TEST REPORT

Reference No.	:	WTD22X09182242W001
FCC ID	:	2AEPIELEMENT5PLUS
Applicant	:	COLOMBIANA DE COMERCIO S.A.
Address	:	Car. 43E No 8-71, Medellin, Colombia
Manufacturer		MOBIWIRE MOBILES (NINGBO) CO.,LTD
Address		Ningbo Fenghua No.999,Dacheng East Road,Fenghua,Zhejiang,China
Product Name	:	SMARTPHONE
Model No.	:	ELEMENT 5 PLUS
Standards	:	FCC Part 2.1093 IEEE Std C95.1: 2019 IEEE Std C95.3: 2002 + Rev. 2008 IEEE 1528: 2013
Date of Receipt sample	:	2022-05-16
Date of Test	:	2022-05-16 to 2022-06-22; 2022-09-07 to 2022-09-22
Date of Issue	:	2022-09-22
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.

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Report version

Version No.	Date of issue	Description
Rev.00	2022-06-22	Original report WTD22X05095859W001.
Rev.01	2022-09-22	Refer the old report WTD22X05095859W001, added test data for WCDMA BAND4 and LTE band 2, updated the model name, but the circuit and the electronic construction do not change, declared by the manufacturer.
/	/	/

1. General Information

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT:	
Product Name:	SMARTPHONE
Trade Name:	Kalley
Model No.:	ELEMENT 5 PLUS
Adding Model(s):	/
Rated Voltage:	DC 3.8V
Battery:	2000mA
Software Version:	/
Hardware Version:	/
Note: The test data is gathered from a production sample provided by the manufacturer.	

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: 32.20dBm, GSM1900: 30.21dBm EDGE850: 27.16dBm, EDGE1900: 26.05dBm
Type of Modulation:	GMSK
Type of Antenna:	Integral Antenna
Antenna Gain:	GSM850: -1.9dBi; GSM1900: -0.93dBi
GPRS Class:	Class 12
3G	
Support Networks:	WCDMA, HSDPA, HSUPA
Support Band:	WCDMA Band 2, WCDMA Band 5, WCDMA Band 4
Uplink Frequency:	WCDMA Band 2: 1850~1910MHz WCDMA Band 5: 824~849MHz WCDMA Band 4: 1710-1755MHz
Downlink Frequency:	WCDMA Band 2: 1930~1990MHz WCDMA Band 5: 869~894MHz WCDMA Band 4: 2110-2155MHz
RF Output Power:	WCDMA Band 2: 22.54dBm, WCDMA Band 5: 22.06dBm WCDMA Band 4: 21.65dBm
Type of Modulation:	BPSK
Antenna Type:	Integral Antenna
Antenna Gain:	WCDMA Band 2: -0.93dBi, WCDMA Band 5: -1.9dBi WCDMA Band 4: -1.24dBi
4G	
Support Networks:	FDD-LTE
Support Band:	FDD-LTE Band 4, 7, 66, 2
Uplink Frequency:	FDD-LTE Band 4: Tx: 1710-1755MHz, FDD-LTE Band 7: Tx: 2500-2570MHz, FDD-LTE Band 66: Tx: 1710-1780MHz, FDD-LTE Band 2: Tx: 1850-1910MHz,
Downlink Frequency:	FDD-LTE Band 4: Rx: 2110-2155MHz, FDD-LTE Band 7: Rx: 2620-2690MHz, FDD-LTE Band 66: Rx: 2110-2200MHz, FDD-LTE Band 2: Rx: 1930-1990MHz,

RF Output Power:	FDD-LTE Band 4: 23.92dBm, FDD-LTE Band 7: 22.17dBm, FDD-LTE Band 66: 23.82dBm, FDD-LTE Band 2: 22.62dBm
Type of Modulation:	QPSK, 16QAM
Antenna Type:	Integral Antenna
Antenna Gain:	FDD-LTE Band 4: -1.24dBi, FDD-LTE Band 7: 0.26dBi, FDD-LTE Band 66: -1.24dBi FDD-LTE Band 2: -0.93dBi
WIFI(2.4GHz)	
Support Standards:	802.11b, 802.11g, 802.11n-HT20/40
Frequency Range:	2412-2462MHz for 11b/g/n(HT20), 2422-2452MHz for 802.11n(HT40)
RF Output Power:	15.65dBm (Conducted)
Type of Modulation:	DBPSK,BPSK,DQPSK,QPSK,16QAM,64QAM
Quantity of Channels:	11 for 802.11b/g/n(HT20), 7 for 802.11n(HT40)
Channel Separation:	5MHz
Type of Antenna:	Integral Antenna
Antenna Gain:	-0.98dBi
Bluetooth	
Bluetooth Version:	Bluetooth V5.0
Frequency Range:	2402-2480MHz
RF Output Power:	5.76dBm (Conducted)
Data Rate:	1Mbps, 2Mbps, 3Mbps
Modulation:	GFSK, π/4 DQPSK, 8DPSK
Quantity of Channels:	79/40
Channel Separation:	1MHz/2 MHz
Antenna Type:	Integral Antenna
Antenna Gain:	-0.98dBi
Note: The Antenna Gain is provided by the customer and can affect the validity of results.	

1.2 Test Standards

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	0.626	0.592	0.561	1.6
WCDMA	0.823	**0.822**	**0.822**	1.6
LTE	**0.948**	0.799	0.799	1.6
WLAN 2.4GHz	0.448	0.233	0.233	1.6
Simultaneous Transmission	**1.396**	1.055	1.055	1.6

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 techiques 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:

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

SAR is expressed in units of Watts per kilogram (W/kg)
SAR measurement can be either related to the temperature elevation in tissue by

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

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

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

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.

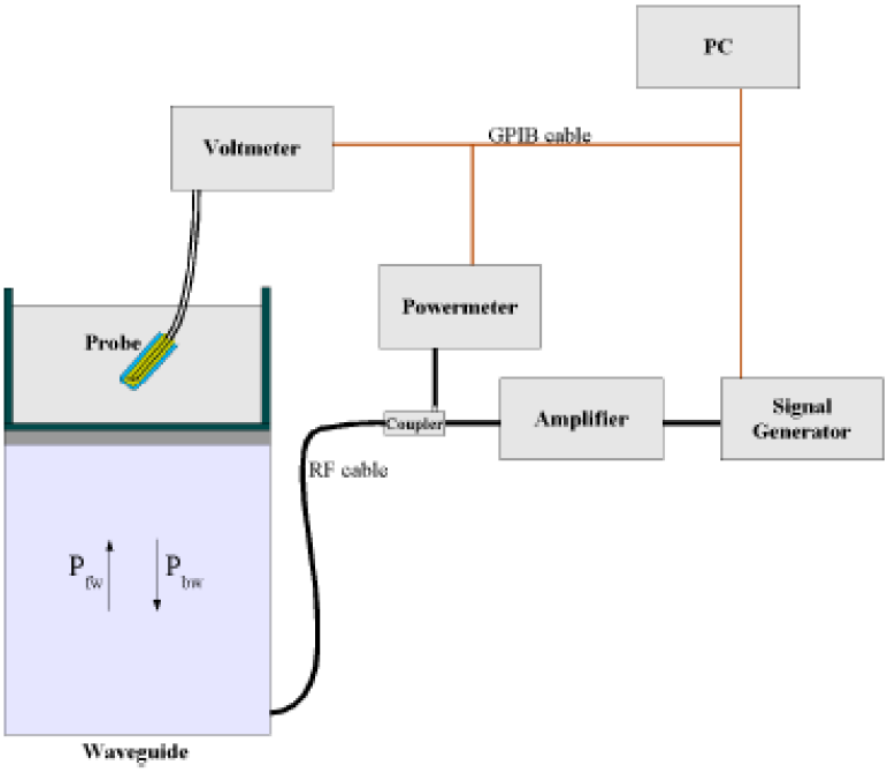
4.2 Probe

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

- 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 suface normal line:1ess than 30°

Probe calibration is realized, in compliance with EN 62209-1 and IEEE 1528 STD, with CALISAR, Antennessa proprietary calibration system. The calibration is performed with the EN 62209-1 annexe technique using reference guide at the five frequencies.



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

Where :

Pfw = Forward Power

Pbw = Backward Power

a and b =Waveguide dimensions

I = Skin depth

Keithley configuration:

Rate = Medium; Filter = ON; RDGS = 10; Filter type = Moving Average; Range auto after each calibration, a SAR measurement is performed on a validation dipole and compared with a NPL calibrated probe, to verify it.

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

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

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

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

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.

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

Where:

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.

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

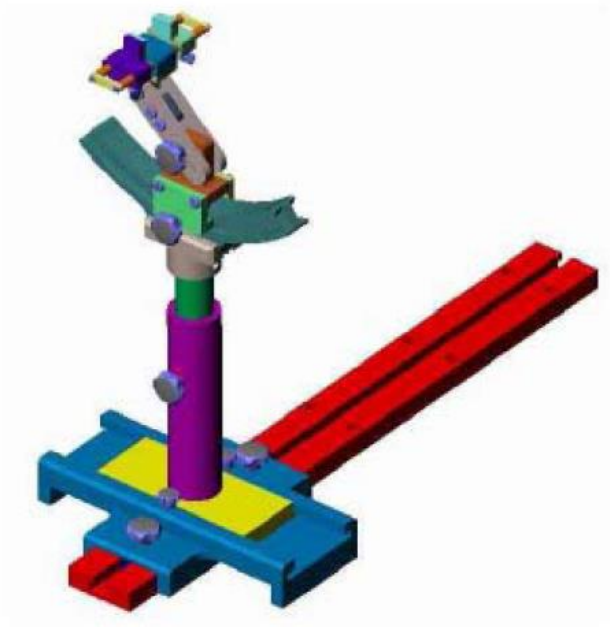
Where:
σ = simulated tissue conductivity,
ρ = Tissue density (1.25 g/cm3 for brain tissue)

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

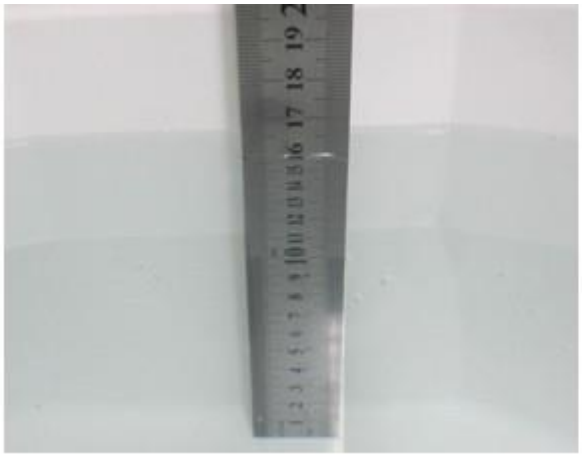
4.6 Test Equipment List

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
E-Field Probe	MVG	SSE2	SN 18/21 EPGO356	2021-07-16	2022-07-15
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
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 SAR

Liquid Height for Body SAR

The Composition of Tissue Simulating Liquid

Frequency (MHz)	Water (%)	Salt (%)	Sugar (%)	HEC (%)	Preventol (%)	DGBE (%)
Head						
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

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. (℃)	Conductivity			Permittivity			Limit (%)	Date
		Reading (σ)	Target (σ)	Delta (%)	Reading (ε r)	Target (ε r)	Delta (%)		
835	22.3	0.91	0.90	1.11	40.38	41.5	-2.70	±5	2022-06-09
1800	22.3	1.41	1.40	0.71	41.69	40.0	4.22	±5	2022-06-09
1900	22.3	1.41	1.40	0.71	40.76	40.0	1.90	±5	2022-06-09
2450	22.3	1.83	1.80	1.67	40.85	39.2	4.21	±5	2022-06-09
2600	22.3	2.18	2.16	0.93	51.94	52.5	-1.07	±5	2022-06-22

Head Tissue Simulating Liquid									
Freq. MHz.	Temp. (℃)	Conductivity			Permittivity			Limit (%)	Date
		Reading (σ)	Target (σ)	Delta (%)	Reading (ε r)	Target (ε r)	Delta (%)		
1800	22.3	1.41	1.40	0.71	41.21	40.0	3.03	±5	2022-09-22

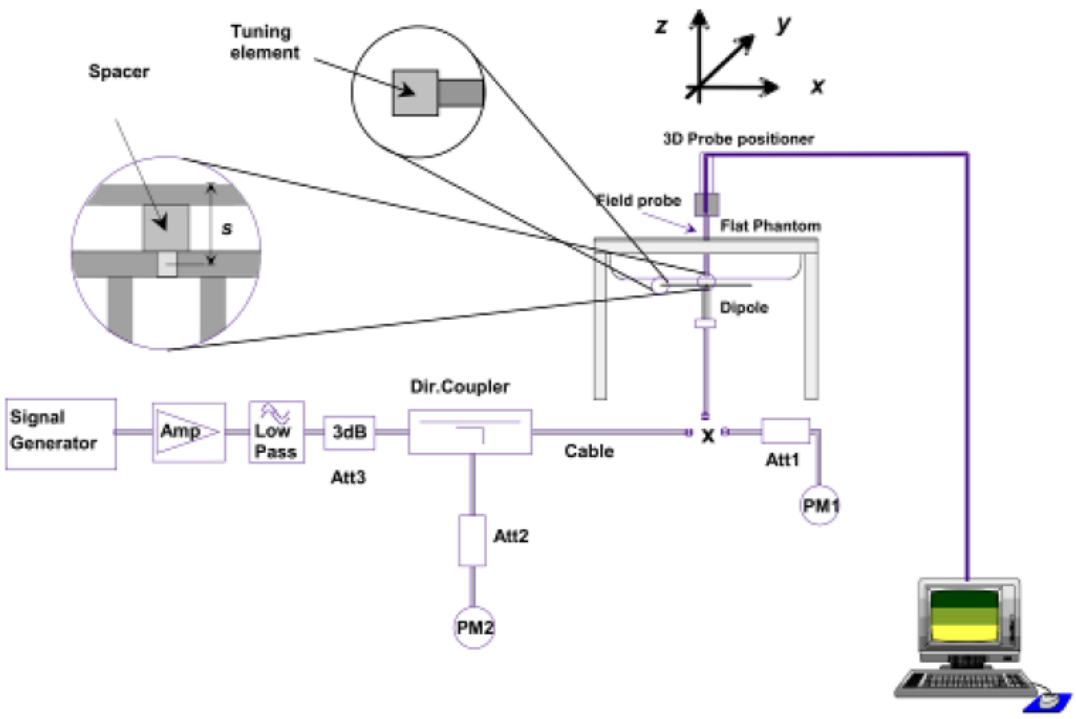
6. SAR Measurement Evaluation

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	Power	Targeted SAR_{1g}	Measured SAR_{1g}	Normalized SAR_{1g}	Tolerance	Date
MHz	(mw)	(W/kg)	(W/kg)	(W/kg)	(%)	
Head						
835	250	9.65	2.47	9.88	2.38	2022-06-09
1800	250	38.49	9.46	37.84	-1.69	2022-06-09
1900	250	39.59	9.97	39.88	0.73	2022-06-09
2450	250	53.76	13.56	54.24	0.89	2022-06-09
2600	250	56.81	13.54	54.16	-4.66	2022-06-22

Frequency	Power	Targeted SAR_{1g}	Measured SAR_{1g}	Normalized SAR_{1g}	Tolerance	Date
MHz	(mw)	(W/kg)	(W/kg)	(W/kg)	(%)	
Head						
1800	250	38.49	9.91	39.64	2.99	2022-09-22

Remark: Referring to IEEE 1528: 2013, Section 8.2, The system check shall be performed at a test frequency that is within ±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.

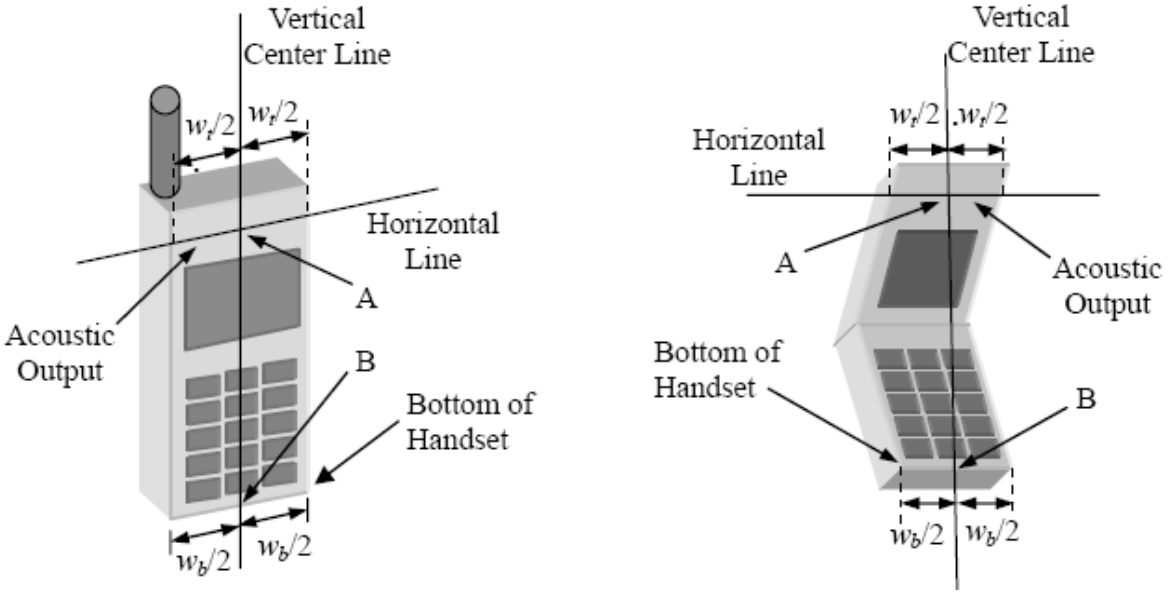


Illustration for Handset Vertical and Horizontal Reference Lines

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).

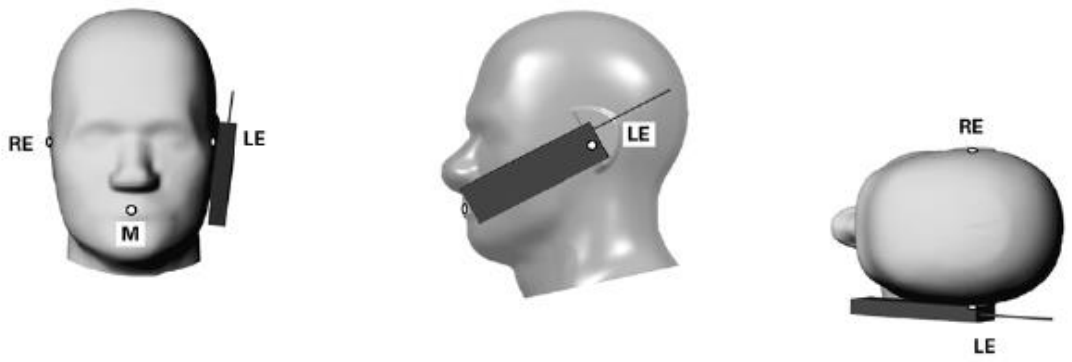


Illustration for Cheek Position

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).

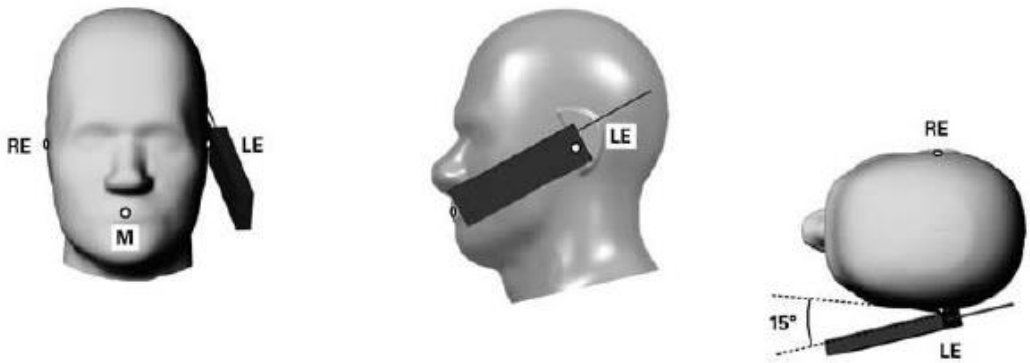


Illustration for Tilted Position

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.

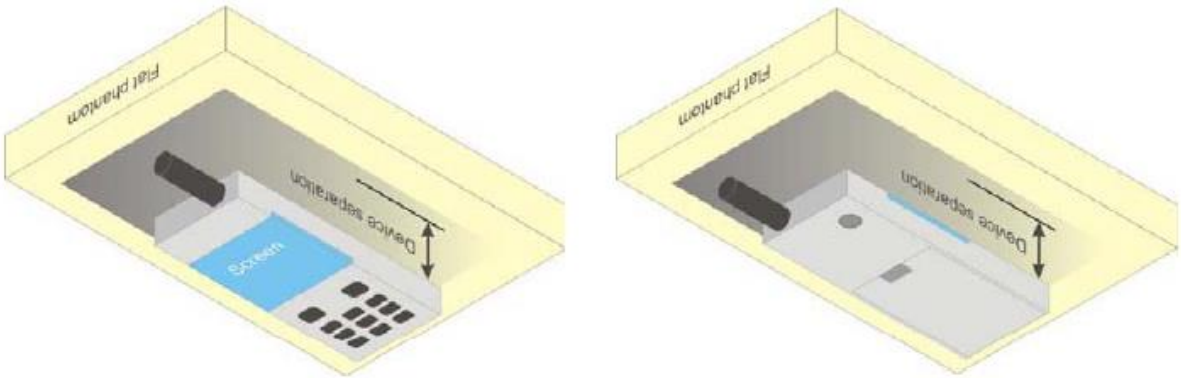
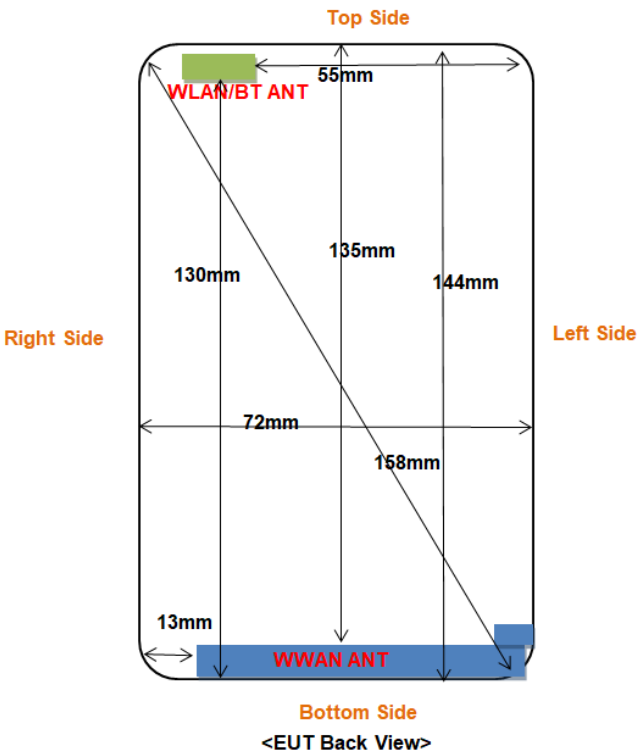


Illustration for Body Position

7.5 EUT Antenna Position



Block Diagram for EUT Antenna Position

Distance of EUT antenna-to-edge/surface(mm), Test distance:10mm						
Antennas	**Front**	**Back**	**Right Side**	**Left Side**	**Top Side**	**Bottom Side**
WWAN	<25	<25	<25	<25	135	<25
WLAN	<25	<25	<25	55	<25	130

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	Yes	Yes	Yes	Yes

Body SAR tests, Test distance: 10mm						
Antennas	**Front**	**Back**	**Right Side**	**Left Side**	**Top Side**	**Bottom Side**
WWAN	Yes	Yes	Yes	Yes	No	Yes
WLAN	Yes	Yes	Yes	No	Yes	No

Body-worn SAR tests, Test distance: 10mm		
Antennas	**Front**	**Back**
WWAN	Yes	Yes
WLAN	Yes	Yes

Remark:

1. Referring to KDB 941225 D06, when the overall device length and width are >= 9cm*5cm, 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.
2. 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 form 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	**33.16**	33.00	32.81	33.5	28.83	29.71	**30.21**	30.5
GPRS (1 slot)	33.20	33.04	32.74	33.5	27.71	28.59	29.14	29.5
GPRS (2 slots)	31.66	31.53	31.27	32.0	26.53	27.38	27.85	28.0
GPRS (3 slots)	29.75	29.65	29.35	30.0	25.34	26.19	26.75	27.0
GPRS (4 slots)	**28.87**	28.70	28.47	29.0	24.79	25.48	**25.91**	26.0
EGPRS (1 slot)	27.16	27.02	26.99	27.5	24.83	25.86	26.05	26.5
EGPRS (2 slots)	25.84	25.27	25.69	26.0	23.78	24.34	24.83	25.0
EGPRS (3 slots)	23.55	23.73	23.52	24.0	22.46	23.51	23.79	24.0
EGPRS (4 slots)	22.31	22.21	22.07	22.5	21.89	22.86	22.84	23.0

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	24.16	24.00	23.81	24.5	19.83	20.71	21.21	21.5
GPRS (1 slot)	24.20	24.04	23.74	24.5	18.71	19.59	20.14	20.5
GPRS (2 slots)	25.66	25.53	25.27	26.0	20.53	21.38	21.85	22.0
GPRS (3 slots)	25.50	25.40	25.10	26.0	21.09	21.94	22.50	23.0
GPRS (4 slots)	**25.87**	25.70	25.47	26.0	21.79	22.48	**22.91**	23.0
EGPRS (1 slot)	18.16	18.02	17.99	18.5	15.83	16.86	17.05	17.5
EGPRS (2 slots)	19.84	19.27	19.69	20.0	17.78	18.34	18.83	19.0
EGPRS (3 slots)	19.30	19.48	19.27	19.5	18.21	19.26	19.54	20.0
EGPRS (4 slots)	19.31	19.21	19.07	19.5	18.89	19.86	19.84	20.0
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 power (dBm)**	**4132**	**4183**	**4233**	**Tune-up power (dBm)**
Frequency (MHz)	**1852.4**	**1880.0**	**1907.6**		**826.4**	**836.4**	**846.6**	
RMC 12.2k	**22.54**	22.53	22.53	23.0	21.96	**22.06**	22.02	22.5
HSDPA Subtest-1	22.47	22.49	22.48	22.5	21.91	21.98	21.96	22.0
HSDPA Subtest-2	22.35	22.38	22.37	22.5	21.83	21.86	21.83	22.0
HSDPA Subtest-3	22.26	22.26	22.29	22.5	21.75	21.78	21.72	22.0
HSDPA Subtest-4	22.18	22.15	22.16	22.5	21.69	21.67	21.64	22.0
HSUPA Subtest-1	21.01	21.10	21.15	21.5	21.50	21.65	21.49	22.0
HSUPA Subtest-2	20.93	21.02	21.06	21.5	21.43	21.53	21.38	22.0
HSUPA Subtest-3	20.86	20.91	20.98	21.0	21.36	21.48	21.26	21.5
HSUPA Subtest-4	20.75	20.82	20.86	21.0	21.28	21.39	21.19	21.5
HSUPA Subtest-5	20.68	20.69	20.73	21.0	21.16	21.28	21.12	21.5

WCDMA - Average Power (dBm)								
Band	**WCDMA Band IV**							
Channel	**1312**	**1413**	**1513**	**Tune-up power (dBm)**				
Frequency (MHz)	**1712.4**	**1732.6**	**1752.6**					
RMC 12.2k	21.61	**21.65**	21.62	22.0				
HSDPA Subtest-1	20.52	20.53	20.46	21.0				
HSDPA Subtest-2	20.44	20.47	20.43	20.5				
HSDPA Subtest-3	20.32	20.39	20.39	20.5				
HSDPA Subtest-4	20.31	20.34	20.26	20.5				
HSUPA Subtest-1	20.19	20.18	20.15	20.5				
HSUPA Subtest-2	20.03	20.05	20.02	20.5				
HSUPA Subtest-3	20.01	20.04	20.02	20.5				
HSUPA Subtest-4	20.05	20.03	20.02	20.5				
HSUPA Subtest-5	20.04	20.02	20.03	20.5				

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 ≤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 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	24	23.5	Pass
19957	1.4	QPSK	1	MID	0	24	23.69	Pass
19957	1.4	QPSK	1	HIGH	0	24	23.52	Pass
19957	1.4	QPSK	3	LOW	0	24	23.53	Pass
19957	1.4	QPSK	3	MID	0	24	23.63	Pass
19957	1.4	QPSK	3	HIGH	0	24	23.58	Pass
19957	1.4	QPSK	6	LOW	0	24	22.56	Pass
19957	1.4	Q16	1	LOW	0	24	22.6	Pass
19957	1.4	Q16	1	MID	0	24	22.75	Pass
19957	1.4	Q16	1	HIGH	0	24	22.58	Pass
19957	1.4	Q16	3	LOW	0	24	22.59	Pass
19957	1.4	Q16	3	MID	0	24	22.6	Pass
19957	1.4	Q16	3	HIGH	0	24	22.59	Pass
19957	1.4	Q16	6	LOW	0	23	21.68	Pass
20175	1.4	QPSK	1	LOW	0	24	23.52	Pass
20175	1.4	QPSK	1	MID	0	24	23.66	Pass
20175	1.4	QPSK	1	HIGH	0	24	23.53	Pass
20175	1.4	QPSK	3	LOW	0	24	23.59	Pass
20175	1.4	QPSK	3	MID	0	24	23.61	Pass
20175	1.4	QPSK	3	HIGH	0	24	23.58	Pass
20175	1.4	QPSK	6	LOW	0	24	22.63	Pass
20175	1.4	Q16	1	LOW	0	24	22.86	Pass
20175	1.4	Q16	1	MID	0	24	22.99	Pass
20175	1.4	Q16	1	HIGH	0	24	22.87	Pass
20175	1.4	Q16	3	LOW	0	24	22.75	Pass
20175	1.4	Q16	3	MID	0	24	22.74	Pass
20175	1.4	Q16	3	HIGH	0	24	22.75	Pass
20175	1.4	Q16	6	LOW	0	23	21.46	Pass
20393	1.4	QPSK	1	LOW	0	24	23.64	Pass
20393	1.4	QPSK	1	MID	0	24	23.84	Pass
20393	1.4	QPSK	1	HIGH	0	24	23.64	Pass
20393	1.4	QPSK	3	LOW	0	24	23.66	Pass
20393	1.4	QPSK	3	MID	0	24	23.73	Pass
20393	1.4	QPSK	3	HIGH	0	24	23.74	Pass
20393	1.4	QPSK	6	LOW	0	24	22.71	Pass
20393	1.4	Q16	1	LOW	0	24	22.63	Pass
20393	1.4	Q16	1	MID	0	24	22.8	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20393	1.4	Q16	1	HIGH	0	24	22.62	Pass
20393	1.4	Q16	3	LOW	0	24	22.82	Pass
20393	1.4	Q16	3	MID	0	24	22.86	Pass
20393	1.4	Q16	3	HIGH	0	24	22.83	Pass
20393	1.4	Q16	6	LOW	0	24	21.82	Pass
19965	3	QPSK	1	LOW	0	24	23.6	Pass
19965	3	QPSK	1	MID	0	24	23.54	Pass
19965	3	QPSK	1	HIGH	0	24	23.53	Pass
19965	3	QPSK	8	LOW	0	24	22.58	Pass
19965	3	QPSK	8	MID	0	24	22.61	Pass
19965	3	QPSK	8	HIGH	0	24	22.56	Pass
19965	3	QPSK	15	LOW	0	24	22.52	Pass
19965	3	Q16	1	LOW	0	23	22.44	Pass
19965	3	Q16	1	MID	0	23	22.46	Pass
19965	3	Q16	1	HIGH	0	23	22.45	Pass
19965	3	Q16	8	LOW	0	23	21.63	Pass
19965	3	Q16	8	MID	0	23	21.66	Pass
19965	3	Q16	8	HIGH	0	23	21.6	Pass
19965	3	Q16	15	LOW	0	23	21.53	Pass
20175	3	QPSK	1	LOW	0	24	23.59	Pass
20175	3	QPSK	1	MID	0	24	23.56	Pass
20175	3	QPSK	1	HIGH	0	24	23.52	Pass
20175	3	QPSK	8	LOW	0	24	23.49	Pass
20175	3	QPSK	8	MID	0	24	23.47	Pass
20175	3	QPSK	8	HIGH	0	24	23.45	Pass
20175	3	QPSK	15	LOW	0	24	23.45	Pass
20175	3	Q16	1	LOW	0	23	23.43	Pass
20175	3	Q16	1	MID	0	23	23.43	Pass
20175	3	Q16	1	HIGH	0	23	23.42	Pass
20175	3	Q16	8	LOW	0	23	23.41	Pass
20175	3	Q16	8	MID	0	23	23.4	Pass
20175	3	Q16	8	HIGH	0	23	23.39	Pass
20175	3	Q16	15	LOW	0	23	23.39	Pass
20385	3	QPSK	1	LOW	0	24	23.64	Pass
20385	3	QPSK	1	MID	0	24	23.65	Pass
20385	3	QPSK	1	HIGH	0	24	23.63	Pass
20385	3	QPSK	8	LOW	0	24	22.71	Pass
20385	3	QPSK	8	MID	0	24	22.73	Pass
20385	3	QPSK	8	HIGH	0	24	22.65	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20385	3	QPSK	15	LOW	0	24	22.66	Pass
20385	3	Q16	1	LOW	0	23	22.57	Pass
20385	3	Q16	1	MID	0	23	22.56	Pass
20385	3	Q16	1	HIGH	0	23	22.57	Pass
20385	3	Q16	8	LOW	0	23	21.75	Pass
20385	3	Q16	8	MID	0	23	21.76	Pass
20385	3	Q16	8	HIGH	0	23	21.75	Pass
20385	3	Q16	15	LOW	0	23	21.63	Pass
19975	5	QPSK	1	LOW	0	24	23.49	Pass
19975	5	QPSK	1	MID	0	24	23.6	Pass
19975	5	QPSK	1	HIGH	0	24	23.45	Pass
19975	5	QPSK	12	LOW	0	24	22.52	Pass
19975	5	QPSK	12	MID	0	24	22.57	Pass
19975	5	QPSK	12	HIGH	0	24	22.53	Pass
19975	5	QPSK	25	LOW	0	24	22.54	Pass
19975	5	Q16	1	LOW	0	23	22.61	Pass
19975	5	Q16	1	MID	0	23	22.72	Pass
19975	5	Q16	1	HIGH	0	23	22.6	Pass
19975	5	Q16	12	LOW	0	23	21.59	Pass
19975	5	Q16	12	MID	0	23	21.63	Pass
19975	5	Q16	12	HIGH	0	23	21.58	Pass
19975	5	Q16	25	LOW	0	23	21.54	Pass
20175	5	QPSK	1	LOW	0	24	23.52	Pass
20175	5	QPSK	1	MID	0	24	23.61	Pass
20175	5	QPSK	1	HIGH	0	24	23.53	Pass
20175	5	QPSK	12	LOW	0	24	22.54	Pass
20175	5	QPSK	12	MID	0	24	22.58	Pass
20175	5	QPSK	12	HIGH	0	24	22.56	Pass
20175	5	QPSK	25	LOW	0	24	22.56	Pass
20175	5	Q16	1	LOW	0	23	22.95	Pass
20175	5	Q16	1	MID	0	23	23.04	Pass
20175	5	Q16	1	HIGH	0	23	22.95	Pass
20175	5	Q16	12	LOW	0	23	21.68	Pass
20175	5	Q16	12	MID	0	23	21.73	Pass
20175	5	Q16	12	HIGH	0	23	21.65	Pass
20175	5	Q16	25	LOW	0	23	21.61	Pass
20375	5	QPSK	1	LOW	0	24	23.56	Pass
20375	5	QPSK	1	MID	0	24	23.66	Pass
20375	5	QPSK	1	HIGH	0	24	23.6	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20375	5	QPSK	12	LOW	0	24	22.61	Pass
20375	5	QPSK	12	MID	0	24	22.71	Pass
20375	5	QPSK	12	HIGH	0	24	22.64	Pass
20375	5	QPSK	25	LOW	0	24	22.67	Pass
20375	5	Q16	1	LOW	0	23	22.64	Pass
20375	5	Q16	1	MID	0	23	22.74	Pass
20375	5	Q16	1	HIGH	0	23	22.71	Pass
20375	5	Q16	12	LOW	0	23	21.65	Pass
20375	5	Q16	12	MID	0	23	21.74	Pass
20375	5	Q16	12	HIGH	0	23	21.68	Pass
20375	5	Q16	25	LOW	0	23	21.59	Pass
20000	10	QPSK	1	LOW	0	24	23.56	Pass
20000	10	QPSK	1	MID	0	24	23.68	Pass
20000	10	QPSK	1	HIGH	0	24	23.53	Pass
20000	10	QPSK	25	LOW	0	24	22.58	Pass
20000	10	QPSK	25	MID	0	24	22.6	Pass
20000	10	QPSK	25	HIGH	0	24	22.62	Pass
20000	10	QPSK	50	LOW	0	24	22.59	Pass
20000	10	Q16	1	LOW	0	23	22.4	Pass
20000	10	Q16	1	MID	0	23	22.56	Pass
20000	10	Q16	1	HIGH	0	23	22.49	Pass
20000	10	Q16	25	LOW	0	23	21.59	Pass
20000	10	Q16	25	MID	0	23	21.6	Pass
20000	10	Q16	25	HIGH	0	23	21.59	Pass
20000	10	Q16	50	LOW	0	23	21.56	Pass
20175	10	QPSK	1	LOW	0	24	23.56	Pass
20175	10	QPSK	1	MID	0	24	23.77	Pass
20175	10	QPSK	1	HIGH	0	24	23.59	Pass
20175	10	QPSK	25	LOW	0	24	22.62	Pass
20175	10	QPSK	25	MID	0	24	22.61	Pass
20175	10	QPSK	25	HIGH	0	24	22.62	Pass
20175	10	QPSK	50	LOW	0	24	22.62	Pass
20175	10	Q16	1	LOW	0	23	22.84	Pass
20175	10	Q16	1	MID	0	23	23.03	Pass
20175	10	Q16	1	HIGH	0	23	22.86	Pass
20175	10	Q16	25	LOW	0	23	21.58	Pass
20175	10	Q16	25	MID	0	23	21.62	Pass
20175	10	Q16	25	HIGH	0	23	21.65	Pass
20175	10	Q16	50	LOW	0	23	21.61	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20350	10	QPSK	1	LOW	0	24	23.65	Pass
20350	10	QPSK	1	MID	0	24	**23.92**	Pass
20350	10	QPSK	1	HIGH	0	24	23.69	Pass
20350	10	QPSK	25	LOW	0	24	22.74	Pass
20350	10	QPSK	25	MID	0	24	22.74	Pass
20350	10	QPSK	25	HIGH	0	24	22.78	Pass
20350	10	QPSK	50	LOW	0	24	22.76	Pass
20350	10	Q16	1	LOW	0	23	22.61	Pass
20350	10	Q16	1	MID	0	23	22.82	Pass
20350	10	Q16	1	HIGH	0	23	22.6	Pass
20350	10	Q16	25	LOW	0	23	21.77	Pass
20350	10	Q16	25	MID	0	23	21.78	Pass
20350	10	Q16	25	HIGH	0	23	21.8	Pass
20350	10	Q16	50	LOW	0	23	21.74	Pass
20025	15	QPSK	1	LOW	0	24	23.46	Pass
20025	15	QPSK	1	MID	0	24	23.55	Pass
20025	15	QPSK	1	HIGH	0	24	23.48	Pass
20025	15	QPSK	36	LOW	0	24	22.6	Pass
20025	15	QPSK	36	MID	0	24	22.6	Pass
20025	15	QPSK	36	HIGH	0	24	22.67	Pass
20025	15	QPSK	75	LOW	0	24	22.65	Pass
20025	15	Q16	1	LOW	0	23	22.3	Pass
20025	15	Q16	1	MID	0	23	22.27	Pass
20025	15	Q16	1	HIGH	0	23	22.28	Pass
20025	15	Q16	36	LOW	0	23	21.56	Pass
20025	15	Q16	36	MID	0	23	21.57	Pass
20025	15	Q16	36	HIGH	0	23	21.61	Pass
20025	15	Q16	75	LOW	0	23	21.59	Pass
20175	15	QPSK	1	LOW	0	24	23.48	Pass
20175	15	QPSK	1	MID	0	24	23.61	Pass
20175	15	QPSK	1	HIGH	0	24	23.41	Pass
20175	15	QPSK	36	LOW	0	24	22.63	Pass
20175	15	QPSK	36	MID	0	24	22.64	Pass
20175	15	QPSK	36	HIGH	0	24	22.66	Pass
20175	15	QPSK	75	LOW	0	24	22.67	Pass
20175	15	Q16	1	LOW	0	23	22.56	Pass
20175	15	Q16	1	MID	0	23	22.75	Pass
20175	15	Q16	1	HIGH	0	23	22.6	Pass
20175	15	Q16	36	LOW	0	23	21.64	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20175	15	Q16	36	MID	0	23	21.66	Pass
20175	15	Q16	36	HIGH	0	23	21.68	Pass
20175	15	Q16	75	LOW	0	23	21.61	Pass
20325	15	QPSK	1	LOW	0	24	23.54	Pass
20325	15	QPSK	1	MID	0	24	23.73	Pass
20325	15	QPSK	1	HIGH	0	24	23.34	Pass
20325	15	QPSK	36	LOW	0	24	22.72	Pass
20325	15	QPSK	36	MID	0	24	22.75	Pass
20325	15	QPSK	36	HIGH	0	24	22.76	Pass
20325	15	QPSK	75	LOW	0	24	22.72	Pass
20325	15	Q16	1	LOW	0	23	22.4	Pass
20325	15	Q16	1	MID	0	23	22.56	Pass
20325	15	Q16	1	HIGH	0	23	22.5	Pass
20325	15	Q16	36	LOW	0	23	21.67	Pass
20325	15	Q16	36	MID	0	23	21.69	Pass
20325	15	Q16	36	HIGH	0	23	21.71	Pass
20325	15	Q16	75	LOW	0	23	21.73	Pass
20050	20	QPSK	1	LOW	0	24	23.28	Pass
20050	20	QPSK	1	MID	0	24	23.73	Pass
20050	20	QPSK	1	HIGH	0	24	22.84	Pass
20050	20	QPSK	50	LOW	0	24	22.42	Pass
20050	20	QPSK	50	MID	0	24	22.6	Pass
20050	20	QPSK	50	HIGH	0	24	22.42	Pass
20050	20	QPSK	100	LOW	0	24	22.37	Pass
20050	20	Q16	1	LOW	0	23	22.25	Pass
20050	20	Q16	1	MID	0	23	22.66	Pass
20050	20	Q16	1	HIGH	0	23	22.32	Pass
20050	20	Q16	50	LOW	0	23	21.19	Pass
20050	20	Q16	50	MID	0	23	21.44	Pass
20050	20	Q16	50	HIGH	0	23	21.59	Pass
20050	20	Q16	100	LOW	0	23	21.41	Pass
20175	20	QPSK	1	LOW	0	24	23.35	Pass
20175	20	QPSK	1	MID	0	24	23.64	Pass
20175	20	QPSK	1	HIGH	0	24	22.91	Pass
20175	20	QPSK	50	LOW	0	24	22.37	Pass
20175	20	QPSK	50	MID	0	24	22.56	Pass
20175	20	QPSK	50	HIGH	0	24	22.43	Pass
20175	20	QPSK	100	LOW	0	24	22.35	Pass
20175	20	Q16	1	LOW	0	23	22.23	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20175	20	Q16	1	MID	0	23	22.55	Pass
20175	20	Q16	1	HIGH	0	23	22.3	Pass
20175	20	Q16	50	LOW	0	23	21.27	Pass
20175	20	Q16	50	MID	0	23	21.44	Pass
20175	20	Q16	50	HIGH	0	23	21.56	Pass
20175	20	Q16	100	LOW	0	23	21.54	Pass
20300	20	QPSK	1	LOW	0	24	23.33	Pass
20300	20	QPSK	1	MID	0	24	23.24	Pass
20300	20	QPSK	1	HIGH	0	24	22.94	Pass
20300	20	QPSK	50	LOW	0	24	22.32	Pass
20300	20	QPSK	50	MID	0	24	22.24	Pass
20300	20	QPSK	50	HIGH	0	24	22.3	Pass
20300	20	QPSK	100	LOW	0	24	22.18	Pass
20300	20	Q16	1	LOW	0	23	22.19	Pass
20300	20	Q16	1	MID	0	23	22.69	Pass
20300	20	Q16	1	HIGH	0	23	22.3	Pass
20300	20	Q16	50	LOW	0	23	21.08	Pass
20300	20	Q16	50	MID	0	23	21.17	Pass
20300	20	Q16	50	HIGH	0	23	21.33	Pass
20300	20	Q16	100	LOW	0	23	21.37	Pass

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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	22	21.89	Pass
20775	5	QPSK	1	MID	0	22	22	Pass
20775	5	QPSK	1	HIGH	0	22	21.95	Pass
20775	5	QPSK	12	LOW	0	22	20.84	Pass
20775	5	QPSK	12	MID	0	22	21.04	Pass
20775	5	QPSK	12	HIGH	0	22	20.92	Pass
20775	5	QPSK	25	LOW	0	22	20.95	Pass
20775	5	Q16	1	LOW	0	22	21.35	Pass
20775	5	Q16	1	MID	0	22	21.47	Pass
20775	5	Q16	1	HIGH	0	22	21.39	Pass
20775	5	Q16	12	LOW	0	21	19.98	Pass
20775	5	Q16	12	MID	0	21	20.17	Pass
20775	5	Q16	12	HIGH	0	21	20.09	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	25	LOW	0	21	20.01	Pass
21100	5	QPSK	1	LOW	0	22	21.96	Pass
21100	5	QPSK	1	MID	0	22	21.92	Pass
21100	5	QPSK	1	HIGH	0	22	21.97	Pass
21100	5	QPSK	12	LOW	0	22	20.92	Pass
21100	5	QPSK	12	MID	0	22	21.01	Pass
21100	5	QPSK	12	HIGH	0	22	20.94	Pass
21100	5	QPSK	25	LOW	0	22	20.93	Pass
21100	5	Q16	1	LOW	0	22	21.04	Pass
21100	5	Q16	1	MID	0	22	21.1	Pass
21100	5	Q16	1	HIGH	0	22	20.93	Pass
21100	5	Q16	12	LOW	0	21	20.01	Pass
21100	5	Q16	12	MID	0	21	20.1	Pass
21100	5	Q16	12	HIGH	0	21	19.97	Pass
21100	5	Q16	25	LOW	0	21	19.92	Pass
21425	5	QPSK	1	LOW	0	22	21.87	Pass
21425	5	QPSK	1	MID	0	22	21.98	Pass
21425	5	QPSK	1	HIGH	0	22	21.9	Pass
21425	5	QPSK	12	LOW	0	22	20.95	Pass
21425	5	QPSK	12	MID	0	22	20.97	Pass
21425	5	QPSK	12	HIGH	0	22	20.91	Pass
21425	5	QPSK	25	LOW	0	22	20.93	Pass
21425	5	Q16	1	LOW	0	22	21.01	Pass
21425	5	Q16	1	MID	0	22	21.11	Pass
21425	5	Q16	1	HIGH	0	22	21.02	Pass
21425	5	Q16	12	LOW	0	21	20.04	Pass
21425	5	Q16	12	MID	0	21	20.12	Pass
21425	5	Q16	12	HIGH	0	21	20	Pass
21425	5	Q16	25	LOW	0	21	19.94	Pass
20800	10	QPSK	1	LOW	0	23	21.91	Pass
20800	10	QPSK	1	MID	0	23	22.11	Pass
20800	10	QPSK	1	HIGH	0	23	21.97	Pass
20800	10	QPSK	25	LOW	0	22	20.96	Pass
20800	10	QPSK	25	MID	0	22	21.05	Pass
20800	10	QPSK	25	HIGH	0	22	21.05	Pass
20800	10	QPSK	50	LOW	0	22	20.98	Pass
20800	10	Q16	1	LOW	0	22	20.8	Pass
20800	10	Q16	1	MID	0	22	20.97	Pass
20800	10	Q16	1	HIGH	0	22	20.93	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	25	LOW	0	21	19.96	Pass
20800	10	Q16	25	MID	0	21	20.04	Pass
20800	10	Q16	25	HIGH	0	21	20.06	Pass
20800	10	Q16	50	LOW	0	21	20.03	Pass
21100	10	QPSK	1	LOW	0	23	21.98	Pass
21100	10	QPSK	1	MID	0	23	22.13	Pass
21100	10	QPSK	1	HIGH	0	23	21.99	Pass
21100	10	QPSK	25	LOW	0	22	20.92	Pass
21100	10	QPSK	25	MID	0	22	21.02	Pass
21100	10	QPSK	25	HIGH	0	22	21.02	Pass
21100	10	QPSK	50	LOW	0	22	21.01	Pass
21100	10	Q16	1	LOW	0	22	21.31	Pass
21100	10	Q16	1	MID	0	22	21.46	Pass
21100	10	Q16	1	HIGH	0	22	21.28	Pass
21100	10	Q16	25	LOW	0	21	19.94	Pass
21100	10	Q16	25	MID	0	21	20.09	Pass
21100	10	Q16	25	HIGH	0	21	20.08	Pass
21100	10	Q16	50	LOW	0	21	20.01	Pass
21400	10	QPSK	1	LOW	0	23	22	Pass
21400	10	QPSK	1	MID	0	23	22.08	Pass
21400	10	QPSK	1	HIGH	0	23	21.95	Pass
21400	10	QPSK	25	LOW	0	22	21.03	Pass
21400	10	QPSK	25	MID	0	22	20.98	Pass
21400	10	QPSK	25	HIGH	0	22	20.95	Pass
21400	10	QPSK	50	LOW	0	22	21	Pass
21400	10	Q16	1	LOW	0	22	20.98	Pass
21400	10	Q16	1	MID	0	22	21.09	Pass
21400	10	Q16	1	HIGH	0	22	20.84	Pass
21400	10	Q16	25	LOW	0	21	20.11	Pass
21400	10	Q16	25	MID	0	21	20.09	Pass
21400	10	Q16	25	HIGH	0	21	20.07	Pass
21400	10	Q16	50	LOW	0	21	20.01	Pass
20825	15	QPSK	1	LOW	0	23	21.88	Pass
20825	15	QPSK	1	MID	0	23	22.01	Pass
20825	15	QPSK	1	HIGH	0	23	21.97	Pass
20825	15	QPSK	36	LOW	0	22	20.98	Pass
20825	15	QPSK	36	MID	0	22	21.09	Pass
20825	15	QPSK	36	HIGH	0	22	21.08	Pass
20825	15	QPSK	75	LOW	0	22	21.05	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
20825	15	Q16	1	LOW	0	22	20.77	Pass
20825	15	Q16	1	MID	0	22	20.87	Pass
20825	15	Q16	1	HIGH	0	22	20.89	Pass
20825	15	Q16	36	LOW	0	21	19.98	Pass
20825	15	Q16	36	MID	0	21	20.09	Pass
20825	15	Q16	36	HIGH	0	21	20.02	Pass
20825	15	Q16	75	LOW	0	21	20.04	Pass
21100	15	QPSK	1	LOW	0	23	21.91	Pass
21100	15	QPSK	1	MID	0	23	21.99	Pass
21100	15	QPSK	1	HIGH	0	23	21.86	Pass
21100	15	QPSK	36	LOW	0	22	21	Pass
21100	15	QPSK	36	MID	0	22	21.08	Pass
21100	15	QPSK	36	HIGH	0	22	21.02	Pass
21100	15	QPSK	75	LOW	0	22	21.01	Pass
21100	15	Q16	1	LOW	0	22	21.28	Pass
21100	15	Q16	1	MID	0	22	21.38	Pass
21100	15	Q16	1	HIGH	0	22	21.23	Pass
21100	15	Q16	36	LOW	0	21	20.04	Pass
21100	15	Q16	36	MID	0	21	20.12	Pass
21100	15	Q16	36	HIGH	0	21	20.1	Pass
21100	15	Q16	75	LOW	0	21	20.02	Pass
21375	15	QPSK	1	LOW	0	23	21.97	Pass
21375	15	QPSK	1	MID	0	23	21.93	Pass
21375	15	QPSK	1	HIGH	0	23	21.83	Pass
21375	15	QPSK	36	LOW	0	22	21.08	Pass
21375	15	QPSK	36	MID	0	22	21.01	Pass
21375	15	QPSK	36	HIGH	0	22	20.95	Pass
21375	15	QPSK	75	LOW	0	22	21.01	Pass
21375	15	Q16	1	LOW	0	22	21.37	Pass
21375	15	Q16	1	MID	0	22	21.31	Pass
21375	15	Q16	1	HIGH	0	22	21.2	Pass
21375	15	Q16	36	LOW	0	21	20.04	Pass
21375	15	Q16	36	MID	0	21	19.99	Pass
21375	15	Q16	36	HIGH	0	21	19.9	Pass
21375	15	Q16	75	LOW	0	21	20	Pass
20850	20	QPSK	1	LOW	0	23	21.69	Pass
20850	20	QPSK	1	MID	0	23	22.13	Pass
20850	20	QPSK	1	HIGH	0	23	21.84	Pass
20850	20	QPSK	50	LOW	0	22	20.93	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	50	MID	0	22	21.05	Pass
20850	20	QPSK	50	HIGH	0	22	21.04	Pass
20850	20	QPSK	100	LOW	0	22	21.03	Pass
20850	20	Q16	1	LOW	0	22	21.16	Pass
20850	20	Q16	1	MID	0	22	21.62	Pass
20850	20	Q16	1	HIGH	0	22	21.32	Pass
20850	20	Q16	50	LOW	0	21	19.96	Pass
20850	20	Q16	50	MID	0	21	20.05	Pass
20850	20	Q16	50	HIGH	0	21	20.08	Pass
20850	20	Q16	100	LOW	0	21	20.02	Pass
21100	20	QPSK	1	LOW	0	23	21.79	Pass
21100	20	QPSK	1	MID	0	23	**22.17**	Pass
21100	20	QPSK	1	HIGH	0	23	21.77	Pass
21100	20	QPSK	50	LOW	0	22	20.93	Pass
21100	20	QPSK	50	MID	0	22	21.02	Pass
21100	20	QPSK	50	HIGH	0	22	21.02	Pass
21100	20	QPSK	100	LOW	0	22	20.93	Pass
21100	20	Q16	1	LOW	0	22	21.22	Pass
21100	20	Q16	1	MID	0	22	21.5	Pass
21100	20	Q16	1	HIGH	0	22	21.21	Pass
21100	20	Q16	50	LOW	0	21	19.95	Pass
21100	20	Q16	50	MID	0	21	20.02	Pass
21100	20	Q16	50	HIGH	0	21	20.01	Pass
21100	20	Q16	100	LOW	0	21	19.95	Pass
21350	20	QPSK	1	LOW	0	23	21.81	Pass
21350	20	QPSK	1	MID	0	23	22.08	Pass
21350	20	QPSK	1	HIGH	0	23	21.56	Pass
21350	20	QPSK	50	LOW	0	22	21.05	Pass
21350	20	QPSK	50	MID	0	22	21	Pass
21350	20	QPSK	50	HIGH	0	22	20.87	Pass
21350	20	QPSK	100	LOW	0	22	21.01	Pass
21350	20	Q16	1	LOW	0	22	21.16	Pass
21350	20	Q16	1	MID	0	22	21.42	Pass
21350	20	Q16	1	HIGH	0	22	20.94	Pass
21350	20	Q16	50	LOW	0	21	20.04	Pass
21350	20	Q16	50	MID	0	21	20.01	Pass
21350	20	Q16	50	HIGH	0	21	19.86	Pass
21350	20	Q16	100	LOW	0	21	20.01	Pass

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UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
131979	1.4	QPSK	1	LOW	0	24	23.58	Pass
131979	1.4	QPSK	1	MID	0	24	23.77	Pass
131979	1.4	QPSK	1	HIGH	0	24	23.57	Pass
131979	1.4	QPSK	3	LOW	0	24	23.63	Pass
131979	1.4	QPSK	3	MID	0	24	23.67	Pass
131979	1.4	QPSK	3	HIGH	0	24	23.66	Pass
131979	1.4	QPSK	6	LOW	0	24	22.65	Pass
131979	1.4	Q16	1	LOW	0	23	22.62	Pass
131979	1.4	Q16	1	MID	0	23	22.77	Pass
131979	1.4	Q16	1	HIGH	0	23	22.63	Pass
131979	1.4	Q16	3	LOW	0	23	22.66	Pass
131979	1.4	Q16	3	MID	0	23	22.61	Pass
131979	1.4	Q16	3	HIGH	0	23	22.48	Pass
131979	1.4	Q16	6	LOW	0	23	21.76	Pass
132322	1.4	QPSK	1	LOW	0	24	23.67	Pass
132322	1.4	QPSK	1	MID	0	24	**23.82**	Pass
132322	1.4	QPSK	1	HIGH	0	24	23.45	Pass
132322	1.4	QPSK	3	LOW	0	24	23.28	Pass
132322	1.4	QPSK	3	MID	0	24	23.44	Pass
132322	1.4	QPSK	3	HIGH	0	24	23.22	Pass
132322	1.4	QPSK	6	LOW	0	24	22.21	Pass
132322	1.4	Q16	1	LOW	0	23	22.51	Pass
132322	1.4	Q16	1	MID	0	23	22.67	Pass
132322	1.4	Q16	1	HIGH	0	23	22.49	Pass
132322	1.4	Q16	3	LOW	0	23	22.48	Pass
132322	1.4	Q16	3	MID	0	23	22.3	Pass
132322	1.4	Q16	3	HIGH	0	23	22.42	Pass
132322	1.4	Q16	6	LOW	0	23	21.14	Pass
132665	1.4	QPSK	1	LOW	0	24	23.41	Pass
132665	1.4	QPSK	1	MID	0	24	23.61	Pass
132665	1.4	QPSK	1	HIGH	0	24	23.22	Pass
132665	1.4	QPSK	3	LOW	0	24	23.28	Pass
132665	1.4	QPSK	3	MID	0	24	23.25	Pass
132665	1.4	QPSK	3	HIGH	0	24	23.22	Pass
132665	1.4	QPSK	6	LOW	0	24	22.18	Pass
132665	1.4	Q16	1	LOW	0	23	22.11	Pass
132665	1.4	Q16	1	MID	0	23	22.23	Pass
132665	1.4	Q16	1	HIGH	0	23	22.09	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
132665	1.4	Q16	3	LOW	0	23	22.43	Pass
132665	1.4	Q16	3	MID	0	23	22.38	Pass
132665	1.4	Q16	3	HIGH	0	23	22.34	Pass
132665	1.4	Q16	6	LOW	0	23	21.55	Pass
131987	3	QPSK	1	LOW	0	24	23.56	Pass
131987	3	QPSK	1	MID	0	24	23.19	Pass
131987	3	QPSK	1	HIGH	0	24	23.07	Pass
131987	3	QPSK	8	LOW	0	24	22.17	Pass
131987	3	QPSK	8	MID	0	24	22.17	Pass
131987	3	QPSK	8	HIGH	0	24	22.14	Pass
131987	3	QPSK	15	LOW	0	24	22.13	Pass
131987	3	Q16	1	LOW	0	23	22	Pass
131987	3	Q16	1	MID	0	23	21.98	Pass
131987	3	Q16	1	HIGH	0	23	21.97	Pass
131987	3	Q16	8	LOW	0	23	21.25	Pass
131987	3	Q16	8	MID	0	23	21.27	Pass
131987	3	Q16	8	HIGH	0	23	21.23	Pass
131987	3	Q16	15	LOW	0	23	21.15	Pass
132322	3	QPSK	1	LOW	0	24	23.41	Pass
132322	3	QPSK	1	MID	0	24	23.22	Pass
132322	3	QPSK	1	HIGH	0	24	23.19	Pass
132322	3	QPSK	8	LOW	0	24	22.21	Pass
132322	3	QPSK	8	MID	0	24	22.21	Pass
132322	3	QPSK	8	HIGH	0	24	22.26	Pass
132322	3	QPSK	15	LOW	0	24	22.2	Pass
132322	3	Q16	1	LOW	0	23	22.53	Pass
132322	3	Q16	1	MID	0	23	22.56	Pass
132322	3	Q16	1	HIGH	0	23	22.53	Pass
132322	3	Q16	8	LOW	0	23	21.33	Pass
132322	3	Q16	8	MID	0	23	21.31	Pass
132322	3	Q16	8	HIGH	0	23	21.29	Pass
132322	3	Q16	15	LOW	0	23	21.23	Pass
132657	3	QPSK	1	LOW	0	24	23.43	Pass
132657	3	QPSK	1	MID	0	24	23.44	Pass
132657	3	QPSK	1	HIGH	0	24	23.25	Pass
132657	3	QPSK	8	LOW	0	24	22.21	Pass
132657	3	QPSK	8	MID	0	24	22.25	Pass
132657	3	QPSK	8	HIGH	0	24	22.2	Pass
132657	3	QPSK	15	LOW	0	24	22.21	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
132657	3	Q16	1	LOW	0	23	22.16	Pass
132657	3	Q16	1	MID	0	23	22.13	Pass
132657	3	Q16	1	HIGH	0	23	22.07	Pass
132657	3	Q16	8	LOW	0	23	21.24	Pass
132657	3	Q16	8	MID	0	23	21.27	Pass
132657	3	Q16	8	HIGH	0	23	21.19	Pass
132657	3	Q16	15	LOW	0	23	21.16	Pass
131997	5	QPSK	1	LOW	0	24	23.01	Pass
131997	5	QPSK	1	MID	0	24	23.12	Pass
131997	5	QPSK	1	HIGH	0	24	23	Pass
131997	5	QPSK	12	LOW	0	24	22.11	Pass
131997	5	QPSK	12	MID	0	24	22.13	Pass
131997	5	QPSK	12	HIGH	0	24	22.1	Pass
131997	5	QPSK	25	LOW	0	24	22.09	Pass
131997	5	Q16	1	LOW	0	23	22.15	Pass
131997	5	Q16	1	MID	0	23	22.27	Pass
131997	5	Q16	1	HIGH	0	23	22.13	Pass
131997	5	Q16	12	LOW	0	23	21.22	Pass
131997	5	Q16	12	MID	0	23	21.25	Pass
131997	5	Q16	12	HIGH	0	23	21.2	Pass
131997	5	Q16	25	LOW	0	23	21.15	Pass
132322	5	QPSK	1	LOW	0	24	23.12	Pass
132322	5	QPSK	1	MID	0	24	23.26	Pass
132322	5	QPSK	1	HIGH	0	24	23.1	Pass
132322	5	QPSK	12	LOW	0	24	22.19	Pass
132322	5	QPSK	12	MID	0	24	22.24	Pass
132322	5	QPSK	12	HIGH	0	24	22.21	Pass
132322	5	QPSK	25	LOW	0	24	22.22	Pass
132322	5	Q16	1	LOW	0	23	22.59	Pass
132322	5	Q16	1	MID	0	23	22.72	Pass
132322	5	Q16	1	HIGH	0	23	22.6	Pass
132322	5	Q16	12	LOW	0	23	21.35	Pass
132322	5	Q16	12	MID	0	23	21.42	Pass
132322	5	Q16	12	HIGH	0	23	21.34	Pass
132322	5	Q16	25	LOW	0	23	21.28	Pass
132647	5	QPSK	1	LOW	0	24	23.03	Pass
132647	5	QPSK	1	MID	0	24	23.2	Pass
132647	5	QPSK	1	HIGH	0	24	23.1	Pass
132647	5	QPSK	12	LOW	0	24	22.16	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
132647	5	QPSK	12	MID	0	24	22.23	Pass
132647	5	QPSK	12	HIGH	0	24	22.15	Pass
132647	5	QPSK	25	LOW	0	24	22.15	Pass
132647	5	Q16	1	LOW	0	23	22.11	Pass
132647	5	Q16	1	MID	0	23	22.22	Pass
132647	5	Q16	1	HIGH	0	23	22.09	Pass
132647	5	Q16	12	LOW	0	23	21.22	Pass
132647	5	Q16	12	MID	0	23	21.29	Pass
132647	5	Q16	12	HIGH	0	23	21.23	Pass
132647	5	Q16	25	LOW	0	23	21.11	Pass
132022	10	QPSK	1	LOW	0	24	23.12	Pass
132022	10	QPSK	1	MID	0	24	23.24	Pass
132022	10	QPSK	1	HIGH	0	24	23.05	Pass
132022	10	QPSK	25	LOW	0	24	22.17	Pass
132022	10	QPSK	25	MID	0	24	22.14	Pass
132022	10	QPSK	25	HIGH	0	24	22.2	Pass
132022	10	QPSK	50	LOW	0	24	22.2	Pass
132022	10	Q16	1	LOW	0	23	21.97	Pass
132022	10	Q16	1	MID	0	23	22.07	Pass
132022	10	Q16	1	HIGH	0	23	21.99	Pass
132022	10	Q16	25	LOW	0	23	21.17	Pass
132022	10	Q16	25	MID	0	23	21.17	Pass
132022	10	Q16	25	HIGH	0	23	21.21	Pass
132022	10	Q16	50	LOW	0	23	21.16	Pass
132322	10	QPSK	1	LOW	0	24	23.17	Pass
132322	10	QPSK	1	MID	0	24	23.35	Pass
132322	10	QPSK	1	HIGH	0	24	23.18	Pass
132322	10	QPSK	25	LOW	0	24	22.28	Pass
132322	10	QPSK	25	MID	0	24	22.24	Pass
132322	10	QPSK	25	HIGH	0	24	22.27	Pass
132322	10	QPSK	50	LOW	0	24	22.29	Pass
132322	10	Q16	1	LOW	0	23	22.48	Pass
132322	10	Q16	1	MID	0	23	22.7	Pass
132322	10	Q16	1	HIGH	0	23	22.54	Pass
132322	10	Q16	25	LOW	0	23	21.3	Pass
132322	10	Q16	25	MID	0	23	21.28	Pass
132322	10	Q16	25	HIGH	0	23	21.32	Pass
132322	10	Q16	50	LOW	0	23	21.3	Pass
132622	10	QPSK	1	LOW	0	24	23.14	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
132622	10	QPSK	1	MID	0	24	23.42	Pass
132622	10	QPSK	1	HIGH	0	24	23.26	Pass
132622	10	QPSK	25	LOW	0	24	22.21	Pass
132622	10	QPSK	25	MID	0	24	22.2	Pass
132622	10	QPSK	25	HIGH	0	24	22.21	Pass
132622	10	QPSK	50	LOW	0	24	22.25	Pass
132622	10	Q16	1	LOW	0	23	22.16	Pass
132622	10	Q16	1	MID	0	23	22.28	Pass
132622	10	Q16	1	HIGH	0	23	22.08	Pass
132622	10	Q16	25	LOW	0	23	21.3	Pass
132622	10	Q16	25	MID	0	23	21.29	Pass
132622	10	Q16	25	HIGH	0	23	21.28	Pass
132622	10	Q16	50	LOW	0	23	21.27	Pass
132047	15	QPSK	1	LOW	0	24	23	Pass
132047	15	QPSK	1	MID	0	24	23.07	Pass
132047	15	QPSK	1	HIGH	0	24	22.98	Pass
132047	15	QPSK	36	LOW	0	24	22.14	Pass
132047	15	QPSK	36	MID	0	24	22.18	Pass
132047	15	QPSK	36	HIGH	0	24	22.17	Pass
132047	15	QPSK	75	LOW	0	24	22.2	Pass
132047	15	Q16	1	LOW	0	23	21.89	Pass
132047	15	Q16	1	MID	0	23	21.98	Pass
132047	15	Q16	1	HIGH	0	23	21.91	Pass
132047	15	Q16	36	LOW	0	23	21.13	Pass
132047	15	Q16	36	MID	0	23	21.2	Pass
132047	15	Q16	36	HIGH	0	23	21.18	Pass
132047	15	Q16	75	LOW	0	23	21.17	Pass
132322	15	QPSK	1	LOW	0	24	23.1	Pass
132322	15	QPSK	1	MID	0	24	23.21	Pass
132322	15	QPSK	1	HIGH	0	24	23.11	Pass
132322	15	QPSK	36	LOW	0	24	22.23	Pass
132322	15	QPSK	36	MID	0	24	22.25	Pass
132322	15	QPSK	36	HIGH	0	24	22.26	Pass
132322	15	QPSK	75	LOW	0	24	22.28	Pass
132322	15	Q16	1	LOW	0	23	22.41	Pass
132322	15	Q16	1	MID	0	23	22.56	Pass
132322	15	Q16	1	HIGH	0	23	22.41	Pass
132322	15	Q16	36	LOW	0	23	21.29	Pass
132322	15	Q16	36	MID	0	23	21.3	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
132322	15	Q16	36	HIGH	0	23	21.34	Pass
132322	15	Q16	75	LOW	0	23	21.26	Pass
132597	15	QPSK	1	LOW	0	24	23.04	Pass
132597	15	QPSK	1	MID	0	24	23.17	Pass
132597	15	QPSK	1	HIGH	0	24	23.15	Pass
132597	15	QPSK	36	LOW	0	24	22.23	Pass
132597	15	QPSK	36	MID	0	24	22.22	Pass
132597	15	QPSK	36	HIGH	0	24	22.2	Pass
132597	15	QPSK	75	LOW	0	24	22.25	Pass
132597	15	Q16	1	LOW	0	23	22.43	Pass
132597	15	Q16	1	MID	0	23	22.53	Pass
132597	15	Q16	1	HIGH	0	23	22.37	Pass
132597	15	Q16	36	LOW	0	23	21.21	Pass
132597	15	Q16	36	MID	0	23	21.2	Pass
132597	15	Q16	36	HIGH	0	23	21.18	Pass
132597	15	Q16	75	LOW	0	23	21.18	Pass
132072	20	QPSK	1	LOW	0	24	22.85	Pass
132072	20	QPSK	1	MID	0	24	23.2	Pass
132072	20	QPSK	1	HIGH	0	24	22.89	Pass
132072	20	QPSK	50	LOW	0	24	22.08	Pass
132072	20	QPSK	50	MID	0	24	22.09	Pass
132072	20	QPSK	50	HIGH	0	24	22.16	Pass
132072	20	QPSK	100	LOW	0	24	22.12	Pass
132072	20	Q16	1	LOW	0	23	22.31	Pass
132072	20	Q16	1	MID	0	23	22.68	Pass
132072	20	Q16	1	HIGH	0	23	22.38	Pass
132072	20	Q16	50	LOW	0	23	21.09	Pass
132072	20	Q16	50	MID	0	23	21.15	Pass
132072	20	Q16	50	HIGH	0	23	21.16	Pass
132072	20	Q16	100	LOW	0	23	21.17	Pass
132322	20	QPSK	1	LOW	0	24	22.95	Pass
132322	20	QPSK	1	MID	0	24	**23.41**	Pass
132322	20	QPSK	1	HIGH	0	24	23.04	Pass
132322	20	QPSK	50	LOW	0	24	22.23	Pass
132322	20	QPSK	50	MID	0	24	22.23	Pass
132322	20	QPSK	50	HIGH	0	24	22.25	Pass
132322	20	QPSK	100	LOW	0	24	22.27	Pass
132322	20	Q16	1	LOW	0	23	22.31	Pass
132322	20	Q16	1	MID	0	23	22.77	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
132322	20	Q16	1	HIGH	0	23	22.43	Pass
132322	20	Q16	50	LOW	0	23	21.26	Pass
132322	20	Q16	50	MID	0	23	21.26	Pass
132322	20	Q16	50	HIGH	0	23	21.26	Pass
132322	20	Q16	100	LOW	0	23	21.23	Pass
132572	20	QPSK	1	LOW	0	24	22.86	Pass
132572	20	QPSK	1	MID	0	24	23.28	Pass
132572	20	QPSK	1	HIGH	0	24	22.94	Pass
132572	20	QPSK	50	LOW	0	24	22.23	Pass
132572	20	QPSK	50	MID	0	24	22.18	Pass
132572	20	QPSK	50	HIGH	0	24	22.14	Pass
132572	20	QPSK	100	LOW	0	24	22.21	Pass
132572	20	Q16	1	LOW	0	23	22.23	Pass
132572	20	Q16	1	MID	0	23	22.63	Pass
132572	20	Q16	1	HIGH	0	23	22.27	Pass
132572	20	Q16	50	LOW	0	23	21.17	Pass
132572	20	Q16	50	MID	0	23	21.15	Pass
132572	20	Q16	50	HIGH	0	23	21.16	Pass
132572	20	Q16	100	LOW	0	23	21.18	Pass

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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	22.43	Pass
18607	1.4	QPSK	1	MID	0	33	22.45	Pass
18607	1.4	QPSK	1	HIGH	0	33	22.46	Pass
18607	1.4	QPSK	3	LOW	0	33	22.43	Pass
18607	1.4	QPSK	3	MID	0	33	22.47	Pass
18607	1.4	QPSK	3	HIGH	0	33	22.43	Pass
18607	1.4	QPSK	6	LOW	0	33	21.42	Pass
18607	1.4	Q16	1	LOW	0	33	21.45	Pass
18607	1.4	Q16	1	MID	0	33	21.42	Pass
18607	1.4	Q16	1	HIGH	0	33	21.44	Pass
18607	1.4	Q16	3	LOW	0	33	21.45	Pass
18607	1.4	Q16	3	MID	0	33	21.36	Pass
18607	1.4	Q16	3	HIGH	0	33	21.42	Pass
18607	1.4	Q16	6	LOW	0	33	20.32	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
18900	1.4	QPSK	1	LOW	0	33	22.33	Pass
18900	1.4	QPSK	1	MID	0	33	22.48	Pass
18900	1.4	QPSK	1	HIGH	0	33	22.36	Pass
18900	1.4	QPSK	3	LOW	0	33	22.41	Pass
18900	1.4	QPSK	3	MID	0	33	22.47	Pass
18900	1.4	QPSK	3	HIGH	0	33	22.42	Pass
18900	1.4	QPSK	6	LOW	0	33	21.41	Pass
18900	1.4	Q16	1	LOW	0	33	21.31	Pass
18900	1.4	Q16	1	MID	0	33	21.47	Pass
18900	1.4	Q16	1	HIGH	0	33	21.31	Pass
18900	1.4	Q16	3	LOW	0	33	21.27	Pass
18900	1.4	Q16	3	MID	0	33	21.22	Pass
18900	1.4	Q16	3	HIGH	0	33	21.29	Pass
18900	1.4	Q16	6	LOW	0	33	20.26	Pass
19193	1.4	QPSK	1	LOW	0	33	22.21	Pass
19193	1.4	QPSK	1	MID	0	33	22.34	Pass
19193	1.4	QPSK	1	HIGH	0	33	22.22	Pass
19193	1.4	QPSK	3	LOW	0	33	22.33	Pass
19193	1.4	QPSK	3	MID	0	33	22.37	Pass
19193	1.4	QPSK	3	HIGH	0	33	22.33	Pass
19193	1.4	QPSK	6	LOW	0	33	21.31	Pass
19193	1.4	Q16	1	LOW	0	33	21.18	Pass
19193	1.4	Q16	1	MID	0	33	21.34	Pass
19193	1.4	Q16	1	HIGH	0	33	21.28	Pass
19193	1.4	Q16	3	LOW	0	33	21.42	Pass
19193	1.4	Q16	3	MID	0	33	21.47	Pass
19193	1.4	Q16	3	HIGH	0	33	21.45	Pass
19193	1.4	Q16	6	LOW	0	33	20.41	Pass
18615	3	QPSK	1	LOW	0	33	22.42	Pass
18615	3	QPSK	1	MID	0	33	22.38	Pass
18615	3	QPSK	1	HIGH	0	33	22.32	Pass
18615	3	QPSK	8	LOW	0	33	21.42	Pass
18615	3	QPSK	8	MID	0	33	21.43	Pass
18615	3	QPSK	8	HIGH	0	33	21.34	Pass
18615	3	QPSK	15	LOW	0	33	21.34	Pass
18615	3	Q16	1	LOW	0	33	21.32	Pass
18615	3	Q16	1	MID	0	33	21.33	Pass
18615	3	Q16	1	HIGH	0	33	21.35	Pass
18615	3	Q16	8	LOW	0	33	20.48	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
18615	3	Q16	8	MID	0	33	20.42	Pass
18615	3	Q16	8	HIGH	0	33	20.44	Pass
18615	3	Q16	15	LOW	0	33	20.35	Pass
18900	3	QPSK	1	LOW	0	33	22.42	Pass
18900	3	QPSK	1	MID	0	33	22.36	Pass
18900	3	QPSK	1	HIGH	0	33	22.37	Pass
18900	3	QPSK	8	LOW	0	33	21.42	Pass
18900	3	QPSK	8	MID	0	33	21.44	Pass
18900	3	QPSK	8	HIGH	0	33	21.39	Pass
18900	3	QPSK	15	LOW	0	33	21.38	Pass
18900	3	Q16	1	LOW	0	33	21.49	Pass
18900	3	Q16	1	MID	0	33	21.47	Pass
18900	3	Q16	1	HIGH	0	33	21.44	Pass
18900	3	Q16	8	LOW	0	33	20.42	Pass
18900	3	Q16	8	MID	0	33	20.43	Pass
18900	3	Q16	8	HIGH	0	33	20.41	Pass
18900	3	Q16	15	LOW	0	33	20.37	Pass
19185	3	QPSK	1	LOW	0	33	22.38	Pass
19185	3	QPSK	1	MID	0	33	22.25	Pass
19185	3	QPSK	1	HIGH	0	33	22.27	Pass
19185	3	QPSK	8	LOW	0	33	21.25	Pass
19185	3	QPSK	8	MID	0	33	21.27	Pass
19185	3	QPSK	8	HIGH	0	33	21.25	Pass
19185	3	QPSK	15	LOW	0	33	21.23	Pass
19185	3	Q16	1	LOW	0	33	21.24	Pass
19185	3	Q16	1	MID	0	33	21.27	Pass
19185	3	Q16	1	HIGH	0	33	21.15	Pass
19185	3	Q16	8	LOW	0	33	20.27	Pass
19185	3	Q16	8	MID	0	33	20.29	Pass
19185	3	Q16	8	HIGH	0	33	20.26	Pass
19185	3	Q16	15	LOW	0	33	20.27	Pass
18625	5	QPSK	1	LOW	0	33	22.45	Pass
18625	5	QPSK	1	MID	0	33	22.44	Pass
18625	5	QPSK	1	HIGH	0	33	22.37	Pass
18625	5	QPSK	12	LOW	0	33	21.37	Pass
18625	5	QPSK	12	MID	0	33	21.48	Pass
18625	5	QPSK	12	HIGH	0	33	21.43	Pass
18625	5	QPSK	25	LOW	0	33	21.45	Pass
18625	5	Q16	1	LOW	0	33	21.34	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
18625	5	Q16	1	MID	0	33	21.49	Pass
18625	5	Q16	1	HIGH	0	33	21.41	Pass
18625	5	Q16	12	LOW	0	33	20.42	Pass
18625	5	Q16	12	MID	0	33	20.42	Pass
18625	5	Q16	12	HIGH	0	33	20.41	Pass
18625	5	Q16	25	LOW	0	33	20.42	Pass
18900	5	QPSK	1	LOW	0	33	22.31	Pass
18900	5	QPSK	1	MID	0	33	22.43	Pass
18900	5	QPSK	1	HIGH	0	33	22.35	Pass
18900	5	QPSK	12	LOW	0	33	21.28	Pass
18900	5	QPSK	12	MID	0	33	21.39	Pass
18900	5	QPSK	12	HIGH	0	33	21.38	Pass
18900	5	QPSK	25	LOW	0	33	21.34	Pass
18900	5	Q16	1	LOW	0	33	21.38	Pass
18900	5	Q16	1	MID	0	33	21.48	Pass
18900	5	Q16	1	HIGH	0	33	21.36	Pass
18900	5	Q16	12	LOW	0	33	20.33	Pass
18900	5	Q16	12	MID	0	33	20.42	Pass
18900	5	Q16	12	HIGH	0	33	20.41	Pass
18900	5	Q16	25	LOW	0	33	20.31	Pass
19175	5	QPSK	1	LOW	0	33	22.27	Pass
19175	5	QPSK	1	MID	0	33	22.37	Pass
19175	5	QPSK	1	HIGH	0	33	22.24	Pass
19175	5	QPSK	12	LOW	0	33	21.29	Pass
19175	5	QPSK	12	MID	0	33	21.25	Pass
19175	5	QPSK	12	HIGH	0	33	21.21	Pass
19175	5	QPSK	25	LOW	0	33	21.23	Pass
19175	5	Q16	1	LOW	0	33	21.25	Pass
19175	5	Q16	1	MID	0	33	21.34	Pass
19175	5	Q16	1	HIGH	0	33	21.22	Pass
19175	5	Q16	12	LOW	0	33	20.24	Pass
19175	5	Q16	12	MID	0	33	20.31	Pass
19175	5	Q16	12	HIGH	0	33	20.32	Pass
19175	5	Q16	25	LOW	0	33	20.15	Pass
18650	10	QPSK	1	LOW	0	33	22.43	Pass
18650	10	QPSK	1	MID	0	33	22.39	Pass
18650	10	QPSK	1	HIGH	0	33	22.41	Pass
18650	10	QPSK	25	LOW	0	33	21.45	Pass
18650	10	QPSK	25	MID	0	33	21.44	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
18650	10	QPSK	25	HIGH	0	33	21.34	Pass
18650	10	QPSK	50	LOW	0	33	21.45	Pass
18650	10	Q16	1	LOW	0	33	21.37	Pass
18650	10	Q16	1	MID	0	33	21.44	Pass
18650	10	Q16	1	HIGH	0	33	21.36	Pass
18650	10	Q16	25	LOW	0	33	20.47	Pass
18650	10	Q16	25	MID	0	33	20.43	Pass
18650	10	Q16	25	HIGH	0	33	20.42	Pass
18650	10	Q16	50	LOW	0	33	20.44	Pass
18900	10	QPSK	1	LOW	0	33	22.36	Pass
18900	10	QPSK	1	MID	0	33	22.32	Pass
18900	10	QPSK	1	HIGH	0	33	22.34	Pass
18900	10	QPSK	25	LOW	0	33	21.35	Pass
18900	10	QPSK	25	MID	0	33	21.38	Pass
18900	10	QPSK	25	HIGH	0	33	21.46	Pass
18900	10	QPSK	50	LOW	0	33	21.43	Pass
18900	10	Q16	1	LOW	0	33	21.31	Pass
18900	10	Q16	1	MID	0	33	21.45	Pass
18900	10	Q16	1	HIGH	0	33	21.26	Pass
18900	10	Q16	25	LOW	0	33	20.36	Pass
18900	10	Q16	25	MID	0	33	20.41	Pass
18900	10	Q16	25	HIGH	0	33	20.49	Pass
18900	10	Q16	50	LOW	0	33	20.43	Pass
19150	10	QPSK	1	LOW	0	33	22.32	Pass
19150	10	QPSK	1	MID	0	33	22.47	Pass
19150	10	QPSK	1	HIGH	0	33	22.22	Pass
19150	10	QPSK	25	LOW	0	33	21.32	Pass
19150	10	QPSK	25	MID	0	33	21.31	Pass
19150	10	QPSK	25	HIGH	0	33	21.36	Pass
19150	10	QPSK	50	LOW	0	33	21.39	Pass
19150	10	Q16	1	LOW	0	33	21.27	Pass
19150	10	Q16	1	MID	0	33	21.33	Pass
19150	10	Q16	1	HIGH	0	33	21.14	Pass
19150	10	Q16	25	LOW	0	33	20.42	Pass
19150	10	Q16	25	MID	0	33	20.42	Pass
19150	10	Q16	25	HIGH	0	33	20.46	Pass
19150	10	Q16	50	LOW	0	33	20.39	Pass
18675	15	QPSK	1	LOW	0	33	22.44	Pass
18675	15	QPSK	1	MID	0	33	22.47	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
18675	15	QPSK	1	HIGH	0	33	22.36	Pass
18675	15	QPSK	36	LOW	0	33	21.34	Pass
18675	15	QPSK	36	MID	0	33	21.49	Pass
18675	15	QPSK	36	HIGH	0	33	21.47	Pass
18675	15	QPSK	75	LOW	0	33	21.42	Pass
18675	15	Q16	1	LOW	0	33	21.31	Pass
18675	15	Q16	1	MID	0	33	21.41	Pass
18675	15	Q16	1	HIGH	0	33	21.19	Pass
18675	15	Q16	36	LOW	0	33	20.35	Pass
18675	15	Q16	36	MID	0	33	20.49	Pass
18675	15	Q16	36	HIGH	0	33	20.49	Pass
18675	15	Q16	75	LOW	0	33	20.46	Pass
18900	15	QPSK	1	LOW	0	33	22.35	Pass
18900	15	QPSK	1	MID	0	33	22.37	Pass
18900	15	QPSK	1	HIGH	0	33	22.17	Pass
18900	15	QPSK	36	LOW	0	33	21.34	Pass
18900	15	QPSK	36	MID	0	33	21.39	Pass
18900	15	QPSK	36	HIGH	0	33	21.42	Pass
18900	15	QPSK	75	LOW	0	33	21.42	Pass
18900	15	Q16	1	LOW	0	33	21.31	Pass
18900	15	Q16	1	MID	0	33	21.41	Pass
18900	15	Q16	1	HIGH	0	33	21.25	Pass
18900	15	Q16	36	LOW	0	33	20.41	Pass
18900	15	Q16	36	MID	0	33	20.44	Pass
18900	15	Q16	36	HIGH	0	33	20.39	Pass
18900	15	Q16	75	LOW	0	33	20.37	Pass
19125	15	QPSK	1	LOW	0	33	22.18	Pass
19125	15	QPSK	1	MID	0	33	22.43	Pass
19125	15	QPSK	1	HIGH	0	33	22.21	Pass
19125	15	QPSK	36	LOW	0	33	21.38	Pass
19125	15	QPSK	36	MID	0	33	21.35	Pass
19125	15	QPSK	36	HIGH	0	33	21.38	Pass
19125	15	QPSK	75	LOW	0	33	21.46	Pass
19125	15	Q16	1	LOW	0	33	21.35	Pass
19125	15	Q16	1	MID	0	33	21.44	Pass
19125	15	Q16	1	HIGH	0	33	21.36	Pass
19125	15	Q16	36	LOW	0	33	20.35	Pass
19125	15	Q16	36	MID	0	33	20.43	Pass
19125	15	Q16	36	HIGH	0	33	20.33	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
19125	15	Q16	75	LOW	0	33	20.36	Pass
18700	20	QPSK	1	LOW	0	33	22.29	Pass
18700	20	QPSK	1	MID	0	33	**22.62**	Pass
18700	20	QPSK	1	HIGH	0	33	22.12	Pass
18700	20	QPSK	50	LOW	0	33	21.48	Pass
18700	20	QPSK	50	MID	0	33	21.48	Pass
18700	20	QPSK	50	HIGH	0	33	21.36	Pass
18700	20	QPSK	100	LOW	0	33	21.46	Pass
18700	20	Q16	1	LOW	0	33	21.45	Pass
18700	20	Q16	1	MID	0	33	21.31	Pass
18700	20	Q16	1	HIGH	0	33	21.42	Pass
18700	20	Q16	50	LOW	0	33	20.21	Pass
18700	20	Q16	50	MID	0	33	20.22	Pass
18700	20	Q16	50	HIGH	0	33	20.41	Pass
18700	20	Q16	100	LOW	0	33	20.45	Pass
18900	20	QPSK	1	LOW	0	33	22.15	Pass
18900	20	QPSK	1	MID	0	33	22.34	Pass
18900	20	QPSK	1	HIGH	0	33	22.06	Pass
18900	20	QPSK	50	LOW	0	33	21.28	Pass
18900	20	QPSK	50	MID	0	33	21.36	Pass
18900	20	QPSK	50	HIGH	0	33	21.41	Pass
18900	20	QPSK	100	LOW	0	33	21.34	Pass
18900	20	Q16	1	LOW	0	33	21.23	Pass
18900	20	Q16	1	MID	0	33	21.39	Pass
18900	20	Q16	1	HIGH	0	33	21.46	Pass
18900	20	Q16	50	LOW	0	33	20.25	Pass
18900	20	Q16	50	MID	0	33	20.35	Pass
18900	20	Q16	50	HIGH	0	33	20.44	Pass
18900	20	Q16	100	LOW	0	33	20.32	Pass
19100	20	QPSK	1	LOW	0	33	22.49	Pass
19100	20	QPSK	1	MID	0	33	22.34	Pass
19100	20	QPSK	1	HIGH	0	33	22.31	Pass
19100	20	QPSK	50	LOW	0	33	21.42	Pass
19100	20	QPSK	50	MID	0	33	21.29	Pass
19100	20	QPSK	50	HIGH	0	33	21.34	Pass
19100	20	QPSK	100	LOW	0	33	21.22	Pass
19100	20	Q16	1	LOW	0	33	21.47	Pass
19100	20	Q16	1	MID	0	33	21.26	Pass
19100	20	Q16	1	HIGH	0	33	21.36	Pass

UL Channel	Bandwidth (MHz)	UL Modulation	UL RB Number	UL RB Position	Lower Limit (dBm)	Upper Limit (dBm)	Measured (dBm)	Verdict
19100	20	Q16	50	LOW	0	33	20.16	Pass
19100	20	Q16	50	MID	0	33	20.11	Pass
19100	20	Q16	50	HIGH	0	33	20.18	Pass
19100	20	Q16	100	LOW	0	33	20.12	Pass

Remark:

1. 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.
2. 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.
3. 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.
4. 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 > ½ 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) - Maximum Average Power					
Test Mode	**Data Rate**	**Channel**	**Frequency (MHz)**	**Average Power (dBm)**	**Tune-up power (dBm)**
802.11b	41Mbps	CH 01	2412	15.07	15.5
		CH 06	2437	**15.65**	16.0
		CH 11	2462	15.17	15.5
802.11g	54Mbps	CH 01	2412	12.86	13.0
		CH 06	2437	14.80	15.0
		CH 11	2462	14.92	15.0
802.11n (20MHz)	MCS7	CH 01	2412	12.91	13.0
		CH 06	2437	15.61	16.0
		CH 11	2462	14.99	15.0
802.11n (40MHz)	MCS7	CH 03	2422	14.50	15.0
		CH 06	2437	14.57	15.0
		CH 09	2452	14.41	14.5

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 <= 1.2W/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**	**Average Power(dBm)**			**Tune-up power (dBm)**
		CH00	**CH39**	**CH78**	
GFSK	1Mbps	3.53	4.28	2.44	4.5
Pi/4 QDPSK	2Mbps	3.49	4.14	2.57	4.5
8DPSK	3Mbps	4.42	**5.31**	3.52	5.5

Bluetooth - Maximum Average Power					
Test Mode	**Data Rate**	**Channel**	**Frequency (MHz)**	**Average Power (dBm)**	**Tune-up power (dBm)**
BLE	1Mbps	CH 00	2402	4.31	4.5
		CH 19	2440	**5.76**	6.0
		CH 39	2480	3.56	4.0

Remark:

Bluetooth maximum output power is 4.310dBm and Maximum Tune-Up output power is 4.50dBm,. Per KDB 447498 D01 V06, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR,16 where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation17
- The result is rounded to one decimal place for comparison

Bluetooth:

Tune-Up Power (dBm)	Max. Power (mW)	Distance (mm)	Frequency (GHz)	Result	Limit
6.0	3.98	5	2.48	1.254	3

The exclusion thresholds is 1.254< 3, therefore, the RF exposure evaluation is not required.

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**					
	GSM	Right Cheek	128	824.2	33.16	33.5	1.081	0.333	0.360
	GSM	Right Tilted	128	824.2	33.16	33.5	1.081	0.198	0.214
1.	GSM	Left Cheek	128	824.2	33.16	33.5	1.081	0.476	**0.515**
	GSM	Left Tilted	128	824.2	33.16	33.5	1.081	0.213	0.230

GPRS850 – 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**					
	GPRS_4TX	Right Cheek	128	824.2	28.87	29.0	1.030	0.394	0.406
	GPRS_4TX	Right Tilted	128	824.2	28.87	29.0	1.030	0.248	0.256
2.	GPRS_4TX	Left Cheek	128	824.2	28.87	29.0	1.030	0.443	**0.456**
	GPRS_4TX	Left Tilted	128	824.2	28.87	29.0	1.030	0.235	0.242

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	810	1909.8	30.21	30.5	1.069	0.400	0.428
	GSM	Right Tilted	810	1909.8	30.21	30.5	1.069	0.231	0.247
3.	GSM	Left Cheek	810	1909.8	30.21	30.5	1.069	0.586	**0.626**
	GSM	Left Tilted	810	1909.8	30.21	30.5	1.069	0.268	0.287

GPRS1900 – 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.	**M Hz**					
	GPRS_4TX	Right Cheek	810	1909.8	25.91	26.0	1.021	0.491	0.501
	GPRS_4TX	Right Tilted	810	1909.8	25.91	26.0	1.021	0.271	0.277
4.	GPRS_4TX	Left Cheek	810	1909.8	25.91	26.0	1.021	0.601	**0.614**
	GPRS_4TX	Left Tilted	810	1909.8	25.91	26.0	1.021	0.342	0.349

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**					
5.	RMC	Right Cheek	9262	1852.4	22.54	23.0	1.112	0.740	**0.823**
	RMC	Right Tilted	9262	1852.4	22.54	23.0	1.112	0.369	0.410
	RMC	Left Cheek	9262	1852.4	22.54	23.0	1.112	0.554	0.616
	RMC	Left Tilted	9262	1852.4	22.54	23.0	1.112	0.283	0.315
	RMC	Right Cheek	9400	1880.0	22.53	23.0	1.114	0.705	0.786
	RMC	Right Cheek	9538	1907.6	22.53	23.0	1.114	0.721	0.803

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**					
6.	RMC	Right Cheek	4183	836.4	22.06	22.5	1.107	0.319	**0.353**
	RMC	Right Tilted	4183	836.4	22.06	22.5	1.107	0.184	0.204
	RMC	Left Cheek	4183	836.4	22.06	22.5	1.107	0.289	0.320
	RMC	Left Tilted	4183	836.4	22.06	22.5	1.107	0.198	0.219

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	1413	1732.6	21.65	22.0	1.084	0.345	0.374
	RMC	Right Tilted	1413	1732.6	21.65	22.0	1.084	0.235	0.255
7.	RMC	Left Cheek	1413	1732.6	21.65	22.0	1.084	0.552	**0.598**
	RMC	Left Tilted	1413	1732.6	21.65	22.0	1.084	0.426	0.462

LTE Band 2– Head SAR Test								
Plot No.	**Mode**	**Test Position**	**Frequency**	**Output Power**	**Rated Limit**	**Scaling Factor**	**SAR1g**	**Scaled SAR1g**
	Modulation, Bandwidth, RB	**Head**	**MHz**	**(dBm)**	**(dBm)**		**(W/kg)**	**(W/kg)**
	QPSK 20MHz 1RB	Right Cheek	1860.0	22.62	23.0	1.091	0.403	0.440
	QPSK 20MHz 1RB	Right Tilted	1860.0	22.62	23.0	1.091	0.302	0.330
8.	QPSK 20MHz 1RB	Left Cheek	1860.0	22.62	23.0	1.091	0.869	**0.948**
	QPSK 20MHz 1RB	Left Tilted	1860.0	22.62	23.0	1.091	0.728	0.795
	QPSK 20MHz 1RB	Left Cheek	1880.0	22.34	22.5	1.038	0.843	0.875
	QPSK 20MHz 1RB	Left Cheek	1900.0	22.49	22.5	1.002	0.800	0.802
	QPSK 20MHz 50%RB	Right Cheek	1860.0	22.62	23.0	1.091	0.345	0.377
	QPSK 20MHz 50%RB	Right Tilted	1860.0	22.62	23.0	1.091	0.211	0.230
	QPSK 20MHz 50%RB	Left Cheek	1860.0	22.62	23.0	1.091	0.723	0.789
	QPSK 20MHz 50%RB	Left Tilted	1860.0	22.62	23.0	1.091	0.632	0.690

LTE Band 4– Head SAR Test								
Plot No.	**Mode**	**Test Position**	**Frequency**	**Output Power**	**Rated Limit**	**Scaling Factor**	**SAR1g**	**Scaled SAR1g**
	Modulation, Bandwidth, RB	**Head**	**MHz**	**(dBm)**	**(dBm)**		**(W/kg)**	**(W/kg)**
	QPSK 10MHz 1RB	Right Cheek	1750.0	23.92	24.0	1.019	0.674	0.687
	QPSK 10MHz 1RB	Right Tilted	1750.0	23.92	24.0	1.019	0.308	0.314
	QPSK 10MHz 1RB	Left Cheek	1750.0	23.92	24.0	1.019	0.687	0.700
	QPSK 10MHz 1RB	Left Tilted	1750.0	23.92	24.0	1.019	0.355	0.362
	QPSK 10MHz 50%RB	Right Cheek	1750.0	23.92	24.0	1.019	0.634	0.646
	QPSK 10MHz 50%RB	Right Tilted	1750.0	23.92	24.0	1.019	0.303	0.309
	QPSK 10MHz 50%RB	Left Cheek	1750.0	23.92	24.0	1.019	0.667	0.679
	QPSK 10MHz 50%RB	Left Tilted	1750.0	23.92	24.0	1.019	0.312	0.318
	QPSK 20MHz 1RB	Right Cheek	1720.0	23.73	24.0	1.064	0.721	0.767
	QPSK 20MHz 1RB	Right Tilted	1720.0	23.73	24.0	1.064	0.321	0.342
9.	QPSK 20MHz 1RB	Left Cheek	1720.0	23.73	24.0	1.064	0.741	**0.789**
	QPSK 20MHz 1RB	Left Tilted	1720.0	23.73	24.0	1.064	0.375	0.399
	QPSK 20MHz 50%RB	Right Cheek	1720.0	23.73	24.0	1.064	0.613	0.652
	QPSK 20MHz 50%RB	Right Tilted	1720.0	23.73	24.0	1.064	0.311	0.331
	QPSK 20MHz 50%RB	Left Cheek	1720.0	23.73	24.0	1.064	0.672	0.715
	QPSK 20MHz 50%RB	Left Tilted	1720.0	23.73	24.0	1.064	0.342	0.364

LTE Band 7– Head SAR Test								
Plot No.	**Mode**	**Test Position**	**Frequency**	**Output Power**	**Rated Limit**	**Scaling Factor**	**SAR1g (W/kg)**	**Scaled SAR1g (W/kg)**
	Modulation, Bandwidth	**Head**	**MHz**	**(dBm)**	**(dBm)**			
	QPSK 20MHz 1RB	Right Cheek	2535.0	22.17	22.5	1.079	0.370	0.399
	QPSK 20MHz 1RB	Right Tilted	2535.0	22.17	22.5	1.079	0.262	0.283
10.	QPSK 20MHz 1RB	Left Cheek	2535.0	22.17	22.5	1.079	0.740	**0.798**
	QPSK 20MHz 1RB	Left Tilted	2535.0	22.17	22.5	1.079	0.375	0.405
	QPSK 20MHz 50%RB	Right Cheek	2535.0	22.17	22.5	1.079	0.307	0.331
	QPSK 20MHz 50%RB	Right Tilted	2535.0	22.17	22.5	1.079	0.164	0.177
	QPSK 20MHz 50%RB	Left Cheek	2535.0	22.17	22.5	1.079	0.610	0.658
	QPSK 20MHz 50%RB	Left Tilted	2535.0	22.17	22.5	1.079	0.309	0.333

LTE Band 66– Head SAR Test								
Plot No.	**Mode**	**Test Position**	**Frequency**	**Output Power**	**Rated Limit**	**Scaling Factor**	**SAR1g (W/kg)**	**Scaled SAR1g (W/kg)**
	Modulation, Bandwidth, RB	**Head**	**MHz**	**(dBm)**	**(dBm)**			
	QPSK 1.4MHz 1RB	Right Cheek	1745.0	23.82	24.0	1.042	0.681	0.710
	QPSK 1.4MHz 1RB	Right Tilted	1745.0	23.82	24.0	1.042	0.337	0.351
	QPSK 1.4MHz 1RB	Left Cheek	1745.0	23.82	24.0	1.042	0.608	0.634
	QPSK 1.4MHz 1RB	Left Tilted	1745.0	23.82	24.0	1.042	0.305	0.318
	QPSK 1.4MHz 50%RB	Right Cheek	1745.0	23.82	24.0	1.042	0.611	0.637
	QPSK 1.4MHz 50%RB	Right Tilted	1745.0	23.82	24.0	1.042	0.297	0.310
	QPSK 1.4MHz 50%RB	Left Cheek	1745.0	23.82	24.0	1.042	0.513	0.535
	QPSK 1.4MHz 50%RB	Left Tilted	1745.0	23.82	24.0	1.042	0.235	0.245
11.	QPSK 20MHz 1RB	Right Cheek	1745.0	23.41	23.5	1.021	0.717	**0.732**
	QPSK 20MHz 1RB	Right Tilted	1745.0	23.41	23.5	1.021	0.359	0.367
	QPSK 20MHz 1RB	Left Cheek	1745.0	23.41	23.5	1.021	0.636	0.649
	QPSK 20MHz 1RB	Left Tilted	1745.0	23.41	23.5	1.021	0.328	0.335
	QPSK 20MHz 50%RB	Right Cheek	1745.0	23.41	23.5	1.021	0.634	0.647
	QPSK 20MHz 50%RB	Right Tilted	1745.0	23.41	23.5	1.021	0.317	0.324
	QPSK 20MHz 50%RB	Left Cheek	1745.0	23.41	23.5	1.021	0.539	0.550
	QPSK 20MHz 50%RB	Left Tilted	1745.0	23.41	23.5	1.021	0.271	0.277

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	06	2437	15.65	16.0	1.084	0.392	0.425
	802.11b	Right Tilted	06	2437	15.65	16.0	1.084	0.204	0.221
12.	802.11b	Left Cheek	06	2437	15.65	16.0	1.084	0.413	**0.448**
	802.11b	Left Tilted	06	2437	15.65	16.0	1.084	0.229	0.248

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					
13.	GSM	Back	128	824.2	33.16	33.5	1.081	0.547	**0.592**
	GSM	Front	128	824.2	33.16	33.5	1.081	0.415	0.449

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					
14.	GSM	Back	810	1909.8	30.21	30.5	1.069	0.517	**0.553**
	GSM	Front	810	1909.8	30.21	30.5	1.069	0.489	0.523

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					
15.	RMC 12.2k	Back Side	9262	1852.4	22.54	23.0	1.112	0.739	**0.822**
	RMC 12.2k	Front Face	9262	1852.4	22.54	23.0	1.112	0.321	0.357
	RMC 12.2k	Back Side	9400	1880.0	22.53	23.0	1.114	0.691	0.770
	RMC 12.2k	Back Side	9538	1907.6	22.53	23.0	1.114	0.654	0.729

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					
16.	RMC 12.2k	Back Side	4183	836.4	22.06	22.5	1.107	0.500	**0.553**
	RMC 12.2k	Front Side	4183	836.4	22.06	22.5	1.107	0.275	0.304

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					
17.	RMC 12.2k	Back Side	1413	1732.6	21.65	22.0	1.084	0.568	**0.616**
	RMC 12.2k	Front Side	1413	1732.6	21.65	22.0	1.084	0.489	0.530

LTE Band 2–Body SAR Test (Gap: 10mm)								
Plot No.	**Mode**	**Test Position**	**Frequency**	**Output Power**	**Rated Limit**	**Scaling Factor**	**SAR1g (W/kg)**	**Scaled SAR1g (W/kg)**
	Modulation, Bandwidth, RB	**Body**	**MHz**	**(dBm)**	**(dBm)**			
18.	QPSK 20MHz 1RB	Back Face	1860.0	22.62	23.0	1.091	0.586	**0.640**
	QPSK 20MHz 1RB	Front Face	1860.0	22.62	23.0	1.091	0.467	0.510
	QPSK 20MHz 50%RB	Back Face	1860.0	22.62	23.0	1.091	0.432	0.472
	QPSK 20MHz 50%RB	Front Face	1860.0	22.62	23.0	1.091	0.380	0.415

LTE Band 4–Body SAR Test (Gap: 10mm)								
Plot No.	**Mode**	**Test Position**	**Frequency**	**Output Power**	**Rated Limit**	**Scaling Factor**	**SAR1g (W/kg)**	**Scaled SAR1g (W/kg)**
	Modulation, Bandwidth, RB	**Body**	**MHz**	**(dBm)**	**(dBm)**			
	QPSK 10MHz 1RB	Back Face	1750.0	23.92	24.0	1.019	0.741	0.755
	QPSK 10MHz 1RB	Front Face	1750.0	23.92	24.0	1.019	0.628	0.640
	QPSK 10MHz 50%RB	Back Face	1750.0	23.92	24.0	1.019	0.657	0.669
	QPSK 10MHz 50%RB	Front Face	1750.0	23.92	24.0	1.019	0.534	0.544
19.	QPSK 20MHz 1RB	Back Face	1720.0	23.73	24.0	1.064	0.751	**0.799**
	QPSK 20MHz 1RB	Front Face	1720.0	23.73	24.0	1.064	0.656	0.698
	QPSK 20MHz 50%RB	Back Face	1720.0	23.73	24.0	1.064	0.683	0.727
	QPSK 20MHz 50%RB	Front Face	1720.0	23.73	24.0	1.064	0.561	0.597

LTE Band 7–Body SAR Test (Gap: 10mm)								
Plot No.	**Mode**	**Test Position**	**Frequency**	**Output Power**	**Rated Limit**	**Scaling Factor**	**SAR1g (W/kg)**	**Scaled SAR1g (W/kg)**
	Modulation, Bandwidth, RB	**Body**	**MHz**	**(dBm)**	**(dBm)**			
20.	QPSK 20MHz 1RB	Back Face	2535.0	22.17	22.5	1.079	0.732	**0.790**
	QPSK 20MHz 1RB	Front Face	2535.0	22.17	22.5	1.079	0.703	0.758
	QPSK 20MHz 50%RB	Back Face	2535.0	22.17	22.5	1.079	0.665	0.717
	QPSK 20MHz 50%RB	Front Face	2535.0	22.17	22.5	1.079	0.533	0.575

LTE Band 66–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	1745.0	23.82	24.0	1.042	0.674	0.703
	QPSK 1.4MHz 1RB	Front Face	1745.0	23.82	24.0	1.042	0.645	0.672
	QPSK 1.4MHz 50%RB	Back Face	1745.0	23.82	24.0	1.042	0.642	0.669
	QPSK 1.4MHz 50%RB	Front Face	1745.0	23.82	24.0	1.042	0.498	0.519
21.	QPSK 20MHz 1RB	Back Face	1745.0	23.41	23.5	1.021	0.703	**0.718**
	QPSK 20MHz 1RB	Front Face	1745.0	23.41	23.5	1.021	0.673	0.687
	QPSK 20MHz 50%RB	Back Face	1745.0	23.41	23.5	1.021	0.666	0.680
	QPSK 20MHz 50%RB	Front Face	1745.0	23.41	23.5	1.021	0.520	0.531

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**					
22.	802.11b	Back Side	06	2437	15.65	16.0	1.084	0.215	**0.233**
	802.11b	Front Side	06	2437	15.65	16.0	1.084	0.182	0.197

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					
23.	GPRS_4TX	Back Face	128	824.2	28.87	29.0	1.030	0.544	**0.561**
	GPRS_4TX	Front Face	128	824.2	28.87	29.0	1.030	0.288	0.297
	GPRS_4TX	Right Side	128	824.2	28.87	29.0	1.030	0.084	0.087
	GPRS_4TX	Left Side	128	824.2	28.87	29.0	1.030	0.174	0.179
	GPRS_4TX	Bottom Side	128	824.2	28.87	29.0	1.030	0.346	0.357

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					
24.	GPRS_4TX	Back Face	810	1909.8	25.91	26.0	1.021	0.472	**0.482**
	GPRS_4TX	Front Face	810	1909.8	25.91	26.0	1.021	0.314	0.321
	GPRS_4TX	Right Side	810	1909.8	25.91	26.0	1.021	0.042	0.043
	GPRS_4TX	Left Side	810	1909.8	25.91	26.0	1.021	0.462	0.472
	GPRS_4TX	Bottom Side	810	1909.8	25.91	26.0	1.021	0.357	0.364

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					
25.	RMC 12.2k	Back Face	9262	1852.4	22.54	23.0	1.112	0.739	**0.822**
	RMC 12.2k	Front Face	9262	1852.4	22.54	23.0	1.112	0.321	0.357
	RMC 12.2k	Right Side	9262	1852.4	22.54	23.0	1.112	0.105	0.117
	RMC 12.2k	Left Side	9262	1852.4	22.54	23.0	1.112	0.442	0.491
	RMC 12.2k	Bottom Side	9262	1852.4	22.54	23.0	1.112	0.682	0.758
	RMC 12.2k	Back Face	9400	1880.0	22.53	23.0	1.114	0.691	0.770
	RMC 12.2k	Back Face	9538	1907.6	22.53	23.0	1.114	0.654	0.729

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					
26.	RMC 12.2k	Back Face	4183	836.4	22.06	22.5	1.107	0.500	**0.553**
	RMC 12.2k	Front Face	4183	836.4	22.06	22.5	1.107	0.275	0.304
	RMC 12.2k	Right Side	4183	836.4	22.06	22.5	1.107	0.126	0.139
	RMC 12.2k	Left Side	4183	836.4	22.06	22.5	1.107	0.236	0.261
	RMC 12.2k	Bottom Side	4183	836.4	22.06	22.5	1.107	0.306	0.339

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**					
27.	RMC 12.2k	Back Face	1413	1732.6	21.65	22.0	1.084	0.568	**0.616**
	RMC 12.2k	Front Face	1413	1732.6	21.65	22.0	1.084	0.489	0.530
	RMC 12.2k	Right Side	1413	1732.6	21.65	22.0	1.084	0.045	0.049
	RMC 12.2k	Left Side	1413	1732.6	21.65	22.0	1.084	0.254	0.275
	RMC 12.2k	Bottom Side	1413	1732.6	21.65	22.0	1.084	0.382	0.414

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**					
28.	QPSK 20MHz 1RB	Back Face	1860.0	22.62	23.0	1.091	0.586	**0.640**
	QPSK 20MHz 1RB	Front Face	1860.0	22.62	23.0	1.091	0.467	0.510
	QPSK 20MHz 1RB	Right Side	1860.0	22.62	23.0	1.091	0.037	0.040
	QPSK 20MHz 1RB	Left Side	1860.0	22.62	23.0	1.091	0.287	0.313
	QPSK 20MHz 1RB	Bottom Side	1860.0	22.62	23.0	1.091	0.392	0.428
	QPSK 20MHz 50%RB	Back Face	1860.0	22.62	23.0	1.091	0.432	0.472
	QPSK 20MHz 50%RB	Front Face	1860.0	22.62	23.0	1.091	0.380	0.415
	QPSK 20MHz 50%RB	Right Side	1860.0	22.62	23.0	1.091	0.033	0.036
	QPSK 20MHz 50%RB	Left Side	1860.0	22.62	23.0	1.091	0.241	0.263
	QPSK 20MHz 50%RB	Bottom Side	1860.0	22.62	23.0	1.091	0.328	0.358

LTE Band 4–Body SAR Test (Gap: 10mm)								
Plot No.	**Mode**	**Test Position**	**Frequency**	**Output Power**	**Rated Limit**	**Scaling Factor**	**SAR1g (W/kg)**	**Scaled SAR1g (W/kg)**
	Modulation, Bandwidth, RB	**Body**	**MHz**	**(dBm)**	**(dBm)**			
	QPSK 10MHz 1RB	Back Face	1750.0	23.92	24.0	1.019	0.741	0.755
	QPSK 10MHz 1RB	Front Face	1750.0	23.92	24.0	1.019	0.628	0.640
	QPSK 10MHz 1RB	Right Side	1750.0	23.92	24.0	1.019	0.099	0.101
	QPSK 10MHz 1RB	Left Side	1750.0	23.92	24.0	1.019	0.554	0.564
	QPSK 10MHz 1RB	Bottom Side	1750.0	23.92	24.0	1.019	0.671	0.683
	QPSK 10MHz 50%RB	Back Face	1750.0	23.92	24.0	1.019	0.657	0.669
	QPSK 10MHz 50%RB	Front Face	1750.0	23.92	24.0	1.019	0.534	0.544
	QPSK 10MHz 50%RB	Right Side	1750.0	23.92	24.0	1.019	0.078	0.079
	QPSK 10MHz 50%RB	Left Side	1750.0	23.92	24.0	1.019	0.476	0.485
	QPSK 10MHz 50%RB	Bottom Side	1750.0	23.92	24.0	1.019	0.528	0.538
29.	QPSK 20MHz 1RB	Back Face	1720.0	23.73	24.0	1.064	0.751	**0.799**
	QPSK 20MHz 1RB	Front Face	1720.0	23.73	24.0	1.064	0.656	0.698
	QPSK 20MHz 1RB	Right Side	1720.0	23.73	24.0	1.064	0.104	0.111
	QPSK 20MHz 1RB	Left Side	1720.0	23.73	24.0	1.064	0.603	0.642
	QPSK 20MHz 1RB	Bottom Side	1720.0	23.73	24.0	1.064	0.692	0.736
	QPSK 20MHz 50%RB	Back Face	1720.0	23.73	24.0	1.064	0.683	0.727
	QPSK 20MHz 50%RB	Front Face	1720.0	23.73	24.0	1.064	0.561	0.597
	QPSK 20MHz 50%RB	Right Side	1720.0	23.73	24.0	1.064	0.085	0.090
	QPSK 20MHz 50%RB	Left Side	1720.0	23.73	24.0	1.064	0.500	0.532
	QPSK 20MHz 50%RB	Bottom Side	1720.0	23.73	24.0	1.064	0.567	0.603

LTE Band 7–Body SAR Test (Gap: 10mm)								
Plot No.	**Mode**	**Test Position**	**Frequency**	**Output Power**	**Rated Limit**	**Scaling Factor**	**SAR1g (W/kg)**	**Scaled SAR1g (W/kg)**
	Modulation, Bandwidth, RB	**Body**	**MHz**	**(dBm)**	**(dBm)**			
30.	QPSK 20MHz 1RB	Back Face	2535.0	22.17	22.5	1.079	0.732	**0.790**
	QPSK 20MHz 1RB	Front Face	2535.0	22.17	22.5	1.079	0.703	0.758
	QPSK 20MHz 1RB	Right Side	2535.0	22.17	22.5	1.079	0.068	0.073
	QPSK 20MHz 1RB	Left Side	2535.0	22.17	22.5	1.079	0.564	0.609
	QPSK 20MHz 1RB	Bottom Side	2535.0	22.17	22.5	1.079	0.584	0.630
	QPSK 20MHz 50%RB	Back Face	2535.0	22.17	22.5	1.079	0.665	0.717
	QPSK 20MHz 50%RB	Front Face	2535.0	22.17	22.5	1.079	0.533	0.575
	QPSK 20MHz 50%RB	Right Side	2535.0	22.17	22.5	1.079	0.056	0.060
	QPSK 20MHz 50%RB	Left Side	2535.0	22.17	22.5	1.079	0.458	0.494
	QPSK 20MHz 50%RB	Bottom Side	2535.0	22.17	22.5	1.079	0.483	0.521

LTE Band 66–Body SAR Test (Gap: 10mm)								
Plot No.	**Mode**	**Test Position**	**Frequency**	**Output Power**	**Rated Limit**	**Scaling Factor**	**SAR1g (W/kg)**	**Scaled SAR1g (W/kg)**
	Modulation, Bandwidth, RB	**Body**	**MHz**	**(dBm)**	**(dBm)**			
	QPSK 1.4MHz 1RB	Back Face	1745.0	23.82	24.0	1.042	0.674	0.703
	QPSK 1.4MHz 1RB	Front Face	1745.0	23.82	24.0	1.042	0.645	0.672
	QPSK 1.4MHz 1RB	Right Side	1745.0	23.82	24.0	1.042	0.108	0.113
	QPSK 1.4MHz 1RB	Left Side	1745.0	23.82	24.0	1.042	0.571	0.595
	QPSK 1.4MHz 1RB	Bottom Side	1745.0	23.82	24.0	1.042	0.673	0.701
	QPSK 1.4MHz 50%RB	Back Face	1745.0	23.82	24.0	1.042	0.642	0.669
	QPSK 1.4MHz 50%RB	Front Face	1745.0	23.82	24.0	1.042	0.498	0.519
	QPSK 1.4MHz 50%RB	Right Side	1745.0	23.82	24.0	1.042	0.087	0.091
	QPSK 1.4MHz 50%RB	Left Side	1745.0	23.82	24.0	1.042	0.486	0.507
	QPSK 1.4MHz 50%RB	Bottom Side	1745.0	23.82	24.0	1.042	0.547	0.570
31.	QPSK 20MHz 1RB	Back Face	1745.0	23.41	23.5	1.021	0.703	**0.718**
	QPSK 20MHz 1RB	Front Face	1745.0	23.41	23.5	1.021	0.673	0.687
	QPSK 20MHz 1RB	Right Side	1745.0	23.41	23.5	1.021	0.114	0.116
	QPSK 20MHz 1RB	Left Side	1745.0	23.41	23.5	1.021	0.587	0.599
	QPSK 20MHz 1RB	Bottom Side	1745.0	23.41	23.5	1.021	0.689	0.703
	QPSK 20MHz 50%RB	Back Face	1745.0	23.41	23.5	1.021	0.666	0.680
	QPSK 20MHz 50%RB	Front Face	1745.0	23.41	23.5	1.021	0.520	0.531
	QPSK 20MHz 50%RB	Right Side	1745.0	23.41	23.5	1.021	0.094	0.096
	QPSK 20MHz 50%RB	Left Side	1745.0	23.41	23.5	1.021	0.505	0.516
	QPSK 20MHz 50%RB	Bottom Side	1745.0	23.41	23.5	1.021	0.576	0.588

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					
32.	802.11b	Back Face	06	2437	15.65	16.0	1.084	0.215	**0.233**
	802.11b	Front Face	06	2437	15.65	16.0	1.084	0.182	0.197
	802.11b	Right Side	06	2437	15.65	16.0	1.084	0.060	0.065
	802.11b	Top Side	06	2437	15.65	16.0	1.084	0.203	0.220

Repeated SAR

LTE Band 2– Head SAR Test							
Mode	Test Position Body	Frequency	SAR1g (W/kg)	Repeated SAR		Ratio	
		MHz		1	2	1	2
QPSK 20MHz 1RB	Left Cheek	1860.0	0.869	0.858	/	1.013	/
QPSK 20MHz 1RB	Left Cheek	1880.0	0.843	0.839	/	1.005	/
QPSK 20MHz 1RB	Left Cheek	1900.0	0.800	0.798	/	1.003	/

Remark:

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

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

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

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

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) + Bluetooth(Data)	Yes	Yes
5	WCDMA (Voice/Data) + Bluetooth(Data)	Yes	Yes
6	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. According to the KDB 447498 D01 v06, when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)/x] W/kg for test separation distances ≤ 50 mm;

where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.

For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01 v06 as below:

Bluetooth:

Tune-Up Power (dBm)	Max. Power (mW)	Distance (mm)	Frequency (GHz)	X	SAR(1g) 5mm	SAR(1g) 10mm
6.0	3.98	5/10	2.48	7.5	0.167	0.084

4. The maximum SAR summation is calculated based on the same configuration and test position.

Head SAR

WWAN and WLAN

	WWAN		WLAN(2.4GHz)	Summed SAR (W/kg)
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Right Cheek	GSM	0.501	0.425	0.926
Right Tilted	GSM	0.277	0.221	0.498
Left Cheek	GSM	**0.626**	**0.448**	1.074
Left Tilted	GSM	0.349	0.248	0.597
Right Cheek	WCDMA	**0.823**	0.425	1.248
Right Tilted	WCDMA	0.410	0.221	0.631
Left Cheek	WCDMA	0.616	**0.448**	1.064
Left Tilted	WCDMA	0.462	0.248	0.710
Right Cheek	LTE	0.767	0.425	1.192
Right Tilted	LTE	0.342	0.221	0.563
Left Cheek	LTE	**0.948**	**0.448**	**1.396**
Left Tilted	LTE	0.795	0.248	1.043

WWAN and Bluetooth

	WWAN		Bluetooth	Summed SAR (W/kg)
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Right Cheek	GSM	0.501	0.167	0.668
Right Tilted	GSM	0.277	0.167	0.444
Left Cheek	GSM	**0.626**	0.167	0.793
Left Tilted	GSM	0.349	0.167	0.516
Right Cheek	WCDMA	**0.823**	0.167	0.990
Right Tilted	WCDMA	0.410	0.167	0.577
Left Cheek	WCDMA	0.616	0.167	0.783
Left Tilted	WCDMA	0.462	0.167	0.629
Right Cheek	LTE	0.767	0.167	0.934
Right Tilted	LTE	0.342	0.167	0.509
Left Cheek	LTE	**0.948**	0.167	**1.115**
Left Tilted	LTE	0.795	0.167	0.962

Body-worn SAR

WWAN and WLAN

	WWAN		WLAN(2.4GHz)	Summed SAR (W/kg)
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Back	GSM	**0.592**	**0.233**	0.825
Front	GSM	0.449	0.197	0.646
Back	WCDMA	**0.822**	**0.233**	**1.055**
Front	WCDMA	0.530	0.197	0.727
Back	LTE	**0.799**	**0.233**	1.032
Front	LTE	0.758	0.197	0.955

WWAN and Bluetooth

	WWAN		Bluetooth	Summed SAR (W/kg)
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Back	GSM	**0.592**	0.084	0.676
Front	GSM	0.449	0.084	0.533
Back	WCDMA	**0.822**	0.084	**0.906**
Front	WCDMA	0.530	0.084	0.614
Back	LTE	**0.799**	0.084	0.883
Front	LTE	0.758	0.084	0.842

Hotspot SAR

WWAN and WLAN

	WWAN		WLAN(2.4GHz)	Summed SAR (W/kg)
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Back	GSM	**0.561**	**0.233**	0.794
Front	GSM	0.321	0.197	0.518
Right side	GSM	0.087	0.065	0.152
Left side	GSM	0.472	--	0.472
Top side	GSM	--	0.220	0.220
Bottom side	GSM	0.364	--	0.364
Back	WCDMA	**0.822**	**0.233**	**1.055**
Front	WCDMA	0.530	0.197	0.727
Right side	WCDMA	0.139	0.065	0.204
Left side	WCDMA	0.491	--	0.491
Top side	WCDMA	--	0.220	0.220
Bottom side	WCDMA	0.758	--	0.758
Back	LTE	**0.799**	**0.233**	1.032
Front	LTE	0.758	0.197	0.955
Right side	LTE	0.116	0.065	0.181
Left side	LTE	0.642	--	0.642
Top side	LTE	--	0.220	0.220
Bottom side	LTE	0.736	--	0.736

WWAN and Bluetooth

	WWAN		Bluetooth	Summed SAR (W/kg)
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Back	GSM	**0.561**	0.084	0.645
Front	GSM	0.321	0.084	0.405
Right side	GSM	0.087	0.084	0.171
Left side	GSM	0.472	0.084	0.556
Top side	GSM	--	0.084	0.084
Bottom side	GSM	0.364	0.084	0.448
Back	WCDMA	**0.822**	0.084	**0.906**
Front	WCDMA	0.530	0.084	0.614
Right side	WCDMA	0.139	0.084	0.223
Left side	WCDMA	0.491	0.084	0.575
Top side	WCDMA	--	0.084	0.084
Bottom side	WCDMA	0.758	0.084	0.842
Back	LTE	**0.799**	0.084	0.883
Front	LTE	0.758	0.084	0.842
Right side	LTE	0.116	0.084	0.200
Left side	LTE	0.642	0.084	0.726
Top side	LTE	--	0.084	0.084
Bottom side	LTE	0.736	0.084	0.820

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	√3	(1_Cp)^1/2	(1_Cp)^1/2	1.02	1.02	∝
Hemispherical Isotropy	E.2.2	4.0	R	√3	(Cp)^1/2	(Cp)^1/2	1.63	1.63	∝
Boundary effect	E.2.3	1.0	R	√3	1	1	0.58	0.58	∝
Linearity	E.2.4	5.0	R	√3	1	1	2.89	2.89	∝
System detection limits	E.2.5	1.0	R	√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	√3	1	1	1.73	1.73	∝
Integration Time	E.2.8	2.0	R	√3	1	1	1.15	1.15	∝
RF ambient Conditions – Noise	E.6.1	0	R	√3	1	1	1.73	1.73	∝
RF ambient Conditions - Reflections	E.6.1	0	R	√3	1	1	1.73	1.73	∝
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	√3	1	1	1.15	1.15	∝
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	√3	1	1	0.03	0.03	∝
Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation	E.5	5.0	R	√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	√3	1	1	6.94	6.94	∝
SAR scaling	E6.5	0.0	R	√3	1	1	0.0	0.0	∝
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	√3	1	1	0.03	0.03	∝
Uncertainty in SAR correction for deviations in permittivity and conductivity	E3.2	1.9	R	√3	1	0.84	1.10	0.90	∝

Liquid conductivity - deviation from target value	E.3.2	5.00	R	√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	√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

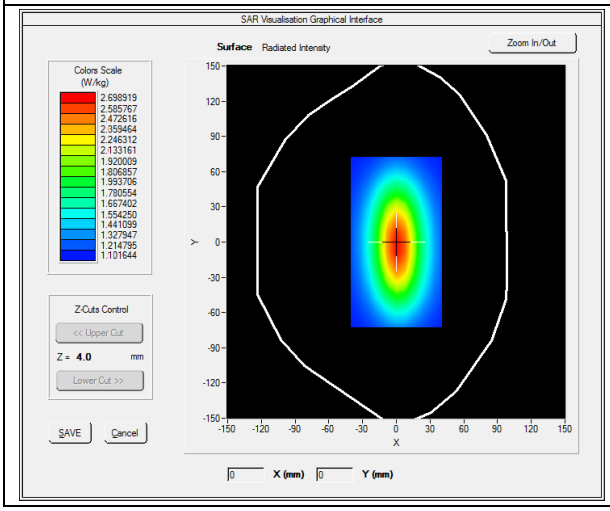
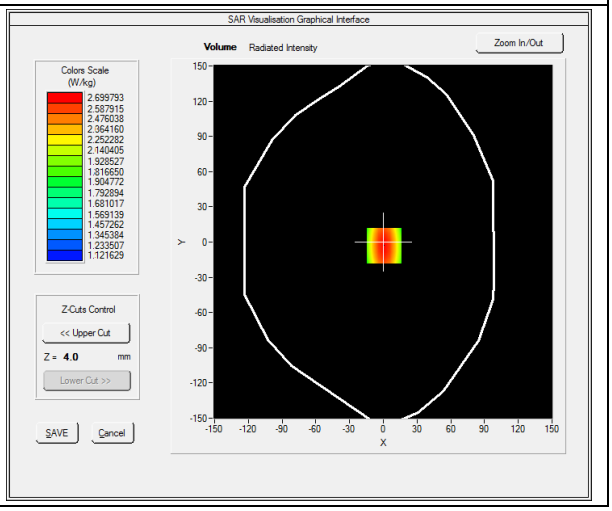
Type: Validation measurement (Fast, 75.00 %)
Measurement duration: 12 minutes 21 seconds
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 1.71; Calibrated: 2021-07-16

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
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)	40.382156
Conductivity (S/m)	0.910439
Power Variation (%)	1.420000
Ambient Temperature	22.3
Liquid Temperature	22.3

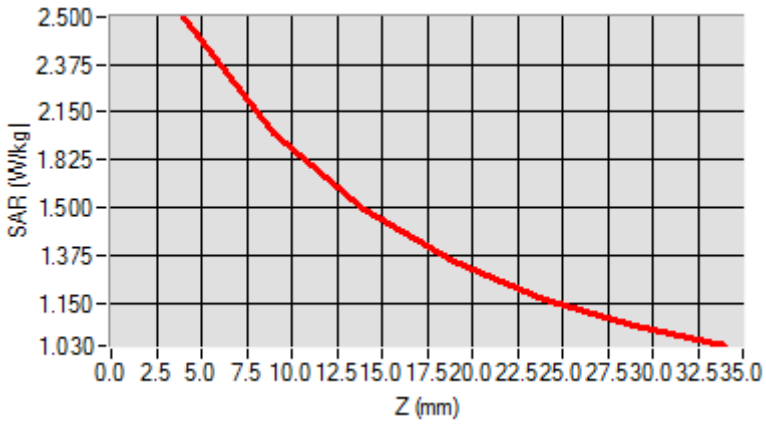
SURFACE SAR	VOLUME SAR
	

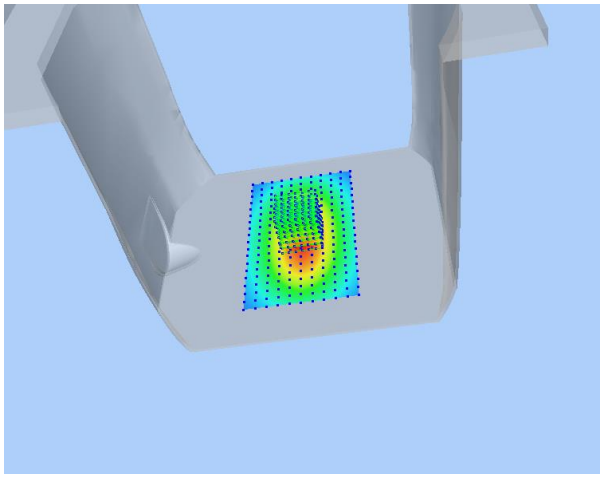
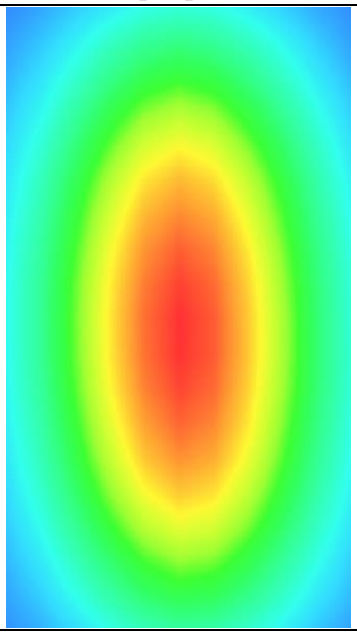
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	**1.581074**
SAR 1g (W/Kg)	**2.470352**

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

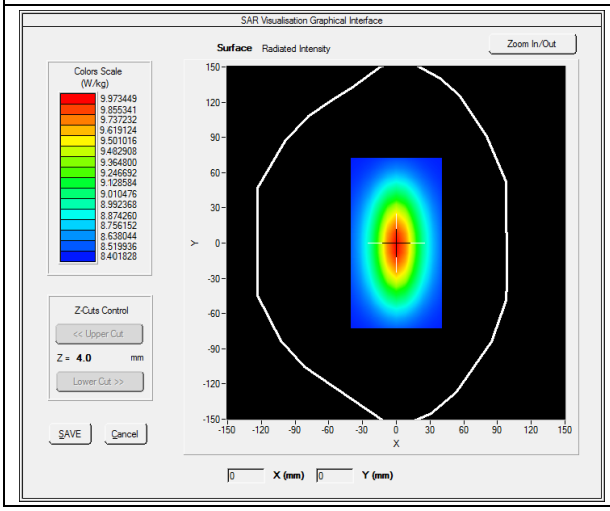
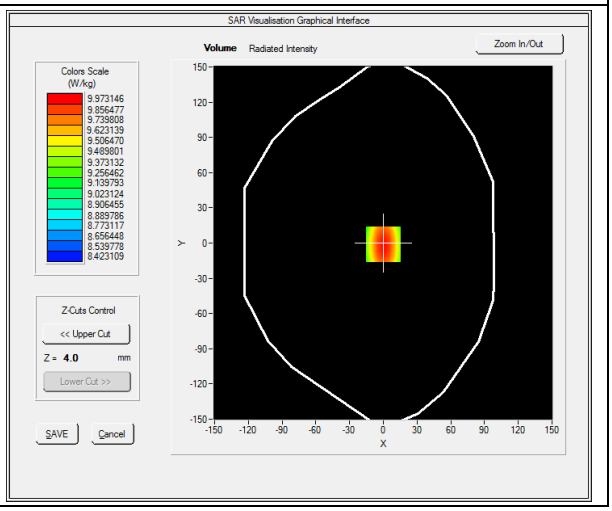
Type: Validation measurement (Fast, 75.00 %)
Measurement duration: 12 minutes 21 seconds
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.11; Calibrated: 2021-07-16

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
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)	41.691709
Conductivity (S/m)	1.412510
Power Variation (%)	1.041232
Ambient Temperature	22.3
Liquid Temperature	22.3

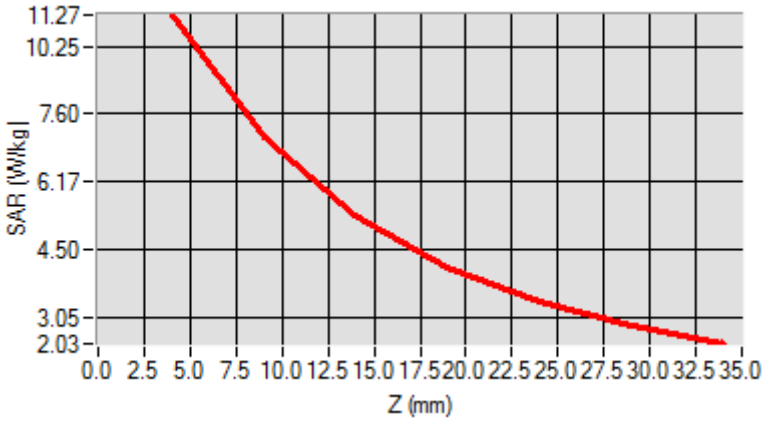
SURFACE SAR	VOLUME SAR
	

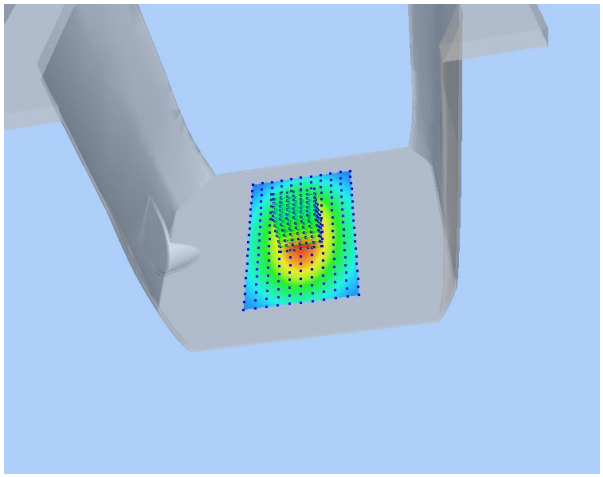
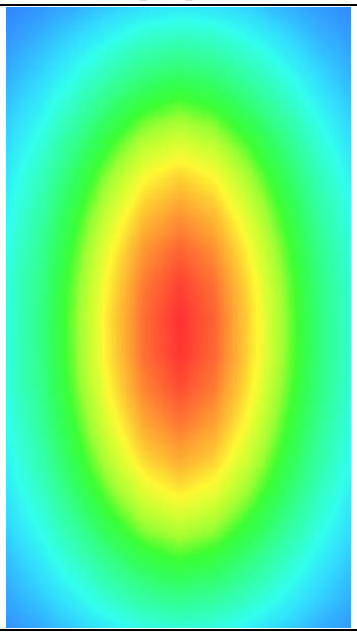
Maximum location: X=0.00, Y=0.00

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

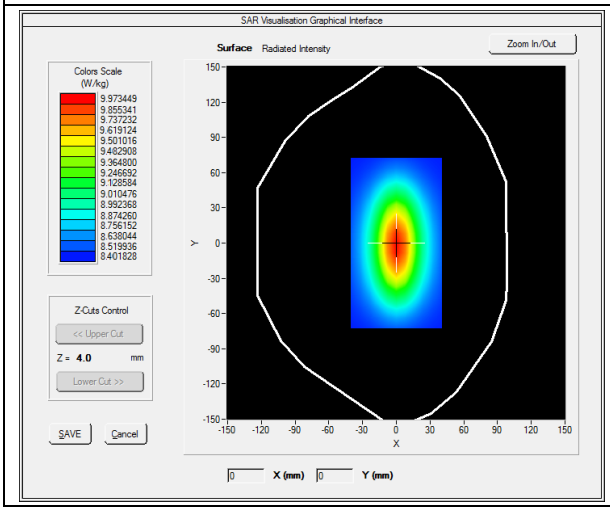
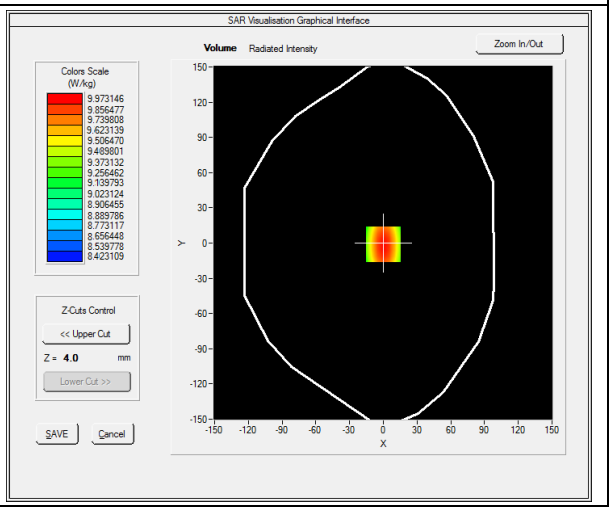
Type: Validation measurement (Fast, 75.00 %)
Measurement duration: 12 minutes 21 seconds
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.21; Calibrated: 2021-07-16

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Validation plane
Device Position	Dipole
Band	CW1900
Signal	CW (Crest factor: 1.0)

B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative Permittivity (real part)	40.764379
Conductivity (S/m)	1.413746
Power Variation (%)	-1.710000
Ambient Temperature	22.3
Liquid Temperature	22.3

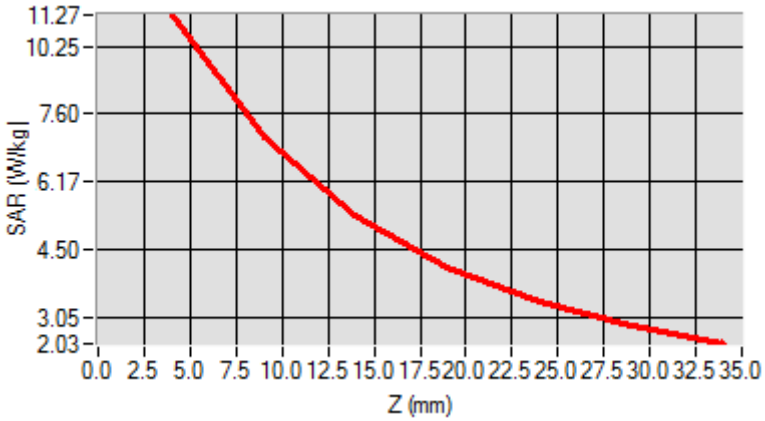
SURFACE SAR	VOLUME SAR
	

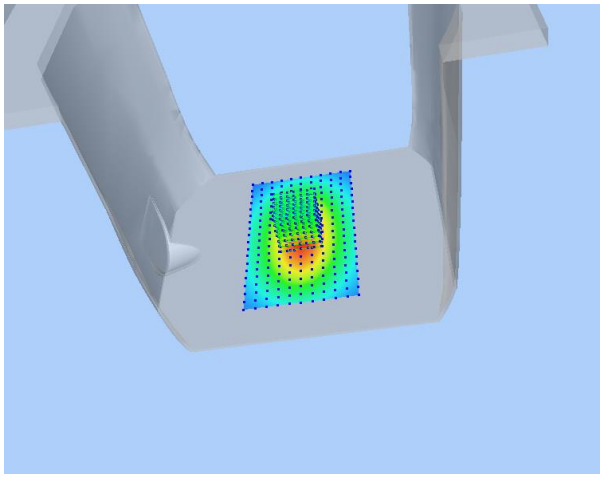
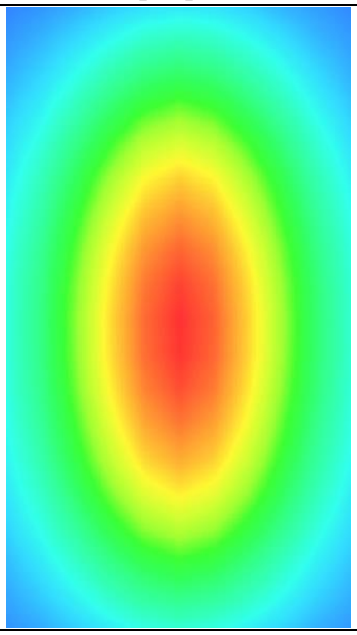
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	**5.281504**
SAR 1g (W/Kg)	**9.970523**

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 4

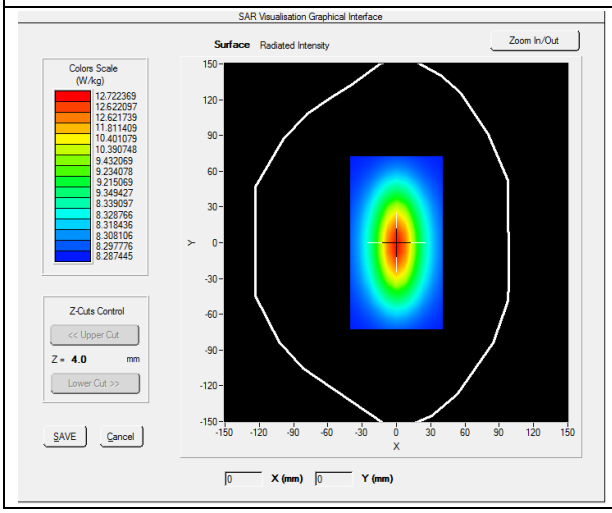
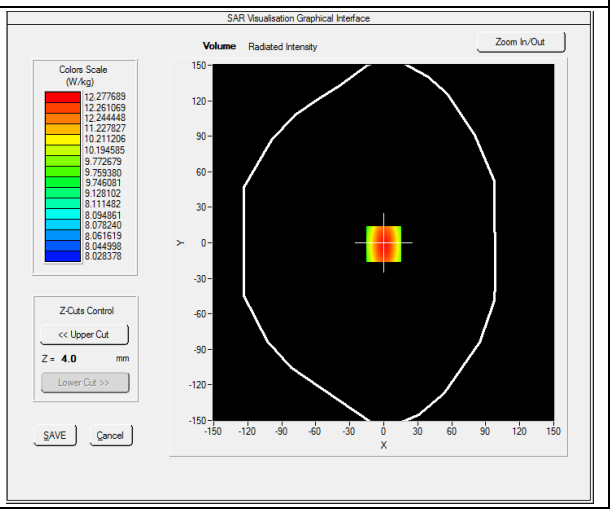
Type: Validation measurement (Fast, 75.00 %)
Measurement duration: 12 minutes 21 seconds
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.29; Calibrated: 2021-07-16

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Signal	CW (Crest factor: 1.0)

B. SAR Measurement Results

Frequency (MHz)	2450.000000
Relative Permittivity (real part)	40.850317
Conductivity (S/m)	1.833504
Power Variation (%)	-1.220000
Ambient Temperature	22.3
Liquid Temperature	22.3

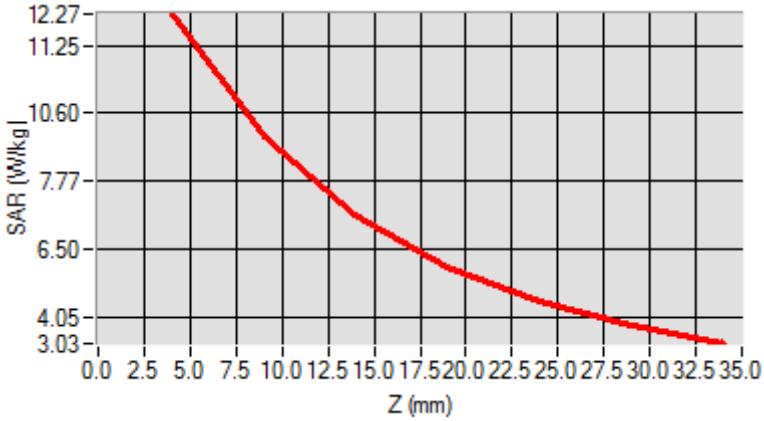
SURFACE SAR	VOLUME SAR
	

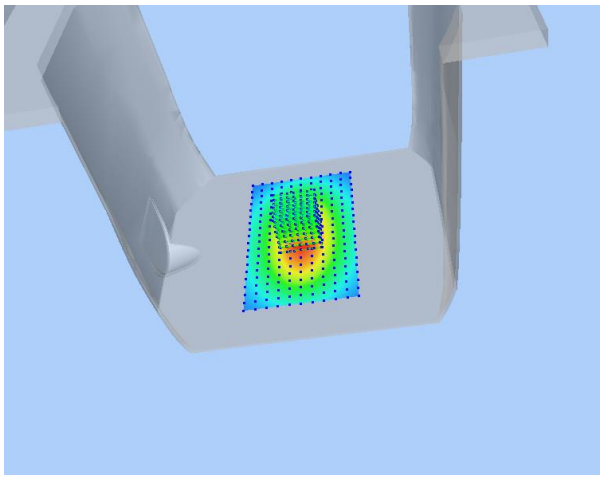
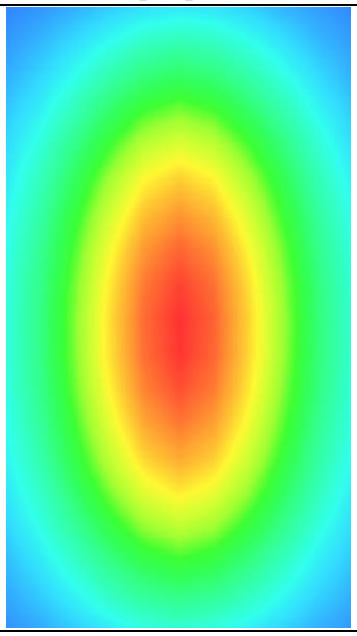
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	**6.053726**
SAR 1g (W/Kg)	**13.561382**

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	12.2365	10.3321	8.4512	6.4365	5.6123	3.5621



3D screen shot	Hot spot position
	

MEASUREMENT 5

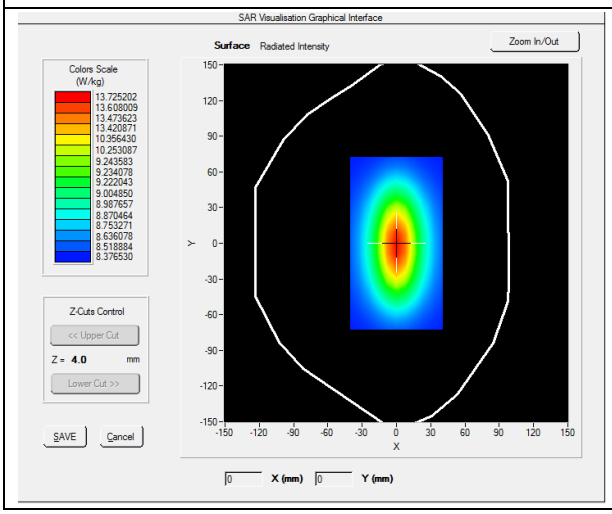
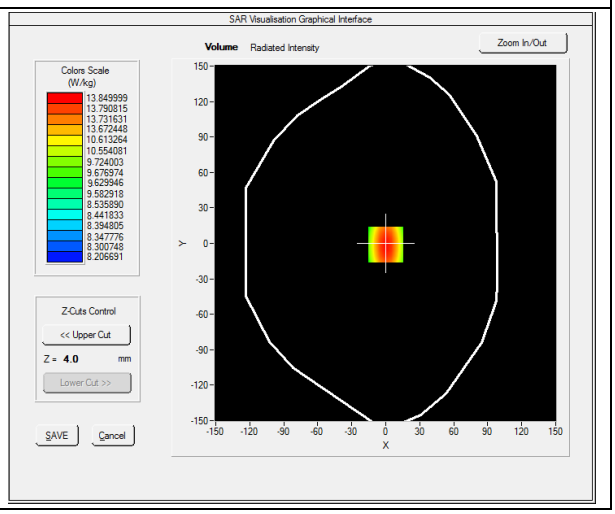
Type: Validation measurement (Fast, 75.00 %)
Measurement duration: 12 minutes 21 seconds
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.22; Calibrated: 2021-07-16

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Validation plane
Device Position	Dipole
Band	CW2600
Signal	CW (Crest factor: 1.0)

B. SAR Measurement Results

Frequency (MHz)	2600.000000
Relative Permittivity (real part)	51.944092
Conductivity (S/m)	2.183182
Power Variation (%)	0.886021
Ambient Temperature	22.3
Liquid Temperature	22.3

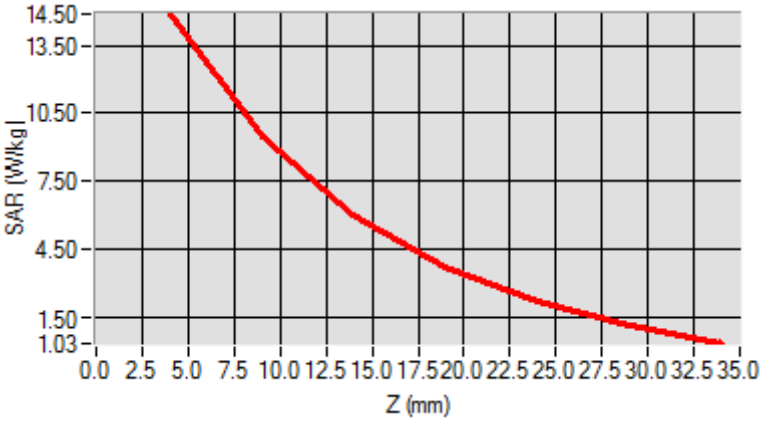
SURFACE SAR	**VOLUME SAR**
	

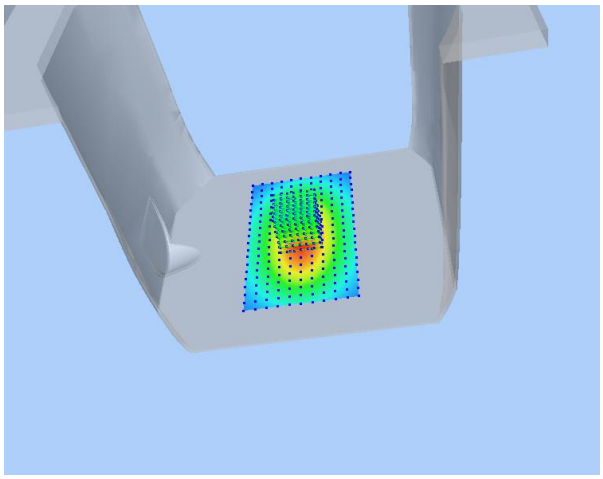
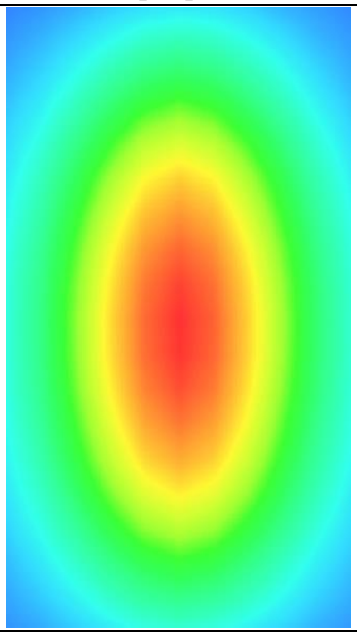
Maximum location: X=0.00, Y=0.00

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

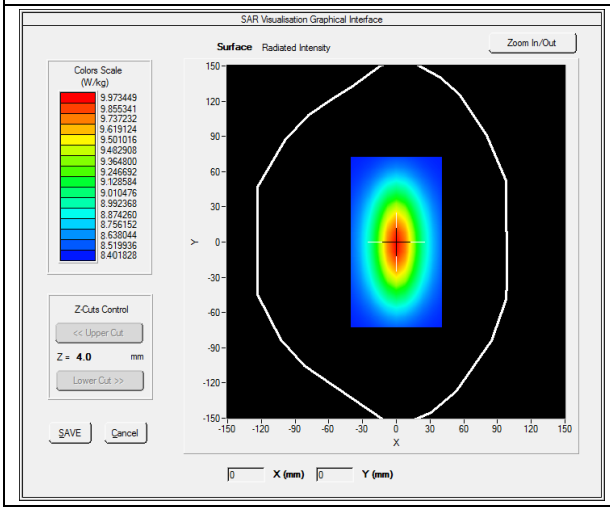
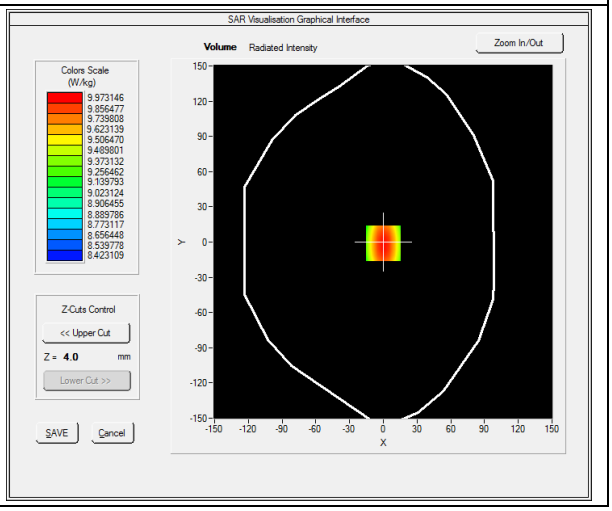
Type: Validation measurement (Fast, 75.00 %)
Measurement duration: 12 minutes 21 seconds
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.11; Calibrated: 2022-07-08
Date of measurement: 2022-09-22

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
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)	41.211245
Conductivity (S/m)	1.413607
Power Variation (%)	1.025401
Ambient Temperature	22.3
Liquid Temperature	22.3

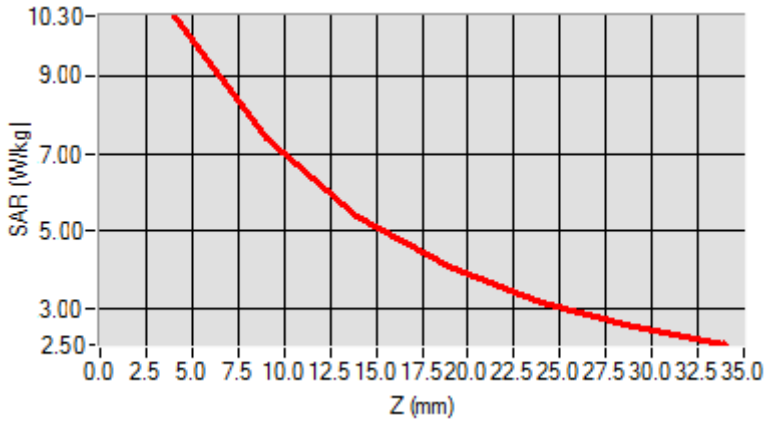
SURFACE SAR	VOLUME SAR
	

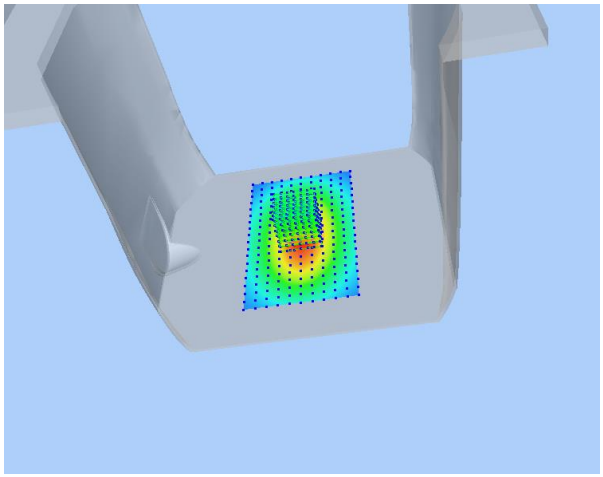
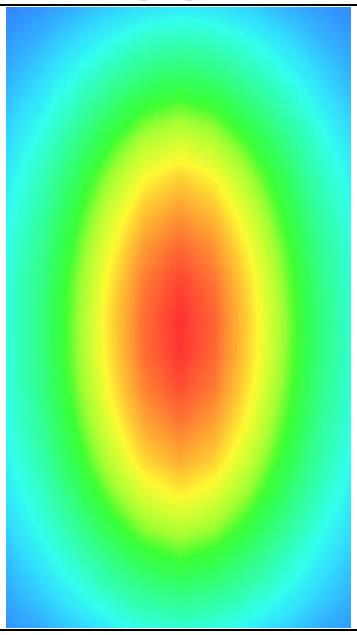
Maximum location: X=0.00, Y=0.00

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**	**6.8402**	**5.0121**	**4.1189**	**3.0522**	**2.8424**



3D screen shot	**Hot spot position**
	

Annex B. Plots of SAR Measurement

MEASUREMENT 1

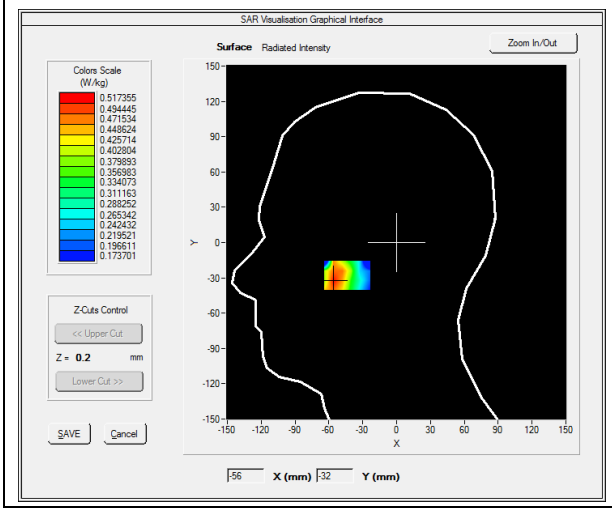
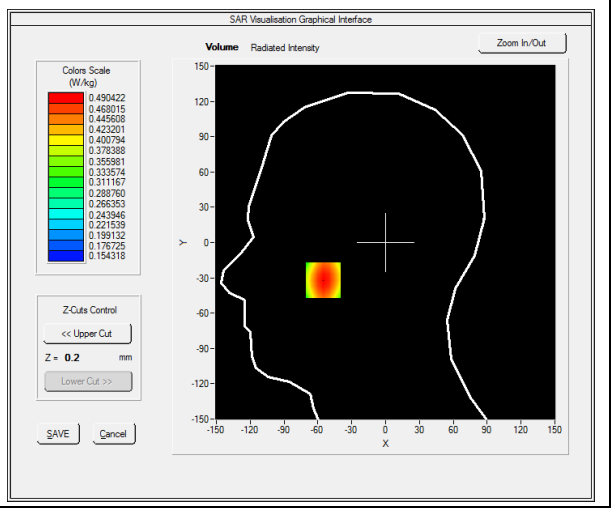
Type: Phone measurement (Complete)
Date of measurement: 2022-06-09
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Left head
Device Position	Cheek
Band	GSM850
Channels	Low
Signal	TDMA (Crest factor: 8.0)

B. SAR Measurement Results

Frequency (MHz)	824.200000
Relative Permittivity (real part)	40.380415
Conductivity (S/m)	0.914808
Power Variation (%)	-0.640000
Ambient Temperature	22.5
Liquid Temperature	22.5

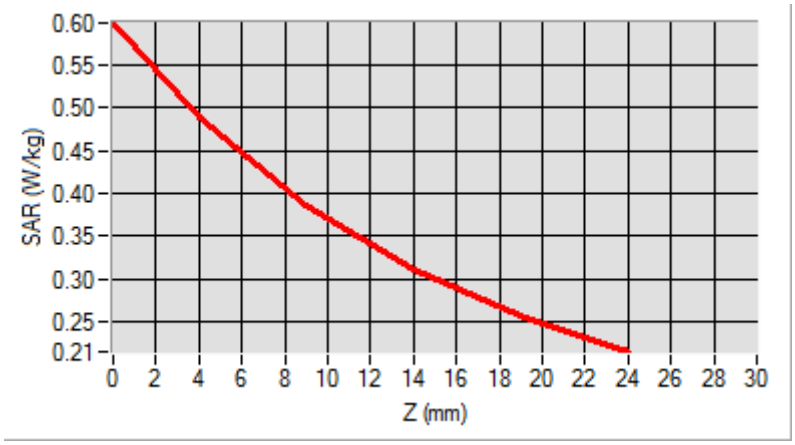
SURFACE SAR	VOLUME SAR
	

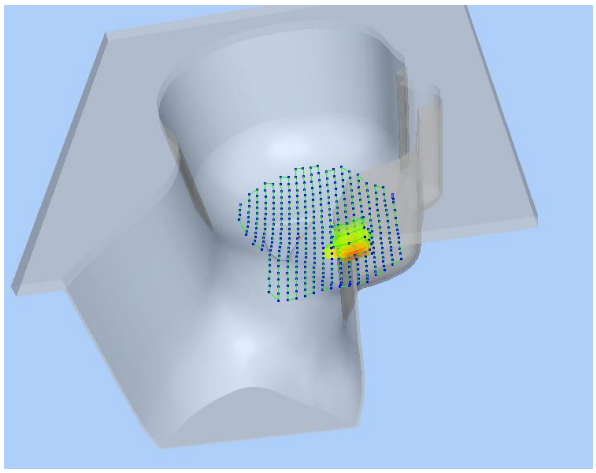
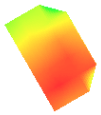
Maximum location: X=-55.00, Y=-32.00

SAR Peak: 0.61 W/kg

SAR 10g (W/Kg)	**0.359013**
SAR 1g (W/Kg)	**0.475727**

Z (mm)	**0.00**	**4.00**	**9.00**	**14.00**	**19.00**
SAR (W/Kg)	**0.5998**	**0.4904**	**0.3856**	**0.3105**	**0.2568**



3D screen shot	**Hot spot position**
	

MEASUREMENT 2

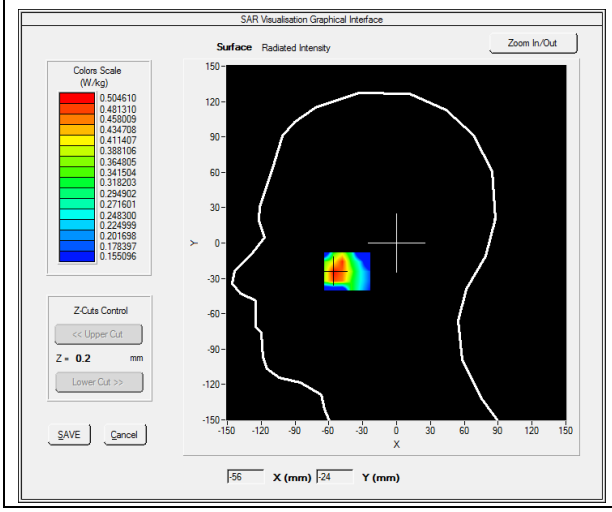
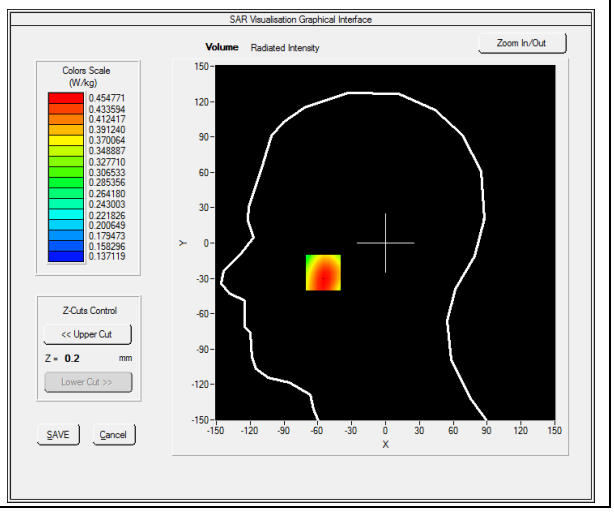
Type: Phone measurement (Complete)
Date of measurement: 2022-06-09
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	GPRS850_4TX
Channels	Low
Signal	Duty Cycle: 1:2

B. SAR Measurement Results

Frequency (MHz)	824.200000
Relative Permittivity (real part)	40.380415
Conductivity (S/m)	0.914808
Power Variation (%)	1.530000
Ambient Temperature	22.5
Liquid Temperature	22.5

SURFACE SAR	VOLUME SAR
	

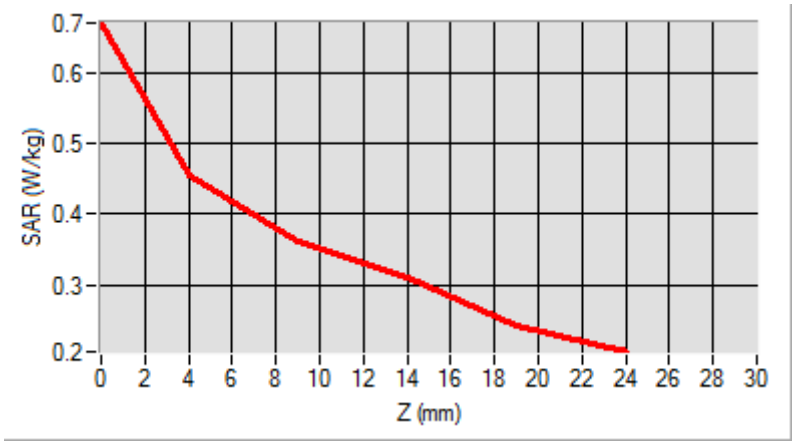
Maximum location: X=-55.00, Y=-25.00

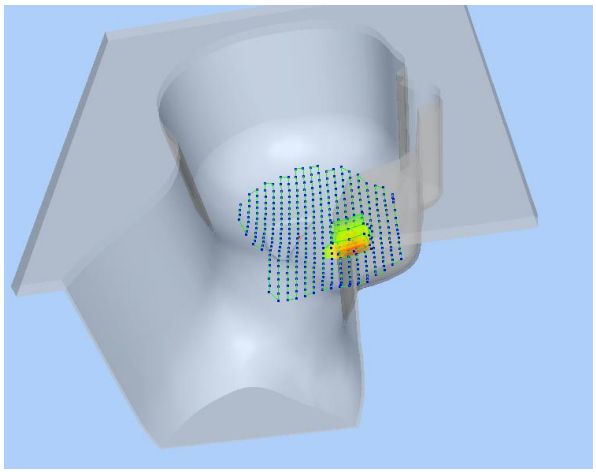
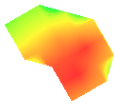
SAR Peak: 0.57 W/kg

SAR 10g (W/Kg)	**0.340986**

SAR 1g (W/Kg)	0.443046

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.6696	0.4548	0.3618	0.3113	0.2432



3D screen shot	Hot spot position
	

MEASUREMENT 3

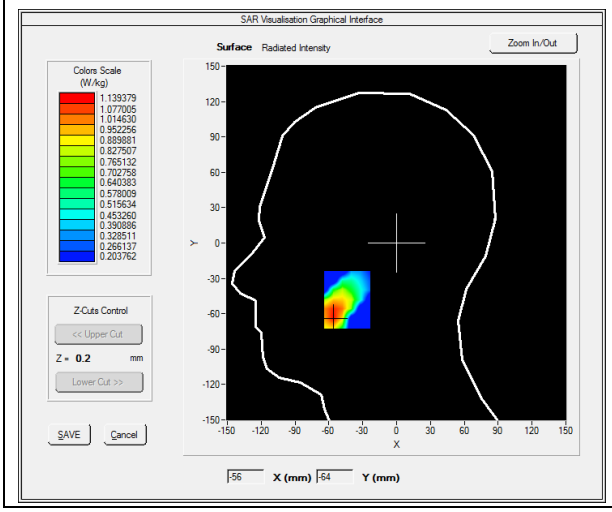
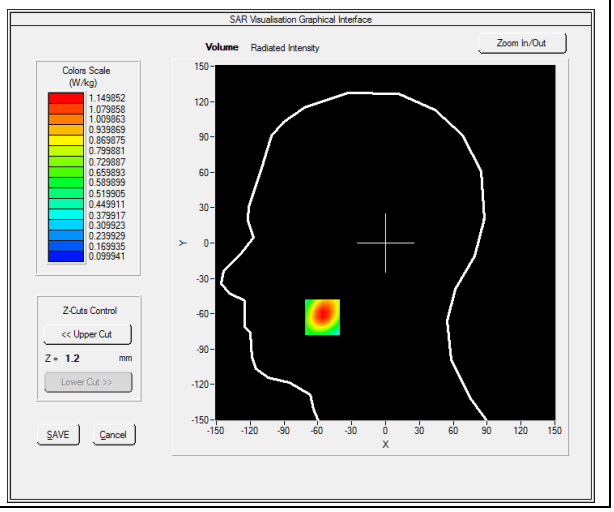
Type: Phone measurement (Complete)
Date of measurement: 2022-06-09
Measurement duration: 12 minutes 21 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Left head
Device Position	Cheek
Band	GSM1900
Channels	High
Signal	TDMA (Crest factor: 8.0)

B. SAR Measurement Results

Frequency (MHz)	1909.800000
Relative Permittivity (real part)	40.761854
Conductivity (S/m)	1.414017
Power Variation (%)	-0.520000
Ambient Temperature	22.5
Liquid Temperature	22.5

SURFACE SAR	VOLUME SAR
	

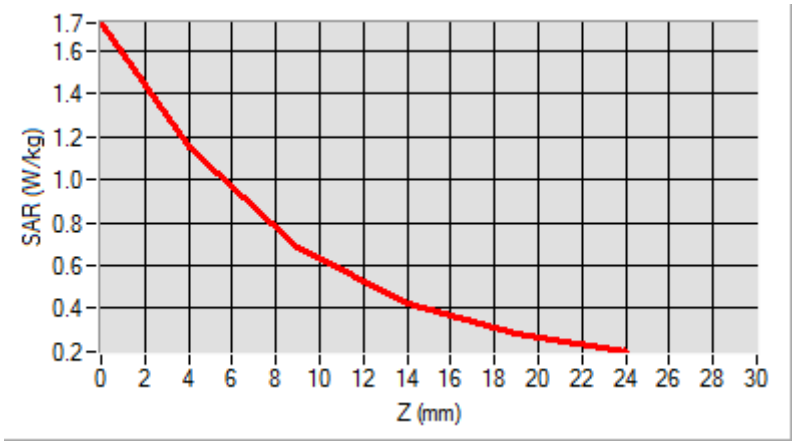
Maximum location: X=-56.00, Y=-63.00

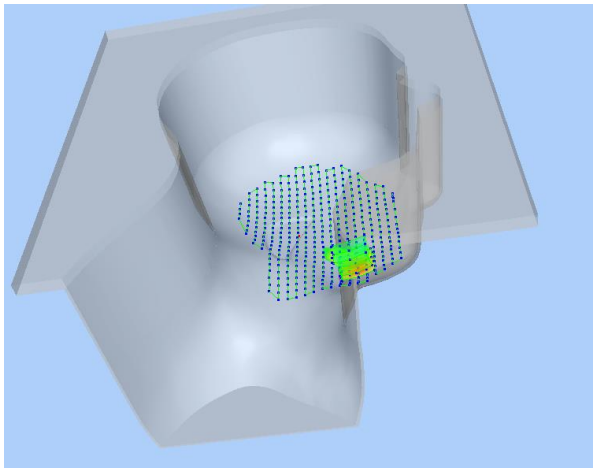
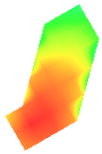
SAR Peak: 1.15 W/kg

SAR 10g (W/Kg)	**0.350612**

SAR 1g (W/Kg)	0.586286

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.7305	1.1499	0.6866	0.4261	0.2862



3D screen shot	Hot spot position
	

MEASUREMENT 4

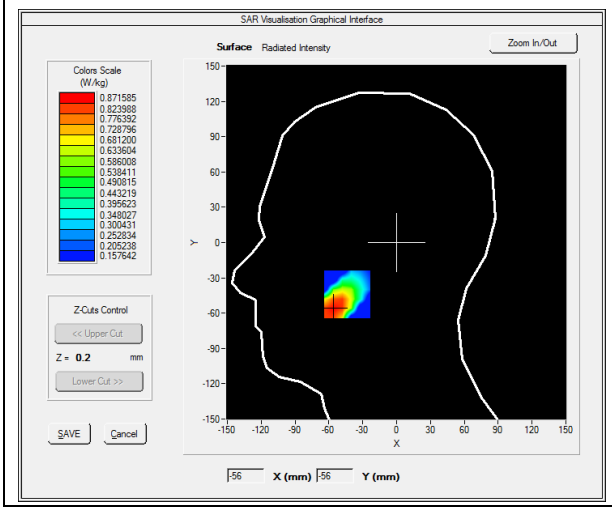
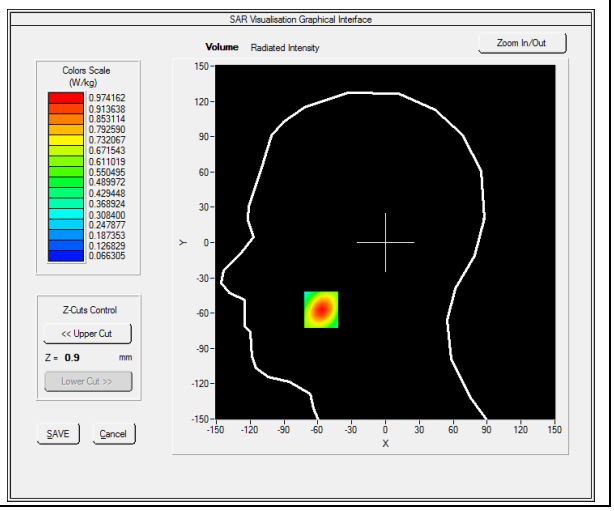
Type: Phone measurement (Complete)
Date of measurement: 2022-06-09
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	GPRS1900_4TX
Channels	High
Signal	Duty Cycle: 1:2

B. SAR Measurement Results

Frequency (MHz)	1909.800000
Relative Permittivity (real part)	40.761854
Conductivity (S/m)	1.414017
Power Variation (%)	1.130000
Ambient Temperature	22.5
Liquid Temperature	22.5

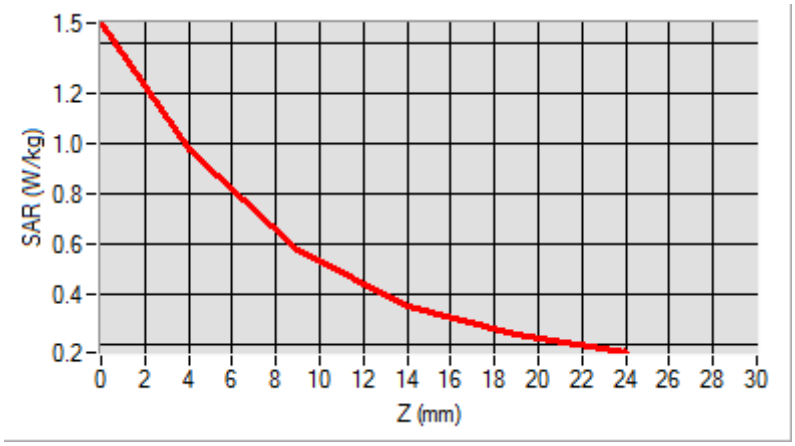
SURFACE SAR	VOLUME SAR
	

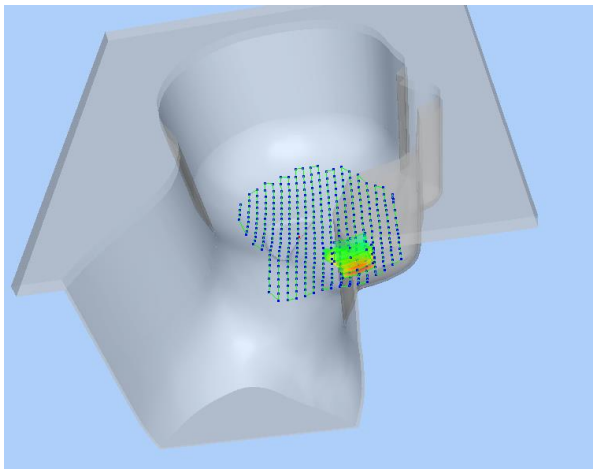
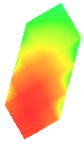
Maximum location: X=-57.00, Y=-57.00

SAR Peak: 1.48 W/kg

SAR 10g (W/Kg)	**0.532839**
SAR 1g (W/Kg)	**0.601388**

Z (mm)	**0.00**	**4.00**	**9.00**	**14.00**	**19.00**
SAR (W/Kg)	**1.4806**	**0.9742**	**0.5753**	**0.3555**	**0.2409**



3D screen shot	**Hot spot position**
	

MEASUREMENT 5

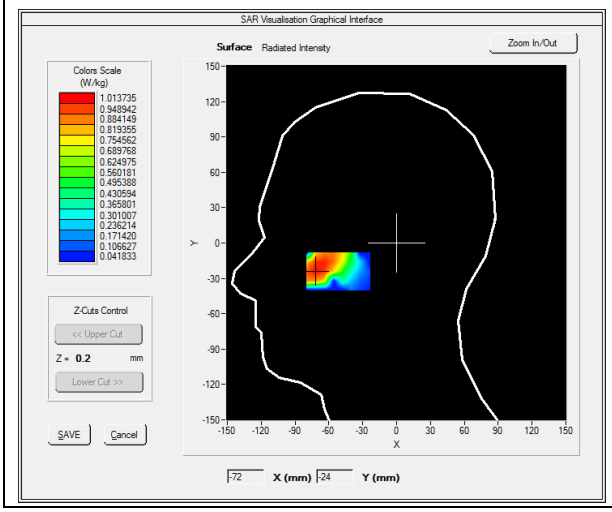
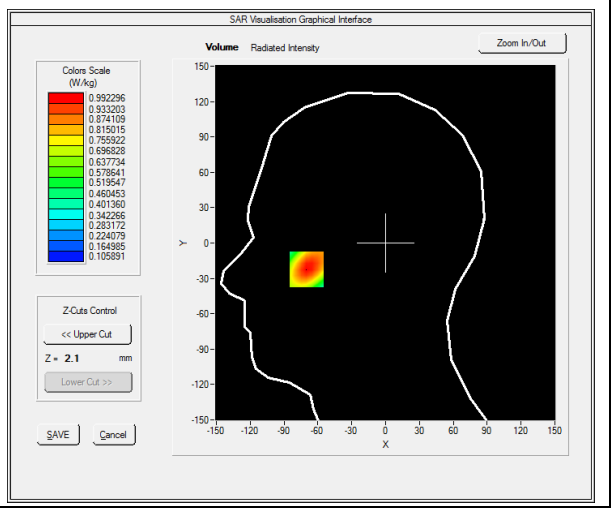
Type: Phone measurement (Complete)
Date of measurement: 2022-06-09
Measurement duration: 12 minutes 21 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Right head
Device Position	Cheek
Band	WCDMA1900_RMC
Channels	Low
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1852.400000
Relative Permittivity (real part)	41.691854
Conductivity (S/m)	1.414017
Power Variation (%)	-1.400000
Ambient Temperature	22.5
Liquid Temperature	22.5

SURFACE SAR	VOLUME SAR
	

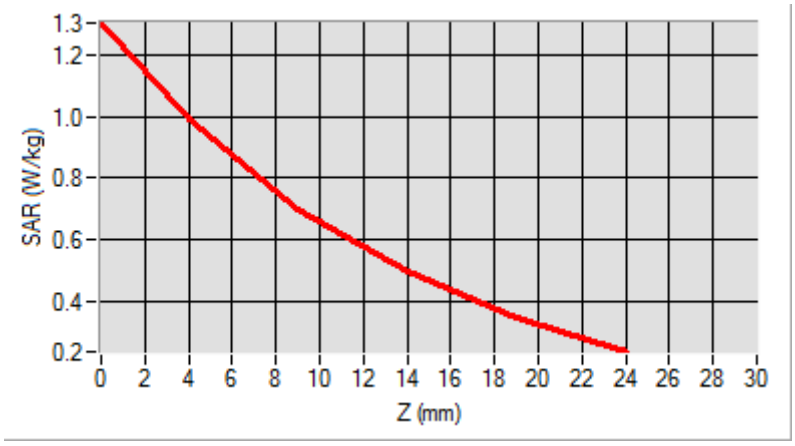
Maximum location: X=-70.00, Y=-22.00

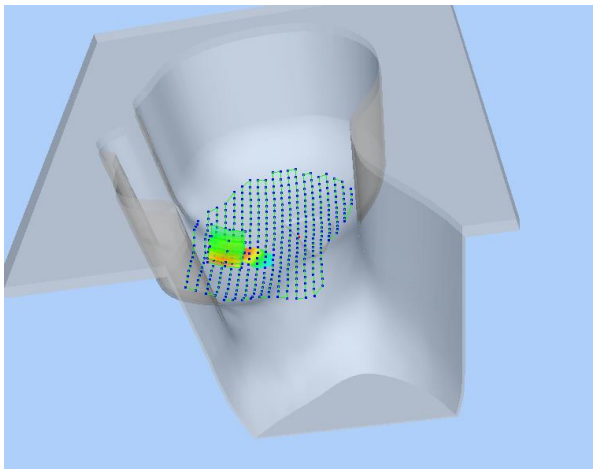
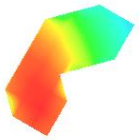
SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	**0.423059**

SAR 1g (W/Kg)	0.739629

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.3005	0.9923	0.7023	0.4966	0.3510



3D screen shot	Hot spot position
	

MEASUREMENT 6

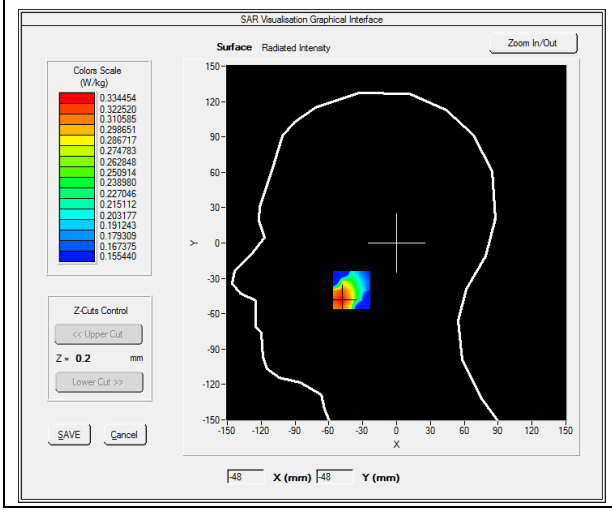
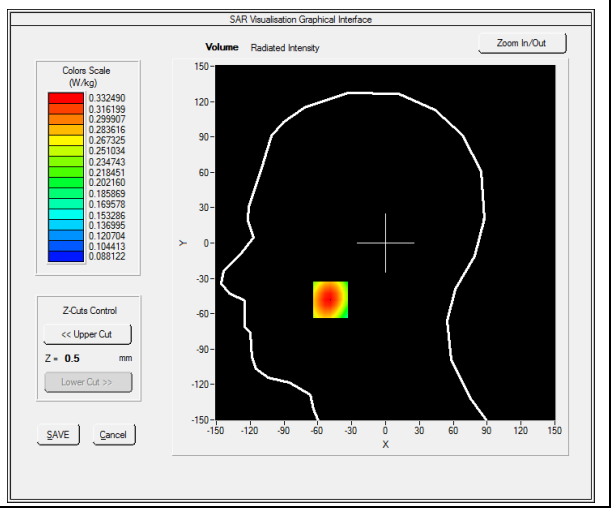
Type: Phone measurement (Complete)
Date of measurement: 2022-06-09
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Right head
Device Position	Cheek
Band	WCDMA850_RMC
Channels	Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative Permittivity (real part)	40.380328
Conductivity (S/m)	0.912167
Power Variation (%)	-1.350000
Ambient Temperature	22.5
Liquid Temperature	22.5

SURFACE SAR	VOLUME SAR
	

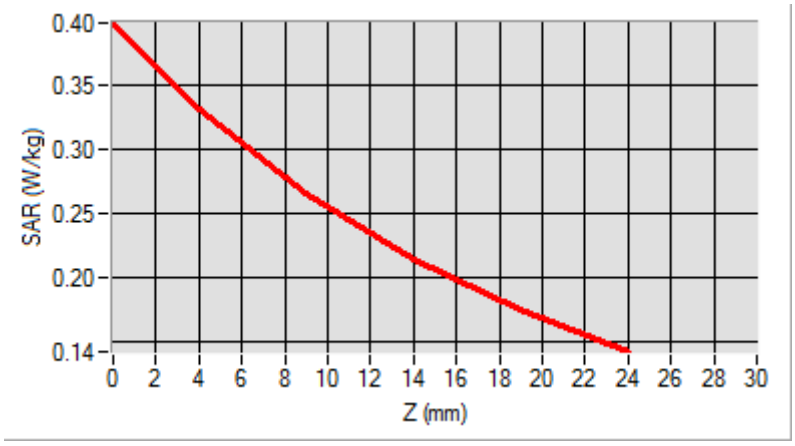
Maximum location: X=-49.00, Y=-48.00

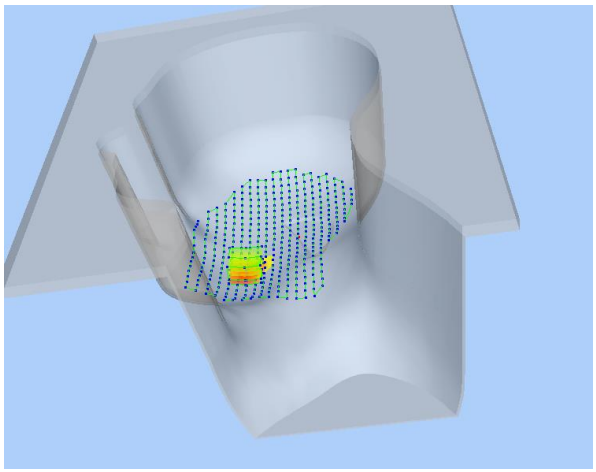
SAR Peak: 0.40 W/kg

SAR 10g (W/Kg)	**0.240854**

SAR 1g (W/Kg)	0.318517

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3990	0.3325	0.2657	0.2145	0.1751



3D screen shot	Hot spot position
	

MEASUREMENT 7

Type: Phone measurement (Complete)
Date of measurement: 2022-09-22
Measurement duration: 12 minutes 3 seconds

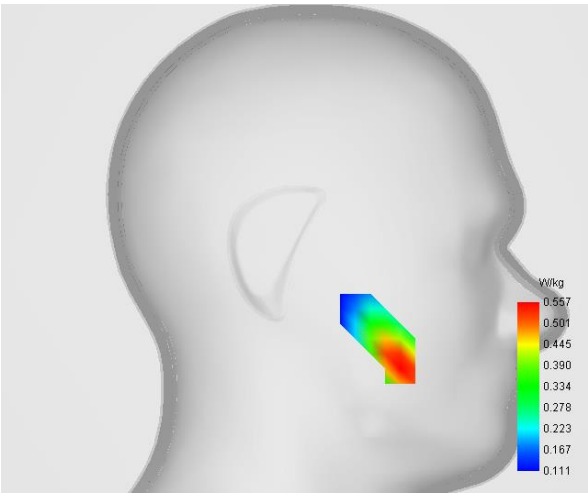
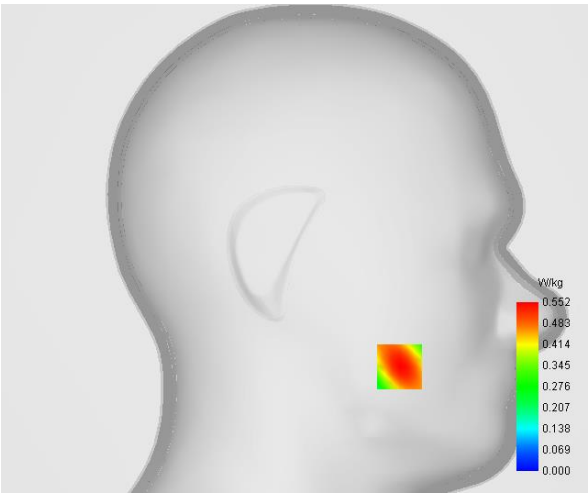
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Left head
Device Position	Cheek
Band	WCDMA1700_RMC
Channels	Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1732.600000
Relative Permittivity (real part)	41.213248
Conductivity (S/m)	1.412117
Power Variation (%)	1.850000
Ambient Temperature	22.3
Liquid Temperature	22.3

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

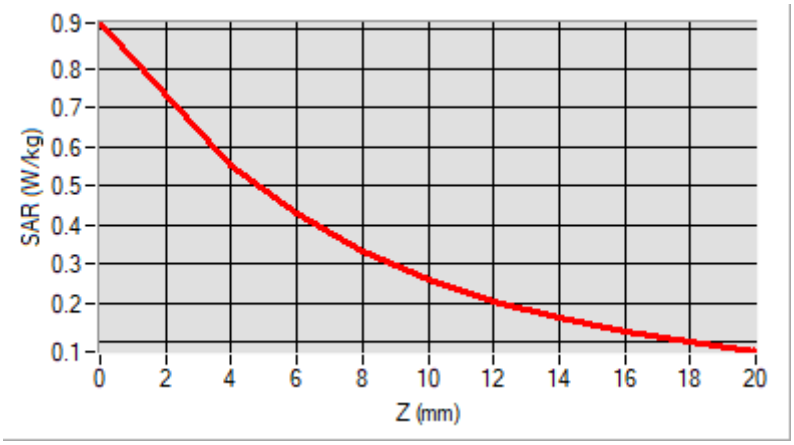
Maximum location: X=-56.00, Y=-63.00

D. SAR 1g & 10g

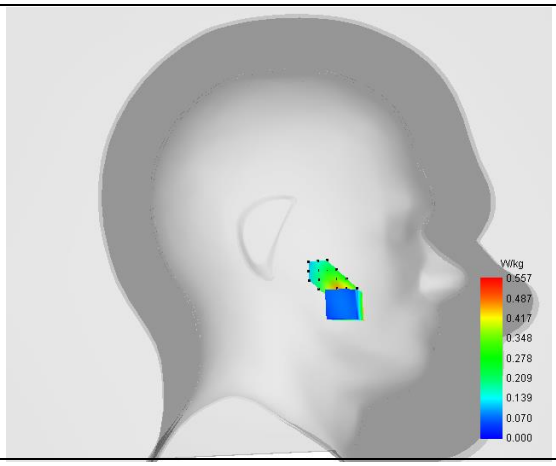
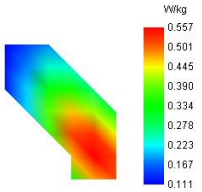
SAR 10g (W/Kg)	**0.291691**
SAR 1g (W/Kg)	**0.551668**

E. Z Axis Scan

Z (mm)	**0.00**	**4.00**	**6.00**	**8.00**	**10.00**	**12.00**	**14.00**	**16.00**	**18.00**
SAR (W/Kg)	**0.9161**	**0.5519**	**0.4269**	**0.3305**	**0.2580**	**0.2032**	**0.1611**	**0.1280**	**0.1011**



F. 3D Image

3D screen shot	**Hot spot position**
	

MEASUREMENT 8

Type: Phone measurement (Complete)
Date of measurement: 2022-09-22
Measurement duration: 12 minutes 3 seconds

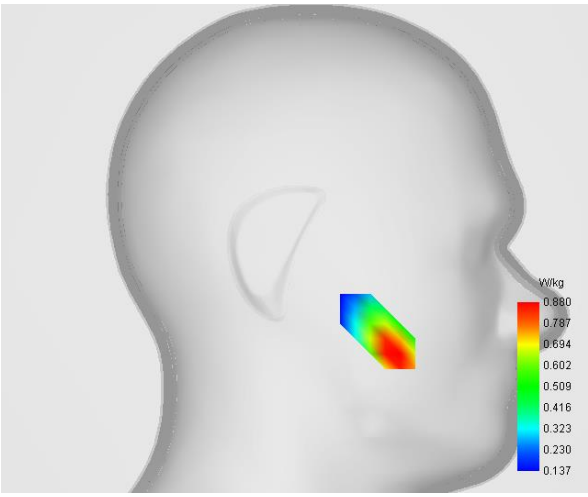
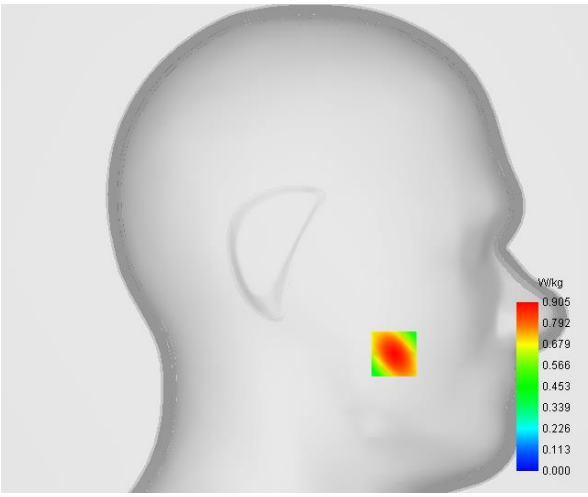
A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	LTE Band 2
Channels	QPSK, 20MHz, 1RB, Low
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1860.000000
Relative Permittivity (real part)	41.215725
Conductivity (S/m)	1.412287
Power Variation (%)	2.080000
Ambient Temperature	22.3
Liquid Temperature	22.3

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

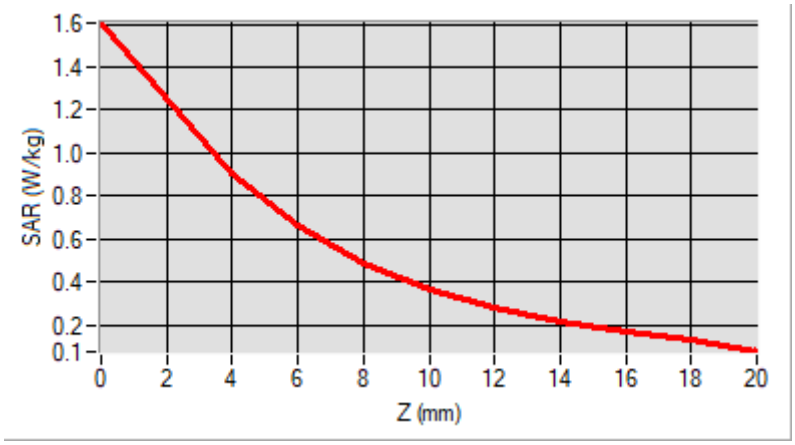
Maximum location: X=-53.00, Y=-56.00

D. SAR 1g & 10g

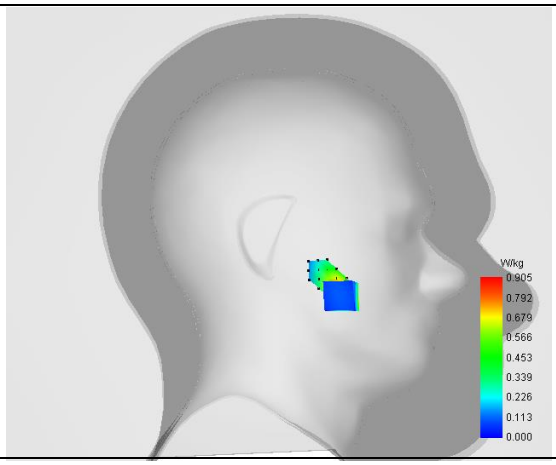
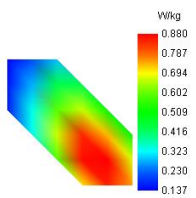
SAR 10g (W/Kg)	**0.442995**
SAR 1g (W/Kg)	**0.869098**

E. Z Axis Scan

Z (mm)	**0.00**	**4.00**	**6.00**	**8.00**	**10.00**	**12.00**	**14.00**	**16.00**	**18.00**
SAR (W/Kg)	**1.6047**	**0.9051**	**0.6661**	**0.4910**	**0.3675**	**0.2799**	**0.2171**	**0.1708**	**0.1351**



F. 3D Image

3D screen shot	**Hot spot position**
	

MEASUREMENT 9

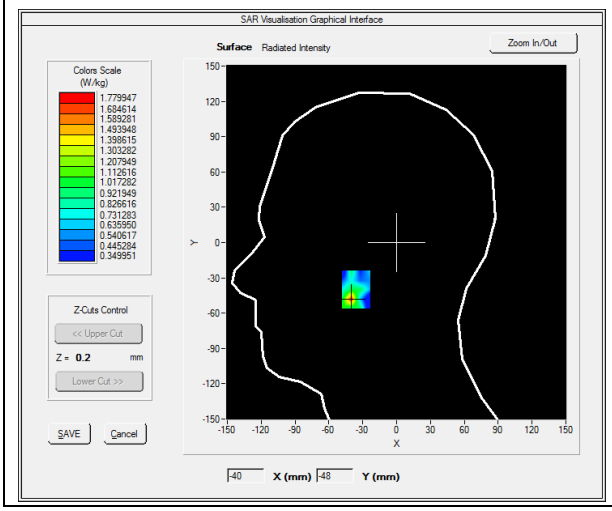
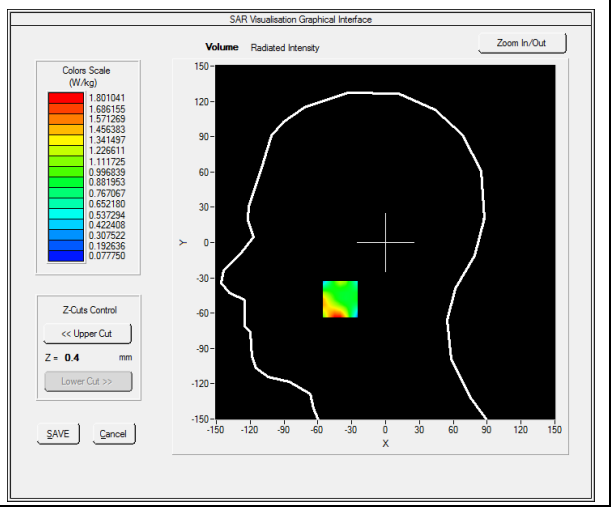
Type: Phone measurement (Complete)
Date of measurement: 2022-06-22
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	LTE Band 4
Channels	QPSK, 20MHz, 1RB, Low
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1720.000000
Relative Permittivity (real part)	41.692275
Conductivity (S/m)	1.410987
Power Variation (%)	0.080000
Ambient Temperature	22.2
Liquid Temperature	22.2

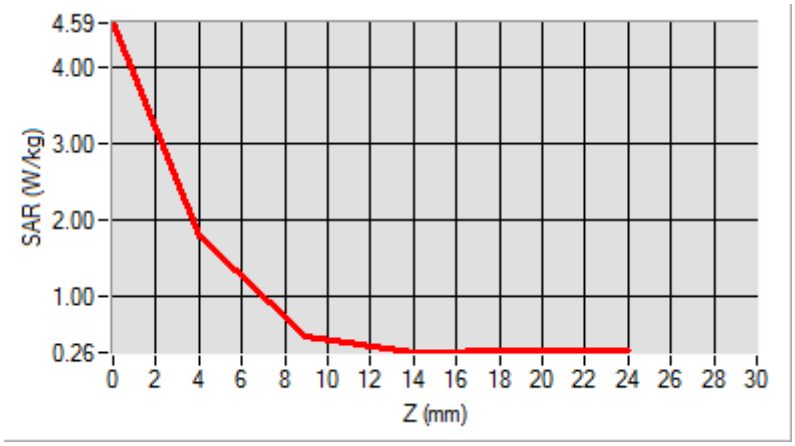
SURFACE SAR	VOLUME SAR
	

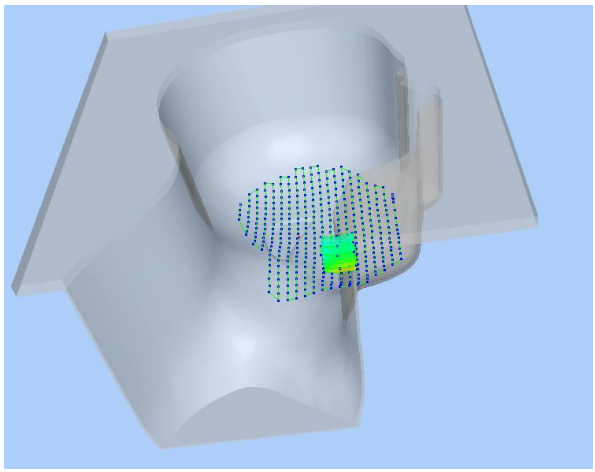
Maximum location: X=-40.00, Y=-48.00

SAR Peak: 1.89 W/kg

SAR 10g (W/Kg)	**0.542804**
SAR 1g (W/Kg)	**0.740626**

Z (mm)	**0.00**	**4.00**	**9.00**	**14.00**	**19.00**
SAR (W/Kg)	**4.5908**	**1.8010**	**0.4814**	**0.2570**	**0.2778**



3D screen shot	**Hot spot position**
	

MEASUREMENT 10

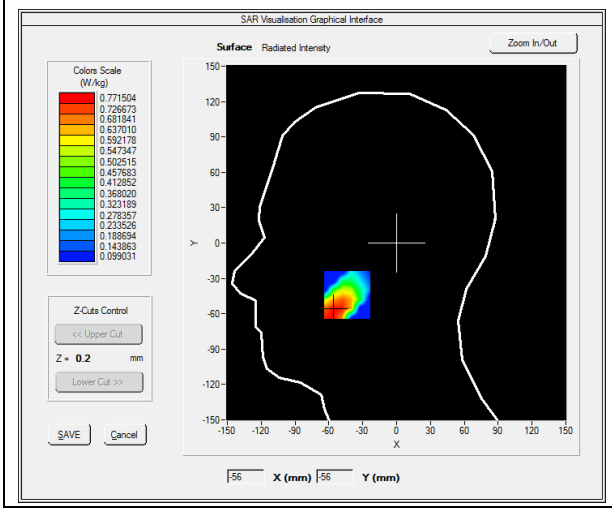
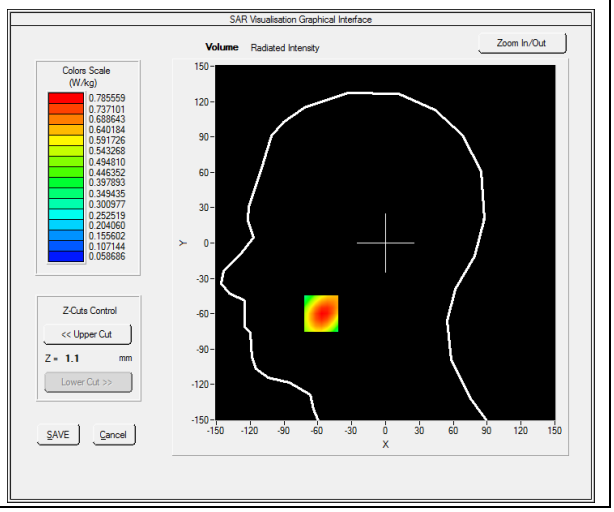
Type: Phone measurement (Complete)
Date of measurement: 2022-06-22
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Left 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)	51.942275
Conductivity (S/m)	2.180987
Power Variation (%)	0.080000
Ambient Temperature	22.2
Liquid Temperature	22.2

SURFACE SAR	VOLUME SAR
	

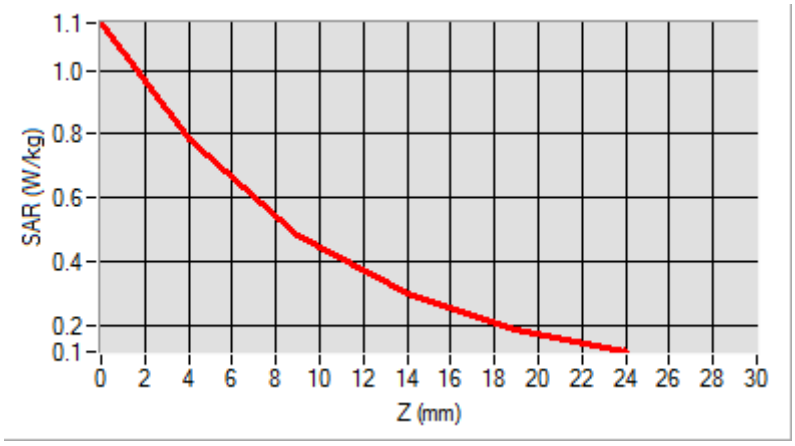
Maximum location: X=-57.00, Y=-60.00

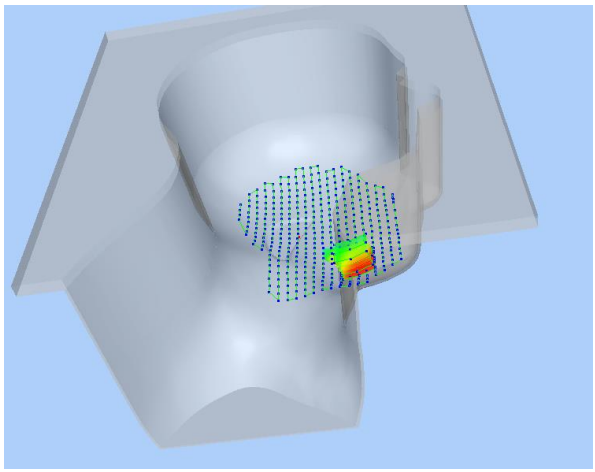
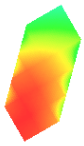
SAR Peak: 1.15 W/kg

SAR 10g (W/Kg)	**0.451538**

SAR 1g (W/Kg)	0.739731

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.1471	0.7856	0.4832	0.3002	0.1921



3D screen shot	Hot spot position
	

MEASUREMENT 11

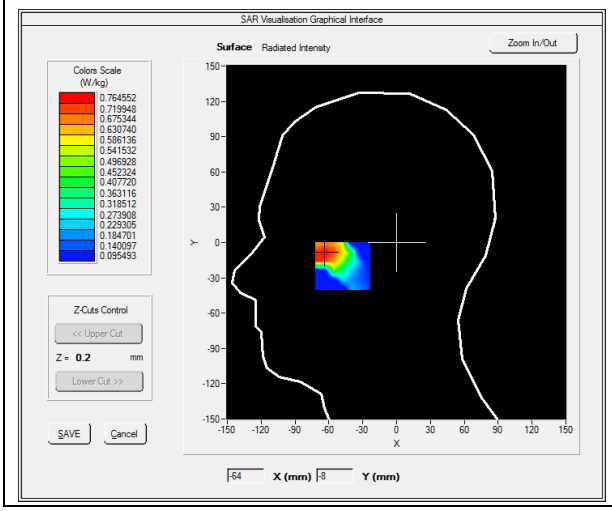
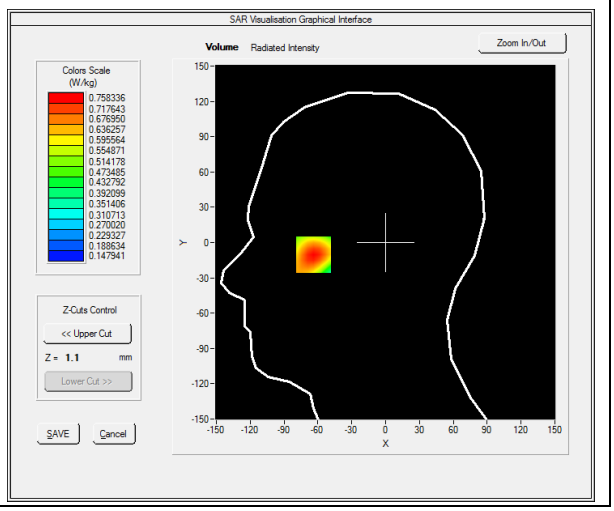
Type: Phone measurement (Complete)
Date of measurement: 2022-06-22
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	LTE Band 66
Channels	QPSK, 20MHz, 1RB, Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1745.000000
Relative Permittivity (real part)	41.692759
Conductivity (S/m)	1.412987
Power Variation (%)	0.080000
Ambient Temperature	22.2
Liquid Temperature	22.2

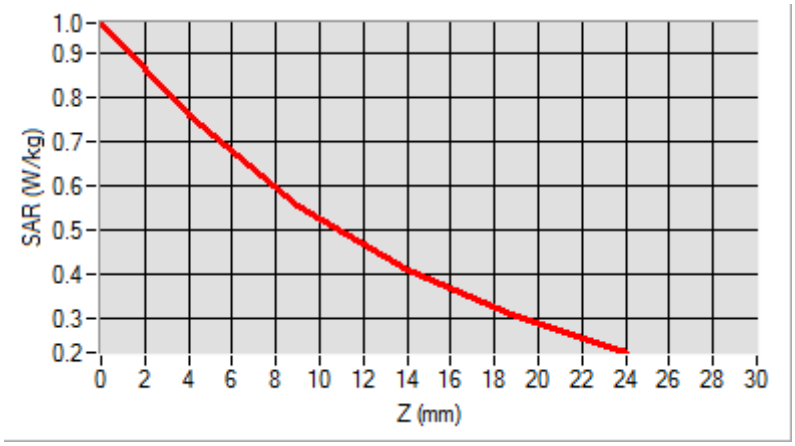
SURFACE SAR	VOLUME SAR
	

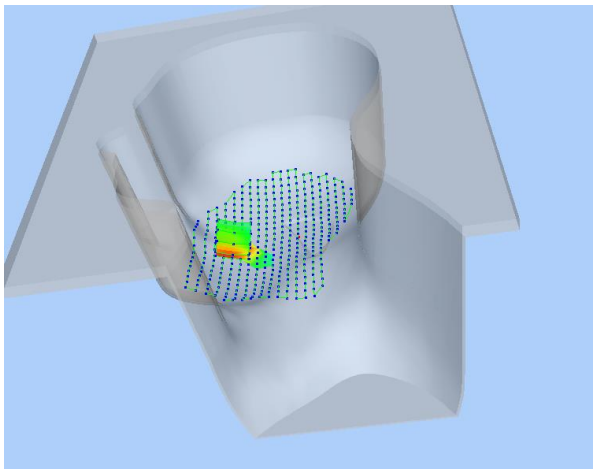
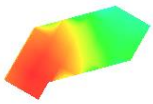
Maximum location: X=-64.00, Y=-9.00

SAR Peak: 0.97 W/kg

SAR 10g (W/Kg)	**0.497387**
SAR 1g (W/Kg)	**0.717044**

Z (mm)	**0.00**	**4.00**	**9.00**	**14.00**	**19.00**
SAR (W/Kg)	**0.9696**	**0.7583**	**0.5566**	**0.4108**	**0.3056**



3D screen shot	**Hot spot position**
	

MEASUREMENT 12

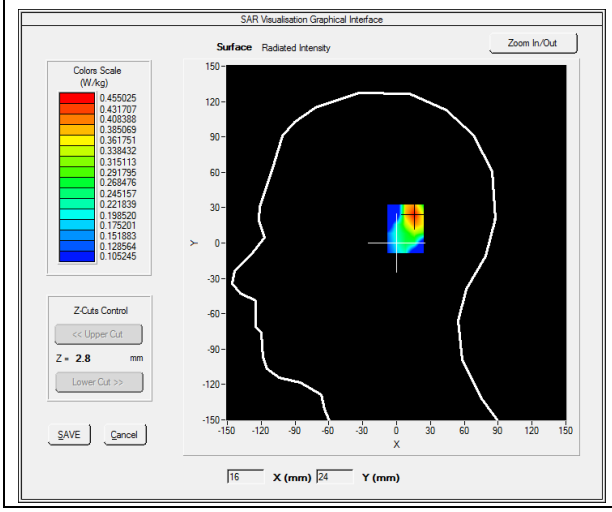
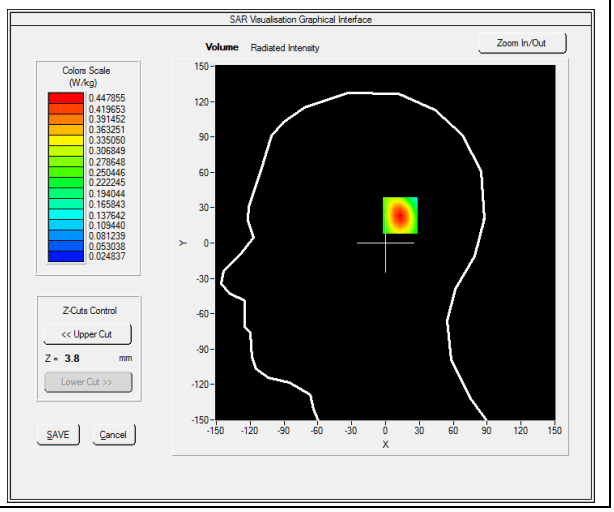
Type: Phone measurement (Complete)
Date of measurement: 2022-06-09
Measurement duration: 12 minutes 21 seconds

A. Experimental conditions

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

B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative Permittivity (real part)	40.850212
Conductivity (S/m)	1.831248
Power Variation (%)	-1.760000
Ambient Temperature	22.5
Liquid Temperature	22.5

SURFACE SAR	**VOLUME SAR**
	

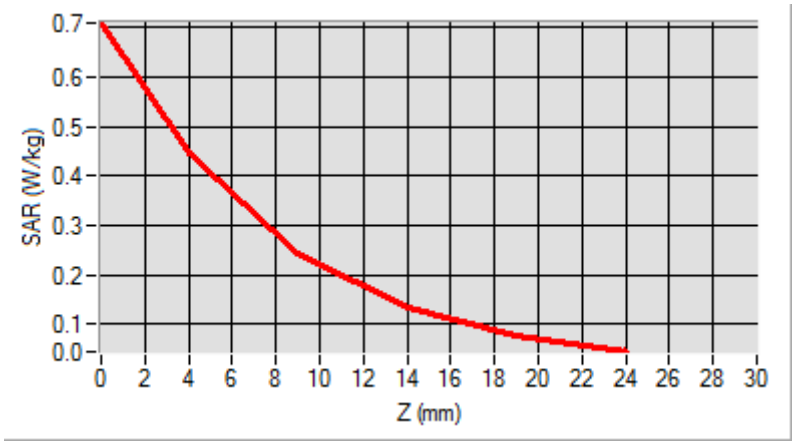
Maximum location: X=16.00, Y=24.00

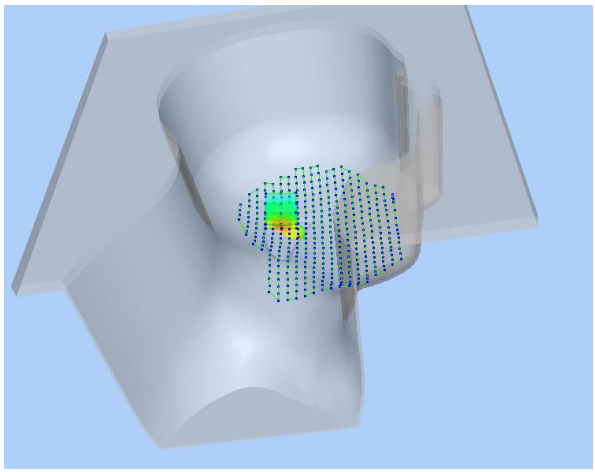
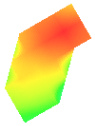
SAR Peak: 0.71 W/kg

SAR 10g (W/Kg)	**0.225306**

SAR 1g (W/Kg)	0.412589

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.7098	0.4479	0.2447	0.1344	0.0775



3D screen shot	Hot spot position
	

MEASUREMENT 13

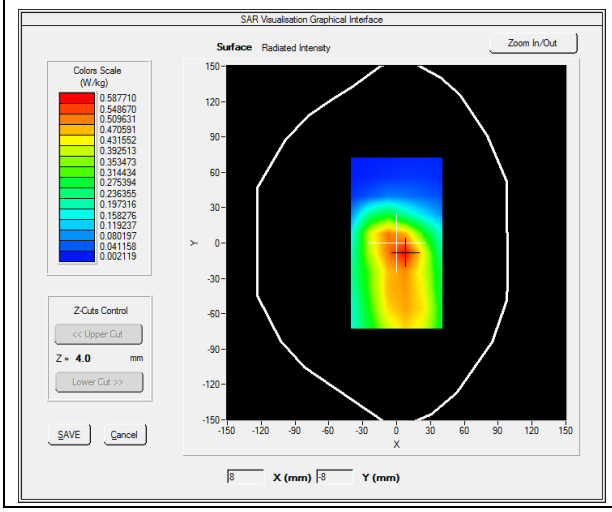
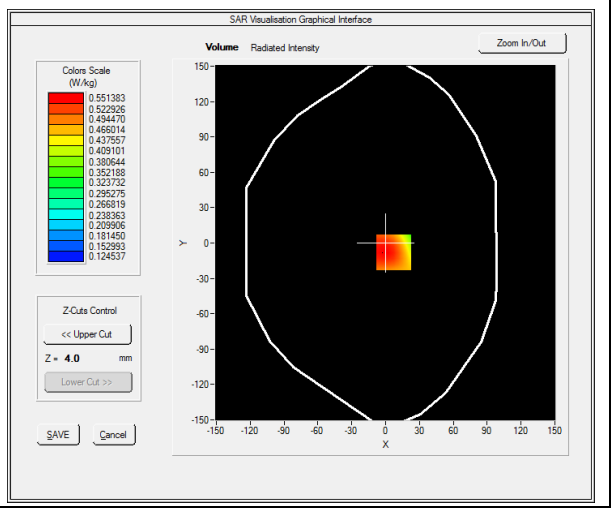
Type: Phone measurement (Complete)
Date of measurement: 2022-06-09
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Flat plane
Device Position	Back
Band	GSM850
Channels	Low
Signal	TDMA (Crest factor: 8.0)

B. SAR Measurement Results

Frequency (MHz)	824.200000
Relative Permittivity (real part)	40.380415
Conductivity (S/m)	0.914808
Power Variation (%)	1.260000
Ambient Temperature	22.5
Liquid Temperature	22.5

SURFACE SAR	VOLUME SAR
	

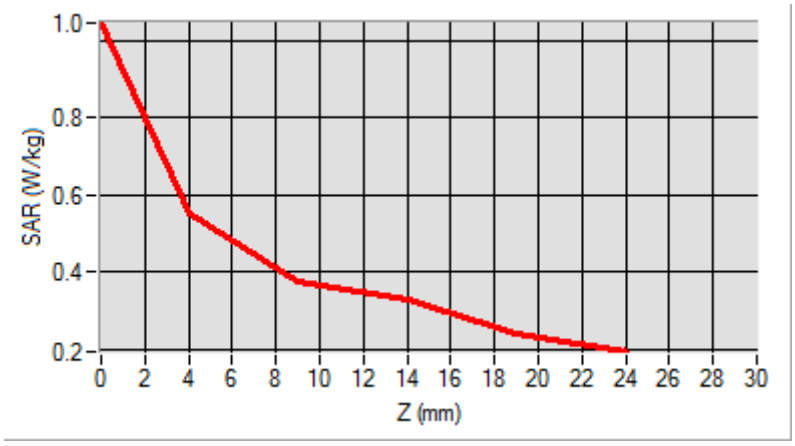
Maximum location: X=7.00, Y=-8.00

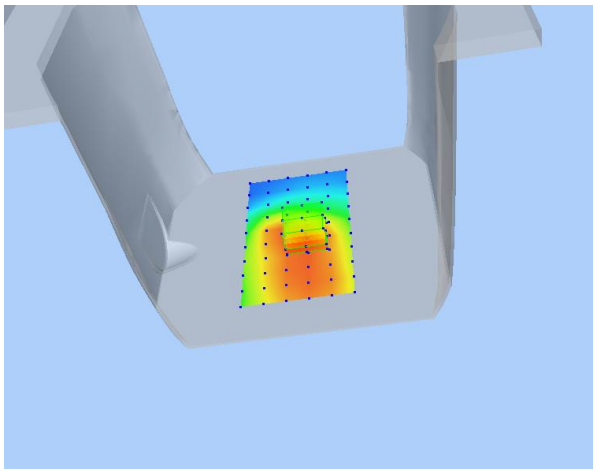
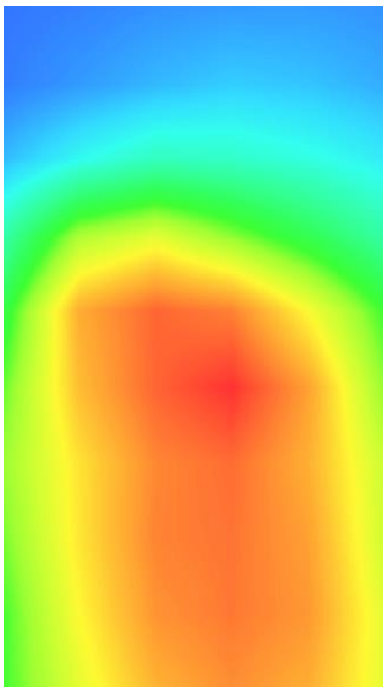
SAR Peak: 0.73 W/kg

SAR 10g (W/Kg)	**0.419998**

SAR 1g (W/Kg)	0.547215

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.0453	0.5514	0.3755	0.3277	0.2436



3D screen shot	Hot spot position
	

MEASUREMENT 14

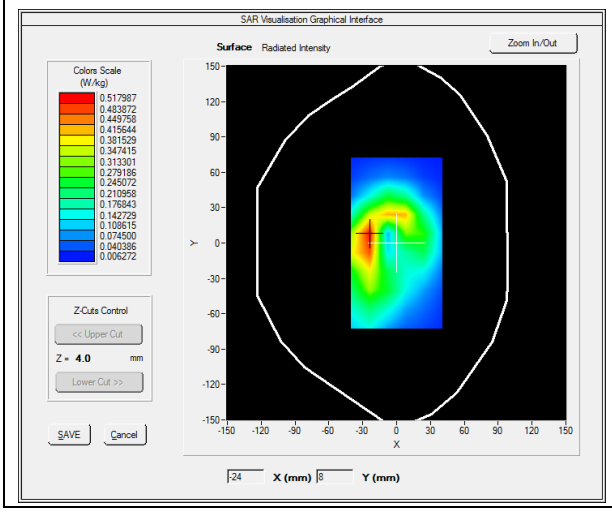
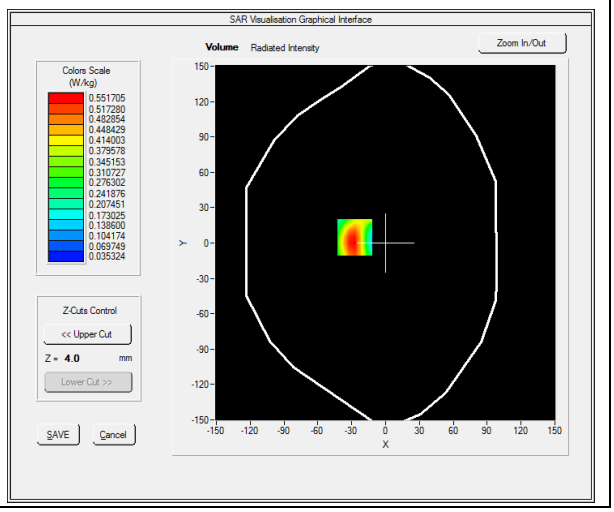
Type: Phone measurement (Complete)
Date of measurement: 2022-06-09
Measurement duration: 12 minutes 21 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Flat plane
Device Position	Back
Band	GSM1900
Channels	High
Signal	TDMA (Crest factor: 8.0)

B. SAR Measurement Results

Frequency (MHz)	1909.800000
Relative Permittivity (real part)	40.761854
Conductivity (S/m)	1.414017
Power Variation (%)	0.430000
Ambient Temperature	22.5
Liquid Temperature	22.5

SURFACE SAR	VOLUME SAR
	

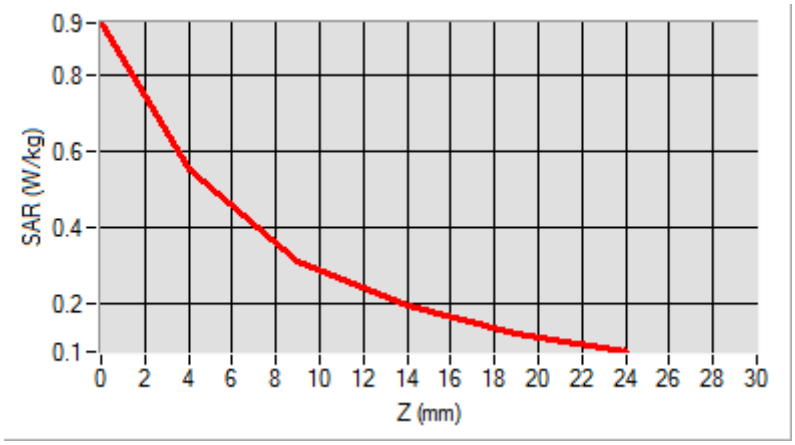
Maximum location: X=-27.00, Y=5.00

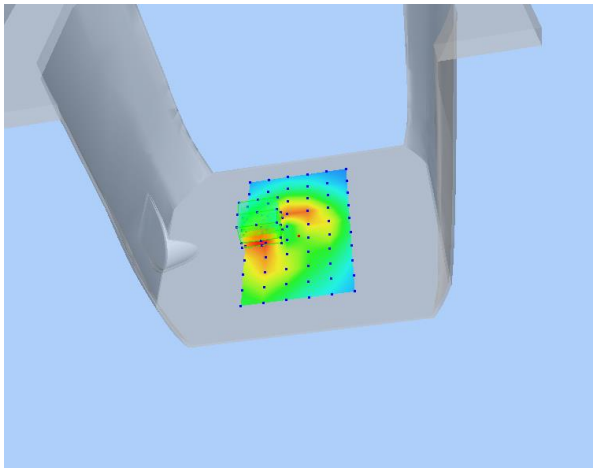
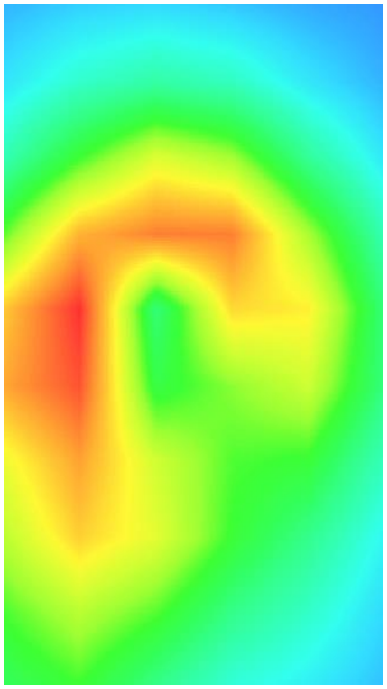
SAR Peak: 0.83 W/kg

SAR 10g (W/Kg)	**0.293292**

SAR 1g (W/Kg)	0.517085

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.9377	0.5517	0.3124	0.1971	0.1211



3D screen shot	Hot spot position
	

MEASUREMENT 15/25

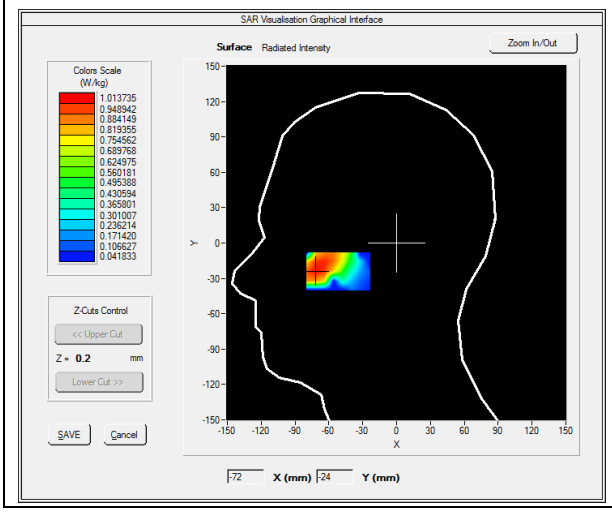
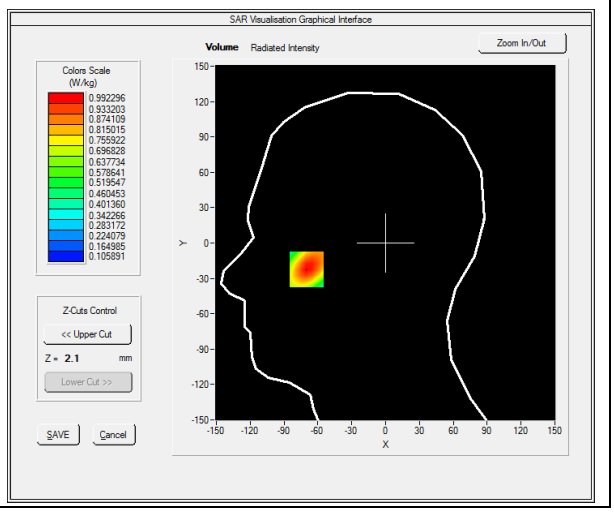
Type: Phone measurement (Complete)
Date of measurement: 2022-06-09
Measurement duration: 12 minutes 21 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Flat plane
Device Position	Back
Band	WCDMA1900_RMC
Channels	Low
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1852.400000
Relative Permittivity (real part)	41.691854
Conductivity (S/m)	1.414017
Power Variation (%)	-0.710000
Ambient Temperature	22.5
Liquid Temperature	22.5

SURFACE SAR	VOLUME SAR
	

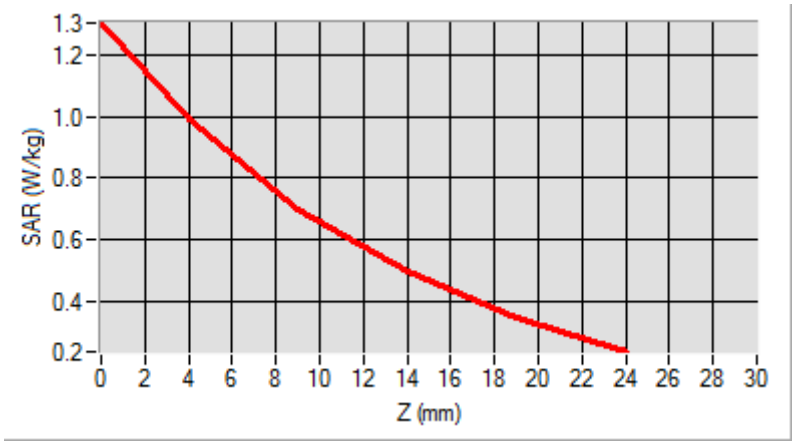
Maximum location: X=-70.00, Y=-22.00

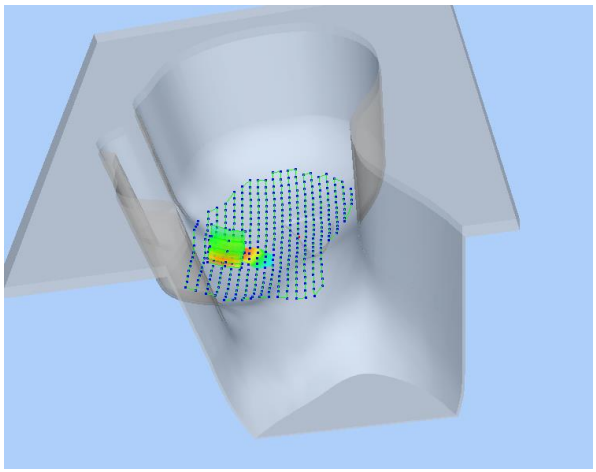
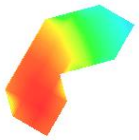
SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	**0.423059**

SAR 1g (W/Kg)	0.739629

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.3005	0.9923	0.7023	0.4966	0.3510



3D screen shot	Hot spot position
	

MEASUREMENT 16/26

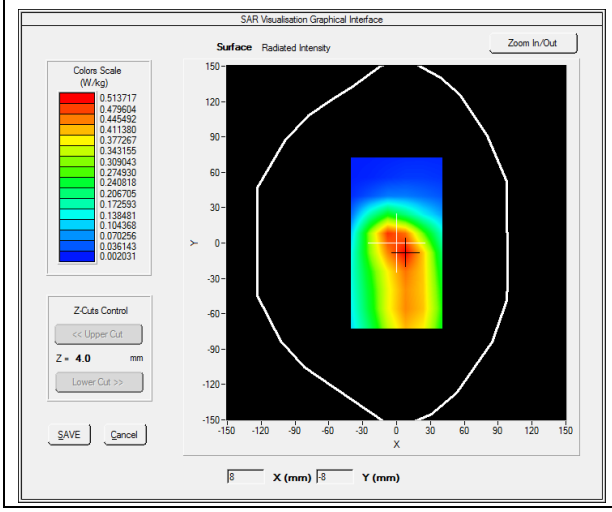
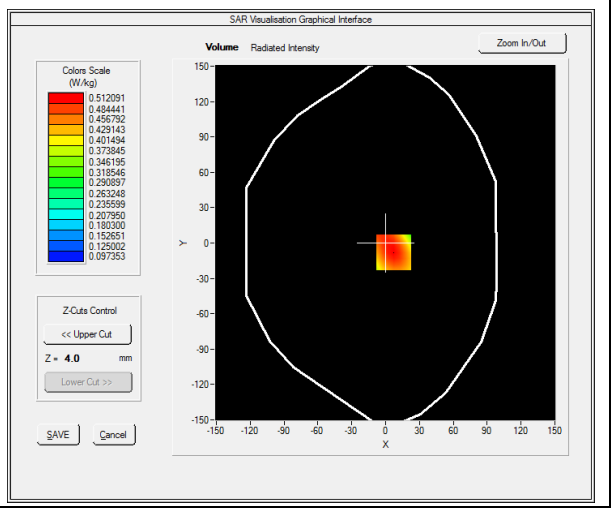
Type: Phone measurement (Complete)
Date of measurement: 2022-06-09
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Flat plane
Device Position	Back
Band	WCDMA850_RMC
Channels	Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative Permittivity (real part)	40.380328
Conductivity (S/m)	0.912167
Power Variation (%)	-1.540000
Ambient Temperature	22.5
Liquid Temperature	22.5

SURFACE SAR	VOLUME SAR
	

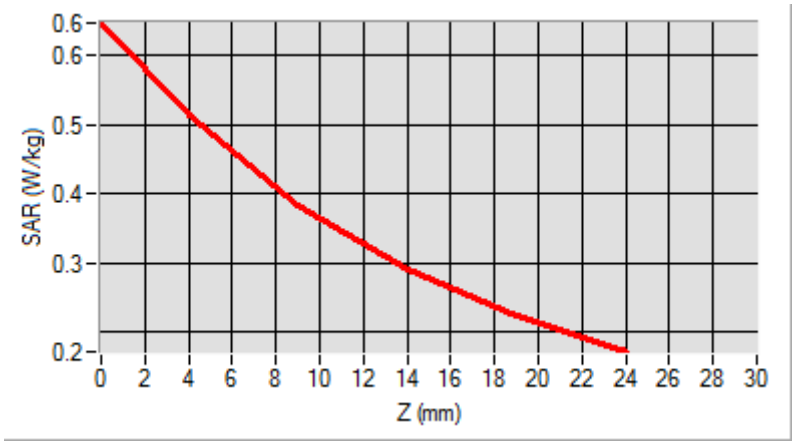
Maximum location: X=7.00, Y=-8.00

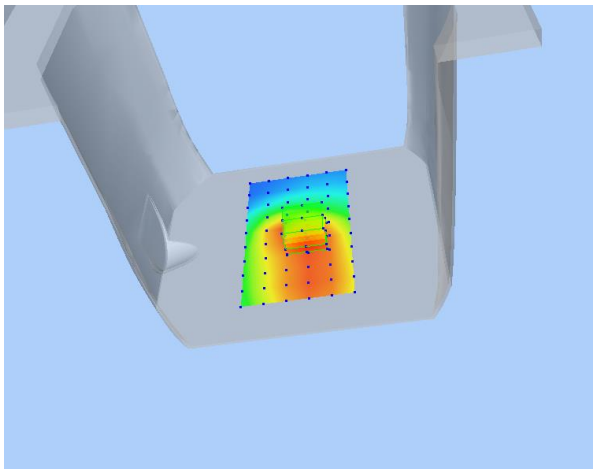
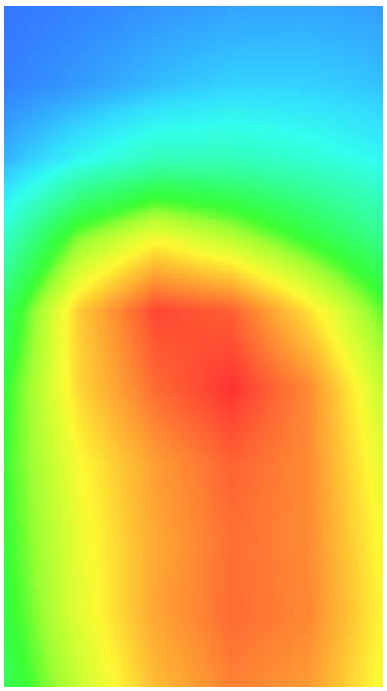
SAR Peak: 0.71 W/kg

SAR 10g (W/Kg)	**0.367338**

SAR 1g (W/Kg)	0.499553

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.6469	0.5121	0.3833	0.2905	0.2236



3D screen shot	Hot spot position
	

MEASUREMENT 17/27

Type: Phone measurement (Complete)
Date of measurement: 2022-09-22
Measurement duration: 12 minutes 21 seconds

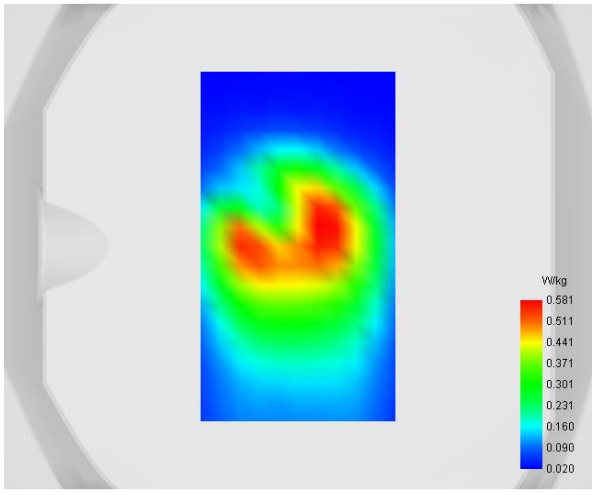
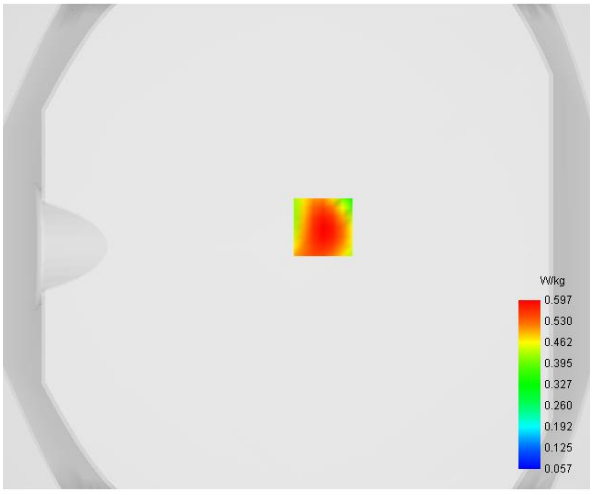
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Flat plane
Device Position	Back
Band	WCDMA1700_RMC
Channels	Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1732.600000
Relative Permittivity (real part)	41.213248
Conductivity (S/m)	1.412117
Power Variation (%)	1.140000
Ambient Temperature	22.3
Liquid Temperature	22.3

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

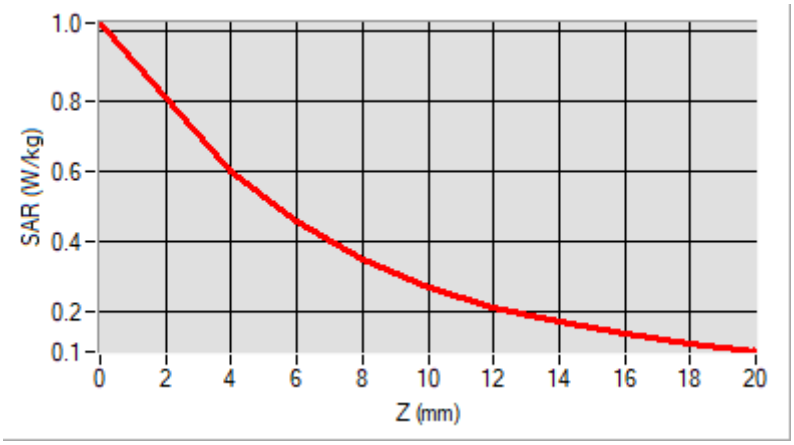
Maximum location: X=11.00, Y=8.00

D. SAR 1g & 10g

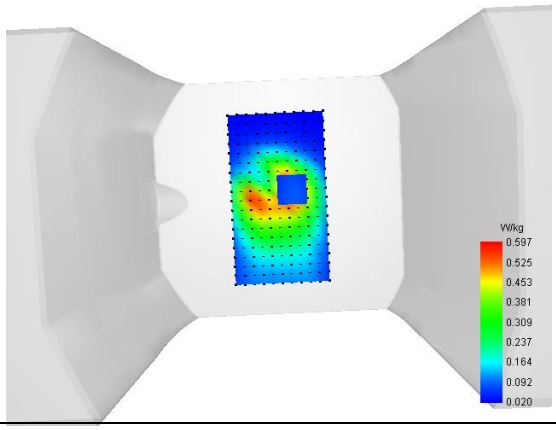
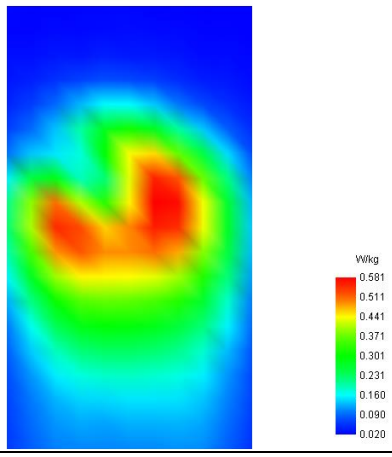
SAR 10g (W/Kg)	**0.311571**
SAR 1g (W/Kg)	**0.567937**

E. Z Axis Scan

Z (mm)	**0.00**	**4.00**	**6.00**	**8.00**	**10.00**	**12.00**	**14.00**	**16.00**	**18.00**
SAR (W/Kg)	**1.0245**	**0.5975**	**0.4562**	**0.3490**	**0.2701**	**0.2116**	**0.1677**	**0.1338**	**0.1066**



F. 3D Image

3D screen shot	**Hot spot position**
	

MEASUREMENT 18/28

Type: Phone measurement (Complete)
Date of measurement: 2022-09-22
Measurement duration: 12 minutes 3 seconds

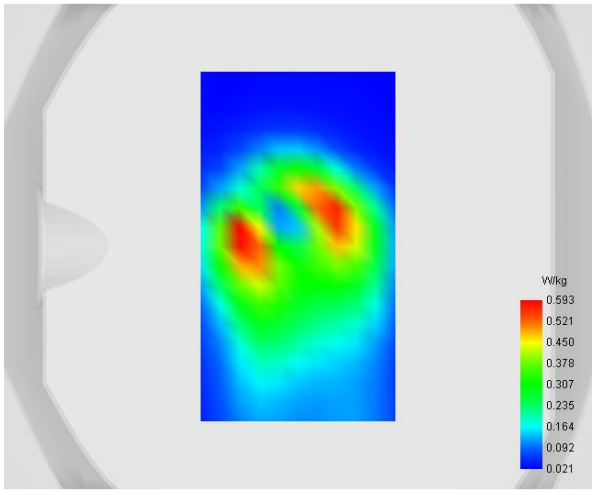
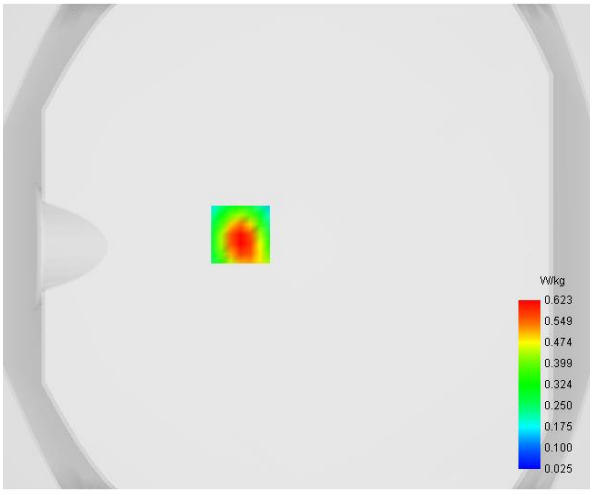
A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat Plane
Device Position	Back
Band	LTE Band 2
Channels	QPSK, 20MHz, 1RB, Low
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1860.000000
Relative Permittivity (real part)	41.215725
Conductivity (S/m)	1.412287
Power Variation (%)	-1.510000
Ambient Temperature	22.3
Liquid Temperature	22.3

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

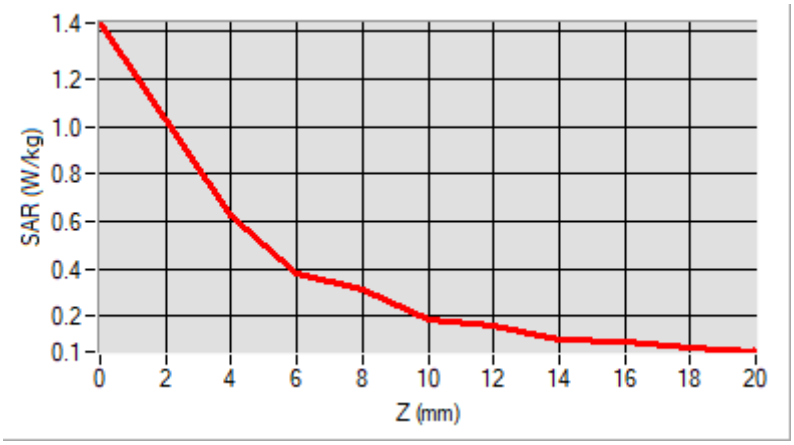
Maximum location: X=-23.00, Y=5.00

D. SAR 1g & 10g

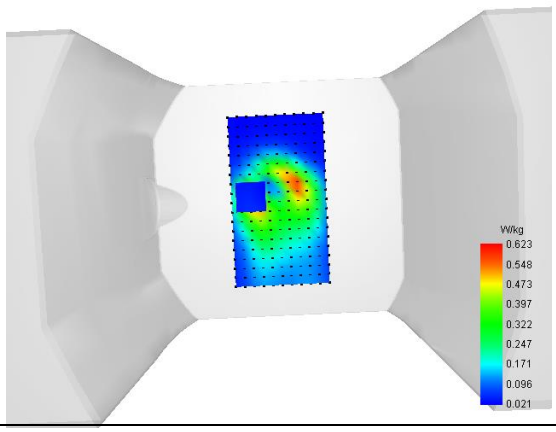
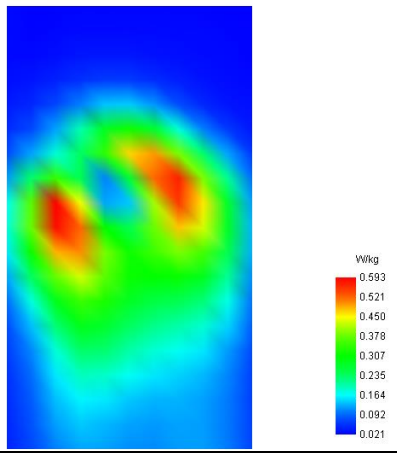
SAR 10g (W/Kg)	**0.262261**
SAR 1g (W/Kg)	**0.585902**

E. Z Axis Scan

Z (mm)	0.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00
SAR (W/Kg)	1.4377	0.6233	0.3805	0.3099	0.1875	0.1608	0.1003	0.0899	0.0682



F. 3D Image

3D screen shot	Hot spot position
	

MEASUREMENT 19/29

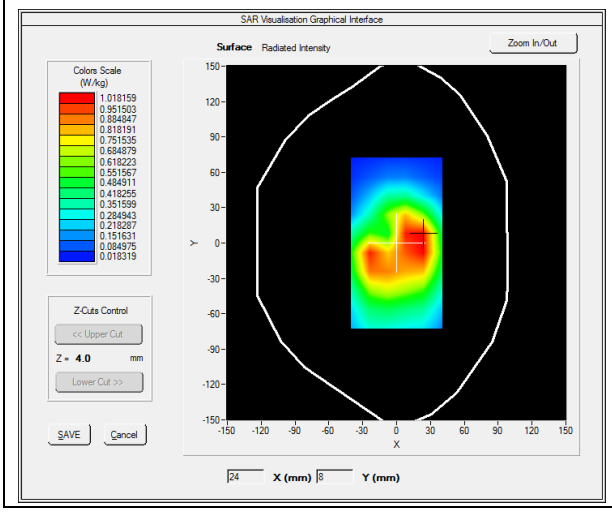
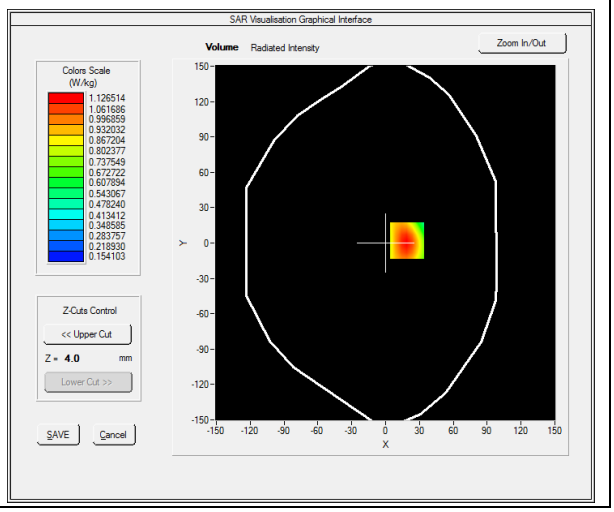
Type: Phone measurement (Complete)
Date of measurement: 2022-06-22
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat Plane
Device Position	Back
Band	LTE Band 4
Channels	QPSK, 20MHz, 1RB, Low
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1720.000000
Relative Permittivity (real part)	41.692275
Conductivity (S/m)	1.410987
Power Variation (%)	-1.010000
Ambient Temperature	22.2
Liquid Temperature	22.2

SURFACE SAR	**VOLUME SAR**
	

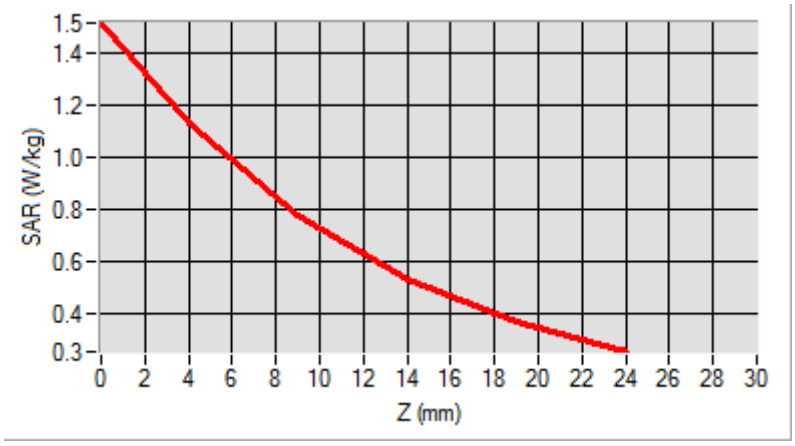
Maximum location: X=19.00, Y=2.00

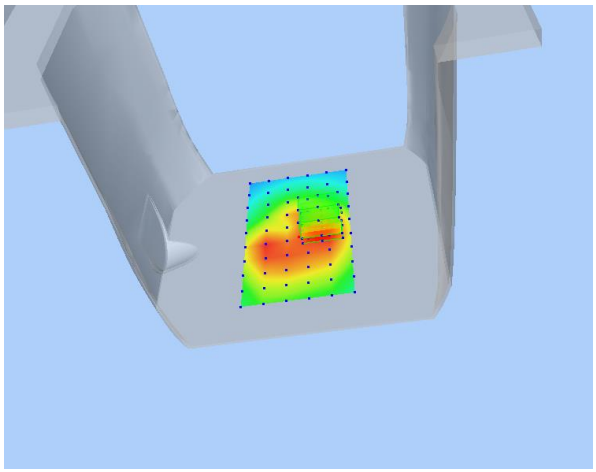
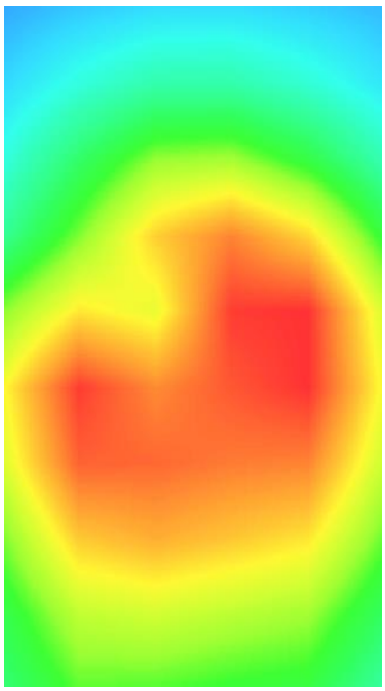
SAR Peak: 1.52 W/kg

SAR 10g (W/Kg)	**0.500497**

SAR 1g (W/Kg)	0.751372

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.4140	1.1065	0.7639	0.5246	0.3632



3D screen shot	Hot spot position
	

MEASUREMENT 20/30

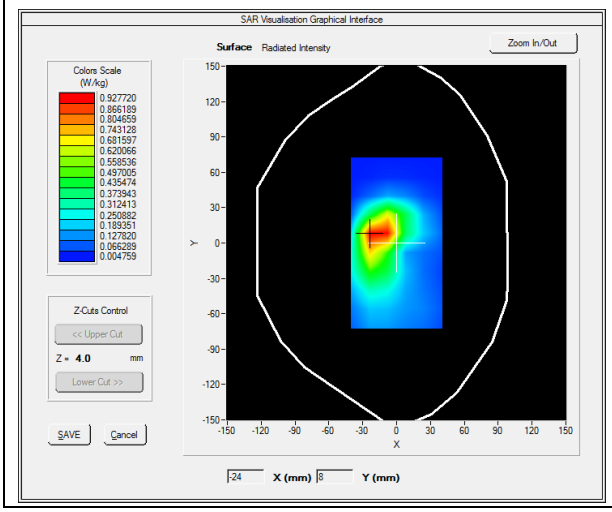
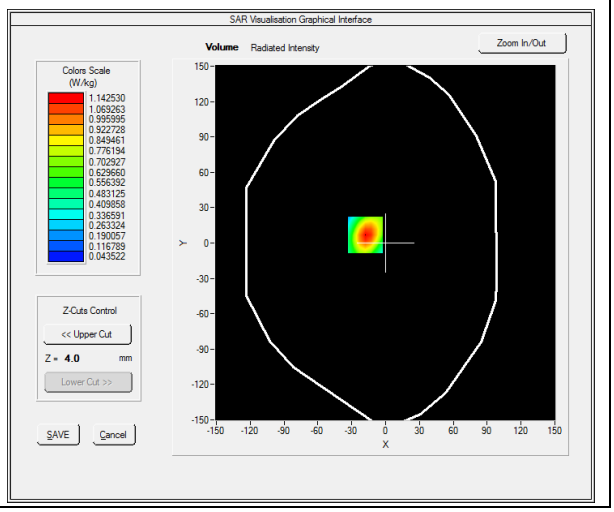
Type: Phone measurement (Complete)
Date of measurement: 2022-06-22
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
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)	51.942275
Conductivity (S/m)	2.180987
Power Variation (%)	-1.010000
Ambient Temperature	22.2
Liquid Temperature	22.2

SURFACE SAR	VOLUME SAR
	

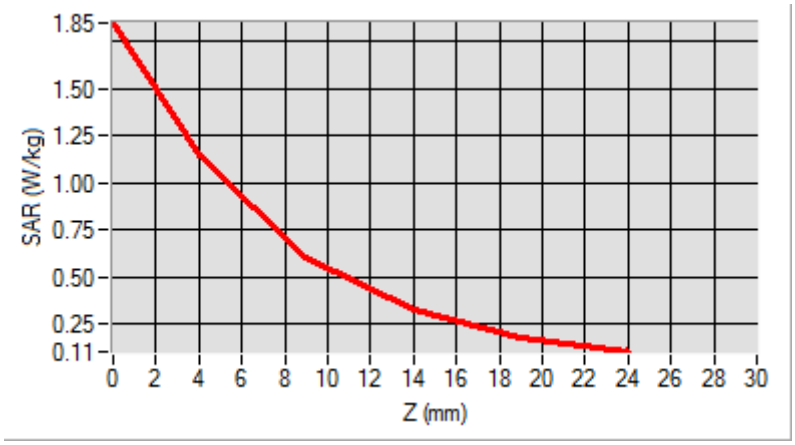
Maximum location: X=-18.00, Y=7.00

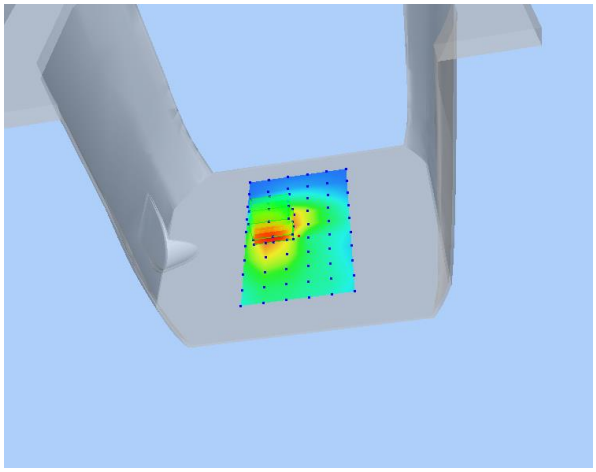
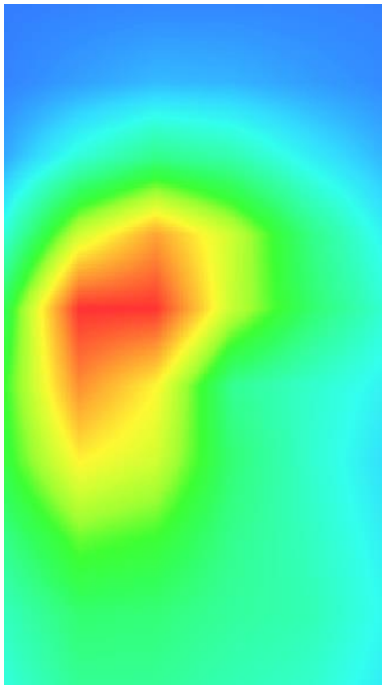
SAR Peak: 1.85 W/kg

SAR 10g (W/Kg)	**0.554794**

SAR 1g (W/Kg)	0.732323

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.7468	1.1325	0.5741	0.3148	0.1748



3D screen shot	Hot spot position
	

MEASUREMENT 21/31

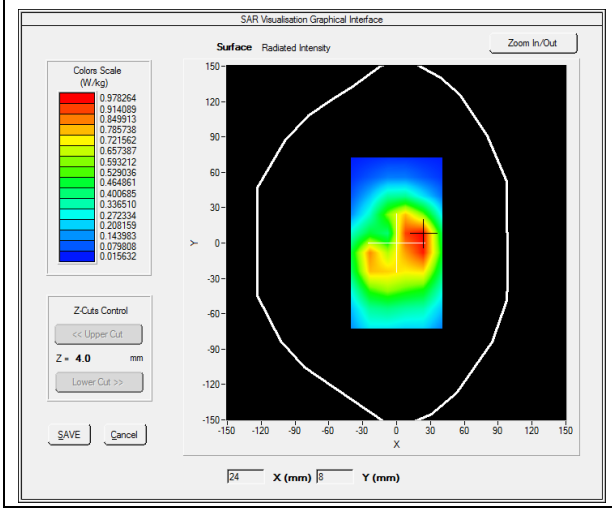
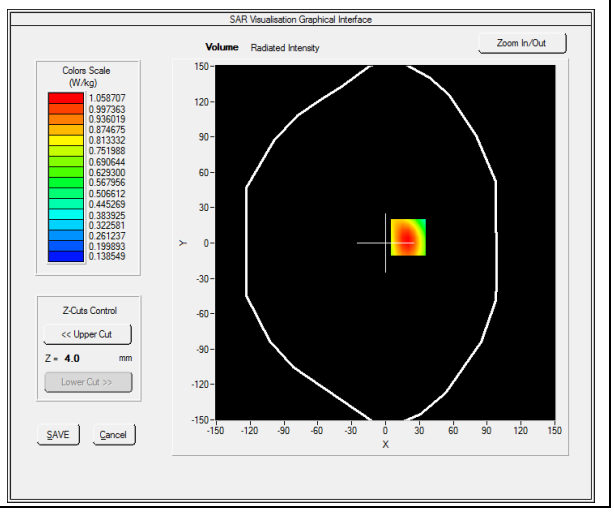
Type: Phone measurement (Complete)
Date of measurement: 2022-06-22
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat Plane
Device Position	Back
Band	LTE Band 66
Channels	QPSK, 20MHz, 1RB, Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1745.000000
Relative Permittivity (real part)	41.692759
Conductivity (S/m)	1.412987
Power Variation (%)	-1.010000
Ambient Temperature	22.2
Liquid Temperature	22.2

SURFACE SAR	VOLUME SAR
	

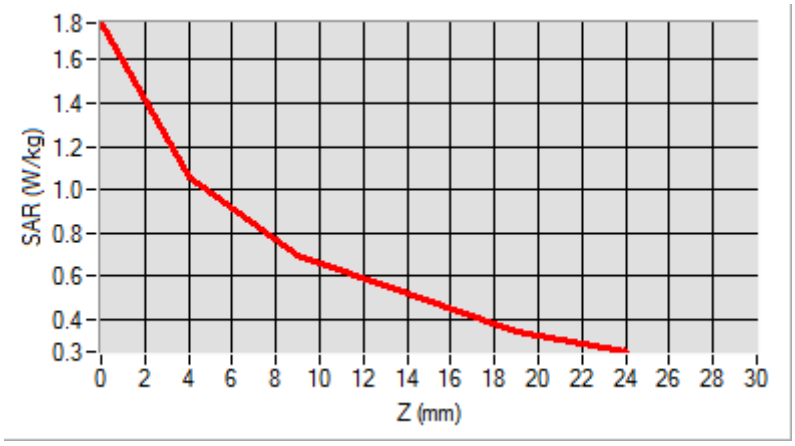
Maximum location: X=20.00, Y=5.00

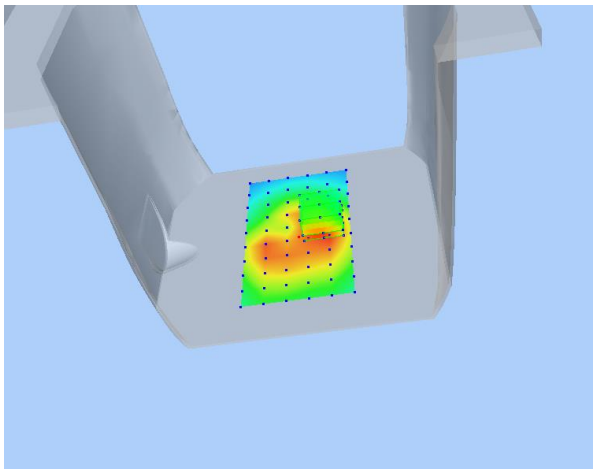
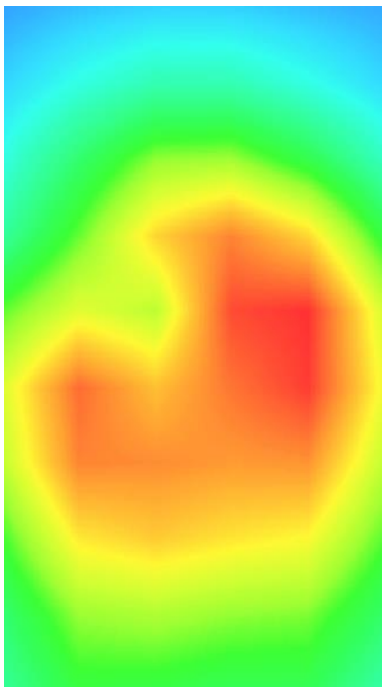
SAR Peak: 1.42 W/kg

SAR 10g (W/Kg)	**0.663048**

SAR 1g (W/Kg)	0.703140

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.7689	1.0587	0.6985	0.5210	0.3446



3D screen shot	Hot spot position
	

MEASUREMENT 22/32

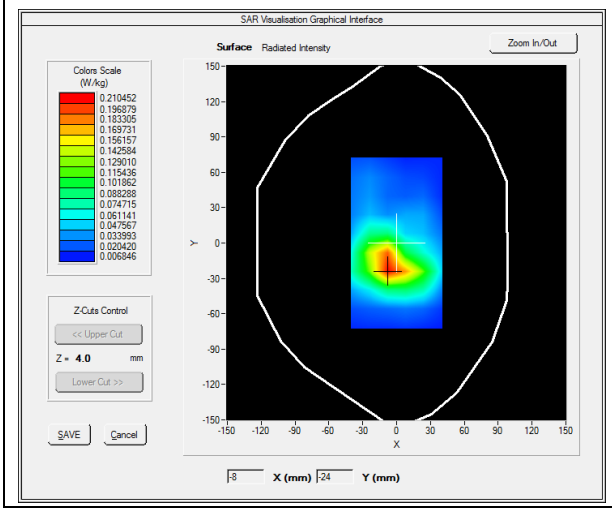
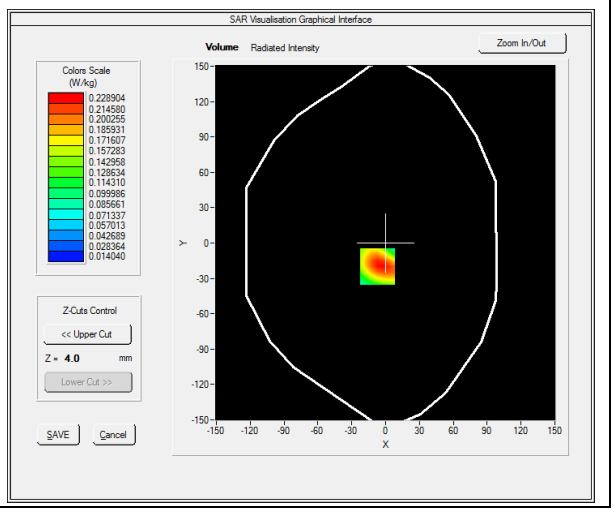
Type: Phone measurement (Complete)
Date of measurement: 2022-06-09
Measurement duration: 12 minutes 21 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Flat plane
Device Position	Back
Band	WiFi_802.11b
Channels	Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative Permittivity (real part)	40.850212
Conductivity (S/m)	1.831248
Power Variation (%)	-1.980000
Ambient Temperature	22.5
Liquid Temperature	22.5

SURFACE SAR	VOLUME SAR
	

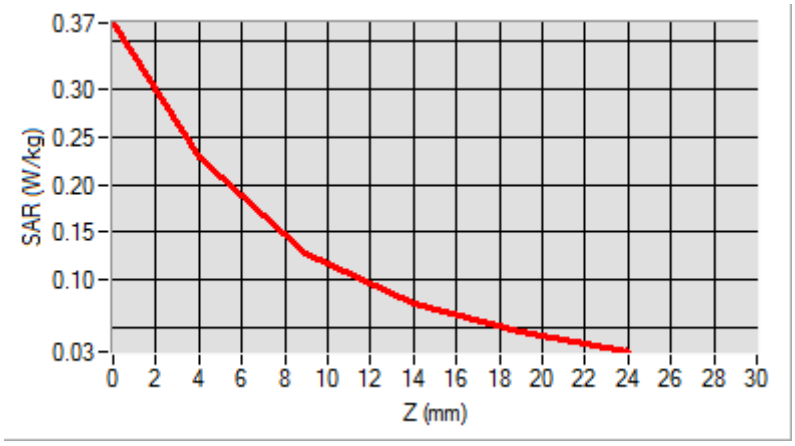
Maximum location: X=-7.00, Y=-20.00

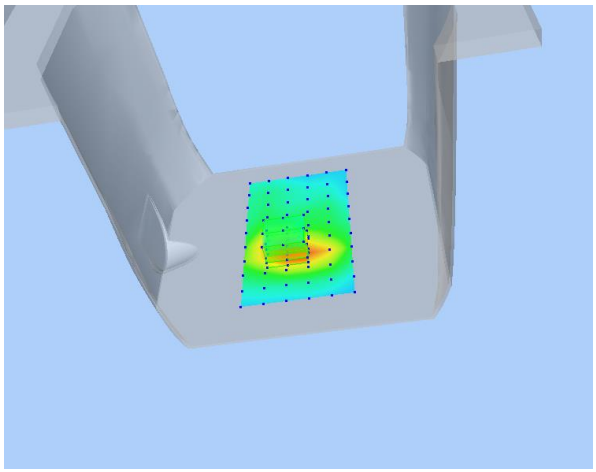
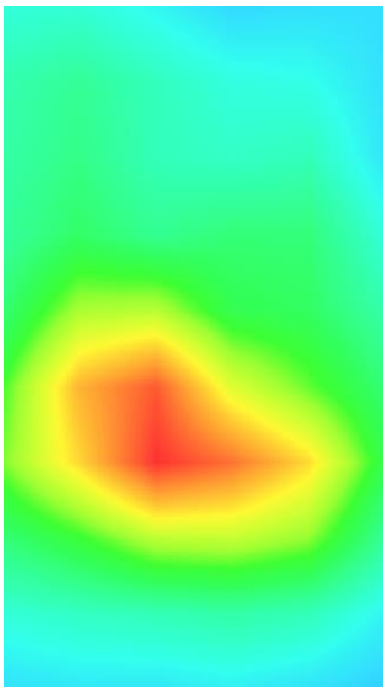
SAR Peak: 0.35 W/kg

SAR 10g (W/Kg)	**0.123983**

SAR 1g (W/Kg)	0.215163

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3687	0.2289	0.1272	0.0753	0.0475



3D screen shot	Hot spot position
	

MEASUREMENT 23

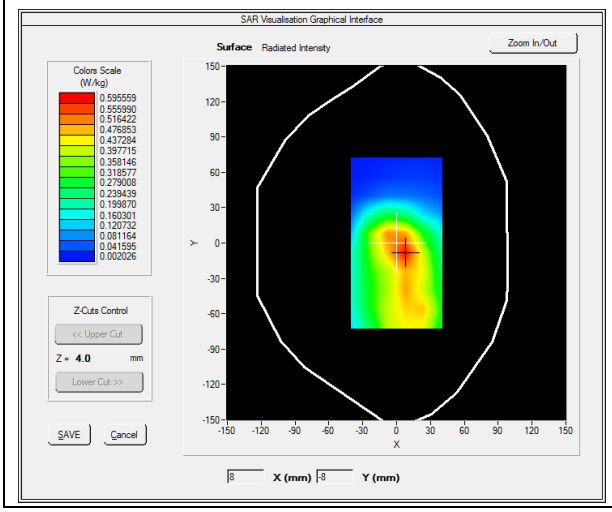
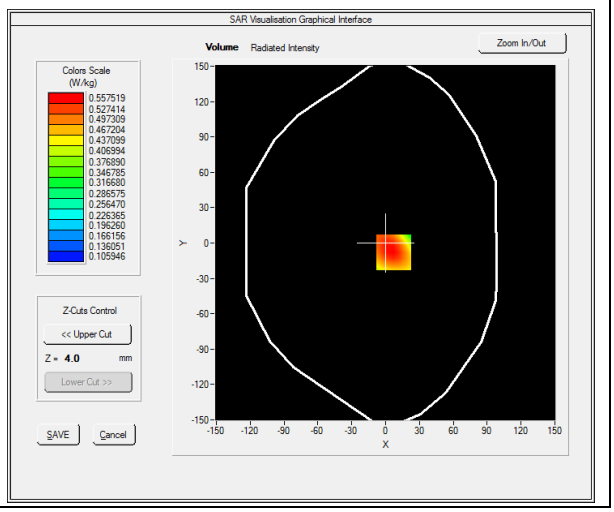
Type: Phone measurement (Complete)
Date of measurement: 2022-06-09
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
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)	40.380415
Conductivity (S/m)	0.914808
Power Variation (%)	-1.910000
Ambient Temperature	22.5
Liquid Temperature	22.5

SURFACE SAR	VOLUME SAR
	

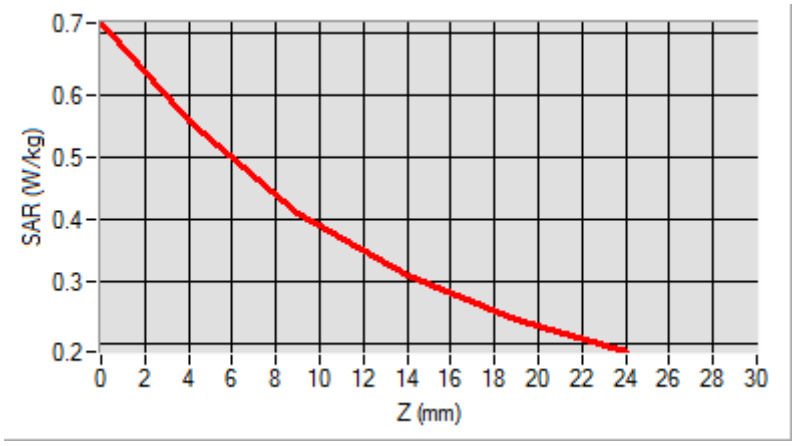
Maximum location: X=7.00, Y=-8.00

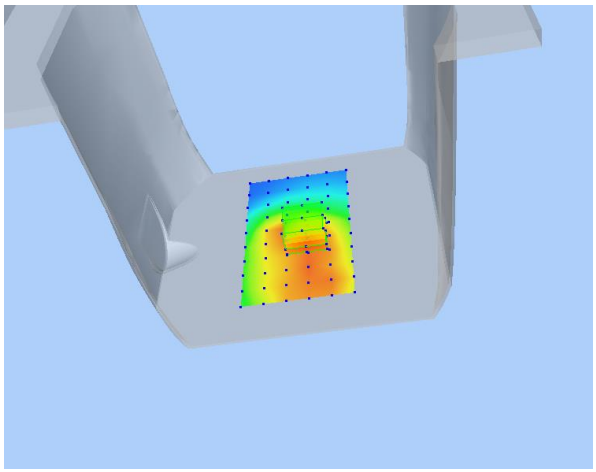
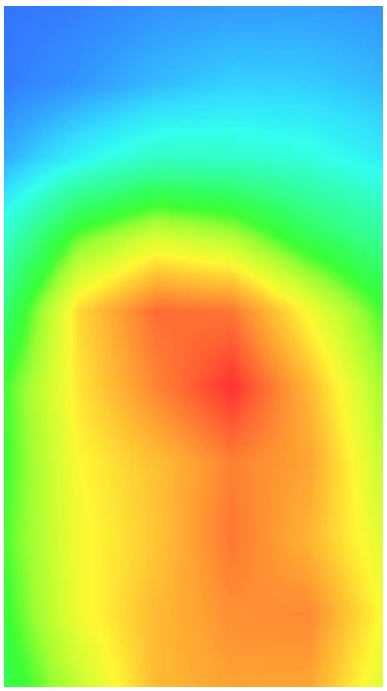
SAR Peak: 0.76 W/kg

SAR 10g (W/Kg)	**0.395860**

SAR 1g (W/Kg)	0.543694

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.7162	0.5575	0.4108	0.3099	0.2409



3D screen shot	Hot spot position
	

MEASUREMENT 24

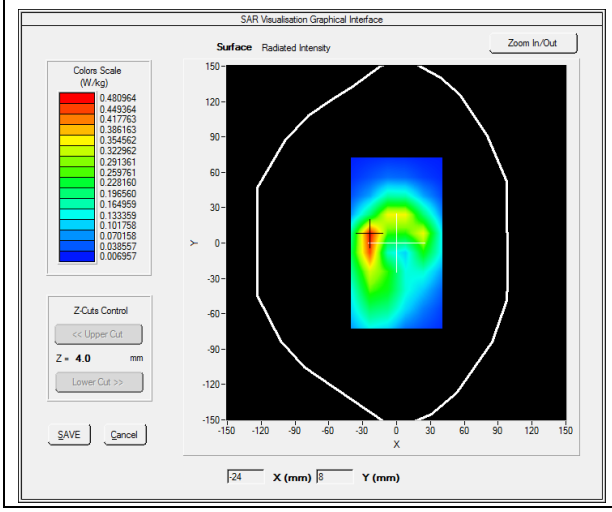
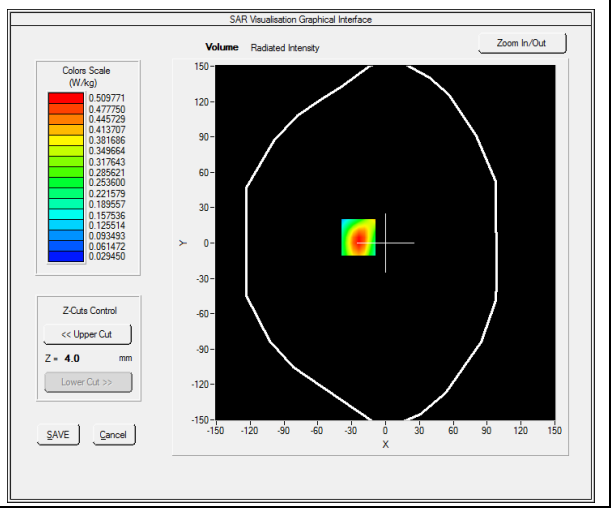
Type: Phone measurement (Complete)
Date of measurement: 2022-06-09
Measurement duration: 12 minutes 21 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Flat plane
Device Position	Back
Band	GPRS1900_4TX
Channels	High
Signal	Duty Cycle 1:2.66

B. SAR Measurement Results

Frequency (MHz)	1909.800000
Relative Permittivity (real part)	40.761854
Conductivity (S/m)	1.414017
Power Variation (%)	-1.210000
Ambient Temperature	22.5
Liquid Temperature	22.5

SURFACE SAR	VOLUME SAR
	

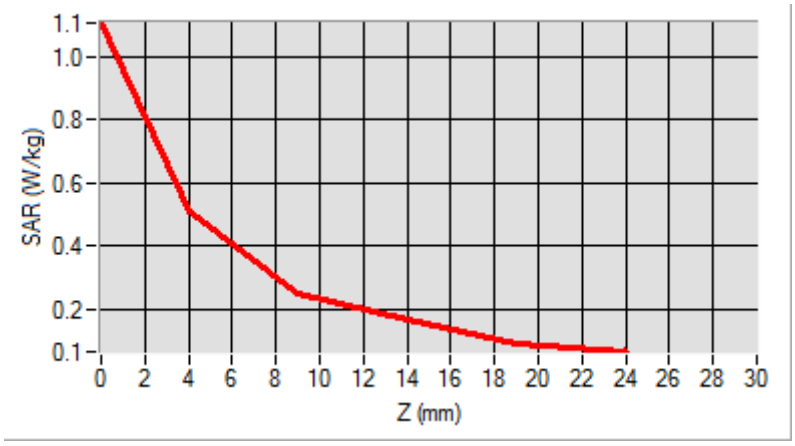
Maximum location: X=-24.00, Y=5.00

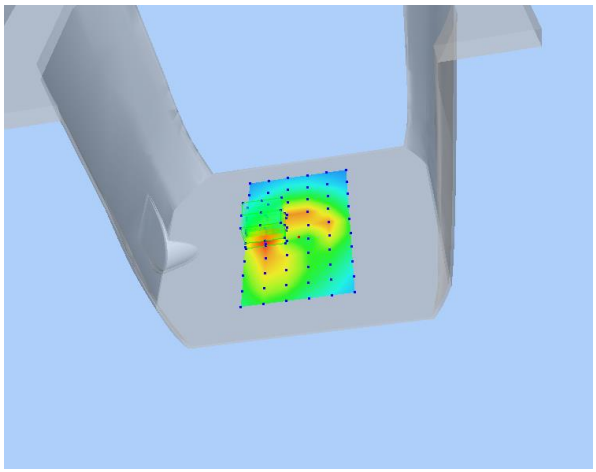
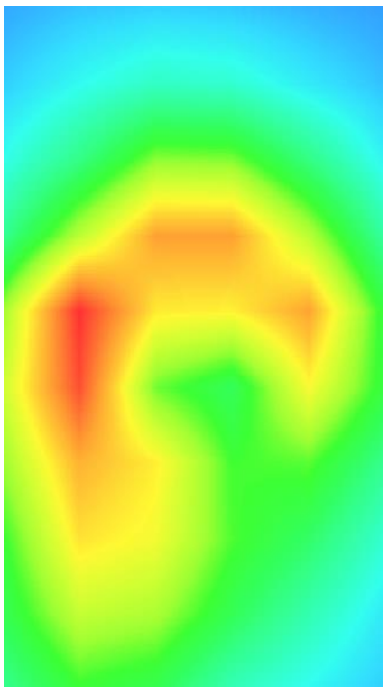
SAR Peak: 0.81 W/kg

SAR 10g (W/Kg)	**0.259753**

SAR 1g (W/Kg)	0.472466

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.1054	0.5098	0.2489	0.1681	0.0924



3D screen shot	Hot spot position
	

Annex C. EUT Photos

EUT View Front

EUT View Back

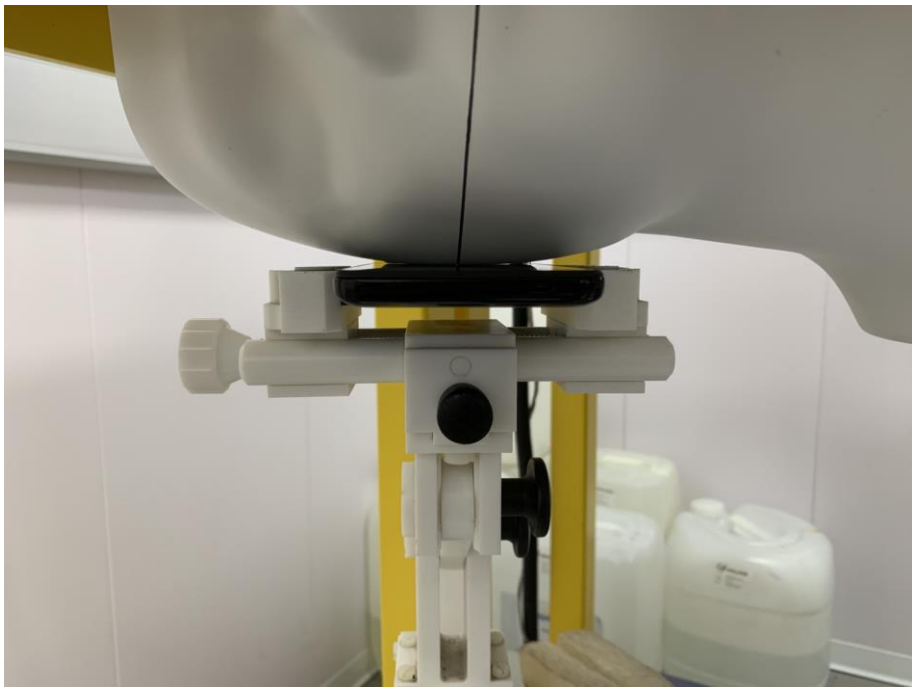
EUT Housing and Board View 1

Antenna View

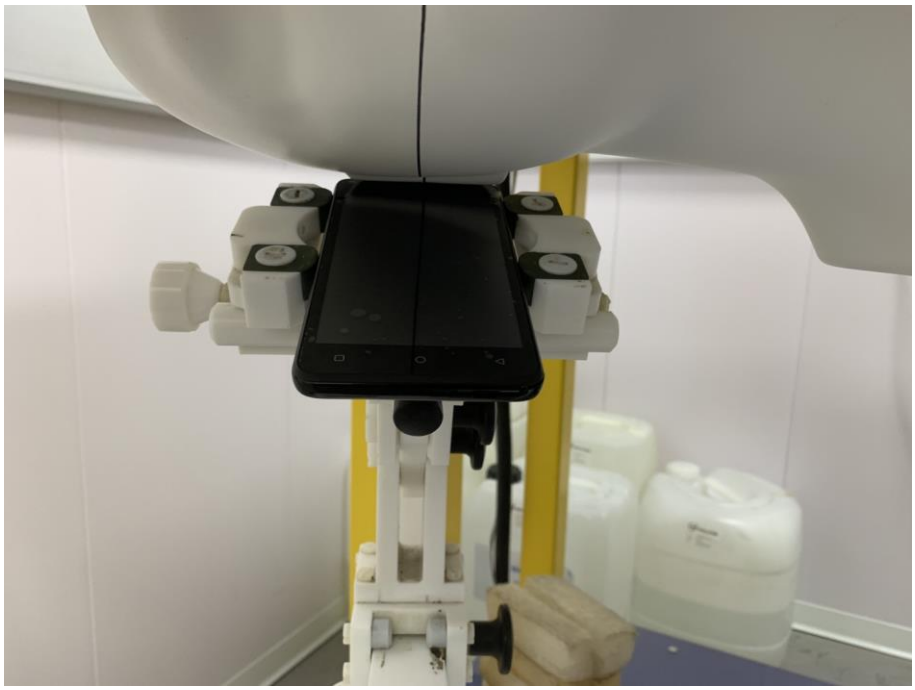
Annex D. Test Setup Photos

Head Exposure Conditions

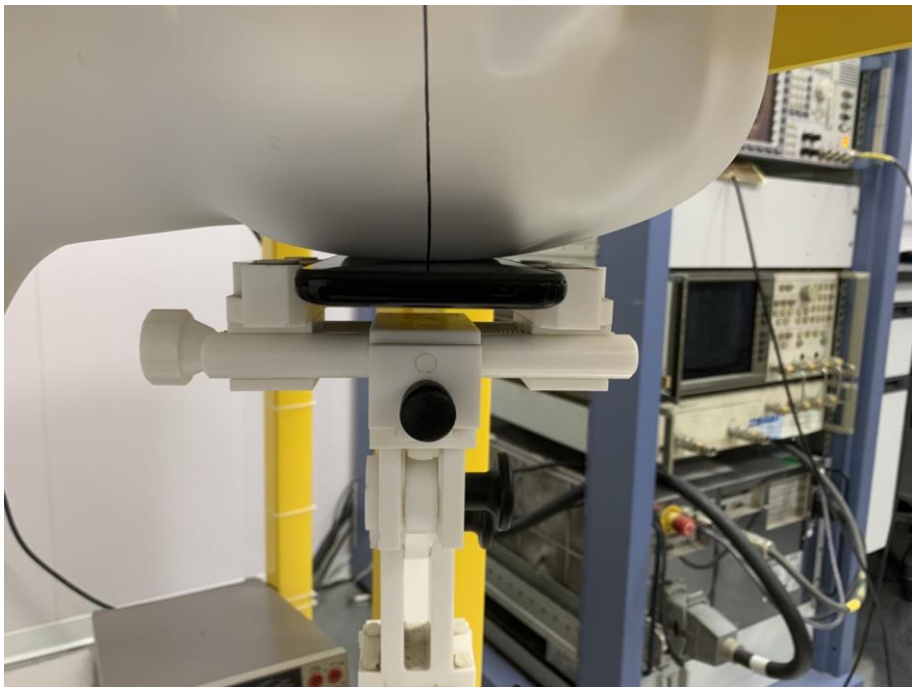
Right Cheek



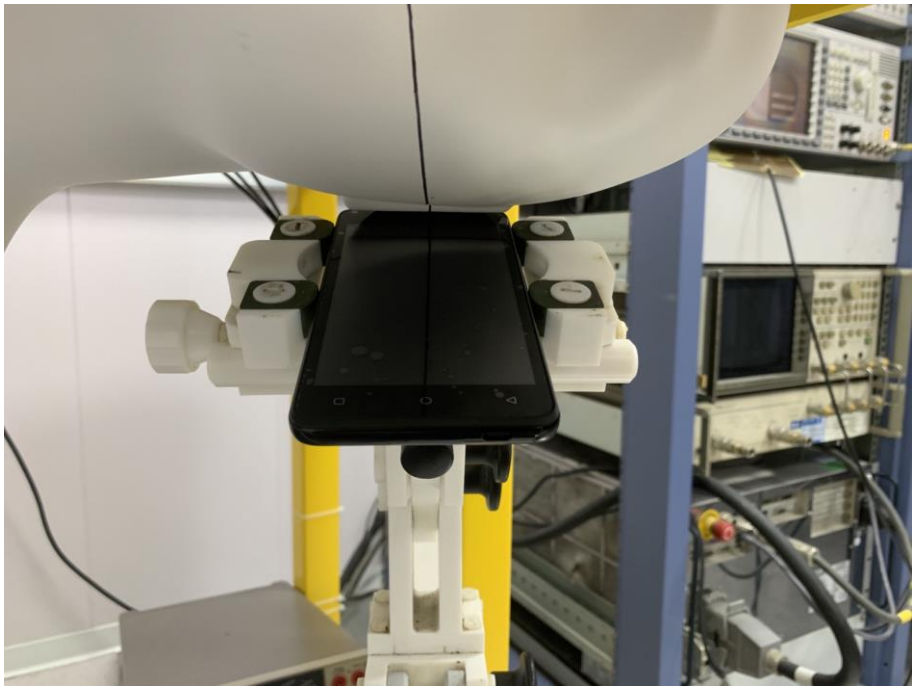
Tilt



Left Cheek



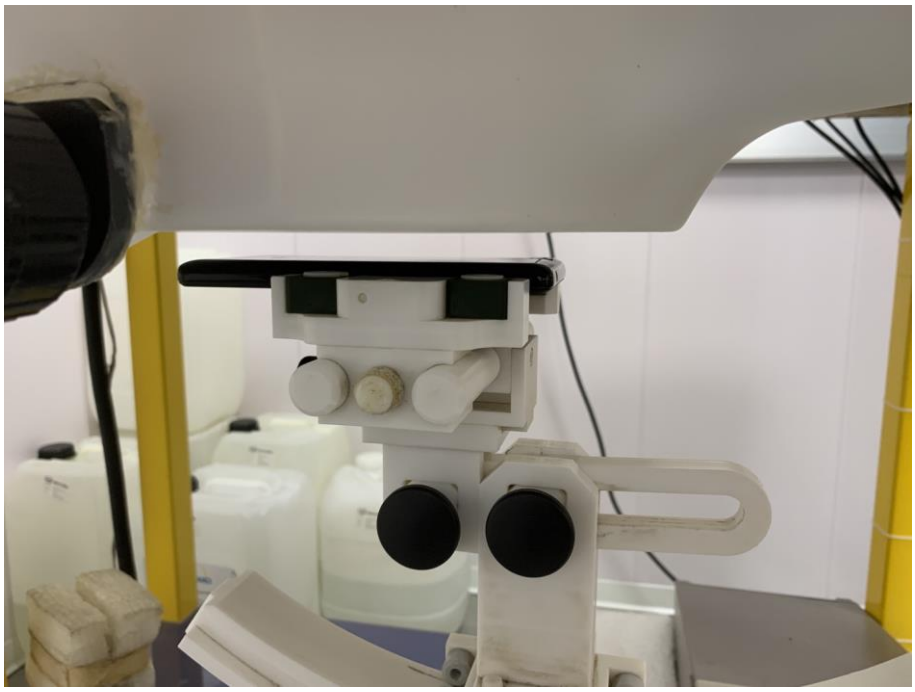
Tilt



Body mode Exposure Conditions
Test distance: 10mm

Body Front

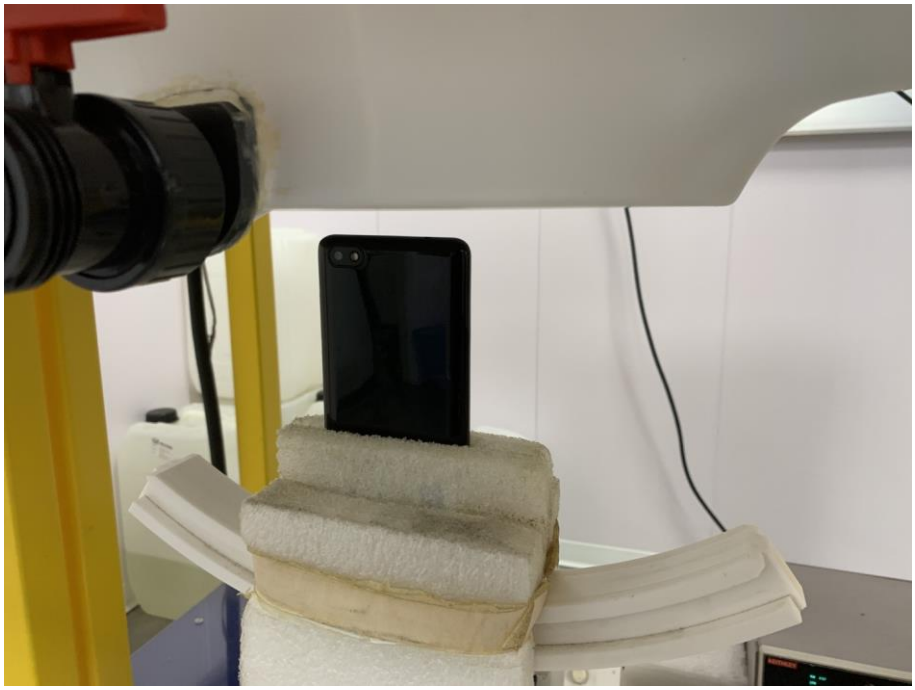
Body Back



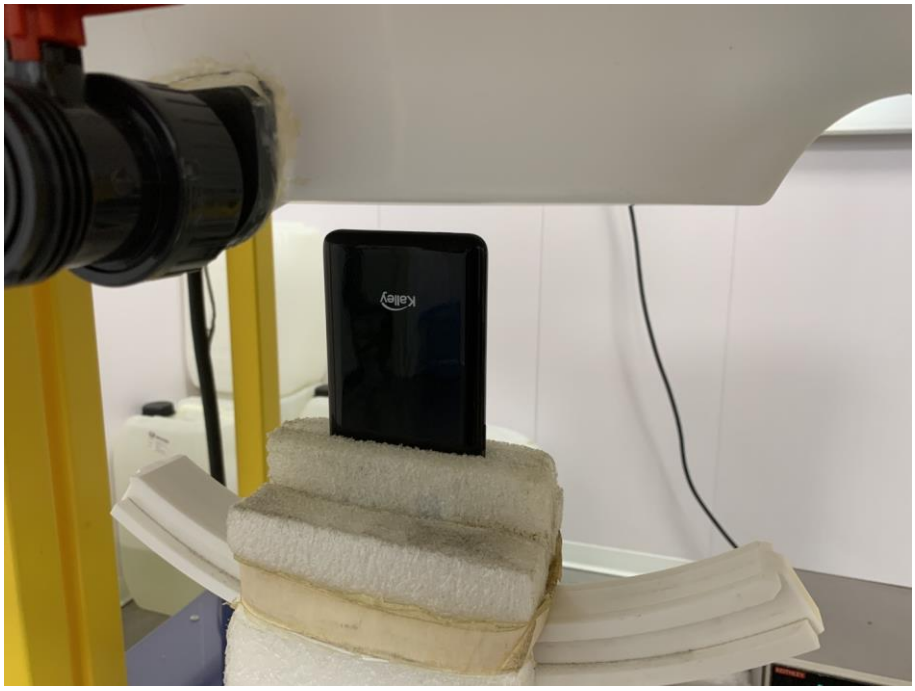
Body Right

Body Left

Body Top



Body Bottom



Annex E. Calibration Certificate

Please refer to the exhibit for the calibration certificate

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