

FCC SAR EVALUATION REPORT

**In accordance with the requirements of
FCC 47 CFR Part 2(2.1093), ANSI/IEEE C95.1-1992 and
IEEE Std 1528-2013**

Product Name : Mobile Phone

Trademark : ulefone

Model Name : GQ3095

Family Model : Note 11P, Note 11, Note 11T, Note 11E, Note
11S, Note 11X, Note 11 Pro, Note 11 Lite,
Note 11 Plus

Report No. : STR201207002007E

FCC ID : 2AOWK3095

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TEST RESULT CERTIFICATION**Applicant's name**.....: Shenzhen Gotron Electronic CO.,LTD.Address.....: 518, 5F, R&D building, Tsinghua Hi-Tech park, Nanshan district,
Shenzhen 518057 P.R.China**Manufacturer's Name**.....: Shenzhen Gotron Electronic CO.,LTD.Address.....: 518, 5F, R&D building, Tsinghua Hi-Tech park, Nanshan district,
Shenzhen 518057 P.R.China**Product description**

Product name.....: Mobile Phone

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Model Name.....: GQ3095

Family Model.....: Note 11P, Note 11, Note 11T, Note 11E, Note 11S, Note 11X, Note 11
Pro, Note 11 Lite, Note 11 Plus

FCC 47 CFR Part 2(2.1093)

ANSI/IEEE C95.1-1992

Standards.....: IEEE Std 1528-2013

Published RF exposure KDB procedures

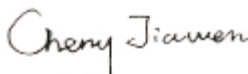
This device described above has been tested by Shenzhen NTEK. In accordance with the measurement methods and procedures specified in IEEE Std 1528-2013 and KDB 865664 D01. Testing has shown that this device is capable of compliance with localized specific absorption rate (SAR) specified in FCC 47 CFR Part 2(2.1093) and ANSI/IEEE C95.1-1992. The test results in this report apply only to the tested sample of the stated device/equipment. Other similar device/equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

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Date of Test

Date (s) of performance of tests.....: Dec. 14, 2020 ~ Dec. 24, 2020

Date of Issue.....: Dec. 31, 2020

Test Result.....: **Pass**Prepared By : 
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※ ※ Revision History ※ ※

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TABLE OF CONTENTS

1. General Information	6
1.1. RF exposure limits.....	6
1.2. Statement of Compliance	7
1.3. EUT Description	7
1.4. Test specification(s)	9
1.5. Ambient Condition.....	9
2. SAR Measurement System	10
2.1. SATIMO SAR Measurement Set-up Diagram	10
2.2. Robot	11
2.3. E-Field Probe.....	12
2.3.1. E-Field Probe Calibration	12
2.4. SAM phantoms	13
2.4.1. Technical Data	14
2.5. Device Holder	15
2.6. Test Equipment List	16
3. SAR Measurement Procedures	18
3.1. Power Reference	18
3.2. Area scan & Zoom scan.....	18
3.3. Description of interpolation/extrapolation scheme	20
3.4. Volumetric Scan	20
3.5. Power Drift	20
4. System Verification Procedure	21
4.1. Tissue Verification	21
4.1.1. Tissue Dielectric Parameter Check Results	22
4.2. System Verification Procedure	23
4.2.1. System Verification Results	23
5. SAR Measurement variability and uncertainty	25
5.1. SAR measurement variability.....	25
5.2. SAR measurement uncertainty	25
6. RF Exposure Positions	26
6.1. Ear and handset reference point	26
6.2. Definition of the cheek position	26
6.3. Definition of the tilt position	28
6.4. Body Worn Accessory	28
6.5. Wireless Router Devices	29
7. RF Output Power	30
7.1. GSM Conducted Power	30
7.2. WCDMA Conducted Power	31
7.3. LTE Conducted Power	32

7.4. WLAN & Bluetooth Output Power	44
7.4.1. Output Power Results Of WLAN	44
7.4.2. Output Power Results Of Bluetooth.....	45
8. Antenna Location.....	46
9. Stand-alone SAR test exclusion.....	47
10. SAR Results	47
10.1. SAR measurement results	47
10.1.1. SAR measurement Result of GSM850	47
10.1.2. SAR measurement Result of GSM1900.....	48
10.1.3. SAR measurement Result of WCDMA Band 2	49
10.1.4. SAR measurement Result of WCDMA Band 4	50
10.1.5. SAR measurement Result of WCDMA Band 5	51
10.1.6. SAR measurement Result of LTE Band 2	52
10.1.7. SAR measurement Result of LTE Band 4	54
10.1.8. SAR measurement Result of LTE Band 5	56
10.1.9. SAR measurement Result of LTE Band 7	58
10.1.10. SAR measurement Result of LTE Band 12	60
10.1.11. SAR measurement Result of LTE Band 17	61
10.1.12. SAR measurement Result of WLAN 2.4G	63
10.1.13. SAR measurement Result of WLAN 5.2G	64
10.1.14. SAR measurement Result of WLAN 5.8G	65
10.2. SAR Summation Scenario.....	65
11. Appendix A. Photo documentation	67
12. Appendix B. System Check Plots.....	67
13. Appendix C. Plots of High SAR Measurement.....	100
14. Appendix D. Calibration Certificate	157

1. General Information

1.1. RF exposure limits

(A).Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

(B).Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

NOTE: **Whole-Body SAR** is averaged over the entire body, **partial-body SAR** is averaged over any 1 gram of tissue defined as a tissue volume in the shape of a cube. **SAR for hands, wrists, feet and ankles** is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

Occupational/Controlled Environments:

Are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure, (i.e. as a result of employment or occupation).

General Population/Uncontrolled Environments:

Are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

NOTE
 HEAD AND TRUNK LIMIT
 1.6 W/kg
 APPLIED TO THIS EUT

1.2. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for GQ3095 are as follows.

RF Exposure Conditions		Equipment Class -Highest Reported SAR (W/kg)			
		PCE	DTS	NII	DSS
1-g Head		0.188	0.105	0.417	N/A
1-g Body-Worn (Separation distance of 10mm)		1.186	0.053	0.217	N/A
1-g Hotspot (Separation distance of 10mm)		1.186	0.053	0.217	N/A
Max Simultaneous Tx	Head	0.605	0.293	0.605	N/A
	Body-Worn	1.403	1.239	1.403	N/A
	Hotspot	1.403	1.239	1.403	N/A

Note: The Max Simultaneous Tx is calculated based on the same configuration and test position. This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR Part 2(2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528-2013 & KDB 865664 D01.

1.3. EUT Description

Device Information			
Product Name	Mobile Phone		
Trade Name	ulefone		
Model Name	GQ3095		
Family Model	Note 11P, Note 11, Note 11T, Note 11E, Note 11S, Note 11X, Note 11 Pro, Note 11 Lite, Note 11 Plus		
FCC ID	2AOWK3095		
Device Phase	Identical Prototype		
Exposure Category	General population / Uncontrolled environment		
Antenna	PIFA Antenna		
Battery Information	DC 3.85V, 4400mAh		
Device Operating Configurations			
Supporting Mode(s)	GSM 850/1900, WCDMA Band 2/4/5, LTE Band 2/4/5/7/12/17, WLAN 2.4G/5.2G/5.8G, Bluetooth		
Test Modulation	GSM(GMSK/8PSK), WCDMA(QPSK), LTE(QPSK/16QAM), WLAN(DSSS/OFDM), Bluetooth(GFSK)		
Device Class	B		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)

	GSM 850	824-849	869-894
	GSM 1900	1850-1910	1930-1990
	WCDMA Band 2	1850-1910	1930-1990
	WCDMA Band 4	1710-1755	2110-2155
	WCDMA Band 5	824-849	869-894
	LTE Band 2	1850-1910	1930-1990
	LTE Band 4	1710-1755	2110-2155
	LTE Band 5	824-849	869-894
	LTE Band 7	2500-2570	2620-2690
	LTE Band 12	699-716	729-746
	LTE Band 17	704-716	734-746
	WLAN 2.4G	2412-2462	
	WLAN 5.2G	5180-5240	
	WLAN 5.8G	5745-5825	
	Bluetooth	2402-2480	
GPRS Multislot Class(12)	Max Number of Timeslots in Uplink		4
	Max Number of Timeslots in Downlink		4
	Max Total Timeslot		5
EDGE Multislot Class(12)	Max Number of Timeslots in Uplink		4
	Max Number of Timeslots in Downlink		4
	Max Total Timeslot		5
Power Class	4, tested with power level 5(GSM 850)		
	1, tested with power level 0(GSM 1900)		
	3, tested with power control "all 1"(WCDMA Band 2)		
	3, tested with power control "all 1"(WCDMA Band 4)		
	3, tested with power control "all 1"(WCDMA Band 5)		
	3, tested with power control all Max.(LTE Band 2)		
	3, tested with power control all Max.(LTE Band 4)		
	3, tested with power control all Max.(LTE Band 5)		
	3, tested with power control all Max.(LTE Band 7)		
	3, tested with power control all Max.(LTE Band 12)		
	3, tested with power control all Max.(LTE Band 17)		

1.4. Test specification(s)

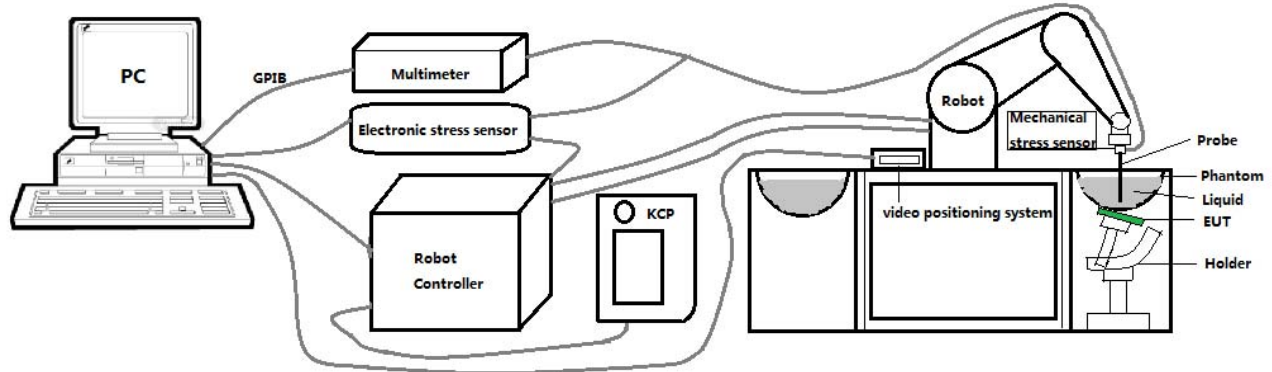
FCC 47 CFR Part 2(2.1093)
ANSI/IEEE C95.1-1992
IEEE Std 1528-2013
KDB 865664 D01 SAR measurement 100 MHz to 6 GHz
KDB 865664 D02 RF Exposure Reporting
KDB 447498 D01 General RF Exposure Guidance
KDB 248227 D01 802.11 Wi-Fi SAR
KDB 941225 D01 3G SAR Procedures
KDB 941225 D05 SAR for LTE Devices
KDB 941225 D06 Hotspot SAR
KDB 648474 D04 Handset SAR

1.5. Ambient Condition

Ambient temperature	20°C – 24°C
Relative Humidity	30% – 70%

2. SAR Measurement System

2.1. SATIMO SAR Measurement Set-up Diagram



These measurements were performed with the automated near-field scanning system OPENSAR from SATIMO. The system is based on a high precision robot (working range: 901 mm), which positions the probes with a positional repeatability of better than ± 0.03 mm. The SAR measurements were conducted with dosimetric probe (manufactured by SATIMO), designed in the classical triangular configuration and optimized for dosimetric evaluation.

The first step of the field measurement is the evaluation of the voltages induced on the probe by the device under test. Probe diode detectors are nonlinear. Below the diode compression point, the output voltage is proportional to the square of the applied E-field; above the diode compression point, it is linear to the applied E-field. The compression point depends on the diode, and a calibration procedure is necessary for each sensor of the probe.

The Keithley multimeter reads the voltage of each sensor and send these three values to the PC. The corresponding E field value is calculated using the probe calibration factors, which are stored in the working directory. This evaluation includes linearization of the diode characteristics. The field calculation is done separately for each sensor. Each component of the E field is displayed on the "Dipole Area Scan Interface" and the total E field is displayed on the "3D Interface"

2.2. Robot

The SATIMO SAR system uses the high precision robots from KUKA. For the 6-axis controller system, the robot controller version (KUKA) from KUKA is used. The KUKA robot series have many features that are important for our application:



- High precision (repeatability ± 0.03 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)

2.3. E-Field Probe

This E-field detection probe is composed of three orthogonal dipoles linked to special Schottky diodes with low detection thresholds. The probe allows the measurement of electric fields in liquids such as the one defined in the IEEE and CENELEC standards.

For the measurements the Specific Dosimetric E-Field Probe SN 08/16 EPGO287 with following specifications is used



- Dynamic range: 0.01-100 W/kg
 - Tip Diameter: 2.5 mm
 - Distance between probe tip and sensor center: 1 mm
 - Distance between sensor center and the inner phantom surface: 2 mm (repeatability better than ± 1 mm).
 - Probe linearity: ± 0.08 dB
 - Axial isotropy: 0.06 dB
 - Hemispherical Isotropy: 0.08 dB
 - Calibration range: 650MHz to 5900MHz for head & body simulating liquid.
 - Lower detection limit: 7mW/kg
- Angle between probe axis (evaluation axis) and surface normal line: less than 30° .

2.3.1. E-Field Probe Calibration

Each probe needs to be calibrated according to a dosimetric assessment procedure with accuracy better than $\pm 10\%$. The spherical isotropy shall be evaluated and within ± 0.25 dB. The sensitivity parameters (Norm X, Norm Y, and Norm Z), the diode compression parameter (DCP) and the conversion factor (Conv F) of the probe are tested. The calibration data can be referred to appendix D of this report.

2.4. SAM phantoms

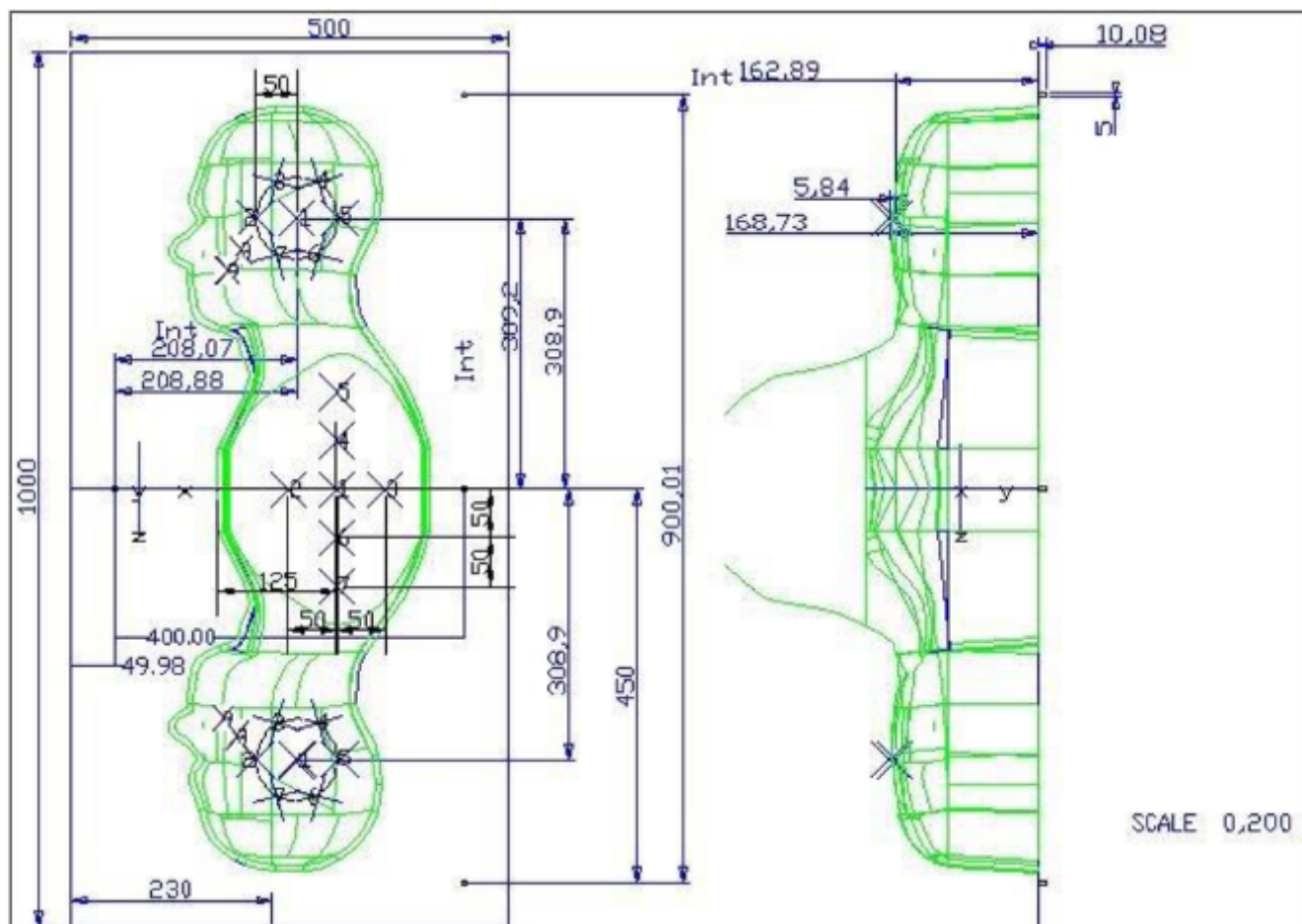
Photo of SAM phantom SN 16/15 SAM119



The SAM phantom is used to measure the SAR relative to people exposed to electro-magnetic field radiated by mobile phones.

2.4.1. Technical Data

Serial Number	Shell thickness	Filling volume	Dimensions	Positionner Material	Permittivity	Loss Tangent
SN 16/15 SAM119	2 mm ±0.2 mm	27 liters	Length:1000 mm Width:500 mm Height:200 mm	Gelcoat with fiberglass	3.4	0.02

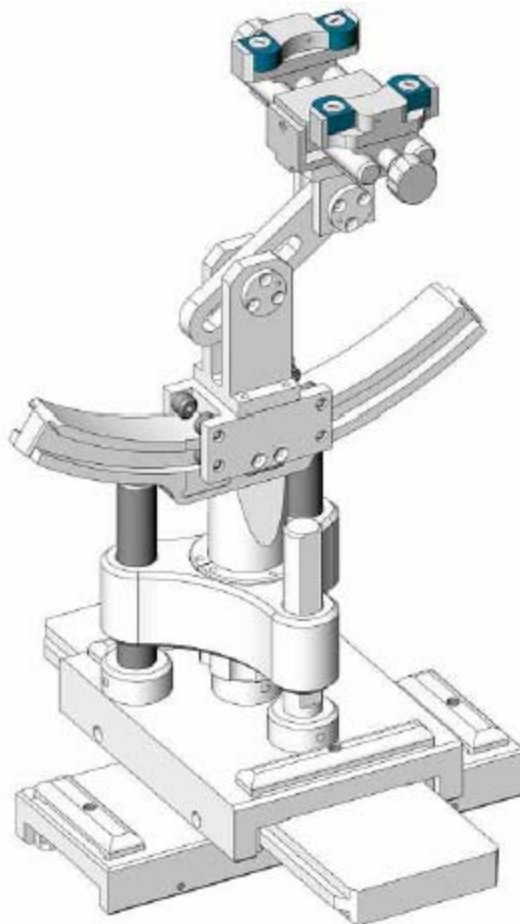


Serial Number	Left Head(mm)		Right Head(mm)		Flat Part(mm)	
SN 16/15 SAM119	2	2.02	2	2.08	1	2.09
	3	2.05	3	2.06	2	2.06
	4	2.07	4	2.07	3	2.08
	5	2.08	5	2.08	4	2.10
	6	2.05	6	2.07	5	2.10
	7	2.05	7	2.05	6	2.07
	8	2.07	8	2.06	7	2.07
	9	2.08	9	2.06	-	-

The test, based on ultrasonic system, allows measuring the thickness with an accuracy of 10 μm .

2.5. Device Holder

The positioning system allows obtaining cheek and tilting position with a very good accuracy. In compliance with CENELEC, the tilt angle uncertainty is lower than 1 degree.



Serial Number	Holder Material	Permittivity	Loss Tangent
SN 16/15 MSH100	Delrin	3.7	0.005

2.6. Test Equipment List

This table gives a complete overview of the SAR measurement equipment.

Devices used during the test described are marked ☒

	Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
					Last Cal.	Due Date
☒	MVG	E FIELD PROBE	SSE2	SN 08/16 EPGO287	Dec. 27, 2019	Dec. 26, 2020
☒	MVG	750 MHz Dipole	SID750	SN 03/15 DIP 0G750-355	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	835 MHz Dipole	SID835	SN 03/15 DIP 0G835-347	Apr. 19, 2018	Apr. 18, 2021
☐	MVG	900 MHz Dipole	SID900	SN 03/15 DIP 0G900-348	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	1800 MHz Dipole	SID1800	SN 03/15 DIP 1G800-349	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	1900 MHz Dipole	SID1900	SN 03/15 DIP 1G900-350	Apr. 19, 2018	Apr. 18, 2021
☐	MVG	2000 MHz Dipole	SID2000	SN 03/15 DIP 2G000-351	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	2450 MHz Dipole	SID2450	SN 03/15 DIP 2G450-352	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	2600 MHz Dipole	SID2600	SN 03/15 DIP 2G600-356	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	5000 MHz Dipole	SWG5500	SN 13/14 WGA 33	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	Liquid measurement Kit	SCLMP	SN 21/15 OCPG 72	NCR	NCR
☒	MVG	Power Amplifier	N.A	AMPLISAR_28/14_003	NCR	NCR
☒	KEITHLEY	Millivoltmeter	2000	4072790	NCR	NCR
☒	R&S	Universal radio communication tester	CMU200	117858	Jul. 13, 2020	Jul. 12, 2021
☒	R&S	Wideband radio communication tester	CMW500	103917	Jul. 13, 2020	Jul. 12, 2021
☒	HP	Network Analyzer	8753D	3410J01136	Jul. 13, 2020	Jul. 12, 2021
☒	Agilent	PSG Analog Signal Generator	E8257D	MY51110112	Jul. 13, 2020	Jul. 12, 2021

☒	Agilent	Power meter	E4419B	MY45102538	Jul. 13, 2020	Jul. 12, 2021
☒	Agilent	Power sensor	E9301A	MY41495644	Jul. 13, 2020	Jul. 12, 2021
☒	Agilent	Power sensor	E9301A	US39212148	Jul. 13, 2020	Jul. 12, 2021
☒	MCLI/USA	Directional Coupler	CB11-20	0D2L51502	Jul. 17, 2020	Jul. 16, 2023

3. SAR Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

- (a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
- (b) Read the WWAN RF power level from the base station simulator.
- (c) For WLAN/Bluetooth power measurement, use engineering software to configure EUT WLAN/Bluetooth continuously transmission, at maximum RF power in each supported wireless interface and frequency band.
- (d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/Bluetooth output power.

<SAR measurement>

- (a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/Bluetooth continuously transmission, at maximum RF power, in the highest power channel.
- (b) Place the EUT in the positions as Appendix A demonstrates.
- (c) Set scan area, grid size and other setting on the OPENSAR software.
- (d) Measure SAR results for the highest power channel on each testing position.
- (e) Find out the largest SAR result on these testing positions of each band.
- (f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg.

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

- (a) Power reference measurement
- (b) Area scan
- (c) Zoom scan
- (d) Power drift measurement

3.1. Power Reference

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

3.2. Area scan & Zoom scan

The area scan is a 2D scan to find the hot spot location on the DUT. The zoom scan is a 3D scan above the hot spot to calculate the 1g and 10g SAR value.

Measurement of the SAR distribution with a grid of 8 to 16 mm * 8 to 16 mm and a constant distance to the inner surface of the phantom. Since the sensors cannot directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme. Around this point, a cube of 30 * 30 * 30 mm or 32 * 32 * 32 mm is assessed by measuring 5 or 8 * 5 or 8 * 4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

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).

Area scan & Zoom scan scan parameters extracted from FCC KDB 865664 D01 SAR measurement 100 MHz to 6 GHz.

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: Δx_{Area} , Δy_{Area}			≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: Δx_{Zoom} , Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm *	3 – 4 GHz: ≤ 5 mm * 4 – 6 GHz: ≤ 4 mm *
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

3.3. Description of interpolation/extrapolation scheme

The local SAR inside the phantom is measured using small dipole sensing elements inside a probe body. The probe tip must not be in contact with the phantom surface in order to minimise measurements errors, but the highest local SAR will occur at the surface of the phantom.

An extrapolation is using to determinate this highest local SAR values. The extrapolation is based on a fourth-order least-square polynomial fit of measured data. The local SAR value is then extrapolated from the liquid surface with a 1 mm step.

The measurements have to be performed over a limited time (due to the duration of the battery) so the step of measurement is high. It could vary between 5 and 8 mm. To obtain an accurate assessment of the maximum SAR averaged over 10 grams and 1 gram requires a very fine resolution in the three dimensional scanned data array.

3.4. Volumetric Scan

The volumetric scan consists to a full 3D scan over a specific area. This 3D scan is useful form multi Tx SAR measurement. Indeed, it is possible with OpenSAR to add, point by point, several volumetric scan to calculate the SAR value of the combined measurement as it is define in the standard IEEE1528 and IEC62209.

3.5. Power Drift

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In OpenSAR measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in V/m. If the power drifts more than $\pm 5\%$, the SAR will be retested.

4. System Verification Procedure

4.1. Tissue Verification

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Ingredients (% of weight)	Head Tissue									
Frequency Band (MHz)	750	835	900	1800	1900	2000	2450	2600	5200	5800
Water	34.40	34.40	34.40	55.36	55.36	57.87	57.87	57.87	65.53	65.53
NaCl	0.79	0.79	0.79	0.35	0.35	0.16	0.16	0.16	0.00	0.00
1,2-Propanediol	64.81	64.81	64.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Triton X-100	0.00	0.00	0.00	30.45	30.45	19.97	19.97	19.97	24.24	24.24
DGBE	0.00	0.00	0.00	13.84	13.84	22.00	22.00	22.00	10.23	10.23
Ingredients (% of weight)	Body Tissue									
Frequency Band (MHz)	750	835	900	1800	1900	2000	2450	2600	5200	5800
Water	50.30	50.30	50.30	69.91	69.91	71.88	71.88	71.88	79.54	79.54
NaCl	0.60	0.60	0.60	0.13	0.13	0.16	0.16	0.16	0.00	0.00
1,2-Propanediol	49.10	49.10	49.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Triton X-100	0.00	0.00	0.00	9.99	9.99	19.97	19.97	19.97	11.24	11.24
DGBE	0.00	0.00	0.00	19.97	19.97	7.99	7.99	7.99	9.22	9.22

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 15 cm. For head SAR testing, the liquid depth from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm.

Photo of Liquid depth for Head Position	Photo of Liquid depth for Body Position
	

4.1.1. Tissue Dielectric Parameter Check Results

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine if the dielectric parameter are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within $\pm 5\%$ of the target values.

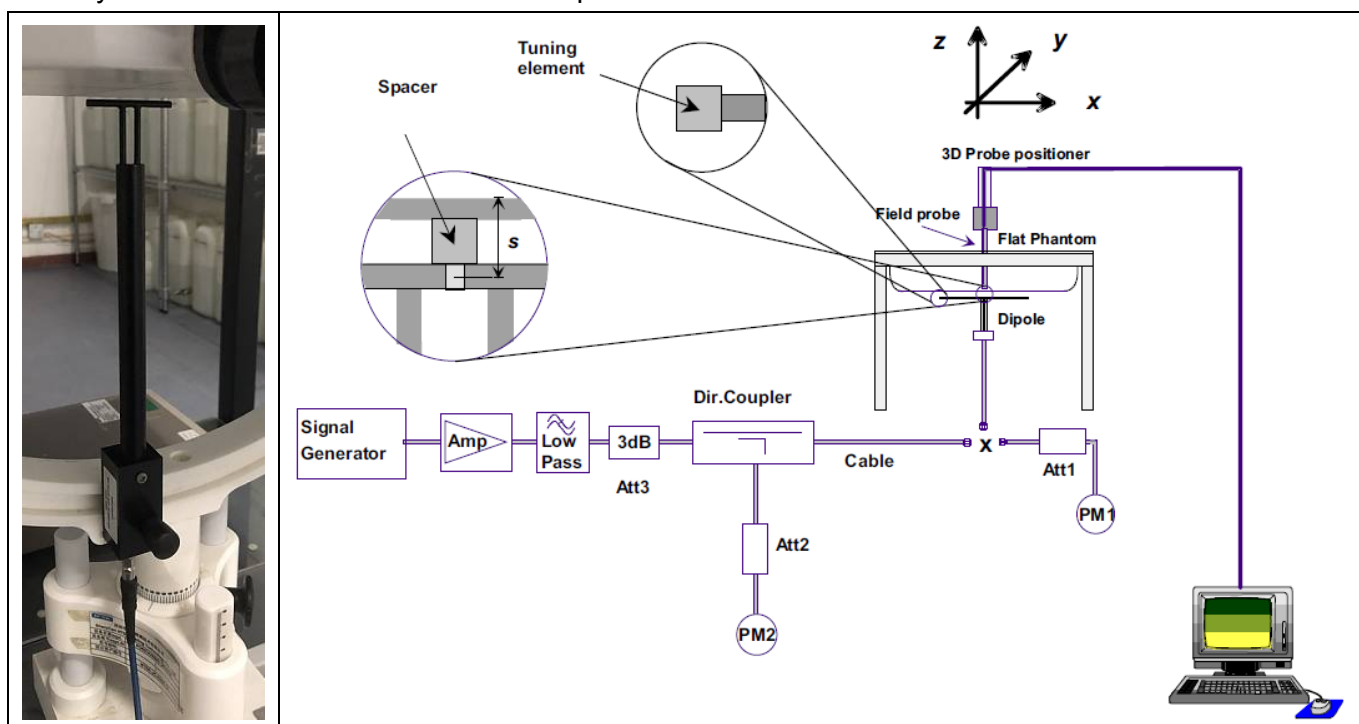
Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
		$\epsilon_r (\pm 5\%)$	σ (S/m) ($\pm 5\%$)	ϵ_r	σ (S/m)		
Head 750	750	41.96 (39.86~44.06)	0.89 (0.85~0.93)	42.29	0.92	21.2 °C	Dec. 18, 2020
Body 750	750	55.55 (52.77~58.33)	0.96 (0.91~1.01)	55.64	0.98	21.2 °C	Dec. 19, 2020
Head 850	835	41.50 (39.43~43.58)	0.90 (0.86~0.95)	41.59	0.91	21.5 °C	Dec. 21, 2020
Body 850	835	55.20 (52.44~57.96)	0.97 (0.92~1.02)	55.32	0.97	21.5 °C	Dec. 19, 2020
Head 1800	1800	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.37	1.41	21.7 °C	Dec. 14, 2020
Body 1800	1800	53.30 (50.64~55.97)	1.52 (1.44~1.60)	54.65	1.52	21.6 °C	Dec. 21, 2020
Head 1900	1900	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.13	1.43	21.2 °C	Dec. 22, 2020
Body 1900	1900	53.30 (50.64~55.97)	1.52 (1.44~1.60)	54.86	1.54	21.4 °C	Dec. 22, 2020
Head 2450	2450	39.20 (37.24~41.16)	1.80 (1.71~1.89)	39.17	1.85	21.5 °C	Dec. 15, 2020
Body 2450	2450	52.70 (50.07~55.34)	1.95 (1.85~2.05)	52.30	1.94	21.5 °C	Dec. 23, 2020
Head 2600	2600	39.01 (37.06~40.96)	1.96 (1.86~2.06)	38.73	2.01	21.4 °C	Dec. 16, 2020
Body 2600	2600	52.51 (49.88~55.14)	2.16 (2.05~2.27)	53.38	2.22	21.2 °C	Dec. 23, 2020
Head 5200	5200	36.00 (34.20~37.80)	4.66 (4.43~4.89)	36.61	4.65	21.5 °C	Dec. 16, 2020
Body 5200	5200	49.00 (46.55~51.45)	5.30 (5.04~5.57)	50.26	5.34	21.5 °C	Dec. 24, 2020
Head 5800	5800	35.30 (33.54~37.07)	5.27 (5.01~5.53)	35.07	5.32	21.9 °C	Dec. 18, 2020
Body 5800	5800	48.20 (45.79~50.61)	6.00 (5.70~6.30)	48.71	6.05	21.2 °C	Dec. 24, 2020

NOTE: The dielectric parameters of the tissue-equivalent liquid should be measured under similar ambient conditions and within 2 °C of the conditions expected during the SAR evaluation to satisfy protocol requirements.

4.2. System Verification Procedure

The system verification is performed for verifying the accuracy of the complete measurement system and performance of the software. The dipole is connected to the signal source consisting of signal generator and amplifier via a directional coupler, N-connector cable and adaption to SMA. It is fed with a power of 100mW (below 5GHz) or 100mW (above 5GHz). To adjust this power a power meter is used. The power sensor is connected to the cable before the system verification to measure the power at this point and do adjustments at the signal generator. At the outputs of the directional coupler both return loss as well as forward power are controlled during the system verification to make sure that emitted power at the dipole is kept constant. This can also be checked by the power drift measurement after the test (result on plot).

The system verification is shown as below picture:



4.2.1. System Verification Results

Comparing to the original SAR value provided by SATIMO, the verification data should be within its specification of $\pm 10\%$. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance verification can meet the variation criterion and the plots can be referred to Appendix B of this report.

System Verification	Target SAR (1W) ($\pm 10\%$)		Measured SAR (Normalized to 1W)		Liquid Temp.	Test Date
	1-g (W/Kg)	10-g (W/Kg)	1-g	10-g		

			(W/Kg)	(W/Kg)		
750MHz Head	8.56 (7.70~9.42)	5.55 (5.00~6.11)	8.23	6.01	21.2 °C	Dec. 18, 2020
750MHz Body	8.85 (7.97~9.74)	5.91 (5.32~6.50)	8.51	5.87	21.2 °C	Dec. 19, 2020
835MHz Head	9.55 (8.60~10.51)	6.10 (5.49~6.71)	10.02	5.87	21.5 °C	Dec. 21, 2020
835MHz Body	9.83 (8.85~10.81)	6.45 (5.81~7.10)	9.91	6.84	21.5 °C	Dec. 19, 2020
1800MHz Head	38.11 (34.30~41.92)	20.05 (18.05~22.06)	36.46	18.77	21.7 °C	Dec. 14, 2020
1800MHz Body	38.13 (34.32~41.94)	20.65 (18.59~22.72)	38.57	21.18	21.6 °C	Dec. 21, 2020
1900MHz Head	38.92 (35.03~42.81)	20.09 (18.08~22.10)	39.53	20.69	21.2 °C	Dec. 22, 2020
1900MHz Body	39.02 (35.12~42.92)	20.57 (18.51~22.63)	38.96	20.99	21.4 °C	Dec. 22, 2020
2450MHz Head	53.76 (48.38~59.14)	24.12 (21.71~26.53)	53.02	24.21	21.5 °C	Dec. 15, 2020
2450MHz Body	52.90 (47.61~58.19)	24.09 (21.68~26.50)	55.17	24.27	21.5 °C	Dec. 23, 2020
2600MHz Head	55.60 (50.04~61.16)	24.60 (22.14~27.06)	59.20	24.35	21.4 °C	Dec. 16, 2020
2600MHz Body	52.49 (47.24~57.74)	23.74 (21.37~26.11)	54.73	22.31	21.2 °C	Dec. 23, 2020
5200MHz Head	160.94 (144.85~177.03)	55.97 (50.37~61.57)	151.43	53.70	21.5 °C	Dec. 16, 2020
5200MHz Body	156.85 (141.17~172.54)	55.20 (49.68~60.72)	155.98	56.59	21.5 °C	Dec. 24, 2020
5800MHz Head	184.13 (165.72~202.54)	62.74 (56.47~69.01)	187.58	60.73	21.9 °C	Dec. 18, 2020
5800MHz Body	169.30 (152.37~186.23)	58.49 (52.64~64.34)	168.86	57.43	21.2 °C	Dec. 24, 2020

5. SAR Measurement variability and uncertainty

5.1. SAR measurement variability

Per KDB865664 D01 SAR measurement 100 MHz to 6 GHz, SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. The additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

- 1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
- 2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
- 3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg ($\sim 10\%$ from the 1-g SAR limit).
- 4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .

5.2. SAR measurement uncertainty

Per KDB865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. The equivalent ratio (1.5/1.6) is applied to extremity and occupational exposure conditions.

6. RF Exposure Positions

6.1. Ear and handset reference point

Figure 6.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled “M”, the left ear reference point (ERP) is marked “LE”, and the right ERP is marked “RE”.



Fig 6.1.1 Front, back, and side views of SAM phantom

6.2. Definition of the cheek position

1. Define two imaginary lines on the handset, the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset: the midpoint of the width w_t of the handset at the level of the acoustic output (point A in Figure 6.2.1 and Figure 6.2.2), and the midpoint of the width w_b of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 6.2.1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 6.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
2. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 6.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
3. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP
4. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
5. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.

6. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 6.2.3. The actual rotation angles should be documented in the test report.

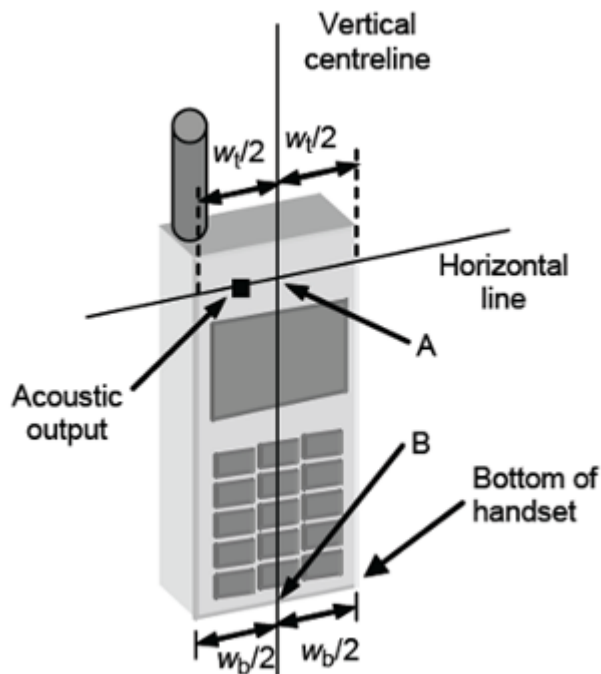


Fig 6.2.1 Handset vertical and horizontal reference lines—"fixed case"

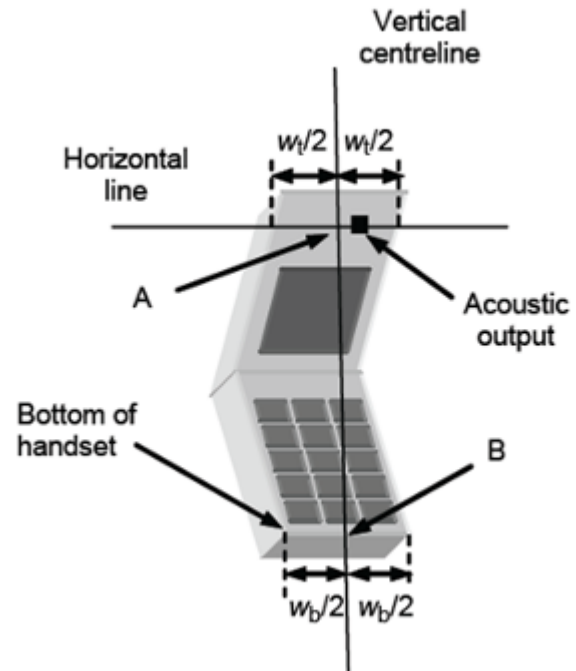


Fig 6.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

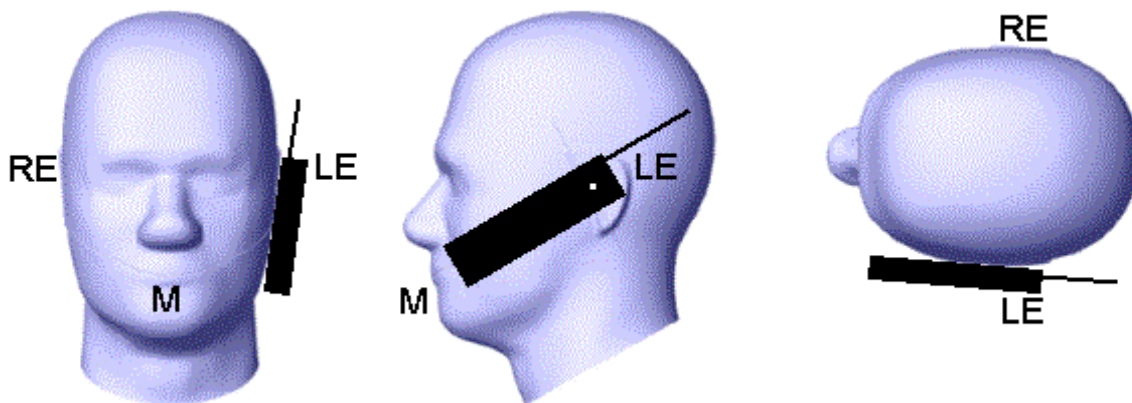


Fig 6.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

6.3. Definition of the tilt position

1. While maintaining the orientation of the handset, retract the handset parallel to the reference plane far enough away from the phantom to enable a rotation of the device by 15 degree.
2. Rotate the Handset around the horizontal line by 15 degree (see Figure 6.3.1).
3. While maintaining the orientation of the handset, move the handset towards the phantom on a line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact is on the pinna. If the contact is at any location other than the pinna, e.g., the antenna with the back of the phantom head, the angle of the handset shall be reduced. In this case, the tilt position is obtained if any part of the handset is in contact with the pinna as well as a second part of the handset is in contact with the phantom, e.g., the antenna with the back of the head.

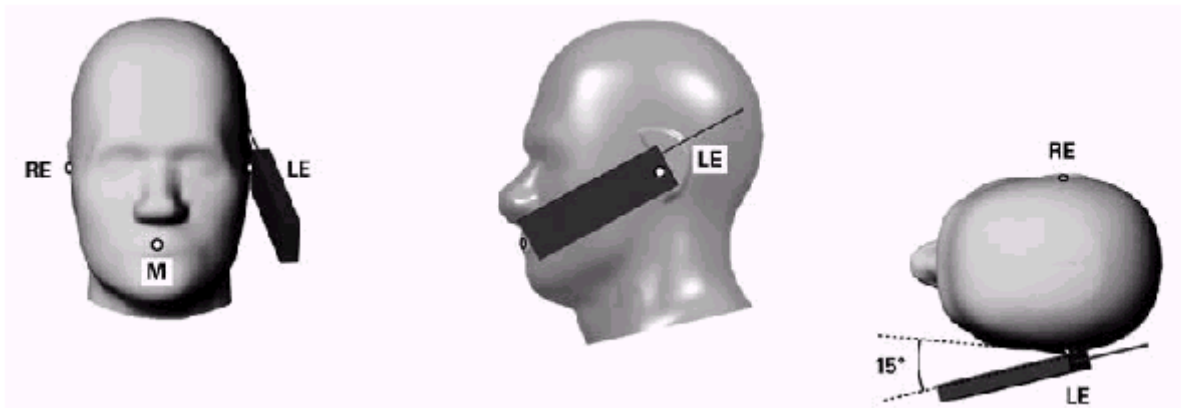


Figure 6.3.1 – Tilt position of the wireless device on the left side of SAM

6.4. Body Worn Accessory

1. Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 6.4.1). Per KDB 648474 D04, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is $< 1.2 \text{ W/kg}$, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a handset attached to the handset.
2. Accessories for body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest

spacing to the body. Then multiple accessories that contain metallic components are test with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

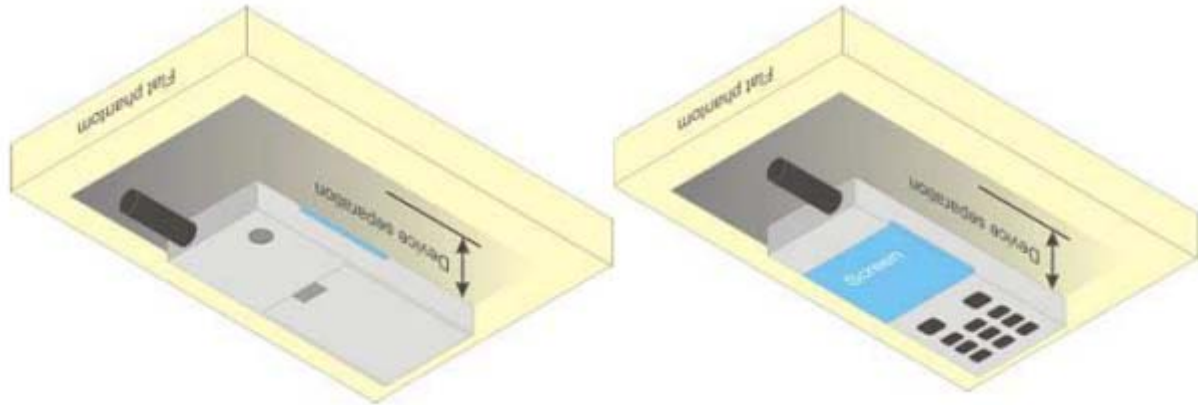


Figure 6.4.1 – Test positions for body-worn devices

6.5. Wireless Router Devices

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WLAN simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 where SAR test considerations for handsets ($L \times W \geq 9 \text{ cm} \times 5 \text{ cm}$) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WLAN transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WLAN transmitter according to FCC KDB Publication 447498 D01 publication procedures. The “Portable Hotspot” feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

7. RF Output Power

7.1. GSM Conducted Power

Band GSM850	Burst-Averaged output Power (dBm)				Frame-Averaged output Power (dBm)			
Tx Channel	Tune-up	128	190	251	Tune-up	128	190	251
Frequency (MHz)	(dBm)	824.2	836.6	848.8	(dBm)	824.2	836.6	848.8
GSM (GMSK)	33.00	32.84	32.85	32.81	23.97	23.81	23.82	23.78
GPRS(GMSK, 1 TS)	33.00	32.86	32.90	32.88	23.97	23.83	23.87	23.85
GPRS(GMSK, 2 TS)	33.00	32.04	32.01	31.96	26.98	26.02	25.99	25.94
GPRS(GMSK, 3 TS)	31.00	30.09	30.03	30.07	26.74	25.83	25.77	25.81
GPRS(GMSK, 4 TS)	29.00	28.84	28.80	28.81	25.99	25.83	25.79	25.80
EDGE(GMSK, 1 TS)	28.00	27.15	27.26	27.44	18.97	18.12	18.23	18.41
EDGE(GMSK, 2 TS)	27.00	25.96	25.99	26.12	20.98	19.94	19.97	20.10
EDGE(GMSK, 3 TS)	24.00	23.91	23.69	23.90	19.74	19.65	19.43	19.64
EDGE(GMSK, 4 TS)	23.00	22.20	22.36	22.16	19.99	19.19	19.35	19.15
Band GSM1900	Burst-Averaged output Power (dBm)				Frame-Averaged output Power (dBm)			
Tx Channel	Tune-up	512	661	810	Tune-up	512	661	810
Frequency (MHz)	(dBm)	1850.2	1880.0	1909.8	(dBm)	1850.2	1880.0	1909.8
GSM (GMSK)	31.00	30.45	30.40	30.28	21.97	21.42	21.37	21.25
GPRS(GMSK, 1 TS)	31.00	30.39	30.34	30.21	21.97	21.36	21.31	21.18
GPRS(GMSK, 2 TS)	30.00	29.46	29.38	29.25	23.98	23.44	23.36	23.23
GPRS(GMSK, 3 TS)	28.00	27.39	27.28	27.13	23.74	23.13	23.02	22.87
GPRS(GMSK, 4 TS)	27.00	26.07	25.97	25.77	23.99	23.06	22.96	22.76
EDGE(GMSK, 1 TS)	29.00	27.67	28.08	27.07	19.97	18.64	19.05	18.04
EDGE(GMSK, 2 TS)	27.00	26.28	26.53	25.77	20.98	20.26	20.51	19.75
EDGE(GMSK, 3 TS)	24.00	23.75	23.91	23.35	19.74	19.49	19.65	19.09
EDGE(GMSK, 4 TS)	23.00	22.83	22.58	22.46	19.99	19.82	19.57	19.45

Note: The frame-averaged power is linearly scaled the maximum burst averaged power over 8 time slots.

The calculated method are shown as below:

Frame-averaged power = Maximum burst averaged power (1 TS) - 9.03 dB

Frame-averaged power = Maximum burst averaged power (2 TS) - 6.02 dB

Frame-averaged power = Maximum burst averaged power (3 TS) - 4.26 dB

Frame-averaged power = Maximum burst averaged power (4 TS) - 3.01 dB

7.2. WCDMA Conducted Power

Band	WCDMA Band 2			
Tx Channel	Tune-up	9262	9400	9538
Frequency (MHz)		1852.4	1880	1907.6
RMC 12.2Kbps	23.00	22.97	22.95	22.98
HSDPA Subtest-1	23.00	22.05	22.06	22.10
HSDPA Subtest-2	22.00	21.59	21.75	21.76
HSDPA Subtest-3	21.00	20.62	20.60	20.18
HSDPA Subtest-4	21.00	20.31	20.70	20.60
HSUPA Subtest-1	22.00	21.34	21.93	21.84
HSUPA Subtest-2	22.00	21.93	21.97	21.97
HSUPA Subtest-3	21.00	20.36	20.68	20.93
HSUPA Subtest-4	23.00	22.03	22.06	22.09
HSUPA Subtest-5	22.00	20.47	21.22	21.32
Band	WCDMA Band 4			
Tx Channel	Tune-up	1312	1450	1513
Frequency (MHz)		1712.4	1740	1752.6
RMC 12.2Kbps	23.50	23.04	23.25	23.15
HSDPA Subtest-1	23.00	22.20	22.36	22.28
HSDPA Subtest-2	22.00	21.71	22.00	21.81
HSDPA Subtest-3	21.00	20.95	20.54	20.81
HSDPA Subtest-4	21.00	20.68	20.53	20.79
HSUPA Subtest-1	23.00	21.25	22.26	22.11
HSUPA Subtest-2	23.00	22.07	22.30	22.17
HSUPA Subtest-3	22.00	20.43	21.15	21.08
HSUPA Subtest-4	23.00	22.23	22.39	22.29
HSUPA Subtest-5	22.00	20.86	21.65	21.42
Band	WCDMA Band 5			
Tx Channel	Tune-up	4132	4182	4233
Frequency (MHz)		826.4	836.4	846.6
RMC 12.2Kbps	23.00	23.00	22.95	22.85
HSDPA Subtest-1	23.00	22.06	21.98	21.87
HSDPA Subtest-2	22.00	21.71	21.58	21.41
HSDPA Subtest-3	21.00	20.71	20.10	20.48
HSDPA Subtest-4	21.00	20.45	20.21	20.47
HSUPA Subtest-1	22.00	20.87	21.82	21.72
HSUPA Subtest-2	22.00	21.98	21.86	21.81
HSUPA Subtest-3	21.00	20.24	20.74	20.77

HSUPA Subtest-4	23.00	22.08	22.01	21.91
HSUPA Subtest-5	22.00	20.64	21.28	20.99

7.3. LTE Conducted Power

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18607/1850.7	18900/1880	19193/1909.3
LTE Band 2	1.4MHz	QPSK	1	0	24.50	23.87	23.87	23.79
			1	2	24.50	24.02	24.01	23.87
			1	5	24.50	23.84	23.86	23.76
			3	0	24.00	23.88	23.86	23.90
			3	1	24.00	23.88	23.89	23.91
			3	2	24.00	23.84	23.88	23.88
			6	0	23.00	22.88	22.84	22.82
		16QAM	1	0	24.00	22.68	22.88	23.00
			1	2	24.00	22.78	22.97	23.11
			1	5	24.00	22.64	22.87	22.95
			3	0	24.00	22.96	22.94	23.07
			3	1	24.00	22.96	22.96	23.07
			3	2	24.00	22.98	22.93	23.09
			6	0	23.00	22.01	21.97	22.00
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18615/1851.5	18900/1880	19185/1908.5
LTE Band 2	3MHz	QPSK	1	0	24.50	23.90	23.90	23.93
			1	7	24.50	24.20	24.14	24.14
			1	14	24.50	23.98	23.88	23.84
			8	0	23.00	22.88	22.88	22.87
			8	4	23.00	22.90	22.91	22.87
			8	7	23.00	22.90	22.85	22.81
			15	0	23.00	22.89	22.82	22.83
		16QAM	1	0	24.00	23.03	22.67	23.28
			1	7	24.00	23.26	23.00	23.58
			1	14	24.00	23.02	22.66	23.23
			8	0	22.00	21.87	21.79	21.95
			8	4	22.00	21.92	21.82	21.90
			8	7	22.00	21.87	21.80	21.85

			15	0	22.00	21.82	21.85	21.89
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18625/1852.5	18900/1880	19175/1907.5
LTE Band 2	5MHz	QPSK	1	0	24.50	23.74	23.77	23.85
			1	12	24.50	24.14	23.99	24.16
			1	24	24.50	23.78	23.82	23.82
			12	0	23.00	22.85	22.82	22.90
			12	6	23.00	22.94	22.89	22.93
			12	11	23.00	22.89	22.83	22.75
			25	0	23.00	22.90	22.84	22.89
		16QAM	1	0	24.00	23.08	23.17	23.13
			1	12	24.00	23.45	23.34	23.51
			1	24	24.00	23.09	23.23	23.14
			12	0	22.00	21.86	21.77	21.86
			12	6	22.00	21.95	21.84	21.88
			12	11	22.00	21.87	21.79	21.73
			25	0	22.00	21.84	21.78	21.90
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18650/1855	18900/1880	19150/1905
LTE Band 2	10MHz	QPSK	1	0	24.50	23.88	23.83	23.92
			1	24	24.50	24.03	23.97	24.04
			1	49	24.50	23.91	23.87	23.85
			25	0	23.00	22.90	22.85	22.95
			25	12	23.00	22.94	22.86	22.93
			25	24	23.00	22.95	22.92	22.77
			50	0	23.00	22.92	22.88	22.86
		16QAM	1	0	24.00	23.21	22.88	22.71
			1	24	24.00	23.39	23.07	22.85
			1	49	24.00	23.29	23.00	22.71
			25	0	22.00	21.93	21.85	21.95
			25	12	22.00	21.92	21.86	21.93
			25	24	22.00	21.98	21.89	21.80
			50	0	22.00	21.92	21.90	21.85
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB	RB		18675/1857.5	18900/1880	19125/1902.5

			Size	Offset				
LTE Band 2	15MHz	QPSK	1	0	24.50	23.95	23.77	23.96
			1	37	24.50	24.21	24.05	24.21
			1	74	24.50	23.86	23.77	23.81
			36	0	23.50	23.03	22.95	22.95
			36	18	23.50	23.04	23.01	23.04
			36	37	23.50	22.96	22.98	22.88
			75	0	23.00	22.99	22.96	22.99
		16QAM	1	0	24.00	23.03	22.91	23.32
			1	37	24.00	23.45	23.33	23.59
			1	74	24.00	22.98	22.93	23.17
			36	0	23.00	22.00	21.83	21.99
			36	18	23.00	22.05	21.90	22.01
			36	37	23.00	22.04	21.86	21.86
			75	0	22.00	21.97	21.94	21.90

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18700/1860	18900/1880	19100/1900
LTE Band 2	20MHz	QPSK	1	0	24.50	23.80	23.82	23.95
			1	49	24.50	24.02	24.11	24.07
			1	99	24.50	23.67	23.84	23.79
			50	0	23.00	22.94	22.77	22.98
			50	24	23.00	22.99	22.89	23.00
			50	49	23.00	22.86	22.83	22.80
			100	0	23.00	22.88	22.80	22.85
		16QAM	1	0	24.00	22.98	22.96	23.23
			1	49	24.00	23.32	23.18	23.35
			1	99	24.00	22.95	23.05	23.14
			50	0	23.00	21.92	21.76	22.03
			50	24	23.00	21.95	21.92	22.04
			50	49	23.00	21.86	21.86	21.83
			100	0	22.00	21.92	21.78	21.86

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		19957/1710.7	20175/1732.5	20393/1754.3
LTE Band	1.4MHz	QPSK	1	0	25.00	24.28	24.40	24.27
			1	2	25.00	24.46	24.51	24.36

4				1	5	25.00	24.26	24.37	24.21
				3	0	25.00	24.35	24.44	24.38
				3	1	25.00	24.33	24.47	24.36
				3	2	25.00	24.30	24.45	24.34
				6	0	24.00	23.27	23.42	23.25
			16QAM	1	0	24.00	23.13	23.54	23.47
				1	2	24.00	23.27	23.62	23.58
				1	5	24.00	23.13	23.52	23.46
				3	0	24.00	23.44	23.58	23.54
				3	1	24.00	23.43	23.61	23.56
				3	2	24.00	23.52	23.56	23.56
				6	0	23.00	22.47	22.58	22.47
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)			
			RB Size	RB Offset		19965/1711.5	20175/1732.5	20385/1753.5	
LTE Band 4	3MHz	QPSK	1	0	25.00	24.27	24.42	24.29	
			1	7	25.00	24.37	24.68	24.55	
			1	14	25.00	24.33	24.35	24.28	
			8	0	24.00	23.26	23.38	23.26	
			8	4	24.00	23.26	23.39	23.32	
			8	7	24.00	23.27	23.35	23.29	
			15	0	24.00	23.24	23.34	23.30	
		16QAM	1	0	25.00	23.17	23.78	23.48	
			1	7	25.00	23.39	24.05	23.79	
			1	14	25.00	23.12	23.73	23.47	
			8	0	23.00	22.22	22.36	22.26	
			8	4	23.00	22.28	22.41	22.33	
			8	7	23.00	22.25	22.38	22.29	
			15	0	23.00	22.27	22.37	22.24	
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)			
			RB Size	RB Offset		19975/1712.5	20175/1732.5	20375/1752.5	
LTE Band 4	5MHz	QPSK	1	0	25.00	24.15	24.23	24.20	
			1	12	25.00	24.56	24.61	24.52	
			1	24	25.00	24.16	24.32	24.19	
			12	0	24.00	23.24	23.33	23.26	
			12	6	24.00	23.30	23.40	23.32	
			12	11	24.00	23.28	23.35	23.24	

			25	0	24.00	23.25	23.35	23.30
		16QAM	1	0	25.00	23.48	23.58	23.70
			1	12	25.00	23.79	24.10	24.14
			1	24	25.00	23.50	23.63	23.71
			12	0	23.00	22.16	22.36	22.22
			12	6	23.00	22.22	22.40	22.32
			12	11	23.00	22.23	22.34	22.27
			25	0	23.00	22.29	22.29	22.30
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20000/1715	20175/1732.5	20350/1750
LTE Band 4	10MHz	QPSK	1	0	25.00	24.22	24.24	24.30
			1	24	25.00	24.31	24.40	24.43
			1	49	25.00	24.13	24.37	24.24
			25	0	24.00	23.22	23.37	23.33
			25	12	24.00	23.21	23.35	23.30
			25	24	24.00	23.38	23.35	23.34
			50	0	24.00	23.29	23.36	23.34
		16QAM	1	0	24.00	23.58	23.45	23.17
			1	24	24.00	23.76	23.58	23.31
			1	49	24.00	23.64	23.52	23.12
			25	0	23.00	22.22	22.40	22.33
			25	12	23.00	22.27	22.37	22.33
			25	24	23.00	22.44	22.34	22.38
			50	0	23.00	22.31	22.34	22.35
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20025/1717.5	20175/1732.5	20325/1747.5
LTE Band 4	15MHz	QPSK	1	0	25.00	24.13	24.25	24.28
			1	37	25.00	24.48	24.62	24.49
			1	74	25.00	24.13	24.29	24.11
			36	0	24.00	23.18	23.33	23.41
			36	18	24.00	23.24	23.37	23.31
			36	37	24.00	23.34	23.31	23.33
			75	0	24.00	23.27	23.30	23.33
		16QAM	1	0	24.00	23.25	23.57	23.44
			1	37	24.00	23.61	23.95	23.75
			1	74	24.00	23.30	23.61	23.32

			36	0	23.00	22.08	22.31	22.40
			36	18	23.00	22.18	22.33	22.35
			36	37	23.00	22.27	22.29	22.38
			75	0	23.00	22.29	22.29	22.34
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20050/1720	20175/1732.5	20300/1745
LTE Band 4	20MHz	QPSK	1	0	25.00	24.06	24.09	24.19
			1	49	25.00	24.29	24.39	24.37
			1	99	25.00	24.16	24.16	24.07
			50	0	24.00	22.99	23.27	23.44
			50	24	24.00	23.20	23.30	23.28
			50	49	24.00	23.32	23.13	23.36
			100	0	24.00	23.17	23.17	23.37
		16QAM	1	0	24.00	23.39	23.43	23.44
			1	49	24.00	23.61	23.58	23.62
			1	99	24.00	23.51	23.46	23.30
			50	0	23.00	22.03	22.18	22.54
			50	24	23.00	22.27	22.22	22.35
			50	49	23.00	22.36	22.13	22.38
			100	0	23.00	22.21	22.17	22.40

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20407/824.7	20525/836.5	20643/848.3
LTE Band 5	1.4MHz	QPSK	1	0	24.00	22.43	23.26	23.25
			1	2	24.00	23.53	23.40	23.38
			1	5	24.00	23.45	23.26	23.25
			3	0	24.00	23.46	23.35	23.18
			3	1	24.00	23.48	23.36	23.19
			3	2	24.00	23.47	23.34	23.17
			6	0	23.00	22.44	22.32	22.30
		16QAM	1	0	23.00	22.47	22.42	21.93
			1	2	23.00	22.61	22.52	22.06
			1	5	23.00	22.54	22.43	21.94
			3	0	23.00	22.58	22.53	22.22
			3	1	23.00	22.62	22.52	22.24
			3	2	23.00	22.59	22.53	22.26

			6	0	22.00	21.58	21.51	21.36
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20415/825.5	20525/836.5	20635/847.5
LTE Band 5	3MHz	QPSK	1	0	24.00	23.48	23.39	23.33
			1	7	24.00	23.82	23.58	23.69
			1	14	24.00	23.56	23.26	23.30
			8	0	23.00	22.47	22.37	22.29
			8	4	23.00	22.52	22.37	22.35
			8	7	23.00	22.51	22.35	22.28
			15	0	23.00	22.44	22.33	22.24
		16QAM	1	0	23.00	22.32	22.73	22.31
			1	7	23.00	22.60	22.96	22.56
			1	14	23.00	22.33	22.63	22.29
			8	0	22.00	21.45	21.37	21.24
			8	4	22.00	21.49	21.40	21.27
			8	7	22.00	21.48	21.36	21.15
			15	0	22.00	21.51	21.37	21.13
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20425/826.5	20525/836.5	20625/846.5
LTE Band 5	5MHz	QPSK	1	0	24.00	23.31	23.29	23.19
			1	12	24.00	23.71	23.64	23.57
			1	24	24.00	23.27	23.21	23.21
			12	0	23.00	22.47	22.39	22.24
			12	6	23.00	22.52	22.41	22.28
			12	11	23.00	22.45	22.31	22.21
			25	0	23.00	22.51	22.37	22.18
		16QAM	1	0	24.00	22.59	22.74	22.36
			1	12	24.00	22.78	23.06	22.71
			1	24	24.00	22.60	22.67	22.32
			12	0	22.00	21.48	21.41	21.12
			12	6	22.00	21.56	21.36	21.21
			12	11	22.00	21.50	21.29	21.08
			25	0	22.00	21.47	21.36	21.17
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB	RB		20450/829	20525/836.5	20600/844

			Size	Offset				
LTE Band 5	10MHz	QPSK	1	0	24.00	23.49	23.42	23.28
			1	24	24.00	23.64	23.47	23.39
			1	49	24.00	23.47	23.31	23.24
			25	0	23.00	22.48	22.37	22.35
			25	12	23.00	22.43	22.38	22.27
			25	24	23.00	22.51	22.29	22.26
			50	0	23.00	22.47	22.35	22.30
		16QAM	1	0	23.00	22.55	22.18	22.59
			1	24	23.00	22.67	22.26	22.64
			1	49	23.00	22.47	22.10	22.46
			25	0	22.00	21.48	21.40	21.34
			25	12	22.00	21.46	21.35	21.25
			25	24	22.00	21.51	21.30	21.27
			50	0	22.00	21.50	21.33	21.29

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20775/2502.5	21100/2535	21425/2567.5
LTE Band 7	5MHz	QPSK	1	0	24.00	23.80	23.57	23.65
			1	12	24.00	24.00	24.00	24.00
			1	24	24.00	23.76	23.52	23.74
			12	0	23.00	22.80	22.62	22.76
			12	6	23.00	22.88	22.70	22.81
			12	11	23.00	22.80	22.61	22.74
			25	0	23.00	22.85	22.64	22.72
		16QAM	1	0	24.00	22.96	22.79	23.06
			1	12	24.00	23.34	23.22	23.42
			1	24	24.00	22.96	22.75	23.11
			12	0	22.00	21.78	21.68	21.74
			12	6	22.00	21.86	21.77	21.82
			12	11	22.00	21.79	21.68	21.75
			25	0	22.00	21.86	21.66	21.73
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20800/2505	21100/2535	21400/2565
LTE Band	10MHz	QPSK	1	0	24.00	23.90	23.67	23.73
			1	24	24.00	24.00	23.76	23.85

7			1	49	24.00	23.91	23.62	23.79
			25	0	23.00	22.84	22.68	22.76
			25	12	23.00	22.82	22.67	22.73
			25	24	23.00	22.87	22.67	22.79
			50	0	23.00	22.81	22.71	22.77
		16QAM	1	0	24.00	22.59	23.00	22.83
			1	24	24.00	22.76	23.11	22.96
			1	49	24.00	22.61	22.93	22.86
			25	0	22.00	21.80	21.73	21.78
			25	12	22.00	21.81	21.71	21.73
			25	24	22.00	21.90	21.72	21.82
			50	0	22.00	21.78	21.70	21.84
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20825/2507.5	21100/2535	21375/2562.5
LTE Band 7	15MHz	QPSK	1	0	24.00	23.92	23.67	23.64
			1	37	24.00	24.00	23.85	23.99
			1	74	24.00	23.78	23.54	23.73
			36	0	23.00	22.95	22.77	22.79
			36	18	23.00	22.92	22.81	22.88
			36	37	23.00	22.92	22.76	22.91
			75	0	23.00	22.94	22.79	22.89
		16QAM	1	0	24.00	22.87	22.71	22.97
			1	37	24.00	23.10	22.96	23.29
			1	74	24.00	22.80	22.65	23.04
			36	0	22.00	21.96	21.75	21.86
			36	18	22.00	21.98	21.75	21.90
			36	37	22.00	21.95	21.74	21.91
			75	0	22.00	21.89	21.83	21.87
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20850/2510	21100/2535	21350/2560
LTE Band 7	20MHz	QPSK	1	0	24.00	23.78	23.71	23.59
			1	49	24.00	23.91	23.84	23.87
			1	99	24.00	23.65	23.62	23.73
			50	0	23.00	22.77	22.59	22.70
			50	24	23.00	22.80	22.71	22.74
			50	49	23.00	22.77	22.62	22.74

			100	0	23.00	22.76	22.65	22.72
		16QAM	1	0	24.00	22.92	22.85	22.83
			1	49	24.00	23.09	22.98	23.11
			1	99	24.00	22.81	22.75	22.98
			50	0	22.00	21.73	21.76	21.82
			50	24	22.00	21.84	21.75	21.89
			50	49	22.00	21.78	21.74	21.87
			100	0	22.00	21.83	21.71	21.79

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		23017/699.7	23095/707.5	23173/715.3
LTE Band 12	1.4MHz	QPSK	1	0	24.00	22.82	23.75	23.58
			1	2	24.00	24.00	23.95	23.71
			1	5	24.00	23.81	23.79	23.55
			3	0	24.00	23.85	23.86	23.70
			3	1	24.00	23.89	23.84	23.77
			3	2	24.00	23.85	23.88	23.70
			6	0	23.00	22.81	22.83	22.62
		16QAM	1	0	24.00	22.65	22.95	22.76
			1	2	24.00	22.82	23.06	22.87
			1	5	24.00	22.64	22.95	22.75
			3	0	24.00	22.96	23.00	22.87
			3	1	24.00	22.95	22.99	22.85
			3	2	24.00	23.01	23.01	22.89
			6	0	22.00	22.00	21.98	21.81
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		23025/700.5	23095/707.5	23165/714.5
LTE Band 12	3MHz	QPSK	1	0	24.00	23.81	23.81	23.67
			1	7	24.00	24.00	23.82	23.92
			1	14	24.00	23.86	23.72	23.61
			8	0	23.00	22.77	22.74	22.63
			8	4	23.00	22.80	22.78	22.69
			8	7	23.00	22.81	22.76	22.59
			15	0	23.00	22.75	22.72	22.62
		16QAM	1	0	24.00	22.66	23.23	22.93
			1	7	24.00	22.99	23.35	23.02

			1	14	24.00	22.65	23.18	22.75
			8	0	22.00	21.75	21.83	21.69
			8	4	22.00	21.83	21.88	21.69
			8	7	22.00	21.79	21.77	21.62
			15	0	22.00	21.84	21.79	21.58
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		23035/701.5	23095/707.5	23155/713.5
LTE Band 12	5MHz	QPSK	1	0	24.00	23.64	23.75	23.60
			1	12	24.00	24.00	24.00	24.00
			1	24	24.00	23.63	23.68	23.58
			12	0	23.00	22.72	22.78	22.68
			12	6	23.00	22.82	22.86	22.74
			12	11	23.00	22.81	22.78	22.62
			25	0	23.00	22.78	22.76	22.69
		16QAM	1	0	24.00	22.98	23.26	22.93
			1	12	24.00	23.42	23.61	23.31
			1	24	24.00	23.03	23.19	22.82
			12	0	22.00	21.73	21.76	21.65
			12	6	22.00	21.85	21.84	21.74
			12	11	22.00	21.86	21.78	21.55
			25	0	22.00	21.76	21.79	21.73
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		23060/704	23095/707.5	23130/711
LTE Band 12	10MHz	QPSK	1	0	24.00	23.76	23.77	23.79
			1	24	24.00	23.93	23.87	23.84
			1	49	24.00	23.78	23.69	23.64
			25	0	23.00	22.75	22.82	22.79
			25	12	23.00	22.80	22.78	22.77
			25	24	23.00	22.82	22.76	22.69
			50	0	23.00	22.80	22.76	22.75
		16QAM	1	0	24.00	23.13	22.94	22.66
			1	24	24.00	23.34	23.12	22.70
			1	49	24.00	23.16	22.86	22.43
			25	0	22.00	21.76	21.79	21.83
			25	12	22.00	21.87	21.81	21.75
			25	24	22.00	21.88	21.80	21.71

			50	0	22.00	21.82	21.85	21.72
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Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		23755/706.5	23790/710	23825/713.5
LTE Band 17	5MHz	QPSK	1	0	24.00	23.80	23.78	23.74
			1	12	24.00	24.00	23.99	23.99
			1	24	24.00	23.81	23.67	23.56
			12	0	23.00	22.85	22.78	22.75
			12	6	23.00	22.93	22.89	22.78
			12	11	23.00	22.87	22.78	22.65
			25	0	23.00	22.88	22.82	22.74
		16QAM	1	0	24.00	23.35	23.09	23.03
			1	12	24.00	23.67	23.53	23.14
			1	24	24.00	23.32	23.01	22.78
			12	0	22.00	21.88	21.81	21.74
			12	6	22.00	21.88	21.80	21.81
			12	11	22.00	21.87	21.72	21.65
			25	0	22.00	21.83	21.85	21.70
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		23780/709	23790/710	23800/711
LTE Band 17	10MHz	QPSK	1	0	24.00	23.89	23.87	23.87
			1	24	24.00	23.99	23.99	23.95
			1	49	24.00	23.77	23.75	23.66
			25	0	23.00	22.90	22.89	22.91
			25	12	23.00	22.86	22.85	22.83
			25	24	23.00	22.79	22.75	22.73
			50	0	23.00	22.81	22.80	22.78
		16QAM	1	0	24.00	22.99	22.73	23.22
			1	24	24.00	23.13	22.84	23.33
			1	49	24.00	22.89	22.56	23.01
			25	0	22.00	21.90	21.89	21.90
			25	12	22.00	21.87	21.87	21.86
			25	24	22.00	21.80	21.78	21.75
			50	0	22.00	21.89	21.81	21.81

7.4. WLAN & Bluetooth Output Power

7.4.1. Output Power Results Of WLAN

Mode	Channel	Frequency (MHz)	Tune-up	Output Power (dBm)
802.11b	1	2412	12.50	12.50
	6	2437	12.50	12.41
	11	2462	12.50	12.31
802.11g	1	2412	12.00	11.78
	6	2437	12.00	11.97
	11	2462	12.00	11.78
802.11n (HT20)	1	2412	12.00	11.53
	6	2437	12.00	11.77
	11	2462	12.00	11.80
802.11n (HT40)	3	2422	12.00	11.48
	6	2437	12.00	10.92
	9	2452	12.00	11.74

NOTE: Power measurement results of WLAN 2.4G.

Mode	Channel	Frequency (MHz)	Tune-up	Output Power (dBm)
802.11a	36	5180	10.500	10.498
	40	5200	10.500	10.122
	48	5240	10.500	10.287
802.11n (HT20)	36	5180	10.000	9.838
	40	5200	10.000	9.858
	48	5240	10.000	9.627
802.11n (HT40)	38	5190	10.000	9.185
	46	5230	10.000	8.326
802.11ac (VHT20)	36	5180	10.500	10.045
	40	5200	10.500	10.422
	48	5240	10.500	9.253
802.11ac (VHT40)	38	5190	9.000	8.725
	46	5230	9.000	8.480
802.11ac (VHT80)	42	5210	8.000	7.219

NOTE: Power measurement results of WLAN 5.2G.

Mode	Channel	Frequency (MHz)	Tune-up	Output Power (dBm)
802.11a	149	5745	11.000	10.887
	157	5785	11.000	10.820

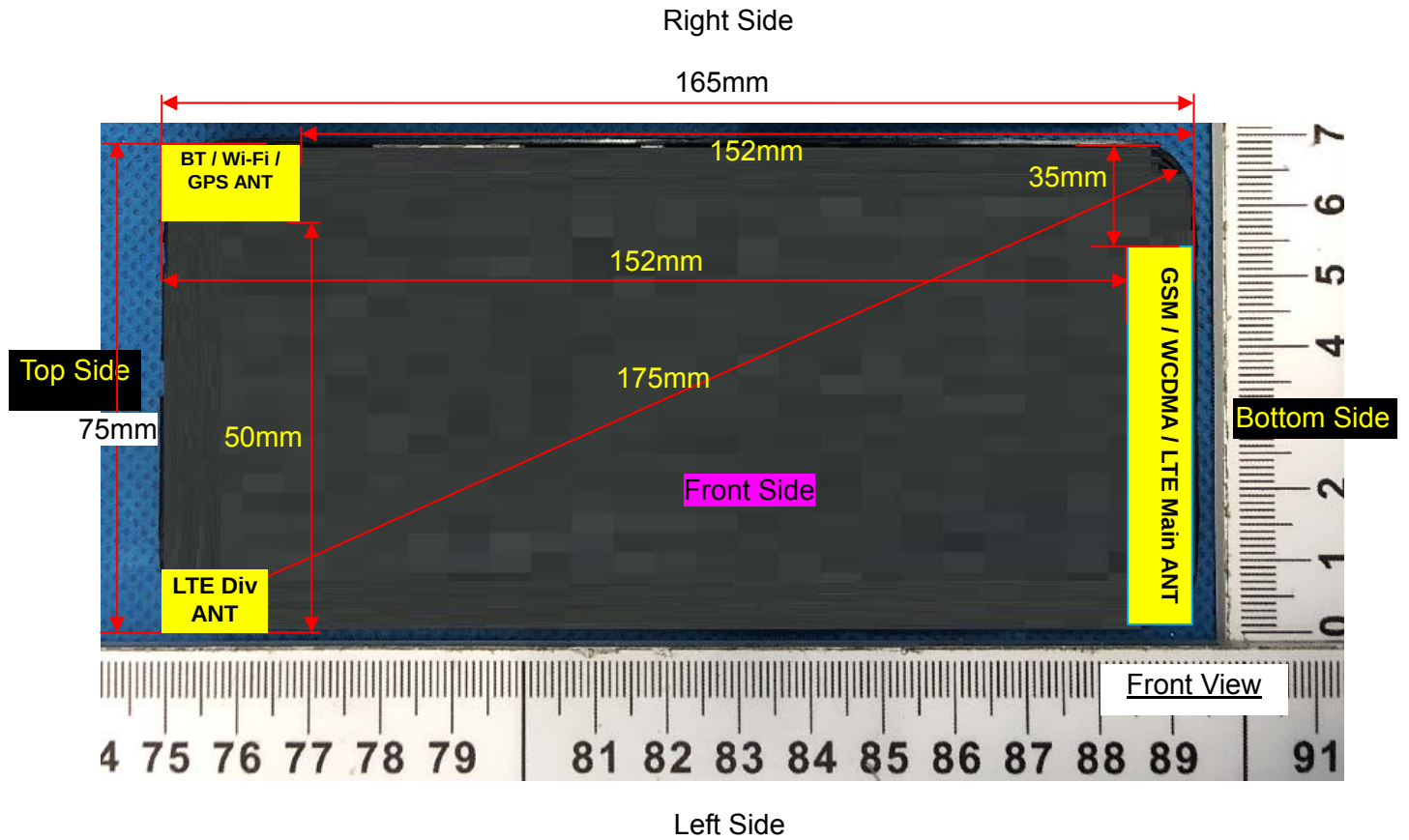
	165	5825	11.000	10.664
802.11n (HT20)	149	5745	10.000	9.218
	157	5785	10.000	8.627
	165	5825	10.000	9.260
802.11n (HT40)	151	5755	9.000	8.753
	159	5795	9.000	7.951
802.11ac (VHT20)	149	5745	8.000	7.360
	157	5785	8.000	7.895
	165	5825	8.000	6.942
802.11ac (VHT40)	151	5755	8.000	7.518
	159	5795	8.000	7.352
802.11ac (VHT80)	155	5775	7.000	6.206

NOTE: Power measurement results of WLAN 5.8G.

7.4.2. Output Power Results Of Bluetooth

BLE	Channel	Tune-up	Output Power (dBm)
	0CH	4.000	3.756
	19CH	4.000	3.604
	39CH	4.000	3.784

8. Antenna Location



Note: Since the confidentiality request of EUT, the antenna location example diagram see as above.

Distance of the Antenna to the EUT surface/edge						
Antennas	Front Side	Back Side	Left Side	Right Side	Top Side	Bottom Side
WWAN Main	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	>25mm	≤ 25mm
WLAN & Bluetooth	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	≤ 25mm	>25mm
Positions for SAR tests						
Antennas	Front Side	Back Side	Left Side	Right Side	Top Side	Bottom Side
WWAN Main	Yes	Yes	Yes	NO	NO	Yes
WLAN & Bluetooth	Yes	Yes	NO	Yes	Yes	NO

9. Stand-alone SAR test exclusion

Refer to FCC KDB 447498D01, the 1-g SAR and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f_{(\text{GHz})}}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where:

- $f_{(\text{GHz})}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Mode	P_{max} (dBm)	P_{max} (mW)	Distance (mm)	f (GHz)	Calculation Result	SAR Exclusion threshold	SAR test exclusion
Bluetooth	4.00	2.51	5	2.480	0.79	3.0	YES

NOTE: Standalone SAR test exclusion for Bluetooth.

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f_{(\text{GHz})}}/x] \text{ W/kg}$ for test separation distances $\leq 50\text{mm}$, where $x = 7.5$ for 1-g SAR and $x = 18.75$ for 10-g SAR.

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Mode	Position	P_{max} (dBm)	P_{max} (mW)	Distance (mm)	f (GHz)	x	Estimated SAR (W/Kg)
Bluetooth	Head	4.00	2.51	5	2.480	7.5	0.105
Bluetooth	Body	4.00	2.51	10	2.480	7.5	0.053
Bluetooth	Hotspot	4.00	2.51	10	2.480	7.5	0.053

NOTE: Estimated SAR calculation for Bluetooth

10. SAR Results

10.1. SAR measurement results

10.1.1. SAR measurement Result of GSM850

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift ($\pm 5\%$)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Left Cheek	190/836.6	GPRS(GMSK 2TS)	0.091	0.067	-0.69	32.01	33.00	0.114	2020/12/21
Left Tilt 15	190/836.6	GPRS(GMSK 2TS)	0.054	0.036	4.52	32.01	33.00	0.068	2020/12/21

Degree									
Right Cheek	190/836.6	GPRS(GMSK 2TS)	0.084	0.058	2.62	32.01	33.00	0.106	2020/12/21
Right Tilt 15 Degree	190/836.6	GPRS(GMSK 2TS)	0.045	0.033	0.05	32.01	33.00	0.057	2020/12/21

NOTE: Head SAR test results of GSM850.

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Front Side	190/836.6	GPRS(GMSK 2TS)	0.087	0.061	-4.12	32.01	33.00	0.109	2020/12/19
Back Side	190/836.6	GPRS(GMSK 2TS)	0.114	0.081	-0.34	32.01	33.00	0.143	2020/12/19

NOTE: Body-Worn SAR test results of GSM850

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Front Side	190/836.6	GPRS(GMSK 2TS)	0.087	0.061	-4.12	32.01	33.00	0.109	2020/12/19
Back Side	190/836.6	GPRS(GMSK 2TS)	0.114	0.081	-0.34	32.01	33.00	0.143	2020/12/19
Left Side	190/836.6	GPRS(GMSK 2TS)	0.042	0.034	0.78	32.01	33.00	0.053	2020/12/19
Bottom Side	190/836.6	GPRS(GMSK 2TS)	0.090	0.067	-1.07	32.01	33.00	0.113	2020/12/19

NOTE: Hotspot SAR test results of GSM850

10.1.2. SAR measurement Result of GSM1900

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Left Cheek	661/1880	GPRS(GMSK 4TS)	0.054	0.037	2.12	25.97	27.00	0.068	2020/12/22
Left Tilt 15 Degree	661/1880	GPRS(GMSK 4TS)	0.032	0.019	3.76	25.97	27.00	0.041	2020/12/22
Right Cheek	661/1880	GPRS(GMSK 4TS)	0.050	0.033	4.67	25.97	27.00	0.063	2020/12/22
Right Tilt 15 Degree	661/1880	GPRS(GMSK 4TS)	0.023	0.019	1.37	25.97	27.00	0.029	2020/12/22

NOTE: Head SAR test results of GSM1900

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Front Side	661/1880	GPRS(GMSK 4TS)	0.457	0.238	4.66	25.97	27.00	0.579	2020/12/22
Back Side	661/1880	GPRS(GMSK 4TS)	0.581	0.298	-2.80	25.97	27.00	0.737	2020/12/22

NOTE: Body-Worn SAR test results of GSM1900

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Front Side	661/1880	GPRS(GMSK 4TS)	0.457	0.238	4.66	25.97	27.00	0.579	2020/12/22
Back Side	661/1880	GPRS(GMSK 4TS)	0.581	0.298	-2.80	25.97	27.00	0.737	2020/12/22
Left Side	661/1880	GPRS(GMSK 4TS)	0.206	0.106	3.72	25.97	27.00	0.261	2020/12/22
Bottom Side	661/1880	GPRS(GMSK 4TS)	0.410	0.209	-4.39	25.97	27.00	0.520	2020/12/22

NOTE: Hotspot SAR test results of GSM1900

10.1.3. SAR measurement Result of WCDMA Band 2

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Left Cheek	9400/1880	RMC12.2K	0.043	0.031	-3.62	22.95	23.00	0.043	2020/12/22
Left Tilt 15 Degree	9400/1880	RMC12.2K	0.023	0.020	0.65	22.95	23.00	0.023	2020/12/22
Right Cheek	9400/1880	RMC12.2K	0.038	0.028	-1.73	22.95	23.00	0.038	2020/12/22
Right Tilt 15 Degree	9400/1880	RMC12.2K	0.019	0.018	0.65	22.95	23.00	0.019	2020/12/22

NOTE: Head SAR test results of WCDMA Band 2

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g	Date
			1g	10g					

								(W/Kg)	
Front Side	9400/1880	RMC12.2K	0.477	0.256	-4.48	22.95	23.00	0.483	2020/12/22
Back Side	9400/1880	RMC12.2K	0.593	0.313	-0.70	22.95	23.00	0.600	2020/12/22

NOTE: Body-Worn SAR test results of WCDMA Band 2

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Front Side	9400/1880	RMC12.2K	0.477	0.256	-4.48	22.95	23.00	0.483	2020/12/22
Back Side	9400/1880	RMC12.2K	0.593	0.313	-0.70	22.95	23.00	0.600	2020/12/22
Left Side	9400/1880	RMC12.2K	0.225	0.116	-3.20	22.95	23.00	0.228	2020/12/22
Bottom Side	9400/1880	RMC12.2K	0.472	0.250	4.83	22.95	23.00	0.477	2020/12/22

NOTE: Hotspot SAR test results of WCDMA Band 2

10.1.4. SAR measurement Result of WCDMA Band 4

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Left Cheek	1450/1740	RMC12.2K	0.105	0.070	-4.92	23.25	23.50	0.111	2020/12/14
Left Tilt 15 Degree	1450/1740	RMC12.2K	0.058	0.042	-3.76	23.25	23.50	0.061	2020/12/14
Right Cheek	1450/1740	RMC12.2K	0.094	0.059	-3.94	23.25	23.50	0.100	2020/12/14
Right Tilt 15 Degree	1450/1740	RMC12.2K	0.051	0.030	-2.96	23.25	23.50	0.054	2020/12/14

NOTE: Head SAR test results of WCDMA Band 4

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Front Side	1450/1740	RMC12.2K	0.657	0.321	1.23	23.25	23.50	0.696	2020/12/21
Back Side	1450/1740	RMC12.2K	1.036	0.557	-0.42	23.25	23.50	1.097	2020/12/21
Back Side Repeated	1450/1740	RMC12.2K	1.030	0.555	1.23	23.25	23.50	1.091	2020/12/21
Back Side	1312/1712.4	RMC12.2K	0.806	0.438	1.84	23.04	23.50	0.896	2020/12/21
Back Side	1513/1752.6	RMC12.2K	0.869	0.469	-1.01	23.15	23.50	0.942	2020/12/21

NOTE: Body-Worn SAR test results of WCDMA Band 4

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Front Side	1450/1740	RMC12.2K	0.657	0.321	1.23	23.25	23.50	0.696	2020/12/21
Back Side	1450/1740	RMC12.2K	1.036	0.557	-0.42	23.25	23.50	1.097	2020/12/21
Back Side Repeated	1450/1740	RMC12.2K	1.030	0.555	1.23	23.25	23.50	1.091	2020/12/21
Left Side	1450/1740	RMC12.2K	0.353	0.190	0.51	23.25	23.50	0.374	2020/12/21
Bottom Side	1450/1740	RMC12.2K	0.556	0.285	1.23	23.25	23.50	0.589	2020/12/21
Back Side	1312/1712.4	RMC12.2K	0.806	0.438	1.84	23.04	23.50	0.896	2020/12/21
Back Side	1513/1752.6	RMC12.2K	0.869	0.469	-1.01	23.15	23.50	0.942	2020/12/21

NOTE: Hotspot SAR test results of WCDMA Band 4

10.1.5. SAR measurement Result of WCDMA Band 5

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Left Cheek	4182/836.4	RMC12.2K	0.070	0.052	-0.87	22.95	23.00	0.071	2020/12/21
Left Tilt 15 Degree	4182/836.4	RMC12.2K	0.038	0.024	3.95	22.95	23.00	0.038	2020/12/21
Right Cheek	4182/836.4	RMC12.2K	0.066	0.054	-1.74	22.95	23.00	0.067	2020/12/21
Right Tilt 15 Degree	4182/836.4	RMC12.2K	0.035	0.024	2.13	22.95	23.00	0.035	2020/12/21

NOTE: Head SAR test results of WCDMA Band 5

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Front Side	4182/836.4	RMC12.2K	0.067	0.051	3.77	22.95	23.00	0.068	2020/12/19
Back Side	4182/836.4	RMC12.2K	0.087	0.064	-0.75	22.95	23.00	0.088	2020/12/19

NOTE: Body-Worn SAR test results of WCDMA Band 5

Test Position of	Test channel	Test Mode	SAR Value (W/kg)		Power Drift	Conducted power	Tune-up power	Scaled SAR	Date
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Hotspot with 10mm	/Freq.		1g	10g	(±5%)	(dBm)	(dBm)	1g (W/Kg)	
Front Side	4182/836.4	RMC12.2K	0.067	0.051	3.77	22.95	23.00	0.068	2020/12/19
Back Side	4182/836.4	RMC12.2K	0.087	0.064	-0.75	22.95	23.00	0.088	2020/12/19
Left Side	4182/836.4	RMC12.2K	0.034	0.028	4.75	22.95	23.00	0.034	2020/12/19
Bottom Side	4182/836.4	RMC12.2K	0.069	0.046	0.16	22.95	23.00	0.070	2020/12/19

NOTE: Hotspot SAR test results of WCDMA Band 5

10.1.6. SAR measurement Result of LTE Band 2

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
1RB									
Left Cheek	18900/1880	20M QPSK(1,49)	0.086	0.056	2.08	24.11	24.50	0.094	2020/12/22
Left Tilt 15 Degree	18900/1880	20M QPSK(1,49)	0.050	0.037	-0.44	24.11	24.50	0.055	2020/12/22
Right Cheek	18900/1880	20M QPSK(1,49)	0.074	0.048	4.72	24.11	24.50	0.081	2020/12/22
Right Tilt 15 Degree	18900/1880	20M QPSK(1,49)	0.034	0.024	-2.83	24.11	24.50	0.037	2020/12/22
50%RB									
Left Cheek	18900/1880	1.4M QPSK(3,1)	0.078	0.050	-1.42	23.89	24.00	0.080	2020/12/22
Left Tilt 15 Degree	18900/1880	1.4M QPSK(3,1)	0.047	0.034	3.42	23.89	24.00	0.048	2020/12/22
Right Cheek	18900/1880	1.4M QPSK(3,1)	0.067	0.043	4.84	23.89	24.00	0.069	2020/12/22
Right Tilt 15 Degree	18900/1880	1.4M QPSK(3,1)	0.031	0.021	-3.91	23.89	24.00	0.032	2020/12/22

NOTE: Head SAR test results of LTE Band 2

Test Position of Body-Worn	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g	Date
			1g	10g					

with 10mm								(W/Kg)	
1RB									
Front Side	18900/1880	20M QPSK(1,49)	0.676	0.365	-0.33	24.11	24.50	0.740	2020/12/22
Back Side	18900/1880	20M QPSK(1,49)	0.801	0.428	-0.55	24.11	24.50	0.876	2020/12/22
Back Side	18700/1860	20M QPSK(1,49)	0.996	0.525	-0.65	24.02	24.50	1.112	2020/12/22
Back Side Repeated	18700/1860	20M QPSK(1,49)	0.990	0.521	0.28	24.02	24.50	1.106	2020/12/22
Back Side	19100/1900	20M QPSK(1,49)	0.704	0.372	-0.42	24.07	24.50	0.777	2020/12/22
50%RB									
Front Side	18900/1880	1.4M QPSK(3,1)	0.342	0.190	-4.08	23.89	24.00	0.351	2020/12/22
Back Side	18900/1880	1.4M QPSK(3,1)	0.479	0.230	3.29	23.89	24.00	0.491	2020/12/22
100%RB									
Back Side	18900/1880	20M QPSK(100,0)	0.434	0.249	-2.20	22.80	23.00	0.454	2020/12/22

NOTE: Body-Worn SAR test results of LTE Band 2

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
1RB									
Front Side	18900/1880	20M QPSK(1,49)	0.676	0.365	-0.33	24.11	24.50	0.740	2020/12/22
Back Side	18900/1880	20M QPSK(1,49)	0.801	0.428	-0.55	24.11	24.50	0.876	2020/12/22
Left Side	18900/1880	20M QPSK(1,49)	0.378	0.201	1.34	24.11	24.50	0.414	2020/12/22
Bottom Side	18900/1880	20M QPSK(1,49)	0.584	0.311	3.92	24.11	24.50	0.639	2020/12/22
Back Side	18700/1860	20M QPSK(1,49)	0.996	0.525	-0.65	24.02	24.50	1.112	2020/12/22
Back Side	18700/1860	20M QPSK(1,49)	0.990	0.521	0.28	24.02	24.50	1.106	2020/12/22

Repeated									
Back Side	19100/1900	20M QPSK(1,49)	0.704	0.372	-0.42	24.07	24.50	0.777	2020/12/22
50%RB									
Front Side	18900/1880	1.4M QPSK(3,1)	0.342	0.190	-4.08	23.89	24.00	0.351	2020/12/22
Back Side	18900/1880	1.4M QPSK(3,1)	0.479	0.230	3.29	23.89	24.00	0.491	2020/12/22
Left Side	18900/1880	1.4M QPSK(3,1)	0.201	0.111	-0.37	23.89	24.00	0.206	2020/12/22
Bottom Side	18900/1880	1.4M QPSK(3,1)	0.292	0.178	3.61	23.89	24.00	0.299	2020/12/22
100%RB									
Back Side	18900/1880	20M QPSK(100,0)	0.434	0.249	-2.20	22.80	23.00	0.454	2020/12/22

NOTE: Hotspot SAR test results of LTE Band 2

10.1.7. SAR measurement Result of LTE Band 4

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
1RB									
Left Cheek	20175/1732.5	20M QPSK(1,49)	0.163	0.100	-1.43	24.39	25.00	0.188	2020/12/14
Left Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.089	0.058	-3.76	24.39	25.00	0.102	2020/12/14
Right Cheek	20175/1732.5	20M QPSK(1,49)	0.148	0.094	-0.46	24.39	25.00	0.170	2020/12/14
Right Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.069	0.042	-2.36	24.39	25.00	0.079	2020/12/14
50%RB									
Left Cheek	20175/1732.5	1.4M QPSK(3,1)	0.141	0.087	-4.60	24.47	25.00	0.159	2020/12/14
Left Tilt 15 Degree	20175/1732.5	1.4M QPSK(3,1)	0.078	0.054	-4.91	24.47	25.00	0.088	2020/12/14
Right Cheek	20175/1732.5	1.4M QPSK(3,1)	0.131	0.082	-4.53	24.47	25.00	0.148	2020/12/14

Right Tilt 15 Degree	20175/1732.5	1.4M QPSK(3,1)	0.063	0.037	-2.74	24.47	25.00	0.071	2020/12/14
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NOTE: Head SAR test results of LTE Band 4

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
1RB									
Front Side	20175/1732.5	20M QPSK(1,49)	0.670	0.352	-1.80	24.39	25.00	0.771	2020/12/21
Back Side	20175/1732.5	20M QPSK(1,49)	1.031	0.565	-0.63	24.39	25.00	1.186	2020/12/21
Back Side Repeated	20175/1732.5	20M QPSK(1,49)	1.023	0.560	0.25	24.39	25.00	1.177	2020/12/21
Back Side	20050/1720	20M QPSK(1,49)	0.876	0.470	3.66	24.29	25.00	1.032	2020/12/21
Back Side	20300/1745	20M QPSK(1,49)	0.897	0.472	-3.75	24.37	25.00	1.037	2020/12/21
50%RB									
Front Side	20175/1732.5	1.4M QPSK(3,1)	0.576	0.306	-1.87	24.47	25.00	0.651	2020/12/21
Back Side	20175/1732.5	1.4M QPSK(3,1)	0.673	0.356	1.86	24.47	25.00	0.760	2020/12/21
100%RB									
Back Side	20175/1732.5	20M QPSK (100,0)	0.631	0.301	-0.49	23.17	24.00	0.764	2020/12/21

NOTE: Body-Worn SAR test results of LTE Band 4

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
1RB									
Front Side	20175/1732.5	20M QPSK(1,49)	0.670	0.352	-1.80	24.39	25.00	0.771	2020/12/21
Back Side	20175/1732.5	20M QPSK(1,49)	1.031	0.565	-0.63	24.39	25.00	1.186	2020/12/21

Back Side Repeated	20175/1732.5	20M QPSK(1,49)	1.023	0.560	0.25	24.39	25.00	1.177	2020/12/21
Left Side	20175/1732.5	20M QPSK(1,49)	0.361	0.190	-1.57	24.39	25.00	0.415	2020/12/21
Bottom Side	20175/1732.5	20M QPSK(1,49)	0.516	0.271	-1.20	24.39	25.00	0.594	2020/12/21
Back Side	20050/1720	20M QPSK(1,49)	0.876	0.470	3.66	24.29	25.00	1.032	2020/12/21
Back Side	20300/1745	20M QPSK(1,49)	0.897	0.472	-3.75	24.37	25.00	1.037	2020/12/21
50%RB									
Front Side	20175/1732.5	1.4M QPSK(3,1)	0.576	0.306	-1.87	24.47	25.00	0.651	2020/12/21
Back Side	20175/1732.5	1.4M QPSK(3,1)	0.673	0.356	1.86	24.47	25.00	0.760	2020/12/21
Left Side	20175/1732.5	1.4M QPSK(3,1)	0.312	0.177	3.22	24.47	25.00	0.352	2020/12/21
Bottom Side	20175/1732.5	1.4M QPSK(3,1)	0.442	0.251	-3.97	24.47	25.00	0.499	2020/12/21
100%RB									
Back Side	20175/1732.5	20MQPSK (100,0)	0.631	0.301	-0.49	23.17	24.00	0.764	2020/12/21

NOTE: Hotspot SAR test results of LTE Band 4

10.1.8. SAR measurement Result of LTE Band 5

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
1RB									
Left Cheek	20525/836.5	10M QPSK(1,24)	0.084	0.065	-0.83	23.47	24.00	0.095	2020/12/21
Left Tilt 15 Degree	20525/836.5	10M QPSK(1,24)	0.043	0.033	4.36	23.47	24.00	0.049	2020/12/21
Right Cheek	20525/836.5	10M QPSK(1,24)	0.078	0.065	-1.59	23.47	24.00	0.088	2020/12/21
Right Tilt 15 Degree	20525/836.5	10M QPSK(1,24)	0.039	0.029	4.84	23.47	24.00	0.044	2020/12/21

50%RB									
Left Cheek	20525/836.5	1.4M QPSK(3,1)	0.073	0.061	-0.33	23.36	24.00	0.085	2020/12/21
Left Tilt 15 Degree	20525/836.5	1.4M QPSK(3,1)	0.037	0.029	1.22	23.36	24.00	0.043	2020/12/21
Right Cheek	20525/836.5	1.4M QPSK(3,1)	0.070	0.059	2.43	23.36	24.00	0.081	2020/12/21
Right Tilt 15 Degree	20525/836.5	1.4M QPSK(3,1)	0.034	0.026	-1.42	23.36	24.00	0.039	2020/12/21

NOTE: Head SAR test results of LTE Band 5

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
1RB									
Front Side	20525/836.5	10M QPSK(1,24)	0.084	0.058	-0.79	23.47	24.00	0.095	2020/12/19
Back Side	20525/836.5	10M QPSK(1,24)	0.103	0.069	-0.07	23.47	24.00	0.116	2020/12/19
50%RB									
Front Side	20525/836.5	1.4M QPSK(3,1)	0.072	0.055	-0.14	23.36	24.00	0.083	2020/12/19
Back Side	20525/836.5	1.4M QPSK(3,1)	0.090	0.060	-1.21	23.36	24.00	0.104	2020/12/19

NOTE: Body-Worn SAR test results of LTE Band 5

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
1RB									
Front Side	20525/836.5	10M QPSK(1,24)	0.084	0.058	-0.79	23.47	24.00	0.095	2020/12/19
Back Side	20525/836.5	10M QPSK(1,24)	0.103	0.069	-0.07	23.47	24.00	0.116	2020/12/19
Left	20525/836.5	10M	0.037	0.023	-0.33	23.47	24.00	0.042	2020/12/19

Side		QPSK(1,24)							
Bottom Side	20525/836.5	10M QPSK(1,24)	0.080	0.052	0.88	23.47	24.00	0.090	2020/12/19
50%RB									
Front Side	20525/836.5	1.4M QPSK(3,1)	0.072	0.055	-0.14	23.36	24.00	0.083	2020/12/19
Back Side	20525/836.5	1.4M QPSK(3,1)	0.090	0.060	-1.21	23.36	24.00	0.104	2020/12/19
Left Side	20525/836.5	1.4M QPSK(3,1)	0.033	0.021	-0.57	23.36	24.00	0.038	2020/12/19
Bottom Side	20525/836.5	1.4M QPSK(3,1)	0.075	0.047	1.36	23.36	24.00	0.087	2020/12/19

NOTE: Hotspot SAR test results of LTE Band 5

10.1.9. SAR measurement Result of LTE Band 7

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
1RB									
Left Cheek	21100/2535	20M QPSK(1,49)	0.171	0.094	-0.08	23.84	24.00	0.177	2020/12/16
Left Tilt 15 Degree	21100/2535	20M QPSK(1,49)	0.092	0.051	-0.33	23.84	24.00	0.095	2020/12/16
Right Cheek	21100/2535	20M QPSK(1,49)	0.161	0.091	-1.48	23.84	24.00	0.167	2020/12/16
Right Tilt 15 Degree	21100/2535	20M QPSK(1,49)	0.082	0.050	3.01	23.84	24.00	0.085	2020/12/16
50%RB									
Left Cheek	21100/2535	20M QPSK(50,24)	0.153	0.085	1.53	22.71	23.00	0.164	2020/12/16
Left Tilt 15 Degree	21100/2535	20M QPSK(50,24)	0.081	0.046	4.05	22.71	23.00	0.087	2020/12/16
Right Cheek	21100/2535	20M QPSK(50,24)	0.152	0.083	2.38	22.71	23.00	0.162	2020/12/16
Right Tilt 15	21100/2535	20M QPSK(50,24)	0.072	0.044	0.43	22.71	23.00	0.077	2020/12/16

Degree									
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NOTE: Head SAR test results of LTE Band 7

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
1RB									
Front Side	21100/2535	20M QPSK(1,49)	0.485	0.220	2.92	23.84	24.00	0.503	2020/12/23
Back Side	21100/2535	20M QPSK(1,49)	0.636	0.286	-1.04	23.84	24.00	0.660	2020/12/23
50%RB									
Front Side	21100/2535	20M QPSK(50,24)	0.426	0.204	2.69	22.71	23.00	0.455	2020/12/23
Back Side	21100/2535	20M QPSK(50,24)	0.585	0.258	-3.65	22.71	23.00	0.625	2020/12/23

NOTE: Body-Worn SAR test results of LTE Band 7

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
1RB									
Front Side	21100/2535	20M QPSK(1,49)	0.485	0.220	2.92	23.84	24.00	0.503	2020/12/23
Back Side	21100/2535	20M QPSK(1,49)	0.636	0.286	-1.04	23.84	24.00	0.660	2020/12/23
Left Side	21100/2535	20M QPSK(1,49)	0.238	0.105	3.62	23.84	24.00	0.247	2020/12/23
Bottom Side	21100/2535	20M QPSK(1,49)	0.475	0.217	3.30	23.84	24.00	0.493	2020/12/23
50%RB									
Front Side	21100/2535	20M QPSK(50,24)	0.426	0.204	2.69	22.71	23.00	0.455	2020/12/23
Back Side	21100/2535	20M QPSK(50,24)	0.585	0.258	-3.65	22.71	23.00	0.625	2020/12/23
Left Side	21100/2535	20M QPSK(50,24)	0.218	0.095	3.47	22.71	23.00	0.233	2020/12/23

Bottom Side	21100/2535	20M QPSK(50,24)	0.442	0.200	4.64	22.71	23.00	0.473	2020/12/23
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NOTE: Hotspot SAR test results of LTE Band 7

10.1.10. SAR measurement Result of LTE Band 12

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
1RB									
Left Cheek	23095/707.5	10M QPSK(1,24)	0.102	0.083	-0.62	23.87	24.00	0.105	2020/12/18
Left Tilt 15 Degree	23095/707.5	10M QPSK(1,24)	0.053	0.047	-0.69	23.87	24.00	0.055	2020/12/18
Right Cheek	23095/707.5	10M QPSK(1,24)	0.091	0.076	-2.48	23.87	24.00	0.094	2020/12/18
Right Tilt 15 Degree	23095/707.5	10M QPSK(1,24)	0.045	0.040	-3.56	23.87	24.00	0.046	2020/12/18
50%RB									
Left Cheek	23095/707.5	1.4M QPSK(3,1)	0.093	0.079	-1.47	23.84	24.00	0.096	2020/12/18
Left Tilt 15 Degree	23095/707.5	1.4M QPSK(3,1)	0.047	0.043	-2.51	23.84	24.00	0.049	2020/12/18
Right Cheek	23095/707.5	1.4M QPSK(3,1)	0.081	0.070	-4.53	23.84	24.00	0.084	2020/12/18
Right Tilt 15 Degree	23095/707.5	1.4M QPSK(3,1)	0.042	0.037	1.84	23.84	24.00	0.044	2020/12/18

NOTE: Head SAR test results of LTE Band 12

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
1RB									
Front Side	23095/707.5	10M QPSK(1,24)	0.092	0.063	-1.37	23.87	24.00	0.095	2020/12/19

Back Side	23095/707.5	10M QPSK(1,24)	0.113	0.078	-0.88	23.87	24.00	0.116	2020/12/19
50%RB									
Front Side	23095/707.5	1.4M QPSK(3,1)	0.086	0.057	-3.73	23.84	24.00	0.089	2020/12/19
Back Side	23095/707.5	1.4M QPSK(3,1)	0.098	0.071	-4.28	23.84	24.00	0.102	2020/12/19

NOTE: Body-Worn SAR test results of LTE Band 12

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
1RB									
Front Side	23095/707.5	10M QPSK(1,24)	0.092	0.063	-1.37	23.87	24.00	0.095	2020/12/19
Back Side	23095/707.5	10M QPSK(1,24)	0.113	0.078	-0.88	23.87	24.00	0.116	2020/12/19
Left Side	23095/707.5	10M QPSK(1,24)	0.050	0.035	-2.61	23.87	24.00	0.052	2020/12/19
Bottom Side	23095/707.5	10M QPSK(1,24)	0.084	0.060	-4.46	23.87	24.00	0.087	2020/12/19
50%RB									
Front Side	23095/707.5	1.4M QPSK(3,1)	0.086	0.057	-3.73	23.84	24.00	0.089	2020/12/19
Back Side	23095/707.5	1.4M QPSK(3,1)	0.098	0.071	-4.28	23.84	24.00	0.102	2020/12/19
Left Side	23095/707.5	1.4M QPSK(3,1)	0.044	0.032	4.70	23.84	24.00	0.046	2020/12/19
Bottom Side	23095/707.5	1.4M QPSK(3,1)	0.075	0.057	2.92	23.84	24.00	0.078	2020/12/19

NOTE: Hotspot SAR test results of LTE Band 12

10.1.11. SAR measurement Result of LTE Band 17

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					

1RB									
Left Cheek	23790/710	10M QPSK(1,24)	0.088	0.067	-0.79	23.99	24.00	0.088	2020/12/18
Left Tilt 15 Degree	23790/710	10M QPSK(1,24)	0.052	0.037	3.73	23.99	24.00	0.052	2020/12/18
Right Cheek	23790/710	10M QPSK(1,24)	0.077	0.062	-2.27	23.99	24.00	0.077	2020/12/18
Right Tilt 15 Degree	23790/710	10M QPSK(1,24)	0.038	0.026	4.00	23.99	24.00	0.038	2020/12/18
50%RB									
Left Cheek	23790/710	10M QPSK(25,0)	0.083	0.058	-4.96	22.89	23.00	0.085	2020/12/18
Left Tilt 15 Degree	23790/710	10M QPSK(25,0)	0.046	0.032	-3.07	22.89	23.00	0.047	2020/12/18
Right Cheek	23790/710	10M QPSK(25,0)	0.071	0.053	2.53	22.89	23.00	0.073	2020/12/18
Right Tilt 15 Degree	23790/710	10M QPSK(25,0)	0.033	0.024	1.72	22.89	23.00	0.034	2020/12/18

NOTE: Head SAR test results of LTE Band 17

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
1RB									
Front Side	23790/710	10M QPSK(1,24)	0.107	0.085	3.76	23.99	24.00	0.107	2020/12/19
Back Side	23790/710	10M QPSK(1,24)	0.141	0.111	-3.18	23.99	24.00	0.141	2020/12/19
50%RB									
Front Side	23790/710	10M QPSK(25,0)	0.093	0.076	-1.40	22.89	23.00	0.095	2020/12/19
Back Side	23790/710	10M QPSK(25,0)	0.127	0.096	2.00	22.89	23.00	0.130	2020/12/19

NOTE: Body-Worn SAR test results of LTE Band 17

Test	Test	Test Mode	SAR Value	Power	Conducted	Tune-up	Scaled	Date
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Position of Hotspot with 10mm	channel /Freq.		(W/kg)		Drift (±5%)	power (dBm)	power (dBm)	SAR 1g (W/Kg)	
			1g	10g					
1RB									
Front Side	23790/710	10M QPSK(1,24)	0.107	0.085	3.76	23.99	24.00	0.107	2020/12/19
Back Side	23790/710	10M QPSK(1,24)	0.141	0.111	-3.18	23.99	24.00	0.141	2020/12/19
Left Side	23790/710	10M QPSK(1,24)	0.053	0.038	1.07	23.99	24.00	0.053	2020/12/19
Bottom Side	23790/710	10M QPSK(1,24)	0.102	0.076	0.46	23.99	24.00	0.102	2020/12/19
50%RB									
Front Side	23790/710	10M QPSK(25,0)	0.093	0.076	-1.40	22.89	23.00	0.095	2020/12/19
Back Side	23790/710	10M QPSK(25,0)	0.127	0.096	2.00	22.89	23.00	0.130	2020/12/19
Left Side	23790/710	10M QPSK(25,0)	0.046	0.035	3.23	22.89	23.00	0.047	2020/12/19
Bottom Side	23790/710	10M QPSK(25,0)	0.095	0.070	2.85	22.89	23.00	0.097	2020/12/19

NOTE: Hotspot SAR test results of LTE Band 17

10.1.12. SAR measurement Result of WLAN 2.4G

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Left Cheek	6/2437	802.11 b	0.084	0.052	-0.75	12.41	12.50	0.086	2020/12/15
Left Tilt 15 Degree	6/2437	802.11 b	0.056	0.033	-1.82	12.41	12.50	0.057	2020/12/15
Right Cheek	6/2437	802.11 b	0.080	0.050	0.03	12.41	12.50	0.082	2020/12/15
Right Tilt 15 Degree	6/2437	802.11 b	0.052	0.035	2.55	12.41	12.50	0.053	2020/12/15

NOTE: Head SAR test results of WLAN 2.4G

Test Position of	Test channel	Test Mode	SAR Value (W/kg)	Power Drift	Conducted power	Tune-up power	Scaled SAR	Date
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Body-Worn with 10mm	/Freq.		1g	10g	(±5%)	(dBm)	(dBm)	1g (W/Kg)	
Front Side	6/2437	802.11 b	0.020	0.017	-2.77	12.41	12.50	0.020	2020/12/23
Back Side	6/2437	802.11 b	0.032	0.026	2.92	12.41	12.50	0.033	2020/12/23

NOTE: Body-Worn SAR test results of WLAN 2.4G

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Front Side	6/2437	802.11 b	0.020	0.017	-2.77	12.41	12.50	0.020	2020/12/23
Back Side	6/2437	802.11 b	0.032	0.026	2.92	12.41	12.50	0.033	2020/12/23
Right Side	6/2437	802.11 b	0.015	0.014	-1.63	12.41	12.50	0.015	2020/12/23
Top Side	6/2437	802.11 b	0.018	0.016	-2.41	12.41	12.50	0.018	2020/12/23

NOTE: Hotspot SAR test results of WLAN 2.4G

10.1.13. SAR measurement Result of WLAN 5.2G

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Left Cheek	40/5200	802.11a	0.382	0.162	1.12	10.122	10.500	0.417	2020/12/16
Left Tilt 15 Degree	40/5200	802.11a	0.225	0.091	0.01	10.122	10.500	0.245	2020/12/16
Right Cheek	40/5200	802.11a	0.347	0.146	-2.93	10.122	10.500	0.379	2020/12/16
Right Tilt 15 Degree	40/5200	802.11a	0.172	0.069	0.40	10.122	10.500	0.188	2020/12/16

NOTE: Head SAR test results of WLAN 5.2G

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Front Side	40/5200	802.11a	0.129	0.067	-0.21	10.122	10.500	0.141	2020/12/24
Back Side	40/5200	802.11a	0.199	0.107	0.63	10.122	10.500	0.217	2020/12/24

NOTE: Body-Worn SAR test results of WLAN 5.2G

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					

Front Side	40/5200	802.11a	0.129	0.067	-0.21	10.122	10.500	0.141	2020/12/24
Back Side	40/5200	802.11a	0.199	0.107	0.63	10.122	10.500	0.217	2020/12/24
Right Side	40/5200	802.11a	0.049	0.027	-3.95	10.122	10.500	0.053	2020/12/24
Top Side	40/5200	802.11a	0.066	0.034	0.87	10.122	10.500	0.072	2020/12/24

NOTE: Hotspot SAR test results of WLAN 5.2G

10.1.14. SAR measurement Result of WLAN 5.8G

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Left Cheek	157/5785	802.11a	0.252	0.112	-4.74	10.820	11.000	0.263	2020/12/18
Left Tilt 15 Degree	157/5785	802.11a	0.129	0.058	0.96	10.820	11.000	0.134	2020/12/18
Right Cheek	157/5785	802.11a	0.222	0.096	-1.89	10.820	11.000	0.231	2020/12/18
Right Tilt 15 Degree	157/5785	802.11a	0.105	0.044	4.31	10.820	11.000	0.109	2020/12/18

NOTE: Head SAR test results of WLAN 5.8G

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Front Side	157/5785	802.11a	0.073	0.050	4.50	10.820	11.000	0.076	2020/12/24
Back Side	157/5785	802.11a	0.117	0.080	-1.02	10.820	11.000	0.122	2020/12/24

NOTE: Body-Worn SAR test results of WLAN 5.8G

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Front Side	157/5785	802.11a	0.073	0.050	4.50	10.820	11.000	0.076	2020/12/24
Back Side	157/5785	802.11a	0.117	0.080	-1.02	10.820	11.000	0.122	2020/12/24
Right Side	157/5785	802.11a	0.024	0.018	-4.88	10.820	11.000	0.025	2020/12/24
Top Side	157/5785	802.11a	0.037	0.028	-0.62	10.820	11.000	0.039	2020/12/24

NOTE: Hotspot SAR test results of WLAN 5.8G

10.2. SAR Summation Scenario

Per KDB 447498 D01, simultaneous transmission SAR is compliant if,

- 1) Scalar SAR summation < 1.6W/kg.

2) $SPLSR = (SAR_1 + SAR_2)^{1.5} / (\text{min. separation distance, mm})$, and the peak separation distance is determined from the square root of $[(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2]$, where (x_1, y_1, z_1) and (x_2, y_2, z_2) are the coordinates of the extrapolated peak SAR locations in the zoom scan. If $SPLSR \leq 0.04$, simultaneously transmission SAR measurement is not necessary.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		WWAN	DTS			
Head	Left Cheek	0.188	0.105	0.293	N/A	N/A
	Left Tilt 15 Degree	0.102	0.105	0.207	N/A	N/A
	Right Cheek	0.170	0.105	0.275	N/A	N/A
	Right Tilt 15 Degree	0.085	0.105	0.190	N/A	N/A
Body-Worn	Front Side	0.771	0.053	0.824	N/A	N/A
	Back Side	1.186	0.053	1.239	N/A	N/A
Hotspot	Front Side	0.771	0.053	0.824	N/A	N/A
	Back Side	1.186	0.053	1.239	N/A	N/A
	Left Side	0.415	N/A	0.415	N/A	N/A
	Right Side	N/A	0.053	0.053	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.639	N/A	0.639	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of WWAN and DTS.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		WWAN	NII			
Head	Left Cheek	0.188	0.417	0.605	N/A	N/A
	Left Tilt 15 Degree	0.102	0.245	0.347	N/A	N/A
	Right Cheek	0.170	0.379	0.549	N/A	N/A
	Right Tilt 15 Degree	0.085	0.188	0.273	N/A	N/A
Body-Worn	Front Side	0.771	0.141	0.912	N/A	N/A
	Back Side	1.186	0.217	1.403	N/A	N/A
Hotspot	Front Side	0.771	0.141	0.912	N/A	N/A
	Back Side	1.186	0.217	1.403	N/A	N/A
	Left Side	0.415	N/A	0.415	N/A	N/A
	Right Side	N/A	0.053	0.053	N/A	N/A
	Top Side	N/A	0.072	0.072	N/A	N/A
	Bottom Side	0.639	N/A	0.639	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of WWAN and NII.

11. Appendix A. Photo documentation

Refer to appendix Test Setup photo---SAR

12. Appendix B. System Check Plots

Table of contents
MEASUREMENT 1 System Performance Check - SID750 - Head
MEASUREMENT 2 System Performance Check - SID750 - Body
MEASUREMENT 3 System Performance Check - SID835 - Head
MEASUREMENT 4 System Performance Check - SID835 - Body
MEASUREMENT 5 System Performance Check - SID1800 - Head
MEASUREMENT 6 System Performance Check - SID1800 - Body
MEASUREMENT 7 System Performance Check - SID1900 - Head
MEASUREMENT 8 System Performance Check - SID1900 - Body
MEASUREMENT 9 System Performance Check - SID2450 - Head
MEASUREMENT 10 System Performance Check - SID2450 - Body
MEASUREMENT 11 System Performance Check - SID2600 - Head
MEASUREMENT 12 System Performance Check - SID2600 - Body
MEASUREMENT 13 System Performance Check - SID5200 - Head
MEASUREMENT 14 System Performance Check - SID5200 - Body
MEASUREMENT 15 System Performance Check - SID5800 - Head
MEASUREMENT 16 System Performance Check - SID5800 - Body

MEASUREMENT 1

Date of measurement: 18/12/2020

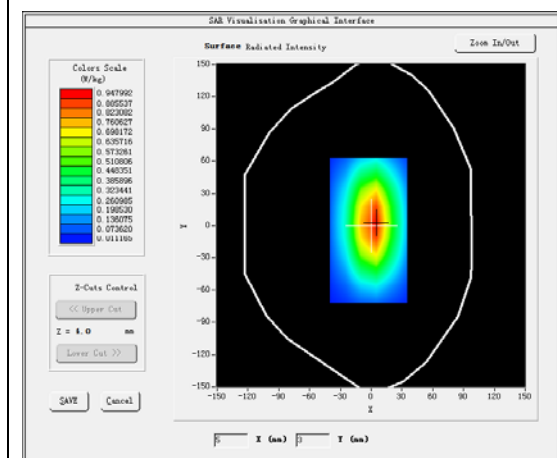
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW750</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

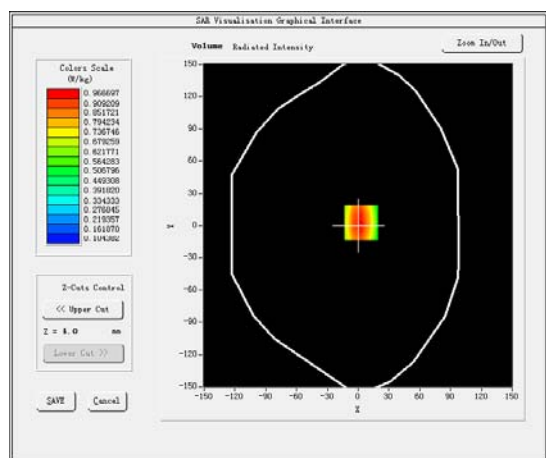
B. SAR Measurement Results

Frequency (MHz)	750.000000
Relative permittivity (real part)	42.293162
Relative permittivity (imaginary part)	22.051263
Conductivity (S/m)	0.922262
Variation (%)	-0.810000

SURFACE SAR



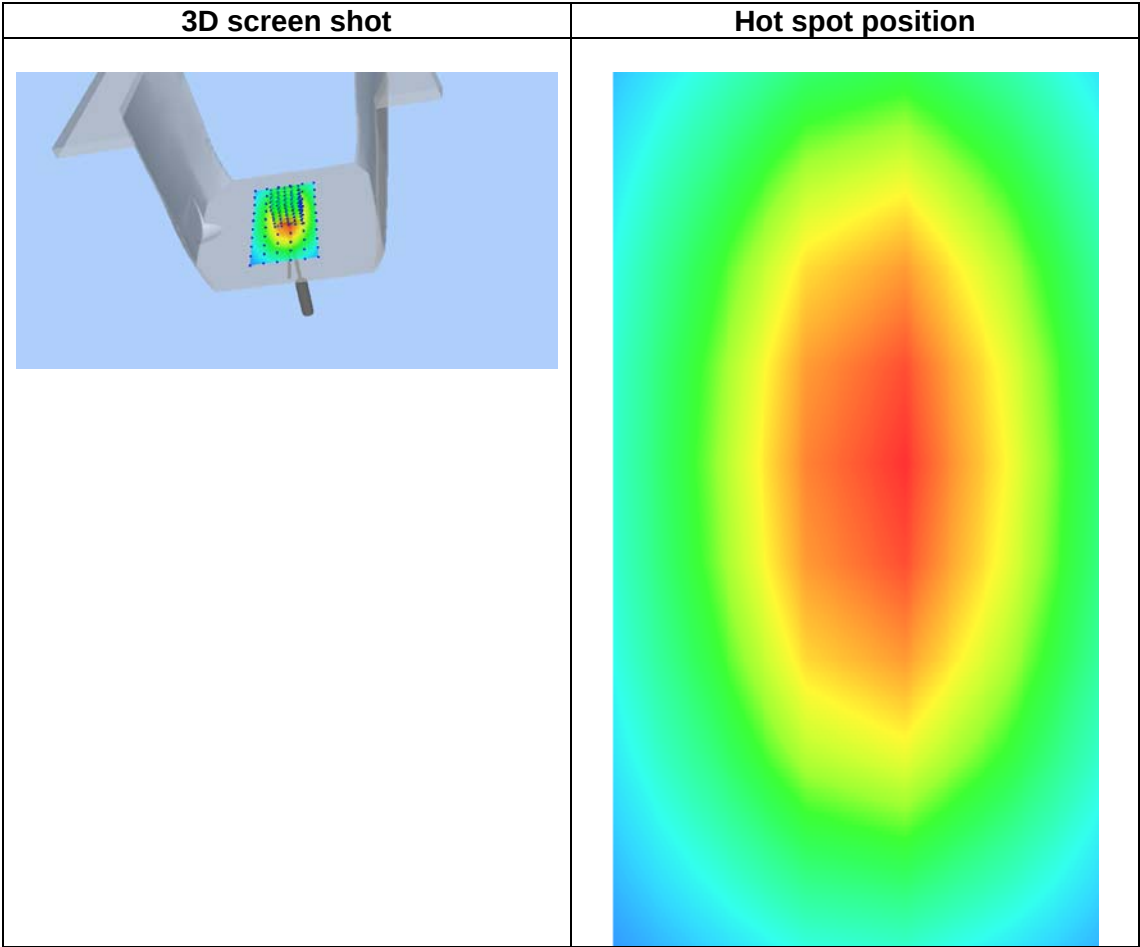
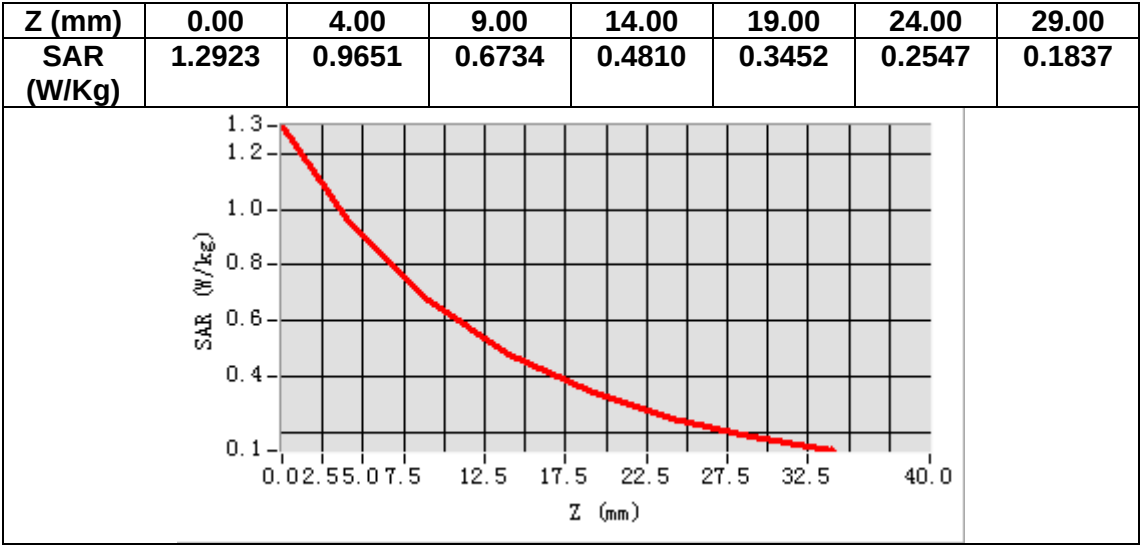
VOLUME SAR



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.601218
SAR 1g (W/Kg)	0.823362



MEASUREMENT 2

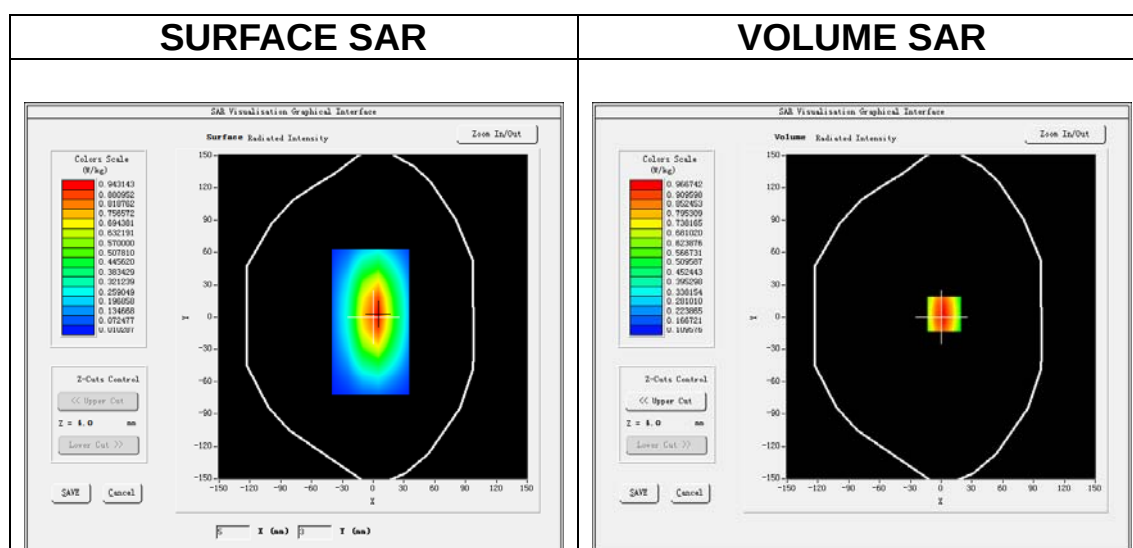
Date of measurement: 19/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW750</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

B. SAR Measurement Results

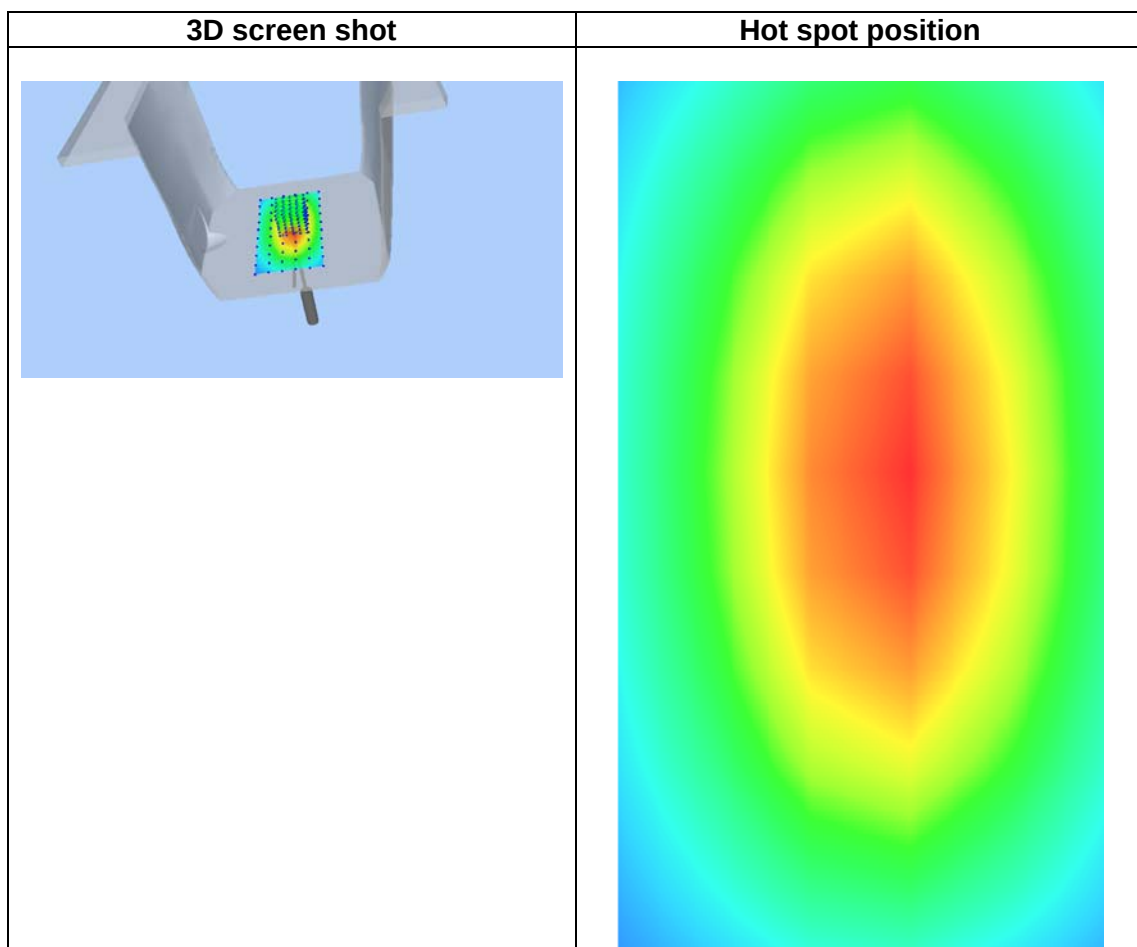
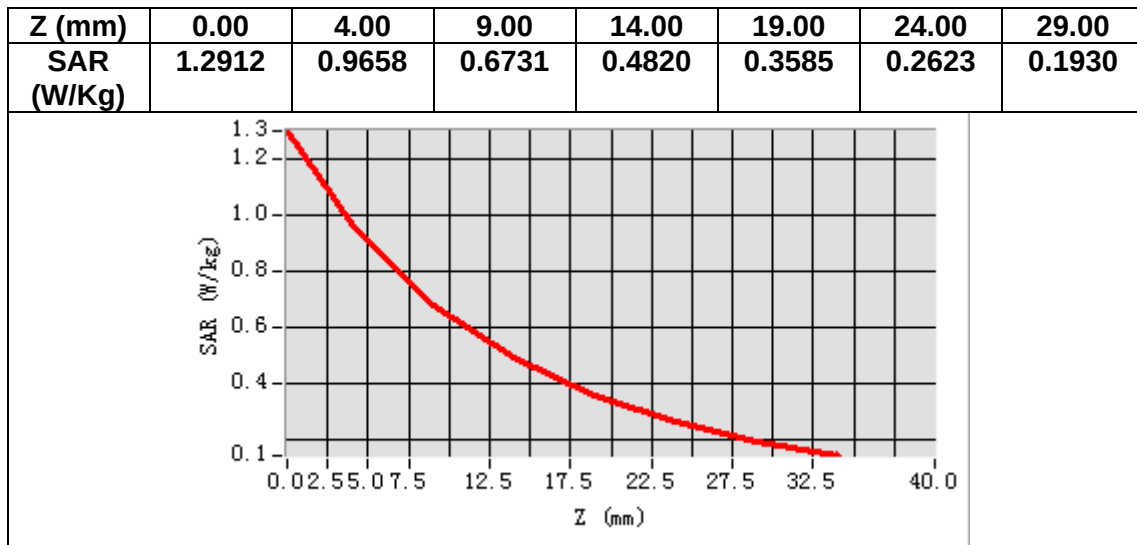
Frequency (MHz)	750.000000
Relative permittivity (real part)	55.640248
Relative permittivity (imaginary part)	23.523842
Conductivity (S/m)	0.980318
Variation (%)	3.490000



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.587281
SAR 1g (W/Kg)	0.851263



MEASUREMENT 3

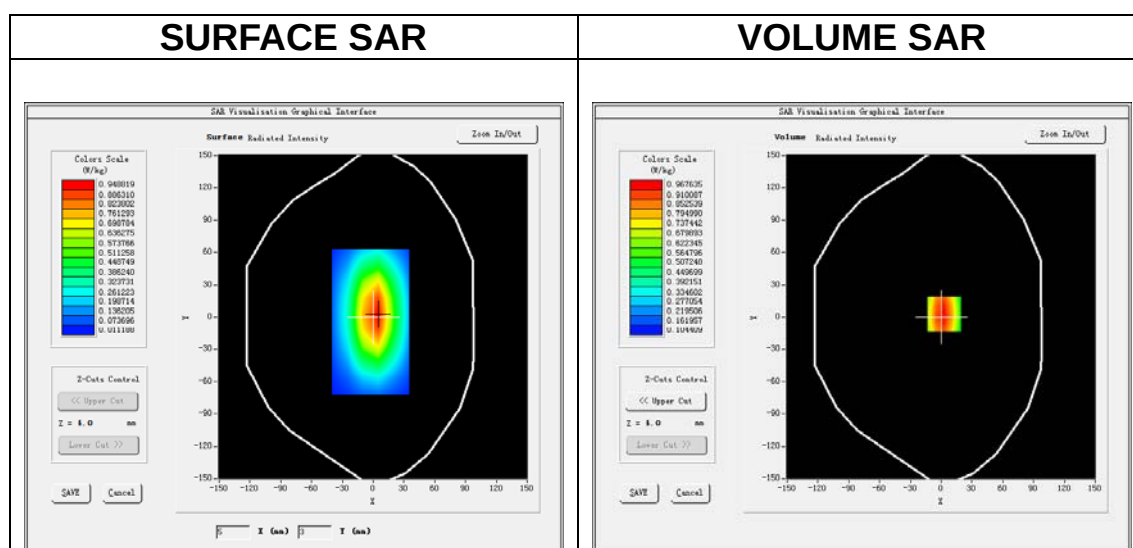
Date of measurement: 21/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW835</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

B. SAR Measurement Results

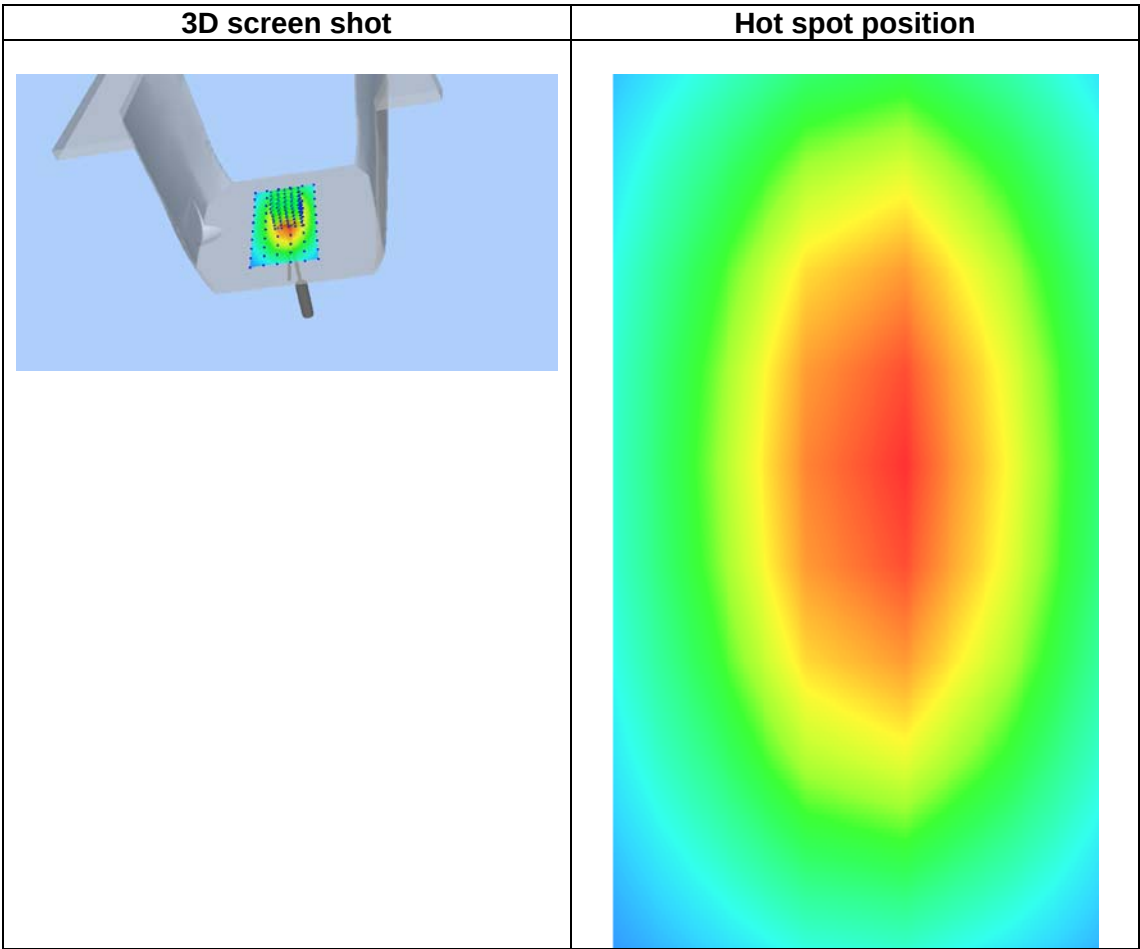
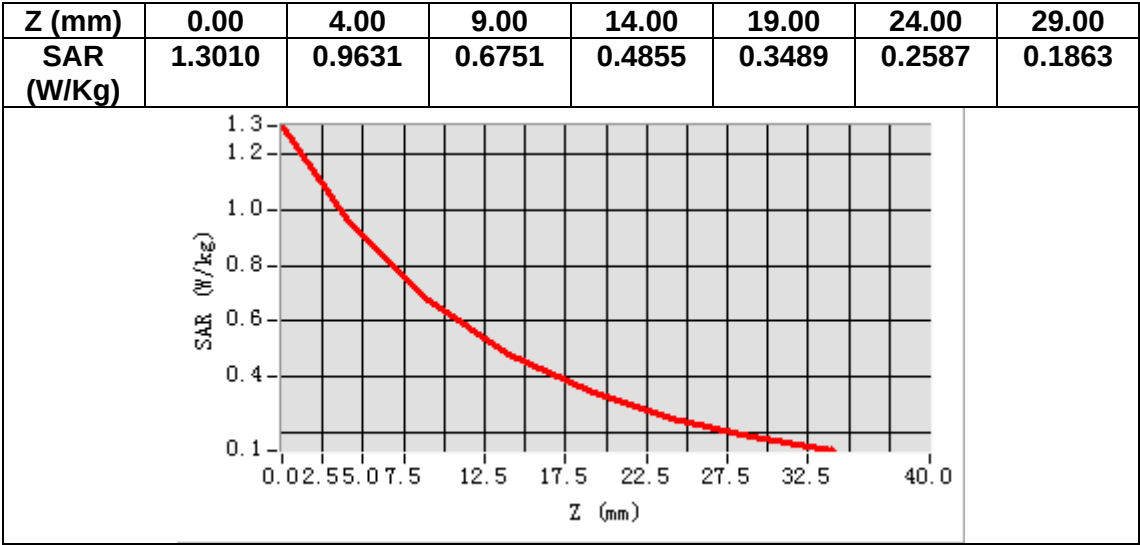
Frequency (MHz)	835.000000
Relative permittivity (real part)	41.593541
Relative permittivity (imaginary part)	19.609613
Conductivity (S/m)	0.910542
Variation (%)	1.870000



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.587466
SAR 1g (W/Kg)	1.002035



MEASUREMENT 4

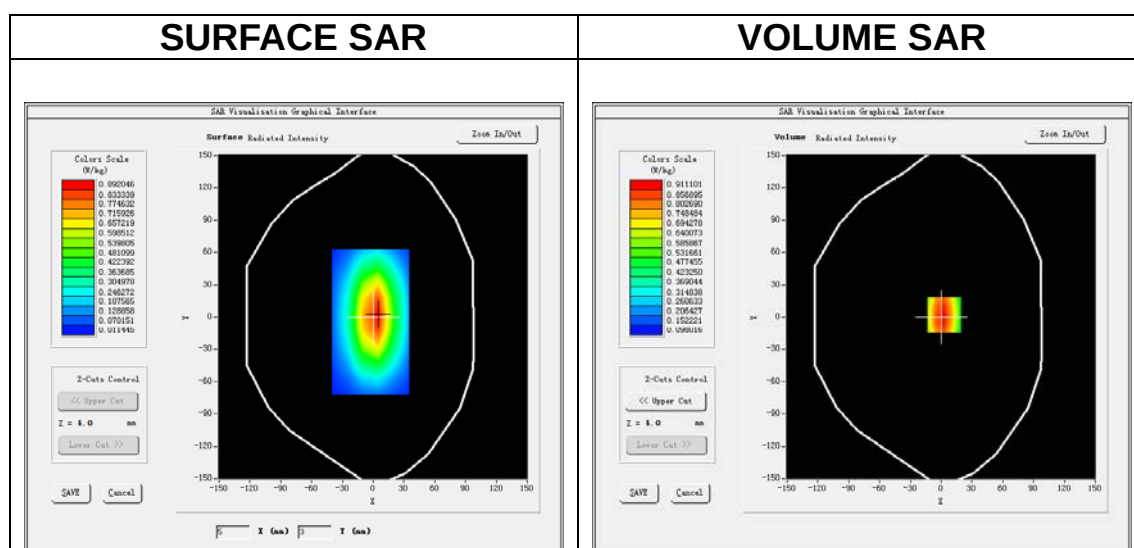
Date of measurement: 19/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW835</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

B. SAR Measurement Results

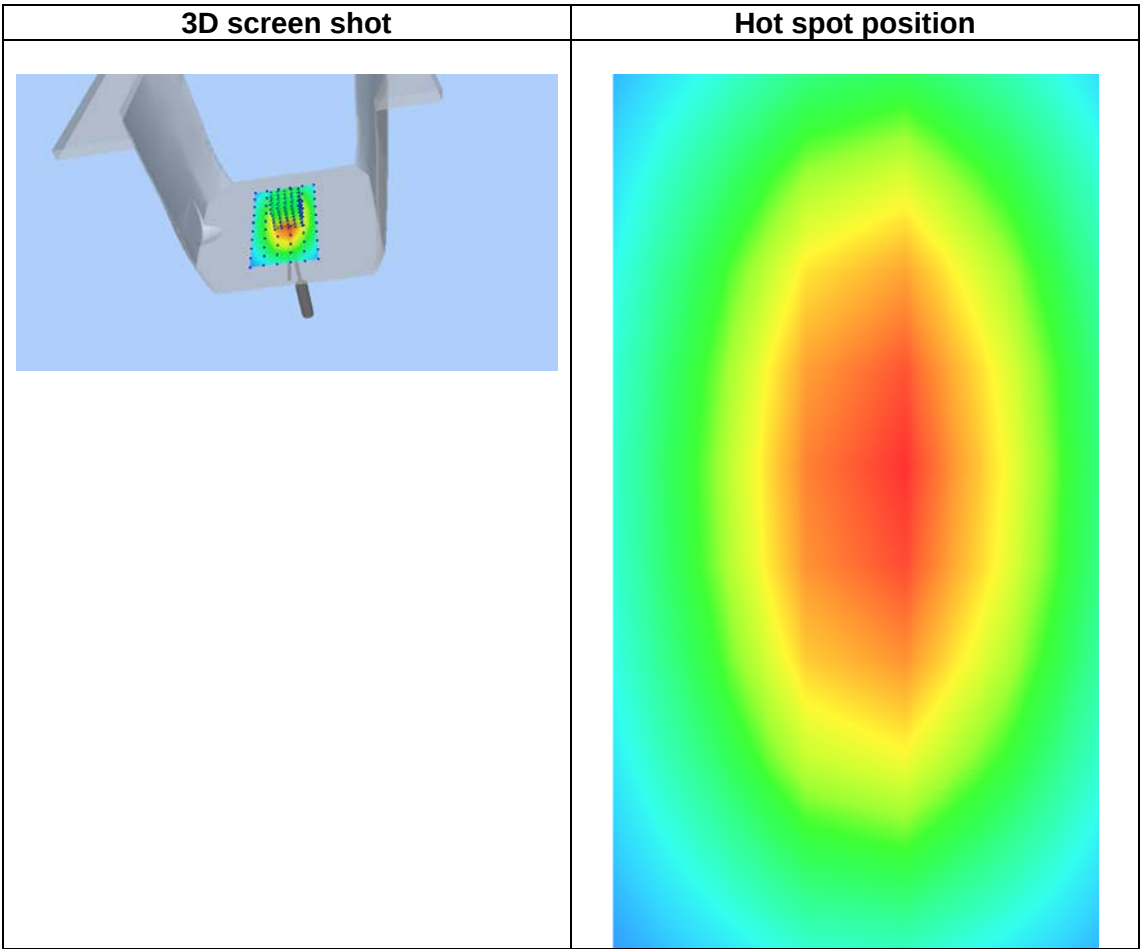
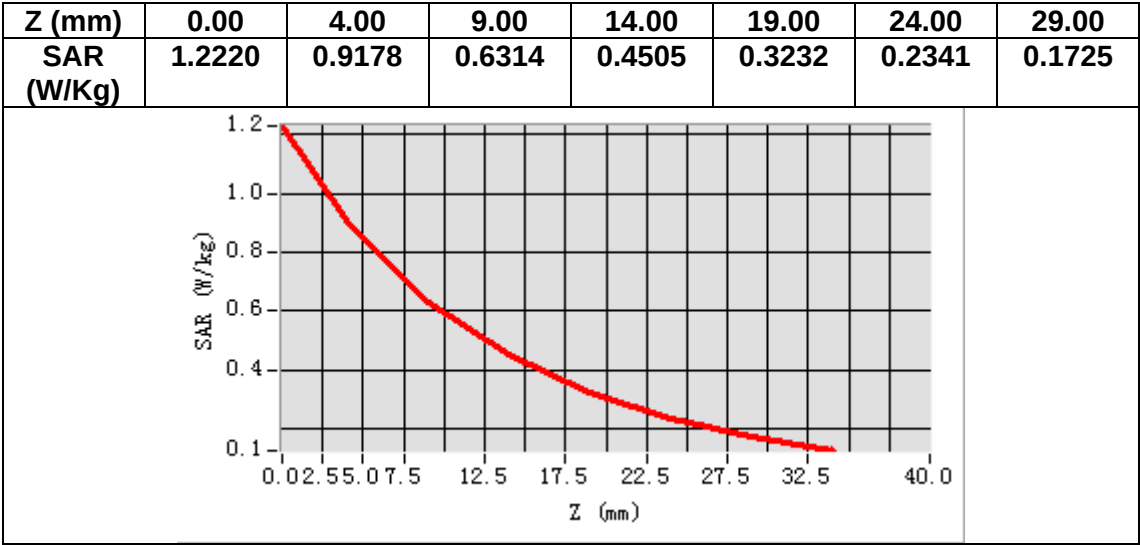
Frequency (MHz)	835.000000
Relative permittivity (real part)	55.321101
Relative permittivity (imaginary part)	20.853359
Conductivity (S/m)	0.971236
Variation (%)	4.260000



Maximum location: X=3.00, Y=2.00

SAR Peak: 1.23 W/kg

SAR 10g (W/Kg)	0.684123
SAR 1g (W/Kg)	0.991356



MEASUREMENT 5

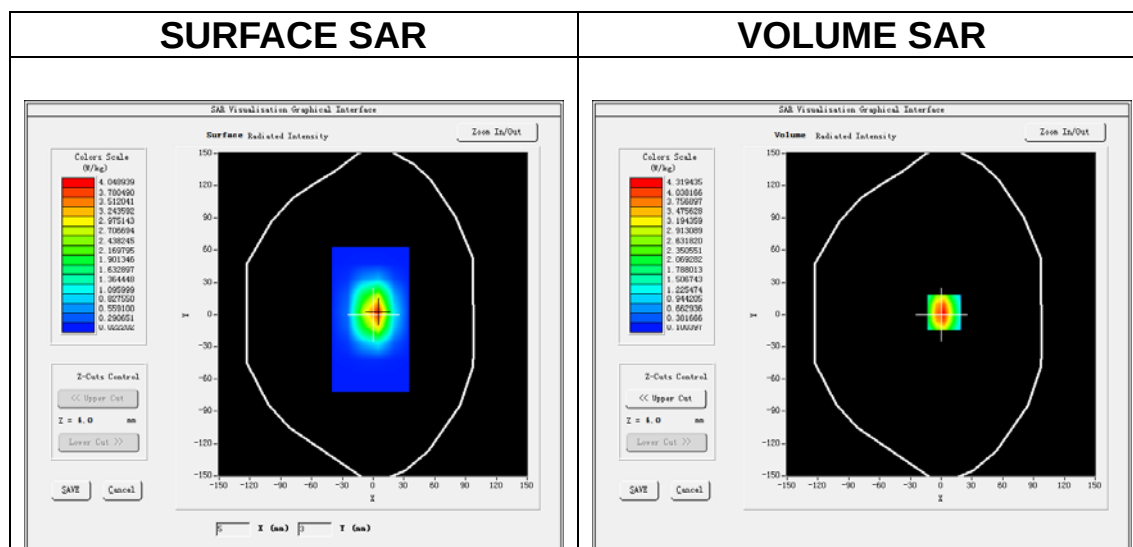
Date of measurement: 14/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW1800</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

B. SAR Measurement Results

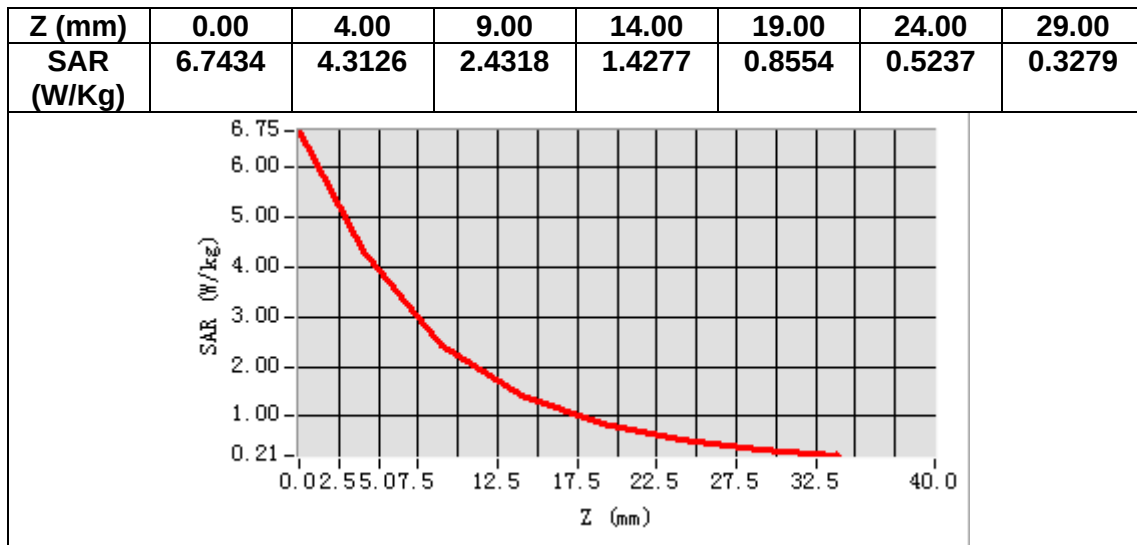
Frequency (MHz)	1800.000000
Relative permittivity (real part)	39.371237
Relative permittivity (imaginary part)	14.103229
Conductivity (S/m)	1.411367
Variation (%)	-2.113000



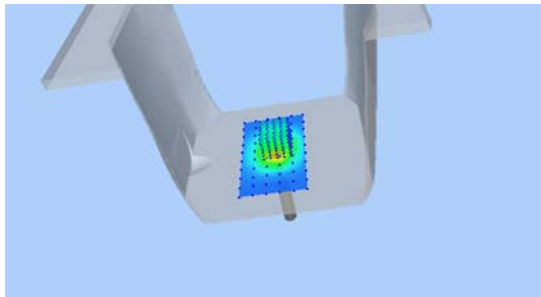
Maximum location: X=3.00, Y=2.00

SAR Peak: 6.82 W/kg

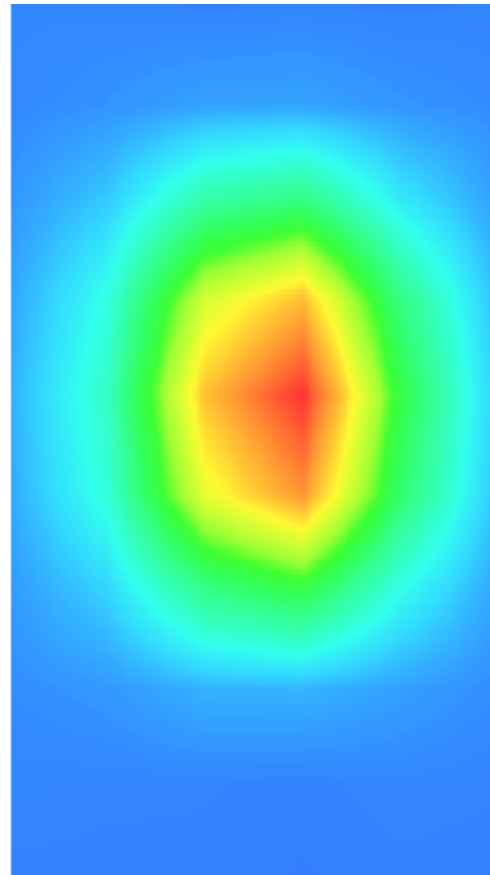
SAR 10g (W/Kg)	1.877397
SAR 1g (W/Kg)	3.646451



3D screen shot



Hot spot position



MEASUREMENT 6

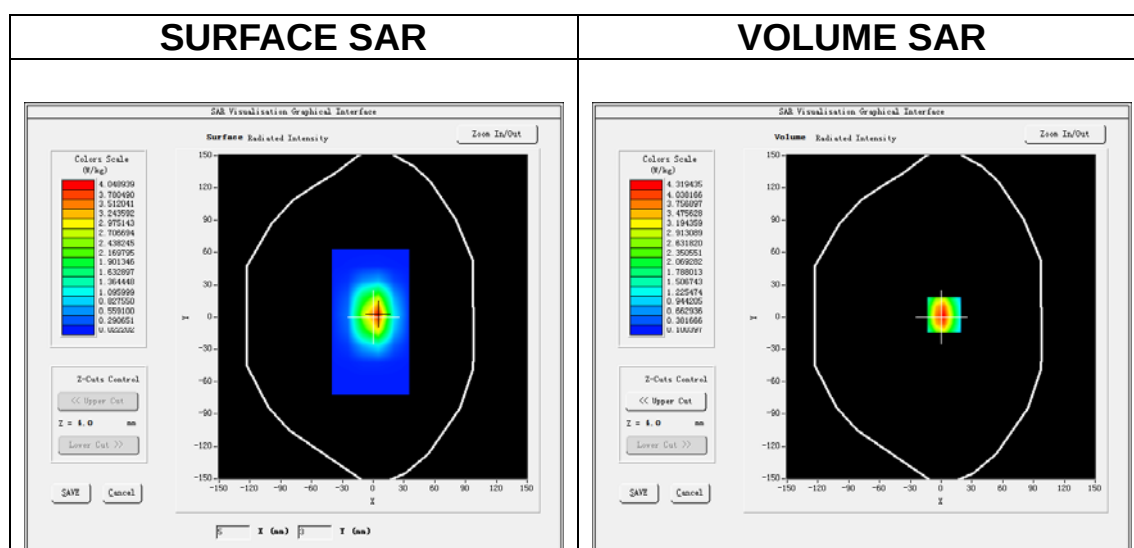
Date of measurement: 21/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW1800</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

B. SAR Measurement Results

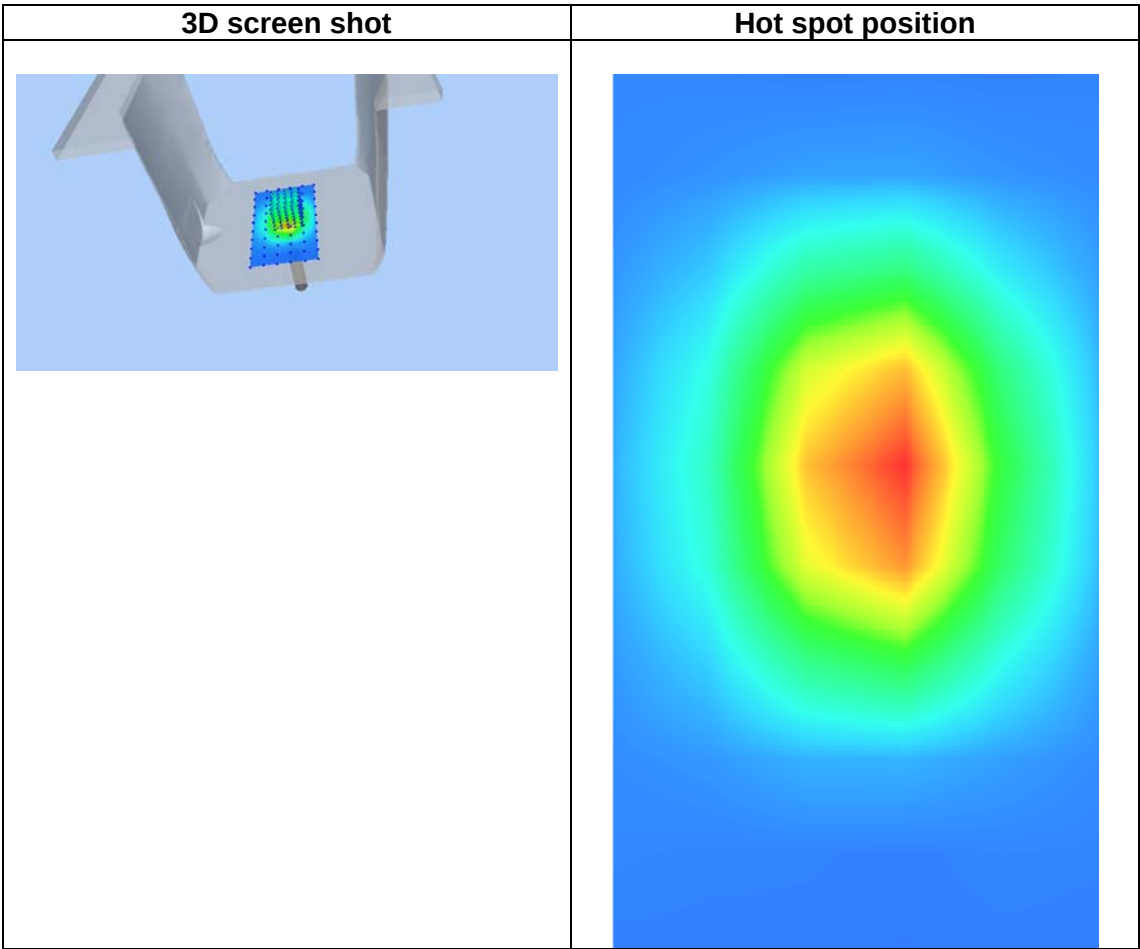
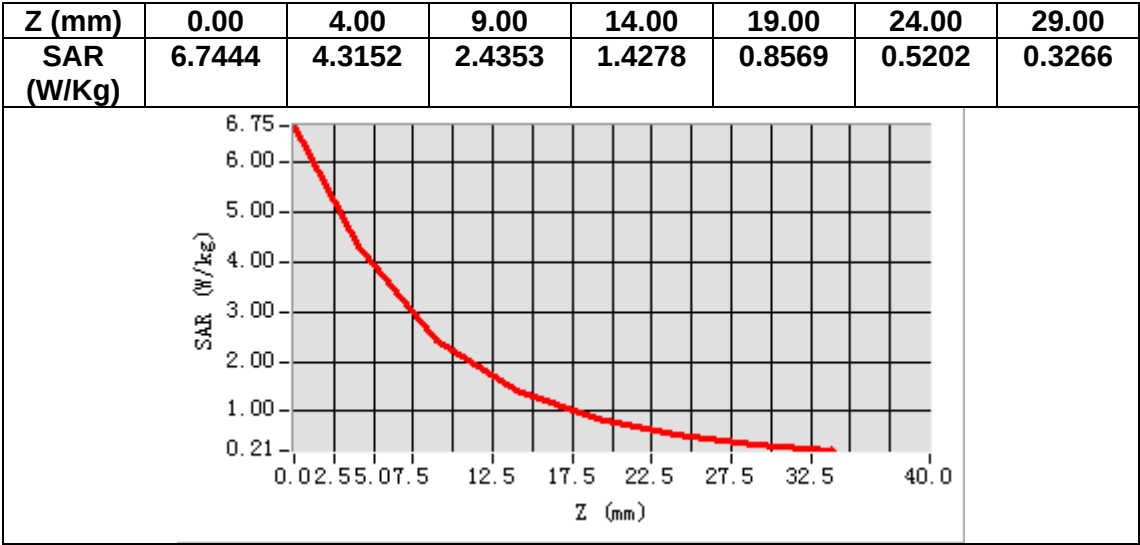
Frequency (MHz)	1800.000000
Relative permittivity (real part)	54.653510
Relative permittivity (imaginary part)	15.194016
Conductivity (S/m)	1.523096
Variation (%)	-3.020000



Maximum location: X=3.00, Y=2.00

SAR Peak: 6.82 W/kg

SAR 10g (W/Kg)	2.118379
SAR 1g (W/Kg)	3.857268



MEASUREMENT 7

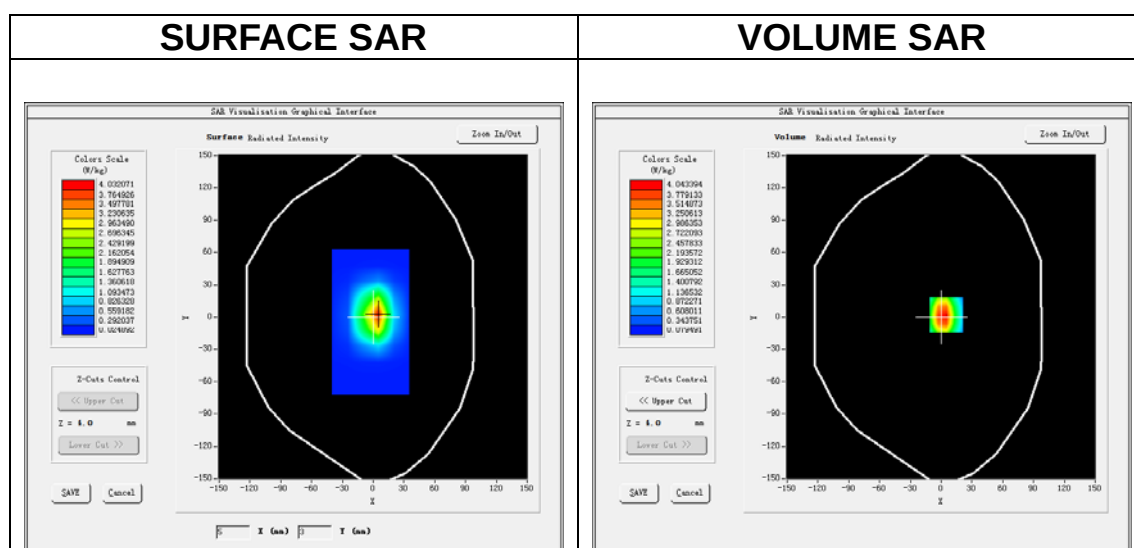
Date of measurement: 22/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW1900</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

B. SAR Measurement Results

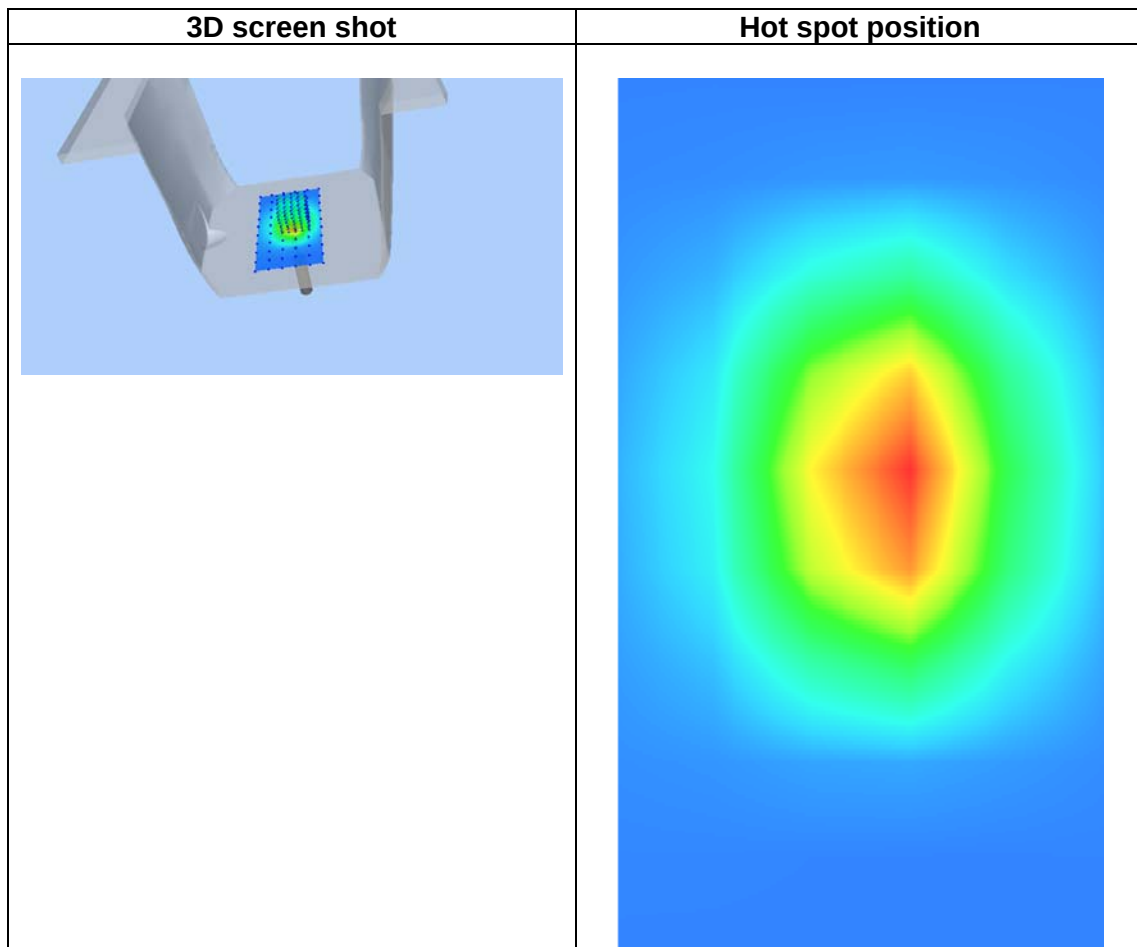
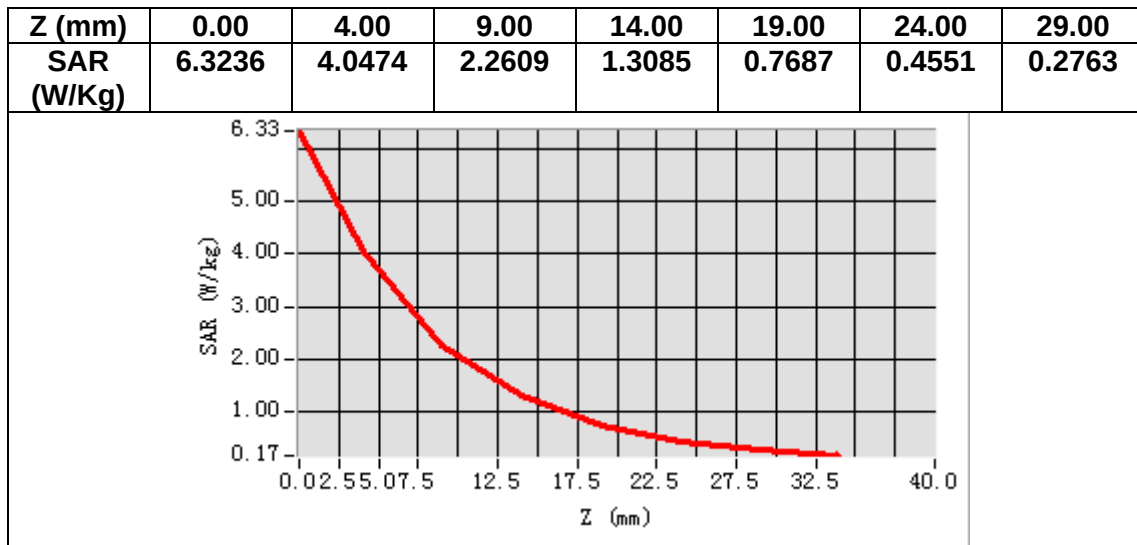
Frequency (MHz)	1900.000000
Relative permittivity (real part)	39.131287
Relative permittivity (imaginary part)	13.523008
Conductivity (S/m)	1.430336
Variation (%)	1.430000



Maximum location: X=5.00, Y=2.00

SAR Peak: 6.70 W/kg

SAR 10g (W/Kg)	2.069456
SAR 1g (W/Kg)	3.953365



MEASUREMENT 8

Date of measurement: 22/12/2020

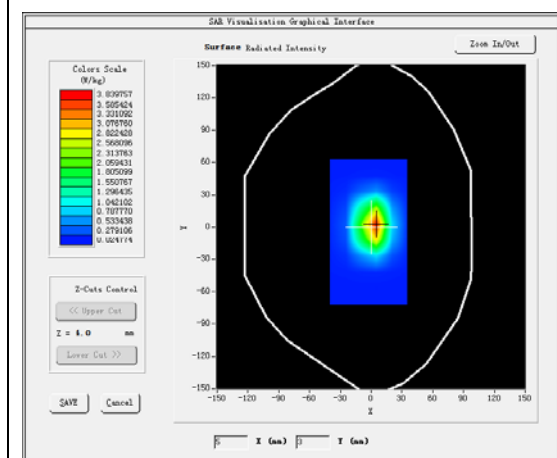
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW1900</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

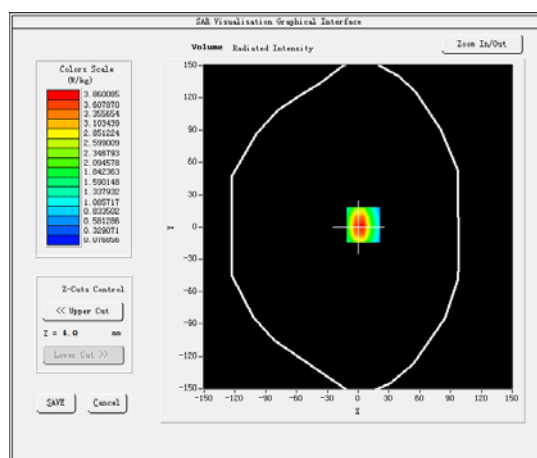
B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative permittivity (real part)	54.863335
Relative permittivity (imaginary part)	14.543503
Conductivity (S/m)	1.543566
Variation (%)	-4.460000

SURFACE SAR



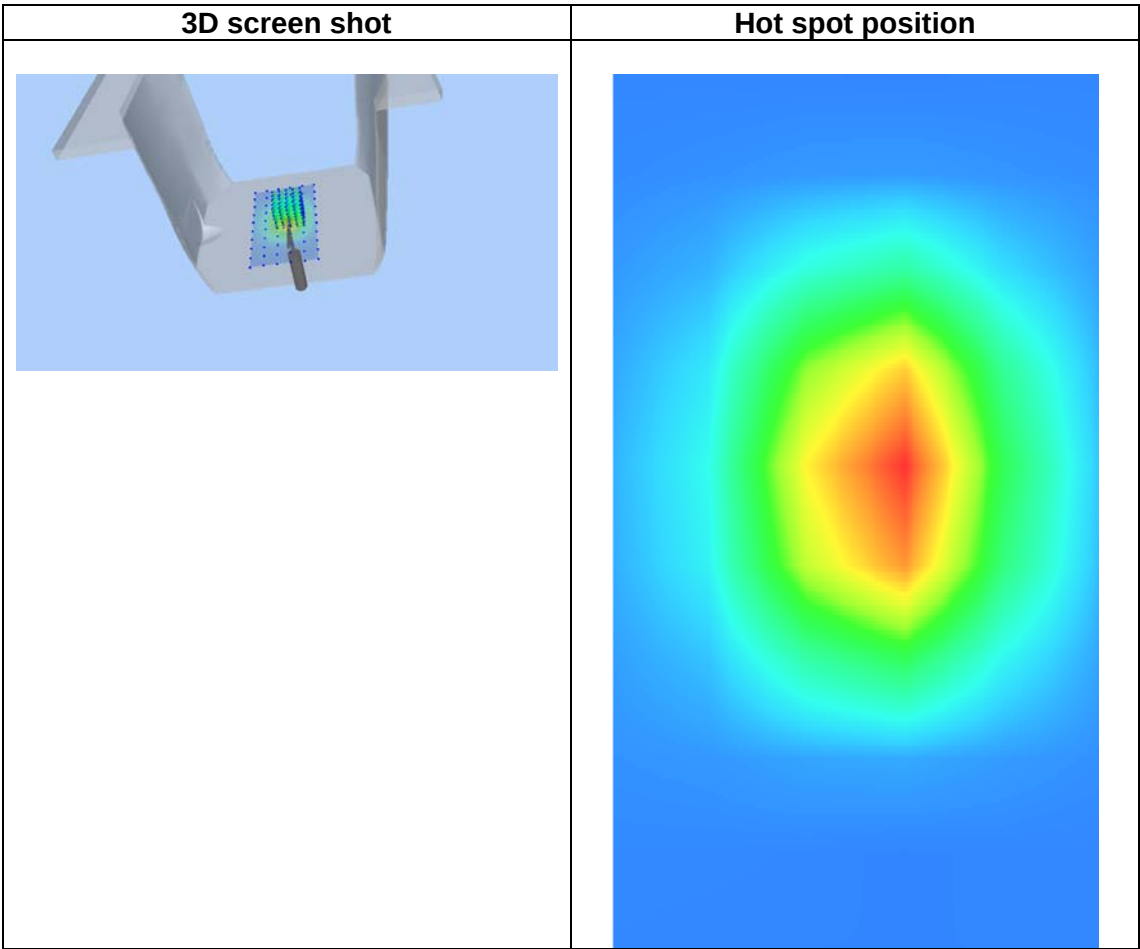
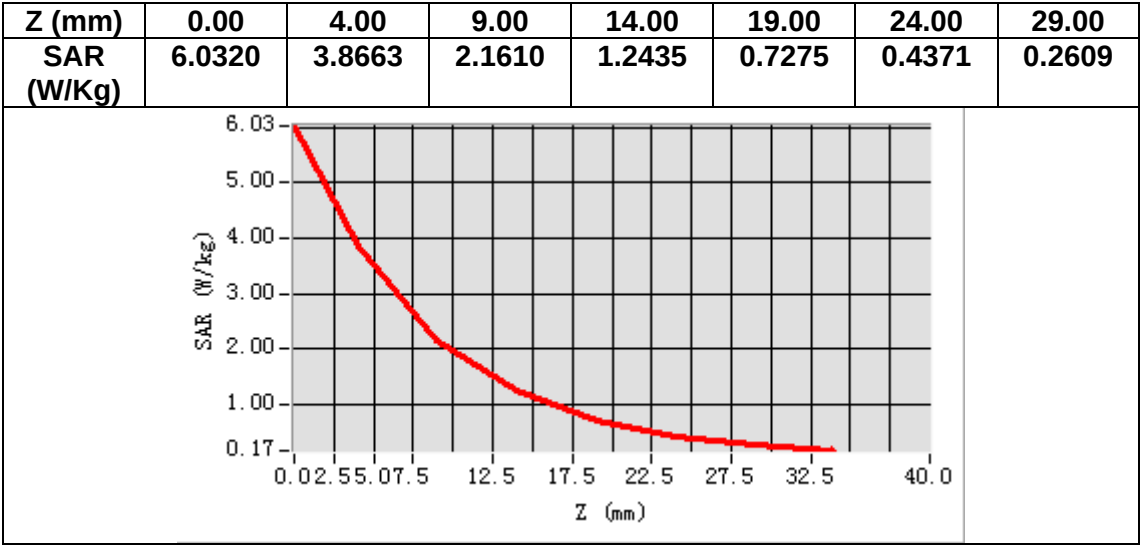
VOLUME SAR



Maximum location: X=5.00, Y=2.00

SAR Peak: 6.39 W/kg

SAR 10g (W/Kg)	2.099329
SAR 1g (W/Kg)	3.896402



MEASUREMENT 9

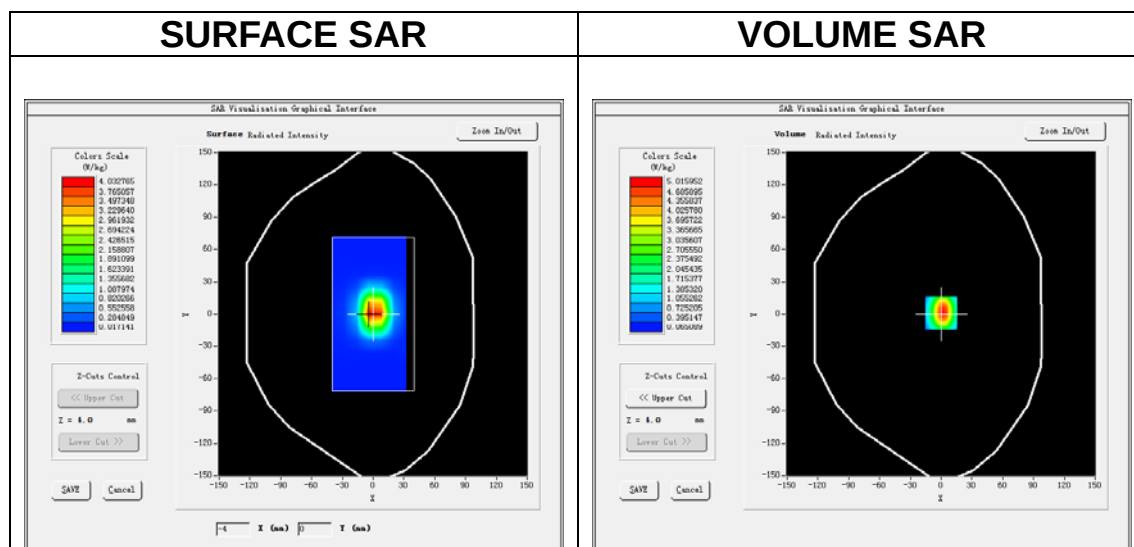
Date of measurement: 15/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>7x7x7,dx=5mm dy=5mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW2450</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

B. SAR Measurement Results

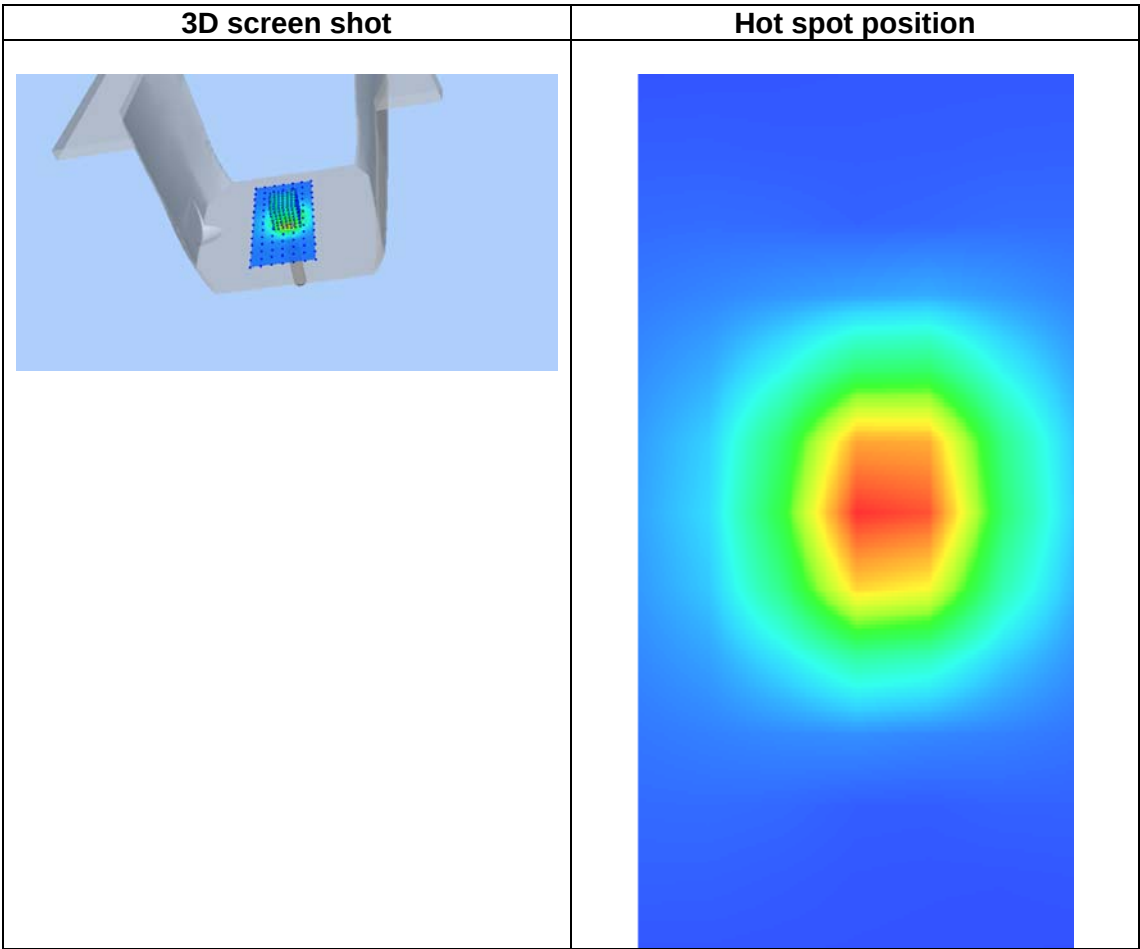
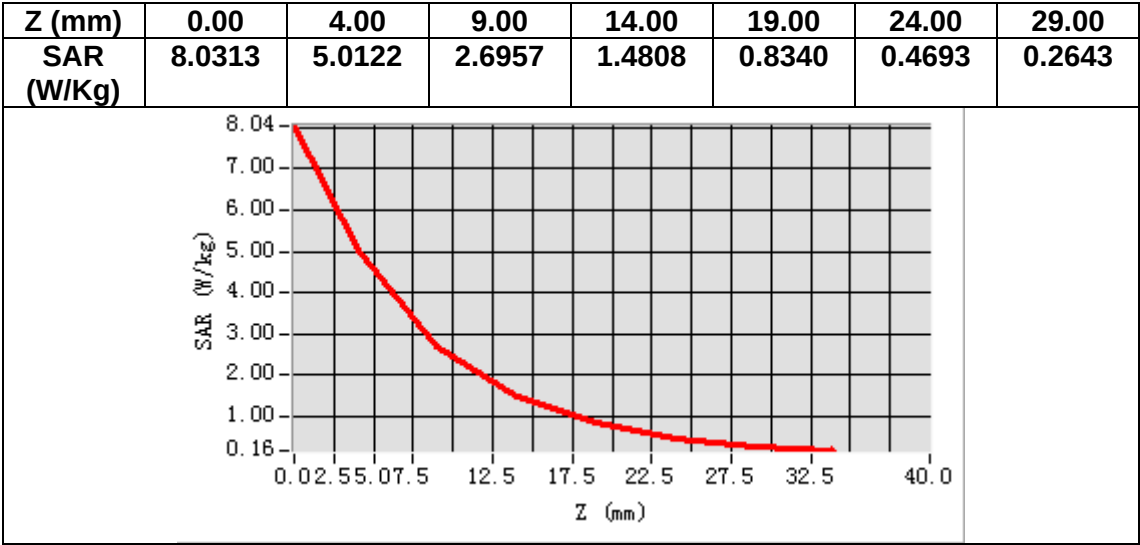
Frequency (MHz)	2450.000000
Relative permittivity (real part)	39.171421
Relative permittivity (imaginary part)	13.602631
Conductivity (S/m)	1.850663
Variation (%)	0.350000



Maximum location: X=0.00, Y=1.00

SAR Peak: 8.14 W/kg

SAR 10g (W/Kg)	2.421375
SAR 1g (W/Kg)	5.302435



MEASUREMENT 10

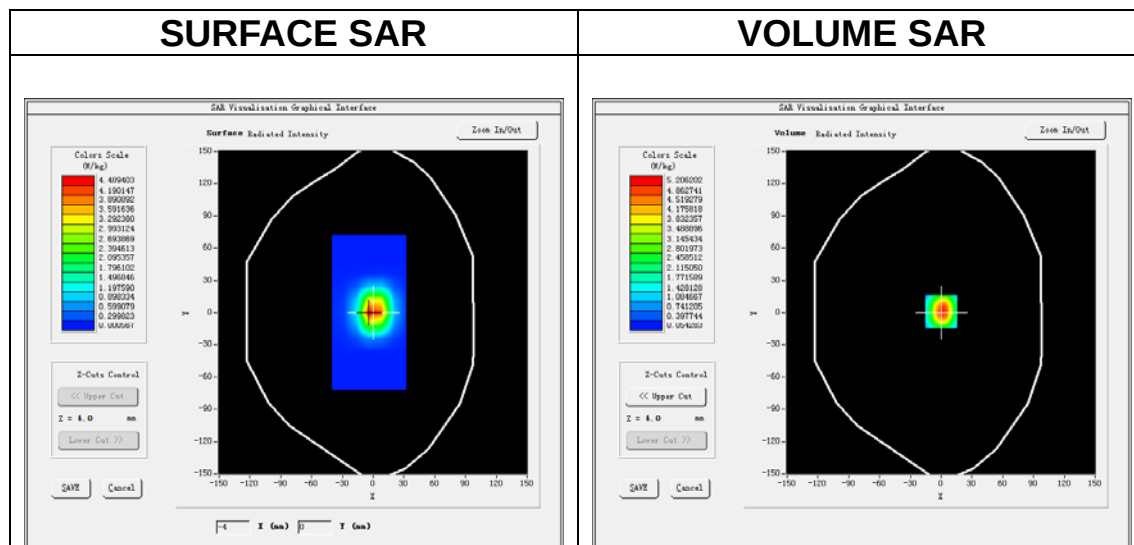
Date of measurement: 23/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>7x7x7, dx=5mm dy=5mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW2450</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

B. SAR Measurement Results

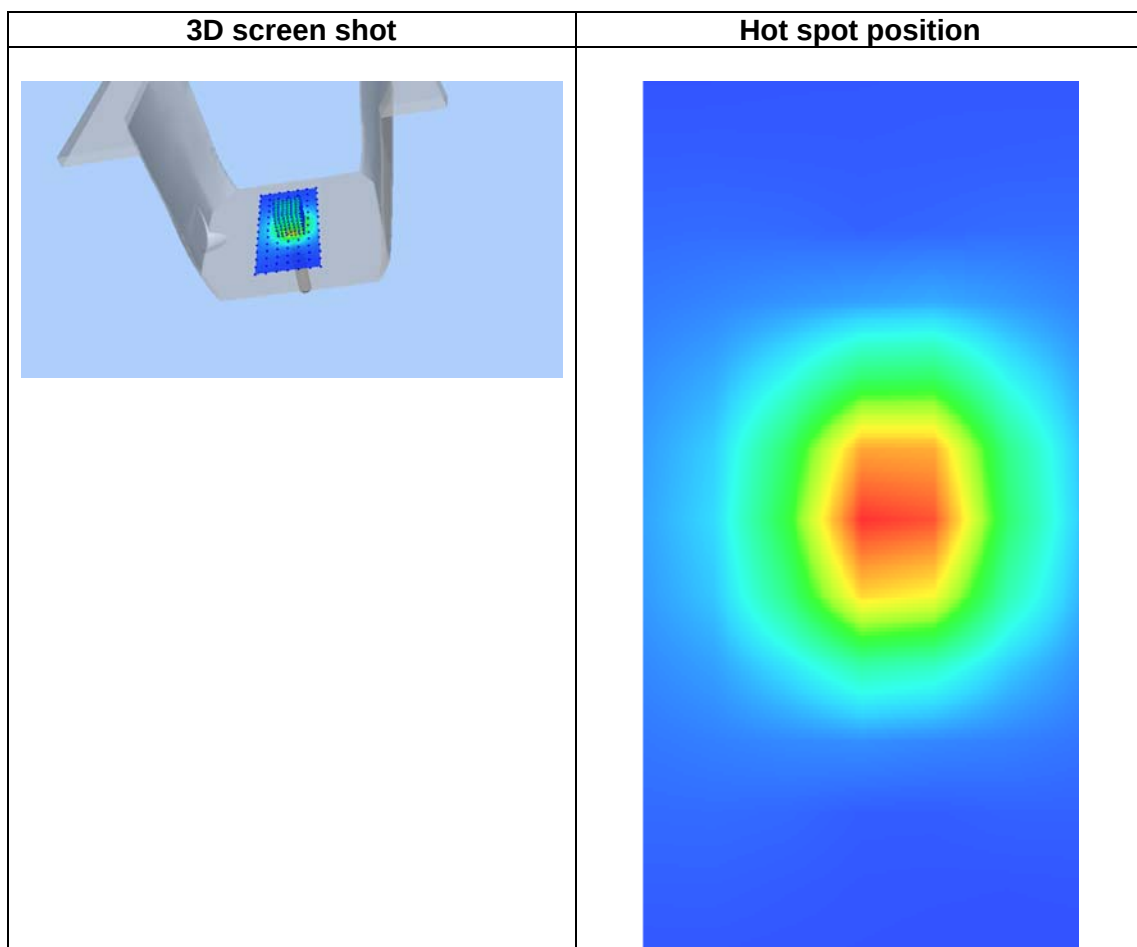
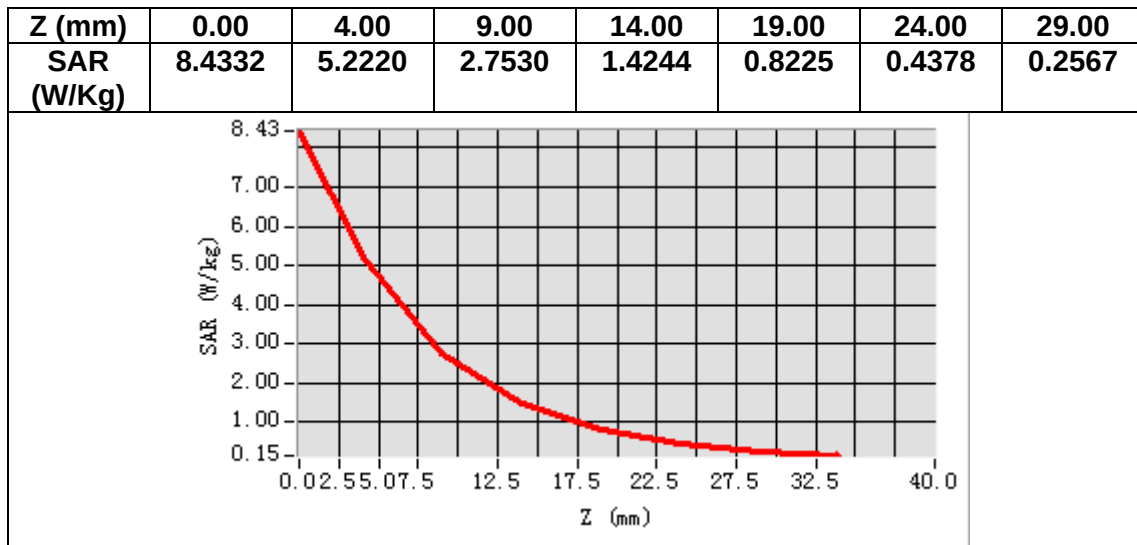
Frequency (MHz)	2450.000000
Relative permittivity (real part)	52.301497
Relative permittivity (imaginary part)	14.233566
Conductivity (S/m)	1.942816
Variation (%)	1.420000



Maximum location: X=0.00, Y=1.00

SAR Peak: 8.46 W/kg

SAR 10g (W/Kg)	2.427285
SAR 1g (W/Kg)	5.517270



MEASUREMENT 11

Date of measurement: 16/12/2020

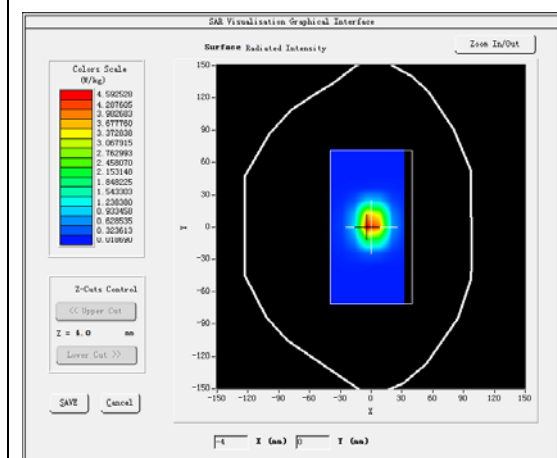
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>7x7x7,dx=5mm dy=5mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW2600</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

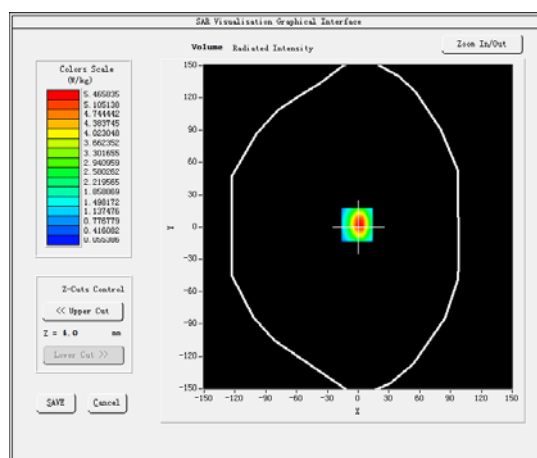
B. SAR Measurement Results

Frequency (MHz)	2600.000000
Relative permittivity (real part)	38.732638
Relative permittivity (imaginary part)	13.923997
Conductivity (S/m)	2.013631
Variation (%)	-0.040000

SURFACE SAR



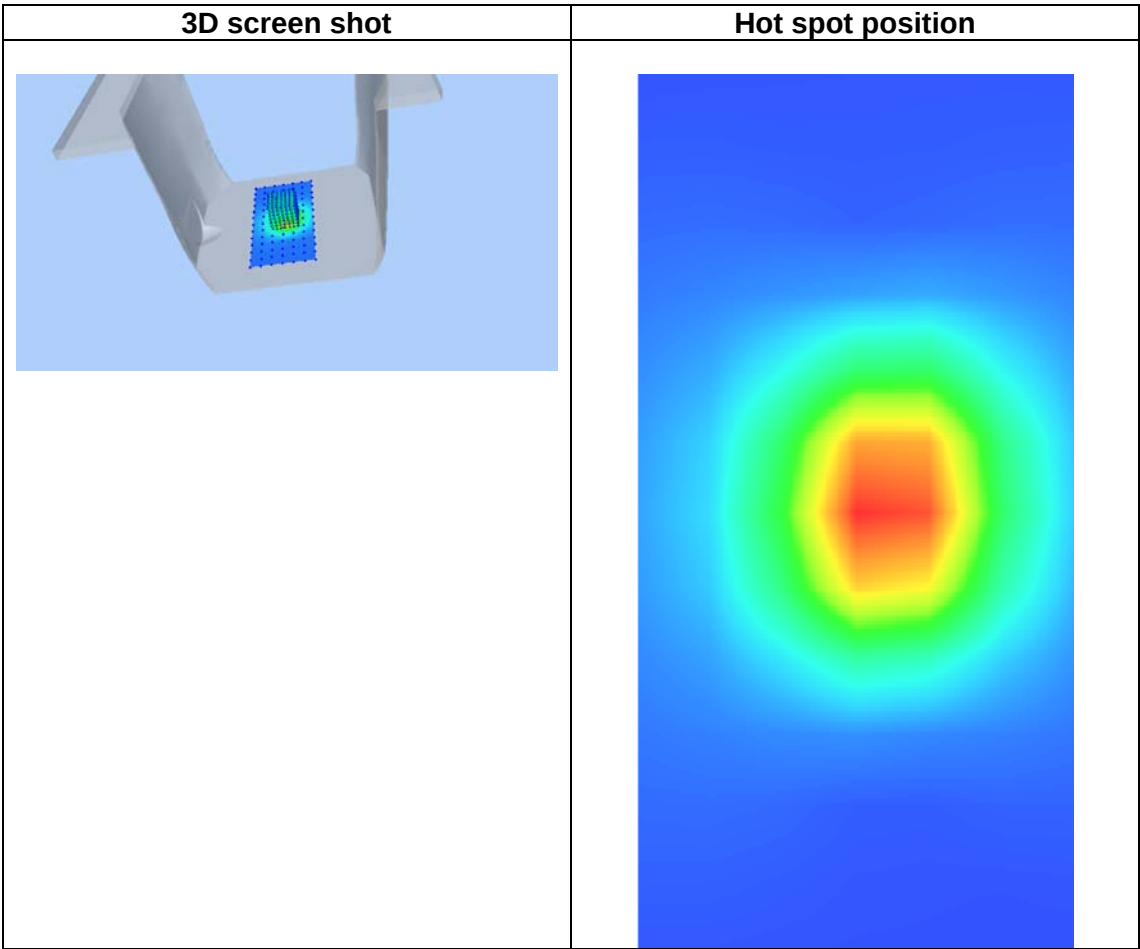
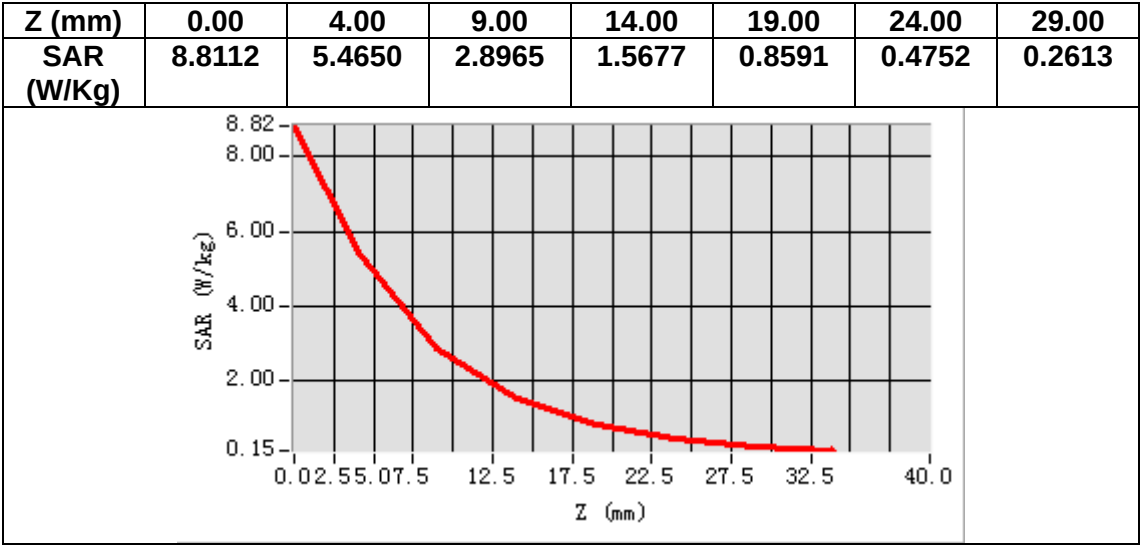
VOLUME SAR



Maximum location: X=-1.00, Y=2.00

SAR Peak: 9.07 W/kg

SAR 10g (W/Kg)	2.435205
SAR 1g (W/Kg)	5.920267



MEASUREMENT 12

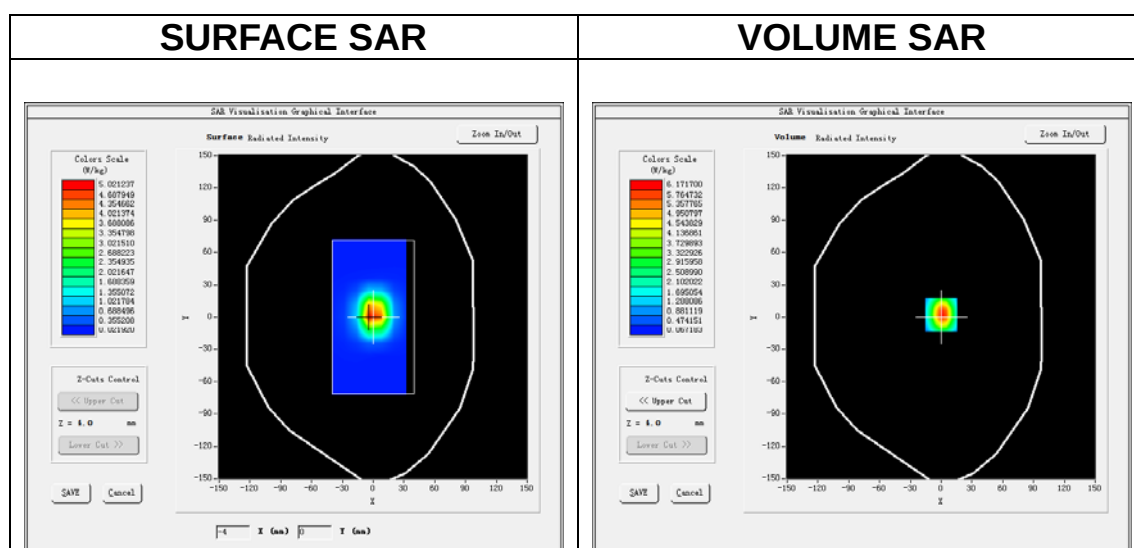
Date of measurement: 23/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>7x7x7,dx=5mm dy=5mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW2600</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

B. SAR Measurement Results

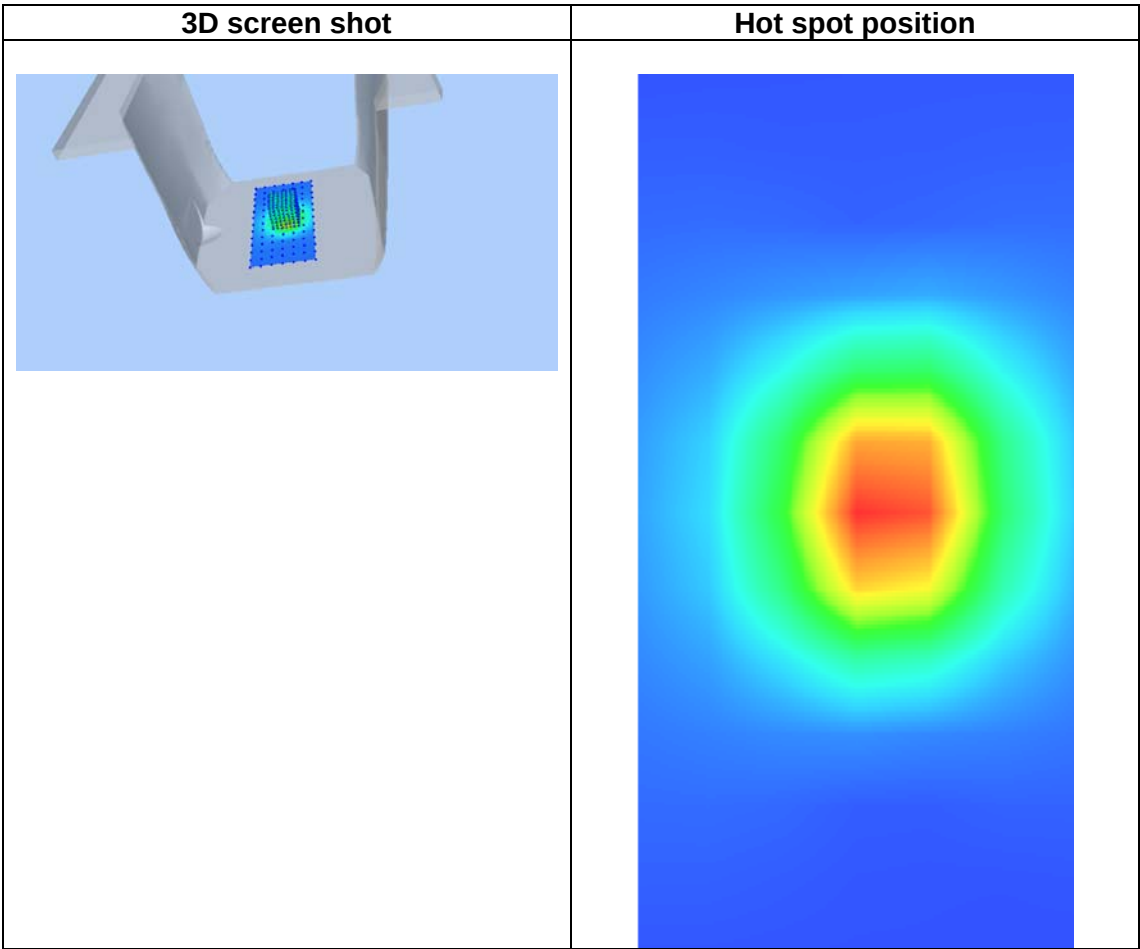
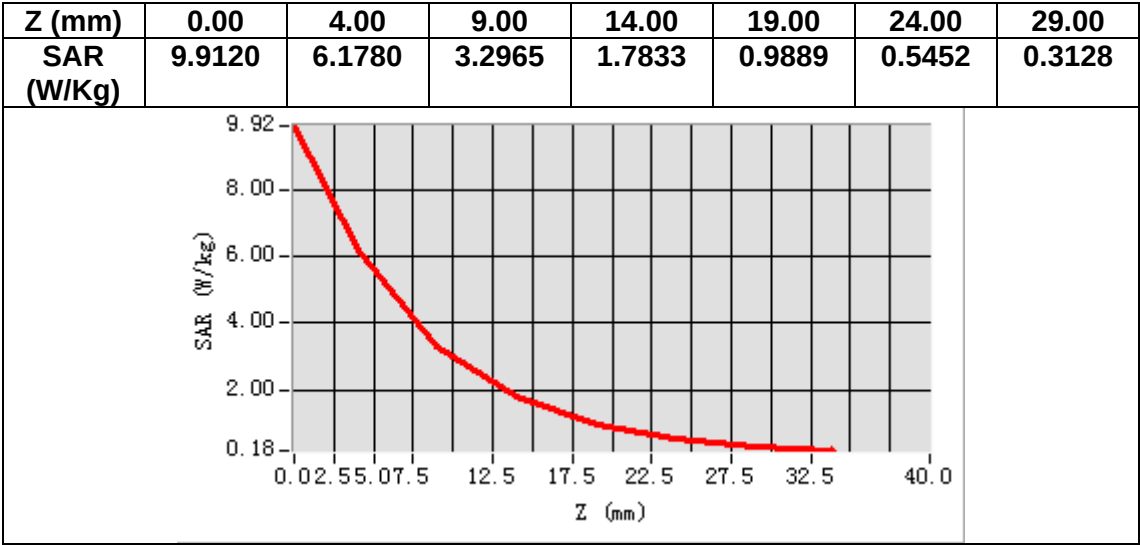
Frequency (MHz)	2600.000000
Relative permittivity (real part)	53.382866
Relative permittivity (imaginary part)	15.400101
Conductivity (S/m)	2.223465
Variation (%)	-3.220000



Maximum location: X=0.00, Y=2.00

SAR Peak: 9.99 W/kg

SAR 10g (W/Kg)	2.231324
SAR 1g (W/Kg)	5.473188



MEASUREMENT 13

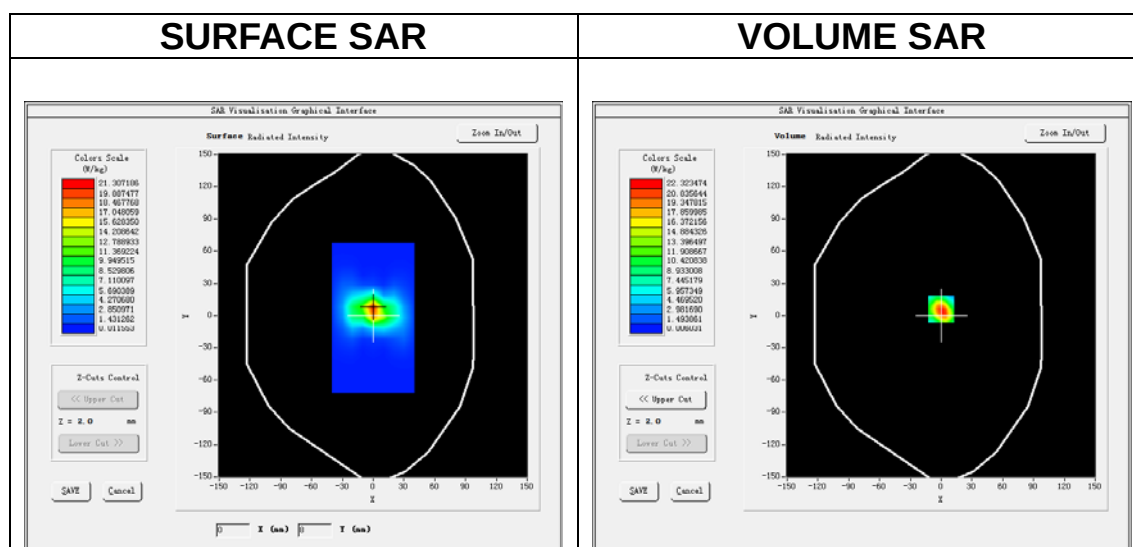
Date of measurement: 16/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW5200</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

B. SAR Measurement Results

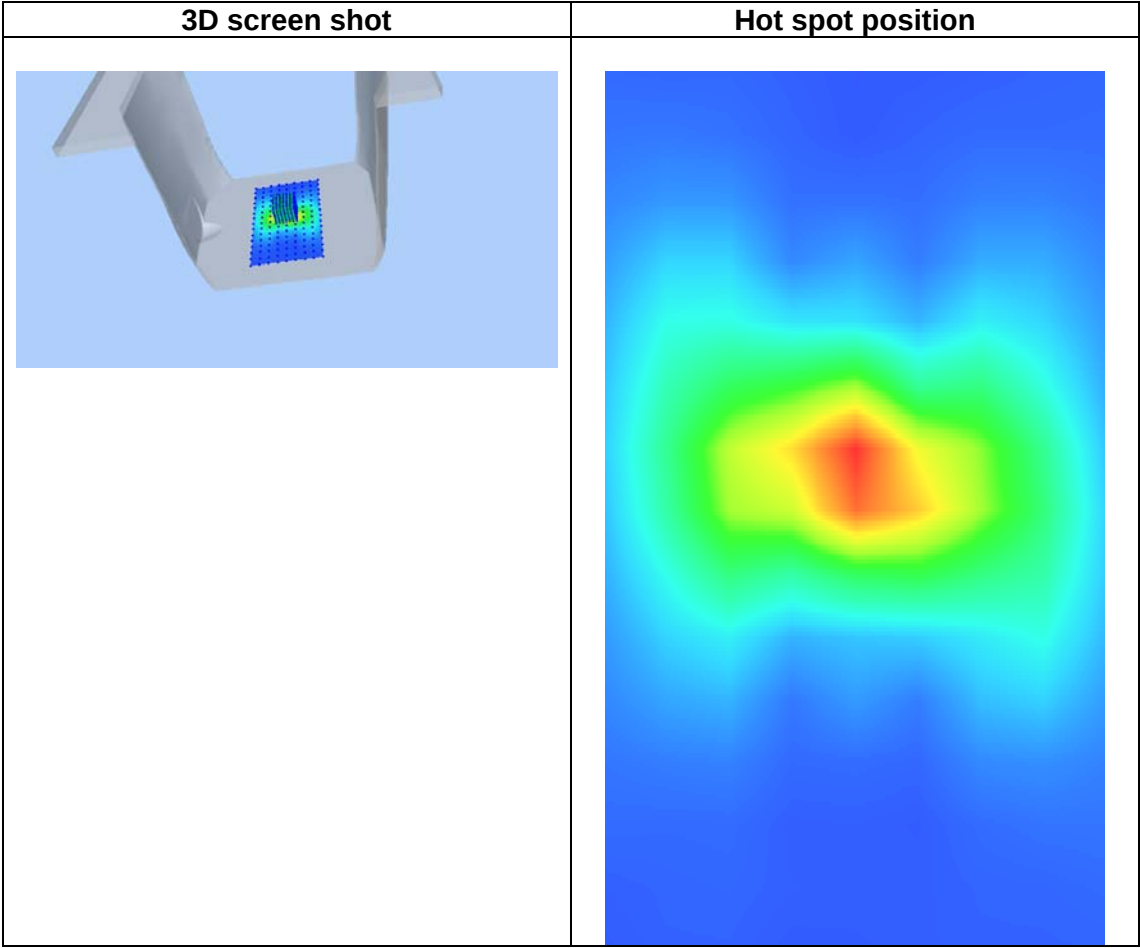
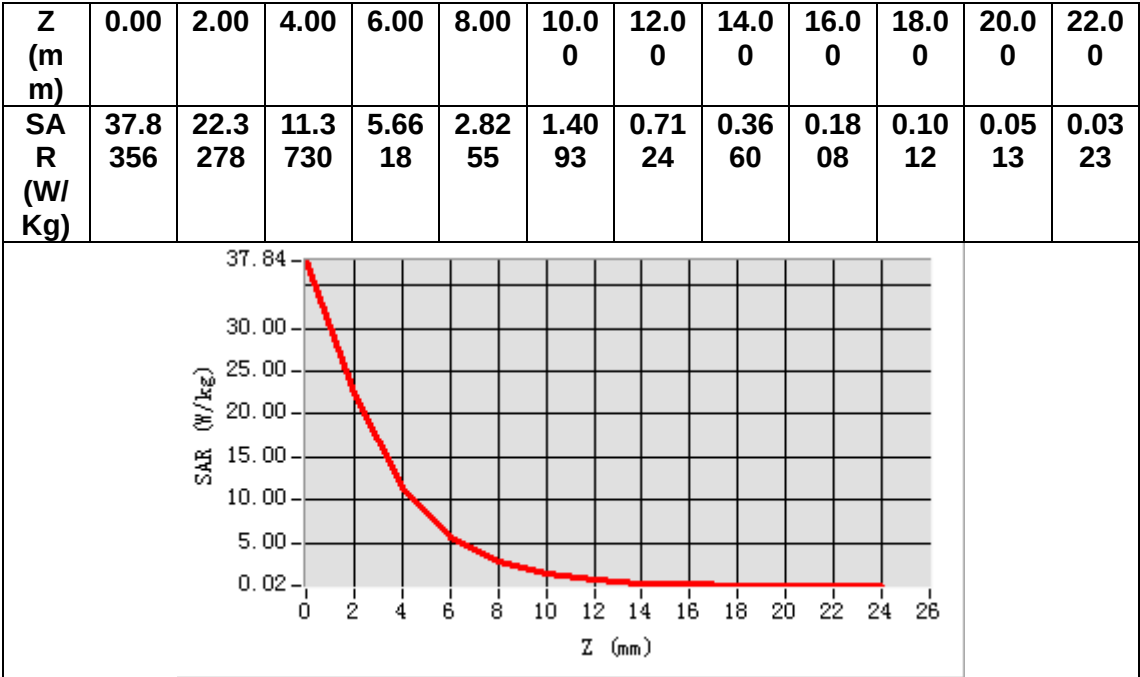
Frequency (MHz)	5200.000000
Relative permittivity (real part)	36.611137
Relative permittivity (imaginary part)	16.089355
Conductivity (S/m)	4.648036
Variation (%)	3.660000



Maximum location: X=0.00, Y=6.00

SAR Peak: 40.06 W/kg

SAR 10g (W/Kg)	5.370495
SAR 1g (W/Kg)	15.143221



MEASUREMENT 14

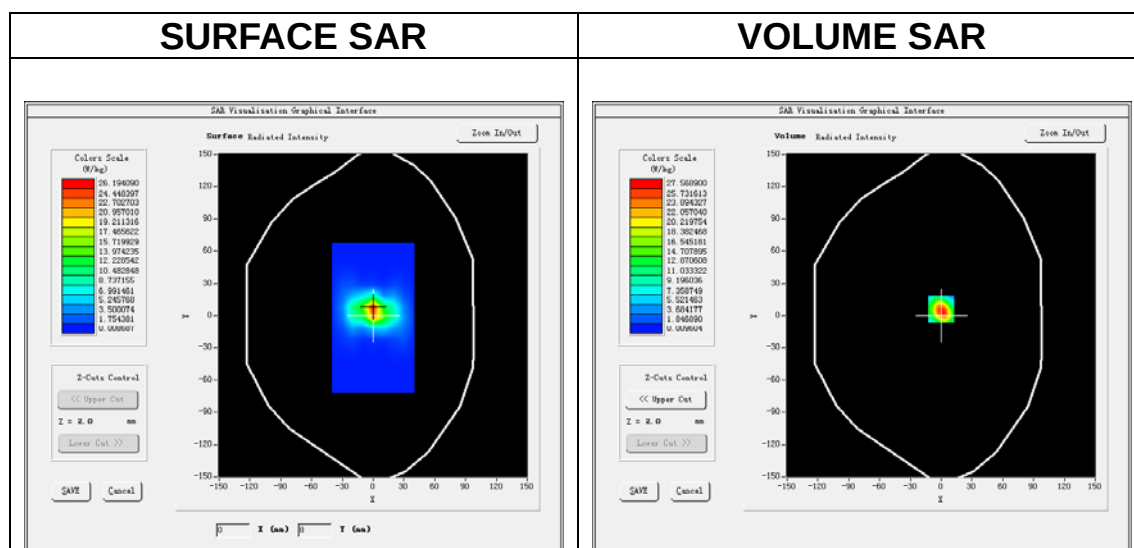
Date of measurement: 24/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW5200</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	50.256230
Relative permittivity (imaginary part)	18.477773
Conductivity (S/m)	5.338023
Variation (%)	4.490000

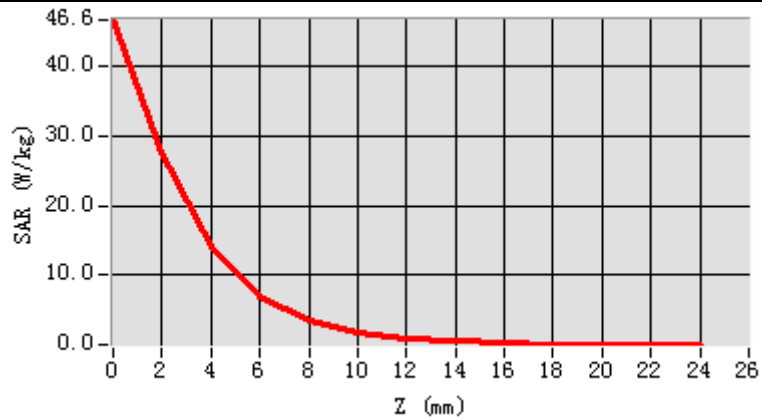


Maximum location: X=0.00, Y=6.00

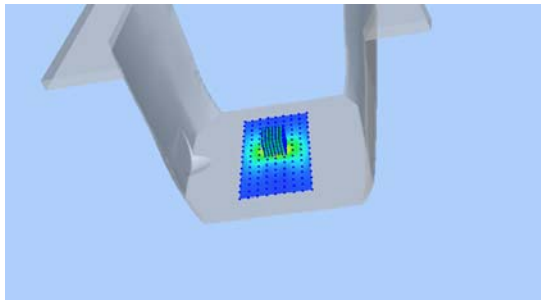
SAR Peak: 49.61 W/kg

SAR 10g (W/Kg)	5.659184
SAR 1g (W/Kg)	15.598246

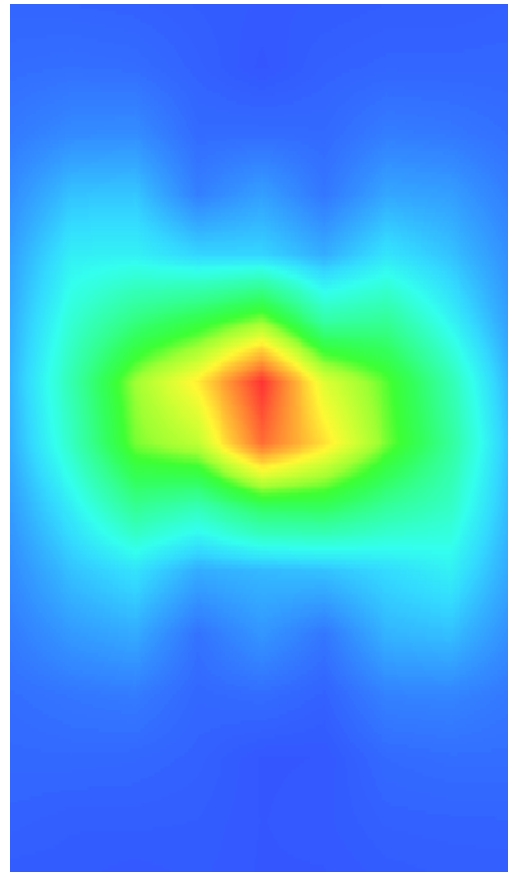
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.0	12.0	14.0	16.0	18.0	20.0	22.0
SAR (W/ Kg)	46.6 150	27.5 644	14.0 668	7.05 91	3.59 28	1.78 02	0.89 38	0.46 70	0.24 75	0.13 53	0.06 50	0.04 000



3D screen shot



Hot spot position



MEASUREMENT 15

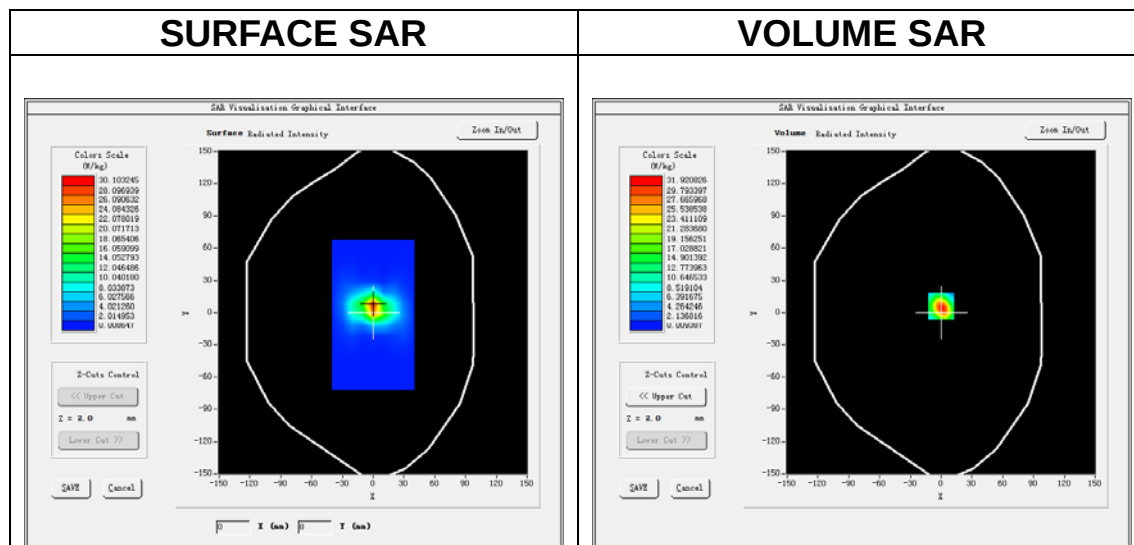
Date of measurement: 18/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW5800</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

B. SAR Measurement Results

Frequency (MHz)	5800.000000
Relative permittivity (real part)	35.071512
Relative permittivity (imaginary part)	16.513082
Conductivity (S/m)	5.320981
Variation (%)	1.880000

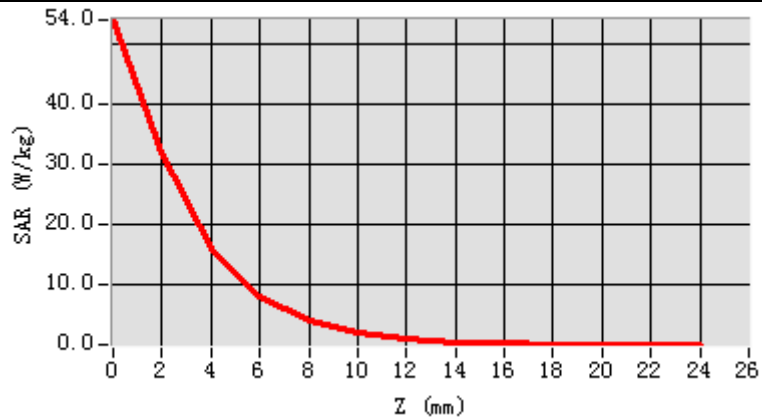


Maximum location: X=0.00, Y=6.00

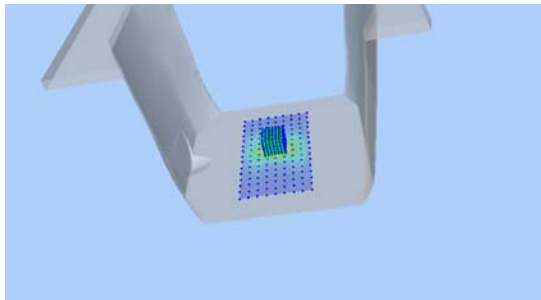
SAR Peak: 57.37 W/kg

SAR 10g (W/Kg)	6.073095
SAR 1g (W/Kg)	18.758093

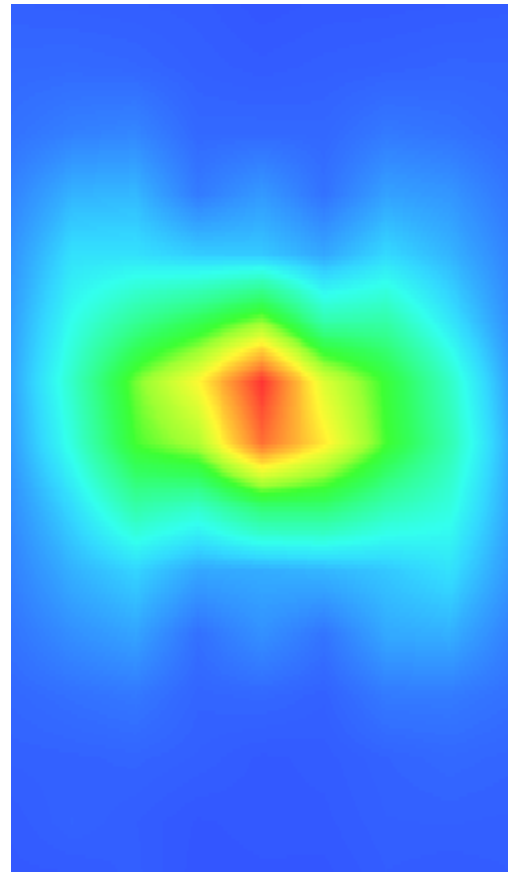
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.0	12.0	14.0	16.0	18.0	20.0	22.0
SAR (W/ Kg)	54.0 337	31.9 251	16.1 709	8.17 95	4.08 15	2.05 72	1.03 29	0.51 77	0.27 63	0.15 42	0.07 82	0.04 46



3D screen shot



Hot spot position



MEASUREMENT 16

Date of measurement: 24/12/2020

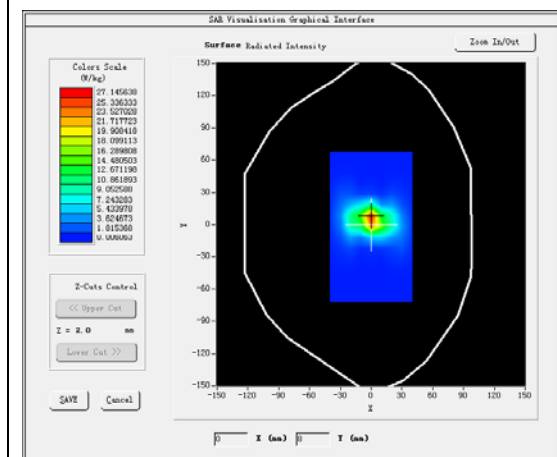
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW5800</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

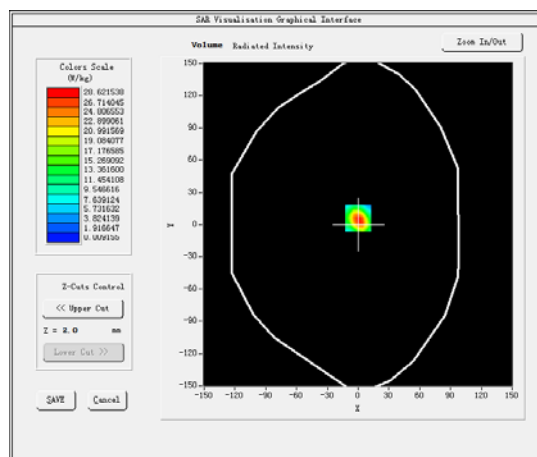
B. SAR Measurement Results

Frequency (MHz)	5800.000000
Relative permittivity (real part)	48.710523
Relative permittivity (imaginary part)	18.780043
Conductivity (S/m)	6.045240
Variation (%)	1.340000

SURFACE SAR



VOLUME SAR

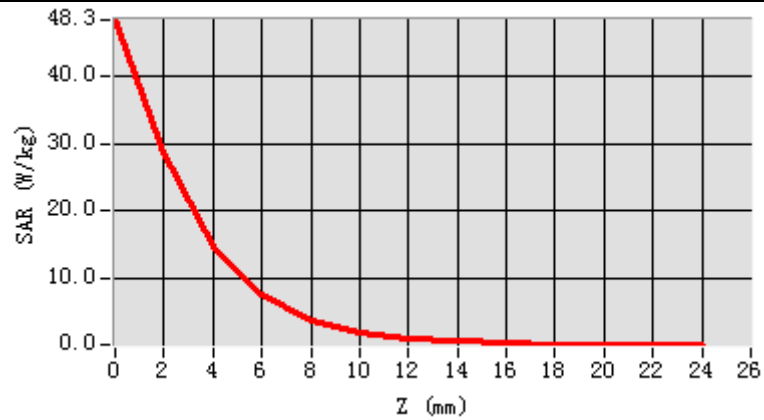


Maximum location: X=0.00, Y=6.00

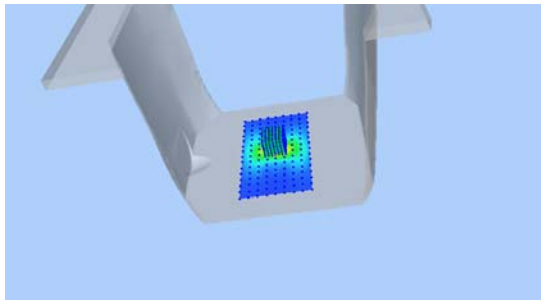
SAR Peak: 51.30 W/kg

SAR 10g (W/Kg)	5.743184
SAR 1g (W/Kg)	16.886052

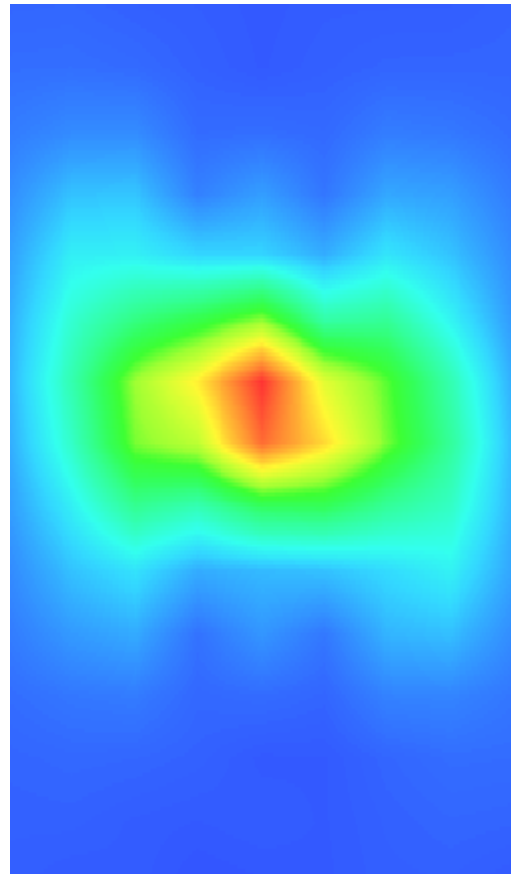
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.0	12.0	14.0	16.0	18.0	20.0	22.0
SAR (W/ Kg)	48.3 472	28.6 209	14.6 589	7.40 39	3.68 57	1.83 35	0.93 18	0.47 60	0.25 13	0.13 08	0.07 83	0.05 22



3D screen shot



Hot spot position



13. Appendix C. Plots of High SAR Measurement

Table of contents
MEASUREMENT 1 GSM 850 Head
MEASUREMENT 2 GSM 850 Body
MEASUREMENT 3 GSM 1900 Head
MEASUREMENT 4 GSM 1900 Body
MEASUREMENT 5 WCDMA Band 2 Head
MEASUREMENT 6 WCDMA Band 2 Body
MEASUREMENT 7 WCDMA Band 4 Head
MEASUREMENT 8 WCDMA Band 4 Body
MEASUREMENT 9 WCDMA Band 5 Head
MEASUREMENT 10 WCDMA Band 5 Body
MEASUREMENT 11 WLAN 5.2G Head
MEASUREMENT 12 WLAN 5.8G Head
MEASUREMENT 13 WLAN 5.8G Body
MEASUREMENT 14 WLAN 5.2G Body
MEASUREMENT 15 WLAN 2.4G Head
MEASUREMENT 16 WLAN 2.4G Body
MEASUREMENT 17 LTE Band 2 Head
MEASUREMENT 18 LTE Band 2 Body
MEASUREMENT 19 LTE Band 4 Head
MEASUREMENT 20 LTE Band 4 Body
MEASUREMENT 21 LTE Band 5 Head
MEASUREMENT 22 LTE Band 5 Body
MEASUREMENT 23 LTE Band 7 Head
MEASUREMENT 24 LTE Band 7 Body
MEASUREMENT 25 LTE Band 12 Head
MEASUREMENT 26 LTE Band 12 Body
MEASUREMENT 27 LTE Band 17 Head
MEASUREMENT 28 LTE Band 17 Body

MEASUREMENT 1

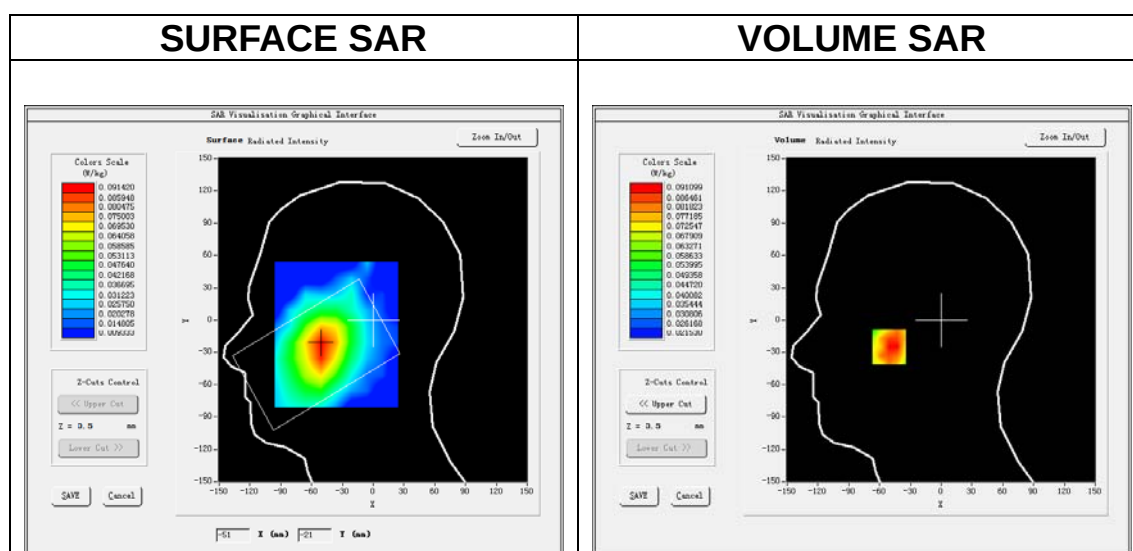
Date of measurement: 21/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>GSM850</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>TDMA (Crest factor: 4.0)</u>

B. SAR Measurement Results

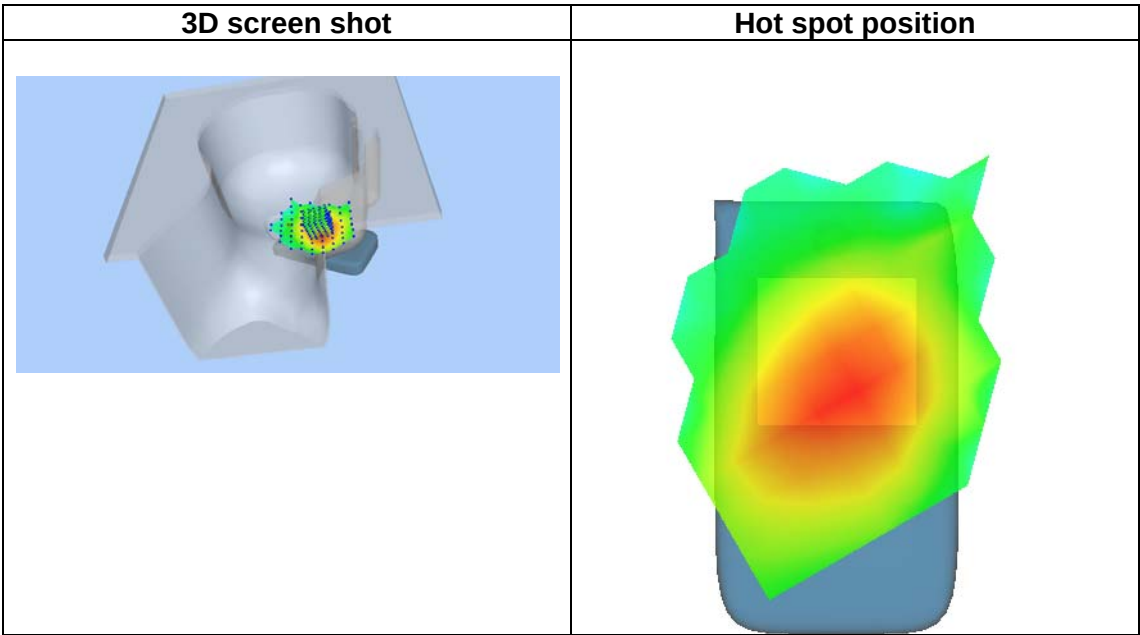
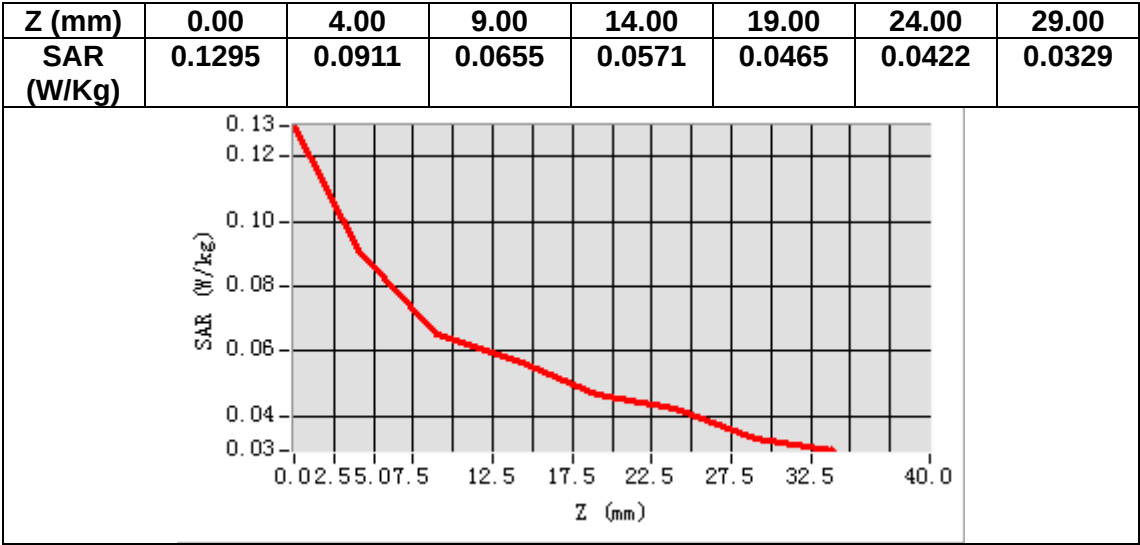
Frequency (MHz)	836.600000
Relative permittivity (real part)	41.509884
Relative permittivity (imaginary part)	19.637012
Conductivity (S/m)	0.912466
Variation (%)	-0.690000



Maximum location: X=-51.00, Y=-25.00

SAR Peak: 0.12 W/kg

SAR 10g (W/Kg)	0.067432
SAR 1g (W/Kg)	0.091342



MEASUREMENT 2

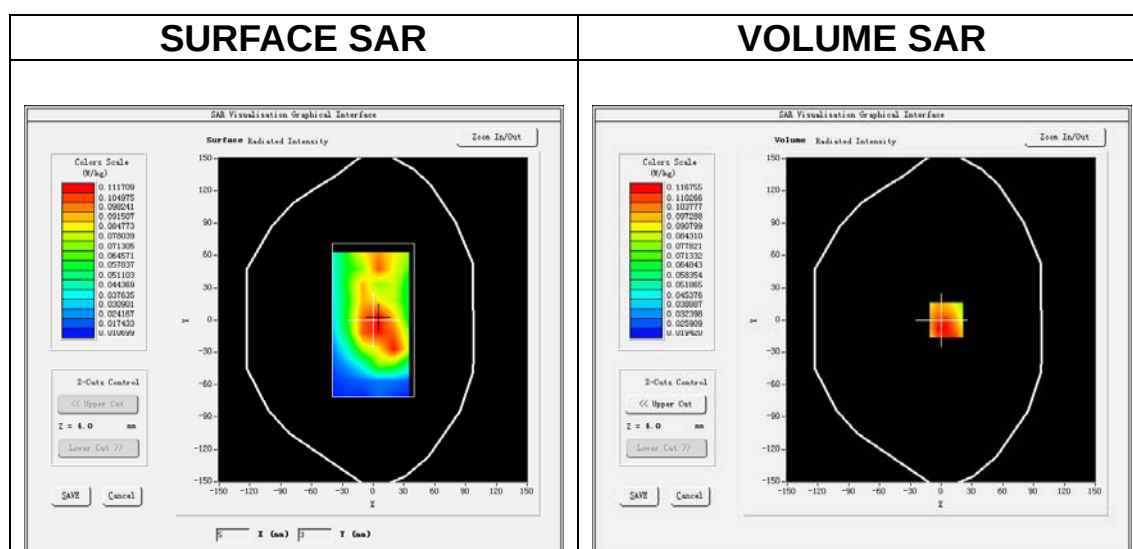
Date of measurement: 19/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>GSM850</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>TDMA (Crest factor: 4.0)</u>

B. SAR Measurement Results

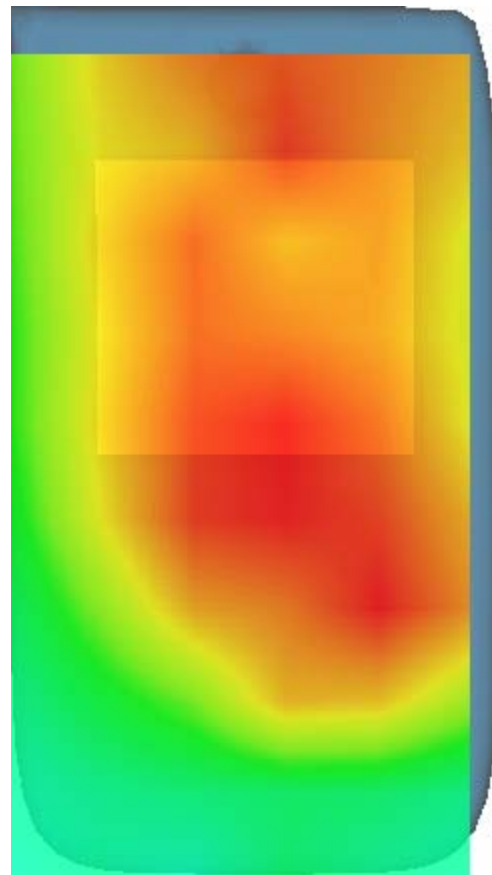
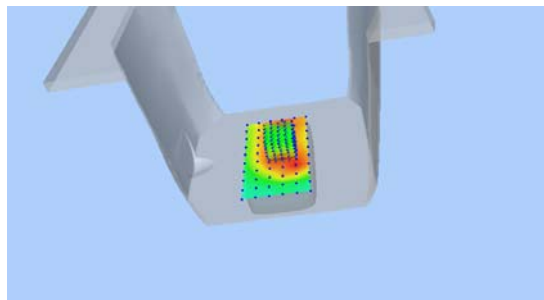
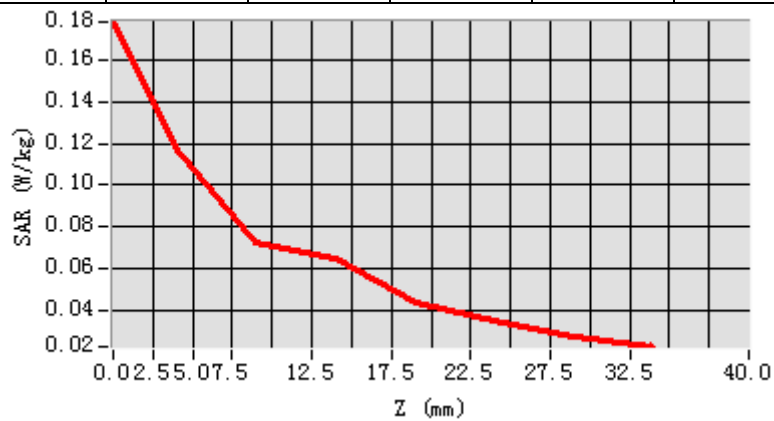
Frequency (MHz)	836.600000
Relative permittivity (real part)	55.338505
Relative permittivity (imaginary part)	20.838211
Conductivity (S/m)	0.968282
Variation (%)	-0.340000



Maximum location: X=5.00, Y=0.00

SAR Peak: 0.16 W/kg

SAR 10g (W/Kg)	0.080511
SAR 1g (W/Kg)	0.114155



MEASUREMENT 3

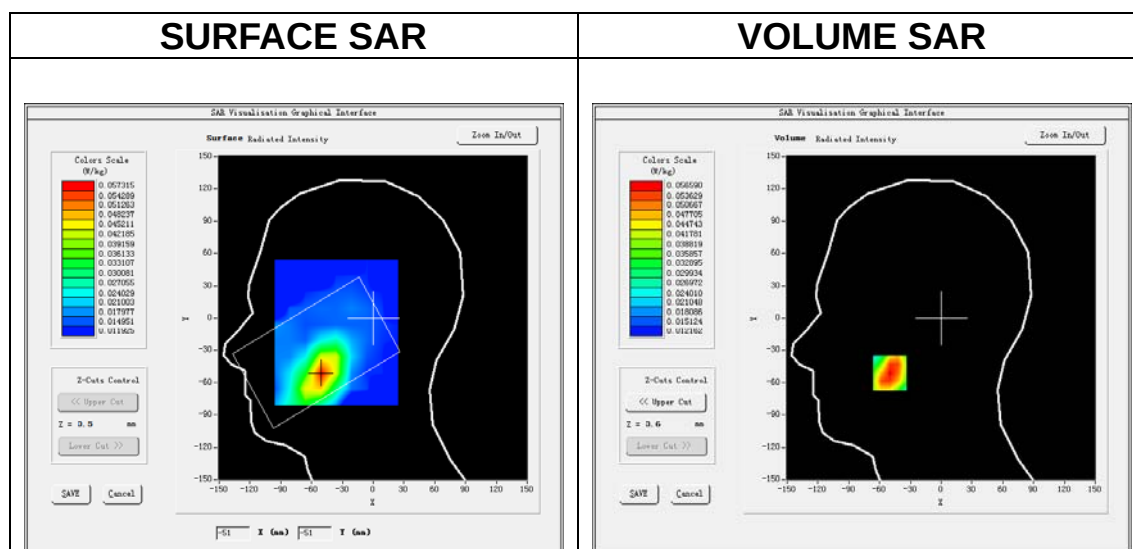
Date of measurement: 22/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>GSM1900</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>TDMA (Crest factor: 2.0)</u>

B. SAR Measurement Results

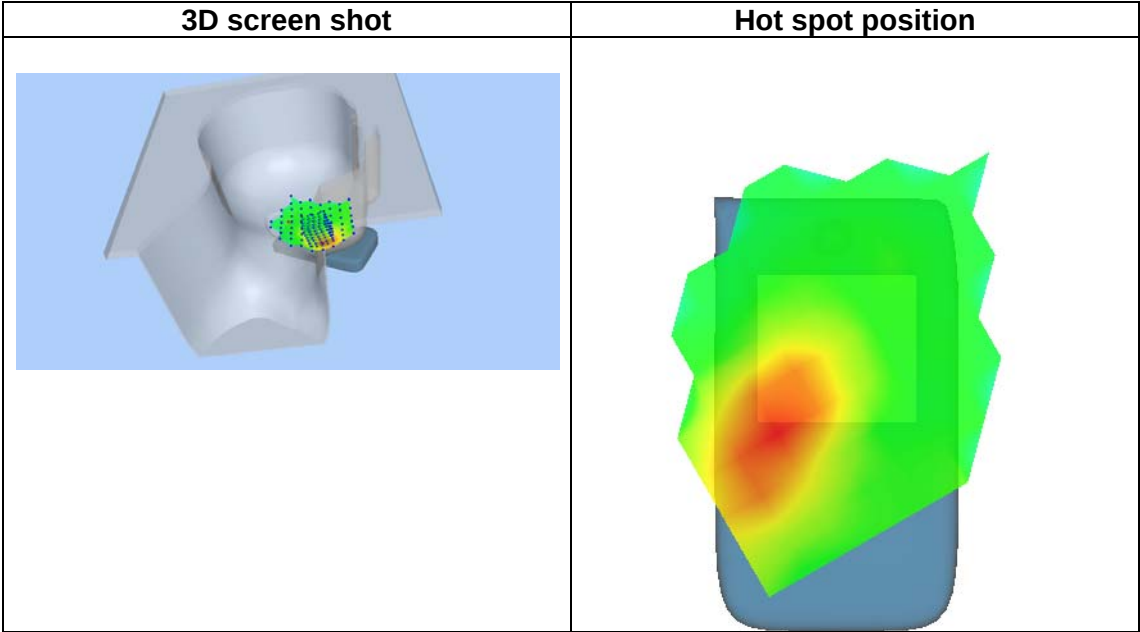
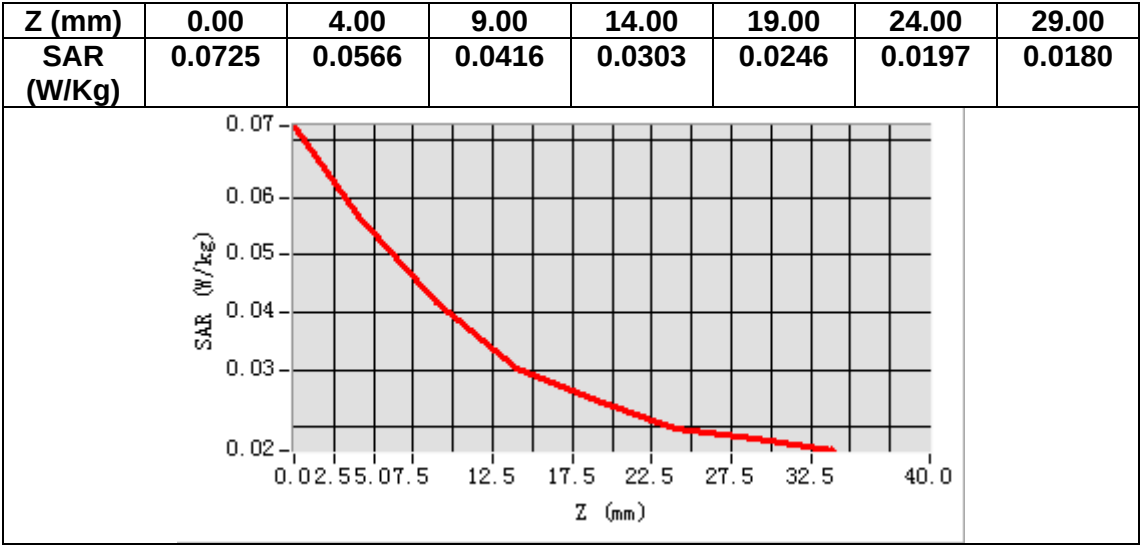
Frequency (MHz)	1880.000000
Relative permittivity (real part)	39.501461
Relative permittivity (imaginary part)	13.170200
Conductivity (S/m)	1.375554
Variation (%)	2.120000



Maximum location: X=-50.00, Y=-51.00

SAR Peak: 0.08 W/kg

SAR 10g (W/Kg)	0.036830
SAR 1g (W/Kg)	0.054434



MEASUREMENT 4

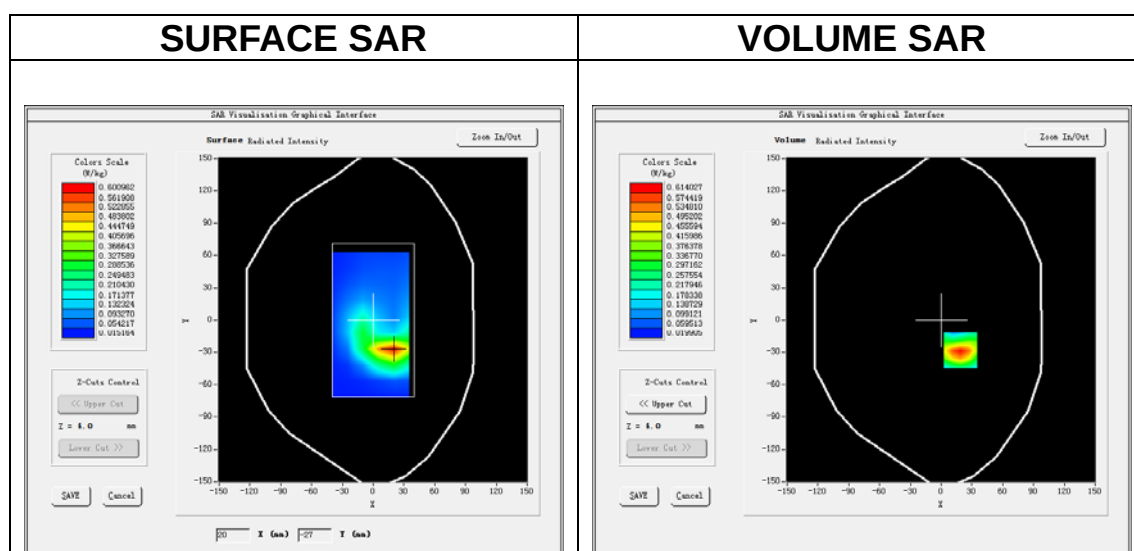
Date of measurement: 22/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>GSM1900</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>TDMA (Crest factor: 2.0)</u>

B. SAR Measurement Results

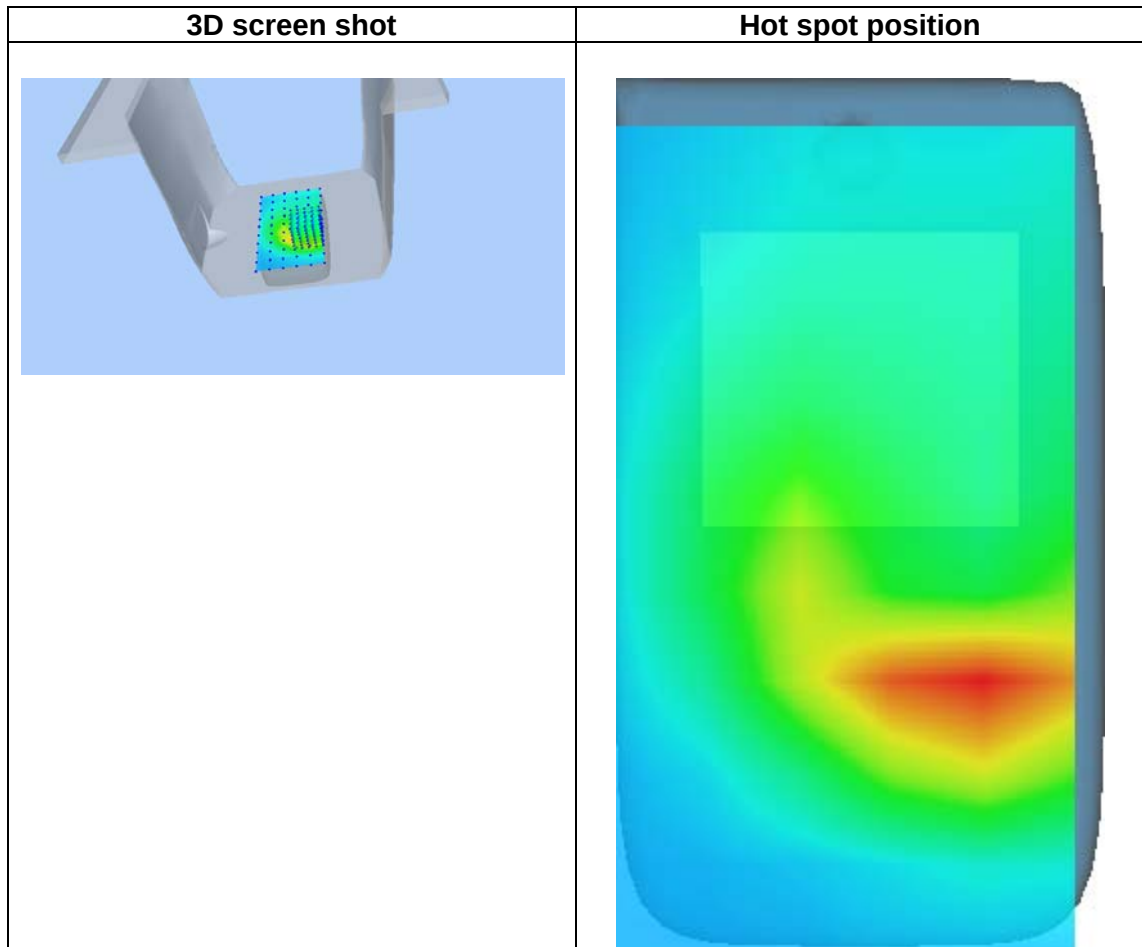
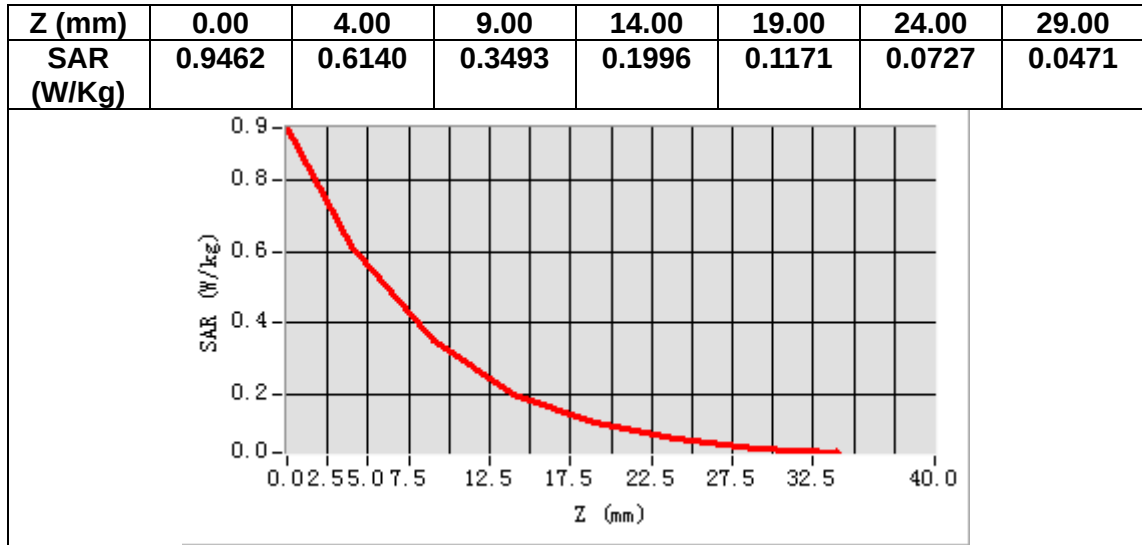
Frequency (MHz)	1880.000000
Relative permittivity (real part)	54.931885
Relative permittivity (imaginary part)	14.631157
Conductivity (S/m)	1.528143
Variation (%)	-2.800000



Maximum location: X=19.00, Y=-28.00

SAR Peak: 0.98 W/kg

SAR 10g (W/Kg)	0.297932
SAR 1g (W/Kg)	0.581104



MEASUREMENT 5

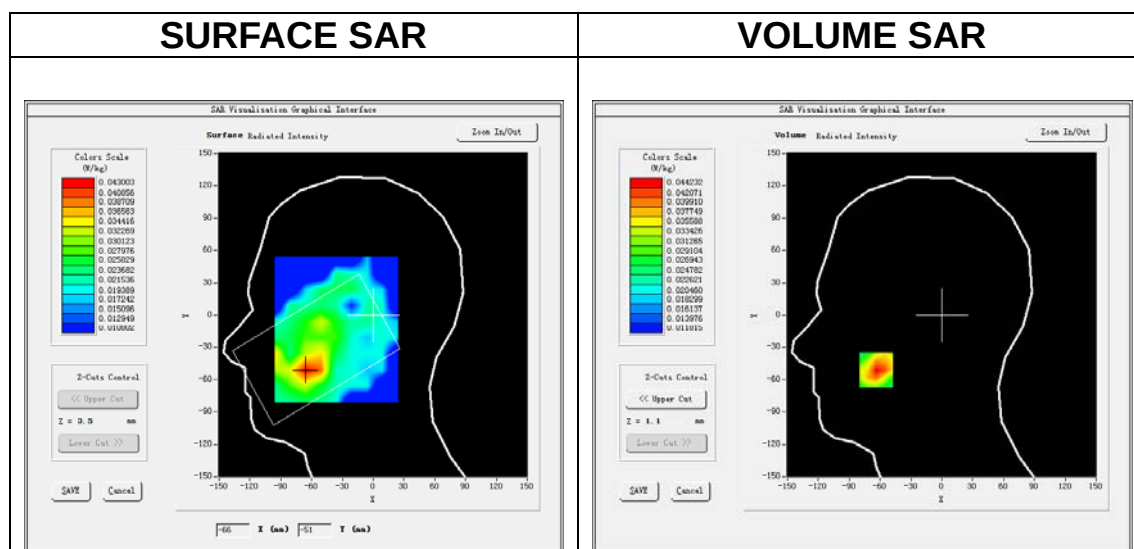
Date of measurement: 22/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>Band2 WCDMA1900</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>

B. SAR Measurement Results

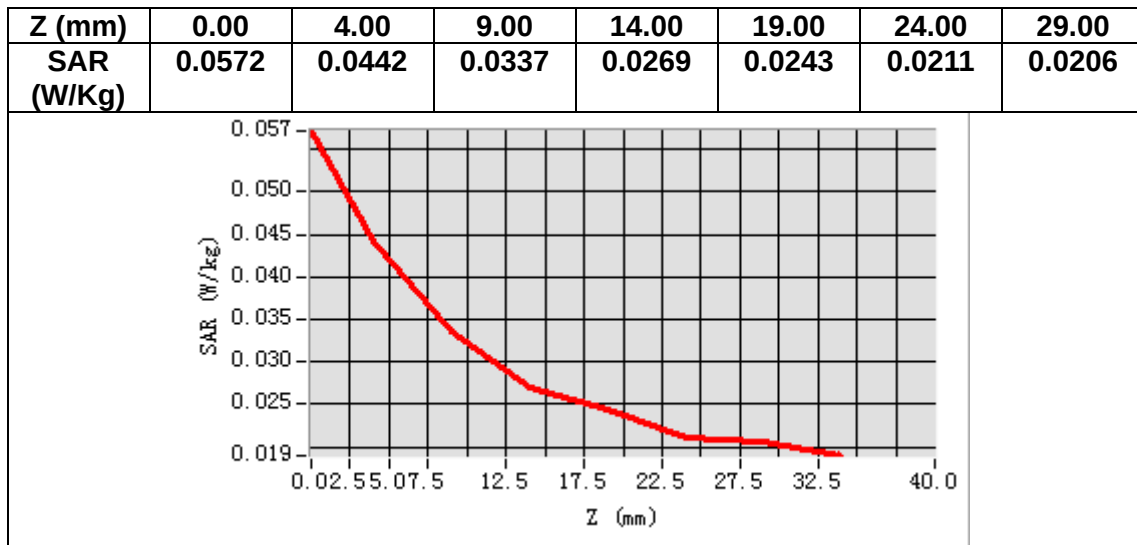
Frequency (MHz)	1880.000000
Relative permittivity (real part)	39.501461
Relative permittivity (imaginary part)	13.170200
Conductivity (S/m)	1.375554
Variation (%)	-3.620000



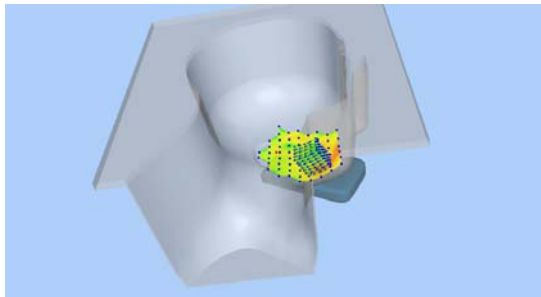
Maximum location: X=-64.00, Y=-51.00

SAR Peak: 0.06 W/kg

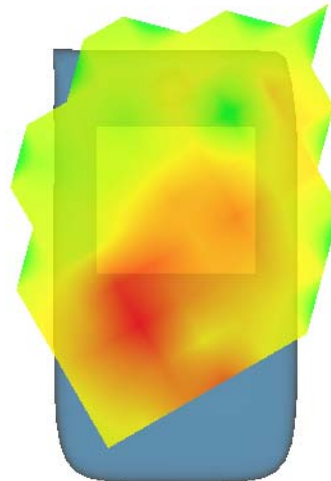
SAR 10g (W/Kg)	0.031056
SAR 1g (W/Kg)	0.042799



3D screen shot



Hot spot position



MEASUREMENT 6

Date of measurement: 22/12/2020

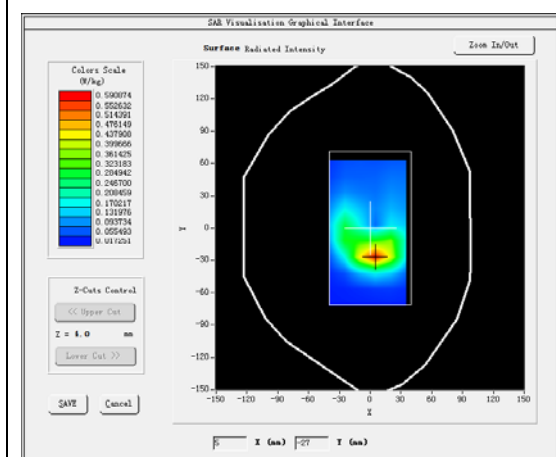
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>Band2 WCDMA1900</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>

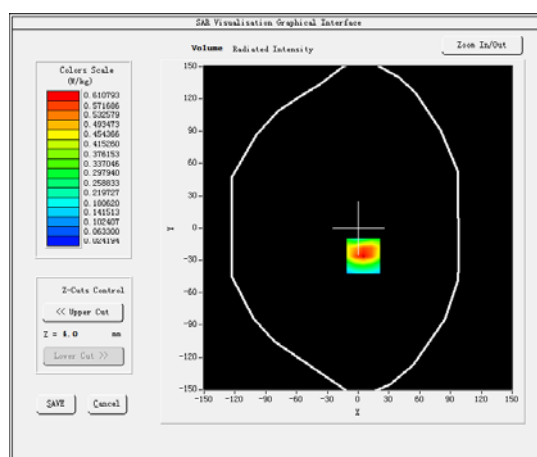
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	54.809654
Relative permittivity (imaginary part)	14.498893
Conductivity (S/m)	1.514329
Variation (%)	-0.700000

SURFACE SAR



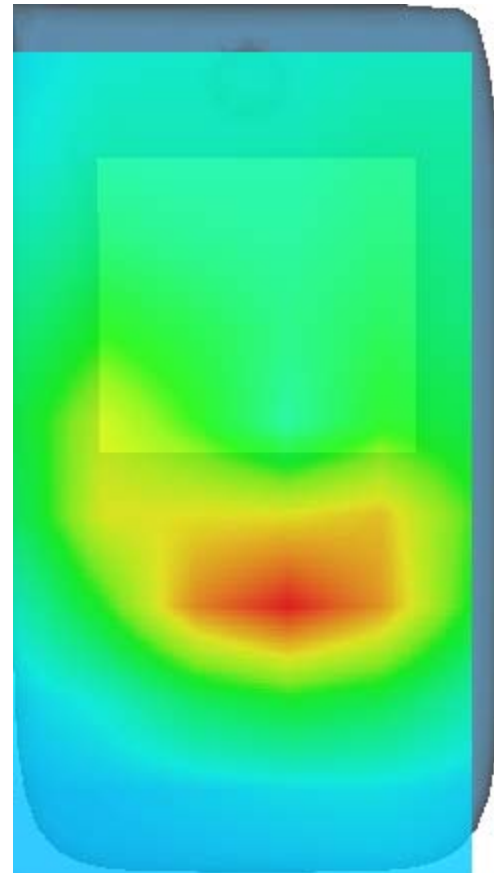
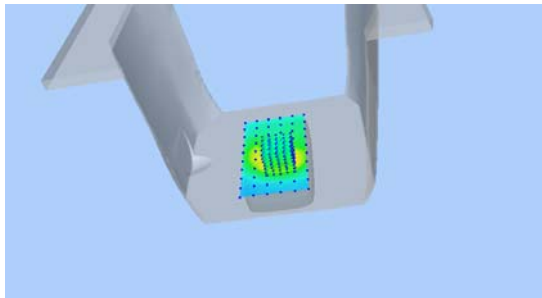
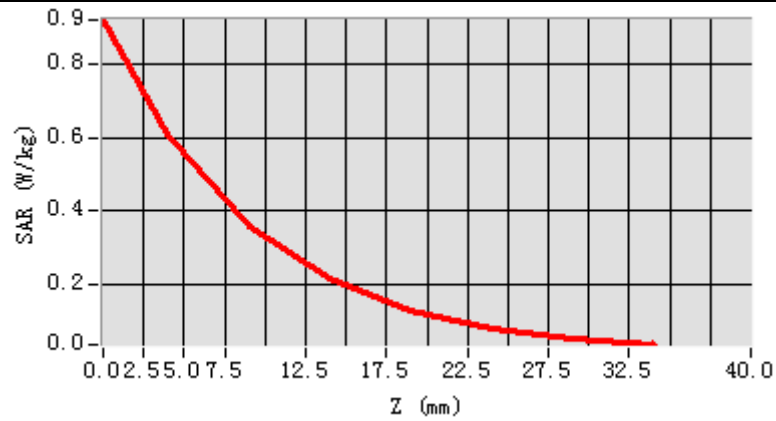
VOLUME SAR



Maximum location: X=5.00, Y=-26.00

SAR Peak: 0.99 W/kg

SAR 10g (W/Kg)	0.312658
SAR 1g (W/Kg)	0.592947



MEASUREMENT 7

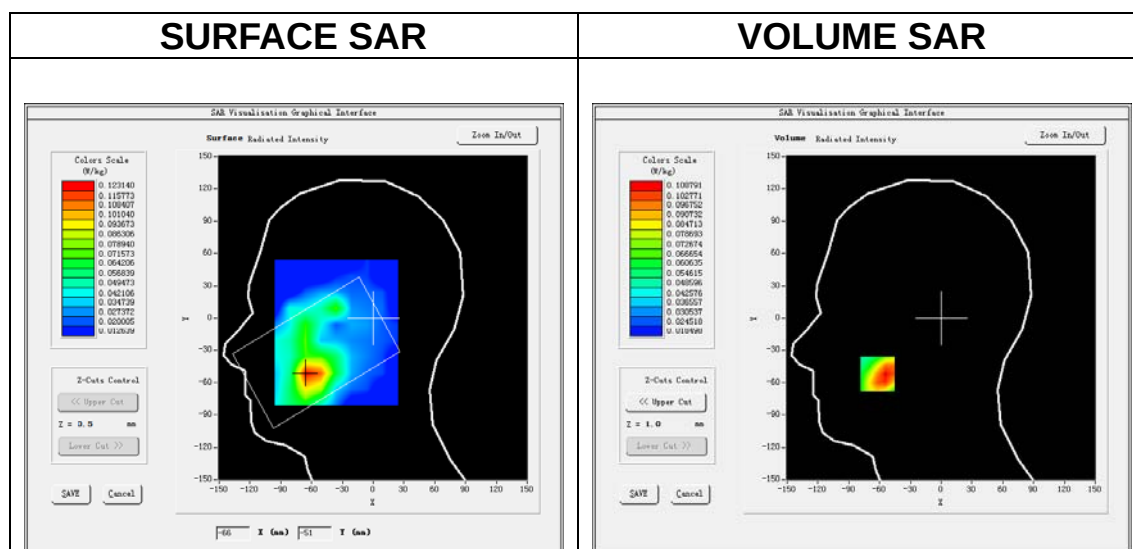
Date of measurement: 14/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>Band4 WCDMA1700</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>

B. SAR Measurement Results

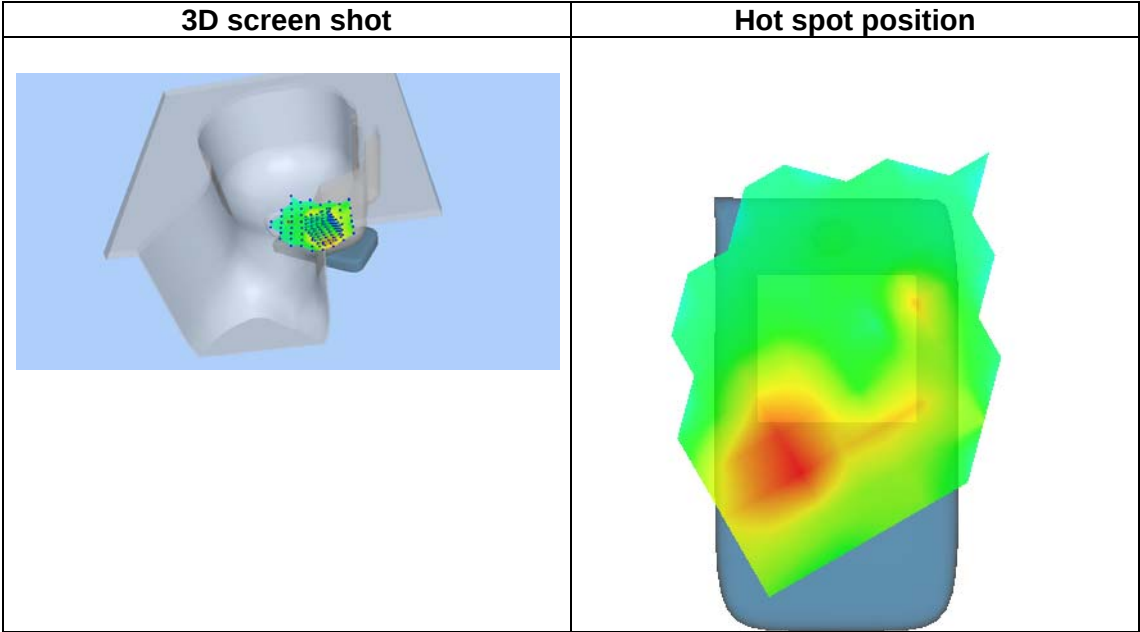
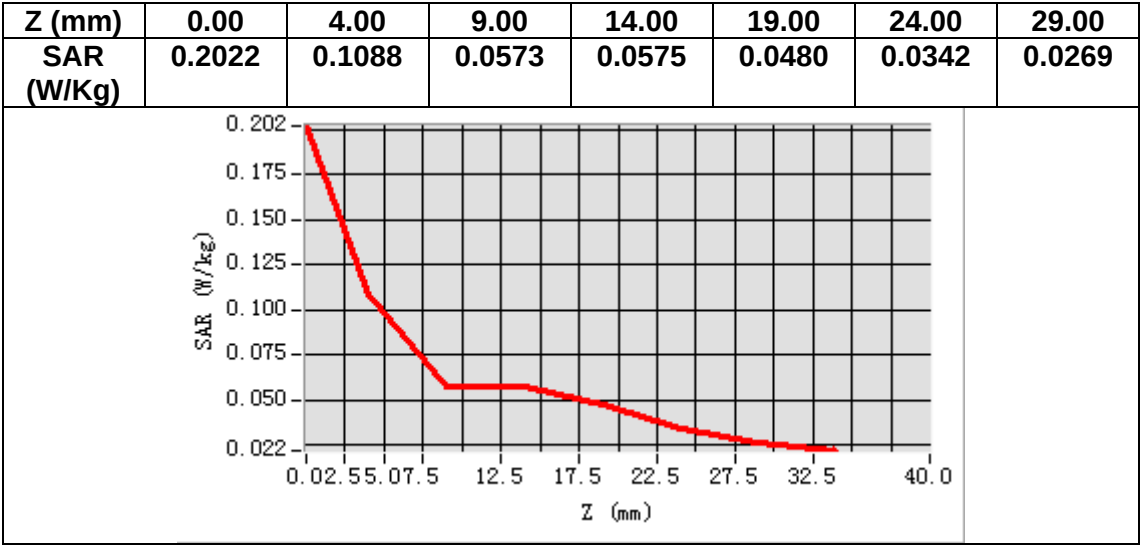
Frequency (MHz)	1740.000000
Relative permittivity (real part)	39.792583
Relative permittivity (imaginary part)	14.022578
Conductivity (S/m)	1.355516
Variation (%)	-4.920000



Maximum location: X=-62.00, Y=-52.00

SAR Peak: 0.15 W/kg

SAR 10g (W/Kg)	0.070250
SAR 1g (W/Kg)	0.105462



MEASUREMENT 8

Date of measurement: 21/12/2020

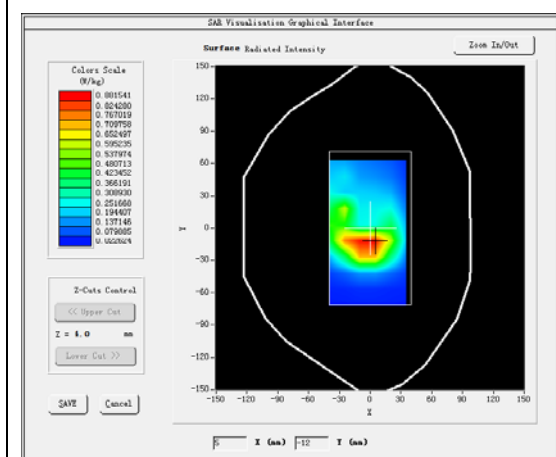
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>Band4 WCDMA1700</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>

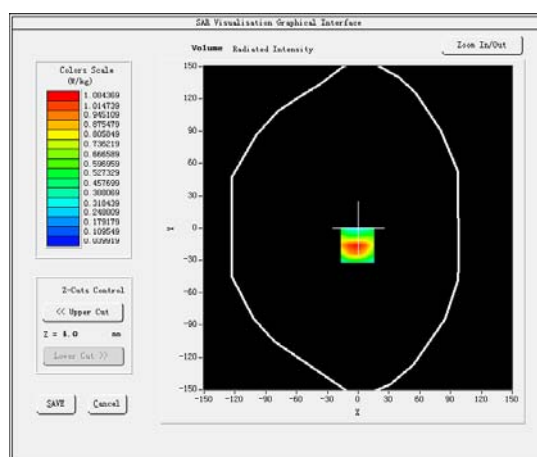
B. SAR Measurement Results

Frequency (MHz)	1740.000000
Relative permittivity (real part)	55.001352
Relative permittivity (imaginary part)	15.241527
Conductivity (S/m)	1.473348
Variation (%)	-0.420000

SURFACE SAR



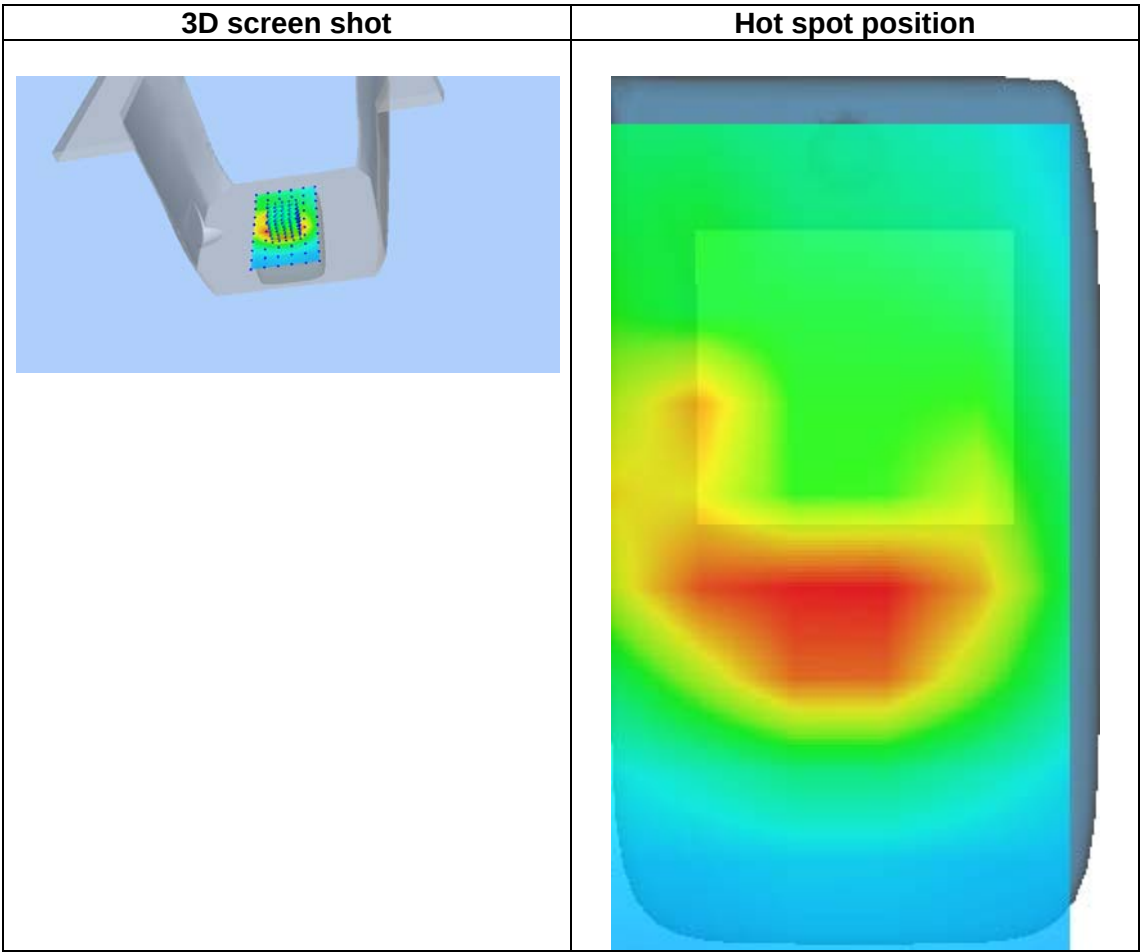
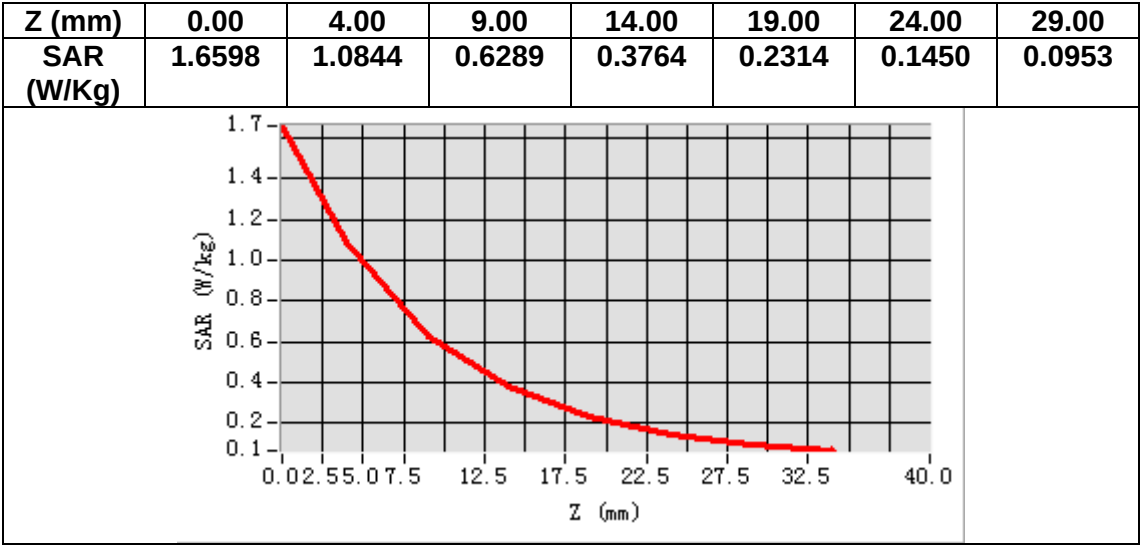
VOLUME SAR



Maximum location: X=-1.00, Y=-16.00

SAR Peak: 1.68 W/kg

SAR 10g (W/Kg)	0.556823
SAR 1g (W/Kg)	1.036238



MEASUREMENT 9

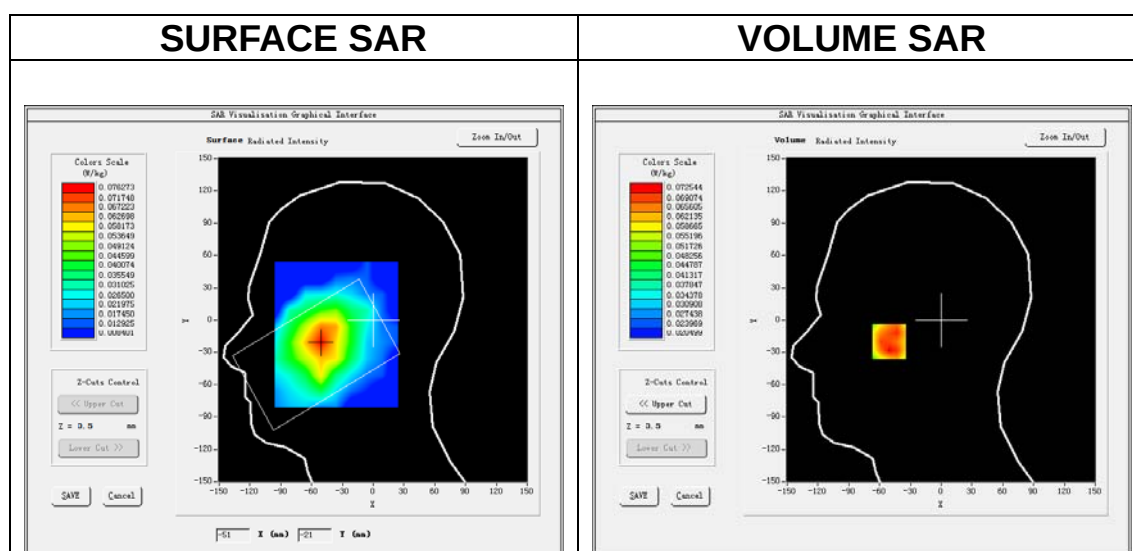
Date of measurement: 21/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>Band5 WCDMA850</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>

B. SAR Measurement Results

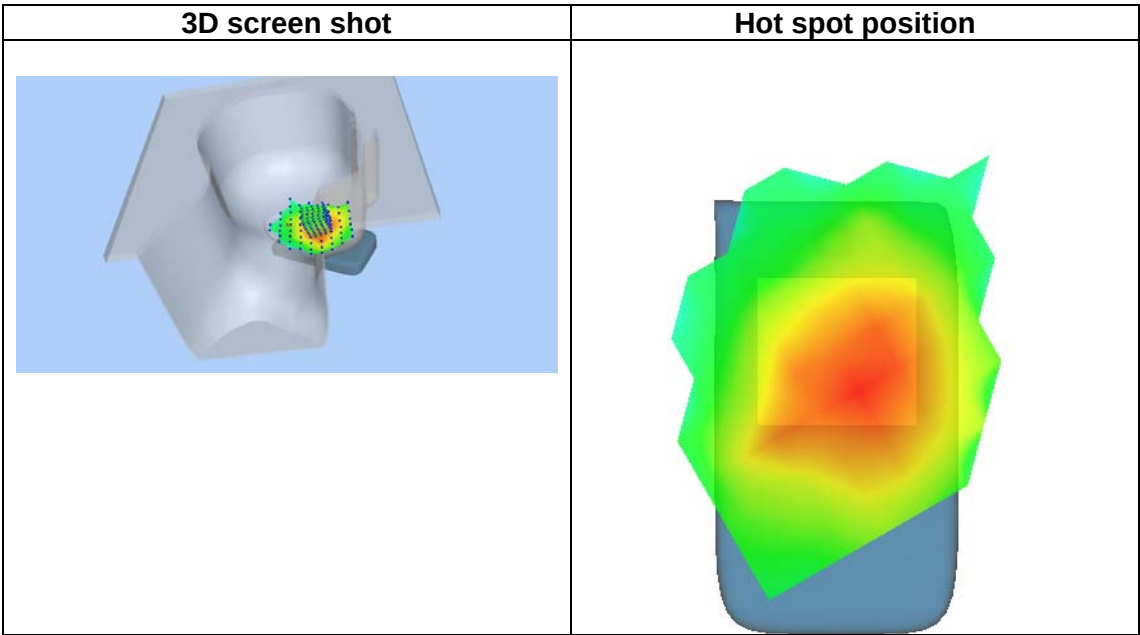
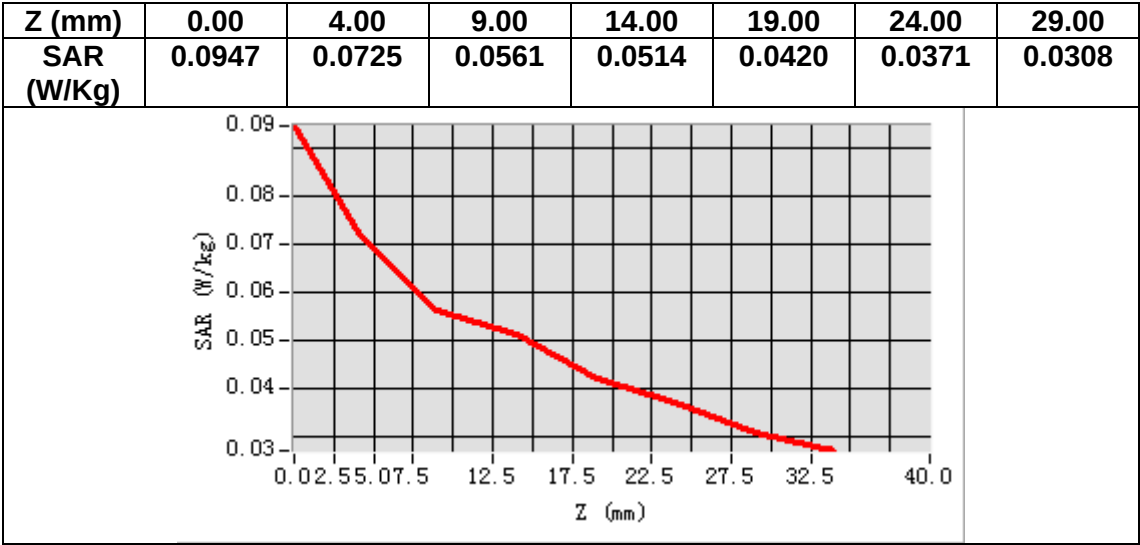
Frequency (MHz)	836.400000
Relative permittivity (real part)	41.509884
Relative permittivity (imaginary part)	19.637012
Conductivity (S/m)	0.912466
Variation (%)	-0.870000



Maximum location: X=-51.00, Y=-20.00

SAR Peak: 0.09 W/kg

SAR 10g (W/Kg)	0.052463
SAR 1g (W/Kg)	0.070193



MEASUREMENT 10

Date of measurement: 19/12/2020

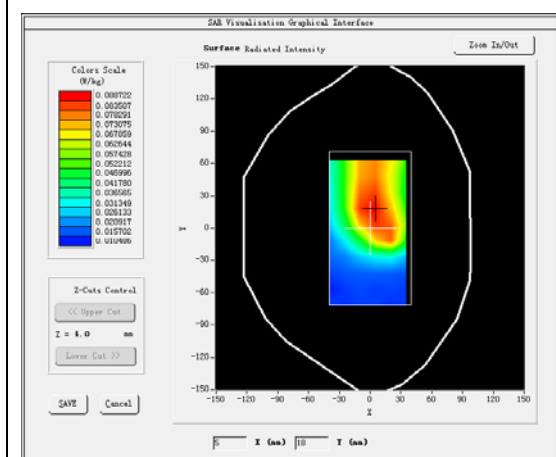
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>Band5 WCDMA850</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>

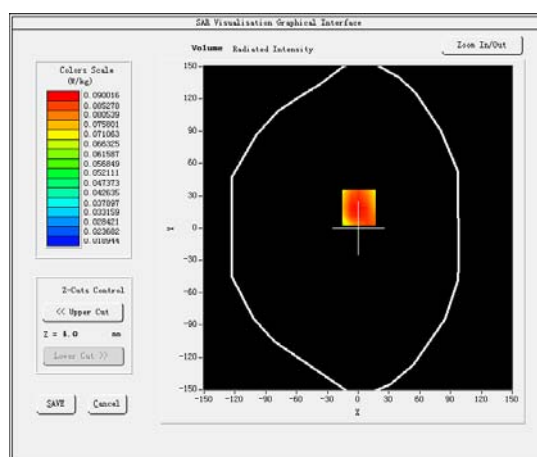
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	55.338505
Relative permittivity (imaginary part)	20.838211
Conductivity (S/m)	0.968282
Variation (%)	-0.750000

SURFACE SAR



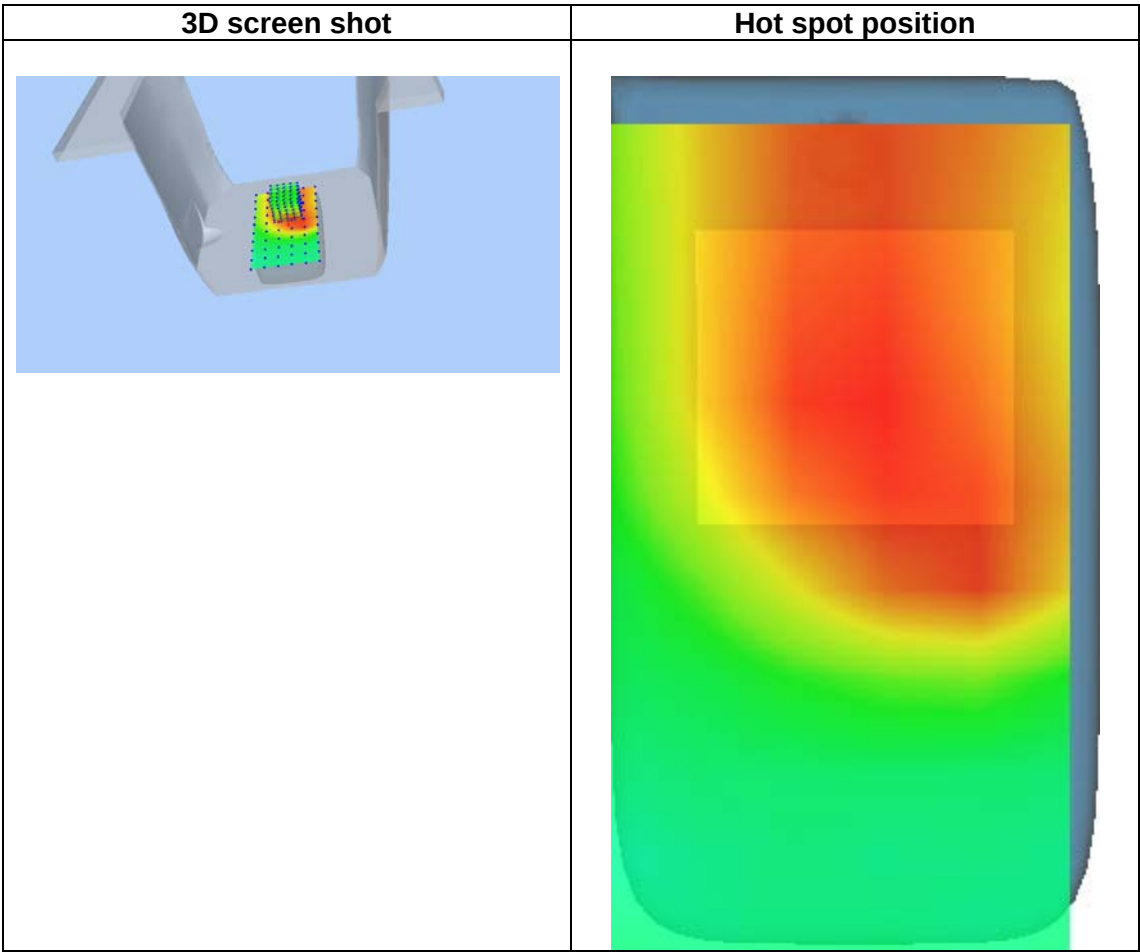
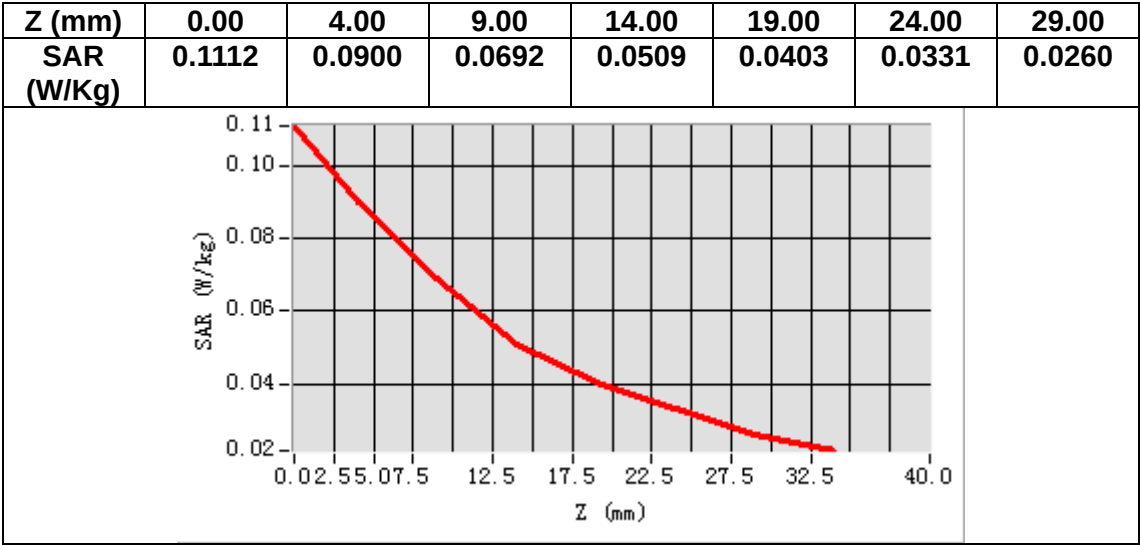
VOLUME SAR



Maximum location: X=1.00, Y=19.00

SAR Peak: 0.12 W/kg

SAR 10g (W/Kg)	0.063661
SAR 1g (W/Kg)	0.087105



MEASUREMENT 11

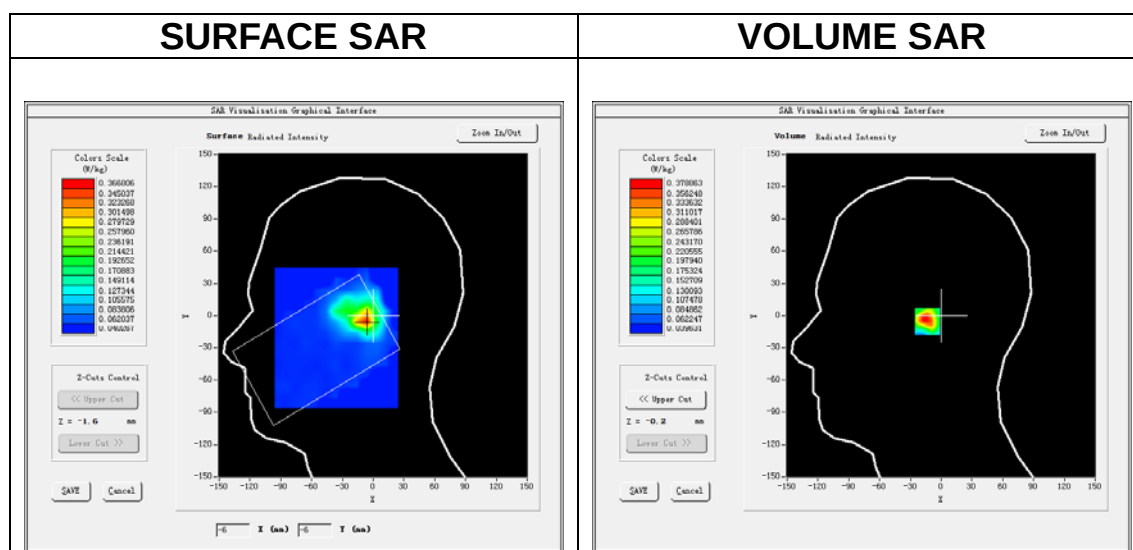
Date of measurement: 16/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>IEEE 802.11a U-NII</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>IEEE802.11a (Crest factor: 1.0)</u>

B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	36.611137
Relative permittivity (imaginary part)	16.089355
Conductivity (S/m)	4.648036
Variation (%)	1.120000

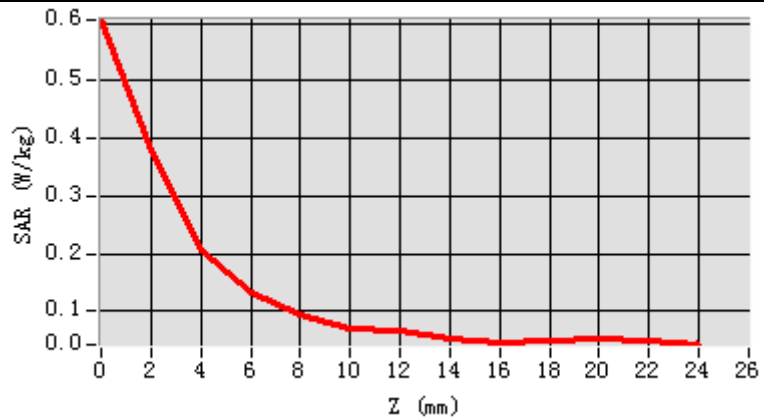


Maximum location: X=-8.00, Y=-5.00

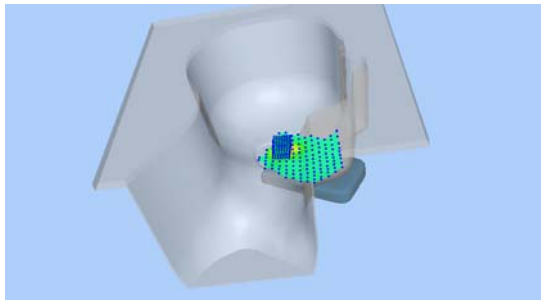
SAR Peak: 0.99 W/kg

SAR 10g (W/Kg)	0.162052
SAR 1g (W/Kg)	0.382356

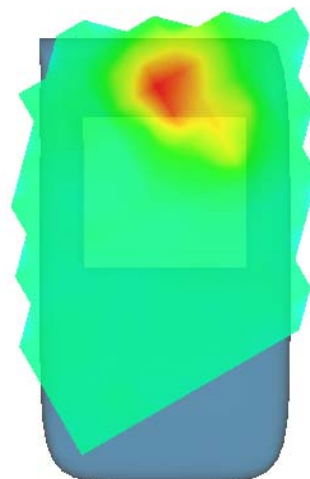
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.0	12.0	14.0	16.0	18.0	20.0	22.0
SA R (W/ Kg)	0.60 61	0.37 89	0.20 49	0.13 21	0.09 30	0.07 06	0.06 58	0.05 40	0.04 62	0.04 80	0.05 21	0.04 77



3D screen shot



Hot spot position



MEASUREMENT 12

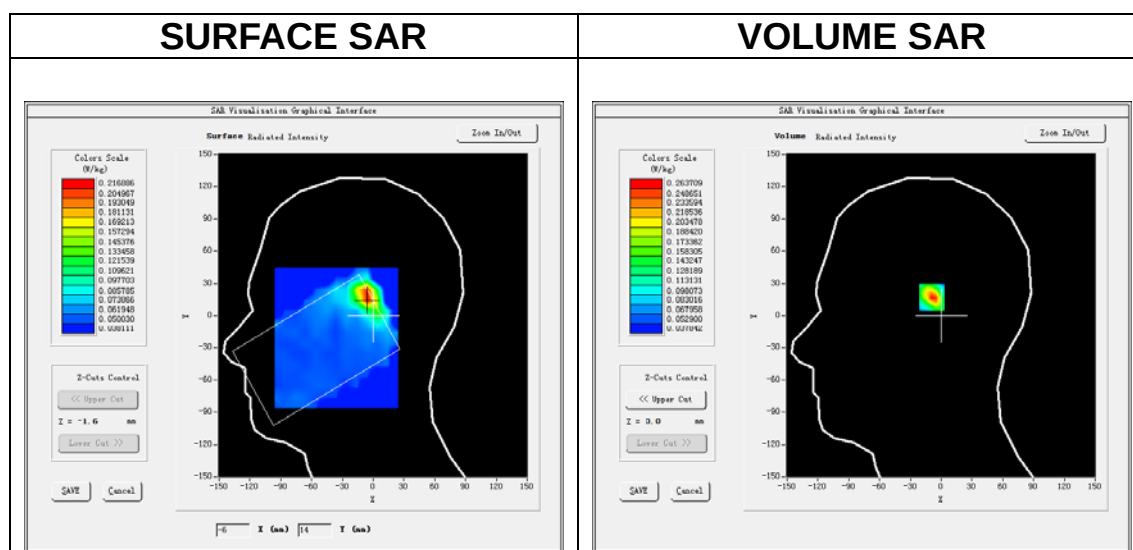
Date of measurement: 18/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>IEEE 802.11a U-NII</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>IEEE802.11a (Crest factor: 1.0)</u>

B. SAR Measurement Results

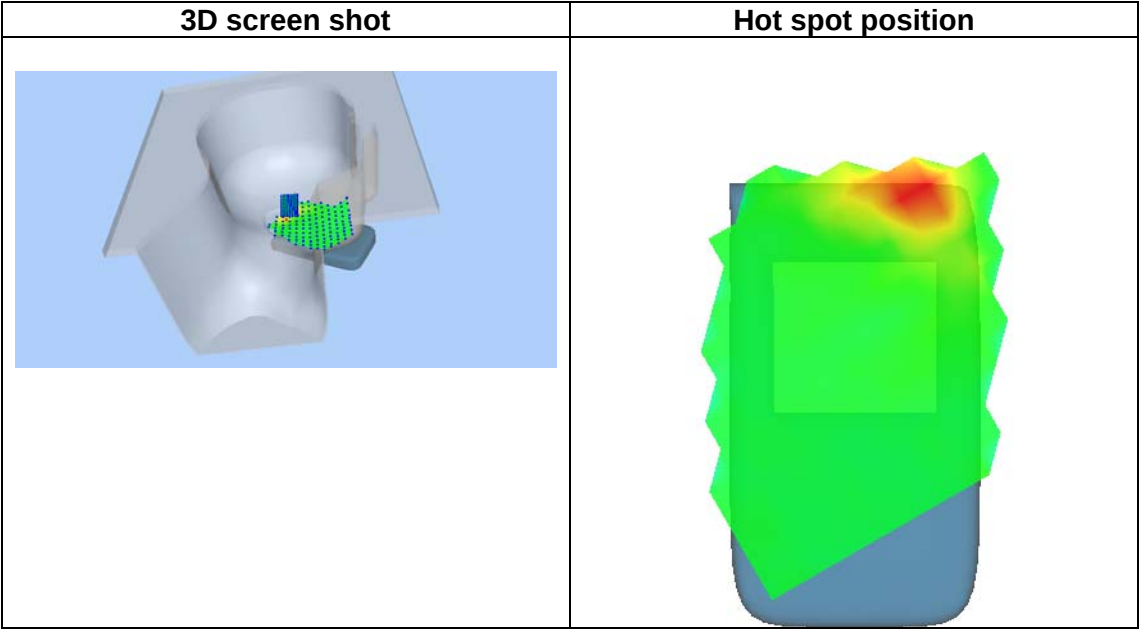
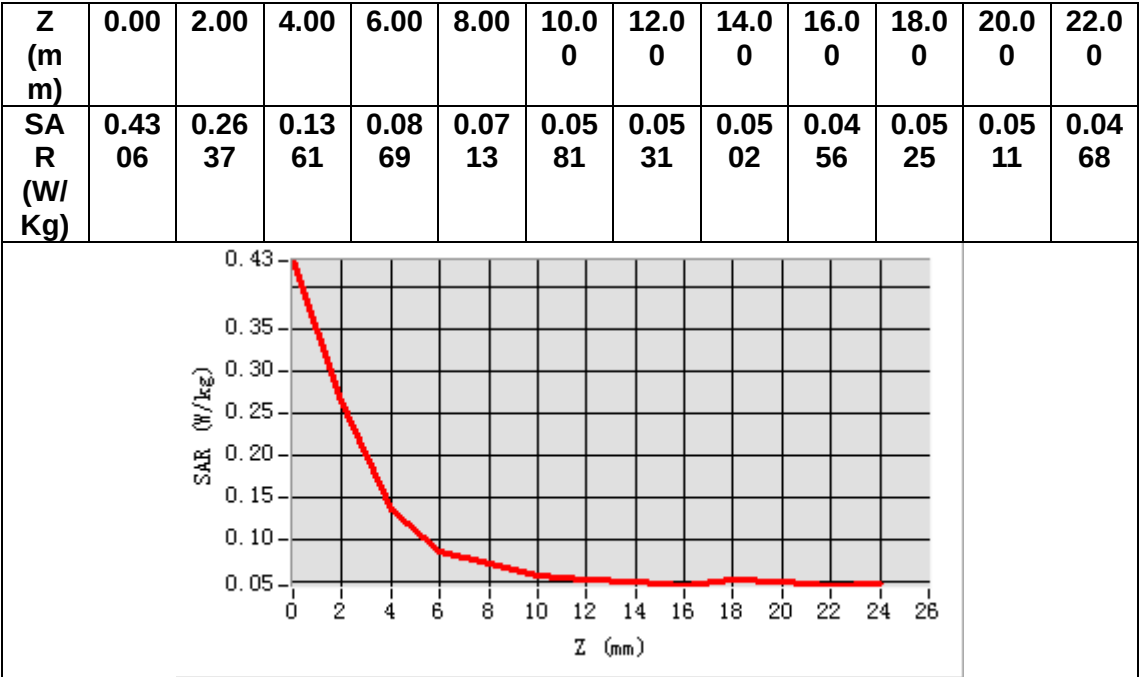
Frequency (MHz)	5785.000000
Relative permittivity (real part)	35.149773
Relative permittivity (imaginary part)	16.386665
Conductivity (S/m)	5.266492
Variation (%)	-4.740000



Maximum location: X=-6.00, Y=18.00

SAR Peak: 0.69 W/kg

SAR 10g (W/Kg)	0.111799
SAR 1g (W/Kg)	0.251801



MEASUREMENT 13

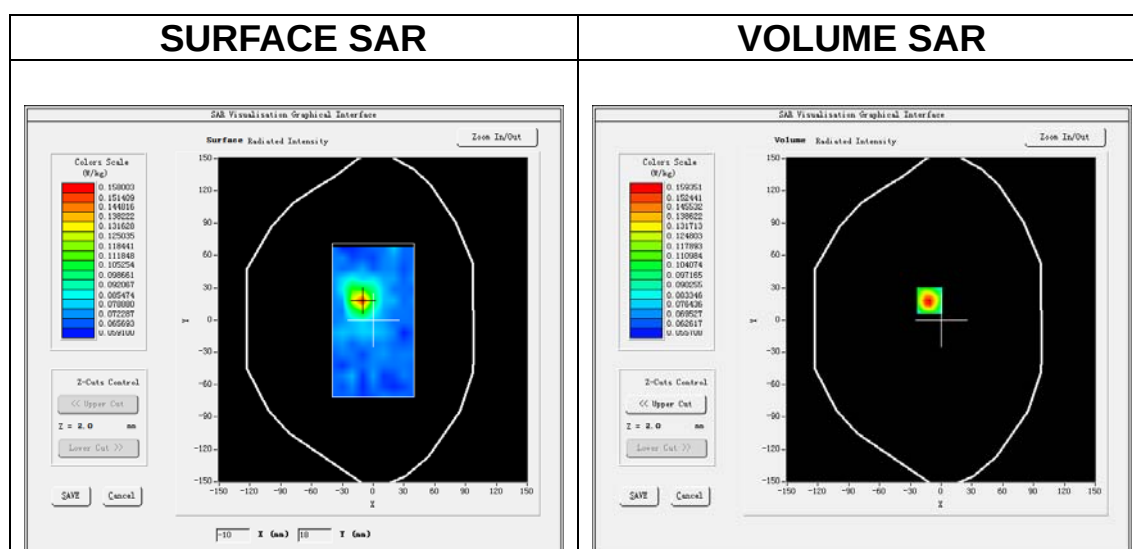
Date of measurement: 24/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>IEEE 802.11a U-NII</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>IEEE802.11a (Crest factor: 1.0)</u>

B. SAR Measurement Results

Frequency (MHz)	5785.000000
Relative permittivity (real part)	48.783165
Relative permittivity (imaginary part)	18.656767
Conductivity (S/m)	5.996077
Variation (%)	-1.020000



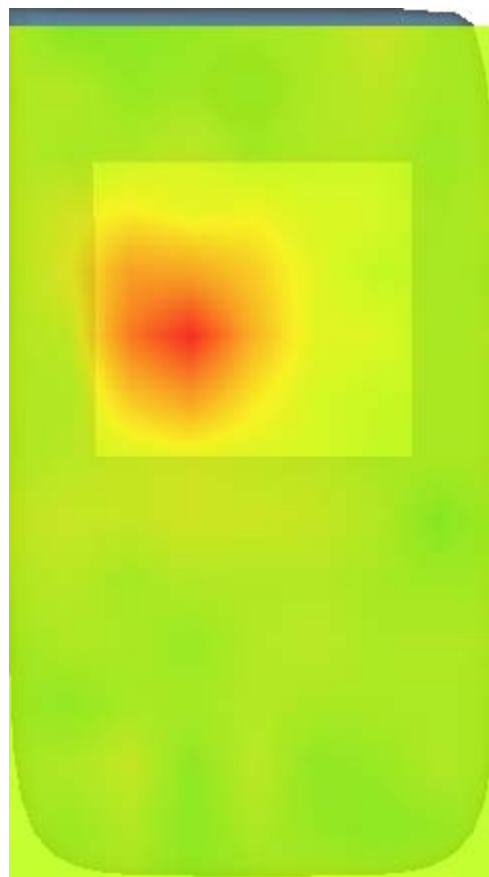
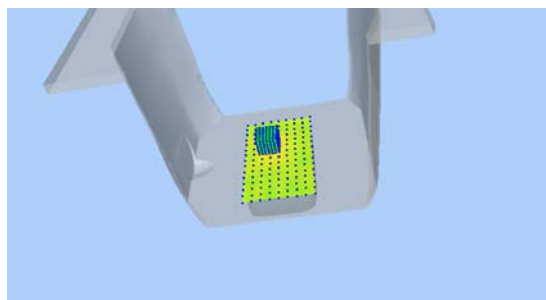
Maximum location: X=-11.00, Y=18.00

SAR Peak: 0.24 W/kg

SAR 10g (W/Kg)	0.080011
SAR 1g (W/Kg)	0.117076

Figure 10 is a line graph showing the SAR (W/kg) as a function of Z (mm) for the 1000 MHz antenna. The y-axis represents SAR (W/kg) and ranges from 0.06 to 0.23. The x-axis represents Z (mm) and ranges from 0 to 26. The SAR value starts at approximately 0.23 W/kg at Z=0 and decreases rapidly, reaching a plateau of about 0.06 W/kg for Z values greater than 8 mm.

Hot spot position



MEASUREMENT 14

Date of measurement: 24/12/2020

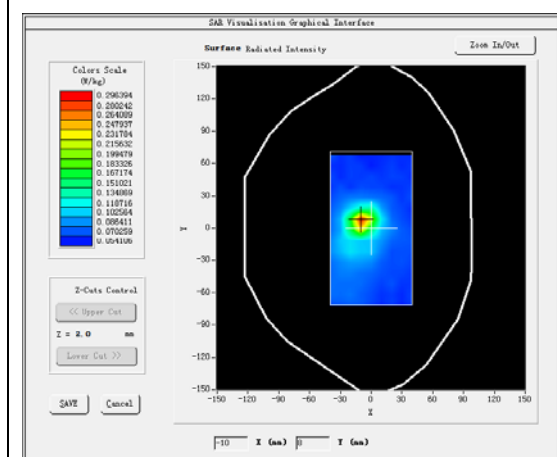
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>IEEE 802.11a U-NII</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>IEEE802.11a (Crest factor: 1.0)</u>

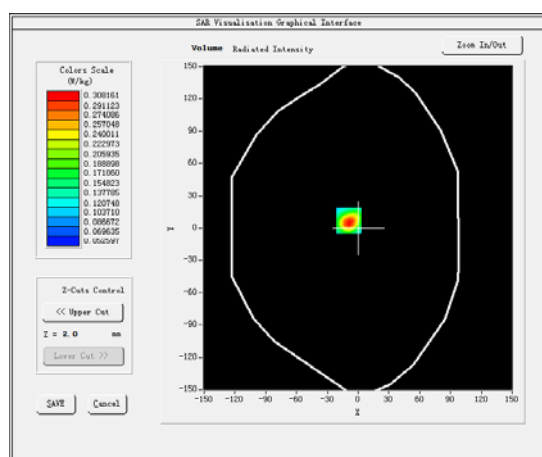
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	50.256229
Relative permittivity (imaginary part)	18.477774
Conductivity (S/m)	5.338023
Variation (%)	0.630000

SURFACE SAR



VOLUME SAR



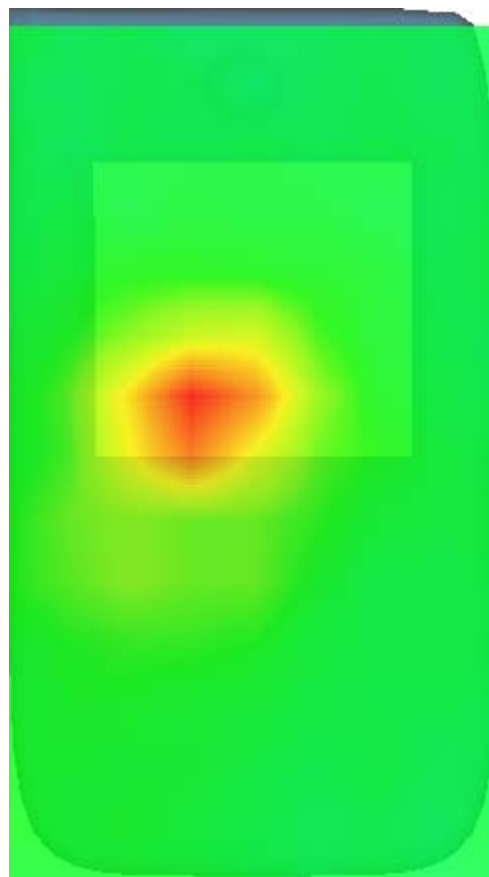
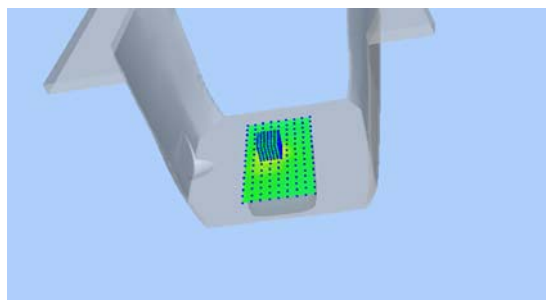
Maximum location: X=-9.00, Y=7.00

SAR Peak: 0.51 W/kg

SAR 10g (W/Kg)	0.107477
SAR 1g (W/Kg)	0.199477

Z (mm)	SAR (W/kg)
0	0.48
2	0.32
4	0.16
6	0.13
8	0.09
10	0.08
12	0.07
14	0.06
16	0.06
18	0.06
20	0.06
22	0.06
24	0.06

Hot spot position



MEASUREMENT 15

Date of measurement: 15/12/2020

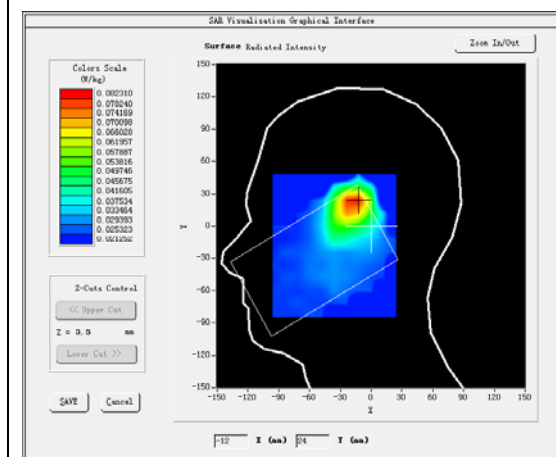
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>7x7x7,dx=5mm dy=5mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>IEEE 802.11b ISM</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>IEEE802.11b (Crest factor: 1.0)</u>

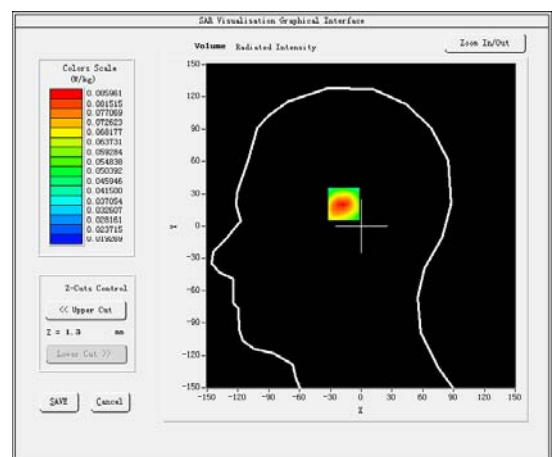
B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative permittivity (real part)	39.249187
Relative permittivity (imaginary part)	13.588757
Conductivity (S/m)	1.843541
Variation (%)	-0.750000

SURFACE SAR



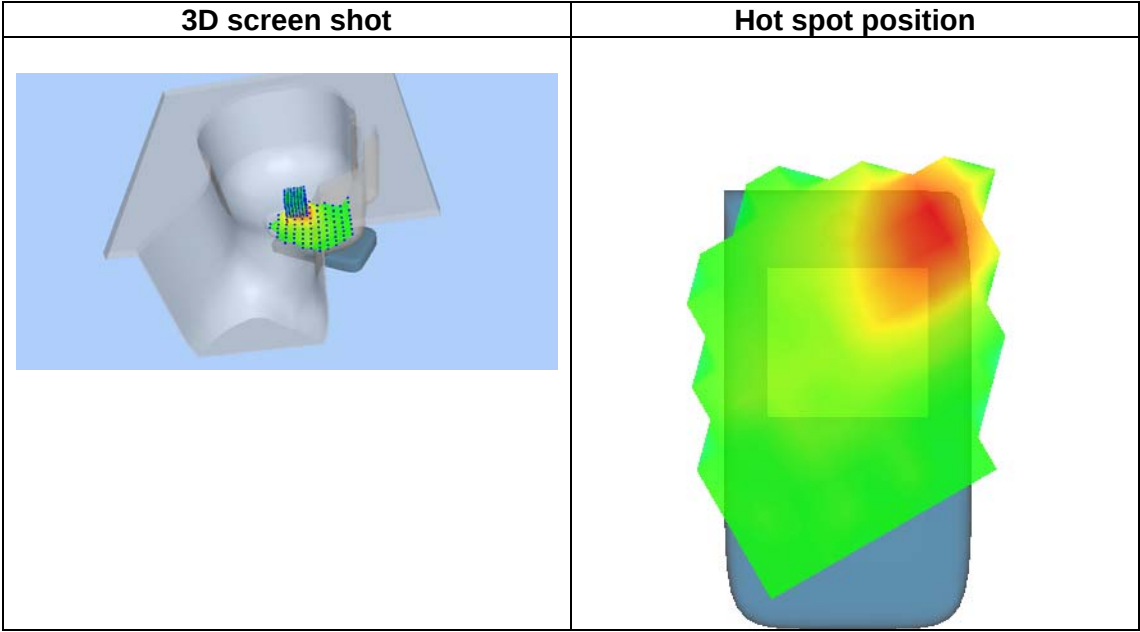
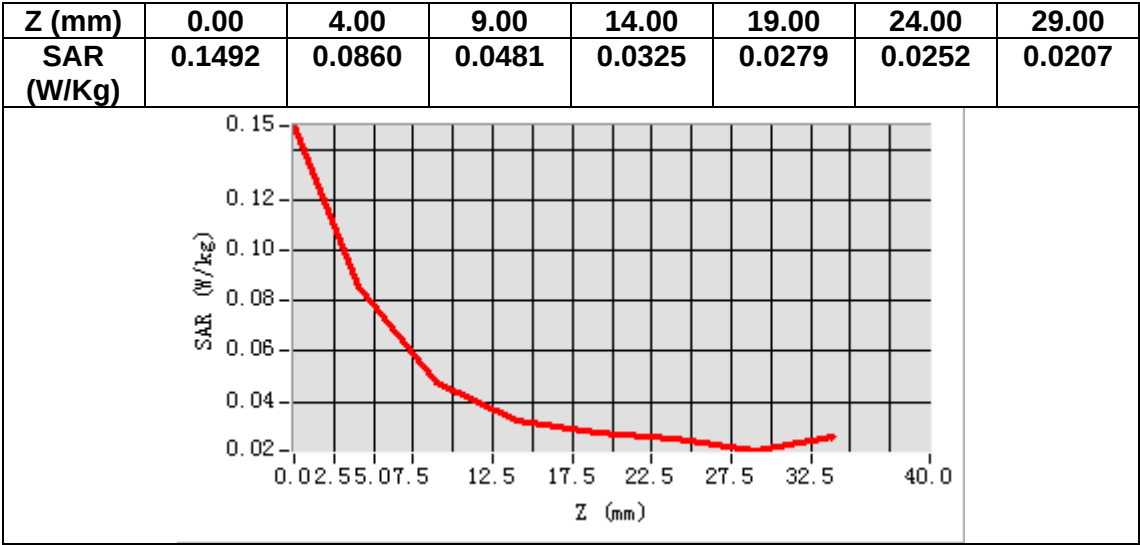
VOLUME SAR



Maximum location: X=-16.00, Y=22.00

SAR Peak: 0.15 W/kg

SAR 10g (W/Kg)	0.051776
SAR 1g (W/Kg)	0.084109



MEASUREMENT 16

Date of measurement: 23/12/2020

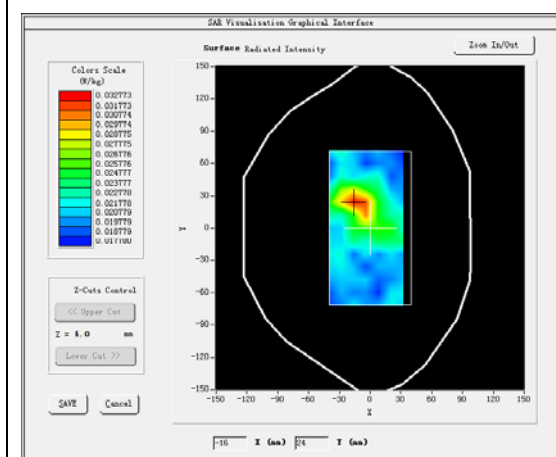
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>7x7x7,dx=5mm dy=5mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>IEEE 802.11b ISM</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>IEEE802.11b (Crest factor: 1.0)</u>

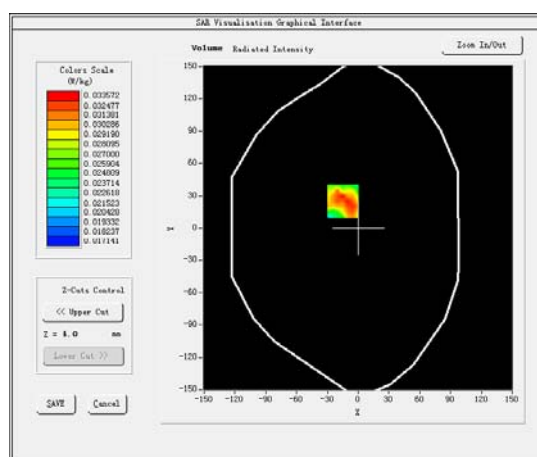
B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative permittivity (real part)	52.435211
Relative permittivity (imaginary part)	14.309257
Conductivity (S/m)	1.937314
Variation (%)	2.920000

SURFACE SAR



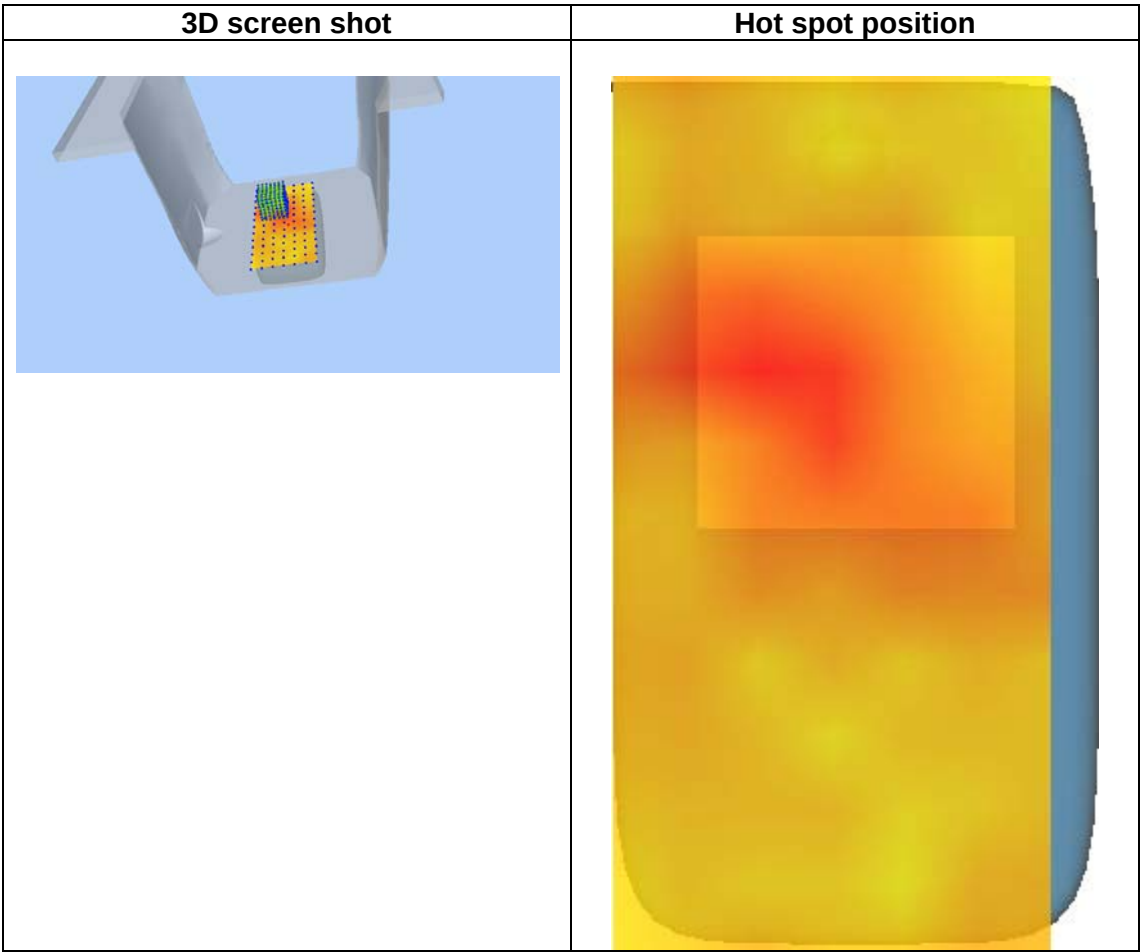
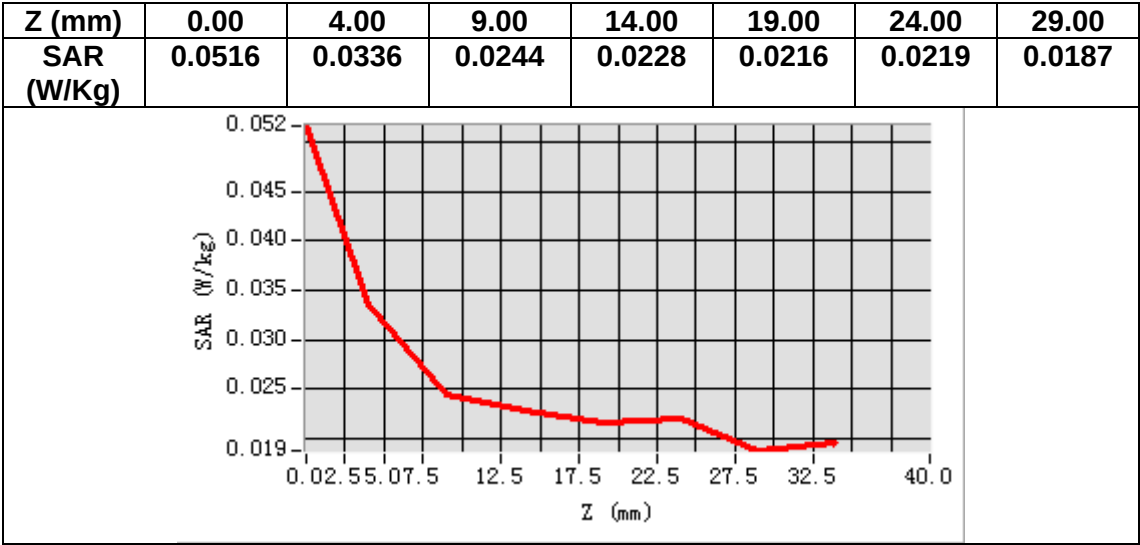
VOLUME SAR



Maximum location: X=-15.00, Y=25.00

SAR Peak: 0.05 W/kg

SAR 10g (W/Kg)	0.026038
SAR 1g (W/Kg)	0.032327



MEASUREMENT 17

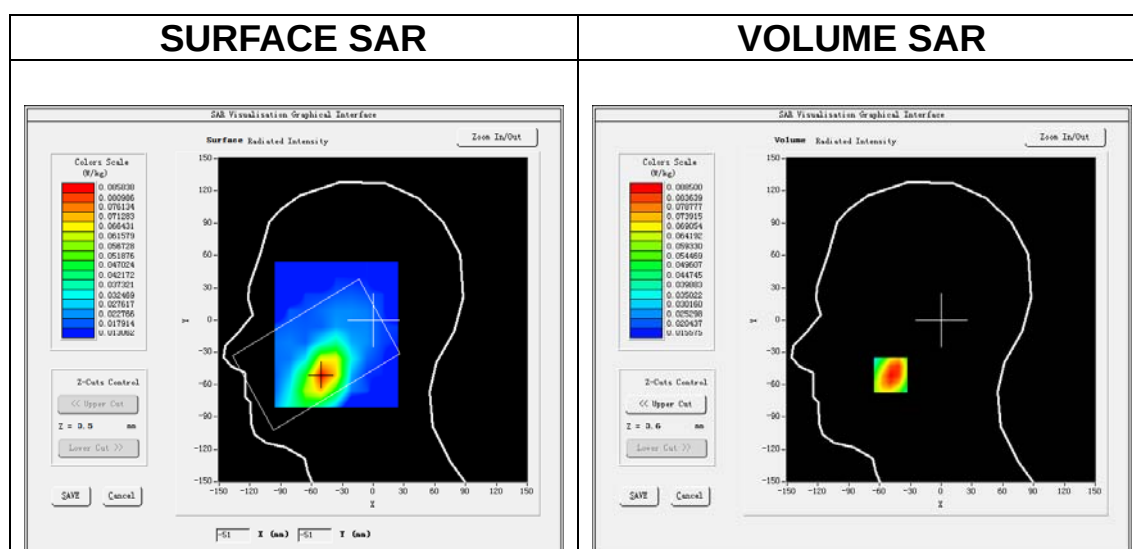
Date of measurement: 22/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>LTE band 2</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

B. SAR Measurement Results

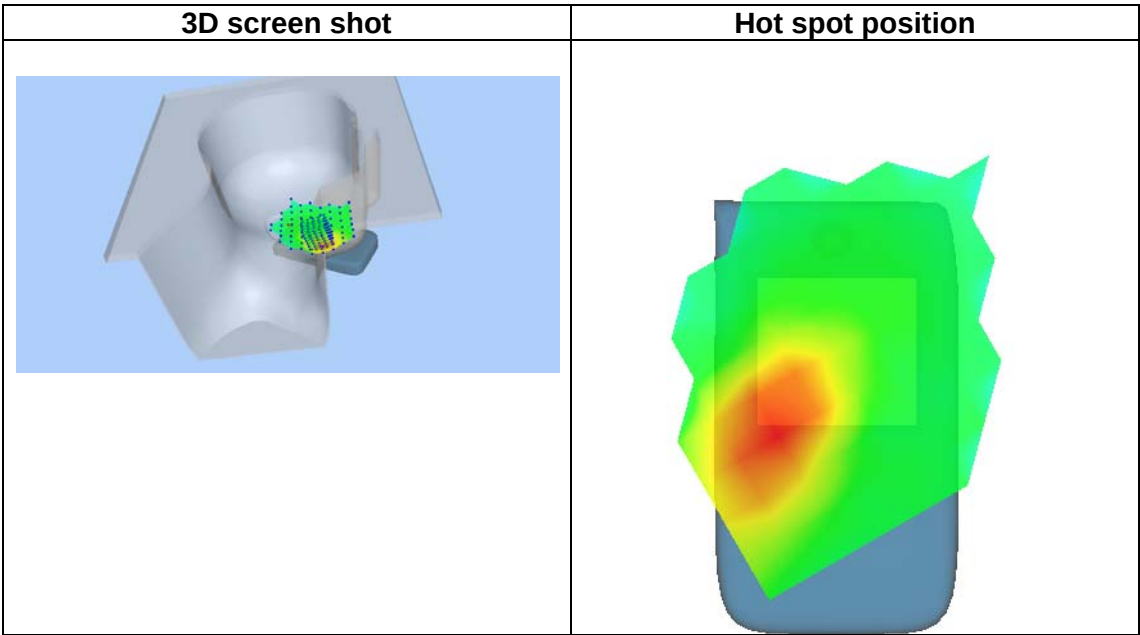
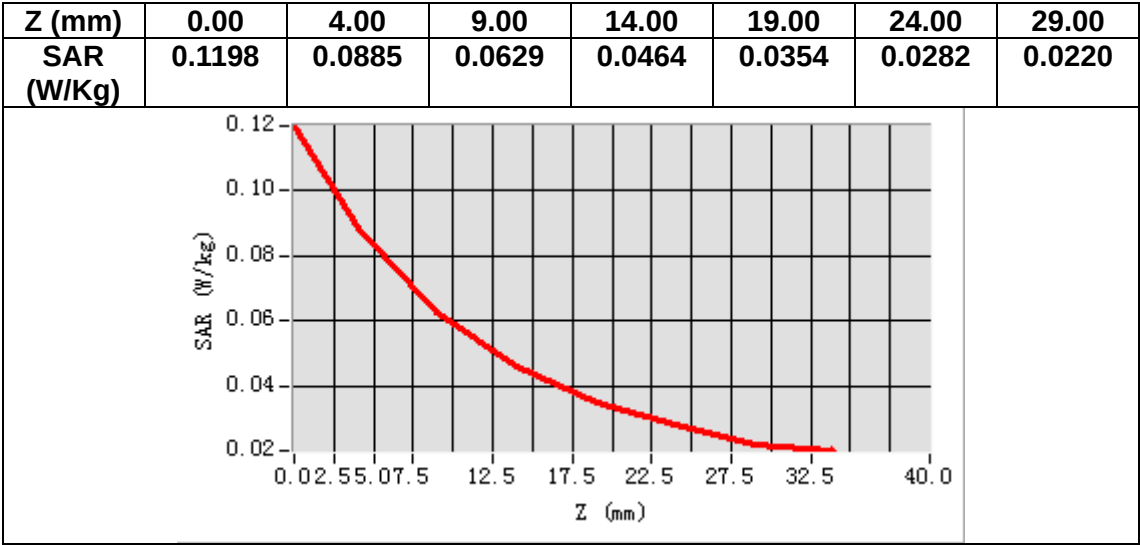
Frequency (MHz)	1880.000000
Relative permittivity (real part)	39.501461
Relative permittivity (imaginary part)	13.170200
Conductivity (S/m)	1.375554
Variation (%)	2.080000



Maximum location: X=-49.00, Y=-51.00

SAR Peak: 0.12 W/kg

SAR 10g (W/Kg)	0.056459
SAR 1g (W/Kg)	0.086474



MEASUREMENT 18

Date of measurement: 22/12/2020

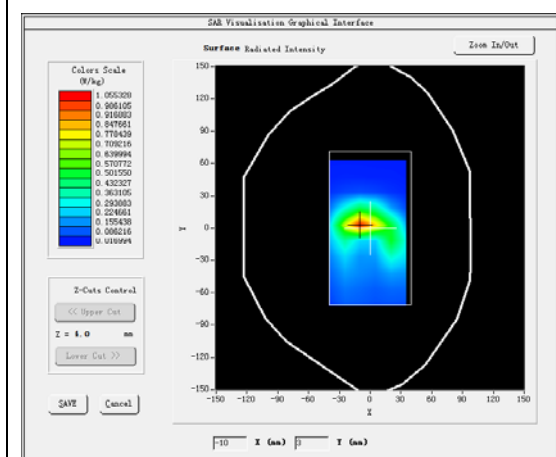
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 2</u>
<u>Channels</u>	<u>Low</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

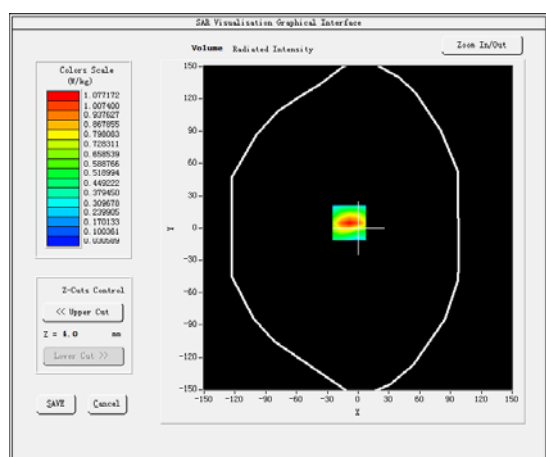
B. SAR Measurement Results

Frequency (MHz)	1860.000000
Relative permittivity (real part)	55.001186
Relative permittivity (imaginary part)	14.692357
Conductivity (S/m)	1.518210
Variation (%)	-0.650000

SURFACE SAR



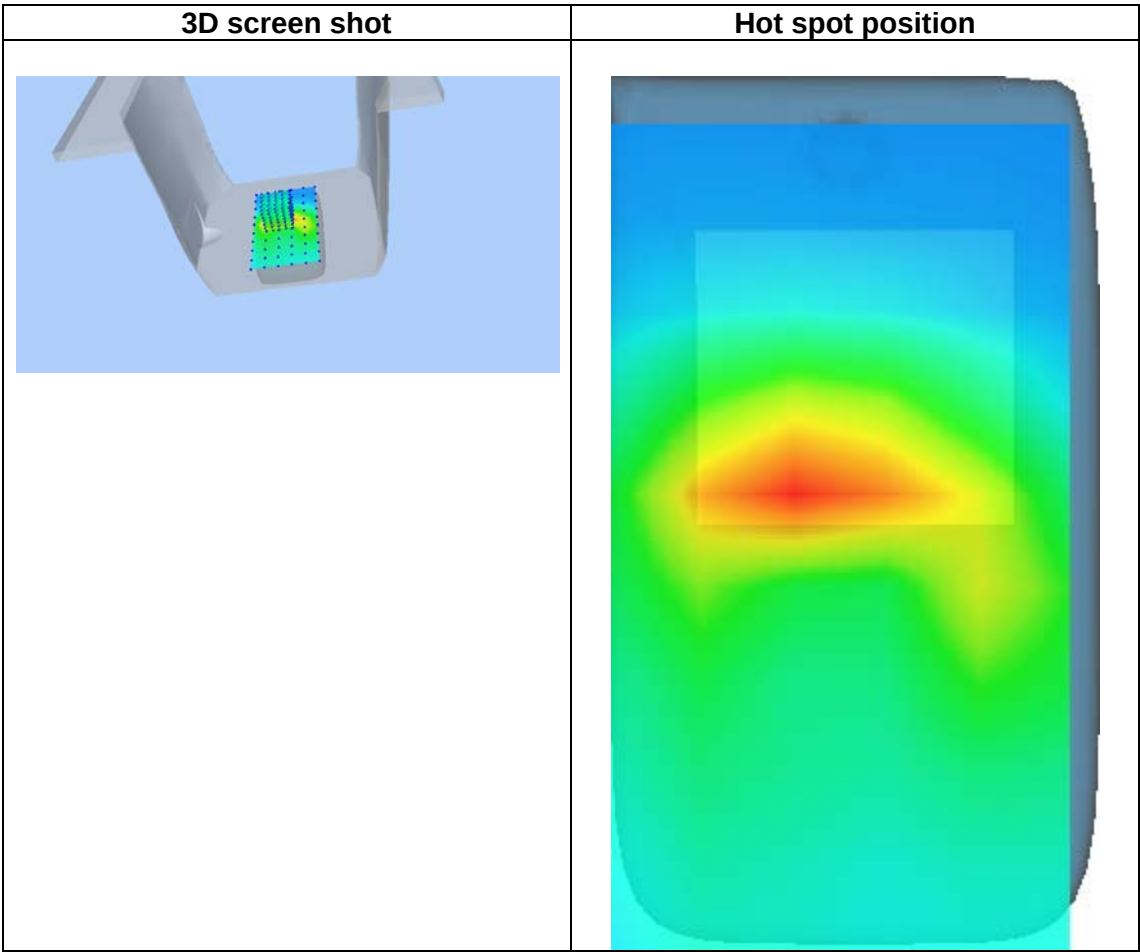
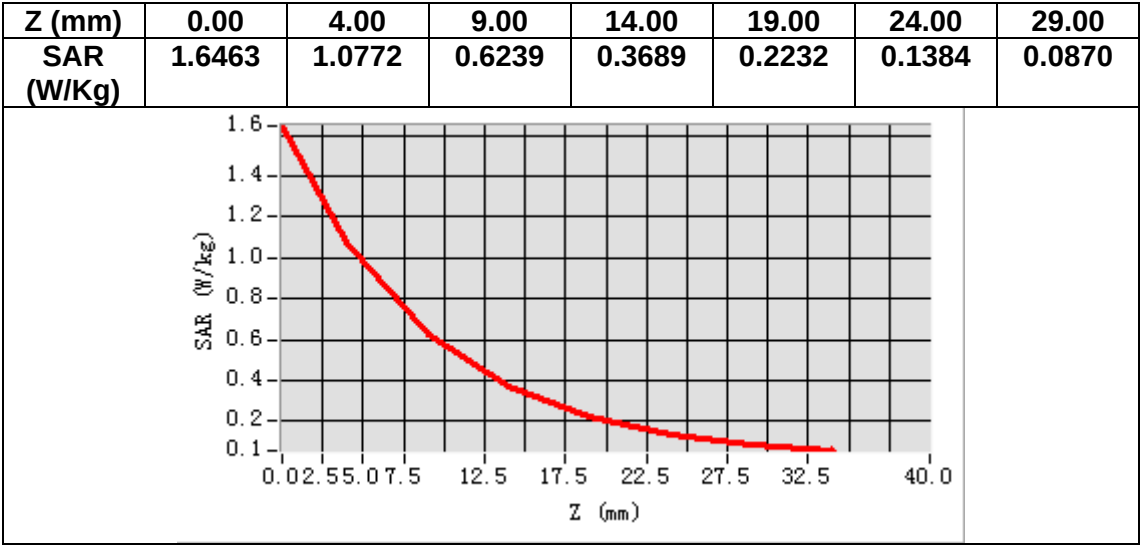
VOLUME SAR



Maximum location: X=-9.00, Y=5.00

SAR Peak: 1.63 W/kg

SAR 10g (W/Kg)	0.525424
SAR 1g (W/Kg)	0.995652



MEASUREMENT 5

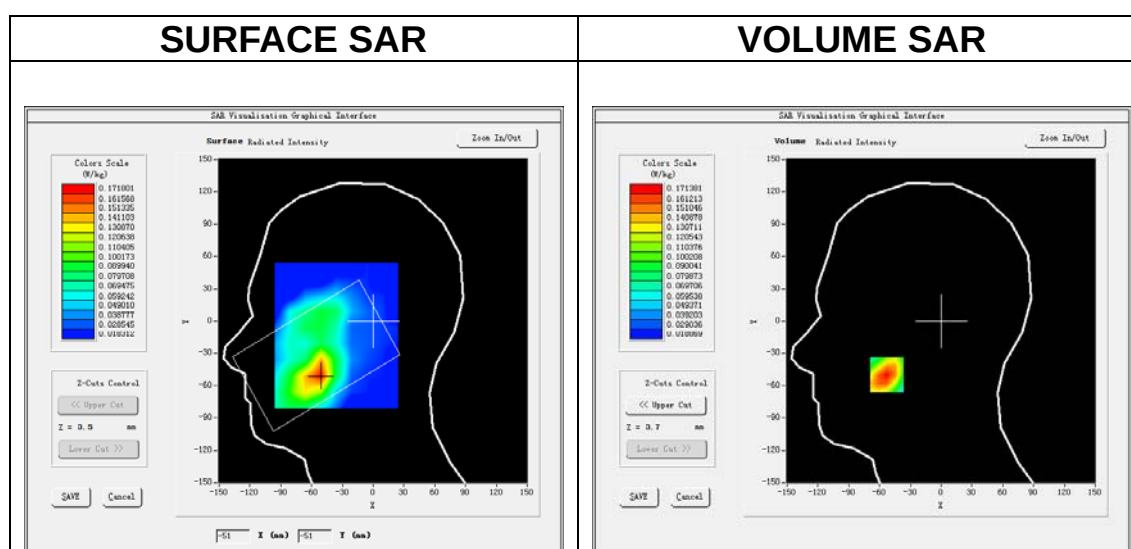
Date of measurement: 14/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>LTE band 4</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

B. SAR Measurement Results

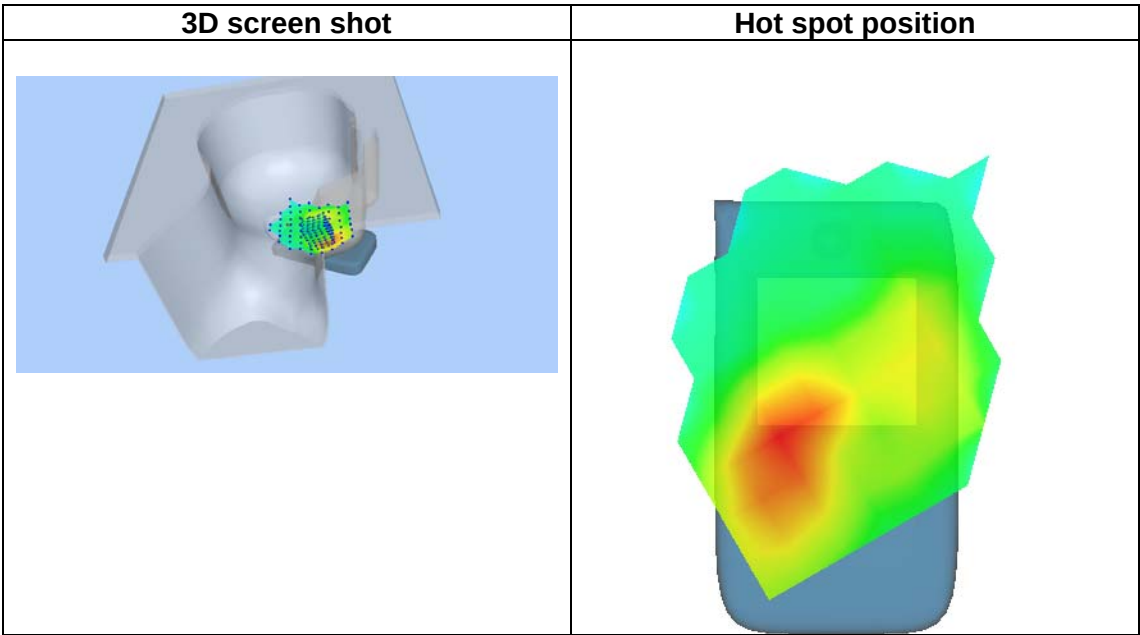
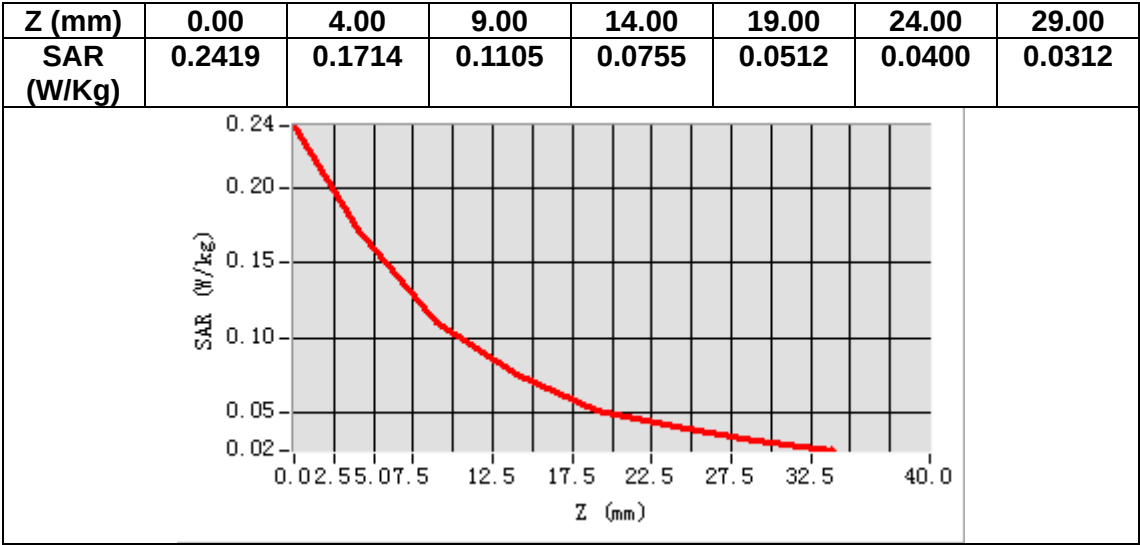
Frequency (MHz)	1732.500000
Relative permittivity (real part)	39.834083
Relative permittivity (imaginary part)	14.053478
Conductivity (S/m)	1.352647
Variation (%)	-1.430000



Maximum location: X=-53.00, Y=-50.00

SAR Peak: 0.25 W/kg

SAR 10g (W/Kg)	0.099566
SAR 1g (W/Kg)	0.162789



MEASUREMENT 19

Date of measurement: 21/12/2020

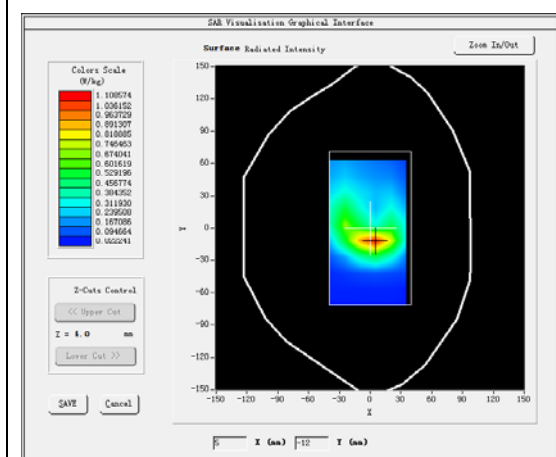
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 4</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

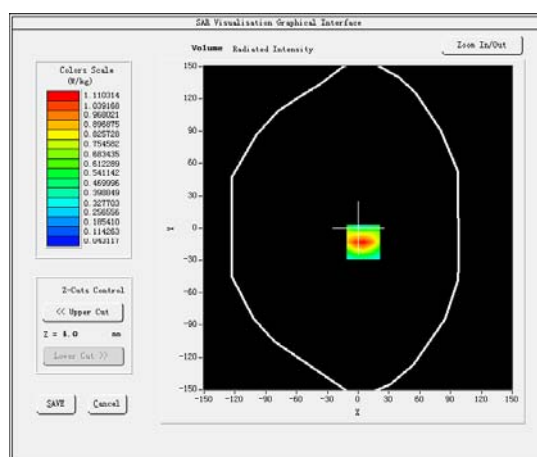
B. SAR Measurement Results

Frequency (MHz)	1732.500000
Relative permittivity (real part)	55.036350
Relative permittivity (imaginary part)	15.221677
Conductivity (S/m)	1.465086
Variation (%)	-0.630000

SURFACE SAR



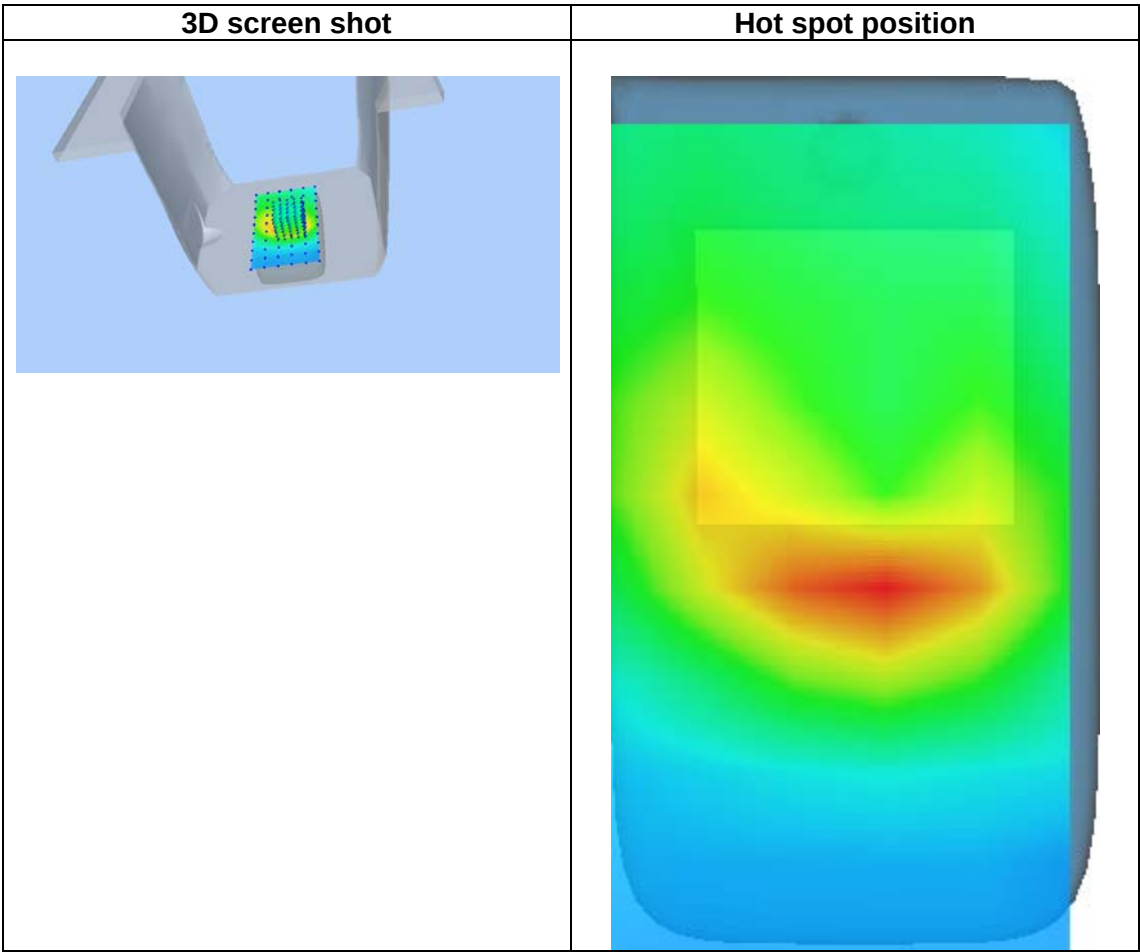
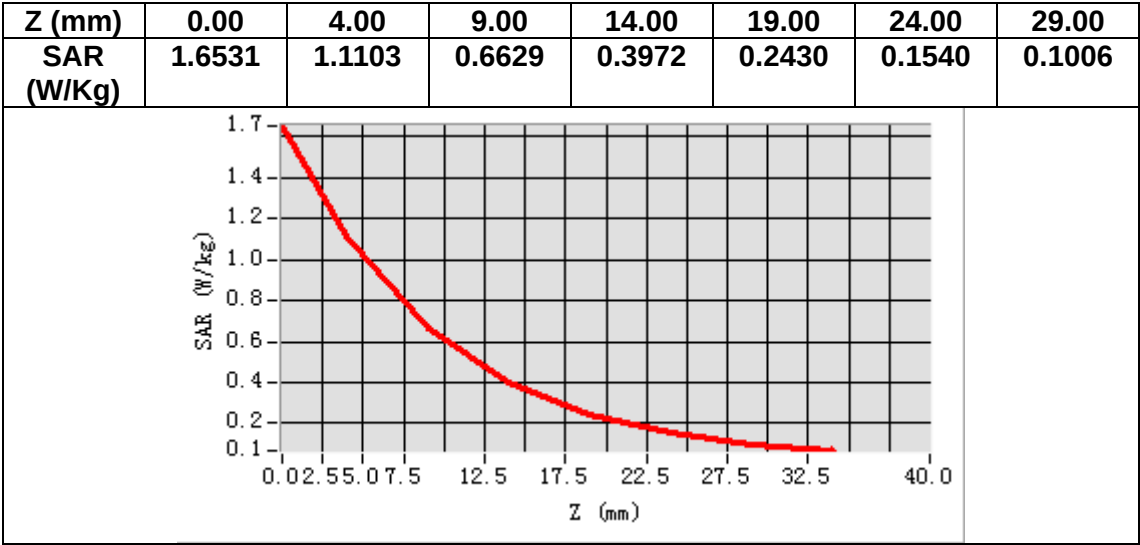
VOLUME SAR



Maximum location: X=5.00, Y=-13.00

SAR Peak: 1.65 W/kg

SAR 10g (W/Kg)	0.564753
SAR 1g (W/Kg)	1.030951



MEASUREMENT 20

Date of measurement: 21/12/2020

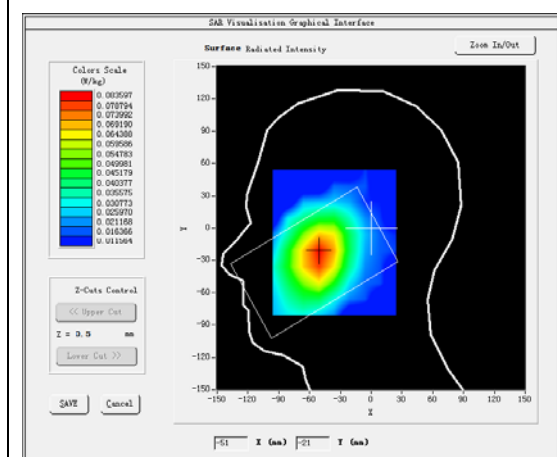
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>LTE band 5</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

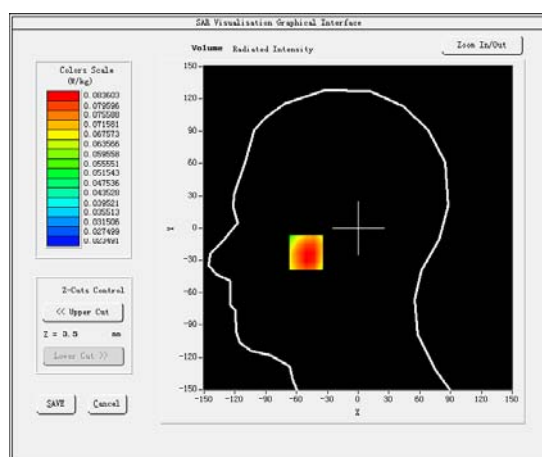
B. SAR Measurement Results

Frequency (MHz)	836.500000
Relative permittivity (real part)	41.512474
Relative permittivity (imaginary part)	19.635672
Conductivity (S/m)	0.912513
Variation (%)	-0.830000

SURFACE SAR



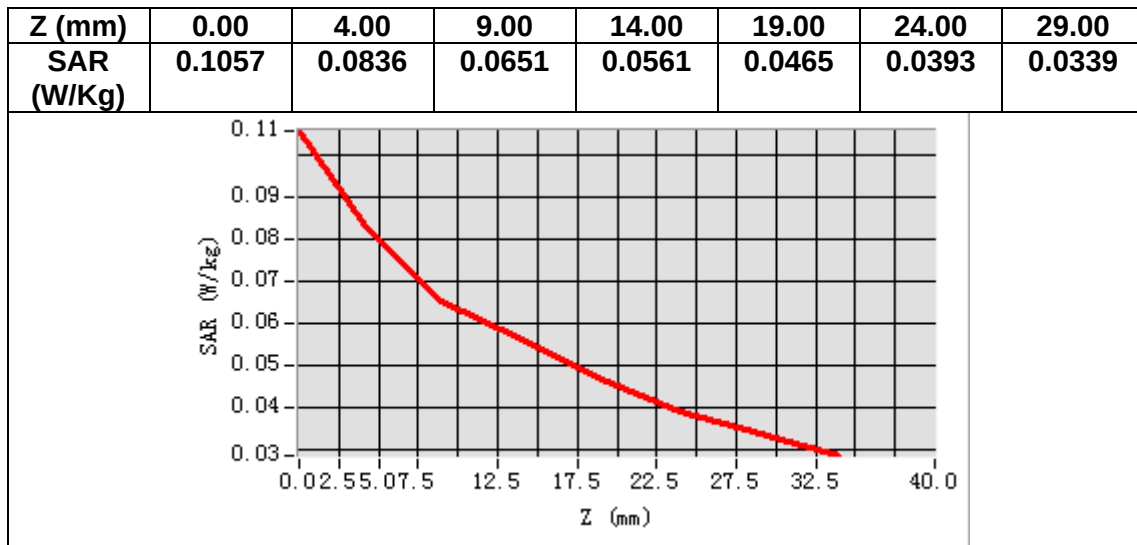
VOLUME SAR



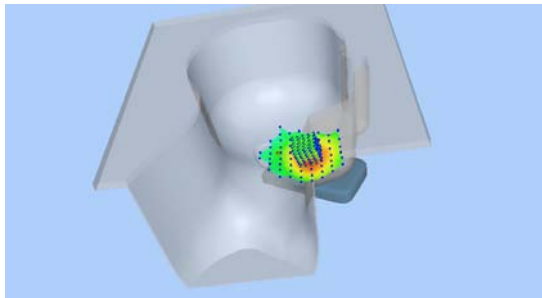
Maximum location: X=-51.00, Y=-23.00

SAR Peak: 0.10 W/kg

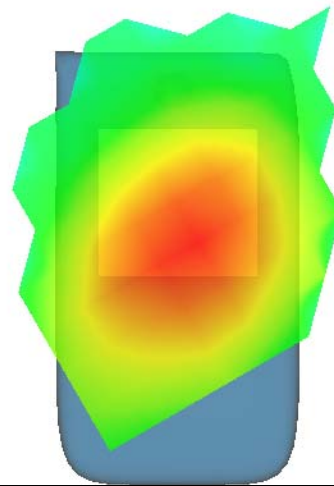
SAR 10g (W/Kg)	0.064774
SAR 1g (W/Kg)	0.083849



3D screen shot



Hot spot position



MEASUREMENT 21

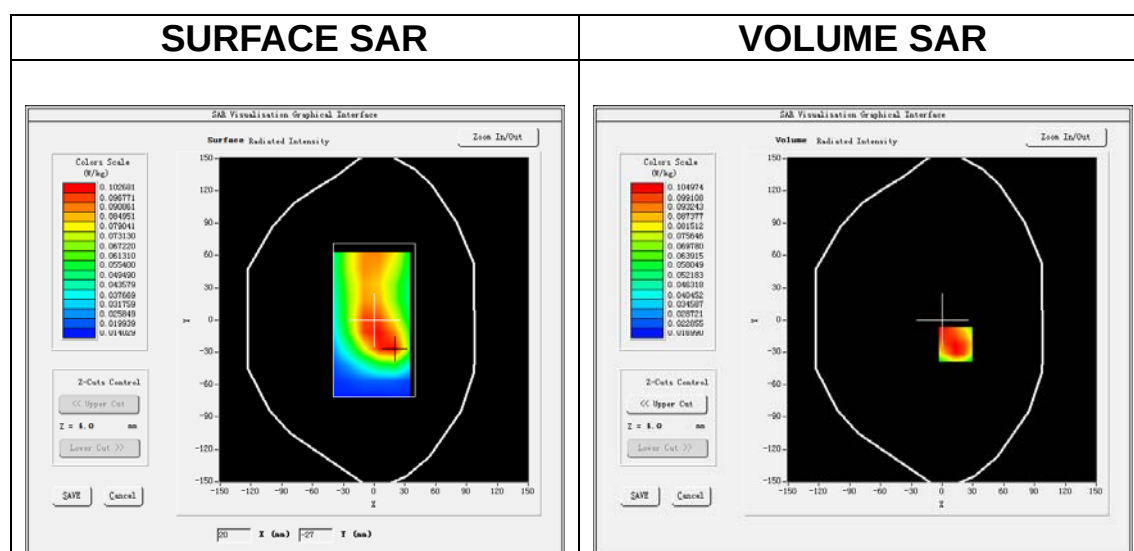
Date of measurement: 19/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 5</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

B. SAR Measurement Results

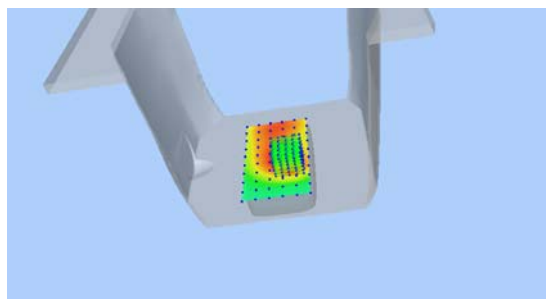
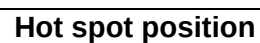
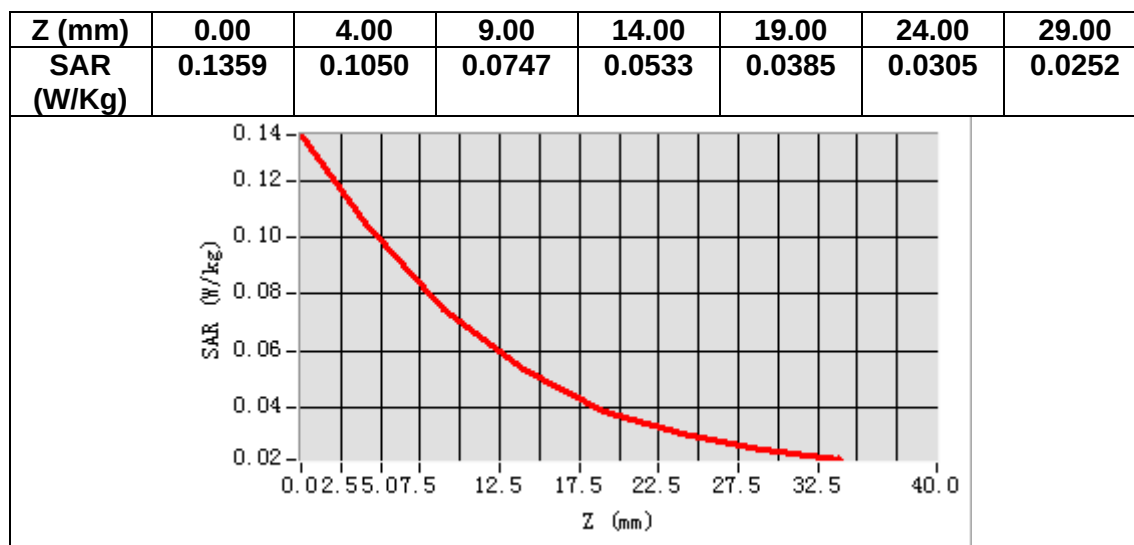
Frequency (MHz)	836.500000
Relative permittivity (real part)	55.342422
Relative permittivity (imaginary part)	20.832472
Conductivity (S/m)	0.968131
Variation (%)	-0.070000



Maximum location: X=13.00, Y=-23.00

SAR Peak: 0.15 W/kg

SAR 10g (W/Kg)	0.069303
SAR 1g (W/Kg)	0.102739



MEASUREMENT 19

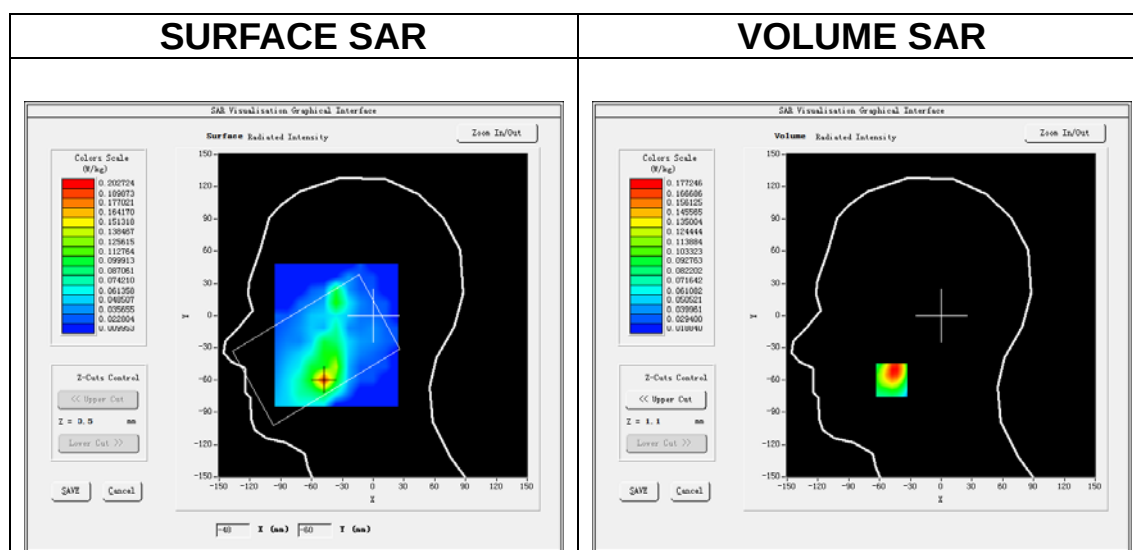
Date of measurement: 16/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>7x7x7,dx=5mm dy=5mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>LTE band 7</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

B. SAR Measurement Results

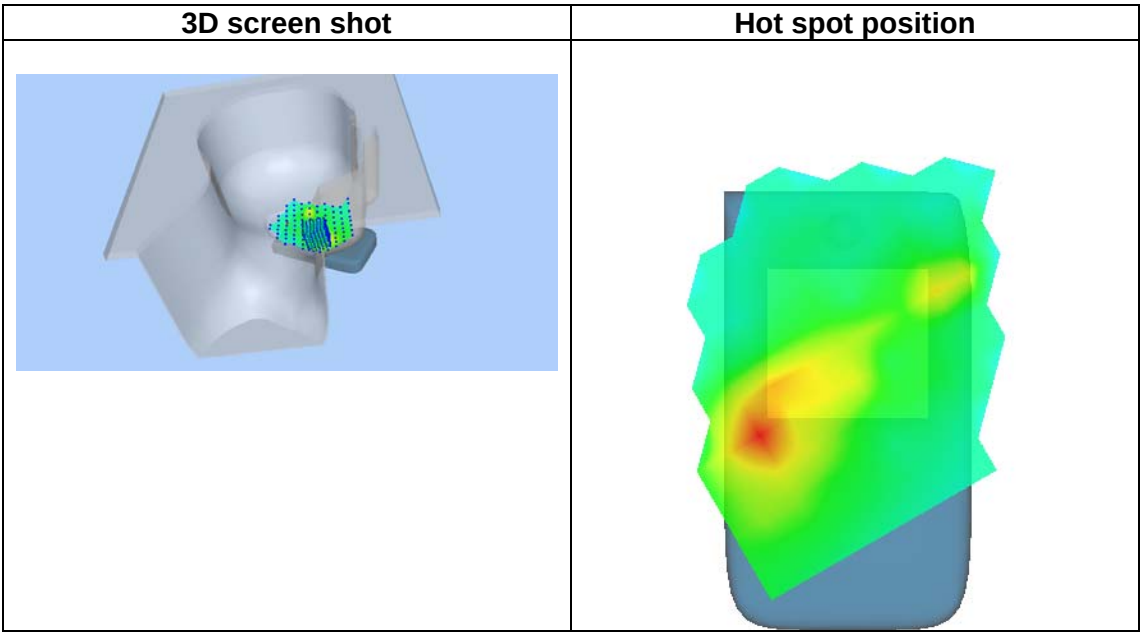
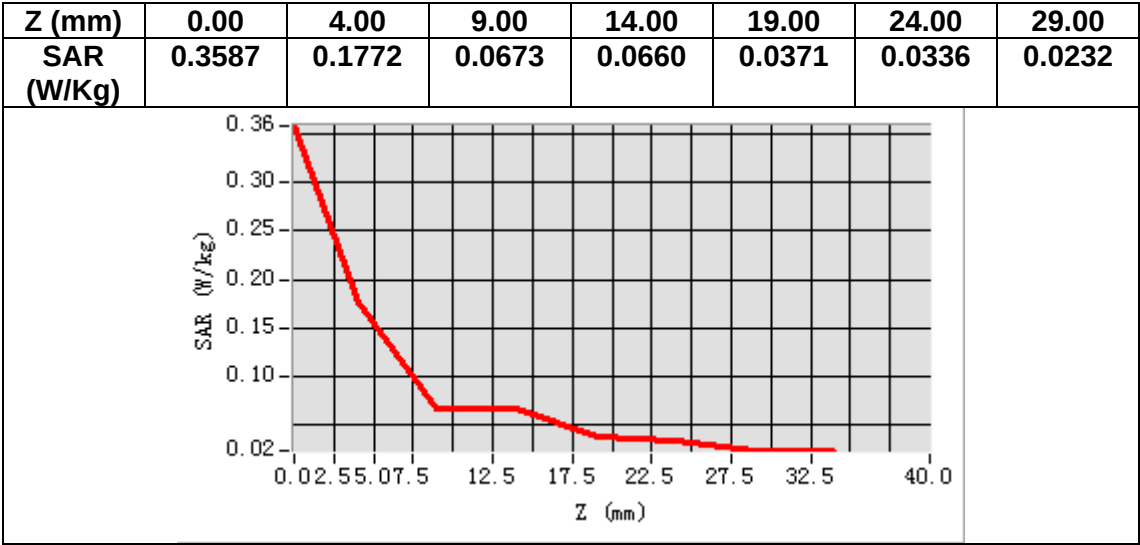
Frequency (MHz)	2535.000000
Relative permittivity (real part)	39.060471
Relative permittivity (imaginary part)	13.790296
Conductivity (S/m)	1.942133
Variation (%)	-0.080000



Maximum location: X=-48.00, Y=-60.00

SAR Peak: 0.28 W/kg

SAR 10g (W/Kg)	0.094372
SAR 1g (W/Kg)	0.170569



MEASUREMENT 22

Date of measurement: 23/12/2020

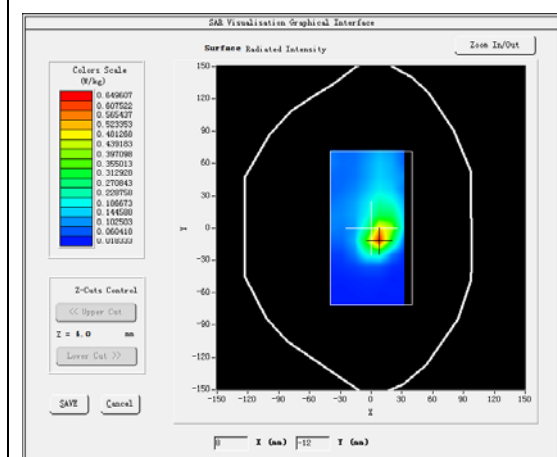
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>7x7x7, dx=5mm dy=5mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 7</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

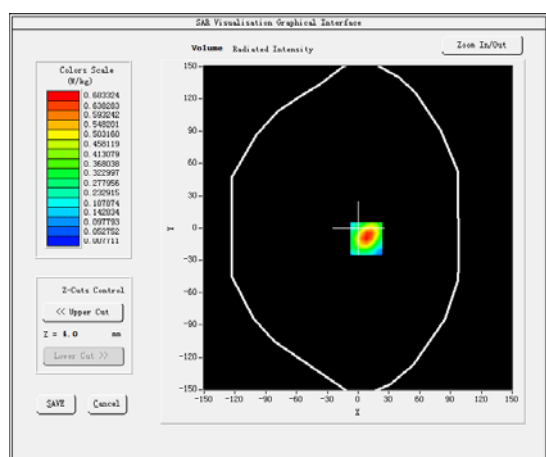
B. SAR Measurement Results

Frequency (MHz)	2535.000000
Relative permittivity (real part)	53.714931
Relative permittivity (imaginary part)	15.269240
Conductivity (S/m)	2.150418
Variation (%)	-1.040000

SURFACE SAR



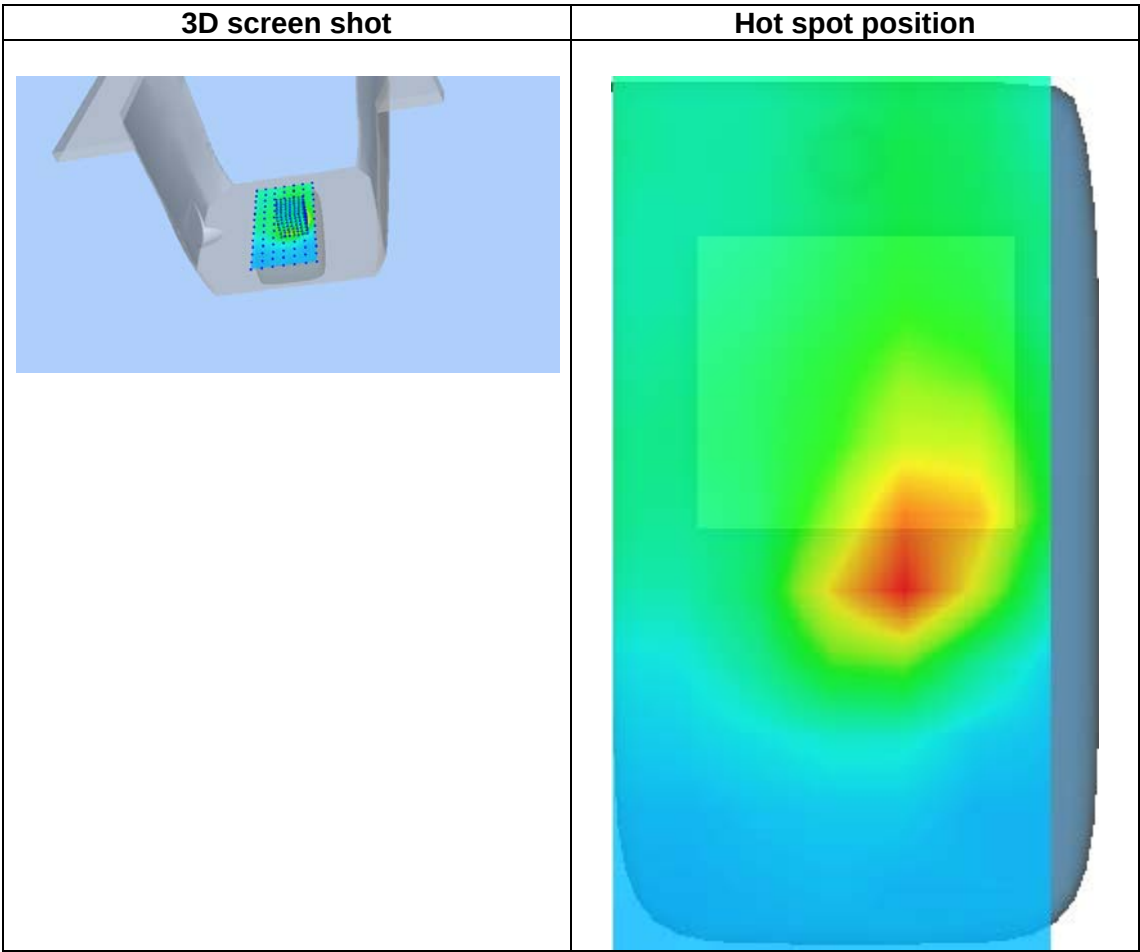
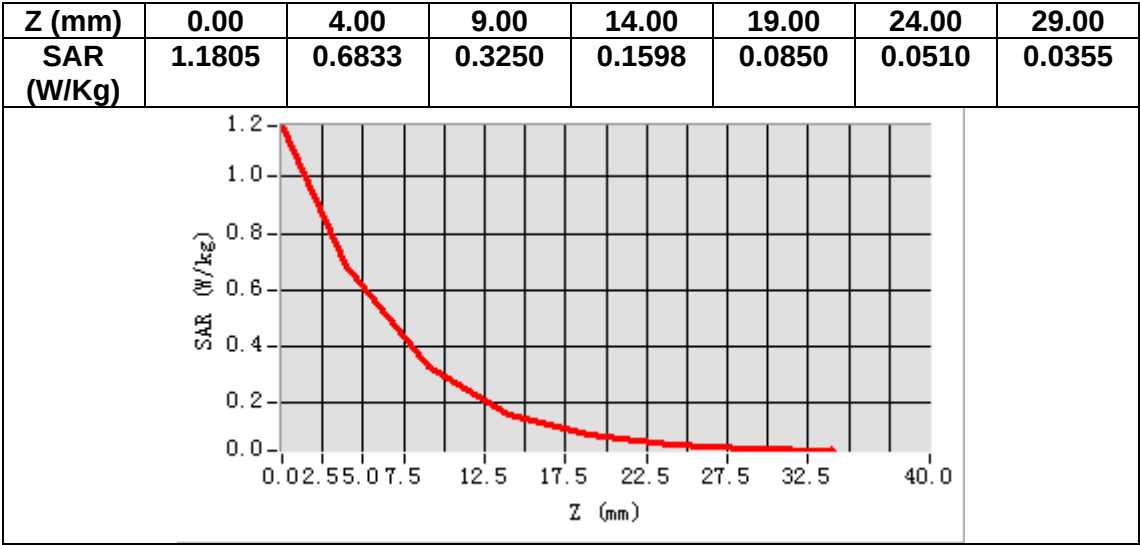
VOLUME SAR



Maximum location: X=8.00, Y=-10.00

SAR Peak: 1.18 W/kg

SAR 10g (W/Kg)	0.286000
SAR 1g (W/Kg)	0.635914



MEASUREMENT 23

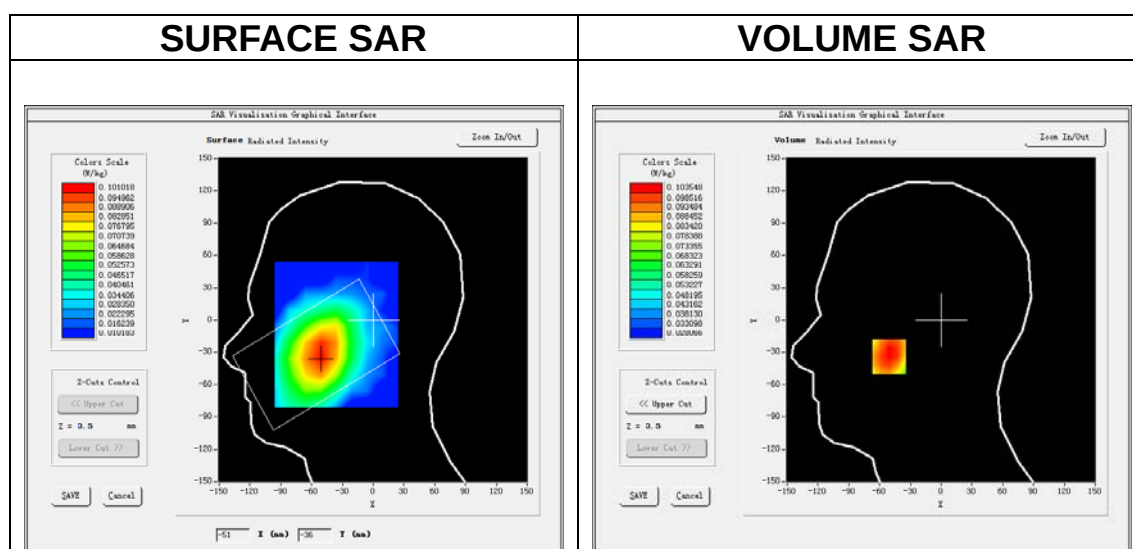
Date of measurement: 18/12/2020

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>LTE band 12</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

B. SAR Measurement Results

Frequency (MHz)	707.500000
Relative permittivity (real part)	42.805187
Relative permittivity (imaginary part)	21.857763
Conductivity (S/m)	0.859132
Variation (%)	-0.620000



Maximum location: X=-51.00, Y=-34.00

SAR Peak: 0.13 W/kg

SAR 10g (W/Kg)	0.082882
SAR 1g (W/Kg)	0.102455

