

FCC SAR EVALUATION REPORT

**In accordance with the requirements of
FCC 47 CFR Part 2(2.1093) and
IEEE Std 1528-2013**

Product Name: Play Pro 2

Model No.: Play Pro 2

Serial Model: N/A

Brand Name: G-Mee

Report No.: SZ26100061S01

FCC ID: 2BYA2-PLAYPRO2

Prepared for

SDC International Limited

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Prepared by

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TEST RESULT CERTIFICATION

Applicant's name.....: SDC International Limited
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Manufacturer's Name.....: OBO ELECTRONICS GROUP LIMITED
Address.....: FLAT/RM 1405A 14/F THE BELGIAN BANK BUILDING
NOS.721-725 NATHAN ROAD MONGKOK KL, Hong Kong

Product description

Product name.....: Play Pro 2
Trademark: G-Mee
Model and/or type reference .: Play Pro 2
Serial Model.....: N/A
FCC 47 CFR Part 2(2.1093)

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

Published RF exposure KDB procedures

This device described above has been tested by Shenzhen Morlab Communications Technology Co., Ltd. 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). 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.....: SZ26100061-1#

Date of Test

Date (s) of performance of tests.....: Oct. 07, 2026 ~ Oct. 08, 2026

Date of Issue.....: Oct. 13, 2026

Test Result.....: **Pass**

Reviewed by:

Pang Siyu

Pang Siyu

Approved by:

Shen Junsheng

Shen Junsheng

※ ※ Revision History ※ ※

REV.	DESCRIPTION	ISSUED DATE	REMARK
Rev.1.0	Initial Test Report Release	Oct. 13, 2026	

TABLE OF CONTENTS

1. General Information	5
1.1. RF exposure limits	5
1.2. Statement of Compliance	6
1.3. EUT Description	7
1.4. Test specification(s)	8
1.5. Ambient Condition	8
1.6. Test Facility	8
2. SAR Measurement System	9
2.1. SATIMO SAR Measurement Set-up Diagram	9
2.2. Robot	10
2.3. Probe	11
2.3.1. E-Field Probe Calibration	11
2.4. Phantoms	12
2.5. Technical Data	13
2.6. Device Holder	14
2.7. Test Equipment List	15
3. SAR Measurement Procedures	16
3.1. Power Reference	16
3.2. Area scan & Zoom scan	16
3.3. Description of interpolation/extrapolation scheme	18
3.4. Volumetric Scan	18
3.5. Power Drift	18
4. System Verification Procedure	19
4.1. Tissue Verification	19
4.1.1. Tissue Dielectric Parameter Check Results	20
4.2. System Verification Procedure	21
4.2.1. System Verification Results	22
5. SAR measurement variability	23
6. SAR Measurement Uncertainty	24
7. RF Exposure Positions	25
7.1. Generic device	25
8. RF Output Power	26
8.1. Wi-Fi & BT Output Power	26
9. Antenna Location	28
10. Stand-alone SAR test exclusion	29
11. Duty Cycle	30
12. SAR Measurement Results	31
13. Simultaneous Transmission Analysis	33
Appendix A. Photo documentation	34
Appendix B. System Check Plots	35
Appendix C. SAR Test Plots	42
Appendix D. Calibration Certificate	49

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. Statement of Compliance

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

Band	Max SAR Value Reported(W/kg)
	1-g Body (Separation distance of 0mm)
2.4GHz WLAN	0.578
5.2GHz WLAN	0.455
5.8GHz WLAN	0.494

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 had been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528-2013 & KDB 865664 D01.

1.3. EUT Description

Device Information			
Product Name	Play Pro 2		
Model Name	Play Pro 2		
Family Model	N/A		
Model Difference	N/A		
Device Phase	Identical Prototype		
Exposure Category	General population / Uncontrolled environment		
Antenna Type	FPC Antenna		
Battery Information	DC 3.85V, 3000mAh, 11.55Wh by Rechargeable Li-ion battery		
Hardware version	N/A		
Software version	N/A		
Device Operating Configurations			
Supporting Mode(s)	WLAN 2.4G/5G, Bluetooth		
Test Modulation	WLAN(DSSS/OFDM), Bluetooth (GFSK, $\pi/4$ -DQPSK, 8DPSK)		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	WLAN 2.4G	2412-2462	
	WLAN 5.2G	5180-5240	
	WLAN 5.8G	5745-5825	
	Bluetooth	2402-2480	

1.4. Test specification(s)

FCC 47 CFR Part 2(2.1093)
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

1.5. Ambient Condition

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

1.6. Test Facility

Test Laboratory:

Shenzhen Morlab Communications Technology Co., Ltd.

FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District,
ShenZhen, GuangDong Province, P. R. China

The test facility is recognized, certified or accredited by the following organizations:

FCC-Registration No.: 226174 Designation Number: CN1192

Shenzhen Morlab Communications Technology Co., Ltd. has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

IC —CAB identifier: CN0062

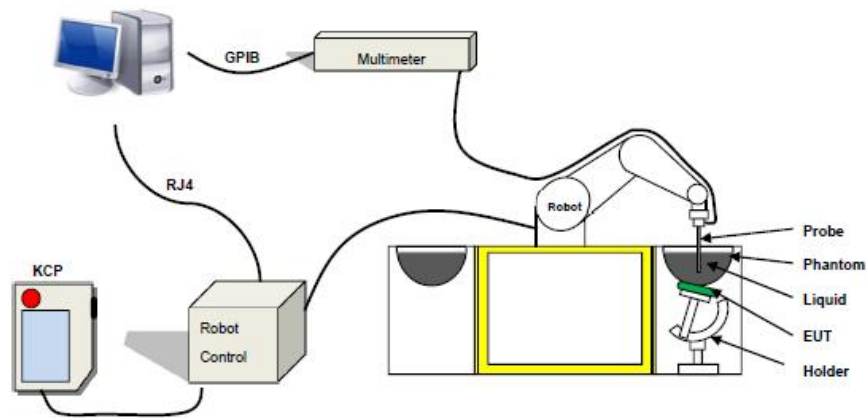
The 3m Semi-anechoic chamber of Shenzhen Morlab Communications Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 7183A

A2LA-Lab Cert. No.: 4267.01

Shenzhen Morlab Communications Technology Co., Ltd. has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

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. 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 with following specifications is used.



- Probe Length: 330 mm
- Length of Individual Dipoles: 2 mm
- Maximum external diameter: 8 mm
- Probe Tip External Diameter: 2.5 mm
- Distance between dipole/probe extremity: 1 mm
- Dynamic range: 0.01-100 W/kg
- Probe linearity: 3%
- Axial Isotropy: < 0.10 dB
- Spherical Isotropy: < 0.10 dB
- Calibration range: 150 MHz to 7.5 GHz for head & body simulating liquid.
- 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 $\pm 0.25\text{dB}$. 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. Phantoms

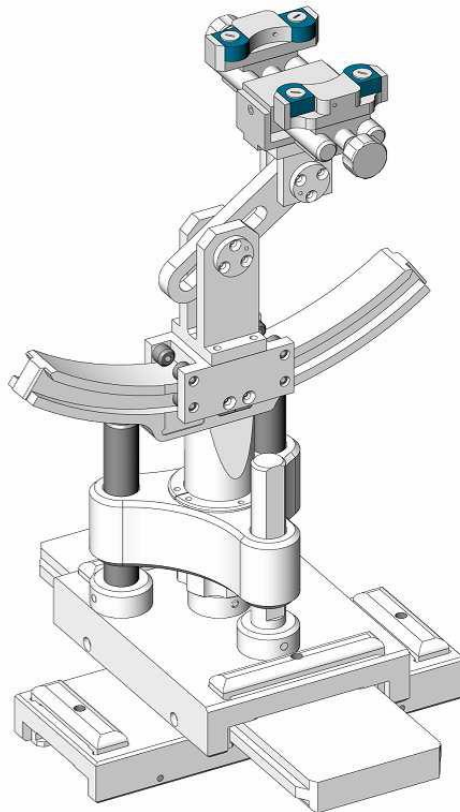
For the measurements the Specific Anthropomorphic Mannequin (SAM) defined by the IEEE SCC-34/SC2 group is used. The phantom is a polyurethane shell integrated in a wooden table. The thickness of the phantom amounts to 2mm +/- 0.2mm. It enables the dosimetric evaluation of left and right phone usage and includes an additional flat phantom part for the simplified performance check. The phantom set-up includes a cover, which prevents the evaporation of the liquid.



SAM

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

2.6. Device Holder



The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5 mm distance, a positioning uncertainty of ± 0.5 mm would produce a SAR uncertainty of ± 20 %. Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.

2.7. Test Equipment List

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

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
SAR Test System	SATIMO	N/A	V5.3.15.11	N/A	N/A
E-Field Probe	MVG	SSE2	SN 37/08 EP80	2026.07.05	2027.07.04
E-Field Probe	MVG	SSE2	SN 27/13 EPG193	2026.07.05	2027.07.04
2450MHzDipole	MVG	SID2450	SN 30/13 DIP2G450-263	2026.07.05	2029.07.04
Waveguide	MVG	SWG5500	SN 41/12 WGA21	2026.07.05	2029.07.04
Dielectric Probe Kit	MVG	SCLMP	SN 32/14 OCPG67	2026.07.05	2027.07.04
Antenna	MVG	ANTA3	SN 07/13 ZNTA52	N/A	N/A
Phantom1	MVG	SAM	SN 32/14 SAM115	N/A	N/A
Phantom3	MVG	SAM	SN 21/21 ELLI48	N/A	N/A
Phone holder	MVG	N/A	SN 32/14 MSH97	N/A	N/A
Laptop holder	MVG	N/A	SN 32/14 LSH29	N/A	N/A
Attenuator	Agilent	HXT-10-8-SMA	240327017	2026.02.04	2027.02.03
Directional coupler	Xi'an Xingbo	XBOH-OA08-20dB	211123-4-3	2026.02.03	2027.02.02
Network Analyzer	Agilent	E5071C	MY46520378	2026.08.25	2027.08.24
Multi Meter	Keithley	Multi Meter 2000	4050073	2026.08.25	2027.08.24
Signal Generator	Agilent	N5182A	MY50140530	2026.08.25	2027.08.24
Wireless Communication Test Set	Agilent	8960-E5515C	MY48360751	2026.02.04	2027.02.03
Wireless Communication Test Set	R&S	CMW500	156324	2026.08.25	2027.08.24
Power Amplifier	DESAY	WCS-DLNA50M8G50G1	CSKJLNA231227A	2026.08.25	2027.08.24
Power Meter	R&S	NRP	100510	2026.08.25	2027.08.24
Power Sensor	R&S	NRP-Z11	101919	2026.08.25	2027.08.24
Power Sensor	Keysight	U2021XA	MY56280002	2026.08.25	2027.08.24
Temperature hygrometer	TOPRIE	TP502V4-P	6700000124198	2026.08.25	2027.08.24
Thermograph	Elitech	RC-4	S/N EF7176501537	2026.08.25	2027.08.24
MCL	Attenuation	6dB	351-218-010	2026.02.04	2027.02.03
MCL	Attenuation	6dB	351-218-011	2026.02.04	2027.02.03
MCL	Attenuation	6dB	351-218-012	2026.02.04	2027.02.03

3. SAR Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

3.1. Power Reference

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

3.2. Area scan & Zoom scan

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

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

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

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

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ 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 used to determine 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 for 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 defined 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.

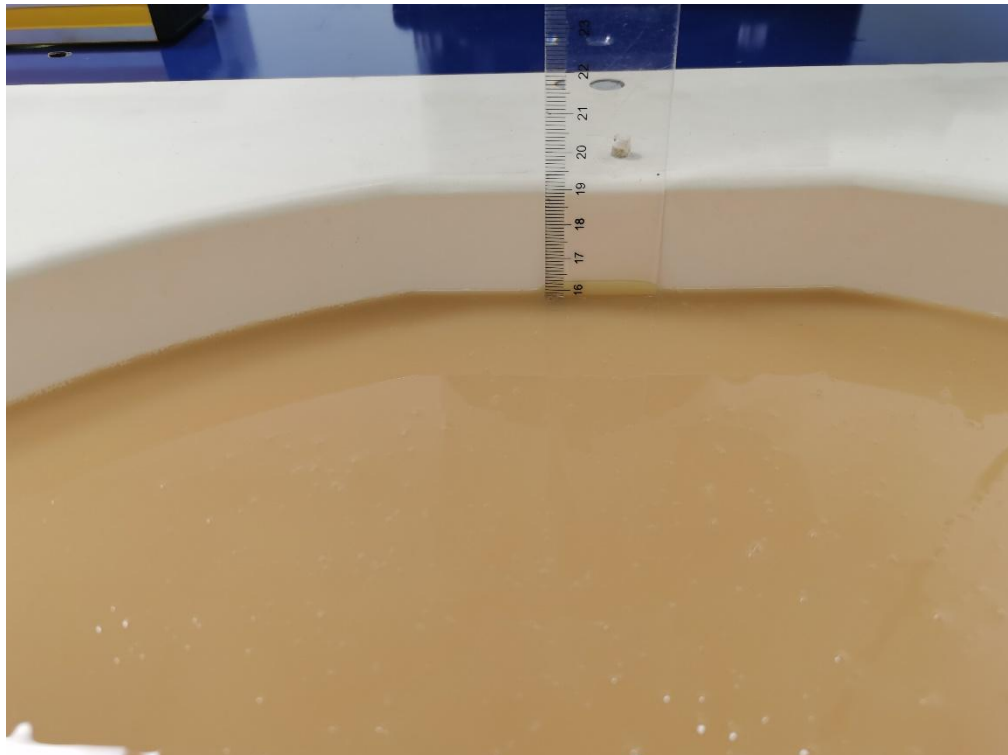
4. System Verification Procedure

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)	750	835	900	1800	1900	2000	2450	2600	5200	5800
Water	34.40	34.40	34.40	55.36	55.36	57.87	57.87	57.87	65.53	65.53
NaCl	0.79	0.79	0.79	0.35	0.35	0.16	0.16	0.16	0.00	0.00
1,2-Propanediol	64.81	64.81	64.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Triton X-100	0.00	0.00	0.00	30.45	30.45	19.97	19.97	19.97	24.24	24.24
DGBE	0.00	0.00	0.00	13.84	13.84	22.00	22.00	22.00	10.23	10.23

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 parameter are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within $\pm 5\%$ of the target values.

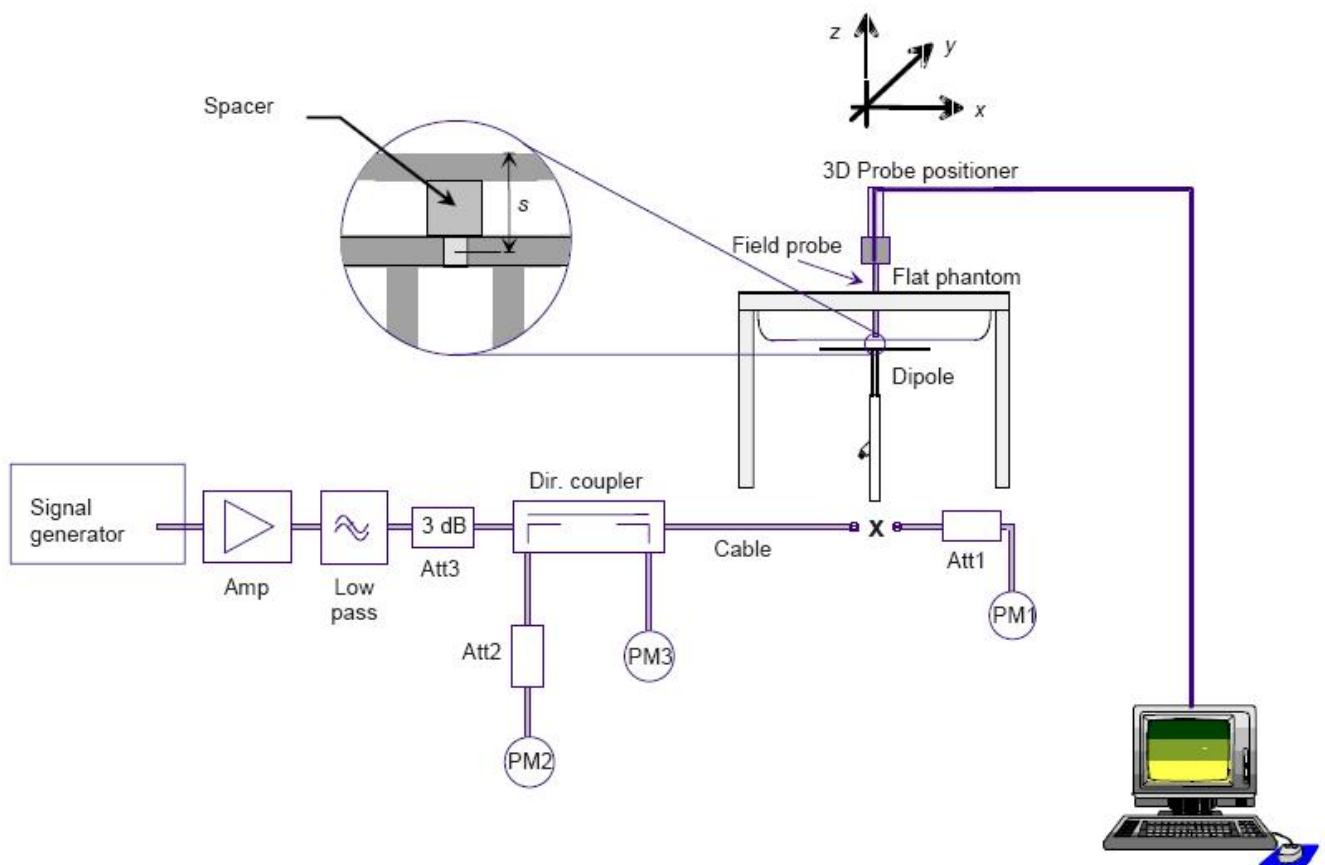
Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
		$\epsilon_r (\pm 5\%)$	$\sigma \text{ (S/m)} (\pm 5\%)$	ϵ_r	$\sigma \text{ (S/m)}$		
Head 2450	2450	39.20 (37.24~41.16)	1.80 (1.71~1.89)	41.06	1.81	21.5 °C	Oct. 07, 2026
Head 5200	5200	36.00 (34.20~37.80)	4.66 (4.43~4.89)	36.03	4.66	21.8 °C	Oct. 08, 2026
Head 5800	5800	35.30 (33.54~37.07)	5.27 (5.01~5.53)	35.34	5.29	21.1 °C	Oct. 08, 2026

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

4.2. System Verification Procedure

The system verification is performed for verifying the accuracy of the complete measurement system and performance of the software. The dipole is connected to the signal source consisting of signal generator and amplifier via a directional coupler, N-connector cable and adaption to SMA. It is fed with a power of 100mW (below 5GHz) or 50mW (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	Power fed to reference dipole (mW)	Measured SAR Value		Measured SAR (Normalized to 1W)		Target SAR Value (1W)		Deviation (%)		Test Date
		1-g (W/Kg)	10-g (W/Kg)	1-g (W/Kg)	10-g (W/Kg)	1-g (W/Kg)	10-g (W/Kg)	1-g (W/Kg)	10-g (W/Kg)	
2450MHz	100	5.188	2.363	51.88	23.63	53.34	24.22	-2.74%	-2.44%	Oct. 07, 2026
5200MHz	50	3.845	1.108	76.90	22.16	77.82	22.53	-1.22%	-1.64%	Oct. 08, 2026
5800MHz	50	4.104	1.203	82.08	24.06	78.72	22.83	4.27%	5.39%	Oct. 08, 2026

5. SAR measurement variability

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

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg ($\sim 10\%$ from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .

6. SAR Measurement Uncertainty

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Symbol	Uncertainty Component	Prob. Dist.	Unc. $a(x_i)$	Div. q_i	$u(x_i) = a(x_i)/q_i$	C_i	$u(y) = C_i * u(x_i)$	v_i
Measurement system errors								
CF	Probe calibration	N ($k = 2$)	5.72	2	2.86	1	2.86	∞
CF _{drift}	Probe calibration drift	R	0.15	$\sqrt{3}$	0.09	1	0.09	∞
LIN	Probe linearity and detection limit	R	1.27	$\sqrt{3}$	0.73	1	0.73	∞
BBS	Broadband signal	R	0.12	$\sqrt{3}$	0.07	1	0.07	∞
ISO	Probe isotropy	R	0.16	$\sqrt{3}$	0.09	1	0.09	∞
DAE	Other probe and data acquisition errors	N	2.4	1	2.40	1	2.40	∞
AMB	RF ambient and noise	N	3.51	1	3.51	1	3.51	∞
Δ_{xyz}	Probe positioning errors	N	1.2	1	1.20	2/5	1.20	
DAT	Data processing errors	N	2.1	1	2.10	1	2.10	∞
Phantom and device (DUT or validation antenna) errors								
LIQ(σ)	Measurement of phantom conductivity(σ)	N	4.1	1	4.1	C_ϵ, C_σ	4.10	∞
LIQ(T_c)	Temperature effects (medium)	R	2.7	$\sqrt{3}$	1.56	C_ϵ, C_σ	1.56	∞
EPS	Shell permittivity	R	2.1	$\sqrt{3}$	1.21	See 8.4.2.3	0.30	∞
DIS	Distance between the radiating element of the DUT and the phantom medium	N	0.7	1	0.7	2	1.40	∞
D_{xyz}	Repeatability of positioning the DUT or source against the phantom	N	1.2	1	1.2	1	1.20	5
H	Device holder effects	N	3.8	1	3.8	1	3.80	
MOD	Effect of operating mode on probe sensitivity	R	3.42	$\sqrt{3}$	1.97	1	1.97	∞
TAS	Time-average SAR	R	1.8	$\sqrt{3}$	1.04	1	1.04	∞
RF _{drift}	Variation in SAR due to drift in output of DUT	N	4.5	1	4.5	1	4.50	
VAL	Validation antenna uncertainty (validation measurement only)	N	1.4	1	1.4	1	1.40	
P_{in}	Uncertainty in accepted power (validation measurement only)	N	2.4	1	2.4	1	2.40	
Corrections to the SAR result (if applied)								
$C(\epsilon', \sigma)$	Phantom deviation from target (ϵ', σ)	N	3.7	1	3.7	1	3.70	
$C(R)$	SAR scaling	R	1.8	$\sqrt{3}$	1.04	1	1.04	
$u(\Delta SAR)$	Combined uncertainty						10.84	
U	Expanded uncertainty and effective degrees of freedom					U =	21.68	

7. RF Exposure Positions

7.1. Generic device

The SAR evaluation shall be performed for surface of the DUT that are accessible during intended use, as indicated in Figure 7.1. Adjust the distance between the device surface and the flat phantom to 0mm.

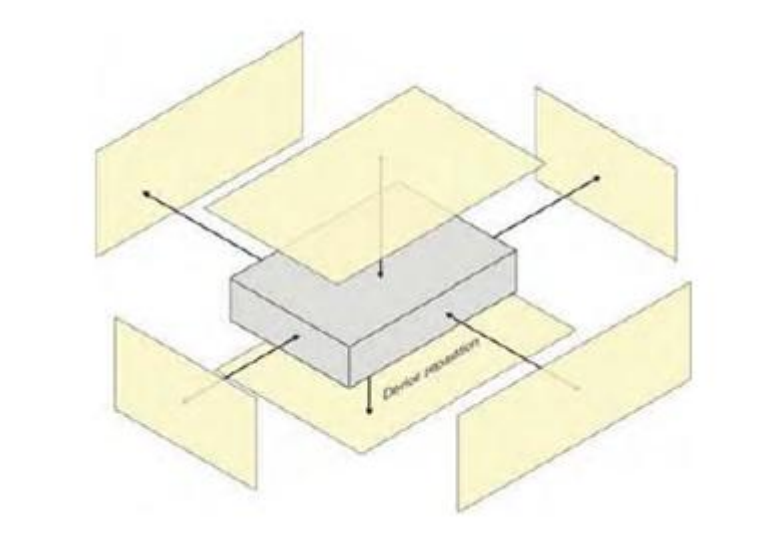


Figure 7.1 – Test positions for generic device

8. RF Output Power

8.1. Wi-Fi & BT Output Power

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11b	1	2412	11.00	10.51
	6	2437	11.00	10.08
	11	2462	11.00	10.08
802.11g	1	2412	11.50	11.12
	6	2437	11.50	10.82
	11	2462	11.50	10.79
802.11n (HT20)	1	2412	11.50	11.10
	6	2437	11.50	10.68
	11	2462	11.50	10.81
802.11n (H40)	3	2422	11.50	11.35
	6	2437	11.50	11.16
	9	2452	11.50	10.77

Mode	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11A	5180	7.50	6.95
	5200	7.50	7.32
	5240	7.50	7.20
802.11N20SISO	5180	8.50	7.90
	5200	8.50	8.22
	5240	8.50	8.26
802.11N40SISO	5190	8.00	7.12
	5230	8.00	7.87
802.11AC20SISO	5180	8.50	6.99
	5200	8.50	7.16
	5240	8.50	8.31
802.11AC40SISO	5190	8.50	7.32
	5230	8.50	8.08
802.11AC80SISO	5210	8.00	7.67

Mode	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11A	5745	7.50	6.39
	5785	7.50	6.85
	5825	7.50	7.03
802.11N20SISO	5745	8.00	7.38
	5785	8.00	7.72
	5825	8.00	7.93
802.11N40SISO	5755	8.00	7.48
	5795	8.00	7.94
802.11AC20SISO	5745	8.50	7.47
	5785	8.50	7.84
	5825	8.50	8.04
802.11AC40SISO	5755	8.00	7.62
	5795	8.00	7.89
802.11AC80SISO	5775	8.00	7.72

BR+EDR	Output Power (dBm)				
	Channel	Tune-up (dBm)	Data Rates		
			1M	2M	3M
	0CH	5.00	3.86	4.06	4.15
	39CH	4.00	3.48	2.98	2.99
	78CH	3.00	2.08	2.13	2.15

Mode	Channel	Tune-up (dBm)	Output Power (dBm)
BLE1M	CH00	-2.00	-2.29
	CH19	-2.00	-2.29
	CH39	-4.00	-4.22

9. Antenna Location

Left Side

Bottom Side



WIFI/BT
Antenna

Top Side

Right Side

Front View

10. Stand-alone SAR test exclusion

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

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

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

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

Mode	Pmax (dBm)	Pmax (mW)	Distance (mm)	f (GHz)	Calculation Result	SAR Exclusion threshold	SAR test exclusion
Bluetooth	5.00	3.16	5	2.480	1.0	3	Yes

NOTE: Standalone SAR test exclusion for Bluetooth.

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

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

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

Mode	Position	Pmax (dBm)	Pmax (mW)	Distance (mm)	f (GHz)	x	Estimated SAR (W/kg)
Bluetooth	Body	5.00	3.16	5	2.48	7.5	0.132

NOTE: Estimated SAR calculation for Bluetooth.

11. Duty Cycle

The calculated SAR is obtained by the following formula:

$$\text{Reported SAR} = \text{Measured SAR} \times 10^{(P_{\text{target}} - P_{\text{measured}})/10}$$

$$\text{Scaling factor} = 10^{(P_{\text{target}} - P_{\text{measured}})/10}$$

$$\text{Reported SAR} = \text{Measured SAR} \times \text{Scaling factor}$$

Where

P_{target} is the power of manufacturing upper limit;

P_{measured} is the measured power;

Measured SAR is measured SAR at measured power which including power drift)

Reported SAR which including Power Drift and Scaling factor

Duty Cycle

Test Mode	Duty Cycle
WLAN	100%
Bluetooth	100%

12. SAR Measurement Results

< WLAN 2.4G >

Test Position of Body with 0mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Plot
			1g	10g					
Front Side	1/2412	802.11 b	0.335	0.173	3.71	10.51	11.00	0.375	
Back Side	1/2412	802.11 b	0.516	0.266	1.22	10.51	11.00	0.578	#3
Back Side	3/2422	802.11n HT40	0.511	0.260	0.20	11.35	11.50	0.529	
Left Side	1/2412	802.11 b	0.181	0.093	0.75	10.51	11.00	0.203	
Right Side	1/2412	802.11 b	0.248	0.127	0.78	10.51	11.00	0.278	
Top Side	1/2412	802.11 b	0.258	0.126	3.35	10.51	11.00	0.289	
Bottom Side	1/2412	802.11 b	0.062	0.032	-3.01	10.51	11.00	0.069	

< WLAN 5.2G >

Test Position of Body with 0mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Plot
			1g	10g					
Front Side	48/5240	802.11ac VHT20	0.270	0.120	-0.65	8.31	8.50	0.282	
Back Side	48/5240	802.11ac VHT20	0.436	0.197	-3.67	8.31	8.50	0.455	#1
Left Side	48/5240	802.11ac VHT20	0.144	0.063	0.68	8.31	8.50	0.150	
Right Side	48/5240	802.11ac VHT20	0.196	0.085	0.12	8.31	8.50	0.205	
Top Side	48/5240	802.11ac VHT20	0.218	0.096	-2.95	8.31	8.50	0.228	
Bottom Side	48/5240	802.11ac VHT20	0.061	0.027	-1.53	8.31	8.50	0.064	

< WLAN 5.8G >

Test Position of Body with 0mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Plot
			1g	10g					
Front Side	165/5825	802.11ac VHT20	0.271	0.121	0.56	8.04	8.50	0.301	
Back Side	165/5825	802.11ac VHT20	0.444	0.205	-0.47	8.04	8.50	0.494	#2
Left Side	165/5825	802.11ac VHT20	0.147	0.065	1.10	8.04	8.50	0.163	
Right Side	165/5825	802.11ac VHT20	0.204	0.092	0.85	8.04	8.50	0.227	
Top Side	165/5825	802.11ac VHT20	0.222	0.097	-0.18	8.04	8.50	0.247	
Bottom Side	165/5825	802.11ac VHT20	0.044	0.019	1.59	8.04	8.50	0.049	

Note:

- 1) When the reported SAR of the highest measured maximum output power channel for the Initial test configuration is ≤ 0.8 W/kg, no further SAR testing is required for other channels.
- 2) SAR is not required for the following 2.4 GHz OFDM conditions.
 - a) When KDB Publication 447498 D01 SAR test exclusion applies to the OFDM configuration.
 - b) 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.

13. Simultaneous Transmission Analysis

Note: WiFi and Bluetooth use the same antenna and cannot be transmitted at the same time.

Appendix A. Photo documentation

Refer to appendix Test Setup photo-SAR

Appendix B. System Check Plots

Table of contents
#1 System Performance Check - 2450MHz
#2 System Performance Check - 5200MHz
#3 System Performance Check - 5800MHz

#1

Date of measurement: 7/10/2026

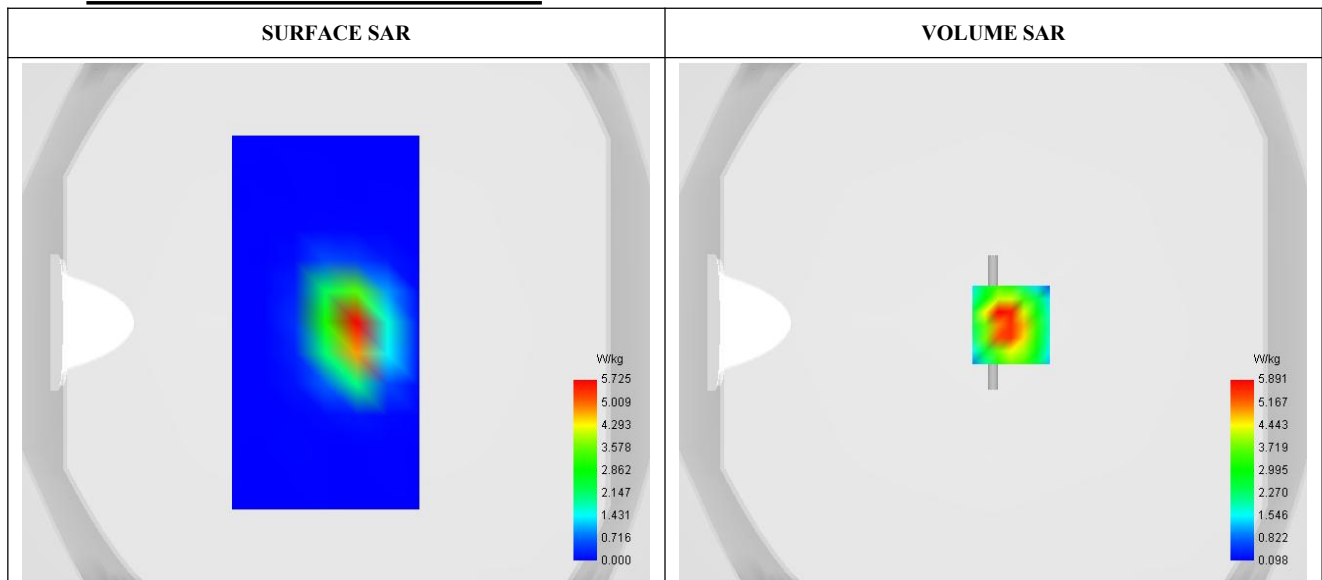
A. Experimental conditions.

Probe	SN 37/08 EP80
ConvF	4.82
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
Channels/Frequency	Middle

B. Permittivity

Middle TX Frequency (MHz)	2450.000
Relative permittivity (real part)	41.060
Relative permittivity (imaginary part)	13.220
Conductivity (S/m)	1.810

C. SAR Surface and Volume



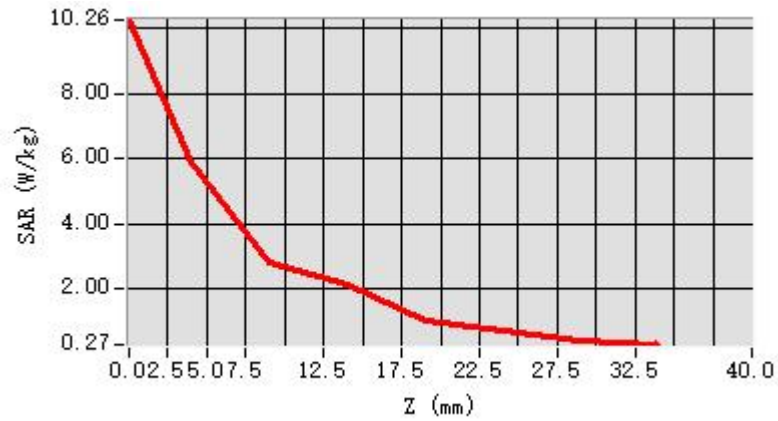
Maximum location: X=7.00, Y=-1.00 ; SAR Peak: 8.99 W/kg

D. SAR 1g & 10g

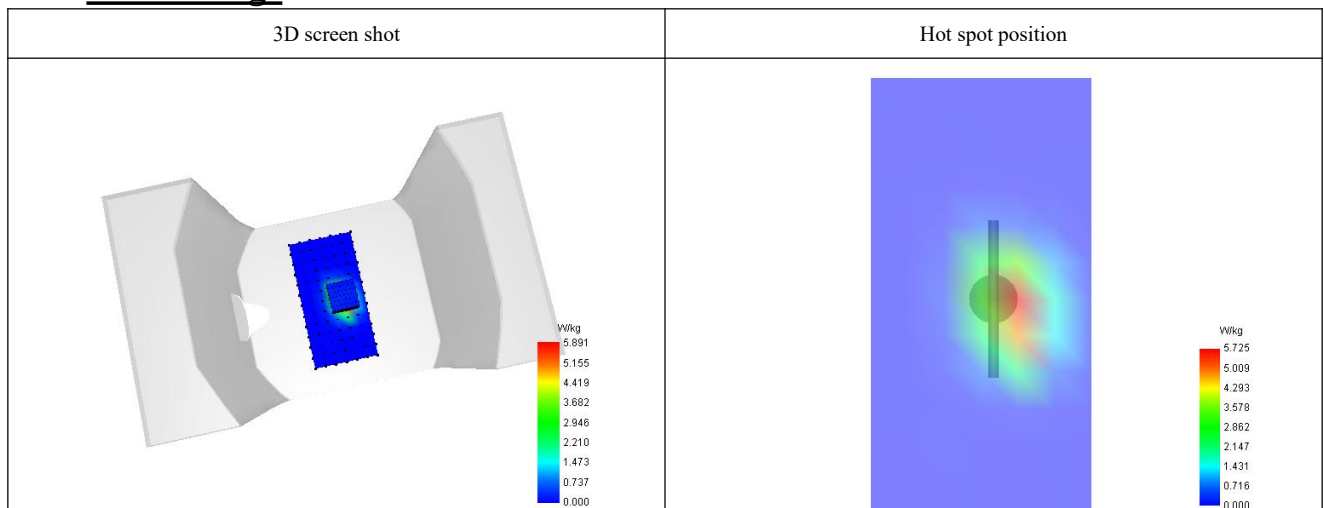
SAR 10g (W/Kg)	2.363
SAR 1g (W/Kg)	5.188
Variation (%)	-3.040
Horizontal validation criteria: minimum distance (mm)	10.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	47.564081

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	10.263	5.891	2.802	2.126	1.045	0.723	0.415



F. 3D Image



#2

Date of measurement: 8/10/2026

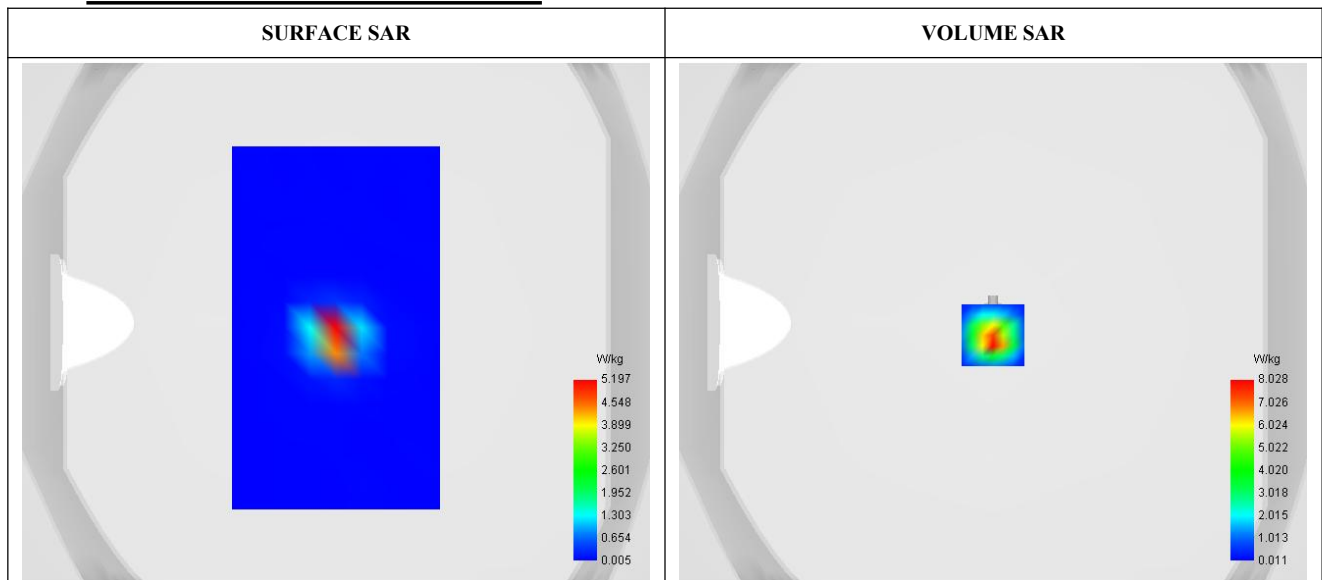
A. Experimental conditions.

Probe	SN 27/13 EPG193
ConvF	21.61
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	CW5200
Channels/Frequency	Middle

B. Permittivity

Middle TX Frequency (MHz)	5200.000
Relative permittivity (real part)	36.030
Relative permittivity (imaginary part)	16.130
Conductivity (S/m)	4.660

C. SAR Surface and Volume



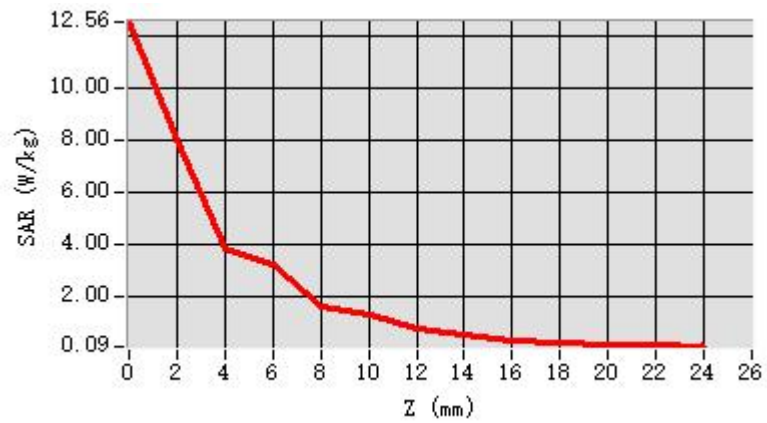
Maximum location: X=0.00, Y=-5.00 ; SAR Peak: 13.42 W/kg

D. SAR 1g & 10g

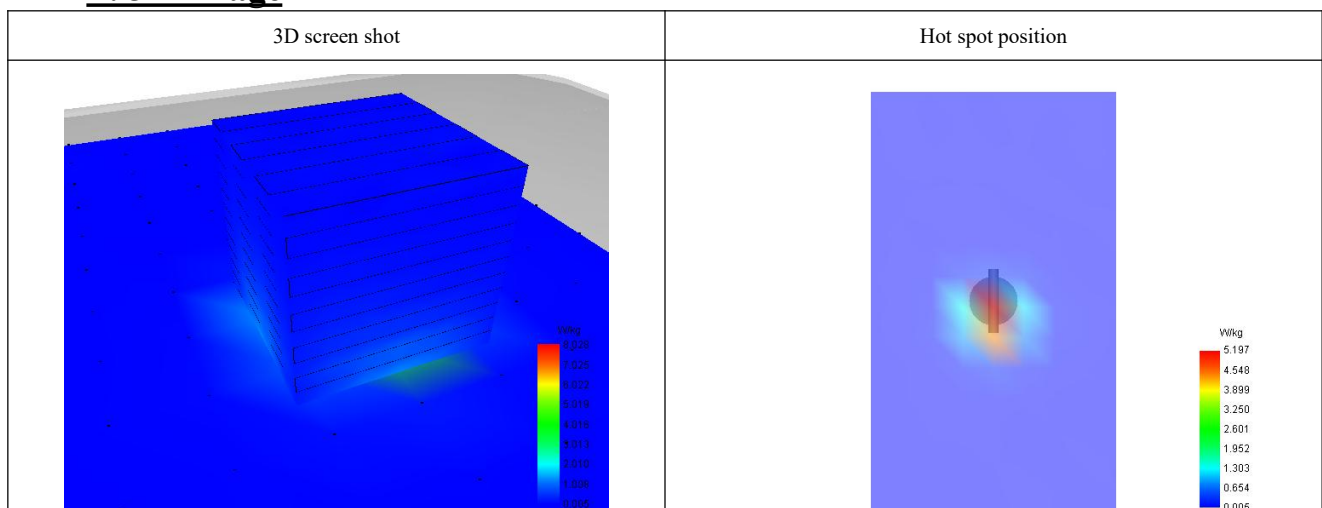
SAR 10g (W/Kg)	1.108
SAR 1g (W/Kg)	3.845
Variation (%)	4.620
Horizontal validation criteria: minimum distance (mm)	4.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	48.169909

E. Z Axis Scan

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)	12.564	8.028	3.867	3.214	1.625	1.324	0.785	0.581	0.314	0.263	0.145	0.126



F. 3D Image



#3

Date of measurement: 8/10/2026

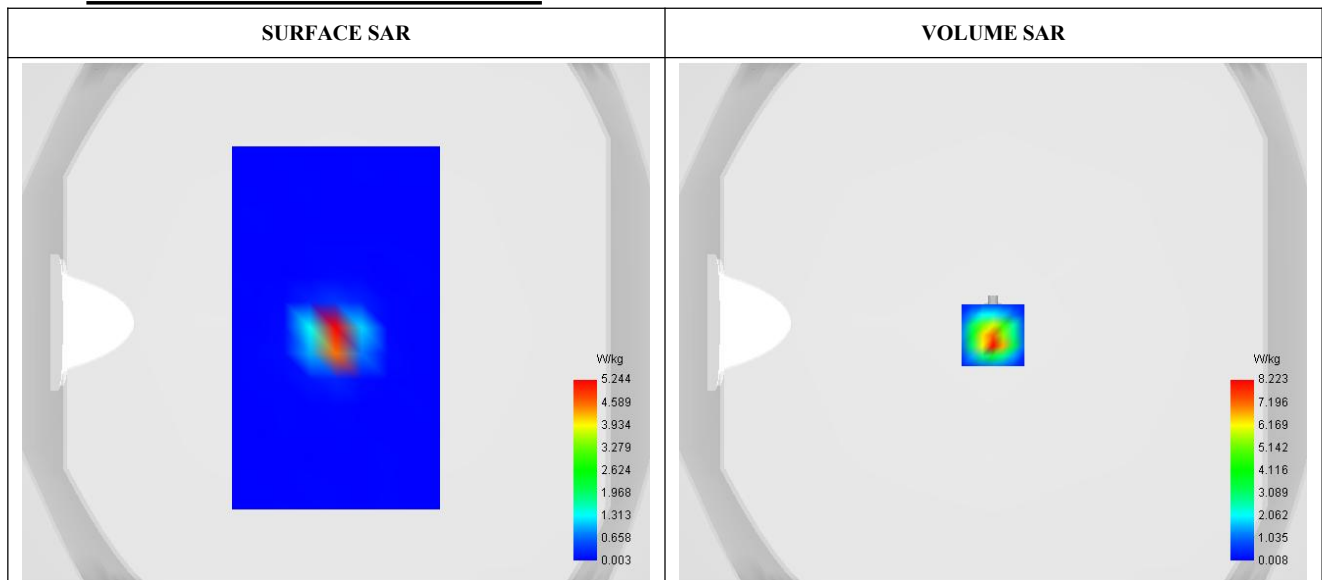
A. Experimental conditions.

Probe	SN 27/13 EPG193
ConvF	22.42
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	CW5800
Channels/Frequency	Middle

B. Permittivity

Middle TX Frequency (MHz)	5800.000
Relative permittivity (real part)	35.340
Relative permittivity (imaginary part)	16.360
Conductivity (S/m)	5.290

C. SAR Surface and Volume



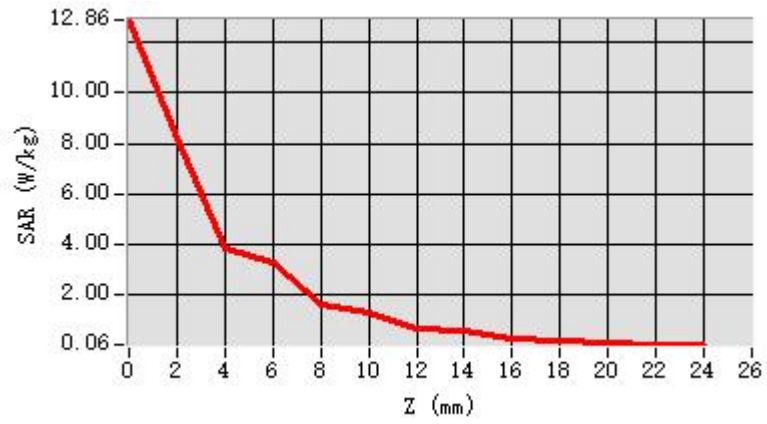
Maximum location: X=0.00, Y=-5.00 ; SAR Peak: 13.82 W/kg

D. SAR 1g & 10g

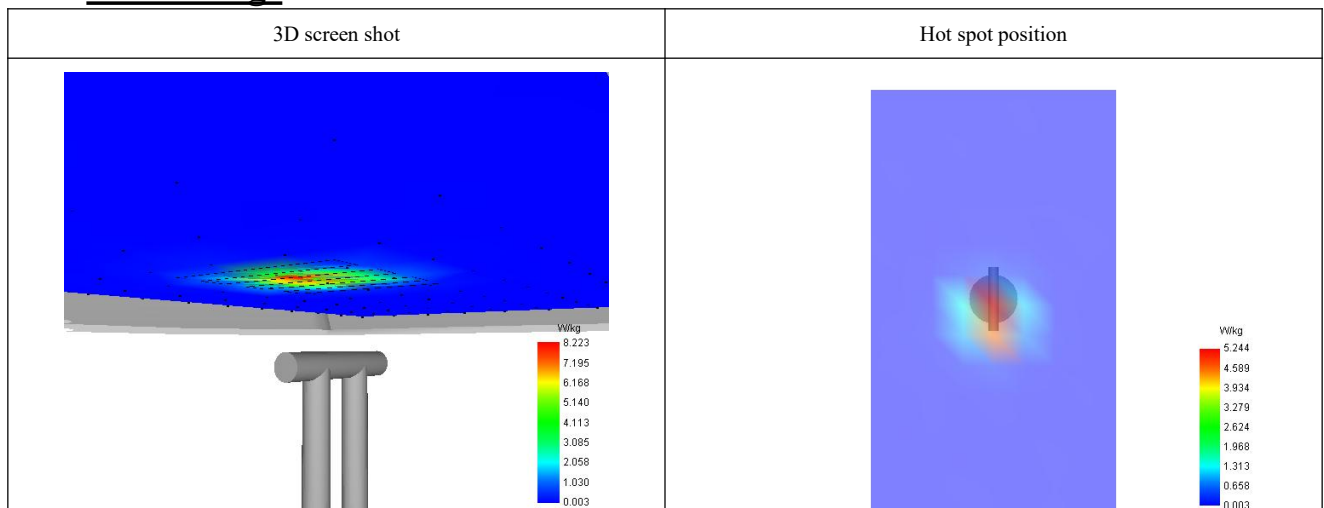
SAR 10g (W/Kg)	1.203
SAR 1g (W/Kg)	4.104
Variation (%)	1.050
Horizontal validation criteria: minimum distance (mm)	4.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	47.257692

E. Z Axis Scan

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)	12.863	8.223	3.886	3.302	1.611	1.337	0.671	0.582	0.287	0.232	0.129	0.083



F. 3D Image



Appendix C. SAR Test Plots

Table of contents	
#1 WALN 5.2G Body	
#2 WALN 5.8G Body	
#3 WALN 2.4G Body	

#1

Date of measurement: 8/10/2026

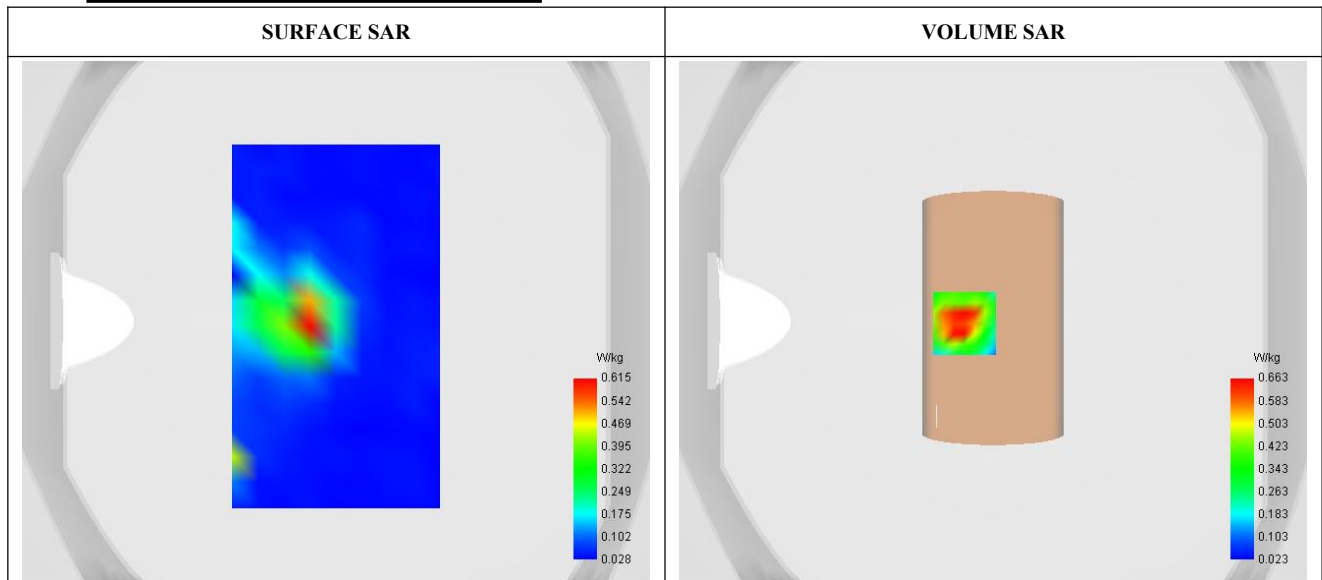
A. Experimental conditions.

Probe	SN 27/13 EPG193
ConvF	21.61
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-1
Channels/Frequency	High (48)/ frequency 5240.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	5240.00
Relative permittivity (real part)	36.000
Relative permittivity (imaginary part)	16.140
Conductivity (S/m)	4.699

C. SAR Surface and Volume



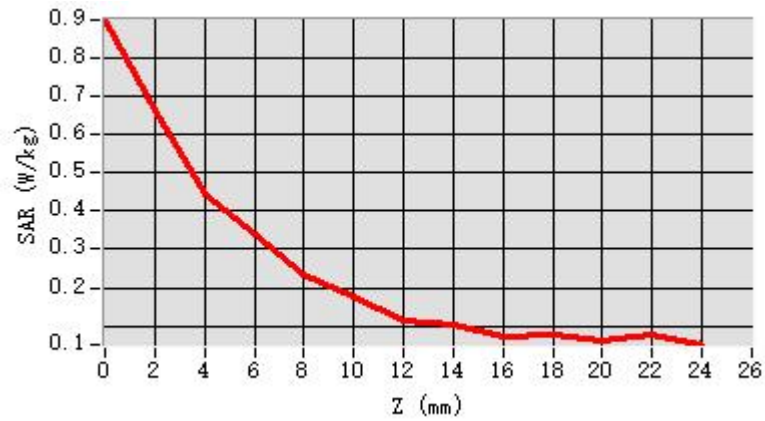
Maximum location: X=-11.00, Y=-1.00 ; SAR Peak: 1.09 W/kg

D. SAR 1g & 10g

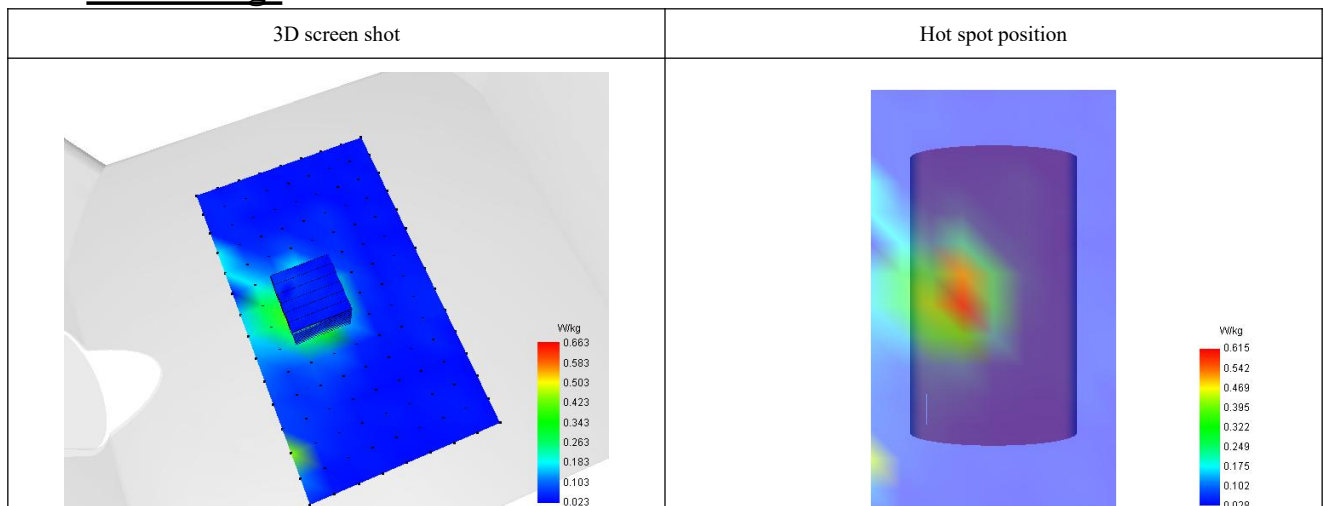
SAR 10g (W/Kg)	0.197
SAR 1g (W/Kg)	0.436
Variation (%)	-3.670
Horizontal validation criteria: minimum distance (mm)	11.313708
Vertical validation criteria: SAR ratio M2/M1 (%)	66.968326

E. Z Axis Scan

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)	0.900	0.663	0.444	0.341	0.237	0.174	0.113	0.101	0.070	0.076	0.061	0.075



F. 3D Image



#2

Date of measurement: 8/10/2026

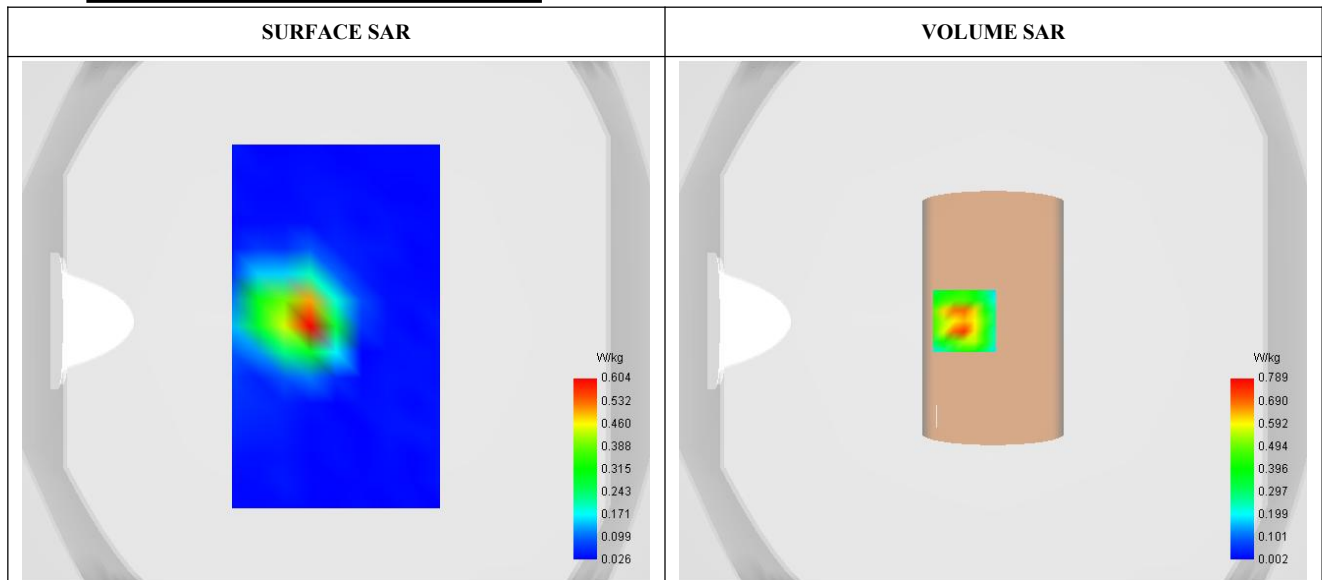
A. Experimental conditions.

Probe	SN 27/13 EPG193
ConvF	22.42
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
Channels/Frequency	High (165)/ frequency 5825.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	5825.00
Relative permittivity (real part)	35.313
Relative permittivity (imaginary part)	16.352
Conductivity (S/m)	5.292

C. SAR Surface and Volume



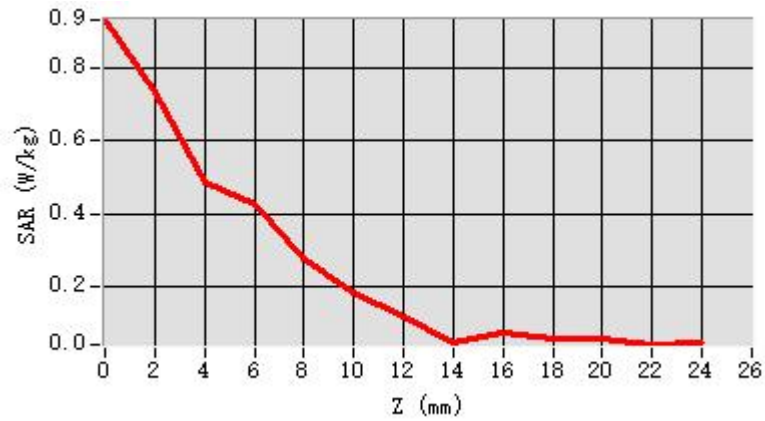
Maximum location: X=-11.00, Y=0.00 ; SAR Peak: 1.09 W/kg

D. SAR 1g & 10g

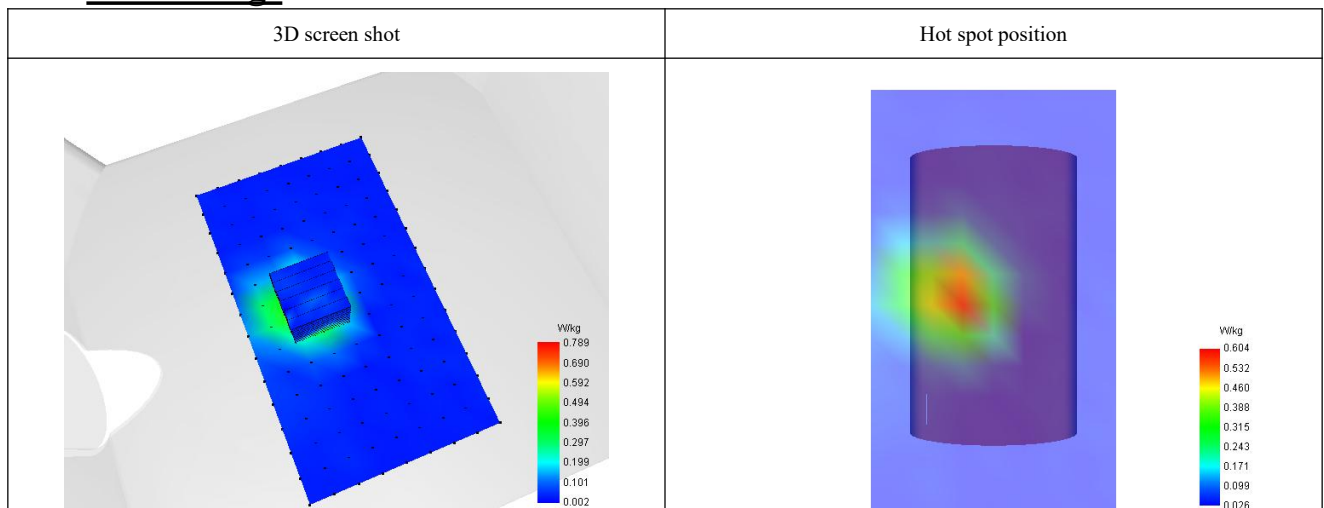
SAR 10g (W/Kg)	0.205
SAR 1g (W/Kg)	0.444
Variation (%)	-0.470
Horizontal validation criteria: minimum distance (mm)	8.944272
Vertical validation criteria: SAR ratio M2/M1 (%)	66.032609

E. Z Axis Scan

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)	0.932	0.736	0.486	0.426	0.277	0.186	0.118	0.045	0.076	0.055	0.056	0.042



F. 3D Image



#3

Date of measurement: 7/10/2026

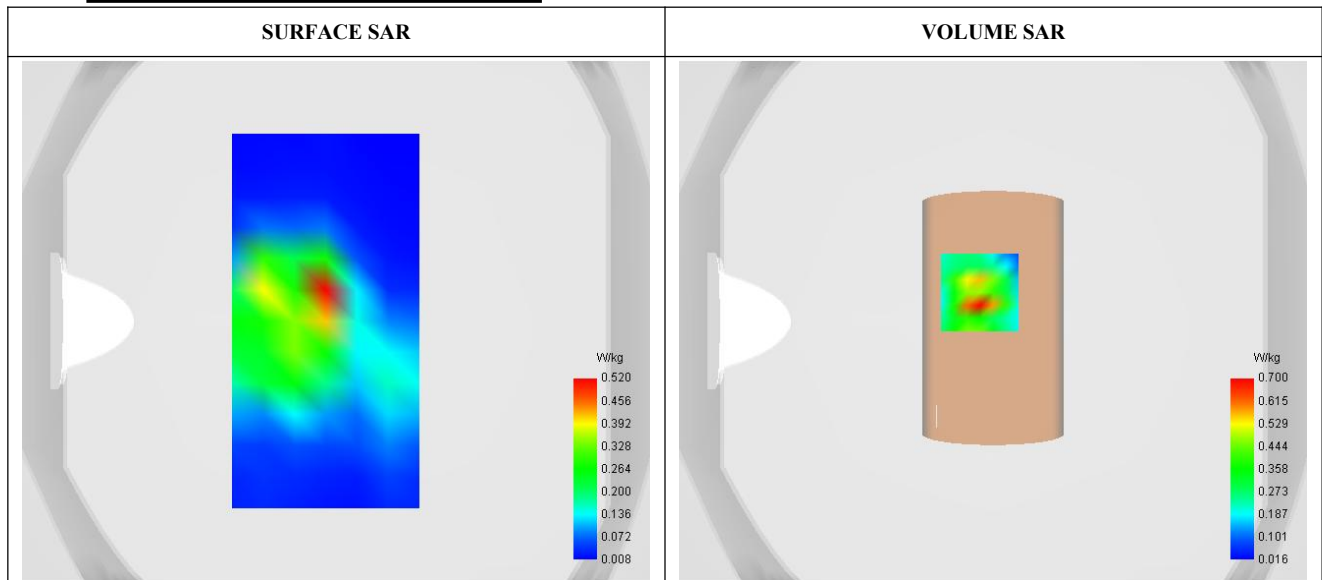
A. Experimental conditions.

Probe	SN 37/08 EP80
ConvF	4.82
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
Channels/Frequency	Low (1)/ frequency 2412.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	2412.00
Relative permittivity (real part)	39.214
Relative permittivity (imaginary part)	13.210
Conductivity (S/m)	1.770

C. SAR Surface and Volume



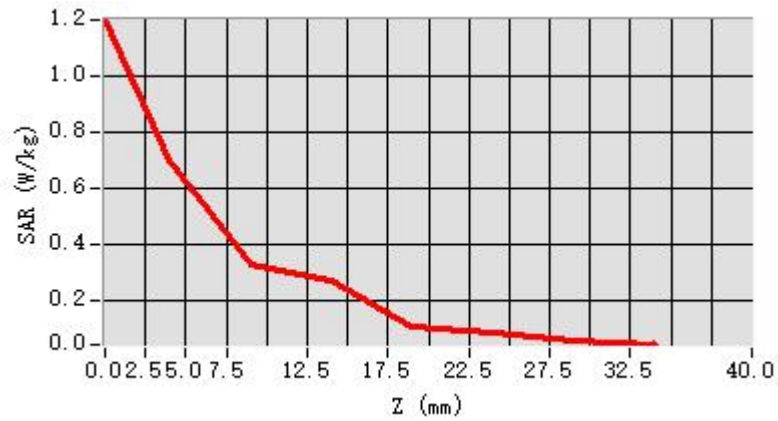
Maximum location: X=-5.00, Y=11.00 ; SAR Peak: 1.06 W/kg

D. SAR 1g & 10g

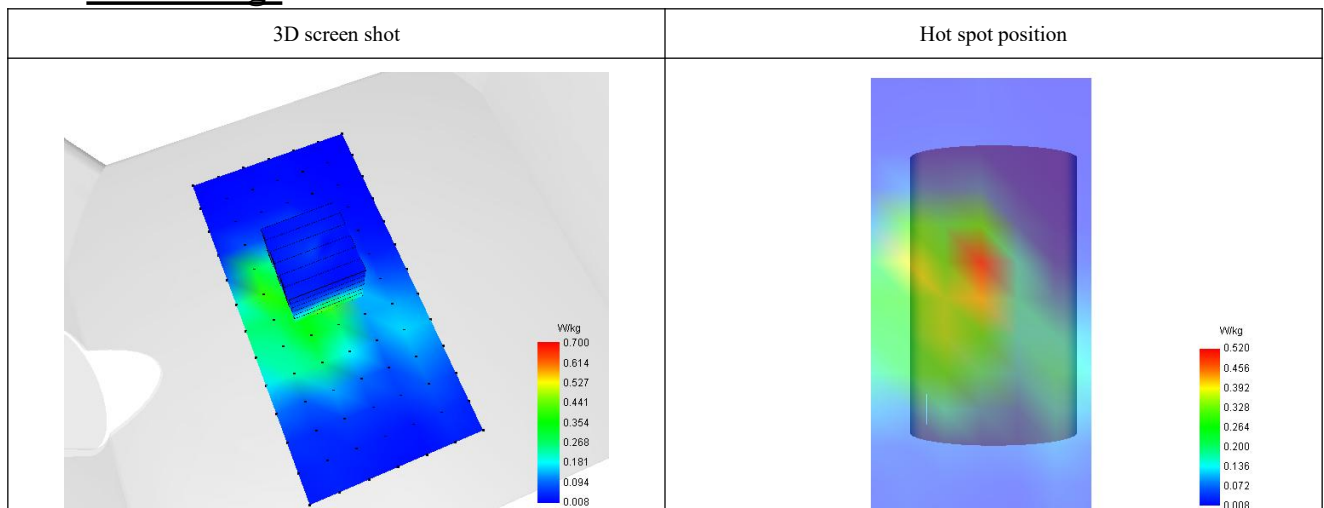
SAR 10g (W/Kg)	0.266
SAR 1g (W/Kg)	0.516
Variation (%)	1.220
Horizontal validation criteria: minimum distance (mm)	7.071068
Vertical validation criteria: SAR ratio M2/M1 (%)	46.714286

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.198	0.700	0.327	0.269	0.109	0.084	0.054



F. 3D Image



Appendix D. Calibration Certificate

Table of contents
E Field Probe - SN 37/08 EP80
E Field Probe - SN 27/13 EPG193
2450 MHz Dipole - SN 30/13 DIP2G450-263
5000-6000 MHz Dipole - SN 41/12 WGA21

※※END OF THE REPORT※※