

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 : Smart Phone

Brand Name : OUKITEL

Model Name : K15 PLUS

Family Model : N/A

Report No. : S21010801603001

FCC ID : 2ANMU-K15PLUS

Prepared for

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TEST RESULT CERTIFICATION

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Product description

Product name.....: Smart Phone
Brand Name: OUKITEL
Model and/or type reference .: K15 PLUS
Family Model.....: N/A
 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: Jan. 14, 2021 ~ Jan. 20, 2021
Date of Issue: Jan. 22, 2021
Test Result.....: **Pass**

Prepared By : Cheng Jiawen
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※ ※ **Revision History** ※ ※

REV.	DESCRIPTION	ISSUED DATE	REMARK
Rev.1.0	Initial Test Report Release	Jan. 22, 2021	Cheng Jiawen

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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 K15 PLUS are as follows.

RF Exposure Conditions		Equipment Class - Highest Reported SAR (W/kg)			
		PCE	DTS	NII	DSS
1-g Head		0.567	0.405	0.592	0.265
1-g Body-Worn (Separation distance of 10mm)		0.882	0.209	0.525	0.132
1-g Hotspot (Separation distance of 10mm)		0.882	0.209	0.525	0.132
Max Simultaneous Tx	Head	1.159	0.972	1.159	0.832
	Body-Worn	1.407	1.091	1.407	1.014
	Hotspot	1.407	1.091	1.407	1.014

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	Smart Phone		
Brand Name	OUKITEL		
Model Name	K15 PLUS		
Family Model	N/A		
FCC ID	2ANMU-K15PLUS		
Device Phase	Identical Prototype		
Exposure Category	General population / Uncontrolled environment		
Antenna Type	FPC Antenna		
Battery Information	DC 3.85V, 10000mAh		
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, NFC		
Test Modulation	GSM(GMSK/8PSK), WCDMA(QPSK), LTE(QPSK/16QAM), WLAN(DSSS/OFDM), Bluetooth(GFSK, π/4-DQPSK, 8DPSK), NFC(ASK)		
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	
	NFC	13.56	
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)

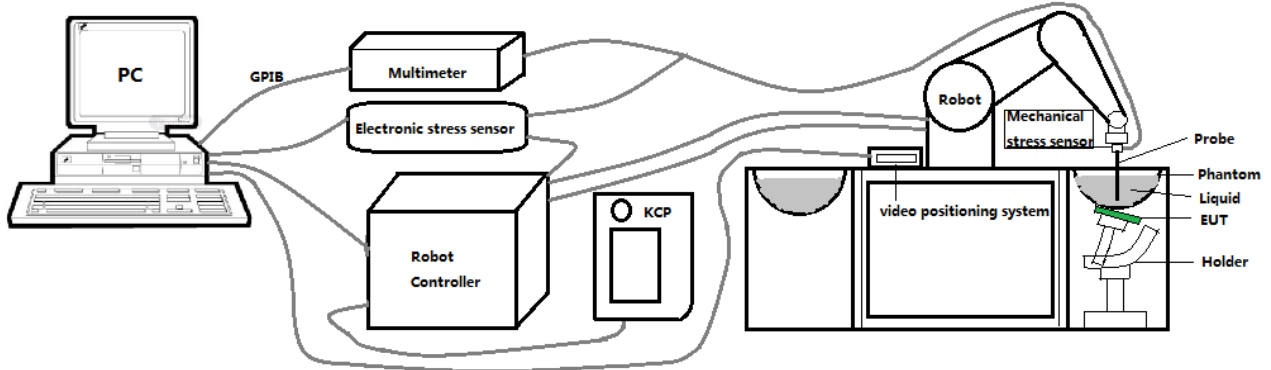
FCC 47 CFR Part 2(2.1093)
ANSI/IEEE C95.1-1992
IEEE Std 1528-2013
KDB 865664 D01 SAR measurement 100 MHz to 6 GHz
KDB 865664 D02 RF Exposure Reporting
KDB 447498 D01 General RF Exposure Guidance
KDB 248227 D01 802.11 Wi-Fi SAR
KDB 941225 D01 3G SAR Procedures
KDB 941225 D05 SAR for LTE Devices
KDB 941225 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 41/18 EPGO330 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: ± 0.10 dB
 - Axial isotropy: 0.06 dB
 - Hemispherical Isotropy: 0.09 dB
 - Calibration range: 650MHz to 5900MHz for head & body simulating liquid.
 - Lower detection limit: 9mW/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

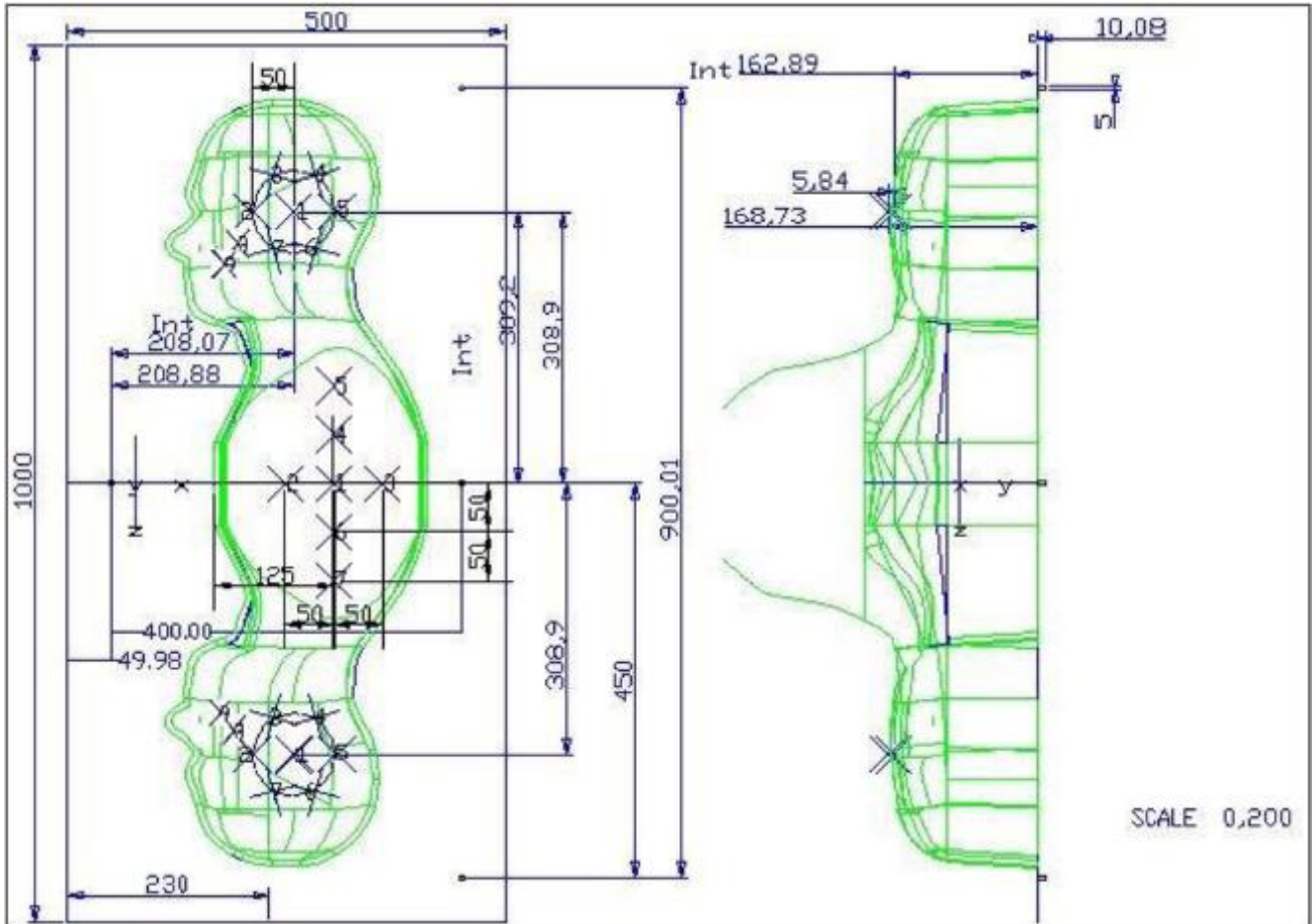
Photo of SAM phantom SN 16/15 SAM119



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

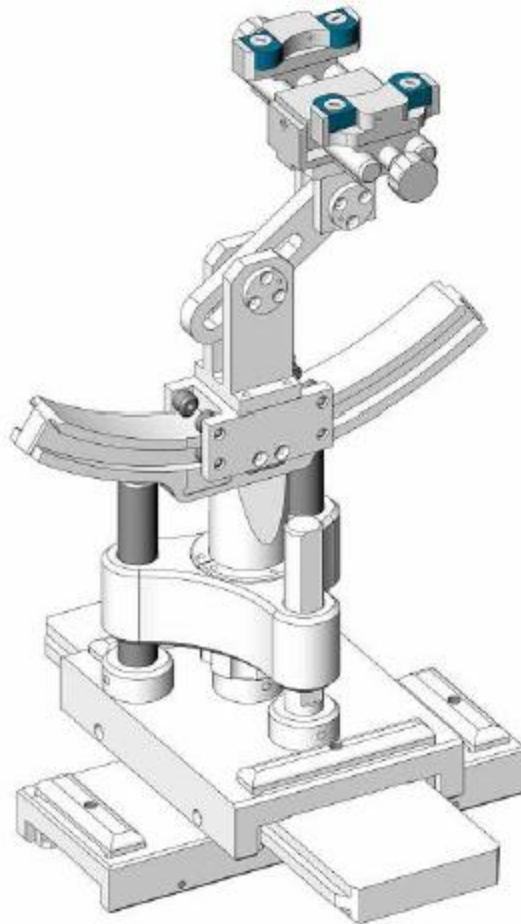


Serial Number	Left Head(mm)		Right Head(mm)		Flat Part(mm)	
	1	2	1	2	1	2
SN 16/15 SAM119	2	2.02	2	2.08	1	2.09
	3	2.05	3	2.06	2	2.06
	4	2.07	4	2.07	3	2.08
	5	2.08	5	2.08	4	2.10
	6	2.05	6	2.07	5	2.10
	7	2.05	7	2.05	6	2.07
	8	2.07	8	2.06	7	2.07
	9	2.08	9	2.06	-	-

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
<input checked="" type="checkbox"/>	MVG	E FIELD PROBE	SSE2	SN 41/18 EPGO330	Sep. 21, 2020	Sep. 20, 2021
<input checked="" type="checkbox"/>	MVG	750 MHz Dipole	SID750	SN 03/15 DIP 0G750-355	Apr. 19, 2018	Apr. 18, 2021
<input checked="" type="checkbox"/>	MVG	835 MHz Dipole	SID835	SN 03/15 DIP 0G835-347	Apr. 19, 2018	Apr. 18, 2021
<input type="checkbox"/>	MVG	900 MHz Dipole	SID900	SN 03/15 DIP 0G900-348	Apr. 19, 2018	Apr. 18, 2021
<input checked="" type="checkbox"/>	MVG	1800 MHz Dipole	SID1800	SN 03/15 DIP 1G800-349	Apr. 19, 2018	Apr. 18, 2021
<input checked="" type="checkbox"/>	MVG	1900 MHz Dipole	SID1900	SN 03/15 DIP 1G900-350	Apr. 19, 2018	Apr. 18, 2021
<input type="checkbox"/>	MVG	2000 MHz Dipole	SID2000	SN 03/15 DIP 2G000-351	Apr. 19, 2018	Apr. 18, 2021
<input checked="" type="checkbox"/>	MVG	2450 MHz Dipole	SID2450	SN 03/15 DIP 2G450-352	Apr. 19, 2018	Apr. 18, 2021
<input checked="" type="checkbox"/>	MVG	2600 MHz Dipole	SID2600	SN 03/15 DIP 2G600-356	Apr. 19, 2018	Apr. 18, 2021
<input checked="" type="checkbox"/>	MVG	5000 MHz Dipole	SWG5500	SN 13/14 WGA 33	Apr. 19, 2018	Apr. 18, 2021
<input checked="" type="checkbox"/>	MVG	Liquid measurement Kit	SCLMP	SN 21/15 OCPG 72	NCR	NCR
<input checked="" type="checkbox"/>	MVG	Power Amplifier	N.A	AMPLISAR_28/14_003	NCR	NCR
<input checked="" type="checkbox"/>	KEITHLEY	Millivoltmeter	2000	4072790	NCR	NCR
<input checked="" type="checkbox"/>	R&S	Universal radio communication tester	CMU200	117858	Jul. 13, 2020	Jul. 12, 2021
<input checked="" type="checkbox"/>	R&S	Wideband radio communication tester	CMW500	103917	Jul. 13, 2020	Jul. 12, 2021
<input checked="" type="checkbox"/>	HP	Network Analyzer	8753D	3410J01136	Jul. 13, 2020	Jul. 12, 2021
<input checked="" type="checkbox"/>	Agilent	PSG Analog Signal Generator	E8257D	MY51110112	Jul. 13, 2020	Jul. 12, 2021

<input checked="" type="checkbox"/>	Agilent	Power meter	E4419B	MY45102538	Jul. 13, 2020	Jul. 12, 2021
<input checked="" type="checkbox"/>	Agilent	Power sensor	E9301A	MY41495644	Jul. 13, 2020	Jul. 12, 2021
<input checked="" type="checkbox"/>	Agilent	Power sensor	E9301A	US39212148	Jul. 13, 2020	Jul. 12, 2021
<input checked="" type="checkbox"/>	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 Wi-Fi/BT power measurement, use engineering software to configure EUT Wi-Fi/BT 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 Wi-Fi/BT output power.

<SAR measurement>

- (a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT Wi-Fi/BT 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	½·δ·ln(2) ± 0.5 mm	
Maximum probe angle from probe axis to phantom surface normal at the measurement location		30° ± 1°	20° ± 1°	
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 ≤ 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: Δz _{Zoom} (n)	≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm	
	graded grid	Δz _{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
		Δz _{Zoom} (n>1): between subsequent points	≤ 1.5·Δz _{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.

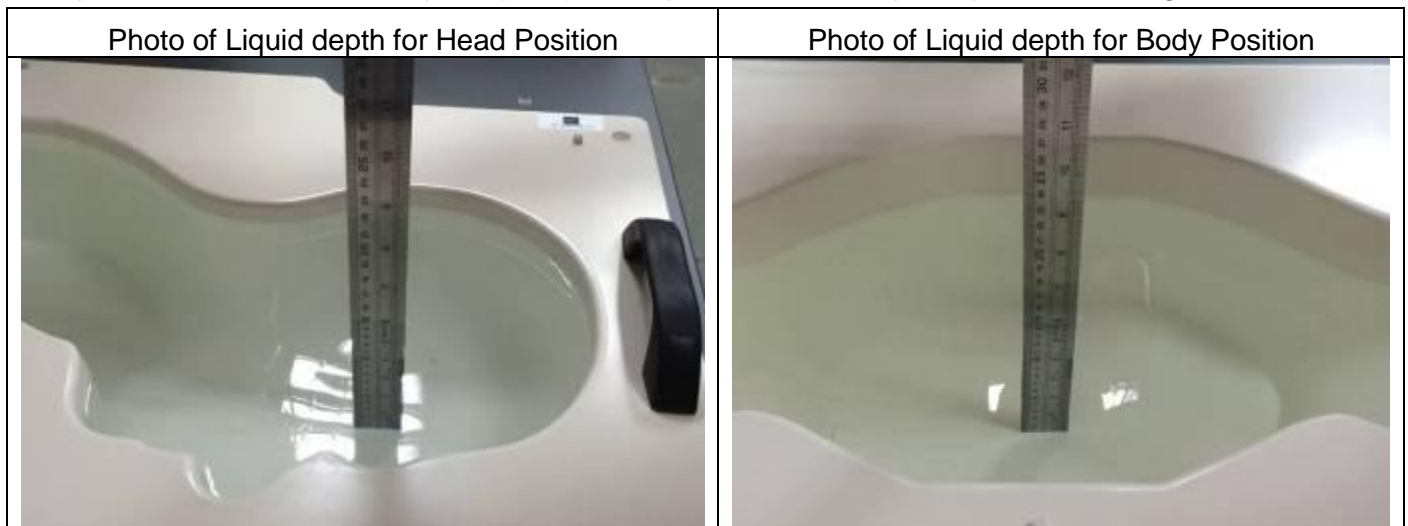
4. System Verification Procedure

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									
	750	835	900	1800	1900	2000	2450	2600	5200	5800
Frequency Band (MHz)										
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									
	750	835	900	1800	1900	2000	2450	2600	5200	5800
Frequency Band (MHz)										
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.



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 of 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
		ϵ_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)	42.17	0.92	21.5 °C	Jan. 14, 2021
Body 750	750	55.55 (52.77~58.33)	0.96 (0.91~1.01)	55.43	0.97	21.2 °C	Jan. 14, 2021
Head 850	835	41.50 (39.43~43.58)	0.90 (0.86~0.95)	41.47	0.90	21.5 °C	Jan. 15, 2021
Body 850	835	55.20 (52.44~57.96)	0.97 (0.92~1.02)	55.20	0.96	21.3 °C	Jan. 15, 2021
Head 1800	1800	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.25	1.40	21.7 °C	Jan. 15, 2021
Body 1800	1800	53.30 (50.64~55.97)	1.52 (1.44~1.60)	54.53	1.51	21.2 °C	Jan. 15, 2021
Head 1900	1900	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.17	1.43	21.4 °C	Jan. 17, 2021
Body 1900	1900	53.30 (50.64~55.97)	1.52 (1.44~1.60)	54.73	1.52	21.4 °C	Jan. 17, 2021
Head 2450	2450	39.20 (37.24~41.16)	1.80 (1.71~1.89)	39.05	1.83	21.5 °C	Jan. 19, 2021
Body 2450	2450	52.70 (50.07~55.33)	1.95 (1.85~2.04)	52.18	1.92	21.2 °C	Jan. 19, 2021
Head 2600	2600	39.01 (37.06~40.96)	1.96 (1.86~2.06)	38.60	2.04	21.4 °C	Jan. 16, 2021
Body 2600	2600	52.51 (49.88~55.14)	2.16 (2.05~2.27)	53.26	2.21	21.6 °C	Jan. 16, 2021
Head 5200	5200	36.00 (34.20~37.80)	4.66 (4.43~4.89)	36.12	4.55	21.5 °C	Jan. 20, 2021
Body 5200	5200	49.00 (46.55~51.45)	5.30 (5.04~5.57)	49.95	5.20	21.5 °C	Jan. 20, 2021
Head 5800	5800	35.30 (33.54~37.07)	5.27 (5.01~5.53)	34.95	5.28	21.9 °C	Jan. 18, 2021
Body 5800	5800	48.20 (45.79~50.61)	6.00 (5.70~6.30)	48.58	6.01	21.2 °C	Jan. 18, 2021

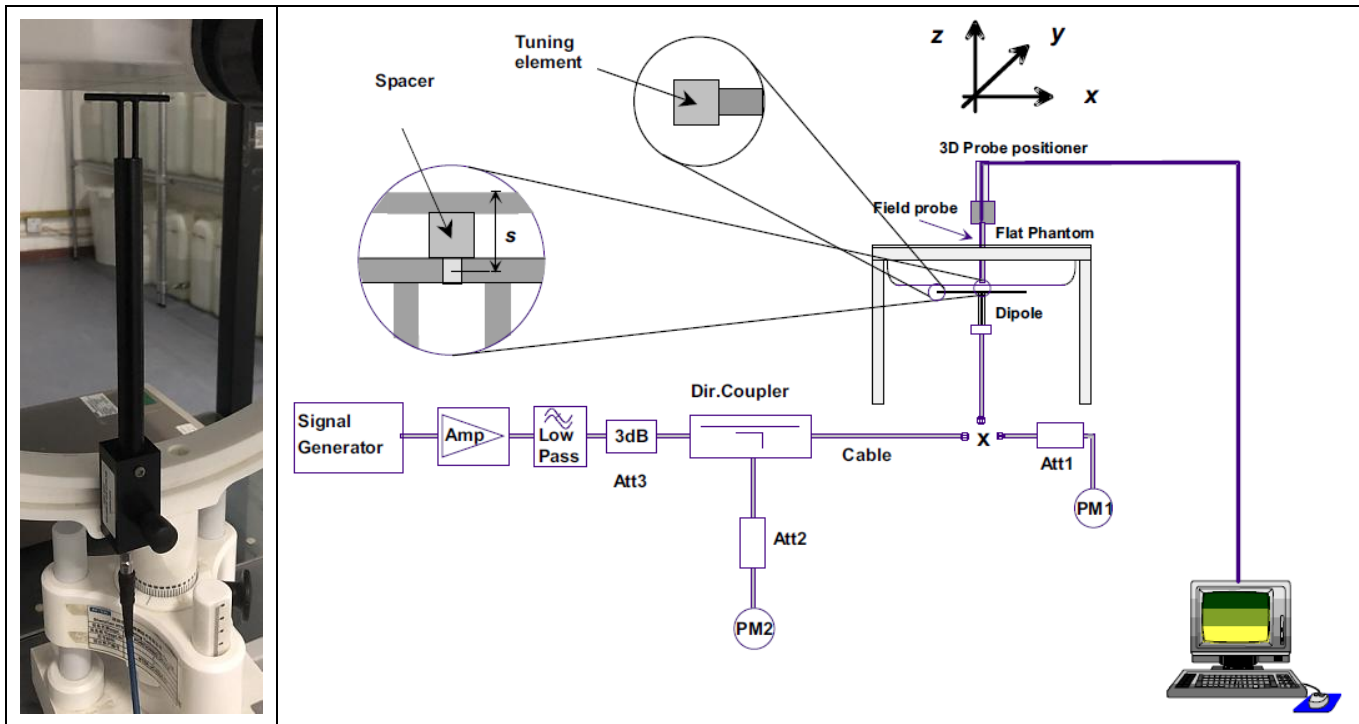
NOTE: The dielectric parameters of the tissue-equivalent liquid should be measured under similar

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 (W/Kg)	10-g (W/Kg)		

750MHz Head	8.56 (7.70~9.42)	5.55 (5.00~6.11)	8.12	5.89	21.5 °C	Jan. 14, 2021
750MHz Body	8.85 (7.97~9.74)	5.91 (5.32~6.50)	8.42	5.63	21.2 °C	Jan. 14, 2021
835MHz Head	9.55 (8.60~10.51)	6.10 (5.49~6.71)	9.18	6.16	21.5 °C	Jan. 15, 2021
835MHz Body	9.83 (8.85~10.81)	6.45 (5.81~7.10)	9.39	6.80	21.3 °C	Jan. 15, 2021
1800MHz Head	38.11 (34.30~41.92)	20.05 (18.05~22.06)	37.52	21.43	21.7°C	Jan. 15, 2021
1800MHz Body	38.13 (34.32~41.94)	20.65 (18.59~22.72)	39.62	21.36	21.2 °C	Jan. 15, 2021
1900MHz Head	38.92 (35.03~42.81)	20.09 (18.08~22.10)	39.76	19.99	21.4 °C	Jan. 17, 2021
1900MHz Body	39.02 (35.12~42.92)	20.57 (18.51~22.63)	39.80	20.67	21.4 °C	Jan. 17, 2021
2450MHz Head	53.76 (48.38~59.14)	24.12 (21.71~26.53)	53.44	23.74	21.5 °C	Jan. 19, 2021
2450MHz Body	52.90 (47.61~58.19)	24.09 (21.68~26.50)	54.29	24.44	21.2 °C	Jan. 19, 2021
2600MHz Head	55.60 (50.04~61.16)	24.60 (22.14~27.06)	55.78	24.60	21.4 °C	Jan. 16, 2021
2600MHz Body	52.49 (47.24~57.74)	23.74 (21.37~26.11)	53.74	24.19	21.6 °C	Jan. 16, 2021
5200MHz Head	160.94 (144.85~177.03)	55.97 (50.37~61.57)	150.40	53.27	21.5 °C	Jan. 20, 2021
5200MHz Body	156.85 (141.17~172.54)	55.20 (49.68~60.72)	156.24	55.52	21.5 °C	Jan. 20, 2021
5800MHz Head	184.13 (165.72~202.54)	62.74 (56.47~69.01)	185.65	60.97	21.9 °C	Jan. 18, 2021
5800MHz Body	169.30 (152.37~186.23)	58.49 (52.64~64.34)	172.64	58.48	21.2 °C	Jan. 18, 2021

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 (~ 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”.

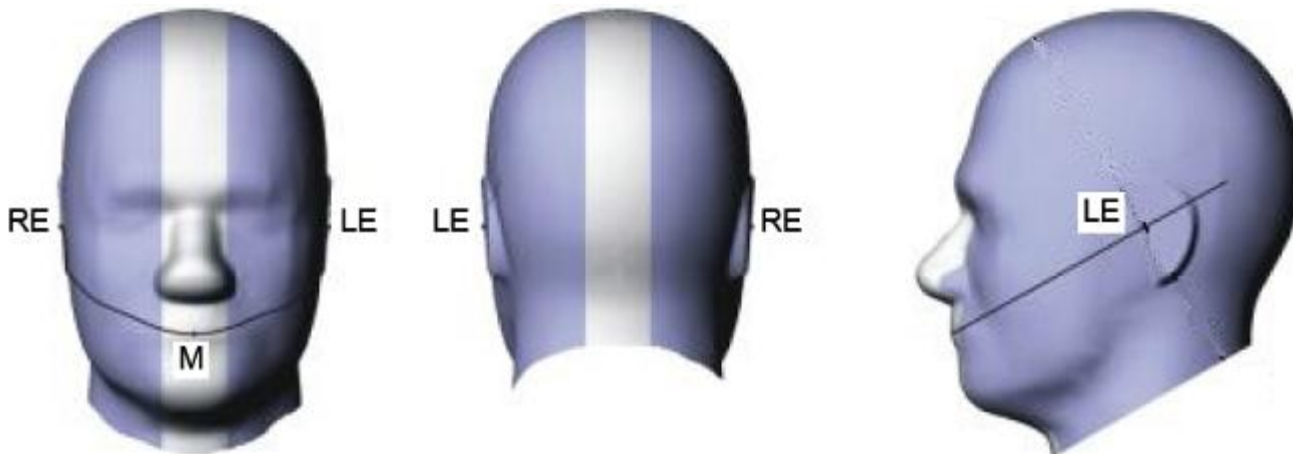


Fig 6.1.1 Front, back, and side views of SAM phantom

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.

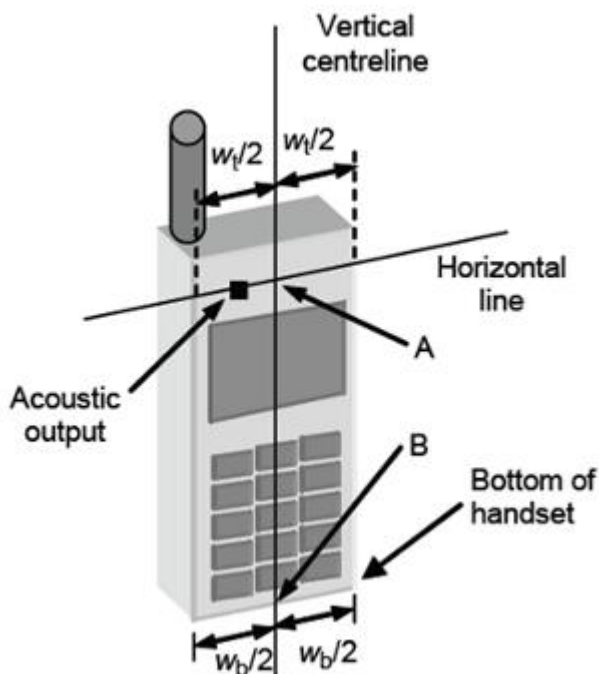


Fig 6.2.1 Handset vertical and horizontal reference lines—"fixed case"

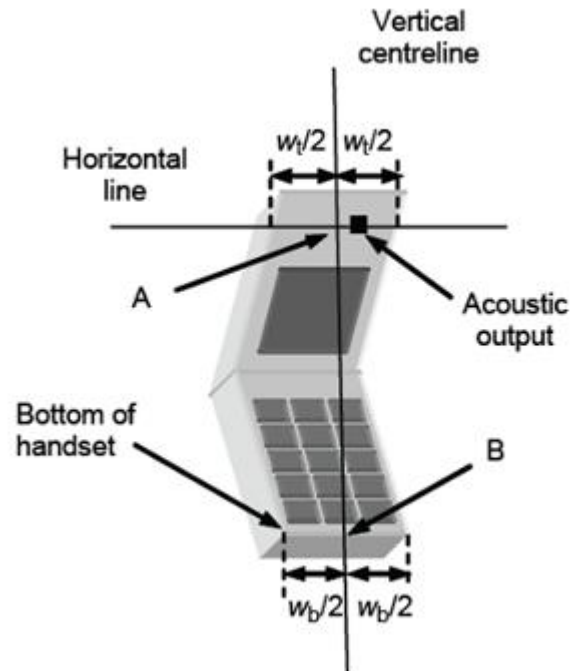


Fig 6.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

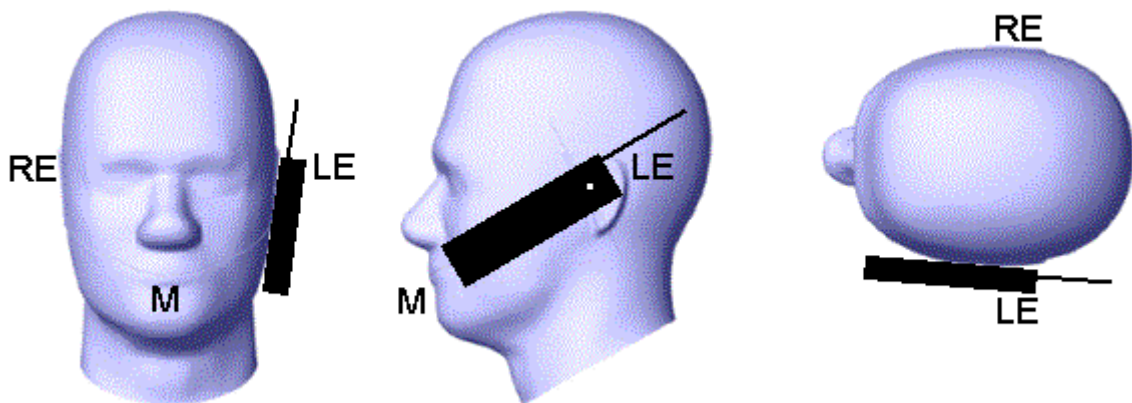


Fig 6.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

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.

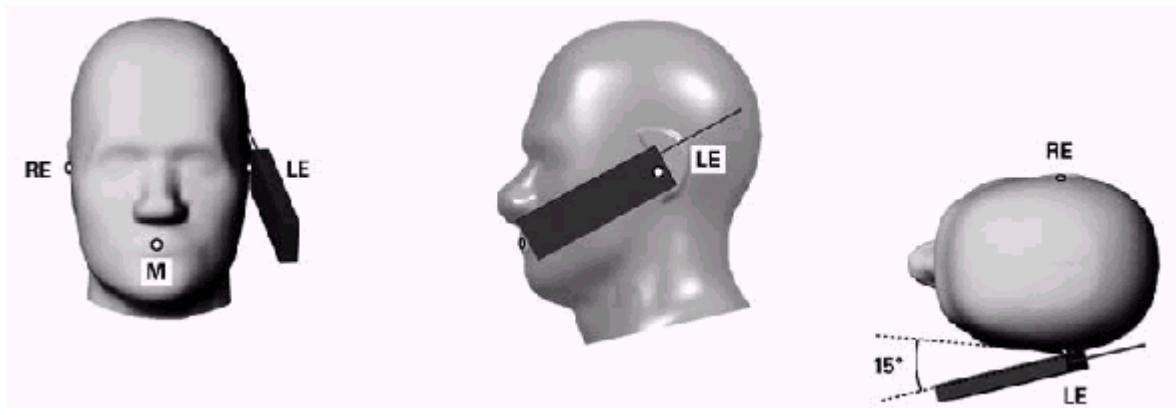


Figure 6.3.1 – Tilt position of the wireless device on the left side of SAM

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 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.

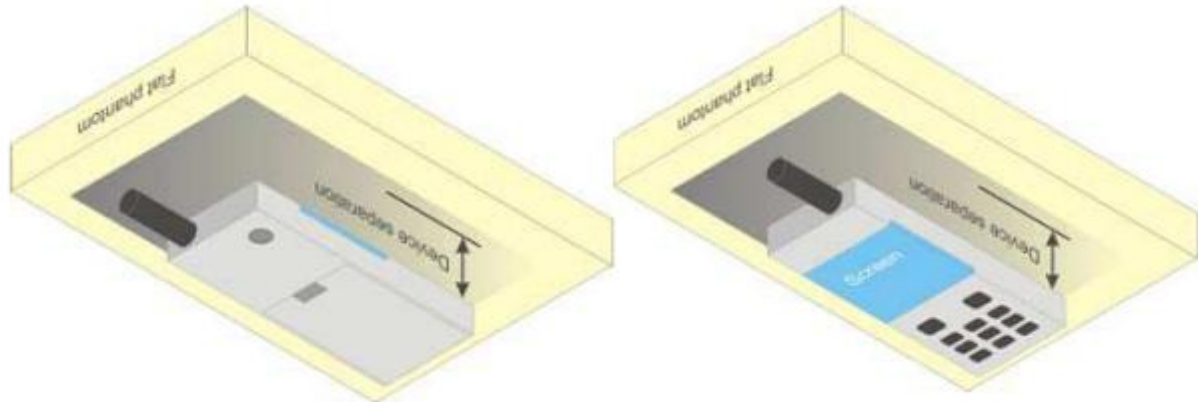


Figure 6.4.1 – Test positions for body-worn devices

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 (dBm)	128	189	251	Tune-up (dBm)	128	189	251
Frequency (MHz)		824.2	836.4	848.8		824.2	836.4	848.8
GSM (GMSK)	33.00	32.59	32.59	32.64	23.97	23.56	23.56	23.61
GPRS(GMSK, 1 TS)	33.00	32.61	32.59	32.65	23.97	23.58	23.56	23.62
GPRS(GMSK, 2 TS)	32.00	31.95	31.89	31.96	25.98	25.93	25.87	25.94
GPRS(GMSK, 3 TS)	30.50	30.34	30.25	30.30	26.24	26.08	25.99	26.04
GPRS(GMSK, 4 TS)	29.50	29.35	29.25	29.31	26.49	26.34	26.24	26.30
EDGE(GMSK, 1 TS)	27.50	26.57	27.41	27.14	18.47	17.54	18.38	18.11
EDGE(GMSK, 2 TS)	27.00	26.28	26.16	26.55	20.98	20.26	20.14	20.53
EDGE(GMSK, 3 TS)	24.50	23.46	23.70	24.07	20.24	19.20	19.44	19.81
EDGE(GMSK, 4 TS)	23.00	22.57	22.69	22.95	19.99	19.56	19.68	19.94
Band GSM1900		Burst-Averaged output Power (dBm)			Frame-Averaged output Power (dBm)			
Tx Channel	Tune-up (dBm)	512	661	810	Tune-up (dBm)	512	661	810
Frequency (MHz)		1850.2	1880.0	1909.8		1850.2	1880.0	1909.8
GSM (GMSK)	31.00	30.33	30.61	30.64	21.97	21.30	21.58	21.61
GPRS(GMSK, 1 TS)	31.00	30.35	30.61	30.65	21.97	21.32	21.58	21.62
GPRS(GMSK, 2 TS)	30.00	29.62	29.93	29.97	23.98	23.60	23.91	23.95
GPRS(GMSK, 3 TS)	28.50	27.85	28.20	28.27	24.24	23.59	23.94	24.01
GPRS(GMSK, 4 TS)	27.50	26.81	27.16	27.26	24.49	23.80	24.15	24.25
EDGE(GMSK, 1 TS)	27.50	27.20	27.37	27.20	18.47	18.17	18.34	18.17
EDGE(GMSK, 2 TS)	27.00	26.53	26.57	26.32	20.98	20.51	20.55	20.30
EDGE(GMSK, 3 TS)	25.00	24.40	24.53	24.50	20.74	20.14	20.27	20.24
EDGE(GMSK, 4 TS)	24.00	23.53	23.40	23.13	20.99	20.52	20.39	20.12

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	24.50	24.31	24.18	23.96
HSDPA Subtest-1	23.50	23.34	23.24	23.05
HSDPA Subtest-2	23.00	22.93	22.69	22.58
HSDPA Subtest-3	22.00	21.93	21.77	21.08
HSDPA Subtest-4	22.00	22.00	21.89	21.28
HSUPA Subtest-1	23.00	22.00	22.97	22.85
HSUPA Subtest-2	23.50	22.81	23.21	22.92
HSUPA Subtest-3	22.50	21.53	21.97	22.08
HSUPA Subtest-4	23.50	23.33	23.24	23.07
HSUPA Subtest-5	22.50	21.78	22.49	21.90
Band	WCDMA Band 4			
Tx Channel	Tune-up	1312	1413	1513
Frequency (MHz)		1712.4	1732.6	1752.6
RMC 12.2Kbps	24.00	23.53	23.62	23.75
HSDPA Subtest-1	23.00	22.60	22.65	22.79
HSDPA Subtest-2	23.00	22.07	22.21	22.55
HSDPA Subtest-3	22.00	21.32	21.00	21.70
HSDPA Subtest-4	22.00	20.94	21.18	21.70
HSUPA Subtest-1	23.00	21.03	22.67	22.79
HSUPA Subtest-2	23.00	22.78	22.62	22.89
HSUPA Subtest-3	22.50	21.14	21.77	22.04
HSUPA Subtest-4	23.00	22.87	22.85	22.98
HSUPA Subtest-5	22.00	21.63	21.92	21.91
Band	WCDMA Band 5			
Tx Channel	Tune-up	4132	4182	4233
Frequency (MHz)		826.4	836.4	846.6
RMC 12.2Kbps	23.50	23.32	23.41	23.36
HSDPA Subtest-1	23.00	22.58	22.67	22.60
HSDPA Subtest-2	22.50	22.13	22.10	22.32
HSDPA Subtest-3	21.50	21.23	21.24	21.16
HSDPA Subtest-4	21.50	21.34	21.42	20.75
HSUPA Subtest-1	22.50	21.29	22.26	22.15
HSUPA Subtest-2	22.50	22.20	22.41	22.22
HSUPA Subtest-3	21.50	20.59	21.19	20.83
HSUPA Subtest-4	22.50	22.37	22.46	22.39
HSUPA Subtest-5	22.00	20.95	21.76	21.63

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	24.00	22.65	23.53	23.29
			1	2	24.00	23.79	23.64	23.46
			1	5	24.00	23.67	23.51	23.29
			3	0	24.00	23.64	23.58	23.36
			3	1	24.00	23.65	23.60	23.38
			3	2	24.00	23.60	23.57	23.36
		16QAM	6	0	23.00	22.66	22.60	22.29
			1	0	23.00	22.70	22.33	22.37
			1	2	23.00	22.79	22.50	22.45
			1	5	23.00	22.69	22.33	22.35
			3	0	23.00	22.78	22.64	22.43
			3	1	23.00	22.80	22.71	22.45
			3	2	23.00	22.82	22.70	22.41
6	0	22.00	21.78	21.74	21.51			
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	24.00	23.66	23.54	23.36
			1	7	24.00	23.89	23.81	23.67
			1	14	24.00	23.60	23.51	23.30
			8	0	23.00	22.64	22.53	22.38
			8	4	23.00	22.67	22.58	22.35
			8	7	23.00	22.66	22.55	22.27
			15	0	23.00	22.61	22.54	22.28
		16QAM	1	0	23.50	22.92	22.66	22.17
			1	7	23.50	23.19	22.95	22.43
			1	14	23.50	22.91	22.63	22.09
			8	0	22.00	21.67	21.57	21.37
			8	4	22.00	21.71	21.60	21.37
			8	7	22.00	21.71	21.55	21.30
15	0	22.00	21.63	21.47	21.36			
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		

2			1	74	24.00	23.50	23.38	23.15			
			36	0	23.00	22.81	22.58	22.58			
			36	18	23.00	22.72	22.58	22.51			
			36	37	23.00	22.73	22.59	22.37			
			75	0	23.00	22.74	22.63	22.52			
		16QAM	1	0	23.50	22.60	22.85	22.55			
			1	37	23.50	23.01	23.07	22.76			
			1	74	23.50	22.54	22.73	22.28			
			36	0	22.00	21.74	21.66	21.63			
			36	18	22.00	21.72	21.61	21.57			
			36	37	22.00	21.67	21.64	21.37			
			75	0	22.00	21.77	21.60	21.46			
			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	24.00	23.38	23.34	23.35			
			1	49	24.00	23.70	23.65	23.64			
			1	99	24.00	23.29	23.29	23.06			
			50	0	23.00	22.67	22.60	22.55			
			50	24	23.00	22.63	22.53	22.49			
			50	49	23.00	22.67	22.51	22.32			
			100	0	23.00	22.64	22.52	22.43			
		16QAM	1	0	23.00	22.65	22.59	22.50			
			1	49	23.00	22.99	22.85	22.81			
			1	99	23.00	22.60	22.48	22.24			
			50	0	22.00	21.77	21.62	21.67			
			50	24	22.00	21.70	21.53	21.55			
			50	49	22.00	21.77	21.51	21.34			
			100	0	22.00	21.70	21.57	21.49			

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 4	1.4MHz	QPSK	1	0	23.50	23.18	23.14	23.15
			1	2	23.50	23.33	23.26	23.31
			1	5	23.50	23.42	23.11	23.18
			3	0	23.50	23.19	23.24	23.22
			3	1	23.50	23.23	23.24	23.22

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		19965/1711.5	20175/1732.5	20385/1753.5
		16QAM	3	2	23.50	23.21	23.24	23.20
			6	0	22.50	22.18	22.20	22.24
			1	0	23.00	22.31	22.30	22.06
			1	2	23.00	22.52	22.46	22.19
			1	5	23.00	22.33	22.36	22.01
			3	0	22.50	22.38	22.44	22.34
			3	1	22.50	22.40	22.44	22.34
			3	2	22.50	22.36	22.45	22.39
			6	0	21.50	21.40	21.36	21.43
LTE Band 4	3MHz	QPSK	1	0	24.00	23.23	23.15	23.25
			1	7	24.00	23.49	23.44	23.56
			1	14	24.00	23.19	23.16	23.23
			8	0	22.50	22.17	22.18	22.21
			8	4	22.50	22.20	22.22	22.23
			8	7	22.50	22.19	22.19	22.20
			15	0	22.50	22.15	22.14	22.18
		16QAM	1	0	23.00	22.58	22.32	22.12
			1	7	23.00	22.91	22.49	22.36
			1	14	23.00	22.66	22.35	22.04
			8	0	21.50	21.23	21.20	21.21
			8	4	21.50	21.25	21.25	21.23
			8	7	21.50	21.23	21.23	21.22
			15	0	21.50	21.17	21.13	21.24
			LTE Band 4	5MHz	QPSK	1	0	24.00
1	12	24.00				23.35	23.44	23.60
1	24	24.00				23.09	23.07	23.13
12	0	22.50				22.17	22.20	22.22
12	6	22.50				22.22	22.22	22.27
12	11	22.50				22.18	22.21	22.21
25	0	22.50				22.19	22.22	22.23
16QAM	1	0			23.50	22.44	22.38	22.72
	1	12			23.50	22.74	22.80	23.08

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20000/1715	20175/1732.5	20350/1750
			1	24	23.50	22.42	22.45	22.64
			12	0	21.50	21.13	21.25	21.27
			12	6	21.50	21.20	21.28	21.25
			12	11	21.50	21.19	21.28	21.24
			25	0	21.50	21.27	21.21	21.23
LTE Band 4	10MHz	QPSK	1	0	23.50	23.21	23.10	23.23
			1	24	23.50	23.33	23.31	23.38
			1	49	23.50	23.15	23.28	23.20
			25	0	22.50	22.21	22.24	22.31
			25	12	22.50	22.21	22.21	22.23
			25	24	22.50	22.24	22.26	22.29
			50	0	22.50	22.25	22.26	22.27
		16QAM	1	0	23.00	22.06	22.51	22.40
			1	24	23.00	22.16	22.74	22.54
			1	49	23.00	22.04	22.66	22.32
			25	0	21.50	21.28	21.31	21.35
			25	12	21.50	21.23	21.27	21.28
			25	24	21.50	21.32	21.33	21.31
			50	0	21.50	21.25	21.30	21.38
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	24.00	23.11	23.06	23.22
			1	37	24.00	23.38	23.29	23.53
			1	74	24.00	23.03	23.24	23.08
			36	0	22.50	22.20	22.22	22.33
			36	18	22.50	22.22	22.26	22.31
			36	37	22.50	22.23	22.26	22.33
			75	0	22.50	22.21	22.22	22.32
		16QAM	1	0	23.00	22.27	22.47	22.37
			1	37	23.00	22.60	22.93	22.72
			1	74	23.00	22.18	22.58	22.23
			36	0	21.50	21.16	21.25	21.38
			36	18	21.50	21.18	21.28	21.40
			36	37	21.50	21.21	21.33	21.34

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20050/1720	20175/1732.5	20300/1745
			75	0		21.50	21.28	21.27
LTE Band 4	20MHz	QPSK	1	0	24.00	22.94	22.94	23.04
			1	49	24.00	23.22	23.93	23.46
			1	99	24.00	22.91	23.05	23.03
			50	0	22.50	22.12	22.23	22.35
			50	24	22.50	22.15	22.25	22.34
			50	49	22.50	22.17	22.21	22.32
			100	0	22.50	22.13	22.22	22.36
		16QAM	1	0	23.00	22.26	22.14	22.25
			1	49	23.00	22.53	22.51	22.70
			1	99	23.00	22.25	22.34	22.20
			50	0	21.50	21.18	21.20	21.42
			50	24	21.50	21.24	21.25	21.40
			50	49	21.50	21.29	21.29	21.35
			100	0	21.50	21.21	21.31	21.39

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20407/824.7	20525/836.5	20643/848.3
			75	0		21.50	21.28	21.27
LTE Band 5	1.4MHz	QPSK	1	0	23.50	23.19	23.20	23.18
			1	2	23.50	23.31	23.34	23.25
			1	5	23.50	23.46	23.17	23.14
			3	0	23.50	23.26	23.28	23.17
			3	1	23.50	23.23	23.30	23.23
			3	2	23.50	23.24	23.29	23.11
			6	0	22.50	22.23	22.25	22.21
		16QAM	1	0	23.00	22.37	22.39	22.03
			1	2	23.00	22.50	22.51	22.14
			1	5	23.00	22.38	22.40	22.05
			3	0	23.00	22.40	22.47	22.31
			3	1	23.00	22.44	22.51	22.35
			3	2	23.00	22.40	22.48	22.34
			6	0	21.50	21.39	21.40	21.38
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		

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	3MHz	QPSK	1	0	24.00	20415/825.5	20525/836.5	20635/847.5
			1	7	24.00	23.23	23.24	23.22
			1	14	24.00	23.53	23.52	23.52
			8	0	22.50	23.19	23.23	23.18
			8	4	22.50	22.19	22.26	22.21
			8	7	22.50	22.24	22.29	22.20
			15	0	22.50	22.21	22.25	22.15
		16QAM	1	0	23.00	22.67	22.42	22.14
			1	7	23.00	22.93	22.82	22.45
			1	14	23.00	22.62	22.41	22.09
			8	0	21.50	21.25	21.27	21.17
			8	4	21.50	21.27	21.29	21.25
			8	7	21.50	21.24	21.24	21.16
			15	0	21.50	21.21	21.20	21.21
LTE Band 5	5MHz	QPSK	1	0	24.00	20425/826.5	20525/836.5	20625/846.5
			1	12	24.00	23.13	23.15	23.16
			1	24	24.00	23.45	23.48	23.51
			12	0	22.50	23.16	23.13	23.06
			12	6	22.50	22.16	22.27	22.22
			12	11	22.50	22.26	22.30	22.22
			12	11	22.50	22.23	22.23	22.14
		16QAM	25	0	22.50	22.23	22.27	22.19
			1	0	23.00	22.44	22.47	22.68
			1	12	23.00	22.85	22.82	22.99
			1	24	23.00	22.50	22.42	22.62
			12	0	21.50	21.03	21.26	21.20
			12	6	21.50	21.19	21.31	21.23
			12	11	21.50	21.13	21.17	21.12
25	0	21.50	21.22	21.21	21.19			
LTE Band	10MHz	QPSK	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20450/829	20525/836.5	20600/844
LTE Band	10MHz	QPSK	1	0	24.00	23.27	23.24	23.22
			1	24	24.00	23.47	23.96	23.31

5			1	49	24.00	23.35	23.23	23.15	
			25	0	22.50	22.21	22.33	22.32	
			25	12	22.50	22.25	22.32	22.25	
			25	24	22.50	22.38	22.28	22.26	
			50	0	22.50	22.23	22.28	22.30	
	16QAM			1	0	23.00	22.06	22.68	22.41
				1	24	23.00	22.26	22.74	22.47
				1	49	23.00	22.10	22.62	22.30
				25	0	21.50	21.20	21.33	21.30
				25	12	21.50	21.24	21.31	21.25
				25	24	21.50	21.36	21.31	21.26
				50	0	21.50	21.24	21.27	21.30

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	23.71	23.54	23.57
			1	12	24.00	23.90	23.98	24.00
			1	24	24.00	23.29	23.57	23.61
			12	0	23.00	22.46	22.66	22.70
			12	6	23.00	22.48	22.70	22.74
			12	11	23.00	22.43	22.65	22.62
		16QAM	1	0	23.50	22.73	22.89	22.88
			1	12	23.50	23.17	23.41	23.28
			1	24	23.50	22.84	22.89	22.89
			12	0	22.00	21.36	21.60	21.70
			12	6	22.00	21.44	21.66	21.78
			12	11	22.00	21.41	21.58	21.63
			25	0	22.00	21.40	21.71	21.66

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20800/2505	21100/2535	21400/2565
LTE Band 7	10MHz	QPSK	1	0	24.00	23.42	23.65	23.68
			1	24	24.00	23.61	23.78	23.82
			1	49	24.00	23.49	23.70	23.67
			25	0	23.00	22.39	22.69	22.81
			25	12	23.00	22.42	22.70	22.73

		16QAM	25	24	23.00	22.57	22.77	22.73
			50	0	23.00	22.49	22.70	22.76
			1	0	23.50	22.52	22.50	23.05
			1	24	23.50	22.70	22.60	23.18
			1	49	23.50	22.62	22.54	23.07
			25	0	22.00	21.44	21.69	21.85
			25	12	22.00	21.45	21.67	21.79
			25	24	22.00	21.55	21.77	21.80
			50	0	22.00	21.51	21.71	21.74
			Band	Band Width	Modulation	RB Configuration		Tune-up
RB Size	RB Offset	20825/2507.5				21100/2535	21375/2562.5	
LTE Band 7	15MHz	QPSK	1	0	24.00	23.40	23.51	23.64
			1	37	24.00	23.62	23.82	23.97
			1	74	24.00	23.50	23.49	23.66
			36	0	23.00	22.50	22.69	22.86
			36	18	23.00	22.58	22.77	22.89
			36	37	23.00	22.59	22.79	22.83
			75	0	23.00	22.56	22.75	22.89
		16QAM	1	0	23.50	22.52	22.70	23.05
			1	37	23.50	22.86	23.06	23.35
			1	74	23.50	22.58	22.73	23.03
			36	0	22.00	21.51	21.68	21.88
			36	18	22.00	21.58	21.69	21.87
			36	37	22.00	21.58	21.70	21.83
			75	0	22.00	21.52	21.73	21.80
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	23.15	23.46	23.55
			1	49	24.00	23.57	23.87	23.89
			1	99	24.00	23.27	23.57	23.56
			50	0	23.00	22.34	22.65	22.85
			50	24	23.00	22.52	22.77	22.82
			50	49	23.00	22.53	22.82	22.74
			100	0	23.00	22.45	22.72	22.76
		16QAM	1	0	23.50	22.41	22.70	22.77
			1	49	23.50	22.84	23.07	23.20

			1	99	23.50	22.59	22.83	22.87
			50	0	22.00	21.39	21.71	21.91
			50	24	22.00	21.56	21.83	21.88
			50	49	22.00	21.51	21.87	21.77
			100	0	22.00	21.47	21.78	21.82

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	23.50	23.24	23.13	23.18
			1	2	23.50	23.38	23.23	23.26
			1	5	23.50	23.14	23.09	23.18
			3	0	23.50	23.29	23.15	23.25
			3	1	23.50	23.29	23.20	23.16
			3	2	23.50	23.26	23.16	23.14
		16QAM	6	0	22.50	22.24	22.20	22.21
			1	0	23.00	22.47	22.31	22.05
			1	2	23.00	22.56	22.40	22.20
			1	5	23.00	22.41	22.33	22.02
			3	0	22.50	22.40	22.36	22.32
			3	1	22.50	22.43	22.41	22.32
			3	2	22.50	22.38	22.41	22.33
6	0	21.50	21.44	21.37	21.44			

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	23.50	23.23	23.30	23.13
			1	7	23.50	23.47	23.45	23.41
			1	14	23.50	23.30	23.19	23.19
			8	0	22.50	22.20	22.16	22.15
			8	4	22.50	22.21	22.18	22.18
			8	7	22.50	22.15	22.15	22.20
		16QAM	15	0	22.50	22.18	22.12	22.14
			1	0	23.00	22.13	22.63	22.37
			1	7	23.00	22.69	22.93	22.70
			1	14	23.00	22.10	22.56	22.34
			8	0	21.50	21.21	21.23	21.21
			8	4	21.50	21.24	21.23	21.21

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		23035/701.5	23095/707.5	23155/713.5
			8	7	21.50	21.15	21.20	21.21
			15	0	21.50	21.24	21.18	21.13
LTE Band 12	5MHz	QPSK	1	0	23.50	23.12	23.10	23.05
			1	12	23.50	23.47	23.34	23.46
			1	24	23.50	23.10	23.10	23.10
			12	0	22.50	22.20	22.20	22.13
			12	6	22.50	22.24	22.22	22.22
			12	11	22.50	22.19	22.14	22.18
			25	0	22.50	22.23	22.21	22.21
		16QAM	1	0	23.00	22.68	22.34	22.42
			1	12	23.00	22.93	22.88	22.88
			1	24	23.00	22.69	22.36	22.41
			12	0	21.50	21.24	21.14	21.16
			12	6	21.50	21.26	21.18	21.26
			12	11	21.50	21.20	21.10	21.16
			25	0	21.50	21.20	21.23	21.19
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	23.50	23.21	23.22	23.21
			1	24	23.50	23.33	23.36	23.36
			1	49	23.50	23.25	23.26	23.21
			25	0	22.50	22.26	22.16	22.24
			25	12	22.50	22.19	22.19	22.16
			25	24	22.50	22.18	22.16	22.25
			50	0	22.50	22.22	22.18	22.20
		16QAM	1	0	23.00	22.35	22.07	22.58
			1	24	23.00	22.49	22.23	22.74
			1	49	23.00	22.28	22.11	22.61
			25	0	21.50	21.26	21.23	21.24
			25	12	21.50	21.21	21.18	21.24
			25	24	21.50	21.21	21.20	21.28
			50	0	21.50	21.27	21.18	21.28

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	23.50	22.94	22.96	22.97
			1	12	23.50	23.46	23.34	23.46
			1	24	23.50	22.95	22.95	22.95
			12	0	22.50	22.09	22.03	22.06
			12	6	22.50	22.11	22.07	22.14
			12	11	22.50	22.06	22.03	22.07
			25	0	22.50	22.06	22.01	22.06
		16QAM	1	0	23.00	22.58	22.23	22.28
			1	12	23.00	22.89	22.63	22.73
			1	24	23.00	22.49	22.25	22.28
			12	0	21.50	21.05	20.96	21.07
			12	6	21.50	21.10	21.05	21.14
			12	11	21.50	21.04	20.97	21.05
			25	0	21.50	21.04	21.08	21.04
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	23.50	23.07	23.05	23.06
			1	24	23.50	23.14	23.13	23.24
			1	49	23.50	23.16	23.09	23.14
			25	0	22.50	22.12	22.06	22.08
			25	12	22.50	22.06	22.05	22.09
			25	24	22.50	22.10	22.08	22.13
			50	0	22.50	22.08	22.09	22.09
		16QAM	1	0	23.00	22.46	22.15	21.91
			1	24	23.00	22.62	22.36	21.99
			1	49	23.00	22.51	22.17	21.96
			25	0	21.50	21.14	21.08	21.08
			25	12	21.50	21.08	21.08	21.10
			25	24	21.50	21.13	21.10	21.16
			50	0	21.50	21.07	21.15	21.10

7.4. WLAN & Bluetooth Output Power

Mode	Channel	Frequency (MHz)	Tune-up	Output Power (dBm)
802.11b	1	2412	13.00	12.69
	6	2437	13.00	12.46
	11	2462	13.00	11.92
802.11g	1	2412	12.00	11.56
	6	2437	12.00	11.08
	11	2462	12.00	10.98
802.11n HT20	1	2412	10.00	9.98
	6	2437	10.00	9.95
	11	2462	10.00	9.70
802.11n HT40	3	2422	9.00	8.61
	6	2437	9.00	8.97
	9	2452	9.00	8.85

NOTE: Power measurement results of WLAN 2.4G.

Mode	Channel	Frequency (MHz)	Tune-up	Output Power (dBm)
802.11a	36	5180	11.500	11.369
	40	5200	11.500	11.286
	48	5240	11.500	11.005
802.11n HT20	36	5180	10.500	10.465
	40	5200	10.500	10.471
	48	5240	10.500	10.372
802.11n HT40	38	5190	9.000	8.565
	46	5230	9.000	8.354
802.11ac VHT20	36	5180	10.000	9.597
	40	5200	10.000	9.366
	48	5240	10.000	9.483
802.11ac VHT40	38	5190	9.500	9.085
	46	5230	9.500	9.225
802.11ac VHT80	42	5210	10.000	9.101

NOTE: Power measurement results of WLAN 5.2G.

Mode	Channel	Frequency (MHz)	Tune-up	Output Power (dBm)
802.11a	149	5745	12.000	11.927
	157	5785	12.000	11.533
	165	5825	12.000	11.748
802.11n HT20	149	5745	11.000	10.867
	157	5785	11.000	10.249
	165	5825	11.000	10.645
802.11n	151	5755	9.500	9.409

HT40	159	5795	9.500	9.204
802.11ac VHT20	149	5745	11.000	10.201
	157	5785	11.000	10.708
	165	5825	11.000	10.310
802.11ac VHT40	151	5755	8.500	8.044
	159	5795	8.500	7.936
802.11ac VHT80	155	5775	8.000	7.192

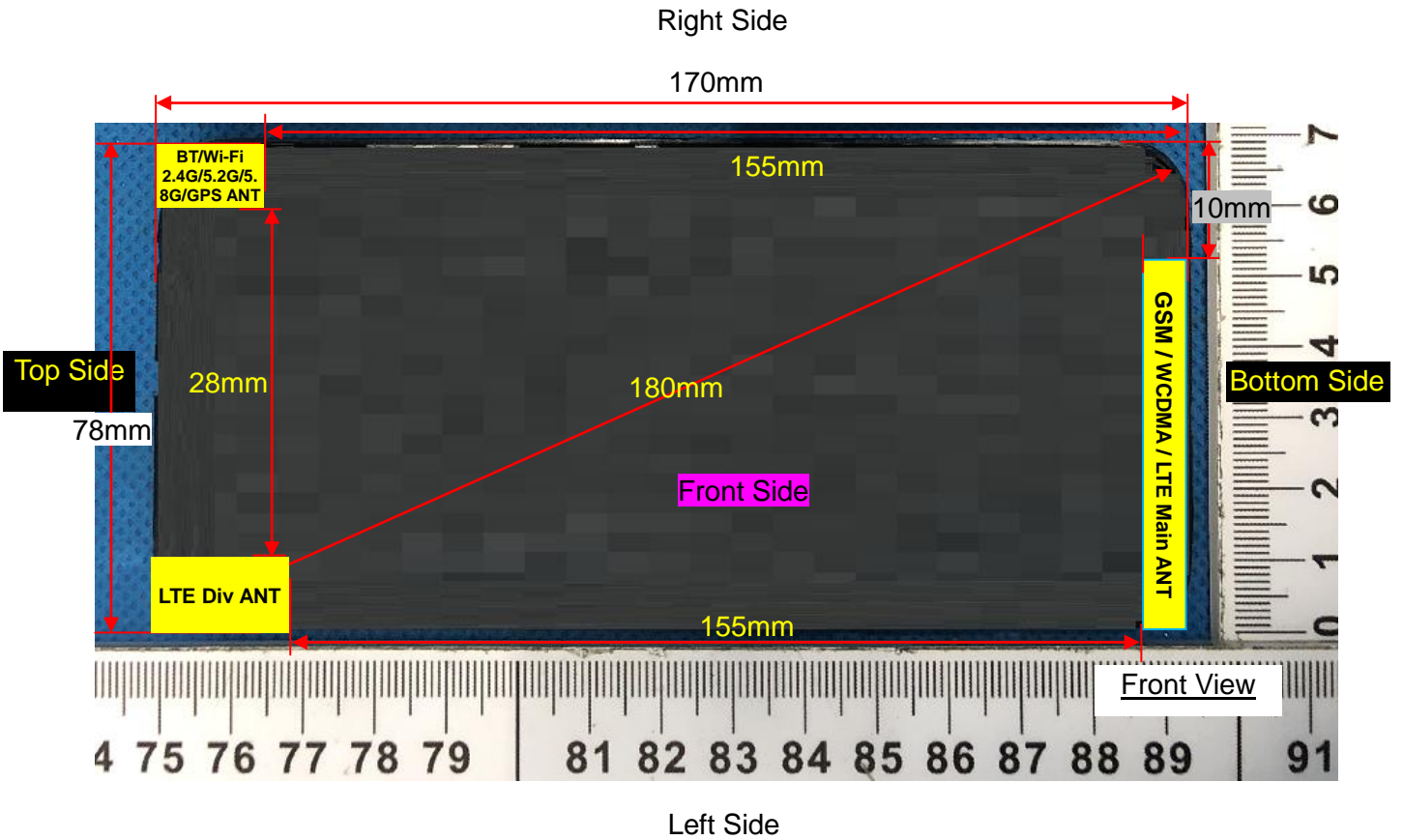
NOTE: Power measurement results of WLAN 5.8G.

BR+EDR	Output Power (dBm)				
	Data Rates	Tune-up	Channel		
			0CH	39CH	78CH
	1M	8.000	7.544	7.632	7.909
	2M	8.000	6.790	7.234	7.117
	3M	8.000	6.186	7.230	7.041

BLE	Channel	Tune-up	Output Power (dBm)	
			1M	2M
		0CH	-1.500	-2.220
	19CH	-1.500	-1.646	-1.678
	39CH	-1.500	-2.992	-3.011

NOTE: Power measurement results of Bluetooth.

8. Antenna Location



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	Yes	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:

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

- $f_{(\text{GHz})}$ 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	8.000	6.310	5	2.480	1.99	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:

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

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	8.000	6.310	5	2.480	7.5	0.265
Bluetooth	Body	8.000	6.310	10	2.480	7.5	0.132
Bluetooth	Hotspot	8.000	6.310	10	2.480	7.5	0.132

NOTE: Estimated SAR calculation for Bluetooth

10. SAR Results

10.1. SAR measurement Result

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	189/836.4	GPRS(GMSK 3TS)	0.535	0.375	-0.20	29.25	29.50	0.567	2021/1/15

Left Tilt 15 Degree	189/836.4	GPRS(GMSK 3TS)	0.269	0.187	-0.34	29.25	29.50	0.285	2021/1/15
Right Cheek	189/836.4	GPRS(GMSK 3TS)	0.489	0.343	-2.10	29.25	29.50	0.518	2021/1/15
Right Tilt 15 Degree	189/836.4	GPRS(GMSK 3TS)	0.231	0.158	-2.18	29.25	29.50	0.245	2021/1/15

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	189/836.4	GPRS(GMSK 3TS)	0.351	0.257	-4.63	29.25	29.50	0.372	2021/1/15
Back Side	189/836.4	GPRS(GMSK 3TS)	0.459	0.340	1.29	29.25	29.50	0.486	2021/1/15

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	189/836.4	GPRS(GMSK 3TS)	0.351	0.257	-4.63	29.25	29.50	0.372	2021/1/15
Back Side	189/836.4	GPRS(GMSK 3TS)	0.459	0.340	1.29	29.25	29.50	0.486	2021/1/15
Left Side	189/836.4	GPRS(GMSK 3TS)	0.156	0.116	3.45	29.25	29.50	0.165	2021/1/15
Right Side	189/836.4	GPRS(GMSK 3TS)	0.144	0.110	-0.88	29.25	29.50	0.153	2021/1/15
Bottom Side	189/836.4	GPRS(GMSK 3TS)	0.342	0.249	-0.61	29.25	29.50	0.362	2021/1/15

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)	0.195	0.115	4.10	27.16	27.50	0.211	2021/1/17
Left Tilt 15 Degree	661/1880	GPRS(GMSK 4TS)	0.099	0.060	-0.79	27.16	27.50	0.107	2021/1/17
Right Cheek	661/1880	GPRS(GMSK 4TS)	0.179	0.101	1.47	27.16	27.50	0.194	2021/1/17
Right Tilt 15 Degree	661/1880	GPRS(GMSK 4TS)	0.096	0.056	-0.82	27.16	27.50	0.104	2021/1/17

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 ($\pm 5\%$)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Front Side	661/1880	GPRS(GMSK 4TS)	0.516	0.301	1.83	27.16	27.50	0.558	2021/1/17
Back Side	661/1880	GPRS(GMSK 4TS)	0.627	0.366	0.98	27.16	27.50	0.678	2021/1/17

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 ($\pm 5\%$)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Front Side	661/1880	GPRS(GMSK 4TS)	0.516	0.301	1.83	27.16	27.50	0.558	2021/1/17
Back Side	661/1880	GPRS(GMSK 4TS)	0.627	0.366	0.98	27.16	27.50	0.678	2021/1/17
Left Side	661/1880	GPRS(GMSK 4TS)	0.244	0.139	1.00	27.16	27.50	0.264	2021/1/17
Right Side	661/1880	GPRS(GMSK 4TS)	0.233	0.128	-1.23	27.16	27.50	0.252	2021/1/17
Bottom Side	661/1880	GPRS(GMSK 4TS)	0.497	0.287	-3.35	27.16	27.50	0.537	2021/1/17

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 ($\pm 5\%$)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Left Cheek	9400/1880	RMC12.2K	0.181	0.102	2.17	24.18	24.50	0.195	2021/1/17
Left Tilt 15 Degree	9400/1880	RMC12.2K	0.092	0.053	-4.92	24.18	24.50	0.099	2021/1/17
Right Cheek	9400/1880	RMC12.2K	0.157	0.096	-4.27	24.18	24.50	0.169	2021/1/17
Right Tilt 15 Degree	9400/1880	RMC12.2K	0.086	0.057	0.60	24.18	24.50	0.093	2021/1/17

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 ($\pm 5\%$)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g	Date
			1g	10g					

								(W/Kg)	
Front Side	9400/1880	RMC12.2K	0.487	0.257	3.02	24.18	24.50	0.524	2021/1/17
Back Side	9400/1880	RMC12.2K	0.644	0.342	3.24	24.18	24.50	0.693	2021/1/17

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	0.487	0.257	3.02	24.18	24.50	0.524	2021/1/17
Back Side	9400/1880	RMC12.2K	0.644	0.342	3.24	24.18	24.50	0.693	2021/1/17
Left Side	9400/1880	RMC12.2K	0.239	0.130	-3.33	24.18	24.50	0.257	2021/1/17
Right Side	9400/1880	RMC12.2K	0.225	0.123	1.24	24.18	24.50	0.242	2021/1/17
Bottom Side	9400/1880	RMC12.2K	0.480	0.253	-4.79	24.18	24.50	0.517	2021/1/17

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	1413/1732.6	RMC12.2K	0.128	0.085	0.86	23.62	24.00	0.140	2021/1/15
Left Tilt 15 Degree	1413/1732.6	RMC12.2K	0.067	0.042	4.07	23.62	24.00	0.073	2021/1/15
Right Cheek	1413/1732.6	RMC12.2K	0.120	0.083	-3.80	23.62	24.00	0.131	2021/1/15
Right Tilt 15 Degree	1413/1732.6	RMC12.2K	0.055	0.041	-2.19	23.62	24.00	0.060	2021/1/15

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	1413/1732.6	RMC12.2K	0.464	0.244	2.64	23.62	24.00	0.506	2021/1/15
Back Side	1413/1732.6	RMC12.2K	0.567	0.292	0.17	23.62	24.00	0.619	2021/1/15

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

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					
Front Side	1413/1732.6	RMC12.2K	0.464	0.244	2.64	23.62	24.00	0.506	2021/1/15
Back Side	1413/1732.6	RMC12.2K	0.567	0.292	0.17	23.62	24.00	0.619	2021/1/15
Left Side	1413/1732.6	RMC12.2K	0.221	0.115	-2.85	23.62	24.00	0.241	2021/1/15
Right Side	1413/1732.6	RMC12.2K	0.216	0.110	1.24	23.62	24.00	0.236	2021/1/15
Bottom Side	1413/1732.6	RMC12.2K	0.436	0.220	2.77	23.62	24.00	0.476	2021/1/15

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	0.315	0.235	1.41	23.41	23.50	0.322	2021/1/15
Left Tilt 15 Degree	4182/836.4	RMC12.2K	0.177	0.145	4.05	23.41	23.50	0.181	2021/1/15
Right Cheek	4182/836.4	RMC12.2K	0.271	0.223	-1.55	23.41	23.50	0.277	2021/1/15
Right Tilt 15 Degree	4182/836.4	RMC12.2K	0.137	0.110	4.78	23.41	23.50	0.140	2021/1/15

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	0.209	0.155	-4.63	23.41	23.50	0.213	2021/1/15
Back Side	4182/836.4	RMC12.2K	0.277	0.208	-0.34	23.41	23.50	0.283	2021/1/15

NOTE: Body-Worn SAR test results of WCDMA 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					
Front Side	4182/836.4	RMC12.2K	0.209	0.155	-4.63	23.41	23.50	0.213	2021/1/15
Back Side	4182/836.4	RMC12.2K	0.277	0.208	-0.34	23.41	23.50	0.283	2021/1/15
Left Side	4182/836.4	RMC12.2K	0.110	0.085	2.65	23.41	23.50	0.112	2021/1/15

Right Side	4182/836.4	RMC12.2K	0.104	0.071	2.31	23.41	23.50	0.106	2021/1/15
Bottom Side	4182/836.4	RMC12.2K	0.188	0.142	-3.76	23.41	23.50	0.192	2021/1/15

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)	0.224	0.132	-0.27	23.65	24.00	0.243	2021/1/17
Left Tilt 15 Degree	18900/1880	20M QPSK(1,49)	0.119	0.073	1.17	23.65	24.00	0.129	2021/1/17
Right Cheek	18900/1880	20M QPSK(1,49)	0.203	0.122	-3.56	23.65	24.00	0.220	2021/1/17
Right Tilt 15 Degree	18900/1880	20M QPSK(1,49)	0.092	0.051	-2.36	23.65	24.00	0.100	2021/1/17
50%RB									
Left Cheek	18900/1880	1.4M QPSK(3,1)	0.212	0.125	3.97	23.60	24.00	0.232	2021/1/17
Left Tilt 15 Degree	18900/1880	1.4M QPSK(3,1)	0.105	0.064	-1.65	23.60	24.00	0.115	2021/1/17
Right Cheek	18900/1880	1.4M QPSK(3,1)	0.180	0.104	-3.92	23.60	24.00	0.197	2021/1/17
Right Tilt 15 Degree	18900/1880	1.4M QPSK(3,1)	0.081	0.045	2.77	23.60	24.00	0.089	2021/1/17

NOTE: Head SAR test results of LTE 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 (W/Kg)	Date
			1g	10g					
1RB									
Front Side	18900/1880	20M QPSK(1,49)	0.524	0.328	2.92	23.65	24.00	0.568	2021/1/17
Back Side	18900/1880	20M	0.633	0.416	-0.28	23.65	24.00	0.686	2021/1/17

		QPSK(1,49)							
50%RB									
Front Side	18900/1880	1.4M QPSK(3,1)	0.482	0.304	-3.35	23.60	24.00	0.529	2021/1/17
Back Side	18900/1880	1.4M QPSK(3,1)	0.578	0.377	-3.52	23.60	24.00	0.634	2021/1/17

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)	0.524	0.328	2.92	23.65	24.00	0.568	2021/1/17
Back Side	18900/1880	20M QPSK(1,49)	0.633	0.416	-0.28	23.65	24.00	0.686	2021/1/17
Left Side	18900/1880	20M QPSK(1,49)	0.265	0.164	-4.85	23.65	24.00	0.287	2021/1/17
Right Side	18900/1880	20M QPSK(1,49)	0.240	0.142	0.26	23.65	24.00	0.260	2021/1/17
Bottom Side	18900/1880	20M QPSK(1,49)	0.481	0.298	-1.69	23.65	24.00	0.521	2021/1/17
50%RB									
Front Side	18900/1880	1.4M QPSK(3,1)	0.482	0.304	-3.35	23.60	24.00	0.529	2021/1/17
Back Side	18900/1880	1.4M QPSK(3,1)	0.578	0.377	-3.52	23.60	24.00	0.634	2021/1/17
Left Side	18900/1880	1.4M QPSK(3,1)	0.247	0.149	-2.30	23.60	24.00	0.271	2021/1/17
Right Side	18900/1880	1.4M QPSK(3,1)	0.215	0.122	1.09	23.60	24.00	0.236	2021/1/17
Bottom Side	18900/1880	1.4M QPSK(3,1)	0.442	0.255	-1.24	23.60	24.00	0.485	2021/1/17

NOTE: Hotspot SAR test results of LTE Band 2

10.1.7. SAR measurement Result of LTE Band 4

Test	Test channel	Test Mode	SAR Value	Power	Conducted	Tune-up	Scaled	Date
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Position of Head	/Freq.		(W/kg)		Drift (±5%)	power (dBm)	power (dBm)	SAR 1g (W/Kg)	
			1g	10g					
1RB									
Left Cheek	20175/1732.5	20M QPSK(1,49)	0.151	0.097	-3.25	23.93	24.00	0.153	2021/1/15
Left Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.081	0.052	0.71	23.93	24.00	0.082	2021/1/15
Right Cheek	20175/1732.5	20M QPSK(1,49)	0.137	0.082	0.70	23.93	24.00	0.139	2021/1/15
Right Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.071	0.049	3.28	23.93	24.00	0.072	2021/1/15
50%RB									
Left Cheek	20175/1732.5	1.4M QPSK(3,1)	0.140	0.088	-2.09	23.24	23.50	0.149	2021/1/15
Left Tilt 15 Degree	20175/1732.5	1.4M QPSK(3,1)	0.073	0.045	1.07	23.24	23.50	0.078	2021/1/15
Right Cheek	20175/1732.5	1.4M QPSK(3,1)	0.120	0.074	-1.52	23.24	23.50	0.127	2021/1/15
Right Tilt 15 Degree	20175/1732.5	1.4M QPSK(3,1)	0.067	0.043	3.64	23.24	23.50	0.071	2021/1/15

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)	0.524	0.311	4.57	23.93	24.00	0.533	2021/1/15
Back Side	20175/1732.5	20M QPSK(1,49)	0.638	0.374	-1.52	23.93	24.00	0.648	2021/1/15
50%RB									
Front Side	20175/1732.5	1.4M QPSK(3,1)	0.455	0.267	1.37	23.24	23.50	0.483	2021/1/15
Back Side	20175/1732.5	1.4M QPSK(3,1)	0.580	0.345	0.96	23.24	23.50	0.616	2021/1/15

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 ($\pm 5\%$)	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)	0.524	0.311	4.57	23.93	24.00	0.533	2021/1/15
Back Side	20175/1732.5	20M QPSK(1,49)	0.638	0.374	-1.52	23.93	24.00	0.648	2021/1/15
Left Side	20175/1732.5	20M QPSK(1,49)	0.252	0.144	1.64	23.93	24.00	0.256	2021/1/15
Right Side	20175/1732.5	20M QPSK(1,49)	0.220	0.128	0.38	23.93	24.00	0.224	2021/1/15
Bottom Side	20175/1732.5	20M QPSK(1,49)	0.485	0.280	-1.16	23.93	24.00	0.493	2021/1/15
50%RB									
Front Side	20175/1732.5	1.4M QPSK(3,1)	0.455	0.267	1.37	23.24	23.50	0.483	2021/1/15
Back Side	20175/1732.5	1.4M QPSK(3,1)	0.580	0.345	0.96	23.24	23.50	0.616	2021/1/15
Left Side	20175/1732.5	1.4M QPSK(3,1)	0.214	0.129	-2.93	23.24	23.50	0.227	2021/1/15
Right Side	20175/1732.5	1.4M QPSK(3,1)	0.206	0.118	1.22	23.24	23.50	0.219	2021/1/15
Bottom Side	20175/1732.5	1.4M QPSK(3,1)	0.429	0.251	1.74	23.24	23.50	0.455	2021/1/15

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 ($\pm 5\%$)	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)	0.362	0.265	0.87	23.96	24.00	0.365	2021/1/15

Left Tilt 15 Degree	20525/836.5	10M QPSK(1,24)	0.196	0.147	-0.68	23.96	24.00	0.198	2021/1/15
Right Cheek	20525/836.5	10M QPSK(1,24)	0.316	0.234	-2.76	23.96	24.00	0.319	2021/1/15
Right Tilt 15 Degree	20525/836.5	10M QPSK(1,24)	0.145	0.103	-4.09	23.96	24.00	0.146	2021/1/15
50%RB									
Left Cheek	20525/836.5	1.4M QPSK(3,2)	0.339	0.247	2.64	23.30	23.50	0.355	2021/1/15
Left Tilt 15 Degree	20525/836.5	1.4M QPSK(3,2)	0.170	0.139	-3.39	23.30	23.50	0.178	2021/1/15
Right Cheek	20525/836.5	1.4M QPSK(3,2)	0.272	0.206	0.82	23.30	23.50	0.285	2021/1/15
Right Tilt 15 Degree	20525/836.5	1.4M QPSK(3,2)	0.129	0.092	1.70	23.30	23.50	0.135	2021/1/15

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)	0.271	0.207	4.27	23.96	24.00	0.274	2021/1/15
Back Side	20525/836.5	10M QPSK(1,24)	0.328	0.248	-1.08	23.96	24.00	0.331	2021/1/15
50%RB									
Front Side	20525/836.5	1.4M QPSK(3,2)	0.250	0.189	2.64	23.30	23.50	0.262	2021/1/15
Back Side	20525/836.5	1.4M QPSK(3,2)	0.303	0.235	2.63	23.30	23.50	0.317	2021/1/15

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

Test Position of Hotspot	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					

with 10mm									
1RB									
Front Side	20525/836.5	10M QPSK(1,24)	0.271	0.207	4.27	23.96	24.00	0.274	2021/1/15
Back Side	20525/836.5	10M QPSK(1,24)	0.328	0.248	-1.08	23.96	24.00	0.331	2021/1/15
Left Side	20525/836.5	10M QPSK(1,24)	0.121	0.087	-4.22	23.96	24.00	0.122	2021/1/15
Right Side	20525/836.5	10M QPSK(1,24)	0.113	0.080	2.31	23.96	24.00	0.114	2021/1/15
Bottom Side	20525/836.5	10M QPSK(1,24)	0.243	0.187	4.69	23.96	24.00	0.245	2021/1/15
50%RB									
Front Side	20525/836.5	1.4M QPSK(3,2)	0.250	0.189	2.64	23.30	23.50	0.262	2021/1/15
Back Side	20525/836.5	1.4M QPSK(3,2)	0.303	0.235	2.63	23.30	23.50	0.317	2021/1/15
Left Side	20525/836.5	1.4M QPSK(3,2)	0.114	0.078	1.08	23.30	23.50	0.119	2021/1/15
Right Side	20525/836.5	1.4M QPSK(3,2)	0.103	0.071	2.22	23.30	23.50	0.108	2021/1/15
Bottom Side	20525/836.5	1.4M QPSK(3,2)	0.226	0.163	3.97	23.30	23.50	0.237	2021/1/15

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)	0.086	0.051	-4.97	23.87	24.00	0.089	2021/1/16
Left Tilt 15 Degree	21100/2535	20M QPSK(1,49)	0.048	0.031	-0.38	23.87	24.00	0.049	2021/1/16
Right Cheek	21100/2535	20M QPSK(1,49)	0.078	0.042	4.79	23.87	24.00	0.080	2021/1/16
Right Tilt 15	21100/2535	20M QPSK(1,49)	0.041	0.025	1.15	23.87	24.00	0.042	2021/1/16

Degree									
50%RB									
Left Cheek	21100/2535	20M QPSK(50,0)	0.075	0.045	-2.74	22.65	23.00	0.081	2021/1/16
Left Tilt 15 Degree	21100/2535	20M QPSK(50,0)	0.043	0.028	4.37	22.65	23.00	0.047	2021/1/16
Right Cheek	21100/2535	20M QPSK(50,0)	0.072	0.036	-3.74	22.65	23.00	0.078	2021/1/16
Right Tilt 15 Degree	21100/2535	20M QPSK(50,0)	0.037	0.024	-0.62	22.65	23.00	0.040	2021/1/16

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)	0.558	0.289	0.35	23.87	24.00	0.575	2021/1/16
Back Side	21100/2535	20M QPSK(1,49)	0.856	0.420	-0.06	23.87	24.00	0.882	2021/1/16
Back Side Repeated	21100/2535	20M QPSK(1,49)	0.849	0.416	1.14	23.87	24.00	0.875	2021/1/16
Back Side	20850/2510	20M QPSK(1,49)	0.779	0.397	0.34	23.57	24.00	0.860	2021/1/16
Back Side	21350/2560	20M QPSK(1,49)	0.801	0.405	0.27	23.89	24.00	0.822	2021/1/16
50%RB									
Front Side	21100/2535	20M QPSK(50,0)	0.527	0.268	-1.30	22.65	23.00	0.571	2021/1/16
Back Side	21100/2535	20M QPSK(50,0)	0.601	0.305	-4.59	22.65	23.00	0.651	2021/1/16
100%RB									
Back Side	21100/2535	20M QPSK(100,0)	0.553	0.289	0.34	22.72	23.00	0.590	2021/1/16

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

Test Position	Test channel	Test Mode	SAR Value (W/kg)	Power Drift	Conducted power	Tune-up power	Scaled SAR	Date
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of Hotspot with 10mm	/Freq.		1g	10g	(±5%)	(dBm)	(dBm)	1g (W/Kg)	
1RB									
Front Side	21100/2535	20M QPSK(1,49)	0.558	0.289	0.35	23.87	24.00	0.575	2021/1/16
Back Side	21100/2535	20M QPSK(1,49)	0.856	0.420	-0.06	23.87	24.00	0.882	2021/1/16
Back Side Repeated	21100/2535	20M QPSK(1,49)	0.849	0.416	1.14	23.87	24.00	0.875	2021/1/16
Left Side	21100/2535	20M QPSK(1,49)	0.312	0.157	-4.31	23.87	24.00	0.321	2021/1/16
Right Side	21100/2535	20M QPSK(1,49)	0.301	0.150	3.02	23.87	24.00	0.310	2021/1/16
Bottom Side	21100/2535	20M QPSK(1,49)	0.328	0.221	2.11	23.87	24.00	0.338	2021/1/16
Back Side	20850/2510	20M QPSK(1,49)	0.779	0.397	0.34	23.57	24.00	0.860	2021/1/16
Back Side	21350/2560	20M QPSK(1,49)	0.801	0.405	0.27	23.89	24.00	0.822	2021/1/16
50%RB									
Front Side	21100/2535	20M QPSK(50,0)	0.527	0.268	-1.30	22.65	23.00	0.571	2021/1/16
Back Side	21100/2535	20M QPSK(50,0)	0.601	0.305	-4.59	22.65	23.00	0.651	2021/1/16
Left Side	21100/2535	20M QPSK(50,0)	0.271	0.141	0.54	22.65	23.00	0.294	2021/1/16
Right Side	21100/2535	20M QPSK(50,0)	0.250	0.124	0.11	22.65	23.00	0.271	2021/1/16
Bottom Side	21100/2535	20M QPSK(50,0)	0.294	0.202	-4.19	22.65	23.00	0.319	2021/1/16
100%RB									
Back Side	21100/2535	20M QPSK(100,0)	0.553	0.289	0.34	22.72	23.00	0.590	2021/1/16

NOTE: Hotspot SAR test results of LTE Band 7

10.1.10. SAR measurement Result of LTE Band 12

Test Position	Test channel /Freq.	Test Mode	SAR Value (W/kg)	Power Drift	Conducted power	Tune-up power	Scaled SAR	Date
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of Head			1g	10g	(±5%)	(dBm)	(dBm)	1g (W/Kg)	
1RB									
Left Cheek	23095/707.5	10M QPSK(1,24)	0.250	0.219	-1.26	23.36	23.50	0.258	2021/1/14
Left Tilt 15 Degree	23095/707.5	10M QPSK(1,24)	0.149	0.135	-2.62	23.36	23.50	0.154	2021/1/14
Right Cheek	23095/707.5	10M QPSK(1,24)	0.216	0.193	-2.39	23.36	23.50	0.223	2021/1/14
Right Tilt 15 Degree	23095/707.5	10M QPSK(1,24)	0.112	0.101	2.48	23.36	23.50	0.116	2021/1/14
50%RB									
Left Cheek	23095/707.5	1.4M QPSK(3,1)	0.213	0.196	-0.95	23.20	23.50	0.228	2021/1/14
Left Tilt 15 Degree	23095/707.5	1.4M QPSK(3,1)	0.139	0.121	-1.33	23.20	23.50	0.149	2021/1/14
Right Cheek	23095/707.5	1.4M QPSK(3,1)	0.189	0.172	0.92	23.20	23.50	0.203	2021/1/14
Right Tilt 15 Degree	23095/707.5	1.4M QPSK(3,1)	0.102	0.095	-4.28	23.20	23.50	0.109	2021/1/14

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)	0.290	0.252	2.29	23.36	23.50	0.300	2021/1/14
Back Side	23095/707.5	10M QPSK(1,24)	0.366	0.315	-1.13	23.36	23.50	0.378	2021/1/14
50%RB									
Front Side	23095/707.5	1.4M QPSK(3,1)	0.269	0.236	-1.48	23.20	23.50	0.288	2021/1/14
Back Side	23095/707.5	1.4M QPSK(3,1)	0.347	0.278	3.92	23.20	23.50	0.372	2021/1/14

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)	0.290	0.252	2.29	23.36	23.50	0.300	2021/1/14
Back Side	23095/707.5	10M QPSK(1,24)	0.366	0.315	-1.13	23.36	23.50	0.378	2021/1/14
Left Side	23095/707.5	10M QPSK(1,24)	0.176	0.153	0.71	23.36	23.50	0.182	2021/1/14
Right Side	23095/707.5	10M QPSK(1,24)	0.152	0.140	3.31	23.36	23.50	0.157	2021/1/14
Bottom Side	23095/707.5	10M QPSK(1,24)	0.272	0.230	4.26	23.36	23.50	0.281	2021/1/14
50%RB									
Front Side	23095/707.5	1.4M QPSK(3,1)	0.269	0.236	-1.48	23.20	23.50	0.288	2021/1/14
Back Side	23095/707.5	1.4M QPSK(3,1)	0.347	0.278	3.92	23.20	23.50	0.372	2021/1/14
Left Side	23095/707.5	1.4M QPSK(3,1)	0.159	0.139	-2.83	23.20	23.50	0.170	2021/1/14
Right Side	23095/707.5	1.4M QPSK(3,1)	0.140	0.130	4.12	23.20	23.50	0.150	2021/1/14
Bottom Side	23095/707.5	1.4M QPSK(3,1)	0.252	0.214	0.64	23.20	23.50	0.270	2021/1/14

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)	0.244	0.213	1.12	23.13	23.50	0.266	2021/1/14
Left Tilt	23790/710	10M	0.134	0.122	1.19	23.13	23.50	0.146	2021/1/14

15 Degree		QPSK(1,24)							
Right Cheek	23790/710	10M QPSK(1,24)	0.219	0.194	3.57	23.13	23.50	0.238	2021/1/14
Right Tilt 15 Degree	23790/710	10M QPSK(1,24)	0.116	0.101	2.14	23.13	23.50	0.126	2021/1/14
50%RB									
Left Cheek	23790/710	10M QPSK(25,24)	0.221	0.192	-2.27	22.08	22.50	0.243	2021/1/14
Left Tilt 15 Degree	23790/710	10M QPSK(25,24)	0.121	0.106	-1.28	22.08	22.50	0.133	2021/1/14
Right Cheek	23790/710	10M QPSK(25,24)	0.197	0.171	0.51	22.08	22.50	0.217	2021/1/14
Right Tilt 15 Degree	23790/710	10M QPSK(25,24)	0.101	0.092	0.69	22.08	22.50	0.111	2021/1/14

NOTE: Head SAR test results of LTE Band17

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)	0.300	0.249	-0.32	23.13	23.50	0.327	2021/1/14
Back Side	23790/710	10M QPSK(1,24)	0.377	0.317	-0.78	23.13	23.50	0.411	2021/1/14
50%RB									
Front Side	23790/710	10M QPSK(25,24)	0.258	0.223	-4.93	22.08	22.50	0.284	2021/1/14
Back Side	23790/710	10M QPSK(25,24)	0.334	0.270	2.62	22.08	22.50	0.368	2021/1/14

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

Test Position of Hotspot with	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					

10mm									
1RB									
Front Side	23790/710	10M QPSK(1,24)	0.300	0.249	-0.32	23.13	23.50	0.327	2021/1/14
Back Side	23790/710	10M QPSK(1,24)	0.377	0.317	-0.78	23.13	23.50	0.411	2021/1/14
Left Side	23790/710	10M QPSK(1,24)	0.133	0.110	4.46	23.13	23.50	0.145	2021/1/14
Right Side	23790/710	10M QPSK(1,24)	0.120	0.105	0.23	23.13	23.50	0.131	2021/1/14
Bottom Side	23790/710	10M QPSK(1,24)	0.281	0.233	-1.90	23.13	23.50	0.306	2021/1/14
50%RB									
Front Side	23790/710	10M QPSK(25,24)	0.258	0.223	-4.93	22.08	22.50	0.284	2021/1/14
Back Side	23790/710	10M QPSK(25,24)	0.334	0.270	2.62	22.08	22.50	0.368	2021/1/14
Left Side	23790/710	10M QPSK(25,24)	0.122	0.096	-2.64	22.08	22.50	0.134	2021/1/14
Right Side	23790/710	10M QPSK(25,24)	0.113	0.085	0.25	22.08	22.50	0.124	2021/1/14
Bottom Side	23790/710	10M QPSK(25,24)	0.256	0.200	-4.06	22.08	22.50	0.282	2021/1/14

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	0.358	0.181	0.49	12.46	13.00	0.405	2021/1/19
Left Tilt 15 Degree	6/2437	802.11 b	0.192	0.099	4.74	12.46	13.00	0.217	2021/1/19
Right Cheek	6/2437	802.11 b	0.307	0.158	-3.49	12.46	13.00	0.348	2021/1/19
Right Tilt 15 Degree	6/2437	802.11 b	0.148	0.070	3.89	12.46	13.00	0.168	2021/1/19

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	0.118	0.061	-1.33	12.46	13.00	0.134	2021/1/19
Back Side	6/2437	802.11 b	0.185	0.100	-2.62	12.46	13.00	0.209	2021/1/19

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	0.118	0.061	-1.33	12.46	13.00	0.134	2021/1/19
Back Side	6/2437	802.11 b	0.185	0.100	-2.62	12.46	13.00	0.209	2021/1/19
Right Side	6/2437	802.11 b	0.045	0.022	4.40	12.46	13.00	0.051	2021/1/19
Top Side	6/2437	802.11 b	0.062	0.030	2.02	12.46	13.00	0.070	2021/1/19

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	0.564	0.189	-1.05	11.286	11.500	0.592	2021/1/20
Left Tilt 15 Degree	40/5200	802.11a	0.322	0.110	4.56	11.286	11.500	0.338	2021/1/20
Right Cheek	40/5200	802.11a	0.510	0.167	2.81	11.286	11.500	0.536	2021/1/20
Right Tilt 15 Degree	40/5200	802.11a	0.262	0.083	3.69	11.286	11.500	0.275	2021/1/20

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	0.319	0.158	-2.19	11.286	11.500	0.335	2021/1/20
Back Side	40/5200	802.11a	0.500	0.245	-0.53	11.286	11.500	0.525	2021/1/20

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	0.319	0.158	-2.19	11.286	11.500	0.335	2021/1/20
Back Side	40/5200	802.11a	0.500	0.245	-0.53	11.286	11.500	0.525	2021/1/20
Right Side	40/5200	802.11a	0.104	0.058	0.45	11.286	11.500	0.109	2021/1/20
Top Side	40/5200	802.11a	0.173	0.086	-4.48	11.286	11.500	0.182	2021/1/20

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 ($\pm 5\%$)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Left Cheek	157/5785	802.11a	0.436	0.201	-0.90	11.533	12.000	0.485	2021/1/18
Left Tilt 15 Degree	157/5785	802.11a	0.253	0.114	1.18	11.533	12.000	0.282	2021/1/18
Right Cheek	157/5785	802.11a	0.386	0.182	-2.25	11.533	12.000	0.430	2021/1/18
Right Tilt 15 Degree	157/5785	802.11a	0.189	0.092	3.34	11.533	12.000	0.210	2021/1/18

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 ($\pm 5\%$)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Front Side	157/5785	802.11a	0.243	0.114	0.06	11.533	12.000	0.271	2021/1/18
Back Side	157/5785	802.11a	0.377	0.179	0.18	11.533	12.000	0.420	2021/1/18

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 ($\pm 5\%$)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date
			1g	10g					
Front Side	157/5785	802.11a	0.243	0.114	0.06	11.533	12.000	0.271	2021/1/18
Back Side	157/5785	802.11a	0.377	0.179	0.18	11.533	12.000	0.420	2021/1/18
Right Side	157/5785	802.11a	0.081	0.042	-2.90	11.533	12.000	0.090	2021/1/18
Top Side	157/5785	802.11a	0.120	0.061	-0.02	11.533	12.000	0.134	2021/1/18

NOTE: Hotspot SAR test results of WLAN 5.8G

10.2. Simultaneous Transmission Analysis

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
		PCE	DTS			
Head	Left Cheek	0.567	0.405	0.972	N/A	N/A
	Left Tilt 15 Degree	0.285	0.217	0.502	N/A	N/A
	Right Cheek	0.518	0.348	0.866	N/A	N/A
	Right Tilt 15 Degree	0.245	0.168	0.413	N/A	N/A
Body-Worn	Front Side	0.575	0.134	0.709	N/A	N/A
	Back Side	0.882	0.209	1.091	N/A	N/A
Hotspot	Front Side	0.575	0.134	0.709	N/A	N/A
	Back Side	0.882	0.209	1.091	N/A	N/A
	Left Side	0.321	N/A	0.321	N/A	N/A
	Right Side	0.310	0.051	0.361	N/A	N/A
	Top Side	N/A	0.070	0.070	N/A	N/A
	Bottom Side	0.537	N/A	0.537	N/A	N/A

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		PCE	NII			
Head	Left Cheek	0.567	0.592	1.159	N/A	N/A
	Left Tilt 15 Degree	0.285	0.338	0.623	N/A	N/A
	Right Cheek	0.518	0.536	1.054	N/A	N/A
	Right Tilt 15 Degree	0.245	0.275	0.520	N/A	N/A
Body-Worn	Front Side	0.575	0.335	0.910	N/A	N/A
	Back Side	0.882	0.525	1.407	N/A	N/A
Hotspot	Front Side	0.575	0.335	0.910	N/A	N/A
	Back Side	0.882	0.525	1.407	N/A	N/A
	Left Side	0.321	N/A	0.321	N/A	N/A
	Right Side	0.310	0.109	0.419	N/A	N/A
	Top Side	N/A	0.182	0.182	N/A	N/A
	Bottom Side	0.537	N/A	0.537	N/A	N/A

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		PCE	DSS			

Head	Left Cheek	0.567	0.265	0.832	N/A	N/A
	Left Tilt 15 Degree	0.285	0.265	0.550	N/A	N/A
	Right Cheek	0.518	0.265	0.783	N/A	N/A
	Right Tilt 15 Degree	0.245	0.265	0.510	N/A	N/A
Body-Worn	Front Side	0.575	0.132	0.707	N/A	N/A
	Back Side	0.882	0.132	1.014	N/A	N/A
Hotspot	Front Side	0.575	0.132	0.707	N/A	N/A
	Back Side	0.882	0.132	1.014	N/A	N/A
	Left Side	0.321	N/A	0.321	N/A	N/A
	Right Side	0.310	0.132	0.442	N/A	N/A
	Top Side	N/A	0.132	0.132	N/A	N/A
	Bottom Side	0.537	N/A	0.537	N/A	N/A

11. Appendix A. Photo documentation

Refer to appendix Test Setup photo---SAR

12. Appendix B. System Check Plots

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MEASUREMENT 1

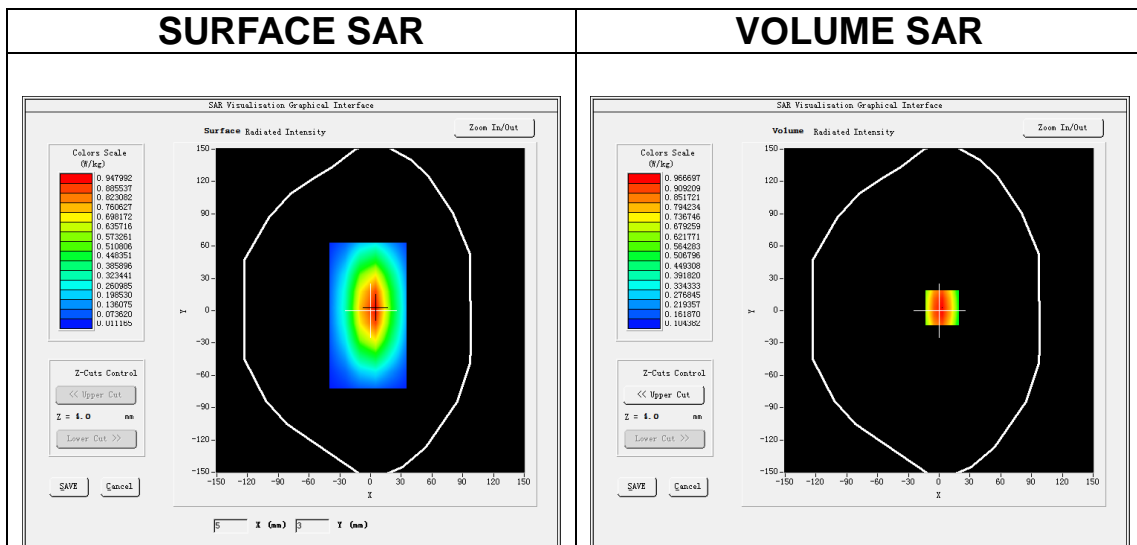
Date of measurement: 14/1/2021

A. Experimental conditions.

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

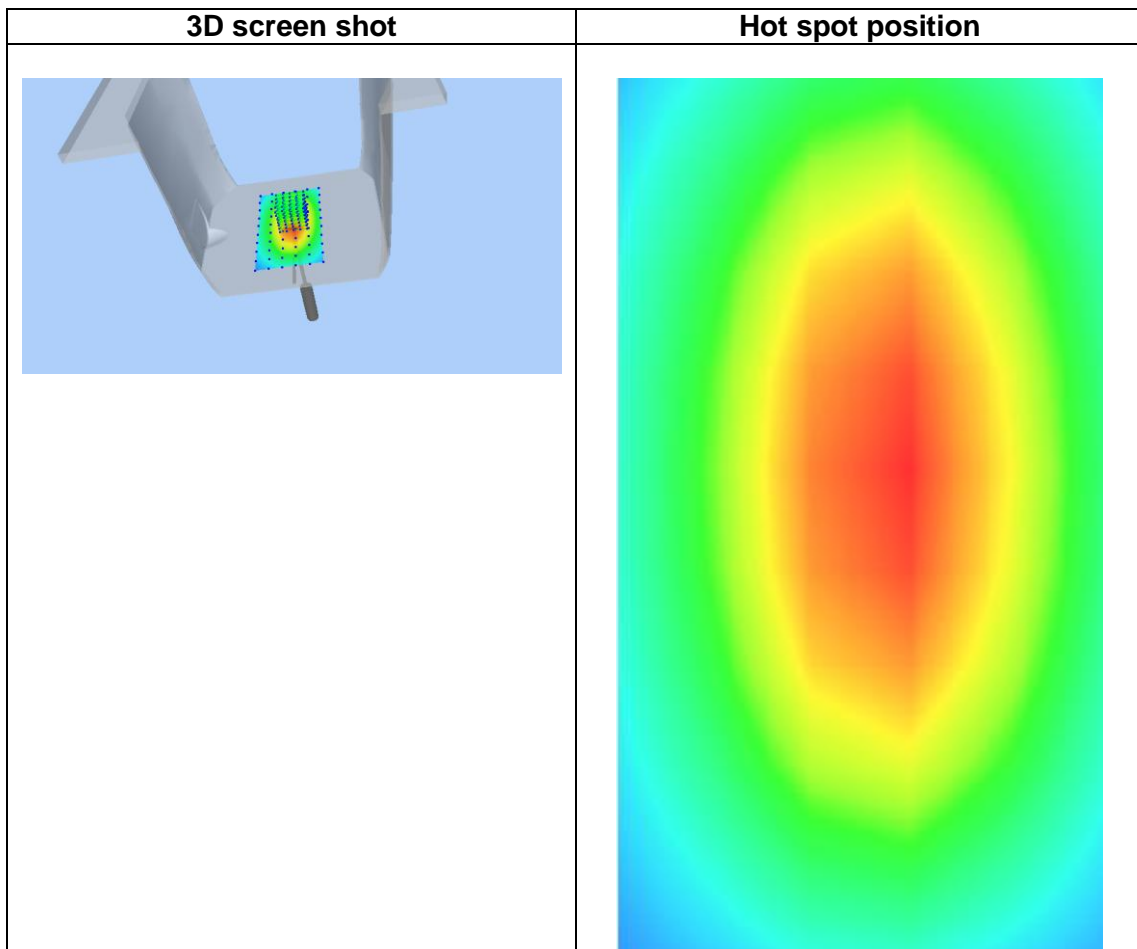
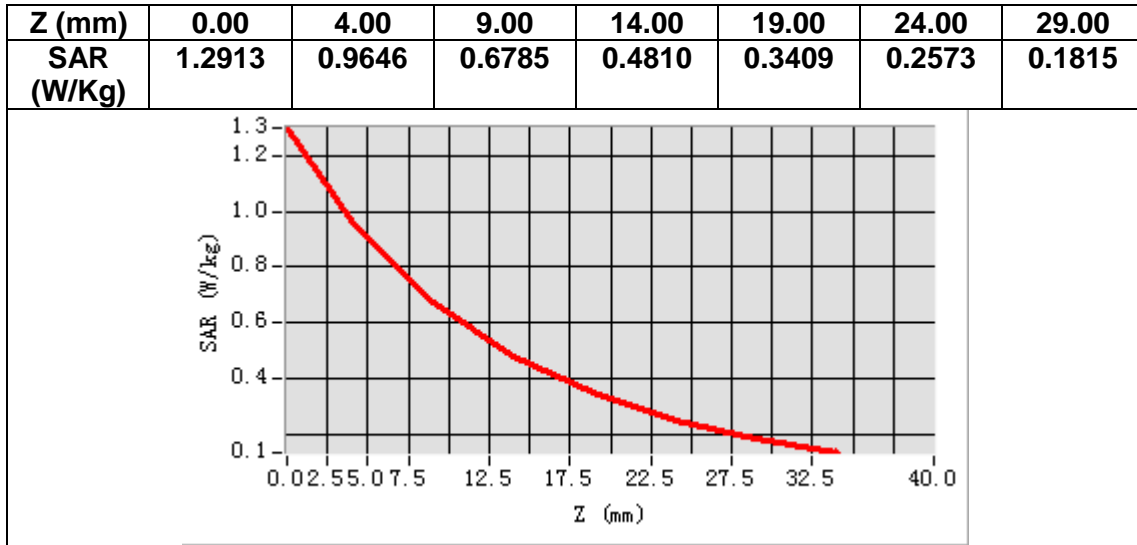
B. SAR Measurement Results

Frequency (MHz)	750.000000
Relative permittivity (real part)	42.173162
Relative permittivity (imaginary part)	22.121263
Conductivity (S/m)	0.923162
Variation (%)	-3.640000



Maximum location: X=3.00, Y=3.00
SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.589238
SAR 1g (W/Kg)	0.812162



MEASUREMENT 2

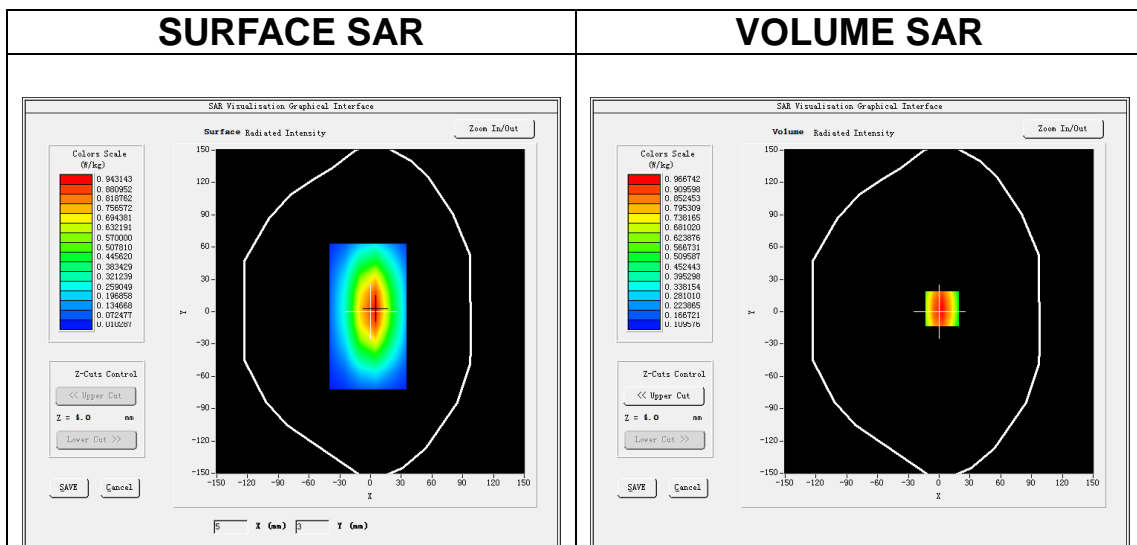
Date of measurement: 14/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

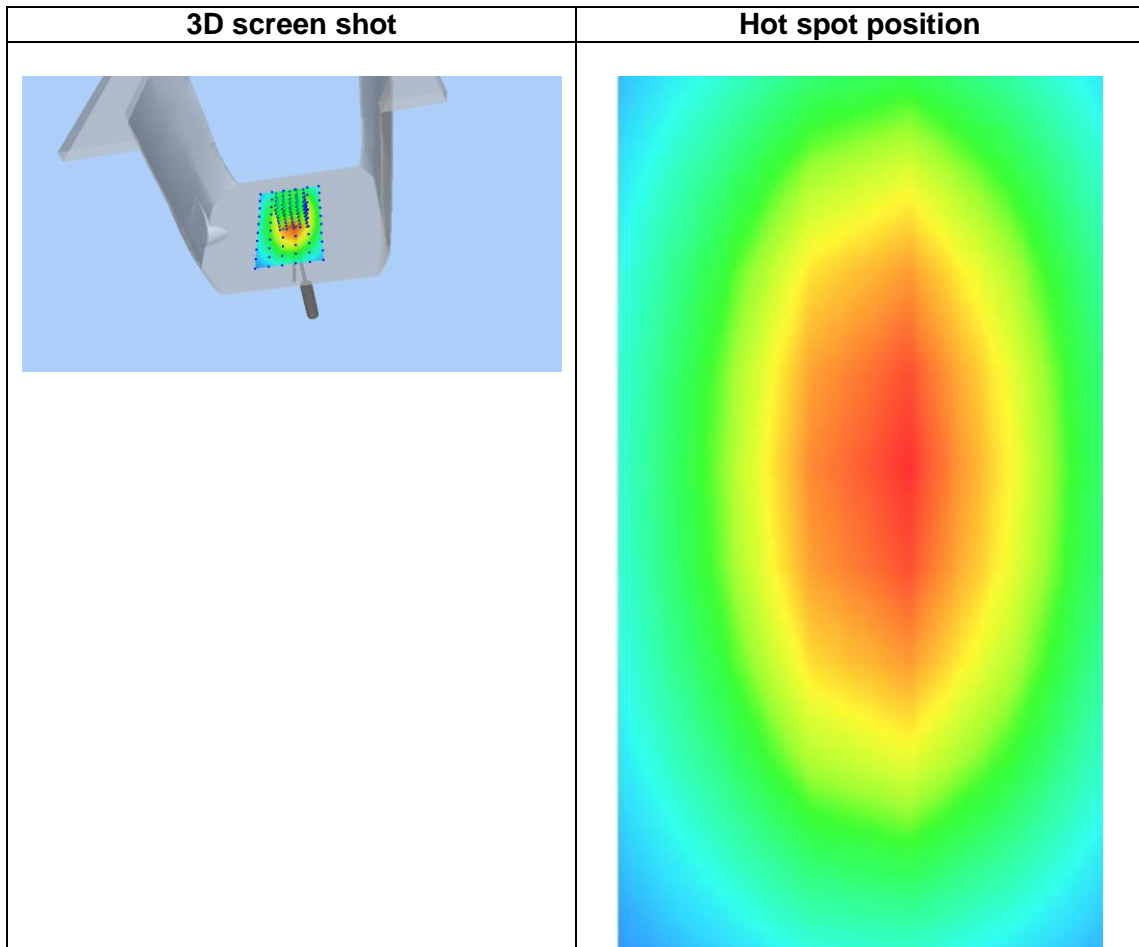
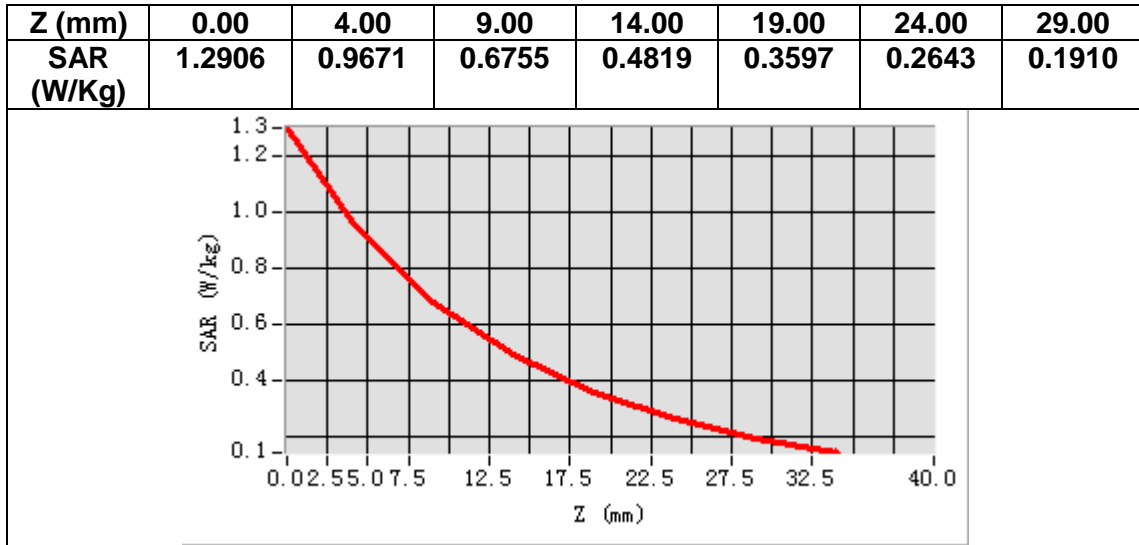
Frequency (MHz)	750.000000
Relative permittivity (real part)	55.430582
Relative permittivity (imaginary part)	23.323421
Conductivity (S/m)	0.972152
Variation (%)	-0.710000



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.563236
SAR 1g (W/Kg)	0.842239



MEASUREMENT 3

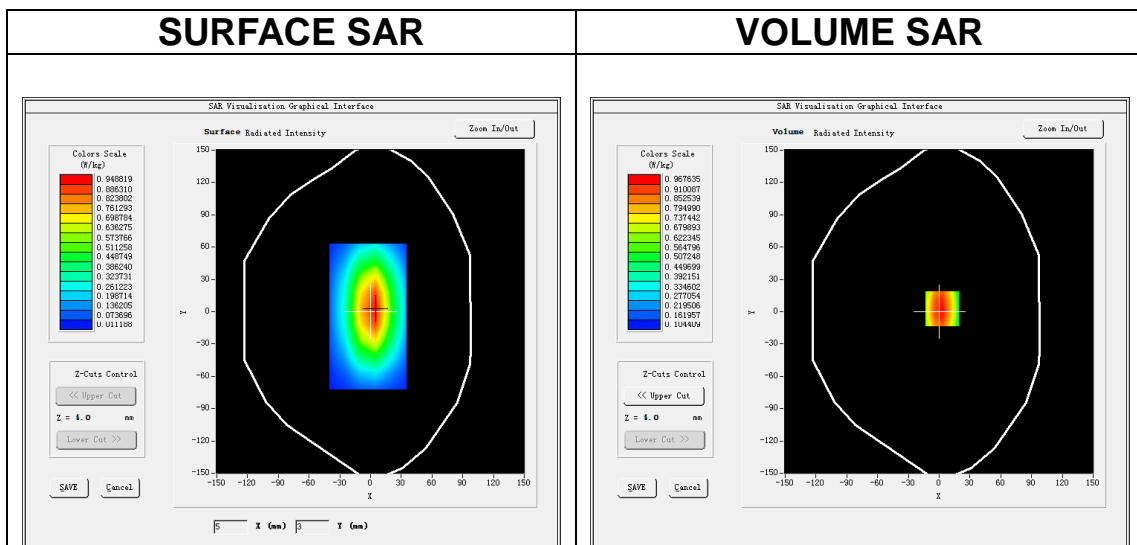
Date of measurement: 15/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

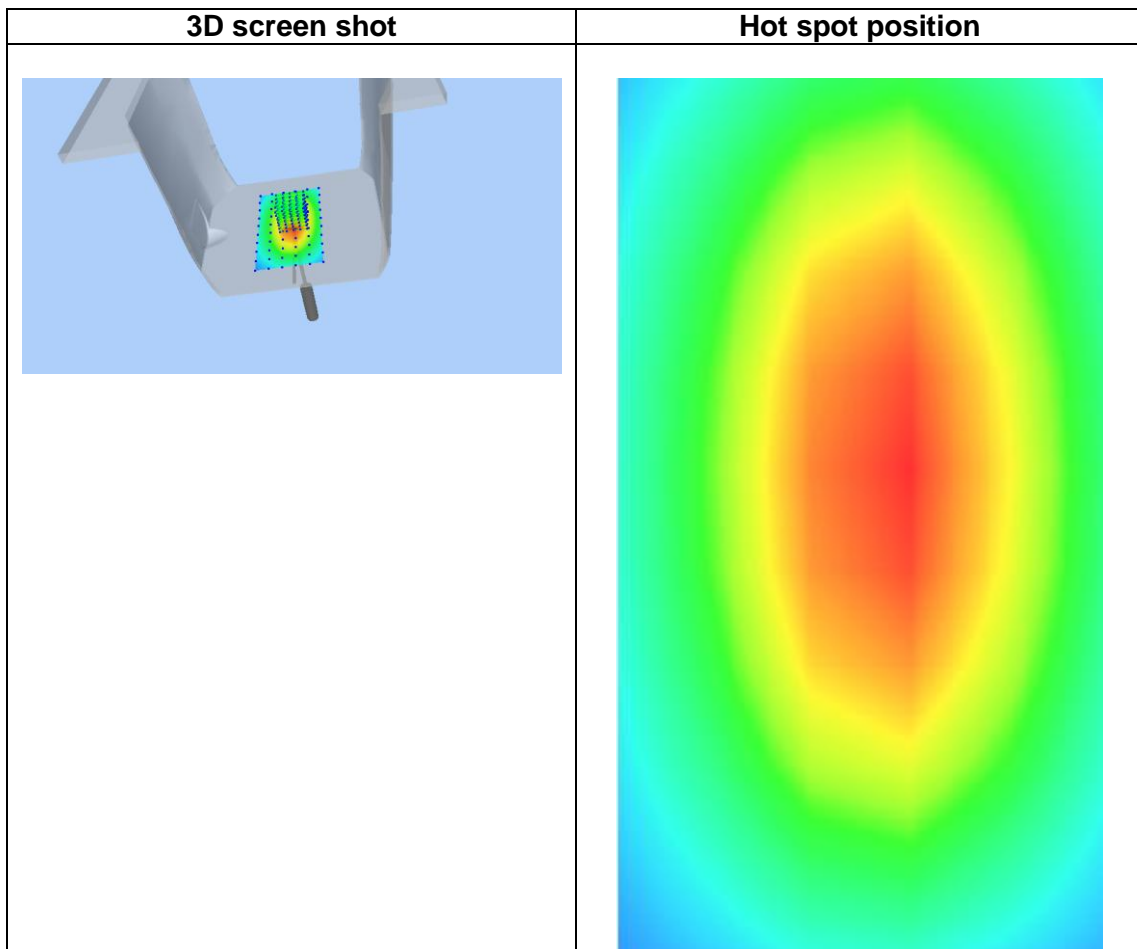
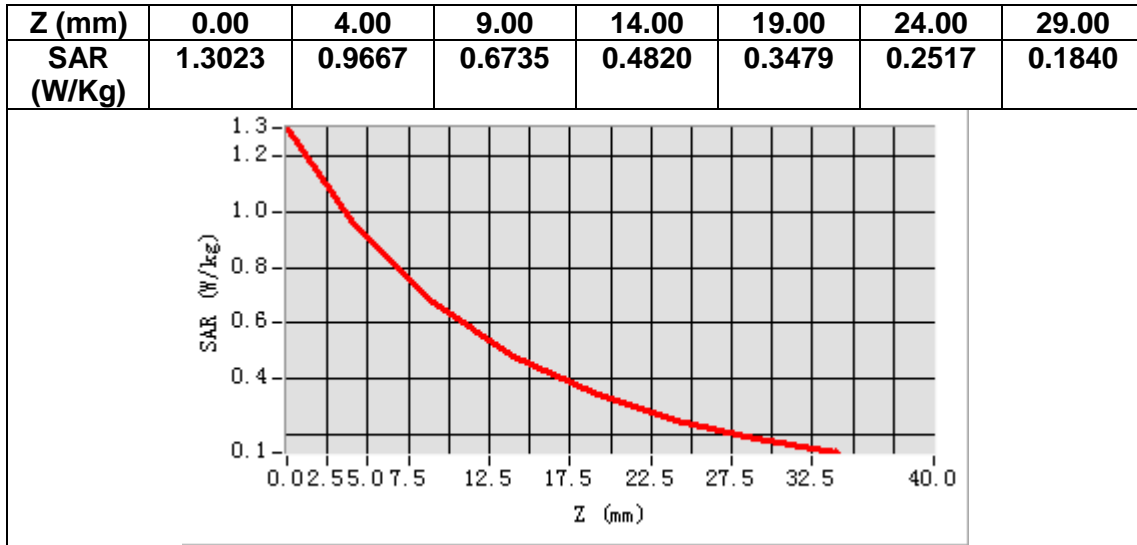
Frequency (MHz)	835.000000
Relative permittivity (real part)	41.471241
Relative permittivity (imaginary part)	19.480512
Conductivity (S/m)	0.901642
Variation (%)	1.120000



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.616376
SAR 1g (W/Kg)	0.918438



MEASUREMENT 4

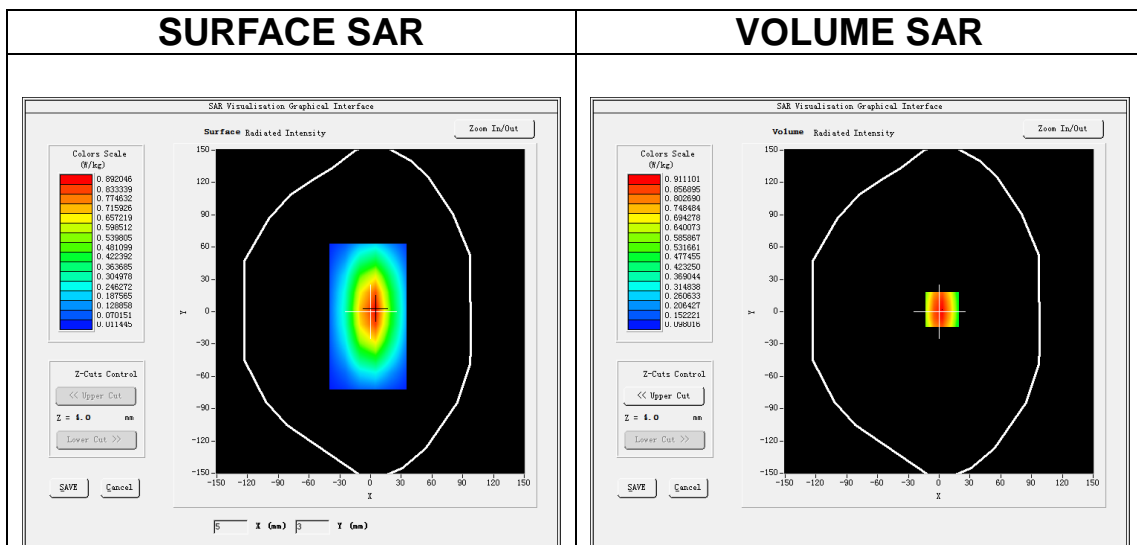
Date of measurement: 15/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

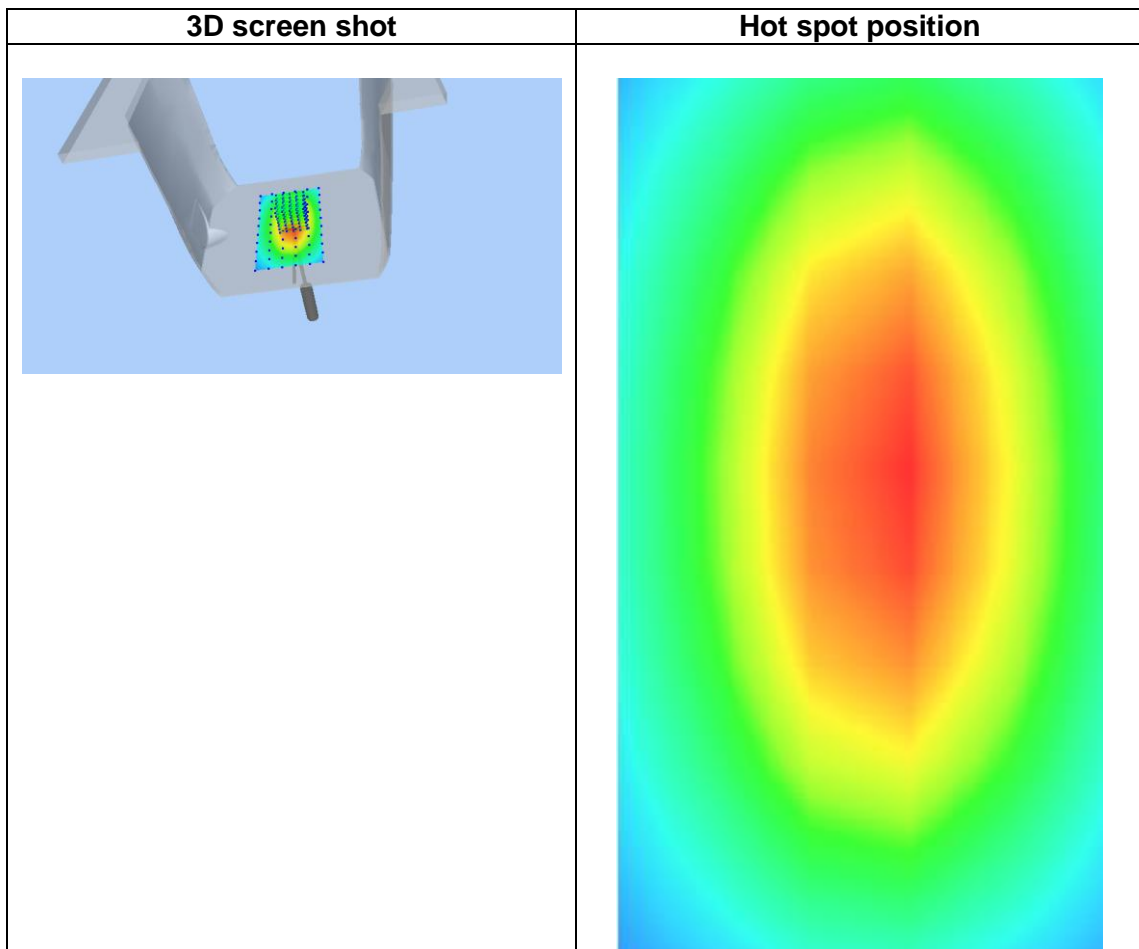
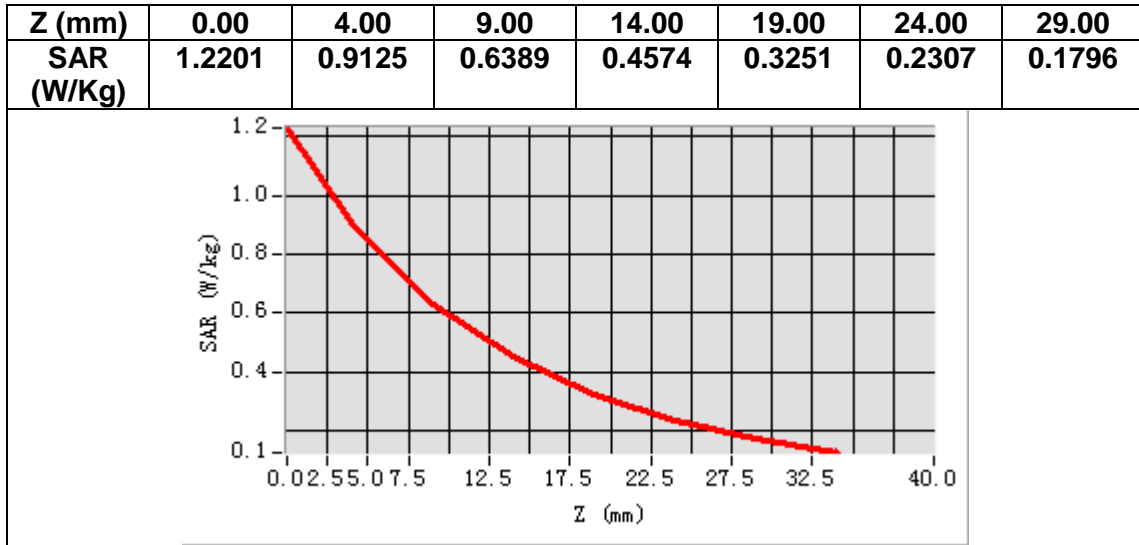
Frequency (MHz)	835.000000
Relative permittivity (real part)	55.202222
Relative permittivity (imaginary part)	20.723419
Conductivity (S/m)	0.961056
Variation (%)	-4.330000



Maximum location: X=3.00, Y=2.00

SAR Peak: 1.23 W/kg

SAR 10g (W/Kg)	0.680102
SAR 1g (W/Kg)	0.939209



MEASUREMENT 5

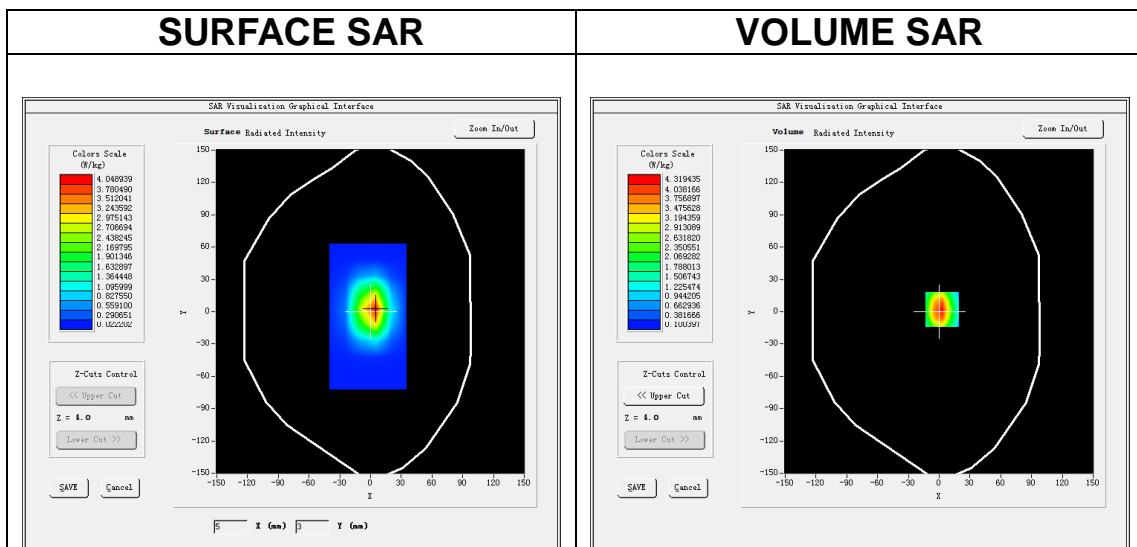
Date of measurement: 15/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

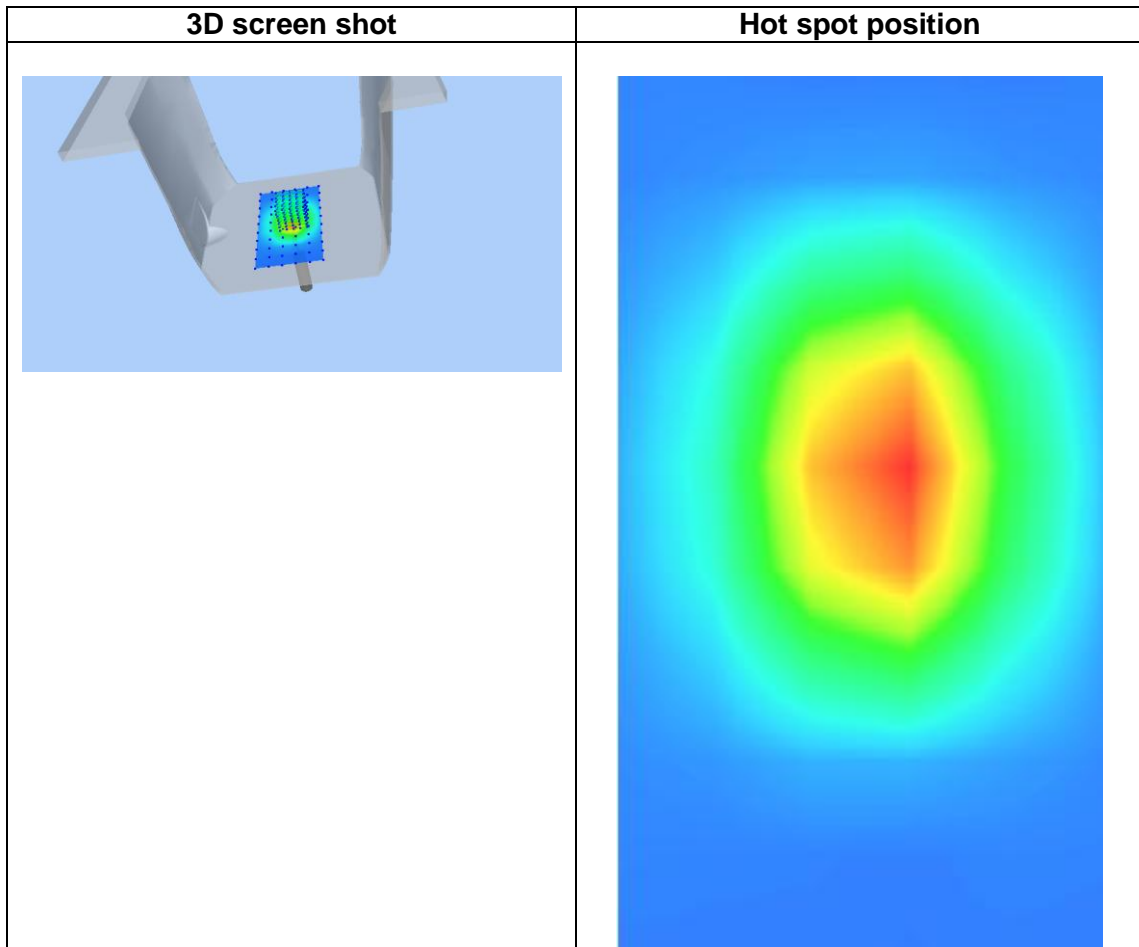
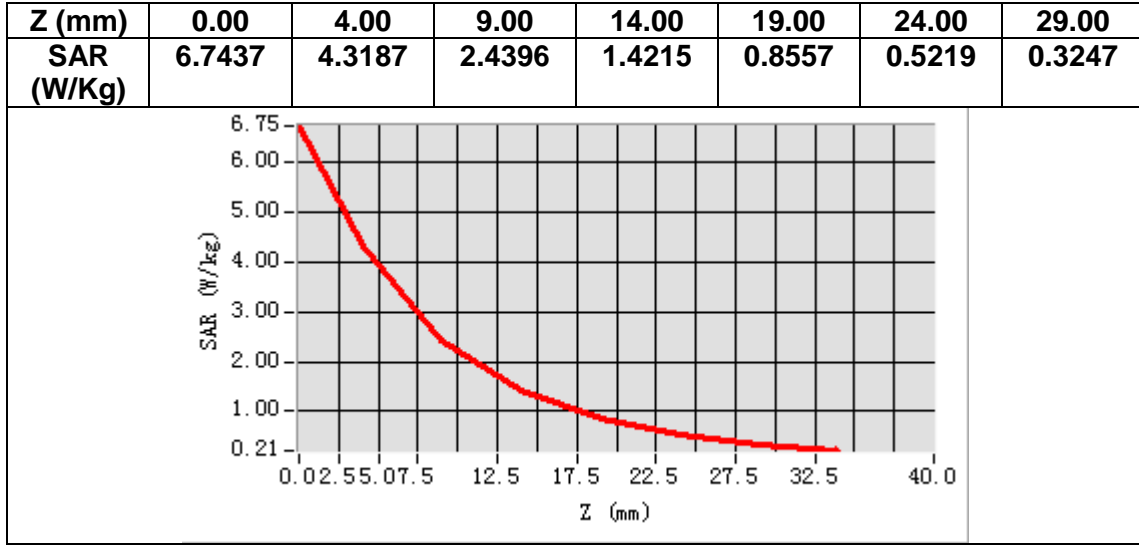
Frequency (MHz)	1800.000000
Relative permittivity (real part)	39.251117
Relative permittivity (imaginary part)	13.972429
Conductivity (S/m)	1.402567
Variation (%)	-2.180000



Maximum location: X=3.00, Y=2.00

SAR Peak: 6.82 W/kg

SAR 10g (W/Kg)	2.143367
SAR 1g (W/Kg)	3.752451



MEASUREMENT 6

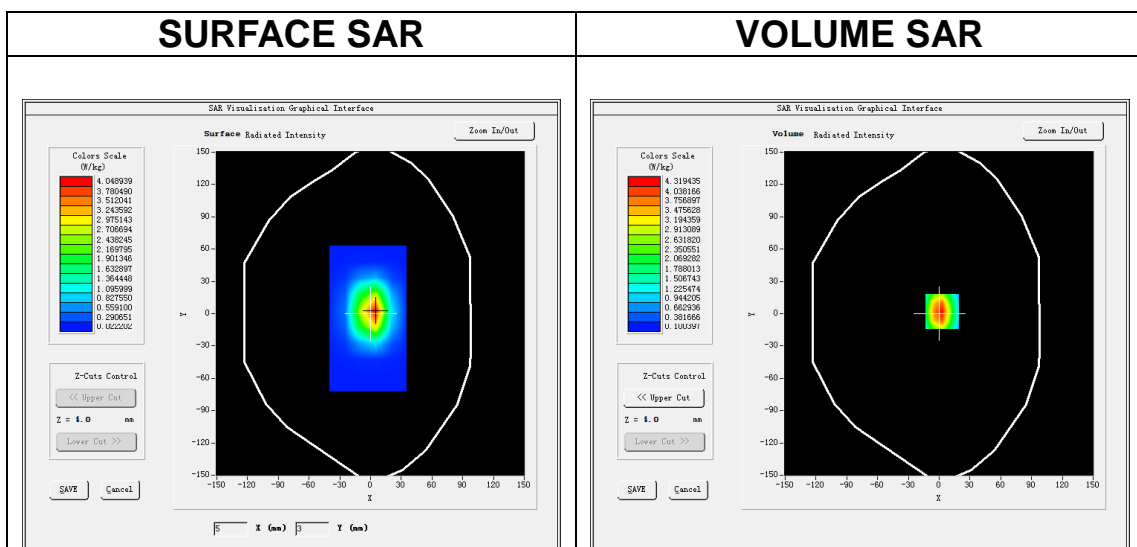
Date of measurement: 15/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

Frequency (MHz)	1800.000000
Relative permittivity (real part)	54.532310
Relative permittivity (imaginary part)	15.061413
Conductivity (S/m)	1.513096
Variation (%)	1.240000

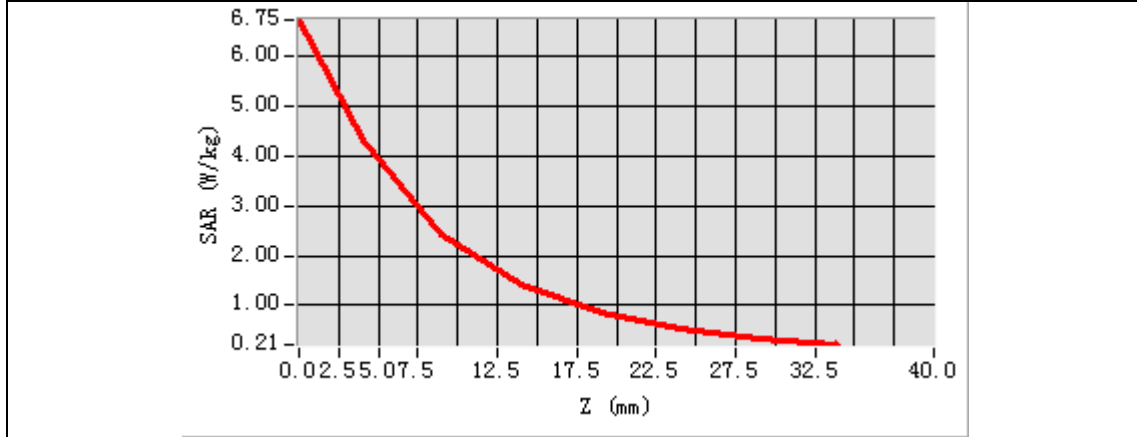


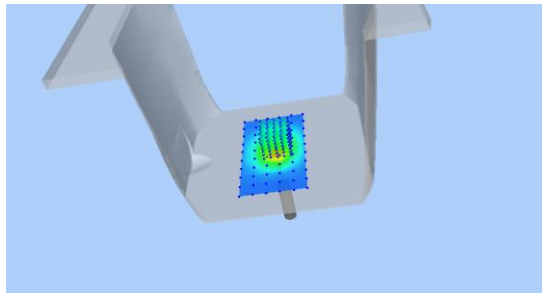
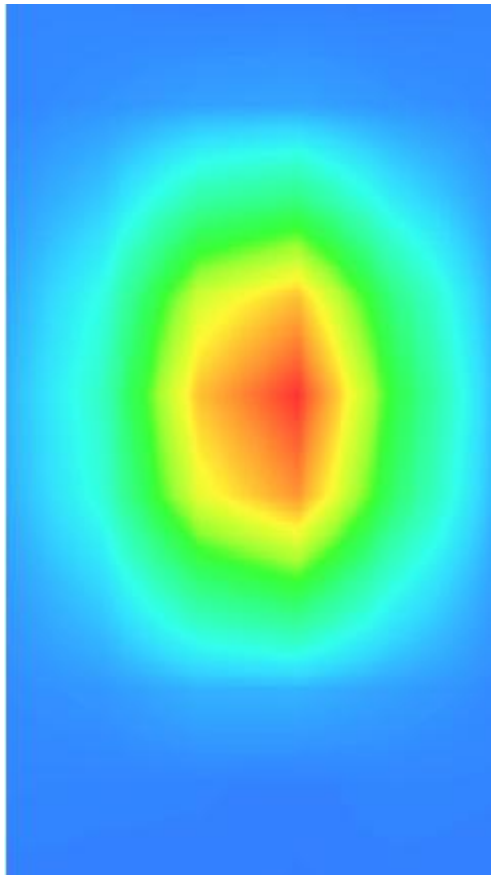
Maximum location: X=3.00, Y=2.00

SAR Peak: 6.82 W/kg

SAR 10g (W/Kg)	2.136079
SAR 1g (W/Kg)	3.962468

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	6.7445	4.3141	2.4368	1.4297	0.8515	0.5270	0.3203



3D screen shot	Hot spot position
	

MEASUREMENT 7

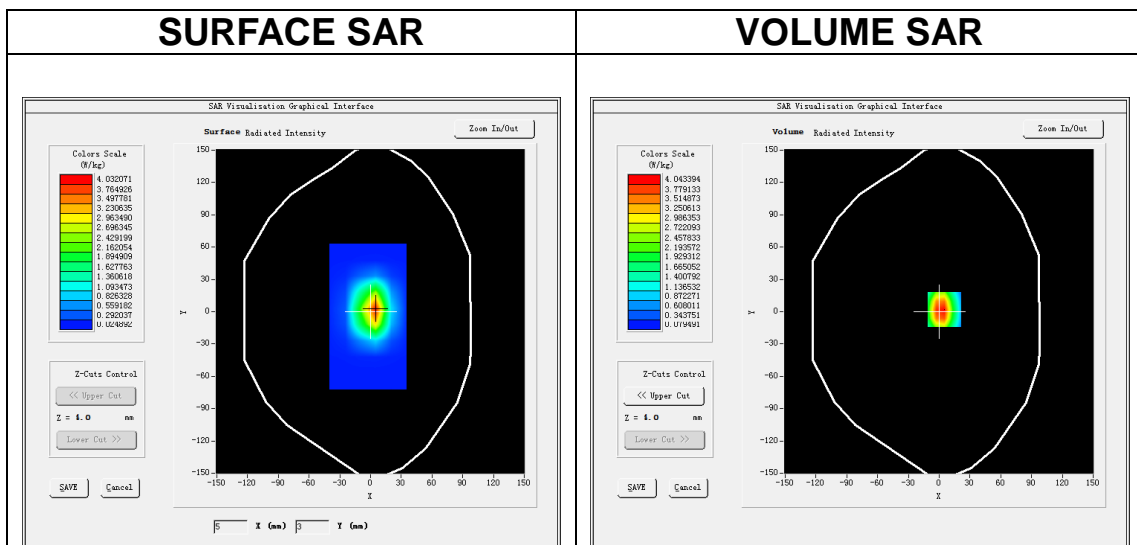
Date of measurement: 17/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative permittivity (real part)	39.173087
Relative permittivity (imaginary part)	13.514000
Conductivity (S/m)	1.432036
Variation (%)	-3.360000

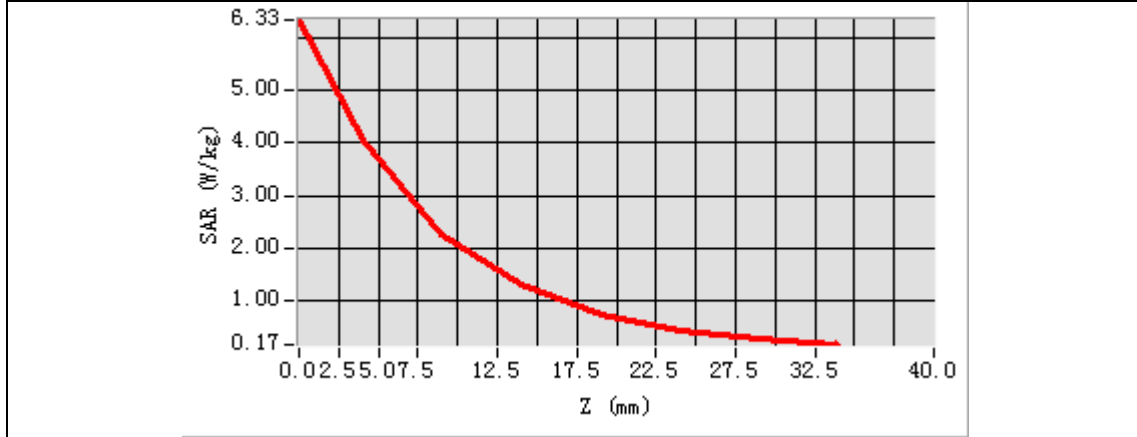


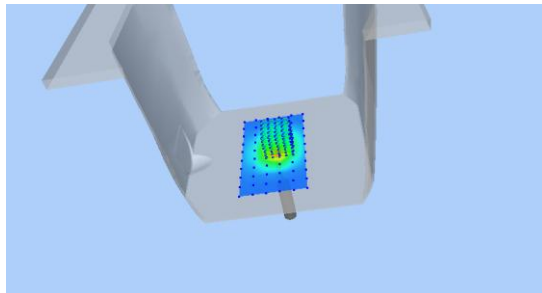
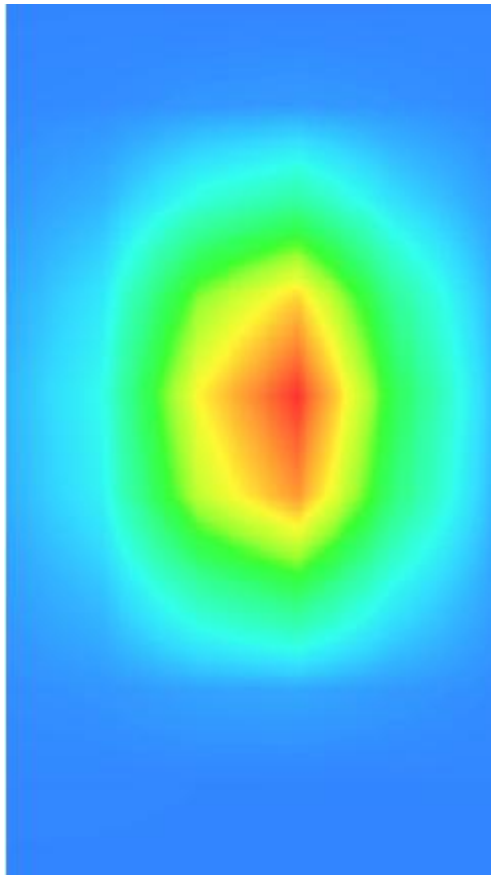
Maximum location: X=5.00, Y=2.00

SAR Peak: 6.70 W/kg

SAR 10g (W/Kg)	1.999456
SAR 1g (W/Kg)	3.976165

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	6.3288	4.0413	2.2625	1.3010	0.7608	0.4597	0.2715



3D screen shot	Hot spot position
	

MEASUREMENT 8

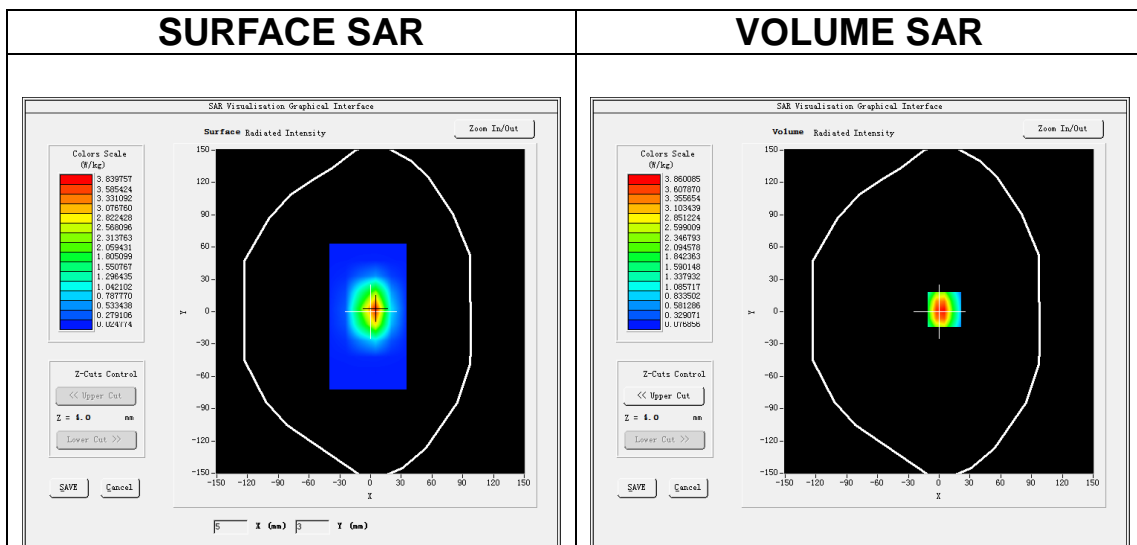
Date of measurement: 17/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

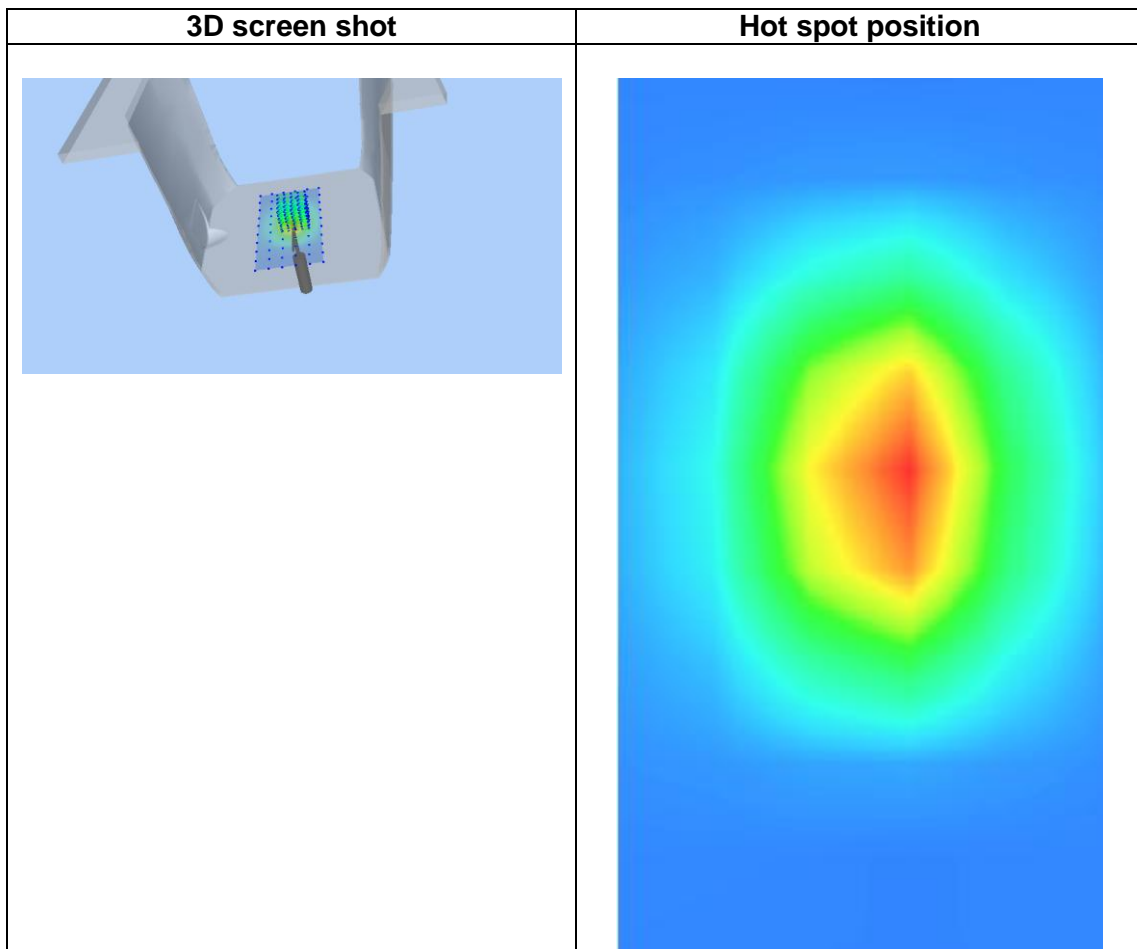
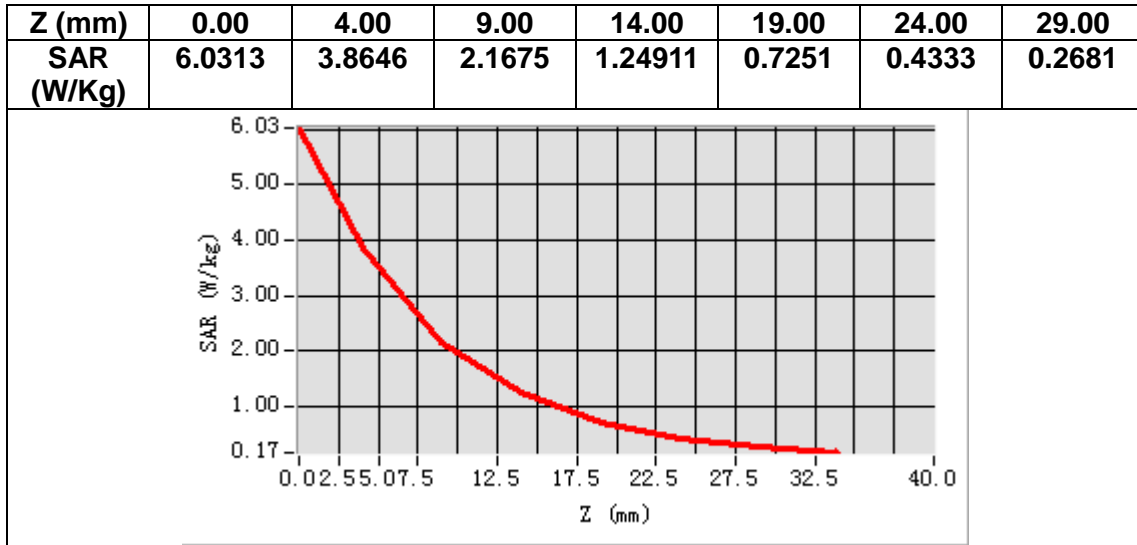
Frequency (MHz)	1900.000000
Relative permittivity (real part)	54.733435
Relative permittivity (imaginary part)	14.413103
Conductivity (S/m)	1.520066
Variation (%)	1.840000



Maximum location: X=5.00, Y=2.00

SAR Peak: 6.39 W/kg

SAR 10g (W/Kg)	2.067019
SAR 1g (W/Kg)	3.980402



MEASUREMENT 9

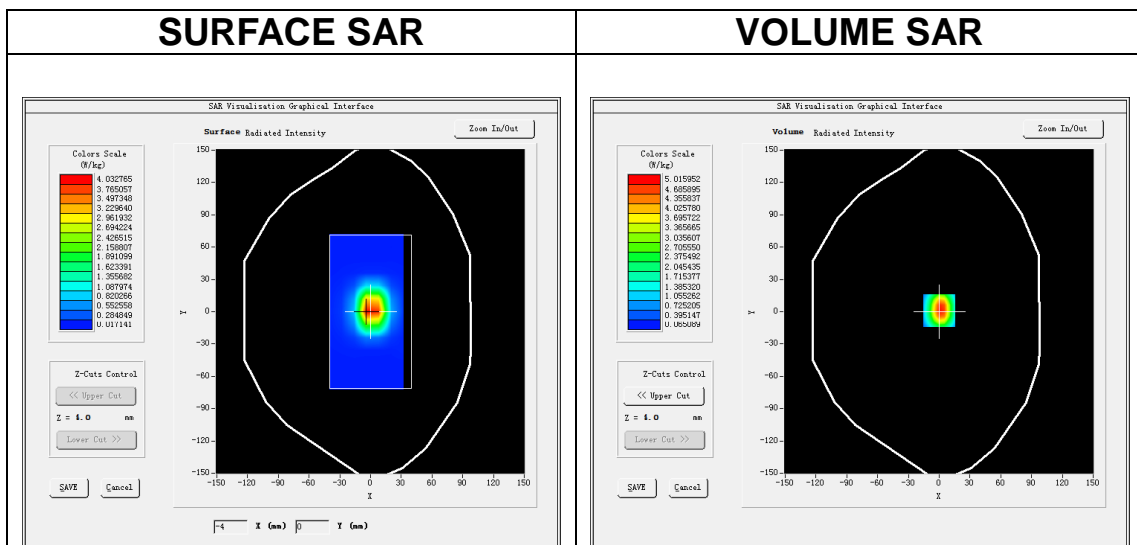
Date of measurement: 19/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

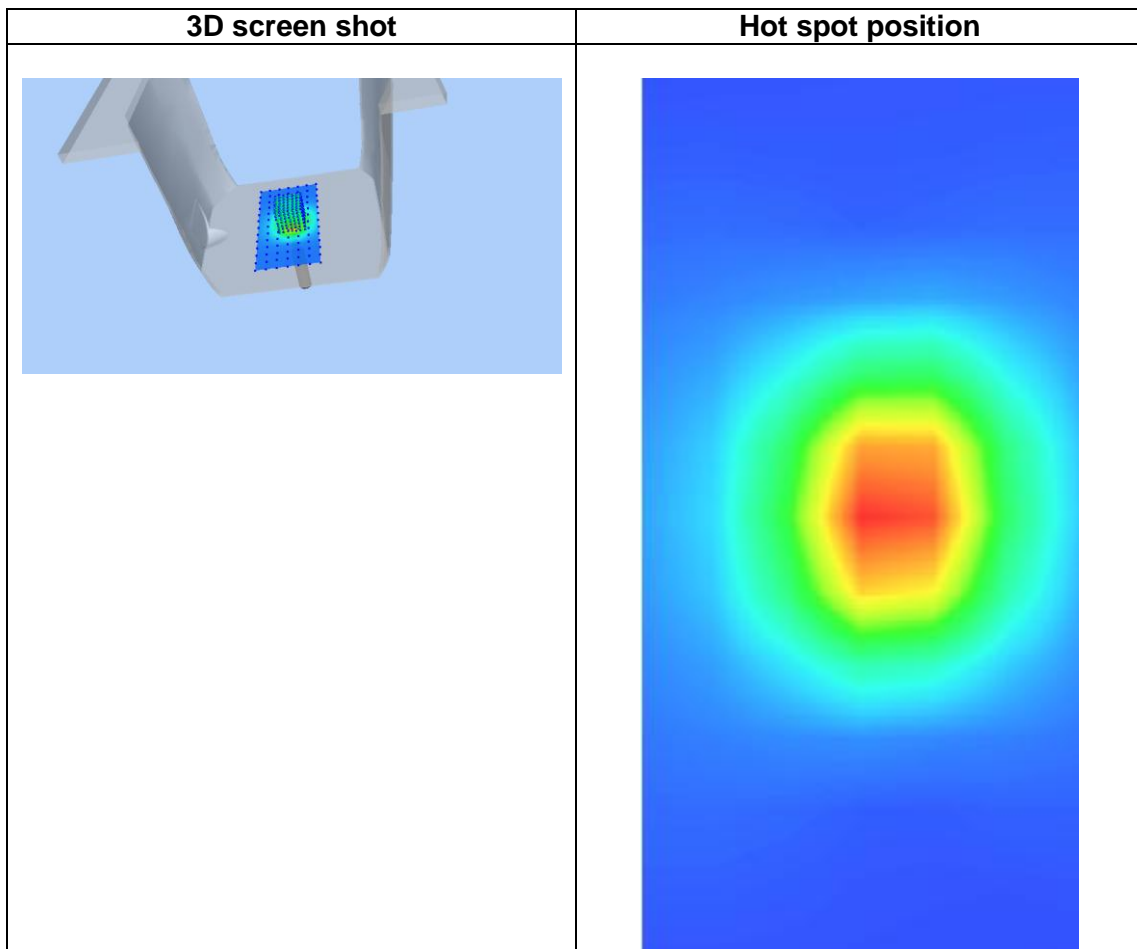
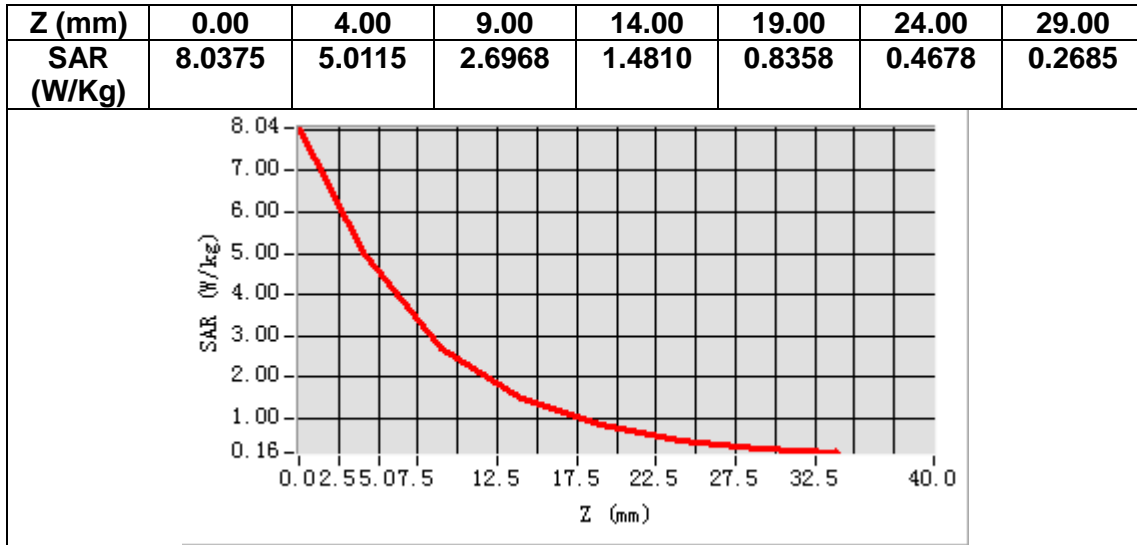
Frequency (MHz)	2450.000000
Relative permittivity (real part)	39.051421
Relative permittivity (imaginary part)	13.462631
Conductivity (S/m)	1.832063
Variation (%)	-3.310000



Maximum location: X=0.00, Y=1.00

SAR Peak: 8.14 W/kg

SAR 10g (W/Kg)	2.374275
SAR 1g (W/Kg)	5.344415



MEASUREMENT 10

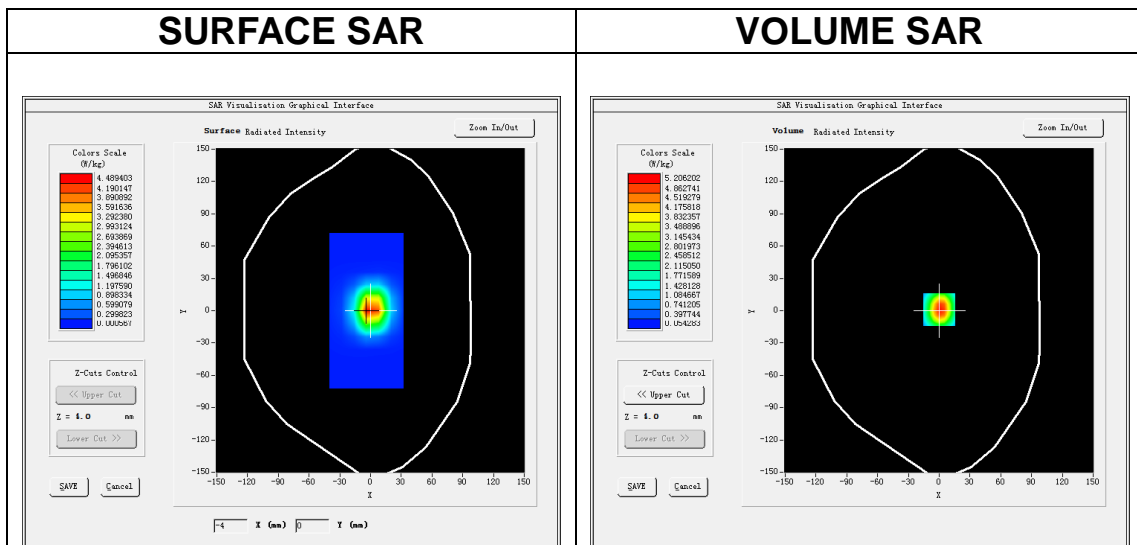
Date of measurement: 19/1/2021

A. Experimental conditions.

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

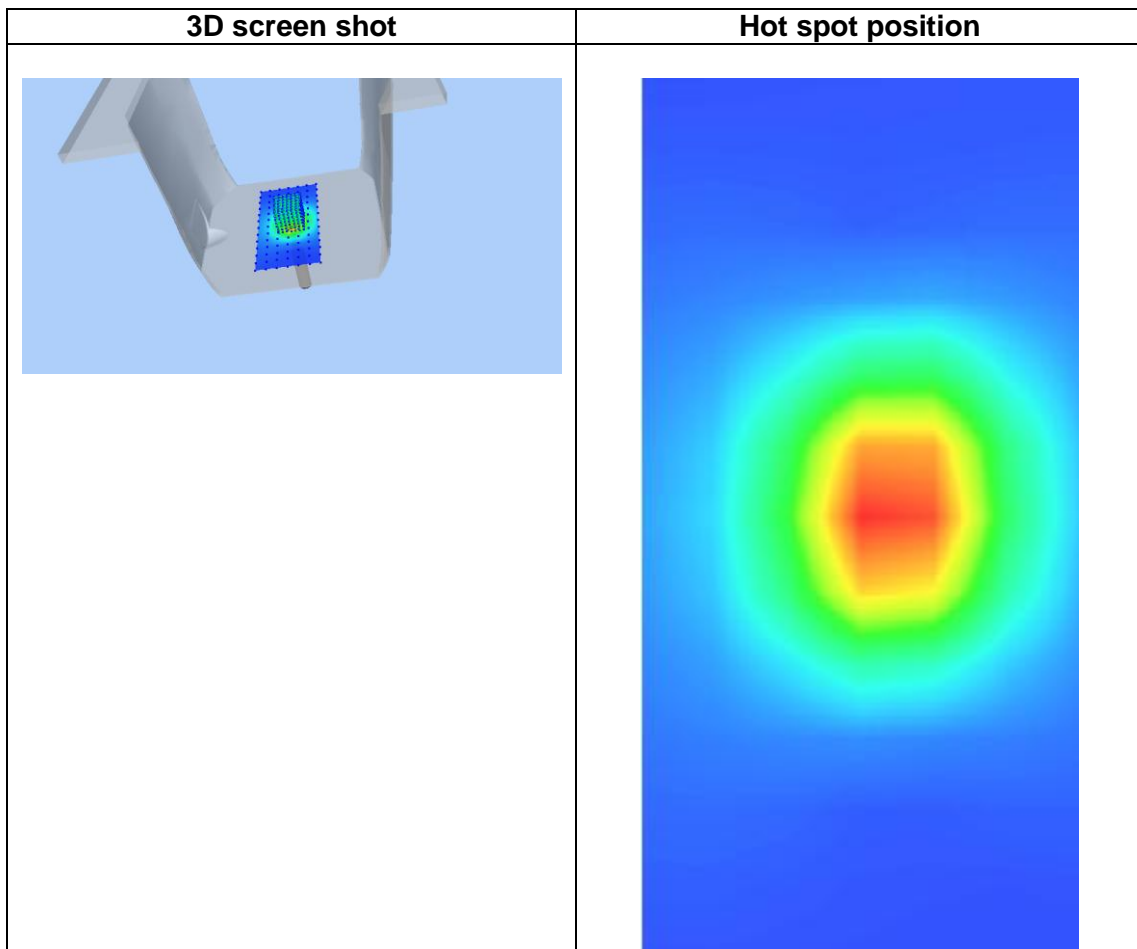
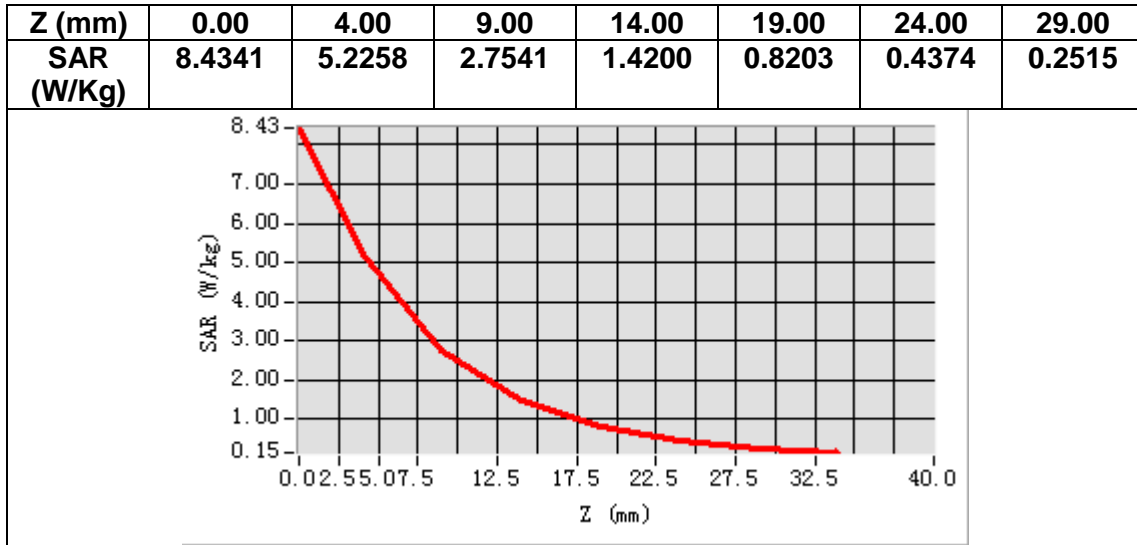
B. SAR Measurement Results

Frequency (MHz)	2450.000000
Relative permittivity (real part)	52.183497
Relative permittivity (imaginary part)	14.104266
Conductivity (S/m)	1.921316
Variation (%)	1.120000



Maximum location: X=0.00, Y=1.00
SAR Peak: 8.46 W/kg

SAR 10g (W/Kg)	2.444285
SAR 1g (W/Kg)	5.429270



MEASUREMENT 11

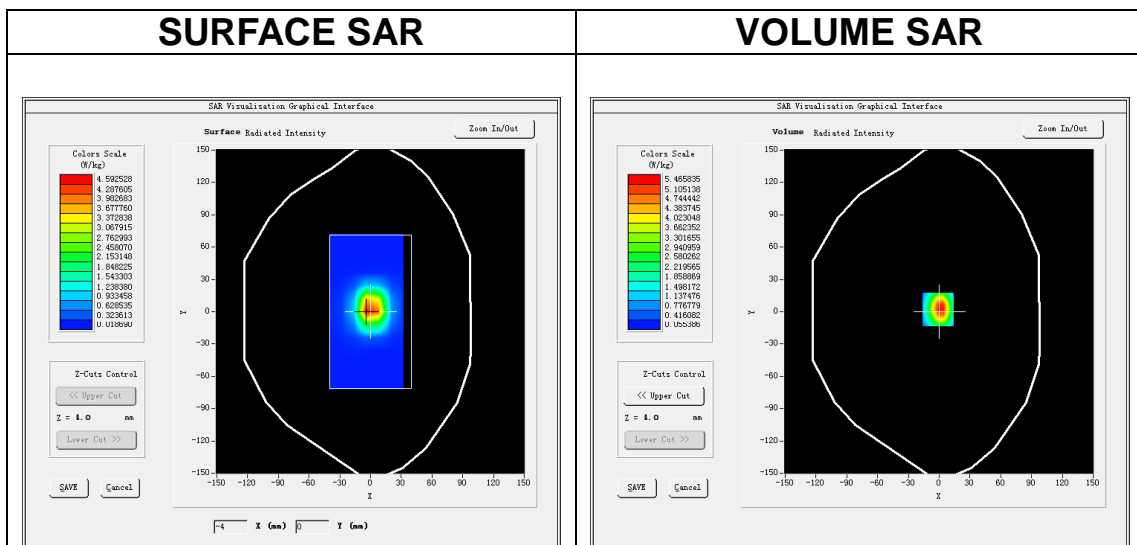
Date of measurement: 16/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

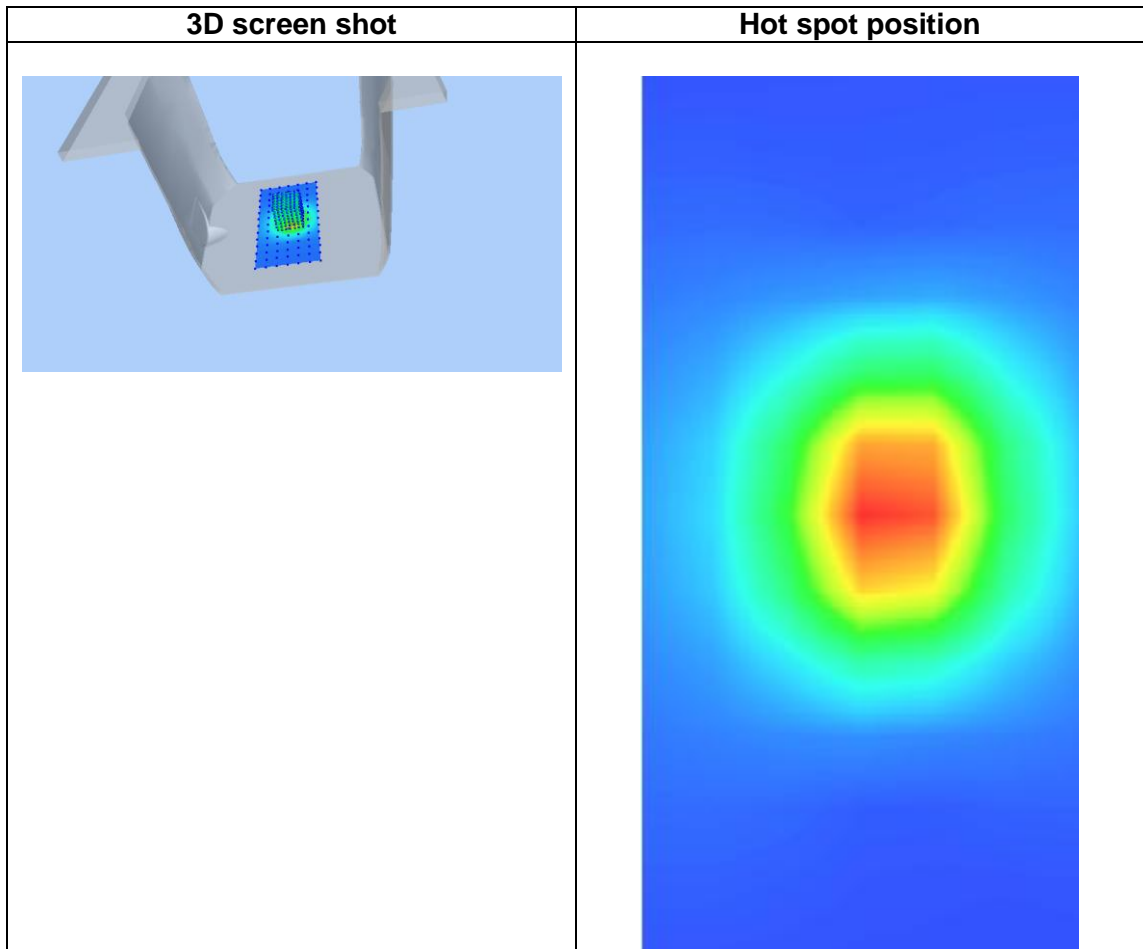
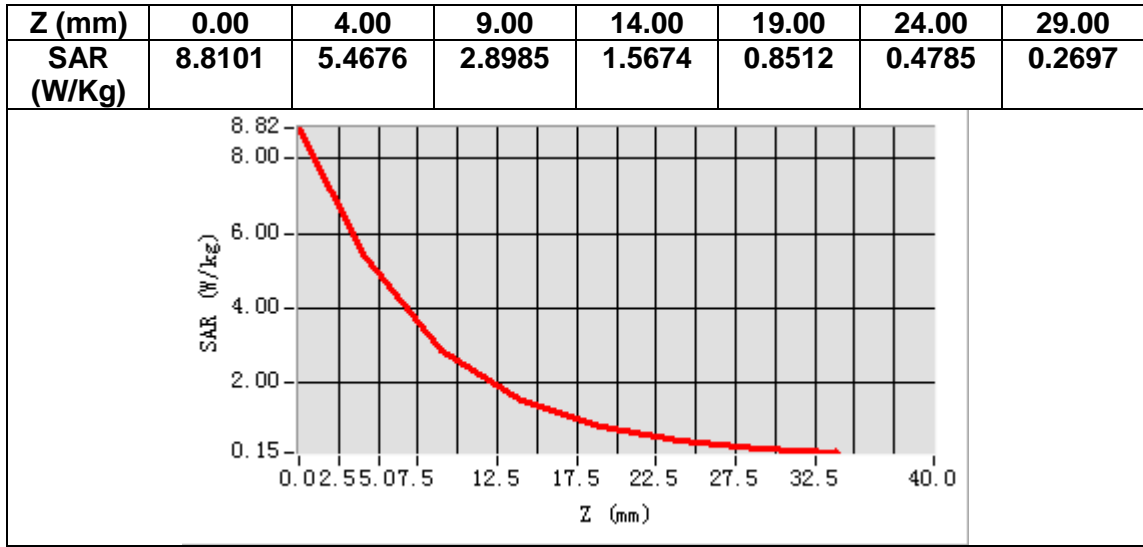
Frequency (MHz)	2600.000000
Relative permittivity (real part)	38.602685
Relative permittivity (imaginary part)	14.121997
Conductivity (S/m)	2.043171
Variation (%)	-2.940000



Maximum location: X=-1.00, Y=2.00

SAR Peak: 9.07 W/kg

SAR 10g (W/Kg)	2.460205
SAR 1g (W/Kg)	5.578067



MEASUREMENT 12

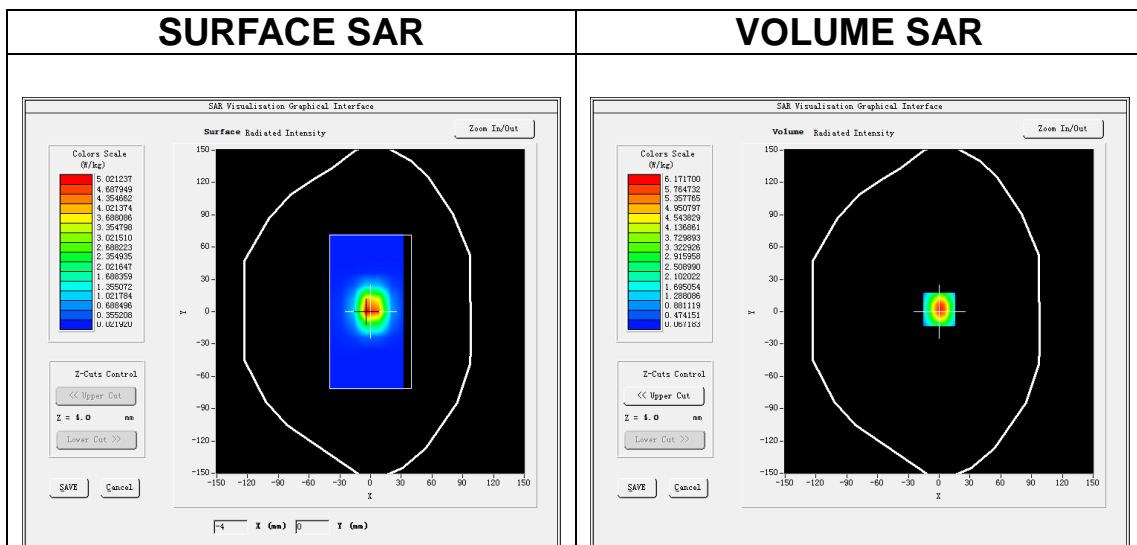
Date of measurement: 16/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

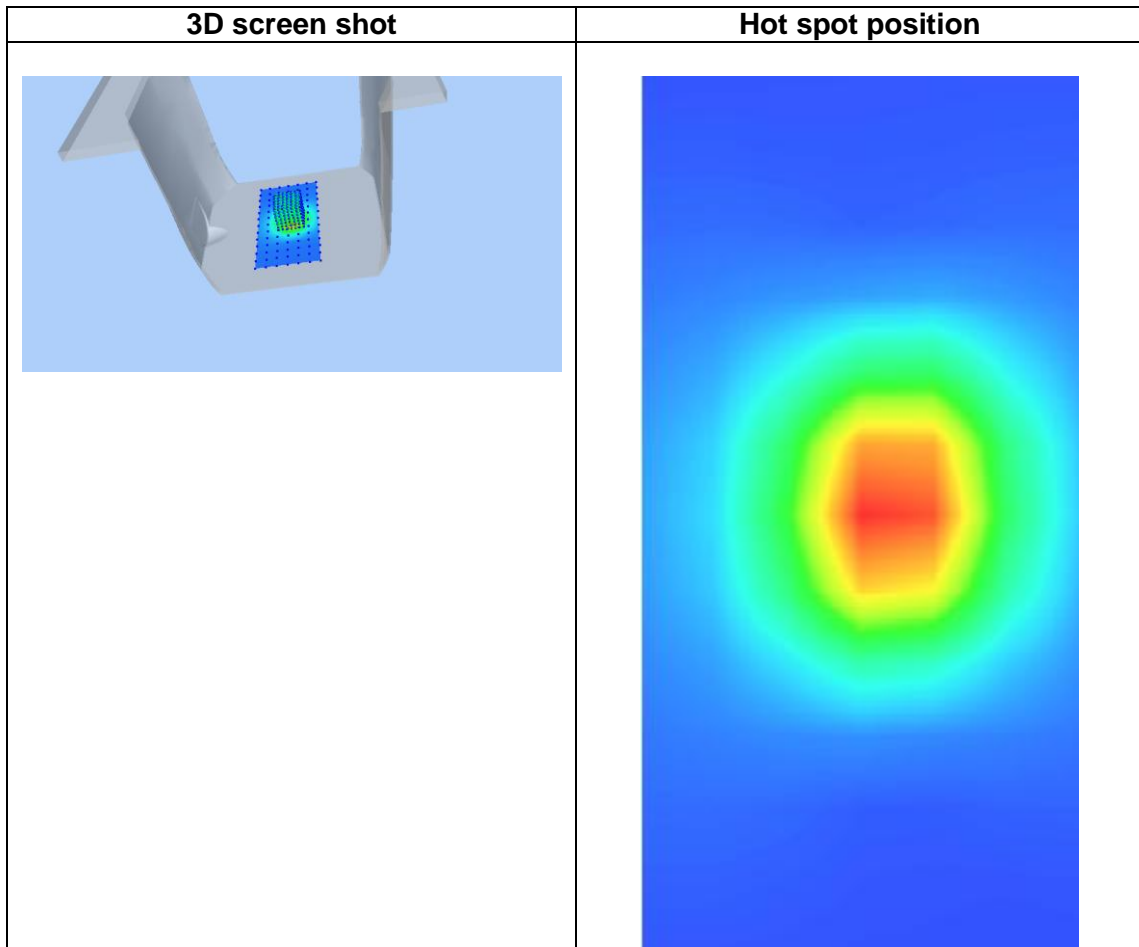
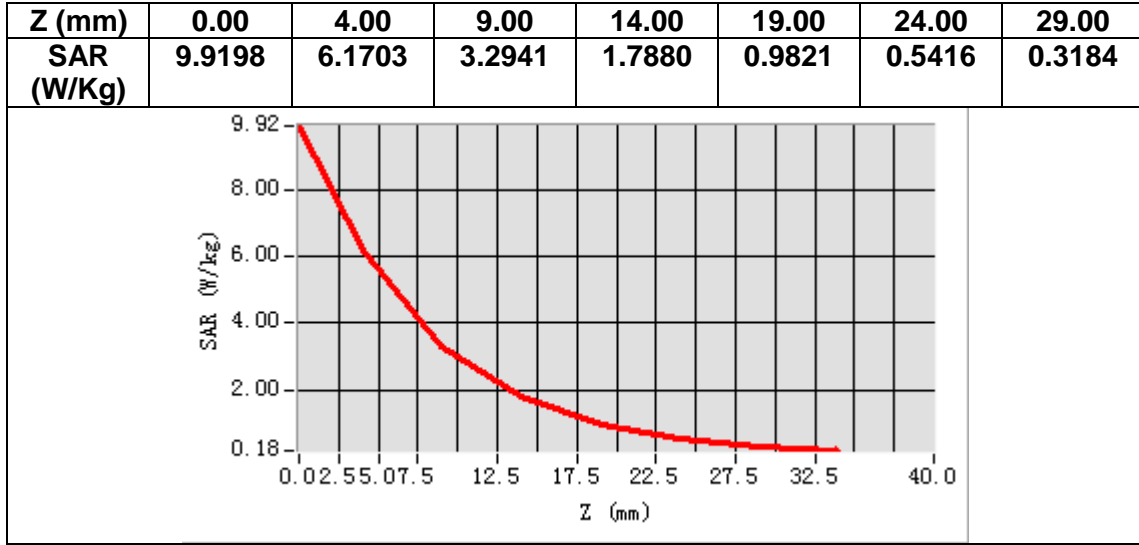
Frequency (MHz)	2600.000000
Relative permittivity (real part)	53.262760
Relative permittivity (imaginary part)	15.274301
Conductivity (S/m)	2.210475
Variation (%)	-4.330000



Maximum location: X=0.00, Y=2.00

SAR Peak: 9.99 W/kg

SAR 10g (W/Kg)	2.419314
SAR 1g (W/Kg)	5.374167



MEASUREMENT 13

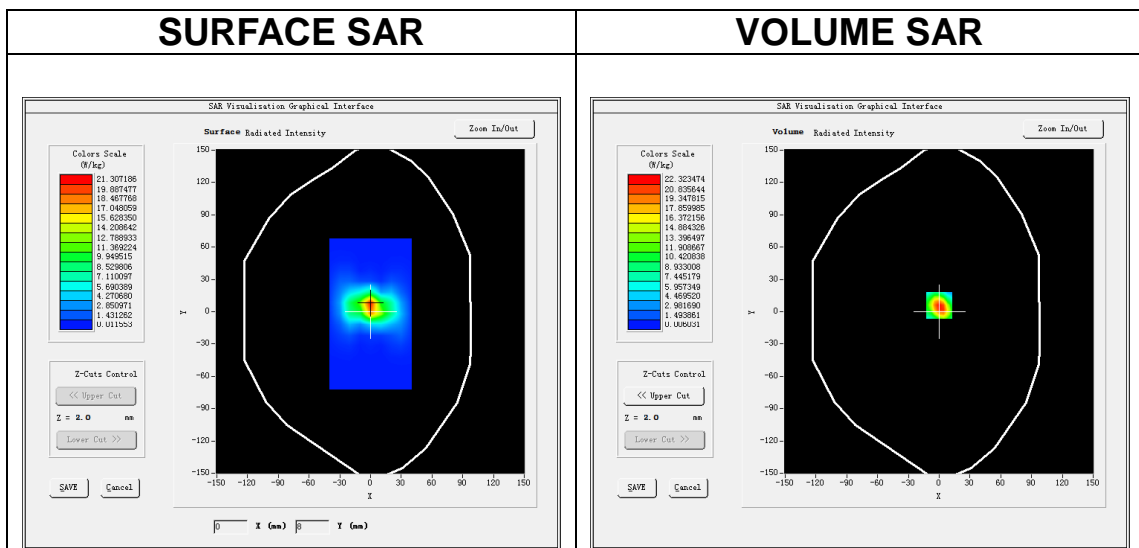
Date of measurement: 20/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	36.122314
Relative permittivity (imaginary part)	15.762642
Conductivity (S/m)	4.553316
Variation (%)	4.160000

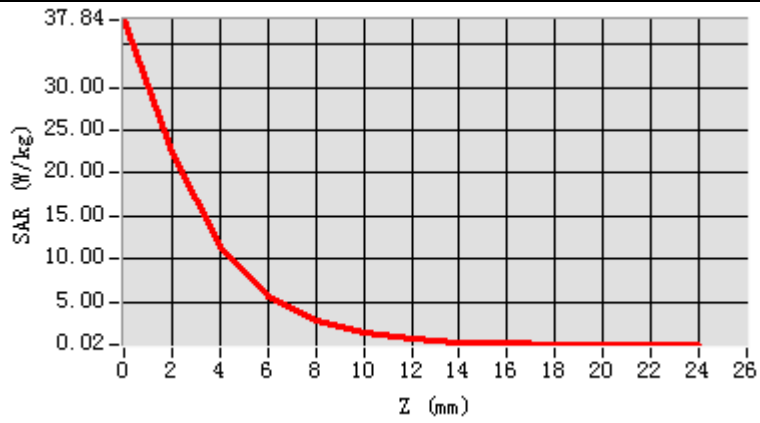


Maximum location: X=0.00, Y=6.00

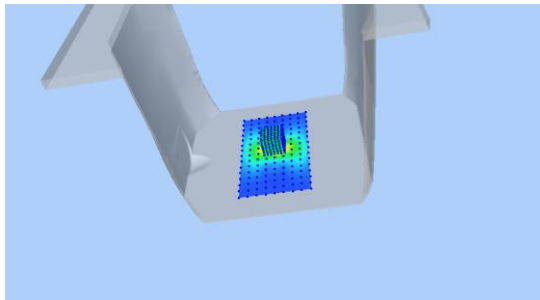
SAR Peak: 40.06 W/kg

SAR 10g (W/Kg)	5.327495
SAR 1g (W/Kg)	15.040121

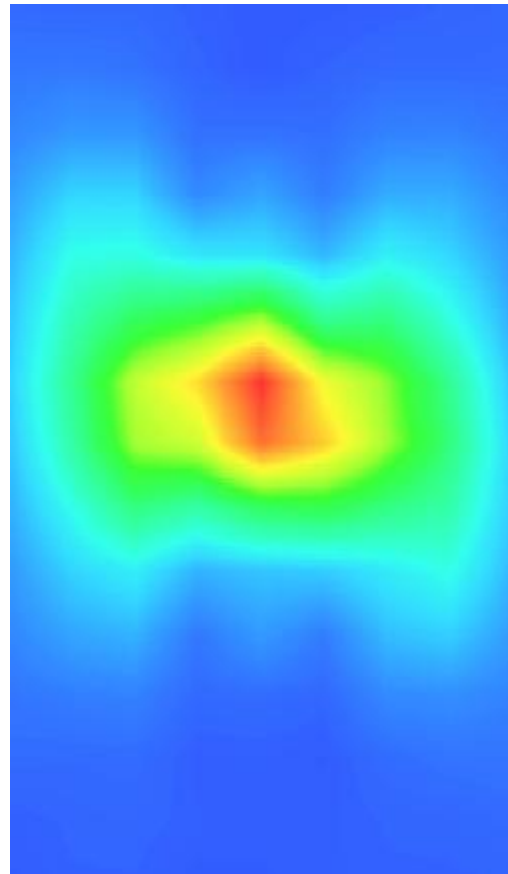
Z (m)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00
SAR (W/Kg)	37.8362	22.3231	11.3780	5.6682	2.8243	1.4086	0.7131	0.3652	0.1863	0.1001	0.0542	0.0312



3D screen shot



Hot spot position



MEASUREMENT 14

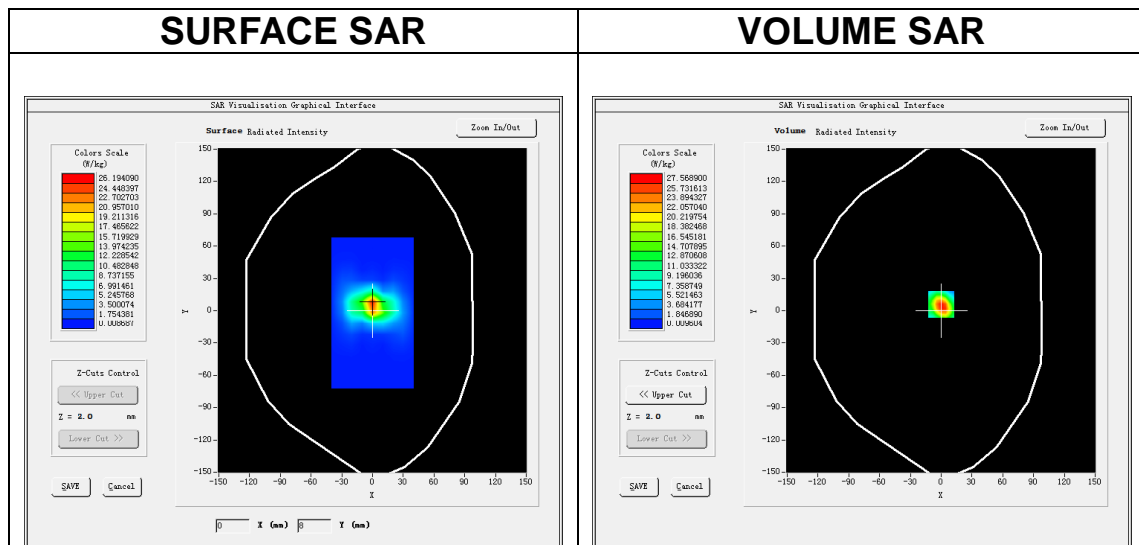
Date of measurement: 20/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	49.953284
Relative permittivity (imaginary part)	18.012341
Conductivity (S/m)	5.200842
Variation (%)	1.670000

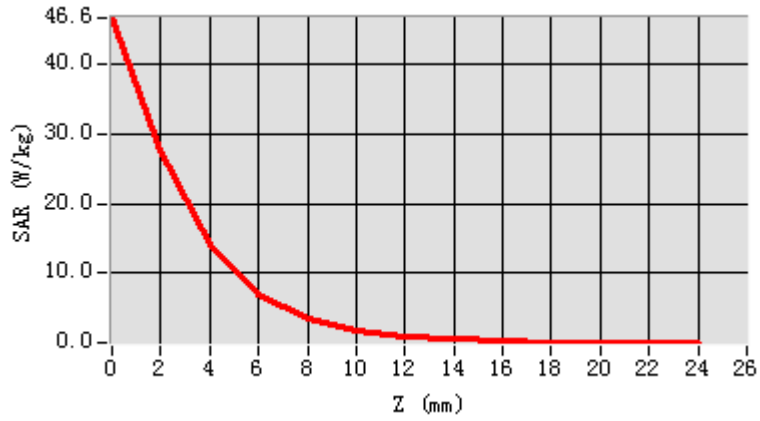


Maximum location: X=0.00, Y=6.00

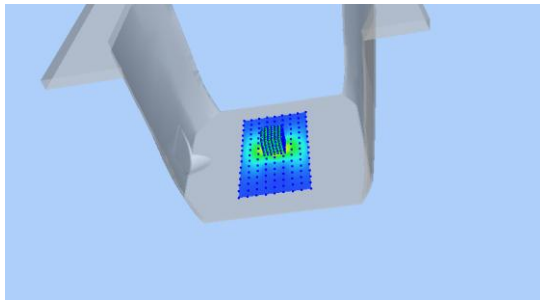
SAR Peak: 49.61 W/kg

SAR 10g (W/Kg)	5.552384
SAR 1g (W/Kg)	15.624086

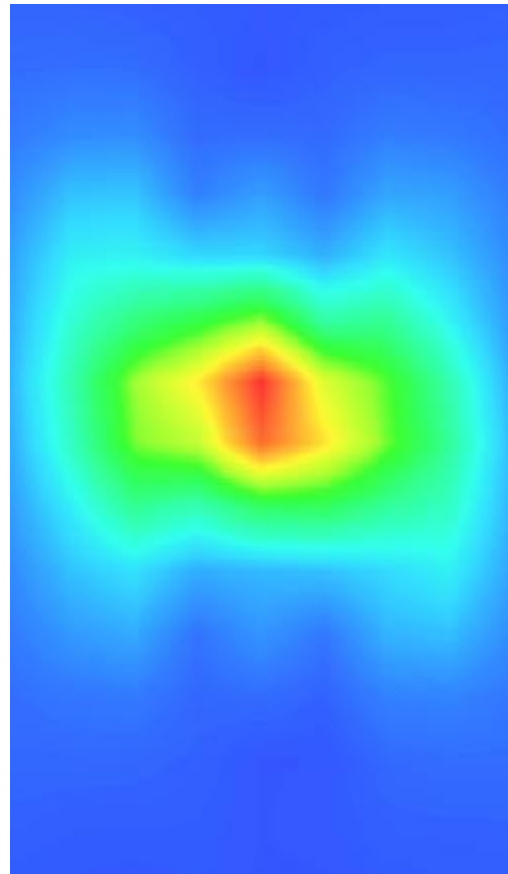
Z (m)	0.00	2.00	4.00	6.00	8.00	10.0	12.0	14.0	16.0	18.0	20.0	22.0
SAR (W/Kg)	46.6	27.5	14.0	7.05	3.59	1.78	0.89	0.46	0.24	0.13	0.06	0.04
R	131	690	609	82	43	60	81	08	42	86	15	63



3D screen shot



Hot spot position



MEASUREMENT 15

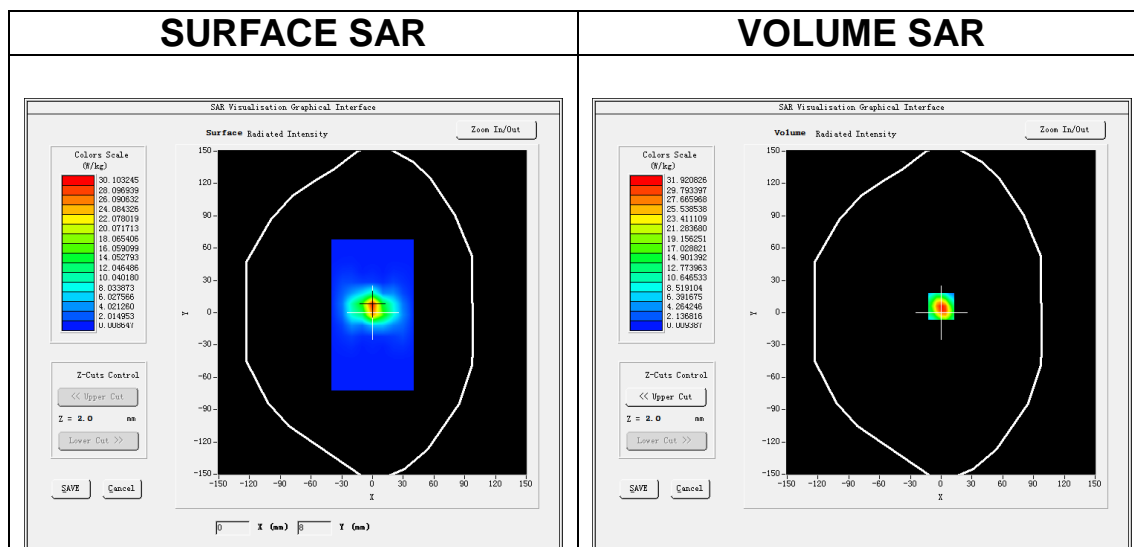
Date of measurement: 18/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

Frequency (MHz)	5800.000000
Relative permittivity (real part)	34.950012
Relative permittivity (imaginary part)	16.383152
Conductivity (S/m)	5.280081
Variation (%)	1.350000

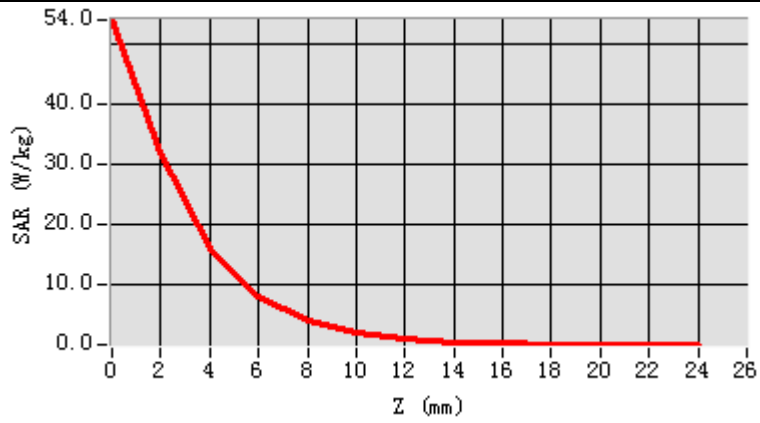


Maximum location: X=0.00, Y=6.00

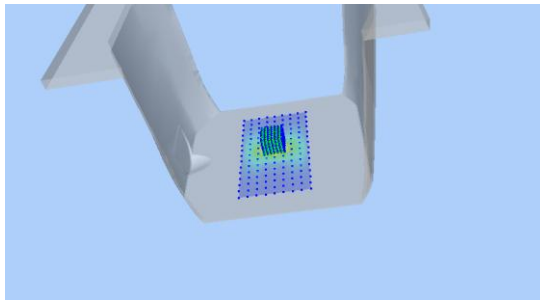
SAR Peak: 57.37 W/kg

SAR 10g (W/Kg)	6.097495
SAR 1g (W/Kg)	18.565463

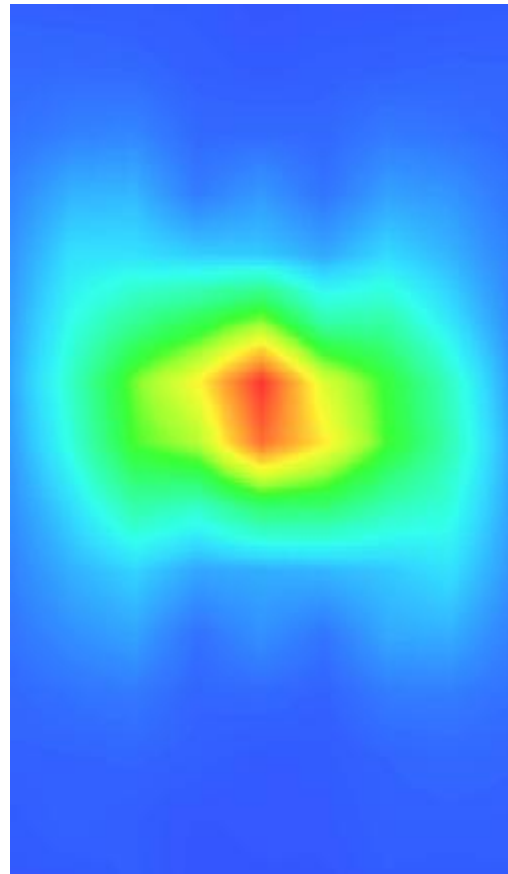
Z (m)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00
SAR (W/Kg)	54.0	31.9	16.1	8.17	4.08	2.05	1.03	0.51	0.27	0.15	0.07	0.04
	382	201	706	22	58	51	43	50	58	61	91	72



3D screen shot



Hot spot position



MEASUREMENT 16

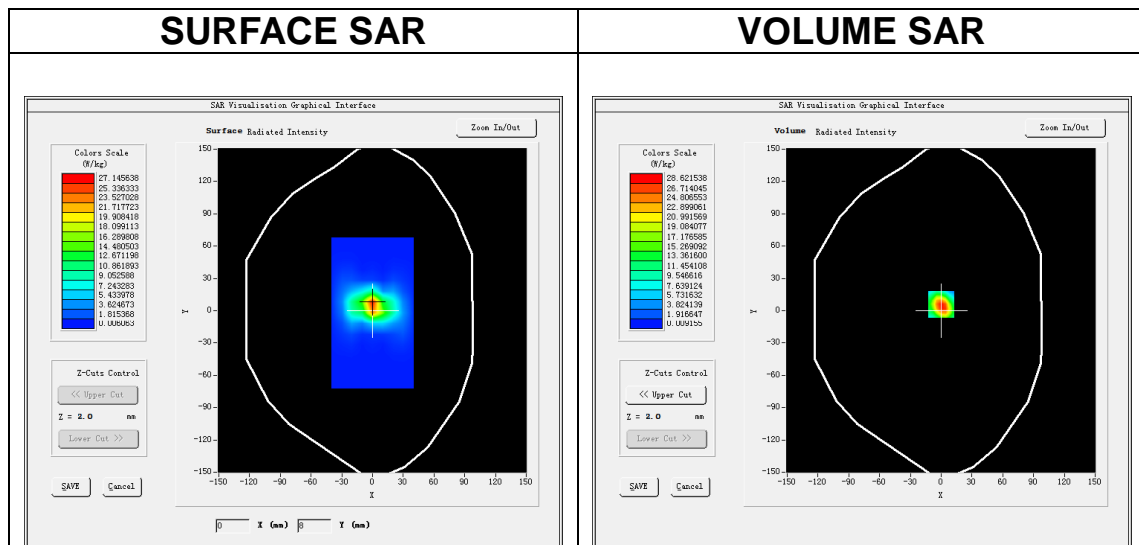
Date of measurement: 18/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

Frequency (MHz)	5800.000000
Relative permittivity (real part)	48.581323
Relative permittivity (imaginary part)	18.651243
Conductivity (S/m)	6.011524
Variation (%)	-1.820000

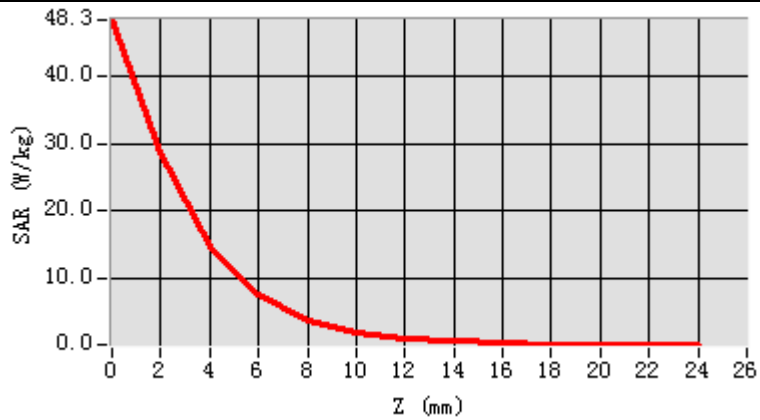


Maximum location: X=0.00, Y=6.00

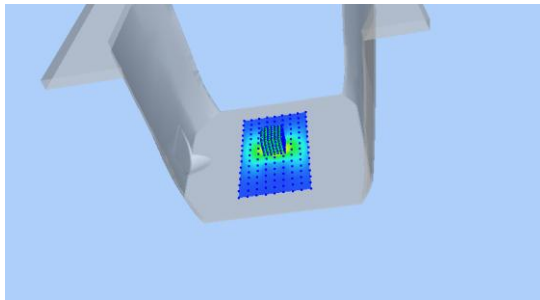
SAR Peak: 51.30 W/kg

SAR 10g (W/Kg)	5.848384
SAR 1g (W/Kg)	17.264052

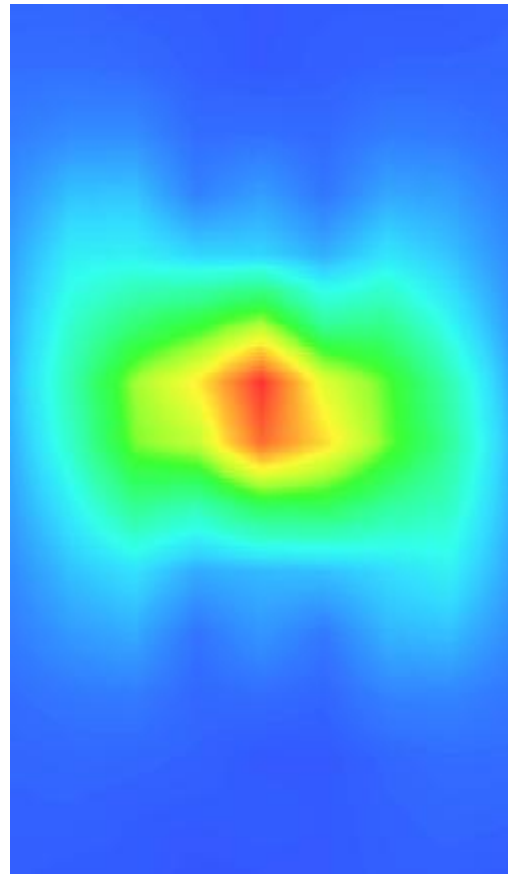
Z (m)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00
SAR (W/Kg)	48.3452	28.6216	14.6550	7.4031	3.6852	1.8342	0.9370	0.4758	0.2531	0.1300	0.0718	0.0502



3D screen shot



Hot spot position



13. Appendix C. Plots of High SAR Measurement

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MEASUREMENT 26 LTE Band 12 Body
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MEASUREMENT 1

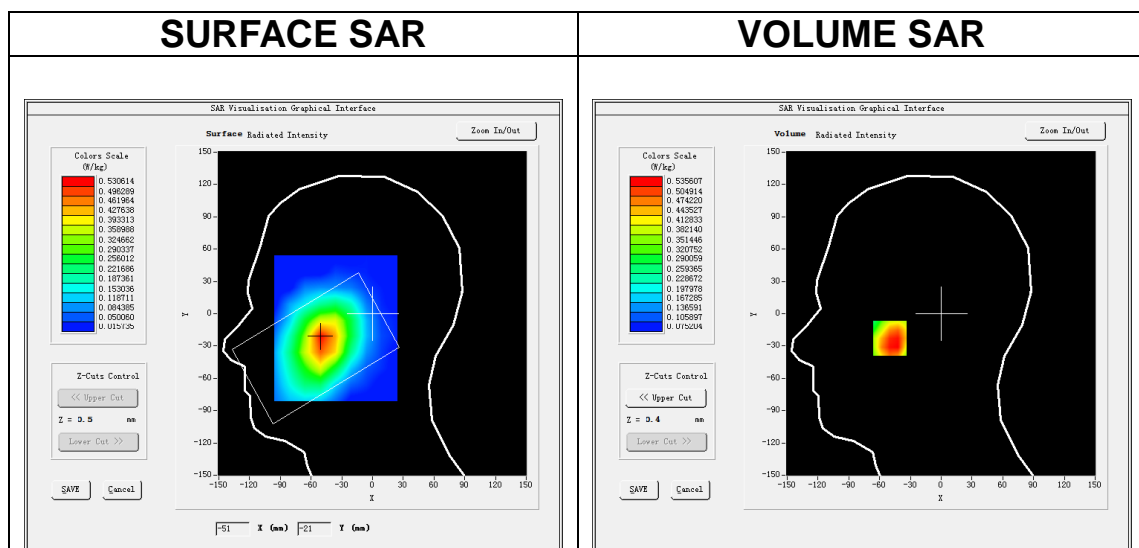
Date of measurement: 15/1/2021

A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>GSM850</u>
Channels	<u>Middle</u>
Signal	<u>TDMA (Crest factor: 2.7)</u>

B. SAR Measurement Results

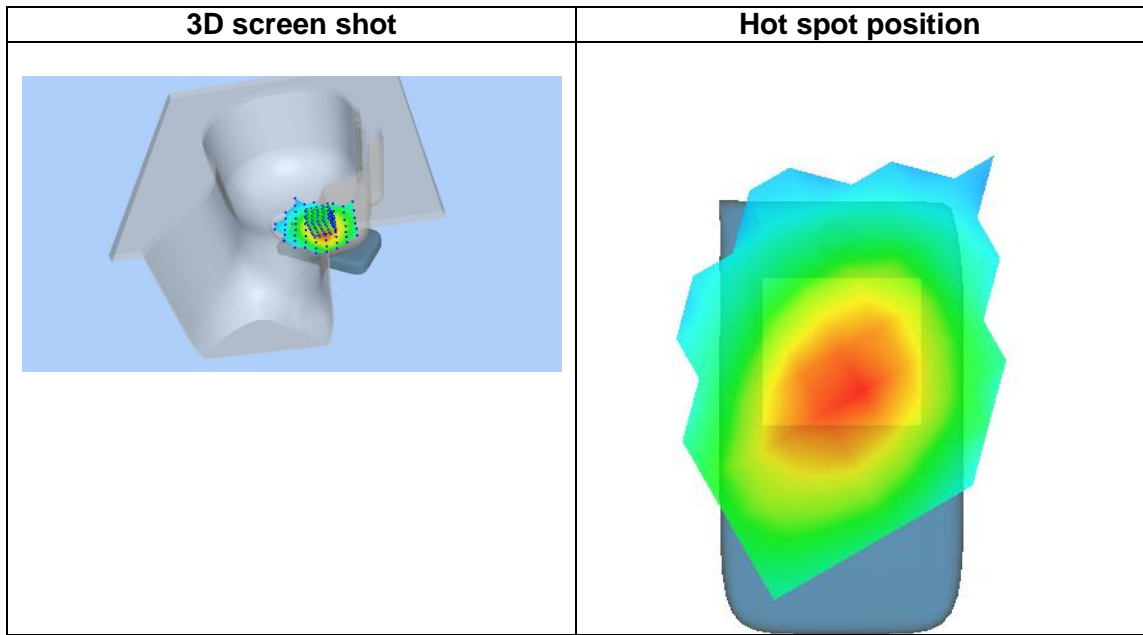
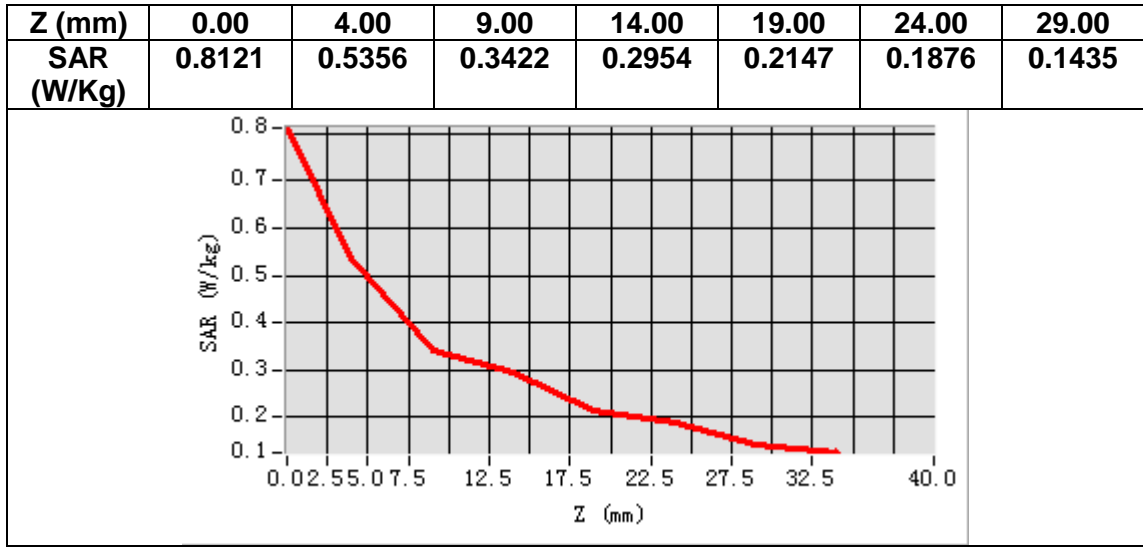
Frequency (MHz)	836.400000
Relative permittivity (real part)	41.377293
Relative permittivity (imaginary part)	19.510108
Conductivity (S/m)	0.906786
Variation (%)	-0.200000



Maximum location: X=-50.00, Y=-23.00

SAR Peak: 0.77 W/kg

SAR 10g (W/Kg)	0.374993
SAR 1g (W/Kg)	0.535308



MEASUREMENT 2

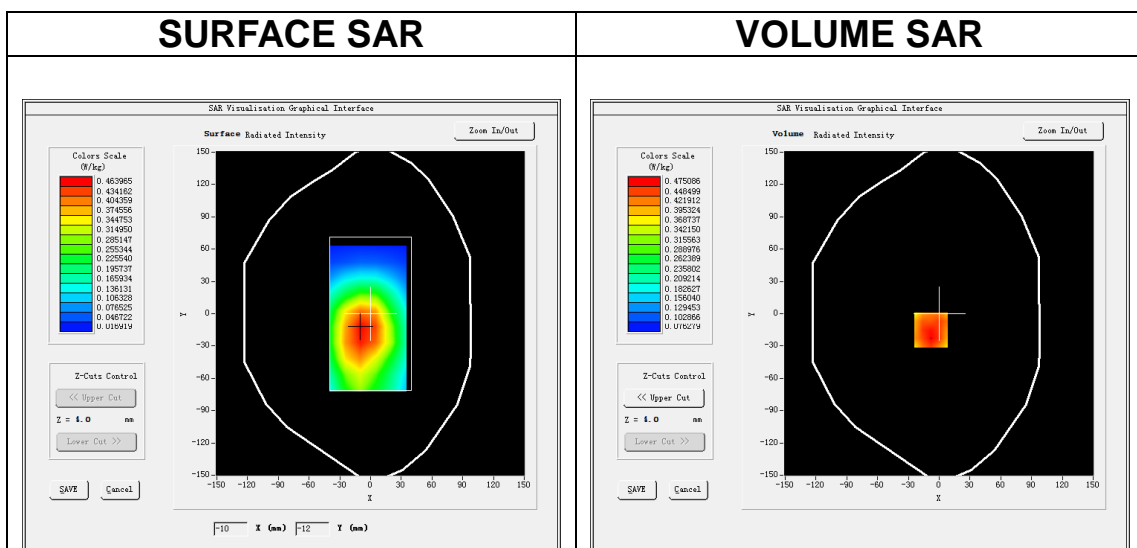
Date of measurement: 15/1/2021

A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body</u>
Band	<u>GSM850</u>
Channels	<u>Middle</u>
Signal	<u>TDMA (Crest factor: 2.7)</u>

B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	55.216274
Relative permittivity (imaginary part)	20.705948
Conductivity (S/m)	0.962136
Variation (%)	1.290000

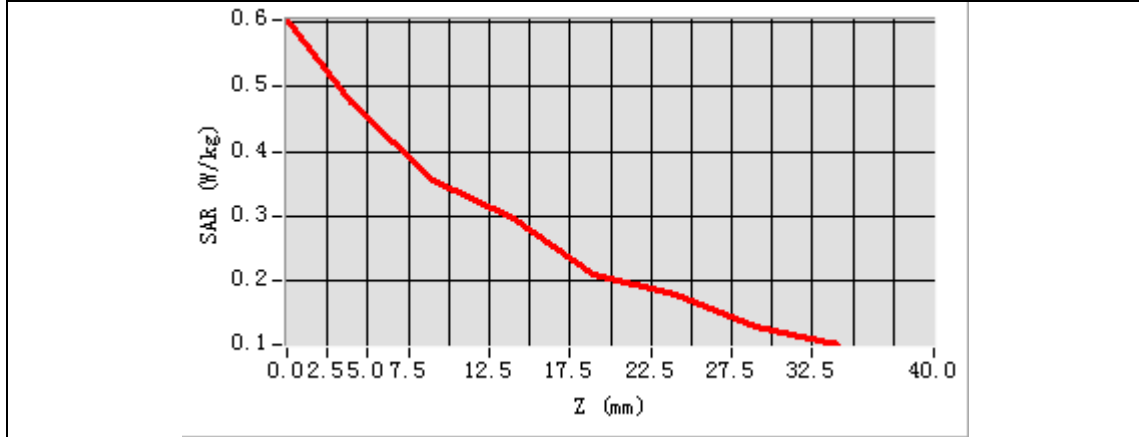


Maximum location: X=-8.00, Y=-15.00

SAR Peak: 0.58 W/kg

SAR 10g (W/Kg)	0.340330
SAR 1g (W/Kg)	0.459238

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.6031	0.4751	0.3540	0.2954	0.2091	0.1771	0.1289



3D screen shot	Hot spot position

MEASUREMENT 3

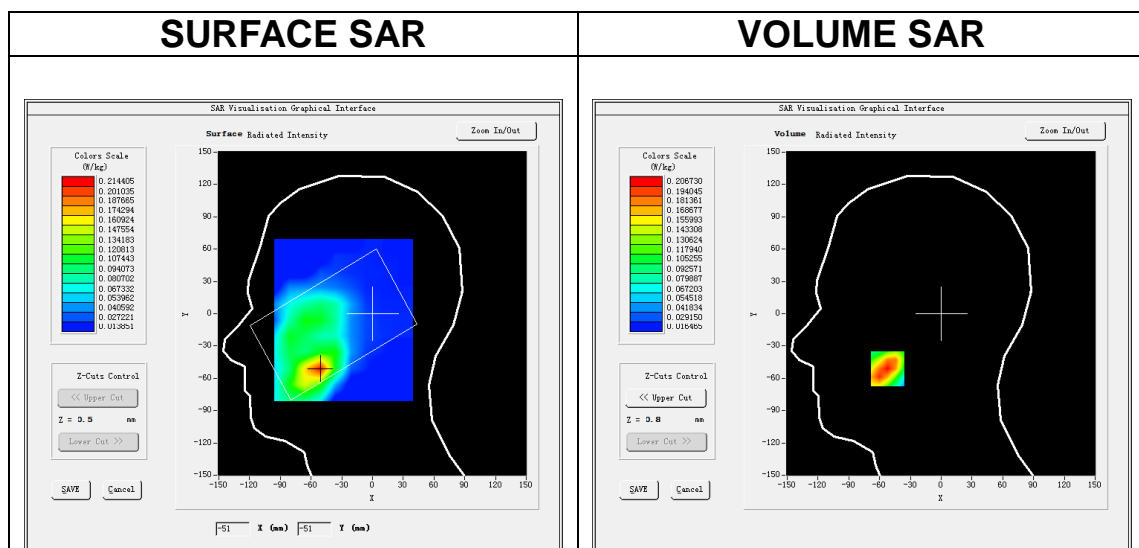
Date of measurement: 17/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

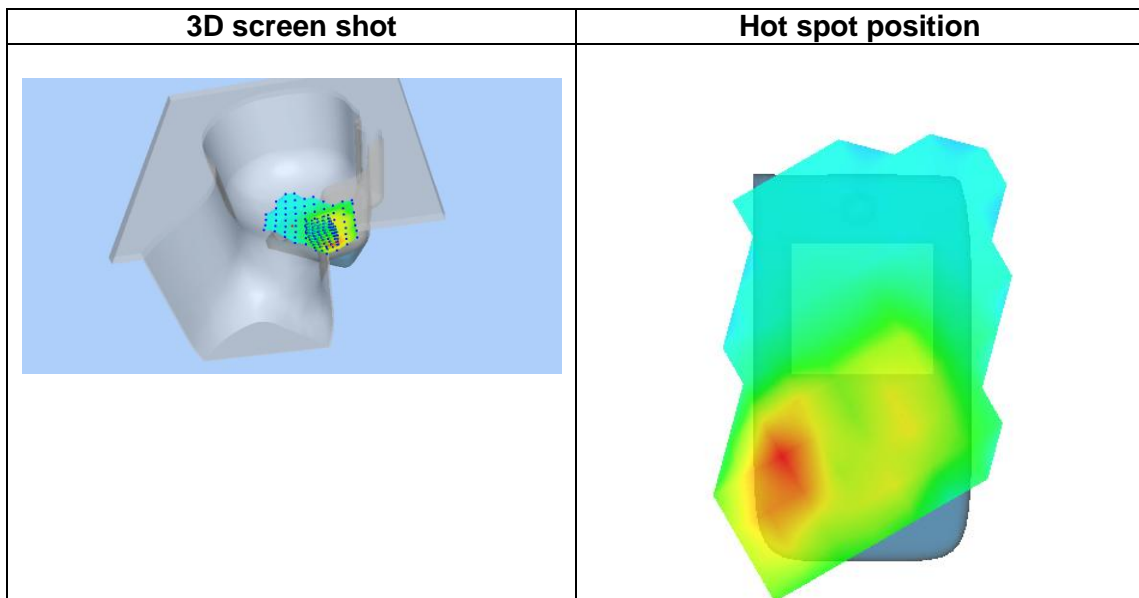
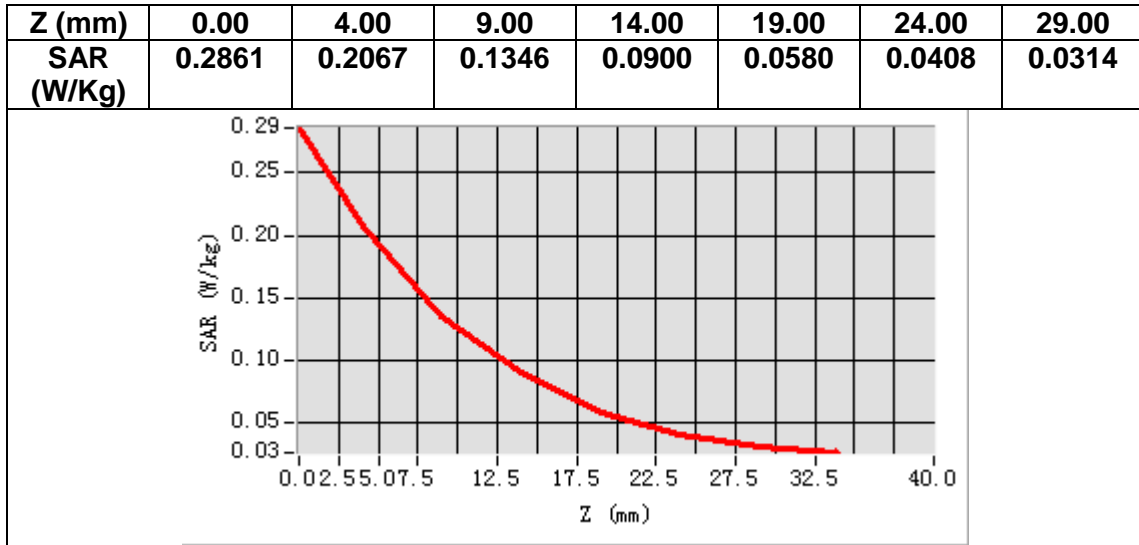
Frequency (MHz)	1880.000000
Relative permittivity (real part)	39.542755
Relative permittivity (imaginary part)	13.161393
Conductivity (S/m)	1.374634
Variation (%)	4.100000



Maximum location: X=-52.00, Y=-51.00

SAR Peak: 0.31 W/kg

SAR 10g (W/Kg)	0.114504
SAR 1g (W/Kg)	0.195113



MEASUREMENT 4

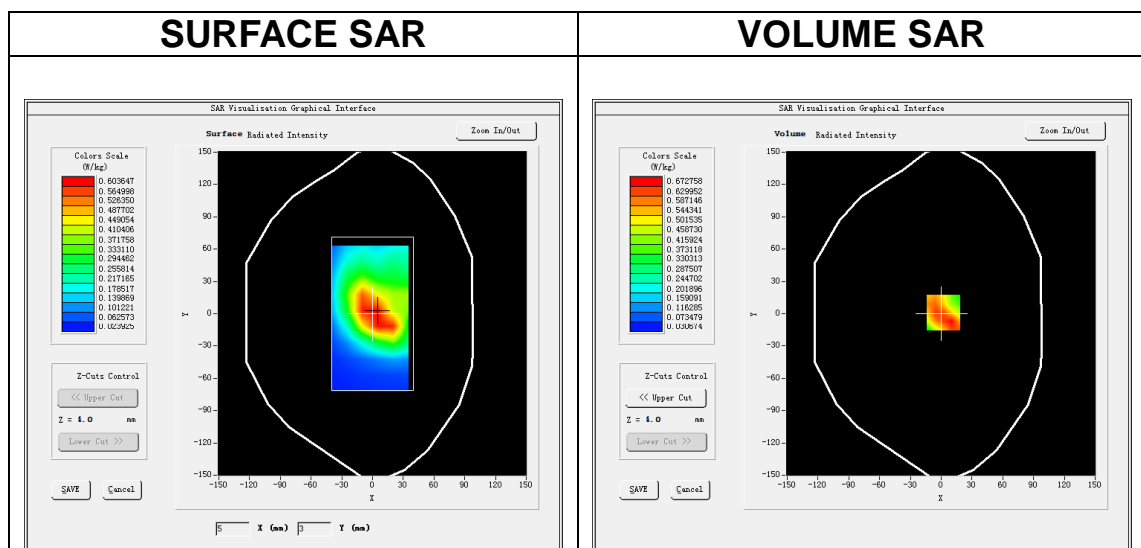
Date of measurement: 17/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

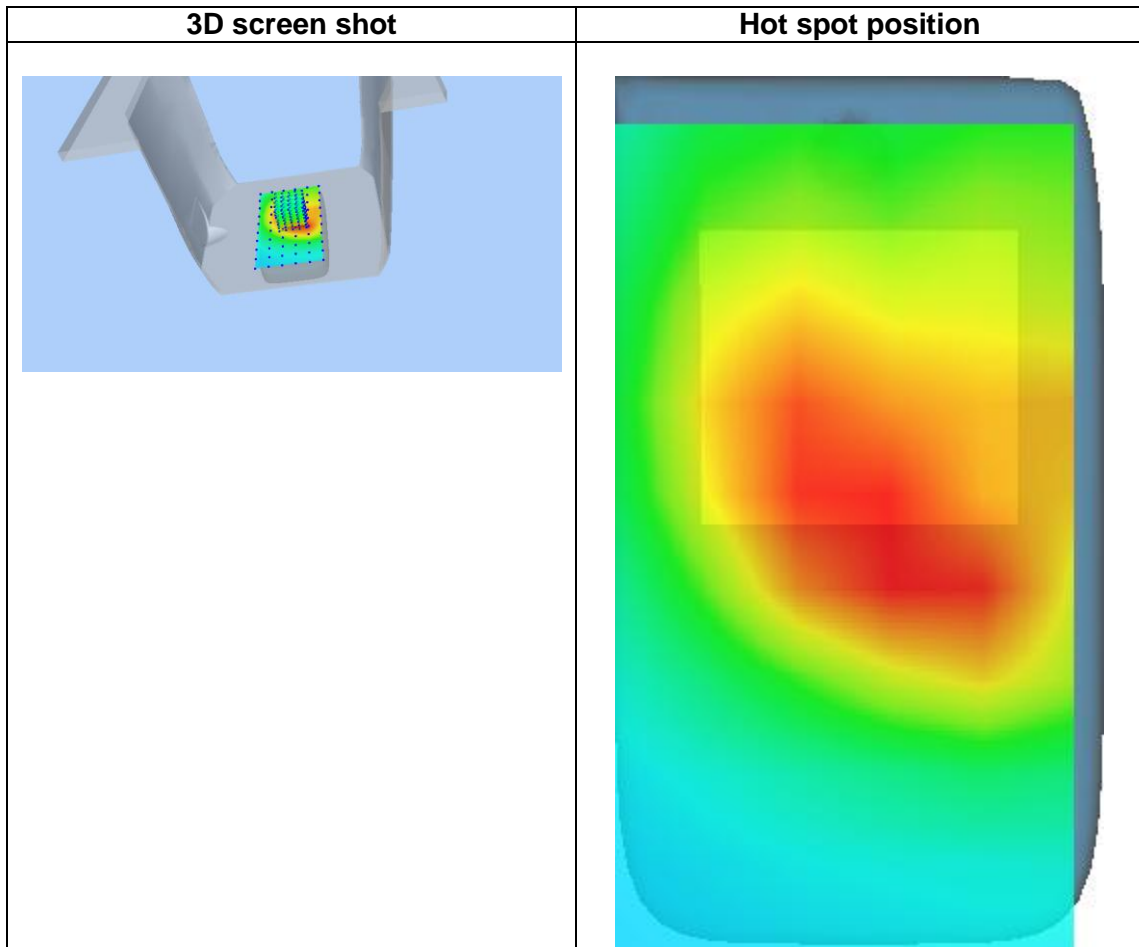
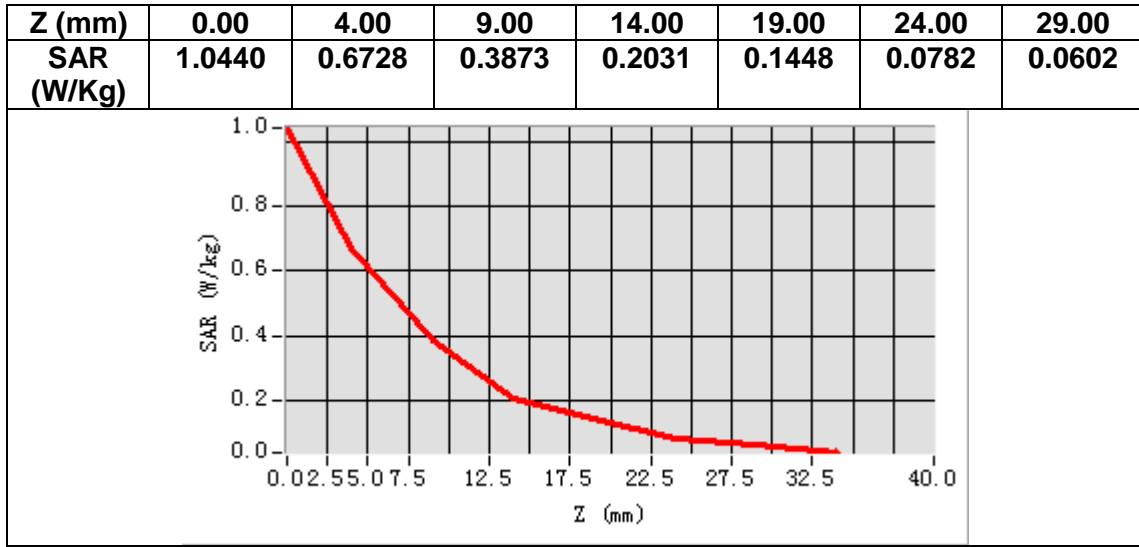
Frequency (MHz)	1880.000000
Relative permittivity (real part)	54.809654
Relative permittivity (imaginary part)	14.498893
Conductivity (S/m)	1.514329
Variation (%)	0.980000



Maximum location: X=2.00, Y=1.00

SAR Peak: 1.05 W/kg

SAR 10g (W/Kg)	0.365706
SAR 1g (W/Kg)	0.626585



MEASUREMENT 5

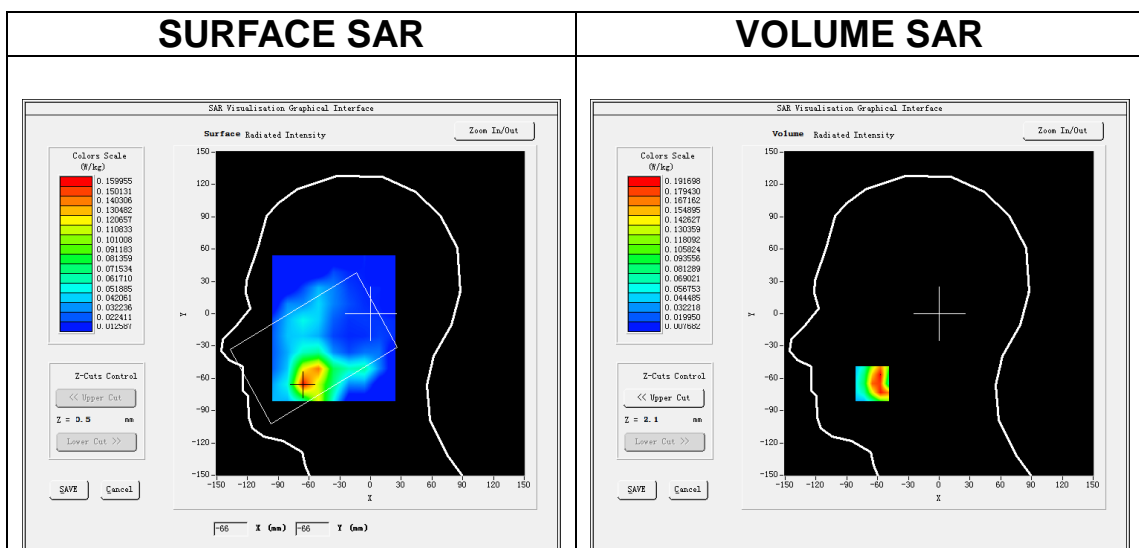
Date of measurement: 17/1/2021

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>

C. SAR Measurement Results

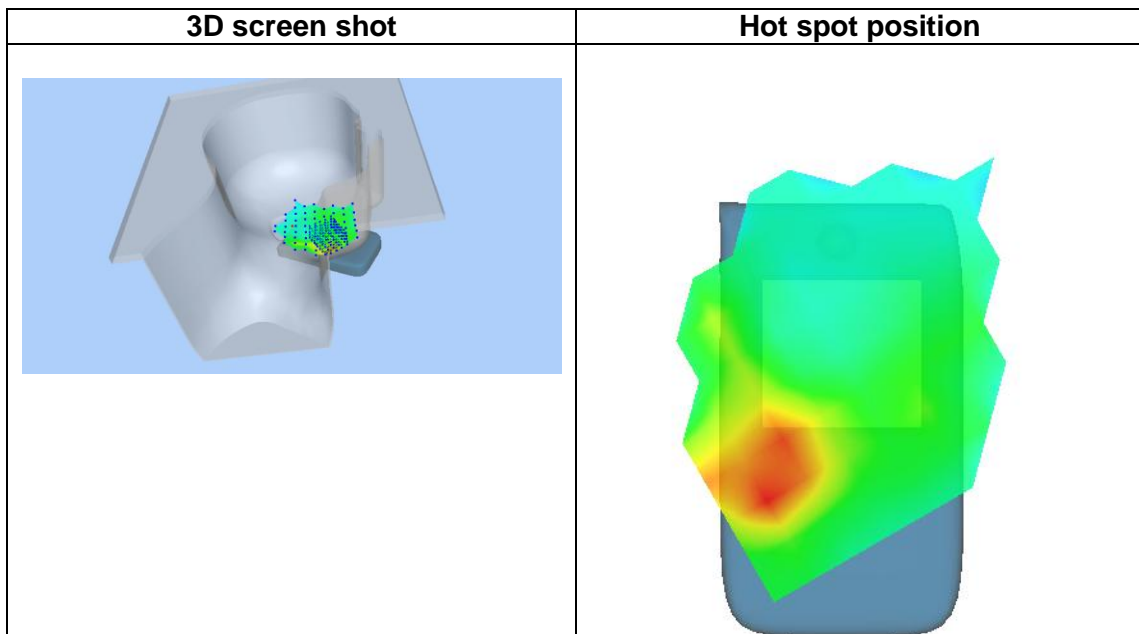
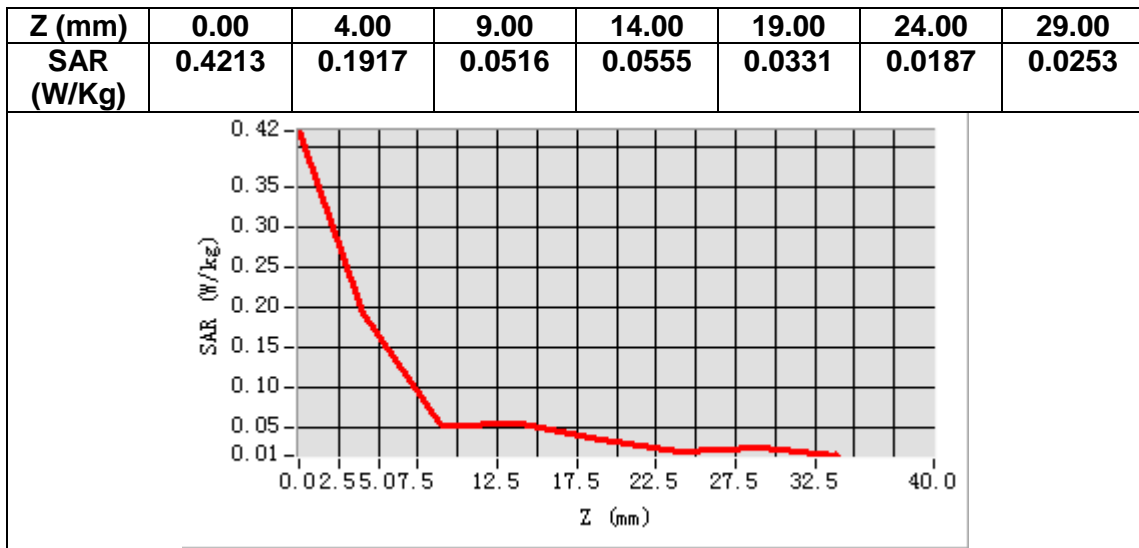
Frequency (MHz)	1880.000000
Relative permittivity (real part)	41.018200
Relative permittivity (imaginary part)	13.744300
Conductivity (S/m)	1.435516
Variation (%)	2.170000



Maximum location: X=-65.00, Y=-65.00

SAR Peak: 0.29 W/kg

SAR 10g (W/Kg)	0.101657
SAR 1g (W/Kg)	0.180833



MEASUREMENT 6

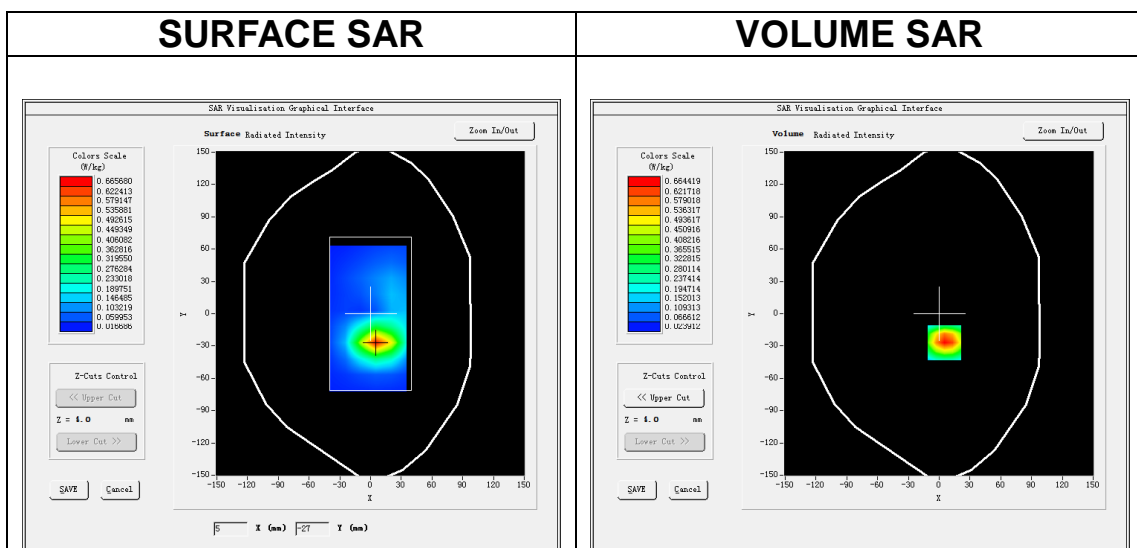
Date of measurement: 17/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

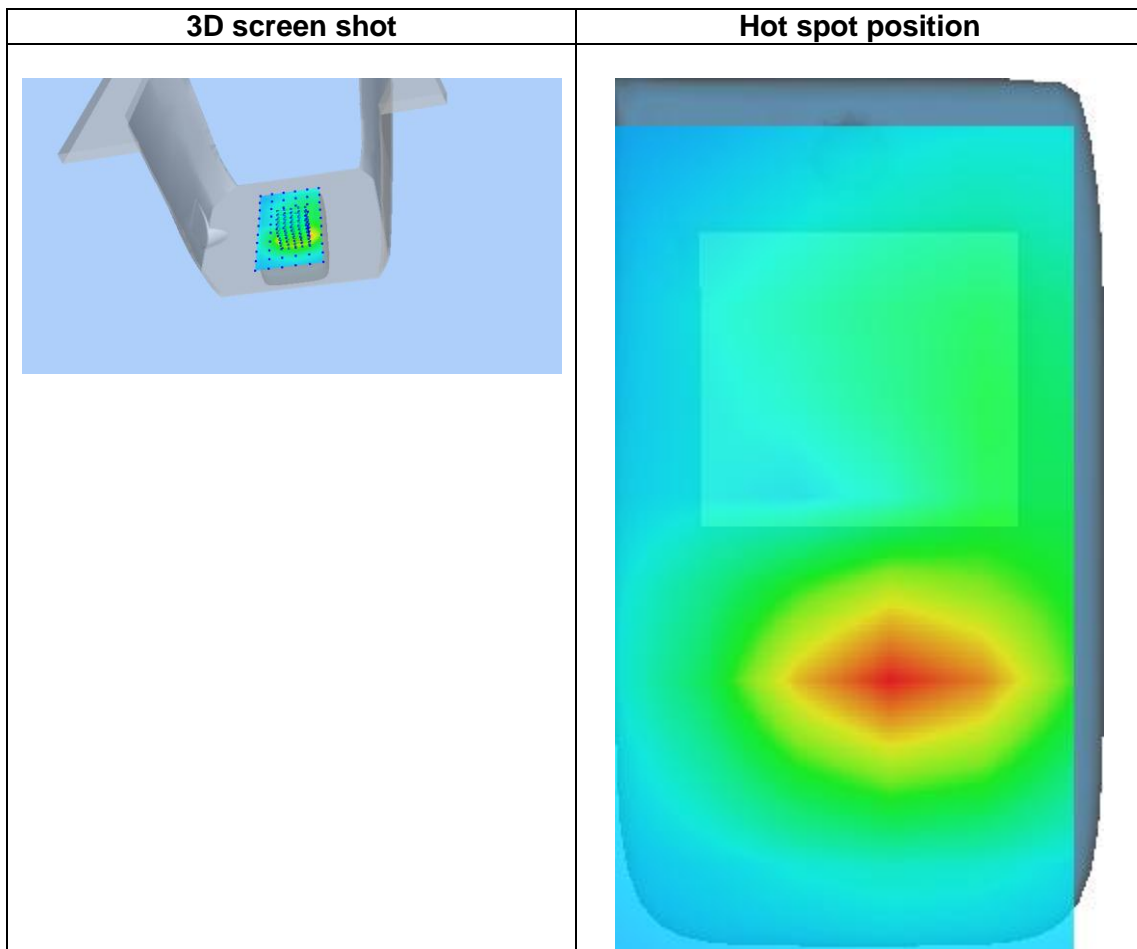
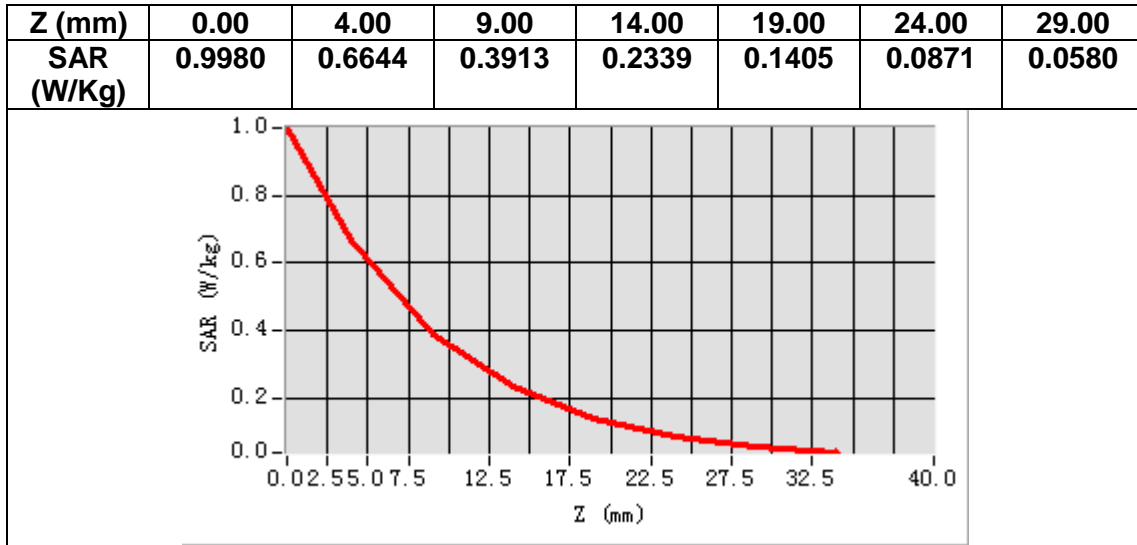
Frequency (MHz)	1880.000000
Relative permittivity (real part)	54.809654
Relative permittivity (imaginary part)	14.498893
Conductivity (S/m)	1.514329
Variation (%)	3.240002



Maximum location: X=5.00, Y=-27.00

SAR Peak: 1.04 W/kg

SAR 10g (W/Kg)	0.341522
SAR 1g (W/Kg)	0.644242



MEASUREMENT 7

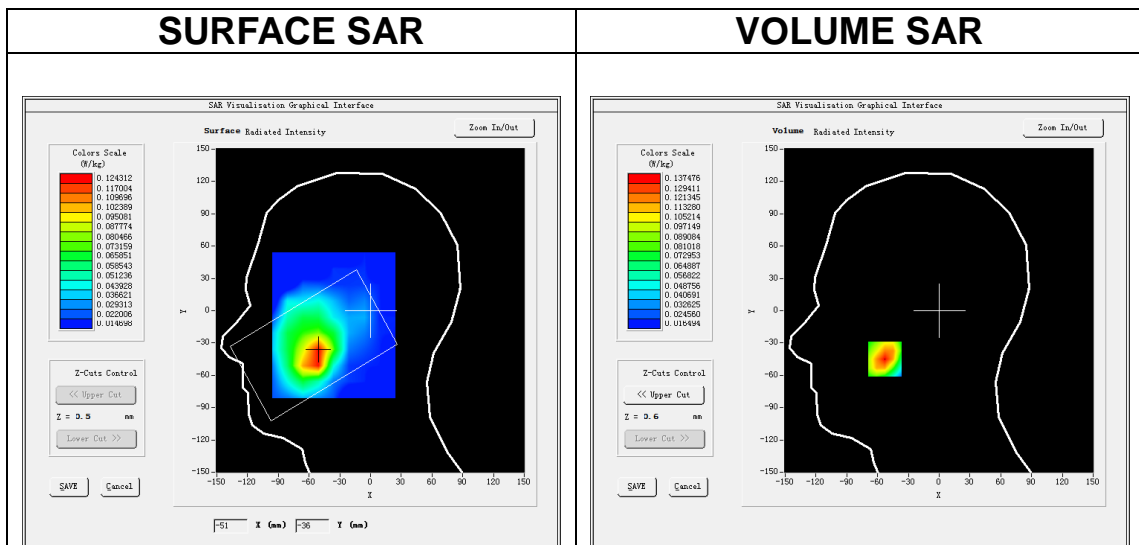
Date of measurement: 15/1/2021

A. Experimental conditions.

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

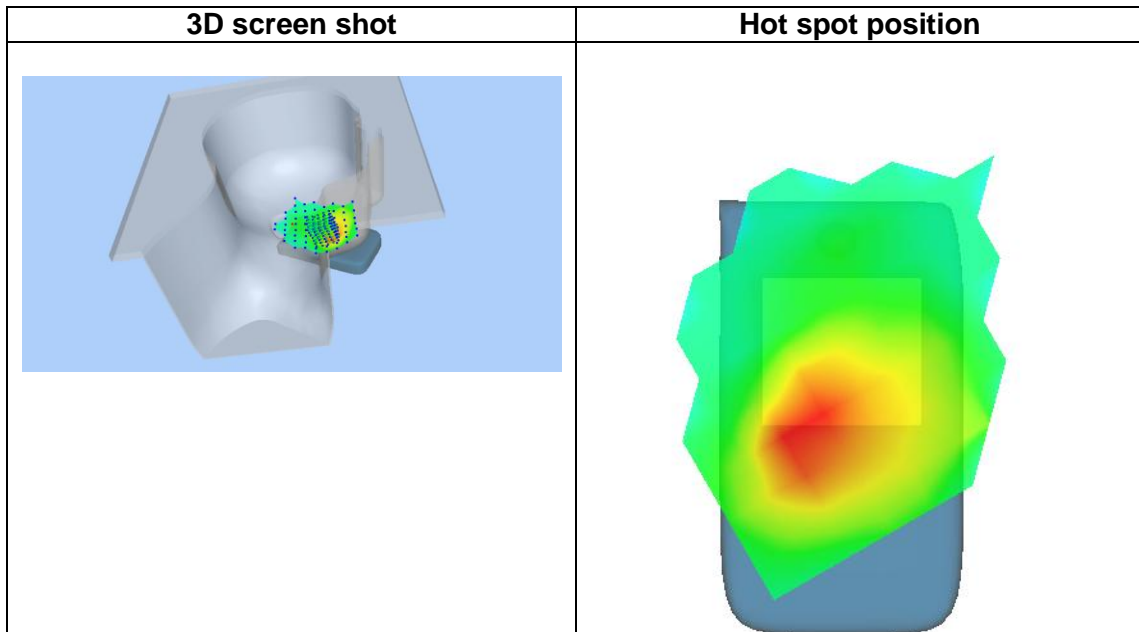
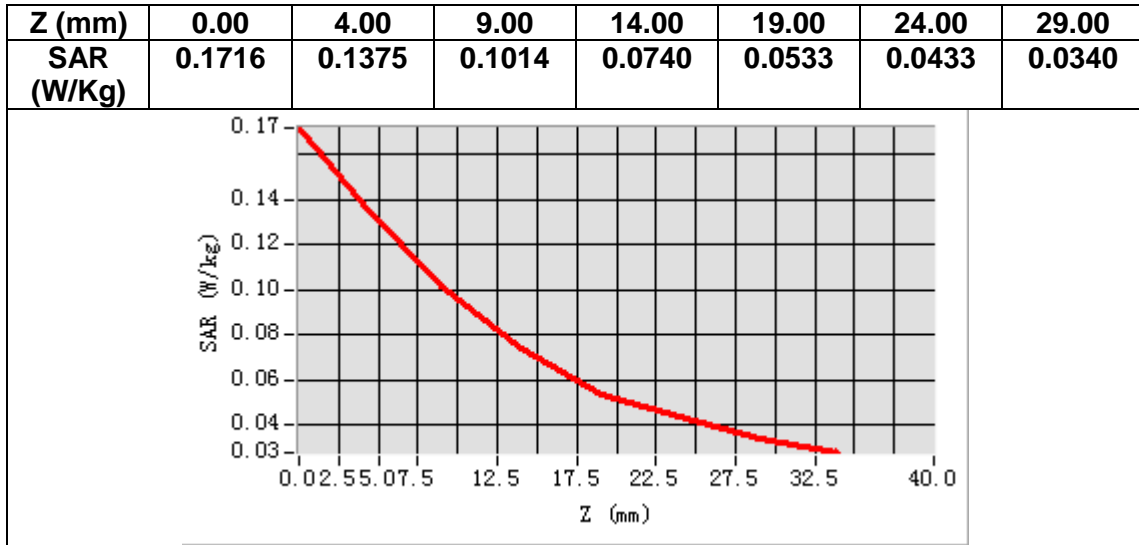
B. SAR Measurement Results

Frequency (MHz)	1732.600000
Relative permittivity (real part)	39.670352
Relative permittivity (imaginary part)	13.890314
Conductivity (S/m)	1.342730
Variation (%)	0.860000



Maximum location: X=-53.00, Y=-45.00
SAR Peak: 0.17 W/kg

SAR 10g (W/Kg)	0.085006
SAR 1g (W/Kg)	0.128277



MEASUREMENT 8

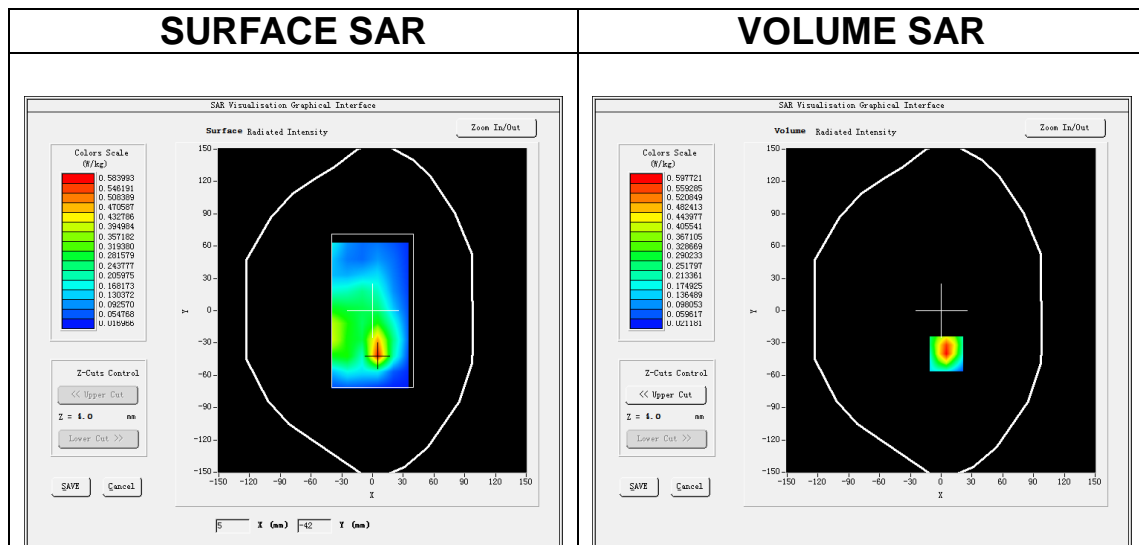
Date of measurement: 15/1/2021

A. Experimental conditions.

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

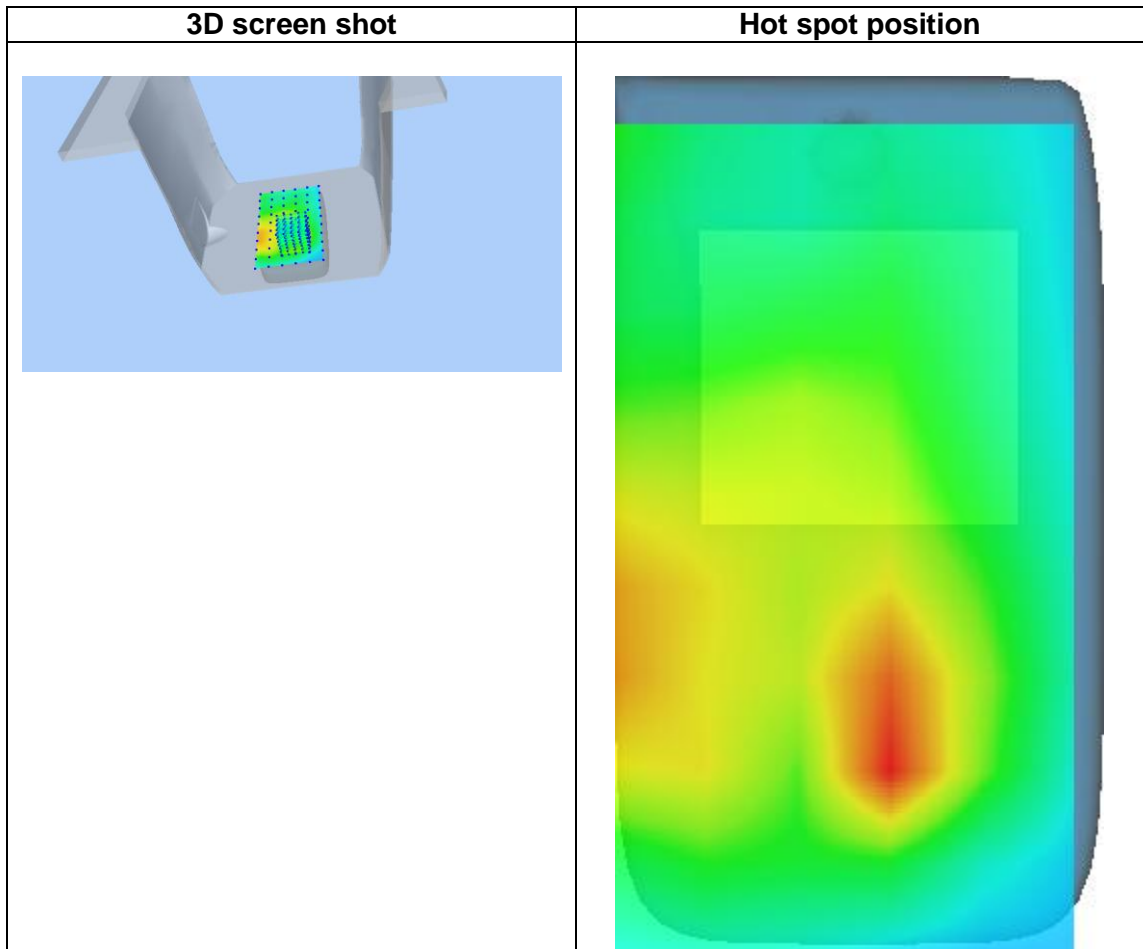
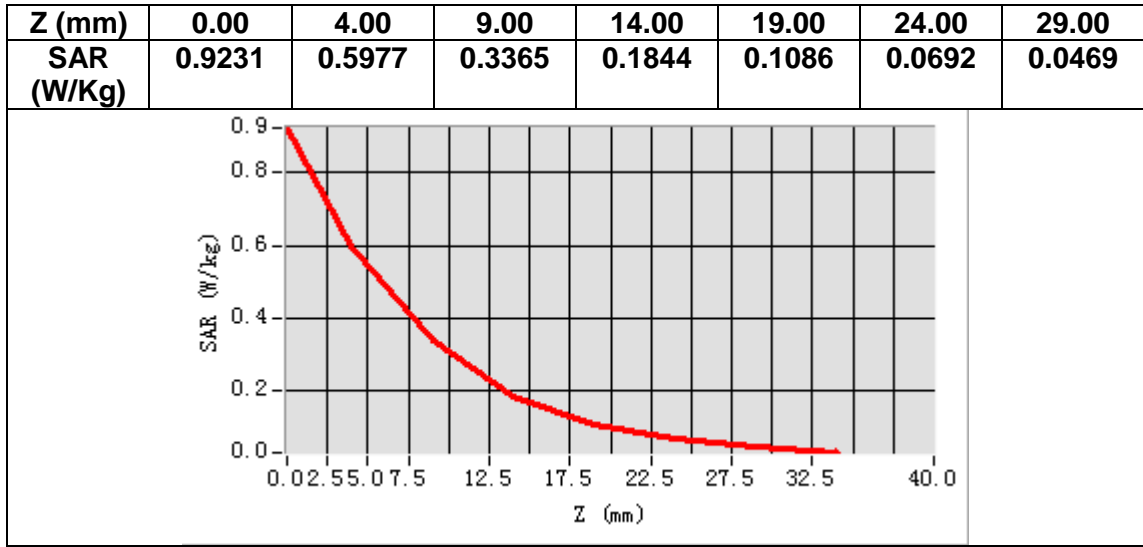
B. SAR Measurement Results

Frequency (MHz)	1732.600000
Relative permittivity (real part)	54.879121
Relative permittivity (imaginary part)	15.109263
Conductivity (S/m)	1.460562
Variation (%)	0.170000



Maximum location: X=5.00, Y=-40.00
SAR Peak: 0.93 W/kg

SAR 10g (W/Kg)	0.292202
SAR 1g (W/Kg)	0.566930



MEASUREMENT 9

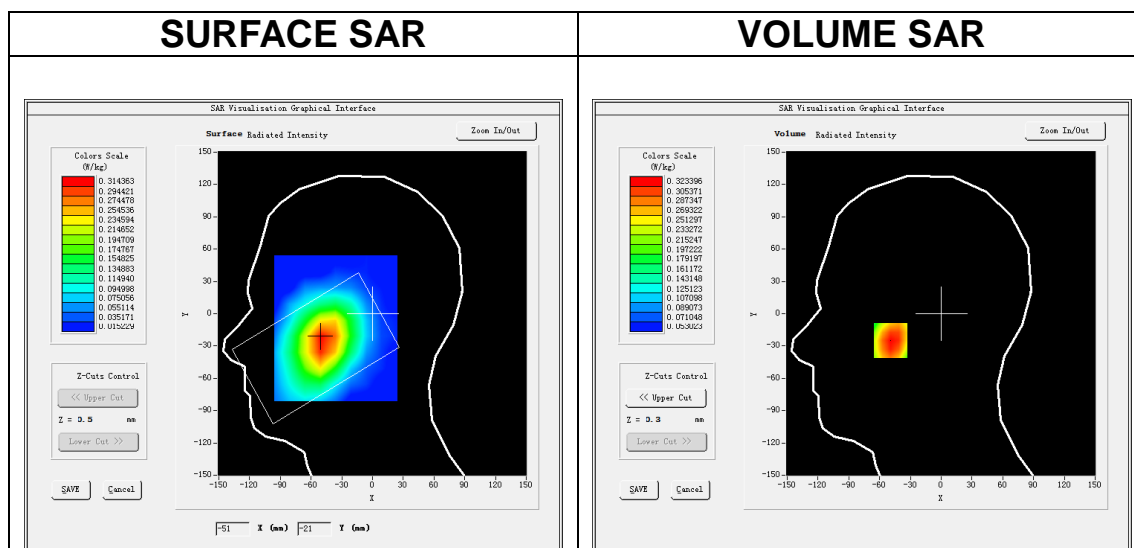
Date of measurement: 15/1/2021

A. Experimental conditions.

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

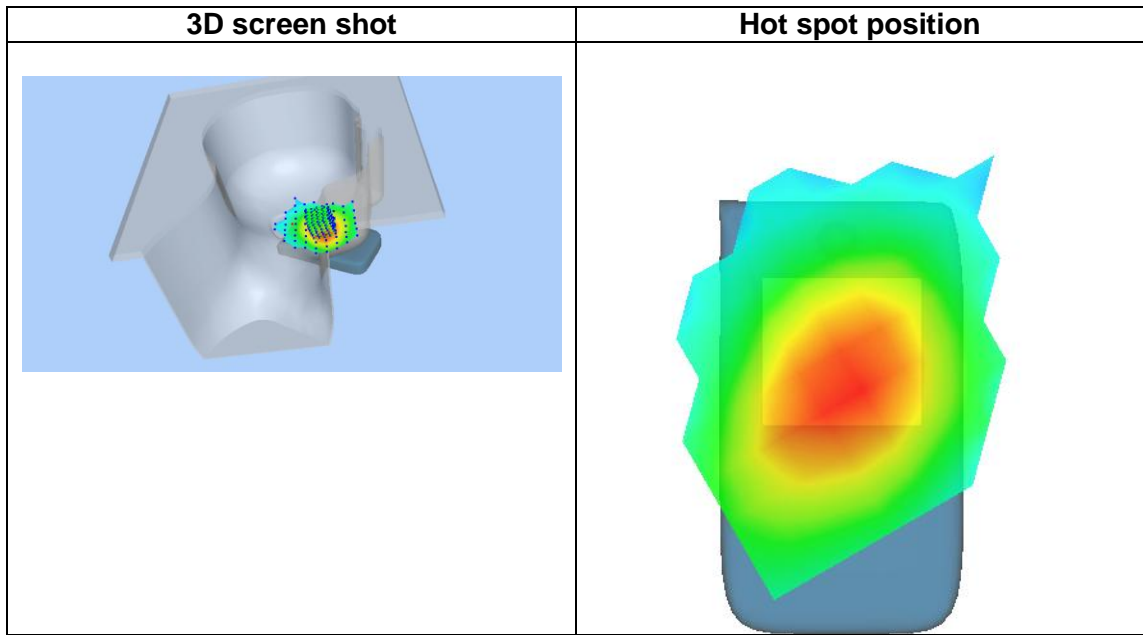
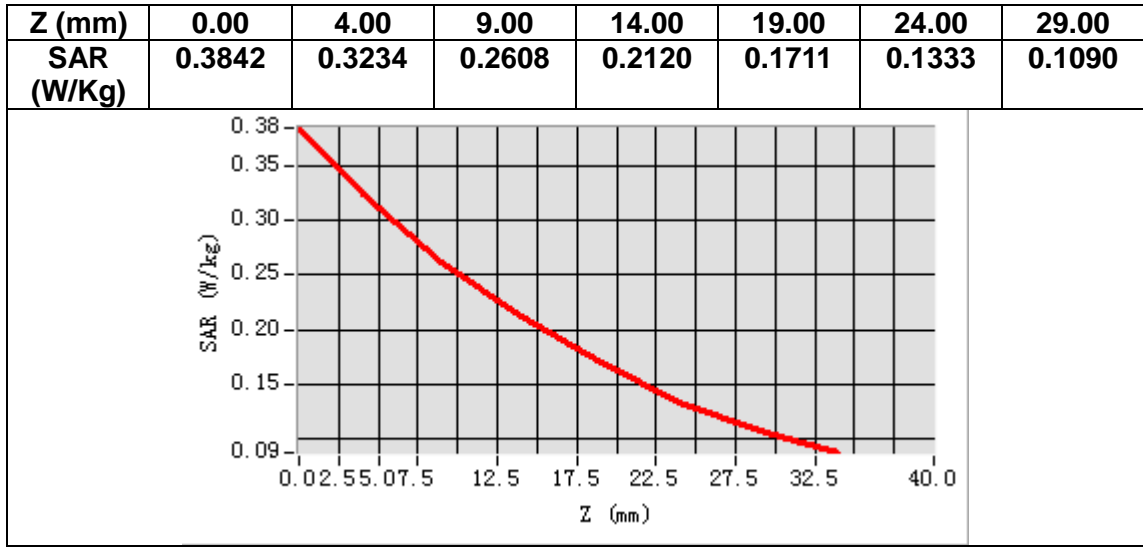
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	41.387283
Relative permittivity (imaginary part)	19.510608
Conductivity (S/m)	0.906593
Variation (%)	1.410000



Maximum location: X=-49.00, Y=-25.00
SAR Peak: 0.39 W/kg

SAR 10g (W/Kg)	0.235361
SAR 1g (W/Kg)	0.314744



MEASUREMENT 10

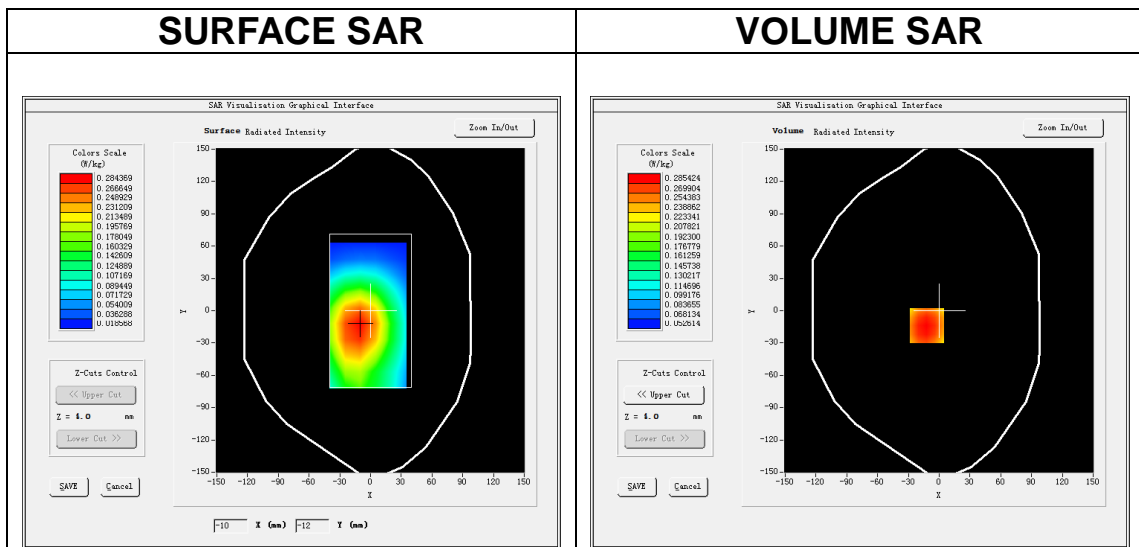
Date of measurement: 15/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

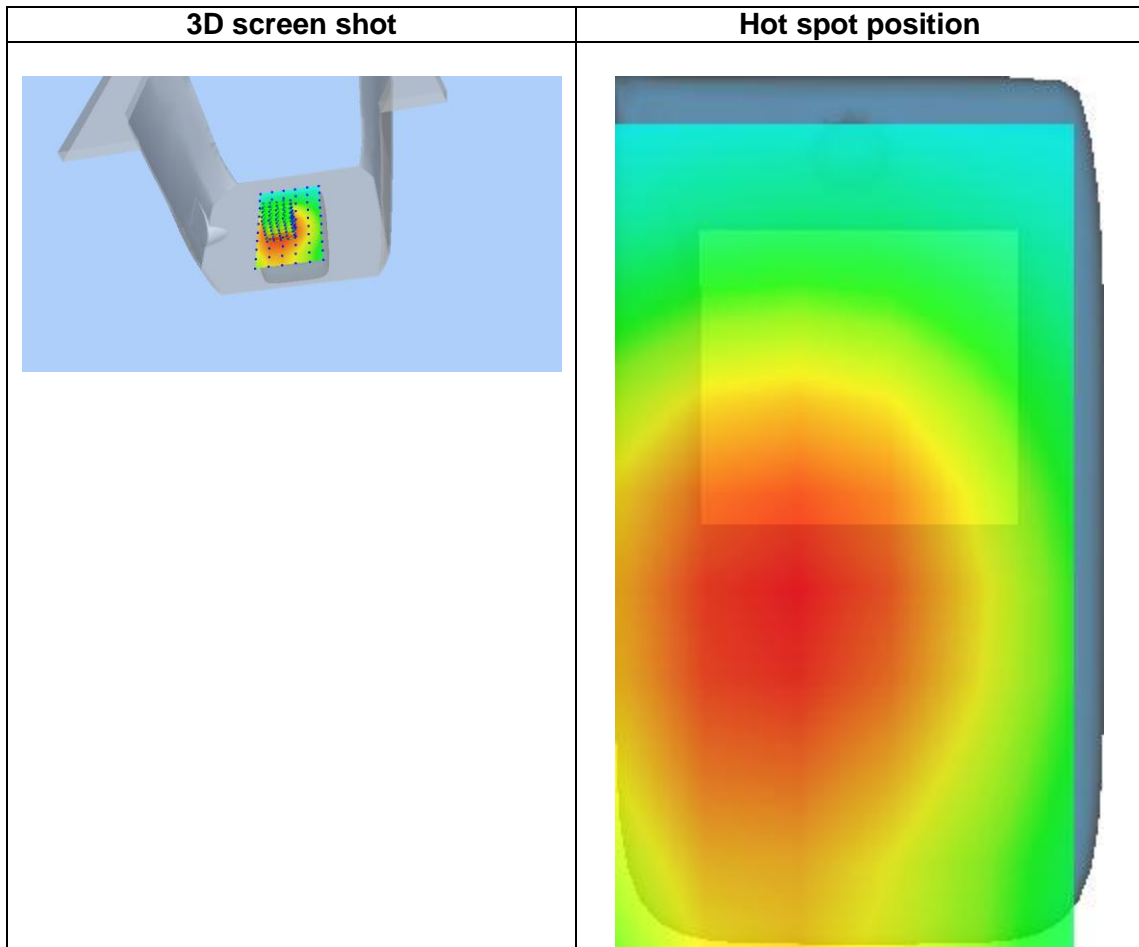
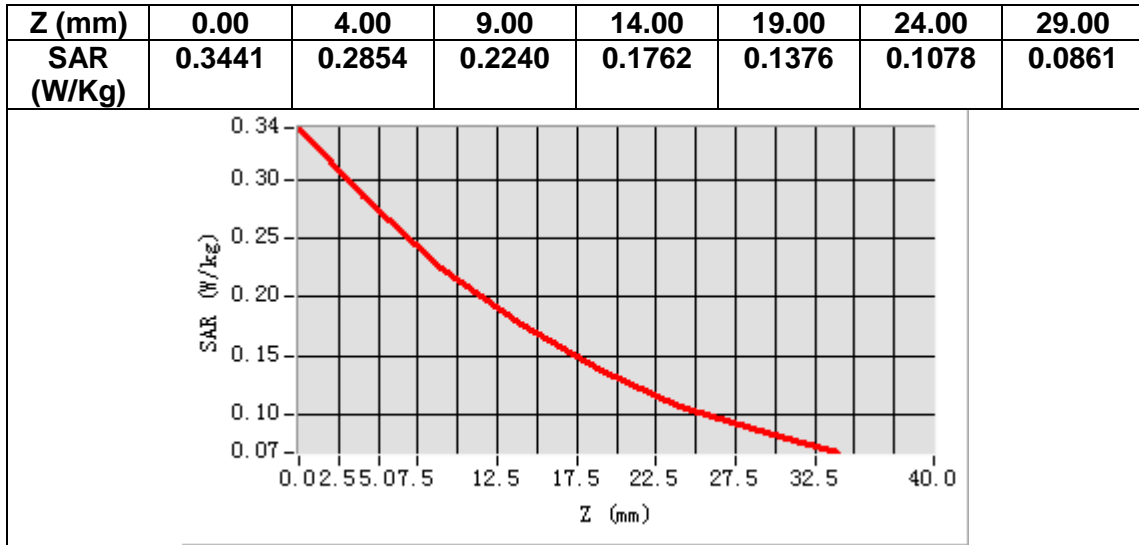
Frequency (MHz)	836.400000
Relative permittivity (real part)	55.216344
Relative permittivity (imaginary part)	20.705977
Conductivity (S/m)	0.962138
Variation (%)	-0.340000



Maximum location: X=-12.00, Y=-14.00

SAR Peak: 0.35 W/kg

SAR 10g (W/Kg)	0.208293
SAR 1g (W/Kg)	0.277059



MEASUREMENT 11

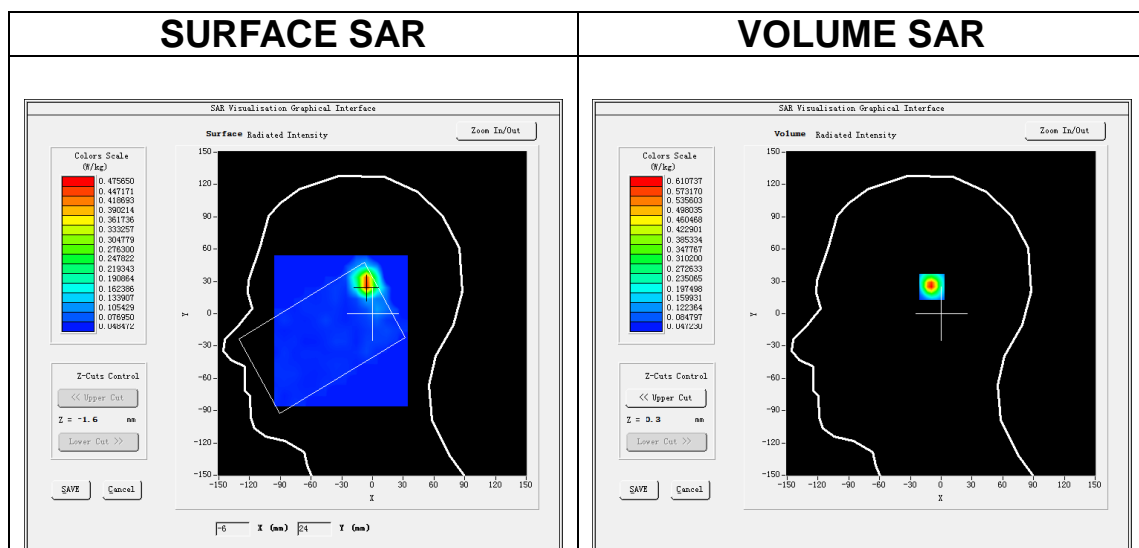
Date of measurement: 20/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	36.122314
Relative permittivity (imaginary part)	15.762642
Conductivity (S/m)	4.553316
Variation (%)	-1.050000

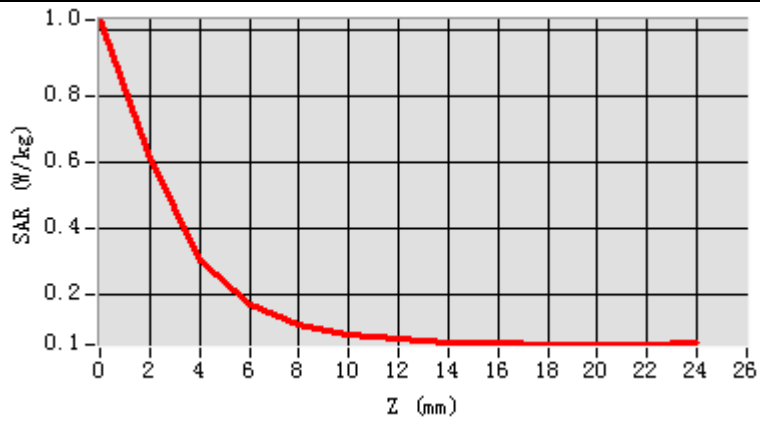


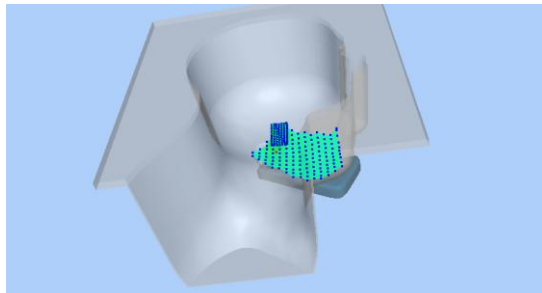
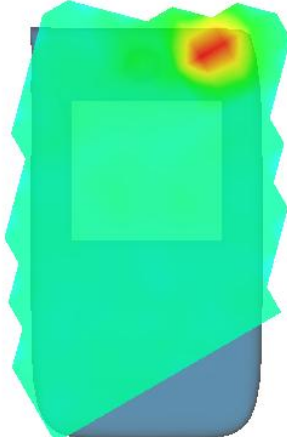
Maximum location: X=-6.00, Y=27.00

SAR Peak: 1.66 W/kg

SAR 10g (W/Kg)	0.188654
SAR 1g (W/Kg)	0.563877

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)	1.02 83	0.61 07	0.30 29	0.17 47	0.11 46	0.08 01	0.07 01	0.05 60	0.05 87	0.05 28	0.05 23	0.05 42



3D screen shot	Hot spot position
	

MEASUREMENT 12

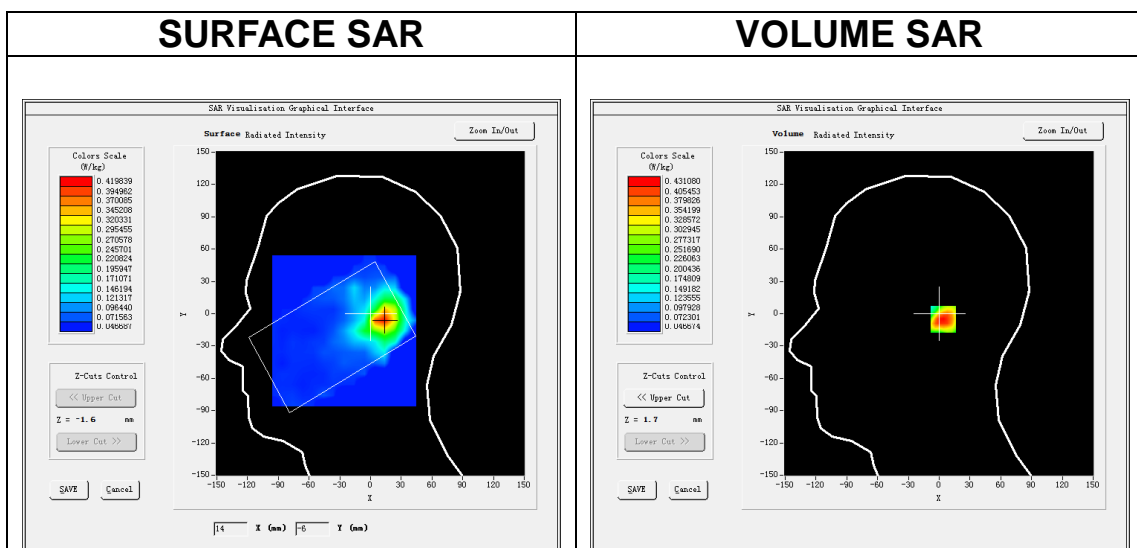
Date of measurement: 18/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

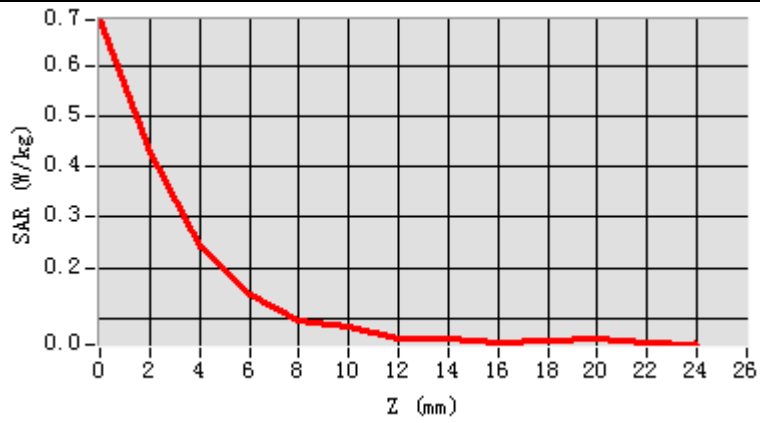
Frequency (MHz)	5785.000000
Relative permittivity (real part)	35.027542
Relative permittivity (imaginary part)	16.254402
Conductivity (S/m)	5.223984
Variation (%)	-0.900000

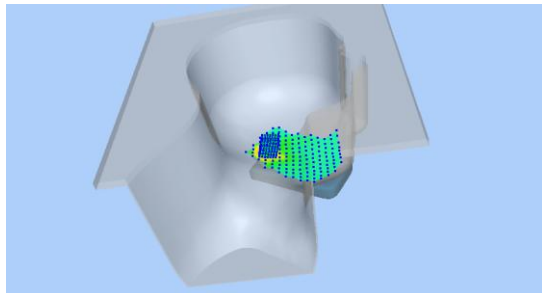
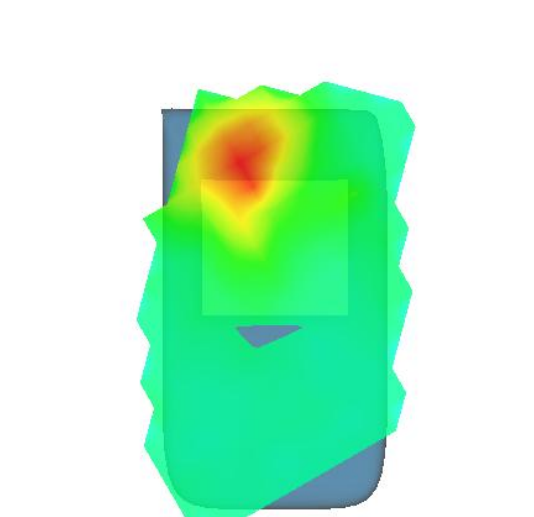


Maximum location: X=12.00, Y=-5.00
SAR Peak: 1.08 W/kg

SAR 10g (W/Kg)	0.200645
SAR 1g (W/Kg)	0.435591

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)	0.69	0.43	0.24	0.14	0.09	0.08	0.06	0.05	0.05	0.05	0.05	0.05
	17	11	09	63	67	32	03	77	13	55	81	04



3D screen shot	Hot spot position
	

MEASUREMENT 13

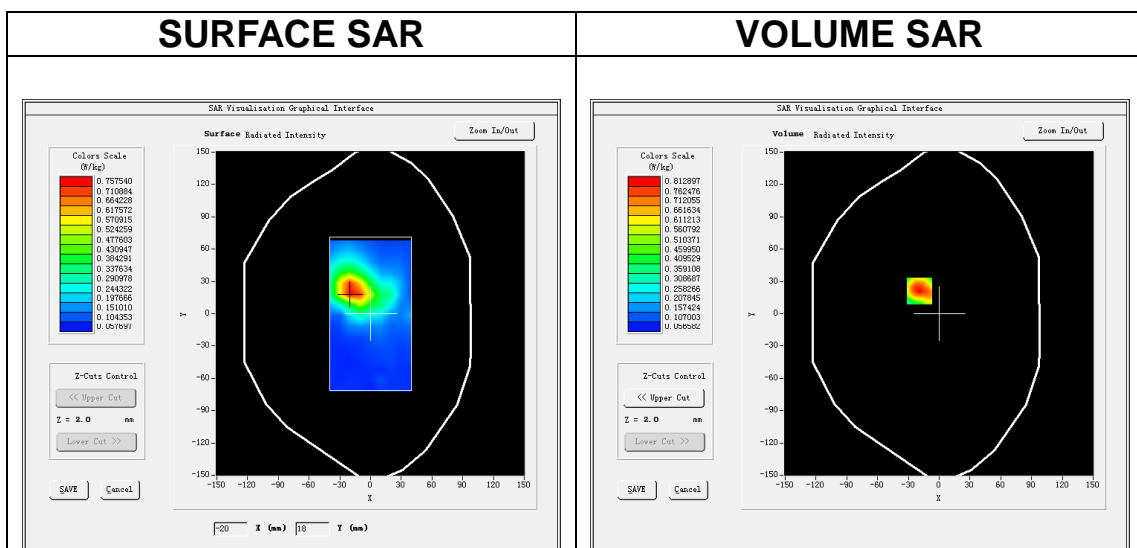
Date of measurement: 20/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	49.953284
Relative permittivity (imaginary part)	18.012341
Conductivity (S/m)	5.200842
Variation (%)	-0.530000

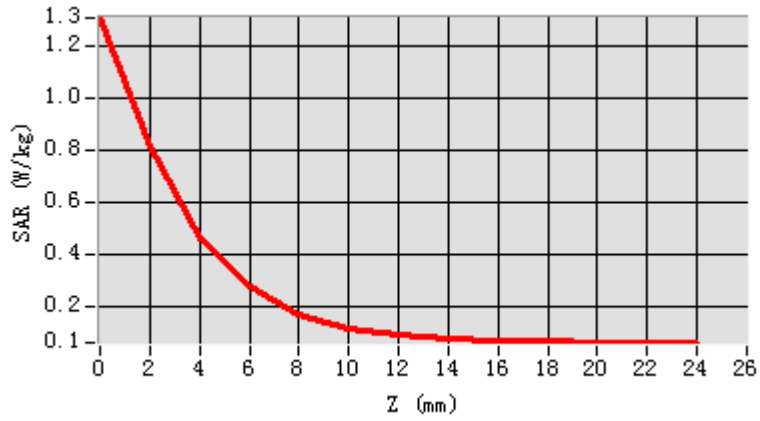


Maximum location: X=-19.00, Y=21.00

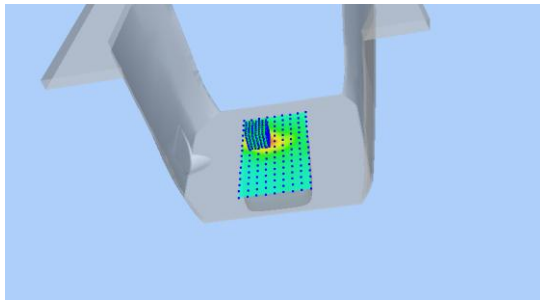
SAR Peak: 1.36 W/kg

SAR 10g (W/Kg)	0.245259
SAR 1g (W/Kg)	0.500337

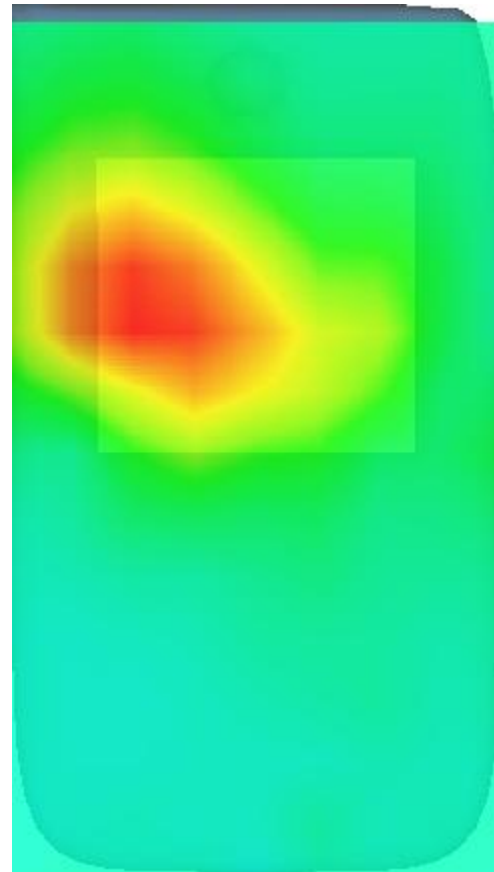
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.0	12.0	14.0	16.0	18.0	20.0	22.0
SAR (W/ Kg)	1.30	0.81	0.46	0.27	0.17	0.12	0.09	0.08	0.07	0.06	0.06	0.06
	83	29	54	63	04	04	20	04	44	82	52	37



3D screen shot



Hot spot position



MEASUREMENT 14

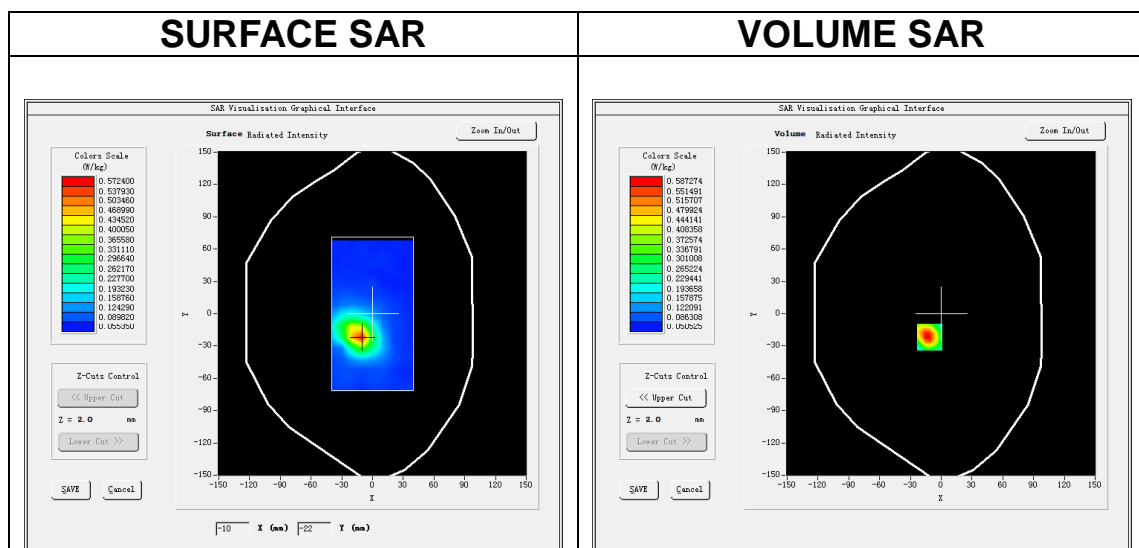
Date of measurement: 18/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

Frequency (MHz)	5785.000000
Relative permittivity (real part)	48.660931
Relative permittivity (imaginary part)	18.524502
Conductivity (S/m)	5.953569
Variation (%)	0.180000

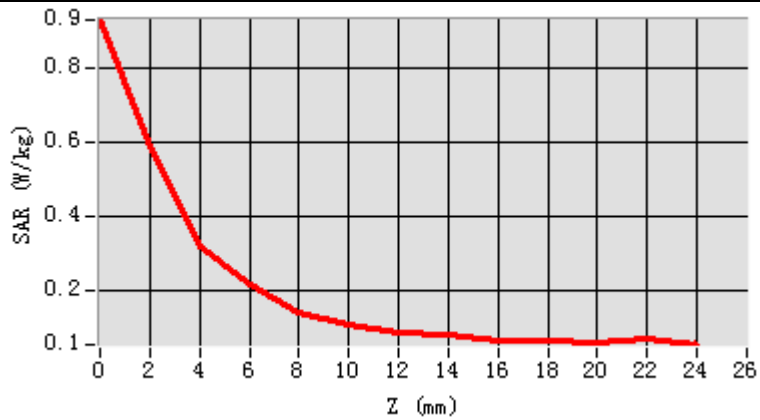


Maximum location: X=-11.00, Y=-22.00

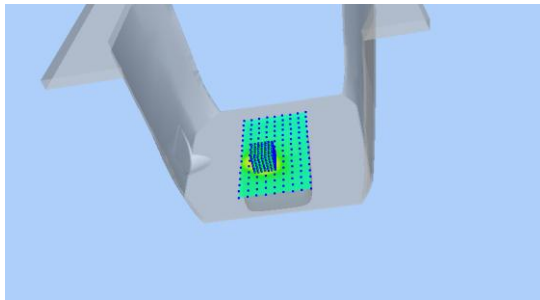
SAR Peak: 0.98 W/kg

SAR 10g (W/Kg)	0.179011
SAR 1g (W/Kg)	0.376889

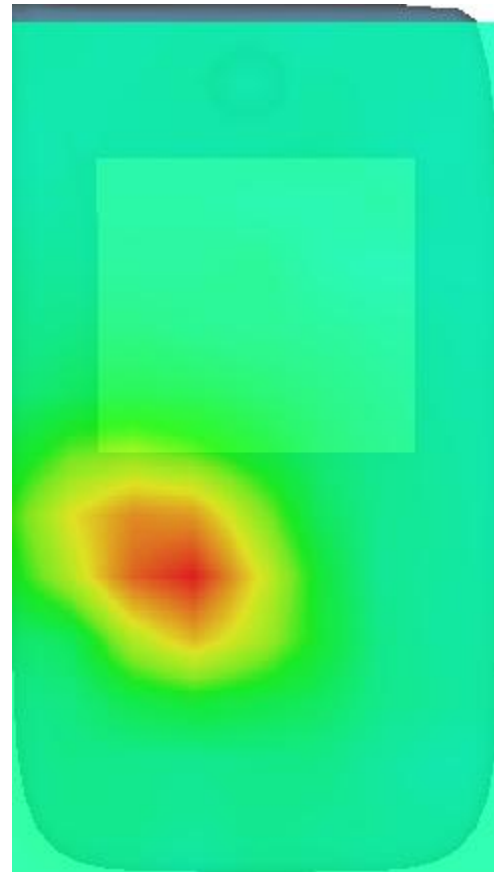
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00
SAR (W/Kg)	0.9291	0.5873	0.3158	0.2170	0.1380	0.1093	0.0833	0.0774	0.0659	0.0624	0.0572	0.0679



3D screen shot



Hot spot position



MEASUREMENT 15

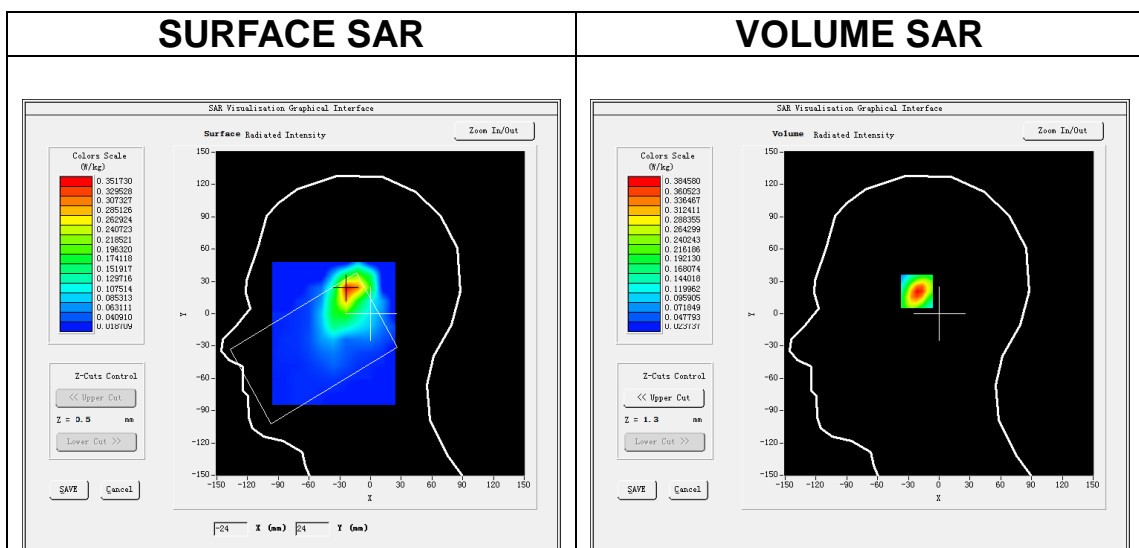
Date of measurement: 19/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

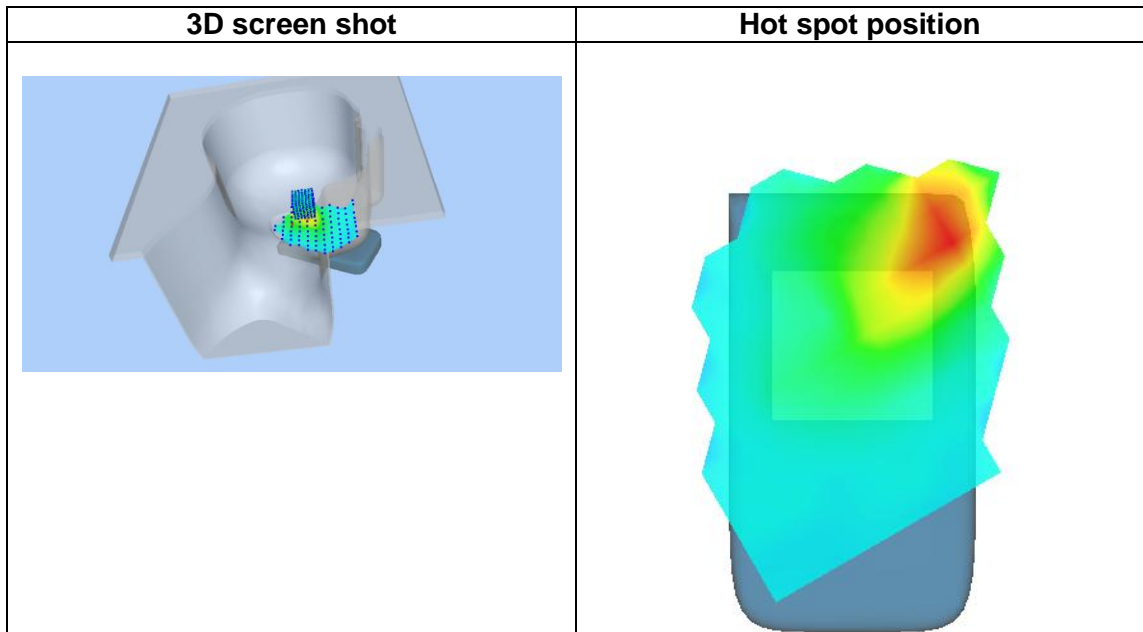
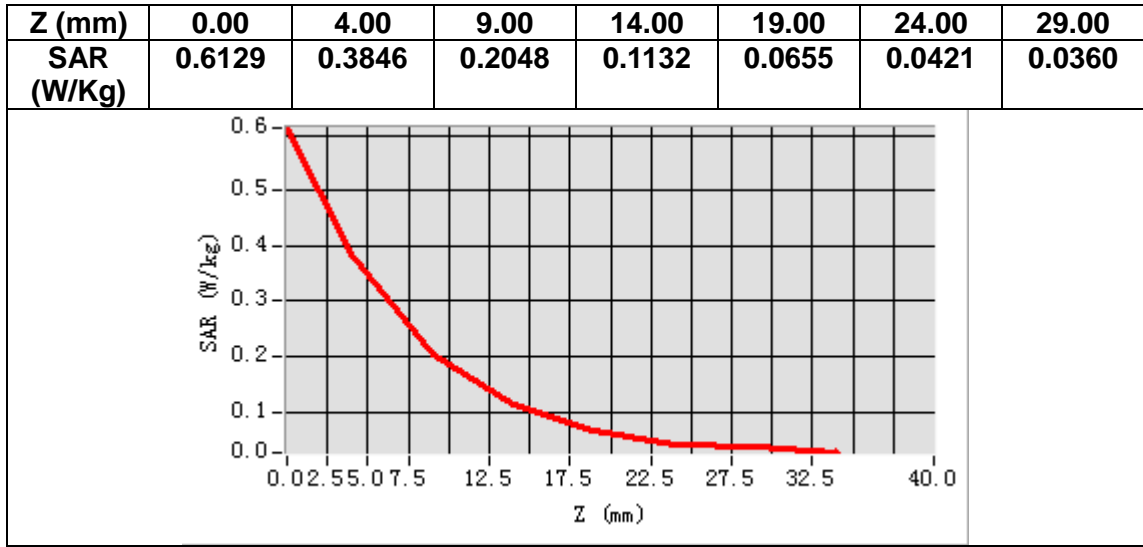
Frequency (MHz)	2437.000000
Relative permittivity (real part)	39.103756
Relative permittivity (imaginary part)	13.381493
Conductivity (S/m)	1.811705
Variation (%)	0.490000



Maximum location: X=-21.00, Y=23.00

SAR Peak: 0.63 W/kg

SAR 10g (W/Kg)	0.181093
SAR 1g (W/Kg)	0.357655



MEASUREMENT 16

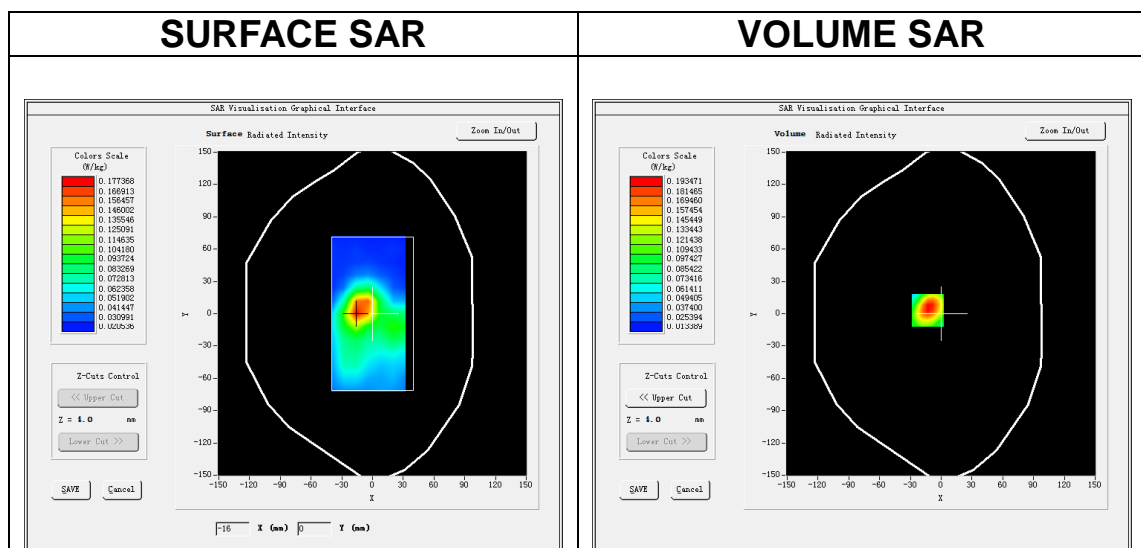
Date of measurement: 19/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

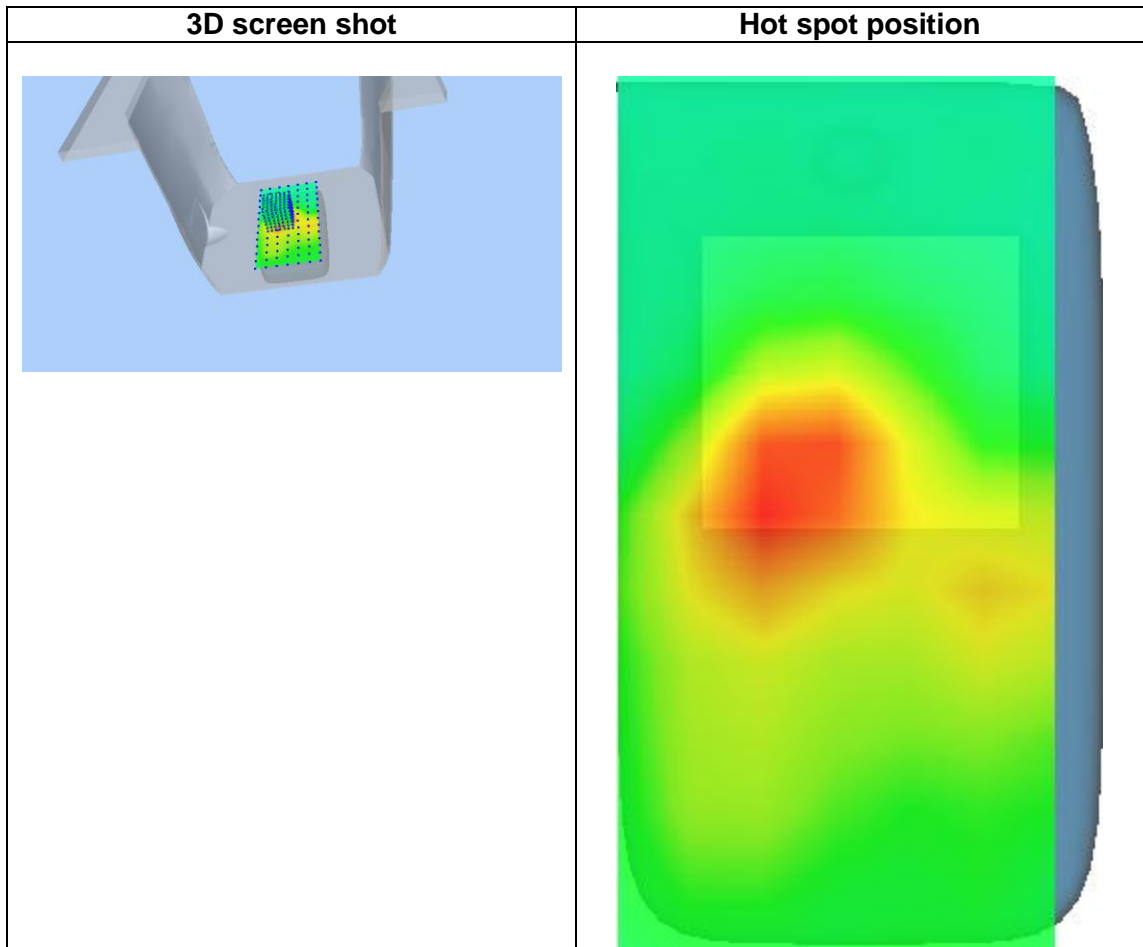
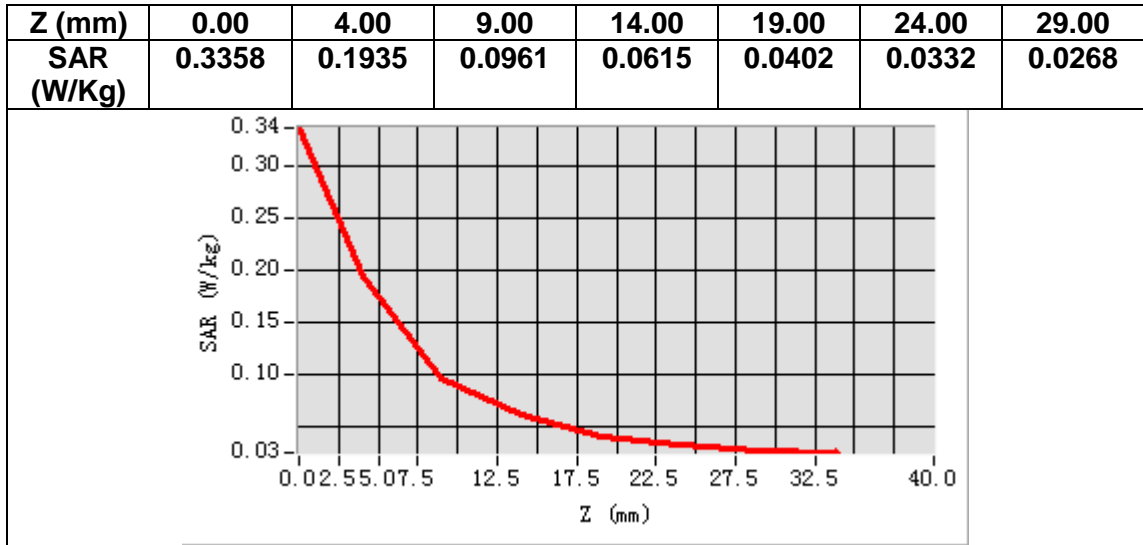
Frequency (MHz)	2437.000000
Relative permittivity (real part)	52.312981
Relative permittivity (imaginary part)	14.176993
Conductivity (S/m)	1.919407
Variation (%)	-2.620000



Maximum location: X=-13.00, Y=3.00

SAR Peak: 0.32 W/kg

SAR 10g (W/Kg)	0.100255
SAR 1g (W/Kg)	0.184526



MEASUREMENT 17

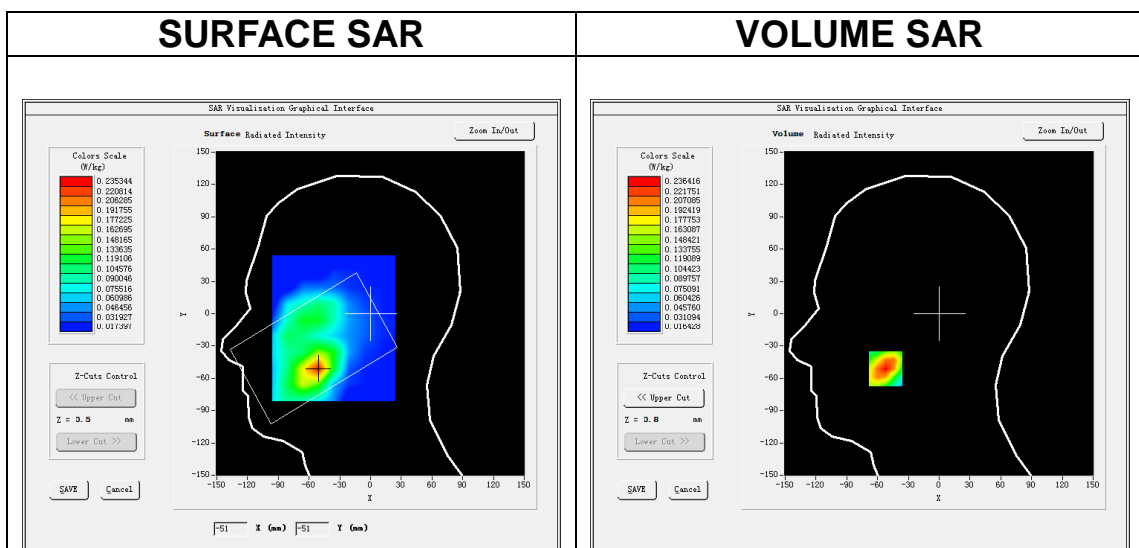
Date of measurement: 17/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

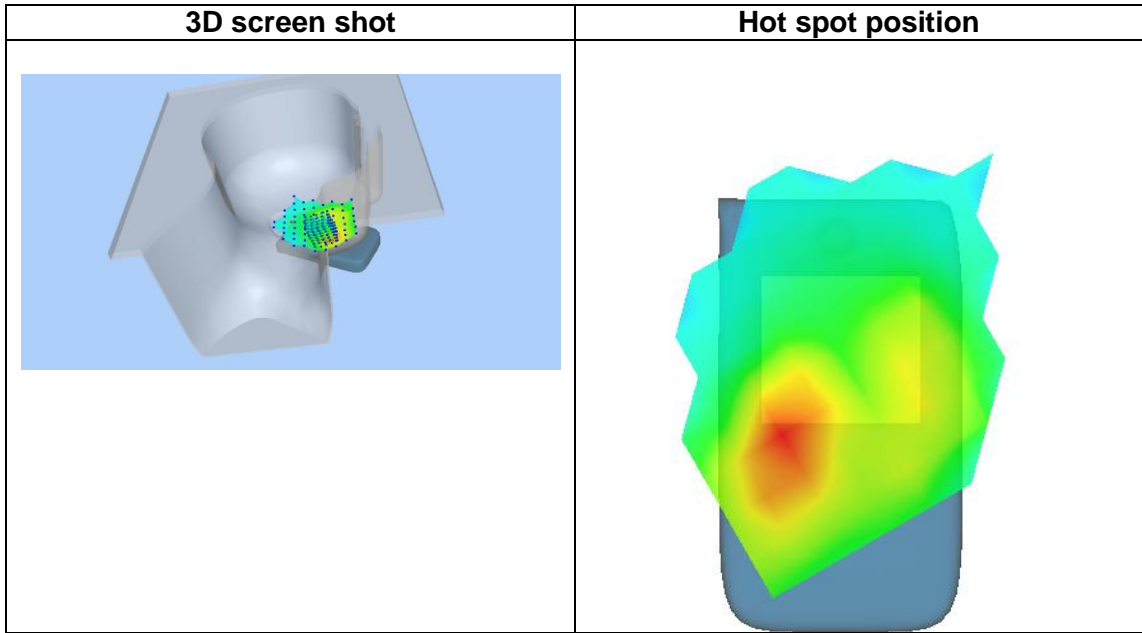
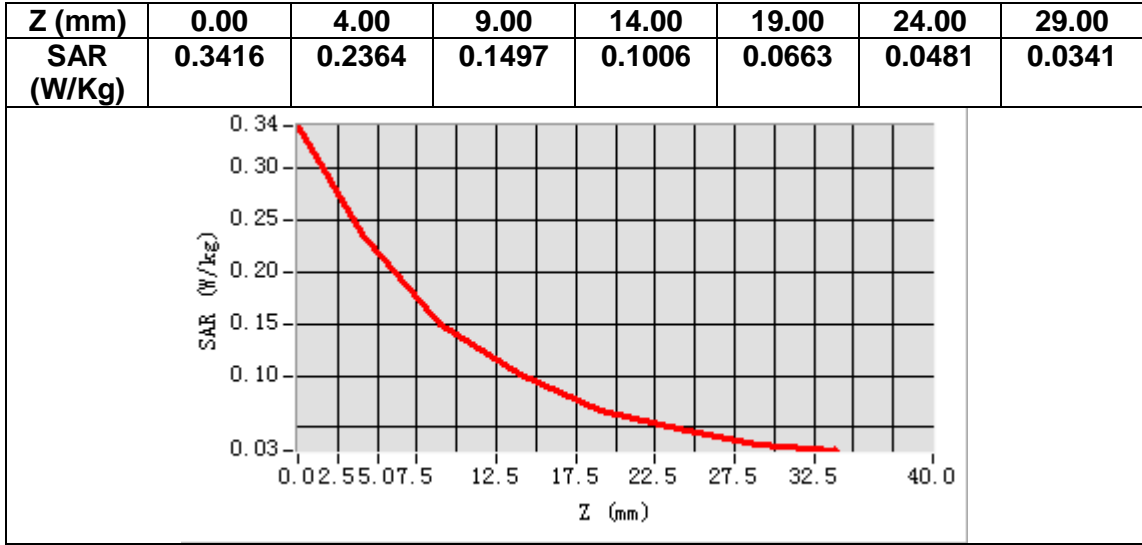
Frequency (MHz)	1880.000000
Relative permittivity (real part)	39.542755
Relative permittivity (imaginary part)	13.161393
Conductivity (S/m)	1.374634
Variation (%)	-0.270000



Maximum location: X=-52.00, Y=-51.00

SAR Peak: 0.34 W/kg

SAR 10g (W/Kg)	0.131779
SAR 1g (W/Kg)	0.223809



MEASUREMENT 18

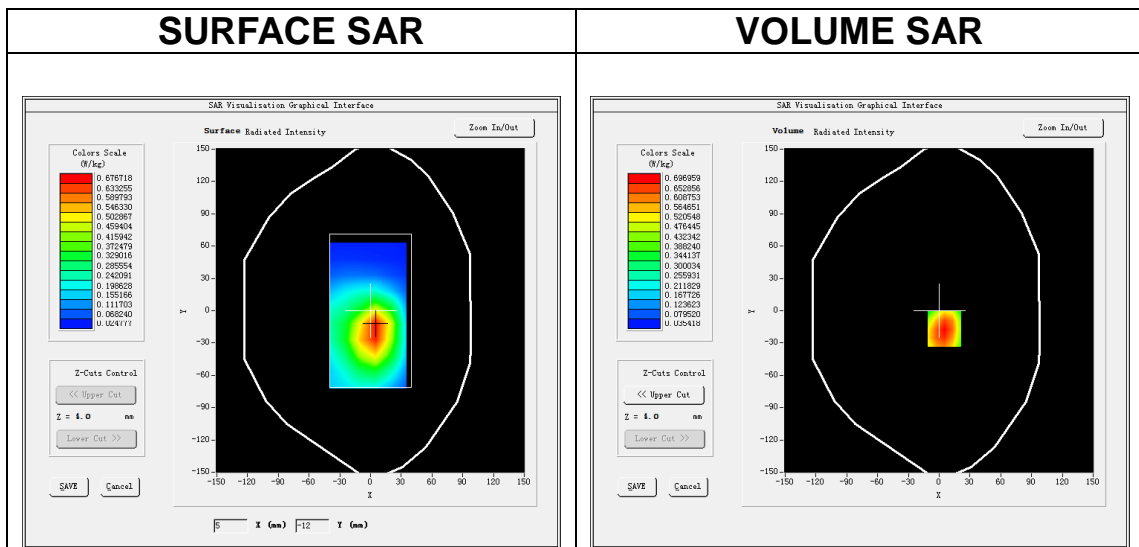
Date of measurement: 17/1/2021

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>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

B. SAR Measurement Results

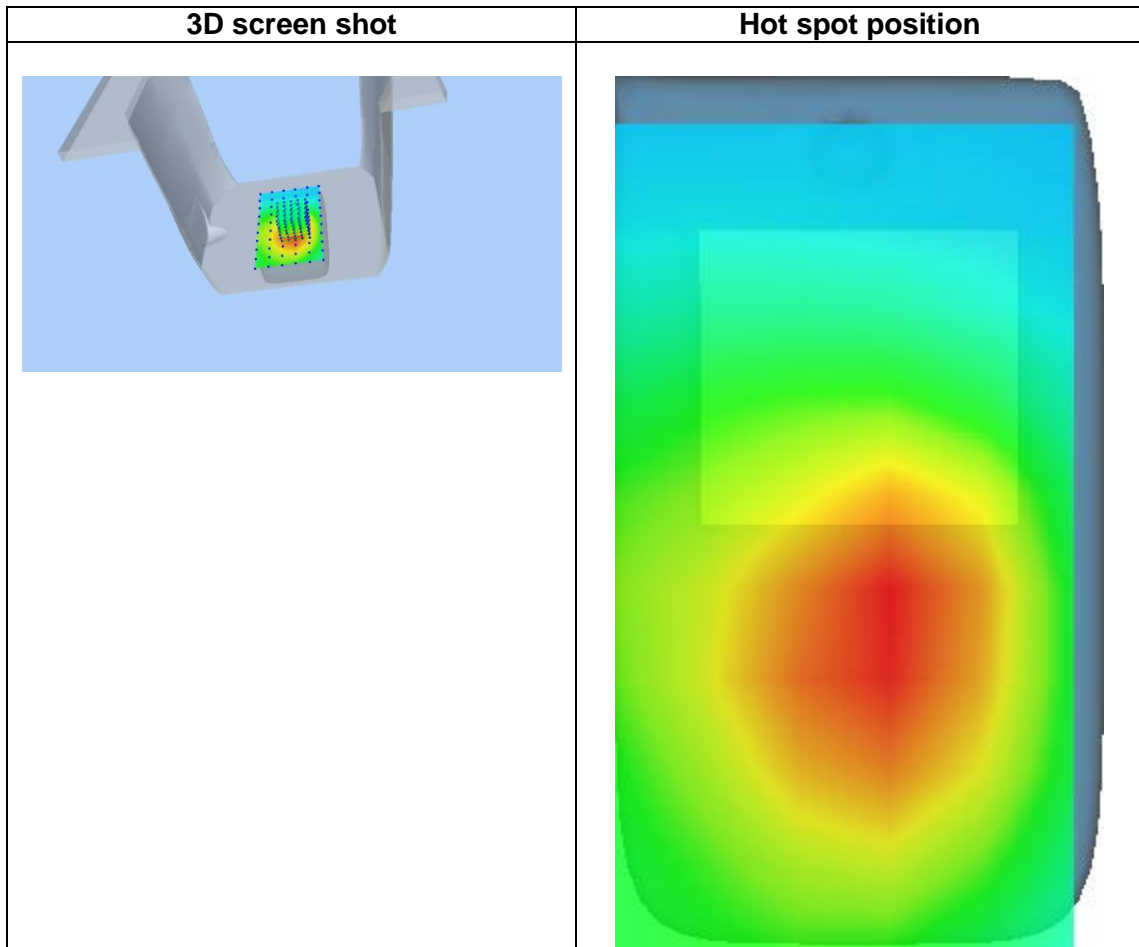
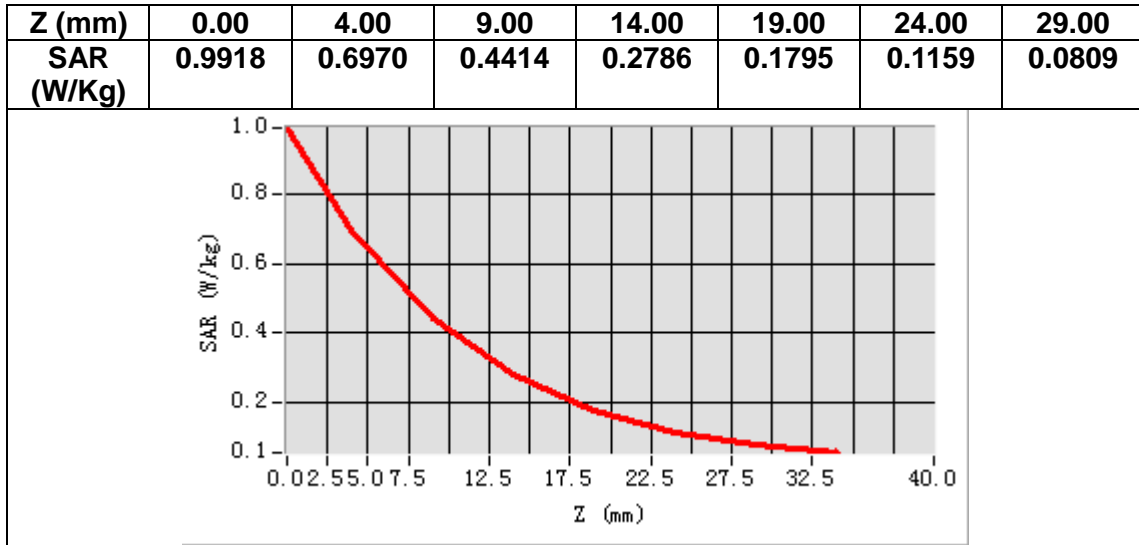
Frequency (MHz)	1880.000000
Relative permittivity (real part)	54.809654
Relative permittivity (imaginary part)	14.498893
Conductivity (S/m)	1.514329
Variation (%)	-0.280000



Maximum location: X=5.00, Y=-17.00

SAR Peak: 0.99 W/kg

SAR 10g (W/Kg)	0.415588
SAR 1g (W/Kg)	0.633079



MEASUREMENT 19

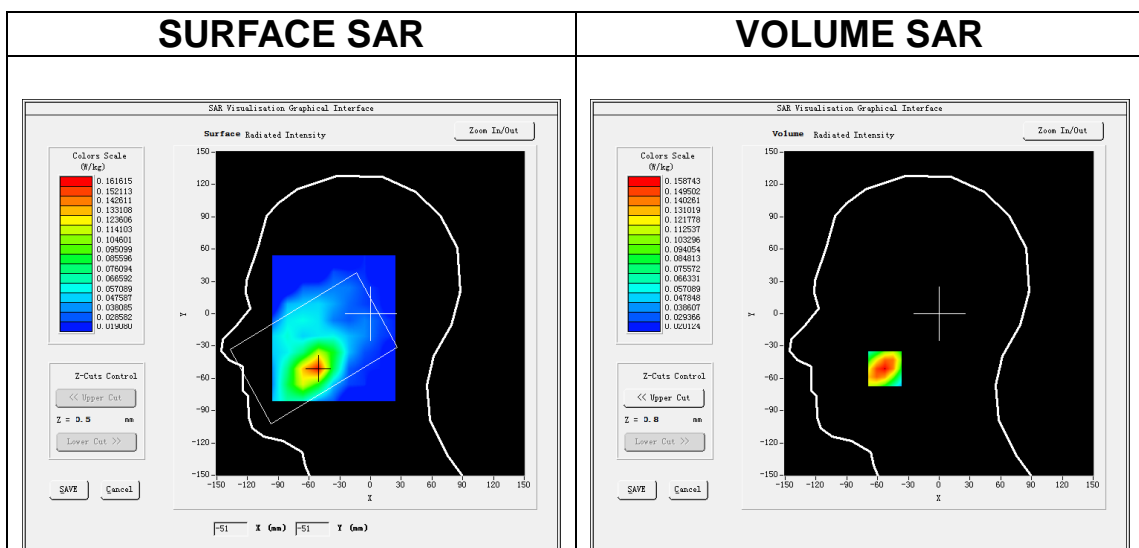
Date of measurement: 15/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

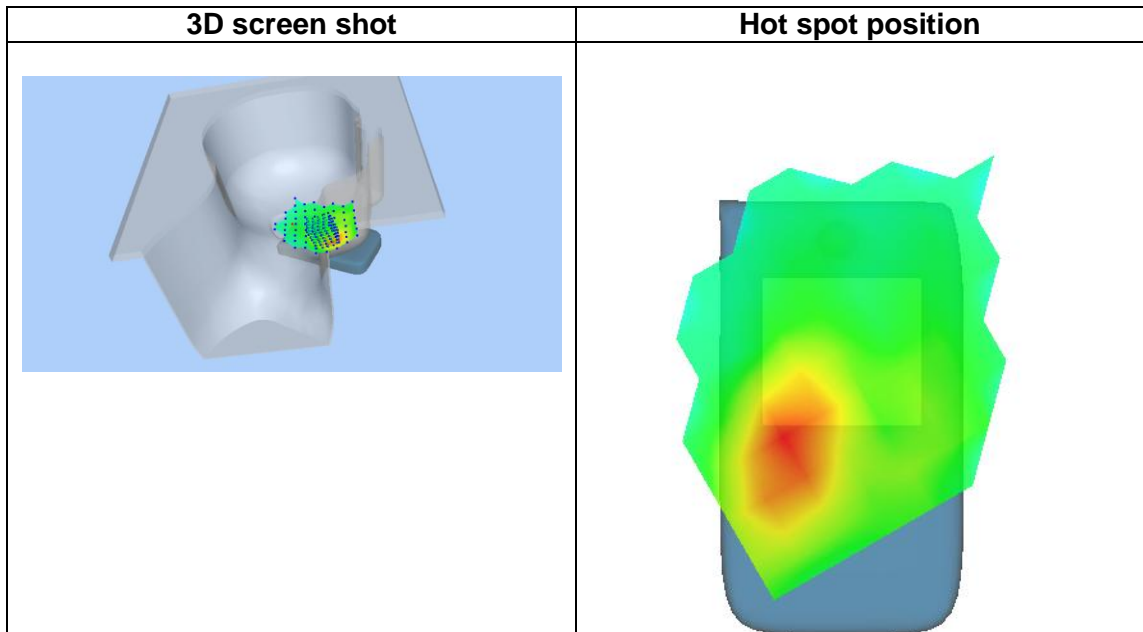
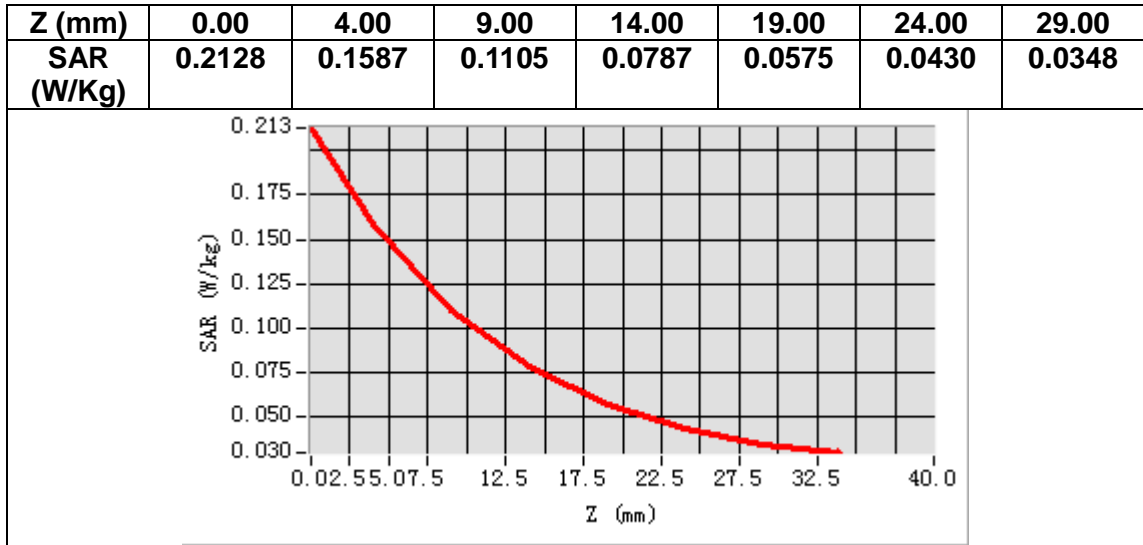
Frequency (MHz)	1732.500000
Relative permittivity (real part)	39.711852
Relative permittivity (imaginary part)	13.921214
Conductivity (S/m)	1.339917
Variation (%)	-3.250000



Maximum location: X=-53.00, Y=-51.00

SAR Peak: 0.22 W/kg

SAR 10g (W/Kg)	0.096574
SAR 1g (W/Kg)	0.150935



MEASUREMENT 20

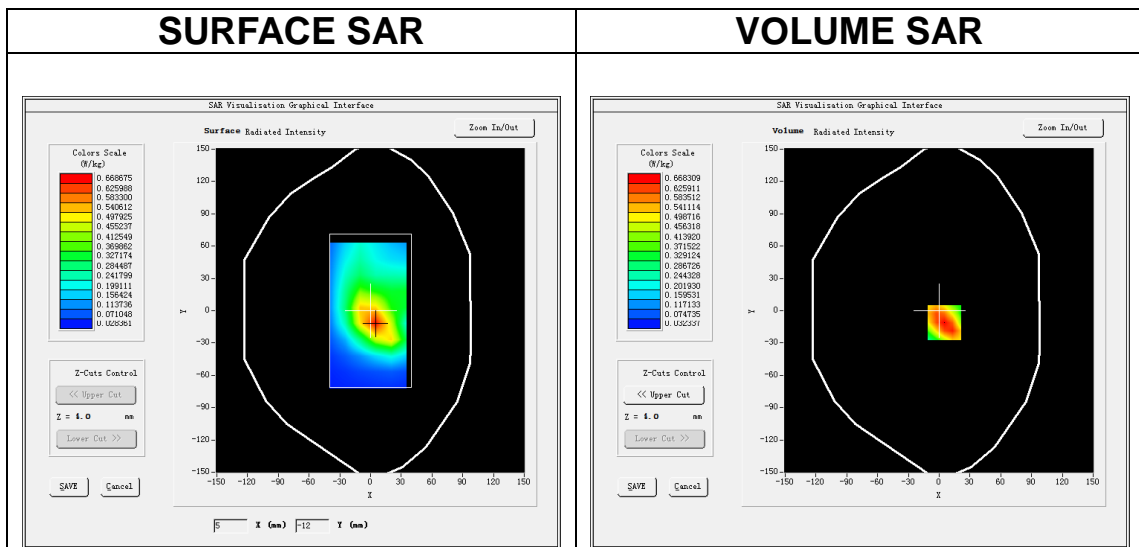
Date of measurement: 15/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

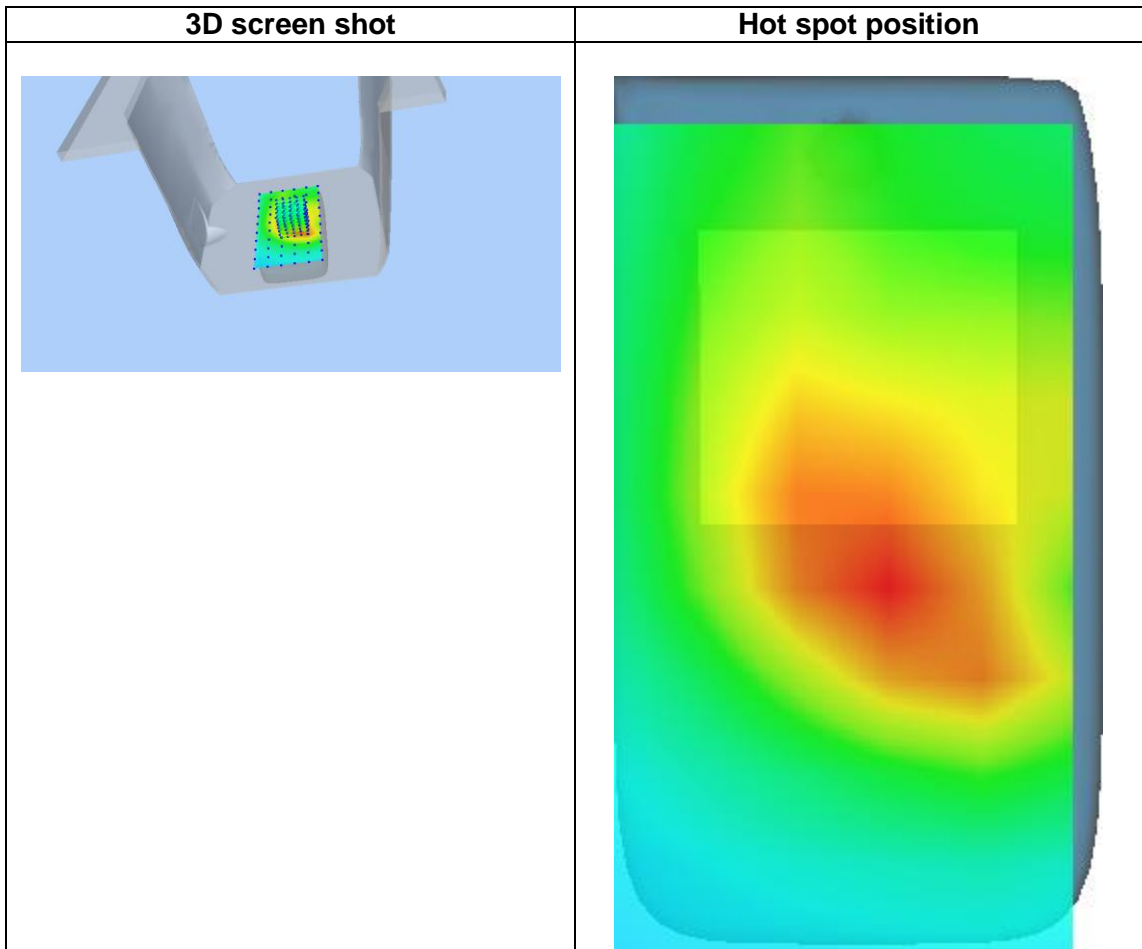
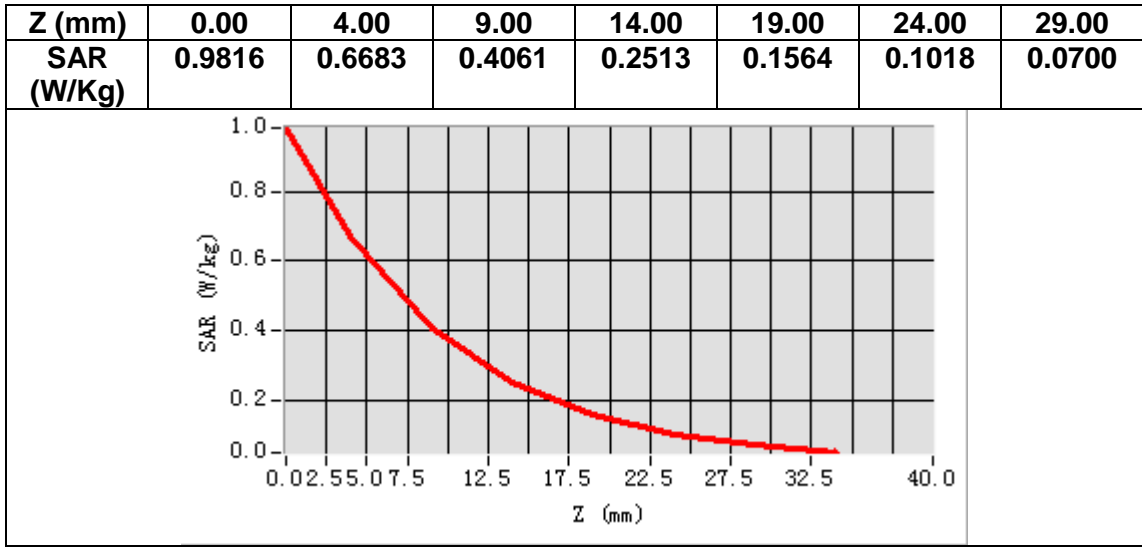
Frequency (MHz)	1732.500000
Relative permittivity (real part)	54.914120
Relative permittivity (imaginary part)	15.089413
Conductivity (S/m)	1.452356
Variation (%)	-1.520000



Maximum location: X=5.00, Y=-11.00

SAR Peak: 1.01 W/kg

SAR 10g (W/Kg)	0.374253
SAR 1g (W/Kg)	0.638409



MEASUREMENT 21

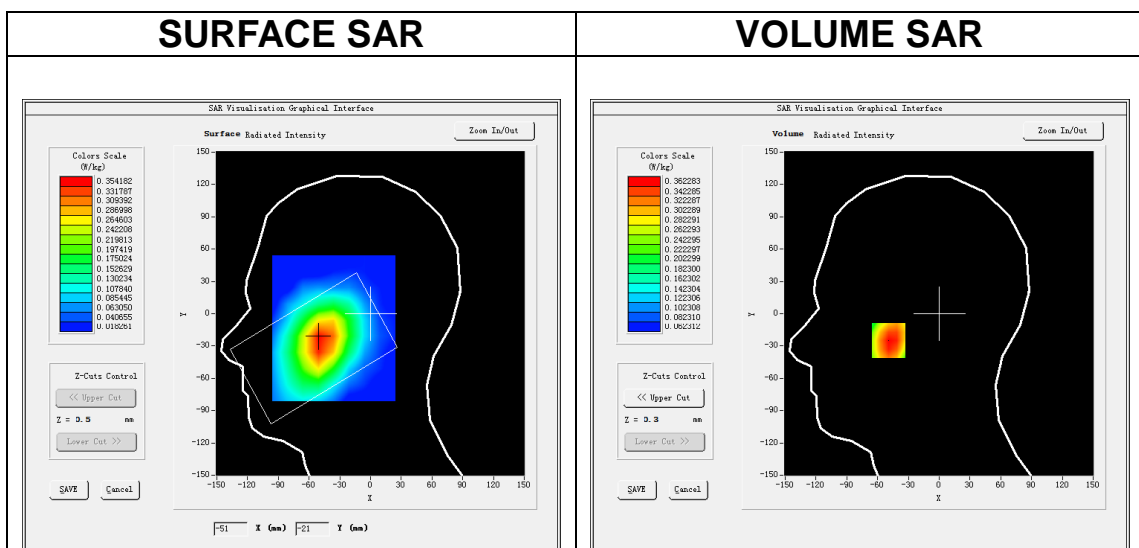
Date of measurement: 15/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

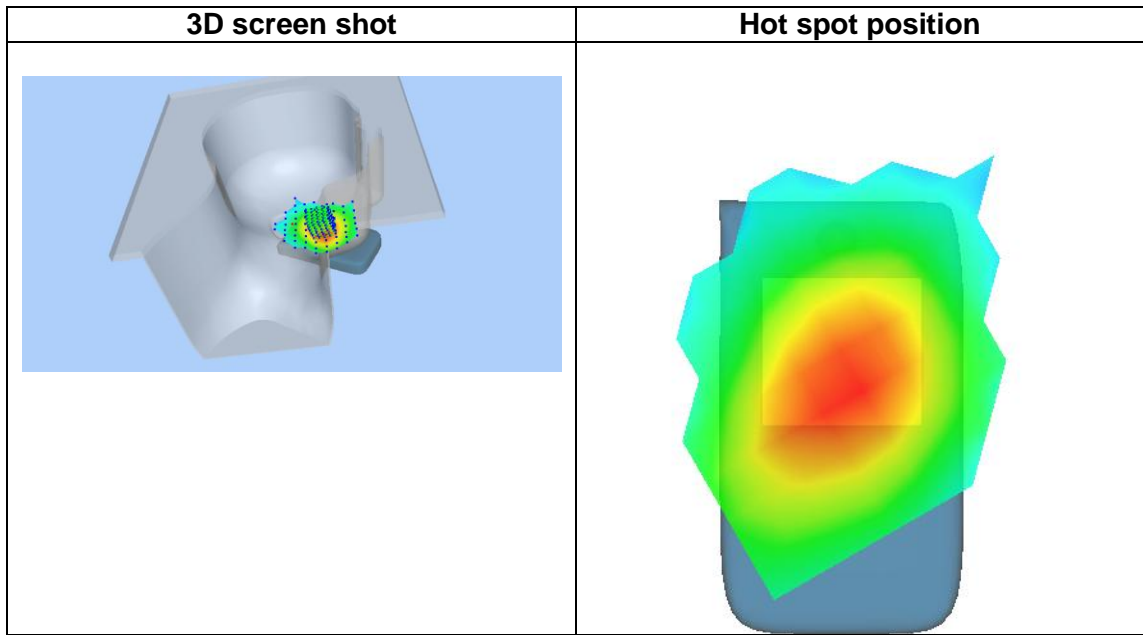
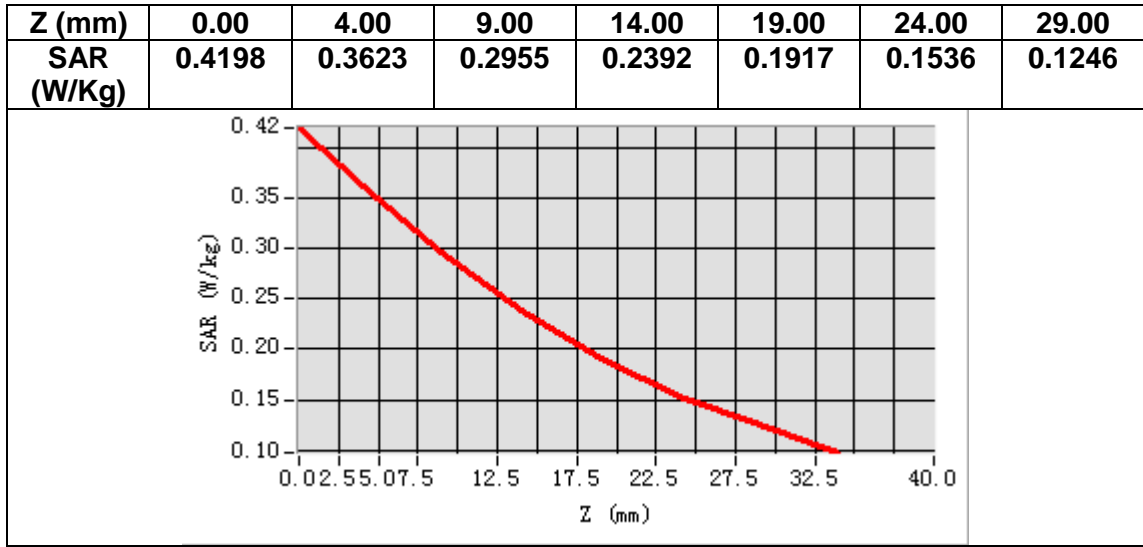
Frequency (MHz)	836.500000
Relative permittivity (real part)	41.377293
Relative permittivity (imaginary part)	19.510108
Conductivity (S/m)	0.906678
Variation (%)	0.870000



Maximum location: X=-49.00, Y=-25.00

SAR Peak: 0.44 W/kg

SAR 10g (W/Kg)	0.264595
SAR 1g (W/Kg)	0.362440



MEASUREMENT 22

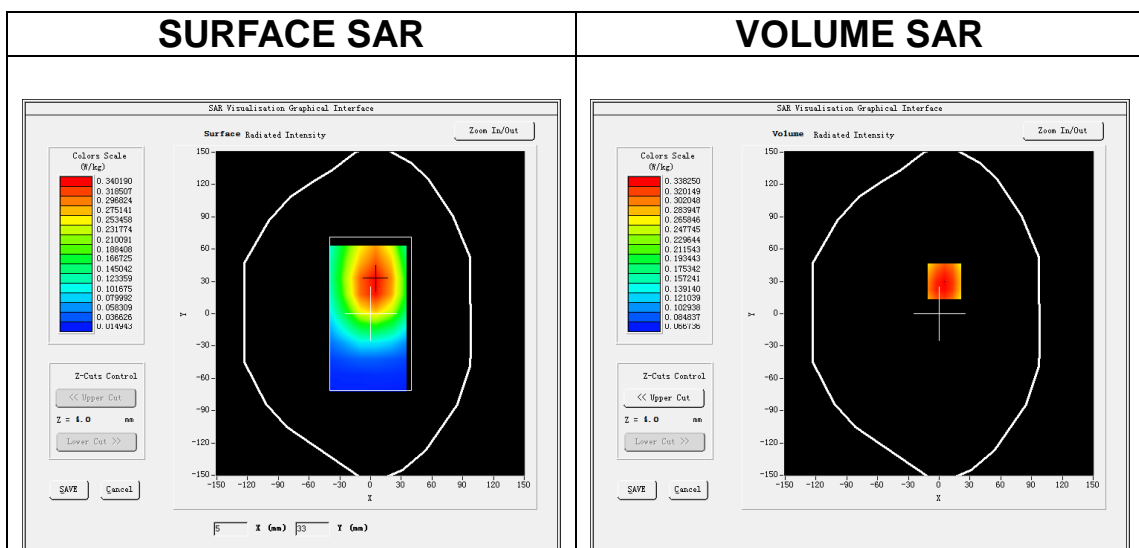
Date of measurement: 15/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

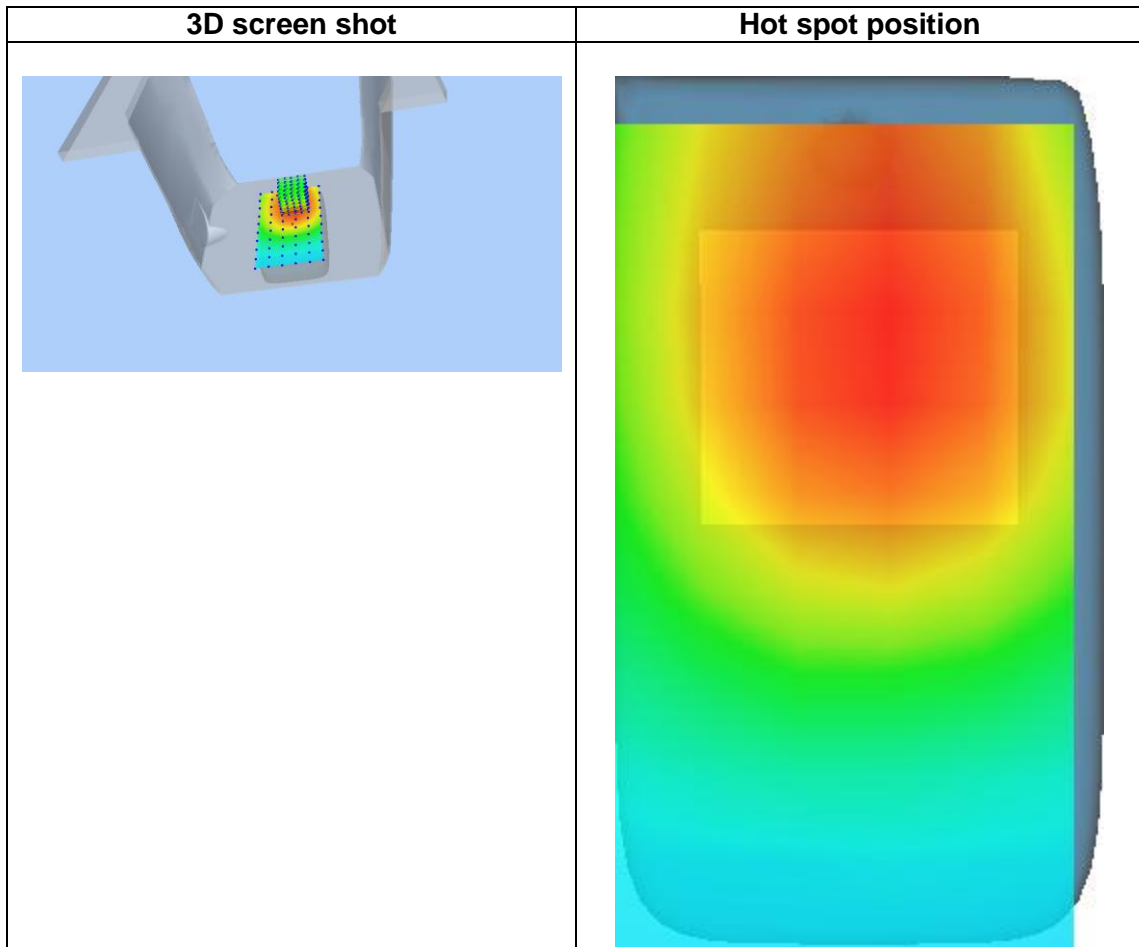
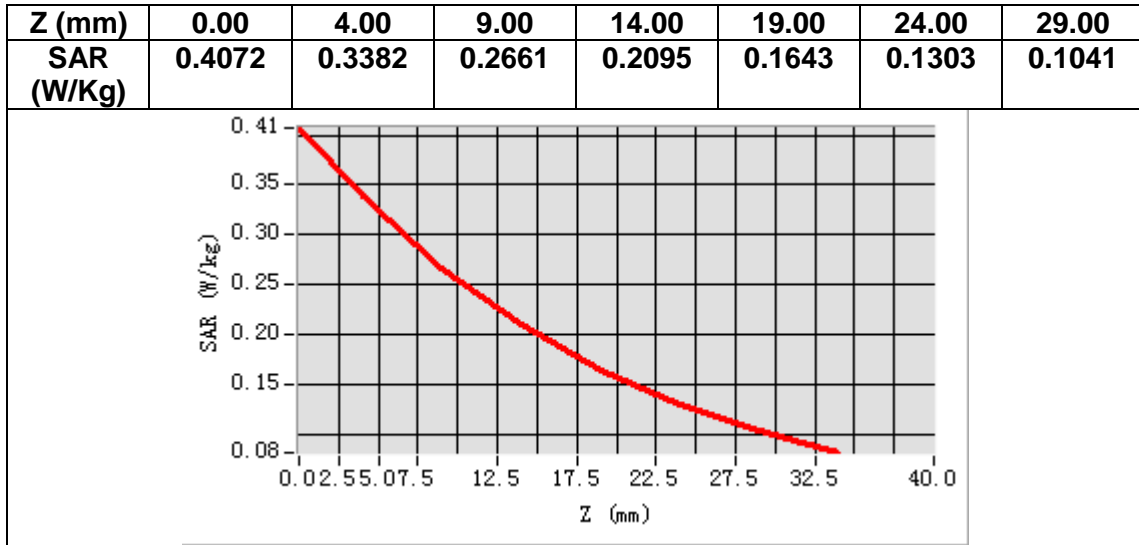
Frequency (MHz)	836.500000
Relative permittivity (real part)	55.220192
Relative permittivity (imaginary part)	20.700209
Conductivity (S/m)	0.961985
Variation (%)	-1.080000



Maximum location: X=5.00, Y=30.00

SAR Peak: 0.41 W/kg

SAR 10g (W/Kg)	0.247546
SAR 1g (W/Kg)	0.328100



MEASUREMENT 23

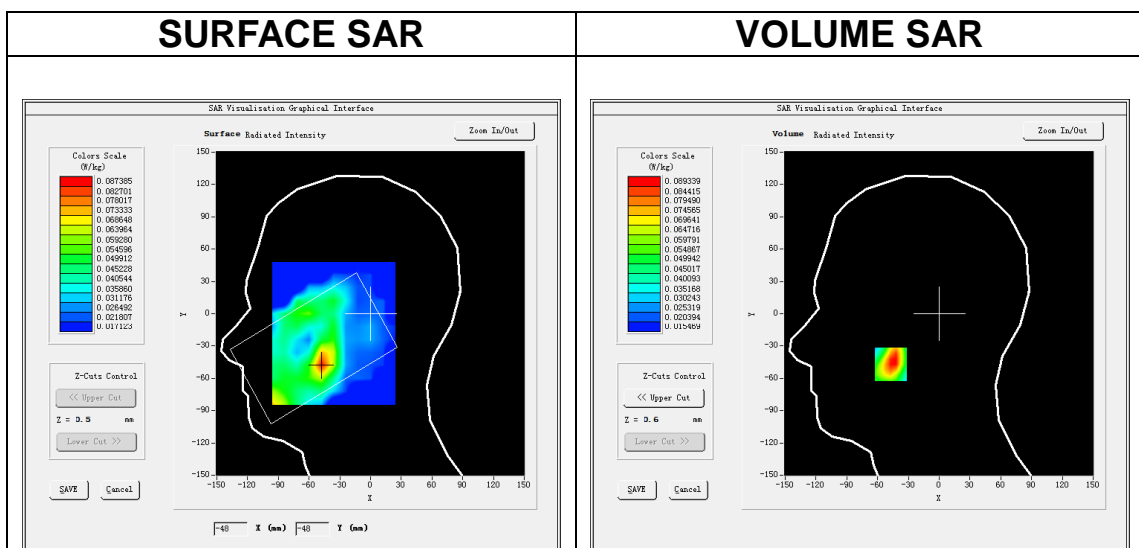
Date of measurement: 16/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

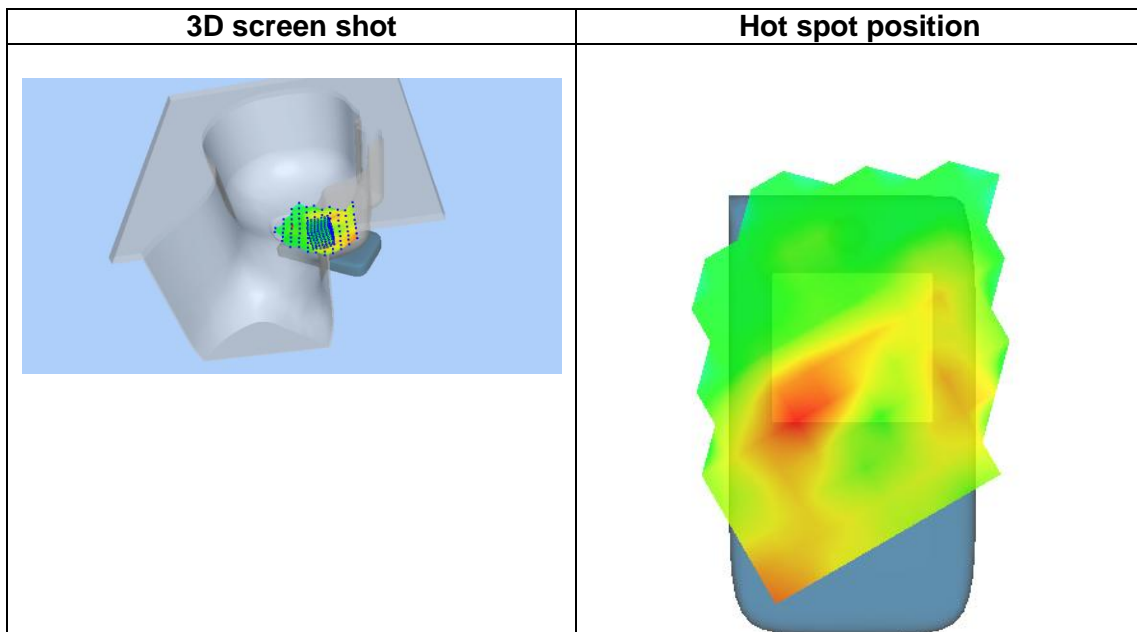
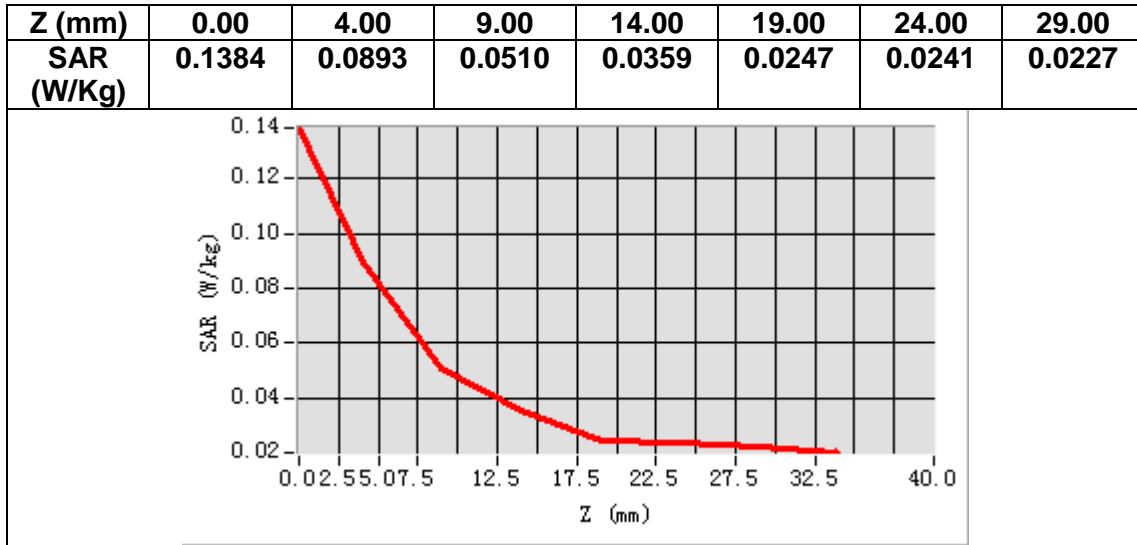
Frequency (MHz)	2535.000000
Relative permittivity (real part)	38.938240
Relative permittivity (imaginary part)	13.990296
Conductivity (S/m)	1.970300
Variation (%)	-4.970000



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

SAR Peak: 0.14 W/kg

SAR 10g (W/Kg)	0.051022
SAR 1g (W/Kg)	0.086488



MEASUREMENT 24

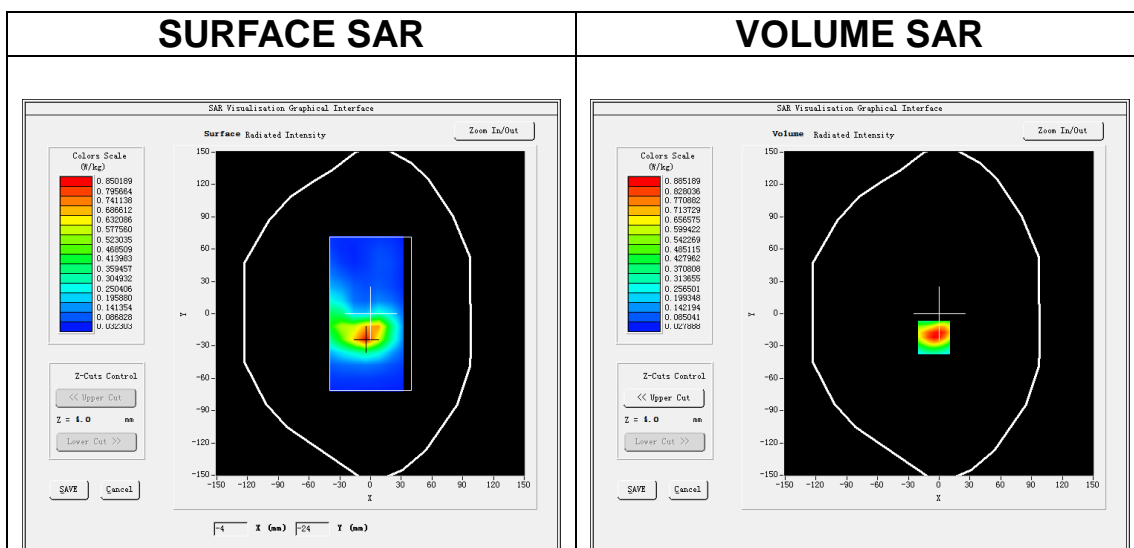
Date of measurement: 16/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

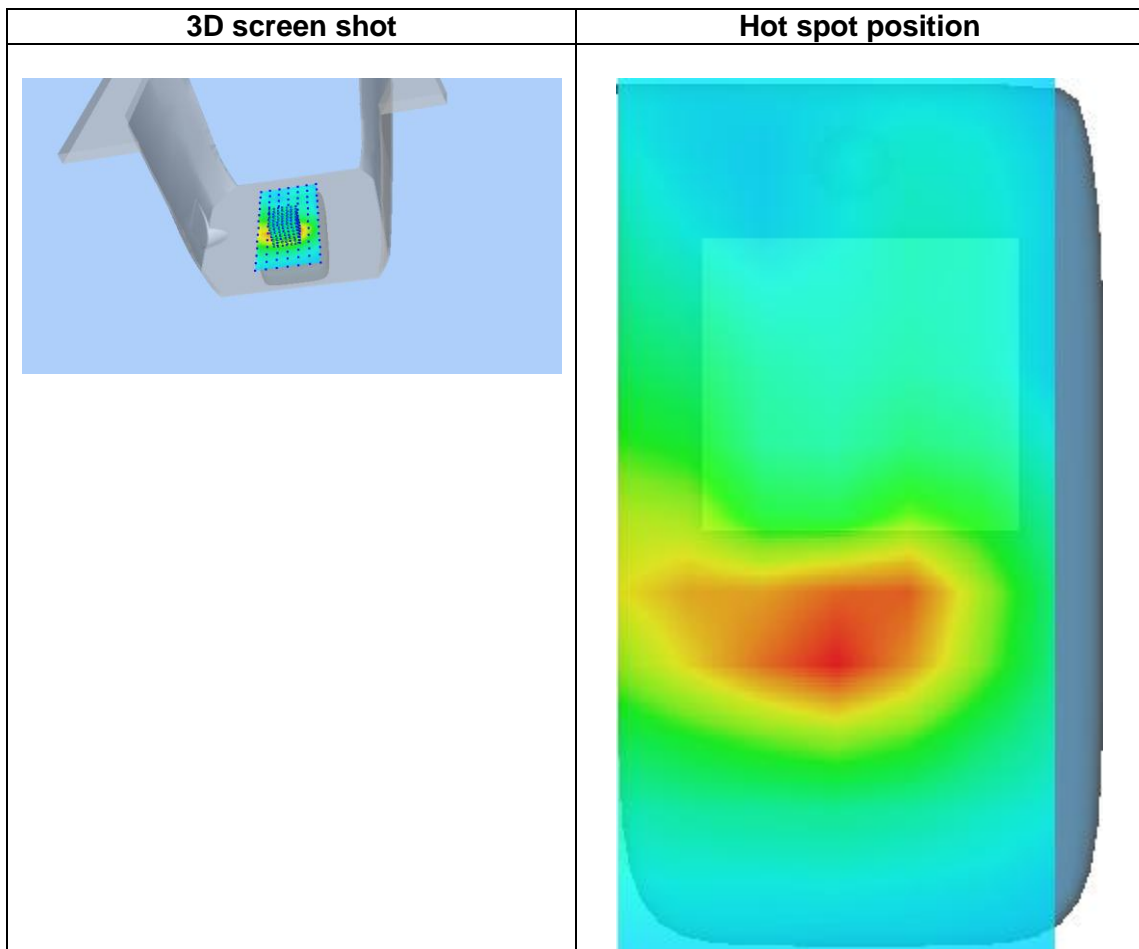
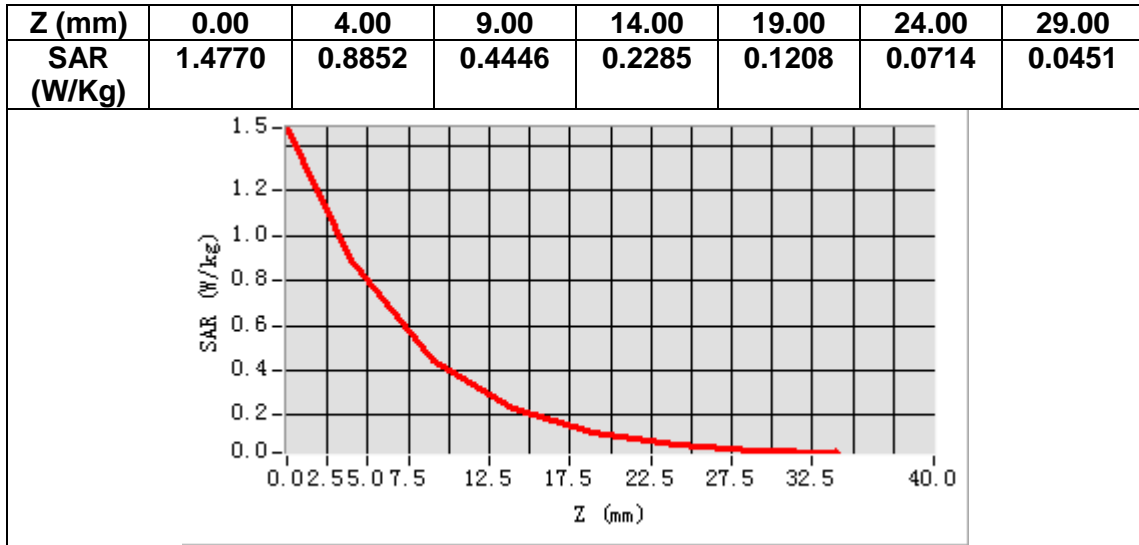
Frequency (MHz)	2535.000000
Relative permittivity (real part)	53.592701
Relative permittivity (imaginary part)	15.136976
Conductivity (S/m)	2.131791
Variation (%)	-0.060000



Maximum location: X=-5.00, Y=-22.00

SAR Peak: 1.49 W/kg

SAR 10g (W/Kg)	0.419676
SAR 1g (W/Kg)	0.856091



MEASUREMENT 25

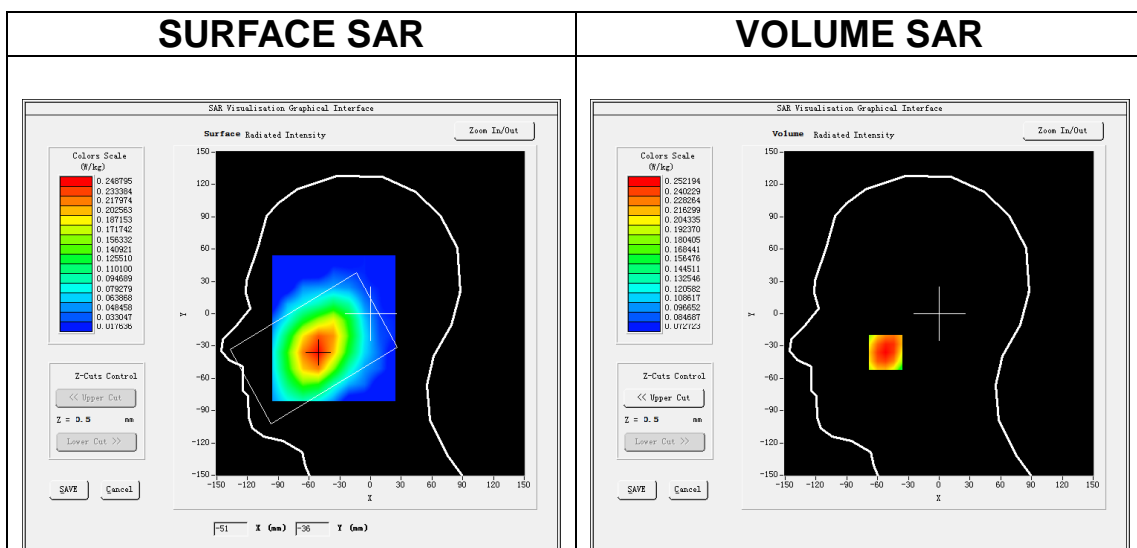
Date of measurement: 14/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

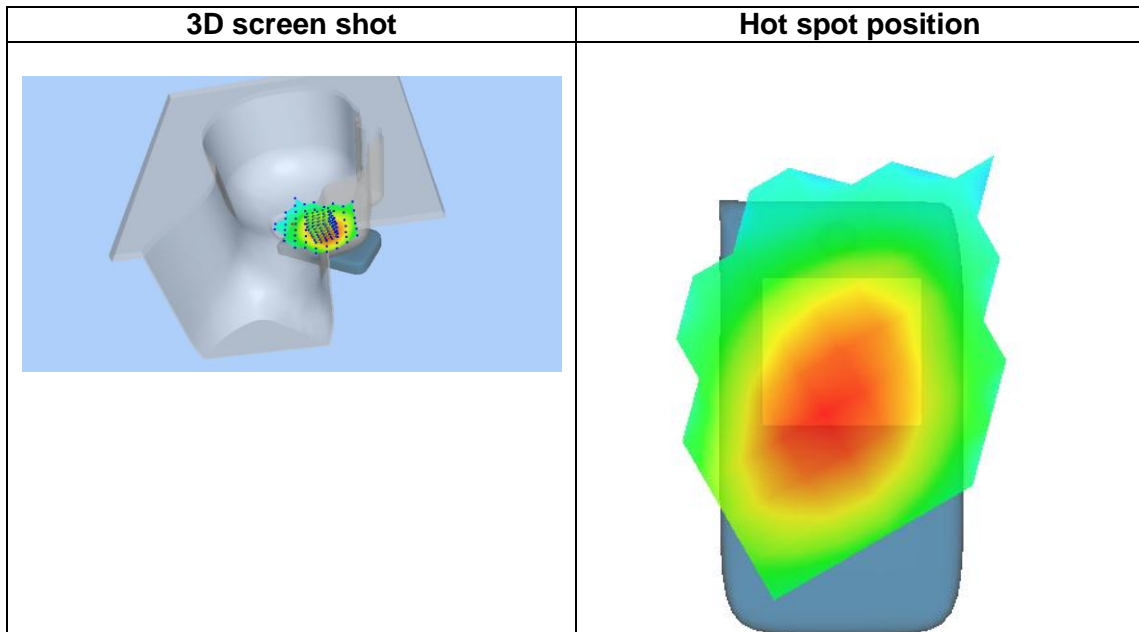
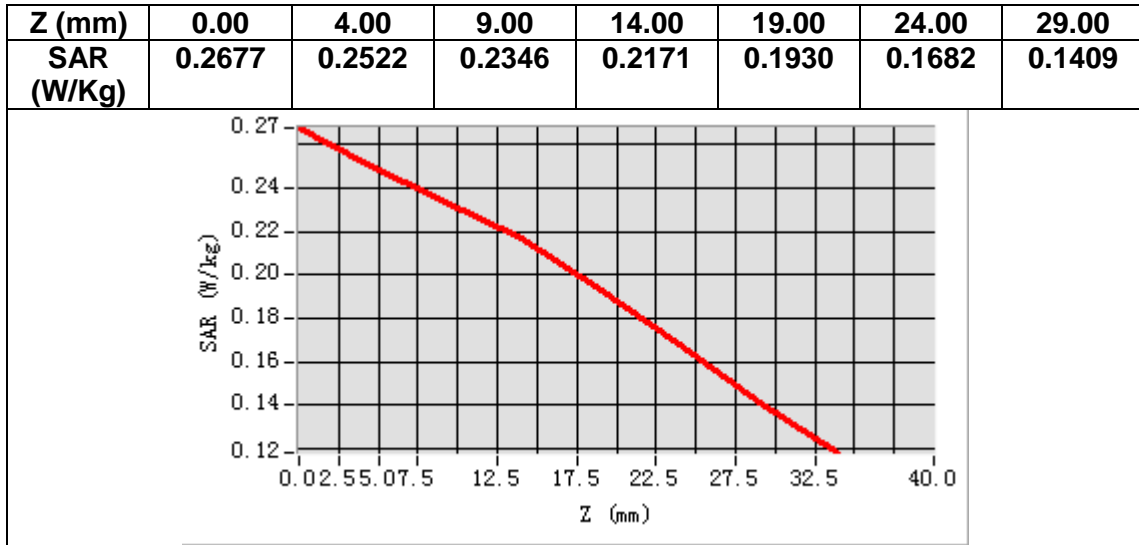
Frequency (MHz)	707.500000
Relative permittivity (real part)	42.682957
Relative permittivity (imaginary part)	22.025499
Conductivity (S/m)	0.865724
Variation (%)	-1.260000



Maximum location: X=-52.00, Y=-36.00

SAR Peak: 0.27 W/kg

SAR 10g (W/Kg)	0.218563
SAR 1g (W/Kg)	0.249597



MEASUREMENT 26

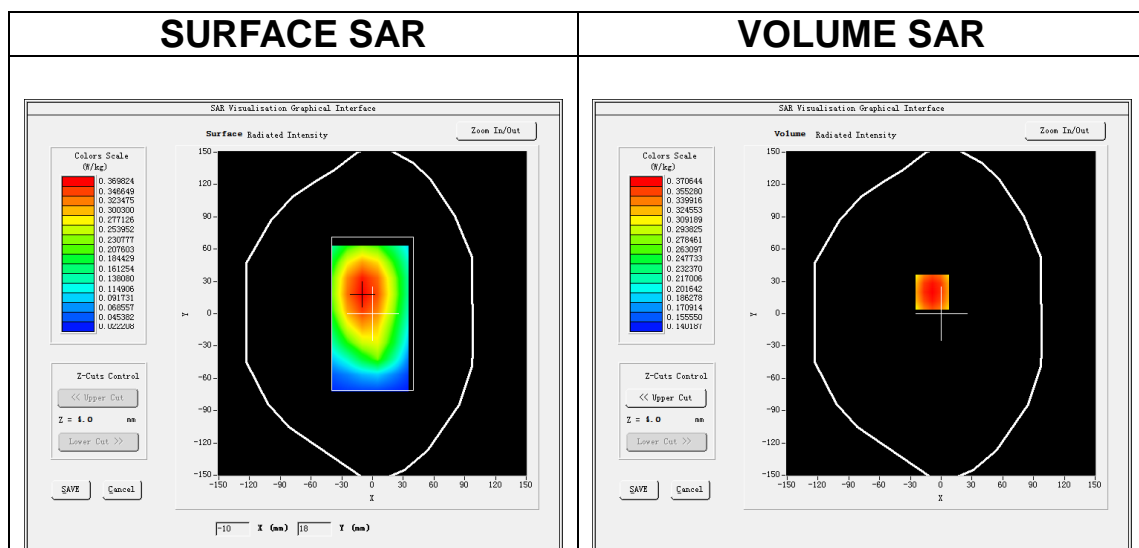
Date of measurement: 14/1/2021

A. Experimental conditions.

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

B. SAR Measurement Results

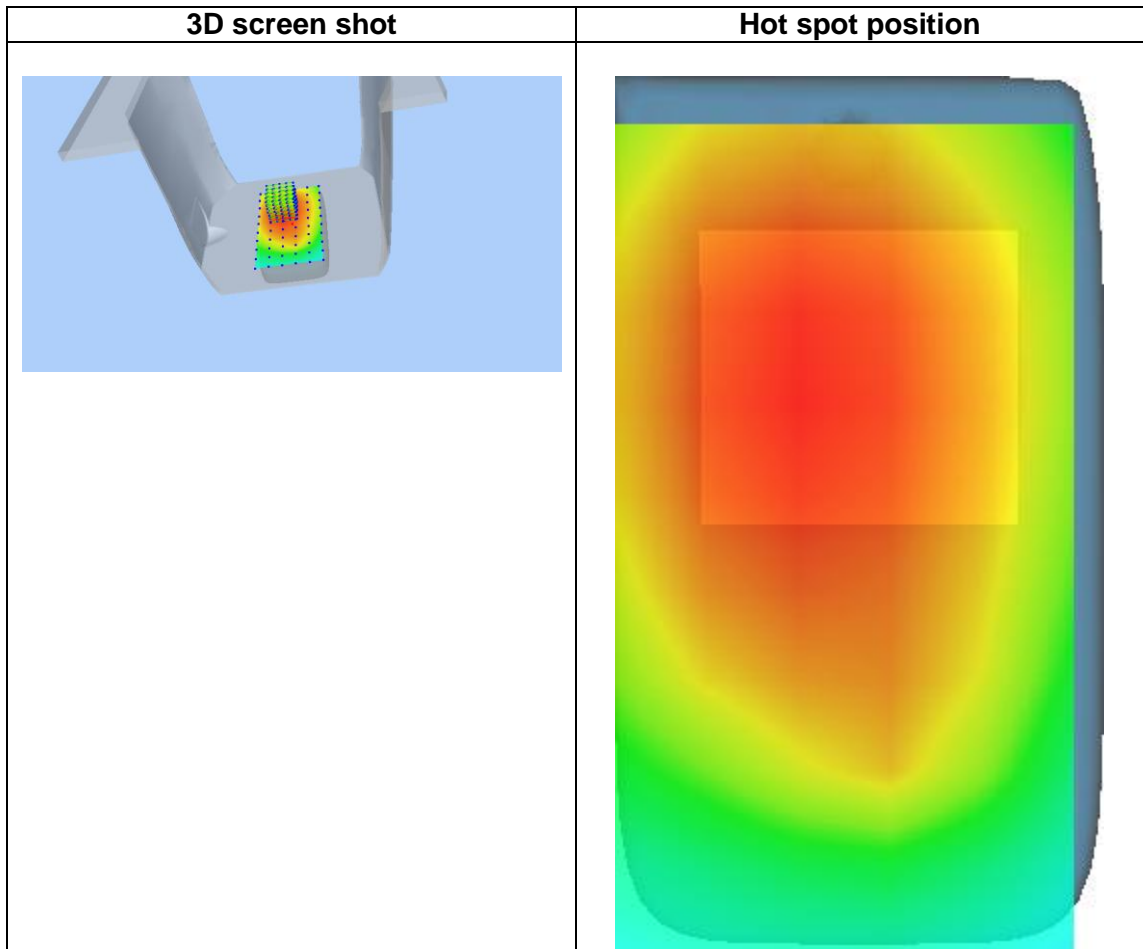
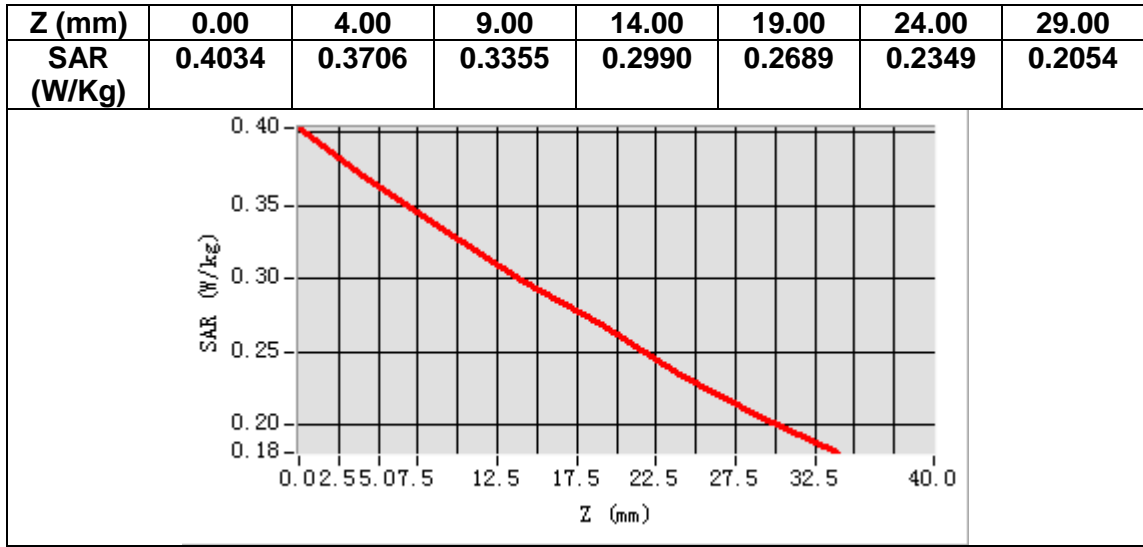
Frequency (MHz)	707.500000
Relative permittivity (real part)	55.671661
Relative permittivity (imaginary part)	23.520849
Conductivity (S/m)	0.924500
Variation (%)	-1.130000



Maximum location: X=-9.00, Y=20.00

SAR Peak: 0.41 W/kg

SAR 10g (W/Kg)	0.315147
SAR 1g (W/Kg)	0.365579



MEASUREMENT 27

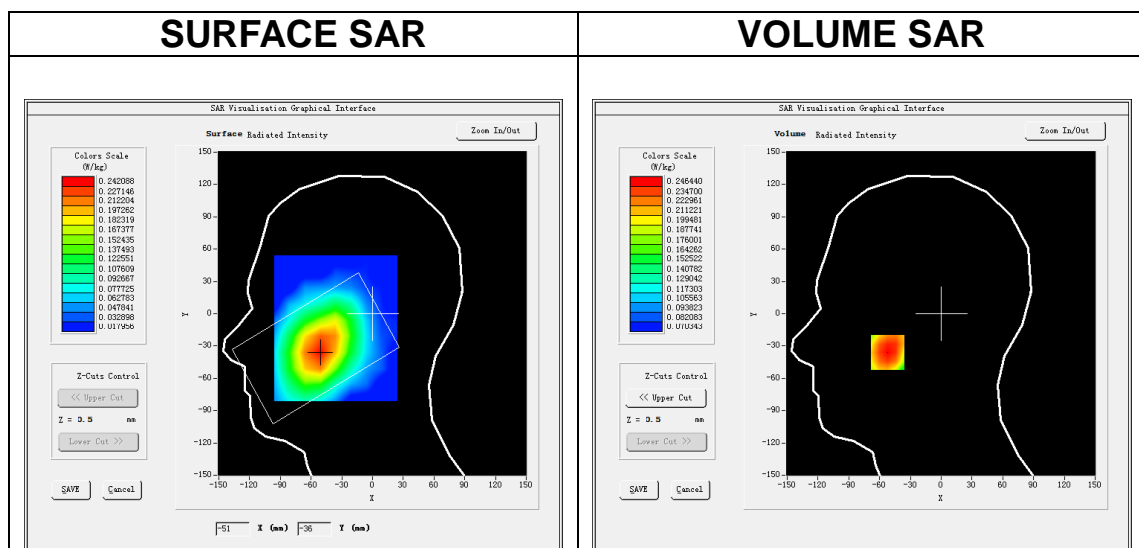
Date of measurement: 14/1/2021

A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>LTE band 17</u>
Channels	<u>Middle</u>
Signal	<u>LTE (Crest factor: 1.0)</u>

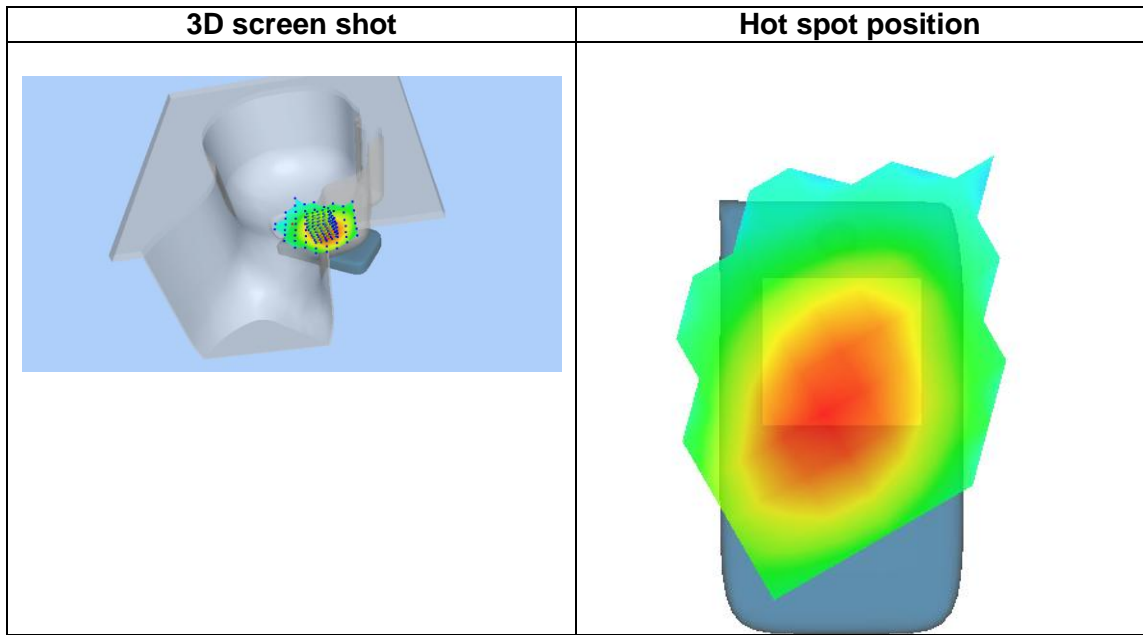
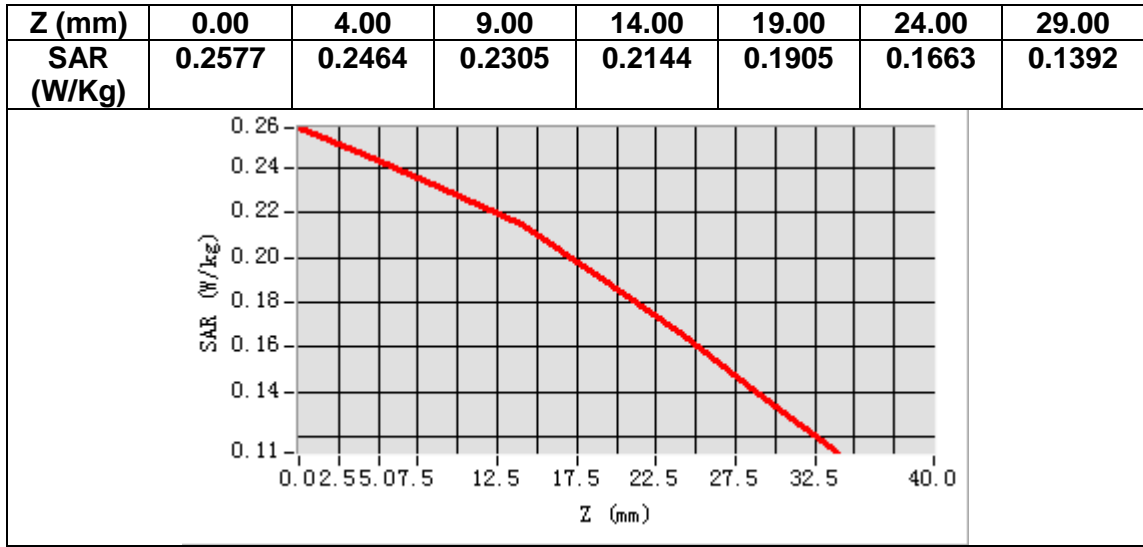
B. SAR Measurement Results

Frequency (MHz)	710.000000
Relative permittivity (real part)	42.661705
Relative permittivity (imaginary part)	22.053900
Conductivity (S/m)	0.869904
Variation (%)	1.120000



Maximum location: X=-52.00, Y=-36.00
SAR Peak: 0.27 W/kg

SAR 10g (W/Kg)	0.213411
SAR 1g (W/Kg)	0.244254



MEASUREMENT 28

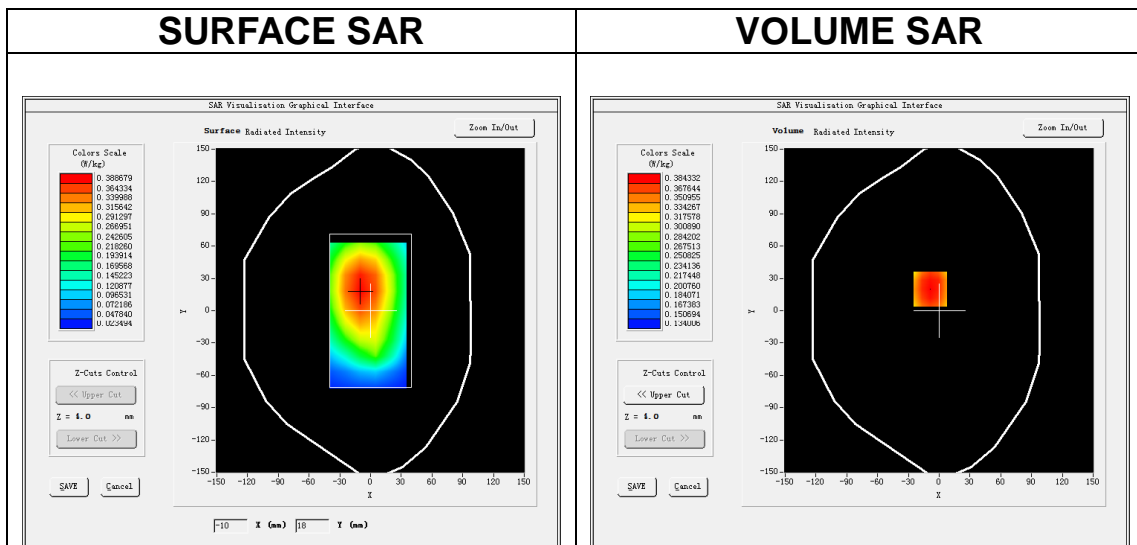
Date of measurement: 14/1/2021

A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body</u>
Band	<u>LTE band 17</u>
Channels	<u>Middle</u>
Signal	<u>LTE (Crest factor: 1.0)</u>

B. SAR Measurement Results

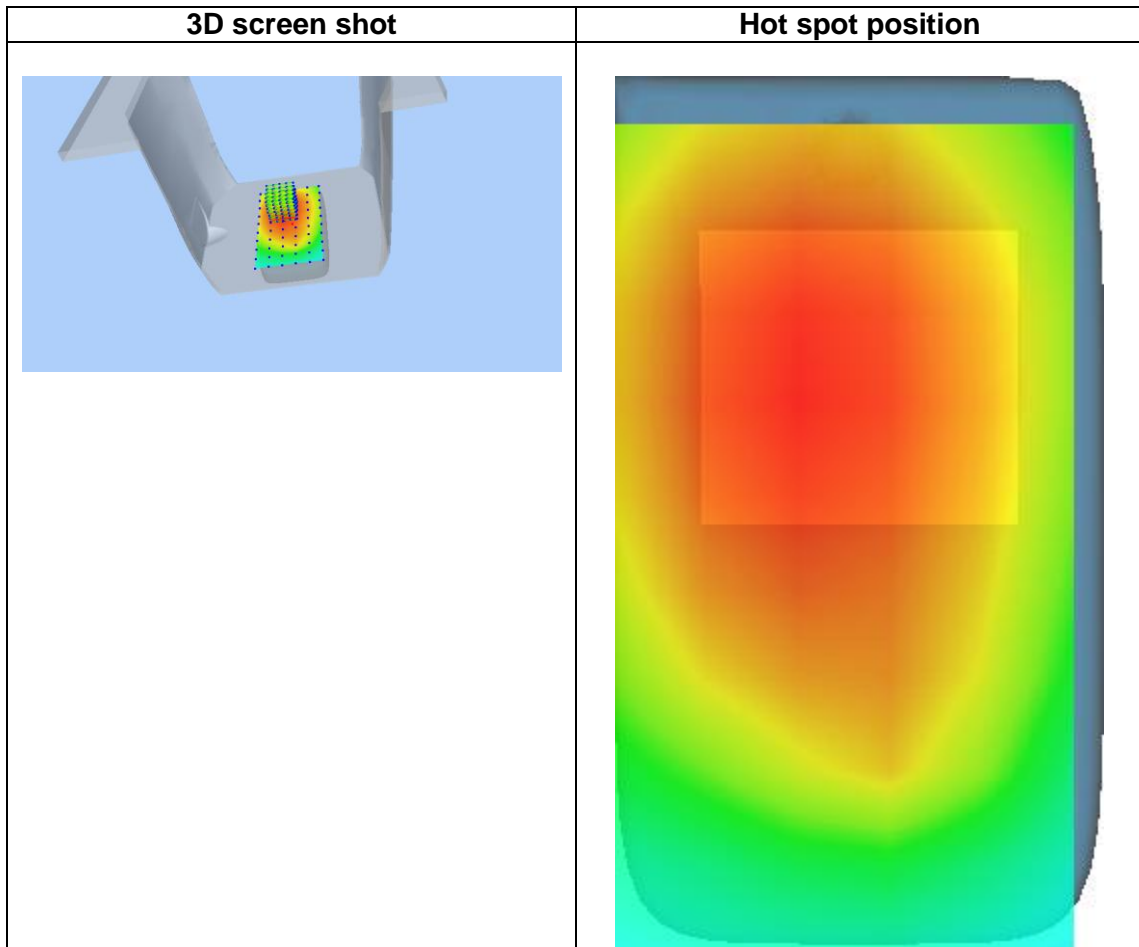
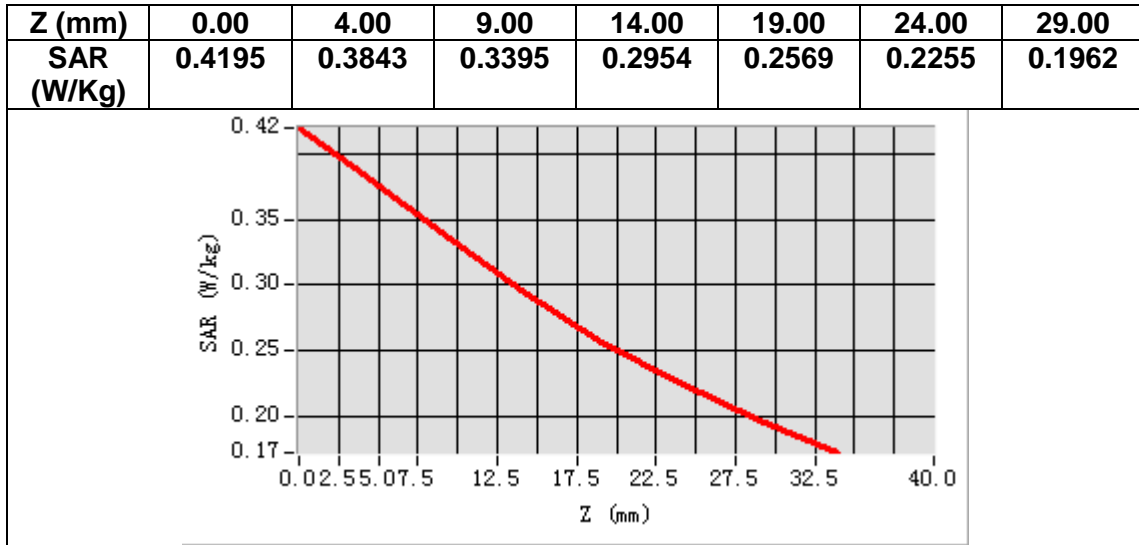
Frequency (MHz)	710.000000
Relative permittivity (real part)	55.600200
Relative permittivity (imaginary part)	23.567921
Conductivity (S/m)	0.929624
Variation (%)	-0.780000



Maximum location: X=-9.00, Y=20.00

SAR Peak: 0.44 W/kg

SAR 10g (W/Kg)	0.317415
SAR 1g (W/Kg)	0.377303



14. Appendix D. Calibration Certificate

Table of contents
E Field Probe - SN 41/18 EPGO330
750 MHz Dipole - SN 03/15 DIP 0G750-355
835 MHz Dipole - SN 03/15 DIP 0G835-347
1800 MHz Dipole - SN 03/15 DIP 1G800-349
1900 MHz Dipole - SN 03/15 DIP 1G900-350
2450 MHz Dipole - SN 03/15 DIP 2G450-352
2600 MHz Dipole - SN 03/15 DIP 2G600-356
5000-6000 MHz Dipole - SN 13/14 WGA 33
Extended Calibration Certificate



COMOSAR E-Field Probe Calibration Report

Ref : ACR.142.6.20.SATU.B

**SHENZHEN NTEK TESTING TECHNOLOGY CO., LTD.
BUILDING E, FENDA SCIENCE PARK, SANWEI
COMMUNITY, XIXIANG STREET,
BAO'AN DISTRICT, SHENZHEN GUANGDONG, CHINA
MVG COMOSAR DOSIMETRIC E-FIELD PROBE
SERIAL NO.: SN 41/18 EPGO330**

**Calibrated at MVG US
2105 Barrett Park Dr. - Kennesaw, GA 30144**



Calibration Date: 09/21/20

Summary:

This document presents the method and results from an accredited COMOSAR Dosimetric E-Field Probe calibration performed in MVG USA using the CALISAR / CALIBAIR test bench, for use with a COMOSAR system only. All calibration results are traceable to national metrology institutions.



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.142.6.20.SATU.B

	<i>Name</i>	<i>Function</i>	<i>Date</i>	<i>Signature</i>
<i>Prepared by :</i>	Jérôme LUC	Product Manager	9/22/2020	<i>JL</i>
<i>Checked by :</i>	Jérôme LUC	Product Manager	9/22/2020	<i>JL</i>
<i>Approved by :</i>	Kim RUTKOWSKI	Quality Manager	9/22/2020	<i>Kim Rutkowski</i>

	<i>Customer Name</i>
<i>Distribution :</i>	SHENZHEN NTEK TESTING TECHNOLOGY CO., LTD.

<i>Issue</i>	<i>Date</i>	<i>Modifications</i>
A	9/22/2020	Initial release
B	9/27/2020	Change customer name and address