

TEST REPORT

Reference No...... : WTD22X07139033W001
FCC ID : 2AEPIBLACKZ
Applicant : COLOMBIANA DE COMERCIO S.A.
Address..... : Car. 43E No 8-71, Medellin, Colombia.
Manufacturer Sichuan Koobee Communication Equipment Co., Ltd.
Address..... 3 Floor, Building 2, 69 Gangyuan Road West Section, Lingang Development
Zone, Yibin City, Sichuan Province, China
Product Name : Smartphone
Model No...... : Black Z
FCC Part 2.1093
Standards : IEEE Std C95.1: 2019
IEEE Std C95.3: 2002 + Rev. 2008
IEEE 1528:2013
Date of Receipt sample : 2022-07-08
Date of Test..... : 2022-07-10 to 2022-08-17
Date of Issue : 2022-08-18
Test Report Form No. : WTX_IEEE_1528_2013W
Test Result..... : **Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of approver.

Prepared By:

Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road,
Block 70 Bao'an District, Shenzhen, Guangdong, China

Tel.: +86-755-33663308 Fax.: +86-755-33663309 Email: sem@waltek.com.cn

Tested by:

Jack Sun

Jack Sun

Approved by:

Silin Chen

Silin Chen

TABLE OF CONTENTS

1. General Information4
 1.1 Product Description for Equipment Under Test (EUT)4
 1.2 Test Standards7
 1.3 Test Methodology7
 1.4 Test Facility7

2. Summary of Test Results8

3. Specific Absorption Rate (SAR).....9
 3.1 Introduction.....9
 3.2 SAR Definition9

4. SAR Measurement System10
 4.1 The Measurement System10
 4.2 Probe10
 4.3 Probe Calibration Process12
 4.4 Phantom13
 4.5 Device Holder13
 4.6 Test Equipment List14

5. Tissue Simulating Liquids15
 5.1 Composition of Tissue Simulating Liquid15
 5.2 Tissue Dielectric Parameters for Head and Body Phantoms16
 5.3 Tissue Calibration Result17

6. SAR Measurement Evaluation18
 6.1 Purpose of System Performance Check18
 6.2 System Setup18
 6.3 Validation Results20

7. EUT Testing Position21
 7.1 Define Two Imaginary Lines on The Handset21
 7.2 Cheek Position22
 7.3 Tilted Position22
 7.4 Body Position23
 7.5 EUT Antenna Position23
 7.6 EUT Testing Position24

8. SAR Measurement Procedures25
 8.1 Measurement Procedures25
 8.2 Spatial Peak SAR Evaluation25
 8.3 Area & Zoom Scan Procedures26
 8.4 Volume Scan Procedures26
 8.5 SAR Averaged Methods26
 8.6 Power Drift Monitoring26

9. SAR Test Result27
 9.1 Conducted RF Output Power27
 9.2 Test Results for Standalone SAR Test55
 9.3 Simultaneous Multi-band Transmission SAR Analysis71

10. Measurement Uncertainty78
 10.1 Uncertainty for SAR Test78

Annex A. Plots of System Performance Check80
Annex B. Plots of SAR Measurement98
Annex C. EUT Photos164
Annex D. Test Setup Photos166
Annex E. Calibration Certificate171

Report version

Version No.	Date of issue	Description
Rev.00	2022-08-18	Original
/	/	/

1. General Information

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT:	
Product Name:	Smartphone
Brand Name:	Kalley
Model No.:	Black Z
Adding Model(s):	/
Rated Voltage:	DC 3.87V
Battery Capacity:	4900mAh
Software Version:	/
Hardware Version:	/
<i>Note: The test data is gathered from a production sample provided by the manufacturer.</i>	

Technical Characteristics of EUT:	
2G	
Support Networks:	GSM, GPRS, EDGE
Support Band:	GSM850/PCS1900
Uplink Frequency:	GSM/GPRS/EDGE 850: 824~849MHz GSM/GPRS/EDGE 1900: 1850~1910MHz
Downlink Frequency:	GSM/GPRS/EDGE 850: 869~894MHz GSM/GPRS/EDGE 1900: 1930~1990MHz
RF Output Power:	GSM850: 32.45dBm, GSM1900: 30.76dBm EDGE850: 26.67dBm, EDGE1900: 26.27dBm
Type of Modulation:	GMSK, 8PSK
Type of Antenna:	Integral Antenna
Antenna Gain:	GSM850:-5.1dBi; GSM1900: -2.4dBi
GPRS/EDGE Class:	Class 12
3G	
Support Networks:	WCDMA, HSDPA, HSUPA
Support Band:	WCDMA Band 2, WCDMA Band 4, WCDMA Band 5
Uplink Frequency:	WCDMA Band 2: 1850~1910MHz WCDMA Band 4: 1710-1755MHz WCDMA Band 5: 824~849MHz
Downlink Frequency:	WCDMA Band 2: 1930~1990MHz WCDMA Band 4: 2110-2155MHz WCDMA Band 5: 869~894MHz
RF Output Power:	WCDMA Band 2: 22.76dBm, WCDMA Band 4: 22.44dBm, WCDMA Band 5: 22.73dBm
Type of Modulation:	BPSK
Antenna Type:	Integral Antenna
Antenna Gain:	WCDMA Band 2: -2.4dBi, WCDMA Band 4: -2.3dBi, WCDMA Band 5: -5.1dBi
4G	
Support Networks:	FDD-LTE
Support Band:	FDD-LTE Band 2, 4, 5, 7
Uplink Frequency:	FDD-LTE Band 2: Tx: 1850-1910MHz, FDD-LTE Band 4: Tx: 1710-1755MHz, FDD-LTE Band 5: Tx: 824-849MHz, FDD-LTE Band 7: Tx: 2500-2570MHz,
Downlink Frequency:	FDD-LTE Band 2: Rx: 1930-1990MHz, FDD-LTE Band 4: Rx: 2110-2155MHz, FDD-LTE Band 5: Rx: 869-894MHz, FDD-LTE Band 7: Rx: 2620-2690MHz,

RF Output Power:	FDD-LTE Band 2: 22.98dBm, FDD-LTE Band 4: 22.88dBm, FDD-LTE Band 5: 23.45dBm, FDD-LTE Band 7: 23.39dBm,
Type of Modulation:	QPSK, 16QAM
Antenna Type:	Integral Antenna
Antenna Gain:	FDD-LTE Band 2: -2.4dBi, FDD-LTE Band 4: -2.3dBi, FDD-LTE Band 5: -5.1dBi, FDD-LTE Band 7: -2.8dBi,
WIFI(2.4GHz)	
Support Standards:	802.11b, 802.11g, 802.11n
Frequency Range:	2412-2462MHz for 11b/g/n(HT20)
RF Output Power:	16.51dBm (Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Quantity of Channels:	11 for 802.11b/g/n(HT20)
Channel Separation:	5MHz
Antenna Type:	Integral Antenna
Antenna Gain:	1.0dBi
Bluetooth	
Bluetooth Version:	V5.0
Frequency Range:	2402-2480MHz
RF Output Power:	8.38dBm (Conducted)
Data Rate:	1Mbps, 2Mbps, 3Mbps
Modulation:	GFSK, $\pi/4$ DQPSK, 8DPSK
Quantity of Channels:	79/40
Channel Separation:	1MHz/2MHz
Antenna Type:	Integral Antenna
Antenna Gain:	1.0dBi
WIFI(5GHz)	
Support Standards:	802.11a, 802.11n-HT20/40, 802.11ac-HT20/40/80
Frequency Range:	Band 1: 5180-5240MHz, Band 2: 5260-5320MHz, Band 3: 5500-5700MHz, Band 4: 5745-5825MHz
RF Output Power:	6.83dBm (Conducted)
Type of Modulation:	BPSK, QPSK, 16QAM, 64QAM, 256-QAM
Type of Antenna:	Integral Antenna
Antenna Gain:	1.3dBi
<i>Note: The Antenna Gain is provided by the customer and can affect the validity of results.</i>	

1.2 Test Standards

The following report is prepared on behalf of the Fortune Ship International Industrial Limited in accordance with FCC 47 CFR Part 2.1093, IEEE Std C95.1: 2019, IEEE Std C95.3: 2002 + Rev. 2008, IEEE 1528:2013, KDB 447498 D01 v06, KDB 648474 D04 v01r03, KDB 248227 D01 v02r02, KDB 941225 D01 v03r01, KDB 941225 D05 v02r05 , and KDB 865664 D01 v01r04 and KDB 865664 D02 v01r02.

The objective is to determine compliance with FCC Part 2.1093 of the Federal Communication Commissions rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with KDB 865664 D01 v01r04 and KDB 865664 D02 v01r02. The public notice KDB 447498 D01 v06 for Mobile and Portable Devices RF Exposure Procedure also.

1.4 Test Facility

Address of the test laboratory

Laboratory: Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F, Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China

FCC – Registration No.: 125990

Waltek Testing Group (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. The Designation Number is CN5010. Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Waltek Testing Group (Shenzhen) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

2. Summary of Test Results

The maximum results of Specific Absorption Rate (SAR) have found during testing are as follows:

Frequency Band	Head SAR	Body-worn (10mm Gap)	Hotspot (10mm Gap)	SAR _{1g} Limit (W/kg)
	Maximum SAR _{1g} (W/kg)	Maximum SAR _{1g} (W/kg)	Maximum SAR _{1g} (W/kg)	
GSM	0.568	0.663	0.505	1.6
WCDMA	0.247	0.536	0.536	1.6
LTE	0.378	0.884	0.884	1.6
WLAN 2.4GHz	0.769	0.475	0.475	1.6
Bluetooth	0.063	0.041	0.041	1.6
WLAN 5GHz	0.781	0.655	0.655	1.6
Simultaneous Transmission	1.210	1.539	1.539	1.6

Remark:

The device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR Part 2.1093 and IEEE Std C95.1: 2019, and had been tested in accordance with the measurement methods and procedure specified in IEEE 1528:2013 and KDB 865664 D01 v01r04 and KDB 865664 D02 v01r02.

3. Specific Absorption Rate (SAR)

3.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

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:

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

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

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

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

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

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

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. SAR Measurement System

4.1 The 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.

4.2 Probe

For the measurements the Specific Dosimetric E-Field Probe SSE2 SN 45/15 EPGO280 with following specifications is used

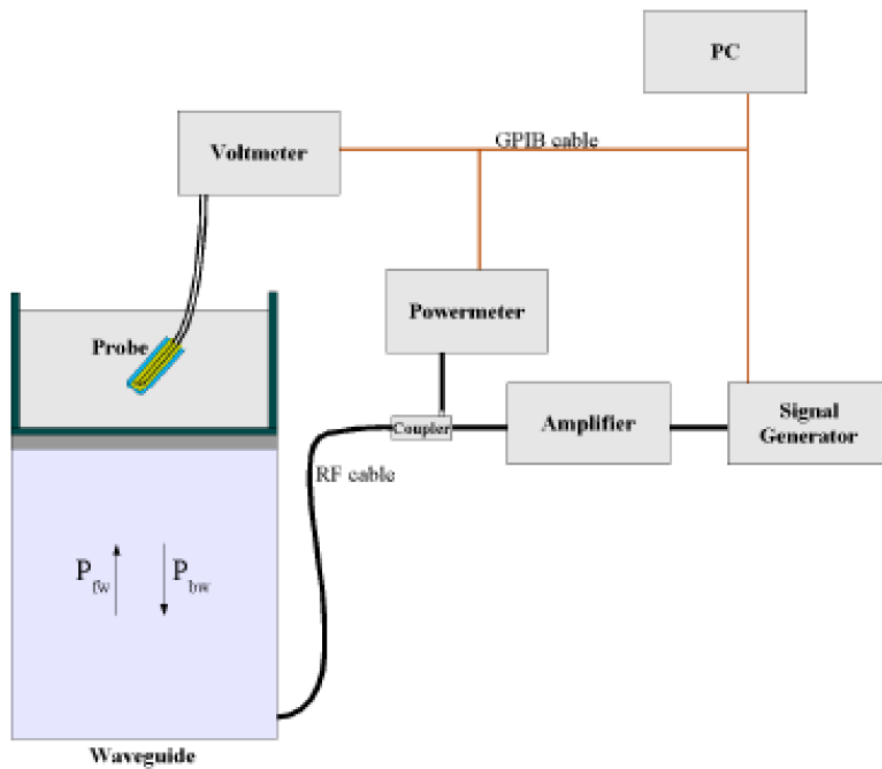
- Dynamic range: 0.01-100 W/kg
- Probe Length: 330 mm
- Length of Individual Dipoles: 4.5 mm
- Maximum external diameter: 8 mm
- Probe Tip External Diameter : 5 mm

Waltek Testing Group (Shenzhen) Co., Ltd.

[Http://www.waltek.com.cn](http://www.waltek.com.cn)

- Distance between dipoles / probe extremity: 2.7mm
- Probe linearity: <0.25 dB
- Axial Isotropy: <0.25 dB
- Spherical Isotropy: <0.50 dB
- Calibration range: 700 to 3000MHz 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 EN 62209-1 and IEEE 1528 STD, with CALISAR, Antenna proprietary calibration system. The calibration is performed with the EN 62209-1 annexe technique using reference guide at the five frequencies.



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

Where :

P_{fw} = Forward Power

P_{bw} = Backward Power

a and b = Waveguide dimensions

δ = 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.

Waltek Testing Group (Shenzhen) Co., Ltd.

[Http://www.waltek.com.cn](http://www.waltek.com.cn)

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

$$CF(N)=SAR(N)/V_{lin}(N) \quad (N=1,2,3)$$

The linearised output voltage $V_{lin}(N)$ is obtained from the displayed output voltage $V(N)$ using

$$V_{lin}(N)=V(N)*(1+V(N)/DCP(N)) \quad (N=1,2,3)$$

where DCP is the diode compression point in mV.

4.3 Probe Calibration Process

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 1mW/cm².

Temperature Assessment Procedure

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated 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:

$$SAR = C \frac{\Delta T}{\Delta t}$$

Δt = exposure time (30 seconds),

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

ΔT = temperature increase due to RF exposure.

SAR is proportional to $\Delta T / \Delta t$, 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.

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

Where:

σ = simulated tissue conductivity,

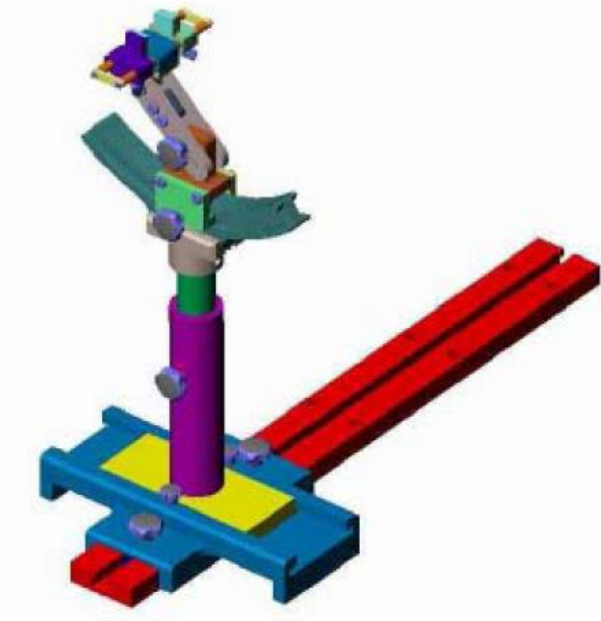
ρ = Tissue density (1.25 g/cm³ for brain tissue)

4.4 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.

4.5 Device Holder

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



System Material	Permittivity	Loss Tangent
Delrin	3.7	0.005

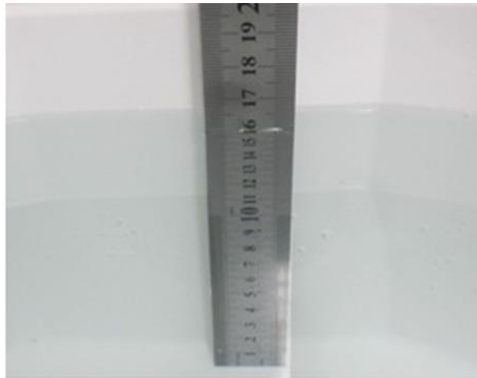
4.6 Test Equipment List

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
E-Field Probe	MVG	SSE2	SN 18/21 EPGO356	2022-07-08	2023-07-07
750MHz Dipole	MVG	SID750	SN 47/12 DIP 0G750-203	2020-03-11	2023-03-10
835MHz Dipole	MVG	SID835	SN 47/12 DIP 0G835-204	2020-03-11	2023-03-10
900MHz Dipole	MVG	SID900	SN 47/12 DIP 0G900-205	2020-03-11	2023-03-10
1800MHz Dipole	MVG	SID1800	SN 47/12 DIP 1G800-206	2020-03-11	2023-03-10
1900MHz Dipole	MVG	SID1900	SN 47/12 DIP 1G900-207	2020-03-11	2023-03-10
2000MHz Dipole	MVG	SID2000	SN 47/12 DIP 2G000-208	2020-03-11	2023-03-10
2300 MHz Dipole	MVG	SID2300	SN 50/20 DIP 2G300-513	2021-01-14	2024-01-13
2450MHz Dipole	MVG	SID2450	SN 13/15 DIP 2G450-364	2020-03-11	2023-03-10
2600MHz Dipole	MVG	SID2600	SN 28/21 DIP 2G600-590	2021-07-16	2024-07-15
5 GHz Dipole	MVG	SWG5500	SN 49/16 WGA45	2020-07-03	2023-07-02
Dielectric Probe	SATIMO	SCLMP	SN 47/12 OCPG49	2022-03-22	2023-03-21
SAM Phantom	SATIMO	SAM	SN/ 47/12 SAM95	N/A	N/A
Multi Meter	Keithley	Keithley 2000	4006367	2022-03-22	2023-03-21
Power meter	Keithley	3500	JC-2017-09-001	2022-03-22	2023-03-21
Power meter	Keithley	3500	JC-2017-09-001	2022-03-22	2023-03-21
Power Sensor	HP	11636B	JC-2017-10-002	2022-03-22	2023-03-21
MXG X-Series RF Vector Signal Generato	KEYSIGHT	N5182B	MY57300664	2022-03-22	2023-03-21
Universal Tester	Rohde & Schwarz	CMU200	112315	2022-03-22	2023-03-21
Universal Radio Communication Tester	Rohde & Schwarz	CMW500	148650	2022-03-22	2023-03-21
Network Analyzer	HP	8753C	2901A00831	2022-03-22	2023-03-21

5. Tissue Simulating Liquids

5.1 Composition of Tissue Simulating Liquid

For the measurement of the field distribution inside the SAM phantom with SMTIMO, 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. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. Please see the following photos for the liquid height.



Liquid Height for Head/Body SAR

The Composition of Tissue Simulating Liquid

Frequency (MHz)	Water (%)	Salt (%)	Sugar (%)	HEC (%)	Preventol (%)	DGBE (%)
Head/Body						
750	41.1	1.4	57.0	0.2	0.3	0
835	40.3	1.4	57.9	0.2	0.2	0
1700-1900	55.2	0.3	0	0	0	44.5
2450	55.0	0.1	0	0	0	44.9
2600	54.9	0.1	0	0	0	45.0

Frequency (MHz)	Water (%)	Hexyl Carbitol (%)	Triton X-100 (%)
Head/Body			
5200-5800	78.6	10.7	10.7

5.2 Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in P1528.

Target Frequency (MHz)	Head		Body	
	Conductivity (σ)	Permittivity (ϵ_r)	Conductivity (σ)	Permittivity (ϵ_r)
150	0.76	52.3	0.80	61.9
300	0.87	45.3	0.92	58.2
450	0.87	43.5	0.94	56.7
750	0.89	41.9	0.96	55.5
835	0.90	41.5	0.97	55.2
900	0.97	41.5	1.05	55.0
915	0.98	41.5	1.06	55.0
1450	1.20	40.5	1.30	54.0
1610	1.29	40.3	1.40	53.8
1800-2000	1.40	40.0	1.52	53.3
2450	1.80	39.2	1.95	52.7
2600	1.96	39.0	2.16	52.5
3000	2.40	38.5	2.73	52.0
5200	4.66	36.0	5.30	49.0
5400	4.86	35.8	5.53	48.7
5600	5.07	35.5	5.77	48.5
5800	5.27	35.3	6.00	48.2

5.3 Tissue Calibration Result

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

Calibration Result for Dielectric Parameters of Tissue Simulating Liquid

Head Tissue Simulating Liquid									
Freq. MHz.	Temp. (°C)	Conductivity			Permittivity			Limit (%)	Date
		Reading (σ)	Target (σ)	Delta (%)	Reading (ϵ_r)	Target (ϵ_r)	Delta (%)		
835	22.2	0.88	0.90	-2.22	40.75	41.50	-1.81	±5	2022-07-30
1800	22.2	1.38	1.40	-1.43	39.43	40.00	-1.43	±5	2022-08-01
1900	22.2	1.39	1.40	-0.71	39.06	40.00	-2.35	±5	2022-08-01
2450	22.2	1.77	1.80	-1.67	38.45	39.20	-1.91	±5	2022-08-08
2600	22.2	1.97	1.96	0.51	37.93	39.00	-2.74	±5	2022-08-08
5200	22.5	4.64	4.66	-0.43	36.18	36.00	0.50	±5	2022-08-17
5400	22.5	4.87	4.86	0.21	36.51	35.80	1.98	±5	2022-08-17
5600	22.5	5.11	5.07	0.79	36.46	35.50	2.70	±5	2022-08-17
5800	22.5	5.28	5.27	0.19	34.91	35.30	-1.10	±5	2022-08-17

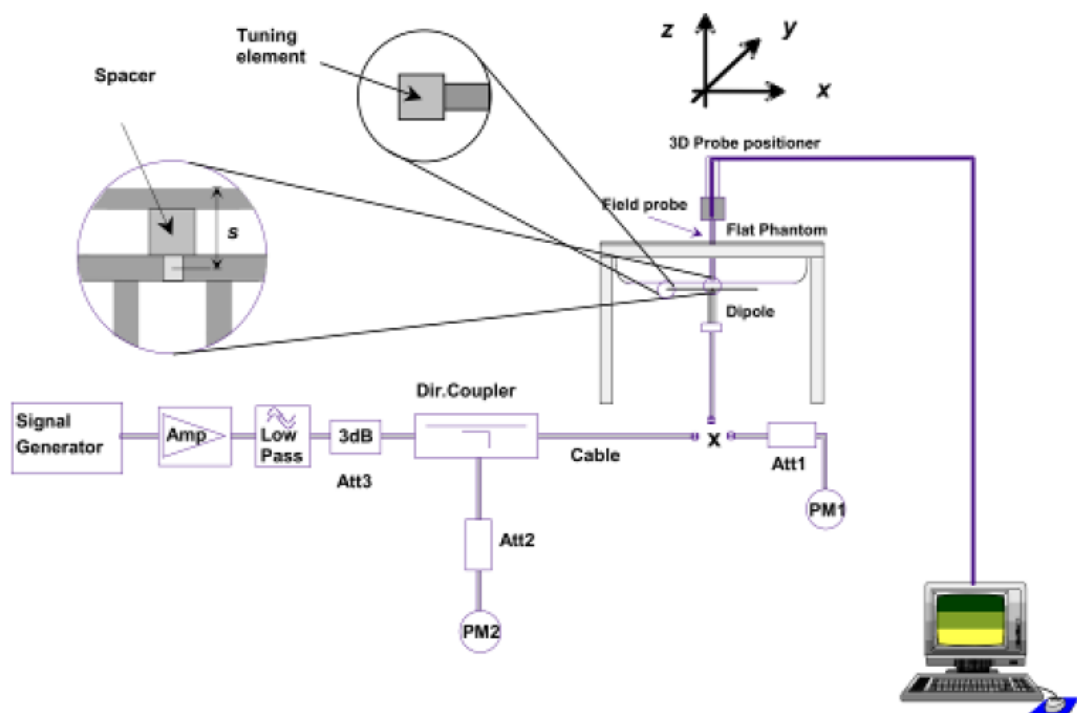
6. SAR Measurement Evaluation

6.1 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.

6.2 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 which comes from a signal generator at frequency 835MHz, 1800MHz, 1900MHz, 2450MHz, 2600MHz, and 5GHz. 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.



System Verification Setup Block Diagram



Setup Photo of Dipole Antenna

The output power on dipole port must be calibrated to 24 dBm(250 mW) before dipole is connected.
The output power on 5 GHz Waveguide must be calibrated to 20 dBm (100mW) before 5 GHz Waveguide is connected.

6.3 Validation Results

Comparing to the original SAR value provided by SATIMO, the validation data should be within its specification of 10 %. Table 6.1 shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion.

Frequency	Targeted SAR _{1g}	Measured SAR _{1g}	Normalized SAR _{1g}	Tolerance	Date
MHz	(W/kg)	(W/kg)	(W/kg)	(%)	
Head					
835	9.65	2.51	10.04	4.04	2022-07-30
1800	38.49	9.46	37.84	-1.69	2022-08-01
1900	39.59	9.91	39.64	0.13	2022-08-01
2450	53.76	13.75	55.00	2.31	2022-08-08
2600	56.81	13.54	54.16	-4.66	2022-08-08
5200	161.23	16.746	167.46	3.86	2022-08-17
5400	165.58	17.481	174.81	5.57	2022-08-17
5600	173.58	17.604	176.04	1.42	2022-08-17
5800	179.32	17.961	179.61	0.16	2022-08-17

Remark: Referring to IEEE 1528:2013, Section 8.2, The system check shall be performed at a test frequency that is within $\pm 10\%$ or ± 100 MHz of the compliance test mid-band frequency, so the 1750 MHz system verification is made of 1800MHz Dipole.

Targeted and Measurement SAR

Please refer to Annex A for the plots of system performance check.

7. EUT Testing Position

7.1 Define Two Imaginary Lines on The Handset

- (a) The vertical centerline passes through two points on the front side of the handset - the midpoint of the width w_t of the handset at the level of the acoustic output, and the midpoint of the width w_b of the bottom of the handset.
- (b) The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.
- (c) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.

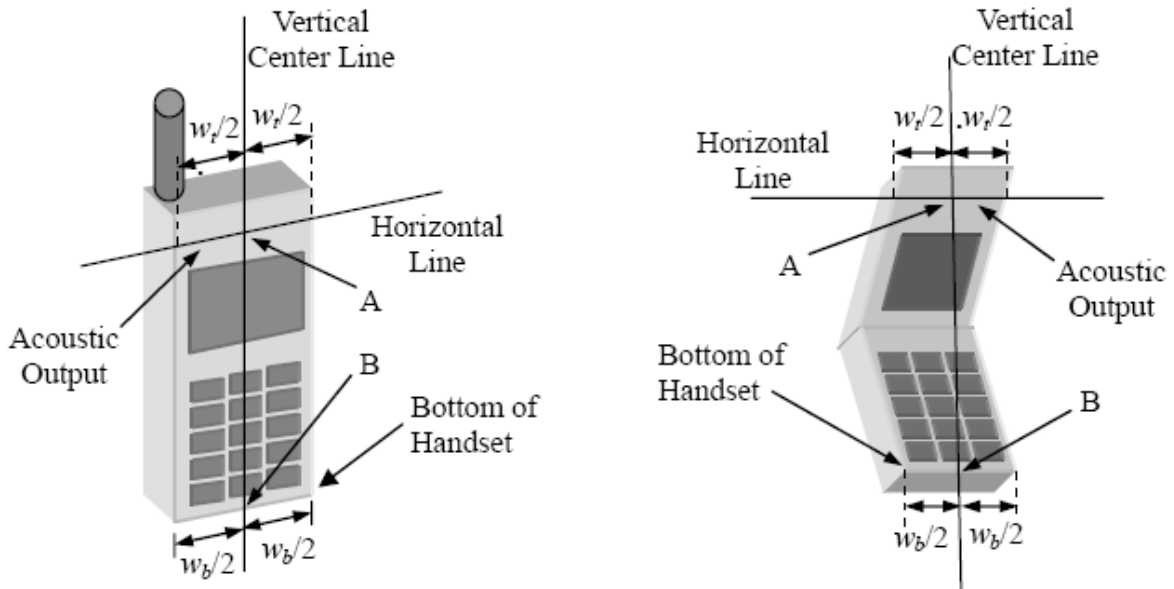


Illustration for Handset Vertical and Horizontal Reference Lines

7.2 Cheek Position

- (a) 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.
- (b) 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 Fig. 7.2).

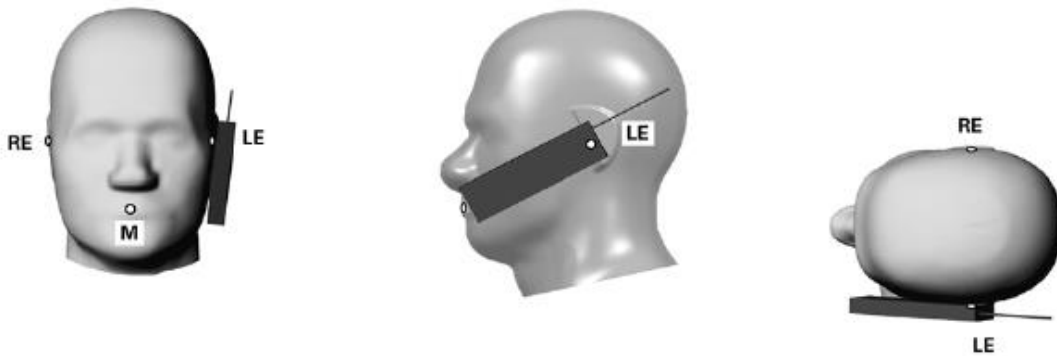


Illustration for Cheek Position

7.3 Tilted Position

- (a) To position the device in the “cheek” position described above.
- (b) 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 Fig. 7.3).

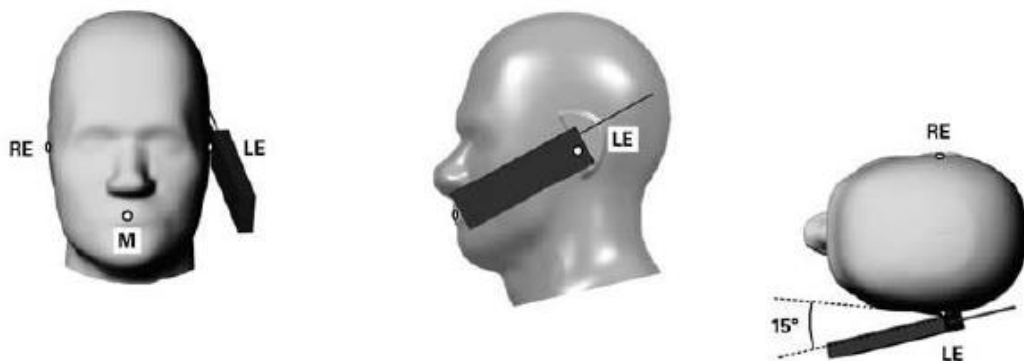


Illustration for Tilted Position

7.4 Body Position

- (a) To position the device parallel to the phantom surface with each side.
- (b) To adjust the device parallel to the flat phantom.
- (c) To adjust the distance between the device surface and the flat phantom to 10mm.

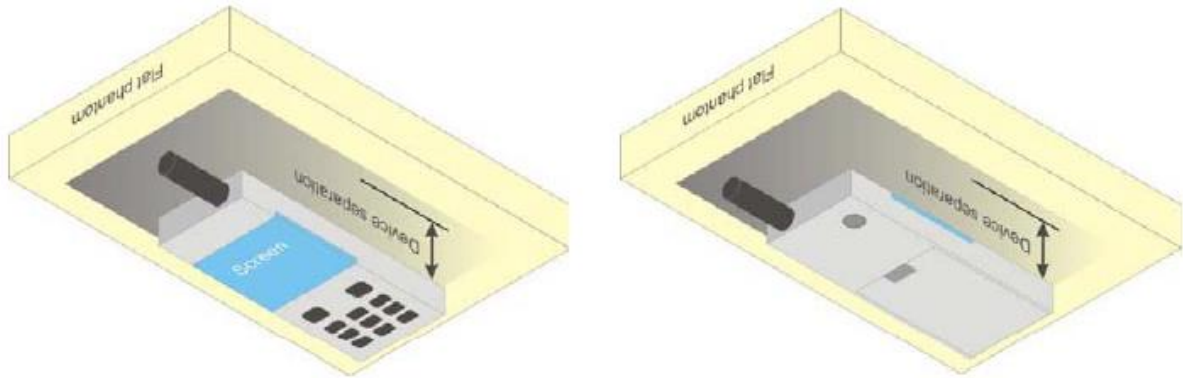
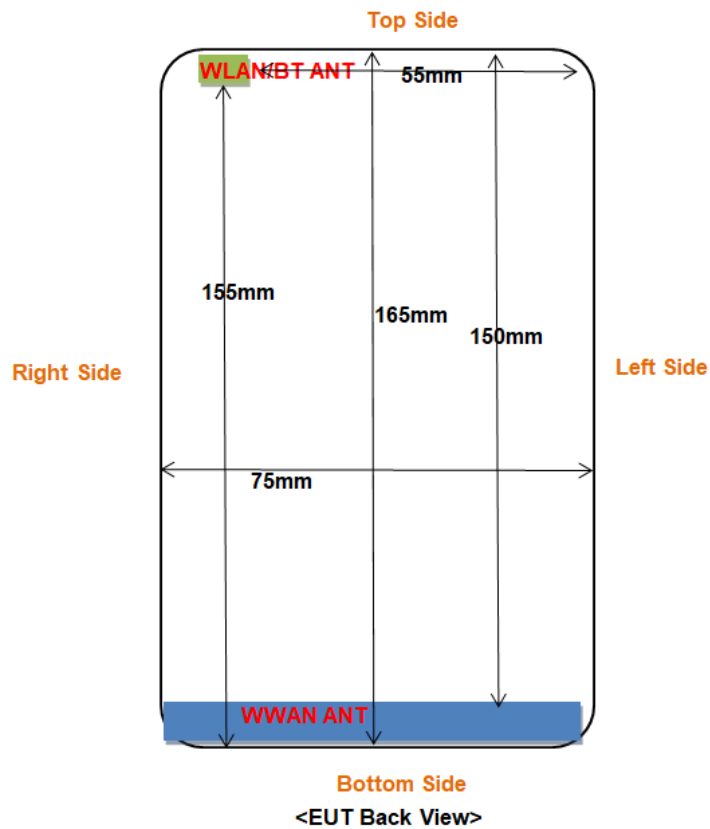


Illustration for Body Position

7.5 EUT Antenna Position



Block Diagram for EUT Antenna Position

Distance of EUT antenna-to-edge/surface(mm), Test distance:10mm						
Antennas	Back side	Front side	Left Edge	Right Edge	Top Edge	Bottom Edge
WWAN	<25	<25	<25	<25	150	<25
WLAN/BT	<25	<25	55	<25	<25	155

7.6 EUT Testing Position

Head/Body mode SAR assessments are required for this device. This EUT was tested in different positions for different SAR test modes, more information as below:

Head SAR tests				
Antennas	Right Cheek	Left Cheek	Right Tilted	Left Tilted
WWAN	Yes	Yes	Yes	Yes
WLAN/BT	Yes	Yes	Yes	Yes

Body SAR tests, Test distance: 10mm						
Antennas	Back side	Front side	Left Edge	Right Edge	Top Edge	Bottom Edge
WWAN	Yes	Yes	Yes	Yes	No	Yes
WLAN/BT	Yes	Yes	No	Yes	Yes	No

Remark:

- Referring to KDB 941225 D06, when the overall device length and width are $\geq 9\text{cm} \times 5\text{cm}$, the test separation distances is 10 mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge. When the form factor of a handset is smaller than 9 cm × 5 cm, a test separation distance of 5 mm (instead of 10 mm) is required for testing hotspot mode.
- Referring to KDB 648474 D04 Handset SAR v01r03, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg

Please refer to Annex D for the EUT test setup photos.

8. SAR Measurement Procedures

8.1 Measurement Procedures

The measurement procedures are as follows:

- (a) Use base station simulator (if applicable) or engineering software to transmit RF power continuously (continuous Tx) in the highest power channel.
- (b) Keep EUT to radiate maximum output power or 100% factor (if applicable)
- (c) Measure output power through RF cable and power meter.
- (d) Place the EUT in the positions as Annex D demonstrates.
- (e) Set scan area, grid size and other setting on the SATIMO software.
- (f) Measure SAR results for the highest power channel on each testing position.
- (g) Find out the largest SAR result on these testing positions of each band
- (h) Measure SAR results for other channels in worst SAR testing position if the SAR of highest power channel is larger than 0.8 W/kg

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

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

8.2 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 SATIMO 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. 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
- (c) Generation of a high-resolution mesh within the measured volume
- (d) Interpolation of all measured values from the measurement grid to the high-resolution grid
- (e) Extrapolation of the entire 3D 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

8.3 Area & Zoom Scan Procedures

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan measures 5x5x7 points with step size 8, 8 and 5 mm for 300 MHz to 3 GHz, and 8x8x8 points with step size 4, 4 and 2.5 mm for 3 GHz to 6 GHz. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g.

8.4 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing (step-size is 4, 4 and 2.5 mm). When all volume scan were completed, the software can combine and subsequently superpose these measurement data to calculating the multiband SAR.

8.5 SAR Averaged Methods

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

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

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

8.6 Power Drift Monitoring

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

9. SAR Test Result

9.1 Conducted RF Output Power

GSM - Burst Average Power (dBm)								
Band	GSM850			Tune-up power (dBm)	PCS1900			Tune-up power (dBm)
Channel	128	190	251		512	661	810	
Frequency (MHz)	824.2	836.6	848.8		1850.2	1880	1909.8	
GSM	32.31	32.36	32.32	32.5	30.47	30.73	30.62	31.0
GPRS (1 slot)	32.45	32.36	32.27	32.5	30.43	30.76	30.70	31.0
GPRS (2 slots)	31.67	31.60	31.58	32.0	29.69	29.95	29.91	30.0
GPRS (3 slots)	29.76	29.83	29.91	30.0	28.06	28.19	28.15	28.5
GPRS (4 slots)	28.73	28.69	28.62	29.0	26.95	27.03	26.98	27.5
EDGE (1 slot)	26.66	26.62	26.67	27.0	25.66	25.90	26.27	26.5
EDGE (2 slots)	25.64	25.52	25.33	26.0	24.76	24.97	25.34	25.5
EDGE (3 slots)	23.43	23.44	23.22	23.5	22.84	22.91	23.00	23.5
EDGE (4 slots)	22.14	22.06	21.93	22.5	21.52	21.64	21.84	22.0

GSM - Source-Based Time-Average Power (dBm)								
Band	GSM850			Tune-up power (dBm)	PCS1900			Tune-up power (dBm)
Channel	128	190	251		512	661	810	
Frequency (MHz)	824.2	836.6	848.8		1850.2	1880	1909.8	
GSM	23.31	23.36	23.32	23.5	21.47	21.73	21.62	22.0
GPRS (1 slot)	23.45	23.36	23.27	23.5	21.43	21.76	21.70	22.0
GPRS (2 slots)	25.67	25.60	25.58	26.0	23.69	23.95	23.91	24.0
GPRS (3 slots)	25.51	25.58	25.66	26.0	23.81	23.94	23.90	24.0
GPRS (4 slots)	25.73	25.69	25.62	26.0	23.95	24.03	23.98	24.5
EDGE (1 slot)	17.66	17.62	17.67	18.0	16.66	16.90	17.27	17.5
EDGE (2 slots)	19.64	19.52	19.33	20.0	18.76	18.97	19.34	19.5
EDGE (3 slots)	19.18	19.19	18.97	19.5	18.59	18.66	18.75	19.0
EDGE (4 slots)	19.14	19.06	18.93	19.5	18.52	18.64	18.84	19.0

Note: The source-based time-averaged power is linearly scaled the maximum burst averaged power based on time slots. The calculated method are shown as below:

Source based time-average power = Burst averaged power - Duty cycle factor in dB

Duty cycle factor = 9 dB for 1 Tx slot, 6 dB for 2 Tx slots, 4.25 dB for 3 Tx slots, 3 dB for 4 Tx slots

Remark:

1. For Head SAR testing, GSM should be evaluated; therefore the EUT was set in GSM for GSM850 and GSM1900 due to its highest source-based time-average power.
2. For Body SAR testing, GPRS should be evaluated; therefore the EUT was set in GPRS (4TX slots) for GSM850 and GPRS (4TX slots) for GSM1900 due to its highest source-based time-average power.

3. Per KDB 447498 D01 v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
4. The DUT do not support DTM function.
5. The DUT do not support Hotspot function.

WCDMA - Average Power (dBm)								
Band	WCDMA Band II				WCDMA Band V			
Channel	9262	9400	9538	Tune-up	4132	4183	4233	Tune-up
Frequency (MHz)	1852.4	1880.0	1907.6	power (dBm)	826.4	836.4	846.6	power (dBm)
RMC 12.2k	22.52	22.66	22.76	23.0	22.70	22.71	22.73	23.0
HSDPA Subtest-1	21.48	21.58	21.69	22.0	21.65	21.63	21.65	22.0
HSDPA Subtest-2	21.39	21.45	21.56	22.0	21.53	21.52	21.58	22.0
HSDPA Subtest-3	21.28	21.38	21.45	22.0	21.48	21.43	21.47	22.0
HSDPA Subtest-4	21.22	21.29	21.38	22.0	21.37	21.35	21.32	22.0
HSUPA Subtest-1	21.04	21.11	21.30	21.5	21.26	21.23	21.24	21.5
HSUPA Subtest-2	20.99	21.05	21.24	21.5	21.18	21.15	21.12	21.5
HSUPA Subtest-3	20.86	20.97	21.13	21.5	21.05	21.03	21.06	21.5
HSUPA Subtest-4	20.73	20.88	21.05	21.5	20.97	20.91	20.96	21.5
HSUPA Subtest-5	20.62	20.72	20.94	21.5	20.85	20.83	20.89	21.5

WCDMA - Average Power (dBm)								
Band	WCDMA Band IV							
Channel	1312	1413	1513	Tune-up				
Frequency (MHz)	1712.4	1732.6	1752.6	power (dBm)				
RMC 12.2k	22.44	22.30	22.22	22.5				
HSDPA Subtest-1	21.40	21.32	21.24	21.5				
HSDPA Subtest-2	21.31	21.26	21.18	21.5				
HSDPA Subtest-3	21.25	21.17	21.06	21.5				
HSDPA Subtest-4	21.19	21.08	20.98	21.5				
HSUPA Subtest-1	21.06	20.86	20.75	21.5				
HSUPA Subtest-2	20.96	20.74	20.63	21.5				
HSUPA Subtest-3	20.85	20.69	20.57	21.5				
HSUPA Subtest-4	20.78	20.58	20.42	21.5				
HSUPA Subtest-5	20.63	20.51	20.35	21.5				

Remark:

1. Per KDB 941225 D01 v03, the 12.2kbps RMC mode was selected for SAR testing (the primary mode).
2. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq 1/4$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

FDD-LTE Band 2:

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
18607	1.4	QPSK	1	LOW	0	33	22.3	Pass
18607	1.4	QPSK	1	MID	0	33	22.39	Pass
18607	1.4	QPSK	1	HIGH	0	33	22.28	Pass
18607	1.4	QPSK	3	LOW	0	33	22.38	Pass
18607	1.4	QPSK	3	MID	0	33	22.45	Pass
18607	1.4	QPSK	3	HIGH	0	33	22.36	Pass
18607	1.4	QPSK	6	LOW	0	33	21.38	Pass
18607	1.4	Q16	1	LOW	0	33	21.41	Pass
18607	1.4	Q16	1	MID	0	33	21.63	Pass
18607	1.4	Q16	1	HIGH	0	33	21.41	Pass
18607	1.4	Q16	3	LOW	0	33	21.47	Pass
18607	1.4	Q16	3	MID	0	33	21.42	Pass
18607	1.4	Q16	3	HIGH	0	33	21.42	Pass
18607	1.4	Q16	6	LOW	0	33	20.57	Pass
18900	1.4	QPSK	1	LOW	0	33	22.62	Pass
18900	1.4	QPSK	1	MID	0	33	22.74	Pass
18900	1.4	QPSK	1	HIGH	0	33	22.64	Pass
18900	1.4	QPSK	3	LOW	0	33	22.73	Pass
18900	1.4	QPSK	3	MID	0	33	22.73	Pass
18900	1.4	QPSK	3	HIGH	0	33	22.68	Pass
18900	1.4	QPSK	6	LOW	0	33	21.69	Pass
18900	1.4	Q16	1	LOW	0	33	21.9	Pass
18900	1.4	Q16	1	MID	0	33	22.14	Pass
18900	1.4	Q16	1	HIGH	0	33	21.94	Pass
18900	1.4	Q16	3	LOW	0	33	21.86	Pass
18900	1.4	Q16	3	MID	0	33	21.84	Pass
18900	1.4	Q16	3	HIGH	0	33	21.83	Pass
18900	1.4	Q16	6	LOW	0	33	20.61	Pass
19193	1.4	QPSK	1	LOW	0	33	22.71	Pass
19193	1.4	QPSK	1	MID	0	33	22.98	Pass
19193	1.4	QPSK	1	HIGH	0	33	22.72	Pass
19193	1.4	QPSK	3	LOW	0	33	22.79	Pass
19193	1.4	QPSK	3	MID	0	33	22.85	Pass
19193	1.4	QPSK	3	HIGH	0	33	22.79	Pass
19193	1.4	QPSK	6	LOW	0	33	21.76	Pass
19193	1.4	Q16	1	LOW	0	33	21.67	Pass
19193	1.4	Q16	1	MID	0	33	21.82	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
19193	1.4	Q16	1	HIGH	0	33	21.66	Pass
19193	1.4	Q16	3	LOW	0	33	21.88	Pass
19193	1.4	Q16	3	MID	0	33	21.92	Pass
19193	1.4	Q16	3	HIGH	0	33	21.83	Pass
19193	1.4	Q16	6	LOW	0	33	20.95	Pass
18615	3	QPSK	1	LOW	0	33	22.31	Pass
18615	3	QPSK	1	MID	0	33	22.35	Pass
18615	3	QPSK	1	HIGH	0	33	22.26	Pass
18615	3	QPSK	8	LOW	0	33	21.33	Pass
18615	3	QPSK	8	MID	0	33	21.37	Pass
18615	3	QPSK	8	HIGH	0	33	21.35	Pass
18615	3	QPSK	15	LOW	0	33	21.32	Pass
18615	3	Q16	1	LOW	0	33	21.24	Pass
18615	3	Q16	1	MID	0	33	21.21	Pass
18615	3	Q16	1	HIGH	0	33	21.23	Pass
18615	3	Q16	8	LOW	0	33	20.47	Pass
18615	3	Q16	8	MID	0	33	20.53	Pass
18615	3	Q16	8	HIGH	0	33	20.46	Pass
18615	3	Q16	15	LOW	0	33	20.38	Pass
18900	3	QPSK	1	LOW	0	33	22.61	Pass
18900	3	QPSK	1	MID	0	33	22.63	Pass
18900	3	QPSK	1	HIGH	0	33	22.62	Pass
18900	3	QPSK	8	LOW	0	33	21.63	Pass
18900	3	QPSK	8	MID	0	33	21.71	Pass
18900	3	QPSK	8	HIGH	0	33	21.65	Pass
18900	3	QPSK	15	LOW	0	33	21.6	Pass
18900	3	Q16	1	LOW	0	33	21.91	Pass
18900	3	Q16	1	MID	0	33	21.97	Pass
18900	3	Q16	1	HIGH	0	33	22.02	Pass
18900	3	Q16	8	LOW	0	33	20.75	Pass
18900	3	Q16	8	MID	0	33	20.8	Pass
18900	3	Q16	8	HIGH	0	33	20.71	Pass
18900	3	Q16	15	LOW	0	33	20.65	Pass
19185	3	QPSK	1	LOW	0	33	22.71	Pass
19185	3	QPSK	1	MID	0	33	22.72	Pass
19185	3	QPSK	1	HIGH	0	33	22.74	Pass
19185	3	QPSK	8	LOW	0	33	21.72	Pass
19185	3	QPSK	8	MID	0	33	21.74	Pass
19185	3	QPSK	8	HIGH	0	33	21.7	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
19185	3	QPSK	15	LOW	0	33	21.71	Pass
19185	3	Q16	1	LOW	0	33	21.69	Pass
19185	3	Q16	1	MID	0	33	21.67	Pass
19185	3	Q16	1	HIGH	0	33	21.6	Pass
19185	3	Q16	8	LOW	0	33	20.77	Pass
19185	3	Q16	8	MID	0	33	20.85	Pass
19185	3	Q16	8	HIGH	0	33	20.77	Pass
19185	3	Q16	15	LOW	0	33	20.68	Pass
18625	5	QPSK	1	LOW	0	33	22.2	Pass
18625	5	QPSK	1	MID	0	33	22.45	Pass
18625	5	QPSK	1	HIGH	0	33	22.24	Pass
18625	5	QPSK	12	LOW	0	33	21.24	Pass
18625	5	QPSK	12	MID	0	33	21.37	Pass
18625	5	QPSK	12	HIGH	0	33	21.32	Pass
18625	5	QPSK	25	LOW	0	33	21.25	Pass
18625	5	Q16	1	LOW	0	33	21.42	Pass
18625	5	Q16	1	MID	0	33	21.53	Pass
18625	5	Q16	1	HIGH	0	33	21.38	Pass
18625	5	Q16	12	LOW	0	33	20.32	Pass
18625	5	Q16	12	MID	0	33	20.45	Pass
18625	5	Q16	12	HIGH	0	33	20.39	Pass
18625	5	Q16	25	LOW	0	33	20.31	Pass
18900	5	QPSK	1	LOW	0	33	22.5	Pass
18900	5	QPSK	1	MID	0	33	22.66	Pass
18900	5	QPSK	1	HIGH	0	33	22.57	Pass
18900	5	QPSK	12	LOW	0	33	21.54	Pass
18900	5	QPSK	12	MID	0	33	21.65	Pass
18900	5	QPSK	12	HIGH	0	33	21.61	Pass
18900	5	QPSK	25	LOW	0	33	21.6	Pass
18900	5	Q16	1	LOW	0	33	21.97	Pass
18900	5	Q16	1	MID	0	33	22.13	Pass
18900	5	Q16	1	HIGH	0	33	22.04	Pass
18900	5	Q16	12	LOW	0	33	20.74	Pass
18900	5	Q16	12	MID	0	33	20.79	Pass
18900	5	Q16	12	HIGH	0	33	20.7	Pass
18900	5	Q16	25	LOW	0	33	20.67	Pass
19175	5	QPSK	1	LOW	0	33	22.57	Pass
19175	5	QPSK	1	MID	0	33	22.72	Pass
19175	5	QPSK	1	HIGH	0	33	22.62	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
19175	5	QPSK	12	LOW	0	33	21.66	Pass
19175	5	QPSK	12	MID	0	33	21.78	Pass
19175	5	QPSK	12	HIGH	0	33	21.64	Pass
19175	5	QPSK	25	LOW	0	33	21.73	Pass
19175	5	Q16	1	LOW	0	33	21.62	Pass
19175	5	Q16	1	MID	0	33	21.77	Pass
19175	5	Q16	1	HIGH	0	33	21.67	Pass
19175	5	Q16	12	LOW	0	33	20.74	Pass
19175	5	Q16	12	MID	0	33	20.84	Pass
19175	5	Q16	12	HIGH	0	33	20.78	Pass
19175	5	Q16	25	LOW	0	33	20.69	Pass
18650	10	QPSK	1	LOW	0	33	22.37	Pass
18650	10	QPSK	1	MID	0	33	22.48	Pass
18650	10	QPSK	1	HIGH	0	33	22.44	Pass
18650	10	QPSK	25	LOW	0	33	21.32	Pass
18650	10	QPSK	25	MID	0	33	21.4	Pass
18650	10	QPSK	25	HIGH	0	33	21.44	Pass
18650	10	QPSK	50	LOW	0	33	21.36	Pass
18650	10	Q16	1	LOW	0	33	21.25	Pass
18650	10	Q16	1	MID	0	33	21.44	Pass
18650	10	Q16	1	HIGH	0	33	21.33	Pass
18650	10	Q16	25	LOW	0	33	20.41	Pass
18650	10	Q16	25	MID	0	33	20.46	Pass
18650	10	Q16	25	HIGH	0	33	20.49	Pass
18650	10	Q16	50	LOW	0	33	20.39	Pass
18900	10	QPSK	1	LOW	0	33	22.63	Pass
18900	10	QPSK	1	MID	0	33	22.82	Pass
18900	10	QPSK	1	HIGH	0	33	22.71	Pass
18900	10	QPSK	25	LOW	0	33	21.67	Pass
18900	10	QPSK	25	MID	0	33	21.68	Pass
18900	10	QPSK	25	HIGH	0	33	21.64	Pass
18900	10	QPSK	50	LOW	0	33	21.67	Pass
18900	10	Q16	1	LOW	0	33	21.88	Pass
18900	10	Q16	1	MID	0	33	22.08	Pass
18900	10	Q16	1	HIGH	0	33	22.03	Pass
18900	10	Q16	25	LOW	0	33	20.71	Pass
18900	10	Q16	25	MID	0	33	20.75	Pass
18900	10	Q16	25	HIGH	0	33	20.67	Pass
18900	10	Q16	50	LOW	0	33	20.68	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
19150	10	QPSK	1	LOW	0	33	22.76	Pass
19150	10	QPSK	1	MID	0	33	22.79	Pass
19150	10	QPSK	1	HIGH	0	33	22.75	Pass
19150	10	QPSK	25	LOW	0	33	21.78	Pass
19150	10	QPSK	25	MID	0	33	21.71	Pass
19150	10	QPSK	25	HIGH	0	33	21.69	Pass
19150	10	QPSK	50	LOW	0	33	21.69	Pass
19150	10	Q16	1	LOW	0	33	21.56	Pass
19150	10	Q16	1	MID	0	33	21.79	Pass
19150	10	Q16	1	HIGH	0	33	21.63	Pass
19150	10	Q16	25	LOW	0	33	20.87	Pass
19150	10	Q16	25	MID	0	33	20.8	Pass
19150	10	Q16	25	HIGH	0	33	20.81	Pass
19150	10	Q16	50	LOW	0	33	20.74	Pass
18675	15	QPSK	1	LOW	0	33	22.28	Pass
18675	15	QPSK	1	MID	0	33	22.37	Pass
18675	15	QPSK	1	HIGH	0	33	22.33	Pass
18675	15	QPSK	36	LOW	0	33	21.38	Pass
18675	15	QPSK	36	MID	0	33	21.47	Pass
18675	15	QPSK	36	HIGH	0	33	21.51	Pass
18675	15	QPSK	75	LOW	0	33	21.47	Pass
18675	15	Q16	1	LOW	0	33	21.18	Pass
18675	15	Q16	1	MID	0	33	21.28	Pass
18675	15	Q16	1	HIGH	0	33	21.29	Pass
18675	15	Q16	36	LOW	0	33	20.36	Pass
18675	15	Q16	36	MID	0	33	20.45	Pass
18675	15	Q16	36	HIGH	0	33	20.45	Pass
18675	15	Q16	75	LOW	0	33	20.42	Pass
18900	15	QPSK	1	LOW	0	33	22.46	Pass
18900	15	QPSK	1	MID	0	33	22.66	Pass
18900	15	QPSK	1	HIGH	0	33	22.6	Pass
18900	15	QPSK	36	LOW	0	33	21.75	Pass
18900	15	QPSK	36	MID	0	33	21.78	Pass
18900	15	QPSK	36	HIGH	0	33	21.73	Pass
18900	15	QPSK	75	LOW	0	33	21.74	Pass
18900	15	Q16	1	LOW	0	33	21.73	Pass
18900	15	Q16	1	MID	0	33	21.97	Pass
18900	15	Q16	1	HIGH	0	33	21.99	Pass
18900	15	Q16	36	LOW	0	33	20.72	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
18900	15	Q16	36	MID	0	33	20.78	Pass
18900	15	Q16	36	HIGH	0	33	20.76	Pass
18900	15	Q16	75	LOW	0	33	20.74	Pass
19125	15	QPSK	1	LOW	0	33	22.66	Pass
19125	15	QPSK	1	MID	0	33	22.74	Pass
19125	15	QPSK	1	HIGH	0	33	22.61	Pass
19125	15	QPSK	36	LOW	0	33	21.86	Pass
19125	15	QPSK	36	MID	0	33	21.85	Pass
19125	15	QPSK	36	HIGH	0	33	21.76	Pass
19125	15	QPSK	75	LOW	0	33	21.78	Pass
19125	15	Q16	1	LOW	0	33	21.88	Pass
19125	15	Q16	1	MID	0	33	21.91	Pass
19125	15	Q16	1	HIGH	0	33	21.92	Pass
19125	15	Q16	36	LOW	0	33	20.73	Pass
19125	15	Q16	36	MID	0	33	20.74	Pass
19125	15	Q16	36	HIGH	0	33	20.68	Pass
19125	15	Q16	75	LOW	0	33	20.73	Pass
18700	20	QPSK	1	LOW	0	33	22.14	Pass
18700	20	QPSK	1	MID	0	33	22.58	Pass
18700	20	QPSK	1	HIGH	0	33	22.19	Pass
18700	20	QPSK	50	LOW	0	33	21.33	Pass
18700	20	QPSK	50	MID	0	33	21.43	Pass
18700	20	QPSK	50	HIGH	0	33	21.45	Pass
18700	20	QPSK	100	LOW	0	33	21.4	Pass
18700	20	Q16	1	LOW	0	33	21.65	Pass
18700	20	Q16	1	MID	0	33	22.01	Pass
18700	20	Q16	1	HIGH	0	33	21.63	Pass
18700	20	Q16	50	LOW	0	33	20.36	Pass
18700	20	Q16	50	MID	0	33	20.46	Pass
18700	20	Q16	50	HIGH	0	33	20.52	Pass
18700	20	Q16	100	LOW	0	33	20.43	Pass
18900	20	QPSK	1	LOW	0	33	22.3	Pass
18900	20	QPSK	1	MID	0	33	22.86	Pass
18900	20	QPSK	1	HIGH	0	33	22.54	Pass
18900	20	QPSK	50	LOW	0	33	21.66	Pass
18900	20	QPSK	50	MID	0	33	21.69	Pass
18900	20	QPSK	50	HIGH	0	33	21.69	Pass
18900	20	QPSK	100	LOW	0	33	21.71	Pass
18900	20	Q16	1	LOW	0	33	21.63	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
18900	20	Q16	1	MID	0	33	22.17	Pass
18900	20	Q16	1	HIGH	0	33	21.89	Pass
18900	20	Q16	50	LOW	0	33	20.72	Pass
18900	20	Q16	50	MID	0	33	20.72	Pass
18900	20	Q16	50	HIGH	0	33	20.68	Pass
18900	20	Q16	100	LOW	0	33	20.71	Pass
19100	20	QPSK	1	LOW	0	33	22.43	Pass
19100	20	QPSK	1	MID	0	33	22.82	Pass
19100	20	QPSK	1	HIGH	0	33	22.43	Pass
19100	20	QPSK	50	LOW	0	33	21.71	Pass
19100	20	QPSK	50	MID	0	33	21.67	Pass
19100	20	QPSK	50	HIGH	0	33	21.45	Pass
19100	20	QPSK	100	LOW	0	33	21.62	Pass
19100	20	Q16	1	LOW	0	33	21.8	Pass
19100	20	Q16	1	MID	0	33	22.06	Pass
19100	20	Q16	1	HIGH	0	33	21.77	Pass
19100	20	Q16	50	LOW	0	33	20.69	Pass
19100	20	Q16	50	MID	0	33	20.63	Pass
19100	20	Q16	50	HIGH	0	33	20.43	Pass
19100	20	Q16	100	LOW	0	33	20.64	Pass

FDD-LTE Band 4:

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
19957	1.4	QPSK	1	LOW	0	30	22.58	Pass
19957	1.4	QPSK	1	MID	0	30	22.7	Pass
19957	1.4	QPSK	1	HIGH	0	30	22.53	Pass
19957	1.4	QPSK	3	LOW	0	30	22.63	Pass
19957	1.4	QPSK	3	MID	0	30	22.63	Pass
19957	1.4	QPSK	3	HIGH	0	30	22.63	Pass
19957	1.4	QPSK	6	LOW	0	30	21.62	Pass
19957	1.4	Q16	1	LOW	0	30	21.71	Pass
19957	1.4	Q16	1	MID	0	30	21.91	Pass
19957	1.4	Q16	1	HIGH	0	30	21.72	Pass
19957	1.4	Q16	3	LOW	0	30	21.71	Pass
19957	1.4	Q16	3	MID	0	30	21.71	Pass
19957	1.4	Q16	3	HIGH	0	30	21.7	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
19957	1.4	Q16	6	LOW	0	30	20.82	Pass
20175	1.4	QPSK	1	LOW	0	30	22.59	Pass
20175	1.4	QPSK	1	MID	0	30	22.69	Pass
20175	1.4	QPSK	1	HIGH	0	30	22.56	Pass
20175	1.4	QPSK	3	LOW	0	30	22.71	Pass
20175	1.4	QPSK	3	MID	0	30	22.67	Pass
20175	1.4	QPSK	3	HIGH	0	30	22.75	Pass
20175	1.4	QPSK	6	LOW	0	30	21.64	Pass
20175	1.4	Q16	1	LOW	0	30	22.02	Pass
20175	1.4	Q16	1	MID	0	30	22.12	Pass
20175	1.4	Q16	1	HIGH	0	30	22.03	Pass
20175	1.4	Q16	3	LOW	0	30	21.94	Pass
20175	1.4	Q16	3	MID	0	30	21.88	Pass
20175	1.4	Q16	3	HIGH	0	30	21.96	Pass
20175	1.4	Q16	6	LOW	0	30	20.58	Pass
20393	1.4	QPSK	1	LOW	0	30	22.43	Pass
20393	1.4	QPSK	1	MID	0	30	22.6	Pass
20393	1.4	QPSK	1	HIGH	0	30	22.42	Pass
20393	1.4	QPSK	3	LOW	0	30	22.56	Pass
20393	1.4	QPSK	3	MID	0	30	22.6	Pass
20393	1.4	QPSK	3	HIGH	0	30	22.57	Pass
20393	1.4	QPSK	6	LOW	0	30	21.53	Pass
20393	1.4	Q16	1	LOW	0	30	21.5	Pass
20393	1.4	Q16	1	MID	0	30	21.64	Pass
20393	1.4	Q16	1	HIGH	0	30	21.5	Pass
20393	1.4	Q16	3	LOW	0	30	21.68	Pass
20393	1.4	Q16	3	MID	0	30	21.73	Pass
20393	1.4	Q16	3	HIGH	0	30	21.73	Pass
20393	1.4	Q16	6	LOW	0	30	20.71	Pass
19965	3	QPSK	1	LOW	0	30	22.62	Pass
19965	3	QPSK	1	MID	0	30	22.59	Pass
19965	3	QPSK	1	HIGH	0	30	22.56	Pass
19965	3	QPSK	8	LOW	0	30	21.63	Pass
19965	3	QPSK	8	MID	0	30	21.67	Pass
19965	3	QPSK	8	HIGH	0	30	21.63	Pass
19965	3	QPSK	15	LOW	0	30	21.63	Pass
19965	3	Q16	1	LOW	0	30	21.53	Pass
19965	3	Q16	1	MID	0	30	21.53	Pass
19965	3	Q16	1	HIGH	0	30	21.59	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
19965	3	Q16	8	LOW	0	30	20.79	Pass
19965	3	Q16	8	MID	0	30	20.76	Pass
19965	3	Q16	8	HIGH	0	30	20.73	Pass
19965	3	Q16	15	LOW	0	30	20.69	Pass
20175	3	QPSK	1	LOW	0	30	22.65	Pass
20175	3	QPSK	1	MID	0	30	22.64	Pass
20175	3	QPSK	1	HIGH	0	30	22.64	Pass
20175	3	QPSK	8	LOW	0	30	21.67	Pass
20175	3	QPSK	8	MID	0	30	21.7	Pass
20175	3	QPSK	8	HIGH	0	30	21.68	Pass
20175	3	QPSK	15	LOW	0	30	21.65	Pass
20175	3	Q16	1	LOW	0	30	22.03	Pass
20175	3	Q16	1	MID	0	30	22.03	Pass
20175	3	Q16	1	HIGH	0	30	22.04	Pass
20175	3	Q16	8	LOW	0	30	20.79	Pass
20175	3	Q16	8	MID	0	30	20.78	Pass
20175	3	Q16	8	HIGH	0	30	20.73	Pass
20175	3	Q16	15	LOW	0	30	20.7	Pass
20385	3	QPSK	1	LOW	0	30	22.51	Pass
20385	3	QPSK	1	MID	0	30	22.49	Pass
20385	3	QPSK	1	HIGH	0	30	22.48	Pass
20385	3	QPSK	8	LOW	0	30	21.54	Pass
20385	3	QPSK	8	MID	0	30	21.57	Pass
20385	3	QPSK	8	HIGH	0	30	21.49	Pass
20385	3	QPSK	15	LOW	0	30	21.54	Pass
20385	3	Q16	1	LOW	0	30	21.57	Pass
20385	3	Q16	1	MID	0	30	21.5	Pass
20385	3	Q16	1	HIGH	0	30	21.51	Pass
20385	3	Q16	8	LOW	0	30	20.58	Pass
20385	3	Q16	8	MID	0	30	20.65	Pass
20385	3	Q16	8	HIGH	0	30	20.56	Pass
20385	3	Q16	15	LOW	0	30	20.51	Pass
19975	5	QPSK	1	LOW	0	30	22.53	Pass
19975	5	QPSK	1	MID	0	30	22.64	Pass
19975	5	QPSK	1	HIGH	0	30	22.57	Pass
19975	5	QPSK	12	LOW	0	30	21.65	Pass
19975	5	QPSK	12	MID	0	30	21.67	Pass
19975	5	QPSK	12	HIGH	0	30	21.66	Pass
19975	5	QPSK	25	LOW	0	30	21.65	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
19975	5	Q16	1	LOW	0	30	21.69	Pass
19975	5	Q16	1	MID	0	30	21.81	Pass
19975	5	Q16	1	HIGH	0	30	21.75	Pass
19975	5	Q16	12	LOW	0	30	20.72	Pass
19975	5	Q16	12	MID	0	30	20.75	Pass
19975	5	Q16	12	HIGH	0	30	20.76	Pass
19975	5	Q16	25	LOW	0	30	20.68	Pass
20175	5	QPSK	1	LOW	0	30	22.6	Pass
20175	5	QPSK	1	MID	0	30	22.65	Pass
20175	5	QPSK	1	HIGH	0	30	22.56	Pass
20175	5	QPSK	12	LOW	0	30	21.59	Pass
20175	5	QPSK	12	MID	0	30	21.73	Pass
20175	5	QPSK	12	HIGH	0	30	21.62	Pass
20175	5	QPSK	25	LOW	0	30	21.63	Pass
20175	5	Q16	1	LOW	0	30	22.13	Pass
20175	5	Q16	1	MID	0	30	22.2	Pass
20175	5	Q16	1	HIGH	0	30	22.07	Pass
20175	5	Q16	12	LOW	0	30	20.76	Pass
20175	5	Q16	12	MID	0	30	20.83	Pass
20175	5	Q16	12	HIGH	0	30	20.79	Pass
20175	5	Q16	25	LOW	0	30	20.71	Pass
20375	5	QPSK	1	LOW	0	30	22.45	Pass
20375	5	QPSK	1	MID	0	30	22.51	Pass
20375	5	QPSK	1	HIGH	0	30	22.43	Pass
20375	5	QPSK	12	LOW	0	30	21.58	Pass
20375	5	QPSK	12	MID	0	30	21.59	Pass
20375	5	QPSK	12	HIGH	0	30	21.46	Pass
20375	5	QPSK	25	LOW	0	30	21.49	Pass
20375	5	Q16	1	LOW	0	30	21.6	Pass
20375	5	Q16	1	MID	0	30	21.65	Pass
20375	5	Q16	1	HIGH	0	30	21.55	Pass
20375	5	Q16	12	LOW	0	30	20.54	Pass
20375	5	Q16	12	MID	0	30	20.64	Pass
20375	5	Q16	12	HIGH	0	30	20.52	Pass
20375	5	Q16	25	LOW	0	30	20.47	Pass
20000	10	QPSK	1	LOW	0	30	22.56	Pass
20000	10	QPSK	1	MID	0	30	22.75	Pass
20000	10	QPSK	1	HIGH	0	30	22.61	Pass
20000	10	QPSK	25	LOW	0	30	21.69	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20000	10	QPSK	25	MID	0	30	21.7	Pass
20000	10	QPSK	25	HIGH	0	30	21.75	Pass
20000	10	QPSK	50	LOW	0	30	21.71	Pass
20000	10	Q16	1	LOW	0	30	21.51	Pass
20000	10	Q16	1	MID	0	30	21.75	Pass
20000	10	Q16	1	HIGH	0	30	21.57	Pass
20000	10	Q16	25	LOW	0	30	20.75	Pass
20000	10	Q16	25	MID	0	30	20.72	Pass
20000	10	Q16	25	HIGH	0	30	20.78	Pass
20000	10	Q16	50	LOW	0	30	20.7	Pass
20175	10	QPSK	1	LOW	0	30	22.66	Pass
20175	10	QPSK	1	MID	0	30	22.73	Pass
20175	10	QPSK	1	HIGH	0	30	22.59	Pass
20175	10	QPSK	25	LOW	0	30	21.65	Pass
20175	10	QPSK	25	MID	0	30	21.72	Pass
20175	10	QPSK	25	HIGH	0	30	21.69	Pass
20175	10	QPSK	50	LOW	0	30	21.67	Pass
20175	10	Q16	1	LOW	0	30	22.03	Pass
20175	10	Q16	1	MID	0	30	22.17	Pass
20175	10	Q16	1	HIGH	0	30	21.94	Pass
20175	10	Q16	25	LOW	0	30	20.7	Pass
20175	10	Q16	25	MID	0	30	20.72	Pass
20175	10	Q16	25	HIGH	0	30	20.75	Pass
20175	10	Q16	50	LOW	0	30	20.69	Pass
20350	10	QPSK	1	LOW	0	30	22.58	Pass
20350	10	QPSK	1	MID	0	30	22.64	Pass
20350	10	QPSK	1	HIGH	0	30	22.48	Pass
20350	10	QPSK	25	LOW	0	30	21.63	Pass
20350	10	QPSK	25	MID	0	30	21.56	Pass
20350	10	QPSK	25	HIGH	0	30	21.48	Pass
20350	10	QPSK	50	LOW	0	30	21.57	Pass
20350	10	Q16	1	LOW	0	30	21.55	Pass
20350	10	Q16	1	MID	0	30	21.66	Pass
20350	10	Q16	1	HIGH	0	30	21.48	Pass
20350	10	Q16	25	LOW	0	30	20.73	Pass
20350	10	Q16	25	MID	0	30	20.71	Pass
20350	10	Q16	25	HIGH	0	30	20.59	Pass
20350	10	Q16	50	LOW	0	30	20.61	Pass
20025	15	QPSK	1	LOW	0	30	22.5	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20025	15	QPSK	1	MID	0	30	22.66	Pass
20025	15	QPSK	1	HIGH	0	30	22.57	Pass
20025	15	QPSK	36	LOW	0	30	21.74	Pass
20025	15	QPSK	36	MID	0	30	21.78	Pass
20025	15	QPSK	36	HIGH	0	30	21.8	Pass
20025	15	QPSK	75	LOW	0	30	21.73	Pass
20025	15	Q16	1	LOW	0	30	21.47	Pass
20025	15	Q16	1	MID	0	30	21.59	Pass
20025	15	Q16	1	HIGH	0	30	21.52	Pass
20025	15	Q16	36	LOW	0	30	20.71	Pass
20025	15	Q16	36	MID	0	30	20.74	Pass
20025	15	Q16	36	HIGH	0	30	20.76	Pass
20025	15	Q16	75	LOW	0	30	20.75	Pass
20175	15	QPSK	1	LOW	0	30	22.58	Pass
20175	15	QPSK	1	MID	0	30	22.72	Pass
20175	15	QPSK	1	HIGH	0	30	22.55	Pass
20175	15	QPSK	36	LOW	0	30	21.69	Pass
20175	15	QPSK	36	MID	0	30	21.78	Pass
20175	15	QPSK	36	HIGH	0	30	21.78	Pass
20175	15	QPSK	75	LOW	0	30	21.7	Pass
20175	15	Q16	1	LOW	0	30	21.97	Pass
20175	15	Q16	1	MID	0	30	22.05	Pass
20175	15	Q16	1	HIGH	0	30	21.89	Pass
20175	15	Q16	36	LOW	0	30	20.7	Pass
20175	15	Q16	36	MID	0	30	20.8	Pass
20175	15	Q16	36	HIGH	0	30	20.79	Pass
20175	15	Q16	75	LOW	0	30	20.69	Pass
20325	15	QPSK	1	LOW	0	30	22.54	Pass
20325	15	QPSK	1	MID	0	30	22.63	Pass
20325	15	QPSK	1	HIGH	0	30	22.41	Pass
20325	15	QPSK	36	LOW	0	30	21.75	Pass
20325	15	QPSK	36	MID	0	30	21.73	Pass
20325	15	QPSK	36	HIGH	0	30	21.6	Pass
20325	15	QPSK	75	LOW	0	30	21.67	Pass
20325	15	Q16	1	LOW	0	30	21.86	Pass
20325	15	Q16	1	MID	0	30	21.92	Pass
20325	15	Q16	1	HIGH	0	30	21.78	Pass
20325	15	Q16	36	LOW	0	30	20.66	Pass
20325	15	Q16	36	MID	0	30	20.62	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20325	15	Q16	36	HIGH	0	30	20.53	Pass
20325	15	Q16	75	LOW	0	30	20.62	Pass
20050	20	QPSK	1	LOW	0	30	22.32	Pass
20050	20	QPSK	1	MID	0	30	22.82	Pass
20050	20	QPSK	1	HIGH	0	30	22.44	Pass
20050	20	QPSK	50	LOW	0	30	21.68	Pass
20050	20	QPSK	50	MID	0	30	21.73	Pass
20050	20	QPSK	50	HIGH	0	30	21.78	Pass
20050	20	QPSK	100	LOW	0	30	21.76	Pass
20050	20	Q16	1	LOW	0	30	21.88	Pass
20050	20	Q16	1	MID	0	30	22.37	Pass
20050	20	Q16	1	HIGH	0	30	21.93	Pass
20050	20	Q16	50	LOW	0	30	20.72	Pass
20050	20	Q16	50	MID	0	30	20.78	Pass
20050	20	Q16	50	HIGH	0	30	20.86	Pass
20050	20	Q16	100	LOW	0	30	20.81	Pass
20175	20	QPSK	1	LOW	0	30	22.38	Pass
20175	20	QPSK	1	MID	0	30	22.88	Pass
20175	20	QPSK	1	HIGH	0	30	22.38	Pass
20175	20	QPSK	50	LOW	0	30	21.6	Pass
20175	20	QPSK	50	MID	0	30	21.71	Pass
20175	20	QPSK	50	HIGH	0	30	21.68	Pass
20175	20	QPSK	100	LOW	0	30	21.69	Pass
20175	20	Q16	1	LOW	0	30	21.91	Pass
20175	20	Q16	1	MID	0	30	22.29	Pass
20175	20	Q16	1	HIGH	0	30	21.75	Pass
20175	20	Q16	50	LOW	0	30	20.66	Pass
20175	20	Q16	50	MID	0	30	20.75	Pass
20175	20	Q16	50	HIGH	0	30	20.73	Pass
20175	20	Q16	100	LOW	0	30	20.7	Pass
20300	20	QPSK	1	LOW	0	30	22.33	Pass
20300	20	QPSK	1	MID	0	30	22.78	Pass
20300	20	QPSK	1	HIGH	0	30	22.21	Pass
20300	20	QPSK	50	LOW	0	30	21.71	Pass
20300	20	QPSK	50	MID	0	30	21.68	Pass
20300	20	QPSK	50	HIGH	0	30	21.49	Pass
20300	20	QPSK	100	LOW	0	30	21.59	Pass
20300	20	Q16	1	LOW	0	30	21.74	Pass
20300	20	Q16	1	MID	0	30	22.09	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20300	20	Q16	1	HIGH	0	30	21.65	Pass
20300	20	Q16	50	LOW	0	30	20.68	Pass
20300	20	Q16	50	MID	0	30	20.64	Pass
20300	20	Q16	50	HIGH	0	30	20.53	Pass
20300	20	Q16	100	LOW	0	30	20.65	Pass

FDD-LTE Band 5:

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20407	1.4	QPSK	1	LOW	0	38.45	23.32	Pass
20407	1.4	QPSK	1	MID	0	38.45	23.45	Pass
20407	1.4	QPSK	1	HIGH	0	38.45	23.24	Pass
20407	1.4	QPSK	3	LOW	0	38.45	23.27	Pass
20407	1.4	QPSK	3	MID	0	38.45	23.31	Pass
20407	1.4	QPSK	3	HIGH	0	38.45	23.24	Pass
20407	1.4	QPSK	6	LOW	0	38.45	22.34	Pass
20407	1.4	Q16	1	LOW	0	38.45	22.18	Pass
20407	1.4	Q16	1	MID	0	38.45	22.33	Pass
20407	1.4	Q16	1	HIGH	0	38.45	22.15	Pass
20407	1.4	Q16	3	LOW	0	38.45	22.21	Pass
20407	1.4	Q16	3	MID	0	38.45	22.24	Pass
20407	1.4	Q16	3	HIGH	0	38.45	22.2	Pass
20407	1.4	Q16	6	LOW	0	38.45	21.44	Pass
20525	1.4	QPSK	1	LOW	0	38.45	23.1	Pass
20525	1.4	QPSK	1	MID	0	38.45	23.27	Pass
20525	1.4	QPSK	1	HIGH	0	38.45	23.09	Pass
20525	1.4	QPSK	3	LOW	0	38.45	23.18	Pass
20525	1.4	QPSK	3	MID	0	38.45	23.23	Pass
20525	1.4	QPSK	3	HIGH	0	38.45	23.19	Pass
20525	1.4	QPSK	6	LOW	0	38.45	22.22	Pass
20525	1.4	Q16	1	LOW	0	38.45	22.41	Pass
20525	1.4	Q16	1	MID	0	38.45	22.54	Pass
20525	1.4	Q16	1	HIGH	0	38.45	22.39	Pass
20525	1.4	Q16	3	LOW	0	38.45	22.34	Pass
20525	1.4	Q16	3	MID	0	38.45	22.33	Pass
20525	1.4	Q16	3	HIGH	0	38.45	22.29	Pass
20525	1.4	Q16	6	LOW	0	38.45	21.14	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20643	1.4	QPSK	1	LOW	0	38.45	23.14	Pass
20643	1.4	QPSK	1	MID	0	38.45	23.42	Pass
20643	1.4	QPSK	1	HIGH	0	38.45	23.14	Pass
20643	1.4	QPSK	3	LOW	0	38.45	23.2	Pass
20643	1.4	QPSK	3	MID	0	38.45	23.27	Pass
20643	1.4	QPSK	3	HIGH	0	38.45	23.22	Pass
20643	1.4	QPSK	6	LOW	0	38.45	22.19	Pass
20643	1.4	Q16	1	LOW	0	38.45	22.01	Pass
20643	1.4	Q16	1	MID	0	38.45	22.19	Pass
20643	1.4	Q16	1	HIGH	0	38.45	22.07	Pass
20643	1.4	Q16	3	LOW	0	38.45	22.26	Pass
20643	1.4	Q16	3	MID	0	38.45	22.39	Pass
20643	1.4	Q16	3	HIGH	0	38.45	22.29	Pass
20643	1.4	Q16	6	LOW	0	38.45	21.36	Pass
20415	3	QPSK	1	LOW	0	38.45	23.39	Pass
20415	3	QPSK	1	MID	0	38.45	23.26	Pass
20415	3	QPSK	1	HIGH	0	38.45	23.28	Pass
20415	3	QPSK	8	LOW	0	38.45	22.28	Pass
20415	3	QPSK	8	MID	0	38.45	22.31	Pass
20415	3	QPSK	8	HIGH	0	38.45	22.24	Pass
20415	3	QPSK	15	LOW	0	38.45	22.22	Pass
20415	3	Q16	1	LOW	0	38.45	22.08	Pass
20415	3	Q16	1	MID	0	38.45	22.03	Pass
20415	3	Q16	1	HIGH	0	38.45	22.04	Pass
20415	3	Q16	8	LOW	0	38.45	21.36	Pass
20415	3	Q16	8	MID	0	38.45	21.38	Pass
20415	3	Q16	8	HIGH	0	38.45	21.27	Pass
20415	3	Q16	15	LOW	0	38.45	21.27	Pass
20525	3	QPSK	1	LOW	0	38.45	23.18	Pass
20525	3	QPSK	1	MID	0	38.45	23.14	Pass
20525	3	QPSK	1	HIGH	0	38.45	23.12	Pass
20525	3	QPSK	8	LOW	0	38.45	22.15	Pass
20525	3	QPSK	8	MID	0	38.45	22.18	Pass
20525	3	QPSK	8	HIGH	0	38.45	22.15	Pass
20525	3	QPSK	15	LOW	0	38.45	22.12	Pass
20525	3	Q16	1	LOW	0	38.45	22.47	Pass
20525	3	Q16	1	MID	0	38.45	22.45	Pass
20525	3	Q16	1	HIGH	0	38.45	22.45	Pass
20525	3	Q16	8	LOW	0	38.45	21.25	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20525	3	Q16	8	MID	0	38.45	21.32	Pass
20525	3	Q16	8	HIGH	0	38.45	21.21	Pass
20525	3	Q16	15	LOW	0	38.45	21.2	Pass
20635	3	QPSK	1	LOW	0	38.45	23.27	Pass
20635	3	QPSK	1	MID	0	38.45	23.2	Pass
20635	3	QPSK	1	HIGH	0	38.45	23.21	Pass
20635	3	QPSK	8	LOW	0	38.45	22.17	Pass
20635	3	QPSK	8	MID	0	38.45	22.24	Pass
20635	3	QPSK	8	HIGH	0	38.45	22.13	Pass
20635	3	QPSK	15	LOW	0	38.45	22.16	Pass
20635	3	Q16	1	LOW	0	38.45	22.05	Pass
20635	3	Q16	1	MID	0	38.45	22.05	Pass
20635	3	Q16	1	HIGH	0	38.45	22.08	Pass
20635	3	Q16	8	LOW	0	38.45	21.2	Pass
20635	3	Q16	8	MID	0	38.45	21.28	Pass
20635	3	Q16	8	HIGH	0	38.45	21.23	Pass
20635	3	Q16	15	LOW	0	38.45	21.15	Pass
20425	5	QPSK	1	LOW	0	38.45	23.19	Pass
20425	5	QPSK	1	MID	0	38.45	23.29	Pass
20425	5	QPSK	1	HIGH	0	38.45	23.09	Pass
20425	5	QPSK	12	LOW	0	38.45	22.21	Pass
20425	5	QPSK	12	MID	0	38.45	22.26	Pass
20425	5	QPSK	12	HIGH	0	38.45	22.25	Pass
20425	5	QPSK	25	LOW	0	38.45	22.18	Pass
20425	5	Q16	1	LOW	0	38.45	22.24	Pass
20425	5	Q16	1	MID	0	38.45	22.33	Pass
20425	5	Q16	1	HIGH	0	38.45	22.24	Pass
20425	5	Q16	12	LOW	0	38.45	21.27	Pass
20425	5	Q16	12	MID	0	38.45	21.33	Pass
20425	5	Q16	12	HIGH	0	38.45	21.29	Pass
20425	5	Q16	25	LOW	0	38.45	21.25	Pass
20525	5	QPSK	1	LOW	0	38.45	23.09	Pass
20525	5	QPSK	1	MID	0	38.45	23.15	Pass
20525	5	QPSK	1	HIGH	0	38.45	23.02	Pass
20525	5	QPSK	12	LOW	0	38.45	22.14	Pass
20525	5	QPSK	12	MID	0	38.45	22.15	Pass
20525	5	QPSK	12	HIGH	0	38.45	22.1	Pass
20525	5	QPSK	25	LOW	0	38.45	22.1	Pass
20525	5	Q16	1	LOW	0	38.45	22.57	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20525	5	Q16	1	MID	0	38.45	22.57	Pass
20525	5	Q16	1	HIGH	0	38.45	22.47	Pass
20525	5	Q16	12	LOW	0	38.45	21.27	Pass
20525	5	Q16	12	MID	0	38.45	21.32	Pass
20525	5	Q16	12	HIGH	0	38.45	21.27	Pass
20525	5	Q16	25	LOW	0	38.45	21.23	Pass
20625	5	QPSK	1	LOW	0	38.45	23.1	Pass
20625	5	QPSK	1	MID	0	38.45	23.19	Pass
20625	5	QPSK	1	HIGH	0	38.45	23.07	Pass
20625	5	QPSK	12	LOW	0	38.45	22.2	Pass
20625	5	QPSK	12	MID	0	38.45	22.16	Pass
20625	5	QPSK	12	HIGH	0	38.45	22.11	Pass
20625	5	QPSK	25	LOW	0	38.45	22.12	Pass
20625	5	Q16	1	LOW	0	38.45	22.04	Pass
20625	5	Q16	1	MID	0	38.45	22.14	Pass
20625	5	Q16	1	HIGH	0	38.45	22.13	Pass
20625	5	Q16	12	LOW	0	38.45	21.2	Pass
20625	5	Q16	12	MID	0	38.45	21.22	Pass
20625	5	Q16	12	HIGH	0	38.45	21.15	Pass
20625	5	Q16	25	LOW	0	38.45	21.11	Pass
20450	10	QPSK	1	LOW	0	38.45	23.34	Pass
20450	10	QPSK	1	MID	0	38.45	23.33	Pass
20450	10	QPSK	1	HIGH	0	38.45	23.1	Pass
20450	10	QPSK	25	LOW	0	38.45	22.26	Pass
20450	10	QPSK	25	MID	0	38.45	22.23	Pass
20450	10	QPSK	25	HIGH	0	38.45	22.24	Pass
20450	10	QPSK	50	LOW	0	38.45	22.26	Pass
20450	10	Q16	1	LOW	0	38.45	22.05	Pass
20450	10	Q16	1	MID	0	38.45	22.2	Pass
20450	10	Q16	1	HIGH	0	38.45	22.05	Pass
20450	10	Q16	25	LOW	0	38.45	21.29	Pass
20450	10	Q16	25	MID	0	38.45	21.31	Pass
20450	10	Q16	25	HIGH	0	38.45	21.29	Pass
20450	10	Q16	50	LOW	0	38.45	21.26	Pass
20525	10	QPSK	1	LOW	0	38.45	23.21	Pass
20525	10	QPSK	1	MID	0	38.45	23.21	Pass
20525	10	QPSK	1	HIGH	0	38.45	23.16	Pass
20525	10	QPSK	25	LOW	0	38.45	22.16	Pass
20525	10	QPSK	25	MID	0	38.45	22.17	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20525	10	QPSK	25	HIGH	0	38.45	22.18	Pass
20525	10	QPSK	50	LOW	0	38.45	22.16	Pass
20525	10	Q16	1	LOW	0	38.45	22.48	Pass
20525	10	Q16	1	MID	0	38.45	22.57	Pass
20525	10	Q16	1	HIGH	0	38.45	22.4	Pass
20525	10	Q16	25	LOW	0	38.45	21.24	Pass
20525	10	Q16	25	MID	0	38.45	21.25	Pass
20525	10	Q16	25	HIGH	0	38.45	21.21	Pass
20525	10	Q16	50	LOW	0	38.45	21.22	Pass
20600	10	QPSK	1	LOW	0	38.45	23.12	Pass
20600	10	QPSK	1	MID	0	38.45	23.4	Pass
20600	10	QPSK	1	HIGH	0	38.45	23.2	Pass
20600	10	QPSK	25	LOW	0	38.45	22.17	Pass
20600	10	QPSK	25	MID	0	38.45	22.12	Pass
20600	10	QPSK	25	HIGH	0	38.45	22.06	Pass
20600	10	QPSK	50	LOW	0	38.45	22.13	Pass
20600	10	Q16	1	LOW	0	38.45	22.01	Pass
20600	10	Q16	1	MID	0	38.45	22.09	Pass
20600	10	Q16	1	HIGH	0	38.45	22.06	Pass
20600	10	Q16	25	LOW	0	38.45	21.27	Pass
20600	10	Q16	25	MID	0	38.45	21.26	Pass
20600	10	Q16	25	HIGH	0	38.45	21.17	Pass
20600	10	Q16	50	LOW	0	38.45	21.19	Pass

FDD-LTE Band 7:

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20775	5	QPSK	1	LOW	0	33	22.88	Pass
20775	5	QPSK	1	MID	0	33	23.04	Pass
20775	5	QPSK	1	HIGH	0	33	22.88	Pass
20775	5	QPSK	12	LOW	0	33	21.92	Pass
20775	5	QPSK	12	MID	0	33	22	Pass
20775	5	QPSK	12	HIGH	0	33	22.03	Pass
20775	5	QPSK	25	LOW	0	33	21.92	Pass
20775	5	Q16	1	LOW	0	33	21.78	Pass
20775	5	Q16	1	MID	0	33	21.96	Pass
20775	5	Q16	1	HIGH	0	33	21.88	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20775	5	Q16	12	LOW	0	33	20.89	Pass
20775	5	Q16	12	MID	0	33	21.01	Pass
20775	5	Q16	12	HIGH	0	33	20.98	Pass
20775	5	Q16	25	LOW	0	33	20.9	Pass
21100	5	QPSK	1	LOW	0	33	22.98	Pass
21100	5	QPSK	1	MID	0	33	23.13	Pass
21100	5	QPSK	1	HIGH	0	33	22.95	Pass
21100	5	QPSK	12	LOW	0	33	22.08	Pass
21100	5	QPSK	12	MID	0	33	22.12	Pass
21100	5	QPSK	12	HIGH	0	33	22.06	Pass
21100	5	QPSK	25	LOW	0	33	22.04	Pass
21100	5	Q16	1	LOW	0	33	22.04	Pass
21100	5	Q16	1	MID	0	33	22.13	Pass
21100	5	Q16	1	HIGH	0	33	22.04	Pass
21100	5	Q16	12	LOW	0	33	21.18	Pass
21100	5	Q16	12	MID	0	33	21.21	Pass
21100	5	Q16	12	HIGH	0	33	21.15	Pass
21100	5	Q16	25	LOW	0	33	21.13	Pass
21425	5	QPSK	1	LOW	0	33	22.92	Pass
21425	5	QPSK	1	MID	0	33	23.05	Pass
21425	5	QPSK	1	HIGH	0	33	23	Pass
21425	5	QPSK	12	LOW	0	33	21.89	Pass
21425	5	QPSK	12	MID	0	33	21.87	Pass
21425	5	QPSK	12	HIGH	0	33	21.78	Pass
21425	5	QPSK	25	LOW	0	33	21.86	Pass
21425	5	Q16	1	LOW	0	33	22.16	Pass
21425	5	Q16	1	MID	0	33	22.22	Pass
21425	5	Q16	1	HIGH	0	33	22.09	Pass
21425	5	Q16	12	LOW	0	33	21.02	Pass
21425	5	Q16	12	MID	0	33	21.01	Pass
21425	5	Q16	12	HIGH	0	33	20.98	Pass
21425	5	Q16	25	LOW	0	33	20.98	Pass
20800	10	QPSK	1	LOW	0	33	23.07	Pass
20800	10	QPSK	1	MID	0	33	23.28	Pass
20800	10	QPSK	1	HIGH	0	33	23.05	Pass
20800	10	QPSK	25	LOW	0	33	22.05	Pass
20800	10	QPSK	25	MID	0	33	22.09	Pass
20800	10	QPSK	25	HIGH	0	33	22.13	Pass
20800	10	QPSK	50	LOW	0	33	22.12	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20800	10	Q16	1	LOW	0	33	21.76	Pass
20800	10	Q16	1	MID	0	33	21.99	Pass
20800	10	Q16	1	HIGH	0	33	21.87	Pass
20800	10	Q16	25	LOW	0	33	21.03	Pass
20800	10	Q16	25	MID	0	33	21.1	Pass
20800	10	Q16	25	HIGH	0	33	21.2	Pass
20800	10	Q16	50	LOW	0	33	21.07	Pass
21100	10	QPSK	1	LOW	0	33	23.17	Pass
21100	10	QPSK	1	MID	0	33	23.31	Pass
21100	10	QPSK	1	HIGH	0	33	23.13	Pass
21100	10	QPSK	25	LOW	0	33	22.2	Pass
21100	10	QPSK	25	MID	0	33	22.15	Pass
21100	10	QPSK	25	HIGH	0	33	22.12	Pass
21100	10	QPSK	50	LOW	0	33	22.19	Pass
21100	10	Q16	1	LOW	0	33	22.36	Pass
21100	10	Q16	1	MID	0	33	22.46	Pass
21100	10	Q16	1	HIGH	0	33	22.3	Pass
21100	10	Q16	25	LOW	0	33	21.18	Pass
21100	10	Q16	25	MID	0	33	21.2	Pass
21100	10	Q16	25	HIGH	0	33	21.25	Pass
21100	10	Q16	50	LOW	0	33	21.17	Pass
21400	10	QPSK	1	LOW	0	33	23.12	Pass
21400	10	QPSK	1	MID	0	33	23.35	Pass
21400	10	QPSK	1	HIGH	0	33	23.22	Pass
21400	10	QPSK	25	LOW	0	33	21.97	Pass
21400	10	QPSK	25	MID	0	33	21.95	Pass
21400	10	QPSK	25	HIGH	0	33	21.96	Pass
21400	10	QPSK	50	LOW	0	33	21.97	Pass
21400	10	Q16	1	LOW	0	33	21.82	Pass
21400	10	Q16	1	MID	0	33	21.91	Pass
21400	10	Q16	1	HIGH	0	33	21.66	Pass
21400	10	Q16	25	LOW	0	33	21.12	Pass
21400	10	Q16	25	MID	0	33	21.08	Pass
21400	10	Q16	25	HIGH	0	33	21.06	Pass
21400	10	Q16	50	LOW	0	33	21.03	Pass
20825	15	QPSK	1	LOW	0	33	23.01	Pass
20825	15	QPSK	1	MID	0	33	23.14	Pass
20825	15	QPSK	1	HIGH	0	33	23.04	Pass
20825	15	QPSK	36	LOW	0	33	22.18	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20825	15	QPSK	36	MID	0	33	22.26	Pass
20825	15	QPSK	36	HIGH	0	33	22.29	Pass
20825	15	QPSK	75	LOW	0	33	22.27	Pass
20825	15	Q16	1	LOW	0	33	21.73	Pass
20825	15	Q16	1	MID	0	33	21.92	Pass
20825	15	Q16	1	HIGH	0	33	21.81	Pass
20825	15	Q16	36	LOW	0	33	21.07	Pass
20825	15	Q16	36	MID	0	33	21.18	Pass
20825	15	Q16	36	HIGH	0	33	21.21	Pass
20825	15	Q16	75	LOW	0	33	21.2	Pass
21100	15	QPSK	1	LOW	0	33	23.1	Pass
21100	15	QPSK	1	MID	0	33	23.2	Pass
21100	15	QPSK	1	HIGH	0	33	23.07	Pass
21100	15	QPSK	36	LOW	0	33	22.32	Pass
21100	15	QPSK	36	MID	0	33	22.29	Pass
21100	15	QPSK	36	HIGH	0	33	22.22	Pass
21100	15	QPSK	75	LOW	0	33	22.27	Pass
21100	15	Q16	1	LOW	0	33	22.29	Pass
21100	15	Q16	1	MID	0	33	22.33	Pass
21100	15	Q16	1	HIGH	0	33	22.24	Pass
21100	15	Q16	36	LOW	0	33	21.23	Pass
21100	15	Q16	36	MID	0	33	21.28	Pass
21100	15	Q16	36	HIGH	0	33	21.28	Pass
21100	15	Q16	75	LOW	0	33	21.26	Pass
21375	15	QPSK	1	LOW	0	33	23.09	Pass
21375	15	QPSK	1	MID	0	33	23.2	Pass
21375	15	QPSK	1	HIGH	0	33	23.03	Pass
21375	15	QPSK	36	LOW	0	33	22.16	Pass
21375	15	QPSK	36	MID	0	33	22.21	Pass
21375	15	QPSK	36	HIGH	0	33	22.14	Pass
21375	15	QPSK	75	LOW	0	33	22.19	Pass
21375	15	Q16	1	LOW	0	33	22.07	Pass
21375	15	Q16	1	MID	0	33	22.13	Pass
21375	15	Q16	1	HIGH	0	33	21.82	Pass
21375	15	Q16	36	LOW	0	33	21.07	Pass
21375	15	Q16	36	MID	0	33	21.09	Pass
21375	15	Q16	36	HIGH	0	33	21.01	Pass
21375	15	Q16	75	LOW	0	33	21.11	Pass
20850	20	QPSK	1	LOW	0	33	22.84	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20850	20	QPSK	1	MID	0	33	23.35	Pass
20850	20	QPSK	1	HIGH	0	33	22.91	Pass
20850	20	QPSK	50	LOW	0	33	22	Pass
20850	20	QPSK	50	MID	0	33	22.14	Pass
20850	20	QPSK	50	HIGH	0	33	22.15	Pass
20850	20	QPSK	100	LOW	0	33	22.1	Pass
20850	20	Q16	1	LOW	0	33	22.23	Pass
20850	20	Q16	1	MID	0	33	22.71	Pass
20850	20	Q16	1	HIGH	0	33	22.36	Pass
20850	20	Q16	50	LOW	0	33	21	Pass
20850	20	Q16	50	MID	0	33	21.17	Pass
20850	20	Q16	50	HIGH	0	33	21.18	Pass
20850	20	Q16	100	LOW	0	33	21.15	Pass
21100	20	QPSK	1	LOW	0	33	22.91	Pass
21100	20	QPSK	1	MID	0	33	23.39	Pass
21100	20	QPSK	1	HIGH	0	33	22.95	Pass
21100	20	QPSK	50	LOW	0	33	22.15	Pass
21100	20	QPSK	50	MID	0	33	22.14	Pass
21100	20	QPSK	50	HIGH	0	33	22.09	Pass
21100	20	QPSK	100	LOW	0	33	22.09	Pass
21100	20	Q16	1	LOW	0	33	22.12	Pass
21100	20	Q16	1	MID	0	33	22.5	Pass
21100	20	Q16	1	HIGH	0	33	22.13	Pass
21100	20	Q16	50	LOW	0	33	21.15	Pass
21100	20	Q16	50	MID	0	33	21.17	Pass
21100	20	Q16	50	HIGH	0	33	21.18	Pass
21100	20	Q16	100	LOW	0	33	21.17	Pass
21350	20	QPSK	1	LOW	0	33	22.84	Pass
21350	20	QPSK	1	MID	0	33	23.25	Pass
21350	20	QPSK	1	HIGH	0	33	22.77	Pass
21350	20	QPSK	50	LOW	0	33	22.05	Pass
21350	20	QPSK	50	MID	0	33	22.03	Pass
21350	20	QPSK	50	HIGH	0	33	21.93	Pass
21350	20	QPSK	100	LOW	0	33	22.04	Pass
21350	20	Q16	1	LOW	0	33	22	Pass
21350	20	Q16	1	MID	0	33	22.34	Pass
21350	20	Q16	1	HIGH	0	33	21.79	Pass
21350	20	Q16	50	LOW	0	33	21.06	Pass
21350	20	Q16	50	MID	0	33	21.05	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
21350	20	Q16	50	HIGH	0	33	20.98	Pass
21350	20	Q16	100	LOW	0	33	21.04	Pass

Remark:

- Per KDB941225 D05 v02r05, Start with the largest channel bandwidth then measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle, and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. 6 When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.
- Per KDB941225 D05 v02r05, The procedures required for 1 RB allocation in 5.2.1 are applied to measure the SAR for QPSK with 50% RB allocation.
- Per KDB941225 D05 v02r05, 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 in 5.2.1 and 5.2.2 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.
- Per KDB941225 D05 v02r05, For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in 5.2.1, 5.2.2, and 5.2.3 to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is $> \frac{1}{2}$ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

WLAN(2.4GHz)					
Test Mode	Data Rate	Channel	Frequency (MHz)	Conducted Power (dBm)	Tune-up power (dBm)
802.11b	1Mbps	CH 01	2412	16.37	16.5
		CH 06	2437	16.44	16.5
		CH 11	2462	16.51	17.0
802.11g	54Mbps	CH 01	2412	15.84	16.0
		CH 06	2437	15.84	16.0
		CH 11	2462	15.84	16.0
802.11n (20MHz)	MCS7	CH 01	2412	15.44	15.5
		CH 06	2437	16.07	16.5
		CH 11	2462	15.85	16.0
802.11n (20MHz)	MCS7	CH 03	2422	15.33	15.5
		CH 06	2437	15.29	15.5
		CH 09	2452	15.49	15.5

WLAN(5.2GHz)				
Test Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Tune-up power (dBm)
802.11a	CH 36	5180	6.76	7.0
	CH 40	5200	6.60	7.0
	CH 48	5240	5.86	6.0
802.11n (HT20)	CH 36	5180	6.83	7.0
	CH 40	5200	6.52	7.0
	CH 48	5240	5.77	6.0
802.11n (HT40)	CH 38	5190	6.79	7.0
	CH 46	5230	6.10	6.5
802.11ac (20MHz)	CH 36	5180	6.78	7.0
	CH 40	5200	6.55	7.0
	CH 48	5240	5.79	6.0
802.11ac (40MHz)	CH 38	5190	6.82	7.0
	CH 46	5230	6.13	6.5
802.11ac (80MHz)	CH42	5210	6.48	6.5

WLAN(5.3GHz)				
Test Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Tune-up power (dBm)
802.11a	CH 52	5260	3.66	4.0
	CH 56	5280	3.27	3.5
	CH 64	5320	3.35	3.5
802.11n (20MHz)	CH 52	5260	3.42	3.5
	CH 56	5280	3.24	3.5
	CH 64	5320	3.23	3.5
802.11n (40MHz)	CH 54	5270	3.27	3.5
	CH 62	5310	3.20	3.5
802.11ac (20MHz)	CH 52	5260	3.42	3.5
	CH 56	5280	3.14	3.5
	CH 64	5320	3.25	3.5
802.11ac (40MHz)	CH 54	5270	3.29	3.5
	CH 62	5310	3.32	3.5
802.11ac (80MHz)	CH58	5290	3.40	3.5

WLAN(5.6GHz)				
Test Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Tune-up power (dBm)
802.11a	CH 100	5500	5.75	6.0
	CH 116	5580	6.41	6.5
	CH 140	5700	5.71	6.0
802.11n (20MHz)	CH 100	5500	5.56	6.0
	CH116	5580	6.26	6.5
	CH 140	5700	5.59	6.0
802.11n (40MHz)	CH 102	5510	5.78	6.0
	CH110	5550	6.15	6.5
	CH 134	5670	5.87	6.0
802.11ac (20MHz)	CH 100	5500	5.51	6.0
	CH 116	5580	6.25	6.5
	CH 140	5700	5.59	6.0
802.11ac (40MHz)	CH 102	5510	5.74	6.0
	CH 110	5550	6.20	6.5
	CH 134	5670	5.95	6.0
802.11ac (80MHz)	CH 106	5530	6.17	6.5
	CH 122	5610	6.61	6.0

WLAN(5.8GHz)				
Test Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Tune-up power (dBm)
802.11a	CH 149	5745	5.46	5.5
	CH 157	5785	4.51	5.0
	CH 165	5825	3.80	4.0
802.11n (20MHz)	CH 149	5745	5.29	5.5
	CH 157	5785	4.38	4.5
	CH 165	5825	3.67	4.0
802.11n (40MHz)	CH 151	5755	5.19	5.5
	CH 159	5795	4.15	4.5
802.11ac (20MHz)	CH 149	5745	5.38	5.5
	CH 157	5785	4.30	4.5
	CH 165	5825	3.78	4.0
802.11ac (40MHz)	CH 151	5755	5.21	5.5
	CH 159	5795	4.20	4.5
802.11ac (80MHz)	CH155	5775	4.76	5.0

Remark:

1. Per KDB 248227 D01 v02r02, For 802.11b DSSS SAR measurements, DSSS SAR procedure applies to fixed exposure test position and initial test position procedure applies to multiple exposure test positions.
2. Per KDB 248227 D01 v02r02, For 802.11b DSSS SAR measurements ,when the reported SAR of the highest measured maximum output power channel (see 3.1) for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration. When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration 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.
- 3 .For OFDM modes (802.11g/n), SAR is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and it is ≤ 1.2 W/kg.
4. Per KDB 248227 D01 v02r02, When multiple channel bandwidth configurations in a frequency band have the same specified maximum output power, the initial test configuration is determined by applying the following steps sequentially.
 - 1) The largest channel bandwidth configuration is selected among the multiple configurations in a frequency band with the same specified maximum output power.
 - 2) If multiple configurations have the same specified maximum output power and largest channel bandwidth, the lowest order modulation among the largest channel bandwidth configurations is selected.
 - 3) If multiple configurations have the same specified maximum output power, largest channel bandwidth and lowest order modulation, the lowest data rate configuration among these configurations is selected.
 - 4) When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n.

Bluetooth - Maximum Average Power					
Test Mode	Data Rate	Conducted Power (dBm)			Tune-up power(dBm)
		CH00	CH39	CH78	
GFSK	1Mbps	8.09	7.88	8.38	8.5
Pi/4 QDPSK	2Mbps	7.27	7.13	7.60	8.0
8DPSK	3Mbps	7.30	7.16	7.63	8.0

Bluetooth - Maximum Average Power					
Test Mode	Data Rate	Channel	Frequency (MHz)	Conducted Power(dBm)	Tune-up power (dBm)
BLE	1Mbps	CH 00	2402	-4.07	-4.0
		CH 19	2440	-4.75	-4.5
		CH 39	2480	-3.82	-3.5

Remark:

The GSM/ WCDMA/LTE/WIFI/BT Output power are provided by Waltek Testing Group Co., Ltd. Dongguan Branch.

9.2 Test Results for Standalone SAR Test

Head SAR

GSM850 – Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
1.	GSM	Right Cheek	190	836.6	32.36	32.5	1.033	0.550	0.568
	GSM	Right Tilted	190	836.6	32.36	32.5	1.033	0.284	0.293
	GSM	Left Cheek	190	836.6	32.36	32.5	1.033	0.307	0.317
	GSM	Left Tilted	190	836.6	32.36	32.5	1.033	0.158	0.163
	GPRS_4TX	Right Cheek	128	824.2	28.73	29.0	1.064	0.445	0.474
	GPRS_4TX	Right Tilted	128	824.2	28.73	29.0	1.064	0.231	0.246
	GPRS_4TX	Left Cheek	128	824.2	28.73	29.0	1.064	0.403	0.429
	GPRS_4TX	Left Tilted	128	824.2	28.73	29.0	1.064	0.208	0.221

GSM1900 – Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
	GSM	Right Cheek	661	1880	30.73	31.0	1.064	0.009	0.010
	GSM	Right Tilted	661	1880	30.73	31.0	1.064	0.006	0.006
	GSM	Left Cheek	661	1880	30.73	31.0	1.064	0.009	0.010
	GSM	Left Tilted	661	1880	30.73	31.0	1.064	0.005	0.005
2.	GPRS_4TX	Right Cheek	661	1880	27.03	27.5	1.114	0.013	0.014
	GPRS_4TX	Right Tilted	661	1880	27.03	27.5	1.114	0.008	0.009
	GPRS_4TX	Left Cheek	661	1880	27.03	27.5	1.114	0.012	0.013
	GPRS_4TX	Left Tilted	661	1880	27.03	27.5	1.114	0.007	0.008

WCDMA Band 2 – Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
	RMC	Right Cheek	9538	1907.6	22.76	23.0	1.057	0.010	0.011
	RMC	Right Tilted	9538	1907.6	22.76	23.0	1.057	0.006	0.006
3.	RMC	Left Cheek	9538	1907.6	22.76	23.0	1.057	0.016	0.017
	RMC	Left Tilted	9538	1907.6	22.76	23.0	1.057	0.009	0.010

WCDMA Band 4 – Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
	RMC	Right Cheek	1312	1712.4	22.44	22.5	1.014	0.107	0.108
	RMC	Right Tilted	1312	1712.4	22.44	22.5	1.014	0.058	0.059
4.	RMC	Left Cheek	1312	1712.4	22.44	22.5	1.014	0.142	0.144
	RMC	Left Tilted	1312	1712.4	22.44	22.5	1.014	0.081	0.082

WCDMA Band 5 – Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
	RMC	Right Cheek	4233	846.6	22.73	23.0	1.064	0.229	0.244
	RMC	Right Tilted	4233	846.6	22.73	23.0	1.064	0.134	0.143
5.	RMC	Left Cheek	4233	846.6	22.73	23.0	1.064	0.232	0.247
	RMC	Left Tilted	4233	846.6	22.73	23.0	1.064	0.138	0.147

LTE Band 2– Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)	
	Modulation, Bandwidth, RB		MHz						
	QPSK 1.4MHz 1RB	Right Cheek	1909.3	22.98	23.0	1.005	0.012	0.012	
	QPSK 1.4MHz 1RB	Right Tilted	1909.3	22.98	23.0	1.005	0.007	0.007	
	QPSK 1.4MHz 1RB	Left Cheek	1909.3	22.98	23.0	1.005	0.032	0.032	
	QPSK 1.4MHz 1RB	Left Tilted	1909.3	22.98	23.0	1.005	0.015	0.015	
	QPSK 1.4MHz 50%RB	Right Cheek	1909.3	22.98	23.0	1.005	0.013	0.013	
	QPSK 1.4MHz 50%RB	Right Tilted	1909.3	22.98	23.0	1.005	0.008	0.008	
	QPSK 1.4MHz 50%RB	Left Cheek	1909.3	22.98	23.0	1.005	0.027	0.027	
	QPSK 1.4MHz 50%RB	Left Tilted	1909.3	22.98	23.0	1.005	0.016	0.016	
	QPSK 20MHz 1RB	Right Cheek	1880.0	22.86	23.0	1.033	0.013	0.013	
	QPSK 20MHz 1RB	Right Tilted	1880.0	22.86	23.0	1.033	0.008	0.008	
6.	QPSK 20MHz 1RB	Left Cheek	1880.0	22.86	23.0	1.033	0.034	0.035	
	QPSK 20MHz 1RB	Left Tilted	1880.0	22.86	23.0	1.033	0.019	0.020	
	QPSK 20MHz 50%RB	Right Cheek	1880.0	22.86	23.0	1.033	0.012	0.012	
	QPSK 20MHz 50%RB	Right Tilted	1880.0	22.86	23.0	1.033	0.008	0.008	
	QPSK 20MHz 50%RB	Left Cheek	1880.0	22.86	23.0	1.033	0.030	0.031	
	QPSK 20MHz 50%RB	Left Tilted	1880.0	22.86	23.0	1.033	0.017	0.018	

LTE Band 4– Head SAR Test								
Plot No.	Mode	Test Position Head	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth, RB		MHz					
	QPSK 20MHz 1RB	Right Cheek	1732.5	22.88	23.0	1.028	0.022	0.023
	QPSK 20MHz 1RB	Right Tilted	1732.5	22.88	23.0	1.028	0.014	0.014
7.	QPSK 20MHz 1RB	Left Cheek	1732.5	22.88	23.0	1.028	0.054	0.056
	QPSK 20MHz 1RB	Left Tilted	1732.5	22.88	23.0	1.028	0.029	0.030
	QPSK 20MHz 50%RB	Right Cheek	1732.5	22.88	23.0	1.028	0.017	0.017
	QPSK 20MHz 50%RB	Right Tilted	1732.5	22.88	23.0	1.028	0.011	0.011
	QPSK 20MHz 50%RB	Left Cheek	1732.5	22.88	23.0	1.028	0.044	0.045
	QPSK 20MHz 50%RB	Left Tilted	1732.5	22.88	23.0	1.028	0.027	0.028

LTE Band 5– Head SAR Test								
Plot No.	Mode	Test Position Head	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth		MHz					
	QPSK 1.4MHz 1RB	Right Cheek	824.7	23.45	23.5	1.012	0.268	0.271
	QPSK 1.4MHz 1RB	Right Tilted	824.7	23.45	23.5	1.012	0.149	0.151
	QPSK 1.4MHz 1RB	Left Cheek	824.7	23.45	23.5	1.012	0.325	0.329
	QPSK 1.4MHz 1RB	Left Tilted	824.7	23.45	23.5	1.012	0.174	0.176
	QPSK 1.4MHz 50%RB	Right Cheek	824.7	23.45	23.5	1.012	0.217	0.220
	QPSK 1.4MHz 50%RB	Right Tilted	824.7	23.45	23.5	1.012	0.117	0.118
	QPSK 1.4MHz 50%RB	Left Cheek	824.7	23.45	23.5	1.012	0.314	0.318
	QPSK 1.4MHz 50%RB	Left Tilted	824.7	23.45	23.5	1.012	0.179	0.181
	QPSK 10MHz 1RB	Right Cheek	844.0	23.40	23.5	1.023	0.271	0.277
	QPSK 10MHz 1RB	Right Tilted	844.0	23.40	23.5	1.023	0.154	0.158
8.	QPSK 10MHz 1RB	Left Cheek	844.0	23.40	23.5	1.023	0.369	0.378
	QPSK 10MHz 1RB	Left Tilted	844.0	23.40	23.5	1.023	0.198	0.203
	QPSK 10MHz 50%RB	Right Cheek	844.0	23.40	23.5	1.023	0.215	0.220
	QPSK 10MHz 50%RB	Right Tilted	844.0	23.40	23.5	1.023	0.113	0.116
	QPSK 10MHz 50%RB	Left Cheek	844.0	23.40	23.5	1.023	0.290	0.297
	QPSK 10MHz 50%RB	Left Tilted	844.0	23.40	23.5	1.023	0.156	0.160

LTE Band 7– Head SAR Test								
Plot No.	Mode	Test Position Head	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth		MHz					
9.	QPSK 20MHz 1RB	Right Cheek	2535.0	23.39	23.5	1.026	0.187	0.192
	QPSK 20MHz 1RB	Right Tilted	2535.0	23.39	23.5	1.026	0.115	0.118
	QPSK 20MHz 1RB	Left Cheek	2535.0	23.39	23.5	1.026	0.093	0.095
	QPSK 20MHz 1RB	Left Tilted	2535.0	23.39	23.5	1.026	0.052	0.053
	QPSK 20MHz 50%RB	Right Cheek	2535.0	23.39	23.5	1.026	0.163	0.167
	QPSK 20MHz 50%RB	Right Tilted	2535.0	23.39	23.5	1.026	0.089	0.091
	QPSK 20MHz 50%RB	Left Cheek	2535.0	23.39	23.5	1.026	0.084	0.086
	QPSK 20MHz 50%RB	Left Tilted	2535.0	23.39	23.5	1.026	0.047	0.048

WLAN 2.4GHz – Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
	802.11b	Right Cheek	11	2462	16.51	17.0	1.119	0.380	0.425
	802.11b	Right Tilted	11	2462	16.51	17.0	1.119	0.191	0.214
10.	802.11b	Left Cheek	11	2462	16.51	17.0	1.119	0.687	0.769
	802.11b	Left Tilted	11	2462	16.51	17.0	1.119	0.356	0.399

Bluetooth – Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
	GFSK	Right Cheek	78	2480	8.38	8.5	1.028	0.036	0.037
	GFSK	Right Tilted	78	2480	8.38	8.5	1.028	0.021	0.022
11.	GFSK	Left Cheek	78	2480	8.38	8.5	1.028	0.061	0.063
	GFSK	Left Tilted	78	2480	8.38	8.5	1.028	0.033	0.034

WLAN 5.2GHz – Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
	802.11n (HT20)	Right Cheek	36	5180	6.83	7.0	1.040	0.265	0.276
	802.11n (HT20)	Right Tilted	36	5180	6.83	7.0	1.040	0.141	0.147
12.	802.11n (HT20)	Left Cheek	36	5180	6.83	7.0	1.040	0.696	0.724
	802.11n (HT20)	Left Tilted	36	5180	6.83	7.0	1.040	0.406	0.422

WLAN 5.3GHz – Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
	802.11a	Right Cheek	52	5260	3.66	4.0	1.081	0.250	0.270
	802.11a	Right Tilted	52	5260	3.66	4.0	1.081	0.132	0.143
13.	802.11a	Left Cheek	52	5260	3.66	4.0	1.081	0.565	0.611
	802.11a	Left Tilted	52	5260	3.66	4.0	1.081	0.278	0.301

WLAN 5.6GHz – Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
	802.11ac 80MHz	Right Cheek	122	5610	6.61	7.0	1.094	0.340	0.372
	802.11ac 80MHz	Right Tilted	122	5610	6.61	7.0	1.094	0.184	0.201
14.	802.11ac 80MHz	Left Cheek	122	5610	6.61	7.0	1.094	0.714	0.781
	802.11ac 80MHz	Left Tilted	122	5610	6.61	7.0	1.094	0.364	0.398

WLAN 5.8GHz– Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
	802.11a	Right Cheek	149	5745	5.46	5.5	1.009	0.348	0.351
	802.11a	Right Tilted	149	5745	5.46	5.5	1.009	0.185	0.187
15.	802.11a	Left Cheek	149	5745	5.46	5.5	1.009	0.741	0.748
	802.11a	Left Tilted	149	5745	5.46	5.5	1.009	0.382	0.386

Remark: Per KDB 447498 D01 v06, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.

Body-worn SAR

GSM850 – Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
16.	GSM	Back	190	836.6	32.36	32.5	1.033	0.642	0.663
	GSM	Front	190	836.6	32.36	32.5	1.033	0.462	0.477

GSM1900 – Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
17.	GSM	Back	661	1880	30.73	31.0	1.064	0.259	0.276
	GSM	Front	661	1880	30.73	31.0	1.064	0.139	0.148

WCDMA Band 2 – Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
18.	RMC 12.2k	Back	9538	1907.6	22.76	23.0	1.057	0.262	0.277
	RMC 12.2k	Front	9538	1907.6	22.76	23.0	1.057	0.112	0.118

WCDMA Band 4 – Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
19.	RMC 12.2k	Back Face	1312	1712.4	22.44	22.5	1.014	0.227	0.230
	RMC 12.2k	Front Face	1312	1712.4	22.44	22.5	1.014	0.147	0.149

WCDMA Band 5 – Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
20.	RMC 12.2k	Back	4233	846.6	22.73	23.0	1.064	0.504	0.536
	RMC 12.2k	Front	4233	846.6	22.73	23.0	1.064	0.309	0.329

LTE Band 2–Body SAR Test (Gap: 10mm)								
Plot No.	Mode	Test Position	Frequency	Output Power	Rated Limit	Scaling Factor	SAR1g	Scaled SAR1g
	Modulation, Bandwidth, RB	Body	MHz	(dBm)	(dBm)		(W/kg)	(W/kg)
	QPSK 1.4MHz 1RB	Back Face	1909.3	22.98	23.0	1.005	0.521	0.523
	QPSK 1.4MHz 1RB	Front Face	1909.3	22.98	23.0	1.005	0.197	0.198
	QPSK 1.4MHz 50%RB	Back Face	1909.3	22.98	23.0	1.005	0.449	0.451
	QPSK 1.4MHz 50%RB	Front Face	1909.3	22.98	23.0	1.005	0.175	0.176
21.	QPSK 20MHz 1RB	Back Face	1880.0	22.86	23.0	1.033	0.529	0.546
	QPSK 20MHz 1RB	Front Face	1880.0	22.86	23.0	1.033	0.204	0.211
	QPSK 20MHz 50%RB	Back Face	1880.0	22.86	23.0	1.033	0.455	0.470
	QPSK 20MHz 50%RB	Front Face	1880.0	22.86	23.0	1.033	0.166	0.171

LTE Band 4–Body SAR Test (Gap: 10mm)								
Plot No.	Mode	Test Position	Frequency	Output Power	Rated Limit	Scaling Factor	SAR1g	Scaled SAR1g
	Modulation, Bandwidth, RB	Body	MHz	(dBm)	(dBm)		(W/kg)	(W/kg)
22.	QPSK 20MHz 1RB	Back	1732.5	22.88	23.0	1.028	0.246	0.253
	QPSK 20MHz 1RB	Front	1732.5	22.88	23.0	1.028	0.062	0.064
	QPSK 20MHz 50%RB	Back	1732.5	22.88	23.0	1.028	0.210	0.216
	QPSK 20MHz 50%RB	Front	1732.5	22.88	23.0	1.028	0.054	0.056

LTE Band 5–Body SAR Test (Gap: 10mm)								
Plot No.	Mode	Test Position	Frequency	Output Power	Rated Limit	Scaling Factor	SAR1g	Scaled SAR1g
	Modulation, Bandwidth, RB	Body	MHz	(dBm)	(dBm)		(W/kg)	(W/kg)
	QPSK 1.4MHz 1RB	Back	824.7	23.45	23.5	1.012	0.584	0.591
	QPSK 1.4MHz 1RB	Front	824.7	23.45	23.5	1.012	0.363	0.367
	QPSK 1.4MHz 50%RB	Back	824.7	23.45	23.5	1.012	0.458	0.463
	QPSK 1.4MHz 50%RB	Front	824.7	23.45	23.5	1.012	0.304	0.308
23.	QPSK 10MHz 1RB	Back	844.0	23.40	23.5	1.023	0.591	0.605
	QPSK 10MHz 1RB	Front	844.0	23.40	23.5	1.023	0.370	0.379
	QPSK 10MHz 50%RB	Back	844.0	23.40	23.5	1.023	0.476	0.487
	QPSK 10MHz 50%RB	Front	844.0	23.40	23.5	1.023	0.294	0.301

LTE Band 7–Body SAR Test (Gap: 10mm)								
Plot No.	Mode	Test Position Body	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth, RB		MHz					
24.	QPSK 20MHz 1RB	Back	2535.0	23.39	23.5	1.026	0.862	0.884
	QPSK 20MHz 1RB	Front	2535.0	23.39	23.5	1.026	0.756	0.775
	QPSK 20MHz 50%RB	Back	2535.0	23.39	23.5	1.026	0.757	0.776
	QPSK 20MHz 50%RB	Front	2535.0	23.39	23.5	1.026	0.686	0.704

WLAN 2.4GHz –Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
25.	802.11b	Back Face	11	2462	16.51	17.0	1.119	0.424	0.475
	802.11b	Front Face	11	2462	16.51	17.0	1.119	0.298	0.334

Bluetooth–Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
26.	GFSK	Back Face	78	2480	8.38	8.5	1.028	0.040	0.041
	GFSK	Front Face	78	2480	8.38	8.5	1.028	0.027	0.028

WLAN 5.2GHz –Body SAR Test(Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
27.	802.11n (HT20)	Back Side	36	5180	6.83	7.0	1.040	0.630	0.655
	802.11n (HT20)	Front Side	36	5180	6.83	7.0	1.040	0.279	0.290

WLAN 5.3GHz –Body SAR Test(Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
	802.11a	Back Side	52	5260	3.66	4.0	1.081	0.304	0.329
28.	802.11a	Front Side	52	5260	3.66	4.0	1.081	0.418	0.452

WLAN 5.6GHz–Body SAR Test(Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
29.	802.11ac 80MHz	Back Side	122	5610	6.61	6.0	1.094	0.360	0.394
	802.11ac 80MHz	Front Side	122	5610	6.61	6.0	1.094	0.229	0.251

WLAN 5.8GHz –Body SAR Test(Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
30.	802.11 a	Back Side	149	5745	5.46	5.5	1.009	0.447	0.451
	802.11 a	Front Side	149	5745	5.46	5.5	1.009	0.355	0.358

Hotspot SAR

GSM850 – Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
31.	GPRS_4TX	Back Face	128	824.2	28.73	29.0	1.064	0.475	0.505
	GPRS_4TX	Front Face	128	824.2	28.73	29.0	1.064	0.379	0.403
	GPRS_4TX	Right Side	128	824.2	28.73	29.0	1.064	0.199	0.212
	GPRS_4TX	Left Side	128	824.2	28.73	29.0	1.064	0.043	0.046
	GPRS_4TX	Bottom Side	128	824.2	28.73	29.0	1.064	0.407	0.433

GSM1900 – Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
32.	GPRS_4TX	Back Face	661	1880	27.03	27.5	1.114	0.367	0.409
	GPRS_4TX	Front Face	661	1880	27.03	27.5	1.114	0.120	0.134
	GPRS_4TX	Right Side	661	1880	27.03	27.5	1.114	0.058	0.065
	GPRS_4TX	Left Side	661	1880	27.03	27.5	1.114	0.014	0.016
	GPRS_4TX	Bottom Side	661	1880	27.03	27.5	1.114	0.272	0.303

WCDMA Band 2 – Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
33.	RMC 12.2k	Back Face	9538	1907.6	22.76	23.0	1.057	0.262	0.277
	RMC 12.2k	Front Face	9538	1907.6	22.76	23.0	1.057	0.112	0.118
	RMC 12.2k	Right Side	9538	1907.6	22.76	23.0	1.057	0.055	0.058
	RMC 12.2k	Left Side	9538	1907.6	22.76	23.0	1.057	0.017	0.018
	RMC 12.2k	Bottom Side	9538	1907.6	22.76	23.0	1.057	0.245	0.259

WCDMA Band 4– Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
34.	RMC 12.2k	Back Face	1312	1712.4	22.44	22.5	1.014	0.227	0.230
	RMC 12.2k	Front Face	1312	1712.4	22.44	22.5	1.014	0.147	0.149
	RMC 12.2k	Right Side	1312	1712.4	22.44	22.5	1.014	0.163	0.165
	RMC 12.2k	Left Side	1312	1712.4	22.44	22.5	1.014	0.098	0.099
	RMC 12.2k	Bottom Side	1312	1712.4	22.44	22.5	1.014	0.207	0.210

WCDMA Band 5 – Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
35.	RMC 12.2k	Back Face	4233	846.6	22.73	23.0	1.064	0.504	0.536
	RMC 12.2k	Front Face	4233	846.6	22.73	23.0	1.064	0.309	0.329
	RMC 12.2k	Right Side	4233	846.6	22.73	23.0	1.064	0.194	0.206
	RMC 12.2k	Left Side	4233	846.6	22.73	23.0	1.064	0.049	0.052
	RMC 12.2k	Bottom Side	4233	846.6	22.73	23.0	1.064	0.382	0.407

LTE Band 2–Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)	
	Modulation, Bandwidth, RB		MHz						
	QPSK 1.4MHz 1RB	Back Face	1909.3	22.98	23.0	1.005	0.521	0.523	
	QPSK 1.4MHz 1RB	Front Face	1909.3	22.98	23.0	1.005	0.197	0.198	
	QPSK 1.4MHz 1RB	Right Side	1909.3	22.98	23.0	1.005	0.095	0.095	
	QPSK 1.4MHz 1RB	Left Side	1909.3	22.98	23.0	1.005	0.031	0.031	
	QPSK 1.4MHz 1RB	Bottom Side	1909.3	22.98	23.0	1.005	0.456	0.458	
	QPSK 1.4MHz 50%RB	Back Face	1909.3	22.98	23.0	1.005	0.449	0.451	
	QPSK 1.4MHz 50%RB	Front Face	1909.3	22.98	23.0	1.005	0.175	0.176	
	QPSK 1.4MHz 50%RB	Right Side	1909.3	22.98	23.0	1.005	0.074	0.074	
	QPSK 1.4MHz 50%RB	Left Side	1909.3	22.98	23.0	1.005	0.023	0.023	
	QPSK 1.4MHz 50%RB	Bottom Side	1909.3	22.98	23.0	1.005	0.365	0.367	
36.	QPSK 20MHz 1RB	Back Face	1880.0	22.86	23.0	1.033	0.529	0.546	
	QPSK 20MHz 1RB	Front Face	1880.0	22.86	23.0	1.033	0.204	0.211	
	QPSK 20MHz 1RB	Right Side	1880.0	22.86	23.0	1.033	0.081	0.084	
	QPSK 20MHz 1RB	Left Side	1880.0	22.86	23.0	1.033	0.022	0.023	
	QPSK 20MHz 1RB	Bottom Side	1880.0	22.86	23.0	1.033	0.453	0.468	
	QPSK 20MHz 50%RB	Back Face	1880.0	22.86	23.0	1.033	0.455	0.470	
	QPSK 20MHz 50%RB	Front Face	1880.0	22.86	23.0	1.033	0.166	0.171	
	QPSK 20MHz 50%RB	Right Side	1880.0	22.86	23.0	1.033	0.068	0.070	
	QPSK 20MHz 50%RB	Left Side	1880.0	22.86	23.0	1.033	0.019	0.020	
	QPSK 20MHz 50%RB	Bottom Side	1880.0	22.86	23.0	1.033	0.371	0.383	

LTE Band 4–Body SAR Test (Gap: 10mm)								
Plot No.	Mode	Test Position Body	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth, RB		MHz					
37.	QPSK 20MHz 1RB	Back Face	1732.5	22.88	23.0	1.028	0.246	0.253
	QPSK 20MHz 1RB	Front Face	1732.5	22.88	23.0	1.028	0.062	0.064
	QPSK 20MHz 1RB	Right Side	1732.5	22.88	23.0	1.028	0.023	0.024
	QPSK 20MHz 1RB	Left Side	1732.5	22.88	23.0	1.028	0.015	0.015
	QPSK 20MHz 1RB	Bottom Side	1732.5	22.88	23.0	1.028	0.148	0.152
	QPSK 20MHz 50%RB	Back Face	1732.5	22.88	23.0	1.028	0.210	0.216
	QPSK 20MHz 50%RB	Front Face	1732.5	22.88	23.0	1.028	0.054	0.056
	QPSK 20MHz 50%RB	Right Side	1732.5	22.88	23.0	1.028	0.019	0.020
	QPSK 20MHz 50%RB	Left Side	1732.5	22.88	23.0	1.028	0.013	0.013
	QPSK 20MHz 50%RB	Bottom Side	1732.5	22.88	23.0	1.028	0.131	0.135

LTE Band 5–Body SAR Test (Gap: 10mm)								
Plot No.	Mode	Test Position Body	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth, RB		MHz					
	QPSK 1.4MHz 1RB	Back Face	824.7	23.45	23.5	1.012	0.584	0.591
	QPSK 1.4MHz 1RB	Front Face	824.7	23.45	23.5	1.012	0.363	0.367
	QPSK 1.4MHz 1RB	Right Side	824.7	23.45	23.5	1.012	0.251	0.254
	QPSK 1.4MHz 1RB	Left Side	824.7	23.45	23.5	1.012	0.065	0.066
	QPSK 1.4MHz 1RB	Bottom Side	824.7	23.45	23.5	1.012	0.449	0.454
	QPSK 1.4MHz 50%RB	Back Face	824.7	23.45	23.5	1.012	0.458	0.463
	QPSK 1.4MHz 50%RB	Front Face	824.7	23.45	23.5	1.012	0.304	0.308
	QPSK 1.4MHz 50%RB	Right Side	824.7	23.45	23.5	1.012	0.213	0.215
	QPSK 1.4MHz 50%RB	Left Side	824.7	23.45	23.5	1.012	0.052	0.053
	QPSK 1.4MHz 50%RB	Bottom Side	824.7	23.45	23.5	1.012	0.361	0.365
38.	QPSK 10MHz 1RB	Back Face	844.0	23.40	23.5	1.023	0.591	0.605
	QPSK 10MHz 1RB	Front Face	844.0	23.40	23.5	1.023	0.370	0.379
	QPSK 10MHz 1RB	Right Side	844.0	23.40	23.5	1.023	0.258	0.264
	QPSK 10MHz 1RB	Left Side	844.0	23.40	23.5	1.023	0.058	0.059
	QPSK 10MHz 1RB	Bottom Side	844.0	23.40	23.5	1.023	0.447	0.457
	QPSK 10MHz 50%RB	Back Face	844.0	23.40	23.5	1.023	0.476	0.487
	QPSK 10MHz 50%RB	Front Face	844.0	23.40	23.5	1.023	0.294	0.301
	QPSK 10MHz 50%RB	Right Side	844.0	23.40	23.5	1.023	0.209	0.214
	QPSK 10MHz 50%RB	Left Side	844.0	23.40	23.5	1.023	0.044	0.045
	QPSK 10MHz 50%RB	Bottom Side	844.0	23.40	23.5	1.023	0.366	0.375

LTE Band 7–Body SAR Test (Gap: 10mm)								
Plot No.	Mode	Test Position	Frequency	Output Power	Rated Limit	Scaling Factor	SAR1g	Scaled SAR1g
	Modulation, Bandwidth, RB	Body	MHz	(dBm)	(dBm)		(W/kg)	(W/kg)
39.	QPSK 20MHz 1RB	Back Face	2535.0	23.39	23.5	1.026	0.862	0.884
	QPSK 20MHz 1RB	Front Face	2535.0	23.39	23.5	1.026	0.756	0.775
	QPSK 20MHz 1RB	Right Side	2535.0	23.39	23.5	1.026	0.193	0.198
	QPSK 20MHz 1RB	Left Side	2535.0	23.39	23.5	1.026	0.145	0.149
	QPSK 20MHz 1RB	Bottom Side	2535.0	23.39	23.5	1.026	0.658	0.675
	QPSK 20MHz 50%RB	Back Face	2535.0	23.39	23.5	1.026	0.757	0.776
	QPSK 20MHz 50%RB	Front Face	2535.0	23.39	23.5	1.026	0.686	0.704
	QPSK 20MHz 50%RB	Right Side	2535.0	23.39	23.5	1.026	0.176	0.181
	QPSK 20MHz 50%RB	Left Side	2535.0	23.39	23.5	1.026	0.127	0.130
	QPSK 20MHz 50%RB	Bottom Side	2535.0	23.39	23.5	1.026	0.632	0.648

WLAN 2.4GHz –Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
40.	802.11b	Back Face	11	2462	16.51	17.0	1.119	0.424	0.475
	802.11b	Front Face	11	2462	16.51	17.0	1.119	0.298	0.334
	802.11b	Right Side	11	2462	16.51	17.0	1.119	0.290	0.325
	802.11b	Top Side	11	2462	16.51	17.0	1.119	0.189	0.212

Bluetooth–Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
41.	GFSK	Back Face	78	2480	8.38	8.5	1.028	0.040	0.041
	GFSK	Front Face	78	2480	8.38	8.5	1.028	0.027	0.028
	GFSK	Right Side	78	2480	8.38	8.5	1.028	0.028	0.029
	GFSK	Top Side	78	2480	8.38	8.5	1.028	0.016	0.016

WLAN 5.2GHz –Body SAR Test(Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
42.	802.11n (HT20)	Back Side	36	5180	6.83	7.0	1.040	0.630	0.655
	802.11n (HT20)	Front Side	36	5180	6.83	7.0	1.040	0.279	0.290
	802.11n (HT20)	Right side	36	5180	6.83	7.0	1.040	0.108	0.112
	802.11n (HT20)	Top Side	36	5180	6.83	7.0	1.040	0.603	0.627

WLAN 5.3GHz –Body SAR Test(Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
	802.11a	Back Side	52	5260	3.66	4.0	1.081	0.304	0.329
	802.11a	Front Side	52	5260	3.66	4.0	1.081	0.418	0.452
	802.11a	Right side	52	5260	3.66	4.0	1.081	0.160	0.173
43.	802.11a	Top Side	52	5260	3.66	4.0	1.081	0.481	0.520

WLAN 5.6GHz–Body SAR Test(Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
44.	802.11ac 80MHz	Back Side	122	5610	6.61	6.0	1.094	0.360	0.394
	802.11ac 80MHz	Front Side	122	5610	6.61	6.0	1.094	0.229	0.251
	802.11ac 80MHz	Right side	122	5610	6.61	6.0	1.094	0.241	0.264
	802.11ac 80MHz	Top Side	122	5610	6.61	6.0	1.094	0.336	0.368

WLAN 5.8GHz –Body SAR Test(Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
45.	802.11a	Back Side	149	5745	5.46	5.5	1.009	0.447	0.451
	802.11a	Front Side	149	5745	5.46	5.5	1.009	0.355	0.358
	802.11a	Right side	149	5745	5.46	5.5	1.009	0.268	0.270
	802.11a	Top Side	149	5745	5.46	5.5	1.009	0.346	0.349

Remark: Per KDB 447498 D01 v06, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.

9.3 Simultaneous Multi-band Transmission SAR Analysis

List of Mode for Simultaneous Multi-band Transmission

No.	Configurations	Head SAR	Body SAR
1	GSM(Voice/Data) + WLAN(2.4GHz)(Data)	Yes	Yes
2	WCDMA (Voice/Data)+ WLAN(2.4GHz)(Data)	Yes	Yes
3	LTE(Data) + WLAN(2.4GHz)(Data)	Yes	Yes
4	GSM(Voice/Data) + WLAN(5GHz)(Data)	Yes	Yes
5	WCDMA (Voice/Data)+ WLAN(5GHz)(Data)	Yes	Yes
6	LTE(Data) + WLAN(5GHz)(Data)	Yes	Yes
7	GSM(Voice/Data) + Bluetooth(Data)	Yes	Yes
8	WCDMA (Voice/Data) + Bluetooth(Data)	Yes	Yes
9	LTE(Data) + Bluetooth(Data)	Yes	Yes

Remark:

1. GSM, WCDMA and LTE share the same antenna, and cannot transmit simultaneously.
2. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
- 3 The maximum SAR summation is calculated based on the same configuration and test position.

Head SAR**WWAN and WLAN**

Position	WWAN		WLAN(2.4GHz)	Summed SAR (W/kg)
	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Right Cheek	GSM	0.568	0.425	0.993
Right Tilted	GSM	0.293	0.214	0.507
Left Cheek	GSM	0.429	0.769	1.198
Left Tilted	GSM	0.221	0.399	0.620
Right Cheek	WCDMA	0.244	0.425	0.669
Right Tilted	WCDMA	0.143	0.214	0.357
Left Cheek	WCDMA	0.247	0.769	1.016
Left Tilted	WCDMA	0.147	0.399	0.546
Right Cheek	LTE	0.277	0.425	0.702
Right Tilted	LTE	0.154	0.214	0.368
Left Cheek	LTE	0.378	0.769	1.147
Left Tilted	LTE	0.203	0.399	0.602

WWAN and Bluetooth

Position	WWAN		Bluetooth	Summed SAR (W/kg)
	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Right Cheek	GSM	0.568	0.037	0.605
Right Tilted	GSM	0.293	0.022	0.315
Left Cheek	GSM	0.429	0.063	0.492
Left Tilted	GSM	0.221	0.034	0.255
Right Cheek	WCDMA	0.244	0.037	0.281
Right Tilted	WCDMA	0.143	0.022	0.165
Left Cheek	WCDMA	0.247	0.063	0.310
Left Tilted	WCDMA	0.147	0.034	0.181
Right Cheek	LTE	0.277	0.037	0.314
Right Tilted	LTE	0.154	0.022	0.176
Left Cheek	LTE	0.378	0.063	0.441
Left Tilted	LTE	0.203	0.034	0.237

WWAN and WLAN

	WWAN		WLAN(5GHz)	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Right Cheek	GSM	0.568	0.372	0.940
Right Tilted	GSM	0.293	0.201	0.494
Left Cheek	GSM	0.429	0.781	1.210
Left Tilted	GSM	0.221	0.422	0.643
Right Cheek	WCDMA	0.244	0.372	0.616
Right Tilted	WCDMA	0.143	0.201	0.344
Left Cheek	WCDMA	0.247	0.781	1.028
Left Tilted	WCDMA	0.147	0.422	0.569
Right Cheek	LTE	0.277	0.372	0.649
Right Tilted	LTE	0.154	0.201	0.355
Left Cheek	LTE	0.378	0.781	1.159
Left Tilted	LTE	0.203	0.422	0.625

Body-worn SAR**WWAN and WLAN**

Position	WWAN		WLAN(2.4GHz)	Summed SAR (W/kg)
	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM	0.663	0.475	1.138
Front	GSM	0.477	0.334	0.811
Back	WCDMA	0.536	0.475	1.011
Front	WCDMA	0.329	0.334	0.663
Back	LTE	0.884	0.475	1.359
Front	LTE	0.775	0.334	1.109

WWAN and Bluetooth

Position	WWAN		Bluetooth	Summed SAR (W/kg)
	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM	0.663	0.041	0.704
Front	GSM	0.477	0.028	0.505
Back	WCDMA	0.536	0.041	0.577
Front	WCDMA	0.329	0.028	0.357
Back	LTE	0.884	0.041	0.925
Front	LTE	0.775	0.028	0.803

WWAN and WLAN

Position	WWAN		WLAN(5GHz)	Summed SAR (W/kg)
	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM	0.663	0.655	1.318
Front	GSM	0.477	0.452	0.929
Back	WCDMA	0.536	0.655	1.191
Front	WCDMA	0.329	0.452	0.781
Back	LTE	0.884	0.655	1.539
Front	LTE	0.775	0.452	1.227

Hotspot SAR**WWAN and WLAN**

Position	WWAN		WLAN(2.4GHz)	Summed SAR (W/kg)
	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM	0.505	0.475	0.980
Front	GSM	0.403	0.334	0.737
Right side	GSM	0.212	0.325	0.537
Left side	GSM	0.046	--	0.046
Bottom side	GSM	0.433	--	0.433
Top side	GSM	--	0.212	0.212
Back	WCDMA	0.536	0.475	1.011
Front	WCDMA	0.329	0.334	0.663
Right side	WCDMA	0.206	0.325	0.531
Left side	WCDMA	0.099	--	0.099
Bottom side	WCDMA	0.407	--	0.407
Top side	WCDMA	--	0.212	0.212
Back	LTE	0.884	0.475	1.359
Front	LTE	0.775	0.334	1.109
Right side	LTE	0.264	0.325	0.589
Left side	LTE	0.149	--	0.149
Bottom side	LTE	0.675	--	0.675
Top side	LTE	--	0.212	0.212

WWAN and Bluetooth

	WWAN		Bluetooth	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM	0.505	0.041	0.546
Front	GSM	0.403	0.028	0.431
Right side	GSM	0.212	0.029	0.241
Left side	GSM	0.046	--	0.046
Bottom side	GSM	0.433	--	0.433
Top side	GSM	--	0.016	0.016
Back	WCDMA	0.536	0.041	0.577
Front	WCDMA	0.329	0.028	0.357
Right side	WCDMA	0.206	0.029	0.235
Left side	WCDMA	0.099	--	0.099
Bottom side	WCDMA	0.407	--	0.407
Top side	WCDMA	--	0.016	0.016
Back	LTE	0.884	0.041	0.925
Front	LTE	0.775	0.028	0.803
Right side	LTE	0.264	0.029	0.293
Left side	LTE	0.149	--	0.149
Bottom side	LTE	0.675	--	0.675
Top side	LTE	--	0.016	0.016

WWAN and WLAN

	WWAN		WLAN(5GHz)	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM	0.505	0.655	1.160
Front	GSM	0.403	0.452	0.855
Right side	GSM	0.212	0.270	0.482
Left side	GSM	0.046	--	0.046
Bottom side	GSM	0.433	--	0.433
Top side	GSM	--	0.627	0.627
Back	WCDMA	0.536	0.655	1.191
Front	WCDMA	0.329	0.452	0.781
Right side	WCDMA	0.206	0.270	0.476
Left side	WCDMA	0.099	--	0.099
Bottom side	WCDMA	0.407	--	0.407
Top side	WCDMA	--	0.627	0.627
Back	LTE	0.884	0.655	1.539
Front	LTE	0.775	0.452	1.227
Right side	LTE	0.264	0.270	0.534
Left side	LTE	0.149	--	0.149
Bottom side	LTE	0.675	--	0.675
Top side	LTE	--	0.627	0.627

10. Measurement Uncertainty

10.1 Uncertainty for SAR Test

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	7.0	N	1	1	1	7.00	7.00	∞
Axial Isotropy	E.2.2	2.5	R	$\sqrt{3}$	$(1_{Cp})^{1/2}$	$(1_{Cp})^{1/2}$	1.02	1.02	∞
Hemispherical Isotropy	E.2.2	4.0	R	$\sqrt{3}$	$(Cp)^{1/2}$	$(Cp)^{1/2}$	1.63	1.63	∞
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 – Noise	E.6.1	0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient Conditions - Reflections	E.6.1	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 Algorithms for Max. SAR Evaluation	E.5	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Test Sample Related									
Test sample positioning	E.4.2	0.03	N	1	1	1	0.03	0.03	N-1
Device Holder Uncertainty	E.4.1	5.00	N	1	1	1	5.00	5.00	
Output power Variation - SAR drift measurement	E.2.9	12.02	R	$\sqrt{3}$	1	1	6.94	6.94	∞
SAR scaling	E6.5	0.0	R	$\sqrt{3}$	1	1	0.0	0.0	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E3.2	1.9	R	$\sqrt{3}$	1	0.84	1.10	0.90	∞

Liquid conductivity - deviation from target value	E.3.2	5.00	R	$\sqrt{3}$	0.64	0.43	1.85	1.24	∞
Liquid conductivity - measurement uncertainty	E.3.3	5.00	N	1	0.64	0.43	3.20	2.15	∞
Liquid permittivity - deviation from target value	E.3.2	0.37	R	$\sqrt{3}$	0.6	0.49	0.13	0.10	∞
Liquid permittivity - measurement uncertainty	E.3.3	10.00	N	1	0.6	0.49	6.00	4.90	∞
Combined Standard Uncertainty			RSS				10.20	10.00	
Expanded Uncertainty (95% Confidence interval)			K=2				20.40	20.00	

Annex A. Plots of System Performance Check

MEASUREMENT 1

Type: Validation measurement (Fast, 75.00 %)

Measurement duration: 7 minutes 21 seconds

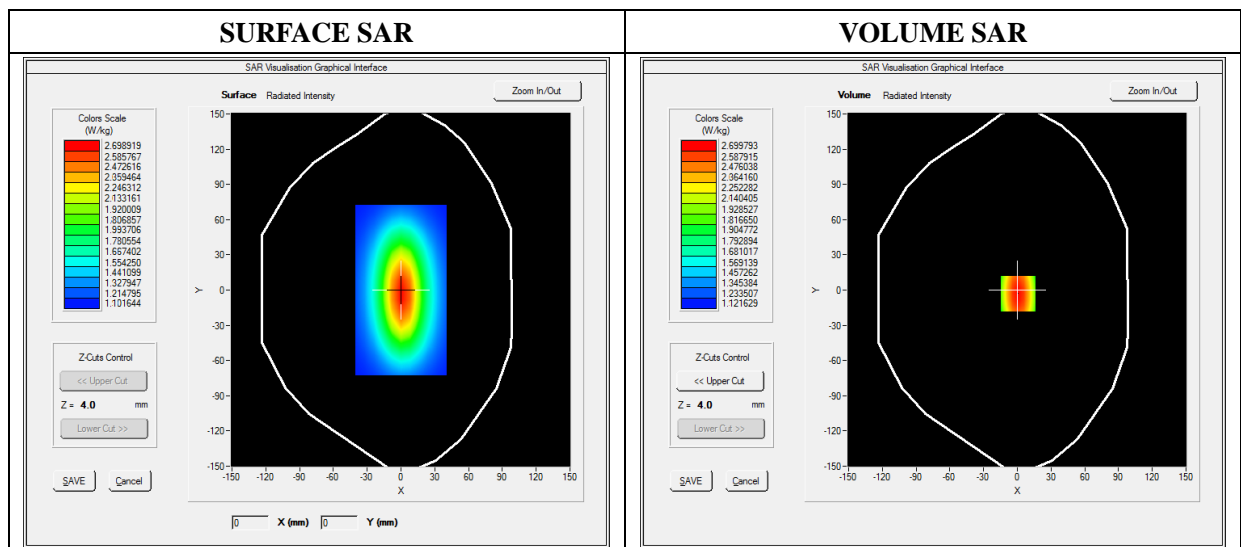
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 1.71; Calibrated: 2022-07-08

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Validation plane
Device Position	Dipole
Band	CW835
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	835.000000
Relative Permittivity (real part)	40.750245
Conductivity (S/m)	0.881245
Power Variation (%)	0.428437
Ambient Temperature	22.2
Liquid Temperature	22.2

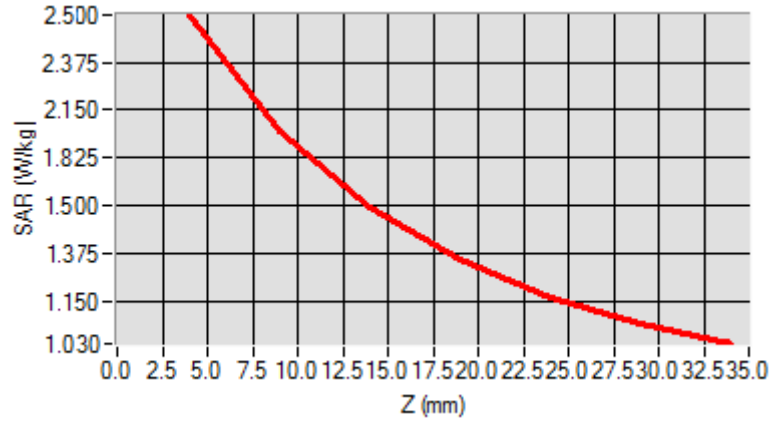


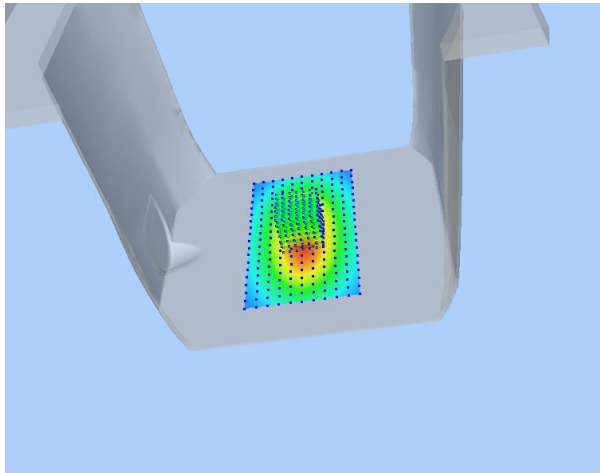
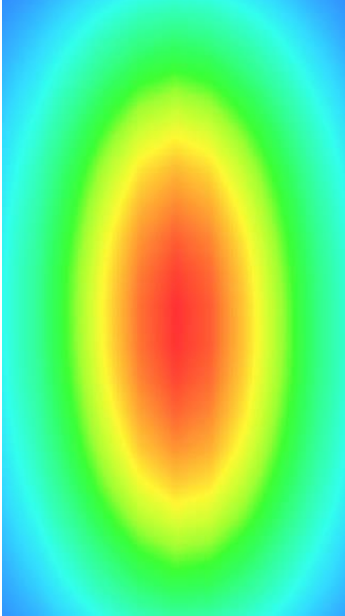
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	1.519489
SAR 1g (W/Kg)	2.511253

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	2.4900	1.8942	1.4811	1.3541	1.1123	1.0539



3D screen shot	Hot spot position
	

MEASUREMENT 2

Type: Validation measurement (Fast, 75.00 %)

Measurement duration: 12 minutes 21 seconds

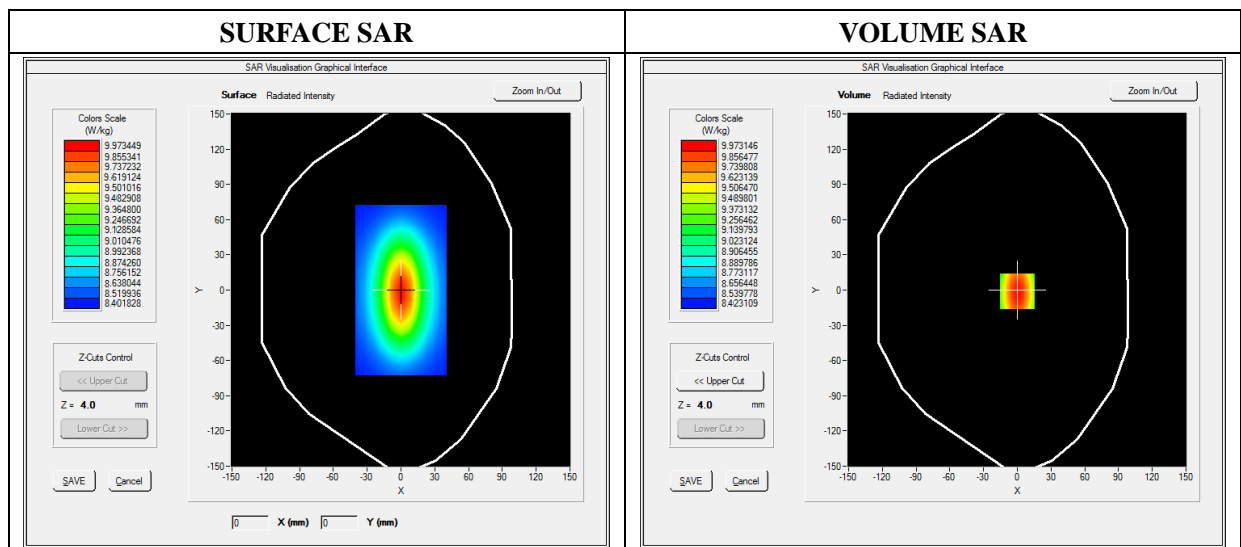
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.11; Calibrated: 2022-07-08

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Validation plane
Device Position	Dipole
Band	CW1800
Signal	CW (Crest factor: 1.0)

B. SAR Measurement Results

Frequency (MHz)	1800.000000
Relative Permittivity (real part)	39.427090
Conductivity (S/m)	1.382510
Power Variation (%)	1.041232
Ambient Temperature	22.2
Liquid Temperature	22.2

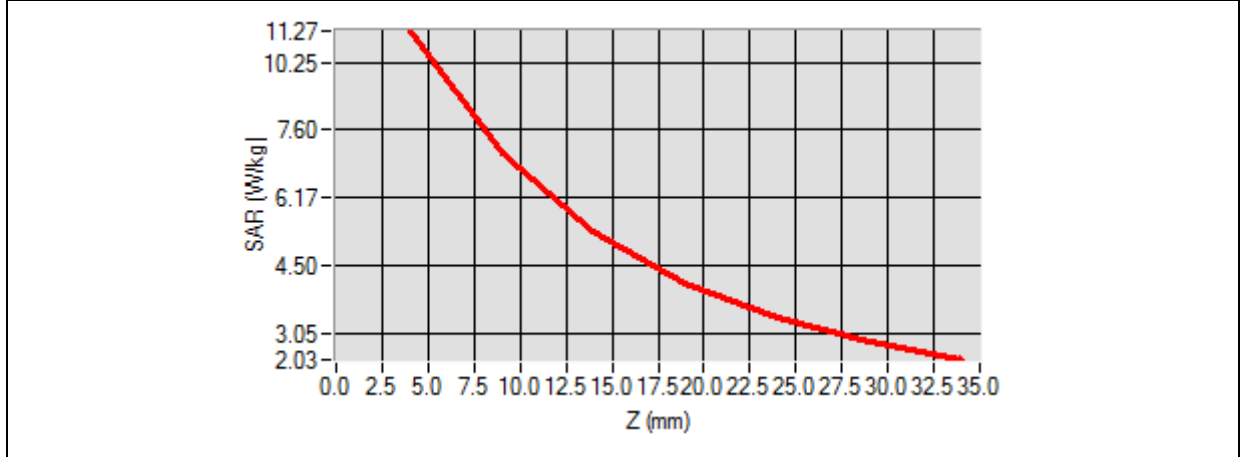


Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	5.081252
SAR 1g (W/Kg)	9.461217

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	10.3455	7.1125	5.1026	3.425	3.0242	2.1125



3D screen shot	Hot spot position

MEASUREMENT 3

Type: Validation measurement (Fast, 75.00 %)

Measurement duration: 12 minutes 21 seconds

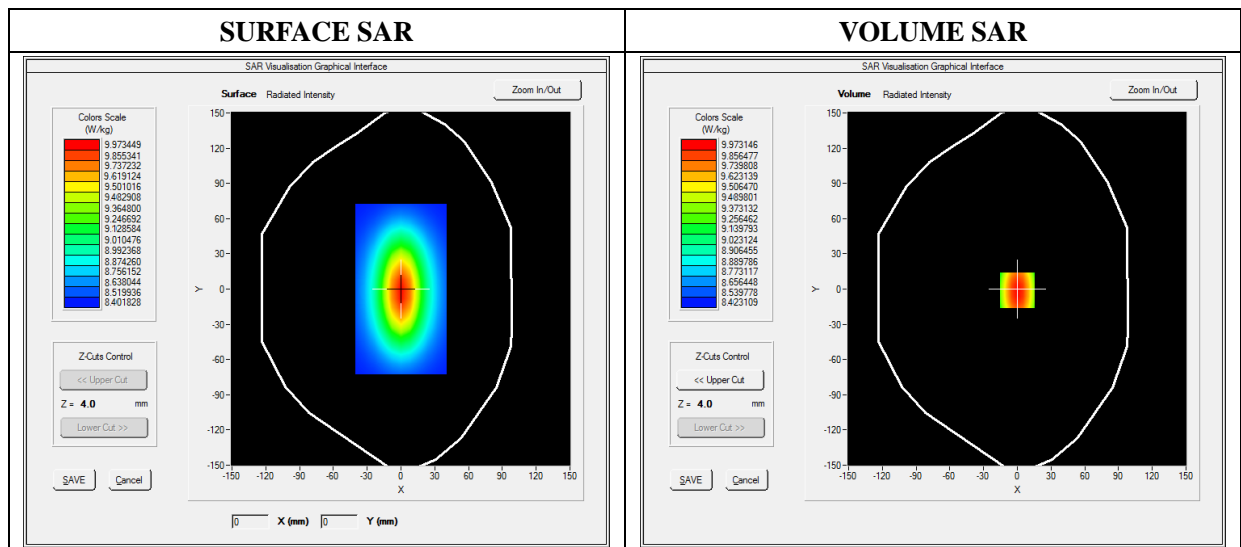
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.21; Calibrated: 2022-07-08

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Validation plane
Device Position	Dipole
Band	CW1900
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative Permittivity (real part)	39.060124
Conductivity (S/m)	1.393607
Power Variation (%)	1.022540
Ambient Temperature	22.2
Liquid Temperature	22.2

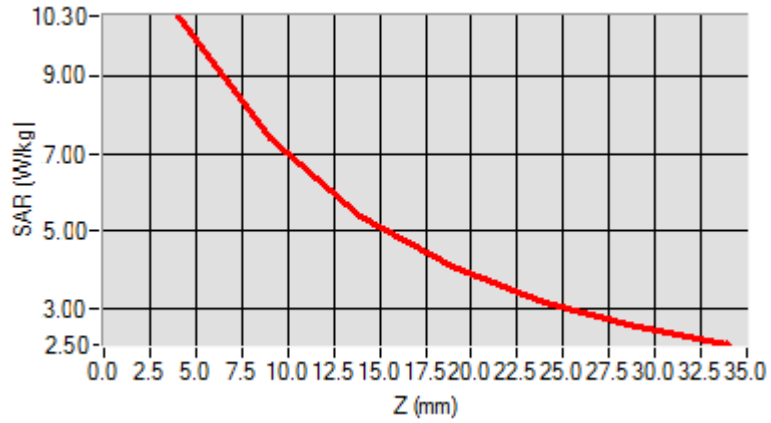


Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	5.174526
SAR 1g (W/Kg)	9.913214

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	10.2354	6.8400	5.0121	4.1189	3.0522	2.8424



3D screen shot	Hot spot position

MEASUREMENT 4

Type: Validation measurement (Fast, 75.00 %)

Measurement duration: 12 minutes 21 seconds

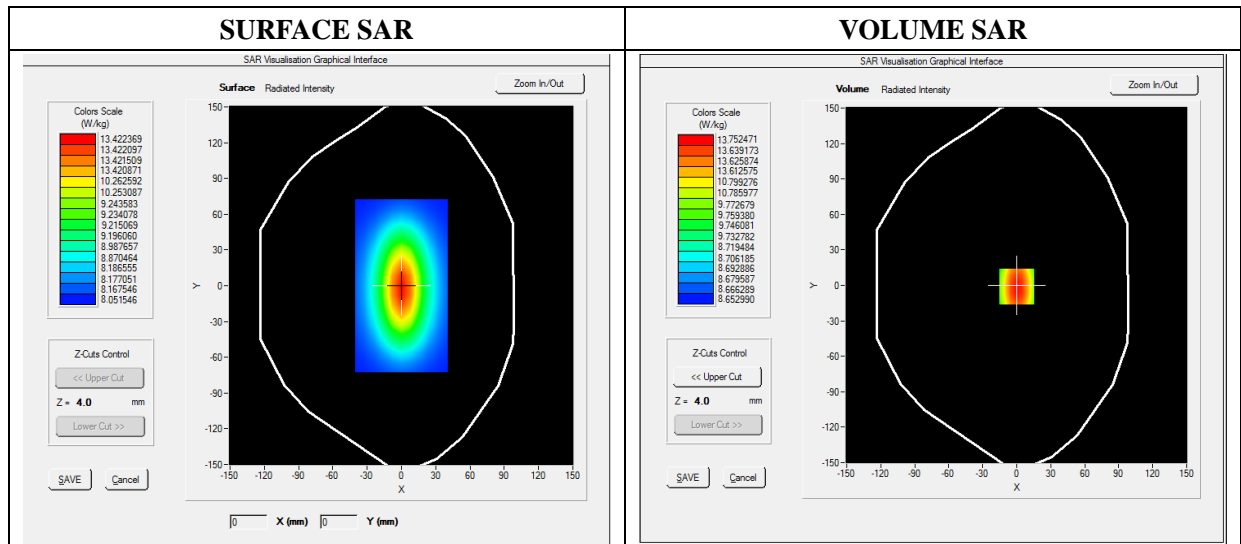
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.29; Calibrated: 2022-07-08

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	2450.000000
Relative Permittivity (real part)	38.450860
Conductivity (S/m)	1.770236
Power Variation (%)	1.141452
Ambient Temperature	22.2
Liquid Temperature	22.2

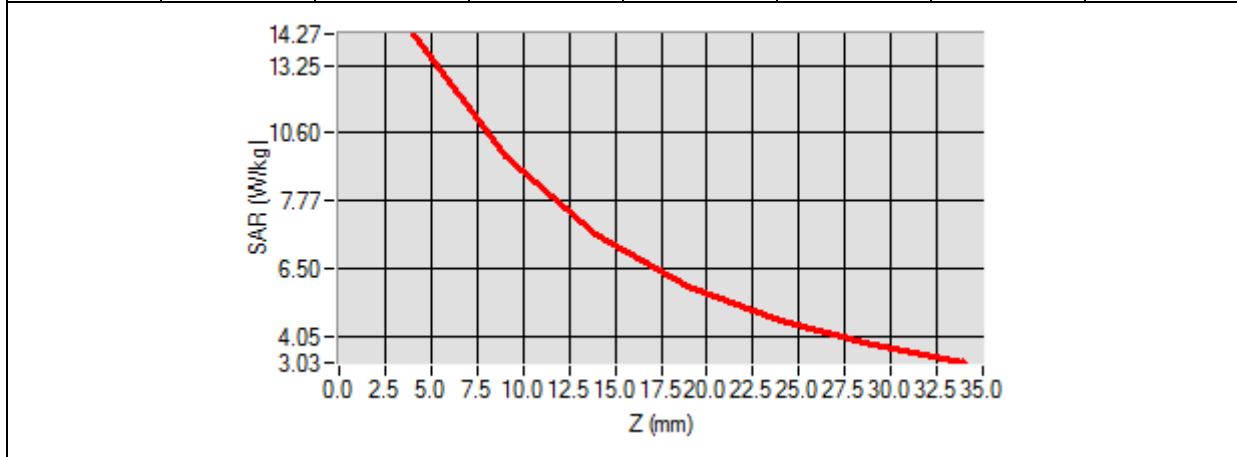


Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	8.210711
SAR 1g (W/Kg)	13.752408

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	14.1034	12.0012	10.2624	7.4715	5.9022	4.5114



3D screen shot	Hot spot position
<p>A 3D perspective view of a grey, L-shaped device. A rectangular area on the inner surface is color-coded to show SAR distribution, with a red/orange hot spot in the center transitioning to blue at the edges.</p>	<p>A 2D heatmap showing a central red hot spot. The intensity decreases radially outwards, passing through yellow and green to blue at the edges of the field.</p>

MEASUREMENT 5

Type: Validation measurement (Fast, 75.00 %)

Measurement duration: 12 minutes 21 seconds

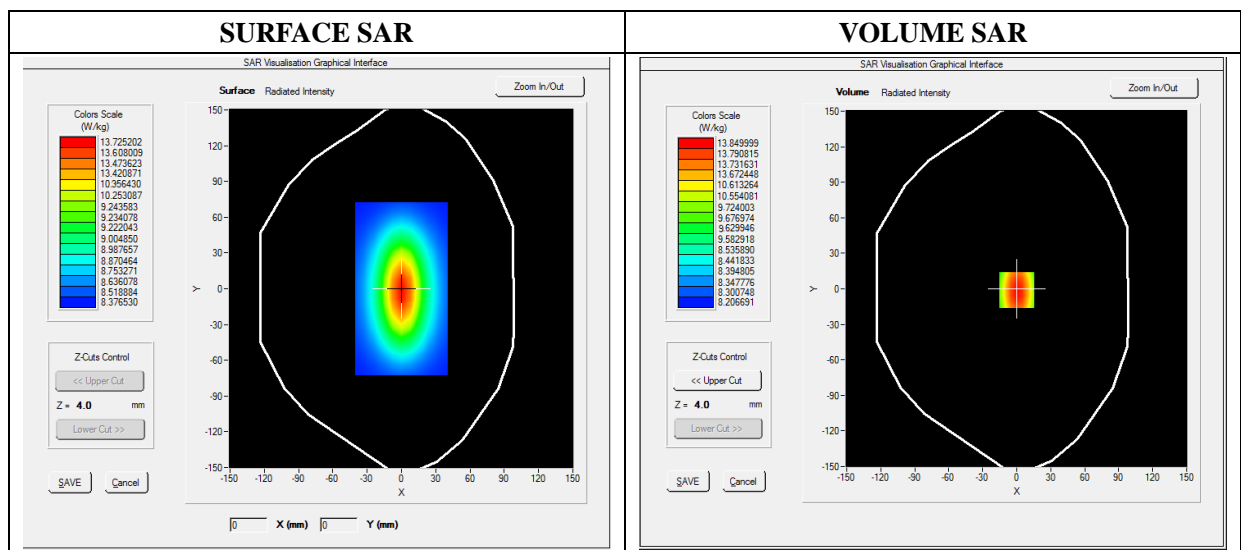
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.22; Calibrated: 2022-07-08

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Validation plane
Device Position	Dipole
Band	CW2600
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	2600.000000
Relative Permittivity (real part)	37.934092
Conductivity (S/m)	1.973182
Power Variation (%)	0.886021
Ambient Temperature	22.2
Liquid Temperature	22.2

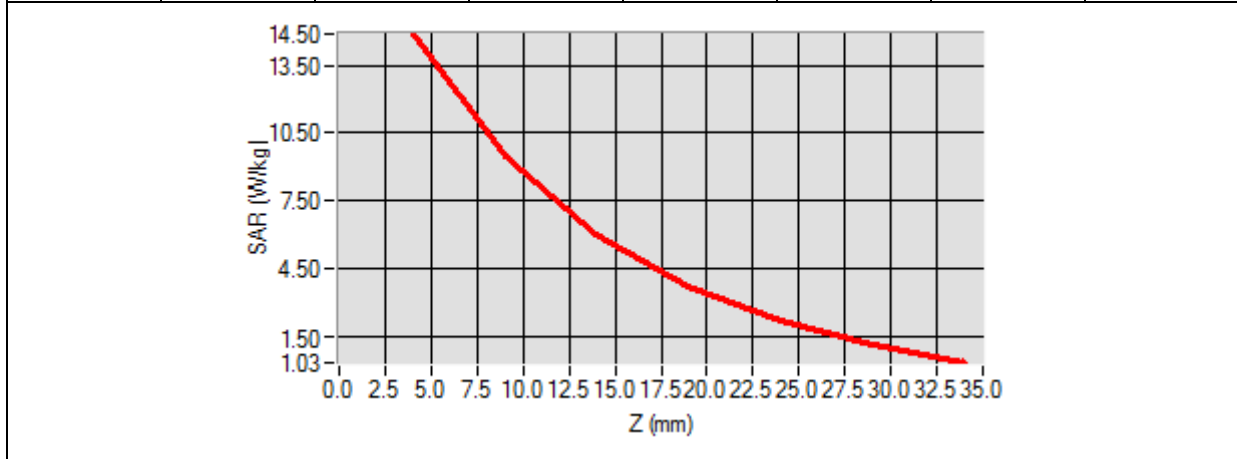


Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	8.230801
SAR 1g (W/Kg)	13.539282

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	14.0426	12.1354	10.2965	7.4854	5.9354	4.5186



3D screen shot	Hot spot position

MEASUREMENT 6

Type: Validation measurement (Fast, 75.00 %)

Measurement duration: 12 minutes 21 seconds

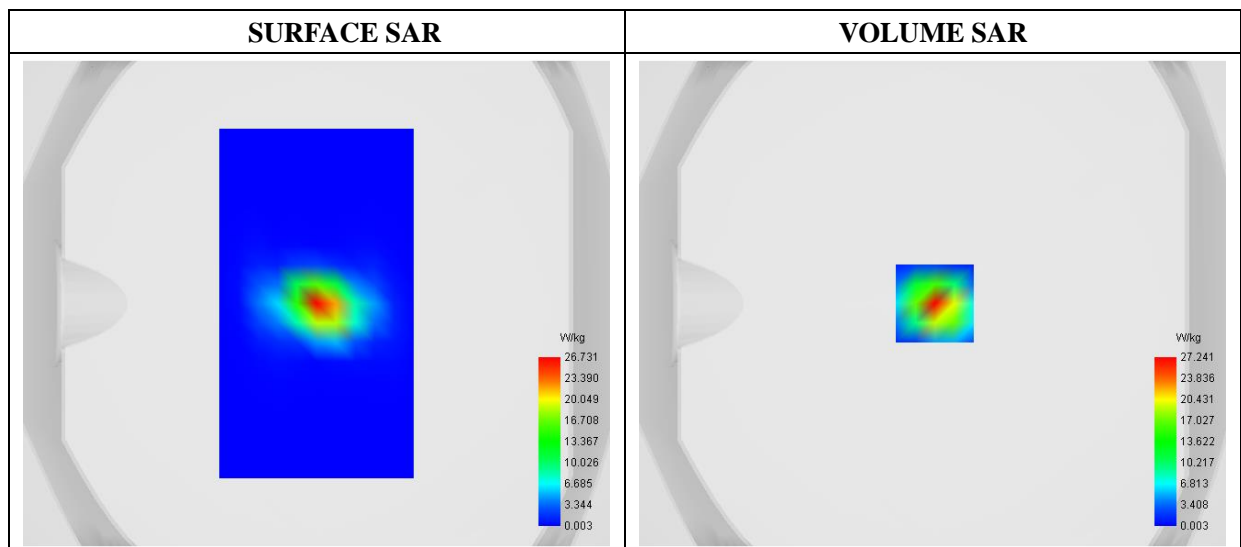
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 1.91; Calibrated: 2022-07-08

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Validation plane
Device Position	Dipole
Band	CW5200
Signal	CW (Crest factor: 1.0)

B. SAR Measurement Results

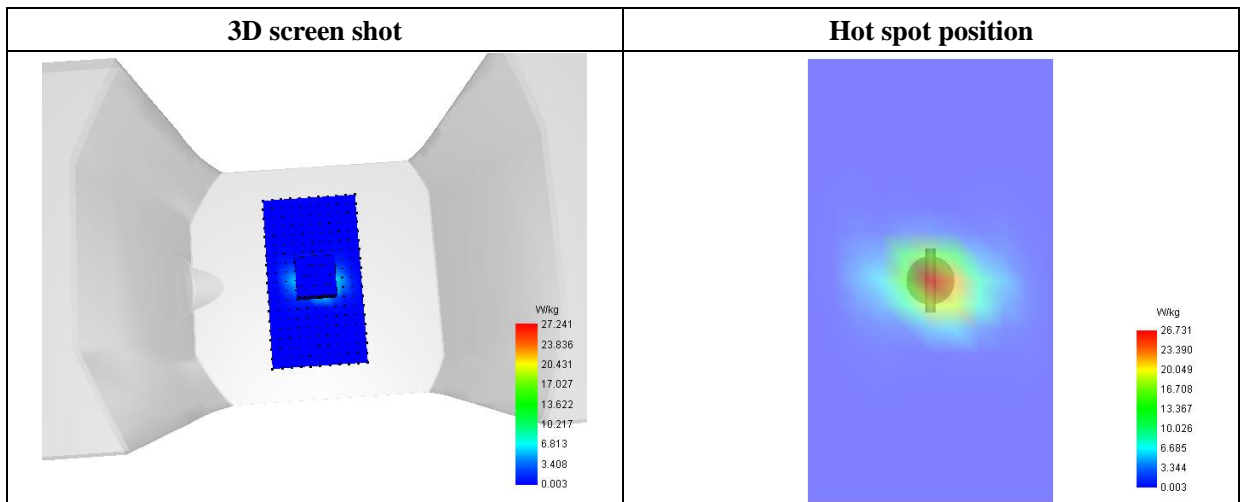
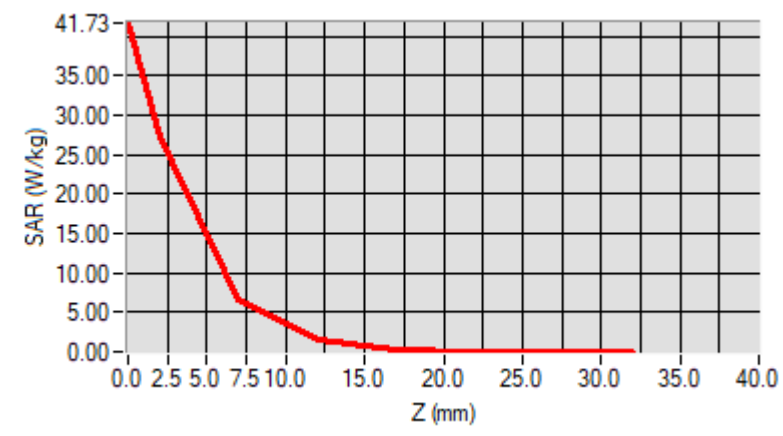
Frequency (MHz)	5200.000000
Relative Permittivity (real part)	36.182911
Conductivity (S/m)	4.643426
Power Variation (%)	-0.940000
Ambient Temperature	22.5
Liquid Temperature	22.5



Maximum location: X=1.00, Y=0.00

SAR 10g (W/Kg)	5.910334
SAR 1g (W/Kg)	16.746226

Z (mm)	0.00	2.00	7.00	12.00	17.00	22.00	27.00
SAR (W/Kg)	41.7264	27.2408	6.5746	1.6234	0.3765	0.0793	0.0129



MEASUREMENT 7

Type: Validation measurement (Fast, 75.00 %)

Measurement duration: 12 minutes 21 seconds

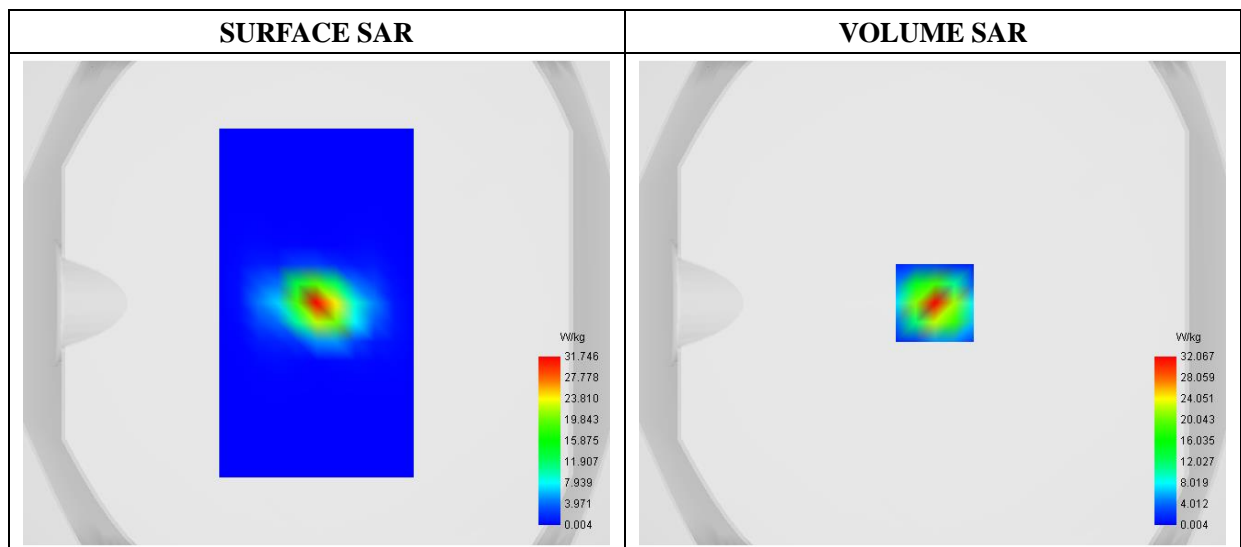
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.12; Calibrated: 2022-07-08

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Validation plane
Device Position	Dipole
Band	CW5400
Signal	CW (Crest factor: 1.0)

B. SAR Measurement Results

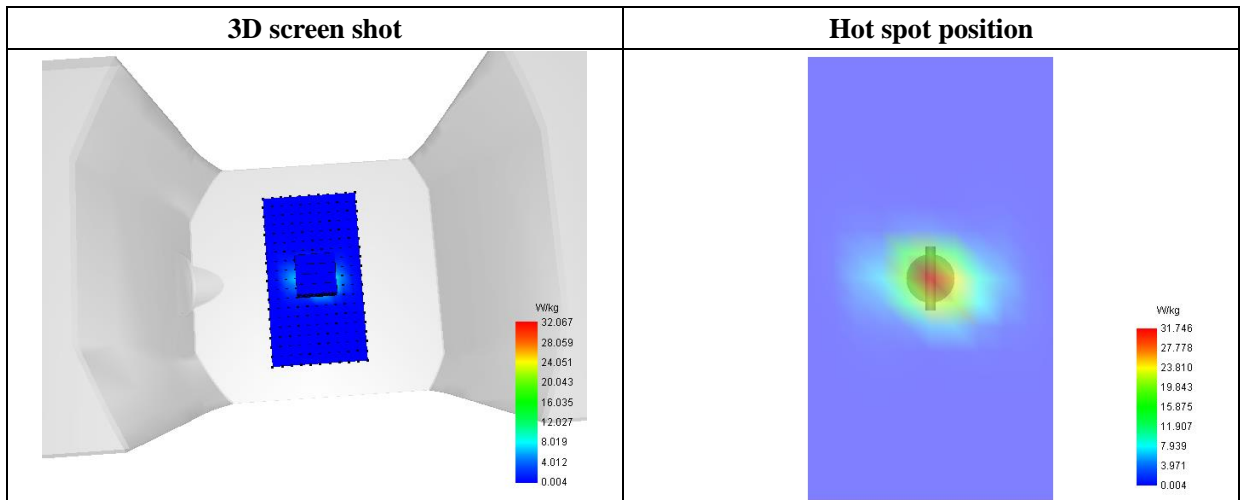
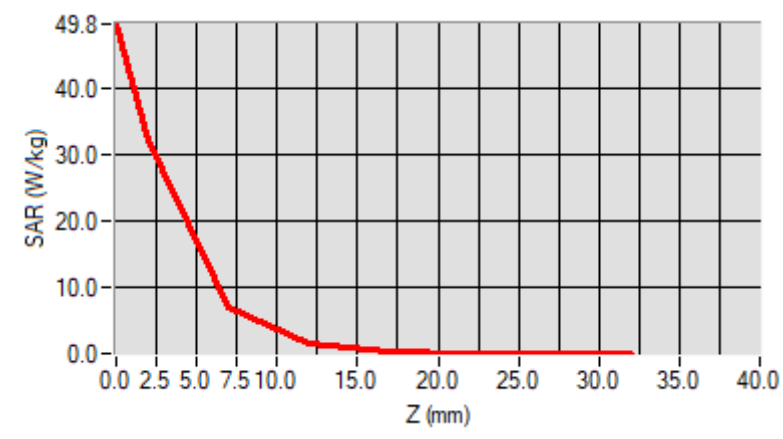
Frequency (MHz)	5400.000000
Relative Permittivity (real part)	36.510839
Conductivity (S/m)	4.871923
Power Variation (%)	1.020000
Ambient Temperature	22.5
Liquid Temperature	22.5



Maximum location: X=1.00, Y=0.00

SAR 10g (W/Kg)	6.047588
SAR 1g (W/Kg)	17.481175

Z (mm)	0.00	2.00	7.00	12.00	17.00	22.00	27.00
SAR (W/Kg)	49.8193	32.0669	7.0244	1.5969	0.3410	0.0635	0.0070



MEASUREMENT 8

Type: Validation measurement (Fast, 75.00 %)

Measurement duration: 12 minutes 21 seconds

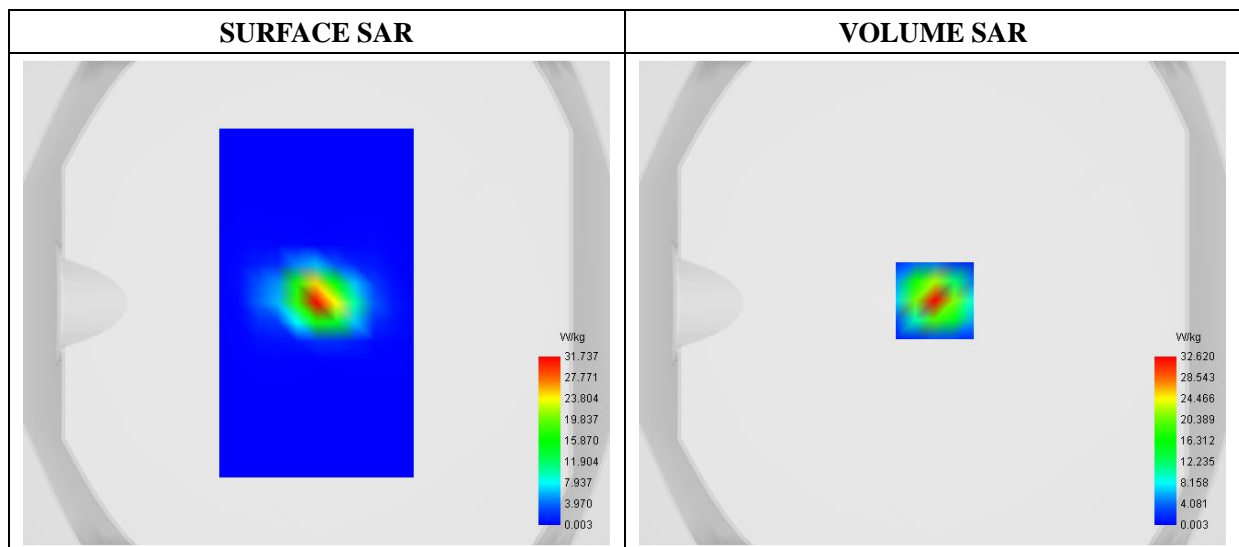
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.25; Calibrated: 2022-07-08

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Validation plane
Device Position	Dipole
Band	CW5600
Signal	CW (Crest factor: 1.0)

B. SAR Measurement Results

Frequency (MHz)	5600.000000
Relative Permittivity (real part)	36.461205
Conductivity (S/m)	5.112357
Power Variation (%)	-0.640000
Ambient Temperature	22.5
Liquid Temperature	22.5

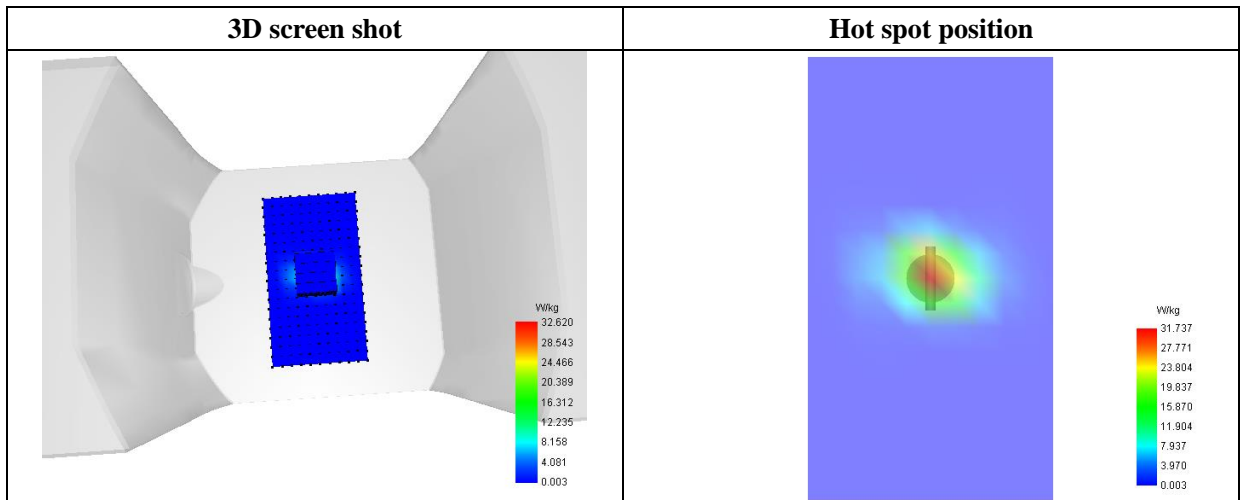
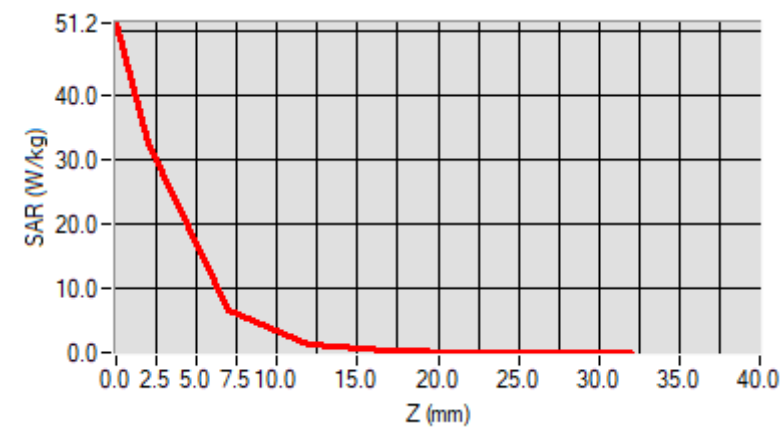


Maximum location: X=1.00, Y=1.00

SAR 10g (W/Kg)	5.922791
-----------------------	-----------------

SAR 1g (W/Kg)	17.604052
----------------------	------------------

Z (mm)	0.00	2.00	7.00	12.00	17.00	22.00	27.00
SAR (W/Kg)	51.2061	32.6198	6.6166	1.3486	0.2638	0.0509	0.0050



MEASUREMENT 9

Type: Validation measurement (Fast, 75.00 %)

Measurement duration: 12 minutes 21 seconds

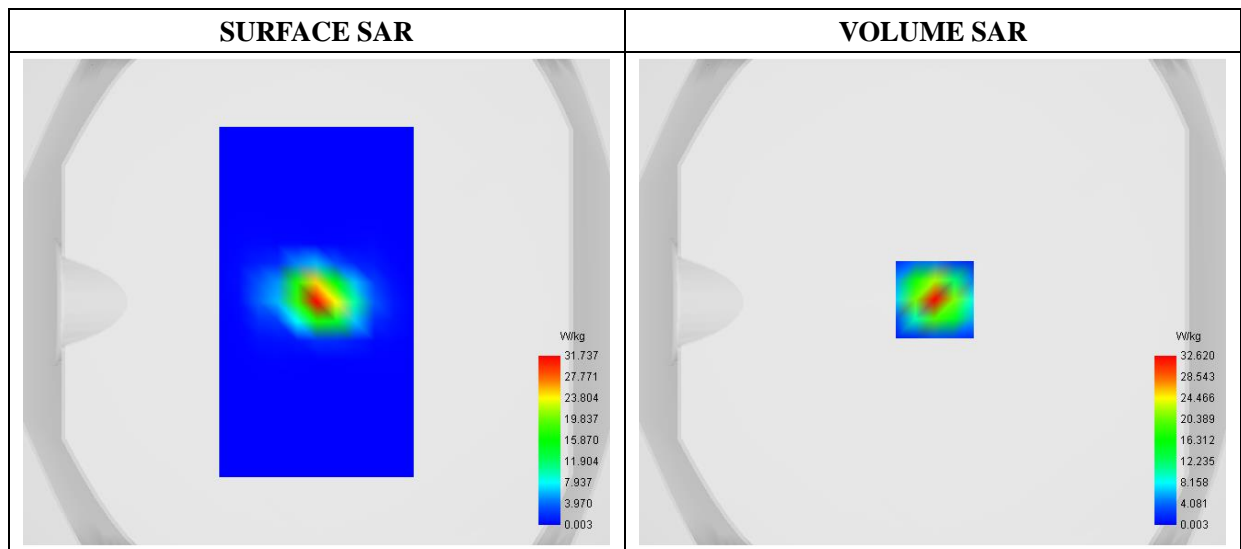
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.14; Calibrated: 2022-07-08

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Validation plane
Device Position	Dipole
Band	CW5800
Signal	CW (Crest factor: 1.0)

B. SAR Measurement Results

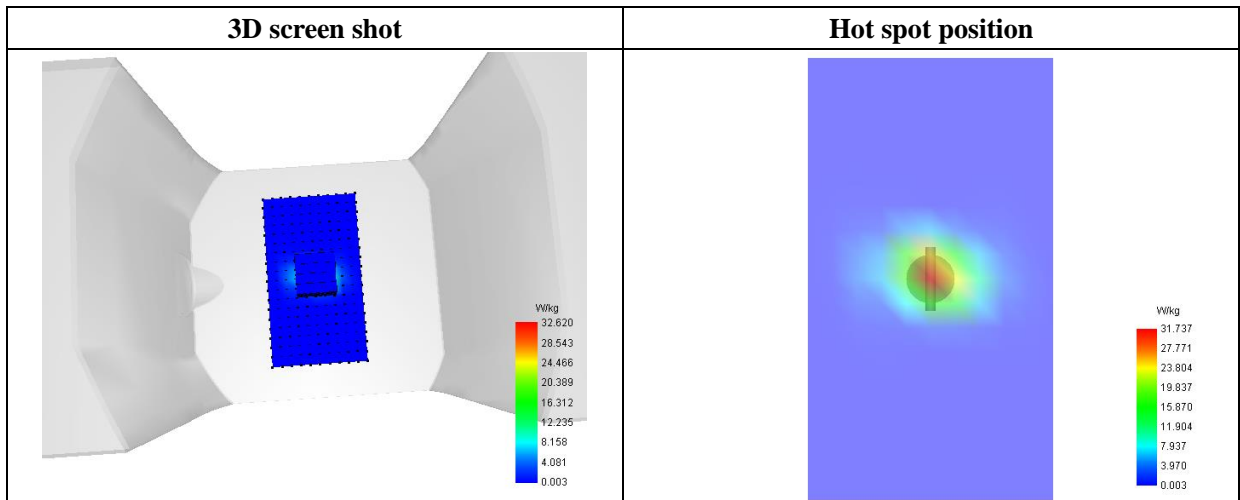
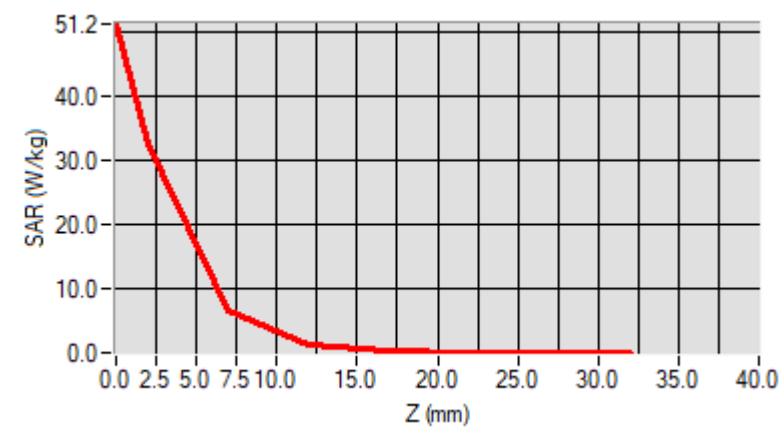
Frequency (MHz)	5800.000000
Relative Permittivity (real part)	34.913814
Conductivity (S/m)	5.282705
Power Variation (%)	-1.640000
Ambient Temperature	22.5
Liquid Temperature	22.5



Maximum location: X=1.00, Y=1.00

SAR 10g (W/Kg)	5.983506
SAR 1g (W/Kg)	17.960742

Z (mm)	0.00	2.00	7.00	12.00	17.00	22.00	27.00
SAR (W/Kg)	51.2061	32.6198	6.6166	1.3486	0.2638	0.0509	0.0050



Annex B. Plots of SAR Measurement

MEASUREMENT 1

Type: Phone measurement (Complete)

Date of measurement: 2022-07-30

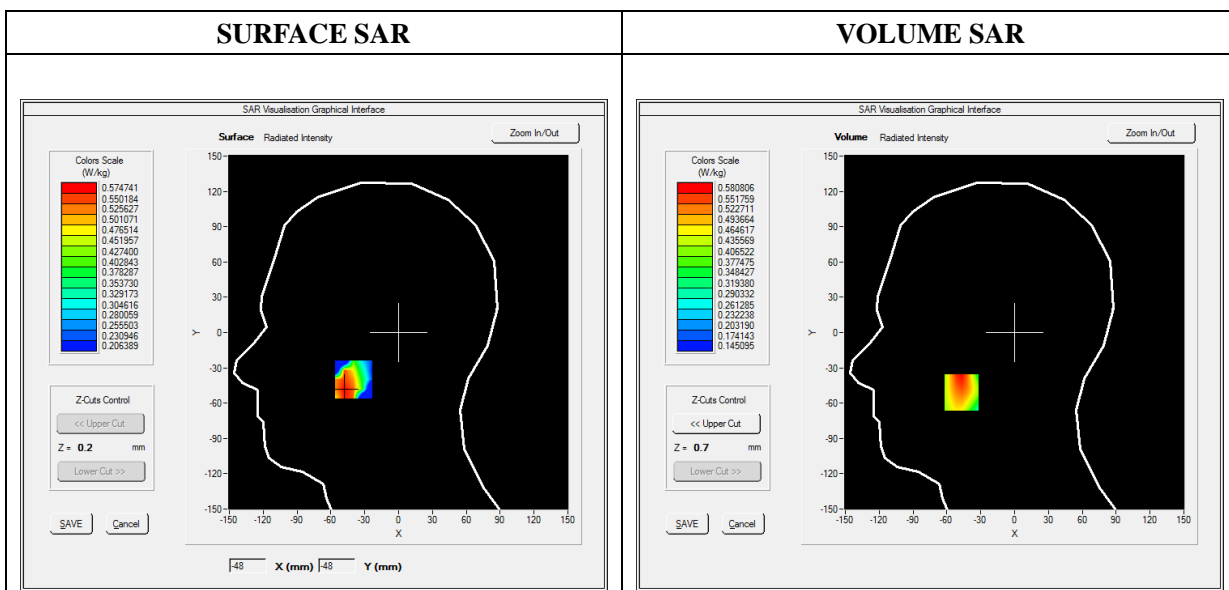
Measurement duration: 11 minutes 48 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

B. SAR Measurement Results

Frequency (MHz)	836.600000
Relative Permittivity (real part)	40.752245
Conductivity (S/m)	0.881245
Power Variation (%)	1.074536
Ambient Temperature	22.2
Liquid Temperature	22.2

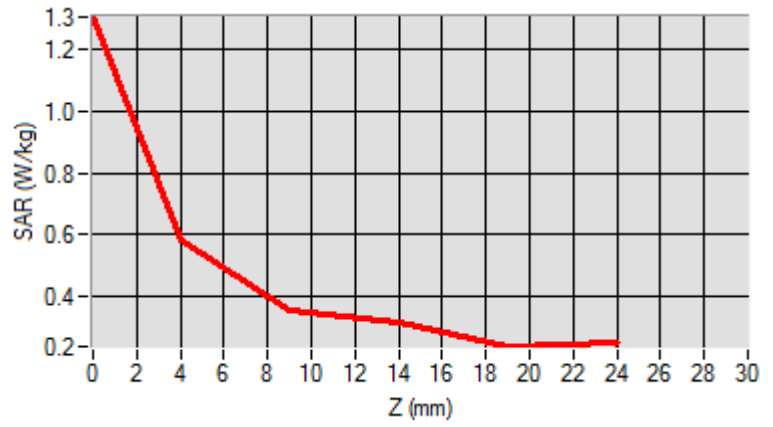


Maximum location: X=-47.00, Y=-51.00

SAR Peak: 0.79 W/kg

SAR 10g (W/Kg)	0.405528
SAR 1g (W/Kg)	0.549678

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.3070	0.5808	0.3529	0.3188	0.2375



3D screen shot	Hot spot position

MEASUREMENT 2

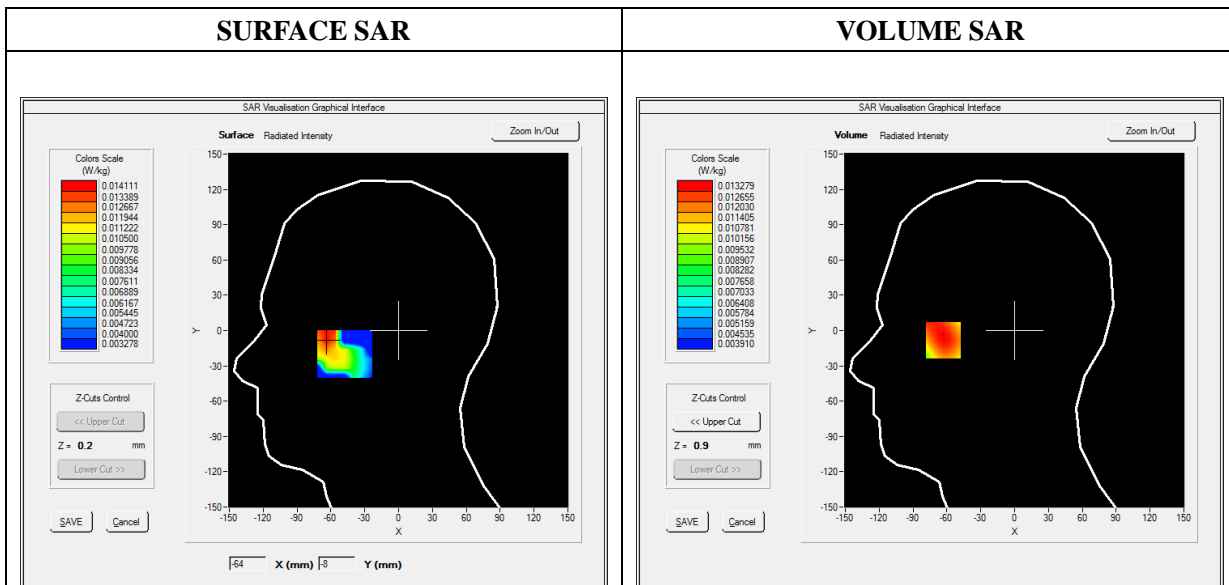
Type: Phone measurement (Complete)
 Date of measurement: 2022-08-01
 Measurement duration: 11 minutes 48 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Right head
Device Position	Cheek
Band	GPRS1900_4TX
Channels	Middle
Signal	Duty Cycle: 1:2

B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative Permittivity (real part)	39.061245
Conductivity (S/m)	1.393691
Power Variation (%)	-0.150000
Ambient Temperature	22.2
Liquid Temperature	22.2

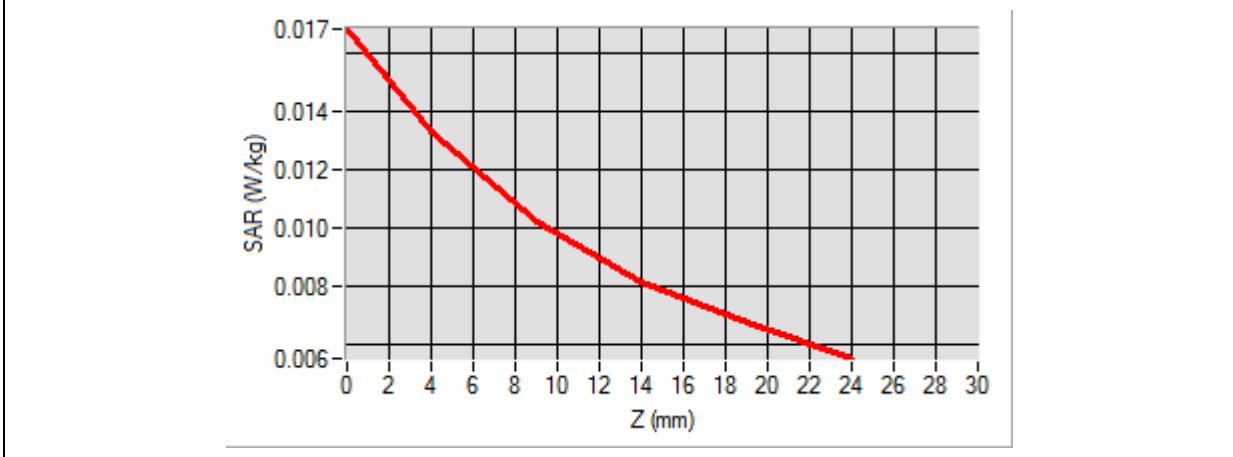


Maximum location: X=-63.00, Y=-7.00

SAR Peak: 0.02 W/kg

SAR 10g (W/Kg)	0.009742
SAR 1g (W/Kg)	0.012894

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0168	0.0133	0.0102	0.0082	0.0068



3D screen shot	Hot spot position
<p>A 3D perspective view of a grey, cup-like device. A grid of blue arrows is overlaid on the inner surface, pointing outwards. A small area on the inner surface is highlighted with a color gradient from yellow to red, indicating a hot spot.</p>	<p>A 2D color-coded map of the hot spot area, showing a yellow and red region against a white background.</p>

MEASUREMENT 3

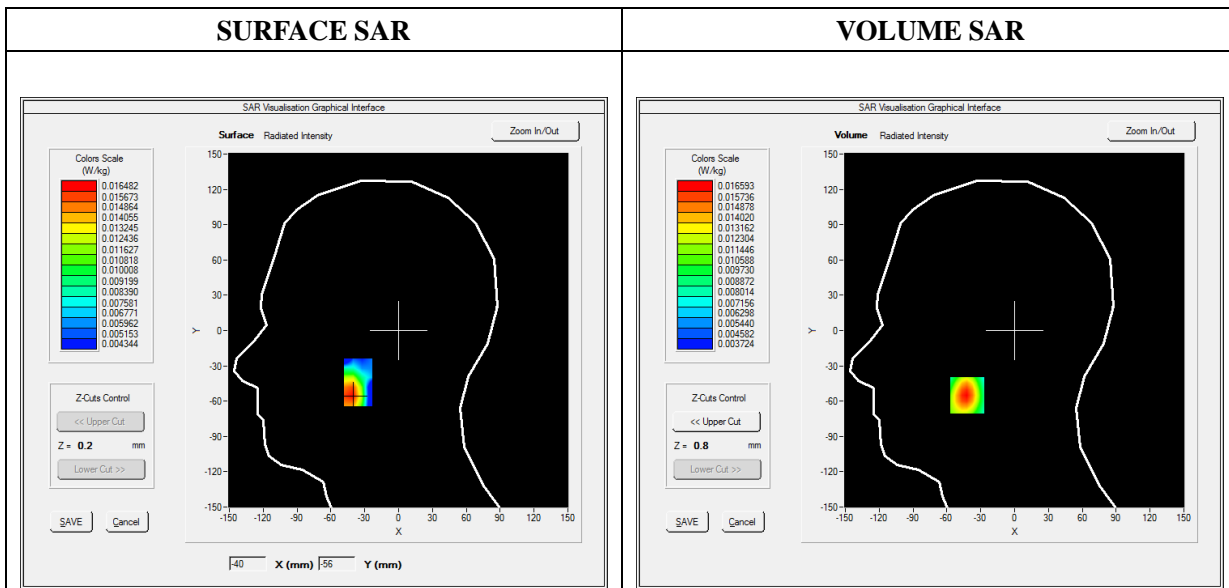
Type: Phone measurement (Complete)
 Date of measurement: 2022-08-01
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Left head
Device Position	Cheek
Band	WCDMA1900_RMC
Channels	High
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1907.600000
Relative Permittivity (real part)	39.060124
Conductivity (S/m)	1.393607
Power Variation (%)	0.820000
Ambient Temperature	22.2
Liquid Temperature	22.2

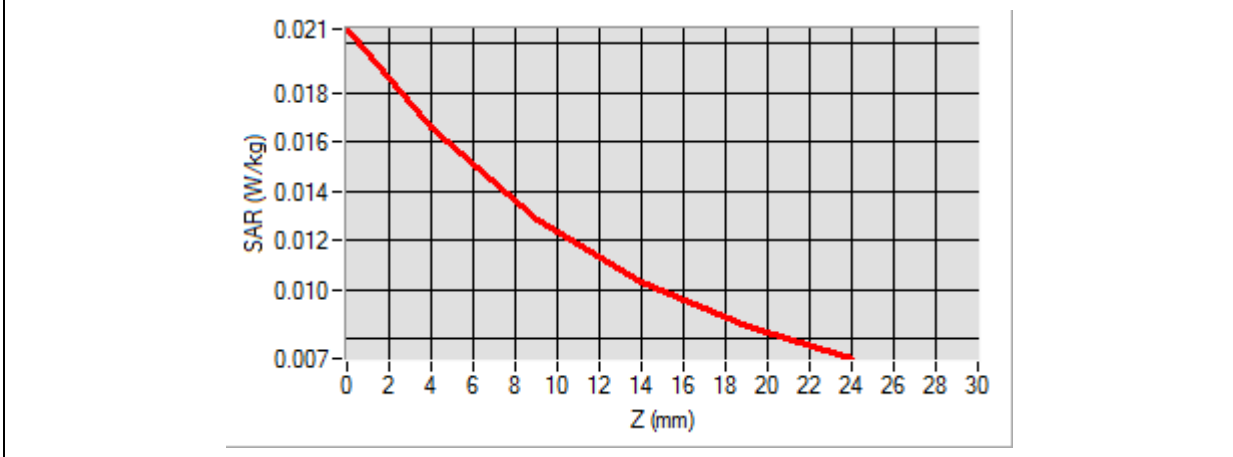


Maximum location: X=-42.00, Y=-55.00

SAR Peak: 0.02 W/kg

SAR 10g (W/Kg)	0.011328
SAR 1g (W/Kg)	0.015643

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0206	0.0166	0.0129	0.0103	0.0086



3D screen shot	Hot spot position
<p>A 3D perspective view of a human head model. A grid of small blue dots is overlaid on the face. A localized area of high SAR is highlighted with a color gradient from yellow to red, indicating the hot spot position.</p>	<p>A small, isolated 3D visualization of the hot spot, showing a color gradient from red (high SAR) to green (lower SAR).</p>

MEASUREMENT 4

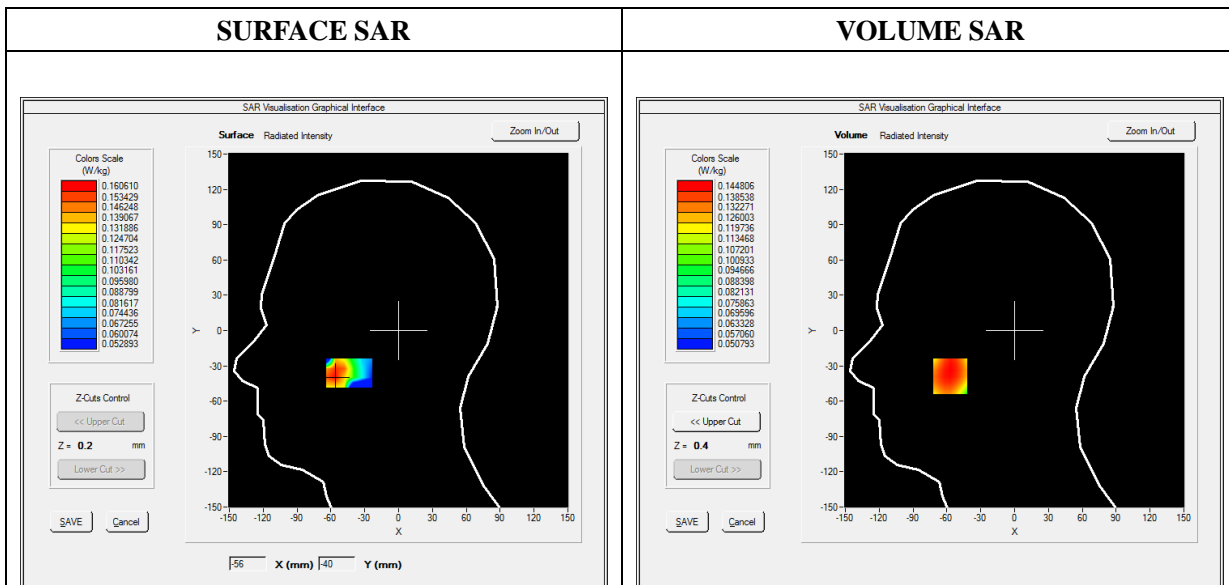
Type: Phone measurement (Complete)
 Date of measurement: 2022-08-01
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Left head
Device Position	Cheek
Band	WCDMA1700_RMC
Channels	Low
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1712.400000
Relative Permittivity (real part)	39.431249
Conductivity (S/m)	1.382627
Power Variation (%)	2.821000
Ambient Temperature	22.2
Liquid Temperature	22.2

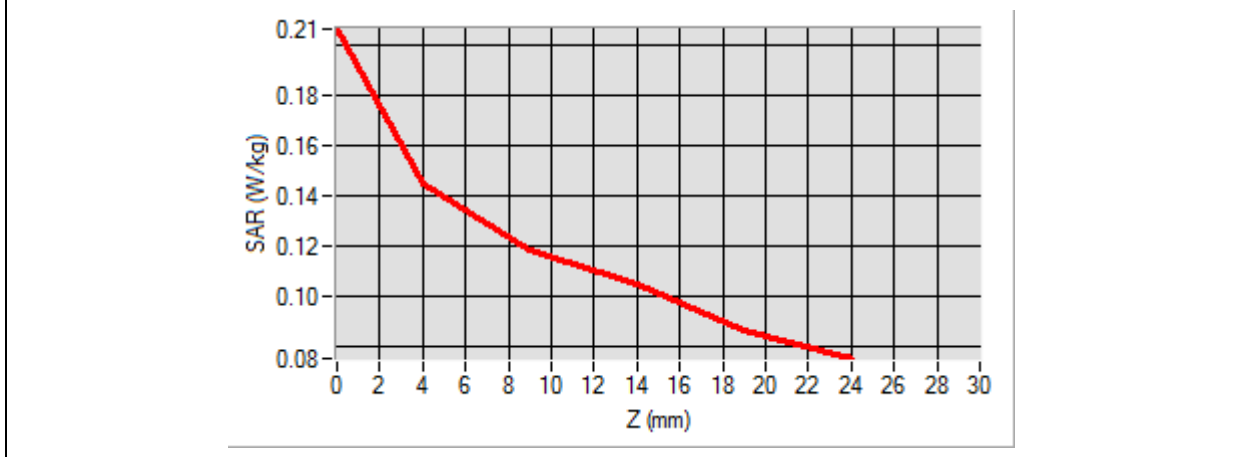


Maximum location: X=-57.00, Y=-39.00

SAR Peak: 0.17 W/kg

SAR 10g (W/Kg)	0.115378
SAR 1g (W/Kg)	0.141670

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2062	0.1448	0.1181	0.1045	0.0863



3D screen shot	Hot spot position

MEASUREMENT 5

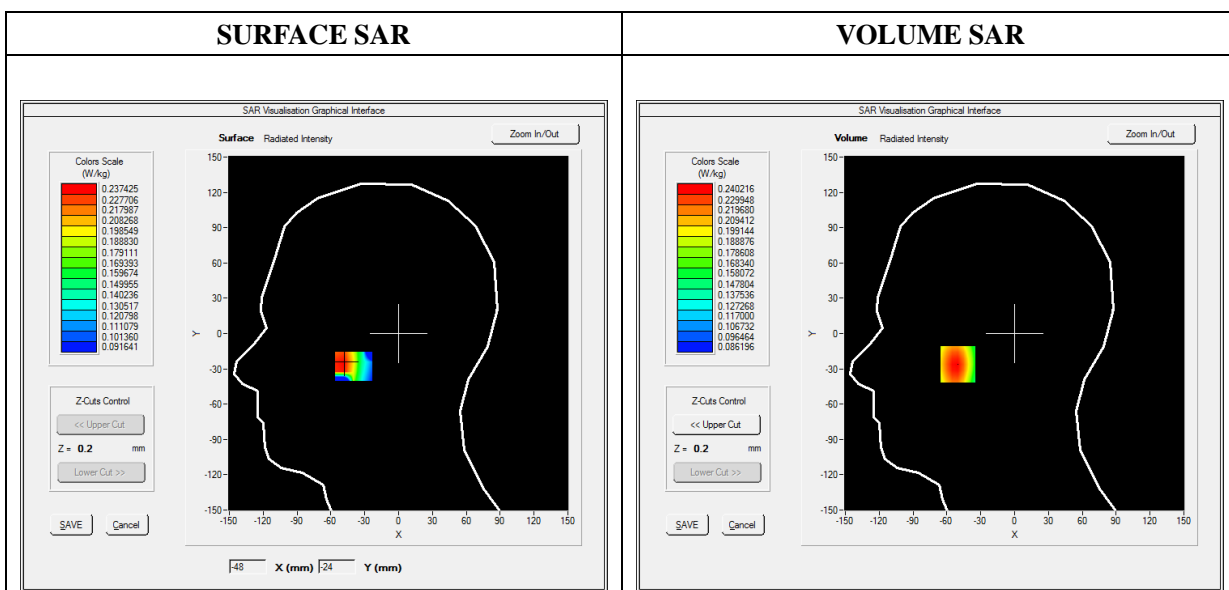
Type: Phone measurement (Complete)
 Date of measurement: 2022-07-30
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Left head
Device Position	Cheek
Band	WCDMA850_RMC
Channels	High
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	846.600000
Relative Permittivity (real part)	40.753245
Conductivity (S/m)	0.881245
Power Variation (%)	-1.360000
Ambient Temperature	22.2
Liquid Temperature	22.2

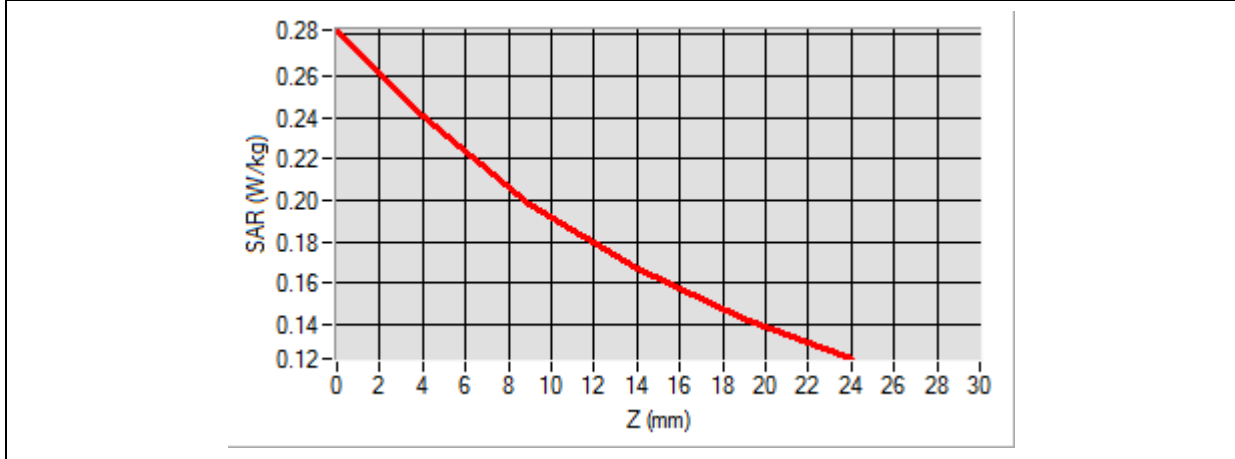


Maximum location: X=-50.00, Y=-26.00

SAR Peak: 0.28 W/kg

SAR 10g (W/Kg)	0.184709
SAR 1g (W/Kg)	0.232413

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2824	0.2402	0.1982	0.1666	0.1429



3D screen shot	Hot spot position

MEASUREMENT 6

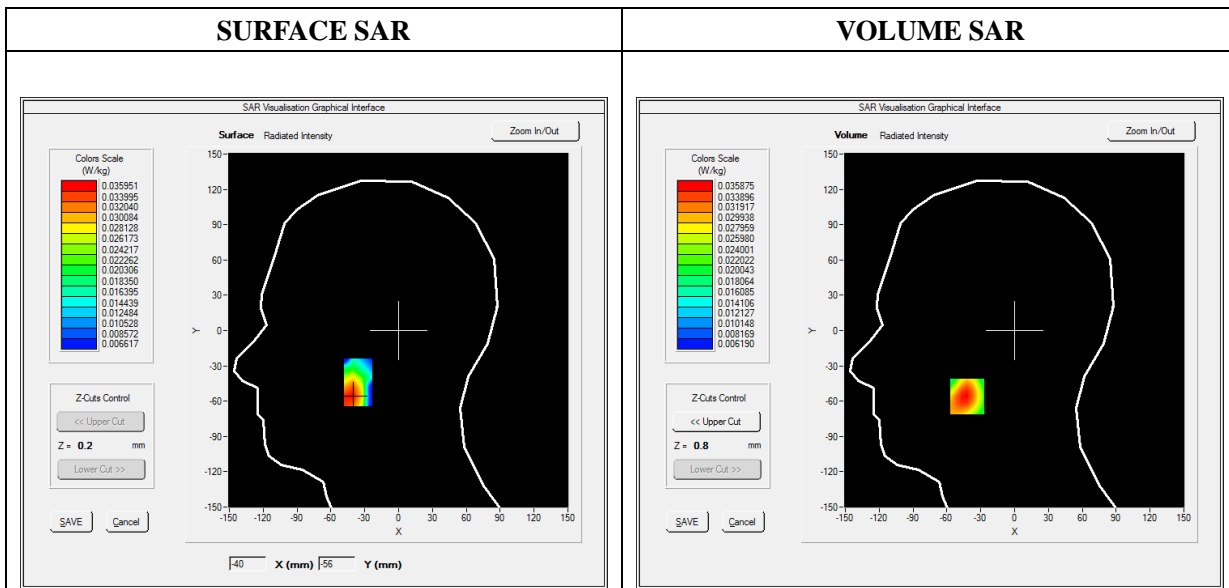
Type: Phone measurement (Complete)
 Date of measurement: 2022-08-01
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Left head
Device Position	Cheek
Band	LTE Band 2
Channels	QPSK, 20MHz, 1RB, Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative Permittivity (real part)	39.061612
Conductivity (S/m)	1.392369
Power Variation (%)	-1.340000
Ambient Temperature	22.2
Liquid Temperature	22.2

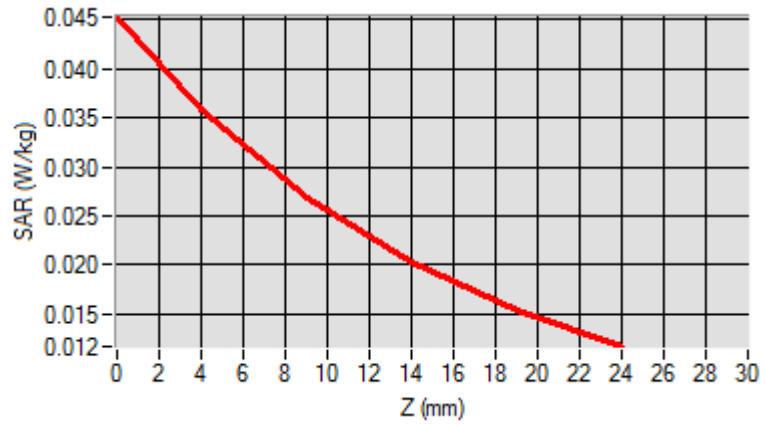


Maximum location: X=-42.00, Y=-56.00

SAR Peak: 0.05 W/kg

SAR 10g (W/Kg)	0.023656
SAR 1g (W/Kg)	0.034040

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0453	0.0359	0.0268	0.0202	0.0155



3D screen shot	Hot spot position
<p>A 3D model of a human head and neck. A grid of blue dots is overlaid on the face, representing measurement points. A small, localized area of high SAR is highlighted with a color gradient from red to green, indicating the hot spot position.</p>	<p>An isolated view of the hot spot visualization, showing a small, irregularly shaped area with a color gradient from red (high SAR) to green (lower SAR).</p>

MEASUREMENT 7

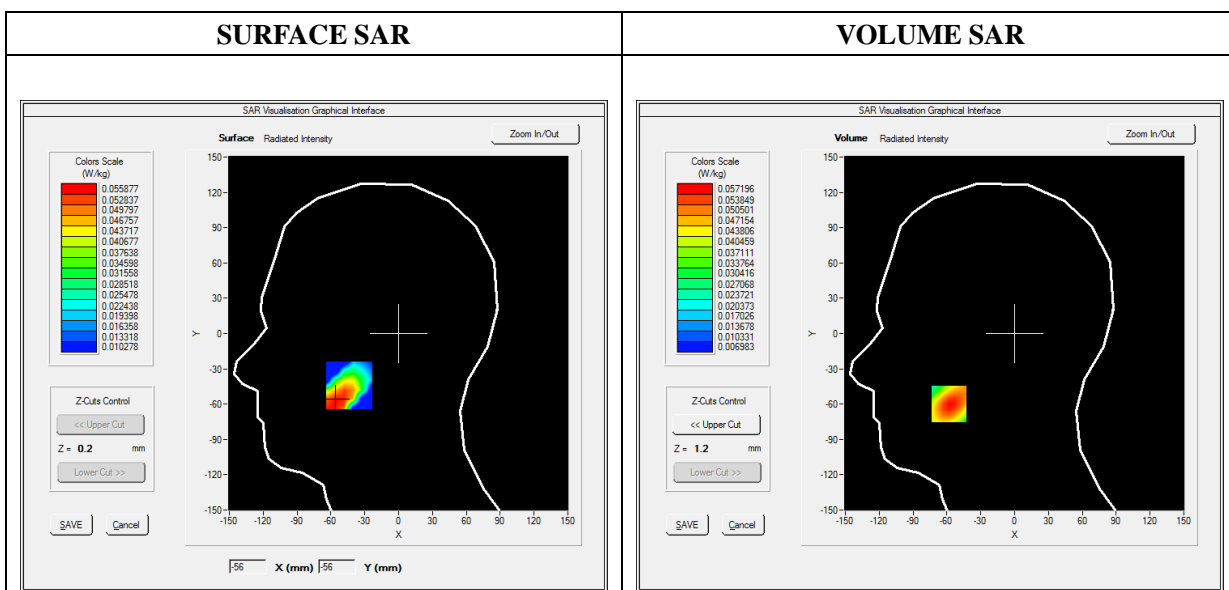
Type: Phone measurement (Complete)
 Date of measurement: 2022-08-01
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Left head
Device Position	Cheek
Band	LTE Band 4
Channels	QPSK, 20MHz, 1RB, Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1732.500000
Relative Permittivity (real part)	39.433275
Conductivity (S/m)	1.3821987
Power Variation (%)	1.080000
Ambient Temperature	22.2
Liquid Temperature	22.2

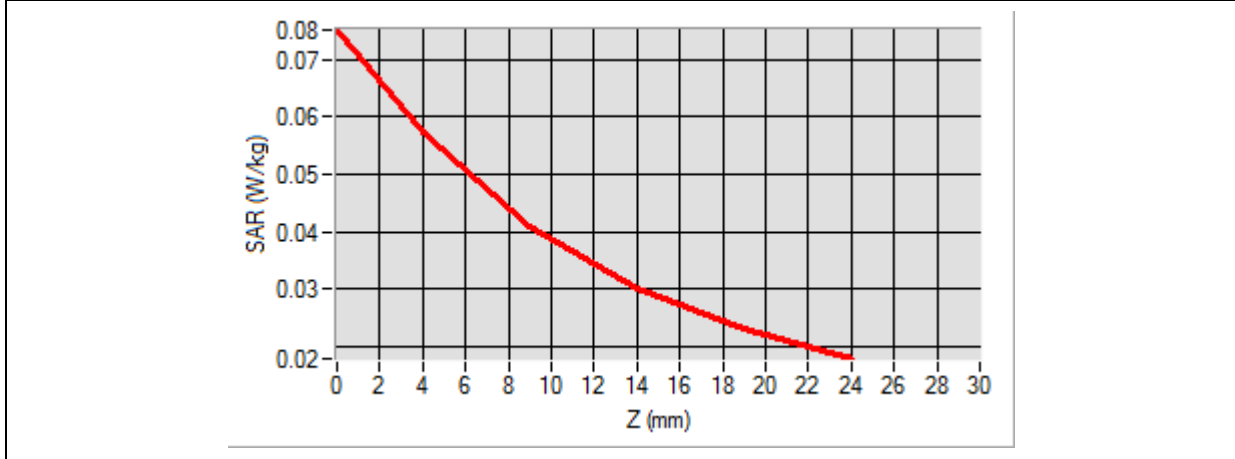


Maximum location: X=-58.00, Y=-60.00

SAR Peak: 0.08 W/kg

SAR 10g (W/Kg)	0.037382
SAR 1g (W/Kg)	0.054283

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0752	0.0572	0.0410	0.0302	0.0231



3D screen shot	Hot spot position

MEASUREMENT 8

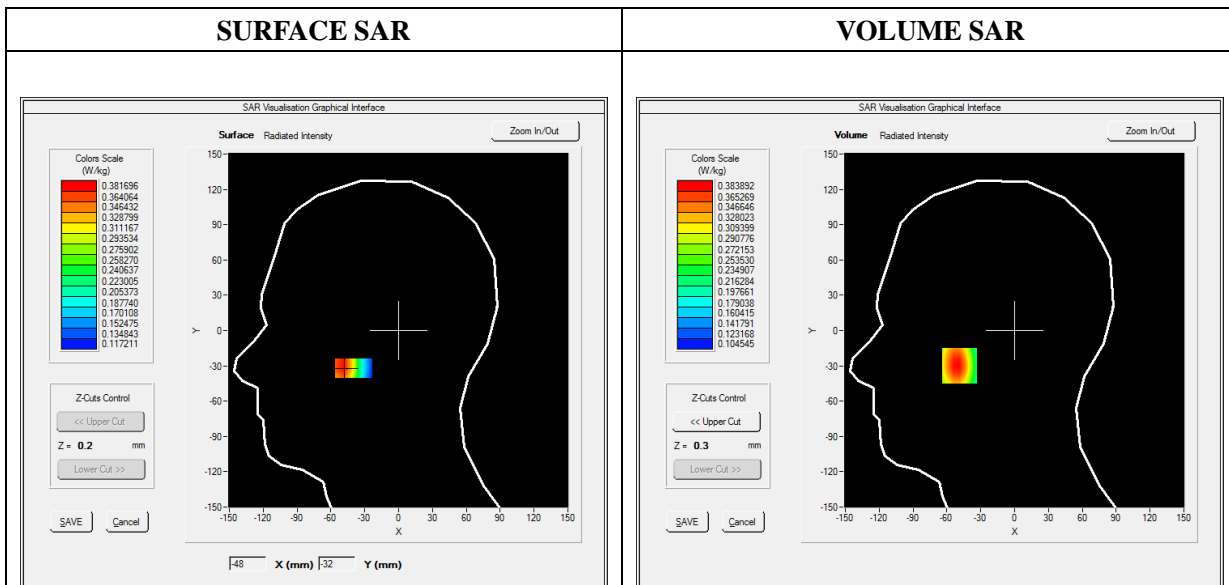
Type: Phone measurement (Complete)
 Date of measurement: 2022-07-30
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Left head
Device Position	Cheek
Band	LTE Band 5
Channels	QPSK, 10MHz, 1RB, High
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	844.000000
Relative Permittivity (real part)	40.750245
Conductivity (S/m)	0.881245
Power Variation (%)	-0.870000
Ambient Temperature	22.2
Liquid Temperature	22.2

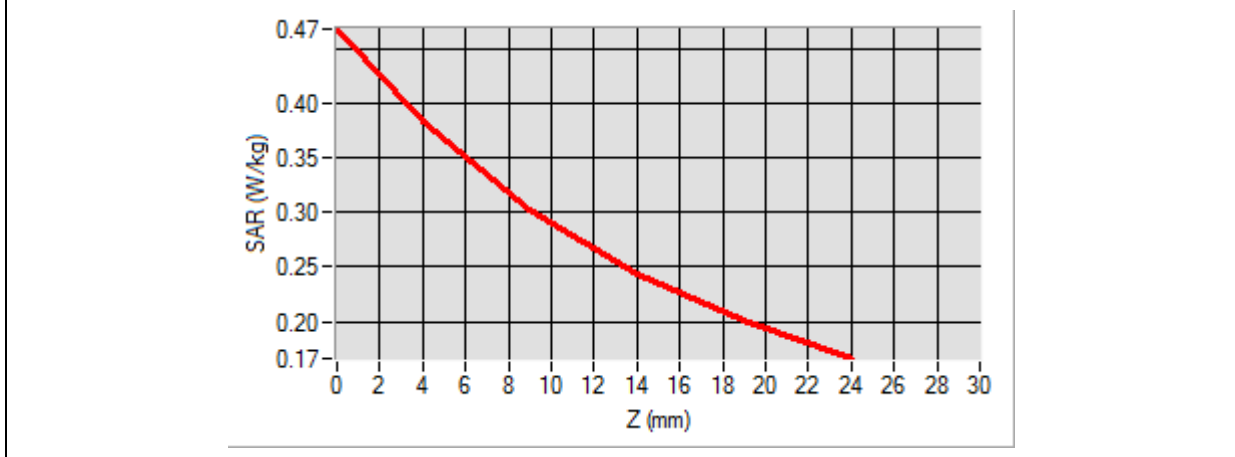


Maximum location: X=-49.00, Y=-30.00

SAR Peak: 0.47 W/kg

SAR 10g (W/Kg)	0.278275
SAR 1g (W/Kg)	0.368835

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.4680	0.3839	0.3025	0.2434	0.2004



3D screen shot	Hot spot position
<p>A 3D perspective view of a human head model. A grid of small blue dots is overlaid on the face, representing the SAR measurement points. A localized area of high SAR is highlighted with a color gradient from yellow to red, indicating the hot spot.</p>	<p>A small 3D rectangular prism representing the hot spot position. It is oriented vertically and colored with a gradient from green at the top to red at the bottom, indicating the location and intensity of the maximum SAR.</p>

MEASUREMENT 9

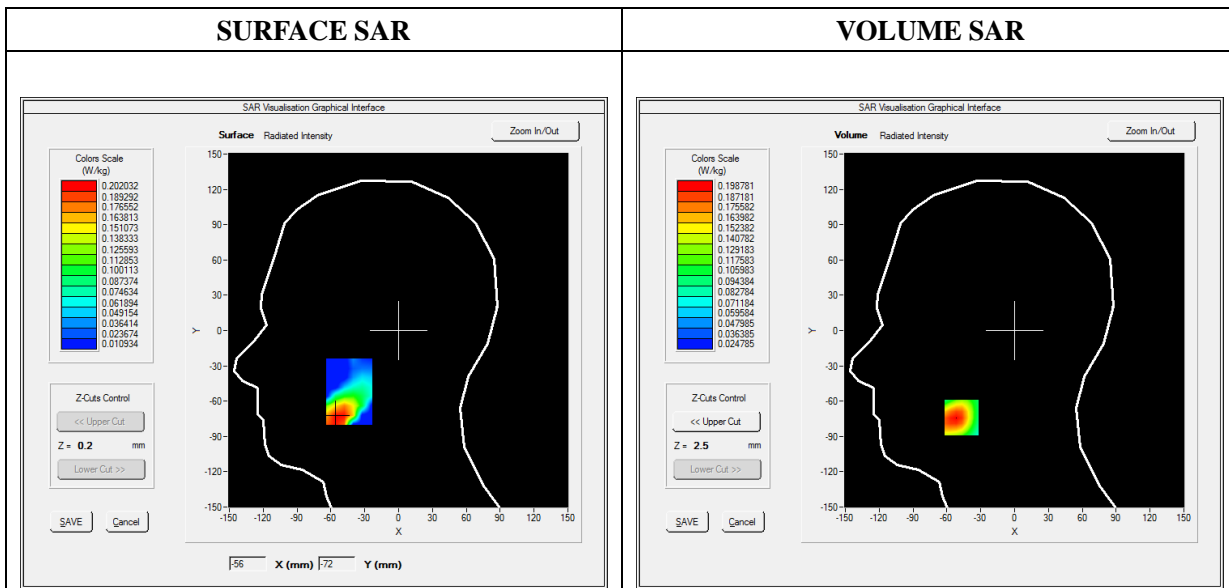
Type: Phone measurement (Complete)
 Date of measurement: 2022-08-08
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Right head
Device Position	Cheek
Band	LTE Band 7
Channels	QPSK, 20MHz, 1RB, Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	2535.000000
Relative Permittivity (real part)	37.932666
Conductivity (S/m)	1.973182
Power Variation (%)	-1.700000
Ambient Temperature	22.2
Liquid Temperature	22.2

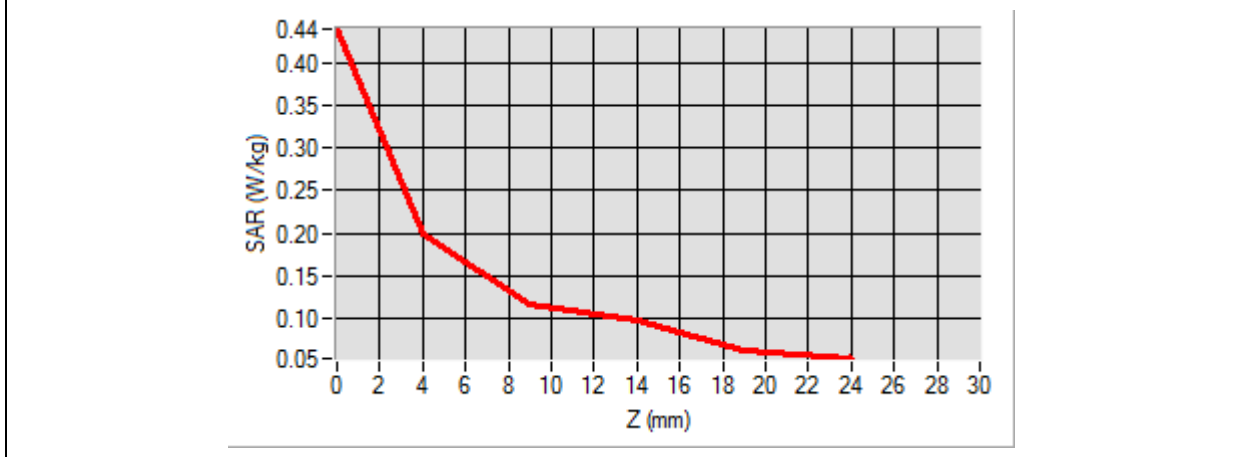


Maximum location: X=-47.00, Y=-74.00

SAR Peak: 0.27 W/kg

SAR 10g (W/Kg)	0.121925
SAR 1g (W/Kg)	0.186699

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.4412	0.1988	0.1162	0.0973	0.0621



3D screen shot	Hot spot position
<p>A 3D perspective view of a grey, cup-like device. A grid of blue dots is overlaid on the inner surface. A small, localized area of the grid is highlighted with a color gradient from green to red, indicating the hot spot position.</p>	<p>An isolated, 3D visualization of the hot spot. It is a small, irregular shape with a color gradient from green at the top to red at the bottom, representing the peak SAR location.</p>

MEASUREMENT 10

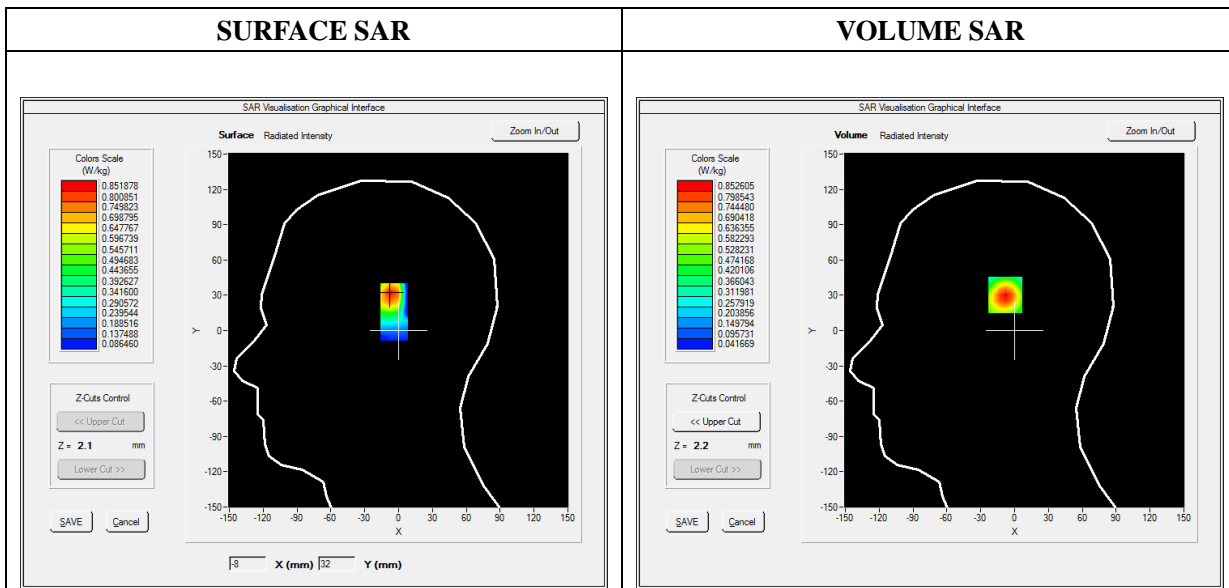
Type: Phone measurement (Complete)
 Date of measurement: 2022-08-08
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Left head
Device Position	Cheek
Band	WiFi_802.11b
Channels	High
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	2462.000000
Relative Permittivity (real part)	38.452301
Conductivity (S/m)	1.771638
Power Variation (%)	-1.960000
Ambient Temperature	22.2
Liquid Temperature	22.2

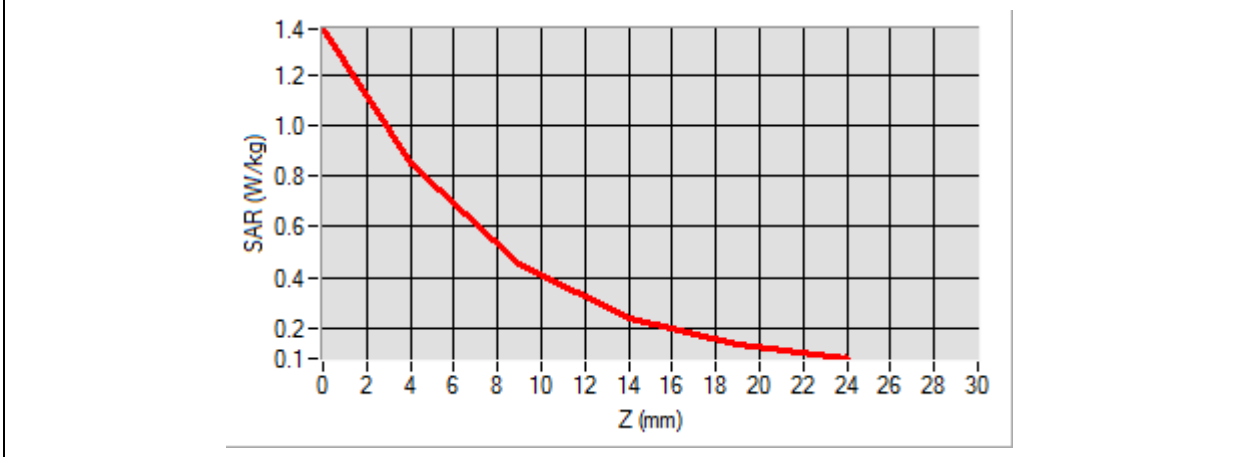


Maximum location: X=-7.00, Y=32.00

SAR Peak: 1.38 W/kg

SAR 10g (W/Kg)	0.424797
SAR 1g (W/Kg)	0.687392

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.3819	0.8526	0.4515	0.2411	0.1374



3D screen shot	Hot spot position
<p>A 3D rendering of a human head model. A grid of small blue dots is overlaid on the face, representing the SAR distribution. A localized area of higher SAR is highlighted with a color gradient from green to yellow, indicating the hot spot position.</p>	<p>A small, isolated 3D visualization of the hot spot. It is a rectangular prism-like shape with a color gradient from green on one side to red on the other, representing the peak SAR location.</p>

MEASUREMENT 11

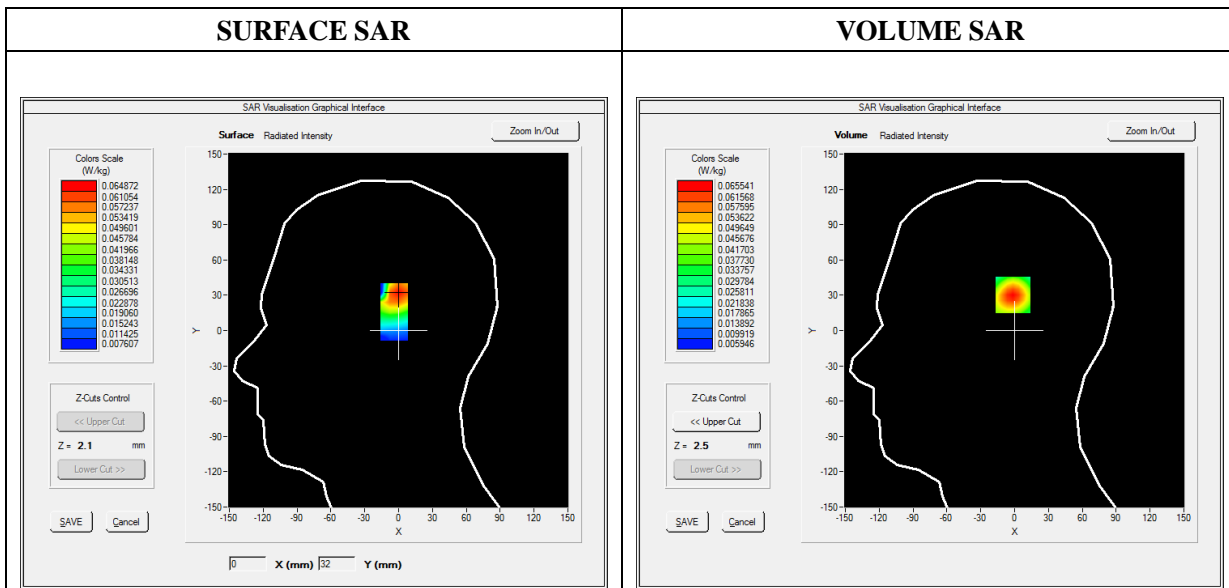
Type: Phone measurement (Complete)
 Date of measurement: 2022-08-08
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Right head
Device Position	Cheek
Band	Bluetooth_GFSK
Channels	High
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	2480.000000
Relative Permittivity (real part)	38.450521
Conductivity (S/m)	1.7713828
Power Variation (%)	1.961000
Ambient Temperature	22.2
Liquid Temperature	22.2

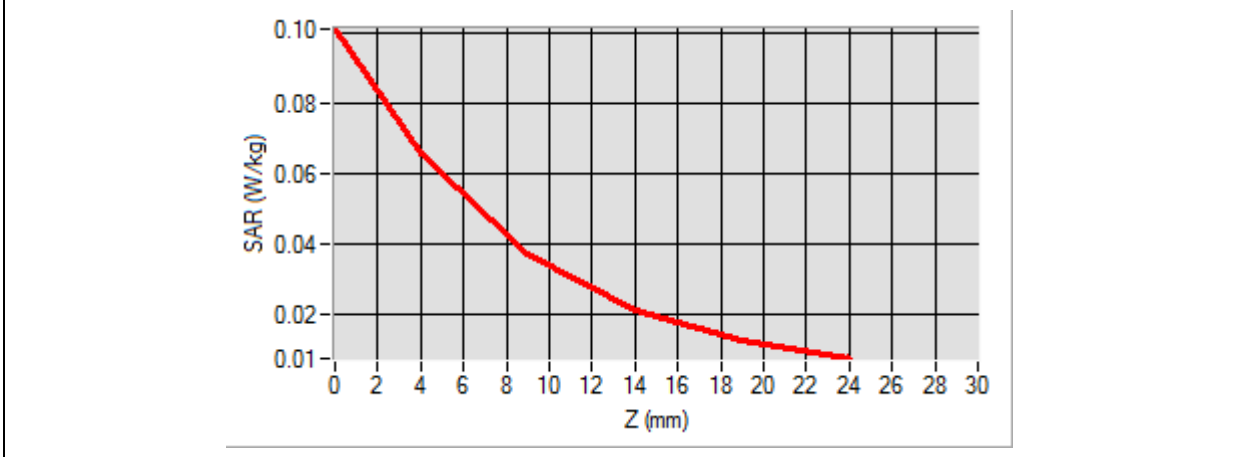


Maximum location: X=0.00, Y=32.00

SAR Peak: 0.10 W/kg

SAR 10g (W/Kg)	0.034670
SAR 1g (W/Kg)	0.060884

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.1013	0.0655	0.0371	0.0212	0.0126



3D screen shot	Hot spot position
<p>A 3D model of a human head and neck. A grid of blue dots is overlaid on the head, representing the SAR distribution. A small area on the forehead is highlighted with a color gradient from green to yellow, indicating the hot spot position.</p>	<p>A small 3D model of the hot spot area, showing a color gradient from green to red, indicating the highest SAR values.</p>

MEASUREMENT 12

Type: Phone measurement (Complete)
 Date of measurement: 2022-08-17
 Measurement duration: 12 minutes 3 seconds

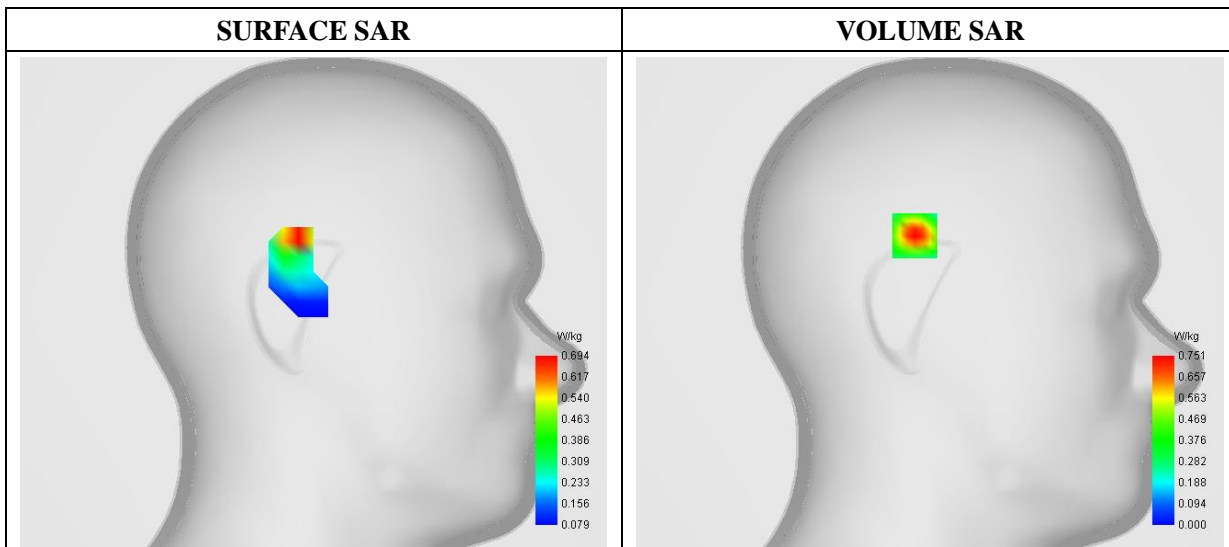
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Left Head
Device Position	Cheek
Band	WiFi(5.2GHz)_802.11n (HT20)
Channels	Low
Signal	Duty Cycle: 1:1

B. SAR Measurement Results

Frequency (MHz)	5180.000000
Relative Permittivity (real part)	36.183869
Conductivity (S/m)	4.641611
Power Variation (%)	-1.150000
Ambient Temperature	22.5
Liquid Temperature	22.5

C. SAR Surface and Volume



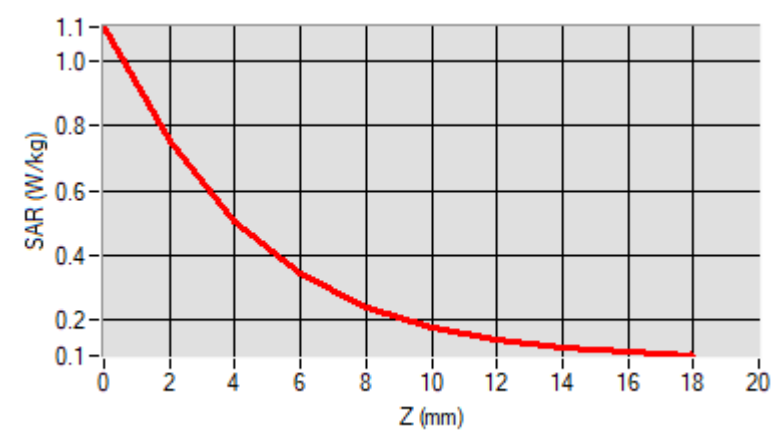
Maximum location: X=8.00, Y=35.00

D. SAR 1g & 10g

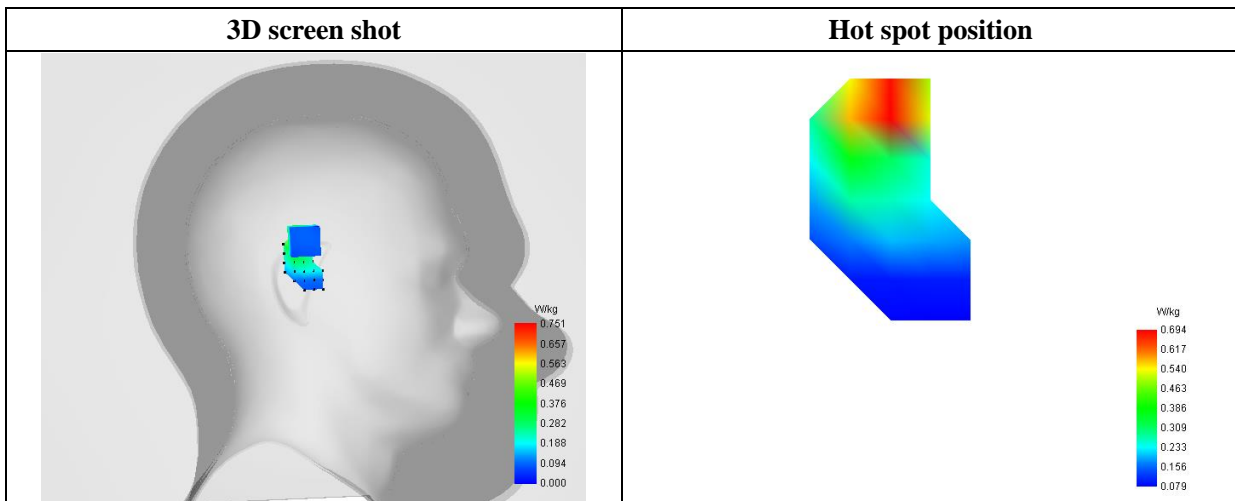
SAR 10g (W/Kg)	0.319519
SAR 1g (W/Kg)	0.695852

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00
SAR (W/Kg)	1.1039	0.7511	0.5065	0.3434	0.2412	0.1781	0.1395	0.1159	0.1028	



F. 3D Image



MEASUREMENT 13

Type: Phone measurement (Complete)

Date of measurement: 2022-08-17

Measurement duration: 12 minutes 3 seconds

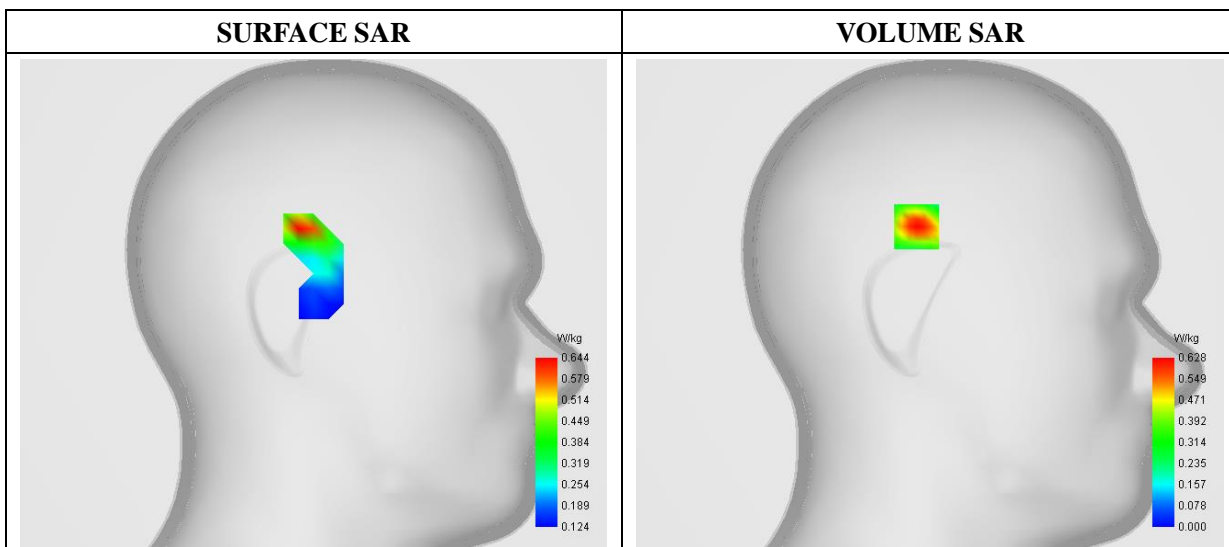
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Left Head
Device Position	Cheek
Band	WiFi(5.3GHz)_802.11a
Channels	Low
Signal	Duty Cycle: 1:1

B. SAR Measurement Results

Frequency (MHz)	5260.000000
Relative Permittivity (real part)	36.512839
Conductivity (S/m)	4.871926
Power Variation (%)	0.460000
Ambient Temperature	22.5
Liquid Temperature	22.5

C. SAR Surface and Volume



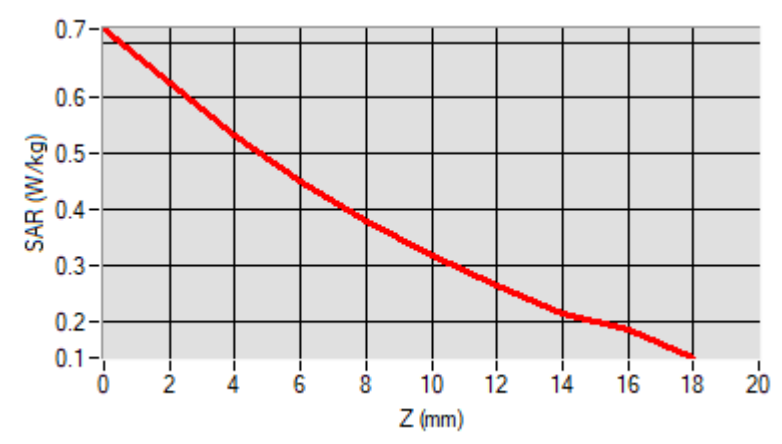
Maximum location: X=7.00, Y=41.00

D. SAR 1g & 10g

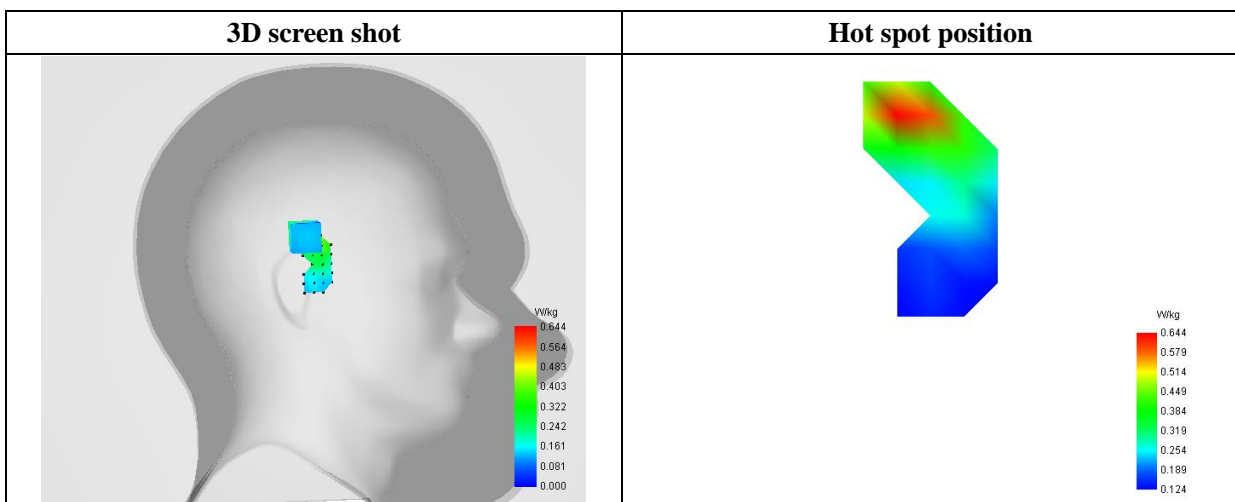
SAR 10g (W/Kg)	0.317835
SAR 1g (W/Kg)	0.565047

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00
SAR (W/Kg)	0.7239	0.6276	0.5331	0.4504	0.3788	0.3165	0.2621	0.2143	0.1831	



F. 3D Image



MEASUREMENT 14

Type: Phone measurement (Complete)

Date of measurement: 2022-08-17

Measurement duration: 12 minutes 21 seconds

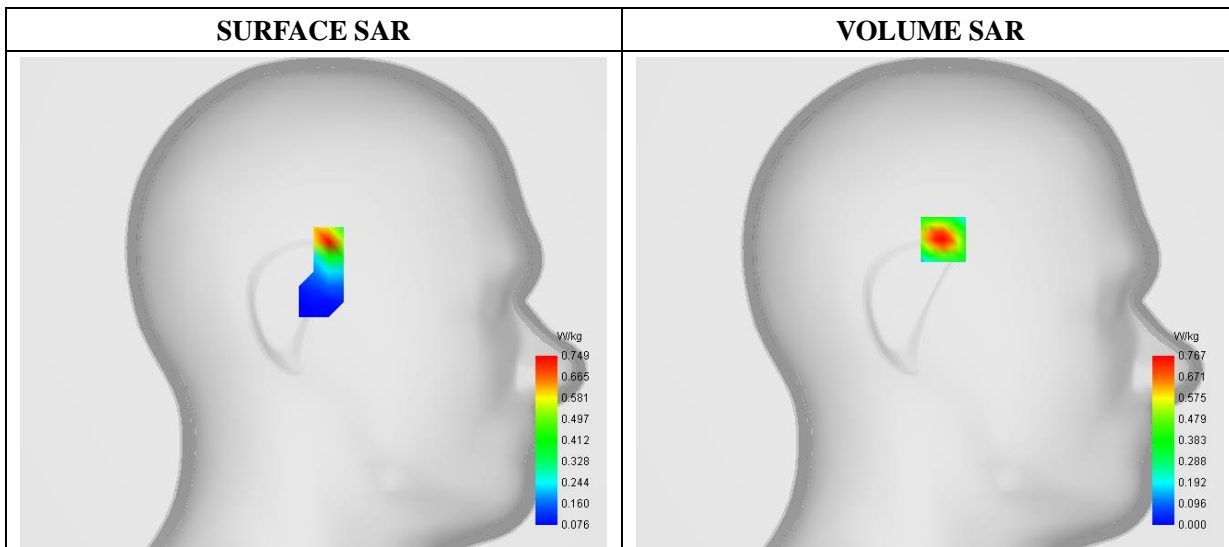
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Left Head
Device Position	Cheek
Band	WiFi(5.6GHz)_802.11ac 80MHz
Channels	Low
Signal	Duty Cycle: 1:1

B. SAR Measurement Results

Frequency (MHz)	5610.000000
Relative Permittivity (real part)	36.462963
Conductivity (S/m)	5.112781
Power Variation (%)	-1.840000
Ambient Temperature	22.5
Liquid Temperature	22.5

C. SAR Surface and Volume



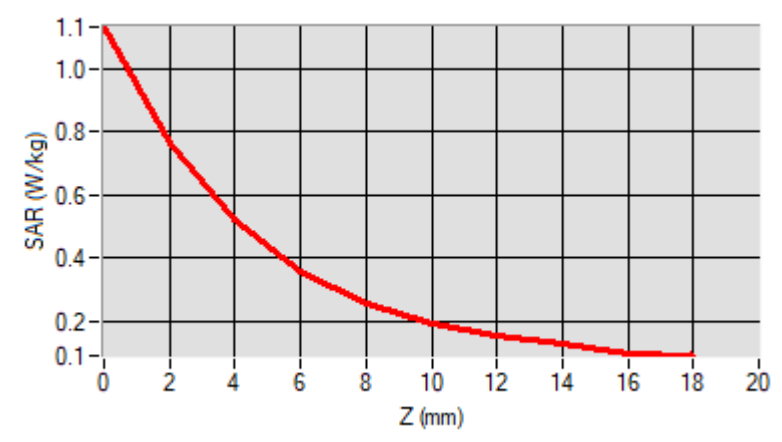
Maximum location: X=-7.00, Y=33.00

D. SAR 1g & 10g

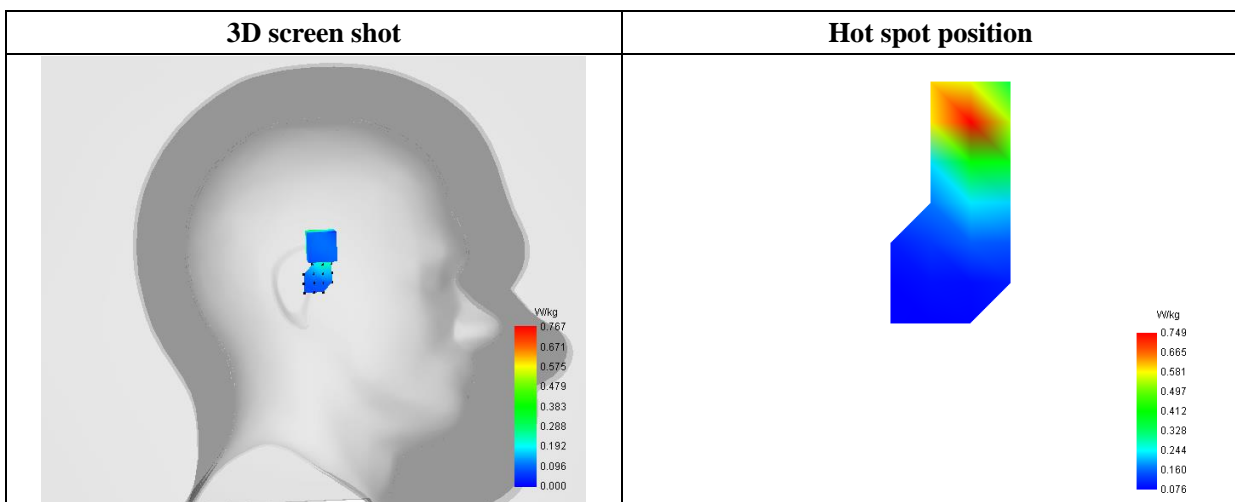
SAR 10g (W/Kg)	0.324937
SAR 1g (W/Kg)	0.713870

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00
SAR (W/Kg)	1.1332	0.7669	0.5214	0.3572	0.2542	0.1904	0.1515	0.1278	0.0976	



F. 3D Image



MEASUREMENT 15

Type: Phone measurement (Complete)

Date of measurement: 2022-08-17

Measurement duration: 12 minutes 21 seconds

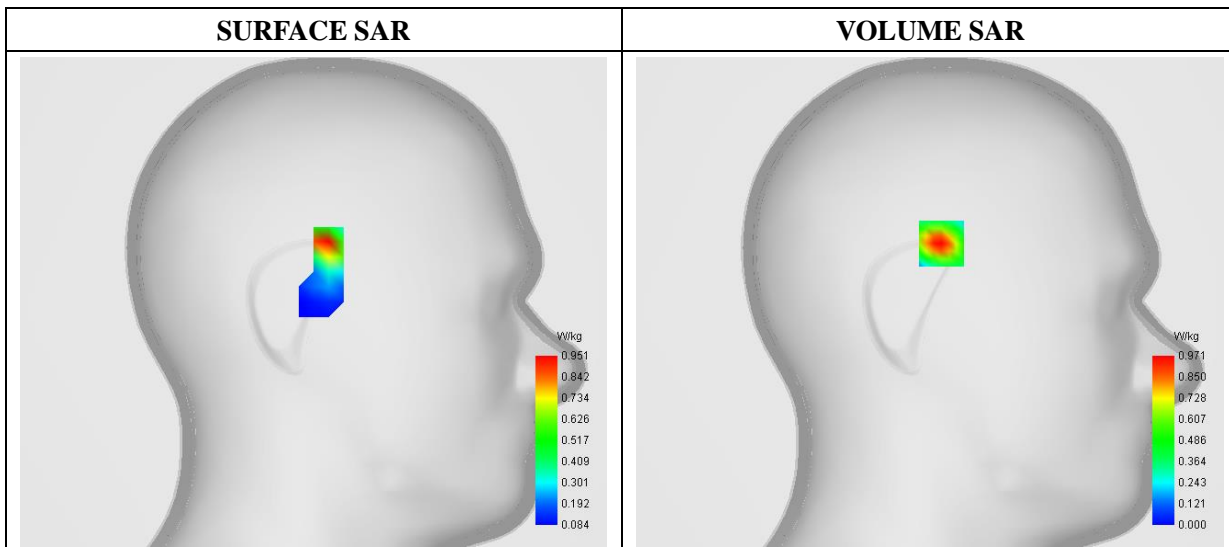
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Left Head
Device Position	Cheek
Band	WiFi(5.8GHz)_ 802.11a
Channels	Low
Signal	Duty Cycle: 1:1

B. SAR Measurement Results

Frequency (MHz)	5745.000000
Relative Permittivity (real part)	34.912273
Conductivity (S/m)	5.283836
Power Variation (%)	-1.290000
Ambient Temperature	22.5
Liquid Temperature	22.5

C. SAR Surface and Volume



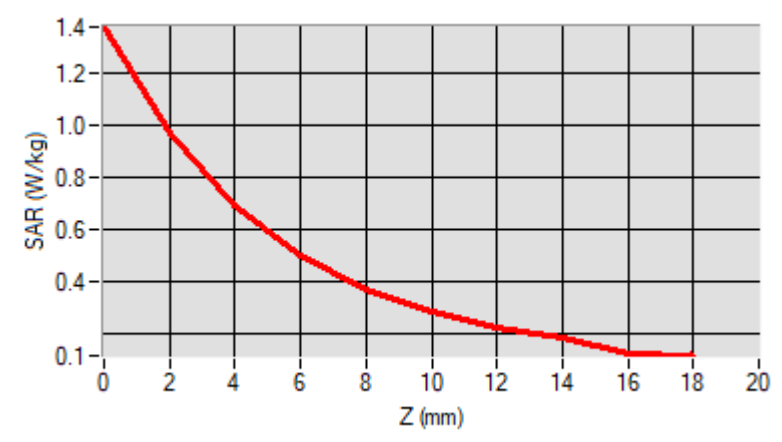
Maximum location: X=-6.00, Y=31.00

D. SAR 1g & 10g

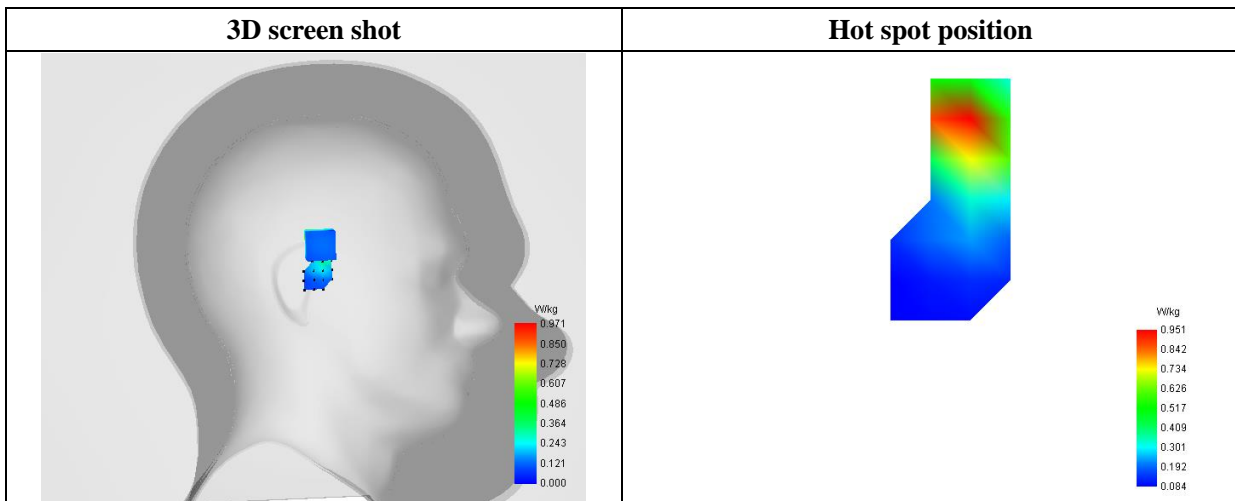
SAR 10g (W/Kg)	0.400291
SAR 1g (W/Kg)	0.740751

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00
SAR (W/Kg)	1.3797	0.9711	0.6976	0.5042	0.3739	0.2862	0.2267	0.1854	0.1521	0.1240



F. 3D Image



MEASUREMENT 16

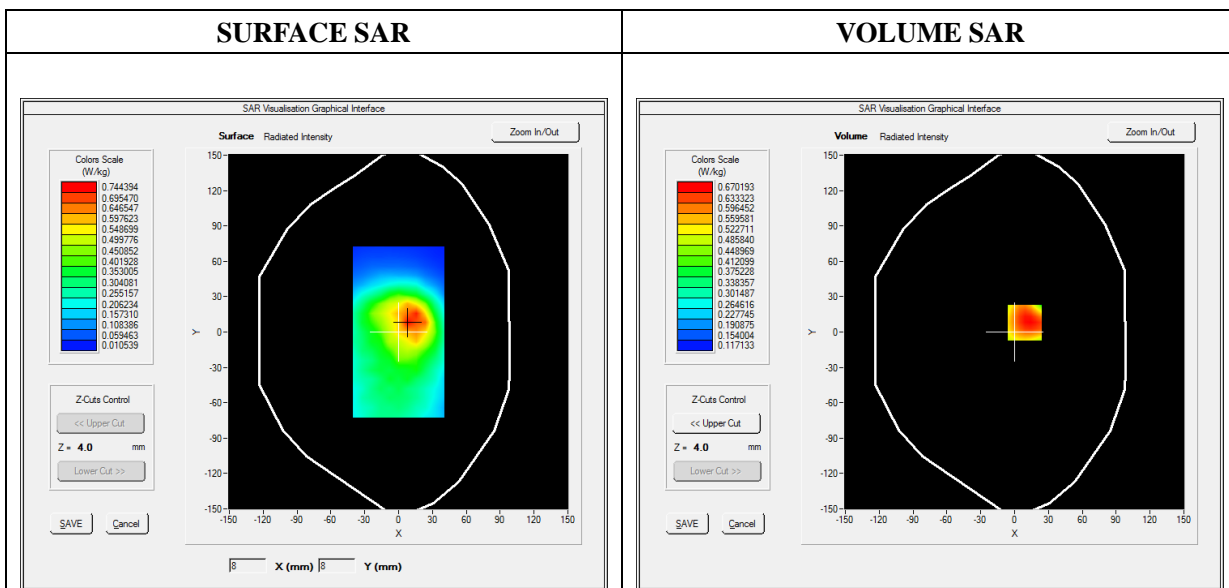
Type: Phone measurement (Complete)
 Date of measurement: 2022-07-30
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Flat Plane
Device Position	Back
Band	GSM850
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

B. SAR Measurement Results

Frequency (MHz)	836.600000
Relative Permittivity (real part)	40.752245
Conductivity (S/m)	0.881245
Power Variation (%)	0.721472
Ambient Temperature	22.2
Liquid Temperature	22.2

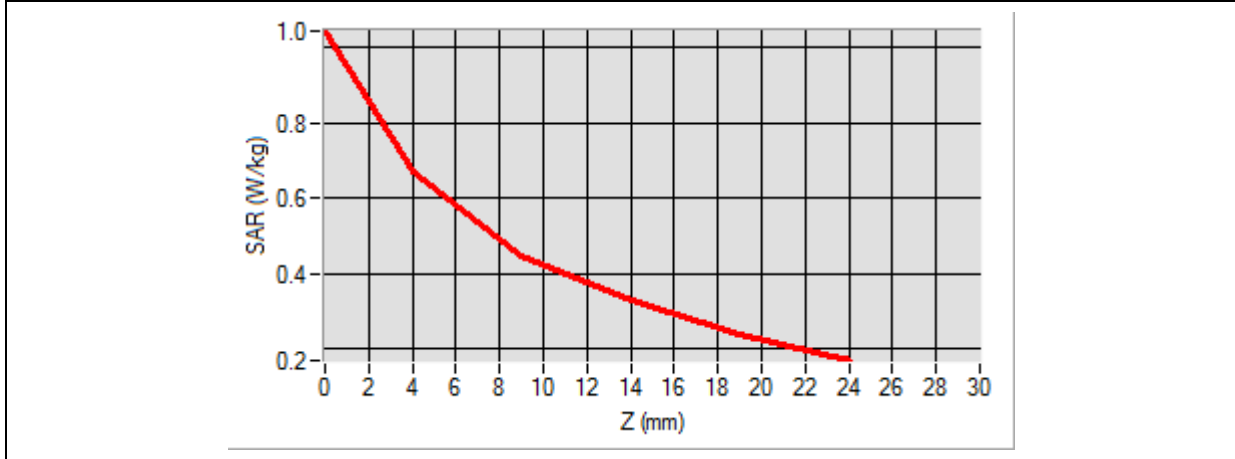


Maximum location: X=9.00, Y=8.00

SAR Peak: 0.91 W/kg

SAR 10g (W/Kg)	0.446811
SAR 1g (W/Kg)	0.642353

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.0453	0.6702	0.4458	0.3304	0.2370



3D screen shot	Hot spot position
<p>A 3D perspective view of a grey device with a grid of colored dots on its top surface. The dots are color-coded to show SAR intensity, with a central red/orange area indicating the highest SAR value (the hot spot).</p>	<p>A 2D heatmap showing the spatial distribution of SAR intensity. The color scale ranges from green (low intensity) to red (high intensity). The highest intensity (red) is concentrated in a central circular region, surrounded by concentric rings of decreasing intensity (yellow, green, cyan).</p>

MEASUREMENT 17

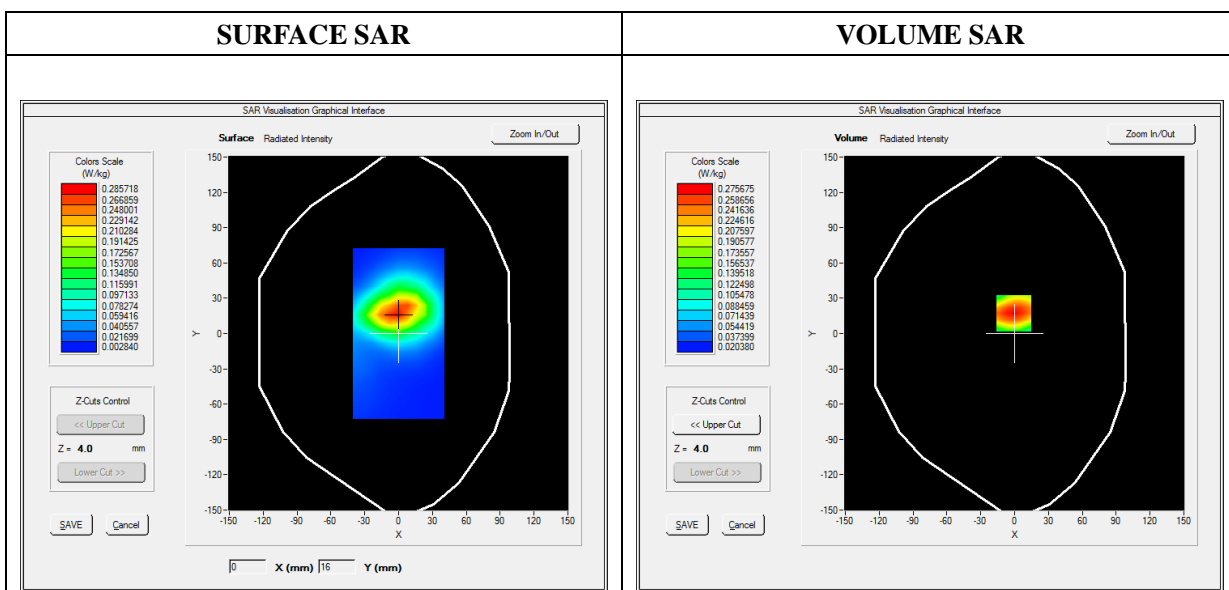
Type: Phone measurement (Complete)
 Date of measurement: 2022-08-01
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Flat Plane
Device Position	Back
Band	GSM1900
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative Permittivity (real part)	39.061245
Conductivity (S/m)	1.393691
Power Variation (%)	-1.100000
Ambient Temperature	22.2
Liquid Temperature	22.2

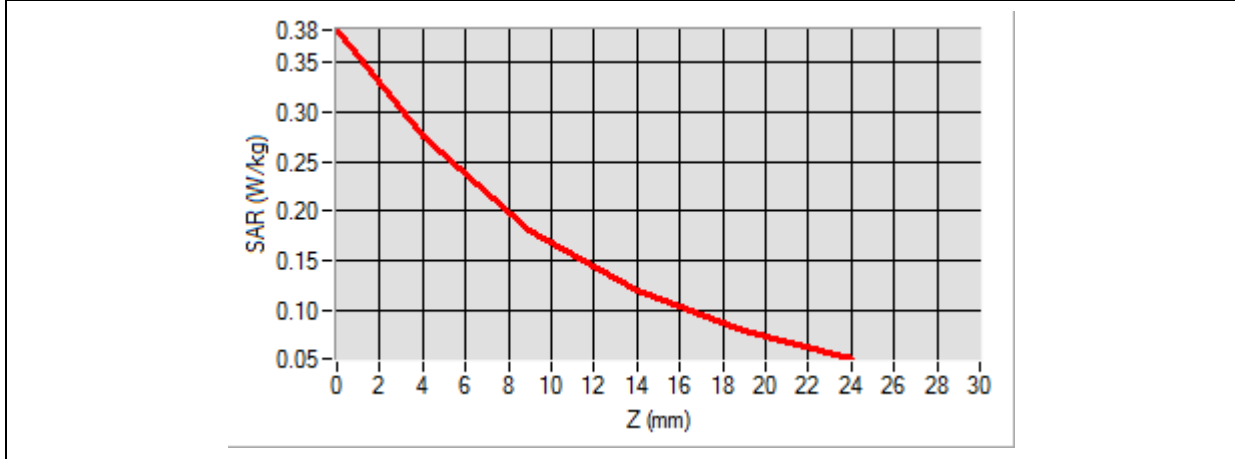


Maximum location: X=-1.00, Y=17.00

SAR Peak: 0.38 W/kg

SAR 10g (W/Kg)	0.163279
SAR 1g (W/Kg)	0.259384

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3819	0.2757	0.1816	0.1200	0.0801



3D screen shot	Hot spot position
<p>A 3D perspective view of a grey device. A rectangular area on the front face is highlighted with a color-coded SAR distribution, showing a central red/orange hot spot that fades to blue at the edges.</p>	<p>A 2D heatmap showing the SAR distribution. The central region is red, indicating the highest SAR values, surrounded by concentric rings of yellow, green, and cyan, indicating decreasing SAR values towards the periphery.</p>

MEASUREMENT 18/33

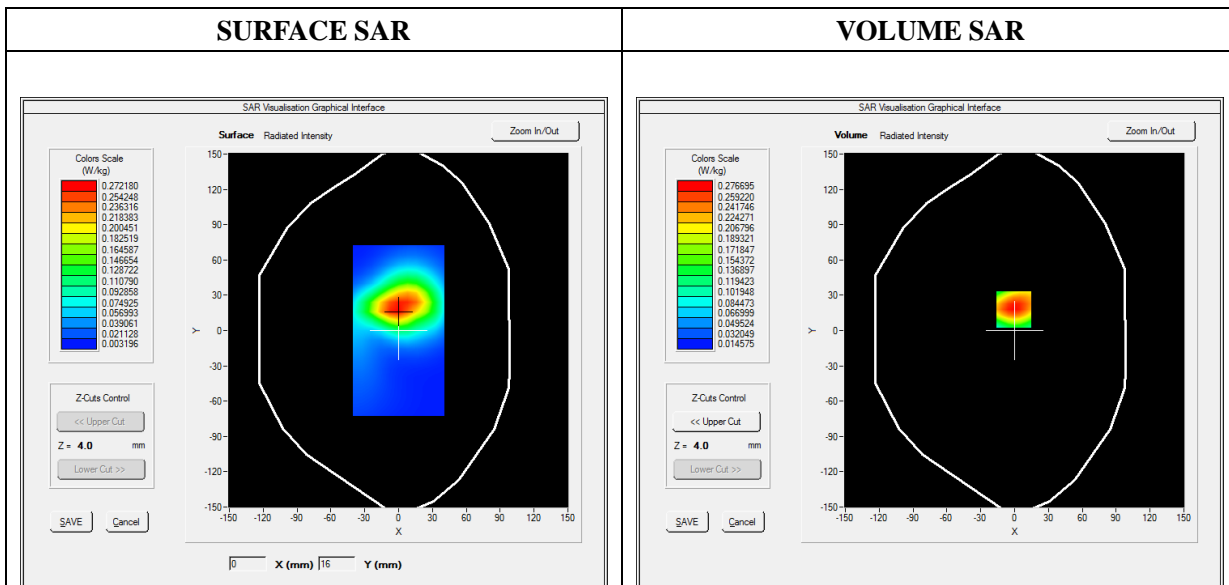
Type: Phone measurement (Complete)
 Date of measurement: 2022-08-01
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Flat Plane
Device Position	Back
Band	WCDMA1900_RMC
Channels	High
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1907.600000
Relative Permittivity (real part)	39.060124
Conductivity (S/m)	1.393607
Power Variation (%)	-0.470000
Ambient Temperature	22.2
Liquid Temperature	22.2

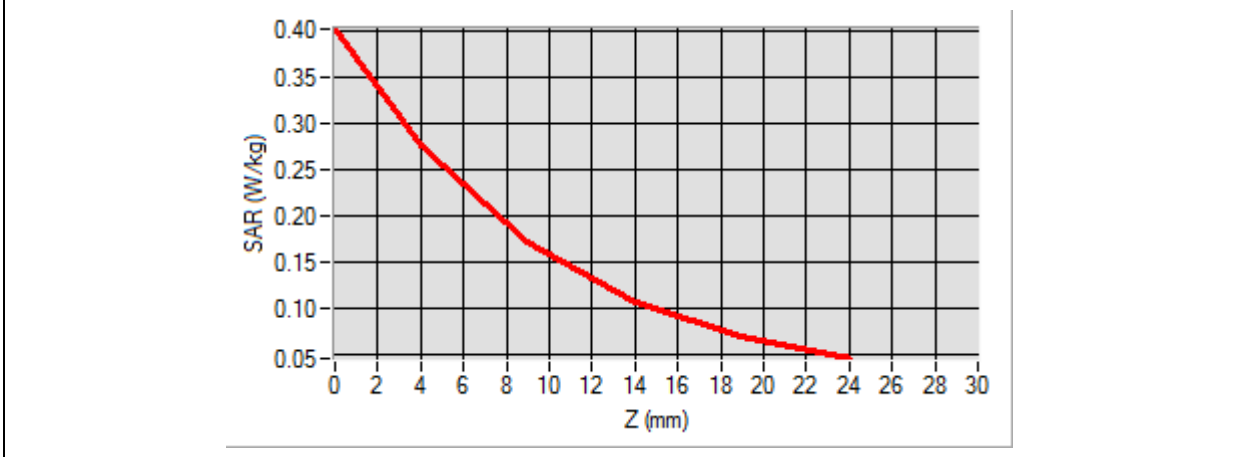


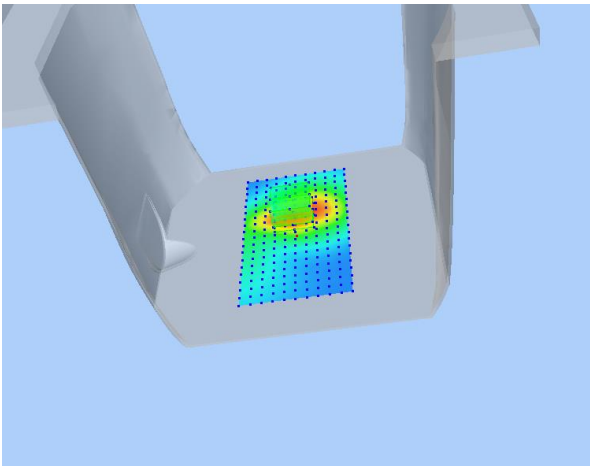
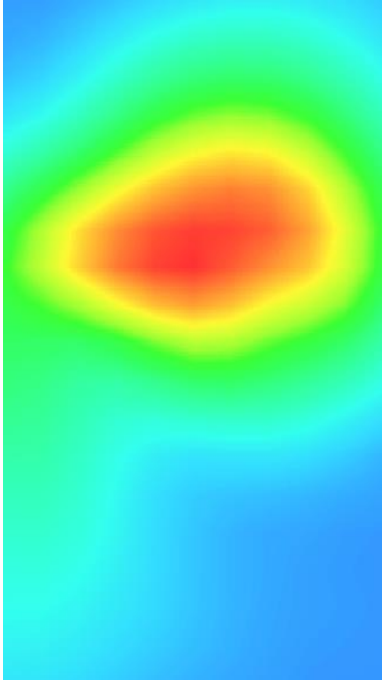
Maximum location: X=-1.00, Y=18.00

SAR Peak: 0.41 W/kg

SAR 10g (W/Kg)	0.160770
SAR 1g (W/Kg)	0.261660

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.4031	0.2767	0.1713	0.1078	0.0705



3D screen shot	Hot spot position
 <p>A 3D perspective view of a grey, L-shaped device. A rectangular area on the horizontal part of the device is highlighted with a color-coded SAR distribution. The colors range from blue (low SAR) to red (high SAR), indicating a localized hot spot.</p>	 <p>A 2D heatmap showing the SAR distribution. The color scale transitions from blue at the bottom to red at the top, with a central red/orange oval representing the highest SAR region (the hot spot).</p>

MEASUREMENT 19/34

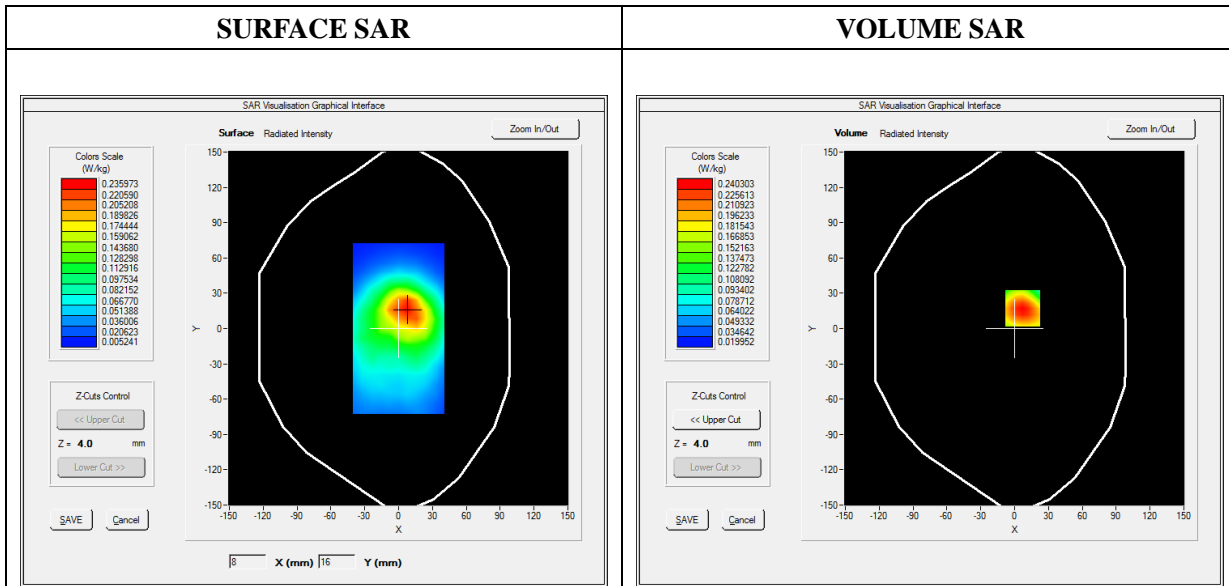
Type: Phone measurement (Complete)
 Date of measurement: 2022-08-01
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Flat Plane
Device Position	Back
Band	WCDMA1700_RMC
Channels	Low
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1712.400000
Relative Permittivity (real part)	39.431249
Conductivity (S/m)	1.382627
Power Variation (%)	-1.270000
Ambient Temperature	22.2
Liquid Temperature	22.2

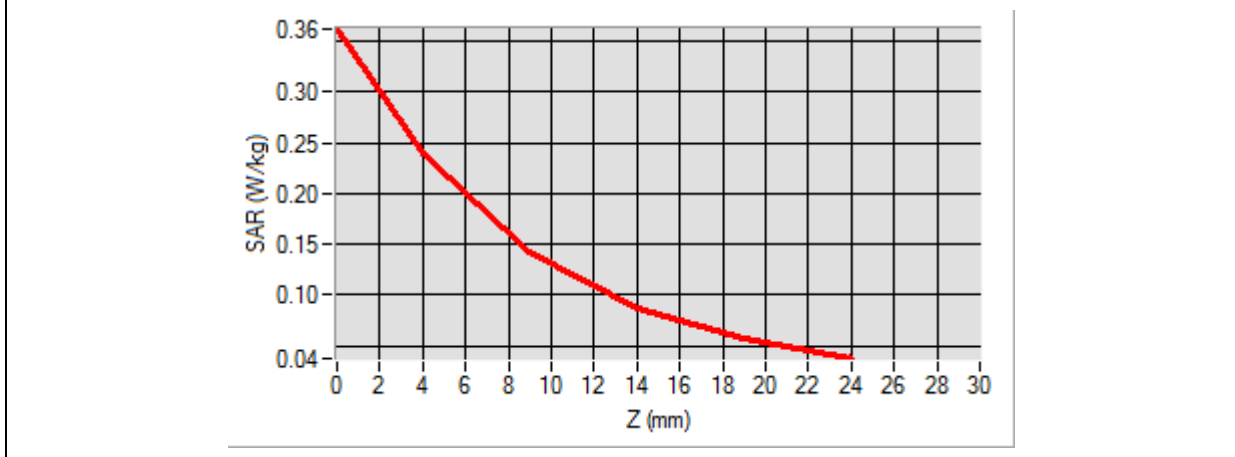


Maximum location: X=7.00, Y=17.00

SAR Peak: 0.36 W/kg

SAR 10g (W/Kg)	0.139245
SAR 1g (W/Kg)	0.226623

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3622	0.2403	0.1425	0.0869	0.0565



3D screen shot	Hot spot position
<p>A 3D perspective view of a grey device. A rectangular area on the front face is highlighted with a color-coded grid, showing a central red/orange hot spot that transitions to yellow, green, and cyan towards the edges.</p>	<p>A 2D heatmap showing a circular hot spot. The center is red, surrounded by yellow, green, and cyan, indicating the spatial distribution of the SAR field.</p>

MEASUREMENT 20/35

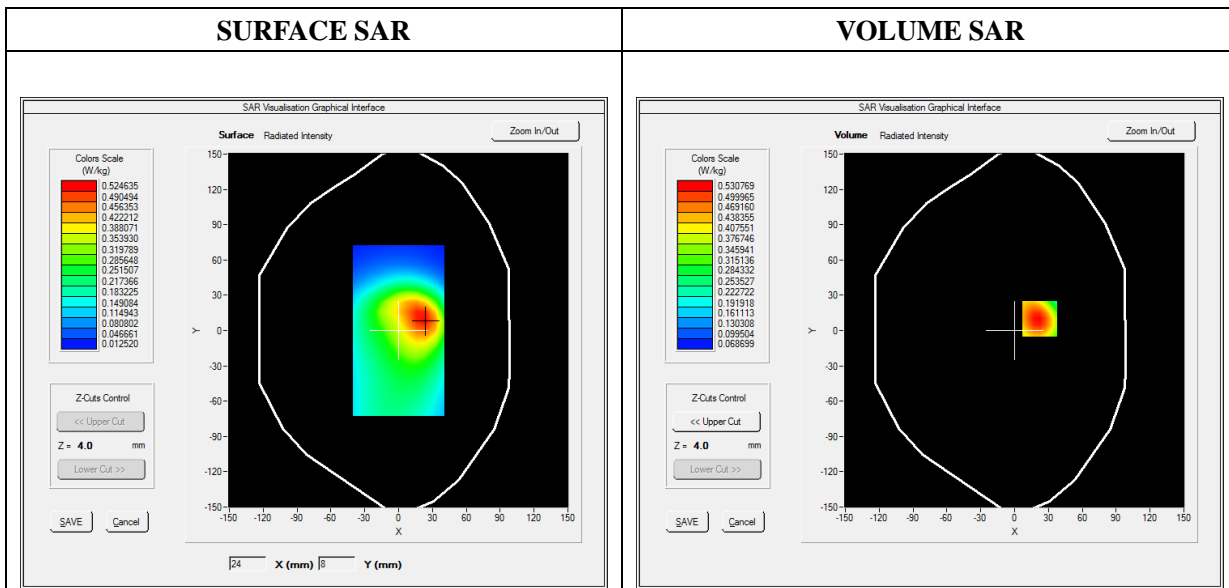
Type: Phone measurement (Complete)
 Date of measurement: 2022-07-30
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Flat Plane
Device Position	Back
Band	WCDMA850_RMC
Channels	High
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	846.600000
Relative Permittivity (real part)	40.753245
Conductivity (S/m)	0.881245
Power Variation (%)	-1.350000
Ambient Temperature	22.2
Liquid Temperature	22.2

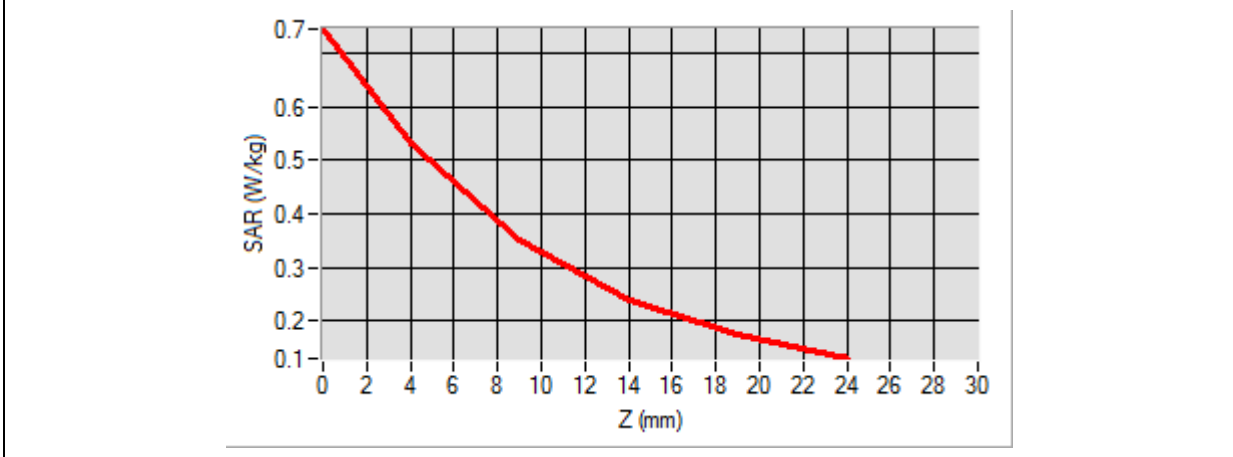


Maximum location: X=22.00, Y=10.00

SAR Peak: 0.75 W/kg

SAR 10g (W/Kg)	0.337188
SAR 1g (W/Kg)	0.504423

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.7447	0.5308	0.3499	0.2398	0.1747



3D screen shot	Hot spot position
<p>A 3D perspective view of a grey device with a color-coded SAR distribution overlay. The overlay shows a central hot spot in red, transitioning through yellow and green to blue at the edges.</p>	<p>A 2D heatmap showing the hot spot position. The center is a bright red circle, surrounded by concentric rings of yellow, green, and blue, indicating the spatial distribution of SAR values.</p>

MEASUREMENT 21/36

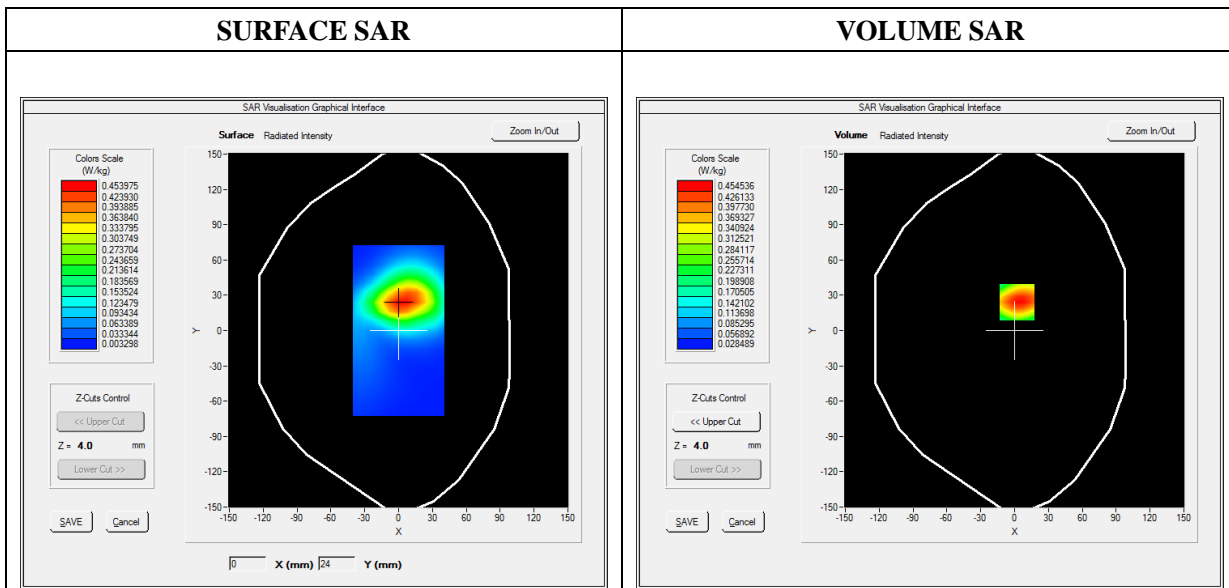
Type: Phone measurement (Complete)
 Date of measurement: 2022-08-01
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Flat Plane
Device Position	Back
Band	LTE Band 2
Channels	QPSK, 20MHz, 1RB, Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative Permittivity (real part)	39.061612
Conductivity (S/m)	1.392369
Power Variation (%)	-0.190000
Ambient Temperature	22.2
Liquid Temperature	22.2

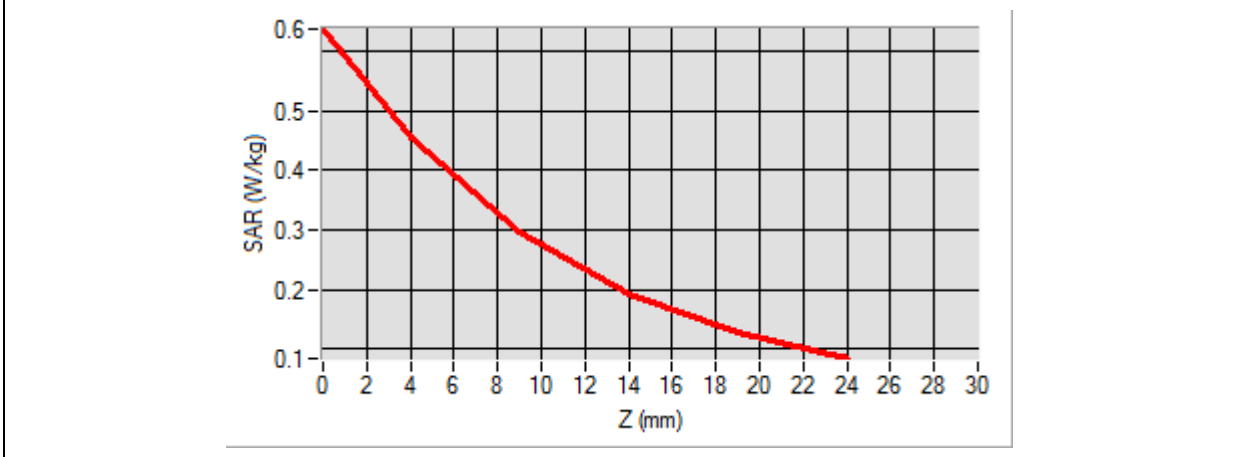


Maximum location: X=2.00, Y=24.00

SAR Peak: 0.64 W/kg

SAR 10g (W/Kg)	0.269958
SAR 1g (W/Kg)	0.528928

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.6365	0.4545	0.2958	0.1940	0.1296



3D screen shot	Hot spot position
<p>A 3D perspective view of a grey device. A rectangular area on the front face is highlighted with a color-coded SAR distribution, showing a central red/orange hot spot transitioning to blue at the edges.</p>	<p>A 2D heatmap showing the SAR distribution. The central region is red, indicating the highest SAR, surrounded by yellow, green, and cyan, with blue representing the lowest SAR. The shape is roughly oval and centered in the upper half of the frame.</p>

MEASUREMENT 22/37

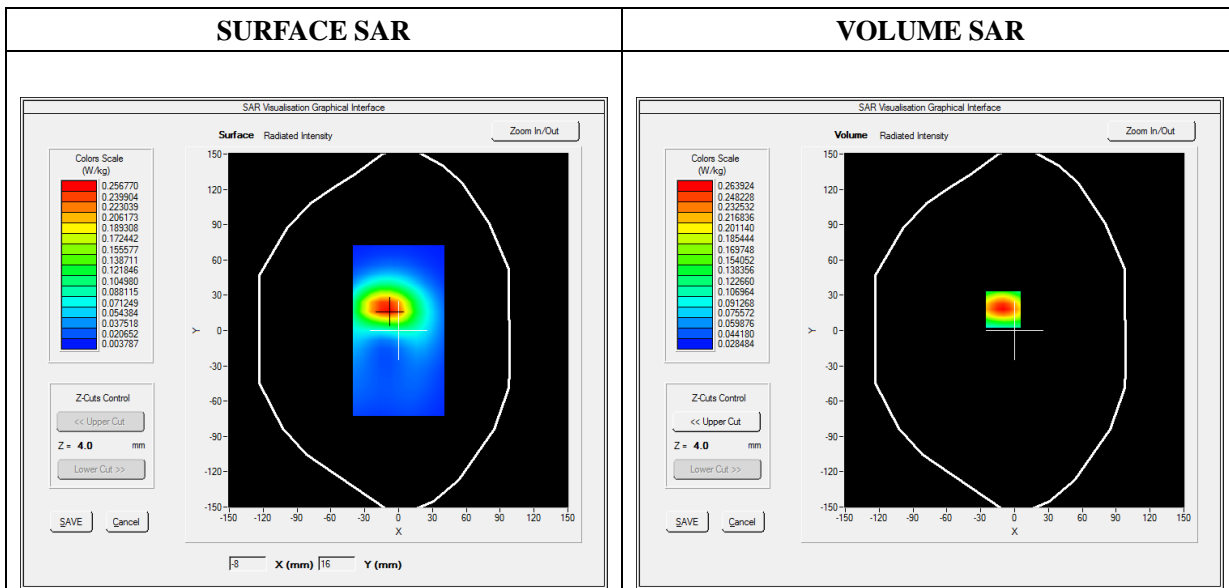
Type: Phone measurement (Complete)
 Date of measurement: 2022-08-01
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Flat Plane
Device Position	Back
Band	LTE Band 4
Channels	QPSK, 20MHz, 1RB, Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1732.500000
Relative Permittivity (real part)	39.433275
Conductivity (S/m)	1.3821987
Power Variation (%)	-0.860000
Ambient Temperature	22.2
Liquid Temperature	22.2

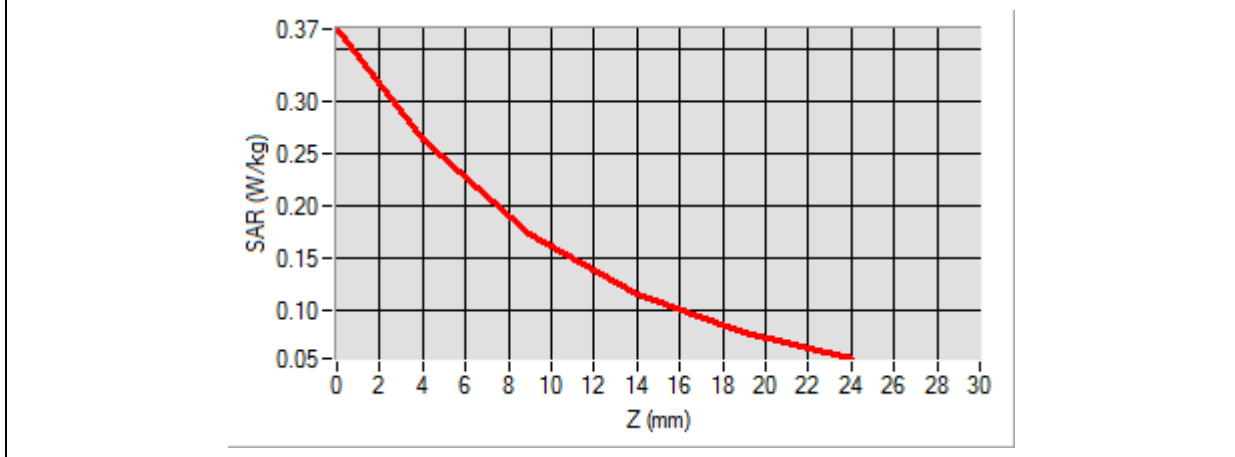


Maximum location: X=-10.00, Y=18.00

SAR Peak: 0.37 W/kg

SAR 10g (W/Kg)	0.150773
SAR 1g (W/Kg)	0.246211

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3702	0.2639	0.1722	0.1143	0.0783



3D screen shot	Hot spot position
<p>A 3D perspective view of a grey, L-shaped device. A rectangular grid of small dots is overlaid on the flat surface of the device. The dots are color-coded, with a central cluster of red and yellow dots indicating the highest SAR values, transitioning to green and then blue towards the edges.</p>	<p>A 2D heatmap showing the spatial distribution of SAR. The color scale ranges from blue (low SAR) to red (high SAR). The highest SAR region is a central, roughly oval-shaped area colored red and yellow, surrounded by concentric rings of green and cyan, indicating a localized hot spot.</p>

MEASUREMENT 23/38

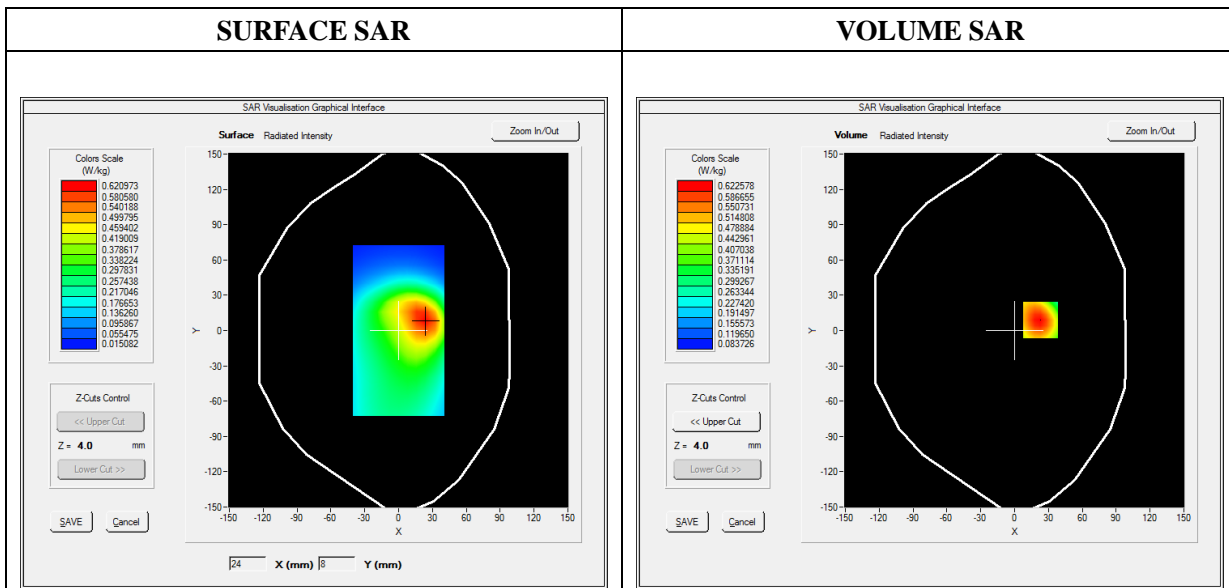
Type: Phone measurement (Complete)
 Date of measurement: 2022-07-30
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Flat Plane
Device Position	Back
Band	LTE Band 5
Channels	QPSK, 10MHz, 1RB, High
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	844.000000
Relative Permittivity (real part)	40.750245
Conductivity (S/m)	0.881245
Power Variation (%)	-0.810000
Ambient Temperature	22.2
Liquid Temperature	22.2

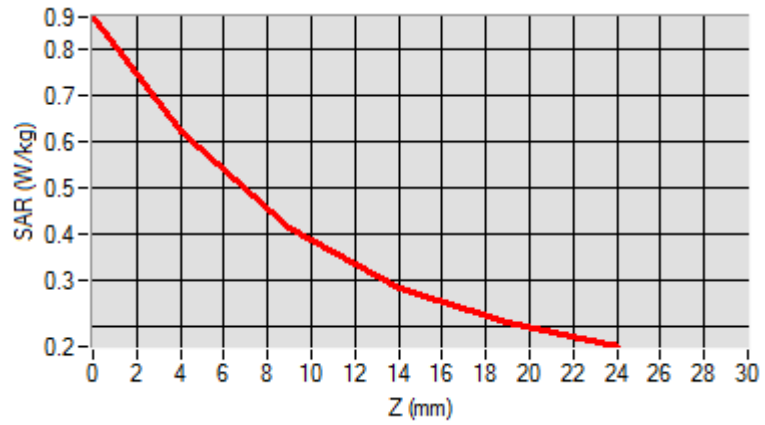


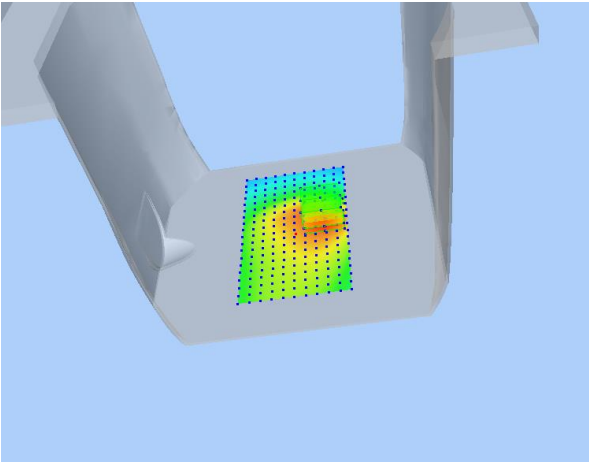
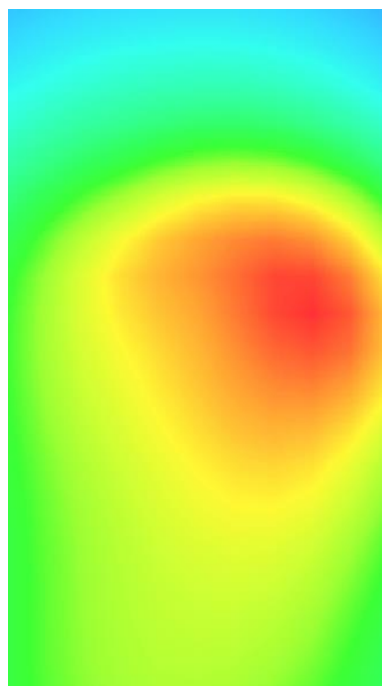
Maximum location: X=23.00, Y=9.00

SAR Peak: 0.87 W/kg

SAR 10g (W/Kg)	0.397247
SAR 1g (W/Kg)	0.591258

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.8705	0.6226	0.4124	0.2839	0.2076



3D screen shot	Hot spot position
 <p>A 3D perspective view of a grey device with a grid of colored dots overlaid on its surface. The colors range from green (low SAR) to red (high SAR), indicating the distribution of SAR values across the device's surface.</p>	 <p>A 2D heatmap showing a circular hot spot in the center, colored red and yellow, surrounded by a green and blue gradient. This represents the spatial distribution of SAR values on the device's surface.</p>

MEASUREMENT 24/39

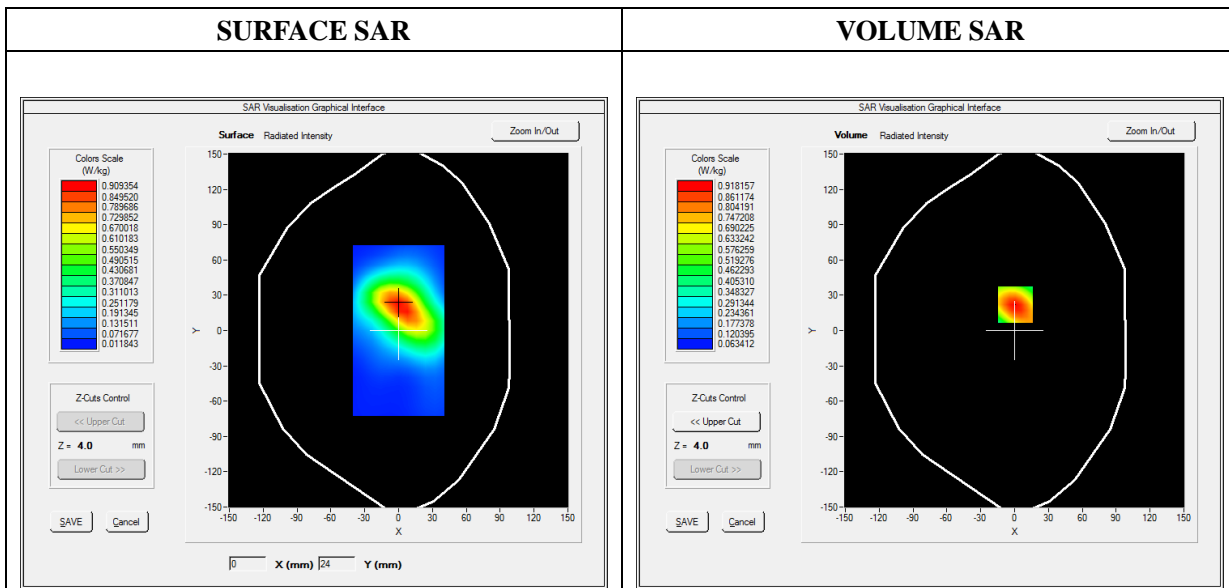
Type: Phone measurement (Complete)
 Date of measurement: 2022-08-08
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Flat Plane
Device Position	Back
Band	LTE Band 7
Channels	QPSK, 20MHz, 1RB, Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	2535.000000
Relative Permittivity (real part)	37.932666
Conductivity (S/m)	1.973182
Power Variation (%)	-1.010000
Ambient Temperature	22.2
Liquid Temperature	22.2

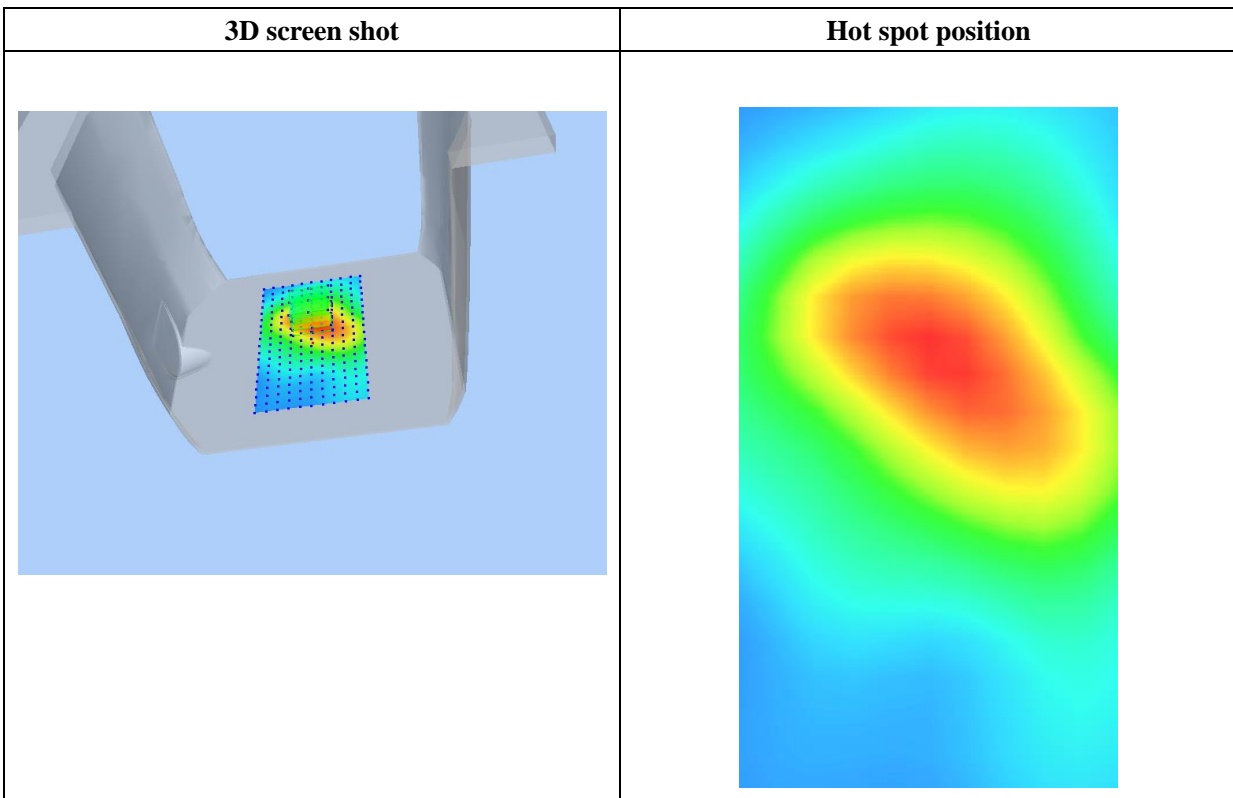
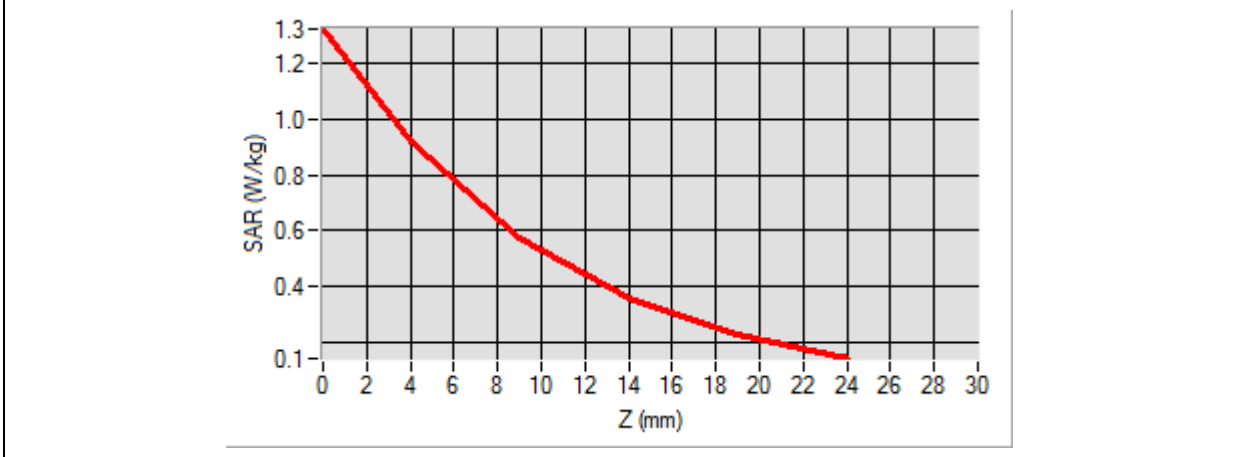


Maximum location: X=1.00, Y=22.00

SAR Peak: 1.33 W/kg

SAR 10g (W/Kg)	0.530355
SAR 1g (W/Kg)	0.861827

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.3204	0.9182	0.5751	0.3615	0.2312



MEASUREMENT 25/40

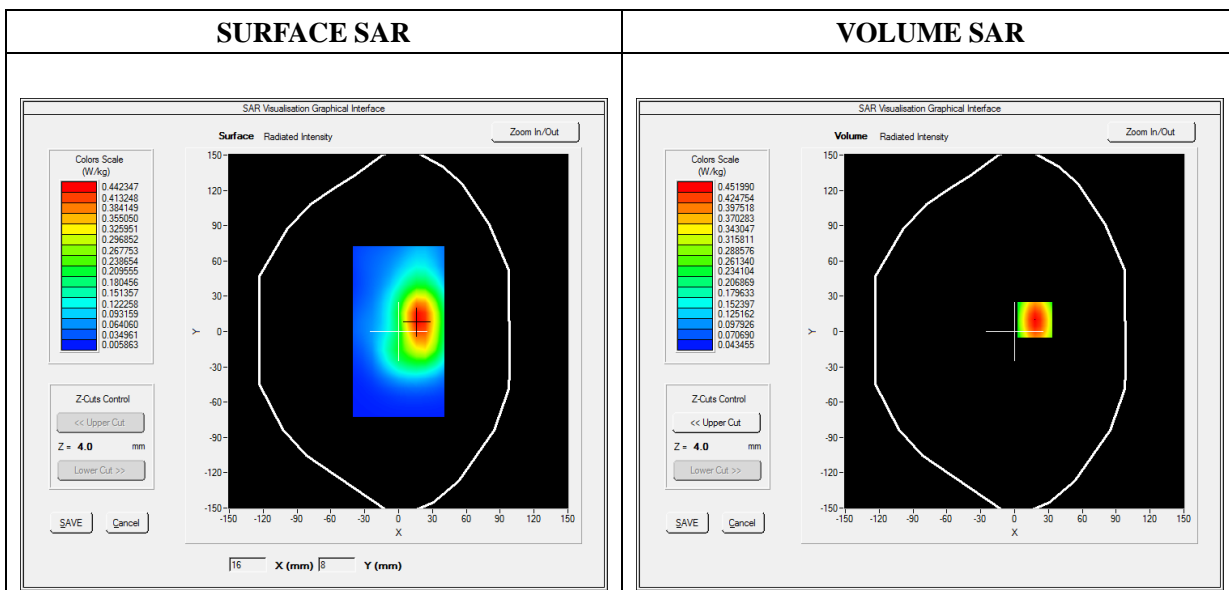
Type: Phone measurement (Complete)
 Date of measurement: 2022-08-08
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Flat Plane
Device Position	Back
Band	WiFi_802.11b
Channels	High
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	2462.000000
Relative Permittivity (real part)	38.452301
Conductivity (S/m)	1.771638
Power Variation (%)	0.360000
Ambient Temperature	22.2
Liquid Temperature	22.2

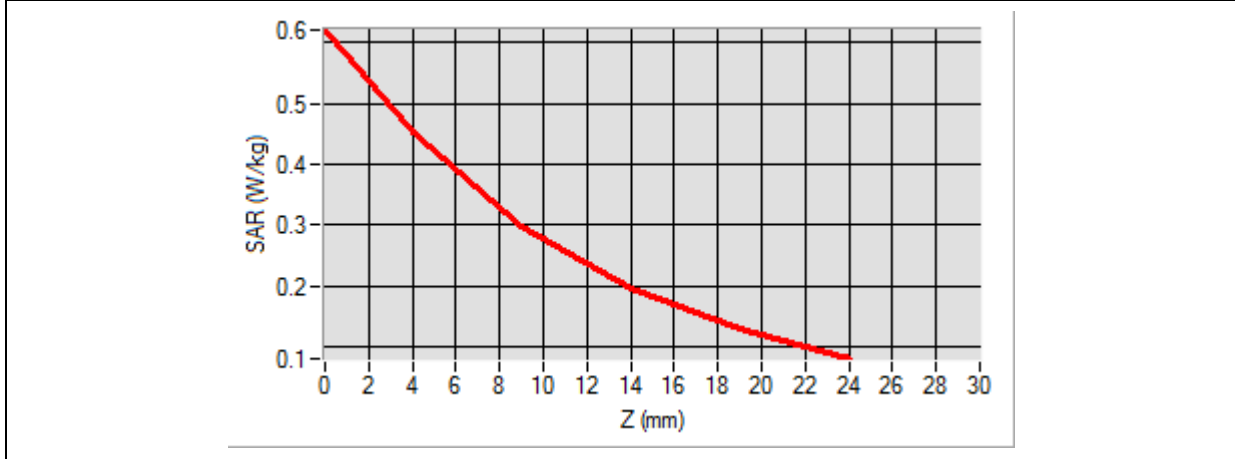


Maximum location: X=18.00, Y=10.00

SAR Peak: 0.62 W/kg

SAR 10g (W/Kg)	0.266293
SAR 1g (W/Kg)	0.423977

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.6206	0.4520	0.2999	0.1977	0.1297



3D screen shot	Hot spot position
<p>A 3D perspective view of a grey device. A rectangular area on the front face is highlighted with a color-coded grid, showing a hot spot in the center (red/yellow) that fades to blue at the edges.</p>	<p>A 2D heatmap showing the spatial distribution of SAR. The highest intensity (red) is concentrated in a central oval region, surrounded by concentric rings of decreasing intensity (yellow, green, cyan, blue).</p>

MEASUREMENT 26/41

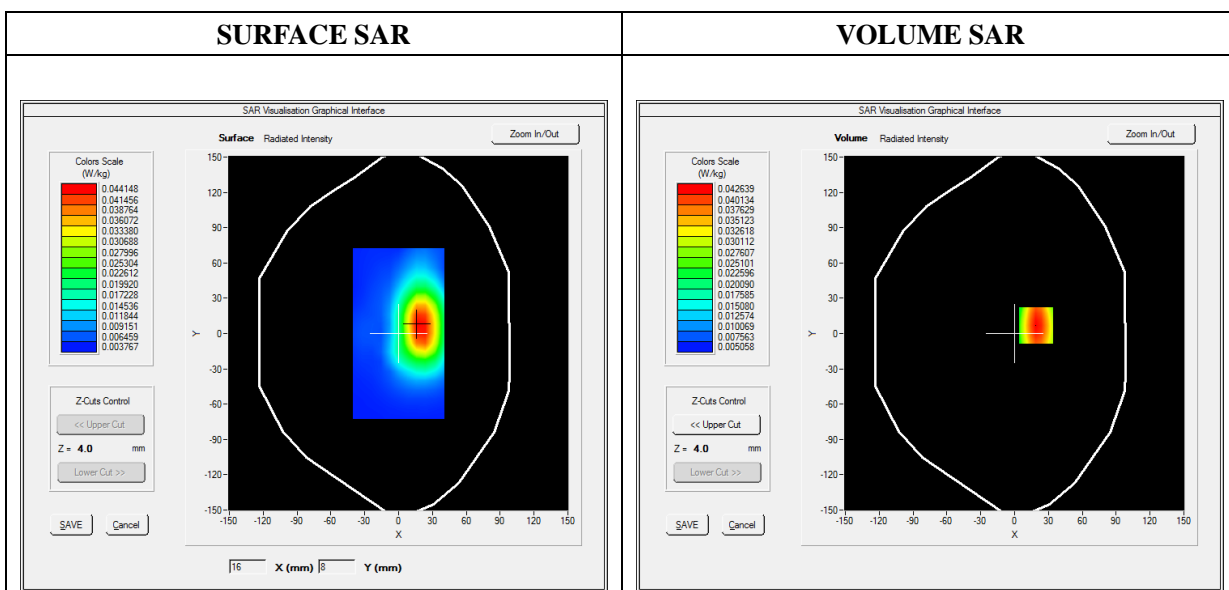
Type: Phone measurement (Complete)
 Date of measurement: 2022-08-08
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Flat Plane
Device Position	Back
Band	Bluetooth_GFSK
Channels	High
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	2480.000000
Relative Permittivity (real part)	38.450521
Conductivity (S/m)	1.7713828
Power Variation (%)	0.360000
Ambient Temperature	22.2
Liquid Temperature	22.2

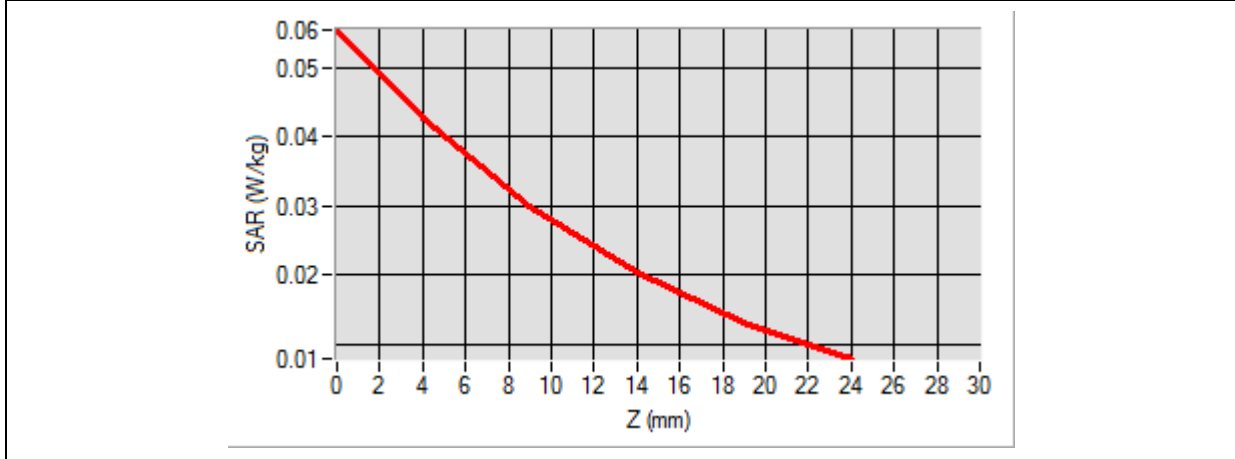


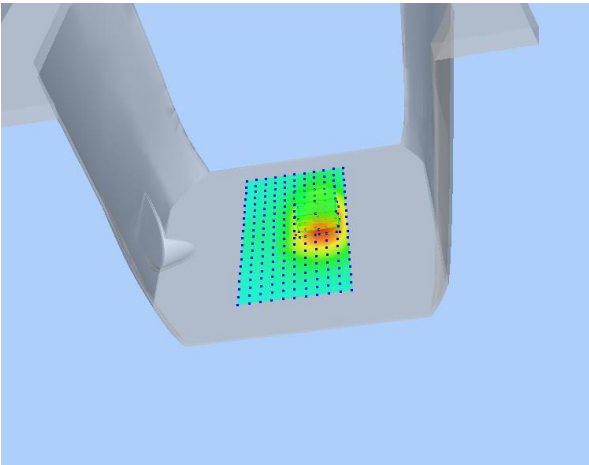
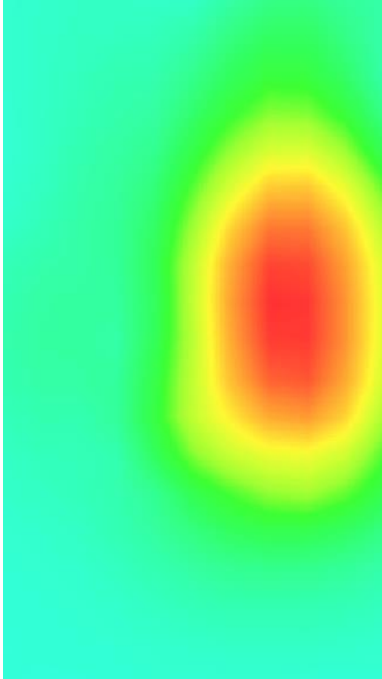
Maximum location: X=19.00, Y=7.00

SAR Peak: 0.06 W/kg

SAR 10g (W/Kg)	0.026093
SAR 1g (W/Kg)	0.040321

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0555	0.0426	0.0300	0.0204	0.0133



3D screen shot	Hot spot position
	

MEASUREMENT 27/42

Type: Phone measurement (Complete)
 Date of measurement: 2022-08-17
 Measurement duration: 12 minutes 3 seconds

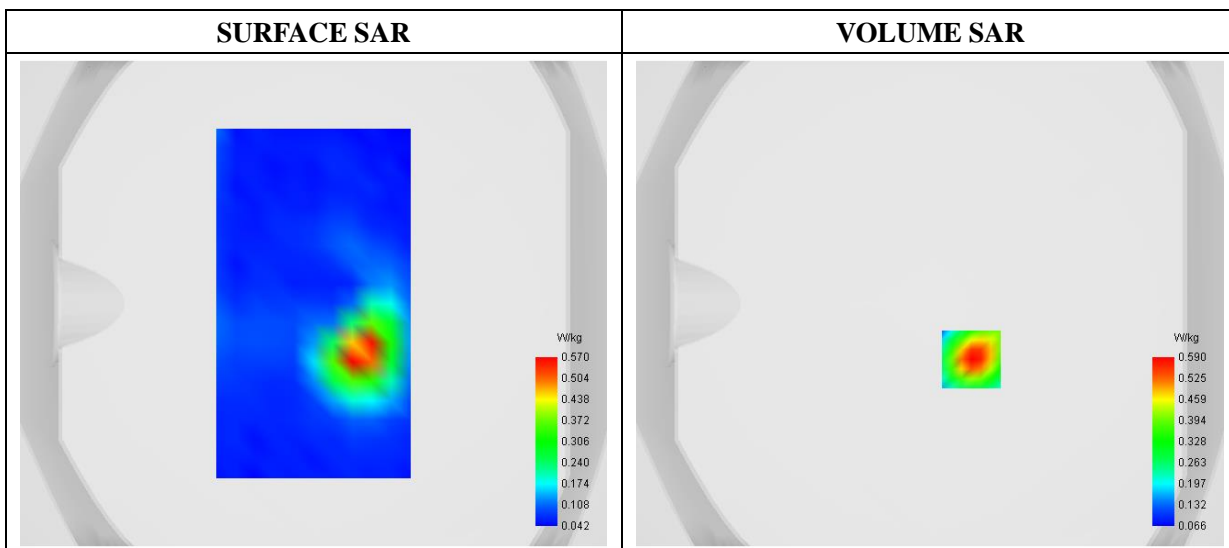
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Flat Plane
Device Position	Back
Band	WiFi(5.2GHz)_802.11n (HT20)
Channels	Low
Signal	Duty Cycle: 1:1

B. SAR Measurement Results

Frequency (MHz)	5180.000000
Relative Permittivity (real part)	36.183869
Conductivity (S/m)	4.641611
Power Variation (%)	-1.520000
Ambient Temperature	22.5
Liquid Temperature	22.5

C. SAR Surface and Volume



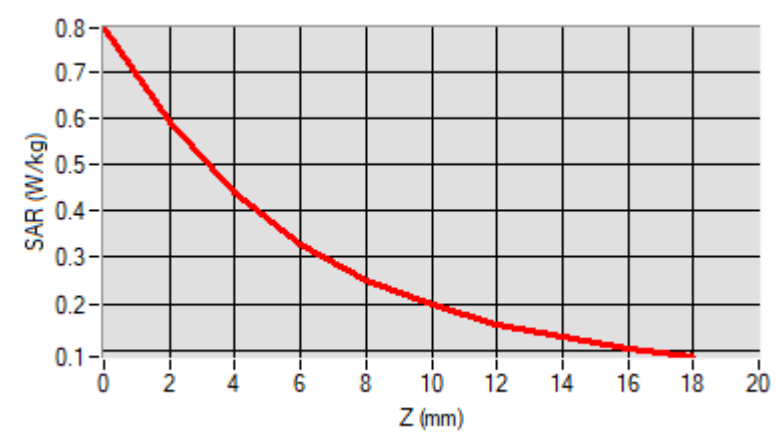
Maximum location: X=17.00, Y=-23.00

D. SAR 1g & 10g

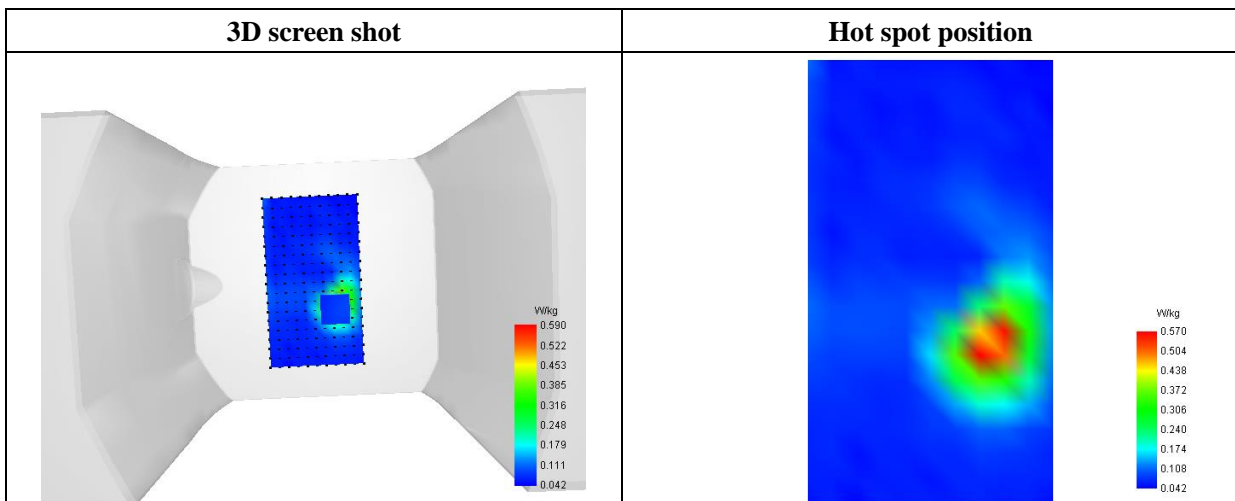
SAR 10g (W/Kg)	0.1866856
SAR 1g (W/Kg)	0.6303739

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00
SAR (W/Kg)	0.7907	0.5880	0.4306	0.3253	0.2505	0.1943	0.1518	0.1206	0.1010	



F. 3D Image



MEASUREMENT 28

Type: Phone measurement (Complete)

Date of measurement: 2022-08-17

Measurement duration: 12 minutes 3 seconds

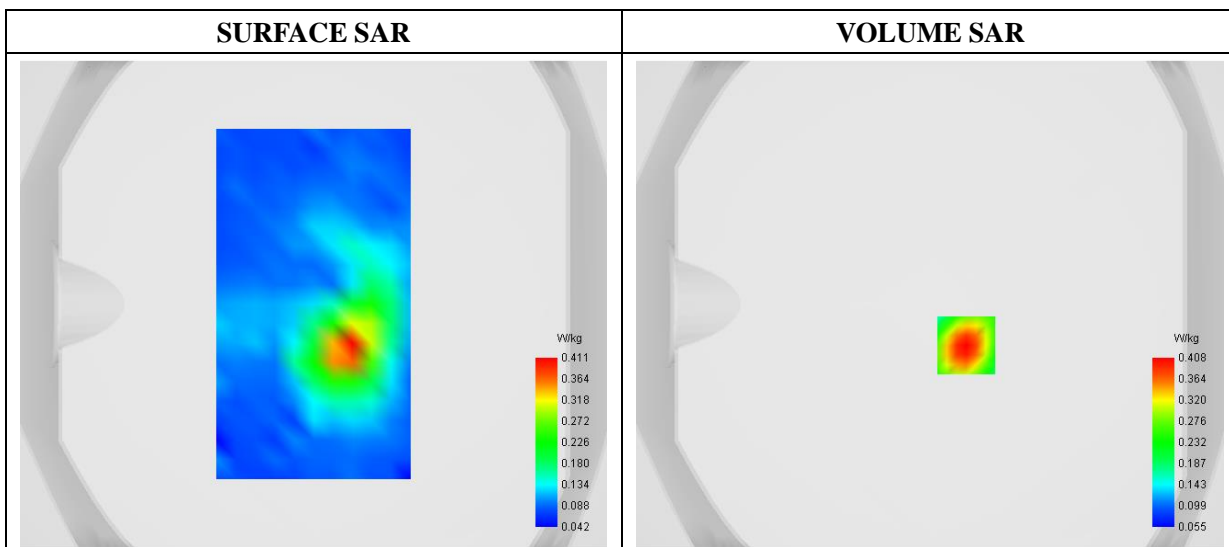
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Flat Plane
Device Position	Front
Band	WiFi(5.3GHz)_802.11a
Channels	Low
Signal	Duty Cycle: 1:1

B. SAR Measurement Results

Frequency (MHz)	5260.000000
Relative Permittivity (real part)	36.512839
Conductivity (S/m)	4.871926
Power Variation (%)	1.110000
Ambient Temperature	22.5
Liquid Temperature	22.5

C. SAR Surface and Volume



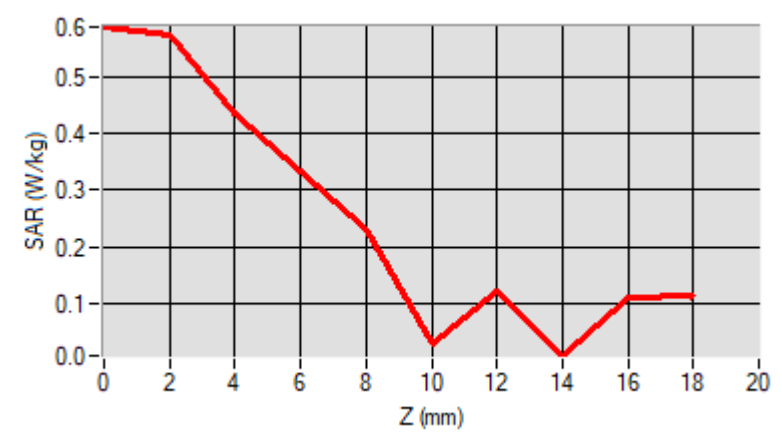
Maximum location: X=-15.00, Y=-22.00

D. SAR 1g & 10g

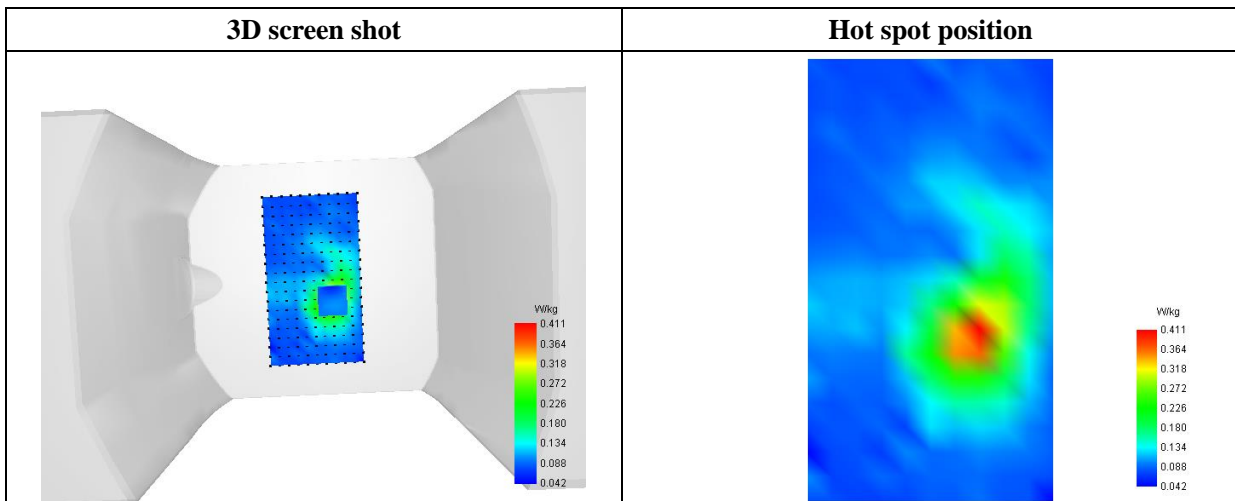
SAR 10g (W/Kg)	0.213421
SAR 1g (W/Kg)	0.418099

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00
SAR (W/Kg)	0.5862	0.5708	0.4342	0.3345	0.2300	0.0320	0.1212	0.0099	0.1129	0.1129



F. 3D Image



MEASUREMENT 29/44

Type: Phone measurement (Complete)
 Date of measurement: 2022-08-17
 Measurement duration: 12 minutes 3 seconds

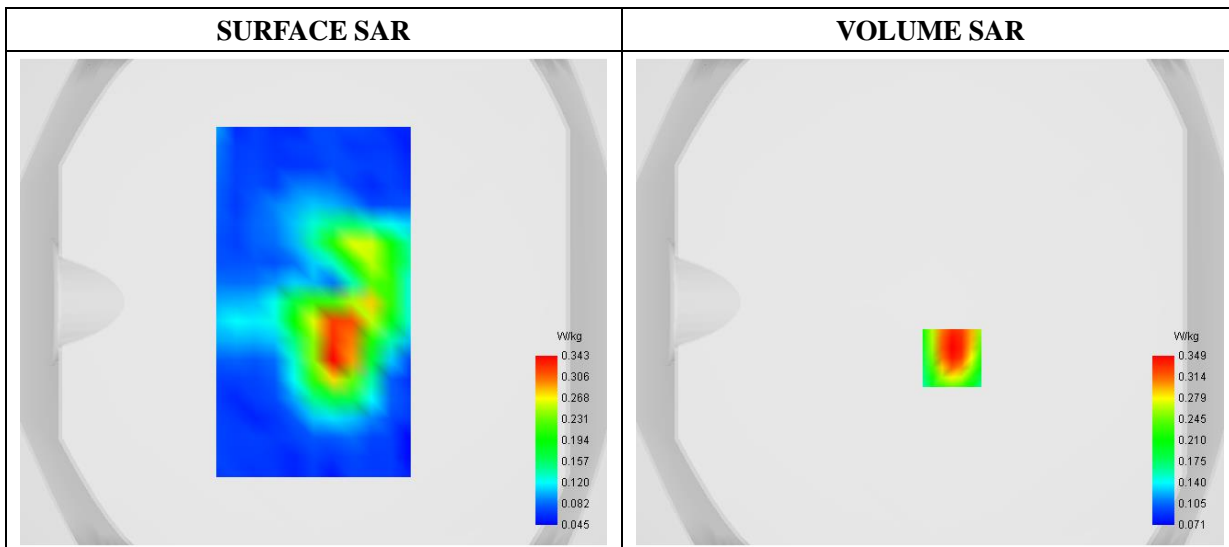
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Flat Plane
Device Position	Back
Band	WiFi(5.6GHz)_802.11ac 80MHz
Channels	Low
Signal	Duty Cycle: 1:1

B. SAR Measurement Results

Frequency (MHz)	5610.000000
Relative Permittivity (real part)	36.462963
Conductivity (S/m)	5.112781
Power Variation (%)	0.750000
Ambient Temperature	22.5
Liquid Temperature	22.5

C. SAR Surface and Volume



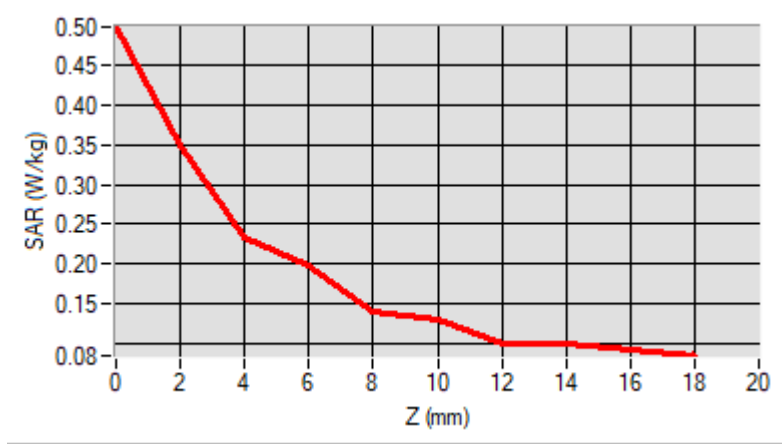
Maximum location: X=9.00, Y=-23.00

D. SAR 1g & 10g

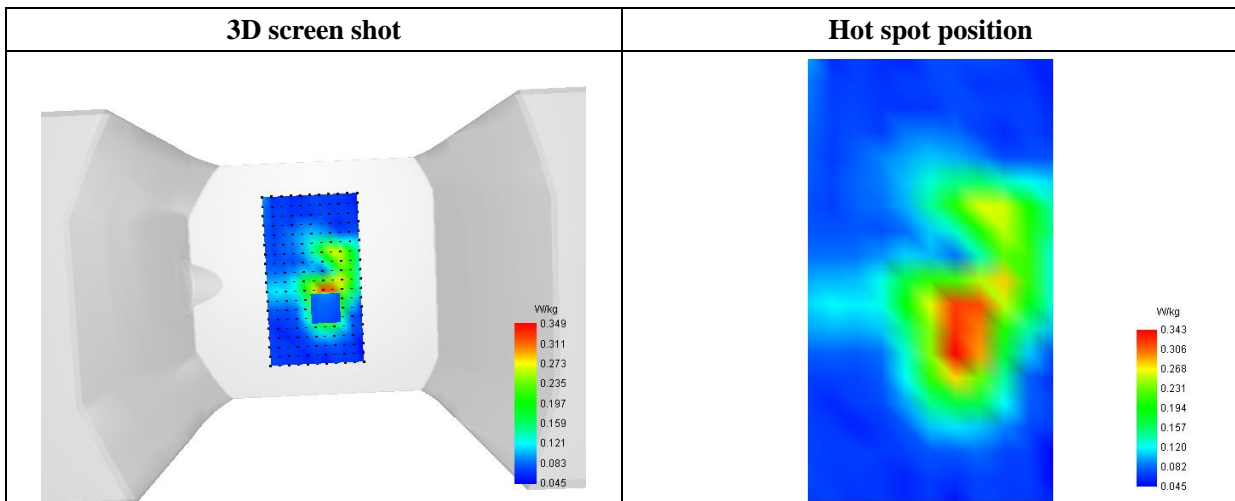
SAR 10g (W/Kg)	0.151170
SAR 1g (W/Kg)	0.360452

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00
SAR (W/Kg)	0.4981	0.3490	0.2344	0.1990	0.1391	0.1295	0.0994	0.0992	0.0909	0.0909



F. 3D Image



MEASUREMENT 30/42

Type: Phone measurement (Complete)
 Date of measurement: 2022-08-17
 Measurement duration: 12 minutes 3 seconds

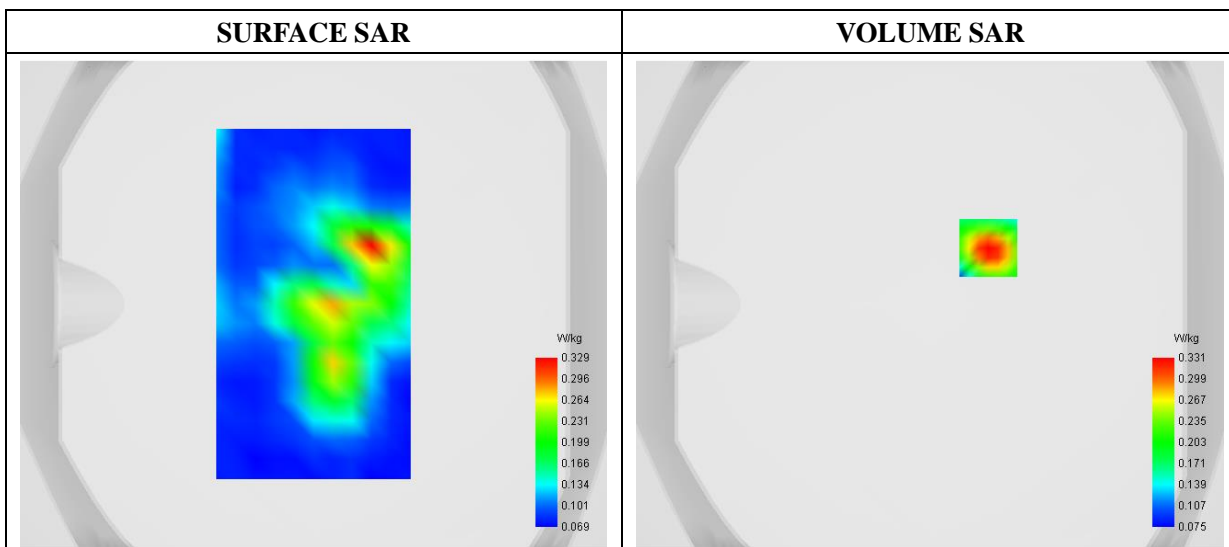
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Flat Plane
Device Position	Back
Band	WiFi(5.8GHz)_ 802.11a
Channels	Low
Signal	Duty Cycle: 1:1

B. SAR Measurement Results

Frequency (MHz)	5745.000000
Relative Permittivity (real part)	34.912273
Conductivity (S/m)	5.283836
Power Variation (%)	-1.330000
Ambient Temperature	22.5
Liquid Temperature	22.5

C. SAR Surface and Volume



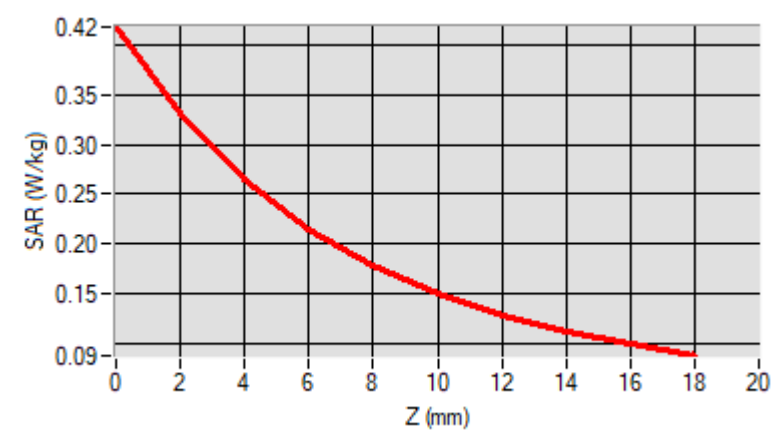
Maximum location: X=24.00, Y=23.00

D. SAR 1g & 10g

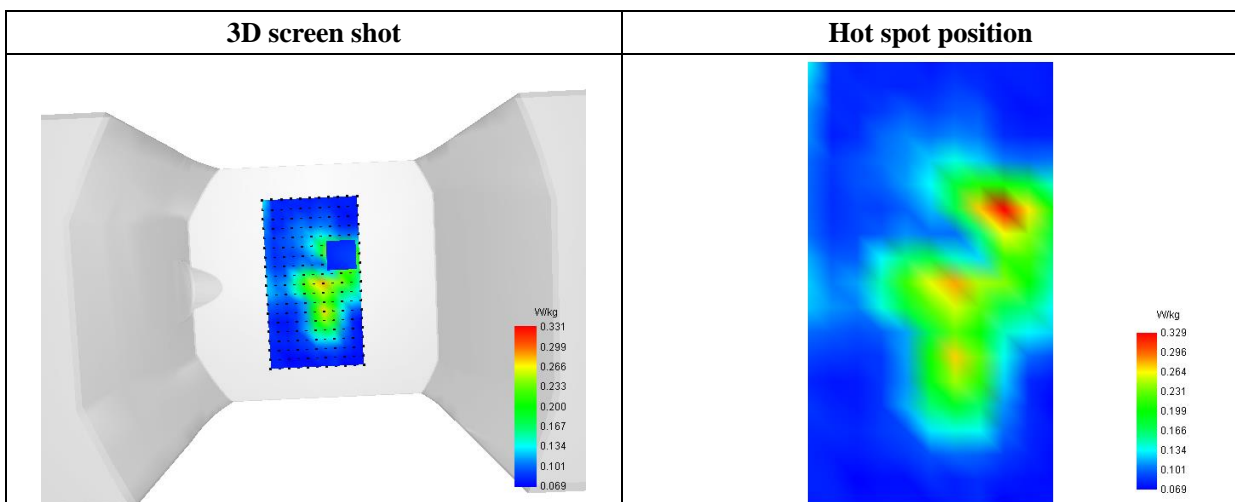
SAR 10g (W/Kg)	0.147330
SAR 1g (W/Kg)	0.446590

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00
SAR (W/Kg)	0.4177	0.3315	0.2656	0.2151	0.1778	0.1500	0.1290	0.1127	0.0995	



F. 3D Image



MEASUREMENT 31

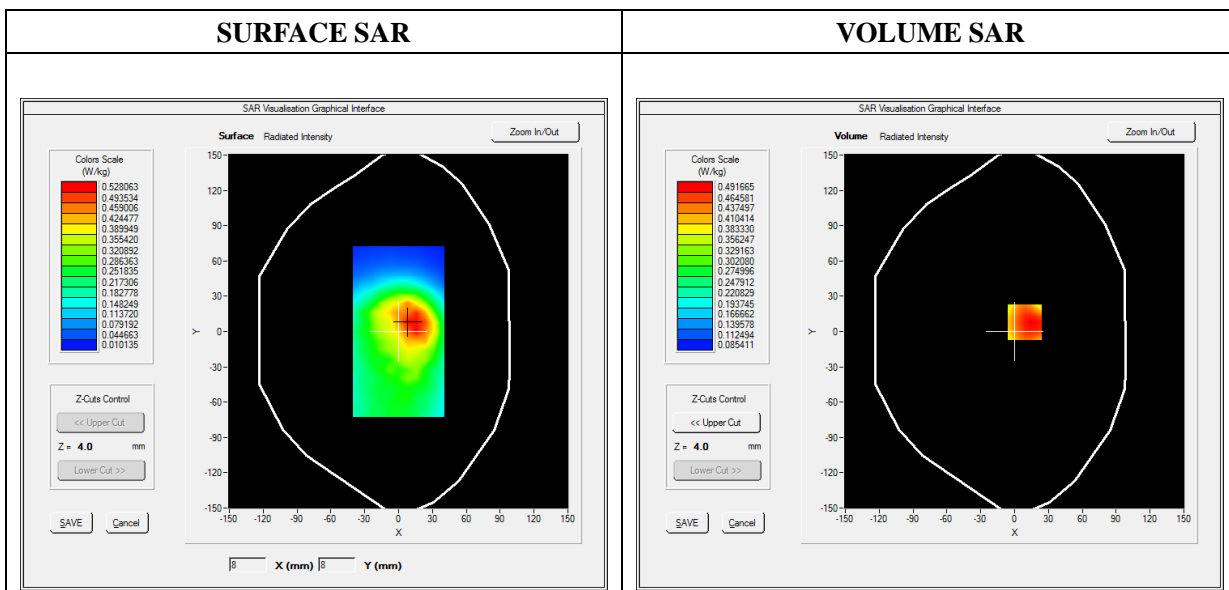
Type: Phone measurement (Complete)
 Date of measurement: 2022-07-30
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Flat plane
Device Position	Back
Band	GPRS850_4TX
Channels	Low
Signal	Duty Cycle: 1:2

B. SAR Measurement Results

Frequency (MHz)	824.200000
Relative Permittivity (real part)	40.751264
Conductivity (S/m)	0.884544
Power Variation (%)	1.108572
Ambient Temperature	22.2
Liquid Temperature	22.2

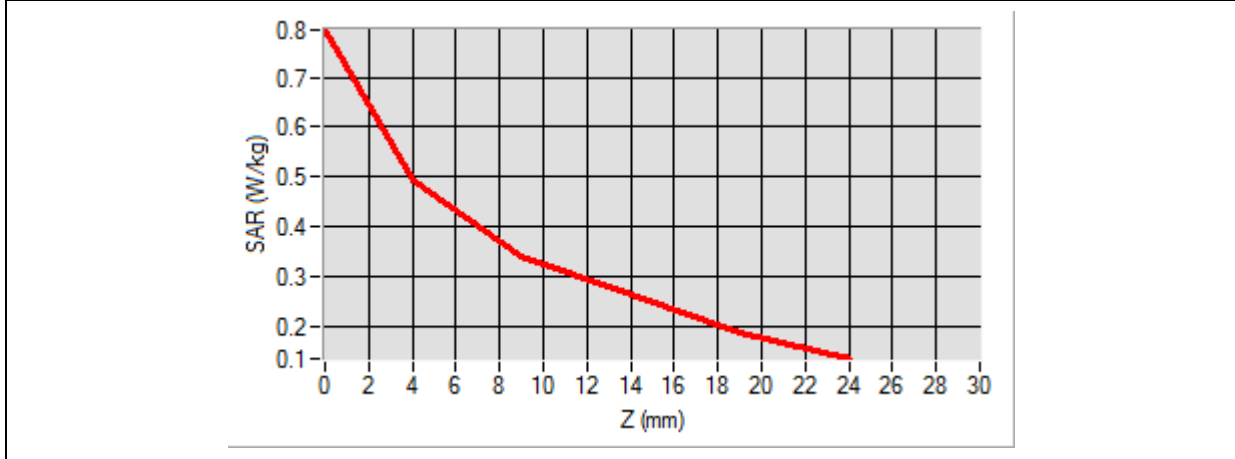


Maximum location: X=9.00, Y=8.00

SAR Peak: 0.64 W/kg

SAR 10g (W/Kg)	0.338722
SAR 1g (W/Kg)	0.474562

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.7956	0.4917	0.3392	0.2637	0.1844



3D screen shot	Hot spot position
<p>A 3D perspective view of a grey device with a color-coded SAR distribution overlay. The highest SAR values (red) are concentrated in the center of the device's top surface, with values decreasing towards the edges (green and blue).</p>	<p>A 2D heatmap showing the SAR distribution. The center of the device is colored red, indicating the highest SAR value (the hot spot). The color transitions through yellow and green to blue at the edges, representing lower SAR values.</p>

MEASUREMENT 32

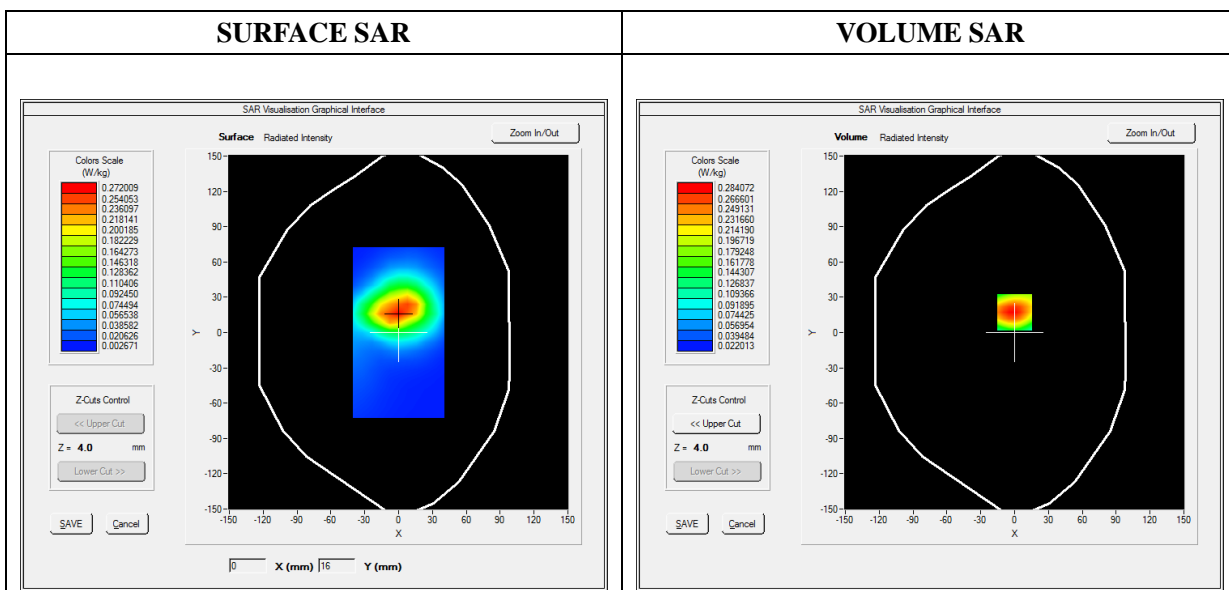
Type: Phone measurement (Complete)
 Date of measurement: 2022-08-01
 Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Flat plane
Device Position	Back
Band	GPRS1900_4TX
Channels	Middle
Signal	Duty Cycle: 1:2

B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative Permittivity (real part)	39.061245
Conductivity (S/m)	1.393691
Power Variation (%)	-0.730000
Ambient Temperature	22.2
Liquid Temperature	22.2

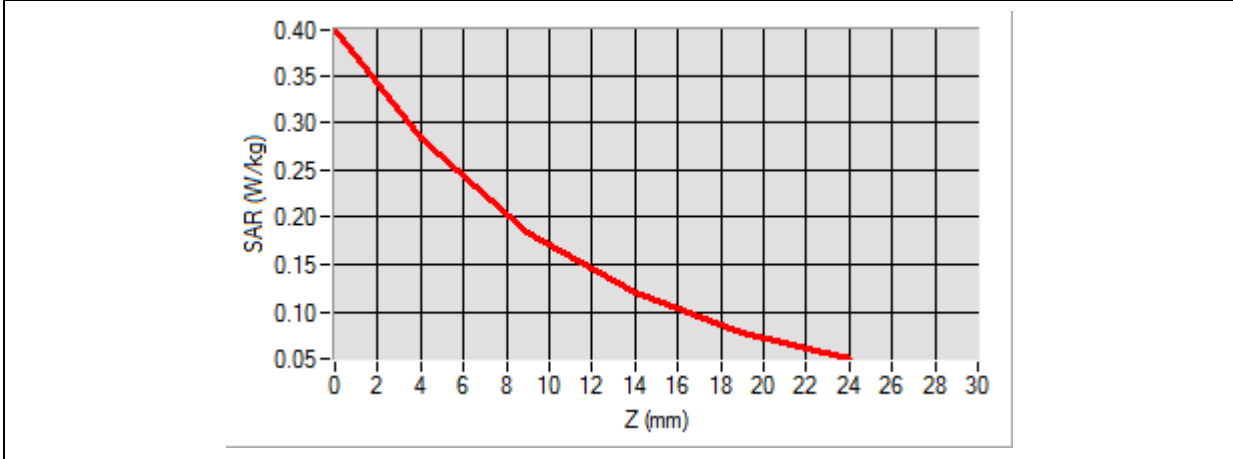


Maximum location: X=0.00, Y=17.00

SAR Peak: 0.40 W/kg

SAR 10g (W/Kg)	0.165874
SAR 1g (W/Kg)	0.367039

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3981	0.2841	0.1842	0.1198	0.0789



3D screen shot	Hot spot position
<p>A 3D perspective view of a grey device with a grid of dots on its top surface. A color-coded hot spot is visible, with red and yellow indicating the highest SAR values, transitioning to green and blue as the values decrease.</p>	<p>A 2D heatmap showing the SAR distribution. The highest SAR values (red) are concentrated in a central oval region, surrounded by concentric rings of yellow, green, and cyan, indicating a localized hot spot.</p>

MEASUREMENT 43

Type: Phone measurement (Complete)
 Date of measurement: 2022-08-17
 Measurement duration: 12 minutes 3 seconds

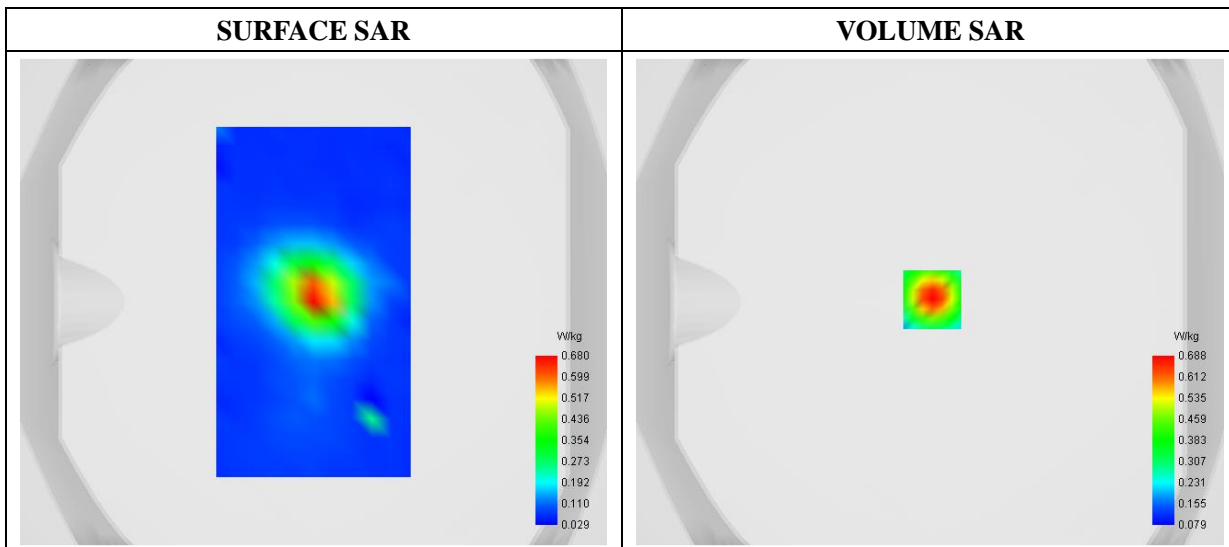
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Flat Plane
Device Position	Top
Band	WiFi(5.3GHz)_802.11ac 20MHz
Channels	Low
Signal	Duty Cycle: 1:1

B. SAR Measurement Results

Frequency (MHz)	5260.000000
Relative Permittivity (real part)	36.512839
Conductivity (S/m)	4.871926
Power Variation (%)	1.180000
Ambient Temperature	22.5
Liquid Temperature	22.5

C. SAR Surface and Volume



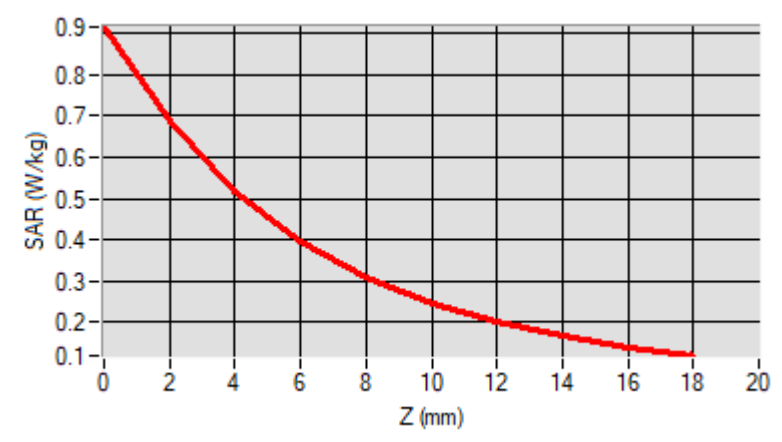
Maximum location: X=1.00, Y=1.00

D. SAR 1g & 10g

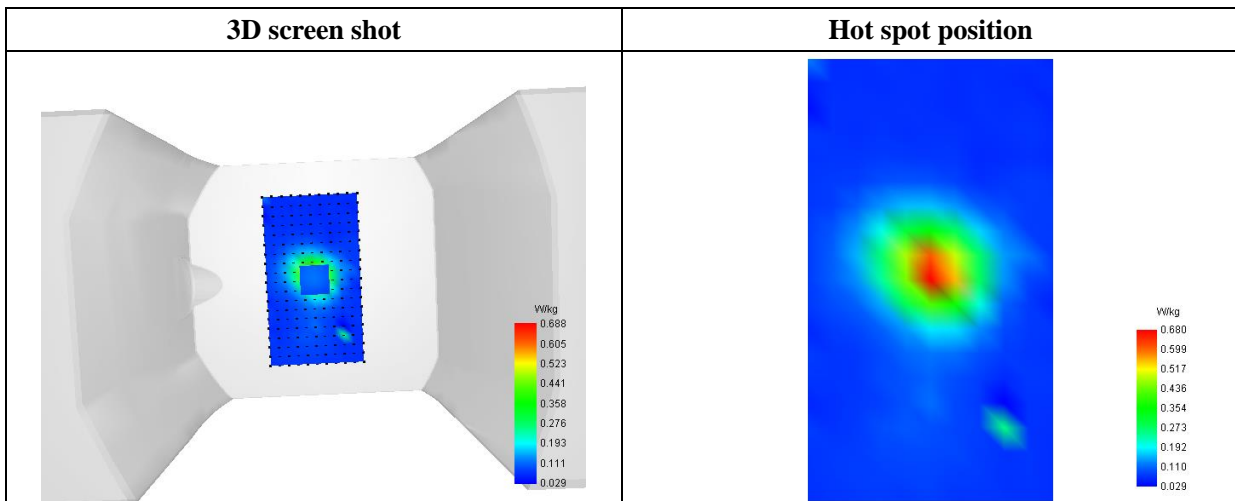
SAR 10g (W/Kg)	0.251178
SAR 1g (W/Kg)	0.481071

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00
SAR (W/Kg)	0.9152	0.6876	0.5191	0.3950	0.3071	0.2447	0.1998	0.1666	0.1408	



F. 3D Image



Annex C. EUT Photos

EUT View Front



EUT View Back



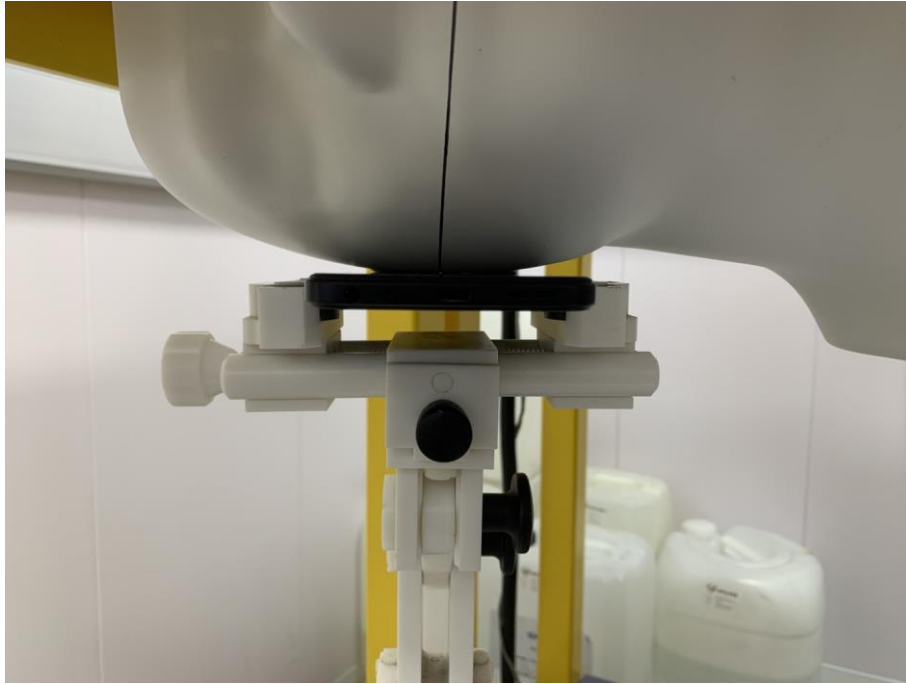
Antenna View



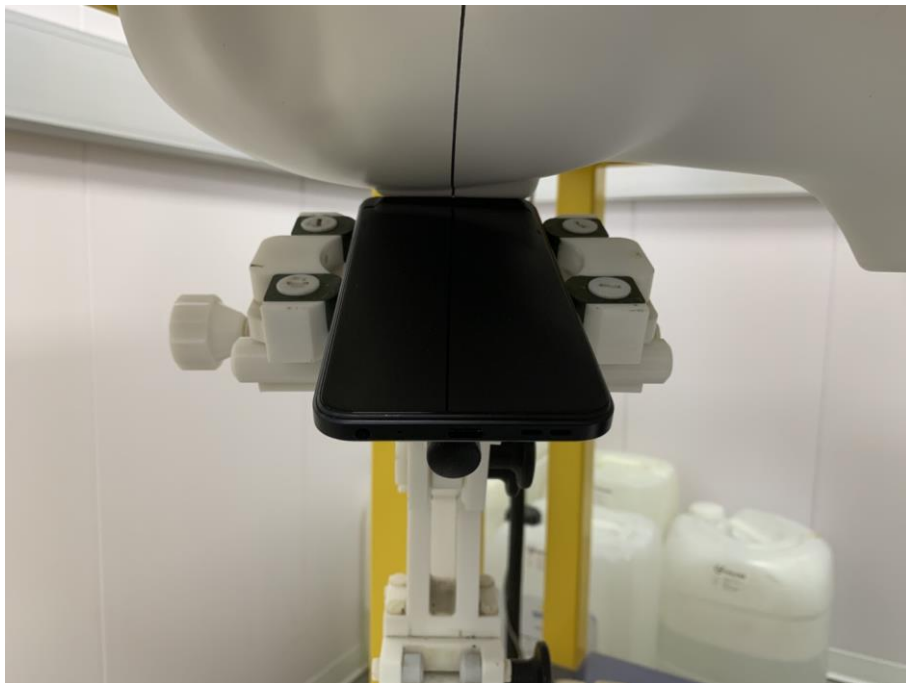
Annex D. Test Setup Photos

Head Exposure Conditions

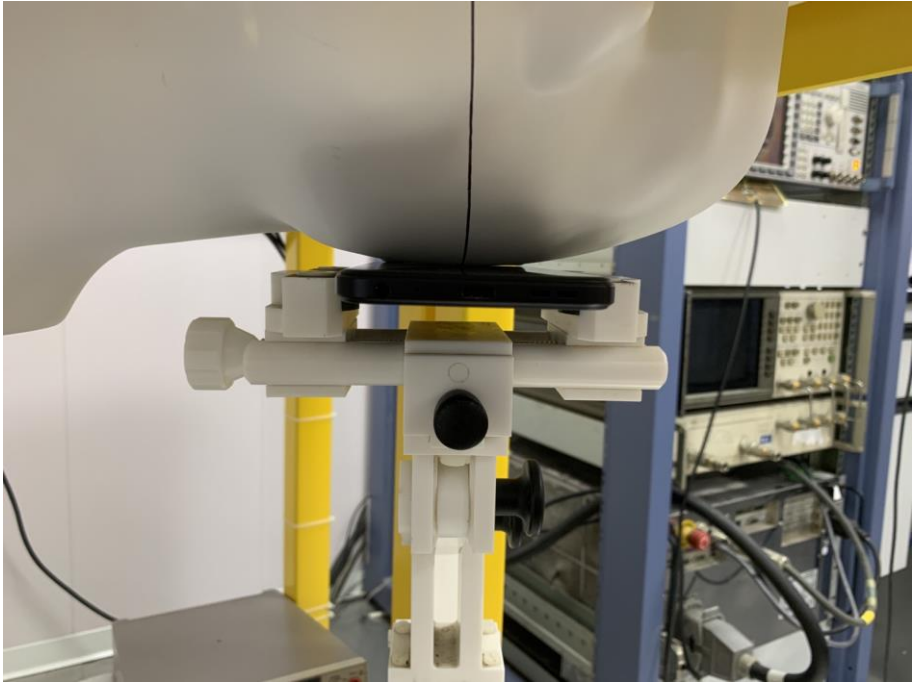
Right Cheek



Tilt



Left Cheek



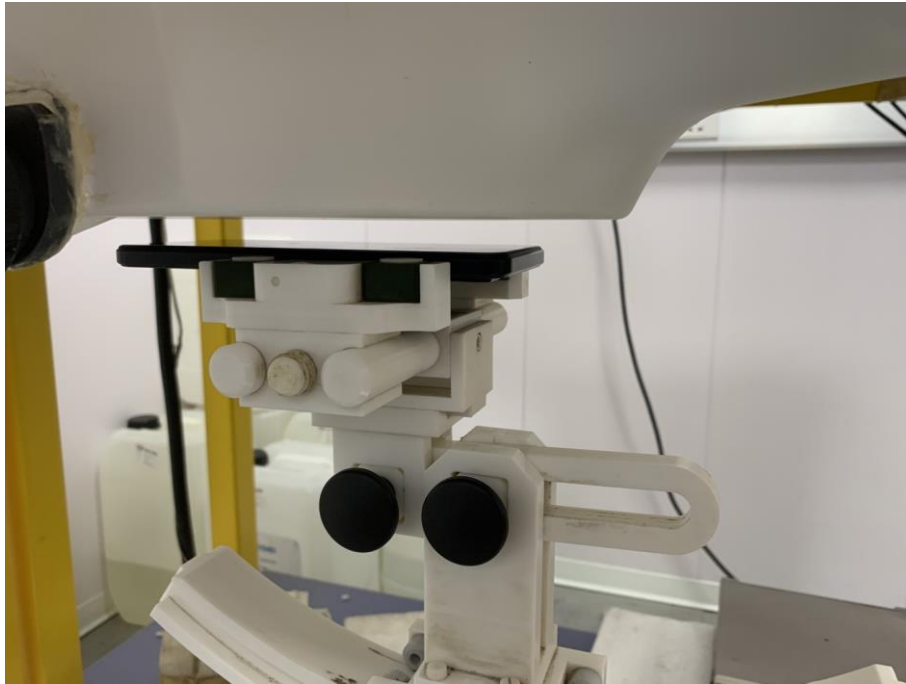
Tilt



Body mode Exposure Conditions

Test distance: 10mm

Body Front



Body Back



Body Right



Body Left



Body Top



Body Bottom



Annex E. Calibration Certificate

Please refer to the exhibit for the calibration certificate

******* END OF REPORT *******