

FCC SAR EVALUATION REPORT

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

Product Name: Sidephone

Model No.: SP-01

Serial Model: N/A

Trade mark: Sidephone

Report No.: AiTSZ-251203006FW1

FCC ID: 2BTWX-SP01

Prepared for

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TEST RESULT CERTIFICATION

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Product description

Product name: Sidephone

Trademark: Sidephone

Model and/or type reference ..: SP-01

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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Date of Test

Date (s) of performance of tests: Dec. 12, 2025 ~ Dec. 28, 2025

Date of Issue: Dec. 31, 2025

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	Dec. 31, 2025	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
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 (Separation distance of 5mm)	1-g Hotspot (Separation distance of 5mm)	
GSM850	0.360	0.166	0.166	Head: 1.293 Body: 1.087 Hotspot: 1.087
GSM1900	1.121	0.550	0.550	
WCDMA Band II	1.012	0.465	0.465	
WCDMA Band V	0.403	0.182	0.182	
LTE band 2	1.149	0.477	0.477	
LTE band 4	0.574	0.285	0.285	
LTE band 5	0.334	0.156	0.156	
LTE band 7	1.161	0.944	0.944	
LTE band 12	0.361	0.160	0.160	
LTE band 17	0.367	0.167	0.167	
LTE band 41	0.677	1.021	1.021	
2.4GHz WLAN	0.193	0.072	0.072	
5.2GHz WLAN	0.233	0.175	0.175	
5.8GHz WLAN	0.183	0.203	0.203	

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) specified in FCC 47 CFR Part 2(2.1093), and had been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528-2013 & KDB 865664 D01.

1.3. EUT Description

Device Information			
Product Name	Sidephone		
Model Name	SP-01		
Device Phase	Identical Prototype		
Exposure Category	General population / Uncontrolled environment		
Antenna Type	PIFA antenna		
Power rating	Rechargeable Li-ion Polymer Battery DC3.7V		
Hardware version	N/A		
Software version	N/A		
Device Operating Configurations			
Supporting Mode(s)	GSM850/1900,WCDMA Band 2/5,LTEBand2/4/5/7/12/17/41, WLAN 2.4G/5.2G/5.8G, Bluetooth		
Test Modulation	GSM(GMSK/8PSK), WCDMA(QPSK), LTE(QPSK/16-QAM), WLAN(DSSS/OFDM), Bluetooth(GFSK, $\pi/4$ -DQPSK, 8DPSK), GPS(BPSK) , FM(FM)		
Device Class	B		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	GSM 850	824-849	869-894
	GSM 1900	1850-1910	1930-1990
	WCDMA Band 2	1850-1910	1930-1990
	WCDMA Band 5	824-849	869-894
	LTE Band 2	1850-1910	1930-1990
	LTE Band 4	1710-1755	2110-2155
	LTE Band 5	824-849	869-894
	LTE Band 7	2500-2570	2620-2690
	LTE Band 12	699-716	729-746
	LTE Band 17	704-716	734-746
	LTE Band 41	2555-2655	
	WLAN 2.4G	2412-2462	
	WLAN 5.2G	5180-5240	
	WLAN 5.8G	5745-5825	
	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 5)	
	3, tested with power control all Max.(LTE Band 2)	
	3, tested with power control all Max.(LTE Band 4)	
	3, tested with power control all Max.(LTE Band 5)	
	3, tested with power control all Max.(LTE Band 7)	
	3, tested with power control all Max.(LTE Band 12)	
	3, tested with power control all Max.(LTE Band 17)	
	3, tested with power control all Max.(LTE Band 41)	

1.4. Test specification(s)

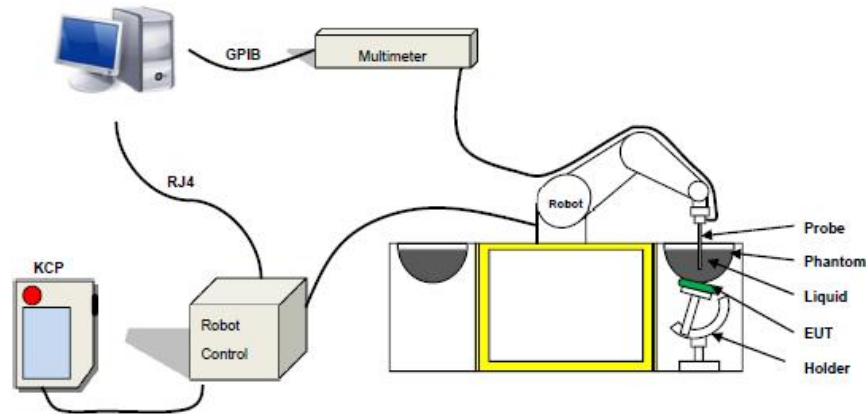
FCC 47 CFR Part 2(2.1093)
IEEE Std 1528-2013
KDB 865664 D01 SAR measurement 100 MHz to 6 GHz
KDB 865664 D02 RF Exposure Reporting
KDB 447498 D01 General RF Exposure Guidance
KDB 248227 D01 802.11 Wi-Fi SAR
KDB 941225 D01 3G SAR Procedures
KDB 941225 D05 SAR for LTE Devices
KDB 941225 D06 Hotspot SAR
KDB 648474 D04 Handset SAR

1.5. Ambient Condition

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

2. SAR Measurement System

2.1. SATIMO SAR Measurement Set-up Diagram



These measurements were performed with the automated near-field scanning system OPENSAR from SATIMO. The system is based on a high precision robot (working range: 901 mm), which positions the probes with a positional repeatability of better than ± 0.03 mm. The SAR measurements were conducted with dosimetric probe (manufactured by SATIMO), designed in the classical triangular configuration and optimized for dosimetric evaluation.

The first step of the field measurement is the evaluation of the voltages induced on the probe by the device under test. Probe diode detectors are nonlinear. Below the diode compression point, the output voltage is proportional to the square of the applied E-field; above the diode compression point, it is linear to the applied E-field. The compression point depends on the diode, and a calibration procedure is necessary for each sensor of the probe.

The Keithley multimeter reads the voltage of each sensor and send these three values to the PC. The corresponding E field value is calculated using the probe calibration factors, which are stored in the working directory. This evaluation includes linearization of the diode characteristics. The field calculation is done separately for each sensor. Each component of the E field is displayed on the "Dipole Area Scan Interface" and the total E field is displayed on the "3D Interface"

2.2. Robot

The SATIMO SAR system uses the high precision robots from KUKA. For the 6-axis controller system, the robot controller version (KUKA) from KUKA is used. The KUKA robot series have many features that are important for our application:



- High precision (repeatability ± 0.03 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)

2.3. 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.

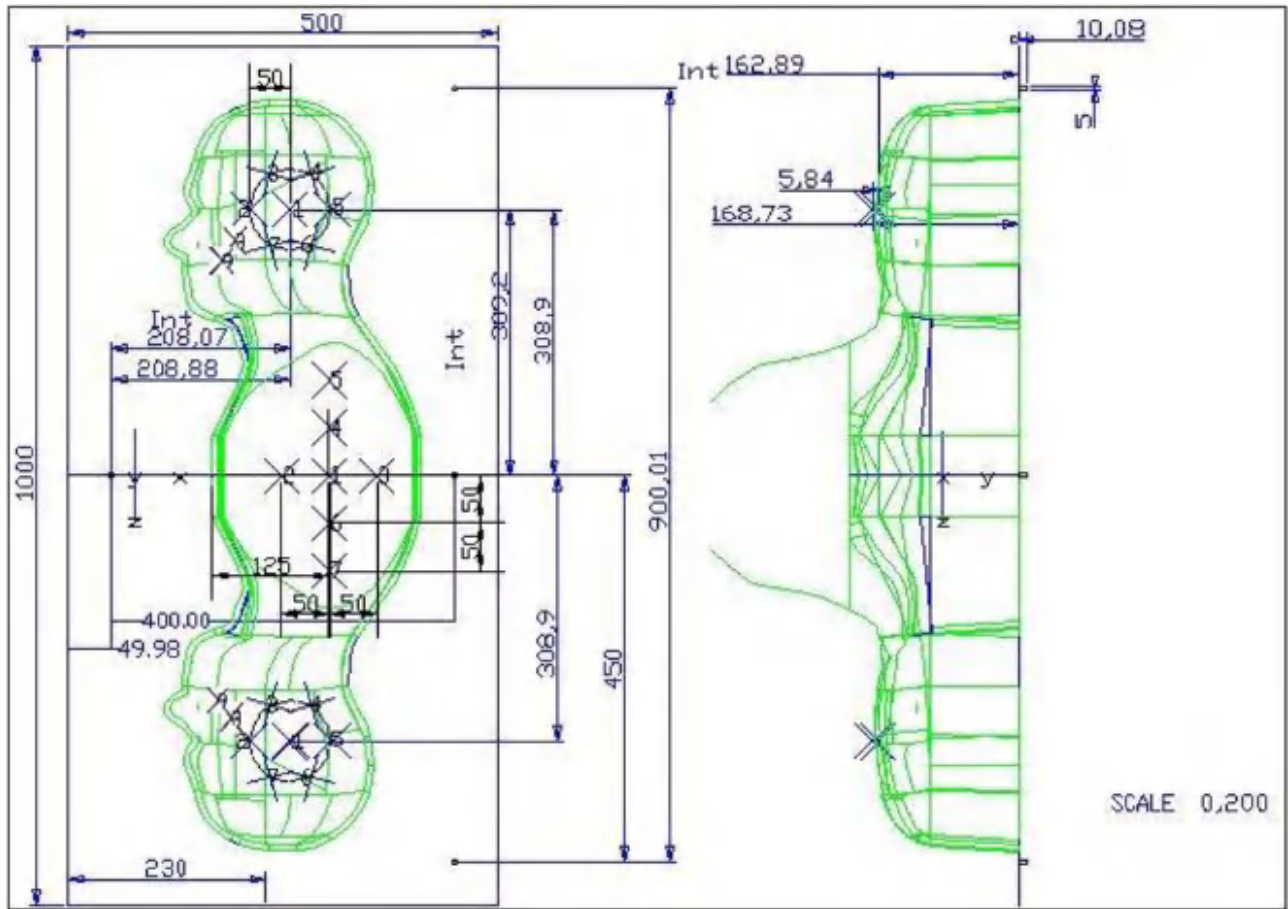
2.4. Phantoms

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

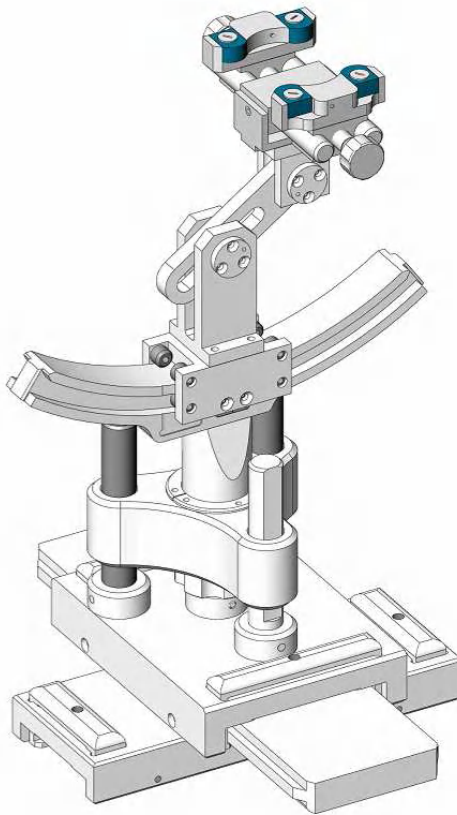
2.5. Technical Data



Left Head(mm)		Right Head(mm)		Flat Part(mm)	
2	2.02	2	2.08	1	2.09
3	2.05	3	2.06	2	2.06
4	2.07	4	2.07	3	2.08
5	2.08	5	2.08	4	2.10
6	2.05	6	2.07	5	2.10
7	2.05	7	2.05	6	2.07
8	2.07	8	2.06	7	2.07
9	2.08	9	2.06	-	-

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

2.6. 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	SID5000	50/20- DIP5G000-523	Mar. 06, 2024	Mar. 05, 2027
☒	MVG	Liquid measurement Kit	SCLMP	SN 21/15 OCPG 72	Jun. 30, 2025	Jun. 29, 2026
☒	MVG	Power Amplifier	N.A	AMPLISAR_28/1 4_003	NCR	NCR
☒	KEITHLEY	Millivoltmeter	2000	4072790	Jun. 30, 2025	Jun. 29, 2026
☒	R&S	Universal radio communication tester	CMU200	117858	Jun. 30, 2025	Jun. 29, 2026
☒	R&S	Wideband radio communication tester	CMW500	116581	Jun. 30, 2025	Jun. 29, 2026
☒	HP	Network Analyzer	8753D	3410J01136	Jun. 30, 2025	Jun. 29, 2026

☒	Agilent	PSG Analog Signal Generator	E8257D	MY51110112	Jun. 30, 2025	Jun. 29, 2026
☒	Agilent	Power meter	E4419B	MY45102538	Jun. 30, 2025	Jun. 29, 2026
☒	Agilent	Power meter	E4419B	MY45102140	Jun. 30, 2025	Jun. 29, 2026
☒	Agilent	Power meter	E4419B	MY45102215	Jun. 30, 2025	Jun. 29, 2026
☒	JFW	attenuator	50FPE-006	4360846-494-4	Jun. 30, 2025	Jun. 29, 2026
☒	JFW	attenuator	50FPE-006	4360846-492-1	Jun. 30, 2025	Jun. 29, 2026
☒	JFW	attenuator	50FPE-006	4360846-490-6	Jun. 30, 2025	Jun. 29, 2026
☒	Agilent	Power sensor	E9301A	MY41495644	Jun. 30, 2025	Jun. 29, 2026
☒	Agilent	Power sensor	E9301A	US39212148	Jun. 30, 2025	Jun. 29, 2026
☒	MCLI/USA	Directional Coupler	CB11-20	0D2L51502	Jul. 17, 2024	Jul. 16, 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.

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area} , Δy_{Area}			≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: Δx_{Zoom} , Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5 · $\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

3.3. Description of interpolation/extrapolation scheme

The local SAR inside the phantom is measured using small dipole sensing elements inside a probe body. The probe tip must not be in contact with the phantom surface in order to minimise measurements errors, but the highest local SAR will occur at the surface of the phantom.

An extrapolation is using to determinate this highest local SAR values. The extrapolation is based on a fourth-order least-square polynomial fit of measured data. The local SAR value is then extrapolated from the liquid surface with a 1 mm step.

The measurements have to be performed over a limited time (due to the duration of the battery) so the step of measurement is high. It could vary between 5 and 8 mm. To obtain an accurate assessment of the maximum SAR averaged over 10 grams and 1 gram requires a very fine resolution in the three dimensional scanned data array.

3.4. Volumetric Scan

The volumetric scan consists to a full 3D scan over a specific area. This 3D scan is useful form multi Tx SAR measurement. Indeed, it is possible with OpenSAR to add, point by point, several volumetric scan to calculate the SAR value of the combined measurement as it is define in the standard IEEE1528 and IEC62209.

3.5. Power Drift

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In OpenSAR measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in V/m. If the power drifts more than $\pm 5\%$, the SAR will be retested.

4. System Verification Procedure

4.1. Tissue Verification

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Ingredients (% of weight)	Head Tissue									
Frequency Band (MHz)	750	835	900	1800	1900	2000	2450	2600	5200	5800
Water	34.40	34.40	34.40	55.36	55.36	57.87	57.87	57.87	65.53	65.53
NaCl	0.79	0.79	0.79	0.35	0.35	0.16	0.16	0.16	0.00	0.00
1,2-Propanediol	64.81	64.81	64.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Triton X-100	0.00	0.00	0.00	30.45	30.45	19.97	19.97	19.97	24.24	24.24
DGBE	0.00	0.00	0.00	13.84	13.84	22.00	22.00	22.00	10.23	10.23

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. For head SAR testing, the liquid depth from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm.



4.1.1. Tissue Dielectric Parameter Check Results

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine if the dielectric parameters are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within $\pm 5\%$ of the target values.

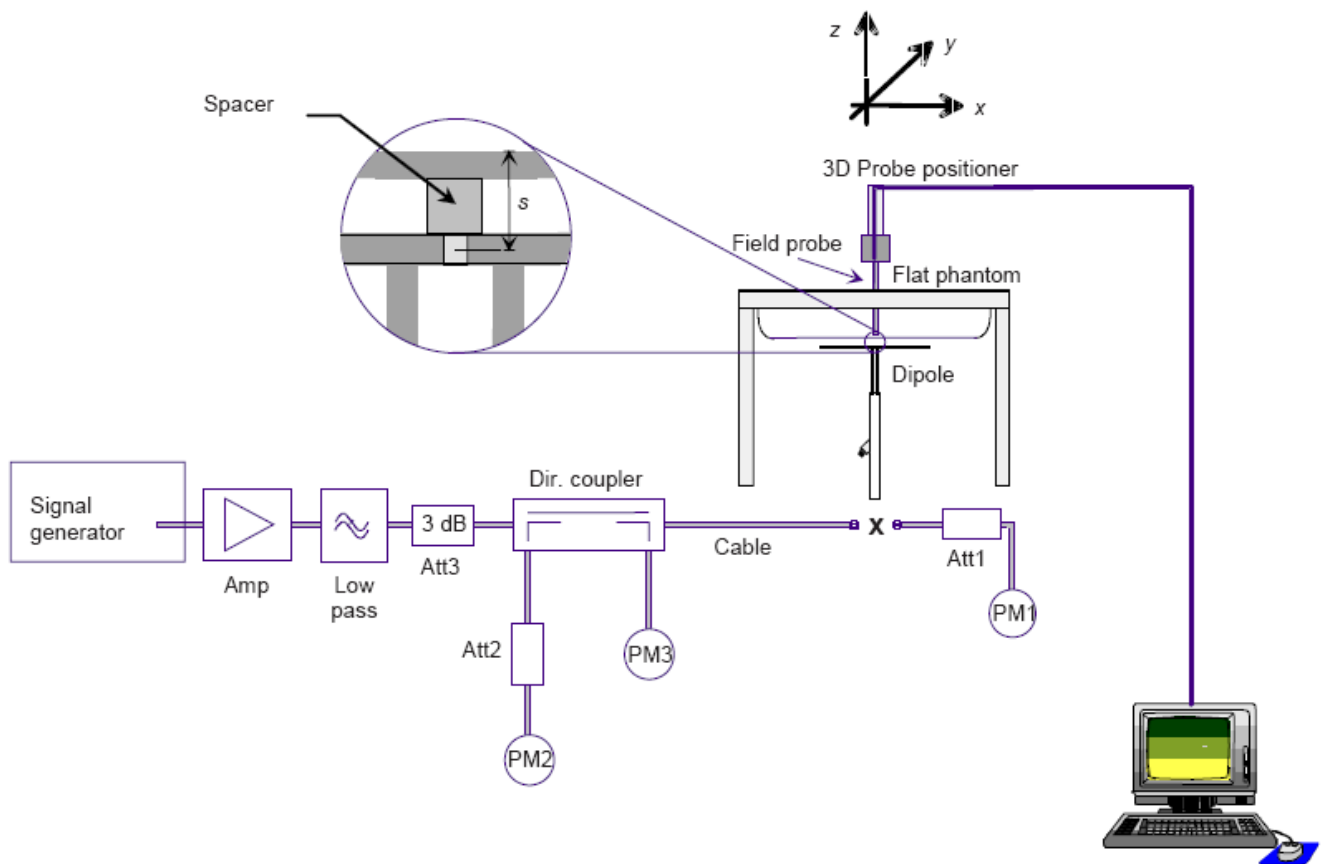
Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
		$\epsilon_r (\pm 5\%)$	$\sigma \text{ (S/m)} (\pm 5\%)$	ϵ_r	$\sigma \text{ (S/m)}$		
Head 750	750	41.96 (39.86~44.06)	0.89 (0.85~0.93)	41.36	0.90	22.6 °C	Dec. 12, 2025
Head 850	835	41.50 (39.43~43.58)	0.90 (0.86~0.95)	41.14	0.88	23.1 °C	Dec. 14, 2025
Head 1800	1800	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.44	1.42	22.9 °C	Dec. 20, 2025
Head 1900	1900	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.39	1.46	22.9 °C	Dec. 20, 2025
Head 2450	2450	39.20 (37.24~41.16)	1.80 (1.71~1.89)	38.76	1.83	22.4 °C	Dec. 22, 2025
Head 2600	2600	39.01 (37.06~40.96)	1.96 (1.86~2.06)	38.51	1.99	22.4 °C	Dec. 22, 2025
Head 5200	5200	36.00 (34.20~37.80)	4.66 (4.43~4.89)	36.85	4.74	22.3 °C	Dec. 27, 2025
Head 5800	5800	35.30 (33.54~37.07)	5.27 (5.01~5.53)	36.01	5.41	22.7 °C	Dec 28, 2025

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

4.2. System Verification Procedure

The system verification is performed for verifying the accuracy of the complete measurement system and performance of the software. The dipole is connected to the signal source consisting of signal generator and amplifier via a directional coupler, N-connector cable and adaption to SMA. It is fed with a power of 100mW (below 5GHz) or 100mW (above 5GHz). To adjust this power a power meter is used. The power sensor is connected to the cable before the system verification to measure the power at this point and do adjustments at the signal generator. At the outputs of the directional coupler both return loss as well as forward power are controlled during the system verification to make sure that emitted power at the dipole is kept constant. This can also be checked by the power drift measurement after the test (result on plot).

The system verification is shown as below picture:



4.2.1. System Verification Results

Comparing to the original SAR value provided by SATIMO, the verification data should be within its specification of $\pm 10\%$. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance verification can meet the variation criterion and the plots can be referred to Appendix B of this report.

System Verification	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	0.798	0.525	7.98	5.25	8.60	5.78	-7.16%	-9.14%	Dec. 12, 2025
835MHz	100	0.880	0.575	8.80	5.75	9.40	6.28	-6.38%	-8.41%	Dec. 14, 2025
1800MHz	100	3.411	1.860	34.11	18.60	37.06	20.01	-7.96%	-7.05%	Dec. 20, 2025
1900MHz	100	3.726	1.961	37.26	19.61	39.69	20.92	-6.13%	-6.26%	Dec. 20, 2025
2450MHz	100	4.990	2.466	49.90	24.66	50.05	23.80	-0.29%	3.63%	Dec. 22, 2025
2600MHz	100	5.719	2.634	57.19	26.34	54.16	24.85	5.60%	6.00%	Dec. 22, 2025
5200MHz	40	3.130	0.876	78.25	21.90	74.90	22.09	4.47%	-0.86%	Dec. 27, 2025
5800MHz	40	3.206	0.920	80.15	23.00	75.30	22.08	6.43%	4.18%	Dec 28, 2025

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 (~ 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.

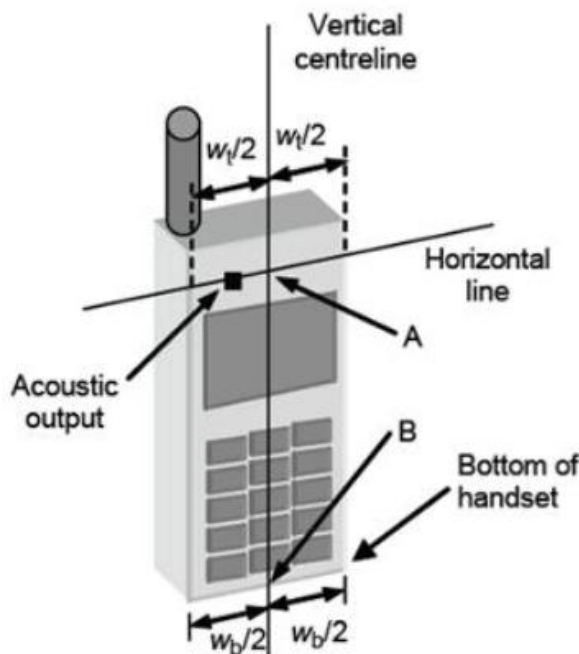


Fig 7.2.1 Handset vertical and horizontal reference lines—fixed case

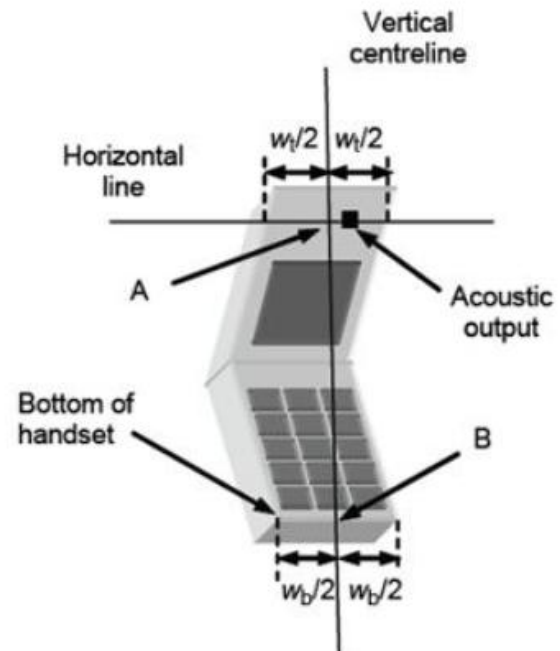


Fig 7.2.2 Handset vertical and horizontal reference lines—“clam-shell case”

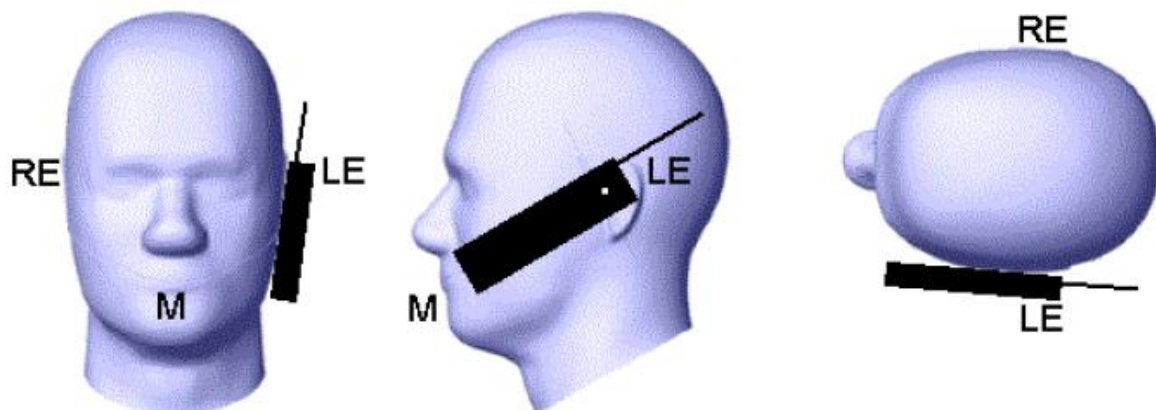


Fig 7.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

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.

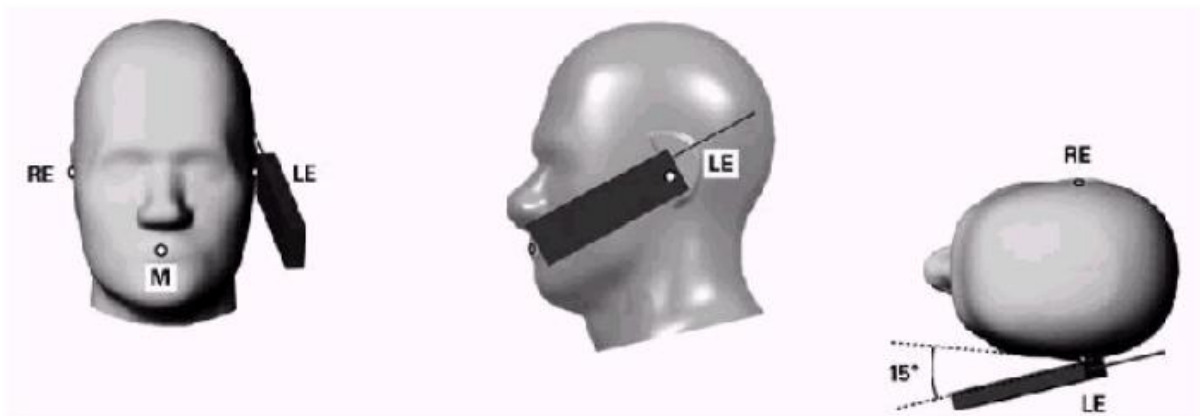


Figure 7.3.1 – Tilt position of the wireless device on the left side of SAM

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 handset attached to the handset.

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

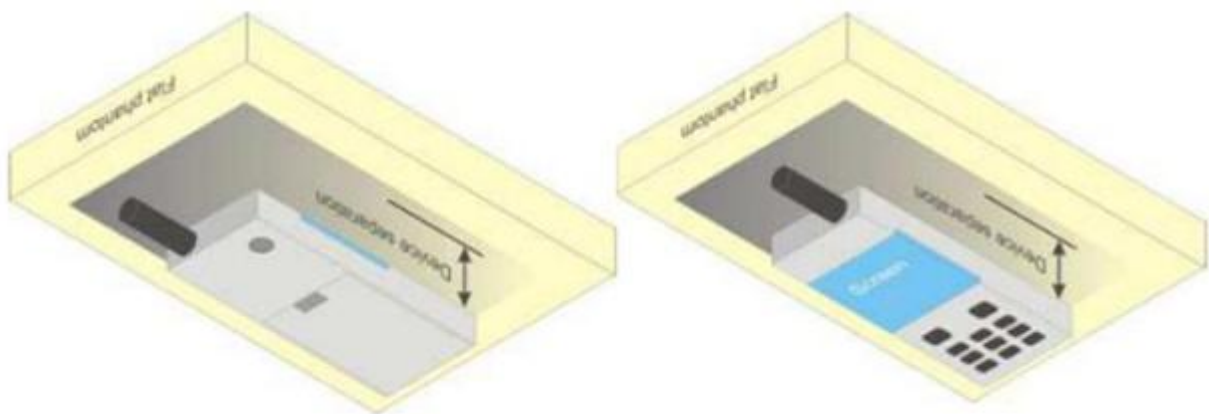


Figure 7.4.1 – Test positions for body-worn devices

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 5mm 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	190	251		128	190	251
Frequency (MHz)		824.2	836.6	848.8		824.2	836.6	848.8
GSM (GMSK)	31.5	30.34	30.49	31.32	/	/	/	/
GPRS(GMSK,1 Tx slot)	31.0	30.15	30.10	30.90	-9.03	21.12	21.07	21.87
GPRS(GMSK,2 Tx slot)	31.0	29.81	29.85	30.69	-6.02	23.79	23.83	24.67
GPRS(GMSK,3 Tx slot)	30.0	28.57	28.62	29.46	-4.26	24.31	24.36	25.20
GPRS(GMSK,4 Tx slot)	29.0	27.27	27.33	28.17	-3.01	24.26	24.32	25.16
EGPRS(8PSK,1 Tx slot)	29.0	27.90	28.06	28.86	-9.03	18.87	19.03	19.83
EGPRS(8PSK,2 Tx slot)	29.0	26.98	27.22	28.06	-6.02	20.96	21.20	22.04
EGPRS(8PSK,3 Tx slot)	27.0	25.23	25.46	26.27	-4.26	20.97	21.20	22.01
EGPRS(8PSK,4 Tx slot)	26.0	24.18	24.42	25.21	-3.01	21.17	21.41	22.20

Band GSM1900	Burst-Averaged output Power (dBm)				Factor	Frame-Averaged output Power (dBm)		
Tx Channel	Tune-up (dBm)	512	661	810		512	661	810
Frequency (MHz)		1850.2	1880	1909.8		1850.2	1880	1909.8
GSM (GMSK)	25.0	21.68	24.73	22.95	/	/	/	/
GPRS(GMSK,1 Tx slot)	25.0	21.41	24.28	22.50	-9.03	12.38	15.25	13.47
GPRS(GMSK,2 Tx slot)	24.0	20.77	23.74	21.96	-6.02	14.75	17.72	15.94
GPRS(GMSK,3 Tx slot)	23.0	19.15	22.19	20.41	-4.26	14.89	17.93	16.15
GPRS(GMSK,4 Tx slot)	21.0	17.98	20.98	19.18	-3.01	14.97	17.97	16.17
EGPRS(8PSK,1 Tx slot)	26.0	23.39	25.38	23.58	-9.03	14.36	16.35	14.55
EGPRS(8PSK,2 Tx slot)	25.0	22.60	24.64	22.79	-6.02	16.58	18.62	16.77
EGPRS(8PSK,3 Tx slot)	24.0	21.05	23.09	21.19	-4.26	16.79	18.83	16.93
EGPRS(8PSK,4 Tx slot)	23.0	20.07	22.05	20.13	-3.01	17.06	19.04	17.12

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	4ms				

HSUPA Specific Settings	5.2B.4)					
	CQI Repetition Factor (Table 5.2B.4)	2				
	A _{hs} = 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 VIII/I 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	24.00	23.85	23.43	23.56
HSDPA Sub 1	24.00	23.84	22.62	23.24
HSDPA Sub 2	23.00	22.42	21.75	21.94
HSDPA Sub 3	22.00	21.32	21.00	21.52
HSDPA Sub 4	22.00	21.18	21.66	20.92
HSUPA Sub 1	21.00	20.36	20.36	19.89
HSUPA Sub 2	23.00	21.71	22.81	22.24
HSUPA Sub 3	22.00	21.06	21.82	21.67
HSUPA Sub 4	22.00	21.27	21.60	20.83
HSUPA Sub 5	21.00	20.77	19.76	20.40

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	24.00	23.15	23.53	23.45
HSDPA Sub 1	24.00	22.96	22.77	22.99
HSDPA Sub 2	23.00	21.77	22.62	22.75
HSDPA Sub 3	22.00	21.78	21.82	20.84
HSDPA Sub 4	22.00	21.65	21.81	21.51
HSUPA Sub 1	21.00	20.08	20.38	20.79
HSUPA Sub 2	23.00	22.79	22.25	22.65
HSUPA Sub 3	22.00	21.42	21.19	21.23
HSUPA Sub 4	22.00	21.15	21.00	21.22
HSUPA Sub 5	21.00	20.05	20.44	19.95

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				
Ch BW	Downlink Configuration	Uplink Configuration		
		Mod'n	RB allocation	
	N/A for Max UE output power testing		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.				

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	24.0	23.39	23.83	23.79
			1	2	24.0	23.35	23.87	23.76
			1	5	24.0	23.35	23.70	23.71
			3	0	23.5	22.87	23.12	23.03
			3	1	23.5	22.86	23.13	23.02
			3	2	23.5	22.71	23.12	23.01
			6	0	22.5	21.80	22.02	22.07
		16QAM	1	0	23.5	22.61	23.09	22.67
			1	2	23.5	22.56	23.05	22.10
			1	5	23.5	22.60	23.07	22.17
			3	0	22.0	21.35	21.78	21.91
			3	1	22.0	21.43	21.75	21.91
			3	2	22.0	21.68	21.80	21.90
			6	0	21.0	21.19	21.34	21.19
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	24.0	23.46	23.50	23.68
			1	7	24.0	23.44	23.59	23.73
			1	14	24.0	23.48	23.64	23.61
			8	0	22.5	21.72	21.97	21.92
			8	4	22.5	21.70	21.88	21.98
			8	7	22.5	21.73	22.04	22.01
			15	0	22.5	21.78	22.03	22.03
		16QAM	1	0	23.0	22.34	22.50	22.58
			1	7	23.0	22.34	22.63	22.59
			1	14	23.0	21.79	22.62	22.50
			8	0	22.0	21.34	21.09	21.11
			8	4	22.0	21.35	21.11	21.13
			8	7	22.0	21.38	21.51	21.23
			15	0	21.5	21.05	21.08	20.97

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	24.0	23.46	23.71	23.64
			1	12	24.0	23.49	23.82	23.64
			1	24	24.0	23.53	23.81	23.58
			12	0	22.5	21.88	21.90	21.93
			12	6	22.5	21.68	21.92	21.99
			12	11	22.5	21.69	21.93	22.08
			25	0	22.0	21.79	21.84	21.94
		16QAM	1	0	23.0	22.24	22.07	22.80
			1	12	23.0	22.20	22.09	22.89
			1	24	23.0	22.36	22.07	22.88
			12	0	21.5	21.17	20.97	21.08
			12	6	21.5	21.31	20.94	21.17
			12	11	21.5	21.29	20.95	21.09
			25	0	21.5	21.22	21.04	20.99
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	24.0	23.48	23.58	23.71
			1	24	24.0	23.53	23.61	23.70
			1	49	24.0	23.44	23.70	23.70
			25	0	22.5	21.79	21.93	22.12
			25	12	22.5	21.83	21.96	22.07
			25	24	22.5	21.84	21.96	22.04
			50	0	22.0	21.78	22.00	21.99
		16QAM	1	0	23.0	21.71	22.44	22.04
			1	24	23.0	22.35	22.45	22.56
			1	49	23.0	22.35	22.54	22.02
			25	0	21.5	21.29	21.00	21.17
			25	12	21.5	21.31	21.01	21.14
			25	24	21.5	21.31	21.02	21.19
			50	0	21.5	20.86	21.07	21.08

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	24.0	23.54	23.65	23.88
			1	37	24.0	23.60	23.70	23.81
			1	74	24.0	23.63	23.70	23.84
			36	0	22.5	21.79	22.00	21.99
			36	18	22.5	21.72	21.90	22.16
			36	37	22.5	21.82	21.92	22.06
			75	0	22.5	21.72	21.99	22.04
		16QAM	1	0	23.0	22.40	22.35	22.80
			1	37	23.0	22.50	22.43	22.76
			1	74	23.0	22.54	22.50	22.76
			36	0	21.5	20.94	21.10	21.20
			36	18	21.5	20.95	21.12	21.23
			36	37	21.5	20.94	21.05	21.18
			75	0	21.5	20.89	21.08	21.05
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	24.5	23.54	23.63	23.97
			1	49	24.5	23.62	23.74	23.90
			1	99	24.5	23.64	23.89	23.91
			50	0	22.5	21.81	22.06	22.12
			50	24	22.5	21.73	22.18	22.18
			50	49	22.5	21.73	22.09	22.20
			100	0	22.5	21.87	22.13	22.15
		16QAM	1	0	23.5	22.92	22.76	23.29
			1	49	23.5	23.03	22.77	23.32
			1	99	23.5	23.02	22.98	23.27
			50	0	21.5	20.90	21.21	21.23
			50	24	21.5	20.90	21.29	21.18
			50	49	21.5	20.92	21.16	21.27
			100	0	21.5	21.25	21.10	21.24

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	23.5	22.82	22.94	22.57
			1	2	23.5	22.88	23.06	22.56
			1	5	23.5	22.78	23.06	22.55
			3	0	23.0	22.71	22.81	22.54
			3	1	23.0	22.84	22.79	22.52
			3	2	23.0	22.83	22.78	22.60
			6	0	22.0	21.82	21.84	21.58
		16QAM	1	0	23.5	22.61	22.96	22.27
			1	2	23.5	23.02	22.36	22.23
			1	5	23.5	23.01	22.37	22.22
			3	0	22.0	21.41	21.70	21.06
			3	1	22.0	21.49	21.64	21.07
			3	2	22.0	21.49	21.63	21.28
			6	0	21.5	21.04	20.88	20.64
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	23.5	22.94	22.94	22.64
			1	7	23.5	22.89	23.08	22.70
			1	14	23.5	22.88	23.10	22.68
			8	0	22.0	21.72	21.67	21.58
			8	4	22.0	21.75	21.59	21.45
			8	7	22.0	21.72	21.71	21.64
			15	0	22.0	21.82	21.71	21.63
		16QAM	1	0	23.0	22.35	23.00	22.01
			1	7	23.0	22.22	22.30	22.12
			1	14	23.0	22.25	22.41	22.04
			8	0	21.0	21.00	20.89	20.77
			8	4	21.0	20.91	20.75	20.79
			8	7	21.0	20.99	20.88	20.75
			15	0	21.0	20.70	20.72	20.51

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	23.5	23.07	23.01	22.97
			1	12	23.5	22.88	22.85	22.97
			1	24	23.5	22.94	22.91	22.96
			12	0	22.0	21.69	21.72	21.61
			12	6	22.0	21.70	21.76	21.64
			12	11	22.0	21.85	21.61	21.65
			25	0	22.0	21.77	21.80	21.62
		16QAM	1	0	23.5	22.19	22.14	21.67
			1	12	23.5	22.52	22.04	21.62
			1	24	23.5	22.52	22.02	21.64
			12	0	21.0	20.91	20.61	20.64
			12	6	21.0	20.92	20.63	20.64
			12	11	21.0	20.91	20.64	20.64
			25	0	21.0	20.75	20.80	20.70
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	23.5	23.02	22.97	22.87
			1	24	23.5	22.87	23.01	22.87
			1	49	23.5	22.89	23.10	22.79
			25	0	22.0	21.76	21.65	21.69
			25	12	22.0	21.59	21.67	21.71
			25	24	22.0	21.65	21.66	21.72
			50	0	22.0	21.60	21.83	21.58
		16QAM	1	0	22.5	21.74	22.23	22.13
			1	24	22.5	21.71	22.34	22.02
			1	49	22.5	21.72	22.32	21.90
			25	0	21.0	20.88	20.88	20.58
			25	12	21.0	20.87	20.95	20.59
			25	24	21.0	20.82	20.70	20.59
			50	0	21.0	20.79	20.82	20.64

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	23.5	23.02	22.94	22.90
			1	37	23.5	22.85	23.02	22.79
			1	74	23.5	22.43	23.12	22.81
			36	0	22.0	21.77	21.67	21.71
			36	16	22.0	21.78	21.69	21.62
			36	35	22.0	21.68	21.54	21.62
			75	0	22.0	21.73	21.76	21.65
		16QAM	1	0	22.5	22.47	22.18	22.11
			1	37	22.5	22.12	22.36	22.07
			1	74	22.5	22.41	22.44	22.28
			36	0	21.0	20.85	20.75	20.78
			36	16	21.0	20.86	20.75	20.82
			36	35	21.0	20.88	20.72	20.81
			75	0	21.5	21.19	20.88	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	23.5	23.08	22.65	22.96
			1	49	23.5	22.78	22.81	22.99
			1	99	23.5	22.86	22.95	23.04
			50	0	22.0	21.64	21.73	21.63
			50	24	22.0	21.67	21.74	21.76
			50	49	22.0	21.57	21.75	21.76
			100	0	22.0	21.54	21.79	21.76
		16QAM	1	0	23.5	23.02	22.26	21.59
			1	49	23.5	22.66	22.39	21.85
			1	99	23.5	22.83	22.13	21.72
			50	0	21.0	20.69	20.82	20.80
			50	24	21.0	20.71	20.85	20.80
			50	49	21.0	20.72	20.85	20.81
			100	0	21.0	20.84	20.67	20.66

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	23.5	23.18	23.32	23.31
			1	2	23.5	23.19	23.44	23.33
			1	5	23.5	23.08	23.40	23.44
			3	0	23.5	23.14	23.16	23.19
			3	1	23.5	23.13	23.18	23.23
			3	2	23.5	23.11	23.17	23.22
			6	0	22.5	22.10	22.15	22.11
		16QAM	1	0	23.5	22.93	22.64	23.31
			1	2	23.5	22.79	22.70	23.31
			1	5	23.5	22.88	22.70	23.27
			3	0	22.5	21.56	22.00	21.79
			3	1	22.5	21.55	22.05	21.94
			3	2	22.5	21.61	22.02	21.79
			6	0	21.5	21.22	21.32	21.18
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	23.5	23.29	23.20	23.26
			1	7	23.5	23.30	23.41	23.24
			1	14	23.5	23.33	23.39	23.34
			8	0	22.5	22.17	22.08	22.17
			8	4	22.5	22.05	22.10	22.12
			8	7	22.5	22.10	22.04	22.04
			15	0	22.5	22.22	22.17	22.10
		16QAM	1	0	23.0	22.57	22.52	22.87
			1	7	23.0	22.61	22.69	22.78
			1	14	23.0	22.53	22.67	22.69
			8	0	21.5	21.32	21.11	21.37
			8	4	21.5	21.34	21.06	21.35
			8	7	21.5	21.28	21.19	21.27
			15	0	21.5	21.08	21.14	21.16

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	24.0	23.41	23.41	23.51
			1	12	24.0	23.33	23.21	23.45
			1	24	24.0	23.45	23.24	23.47
			12	0	22.5	22.26	22.09	22.14
			12	6	22.5	22.13	22.01	22.23
			12	11	22.5	22.14	22.01	22.15
			25	0	22.5	22.14	22.09	22.17
		16QAM	1	0	23.0	22.49	22.47	22.18
			1	12	23.0	22.50	22.42	22.18
			1	24	23.0	22.62	22.30	22.21
			12	0	21.5	21.12	21.01	21.12
			12	6	21.5	21.14	21.03	21.12
			12	11	21.5	21.14	21.03	21.12
			25	0	21.5	21.03	21.26	21.32
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	24.0	23.26	23.42	23.25
			1	24	24.0	23.30	23.44	23.18
			1	49	24.0	23.24	23.50	23.30
			25	0	22.5	22.07	21.96	22.15
			25	12	22.5	22.14	22.10	22.17
			25	24	22.5	22.21	22.11	22.18
			50	0	22.5	22.05	22.14	22.09
		16QAM	1	0	23.0	21.99	22.69	22.39
			1	24	23.0	22.10	22.68	22.34
			1	49	23.0	22.09	22.71	22.54
			25	0	21.5	21.19	21.14	21.04
			25	12	21.5	21.24	21.15	21.07
			25	24	21.5	21.19	21.10	20.99
			50	0	21.5	20.97	21.25	21.01

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20775/2502.5	21100/2535	21425/2567.5
LTE Band 7	5MHz	QPSK	1	0	22.5	22.12	21.82	21.85
			1	12	22.5	22.16	22.04	22.01
			1	24	22.5	22.18	21.99	22.03
			12	0	21.5	21.08	20.96	20.82
			12	6	21.5	21.13	20.91	20.78
			12	11	21.5	21.13	20.95	20.79
			25	0	21.5	21.03	20.87	20.81
		16QAM	1	0	21.5	21.28	21.17	21.07
			1	12	21.5	21.30	21.16	21.15
			1	24	21.5	21.28	21.15	21.14
			12	0	20.5	20.26	20.04	20.06
			12	6	20.5	20.26	20.05	19.93
			12	11	20.5	20.26	20.02	19.93
			25	0	20.5	20.30	19.84	19.97
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20800/2505	21100/2535	21400/2565
LTE Band 7	10MHz	QPSK	1	0	22.5	22.11	21.88	21.74
			1	24	22.5	22.10	21.79	21.81
			1	49	22.5	22.08	21.86	21.64
			25	0	21.5	21.16	20.77	20.82
			25	12	21.5	21.08	20.93	20.84
			25	24	21.5	21.18	20.93	20.73
			50	0	21.5	21.17	20.86	20.75
		16QAM	1	0	22.0	20.94	21.96	21.52
			1	24	22.0	21.00	21.96	21.03
			1	49	22.0	20.91	21.93	20.97
			25	0	20.5	20.28	19.98	19.90
			25	12	20.5	20.25	20.05	19.82
			25	24	20.5	20.25	19.98	19.86
			50	0	20.5	20.19	20.00	19.99

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20825/2507.5	21100/2535	21375/2562.5
LTE Band 7	15MHz	QPSK	1	0	22.0	21.72	21.75	21.80
			1	37	22.0	21.67	21.81	21.80
			1	74	22.0	21.59	21.87	21.75
			36	0	21.5	21.17	20.84	20.86
			36	16	21.5	21.18	20.88	20.82
			36	35	21.5	21.18	20.88	20.84
			75	0	21.0	20.99	20.87	20.98
		16QAM	1	0	22.0	21.52	21.96	21.47
			1	37	22.0	21.44	21.89	21.53
			1	74	22.0	21.42	21.99	21.45
			36	0	20.5	20.33	19.94	19.95
			36	16	20.5	20.33	19.92	20.01
			36	35	20.5	20.33	19.92	19.98
			75	0	21.0	20.23	19.91	19.97
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20850/2510	21100/2535	21350/2560
LTE Band 7	20MHz	QPSK	1	0	22.5	22.08	21.95	21.99
			1	49	22.5	22.05	21.92	21.88
			1	99	22.5	22.11	22.06	21.86
			50	0	21.5	21.00	20.95	20.87
			50	24	21.5	21.14	20.98	20.89
			50	49	21.5	21.13	20.98	20.83
			100	0	21.5	21.07	20.80	20.89
		16QAM	1	0	22.5	21.99	21.26	21.16
			1	49	22.5	21.97	21.27	21.16
			1	99	22.5	22.11	21.33	20.76
			50	0	20.5	20.18	20.14	20.15
			50	24	20.5	20.22	20.15	20.07
			50	49	20.5	20.21	20.07	20.09
			100	0	20.5	20.23	19.95	19.95

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	24.0	23.79	23.87	23.95
			1	2	24.0	23.76	23.79	23.88
			1	5	24.0	23.73	23.84	23.85
			3	0	23.5	23.16	23.12	23.22
			3	1	23.5	23.17	23.11	23.23
			3	2	23.5	23.17	23.11	23.21
			6	0	22.5	21.97	22.17	22.26
		16QAM	1	0	22.5	22.90	22.65	23.06
			1	2	23.5	22.93	22.66	23.06
			1	5	23.5	22.82	22.62	23.09
			3	0	23.5	21.57	22.13	22.08
			3	1	22.5	21.57	22.15	21.75
			3	2	22.5	21.52	22.15	21.71
			6	0	22.0	21.51	21.00	21.43
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	24.0	23.88	23.84	23.86
			1	7	24.0	23.87	23.83	23.90
			1	14	24.0	23.93	23.88	23.81
			8	0	22.5	22.01	22.06	22.15
			8	4	22.5	22.04	22.23	22.10
			8	7	22.5	22.18	22.16	22.31
			15	0	22.5	22.05	21.91	22.09
		16QAM	1	0	23.5	22.41	23.30	22.74
			1	7	23.5	22.28	22.59	22.84
			1	14	23.5	22.55	22.67	22.57
			8	0	22.0	21.68	21.06	21.13
			8	4	22.0	21.63	21.10	21.11
			8	7	22.0	21.32	21.03	21.34
			15	0	21.5	21.36	21.17	21.15

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	24.5	23.96	23.92	24.09
			1	12	24.5	23.97	23.76	23.98
			1	24	24.5	23.90	24.00	23.92
			12	0	22.5	21.96	22.05	22.15
			12	6	22.5	22.02	21.90	22.16
			12	11	22.5	22.02	21.89	22.16
			25	0	22.5	22.20	22.09	22.01
		16QAM	1	0	23.0	22.01	22.33	22.59
			1	12	23.0	22.12	22.27	22.45
			1	24	23.0	22.03	22.21	22.55
			12	0	21.5	21.39	20.91	21.12
			12	6	21.5	21.49	20.88	21.07
			12	11	21.5	21.49	21.02	21.07
			25	0	21.5	21.20	21.05	20.95
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	24.5	23.75	23.79	23.73
			1	24	24.5	23.68	23.82	23.79
			1	49	24.5	23.81	24.00	23.72
			25	0	22.5	22.13	22.06	22.02
			25	12	22.5	22.14	22.00	22.09
			25	24	22.5	22.15	22.01	22.11
			50	0	22.5	22.05	21.94	21.90
		16QAM	1	0	23.0	22.38	22.51	22.25
			1	24	23.0	22.46	22.50	22.28
			1	49	23.0	22.54	22.81	22.45
			25	0	21.5	21.25	21.13	21.04
			25	12	21.5	21.35	21.20	21.11
			25	24	21.5	21.20	21.20	20.93
			50	0	21.5	21.04	21.01	20.87

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	24.5	23.60	23.86	24.04
			1	12	24.5	23.86	23.96	23.93
			1	24	24.5	23.71	24.11	23.76
			12	0	22.5	21.96	22.03	22.22
			12	6	22.5	21.97	21.91	22.18
			12	11	22.5	22.14	22.07	22.17
			25	0	22.5	22.16	22.00	22.13
		16QAM	1	0	23.0	22.13	22.04	22.97
			1	12	23.0	22.21	21.91	22.88
			1	24	23.0	22.12	22.23	22.91
			12	0	21.5	21.02	20.85	21.20
			12	6	21.5	21.02	20.86	21.24
			12	11	21.5	21.02	20.87	21.11
			25	0	21.5	21.07	20.90	21.00
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	24.5	23.78	23.84	23.65
			1	24	24.5	23.77	23.95	23.84
			1	49	24.5	23.94	24.07	23.73
			25	0	22.5	21.99	21.88	22.20
			25	12	22.5	22.14	21.97	22.00
			25	24	22.5	22.15	21.93	21.84
			50	0	22.0	22.00	21.98	21.96
		16QAM	1	0	23.0	22.03	22.58	22.24
			1	24	23.0	22.10	22.57	22.68
			1	49	23.0	22.19	22.67	22.90
			25	0	21.5	21.13	21.11	21.09
			25	12	21.5	21.09	21.09	21.10
			25	24	21.5	21.12	21.11	20.99
			50	0	21.5	21.05	20.88	20.89

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	22.5	21.82	21.93	21.82
			1	12	22.5	21.83	22.03	21.91
			1	24	22.5	21.86	21.99	21.89
			12	0	21.5	20.86	21.12	20.99
			12	6	21.5	20.88	21.09	21.00
			12	11	21.5	21.00	21.09	21.04
			25	0	21.5	20.94	21.05	21.03
		16QAM	1	0	22.5	21.86	22.09	21.95
			1	12	22.5	21.91	21.75	21.88
			1	24	22.5	21.94	21.83	21.90
			12	0	20.5	19.77	20.13	19.99
			12	6	20.5	19.78	20.14	20.00
			12	11	20.5	19.77	20.14	20.00
			25	0	20.5	20.14	20.25	20.18
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	22.5	21.82	21.72	21.87
			1	24	22.5	21.92	21.67	21.89
			1	49	22.5	21.89	21.78	21.95
			25	0	21.5	20.96	21.02	21.11
			25	12	21.5	20.97	21.03	21.07
			25	24	21.5	20.97	21.03	21.08
			50	0	21.5	20.98	20.90	21.07
		16QAM	1	0	22.0	21.85	21.50	21.60
			1	24	22.0	21.91	21.52	21.63
			1	49	22.0	21.92	21.54	21.64
			25	0	21.0	20.08	20.25	20.31
			25	12	21.0	20.08	20.14	20.28
			25	24	21.0	20.08	20.15	20.28
			50	0	20.5	20.15	20.10	20.20

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	22.5	21.76	21.98	21.94
			1	37	22.5	21.86	21.94	21.97
			1	74	22.5	21.84	22.10	22.04
			36	0	21.5	20.85	21.08	21.08
			36	16	21.5	20.88	21.12	21.06
			36	35	21.5	20.88	21.06	21.04
			75	0	21.5	20.82	20.96	21.03
		16QAM	1	0	22.0	20.51	21.78	21.11
			1	37	22.0	20.47	21.73	21.03
			1	74	22.0	20.66	21.76	21.19
			36	0	21.0	20.02	20.15	20.23
			36	16	21.0	20.02	20.17	20.24
			36	35	21.0	20.01	20.18	20.24
			75	0	20.5	20.06	20.13	20.21
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	22.5	21.74	21.77	21.85
			1	49	22.5	21.83	21.90	21.96
			1	99	22.5	21.78	21.86	21.95
			50	0	21.5	20.94	21.04	21.09
			50	24	21.5	20.94	20.93	21.03
			50	49	21.5	20.93	20.94	21.03
			100	0	21.5	20.92	21.03	21.07
		16QAM	1	0	22.5	21.15	21.89	21.65
			1	49	22.5	21.06	21.89	21.64
			1	99	22.5	21.04	21.90	21.67
			50	0	20.5	20.05	20.28	20.22
			50	24	20.5	20.05	20.23	20.21
			50	49	20.5	20.05	20.14	20.18
			100	0	20.5	19.97	20.15	20.19

8.4. Wi-Fi & BT Output Power

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11b	1	2412	14.0	13.05
	6	2437	14.0	13.69
	11	2462	14.0	13.63
802.11g	1	2412	13.5	12.64
	6	2437	13.5	12.95
	11	2462	13.5	13.10
802.11n (HT20)	1	2412	13.0	12.43
	6	2437	14.0	13.97
	11	2462	13.0	12.82
802.11n (HT40)	3	2422	14.0	13.62
	6	2437	14.0	13.18
	9	2452	14.0	13.47

Mode	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11A	5180	11.0	10.62
	5200	12.0	11.80
	5240	12.0	11.09
802.11N20SISO	5180	12.0	11.62
	5200	12.0	11.51
	5240	11.0	10.90
802.11N40SISO	5190	12.0	11.08
	5230	12.0	11.74
802.11AC20SISO	5180	11.0	10.50
	5200	12.0	11.49
	5240	12.0	11.17
802.11AC40SISO	5190	12.0	11.08
	5230	12.0	11.84
802.11AC80SISO	5210	12.0	11.67

Mode	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11A	5745	14.0	13.08
	5785	11.0	10.96
	5825	12.0	11.63
802.11N20SISO	5745	14.0	13.06
	5785	12.0	11.08
	5825	12.0	11.82
802.11N40SISO	5755	13.0	12.14
	5795	12.0	11.30
802.11AC20SISO	5745	14.0	13.07
	5785	12.0	11.05
	5825	12.0	11.72
802.11AC40SISO	5755	13.0	12.23
	5795	12.0	11.29
802.11AC80SISO	5775	12.0	11.40

BR+EDR	Output Power (dBm)				
	Channel	Tune-up (dBm)	Data Rates		
			1M	2M	3M
	0CH	2.0	1.16	0.23	0.27
	39CH	4.0	3.31	2.51	2.48
	78CH	5.0	4.13	3.32	3.53

9. Antenna Location



Fig.14.1 EUT Antenna Locations

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
WWAN	<25mm	<25mm	<25mm	46.17mm	<25mm	88.36mm
BT/WLAN	<25mm	<25mm	45.55mm	<25mm	68.68mm	26.46mm

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

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	5.0	3.162	5	2.441	1.0	3	Yes

NOTE: Standalone SAR test exclusion for Bluetooth.

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

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

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

Mode	Position	Pmax (dBm)	Pmax (mW)	Distance (mm)	f (GHz)	x	Estimated SAR (W/kg)
Bluetooth	Head	5.00	3.162	5	2.441	7.5	0.132
Bluetooth	Body	5.00	3.162	10	2.441	7.5	0.066
Bluetooth	Hotspot	5.00	3.162	10	2.441	7.5	0.066

NOTE: Estimated SAR calculation for Bluetooth

11. SAR Measurement Results

< GSM 850>

Test Position	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
Right Cheek	251/848.8	GSM (voice)	0.345	-0.68	31.32	31.5	0.360	2025/12/14	1#
Right Tilt 15 Degree	251/848.8	GSM (voice)	0.333	1.08	31.32	31.5	0.347	2025/12/14	
Left Cheek	251/848.8	GSM (voice)	0.291	-2.31	31.32	31.5	0.303	2025/12/14	
Left Tilt 15 Degree	251/848.8	GSM (voice)	0.267	-1.69	31.32	31.5	0.278	2025/12/14	

Test Position of Body&Hotspot with 5mm	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
Front Side	251/848.8	GPRS (GMSK 3TS)	0.108	3.66	29.46	30.0	0.122	2025/12/14	
Back Side	251/848.8	GPRS (GMSK 3TS)	0.147	-4.18	29.46	30.0	0.166	2025/12/14	15#
Left Side	251/848.8	GPRS (GMSK 3TS)	0.040	2.92	29.46	30.0	0.045	2025/12/14	
Top Side	251/848.8	GPRS (GMSK 3TS)	0.101	2.73	29.46	30.0	0.114	2025/12/14	
Back Side	251/848.8	GPRS (GMSK 4TS)	0.135	1.11	25.21	26.0	0.162	2025/12/14	

< GSM 1900>

Test Position	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
Right Cheek	810/1880	GSM (voice)	0.627	0.52	29.49	30.0	0.705	2025/12/20	
Right Tilt 15 Degree	810/1880	GSM (voice)	0.997	0.10	29.49	30.0	1.121	2025/12/20	2#
Left Cheek	810/1880	GSM (voice)	0.268	-3.31	29.49	30.0	0.301	2025/12/20	
Left Tilt 15 Degree	810/1880	GSM (voice)	0.306	-0.29	29.49	30.0	0.344	2025/12/20	
Right Tilt 15 Degree	512/1850.2	GSM (voice)	0.437	0.51	21.68	22.0	0.470	2025/12/20	
Right Tilt 15 Degree	810/1909.8	GSM (voice)	0.735	0.14	22.95	23.0	0.744	2025/12/20	

Test Position of Body&Hotspot with 5mm	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
Front Side	661/1880	GPRS (GMSK 4TS)	0.240	-2.04	20.98	21.0	0.241	2025/12/20	
Back Side	661/1880	GPRS (GMSK 4TS)	0.547	-0.22	20.98	21.0	0.550	2025/12/20	16#
Left Side	661/1880	GPRS (GMSK 4TS)	0.117	-3.44	20.98	21.0	0.118	2025/12/20	
Top Side	661/1880	GPRS (GMSK 4TS)	0.423	0.44	20.98	21.0	0.425	2025/12/20	
Back Side	661/1880	EGPRS (GMSK 4TS)	0.398	0.68	22.05	23.00	0.495	2025/12/20	

< WCDMA Band 2 >

Test Position	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
Right Cheek	9262/1852.4	RMC12.2K	0.978	0.58	23.85	24.0	1.012	2025/12/20	3#
Right Tilt 15 Degree	9262/1852.4	RMC12.2K	0.912	-0.57	23.85	24.0	0.944	2025/12/20	
Left Cheek	9262/1852.4	RMC12.2K	0.532	1.50	23.85	24.0	0.551	2025/12/20	
Left Tilt 15 Degree	9262/1852.4	RMC12.2K	0.640	3.72	23.85	24.0	0.662	2025/12/20	
Right Cheek	9400/1880	RMC12.2K	0.885	0.75	23.43	24.00	1.009	2025/12/20	
Right Cheek	9538/1907.6	RMC12.2K	0.839	1.24	23.56	24.00	0.928	2025/12/20	
Right Tilt 15 Degree	9400/1880	RMC12.2K	0.844	0.44	23.43	24.00	0.962	2025/12/20	
Right Tilt 15 Degree	9538/1907.6	RMC12.2K	0.852	0.65	23.56	24.00	0.943	2025/12/20	

Test Position of Body&Hotspot with 5mm	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
Front Side	9262/1852.4	RMC12.2K	0.184	0.64	23.85	24.0	0.190	2025/12/20	
Back Side	9262/1852.4	RMC12.2K	0.321	-0.58	23.85	24.0	0.332	2025/12/20	
Left Side	9262/1852.4	RMC12.2K	0.075	-1.23	23.85	24.0	0.078	2025/12/20	
Top Side	9262/1852.4	RMC12.2K	0.449	-2.64	23.85	24.0	0.465	2025/12/20	17#

< WCDMA Band 5>

Test Position	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
Right Cheek	4183/836.6	RMC12.2K	0.362	-1.27	23.53	24.0	0.403	2025/12/14	4#
Right Tilt 15 Degree	4183/836.6	RMC12.2K	0.290	-1.37	23.53	24.0	0.323	2025/12/14	
Left Cheek	4183/836.6	RMC12.2K	0.320	4.61	23.53	24.0	0.357	2025/12/14	
Left Tilt 15 Degree	4183/836.6	RMC12.2K	0.335	-1.75	23.53	24.0	0.373	2025/12/14	

Test Position of Body&Hotspot with 5mm	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
Front Side	4183/836.6	RMC12.2K	0.100	1.58	23.53	24.0	0.111	2025/12/14	
Back Side	4183/836.6	RMC12.2K	0.163	-0.04	23.53	24.0	0.182	2025/12/14	18#
Left Side	4183/836.6	RMC12.2K	0.046	0.25	23.53	24.0	0.051	2025/12/14	
Top Side	4183/836.6	RMC12.2K	0.089	1.66	23.53	24.0	0.099	2025/12/14	

< LTE Band 2 >

Test Position	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
1RB									
Right Cheek	19100/1900	20M QPSK(1,0)	0.846	-2.65	23.97	24.5	0.956	2025/12/20	
Right Tilt 15 Degree	19100/1900	20M QPSK(1,0)	0.971	1.64	23.97	24.5	1.097	2025/12/20	
Left Cheek	19100/1900	20M QPSK(1,0)	0.408	1.60	23.97	24.5	0.461	2025/12/20	
Left Tilt 15 Degree	19100/1900	20M QPSK(1,0)	0.424	0.37	23.97	24.5	0.479	2025/12/20	
Right Cheek	18700/1860	20M QPSK(1,99)	0.592	-2.00	23.64	24.5	0.722	2025/12/20	
Right Cheek	18900/1880	20M QPSK(1,99)	0.892	1.63	23.89	24.5	1.027	2025/12/20	
Right Tilt 15 Degree	18700/1860	20M QPSK(1,99)	0.613	1.25	23.64	24.5	0.747	2025/12/20	
Right Tilt 15 Degree	18900/1880	20M QPSK(1,99)	0.998	-1.60	23.89	24.5	1.149	2025/12/20	5#
50%RB									
Right Cheek	19100/1900	20M QPSK(50,49)	0.688	-2.67	22.20	22.5	0.738	2025/12/20	
Right Tilt 15 Degree	19100/1900	20M QPSK(50,49)	0.862	2.51	22.20	22.5	0.924	2025/12/20	
Left Cheek	19100/1900	20M QPSK(50,49)	0.406	0.79	22.20	22.5	0.435	2025/12/20	
Left Tilt 15 Degree	19100/1900	20M QPSK(50,49)	0.421	-0.40	22.20	22.5	0.451	2025/12/20	
Right Tilt 15 Degree	18700/1860	20M QPSK(50,0)	0.582	-0.34	21.81	22.5	0.682	2025/12/20	
Right Tilt 15 Degree	18900/1880	20M QPSK(50,24)	0.989	2.49	22.18	22.5	1.064	2025/12/20	
100%RB									
Right Cheek	19100/1900	20M QPSK(100,0)	0.574	-2.50	22.15	22.5	0.622	2025/12/20	
Right Tilt 15 Degree	19100/1900	20M QPSK(100,0)	0.699	-1.97	22.15	22.5	0.758	2025/12/20	

Test Position of Body&Hotspot with 5mm	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
1RB									
Front Side	19100/1900	20M QPSK(1,0)	0.176	-0.34	23.97	24.5	0.199	2025/12/20	
Back Side	19100/1900	20M QPSK(1,0)	0.367	-1.74	23.97	24.5	0.415	2025/12/20	
Left Side	19100/1900	20M QPSK(1,0)	0.059	-1.64	23.97	24.5	0.067	2025/12/20	
Top Side	19100/1900	20M QPSK(1,0)	0.349	1.44	23.97	24.5	0.394	2025/12/20	
50%RB									
Front Side	19100/1900	20M QPSK(50,49)	0.187	-2.20	22.20	22.5	0.200	2025/12/20	
Back Side	19100/1900	20M QPSK(50,49)	0.368	-1.32	22.20	22.5	0.394	2025/12/20	
Left Side	19100/1900	20M QPSK(50,49)	0.051	0.57	22.20	22.5	0.055	2025/12/20	
Top Side	19100/1900	20M QPSK(50,49)	0.445	-1.13	22.20	22.5	0.477	2025/12/20	19#

< LTE Band 4>

Test Position	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
1RB									
Right Cheek	20050/1720	20M QPSK(1,0)	0.387	1.22	23.08	23.5	0.426	2025/12/20	
Right Tilt 15 Degree	20050/1720	20M QPSK(1,0)	0.574	0.81	23.08	23.5	0.633	2025/12/20	6#
Left Cheek	20050/1720	20M QPSK(1,0)	0.226	-0.20	23.08	23.5	0.249	2025/12/20	
Left Tilt 15 Degree	20050/1720	20M QPSK(1,0)	0.244	-1.11	23.08	23.5	0.269	2025/12/20	
50%RB									
Right Cheek	20300/1745	20M QPSK(50,24)	0.407	-0.34	21.76	22.0	0.430	2025/12/20	
Right Tilt 15 Degree	20300/1745	20M QPSK(50,24)	0.469	0.40	21.76	22.0	0.496	2025/12/20	
Left Cheek	20300/1745	20M QPSK(50,24)	0.240	2.91	21.76	22.0	0.254	2025/12/20	
Left Tilt 15 Degree	20300/1745	20M QPSK(50,24)	0.259	2.46	21.76	22.0	0.274	2025/12/20	

Test Position of Body&Hotspot with 5mm	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
1RB									
Front Side	20050/1720	20M QPSK(1,0)	0.103	0.99	23.08	23.5	0.114	2025/12/20	
Back Side	20050/1720	20M QPSK(1,0)	0.160	-0.88	23.08	23.5	0.176	2025/12/20	
Left Side	20050/1720	20M QPSK(1,0)	0.025	-2.20	23.08	23.5	0.028	2025/12/20	
Top Side	20050/1720	20M QPSK(1,0)	0.188	-1.62	23.08	23.5	0.207	2025/12/20	
50%RB									
Front Side	20300/1745	20M QPSK(50,24)	0.107	1.47	21.76	22.0	0.113	2025/12/20	
Back Side	20300/1745	20M QPSK(50,24)	0.173	-0.25	21.76	22.0	0.183	2025/12/20	
Left Side	20300/1745	20M QPSK(50,24)	0.025	-1.43	21.76	22.0	0.026	2025/12/20	
Top Side	20300/1745	20M QPSK(50,24)	0.270	0.36	21.76	22.0	0.285	2025/12/20	20#

< LTE Band 5 >

Test Position	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
1RB									
Right Cheek	20525/836.5	10M QPSK(1,49)	0.298	-1.69	23.50	24.0	0.334	2025/12/14	7#
Right Tilt 15 Degree	20525/836.5	10M QPSK(1,49)	0.242	-0.76	23.50	24.0	0.272	2025/12/14	
Left Cheek	20525/836.5	10M QPSK(1,49)	0.258	0.21	23.50	24.0	0.289	2025/12/14	
Left Tilt 15 Degree	20525/836.5	10M QPSK(1,49)	0.269	2.16	23.50	24.0	0.302	2025/12/14	
50%RB									
Right Cheek	20450/829	10M QPSK(25,24)	0.272	-2.71	22.21	22.5	0.291	2025/12/14	
Right Tilt 15 Degree	20450/829	10M QPSK(25,24)	0.199	-0.72	22.21	22.5	0.213	2025/12/14	
Left Cheek	20450/829	10M QPSK(25,24)	0.211	-0.93	22.21	22.5	0.226	2025/12/14	
Left Tilt 15 Degree	20450/829	10M QPSK(25,24)	0.267	-1.66	22.21	22.5	0.285	2025/12/14	

Test Position of Body&Hotspot with 5mm	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
1RB									
Front Side	20525/836.5	10M QPSK(1,49)	0.089	1.99	23.50	24.0	0.100	2025/12/14	
Back Side	20525/836.5	10M QPSK(1,49)	0.139	-0.56	23.50	24.0	0.156	2025/12/14	21#
Left Side	20525/836.5	10M QPSK(1,49)	0.034	-1.47	23.50	24.0	0.038	2025/12/14	
Top Side	20525/836.5	10M QPSK(1,49)	0.103	0.53	23.50	24.0	0.116	2025/12/14	
50%RB									
Front Side	20450/829	10M QPSK(25,24)	0.048	0.77	22.21	22.5	0.051	2025/12/14	
Back Side	20450/829	10M QPSK(25,24)	0.111	-0.52	22.21	22.5	0.119	2025/12/14	
Left Side	20450/829	10M QPSK(25,24)	0.028	2.34	22.21	22.5	0.030	2025/12/14	
Top Side	20450/829	10M QPSK(25,24)	0.082	-2.36	22.21	22.5	0.087	2025/12/14	

< LTE Band 7 >

Test Position	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
1RB									
Right Cheek	20850/2510	20M QPSK(1,99)	0.702	-0.57	22.11	22.5	0.768	2025/12/22	
Right Tilt 15 Degree	20850/2510	20M QPSK(1,99)	0.960	-2.30	22.11	22.5	1.050	2025/12/22	
Left Cheek	20850/2510	20M QPSK(1,99)	0.285	2.44	22.11	22.5	0.312	2025/12/22	
Left Tilt 15 Degree	20850/2510	20M QPSK(1,99)	0.345	-2.89	22.11	22.5	0.377	2025/12/22	
Right Tilt 15 Degree	21100/2535	20M QPSK(1,99)	1.000	2.83	22.06	22.5	1.107	2025/12/22	
Right Tilt 15 Degree	21350/2560	20M QPSK(1,0)	0.972	-0.54	21.99	22.5	1.094	2025/12/22	
50%RB									
Right Cheek	20850/2510	20M QPSK(50,24)	0.697	-2.09	21.14	21.5	0.757	2025/12/22	
Right Tilt 15 Degree	20850/2510	20M QPSK(50,24)	0.998	0.12	21.14	21.5	1.084	2025/12/22	
Left Cheek	20850/2510	20M QPSK(50,24)	0.285	-2.15	21.14	21.5	0.310	2025/12/22	
Left Tilt 15 Degree	20850/2510	20M QPSK(50,24)	0.343	-1.95	21.14	21.5	0.372	2025/12/22	
Right Tilt 15 Degree	21100/2535	20M QPSK(50,24)	1.030	-2.76	20.98	21.5	1.161	2025/12/22	8#
Right Tilt 15 Degree	21350/2560	20M QPSK(50,24)	0.983	-1.58	20.89	21.5	1.131	2025/12/22	
100%RB									
Right Tilt 15 Degree	20850/2510	20M QPSK(100,0)	0.715	0.89	21.07	21.5	0.789	2025/12/22	

Test Position of Body&Hotspot with 5mm	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
1RB									
Front Side	20850/2510	20M QPSK(1,99)	0.189	1.15	22.11	22.5	0.207	2025/12/22	
Back Side	20850/2510	20M QPSK(1,99)	0.742	2.39	22.11	22.5	0.812	2025/12/22	
Left Side	20850/2510	20M QPSK(1,99)	0.206	-1.87	22.11	22.5	0.225	2025/12/22	
Top Side	20850/2510	20M QPSK(1,99)	0.499	-2.62	22.11	22.5	0.546	2025/12/22	
Back Side	21100/2535	20M QPSK(1,99)	0.853	0.96	22.06	22.5	0.944	2025/12/22	22#
Back Side	21350/2560	20M QPSK(1,0)	0.788	0.14	21.99	22.5	0.887	2025/12/22	
50%RB									
Front Side	20850/2510	20M QPSK(50,24)	0.194	1.32	21.14	21.5	0.211	2025/12/22	
Back Side	20850/2510	20M QPSK(50,24)	0.703	1.91	21.14	21.5	0.763	2025/12/22	
Left Side	20850/2510	20M QPSK(50,24)	0.215	0.48	21.14	21.5	0.233	2025/12/22	
Top Side	20850/2510	20M QPSK(50,24)	0.504	-1.83	21.14	21.5	0.547	2025/12/22	
100%RB									
Back Side	20850/2510	20M QPSK(100,0)	0.668	1.11	21.07	21.0	0.657	2025/12/22	

< LTE Band 12 >

Test Position	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
1RB									
Right Cheek	23095/707.5	10M QPSK(1,49)	0.253	3.39	24.00	24.5	0.284	2025/12/12	
Right Tilt 15 Degree	23095/707.5	10M QPSK(1,49)	0.322	0.00	24.00	24.5	0.361	2025/12/12	9#
Left Cheek	23095/707.5	10M QPSK(1,49)	0.187	2.76	24.00	24.5	0.210	2025/12/12	
Left Tilt 15 Degree	23095/707.5	10M QPSK(1,49)	0.296	1.38	24.00	24.5	0.332	2025/12/12	
50%RB									
Right Cheek	23060/704	10M QPSK(25,24)	0.240	-2.31	22.15	22.5	0.260	2025/12/12	
Right Tilt 15 Degree	23060/704	10M QPSK(25,24)	0.198	2.55	22.15	22.5	0.215	2025/12/12	
Left Cheek	23060/704	10M QPSK(25,24)	0.176	-1.27	22.15	22.5	0.191	2025/12/12	
Left Tilt 15 Degree	23060/704	10M QPSK(25,24)	0.208	0.82	22.15	22.5	0.225	2025/12/12	

Test Position of Body&Hotspot with 5mm	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
1RB									
Front Side	23095/707.5	10M QPSK(1,24)	0.090	1.47	24.00	24.5	0.101	2025/12/12	
Back Side	23095/707.5	10M QPSK(1,24)	0.143	-0.66	24.00	24.5	0.160	2025/12/12	23#
Left Side	23095/707.5	10M QPSK(1,24)	0.075	1.71	24.00	24.5	0.084	2025/12/12	
Top Side	23095/707.5	10M QPSK(1,24)	0.068	-1.46	24.00	24.5	0.076	2025/12/12	
50%RB									
Front Side	23095/707.5	10M QPSK(25,24)	0.058	-1.52	22.15	22.5	0.063	2025/12/12	
Back Side	23095/707.5	10M QPSK(25,24)	0.140	-2.70	22.15	22.5	0.152	2025/12/12	
Left Side	23095/707.5	10M QPSK(25,24)	0.057	2.66	22.15	22.5	0.061	2025/12/12	
Top Side	23095/707.5	10M QPSK(25,24)	0.048	1.77	22.15	22.5	0.052	2025/12/12	

< LTE Band 17 >

Test Position	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
1RB									
Right Cheek	23790/710	10M QPSK(1,49)	0.257	1.44	24.07	24.5	0.284	2025/12/12	
Right Tilt 15 Degree	23790/710	10M QPSK(1,49)	0.332	-0.43	24.07	24.5	0.367	2025/12/12	10#
Left Cheek	23790/710	10M QPSK(1,49)	0.190	2.03	24.07	24.5	0.210	2025/12/12	
Left Tilt 15 Degree	23790/710	10M QPSK(1,49)	0.290	0.32	24.07	24.5	0.320	2025/12/12	
50%RB									
Right Cheek	23800/711	10M QPSK(25,24)	0.230	0.37	22.20	22.5	0.247	2025/12/12	
Right Tilt 15 Degree	23800/711	10M QPSK(25,24)	0.125	-0.09	22.20	22.5	0.134	2025/12/12	
Left Cheek	23800/711	10M QPSK(25,24)	0.180	2.97	22.20	22.5	0.193	2025/12/12	
Left Tilt 15 Degree	23800/711	10M QPSK(25,24)	0.200	0.63	22.20	22.5	0.214	2025/12/12	

Test Position of Body&Hotspot with 5mm	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
1RB									
Front Side	23790/710	10M QPSK(1,49)	0.082	0.28	24.07	24.5	0.090	2025/12/12	
Back Side	23790/710	10M QPSK(1,49)	0.151	-0.58	24.07	24.5	0.167	2025/12/12	24#
Left Side	23790/710	10M QPSK(1,49)	0.078	2.78	24.07	24.5	0.086	2025/12/12	
Top Side	23790/710	10M QPSK(1,49)	0.069	-1.83	24.07	24.5	0.076	2025/12/12	
50%RB									
Front Side	23800/711	10M QPSK(25,24)	0.058	-0.76	22.20	22.5	0.062	2025/12/12	
Back Side	23800/711	10M QPSK(25,24)	0.140	1.09	22.20	22.5	0.150	2025/12/12	
Left Side	23800/711	10M QPSK(25,24)	0.054	-0.02	22.20	22.5	0.058	2025/12/12	
Top Side	23800/711	10M QPSK(25,24)	0.047	1.07	22.20	22.5	0.050	2025/12/12	

< LTE Band 41>

Test Position	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
1RB									
Right Cheek	41140/2645	20M QPSK(1,99)	0.628	-0.64	22.21	22.5	0.677	2025/12/22	11#
Right Tilt 15 Degree	41140/2645	20M QPSK(1,99)	0.582	0.37	22.21	22.5	0.627	2025/12/22	
Left Cheek	41140/2645	20M QPSK(1,99)	0.445	-2.66	22.21	22.5	0.480	2025/12/22	
Left Tilt 15 Degree	41140/2645	20M QPSK(1,99)	0.423	1.64	22.21	22.5	0.456	2025/12/22	
50%RB									
Right Cheek	41140/2645	20M QPSK(50,0)	0.501	1.61	21.29	21.5	0.530	2025/12/22	
Right Tilt 15 Degree	41140/2645	20M QPSK(50,0)	0.393	2.10	21.29	21.5	0.416	2025/12/22	
Left Cheek	41140/2645	20M QPSK(50,0)	0.310	-1.54	21.29	21.5	0.328	2025/12/22	
Left Tilt 15 Degree	41140/2645	20M QPSK(50,0)	0.289	-2.92	21.29	21.5	0.306	2025/12/22	

Test Position of Body&Hotspot with 5mm	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
1RB									
Front Side	41140/2645	20M QPSK(1,99)	0.080	-1.28	22.21	22.5	0.087	2025/12/22	
Back Side	41140/2645	20M QPSK(1,99)	0.778	2.07	22.21	22.5	0.838	2025/12/22	
Left Side	41140/2645	20M QPSK(1,99)	0.242	0.80	22.21	22.5	0.261	2025/12/22	
Top Side	41140/2645	20M QPSK(1,99)	0.309	0.54	22.21	22.5	0.333	2025/12/22	
Back Side	40140/2545	20M QPSK(1,49)	0.868	-3.26	21.83	22.5	1.021	2025/12/22	25#
Back Side	40390/2570	20M QPSK(1,49)	0.781	0.08	22.00	22.5	0.883	2025/12/22	
Back Side	40640/2595	20M QPSK(1,99)	0.840	-1.11	21.90	22.5	0.972	2025/12/22	
Back Side	40890/2620	20M QPSK(1,49)	0.682	-0.81	21.96	22.5	0.778	2025/12/22	
50%RB									
Front Side	41140/2645	20M QPSK(50,0)	0.073	1.16	21.29	21.5	0.077	2025/12/22	
Back Side	41140/2645	20M QPSK(50,0)	0.389	2.83	21.29	21.5	0.412	2025/12/22	
Left Side	41140/2645	20M QPSK(50,0)	0.197	2.05	21.29	21.5	0.209	2025/12/22	
Top Side	41140/2645	20M QPSK(50,0)	0.264	0.87	21.29	21.5	0.279	2025/12/22	
100%RB									
Back Side	41140/2645	20M QPSK(100,0)	0.352	0.27	21.26	21.5	0.375	2025/12/22	

< WiFi 2.4G >

Test Position	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
Right Cheek	06/2437	802.11b	0.124	-0.75	13.69	14.0	0.133	2025/12/22	
Right Tilt 15 Degree	06/2437	802.11b	0.114	1.66	13.69	14.0	0.122	2025/12/22	
Left Cheek	06/2437	802.11b	0.180	-2.42	13.69	14.0	0.193	2025/12/22	12#
Left Tilt 15 Degree	06/2437	802.11b	0.173	0.25	13.69	14.0	0.186	2025/12/22	

Test Position of Body&Hotspot with 5mm	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
Front Side	06/2437	802.11b	0.044	0.58	13.69	14.0	0.047	2025/12/22	
Back Side	06/2437	802.11b	0.067	-2.30	13.69	14.0	0.072	2025/12/22	26#
Right Side	06/2437	802.11b	0.055	0.22	13.69	14.0	0.059	2025/12/22	

< WiFi 5.2G >

Test Position	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
Right Cheek	46/5230	802.11AC40	0.144	1.28	11.84	12.0	0.149	2025/12/27	
Right Tilt 15 Degree	46/5230	802.11AC40	0.109	-2.59	11.84	12.0	0.113	2025/12/27	
Left Cheek	46/5230	802.11AC40	0.225	-0.83	11.84	12.0	0.233	2025/12/27	13#
Left Tilt 15 Degree	46/5230	802.11AC40	0.172	0.69	11.84	12.0	0.178	2025/12/27	

Test Position of Body&Hotspot with 5mm	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
Front Side	46/5230	802.11AC40	0.060	1.25	11.84	12.0	0.062	2025/12/27	
Back Side	46/5230	802.11AC40	0.169	2.72	11.84	12.0	0.175	2025/12/27	27#
Right Side	46/5230	802.11AC40	0.123	3.10	11.84	12.0	0.128	2025/12/27	

< WiFi 5.8G>

Test Position	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
Right Cheek	149/5745	802.11a	0.044	2.14	13.08	14.0	0.054	2025/12/28	
Right Tilt 15 Degree	149/5745	802.11a	0.026	0.03	13.08	14.0	0.032	2025/12/28	
Left Cheek	149/5745	802.11a	0.148	-2.69	13.08	14.0	0.183	2025/12/28	14#
Left Tilt 15 Degree	149/5745	802.11a	0.054	3.68	13.08	14.0	0.067	2025/12/28	

Test Position of Body&Hotspot with 5mm	Test channel /Freq.	Mode	SAR Value (W/kg) 1g	Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
Front Side	149/5745	802.11a	0.049	1.32	13.08	14.0	0.061	2025/12/28	
Back Side	149/5745	802.11a	0.164	2.02	13.08	14.0	0.203	2025/12/28	28#
Right Side	149/5745	802.11a	0.028	-0.10	13.08	14.0	0.035	2025/12/28	

12. Repeated SAR measurement

Band	Mode	Test Position	Ch.	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
GSM 1900	GSM (voice)	Right Tilt	810/1880	0.984	0.997	1.013	/
WCDMA Band 2	RMC12.2K	Right Cheek	9262/1852.4	0.950	0.978	1.029	
		Right Tilt 15 Degree	9262/1852.4	0.895	0.912	1.019	
		Right Cheek	9400/1880	0.885	0.865	1.023	
		Right Cheek	9538/1907.6	0.825	0.839	1.017	
		Right Tilt 15 Degree	9400/1880	0.826	0.844	1.022	
		Right Tilt 15 Degree	9538/1907.6	0.852	0.831	1.025	
LTE Band 2	1RB 20M QPSK(1,0)	Right Cheek	19100/1900	0.843	0.846	1.004	
	1RB 20M QPSK(1,0)	Right Tilt 15 Degree	19100/1900	0.959	0.971	1.012	
	1RB 20M QPSK(1,99)	Right Cheek	18900/1880	0.881	0.892	1.012	
	1RB 20M QPSK(1,99)	Right Tilt 15 Degree	18900/1880	0.989	0.998	1.009	
	50RB 20M QPSK(50,49)	Right Tilt 15 Degree	19100/1900	0.838	0.862	1.029	
	50RB 20M QPSK(50,24)	Right Tilt 15 Degree	18900/1880	0.989	0.981	1.008	
LTE Band 7	1RB 20M QPSK(1,99)	Right Tilt 15 Degree	20850/2510	0.960	0.956	1.004	
	1RB 20M QPSK(1,99)	Right Tilt 15 Degree	21100/2535	1.000	0.970	1.031	
	1RB 20M QPSK(1,0)	Right Tilt 15 Degree	21350/2560	0.972	0.972	1.000	
	50RB 20M QPSK(50,24)	Right Tilt 15 Degree	20850/2510	0.968	0.998	1.031	
	50RB 20M QPSK(50,24)	Right Tilt 15 Degree	21100/2535	1.028	1.030	1.002	
	50RB 20M QPSK(50,24)	Right Tilt 15 Degree	21350/2560	0.955	0.983	1.029	
	1RB 20M QPSK(1,99)	Back Side	20850/2510	0.733	0.742	1.012	
	1RB 20M QPSK(1,99)	Back Side	21100/2535	0.846	0.853	1.009	
	1RB 20M QPSK(1,0)	Back Side	21350/2560	0.773	0.788	1.019	
LTE Band 41	1RB 20M QPSK(1,99)	Back Side	41140/2645	0.769	0.778	1.011	
	1RB 20M QPSK(1,49)	Back Side	40140/2545	0.868	0.862	1.007	
	1RB 20M QPSK(1,49)	Back Side	40390/2570	0.781	0.757	1.032	
	1RB 20M QPSK(1,99)	Back Side	40640/2595	0.817	0.840	1.029	

Note:

- Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥ 0.8 W/kg
- Per KDB 865664 D01v01r04, if the ratio of *original* and *repeated* is ≤ 1.2 and the measured SAR < 1.45 W/kg, only one repeated measurement is required.

13. 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
1	WWAN+WLAN	Yes	Yes	Yes
2	WWAN+Bluetooth	Yes	Yes	Yes

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

Position		Standalone SAR(W/kg)				$\sum \text{SAR}_{1g} \text{ (W/kg)}$		
		1	2	3	4	1+2	1+3	1+4
		WWAN	2.4G WLAN	5G WLAN	BT			
Head	Right Cheek	1.027	0.133	0.149	0.132	1.160	1.176	1.159
	Right Tilted	1.161	0.122	0.113	0.132	1.283	1.274	1.293
	Left Cheek	0.551	0.193	0.233	0.132	0.744	0.784	0.683
	Left Tilted	0.662	0.186	0.178	0.132	0.848	0.840	0.794
Body-worn	Front	0.241	0.047	0.062	0.066	0.288	0.303	0.307
	Back	1.021	0.072	0.175	0.066	1.093	1.196	1.087
Hotspot	Front	0.241	0.047	0.062	0.066	0.288	0.303	0.307
	Back	1.021	0.072	0.203	0.066	1.093	1.224	1.087
	Left	0.261	/	/	0.066	0.261	0.261	0.327
	Right	/	0.059	0.128	0.066	0.059	0.128	0.066
	Top	0.547	0.058	/	0.066	0.605	0.547	0.613
	Bottom	/	/	/	0.066	/	/	0.066

Note :

1. The Simultaneous Tx is calculated based on the same configuration and test position.
2. WLAN 2.4GHz Band, WLAN 5.2GHz Band, WLAN 5.3GHz Band, WLAN 5.6GHz Band, WLAN 5.8GHz Band and Bluetooth share the same antenna, and cannot transmit simultaneously.
3. GSM/WCDMA/LTE shares the same antenna, and cannot transmit simultaneously.

Appendix A. Photo documentation

Refer to appendix Test Setup photo---SAR

Appendix B. System Check Plots

System check at 750 MHz

Date of measurement: 12/12/2025

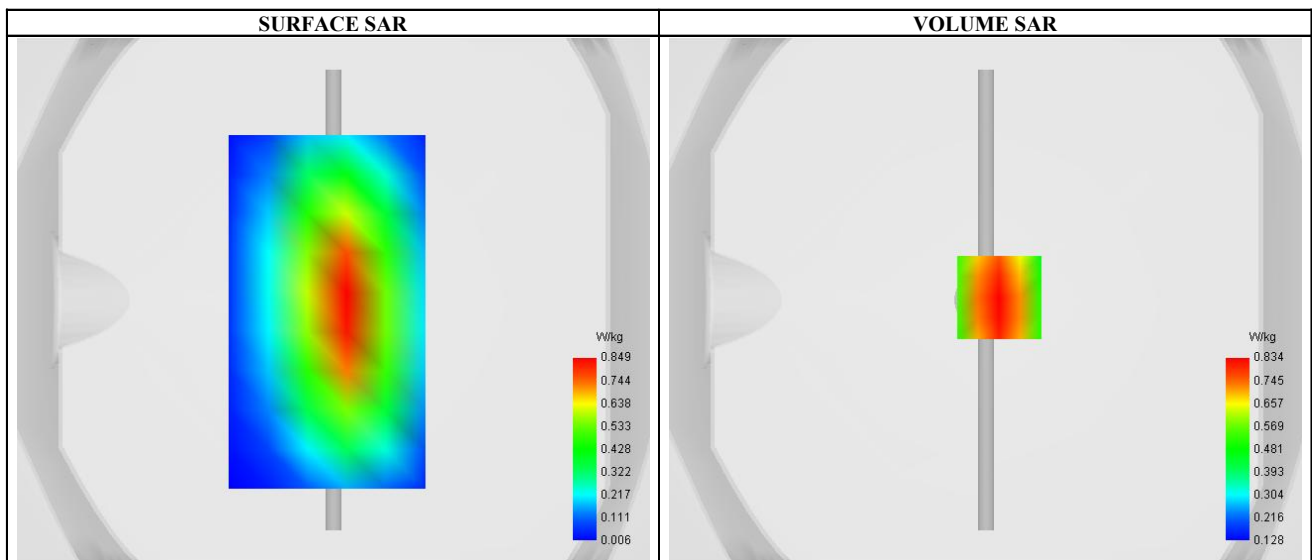
A. Experimental conditions.

Probe	SN 39/21 EPGO0523-403
ConvF	1.65
Area Scan	surf sam plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW750
Channels	Middle
Signal	CW (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	750.000000
Relative permittivity (real part)	41.358209
Conductivity (S/m)	0.896013

C. SAR Surface and Volume

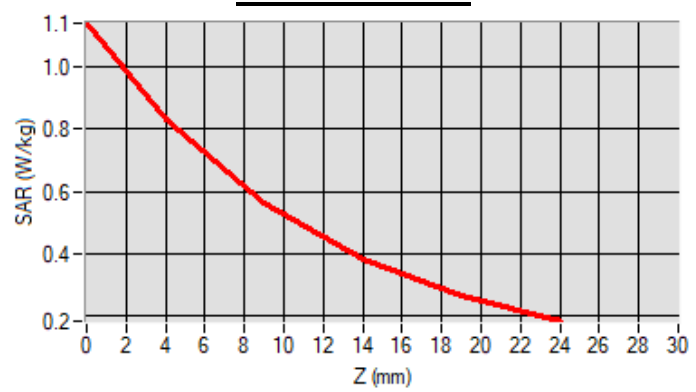


Maximum location: X=5.00, Y=1.00 ; SAR Peak: 1.15 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.525173
SAR 1g (W/Kg)	0.798415
Variation (%)	-1.080000

E. Z Axis Scan



System check at 835 MHz

Date of measurement: 14/12/2025

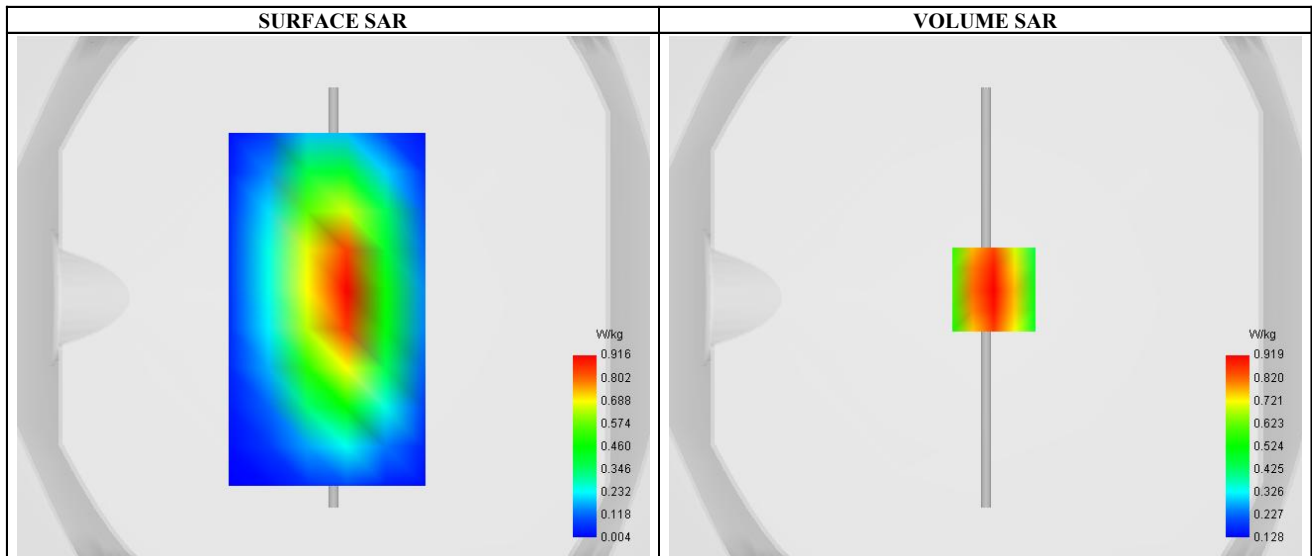
A. Experimental conditions.

Probe	SN 39/21 EPG0523-403
ConvF	1.66
Area Scan	surf sam plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW835
Channels	Middle
Signal	CW (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	835.000000
Relative permittivity (real part)	41.136954
Conductivity (S/m)	0.882052

C. SAR Surface and Volume

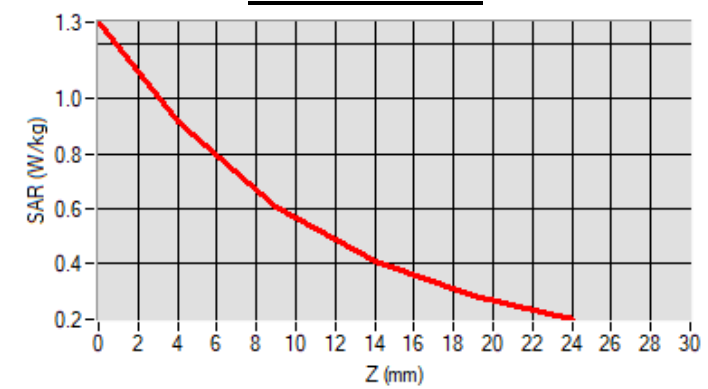


Maximum location: X=3.00, Y=3.00 ; SAR Peak: 1.28 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.575214
SAR 1g (W/Kg)	0.880069
Variation (%)	-2.120000

E. Z Axis Scan



System check at 1800 MHz

Date of measurement: 20/12/2025

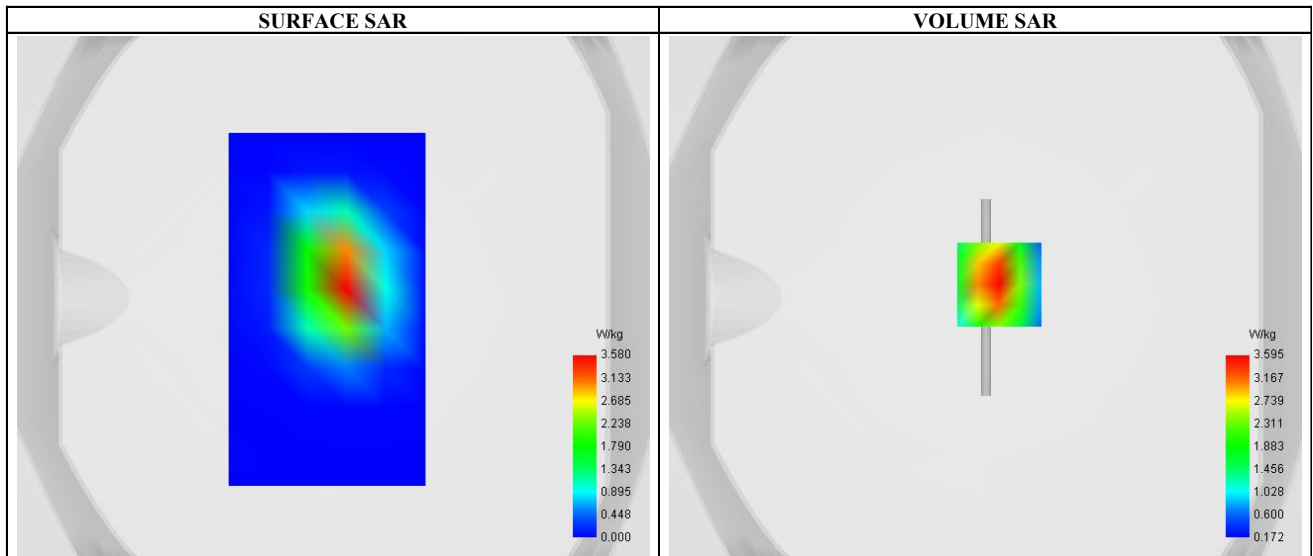
A. Experimental conditions.

Probe	SN 39/21 EPGO523-403
ConvF	2.05
Area Scan	surf sam plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW1800
Channels	Middle
Signal	CW (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	1800.000000
Relative permittivity (real part)	39.435114
Conductivity (S/m)	1.420224

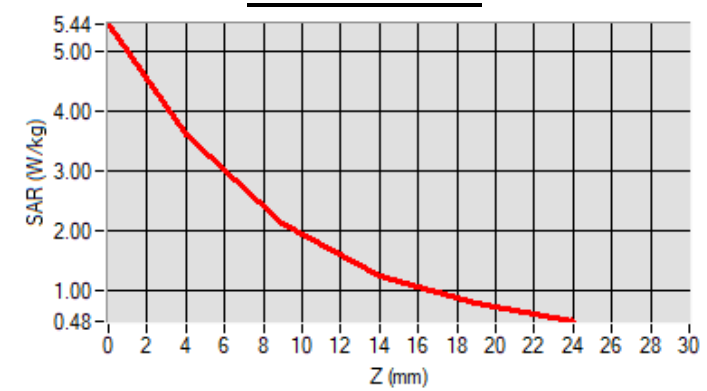
C. SAR Surface and Volume



D. SAR 1g & 10g

SAR 10g (W/Kg)	1.859841
SAR 1g (W/Kg)	3.410879
Variation (%)	3.230000

E. Z Axis Scan



System check at 1900 MHz

Date of measurement: 20/12/2025

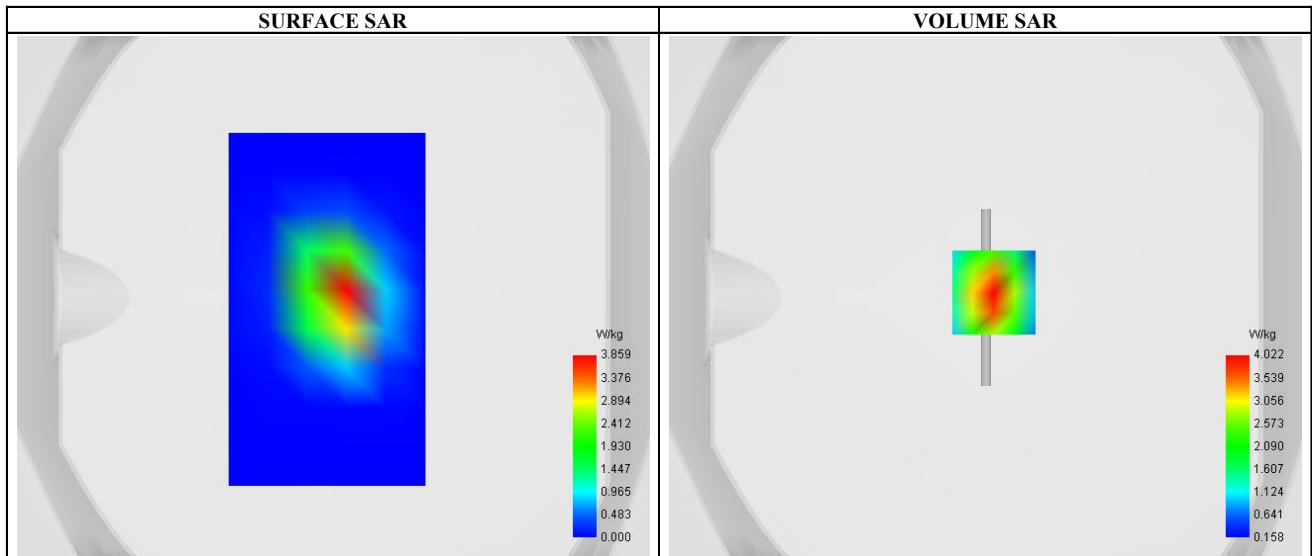
A. Experimental conditions.

Probe	SN 39/21 EPG0523-403
ConvF	2.05
Area Scan	surf sam plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW1900
Channels	Middle
Signal	CW (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	1900.000000
Relative permittivity (real part)	39.393307
Conductivity (S/m)	1.461132

C. SAR Surface and Volume

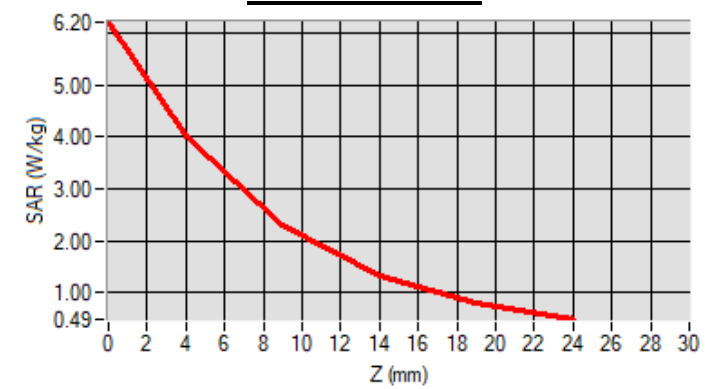


Maximum location: X=3.00, Y=2.00 ; SAR Peak: 6.24 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	1.960941
SAR 1g (W/Kg)	3.725874
Variation (%)	1.990000

E. Z Axis Scan



System check at 2450 MHz

Date of measurement: 22/12/2025

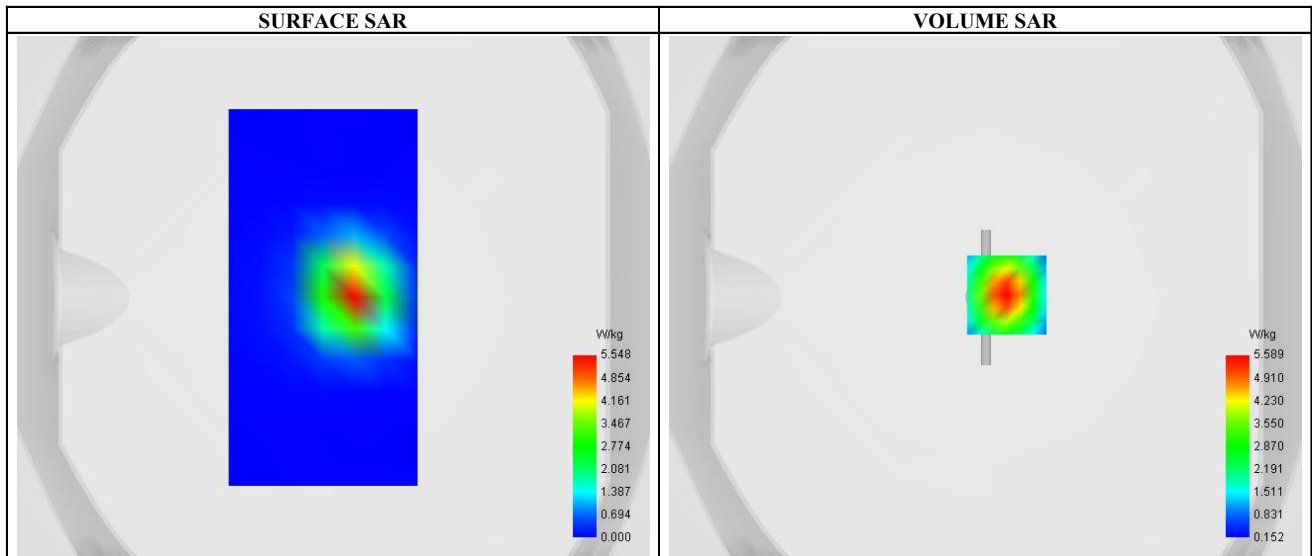
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	2.38
Area Scan	surf sam plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Channels	Middle
Signal	CW (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	2450.000000
Relative permittivity (real part)	38.761441
Conductivity (S/m)	1.830523

C. SAR Surface and Volume

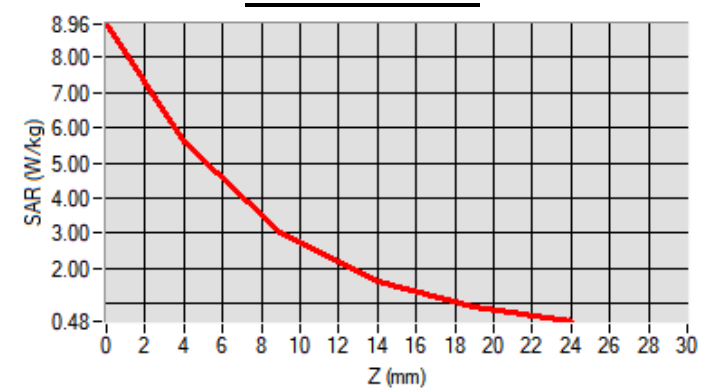


Maximum location: X=8.00, Y=1.00 ; SAR Peak: 8.94 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	2.466284
SAR 1g (W/Kg)	4.990264
Variation (%)	-3.490000

E. Z Axis Scan



System check at 2600 MHz

Date of measurement: 22/12/2025

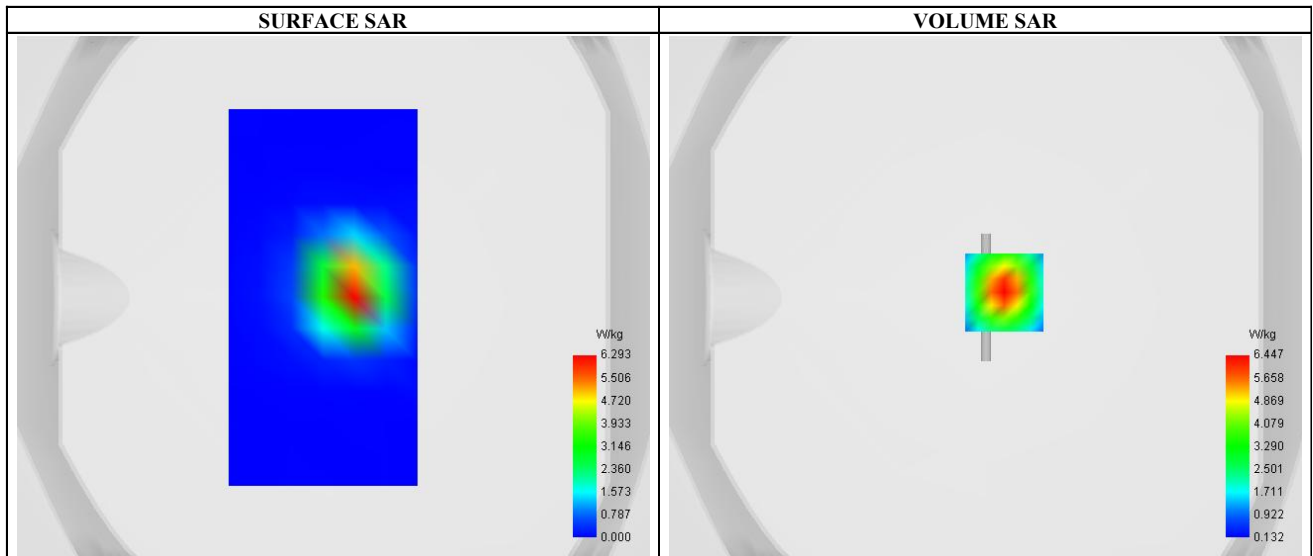
A. Experimental conditions.

Probe	SN 39/21 EPG0523-403
ConvF	2.35
Area Scan	surf sam plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW2600
Channels	Middle
Signal	CW (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	2600.000000
Relative permittivity (real part)	38.509811
Conductivity (S/m)	1.991522

C. SAR Surface and Volume

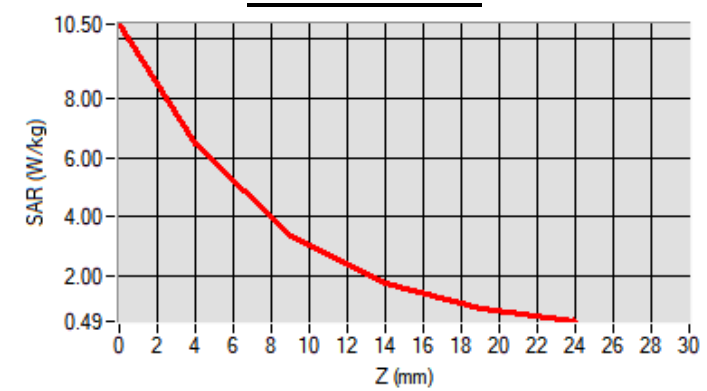


Maximum location: X=7.00, Y=2.00 ; SAR Peak: 10.51 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	2.634123
SAR 1g (W/Kg)	5.719087
Variation (%)	2.820000

E. Z Axis Scan



System check at 5200 MHz

Date of measurement: 27/12/2025

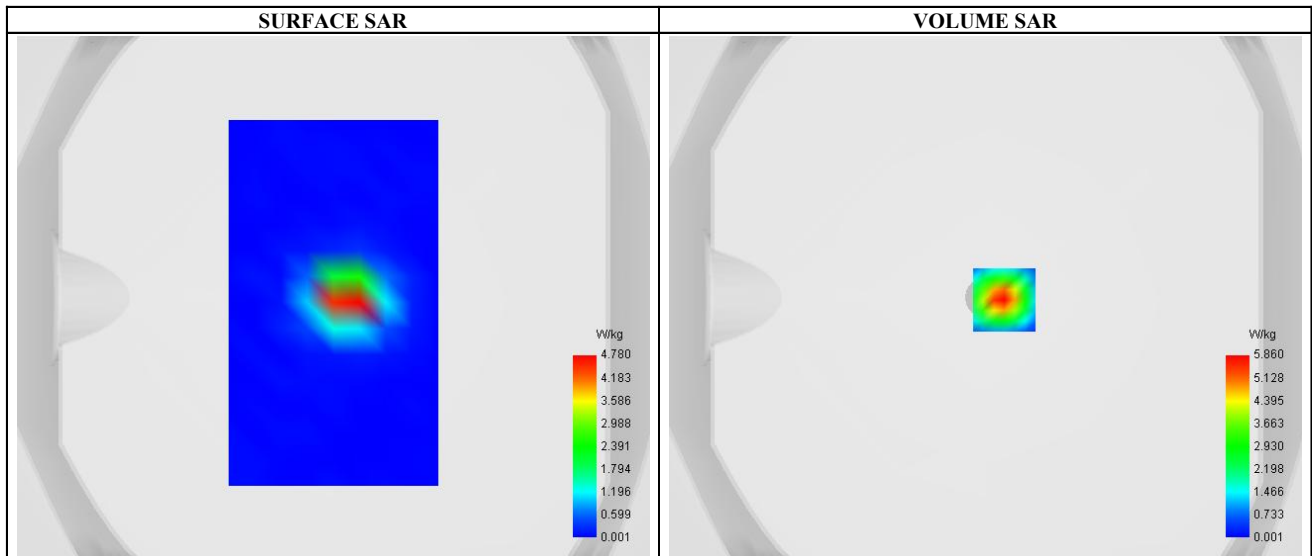
A. Experimental conditions.

Probe	SN 39/21 EPGO523-403
ConvF	2.30
Area Scan	surf sam plan.txt
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW5200
Channels	Middle
Signal	CW (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	5200.000000
Relative permittivity (real part)	36.846617
Conductivity (S/m)	4.737814

C. SAR Surface and Volume

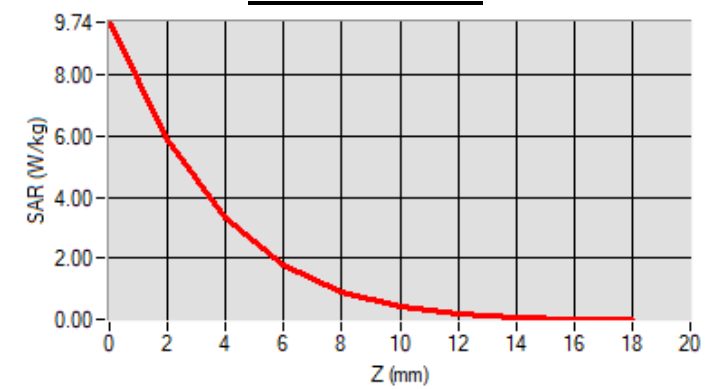


Maximum location: X=7.00, Y=-1.00 ; SAR Peak: 10.02 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.876008
SAR 1g (W/Kg)	3.129874
Variation (%)	1.190000

E. Z Axis Scan



System check at 5800 MHz

Date of measurement: 28/12/2025

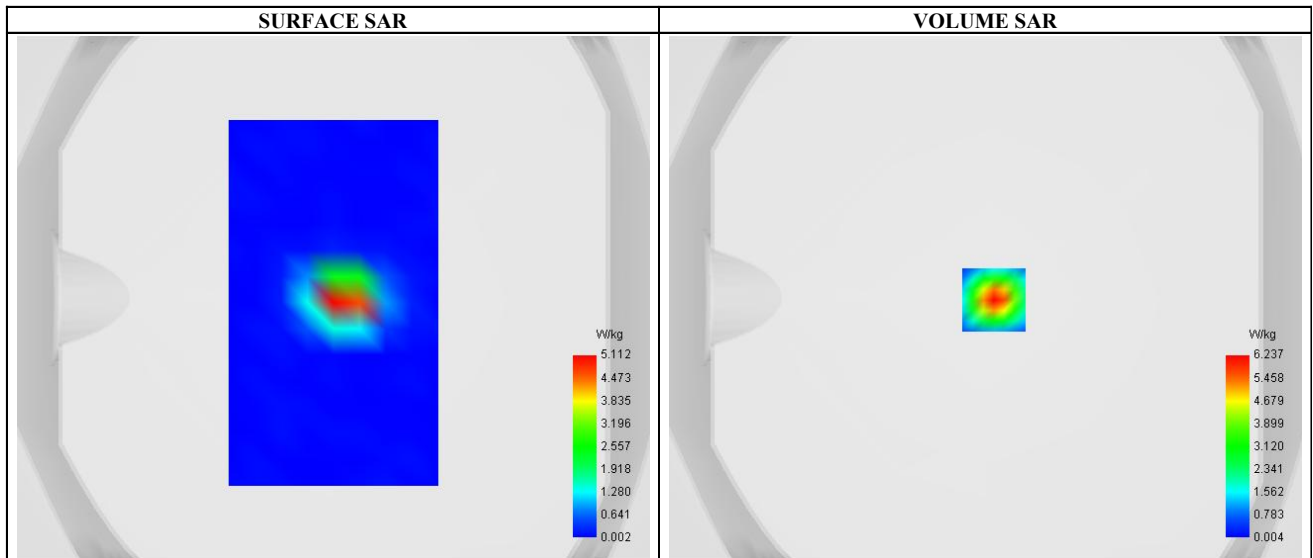
A. Experimental conditions.

Probe	SN 39/21 EPGO523-403
ConvF	2.27
Area Scan	surf sam plan.txt
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW5800
Channels	Middle
Signal	CW (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	5800.000000
Relative permittivity (real part)	36.010218
Conductivity (S/m)	5.411224

C. SAR Surface and Volume

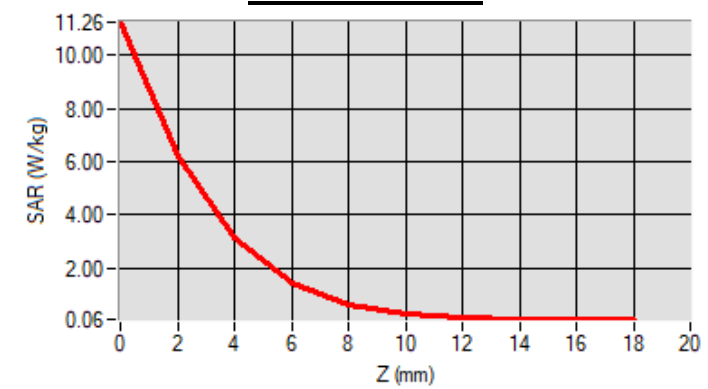


Maximum location: X=3.00, Y=-1.00 ; SAR Peak: 11.72 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.920089
SAR 1g (W/Kg)	3.205801
Variation (%)	1.550000

E. Z Axis Scan



Appendix C. SAR Test Plots

SAR Measurement at GSM850 (Cheek, Right)

Date of measurement: 14/12/2025

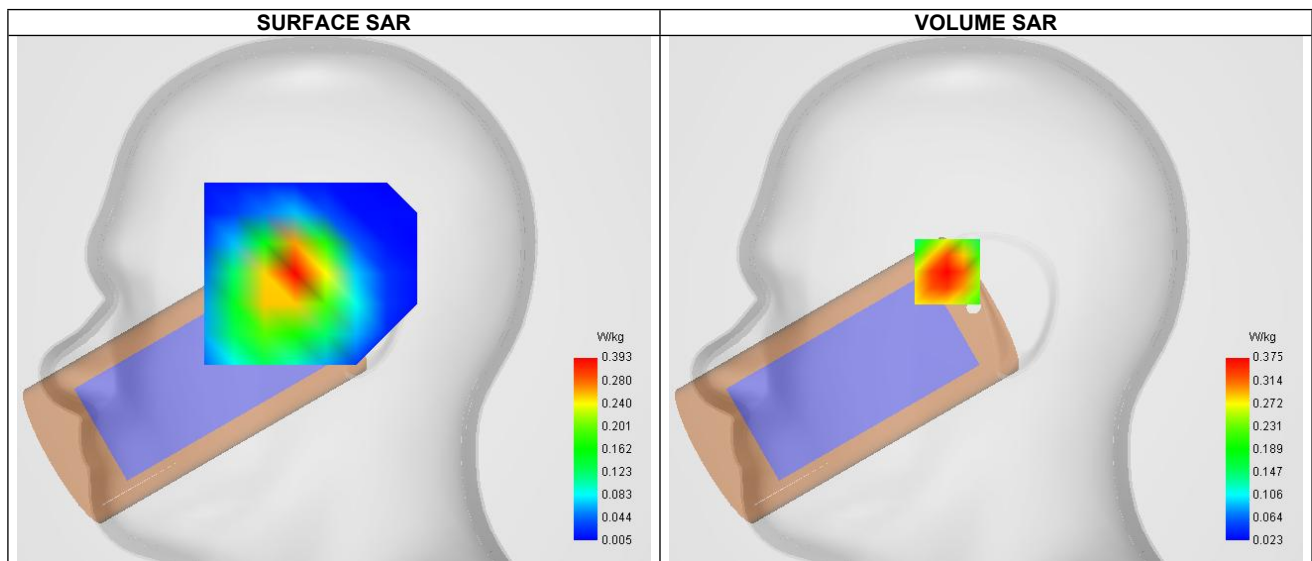
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	1.66
Area Scan	dx=15mm dy=15mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

B. Permittivity

Frequency (MHz)	836.599976
Relative permittivity (real part)	41.143152
Conductivity (S/m)	0.880552

C. SAR Surface and Volume

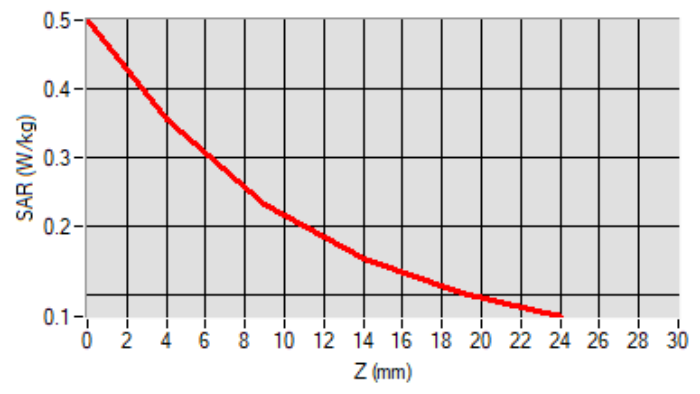


Maximum location: X=-19.00, Y=14.00 ; SAR Peak: 0.52 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.179643
SAR 1g (W/Kg)	0.345144
Variation (%)	-0.680000

E. Z Axis Scan



SAR Measurement at GSM1900 (Tilt, Right)

Date of measurement: 20/12/2025

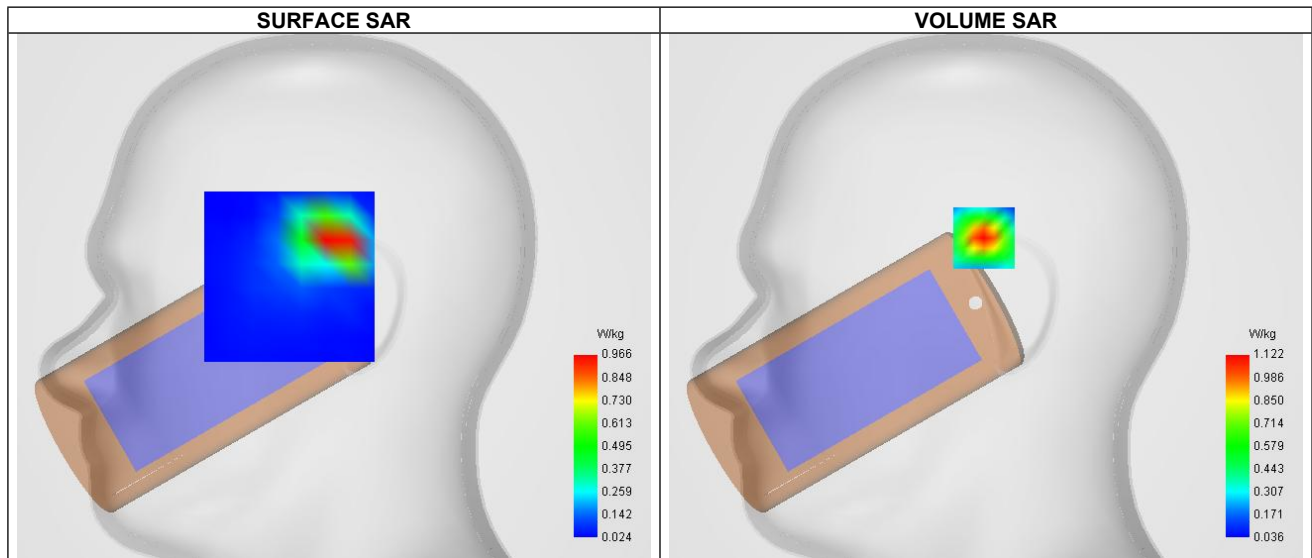
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	2.05
Area Scan	dx=15mm dy=15mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Tilt
Band	GSM1900
Channels	High
Signal	TDMA (Crest factor: 8.0)

B. Permittivity

Frequency (MHz)	1909.800000
Relative permittivity (real part)	39.390000
Conductivity (S/m)	1.400024

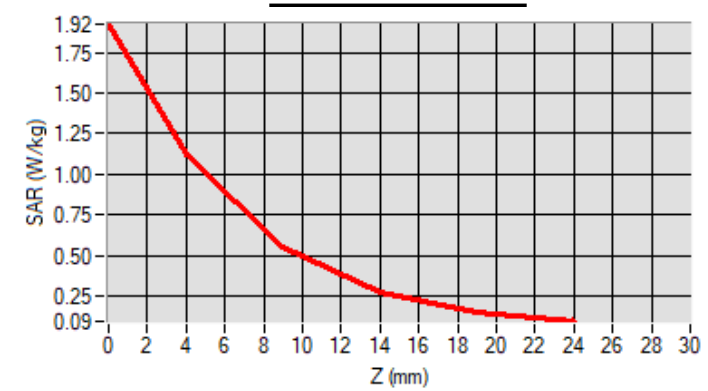
C. SAR Surface and Volume



D. SAR 1g & 10g

SAR 10g (W/Kg)	0.494648
SAR 1g (W/Kg)	0.997269
Variation (%)	0.100000

E. Z Axis Scan



SAR Measurement at Band2 WCDMA1900 (Cheek, Right)

Date of measurement: 20/12/2025

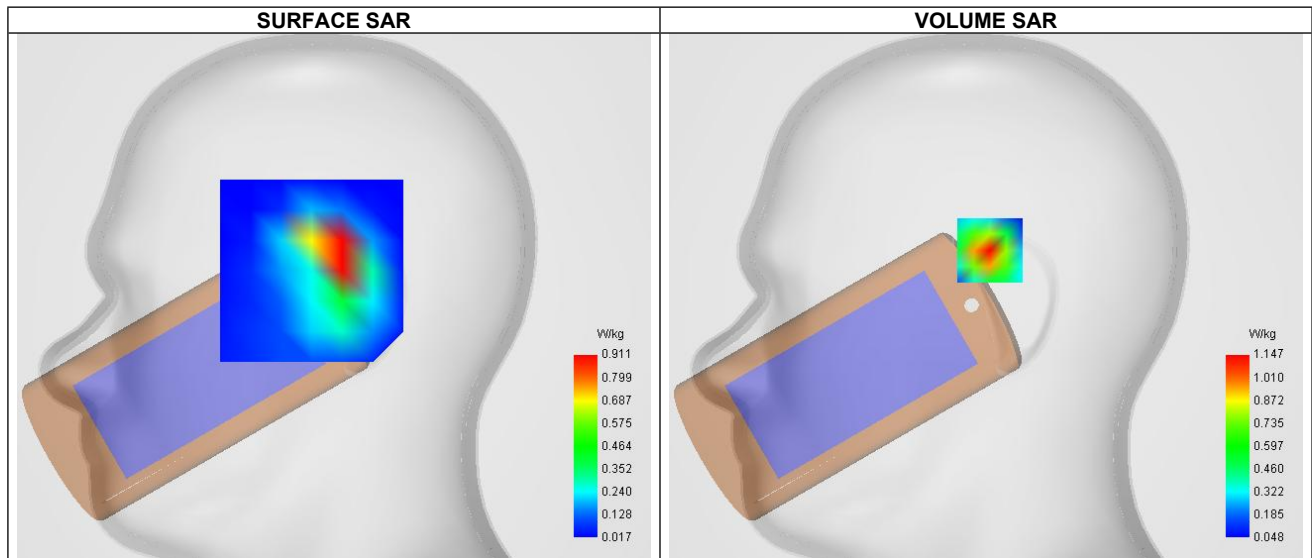
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	2.05
Area Scan	dx=15mm dy=15mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	Band2 WCDMA1900
Channels	Middle
Signal	WCDMA (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	1880.000000
Relative permittivity (real part)	39.391013
Conductivity (S/m)	1.461404

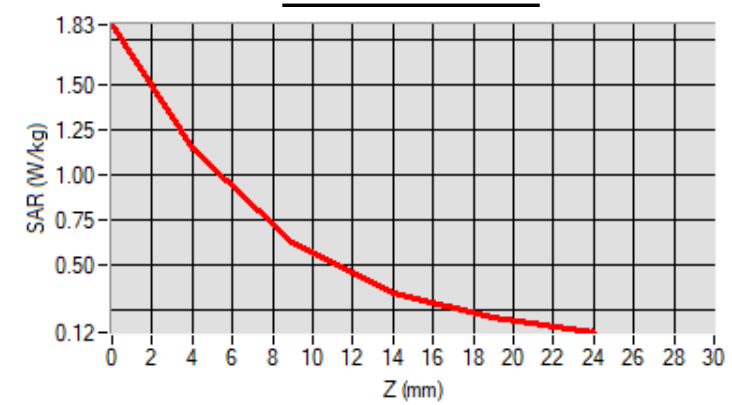
C. SAR Surface and Volume



D. SAR 1g & 10g

SAR 10g (W/Kg)	0.520815
SAR 1g (W/Kg)	0.978056
Variation (%)	-0.730000

E. Z Axis Scan



SAR Measurement at Band5 WCDMA850 (Cheek, Right)

Date of measurement: 14/12/2023

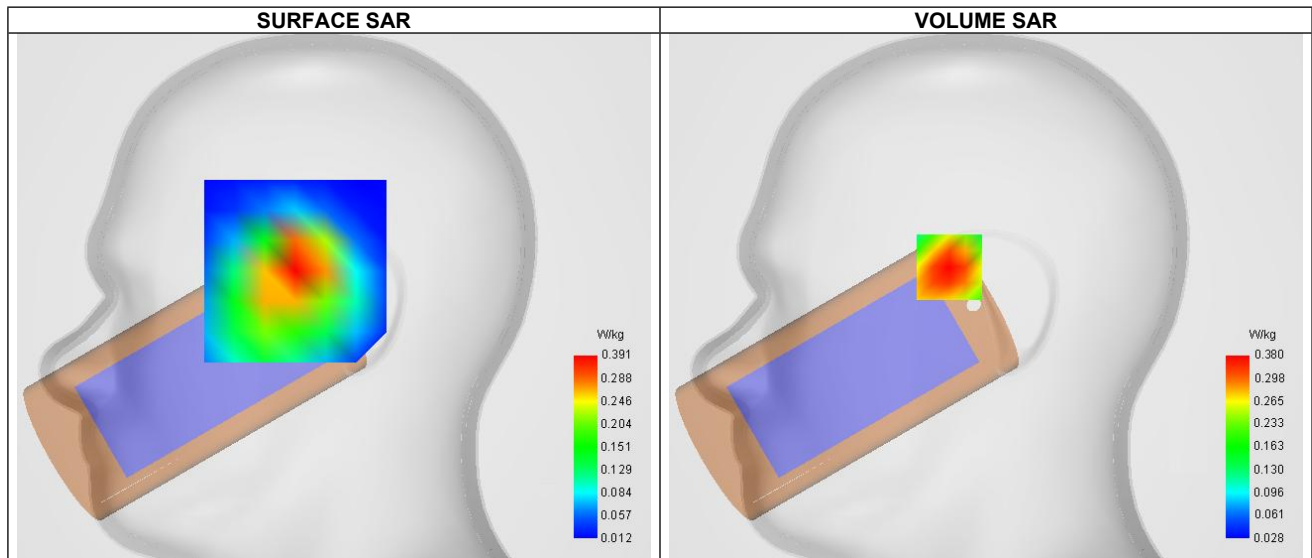
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	1.66
Area Scan	dx=15mm dy=15mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	Band5 WCDMA850
Channels	Middle
Signal	WCDMA (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	836.599976
Relative permittivity (real part)	41.143152
Conductivity (S/m)	0.880552

C. SAR Surface and Volume

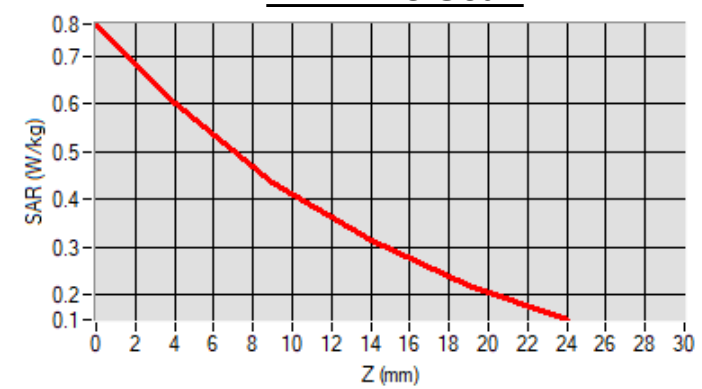


Maximum location: X=-14.00, Y=12.00 ; SAR Peak: 0.79 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.195588
SAR 1g (W/Kg)	0.362166
Variation (%)	-1.270000

E. Z Axis Scan



SAR Measurement at LTE band 2 (Tilt, Right)

Date of measurement: 20/12/2025

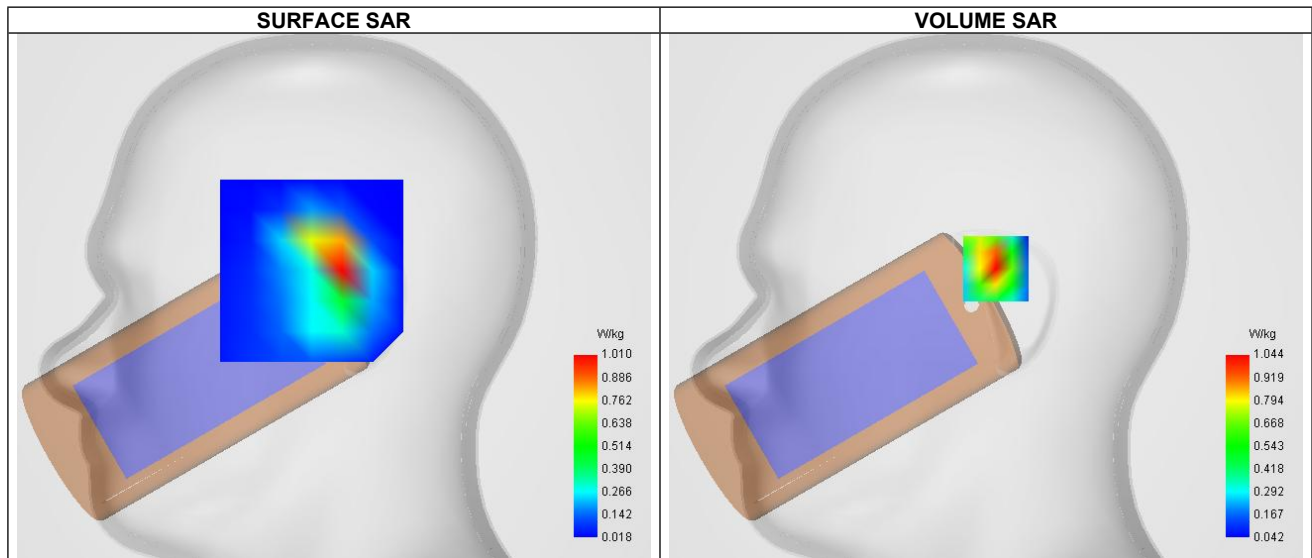
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	2.05
Area Scan	dx=15mm dy=15mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Tilt
Band	LTE band 2
Channels	Middle
Signal	LTE (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	1880.000000
Relative permittivity (real part)	39.391013
Conductivity (S/m)	1.461404

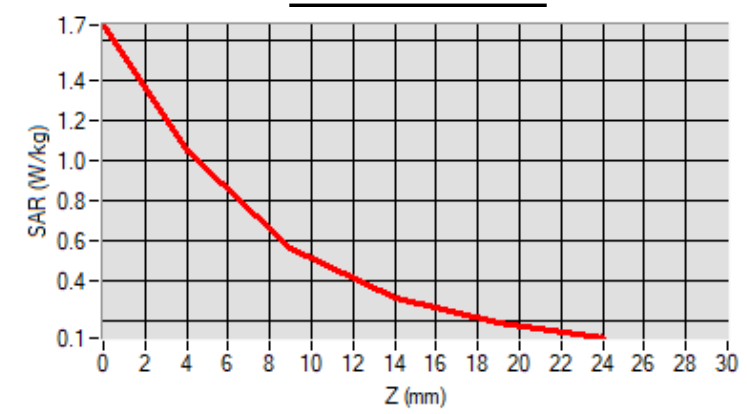
C. SAR Surface and Volume



D. SAR 1g & 10g

SAR 10g (W/Kg)	0.489802
SAR 1g (W/Kg)	0.998327
Variation (%)	-1.600000

E. Z Axis Scan



SAR Measurement at CUSTOM (LTE Band 4) (Tilt, Right)

Date of measurement: 20/12/2025

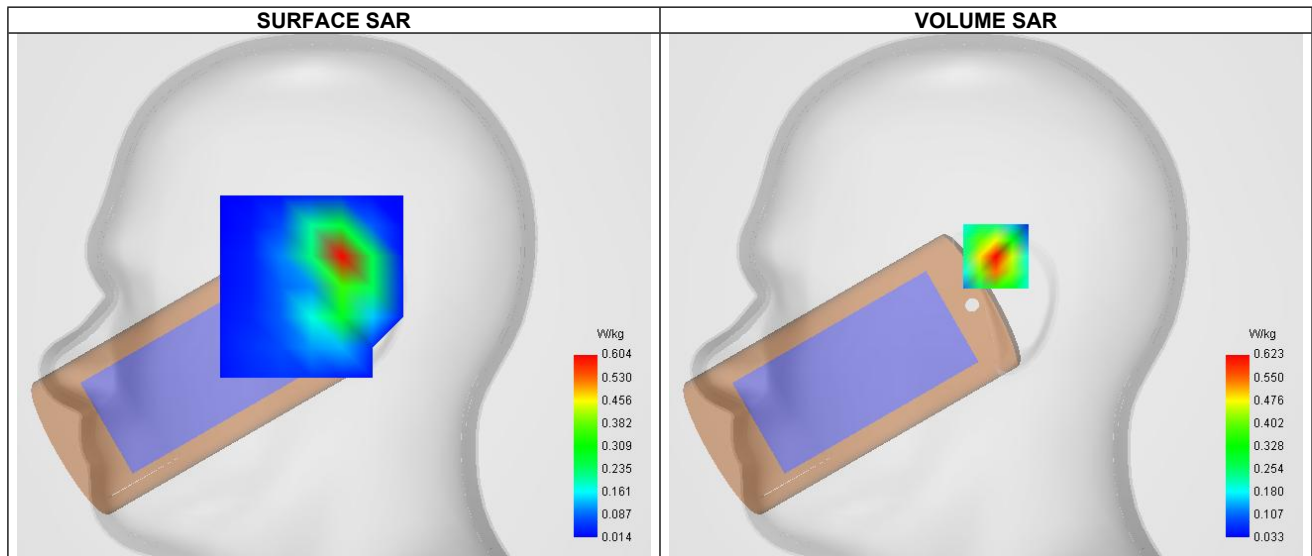
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	2.09
Area Scan	dx=15mm dy=15mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Tilt
Band	LTE band 4
Channels	Low
Signal	LTE (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	1720.000000
Relative permittivity (real part)	39.513174
Conductivity (S/m)	1.393935

C. SAR Surface and Volume

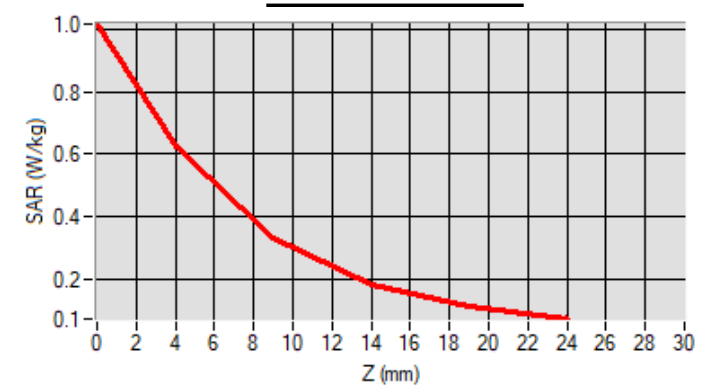


Maximum location: X=5.00, Y=20.00 ; SAR Peak: 1.03 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.293607
SAR 1g (W/Kg)	0.574129
Variation (%)	0.810000

E. Z Axis Scan



SAR Measurement at LTE band 5 (Cheek, Right)

Date of measurement: 14/12/2025

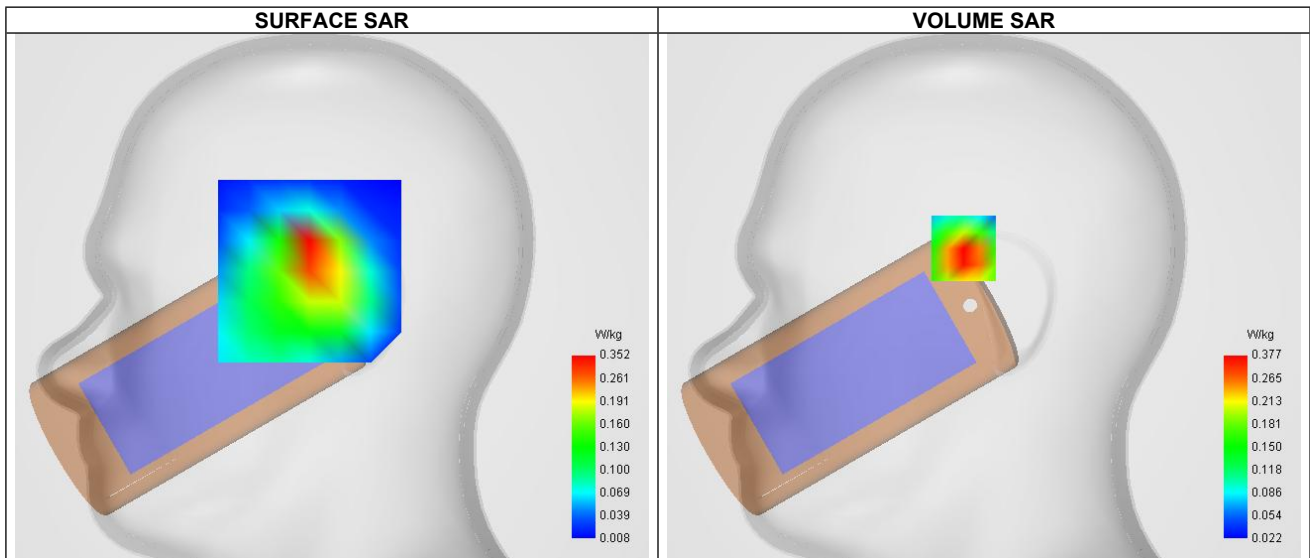
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	1.66
Area Scan	dx=15mm dy=15mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 5
Channels	Middle
Signal	LTE (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	836.500000
Relative permittivity (real part)	41.142325
Conductivity (S/m)	0.880644

C. SAR Surface and Volume

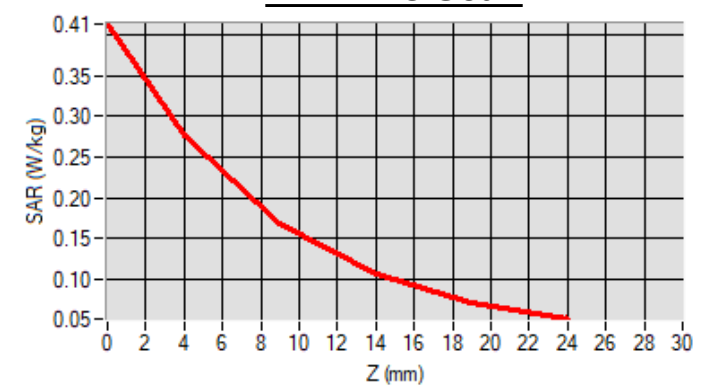


Maximum location: X=-10.00, Y=24.00 ; SAR Peak: 0.42 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.120553
SAR 1g (W/Kg)	0.298132
Variation (%)	-1.690000

E. Z Axis Scan



SAR Measurement at LTE band 7 (Tilt, Right)

Date of measurement: 22/12/2025

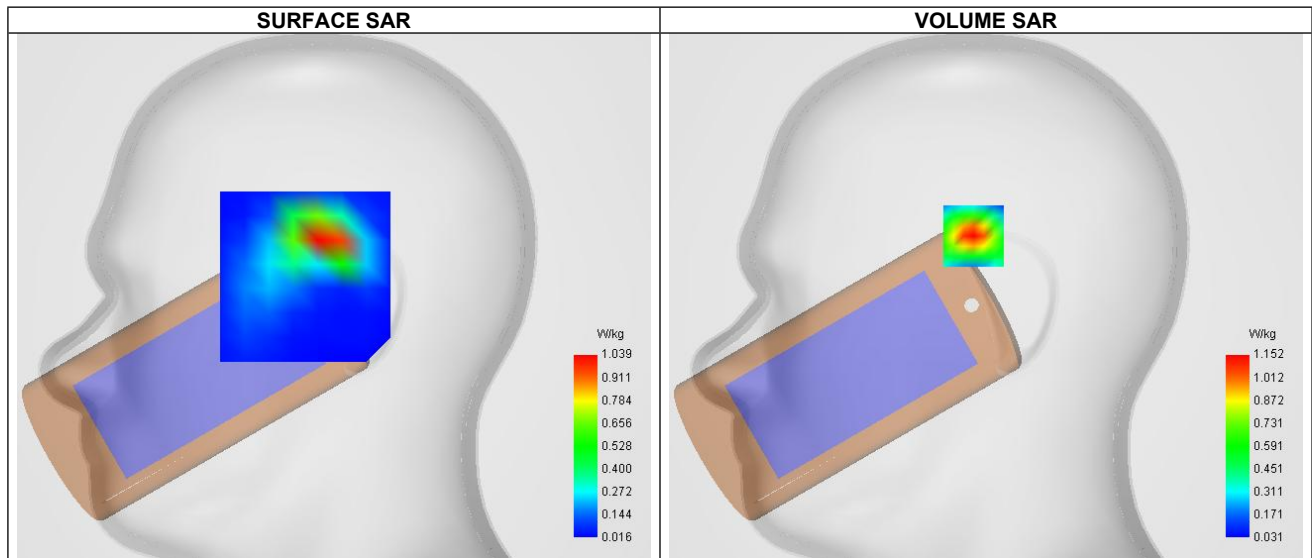
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	2.35
Area Scan	dx=12mm dy=12mm
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5mm,Complete
Phantom	Right head
Device Position	Tilt
Band	LTE band 7
Channels	Middle
Signal	LTE (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	2535.000000
Relative permittivity (real part)	38.511358
Conductivity (S/m)	1.986159

C. SAR Surface and Volume

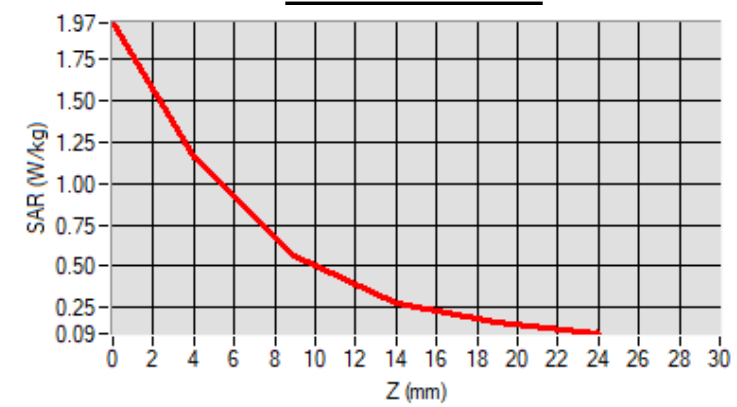


Maximum location: X=-6.00, Y=30.00 ; SAR Peak: 1.97 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.485608
SAR 1g (W/Kg)	1.029820
Variation (%)	-2.760000

E. Z Axis Scan



SAR Measurement at LTE band 12 (Tilt, Right)

Date of measurement: 12/12/2025

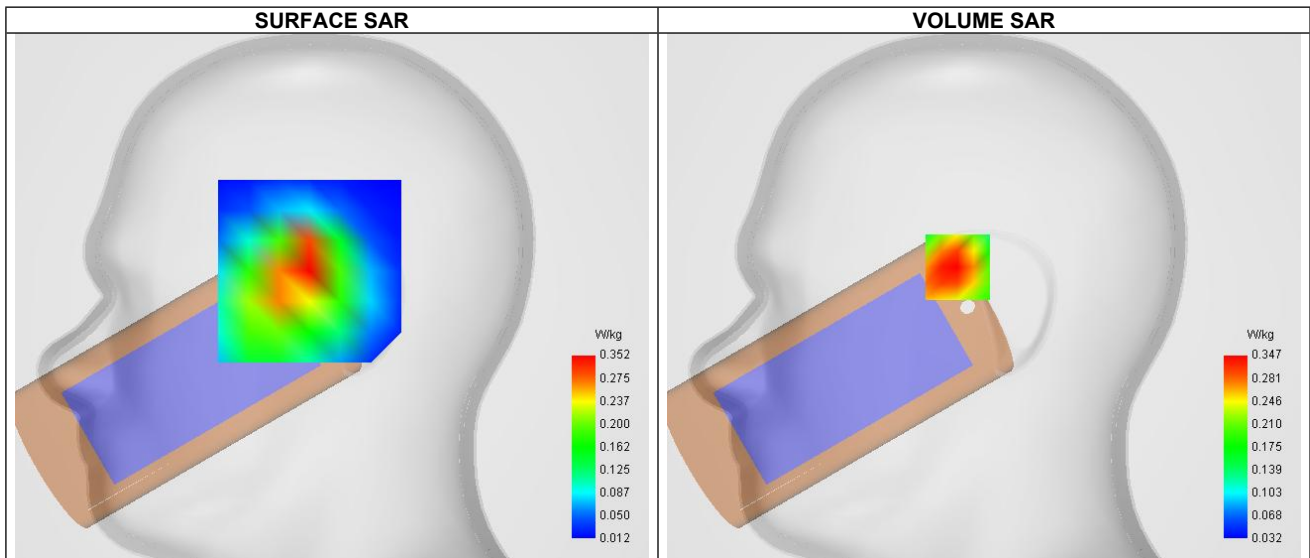
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	1.65
Area Scan	dx=15mm dy=15mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Tilt
Band	LTE band 12
Channels	Middle
Signal	LTE (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	707.500000
Relative permittivity (real part)	41.326044
Conductivity (S/m)	0.891440

C. SAR Surface and Volume

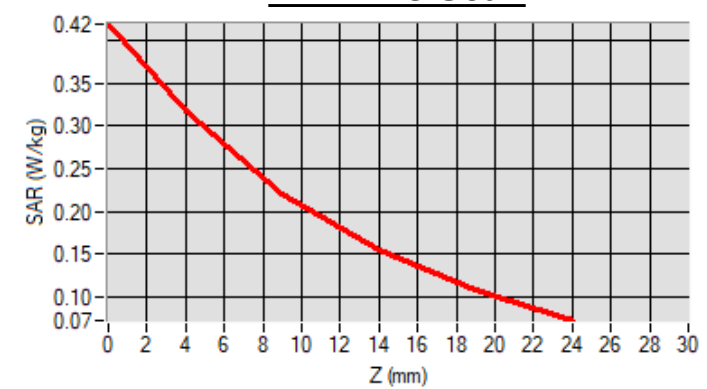


Maximum location: X=-13.00, Y=15.00 ; SAR Peak: 0.42 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.213543
SAR 1g (W/Kg)	0.322181
Variation (%)	0.000000

E. Z Axis Scan



SAR Measurement at LTE band 17 (Tilt, Right)

Date of measurement: 12/12/2025

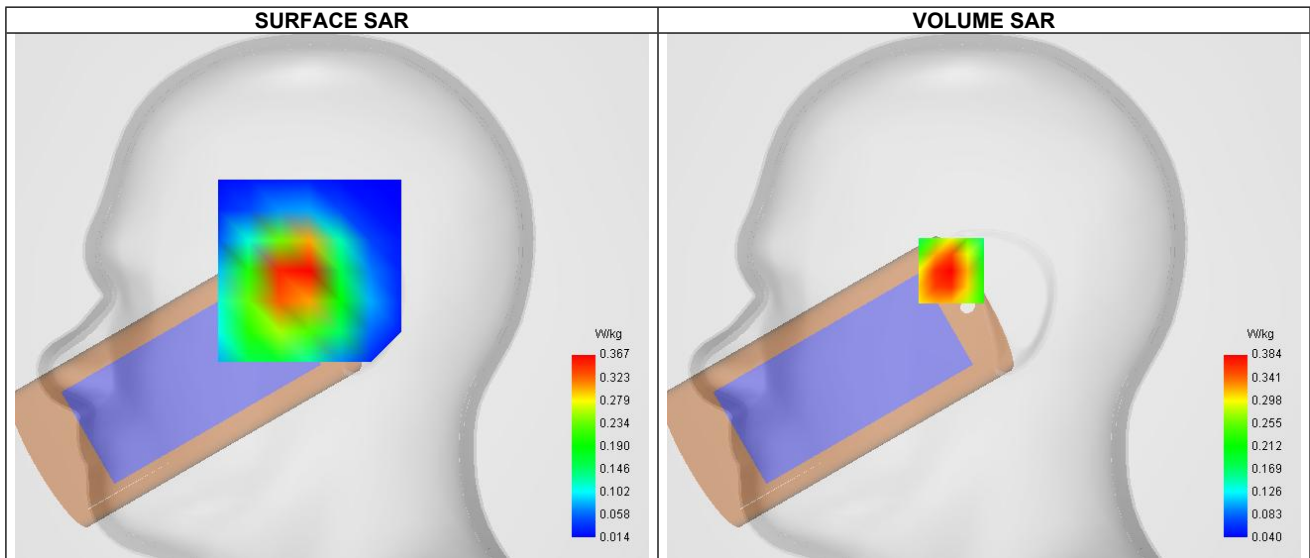
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	1.65
Area Scan	dx=15mm dy=15mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Tilt
Band	LTE band 17
Channels	Middle
Signal	LTE (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	710.000000
Relative permittivity (real part)	41.323453
Conductivity (S/m)	0.892220

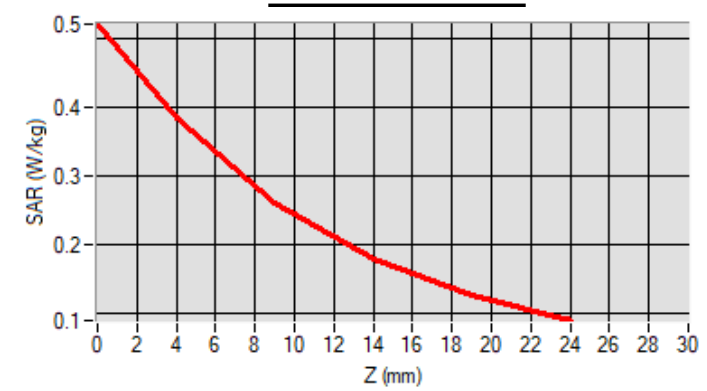
C. SAR Surface and Volume



D. SAR 1g & 10g

SAR 10g (W/Kg)	0.248823
SAR 1g (W/Kg)	0.332118
Variation (%)	-0.430000

E. Z Axis Scan



SAR Measurement at LTE band 41 (Cheek, Right)

Date of measurement: 22/12/2025

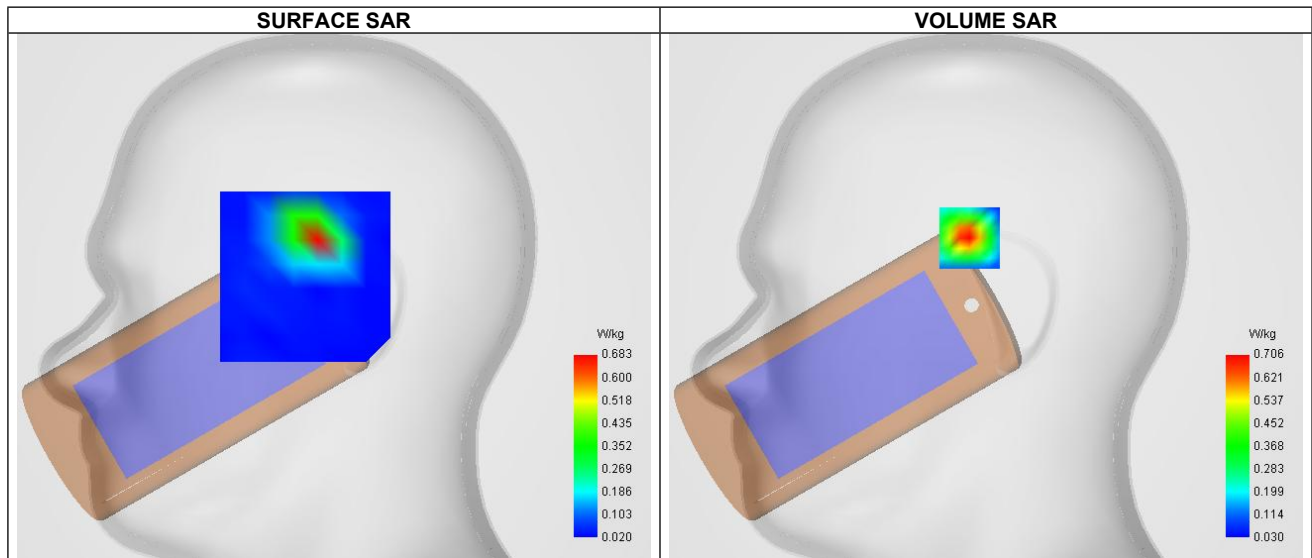
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	2.35
Area Scan	dx=12mm dy=12mm
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 41
Channels	High
Signal	LTE (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	2645.000000
Relative permittivity (real part)	38.506668
Conductivity (S/m)	1.994660

C. SAR Surface and Volume

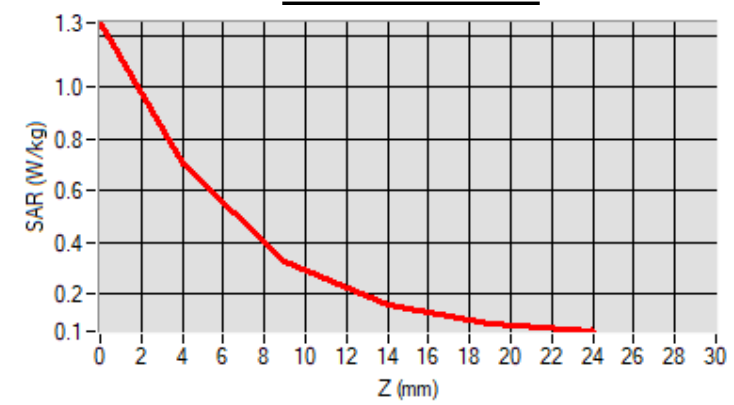


Maximum location: X=-8.00, Y=29.00 ; SAR Peak: 1.26 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.285065
SAR 1g (W/Kg)	0.628270
Variation (%)	-0.640000

E. Z Axis Scan



SAR Measurement at IEEE 802.11b ISM (Cheek, Left)

Date of measurement: 22/12/2025

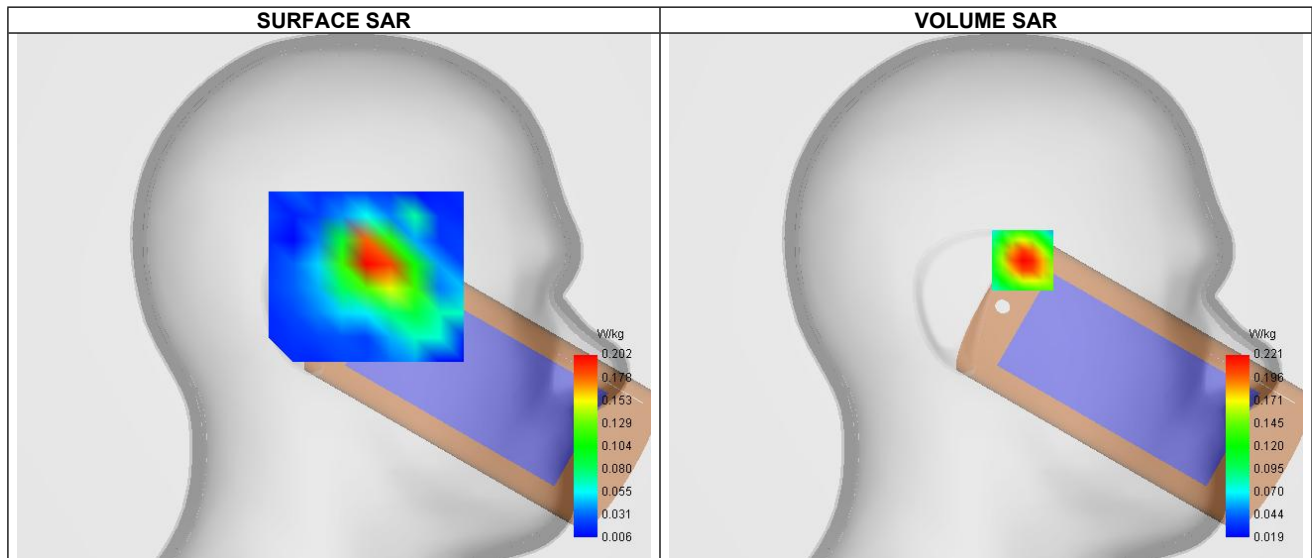
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	2.38
Area Scan	dx=12mm dy=12mm
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5mm,Complete
Phantom	Left head
Device Position	Cheek
Band	IEEE 802.11b ISM
Channels	Middle
Signal	IEEE802.b (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	2437.000000
Relative permittivity (real part)	38.763000
Conductivity (S/m)	1.834028

C. SAR Surface and Volume

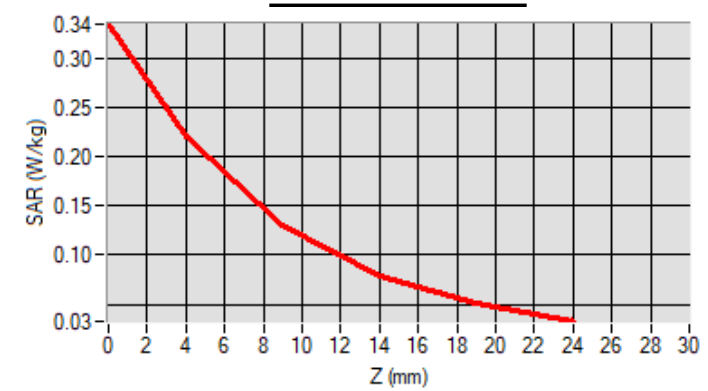


Maximum location: X=-18.00, Y=18.00 ; SAR Peak: 0.34 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.115427
SAR 1g (W/Kg)	0.180136
Variation (%)	-2.420000

E. Z Axis Scan



SAR Measurement at CUSTOM (5.2GHz 802.11ac40) (Cheek, Left)

Date of measurement: 27/12/2025

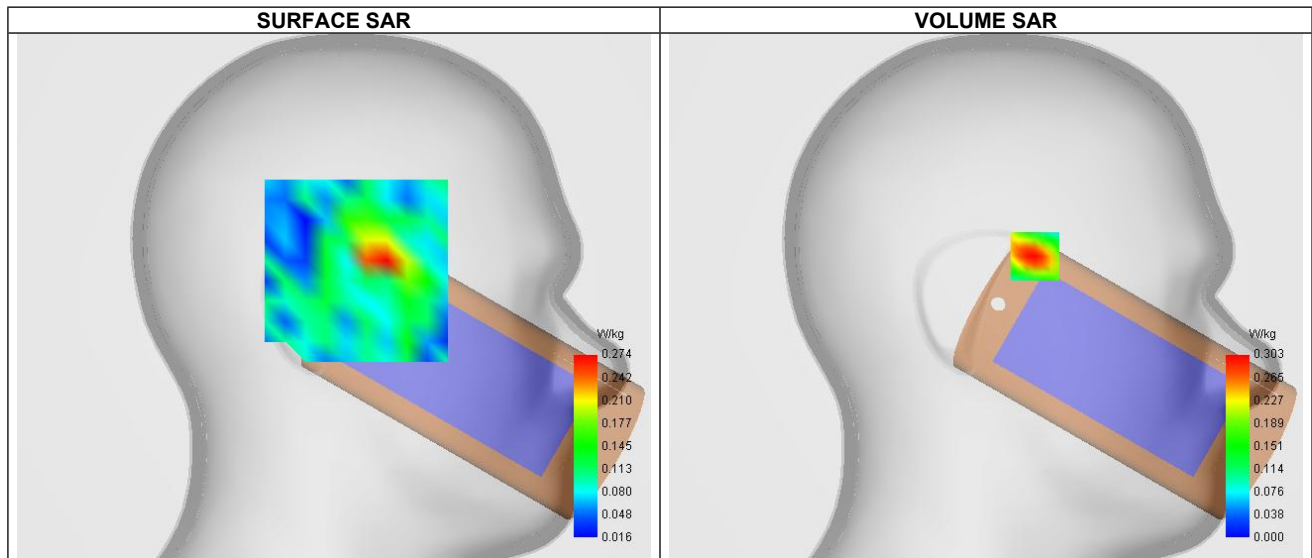
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	2.30
Area Scan	dx=5mm dy=5mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm,Complete
Phantom	Left head
Device Position	Cheek
Band	IEEE802.ac
Channels	High
Signal	IEEE802.ac (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	5230.000000
Relative permittivity (real part)	36.859999
Conductivity (S/m)	4.741564

C. SAR Surface and Volume

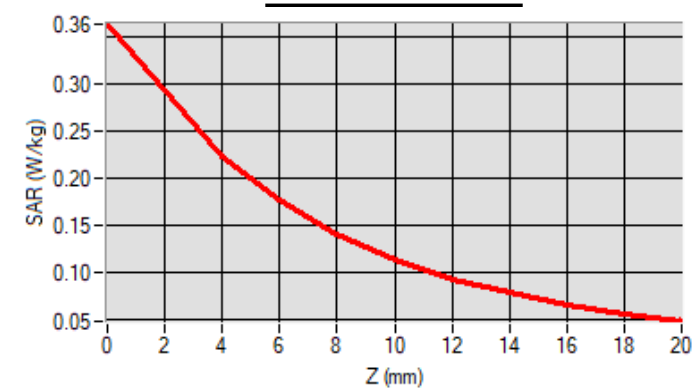


Maximum location: X=5.00, Y=15.00 ; SAR Peak: 0.37 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.147509
SAR 1g (W/Kg)	0.225216
Variation (%)	-0.830000

E. Z Axis Scan



SAR Measurement at CUSTOM (5.8GHz 802.11a) (Cheek, Left)

Date of measurement: 28/12/2025

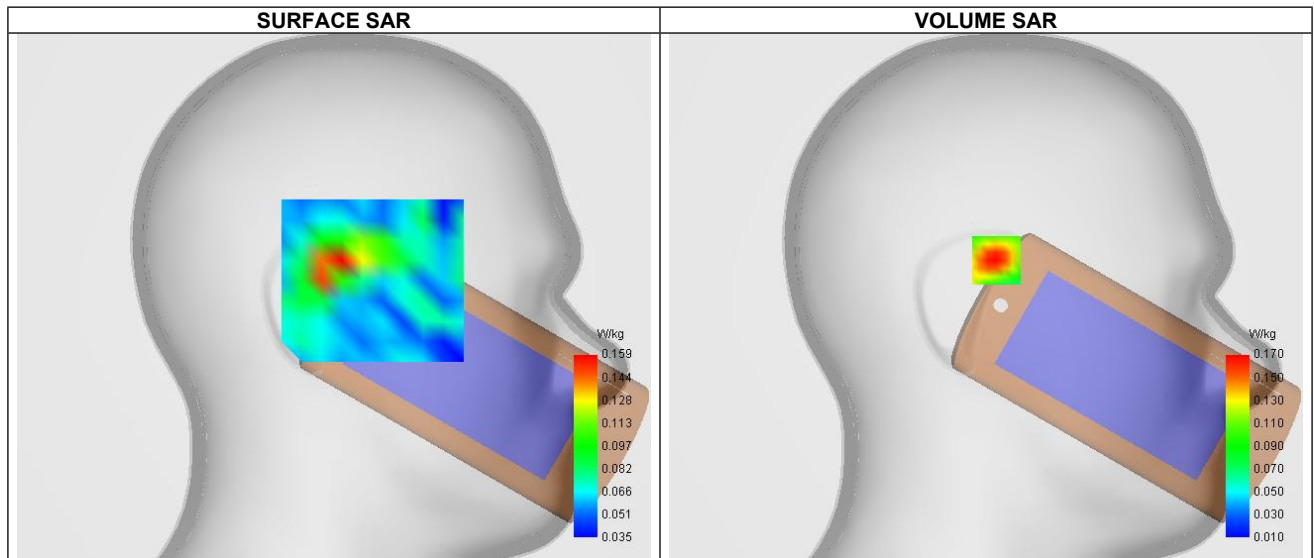
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	2.27
Area Scan	dx=5mm dy=5mm
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm,Complete
Phantom	Left head
Device Position	Cheek
Band	IEEE802.a
Channels	Low
Signal	IEEE802.a (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	5745.000000
Relative permittivity (real part)	36.006000
Conductivity (S/m)	5.406583

C. SAR Surface and Volume

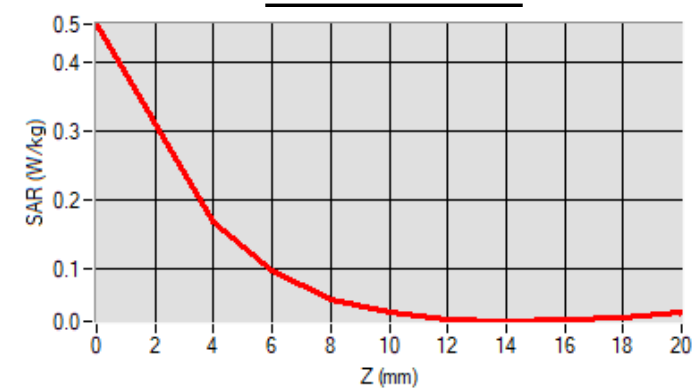


Maximum location: X=-5.00, Y=18.00 ; SAR Peak: 0.47 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.088552
SAR 1g (W/Kg)	0.147976
Variation (%)	-2.690000

E. Z Axis Scan



SAR Measurement at CUSTOM (GPRS850 3Txslots) (Body, Validation Plane)

Date of measurement: 14/12/2025

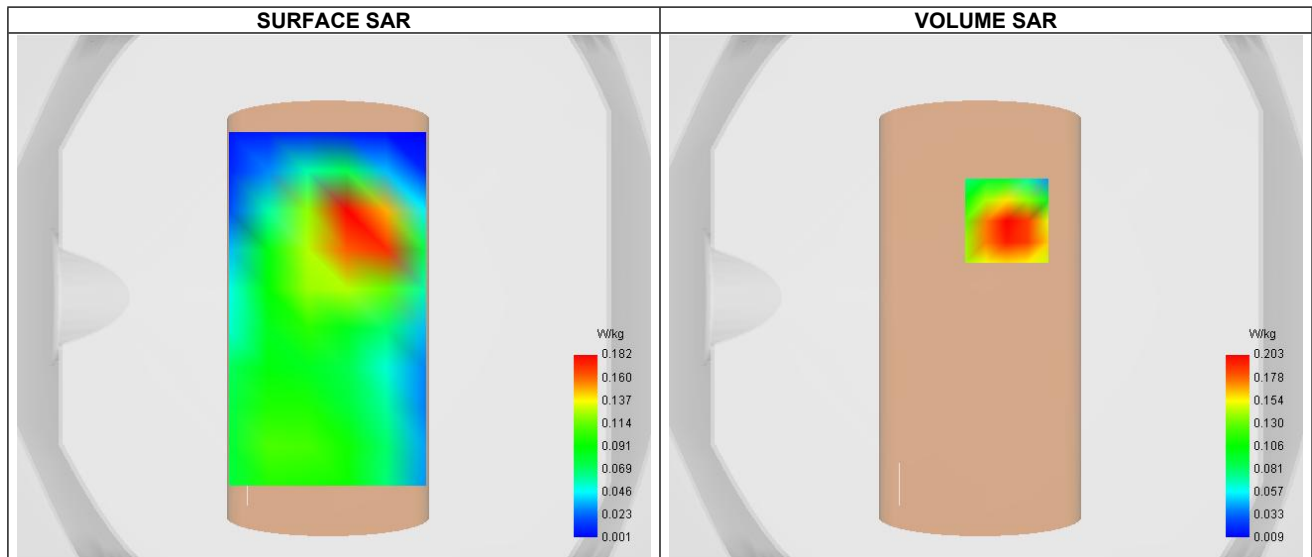
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	1.66
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	GSM 850
Channels	High
Signal	TDMA (Crest factor: 2.7)

B. Permittivity

Frequency (MHz)	848.80000
Relative permittivity (real part)	41.143152
Conductivity (S/m)	0.880552

C. SAR Surface and Volume

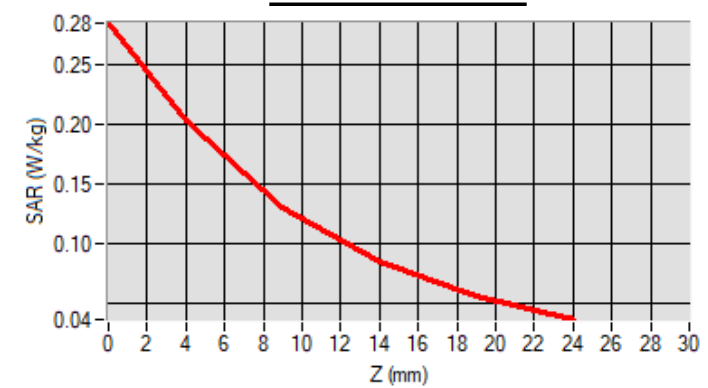


Maximum location: X=8.00, Y=29.00 ; SAR Peak: 0.29 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.083834
SAR 1g (W/Kg)	0.147072
Variation (%)	-4.180000

E. Z Axis Scan



SAR Measurement at CUSTOM (GPRS1900 4Tx slot) (Body, Validation Plane)

Date of measurement: 20/12/2025

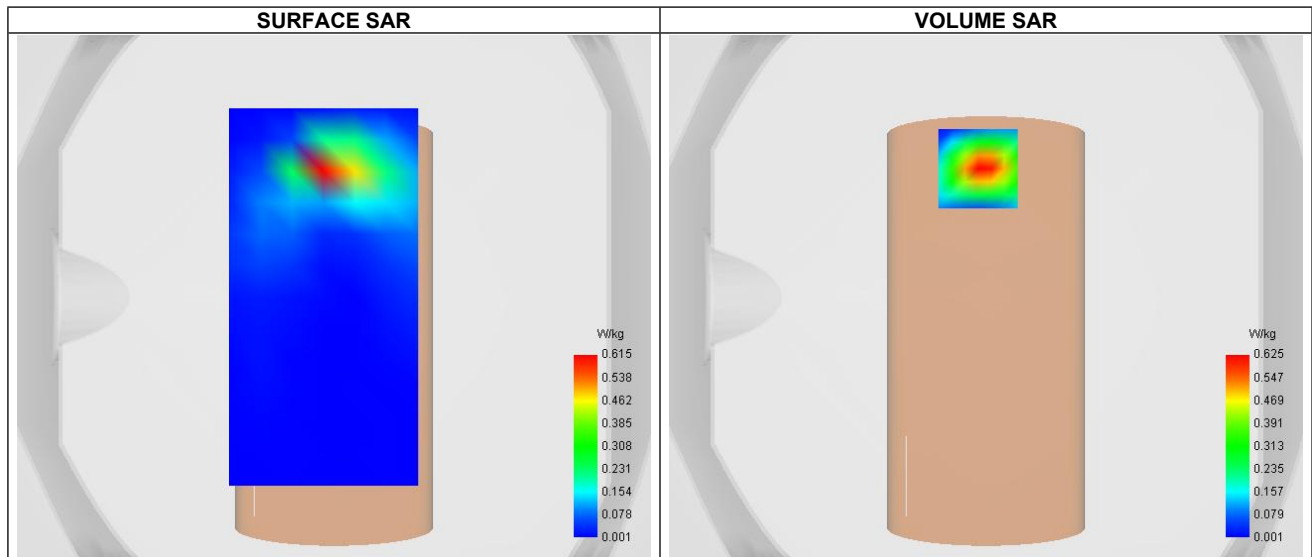
A. Experimental conditions.

Probe	SN 39/21 EPGO523-403
ConvF	2.05
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	GSM 1900
Channels	Middle
Signal	TDMA (Crest factor: 4.0)

B. Permittivity

Frequency (MHz)	1880.000000
Relative permittivity (real part)	39.390000
Conductivity (S/m)	1.400024

C. SAR Surface and Volume

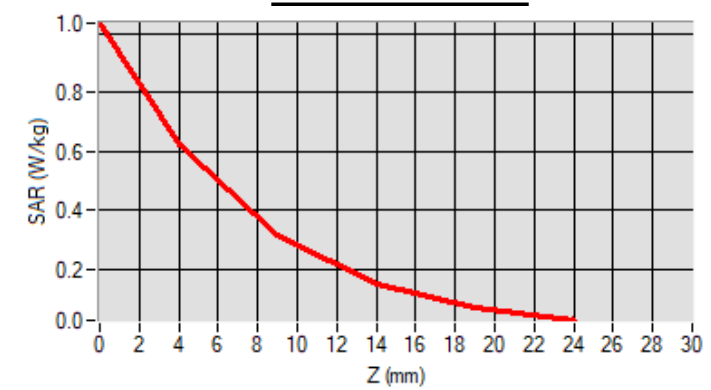


Maximum location: X=-3.00, Y=49.00 ; SAR Peak: 1.05 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.224239
SAR 1g (W/Kg)	0.547123
Variation (%)	-0.220000

E. Z Axis Scan



SAR Measurement at Band2 WCDMA1900 (Body, Validation Plane)

Date of measurement: 20/12/2025

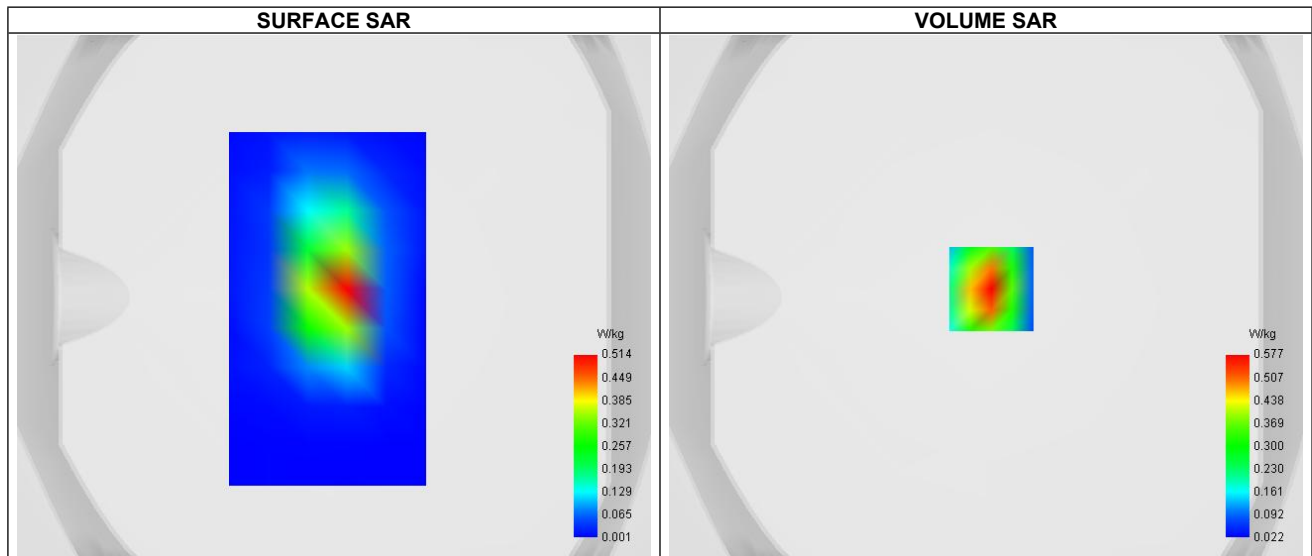
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	2.05
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	Band2 WCDMA1900
Channels	Low
Signal	WCDMA (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	1852.400000
Relative permittivity (real part)	39.392150
Conductivity (S/m)	1.465102

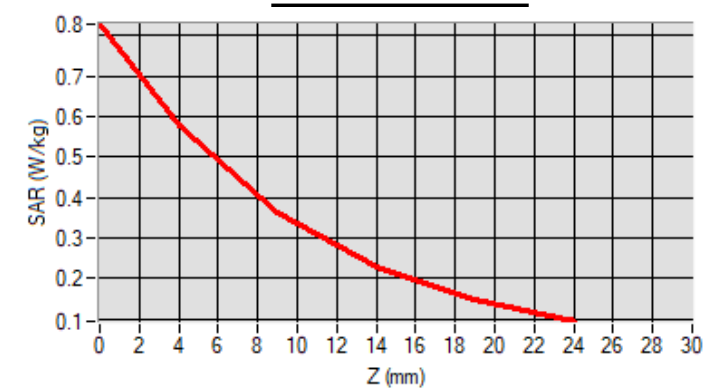
C. SAR Surface and Volume



D. SAR 1g & 10g

SAR 10g (W/Kg)	0.222873
SAR 1g (W/Kg)	0.449432
Variation (%)	-2.640000

E. Z Axis Scan



SAR Measurement at Band5 WCDMA850 (Body, Validation Plane)

Date of measurement: 14/12/2025

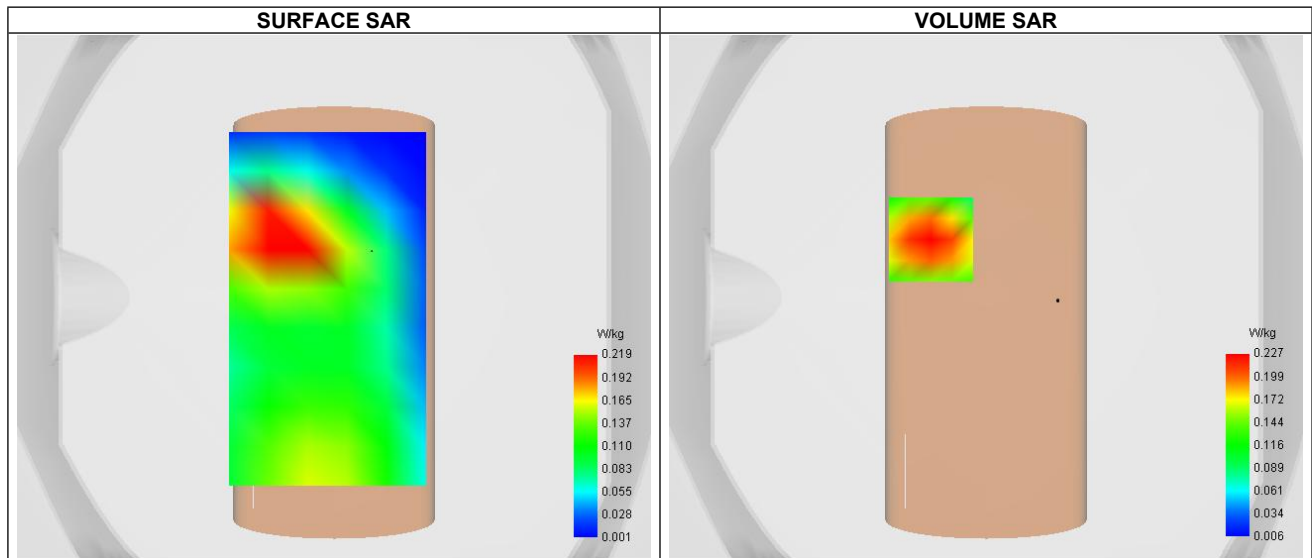
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	1.66
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	Band5 WCDMA850
Channels	Middle
Signal	WCDMA (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	836.600000
Relative permittivity (real part)	41.142325
Conductivity (S/m)	0.880644

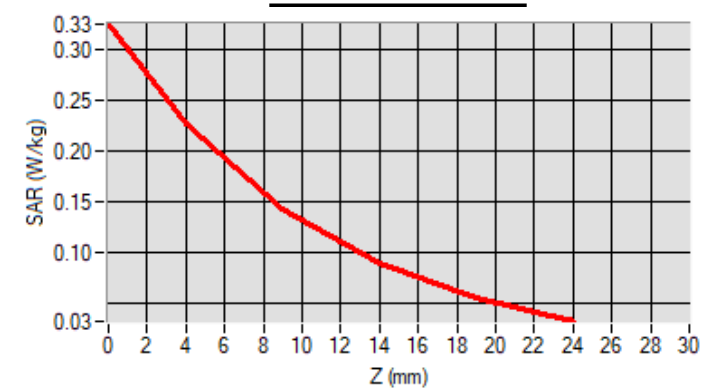
C. SAR Surface and Volume



D. SAR 1g & 10g

SAR 10g (W/Kg)	0.095034
SAR 1g (W/Kg)	0.163180
Variation (%)	-0.040000

E. Z Axis Scan



SAR Measurement at LTE band 2 (Body, Validation Plane)

Date of measurement: 20/12/2025

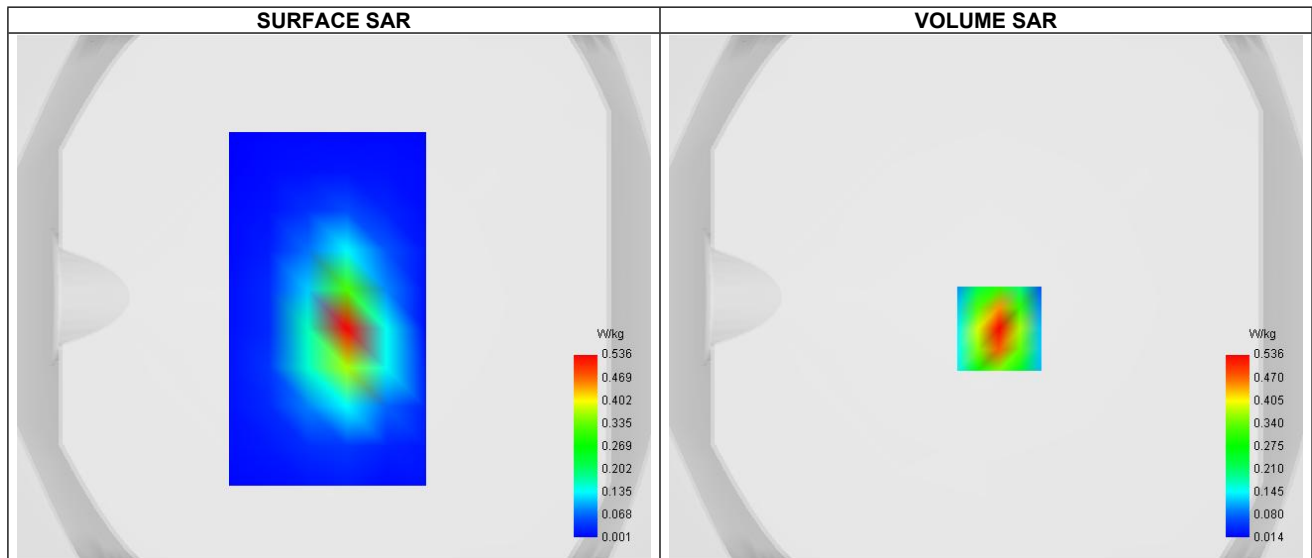
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	2.05
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 2
Channels	High
Signal	LTE (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	1900.000000
Relative permittivity (real part)	39.393000
Conductivity (S/m)	1.461211

C. SAR Surface and Volume

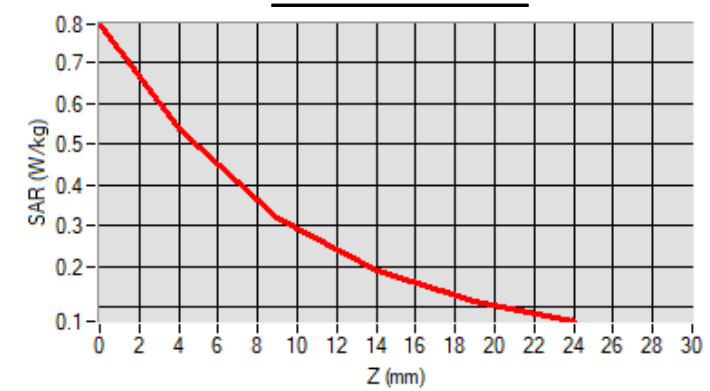


Maximum location: X=5.00, Y=-12.00 ; SAR Peak: 0.79 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.306071
SAR 1g (W/Kg)	0.445037
Variation (%)	-1.130000

E. Z Axis Scan



SAR Measurement at LTE band 4 (Body, Validation Plane)

Date of measurement: 20/12/2025

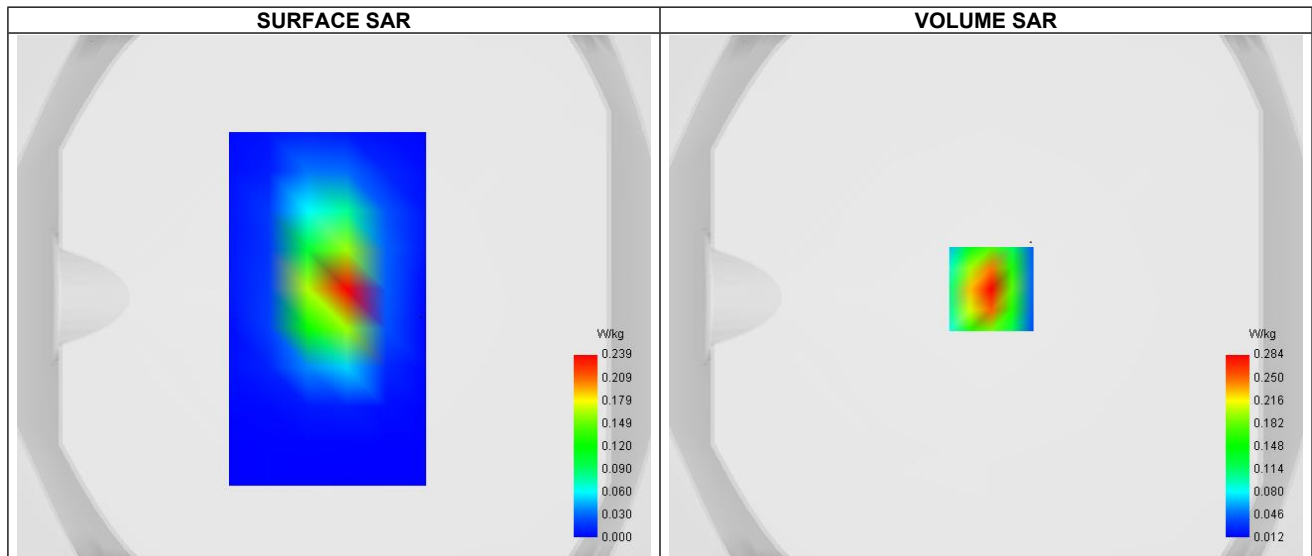
A. Experimental conditions.

Probe	SN 39/21 EPG0523-403
ConvF	2.09
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 4
Channels	High
Signal	LTE (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	1745.000000
Relative permittivity (real part)	39.531591
Conductivity (S/m)	1.392363

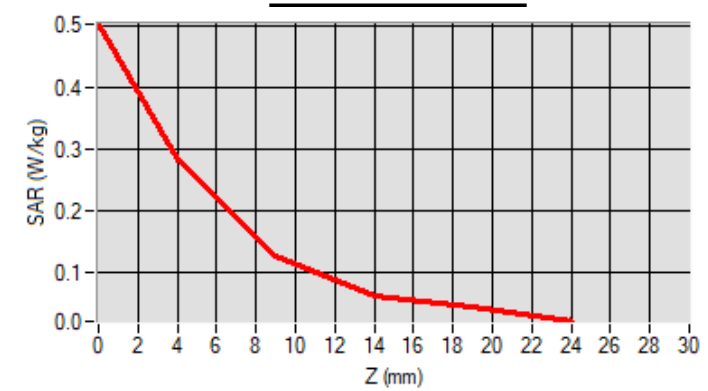
C. SAR Surface and Volume



D. SAR 1g & 10g

SAR 10g (W/Kg)	0.142490
SAR 1g (W/Kg)	0.270070
Variation (%)	0.360000

E. Z Axis Scan



SAR Measurement at LTE band 5 (Body, Validation Plane)

Date of measurement: 14/12/2025

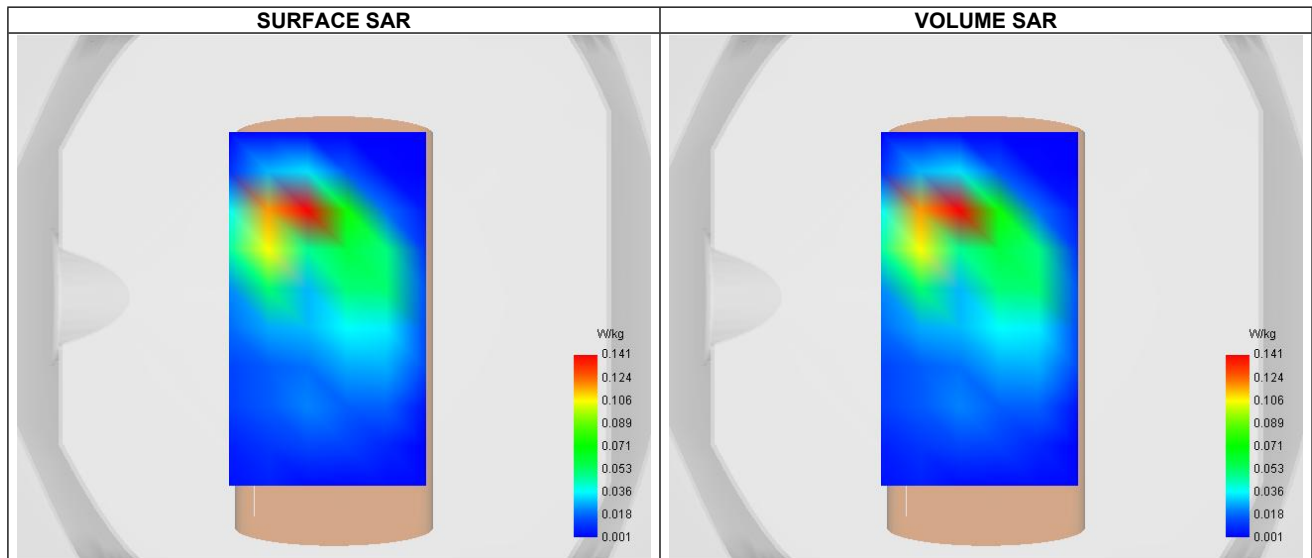
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	1.66
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 5
Channels	Middle
Signal	LTE (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	836.500000
Relative permittivity (real part)	41.143152
Conductivity (S/m)	0.880552

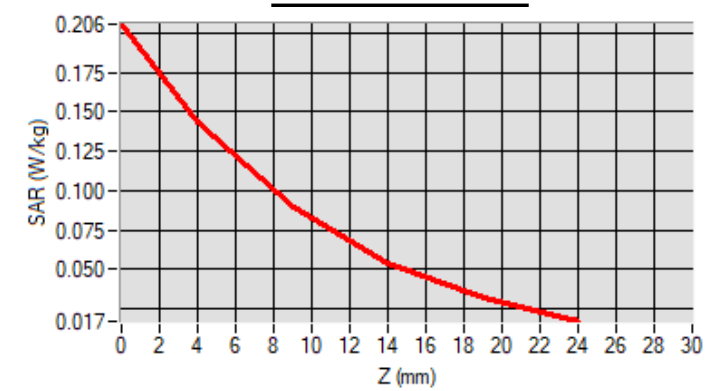
C. SAR Surface and Volume



D. SAR 1g & 10g

SAR 10g (W/Kg)	0.072827
SAR 1g (W/Kg)	0.139133
Variation (%)	-0.560000

E. Z Axis Scan



SAR Measurement at LTE band 7 (Body, Validation Plane)

Date of measurement: 22/12/2025

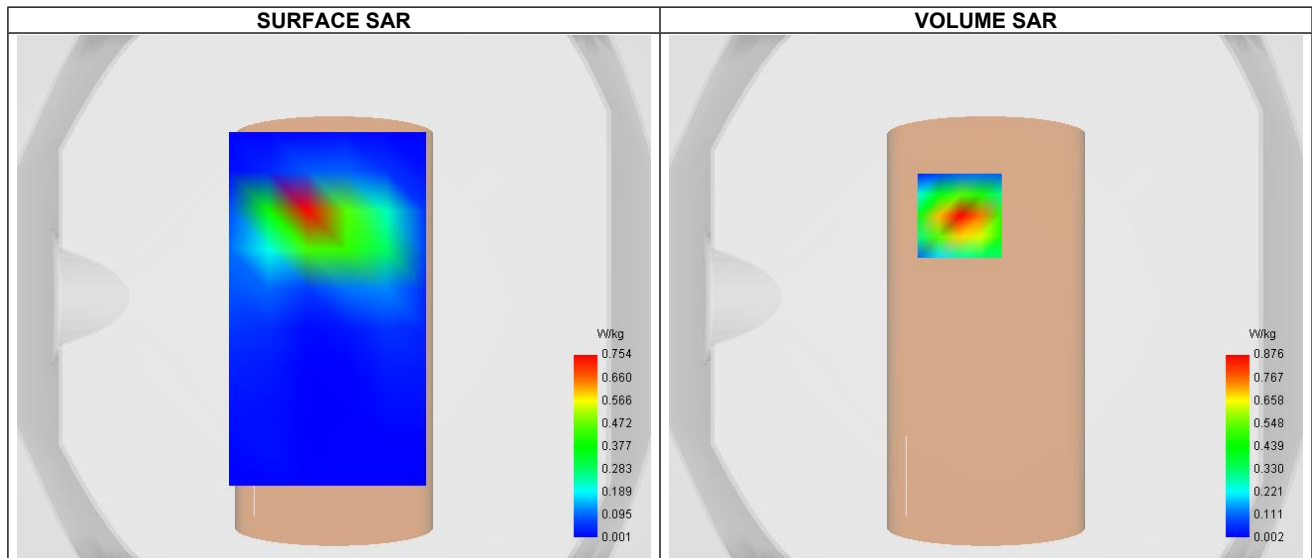
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	2.35
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 7
Channels	Middle
Signal	LTE (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	2535.000000
Relative permittivity (real part)	38.511358
Conductivity (S/m)	1.986159

C. SAR Surface and Volume

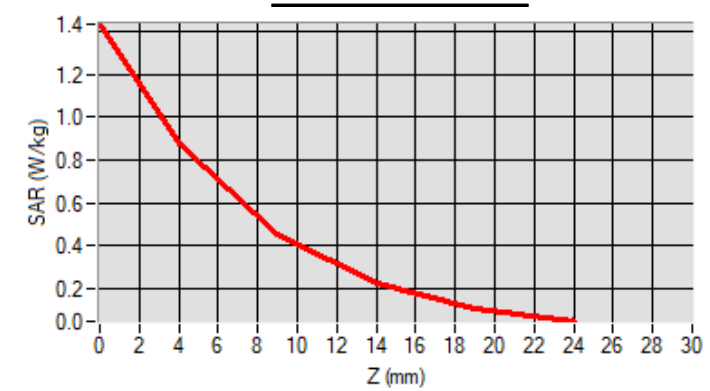


Maximum location: X=-10.00, Y=31.00 ; SAR Peak: 1.45 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.371674
SAR 1g (W/Kg)	0.853172
Variation (%)	0.960000

E. Z Axis Scan



SAR Measurement at LTE band 12 (Body, Validation Plane)

Date of measurement: 12/12/2025

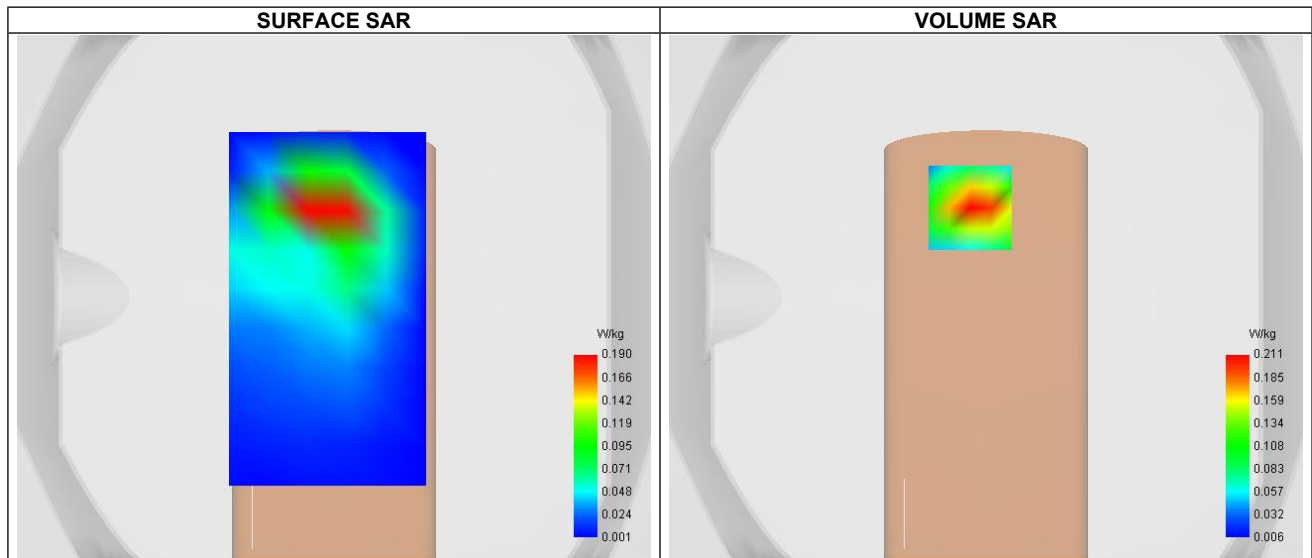
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	1.65
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 12
Channels	Middle
Signal	LTE (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	707.500000
Relative permittivity (real part)	41.326044
Conductivity (S/m)	0.891440

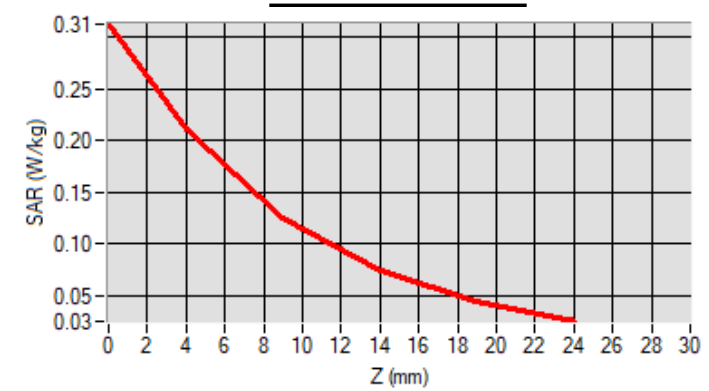
C. SAR Surface and Volume



D. SAR 1g & 10g

SAR 10g (W/Kg)	0.056306
SAR 1g (W/Kg)	0.143175
Variation (%)	-0.660000

E. Z Axis Scan



SAR Measurement at LTE band 17 (Body, Validation Plane)

Date of measurement: 12/12/2025

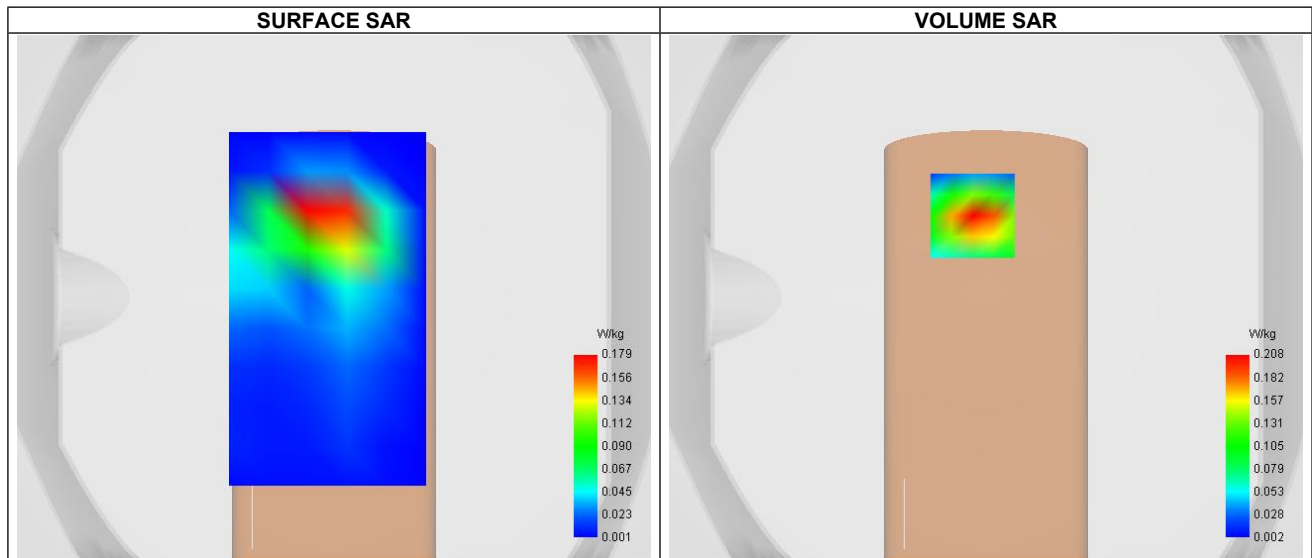
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	1.65
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 17
Channels	Middle
Signal	LTE (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	710.000000
Relative permittivity (real part)	41.323453
Conductivity (S/m)	0.892222

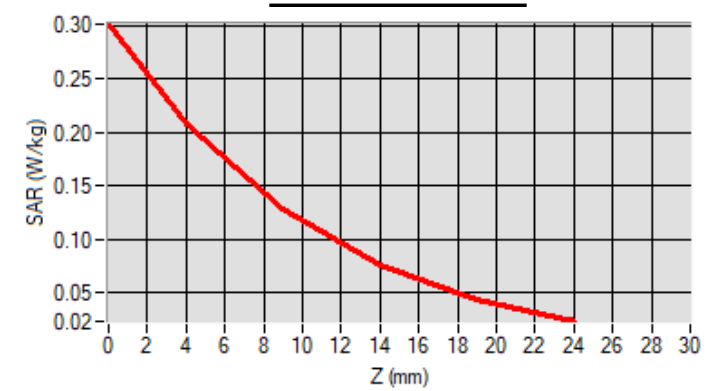
C. SAR Surface and Volume



D. SAR 1g & 10g

SAR 10g (W/Kg)	0.060882
SAR 1g (W/Kg)	0.151031
Variation (%)	-0.580000

E. Z Axis Scan



SAR Measurement at LTE band 41 (Body, Validation Plane)

Date of measurement: 22/12/2025

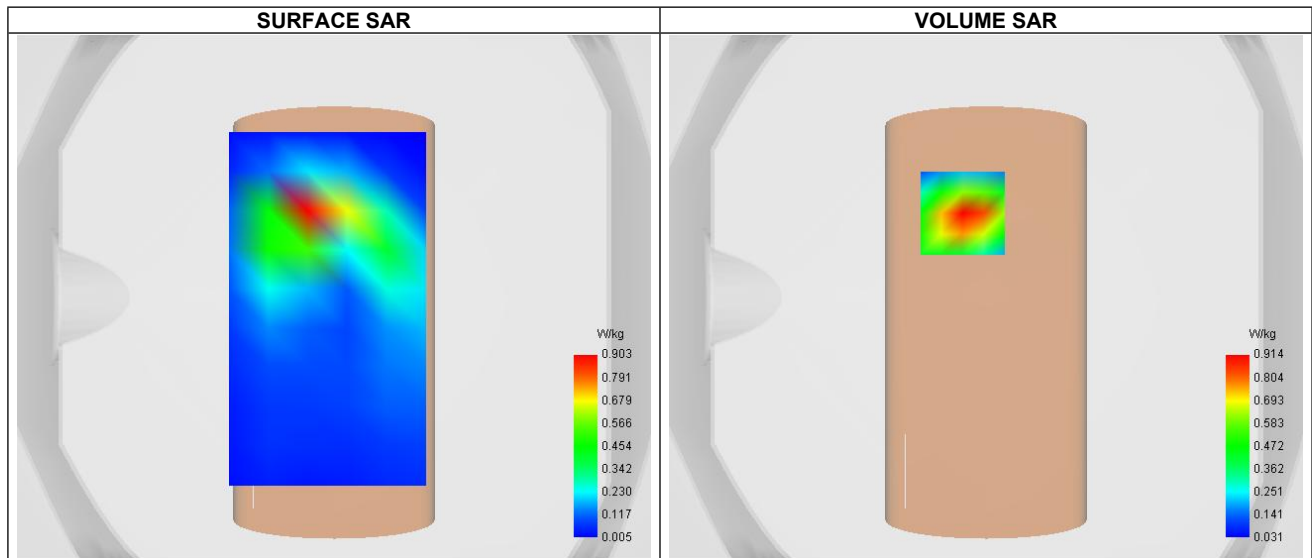
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	2.35
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 41
Channels	Low
Signal	LTE (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	2545.000000
Relative permittivity (real part)	38.621511
Conductivity (S/m)	1.948123

C. SAR Surface and Volume

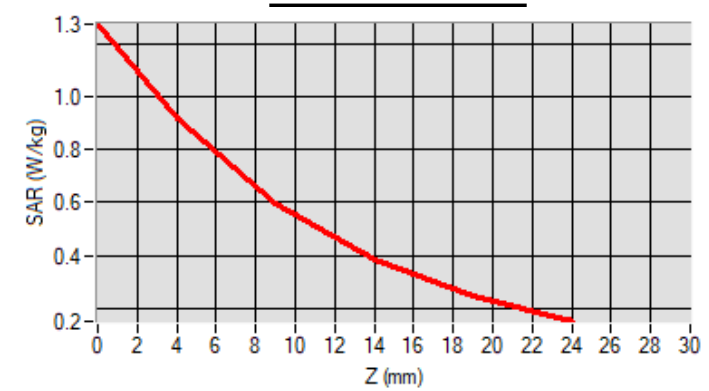


Maximum location: X=-9.00, Y=32.00 ; SAR Peak: 1.30 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.474018
SAR 1g (W/Kg)	0.868121
Variation (%)	-3.260000

E. Z Axis Scan



SAR Measurement at IEEE 802.11b ISM (Body, Validation Plane)

Date of measurement: 22/12/2025

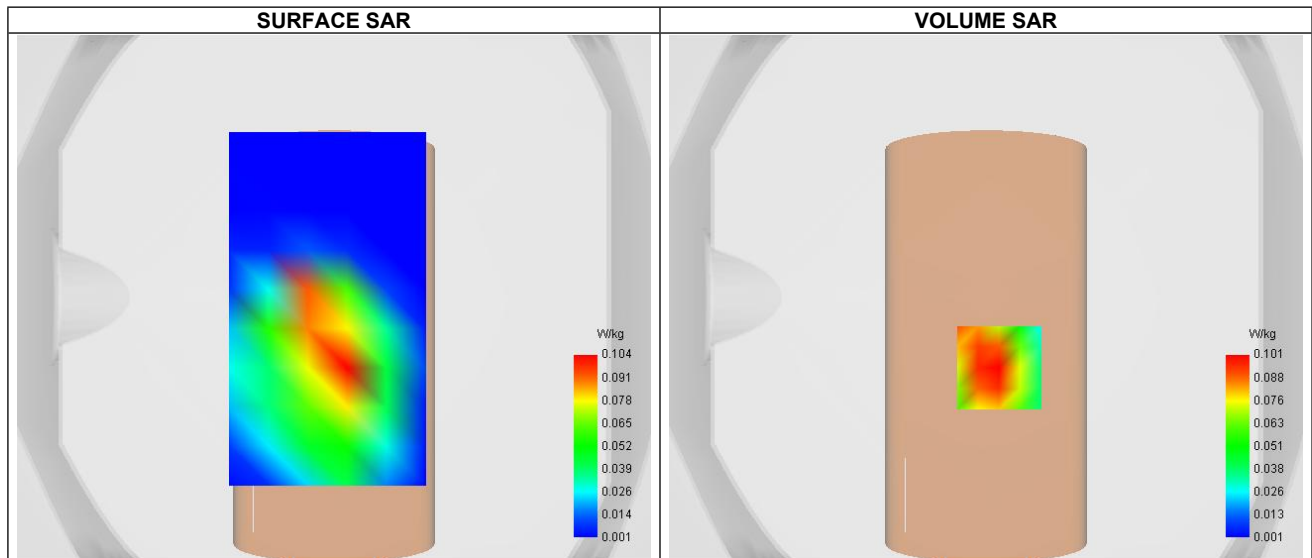
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	2.38
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	IEEE 802.11b ISM
Channels	Middle
Signal	IEEE802.b (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	2437.000000
Relative permittivity (real part)	38.763000
Conductivity (S/m)	1.834028

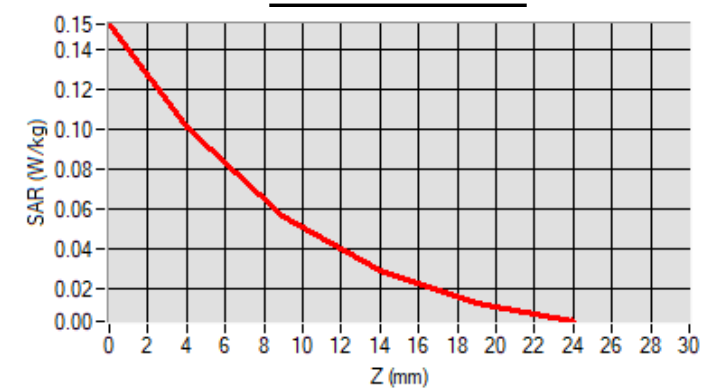
C. SAR Surface and Volume



D. SAR 1g & 10g

SAR 10g (W/Kg)	0.040582
SAR 1g (W/Kg)	0.067194
Variation (%)	-2.389999

E. Z Axis Scan



SAR Measurement at CUSTOM (5.2GHz 802.11AC40) (Body, Validation Plane)

Date of measurement: 27/12/2025

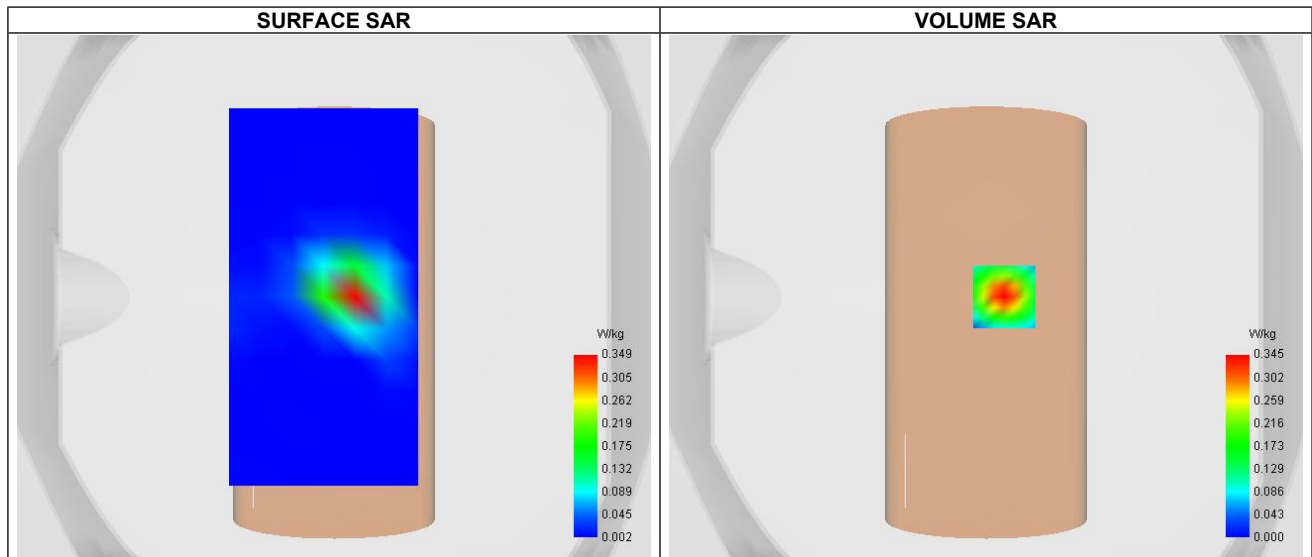
A. Experimental conditions.

Probe	SN 39/21 EPG0523-403
ConvF	2.30
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm,Complete
Phantom	Validation plane
Device Position	Body
Band	IEEE 802.11ac
Channels	High
Signal	IEEE802.ac (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	5230.000000
Relative permittivity (real part)	36.859999
Conductivity (S/m)	4.741564

C. SAR Surface and Volume

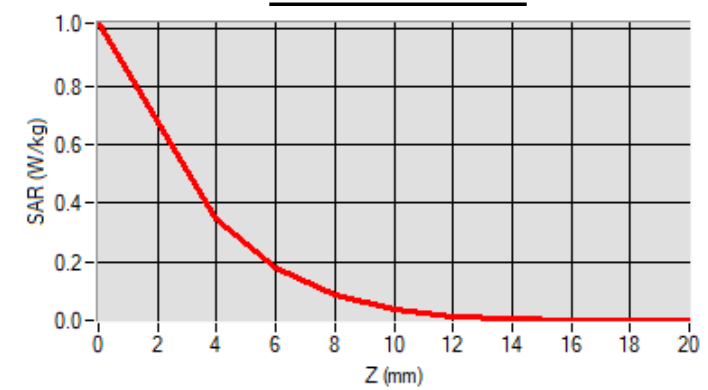


Maximum location: X=7.00, Y=0.00 ; SAR Peak: 0.64 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.051097
SAR 1g (W/Kg)	0.168572
Variation (%)	2.720000

E. Z Axis Scan



SAR Measurement at CUSTOM (5.8GHz 802.11a) (Body, Validation Plane)

Date of measurement: 28/12/2025

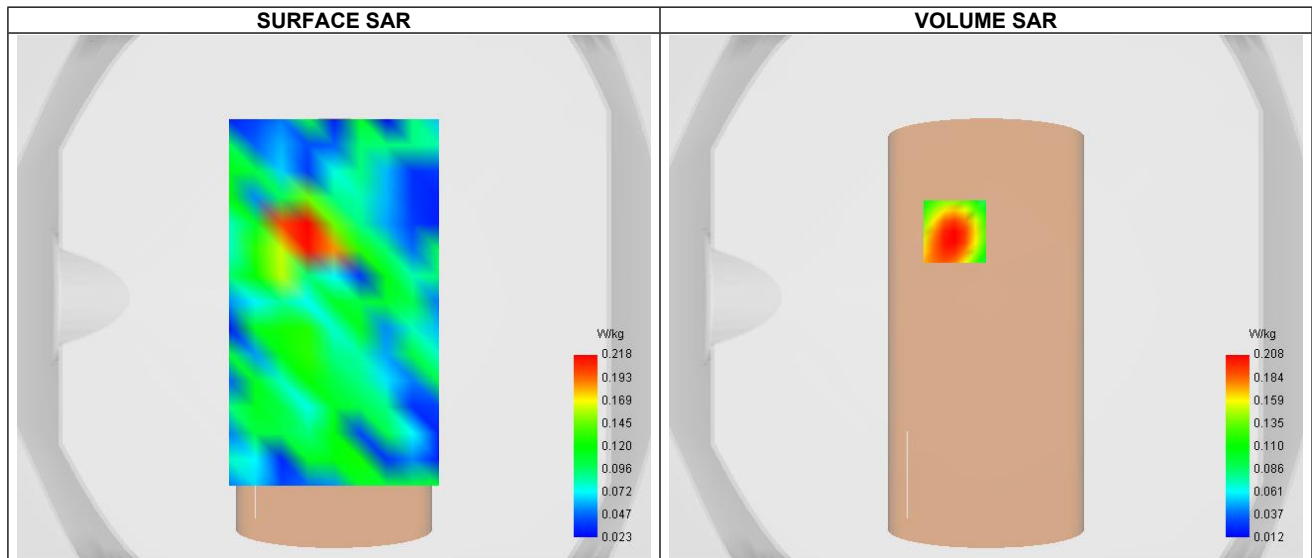
A. Experimental conditions.

Probe	SN 39/21 EPG00523-403
ConvF	2.27
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm,Complete
Phantom	Validation plane
Device Position	Body
Band	IEEE 802.11a
Channels	Low
Signal	IEEE802.a (Crest factor: 1.0)

B. Permittivity

Frequency (MHz)	5745.000000
Relative permittivity (real part)	36.006000
Conductivity (S/m)	5.406583

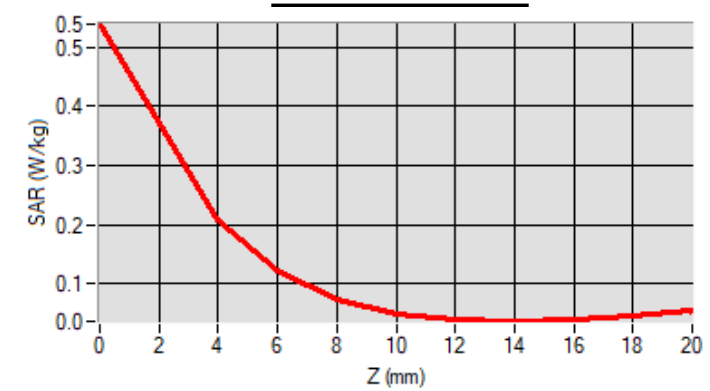
C. SAR Surface and Volume



D. SAR 1g & 10g

SAR 10g (W/Kg)	0.077758
SAR 1g (W/Kg)	0.164062
Variation (%)	2.020000

E. Z Axis Scan



Appendix D. Calibration Certificate

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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
5000-6000 MHz Dipole - SN 03/14 WGA33



COMOSAR E-Field Probe Calibration Report

Ref : ACR.307.3.24.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 DOSIMETRIC E-FIELD PROBE
SERIAL NO.: SN 39/21 EPGO0523-403

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

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

	<i>Customer Name</i>
<i>Distribution :</i>	Shenzhen Asia Hongke

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



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.307.3.24.BES.A

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

	<i>Customer Name</i>
<i>Distribution :</i>	Shenzhen Asia Hongke

<i>Issue</i>	<i>Name</i>	<i>Date</i>	<i>Modifications</i>
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 EPG00523-403
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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COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.307.3.24.BES.A

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:

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

where

$SAR_{uncertainty}$ is the uncertainty in percent of the probe boundary effect

d_{be} is the distance between the surface and the closest *zoom-scan* 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

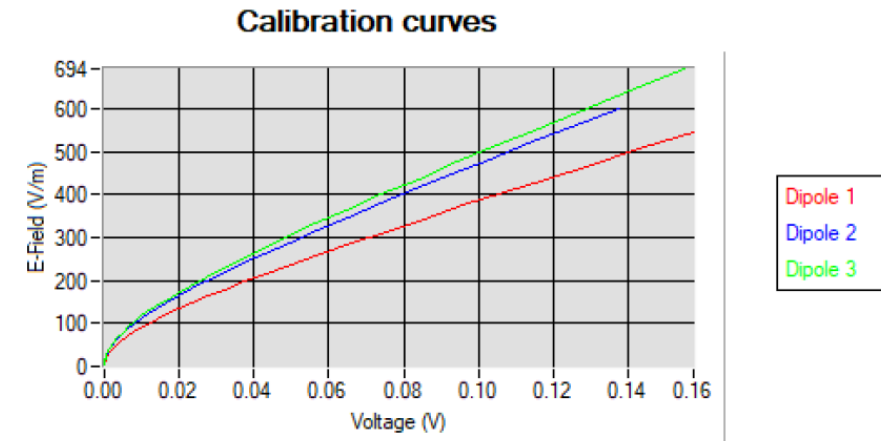
Calibration curves $e_i=f(V)$ ($i=1,2,3$) allow to obtain E-field value using the formula:

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

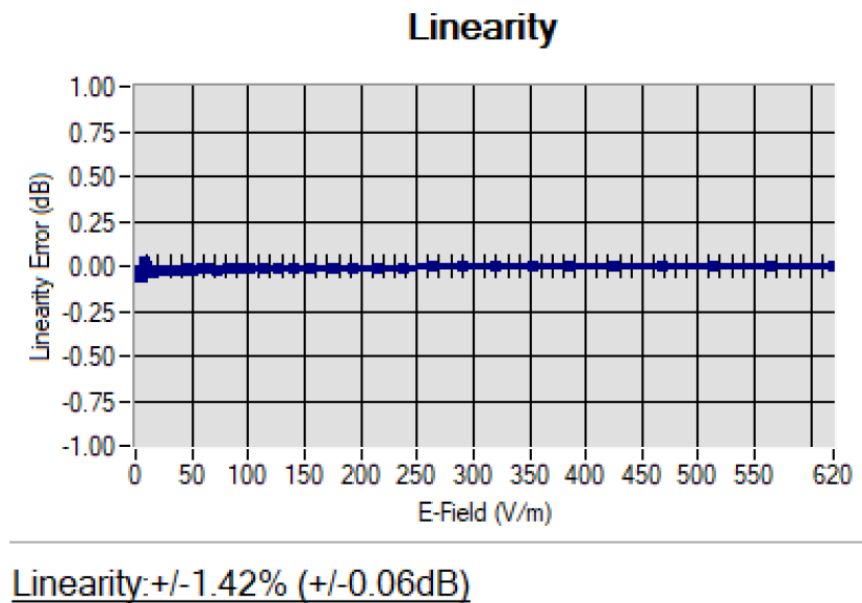


COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.307.3.24.BES.A



5.2 LINEARITY





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

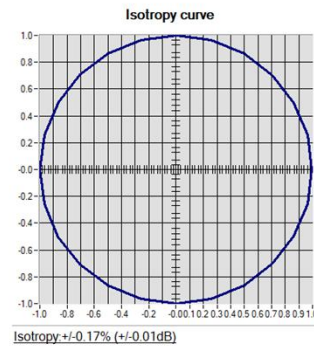


COMOSAR E-FIELD PROBE CALIBRATION REPORT

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

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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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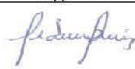
Summary:

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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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