SAR Test Report

Report No.: AGC14070220802FH01

FCC ID	:	2A3KR-KST102SF
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Android Tablet
BRAND NAME	:	Kinstone
MODEL NAME	:	KST102SF, KST102SF_EA
APPLICANT	:	SHENZHEN KINSTONE D&T DEVELOP CO.LTD.
DATE OF ISSUE	:	Oct. 26,.2022
STANDARD(S)	:	IEEE Std. 1528:2013 FCC 47 CFR Part 2§2.1093 IEEE Std C95.1 ™-2005
REPORT VERSION	:	V1.0

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

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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Oct. 26,.2022	Valid	Initial Release

Test Report

Applicant Name	SHENZHEN KINSTONE D&T DEVELOP CO.LTD.
Applicant Address	5th Floor, Building A2, Xinjianxing Technology Industrial Park, Fengxin Road, Guangming District, SHENZHEN, China
Manufacturer Name	SHENZHEN KINSTONE D&T DEVELOP CO.LTD.
Manufacturer Address	5th Floor, Building A2, Xinjianxing Technology Industrial Park, Fengxin Road, Guangming District, SHENZHEN, China
Factory Name	SHENZHEN KINSTONE D&T DEVELOP CO.LTD.
Factory Address	5th Floor, Building A2, Xinjianxing Technology Industrial Park, Fengxin Road, Guangming District, SHENZHEN, China
Product Designation	Android Tablet
Brand Name	Kinstone
Model Name	KST102SF, KST102SF_EA
Different Description	All the same except model name
EUT Voltage	DC3.7V by battery
Applicable Standard	IEEE Std. 1528:2013 FCC 47 CFR Part 2§2.1093 IEEE Std C95.1 ™-2005
Date of receipt of test item	Oct. 24,.2022
Test Date	Oct. 24,.2022 to Oct. 26,.2022
Report Template	AGCRT-US-5G/SAR (2021-04-20)

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

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Reviewed By

Calvin Liu (Reviewer) Oct. 26,.2022

Approved By

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1. SUMMARY OF MAXIMUM SAR VALUE

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

Frequency Band	Highest Reported 1g-SAR(W/kg)	SAR Test Limit (W/kg)
	Body-worn(with 0mm separation)	
2.4 GHz WIFI	1.158	1.6
5.2 GHz WIFI	0.632	
5.8 GHz WIFI	0.495	
SAR Test Result	PASS	

This device is compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6W/kg) specified in IEEE Std. 1528:2013; FCC 47CFR § 2.1093; IEEE/ANSI C95.1:2005 and the following specific FCC Test Procedures:

- KDB 447498 D01 General RF Exposure Guidance v06
- KDB 865664 D01 SAR Measurement 100MHz to 6GHz v01r04
- KDB 248227 D01 802 11 Wi-Fi SAR v02r02
- KDB 616217 D04 SAR evaluation requirements for laptop, notebook, notebook and tablet computers

2. GENERAL INFORMATION

2.1. EUT Description

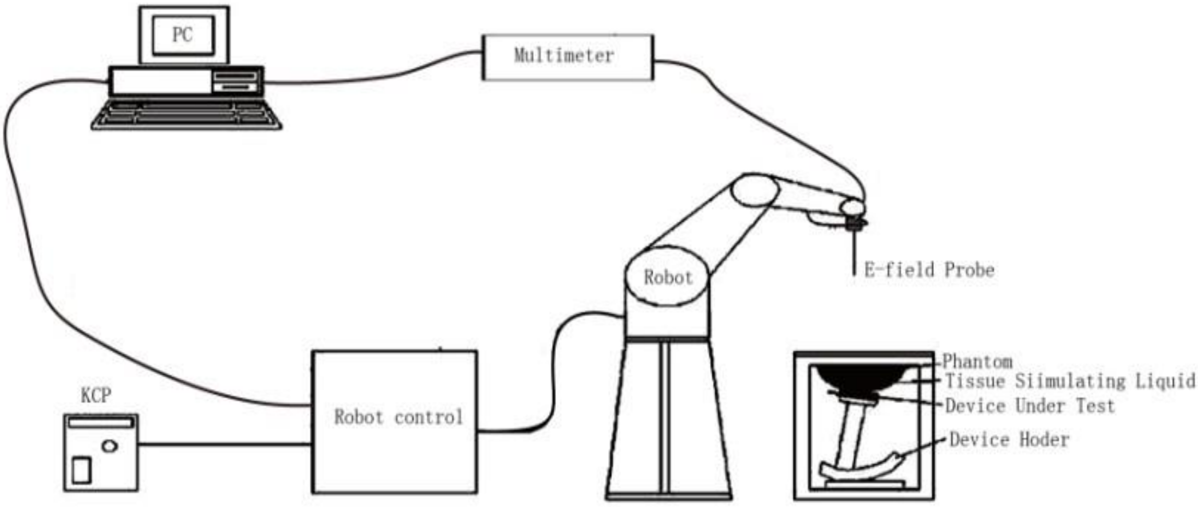
General Information	
Product Designation	Android Tablet
Test Model	KST102SF
Hardware Version	P30-T310-V1.0（1.0X）-210719-C
Software Version	3906_JST_T310_P30_KST102SF_US_WIFIONLY_S_20220928_user
Device Category	Portable
RF Exposure Environment	Uncontrolled
Antenna Type	PIFA
Bluetooth	
Operation Frequency	2402~2480MHz
Antenna Gain	0.21dBi
Bluetooth Version	V5.0
Duty cycle of BR/EDR	77%
Type of modulation	**BR/EDR**: GFSK, Π/4-DQPSK, 8-DPSK; **BLE:** GFSK
Max Peak Power(dBm)	**BR/EDR**: 9.360dBm ; **BLE:** 6.586dBm
2.4GHz WIFI	
WIFI Specification	☐802.11a ☒802.11b ☒802.11g ☒802.11n(20) ☒802.11n(40)
Operation Frequency	2412~2472MHz
Max Average Power	IEEE 802.11b:16.75dBm; IEEE 802.11g:15.36dBm; IEEE 802.11n(HT20):15.59dBm; IEEE 802.11n(HT40):14.95dBm
Antenna Gain	0.21dBi
5GHz WIFI	
WIFI Specification	☒802.11a ☒802.11n20 ☒802.11ac20 ☒802.11n40 ☒802.11ac40 ☒802.11ac80
Operation Frequency	5.180GHz～5.825GHz
Type of modulation	802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM,128QAM) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM,128QAM,256QAM)
Max Average Power	IEEE 802.11a:12.19dBm; IEEE 802.11n-HT20:19.61.78dBm; IEEE 802.11n-HT40:11.45dBm; IEEE 802.11ac-VHT20:10.96dBm; IEEE 802.11ac-VHT40:10.71dBm; IEEE 802.11ac-VHT80:9.86dBm
Antenna Gain	-2.82dBi
Accessories	
Battery	Brand name: N/A Model No. : GX30100140 Voltage and Capacitance: 3.7 V & 4000mAh
Earphone	Brand name: N/A Model No. : N/A

Note:1.The sample used for testing is end product.
2.The test sample has no any deviation to the test method of standard mentioned in page 1.

Product	Type	
	☒ Production unit	☐ Identical Prototype

3. SAR MEASUREMENT SYSTEM

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



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

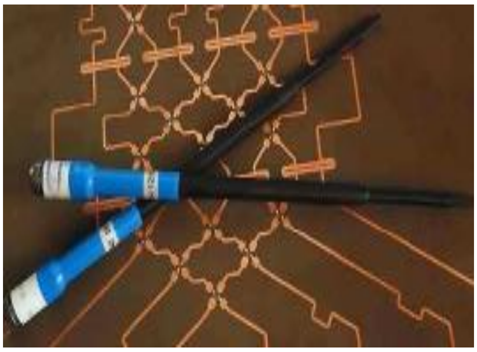
- The PC. It controls most of the bench devices and stores measurement data.A computer running WinXP and the Opensar software.
- The E-Field probe. The probe is a 3-axis system made of 3 distinct dipoles. Each dipole returns a voltage in function of the ambient electric field.
- The Keithley multimeter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

·The phantom, the device holder and other accessories according to the targeted measurement.

3.2. COMOSAR E-Field Probe

The SAR measurement is conducted with the dosimetric probe manufactured by SATIMO. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. SATIMO conducts the probe calibration in compliance with international and national standards (e.g. IEEE1528 etc.)Under ISO17025.The calibration data are in Appendix D.

Isotropic E-Field Probe Specification

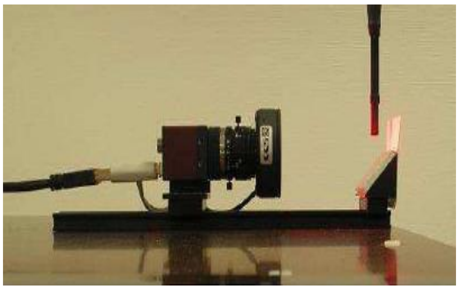
<table>
<tr><th>Model</th><td colspan="2">SSE2</td></tr>
<tr><th>Manufacture</th><td colspan="2">MVG</td></tr>
<tr><th>Identification No.</th><td colspan="2">SN 13/22 EPGO368</td></tr>
<tr><th>Frequency</th><td>0.15GHz-6GHz
Linearity:±0.09dB(0.15GHz-6GHz)</td><td rowspan="3"></td></tr>
<tr><th>Dynamic Range</th><td>0.01W/kg-100W/kg
Linearity:±0.09dB</td></tr>
<tr><th>Dimensions</th><td>Overall length:330mm
Length of individual dipoles:2mm
Maximum external diameter:8mm
Probe Tip external diameter:2.5mm
Distance between dipoles/ probe extremity:1mm</td></tr>
<tr><th>Application</th><td colspan="2">High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precisin of better 30%.</td></tr>
</table>

3.3. Robot

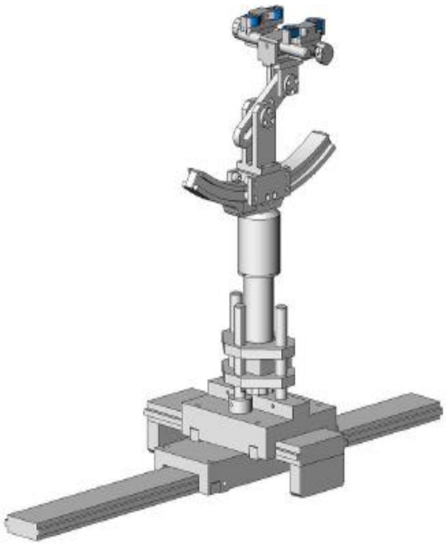
The COMOSAR system uses the KUKA robot from SATIMO SA (France).For the 6-axis controller COMOSAR system, the KUKA robot controller version from SATIMO is used.
The XL robot series have many features that are important for our application:

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

3.4. Video Positioning System

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

3.5. Device Holder

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

3.6. ELLI39 Phantom

The Flat phantom is a fiberglass shellphantom with 2mm+/- 0.2 mm shell thickness. It has only one measurement area for Flat phantom	

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

4. SAR MEASUREMENT PROCEDURE

4.1. Specific Absorption Rate (SAR)

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

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

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

SAR is expressed in units of Watts per kilogram (W/kg)
SAR can be obtained using either of the following equations:

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

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

Where

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

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

4.2. SAR Measurement Procedure

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurement are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface is 2.7mm This distance cannot be smaller than the distance os sensor calibration points to probe tip as `defined in the probe properties,

Step 2: Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in SATIMO software can find the maximum locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in db) is specified in the standards for compliance testing. For example, a 2db range is required in IEEE Standard 1528 and IEC62209 standards, whereby 3db is a requirement when compliance is assessed in accordance with the ARIB standard (Japan) If one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximum are detected, the number of Zoom Scan has to be increased accordingly.

Area Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100MHz to 6GHz

	≤ 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.	

Step 3: Zoom Scan

Zoom Scan are used to assess the peak spatial SAR value within a cubic average volume containing 1g abd 10g of simulated tissue. The Zoom Scan measures points(refer to table below) within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the Zoom Scan evaluates the averaged SAR for 1g and 10g and displays these values next to the job's label.

Zoom Scan Parameters extracted from KDB865664 d01 SAR Measurement 100MHz to 6GHz

<table>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}</td><td>≤ 2 GHz: ≤ 8 mm
2 – 3 GHz: ≤ 5 mm*</td><td>3 – 4 GHz: ≤ 5 mm*
4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>≤ 5 mm</td><td>3 – 4 GHz: ≤ 4 mm
4 – 5 GHz: ≤ 3 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>≤ 4 mm</td><td>3 – 4 GHz: ≤ 3 mm
4 – 5 GHz: ≤ 2.5 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3 – 4 GHz: ≥ 28 mm
4 – 5 GHz: ≥ 25 mm
5 – 6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">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 <u>reported</u> 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.</td></tr>
</table>

Step 4: Power Drift Measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the same settings. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

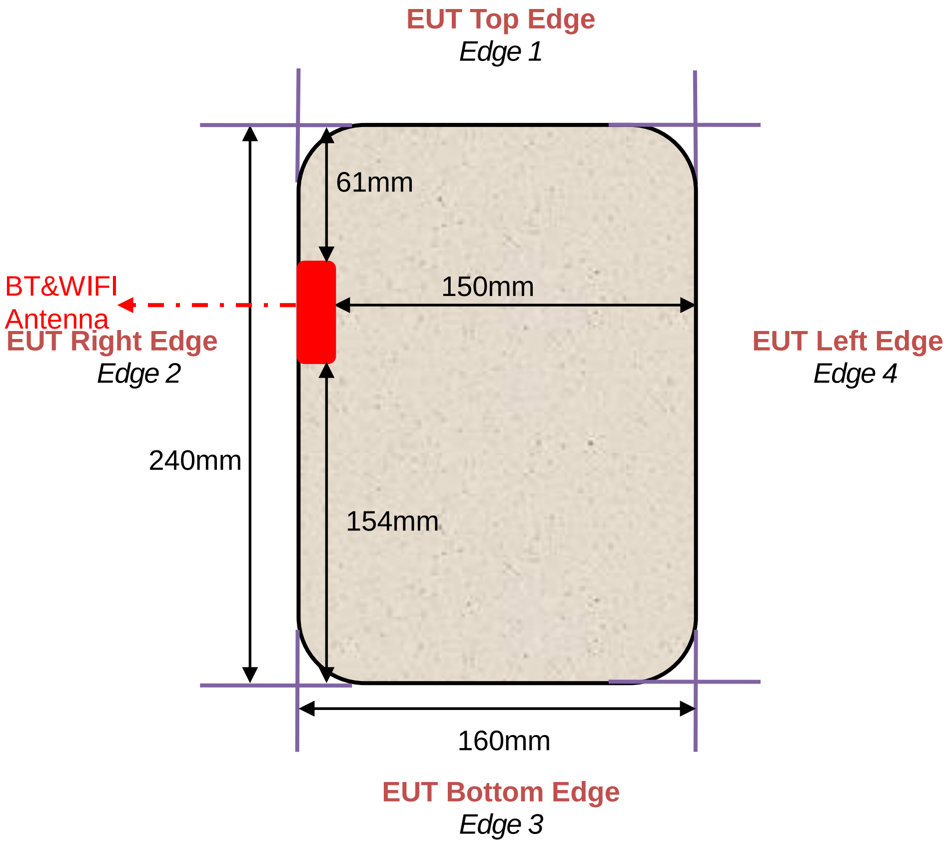
4.3. RF Exposure Conditions

Test Configuration and setting:

The device is a sport camera which support 2.4GHz & 5G Wifi, Bluetooth; And share one antenna.

For SAR testing, the EUT is configured with the WLAN continuous TX tool through qualcomm software.

Antenna Location: (the back view)



SAR Test Exclusion Consideration for Adjacent Edges
Per KDB 447498 D01 cl. 4.3.1:
a) For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:
[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] • [√f(GHz)] ≤ 3.0 for1-g SAR, and ≤ 7.5 for 10-g extremity SAR.
b) For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:
1) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)•(f(MHz)/150)]} mW, for 100 MHz to 1500 MHz
2) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)•10]} mW, for > 1500 MHz and ≤ 6 GHz

1-g SAR test exclusion thresholds for WWAN					
Test Mode / Test position		Edge 1 (61mm)	Edge 2 (1mm)	Edge 3 (154mm)	Edge 4 (150mm)
BT(BR/EDR)	SAR test exclusion thresholds(mW)	**206.01**	**9.60**	**1136.01**	**1096.01**
	SAR Max. Avg. Burst Power(mW)	8.630	8.630	8.630	8.630
	SAR required (Yes/No)	No	No	No	No
BT(BLE)	SAR test exclusion thresholds(mW)	**206.03**	**9.60**	**1136.03**	**1096.03**
	SAR Max. Avg. Burst Power(mW)	4.556	4.556	4.556	4.556
	SAR required (Yes/No)	No	No	No	No
2.4 GHz WIFI	SAR test exclusion thresholds(mW)	**206.09**	**9.61**	**1136.09**	**1096.09**
	SAR Max. Avg. Burst Power(mW)	47.315	47.315	47.315	47.315
	SAR required (Yes/No)	No	Yes	No	No
5.2 GHz WIFI	SAR test exclusion thresholds(mW)	**175.91**	**1.318**	**1105.91**	**1065.91**
	SAR Max. Avg. Burst Power(mW)	16.558	16.558	16.558	16.558
	SAR required (Yes/No)	No	Yes	No	No
5.8 GHz WIFI	SAR test exclusion thresholds(mW)	**172.58**	**1.252**	**1102.58**	**1062.58**
	SAR Max. Avg. Burst Power(mW)	10.617	10.617	10.617	10.617
	SAR required (Yes/No)	No	Yes	No	No

CONCLUSION:
1.BT SAR is not required.
2. Edge2 of WIFI SAR is required.

5. TISSUE SIMULATING LIQUID

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

5.1. The composition of the tissue simulating liquid

Ingredient (% Weight) / Frequency (MHz)	Water	Nacl	Polysorbate 20	DGBE	1,2-Propanediol	Triton X-100	Diethylen glycol monohexylether
2450 Head	71.88	0.16	0.0	7.99	0.0	19.97	0.0
5000 Head	65.52	0.0	0.0	0.0	0.0	17.24	17.24

5.2. Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE 1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head and body tissue parameters that have not been specified in IEEE 1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in IEEE 1528.

Target Frequency (MHz)	head		body	
	εr	σ (S/m)	εr	σ (S/m)
300	45.3	0.87	45.3	0.87
450	43.5	0.87	43.5	0.87
835	41.5	0.90	41.5	0.90
900	41.5	0.97	41.5	0.97
1450	40.5	1.20	40.5	1.20
1800 – 2000	40.0	1.40	40.0	1.40
2450	**39.2**	**1.80**	**52.7**	**1.95**
3000	38.5	2.40	38.5	2.40
5200	**36.0**	**4.66**	**49.0**	**5.30**
5300	35.9	4.76	48.9	5.42
5600	35.5	5.07	48.5	5.77
5800	**35.3**	**5.27**	**48.2**	**6.00**

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

5.3. Tissue Calibration Result

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

Tissue Stimulant Measurement for 2450MHz					
Head	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [^{o}C]	Test time
		εr 39.2(37.24-41.16)	δ[s/m] 1.80(1.71-1.89)		
	2412	40.46	1.75	21.3	Oct. 24, 2022
	2437	40.12	1.79		
	2450	39.68	1.84		
	2462	38.22	1.86		

Tissue Stimulant Measurement for 5200MHz					
Head	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [^{o}C]	Test time
		εr 36(34.2-37.8)	δ[s/m] 4.66(4.43-4.89)		
	5200	35.29	4.61	21.4	Oct. 25, 2022

Tissue Stimulant Measurement for 5800MHz					
Head	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [^{o}C]	Test time
		εr 35.3(33.535-37.065)	δ[s/m] 5.27(5.0065-5.5335)		
	5785	35.69	5.19	20.9	Oct. 26, 2022
	5800	34.91	5.22		

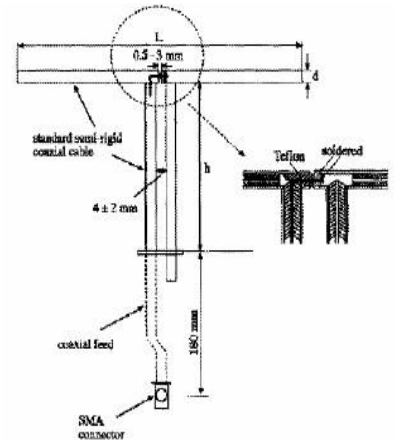
6. SAR SYSTEM CHECK PROCEDURE

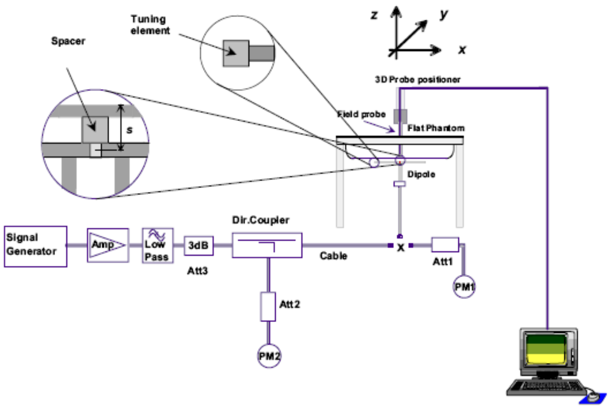
6.1. SAR System Check Procedures

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

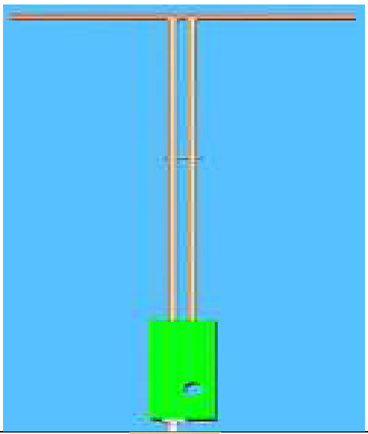
Each SATIMO system is equipped with one or more system check kits. These units, together with the predefined measurement procedures within the SATIMO software, enable the user to conduct the system check and system validation. System kit includes a dipole, and dipole device holder.

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





6.2. SAR System Check
6.2.1. Dipoles

	The dipoles are based on the IEEE-1528 standard, and are complied with mechanical and electrical specifications in line with the requirements of IEEE. the table below provides details for the mechanical and electrical Specifications for the dipoles.
	The dipole is based on the IEEE-1528 standard, and is complied with mechanical and electrical specifications in line with the requirements of IEEE. The table below provides details for the mechanical and electrical specifications for the wave guide.

Frequency	L (mm)	h (mm)	d (mm)
2450MHz	51.5	30.4	3.6
5000MHz	20.6	40.3	3.6

6.2.2. System Check Result

System Performance Check at 2450MHz & 5200-5800MHz for Head								
Validation Kit: SN 29/15 DIP 2G450-393 & SN 17/22 DIP 5G000-671								
Frequency [MHz]	Target Value(W/kg)		Reference Result (± 10%)		Normalized to 1W(W/kg)		Tissue Temp. [°C]	Test time
	1g	10g	1g	10g	1g	10g		
2450	54.32	24.25	48.888-59.752	21.825-26.675	51.50	23.19	21.3	Oct. 24, 2022
5200	73.43	21.83	66.087-80.773	19.647-24.013	69.31	21.76	21.4	Oct. 25, 2022
5800	75.69	22.44	68.121-83.259	20.196-24.684	76.72	24.31	20.9	Oct. 26, 2022

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

7. EUT TEST POSITION

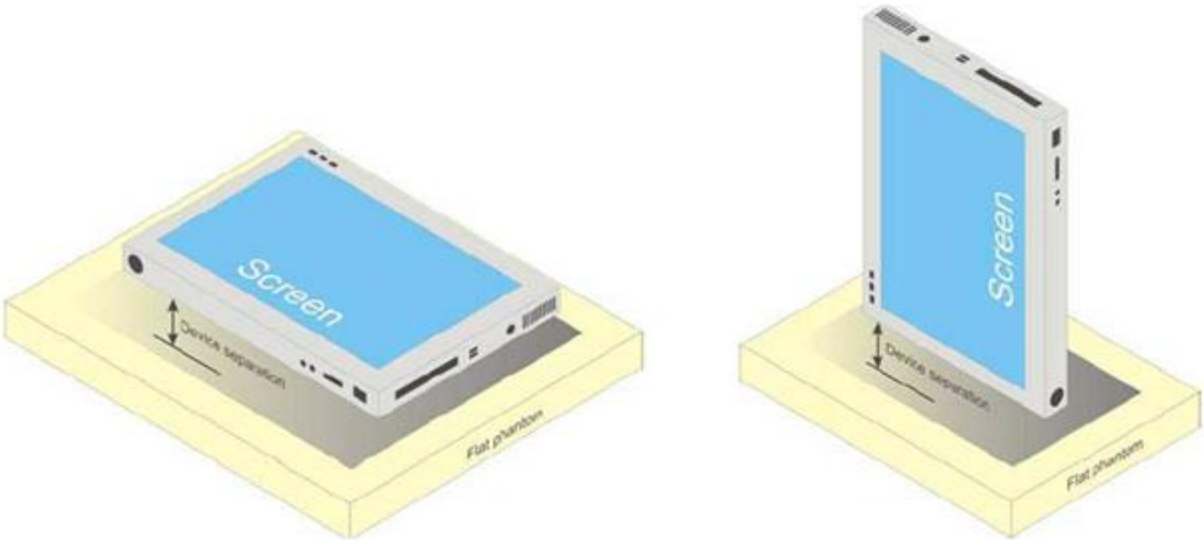
This EUT was tested in **Body back, Edge2.**

7.1. Body Worn Position

(1) To position the EUT parallel to the phantom surface.

(2) To adjust the EUT parallel to the flat phantom.

(3) To adjust the distance between the EUT surface and the flat phantom to **0mm.**



8. SAR EXPOSURE LIMITS

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

Type Exposure	Uncontrolled Environment Limit (W/kg)
Spatial Peak SAR (1 g cube tissue for brain or body)	1.60
Spatial Average SAR (Whole body)	0.08
Spatial Peak SAR (Limbs)	4.0

9. TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Designation Number	CN1259
FCC Test Firm Registration Number	975832
A2LA Cert. No.	5054.02
Description	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by A2LA

10. TEST EQUIPMENT LIST

Equipment description	Manufacturer/ Model	Identification No.	Software version	Current calibration date	Next calibration date
SAR Probe	MVG	SN 13/22 EPGO368	N/A	Apr. 13,2022	Apr. 12,2023
Phantom	SATIMO	SN_2316_ELLI39	N/A	Validated. No cal required.	Validated. No cal required.
Liquid	SATIMO	N/A	N/A	Validated. No cal required.	Validated. No cal required.
Multimeter	Keithley 2000	4114939	N/A	Aug. 06,2022	Aug. 05,2023
SAR Software	MVG-OpenSAR	N/A	OpenSAR V4_02_35	N/A	N/A
Dipole	SATIMO SID2450	SN 29/15 DIP 2G450-393	N/A	Apr. 28,2022	Apr. 27,2025
Dipole	SID5000	SN 17/22 DIP 5G000-671	N/A	Apr. 28,2022	Apr. 27, 2025
Signal Generator	Agilent-E4438C	US41461365	V5.03	Aug. 03,2022	Aug. 02,2023
Vector Analyzer	Agilent / E4440A	MY44303916	N/A	Mar. 28,2022	Mar. 27,2023
Network Analyzer	Rhode & Schwarz ZVL6	SN101443	3.2	Oct. 28,2021	Oct. 27,2022
Attenuator	Warison /WATT-6SR1211	S/N:WRJ34AYM2F1	N/A	June 08,2022	June 07,2023
Attenuator	Mini-circuits / VAT-10+	31405	N/A	June 08,2022	June 07,2023
Amplifier	EM30180	SN060552	N/A	June 09,2022	June 08,2023
Directional Couple	Werlatone/ C5571-10	SN99463	N/A	Mar. 10,2022	Mar. 09,2024
Directional Couple	Werlatone/ C6026-10	SN99482	N/A	Mar. 10,2022	Mar. 09,2024
Power Sensor	NRP-Z21	1137.6000.02	N/A	Sep. 06,2022	Sep. 05,2023
Power Sensor	NRP-Z23	100323		Feb. 16,2022	Feb. 15,2023
Power Viewer	R&S	V2.3.1.0		N/A	N/A
Calibration standard parts for network sub - port	R&S/ ZV-Z132	N/A	V2.3.1.0	Dec. 07, 2021	Dec. 06, 2022

Note: Per KDB 865664 Dipole SAR Validation, AGC Lab has adopted 3 years calibration intervals. On annual basis, every measurement dipole has been evaluated and is in compliance with the following criteria:
1. There is no physical damage on the dipole;
2. System validation with specific dipole is within 10% of calibrated value;
3. Return-loss is within 20% of calibrated measurement;
4. Impedance is within 5Ω of calibrated measurement.

11. MEASUREMENT UNCERTAINTY

SATIMO Uncertainty- SN 13/22 EPGO368 Measurement uncertainty for DUT averaged over 1 gram / 10 gram.									
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System									
Probe calibration	E.2.1	7.000	N	1	1	1	7.000	7.000	∞
Axial Isotropy	E.2.2	0.175	R	$\sqrt{3}$	√0.5	√0.5	0.071	0.071	∞
Hemispherical Isotropy	E.2.2	0.175	R	$\sqrt{3}$	√0.5	√0.5	0.071	0.071	∞
Boundary effect	E.2.3	1.000	R	$\sqrt{3}$	1	1	0.577	0.577	∞
Linearity	E.2.4	0.990	R	$\sqrt{3}$	1	1	0.572	0.572	∞
System detection limits	E.2.4	1.000	R	$\sqrt{3}$	1	1	0.577	0.577	∞
Modulation response	E2.5	3.000	R	$\sqrt{3}$	1	1	1.732	1.732	∞
Readout Electronics	E.2.6	0.021	N	1	1	1	0.021	0.021	∞
Response Time	E.2.7	0.000	R	$\sqrt{3}$	1	1	0.000	0.000	∞
Integration Time	E.2.8	1.400	R	$\sqrt{3}$	1	1	0.808	0.808	∞
RF ambient conditions-Noise	E.6.1	3.000	R	$\sqrt{3}$	1	1	1.732	1.732	∞
RF ambient conditions-reflections	E.6.1	3.000	R	$\sqrt{3}$	1	1	1.732	1.732	∞
Probe positioner mechanical tolerance	E.6.2	1.400	R	$\sqrt{3}$	1	1	0.808	0.808	∞
Probe positioning with respect to phantom shell	E.6.3	1.400	R	$\sqrt{3}$	1	1	0.808	0.808	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.300	R	$\sqrt{3}$	1	1	1.328	1.328	∞
Test sample Related									
Test sample positioning	E.4.2	2.6	N	1	1	1	2.600	2.600	∞
Device holder uncertainty	E.4.1	3	N	1	1	1	3.000	3.000	∞
Output power variation—SAR drift measurement	E.2.9	5	R	$\sqrt{3}$	1	1	2.887	2.887	∞
SAR scaling	E.6.5	5	R	$\sqrt{3}$	1	1	2.887	2.887	∞
Phantom and tissue parameters									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	4	R	$\sqrt{3}$	1	1	2.309	2.309	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.9	N	1	1	0.84	1.900	1.596	∞
Liquid conductivity measurement	E.3.3	4	R	$\sqrt{3}$	0.78	0.71	3.120	2.840	∞
Liquid permittivity measurement	E.3.3	5	N	1	0.78	0.71	1.150	1.300	M
Liquid conductivity—temperature uncertainty	E.3.4	2.5	R	$\sqrt{3}$	0.23	0.26	1.126	1.025	∞
Liquid permittivity—temperature uncertainty	E.3.4	2.5	N	1	0.23	0.26	0.332	0.375	M
Combined Standard Uncertainty			RSS				10.529	10.344	
Expanded Uncertainty (95% Confidence interval)			K=2				21.058	20.688	

SATIMO Uncertainty- SN 13/22 EPGO368 System Validation uncertainty for DUT averaged over 1 gram / 10 gram.									
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System									
Probe calibration	E.2.1	7.000	N	1	1	1	7.000	7.000	∞
Axial Isotropy	E.2.2	0.175	R	$\sqrt{3}$	1	1	0.101	0.101	∞
Hemispherical Isotropy	E.2.2	0.175	R	$\sqrt{3}$	0	0	0.000	0.000	∞
Boundary effect	E.2.3	1.000	R	$\sqrt{3}$	1	1	0.577	0.577	∞
Linearity	E.2.4	0.990	R	$\sqrt{3}$	1	1	0.572	0.572	∞
System detection limits	E.2.4	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	E2.5	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Readout Electronics	E.2.6	0.021	N	1	1	1	0.021	0.021	∞
Response Time	E.2.7	0.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Integration Time	E.2.8	1.4	R	$\sqrt{3}$	0	0	0.00	0.00	∞
RF ambient conditions-Noise	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient conditions-reflections	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner mechanical tolerance	E.6.2	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	E.6.3	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
System validation source									
Deviation of experimental dipole from numerical dipole	E.6.4	5.0	N	1	1	1	5.00	5.00	∞
Input power and SAR drift measurement	8,6.6.4	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Dipole axis to liquid distance	8,E.6.6	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Phantom and set-up									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	4.0	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.9	N	1	1	0.84	1.90	1.60	∞
Liquid conductivity（temperature uncertainty）	E.3.3	2.5	R	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid conductivity（measured）	E.3.3	4	N	1	0.78	0.71	3.12	2.84	M
Liquid permittivity（temperature uncertainty）	E.3.4	2.5	R	$\sqrt{3}$	0.23	0.26	0.33	0.38	∞
Liquid permittivity（measured）	E.3.4	5	N	1	0.23	0.26	1.15	1.30	M
Combined Standard Uncertainty			RSS				10.462	10.276	
Expanded Uncertainty (95% Confidence interval)			K=2				20.924	20.551	

SATIMO Uncertainty- SN 13/22 EPGO368 System Check uncertainty for DUT averaged over 1 gram / 10 gram.									
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
Measurement System									
Probe calibration drift	E.2.1.3	0.500	N	1	1	1	0.50	0.50	∞
Axial Isotropy	E.2.2	0.175	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Hemispherical Isotropy	E.2.2	0.175	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Boundary effect	E.2.3	1.000	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Linearity	E.2.4	0.990	R	$\sqrt{3}$	0	0	0.00	0.00	∞
System detection limits	E.2.4	1.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Modulation response	E2.5	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Readout Electronics	E.2.6	0.021	N	1	0	0	0.00	0.00	∞
Response Time	E.2.7	0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Integration Time	E.2.8	1.4	R	$\sqrt{3}$	0	0	0.00	0.00	∞
RF ambient conditions-Noise	E.6.1	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
RF ambient conditions-reflections	E.6.1	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Probe positioner mechanical tolerance	E.6.2	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	E.6.3	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.3	R	$\sqrt{3}$	0	0	0.00	0.00	∞
System check source (dipole)									
Deviation of experimental dipoles	E.6.4	2.0	N	1	1	1	2.00	2.00	∞
Input power and SAR drift measurement	8,6.6.4	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Dipole axis to liquid distance	8,E.6.6	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Phantom and tissue parameters									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	4	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.9	N	1	1	0.84	1.90	1.60	∞
Liquid conductivity measurement	E.3.3	4	R	$\sqrt{3}$	0.78	0.71	3.12	2.84	∞
Liquid permittivity measurement	E.3.3	5	N	1	0.78	0.71	1.15	1.30	M
Liquid conductivity—temperature uncertainty	E.3.4	2.5	R	$\sqrt{3}$	0.23	0.26	1.13	1.02	∞
Liquid permittivity—temperature uncertainty	E.3.4	2.5	N	1	0.23	0.26	0.33	0.38	M
Combined Standard Uncertainty			RSS				5.562	5.203	
Expanded Uncertainty (95% Confidence interval)			K=2				11.124	10.406	

12. CONDUCTED POWER MEASUREMENT

2.4GHz WIFI

Mode	Data Rate (Mbps)	Channel	Frequency(MHz)	Average Power (dBm)
802.11b	1	1	2412	15.37
		6	2437	**16.75**
		11	2462	15.44
802.11g	6	1	2412	14.91
		6	2437	15.36
		11	2462	14.56
802.11n HT20	6.5	1	2412	15.08
		6	2437	15.59
		11	2462	14.67
802.11n HT40	13.5	1	2412	14.97
		6	2437	14.95
		11	2462	14.89

Bluetooth_V5.0

Modulation	Channel	Frequency(MHz)	Peak Power (dBm)
GFSK	0	2402	6.653
	39	2441	7.604
	78	2480	6.840
π /4-DQPSK	0	2402	8.288
	39	2441	9.194
	78	2480	8.292
8-DPSK	0	2402	8.437
	39	2441	**9.360**
	78	2480	8.408

Bluetooth_V5.0

Modulation	Channel	Frequency(MHz)	Peak Power (dBm)
GFSK 1M	0	2402	4.836
	19	2440	**6.586**
	39	2480	5.511
GFSK 2M	0	2402	4.846
	19	2440	6.403
	39	2480	5.228

5GHz WIFI

Mode	channel	Frequency	Power(dBm)							
			Data Rate(bps)							
			6M	**9M**	**12M**	**18M**	**24M**	**36M**	**48M**	**54M**
802.11a	36	5180	**12.19**	12.05	11.93	11.77	11.66	11.54	11.37	11.21
	40	5200	11.86	11.78	11.77	11.61	11.47	11.38	11.36	11.32
	44	5220	11.72	11.64	11.51	11.33	11.29	11.15	11.15	11.06
	48	5240	10.53	10.52	10.43	10.33	10.16	10.05	10.01	9.93
	149	5745	**10.26**	10.25	10.09	9.95	9.86	9.82	9.81	9.77
	157	5785	9.29	9.23	9.06	8.89	8.74	8.67	8.49	8.30
	165	5825	8.31	8.15	8.11	7.92	7.74	7.68	7.65	7.54
			MCS0	**MCS1**	**MCS2**	**MCS3**	**MCS4**	**MCS5**	**MCS6**	**MCS7**
802.11n (20)	36	5180	11.78	11.62	11.49	11.44	11.25	11.05	10.86	10.82
	40	5200	11.00	10.99	10.86	10.75	10.62	10.55	10.52	10.45
	44	5220	10.36	10.19	10.10	10.01	9.93	9.81	9.78	9.67
	48	5240	9.75	9.70	9.67	9.54	9.51	9.43	9.33	9.17
	149	5745	9.94	9.90	9.71	9.60	9.58	9.51	9.51	9.36
	157	5785	8.69	8.64	8.57	8.54	8.51	8.46	8.39	8.25
	165	5825	7.10	6.98	6.83	6.77	6.68	6.50	6.41	6.25
			MCS0	**MCS1**	**MCS2**	**MCS3**	**MCS4**	**MCS5**	**MCS6**	**MCS7**
802.11n (40)	38	5190	11.45	11.29	11.25	11.17	10.99	10.85	10.79	10.77
	46	5230	10.24	10.10	9.95	9.80	9.77	9.67	9.60	9.42
	151	5755	10.08	9.91	9.74	9.69	9.62	9.61	9.52	9.37
	159	5795	8.73	8.71	8.63	8.59	8.58	8.48	8.38	8.28
			MCS0	**MCS1**	**MCS2**	**MCS3**	**MCS4**	**MCS5**	**MCS6**	**MCS7**
802.11ac (20)	36	5180	10.96	10.88	10.74	10.70	10.61	10.51	10.34	10.23
	40	5200	10.23	10.09	9.93	9.86	9.76	9.64	9.59	9.54
	44	5220	10.02	9.86	9.72	9.69	9.53	9.49	9.46	9.26
	48	5240	8.58	8.51	8.50	8.34	8.28	8.24	8.12	7.92
	149	5745	8.49	8.43	8.29	8.14	7.99	7.92	7.86	7.85
	157	5785	7.61	7.58	7.39	7.34	7.14	6.98	6.98	6.95
	165	5825	6.60	6.43	6.24	6.09	6.00	5.91	5.74	5.69
			MCS0	**MCS1**	**MCS2**	**MCS3**	**MCS4**	**MCS5**	**MCS6**	**MCS7**
802.11ac (40)	38	5190	10.71	10.54	10.40	10.38	10.23	10.10	10.01	9.83
	46	5230	9.41	9.24	9.20	9.02	8.88	8.86	8.75	8.67
	151	5755	8.64	8.61	8.44	8.32	8.15	8.11	7.93	7.82
	159	5795	7.69	7.61	7.45	7.38	7.38	7.26	7.08	7.06
			MCS0	**MCS1**	**MCS2**	**MCS3**	**MCS4**	**MCS5**	**MCS6**	**MCS7**
802.11ac (80)	42	5210	9.86	9.75	9.74	9.59	9.40	9.39	9.31	9.12
	155	5775	8.97	8.91	8.79	8.70	8.68	8.51	8.35	8.23

13. TEST RESULTS

13.1. SAR Test Results Summary

13.1.1. Test position and configuration

1. The EUT is a Android Tablet

2. Lab use the head liquid with a separation of 0mm at flat phantom to test;

3. For SAR testing, the device was controlled by software to test at reference fixed frequency points.

13.1.2. Operation Mode

1. Per KDB 447498 D01 v06 ,for each exposure position, if the highest 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional.
2. Per KDB 865664 D01 v01r04,for each frequency band, if the measured SAR is ≥0.8W/kg, testing for repeated SAR measurement is required , that the highest measured SAR is only to be tested. When the SAR results are near the limit, the following procedures are required for each device to verify these types of SAR measurement related variation concerns by repeating the highest measured SAR configuration in each frequency band.
   (1) When the original highest measured SAR is ≥0.8W/kg, repeat that measurement once.
   (2) 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.
   (3) Perform a third repeated measurement only if the original, first and second repeated measurement is ≥1.5 W/kg and ratio of largest to smallest SAR for the original, first and second measurement is ≥ 1.20.
3. Per KDB 248227 D01 v02r02 Chapter 5.2.2,when SAR measurement is required for 2.4GHz 802.11g/n OFDM configurations, the measurement and test reducing procedures for OFDM are applied. SAR is not required for the following 2.4 GHz OFDM conditions.
   (1) When KDB Publication 447498 D01 SAR test exclusion applies to the OFDM configuration.
   (2) When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is≤1.2 W/kg,
4. Per KDB 248227 D01 v02r02 Chapter 5.3.4, SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units. The initial test position procedure is applied to next to the ear, UMPC mini-tablet and hotspot mode configurations. When the same maximum output power is specified for multiple transmission modes, the procedures in 5.3.2 are applied to determine the test configuration. Additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. The subsequent test configuration and SAR measurement procedures are described in the following.
   (1) When SAR test exclusion provisions of KDB Publication 447498 D01 are applicable and SAR measurement is not required for the initial test configuration, SAR is also not required for the next highest maximum output power transmission mode subsequent test configuration(s) in that frequency band or aggregated band and exposure configuration.
   (2) When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified

maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.

(3) When the specified maximum output power is same for both UNII 1 and UNII 2A,begin SAR measuremengs in UNII 2A with the channel with the highest measured output power.If the report SAR for UNII 2A is <1.2W/kg,SAR is nor required for UNII 1;otherwise treat the remaining bands separately and test them independently for SAR.

(4) When the specified maximum output power different between UNII 1 and UNII 2A,begin SAR with the band that has the higher specified maximum output. If the highest reported SAR for the band with the highest specified power is ≤1.2W/kg,testing for the band with the lower specicied output power is not required;otherwise test is remaining separately for SAR;

5. Per KDB616217 D04 v01r02, The antennas in tablets are typically located near the back (bottom) surface and/or along the edges of the devices; therefore, SAR evaluation is required for these configurations. Exposures from antennas through the front (top) surface of the display section of a full-size tablet, away from the edges, are generally limited to the user’s hands. Exposures to hands for typical consumer transmitters used in tablets are not expected to exceed the extremity SAR limit; therefore, SAR evaluation for the front surface of tablet display screens are generally not necessary, except for tablets that are designed to require continuous operations with the hand(s) next to the antenna(s).

6. Maximum Scaling SAR in order to calculate the Maximum SAR values to test under the standard Peak Power, Calculation method is as follows:
   Maximum Scaling SAR =tested SAR (Max.) ×[maximum turn-up power (mw)/ maximum measurement output power(mw)]

13.1.3. SAR Test Results Summary

SAR MEASUREMENT									
Depth of Liquid (cm):>15					Relative Humidity (%): 61.1				
Product: Android Tablet									
Test Mode: 2.4GHz 802.11b									
Position	**Mode**	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) (W/kg)**	**Max. Tune-up Power (dBm)**	**Meas. output Power (dBm)**	**Scaled SAR (W/kg)**	**Limit W/kg**
Body back	DTS	6	2437	-0.18	0.544	17.00	16.75	0.576	1.6
Edge 2 (Right)	DTS	1	2412	-0.11	1.041	15.50	15.37	1.073	1.6
Edge 2 (Right)	DTS	6	2437	0.11	0.963	17.00	16.75	1.020	1.6
Edge 2 (Right)	DTS	11	2462	-0.28	**1.142**	15.50	15.44	**1.158**	1.6

Note:
- When the 1-g SAR is ≤ 0.8W/kg, testing for low and high channel is optional.
- The test separation of all above table(body part) is 0mm.
- Plots are only shown for the bold markered worst case SAR results.

SAR MEASUREMENT								
Depth of Liquid (cm):>15				Relative Humidity (%): 56.8				
Product: Android Tablet								
Test Mode: 5.2GHz 802.11a								
Position	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) (W/kg)**	**Max. Tune-up Power (dBm)**	**Meas. output Power (dBm)**	**Scaled SAR (W/kg)**	**Limit (W/kg)**
Body Back	40	5200	-0.28	**0.584**	12.20	11.86	**0.632**	1.6
Edge 2 (Right)	40	5200	-0.31	0.324	12.00	11.86	0.375	1.6

Note:
- When the 1-g SAR is ≤ 0.8W/kg, testing for low and high channel is optional.
- The test separation of all above table(body part) is 0mm.
- Plots are only shown for the bold markered worst case SAR results

SAR MEASUREMENT								
Depth of Liquid (cm):>15				Relative Humidity (%): 49.3				
Product: Android Tablet								
Test Mode: 5.8GHz 802.11a								
Position	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) (W/kg)**	**Max. Tune-up Power (dBm)**	**Meas. output Power (dBm)**	**Scaled SAR (W/kg)**	**Limit (W/kg)**
Body Back	157	5785	-0.03	**0.392**	10.30	9.29	**0.495**	1.6
Edge 2 (Right)	157	5785	-0.13	0.197	10.30	9.29	0.249	1.6

Note:
- When the 1-g SAR is ≤ 0.8W/kg, testing for low and high channel is optional.
- The test separation of all above table(body part) is 0mm.
- Plots are only shown for the bold markered worst case SAR results

Repeated SAR										
Product: Android Tablet										
Test Mode: 2.4GHz 802.11b										
Position	**Mode**	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**Once SAR (1g) (W/kg)**	**Power Drift (<±5%)**	**Twice SAR (1g) (W/kg)**	**Power Drift (<±5%)**	**Third SAR (1g) (W/kg)**	**Limit W/kg**
Edge 2 (Right)	DTS	11	2462	-0.26	1.051	--	--	--	--	1.6

The second repeated SAR judge reference								
Product: Android Tablet								
Band	**Position**	**Mode**	**Ch.**	**Fr. (MHz)**	**Orignal SAR (1g) (W/kg)**	**First SAR (1g) (W/kg)**	**Ratio**	**Limit**
2.4GHz 802.11b	Edge 2 (Right)	DTS	11	2462	1.142	1.051	1.087	<1.2

APPENDIX A. SAR SYSTEM CHECK DATA

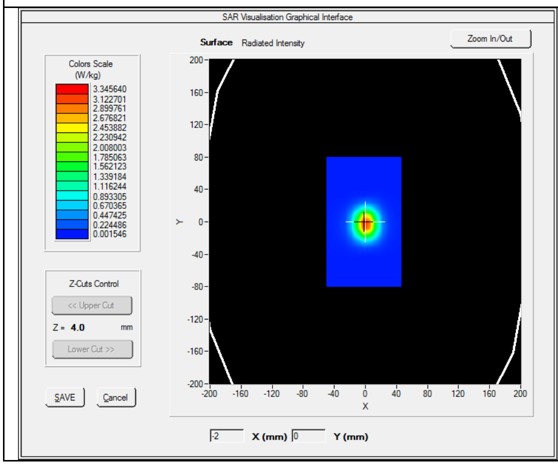
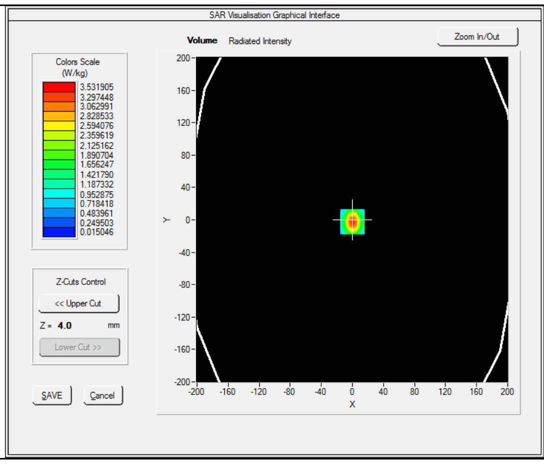
Test Laboratory: AGC Lab **Date: Oct. 24, 2022**
System Check Head 2450 MHz
DUT: Dipole 2450 MHz Type: SID 2450
Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Duty Cycle: 1:1; Conv.F=1.99
Frequency: 2450 MHz; Medium parameters used: f = 2450 MHz; σ =1.84 mho/m; εr =39.68; ρ = 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm

Ambient temperature (℃): 21.6, Liquid temperature (℃): 21.3

SATIMO Configuration:

- Probe: SSE2; Calibrated: Apr. 13, 2022; Serial No.: SN 13/22 EPGO368
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

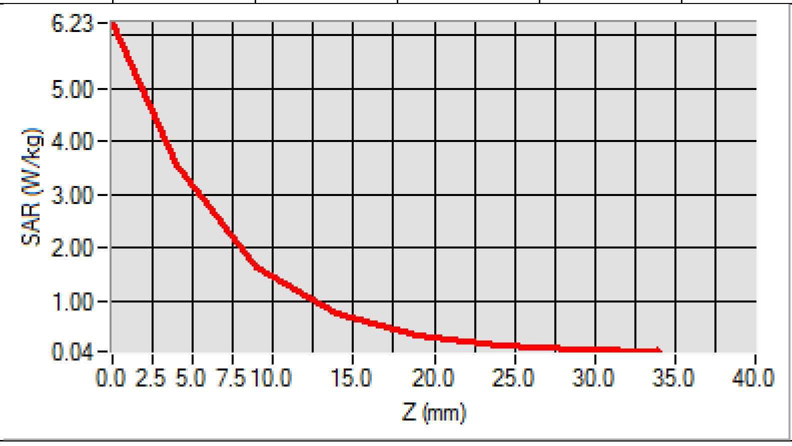
Configuration/System Check 2450 MHz Head/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check 2450 MHz Head/Zoom Scan: Measurement grid: dx=5mm,dy=5mm, dz=5mm

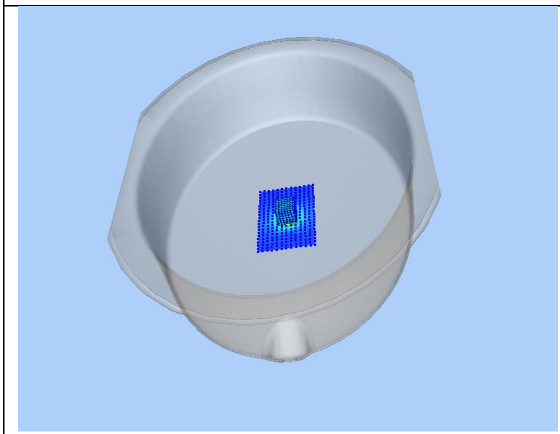
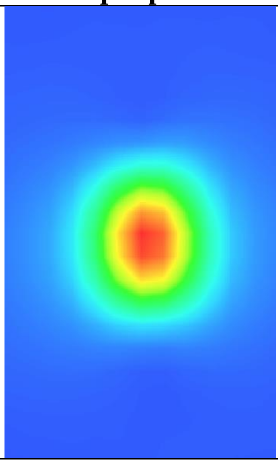
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=-2.00
SAR Peak: 6.14 W/kg

SAR 10g (W/Kg)	1.463072
SAR 1g (W/Kg)	3.249315

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	6.2294	3.5319	1.6079	0.7541	0.3574	0.1718	0.0832



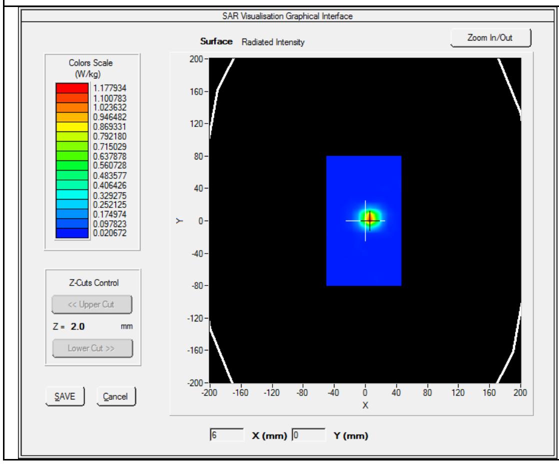
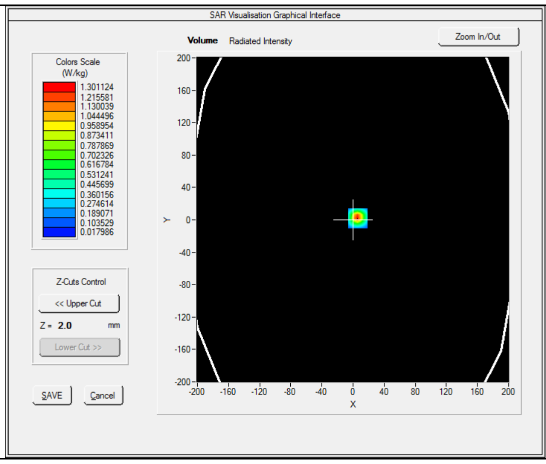
3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Oct. 25, 2022**
System Check Head 5200 MHz
DUT: Dipole 5000MHz Type: SID5000
Communication System: CW; Communication System Band: D5000 (5000.0 MHz); Duty Cycle: 1:1; Conv.F=1.28
Frequency: 5200 MHz; Medium parameters used: f = 5200 MHz; σ =4.61 mho/m; εr =35.29; ρ = 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=10dBm
Ambient temperature (℃): 21.7, Liquid temperature (℃): 21.4

SATIMO Configuration:

- Probe: SSE2; Calibrated: Apr. 13, 2022; Serial No.: SN 13/22 EPGO368
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

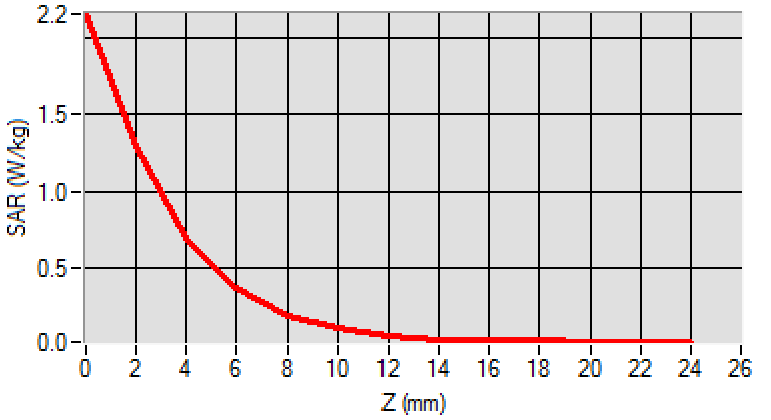
Configuration/System Check 5200 MHz Head/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check 5200 MHz Head/Zoom Scan: Measurement grid: dx=4mm,dy=4mm, dz=2mm

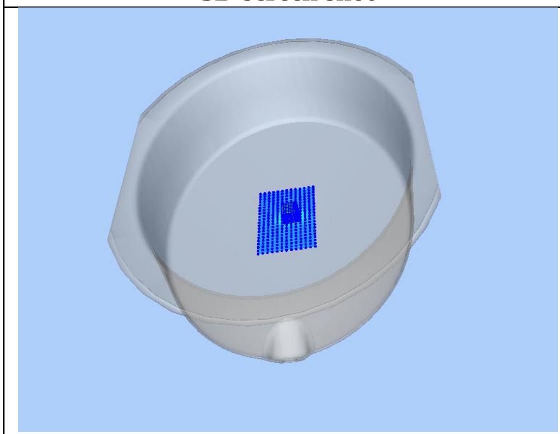
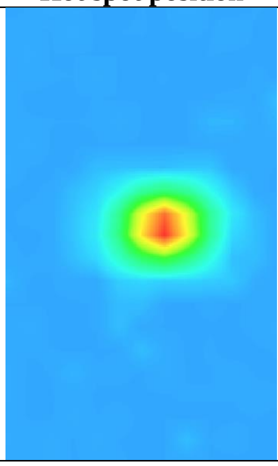
SURFACE SAR	VOLUME SAR
	

Maximum location: X=6.00, Y=2.00
SAR Peak: 2.27 W/kg

SAR 10g (W/Kg)	0.217604
SAR 1g (W/Kg)	0.693146

Z (mm)	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)	2.1577	1.3011	0.6927	0.3696	0.1940	0.1101	0.0608	0.0391	0.0314	0.0303	0.0210	0.0210



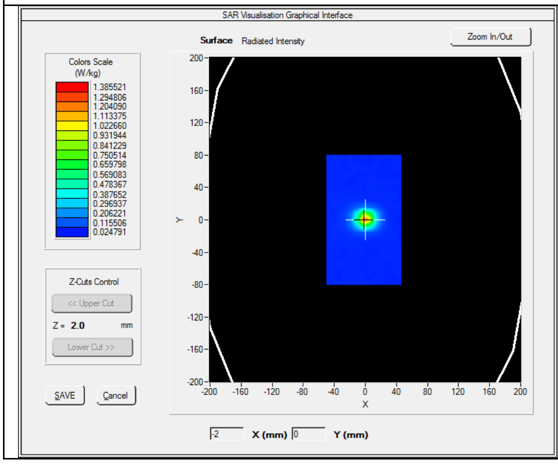
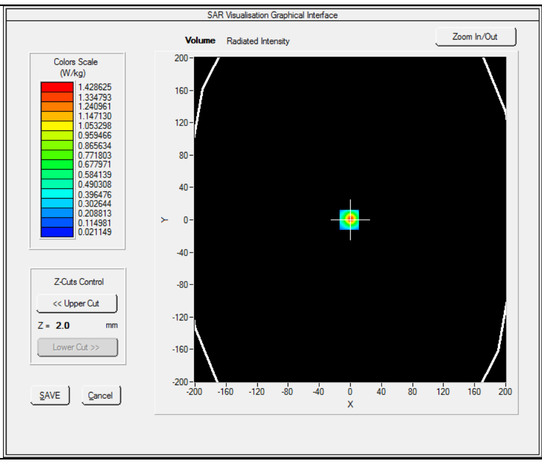
3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Oct. 26, 2022**
System Check Head 5800 MHz
DUT: Dipole 5000MHz Type: SID5000
Communication System: CW; Communication System Band: D5000 (5000.0 MHz); Duty Cycle: 1:1; Conv.F=1.42
Frequency: 5800 MHz; Medium parameters used: f = 5800 MHz; σ =5.22 mho/m; εr =34.91; ρ = 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=10dBm
Ambient temperature (℃): 21.2, Liquid temperature (℃): 20.9

SATIMO Configuration:

- Probe: SSE2; Calibrated: Apr. 13, 2022; Serial No.: SN 13/22 EPGO368
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

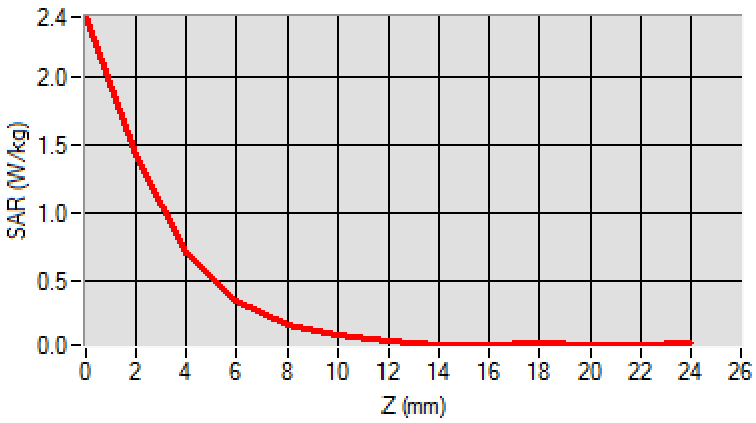
Configuration/System Check 5800 MHz Head/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check 5800 MHz Head/Zoom Scan: Measurement grid: dx=4mm,dy=4mm, dz=2mm

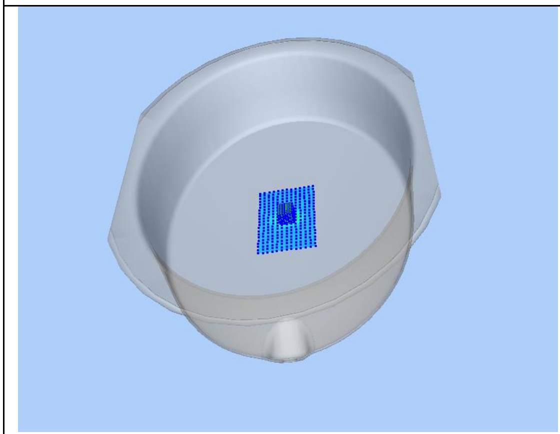
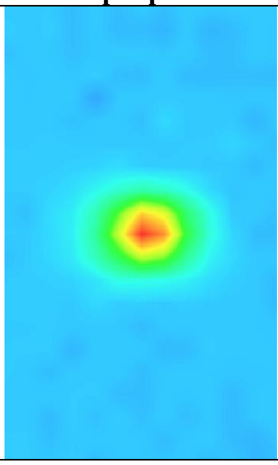
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-1.00, Y=0.00
SAR Peak: 2.62 W/kg

SAR 10g (W/Kg)	0.243087
SAR 1g (W/Kg)	0.767229

Z (mm)	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)	2.4386	1.4286	0.7074	0.3571	0.1801	0.1073	0.0623	0.0377	0.0381	0.0440	0.0361	0.0366



3D screen shot	Hot spot position
	

APPENDIX B. SAR MEASUREMENT DATA

2.4GHz 802.11b
Test Laboratory: AGC Lab **Date: Oct. 24, 2022**
802.11b High- Edge 2 (Right)
DUT: Android Tablet; Type: KST102SF

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=1.99;
Frequency: 2462 MHz; Medium parameters used: f = 2450 MHz; σ = 1.79mho/m; ε r =40.12; ρ = 1000 kg/m³ ;
Phantom section: Flat Section

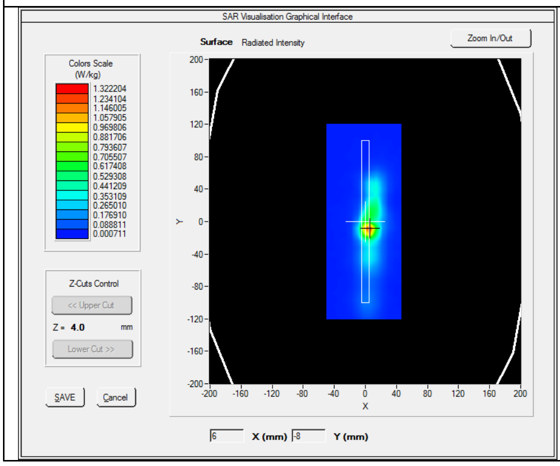
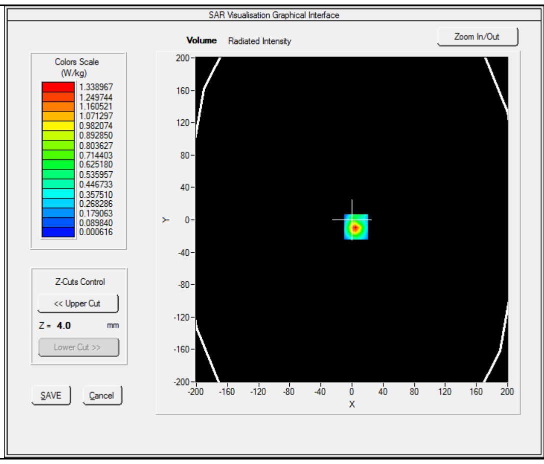
Ambient temperature (℃):21.6, Liquid temperature (℃): 21.3

SATIMO Configuration:

- Probe: SSE2; Calibrated: Apr. 13, 2022; Serial No.: SN 13/22 EPGO368
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/802.11b High-Edge 2 (Right)/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/802.11b High-Edge 2 (Right)/Zoom Scan: Measurement grid: dx=5mm,dy=5mm, dz=5mm;

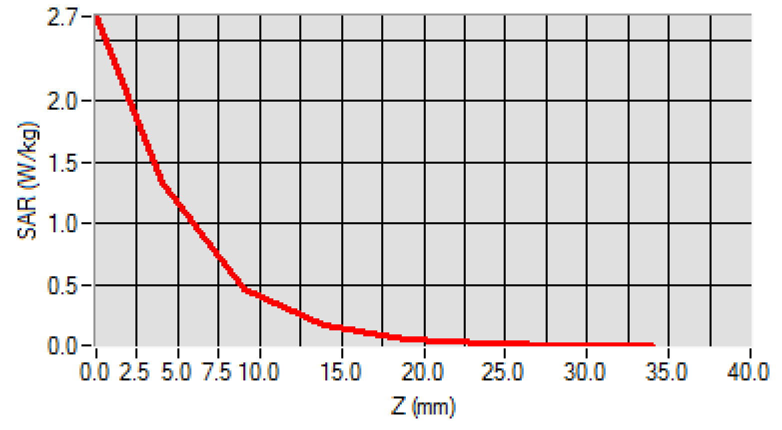
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	7x7x7,dx=5mm dy=5mm dz=5mm
Phantom	ELLI
Device Position	Edge 2 (Right)
Band	2450MHz
Channels	High
Signal	Crest factor: 1.0

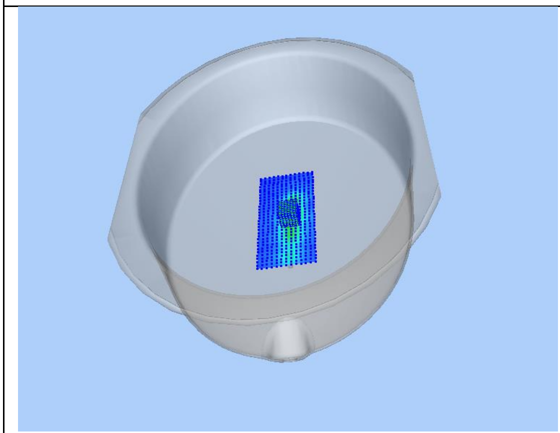
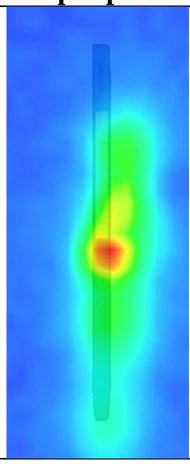
SURFACE SAR	VOLUME SAR
	

Maximum location: X=5.00, Y=-9.00
SAR Peak: 2.61 W/kg

SAR 10g (W/Kg)	0.416195
SAR 1g (W/Kg)	1.141531

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	2.6516	1.3390	0.4598	0.1714	0.0603	0.0239	0.0089



3D screen shot	Hot spot position
	

5.2GHz 802.11a
Test Laboratory: AGC Lab **Date: Oct. 25, 2022**
802.11a CH40- Body Back
DUT: Android Tablet; Type: KST102SF

Communication System: Wi-Fi; Communication System Band: 802.11a; Duty Cycle: 1:1; Conv.F=1.28;
Frequency: 5200MHz; Medium parameters used: f = 5200 MHz; σ = 4.61mho/m; ε r =35.29; ρ = 1000 kg/m³ ;
Phantom section: Flat Section

Ambient temperature (℃): 21.7, Liquid temperature (℃): 21.4

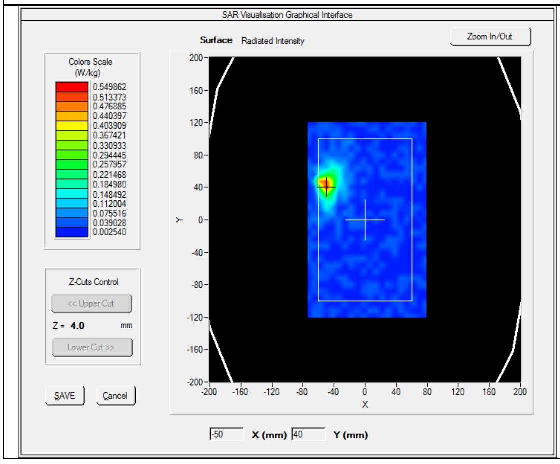
SATIMO Configuration:

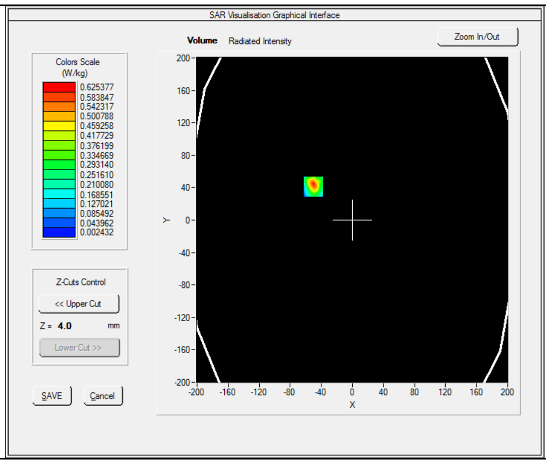
- Probe: SSE2; Calibrated: Apr. 13, 2022; Serial No.: SN 13/22 EPGO368
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/802.11a CH40- Body Back /Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/802.11a CH40- Body Back /Zoom Scan: Measurement grid: dx=4mm,dy=4mm, dz=2mm

Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	7x7x12 dx=4mm dy=4mm dz=2mm
Phantom	ELLI
Device Position	Body Back
Band	5200MHz
Channels	CH40
Signal	Crest factor: 1.0

SURFACE SAR	VOLUME SAR

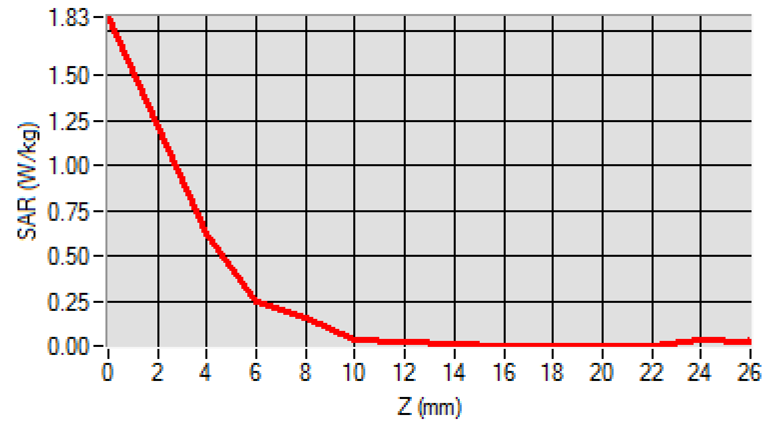


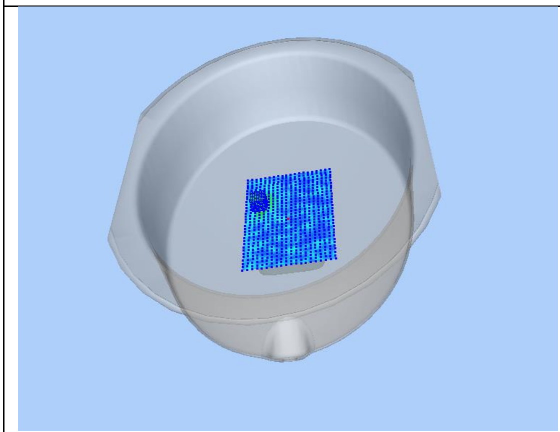
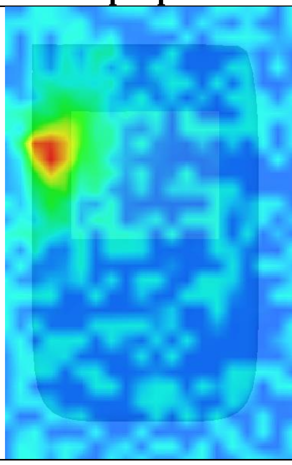


Maximum location: X=-50.00, Y=41.00
SAR Peak: 1.76 W/kg

SAR 10g (W/Kg)	0.202385
SAR 1g (W/Kg)	0.583584

Z (mm)	0.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	24.00
SAR (W/Kg)	1.8253	0.6254	0.2529	0.1569	0.0335	0.0207	0.0185	0.0068	0.0042	0.0046	0.0032	0.0343



3D screen shot	Hot spot position
	

5.8GHz 802.11a
Test Laboratory: AGC Lab **Date: Oct. 26, 2022**
802.11a CH157- Body Back
DUT: Android Tablet; Type: KST102SF

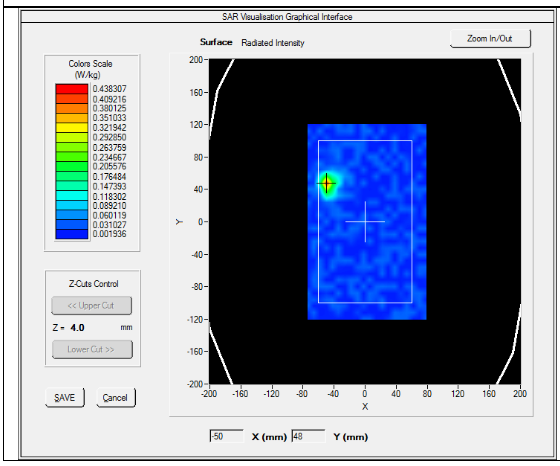
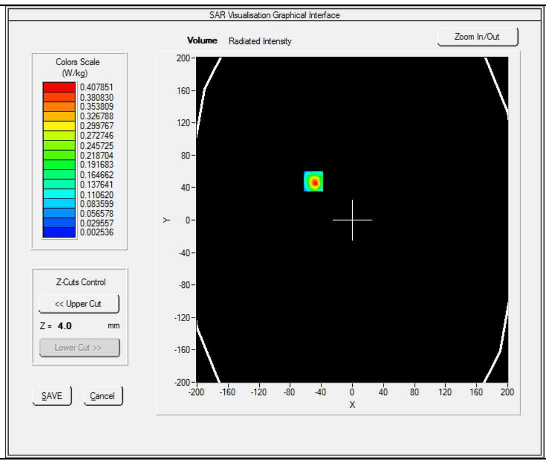
Communication System: Wi-Fi; Communication System Band: 802.11a; Duty Cycle: 1:1; Conv.F=1.42; Frequency: 5785MHz; Medium parameters used: f = 5800 MHz; σ = 5.19mho/m; εr =35.69; ρ = 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 21.2, Liquid temperature (℃): 20.9

SATIMO Configuration:

- Probe: SSE2; Calibrated: Apr. 13, 2022; Serial No.: SN 13/22 EPGO368
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/ 802.11a CH157- Body Back /Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ 802.11a CH157- Body Back /Zoom Scan: Measurement grid: dx=4mm,dy=4mm, dz=2mm

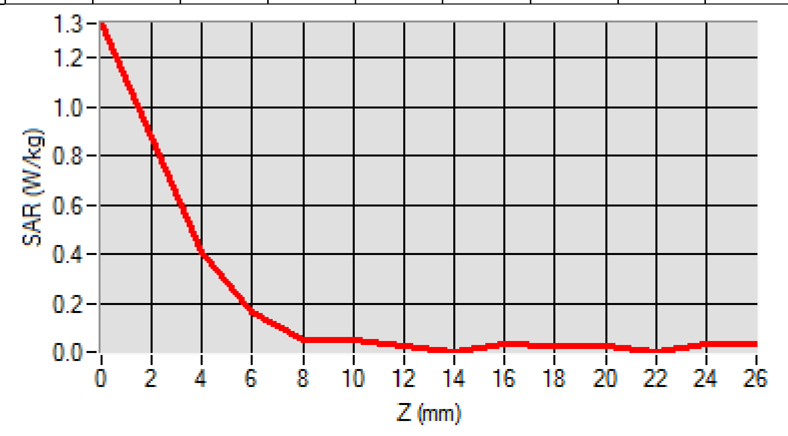
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	7x7x12 dx=4mm dy=4mm dz=2mm
Phantom	ELLI
Device Position	Body Back
Band	5800MHz
Channels	CH157
Signal	Crest factor: 1.0

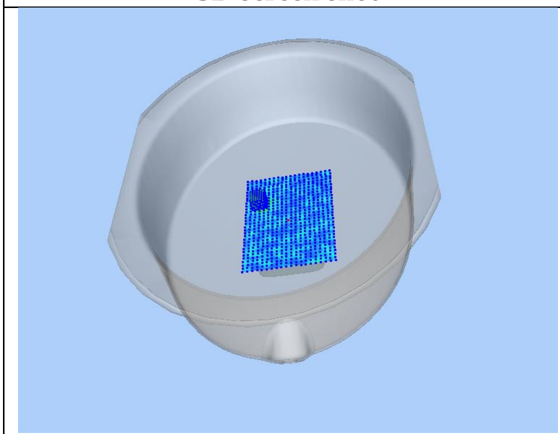
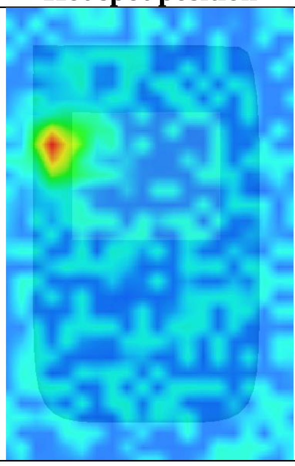
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-50.00, Y=48.00
SAR Peak: 1.31 W/kg

SAR 10g (W/Kg)	0.130970
SAR 1g (W/Kg)	0.391630

Z (mm)	0.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	24.00
SAR (W/Kg)	1.3393	0.4079	0.1632	0.0493	0.0522	0.0262	0.0050	0.0359	0.0319	0.0321	0.0038	0.0332



3D screen shot	Hot spot position
	

Repeated SAR

2.4GHz 802.11b
Test Laboratory: AGC Lab **Date: Oct. 24, 2022**
802.11b High- Edge 2 (Right)
DUT: Android Tablet; Type: KST102SF

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=1.99;
Frequency: 2462 MHz; Medium parameters used: f = 2450 MHz; σ = 1.79mho/m; ε r =40.12; ρ = 1000 kg/m³ ;
Phantom section: Flat Section

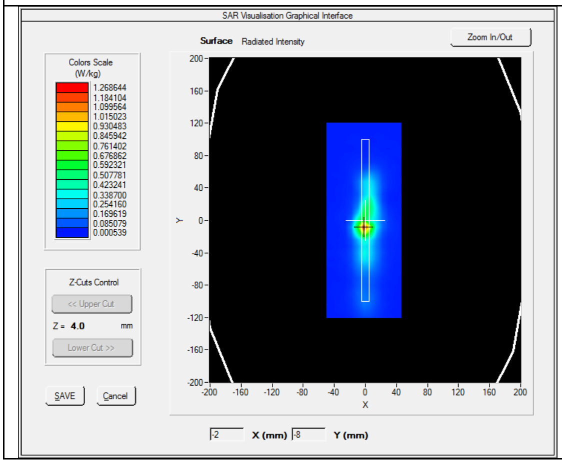
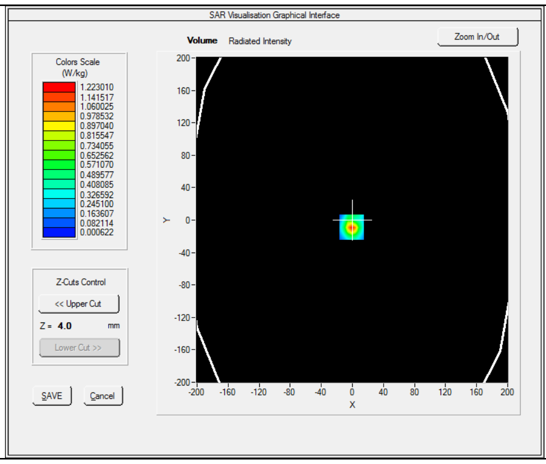
Ambient temperature (℃):21.6, Liquid temperature (℃): 21.3

SATIMO Configuration:

- Probe: SSE2; Calibrated: Apr. 13, 2022; Serial No.: SN 13/22 EPGO368
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: ELLI39 Phantom
- Measurement SW: OpenSAR V4_02_35

Configuration/802.11b High-Edge 2 (Right)/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/802.11b High-Edge 2 (Right)/Zoom Scan: Measurement grid: dx=5mm,dy=5mm, dz=5mm;

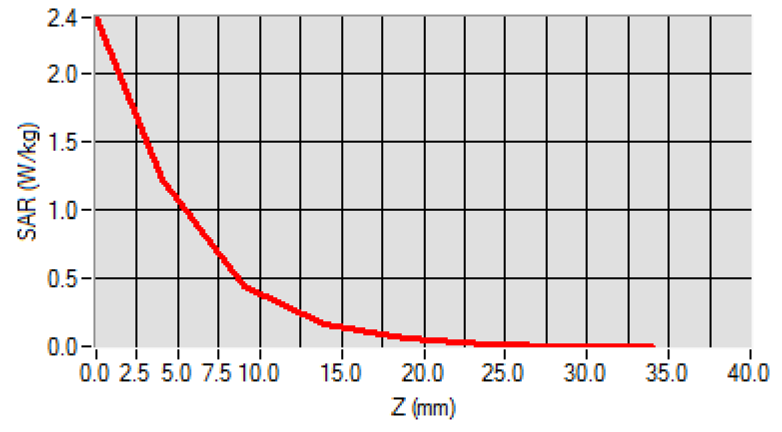
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	7x7x7,dx=5mm dy=5mm dz=5mm
Phantom	ELLI
Device Position	Edge 2 (Right)
Band	2450MHz
Channels	High
Signal	Crest factor: 1.0

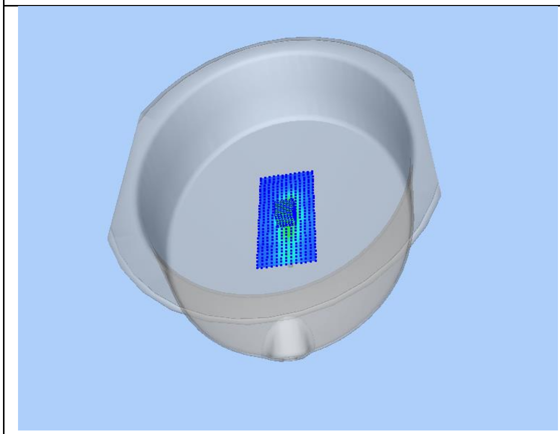
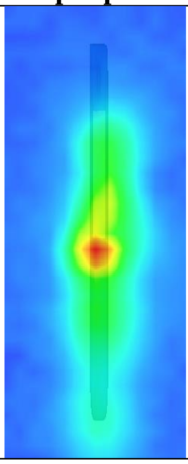
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-1.00, Y=-9.00
SAR Peak: 2.37 W/kg

SAR 10g (W/Kg)	0.380447
SAR 1g (W/Kg)	1.051201

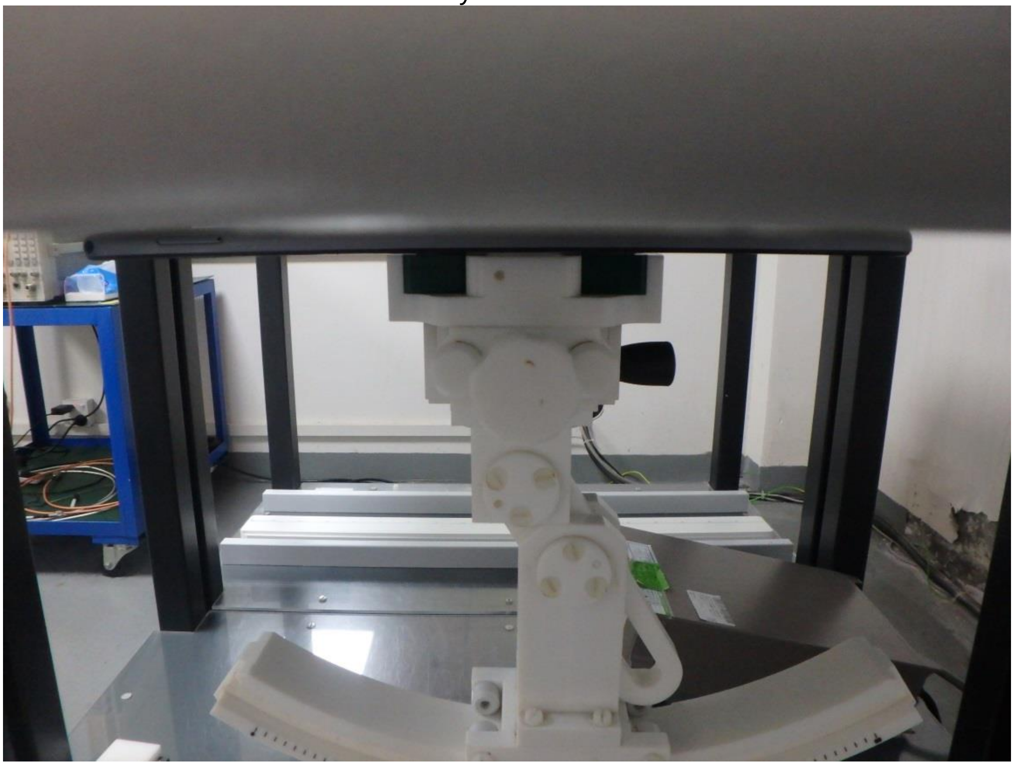
Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	2.4091	1.2230	0.4392	0.1663	0.0600	0.0252	0.0109



3D screen shot	Hot spot position
	

APPENDIX C. TEST SETUP PHOTOGRAPHS

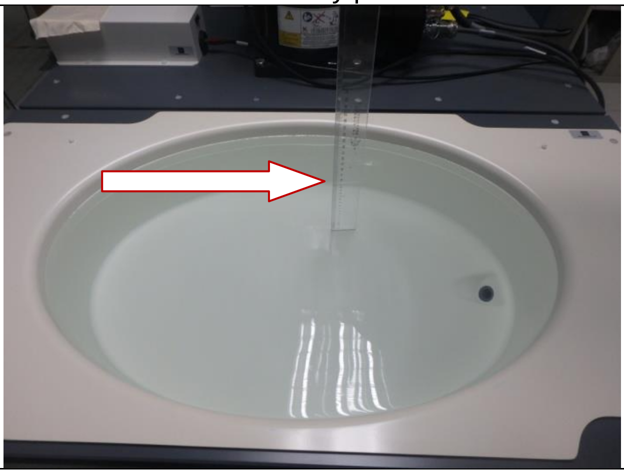
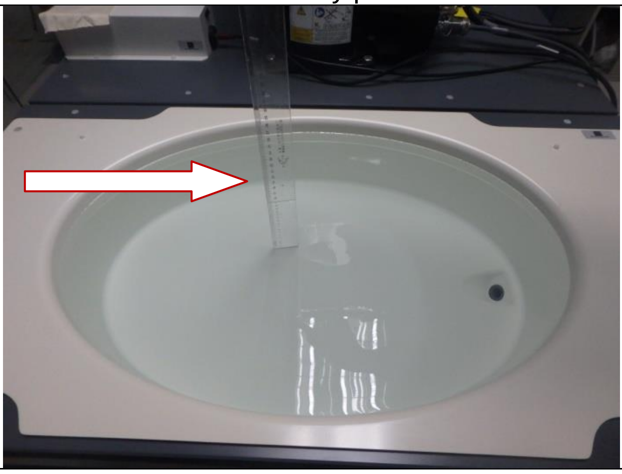
Body Back 0mm



Edge 2 (Right) 0mm

DEPTH OF THE LIQUID IN THE PHANTOM—ZOOM IN

Note：The position used in the measurement were according to IEEE Std. 1528:2013

2450MHz body phantom	5000MHz body phantom
	

APPENDIX D. CALIBRATION DATA

Refer to Attached files.

----END OF REPORT----

Conditions of Issuance of Test Reports

1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd. (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").
2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
3.The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
7.Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

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