

FCC SAR EVALUATION REPORT

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

Product Name: Mobile Phone

Model No.: NOTE 10

Serial Model: N/A

Brand Name: Huidun

Report No.: AiTSZ-260328007FW6

FCC ID: 2BU85-NOTE10

Prepared for

JIAHANG TECHNOLOGY (HONG KONG) CO.,LIMITED

19H MAXGRAND PLAZA 3 TAI YAU STREET SAN PO KONG KL HONG KONG China

Prepared by

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TEST RESULT CERTIFICATION

Applicant's name: **JIAHANG TECHNOLOGY (HONG KONG) CO.,LIMITED**
Address: 19H MAXGRAND PLAZA 3 TAI YAU STREET SAN PO KONG
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Manufacturer's Name: **LUZHENG TECHNOLOGY HONGKONG LIMITED**
Address: ROOM A08, 2/F LEE KA INDUSTRIAL BUILDING 8 NG FONG
 STREET SAN PO KONG HK China

Product description

Product name: Mobile Phone
Trademark: Huidun
Model and/or type reference ..: NOTE 10
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 Guangdong Asia Hongke Test Technology Limited. 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: AiTSZ-260328007-1

Date of Test

Date (s) of performance of tests: Mar. 28, 2026 ~ Apr. 10, 2026
Date of Issue.....: Apr. 24, 2026
Test Result: **Pass**

Reviewed by: Ken Zou
 Ken Zou

Approved by: Jack Li
 Jack Li



※ ※ Revision History ※ ※

REV.	DESCRIPTION	ISSUED DATE	REMARK
Rev.1.0	Initial Test Report Release	Apr. 24, 2026	Jack Li

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1. General Information

1.1. RF exposure limits

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

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

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

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

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

Occupational/Controlled Environments:

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

General Population/Uncontrolled Environments:

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

NOTE

HEAD AND TRUNK LIMIT
1.6 W/kg AND LIMBS 4.0 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)			Max SAR Summation
	1-g Head (Separation distance of 0mm)	1-g Body&Hotspot (Separation distance of 5mm)	10-g Limbs (Separation distance of 0mm)	
GSM850	0.191	0.164	0.321	Head: 0.744 Body: 0.970 Hotspot: 0.970 Limbs: 0.998
GSM1900	0.306	0.584	0.445	
WCDMA Band II	0.241	0.482	0.427	
WCDMA Band VI	0.291	0.572	0.638	
WCDMA Band V	0.148	0.150	0.293	
LTE band 2	0.214	0.533	0.518	
LTE band 4	0.291	0.532	0.525	
LTE band 5	0.218	0.221	0.496	
LTE band 12	0.185	0.245	0.450	
LTE band 17	0.183	0.245	0.451	
LTE band 41	0.532	0.720	0.660	
LTE band 66	0.294	0.532	0.503	
2.4GHz WLAN	0.212	0.250	0.338	
Bluetooth	0.167	0.228	0.330	

NOTE: The Max SAR Summation is calculated based on the same configuration and test position.

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg, 4.0 W/kg for Limbs) 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.

The EUT has two SIM card slots(SIM1 and SIM2). The result for GSM/WCDMA/LTE card slot(SIM1) is the worst case which was only recorded.

1.3. EUT Description

Device Information			
Product Name	Mobile Phone		
Model Name	NOTE 10		
Family Model	N/A		
Model Difference	N/A		
Device Phase	Identical Prototype		
Exposure Category	General population / Uncontrolled environment		
Antenna Type	PIFA Antenna		
Battery Information	DC 3.80V 3000mAh 11.40Wh Rechargeable Li-ion battery		
Hardware Version:	L722M_V1		
Software Version:	NOTE10_S3203B_V1.0		
Device Operating Configurations			
Supporting Mode(s)	GSM850/1900,WCDMABand2/4/5, FDD-LTE: Band 2/4/5/12/17/66 TDD-LTE: Band 41, WLAN 2.4G, Bluetooth		
Test Modulation	GSM(GMSK/8PSK), WCDMA(QPSK), LTE(QPSK/16QAM), WLAN(DSSS/OFDM), Bluetooth(GFSK, $\pi/4$ -DQPSK, 8DPSK)		
LTE Category	Cat. 4		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	GSM 850	824-849	869-894
	GSM 1900	1850-1910	1930-1990
	WCDMA Band 2	1850-1910	1930-1990
	WCDMA Band 4	1710-1755	2110-2155
	WCDMA Band 5	824-849	869-894
	LTE Band 2	1850-1910	1930-1990
	LTE Band 4	1710-1755	2110-2155
	LTE Band 5	824-849	869-894
	LTE Band 12	699-716	729-746
	LTE Band 17	704-716	734-746
	LTE Band 41	2555-2655	
	LTE Band 66	1710-1780	2110-2200
	WLAN 2.4G	2412-2462	
	Bluetooth	2402-2480	
GPRS Multislot Class(12)	Max Number of Timeslots in Uplink		4
	Max Number of Timeslots in Downlink		4
	Max Total Timeslot		5
EGPRS Multislot Class(12)	Max Number of Timeslots in Uplink		4
	Max Number of Timeslots in Downlink		4

	Max Total Timeslot	5
Power Class	4, tested with power level 5(GSM 850)	
	1, tested with power level 0(GSM 1900)	
	3, tested with power control "all 1"(WCDMA Band 2)	
	3, tested with power control "all 1"(WCDMA Band 4)	
	3, tested with power control "all 1"(WCDMA Band 5)	
	3, tested with power control all Max.(LTE Band 2)	
	3, tested with power control all Max.(LTE Band 4)	
	3, tested with power control all Max.(LTE Band 5)	
	3, tested with power control all Max.(LTE Band 12)	
	3, tested with power control all Max.(LTE Band 17)	
	3, tested with power control all Max.(LTE Band 41)	
	3, tested with power control all Max.(LTE Band 66)	

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
KDB 941225 D01 3G SAR Procedures v03r01
KDB 941225 D05 SAR for LTE Devices v02r05
KDB 941225 D06 Hotspot SAR v02r01
KDB 648474 D04 Handset SAR v01r03

1.5. Ambient Condition

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

1.6. Test Facility

Test Laboratory:

Guangdong Asia Hongke Test Technology Limited

B1/F, Building 11, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

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

FCC-Registration No.: 251906 Designation Number: CN1376

Guangdong Asia Hongke Test Technology Limited 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 —Registration No.: 31737 CAB identifier: CN0165

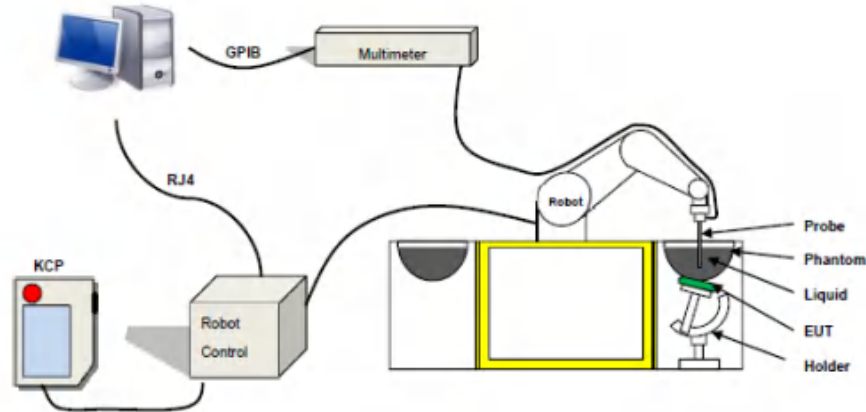
The 3m Semi-anechoic chamber of Guangdong Asia Hongke Test Technology Limited has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 31737

A2LA-Lab Cert. No.: 7133.01

Guangdong Asia Hongke Test Technology Limited 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 EPGO 0523-403 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 6 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

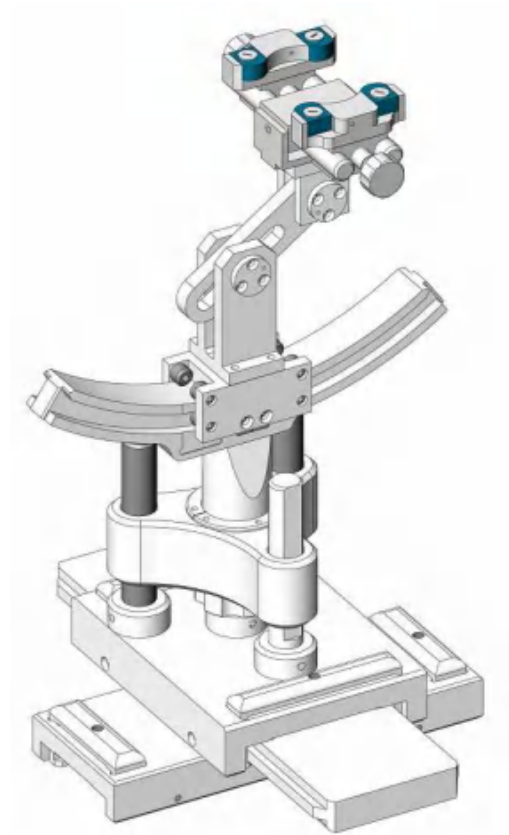
For the measurements the Specific Anthropomorphic Mannequin (SAM) defined by the IEEE SCC-34/SC2 group is used. The phantom is a polyurethane shell integrated in a wooden table. The thickness of the phantom amounts to 2mm +/- 0.2mm. It enables the dosimetric evaluation of left and right phone usage and 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.

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	EPGO 0523-403	Sep. 09, 2025	Sep. 08, 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 DI P 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. 21, 2024	Feb. 20, 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	Jul. 02, 2023	Jul. 01, 2024
					Jul. 01, 2024	Jun. 30, 2025
					Jun. 30, 2025	Jun. 29, 2026
☒	MVG	Power Amplifier	N.A	AMPLISAR_28/14_003	NCR	NCR
☒	KEITHLEY	Millivoltmeter	2000	4072790	Jul. 02, 2023	Jul. 01, 2024
					Jul. 01, 2024	Jun. 30, 2025
					Jun. 30, 2025	Jun. 29, 2026

☒	R&S	Wideband radio communication tester	CMW500	116581	Jul. 02, 2023	Jul. 01, 2024
					Jul. 01, 2024	Jun. 30, 2025
					Jun. 30, 2025	Jun. 29, 2026
☒	HP	Network Analyzer	8753D	3410J01136	Jul. 02, 2023	Jul. 01, 2024
					Jul. 01, 2024	Jun. 30, 2025
					Jun. 30, 2025	Jun. 29, 2026
☒	Agilent	PSG Analog Signal Generator	E8257D	MY51110112	Jul. 02, 2023	Jul. 01, 2024
					Jul. 01, 2024	Jun. 30, 2025
					Jun. 30, 2025	Jun. 29, 2026
☒	Agilent	Power meter	E4419B	MY45102538	Jul. 02, 2023	Jul. 01, 2024
					Jul. 01, 2024	Jun. 30, 2025
					Jun. 30, 2025	Jun. 29, 2026
☒	Agilent	Power meter	E4419B	MY45102140	Jul. 02, 2023	Jul. 01, 2024
					Jul. 01, 2024	Jun. 30, 2025
					Jun. 30, 2025	Jun. 29, 2026
☒	Agilent	Power meter	E4419B	MY45102215	Jul. 02, 2023	Jul. 01, 2024
					Jul. 01, 2024	Jun. 30, 2025
					Jun. 30, 2025	Jun. 29, 2026
☒	JFW	attenuator	50FPE-006	4360846-494-4	Jul. 02, 2023	Jul. 01, 2024
					Jul. 01, 2024	Jun. 30, 2025

					Jun. 30, 2025	Jun. 29, 2026
☒	JFW	attenuator	50FPE-006	4360846-492-1	Jul. 02, 2023	Jul. 01, 2024
					Jul. 01, 2024	Jun. 30, 2025
					Jun. 30, 2025	Jun. 29, 2026
☒	JFW	attenuator	50FPE-006	4360846-490-6	Jul. 02, 2023	Jul. 01, 2024
					Jul. 01, 2024	Jun. 30, 2025
					Jun. 30, 2025	Jun. 29, 2026
☒	Agilent	Power sensor	E9301A	MY41495644	Jul. 02, 2023	Jul. 01, 2024
					Jul. 01, 2024	Jun. 30, 2025
					Jun. 30, 2025	Jun. 29, 2026
☒	Agilent	Power sensor	E9301A	US39212148	Jul. 02, 2023	Jul. 01, 2024
					Jul. 01, 2024	Jun. 30, 2025
					Jun. 30, 2025	Jun. 29, 2026
☒	MCLI/USA	Directional Coupler	CB11-20	0D2L51502	Jul. 18, 2021	Jul. 17, 2024
					Jul. 17, 2024	Jul. 16, 2027
☒	N/A	Thermometer	N/A	LES-085	Sep. 23, 2024	Sep. 22, 2027
☒	MVG	SAR Phantom	SSM2	SN 24/11 SAM87	NCR	NCR
☒	MVG	Device Holder	SMPPD	SN 24/11 MSH73	NCR	NCR

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.

			$\leq 3\text{ GHz}$	$> 3\text{ GHz}$
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			$5 \pm 1\text{ mm}$	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5\text{ mm}$
Maximum probe angle from probe axis to phantom surface normal at the measurement location			$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: Δx_{Area} , Δy_{Area}			$\leq 2\text{ GHz}: \leq 15\text{ mm}$ $2 - 3\text{ GHz}: \leq 12\text{ mm}$	$3 - 4\text{ GHz}: \leq 12\text{ mm}$ $4 - 6\text{ GHz}: \leq 10\text{ mm}$
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: Δx_{Zoom} , Δy_{Zoom}			$\leq 2\text{ GHz}: \leq 8\text{ mm}$ $2 - 3\text{ GHz}: \leq 5\text{ mm}^*$	$3 - 4\text{ GHz}: \leq 5\text{ mm}^*$ $4 - 6\text{ GHz}: \leq 4\text{ mm}^*$
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		$\leq 5\text{ mm}$	$3 - 4\text{ GHz}: \leq 4\text{ mm}$ $4 - 5\text{ GHz}: \leq 3\text{ mm}$ $5 - 6\text{ GHz}: \leq 2\text{ mm}$
	graded grid	$\Delta z_{Zoom}(1)$: between 1 st two points closest to phantom surface	$\leq 4\text{ mm}$	$3 - 4\text{ GHz}: \leq 3\text{ mm}$ $4 - 5\text{ GHz}: \leq 2.5\text{ mm}$ $5 - 6\text{ GHz}: \leq 2\text{ mm}$
		$\Delta z_{Zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		$\geq 30\text{ mm}$	$3 - 4\text{ GHz}: \geq 28\text{ mm}$ $4 - 5\text{ GHz}: \geq 25\text{ mm}$ $5 - 6\text{ GHz}: \geq 22\text{ mm}$
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 <u>reported</u> SAR from the <u>area scan based 1-g SAR estimation</u> procedures of KDB 447498 is $\leq 1.4\text{ W/kg}$, $\leq 8\text{ mm}$, $\leq 7\text{ mm}$ and $\leq 5\text{ mm}$ 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 these 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 of 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 scans 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 with 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 of the dielectric parameter are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within $\pm 5\%$ of the target values.

Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
		ϵ_r ($\pm 5\%$)	σ (S/m) ($\pm 5\%$)	ϵ_r	σ (S/m)		
Head 750	704	42.15 (40.04~44.25)	0.89 (0.84~0.93)	41.38	0.86	21.1 °C	Mar. 28, 2026
Head 750	707.5	42.13 (40.02~44.23)	0.89 (0.84~0.93)	42.14	0.92	21.1 °C	Mar. 28, 2026
Head 750	709	42.12 (40.01~44.22)	0.89 (0.84~0.93)	41.41	0.86	21.1 °C	Mar. 28, 2026
Head 750	710	42.11 (40.01~44.22)	0.89 (0.84~0.93)	42.12	0.92	21.1 °C	Mar. 28, 2026
Head 750	711	42.11 (40.00~44.21)	0.89 (0.84~0.93)	41.46	0.86	21.1 °C	Mar. 28, 2026
Head 750	750	41.96 (39.86~44.06)	0.89 (0.85~0.93)	41.90	0.89	21.1 °C	Mar. 28, 2026
Head 850	824.2	41.55 (39.47~43.63)	0.90 (0.85~0.94)	41.16	0.87	21.4 °C	Mar. 30, 2026
Head 850	826.4	41.54 (39.46~43.62)	0.90 (0.85~0.94)	41.17	0.87	21.4 °C	Mar. 30, 2026
Head 850	829	41.53 (39.45~43.60)	0.90 (0.85~0.94)	41.09	0.88	21.4 °C	Mar. 30, 2026
Head 850	835	41.50 (39.43~43.58)	0.90 (0.86~0.95)	40.94	0.90	21.4 °C	Mar. 30, 2026
Head 850	836.4	41.50 (39.43~43.58)	0.90 (0.85~0.94)	41.50	0.90	21.4 °C	Mar. 30, 2026
Head 850	836.5	41.50 (39.43~43.58)	0.90 (0.85~0.94)	41.50	0.90	21.4 °C	Mar. 30, 2026
Head 850	844	41.50 (39.43~43.58)	0.91 (0.86~0.95)	40.87	0.90	21.4 °C	Mar. 30, 2026
Head 850	846.6	41.50 (39.43~43.58)	0.91 (0.86~0.95)	40.83	0.90	21.4 °C	Mar. 30, 2026
Head 850	848.8	41.50 (39.43~43.58)	0.91 (0.86~0.95)	40.80	0.90	21.4 °C	Mar. 30, 2026
Head 1800	1712.4	40.13 (38.12~42.13)	1.35 (1.28~1.42)	39.67	1.30	21.6 °C	Mar. 31, 2026

Head 1800	1720	40.11 (38.11~42.12)	1.35 (1.29~1.42)	39.64	1.31	21.6 °C	Mar. 31, 2026
Head 1800	1732.5	40.10 (38.09~42.10)	1.36 (1.29~1.43)	40.12	1.36	21.6 °C	Mar. 31, 2026
Head 1800	1732.6	40.10 (38.09~42.10)	1.36 (1.29~1.43)	40.12	1.36	21.6 °C	Mar. 31, 2026
Head 1800	1745	40.08 (38.07~42.08)	1.37 (1.30~1.44)	40.11	1.37	21.6 °C	Mar. 31, 2026
Head 1800	1752.6	40.07 (38.06~42.07)	1.37 (1.30~1.44)	39.35	1.34	21.6 °C	Mar. 31, 2026
Head 1800	1770	40.04 (38.04~42.05)	1.38 (1.31~1.45)	39.51	1.38	21.6 °C	Mar. 31, 2026
Head 1800	1800	40.00 (38.00~42.00)	1.40 (1.33~1.47)	41.52	1.40	21.6 °C	Mar. 31, 2026
Head 1900	1850.2	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.00	1.41	21.2 °C	Apr. 01, 2026
Head 1900	1852.4	40.00 (38.00~42.00)	1.40 (1.33~1.47)	38.97	1.41	21.2 °C	Apr. 01, 2026
Head 1900	1860	40.00 (38.00~42.00)	1.40 (1.33~1.47)	38.94	1.41	21.2 °C	Apr. 01, 2026
Head 1900	1880	40.00 (38.00~42.00)	1.40 (1.33~1.47)	40.00	1.40	21.2 °C	Apr. 01, 2026
Head 1900	1900	40.00 (38.00~42.00)	1.40 (1.33~1.47)	41.27	1.34	21.2 °C	Apr. 01, 2026
Head 1900	1907.6	40.00 (38.00~42.00)	1.40 (1.33~1.47)	38.73	1.43	21.2 °C	Apr. 01, 2026
Head 1900	1909.8	40.00 (38.00~42.00)	1.40 (1.33~1.47)	38.72	1.44	21.2 °C	Apr. 01, 2026
Head 2450	2412	39.27 (37.30~41.23)	1.77 (1.68~1.85)	39.21	1.77	21.0 °C	Apr. 02, 2026
Head 2450	2437	39.22 (37.26~41.18)	1.79 (1.70~1.88)	39.23	1.79	21.0 °C	Apr. 02, 2026
Head 2450	2450	39.20 (37.24~41.16)	1.80 (1.71~1.89)	41.04	1.80	21.0 °C	Apr. 02, 2026
Head 2450	2462	39.18 (37.22~41.14)	1.81 (1.72~1.90)	39.21	1.81	21.0 °C	Apr. 02, 2026
Head 2450	2402	39.28 (37.32~41.25)	1.76 (1.67~1.85)	39.22	1.76	21.0 °C	Apr. 02, 2026
Head 2450	2441	39.22 (37.25~41.18)	1.79 (1.70~1.88)	39.30	1.74	21.0 °C	Apr. 02, 2026

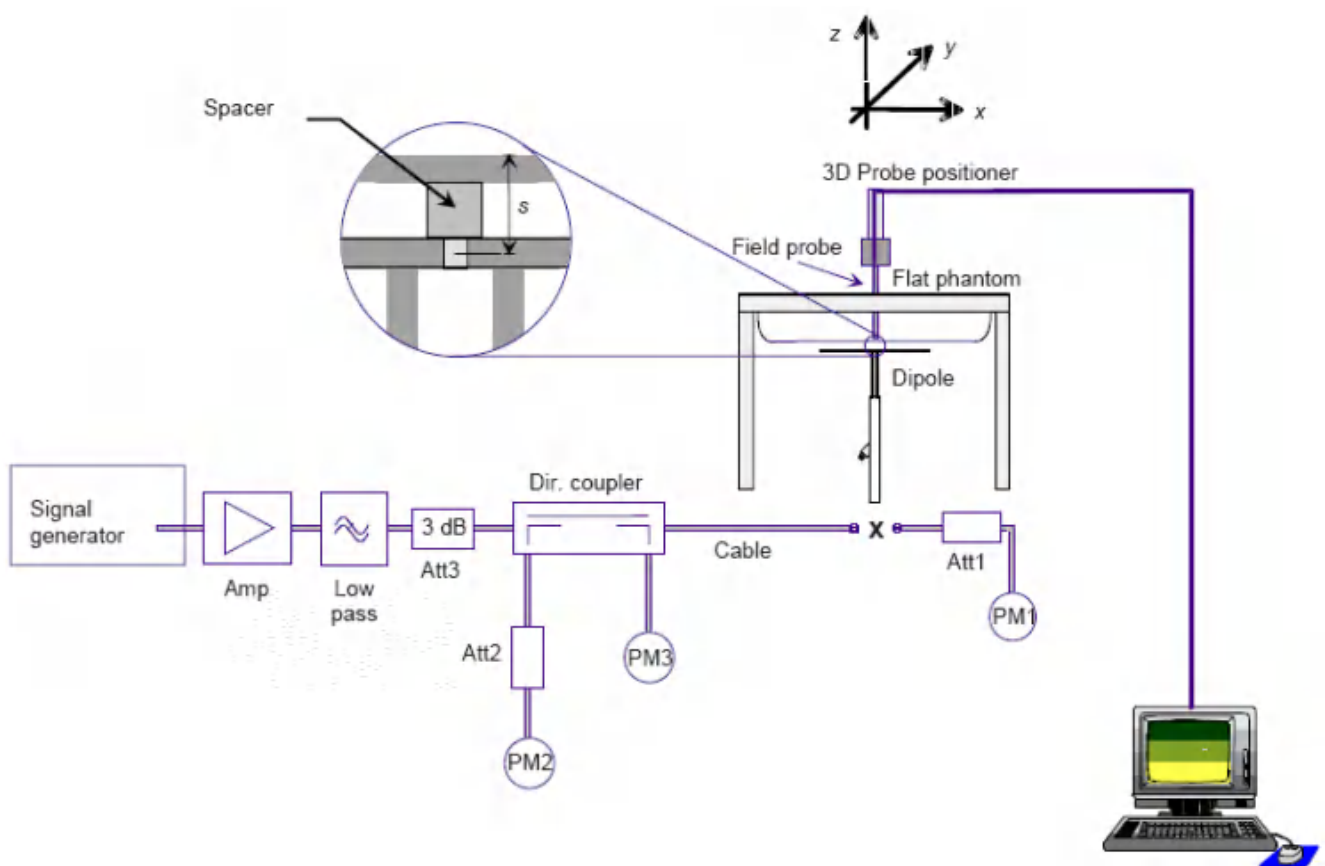
Head 2450	2480	39.16 (37.20~41.12)	1.83 (1.74~1.92)	39.22	1.82	21.0 °C	Apr. 02, 2026
Head 2600	2565	39.05 (37.09~41.00)	1.92 (1.83~2.02)	39.06	1.94	21.3 °C	Apr. 10, 2026
Head 2600	2600	39.01 (37.06~40.96)	1.96 (1.86~2.06)	39.00	1.96	21.3 °C	Apr. 10, 2026
Head 2600	2605	38.99 (37.04~40.94)	1.97 (1.87~2.06)	39.02	1.96	21.3 °C	Apr. 10, 2026
Head 2600	2645	38.94 (37.00~40.89)	2.01 (1.91~2.11)	38.96	1.98	21.3 °C	Apr. 10, 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 25mW (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)	
750MHz	100	0.930	0.621	9.30	6.21	8.60	5.78	8.14%	7.44%	Mar. 28, 2026
835MHz	100	1.011	0.612	10.11	6.12	9.40	6.28	7.55%	-2.55%	Mar. 30, 2026
1800MHz	100	3.832	2.025	38.32	20.25	37.06	20.01	3.40%	1.20%	Mar. 31, 2026
1900MHz	100	4.154	2.153	41.54	21.53	39.69	20.92	4.66%	2.92%	Apr. 01, 2026
2450MHz	100	5.184	2.359	51.84	23.59	50.05	23.80	3.58%	-0.88%	Apr. 02, 2026
2600MHz	100	5.433	2.523	54.33	25.23	54.16	24.85	0.31%	1.53%	Apr. 10, 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

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

7. RF Exposure Positions

7.1. Ear and handset reference point

Figure 7.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled "M", the left ear reference point (ERP) is marked "LE", and the right ERP is marked "RE".



Fig 7.1.1 Front, back, and side views of SAM phantom

7.2. Definition of the cheek position

1. Define two imaginary lines on the handset, the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset: the midpoint of the width w_t of the handset at the level of the acoustic output (point A in Figure 7.2.1 and Figure 7.2.2), and the midpoint of the width w_b of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 7.2.1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 7.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
2. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 7.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
3. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP
4. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
5. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.

6. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 7.2.3. The actual rotation angles should be documented in the test report.

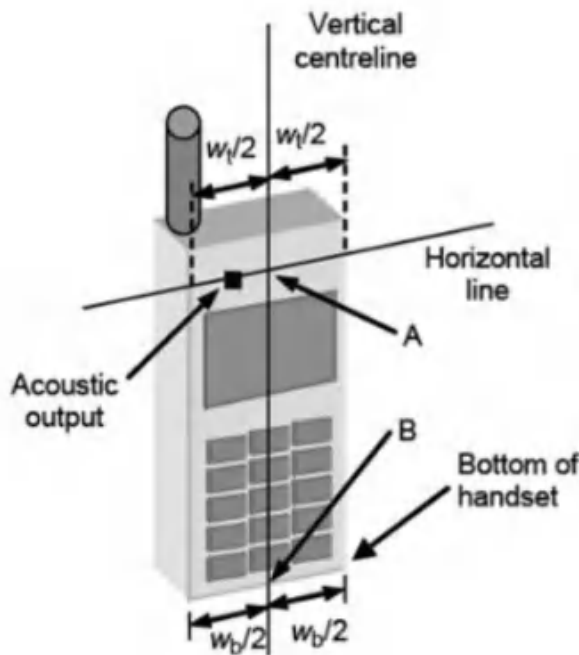


Fig 7.2.1 Handset vertical and horizontal reference lines—fixed case

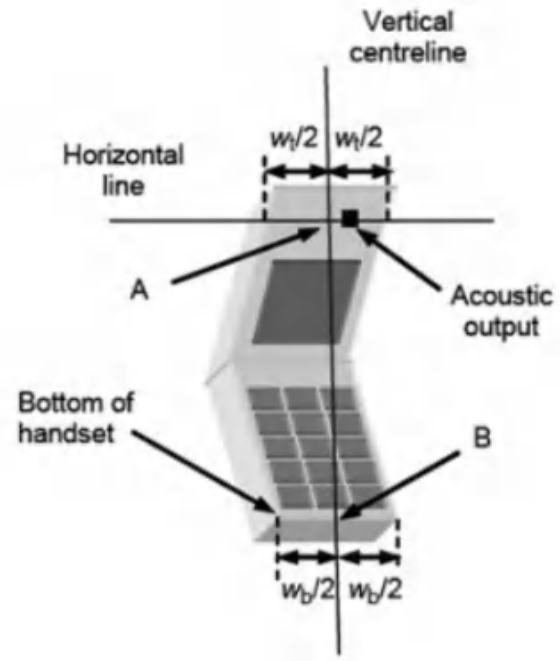


Fig 7.2.2 Handset vertical and horizontal reference lines—“clam-shell case”

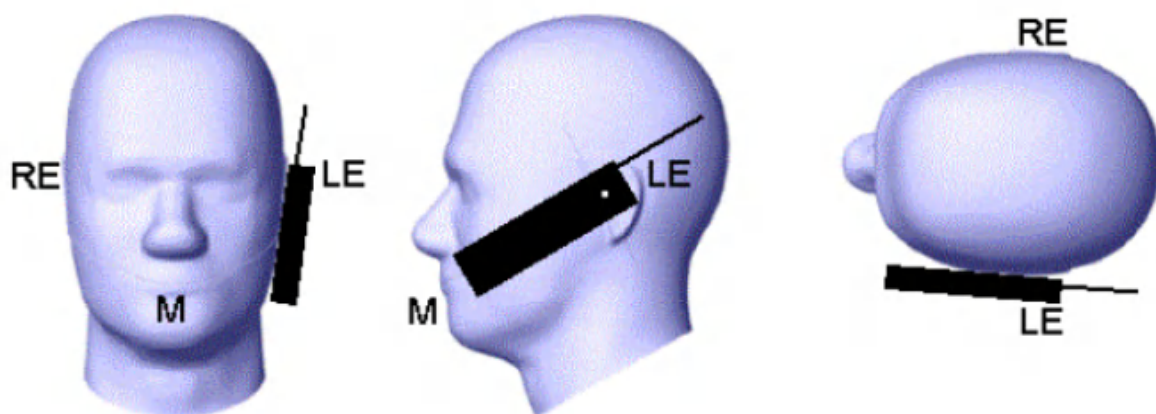


Fig 7.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

7.3. Definition of the tilt position

1. While maintaining the orientation of the handset, retract the handset parallel to the reference plane far enough away from the phantom to enable a rotation of the device by 15 degree.
2. Rotate the Handset around the horizontal line by 15 degree (see Figure 7.3.1).
3. While maintaining the orientation of the handset, move the handset towards the phantom on a line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact is on the pinna. If the contact is at any location other than the pinna, e.g., the antenna with the back of the phantom head, the angle of the handset shall be reduced. In this case, the tilt position is obtained if any part of the handset is in contact with the pinna as well as a second part of the handset is in contact with the phantom, e.g., the antenna with the back of the head.



Figure 7.3.1 – Tilt position of the wireless device on the left side of SAM

7.4. Body Worn Accessory

1. Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 7.4.1). Per KDB 648474 D04, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is $< 1.2 \text{ W/kg}$, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.
2. Accessories for body-worn operation configurations are divided into two categories: those that do

not contain metallic components and those that do contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are test with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-chip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

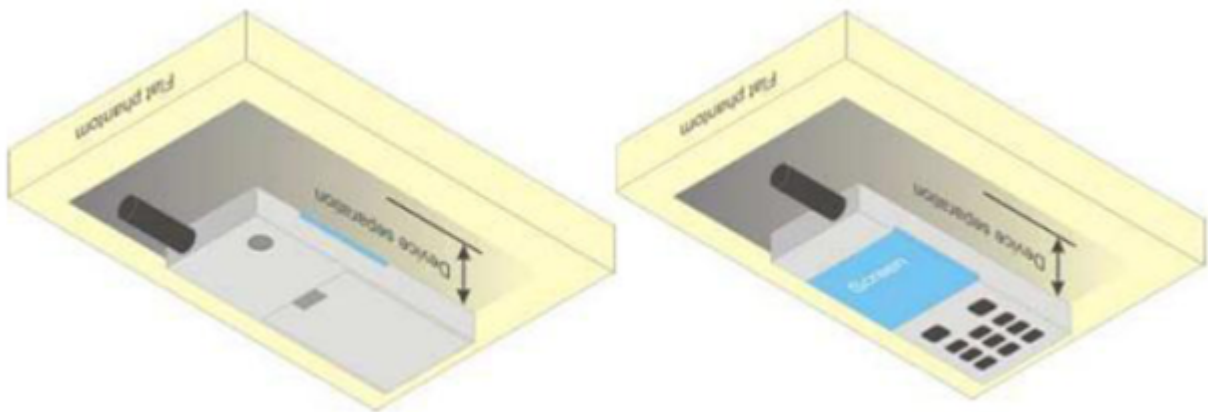


Figure 7.4.1 – Test positions for body-worn devices

7.5. Wireless Router Devices

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

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

8. RF Output Power

8.1. GSM Conducted Power

Band GSM850	Burst-Averaged output Power (dBm)				Factor	Frame-Averaged output Power (dBm)			
Tx Channel	Tune-up (dBm)	128	189	251		Tune-up	128	189	251
Frequency (MHz)		824.2	836.4	848.8			824.2	836.4	848.8
GSM (GMSK)	34.00	33.43	33.55	33.56	-9.03	24.97	24.40	24.52	24.53
GPRS(GMSK,1 Tx slot)	33.50	33.41	33.48	33.47	-9.03	24.47	24.38	24.45	24.44
GPRS(GMSK,2 Tx slot)	33.00	32.60	32.70	32.70	-6.02	26.98	26.58	26.68	26.68
GPRS(GMSK,3 Tx slot)	31.00	30.75	30.87	30.91	-4.26	26.74	26.49	26.61	26.65
GPRS(GMSK,4 Tx slot)	29.00	28.57	28.75	28.79	-3.01	25.99	25.56	25.74	25.78
GPRS(EDGE,1 Tx slot)	27.50	27.30	27.27	27.32	-9.03	18.47	18.27	18.24	18.29
GPRS(EDGE,2 Tx slot)	26.50	26.13	26.14	26.08	-6.02	20.48	20.11	20.12	20.06
GPRS(EDGE,3 Tx slot)	24.50	24.16	23.96	23.94	-4.26	20.24	19.90	19.70	19.68
GPRS(EDGE,4 Tx slot)	22.50	22.30	21.99	21.83	-3.01	19.49	19.29	18.98	18.82

Band GSM1900	Burst-Averaged output Power (dBm)				Factor	Frame-Averaged output Power (dBm)			
Tx Channel	Tune-up (dBm)	512	661	810		Tune-up	512	661	810
Frequency (MHz)		1850.2	1880	1909.8			1850.2	1880	1909.8
GSM (GMSK)	30.50	30.31	30.45	30.12	-9.03	21.47	21.28	21.42	21.09
GPRS(GMSK,1 Tx slot)	30.50	30.32	30.40	30.07	-9.03	21.47	21.29	21.37	21.04
GPRS(GMSK,2 Tx slot)	30.00	29.44	29.64	29.40	-6.02	23.98	23.42	23.62	23.38
GPRS(GMSK,3 Tx slot)	27.50	26.98	27.31	27.40	-4.26	23.24	22.72	23.05	23.14
GPRS(GMSK,4 Tx slot)	26.50	25.81	26.21	26.34	-3.01	23.49	22.80	23.20	23.33
GPRS(EDGE,1 Tx slot)	26.00	25.51	25.37	25.30	-9.03	16.97	16.48	16.34	16.27
GPRS(EDGE,2 Tx slot)	24.50	24.37	24.28	24.00	-6.02	18.48	18.35	18.26	17.98
GPRS(EDGE,3 Tx slot)	23.00	22.00	22.33	22.87	-4.26	18.74	17.74	18.07	18.61
GPRS(EDGE,4 Tx slot)	22.00	21.85	20.63	20.46	-3.01	18.99	18.84	17.62	17.45

Note:

Remark: GPRS, CS4 coding scheme. EGPRS, MCS5 coding scheme.

Multi-Slot Class 8, Support Max 4 downlink, 1 uplink, 5 working link

Multi-Slot Class 10, Support Max 4 downlink, 2 uplink, 5 working link

Multi-Slot Class 12, Support Max 4 downlink, 4 uplink, 5 working link

SAR testing was performed on the maximum frame-averaged power mode.

The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum

Burst-averaged power based on time slots. The calculated method is shown as below:

Frame-averaged power = Burst averaged power (1 TX Slot) – 9.03 dB

Frame-averaged power = Burst averaged power (2 TX Slots) – 6.02 dB

Frame-averaged power = Burst averaged power (3 TX Slots) - 4.26 dB

Frame-averaged power = Burst averaged power (4 TX Slots) – 3.01 dB

8.2. WCDMA Conducted Power

The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification. A summary of these settings are illustrated below:

1. Release99 Setup Configuration

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm1
	β_c/β_d	8/15

2. HSDPA Setup Configuration

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm 2			
	β_c	2/15	12/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	β_c/β_d	2/15	12/15	15/8	15/4
	β_{hs}	4/15	24/15	30/15	30/15
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	$A_{hs} = \beta_{hs}/\beta_c$	30/15			

3. HSUPA Setup Configuration

	Mode	HSUPA	HSUPA	HSUPA	HSUPA	HSUPA
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm1				
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/15	15/15
	β_{ec}	209/225	12/15	30/15	2/15	24/15
	β_c/β_d	11/15	6/15	15/9	2/15	15/15
	β_{hs}	22/15	12/15	30/15	4/15	30/15
	β_{ed}	1309/225	94/75	47/15 47/15	56/75	134/15
	CM (dB)	1.0	3.0	2.0	3.0	1.0
HSDPA Specific Settings	D_{ACK}	8				
	D_{NAK}	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				

HSUPA Specific Settings	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = β_{hs}/β_c	30/15				
	D E-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9

4. WCDMA Conducted Power Results

Choose the highest output power mode RMC 12.2Kbps for Band V/VI/II at middle channel to test SAR and determine the worst configuration for further high/low channel test.

WCDMA Band II	Burst-Averaged output Power (dBm)			
Tx Channel	Tune-up (dBm)	9262	9400	9538
Frequency (MHz)		1852.4	1880	1907.6
RMC12.2K	23.50	23.48	23.34	23.30
HSDPA Sub 1	21.50	21.29	21.16	21.15
HSDPA Sub 2	21.50	21.29	21.15	21.15
HSDPA Sub 3	21.50	21.31	21.14	21.14
HSDPA Sub 4	21.50	21.30	21.14	21.16
HSUPA Sub 1	19.50	18.49	19.07	19.08
HSUPA Sub 2	19.50	18.49	18.60	19.07
HSUPA Sub 3	19.50	18.67	19.06	18.60
HSUPA Sub 4	19.00	18.98	18.86	18.59
HSUPA Sub 5	20.00	18.87	19.33	19.61

WCDMA Band IV	Burst-Averaged output Power (dBm)			
Tx Channel	Tune-up (dBm)	1312	1413	1513
Frequency (MHz)		1712.4	1732.6	1752.6
RMC12.2K	23.50	23.13	23.05	22.78
HSDPA Sub 1	21.00	20.98	20.86	20.63
HSDPA Sub 2	21.00	20.94	20.85	20.62
HSDPA Sub 3	21.00	20.97	20.86	20.63
HSDPA Sub 4	21.00	20.96	20.85	20.60
HSUPA Sub 1	19.00	18.85	18.06	18.01
HSUPA Sub 2	18.50	18.38	18.04	18.31
HSUPA Sub 3	19.00	18.65	18.23	18.54
HSUPA Sub 4	19.00	18.66	18.55	18.55
HSUPA Sub 5	19.50	19.37	18.68	19.00

WCDMA Band V	Burst-Averaged output Power (dBm)			
Tx Channel	Tune-up (dBm)	4132	4182	4233
Frequency (MHz)		826.4	836.4	846.6
RMC12.2K	24.50	24.30	24.22	24.29
HSDPA Sub 1	22.50	21.92	22.05	22.03
HSDPA Sub 2	22.50	21.93	22.03	22.00
HSDPA Sub 3	22.50	21.91	22.05	21.97
HSDPA Sub 4	22.50	21.90	22.05	21.99
HSUPA Sub 1	20.00	19.63	19.44	19.95
HSUPA Sub 2	20.00	19.88	19.40	19.41
HSUPA Sub 3	20.00	19.66	19.23	19.90
HSUPA Sub 4	20.00	19.38	19.42	19.96
HSUPA Sub 5	20.50	20.17	19.58	20.16

8.3. LTE Conducted Power

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 36.521-1 specification. A summary of these configurations are illustrated below:

Test Parameters for Channel Bandwidths				
Downlink Configuration		Uplink Configuration		
Ch BW	N/A for Max UE output power testing	Mod'n	RB allocation	
			FDD	TDD
1.4MHz		QPSK	1	1
1.4MHz		QPSK	5	5
3MHz		QPSK	1	1
3MHz		QPSK	4	4
5MHz		QPSK	1	1
5MHz		QPSK	8	8
10MHz		QPSK	1	1
10MHz		QPSK	12	12
15MHz		QPSK	1	1
15MHz		QPSK	16	16
20MHz		QPSK	1	1
20MHz		QPSK	18	18
Note 1: Test Channel Bandwidths are checked separately for each E-UTRA band, the applicable channel bandwidths are specified in Table 5.4.2.1-1.				
Note 2: For E-UTRA bands not applied with Note 2 in Table 6.2.2.3-1:				
-	The 1 RB allocation shall be tested at RB#0 for low and mid range, RB #max for high range test frequency.			
-	The RBstart of non-1RB allocation shall be RB #0 for low and mid range, RB# (max +1 - RB allocation) for high range test frequency.			
Note 3: For E-UTRA bands applied with Note 2 in Table 6.2.2.3-1:				
-	If the test channel bandwidth is larger than 4MHz, then the 1 RB allocation shall be tested at both RB #0 and RB #max.			
-	If the test channel bandwidth is smaller or equal to 4MHz, then the 1 RB allocation shall be tested at RB #0.			
-	If the test channel bandwidth = (FUL_high - FUL_low) specified by the operating band, then only one frequency range shall be tested and the 1 RB allocation shall be tested at RB #0, RB # $\left\lceil N_{RB}^{UL} / 2 \right\rceil$ and RB #max.			
-	For non-1RB allocation, test frequency is middle range, and the RBstart shall be RB #0.			

2. LTE Conducted Power Results

LTE output list

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18607/1850.7	18900/1880	19193/1909.3
LTE Band 2	1.4MHz	QPSK	1	0	23.50	23.35	23.27	23.22
			1	2	23.50	23.35	23.34	23.25
			1	5	23.50	23.36	23.28	23.24
			3	0	23.50	23.42	23.30	23.30
			3	1	23.50	23.43	23.30	23.32
			3	2	23.50	23.41	23.30	23.30
		16QAM	6	0	22.50	22.42	22.28	22.37
			1	0	23.00	22.41	22.31	22.49
			1	2	23.00	22.38	22.34	22.51
			1	5	23.00	22.41	22.37	22.50
			3	0	23.00	22.54	22.35	22.29
			3	1	23.00	22.58	22.34	22.31
			3	2	23.00	22.59	22.33	22.30
			6	0	21.50	21.41	21.20	21.38
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18615/1851.5	18900/1880	19185/1908.5
LTE Band 2	3MHz	QPSK	1	0	23.50	23.44	23.29	23.32
			1	7	23.50	23.46	23.31	23.38
			1	14	23.50	23.46	23.27	23.38
			8	0	22.50	22.44	22.29	22.29
			8	4	22.50	22.41	22.28	22.33
			8	7	22.50	22.41	22.28	22.32
			15	0	22.50	22.40	22.29	22.34
		16QAM	1	0	23.00	22.49	22.54	22.82
			1	7	23.00	22.50	22.53	22.86
			1	14	23.00	22.47	22.43	22.86
			8	0	22.00	21.49	21.28	21.49
			8	4	22.00	21.46	21.26	21.53
			8	7	22.00	21.49	21.26	21.55
			15	0	21.50	21.45	21.25	21.44
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18625/1852.5	18900/1880	19175/1907.5
LTE Band 2	5MHz	QPSK	1	0	24.00	23.52	23.44	23.43
			1	12	24.00	23.50	23.36	23.54
			1	24	24.00	23.54	23.37	23.62
			12	0	22.50	22.43	22.35	22.28
			12	6	22.50	22.45	22.30	22.34
			12	11	22.50	22.48	22.34	22.37
			25	0	22.50	22.46	22.37	22.35
		16QAM	1	0	23.00	22.59	22.71	22.08
			1	12	23.00	22.57	22.61	22.13
			1	24	23.00	22.61	22.61	22.12
			12	0	21.50	21.39	21.39	21.27

			12	6	21.50	21.43	21.34	21.34
			12	11	21.50	21.41	21.35	21.38
			25	0	21.50	21.47	21.36	21.38
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18650/1855	18900/1880	19150/1905
LTE Band 2	10MHz	QPSK	1	0	24.00	23.47	23.21	22.73
			1	24	24.00	23.50	23.28	22.80
			1	49	24.00	23.47	23.02	22.93
			25	0	22.50	22.43	22.30	22.25
			25	12	22.50	22.47	22.35	22.32
			25	24	22.50	22.49	22.33	22.47
			50	0	22.50	22.48	22.33	22.38
		16QAM	1	0	22.50	22.45	22.07	22.30
			1	24	22.50	22.48	22.09	22.34
			1	49	22.50	22.48	21.98	22.37
			25	0	22.00	21.51	21.30	21.29
			25	12	22.00	21.53	21.39	21.37
			25	24	22.00	21.58	21.34	21.54
			50	0	21.50	21.47	21.32	21.37
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18675/1857.5	18900/1880	19125/1902.5
LTE Band 2	15MHz	QPSK	1	0	23.50	23.29	22.76	22.58
			1	37	23.50	23.24	22.81	22.76
			1	74	23.50	22.95	22.70	22.83
			36	0	22.50	22.40	22.29	22.26
			36	18	22.50	22.45	22.30	22.28
			36	37	22.50	22.45	22.23	22.43
			75	0	22.50	22.47	22.37	22.36
		16QAM	1	0	22.50	22.27	21.95	22.19
			1	37	22.50	22.35	22.00	22.34
			1	74	22.50	22.25	21.86	22.34
			36	0	21.50	21.42	21.35	21.27
			36	18	21.50	21.46	21.31	21.30
			36	37	21.50	21.40	21.26	21.42
			75	0	21.50	21.41	21.35	21.38
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18700/1860	18900/1880	19100/1900
LTE Band 2	20MHz	QPSK	1	0	23.00	22.87	22.81	22.62
			1	49	23.00	22.93	22.85	22.76
			1	99	23.00	22.81	22.70	22.81
			50	0	23.00	22.42	22.32	22.36
			50	24	23.00	22.48	22.31	22.33
			50	49	23.00	22.43	22.37	22.54
			100	0	22.50	22.44	22.34	22.43
		16QAM	1	0	23.00	22.42	22.03	21.90
			1	49	23.00	22.52	22.07	22.03
			1	99	23.00	22.40	21.87	22.08
			50	0	22.00	21.40	21.29	21.31

			50	24	22.00	21.45	21.29	21.30
			50	49	22.00	21.42	21.33	21.50
			100	0	21.50	21.42	21.29	21.42

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		19957/1710.7	20175/1732.5	20393/1754.3
LTE Band 4	1.4MHz	QPSK	1	0	23.00	22.65	22.60	22.04
			1	2	23.00	22.68	22.62	22.08
			1	5	23.00	22.67	22.66	21.96
			3	0	23.00	22.70	22.78	22.58
			3	1	23.00	22.70	22.76	22.59
			3	2	23.00	22.71	22.75	22.57
			6	0	22.00	21.68	21.83	21.57
		16QAM	1	0	22.00	21.70	21.59	21.06
			1	2	22.00	21.71	21.47	21.04
			1	5	22.00	21.75	21.52	21.04
			3	0	22.00	21.74	21.77	21.72
			3	1	22.00	21.72	21.74	21.74
			3	2	22.00	21.72	21.74	21.74
			6	0	21.00	20.60	20.84	20.54
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		19965/1711.5	20175/1732.5	20385/1753.5
LTE Band 4	3MHz	QPSK	1	0	22.50	22.19	22.26	22.08
			1	7	22.50	22.20	22.25	22.02
			1	14	22.50	22.19	22.22	22.04
			8	0	22.00	21.69	21.83	21.55
			8	4	22.00	21.67	21.77	21.53
			8	7	22.00	21.70	21.79	21.54
			15	0	22.00	21.68	21.78	21.58
		16QAM	1	0	22.00	21.21	21.52	21.68
			1	7	22.00	21.23	21.52	21.64
			1	14	22.00	21.20	21.47	21.59
			8	0	21.00	20.73	20.78	20.73
			8	4	21.00	20.76	20.74	20.71
			8	7	21.00	20.76	20.74	20.72
			15	0	21.00	20.74	20.71	20.64
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		19975/1712.5	20175/1732.5	20375/1752.5
LTE Band 4	5MHz	QPSK	1	0	22.50	22.25	22.33	22.26
			1	12	22.50	22.19	22.29	22.20
			1	24	22.50	22.26	22.36	22.22
			12	0	22.00	21.70	21.86	21.57
			12	6	22.00	21.70	21.83	21.59
			12	11	22.00	21.70	21.80	21.60
			25	0	22.00	21.73	21.84	21.60
		16QAM	1	0	22.00	21.36	21.64	20.99
			1	12	22.00	21.27	21.58	20.94
			1	24	22.00	21.34	21.62	21.00

			12	0	21.00	20.64	20.89	20.55
			12	6	21.00	20.67	20.84	20.58
			12	11	21.00	20.65	20.80	20.60
			25	0	21.00	20.74	20.83	20.64
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20000/1715	20175/1732.5	20350/1750
LTE Band 4	10MHz	QPSK	1	0	22.50	22.20	22.31	22.16
			1	24	22.50	22.20	22.32	22.09
			1	49	22.50	22.28	22.28	22.08
			25	0	22.00	21.64	21.85	21.61
			25	12	22.00	21.70	21.84	21.59
			25	24	22.00	21.86	21.78	21.66
			50	0	22.00	21.76	21.83	21.64
		16QAM	1	0	22.00	21.23	21.53	21.71
			1	24	22.00	21.19	21.51	21.62
			1	49	22.00	21.29	21.50	21.62
			25	0	21.00	20.75	20.89	20.64
			25	12	21.00	20.80	20.88	20.62
			25	24	21.00	20.93	20.78	20.73
			50	0	21.00	20.79	20.81	20.67
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20025/1717.5	20175/1732.5	20325/1747.5
LTE Band 4	15MHz	QPSK	1	0	22.50	22.06	22.16	22.11
			1	37	22.50	22.13	22.27	22.13
			1	74	22.50	22.17	22.23	21.99
			36	0	22.00	21.57	21.79	21.66
			36	18	22.00	21.67	21.79	21.61
			36	37	22.00	21.82	21.74	21.63
			75	0	22.00	21.74	21.77	21.66
		16QAM	1	0	22.00	21.50	21.37	21.69
			1	37	22.00	21.57	21.47	21.74
			1	74	22.00	21.67	21.42	21.57
			36	0	21.00	20.60	20.80	20.67
			36	18	21.00	20.67	20.82	20.63
			36	37	21.00	20.82	20.75	20.65
			75	0	21.00	20.76	20.79	20.67
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20050/1720	20175/1732.5	20300/1745
LTE Band 4	20MHz	QPSK	1	0	22.50	22.10	22.20	22.25
			1	49	22.50	22.19	22.32	22.22
			1	99	22.50	22.22	22.19	22.01
			50	0	22.00	21.55	21.75	21.74
			50	24	22.00	21.81	21.84	21.68
			50	49	22.00	21.95	21.74	21.72
			100	0	22.00	21.78	21.74	21.73
		16QAM	1	0	22.00	21.72	21.45	21.59
			1	49	22.00	21.81	21.55	21.51
			1	99	22.00	21.89	21.39	21.33

			50	0	21.00	20.51	20.73	20.74
			50	24	21.00	20.76	20.81	20.68
			50	49	21.00	20.92	20.73	20.69
			100	0	21.00	20.76	20.72	20.72

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20407/824.7	20525/836.5	20643/848.3
LTE Band 5	1.4MHz	QPSK	1	0	24.50	23.57	24.12	23.97
			1	2	24.50	23.47	24.13	23.94
			1	5	24.50	23.38	24.10	23.92
			3	0	24.50	24.04	24.15	24.01
			3	1	24.50	24.04	24.12	24.03
			3	2	24.50	24.03	24.14	24.00
		16QAM	6	0	23.50	23.02	23.12	23.03
			1	0	23.50	22.52	23.15	23.17
			1	2	23.50	22.51	23.14	23.18
			1	5	23.50	22.50	23.20	23.20
			3	0	23.50	23.18	23.16	22.97
			3	1	23.50	23.19	23.13	22.98
			3	2	23.50	23.21	23.12	22.99
			6	0	22.50	22.01	22.02	22.05
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20415/825.5	20525/836.5	20635/847.5
LTE Band 5	3MHz	QPSK	1	0	24.50	23.97	24.04	24.04
			1	7	24.50	23.94	24.06	24.03
			1	14	24.50	23.98	24.02	24.01
			8	0	23.50	22.98	23.04	22.98
			8	4	23.50	22.96	23.08	22.95
			8	7	23.50	22.99	23.10	22.94
			15	0	23.50	23.00	23.09	23.01
		16QAM	1	0	24.00	23.06	23.29	23.52
			1	7	24.00	23.04	23.29	23.52
			1	14	24.00	23.08	23.26	23.46
			8	0	22.50	22.07	22.04	22.18
			8	4	22.50	22.02	22.08	22.17
			8	7	22.50	22.07	22.09	22.16
			15	0	22.50	22.05	22.06	22.09
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20425/826.5	20525/836.5	20625/846.5
LTE Band 5	5MHz	QPSK	1	0	24.50	24.03	24.05	23.96
			1	12	24.50	24.02	24.03	23.66
			1	24	24.50	24.09	24.04	23.67
			12	0	23.50	22.98	23.08	23.06
			12	6	23.50	22.96	23.08	22.95
			12	11	23.50	22.91	23.06	22.92
			25	0	23.50	23.02	23.10	23.05
		16QAM	1	0	23.50	23.08	23.02	22.37
			1	12	23.50	23.07	23.24	22.31
			1	24	23.50	23.13	23.07	22.36

			12	0	22.50	21.94	22.11	22.10
			12	6	22.50	21.99	22.09	21.99
			12	11	22.50	21.91	22.09	21.93
			25	0	22.50	22.02	22.13	22.07
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20450/829	20525/836.5	20600/844
LTE Band 5	10MHz	QPSK	1	0	24.50	23.95	23.61	23.60
			1	24	24.50	24.06	23.57	23.53
			1	49	24.50	24.03	23.51	23.47
			25	0	23.50	23.00	23.13	23.13
			25	12	23.50	23.07	23.11	23.04
			25	24	23.50	23.02	23.13	22.96
		16QAM	50	0	23.50	23.07	23.17	23.10
			1	0	23.50	22.56	22.75	23.09
			1	24	23.50	22.69	22.79	23.00
			1	49	23.50	22.61	22.67	22.94
			25	0	22.50	22.16	22.15	22.18
			25	12	22.50	22.15	22.15	22.08
			25	24	22.50	22.08	22.19	22.01
			50	0	22.50	22.06	22.17	22.08

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23017/699.7	23095/707.5	23173/715.3
LTE Band 12	1.4MHz	QPSK	1	0	23.50	23.27	23.37	23.39
			1	2	23.50	23.26	23.38	23.37
			1	5	23.50	23.31	23.36	23.36
			3	0	24.50	23.86	23.93	24.07
			3	1	24.50	23.87	23.91	24.09
			3	2	24.50	23.85	23.94	24.01
		16QAM	6	0	23.00	22.86	22.97	22.99
			1	0	23.00	22.34	22.59	22.57
			1	2	23.00	22.33	22.61	22.55
			1	5	23.00	22.36	22.60	22.51
			3	0	23.50	22.97	22.90	23.15
			3	1	23.50	23.01	22.90	23.18
			3	2	23.50	23.01	22.91	23.17
			6	0	22.50	21.83	21.97	22.01
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23025/700.5	23095/707.5	23165/714.5
LTE Band 12	3MHz	QPSK	1	0	24.00	23.32	23.35	23.62
			1	7	24.00	23.35	23.38	23.60
			1	14	24.00	23.36	23.41	23.50
			8	0	23.00	22.85	22.92	22.96
			8	4	23.00	22.84	22.95	23.00
			8	7	23.00	22.84	22.91	22.97
			15	0	23.00	22.88	22.90	23.00
		16QAM	1	0	23.50	22.40	22.63	23.08
			1	7	23.50	22.41	22.62	23.01

			1	14	23.50	22.37	22.62	22.93
			8	0	22.50	21.92	21.89	22.20
			8	4	22.50	21.90	21.91	22.24
			8	7	22.50	21.92	21.89	22.23
			15	0	22.50	21.91	21.85	22.10
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23035/701.5	23095/707.5	23155/713.5
LTE Band 12	5MHz	QPSK	1	0	24.00	23.45	23.37	23.71
			1	12	24.00	23.39	23.43	23.76
			1	24	24.00	23.49	23.50	23.81
			12	0	23.50	22.92	22.95	23.05
			12	6	23.50	22.86	22.95	22.99
			12	11	23.50	22.90	22.92	23.02
			25	0	23.50	22.93	22.93	23.08
		16QAM	1	0	23.00	22.52	22.67	22.42
			1	12	23.00	22.44	22.70	22.43
			1	24	23.00	22.54	22.77	22.42
			12	0	22.50	21.88	21.98	22.10
			12	6	22.50	21.83	21.98	22.03
			12	11	22.50	21.89	21.94	22.11
			25	0	22.50	21.94	21.93	22.10
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23060/704	23095/707.5	23130/711
LTE Band 12	10MHz	QPSK	1	0	24.00	23.36	23.34	23.46
			1	24	24.00	23.44	23.45	23.60
			1	49	24.00	23.53	23.50	23.61
			25	0	23.50	22.81	22.93	23.07
			25	12	23.50	22.88	22.96	23.03
			25	24	23.50	22.94	22.90	23.08
			50	0	23.50	22.90	22.92	23.10
		16QAM	1	0	23.50	22.40	22.52	22.94
			1	24	23.50	22.46	22.65	23.08
			1	49	23.50	22.54	22.67	23.03
			25	0	22.50	21.90	21.94	22.10
			25	12	22.50	22.04	21.99	22.08
			25	24	22.50	22.10	21.91	22.11
			50	0	22.50	21.91	21.89	22.10

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23755/706.5	23790/710	23825/713.5
LTE Band 17	5MHz	QPSK	1	0	24.50	23.86	24.17	24.11
			1	12	24.50	23.90	24.10	24.05
			1	24	24.50	24.01	24.28	24.19
			12	0	23.50	22.90	22.99	23.09
			12	6	23.50	22.92	22.95	23.03
			12	11	23.50	22.95	22.91	23.05
			25	0	23.50	22.92	22.92	23.07
		16QAM	1	0	23.50	23.18	22.85	23.16

			1	12	23.50	23.15	22.79	23.07
			1	24	23.50	23.28	22.97	23.22
			12	0	22.50	21.92	22.00	22.05
			12	6	22.50	21.93	21.96	21.98
			12	11	22.50	21.93	21.89	22.05
			25	0	22.50	21.92	21.98	22.08
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23780/709	23790/710	23800/711
LTE Band 17	10MHz	QPSK	1	0	24.50	23.88	23.87	24.04
			1	24	24.50	24.02	24.01	24.05
			1	49	24.50	24.05	24.03	24.22
			25	0	23.50	22.94	22.98	23.08
			25	12	23.50	22.97	22.97	23.03
			25	24	23.50	22.88	22.94	23.06
			50	0	23.50	22.95	22.99	23.10
		16QAM	1	0	24.00	22.93	23.11	23.50
			1	24	24.00	23.02	23.19	23.49
			1	49	24.00	23.10	23.27	23.37
			25	0	22.50	22.07	22.02	22.11
			25	12	22.50	22.07	21.98	22.07
			25	24	22.50	21.99	21.95	22.11
			50	0	22.50	21.92	21.97	22.08

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		40265/2557.5	40740/2605	41215/2652.5
LTE Band 41	5MHz	QPSK	1	0	23.50	22.43	22.42	23.18
			1	12	23.50	22.40	22.60	23.16
			1	24	23.50	22.46	22.49	23.22
			12	0	23.00	21.87	21.93	22.61
			12	6	23.00	21.84	21.95	22.60
			12	11	23.00	21.83	21.97	22.67
			25	0	23.00	21.80	21.94	22.69
		16QAM	1	0	22.50	21.31	21.42	21.89
			1	12	22.50	21.54	21.41	22.19
			1	24	22.50	21.63	21.47	22.25
			12	0	22.00	20.87	20.90	21.73
			12	6	22.00	20.79	20.89	21.64
			12	11	22.00	20.82	20.96	21.59
			25	0	22.00	20.79	20.93	21.75
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		40290/2560	40740/2605	41190/2650
LTE Band 41	10MHz	QPSK	1	0	24.00	22.75	22.69	23.49
			1	24	24.00	22.74	22.67	23.54
			1	49	24.00	22.89	22.58	23.51
			25	0	23.00	21.82	21.92	22.57
			25	12	23.00	21.82	21.90	22.65
			25	24	23.00	21.79	21.92	22.63
			50	0	23.00	21.85	22.00	22.62
		16QAM	1	0	22.50	22.00	21.37	22.21

			1	24	22.50	21.47	21.43	22.21
			1	49	22.50	21.78	21.62	22.43
			25	0	22.00	20.85	20.89	21.58
			25	12	22.00	20.80	20.91	21.65
			25	24	22.00	20.76	20.95	21.67
			50	0	22.00	20.79	20.93	21.61
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		40315/2562.5	40740/2605	41165/2647.5
LTE Band 41	15MHz	QPSK	1	0	24.00	22.78	22.77	23.46
			1	37	24.00	22.85	22.98	23.61
			1	74	24.00	22.72	22.88	23.66
			36	0	23.00	21.76	21.88	22.44
			36	18	23.00	21.75	21.91	22.48
			36	37	23.00	21.74	21.91	22.55
			75	0	23.00	21.75	21.91	22.53
		16QAM	1	0	23.00	21.49	21.59	22.29
			1	37	23.00	21.70	21.57	22.31
			1	74	23.00	21.59	21.74	22.68
			36	0	22.00	20.75	20.87	21.50
			36	18	22.00	20.74	20.86	21.53
			36	37	22.00	20.81	20.89	21.59
			75	0	22.00	20.82	20.88	21.51
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		40340/2565	40740/2605	41140/2645
LTE Band 41	20MHz	QPSK	1	0	24.00	22.64	22.66	23.37
			1	49	24.00	22.83	22.97	23.51
			1	99	24.00	22.69	22.98	23.55
			50	0	23.00	21.80	21.89	22.46
			50	24	23.00	21.79	21.97	22.55
			50	49	23.00	21.80	22.03	22.56
			100	0	23.00	21.82	21.96	22.50
		16QAM	1	0	23.00	21.84	21.62	22.21
			1	49	23.00	22.00	21.66	22.74
			1	99	23.00	21.43	21.70	22.52
			50	0	22.00	20.82	20.84	21.46
			50	24	22.00	20.75	20.89	21.53
			50	49	22.00	20.77	21.06	21.51
			100	0	21.50	20.80	20.92	21.47

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		131979/1710.7	132322/1745	132665/1779.3
LTE Band 66	1.4MHz	QPSK	1	0	22.50	22.48	22.20	22.24
			1	2	22.50	22.27	22.22	22.32
			1	5	22.50	22.25	22.19	22.26
			3	0	23.00	22.67	22.73	22.82
			3	1	23.00	22.65	22.66	22.79
			3	2	23.00	22.66	22.65	22.79
			6	0	22.00	21.68	21.66	21.75
		16QAM	1	0	21.50	21.06	21.06	21.23

			1	2	21.50	21.16	21.10	21.23
			1	5	21.50	21.09	21.03	21.23
			3	0	22.00	21.88	21.68	21.78
			3	1	22.00	21.89	21.64	21.77
			3	2	22.00	21.88	21.64	21.77
			6	0	21.00	20.69	20.61	20.73
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		131987/1711.5	132322/1745	132657/1778.5
LTE Band 66	3MHz	QPSK	1	0	22.50	22.19	22.16	22.32
			1	7	22.50	22.25	22.12	22.34
			1	14	22.50	22.25	22.12	22.32
			8	0	22.00	21.69	21.64	21.75
			8	4	22.00	21.70	21.59	21.76
			8	7	22.00	21.72	21.61	21.73
		16QAM	15	0	22.00	21.73	21.64	21.77
			1	0	22.00	21.09	21.36	21.52
			1	7	22.00	21.15	21.30	21.55
			1	14	22.00	21.16	21.25	21.51
			8	0	21.00	20.72	20.68	20.78
			8	4	21.00	20.72	20.63	20.78
			8	7	21.00	20.77	20.61	20.76
			15	0	21.00	20.72	20.52	20.72
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		131997/1712.5	132322/1745	132647/1777.5
LTE Band 66	5MHz	QPSK	1	0	22.50	22.16	22.21	22.31
			1	12	22.50	22.18	22.14	22.35
			1	24	22.50	22.20	22.18	22.36
			12	0	22.00	21.67	21.72	21.76
			12	6	22.00	21.72	21.69	21.77
			12	11	22.00	21.76	21.62	21.76
			25	0	22.00	21.73	21.66	21.81
		16QAM	1	0	21.50	21.38	21.37	21.47
			1	12	21.50	21.44	21.31	21.47
			1	24	21.50	21.48	21.29	21.46
			12	0	21.00	20.68	20.67	20.76
			12	6	21.00	20.73	20.61	20.73
			12	11	21.00	20.77	20.54	20.75
			25	0	21.00	20.75	20.63	20.80
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		132022/1715	132322/1745	132622/1775
LTE Band 66	10MHz	QPSK	1	0	22.50	22.23	22.22	22.18
			1	24	22.50	22.33	22.21	22.28
			1	49	22.50	22.28	22.08	22.33
			25	0	22.00	21.71	21.74	21.74
			25	12	22.00	21.76	21.67	21.74
			25	24	22.00	21.89	21.68	21.83
			50	0	22.00	21.83	21.75	21.84
		16QAM	1	0	21.50	21.07	21.33	21.39

			1	24	21.50	21.17	21.30	21.47
			1	49	21.50	21.14	21.21	21.48
			25	0	21.00	20.69	20.76	20.78
			25	12	21.00	20.73	20.71	20.81
			25	24	21.00	20.83	20.73	20.89
			50	0	21.00	20.75	20.73	20.82
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		132047/1717.5	132322/1745	132597/1772.5
LTE Band 66	15MHz	QPSK	1	0	22.50	22.18	22.18	22.07
			1	37	22.50	22.29	22.14	22.18
			1	74	22.50	22.27	22.00	22.28
			36	0	22.00	21.64	21.71	21.70
			36	18	22.00	21.77	21.68	21.70
			36	37	22.00	21.80	21.65	21.78
			75	0	22.00	21.76	21.74	21.77
		16QAM	1	0	21.50	21.21	21.33	21.25
			1	37	21.50	21.34	21.31	21.39
			1	74	21.50	21.32	21.14	21.47
			36	0	21.00	20.61	20.76	20.70
			36	18	21.00	20.74	20.62	20.73
			36	37	21.00	20.82	20.62	20.81
			75	0	21.00	20.78	20.66	20.74
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		132072/1720	132322/1745	132572/1770
LTE Band 66	20MHz	QPSK	1	0	22.50	22.12	22.22	21.99
			1	49	22.50	22.25	22.27	22.18
			1	99	22.50	22.21	22.05	22.25
			50	0	22.00	21.60	21.79	21.75
			50	24	22.00	21.85	21.74	21.72
			50	49	22.00	21.95	21.73	21.80
			100	0	22.00	21.81	21.74	21.76
		16QAM	1	0	21.50	20.94	21.09	21.07
			1	49	21.50	21.12	21.09	21.32
			1	99	21.50	21.12	20.87	21.30
			50	0	21.00	20.58	20.74	20.72
			50	24	21.00	20.84	20.71	20.69
			50	49	21.00	20.97	20.70	20.76
			100	0	21.00	20.77	20.74	20.73

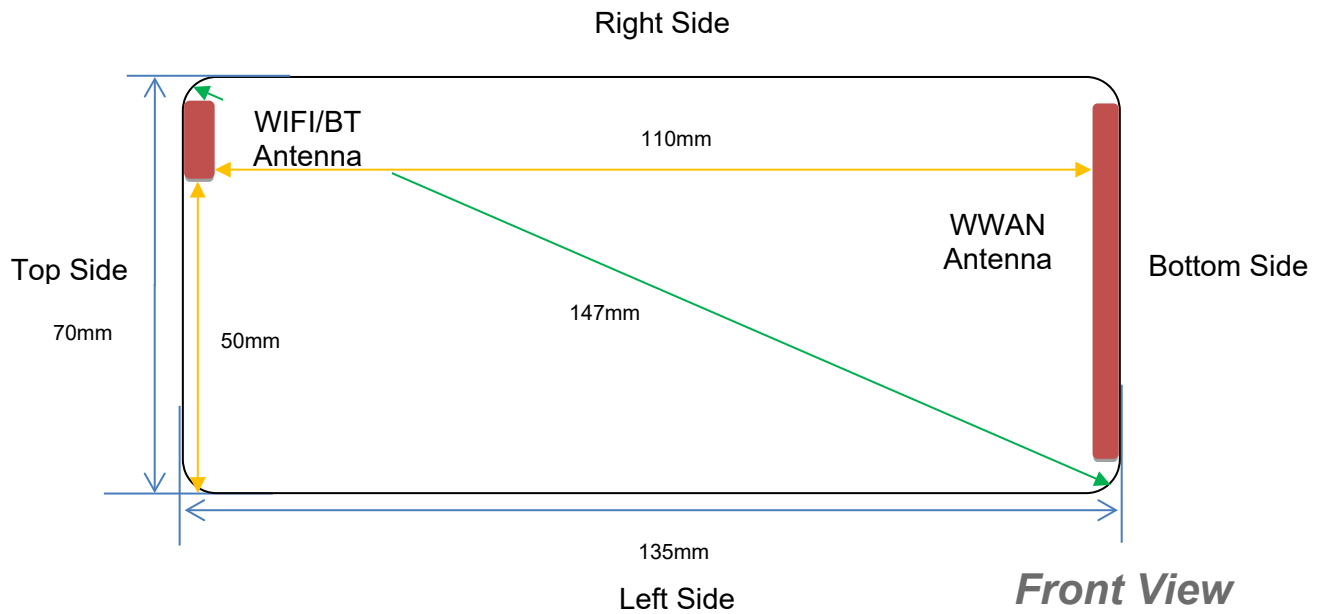
8.4. Wi-Fi & BT Output Power

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11b	1	2412	14.50	14.10
	6	2437	14.50	13.72
	11	2462	14.50	13.91
802.11g	1	2412	14.50	13.76
	6	2437	14.50	14.13
	11	2462	14.50	14.48
802.11n HT20	1	2412	14.00	13.34
	6	2437	14.00	13.49
	11	2462	14.00	14.00

BR+EDR	Output Power (dBm)				
	Channel	Tune-up (dBm)	Data Rates		
			1M	2M	3M
	0CH	5.50	3.74	4.66	5.08
	39CH	2.00	0.75	1.28	1.62
	78CH	2.00	0.65	1.22	1.68

Mode	Channel	Tune-up (dBm)	Output Power (dBm)
BLE1M	CH00	-1.00	-1.32
	CH19	-4.00	-4.56
	CH39	-4.00	-4.21

9. Antenna Location



Antenna information:

Distance of The Antenna to the EUT surface and edge (mm)						
Antennas	Front Side	Back Side	Left Side	Right Side	Top Side	Bottom Side
BT/WLAN	≤25mm	≤25mm	>25mm	≤25mm	≤25mm	>25mm
WWAN	≤25mm	≤25mm	≤25mm	≤25mm	>25mm	≤25mm

Positions for SAR tests						
Antennas	Front Side	Back Side	Left Side	Right Side	Top Side	Bottom Side
BT/WLAN	Yes	Yes	NO	Yes	Yes	NO
WWAN	Yes	Yes	Yes	Yes	NO	Yes

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	5.50	3.55	5	2.480	1.1	3	Yes

NOTE: Standalone SAR test exclusion for Bluetooth.

11. SAR Measurement Results

< GSM 850>

Test Position	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
Left Cheek	189/836.4	GPRS(GMSK 2TS)	0.178	0.109	1.13	32.70	33.00	0.191	2026/3/30	#1
Left Tilt 15 Degree	189/836.4	GPRS(GMSK 2TS)	0.103	0.062	-1.19	32.70	33.00	0.110	2026/3/30	
Right Cheek	189/836.4	GPRS(GMSK 2TS)	0.165	0.101	-0.09	32.70	33.00	0.177	2026/3/30	
Right Tilt 15 Degree	189/836.4	GPRS(GMSK 2TS)	0.080	0.048	-2.34	32.70	33.00	0.086	2026/3/30	

Test Position of Hotspot with 5mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
Front Side	189/836.4	GPRS(GMSK 2TS)	0.102	0.058	3.13	32.70	33.00	0.109	2026/3/30	
Back Side	189/836.4	GPRS(GMSK 2TS)	0.153	0.089	-1.51	32.70	33.00	0.164	2026/3/30	#2
Left Side	189/836.4	GPRS(GMSK 2TS)	0.051	0.029	-1.82	32.70	33.00	0.055	2026/3/30	
Right Side	189/836.4	GPRS(GMSK 2TS)	0.048	0.026	-2.78	32.70	33.00	0.051	2026/3/30	
Bottom Side	189/836.4	GPRS(GMSK 2TS)	0.080	0.045	-1.95	32.70	33.00	0.086	2026/3/30	
0mm Limbs										
Back Side	189/836.4	GPRS(GMSK 2TS)	0.520	0.300	2.01	32.70	33.00	0.321	2026/3/30	#29

< GSM 1900>

Test	Test	Test Mode	SAR Value	Power	Conducted	Tune-up	Scaled	Date	Plot
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Position	channel /Freq.		(W/kg)		Drift (±5%)	power (dBm)	power (dBm)	SAR 1g/10g (W/Kg)		
			1g	10g						
Left Cheek	661/1880	GPRS(GMSK 2TS)	0.282	0.177	2.41	29.64	30.00	0.306	2026/4/1	#3
Left Tilt 15 Degree	661/1880	GPRS(GMSK 2TS)	0.146	0.088	-1.86	29.64	30.00	0.159	2026/4/1	
Right Cheek	661/1880	GPRS(GMSK 2TS)	0.256	0.153	-1.63	29.64	30.00	0.278	2026/4/1	
Right Tilt 15 Degree	661/1880	GPRS(GMSK 2TS)	0.136	0.084	-2.49	29.64	30.00	0.148	2026/4/1	

Test Position of Hotspot with 5mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
Front Side	661/1880	GPRS(GMSK 2TS)	0.336	0.171	-0.68	29.64	30.00	0.365	2026/4/1	
Back Side	661/1880	GPRS(GMSK 2TS)	0.538	0.285	-4.56	29.64	30.00	0.584	2026/4/1	#4
Left Side	661/1880	GPRS(GMSK 2TS)	0.162	0.083	1.55	29.64	30.00	0.176	2026/4/1	
Right Side	661/1880	GPRS(GMSK 2TS)	0.160	0.081	2.12	29.64	30.00	0.174	2026/4/1	
Bottom Side	661/1880	GPRS(GMSK 2TS)	0.280	0.144	0.78	29.64	30.00	0.304	2026/4/1	
0mm Limbs										
Back Side	661/1880	GPRS(GMSK 2TS)	0.675	0.410	2.58	29.64	30.00	0.445	2026/4/1	#30

< WCDMA Band 2 >

Test Position	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
Left	9400/1880	RMC12.2K	0.232	0.152	1.08	23.34	23.50	0.241	2026/4/1	#5

Cheek										
Left Tilt 15 Degree	9400/1880	RMC12.2K	0.138	0.088	2.24	23.34	23.50	0.143	2026/4/1	
Right Cheek	9400/1880	RMC12.2K	0.201	0.126	-2.01	23.34	23.50	0.209	2026/4/1	
Right Tilt 15 Degree	9400/1880	RMC12.2K	0.110	0.070	-3.80	23.34	23.50	0.114	2026/4/1	

Test Position of Hotspot with 5mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
Front Side	9400/1880	RMC12.2K	0.306	0.190	-1.44	23.34	23.50	0.317	2026/4/1	
Back Side	9400/1880	RMC12.2K	0.465	0.292	-3.70	23.34	23.50	0.482	2026/4/1	#6
Left Side	9400/1880	RMC12.2K	0.153	0.096	3.20	23.34	23.50	0.159	2026/4/1	
Right Side	9400/1880	RMC12.2K	0.158	0.100	-2.98	23.34	23.50	0.164	2026/4/1	
Bottom Side	9400/1880	RMC12.2K	0.255	0.160	-3.32	23.34	23.50	0.265	2026/4/1	
0mm Limbs										
Back Side	9400/1880	RMC12.2K	0.650	0.412	1.58	23.34	23.50	0.427	2026/4/1	#31

< WCDMA Band 4 >

Test Position	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
Left Cheek	1413/1732.6	RMC12.2K	0.262	0.171	2.17	23.05	23.50	0.291	2026/3/31	#7
Left Tilt 15 Degree	1413/1732.6	RMC12.2K	0.144	0.093	-3.63	23.05	23.50	0.160	2026/3/31	

Right Cheek	1413/1732.6	RMC12.2K	0.236	0.154	-2.39	23.05	23.50	0.262	2026/3/31	
Right Tilt 15 Degree	1413/1732.6	RMC12.2K	0.125	0.080	0.53	23.05	23.50	0.139	2026/3/31	

Test Position of Hotspot with 5mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
Front Side	1413/1732.6	RMC12.2K	0.330	0.203	-0.01	23.05	23.50	0.366	2026/3/31	
Back Side	1413/1732.6	RMC12.2K	0.516	0.328	-1.93	23.05	23.50	0.572	2026/3/31	#8
Left Side	1413/1732.6	RMC12.2K	0.159	0.098	-1.07	23.05	23.50	0.176	2026/3/31	
Right Side	1413/1732.6	RMC12.2K	0.162	0.100	1.04	23.05	23.50	0.180	2026/3/31	
Bottom Side	1413/1732.6	RMC12.2K	0.265	0.162	2.30	23.05	23.50	0.294	2026/3/31	
0mm Limbs										
Back Side	1413/1732.6	RMC12.2K	0.800	0.575	1.50	23.05	23.50	0.638	2026/3/31	#32

< WCDMA Band 5 >

Test Position	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
Left Cheek	4182/836.4	RMC12.2K	0.139	0.089	0.84	24.22	24.50	0.148	2026/3/30	#9
Left Tilt 15 Degree	4182/836.4	RMC12.2K	0.070	0.043	0.69	24.22	24.50	0.075	2026/3/30	
Right Cheek	4182/836.4	RMC12.2K	0.128	0.081	0.12	24.22	24.50	0.137	2026/3/30	
Right Tilt 15	4182/836.4	RMC12.2K	0.068	0.042	-3.21	24.22	24.50	0.073	2026/3/30	

Degree										
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Test Position of Hotspot with 5mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
Front Side	4182/836.4	RMC12.2K	0.096	0.061	1.76	24.22	24.50	0.102	2026/3/30	
Back Side	4182/836.4	RMC12.2K	0.141	0.093	-1.16	24.22	24.50	0.150	2026/3/30	#10
Left Side	4182/836.4	RMC12.2K	0.054	0.034	3.99	24.22	24.50	0.058	2026/3/30	
Right Side	4182/836.4	RMC12.2K	0.057	0.036	1.34	24.22	24.50	0.061	2026/3/30	
Bottom Side	4182/836.4	RMC12.2K	0.085	0.055	2.84	24.22	24.50	0.091	2026/3/30	
0mm Limbs										
Back Side	4182/836.4	RMC12.2K	0.500	0.275	2.50	24.22	24.50	0.293	2026/3/30	#33

< LTE Band 2 >

Test Position	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
1RB										
Left Cheek	18900/1880	20M QPSK(1,49)	0.207	0.142	4.03	22.85	23.00	0.214	2026/4/1	#15
Left Tilt 15 Degree	18900/1880	20M QPSK(1,49)	0.106	0.069	-3.98	22.85	23.00	0.110	2026/4/1	
Right Cheek	18900/1880	20M QPSK(1,49)	0.185	0.127	1.82	22.85	23.00	0.192	2026/4/1	
Right Tilt 15 Degree	18900/1880	20M QPSK(1,49)	0.084	0.056	3.49	22.85	23.00	0.087	2026/4/1	
50%RB										
Left	18900/1880	20M	0.122	0.075	3.63	22.37	23.00	0.141	2026/4/1	

Cheek		QPSK(50,49)								
Left Tilt 15 Degree	18900/1880	20M QPSK(50,49)	0.056	0.036	-3.31	22.37	23.00	0.065	2026/4/1	
Right Cheek	18900/1880	20M QPSK(50,49)	0.101	0.069	4.67	22.37	23.00	0.117	2026/4/1	
Right Tilt 15 Degree	18900/1880	20M QPSK(50,49)	0.049	0.033	-2.69	22.37	23.00	0.057	2026/4/1	

Test Position of Hotspot with 5mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
1RB										
Front Side	18900/1880	20M QPSK(1,49)	0.330	0.181	0.56	22.85	23.00	0.342	2026/4/1	
Back Side	18900/1880	20M QPSK(1,49)	0.515	0.288	0.97	22.85	23.00	0.533	2026/4/1	#16
Left Side	18900/1880	20M QPSK(1,49)	0.162	0.086	3.67	22.85	23.00	0.168	2026/4/1	
Right Side	18900/1880	20M QPSK(1,49)	0.168	0.090	-1.76	22.85	23.00	0.174	2026/4/1	
Bottom Side	18900/1880	20M QPSK(1,49)	0.265	0.141	-2.90	22.85	23.00	0.274	2026/4/1	
50%RB										
Front Side	18900/1880	20M QPSK(50,49)	0.189	0.099	-3.55	22.37	23.00	0.219	2026/4/1	
Back Side	18900/1880	20M QPSK(50,49)	0.271	0.157	2.70	22.37	23.00	0.313	2026/4/1	
Left Side	18900/1880	20M QPSK(50,49)	0.084	0.048	4.51	22.37	23.00	0.097	2026/4/1	
Right Side	18900/1880	20M QPSK(50,49)	0.100	0.050	1.44	22.37	23.00	0.116	2026/4/1	
Bottom Side	18900/1880	20M QPSK(50,49)	0.136	0.071	2.93	22.37	23.00	0.157	2026/4/1	
0mm Limbs										
Back	18900/1880	20M QPSK(1,49)	0.675	0.500	2.05	22.85	23.00	0.518	2026/4/1	#36

Side										
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< LTE Band 4>

Test Position	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
1RB										
Left Cheek	20175/1732.5	20M QPSK(1,49)	0.279	0.191	2.97	22.32	22.50	0.291	2026/3/31	#17
Left Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.152	0.104	-1.95	22.32	22.50	0.158	2026/3/31	
Right Cheek	20175/1732.5	20M QPSK(1,49)	0.249	0.169	0.31	22.32	22.50	0.260	2026/3/31	
Right Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.114	0.076	-1.52	22.32	22.50	0.119	2026/3/31	
50%RB										
Left Cheek	20175/1732.5	20M QPSK(50,49)	0.143	0.108	-4.02	21.74	22.00	0.152	2026/3/31	
Left Tilt 15 Degree	20175/1732.5	20M QPSK(50,49)	0.085	0.060	4.22	21.74	22.00	0.090	2026/3/31	
Right Cheek	20175/1732.5	20M QPSK(50,49)	0.140	0.100	3.74	21.74	22.00	0.149	2026/3/31	
Right Tilt 15 Degree	20175/1732.5	20M QPSK(50,49)	0.060	0.040	-2.32	21.74	22.00	0.064	2026/3/31	

Test Position of Hotspot with 5mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
1RB										
Front Side	20175/1732.5	20M QPSK(1,49)	0.306	0.187	-2.05	22.32	22.50	0.319	2026/3/31	
Back	20175/1732.5	20M QPSK(1,49)	0.510	0.325	-3.53	22.32	22.50	0.532	2026/3/31	#18

Side										
Left Side	20175/1732.5	20M QPSK(1,49)	0.153	0.093	1.92	22.32	22.50	0.159	2026/3/31	
Right Side	20175/1732.5	20M QPSK(1,49)	0.159	0.096	-1.11	22.32	22.50	0.166	2026/3/31	
Bottom Side	20175/1732.5	20M QPSK(1,49)	0.280	0.171	2.02	22.32	22.50	0.292	2026/3/31	
50%RB										
Front Side	20175/1732.5	20M QPSK(50,49)	0.166	0.111	-0.68	21.74	22.00	0.176	2026/3/31	
Back Side	20175/1732.5	20M QPSK(50,49)	0.284	0.185	-3.18	21.74	22.00	0.302	2026/3/31	
Left Side	20175/1732.5	20M QPSK(50,49)	0.077	0.048	-0.95	21.74	22.00	0.082	2026/3/31	
Right Side	20175/1732.5	20M QPSK(50,49)	0.094	0.058	4.19	21.74	22.00	0.100	2026/3/31	
Bottom Side	20175/1732.5	20M QPSK(50,49)	0.159	0.096	4.51	21.74	22.00	0.169	2026/3/31	
0mm Limbs										
Back Side	20175/1732.5	20M QPSK(1,49)	0.685	0.504	2.60	22.32	22.50	0.525	2026/3/31	#37

< LTE Band 5 >

Test Position	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
1RB										
Left Cheek	20525/836.5	10M QPSK(1,24)	0.176	0.117	-3.07	23.57	24.50	0.218	2026/3/30	#19
Left Tilt 15 Degree	20525/836.5	10M QPSK(1,24)	0.104	0.066	-1.80	23.57	24.50	0.129	2026/3/30	
Right Cheek	20525/836.5	10M QPSK(1,24)	0.154	0.099	2.78	23.57	24.50	0.191	2026/3/30	
Right Tilt 15 Degree	20525/836.5	10M QPSK(1,24)	0.073	0.047	3.44	23.57	24.50	0.090	2026/3/30	
50%RB										
Left	20525/836.5	10M	0.099	0.066	-4.89	23.13	23.50	0.108	2026/3/30	

Cheek		QPSK(25,0)								
Left Tilt 15 Degree	20525/836.5	10M QPSK(25,0)	0.054	0.034	-2.04	23.13	23.50	0.059	2026/3/30	
Right Cheek	20525/836.5	10M QPSK(25,0)	0.084	0.050	-0.53	23.13	23.50	0.091	2026/3/30	
Right Tilt 15 Degree	20525/836.5	10M QPSK(25,0)	0.038	0.026	-1.17	23.13	23.50	0.041	2026/3/30	

Test Position of Hotspot with 5mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
1RB										
Front Side	20525/836.5	10M QPSK(1,24)	0.126	0.071	2.70	23.57	24.50	0.156	2026/3/30	
Back Side	20525/836.5	10M QPSK(1,24)	0.178	0.101	-4.29	23.57	24.50	0.221	2026/3/30	#20
Left Side	20525/836.5	10M QPSK(1,24)	0.066	0.037	-0.68	23.57	24.50	0.082	2026/3/30	
Right Side	20525/836.5	10M QPSK(1,24)	0.054	0.030	3.28	23.57	24.50	0.067	2026/3/30	
Bottom Side	20525/836.5	10M QPSK(1,24)	0.090	0.050	-1.39	23.57	24.50	0.111	2026/3/30	
50%RB										
Front Side	20525/836.5	10M QPSK(25,0)	0.068	0.039	-4.30	23.13	23.50	0.074	2026/3/30	
Back Side	20525/836.5	10M QPSK(25,0)	0.100	0.060	-2.49	23.13	23.50	0.109	2026/3/30	
Left Side	20525/836.5	10M QPSK(25,0)	0.038	0.019	-3.26	23.13	23.50	0.041	2026/3/30	
Right Side	20525/836.5	10M QPSK(25,0)	0.029	0.016	1.39	23.13	23.50	0.032	2026/3/30	
Bottom Side	20525/836.5	10M QPSK(25,0)	0.050	0.028	2.28	23.13	23.50	0.054	2026/3/30	
0mm Limbs										
Back	20525/836.5	10M QPSK(1,24)	0.512	0.400	0.87	23.57	24.50	0.496	2026/3/30	#38



Side										
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< LTE Band 12>

Test Position	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
1RB										
Left Cheek	23095/707.5	10M QPSK(1,49)	0.165	0.112	4.49	23.50	24.00	0.185	2026/3/28	#21
Left Tilt 15 Degree	23095/707.5	10M QPSK(1,49)	0.084	0.056	3.93	23.50	24.00	0.094	2026/3/28	
Right Cheek	23095/707.5	10M QPSK(1,49)	0.142	0.092	1.34	23.50	24.00	0.159	2026/3/28	
Right Tilt 15 Degree	23095/707.5	10M QPSK(1,49)	0.070	0.046	-2.85	23.50	24.00	0.079	2026/3/28	
50%RB										
Left Cheek	23095/707.5	10M QPSK(25,24)	0.096	0.063	-0.82	22.90	23.50	0.110	2026/3/28	
Left Tilt 15 Degree	23095/707.5	10M QPSK(25,24)	0.044	0.028	4.70	22.90	23.50	0.051	2026/3/28	
Right Cheek	23095/707.5	10M QPSK(25,24)	0.084	0.047	1.67	22.90	23.50	0.096	2026/3/28	
Right Tilt 15 Degree	23095/707.5	10M QPSK(25,24)	0.036	0.025	-4.00	22.90	23.50	0.041	2026/3/28	

Test Position of Hotspot with 5mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
			1RB							
Front Side	23095/707.5	10M QPSK(1,49)	0.150	0.085	-1.45	23.50	24.00	0.168	2026/3/28	
Back	23095/707.5	10M QPSK(1,49)	0.218	0.124	-3.85	23.50	24.00	0.245	2026/3/28	#22

Side										
Left Side	23095/707.5	10M QPSK(1,49)	0.075	0.042	-0.71	23.50	24.00	0.084	2026/3/28	
Right Side	23095/707.5	10M QPSK(1,49)	0.069	0.038	-1.24	23.50	24.00	0.077	2026/3/28	
Bottom Side	23095/707.5	10M QPSK(1,49)	0.110	0.059	-3.60	23.50	24.00	0.123	2026/3/28	
50%RB										
Front Side	23095/707.5	10M QPSK(25,24)	0.083	0.046	3.65	22.90	23.50	0.095	2026/3/28	
Back Side	23095/707.5	10M QPSK(25,24)	0.110	0.066	3.03	22.90	23.50	0.126	2026/3/28	
Left Side	23095/707.5	10M QPSK(25,24)	0.042	0.022	4.32	22.90	23.50	0.048	2026/3/28	
Right Side	23095/707.5	10M QPSK(25,24)	0.038	0.022	-2.59	22.90	23.50	0.044	2026/3/28	
Bottom Side	23095/707.5	10M QPSK(25,24)	0.059	0.032	3.05	22.90	23.50	0.068	2026/3/28	
0mm Limbs										
Back Side	23095/707.5	10M QPSK(1,49)	0.530	0.401	3.02	23.50	24.00	0.450	2026/3/28	#39

< LTE Band 17>

Test Position	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
1RB										
Left Cheek	23790/710	10M QPSK(1,49)	0.164	0.112	4.00	24.03	24.50	0.183	2026/3/28	#23
Left Tilt 15 Degree	23790/710	10M QPSK(1,49)	0.087	0.057	3.75	24.03	24.50	0.097	2026/3/28	
Right Cheek	23790/710	10M QPSK(1,49)	0.145	0.098	1.19	24.03	24.50	0.162	2026/3/28	
Right Tilt 15 Degree	23790/710	10M QPSK(1,49)	0.074	0.050	-0.11	24.03	24.50	0.082	2026/3/28	
50%RB										
Left	23790/710	10M	0.097	0.058	-1.04	22.98	23.50	0.109	2026/3/28	

Cheek		QPSK(25,0)								
Left Tilt 15 Degree	23790/710	10M QPSK(25,0)	0.047	0.034	3.41	22.98	23.50	0.053	2026/3/28	
Right Cheek	23790/710	10M QPSK(25,0)	0.083	0.057	4.49	22.98	23.50	0.094	2026/3/28	
Right Tilt 15 Degree	23790/710	10M QPSK(25,0)	0.042	0.028	0.43	22.98	23.50	0.047	2026/3/28	

Test Position of Hotspot with 5mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
1RB										
Front Side	23790/710	10M QPSK(1,49)	0.156	0.088	2.90	24.03	24.50	0.174	2026/3/28	
Back Side	23790/710	10M QPSK(1,49)	0.220	0.124	-3.52	24.03	24.50	0.245	2026/3/28	#24
Left Side	23790/710	10M QPSK(1,49)	0.072	0.040	-2.63	24.03	24.50	0.080	2026/3/28	
Right Side	23790/710	10M QPSK(1,49)	0.066	0.036	-3.91	24.03	24.50	0.074	2026/3/28	
Bottom Side	23790/710	10M QPSK(1,49)	0.135	0.073	-0.70	24.03	24.50	0.150	2026/3/28	
50%RB										
Front Side	23790/710	10M QPSK(25,0)	0.092	0.050	2.63	22.98	23.50	0.104	2026/3/28	
Back Side	23790/710	10M QPSK(25,0)	0.126	0.071	-0.32	22.98	23.50	0.142	2026/3/28	
Left Side	23790/710	10M QPSK(25,0)	0.038	0.022	-1.54	22.98	23.50	0.043	2026/3/28	
Right Side	23790/710	10M QPSK(25,0)	0.033	0.018	0.58	22.98	23.50	0.037	2026/3/28	
Bottom Side	23790/710	10M QPSK(25,0)	0.077	0.041	0.08	22.98	23.50	0.087	2026/3/28	
0mm Limbs										
Back	23790/710	10M QPSK(1,49)	0.535	0.405	1.02	24.03	24.50	0.451	2026/3/28	#40

Side										
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< LTE Band 41>

Test Position	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
1RB										
Left Cheek	40740/2605	20M QPSK(1,99)	0.421	0.299	2.06	22.98	24.00	0.532	2026/4/10	#25
Left Tilt 15 Degree	40740/2605	20M QPSK(1,99)	0.237	0.167	-1.36	22.98	24.00	0.300	2026/4/10	
Right Cheek	40740/2605	20M QPSK(1,99)	0.375	0.256	-2.55	22.98	24.00	0.474	2026/4/10	
Right Tilt 15 Degree	40740/2605	20M QPSK(1,99)	0.188	0.127	2.34	22.98	24.00	0.238	2026/4/10	
50%RB										
Left Cheek	40740/2605	20M QPSK(50,49)	0.222	0.172	-3.37	22.03	23.00	0.278	2026/4/10	
Left Tilt 15 Degree	40740/2605	20M QPSK(50,49)	0.119	0.089	1.61	22.03	23.00	0.149	2026/4/10	
Right Cheek	40740/2605	20M QPSK(50,49)	0.208	0.148	-3.81	22.03	23.00	0.260	2026/4/10	
Right Tilt 15 Degree	40740/2605	20M QPSK(50,49)	0.096	0.064	4.96	22.03	23.00	0.120	2026/4/10	

Test Position of Hotspot with 5mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
1RB										
Front Side	40740/2605	20M QPSK(1,99)	0.348	0.196	-3.09	22.98	24.00	0.440	2026/4/10	
Back	40740/2605	20M QPSK(1,99)	0.569	0.320	-0.99	22.98	24.00	0.720	2026/4/10	#26

Side										
Left Side	40740/2605	20M QPSK(1,99)	0.174	0.098	-0.20	22.98	24.00	0.220	2026/4/10	
Right Side	40740/2605	20M QPSK(1,99)	0.183	0.100	-2.19	22.98	24.00	0.231	2026/4/10	
Bottom Side	40740/2605	20M QPSK(1,99)	0.295	0.161	-2.78	22.98	24.00	0.373	2026/4/10	
50%RB										
Front Side	40740/2605	20M QPSK(50,49)	0.188	0.108	4.94	22.03	23.00	0.235	2026/4/10	
Back Side	40740/2605	20M QPSK(50,49)	0.287	0.170	-3.17	22.03	23.00	0.359	2026/4/10	
Left Side	40740/2605	20M QPSK(50,49)	0.092	0.059	-0.30	22.03	23.00	0.115	2026/4/10	
Right Side	40740/2605	20M QPSK(50,49)	0.108	0.060	-3.77	22.03	23.00	0.135	2026/4/10	
Bottom Side	40740/2605	20M QPSK(50,49)	0.153	0.092	-1.94	22.03	23.00	0.191	2026/4/10	
0mm Limbs										
Back Side	40740/2605	20M QPSK(1,99)	0.710	0.522	1.00	22.98	24.00	0.660	2026/4/10	#41

< LTE Band 66>

Test Position	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
1RB										
Left Cheek	132322/1745	20M QPSK(1,49)	0.279	0.187	2.91	22.27	22.50	0.294	2026/3/31	#27
Left Tilt 15 Degree	132322/1745	20M QPSK(1,49)	0.156	0.105	1.40	22.27	22.50	0.164	2026/3/31	
Right Cheek	132322/1745	20M QPSK(1,49)	0.243	0.160	-0.51	22.27	22.50	0.256	2026/3/31	
Right Tilt 15 Degree	132322/1745	20M QPSK(1,49)	0.118	0.076	-3.58	22.27	22.50	0.124	2026/3/31	
50%RB										
Left	132322/1745	20M	0.166	0.100	-2.00	21.73	22.00	0.177	2026/3/31	

Cheek		QPSK(50,49)								
Left Tilt 15 Degree	132322/1745	20M QPSK(50,49)	0.094	0.057	3.69	21.73	22.00	0.100	2026/3/31	
Right Cheek	132322/1745	20M QPSK(50,49)	0.146	0.088	-2.62	21.73	22.00	0.155	2026/3/31	
Right Tilt 15 Degree	132322/1745	20M QPSK(50,49)	0.061	0.043	-2.50	21.73	22.00	0.065	2026/3/31	

Test Position of Hotspot with 5mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
1RB										
Front Side	132322/1745	20M QPSK(1,49)	0.330	0.207	1.03	22.27	22.50	0.348	2026/3/31	
Back Side	132322/1745	20M QPSK(1,49)	0.505	0.326	-3.30	22.27	22.50	0.532	2026/3/31	#28
Left Side	132322/1745	20M QPSK(1,49)	0.165	0.101	-2.61	22.27	22.50	0.174	2026/3/31	
Right Side	132322/1745	20M QPSK(1,49)	0.170	0.104	-0.59	22.27	22.50	0.179	2026/3/31	
Bottom Side	132322/1745	20M QPSK(1,49)	0.255	0.161	2.24	22.27	22.50	0.269	2026/3/31	
50%RB										
Front Side	132322/1745	20M QPSK(50,49)	0.194	0.118	0.50	21.73	22.00	0.206	2026/3/31	
Back Side	132322/1745	20M QPSK(50,49)	0.292	0.190	1.62	21.73	22.00	0.311	2026/3/31	
Left Side	132322/1745	20M QPSK(50,49)	0.091	0.057	-2.83	21.73	22.00	0.097	2026/3/31	
Right Side	132322/1745	20M QPSK(50,49)	0.095	0.060	-2.53	21.73	22.00	0.101	2026/3/31	
Bottom Side	132322/1745	20M QPSK(50,49)	0.150	0.092	4.28	21.73	22.00	0.160	2026/3/31	
0mm Limbs										
Back	132322/1745	20M QPSK(1,49)	0.650	0.477	1.50	22.27	22.50	0.503	2026/3/31	#42

Side										
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< WiFi 2.4G >

Test Position	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
Left Cheek	1/2412	802.11b	0.193	0.089	0.68	14.10	14.50	0.212	2026/4/2	#13
Left Cheek	11/2462	802.11g	0.188	0.085	1.20	14.48	14.50	0.189	2026/4/2	
Left Tilt 15 Degree	1/2412	802.11b	0.106	0.049	-2.56	14.10	14.50	0.116	2026/4/2	
Right Cheek	1/2412	802.11b	0.179	0.080	-3.58	14.10	14.50	0.196	2026/4/2	
Right Tilt 15 Degree	1/2412	802.11b	0.095	0.042	0.46	14.10	14.50	0.104	2026/4/2	

Test Position of Hotspot with 5mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
Front Side	1/2412	802.11b	0.162	0.066	3.14	14.10	14.50	0.178	2026/4/2	
Back Side	1/2412	802.11b	0.228	0.098	-3.74	14.10	14.50	0.250	2026/4/2	#14
Back Side	11/2462	802.11g	0.223	0.094	0.14	14.48	14.50	0.224	2026/4/2	
Right Side	1/2412	802.11b	0.072	0.031	-3.19	14.10	14.50	0.079	2026/4/2	
Top Side	1/2412	802.11b	0.081	0.034	1.29	14.10	14.50	0.089	2026/4/2	
0mm Limbs										
Back Side	1/2412	802.11b	0.430	0.308	1.02	14.10	14.50	0.338	2026/4/2	#34

< Bluetooth >

Test Position	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
Left Cheek	0/2402	3DH5	0.152	0.069	3.16	5.08	5.50	0.167	2026/4/2	#11
Left Tilt 15 Degree	0/2402	3DH5	0.081	0.036	-0.38	5.08	5.50	0.089	2026/4/2	
Right Cheek	0/2402	3DH5	0.132	0.059	1.22	5.08	5.50	0.145	2026/4/2	
Right Tilt 15 Degree	0/2402	3DH5	0.069	0.030	2.62	5.08	5.50	0.076	2026/4/2	

Test Position of Hotspot with 5mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g/10g (W/Kg)	Date	Plot
			1g	10g						
Front Side	0/2402	3DH5	0.138	0.063	1.14	5.08	5.50	0.152	2026/4/2	
Back Side	0/2402	3DH5	0.207	0.097	1.79	5.08	5.50	0.228	2026/4/2	#12
Right Side	0/2402	3DH5	0.063	0.028	-1.40	5.08	5.50	0.069	2026/4/2	
Top Side	0/2402	3DH5	0.075	0.034	-0.27	5.08	5.50	0.083	2026/4/2	
0mm Limbs										
Back Side	0/2402	3DH5	0.412	0.300	1.00	5.08	5.50	0.330	2026/4/2	#35

12. Simultaneous Transmission Analysis

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

1) Scalar SAR summation $< 1.6\text{W/kg}$.

2) $\text{SPLSR} = \frac{(\text{SAR}_1 + \text{SAR}_2)^{1.5}}{\text{min. separation distance, mm}}$, and the peak separation distance is

determined from the square root of $[(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2]$, where

(x_1, y_1, z_1) and (x_2, y_2, z_2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.

If $\text{SPLSR} \leq 0.04$, simultaneously transmission SAR measurement is not necessary.

No.	Simultaneous Tx	Head	Body-worn	Hotspot	Limbs
1	WWAN+WLAN	Yes	Yes	Yes	Yes
2	WWAN+Bluetooth	Yes	Yes	Yes	Yes

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

Exposure Position		WWAN Band	DTS/DSS	Simultaneous Tx SAR(W/Kg)
		SAR(W/Kg)	SAR(W/Kg)	
Head	Left Cheek	0.532	0.212	0.744
	Left Tilt 15 Degree	0.300	0.116	0.416
	Right Cheek	0.474	0.196	0.670
	Right Tilt 15 Degree	0.238	0.104	0.342
Body&Hotspot	Front Side	0.440	0.178	0.618
	Back Side	0.720	0.250	0.970
	Left Side	0.220	/	0.220
	Right Side	0.231	0.079	0.310
	Top Side	/	0.089	0.089
	Bottom Side	0.373	/	0.373
Limbs	Back Side	0.660	0.338	0.998

Note : The Simultaneous Tx is calculated based on the same configuration and test position.

Appendix A. Photo documentation

Refer to appendix Test Setup photo---SAR

Appendix B. System Check Plots

Table of contents
#1 System Performance Check - 750MHz
#2 System Performance Check - 850MHz
#3 System Performance Check - 1800MHz
#4 System Performance Check - 1900MHz
#5 System Performance Check - 2450MHz
#6 System Performance Check - 2600MHz

#1

Date of measurement: 28/3/2026

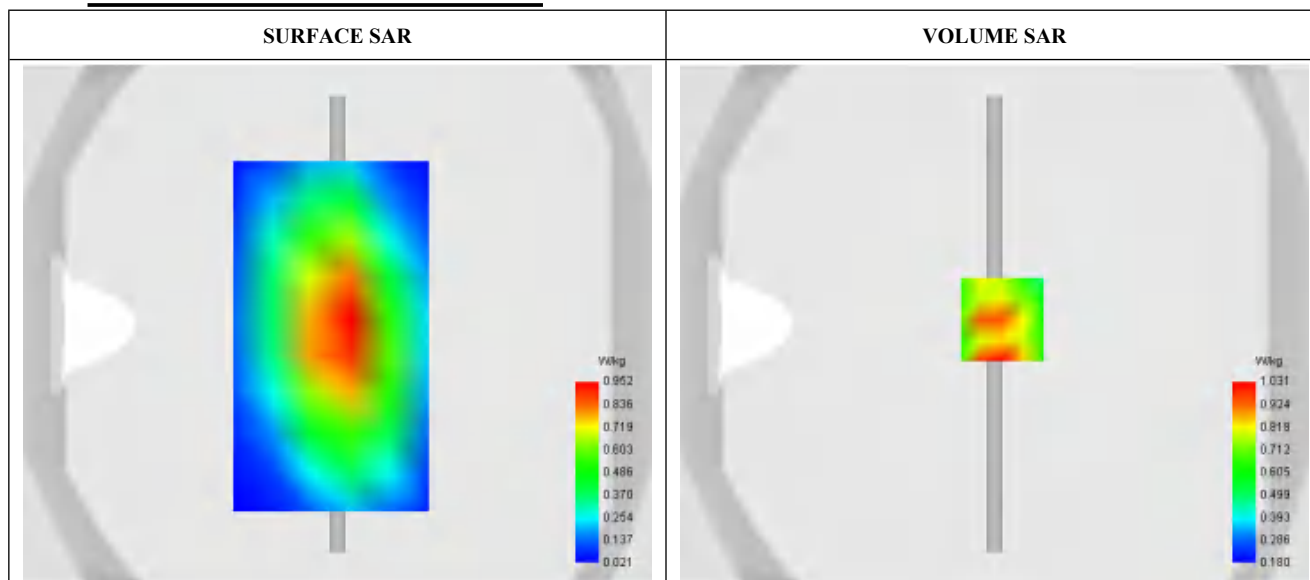
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	1.65
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW750
Channels/Frequency	Middle

B. Permittivity

Middle TX Frequency (MHz)	750.000
Relative permittivity (real part)	41.900
Relative permittivity (imaginary part)	21.360
Conductivity (S/m)	0.890

C. SAR Surface and Volume



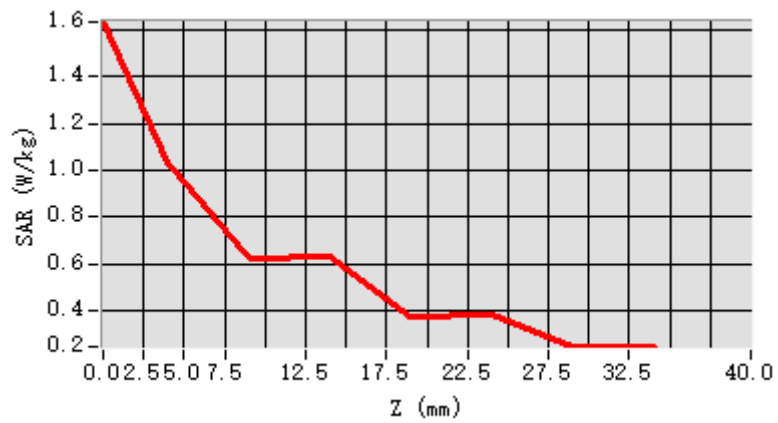
Maximum location: X=3.00, Y=2.00 ; SAR Peak: 1.54 W/kg

D. SAR 1g & 10g

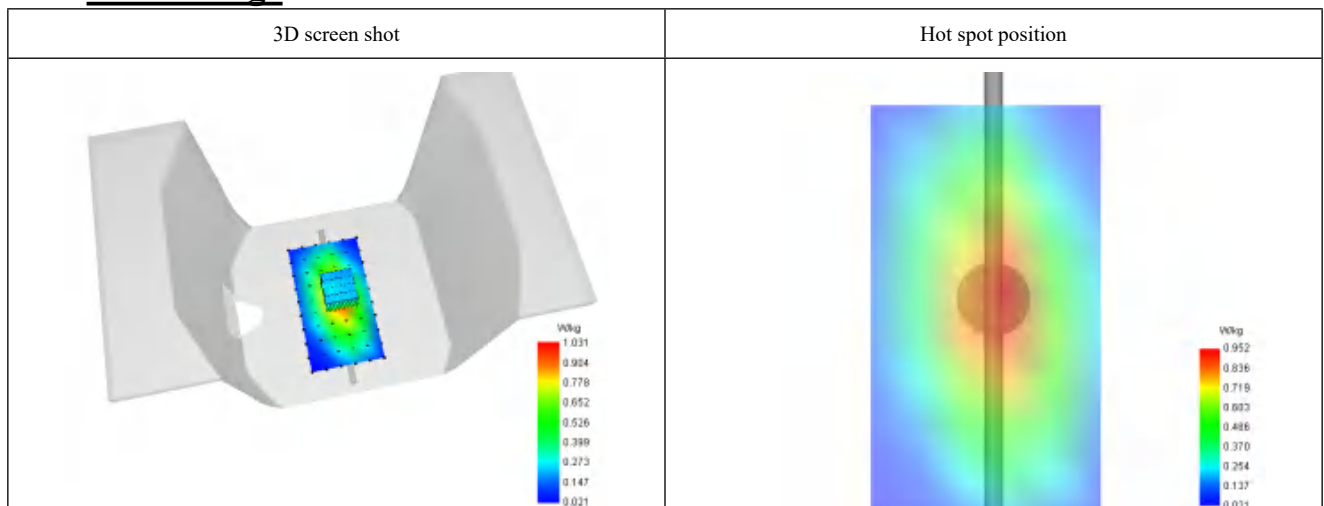
SAR 10g (W/Kg)	0.621
SAR 1g (W/Kg)	0.930
Variation (%)	0.380
Horizontal validation criteria: minimum distance (mm)	35.777088
Vertical validation criteria: SAR ratio M2/M1 (%)	60.135790

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.636	1.031	0.620	0.629	0.375	0.386	0.245



F. 3D Image



#2

Date of measurement: 30/3/2026

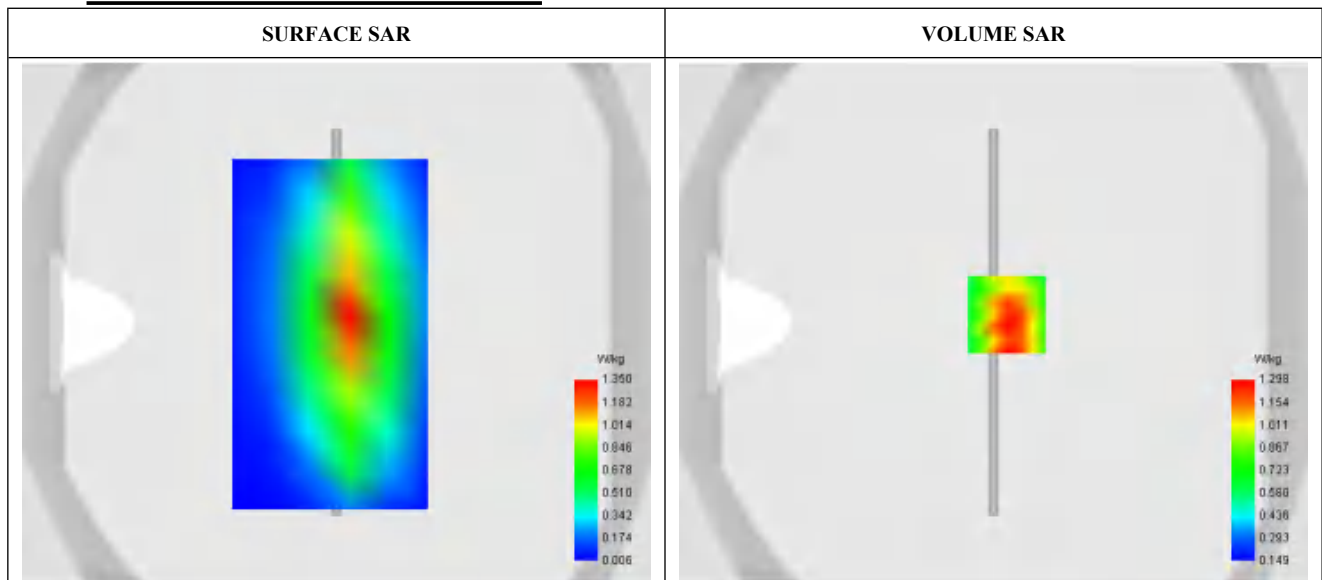
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	1.66
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW835
Channels/Frequency	Middle

B. Permittivity

Middle TX Frequency (MHz)	835.000
Relative permittivity (real part)	40.940
Relative permittivity (imaginary part)	19.300
Conductivity (S/m)	0.895

C. SAR Surface and Volume



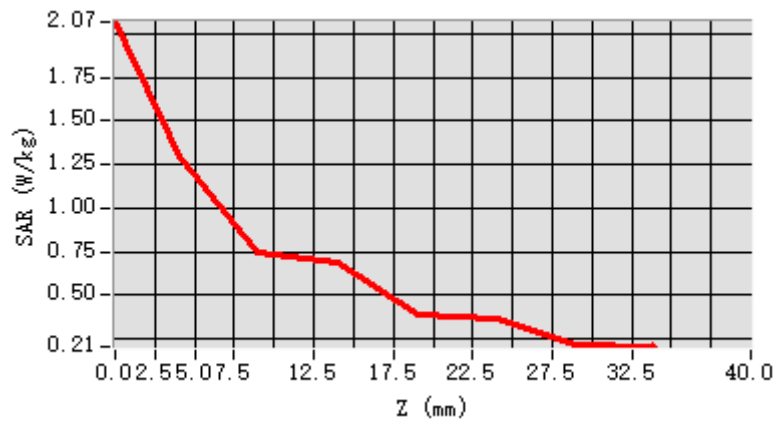
Maximum location: X=5.00, Y=3.00 ; SAR Peak: 1.90 W/kg

D. SAR 1g & 10g

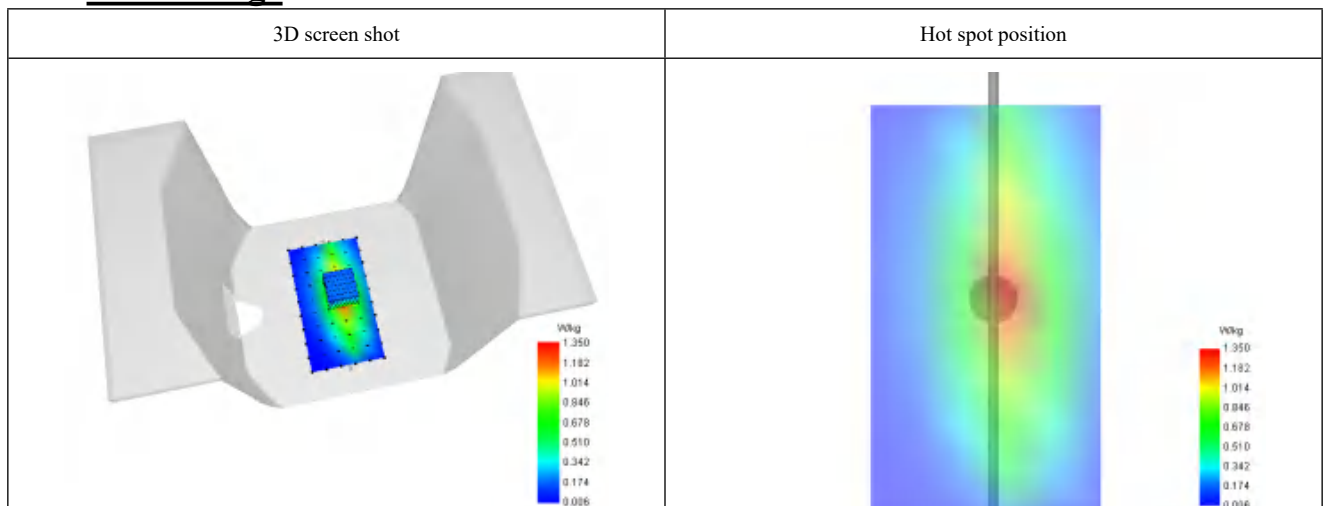
SAR 10g (W/Kg)	0.612
SAR 1g (W/Kg)	1.011
Variation (%)	2.200
Horizontal validation criteria: minimum distance (mm)	15.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	57.716049

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	2.064	1.296	0.748	0.687	0.392	0.367	0.223



F. 3D Image



#3

Date of measurement: 31/3/2026

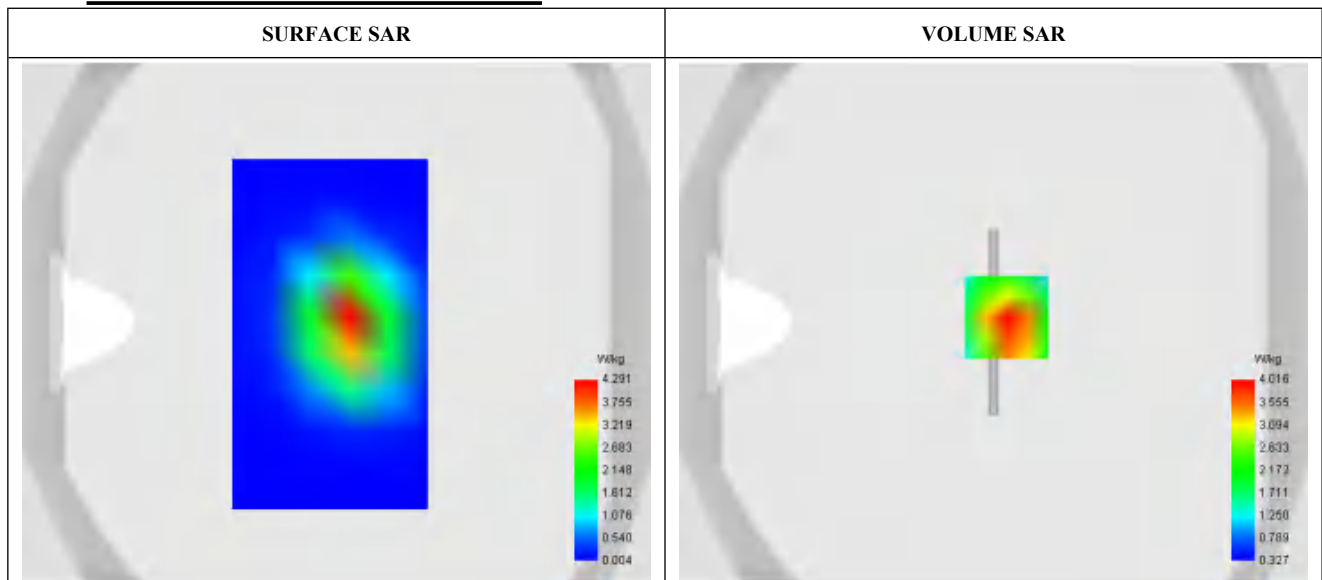
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW1800
Channels/Frequency	Middle

B. Permittivity

Middle TX Frequency (MHz)	1800.000
Relative permittivity (real part)	41.520
Relative permittivity (imaginary part)	14.000
Conductivity (S/m)	1.400

C. SAR Surface and Volume



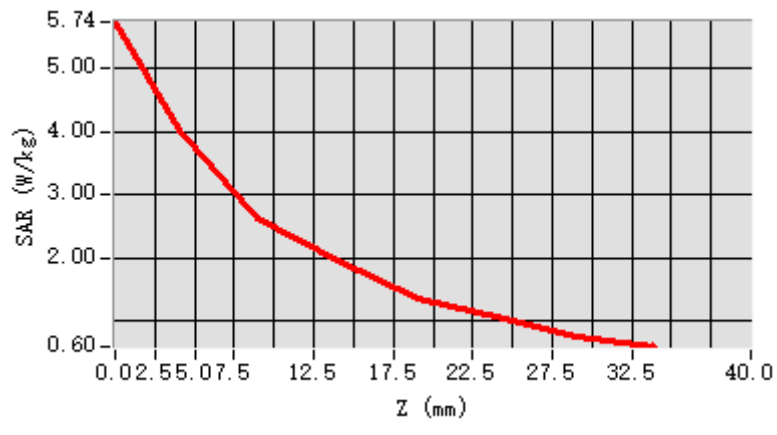
Maximum location: X=5.00, Y=2.00 ; SAR Peak: 5.78 W/kg

D. SAR 1g & 10g

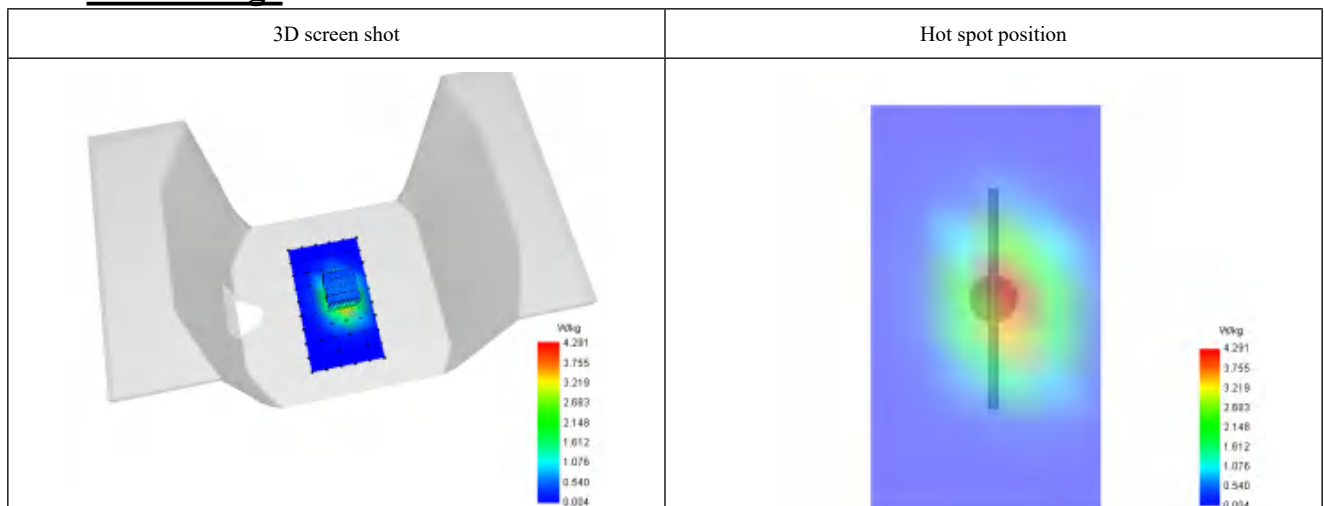
SAR 10g (W/Kg)	2.025
SAR 1g (W/Kg)	3.832
Variation (%)	0.180
Horizontal validation criteria: minimum distance (mm)	16.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	65.811753

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	5.739	4.016	2.643	1.958	1.374	1.074	0.775



F. 3D Image



#4

Date of measurement: 1/4/2026

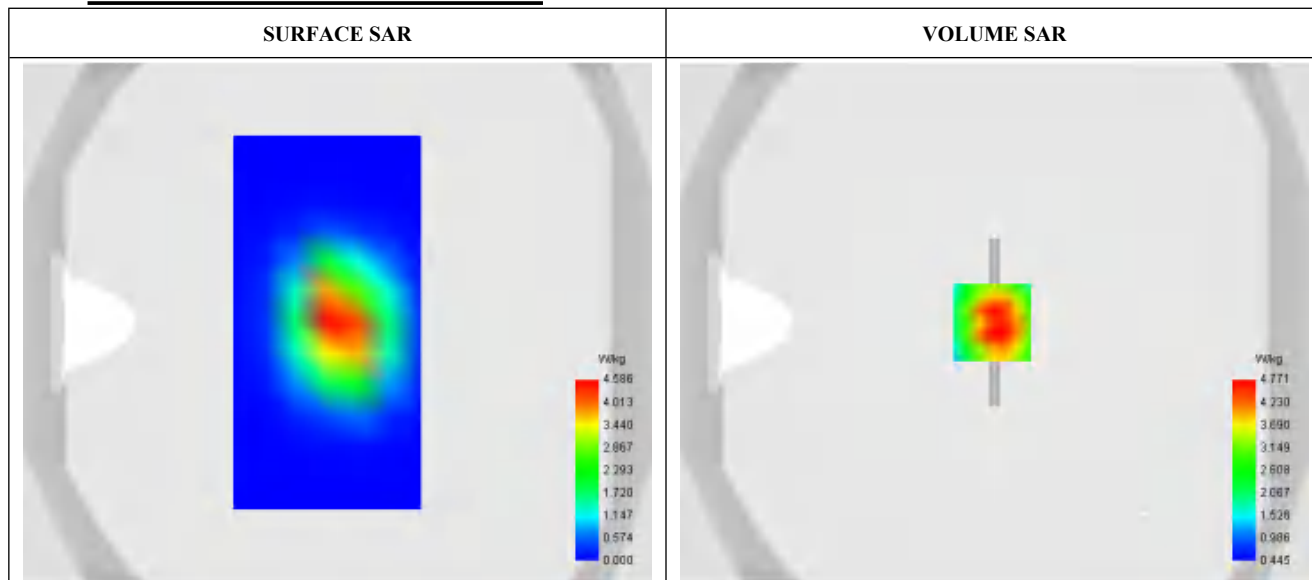
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
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	CW1900
Channels/Frequency	Middle

B. Permittivity

Middle TX Frequency (MHz)	1900.000
Relative permittivity (real part)	41.270
Relative permittivity (imaginary part)	12.700
Conductivity (S/m)	1.341

C. SAR Surface and Volume



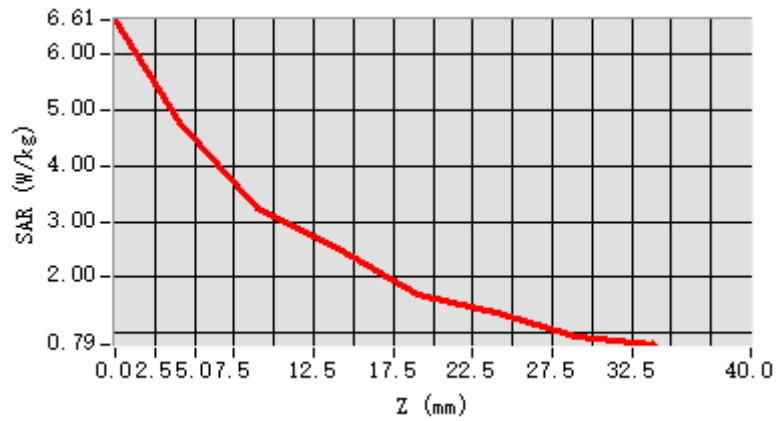
Maximum location: X=-1.00, Y=0.00 ; SAR Peak: 6.50 W/kg

D. SAR 1g & 10g

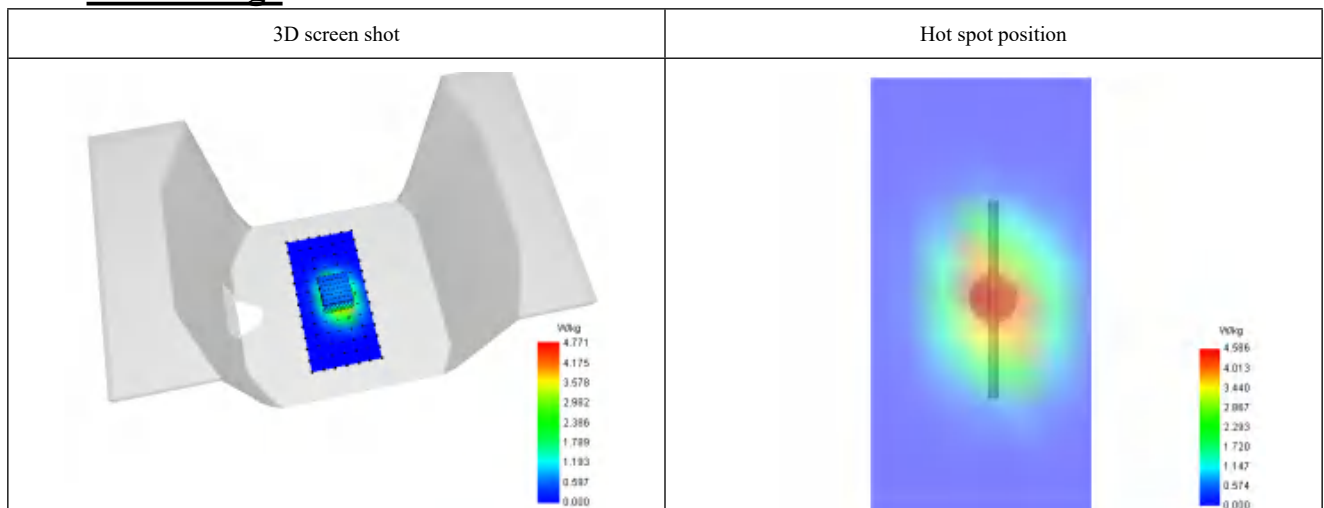
SAR 10g (W/Kg)	2.153
SAR 1g (W/Kg)	4.154
Variation (%)	1.300
Horizontal validation criteria: minimum distance (mm)	14.141203
Vertical validation criteria: SAR ratio M2/M1 (%)	67.966457

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	6.612	4.770	3.242	2.521	1.694	1.380	0.943



F. 3D Image



#5

Date of measurement: 2/4/2026

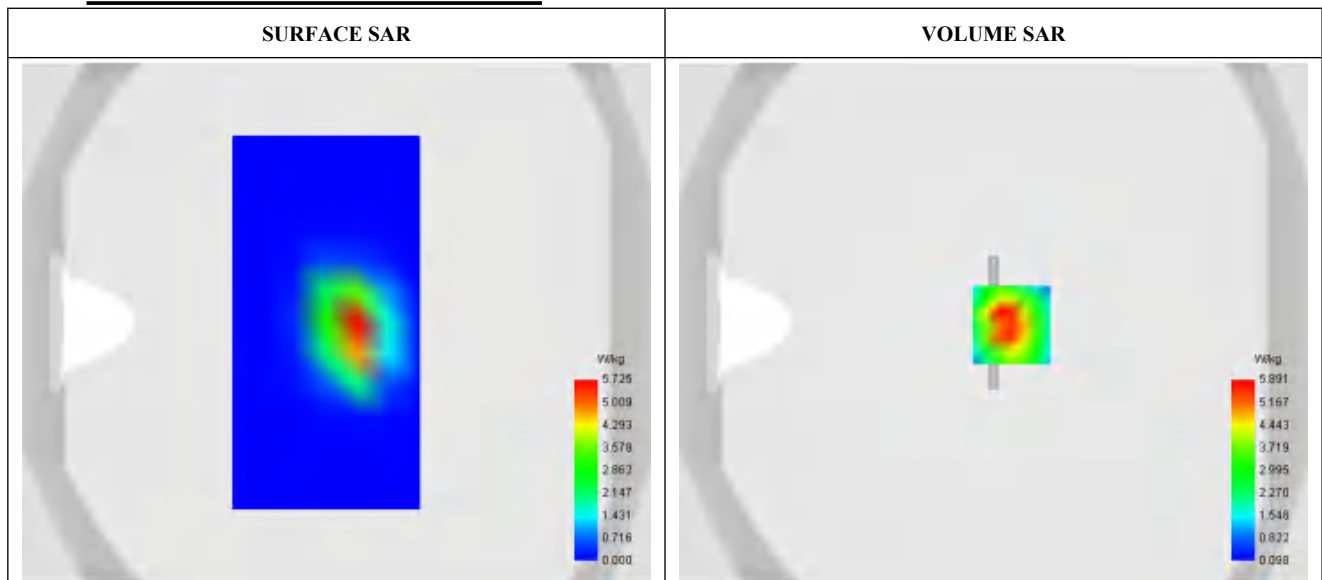
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.38
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)	41.040
Relative permittivity (imaginary part)	13.220
Conductivity (S/m)	1.799

C. SAR Surface and Volume



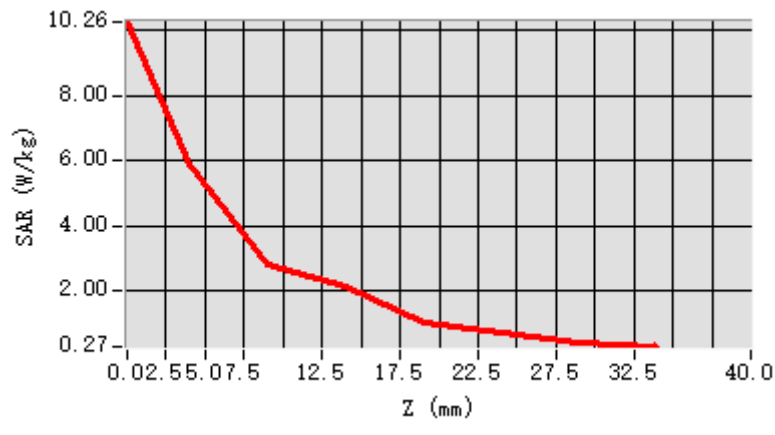
Maximum location: X=7.00, Y=-1.00 ; SAR Peak: 8.99 W/kg

D. SAR 1g & 10g

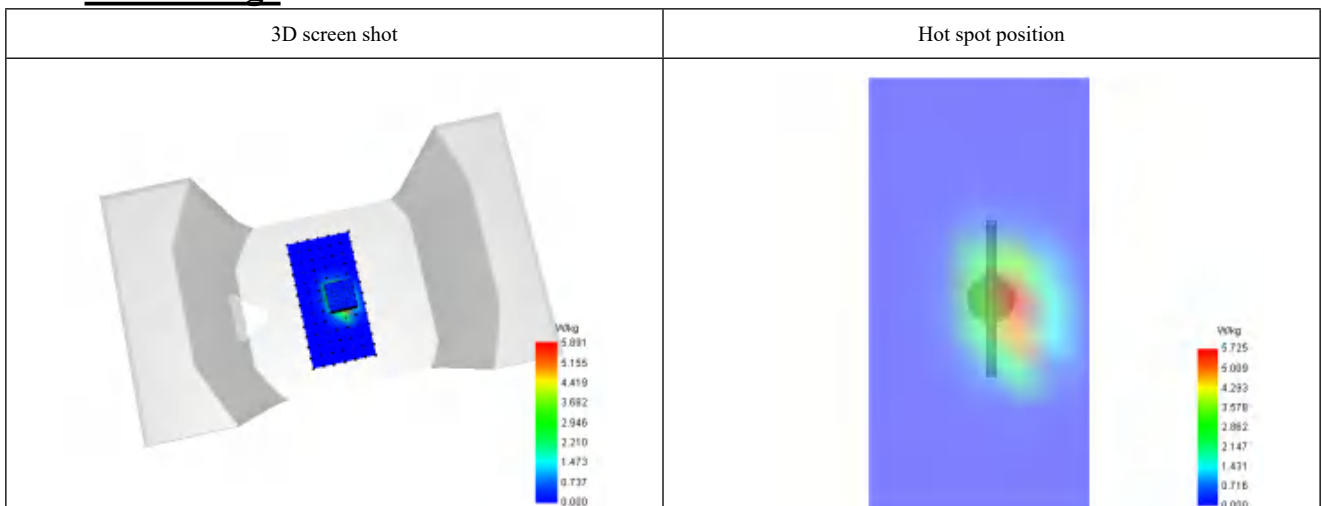
SAR 10g (W/Kg)	2.359
SAR 1g (W/Kg)	5.184
Variation (%)	-3.040
Horizontal validation criteria: minimum distance (mm)	10.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	47.564081

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



#6

Date of measurement: 10/4/2026

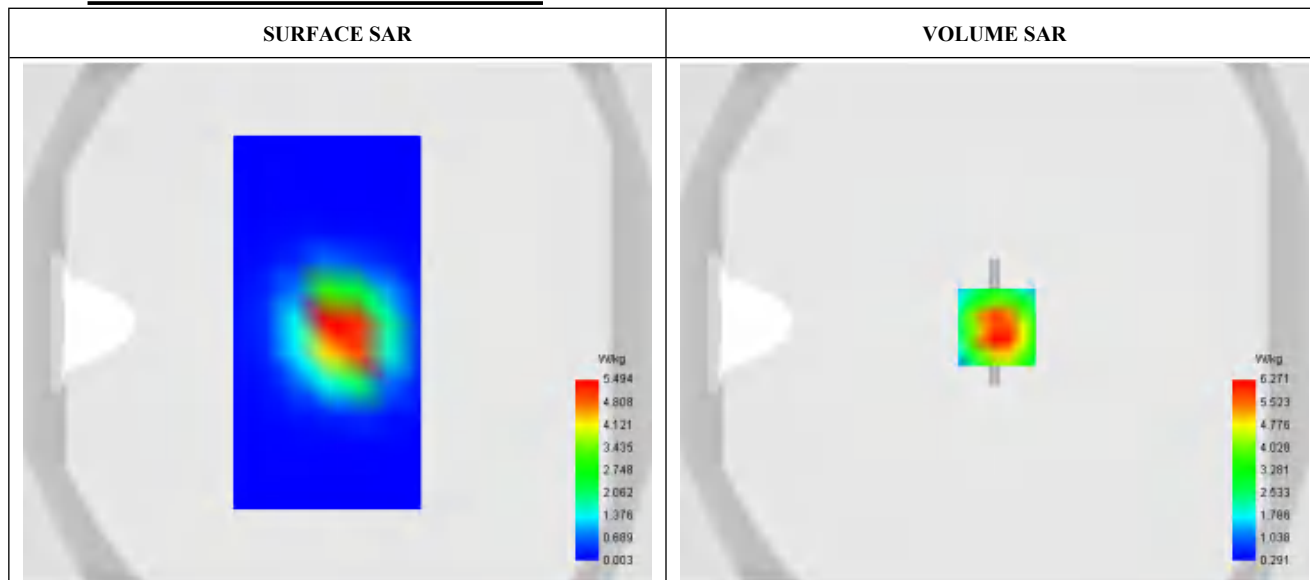
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.35
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	CW2600
Channels/Frequency	Middle

B. Permittivity

Middle TX Frequency (MHz)	2600.000
Relative permittivity (real part)	39.000
Relative permittivity (imaginary part)	13.570
Conductivity (S/m)	1.960

C. SAR Surface and Volume



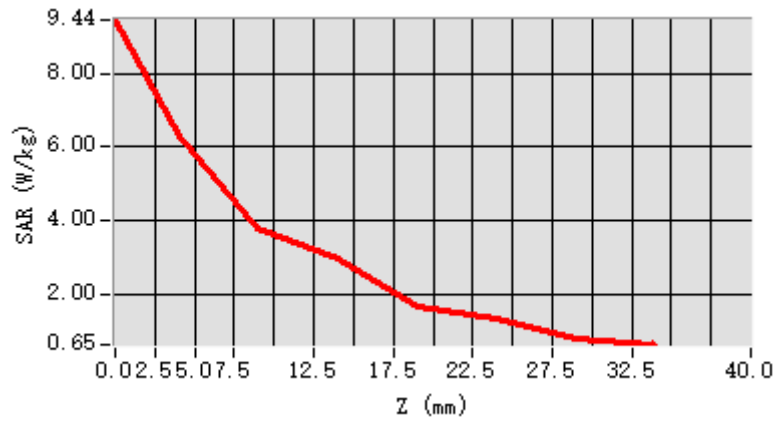
Maximum location: X=1.00, Y=-2.00 ; SAR Peak: 8.65 W/kg

D. SAR 1g & 10g

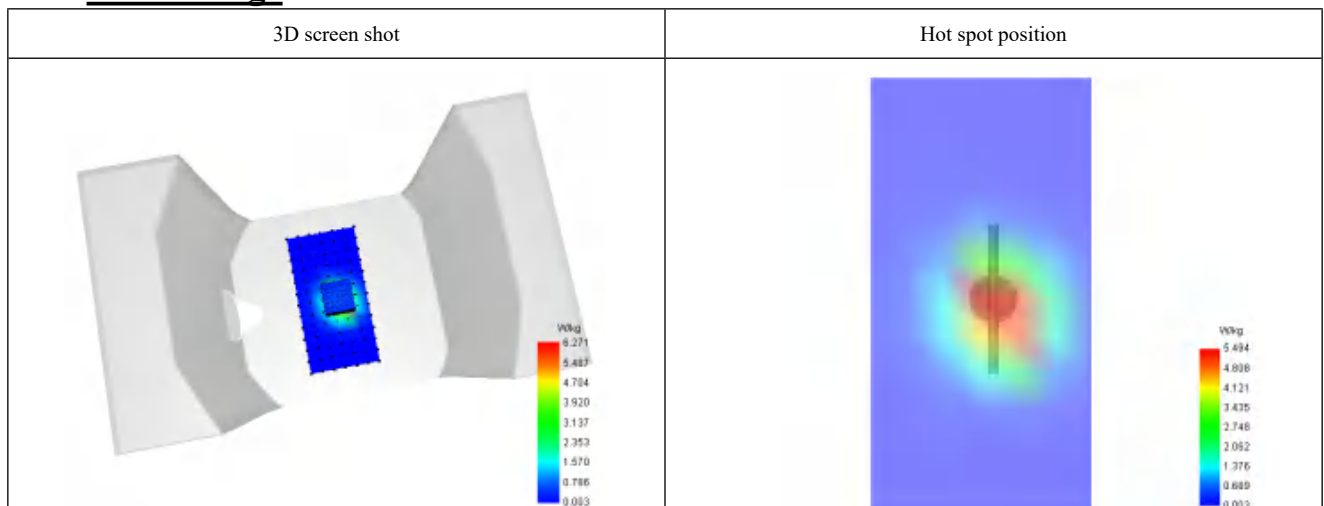
SAR 10g (W/Kg)	2.523
SAR 1g (W/Kg)	5.433
Variation (%)	-0.710
Horizontal validation criteria: minimum distance (mm)	11.180340
Vertical validation criteria: SAR ratio M2/M1 (%)	60.197736

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	9.444	6.271	3.775	2.988	1.706	1.361	0.819



F. 3D Image



Appendix C. SAR Test Plots

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#14 WALN 2.4G Body
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#36 LTE Band 2 Limbs
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#39 LTE Band 12 Limbs
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#41 LTE Band 41 Limbs
#42 LTE Band 66 Limbs

#1

Date of measurement: 30/3/2026

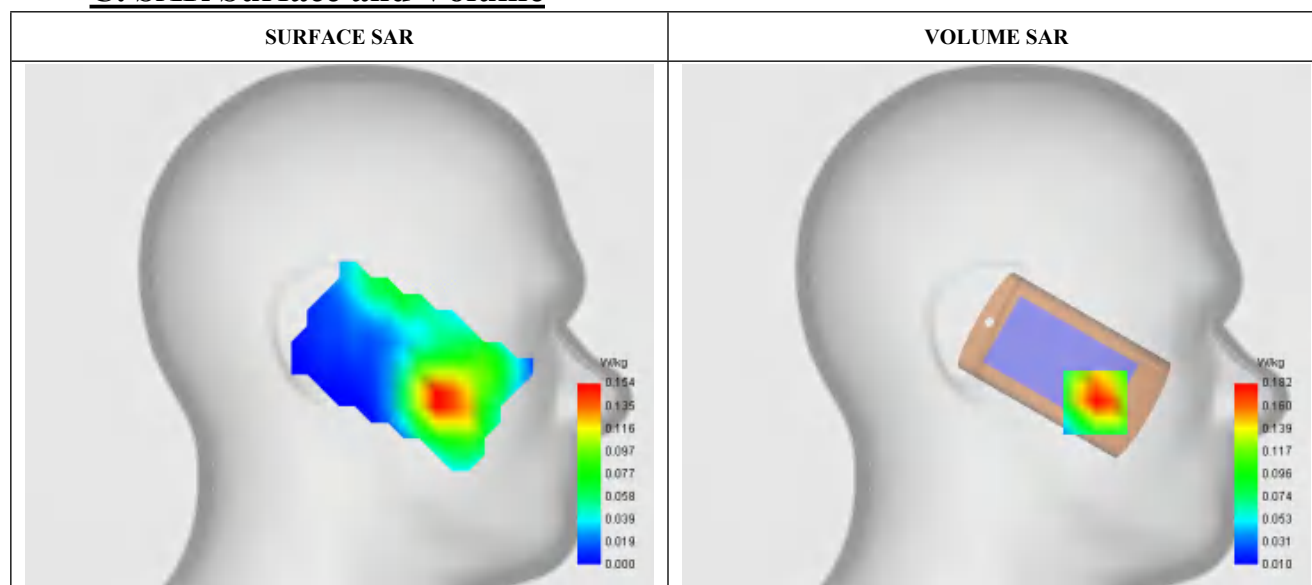
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	1.66
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Left head
Device Position	Cheek
Band	GSM850
Channels/Frequency	Middle (189)/ frequency 836.40 Mhz

B. Permittivity

Middle TX Frequency (MHz)	836.40
Relative permittivity (real part)	41.500
Relative permittivity (imaginary part)	19.400
Conductivity (S/m)	0.901

C. SAR Surface and Volume



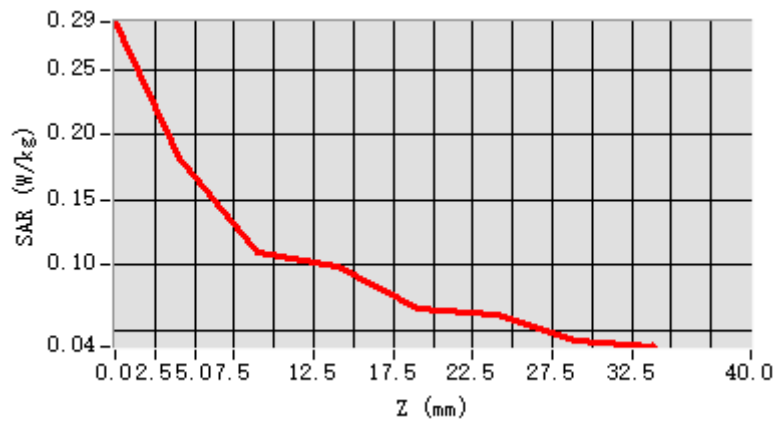
Maximum location: X=-49.00, Y=-38.00 ; SAR Peak: 0.28 W/kg

D. SAR 1g & 10g

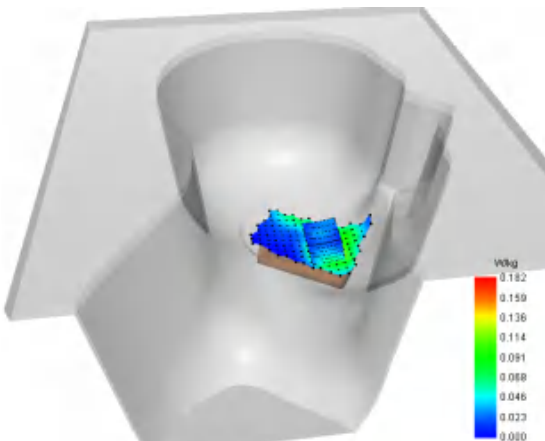
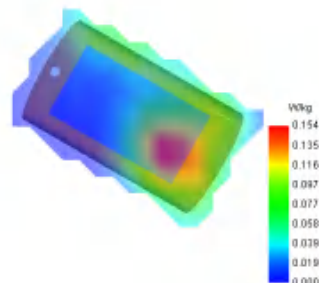
SAR 10g (W/Kg)	0.109
SAR 1g (W/Kg)	0.178
Variation (%)	1.130
Horizontal validation criteria: minimum distance (mm)	16.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	60.439560

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.287	0.182	0.110	0.098	0.066	0.061	0.042



F. 3D Image

3D screen shot	Hot spot position
	

#2

Date of measurement: 30/3/2026

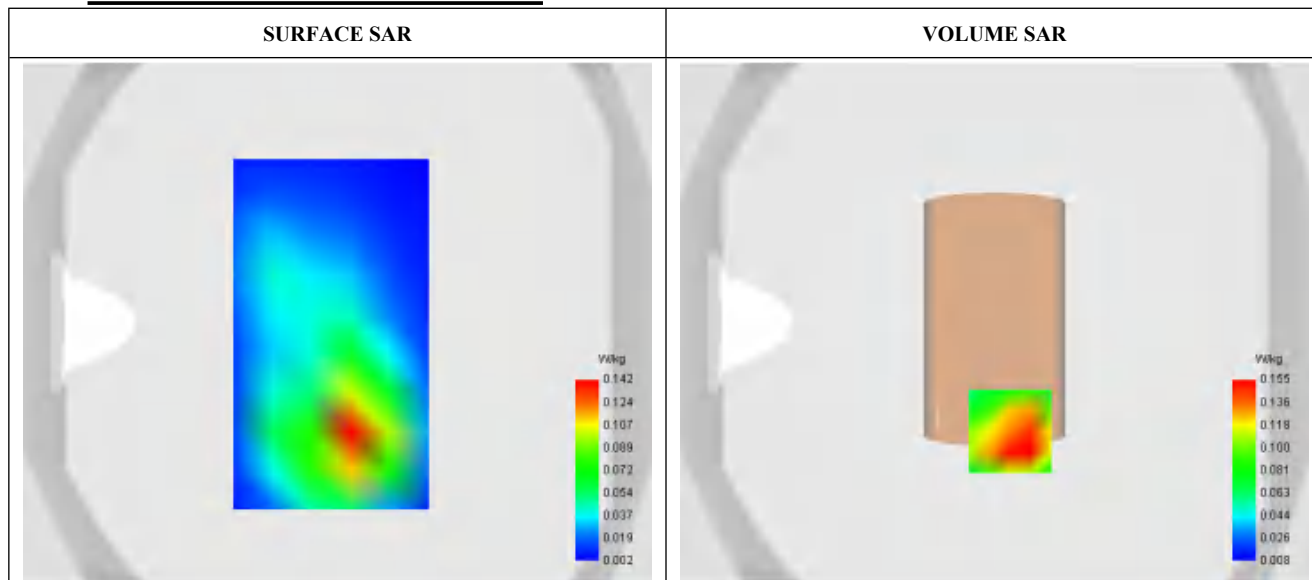
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	1.66
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels/Frequency	Middle (189)/ frequency 836.40 Mhz

B. Permittivity

Middle TX Frequency (MHz)	836.40
Relative permittivity (real part)	41.500
Relative permittivity (imaginary part)	19.400
Conductivity (S/m)	0.901

C. SAR Surface and Volume



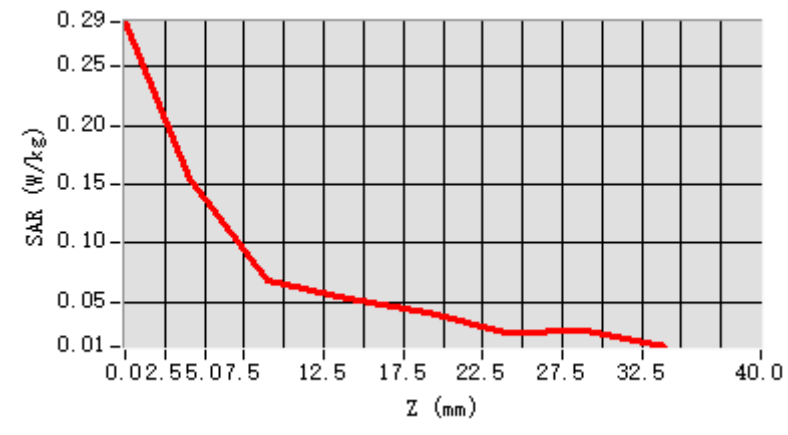
Maximum location: X=6.00, Y=-42.00 ; SAR Peak: 0.27 W/kg

D. SAR 1g & 10g

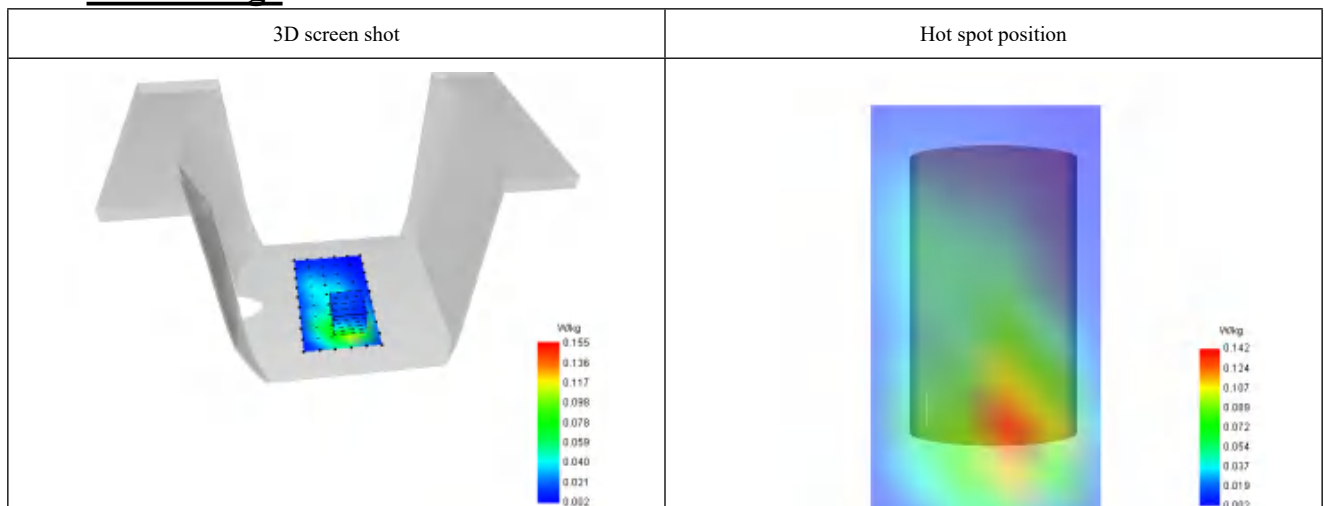
SAR 10g (W/Kg)	0.089
SAR 1g (W/Kg)	0.153
Variation (%)	-1.510
Horizontal validation criteria: minimum distance (mm)	25.298221
Vertical validation criteria: SAR ratio M2/M1 (%)	44.516219

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.288	0.155	0.069	0.053	0.041	0.023	0.026



F. 3D Image



#3

Date of measurement: 1/4/2026

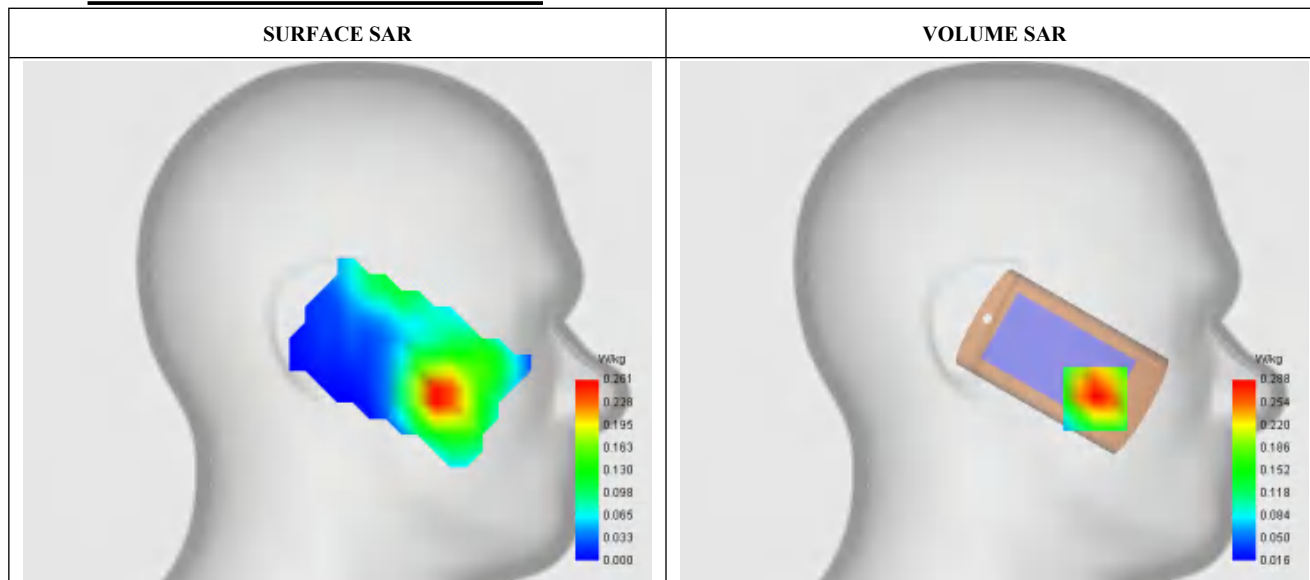
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Left head
Device Position	Cheek
Band	GSM1900
Channels/Frequency	Middle (661)/ frequency 1880.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1880.00
Relative permittivity (real part)	40.000
Relative permittivity (imaginary part)	13.408
Conductivity (S/m)	1.400

C. SAR Surface and Volume



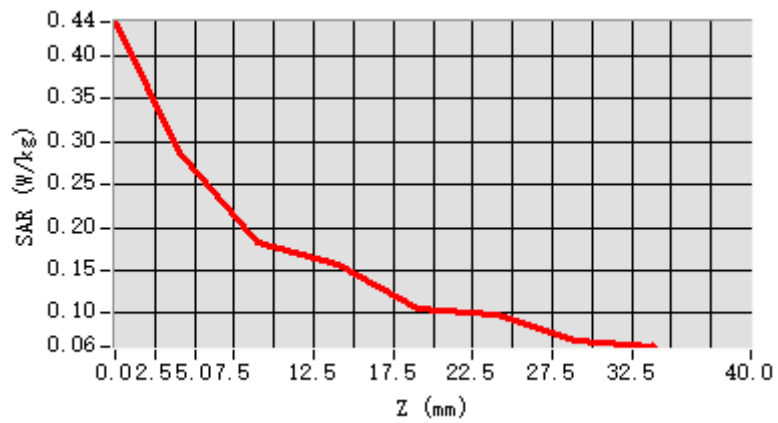
Maximum location: X=-50.00, Y=-38.00 ; SAR Peak: 0.43 W/kg

D. SAR 1g & 10g

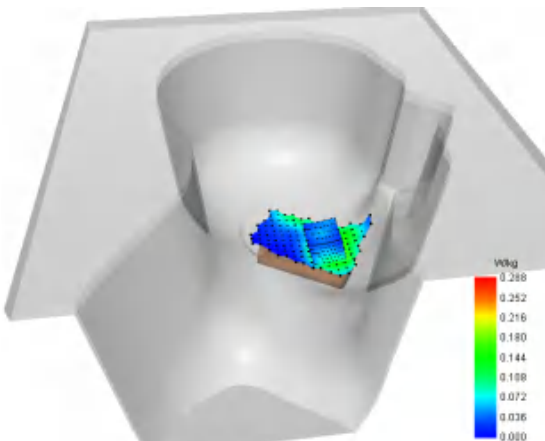
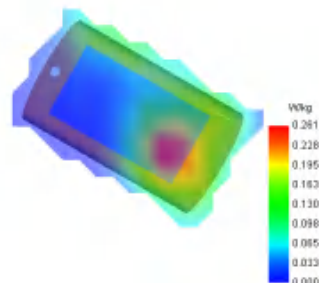
SAR 10g (W/Kg)	0.177
SAR 1g (W/Kg)	0.282
Variation (%)	2.410
Horizontal validation criteria: minimum distance (mm)	16.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	63.194444

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.439	0.288	0.182	0.157	0.105	0.099	0.068



F. 3D Image

3D screen shot	Hot spot position
	

#4

Date of measurement: 1/4/2026

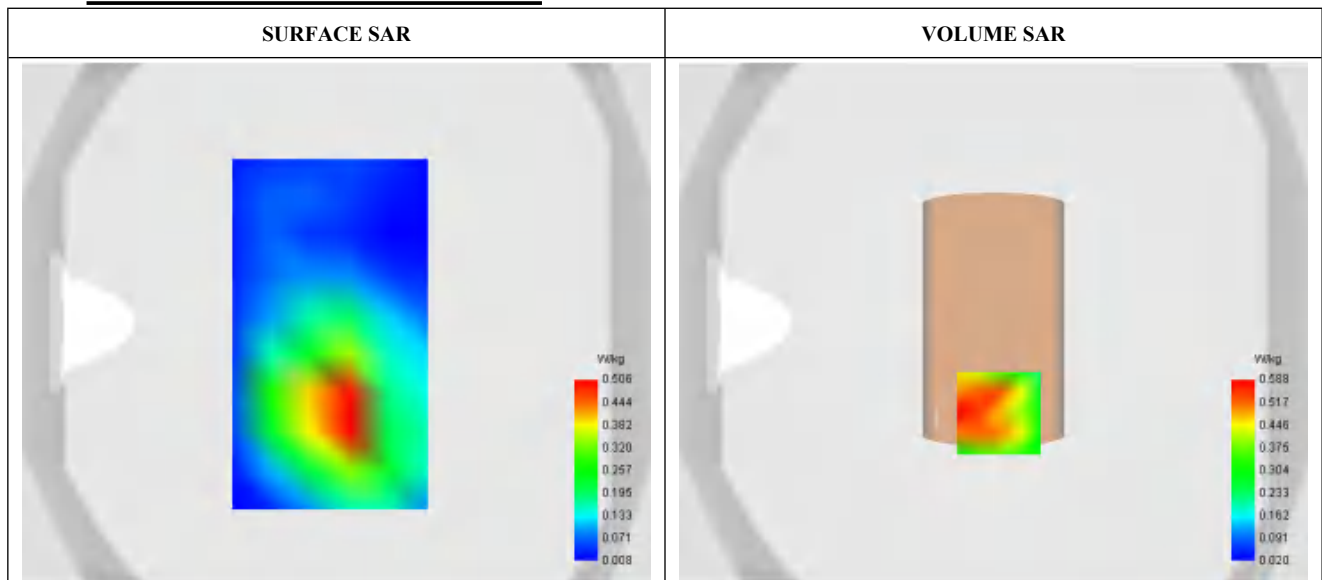
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels/Frequency	Middle (661)/ frequency 1880.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1880.00
Relative permittivity (real part)	40.000
Relative permittivity (imaginary part)	13.408
Conductivity (S/m)	1.400

C. SAR Surface and Volume



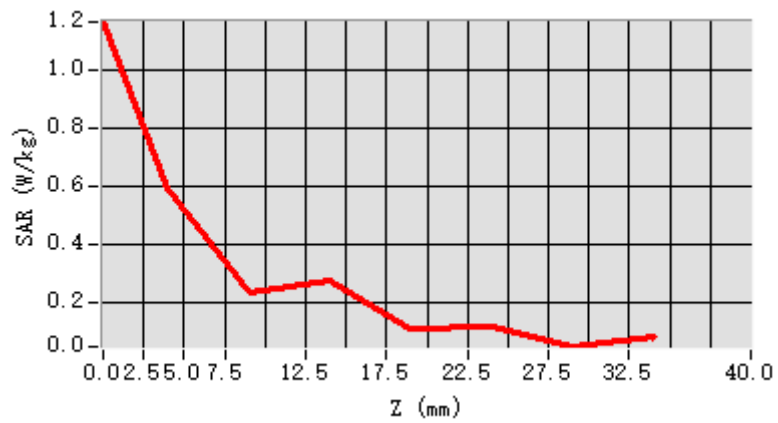
Maximum location: X=2.00, Y=-35.00 ; SAR Peak: 0.81 W/kg

D. SAR 1g & 10g

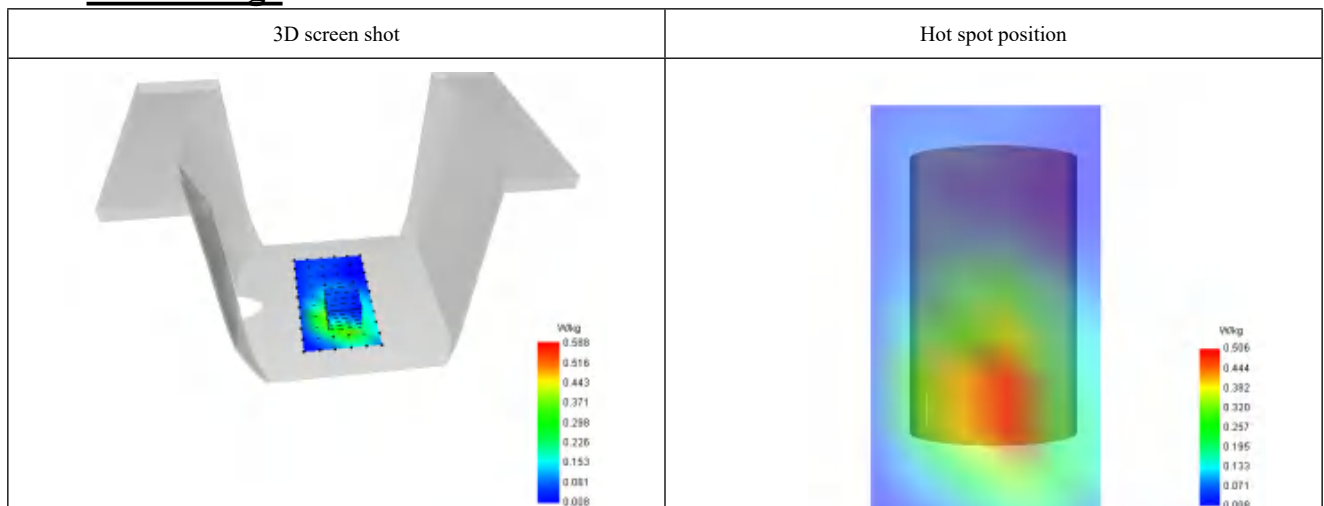
SAR 10g (W/Kg)	0.285
SAR 1g (W/Kg)	0.538
Variation (%)	-4.560
Horizontal validation criteria: minimum distance (mm)	16.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	39.285714

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.164	0.588	0.231	0.276	0.107	0.116	0.046



F. 3D Image



#5

Date of measurement: 1/4/2026

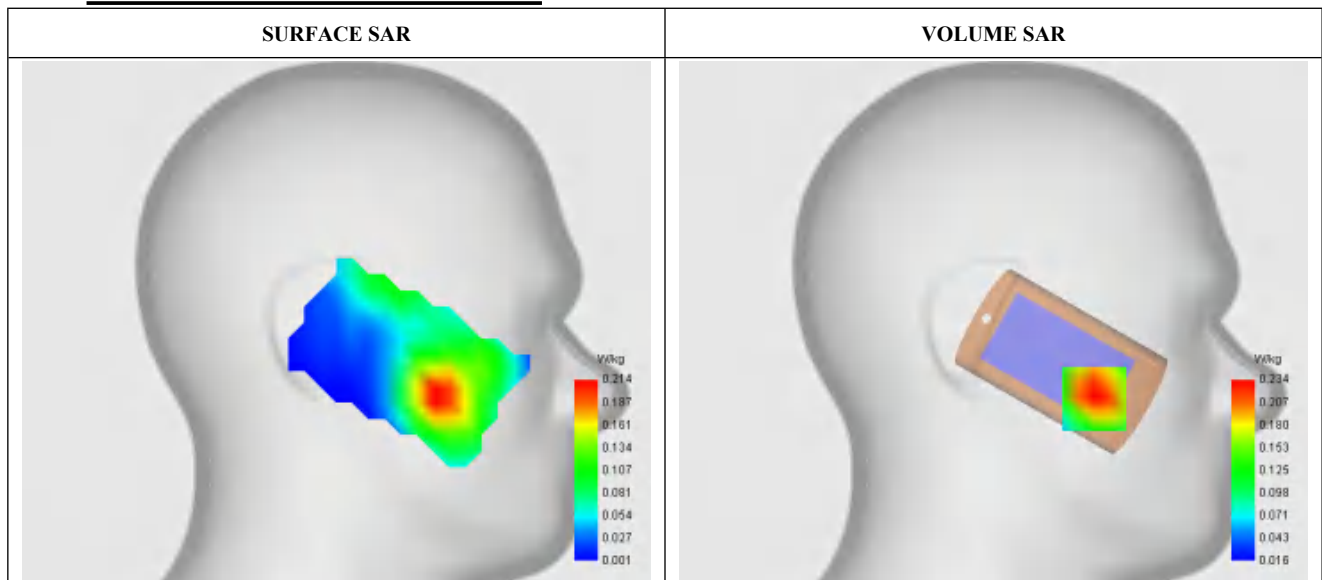
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Left head
Device Position	Cheek
Band	Band 2 (1900)
Channels/Frequency	Middle (9400)/ frequency 1880.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1880.00
Relative permittivity (real part)	40.000
Relative permittivity (imaginary part)	13.408
Conductivity (S/m)	1.400

C. SAR Surface and Volume



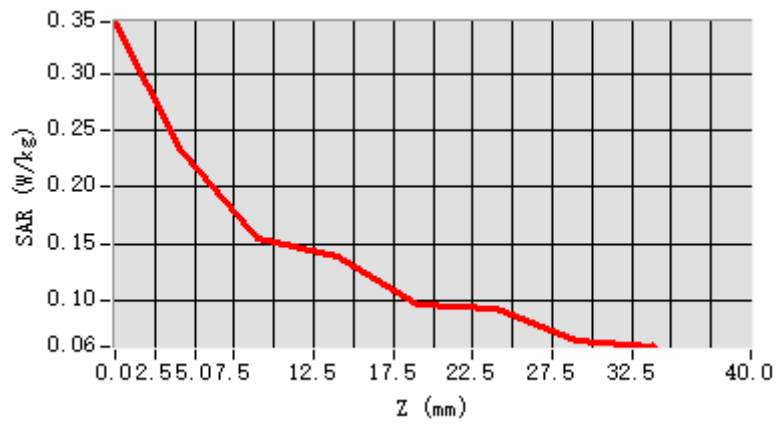
Maximum location: X=-50.00, Y=-38.00 ; SAR Peak: 0.35 W/kg

D. SAR 1g & 10g

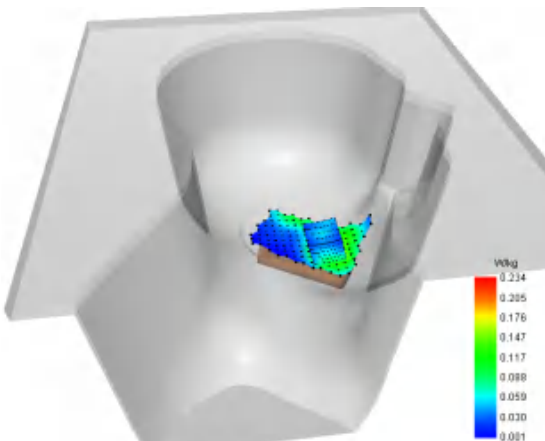
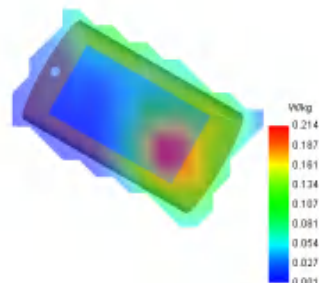
SAR 10g (W/Kg)	0.152
SAR 1g (W/Kg)	0.232
Variation (%)	1.080
Horizontal validation criteria: minimum distance (mm)	17.888544
Vertical validation criteria: SAR ratio M2/M1 (%)	66.239316

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.347	0.234	0.155	0.139	0.095	0.092	0.063



F. 3D Image

3D screen shot	Hot spot position
	

#6

Date of measurement: 1/4/2026

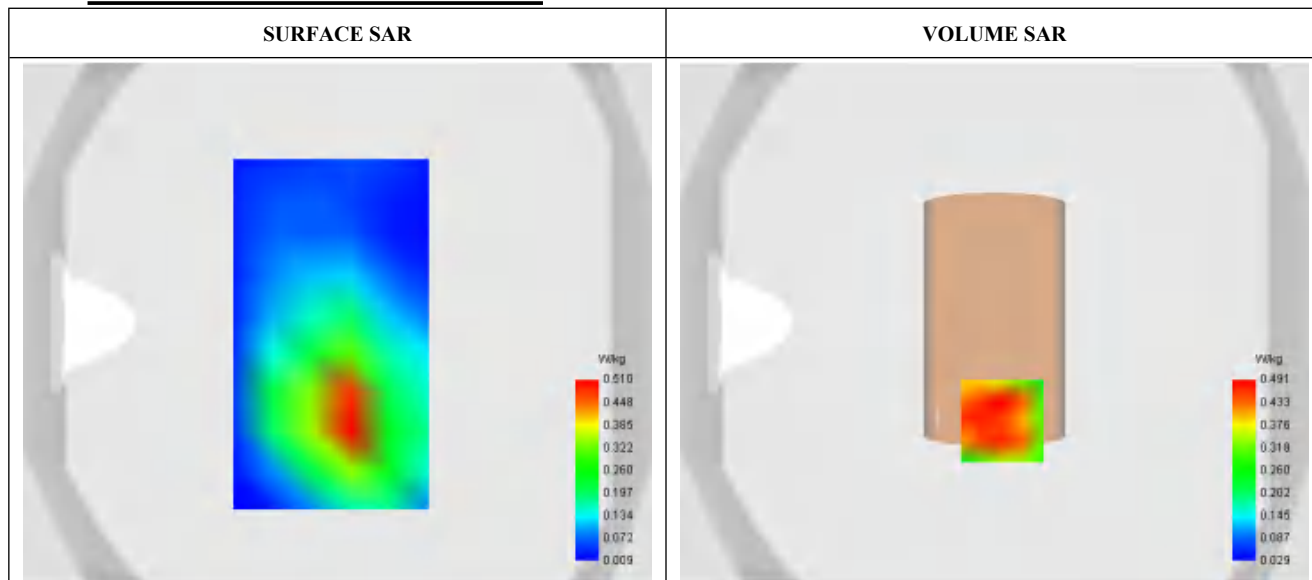
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	Band 2 (1900)
Channels/Frequency	Middle (9400)/ frequency 1880.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1880.00
Relative permittivity (real part)	40.000
Relative permittivity (imaginary part)	13.408
Conductivity (S/m)	1.400

C. SAR Surface and Volume



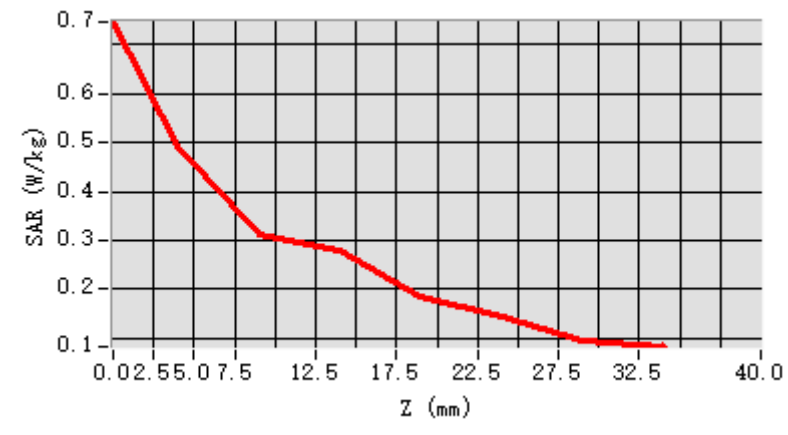
Maximum location: X=3.00, Y=-38.00 ; SAR Peak: 0.71 W/kg

D. SAR 1g & 10g

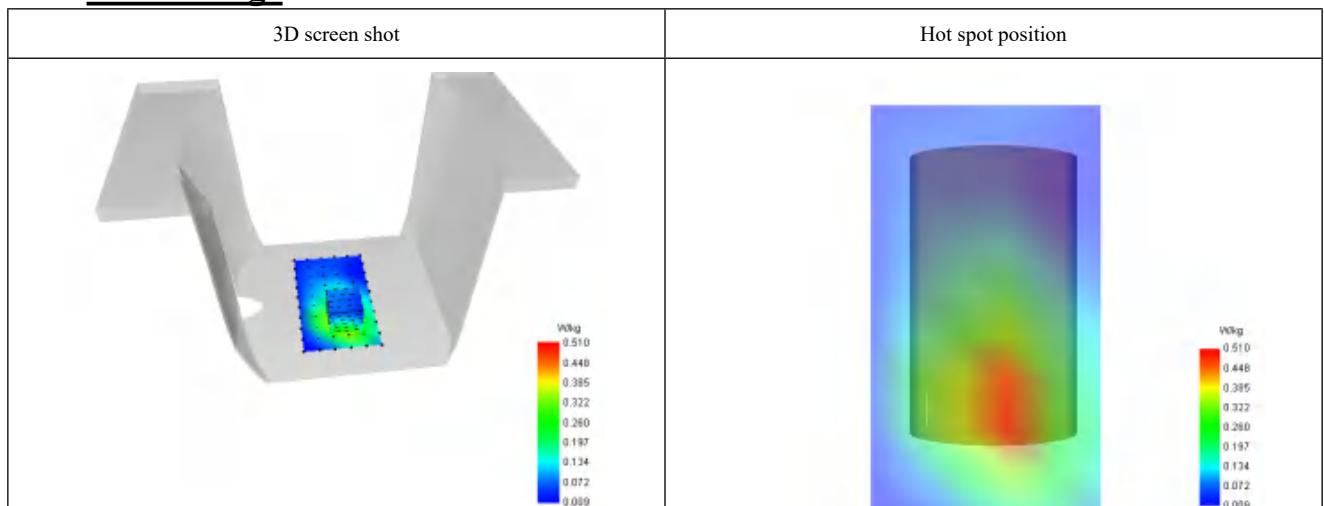
SAR 10g (W/Kg)	0.292
SAR 1g (W/Kg)	0.465
Variation (%)	-3.700
Horizontal validation criteria: minimum distance (mm)	17.888544
Vertical validation criteria: SAR ratio M2/M1 (%)	63.543788

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.747	0.491	0.312	0.278	0.184	0.143	0.093



F. 3D Image



#7

Date of measurement: 31/3/2026

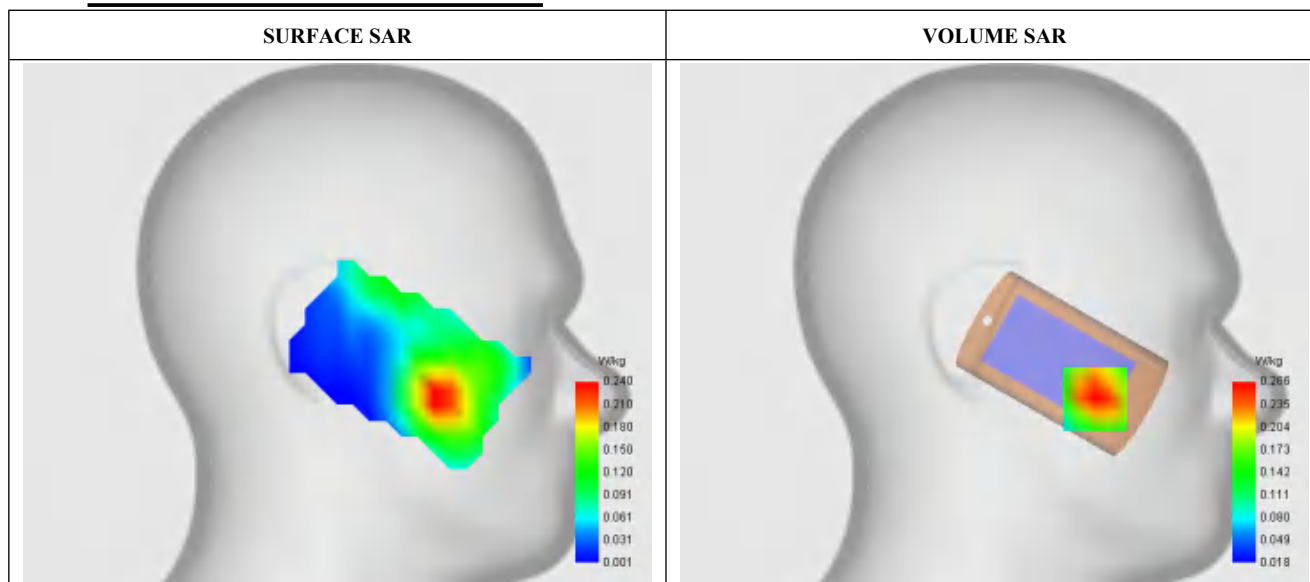
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Left head
Device Position	Cheek
Band	Band 4 (1700)
Channels/Frequency	Middle (1413)/ frequency 1732.60 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1732.60
Relative permittivity (real part)	40.116
Relative permittivity (imaginary part)	14.136
Conductivity (S/m)	1.361

C. SAR Surface and Volume



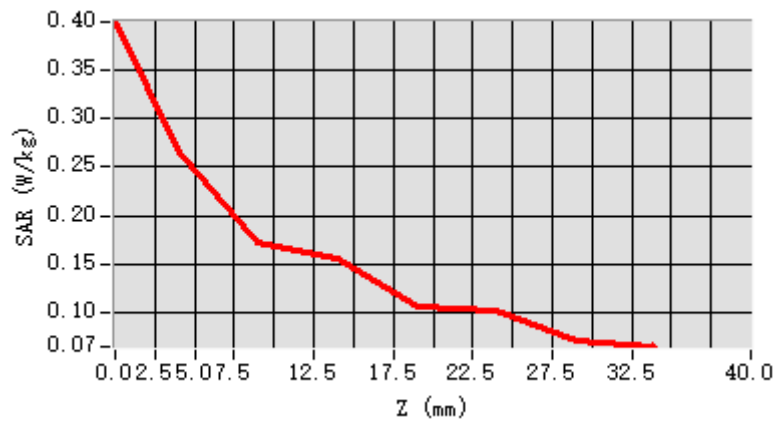
Maximum location: X=-50.00, Y=-37.00 ; SAR Peak: 0.40 W/kg

D. SAR 1g & 10g

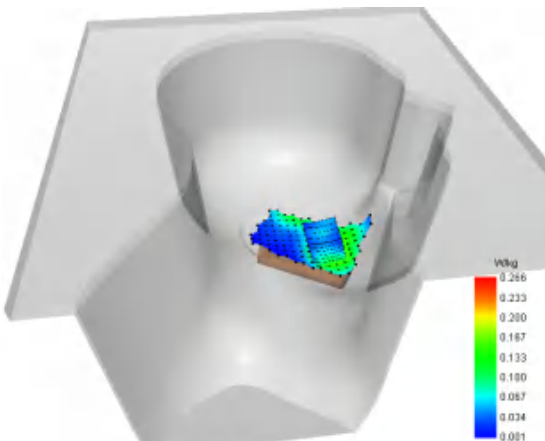
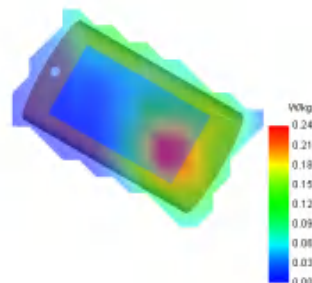
SAR 10g (W/Kg)	0.171
SAR 1g (W/Kg)	0.262
Variation (%)	2.170
Horizontal validation criteria: minimum distance (mm)	17.888544
Vertical validation criteria: SAR ratio M2/M1 (%)	65.037594

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.398	0.266	0.173	0.156	0.106	0.104	0.072



F. 3D Image

3D screen shot	Hot spot position
	

#8

Date of measurement: 31/3/2026

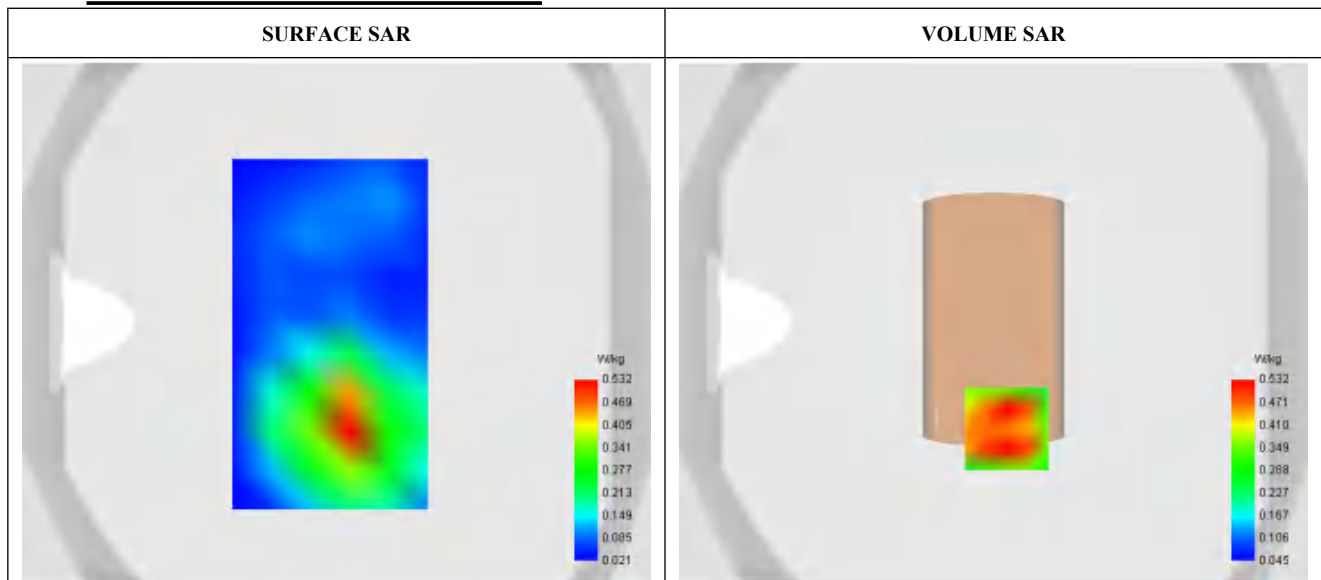
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	Band 4 (1700)
Channels/Frequency	Middle (1413)/ frequency 1732.60 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1732.60
Relative permittivity (real part)	40.116
Relative permittivity (imaginary part)	14.136
Conductivity (S/m)	1.361

C. SAR Surface and Volume



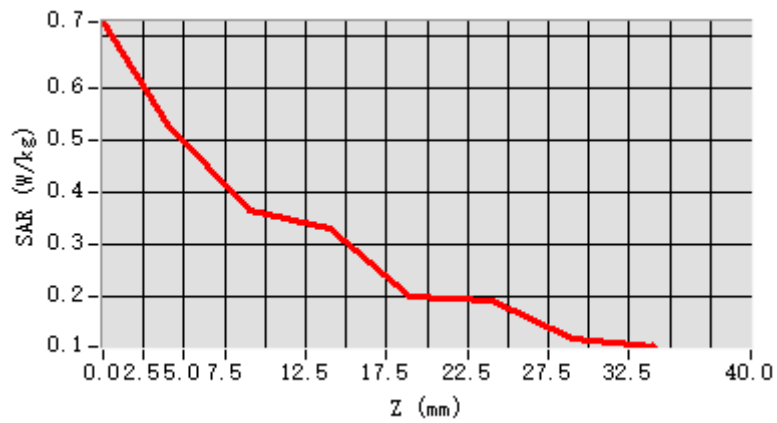
Maximum location: X=5.00, Y=-41.00 ; SAR Peak: 0.84 W/kg

D. SAR 1g & 10g

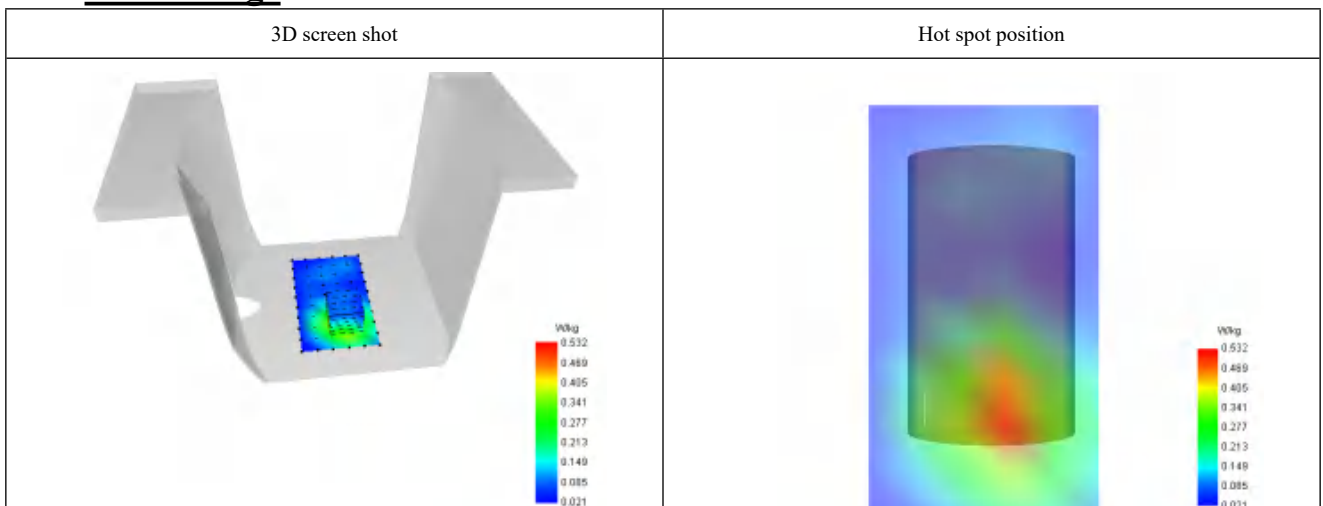
SAR 10g (W/Kg)	0.328
SAR 1g (W/Kg)	0.516
Variation (%)	-1.930
Horizontal validation criteria: minimum distance (mm)	17.888544
Vertical validation criteria: SAR ratio M2/M1 (%)	68.796992

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.727	0.532	0.366	0.330	0.198	0.190	0.117



F. 3D Image



#9

Date of measurement: 30/3/2026

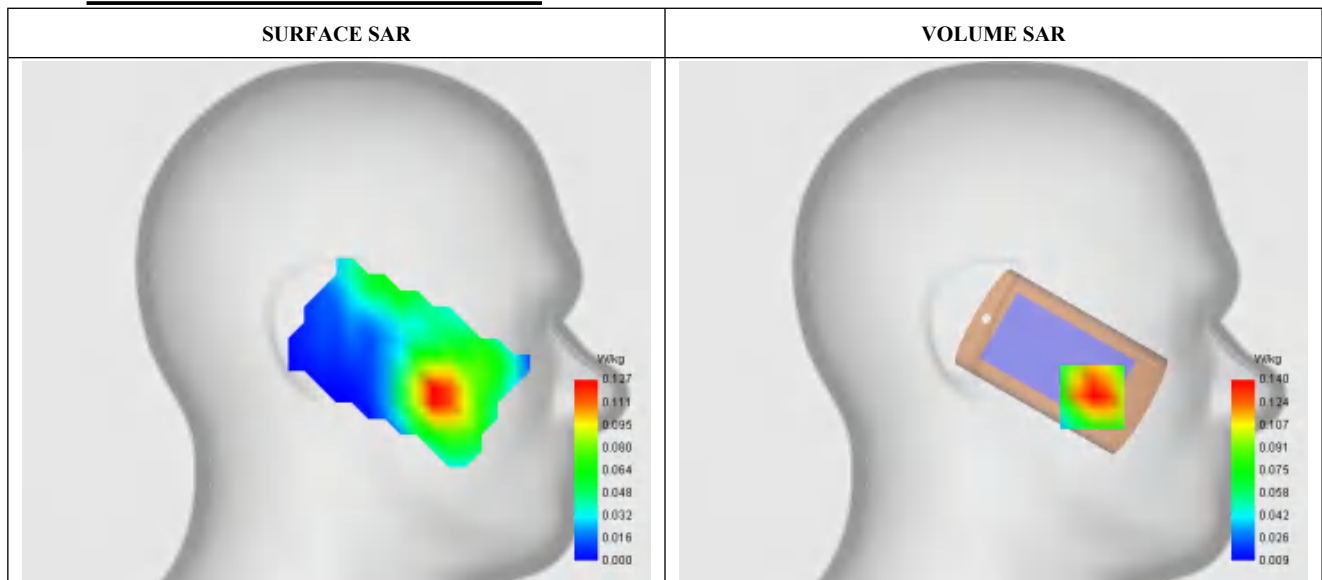
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	1.66
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Left head
Device Position	Cheek
Band	Band 5 (850)
Channels/Frequency	Middle (4182)/ frequency 836.40 Mhz

B. Permittivity

Middle TX Frequency (MHz)	836.40
Relative permittivity (real part)	41.500
Relative permittivity (imaginary part)	19.400
Conductivity (S/m)	0.901

C. SAR Surface and Volume



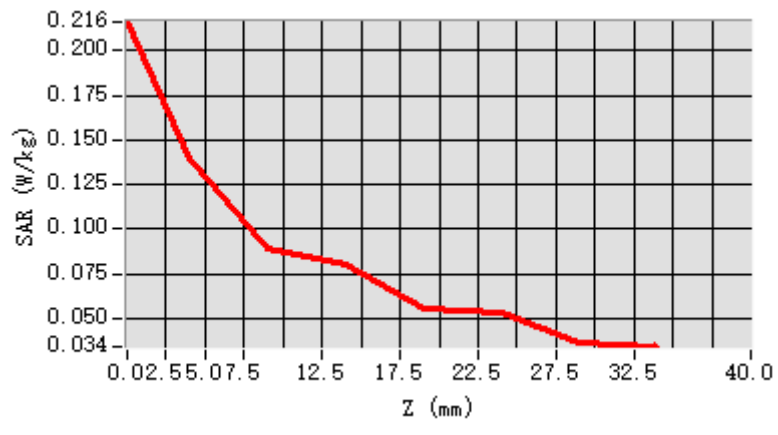
Maximum location: X=-49.00, Y=-37.00 ; SAR Peak: 0.21 W/kg

D. SAR 1g & 10g

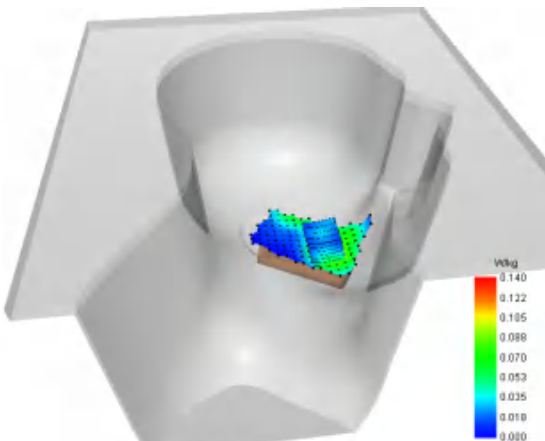
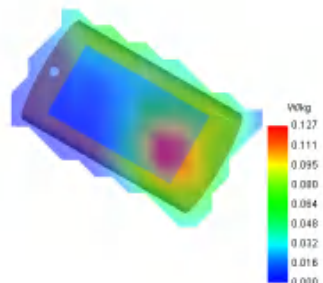
SAR 10g (W/Kg)	0.089
SAR 1g (W/Kg)	0.139
Variation (%)	0.840
Horizontal validation criteria: minimum distance (mm)	17.888544
Vertical validation criteria: SAR ratio M2/M1 (%)	63.571429

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.216	0.140	0.089	0.081	0.056	0.054	0.037



F. 3D Image

3D screen shot	Hot spot position
	

#10

Date of measurement: 30/3/2026

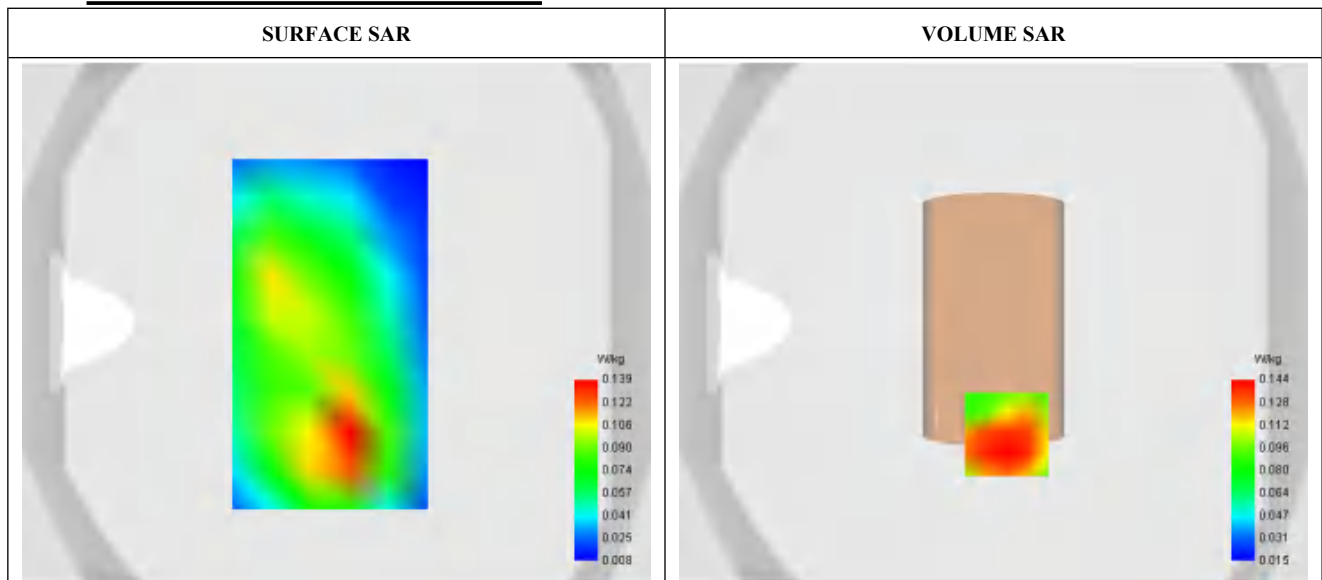
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	1.66
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	Band 5 (850)
Channels/Frequency	Middle (4182)/ frequency 836.40 Mhz

B. Permittivity

Middle TX Frequency (MHz)	836.40
Relative permittivity (real part)	41.500
Relative permittivity (imaginary part)	19.400
Conductivity (S/m)	0.901

C. SAR Surface and Volume



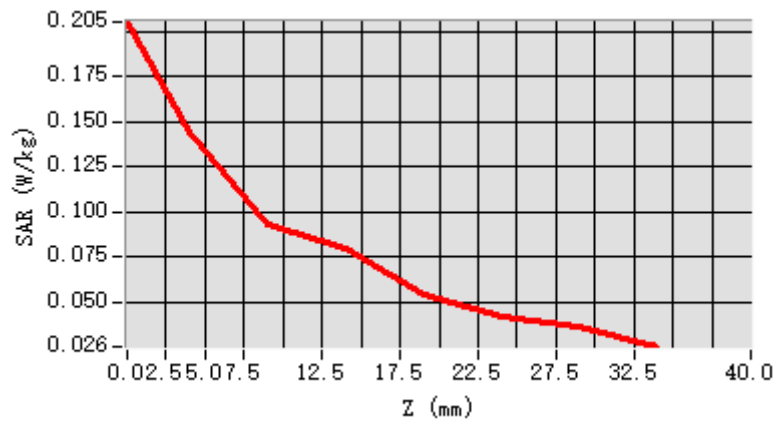
Maximum location: X=5.00, Y=-43.00 ; SAR Peak: 0.20 W/kg

D. SAR 1g & 10g

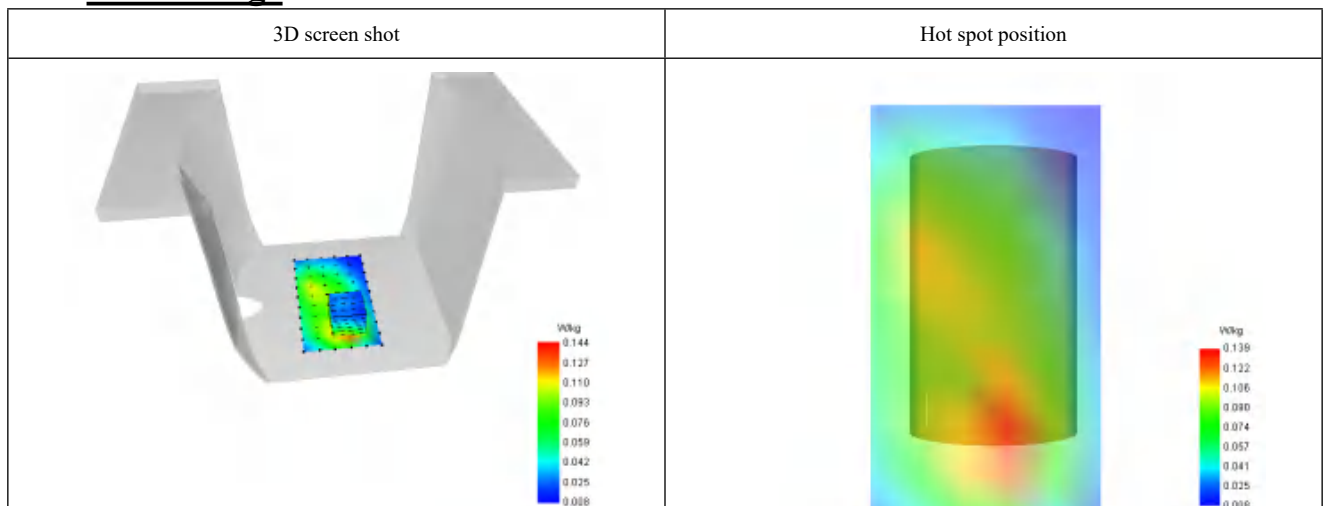
SAR 10g (W/Kg)	0.093
SAR 1g (W/Kg)	0.141
Variation (%)	-1.160
Horizontal validation criteria: minimum distance (mm)	10.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	64.583333

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.205	0.144	0.093	0.080	0.055	0.042	0.037



F. 3D Image



#11

Date of measurement: 2/4/2026

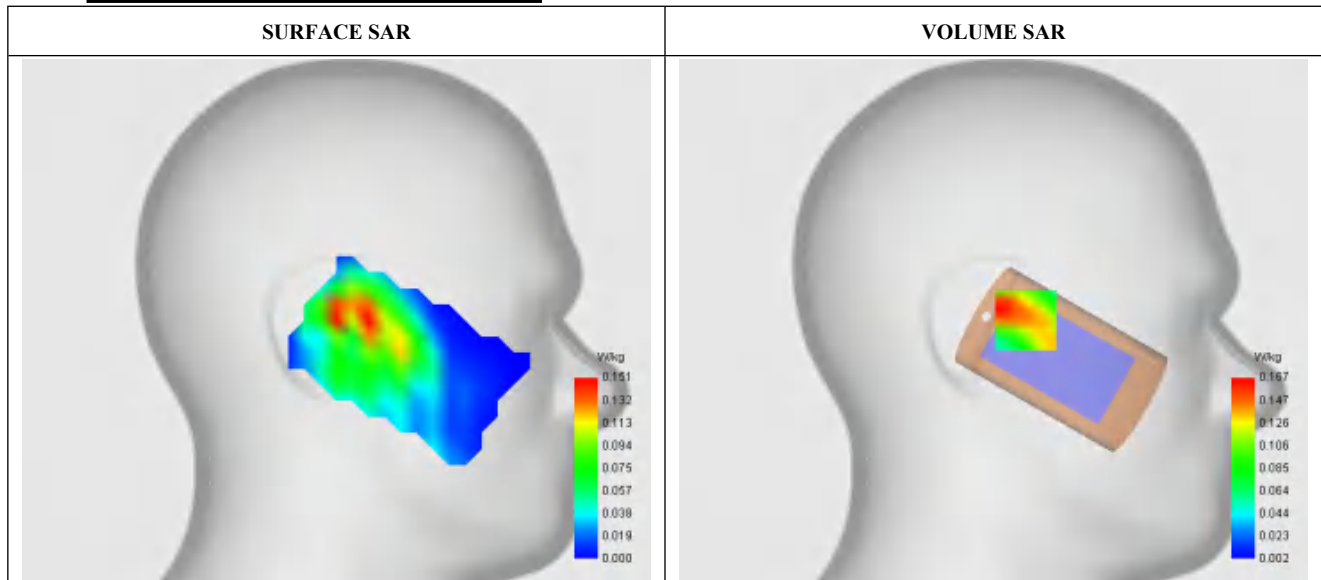
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.38
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm,Complete
Phantom	Left head
Device Position	Cheek
Band	Bluetooth
Channels/Frequency	Low (0)/ frequency 2402.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	2402.00
Relative permittivity (real part)	39.216
Relative permittivity (imaginary part)	13.210
Conductivity (S/m)	1.762

C. SAR Surface and Volume



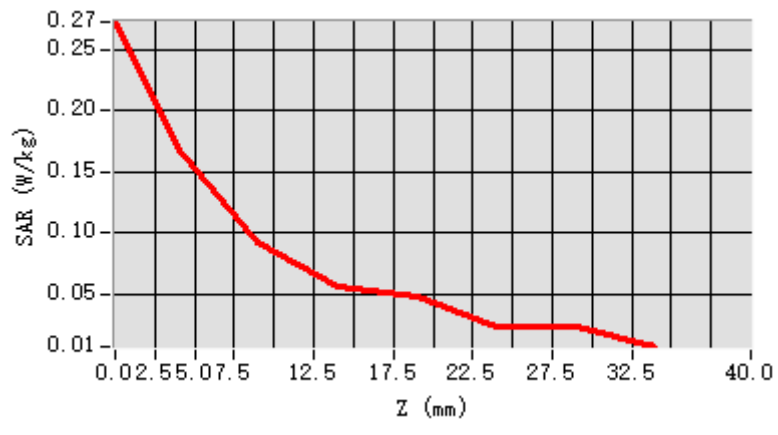
Maximum location: X=-16.00, Y=0.00 ; SAR Peak: 0.26 W/kg

D. SAR 1g & 10g

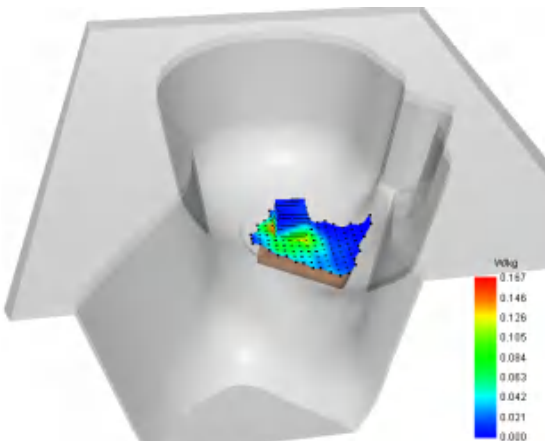
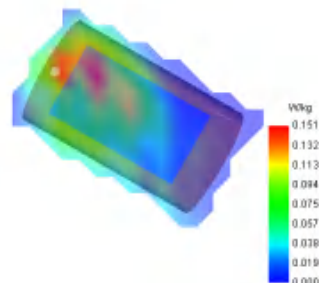
SAR 10g (W/Kg)	0.069
SAR 1g (W/Kg)	0.152
Variation (%)	3.160
Horizontal validation criteria: minimum distance (mm)	15.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	55.089820

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.273	0.167	0.092	0.056	0.047	0.023	0.024



F. 3D Image

3D screen shot	Hot spot position
	

#12

Date of measurement: 2/4/2026

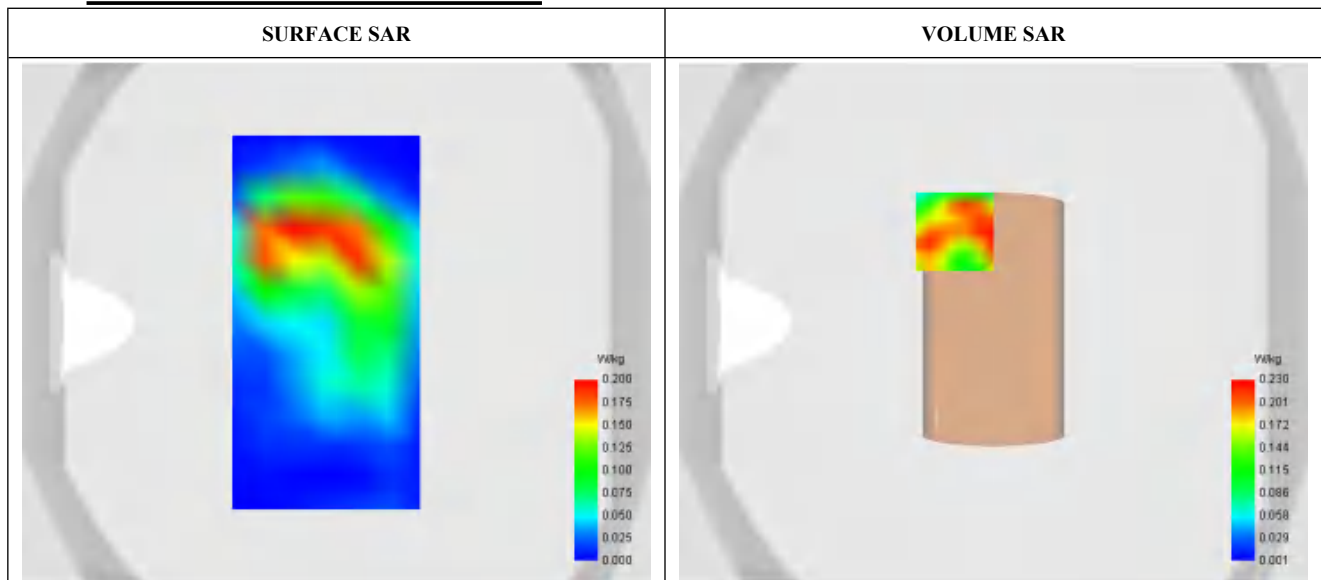
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.38
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
Channels/Frequency	Low (0)/ frequency 2402.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	2402.00
Relative permittivity (real part)	39.216
Relative permittivity (imaginary part)	13.210
Conductivity (S/m)	1.762

C. SAR Surface and Volume



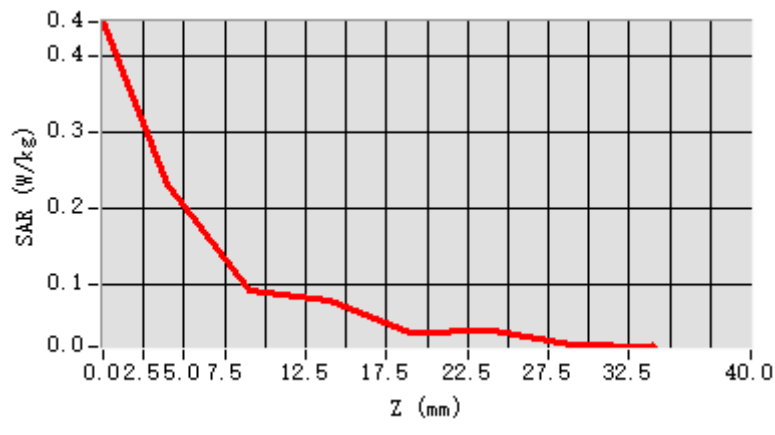
Maximum location: X=-15.00, Y=35.00 ; SAR Peak: 0.36 W/kg

D. SAR 1g & 10g

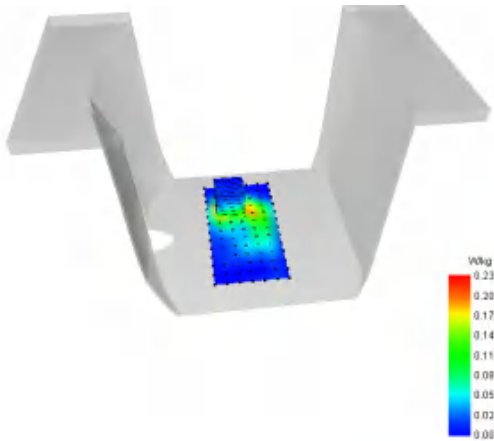
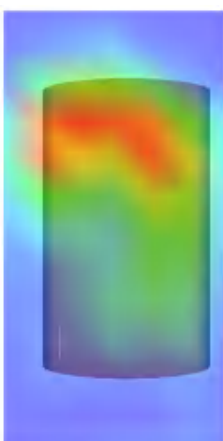
SAR 10g (W/Kg)	0.097
SAR 1g (W/Kg)	0.207
Variation (%)	1.790
Horizontal validation criteria: minimum distance (mm)	15.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	40.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.444	0.230	0.092	0.077	0.035	0.039	0.019



F. 3D Image

3D screen shot	Hot spot position
	

#13

Date of measurement: 2/4/2026

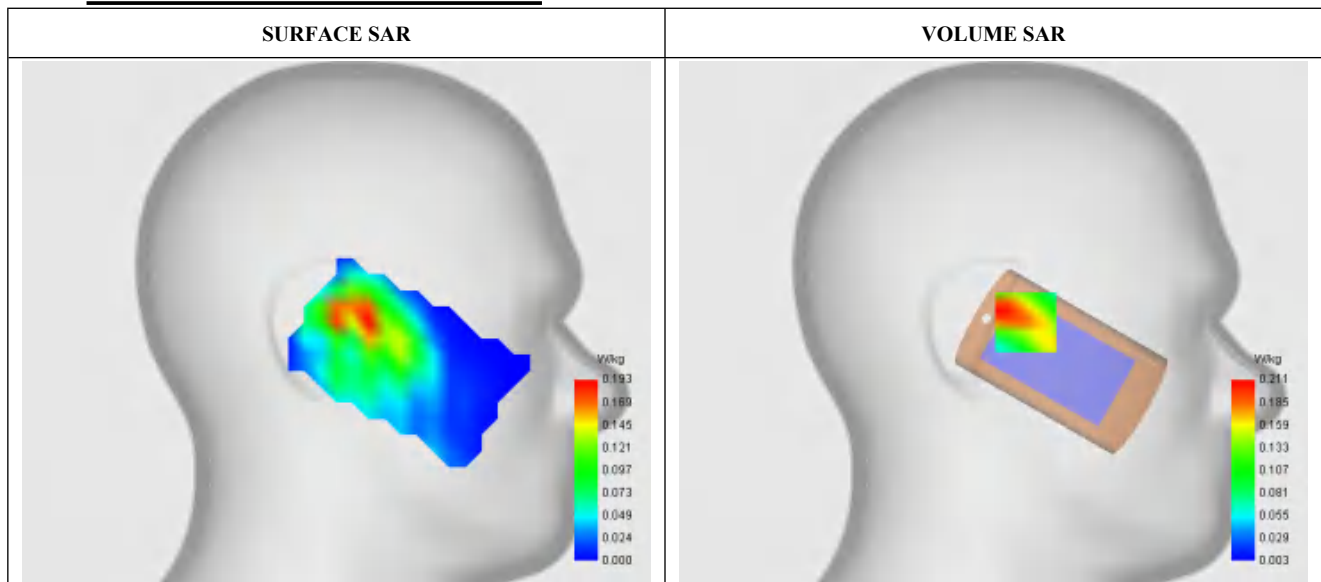
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.38
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm,Complete
Phantom	Left head
Device Position	Cheek
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



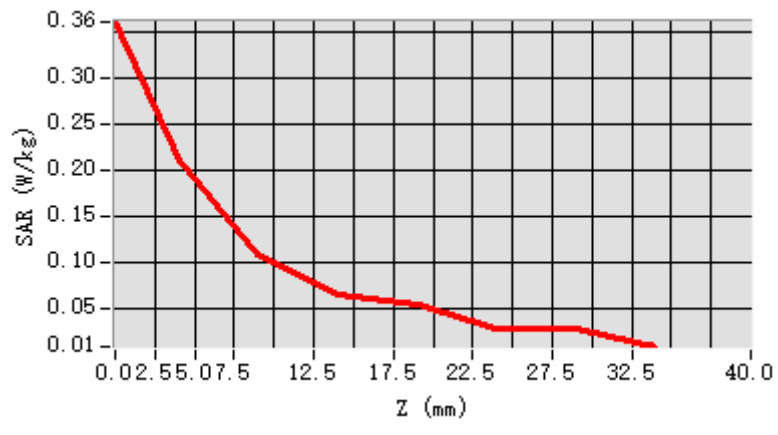
Maximum location: X=-16.00, Y=0.00 ; SAR Peak: 0.33 W/kg

D. SAR 1g & 10g

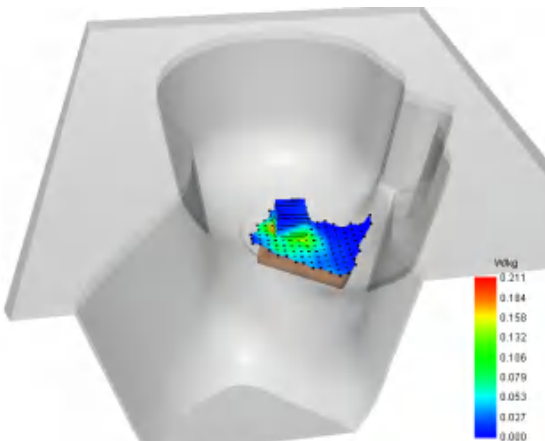
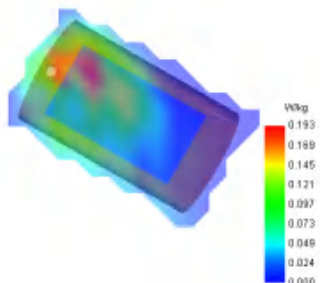
SAR 10g (W/Kg)	0.089
SAR 1g (W/Kg)	0.193
Variation (%)	0.680
Horizontal validation criteria: minimum distance (mm)	15.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	51.184834

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.361	0.211	0.108	0.065	0.055	0.027	0.028



F. 3D Image

3D screen shot	Hot spot position
	

#14

Date of measurement: 2/4/2026

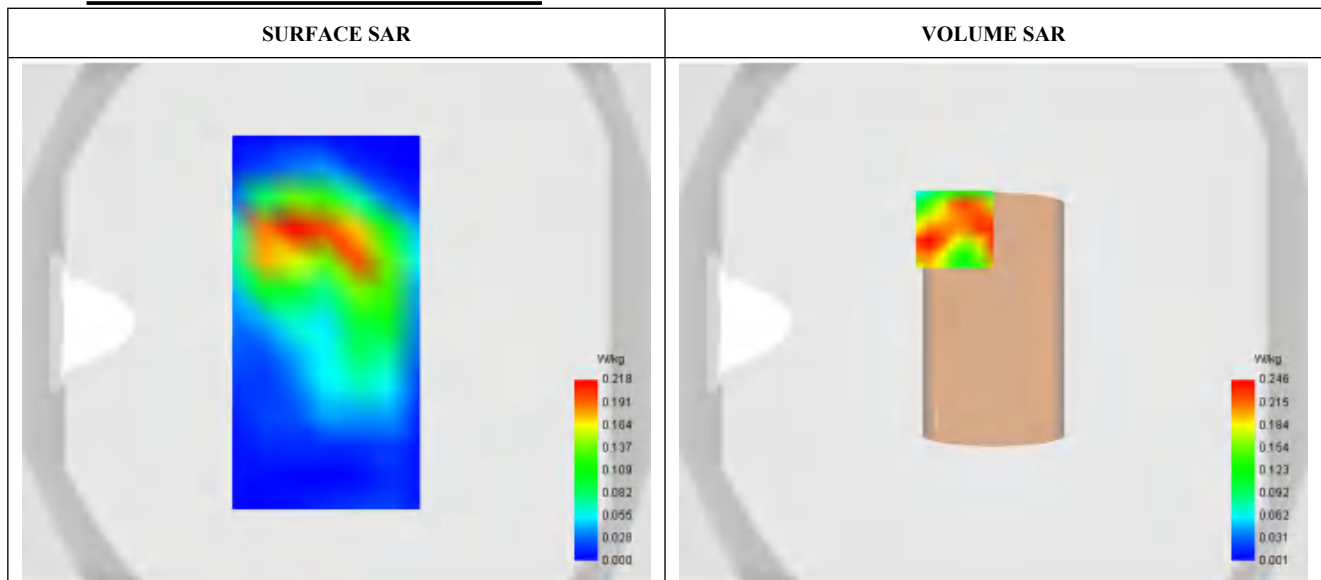
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.38
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



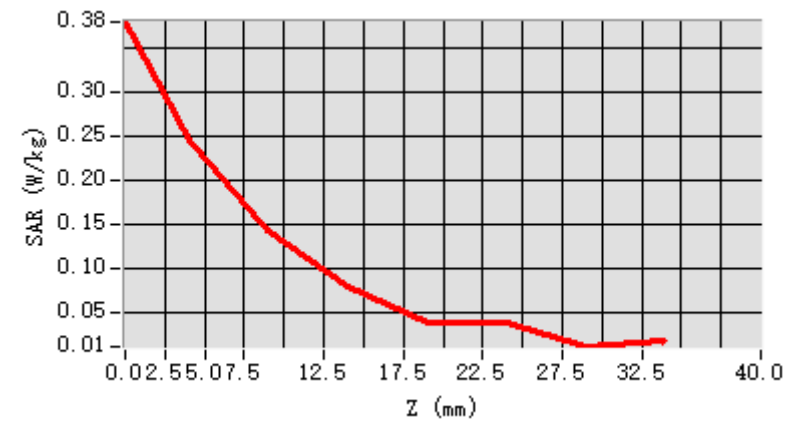
Maximum location: X=-15.00, Y=36.00 ; SAR Peak: 0.41 W/kg

D. SAR 1g & 10g

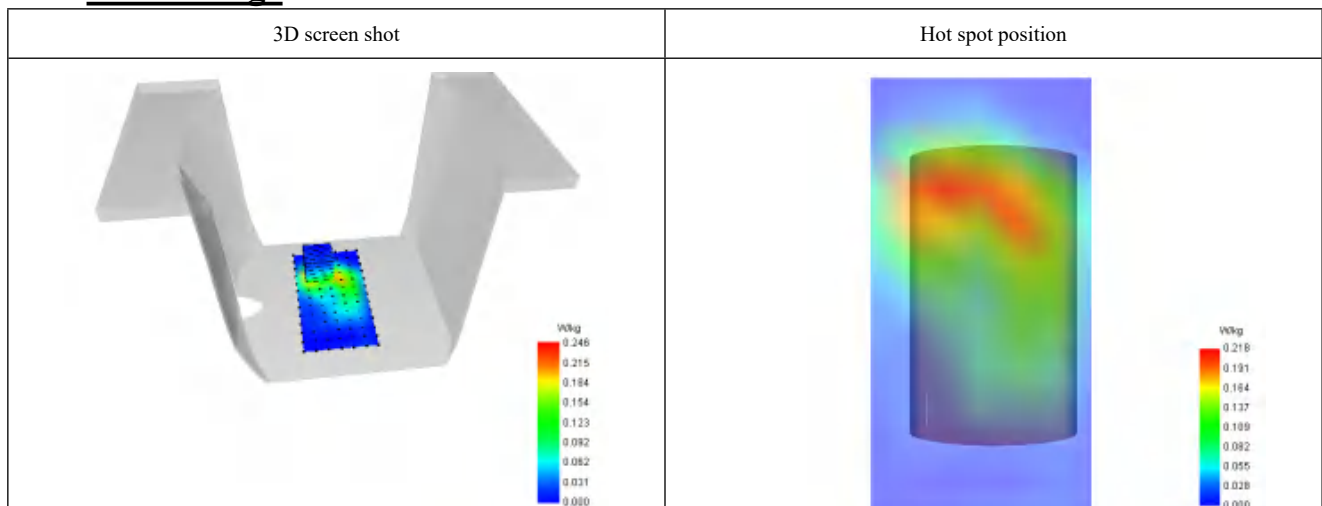
SAR 10g (W/Kg)	0.098
SAR 1g (W/Kg)	0.228
Variation (%)	-3.740
Horizontal validation criteria: minimum distance (mm)	15.811388
Vertical validation criteria: SAR ratio M2/M1 (%)	58.130081

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.379	0.246	0.143	0.079	0.039	0.040	0.012



F. 3D Image



#15

Date of measurement: 1/4/2026

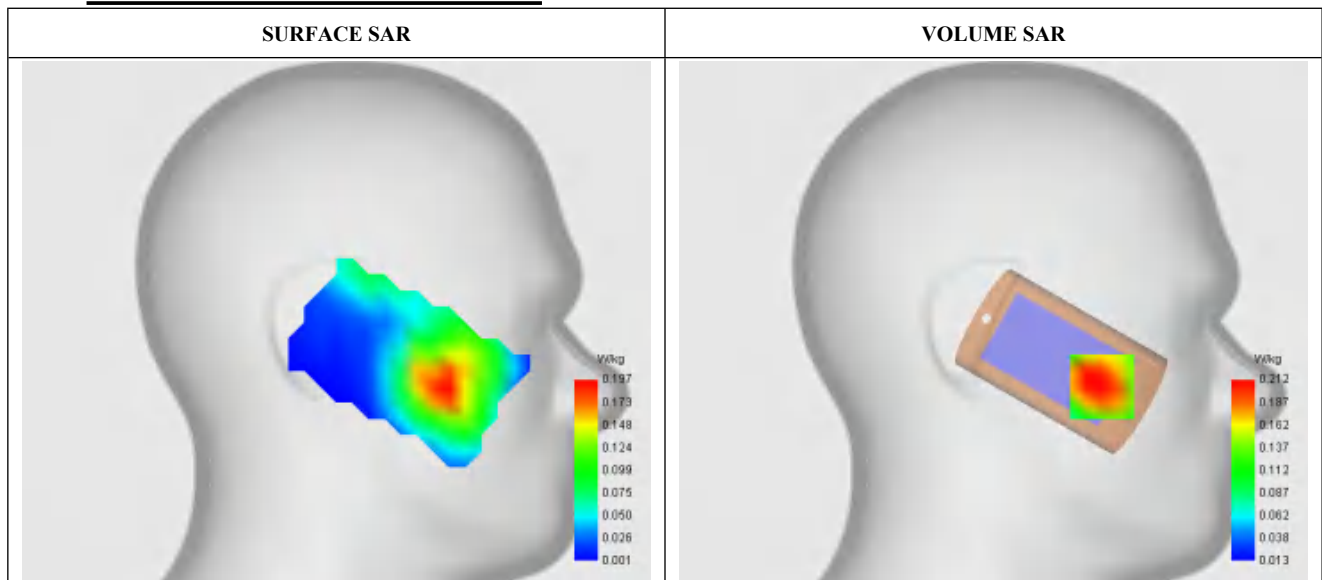
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Left head
Device Position	Cheek
Band	LTE band 2
Channel Center [EARFCN] / Channel Center [MHz]	Middle (18900)/ frequency 1880.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1880.00
Relative permittivity (real part)	40.000
Relative permittivity (imaginary part)	13.408
Conductivity (S/m)	1.400

C. SAR Surface and Volume



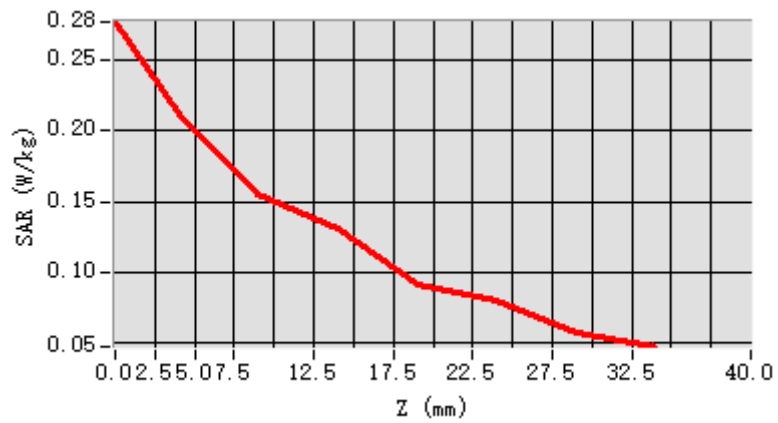
Maximum location: X=-54.00, Y=-32.00 ; SAR Peak: 0.29 W/kg

D. SAR 1g & 10g

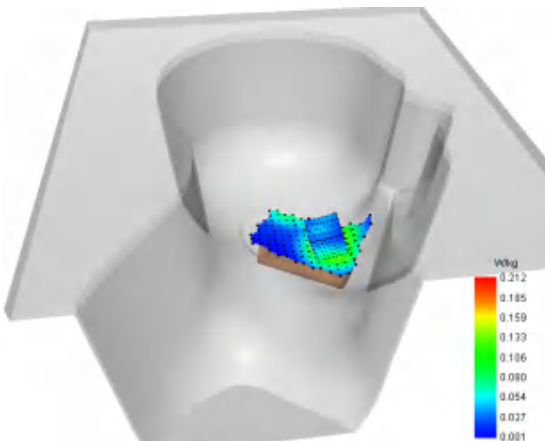
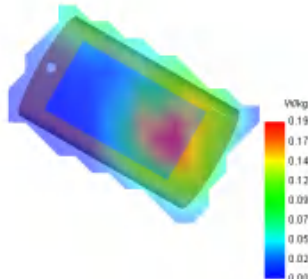
SAR 10g (W/Kg)	0.142
SAR 1g (W/Kg)	0.207
Variation (%)	4.030
Horizontal validation criteria: minimum distance (mm)	22.627417
Vertical validation criteria: SAR ratio M2/M1 (%)	73.113208

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.277	0.212	0.155	0.131	0.091	0.080	0.057



F. 3D Image

3D screen shot	Hot spot position
	

#16

Date of measurement: 1/4/2026

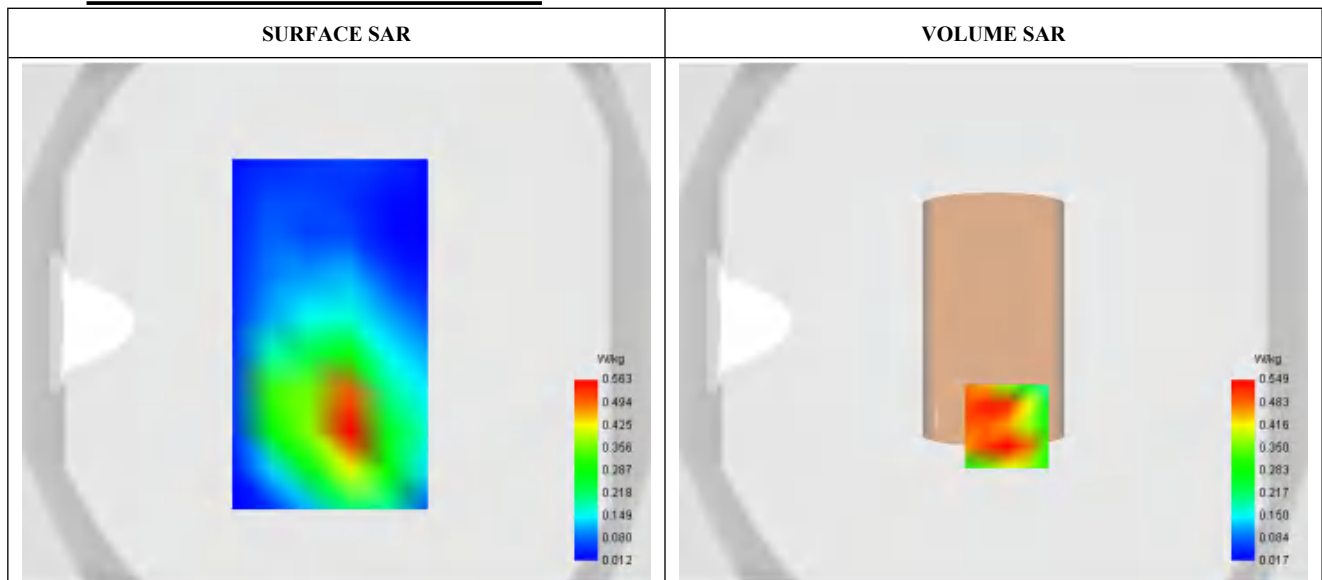
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 2
Channel Center [EARFCN] / Channel Center [MHz]	Middle (18900)/ frequency 1880.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1880.00
Relative permittivity (real part)	40.000
Relative permittivity (imaginary part)	13.408
Conductivity (S/m)	1.400

C. SAR Surface and Volume



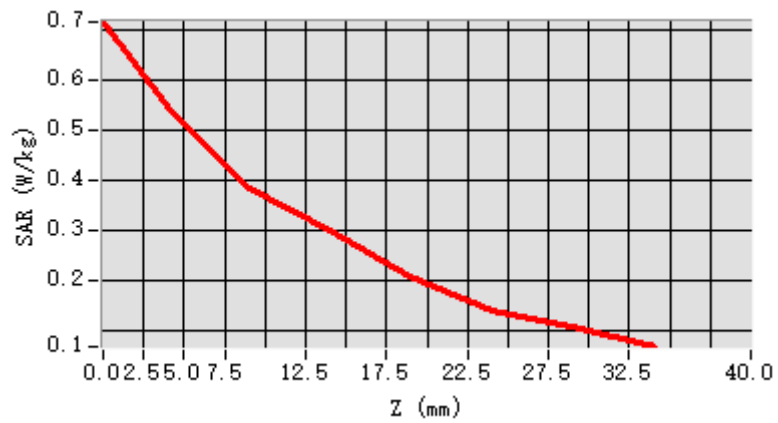
Maximum location: X=5.00, Y=-40.00 ; SAR Peak: 0.83 W/kg

D. SAR 1g & 10g

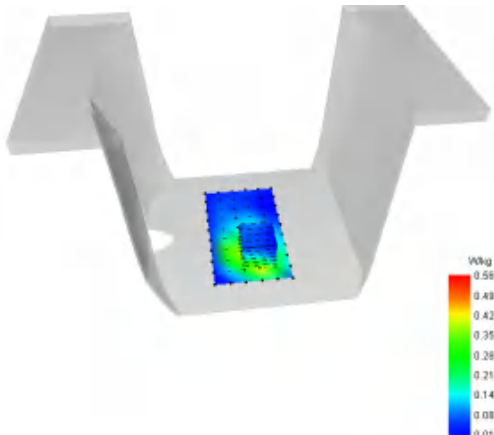
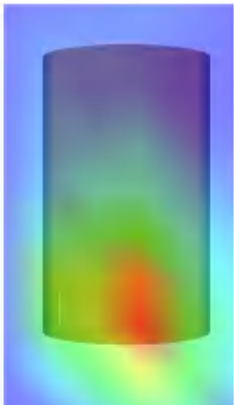
SAR 10g (W/Kg)	0.288
SAR 1g (W/Kg)	0.515
Variation (%)	0.970
Horizontal validation criteria: minimum distance (mm)	17.888544
Vertical validation criteria: SAR ratio M2/M1 (%)	69.945355

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.717	0.549	0.384	0.301	0.205	0.139	0.108



F. 3D Image

3D screen shot	Hot spot position
	

#17

Date of measurement: 31/3/2026

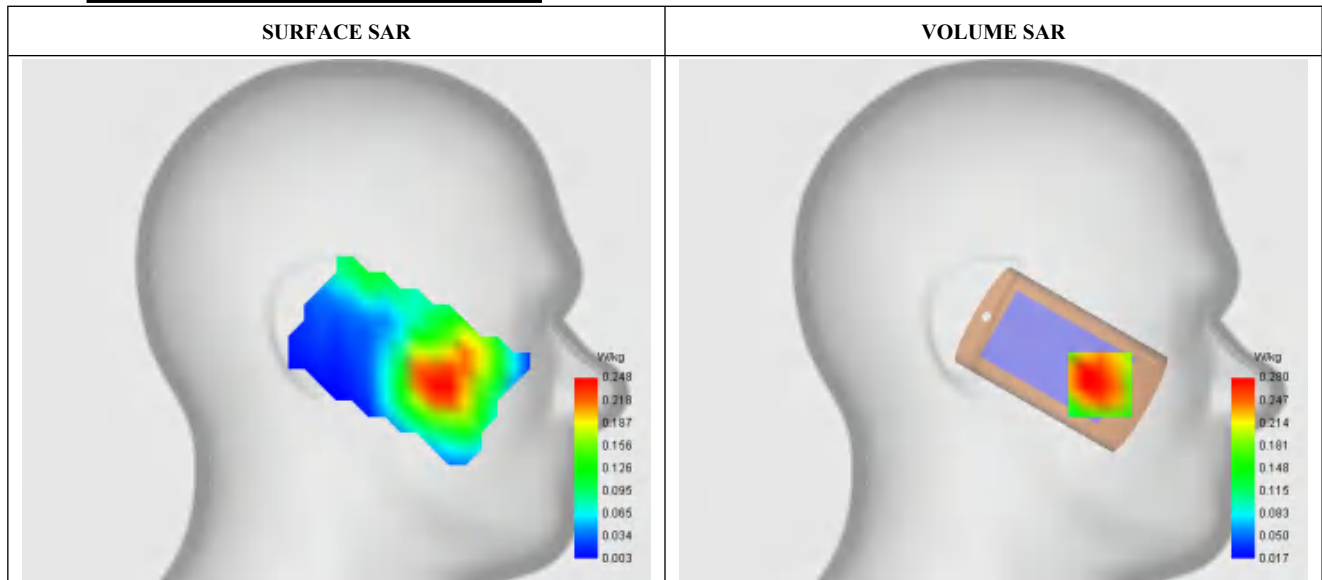
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Left head
Device Position	Cheek
Band	LTE band 4
Channel Center [EARFCN] / Channel Center [MHz]	Middle (20175)/ frequency 1732.50 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1732.50
Relative permittivity (real part)	40.116
Relative permittivity (imaginary part)	14.136
Conductivity (S/m)	1.361

C. SAR Surface and Volume



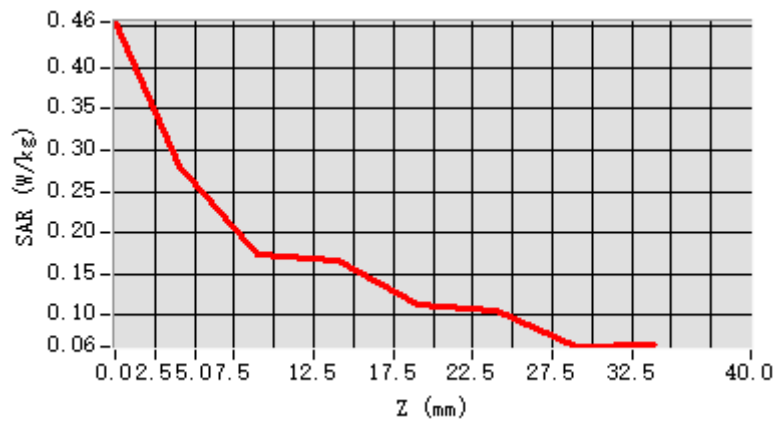
Maximum location: X=-53.00, Y=-32.00 ; SAR Peak: 0.39 W/kg

D. SAR 1g & 10g

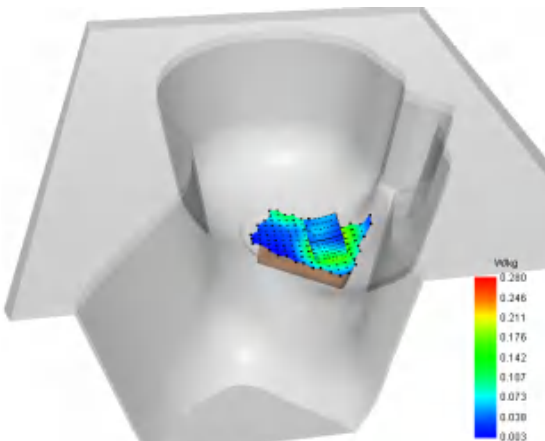
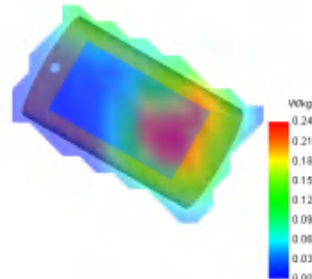
SAR 10g (W/Kg)	0.191
SAR 1g (W/Kg)	0.279
Variation (%)	2.970
Horizontal validation criteria: minimum distance (mm)	17.888544
Vertical validation criteria: SAR ratio M2/M1 (%)	62.142857

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.455	0.280	0.174	0.167	0.112	0.105	0.062



F. 3D Image

3D screen shot	Hot spot position
	

#18

Date of measurement: 31/3/2026

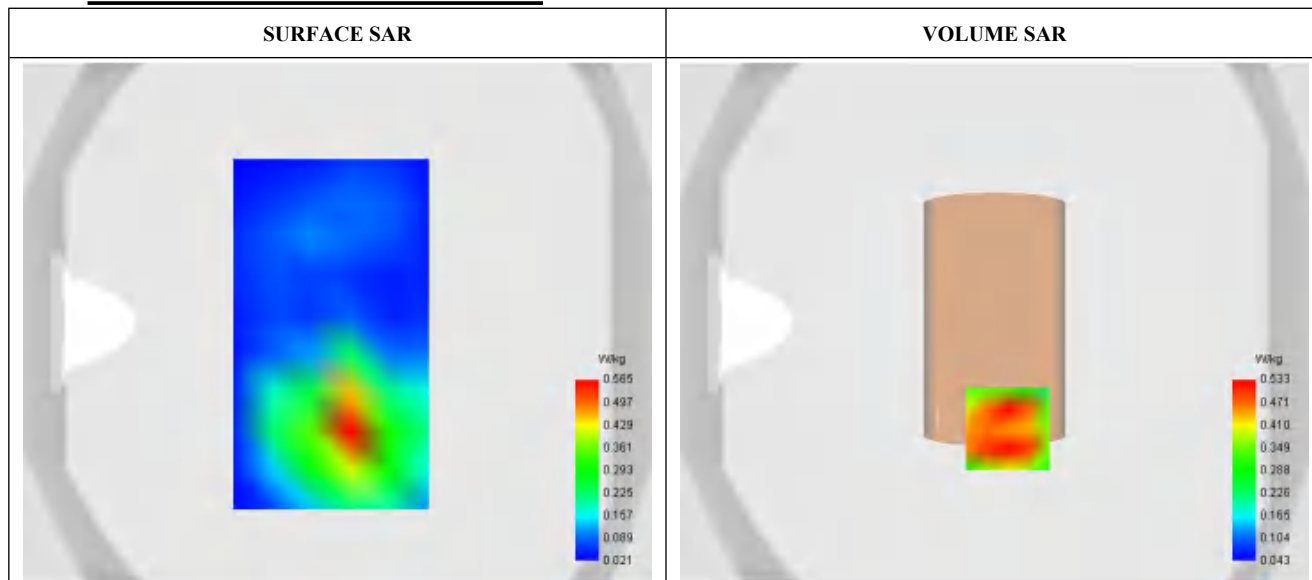
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 4
Channel Center [EARFCN] / Channel Center [MHz]	Middle (20175)/ frequency 1732.50 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1732.50
Relative permittivity (real part)	40.116
Relative permittivity (imaginary part)	14.136
Conductivity (S/m)	1.361

C. SAR Surface and Volume



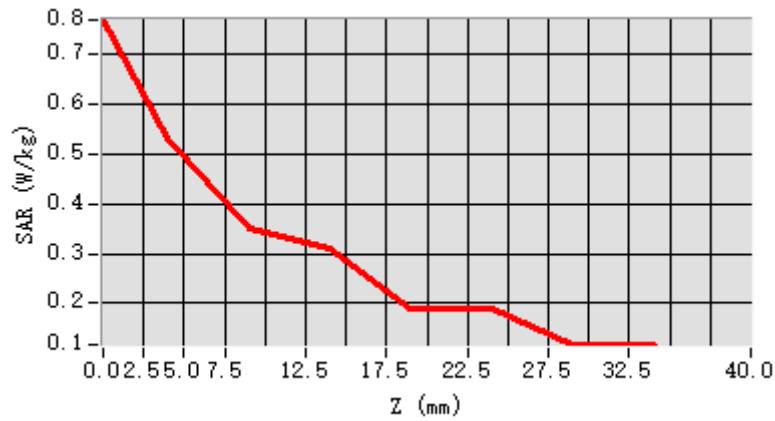
Maximum location: X=5.00, Y=-41.00 ; SAR Peak: 0.84 W/kg

D. SAR 1g & 10g

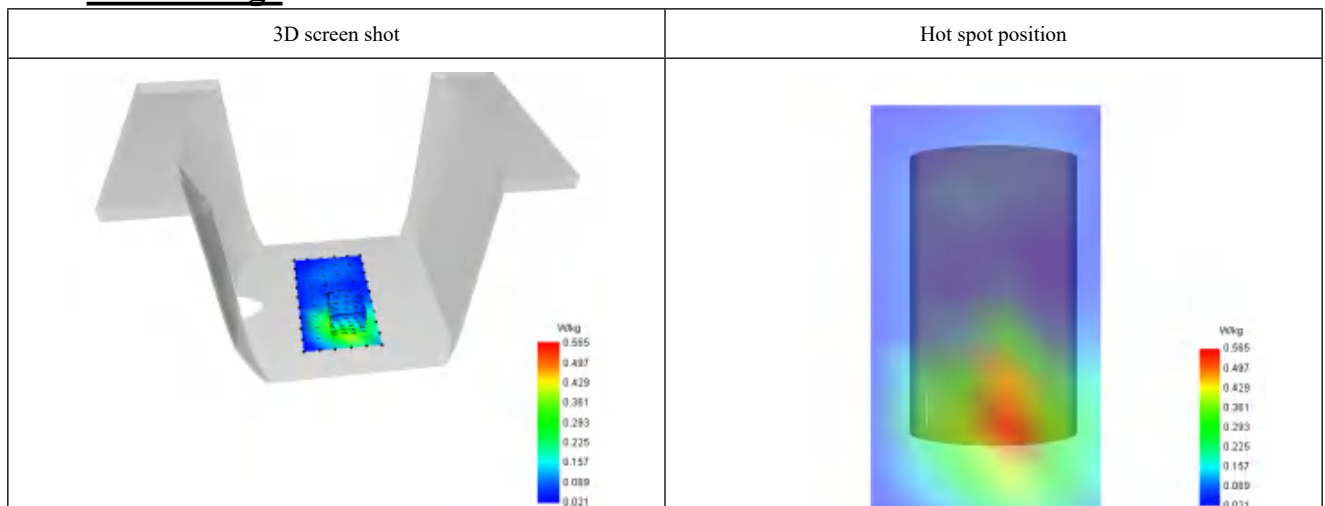
SAR 10g (W/Kg)	0.325
SAR 1g (W/Kg)	0.510
Variation (%)	-3.530
Horizontal validation criteria: minimum distance (mm)	28.844410
Vertical validation criteria: SAR ratio M2/M1 (%)	66.041276

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.770	0.533	0.352	0.312	0.190	0.191	0.117



F. 3D Image



#19

Date of measurement: 30/3/2026

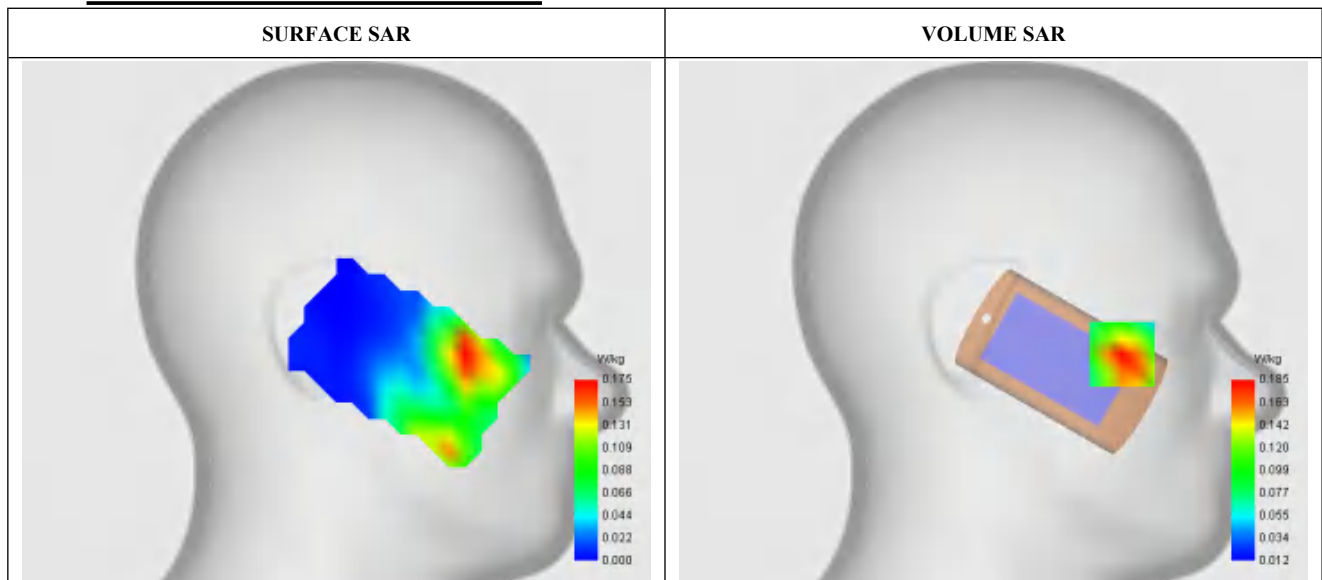
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	1.66
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Left head
Device Position	Cheek
Band	LTE band 5
Channel Center [EARFCN] / Channel Center [MHz]	Middle (20525)/ frequency 836.50 Mhz

B. Permittivity

Middle TX Frequency (MHz)	836.50
Relative permittivity (real part)	41.500
Relative permittivity (imaginary part)	19.400
Conductivity (S/m)	0.902

C. SAR Surface and Volume



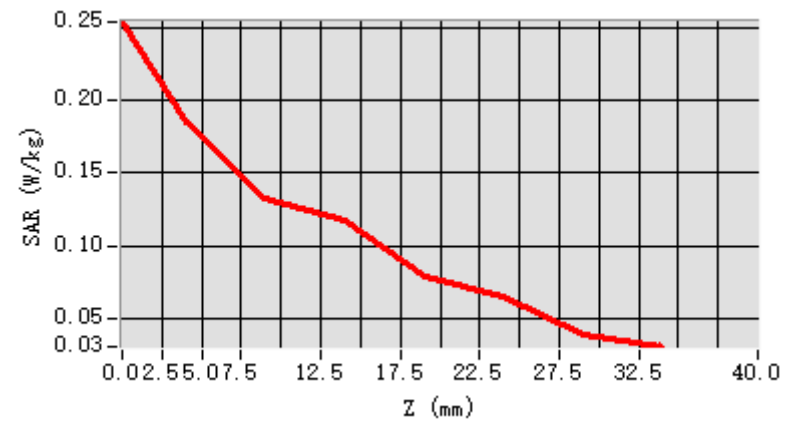
Maximum location: X=-64.00, Y=-16.00 ; SAR Peak: 0.25 W/kg

D. SAR 1g & 10g

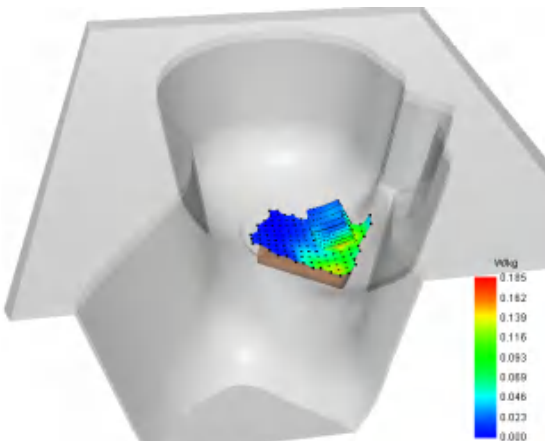
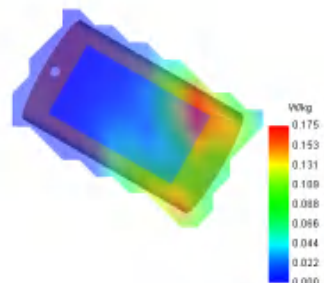
SAR 10g (W/Kg)	0.117
SAR 1g (W/Kg)	0.176
Variation (%)	-3.070
Horizontal validation criteria: minimum distance (mm)	17.888544
Vertical validation criteria: SAR ratio M2/M1 (%)	71.351351

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.254	0.185	0.132	0.118	0.078	0.065	0.039



F. 3D Image

3D screen shot	Hot spot position
	

#20

Date of measurement: 30/3/2026

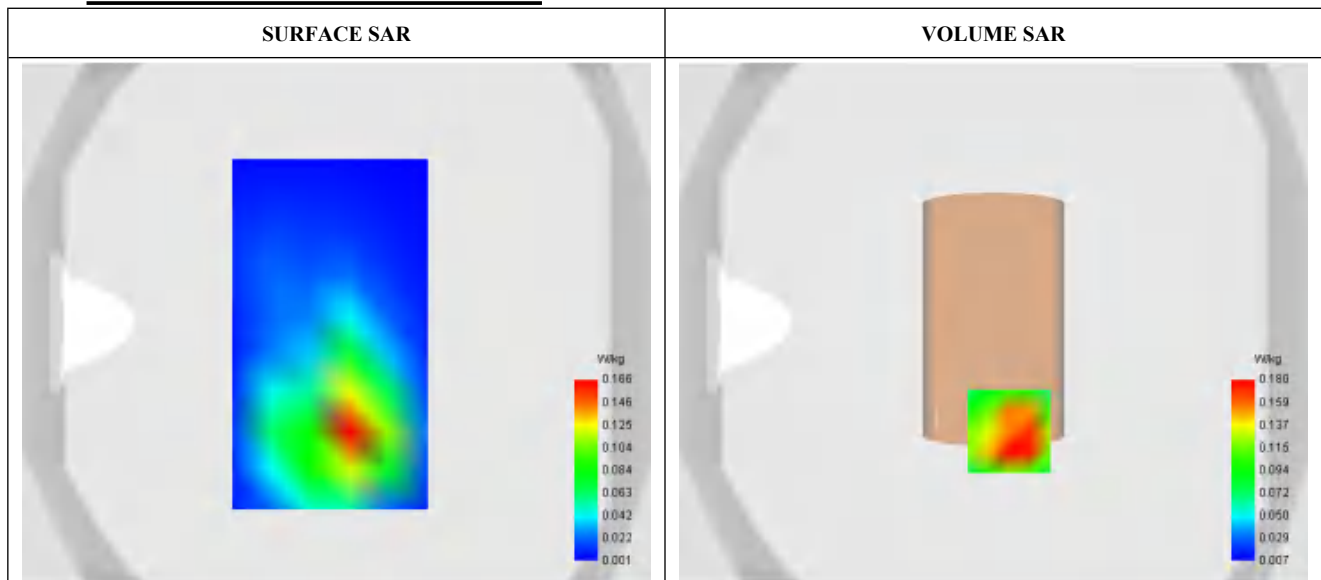
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	1.66
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 5
Channel Center [EARFCN] / Channel Center [MHz]	Middle (20525)/ frequency 836.50 Mhz

B. Permittivity

Middle TX Frequency (MHz)	836.50
Relative permittivity (real part)	41.500
Relative permittivity (imaginary part)	19.400
Conductivity (S/m)	0.902

C. SAR Surface and Volume



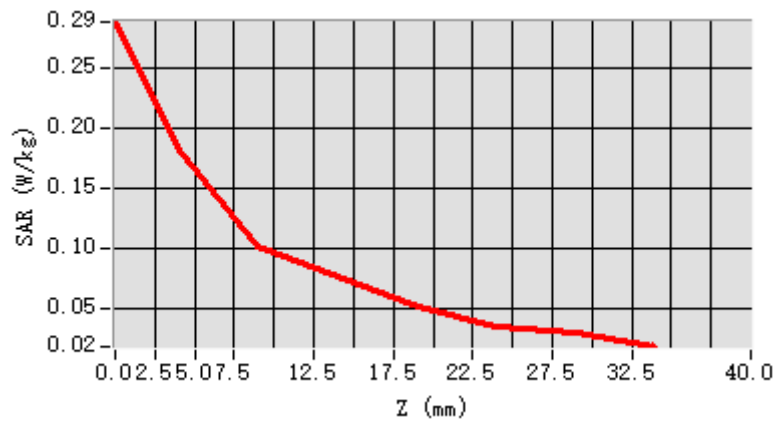
Maximum location: X=6.00, Y=-42.00 ; SAR Peak: 0.32 W/kg

D. SAR 1g & 10g

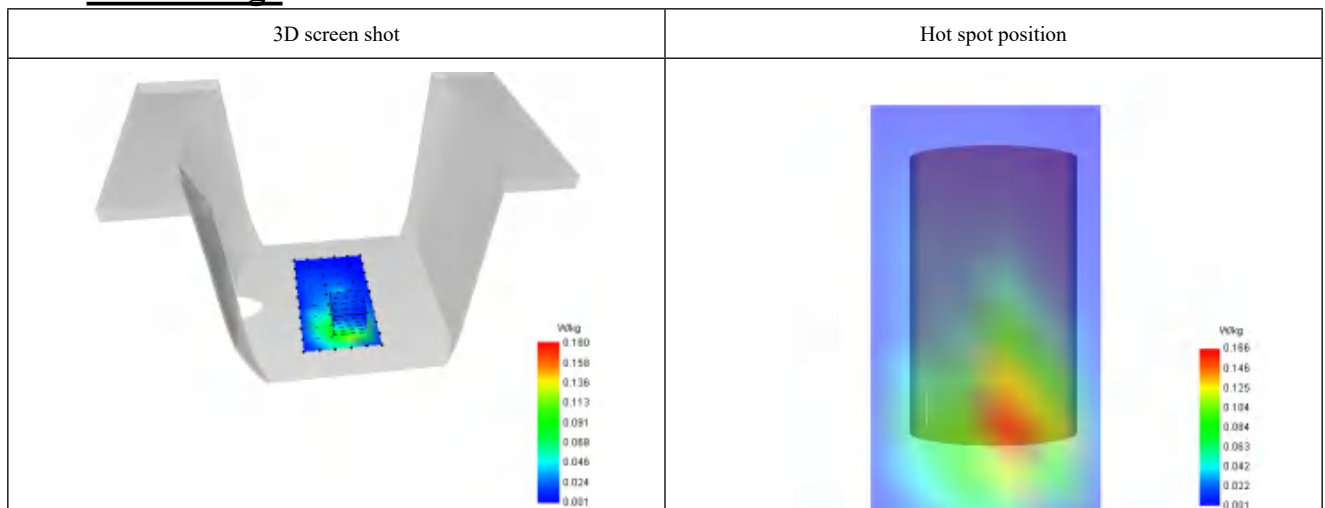
SAR 10g (W/Kg)	0.101
SAR 1g (W/Kg)	0.178
Variation (%)	-4.290
Horizontal validation criteria: minimum distance (mm)	17.888544
Vertical validation criteria: SAR ratio M2/M1 (%)	56.111111

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.288	0.180	0.101	0.076	0.051	0.035	0.029



F. 3D Image



#21

Date of measurement: 28/3/2026

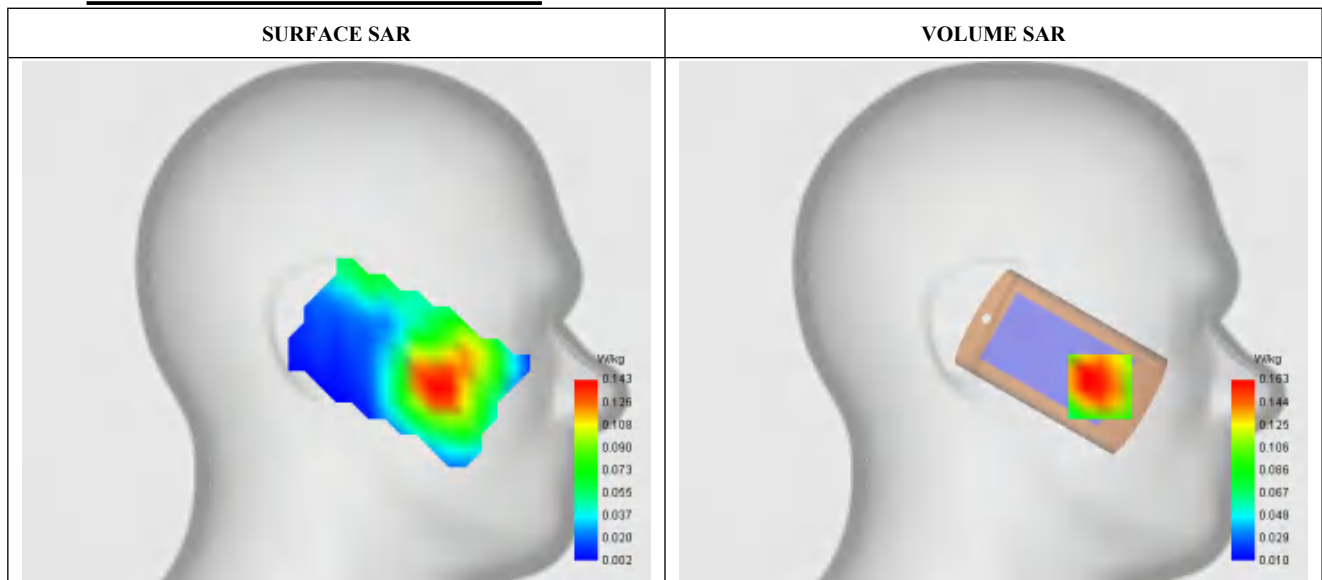
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	1.65
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Left head
Device Position	Cheek
Band	LTE band 12
Channel Center [EARFCN] / Channel Center [MHz]	Middle (23095)/ frequency 707.50 Mhz

B. Permittivity

Middle TX Frequency (MHz)	707.500
Relative permittivity (real part)	42.136
Relative permittivity (imaginary part)	23.345
Conductivity (S/m)	0.918

C. SAR Surface and Volume



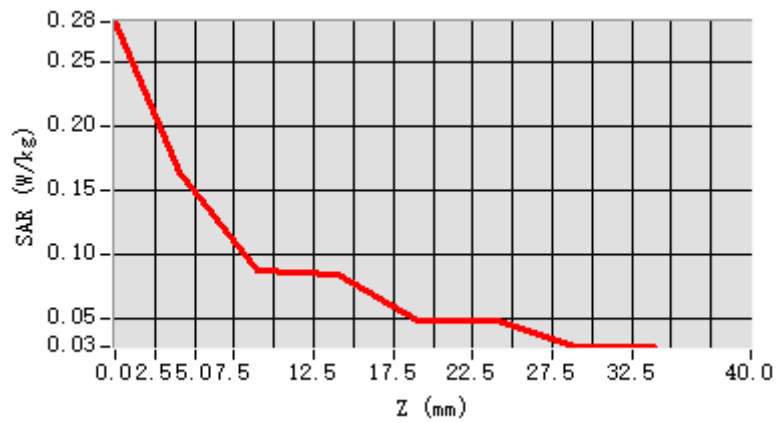
Maximum location: X=-53.00, Y=-32.00 ; SAR Peak: 0.23 W/kg

D. SAR 1g & 10g

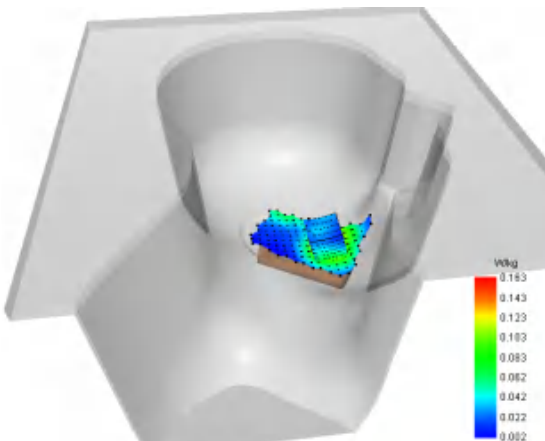
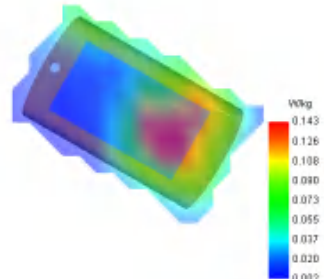
SAR 10g (W/Kg)	0.112
SAR 1g (W/Kg)	0.165
Variation (%)	4.490
Horizontal validation criteria: minimum distance (mm)	25.298221
Vertical validation criteria: SAR ratio M2/M1 (%)	53.374233

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.280	0.163	0.087	0.084	0.048	0.049	0.028



F. 3D Image

3D screen shot	Hot spot position
	

#22

Date of measurement: 28/3/2026

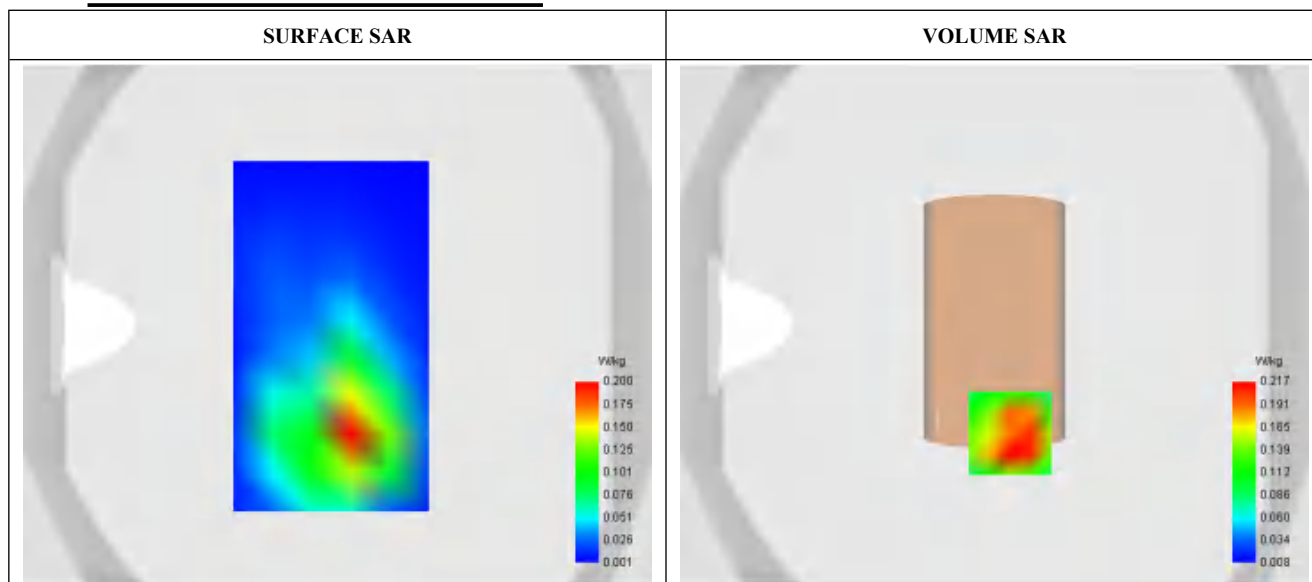
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	1.65
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 12
Channel Center [EARFCN] / Channel Center [MHz]	Middle (23095)/ frequency 707.50 Mhz

B. Permittivity

Middle TX Frequency (MHz)	707.500
Relative permittivity (real part)	42.136
Relative permittivity (imaginary part)	23.345
Conductivity (S/m)	0.918

C. SAR Surface and Volume



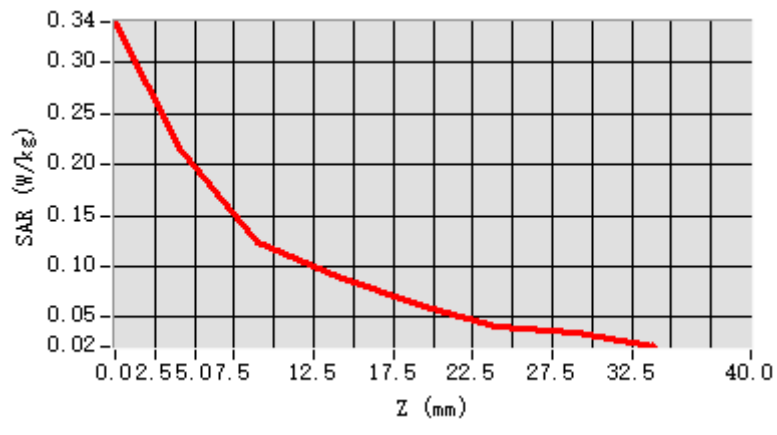
Maximum location: X=6.00, Y=-42.00 ; SAR Peak: 0.38 W/kg

D. SAR 1g & 10g

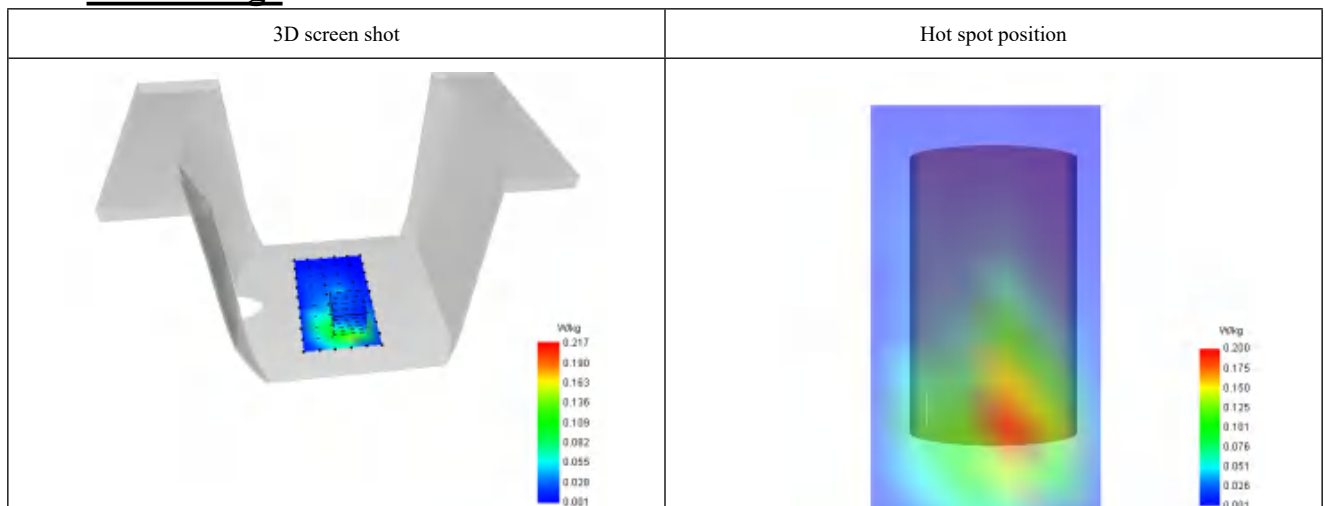
SAR 10g (W/Kg)	0.124
SAR 1g (W/Kg)	0.218
Variation (%)	-3.850
Horizontal validation criteria: minimum distance (mm)	17.888544
Vertical validation criteria: SAR ratio M2/M1 (%)	57.142857

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.340	0.217	0.124	0.090	0.062	0.041	0.035



F. 3D Image



#23

Date of measurement: 28/3/2026

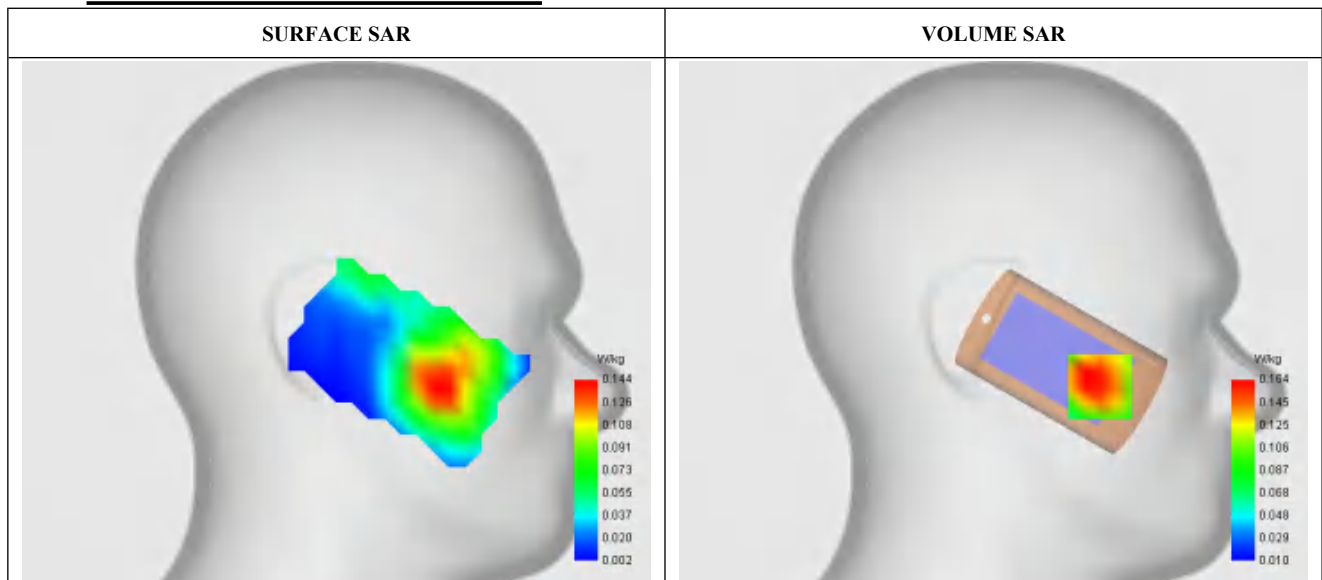
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	1.65
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Left head
Device Position	Cheek
Band	LTE band 17
Channel Center [EARFCN] / Channel Center [MHz]	Middle (23790)/ frequency 710.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	710.000
Relative permittivity (real part)	42.123
Relative permittivity (imaginary part)	23.233
Conductivity (S/m)	0.916

C. SAR Surface and Volume



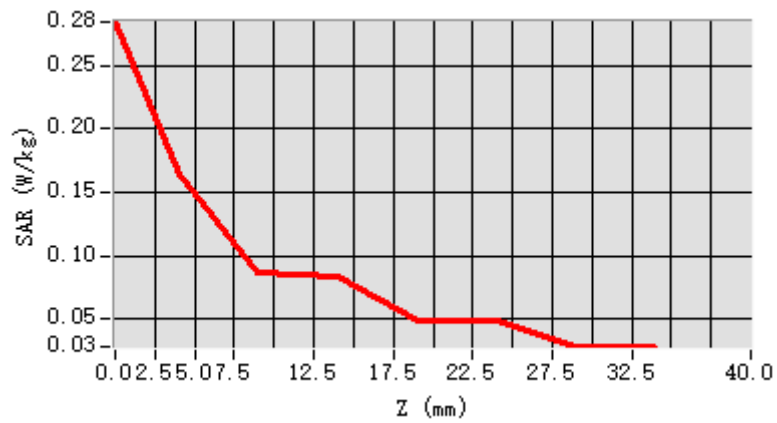
Maximum location: X=-53.00, Y=-32.00 ; SAR Peak: 0.23 W/kg

D. SAR 1g & 10g

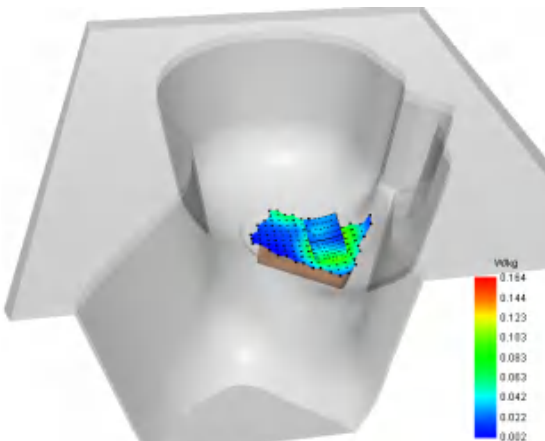
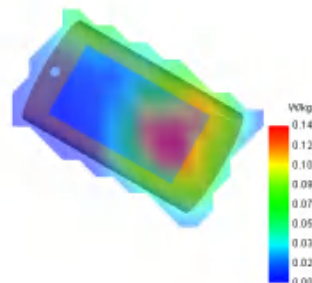
SAR 10g (W/Kg)	0.112
SAR 1g (W/Kg)	0.164
Variation (%)	4.000
Horizontal validation criteria: minimum distance (mm)	25.298221
Vertical validation criteria: SAR ratio M2/M1 (%)	53.048780

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.284	0.164	0.087	0.084	0.048	0.049	0.028



F. 3D Image

3D screen shot	Hot spot position
	

#24

Date of measurement: 28/3/2026

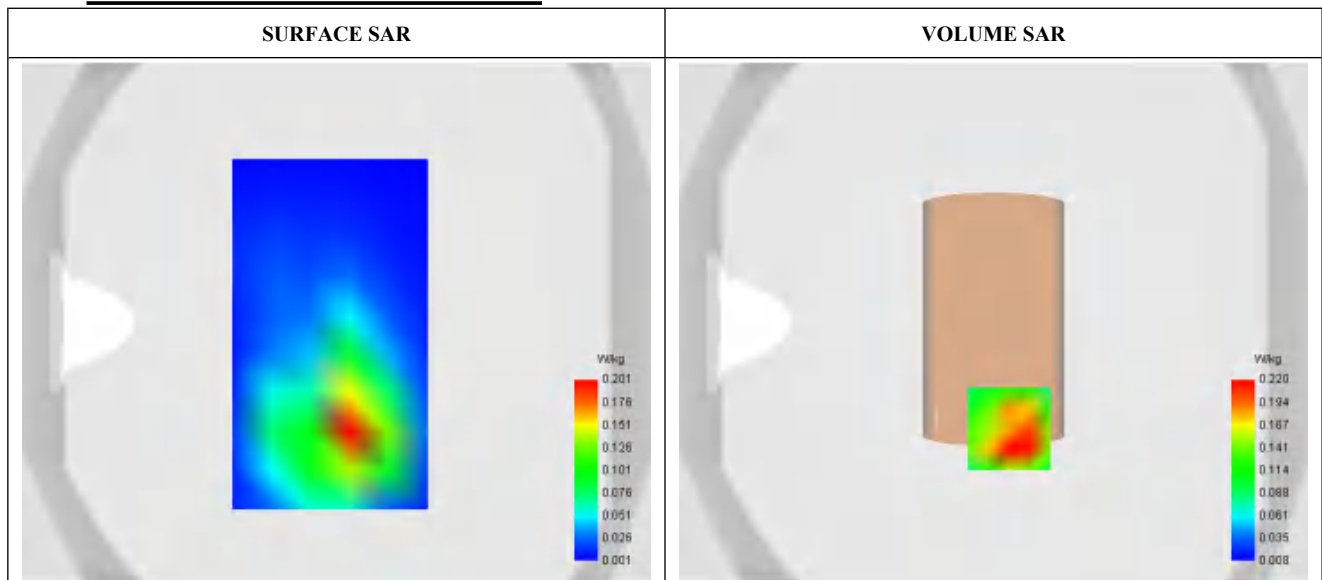
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	1.65
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 17
Channel Center [EARFCN] / Channel Center [MHz]	Middle (23790)/ frequency 710.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	710.000
Relative permittivity (real part)	42.123
Relative permittivity (imaginary part)	23.233
Conductivity (S/m)	0.916

C. SAR Surface and Volume



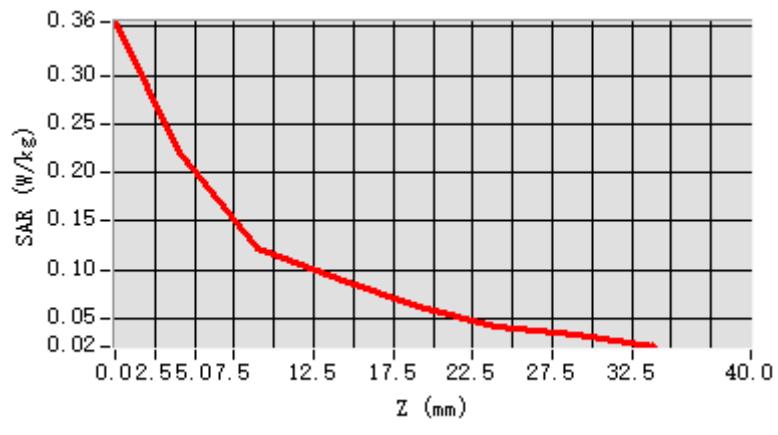
Maximum location: X=6.00, Y=-41.00 ; SAR Peak: 0.39 W/kg

D. SAR 1g & 10g

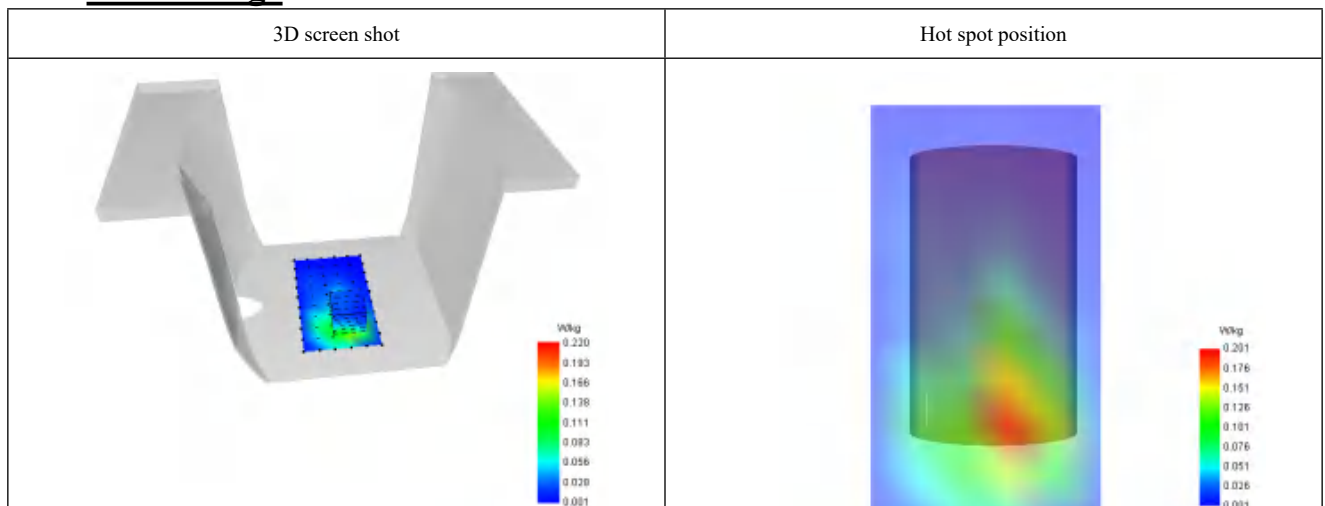
SAR 10g (W/Kg)	0.124
SAR 1g (W/Kg)	0.220
Variation (%)	-3.520
Horizontal validation criteria: minimum distance (mm)	17.888544
Vertical validation criteria: SAR ratio M2/M1 (%)	55.454545

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.355	0.220	0.122	0.092	0.062	0.042	0.034



F. 3D Image



#25

Date of measurement: 10/4/2026

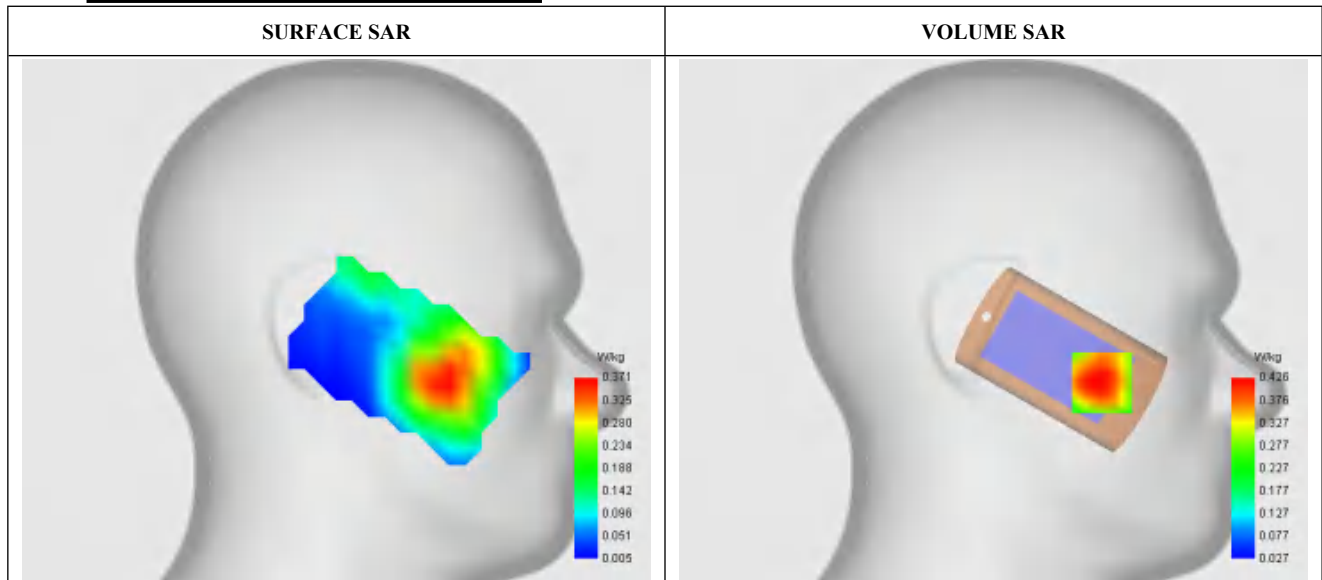
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.35
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm,Complete
Phantom	Left head
Device Position	Cheek
Band	LTE band 41
Channel Center [EARFCN] / Channel Center [MHz]	Middle (40740)/ frequency 2605.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	2605.000
Relative permittivity (real part)	39.018
Relative permittivity (imaginary part)	13.539
Conductivity (S/m)	1.959

C. SAR Surface and Volume



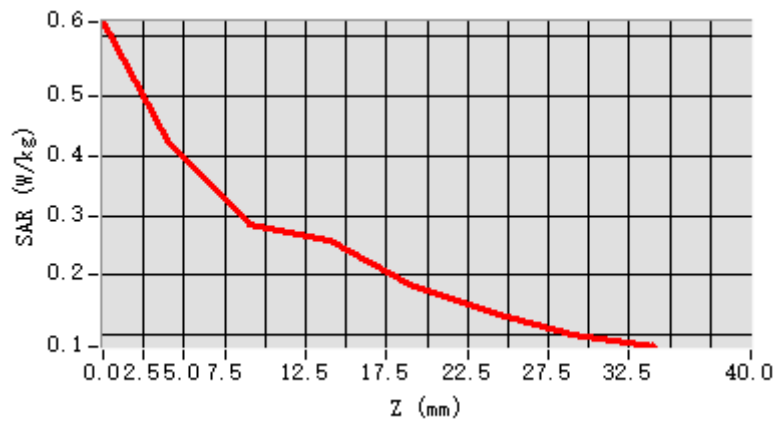
Maximum location: X=-54.00, Y=-31.00 ; SAR Peak: 0.58 W/kg

D. SAR 1g & 10g

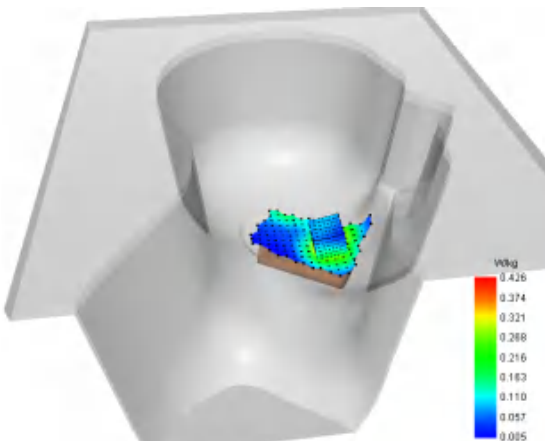
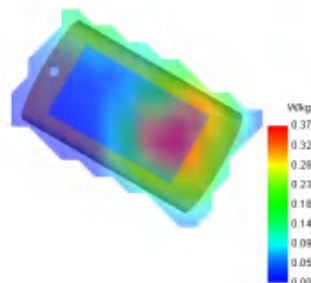
SAR 10g (W/Kg)	0.299
SAR 1g (W/Kg)	0.421
Variation (%)	2.060
Horizontal validation criteria: minimum distance (mm)	18.027756
Vertical validation criteria: SAR ratio M2/M1 (%)	66.666667

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.624	0.426	0.284	0.260	0.185	0.138	0.103



F. 3D Image

3D screen shot	Hot spot position
	

#26

Date of measurement: 10/4/2026

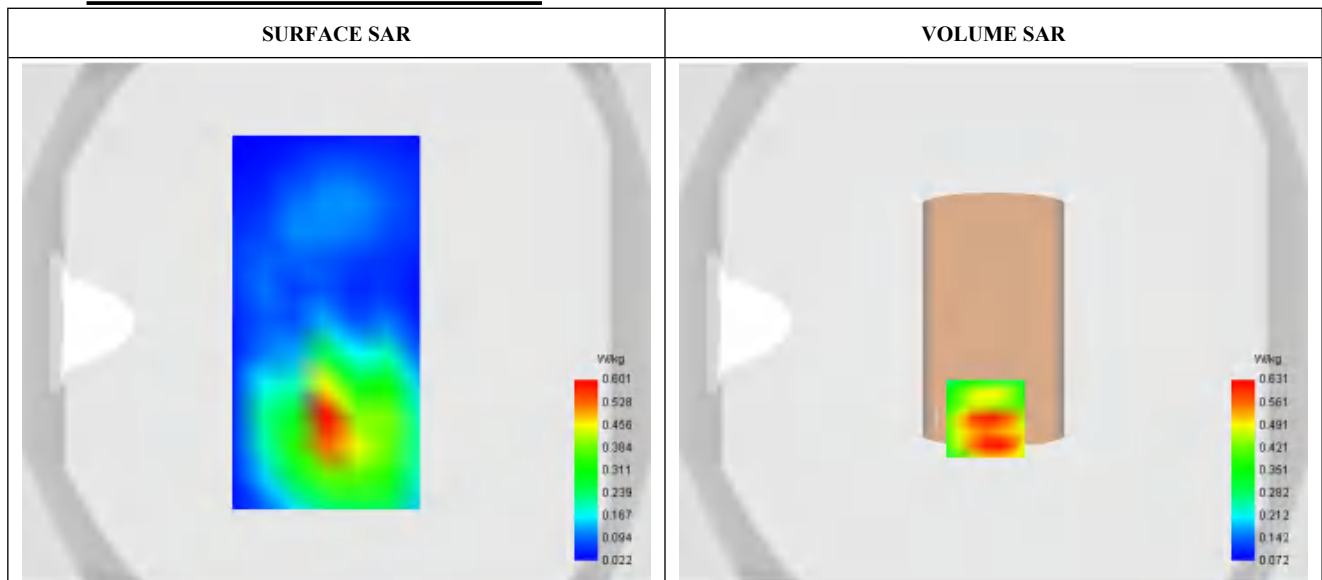
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.35
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	LTE band 41
Channel Center [EARFCN] / Channel Center [MHz]	Middle (40740)/ frequency 2605.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	2605.000
Relative permittivity (real part)	39.018
Relative permittivity (imaginary part)	13.539
Conductivity (S/m)	1.959

C. SAR Surface and Volume



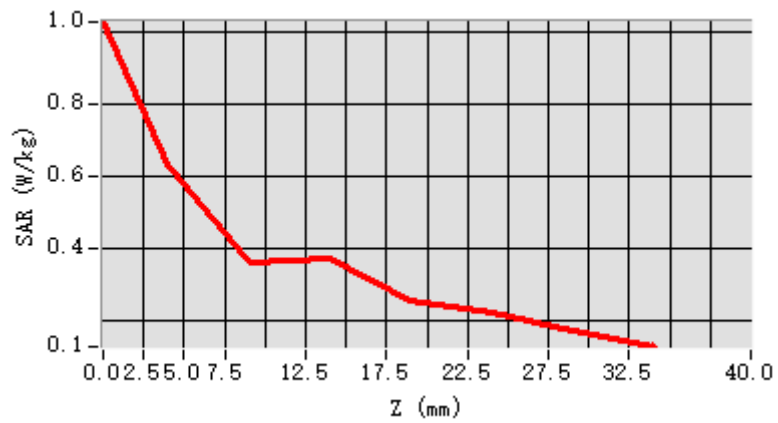
Maximum location: X=-3.00, Y=-37.00 ; SAR Peak: 0.91 W/kg

D. SAR 1g & 10g

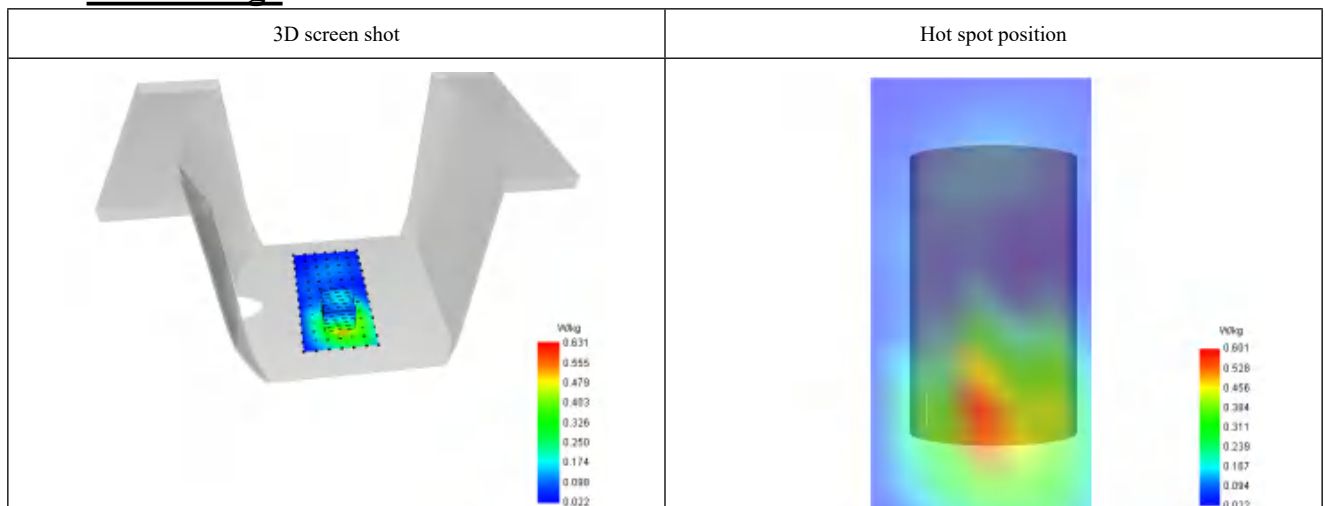
SAR 10g (W/Kg)	0.320
SAR 1g (W/Kg)	0.569
Variation (%)	-0.990
Horizontal validation criteria: minimum distance (mm)	20.615528
Vertical validation criteria: SAR ratio M2/M1 (%)	57.369255

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.029	0.631	0.362	0.370	0.251	0.218	0.171



F. 3D Image



#27

Date of measurement: 31/3/2026

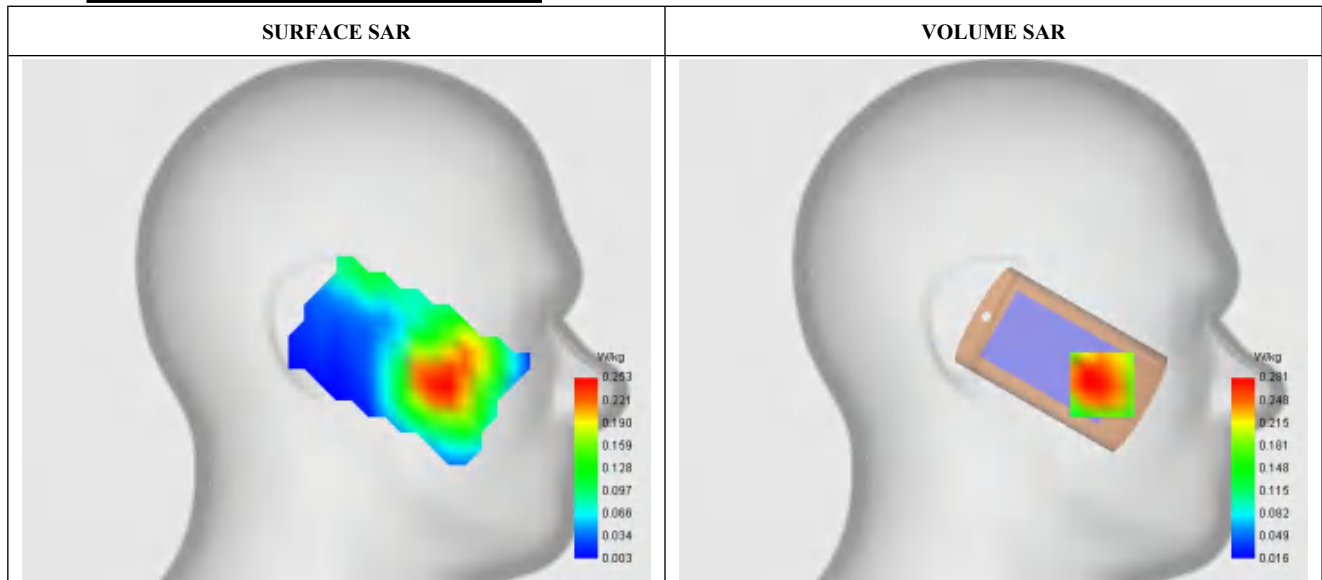
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Left head
Device Position	Cheek
Band	LTE band 66
Channel Center [EARFCN] / Channel Center [MHz]	Middle (132322)/ frequency 1745.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1745.00
Relative permittivity (real part)	40.105
Relative permittivity (imaginary part)	14.103
Conductivity (S/m)	1.367

C. SAR Surface and Volume



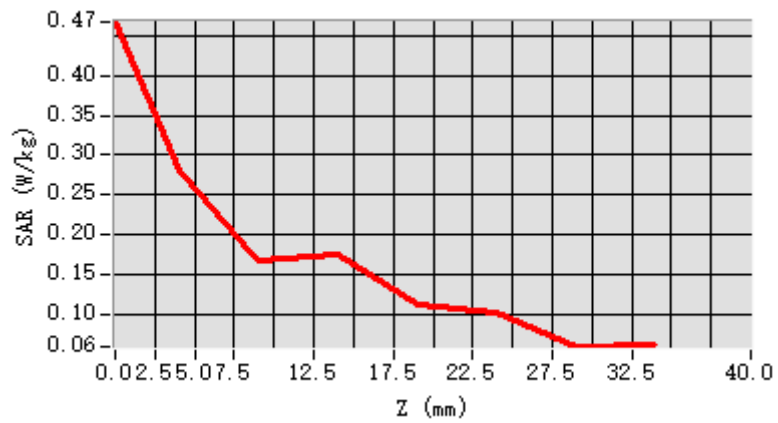
Maximum location: X=-54.00, Y=-32.00 ; SAR Peak: 0.39 W/kg

D. SAR 1g & 10g

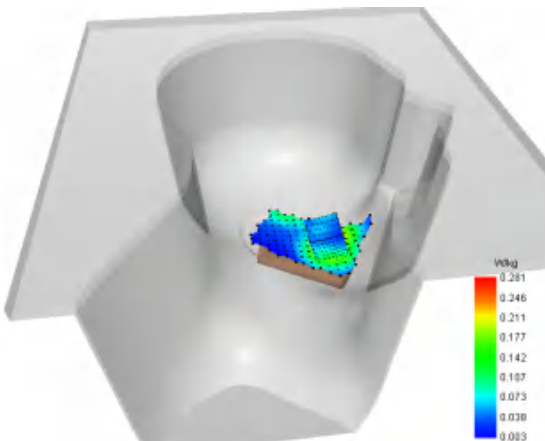
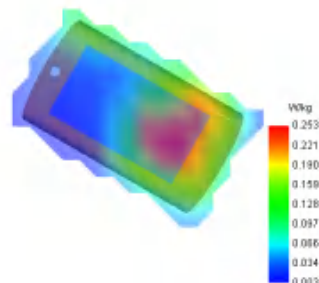
SAR 10g (W/Kg)	0.187
SAR 1g (W/Kg)	0.279
Variation (%)	2.910
Horizontal validation criteria: minimum distance (mm)	17.888544
Vertical validation criteria: SAR ratio M2/M1 (%)	59.786477

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.467	0.281	0.168	0.176	0.112	0.104	0.060



F. 3D Image

3D screen shot	Hot spot position
	

#28

Date of measurement: 31/3/2026

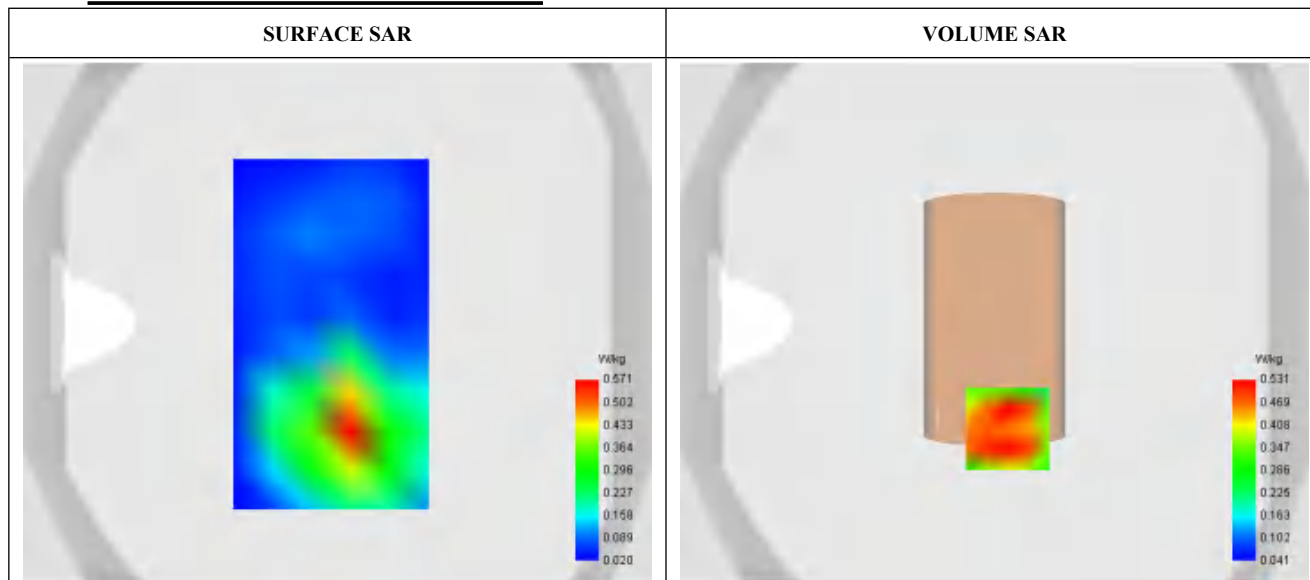
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 66
Channel Center [EARFCN] / Channel Center [MHz]	Middle (132322)/ frequency 1745.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1745.00
Relative permittivity (real part)	40.105
Relative permittivity (imaginary part)	14.103
Conductivity (S/m)	1.367

C. SAR Surface and Volume



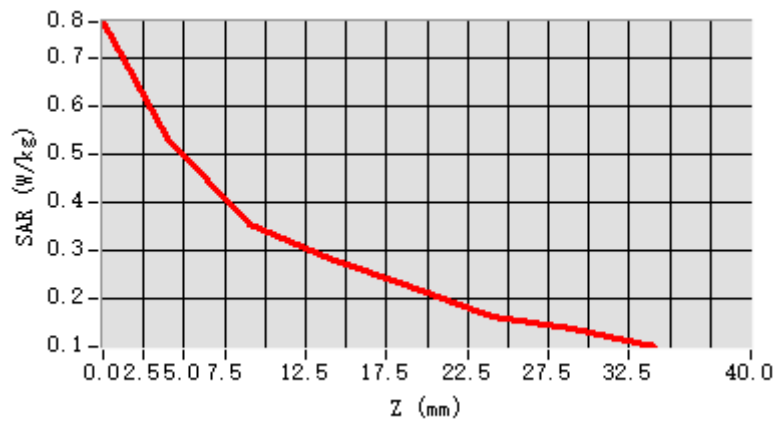
Maximum location: X=5.00, Y=-41.00 ; SAR Peak: 0.81 W/kg

D. SAR 1g & 10g

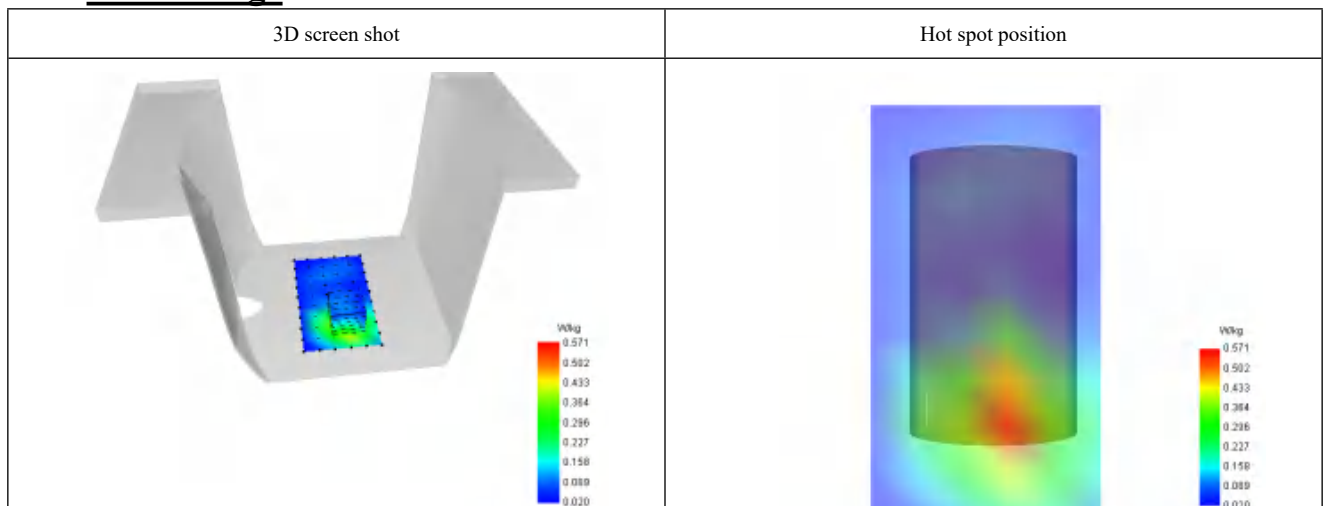
SAR 10g (W/Kg)	0.326
SAR 1g (W/Kg)	0.505
Variation (%)	-3.300
Horizontal validation criteria: minimum distance (mm)	17.888544
Vertical validation criteria: SAR ratio M2/M1 (%)	66.101695

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.774	0.531	0.351	0.281	0.222	0.160	0.135



F. 3D Image



#29

Date of measurement: 30/3/2026

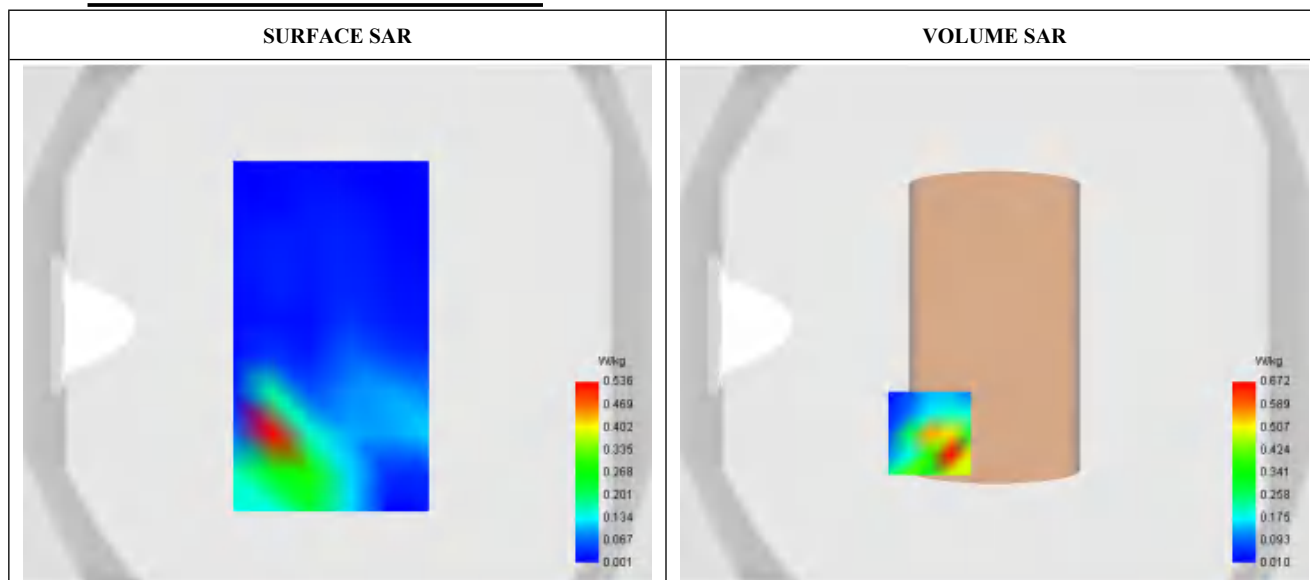
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	1.66
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels/Frequency	Middle (189)/ frequency 836.40 Mhz

B. Permittivity

Middle TX Frequency (MHz)	836.40
Relative permittivity (real part)	41.500
Relative permittivity (imaginary part)	19.400
Conductivity (S/m)	0.901

C. SAR Surface and Volume



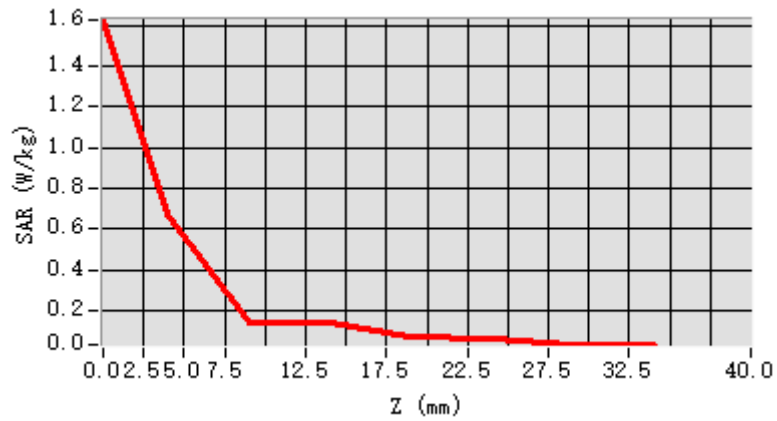
Maximum location: X=-25.00, Y=-42.00 ; SAR Peak: 1.16 W/kg

D. SAR 1g & 10g

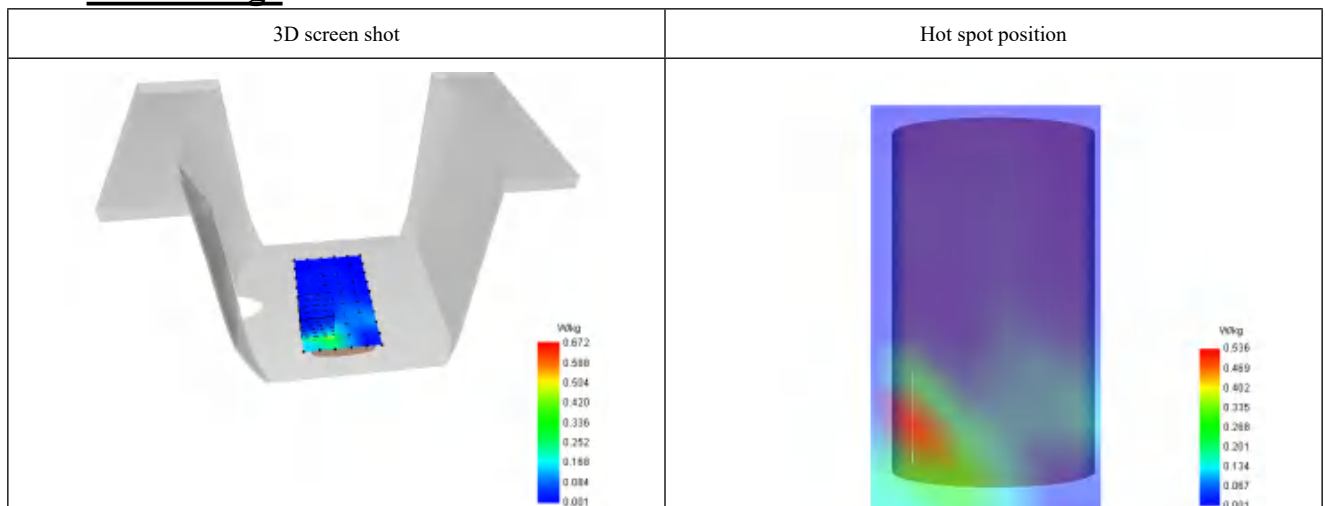
SAR 10g (W/Kg)	0.300
SAR 1g (W/Kg)	0.520
Variation (%)	2.010
Horizontal validation criteria: minimum distance (mm)	11.313708
Vertical validation criteria: SAR ratio M2/M1 (%)	30.086580

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.626	0.462	0.139	0.139	0.078	0.068	0.038



F. 3D Image



#30

Date of measurement: 1/4/2026

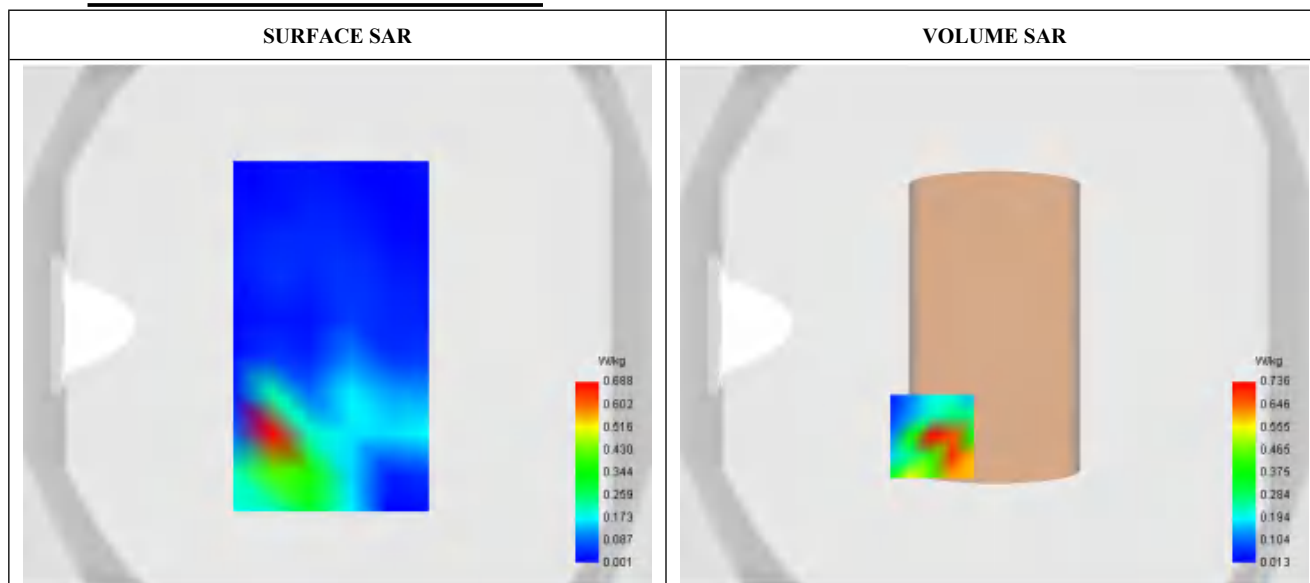
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels/Frequency	Middle (661)/ frequency 1880.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1880.00
Relative permittivity (real part)	40.000
Relative permittivity (imaginary part)	13.408
Conductivity (S/m)	1.400

C. SAR Surface and Volume



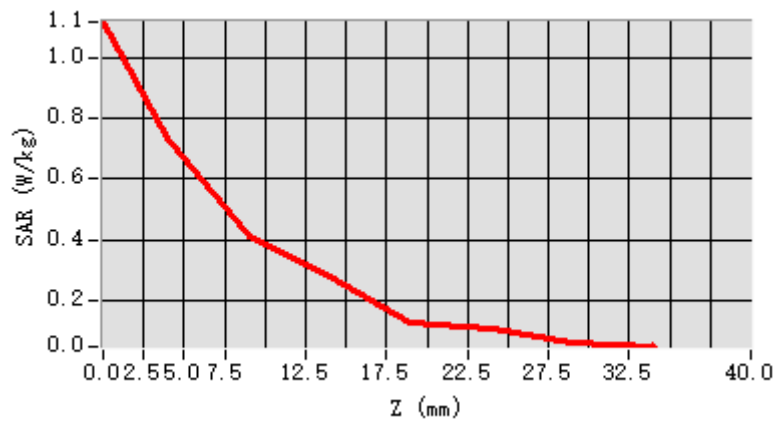
Maximum location: X=-24.00, Y=-43.00 ; SAR Peak: 1.31 W/kg

D. SAR 1g & 10g

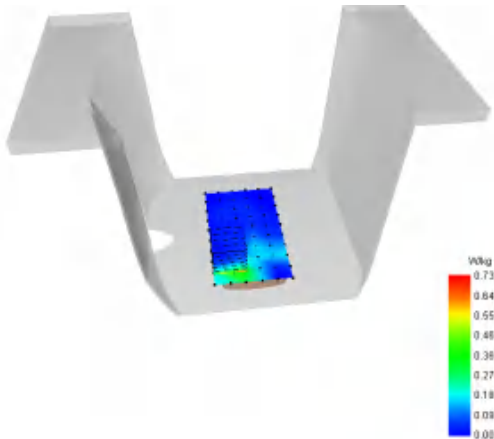
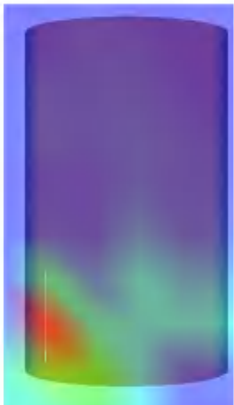
SAR 10g (W/Kg)	0.410
SAR 1g (W/Kg)	0.675
Variation (%)	2.580
Horizontal validation criteria: minimum distance (mm)	8.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	56.250000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.118	0.736	0.414	0.281	0.128	0.108	0.058



F. 3D Image

3D screen shot	Hot spot position
	

#31

Date of measurement: 1/4/2026

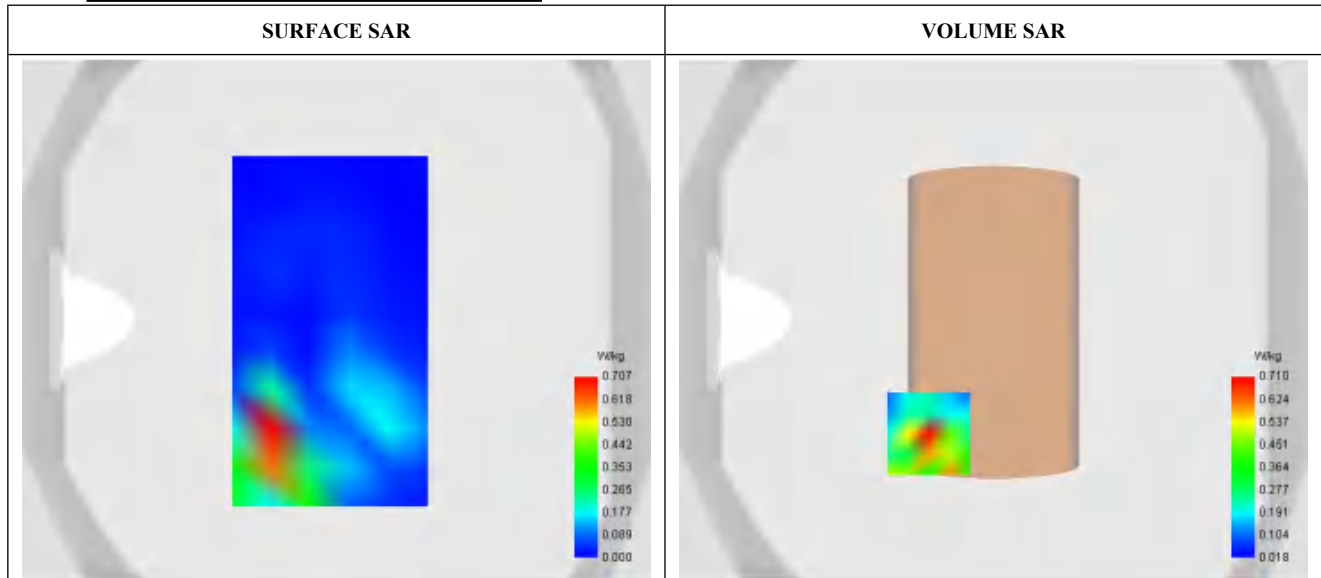
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	Band 2 (1900)
Channels/Frequency	Middle (9400)/ frequency 1880.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1880.00
Relative permittivity (real part)	40.000
Relative permittivity (imaginary part)	13.408
Conductivity (S/m)	1.400

C. SAR Surface and Volume



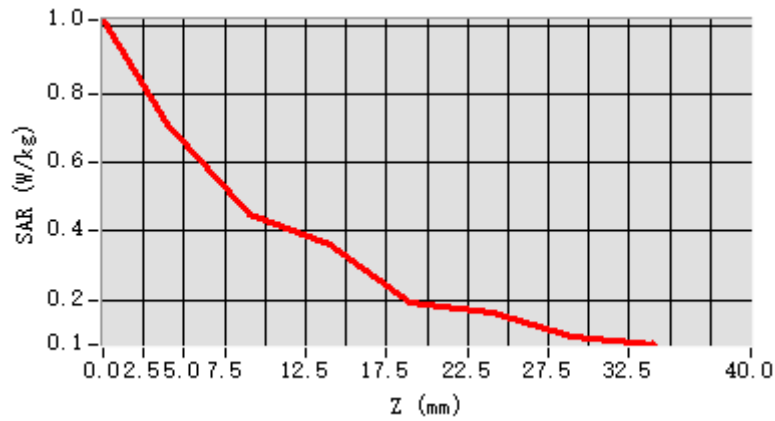
Maximum location: X=-25.00, Y=-44.00 ; SAR Peak: 1.05 W/kg

D. SAR 1g & 10g

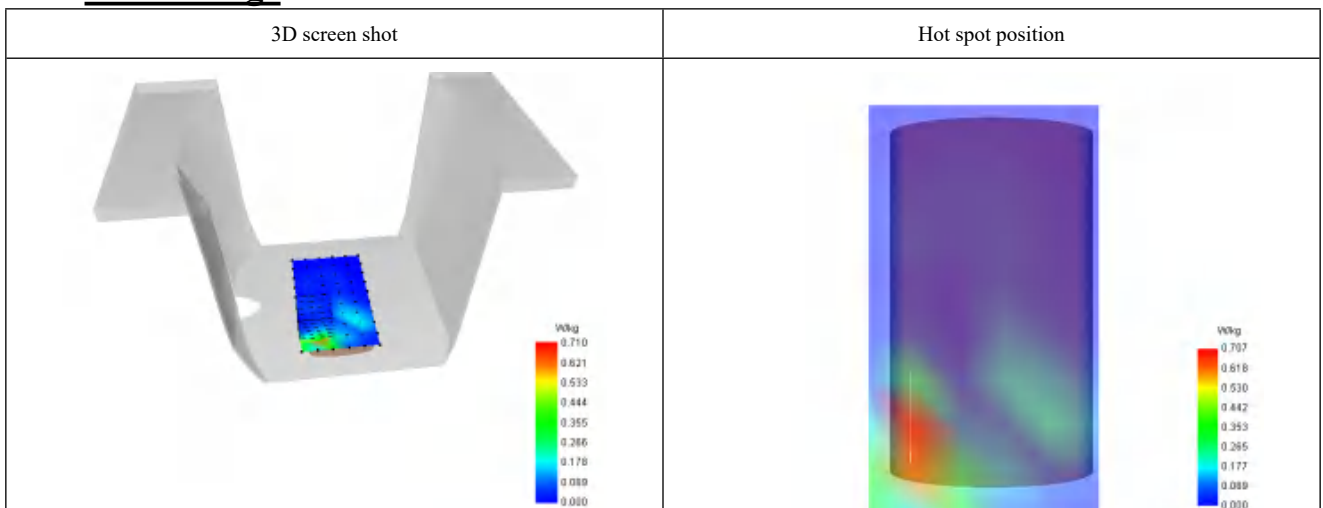
SAR 10g (W/Kg)	0.412
SAR 1g (W/Kg)	0.650
Variation (%)	1.580
Horizontal validation criteria: minimum distance (mm)	8.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	62.957746

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.015	0.710	0.447	0.362	0.194	0.162	0.091



F. 3D Image



#32

Date of measurement: 31/3/2026

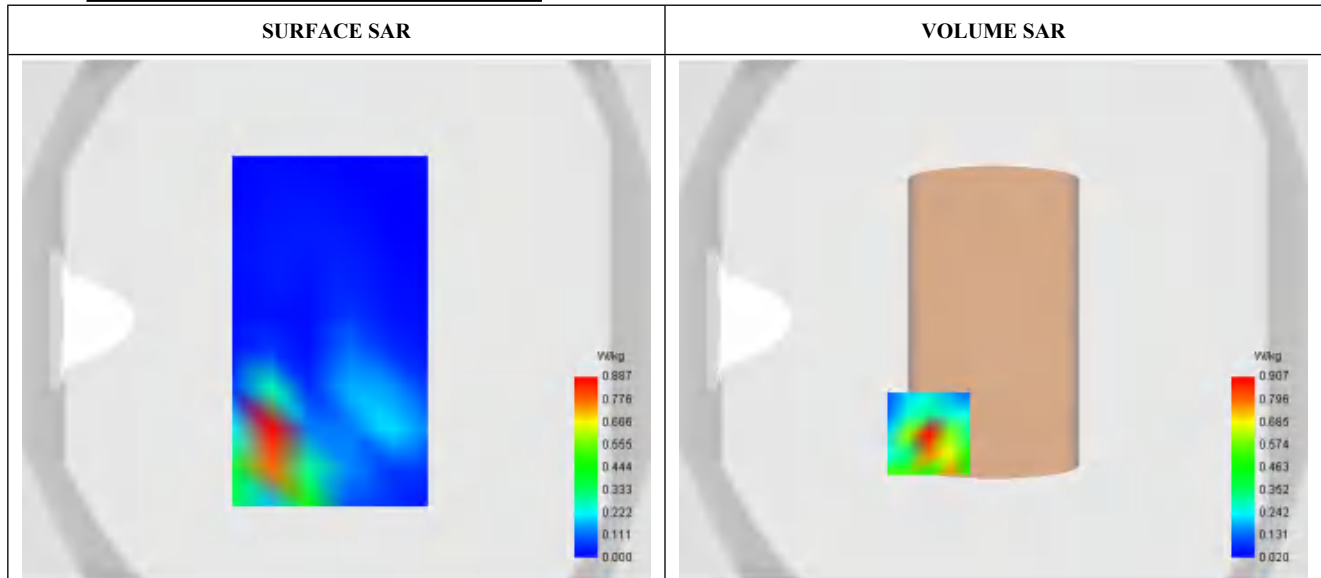
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	Band 4 (1700)
Channels/Frequency	Middle (1412)/ frequency 1732.60 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1732.60
Relative permittivity (real part)	40.116
Relative permittivity (imaginary part)	14.136
Conductivity (S/m)	1.361

C. SAR Surface and Volume



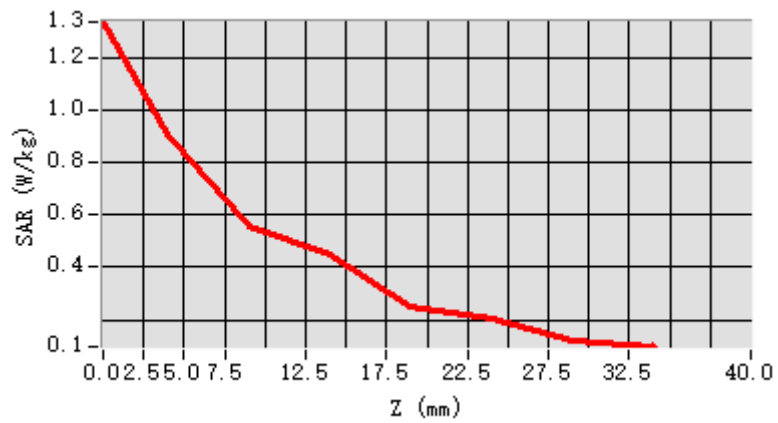
Maximum location: X=-25.00, Y=-44.00 ; SAR Peak: 1.41 W/kg

D. SAR 1g & 10g

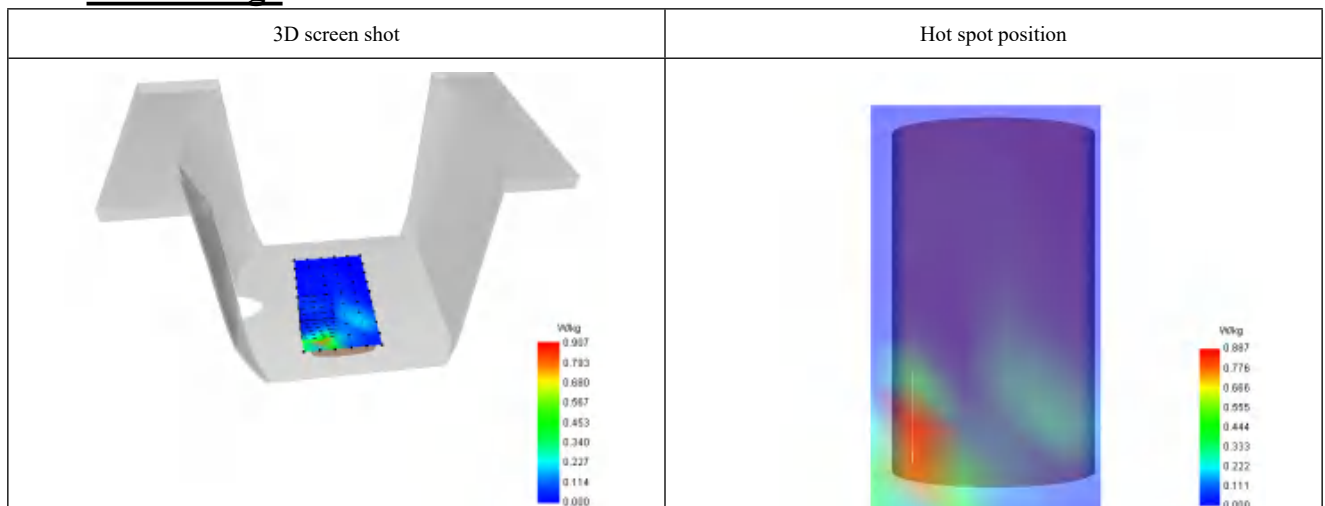
SAR 10g (W/Kg)	0.575
SAR 1g (W/Kg)	0.800
Variation (%)	1.500
Horizontal validation criteria: minimum distance (mm)	8.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	61.300992

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.337	0.907	0.556	0.446	0.247	0.206	0.119



F. 3D Image



#33

Date of measurement: 30/3/2026

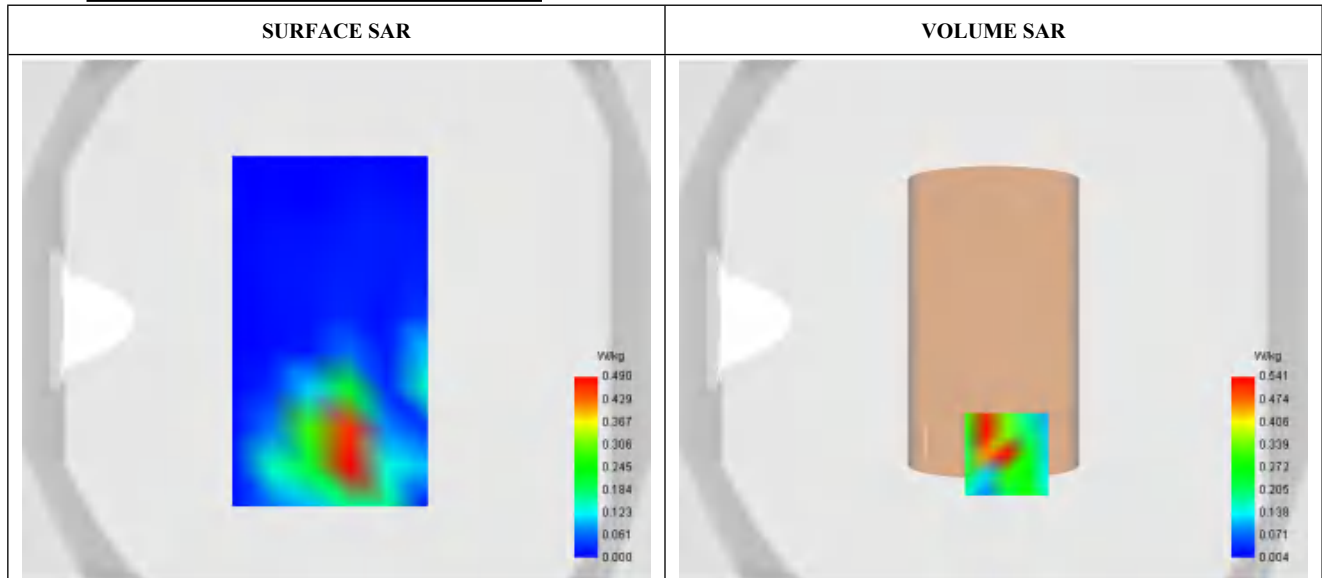
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	1.66
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	Band 5 (850)
Channels/Frequency	Middle (4182)/ frequency 836.40 Mhz

B. Permittivity

Middle TX Frequency (MHz)	836.40
Relative permittivity (real part)	41.500
Relative permittivity (imaginary part)	19.400
Conductivity (S/m)	0.901

C. SAR Surface and Volume



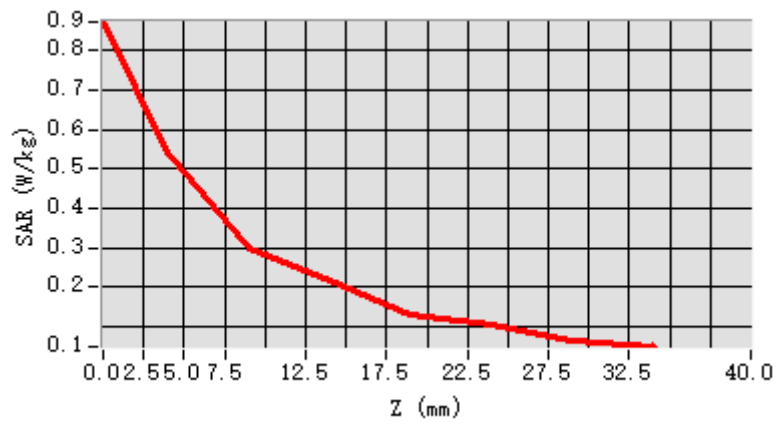
Maximum location: X=5.00, Y=-52.00 ; SAR Peak: 1.03 W/kg

D. SAR 1g & 10g

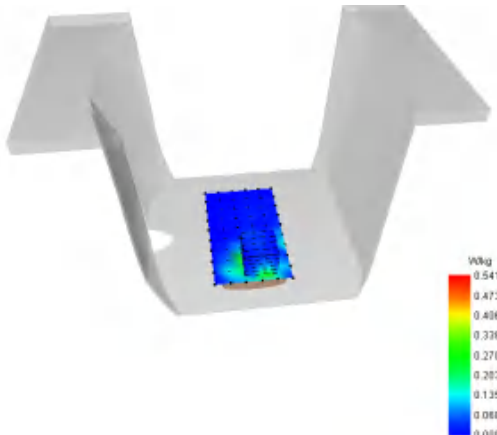
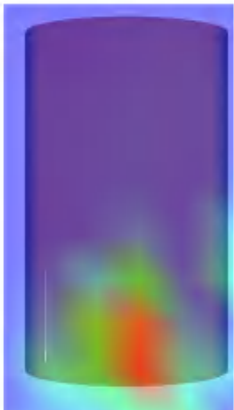
SAR 10g (W/Kg)	0.275
SAR 1g (W/Kg)	0.500
Variation (%)	2.500
Horizontal validation criteria: minimum distance (mm)	11.313708
Vertical validation criteria: SAR ratio M2/M1 (%)	55.637708

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.873	0.541	0.301	0.218	0.132	0.105	0.063



F. 3D Image

3D screen shot	Hot spot position
	

#34

Date of measurement: 2/4/2026

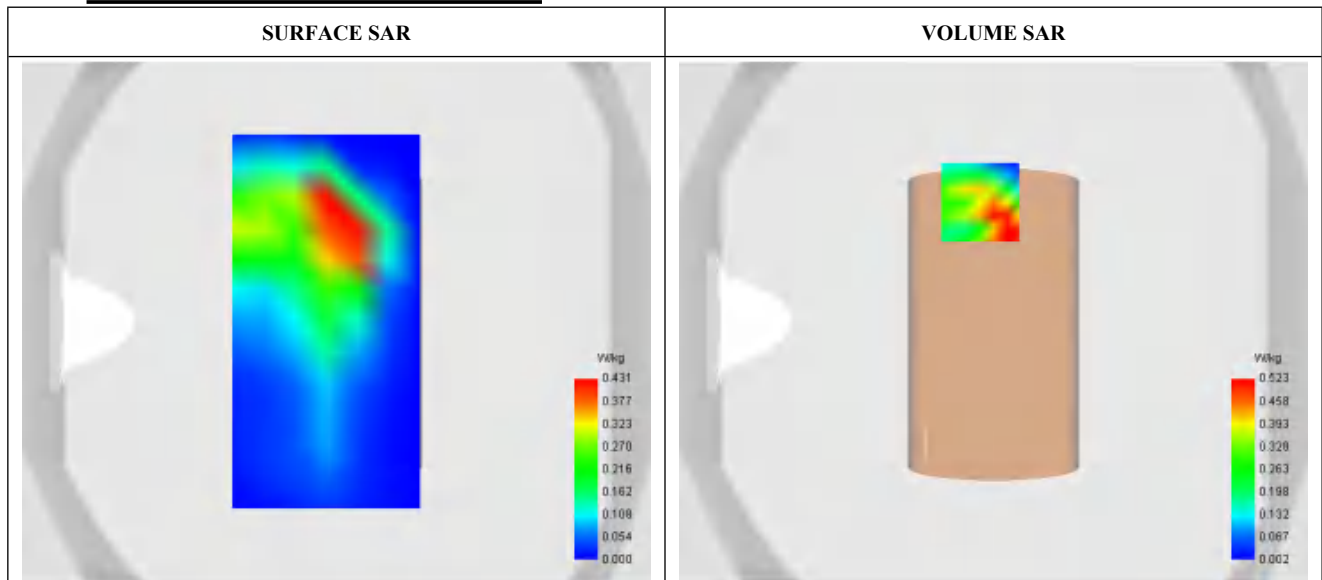
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.38
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



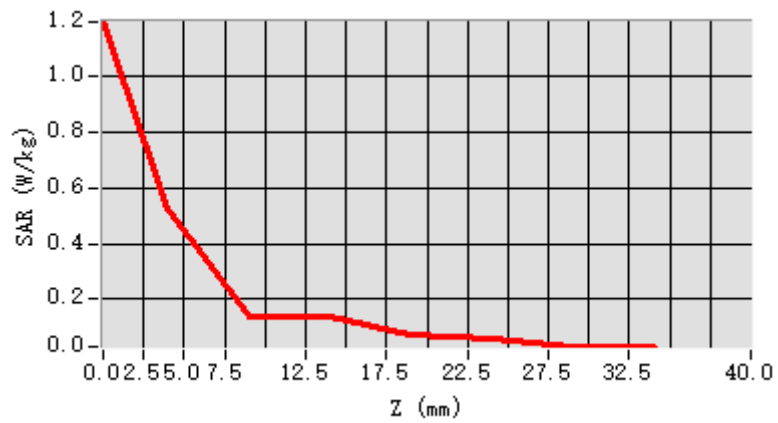
Maximum location: X=-5.00, Y=46.00 ; SAR Peak: 0.93 W/kg

D. SAR 1g & 10g

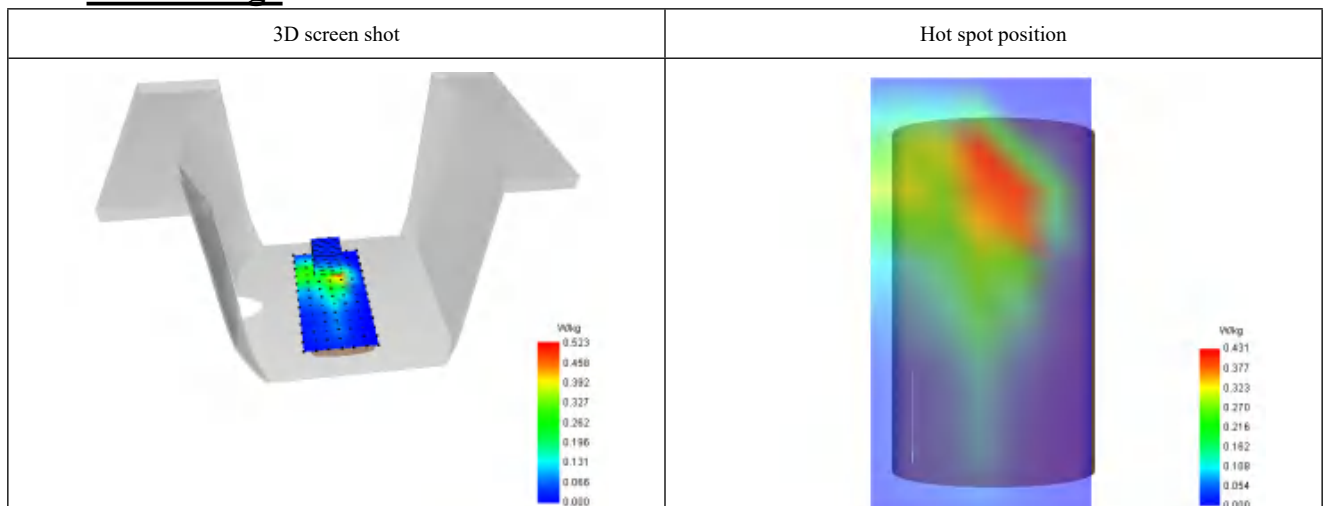
SAR 10g (W/Kg)	0.308
SAR 1g (W/Kg)	0.430
Variation (%)	1.020
Horizontal validation criteria: minimum distance (mm)	15.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	32.860520

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.193	0.423	0.139	0.139	0.075	0.059	0.033



F. 3D Image



#35

Date of measurement: 2/4/2026

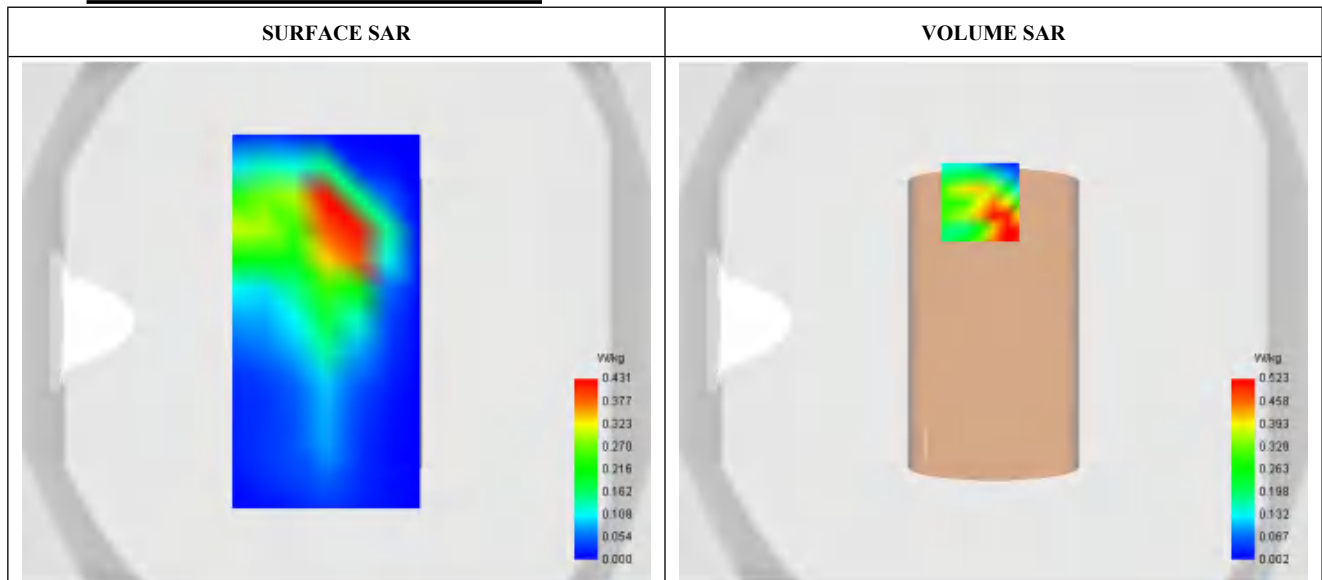
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.38
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
Channels/Frequency	Low (0)/ frequency 2402.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	2402.00
Relative permittivity (real part)	39.216
Relative permittivity (imaginary part)	13.210
Conductivity (S/m)	1.762

C. SAR Surface and Volume



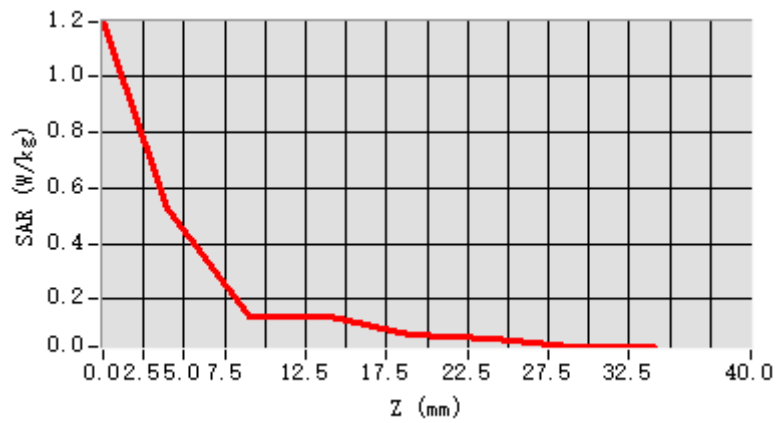
Maximum location: X=-5.00, Y=46.00 ; SAR Peak: 0.93 W/kg

D. SAR 1g & 10g

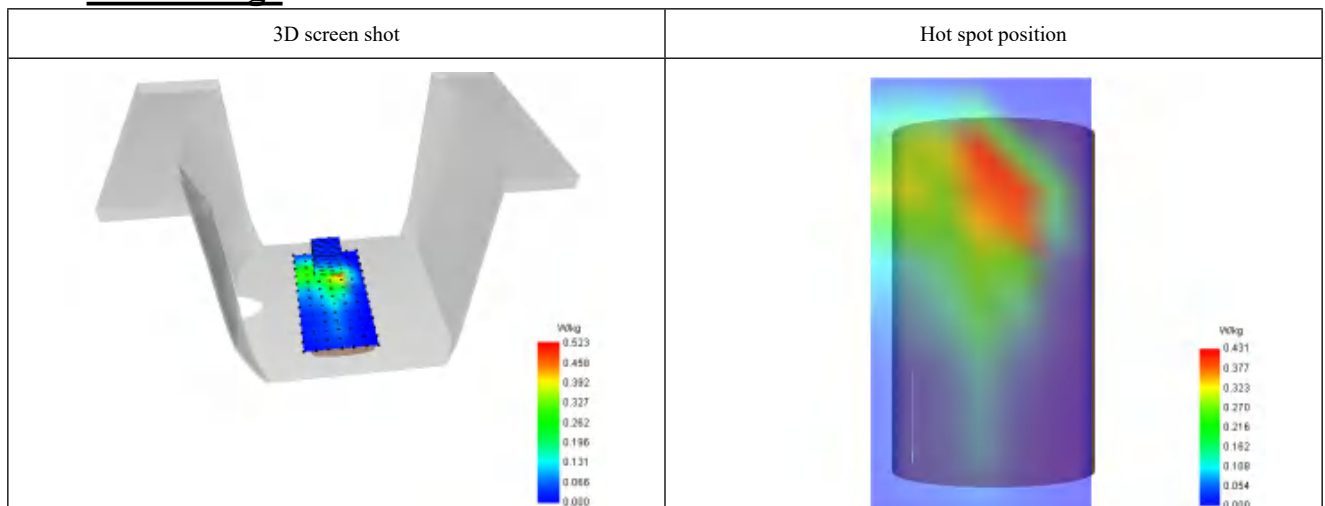
SAR 10g (W/Kg)	0.300
SAR 1g (W/Kg)	0.412
Variation (%)	1.000
Horizontal validation criteria: minimum distance (mm)	15.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	32.304038

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.191	0.421	0.136	0.138	0.073	0.057	0.031



F. 3D Image



#36

Date of measurement: 1/4/2026

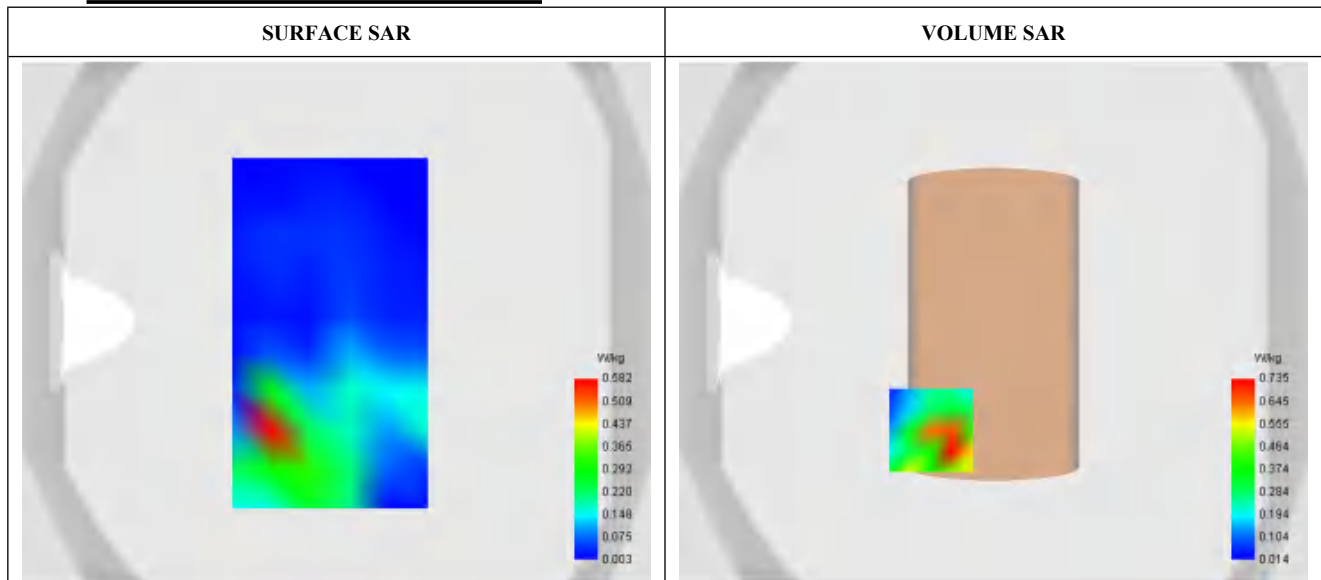
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 2
Channel Center [EARFCN] / Channel Center [MHz]	Middle (18900)/ frequency 1880.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1880.00
Relative permittivity (real part)	40.000
Relative permittivity (imaginary part)	13.408
Conductivity (S/m)	1.400

C. SAR Surface and Volume



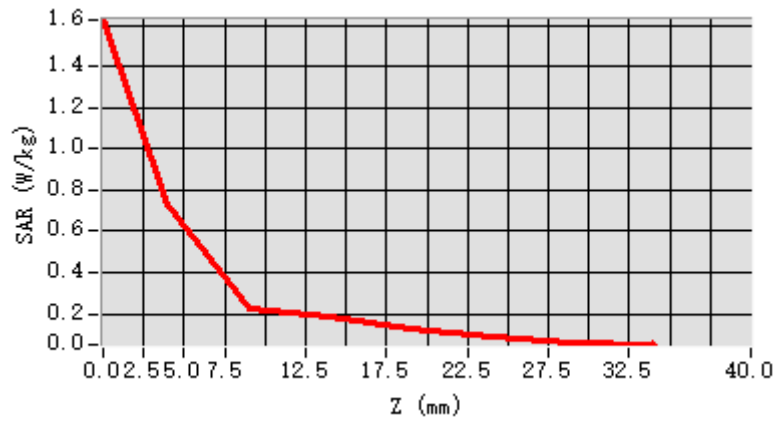
Maximum location: X=-24.00, Y=-42.00 ; SAR Peak: 1.27 W/kg

D. SAR 1g & 10g

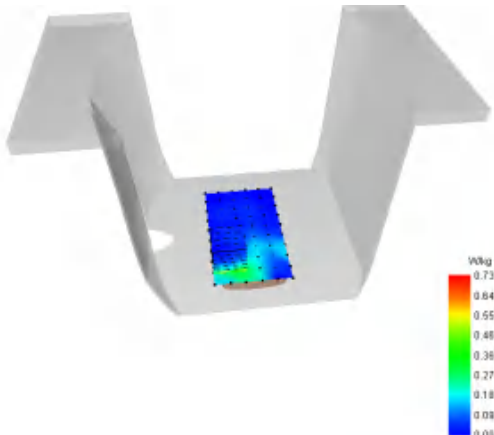
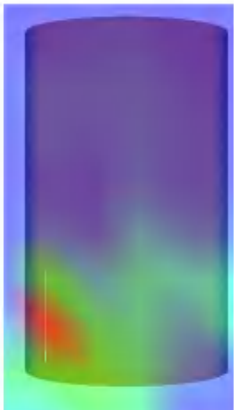
SAR 10g (W/Kg)	0.500
SAR 1g (W/Kg)	0.675
Variation (%)	2.050
Horizontal validation criteria: minimum distance (mm)	16.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	30.884354

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.627	0.735	0.227	0.185	0.125	0.092	0.057



F. 3D Image

3D screen shot	Hot spot position
	

#37

Date of measurement: 31/3/2026

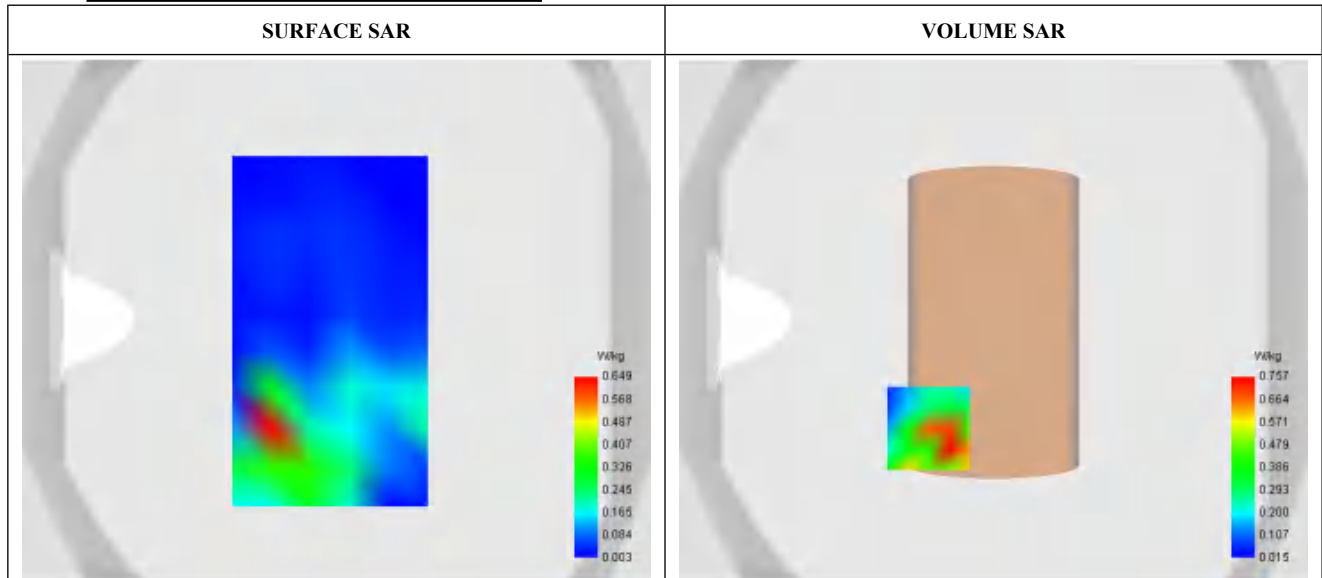
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 4
Channel Center [EARFCN] / Channel Center [MHz]	Middle (20175)/ frequency 1732.50 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1732.500
Relative permittivity (real part)	40.122
Relative permittivity (imaginary part)	14.153
Conductivity (S/m)	1.362

C. SAR Surface and Volume



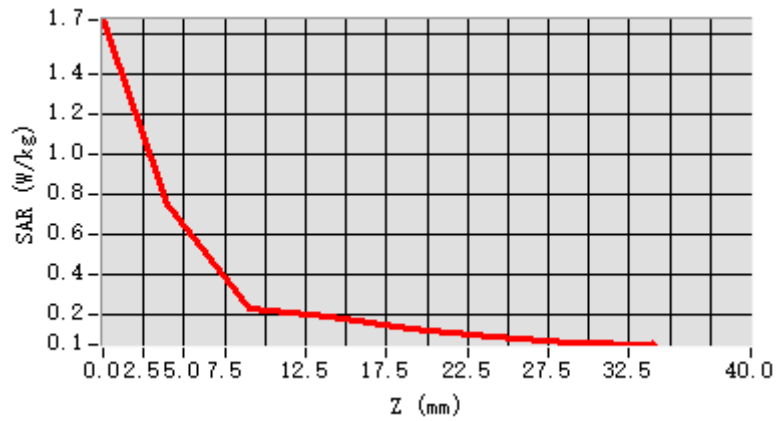
Maximum location: X=-25.00, Y=-42.00 ; SAR Peak: 1.30 W/kg

D. SAR 1g & 10g

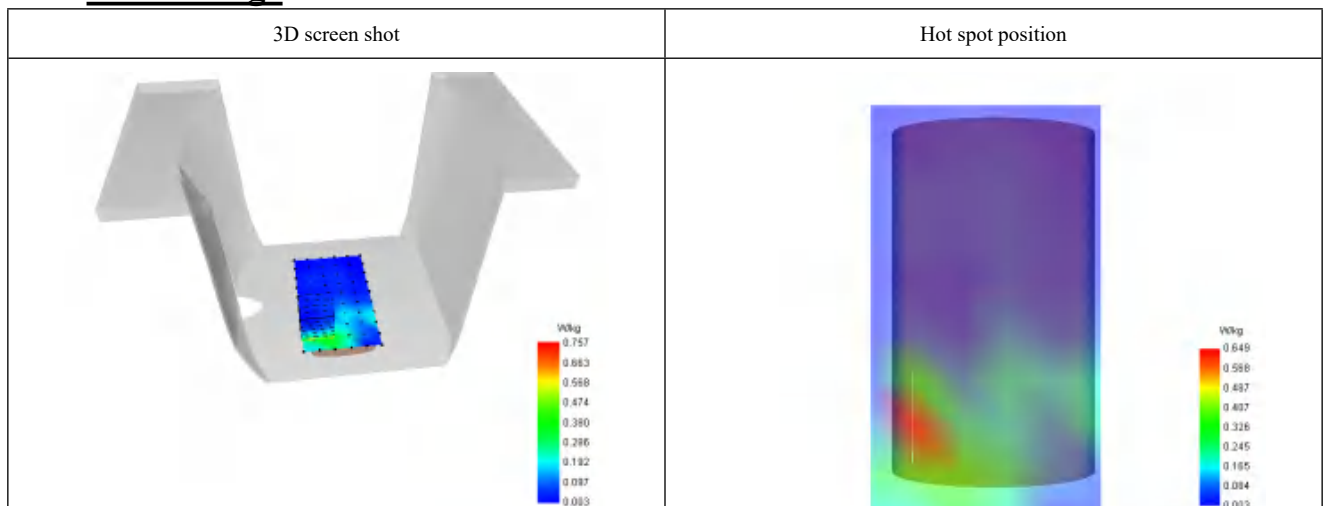
SAR 10g (W/Kg)	0.504
SAR 1g (W/Kg)	0.685
Variation (%)	2.600
Horizontal validation criteria: minimum distance (mm)	16.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	31.175694

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.673	0.757	0.236	0.194	0.134	0.099	0.064



F. 3D Image



#38

Date of measurement: 30/3/2026

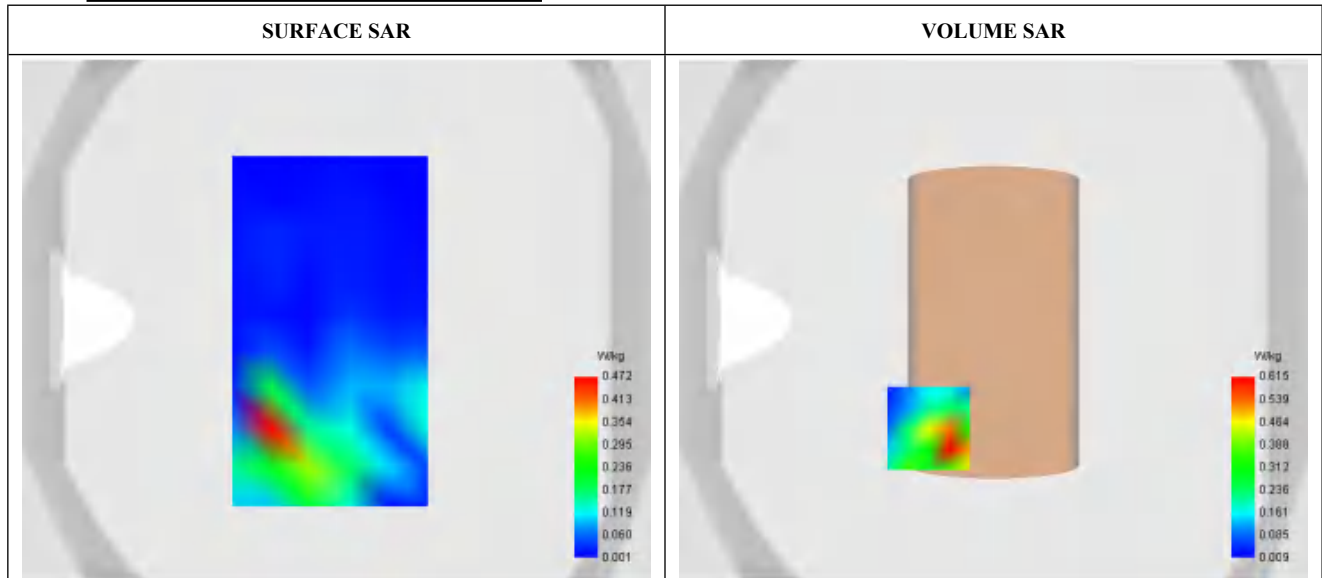
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	1.66
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 5
Channel Center [EARFCN] / Channel Center [MHz]	Middle (20525)/ frequency 836.50 Mhz

B. Permittivity

Middle TX Frequency (MHz)	836.500
Relative permittivity (real part)	41.501
Relative permittivity (imaginary part)	19.407
Conductivity (S/m)	0.902

C. SAR Surface and Volume



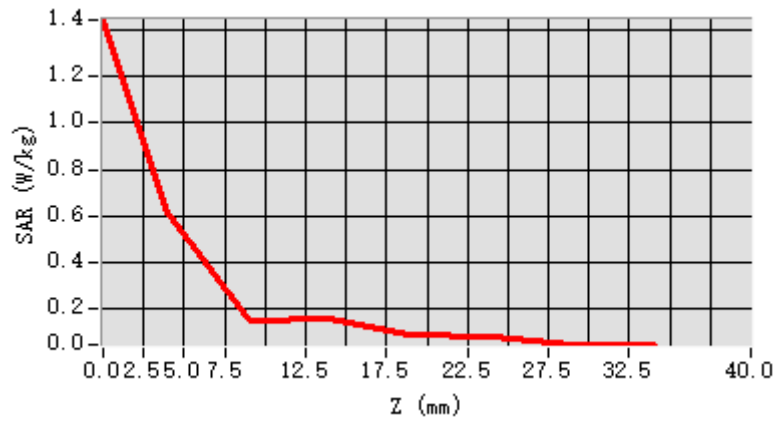
Maximum location: X=-25.00, Y=-42.00 ; SAR Peak: 1.13 W/kg

D. SAR 1g & 10g

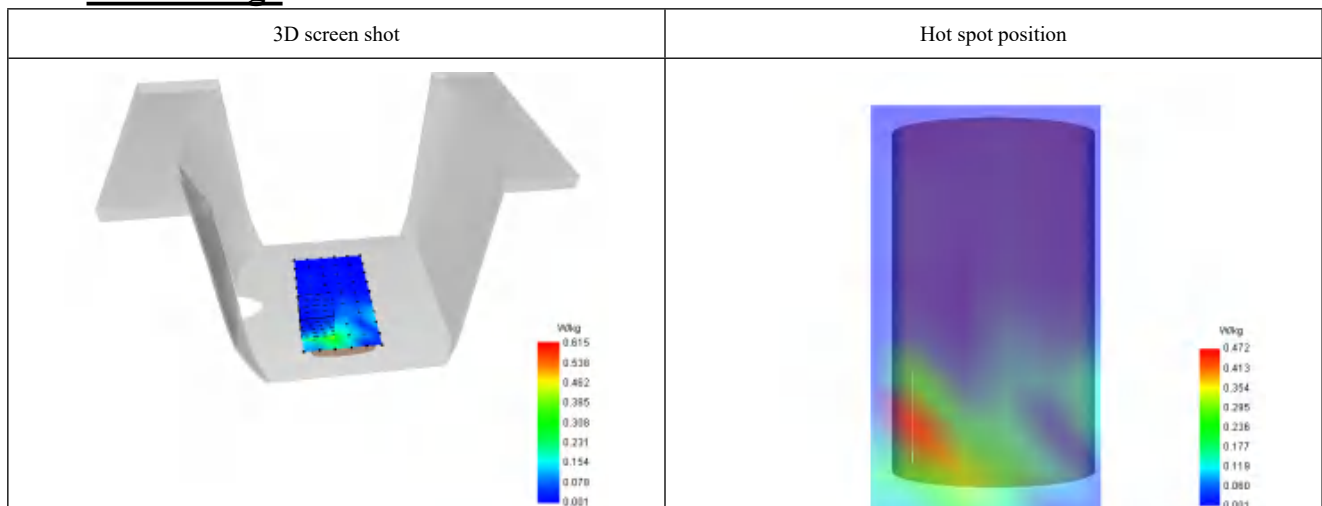
SAR 10g (W/Kg)	0.400
SAR 1g (W/Kg)	0.512
Variation (%)	0.870
Horizontal validation criteria: minimum distance (mm)	8.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	30.101010

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.445	0.495	0.149	0.160	0.086	0.081	0.043



F. 3D Image



#39

Date of measurement: 28/3/2026

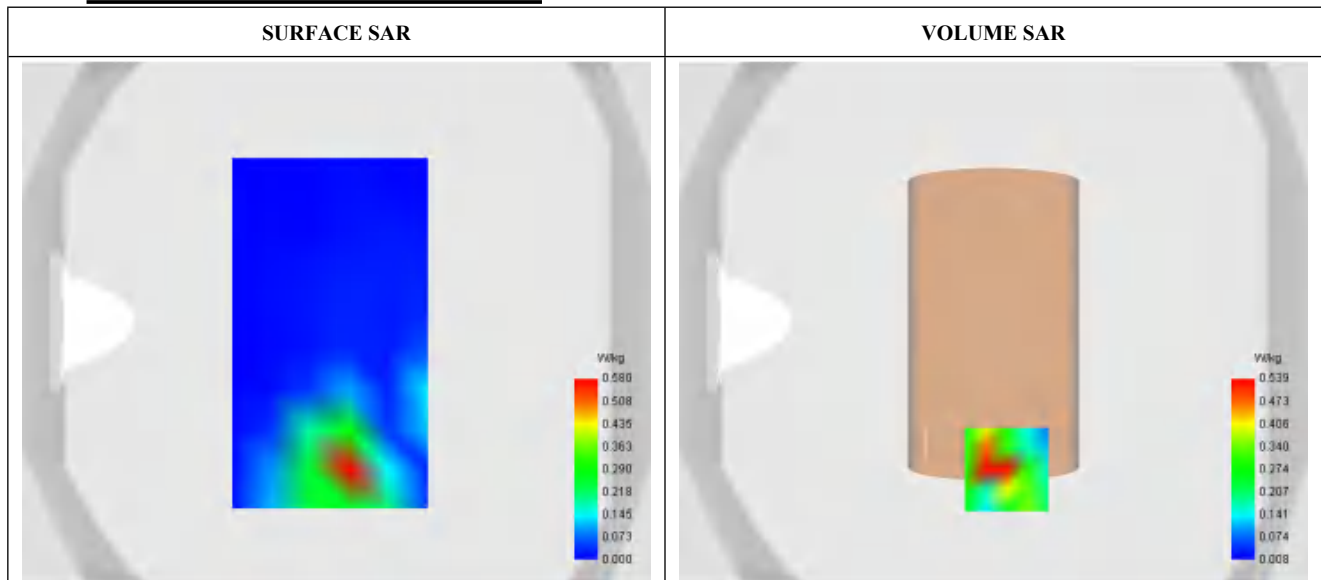
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	1.65
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 12
Channel Center [EARFCN] / Channel Center [MHz]	Middle (23095)/ frequency 707.50 Mhz

B. Permittivity

Middle TX Frequency (MHz)	707.500
Relative permittivity (real part)	42.136
Relative permittivity (imaginary part)	23.345
Conductivity (S/m)	0.918

C. SAR Surface and Volume



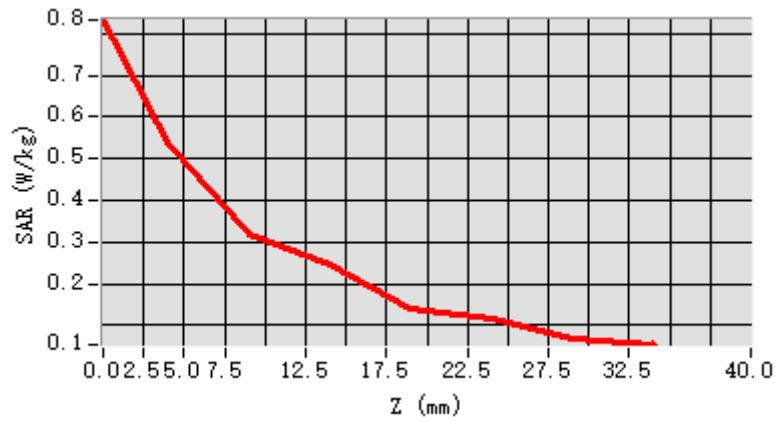
Maximum location: X=5.00, Y=-57.00 ; SAR Peak: 1.02 W/kg

D. SAR 1g & 10g

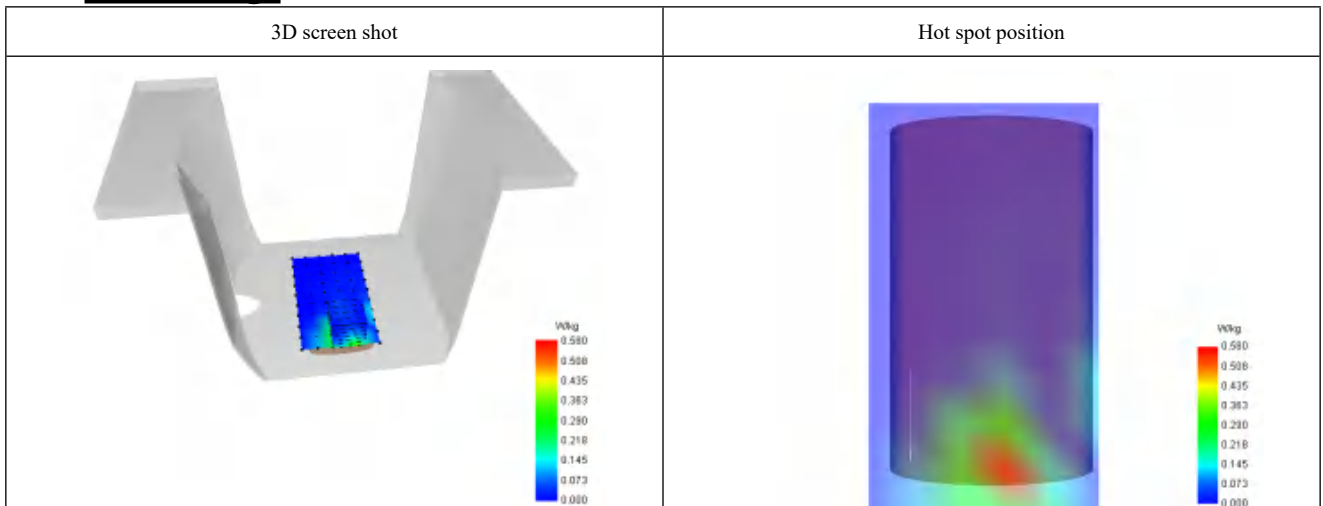
SAR 10g (W/Kg)	0.401
SAR 1g (W/Kg)	0.530
Variation (%)	3.020
Horizontal validation criteria: minimum distance (mm)	11.313708
Vertical validation criteria: SAR ratio M2/M1 (%)	58.627087

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.833	0.539	0.316	0.244	0.140	0.116	0.068



F. 3D Image



#40

Date of measurement: 28/3/2026

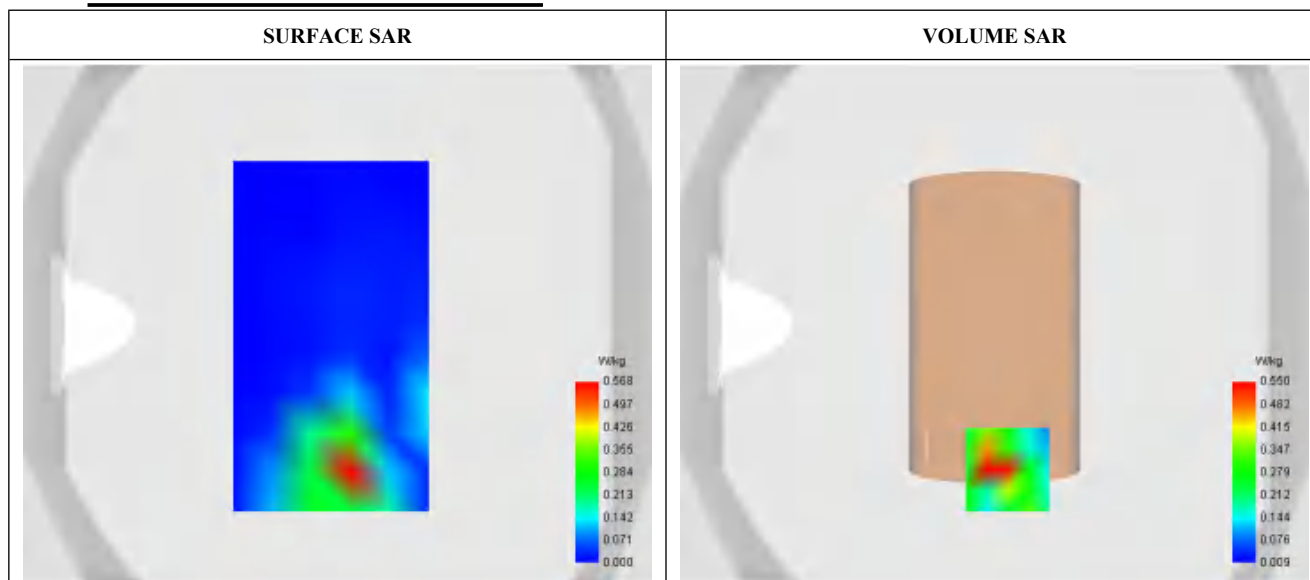
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	1.65
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 17
Channel Center [EARFCN] / Channel Center [MHz]	Middle (23790)/ frequency 710.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	710.000
Relative permittivity (real part)	42.123
Relative permittivity (imaginary part)	23.233
Conductivity (S/m)	0.916

C. SAR Surface and Volume



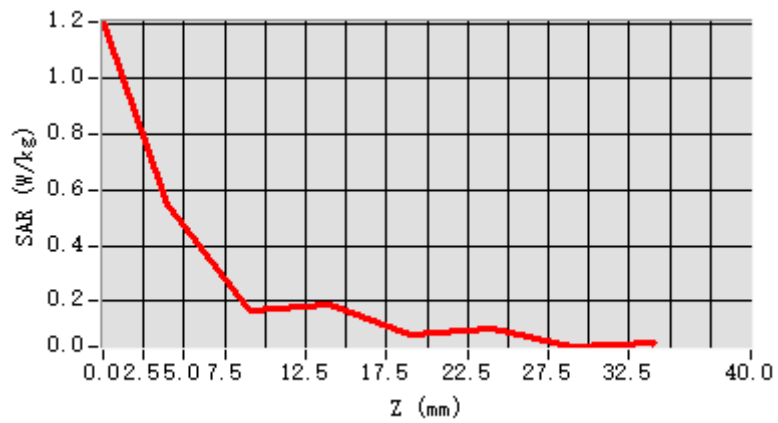
Maximum location: X=5.00, Y=-56.00 ; SAR Peak: 1.06 W/kg

D. SAR 1g & 10g

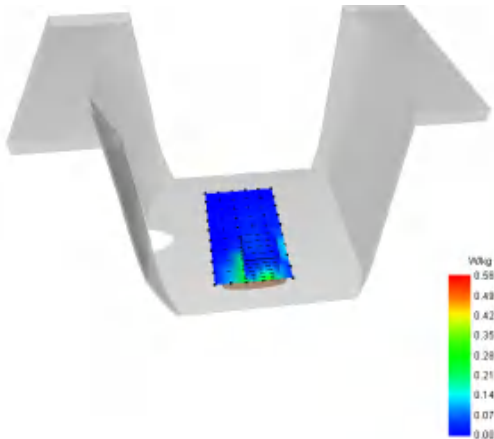
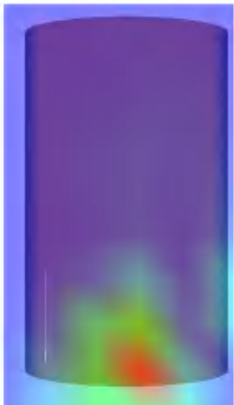
SAR 10g (W/Kg)	0.405
SAR 1g (W/Kg)	0.535
Variation (%)	1.020
Horizontal validation criteria: minimum distance (mm)	8.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	30.727273

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.205	0.550	0.169	0.190	0.078	0.099	0.036



F. 3D Image

3D screen shot	Hot spot position
	

#41

Date of measurement: 10/4/2026

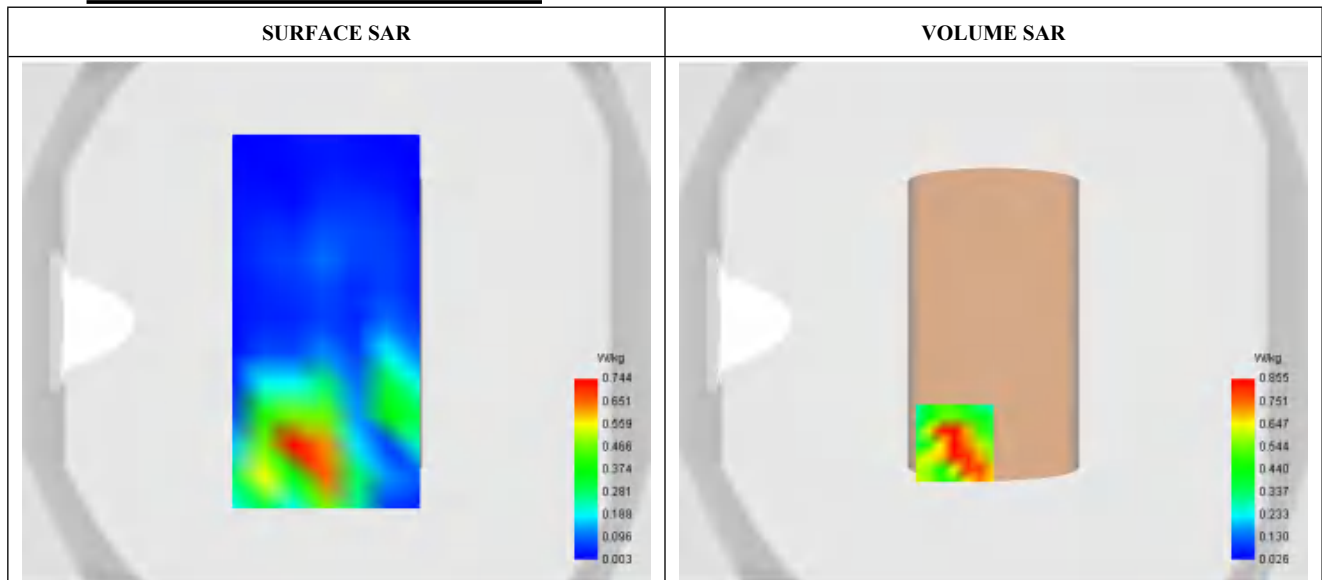
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.35
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	LTE band 41
Channel Center [EARFCN] / Channel Center [MHz]	Middle (40740)/ frequency 2605.000 Mhz

B. Permittivity

Middle TX Frequency (MHz)	2605.000
Relative permittivity (real part)	39.018
Relative permittivity (imaginary part)	13.539
Conductivity (S/m)	1.959

C. SAR Surface and Volume



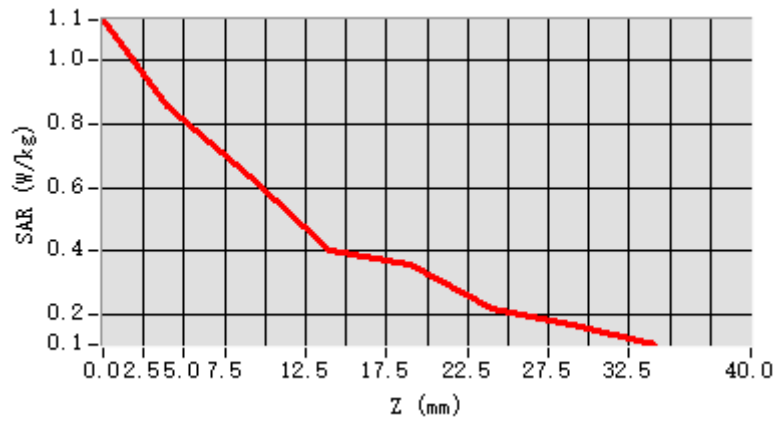
Maximum location: X=-15.00, Y=-47.00 ; SAR Peak: 1.20 W/kg

D. SAR 1g & 10g

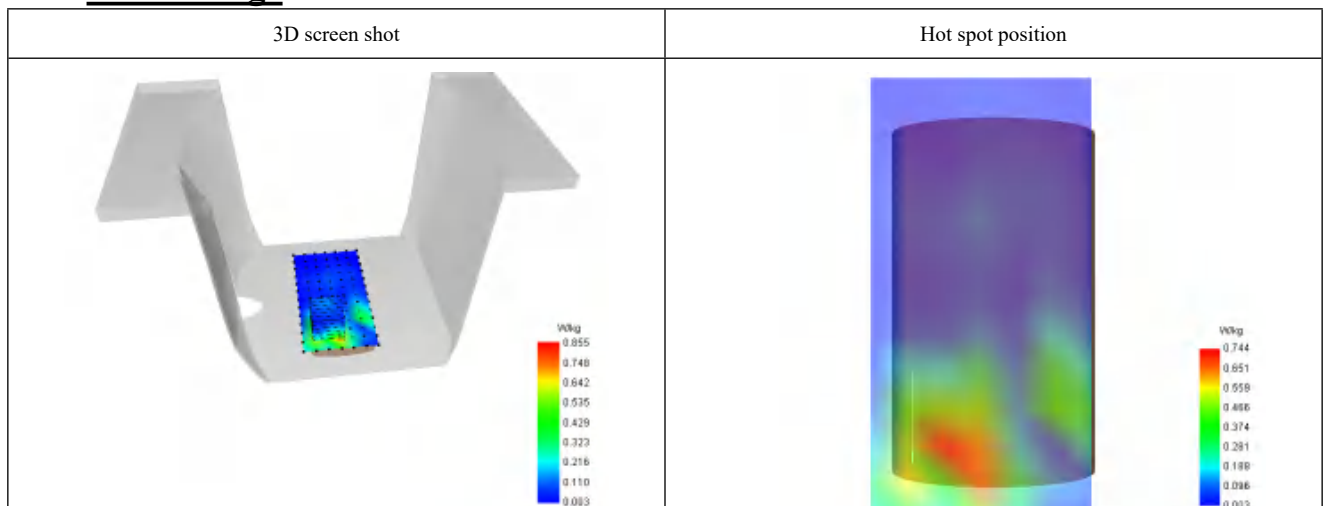
SAR 10g (W/Kg)	0.522
SAR 1g (W/Kg)	0.710
Variation (%)	1.000
Horizontal validation criteria: minimum distance (mm)	14.142136
Vertical validation criteria: SAR ratio M2/M1 (%)	73.918129

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.127	0.855	0.632	0.403	0.355	0.218	0.165



F. 3D Image



#42

Date of measurement: 31/3/2026

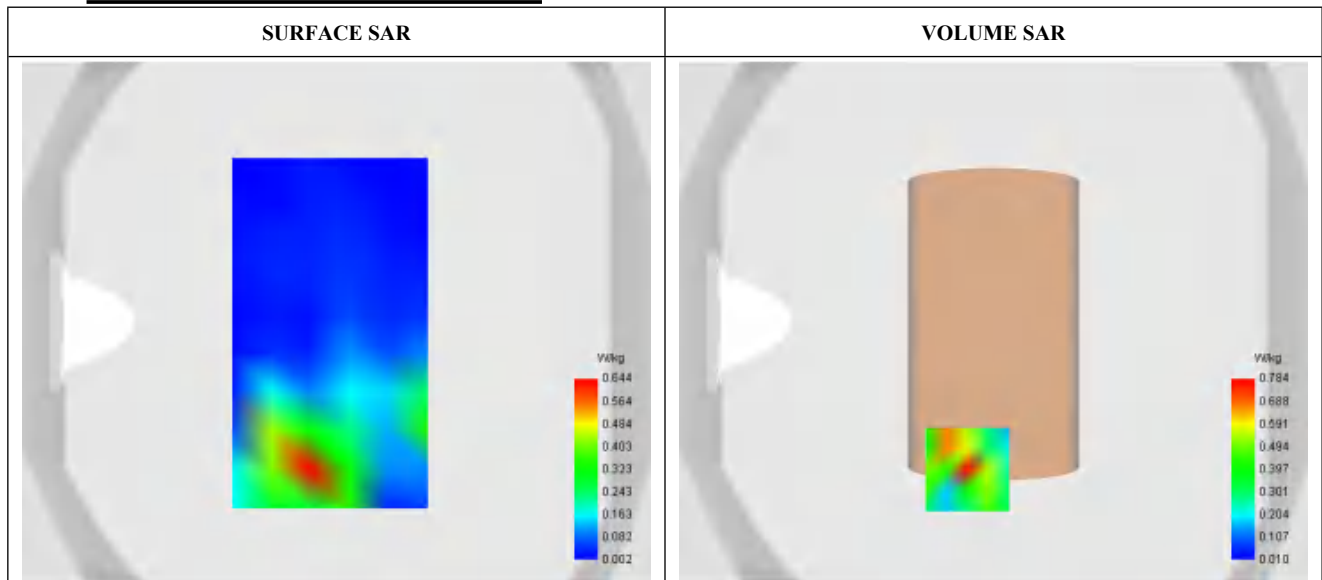
A. Experimental conditions.

Probe	0523-EPGO-403
ConvF	2.05
Area Scan	dx=15mm dy=15mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 66
Channel Center [EARFCN] / Channel Center [MHz]	Middle (132322)/ frequency 1745.00 Mhz

B. Permittivity

Middle TX Frequency (MHz)	1745.000
Relative permittivity (real part)	40.110
Relative permittivity (imaginary part)	14.120
Conductivity (S/m)	1.369

C. SAR Surface and Volume



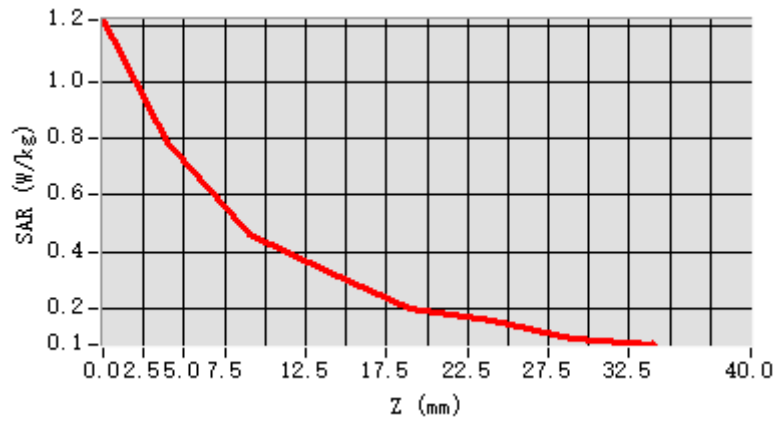
Maximum location: X=-10.00, Y=-57.00 ; SAR Peak: 1.22 W/kg

D. SAR 1g & 10g

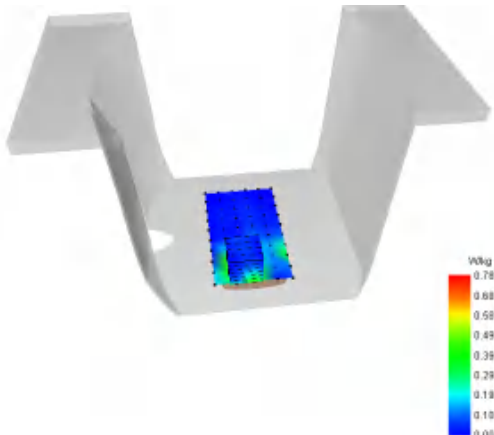
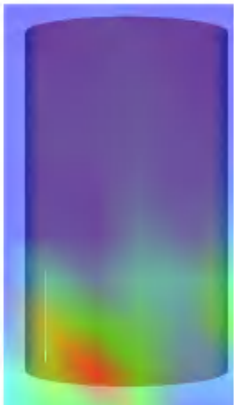
SAR 10g (W/Kg)	0.477
SAR 1g (W/Kg)	0.650
Variation (%)	1.500
Horizontal validation criteria: minimum distance (mm)	11.313708
Vertical validation criteria: SAR ratio M2/M1 (%)	58.673469

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.220	0.784	0.460	0.329	0.202	0.156	0.093



F. 3D Image

3D screen shot	Hot spot position
	

Appendix D. Calibration Certificate

Table of contents
E Field Probe - EPGO0523-403
750 MHz Dipole - SN 03/15 DIP 0G750-355
835 MHz Dipole - SN 03/15 DIP 0G835-347
1800 MHz Dipole - SN 03/15 DIP 1G800-349
1900 MHz Dipole - SN 03/15 DIP 1G900-350
2450 MHz Dipole - SN 03/15 DIP 2G450-352
2600 MHz Dipole - SN 03/15 DIP 2G600-356



COMOSAR E-Field Probe Calibration Report

Ref : ACR.307.3.25.BES.A

**GUANGDONG ASIA HONGKE TEST
TECHNOLOGY CO., LTD**
NO.1/F,BUILDING B1, JUNFENG INDUSTRIAL PARK,
CHONGQING ROAD, HEPING COMMUNITY,
FUHAIHAI STREET, BAO'AN DISTRICT,SHENZHEN,
GUANGDONG 518055, P.R.CHINA
MVG COMOSAR DOSIMETRIC E-FIELD PROBE
SERIAL NO.: SN 39/21 EPG00523-403

Calibrated at MVG
Z.I. de la pointe du diable
Technopôle Brest Iroise – 295 avenue Alexis de Rochon
29280 PLOUZANE - FRANCE

Calibration date: 09/09/2025



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

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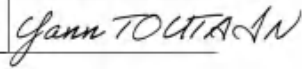
Summary:

This document presents the method and results from an accredited COMOSAR 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).



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.307.3.24.BES.A

	Name	Function	Date	Signature
Prepared by :	Jérôme Le Gall	Measurement Responsible	09/08/2025	
Checked by :	Jérôme Luc	Technical Manager	09/08/2025	
Approved by :	Yann Toutain	Laboratory Director	09/09/2025	

	Customer Name
Distribution :	Shenzhen Asia Hongke

Issue	Name	Date	Modifications
A	Jérôme Luc	9/09/2025	Initial release



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR 307 3.24 BES A

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COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.307.3.24.BES.A

1 DEVICE UNDER TEST

Device Under Test	
Device Type	COMOSAR DOSIMETRIC E FIELD PROBE
Manufacturer	MVG
Model	SSE2
Serial Number	SN 39/21 EPGO0523-403
Product Condition (new / used)	New
Frequency Range of Probe	0.15 GHz-6GHz
Resistance of Three Dipoles at Connector	Dipole 1: R1=0.199 M Ω Dipole 2: R2=0.218 M Ω Dipole 3: R3=0.210 M Ω

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 affect. All calibrations / measurements performed meet the fore mentioned standards.

3.1 LINEARITY

The evaluation of the linearity was done in free space using the waveguide, performing a power sweep to cover the SAR range 0.01W/kg to 100W/kg.

3.2 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.

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Template_ACR.DDD.N.YY.MVGB.ISSUE COMOSAR Probe vK

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3.3 LOWER DETECTION LIMIT

The lower detection limit was assessed using the same measurement set up as used for the linearity measurement. The required lower detection limit is 10 mW/kg.

3.4 ISOTROPY

The axial isotropy was evaluated by exposing the probe to a reference wave from a standard dipole with the dipole mounted under the flat phantom in the test configuration suggested for system validations and checks. The probe was rotated along its main axis from 0 to 360 degrees in 15-degree steps. The hemispherical isotropy is determined by inserting the probe in a thin plastic box filled with tissue-equivalent liquid, with the plastic box illuminated with the fields from a half wave dipole. The dipole is rotated about its axis (0°–180°) in 15° increments. At each step the probe is rotated about its axis (0°–360°).

3.1 BOUNDARY EFFECT

The boundary effect is defined as the deviation between the SAR measured data and the expected exponential decay in the liquid when the probe is oriented normal to the interface. To evaluate this effect, the liquid filled flat phantom is exposed to fields from either a reference dipole or waveguide. With the probe normal to the phantom surface, the peak spatial average SAR is measured and compared to the analytical value at the surface.

The boundary effect uncertainty can be estimated according to the following uncertainty approximation formula based on linear and exponential extrapolations between the surface and $d_{be} + d_{step}$ along lines that are approximately normal to the surface:

$$SAR_{uncertainty} [\%] = \Delta SAR_{be} \frac{(d_{be} + d_{step})^2 (e^{-d_{be}/\delta})}{2d_{step} \delta/2} \quad \text{for } (d_{be} + d_{step}) < 10 \text{ mm}$$

where

$SAR_{uncertainty}$	is the uncertainty in percent of the probe boundary effect
d_{be}	is the distance between the surface and the closest <i>zoom-scan</i> measurement point, in millimetre
Δ_{step}	is the separation distance between the first and second measurement points that are closest to the phantom surface, in millimetre, assuming the boundary effect at the second location is negligible
δ	is the minimum penetration depth in millimetres of the head tissue-equivalent liquids defined in this standard, i.e., $\delta \approx 14$ mm at 3 GHz;
ΔSAR_{be}	in percent of SAR is the deviation between the measured SAR value, at the distance d_{be} from the boundary, and the analytical SAR value.

The measured worst case boundary effect SARuncertainty[%] for scanning distances larger than 4mm is 1.0% Limit ,2%).



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR 307.3.24.BES.A

4 MEASUREMENT UNCERTAINTY

The guidelines outlined in the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards were followed to generate the measurement uncertainty associated with an E-field probe calibration using the waveguide technique. All uncertainties listed below represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$, traceable to the Internationally Accepted Guides to Measurement Uncertainty.

Uncertainty analysis of the probe calibration in waveguide					
ERROR SOURCES	Uncertainty value (%)	Probability Distribution	Divisor	ci	Standard Uncertainty (%)
Expanded uncertainty 95 % confidence level $k = 2$					14 %

5 CALIBRATION MEASUREMENT RESULTS

Calibration Parameters	
Liquid Temperature	20 +/- 1 °C
Lab Temperature	20 +/- 1 °C
Lab Humidity	30-70 %

5.1 SENSITIVITY IN AIR

Normx dipole 1 ($\mu\text{V}/(\text{V}/\text{m})^2$)	Normy dipole 2 ($\mu\text{V}/(\text{V}/\text{m})^2$)	Normz dipole 3 ($\mu\text{V}/(\text{V}/\text{m})^2$)
1.26	0.87	0.77

DCP dipole 1 (mV)	DCP dipole 2 (mV)	DCP dipole 3 (mV)
113	108	113

Calibration curves $e_i=f(V)$ ($i=1,2,3$) allow to obtain E-field value using the formula:

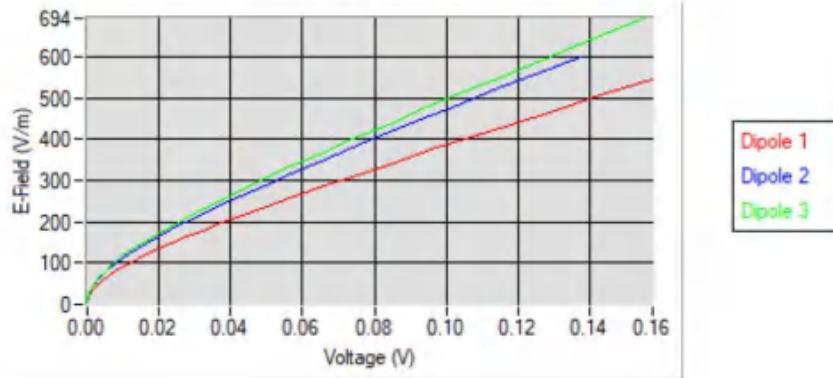
$$E = \sqrt{E_1^2 + E_2^2 + E_3^2}$$



COMOSAR E-FIELD PROBE CALIBRATION REPORT

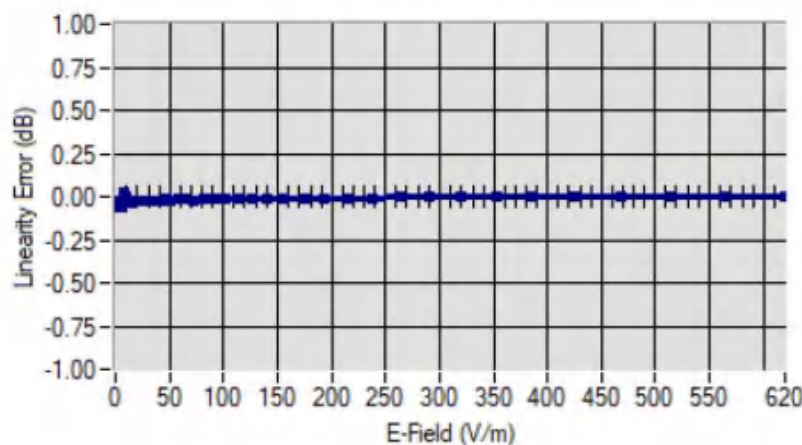
Ref: ACR 307.3.24.BES.A

Calibration curves



5.2 LINEARITY

Linearity



Linearity: +/-1.42% (+/-0.06dB)



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR 307 3.24 BES A

5.3 SENSITIVITY IN LIQUID

Liquid	Frequency (MHz +/- 100MHz)	ConvF
HL600	600	1.62
HL750	750	1.65
HL850	835	1.66
HL900	900	1.77
HL1500	1500	2.09
HL1750	1750	2.09
HL1800	1800	2.05
HL1900	1900	2.05
HL2000	2000	2.41
HL2100	2100	2.36
HL2300	2300	2.55
HL2450	2450	2.38
HL2600	2600	2.35
HL3300	3300	2.04
HL3500	3500	1.98
HL3700	3700	2.11
HL3900	3900	2.54
HL4200	4200	2.22
HL4600	4600	2.40
HL4900	4900	2.33
HL5200	5200	2.30
HL5400	5400	2.30
HL5600	5600	2.29
HL5800	5800	2.27

LOWER DETECTION LIMIT: 8mW/kg

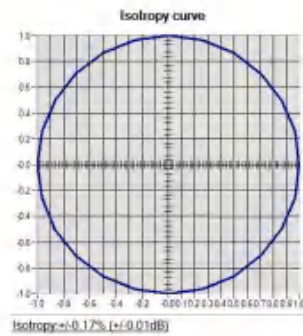


COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.307.3.24.BES.A

5.4 ISOTROPY

HL1800 MHz





COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.307.3.24.BES.A

6 LIST OF EQUIPMENT

Equipment Summary Sheet				
Equipment Description	Manufacturer / Model	Identification No.	Current Calibration Date	Next Calibration Date
CALIPROBE Test Bench	Version 2	NA	Validated. No cal required.	Validated. No cal required.
Network Analyzer	Rohde & Schwarz ZVM	100203	08/2024	08/2027
Network Analyzer	Agilent 8753ES	MY40003210	10/2022	10/2025
Network Analyzer – Calibration kit	Rohde & Schwarz ZV-Z235	101223	05/2024	05/2027
Network Analyzer – Calibration kit	HP 85033D	3423A08186	06/2021	06/2027
Multimeter	Keithley 2000	1160271	02/2024	02/2027
Signal Generator	Rohde & Schwarz SMB	106589	04/2024	04/2027
Amplifier	MVG	MODU-023-C-0002	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Power Meter	NI-USB 5680	170100013	06/2024	06/2027
Power Meter	Rohde & Schwarz NRVD	832839-056	11/2022	11/2025
Directional Coupler	Krytar 158020	131467	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Waveguide	MVG	SN 32/16 WG4_1	Validated. No cal required.	Validated. No cal required.
Liquid transition	MVG	SN 32/16 WGLIQ_0G900_1	Validated. No cal required.	Validated. No cal required.
Waveguide	MVG	SN 32/16 WG6_1	Validated. No cal required.	Validated. No cal required.
Liquid transition	MVG	SN 32/16 WGLIQ_1G500_1	Validated. No cal required.	Validated. No cal required.
Waveguide	MVG	SN 32/16 WG8_1	Validated. No cal required.	Validated. No cal required.
Liquid transition	MVG	SN 32/16 WGLIQ_1G800B_1	Validated. No cal required.	Validated. No cal required.
Liquid transition	MVG	SN 32/16 WGLIQ_1G800H_1	Validated. No cal required.	Validated. No cal required.
Waveguide	MVG	SN 32/16 WG10_1	Validated. No cal required.	Validated. No cal required.
Liquid transition	MVG	SN 32/16 WGLIQ_3G500_1	Validated. No cal required.	Validated. No cal required.

Page: 10/11

Template: ACR.DDD.N.YY.MVGB.ISSUE COMOSAR Probe vK

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COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR 307 3.24 BES A

Waveguide	MVG	SN 32/16 WG12_1	Validated. No cal required.	Validated. No cal required.
Liquid transition	MVG	SN 32/16 WGLIQ_5G000_1	Validated. No cal required.	Validated. No cal required.
Temperature / Humidity Sensor	Testo 184 H1	44225320	06/2024	06/2027



SAR Reference Dipole Calibration Report

Ref : ACR.53.23.24.BES.A

GUANGDONG ASIA HONGKE TEST TECHNOLOGY CO., LTD

NO.1/F,BUILDING B1, JUNFENG INDUSTRIAL PARK,
CHONGQING ROAD, HEPING COMMUNITY ,
FUHAIHAI STREET, BAO'AN DISTRICT,SHENZHEN,
GUANGDONG 518055, P.R.CHINA

MVG COMOSAR REFERENCE DIPOLE

FREQUENCY: 750MHZ

SERIAL NO.: SN 03/15 DIP0G750-355

Calibrated at MVG

Z.I. de la pointe du diable

Technopôle Brest Iroise – 295 avenue Alexis de Rochon

29280 PLOUZANE - FRANCE

Calibration date: 02/21/2024



Accreditations #2-6789 and #2-6814
Scope available on www.cofrac.fr

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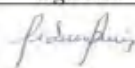
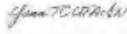
Summary:

This document presents the method and results from an accredited SAR reference dipole calibration performed in MVG using the COMOSAR test bench. All calibration results are traceable to national metrology institutions.



SAR REFERENCE DIPOLE CALIBRATION REPORT

REF: ACR 53 23 24 BES A

	Name	Function	Date	Signature
Prepared by :	Pedro Ruiz	Measurement Responsible	2/22/2024	
Checked & approved by:	Jérôme Luc	Technical Manager	2/22/2024	
Authorized by:	Yann Toutain	Laboratory Director	2/27/2024	

Yann
Toutain ID

Signature
numérique de
Yann Toutain ID
Date: 2024.02.27
08:54:37 +01'00'

	Customer Name
Distribution :	Shenzhen Asia Hongke

Issue	Name	Date	Modifications
A	Pedro Ruiz	2/22/2024	Initial release



SAR REFERENCE DIPOLE CALIBRATION REPORT

REF: ACR 53.23.24 BES A

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7	List of Equipment	8



SAR REFERENCE DIPOLE CALIBRATION REPORT

REF : ACR 53.23.24.BES.A

1 INTRODUCTION

This document contains a summary of the requirements set forth by the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards for reference dipoles used for SAR measurement system validations and the measurements that were performed to verify that the product complies with the fore mentioned standards.

2 DEVICE UNDER TEST

Device Under Test	
Device Type	COMOSAR 750 MHz REFERENCE DIPOLE
Manufacturer	MVG
Model	SID750
Serial Number	SN 03/15DIP0G750-355
Product Condition (new / used)	Used

3 PRODUCT DESCRIPTION

3.1 GENERAL INFORMATION

MVG's COMOSAR Validation Dipoles are built in accordance to the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards. The product is designed for use with the COMOSAR test bench only.



Figure 1 – MVG COMOSAR Validation Dipole



4 MEASUREMENT METHOD

4.1 MECHANICAL REQUIREMENTS

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards specify the mechanical components and dimensions of the validation dipoles, with the dimension's frequency and phantom shell thickness dependent. The COMOSAR test bench employs a 2 mm phantom shell thickness therefore the dipoles sold for use with the COMOSAR test bench comply with the requirements set forth for a 2 mm phantom shell thickness. A direct method is used with a ISO17025 calibrated caliper.

4.2 S11 PARAMETER REQUIREMENTS

The dipole used for SAR system validation measurements and checks must have a S11 of -20 dB or better. The S11 measurement shall be performed against a liquid filled flat phantom, with the phantom constructed as outlined in the fore mentioned standards. A direct method is used with a network analyser and its calibration kit, both with a valid ISO17025 calibration.

4.3 SAR REQUIREMENTS

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards provide requirements for reference dipoles used for system validation measurements. The following measurements were performed to verify that the product complies with the fore-mentioned standards.

5 MEASUREMENT UNCERTAINTY

5.1 MECHANICAL DIMENSIONS

For the measurement in the range 0-300mm, the estimated expanded uncertainty (k=2) in calibration for the dimension measurement in mm is +/-0.20 mm with respect to measurement conditions.

For the measurement in the range 300-450mm, the estimated expanded uncertainty (k=2) in calibration for the dimension measurement in mm is +/-0.44 mm with respect to measurement conditions.

5.2 S11 PARAMETER

The estimated expanded uncertainty (k=2) in calibration for the S11 parameter in linear is +/-0.08 with respect to measurement conditions.

5.3 SAR

The guidelines outlined in the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards were followed to generate the measurement uncertainty for validation measurements.

The estimated expanded uncertainty (k=2) in calibration for the 1g and 10g SAR measurement in W/kg is +/-19% with respect to measurement conditions.



SAR REFERENCE DIPOLE CALIBRATION REPORT

REF : ACR.53.23.24.BES.A

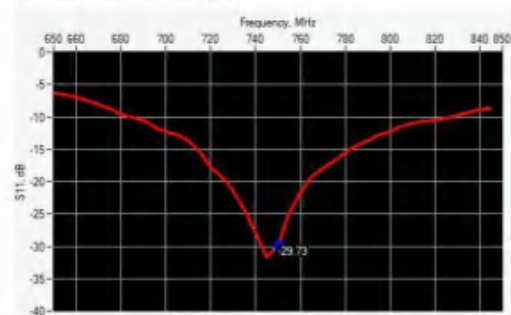
6 CALIBRATION RESULTS

6.1 MECHANICAL DIMENSIONS

L mm		h mm		d mm	
Measured	Required	Measured	Required	Measured	Required
-	176.00 +/- 2%	-	100.00 +/- 2%	-	6.35 +/- 2%

6.2 S11 PARAMETER

6.2.1 S11 parameter in Head Liquid



Frequency (MHz)	S11 parameter (dB)	Requirement (dB)	Impedance
750	-29.73	-20	52.5Ω + 2.2jΩ

6.3 SAR

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards state that the system validation measurements must be performed using a reference dipole meeting the fore mentioned return loss and mechanical dimension requirements. The validation measurement must be performed against a liquid filled flat phantom, with the phantom constructed as outlined in the fore mentioned standards. Per the standards, the dipole shall be positioned below the bottom of the phantom, with the dipole length centered and parallel to the longest dimension of the flat phantom, with the top surface of the dipole at the described distance from the bottom surface of the phantom.

6.3.1 SAR with Head Liquid

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards state that the system validation measurements should produce the SAR values shown below (for phantom thickness of 2 mm), within the uncertainty for the system validation. All SAR values are normalized to 1 W forward power. In bracket, the measured SAR is given with the used input power.

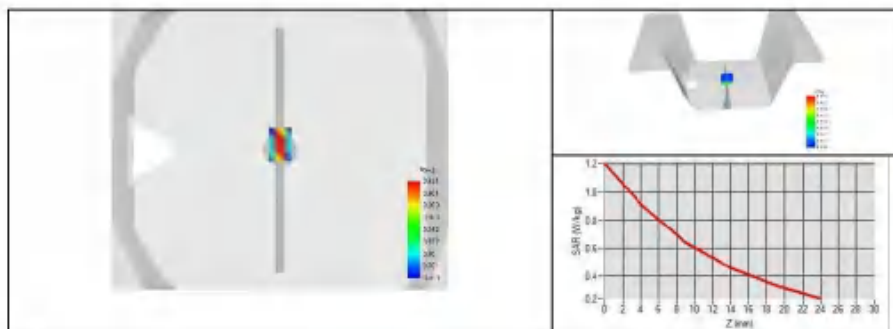


SAR REFERENCE DIPOLE CALIBRATION REPORT

REF : ACR 53.23.24 BES A

Software	OPENSAR V5
Phantom	SN 13/09 SAM68
Probe	3523-EPGO-429
Liquid	Head Liquid Values: $\epsilon_{ps}' : 45.0$ $\sigma : 0.87$
Distance between dipole center and liquid	15.0 mm
Area scan resolution	$dx=8mm/dy=8mm$
Zoon Scan Resolution	$dx=8mm/dy=8mm/dz=5mm$
Frequency	750 MHz
Input power	20 dBm
Liquid Temperature	20 +/- 1 °C
Lab Temperature	20 +/- 1 °C
Lab Humidity	30-70 %

Frequency	1g SAR (W/kg)			10g SAR (W/kg)		
	Measured	Measured normalized to 1W	Target normalized to 1W	Measured	Measured normalized to 1W	Target normalized to 1W
750 MHz	0.86	8.60	8.49	0.58	5.78	5.55





SAR REFERENCE DIPOLE CALIBRATION REPORT

REF : ACR 53.23.24.BES.A

7 LIST OF EQUIPMENT

Equipment Summary Sheet				
Equipment Description	Manufacturer / Model	Identification No.	Current Calibration Date	Next Calibration Date
SAM Phantom	MVG	SN 13/09 SAM68	Validated. No cal required.	Validated. No cal required.
COMOSAR Test Bench	Version 3	NA	Validated. No cal required.	Validated. No cal required.
Network Analyzer	Rohde & Schwarz ZVM	100203	08/2021	08/2024
Network Analyzer – Calibration kit	Rohde & Schwarz ZV-Z235	101223	07/2022	07/2025
Calipers	Mitutoyo	SN 0009732	11/2022	11/2025
Reference Probe	MVG	3523-EPGO-429	11/2023	11/2024
Multimeter	Keithley 2000	4013982	02/2023	02/2026
Signal Generator	Rohde & Schwarz SMB	106589	03/2022	03/2025
Amplifier	MVG	MODU-023-C-0002	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Power Meter	NI-USB 5680	170100013	06/2021	06/2024
Power Meter	Keysight U2000A	SN: MY62340002	10/2022	10/2025
Directional Coupler	Krytar 158020	131467	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Temperature / Humidity Sensor	Testo 184 H1	44225320	06/2021	06/2024

Page: 8/8

Template: ACR.DDD.N.YK.MVGB.ISSUE_SAR Reference Dipole v1.

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SAR Reference Dipole Calibration Report

Ref : ACR.53.24.24.BES.A

**GUANGDONG ASIA HONGKE TEST
TECHNOLOGY CO., LTD**
NO.1/F,BUILDING B1, JUNFENG INDUSTRIAL PARK,
CHONGQING ROAD, HEPING COMMUNITY ,
FUHAIHAI STREET, BAO'AN DISTRICT, SHENZHEN,
GUANGDONG 518055, P.R.CHINA
MVG COMOSAR REFERENCE DIPOLE
FREQUENCY: 835MHZ
SERIAL NO.: SN 03/15 DIP0G835-347

Calibrated at MVG
Z.I. de la pointe du diable
Technopôle Brest Iroise – 295 avenue Alexis de Rochon
29280 PLOUZANE – FRANCE

Calibration date: 02/21/2024



Accreditations #2-6789 and #2-6814
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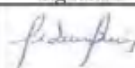
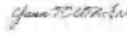
Summary:

This document presents the method and results from an accredited SAR reference dipole calibration performed in MVG using the COMOSAR test bench. All calibration results are traceable to national metrology institutions.



SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref. A CR.53.24.24.BES.A

	Name	Function	Date	Signature
Prepared by :	Pedro Ruiz	Measurement Responsible	2/22/2024	
Checked & approved by:	Jérôme Luc	Technical Manager	2/22/2024	
Authorized by:	Yann Toutain	Laboratory Director	2/27/2024	

Yann
Toutain ID

Signature numérique
de Yann Toutain ID
Date : 2024.02.27
08:55:11 +01'00'

	Customer Name
Distribution :	Shenzhen Asia Hongke

Issue	Name	Date	Modifications
A	Pedro Ruiz	2/22/2024	Initial release



SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR.53.24.24.BES.A

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7	List of Equipment	8



SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR.53.24.24.BES.A

1 INTRODUCTION

This document contains a summary of the requirements set forth by the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards for reference dipoles used for SAR measurement system validations and the measurements that were performed to verify that the product complies with the fore mentioned standards.

2 DEVICE UNDER TEST

Device Under Test	
Device Type	COMOSAR 835 MHz REFERENCE DIPOLE
Manufacturer	MVG
Model	SID835
Serial Number	SN 03/15DIP0G835-347
Product Condition (new / used)	Used

3 PRODUCT DESCRIPTION

3.1 GENERAL INFORMATION

MVG's COMOSAR Validation Dipoles are built in accordance to the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards. The product is designed for use with the COMOSAR test bench only.



Figure 1 – MVG COMOSAR Validation Dipole



4 MEASUREMENT METHOD

4.1 MECHANICAL REQUIREMENTS

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards specify the mechanical components and dimensions of the validation dipoles, with the dimension's frequency and phantom shell thickness dependent. The COMOSAR test bench employs a 2 mm phantom shell thickness therefore the dipoles sold for use with the COMOSAR test bench comply with the requirements set forth for a 2 mm phantom shell thickness. A direct method is used with a ISO17025 calibrated caliper.

4.2 S11 PARAMETER REQUIREMENTS

The dipole used for SAR system validation measurements and checks must have a S11 of -20 dB or better. The S11 measurement shall be performed against a liquid filled flat phantom, with the phantom constructed as outlined in the fore mentioned standards. A direct method is used with a network analyser and its calibration kit, both with a valid ISO17025 calibration.

4.3 SAR REQUIREMENTS

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards provide requirements for reference dipoles used for system validation measurements. The following measurements were performed to verify that the product complies with the fore-mentioned standards.

5 MEASUREMENT UNCERTAINTY

5.1 MECHANICAL DIMENSIONS

For the measurement in the range 0-300mm, the estimated expanded uncertainty (k=2) in calibration for the dimension measurement in mm is +/-0.20 mm with respect to measurement conditions.

For the measurement in the range 300-450mm, the estimated expanded uncertainty (k=2) in calibration for the dimension measurement in mm is +/-0.44 mm with respect to measurement conditions.

5.2 S11 PARAMETER

The estimated expanded uncertainty (k=2) in calibration for the S11 parameter in linear is +/-0.08 with respect to measurement conditions.

5.3 SAR

The guidelines outlined in the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards were followed to generate the measurement uncertainty for validation measurements.

The estimated expanded uncertainty (k=2) in calibration for the 1g and 10g SAR measurement in W/kg is +/-19% with respect to measurement conditions.



SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR.53.24.24.BES.A

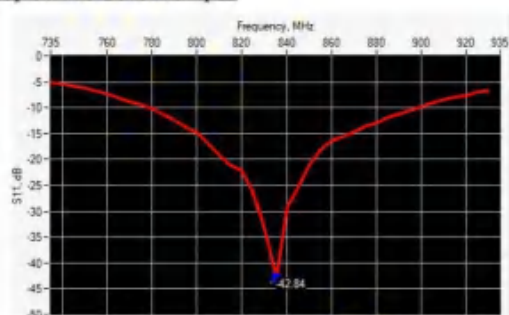
6 CALIBRATION RESULTS

6.1 MECHANICAL DIMENSIONS

L mm		h mm		d mm	
Measured	Required	Measured	Required	Measured	Required
-	161.00 +/- 2%	-	89.80 +/- 2%	-	3.60 +/- 2%

6.2 S11 PARAMETER

6.2.1 S11 parameter in Head Liquid



Frequency (MHz)	S11 parameter (dB)	Requirement (dB)	Impedance
835	-42.84	-20	50.5Ω + 0.5jΩ

6.3 SAR

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards state that the system validation measurements must be performed using a reference dipole meeting the fore mentioned return loss and mechanical dimension requirements. The validation measurement must be performed against a liquid filled flat phantom, with the phantom constructed as outlined in the fore mentioned standards. Per the standards, the dipole shall be positioned below the bottom of the phantom, with the dipole length centered and parallel to the longest dimension of the flat phantom, with the top surface of the dipole at the described distance from the bottom surface of the phantom.

6.3.1 SAR with Head Liquid

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards state that the system validation measurements should produce the SAR values shown below (for phantom thickness of 2 mm), within the uncertainty for the system validation. All SAR values are normalized to 1 W forward power. In bracket, the measured SAR is given with the used input power.

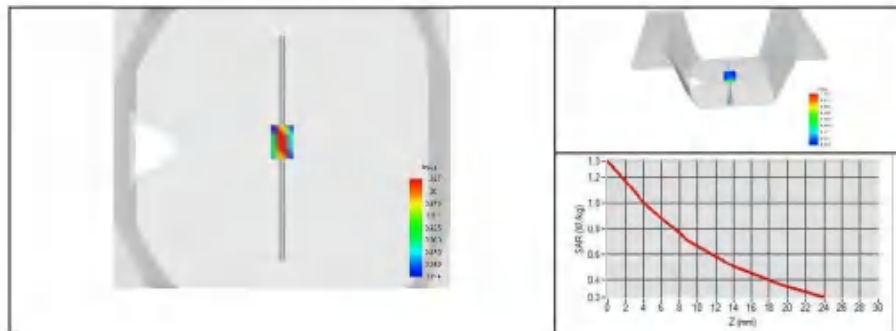


SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR 53.24.24.BES.A

Software	OPENSAR V5
Phantom	SN 13/09 SAM68
Probe	3523-EPGO-429
Liquid	Head Liquid Values: ϵ_p : 44.8 σ : 0.90
Distance between dipole center and liquid	15.0 mm
Area scan resolution	$dx=8mm/dy=8mm$
Zoon Scan Resolution	$dx=8mm/dy=8mm/dz=5mm$
Frequency	835 MHz
Input power	20 dBm
Liquid Temperature	20 $\pm$ 1 °C
Lab Temperature	20 $\pm$ 1 °C
Lab Humidity	30-70 %

Frequency	1g SAR (W/kg)			10g SAR (W/kg)		
	Measured	Measured normalized to 1W	Target normalized to 1W	Measured	Measured normalized to 1W	Target normalized to 1W
835 MHz	0.94	9.40	9.56	0.63	6.28	6.22





SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR 53 24 24 BES A

7 LIST OF EQUIPMENT

Equipment Summary Sheet				
Equipment Description	Manufacturer / Model	Identification No.	Current Calibration Date	Next Calibration Date
SAM Phantom	MVG	SN 13/09 SAM68	Validated. No cal required.	Validated. No cal required.
COMOSAR Test Bench	Version 3	NA	Validated. No cal required.	Validated. No cal required.
Network Analyzer	Rohde & Schwarz ZVM	100203	08/2021	08/2024
Network Analyzer – Calibration kit	Rohde & Schwarz ZV-Z235	101223	07/2022	07/2025
Calipers	Mitutoyo	SN 0009732	11/2022	11/2025
Reference Probe	MVG	3523-EPGO-429	11/2023	11/2024
Multimeter	Keithley 2000	4013982	02/2023	02/2026
Signal Generator	Rohde & Schwarz SMB	106589	03/2022	03/2025
Amplifier	MVG	MODU-023-C-0002	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Power Meter	NI-USB 5680	170100013	06/2021	06/2024
Power Meter	Keysight U2000A	SN: MY62340002	10/2022	10/2025
Directional Coupler	Krytar 158020	131467	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Temperature / Humidity Sensor	Testo 184 H1	44225320	06/2021	06/2024



SAR Reference Dipole Calibration Report

Ref : ACR.53.26.24.BES.A

GUANGDONG ASIA HONGKE TEST TECHNOLOGY CO., LTD

NO.1/F,BUILDING B1, JUNFENG INDUSTRIAL PARK,
CHONGQING ROAD, HEPING COMMUNITY ,
FUHAIHAI STREET, BAO'AN DISTRICT,SHENZHEN,
GUANGDONG 518055, P.R.CHINA

MVG COMOSAR REFERENCE DIPOLE

FREQUENCY: 1800MHZ

SERIAL NO.: SN 03/15 DIP1G800-349

Calibrated at MVG

Z.I. de la pointe du diable

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

Calibration date: 02/21/2024



Accreditations #2-6789 and #2-6814
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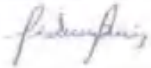
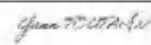
Summary:

This document presents the method and results from an accredited SAR reference dipole calibration performed in MVG using the COMOSAR test bench. All calibration results are traceable to national metrology institutions.



SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref : ACR-53 2624 RES A

	Name	Function	Date	Signature
Prepared by :	Pedro Ruiz	Measurement Responsible	2/22/2024	
Checked & approved by:	Jérôme Luc	Technical Manager	2/22/2024	
Authorized by:	Yann Toutain	Laboratory Director	2/27/2024	

Yann
Toutain ID

Signature
numérique de
Yann Toutain ID
Date : 2024.02.27
08:56:12 +0100

	Customer Name
Distribution :	Shenzhen Asia Hongke

Issue	Name	Date	Modifications
A	Pedro Ruiz	2/22/2024	Initial release



SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR.53.2624.BES.A

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6.3	SAR	6
7	List of Equipment	8



SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR.53.2624.BES.A

1 INTRODUCTION

This document contains a summary of the requirements set forth by the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards for reference dipoles used for SAR measurement system validations and the measurements that were performed to verify that the product complies with the fore mentioned standards.

2 DEVICE UNDER TEST

Device Under Test	
Device Type	COMOSAR 1800 MHz REFERENCE DIPOLE
Manufacturer	MVG
Model	SID1800
Serial Number	SN 03/15DIP1G800-349
Product Condition (new / used)	Used

3 PRODUCT DESCRIPTION

3.1 GENERAL INFORMATION

MVG's COMOSAR Validation Dipoles are built in accordance to the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards. The product is designed for use with the COMOSAR test bench only.



Figure 1 – MVG COMOSAR Validation Dipole



4 MEASUREMENT METHOD

4.1 MECHANICAL REQUIREMENTS

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards specify the mechanical components and dimensions of the validation dipoles, with the dimension's frequency and phantom shell thickness dependent. The COMOSAR test bench employs a 2 mm phantom shell thickness therefore the dipoles sold for use with the COMOSAR test bench comply with the requirements set forth for a 2 mm phantom shell thickness. A direct method is used with a ISO17025 calibrated caliper.

4.2 S11 PARAMETER REQUIREMENTS

The dipole used for SAR system validation measurements and checks must have a S11 of -20 dB or better. The S11 measurement shall be performed against a liquid filled flat phantom, with the phantom constructed as outlined in the fore mentioned standards. A direct method is used with a network analyser and its calibration kit, both with a valid ISO17025 calibration.

4.3 SAR REQUIREMENTS

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards provide requirements for reference dipoles used for system validation measurements. The following measurements were performed to verify that the product complies with the fore-mentioned standards.

5 MEASUREMENT UNCERTAINTY

5.1 MECHANICAL DIMENSIONS

For the measurement in the range 0-300mm, the estimated expanded uncertainty (k=2) in calibration for the dimension measurement in mm is +/-0.20 mm with respect to measurement conditions.

For the measurement in the range 300-450mm, the estimated expanded uncertainty (k=2) in calibration for the dimension measurement in mm is +/-0.44 mm with respect to measurement conditions.

5.2 S11 PARAMETER

The estimated expanded uncertainty (k=2) in calibration for the S11 parameter in linear is +/-0.08 with respect to measurement conditions.

5.3 SAR

The guidelines outlined in the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards were followed to generate the measurement uncertainty for validation measurements.

The estimated expanded uncertainty (k=2) in calibration for the 1g and 10g SAR measurement in W/kg is +/-19% with respect to measurement conditions.



SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR.53.2624.BES.A

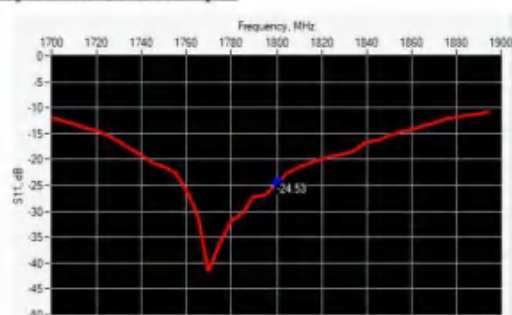
6 CALIBRATION RESULTS

6.1 MECHANICAL DIMENSIONS

L mm		h mm		d mm	
Measured	Required	Measured	Required	Measured	Required
-	72.00 +/- 2%	-	41.70 +/- 2%	-	3.60 +/- 2%

6.2 S11 PARAMETER

6.2.1 S11 parameter in Head Liquid



Frequency (MHz)	S11 parameter (dB)	Requirement (dB)	Impedance
1800	-24.53	-20	44.8Ω + 2.0jΩ

6.3 SAR

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards state that the system validation measurements must be performed using a reference dipole meeting the fore mentioned return loss and mechanical dimension requirements. The validation measurement must be performed against a liquid filled flat phantom, with the phantom constructed as outlined in the fore mentioned standards. Per the standards, the dipole shall be positioned below the bottom of the phantom, with the dipole length centered and parallel to the longest dimension of the flat phantom, with the top surface of the dipole at the described distance from the bottom surface of the phantom.

6.3.1 SAR with Head Liquid

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards state that the system validation measurements should produce the SAR values shown below (for phantom thickness of 2 mm), within the uncertainty for the system validation. All SAR values are normalized to 1 W forward power. In bracket, the measured SAR is given with the used input power.

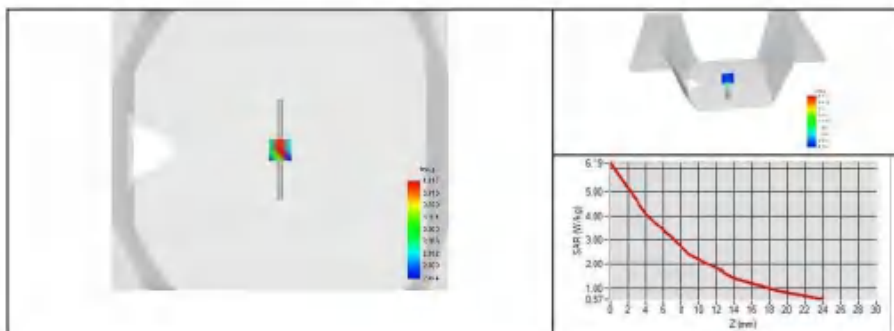


SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR.53.2624.BES.A

Software	OPENSAR V5
Phantom	SN 13/09 SAM68
Probe	3523-EPGO-429
Liquid	Head Liquid Values: ϵ_p : 42.7 σ : 1.36
Distance between dipole center and liquid	10.0 mm
Area scan resolution	$dx=8mm/dy=8mm$
Zoon Scan Resolution	$dx=8mm/dy=8mm/dz=5mm$
Frequency	1800 MHz
Input power	20 dBm
Liquid Temperature	20 +/- 1 °C
Lab Temperature	20 +/- 1 °C
Lab Humidity	30-70 %

Frequency	1g SAR (W/kg)			10g SAR (W/kg)		
	Measured	Measured normalized to 1W	Target normalized to 1W	Measured	Measured normalized to 1W	Target normalized to 1W
1800 MHz	3.71	37.06	38.40	2.00	20.01	20.10





SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR 53 26 24 BES A

7 LIST OF EQUIPMENT

Equipment Summary Sheet				
Equipment Description	Manufacturer / Model	Identification No.	Current Calibration Date	Next Calibration Date
SAM Phantom	MVG	SN 13/09 SAM68	Validated. No cal required.	Validated. No cal required.
COMOSAR Test Bench	Version 3	NA	Validated. No cal required.	Validated. No cal required.
Network Analyzer	Rohde & Schwarz ZVM	100203	08/2021	08/2024
Network Analyzer – Calibration kit	Rohde & Schwarz ZV-Z235	101223	07/2022	07/2025
Calipers	Mitutoyo	SN 0009732	11/2022	11/2025
Reference Probe	MVG	3523-EPGO-429	11/2023	11/2024
Multimeter	Keithley 2000	4013982	02/2023	02/2026
Signal Generator	Rohde & Schwarz SMB	106589	03/2022	03/2025
Amplifier	MVG	MODU-023-C-0002	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Power Meter	NI-USB 5680	170100013	06/2021	06/2024
Power Meter	Keysight U2000A	SN: MY62340002	10/2022	10/2025
Directional Coupler	Krytar 158020	131467	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Temperature / Humidity Sensor	Testo 184 H1	44225320	06/2021	06/2024

Page: 8/8

Template: ACR.DDD.N.YY.MVGB.ISSUE_SAR Reference Dipole v1.

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SAR Reference Dipole Calibration Report

Ref : ACR.53.27.24.BES.A

GUANGDONG ASIA HONGKE TEST TECHNOLOGY CO., LTD

NO.1/F,BUILDING B1, JUNFENG INDUSTRIAL PARK,
CHONGQING ROAD, HEPING COMMUNITY ,
FUHAIHAI STREET, BAO'AN DISTRICT,SHENZHEN,
GUANGDONG 518055, P.R.CHINA

MVG COMOSAR REFERENCE DIPOLE

FREQUENCY: 1900MHZ

SERIAL NO.: SN 03/15 DIP1G900-350

Calibrated at MVG

Z.I. de la pointe du diable

Technopôle Brest Iroise – 295 avenue Alexis de Rochon

29280 PLOUZANE – FRANCE

Calibration date: 02/21/2024



Accreditations #2-6789 and #2-6814
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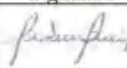
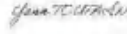
Summary:

This document presents the method and results from an accredited SAR reference dipole calibration performed in MVG using the COMOSAR test bench. All calibration results are traceable to national metrology institutions.



SAR REFERENCE DIPOLE CALIBRATION REPORT

REF: ACR.53.27.24.BES.A

	Name	Function	Date	Signature
Prepared by :	Pedro Ruiz	Measurement Responsible	2/22/2024	
Checked & approved by:	Jérôme Luc	Technical Manager	2/22/2024	
Authorized by:	Yann Toutain	Laboratory Director	2/27/2024	

Yann
Toutain ID

Signature
numérique de
Yann Toutain ID
Date : 2024.02.27
08:56:45 +01'00'

	Customer Name
Distribution :	Shenzhen Asia Hongke

Issue	Name	Date	Modifications
A	Pedro Ruiz	2/22/2024	Initial release



SAR REFERENCE DIPOLE CALIBRATION REPORT

REF: ACR 33.27.24.BES.A

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SAR REFERENCE DIPOLE CALIBRATION REPORT

REF: ACR 33.27.24.BES.A

1 INTRODUCTION

This document contains a summary of the requirements set forth by the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards for reference dipoles used for SAR measurement system validations and the measurements that were performed to verify that the product complies with the fore mentioned standards.

2 DEVICE UNDER TEST

Device Under Test	
Device Type	COMOSAR 1900 MHz REFERENCE DIPOLE
Manufacturer	MVG
Model	SID1900
Serial Number	SN 03/15DIP1G900-350
Product Condition (new / used)	Used

3 PRODUCT DESCRIPTION

3.1 GENERAL INFORMATION

MVG's COMOSAR Validation Dipoles are built in accordance to the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards. The product is designed for use with the COMOSAR test bench only.



Figure 1 – MVG COMOSAR Validation Dipole



4 MEASUREMENT METHOD

4.1 MECHANICAL REQUIREMENTS

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards specify the mechanical components and dimensions of the validation dipoles, with the dimension's frequency and phantom shell thickness dependent. The COMOSAR test bench employs a 2 mm phantom shell thickness therefore the dipoles sold for use with the COMOSAR test bench comply with the requirements set forth for a 2 mm phantom shell thickness. A direct method is used with a ISO17025 calibrated caliper.

4.2 S11 PARAMETER REQUIREMENTS

The dipole used for SAR system validation measurements and checks must have a S11 of -20 dB or better. The S11 measurement shall be performed against a liquid filled flat phantom, with the phantom constructed as outlined in the fore mentioned standards. A direct method is used with a network analyser and its calibration kit, both with a valid ISO17025 calibration.

4.3 SAR REQUIREMENTS

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards provide requirements for reference dipoles used for system validation measurements. The following measurements were performed to verify that the product complies with the fore-mentioned standards.

5 MEASUREMENT UNCERTAINTY

5.1 MECHANICAL DIMENSIONS

For the measurement in the range 0-300mm, the estimated expanded uncertainty (k=2) in calibration for the dimension measurement in mm is +/-0.20 mm with respect to measurement conditions.

For the measurement in the range 300-450mm, the estimated expanded uncertainty (k=2) in calibration for the dimension measurement in mm is +/-0.44 mm with respect to measurement conditions.

5.2 S11 PARAMETER

The estimated expanded uncertainty (k=2) in calibration for the S11 parameter in linear is +/-0.08 with respect to measurement conditions.

5.3 SAR

The guidelines outlined in the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards were followed to generate the measurement uncertainty for validation measurements.

The estimated expanded uncertainty (k=2) in calibration for the 1g and 10g SAR measurement in W/kg is +/-19% with respect to measurement conditions.



SAR REFERENCE DIPOLE CALIBRATION REPORT

REF: ACR.33.27.24.BES.A

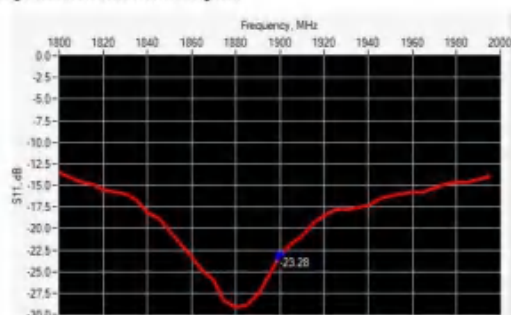
6 CALIBRATION RESULTS

6.1 MECHANICAL DIMENSIONS

L mm		h mm		d mm	
Measured	Required	Measured	Required	Measured	Required
-	68.00 +/- 2%	-	39.50 +/- 2%	-	3.60 +/- 2%

6.2 S11 PARAMETER

6.2.1 S11 parameter in Head Liquid



Frequency (MHz)	S11 parameter (dB)	Requirement (dB)	Impedance
1900	-23.28	-20	46.2Ω + 5.4jΩ

6.3 SAR

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards state that the system validation measurements must be performed using a reference dipole meeting the fore mentioned return loss and mechanical dimension requirements. The validation measurement must be performed against a liquid filled flat phantom, with the phantom constructed as outlined in the fore mentioned standards. Per the standards, the dipole shall be positioned below the bottom of the phantom, with the dipole length centered and parallel to the longest dimension of the flat phantom, with the top surface of the dipole at the described distance from the bottom surface of the phantom.

6.3.1 SAR with Head Liquid

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards state that the system validation measurements should produce the SAR values shown below (for phantom thickness of 2 mm), within the uncertainty for the system validation. All SAR values are normalized to 1 W forward power. In bracket, the measured SAR is given with the used input power.

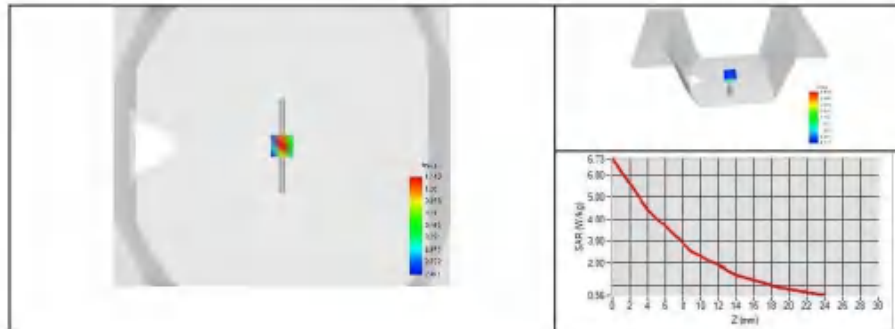


SAR REFERENCE DIPOLE CALIBRATION REPORT

REF: ACR.53.27.24.BES.A

Software	OPENSAR V5
Phantom	SN 13/09 SAM68
Probe	3523-EPGO-429
Liquid	Head Liquid Values: ϵ_p : 42.5 σ : 1.39
Distance between dipole center and liquid	10.0 mm
Area scan resolution	$dx=8mm/dy=8mm$
Zoon Scan Resolution	$dx=8mm/dy=8mm/dz=5mm$
Frequency	1900 MHz
Input power	20 dBm
Liquid Temperature	20 +/- 1 °C
Lab Temperature	20 +/- 1 °C
Lab Humidity	30-70 %

Frequency	1g SAR (W/kg)			10g SAR (W/kg)		
	Measured	Measured normalized to 1W	Target normalized to 1W	Measured	Measured normalized to 1W	Target normalized to 1W
1900 MHz	3.97	39.69	39.70	2.09	20.92	20.50





SAR REFERENCE DIPOLE CALIBRATION REPORT

REF: ACR 33.27.24.BES.A

7 LIST OF EQUIPMENT

Equipment Summary Sheet				
Equipment Description	Manufacturer / Model	Identification No.	Current Calibration Date	Next Calibration Date
SAM Phantom	MVG	SN 13/09 SAM68	Validated. No cal required.	Validated. No cal required.
COMOSAR Test Bench	Version 3	NA	Validated. No cal required.	Validated. No cal required.
Network Analyzer	Rohde & Schwarz ZVM	100203	08/2021	08/2024
Network Analyzer – Calibration kit	Rohde & Schwarz ZV-Z235	101223	07/2022	07/2025
Calipers	Mitutoyo	SN 0009732	11/2022	11/2025
Reference Probe	MVG	3523-EPGO-429	11/2023	11/2024
Multimeter	Keithley 2000	4013982	02/2023	02/2026
Signal Generator	Rohde & Schwarz SMB	106589	03/2022	03/2025
Amplifier	MVG	MODU-023-C-0002	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Power Meter	NI-USB 5680	170100013	06/2021	06/2024
Power Meter	Keysight U2000A	SN: MY62340002	10/2022	10/2025
Directional Coupler	Krytar 158020	131467	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Temperature / Humidity Sensor	Testo 184 H1	44225320	06/2021	06/2024

Page: 8/8

Template: ACR.DDD.N.YY.MVGB.ISSUE_SAR Reference Dipole v1.

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SAR Reference Dipole Calibration Report

Ref : ACR.53.29.24.BES.A

**GUANGDONG ASIA HONGKE TEST
TECHNOLOGY CO., LTD**
NO.1/F,BUILDING B1, JUNFENG INDUSTRIAL PARK,
CHONGQING ROAD, HEPING COMMUNITY ,
FUHAIHAI STREET, BAO'AN DISTRICT,SHENZHEN,
GUANGDONG 518055, P.R.CHINA
MVG COMOSAR REFERENCE DIPOLE
FREQUENCY: 2450MHZ
SERIAL NO.: SN 03/15 DIP2G450-352

Calibrated at MVG
Z.I. de la pointe du diable
Technopôle Brest Iroise – 295 avenue Alexis de Rochon
29280 PLOUZANE – FRANCE

Calibration date: 02/21/2024



Accreditations #2-6789 and #2-6814
Scope available on www.cofrac.fr

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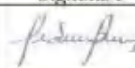
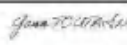
Summary:

This document presents the method and results from an accredited SAR reference dipole calibration performed in MVG using the COMOSAR test bench. All calibration results are traceable to national metrology institutions.



SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref. ACR.53.29.24.BES.A

	Name	Function	Date	Signature
Prepared by:	Pedro Ruiz	Measurement Responsible	2/22/2024	
Checked & approved by:	Jérôme Luc	Technical Manager	2/22/2024	
Authorized by:	Yann Toutain	Laboratory Director	2/27/2024	

Yann
Toutain ID

Signature
numérique de
Yann Toutain ID
Date : 2024.02.27
08:57:39 +01'00'

	Customer Name
Distribution :	Shenzhen Asia Hongke

Issue	Name	Date	Modifications
A	Pedro Ruiz	2/22/2024	Initial release



SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR 33.29.24.BES.A

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5	Measurement Uncertainty	5
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5.2	S11 Parameter	5
5.3	SAR	5
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7	List of Equipment	8



SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR 33.29.24.BES.A

1 INTRODUCTION

This document contains a summary of the requirements set forth by the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards for reference dipoles used for SAR measurement system validations and the measurements that were performed to verify that the product complies with the fore mentioned standards.

2 DEVICE UNDER TEST

Device Under Test	
Device Type	COMOSAR 2450 MHz REFERENCE DIPOLE
Manufacturer	MVG
Model	SID2450
Serial Number	SN 03/15DIP2G450-352
Product Condition (new / used)	Used

3 PRODUCT DESCRIPTION

3.1 GENERAL INFORMATION

MVG's COMOSAR Validation Dipoles are built in accordance to the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards. The product is designed for use with the COMOSAR test bench only.



Figure 1 – MVG COMOSAR Validation Dipole



SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR.33.2924.BES.A

4 MEASUREMENT METHOD

4.1 MECHANICAL REQUIREMENTS

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards specify the mechanical components and dimensions of the validation dipoles, with the dimension's frequency and phantom shell thickness dependent. The COMOSAR test bench employs a 2 mm phantom shell thickness therefore the dipoles sold for use with the COMOSAR test bench comply with the requirements set forth for a 2 mm phantom shell thickness. A direct method is used with a ISO17025 calibrated caliper.

4.2 S11 PARAMETER REQUIREMENTS

The dipole used for SAR system validation measurements and checks must have a S11 of -20 dB or better. The S11 measurement shall be performed against a liquid filled flat phantom, with the phantom constructed as outlined in the fore mentioned standards. A direct method is used with a network analyser and its calibration kit, both with a valid ISO17025 calibration.

4.3 SAR REQUIREMENTS

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards provide requirements for reference dipoles used for system validation measurements. The following measurements were performed to verify that the product complies with the fore-mentioned standards.

5 MEASUREMENT UNCERTAINTY

5.1 MECHANICAL DIMENSIONS

For the measurement in the range 0-300mm, the estimated expanded uncertainty (k=2) in calibration for the dimension measurement in mm is +/-0.20 mm with respect to measurement conditions.

For the measurement in the range 300-450mm, the estimated expanded uncertainty (k=2) in calibration for the dimension measurement in mm is +/-0.44 mm with respect to measurement conditions.

5.2 S11 PARAMETER

The estimated expanded uncertainty (k=2) in calibration for the S11 parameter in linear is +/-0.08 with respect to measurement conditions.

5.3 SAR

The guidelines outlined in the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards were followed to generate the measurement uncertainty for validation measurements.

The estimated expanded uncertainty (k=2) in calibration for the 1g and 10g SAR measurement in W/kg is +/-19% with respect to measurement conditions.

Page: 5/8

Template_ACR.DDD.N.YY.MVGB.ISSUE_SAR Reference Dipole v1.

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SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR 33.29.24.BES.A

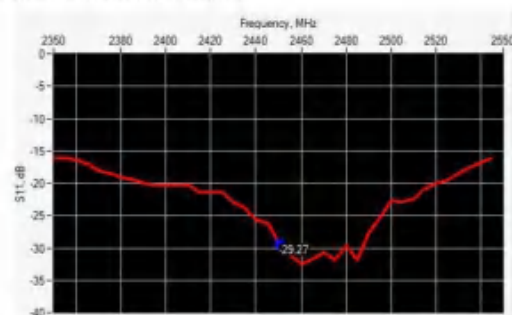
6 CALIBRATION RESULTS

6.1 MECHANICAL DIMENSIONS

L mm		h mm		d mm	
Measured	Required	Measured	Required	Measured	Required
-	51.50 +/- 2%	-	30.40 +/- 2%	-	3.60 +/- 2%

6.2 S11 PARAMETER

6.2.1 S11 parameter in Head Liquid



Frequency (MHz)	S11 parameter (dB)	Requirement (dB)	Impedance
2450	-29.27	-20	53.6Ω + 0.1jΩ

6.3 SAR

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards state that the system validation measurements must be performed using a reference dipole meeting the fore mentioned return loss and mechanical dimension requirements. The validation measurement must be performed against a liquid filled flat phantom, with the phantom constructed as outlined in the fore mentioned standards. Per the standards, the dipole shall be positioned below the bottom of the phantom, with the dipole length centered and parallel to the longest dimension of the flat phantom, with the top surface of the dipole at the described distance from the bottom surface of the phantom.

6.3.1 SAR with Head Liquid

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards state that the system validation measurements should produce the SAR values shown below (for phantom thickness of 2 mm), within the uncertainty for the system validation. All SAR values are normalized to 1 W forward power. In bracket, the measured SAR is given with the used input power.

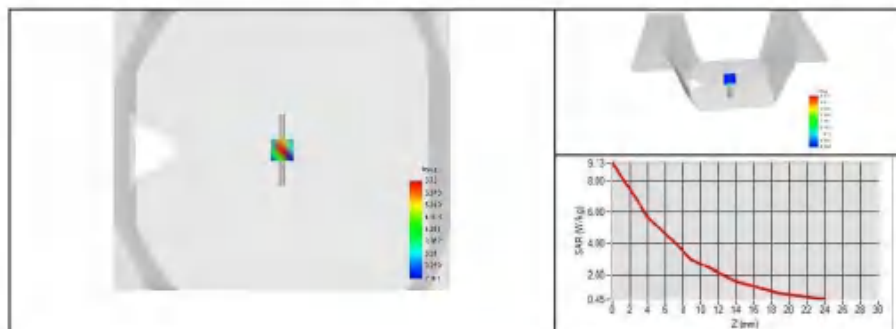


SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR 33.29.24.BES.A

Software	OPENSAR V5
Phantom	SN 13/09 SAM68
Probe	3523-EPGO-429
Liquid	Head Liquid Values: ϵ_p : 42.1 σ : 1.83
Distance between dipole center and liquid	10.0 mm
Area scan resolution	$dx=8mm/dy=8mm$
Zoon Scan Resolution	$dx=5mm/dy=5mm/dz=5mm$
Frequency	2450 MHz
Input power	20 dBm
Liquid Temperature	20 +/- 1 °C
Lab Temperature	20 +/- 1 °C
Lab Humidity	30-70 %

Frequency	1g SAR (W/kg)			10g SAR (W/kg)		
	Measured	Measured normalized to 1W	Target normalized to 1W	Measured	Measured normalized to 1W	Target normalized to 1W
2450 MHz	5.00	50.05	52.40	2.38	23.80	24.00





SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR 33.29.24.BES.A

7 LIST OF EQUIPMENT

Equipment Summary Sheet				
Equipment Description	Manufacturer / Model	Identification No.	Current Calibration Date	Next Calibration Date
SAM Phantom	MVG	SN 13/09 SAM68	Validated. No cal required.	Validated. No cal required.
COMOSAR Test Bench	Version 3	NA	Validated. No cal required.	Validated. No cal required.
Network Analyzer	Rohde & Schwarz ZVM	100203	08/2021	08/2024
Network Analyzer – Calibration kit	Rohde & Schwarz ZV-Z235	101223	07/2022	07/2025
Calipers	Mitutoyo	SN 0009732	11/2022	11/2025
Reference Probe	MVG	3523-EPGO-429	11/2023	11/2024
Multimeter	Keithley 2000	4013982	02/2023	02/2026
Signal Generator	Rohde & Schwarz SMB	106589	03/2022	03/2025
Amplifier	MVG	MODU-023-C-0002	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Power Meter	NI-USB 5680	170100013	06/2021	06/2024
Power Meter	Keysight U2000A	SN: MY62340002	10/2022	10/2025
Directional Coupler	Krytar 158020	131467	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Temperature / Humidity Sensor	Testo 184 H1	44225320	06/2021	06/2024



SAR Reference Dipole Calibration Report

Ref : ACR.53.30.24.BES.A

**GUANGDONG ASIA HONGKE TEST
TECHNOLOGY CO., LTD**
NO.1/F,BUILDING B1, JUNFENG INDUSTRIAL PARK,
CHONGQING ROAD, HEPING COMMUNITY ,
FUHAIHAI STREET, BAO'AN DISTRICT,SHENZHEN,
GUANGDONG 518055, P.R.CHINA
MVG COMOSAR REFERENCE DIPOLE
FREQUENCY: 2600MHZ
SERIAL NO.: SN 03/15 DIP2G600-356

Calibrated at MVG
Z.I. de la pointe du diable
Technopôle Brest Iroise – 295 avenue Alexis de Rochon
29280 PLOUZANE – FRANCE

Calibration date: 02/21/2024



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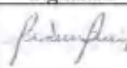
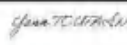
Summary:

This document presents the method and results from an accredited SAR reference dipole calibration performed in MVG using the COMOSAR test bench. All calibration results are traceable to national metrology institutions.



SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref.: ACR.53.0024.BES.A

	Name	Function	Date	Signature
Prepared by :	Pedro Ruiz	Measurement Responsible	2/22/2024	
Checked & approved by:	Jérôme Luc	Technical Manager	2/22/2024	
Authorized by:	Yann Toutain	Laboratory Director	2/27/2024	

Yann
Toutain
ID

Signature
numérique de
Yann Toutain ID
Date : 2024.02.27
08:58:12 +01'00'

	Customer Name
Distribution :	Shenzhen Asia Hongke

Issue	Name	Date	Modifications
A	Pedro Ruiz	2/22/2024	Initial release



SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR 33 30 24 BES A

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SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR 33 3024 BES A

1 INTRODUCTION

This document contains a summary of the requirements set forth by the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards for reference dipoles used for SAR measurement system validations and the measurements that were performed to verify that the product complies with the fore mentioned standards.

2 DEVICE UNDER TEST

Device Under Test	
Device Type	COMOSAR 2600 MHz REFERENCE DIPOLE
Manufacturer	MVG
Model	SID2600
Serial Number	SN 03/15DIP2G600-356
Product Condition (new / used)	Used

3 PRODUCT DESCRIPTION

3.1 GENERAL INFORMATION

MVG's COMOSAR Validation Dipoles are built in accordance to the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards. The product is designed for use with the COMOSAR test bench only.



Figure 1 – MVG COMOSAR Validation Dipole



SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR 33 30 24 BES A

4 MEASUREMENT METHOD

4.1 MECHANICAL REQUIREMENTS

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards specify the mechanical components and dimensions of the validation dipoles, with the dimension's frequency and phantom shell thickness dependent. The COMOSAR test bench employs a 2 mm phantom shell thickness therefore the dipoles sold for use with the COMOSAR test bench comply with the requirements set forth for a 2 mm phantom shell thickness. A direct method is used with a ISO17025 calibrated caliper.

4.2 S11 PARAMETER REQUIREMENTS

The dipole used for SAR system validation measurements and checks must have a S11 of -20 dB or better. The S11 measurement shall be performed against a liquid filled flat phantom, with the phantom constructed as outlined in the fore mentioned standards. A direct method is used with a network analyser and its calibration kit, both with a valid ISO17025 calibration.

4.3 SAR REQUIREMENTS

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards provide requirements for reference dipoles used for system validation measurements. The following measurements were performed to verify that the product complies with the fore-mentioned standards.

5 MEASUREMENT UNCERTAINTY

5.1 MECHANICAL DIMENSIONS

For the measurement in the range 0-300mm, the estimated expanded uncertainty (k=2) in calibration for the dimension measurement in mm is +/-0.20 mm with respect to measurement conditions.

For the measurement in the range 300-450mm, the estimated expanded uncertainty (k=2) in calibration for the dimension measurement in mm is +/-0.44 mm with respect to measurement conditions.

5.2 S11 PARAMETER

The estimated expanded uncertainty (k=2) in calibration for the S11 parameter in linear is +/-0.08 with respect to measurement conditions.

5.3 SAR

The guidelines outlined in the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards were followed to generate the measurement uncertainty for validation measurements.

The estimated expanded uncertainty (k=2) in calibration for the 1g and 10g SAR measurement in W/kg is +/-19% with respect to measurement conditions.

Page: 5/8

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SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR 33 30 24 BES A

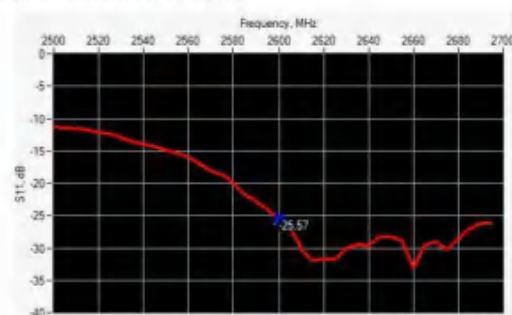
6 CALIBRATION RESULTS

6.1 MECHANICAL DIMENSIONS

L mm		h mm		d mm	
Measured	Required	Measured	Required	Measured	Required
-	48.50 +/- 2%	-	28.80 +/- 2%	-	3.60 +/- 2%

6.2 S11 PARAMETER

6.2.1 S11 parameter in Head Liquid



Frequency (MHz)	S11 parameter (dB)	Requirement (dB)	Impedance
2600	-25.57	-20	54.5Ω - 3.2jΩ

6.3 SAR

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards state that the system validation measurements must be performed using a reference dipole meeting the fore mentioned return loss and mechanical dimension requirements. The validation measurement must be performed against a liquid filled flat phantom, with the phantom constructed as outlined in the fore mentioned standards. Per the standards, the dipole shall be positioned below the bottom of the phantom, with the dipole length centered and parallel to the longest dimension of the flat phantom, with the top surface of the dipole at the described distance from the bottom surface of the phantom.

6.3.1 SAR with Head Liquid

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards state that the system validation measurements should produce the SAR values shown below (for phantom thickness of 2 mm), within the uncertainty for the system validation. All SAR values are normalized to 1 W forward power. In bracket, the measured SAR is given with the used input power.

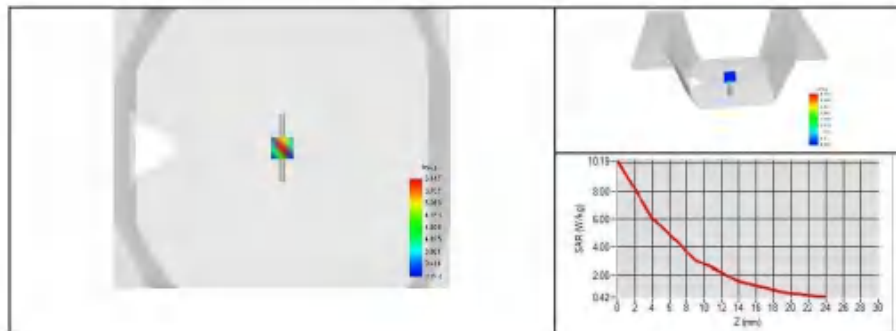


SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR 33 30 24 BES A

Software	OPENSAR V5
Phantom	SN 13/09 SAM68
Probe	3523-EPGO-429
Liquid	Head Liquid Values: ϵ_p' : 41.3 σ : 1.95
Distance between dipole center and liquid	10.0 mm
Area scan resolution	$dx=8mm/dy=8mm$
Zoon Scan Resolution	$dx=5mm/dy=5mm/dz=5mm$
Frequency	2600 MHz
Input power	20 dBm
Liquid Temperature	20 +/- 1 °C
Lab Temperature	20 +/- 1 °C
Lab Humidity	30-70 %

Frequency	1g SAR (W/kg)			10g SAR (W/kg)		
	Measured	Measured normalized to 1W	Target normalized to 1W	Measured	Measured normalized to 1W	Target normalized to 1W
2600 MHz	5.42	54.16	55.30	2.49	24.85	24.60





SAR REFERENCE DIPOLE CALIBRATION REPORT

Ref: ACR-53-30-24-BES-A

7 LIST OF EQUIPMENT

Equipment Summary Sheet				
Equipment Description	Manufacturer / Model	Identification No.	Current Calibration Date	Next Calibration Date
SAM Phantom	MVG	SN 13/09 SAM68	Validated. No cal required.	Validated. No cal required.
COMOSAR Test Bench	Version 3	NA	Validated. No cal required.	Validated. No cal required.
Network Analyzer	Rohde & Schwarz ZVM	100203	08/2021	08/2024
Network Analyzer – Calibration kit	Rohde & Schwarz ZV-Z235	101223	07/2022	07/2025
Calipers	Mitutoyo	SN 0009732	11/2022	11/2025
Reference Probe	MVG	3523-EPGO-429	11/2023	11/2024
Multimeter	Keithley 2000	4013982	02/2023	02/2026
Signal Generator	Rohde & Schwarz SMB	106589	03/2022	03/2025
Amplifier	MVG	MODU-023-C-0002	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Power Meter	NI-USB 5680	170100013	06/2021	06/2024
Power Meter	Keysight U2000A	SN: MY62340002	10/2022	10/2025
Directional Coupler	Krytar 158020	131467	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Temperature / Humidity Sensor	Testo 184 H1	44225320	06/2021	06/2024

Appendix E. Justification of the extended calibration

If dipoles are verified in return loss ($<-20\text{dB}$, within 20% of prior calibration for below 3GHz, and $<-8\text{dB}$, within 20% of prior calibration for 5GHz to 6GHz), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

<Head 750MHz>

Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)	Date of Measurement
-29.73	-	52.5	-	Feb. 21, 2024
-29.642	0.30	52.998	0.498	Feb. 20, 2025
-29.638	0.31	52.983	0.483	Feb. 19, 2026

The return loss is $<-20\text{dB}$, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Head 835MHz>

Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)	Date of Measurement
-42.84	-	50.5	-	Feb. 21, 2024
-42.803	0.09	50.592	0.092	Feb. 20, 2025
-42.812	0.07	50.584	0.084	Feb. 19, 2026

The return loss is $<-20\text{dB}$, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Head 1800MHz>

Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)	Date of Measurement
-24.53	-	44.8	-	Feb. 21, 2024
-24.545	0.06	44.809	0.009	Feb. 20, 2025
-24.540	0.04	44.805	0.005	Feb. 19, 2026

The return loss is $<-20\text{dB}$, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Head 1900MHz>

Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)	Date of Measurement
-23.28	-	46.2	-	Feb. 21, 2024
-23.518	1.02	46.516	0.316	Feb. 20, 2025
-23.512	1.00	46.511	0.311	Feb. 19, 2026

The return loss is <-20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Head 2450MHz>

Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)	Date of Measurement
-29.27	-	53.6	-	Feb. 21, 2024
-29.39	0.41	53.742	0.142	Feb. 20, 2025
-29.30	0.10	53.730	0.130	Feb. 19, 2026

The return loss is <-20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Head 2600MHz>

Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)	Date of Measurement
-25.57	-	54.5	-	Feb. 21, 2024
-25.248	1.26	54.653	0.153	Feb. 20, 2025
-25.237	1.30	54.642	0.142	Feb. 19, 2026

The return loss is <-20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

※※END OF THE REPORT※※