TEST REPORT

APPLICANT	:	FOXX Development Inc.
PRODUCT NAME	:	Smart Phone
MODEL NAME	:	S67L
TRADE NAME	:	MIR, FOXX, FOXXD, AIRVOICE FOXXD HTH
FCC ID	:	2AQRM-S67L
STANDARD(S)	:	FCC 47 CFR Part 2 (2.1093) IEEE 1528-2013
RECEIPT DATE	:	2025-03-16
TEST DATE	:	2025-04-01 to 2025-04-09
ISSUE DATE	:	2025-04-28

Edited by: Pang Siyu (Rapporteur)

Approved by: Gan Yueming (Supervisor)

DIRECTORY

Version	Date	Description
1.0	2025-04-28	Original

1 SAR Results Summary

The maximum results of Specific Absorption Rate (SAR) found during test as bellows:

<Highest Reported SAR Summary>

Frequency Band		Highest SAR Summary			
		Head (Gap 0 mm)	Body-worn (Gap 10 mm)	Hotspot (Gap 10 mm)	Extremity (Gap 0mm)
		1g SAR (W/kg)			10g SAR (W/kg)
GSM	GSM 850	0.362	0.729	0.729	N/A
	GSM 1900	0.651	1.186	1.186	N/A
WCDMA	WCDMA II	0.416	0.815	0.815	N/A
	WCDMA IV	0.529	0.519	0.519	N/A
	WCDMA V	0.261	0.216	0.216	N/A
LTE	LTE Band 2	0.472	0.761	0.761	N/A
	LTE Band 5	0.255	0.523	0.523	N/A
	LTE Band 7	0.250	0.327	0.327	N/A
	LTE Band 12	0.225	0.267	0.267	N/A
	LTE Band 25	0.326	0.699	0.699	N/A
	LTE Band 26	0.125	0.466	0.466	N/A
	LTE Band 40	0.473	0.418	0.418	N/A
	LTE Band 41	0.382	0.466	0.466	N/A
	LTE Band 66	0.625	1.033	1.033	N/A
	LTE Band 71	0.191	0.198	0.198	N/A
WLAN	2.4GHz WLAN	0.604	0.322	0.322	N/A
	5GHz WLAN	0.190	0.358	0.358	N/A
2.4GHz Band	Bluetooth (Estimated)	N/A	0.047	0.047	N/A

Highest Simultaneous Transmission SAR_{1g} (W/Kg):	1.544	Limit (W/kg): 1.6

Note:

1. This device is in compliance with Specific Absorption Rate (SAR) for general population or uncontrolled exposure limits (1.6W/kg as averaged over any 1 gram of tissue; specified in FCC 47 CFR Part 1 (1.1310) and ANSI/IEEE C95.1-1992), and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013, FCC KDB publications.
2. When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.

2 Technical Information

Note: Provide by manufacturer.

2.1 Applicant and Manufacturer Information

Applicant:	FOXX Development Inc.
Applicant Address:	3480 Preston Ridge Road, Suite500, Alpharetta, GA 30005, USA
Manufacturer:	FOXX Development Inc.
Manufacturer Address:	3480 Preston Ridge Road, Suite500, Alpharetta, GA 30005, USA

2.2 Equipment Under Test (EUT) Description

Product Name:	Smart Phone
EUT No.:	1#
Hardware Version:	N/A
Software Version:	N/A
Operation Frequency:	GSM 850: 824 MHz ~ 849 MHz GSM 1900: 1850 MHz ~ 1910 MHz WCDMA II: 1850 MHz ~ 1910 MHz WCDMA IV: 1710 MHz ~ 1755 MHz WCDMA V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 40: 2305 MHz ~ 2315 MHz, 2350 MHz ~ 2360 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz WLAN 2.4GHz: 2412 MHz ~ 2462 MHz WLAN 5.2GHz: 5180 MHz ~ 5240 MHz WLAN 5.3GHz: 5260 MHz ~ 5320 MHz WLAN 5.5GHz: 5500 MHz ~ 5700 MHz WLAN 5.8GHz: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz

Modulation technology:	GSM/GPRS: GMSK EDGE: 8PSK WCDMA: QPSK, 16QAM LTE: QPSK, 16QAM 802.11b: DSSS 802.11a/g/n-HT20/HT40: OFDM 802.11ac-VHT20/40/80: OFDM BR+EDR: GFSK (1Mbps), π/4-DQPSK (2Mbps), 8-DPSK (3Mbps) Bluetooth LE: GFSK (1Mbps, 2Mbps)
Multi-slot Class:	GPRS/EDGE: Multi-slot Class 12
Operation Mode:	Class B

2.3 Environment of Test Site

Temperature:	18°C ~25 °C
Humidity:	35% ~ 75% RH
Atmospheric Pressure:	1010 mbar

3 Specific Absorption Rate (SAR)

3.1 Introduction

3.2 SAR Definition

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

$$SAR = \frac{d}{dt}\left(\frac{dU}{dm}\right) = \frac{d}{dt}\left(\frac{dU}{\rho dv}\right)$$

SAR is expressed in units of Watts per kilogram (W/kg)

SAR measurement can be either related to the temperature elevation in tissue by

$$SAR = C\left(\frac{\delta T}{\delta t}\right)$$

Where: C is the specific heat capacity, δT is the temperature rise and δt is the exposure duration, or related to the electrical field in the tissue by

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

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength. However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

4 RF Exposure Limits

4.1 Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

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

Type Exposure	Uncontrolled Environment Limit
Spatial Peak SAR (1g cube tissue for head and trunk)	1.6 W/kg
Spatial Peak SAR (10g cube tissue for limbs)	4.0 W/kg
Spatial Peak SAR (1g cube tissue for whole body)	0.08 W/kg

Note:

1. Occupational/Uncontrolled 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).
2. Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram 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.

4.2 Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

5 Applied Reference Documents

Leading reference documents for testing:

Identity	Document Title
47 CFR Part 2 (2.1093)	Radio Frequency Radiation Exposure Evaluation: Portable Devices
IEEE 1528-2013	IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
KDB 447498 D01v06	General RF Exposure Guidance
KDB 248227 D01v02r02	SAR Measurement Procedures for 802.11 Transmitters
KDB 865664 D01v01r04	SAR Measurement 100 MHz to 6 GHz
KDB 865664 D02v01r02	RF Exposure Reporting
KDB 648474 D04v01r03	Handset SAR
KDB 941225 D01v03r01	3G SAR Measurement Procedures
KDB 941225 D05v02r05	SAR Evaluation Consideration for LTE Devices
KDB 941225 D06v02r01	SAR Evaluation Procedures For Portable Devices With Wireless Router Capabilities

6 SAR Measurement System

Comosar is a system that is able to determine the SAR distribution inside a phantom of human being according to different standards. The Comosar system consists of the following items:

- Main computer to control all the system
- 6 axis robot
- Data acquisition system
- Miniature E-field probe
- Phone holder
- Head simulating tissue

The following figure shows the system.

The EUT under test operating at the maximum power level is placed in the phone holder, under the phantom, which is filled with head simulating liquid. The E-Field probe measures the electric field inside the phantom. The OpenSAR software computes the results to give a SAR value in a 1g or 10g mass.

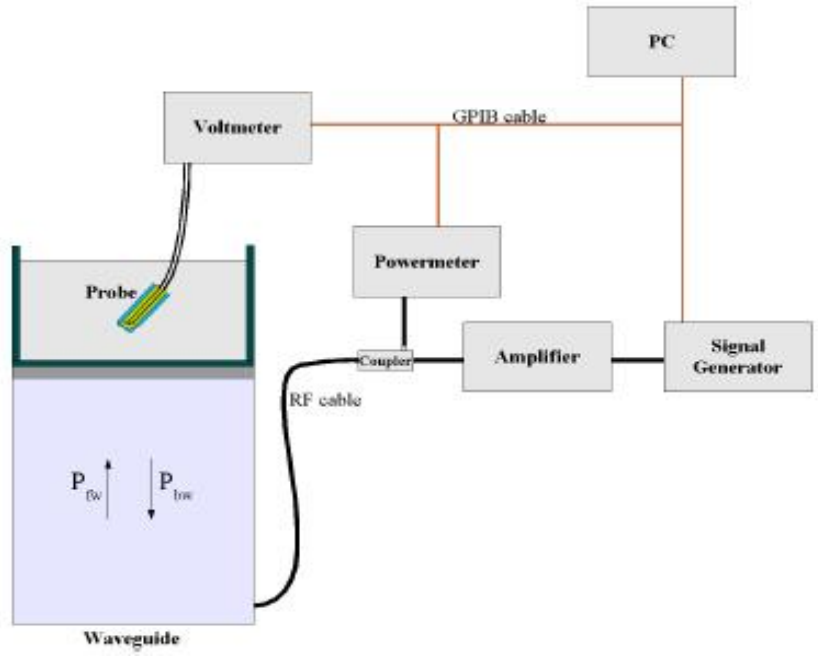
6.1 E-Field Probe

For the measurements the Specific Dosimetric E-Field Probe SN 37/08 EP80 with following specifications is used

- Dynamic range: 0.01-100 W/kg
- Tip Diameter : 6.5 mm
- Distance between probe tip and sensor center: 2.5mm
- Distance between sensor center and the inner phantom surface: 4 mm
(repeatability better than +/- 1mm)
- Probe linearity: <0.25 dB
- Axial Isotropy: <0.25 dB
- Spherical Isotropy: <0.25 dB
- Calibration range: 835 to 2500MHz for head & body simulating liquid.

Angle between probe axis (evaluation axis) and surface normal line: less than 30°

Probe calibration is realized, in compliance with CENELEC EN 62209 and IEEE 1528 std, with CALISAR, Antennessa proprietary calibration system. The calibration is performed with the EN 622091 appendixe technique using reference guide at the five frequencies.



$$SAR = \frac{4\,(P_{fw} - P_{bw})}{abc\delta} \cos^2\left(\pi \frac{y}{a}\right) e^{-(2z/\delta)}$$

Where :

Pfw = Forward Power

Pbw = Backward Power

a and b = Waveguide dimensions

ı = Skin depth

Keithley configuration:

Rate = Medium; Filter =ON; RDGS=10; FILTER TYPE =MOVING AVERAGE; RANGE AUTO

After each calibration, a SAR measurement is performed on a validation dipole and compared with a NPL calibrated probe, to verify it.

The calibration factors, CF(N), for the 3 sensors corresponding to dipole 1, dipole 2 and dipole 3 are:

$$CF(N)=SAR(N)/Vlin(N) \qquad (N=1,2,3)$$

The linearised output voltage Vlin(N) is obtained from the displayed output voltage V(N) using

$$Vlin(N)=V(N)*(1+V(N)/DCP(N)) \qquad (N=1,2,3)$$

where DCP is the diode compression point in mV.

Dosimetric Assessment Procedure

Each E-Probe/Probe Amplifier combination has unique calibration parameters. SATIMO Probe calibration procedure is conducted to determine the proper amplifier settings to enter in the probe parameters. The amplifier settings are determined for a given frequency by subjecting the probe to a known E-field density (1 mW/cm²) using an with CALISAR, Antenna proprietary calibration system.

Free Space Assessment Procedure

The free space E-field from amplified probe outputs is determined in a test chamber. This calibration can be performed in a TEM cell if the frequency is below 1 GHz and in a waveguide or other methodologies above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is rotated 360 degrees until the three channels show the maximum reading. The power density readings equates to 1 mW/cm².

Temperature Assessment Procedure

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulating head tissue. The E-field in the medium correlates with the temperature rise in the dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

Where:

δt = exposure time (30 seconds),

$$\mathrm{SAR} = \mathrm{C}\left(\frac{\delta T}{\delta t}\right)$$

C = heat capacity of tissue (brain or muscle),

δT = temperature increase due to RF exposure.

SAR is proportional to ΔT/Δt, the initial rate of tissue heating, before thermal diffusion takes place. The electric field in the simulated tissue can be used to estimate SAR by equating the thermally derived SAR to that with the E- field component.

Where:

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

σ = simulated tissue conductivity,

ρ = Tissue density (1.25 g/cm³ for brain tissue)

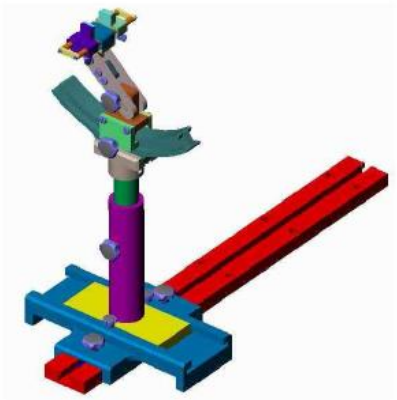
ρ = Tissue density (1.25 g/cm³ for brain tissue)

6.2 Phantom

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.

6.3 Device Holder

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



Device holder

System Material	Permittivity	Loss Tangent
Delrin	3.7	0.005

6.4 Test Equipment List

Manufacturer	Name of Equipment	Model	Serial Number	Calibration	
				Last Cal.	Due Date
SATIMO	900MHz System Validation Kit	D900	36/08 DIPD100	2024.05.10	2027.05.09
SATIMO	1800MHz System Validation Kit	D1800	36/08 DIPF101	2024.05.10	2027.05.09
SATIMO	2000MHz System Validation Kit	D2000V2	20/08 DIPI102	2024.05.10	2027.05.09
SATIMO	2450MHz System Validation Kit	D2450V2	30/13 DIP2G450-263	2024.05.10	2027.05.09
SATIMO	2600MHz System Validation Kit	D2600	30/13 DIP2G600-265	2024.05.10	2027.05.09
SATIMO	5000MHz System Validation Kit	D5GHz	41/12 WGA21	2024.05.10	2027.05.09
SATIMO	Dosimetric E-Field Probe	N/A	37/08 EP80	2024.05.10	2027.05.09
SATIMO	Dosimetric E-Field Probe	N/A	37/13 EPG193	2024.05.10	2027.05.09
Keithley	Voltmeter	2000	1000572	2024.05.10	2027.05.09
SATIMO	SAM Twin Phantom 2	N/A	SN_36_08_SAM62	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
R&S	Network Emulator	CMW500	165755	2024.01.25	2025.01.24
Agilent	Network Analyzer	E5071B	MY42404762	2018.04.17	2019.04.16
Agilent	Dielectric Probe Kit	85033E	N/A	2025.01.10	2026.01.09
mini-circuits	Amplifier	ZHL-42W+	608501717	NCR	NCR
mini-circuits	Amplifier	ZVE-8G+	754401735	NCR	NCR
Agilent	Signal Generator	N5182B	MY53050509	2024.09.11	2025.09.10
Agilent	Power Meter	E4416A	MY45102093	2024.09.11	2025.09.10
Agilent	Power Senor	N8482A	MY41090849	2024.04.17	2025.04.16
R&S	Power Meter	NRVD	101066	2024.04.17	2025.04.16
Anritsu	Power Sensor	MA2411B	N/A	2024.04.17	2025.04.16
Giga-tronics	Directional coupler	N/A	1829112	NA	NA
MCL	Attenuation1	6dBm	351-218-010	NA	NA
THERMOMETER	Thermo meter	Mode-01	N/A	2024.04.25	2025.04.24

7 Tissue Simulating Liquids

For the measurement of the field distribution inside the phantom, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 7.1, for body SAR testing, the liquid height from the center of the flat phantom to liquid top surface is larger than 15 cm, which is shown in Fig. 7.2.

Fig 7.1 Photo of Liquid Height for Head SAR

Fig 7.2 Photo of Liquid Height for Body SAR

The following table gives the recipes for tissue simulating liquids

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0
Body								
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0	0	31.4	1.95	52.7
2600	68.1	0	0	0.1	0	31.8	2.16	52.5

Simulating Liquid for 5GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	64~78%
Mineral oil	11~18%
Emulsifiers	9~15%
Additives and Salt	2~3%

Recipes for Tissue Simulating Liquid

The dielectric parameters of liquids were verified prior to the SAR evaluation using a Speag Dielectric Probe Kit and an Agilent Network Analyzer.

The following table shows the measuring results for simulating liquid.

Frequency (MHz)	**Real part of the complex relative permittivity, ε'r**	**Conductivity, σ (S/m)**
30	55.0	0.75
150	52.3	0.76
300	45.3	0.87
450	43.5	0.87
835	41.5	0.90
900	41.5	0.97
1450	40.5	1.20
1800	40.0	1.40
1900	40.0	1.40
1950	40.0	1.40
2000	40.0	1.40
2100	39.8	1.49
2450	39.2	1.80
2600	39.0	1.96
3000	38.5	2.40
4000	37.4	3.43
5000	36.2	4.45
5200	36.0	4.65
5400	35.8	4.86
5600	35.5	5.06
5800	35.4	5.27
6000	35.1	5.48

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Conductivity Target (σ)	Delta (σ) (%)	Limit (%)	Date
750	HSL	21.4	0.871	0.89	-2.13	±5	2025/4/1
900	HSL	21.4	0.941	0.97	-2.99	±5	2025/4/2
1800	HSL	21.5	1.393	1.40	-0.50	±5	2025/4/3
2000	HSL	21.5	1.402	1.40	0.14	±5	2025/4/9
2450	HSL	21.3	1.742	1.80	-3.22	±5	2025/4/5
2600	HSL	21.5	1.903	1.96	-2.91	±5	2025/4/6
5200	HSL	21.8	4.632	4.66	-0.60	±5	2025/4/7
5600	HSL	21.4	5.112	5.07	0.83	±5	2025/4/8
5800	HSL	21.4	5.254	5.27	-0.30	±5	2025/4/9

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Permittivity (ε r)	Permittivity Target (ε r)	Delta (ε r) (%)	Limit (%)	Date
750	HSL	21.4	42.452	41.90	1.32	±5	2025/4/1
900	HSL	21.5	42.082	41.50	1.40	±5	2025/4/2
1800	HSL	21.5	40.662	40.00	1.66	±5	2025/4/3
2000	HSL	21.3	40.453	40.00	1.13	±5	2025/4/9
2450	HSL	21.5	39.328	39.20	0.33	±5	2025/4/5
2600	HSL	21.8	38.952	39.00	-0.12	±5	2025/4/6
5200	HSL	21.4	35.824	36.00	-0.49	±5	2025/4/7
5600	HSL	21.4	35.123	35.50	-1.06	±5	2025/4/8
5800	HSL	21.5	34.864	35.30	-1.24	±5	2025/4/9

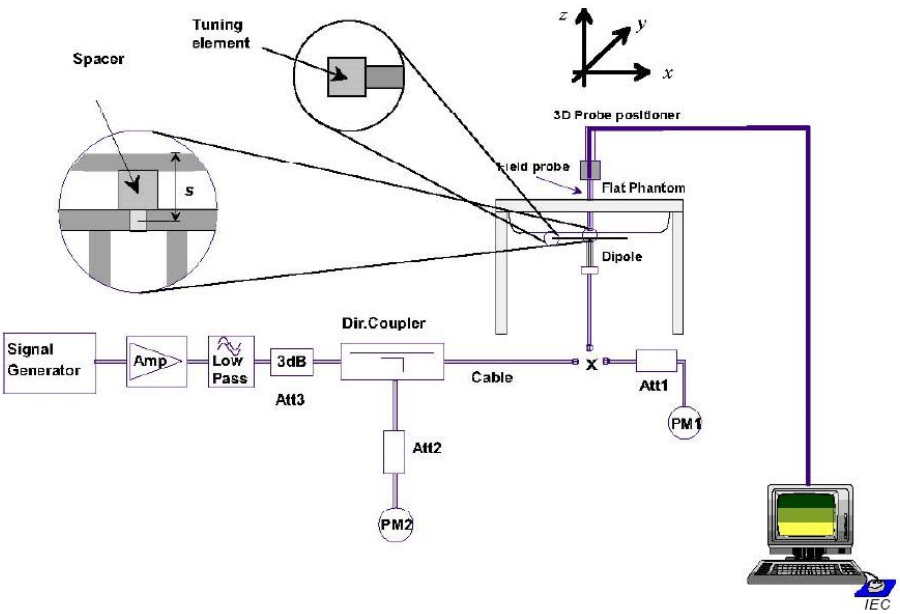
8 SAR System Verification

➢ **Purpose of System Performance Check**

The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system performance check uses normal SAR measurements in a simplified setup with a well characterized source. This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

➢ **System Setup**

In the simplified setup for system evaluation, the EUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave that comes from a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The equipment setup is shown below:



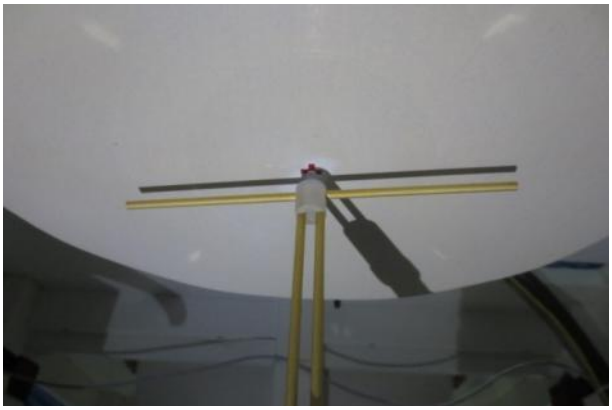


Fig. 8.1 Photo of Dipole setup

➢ **System Verification Results**

After system check testing, the SAR result will be normalized to 1W forward input power and compared with the reference SAR value derived from validation dipole certificate report. The deviation of system check should be within 10 %.

<System Validation>

Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N
750	HSL	100	DIP0G750-259	37/08 EP80
900	HSL	100	DIPD100	37/08 EP80
1800	HSL	100	DIPF101	37/08 EP80
2000	HSL	100	DIPI102	37/08 EP80
2450	HSL	100	DIP2G450-263	37/08 EP80
2600	HSL	100	DIP2G600-265	37/08 EP80
5200	HSL	100	41/12 WGA21	27/13 EPG193
5600	HSL	100	41/12 WGA21	27/13 EPG193
5800	HSL	100	41/12 WGA21	27/13 EPG193

<System Results>

Date	Frequency (MHz)	Tissue Type	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2025/4/1	750	HSL	0.885	8.41	8.85	5.23
2025/4/2	900	HSL	1.124	11.16	11.24	0.72
2025/4/3	1800	HSL	3.870	37.05	38.7	4.45
2025/4/9	2000	HSL	3.957	42.70	39.57	-7.33
2025/4/5	2450	HSL	5.311	52.40	53.11	1.35
2025/4/6	2600	HSL	5.277	56.94	52.77	-7.32

2025/4/7	5200	HSL	15.928	164.05	159.28	-2.91
2025/4/8	5600	HSL	17.749	177.81	177.49	-0.18
2025/4/9	5800	HSL	17.887	185.02	178.87	-3.32

Date	Frequency (MHz)	Tissue Type	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2025/4/1	750	HSL	0.589	5.52	5.89	6.70
2025/4/2	900	HSL	0.667	7.01	6.67	-4.85
2025/4/3	1800	HSL	1.934	19.85	19.34	-2.57
2025/4/9	2000	HSL	2.021	21.39	20.21	-5.52
2025/4/5	2450	HSL	2.366	24.22	23.66	-2.31
2025/4/6	2600	HSL	2.425	25.06	24.25	-3.23
2025/4/7	5200	HSL	5.289	57.03	52.89	-7.26
2025/4/8	5600	HSL	6.028	60.90	60.28	-1.02
2025/4/9	5800	HSL	6.362	62.43	63.62	1.91

9 EUT Testing Position

This EUT was tested in ten different positions. They are right cheek/right tilted/left cheek/left tilted for head, Front/Back/Right Side/Top Side/Bottom Side of the EUT with phantom 10 mm gap, as illustrated below, please refer to Appendix B for the test setup photos.

9.1 Handset Reference Points

The vertical centreline passes through two points on the front side of the handset – the midpoint of the width wt of the handset at the level of the acoustic output, and the midpoint of the width wb of the bottom of the handset.
The horizontal line is perpendicular to the vertical centreline and passes the center of the acoustic output. The horizontal line is also tangential to the handset at point A.
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 centreline is not necessarily parallel to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.

Fig.9.1 Illustration for Front, Back and Side of SAM Phantom

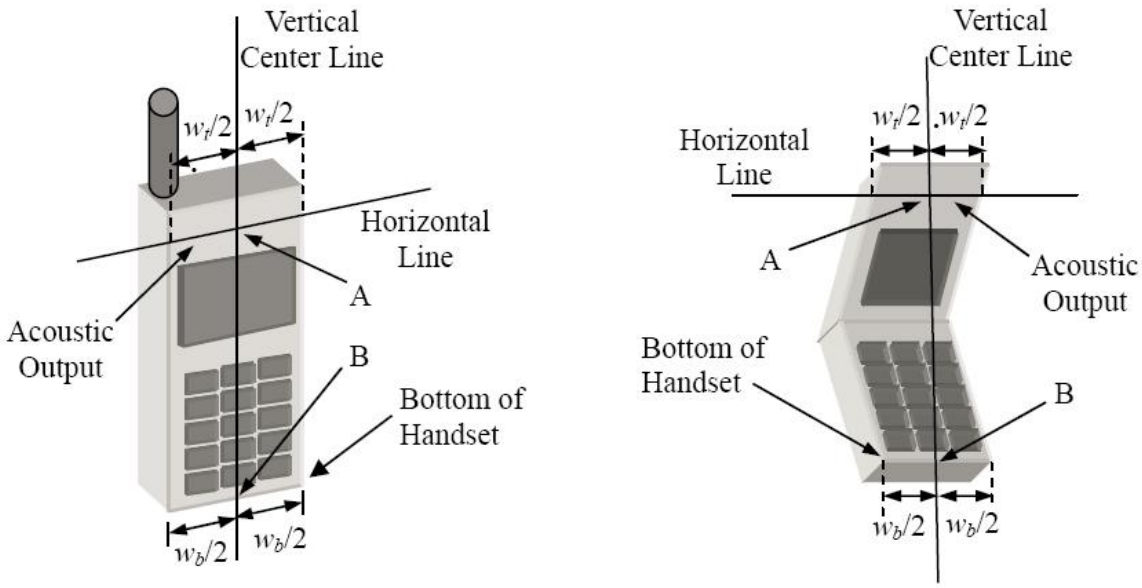


Fig. 9.2 Illustration for Handset Vertical and Horizontal Reference Lines

9.2 Positioning for Cheek / Touch

To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference point (M: Mouth, RE: Right Ear and LE: Left Ear) and align the center of the ear piece with the line RE-LE.

To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost (see below figure)

Fig. 9.3 Illustration for Cheek Position

9.3 Positioning for Ear / 15º Tilt

To position the device in the “cheek” position described above.
While maintaining the device the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost (see figure below).

Fig.9.4 Illustration for Tilted Position

9.4 SAR Evaluation near the Mouth/Jaw Regions of the Phantom

Antennas located near the bottom of a phone may require SAR measurements around the mouth and jaw regions of the SAM head phantom. This typically applies to clam-shell style phones that are generally longer in the unfolded normal use positions or to certain older style long rectangular phones.

Under these circumstances, the following procedures apply, adopted from the FCC guidance on SAR handsets document FCC KDB Publication 648474 D04v01r03. The SAR required in these regions of SAM should be measured using a flat phantom. The phone should be positioned with a separation distance of 4 mm between the ear reference point (ERP) and the outer surface of the flat phantom shell. While maintaining this distance at the ERP location, the low (bottom) edge of the phone should be lowered from the phantom to establish the same separation distance between the peak SAR locations identified by the truncated partial SAR distribution measured with the SAM phantom. The distance from the peak SAR location to the phone is determined by the straight line passing perpendicularly through the phantom surface. When it is not feasible to maintain 4 mm separation at the ERP while also establishing the required separation at the peak SAR location, the top edge of the phone will be allowed to touch the phantom with a separation < 4 mm at the ERP. The phone should not be tilted to the left or right while placed in this inclined position to the flat phantom.

9.5 Body Worn Accessory Configurations

The body-worn configurations shall be tested with the supplied accessories (belt-clips, holsters, etc.) attached to the device in normal use configuration.

For body-worn and other configurations a flat phantom shall be used which is comprised of material with electrical properties similar to the corresponding tissues.

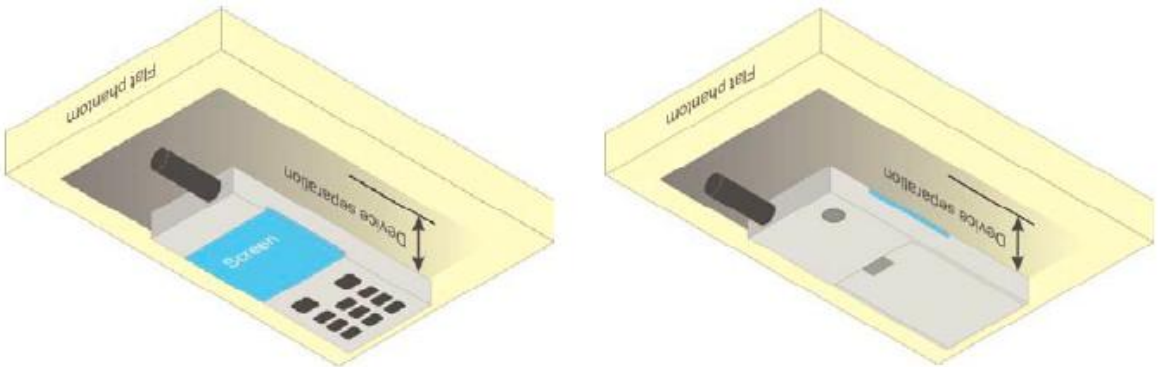


Fig.9.5 Illustration for Body Worn Position

9.6 Wireless Router (Hotspot) Configurations

Some battery-operated handsets have the capability to transmit and receive internet connectivity through simultaneous transmission of WIFI in conjunction with a separate licensed transmitter. The FCC has provided guidance in KDB Publication 941225 D06 where SAR test considerations for handsets (L x W ≥
9 cm x 5 cm) are based on a composite test separation distance of 10 mm from the front, back and edges of the device with antennas 2.5 cm or closer to the edge of the device, 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 WIFI 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. Therefore, SAR must be evaluated for each frequency transmission and mode separately and summed with the WIFI transmitter according to KDB 648474 publication procedures. The “Portable Hotspot” feature on the handset was NOT activated, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal.

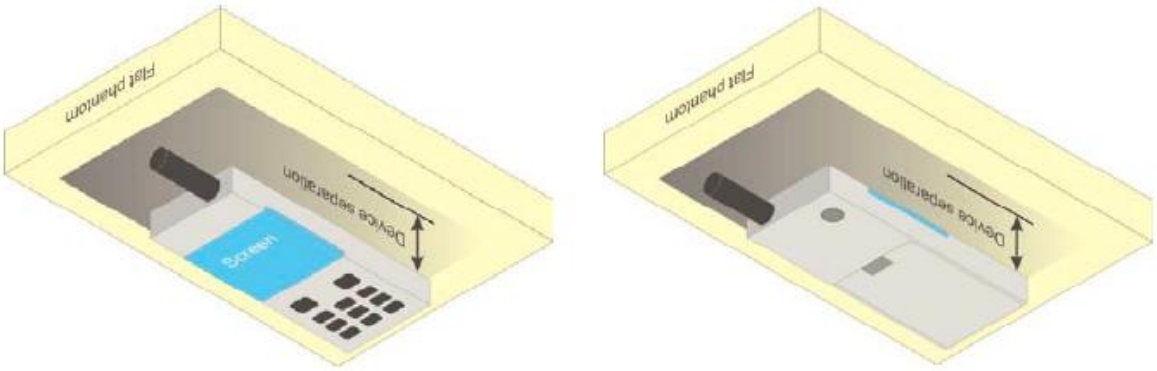


Fig.9.6 Illustration for Hotspot Position

10 Measurement Procedures

The measurement procedures are as bellows:

<Conducted power measurement>

- For WWAN power measurement, use base station simulator to configure EUT WWAN transition in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
- Read the WWAN RF power level from the base station simulator.
- For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band.
- Connect EUT RF port through RF cable to the power meter or spectrum analyzer, and measure WLAN/BT output power.

<Conducted power measurement>

- Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
- Place the EUT in positions as Appendix B demonstrates.
- Measure SAR results for the highest power channel on each testing position.
- Find out the largest SAR result on these testing positions of each band.
- Measure SAR results for other channels in worst SAR testing position if the Reported SAR or 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:

- Power reference measurement
- Area scan
- Zoom scan

10.1 Power Reference Measurement

The Power Reference Measurement and Power Drift Measurement are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface 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.

10.2 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a “cube” measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.
The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

(a) Extraction of the measured data (grid and values) from the Zoom Scan.
(b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters).
(c) Generation of a high-resolution mesh within the measured volume.
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid.
(e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface.
(f) Calculation of the averaged SAR within masses of 1g and 10g.

10.3 Area Scan Procedures

Area scans are defined prior to the measurement process being executed with a user defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for FCC applications utilize a 10mm² step integral, with 1mm interpolation used to locate the peak SAR area used for zoom scan assessments.

When an Area Scan has measured all reachable points, it computes the field maxima founding the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE 1528-2013.

10.4 Zoom Scan Procedures

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. A density of 1000 kg/m^3 is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1g cube is 10 mm, with the side length of the 10 g cube 21,5 mm.The zoom scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications utilize a physical step of 5 x 5 x 7 (8 mm x 8 mm x 5 mm) providing a volume of 32 mm in the X & Y axis, and 30 mm in the Z axis.

10.5 SAR Averaged Methods

In SATIMO, the interpolation and extrapolation are both based on the modified Quadratic Sheppard's method. The interpolation scheme combines a least-square fitted function method and a weighted average method which are the two basic types of computational interpolation and approximation.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1g and 10g cubes, the extrapolation distance should not be larger than 5 mm.

11 SAR Test Configuration

<GSM Mode>

A summary of these settings are illustrated below:

For GSM850 frequency band, the power control is set to 5 for GSM/GPRS mode (GSMK-CS1) and set to 8 for EDGE mode (MCS5); For GSM1900 frequency band, the power control is set to 0 for GSM/GPRS mode (GSMK-CS1) and set to 2 for EDGE mode (MCS5).

1. Per KDB 447498 D04v01, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. Per KDB 941225 D01v03r01, SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. Therefore, the GPRS (4Tx slots) for GSM850/GSM1900 is considered as the primary mode.
3. Other configurations of GSM / GPRS / EDGE are considered as secondary modes.

Time slot consignations:

Remark:

1. The frame-averaged power is linearly reported the maximum burst averaged power over 8 time slots. The calculated method are shown as below:
   The duty cycle "x" of different time slots as below:
   1 TX slot is 1/8, 2 TX slots is 2/8, 3 TX slots is 3/8 and 4 TX slots is 4/8
   Based on the calculation formula:
   Frame-averaged power = Burst averaged power + 10 1og (x)
   So,
   Frame-averaged power (1 TX slot) = Burst averaged power (1 TX slot)– 9.03
   Frame-averaged power (2 TX slots) = Burst averaged power (2 TX slots)– 6.02
   Frame-averaged power (3 TX slots) = Burst averaged power (3 TX slots)– 4.26
   Frame-averaged power (4 TX slots) = Burst averaged power (4 TX slots) – 3.01
2. CS1 coding scheme was used in GPRS conducted power measurements and SAR testing, MCS5 coding scheme was used in EGPRS conducted power measurements and SAR testing (if necessary).

No. of Slots:	Slot 1	Slot 2	Slot 3	Slot 4
Slot Consignation:	1Up4Down	2Up3Down	3Up2Down	4Up1Down
Duty Cycle:	1:8.3	1:4.15	1:2.77	1:2.08
Correct Factor:	-9.03dB	-6.02dB	-4.26dB	-3.01dB

<WCDMA>

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:

HSDPA Setup Configuration:

a. The EUT was connected to Base Station Rohde & Schwarz CMU200 referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set Gain Factors (βc and βd) and parameters were set according to each
   ii. Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
   iii. Set RMC 12.2kbps + HSDPA mode.
   iv. Set Cell Power = -86 dBm
   v. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
   vi. Select HSDPA Uplink Parameters
   vii. Set Delta ACK, Delta NACK and Delta CQI = 8
   viii. Set Ack-Nack Repetition Factor to 3
   ix. Set CQI Feedback Cycle (k) to 4 ms
   x. Set CQI Repetition Factor to 2
   xi. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

Table 1

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (1)	CM (dB) (2)
1	2/15	15/15	64	2/15	4/15	0.0
2	12/15 (3)	15/15 (3)	64	12/15 (3)	24/15	1.0
3	15/15	8/15	64	15/8	30/15	1.5
4	15/15	4/15	64	15/4	30/15	1.5

Note 1: Δ_{ACK}, Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$
Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15.
Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

HSDPA Sub-test setup configuration

HSUPA Setup Configuration:

a. The EUT was connected to Base Station Rohde & Schwarz CMU200 referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting * :
   i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
   ii. Set the Gain Factors (βc and βd) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
   iii. Set Cell Power = -86 dBm
   iv. Set Channel Type = 12.2k + HSPA
   v. Set UE Target Power
   vi. Power Ctrl Mode= Alternating bits
   vii. Set and observe the E-TFCI
   viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

Table 2

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (1)	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (codes)	CM (2) (dB)	MPR (dB)	AG (4) Index	E-TFCI
1	11/15 (3)	15/15 (3)	64	11/15 (3)	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1}: 47/15 β_{ed2}: 47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 (4)	15/15 (4)	64	15/15 (4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$.
Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.
Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.
Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 14/15 and β_d = 15/15.
Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g.
Note 6: β_{ed} cannot be set directly; it is set by Absolute Grant Value.

HSUPA Sub-test setup configuration

<LTE Mode>

LTE Target MPR level

The device implements maximum power reduction per 3GPP 36.101 requirements where the MPR target is as below table. The MPR settings are implemented configured into firmware and cannot be disabled by the end user or LTE carrier network.

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						MPR	3GPP
	1.4	3.0	5	10	15	20	Target	MPR
	MHz	MHz	MHz	MHz	MHz	MHz	(dB)	(dB)
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	1	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	1	≤ 1
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	2	≤ 2

Note: The measurement result showed some difference from the target MPR level, due to expected 0.5dBmeasurement tolerance

LTE Bands

LTE Bands	Channel bandwidth / Transmission bandwidth configuration [RB]					
	1.4	3.0	5	10	15	20
	MHz	MHz	MHz	MHz	MHz	MHz
2	√	√	√	√	√	√
4	√	√	√	√	√	√
5	√	√	√	√	N/A	N/A
7	N/A	N/A	√	√	√	√
12	√	√	√	√	N/A	N/A
13	N/A	N/A	√	√	N/A	N/A
25	√	√	√	√	√	√
26	√	√	√	√	√	N/A
38	N/A	N/A	√	√	√	√
40	N/A	N/A	√	√	N/A	N/A
41	N/A	N/A	√	√	√	√
66	√	√	√	√	√	√
71	N/A	N/A	√	√	√	√

Note:

1. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
2. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
3. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
4. Per KDB 941225 D05v02r05, for QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB

allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

5. Per KDB 941225 D05v02r05, 16QAM/64QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB941225 D05v02r05, 16QAM/64QAM SAR testing is not required.
6. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is > not ½ Db higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported band width is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
7. For LTE B4 / B5 / B7 / B17 the maximum bandwidth does not support three non-overlapping channels, per KDB941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
8. LTE band 2 / 12 SAR test was covered by Band 25 / 17; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. The maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion.
   b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.
9. According to 2017 TCB workshop, for 64 QAM and 16 QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >>constellation" mode of the device connect to the CMW500 base station, therefore, the device 64QAM and 16QAMsignal modulation are correct. Identify if Maximum Power Reduction (MPR) is optional or mandatory, i.e. built-in by design: only mandatory MPR may be considered during SAR testing, when the maximum output power is permanently limited by the MPR implemented within the UE; and only for the applicable RB (resource block) configurations specified in LTE standards: b) A-MPR (additional MPR) must be disabled.
10. Per KDB 447498 D04v01, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
    a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
    b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1 / (duty cycle)"
    c. For WWAN: Reported SAR (W/kg) = Measured SAR (W/kg) * Tune-up Scaling Factor
    d. For WLAN/Bluetooth: Reported SAR(W/kg) = Measured SAR (W/kg) * Duty Cycle scaling

factor * Tune-up scaling factor

e. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg) * Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

11. Per KDB 447498 D04v01, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
12. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
13. Per KDB 648474 D04v01r03, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, SAR testing with a headset connected to the handset is not required.

<WLAN 2.4GHz>

1. SAR is measured for 2.4 GHz 802.11b DSSS using either the fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:
   a. When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
   b. When the reported SAR is > 0.8 W/kg, SAR is required for that position using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.
2. 2.4 GHz 802.11 g/n OFDM are additionally evaluated for SAR if the highest reported SAR for 802.11b, adjusted by the ratio of the OFDM to DSSS specified maximum output power, is > 1.2 W/kg. When SAR is required for OFDM modes in 2.4 GHz band, the Initial Test configuration Procedures should be followed.
3. For held-to-ear and hotspot operations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.

4. Justification for test configurations for WLAN per KDB Publication 248227 D02DR02-41929 for 2.4 GHz WI-FI single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSSSAR.
5. A fixed level power reduction is applied for WiFi when handset operates "held to the body" condition or "held to the ear" condition, the power reduction triggered by audio receiver detection and call establish status.
6. Per KDB 248227 D01v02r02, In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. SAR is not required for the following 2.4 GHz OFDM conditions:
   a. When KDB Publication 447498 SAR test exclusion applies to the OFDM configuration.
   b. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

<WLAN 5GHz>

A) U-NII-1 and U-NII-2A Bands

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

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

B) U-NII-2C and U-NII-3 Bands

The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. when Terminal Doppler Weather Radar (TDWR) restriction applies, all channels that operate at 5.60 – 5.65 GHz must be included to apply the SAR test reduction and measurement procedures. When the same transmitter and antenna(s) are used for U-NII-2C band and U-NII-3 band or 5.8 GHz band of §15.247, the bands may be aggregated to enable additional channels with 20, 40 or 80 MHz bandwidth to span across the band gap, as illustrated in Appendix B. The maximum output power for the additional band gap channels is limited to the lower of those certified for the bands. Unless band gap channels are permanently disabled, they must be considered for SAR testing. The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. To maintain SAR measurement accuracy and to facilitate test reduction, the channels in U-NII-2C band above 5.65 GHz may be grouped with the 5.8 GHz channels in U-NII-3 or §15.247 band to enable two SAR probe calibration frequency points to cover the bands, including the band gap channels. When band gap channels are supported and the bands are not aggregated for SAR testing, band gap channels must be considered independently in each band according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

C) OFDM Transmission Mode SAR Test Configuration and Channel Selection Requirements

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

1. The largest channel bandwidth configuration is selected among the multiple configurations with the same specified maximum output power.
2. If multiple configurations have the same specified maximum output power and largest channel bandwidth, the lowest order modulation among the largest channel bandwidth configurations is selected.
3. If multiple configurations have the same specified maximum output power, largest channel band width and lowest order modulation, the lowest data rate configuration among these configurations is selected.
4. When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is

chosen over 802.11n. After an initial test configuration is determined, if multiple test channels have the same measured maximum output power, the channel chosen for SAR measurement is determined according to the following. These channel selection procedures apply to both the initial test configuration and subsequent test configuration(s), with respect to the default power measurement procedures or additional power measurements required for further SAR test reduction. The same procedures also apply to subsequent highest output power channel(s) selection.

5. The channel closest to mid-band frequency is selected for SAR measurement.
6. For channels with equal separation from mid-band frequency; for example, high and low channels or two mid-band channels, the higher frequency (number) channel is selected for SAR measurement.

D) SAR Test Requirements for OFDM configurations

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

12 Conducted Power List

➢ **Remark**

The output power of GSM/WCDMA/LTE/WLAN/Bluetooth was recorded in annex C of this report.

➢ **RF Exposure evaluation for Bluetooth**

1. Per KDB 447498 D01v06, the 1-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
   [(*max. power of channel, including tune-up tolerance, mW*) / (*min. test separation distance, mm*)] · [√f(GHz)] ≤ 3.0 for 1-g SAR, where
   - f(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

Channel	Frequency (GHz)	Max. Tune-up Power (dBm)	Max. Power (mW)	Test Distance (mm)	Result	exclusion thresholds for 1-g SAR
78	2.4	3.5	2.2	10	0.35	3.0

2. When standalone SAR is not required to be measured, per FCC KDB 447498 D01v06 4.3.2), the following equation must be used to estimate the standalone 1g SAR.

$$\text{Estimated SAR} = \frac{\sqrt{f(GHz)}}{7.5} \cdot \frac{\text{Max. power of channel, mW}}{\text{Min. Separation Distance, mm}}$$

Mode	Max. Tune-up Power (dBm)	Exposure Position	Body-worn
		Test Distance (mm)	10
Bluetooth	3.5	Estimated SAR (W/kg)	0.047

13 Exposure Positions Consideration

➢ **Antenna Information**

Wireless Bands	ANT0	ANT1	ANT2	ANT3	ANT4	ANT5
GSM 850	TX/PRX	N/A	DRX	N/A	N/A	N/A
GSM 1900	N/A	TX/PRX	DRX	N/A	N/A	N/A
WCDMA II	N/A	TX/PRX	DRX	N/A	N/A	N/A
WCDMA IV	N/A	TX/PRX	DRX	N/A	N/A	N/A
WCDMA V	TX/PRX	N/A	DRX	N/A	N/A	N/A
LTE Band 2	N/A	TX/PRX	DRX	DRX2	PRX2	N/A
LTE Band 4	N/A	TX/PRX	DRX	DRX2	PRX2	N/A
LTE Band 5	TX/PRX	N/A	DRX	N/A	N/A	N/A
LTE Band 7	TX/PRX	N/A	DRX2	DRX	PRX2	N/A
LTE Band 12	TX/PRX	N/A	DRX	N/A	N/A	N/A
LTE Band 25	N/A	TX/PRX	DRX	DRX2	PRX2	N/A
LTE Band 26	TX/PRX	N/A	DRX	N/A	N/A	N/A
LTE Band 40	TX/PRX	N/A	DRX	N/A	N/A	N/A
LTE Band 41	TX/PRX	N/A	DRX2	DRX	PRX2	N/A
LTE Band 66	N/A	TX/PRX	DRX	DRX2	PRX2	N/A
LTE Band 71	TX/PRX	N/A	DRX	N/A	N/A	N/A
WLAN 2.4GHz	N/A	N/A	N/A	N/A	N/A	TX/RX
WLAN 5GHz	N/A	N/A	N/A	N/A	N/A	TX/RX
Bluetooth	N/A	N/A	N/A	N/A	N/A	TX/RX
GPS	N/A	N/A	N/A	N/A	N/A	RX

Note：The location of antenna was recorded in annex B

➢ **EUT Antenna Distance (mm)**

Antenna Location	Front	Back	Left	Right	Top	Bottom
ANT 0	＜5mm	＜5mm	＜25mm	＞25mm	＞25mm	＜5mm
ANT 1	＜5mm	＜5mm	＜5mm	＞25mm	＜25mm	＞25mm
ANT 2	＜5mm	＜5mm	＜5mm	＞25mm	＜25mm	＞25mm
ANT 3	＜5mm	＜5mm	＞25mm	＜5mm	＜25mm	＞25mm
ANT 4	＜5mm	＜5mm	＞25mm	＜25mm	＜5mm	＞25mm
ANT 5	＜5mm	＜5mm	＞25mm	＜25mm	＜5mm	＞25mm

➢ **Hotspot Evaluation (Hotspot Side for SAR Test Distance: 10 mm)**

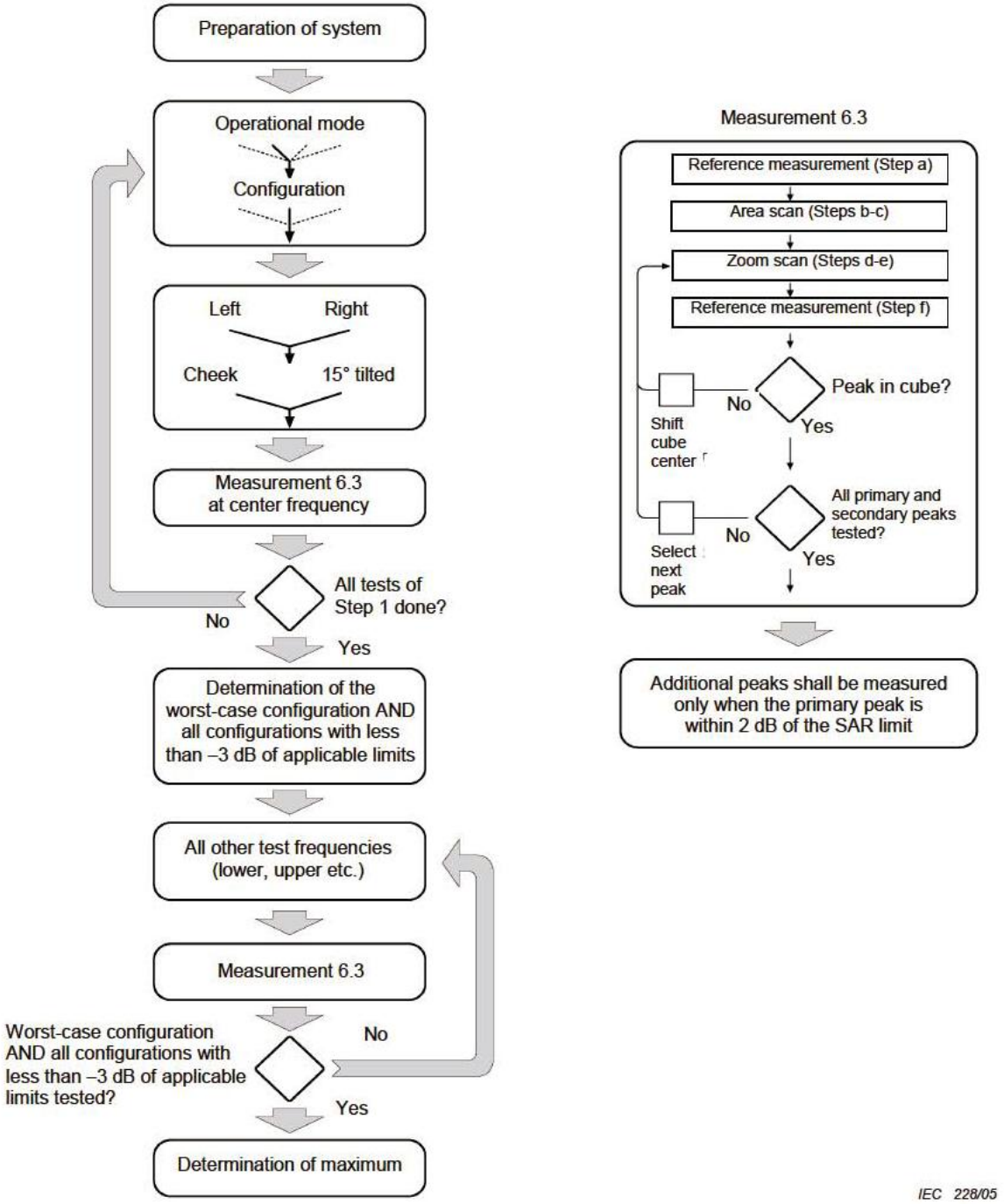
Antenna Location	Front	Back	Left	Right	Top	Bottom
ANT 0	Yes	Yes	Yes	No	No	No
ANT 1	Yes	Yes	Yes	No	Yes	No
ANT 2	Yes	Yes	Yes	No	Yes	No
ANT 3	Yes	Yes	No	Yes	Yes	No
ANT 4	Yes	Yes	No	Yes	Yes	No
ANT 5	Yes	Yes	No	Yes	Yes	No

Note :

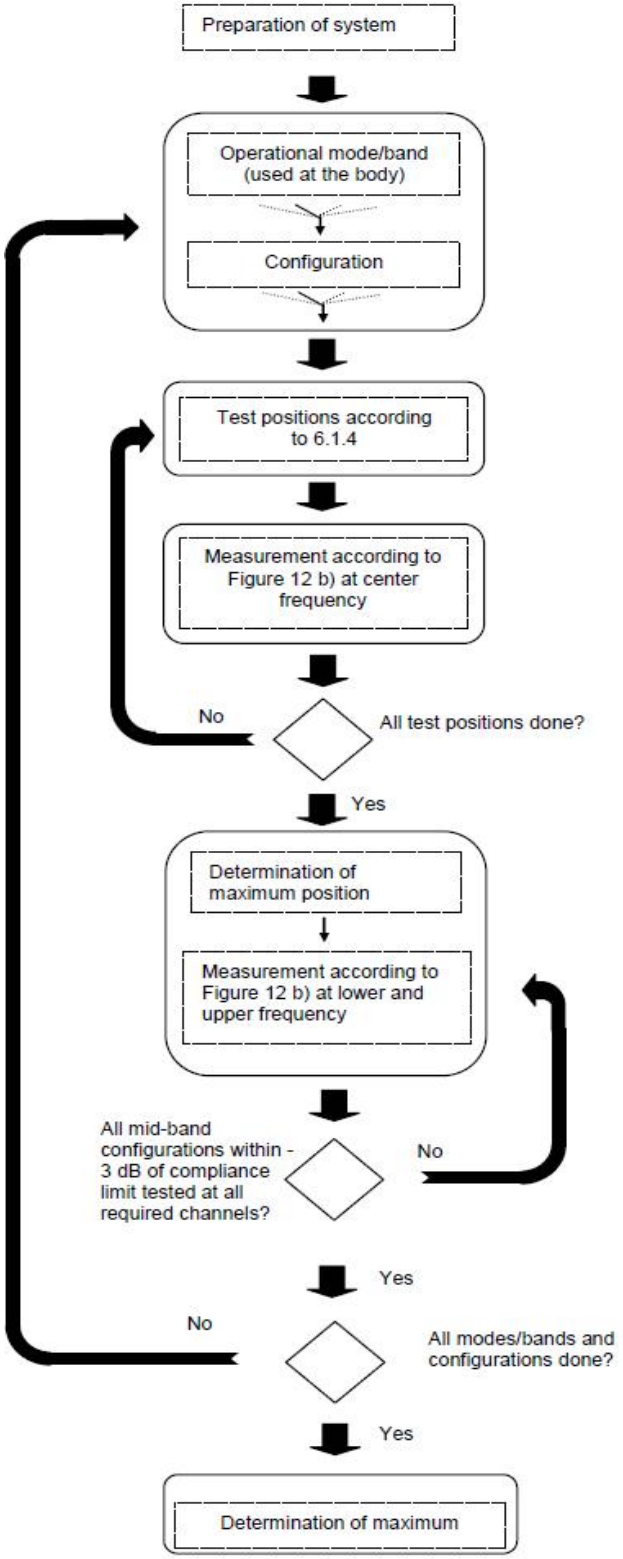
1. The SAR evaluation procedures for Portable Devices with Wireless Router function is according to KDB 941225 D06 Hotspot SAR v02r01.
2. Head/Body-worn/Hotspot mode SAR assessments are required.
3. Referring to KDB 941225 D06, when the overall device length and width are ≥ 9cm*5cm, the test distance is 10 mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25 mm from that surface or edge.

14 Block Diagram of the Tests to be Performed

14.1 Head



14.2 Body



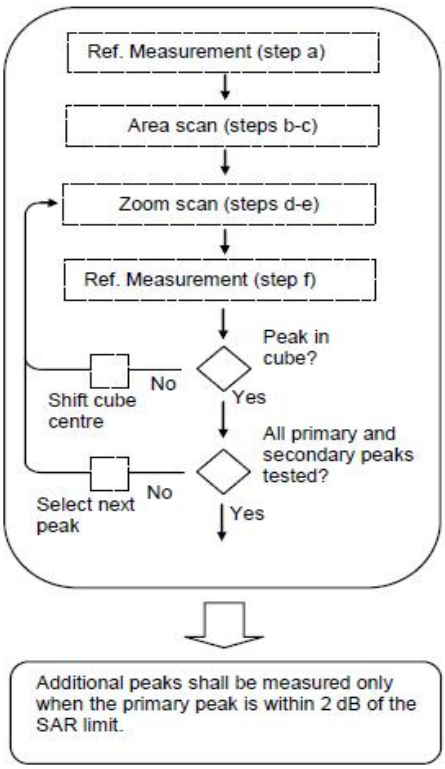


Figure 12b – General procedure

15 Test Results List

15.1 Test Guidance

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1 / (duty cycle)".
   c. For WWAN: Reported SAR (W/kg) = Measured SAR (W/kg) * Tune-up Scaling Factor.
   d. For WLAN/Bluetooth: Reported SAR (W/kg) = Measured SAR (W/kg) * Duty Cycle scaling factor * Tune-up scaling factor.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   a. ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   b. ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   c. ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
4. Per KDB 648474 D04v01r03, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, SAR testing with a headset connected to the handset is not required.
5. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for tablet modes to compare with the 1.2 W/kg SAR test reduction threshold.
6. Per KDB248227 D01v02r02, a Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement. The test frequencies established using test mode must correspond to the actual channel frequencies required for operations in the U.S. When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92 - 96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. In addition, a periodic transmission duty factor is required for current generation SAR systems to measure

SAR correctly. Unless it is permitted by specific KDB procedures or continuous transmission is specifically restricted by the device, the reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. When a device is not capable of sustaining continuous transmission or the output can become nonlinear, and it is limited by hardware design and unable to transmit at higher than 85% duty factor, a periodic duty factor within 15% of the maximum duty factor the device is capable of transmitting should be used. The reported SAR must be scaled to the maximum transmission duty factor to determine compliance. Descriptions of the procedures applied to establish the specific duty factor used for SAR testing are required in SAR reports to support the test results.

15.2 Head SAR Data List

➢ GSM Head SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
1#	GSM 850 (GSM Voice)	Right Cheek	128	32.12	32.5	1.091	0.332	0.362
	GSM 850 (GSM Voice)	Right Tilt	128	32.12	32.5	1.091	0.198	0.216
	GSM 850 (GSM Voice)	Left Cheek	128	32.12	32.5	1.091	0.204	0.223
	GSM 850 (GSM Voice)	Left Tilt	128	32.12	32.5	1.091	0.117	0.128
2#	GSM 1900 (GSM Voice)	Right Cheek	661	28.39	28.5	1.026	0.635	0.651
	GSM 1900 (GSM Voice)	Right Tilt	661	28.39	28.5	1.026	0.419	0.430
	GSM 1900 (GSM Voice)	Left Cheek	661	28.39	28.5	1.026	0.341	0.350
	GSM 1900 (GSM Voice)	Left Tilt	661	28.39	28.5	1.026	0.277	0.284

➢ WCDMA Head SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
3#	WCDMA II/RMC	Right Cheek	9538	20.72	21.0	1.067	0.390	0.416
	WCDMA II/RMC	Right Tilt	9538	20.72	21.0	1.067	0.222	0.237
	WCDMA II/RMC	Left Cheek	9538	20.72	21.0	1.067	0.219	0.234
	WCDMA II/RMC	Left Tilt	9538	20.72	21.0	1.067	0.108	0.115
4#	WCDMA IV/RMC	Right Cheek	1413	20.30	20.5	1.047	0.505	0.529
	WCDMA IV/RMC	Right Tilt	1413	20.30	20.5	1.047	0.312	0.327
	WCDMA IV/RMC	Left Cheek	1413	20.30	20.5	1.047	0.343	0.359
	WCDMA IV/RMC	Left Tilt	1413	20.30	20.5	1.047	0.184	0.193
5#	WCDMA V/RMC	Right Cheek	4132	21.60	22.0	1.096	0.238	0.261
	WCDMA V/RMC	Right Tilt	4132	21.60	22.0	1.096	0.109	0.120
	WCDMA V/RMC	Left Cheek	4132	21.60	22.0	1.096	0.116	0.127
	WCDMA V/RMC	Left Tilt	4132	21.60	22.0	1.096	0.071	0.078

➢ LTE Head SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
6#	LTE Band 2/1#50 20M	Right Cheek	18900	20.96	21.0	1.009	0.468	0.472
	LTE Band 2/1#50 20M	Right Tilt	18900	20.96	21.0	1.009	0.298	0.301
	LTE Band 2/1#50 20M	Left Cheek	18900	20.96	21.0	1.009	0.246	0.248
	LTE Band 2/1#50 20M	Left Tilt	18900	20.96	21.0	1.009	0.104	0.105
	LTE Band 2/50#25 20M	Right Cheek	18900	19.74	20.0	1.062	0.274	0.291
	LTE Band 2/50#25 20M	Right Tilt	18900	19.74	20.0	1.062	0.113	0.120
	LTE Band 2/50#25 20M	Left Cheek	18900	19.74	20.0	1.062	0.108	0.115
	LTE Band 2/50#25 20M	Left Tilt	18900	19.74	20.0	1.062	0.081	0.086
7#	LTE Band 4/1#50 20M	Right Cheek	20175	21.13	21.5	1.089	0.764	0.832
	LTE Band 4/1#50 20M	Right Tilt	20175	21.13	21.5	1.089	0.677	0.737
	LTE Band 4/1#50 20M	Left Cheek	20175	21.13	21.5	1.089	0.521	0.567
	LTE Band 4/1#50 20M	Left Tilt	20175	21.13	21.5	1.089	0.322	0.351
	LTE Band 4/1#50 20M	Right Cheek	20050	20.54	21.5	1.247	0.579	0.722
	LTE Band 4/1#50 20M	Right Cheek	20300	20.80	21.5	1.175	0.603	0.708
	LTE Band 4/50#25 20M	Right Cheek	20300	19.86	20.0	1.033	0.512	0.529
	LTE Band 4/50#25 20M	Right Tilt	20300	19.86	20.0	1.033	0.377	0.389
	LTE Band 4/50#25 20M	Left Cheek	20300	19.86	20.0	1.033	0.369	0.381
	LTE Band 4/50#25 20M	Left Tilt	20300	19.86	20.0	1.033	0.205	0.212
8#	LTE Band 5/1#25 10M	Right Cheek	20600	22.36	22.5	1.033	0.247	0.255
	LTE Band 5/1#25 10M	Right Tilt	20525	22.36	22.5	1.033	0.106	0.109
	LTE Band 5/1#25 10M	Left Cheek	20525	22.36	22.5	1.033	0.119	0.123
	LTE Band 5/1#25 10M	Left Tilt	20525	22.36	22.5	1.033	0.088	0.091
	LTE Band 5/25#13 10M	Right Cheek	20525	21.39	21.5	1.026	0.167	0.171
	LTE Band 5/25#13 10M	Right Tilt	20525	21.39	21.5	1.026	0.089	0.091
	LTE Band 5/25#13 10M	Left Cheek	20525	21.39	21.5	1.026	0.046	0.047
	LTE Band 5/25#13 10M	Left Tilt	20525	21.39	21.5	1.026	0.028	0.029
9#	LTE Band 7/1#0 20M	Right Cheek	21350	20.84	21.0	1.038	0.241	0.250
	LTE Band 7/1#0 20M	Right Tilt	21350	20.84	21.0	1.038	0.181	0.188
	LTE Band 7/1#0 20M	Left Cheek	21350	20.84	21.0	1.038	0.141	0.146
	LTE Band 7/1#0 20M	Left Tilt	21350	20.84	21.0	1.038	0.087	0.090
	LTE Band 7/50#25 20M	Right Cheek	21100	17.95	19.5	1.429	0.112	0.160
	LTE Band 7/50#25 20M	Right Tilt	21100	17.95	19.5	1.429	0.072	0.103
	LTE Band 7/50#25 20M	Left Cheek	21100	17.95	19.5	1.429	0.108	0.154
	LTE Band 7/50#25 20M	Left Tilt	21100	17.95	19.5	1.429	0.063	0.090
10#	LTE Band 12/1#25 10M	Right Cheek	23130	22.58	23.0	1.102	0.204	0.225
	LTE Band 12/1#25 10M	Right Tilt	23130	22.58	23.0	1.102	0.113	0.124
	LTE Band 12/1#25 10M	Left Cheek	23130	22.58	23.0	1.102	0.109	0.120
	LTE Band 12/1#25 10M	Left Tilt	23130	22.58	23.0	1.102	0.045	0.050
	LTE Band 12/25#13 10M	Right Cheek	23130	21.44	21.5	1.014	0.139	0.141
	LTE Band 12/25#13 10M	Right Tilt	23130	21.44	21.5	1.014	0.098	0.099
	LTE Band 12/25#13 10M	Left Cheek	23130	21.44	21.5	1.014	0.106	0.107

	LTE Band 12/25#13 10M	Left Tilt	23130	21.44	21.5	1.014	0.055	0.056
11#	LTE Band 25/1#50 20M	Right Cheek	26590	20.97	21.0	1.007	0.324	0.326
	LTE Band 25/1#50 20M	Right Tilt	26590	20.97	21.0	1.007	0.217	0.219
	LTE Band 25/1#50 20M	Left Cheek	26590	20.97	21.0	1.007	0.203	0.204
	LTE Band 25/1#50 20M	Left Tilt	26590	20.97	21.0	1.007	0.118	0.119
	LTE Band 25/50#0 20M	Right Cheek	26365	19.99	20.0	1.002	0.204	0.204
	LTE Band 25/50#0 20M	Right Tilt	26365	19.99	20.0	1.002	0.149	0.149
	LTE Band 25/50#0 20M	Left Cheek	26365	19.99	20.0	1.002	0.153	0.153
	LTE Band 25/50#0 20M	Left Tilt	26365	19.99	20.0	1.002	0.075	0.075
12#	LTE Band 26/1#49 10M	Right Cheek	26740	22.27	22.5	1.054	0.119	0.125
	LTE Band 26/1#49 10M	Right Tilt	26740	22.27	22.5	1.054	0.068	0.072
	LTE Band 26/1#49 10M	Left Cheek	26740	22.27	22.5	1.054	0.071	0.075
	LTE Band 26/1#49 10M	Left Tilt	26740	22.27	22.5	1.054	0.034	0.036
	LTE Band 26/25#13 10M	Right Cheek	26740	21.42	21.5	1.019	0.082	0.084
	LTE Band 26/25#13 10M	Right Tilt	26740	21.42	21.5	1.019	0.049	0.050
	LTE Band 26/25#13 10M	Left Cheek	26740	21.42	21.5	1.019	0.056	0.057
	LTE Band 26/25#13 10M	Left Tilt	26740	21.42	21.5	1.019	0.019	0.019
	LTE Band 26/1#38 15M	Right Cheek	26865	22.66	23.0	1.081	0.100	0.108
	LTE Band 26/1#38 15M	Right Tilt	26865	22.66	23.0	1.081	0.037	0.040
	LTE Band 26/1#38 15M	Left Cheek	26865	22.66	23.0	1.081	0.044	0.048
	LTE Band 26/1#38 15M	Left Tilt	26865	22.66	23.0	1.081	0.021	0.023
	LTE Band 26/36#18 15M	Right Cheek	26865	21.51	22.0	1.119	0.067	0.075
	LTE Band 26/36#18 15M	Right Tilt	26865	21.51	22.0	1.119	0.028	0.031
	LTE Band 26/36#18 15M	Left Cheek	26865	21.51	22.0	1.119	0.019	0.021
	LTE Band 26/36#18 15M	Left Tilt	26865	21.51	22.0	1.119	0.013	0.015
13#	LTE Band 40/1#0 10M	Right Cheek	39200	20.98	21.0	1.005	0.468	0.473
	LTE Band 40/1#0 10M	Right Tilt	39200	20.98	21.0	1.005	0.330	0.334
	LTE Band 40/1#0 10M	Left Cheek	39200	20.98	21.0	1.005	0.281	0.284
	LTE Band 40/1#0 10M	Left Tilt	39200	20.98	21.0	1.005	0.191	0.193
	LTE Band 40/25#0 10M	Right Cheek	39200	20.07	20.5	1.104	0.213	0.237
	LTE Band 40/25#0 10M	Right Tilt	39200	20.07	20.5	1.104	0.144	0.160
	LTE Band 40/25#0 10M	Left Cheek	39200	20.07	20.5	1.104	0.120	0.133
	LTE Band 40/25#0 10M	Left Tilt	39200	20.07	20.5	1.104	0.064	0.071
14#	LTE Band 41/1#50 20M	Right Cheek	41490	21.97	22.0	1.007	0.377	0.382
	LTE Band 41/1#50 20M	Right Tilt	41490	21.97	22.0	1.007	0.203	0.206
	LTE Band 41/1#50 20M	Left Cheek	41490	21.97	22.0	1.007	0.116	0.118
	LTE Band 41/1#50 20M	Left Tilt	41490	21.97	22.0	1.007	0.082	0.083
	LTE Band 41/50#25 20M	Right Cheek	41490	20.97	21.0	1.007	0.222	0.225
	LTE Band 41/50#25 20M	Right Tilt	41490	20.97	21.0	1.007	0.167	0.169
	LTE Band 41/50#25 20M	Left Cheek	41490	20.97	21.0	1.007	0.109	0.110
	LTE Band 41/50#25 20M	Left Tilt	41490	20.97	21.0	1.007	0.066	0.067
15#	LTE Band 66/1#0 20M	Right Cheek	132322	23.87	24.0	1.030	0.607	0.625
	LTE Band 66/1#0 20M	Right Tilt	132322	23.87	24.0	1.030	0.416	0.429

	LTE Band 66/1#0 20M	Left Cheek	132322	23.87	24.0	1.030	0.387	0.399
	LTE Band 66/1#0 20M	Left Tilt	132322	23.87	24.0	1.030	0.219	0.226
	LTE Band 66/50#0 20M	Right Cheek	132322	22.63	23.0	1.089	0.444	0.483
	LTE Band 66/50#0 20M	Right Tilt	132322	22.63	23.0	1.089	0.271	0.295
	LTE Band 66/50#0 20M	Left Cheek	132322	22.63	23.0	1.089	0.243	0.265
	LTE Band 66/50#0 20M	Left Tilt	132322	22.63	23.0	1.089	0.116	0.126
16#	LTE Band 71/1#0 20M	Right Cheek	133322	22.03	22.5	1.114	0.171	0.191
	LTE Band 71/1#0 20M	Right Tilt	133322	22.03	22.5	1.114	0.086	0.096
	LTE Band 71/1#0 20M	Left Cheek	133322	22.03	22.5	1.114	0.075	0.084
	LTE Band 71/1#0 20M	Left Tilt	133322	22.03	22.5	1.114	0.037	0.041
	LTE Band 71/50#0 20M	Right Cheek	133322	20.98	21.0	1.005	0.088	0.088
	LTE Band 71/50#0 20M	Right Tilt	133322	20.98	21.0	1.005	0.051	0.051
	LTE Band 71/50#0 20M	Left Cheek	133322	20.98	21.0	1.005	0.067	0.067
	LTE Band 71/50#0 20M	Left Tilt	133322	20.98	21.0	1.005	0.021	0.021

➢ WLAN Head SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
17#	WLAN 2.4GHz/802.11b	Right Cheek	11	15.71	16.0	1.069	0.565	0.604
	WLAN 2.4GHz/802.11b	Right Tilt	11	15.71	16.0	1.069	0.415	0.444
	WLAN 2.4GHz/802.11b	Left Cheek	11	15.71	16.0	1.069	0.389	0.416
	WLAN 2.4GHz/802.11b	Left Tilt	11	15.71	16.0	1.069	0.224	0.239
18#	WLAN5.2GHz/802.11ac80	Right Cheek	42	12.90	12.9	1.000	0.167	0.167
	WLAN5.2GHz/802.11ac80	Right Tilt	42	12.90	12.9	1.000	0.103	0.103
	WLAN5.2GHz/802.11ac80	Left Cheek	42	12.90	12.9	1.000	0.098	0.098
	WLAN5.2GHz/802.11ac80	Left Tilt	42	12.90	12.9	1.000	0.072	0.072
19#	WLAN 5.3GHz/802.11n40	Right Cheek	52	12.54	13.0	1.112	0.171	0.190
	WLAN 5.3GHz/802.11n40	Right Tilt	52	12.54	13.0	1.112	0.103	0.115
	WLAN 5.3GHz/802.11n40	Left Cheek	52	12.54	13.0	1.112	0.086	0.096
	WLAN 5.3GHz/802.11n40	Left Tilt	52	12.54	13.0	1.112	0.051	0.057
20#	WLAN 5.5GHz/802.11a	Right Cheek	120	13.43	13.5	1.016	0.179	0.182
	WLAN 5.5GHz/802.11a	Right Tilt	120	13.43	13.5	1.016	0.112	0.114
	WLAN 5.5GHz/802.11a	Left Cheek	120	13.43	13.5	1.016	0.086	0.087
	WLAN 5.5GHz/802.11a	Left Tilt	120	13.43	13.5	1.016	0.049	0.050
21#	WLAN5.8GHz/802.11ac80	Right Cheek	155	12.92	13.0	1.019	0.164	0.167
	WLAN5.8GHz/802.11ac80	Right Tilt	155	12.92	13.0	1.019	0.093	0.095
	WLAN5.8GHz/802.11ac80	Left Cheek	155	12.92	13.0	1.019	0.088	0.090
	WLAN5.8GHz/802.11ac80	Left Tilt	155	12.92	13.0	1.019	0.046	0.047

15.3 Body SAR Data List

➢ GSM Head SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
	GPRS 850 (2TX Slots)	Front Side	128	30.12	30.5	1.091	0.328	0.358
22#	GPRS 850 (2TX Slots)	Back Side	128	30.12	30.5	1.091	0.668	0.729
	GPRS 850 (2TX Slots)	Left Side	128	30.12	30.5	1.091	0.236	0.258
	GPRS 850 (2TX Slots)	Bottom Side	128	30.12	30.5	1.091	0.236	0.258
	GPRS 1900 (3TX Slots)	Front Side	810	24.71	25.0	1.069	0.231	0.247
23#	GPRS 1900 (3TX Slots)	Back Side	810	24.71	25.0	1.069	1.109	1.186
	GPRS 1900 (3TX Slots)	Left Side	810	24.71	25.0	1.069	0.515	0.551
	GPRS 1900 (3TX Slots)	Top Side	810	24.71	25.0	1.069	0.739	0.790
	GPRS 1900 (3TX Slots)	Back Side	512	24.06	25.0	1.242	0.802	0.996
	GPRS 1900 (3TX Slots)	Back Side	661	24.52	25.0	1.117	0.738	0.824

➢ WCDMA Head SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
	WCDMA II/RMC	Front Side	9538	20.72	21.0	1.067	0.392	0.418
24#	WCDMA II/RMC	Back Side	9538	20.72	21.0	1.067	0.764	0.815
	WCDMA II/RMC	Left Side	9538	20.72	21.0	1.067	0.438	0.467
	WCDMA II/RMC	Top Side	9538	20.72	21.0	1.067	0.574	0.612
	WCDMA II/RMC	Back Side	9262	20.62	21.0	1.091	0.718	0.784
	WCDMA II/RMC	Back Side	9400	20.65	21.0	1.084	0.722	0.783
	WCDMA IV/RMC	Front Side	1413	20.30	20.5	1.047	0.185	0.194
25#	WCDMA IV/RMC	Back Side	1413	20.30	20.5	1.047	0.496	0.519
	WCDMA IV/RMC	Left Side	1413	20.30	20.5	1.047	0.250	0.262
	WCDMA IV/RMC	Top Side	1413	20.30	20.5	1.047	0.331	0.347
	WCDMA V/RMC	Front Side	4182	21.60	22.0	1.096	0.184	0.202
26#	WCDMA V/RMC	Back Side	4182	21.60	22.0	1.096	0.197	0.216
	WCDMA V/RMC	Left Side	4182	21.60	22.0	1.096	0.139	0.152
	WCDMA V/RMC	Bottom Side	4182	21.60	22.0	1.096	0.100	0.110

➢ LTE Head SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
	LTE Band 2/1#50 20M	Front Side	18900	20.96	21.0	1.009	0.571	0.576
27#	LTE Band 2/1#50 20M	Back Side	18900	20.96	21.0	1.009	0.754	0.761
	LTE Band 2/1#50 20M	Left Side	18900	20.96	21.0	1.009	0.671	0.677
	LTE Band 2/1#50 20M	Top Side	18900	20.96	21.0	1.009	0.489	0.494
	LTE Band 2/50#25 20M	Front Side	18900	19.74	20.0	1.062	0.416	0.442
	LTE Band 2/50#25 20M	Back Side	18900	19.74	20.0	1.062	0.528	0.561

	LTE Band 2/50#25 20M	Left Side	18900	19.74	20.0	1.062	0.447	0.475
	LTE Band 2/50#25 20M	Top Side	18900	19.74	20.0	1.062	0.321	0.341
	LTE Band 4/1#50 20M	Front Side	20175	21.13	21.5	1.089	0.576	0.627
28#	LTE Band 4/1#50 20M	Back Side	20175	21.13	21.5	1.089	0.887	0.966
	LTE Band 4/1#50 20M	Left Side	20175	21.13	21.5	1.089	0.628	0.684
	LTE Band 4/1#50 20M	Top Side	20175	21.13	21.5	1.089	0.462	0.503
	LTE Band 4/1#50 20M	Back Side	20050	20.54	21.5	1.247	0.588	0.733
	LTE Band 4/1#50 20M	Back Side	20300	20.80	21.5	1.175	0.516	0.606
	LTE Band 4/50#25 20M	Front Side	20175	19.86	20.0	1.033	0.396	0.409
	LTE Band 4/50#25 20M	Back Side	20175	19.86	20.0	1.033	0.672	0.694
	LTE Band 4/50#25 20M	Left Side	20175	19.86	20.0	1.033	0.598	0.618
	LTE Band 4/50#25 20M	Top Side	20175	19.86	20.0	1.033	0.489	0.505
29#	LTE Band 5/1#25 10M	Front Side	20525	22.36	22.5	1.033	0.233	0.241
	LTE Band 5/1#25 10M	Back Side	20525	22.36	22.5	1.033	0.506	0.523
	LTE Band 5/1#25 10M	Left Side	20525	22.36	22.5	1.033	0.352	0.364
	LTE Band 5/1#25 10M	Bottom Side	20525	22.36	22.5	1.033	0.246	0.254
	LTE Band 5/25#13 10M	Front Side	20525	21.39	21.5	1.026	0.187	0.192
	LTE Band 5/25#13 10M	Back Side	20525	21.39	21.5	1.026	0.264	0.271
	LTE Band 5/25#13 10M	Left Side	20525	21.39	21.5	1.026	0.178	0.183
	LTE Band 5/25#13 10M	Bottom Side	20525	21.39	21.5	1.026	0.248	0.254
	LTE Band 7/1#0 20M	Front Side	21350	20.84	21.0	1.038	0.285	0.296
30#	LTE Band 7/1#0 20M	Back Side	21350	20.84	21.0	1.038	0.315	0.327
	LTE Band 7/1#0 20M	Left Side	21350	20.84	21.0	1.038	0.066	0.068
	LTE Band 7/1#0 20M	Bottom Side	21350	20.84	21.0	1.038	0.224	0.232
	LTE Band 7/50#25 20M	Front Side	21100	17.95	19.5	1.429	0.214	0.306
	LTE Band 7/50#25 20M	Back Side	21100	17.95	19.5	1.429	0.218	0.311
	LTE Band 7/50#25 20M	Left Side	21100	17.95	19.5	1.429	0.121	0.173
	LTE Band 7/50#25 20M	Bottom Side	21100	17.95	19.5	1.429	0.217	0.310
	LTE Band 12/1#25 10M	Front Side	23130	22.58	23.0	1.102	0.194	0.214
31#	LTE Band 12/1#25 10M	Back Side	23130	22.58	23.0	1.102	0.242	0.267
	LTE Band 12/1#25 10M	Left Side	23130	22.58	23.0	1.102	0.207	0.228
	LTE Band 12/1#25 10M	Bottom Side	23130	22.58	23.0	1.102	0.186	0.205
	LTE Band 12/25#13 10M	Front Side	23130	21.44	21.5	1.014	0.129	0.131
	LTE Band 12/25#13 10M	Back Side	23130	21.44	21.5	1.014	0.172	0.174
	LTE Band 12/25#13 10M	Left Side	23130	21.44	21.5	1.014	0.180	0.183
	LTE Band 12/25#13 10M	Bottom Side	23130	21.44	21.5	1.014	0.155	0.157
	LTE Band 25/1#50 20M	Front Side	26590	20.97	21.0	1.007	0.310	0.312
32#	LTE Band 25/1#50 20M	Back Side	26590	20.97	21.0	1.007	0.694	0.699
	LTE Band 25/1#50 20M	Left Side	26590	20.97	21.0	1.007	0.192	0.193
	LTE Band 25/1#50 20M	Top Side	26590	20.97	21.0	1.007	0.416	0.419
	LTE Band 25/50#0 20M	Front Side	26590	19.99	20.0	1.002	0.281	0.282
	LTE Band 25/50#0 20M	Back Side	26590	19.99	20.0	1.002	0.372	0.373
	LTE Band 25/50#0 20M	Left Side	26590	19.99	20.0	1.002	0.203	0.203
	LTE Band 25/50#0 20M	Top Side	26590	19.99	20.0	1.002	0.295	0.296

	LTE Band 26/1#49 10M	Front Side	26740	22.27	22.5	1.054	0.127	0.134
	LTE Band 26/1#49 10M	Back Side	26740	22.27	22.5	1.054	0.191	0.201
	LTE Band 26/1#49 10M	Left Side	26740	22.27	22.5	1.054	0.086	0.091
	LTE Band 26/1#49 10M	Bottom Side	26740	22.27	22.5	1.054	0.032	0.034
	LTE Band 26/25#13 10M	Front Side	26740	22.27	22.5	1.054	0.122	0.129
	LTE Band 26/25#13 10M	Back Side	26740	22.27	22.5	1.054	0.162	0.171
	LTE Band 26/25#13 10M	Left Side	26740	22.27	22.5	1.054	0.054	0.057
	LTE Band 26/25#13 10M	Bottom Side	26740	22.27	22.5	1.054	0.061	0.064
	LTE Band 26/1#38 15M	Front Side	26865	22.66	23.0	1.081	0.227	0.245
33#	LTE Band 26/1#38 15M	Back Side	26865	22.66	23.0	1.081	0.431	0.466
	LTE Band 26/1#38 15M	Left Side	26865	22.66	23.0	1.081	0.136	0.147
	LTE Band 26/1#38 15M	Bottom Side	26865	22.66	23.0	1.081	0.309	0.334
	LTE Band 26/36#18 15M	Front Side	26865	21.51	22.0	1.119	0.180	0.201
	LTE Band 26/36#18 15M	Back Side	26865	21.51	22.0	1.119	0.271	0.303
	LTE Band 26/36#18 15M	Left Side	26865	21.51	22.0	1.119	0.130	0.146
	LTE Band 26/36#18 15M	Bottom Side	26865	21.51	22.0	1.119	0.252	0.282
	LTE Band 40/1#0 10M	Front Side	39200	20.98	21.0	1.005	0.311	0.314
34#	LTE Band 40/1#0 10M	Back Side	39200	20.98	21.0	1.005	0.376	0.380
	LTE Band 40/1#0 10M	Left Side	39200	20.98	21.0	1.005	0.097	0.098
	LTE Band 40/1#0 10M	Bottom Side	39200	20.98	21.0	1.005	0.346	0.350
	LTE Band 40/25#0 10M	Front Side	39200	20.07	20.5	1.104	0.230	0.255
	LTE Band 40/25#0 10M	Back Side	39200	20.07	20.5	1.104	0.376	0.418
	LTE Band 40/25#0 10M	Left Side	39200	20.07	20.5	1.104	0.157	0.174
	LTE Band 40/25#0 10M	Bottom Side	39200	20.07	20.5	1.104	0.304	0.338
	LTE Band 41/1#50 20M	Front Side	41490	21.97	22.0	1.007	0.159	0.161
35#	LTE Band 41/1#50 20M	Back Side	41490	21.97	22.0	1.007	0.460	0.466
	LTE Band 41/1#50 20M	Left Side	41490	21.97	22.0	1.007	0.195	0.198
	LTE Band 41/1#50 20M	Bottom Side	41490	21.97	22.0	1.007	0.328	0.332
	LTE Band 41/50#25 20M	Front Side	41490	20.97	21.0	1.007	0.131	0.133
	LTE Band 41/50#25 20M	Back Side	41490	20.97	21.0	1.007	0.186	0.188
	LTE Band 41/50#25 20M	Left Side	41490	20.97	21.0	1.007	0.101	0.102
	LTE Band 41/50#25 20M	Bottom Side	41490	20.97	21.0	1.007	0.306	0.310
	LTE Band 66/1#0 20M	Front Side	132322	23.87	24.0	1.030	0.301	0.310
36#	LTE Band 66/1#0 20M	Back Side	132322	23.87	24.0	1.030	1.003	1.033
	LTE Band 66/1#0 20M	Left Side	132322	23.87	24.0	1.030	0.426	0.439
	LTE Band 66/1#0 20M	Top Side	132322	23.87	24.0	1.030	0.649	0.669
	LTE Band 66/50#0 20M	Front Side	132322	22.63	23.0	1.089	0.302	0.329
	LTE Band 66/50#0 20M	Back Side	132322	22.63	23.0	1.089	0.417	0.454
	LTE Band 66/50#0 20M	Left Side	132322	22.63	23.0	1.089	0.210	0.229
	LTE Band 66/50#0 20M	Top Side	132322	22.63	23.0	1.089	0.660	0.719
	LTE Band 71/1#0 20M	Front Side	133322	22.03	22.5	1.114	0.127	0.142
37#	LTE Band 71/1#0 20M	Back Side	133322	22.03	22.5	1.114	0.178	0.198
	LTE Band 71/1#0 20M	Left Side	133322	22.03	22.5	1.114	0.091	0.101

	LTE Band 71/1#0 20M	Bottom Side	133322	22.03	22.5	1.114	0.131	0.146
	LTE Band 71/50#0 20M	Front Side	133322	20.98	21.0	1.005	0.103	0.103
	LTE Band 71/50#0 20M	Back Side	133322	20.98	21.0	1.005	0.117	0.118
	LTE Band 71/50#0 20M	Left Side	133322	20.98	21.0	1.005	0.103	0.103
	LTE Band 71/50#0 20M	Bottom Side	133322	20.98	21.0	1.005	0.147	0.148

➢ WLAN Head SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
	WLAN 2.4GHz/802.11b	Front Side	11	15.71	16.0	1.069	0.273	0.292
38#	WLAN 2.4GHz/802.11b	Back Side	11	15.71	16.0	1.069	0.301	0.322
	WLAN 2.4GHz/802.11b	Right Side	11	15.71	16.0	1.069	0.204	0.218
	WLAN 2.4GHz/802.11b	Top Side	11	15.71	16.0	1.069	0.252	0.269
	WLAN5.2GHz/802.11ac80	Front Side	42	12.90	12.9	1.000	0.170	0.170
39#	WLAN5.2GHz/802.11ac80	Back Side	42	12.90	12.9	1.000	0.181	0.181
	WLAN5.2GHz/802.11ac80	Right Side	42	12.90	12.9	1.000	0.165	0.165
	WLAN5.2GHz/802.11ac80	Top Side	42	12.90	12.9	1.000	0.173	0.173
	WLAN 5.3GHz/802.11n40	Front Side	52	12.54	13.0	1.112	0.109	0.121
40#	WLAN 5.3GHz/802.11n40	Back Side	52	12.54	13.0	1.112	0.322	0.358
	WLAN 5.3GHz/802.11n40	Right Side	52	12.54	13.0	1.112	0.303	0.337
	WLAN 5.3GHz/802.11n40	Top Side	52	12.54	13.0	1.112	0.099	0.110
	WLAN 5.5GHz/802.11a	Front Side	120	13.43	13.5	1.016	0.346	0.352
41#	WLAN 5.5GHz/802.11a	Back Side	120	13.43	13.5	1.016	0.324	0.329
	WLAN 5.5GHz/802.11a	Right Side	120	13.43	13.5	1.016	0.258	0.262
	WLAN 5.5GHz/802.11a	Top Side	120	13.43	13.5	1.016	0.234	0.238
	WLAN5.8GHz/802.11ac80	Front Side	155	12.92	13.0	1.019	0.184	0.187
42#	WLAN5.8GHz/802.11ac80	Back Side	155	12.92	13.0	1.019	0.321	0.327
	WLAN5.8GHz/802.11ac80	Right Side	155	12.92	13.0	1.019	0.318	0.324
	WLAN5.8GHz/802.11ac80	Top Side	155	12.92	13.0	1.019	0.266	0.271

16 Simultaneous Transmission Evaluation

16.1 Simultaneous Transmission Consideration

No.	Simultaneous Transmission Consideration	Head	Body-Worn	Hotspot
1	WWAN+WLAN 2.4GHz/5GHz	Yes	Yes	Yes
2	WWAN+Bluetooth	No	Yes	No

Note:

1. When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of the WWAN and WLAN transmitters. The "Portable Hotspot" feature on the handset was NOT activated, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal.
2. The hotspot SAR result may overlap with the body-worn accessory SAR requirements, per KDB 941225 D06, the more conservative configurations can be considered, thus excluding some unnecessary body-worn accessory SAR tests.
3. Simultaneous Transmission SAR evaluation is not required for BT and WLAN 2.4GHz, because the software mechanism have been incorporated to guarantee that the WLAN 2.4GHz and Bluetooth transmitters would not simultaneously operate.
4. Per KDB 447498D01v06, simultaneous transmission SAR evaluation procedures is as followed:

   Step 1: If sum of 1 g SAR < 1.6 W/kg, Simultaneous SAR measurement is not required.

   Step 2: If sum of 1 g SAR > 1.6 W/kg, ratio of SAR to peak separation distance for pair of transmitters calculated.

   Step 3: If the ratio of SAR to peak separation distance is ≤ 0.04, Simultaneous SAR measurement is not required.

   Step 4: If the ratio of SAR to peak separation distance is > 0.04, Simultaneous SAR measurement is required and simultaneous transmission SAR value is calculated.

   (The ratio is determined by: $(SAR_1 + SAR_2)$ ^ 1.5 / $R_i \leq 0.04$,

   Ri is the separation distance between the peak SAR locations for the antenna pair in mm.

16.2 Simultaneous Transmission Analysis

➢ Head Simultaneous Transmission for WWAN + WLAN 2.4GHz/5GHz

WWAN Band		Exposure Position	1	2	3	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN	5GHz WLAN		
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
GSM	GSM850	Right Cheek	0.362	0.604	0.190	0.966	0.552
		Right Tilt	0.216	0.444	0.115	0.660	0.331
		Left Cheek	0.223	0.416	0.098	0.639	0.321
		Left Tilt	0.128	0.239	0.072	0.367	0.200
	GSM1900	Right Cheek	0.651	0.604	0.190	1.255	0.841
		Right Tilt	0.430	0.444	0.115	0.874	0.545
		Left Cheek	0.350	0.416	0.098	0.766	0.448
		Left Tilt	0.284	0.239	0.072	0.523	0.356
WCDMA	WCDMA II	Right Cheek	0.416	0.604	0.190	1.020	0.606
		Right Tilt	0.237	0.444	0.115	0.681	0.352
		Left Cheek	0.234	0.416	0.098	0.650	0.332
		Left Tilt	0.115	0.239	0.072	0.354	0.187
	WCDMA IV	Right Cheek	0.529	0.604	0.190	1.133	0.719
		Right Tilt	0.327	0.444	0.115	0.771	0.442
		Left Cheek	0.359	0.416	0.098	0.775	0.457
		Left Tilt	0.193	0.239	0.072	0.432	0.265
	WCDMA V	Right Cheek	0.261	0.604	0.190	0.865	0.451
		Right Tilt	0.120	0.444	0.115	0.564	0.235
		Left Cheek	0.127	0.416	0.098	0.543	0.225
		Left Tilt	0.078	0.239	0.072	0.317	0.150
LTE	LTE Band 2	Right Cheek	0.472	0.604	0.190	1.076	0.662
		Right Tilt	0.301	0.444	0.115	0.745	0.416
		Left Cheek	0.248	0.416	0.098	0.664	0.346
		Left Tilt	0.105	0.239	0.072	0.344	0.177
	LTE Band 5	Right Cheek	0.255	0.604	0.190	0.859	0.445
		Right Tilt	0.109	0.444	0.115	0.553	0.224
		Left Cheek	0.123	0.416	0.098	0.539	0.221
		Left Tilt	0.091	0.239	0.072	0.330	0.163
	LTE Band 7	Right Cheek	0.250	0.604	0.190	0.854	0.440
		Right Tilt	0.188	0.444	0.115	0.632	0.303
		Left Cheek	0.154	0.416	0.098	0.570	0.252
		Left Tilt	0.090	0.239	0.072	0.329	0.162
	LTE Band 12	Right Cheek	0.225	0.604	0.190	0.829	0.415
		Right Tilt	0.124	0.444	0.115	0.568	0.239

		Left Cheek	0.120	0.416	0.098	0.536	0.218
		Left Tilt	0.056	0.239	0.072	0.295	0.128
	LTE Band 25	Right Cheek	0.326	0.604	0.190	0.930	0.516
		Right Tilt	0.219	0.444	0.115	0.663	0.334
		Left Cheek	0.204	0.416	0.098	0.620	0.302
		Left Tilt	0.119	0.239	0.072	0.358	0.191
	LTE Band 26	Right Cheek	0.125	0.604	0.190	0.729	0.315
		Right Tilt	0.072	0.444	0.115	0.516	0.187
		Left Cheek	0.075	0.416	0.098	0.491	0.173
		Left Tilt	0.036	0.239	0.072	0.275	0.108
	LTE Band 40	Right Cheek	0.473	0.604	0.190	1.077	0.663
		Right Tilt	0.334	0.444	0.115	0.778	0.449
		Left Cheek	0.284	0.416	0.098	0.700	0.382
		Left Tilt	0.193	0.239	0.072	0.432	0.265
	LTE Band 41	Right Cheek	0.382	0.604	0.190	0.986	0.572
		Right Tilt	0.206	0.444	0.115	0.650	0.321
		Left Cheek	0.118	0.416	0.098	0.534	0.216
		Left Tilt	0.083	0.239	0.072	0.322	0.155
	LTE Band 66	Right Cheek	0.625	0.604	0.190	1.229	0.815
		Right Tilt	0.429	0.444	0.115	0.873	0.544
		Left Cheek	0.399	0.416	0.098	0.815	0.497
		Left Tilt	0.226	0.239	0.072	0.465	0.298
	LTE Band 71	Right Cheek	0.191	0.604	0.190	0.795	0.381
		Right Tilt	0.096	0.444	0.115	0.540	0.211
		Left Cheek	0.084	0.416	0.098	0.500	0.182
		Left Tilt	0.041	0.239	0.072	0.280	0.113

➢ Body Simultaneous Transmission for WWAN + WLAN 2.4GHz/5GHz

WWAN Band		Exposure Position	1	2	3	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN	5GHz WLAN		
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
GSM	GSM850	Front Side	0.358	0.292	0.352	0.650	0.710
		Back Side	0.729	0.322	0.358	1.051	1.087
		Left Side	0.258			0.258	0.258
		Right Side		0.218	0.337	0.218	0.337
		Top Side		0.269	0.271	0.269	0.271
		Bottom Side	0.258			0.258	0.258
	GSM1900	Front Side	0.247	0.292	0.352	0.539	0.599
		Back Side	1.186	0.322	0.358	1.508	1.544
		Left Side	0.551			0.551	0.551
		Right Side		0.218	0.337	0.218	0.337
		Top Side	0.790	0.269	0.271	1.059	1.061
		Bottom Side				0.000	0.000
WCDMA	WCDMA II	Front Side	0.418	0.292	0.352	0.710	0.770
		Back Side	0.815	0.322	0.358	1.137	1.173
		Left Side	0.467			0.467	0.467
		Right Side		0.218	0.337	0.218	0.337
		Top Side	0.612	0.269	0.271	0.881	0.883
		Bottom Side				0.000	0.000
	WCDMA IV	Front Side	0.194	0.292	0.352	0.486	0.546
		Back Side	0.519	0.322	0.358	0.841	0.877
		Left Side	0.262			0.262	0.262
		Right Side		0.218	0.337	0.218	0.337
		Top Side	0.347	0.269	0.271	0.616	0.618
		Bottom Side				0.000	0.000
	WCDMA V	Front Side	0.202	0.292	0.352	0.494	0.554
		Back Side	0.216	0.322	0.358	0.538	0.574
		Left Side	0.152			0.152	0.152
		Right Side		0.218	0.337	0.218	0.337
		Top Side		0.269	0.271	0.269	0.271
		Bottom Side	0.110			0.110	0.110
LTE	LTE Band 2	Front Side	0.576	0.292	0.352	0.868	0.928
		Back Side	0.761	0.322	0.358	1.083	1.119
		Left Side	0.677			0.677	0.677
		Right Side		0.218	0.337	0.218	0.337
		Top Side	0.494	0.269	0.271	0.763	0.765
		Bottom Side				0.000	0.000

	LTE Band 5	Front Side	0.241	0.292	0.352	0.533	0.593
		Back Side	0.523	0.322	0.358	0.845	0.881
		Left Side	0.364			0.364	0.364
		Right Side		0.218	0.337	0.218	0.337
		Top Side		0.269	0.271	0.269	0.271
		Bottom Side	0.254			0.254	0.254
	LTE Band 7	Front Side	0.306	0.292	0.352	0.598	0.658
		Back Side	0.327	0.322	0.358	0.649	0.685
		Left Side	0.173			0.173	0.173
		Right Side		0.218	0.337	0.218	0.337
		Top Side		0.269	0.271	0.269	0.271
		Bottom Side	0.310			0.310	0.310
	LTE Band 12	Front Side	0.214	0.292	0.352	0.506	0.566
		Back Side	0.267	0.322	0.358	0.589	0.625
		Left Side	0.228			0.228	0.228
		Right Side		0.218	0.337	0.218	0.337
		Top Side		0.269	0.271	0.269	0.271
		Bottom Side	0.205			0.205	0.205
	LTE Band 25	Front Side	0.312	0.292	0.352	0.604	0.664
		Back Side	0.699	0.322	0.358	1.021	1.057
		Left Side	0.203			0.203	0.203
		Right Side		0.218	0.337	0.218	0.337
		Top Side	0.419	0.269	0.271	0.688	0.690
		Bottom Side				0.000	0.000
	LTE Band 26	Front Side	0.245	0.292	0.352	0.537	0.597
		Back Side	0.466	0.322	0.358	0.788	0.824
		Left Side	0.147			0.147	0.147
		Right Side		0.218	0.337	0.218	0.337
		Top Side		0.269	0.271	0.269	0.271
		Bottom Side	0.334			0.334	0.334
	LTE Band 40	Front Side	0.314	0.292	0.352	0.606	0.666
		Back Side	0.418	0.322	0.358	0.740	0.776
		Left Side	0.174			0.174	0.174
		Right Side		0.218	0.337	0.218	0.337
		Top Side		0.269	0.271	0.269	0.271
		Bottom Side	0.350			0.350	0.350
	LTE Band 41	Front Side	0.161	0.292	0.352	0.453	0.513
		Back Side	0.466	0.322	0.358	0.788	0.824
		Left Side	0.198			0.198	0.198
		Right Side		0.218	0.337	0.218	0.337
		Top Side		0.269	0.271	0.269	0.271

		Bottom Side	0.332			0.332	0.332
	LTE Band 66	Front Side	0.329	0.292	0.352	0.621	0.681
		Back Side	1.033	0.322	0.358	1.355	1.391
		Left Side	0.439			0.439	0.439
		Right Side		0.218	0.337	0.218	0.337
		Top Side	0.719	0.269	0.271	0.988	0.990
		Bottom Side				0.000	0.000
	LTE Band 71	Front Side	0.142	0.292	0.352	0.434	0.494
		Back Side	0.198	0.322	0.358	0.520	0.556
		Left Side	0.103			0.103	0.103
		Right Side		0.218	0.337	0.218	0.337
		Top Side		0.269	0.271	0.269	0.271
		Bottom Side	0.148			0.148	0.148

➢ Body Simultaneous Transmission for WWAN + WLAN 2.4GHz/5GHz/Bluetooth

WWAN Band		Exposure Position	1	2	1+2 Summed 1g SAR (W/kg)
			WWAN	Bluetooth	
			1g SAR (W/kg)	Estimated 1g SAR (W/kg)	
GSM	GSM850	Front Side	0.358	0.047	0.405
		Back Side	0.729	0.047	0.776
		Left Side	0.258		0.258
		Right Side			0.000
		Top Side			0.000
		Bottom Side	0.258		0.258
	GSM1900	Front Side	0.247	0.047	0.294
		Back Side	1.186	0.047	1.233
		Left Side	0.551		0.551
		Right Side			0.000
		Top Side	0.790		0.790
		Bottom Side			0.000
WCDMA	WCDMA II	Front Side	0.418	0.047	0.465
		Back Side	0.815	0.047	0.862
		Left Side	0.467		0.467
		Right Side			0.000
		Top Side	0.612		0.612
		Bottom Side			0.000
	WCDMA IV	Front Side	0.194	0.047	0.241
		Back Side	0.519	0.047	0.566
		Left Side	0.262		0.262
		Right Side			0.000

		Top Side	0.347		0.347
		Bottom Side			0.000
	WCDMA V	Front Side	0.202	0.047	0.249
		Back Side	0.216	0.047	0.263
		Left Side	0.152		0.152
		Right Side			0.000
		Top Side			0.000
		Bottom Side	0.110		0.110
LTE	LTE Band 2	Front Side	0.576	0.047	0.623
		Back Side	0.761	0.047	0.808
		Left Side	0.677		0.677
		Right Side			0.000
		Top Side	0.494		0.494
		Bottom Side			0.000
	LTE Band 5	Front Side	0.241	0.047	0.288
		Back Side	0.523	0.047	0.570
		Left Side	0.364		0.364
		Right Side			0.000
		Top Side			0.000
		Bottom Side	0.254		0.254
	LTE Band 7	Front Side	0.306	0.047	0.353
		Back Side	0.327	0.047	0.374
		Left Side	0.173		0.173
		Right Side			0.000
		Top Side			0.000
		Bottom Side	0.310		0.310
	LTE Band 12	Front Side	0.214	0.047	0.261
		Back Side	0.267	0.047	0.314
		Left Side	0.228		0.228
		Right Side			0.000
		Top Side			0.000
		Bottom Side	0.205		0.205
	LTE Band 25	Front Side	0.312	0.047	0.359
		Back Side	0.699	0.047	0.746
		Left Side	0.203		0.203
		Right Side			0.000
		Top Side	0.419		0.419
		Bottom Side			0.000
	LTE Band 26	Front Side	0.245	0.047	0.292
		Back Side	0.466	0.047	0.513
		Left Side	0.147		0.147

		Right Side			0.000
		Top Side			0.000
		Bottom Side	0.334		0.334
	LTE Band 40	Front Side	0.314	0.047	0.361
		Back Side	0.418	0.047	0.465
		Left Side	0.174		0.174
		Right Side			0.000
		Top Side			0.000
		Bottom Side	0.350		0.350
	LTE Band 41	Front Side	0.161	0.047	0.208
		Back Side	0.466	0.047	0.513
		Left Side	0.198		0.198
		Right Side			0.000
		Top Side			0.000
		Bottom Side	0.332		0.332
	LTE Band 66	Front Side	0.329	0.047	0.376
		Back Side	1.033	0.047	1.080
		Left Side	0.439		0.439
		Right Side			0.000
		Top Side	0.719		0.719
		Bottom Side			0.000
	LTE Band 71	Front Side	0.142	0.047	0.189
		Back Side	0.198	0.047	0.245
		Left Side	0.103		0.103
		Right Side			0.000
		Top Side			0.000
		Bottom Side	0.148		0.148

17 Measurement Uncertainty

The component of uncertainly may generally be categorized according to the methods used to evaluate them. The evaluation of uncertainly by the statistical analysis of a series of observations is termed a Type A evaluation of uncertainty. The evaluation of uncertainty by means other than the statistical analysis of a series of observation is termed a Type B evaluation of uncertainty. Each component of uncertainty, however evaluated, is represented by an estimated standard deviation, termed standard uncertainty, which is determined by the positive square root of the estimated variance.

A Type A evaluation of standard uncertainty may be based on any valid statistical method for treating data. This includes calculating the standard deviation of the mean of a series of independent observations; using the method of least squares to fit a curve to the data in order to estimate the parameter of the curve and their standard deviations; or carrying out an analysis of variance in order to identify and quantify random effects in certain kinds of measurement.

A Type B evaluation of standard uncertainty is typically based on scientific judgment using all of the relevant information available. These may include previous measurement data, experience, and knowledge of the behavior and properties of relevant materials and instruments, manufacture's specification, data provided in calibration reports and uncertainties assigned to reference data taken from handbooks. Broadly speaking, the uncertainty is either obtained from an outdoor source or obtained from an assumed distribution, such as the normal distribution,rectangular or triangular distributions indicated in below Table.

Uncertainty Distributions	Normal	Rectangular	Triangular	U-Shape
Multi-plying Factor	1/k(b)	$1/\sqrt{3}$	$1/\sqrt{6}$	$1/\sqrt{2}$

Standard Uncertainty for Assumed Distribution

The combined standard uncertainty of the measurement result represents the estimated standard deviation of the result. It is obtained by combining the individual standard uncertainties of both Type A and Type B evaluation using the usual "root-sum-squares" (RSS) methods of combining standard deviations by taking the positive square root of the estimated variances.

Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within which the measured value is confidently believed to lie. It is obtained by multiplying the combined standard uncertainty by a coverage factor. Typically, the coverage factor ranges from 2 to 3. Using a coverage factor allows the true value of a measured quantity to be specified with a defined probability within the specified uncertainty range. For purpose of this document, a coverage factor two is used, which corresponds to confidence interval of about 95 %. The SATIMO uncertainty Budget is shown in the following tables.

Uncertainty Evaluation For Handset SAR Test

a	b	c	d	e= f(d,k)	f	g	h= c*f/e	i= c*g/e	j
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	Vi
Measurement System									
Probe calibration	E.2.1	5.83	N	1	1	1	5.83	5.83	∞
Axial Isotropy	E.2.2	3.5	R	$\sqrt{3}$	1	1	2.02	2.02	∞
Hemispherical Isotropy	E.2.2	5.9	R	$\sqrt{3}$	1	1	3.41	3.41	∞
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	E.2.4	4.7	R	$\sqrt{3}$	1	1	2.71	2.71	∞
System detection limits	E.2.5	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation Response	E.2.4	4.1	R	$\sqrt{3}$	1	1	2.4	2.4	∞
Readout Electronics	E.2.6	0.5	N	1	1	1	0.5	0.5	∞
Reponse Time	E.2.7	3.0	R	$\sqrt{3}$	1	1	3.0	3.0	∞
Integration Time	E.2.8	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
RF ambient Conditions	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner Mechanical Tolerance	E.6.2	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to Phantom Shell	E.6.3	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation	E.5.2	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
Test sample Related									
Test sample positioning	E.4.2.1	2.6	N	1	1	1	2.6	2.6	N-1
Device Holder Uncertainty	E.4.1.1	3.0	N	1	1	1	3.0	3.0	N-1
Output power Power drift - SAR drift measurement	6.6.2	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	4.0	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Liquid conductivity - deviation from target value	E.3.2	2.0	R	$\sqrt{3}$	0.64	0.43	1.69	1.13	∞
Liquid conductivity - measurement uncertainty	E.3.3	2.5	N	1	0.64	0.43	3.20	2.15	M
Liquid permittivity - deviation from target value	E.3.2	2.5	R	$\sqrt{3}$	0.6	0.49	1.28	1.04	∞
Liquid permittivity - measurement uncertainty	E.3.3	5.0	N	1	0.6	0.49	6.00	4.90	M
Liquid conductivity –temperature uncertainty	E.3.4		R	$\sqrt{3}$	0.78	0.41			∞

Liquid permittivity –temperature uncertainty	E.3.4		R	$\sqrt{3}$	0.23	0.26			∞
Combined Standard Uncertainty			RSS				11.55	12.07	
Expanded Uncertainty (95% Confidence interval)			K=2				±23.20	±24.17	

Uncertainty For System Performance Check

a	b	c	d	e= f(d,k)	f	g	h= c*f/e	i= c*g/e	k
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	Vi
Measurement System									
Probe calibration	E.2.1	4.76	N	1	1	1	4.76	4.76	∞
Axial Isotropy	E.2.2	2.5	R	$\sqrt{3}$	1	1	1.44	1.41	∞
Hemispherical Isotropy	E.2.2	4.0	R	$\sqrt{3}$	1	1	2.31	2.32	∞
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	E.2.4	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
System detection limits	E.2.5	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Readout Electronics	E.2.6	0.02	N	1	1	1	0.02	0.02	∞
Reponse Time	E.2.7	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Integration Time	E.2.8	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
RF ambient Conditions	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation	E.5.2	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Dipole									
Dipole axis to liquid Distance	8,E.4.2	1.00	N	$\sqrt{3}$	1	1	0.58	0.58	∞
Input power and SAR drift measurement	8,6.6.2	4.04	R	$\sqrt{3}$	1	1	2.33	2.33	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Liquid conductivity - deviation from target value	E.3.2	4.57	R	$\sqrt{3}$	0.64	0.43	1.69	1.13	∞

Liquid conductivity - measurement uncertainty	E.3.3	5.00	N	$\sqrt{3}$	0.64	0.43	1.85	1.24	M
Liquid permittivity - deviation from target value	E.3.2	3.69	R	$\sqrt{3}$	0.6	0.49	1.28	1.04	∞
Liquid permittivity - measurement uncertainty	E.3.3	10.00	N	$\sqrt{3}$	0.6	0.49	3.46	2.83	M
Combined Standard Uncertainty			RSS				8.83	8.37	
Expanded Uncertainty (95% Confidence interval)			K=2				17.66	16.73	

18 Measurement Conclusion

The SAR evaluation indicates that the EUT complies with the RF radiation exposure limits of the CE, with respect to all parameters subject to this test. These measurements were taken to simulate the RF effects of RF exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested. Please note that the absorption and distribution of electromagnetic energy in the body are very complex phenomena that depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because various factors may interact with one another to vary the specific biological outcome of an exposure to electromagnetic fields, any protection guide should consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables.

Annex A General Information

1. Identification of the Responsible Testing Laboratory

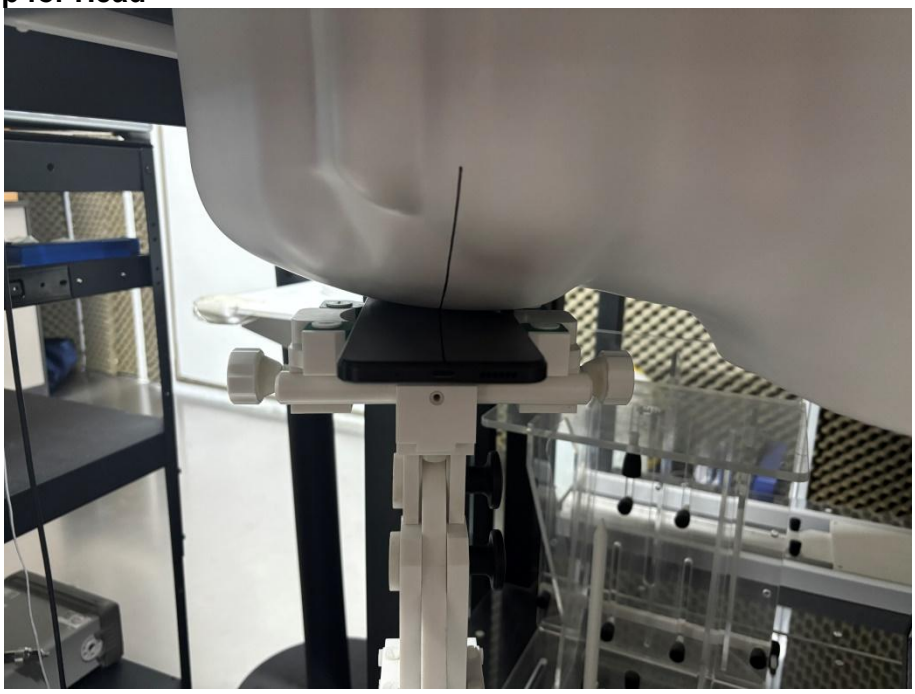
Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

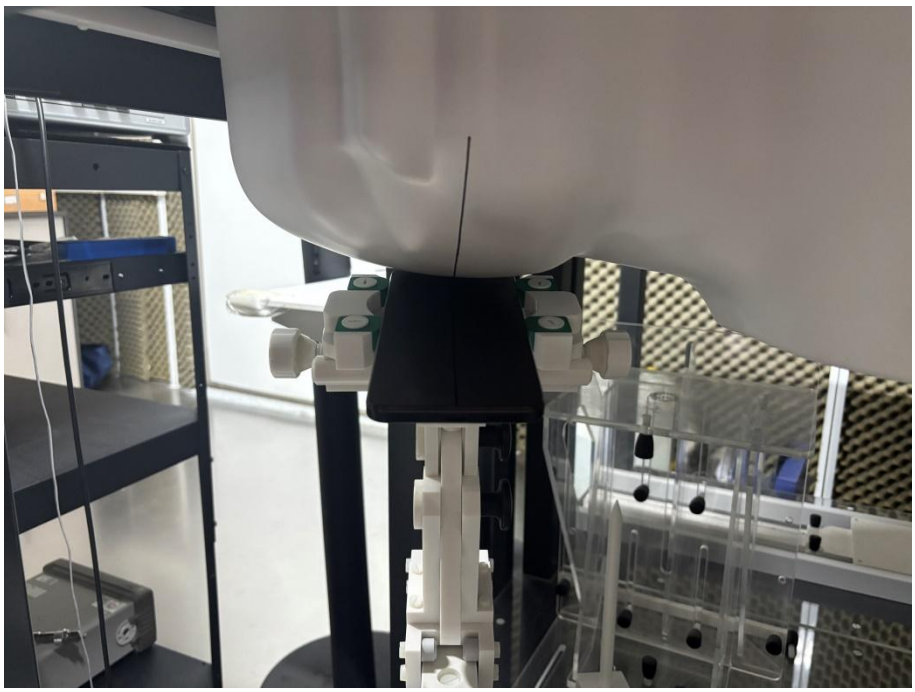
Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

Annex B Test Setup

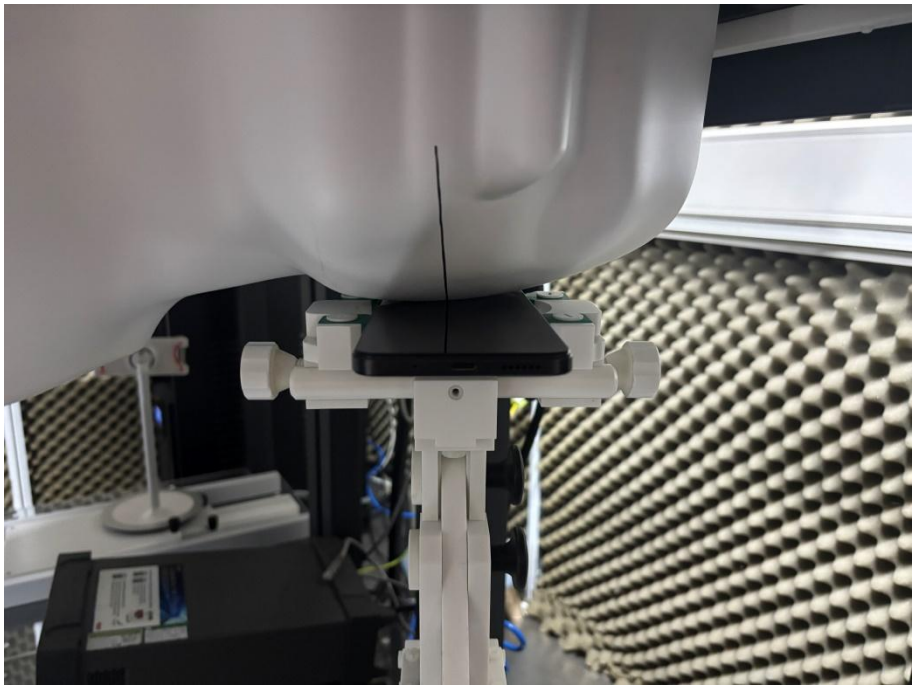
➢ **Test Setup for Head**



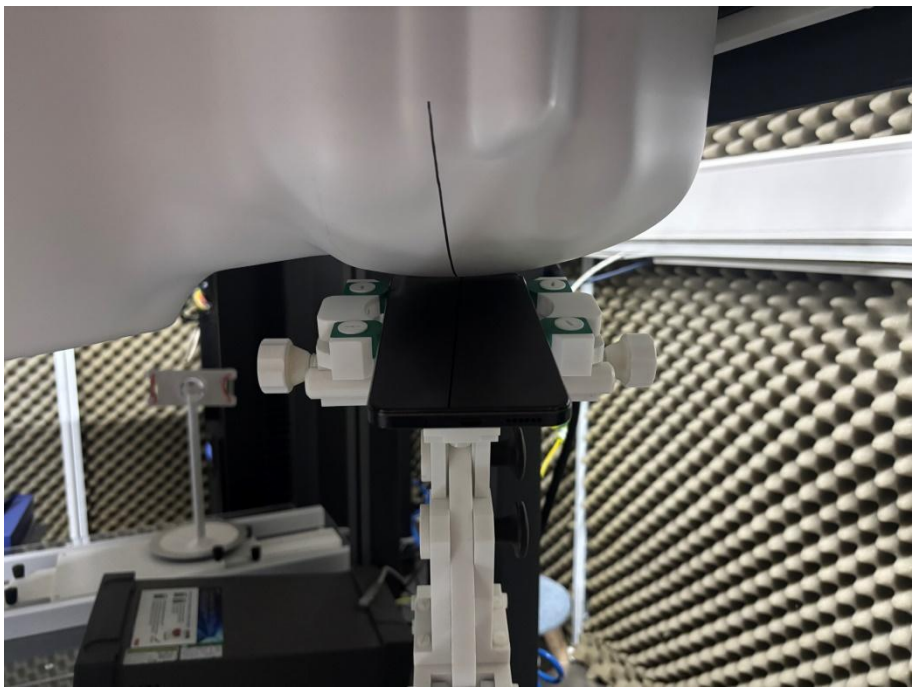
Right Cheek



Right Tilt

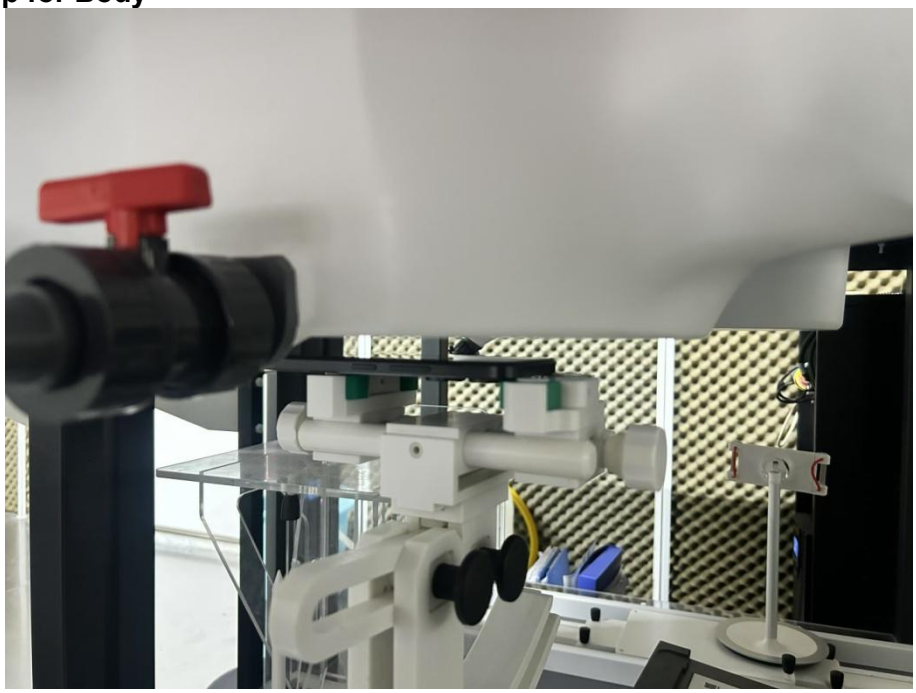


Left Cheek

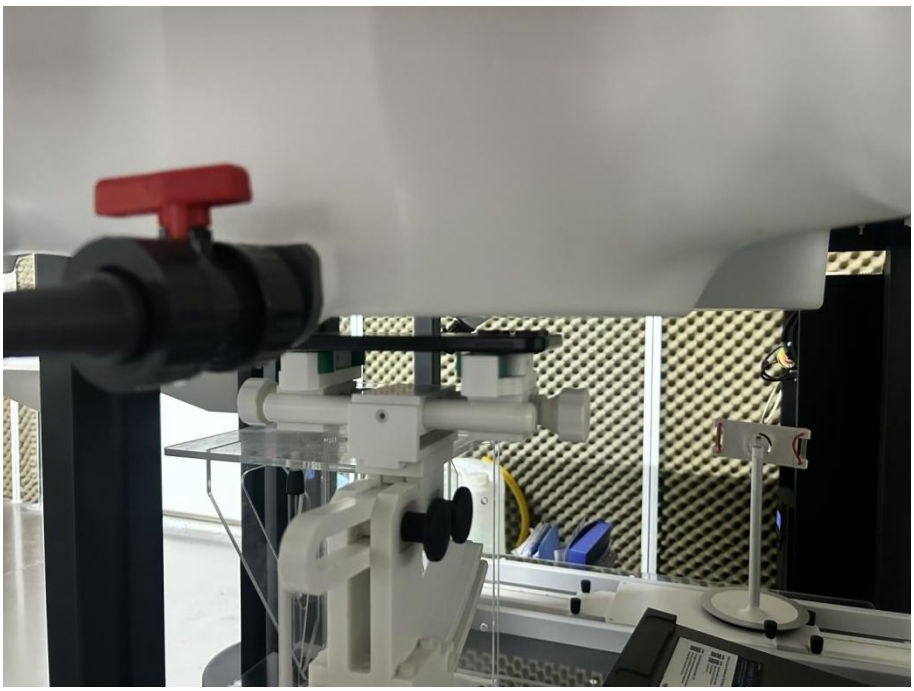


Left Tilt

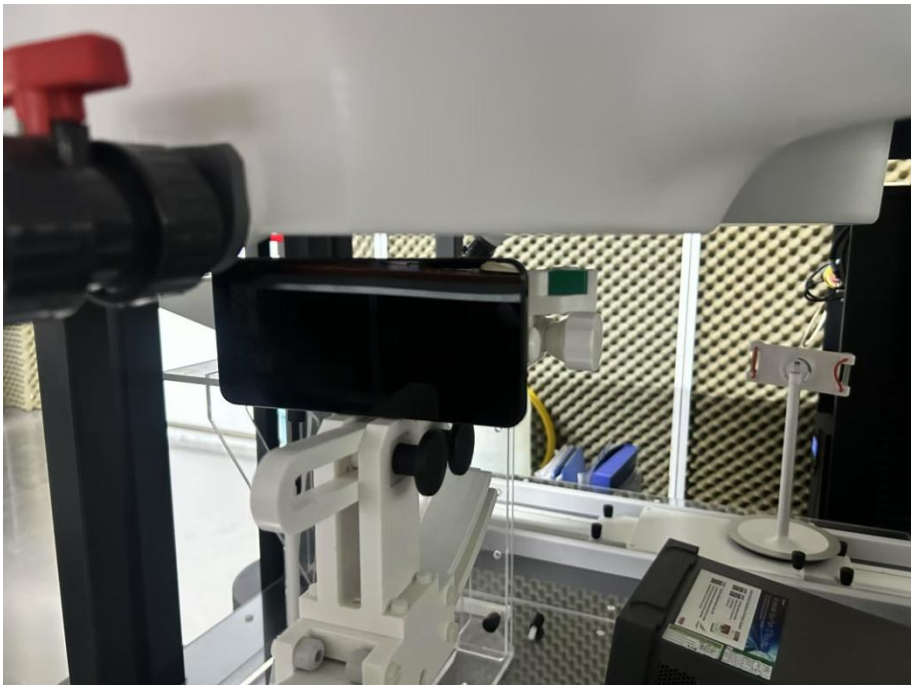
➢ **Test Setup for Body**



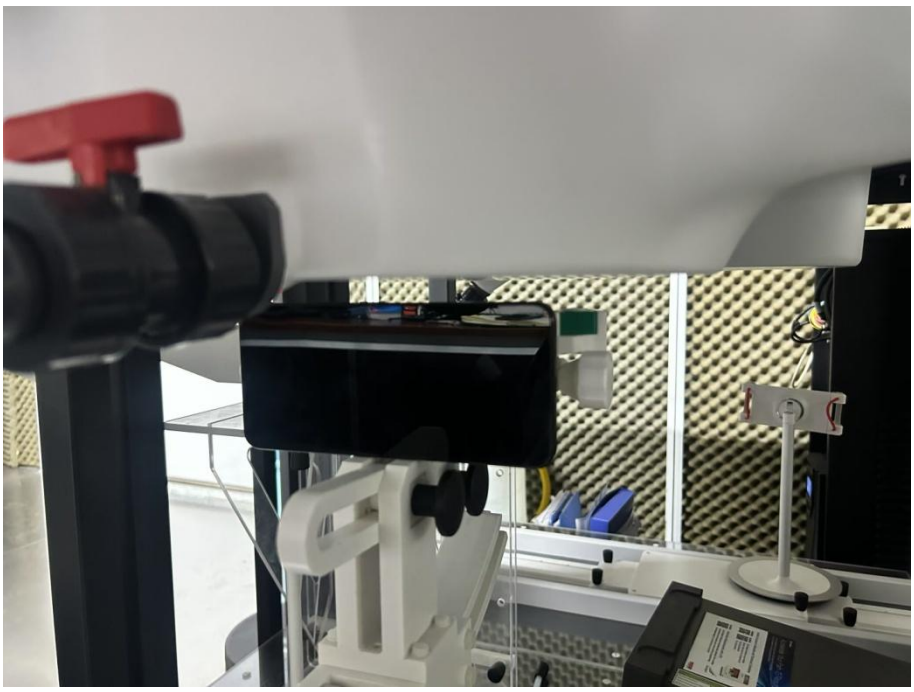
Front Side (Test Distance: 10 mm)



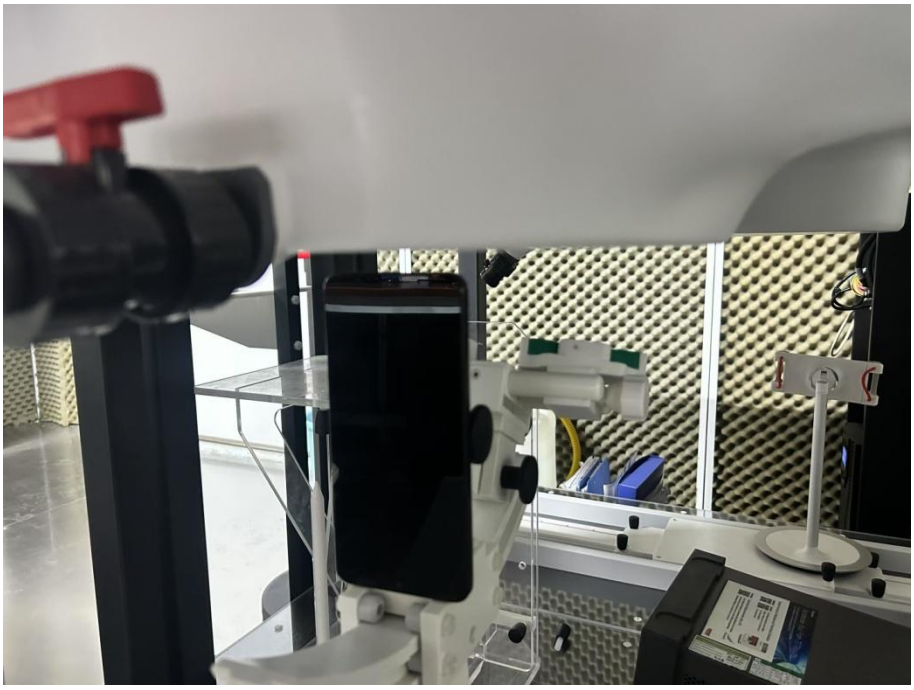
Back Side (Test Distance: 10 mm)



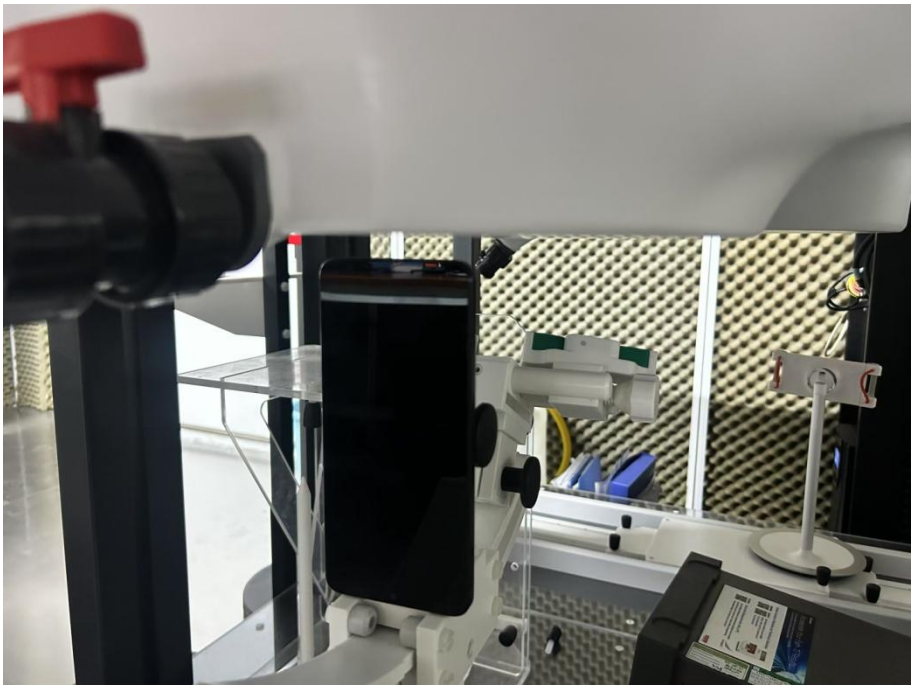
Left Side (Test Distance: 10 mm)



Right Side (Test Distance: 10 mm)



Top Side (Test Distance: 10 mm)



Bottom Side (Test Distance: 10 mm)

Annex C Plots of System Performance Check

System check at 750 MHz

Date of measurement: 1/4/2025

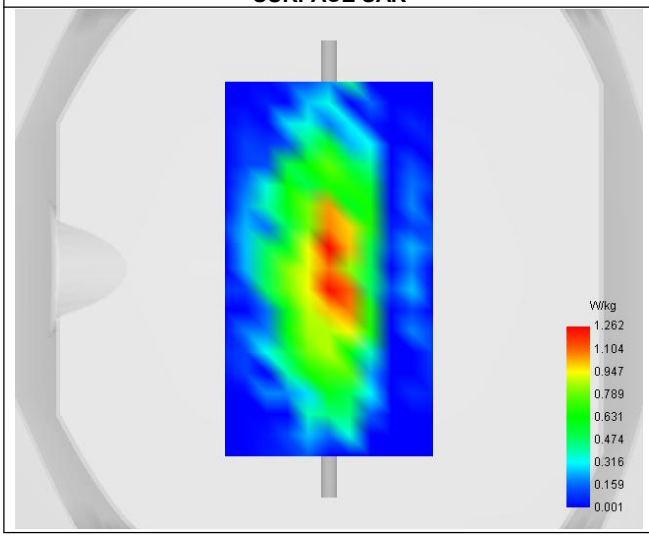
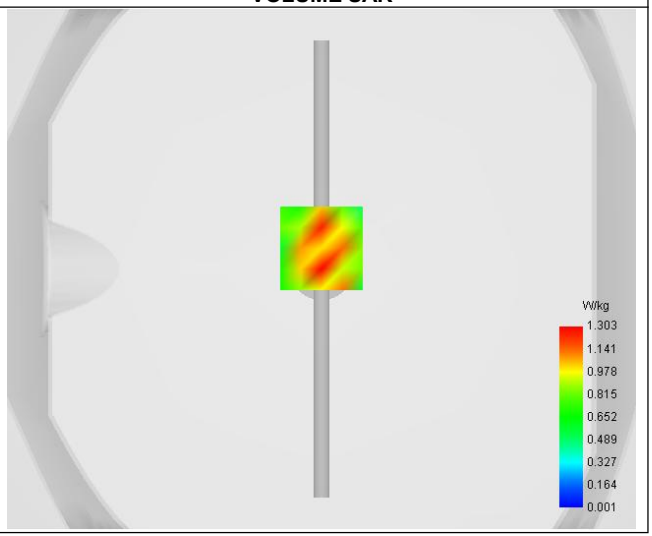
A. Experimental conditions.

Probe	37/08 EP80
ConvF	6.44
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW750
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	750.000
Relative permitivity (real part)	42.452
Relative permitivity (imaginary part)	21.642
Conductivity (S/m)	0.871

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

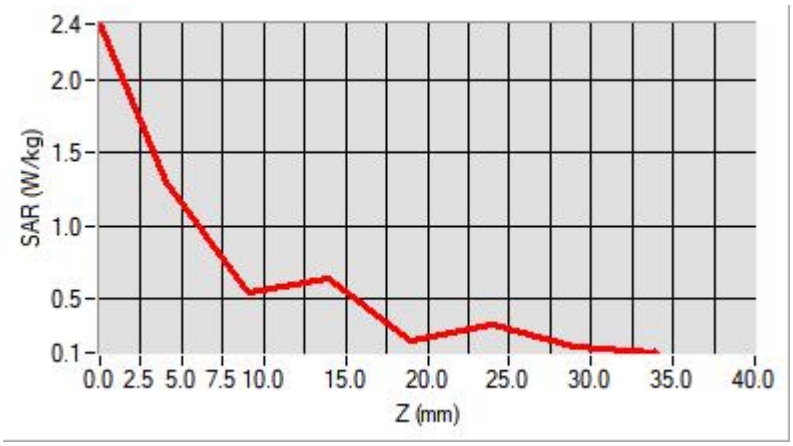
Maximum location: X=0.00, Y=8.00 ; SAR Peak: 2.19 W/kg

D. SAR 1g & 10g

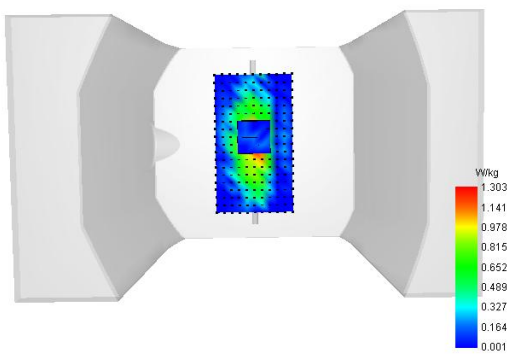
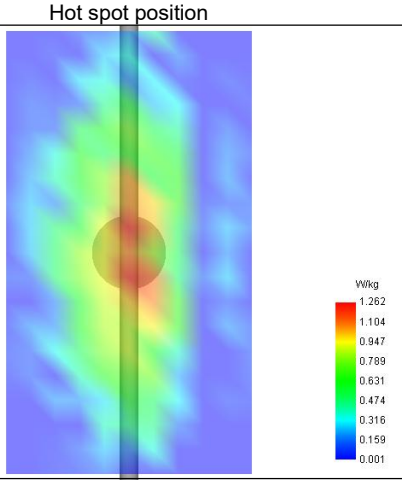
SAR 10g (W/Kg)	0.589
SAR 1g (W/Kg)	0.885
Variation (%)	-1.490
Horizontal validation criteria: minimum distance (mm)	17.888
Vertical validation criteria: SAR ratio M2/M1 (%)	41.75%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	2.382	1.303	0.544	0.644	0.219



F. 3D Image

3D screen shot	Hot spot position
	

System check at 900 MHz

Date of measurement: 2/4/2025

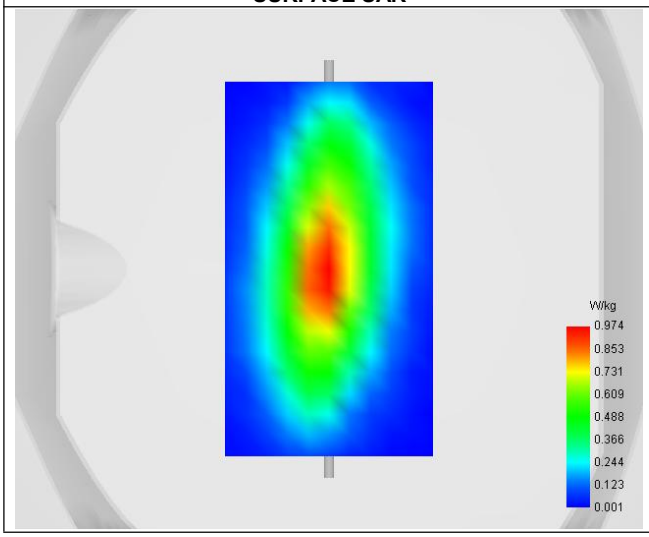
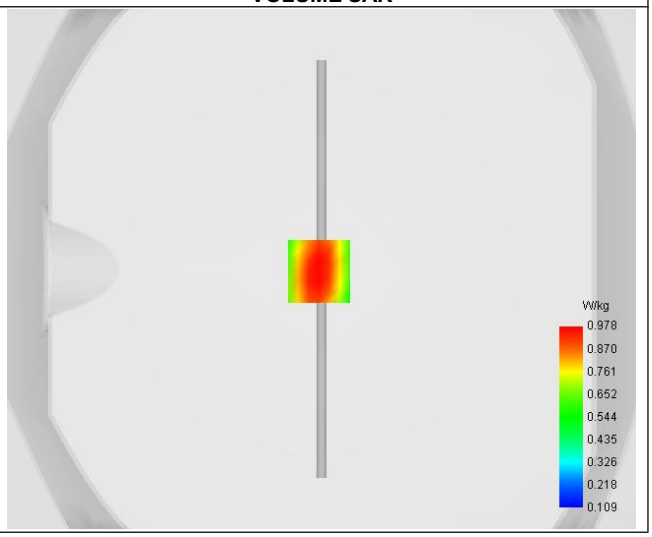
A. Experimental conditions.

Probe	37/08 EP80
ConvF	6.13
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW900
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	900.000
Relative permitivity (real part)	42.082
Relative permitivity (imaginary part)	20.267
Conductivity (S/m)	0.941

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=-1.00, Y=9.00 ; SAR Peak: 2.31 W/kg

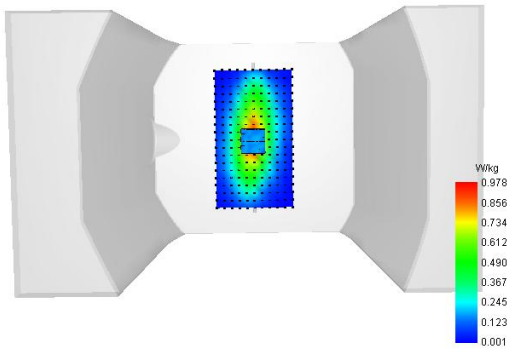
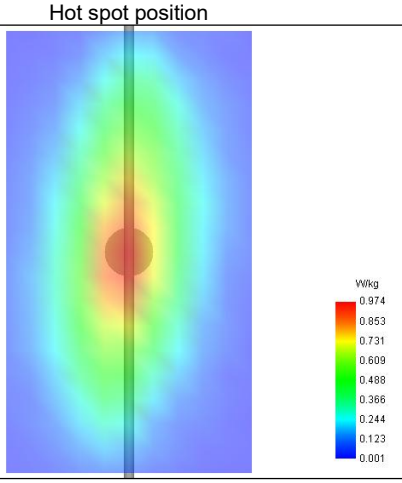
D. SAR 1g & 10g

SAR 10g (W/Kg)	0.667
SAR 1g (W/Kg)	1.124
Variation (%)	3.090
Horizontal validation criteria: minimum distance (mm)	16.000
Vertical validation criteria: SAR ratio M2/M1 (%)	62.08%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.442	0.989	0.614	0.396	0.172

F. 3D Image

3D screen shot	Hot spot position
	

System check at 1800 MHz

Date of measurement: 3/4/2025

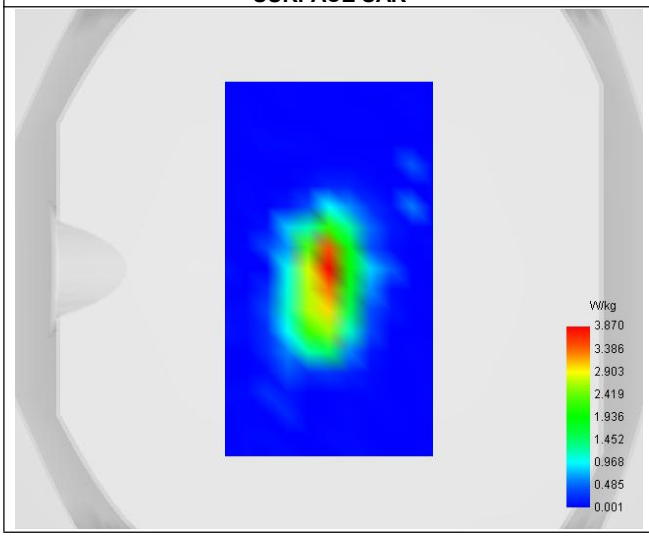
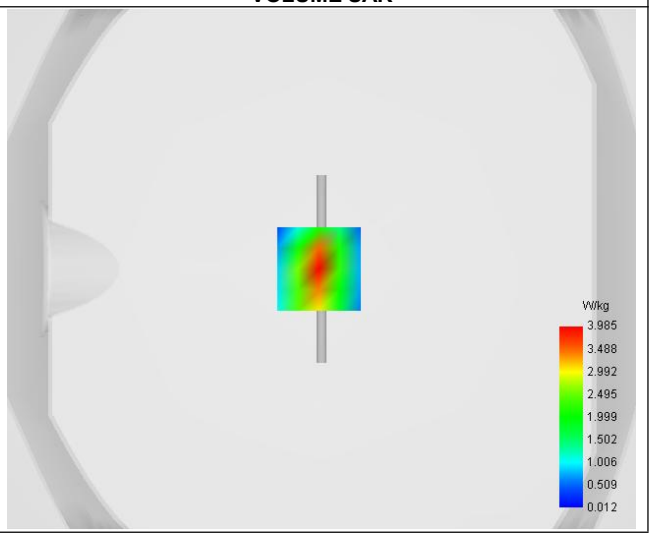
A. Experimental conditions.

Probe	37/08 EP80
ConvF	5.21
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW1800
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	1800.000
Relative permitivity (real part)	40.662
Relative permitivity (imaginary part)	15.845
Conductivity (S/m)	1.393

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

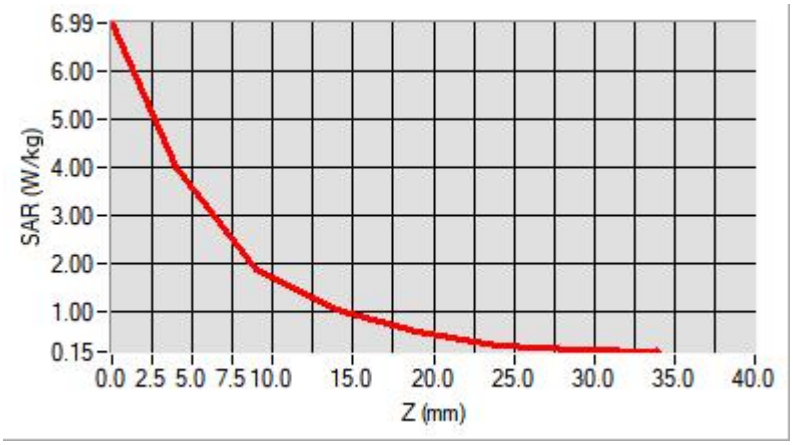
Maximum location: X=-1.00, Y=0.00 ; SAR Peak: 6.95 W/kg

D. SAR 1g & 10g

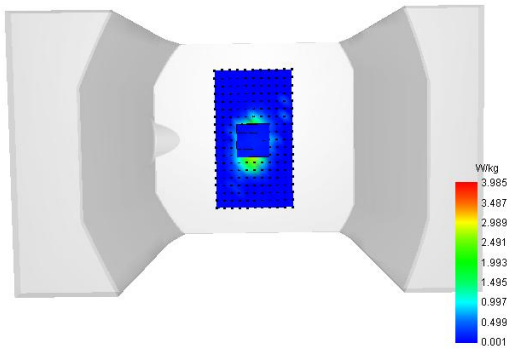
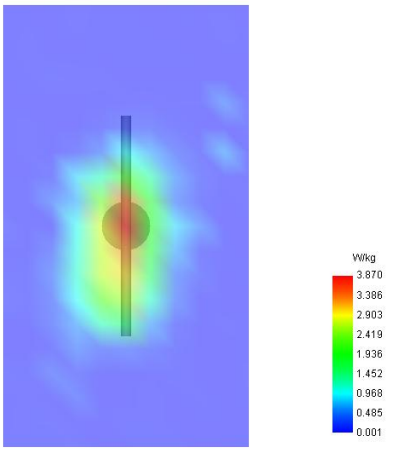
SAR 10g (W/Kg)	1.934
SAR 1g (W/Kg)	3.870
Variation (%)	-2.470
Horizontal validation criteria: minimum distance (mm)	11.314
Vertical validation criteria: SAR ratio M2/M1 (%)	48.29%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	6.992	3.870	1.869	1.009	0.570



F. 3D Image

3D screen shot	Hot spot position
	

System check at 2000 MHz

Date of measurement: 9/4/2025

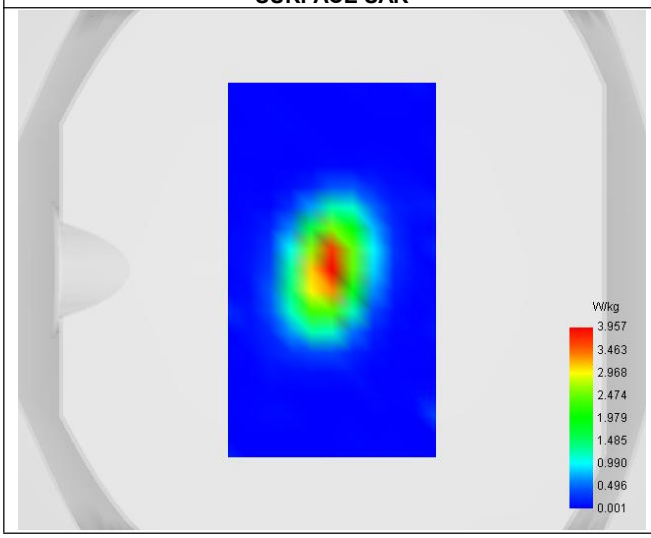
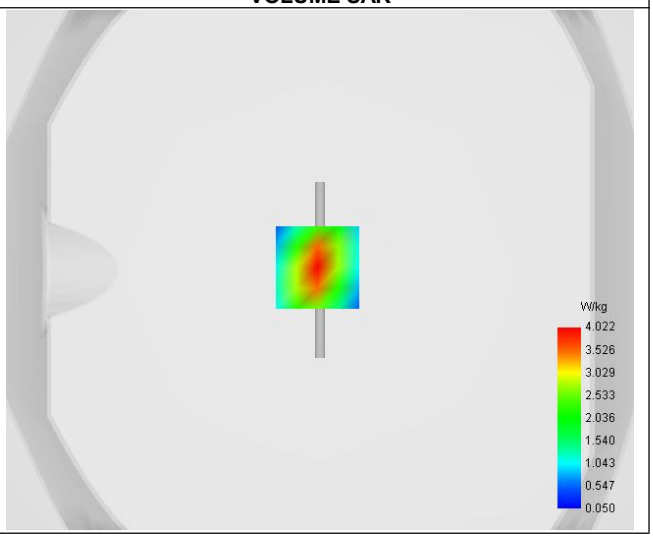
A. Experimental conditions.

Probe	37/08 EP80
ConvF	5.61
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW2000
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	2000.000
Relative permitivity (real part)	40.453
Relative permitivity (imaginary part)	14.657
Conductivity (S/m)	1.402

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=-1.00, Y=1.00 ; SAR Peak: 6.36 W/kg

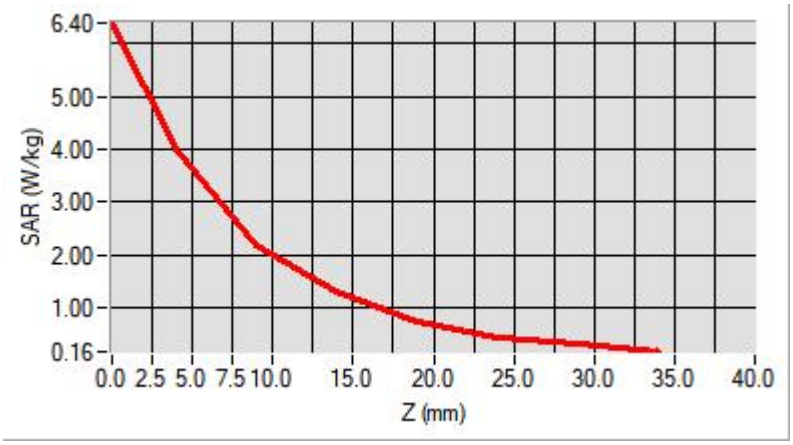
D. SAR 1g & 10g

SAR 10g (W/Kg)	2.021

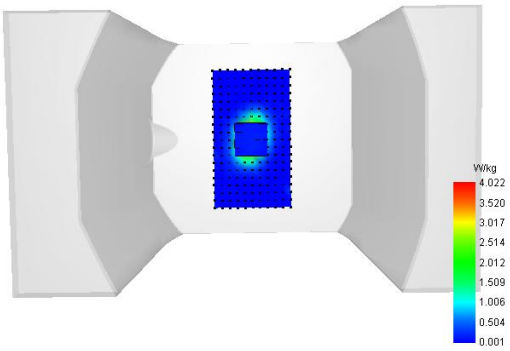
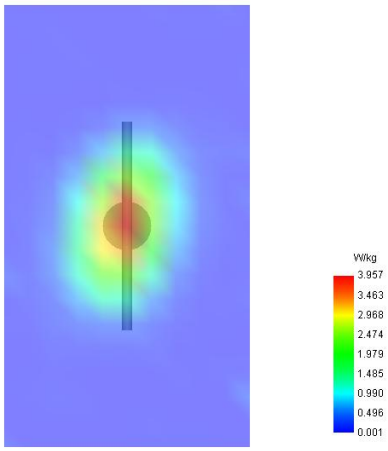
SAR 1g (W/Kg)	3.957
Variation (%)	-3.680
Horizontal validation criteria: minimum distance (mm)	16.000
Vertical validation criteria: SAR ratio M2/M1 (%)	54.09%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	6.402	4.012	2.170	1.306	0.749



F. 3D Image

3D screen shot	Hot spot position
	

System check at 2300 MHz

Date of measurement: 5/4/2025

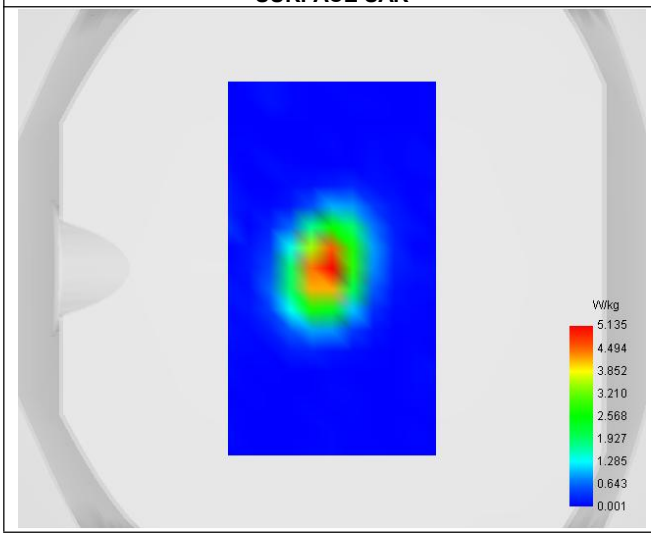
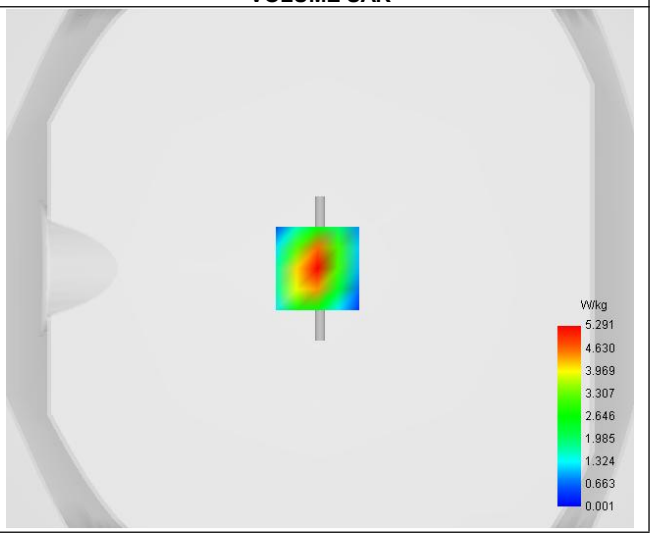
A. Experimental conditions.

Probe	37/08 EP80
ConvF	4.82
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW2300
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	2300.000
Relative permitivity (real part)	39.635
Relative permitivity (imaginary part)	13.922
Conductivity (S/m)	1.649

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

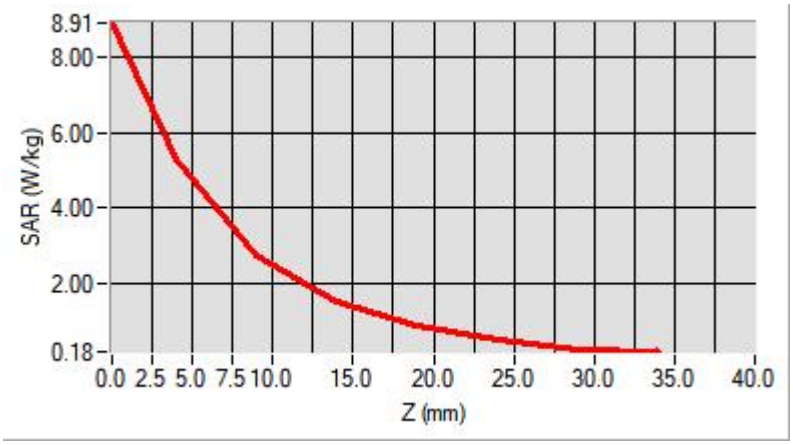
Maximum location: X=-1.00, Y=0.00 ; SAR Peak: 8.91 W/kg

D. SAR 1g & 10g

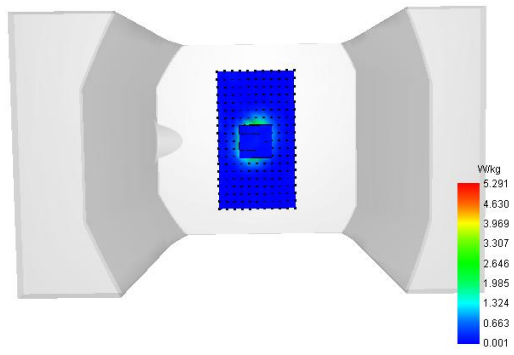
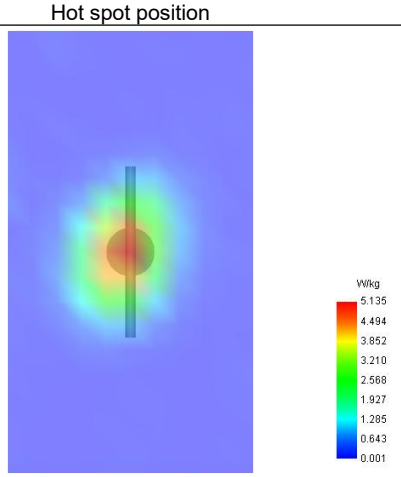
SAR 10g (W/Kg)	2.425
SAR 1g (W/Kg)	5.135
Variation (%)	2.520
Horizontal validation criteria: minimum distance (mm)	16.044
Vertical validation criteria: SAR ratio M2/M1 (%)	51.39%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	8.909	5.281	2.714	1.514	0.863



F. 3D Image

3D screen shot	Hot spot position
	

System check at 2450 MHz

Date of measurement: 5/4/2025

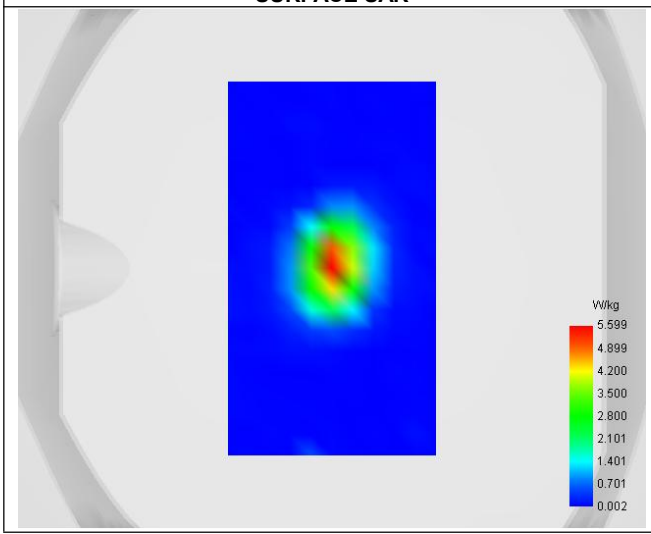
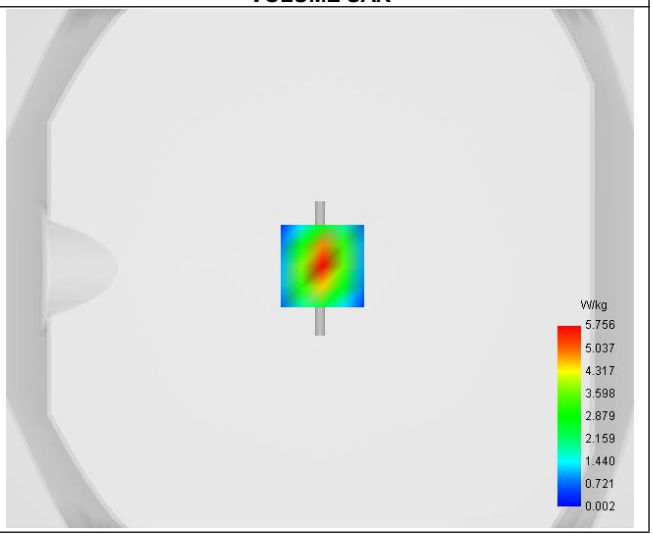
A. Experimental conditions.

Probe	37/08 EP80
ConvF	4.82
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	2450.000
Relative permitivity (real part)	39.328
Relative permitivity (imaginary part)	13.647
Conductivity (S/m)	1.742

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

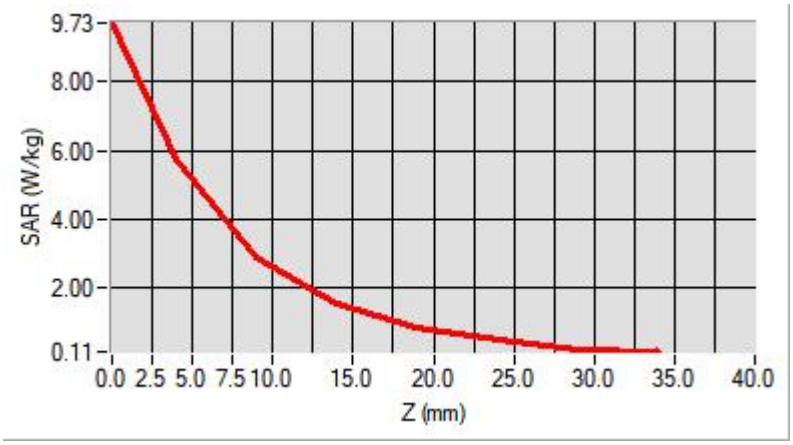
Maximum location: X=0.00, Y=1.00 ; SAR Peak: 9.63 W/kg

D. SAR 1g & 10g

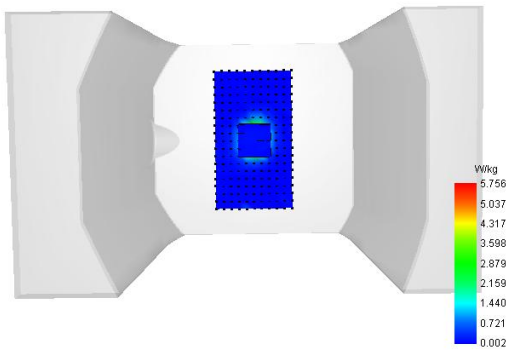
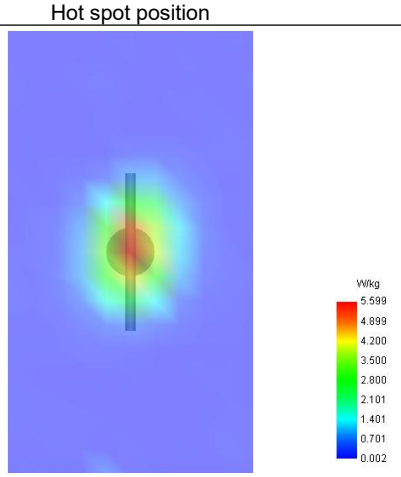
SAR 10g (W/Kg)	2.366
SAR 1g (W/Kg)	5.311
Variation (%)	-1.750
Horizontal validation criteria: minimum distance (mm)	11.314
Vertical validation criteria: SAR ratio M2/M1 (%)	50.30%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	9.726	5.756	2.895	1.513	0.792



F. 3D Image

3D screen shot	Hot spot position
	

System check at 2600 MHz

Date of measurement: 6/4/2025

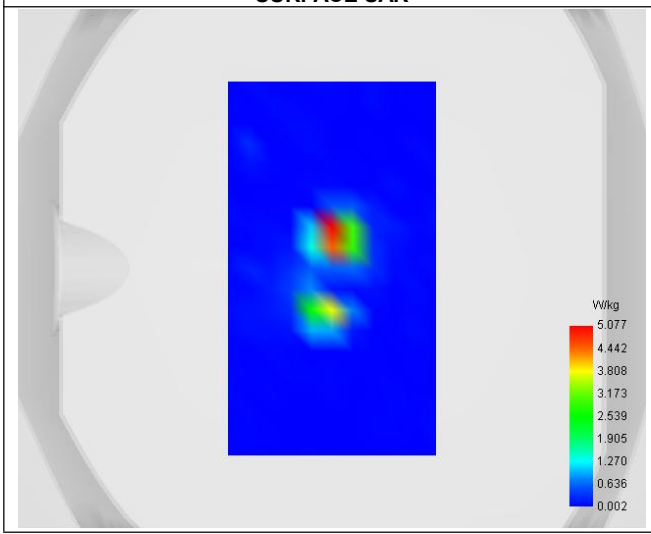
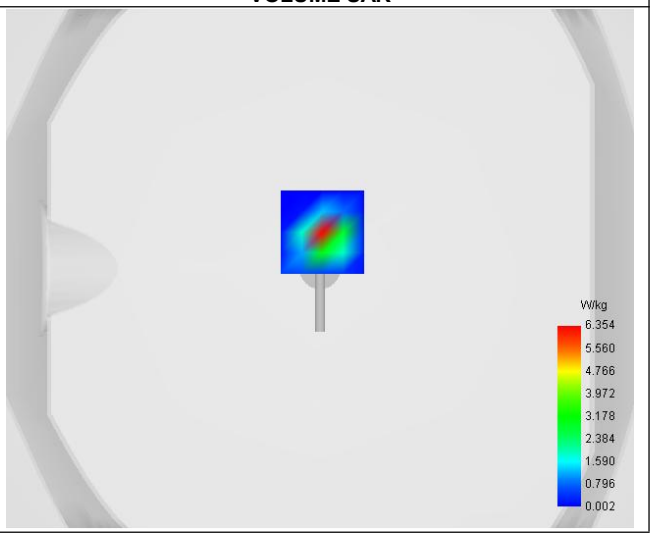
A. Experimental conditions.

Probe	37/08 EP80
ConvF	4.74
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW2600
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	2600.000
Relative permitivity (real part)	38.952
Relative permitivity (imaginary part)	12.864
Conductivity (S/m)	1.903

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

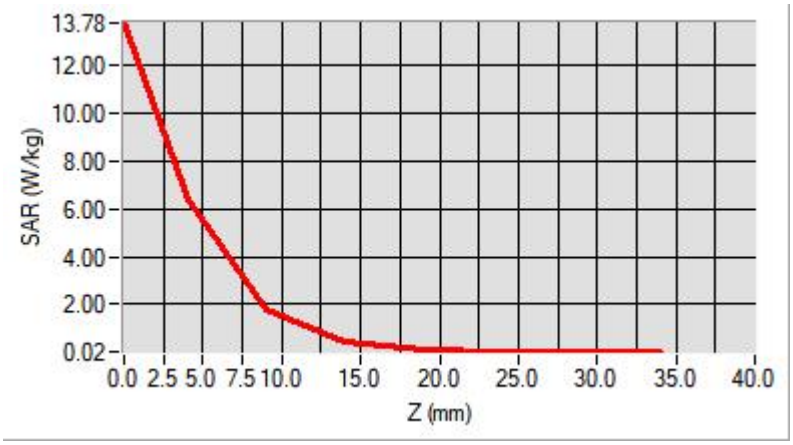
Maximum location: X=1.00, Y=14.00 ; SAR Peak: 13.58 W/kg

D. SAR 1g & 10g

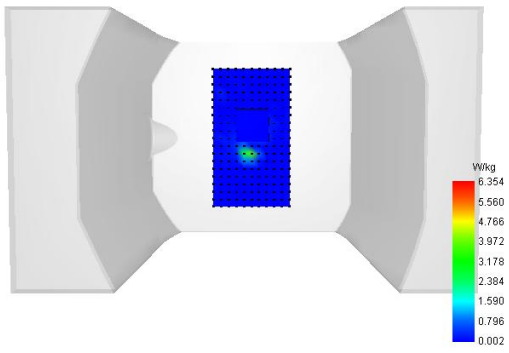
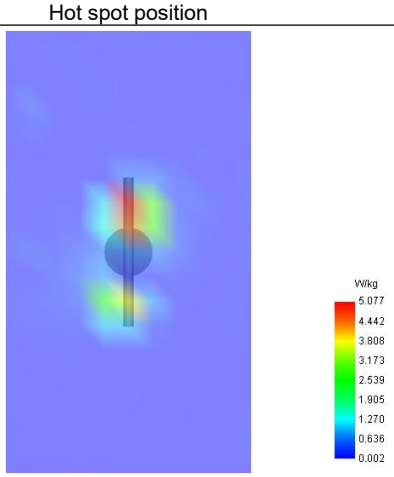
SAR 10g (W/Kg)	2.425
SAR 1g (W/Kg)	5.277
Variation (%)	-2.420
Horizontal validation criteria: minimum distance (mm)	8.000
Vertical validation criteria: SAR ratio M2/M1 (%)	31.93%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	13.775	6.214	1.984	0.448	0.140



F. 3D Image

3D screen shot	Hot spot position
	

System check at 5200 MHz

Date of measurement: 7/4/2025

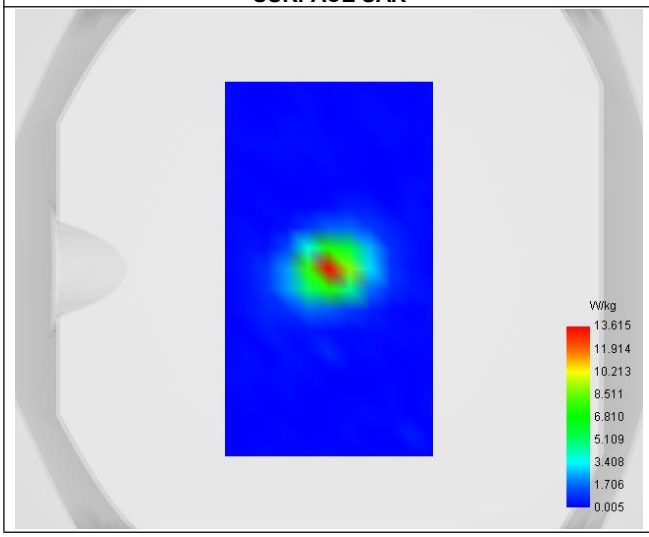
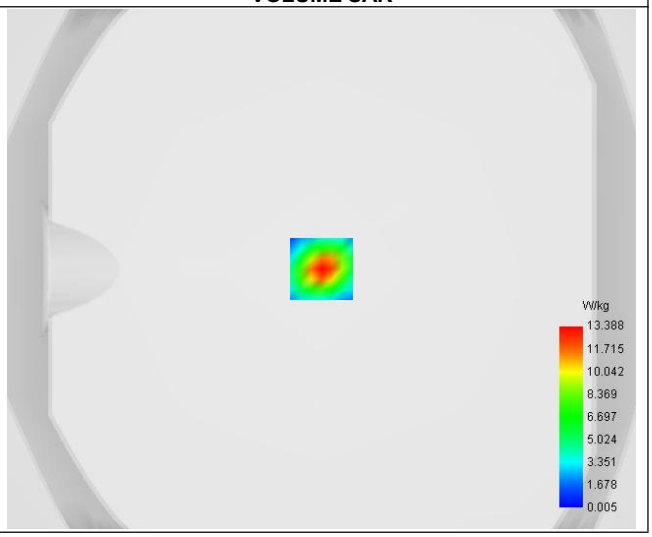
A. Experimental conditions.

Probe	27/13 EPG193
ConvF	21.61
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW5200
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	5200.000
Relative permitivity (real part)	35.824
Relative permitivity (imaginary part)	16.128
Conductivity (S/m)	4.632

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

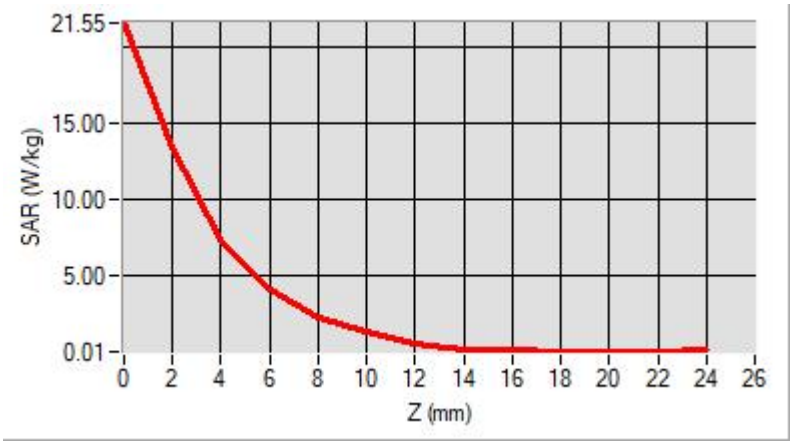
Maximum location: X=0.00, Y=0.00 ; SAR Peak: 22.31 W/kg

D. SAR 1g & 10g

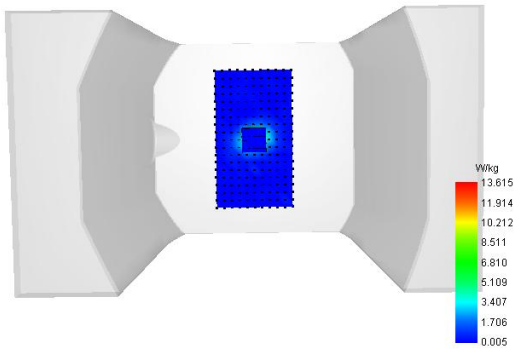
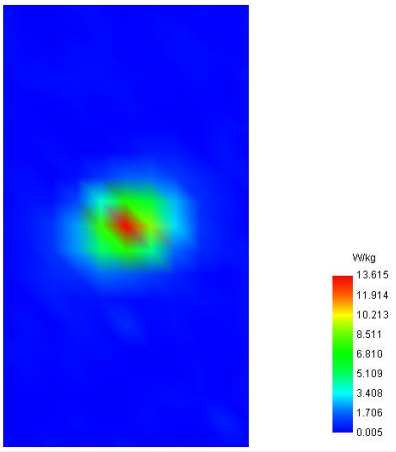
SAR 10g (W/Kg)	5.289
SAR 1g (W/Kg)	15.928
Variation (%)	-3.670
Horizontal validation criteria: minimum distance (mm)	16.000
Vertical validation criteria: SAR ratio M2/M1 (%)	55.23%

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	21.551	13.384	7.392	4.139	2.247	1.301	0.470	0.134	0.136



F. 3D Image

3D screen shot	Hot spot position
	

System check at 5400 MHz

Date of measurement: 7/4/2025

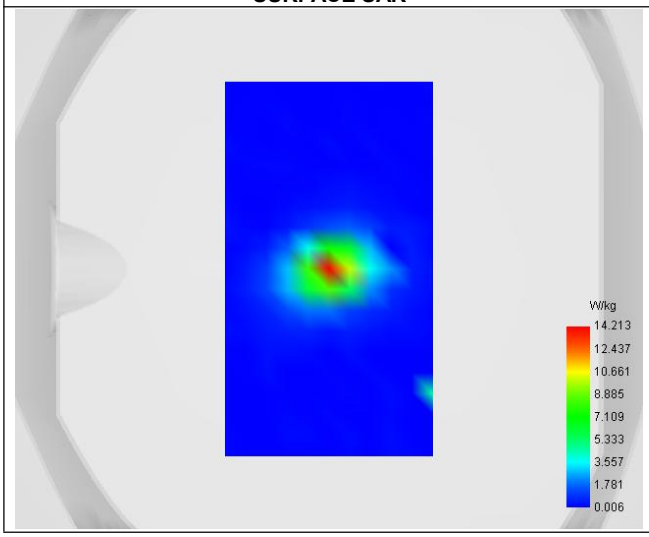
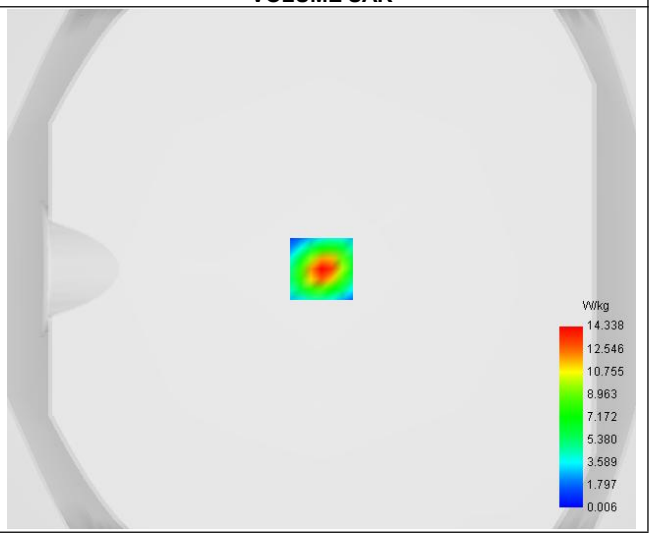
A. Experimental conditions.

Probe	27/13 EPG193
ConvF	23.2
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW5400
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	5400.000
Relative permitivity (real part)	35.432
Relative permitivity (imaginary part)	16.259
Conductivity (S/m)	4.911

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

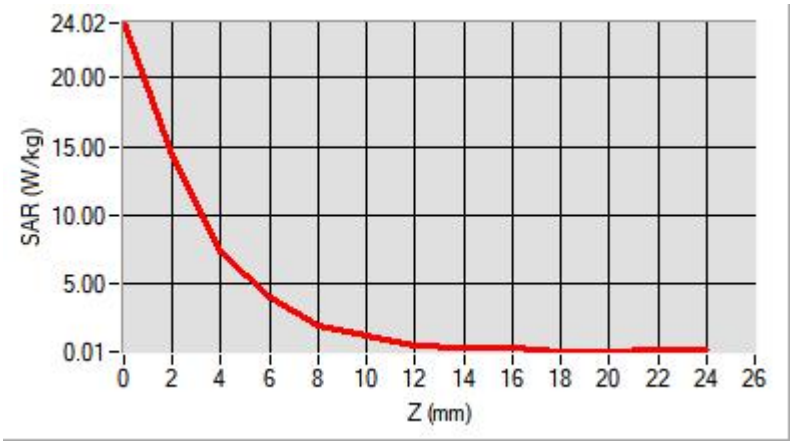
Maximum location: X=0.00, Y=0.00 ; SAR Peak: 25.09 W/kg

D. SAR 1g & 10g

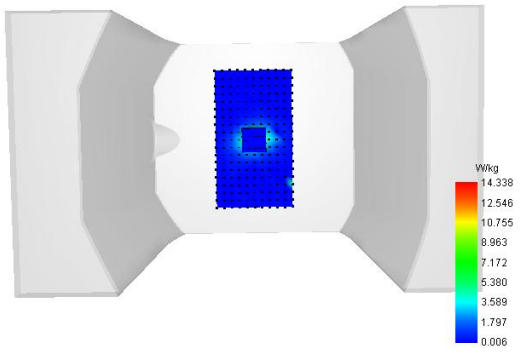
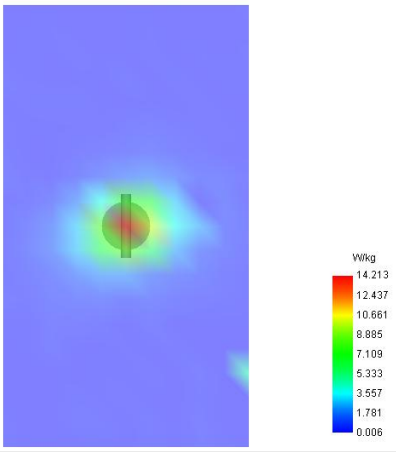
SAR 10g (W/Kg)	2.395
SAR 1g (W/Kg)	7.665
Variation (%)	-1.680
Horizontal validation criteria: minimum distance (mm)	8.485
Vertical validation criteria: SAR ratio M2/M1 (%)	50.83%

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	24.015	14.338	7.288	3.930	1.950	1.113	0.492	0.268	0.234



F. 3D Image

3D screen shot	Hot spot position
	

System check at 5600 MHz

Date of measurement: 8/4/2025

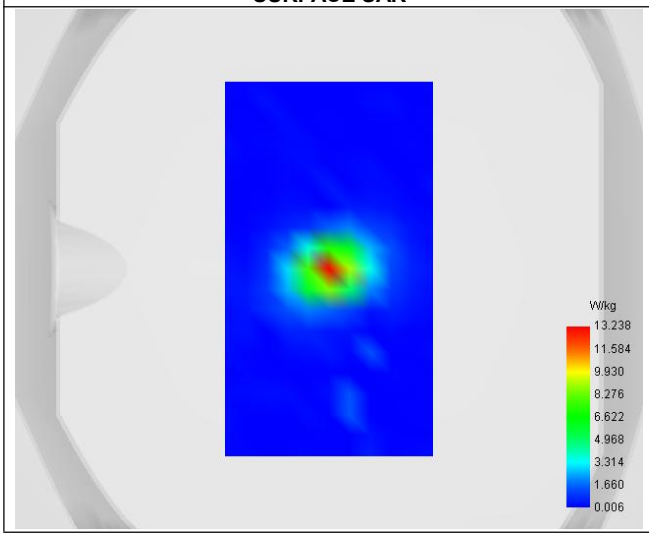
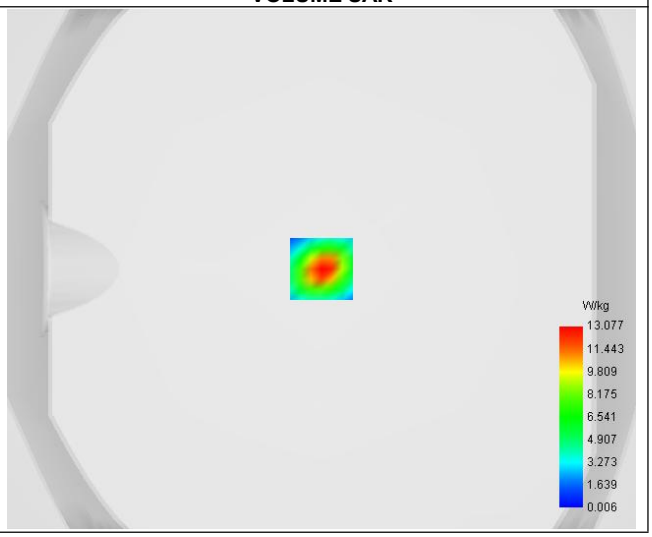
A. Experimental conditions.

Probe	27/13 EPG193
ConvF	22.92
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW5600
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	5600.000
Relative permitivity (real part)	35.123
Relative permitivity (imaginary part)	16.430
Conductivity (S/m)	5.112

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=0.00 ; SAR Peak: 23.09 W/kg

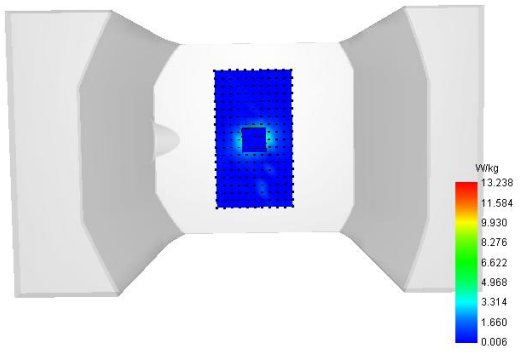
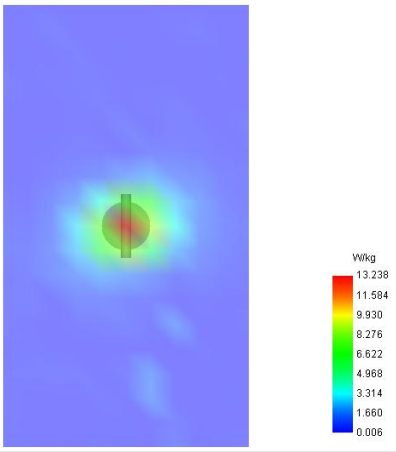
D. SAR 1g & 10g

SAR 10g (W/Kg)	6.028
SAR 1g (W/Kg)	17.749
Variation (%)	0.860
Horizontal validation criteria: minimum distance (mm)	12.000
Vertical validation criteria: SAR ratio M2/M1 (%)	51.78%

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	21.970	13.077	6.771	3.348	1.827	1.068	0.522	0.082	0.182

F. 3D Image

3D screen shot	Hot spot position
	

System check at 5800 MHz

Date of measurement: 9/4/2025

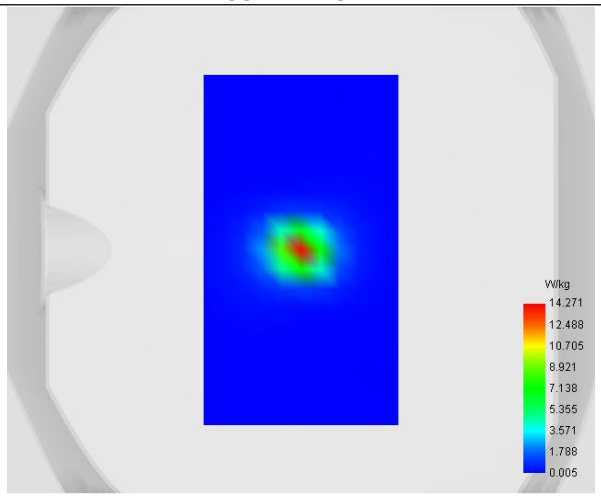
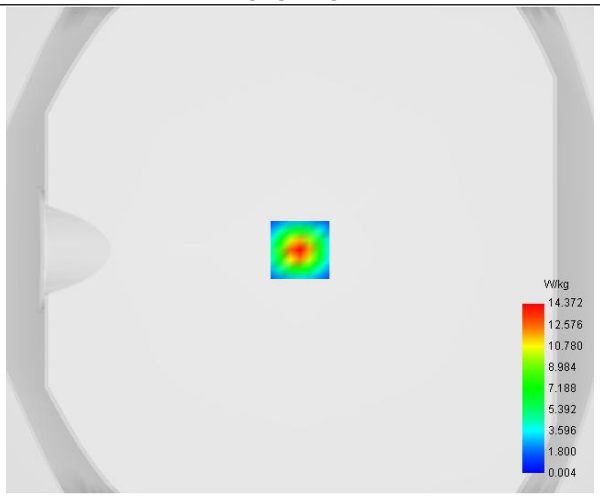
A. Experimental conditions.

Probe	27/13 EPG193
ConvF	22.42
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=2mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW5800
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	5800.000
Relative permitivity (real part)	34.864
Relative permitivity (imaginary part)	16.875
Conductivity (S/m)	5.254

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=0.00, Y=0.00 ; SAR Peak: 24.77 W/kg

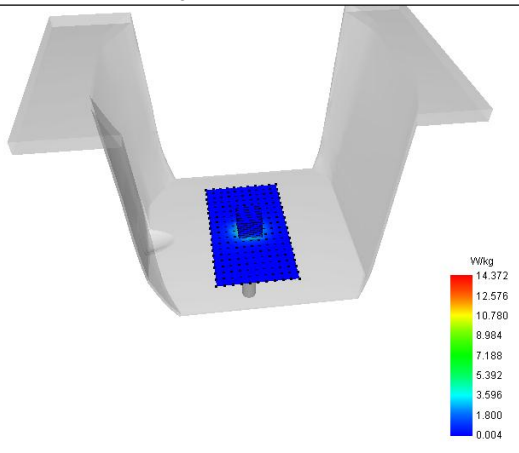
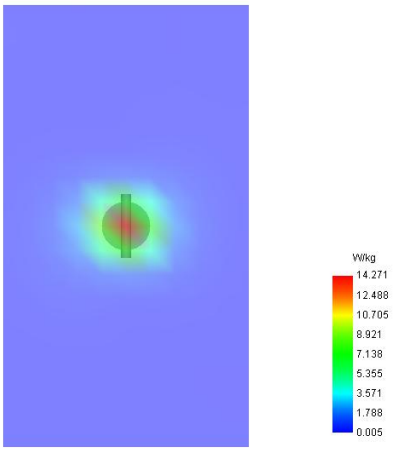
D. SAR 1g & 10g

SAR 10g (W/Kg)	6.362
SAR 1g (W/Kg)	17.887
Variation (%)	0.960
Horizontal validation criteria: minimum distance (mm)	8.000
Vertical validation criteria: SAR ratio M2/M1 (%)	53.86%

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	23.480	14.372	7.741	4.320	2.386	1.308	0.736	0.406	0.236

F. 3D Image

3D screen shot	Hot spot position
	

Annex D Plots of Maximum SAR Test Results

SAR Measurement at GSM850 (Cheek, Right)

Date of measurement: 2/4/2025

A. Experimental conditions.

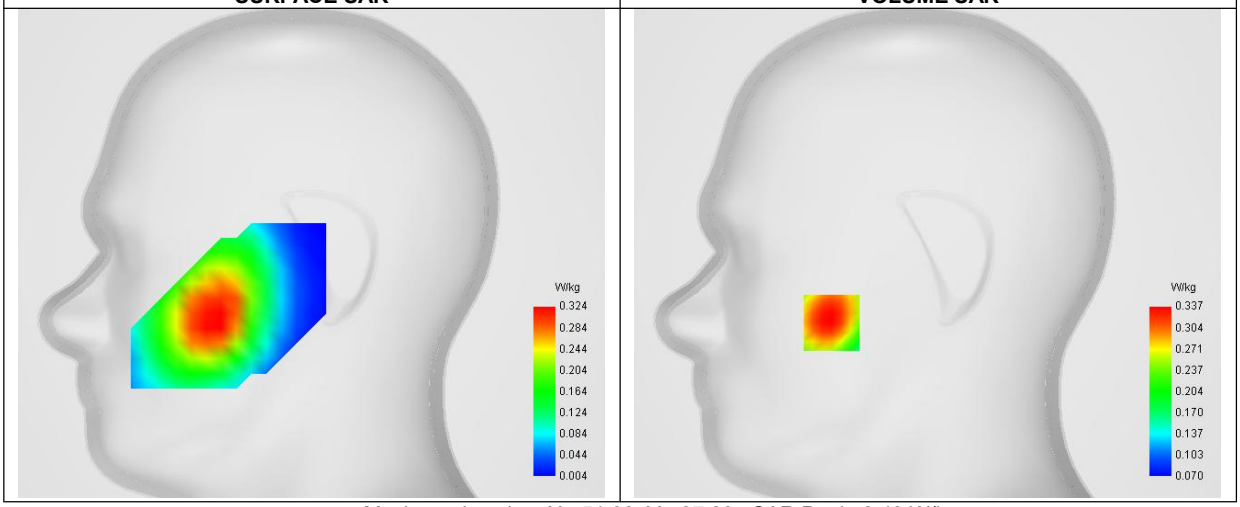
Probe	37/08 EP80
ConvF	6.13
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	7x7x7,dx=5mm dy=5mm dz=5.0mm,Complete
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels/Frequency	Lower (128)/ frequency 824.200 Mhz
Signal	TDMA (GSM)
Modulation	GMSK

B. Permitivity

Middle TX Frequency (MHz)	824.200
Relative permitivity (real part)	43.023
Relative permitivity (imaginary part)	20.269
Conductivity (S/m)	0.928

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR



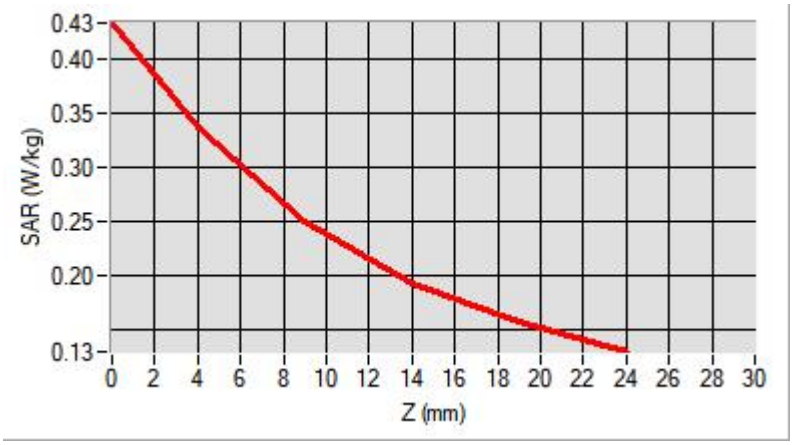
Maximum location: X=-51.00, Y=-37.00 ; SAR Peak: 0.43 W/kg

D. SAR 1g & 10g

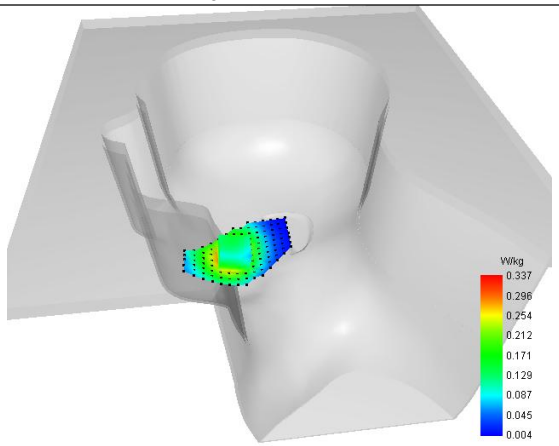
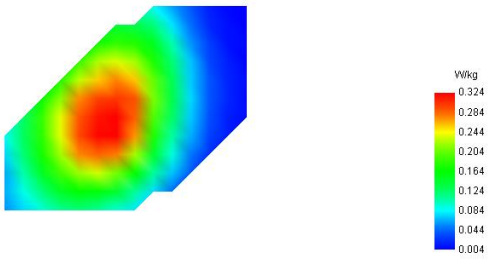
SAR 10g (W/Kg)	0.222
SAR 1g (W/Kg)	0.332
Variation (%)	-1.820
Horizontal validation criteria: minimum distance (mm)	21.213
Vertical validation criteria: SAR ratio M2/M1 (%)	74.48%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.433	0.337	0.251	0.194	0.157



F. 3D Image

3D screen shot	Hot spot position
	

SAR Measurement at GPRS850 (Body, Validation Plane)

Date of measurement: 9/4/2025

A. Experimental conditions.

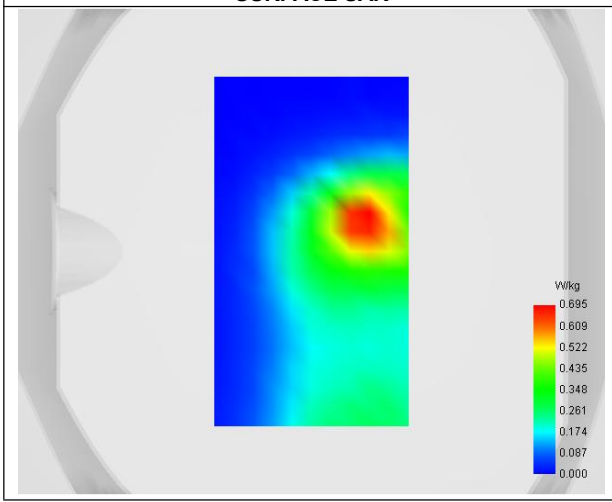
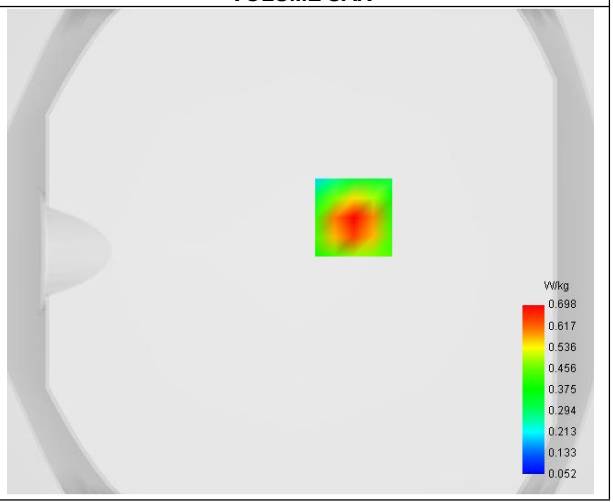
Probe	37/08 EP80
ConvF	6.13
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	GPRS850
Channels/Frequency	Lower (128)/ frequency 824.200 Mhz
Signal	TDMA (GPRS)
Modulation	GMSK (CS-1)
TX-slots	2

B. Permitivity

Middle TX Frequency (MHz)	824.200

Relative permitivity (real part)	43.023
Relative permitivity (imaginary part)	20.269
Conductivity (S/m)	0.928

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=22.00, Y=14.00 ; SAR Peak: 1.04 W/kg

D. SAR 1g & 10g

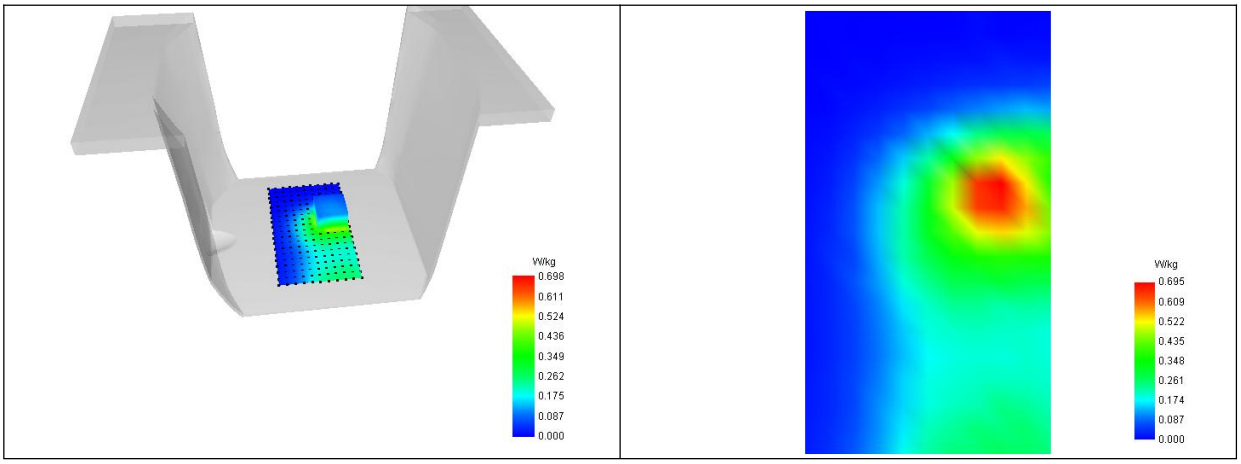
SAR 10g (W/Kg)	0.385
SAR 1g (W/Kg)	0.668
Variation (%)	-2.190
Horizontal validation criteria: minimum distance (mm)	16.000
Vertical validation criteria: SAR ratio M2/M1 (%)	60.46%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.036	0.698	0.422	0.260	0.168

F. 3D Image

3D screen shot	Hot spot position


W/kg
0.698
0.611
0.524
0.436
0.349
0.262
0.175
0.087
0.000
W/kg
0.695
0.609
0.522
0.435
0.348
0.261
0.174
0.087
0.000

SAR Measurement at GSM1900 (Cheek, Right)

Date of measurement: 9/4/2025

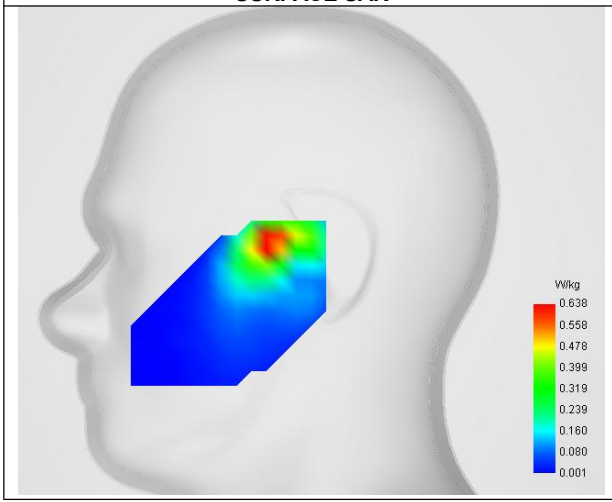
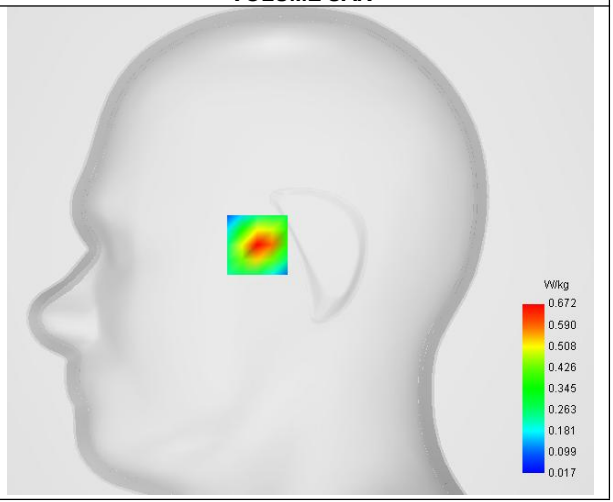
A. Experimental conditions.

Probe	37/08 EP80
ConvF	5.61
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Right head
Device Position	Cheek
Band	GSM1900
Channels/Frequency	Middle (661)/ frequency 1880.000 Mhz
Signal	TDMA (GSM)
Modulation	GMSK

B. Permitivity

Middle TX Frequency (MHz)	1880.000
Relative permitivity (real part)	41.432
Relative permitivity (imaginary part)	14.212
Conductivity (S/m)	1.484

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

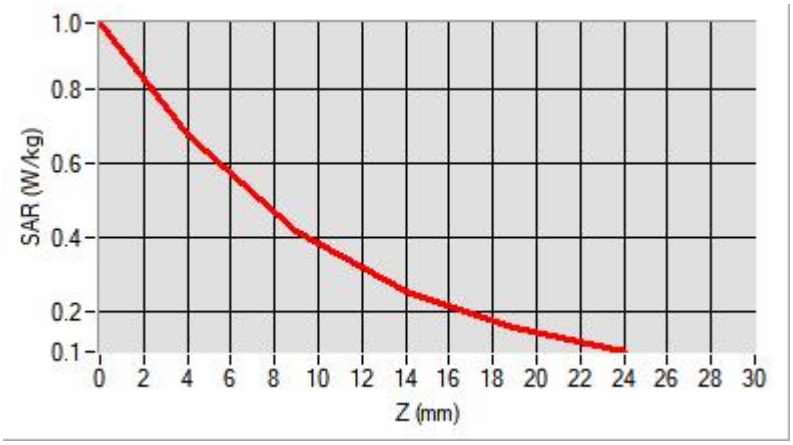
Maximum location: X=-23.00, Y=3.00 ; SAR Peak: 0.98 W/kg

D. SAR 1g & 10g

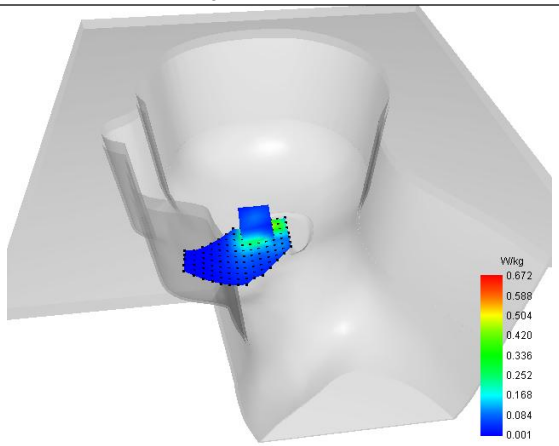
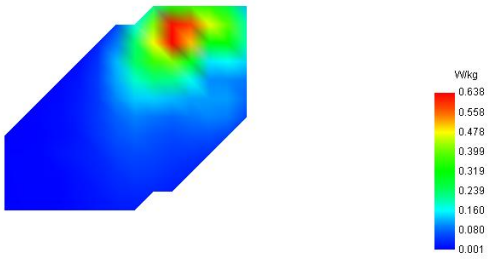
SAR 10g (W/Kg)	0.335
SAR 1g (W/Kg)	0.635
Variation (%)	-0.030
Horizontal validation criteria: minimum distance (mm)	16.000
Vertical validation criteria: SAR ratio M2/M1 (%)	61.61%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.976	0.672	0.414	0.254	0.157



F. 3D Image

3D screen shot	Hot spot position
	

SAR Measurement at GPRS1900 (Body, Validation Plane)

Date of measurement: 9/4/2025

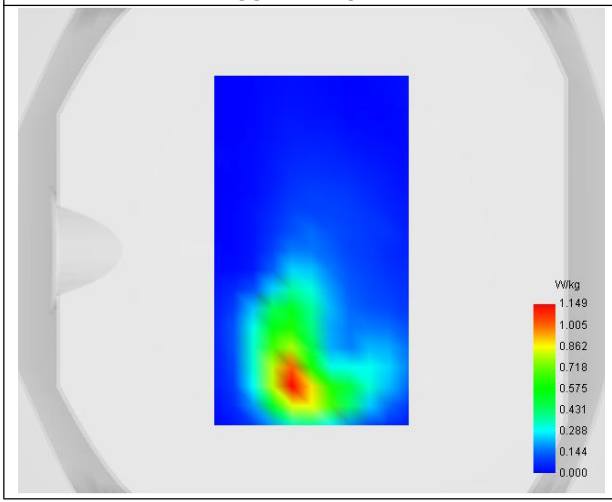
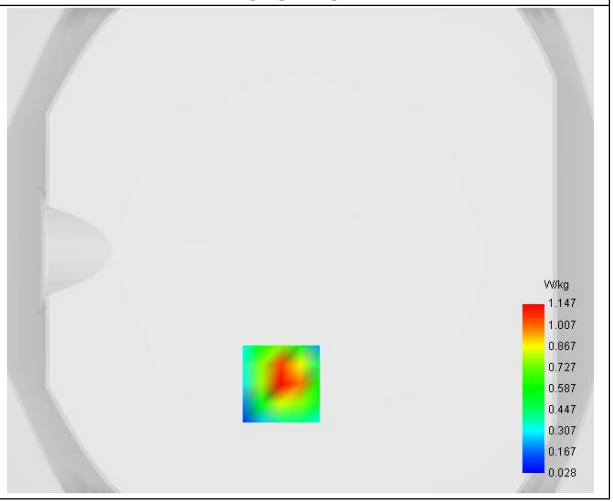
A. Experimental conditions.

Probe	37/08 EP80
ConvF	5.61
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	GPRS1900
Channels/Frequency	Higher (810)/ frequency 1909.800 Mhz
Signal	TDMA (GPRS)
Modulation	GMSK (CS-1)
TX-slots	3

B. Permitivity

Middle TX Frequency (MHz)	1909.800
Relative permitivity (real part)	41.369
Relative permitivity (imaginary part)	14.142
Conductivity (S/m)	1.500

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

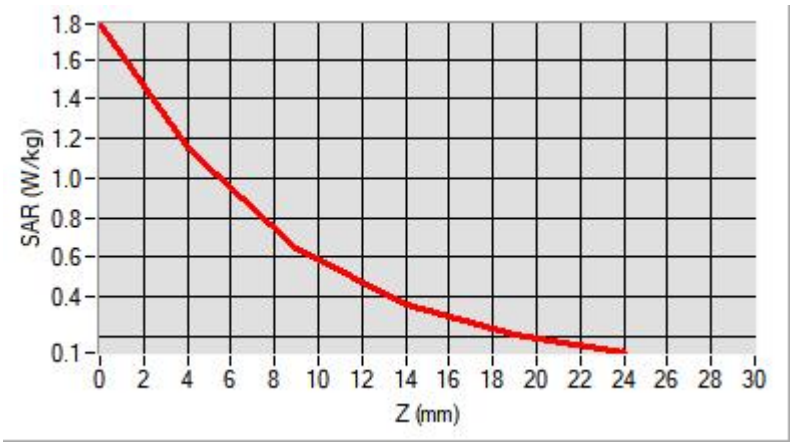
Maximum location: X=-8.00, Y=-55.00 ; SAR Peak: 1.82 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.563
SAR 1g (W/Kg)	1.109
Variation (%)	2.410
Horizontal validation criteria: minimum distance (mm)	11.314
Vertical validation criteria: SAR ratio M2/M1 (%)	56.23%

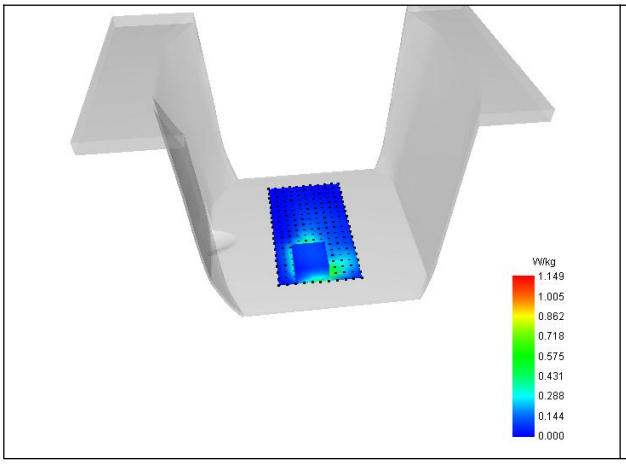
E. Z Axis Scan

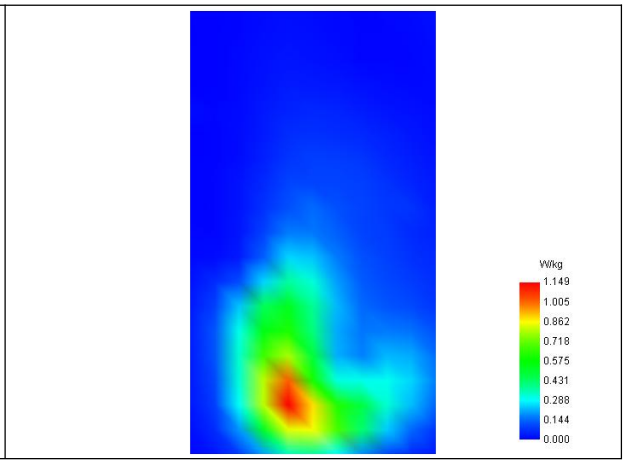
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.778	1.147	0.645	0.362	0.209



F. 3D Image

3D screen shot	Hot spot position





SAR Measurement at Band 2 (1900) (Cheek, Right)

Date of measurement: 9/4/2025

A. Experimental conditions.

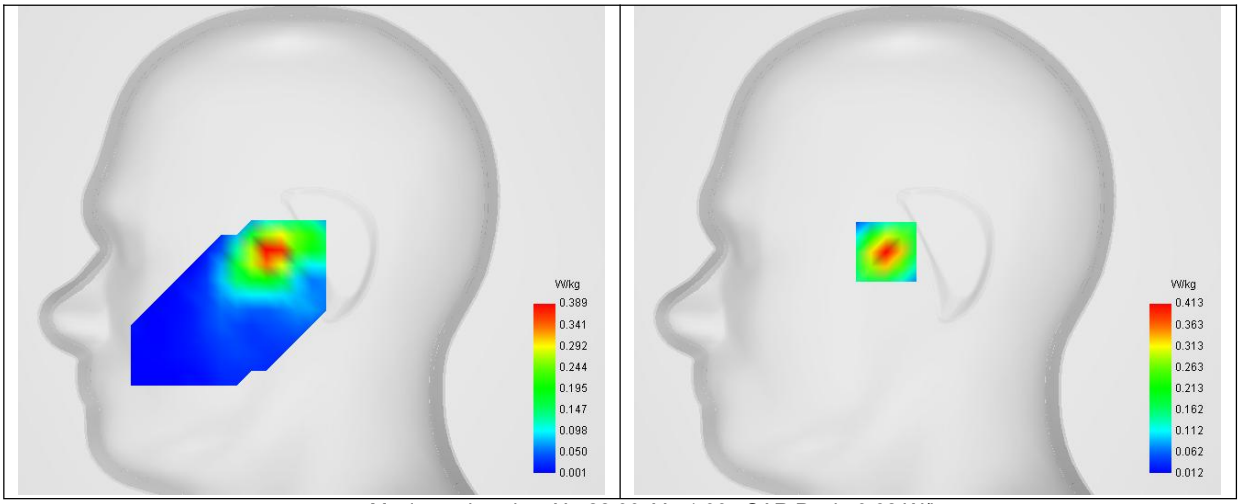
Probe	37/08 EP80
ConvF	5.61
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Right head
Device Position	Cheek
Band	Band 2 (1900)
Channels/Frequency	Higher (9538)/ frequency 1907.600 Mhz
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permitivity

Middle TX Frequency (MHz)	1907.600
Relative permitivity (real part)	41.367
Relative permitivity (imaginary part)	14.147
Conductivity (S/m)	1.499

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**



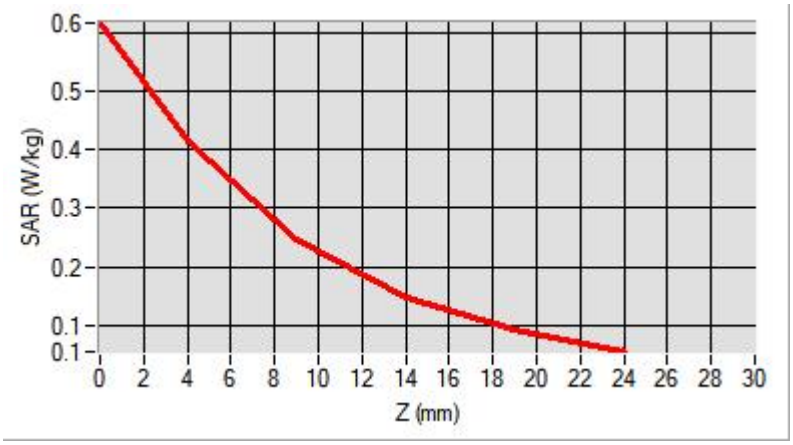
Maximum location: X=-22.00, Y=-1.00 ; SAR Peak: 0.62 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.201
SAR 1g (W/Kg)	0.390
Variation (%)	-2.240
Horizontal validation criteria: minimum distance (mm)	16.000
Vertical validation criteria: SAR ratio M2/M1 (%)	59.56%

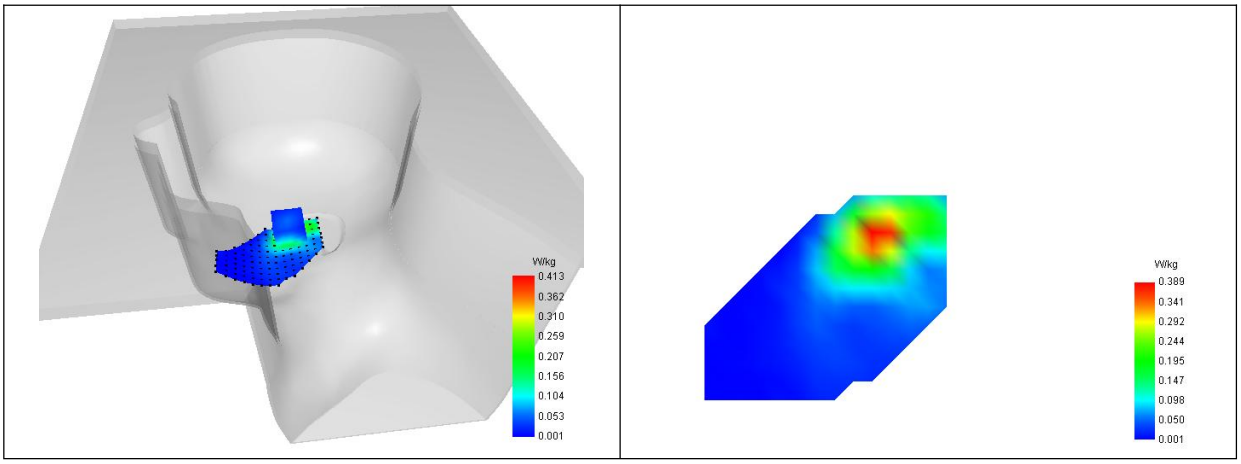
E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.617	0.413	0.246	0.147	0.091



F. 3D Image

3D screen shot	Hot spot position


W/kg
0.413
0.362
0.310
0.259
0.207
0.156
0.104
0.053
0.001
W/kg
0.389
0.341
0.292
0.244
0.195
0.147
0.098
0.050
0.001

SAR Measurement at Band 2 (1900) (Body, Validation Plane)

Date of measurement: 1/4/2025

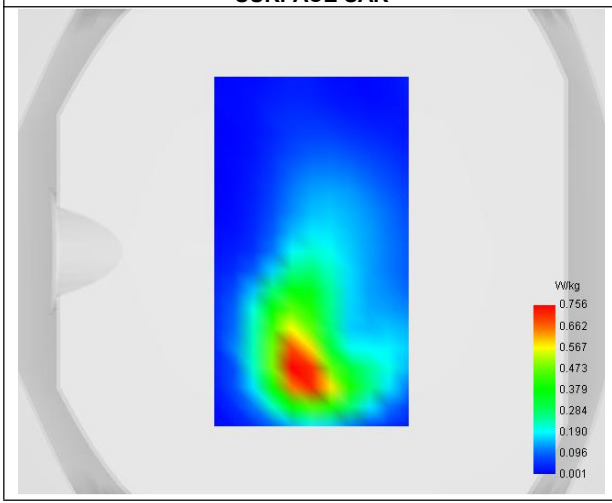
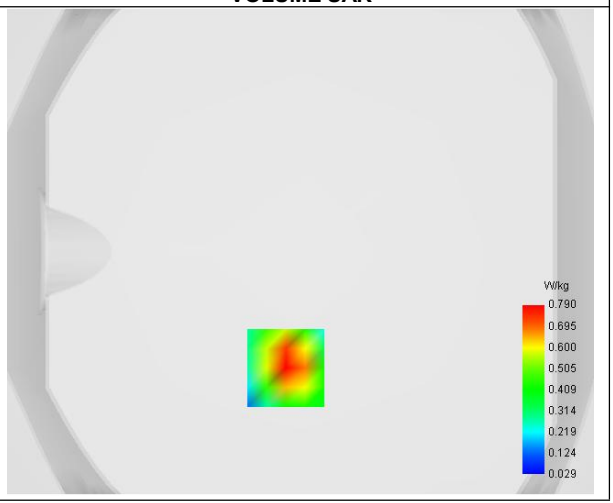
A. Experimental conditions.

Probe	37/08 EP80
ConvF	5.61
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	Band 2 (1900)
Channels/Frequency	Higher (9538)/ frequency 1907.600 Mhz
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permitivity

Middle TX Frequency (MHz)	1907.600
Relative permitivity (real part)	41.367
Relative permitivity (imaginary part)	14.147
Conductivity (S/m)	1.499

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

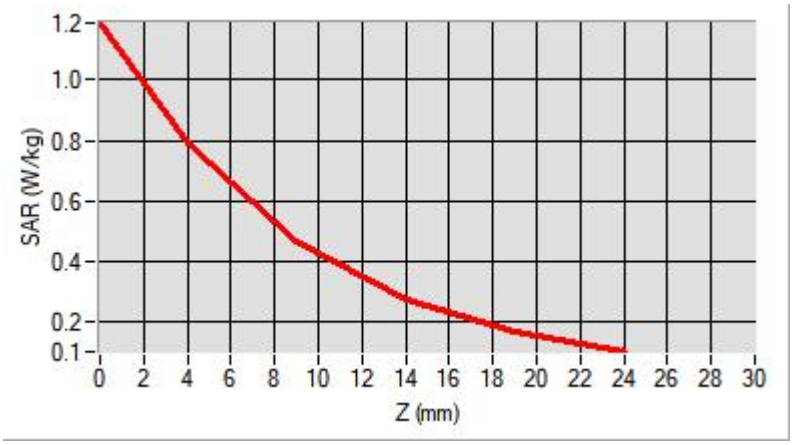
Maximum location: X=-6.00, Y=-48.00 ; SAR Peak: 1.20 W/kg

D. SAR 1g & 10g

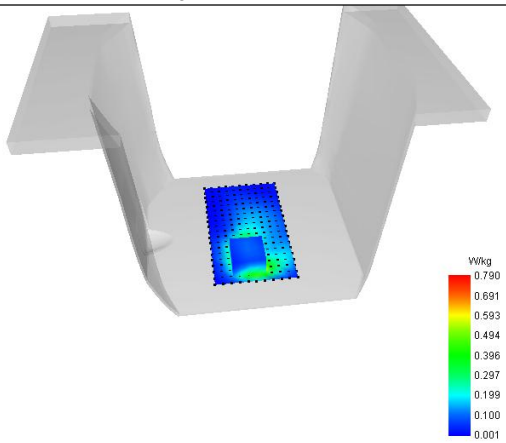
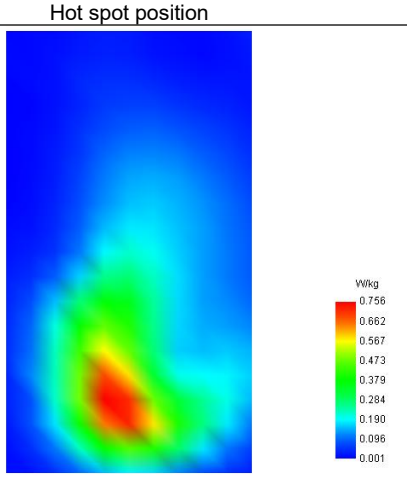
SAR 10g (W/Kg)	0.413
SAR 1g (W/Kg)	0.764
Variation (%)	-1.250
Horizontal validation criteria: minimum distance (mm)	16.000
Vertical validation criteria: SAR ratio M2/M1 (%)	58.86%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.189	0.790	0.465	0.276	0.169



F. 3D Image

3D screen shot	Hot spot position
	

SAR Measurement at Band 4 (1700) (Cheek, Right)

Date of measurement: 9/4/2025

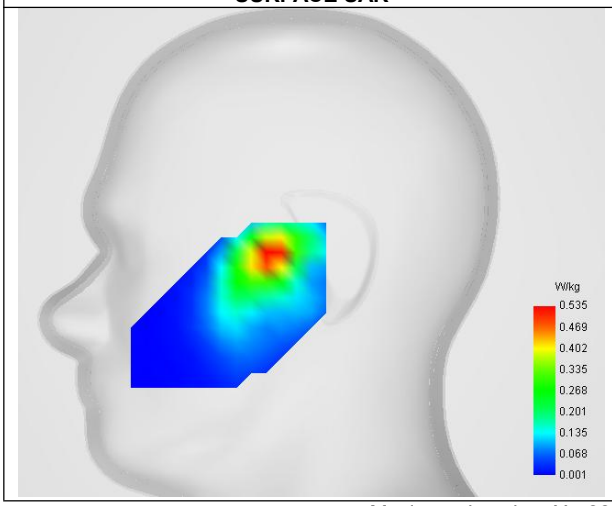
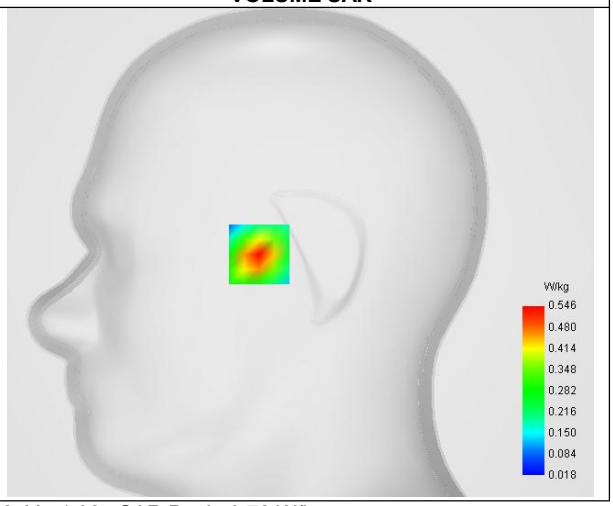
A. Experimental conditions.

Probe	37/08 EP80
ConvF	5.21
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Right head
Device Position	Cheek
Band	Band 4 (1700)
Channels/Frequency	Middle (1413)/ frequency 1732.600 Mhz
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permitivity

Middle TX Frequency (MHz)	1732.600
Relative permitivity (real part)	41.747
Relative permitivity (imaginary part)	14.361
Conductivity (S/m)	1.382

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

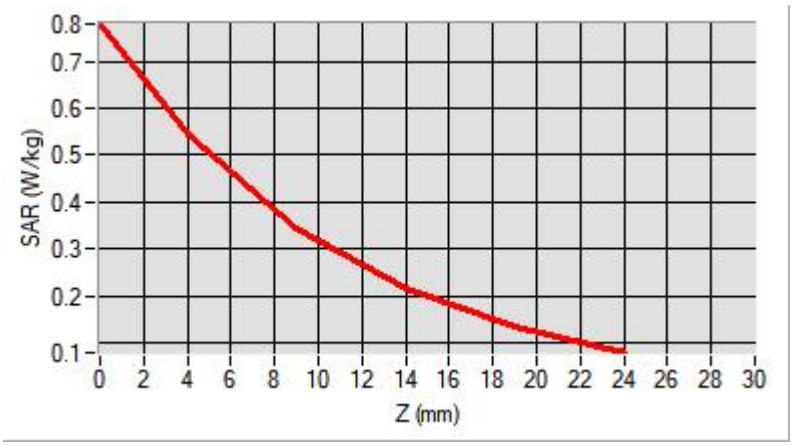
Maximum location: X=-22.00, Y=-1.00 ; SAR Peak: 0.78 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.279
SAR 1g (W/Kg)	0.505
Variation (%)	4.180
Horizontal validation criteria: minimum distance (mm)	16.000
Vertical validation criteria: SAR ratio M2/M1 (%)	63.00%

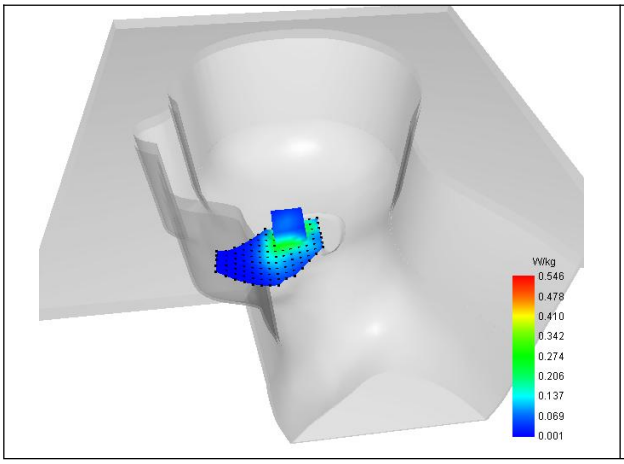
E. Z Axis Scan

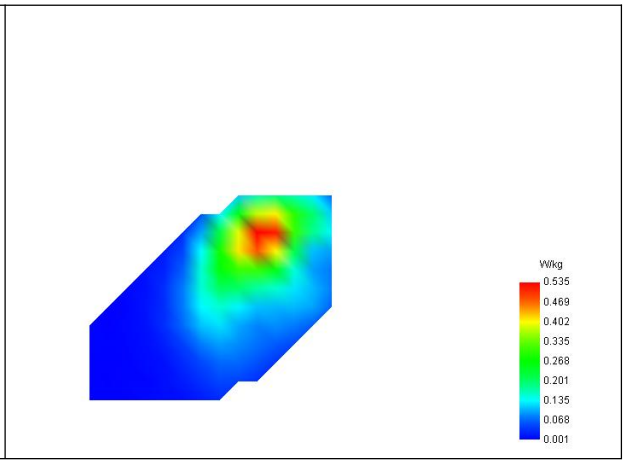
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.779	0.546	0.344	0.215	0.134



F. 3D Image

3D screen shot	Hot spot position





SAR Measurement at Band 4 (1700) (Body, Validation Plane)

Date of measurement: 9/4/2025

A. Experimental conditions.

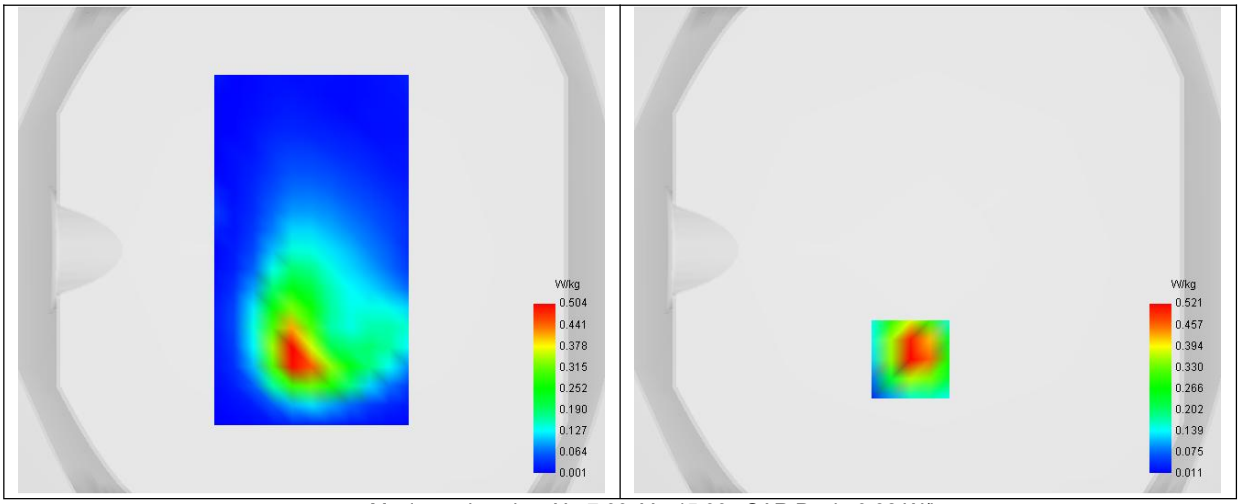
Probe	37/08 EP80
ConvF	5.21
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Validation plane
Device Position	Body
Band	Band 4 (1700)
Channels/Frequency	Middle (1413)/ frequency 1732.600 Mhz
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permitivity

Middle TX Frequency (MHz)	1732.600
Relative permitivity (real part)	41.747
Relative permitivity (imaginary part)	14.361
Conductivity (S/m)	1.382

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**



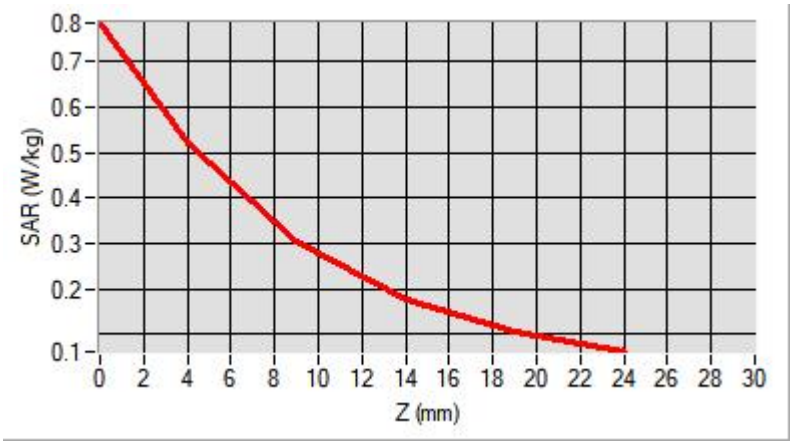
Maximum location: X=-7.00, Y=-45.00 ; SAR Peak: 0.82 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.261
SAR 1g (W/Kg)	0.496
Variation (%)	1.620
Horizontal validation criteria: minimum distance (mm)	11.314
Vertical validation criteria: SAR ratio M2/M1 (%)	58.54%

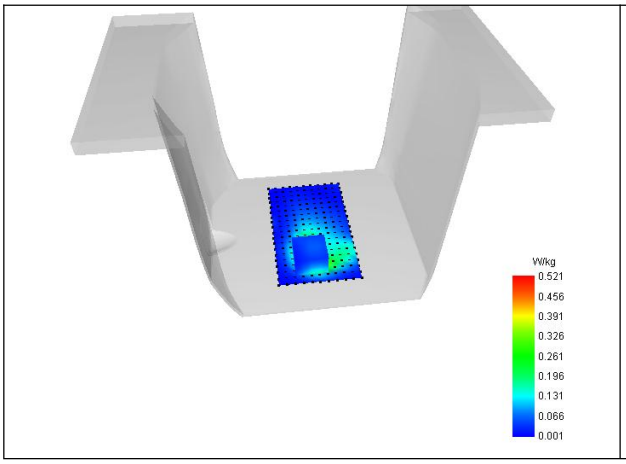
E. Z Axis Scan

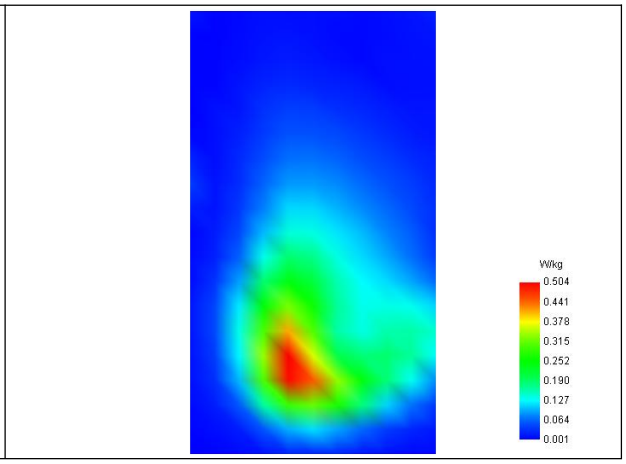
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.786	0.521	0.305	0.178	0.107



F. 3D Image

3D screen shot	Hot spot position





SAR Measurement at Band 5 (850) (Cheek, Right)

Date of measurement: 1/4/2025

A. Experimental conditions.

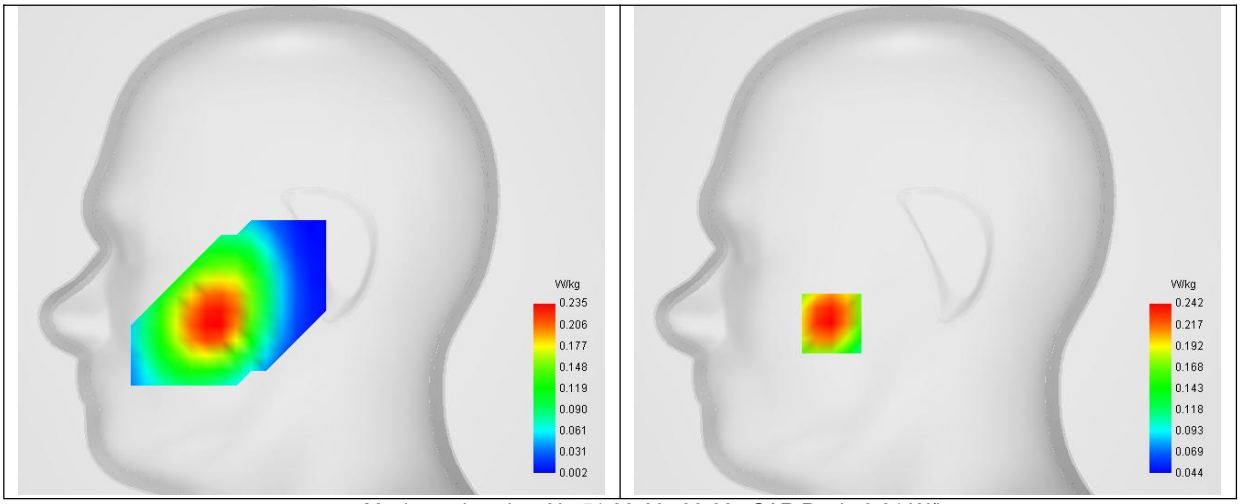
Probe	37/08 EP80
ConvF	6.13
Area Scan	dx=8mm dy=8mm, Complete
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5.0mm,Complete
Phantom	Right head
Device Position	Cheek
Band	Band 5 (850)
Channels/Frequency	Lower (4132)/ frequency 826.400 Mhz
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permitivity

Middle TX Frequency (MHz)	826.400
Relative permitivity (real part)	43.019
Relative permitivity (imaginary part)	20.229
Conductivity (S/m)	0.929

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**



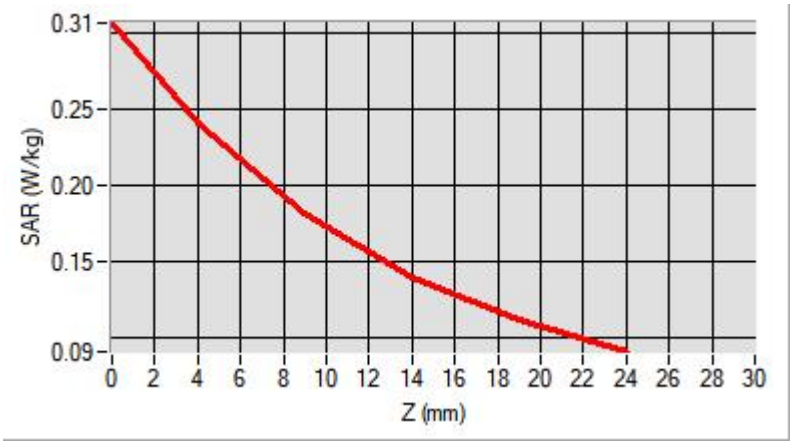
Maximum location: X=-51.00, Y=-39.00 ; SAR Peak: 0.31 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.171
SAR 1g (W/Kg)	0.238
Variation (%)	-3.100
Horizontal validation criteria: minimum distance (mm)	22.627
Vertical validation criteria: SAR ratio M2/M1 (%)	74.79%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.307	0.242	0.181	0.140	0.112



F. 3D Image

3D screen shot	Hot spot position