

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 : PocketBook InkPad One

Trademark : Pocketbook

Model Name : PB1030

Family Model : N/A

Report No. : N25103001218E

FCC ID : 2A2JY-PB1030

Prepared for

Pocketbook International SA

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TEST RESULT CERTIFICATION

Applicant's name Pocketbook International SA
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Manufacturer's Name..... Pocketbook International SA
Address Crocicchio Cortogna, 6, 6900, Lugano, Switzerland

Product description

Product name PocketBook InkPad One
Trademark Pocketbook
Model Name PB1030
Family Model N/A

Standards FCC 47 CFR Part 2(2.1093)
 ANSI/IEEE C95.1-1992
 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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Test Sample Number S2510300109-1#

Date of Test

Date (s) of performance of tests ... Nov. 10, 2025~ Nov. 14, 2025

Date of Issue Nov. 20, 2025

Test Result **Pass**

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❖ ❖ Revision History ❖ ❖

REV.	DESCRIPTION	ISSUED DATE	REMARK
Rev.1.0	Initial Test Report Release	Nov. 20, 2025	Owen Xiao

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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

Trunk Limit

1.6 W/kg

APPLIED TO THIS EUT

1.2. EUT Description

Device Information			
Product Name	PocketBook InkPad One		
Trade Name	Pocketbook		
Model Name	PB1030		
Family Model	N/A		
Model Difference	N/A.		
FCC ID	2A2JY-PB1030		
Device Phase	Identical Prototype		
Exposure Category	General population / Uncontrolled environment		
Antenna Type	FPC antenna		
Battery Information	DC 3.8V, 3700mAh		
Hardware version	V1.2		
Software version	N/A		
Device Operating Configurations			
Supporting Mode(s)	WLAN 2.4G/5G, Bluetooth		
Test Modulation	WLAN(DSSS/OFDM, OFDMA), Bluetooth(GFSK, π/4-DQPSK, 8DPSK)		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	WLAN 2.4G	2412-2462	
	WLAN 5.2G	5180-5240	
	WLAN 5.3G	5260-5320	
	WLAN 5.6G	5500-5700	
	WLAN 5.8G	5745-5825	
	Bluetooth	2402-2480	

1.3. 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 v01r04
KDB 865664 D02 RF Exposure Reporting v01r02;
KDB 447498 D01 General RF Exposure Guidance v06;
KDB 248227 D01 802.11 Wi-Fi SAR v02r02;

1.4. Ambient Condition

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

1.5. Facilities And Accreditations

1.5.1. Facilities

All measurement facilities used to collect the measurement data are located at Building 1, No. 24 Xinfu East Road, Xiangshan Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, China

The sites are constructed in conformance with the requirements of IEC/IEEE Std 1528-2013

1.6. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for PB1030 are as follows.

Band	Max Reported SAR Value(W/kg)
	1-g Body (Separation distance of 0mm)
WLAN 2.4G	1.430
Bluetooth LE	0.157
Bluetooth BR+EDR	0.274
WLAN 5.2G	1.517
WLAN 5.3G	1.205
WLAN 5.6G	1.254
WLAN 5.8G	0.833

Note: 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.

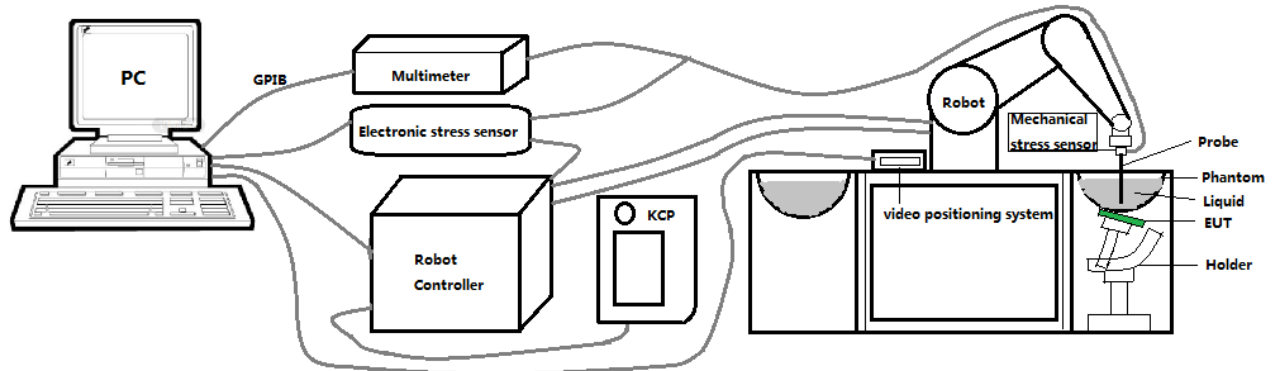
1.6.1. Laboratory Accreditations And Listings

Site Description

CNAS Lab. : The Certificate Registration Number is L5516
A2LA Lab. : The Certificate Registration Number is 4298.01
FCC Accredited : Test Firm Registration Number: 463705
Designation Number: CN1184
ISED Registration : Company Number: 9270A
CAB identifier: CN0074

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 0725-EPGO-448 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: ± 0.06 dB
- Axial isotropy: ± 0.01 dB
- Hemispherical Isotropy: ± 0.01 dB
- Calibration range: 650MHz to 5900MHz for head & body simulating liquid.
- Lower detection limit: 8mW/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.

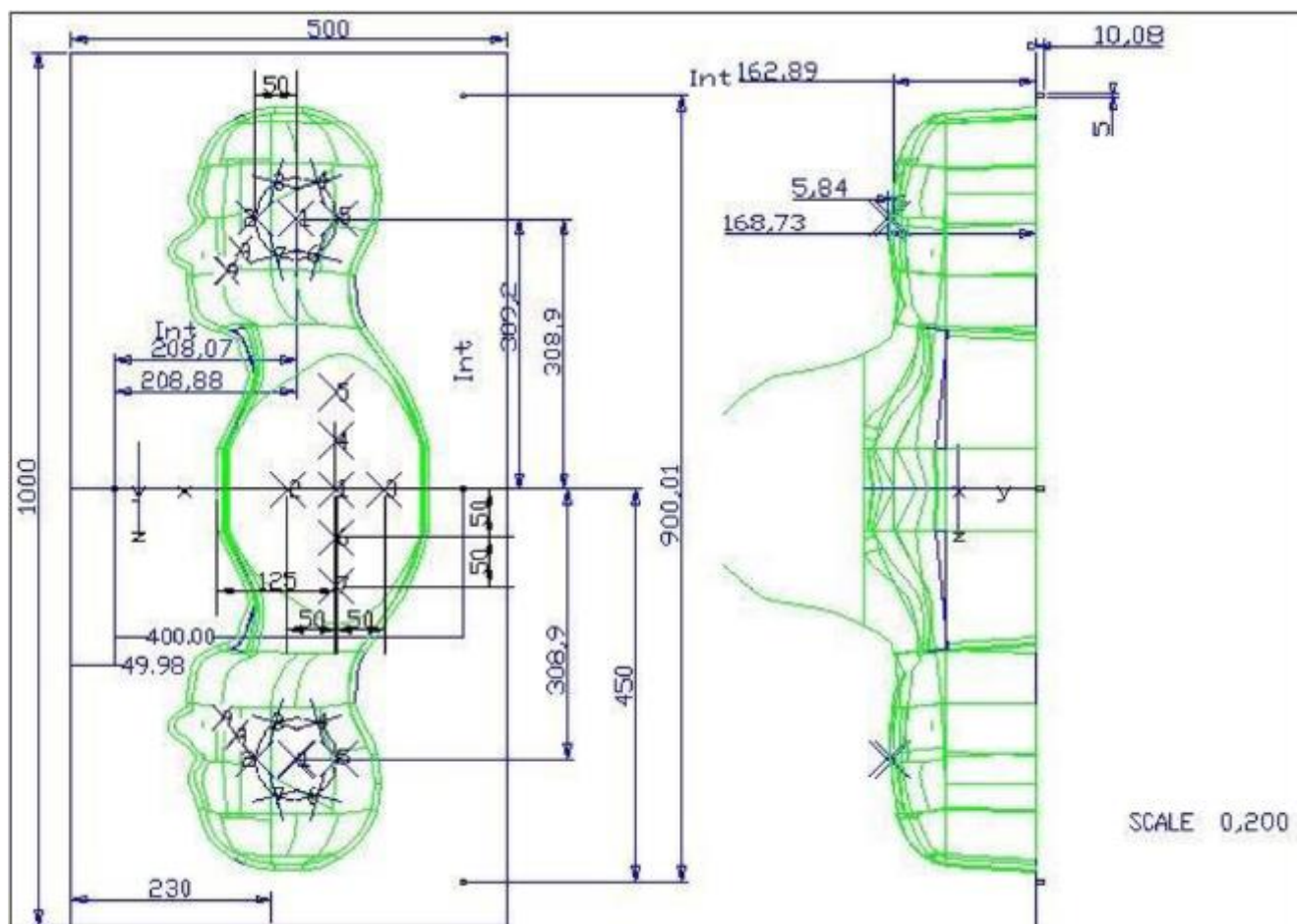
2.4. SAM phantoms

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.

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

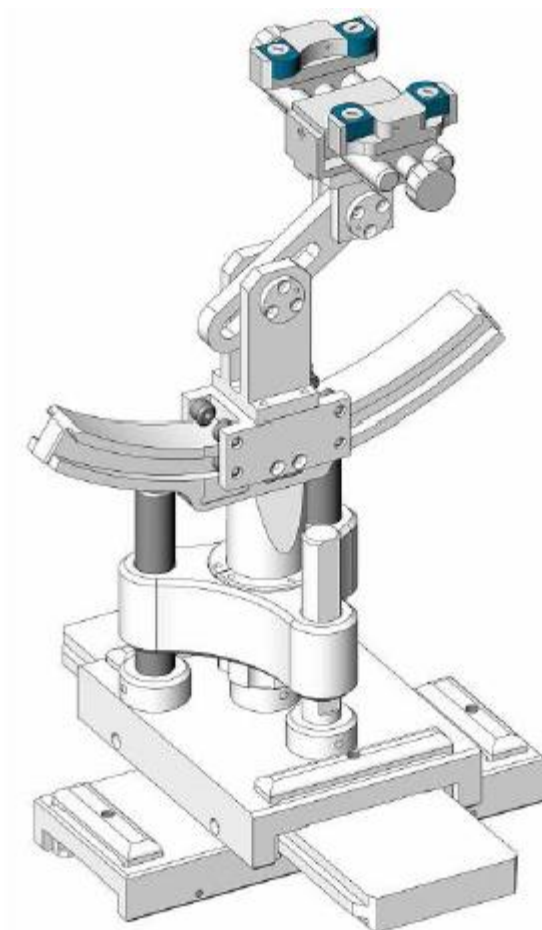


Serial Number	Left Head(mm)		Right Head(mm)		Flat Part(mm)	
SN 16/15 SAM119	2	2.02	2	2.08	1	2.09
	3	2.05	3	2.06	2	2.06
	4	2.07	4	2.07	3	2.08
	5	2.08	5	2.08	4	2.10
	6	2.05	6	2.07	5	2.10
	7	2.05	7	2.05	6	2.07
	8	2.07	8	2.06	7	2.07
	9	2.08	9	2.06	-	-

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

2.5. Device Holder

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



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

2.6. Test Equipment List

This table gives a complete overview of the SAR measurement equipment. Devices used during the test described are marked ☒

	Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
					Last Cal.	Due Date
☒	MVG	E FIELD PROBE	SSE2	0725-EPGO-448	Apr. 15, 2025	Apr. 14, 2026
☐	MVG	750 MHz Dipole	SID750	SN 03/15 DIP 0G750-355	Feb. 21, 2024	Feb. 20, 2027
☐	MVG	835 MHz Dipole	SID835	SN 03/15 DIP 0G835-347	Feb. 21, 2024	Feb. 20, 2027
☐	MVG	900 MHz Dipole	SID900	SN 03/15 DIP 0G900-348	Feb. 21, 2024	Feb. 20, 2027
☐	MVG	1800 MHz Dipole	SID1800	SN 03/15 DIP 1G800-349	Feb. 21, 2024	Feb. 20, 2027
☐	MVG	1900 MHz Dipole	SID1900	SN 03/15 DIP 1G900-350	Feb. 21, 2024	Feb. 20, 2027
☐	MVG	2000 MHz Dipole	SID2000	SN 03/15 DIP 2G000-351	Feb. 21, 2024	Feb. 20, 2027
☐	MVG	2300 MHz Dipole	SID2300	SN 03/16 DIP 2G300-358	Feb. 22, 2024	Feb. 21, 2027
☒	MVG	2450 MHz Dipole	SID2450	SN 03/15 DIP 2G450-352	Feb. 21, 2024	Feb. 20, 2027
☐	MVG	2600 MHz Dipole	SID2600	SN 03/15 DIP 2G600-356	Feb. 21, 2024	Feb. 20, 2027
☒	MVG	5000 MHz Dipole	SWG5500	SN 13/14 WGA 33	Feb. 21, 2024	Feb. 20, 2027
☒	MVG	Liquid measurement Kit	SCLMP	SN 21/15 OCPG 72	NCR	NCR
☒	MVG	Power Amplifier	N/A	AMPLISAR_28/14_003	NCR	NCR
☒	KEITHLEY	Millivoltmeter	2000	4072790	May. 12, 2025	May. 11, 2026
☒	R&S	Universal radio communication tester	CMU200	105747	Apr. 17, 2025	Apr. 16, 2026
☒	R&S	Wideband radio communication tester	CMW500	103917	May. 12, 2025	May. 11, 2026
☐	Anritsu	4G LTE comprehensive tester	MT8821C	6262192315	Apr.16, 2025	Apr.15, 2026
☒	Anritsu	5G NR comprehensive tester	MT8000A	6262186364	Apr.16, 2025	Apr.15, 2026
☒	Keysight	Network Analyzer	E5071C	LPS-461	Jun. 3, 2025	Jun. 2, 2026

☒	Agilent	Calibration Kit	85033E	N/A	May. 31, 2024	May. 30, 2027
☒	Agilent	MXG Vector Signal Generator	N5182A	MY47070317	Apr. 17, 2025	Apr. 16, 2026
☒	Agilent	Power sensor	E9301A	LES-413-C	May. 6, 2025	May. 5, 2026
☒	Agilent	Power sensor	E9301A	US39212148	Apr. 17, 2025	Apr. 16, 2026
☒	MCLI/USA	Directional Coupler	CB11-20	0D2L51502	Apr. 26, 2024	Apr. 25, 2027
☒	N/A	Thermometer	N/A	LES-085	Mar. 27, 2023	Mar. 26, 2026
☒	MVG	SAM Phantom	SSM2	SN 16/15 SAM119	NCR	NCR
☒	MVG	Device Holder	SMPPD	SN 16/15 MSH100	NCR	NCR

Measurement Software

Manufacturer	Software Name	Software Version
SATIMO	OpenSAR	V5.3.15.11

3. SAR Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

3.1. Power Reference

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

3.2. Area scan & Zoom scan

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

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

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

MHz to 6 GHz.

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

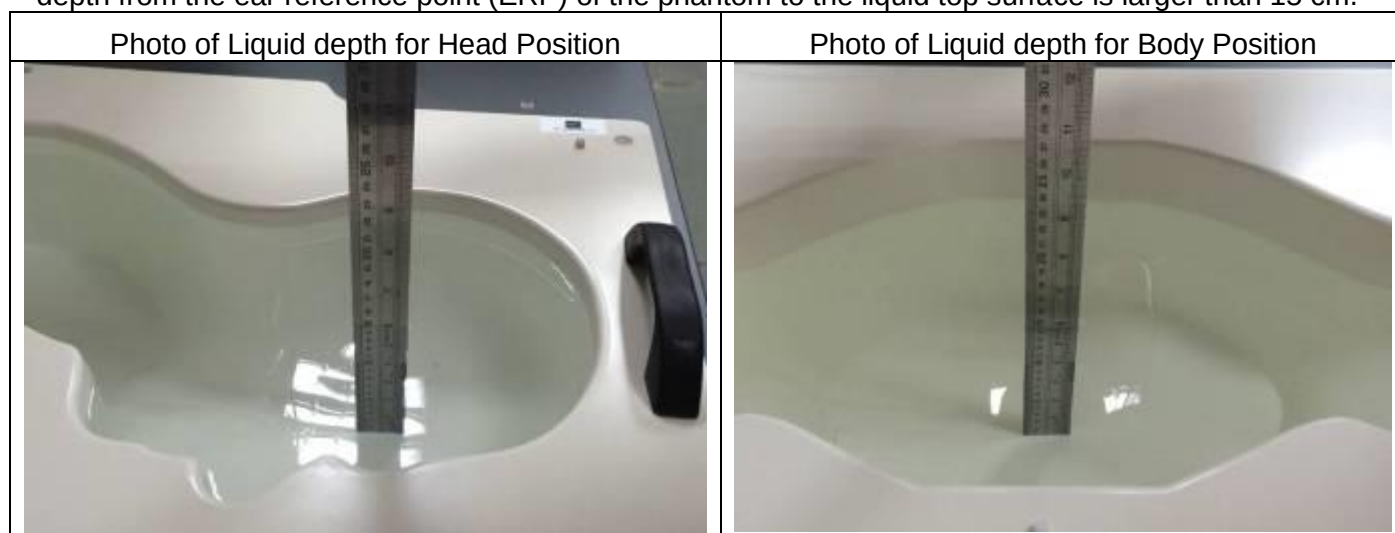
4. System Verification Procedure

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

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 if the dielectric parameters 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		Delta(%)		Liquid Temp.	Test Date
		ϵ_r	σ (S/m)	ϵ_r	σ (S/m)	ϵ_r	σ (S/m)		
Head 2450	2450	39.20	1.80	37.99	1.84	-3.09	2.22	21.9 °C	Nov. 14, 2025
Head 5200	5200	36.00	4.66	36.67	4.57	1.86	-1.93	21.2 °C	Nov. 12, 2025
Head 5200	5200	36.00	4.66	36.53	4.53	1.47	-2.79	21.4 °C	Nov. 26, 2025
Head 5400	5400	35.80	4.86	34.46	4.96	-3.74	2.06	21.3 °C	Nov. 10, 2025
Head 5600	5600	35.50	5.07	34.89	5.02	-1.72	-0.99	21.6 °C	Nov. 11, 2025
Head 5800	5800	35.30	5.27	35.15	5.17	-0.42	-1.90	21.7 °C	Nov. 13, 2025

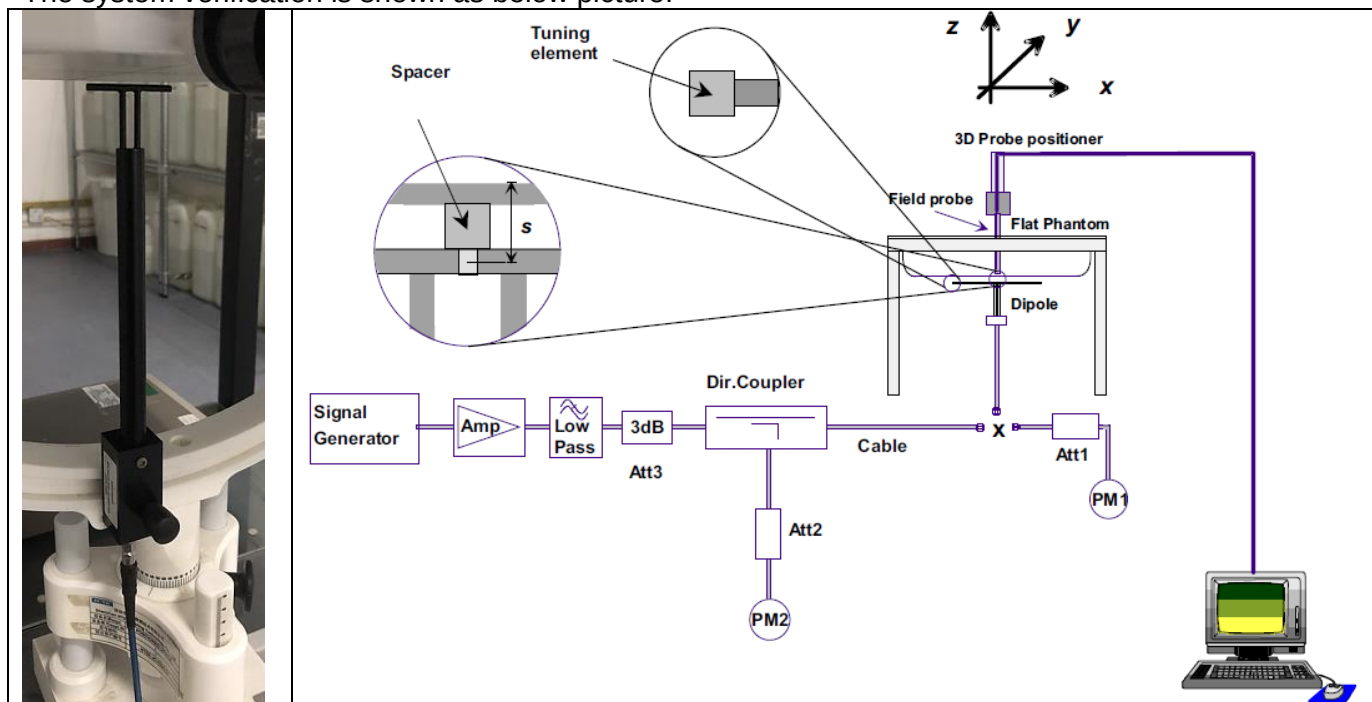
NOTE: 1. The dielectric parameters of the tissue-equivalent liquid should be measured under similar ambient conditions and within 2 °C of the conditions expected during the SAR evaluation to satisfy protocol requirements.

NOTE: 2. Tested by : Max Zhou, Jack Peng

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 10mW (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)		Measured SAR			Measured SAR		Delta (%)		Liquid Temp.	Test Date
						(Normalized to 1W)					
	1-g (W/Kg)	10-g (W/Kg)	Input Power (mW)	1-g (W/Kg)	10-g (W/Kg)	1-g (W/Kg)	10-g (W/Kg)	1-g (%)	10-g (%)		
2450MHz	50.05	23.80	100.00	5.15	2.24	51.52	22.37	2.94	-6.01	21.9 °C	Nov. 14, 2025
5200MHz	162.59	56.21	10.00	1.70	0.59	169.60	58.60	4.31	4.25	21.2 °C	Nov. 12, 2025
5200MHz	162.59	56.21	10.00	1.67	0.57	166.80	57.40	2.59	2.12	21.4 °C	Nov. 26, 2025
5400MHz	159.81	55.00	10.00	1.52	0.53	152.30	53.40	-4.70	-2.91	21.3 °C	Nov. 10, 2025
5600MHz	179.15	61.01	10.00	1.93	0.66	192.80	65.70	7.62	7.69	21.6 °C	Nov. 11, 2025
5800MHz	182.20	61.32	10.00	1.75	0.59	175.30	58.70	-3.79	-4.27	21.7 °C	Nov. 13, 2025

NOTE: 1. Tested by : Max Zhou, Jack Peng

4.2.2. Initial Test Position SAR Test Reduction Procedure

DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures. The initial test position procedure is described in the following:

When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other (remaining) test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band. SAR is also not required for that exposure configuration in the subsequent test configuration(s).

When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest extrapolated or estimated 1-g SAR conditions determined by area scans or next closest/smallest test separation distance and maximum RF coupling test positions based on manufacturer justification, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions (left, right, touch, tilt or subsequent surfaces and edges) are tested.

For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested. a) Additional power measurements may be required for this step, which should be limited to those necessary for identifying the subsequent highest output power channels.

4.2.3. Initial Test Configuration Procedures

An initial test configuration is determined for OFDM transmission modes according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. SAR is measured using the highest measured maximum output power channel. For configurations with the same specified or measured maximum output power, additional transmission mode and test channel selection procedures are required. SAR test reduction for subsequent highest output test channels is determined according to reported SAR of the initial test configuration.

For next to the ear, hotspot mode and UMC mini-tablet exposure configurations where multiple test positions are required, the initial test position procedure is applied to minimize the number of test positions required for SAR measurement using the initial test configuration transmission mode. For fixed exposure conditions that do not have multiple SAR test positions, SAR is measured in the transmission mode determined by the initial test configuration.

When the reported SAR of the initial test configuration is $> 0.8 \text{ W/kg}$, SAR measurement is required for subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is $\leq 1.2 \text{ W/kg}$ or all required channels are tested.

4.2.4. Subsequent Test Configuration Procedures

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, 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 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 $\leq 1.2 \text{ W/kg}$, SAR is not required for that subsequent test configuration.
3. The number of channels in the initial test configuration and subsequent test configuration can be different due to differences in channel bandwidth. When SAR measurement is required for a subsequent test configuration and the channel bandwidth is smaller than that in the initial test configuration, all channels in the subsequent test configuration that overlap with the larger bandwidth channel tested in the initial test configuration should be used to determine the highest maximum output power channel. This step requires additional power measurement to identify the highest maximum output power channel in the subsequent test configuration to determine SAR test reduction.

a. SAR should first be measured for the channel with highest measured output power in the subsequent test configuration.

b. SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the reported SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is $> 1.2 \text{ W/kg}$ or until all required channels are tested. i) For channels with the same measured maximum output power, SAR should be measured using the channel closest to the center frequency of the larger channel bandwidth channel in the initial test configuration.

4. SAR measurements for the remaining highest specified maximum output power OFDM transmission mode configurations that have not been tested in the initial test configuration (highest maximum output) or subsequent test configuration(s) (subsequent next highest maximum output power) is determined by recursively applying the subsequent test configuration procedures in this section to the remaining configurations according to the following:

a. replace “subsequent test configuration” with “next subsequent test configuration” (i.e., subsequent next highest specified maximum output power configuration)

b. replace “initial test configuration” with “all tested higher output power configurations”

4.2.5. 2.4 GHz Wi-Fi SAR Procedures

Separate SAR procedures are applied to DSSS and OFDM configurations in the 2.4 GHz band to simplify DSSS test requirements. For 802.11b DSSS SAR measurements, DSSS SAR procedure applies to fixed exposure test position and initial test position procedure applies to multiple exposure test positions. When SAR measurement is required for an OFDM configuration, the initial test configuration, subsequent test configuration and initial test position procedures are applied. The SAR test exclusion requirements for 802.11g/n OFDM configurations are described in following.

802.11b DSSS SAR Test Requirements

SAR is measured for 2.4 GHz 802.11b DSSS using either a fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

1. When the reported SAR of the highest measured maximum output power channel for the exposure configuration is $\leq 0.8 \text{ W/kg}$, no further SAR testing is required for 802.11b DSSS in that exposure configuration.

2. When the reported SAR is $> 0.8 \text{ W/kg}$, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is $> 1.2 \text{ W/kg}$, SAR is required for the third channel; i.e., all channels require testing.

2.4 GHz 802.11g/n OFDM SAR Test Exclusion Requirements

1. When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied (section 5.3, including sub-sections). SAR is not required for the following 2.4 GHz OFDM conditions. When KDB Publication 447498 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 $\leq 1.2 \text{ W/kg}$.

4.2.6. 5 GHz Wi-Fi SAR Procedures

• U-NII-1 and U-NII-2A Bands

For devices that operate in only one of the U-NII-1 and U-NII-2A bands, the normally required SAR procedures for OFDM configurations are applied. For devices that operate in both U-NII bands using the same transmitter and antenna(s), SAR test reduction is determined according to the following:

- 1) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, both bands are tested independently for SAR.
- 2) When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration; otherwise, both bands are tested independently for SAR.
- 3) The two U-NII bands may be aggregated to support a 160 MHz channel on channel number 50. Without additional testing, the maximum output power for this is limited to the lower of the maximum output power certified for the two bands. When SAR measurement is required for at least one of the bands and the highest reported SAR adjusted by the ratio of specified maximum output power of aggregated to standalone band is > 1.2 W/kg, SAR is required for the 160 MHz channel. This procedure does not apply to an aggregated band with maximum output higher than the standalone band(s); the aggregated band must be tested independently for SAR. SAR is not required when the 160 MHz channel is operating at a reduced maximum power and also qualifies for SAR test exclusion.

• U-NII-2C and U-NII-3 Bands

The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. When Terminal Doppler Weather Radar (TDWR) restriction applies, all channels that operate at 5.60 – 5.65 GHz must be included to apply the SAR test reduction and measurement procedures.

When the same transmitter and antenna(s) are used for U-NII-2C band and U-NII-3 band or 5.8 GHz band of §15.247, the bands may be aggregated to enable additional channels with 20, 40 or 80 MHz bandwidth to span across the band gap, as illustrated in Appendix B. The maximum output power for the additional band gap channels is limited to the lower of those certified for the bands. Unless band gap channels are permanently disabled, they must be considered for SAR testing. The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. To maintain SAR measurement accuracy and to facilitate test reduction, the channels in U-NII-2C band above 5.65 GHz may be grouped with the 5.8 GHz channels in U-NII-3 or §15.247 band to enable two SAR probe calibration frequency points to cover the bands, including the band gap channels. When band gap channels are supported and the bands are not aggregated for SAR testing, band gap channels must be considered independently in each band according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

• OFDM Transmission Mode SAR Test Configuration and Channel Selection Requirements

The initial test configuration for 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple configurations in a frequency band have the same specified maximum output power, the initial test configuration is determined according to the following steps applied sequentially.

- 1) The largest channel bandwidth configuration is selected among the multiple configurations with the same specified maximum output power.

- 2) If multiple configurations have the same specified maximum output power and largest channel bandwidth, the lowest order modulation among the largest channel bandwidth configurations is selected.
- 3) If multiple configurations have the same specified maximum output power, largest channel bandwidth and lowest order modulation, the lowest data rate configuration among these configurations is selected.
- 4) When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n. After an initial test configuration is determined, if multiple test channels have the same measured maximum output power, the channel chosen for SAR measurement is determined according to the following. These channel selection procedures apply to both the initial test configuration and subsequent test configuration(s), with respect to the default power measurement procedures or additional power measurements required for further SAR test reduction. The same procedures also apply to subsequent highest output power channel(s) selection.
 - a) The channel closest to mid-band frequency is selected for SAR measurement.
 - b) For channels with equal separation from mid-band frequency; for example, high and low channels or two mid-band channels, the higher frequency (number) channel is selected for SAR measurement.

• **SAR Test Requirements for OFDM configurations**

When SAR measurement is required for 802.11 a/n/ac OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. When the same transmitter and antenna(s) are used for U-NII-1 and U-NII-2A bands, additional SAR test reduction applies. When band gap channels between U-NII-2C band and 5.8 GHz U-NII-3 or §15.247 band are supported, the highest maximum output power transmission mode configuration and maximum output power channel across the bands must be used to determine SAR test reduction, according to the initial test configuration and subsequent test configuration requirements. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

4.2.7. Bluetooth Test Configuration

For the Bluetooth SAR tests, a communication link is set up with the test mode software for BT mode test. Bluetooth USES frequency hopping technology to divide the transmitted data into packets and transmit the packets respectively through 79 designated Bluetooth channels, 1MHz Bandwidth, frequency hops at 1600 hops/second per the Bluetooth standard. The Radio Frequency Channel Number (RFCN) is allocated to 0, 39 and 78 respectively in the case of 2402~2480 MHz during the test at each test frequency channel, the EUT is operated at the RF continuous emission mode.

5. SAR Measurement variability and uncertainty

5.1. SAR measurement variability

Per IEC/IEEE 62209-1528 SAR measurement 4 MHz to 10 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. Uncertainty Evaluation For System Performance Check

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in IEC/IEEE 62209-1528. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Uncertainty Component	Tol. (±%)	Prob. Dist.	Div.	Ci (1 g)	Ci (10 g)	1 g Ui (±%)	10 g Ui (±%)	Vi
Measurement System								
Probe Calibration	7	N	1	1	1	7	7	∞
Axial Isotropy	3.5	R	$\sqrt{3}$	1	1	2.02	2.02	∞
Hemispherical Isotropy	5.9	R	$\sqrt{3}$	0	0	0	0	∞
Boundary Effect	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	4.7	R	$\sqrt{3}$	1	1	2.71	2.71	∞
System Detection Limits	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	0	R	$\sqrt{3}$	0	0	0	0	∞
Readout Electronics	0.5	N	1	1	1	0.5	0.5	∞
Response Time	0	R	$\sqrt{3}$	0	0	0	0	∞
Integration Time	1.4	R	$\sqrt{3}$	0	0	0	0	∞
RF Ambient Conditions - Noise	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞

RF Ambient Conditions - Reflections	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe Positioner Mechanical Tolerance	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe Positioning with respect to Phantom Shell	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
Dipole								
Deviation of experimental source from numerical source	5	N	1	1	1	5	5	∞
Input power and SAR drift measurement	0.5	N	1	1	1	0.5	0.5	∞
Dipole axis to liquid Distance	2	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Phantom and Tissue Parameters								
Phantom Uncertainty (shape and thickness tolerances)	4	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviation (in permittivity and conductivity)	2	N	1	1	0.84	2	1.68	∞
Liquid Conductivity (temperature uncertainty)	2.5	R	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid conductivity - measurement uncertainty	1.59	N	1	0.23	0.26	0.37	0.41	99
Liquid permittivity (temperature uncertainty)	2.5	R	$\sqrt{3}$	0.23	0.26	0.33	0.38	∞
Liquid permittivity - measurement uncertainty	1.65	N	1	0.23	0.26	0.38	0.43	99
Combined Standard Uncertainty		RSS				10.35	10.24	
Expanded Uncertainty (95% Confidence interval)		k				20.70	20.48	

5.3. Uncertainty Evaluation For EUT SAR Test

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in IEC/IEEE 62209-1528. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Uncertainty Component	Tol. ($\pm\%$)	Prob. Dist.	Div.	Ci (1 g)	Ci (10 g)	1 g Ui ($\pm\%$)	10 g Ui ($\pm\%$)	Vi
Measurement System								
Probe Calibration	7	N	1	1	1	7	7	∞
Axial Isotropy	3.5	R	$\sqrt{3}$	0.71	0.71	1.43	1.43	∞
Hemispherical Isotropy	5.9	R	$\sqrt{3}$	0.71	0.71	2.41	2.41	∞
Boundary Effect	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞

Linearity	4.7	R	$\sqrt{3}$	1	1	2.71	2.71	∞
System Detection Limits	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	10	R	$\sqrt{3}$	1	1	5.77	5.77	∞
Readout Electronics	0.5	N	1	1	1	0.5	0.5	∞
Response Time	0	R	$\sqrt{3}$	1	1	0	0	∞
Integration Time	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
RF Ambient Conditions - Noise	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF Ambient Conditions - Reflections	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe Positioner Mechanical Tolerance	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe Positioning with respect to Phantom Shell	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
Test sample Related								
Test Sample Positioning	2.6	N	1	1	1	2.6	2.6	11
Device Holder Uncertainty	3	N	1	1	1	3	3	7
Output Power Variation - SAR drift measurement	5	N	1	1	1	5	5	∞
SAR scaling	2	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Phantom and Tissue Parameters								
Phantom Uncertainty (shape and thickness tolerances)	4	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviation (in permittivity and conductivity)	2	N	1	1	0.84	2	1.68	∞
Liquid Conductivity (temperature uncertainty)	2.5	R	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid conductivity - measurement uncertainty	1.59	N	1	0.23	0.26	0.37	0.41	99
Liquid permittivity (temperature uncertainty)	2.5	R	$\sqrt{3}$	0.23	0.26	0.33	0.38	∞
Liquid permittivity - measurement uncertainty	1.65	N	1	0.23	0.26	0.38	0.43	99
Combined Standard Uncertainty		RSS				12.51	12.42	
Expanded Uncertainty (95% Confidence interval)		k				25.02	24.84	

6. RF Exposure Positions

6.1. Generic device

The SAR evaluation shall be performed for surface of the DUT that are accessible during intended use, as indicated in Figure 6.1. Adjust the distance between the device surface and the flat phantom to 0mm.

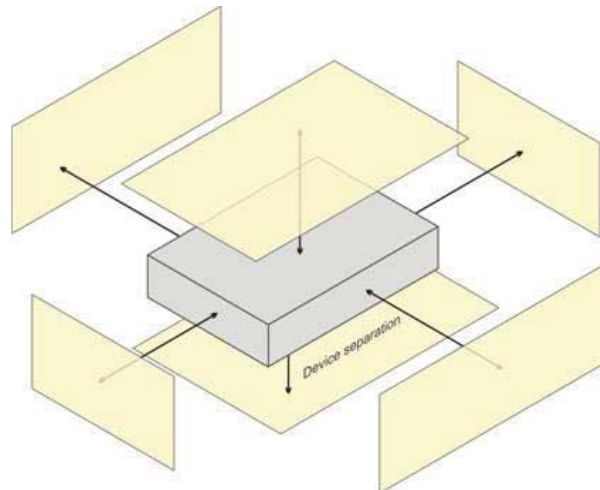


Figure 6.1 – Test positions for generic device

7. RF Output Power

7.1. WLAN & Bluetooth Output Power

7.1.1. Output Power Results Of WLAN

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11b	1	2412	16.00	15.58
	6	2437	16.00	15.45
	11	2462	16.00	15.61
802.11g	1	2412	13.50	13.23
	6	2437	13.50	13.13
	11	2462	13.50	13.10
802.11n HT20	1	2412	12.00	11.61
	6	2437	12.00	11.29
	11	2462	12.00	11.24
802.11n HT40	3	2422	12.00	11.74
	6	2437	12.00	12.00
	9	2452	12.00	11.50
802.11ax HE20	1	2412	13.00	12.74
	6	2437	13.00	12.85
	11	2462	13.00	12.96
802.11ax HE40	3	2422	12.50	11.50
	6	2437	12.50	12.05
	9	2452	12.50	11.22

NOTE: Power measurement results of WLAN 2.4G.

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11a	36	5180	10.00	9.55
	40	5200	10.00	9.40
	48	5240	10.00	8.72
802.11n HT20	36	5180	9.50	9.33
	40	5200	9.50	8.95
	48	5240	9.50	8.57
802.11n HT40	38	5190	9.50	9.30
	46	5230	9.50	9.16
802.11ac VHT20	36	5180	10.00	9.52
	40	5200	10.00	9.03
	48	5240	10.00	8.71
802.11ac VHT40	38	5190	9.50	9.08
	46	5230	9.50	8.99

802.11ac VHT80	42	5210	9.00	8.84
802.11ax HE20	36	5180	9.50	9.35
	40	5200	9.50	9.44
	48	5240	9.50	8.61
802.11ax HE40	38	5190	9.50	9.29
	46	5230	9.50	8.85
802.11ax HE80	42	5210	9.00	8.71

NOTE: Power measurement results of WLAN 5.2G.

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11a	52	5260	10.00	9.87
	56	5280	10.00	9.46
	64	5320	10.00	9.83
802.11n HT20	52	5260	10.00	9.53
	56	5280	10.00	9.21
	64	5320	10.00	9.31
802.11n HT40	54	5270	10.00	9.74
	62	5310	10.00	9.86
802.11ac VHT20	52	5260	10.00	9.67
	56	5280	10.00	9.35
	64	5320	10.00	9.72
802.11ac VHT40	54	5270	10.00	9.24
	62	5310	10.00	9.61
802.11ac VHT80	58	5290	9.50	9.07
802.11ax HE20	52	5260	10.00	9.75
	56	5280	10.00	9.32
	64	5320	10.00	9.81
802.11ax HE40	54	5270	10.00	9.55
	62	5310	10.00	9.77
802.11ax HE80	58	5290	9.00	8.96

NOTE: Power measurement results of WLAN 5.3G.

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11a	100	5500	10.50	10.19
	120	5600	10.50	9.82

	140	5700	10.50	9.52
802.11n	100	5500	10.00	9.79
	120	5600	10.00	8.57
	140	5700	10.00	9.22
	102	5510	10.00	9.72
802.11n	118	5590	10.00	9.24
	134	5670	10.00	9.67
	100	5500	10.00	9.76
802.11ac (VHT20)	120	5600	10.00	8.82
	140	5700	10.00	9.04
	102	5510	10.00	9.53
802.11ac (VHT40)	118	5590	10.00	9.14
	134	5670	10.00	9.70
	106	5530	10.00	9.61
802.11ac (VHT80)	122	5610	10.00	9.64
	100	5500	10.00	10.00
802.11ax (HE20)	120	5600	10.00	8.92
	140	5700	10.00	9.11
	102	5510	10.00	9.70
802.11ax (HE40)	118	5590	10.00	9.34
	134	5670	10.00	9.82
	106	5530	9.50	9.46
802.11ax (HE80)	122	5610	9.50	9.34

NOTE: Power measurement results of WLAN 5.6G.

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11a	149	5745	9.50	9.31
	157	5785	9.50	9.00
	165	5825	9.50	8.83
802.11n HT20	149	5745	9.00	8.81
	157	5785	9.00	8.99
	165	5825	9.00	8.69
802.11n HT40	151	5755	9.50	9.21
	159	5795	9.50	9.12
802.11ac VHT20	149	5745	9.00	8.65
	157	5785	9.00	9.00
	165	5825	9.00	8.71
802.11ac VHT40	151	5755	9.00	8.89
	159	5795	9.00	8.84
802.11ac VHT80	155	5775	9.00	8.77

802.11ax HE20	149	5745	9.00	8.64
	157	5785	9.00	8.92
	165	5825	9.00	8.89
802.11ax HE40	151	5755	9.50	9.08
	159	5795	9.50	8.93
802.11ax HE80	155	5775	9.00	8.81

NOTE: Power measurement results of WLAN 5.8G.

7.1.2. Output Power Results Of Bluetooth

BLE	Output Power (dBm)				
	Data Rates	Tune-up (dBm)	Channe		
			0CH	19CH	39CH
	1M	8	7.57	7.41	7.36
	2M	7.5	7.47	7.29	7.25

NOTE: Power measurement results of Bluetooth.

BR+EDR	Output Power EIRP(dBm)				
	Data Rates	Tune-up (dBm)	Channel		
			0CH	39CH	78CH
	1M	8.00	7.51	7.37	7.37
	2M	10.00	9.50	9.24	9.23
	3M	10.00	9.94	9.95	9.69

NOTE: Power measurement results of Bluetooth.

8. Antenna Location



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

Distance of the Antenna to the EUT surface/edge

Antennas	Front Side	Back Side	Left Side	Right Side	Top Side	Bottom Side
WLAN & Bluetooth	5	5	144	5	223	5

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

Positions for WLAN & Bluetooth Ant1 SAR tests		
Test separation distances $\leq$ 50 mm		
Exposure Positions	Tune-up Maximum power of WLAN 2.4G	
	16.00dBm	39.81mW
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	10.00
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	10.00
	SAR testing required?	YES
Right Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	10.00
	SAR testing required?	YES
Bottom Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	10.00
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of BT	
	10.00dBm	10.00mW
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	10.00
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	10.00
	SAR testing required?	YES
Right Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	10.00
	SAR testing required?	YES
Bottom Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	10.00
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of WLAN 5.2G	
	10.00dBm	10.00mW
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	7
	SAR testing required?	YES

Back Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	7
	SAR testing required?	YES
Right Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	7
	SAR testing required?	YES
Bottom Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	7
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of WLAN 5.3G	
	10.00dBm	10.00mW
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	6
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	6
	SAR testing required?	YES
Right Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	6
	SAR testing required?	YES
Bottom Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	6
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of WLAN 5.6G	
	10.50dBm	11.22mW
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	6
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	6
	SAR testing required?	YES
Right Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	6
	SAR testing required?	YES
Bottom Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	6
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of WLAN 5.8G	
	9.50dBm	8.91mW
Front Side	Antenna to user(mm)	5

	SAR exclusion threshold (mW)	6
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	6
	SAR testing required?	YES
Right Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	6
	SAR testing required?	YES
Bottom Side	Antenna to user(mm)	5
	SAR exclusion threshold (mW)	6
	SAR testing required?	YES

Positions for WLAN & Bluetooth SAR tests		
Test separation distances > 50 mm		
Exposure Positions	Tune-up Maximum power of WLAN 2.4G	
	16.00dBm	39.81mW
Left Side	Antenna to user(mm)	144
	SAR exclusion threshold (mW)	1036
	SAR testing required?	NO
Top Side	Antenna to user(mm)	223
	SAR exclusion threshold (mW)	1826
	SAR testing required?	NO
Exposure Positions	Tune-up Maximum power of BT	
	10.00dBm	10.00mW
Left Side	Antenna to user(mm)	144
	SAR exclusion threshold (mW)	1036
	SAR testing required?	NO
Top Side	Antenna to user(mm)	223
	SAR exclusion threshold (mW)	1826
	SAR testing required?	NO
Exposure Positions	Tune-up Maximum power of WLAN 5.2G	
	10.00dBm	10.00mW
Left Side	Antenna to user(mm)	144
	SAR exclusion threshold (mW)	1006
	SAR testing required?	NO
Top Side	Antenna to user(mm)	223
	SAR exclusion threshold (mW)	1796
	SAR testing required?	NO
Exposure Positions	Tune-up Maximum power of WLAN 5.3G	
	10.00dBm	10.00mW

Left Side	Antenna to user(mm)	144
	SAR exclusion threshold (mW)	1005
	SAR testing required?	NO
Top Side	Antenna to user(mm)	223
	SAR exclusion threshold (mW)	1795
	SAR testing required?	NO
Exposure Positions	Tune-up Maximum power of WLAN 5.6G	
	10.50dBm	11.22mW
Left Side	Antenna to user(mm)	144
	SAR exclusion threshold (mW)	1005
	SAR testing required?	NO
Top Side	Antenna to user(mm)	223
	SAR exclusion threshold (mW)	1795
	SAR testing required?	NO
Exposure Positions	Tune-up Maximum power of WLAN 5.8G	
	9.50dBm	8.91mW
Left Side	Antenna to user(mm)	144
	SAR exclusion threshold (mW)	1002
	SAR testing required?	NO
Top Side	Antenna to user(mm)	223
	SAR exclusion threshold (mW)	1792
	SAR testing required?	NO

9. SAR Results

9.1. SAR measurement results

9.1.1. SAR measurement Result of WLAN 2.4G

Test Position of Body with Omm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	6/2437	802.11b	1.260	0.373	-3.98	15.45	16.00	1.430	2025/11/14	7#
Back Side	6/2437	802.11b	0.126	0.037	-3.90	15.45	16.00	0.143	2025/11/14	
Right Side	6/2437	802.11b	0.013	0.011	1.24	15.45	16.00	0.015	2025/11/14	
Bottom Side	6/2437	802.11b	0.127	0.037	-1.20	15.45	16.00	0.144	2025/11/14	
Front Side	1/2412	802.11b	1.235	0.347	-3.89	15.58	16.00	1.360	2025/11/14	
Front Side	11/2462	802.11b	1.216	0.346	1.66	15.61	16.00	1.330	2025/11/14	

NOTE: 1.Body SAR test results of WLAN 2.4G

NOTE: 2.Tested by : Max Zhou, Jack Peng

NOTE: 3.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.

9.1.2. SAR measurement Result of WLAN 5.2G

Test Position of Body with 0mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	40/5200	802.11a	1.321	0.383	-1.67	9.40	10.00	1.517	2025/11/12	3#
Back Side	40/5200	802.11a	0.133	0.037	-2.01	9.40	10.00	0.153	2025/11/12	
Right Side	40/5200	802.11a	0.014	0.012	3.05	9.40	10.00	0.016	2025/11/12	
Bottom Side	40/5200	802.11a	0.133	0.037	2.42	9.40	10.00	0.153	2025/11/12	
Front Side	36/5180	802.11a	1.292	0.360	0.01	9.55	10.00	1.433	2025/11/12	
Front Side	48/5240	802.11a	1.308	0.377	0.85	9.42	10.00	1.495	2025/11/12	
Front Side	40/5200	802.11ac VHT20	1.202	0.289	-1.85	9.03	10.00	1.503	2025/11/12	
Front Side	36/5180	802.11ac VHT20	1.221	0.335	-2.64	9.52	10.00	1.364	2025/11/12	
Front Side	48/5240	802.11ac VHT20	1.085	0.218	1.55	8.71	10.00	1.460	2025/11/12	
Front Side	46/5230	802.11n HT40	1.090	0.254	0.96	9.16	9.50	1.179	2025/11/12	
Front Side	38/5190	802.11n HT40	1.121	0.269	-1.74	9.30	9.50	1.174	2025/11/12	

NOTE: 1.Body SAR test results of WLAN 5.2G

NOTE: 2.Tested by : Max Zhou, Jack Peng

9.1.3. SAR measurement Result of WLAN 5.3G

Test Position of Body with 0mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	62/5310	802.11n HT40	1.167	0.340	0.37	9.86	10.00	1.205	2025/11/10	4#
Back Side	62/5310	802.11n HT40	0.118	0.033	0.06	9.86	10.00	0.122	2025/11/10	
Right Side	62/5310	802.11n HT40	0.012	0.010	3.91	9.86	10.00	0.012	2025/11/10	
Bottom Side	62/5310	802.11n HT40	0.119	0.033	2.53	9.86	10.00	0.123	2025/11/10	
Front Side	54/5270	802.11n HT40	1.062	0.329	-1.35	9.74	10.00	1.128	2025/11/26	
Front Side	56/5280	802.11a	0.968	0.274	-2.65	9.46	10.00	1.096	2025/11/26	
Front Side	52/5260	802.11a	1.021	0.252	-1.54	9.87	10.00	1.052	2025/11/26	
Front Side	64/5320	802.11a	0.981	0.249	-2.99	9.83	10.00	1.020	2025/11/10	

NOTE: 1.Body SAR test results of WLAN 5.3G

NOTE: 2.Tested by : Max Zhou, Jack Peng

9.1.4. SAR measurement Result of WLAN 5.6G

Test Position of Body with 0mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	120/5600	802.11a	1.072	0.300	3.56	9.82	10.50	1.254	2025/11/11	5#
Back Side	120/5600	802.11a	0.111	0.031	-2.58	9.82	10.50	0.130	2025/11/11	
Right Side	120/5600	802.11a	0.011	0.009	-0.16	9.82	10.50	0.013	2025/11/11	
Bottom Side	120/5600	802.11a	0.109	0.029	0.02	9.82	10.50	0.127	2025/11/11	
Front Side	100/5500	802.11a	1.055	0.283	-1.27	10.19	10.50	1.133	2025/11/11	
Front Side	140/5700	802.11a	0.990	0.266	-1.76	9.52	10.50	1.241	2025/11/11	
Front Side	106/5530	802.11ac VHT80	0.955	0.254	-2.62	9.61	10.00	1.045	2025/11/11	
Front Side	122/5610	802.11ac VHT80	0.992	0.280	-1.84	9.64	10.00	1.078	2025/11/11	

NOTE: 1.Body SAR test results of WLAN 5.6G

NOTE: 2.Tested by : Max Zhou, Jack Peng

9.1.5. SAR measurement Result of WLAN 5.8G

Test Position of Body with 0mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	159/5795	802.11n HT40	0.763	0.216	4.91	9.12	9.50	0.833	2025/11/13	6#
Back Side	159/5795	802.11n HT40	0.080	0.023	-1.42	9.12	9.50	0.087	2025/11/13	
Right Side	159/5795	802.11n HT40	0.008	0.006	-0.10	9.12	9.50	0.009	2025/11/13	
Bottom Side	159/5795	802.11n HT40	0.078	0.021	-3.27	9.12	9.50	0.085	2025/11/13	
Front Side	151/5755	802.11n HT40	0.751	0.206	1.96	9.21	9.50	0.803	2025/11/13	

NOTE: 1. Body SAR test results of WLAN 5.8G

NOTE: 2. Tested by : Max Zhou, Jack Peng

9.1.6. SAR measurement Result of Bluetooth BR+EDR

Test Position of Body with 0mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	39/2441	8-DPSK	0.271	0.088	4.64	9.95	10.00	0.274	2025/11/14	1#
Back Side	39/2441	8-DPSK	0.029	0.009	3.63	9.95	10.00	0.029	2025/11/14	
Right Side	39/2441	8-DPSK	0.003	0.001	3.30	9.95	10.00	0.003	2025/11/14	
Bottom Side	39/2441	8-DPSK	0.030	0.010	-2.26	9.95	10.00	0.030	2025/11/14	
Front Side	0/2402	8-DPSK	0.261	0.083	-0.70	9.94	10.00	0.265	2025/11/14	
Front Side	39/2437	8-DPSK	0.252	0.082	-3.01	9.69	10.00	0.271	2025/11/14	

NOTE: 1.Body SAR test results of Bluetooth BR+EDR

NOTE: 2.Tested by : Max Zhou, Jack Peng

9.1.7. SAR measurement Result of Bluetooth LE

Test Position of Body with 0mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	19/2440	GFSK	0.137	0.061	4.64	7.41	8.00	0.157	2025/11/14	2#
Back Side	19/2440	GFSK	0.019	0.017	2.96	7.41	8.00	0.022	2025/11/14	
Right Side	19/2440	GFSK	0.002	0.000	-2.96	7.41	8.00	0.002	2025/11/14	
Bottom Side	19/2440	GFSK	0.017	0.015	-2.65	7.41	8.00	0.019	2025/11/14	
Front Side	0/2402	GFSK	0.121	0.059	-2.38	7.57	8.00	0.134	2025/11/14	
Front Side	39/2437	GFSK	0.114	0.043	3.61	7.36	8.00	0.132	2025/11/14	

NOTE: 1. Body SAR test results of Bluetooth LE

NOTE: 2.Tested by : Max Zhou, Jack Peng

9.2. Simultaneous Transmission Analysis

NO simultaneous transmissions are possible for this device of 2.4G Wi-Fi/Bluetooth and 5G Wi-Fi.

9.3. Repeated SAR Data

10. Test Position of Body with 0mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Repeated 1	6/2437	802.11b	1.251	0.370	4.85	15.45	16.00	1.420	2025/11/14	
Front Repeated 2	6/2437	802.11b	1.231	0.363	3.96	15.45	16.00	1.397	2025/11/14	
Front Side	1/2412	802.11b	1.225	0.321	3.98	15.58	16.00	1.349	2025/11/14	
Front Side	11/2462	802.11b	1.204	0.287	2.71	15.61	16.00	1.317	2025/11/14	

NOTE: 1. Body SAR test results of 2.4G Wi-Fi

NOTE: 2. Tested by : Max Zhou, Jack Peng

Test Position of Body with 0mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side Repeated	36/5180	802.11a	1.251	0.347	0.81	9.55	10.00	1.388	2025/11/12	
Front Side Repeated	48/5240	802.11a	1.274	0.364	0.54	9.42	10.00	1.456	2025/11/12	
Front Side Repeated 1	40/5200	802.11a	1.305	0.369	-2.85	9.40	10.00	1.498	2025/11/12	
Front Side Repeated 2	40/5200	802.11a	1.294	0.347	-3.61	9.40	10.00	1.486	2025/11/12	
Front Side Repeated	36/5180	802.11ac VHT20	1.221	0.335	-2.64	9.52	10.00	1.364	2025/11/12	
Front Side Repeated	48/5240	802.11ac VHT20	1.085	0.218	1.55	8.71	10.00	1.460	2025/11/12	
Front Side Repeated 1	40/5200	802.11ac VHT20	1.158	0.235	-1.25	9.03	10.00	1.448	2025/11/12	
Front Side	40/5200	802.11ac	1.128	0.214	-2.95	9.03	10.00	1.410	2025/11/12	

Repeated 2		VHT20								
Front Side	46/5230	802.11n	1.062	0.241	0.74	9.16	9.50	1.148	2025/11/12	
Repeated		HT40								
Front Side	38/5190	802.11n	1.098	0.254	-1.52	9.30	9.50	1.150	2025/11/12	
Repeated		HT40								

NOTE: 1. Body SAR test results of 5.2G Wi-Fi

NOTE: 2. Tested by : Max Zhou, Jack Peng

Test Position of Body with 0mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	54/5270	802.11n	1.015	0.308	-2.61	9.74	10.00	1.078	2025/11/26	
Repeated		HT40								
Front Side	62/5310	802.11n	1.161	0.339	0.37	9.86	10.00	1.199	2025/11/10	
Repeated		HT40								
Front Side	52/5260	802.11a	0.991	0.241	-1.54	9.87	10.00	1.021	2025/11/26	
Repeated										
Front Side	56/5280	802.11a	0.918	0.239	-1.54	9.46	10.00	1.040	2025/11/26	
Repeated										
Front Side	64/5320	802.11a	0.974	0.225	-2.62	9.83	10.00	1.013	2025/11/10	
Repeated										

NOTE: 1. Body SAR test results of 5.3G Wi-Fi

NOTE: 2. Tested by : Max Zhou, Jack Peng

Test Position of Body with 0mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	100/5500	802.11a	0.988	0.257	-2.19	10.19	10.50	1.061	2025/11/11	
Repeated										
Front Side	140/5700	802.11a	0.965	0.237	-1.05	9.52	10.50	1.209	2025/11/11	
Repeated										
Front Side	120/5600	802.11a	1.070	0.298	4.87	9.82	10.50	1.251	2025/11/11	
Repeated										
Front Side	106/5530	802.11ac	0.925	0.217	-0.54	9.61	10.00	1.012	2025/11/11	
Repeated		VHT80								
Front Side	122/5610	802.11ac	0.931	0.228	-1.57	9.64	10.00	1.011	2025/11/11	
Repeated		VHT80								

NOTE: 1. Body SAR test results of 5.6G Wi-Fi

NOTE: 2. Tested by : Max Zhou, Jack Peng

Test Position of Body with 0mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side Repeated	151/5755	802.11n HT40	0.732	0.185	1.32	9.21	9.50	0.783	2025/11/13	
Front Side Repeated	159/5795	802.11n HT40	0.760	0.215	4.88	9.12	9.50	0.829	2025/11/13	

NOTE: 1. Body SAR test results of 5.8G Wi-Fi

NOTE: 2. Tested by : Max Zhou, Jack Peng

11. Appendix A. Photo documentation

Refer to appendix Test Setup photo---SAR

12. Appendix B. System Check Plots

Table of contents
MEASUREMENT 1 System Performance Check - 2450MHz
MEASUREMENT 2 System Performance Check - 5200MHz
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MEASUREMENT 4 System Performance Check - 5400MHz
MEASUREMENT 5 System Performance Check - 5600MHz
MEASUREMENT 6 System Performance Check - 5800MHz

1# System check at 2450 MHz
Date of measurement: 14/11/2025

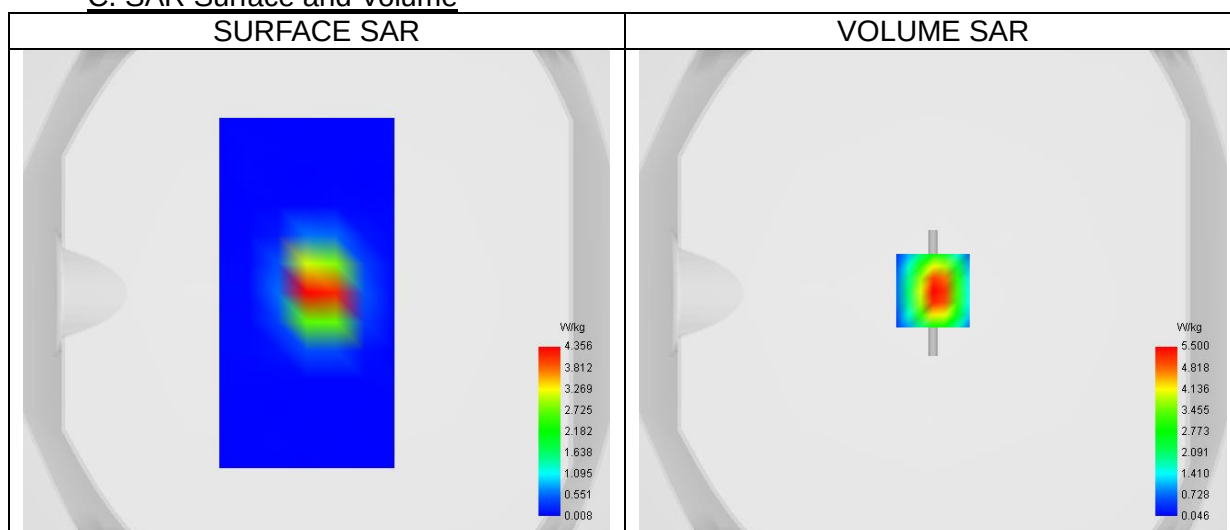
A. Experimental conditions.

Probe	0725-EPGO-448
ConvF	1.63
Area Scan	dx=12mm dy=12mm, Complete
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Signal	CW
Channels/Frequency	Middle

B. Permittivity

Middle TX Frequency (MHz)	2450.00
Relative permittivity (real part)	37.99
Relative permittivity (imaginary part)	13.53
Conductivity (S/m)	1.84

C. SAR Surface and Volume



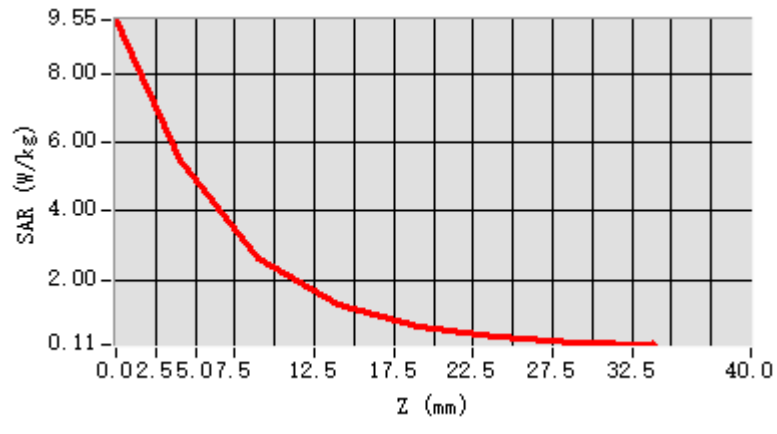
Maximum location: X=0.00, Y=1.00 ; SAR Peak: 9.62 W/kg

D. SAR 1g & 10g

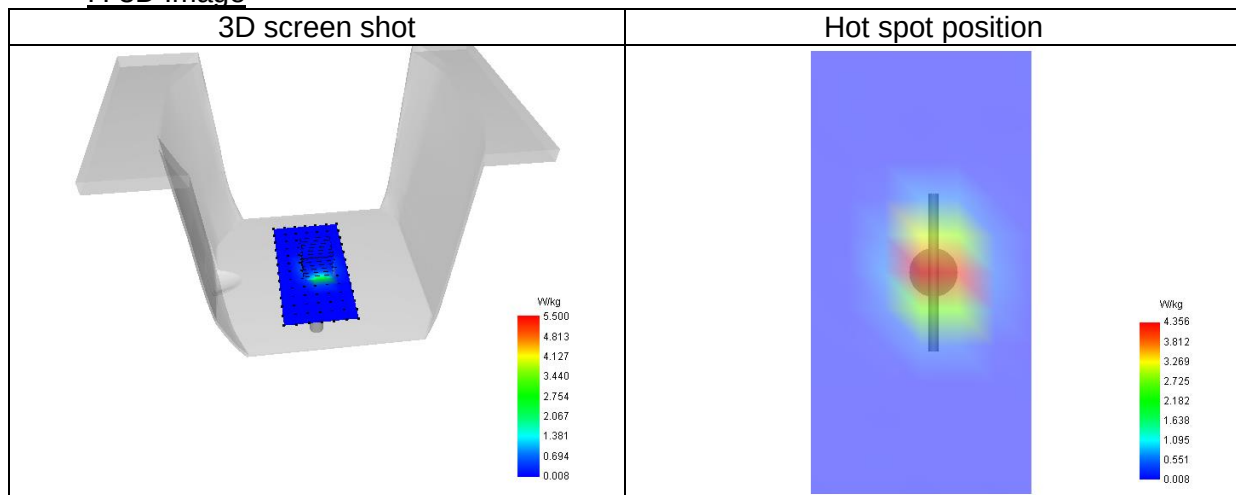
SAR 10g (W/Kg)	2.237
SAR 1g (W/Kg)	5.152
Variation (%)	-0.42
Horizontal validation criteria: minimum distance (mm)	10.00
Vertical validation criteria: SAR ratio M2/M1 (%)	47.12

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	9.553	5.500	2.592	1.282	0.644	0.345	0.178



F. 3D Image



2# System check at 5200 MHz
Date of measurement: 12/11/2025

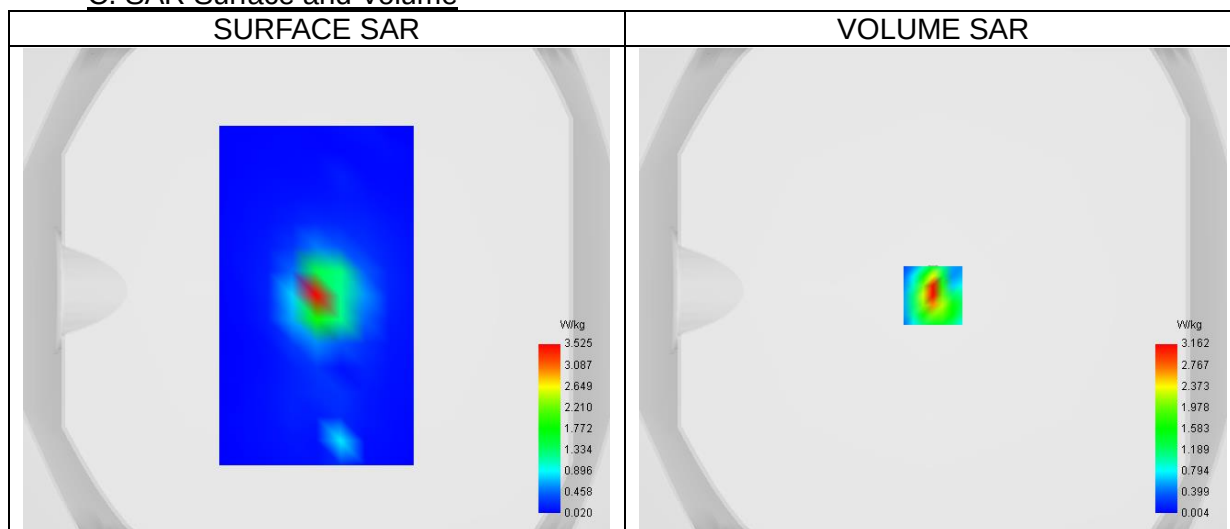
A. Experimental conditions.

Probe	0725-EPGO-448
ConvF	1.37
Area Scan	dx=10mm dy=10mm, Complete
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2.0mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW5200
Signal	CW
Channels/Frequency	Middle

B. Permittivity

Middle TX Frequency (MHz)	5200.00
Relative permittivity (real part)	36.67
Relative permittivity (imaginary part)	15.81
Conductivity (S/m)	4.57

C. SAR Surface and Volume



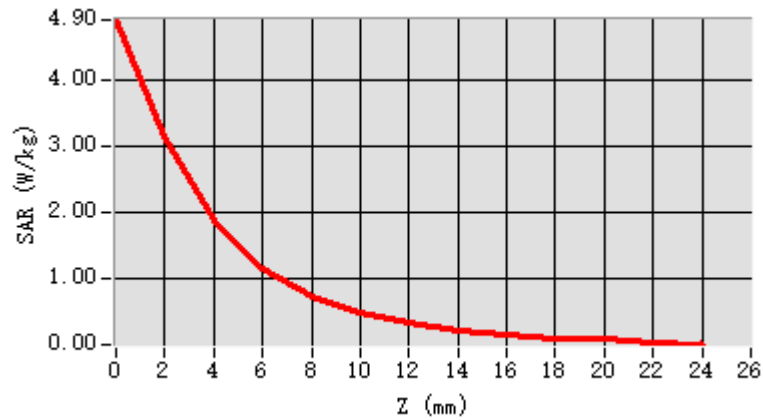
Maximum location: X=0.00, Y=-2.00 ; SAR Peak: 5.35 W/kg

D. SAR 1g & 10g

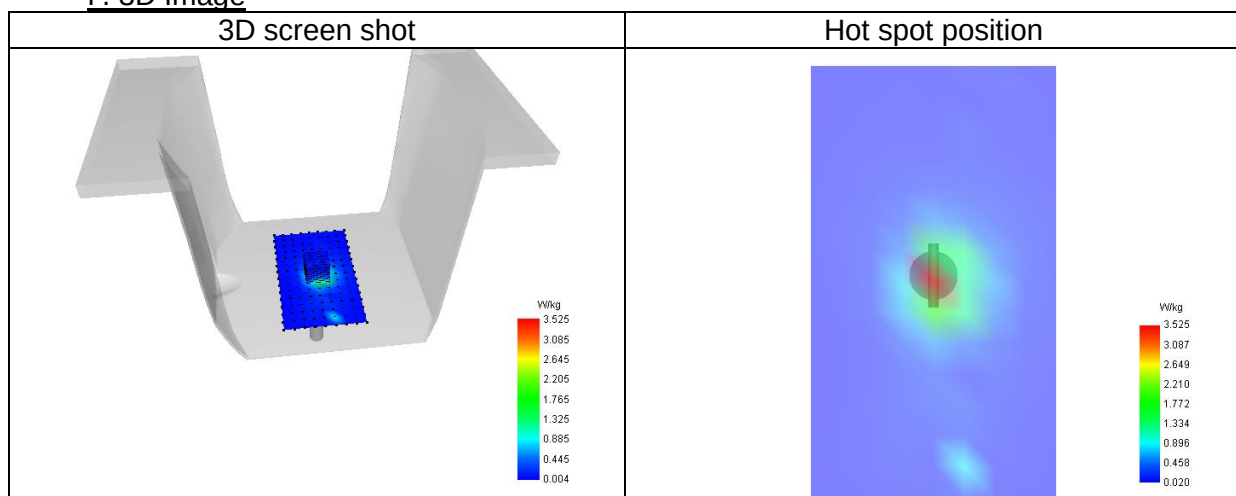
SAR 10g (W/Kg)	0.586
SAR 1g (W/Kg)	1.696
Variation (%)	0.65
Horizontal validation criteria: minimum distance (mm)	8.00
Vertical validation criteria: SAR ratio M2/M1 (%)	59.70

E. Z Axis Scan

Z (mm)	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)	4.90 2	3.16 2	1.88 8	1.16 4	0.74 5	0.48 2	0.33 5	0.22 3	0.16 5	0.10 7	0.08 8	0.04 7



F. 3D Image



3# System check at 5200 MHz
Date of measurement: 26/11/2025

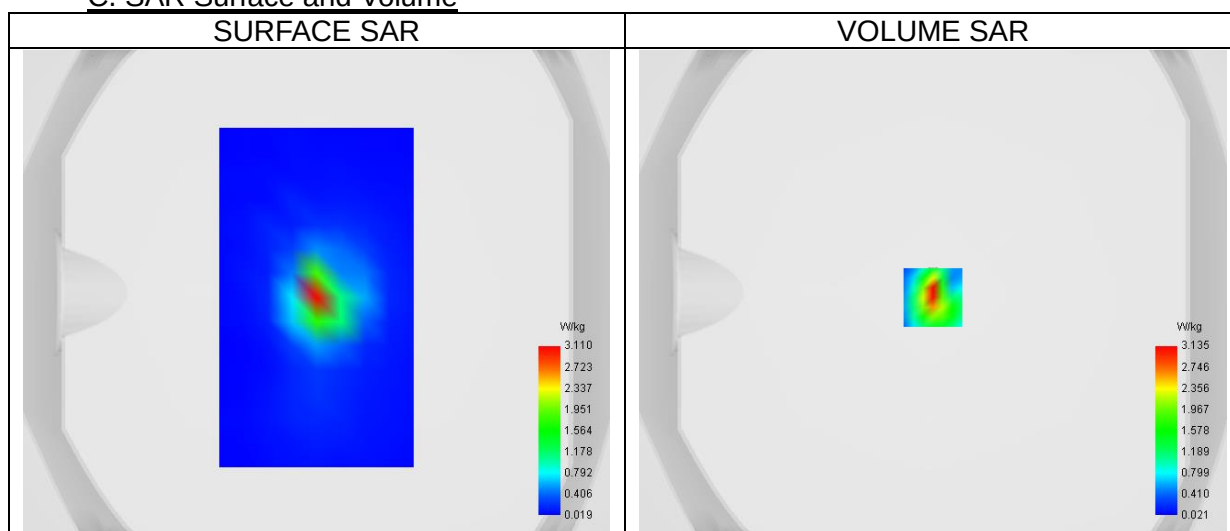
A. Experimental conditions.

Probe	0725-EPGO-448
ConvF	1.37
Area Scan	dx=10mm dy=10mm, Complete
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2.0mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW5200
Signal	CW
Channels/Frequency	Middle

B. Permittivity

Middle TX Frequency (MHz)	5200.00
Relative permittivity (real part)	36.53
Relative permittivity (imaginary part)	15.69
Conductivity (S/m)	4.53

C. SAR Surface and Volume



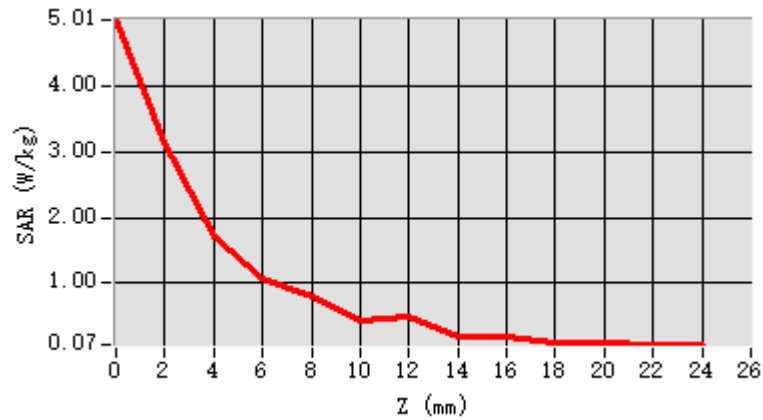
Maximum location: X=0.00, Y=-2.00 ; SAR Peak: 5.45 W/kg

D. SAR 1g & 10g

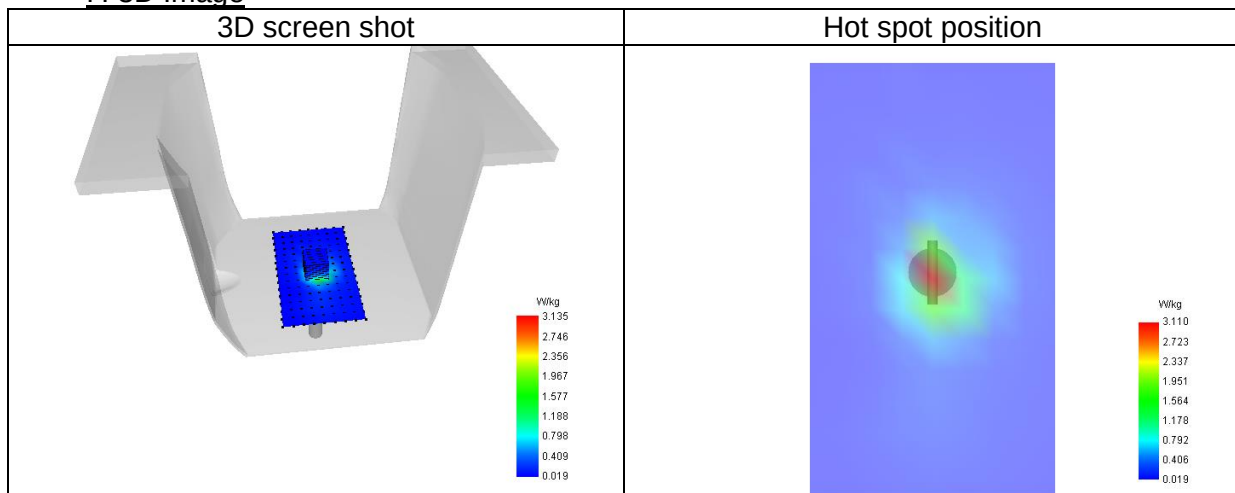
SAR 10g (W/Kg)	0.574
SAR 1g (W/Kg)	1.668
Variation (%)	1.69
Horizontal validation criteria: minimum distance (mm)	5.66
Vertical validation criteria: SAR ratio M2/M1 (%)	59.20

E. Z Axis Scan

Z (mm)	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)	5.00 8	3.13 5	1.72 5	1.06 4	0.78 6	0.43 3	0.50 4	0.19 9	0.19 1	0.09 4	0.10 8	0.06 6



F. 3D Image



4# System check at 5400 MHz

Date of measurement: 10/11/2025

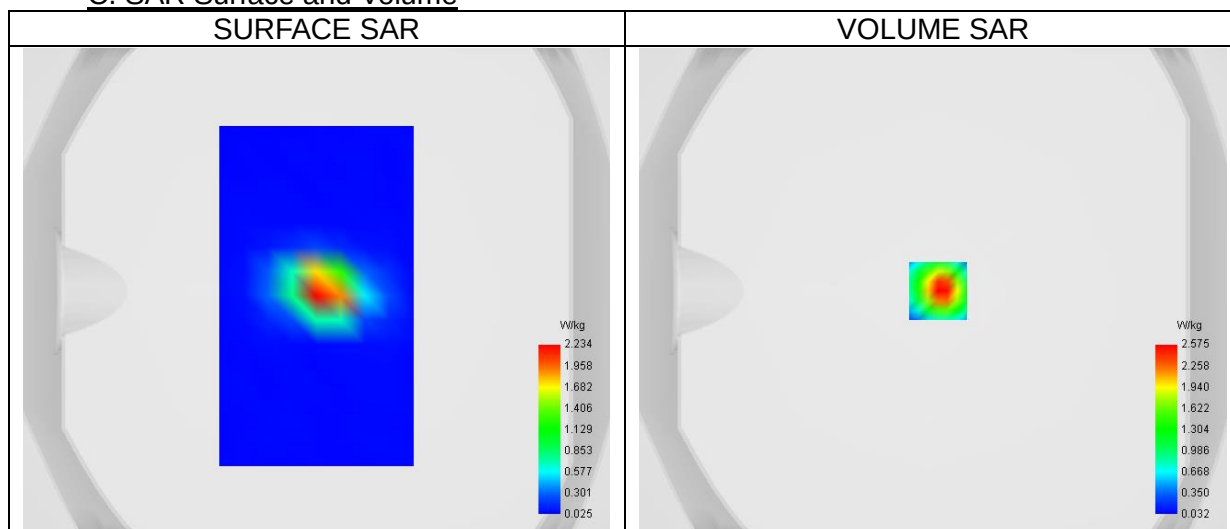
A. Experimental conditions.

Probe	0725-EPGO-448
ConvF	1.37
Area Scan	dx=10mm dy=10mm, Complete
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2.0mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW5400
Signal	CW
Channels/Frequency	Middle

B. Permittivity

Middle TX Frequency (MHz)	5400.00
Relative permittivity (real part)	34.46
Relative permittivity (imaginary part)	16.52
Conductivity (S/m)	4.96

C. SAR Surface and Volume



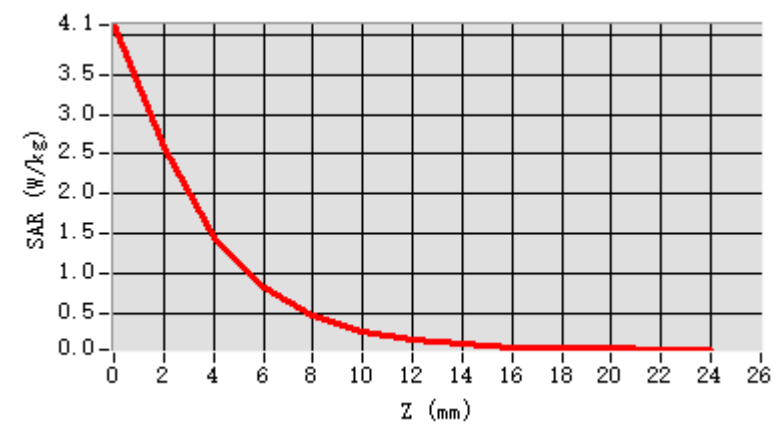
Maximum location: X=2.00, Y=0.00 ; SAR Peak: 4.32 W/kg

D. SAR 1g & 10g

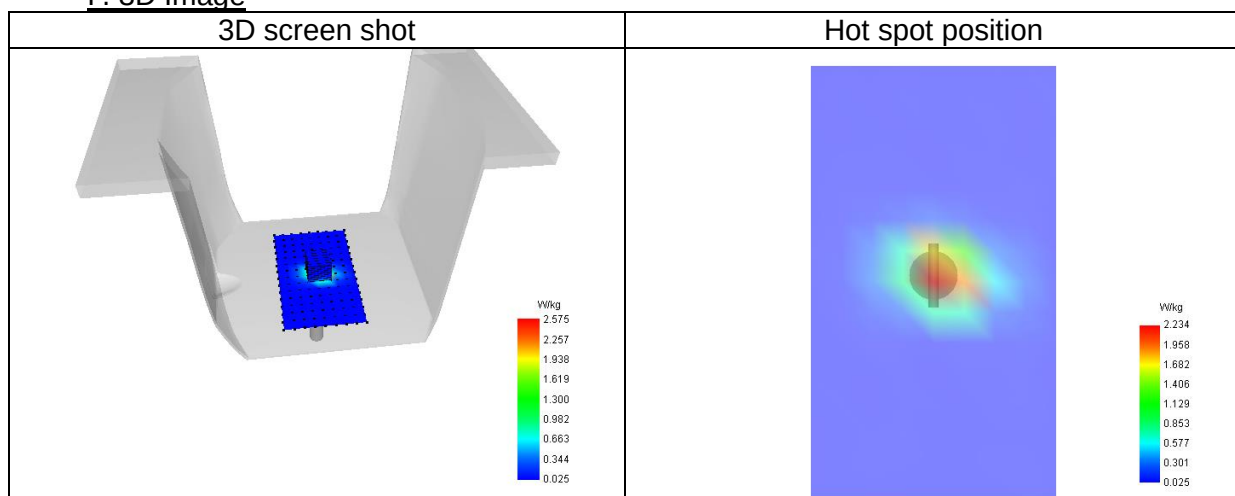
SAR 10g (W/Kg)	0.534
SAR 1g (W/Kg)	1.523
Variation (%)	-0.63
Horizontal validation criteria: minimum distance (mm)	8.94
Vertical validation criteria: SAR ratio M2/M1 (%)	56.73

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.0	12.0	14.0	16.0	18.0	20.0	22.0
						0	0	0	0	0	0	0
SAR (W/Kg)	4.12	2.57	1.46	0.83	0.48	0.28	0.17	0.12	0.08	0.06	0.06	0.05
	2	5	1	9	0	3	4	0	1	3	4	8



F. 3D Image



5# System check at 5600 MHz
Date of measurement: 11/11/2025

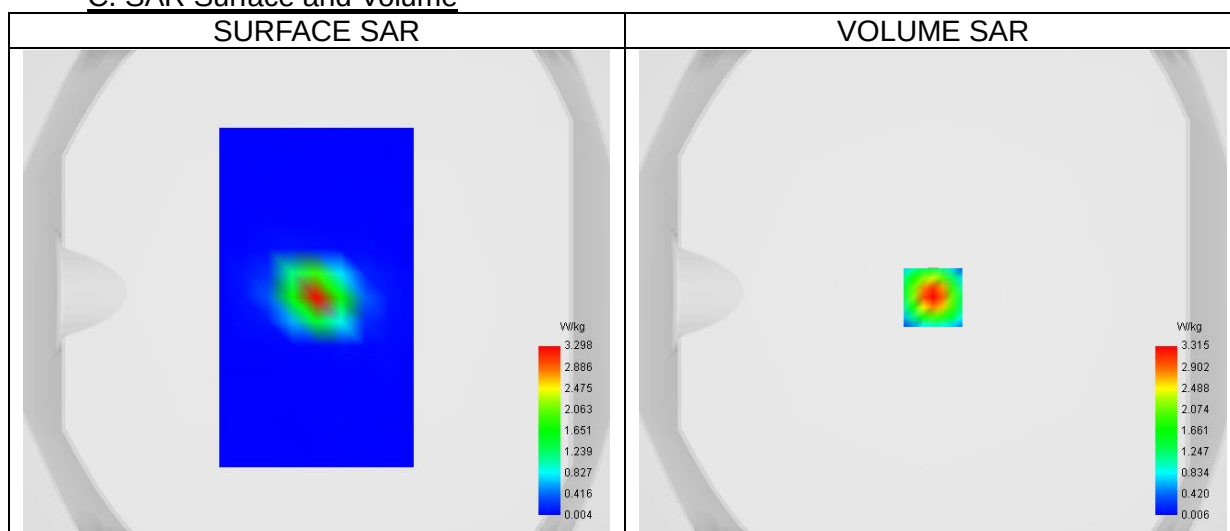
A. Experimental conditions.

Probe	0725-EPGO-448
ConvF	1.36
Area Scan	dx=10mm dy=10mm, Complete
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2.0mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW5600
Signal	CW
Channels/Frequency	Middle

B. Permittivity

Middle TX Frequency (MHz)	5600.00
Relative permittivity (real part)	34.89
Relative permittivity (imaginary part)	16.13
Conductivity (S/m)	5.02

C. SAR Surface and Volume



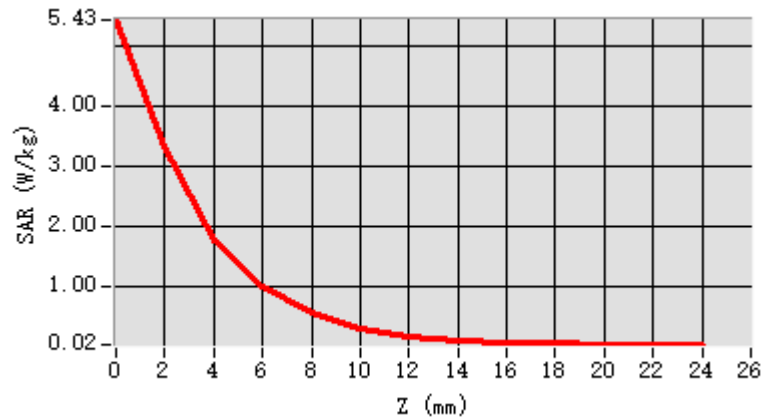
Maximum location: X=0.00, Y=-2.00 ; SAR Peak: 5.91 W/kg

D. SAR 1g & 10g

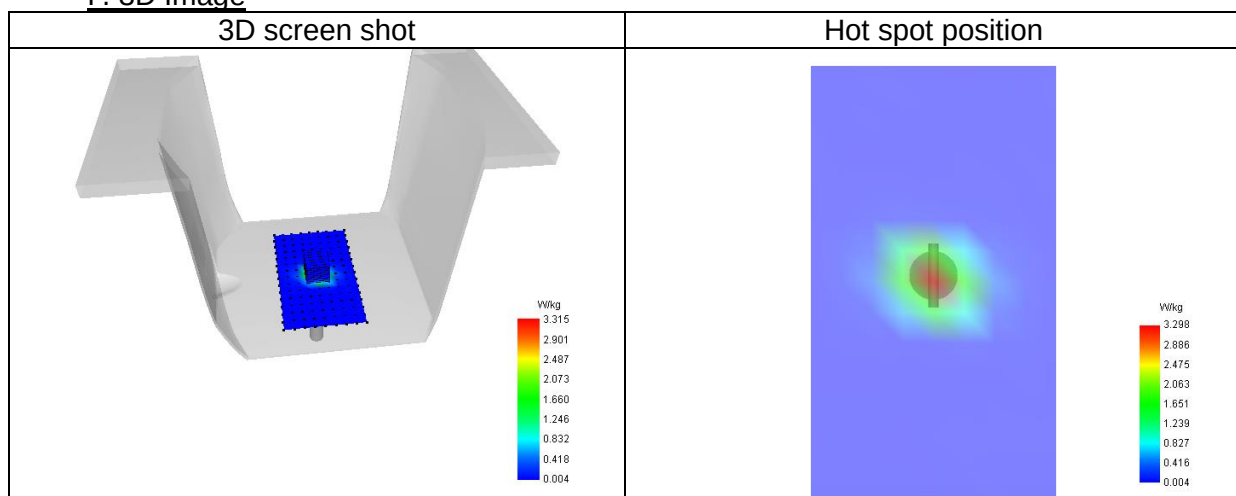
SAR 10g (W/Kg)	0.657
SAR 1g (W/Kg)	1.928
Variation (%)	-0.87
Horizontal validation criteria: minimum distance (mm)	11.31
Vertical validation criteria: SAR ratio M2/M1 (%)	52.54

E. Z Axis Scan

Z (mm)	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)	5.43 2	3.31 5	1.74 2	0.97 3	0.54 4	0.29 2	0.15 6	0.10 0	0.04 5	0.04 2	0.03 0	0.03 6



F. 3D Image



6# System check at 5800 MHz
Date of measurement: 13/11/2025

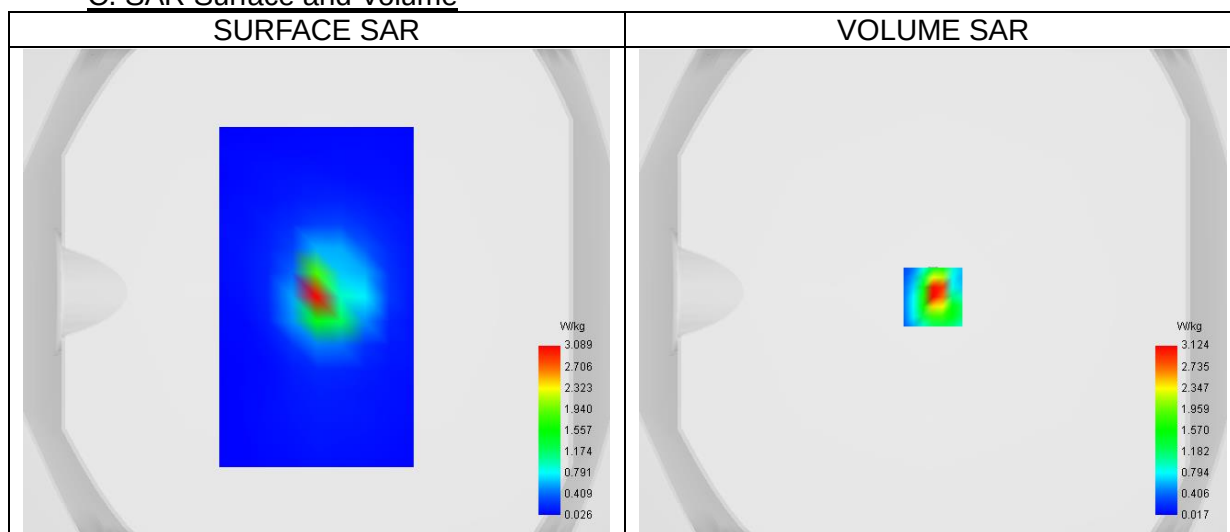
A. Experimental conditions.

Probe	0725-EPGO-448
ConvF	1.35
Area Scan	dx=10mm dy=10mm, Complete
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2.0mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW5800
Signal	CW
Channels/Frequency	Middle

B. Permittivity

Middle TX Frequency (MHz)	5800.00
Relative permittivity (real part)	35.15
Relative permittivity (imaginary part)	16.05
Conductivity (S/m)	5.17

C. SAR Surface and Volume



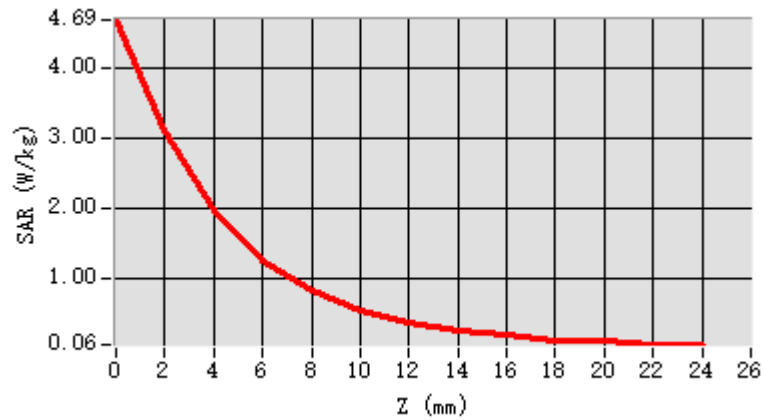
Maximum location: X=0.00, Y=-2.00 ; SAR Peak: 5.63 W/kg

D. SAR 1g & 10g

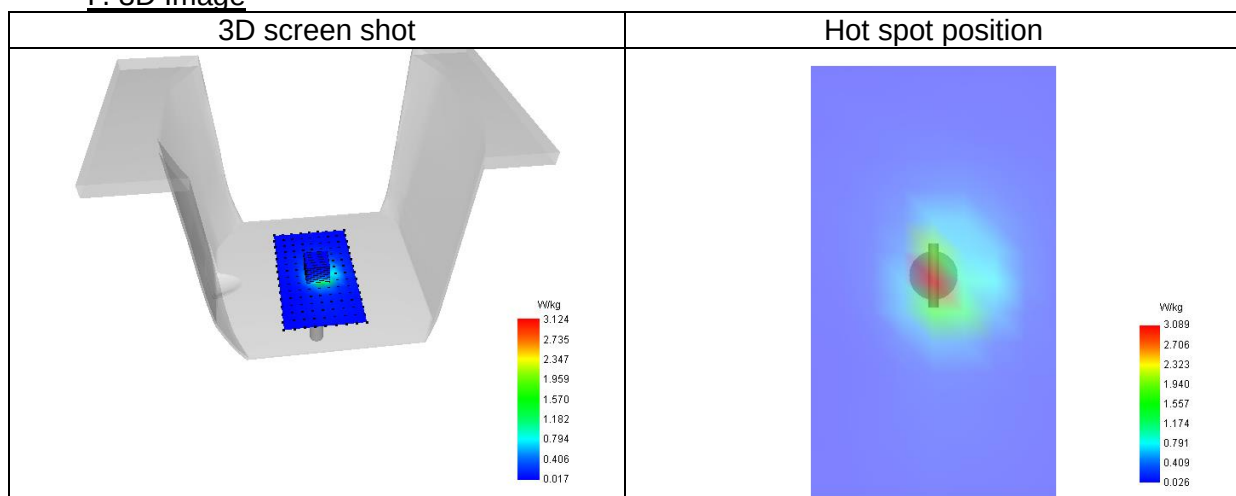
SAR 10g (W/Kg)	0.587
SAR 1g (W/Kg)	1.753
Variation (%)	0.57
Horizontal validation criteria: minimum distance (mm)	5.66
Vertical validation criteria: SAR ratio M2/M1 (%)	63.10

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.0	12.0	14.0	16.0	18.0	20.0	22.0
						0	0	0	0	0	0	0
SAR (W/Kg)	4.69	3.12	1.97	1.26	0.83	0.55	0.37	0.25	0.19	0.13	0.12	0.07
	2	4	1	2	3	5	1	6	9	1	3	2



F. 3D Image



13. Appendix C. SAR Measurement Plots

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5# SAR Measurement at U-NII-2c (Body, Validation Plane)
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7# SAR Measurement at ISM (Body, Validation Plane)

1# SAR Measurement at Bluetooth (Body, Validation Plane)

Date of measurement: 14/11/2025

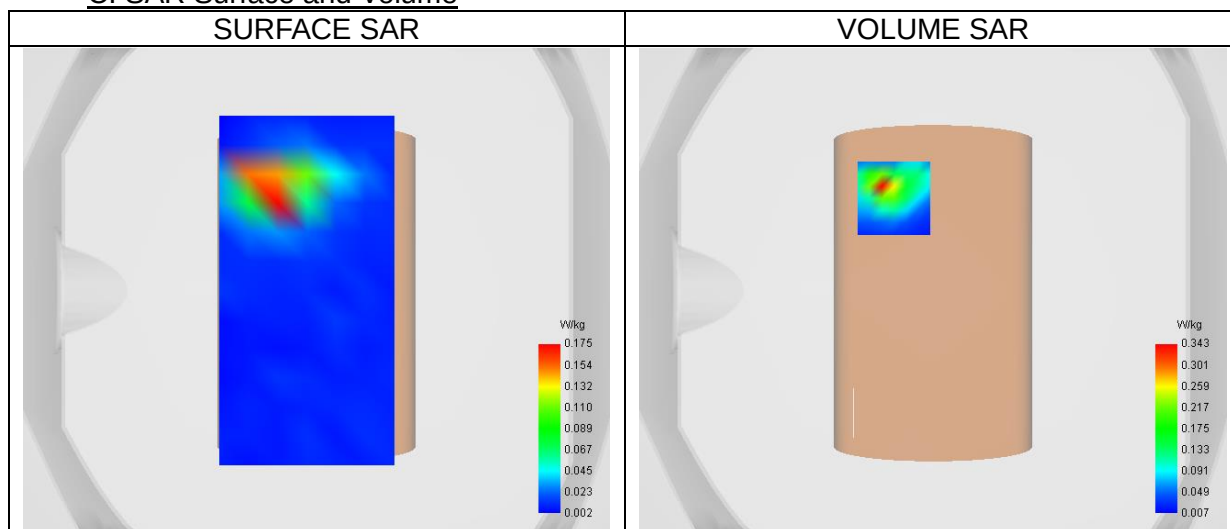
A. Experimental conditions.

Probe	0725-EPGO-448
ConvF	1.63
Area Scan	dx=12mm dy=12mm, Complete
Zoom Scan	7x7x8,dx=5mm dy=5mm dz=4.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	Bluetooth
Signal	Bluetooth
Channels/Frequency	Middle (39)/ frequency 2441.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	2441.00
Relative permittivity (real part)	38.02
Relative permittivity (imaginary part)	13.46
Conductivity (S/m)	1.82

C. SAR Surface and Volume



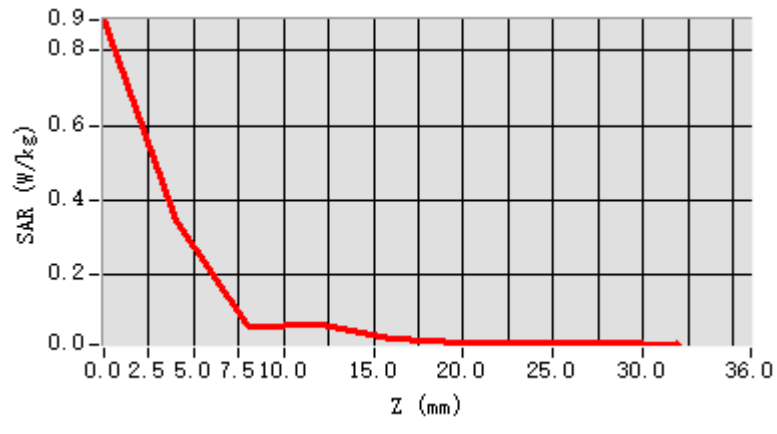
Maximum location: X=-16.00, Y=38.00 ; SAR Peak: 0.69 W/kg

D. SAR 1g & 10g

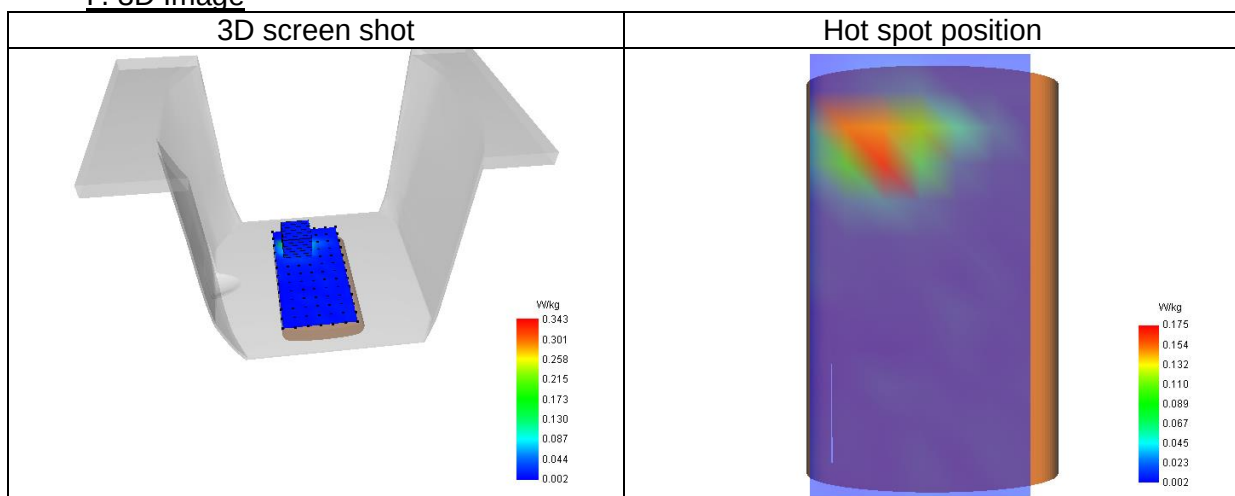
SAR 10g (W/Kg)	0.088
SAR 1g (W/Kg)	0.271
Variation (%)	34.64
Horizontal validation criteria: minimum distance (mm)	7.07
Vertical validation criteria: SAR ratio M2/M1 (%)	41.79

E. Z Axis Scan

Z (mm)	0.00	4.00	8.00	12.00	16.00	20.00	24.00	28.00
SAR (W/Kg)	0.882	0.343	0.062	0.065	0.027	0.018	0.018	0.015



F. 3D Image



2# SAR Measurement at Bluetooth (Body, Validation Plane)

Date of measurement: 14/11/2025

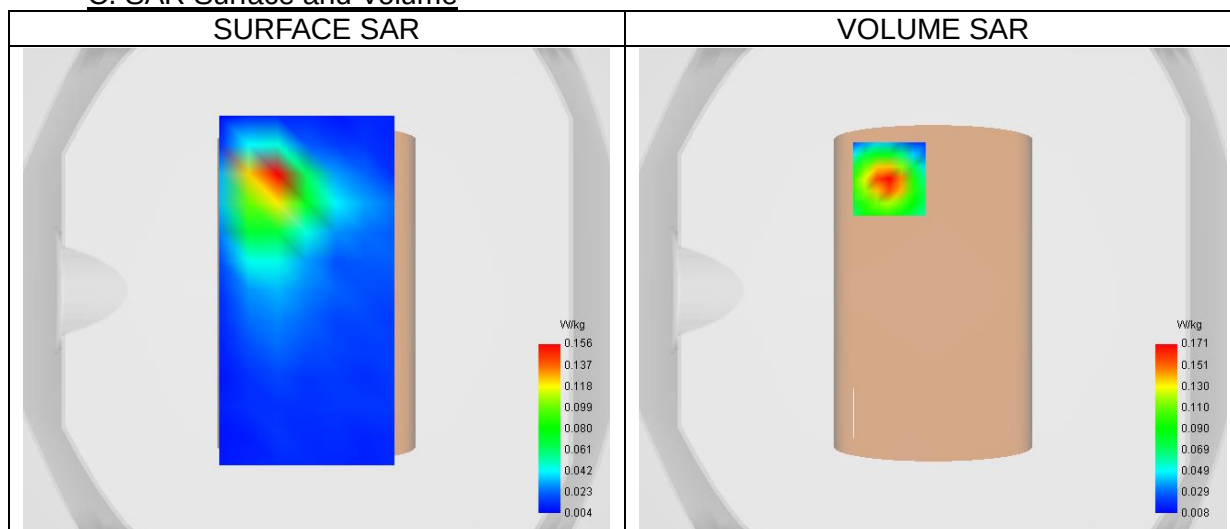
A. Experimental conditions.

Probe	0725-EPGO-448
ConvF	1.63
Area Scan	dx=12mm dy=12mm, Complete
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	Bluetooth
Signal	Bluetooth
Channels/Frequency	Middle (19)/ frequency 2440.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	2440.00
Relative permittivity (real part)	38.06
Relative permittivity (imaginary part)	13.49
Conductivity (S/m)	1.83

C. SAR Surface and Volume



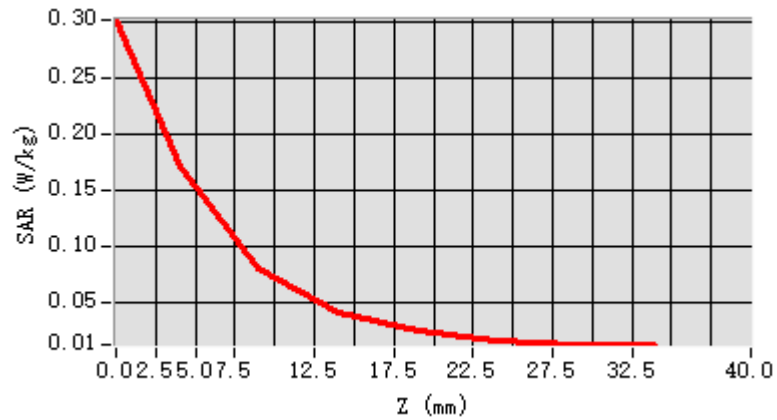
Maximum location: X=-18.00, Y=46.00 ; SAR Peak: 0.30 W/kg

D. SAR 1g & 10g

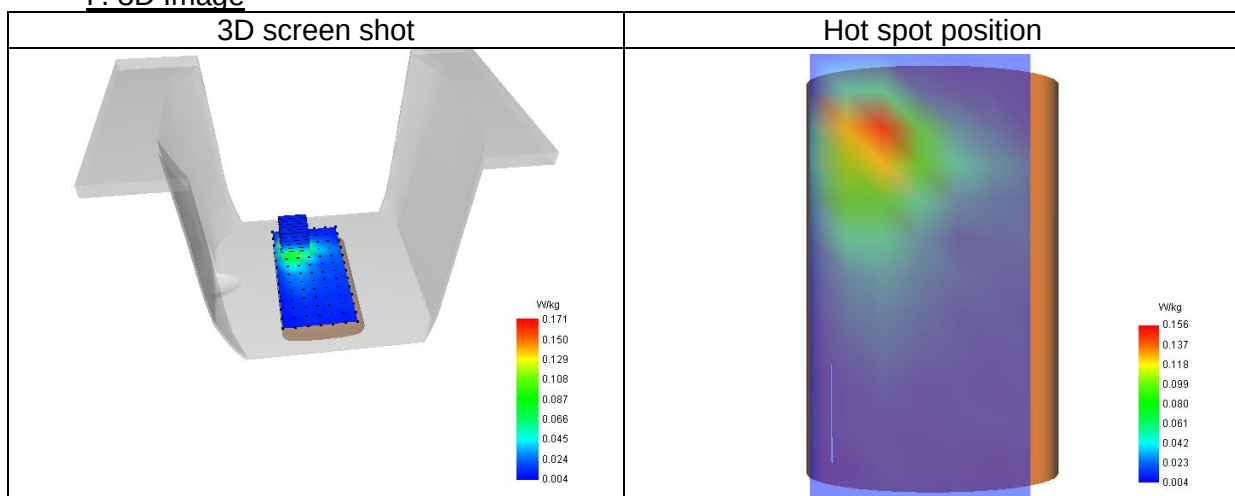
SAR 10g (W/Kg)	0.061
SAR 1g (W/Kg)	0.137
Variation (%)	22.71
Horizontal validation criteria: minimum distance (mm)	10.00
Vertical validation criteria: SAR ratio M2/M1 (%)	47.00

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.302	0.171	0.080	0.042	0.025	0.016	0.013



F. 3D Image



3# SAR Measurement at U-NII-1 (Body, Validation Plane)

Date of measurement: 12/11/2025

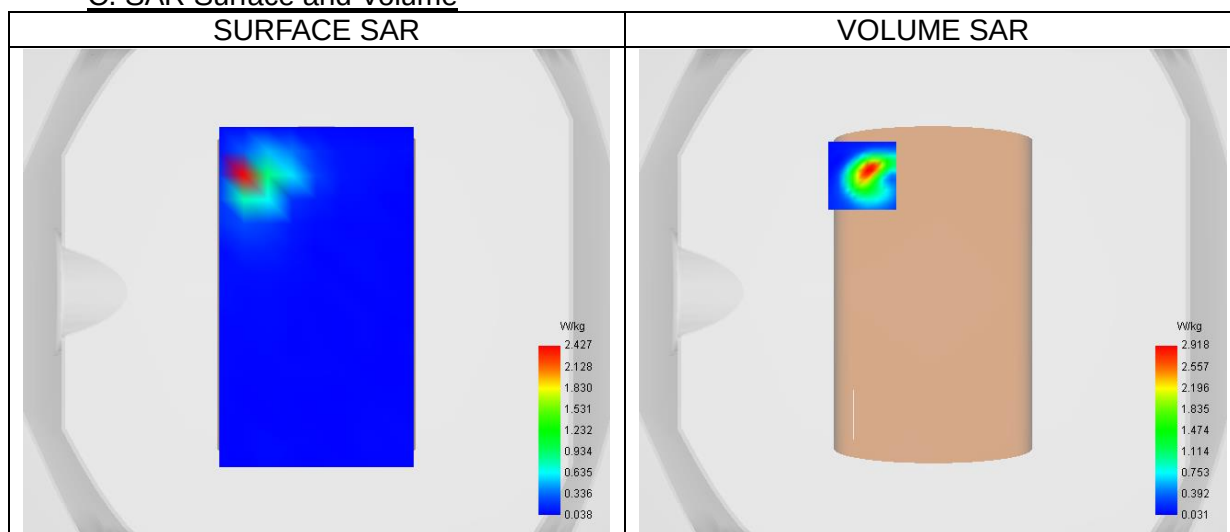
A. Experimental conditions.

Probe	0725-EPGO-448
ConvF	1.37
Area Scan	dx=10mm dy=10mm, Complete
Zoom Scan	15x15x12,dx=2mm dy=2mm dz=2.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	U-NII-1
Signal	IEEE 802.11 a
Channels/Frequency	Middle (40)/ frequency 5200.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	5200.00
Relative permittivity (real part)	36.67
Relative permittivity (imaginary part)	15.81
Conductivity (S/m)	4.57

C. SAR Surface and Volume

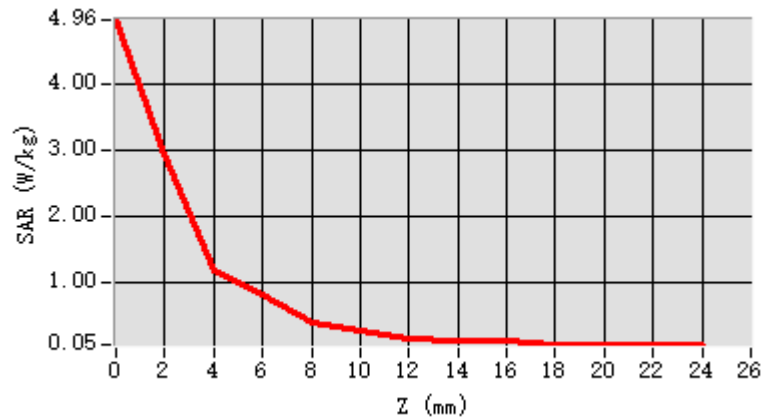


D. SAR 1g & 10g

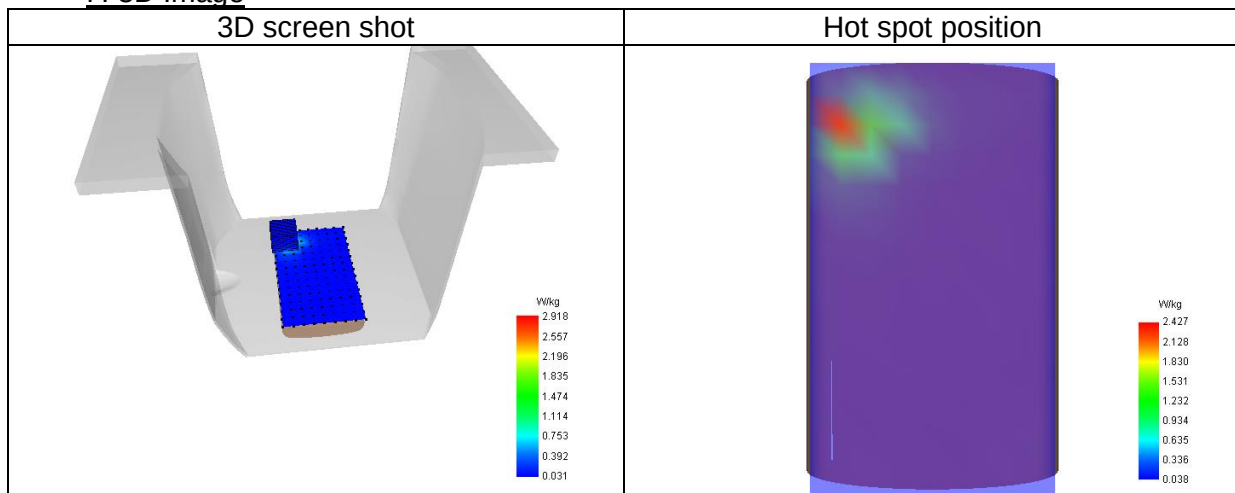
SAR 10g (W/Kg)	0.383
SAR 1g (W/Kg)	1.321
Variation (%)	-1.67
Horizontal validation criteria: minimum distance (mm)	4.47
Vertical validation criteria: SAR ratio M2/M1 (%)	51.96

E. Z Axis Scan

Z (mm)	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)	4.96 0	2.91 8	1.18 3	0.81 3	0.39 5	0.26 0	0.14 0	0.11 0	0.09 3	0.05 6	0.05 9	0.05 8



F. 3D Image



4# SAR Measurement at U-NII-2a (Body, Validation Plane)

Date of measurement: 10/11/2025

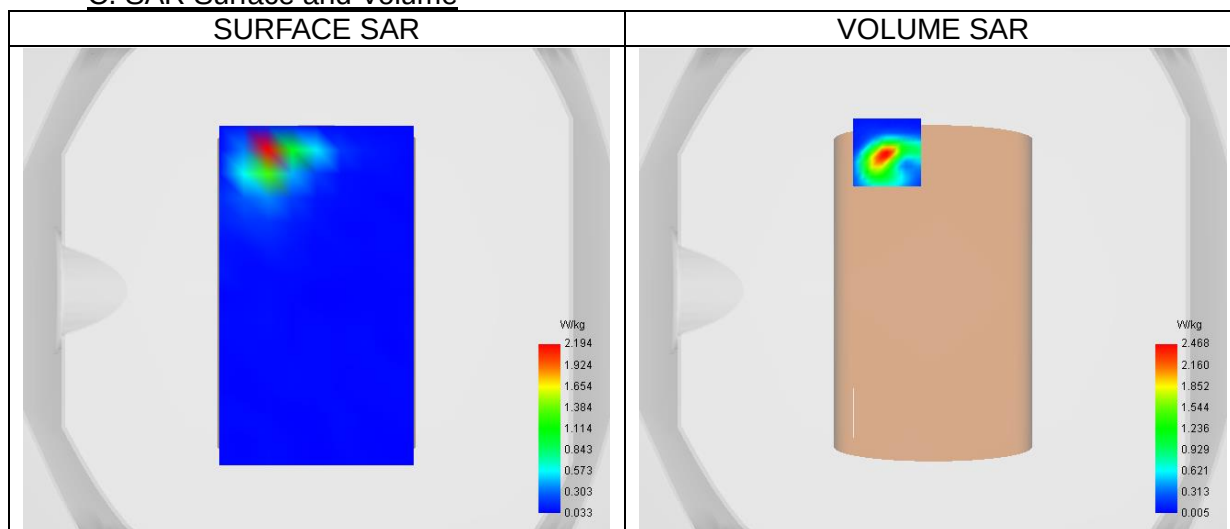
A. Experimental conditions.

Probe	0725-EPGO-448
ConvF	1.37
Area Scan	dx=10mm dy=10mm, Complete
Zoom Scan	15x15x12,dx=2mm dy=2mm dz=2.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	U-NII-2a
Signal	IEEE 802.11 n
Channels/Frequency	Middle (62)/ frequency 5310.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	5310.00
Relative permittivity (real part)	34.73
Relative permittivity (imaginary part)	16.39
Conductivity (S/m)	4.84

C. SAR Surface and Volume



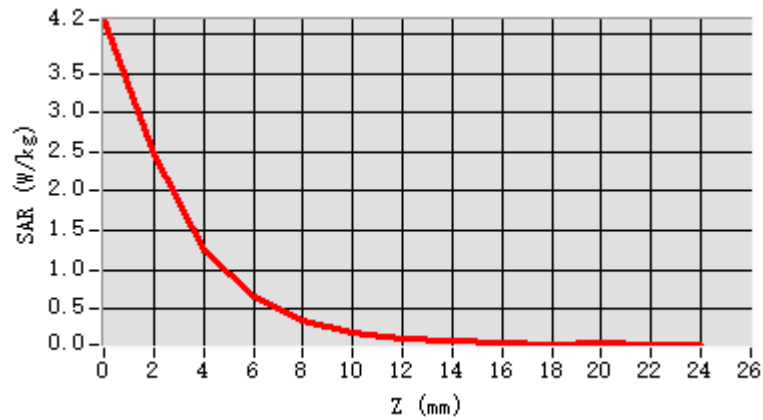
Maximum location: X=-19.00, Y=57.00 ; SAR Peak: 4.44 W/kg

D. SAR 1g & 10g

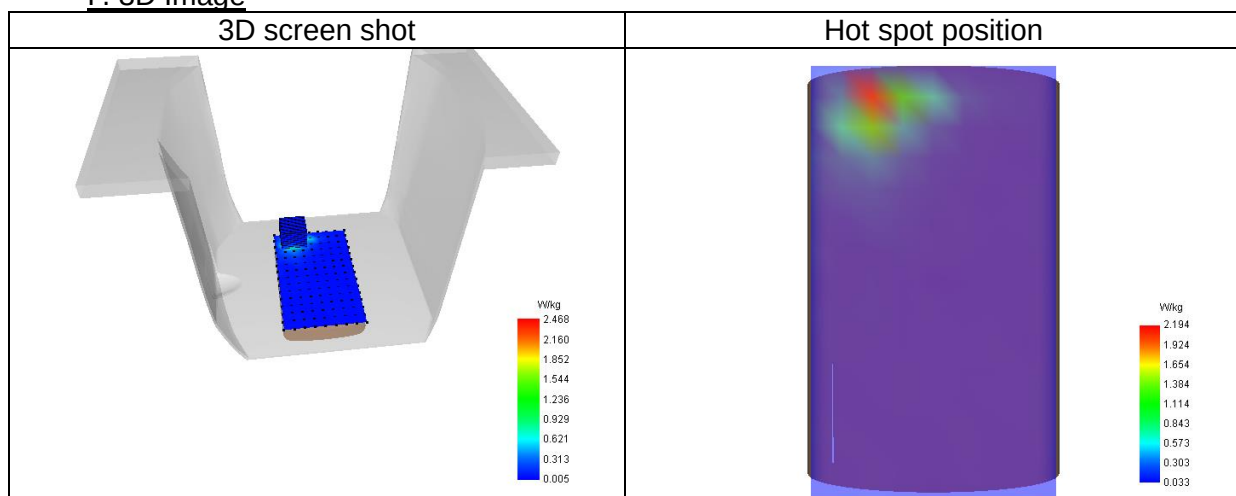
SAR 10g (W/Kg)	0.340
SAR 1g (W/Kg)	1.167
Variation (%)	0.37
Horizontal validation criteria: minimum distance (mm)	4.00
Vertical validation criteria: SAR ratio M2/M1 (%)	50.90

E. Z Axis Scan

Z (mm)	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)	4.18 4	2.46 8	1.24 7	0.64 5	0.34 2	0.19 5	0.12 3	0.09 4	0.07 9	0.05 6	0.06 0	0.04 6



F. 3D Image



5# SAR Measurement at U-NII-2c (Body, Validation Plane)

Date of measurement: 11/11/2025

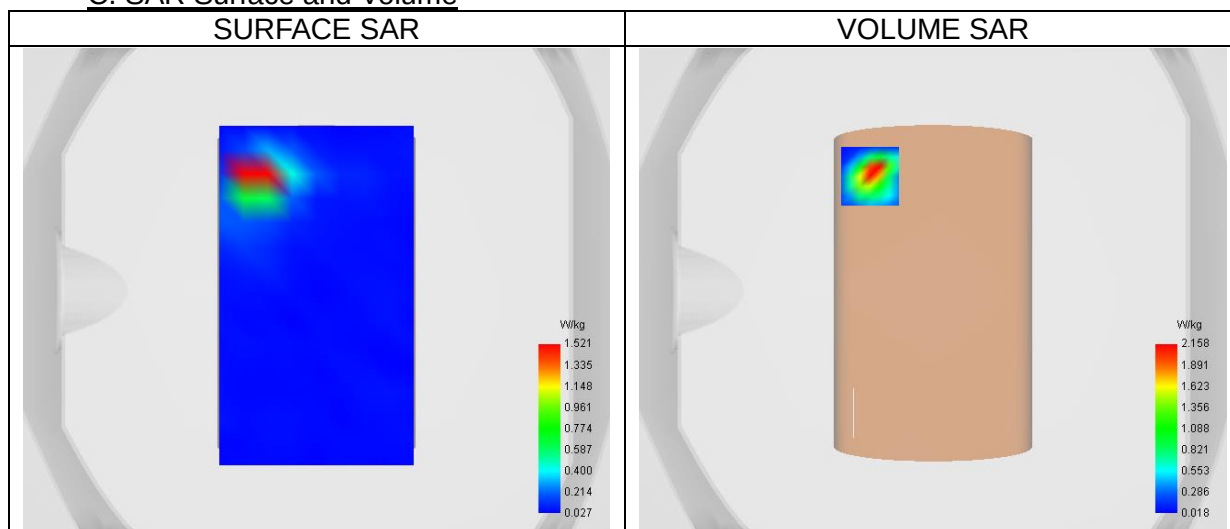
A. Experimental conditions.

Probe	0725-EPGO-448
ConvF	1.36
Area Scan	dx=10mm dy=10mm, Complete
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	U-NII-2c
Signal	IEEE 802.11 a
Channels/Frequency	Middle (120)/ frequency 5600.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	5600.00
Relative permittivity (real part)	34.89
Relative permittivity (imaginary part)	16.13
Conductivity (S/m)	5.02

C. SAR Surface and Volume



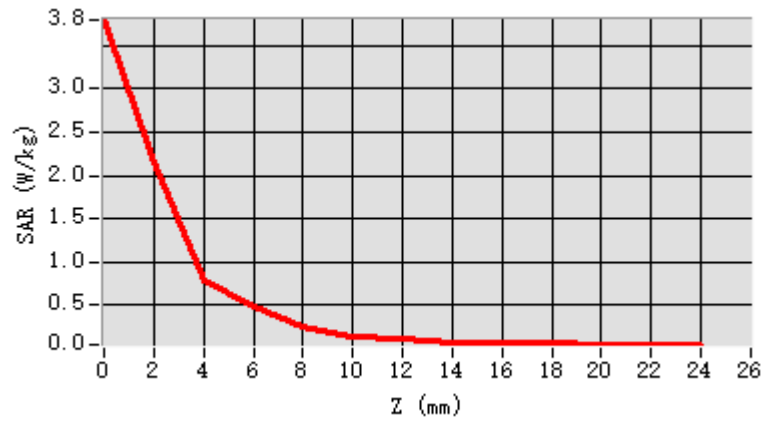
Maximum location: X=-26.00, Y=47.00 ; SAR Peak: 4.26 W/kg

D. SAR 1g & 10g

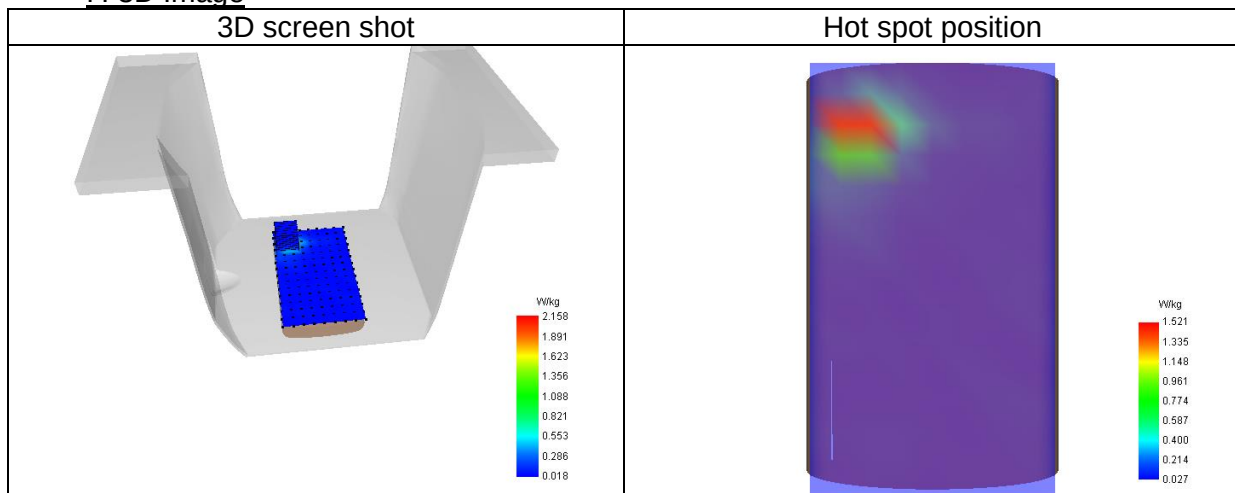
SAR 10g (W/Kg)	0.300
SAR 1g (W/Kg)	1.072
Variation (%)	3.56
Horizontal validation criteria: minimum distance (mm)	4.00
Vertical validation criteria: SAR ratio M2/M1 (%)	51.45

E. Z Axis Scan

Z (mm)	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)	3.80 0	2.15 8	0.78 2	0.48 6	0.25 7	0.13 7	0.10 2	0.05 3	0.05 4	0.05 2	0.04 0	0.04 9



F. 3D Image



6# SAR Measurement at U-NII-3 (Body, Validation Plane)

Date of measurement: 13/11/2025

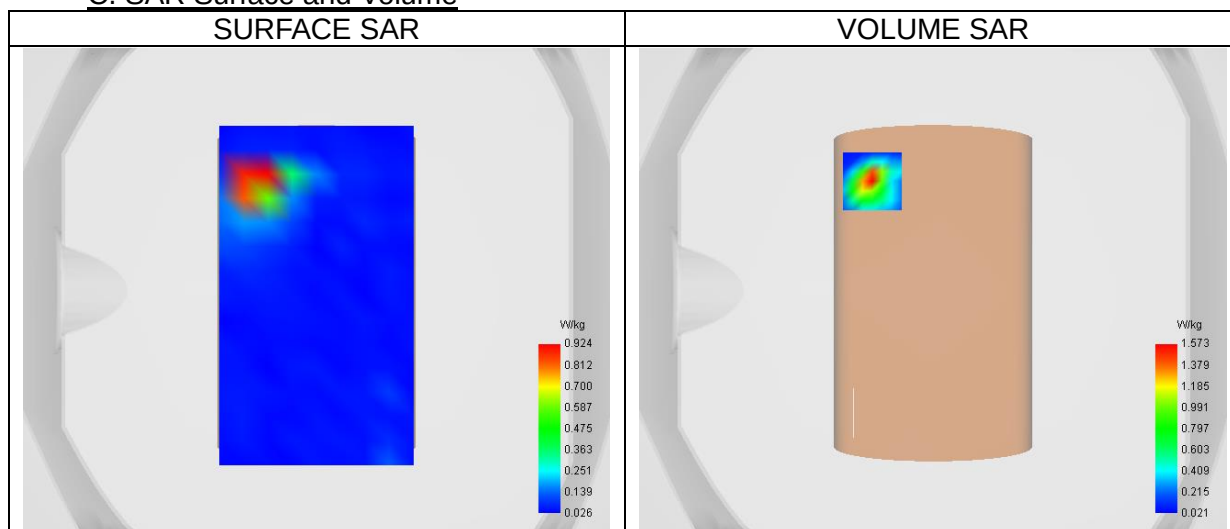
A. Experimental conditions.

Probe	0725-EPGO-448
ConvF	1.35
Area Scan	dx=10mm dy=10mm, Complete
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	U-NII-3
Signal	IEEE 802.11 n
Channels/Frequency	Middle (159)/ frequency 5795.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	5795.00
Relative permittivity (real part)	35.14
Relative permittivity (imaginary part)	16.10
Conductivity (S/m)	5.18

C. SAR Surface and Volume



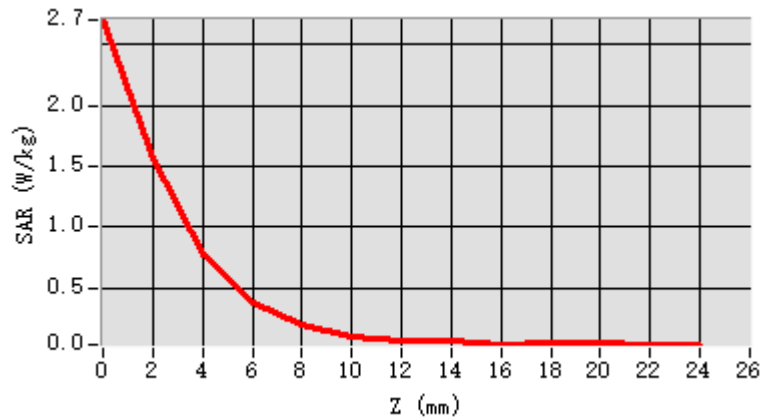
Maximum location: X=-25.00, Y=45.00 ; SAR Peak: 2.97 W/kg

D. SAR 1g & 10g

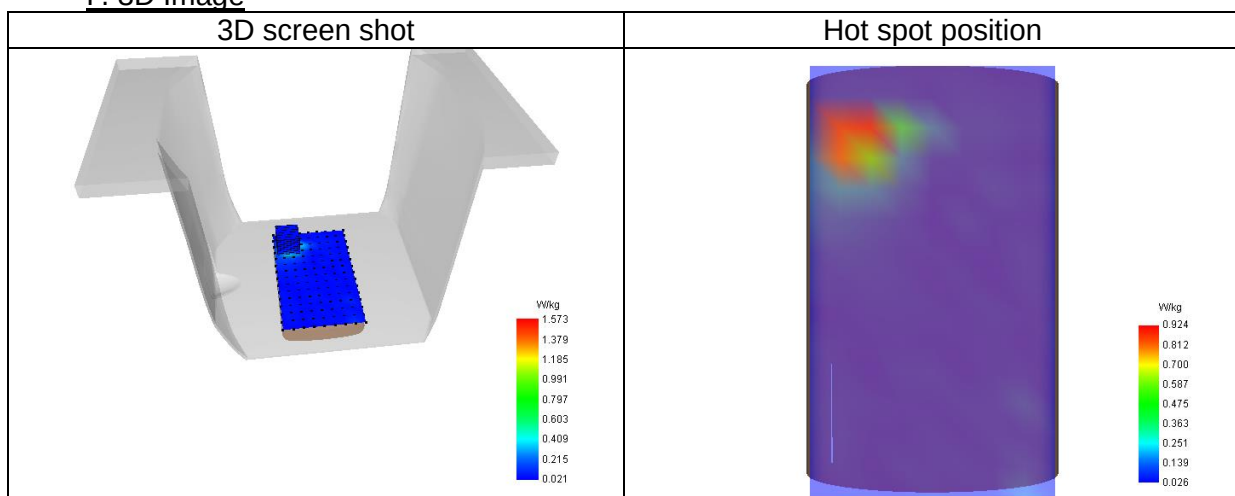
SAR 10g (W/Kg)	0.216
SAR 1g (W/Kg)	0.763
Variation (%)	4.91
Horizontal validation criteria: minimum distance (mm)	5.66
Vertical validation criteria: SAR ratio M2/M1 (%)	49.15

E. Z Axis Scan

Z (mm)	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)	2.70 4	1.57 3	0.77 3	0.38 2	0.19 7	0.10 7	0.06 9	0.06 6	0.03 4	0.04 3	0.04 3	0.04 0



F. 3D Image



7# SAR Measurement at ISM (Body, Validation Plane)

Date of measurement: 14/11/2025

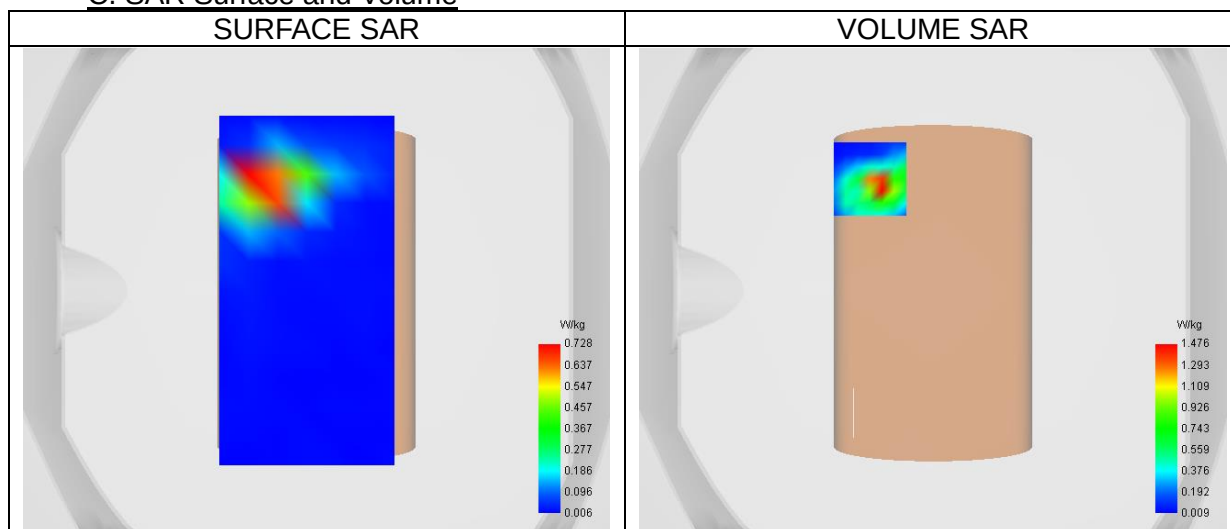
A. Experimental conditions.

Probe	0725-EPGO-448
ConvF	1.63
Area Scan	dx=12mm dy=12mm, Complete
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	ISM
Signal	IEEE 802.11 b
Channels/Frequency	Middle (6)/ frequency 2437.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	2437.00
Relative permittivity (real part)	38.04
Relative permittivity (imaginary part)	13.45
Conductivity (S/m)	1.82

C. SAR Surface and Volume



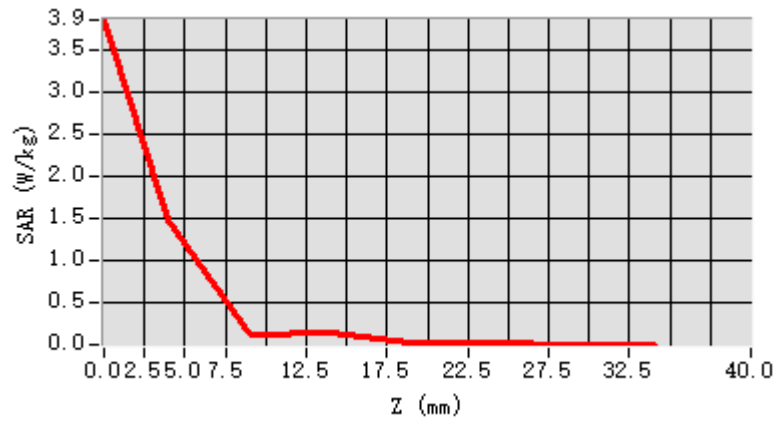
Maximum location: X=-26.00, Y=46.00 ; SAR Peak: 3.29 W/kg

D. SAR 1g & 10g

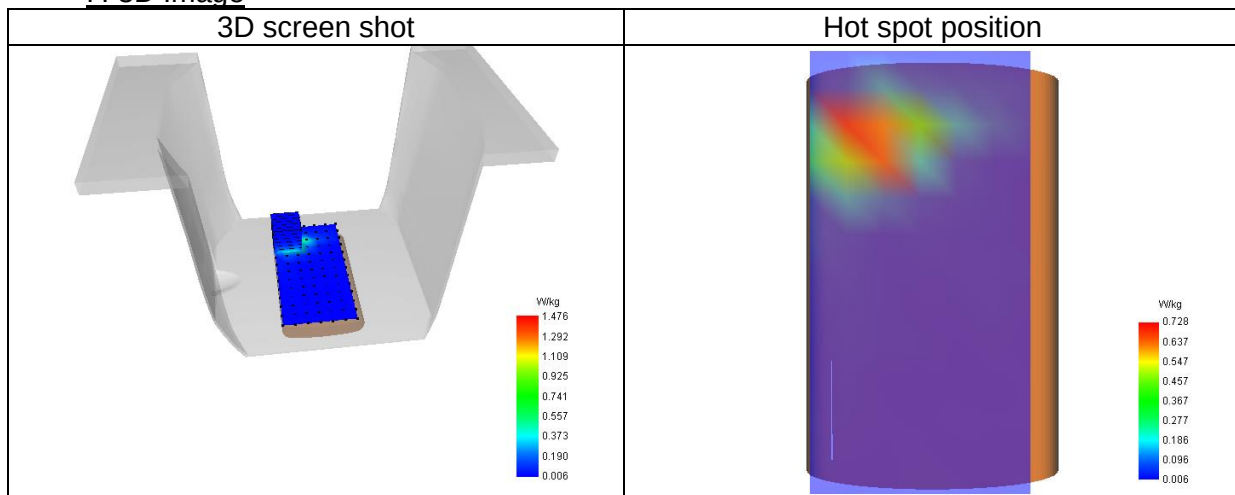
SAR 10g (W/Kg)	0.373
SAR 1g (W/Kg)	1.260
Variation (%)	-3.98
Horizontal validation criteria: minimum distance (mm)	7.07
Vertical validation criteria: SAR ratio M2/M1 (%)	32.49

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	3.854	1.476	0.140	0.164	0.035	0.028	0.013



F. 3D Image



14. Appendix D. Calibration Certificate

Table of contents
E Field Probe - 0725-EPGO-448
2450 MHz Dipole - SN 03/15 DIP 2G450-352
5000-6000 MHz Dipole - SN 13/14 WGA 33
<Justification of the extended calibration>

Docusign Envelope ID: 8D8CB647-C2B4-4414-A550-C6E3F74EB7AD



COMOSAR E-Field Probe Calibration Report

Ref : ACR.108.1.25.BES.A

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.: 0725-EPGO-448

Calibrated at MVG

Z.I. de la pointe du diable

Technopôle Brest Iroise – 295 avenue Alexis de Rochon
29280 PLOUZANE - FRANCE

Calibration date: 04/15/2025



Accreditations #2-6789
Scope available on www.cofrac.fr

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Summary:

This document presents the method and results from an accredited COMOSAR Dosimetric E-Field Probe calibration performed at MVG, using the CALIPROBE test bench, for use with a MVG COMOSAR system only. The test results covered by accreditation are traceable to the International System of Units (SI).

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COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.108.1.25.BES.A

	Name	Function	Date	Signature
Prepared by :	Pedro Ruiz	Technical Manager	4/18/2025	
Checked & approved by:	Pedro Ruiz	Technical Manager	4/18/2025	
Authorized by:	Kim Rutkowski	Quality Manager	4/23/2025	Signed by: 2B68B547AD1743* ...

	Customer Name
Distribution :	SHENZHEN NTEK TESTING TECHNOLOGY CO., LTD.

Issue	Name	Date	Modifications
A	Pedro Ruiz	4/18/2025	Initial release

Page: 2/11

Template: ACR.DDD.N.YY.MVGB.ISSUE_COMOSAR Probe vM

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COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.108.1.25.BES.A

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COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.108.1.25.BES.A

1 DEVICE UNDER TEST

Device Under Test	
Device Type	COMOSAR DOSIMETRIC E FIELD PROBE
Manufacturer	MVG
Model	SSE2
Serial Number	0725-EPGO-448
Product Condition (new / used)	New
Frequency Range of Probe	0.15 GHz-7.5GHz
Resistance of Three Dipoles at Connector	Dipole 1: R1=0.191 MΩ Dipole 2: R2=0.212 MΩ Dipole 3: R3=0.208 MΩ

2 PRODUCT DESCRIPTION

2.1 GENERAL INFORMATION

MVG's COMOSAR E field Probes are built in accordance to the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards.



Figure 1 – MVG COMOSAR Dosimetric E field Probe

Probe Length	330 mm
Length of Individual Dipoles	2 mm
Maximum external diameter	8 mm
Probe Tip External Diameter	2.5 mm
Distance between dipoles / probe extremity	1 mm

3 MEASUREMENT METHOD

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards provide recommended practices for the probe calibrations, including the performance characteristics of interest and methods by which to assess their effect. All calibrations / measurements performed meet the fore-mentioned standards.

3.1 SENSITIVITY

The sensitivity factors of the three dipoles were determined using a two step calibration method (air and tissue simulating liquid) using waveguides as outlined in the standards for frequency range 600-7500MHz and using the calorimeter cell method (transfer method) as outlined in the standards for frequency 150-450 MHz.