FCC SAR
Measurement and Test Report

For

SC GOLD STANDARD INTERNATIONAL SRL

Buciumat 14, Sector 1, Bucuresti, Romania

FCC ID: 2AU6K-K1

Test Standards:	FCC Part 2.1093 ANSI / IEEE C95.1 :2005+A1:2010 ANSI / IEEE C95.3 : 2002(R2008) IEEE 1528 :2013
Product Description:	IMPulse
Tested Model:	K1
Report No.:	WTX19X11077161W
Sample Received Date:	2019-11-07
Tested Date:	2019-11-07 to 2019-12-02
Issued Date:	2019-12-03
Tested By:	Ruler Liu / Engineer
Reviewed By:	Silin Chen / EMC Manager
Approved & Authorized By:	Jandy So / PSQ Manager
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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM Test Technology Co., Ltd.

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1. General Information

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	SC GOLD STANDARD INTERNATIONAL SRL
Address of applicant:	Buciumat 14, Sector 1, Bucuresti, Romania
Manufacturer:	Shenzhen KEP Technology Co., Ltd
Address of manufacturer:	4th Floor South, Building B20, Heng Feng Industrial Area, Xixiang Town, Bao'an District, Shenzhen, Guangdong, China 518126

General Description of EUT:	
Product Name:	IMPulse
Brand Name:	Cryptodata
Model No.:	K1
Adding Model(s):	/
Rated Voltage:	DC3.85V by Battery
Battery:	2000mAh
Device Category:	Portable Device
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: 31.33dBm, GSM1900: 28.57dBm EDGE850: 26.09dBm, EDGE1900: 24.55dBm
Type of Modulation:	GMSK, 8PSK
Type of Antenna:	Integral Antenna
Antenna Gain:	GSM850: 1.6dBi; GSM1900: 3.8dBi
GPRS/EDGE Class:	Class 12
3G	
Support Networks:	WCDMA, HSDPA, HSUPA
Support Band:	WCDMA Band 2, WCDMA Band 5
Uplink Frequency:	WCDMA Band 2: 1850~1910MHz WCDMA Band 5: 824~849MHz
Downlink Frequency:	WCDMA Band 2: 1930~1990MHz WCDMA Band 5: 869~894MHz
RF Output Power:	WCDMA Band 2: 22.58dBm, WCDMA Band 5: 22.51dBm
Type of Modulation:	BPSK
Antenna Type:	Integral Antenna
Antenna Gain:	WCDMA Band 2: 2.8dBi, WCDMA Band 5: 1.6dBi
4G	
Support Networks:	FDD-LTE
Support Band:	FDD-LTE Band 2,4, 5,7, TDD-LTE Band 38,40
Uplink Frequency:	FDD-LTE Band 2: Tx: 1850-1910MHz, FDD-LTE Band 4: Tx: 1710-1755MHz, FDD-LTE Band 5: Tx: 824-849MHz, FDD-LTE Band 7: Tx: 2500-2570MHz, TDD-LTE Band 38: Tx: 2570-2620MHz, TDD-LTE Band 40: Tx: 2305-2315MHz&2350-2360MHz TDD-LTE Band 41: Tx: 2500-2690MHz
Downlink Frequency:	FDD-LTE Band 2: Rx: 1930-1990MHz, FDD-LTE Band 4: Rx: 2110-2155MHz, FDD-LTE Band 5: Rx: 869-894MHz, FDD-LTE Band 7: Rx: 2620-2690MHz, TDD-LTE Band 38: Rx: 2570-2620MHz TDD-LTE Band 40: Rx: 2305-2315MHz&2350-2360MHz

	TDD-LTE Band 41:Rx: 2500-2690MHz
RF Output Power:	FDD-LTE Band 2: 24.29dBm, FDD-LTE Band 4: 24.24dBm, FDD-LTE Band 5: 23.88dBm, FDD-LTE Band 7: 24.64dBm, TDD-LTE Band 38: 24.51dBm TDD-LTE Band 40 (2305-2315MHz): 22.71dBm, TDD-LTE Band 40 (2350-2360MHz): 21.60dBm, TDD-LTE Band 41: 24.98dBm
Type of Modulation:	QPSK, 16QAM
Antenna Type:	Integral Antenna
Antenna Gain:	FDD-LTE Band 2: 3.8dBi, FDD-LTE Band 4: 3.95dBi, FDD-LTE Band 5: 1.6dBi, FDD-LTE Band 7: 4.3dBi, TDD-LTE Band 38: 4.15dBi, TDD-LTE Band 40: 4.25dBi, TDD-LTE Band 41: 4.35dBi,
WIFI(2.4G)	
Support Standards:	802.11b, 802.11g, 802.11n
Frequency Range:	2412-2462MHz for 11b/g/n(HT20) 2422-2452MHz for 11n(HT40)
RF Output Power:	15.87dBm (Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Data Rate:	1-11Mbps, 6-54Mbps, up to 150Mbps
Quantity of Channels:	11 for 802.11b/g/n(HT20) 7 for 802.11n(HT40)
Channel Separation:	5MHz
Antenna Type:	Integral Antenna
Antenna Gain:	2.9dBi
Bluetooth	
Bluetooth Version:	V5.0
Frequency Range:	2402-2480MHz
RF Output Power:	4.761dBm (Conducted)
Data Rate:	1Mbps, 2Mbps, 3Mbps
Modulation:	GFSK, Pi/4 QDPSK, 8DPSK
Quantity of Channels:	79/40
Channel Separation:	1MHz/2MHz
Antenna Type:	Integral Antenna
Antenna Gain:	2.9dBi
WIFI(5G)	
Support Standards:	802.11a,802.11n(HT20) , 802.11n-HT40, 802.11ac-VH80

Frequency Range:	Band 1: 5150-5250MHz, Band 4: 5725-5850MHz
RF Output Power:	12.78dBm (Conducted)
Type of Modulation:	QPSK, 16QAM, 64QAM
Type of Antenna:	Integral Antenna
Antenna Gain:	4.8dBi
NFC	
Frequency Range:	13.56MHz
Max. Field Strength:	54.14dBuV/m (at 3m)
Antenna Type:	Integral Antenna

1.2 Test Standards

The following report is prepared on behalf of the SC GOLD STANDARD INTERNATIONAL SRL in accordance with FCC 47 CFR Part 2.1093, ANSI/IEEE C95.1-2005, ANSI / IEEE C95.3 :2002, 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: Shenzhen SEM Test Technology Co., Ltd.
Address: 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C. (518101）

FCC – Registration No.: 125990
Shenzhen SEM Test Technology 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 Shenzhen SEM.Test Technology 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	0.136	0.414	**0.944**	1.6
WCDMA	0.096	0.574	0.574	1.6
LTE	**0.350**	**0.730**	0.730	1.6
WLAN 2.4G	0.090	0.142	0.142	1.6
WLAN 5.2G	0.216	0.183	0.183	1.6
WLAN 5.8G	0.298	0.100	0.177	1.6
BT	0.008	0.019	0.018	1.6
Simultaneous Transmission	0.648	0.913	**1.127**	1.6

Remark:

*The highest reported SAR values for head, body-worn, router(hotspot), and simultaneous transmission conditions are **0.350W/kg, 0.730 W/kg, 0.944W/kg, and 1.127W/kg** respectively.*

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 ANSI/IEEE C95.1-2005, 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.

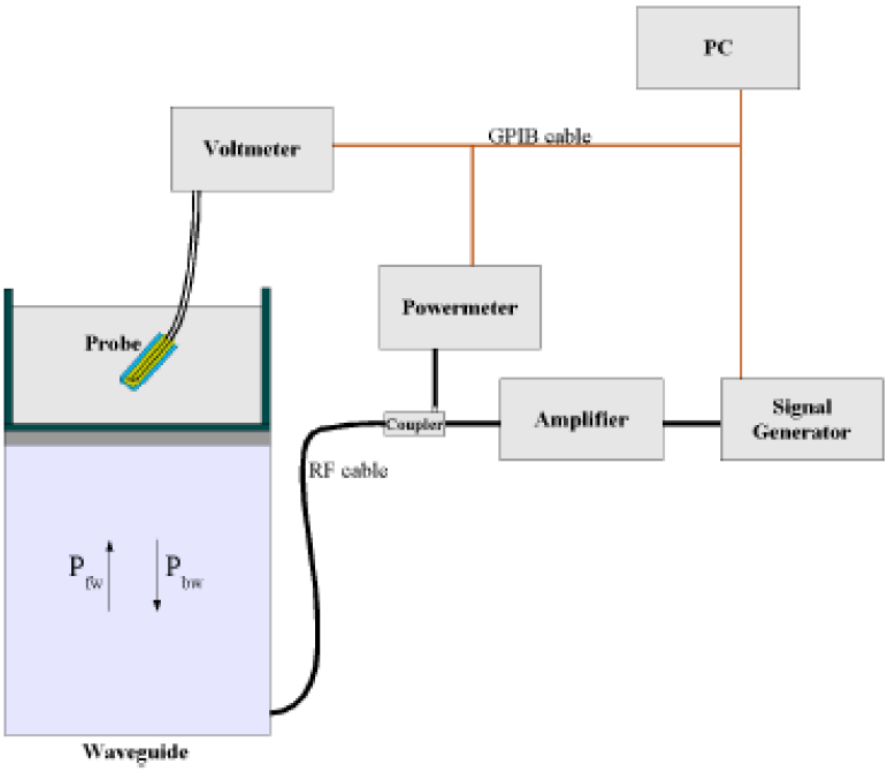
4.2 Probe

For the measurements the Specific Dosimetric E-Field Probe SSE5 SN 09/13 EP168 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.

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

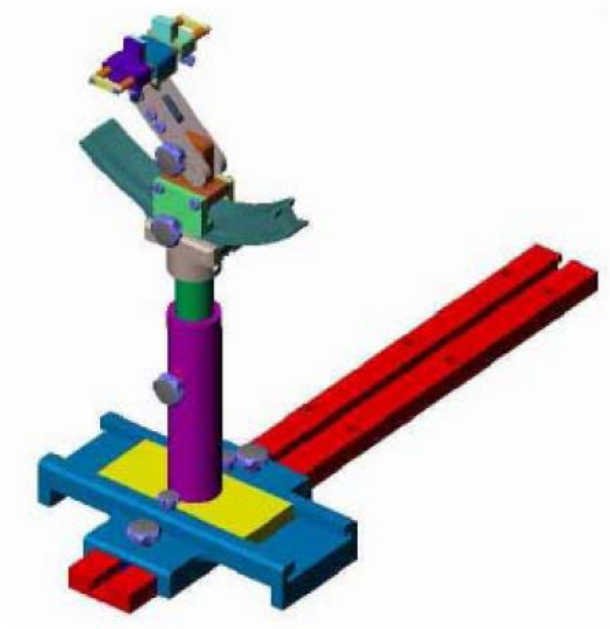
Where:
σ = simulated tissue conductivity,
ρ = Tissue density (1.25 g/cm3 for brain tissue)

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

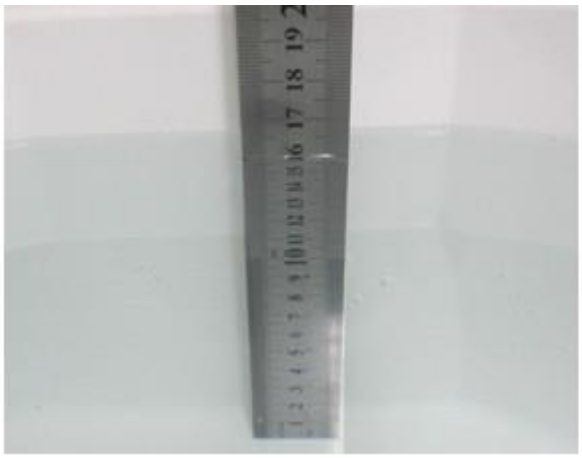
4.6 Test Equipment List

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
E-Field Probe	MVG	SSE5	SN 09/13 EP168	2019-05-22	2020-05-21
E-Field Probe	MVG	SSE2	SN 45/15 EPGO280	2019-07-08	2020-07-07
835MHz Dipole	MVG	SID835	SN 47/12 DIP 0G835-204	2019-03-16	2020-03-15
1800MHz Dipole	MVG	SID1800	SN 47/12 DIP 1G800-206	2019-03-16	2020-03-15
1900MHz Dipole	MVG	SID1900	SN 47/12 DIP 1G900-207	2019-03-16	2020-03-15
2450MHz Dipole	MVG	SID2450	SN 13/15 DIP 2G450-364	2019-03-16	2020-03-15
2600MHz Dipole	MVG	SID2600	SN 13/15 DIP 2G600-365	2019-03-16	2020-03-15
5 GHz Waveguide	MVG	SWG5500	SN 49/16 WGA45	2019-07-15	2020-07-14
Dielectric Probe Kit	MVG	SCLMP	SN 47/12 OCPG49	2019-03-16	2020-03-15
SAM Phantom	MVG	SAM	SN/ 47/12 SAM95	N/A	N/A
MULTIMETER	KEITHLEY	Keithley 2000	4006367	2019-04-30	2020-04-29
Signal Generator	Rohde & Schwarz	SMR20	100047	2019-04-30	2020-04-29
Universal Tester	Rohde & Schwarz	CMU200	112012	2019-04-30	2020-04-29
Communications Tester	Rohde & Schwarz	CMW500	148650	2019-04-30	2020-04-29
Network Analyzer	HP	8753C	2901A00831	2019-04-30	2020-04-29
Directional Couplers	Agilent	778D	20160	2019-04-30	2020-04-29

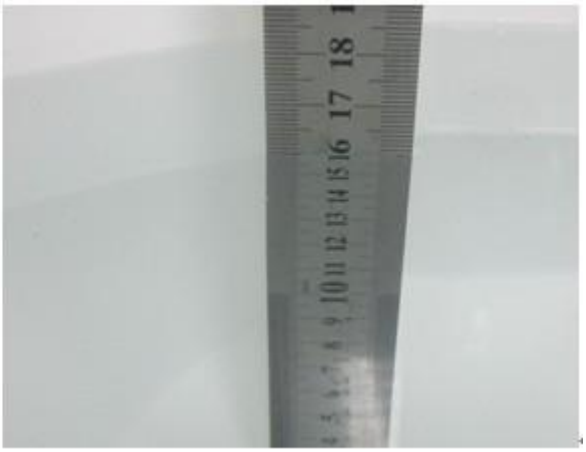
5. Tissue Simulating Liquids

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						
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
Body						
835	50.8	0.9	48.1	0.1	0.1	0
1700-1900	70.2	0.4	0	0	0	29.4
2450	68.6	0.1	0	0	0	31.3
2600	68.2	0.1	0	0	0	31.7

Frequency (MHz)	Water (%)	Hexyl Carbitol (%)	Triton X-100 (%)
Head			
5000-6000	65.52	17.24	17.24
Body			
5000-6000	78.6	10.7	10.7

5.2 Tissue Dielectric Parameters for Head and Body Phantoms

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

Target Frequency (MHz)	Head		Body	
	Conductivity (σ)	Permittivity (ε_r)	Conductivity (σ)	Permittivity (ε_r)
150	0.76	52.3	0.80	61.9
300	0.87	45.3	0.92	58.2
450	0.87	43.5	0.94	56.7
750	0.89	41.9	0.96	55.5
835	**0.90**	**41.5**	**0.97**	**55.2**
900	0.97	41.5	1.05	55.0
915	0.98	41.5	1.06	55.0
1450	1.20	40.5	1.30	54.0
1610	1.29	40.3	1.40	53.8
1750	**1.37**	**40.1**	**1.49**	**53.4**
1800-2000	**1.40**	**40.0**	**1.52**	**53.3**
2450	**1.80**	**39.2**	**1.95**	**52.7**
3000	2.40	38.5	2.73	52.0
5200	**4.66**	**36.0**	**5.30**	**49.0**
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 (%)		
824.2	21.2	0.87	0.90	-3.33	41.11	41.50	-0.94	±5	2019-11-25
835	21.2	0.87	0.90	-3.33	41.11	41.50	-0.94	±5	2019-11-25
836.6	21.2	0.87	0.90	-3.33	41.11	41.50	-0.94	±5	2019-11-25
848.8	21.2	0.87	0.90	-3.33	41.11	41.50	-0.94	±5	2019-11-25
1710.7	21.3	1.37	1.37	0.00	39.02	40.1	-2.69	±5	2019-11-26
1747.5	21.3	1.37	1.37	0.00	39.02	40.1	-2.69	±5	2019-11-26
1750	21.3	1.37	1.37	0.00	39.02	40.1	-2.69	±5	2019-11-26
1784.3	21.3	1.37	1.37	0.00	39.02	40.1	-2.69	±5	2019-11-26
1800	21.2	1.48	1.52	-2.63	52.26	53.30	-1.95	±5	2019-11-26
1850.2	21.2	1.48	1.52	-2.63	52.26	53.30	-1.95	±5	2019-11-26
1880	21.2	1.49	1.52	-1.97	52.21	53.30	-2.05	±5	2019-11-26
1900	21.3	1.38	1.40	-1.43	38.56	40.00	-3.60	±5	2019-11-26
1909.8	21.3	1.38	1.40	-1.43	38.56	40.00	-3.60	±5	2019-11-26
2307.5	21.3	1.74	1.80	-3.33	38.15	39.20	-2.68	±5	2019-11-27
2350	21.3	1.74	1.80	-3.33	38.15	39.20	-2.68	±5	2019-11-27
2357.5	21.3	1.74	1.80	-3.33	38.15	39.20	-2.68	±5	2019-11-27
2412	21.3	1.74	1.80	-3.33	38.15	39.20	-2.68	±5	2019-11-27
2437	21.3	1.74	1.80	-3.33	38.15	39.20	-2.68	±5	2019-11-27
2450	21.3	1.74	1.80	-3.33	38.15	39.20	-2.68	±5	2019-11-27
2462	21.3	1.74	1.80	-3.33	38.15	39.20	-2.68	±5	2019-11-27
2502.5	21.3	1.93	1.96	-1.53	38.63	39.0	-0.95	±5	2019-11-27
2593	21.3	1.93	1.96	-1.53	38.63	39.0	-0.95	±5	2019-11-27
2600	21.3	1.93	1.96	-1.53	38.63	39.0	-0.95	±5	2019-11-27
2687.5	21.3	4.87	4.66	4.51	35.6	36.0	-1.11	±5	2019-11-28
5180	21.3	4.87	4.66	4.51	35.6	36.0	-1.11	±5	2019-11-28
5200	21.3	4.87	4.66	4.51	35.6	36.0	-1.11	±5	2019-11-28
5240	21.3	4.87	4.66	4.51	35.6	36.0	-1.11	±5	2019-11-28
5745	21.3	5.17	5.27	-1.90	35.6	35.3	0.85	±5	2019-11-28
5785	21.3	5.17	5.27	-1.90	35.6	35.3	0.85	±5	2019-11-28
5800	21.3	5.17	5.27	-1.90	35.6	35.3	0.85	±5	2019-11-28
5825	21.3	5.17	5.27	-1.90	35.6	35.3	0.85	±5	2019-11-28

Body Tissue Simulating Liquid									
Freq. MHz.	Temp. (℃)	Conductivity			Permittivity			Limit (%)	Date
		Reading (σ)	Target (σ)	Delta (%)	Reading (εr)	Target (εr)	Delta (%)		
824.2	21.2	0.95	0.97	-2.06	54.85	55.20	-0.63	±5	2019-11-25
835	21.2	0.95	0.97	-2.06	54.85	55.20	-0.63	±5	2019-11-25
836.6	21.2	0.95	0.97	-2.06	54.85	55.20	-0.63	±5	2019-11-25
848.8	21.2	0.95	0.97	-2.06	54.85	55.20	-0.63	±5	2019-11-25
1710.7	21.3	1.46	1.49	-2.01	51.22	53.40	-4.08	±5	2019-11-26
1747.5	21.3	1.46	1.49	-2.01	51.22	53.40	-4.08	±5	2019-11-26
1750	21.3	1.46	1.49	-2.01	51.22	53.40	-4.08	±5	2019-11-26
1784.3	21.3	1.46	1.49	-2.01	51.22	53.40	-4.08	±5	2019-11-26
1800	21.3	1.46	1.52	-3.95	51.22	53.30	-3.90	±5	2019-11-26
1850.2	21.3	1.46	1.52	-3.95	51.22	53.30	-3.90	±5	2019-11-26
1880	21.3	1.46	1.52	-3.95	51.22	53.30	-3.90	±5	2019-11-26
1900	21.3	1.50	1.52	-1.32	52.42	53.30	-1.65	±5	2019-11-26
1909.8	21.3	1.50	1.52	-1.32	52.42	53.30	-1.65	±5	2019-11-26
2302.5	21.3	1.91	1.95	-2.05	52.01	52.70	-1.31	±5	2019-11-27
2350	21.3	1.91	1.95	-2.05	52.01	52.70	-1.31	±5	2019-11-27
2397.5	21.3	1.91	1.95	-2.05	52.01	52.70	-1.31	±5	2019-11-27
2412	21.3	1.91	1.95	-2.05	52.01	52.70	-1.31	±5	2019-11-27
2437	21.3	1.91	1.95	-2.05	52.01	52.70	-1.31	±5	2019-11-27
2450	21.3	1.91	1.95	-2.05	52.01	52.70	-1.31	±5	2019-11-27
2462	21.3	1.91	1.95	-2.05	52.01	52.70	-1.31	±5	2019-11-27
2502.5	21.3	1.91	1.95	-2.05	52.01	52.70	-1.31	±5	2019-11-27
2593	21.3	1.91	1.95	-2.05	52.01	52.70	-1.31	±5	2019-11-27
2600	21.3	2.12	2.16	-1.85	52.24	52.50	-0.50	±5	2019-11-27
2687.5	21.3	2.12	2.16	-1.85	52.24	52.50	-0.50	±5	2019-11-27
5180	21.3	5.16	5.30	-2.64	48.50	49.0	-1.02	±5	2019-11-28
5200	21.3	5.16	5.30	-2.64	48.50	49.0	-1.02	±5	2019-11-28
5240	21.3	5.16	5.30	-2.64	48.50	49.0	-1.02	±5	2019-11-28
5745	21.3	5.76	6.00	-4.00	48.50	48.2	0.62	±5	2019-11-28
5785	21.3	5.76	6.00	-4.00	48.50	48.2	0.62	±5	2019-11-28
5800	21.3	5.76	6.00	-4.00	48.50	48.2	0.62	±5	2019-11-28
5825	21.3	5.76	6.00	-4.00	48.50	48.2	0.62	±5	2019-11-28

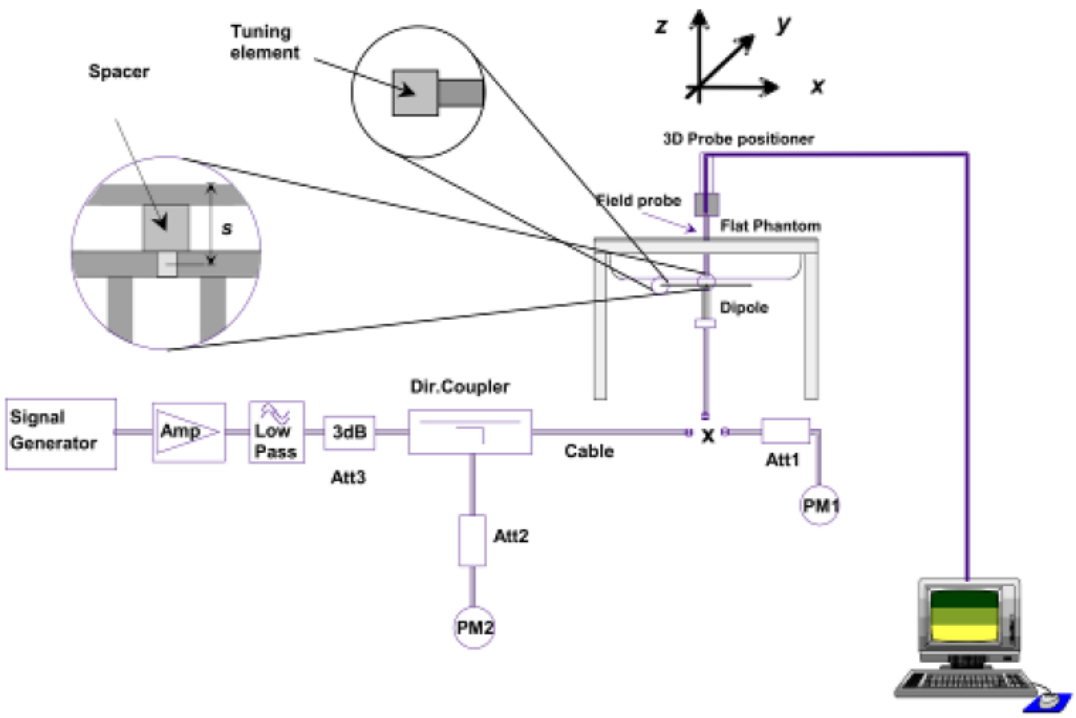
6. SAR Measurement Evaluation

6.1 Purpose of System Performance Check

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

6.2 System Setup

In the simplified setup for system evaluation, the EUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave which comes from a signal generator at frequency 835MHz ,1800MHz, 1900MHz 2450MHz,2600MHz,and 5GHz. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom.



System Verification Setup Block Diagram

Setup Photo of Dipole Antenna

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

6.3 Validation Results

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

Frequency	Targeted SAR_{1g}	Measured SAR_{1g}	Normalized SAR_{1g}	Tolerance	Date
MHz	(W/kg)	(W/kg)	(W/kg)	(%)	
Head					
835	9.65	2.41	9.64	-0.10	2019-11-25
1800	38.49	9.61	38.44	-0.13	2019-11-26
1900	39.59	9.91	39.64	0.13	2019-11-26
2450	53.76	13.45	53.8	0.07	2019-11-27
2600	55.07	13.67	54.68	-0.71	2019-11-27
Body					
835	9.36	2.35	9.4	0.43	2019-11-25
1800	38.29	9.58	38.32	0.08	2019-11-26
1900	39.01	9.78	39.12	0.28	2019-11-26
2450	50.33	12.59	50.36	0.06	2019-11-27
2600	53.92	13.43	53.72	-0.37	2019-11-27

Frequency	Liquid	Power (mw)	Targeted SAR1g	Measured SAR1g	Normalized SAR1g	Tolerance
5200	Head	100	161.23	16.946	169.46	5.10
5200	Body	100	154.45	16.681	166.81	8.00
5800	Head	100	179.32	17.191	171.91	-4.13
5800	Body	100	170.71	16.980	169.8	-0.53

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.

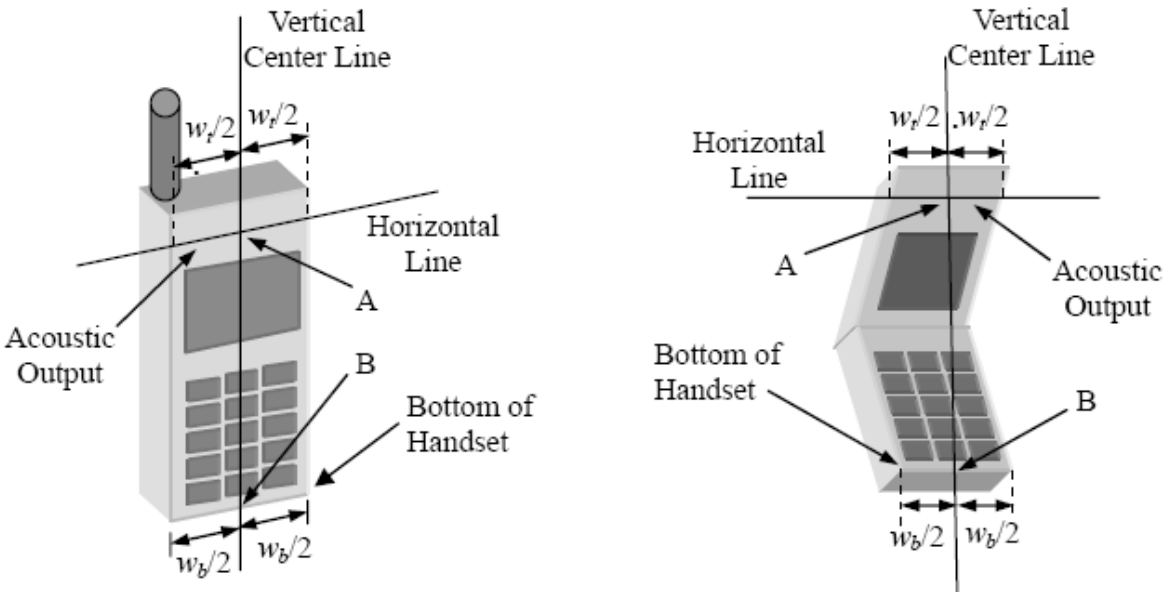


Illustration for Handset Vertical and Horizontal Reference Lines

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).

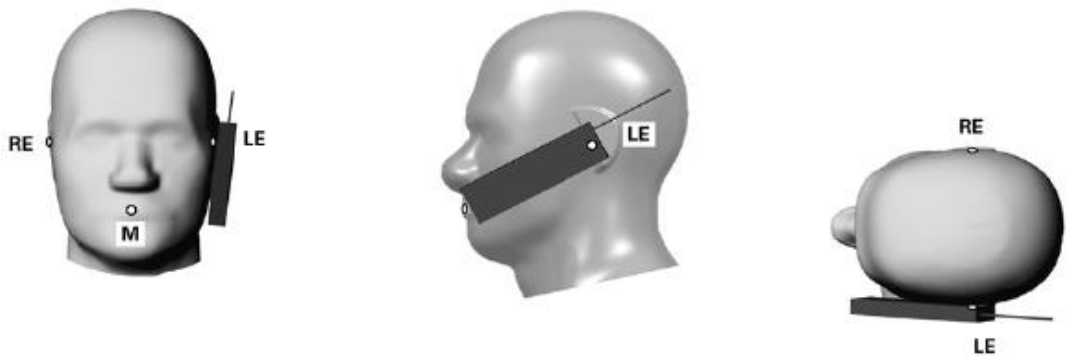


Illustration for Cheek Position

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).

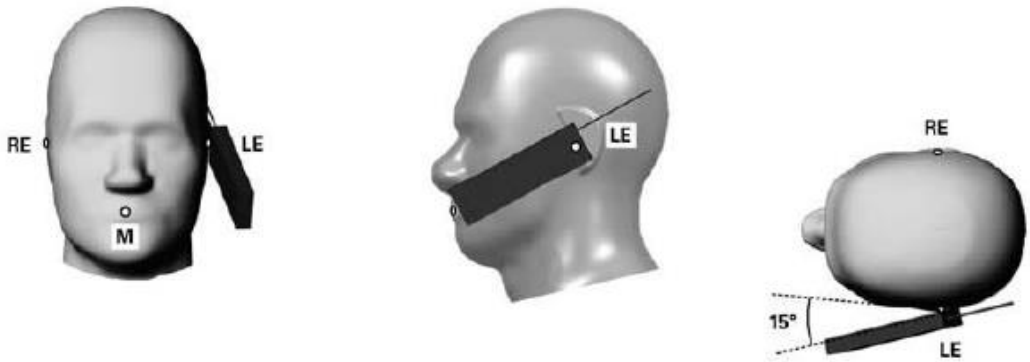


Illustration for Tilted Position

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.

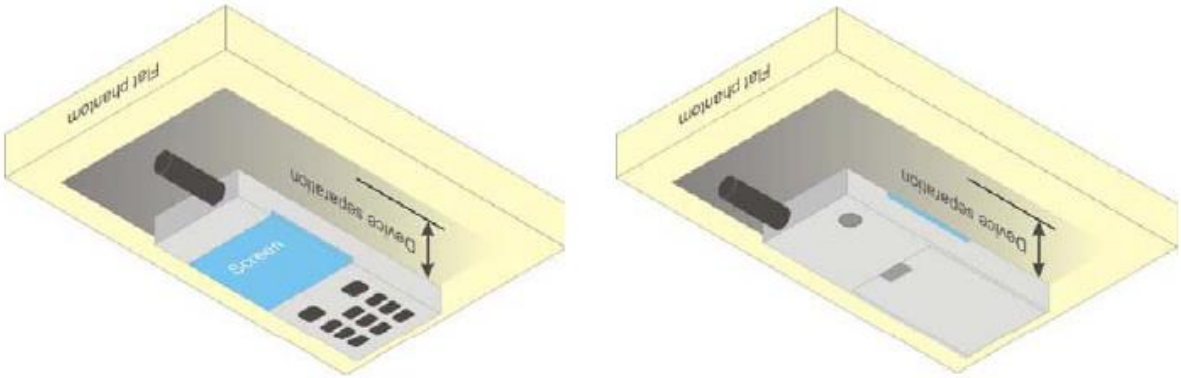
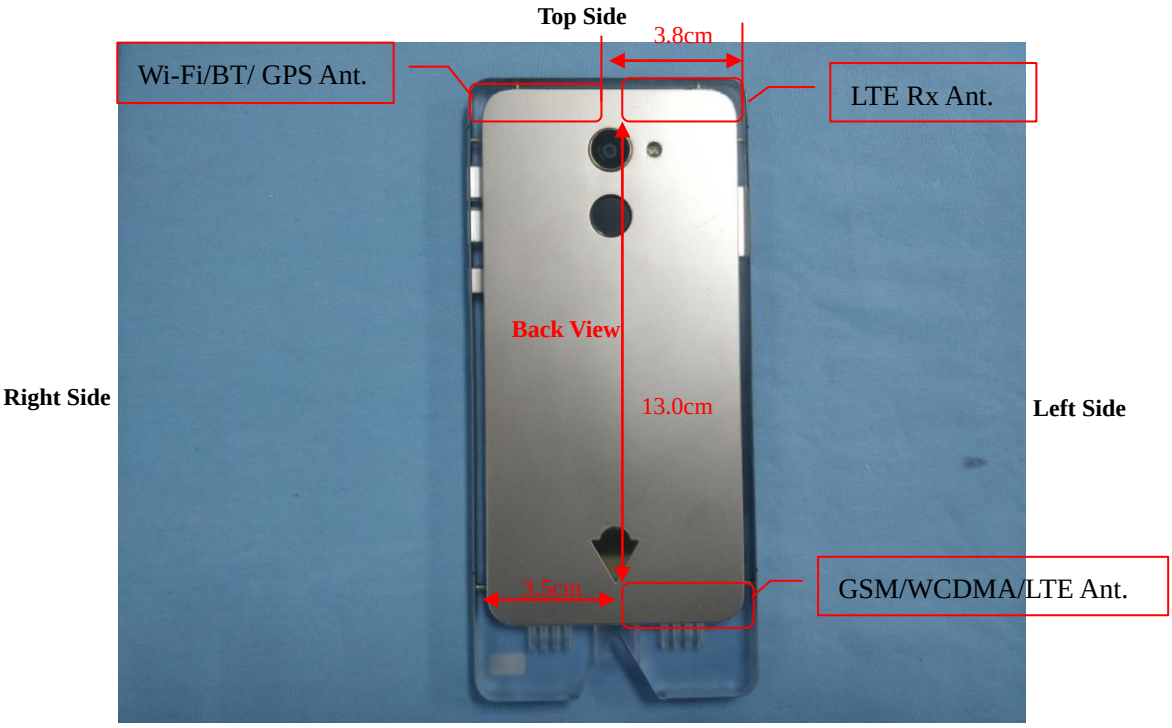
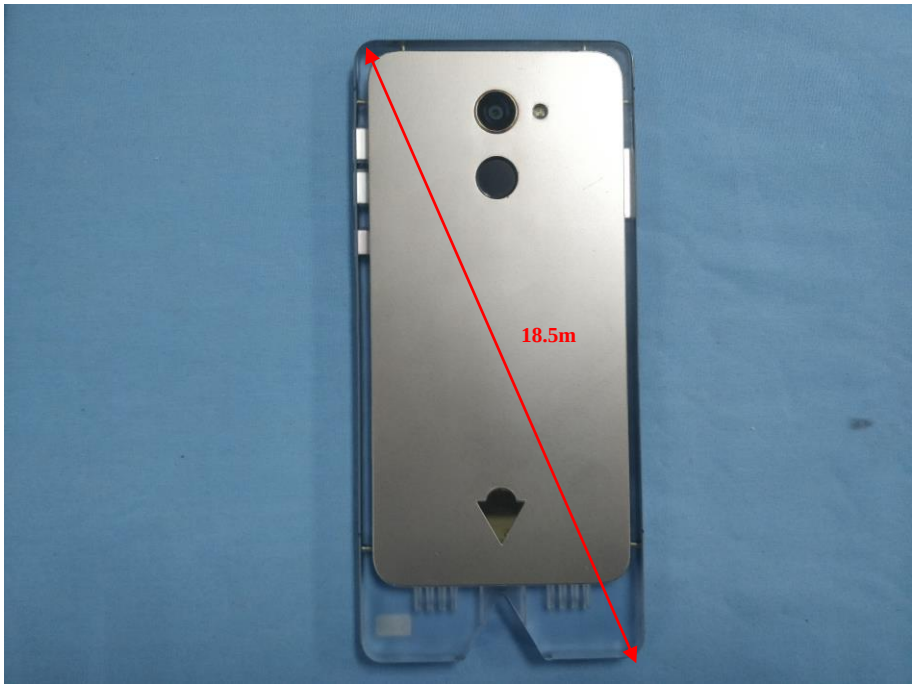


Illustration for Body Position

7.5 EUT Antenna Position





Block Diagram for EUT Antenna Position

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	No	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	31.22	31.30	31.13	31.5	28.51	28.19	28.15	29.0
GPRS (1 slot)	31.24	31.33	31.14	31.5	28.57	28.22	28.18	29.0
GPRS (2 slots)	30.77	30.80	30.66	31.0	28.04	27.62	27.59	28.5
GPRS (3 slots)	29.38	29.43	29.18	29.5	26.46	26.05	26.01	26.5
GPRS (4 slots)	28.45	28.47	28.27	28.5	25.40	24.94	24.91	25.5
EDGE (1 slot)	26.09	26.08	25.95	26.5	24.55	24.07	24.14	25.0
EDGE (2 slots)	25.00	25.02	24.85	25.5	23.89	23.25	23.07	24.0
EDGE (3 slots)	23.03	23.05	22.81	23.5	22.50	20.86	20.90	23.0
EDGE (4 slots)	21.95	21.95	21.69	22.0	20.23	20.71	19.80	20.5

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	22.22	22.30	22.13	22.5	19.51	19.19	19.15	20.0
GPRS (1 slot)	22.24	22.33	22.14	22.5	19.57	19.22	19.18	20.0
GPRS (2 slots)	24.77	24.80	24.66	25.0	22.04	21.62	21.59	22.5
GPRS (3 slots)	25.13	25.18	24.93	25.5	22.21	21.80	21.76	22.5
GPRS (4 slots)	25.45	25.47	25.27	25.5	22.40	21.94	21.91	22.5
EDGE (1 slot)	17.09	17.08	16.95	17.5	15.55	15.07	15.14	16.0
EDGE (2 slots)	19.00	19.02	18.85	19.5	17.89	17.25	17.07	18.0
EDGE (3 slots)	18.78	18.80	18.56	19.0	18.25	16.61	16.65	18.5
EDGE (4 slots)	18.95	18.95	18.69	19.0	17.23	17.71	16.80	18.0
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 (2TX slots) for GSM850 and GPRS (2TX 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	22.58	22.10	22.07	23.0	22.49	22.50	22.51	23.0
HSDPA Subtest-1	21.78	21.30	21.45	22.0	21.50	21.64	21.67	22.0
HSDPA Subtest-2	21.76	21.28	21.43	22.0	21.48	21.63	21.65	22.0
HSDPA Subtest-3	21.75	21.29	21.44	22.0	21.49	21.62	21.63	22.0
HSDPA Subtest-4	21.77	21.27	21.43	22.0	21.49	21.62	21.65	22.0
HSUPA Subtest-1	21.66	20.91	21.38	22.0	21.49	21.46	21.59	22.0
HSUPA Subtest-2	21.63	20.89	21.35	22.0	21.45	21.43	21.56	22.0
HSUPA Subtest-3	21.62	20.87	21.36	22.0	21.46	21.44	21.57	22.0
HSUPA Subtest-4	21.63	20.89	21.37	22.0	21.46	21.44	21.58	22.0
HSUPA Subtest-5	21.64	20.89	21.37	22.0	21.47	21.45	21.58	22.0

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 2:

Channel Bandwidth: 1.4 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	24.09	0
		1	3	24.21	0
		1	5	24.07	0
		3	0	23.20	0
		3	2	23.20	0
		3	3	23.14	0
		6	0	22.66	1
	MCH	1	0	22.71	0
		1	3	22.86	0
		1	5	22.74	0
		3	0	22.75	0
		3	2	22.77	0
		3	3	22.75	0
		6	0	21.85	1
	HCH	1	0	23.51	0
		1	3	23.70	0
		1	5	23.52	0
		3	0	23.26	0
		3	2	23.24	0
		3	3	23.21	0
		6	0	22.61	1
16QAM	LCH	1	0	23.37	1
		1	3	23.46	1
		1	5	23.29	1
		3	0	22.85	1
		3	2	22.79	1
		3	3	22.73	1
		6	0	21.68	2
	MCH	1	0	22.06	1
		1	3	22.30	1
		1	5	22.08	1
		3	0	21.71	1
		3	2	21.74	1
		3	3	21.72	1
		6	0	20.79	2
	HCH	1	0	22.77	1
		1	3	22.94	1

		1	5	22.80	1
		3	0	22.64	1
		3	2	22.67	1
		3	3	22.66	1
		6	0	21.70	2

Channel Bandwidth: 3 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	24.11	0
		1	7	24.27	0
		1	14	24.02	0
		8	0	23.14	1
		8	4	23.11	1
		8	7	23.06	1
		15	0	23.07	1
	MCH	1	0	22.78	0
		1	7	23.00	0
		1	14	22.77	0
		8	0	21.83	1
		8	4	21.82	1
		8	7	21.79	1
		15	0	21.72	1
	HCH	1	0	23.51	0
		1	7	23.77	0
		1	14	23.56	0
		8	0	22.52	1
		8	4	22.56	1
		8	7	22.52	1
		15	0	22.52	1
16QAM	LCH	1	0	23.42	1
		1	7	23.47	1
		1	14	23.27	1
		8	0	22.20	2
		8	4	22.20	2
		8	7	22.13	2
		15	0	22.07	2
	MCH	1	0	22.12	1
		1	7	22.40	1
		1	14	22.14	1
		8	0	20.77	2
		8	4	20.78	2
		8	7	20.75	2

		15	0	20.70	2
	HCH	1	0	22.79	1
		1	7	22.97	1
		1	14	22.86	1
		8	0	21.46	2
		8	4	21.55	2
		8	7	21.47	2
		15	0	21.53	2

Channel Bandwidth: 5 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	24.07	0
		1	12	24.29	0
		1	24	23.89	0
		12	0	23.13	1
		12	6	23.31	1
		12	13	22.94	1
		25	0	23.06	1
	MCH	1	0	22.69	0
		1	12	23.03	0
		1	24	22.72	0
		12	0	21.80	1
		12	6	21.83	1
		12	13	21.72	1
		25	0	21.75	1
	HCH	1	0	23.42	0
		1	12	23.70	0
		1	24	23.50	0
		12	0	22.49	1
		12	6	22.51	1
		12	13	22.50	1
		25	0	22.53	1
16QAM	LCH	1	0	23.34	1
		1	12	23.46	1
		1	24	23.13	1
		12	0	22.15	2
		12	6	22.20	2
		12	13	22.01	2
		25	0	22.11	2
	MCH	1	0	21.92	1
		1	12	22.29	1
		1	24	21.97	1

		12	0	20.83	2
		12	6	20.86	2
		12	13	20.73	2
		25	0	20.73	2
	HCH	1	0	22.59	1
		1	12	22.89	1
		1	24	22.70	1
		12	0	21.42	2
		12	6	21.50	2
		12	13	21.48	2
		25	0	21.54	2

Channel Bandwidth: 10 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	24.11	0
		1	24	24.09	0
		1	49	23.58	0
		25	0	23.11	1
		25	12	22.94	1
		25	25	22.88	1
		50	0	23.00	1
	MCH	1	0	22.80	0
		1	24	22.93	0
		1	49	22.74	0
		25	0	21.93	1
		25	12	21.85	1
		25	25	21.69	1
		50	0	21.83	1
	HCH	1	0	23.24	0
		1	24	23.59	0
		1	49	23.52	0
		25	0	22.45	1
		25	12	22.43	1
		25	25	22.47	1
		50	0	22.38	1
16QAM	LCH	1	0	23.39	1
		1	24	23.38	1
		1	49	22.87	1
		25	0	22.17	2
		25	12	22.00	2
		25	25	21.93	2
		50	0	22.00	2

	MCH	1	0	22.13	1
		1	24	22.31	1
		1	49	22.17	1
		25	0	20.91	2
		25	12	20.83	2
		25	25	20.68	2
		50	0	20.79	2
	HCH	1	0	22.55	1
		1	24	22.87	1
		1	49	22.79	1
		25	0	21.41	2
		25	12	21.41	2
		25	25	21.37	2
		50	0	21.39	2

Channel Bandwidth: 15 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	24.03	0
		1	37	23.98	0
		1	74	23.16	0
		37	0	23.00	1
		37	18	22.83	1
		37	38	22.58	1
		75	0	22.79	1
	MCH	1	0	22.80	0
		1	37	22.90	0
		1	74	22.63	0
		37	0	21.97	1
		37	18	21.93	1
		37	38	21.77	1
		75	0	21.86	1
	HCH	1	0	23.07	0
		1	37	23.60	0
		1	74	23.43	0
		37	0	22.25	1
		37	18	22.39	1
		37	38	22.38	1
		75	0	22.31	1
16QAM	LCH	1	0	23.33	1
		1	37	23.27	1
		1	74	22.45	1
		37	0	22.01	2

		37	18	21.84	2
		37	38	21.61	2
		75	0	21.82	2
	MCH	1	0	22.06	1
		1	37	22.26	1
		1	74	22.01	1
		37	0	20.93	2
		37	18	20.85	2
		37	38	20.75	2
		75	0	20.79	2
	HCH	1	0	22.35	1
		1	37	22.75	1
		1	74	22.70	1
		37	0	21.17	2
		37	18	21.32	2
		37	38	21.30	2
		75	0	21.25	2

Channel Bandwidth: 20 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	23.92	0
		1	49	23.83	0
		1	99	22.84	0
		50	0	22.89	1
		50	25	22.66	1
		50	50	22.46	1
		100	0	22.65	1
	MCH	1	0	22.77	0
		1	49	22.99	0
		1	99	22.61	0
		50	0	21.96	1
		50	25	21.84	1
		50	50	21.66	1
		100	0	21.89	1
	HCH	1	0	22.64	0
		1	49	23.37	0
		1	99	23.15	0
		50	0	22.04	1
		50	25	22.28	1
		50	50	22.21	1
		100	0	22.14	1
16QAM	LCH	1	0	23.13	1

		1	49	23.03	1
		1	99	22.04	1
		50	0	21.91	2
		50	25	21.65	2
		50	50	21.47	2
		100	0	21.70	2
	MCH	1	0	22.10	1
		1	49	22.30	1
		1	99	21.99	1
		50	0	20.98	2
		50	25	20.84	2
		50	50	20.67	2
		100	0	20.83	2
	HCH	1	0	21.97	1
		1	49	22.68	1
		1	99	22.48	1
		50	0	21.05	2
		50	25	21.26	2
		50	50	21.19	2
		100	0	21.14	2

FDD-LTE Band 4:

Channel Bandwidth: 1.4 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	23.19	0
		1	3	23.29	0
		1	5	23.13	0
		3	0	23.24	0
		3	2	23.26	0
		3	3	23.22	0
		6	0	22.19	1
	MCH	1	0	22.73	0
		1	3	22.91	0
		1	5	22.79	0
		3	0	22.84	0
		3	2	22.86	0
		3	3	22.86	0
		6	0	21.79	1
	HCH	1	0	23.95	0
		1	3	24.17	0
		1	5	24.06	0
		3	0	23.09	0
		3	2	23.15	0
		3	3	23.13	0
		6	0	23.09	1
16QAM	LCH	1	0	22.37	1
		1	3	22.53	1
		1	5	22.34	1
		3	0	22.26	1
		3	2	22.32	1
		3	3	22.31	1
		6	0	21.17	2
	MCH	1	0	22.14	1
		1	3	22.31	1
		1	5	22.13	1
		3	0	21.82	1
		3	2	21.88	1
		3	3	21.86	1
		6	0	21.78	2
	HCH	1	0	23.20	1
		1	3	23.43	1

		1	5	23.26	1
		3	0	23.11	1
		3	2	23.16	1
		3	3	23.15	1
		6	0	22.18	2

Channel Bandwidth: 3 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	23.19	0
		1	7	23.37	0
		1	14	23.11	0
		8	0	22.20	1
		8	4	22.16	1
		8	7	22.12	1
		15	0	22.13	1
	MCH	1	0	22.76	0
		1	7	22.99	0
		1	14	22.82	0
		8	0	21.75	1
		8	4	21.83	1
		8	7	21.78	1
		15	0	21.79	1
	HCH	1	0	23.97	0
		1	7	24.21	0
		1	14	24.11	0
		8	0	23.02	1
		8	4	23.05	1
		8	7	23.04	1
		15	0	23.01	1
16QAM	LCH	1	0	22.45	1
		1	7	22.55	1
		1	14	22.32	1
		8	0	21.27	2
		8	4	21.28	2
		8	7	21.17	2
		15	0	21.09	2
	MCH	1	0	22.14	1
		1	7	22.40	1
		1	14	22.24	1
		8	0	20.80	2
		8	4	20.83	2
		8	7	20.82	2

		15	0	20.75	2
	HCH	1	0	23.15	1
		1	7	23.45	1
		1	14	23.32	1
		8	0	21.97	2
		8	4	22.04	2
		8	7	21.99	2
		15	0	21.99	2

Channel Bandwidth: 5 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	23.12	0
		1	12	23.25	0
		1	24	22.94	0
		12	0	22.15	1
		12	6	22.15	1
		12	13	22.05	1
		25	0	22.10	1
	MCH	1	0	22.64	0
		1	12	23.17	0
		1	24	22.84	0
		12	0	21.73	1
		12	6	21.81	1
		12	13	21.82	1
		25	0	21.81	1
	HCH	1	0	23.82	0
		1	12	24.24	0
		1	24	24.07	0
		12	0	22.94	1
		12	6	23.34	1
		12	13	22.97	1
		25	0	22.96	1
16QAM	LCH	1	0	22.35	1
		1	12	22.65	1
		1	24	22.19	1
		12	0	21.15	2
		12	6	21.22	2
		12	13	21.05	2
		25	0	21.10	2
	MCH	1	0	21.95	1
		1	12	22.38	1
		1	24	22.07	1

		12	0	20.87	2
		12	6	21.00	2
		12	13	20.97	2
		25	0	20.91	2
	HCH	1	0	22.93	1
		1	12	23.36	1
		1	24	23.23	1
		12	0	21.91	2
		12	6	22.01	2
		12	13	21.93	2
		25	0	22.01	2

Channel Bandwidth: 10 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	23.12	0
		1	24	23.13	0
		1	49	22.73	0
		25	0	22.15	1
		25	12	21.96	1
		25	25	21.89	1
		50	0	21.94	1
	MCH	1	0	22.70	0
		1	24	22.90	0
		1	49	22.93	0
		25	0	21.79	1
		25	12	21.82	1
		25	25	21.96	1
		50	0	21.87	1
	HCH	1	0	23.47	0
		1	24	23.94	0
		1	49	24.05	0
		25	0	22.82	1
		25	12	22.79	1
		25	25	22.81	1
		50	0	22.79	1
16QAM	LCH	1	0	22.39	1
		1	24	22.39	1
		1	49	21.99	1
		25	0	21.17	2
		25	12	21.02	2
		25	25	20.88	2
		50	0	20.94	2

	MCH	1	0	22.08	1
		1	24	22.31	1
		1	49	22.37	1
		25	0	20.90	2
		25	12	20.89	2
		25	25	21.03	2
		50	0	20.97	2
	HCH	1	0	22.71	1
		1	24	23.15	1
		1	49	23.26	1
		25	0	21.83	2
		25	12	21.80	2
		25	25	21.83	2
		50	0	21.83	2

Channel Bandwidth: 15 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	23.04	0
		1	37	23.00	0
		1	74	22.52	0
		37	0	22.07	1
		37	18	21.89	1
		37	38	21.80	1
		75	0	21.93	1
	MCH	1	0	22.57	0
		1	37	22.89	0
		1	74	22.96	0
		37	0	21.76	1
		37	18	21.80	1
		37	38	22.00	1
		75	0	21.87	1
	HCH	1	0	23.18	0
		1	37	23.89	0
		1	74	23.94	0
		37	0	22.47	1
		37	18	22.73	1
		37	38	22.81	1
		75	0	22.60	1
16QAM	LCH	1	0	22.33	1
		1	37	22.33	1
		1	74	21.83	1
		37	0	21.02	2

		37	18	20.89	2
		37	38	20.71	2
		75	0	20.91	2
	MCH	1	0	21.89	1
		1	37	22.26	1
		1	74	22.26	1
		37	0	20.77	2
		37	18	20.86	2
		37	38	21.02	2
		75	0	20.87	2
	HCH	1	0	22.44	1
		1	37	23.02	1
		1	74	23.17	1
		37	0	21.43	2
		37	18	21.65	2
		37	38	21.72	2
		75	0	21.62	2

Channel Bandwidth: 20 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	22.97	0
		1	49	23.01	0
		1	99	22.58	0
		50	0	21.98	1
		50	25	21.78	1
		50	50	21.61	1
		100	0	21.78	1
	MCH	1	0	22.57	0
		1	49	22.95	0
		1	99	22.99	0
		50	0	21.77	1
		50	25	21.85	1
		50	50	22.10	1
		100	0	21.92	1
	HCH	1	0	22.60	0
		1	49	23.57	0
		1	99	23.65	0
		50	0	22.15	1
		50	25	22.49	1
		50	50	22.52	1
		100	0	22.40	1
16QAM	LCH	1	0	22.12	1

		1	49	22.18	1
		1	99	21.70	1
		50	0	20.95	2
		50	25	20.81	2
		50	50	20.62	2
		100	0	20.84	2
	MCH	1	0	21.79	1
		1	49	22.36	1
		1	99	22.36	1
		50	0	20.89	2
		50	25	20.91	2
		50	50	21.19	2
		100	0	21.00	2
	HCH	1	0	21.93	1
		1	49	22.84	1
		1	99	22.94	1
		50	0	21.31	2
		50	25	21.60	2
		50	50	21.62	2
		100	0	21.42	2

FDD-LTE Band 5:

Channel Bandwidth: 1.4 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	22.41	0
		1	3	22.62	0
		1	5	22.44	0
		3	0	22.55	0
		3	2	22.60	0
		3	3	22.57	0
		6	0	21.57	1
	MCH	1	0	23.16	0
		1	3	23.29	0
		1	5	23.18	0
		3	0	22.22	0
		3	2	22.23	0
		3	3	22.25	0
		6	0	22.26	1
	HCH	1	0	23.60	0
		1	3	23.78	0
		1	5	23.64	0
		3	0	22.22	0
		3	2	22.28	0
		3	3	22.25	0
		6	0	22.27	1
16QAM	LCH	1	0	21.80	1
		1	3	22.03	1
		1	5	21.81	1
		3	0	21.75	1
		3	2	21.76	1
		3	3	21.74	1
		6	0	20.59	2
	MCH	1	0	22.61	1
		1	3	22.84	1
		1	5	22.63	1
		3	0	22.27	1
		3	2	22.34	1
		3	3	22.34	1
		6	0	21.25	2
	HCH	1	0	22.90	1
		1	3	22.97	1
		1	5	22.99	1

		3	0	22.79	1
		3	2	22.84	1
		3	3	22.83	1
		6	0	21.88	2

Channel Bandwidth: 3 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	22.53	0
		1	7	22.76	0
		1	14	22.62	0
		8	0	21.57	1
		8	4	21.64	1
		8	7	21.64	1
		15	0	21.58	1
	MCH	1	0	23.11	0
		1	7	23.39	0
		1	14	23.29	0
		8	0	22.19	1
		8	4	22.29	1
		8	7	22.26	1
		15	0	22.24	1
	HCH	1	0	23.66	0
		1	7	23.88	0
		1	14	23.67	0
		8	0	22.72	1
		8	4	22.79	1
		8	7	22.68	1
		15	0	22.71	1
16QAM	LCH	1	0	21.94	1
		1	7	22.11	1
		1	14	21.98	1
		8	0	20.61	2
		8	4	20.71	2
		8	7	20.68	2
		15	0	20.56	2
	MCH	1	0	22.58	1
		1	7	22.93	1
		1	14	22.82	1
		8	0	21.22	2
		8	4	21.32	2
		8	7	21.28	2
		15	0	21.25	2

	HCH	1	0	22.99	1
		1	7	22.94	1
		1	14	22.99	1
		8	0	21.67	2
		8	4	21.70	2
		8	7	21.66	2
		15	0	21.65	2

Channel Bandwidth: 5 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	22.49	0
		1	12	22.88	0
		1	24	22.73	0
		12	0	21.49	1
		12	6	21.67	1
		12	13	21.77	1
		25	0	21.64	1
	MCH	1	0	23.05	0
		1	12	23.45	0
		1	24	23.36	0
		12	0	22.19	1
		12	6	22.32	1
		12	13	22.31	1
		25	0	22.31	1
	HCH	1	0	23.64	0
		1	12	23.83	0
		1	24	23.65	0
		12	0	22.74	1
		12	6	22.69	1
		12	13	22.64	1
		25	0	22.74	1
16QAM	LCH	1	0	21.82	1
		1	12	22.19	1
		1	24	22.03	1
		12	0	20.56	2
		12	6	20.72	2
		12	13	20.78	2
		25	0	20.61	2
	MCH	1	0	22.40	1
		1	12	22.86	1
		1	24	22.72	1
		12	0	21.30	2

		12	6	21.41	2
		12	13	21.41	2
		25	0	21.33	2
	HCH	1	0	22.93	1
		1	12	22.91	1
		1	24	22.92	1
		12	0	21.73	2
		12	6	21.77	2
		12	13	21.62	2
		25	0	21.74	2

Channel Bandwidth: 10 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	22.53	0
		1	24	22.94	0
		1	49	22.95	0
		25	0	21.65	1
		25	12	21.85	1
		25	25	21.93	1
		50	0	21.78	1
	MCH	1	0	22.92	0
		1	24	23.37	0
		1	49	23.49	0
		25	0	22.32	1
		25	12	22.34	1
		25	25	22.51	1
		50	0	22.13	1
	HCH	1	0	23.25	0
		1	24	23.42	0
		1	49	23.19	0
		25	0	22.33	1
		25	12	22.34	1
		25	25	22.32	1
		50	0	22.32	1
16QAM	LCH	1	0	21.94	1
		1	24	22.26	1
		1	49	22.36	1
		25	0	20.63	2
		25	12	20.83	2
		25	25	20.94	2
		50	0	20.75	2
	MCH	1	0	22.38	1

		1	24	22.88	1
		1	49	22.83	1
		25	0	21.31	2
		25	12	21.36	2
		25	25	21.57	2
		50	0	21.16	2
	HCH	1	0	22.61	1
		1	24	22.80	1
		1	49	22.50	1
		25	0	21.32	2
		25	12	21.32	2
		25	25	21.36	2
		50	0	21.31	2

FDD-LTE Band 7:

Channel Bandwidth: 5 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	23.73	0
		1	12	23.93	0
		1	24	24.12	0
		12	0	22.81	1
		12	6	22.87	1
		12	13	22.79	1
		25	0	22.84	1
	MCH	1	0	23.00	0
		1	12	23.19	0
		1	24	23.11	0
		12	0	22.04	1
		12	6	22.00	1
		12	13	22.19	1
		25	0	23.17	1
	HCH	1	0	23.12	0
		1	12	23.01	0
		1	24	23.64	0
		12	0	22.87	1
		12	6	22.82	1
		12	13	22.72	1
		25	0	22.81	1
16QAM	LCH	1	0	23.02	1
		1	12	23.28	1
		1	24	22.96	1
		12	0	21.83	2
		12	6	21.91	2
		12	13	21.80	2
		25	0	21.83	2
	MCH	1	0	22.32	1
		1	12	22.69	1
		1	24	22.13	1
		12	0	21.12	2
		12	6	21.15	2
		12	13	21.04	2
		25	0	21.00	2
	HCH	1	0	22.10	1
		1	12	22.38	1
		1	24	22.87	1

		12	0	21.83	2
		12	6	21.85	2
		12	13	21.74	2
		25	0	21.87	2

Channel Bandwidth: 10 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	23.52	0
		1	24	23.89	0
		1	49	24.64	0
		25	0	22.87	1
		25	12	22.82	1
		25	25	23.15	1
		50	0	22.82	1
	MCH	1	0	23.13	0
		1	24	23.16	0
		1	49	23.10	0
		25	0	22.07	1
		25	12	22.19	1
		25	25	22.17	1
		50	0	22.03	1
	HCH	1	0	23.06	0
		1	24	23.08	0
		1	49	23.18	0
		25	0	22.55	1
		25	12	22.79	1
		25	25	22.82	1
		50	0	22.91	1
16QAM	LCH	1	0	23.07	1
		1	24	23.18	1
		1	49	22.98	1
		25	0	21.85	2
		25	12	21.84	2
		25	25	21.87	2
		50	0	21.81	2
	MCH	1	0	22.50	1
		1	24	22.51	1
		1	49	22.21	1
		25	0	21.15	2
		25	12	21.06	2
		25	25	21.17	2
		50	0	21.10	2

	HCH	1	0	22.99	1
		1	24	22.71	1
		1	49	22.61	1
		25	0	22.58	2
		25	12	21.90	2
		25	25	22.12	2
		50	0	21.79	2

Channel Bandwidth: 15 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	23.70	0
		1	37	23.70	0
		1	74	23.15	0
		37	0	22.11	1
		37	18	22.17	1
		37	38	22.19	1
		75	0	22.14	1
	MCH	1	0	23.63	0
		1	37	23.56	0
		1	74	23.74	0
		37	0	22.79	1
		37	18	22.80	1
		37	38	22.63	1
		75	0	22.70	1
	HCH	1	0	23.19	0
		1	37	23.17	0
		1	74	23.18	0
		37	0	22.91	1
		37	18	22.53	1
		37	38	22.76	1
		75	0	22.53	1
16QAM	LCH	1	0	22.27	1
		1	37	22.57	1
		1	74	22.38	1
		37	0	21.07	2
		37	18	21.15	2
		37	38	21.16	2
		75	0	21.11	2
	MCH	1	0	22.92	1
		1	37	23.29	1
		1	74	22.69	1
		37	0	21.82	2

		37	18	21.83	2
		37	38	21.66	2
		75	0	21.75	2
	HCH	1	0	22.45	1
		1	37	22.99	1
		1	74	22.09	1
		37	0	22.92	2
		37	18	21.54	2
		37	38	21.57	2
		75	0	21.58	2

Channel Bandwidth: 20 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	23.70	0
		1	49	24.08	0
		1	99	23.21	0
		50	0	22.01	1
		50	25	22.19	1
		50	50	22.24	1
		100	0	22.14	1
	MCH	1	0	23.48	0
		1	49	23.65	0
		1	99	23.81	0
		50	0	22.74	1
		50	25	22.77	1
		50	50	22.61	1
		100	0	22.65	1
	HCH	1	0	23.48	0
		1	49	23.43	0
		1	99	23.57	0
		50	0	22.31	1
		50	25	22.84	1
		50	50	22.78	1
		100	0	22.93	1
16QAM	LCH	1	0	22.13	1
		1	49	22.63	1
		1	99	22.43	1
		50	0	21.00	2
		50	25	21.20	2
		50	50	21.22	2
		100	0	21.11	2
	MCH	1	0	22.82	1

		1	49	23.33	1
		1	99	22.53	1
		50	0	21.77	2
		50	25	21.83	2
		50	50	21.65	2
		100	0	21.71	2
	HCH	1	0	22.08	1
		1	49	22.18	1
		1	99	22.94	1
		50	0	21.49	2
		50	25	21.85	2
		50	50	21.71	2
		100	0	21.94	2

FDD-LTE Band 38:

Channel Bandwidth: 5 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	24.05	0
		1	12	24.35	0
		1	24	23.95	0
		12	0	23.14	1
		12	6	23.10	1
		12	13	23.00	1
		25	0	23.32	1
	MCH	1	0	23.78	0
		1	12	24.06	0
		1	24	23.72	0
		12	0	22.82	1
		12	6	22.86	1
		12	13	22.77	1
		25	0	22.80	1
	HCH	1	0	23.77	0
		1	12	24.03	0
		1	24	23.75	0
		12	0	22.84	1
		12	6	22.89	1
		12	13	22.84	1
		25	0	22.88	1
16QAM	LCH	1	0	23.31	1
		1	12	23.41	1
		1	24	22.91	1
		12	0	22.19	2
		12	6	22.25	2
		12	13	22.16	2
		25	0	22.34	2
	MCH	1	0	23.12	1
		1	12	23.40	1
		1	24	23.07	1
		12	0	21.89	2
		12	6	21.89	2
		12	13	21.82	2
		25	0	21.79	2
	HCH	1	0	23.04	1
		1	12	23.31	1
		1	24	23.02	1

		12	0	21.80	2
		12	6	21.85	2
		12	13	21.80	2
		25	0	21.90	2

Channel Bandwidth: 10 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	24.40	0
		1	24	24.37	0
		1	49	24.12	0
		25	0	23.43	1
		25	12	23.32	1
		25	25	23.24	1
		50	0	23.34	1
	MCH	1	0	23.94	0
		1	24	23.95	0
		1	49	23.81	0
		25	0	22.94	1
		25	12	22.92	1
		25	25	22.89	1
		50	0	22.92	1
	HCH	1	0	23.79	0
		1	24	23.92	0
		1	49	23.85	0
		25	0	22.87	1
		25	12	22.90	1
		25	25	22.94	1
		50	0	22.91	1
16QAM	LCH	1	0	23.70	1
		1	24	23.65	1
		1	49	23.43	1
		25	0	22.45	2
		25	12	22.33	2
		25	25	22.24	2
		50	0	22.36	2
	MCH	1	0	23.27	1
		1	24	23.30	1
		1	49	23.14	1
		25	0	21.96	2
		25	12	21.93	2
		25	25	21.85	2
		50	0	21.94	2

	HCH	1	0	23.21	1
		1	24	23.32	1
		1	49	23.27	1
		25	0	21.85	2
		25	12	21.88	2
		25	25	21.93	2
		50	0	21.91	2

Channel Bandwidth: 15 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	24.35	0
		1	37	24.51	0
		1	74	23.94	0
		37	0	23.36	1
		37	18	23.45	1
		37	38	23.14	1
		75	0	23.24	1
	MCH	1	0	23.94	0
		1	37	24.11	0
		1	74	23.69	0
		37	0	22.97	1
		37	18	22.92	1
		37	38	22.82	1
		75	0	22.89	1
	HCH	1	0	23.76	0
		1	37	24.13	0
		1	74	23.79	0
		37	0	22.84	1
		37	18	22.88	1
		37	38	22.90	1
		75	0	22.87	1
16QAM	LCH	1	0	23.61	1
		1	37	23.77	1
		1	74	23.24	1
		37	0	22.35	2
		37	18	22.23	2
		37	38	22.10	2
		75	0	22.24	2
	MCH	1	0	23.21	1
		1	37	23.41	1
		1	74	23.01	1
		37	0	21.95	2

		37	18	21.95	2
		37	38	21.84	2
		75	0	21.89	2
	HCH	1	0	23.19	1
		1	37	23.53	1
		1	74	23.22	1
		37	0	21.76	2
		37	18	21.82	2
		37	38	21.82	2
		75	0	21.84	2

Channel Bandwidth: 20 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	24.17	0
		1	49	24.28	0
		1	99	23.67	0
		50	0	23.35	1
		50	25	23.26	1
		50	50	23.02	1
		100	0	23.21	1
	MCH	1	0	23.90	0
		1	49	24.06	0
		1	99	23.57	0
		50	0	23.03	1
		50	25	22.96	1
		50	50	22.79	1
		100	0	22.92	1
	HCH	1	0	23.57	0
		1	49	23.87	0
		1	99	23.55	0
		50	0	22.81	1
		50	25	22.89	1
		50	50	22.86	1
		100	0	22.86	1
16QAM	LCH	1	0	23.46	1
		1	49	23.59	1
		1	99	23.00	1
		50	0	22.34	2
		50	25	22.24	2
		50	50	22.04	2
		100	0	22.23	2
	MCH	1	0	23.20	1

		1	49	23.38	1
		1	99	22.89	1
		50	0	22.02	2
		50	25	21.96	2
		50	50	21.80	2
		100	0	21.93	2
	HCH	1	0	22.80	1
		1	49	23.09	1
		1	99	22.80	1
		50	0	21.80	2
		50	25	21.86	2
		50	50	21.85	2
		100	0	21.87	2

FDD-LTE Band 40: 2305-2315MHz

Channel Bandwidth: 5 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dBm)
		Size	Offset		
QPSK	LCH	1	0	22.48	0
		1	12	22.71	0
		1	24	22.29	0
		12	0	21.51	1
		12	6	21.50	1
		12	13	21.39	1
		25	0	21.45	1
	HCH	1	0	22.30	0
		1	12	22.56	0
		1	24	22.15	0
		12	0	21.32	1
		12	6	21.32	1
		12	13	21.25	1
		25	0	21.30	1
16QAM	LCH	1	0	21.67	1
		1	12	21.94	1
		1	24	21.51	1
		12	0	20.56	2
		12	6	20.58	2
		12	13	20.45	2
		25	0	20.51	2
	HCH	1	0	21.67	1
		1	12	21.93	1
		1	24	21.58	1
		12	0	20.44	2
		12	6	20.44	2
		12	13	20.38	2
		25	0	20.36	2

Channel Bandwidth: 10 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dBm)
		Size	Offset		
QPSK	MCH	1	0	22.55	0
		1	24	22.41	0
		1	49	22.15	0
		25	0	21.46	1
		25	12	21.37	1
		25	25	21.28	1
		50	0	21.40	1
16QAM	MCH	1	0	21.83	1
		1	24	21.79	1
		1	49	21.58	1
		25	0	20.53	2
		25	12	20.47	2
		25	25	20.36	2
		50	0	20.50	2

FDD-LTE Band 40: 2350-2360MHz

Channel Bandwidth: 5 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dBm)
		Size	Offset		
QPSK	LCH	1	0	21.30	0
		1	12	21.57	0
		1	24	21.28	0
		12	0	20.79	1
		12	6	20.58	1
		12	13	20.70	1
		25	0	20.53	1
	HCH	1	0	21.28	0
		1	12	21.60	0
		1	24	21.29	0
		12	0	20.91	1
		12	6	20.90	1
		12	13	20.85	1
		25	0	20.88	1
16QAM	LCH	1	0	20.49	1
		1	12	20.80	1
		1	24	20.51	1
		12	0	19.53	2
		12	6	19.59	2

		12	13	19.53	2
		25	0	19.54	2
	HCH	1	0	20.71	1
		1	12	20.71	1
		1	24	20.76	1
		12	0	19.92	2
		12	6	19.93	2
		12	13	19.95	2
		25	0	19.83	2

Channel Bandwidth: 10 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dBm)
		Size	Offset		
QPSK	MCH	1	0	21.37	0
		1	24	21.50	0
		1	49	21.32	0
		25	0	20.49	1
		25	12	20.44	1
		25	25	20.45	1
		50	0	20.45	1
16QAM	MCH	1	0	20.61	1
		1	24	20.72	1
		1	49	20.66	1
		25	0	19.52	2
		25	12	19.46	2
		25	25	19.42	2
		50	0	19.48	2

FDD-LTE Band 41:

Channel Bandwidth: 5 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	24.06	0
		1	12	24.45	0
		1	24	24.09	0
		12	0	23.12	1
		12	6	23.14	1
		12	13	23.09	1
		25	0	23.07	1
	MCH	1	0	23.84	0
		1	12	24.14	0
		1	24	23.73	0
		12	0	22.89	1
		12	6	22.90	1
		12	13	22.80	1
		25	0	22.83	1
	HCH	1	0	24.62	0
		1	12	24.01	0
		1	24	24.68	0
		12	0	23.79	1
		12	6	23.83	1
		12	13	23.84	1
		25	0	23.76	1
16QAM	LCH	1	0	23.21	1
		1	12	23.60	1
		1	24	23.26	1
		12	0	23.00	2
		12	6	22.04	2
		12	13	22.18	2
		25	0	22.01	2
	MCH	1	0	23.04	1
		1	12	23.36	1
		1	24	22.92	1
		12	0	21.87	2
		12	6	21.88	2
		12	13	21.79	2
		25	0	21.81	2
	HCH	1	0	23.24	1
		1	12	23.20	1
		1	24	23.20	1

		12	0	22.88	2
		12	6	22.91	2
		12	13	22.90	2
		25	0	22.86	2

Channel Bandwidth: 10 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	24.12	0
		1	24	24.26	0
		1	49	24.18	0
		25	0	23.17	1
		25	12	23.17	1
		25	25	23.18	1
		50	0	23.16	1
	MCH	1	0	23.99	0
		1	24	23.97	0
		1	49	23.84	0
		25	0	22.99	1
		25	12	22.94	1
		25	25	22.84	1
		50	0	22.92	1
	HCH	1	0	24.85	0
		1	24	24.98	0
		1	49	24.94	0
		25	0	23.83	1
		25	12	23.85	1
		25	25	23.84	1
		50	0	23.87	1
16QAM	LCH	1	0	23.29	1
		1	24	23.45	1
		1	49	23.35	1
		25	0	22.12	2
		25	12	22.11	2
		25	25	22.08	2
		50	0	22.09	2
	MCH	1	0	23.36	1
		1	24	23.33	1
		1	49	23.14	1
		25	0	21.99	2
		25	12	21.96	2
		25	25	21.86	2
		50	0	21.94	2

	HCH	1	0	23.56	1
		1	24	23.75	1
		1	49	23.77	1
		25	0	22.78	2
		25	12	22.80	2
		25	25	22.77	2
		50	0	22.81	2

Channel Bandwidth: 15 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	24.04	0
		1	37	24.43	0
		1	74	24.15	0
		37	0	23.22	1
		37	18	23.21	1
		37	38	23.23	1
		75	0	23.21	1
	MCH	1	0	23.97	0
		1	37	24.15	0
		1	74	23.73	0
		37	0	22.97	1
		37	18	22.93	1
		37	38	22.81	1
		75	0	22.87	1
	HCH	1	0	24.44	0
		1	37	24.87	0
		1	74	23.68	0
		37	0	23.67	1
		37	18	23.74	1
		37	38	23.79	1
		75	0	23.76	1
16QAM	LCH	1	0	23.20	1
		1	37	23.58	1
		1	74	23.31	1
		37	0	22.14	2
		37	18	22.10	2
		37	38	22.14	2
		75	0	22.15	2
	MCH	1	0	23.28	1
		1	37	23.43	1
		1	74	22.99	1
		37	0	21.97	2

		37	18	21.92	2
		37	38	21.80	2
		75	0	21.86	2
	HCH	1	0	23.69	1
		1	37	23.10	1
		1	74	23.90	1
		37	0	22.67	2
		37	18	22.71	2
		37	38	22.74	2
		75	0	22.78	2

Channel Bandwidth: 20 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	MPR (dB)
		Size	Offset		
QPSK	LCH	1	0	24.93	0
		1	49	24.34	0
		1	99	24.97	0
		50	0	23.16	1
		50	25	23.17	1
		50	50	23.21	1
		100	0	23.24	1
	MCH	1	0	23.92	0
		1	49	24.06	0
		1	99	23.60	0
		50	0	23.02	1
		50	25	22.93	1
		50	50	22.79	1
		100	0	22.92	1
	HCH	1	0	24.19	0
		1	49	24.70	0
		1	99	24.54	0
		50	0	23.58	1
		50	25	23.69	1
		50	50	23.68	1
		100	0	23.64	1
16QAM	LCH	1	0	23.06	1
		1	49	23.50	1
		1	99	23.14	1
		50	0	22.08	2
		50	25	22.07	2
		50	50	22.13	2
		100	0	22.15	2
	MCH	1	0	22.21	1

		1	49	22.37	1
		1	99	22.91	1
		50	0	22.04	2
		50	25	21.96	2
		50	50	21.83	2
		100	0	21.90	2
	HCH	1	0	23.47	1
		1	49	23.96	1
		1	99	23.79	1
		50	0	22.62	2
		50	25	22.75	2
		50	50	22.72	2
		100	0	22.72	2

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(2.4G) - Maximum Average Power					
Test Mode	**Data Rate**	**Channel**	**Frequency (MHz)**	**Average Power (dBm)**	**Tune-up power (dBm)**
802.11b	1Mbps	CH 01	2412	15.87	16.0
		CH 06	2437	15.40	16.0
		CH 11	2462	15.86	16.0
802.11g	6Mbps	CH 01	2412	14.61	15.5
		CH 06	2437	14.60	15.5
		CH 11	2462	15.11	15.5
802.11n (20MHz)	MCS0	CH 01	2412	13.91	15.0
		CH 06	2437	14.12	15.0
		CH 11	2462	14.61	15.0
802.11n (40MHz)	MCS0	CH 03	2422	12.93	13.0
		CH 06	2437	12.94	13.0
		CH 09	2452	12.99	13.0

WLAN(5.2G)- Maximum Average Power				
Test Mode	**Channel**	**Frequency (MHz)**	**Average Power (dBm)**	**Tune-up power (dBm)**
802.11a	CH 36	5180	12.61	13.0
	CH 40	5200	12.19	13.0
	CH 48	5240	12.56	13.0
802.11n-20	CH 36	5180	11.63	13.0
	CH 40	5200	12.28	13.0
	CH 48	5240	12.78	13.0
802.11n -40	CH 38	5190	11.84	12.5
	CH46	5230	12.12	12.5
802.11ac -80	CH 42	5210	11.36	11.5

WLAN(5.8G) - Maximum Average Power				
Test Mode	**Channel**	**Frequency**	**Average Power**	**Tune-up power**
		(MHz)	**(dBm)**	**(dBm)**
802.11a	CH149	5745	11.21	12.0
	CH157	5785	11.86	12.0
	CH165	5825	11.65	12.0
802.11n-20	CH149	5745	11.08	12.0
	CH157	5785	11.64	12.0
	CH165	5825	11.44	12.0
802.11n -40	CH151	5755	11.68	12.0
	CH159	5795	11.37	12.0
802.11ac -80	CH155	5775	11.06	11.5

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)**
GFSK	1Mbps	4.761	5.0
Pi/4 QDPSK	2Mbps	3.727	5.0
8DPSK	3Mbps	3.673	5.0

Bluetooth - Maximum Average Power					
Test Mode	**Data Rate**	**Channel**	**Frequency (MHz)**	**Average Power (dBm)**	**Tune-up power (dBm)**
BLE	1Mbps	CH 00	2402	-7.642	-6
		CH 19	2440	-6.089	-6
		CH 39	2480	-6.566	-6

Remark:

According to RSS-102 Issue 5, the following RF exposure evaluation shall to demonstrate RF exposure compliance.

BT(BLE)

Tune-Up Power (dBm)	Turn-up with Antenna gain (dBm)	Turn-up Max. Power (mW)	Distance (mm)	Limit(mW)
-6	-3	0.5	5	4

The exclusion thresholds is 0.5mW < 4mW, 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					
1.	GSM	Right Cheek	190	836.6	31.30	31.5	1.047	0.057	0.060
2.	GSM	Right Tilted	190	836.6	31.30	31.5	1.047	0.033	0.035
3.	GSM	Left Cheek	190	836.6	31.30	31.5	1.047	0.056	0.059
4.	GSM	Left Tilted	190	836.6	31.30	31.5	1.047	0.031	0.032

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.	M Hz					
5.	GSM	Right Cheek	512	1850.2	28.51	29.0	1.119	0.020	0.022
6.	GSM	Right Tilted	512	1850.2	28.51	29.0	1.119	0.011	0.012
7.	GSM	Left Cheek	512	1850.2	28.51	29.0	1.119	0.029	0.032
8.	GSM	Left Tilted	512	1850.2	28.51	29.0	1.119	0.015	0.017

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					
9.	GPRS_4TX	Right Cheek	190	836.6	28.47	28.5	1.007	0.135	0.136
10.	GPRS_4TX	Right Tilted	190	836.6	28.47	28.5	1.007	0.065	0.065
11.	GPRS_4TX	Left Cheek	190	836.6	28.47	28.5	1.007	0.127	0.128
12.	GPRS_4TX	Left Tilted	190	836.6	28.47	28.5	1.007	0.062	0.062

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					
13.	GPRS_4TX	Right Cheek	512	1850.2	25.40	25.5	1.023	0.055	0.056
14.	GPRS_4TX	Right Tilted	512	1850.2	25.40	25.5	1.023	0.029	0.030
15.	GPRS_4TX	Left Cheek	512	1850.2	25.40	25.5	1.023	0.113	0.116
16.	GPRS_4TX	Left Tilted	512	1850.2	25.40	25.5	1.023	0.055	0.056

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					
17.	RMC	Right Cheek	9262	1852.4	22.58	23.0	1.102	0.060	0.066
18.	RMC	Right Tilted	9262	1852.4	22.58	23.0	1.102	0.033	0.036
19.	RMC	Left Cheek	9262	1852.4	22.58	23.0	1.102	0.087	0.096
20.	RMC	Left Tilted	9262	1852.4	22.58	23.0	1.102	0.042	0.046

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					
21.	RMC	Right Cheek	4233	846.6	22.51	23.0	1.119	0.038	0.043
22.	RMC	Right Tilted	4233	846.6	22.51	23.0	1.119	0.019	0.021
23.	RMC	Left Cheek	4233	846.6	22.51	23.0	1.119	0.043	0.048
24.	RMC	Left Tilted	4233	846.6	22.51	23.0	1.119	0.023	0.026

LTE Band 2– Head SAR Test								
Plot No.	Mode	Test Position Head	Frequency MHz	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth, RB							
25.	QPSK 5MHz 1RB	Right Cheek	1852.5	24.29	24.5	1.050	0.030	0.031
26.	QPSK 5MHz 1RB	Right Tilted	1852.5	24.29	24.5	1.050	0.022	0.023
27.	QPSK 5MHz 1RB	Left Cheek	1852.5	24.29	24.5	1.050	0.054	0.057
28.	QPSK 5MHz 1RB	Left Tilted	1852.5	24.29	24.5	1.050	0.035	0.037
29.	QPSK 5MHz 50%RB	Right Cheek	1852.5	24.29	24.5	1.050	0.018	0.019
30.	QPSK 5MHz 50%RB	Right Tilted	1852.5	24.29	24.5	1.050	0.013	0.014
31.	QPSK 5MHz 50%RB	Left Cheek	1852.5	24.29	24.5	1.050	0.029	0.030
32.	QPSK 5MHz 50%RB	Left Tilted	1852.5	24.29	24.5	1.050	0.016	0.017

LTE Band 4– Head SAR Test								
Plot No.	Mode	Test Position Head	Frequency MHz	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth, RB							
33.	QPSK 5MHz 1RB	Right Cheek	1752.5	24.24	24.5	1.062	0.033	0.035
34.	QPSK 5MHz 1RB	Right Tilted	1752.5	24.24	24.5	1.062	0.018	0.019
35.	QPSK 5MHz 1RB	Left Cheek	1752.5	24.24	24.5	1.062	0.032	0.034
36.	QPSK 5MHz 1RB	Left Tilted	1752.5	24.24	24.5	1.062	0.017	0.018
37.	QPSK 5MHz 50%RB	Right Cheek	1752.5	24.24	24.5	1.062	0.018	0.019
38.	QPSK 5MHz 50%RB	Right Tilted	1752.5	24.24	24.5	1.062	0.011	0.012
39.	QPSK 5MHz 50%RB	Left Cheek	1752.5	24.24	24.5	1.062	0.016	0.017
40.	QPSK 5MHz 50%RB	Left Tilted	1752.5	24.24	24.5	1.062	0.009	0.010

LTE Band 5– 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)			
41.	QPSK 3MHz 1RB	Right Cheek	847.5	23.88	24.0	1.028	0.038	0.039
42.	QPSK 3MHz 1RB	Right Tilted	847.5	23.88	24.0	1.028	0.019	0.020
43.	QPSK 3MHz 1RB	Left Cheek	847.5	23.88	24.0	1.028	0.032	0.033
44.	QPSK 3MHz 1RB	Left Tilted	847.5	23.88	24.0	1.028	0.016	0.016
45.	QPSK 3MHz 50%RB	Right Cheek	847.5	23.88	24.0	1.028	0.021	0.022
46.	QPSK 3MHz 50%RB	Right Tilted	847.5	23.88	24.0	1.028	0.011	0.011
47.	QPSK 3MHz 50%RB	Left Cheek	847.5	23.88	24.0	1.028	0.017	0.017
48.	QPSK 3MHz 50%RB	Left Tilted	847.5	23.88	24.0	1.028	0.038	0.039

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)			
49.	QPSK 10MHz 1RB	Right Cheek	2505.0	24.64	25.0	1.086	0.172	0.187
50.	QPSK 10MHz 1RB	Right Tilted	2505.0	24.64	25.0	1.086	0.113	0.123
51.	QPSK 10MHz 1RB	Left Cheek	2505.0	24.64	25.0	1.086	0.301	0.327
52.	QPSK 10MHz 1RB	Left Tilted	2505.0	24.64	25.0	1.086	0.168	0.183
53.	QPSK 10MHz 50%RB	Right Cheek	2505.0	24.64	25.0	1.086	0.103	0.112
54.	QPSK 10MHz 50%RB	Right Tilted	2505.0	24.64	25.0	1.086	0.066	0.072
55.	QPSK 10MHz 50%RB	Left Cheek	2505.0	24.64	25.0	1.086	0.159	0.173
56.	QPSK 10MHz 50%RB	Left Tilted	2505.0	24.64	25.0	1.086	0.088	0.096

LTE Band 38– 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)			
57.	QPSK 15MHz 1RB	Right Cheek	2577.5	24.51	25.0	1.119	0.194	0.217
58.	QPSK 15MHz 1RB	Right Tilted	2577.5	24.51	25.0	1.119	0.122	0.137
59.	QPSK 15MHz 1RB	Left Cheek	2577.5	24.51	25.0	1.119	0.191	0.214
60.	QPSK 15MHz 1RB	Left Tilted	2577.5	24.51	25.0	1.119	0.119	0.133
61.	QPSK 15MHz 50%RB	Right Cheek	2577.5	24.51	25.0	1.119	0.116	0.130
62.	QPSK 15MHz 50%RB	Right Tilted	2577.5	24.51	25.0	1.119	0.069	0.077
63.	QPSK 15MHz 50%RB	Left Cheek	2577.5	24.51	25.0	1.119	0.109	0.122
64.	QPSK 15MHz 50%RB	Left Tilted	2577.5	24.51	25.0	1.119	0.058	0.065

LTE Band 40:2305-2315MHz– 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)			
65.	RMC QPSK 5MHz 1RB	Right Cheek	2307.5	22.71	23.0	1.069	0.110	0.118
66.	RMC QPSK 5MHz 1RB	Right Tilted	2307.5	22.71	23.0	1.069	0.066	0.071
67.	RMC QPSK 5MHz 1RB	Left Cheek	2307.5	22.71	23.0	1.069	0.157	0.168
68.	RMC QPSK 5MHz 1RB	Left Tilted	2307.5	22.71	23.0	1.069	0.078	0.083
69.	RMC QPSK 5MHz 50%RB	Right Cheek	2307.5	22.71	23.0	1.069	0.056	0.060
70.	RMC QPSK 5MHz 50%RB	Right Tilted	2307.5	22.71	23.0	1.069	0.035	0.037
71.	RMC QPSK 5MHz 50%RB	Left Cheek	2307.5	22.71	23.0	1.069	0.072	0.077
72.	RMC QPSK 5MHz 50%RB	Left Tilted	2307.5	22.71	23.0	1.069	0.036	0.038

LTE Band 40: 2350-2360MHz– 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)			
73.	RMC QPSK 10MHz 1RB	Right Cheek	2357.5	21.60	22.0	1.096	0.081	0.089
74.	RMC QPSK 10MHz 1RB	Right Tilted	2357.5	21.60	22.0	1.096	0.044	0.048
75.	RMC QPSK 10MHz 1RB	Left Cheek	2357.5	21.60	22.0	1.096	0.075	0.082
76.	RMC QPSK 10MHz 1RB	Left Tilted	2357.5	21.60	22.0	1.096	0.039	0.043
77.	RMC QPSK 10MHz 50%RB	Right Cheek	2357.5	21.60	22.0	1.096	0.042	0.046
78.	RMC QPSK 10MHz 50%RB	Right Tilted	2357.5	21.60	22.0	1.096	0.023	0.025
79.	RMC QPSK 10MHz 50%RB	Left Cheek	2357.5	21.60	22.0	1.096	0.039	0.043
80.	RMC QPSK 10MHz 50%RB	Left Tilted	2357.5	21.60	22.0	1.096	0.021	0.023

LTE Band 41– 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)			
81.	QPSK 10MHz 1RB	Right Cheek	2685	24.98	25.0	1.005	0.338	0.340
82.	QPSK 10MHz 1RB	Right Tilted	2685	24.98	25.0	1.005	0.188	0.189
83.	QPSK 10MHz 1RB	Left Cheek	2685	24.98	25.0	1.005	0.348	0.350
84.	QPSK 10MHz 1RB	Left Tilted	2685	24.98	25.0	1.005	0.196	0.197
85.	QPSK 10MHz 50%RB	Right Cheek	2685	24.98	25.0	1.005	0.162	0.163
86.	QPSK 10MHz 50%RB	Right Tilted	2685	24.98	25.0	1.005	0.113	0.114
87.	QPSK 10MHz 50%RB	Left Cheek	2685	24.98	25.0	1.005	0.178	0.179
88.	QPSK 10MHz 50%RB	Left Tilted	2685	24.98	25.0	1.005	0.106	0.106

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					
89.	802.11b	Right Cheek	01	2412	15.87	16.0	1.030	0.039	0.040
90.	802.11b	Right Tilted	01	2412	15.87	16.0	1.030	0.019	0.020
91.	802.11b	Left Cheek	01	2412	15.87	16.0	1.030	0.087	0.090
92.	802.11b	Left Tilted	01	2412	15.87	16.0	1.030	0.048	0.049

BT – 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					
93.	GFSK	Right Cheek	39	2441	4.761	5.0	1.057	0.008	0.008
94.	GFSK	Right Tilted	39	2441	4.761	5.0	1.057	0.005	0.005
95.	GFSK	Left Cheek	39	2441	4.761	5.0	1.057	0.006	0.006
96.	GFSK	Left Tilted	39	2441	4.761	5.0	1.057	0.003	0.003

WLAN 5.2GHz – Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
97.	802.11n(20)	Right Cheek	48	5240	12.78	13.0	1.052	0.090	0.095
98.	802.11n(20)	Right Tilted	48	5240	12.78	13.0	1.052	0.051	0.054
99.	802.11n(20)	Left Cheek	48	5240	12.78	13.0	1.052	0.205	0.216
100.	802.11n(20)	Left Tilted	48	5240	12.78	13.0	1.052	0.122	0.128

WLAN 5.8GHz – Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
101.	802.11a	Right Cheek	157	5785	11.86	12.0	1.033	0.205	0.212
102.	802.11a	Right Tilted	157	5785	11.86	12.0	1.033	0.118	0.122
103.	802.11a	Left Cheek	157	5785	11.86	12.0	1.033	0.289	0.298
104.	802.11a	Left Tilted	157	5785	11.86	12.0	1.033	0.147	0.152

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					
105.	GSM	Back	190	836.6	31.30	31.5	1.047	0.075	0.079
106.	GSM	Front	190	836.6	31.30	31.5	1.047	0.045	0.047

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					
107.	GSM	Back	512	1850.2	28.51	29.0	1.119	0.370	0.414
108.	GSM	Front	512	1850.2	28.51	29.0	1.119	0.066	0.074

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					
109.	RMC 12.2k	Back Side	9262	1852.4	22.58	23.0	1.102	0.521	0.574
110.	RMC 12.2k	Front Side	9262	1852.4	22.58	23.0	1.102	0.174	0.192

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					
111.	RMC 12.2k	Back Side	4233	846.6	22.51	23.0	1.119	0.067	0.075
112.	RMC 12.2k	Front Side	4233	846.6	22.51	23.0	1.119	0.043	0.048

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					
113.	RMC QPSK 5MHz 1RB	Back Side	1852.5	24.29	24.5	1.050	0.621	0.652
114.	RMC QPSK 5MHz 1RB	Front Side	1852.5	24.29	24.5	1.050	0.147	0.154
115.	RMC QPSK 5MHz 50%RB	Back Side	1852.5	24.29	24.5	1.050	0.332	0.348
116.	RMC QPSK 5MHz 50%RB	Front Side	1852.5	24.29	24.5	1.050	0.078	0.082

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)			
117.	RMC QPSK 5MHz 1RB	Back Side	1752.5	24.24	24.5	1.062	0.688	0.730
118.	RMC QPSK 5MHz 1RB	Front Side	1752.5	24.24	24.5	1.062	0.116	0.123
119.	RMC QPSK 5MHz 50%RB	Back Side	1752.5	24.24	24.5	1.062	0.348	0.369
120.	RMC QPSK 5MHz 50%RB	Front Side	1752.5	24.24	24.5	1.062	0.055	0.058

LTE Band 5–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)			
121.	RMC QPSK 3MHz 1RB	Back Side	847.5	23.88	24.0	1.028	0.071	0.073
122.	RMC QPSK 3MHz 1RB	Front Side	847.5	23.88	24.0	1.028	0.036	0.037
123.	RMC QPSK 3MHz 50%RB	Back Side	847.5	23.88	24.0	1.028	0.035	0.036
124.	RMC QPSK 3MHz 50%RB	Front Side	847.5	23.88	24.0	1.028	0.019	0.020

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)			
125.	RMC QPSK 10MHz 1RB	Back Side	2505.0	24.64	25.0	1.086	0.569	0.618
126.	RMC QPSK 10MHz 1RB	Front Side	2505.0	24.64	25.0	1.086	0.177	0.192
127.	RMC QPSK 10MHz 50%RB	Back Side	2505.0	24.64	25.0	1.086	0.288	0.313
128.	RMC QPSK 10MHz 50%RB	Front Side	2505.0	24.64	25.0	1.086	0.103	0.112

LTE Band 38–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)			
129.	QPSK 15MHz 1RB	Back Side	2577.5	24.51	25.0	1.119	0.181	0.203
130.	QPSK 15MHz 1RB	Back Side	2577.5	24.51	25.0	1.119	0.077	0.086
131.	RMC QPSK 15MHz 50%RB	Back Side	2577.5	24.51	25.0	1.119	0.103	0.115
132.	RMC QPSK 15MHz 50%RB	Front Side	2577.5	24.51	25.0	1.119	0.038	0.043

LTE Band 40:2305-2315MHz–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)			
133.	RMC QPSK 5MHz 1RB	Back Side	2307.5	22.71	23.0	1.069	0.256	0.274
134.	RMC QPSK 5MHz 1RB	Front Side	2307.5	22.71	23.0	1.069	0.086	0.092
135.	RMC QPSK 5MHz 50%RB	Back Side	2307.5	22.71	23.0	1.069	0.133	0.142
136.	RMC QPSK 5MHz 50%RB	Front Side	2307.5	22.71	23.0	1.069	0.042	0.045

LTE Band 40: 2350-2360MHz–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)			
137.	RMC QPSK 5MHz 1RB	Back Side	2357.5	21.60	22.0	1.096	0.255	0.280
138.	RMC QPSK 5MHz 1RB	Front Side	2357.5	21.60	22.0	1.096	0.079	0.087
139.	RMC QPSK 5MHz 50%RB	Back Side	2357.5	21.60	22.0	1.096	0.126	0.138
140.	RMC QPSK 5MHz 50%RB	Front Side	2357.5	21.60	22.0	1.096	0.038	0.042

LTE Band 41–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)			
141.	QPSK 10MHz 1RB	Back Side	2685	24.98	25.0	1.005	0.271	0.272
142.	QPSK 10MHz 1RB	Back Side	2685	24.98	25.0	1.005	0.122	0.123
143.	RMC QPSK 10MHz 50%RB	Back Side	2685	24.98	25.0	1.005	0.183	0.184
144.	RMC QPSK 10MHz 50%RB	Front Side	2685	24.98	25.0	1.005	0.068	0.068

WLAN 2.4GHz –Body SAR Test									
Plot No.	Mode	Test Position	Frequency		Output Power	Rated Limit	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
		Body	CH.	MHz	(dBm)	(dBm)			
145.	802.11b	Back Side	01	2412	15.87	16.0	1.030	0.138	0.142
146.	802.11b	Front Side	01	2412	15.87	16.0	1.030	0.029	0.030

WLAN 5.2GHz –Body SAR Test (Gap: 10mm)									
Plot No.	**Mode**	**Test Position Body**	**Frequency**		**Output Power (dBm)**	**Rated Limit (dBm)**	**Scaling Factor**	**SAR10g (W/kg)**	**Scaled SAR10g (W/kg)**
			CH.	**MHz**					
147.	802.11n(20)	Back Side	48	5240	12.78	13.0	1.052	0.174	0.183
148.	802.11n(20)	Front Side	48	5240	12.78	13.0	1.052	0.041	0.043

WLAN 5.8GHz –Body SAR Test									
Plot No.	**Mode**	**Test Position Body**	**Frequency**		**Output Power (dBm)**	**Rated Limit (dBm)**	**Scaling Factor**	**SAR10g (W/kg)**	**Scaled SAR10g (W/kg)**
			CH.	**MHz**					
149.	802.11a	Back Side	157	5785	11.86	12.0	1.033	0.097	0.100
150.	802.11a	Front Side	157	5785	11.86	12.0	1.033	0.021	0.022

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					
151.	GPRS_4TX	Back Side	190	836.6	28.47	28.5	1.007	0.207	0.208
152.	GPRS_4TX	Front Side	190	836.6	28.47	28.5	1.007	0.113	0.114
153.	GPRS_4TX	Left side	190	836.6	28.47	28.5	1.007	0.054	0.054
154.	GPRS_4TX	Bottom side	190	836.6	28.47	28.5	1.007	0.049	0.049

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					
155.	GPRS_4TX	Back Side	512	1850.2	25.40	25.5	1.023	0.923	0.944
156.	GPRS_4TX	Back Side	661	1880.0	24.94	25.5	1.138	0.761	0.866
157.	GPRS_4TX	Back Side	810	1909.8	24.91	25.5	1.146	0.630	0.722
158.	GPRS_4TX	Front Side	512	1850.2	25.40	25.5	1.023	0.220	0.225
159.	GPRS_4TX	Left side	512	1850.2	25.40	25.5	1.023	0.178	0.182
160.	GPRS_4TX	Bottom side	512	1850.2	25.40	25.5	1.023	0.034	0.035

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					
161.	RMC 12.2k	Back Side	9262	1852.4	22.58	23.0	1.102	0.521	0.574
162.	RMC 12.2k	Front Face	9262	1852.4	22.58	23.0	1.102	0.174	0.192
163.	RMC 12.2k	Left side	9262	1852.4	22.58	23.0	1.102	0.144	0.159
164.	RMC 12.2k	Bottom Side	9262	1852.4	22.58	23.0	1.102	0.056	0.062

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					
165.	RMC 12.2k	Back Side	4233	846.6	22.51	23.0	1.119	0.067	0.075
166.	RMC 12.2k	Front Side	4233	846.6	22.51	23.0	1.119	0.043	0.048
167.	RMC 12.2k	Left side	4233	846.6	22.51	23.0	1.119	0.011	0.012
168.	RMC 12.2k	Bottom side	4233	846.6	22.51	23.0	1.119	0.020	0.022

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)			
169.	RMC QPSK 5MHz 1RB	Back Side	1852.5	24.29	24.5	1.050	0.621	0.652
170.	RMC QPSK 5MHz 1RB	Front Side	1852.5	24.29	24.5	1.050	0.147	0.154
171.	RMC QPSK 5MHz 1RB	Left side	1852.5	24.29	24.5	1.050	0.131	0.137
172.	RMC QPSK 5MHz 1RB	Bottom side	1852.5	24.29	24.5	1.050	0.044	0.046
173.	RMC QPSK 5MHz 50%RB	Back Side	1852.5	24.29	24.5	1.050	0.332	0.348
174.	RMC QPSK 5MHz 50%RB	Front Side	1852.5	24.29	24.5	1.050	0.078	0.082
175.	RMC QPSK 5MHz 50%RB	Left side	1852.5	24.29	24.5	1.050	0.062	0.065
176.	RMC QPSK 5MHz 50%RB	Bottom side	1852.5	24.29	24.5	1.050	0.024	0.025

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)			
177.	RMC QPSK 5MHz 1RB	Back Side	1752.5	24.24	24.5	1.062	0.688	0.730
178.	RMC QPSK 5MHz 1RB	Front Side	1752.5	24.24	24.5	1.062	0.116	0.123
179.	RMC QPSK 5MHz 1RB	Left side	1752.5	24.24	24.5	1.062	0.063	0.067
180.	RMC QPSK 5MHz 1RB	Bottom side	1752.5	24.24	24.5	1.062	0.019	0.020
181.	RMC QPSK 5MHz 50%RB	Back Side	1752.5	24.24	24.5	1.062	0.348	0.369
182.	RMC QPSK 5MHz 50%RB	Front Side	1752.5	24.24	24.5	1.062	0.055	0.058
183.	RMC QPSK 5MHz 50%RB	Left side	1752.5	24.24	24.5	1.062	0.035	0.037
184.	RMC QPSK 5MHz 50%RB	Bottom side	1752.5	24.24	24.5	1.062	0.010	0.011

LTE Band 5–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)			
185.	RMC QPSK 3MHz 1RB	Back Side	847.5	23.88	24.0	1.028	0.071	0.073
186.	RMC QPSK 3MHz 1RB	Front Side	847.5	23.88	24.0	1.028	0.036	0.037
187.	RMC QPSK 3MHz 1RB	Left side	847.5	23.88	24.0	1.028	0.018	0.019
188.	RMC QPSK 3MHz 1RB	Bottom side	847.5	23.88	24.0	1.028	0.019	0.020
189.	RMC QPSK 3MHz 50%RB	Back Side	847.5	23.88	24.0	1.028	0.035	0.036
190.	RMC QPSK 3MHz 50%RB	Front Side	847.5	23.88	24.0	1.028	0.019	0.020
191.	RMC QPSK 3MHz 50%RB	Left side	847.5	23.88	24.0	1.028	0.010	0.010
192.	RMC QPSK 3MHz 50%RB	Bottom side	847.5	23.88	24.0	1.028	0.011	0.011

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)			
193.	RMC QPSK 10MHz 1RB	Back Side	2505.0	24.64	25.0	1.086	0.569	0.618
194.	RMC QPSK 10MHz 1RB	Front Side	2505.0	24.64	25.0	1.086	0.177	0.192
195.	RMC QPSK 10MHz 1RB	Left side	2505.0	24.64	25.0	1.086	0.215	0.234
196.	RMC QPSK 10MHz 1RB	Bottom side	2505.0	24.64	25.0	1.086	0.079	0.086
197.	RMC QPSK 10MHz 50%RB	Back Side	2505.0	24.64	25.0	1.086	0.288	0.313
198.	RMC QPSK 10MHz 50%RB	Front Side	2505.0	24.64	25.0	1.086	0.103	0.112
199.	RMC QPSK 10MHz 50%RB	Left side	2505.0	24.64	25.0	1.086	0.118	0.128
200.	RMC QPSK 10MHz 50%RB	Bottom side	2505.0	24.64	25.0	1.086	0.043	0.047

LTE Band 38–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)			
201.	QPSK 15MHz 1RB	Back Side	2577.5	24.51	25.0	1.119	0.181	0.203
202.	QPSK 15MHz 1RB	Front Side	2577.5	24.51	25.0	1.119	0.077	0.086
203.	QPSK 15MHz 1RB	Left side	2577.5	24.51	25.0	1.119	0.176	0.197
204.	QPSK 15MHz 1RB	Bottom side	2577.5	24.51	25.0	1.119	0.028	0.031
205.	QPSK 15MHz 50%RB	Back Side	2577.5	24.51	25.0	1.119	0.103	0.115
206.	QPSK 15MHz 50%RB	Front Side	2577.5	24.51	25.0	1.119	0.038	0.043
207.	QPSK 15MHz 50%RB	Left side	2577.5	24.51	25.0	1.119	0.089	0.100
208.	QPSK 15MHz 50%RB	Bottom side	2577.5	24.51	25.0	1.119	0.016	0.018

LTE Band 40:2305-2315MHz–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)			
209.	RMC QPSK 5MHz 1RB	Back Side	2307.5	22.71	23.0	1.069	0.256	0.274
210.	RMC QPSK 5MHz 1RB	Front Side	2307.5	22.71	23.0	1.069	0.086	0.092
211.	RMC QPSK 5MHz 1RB	Left side	2307.5	22.71	23.0	1.069	0.097	0.104
212.	RMC QPSK 5MHz 1RB	Bottom side	2307.5	22.71	23.0	1.069	0.048	0.051
213.	RMC QPSK 5MHz 50%RB	Back Side	2307.5	22.71	23.0	1.069	0.133	0.142
214.	RMC QPSK 5MHz 50%RB	Front Side	2307.5	22.71	23.0	1.069	0.042	0.045
215.	RMC QPSK 5MHz 50%RB	Left side	2307.5	22.71	23.0	1.069	0.046	0.049
216.	RMC QPSK 5MHz 50%RB	Bottom side	2307.5	22.71	23.0	1.069	0.026	0.028

LTE Band 40: 2350-2360MHz–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					
217.	RMC QPSK 5MHz 1RB	Back Side	2357.5	21.60	22.0	1.096	0.255	0.280
218.	RMC QPSK 5MHz 1RB	Front Side	2357.5	21.60	22.0	1.096	0.079	0.087
219.	RMC QPSK 5MHz 1RB	Left side	2357.5	21.60	22.0	1.096	0.091	0.100
220.	RMC QPSK 5MHz 1RB	Bottom side	2357.5	21.60	22.0	1.096	0.044	0.048
221.	RMC QPSK 5MHz 50%RB	Back Side	2357.5	21.60	22.0	1.096	0.126	0.138
222.	RMC QPSK 5MHz 50%RB	Front Side	2357.5	21.60	22.0	1.096	0.038	0.042
223.	RMC QPSK 5MHz 50%RB	Left side	2357.5	21.60	22.0	1.096	0.041	0.045
224.	RMC QPSK 5MHz 50%RB	Bottom side	2357.5	21.60	22.0	1.096	0.022	0.024

LTE Band 41–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					
225.	QPSK 10MHz 1RB	Back Side	2685	24.98	25.0	1.005	0.271	0.272
226.	QPSK 10MHz 1RB	Front Side	2685	24.98	25.0	1.005	0.122	0.123
227.	QPSK 10MHz 1RB	Left side	2685	24.98	25.0	1.005	0.241	0.242
228.	QPSK 10MHz 1RB	Bottom side	2685	24.98	25.0	1.005	0.089	0.089
229.	RMC QPSK 10MHz 50%RB	Back Side	2685	24.98	25.0	1.005	0.183	0.184
230.	RMC QPSK 10MHz 50%RB	Front Side	2685	24.98	25.0	1.005	0.068	0.068
231.	RMC QPSK 10MHz 50%RB	Left side	2685	24.98	25.0	1.005	0.132	0.133
232.	RMC QPSK 10MHz 50%RB	Bottom side	2685	24.98	25.0	1.005	0.044	0.044

WLAN 2.4GHz –Body SAR Test									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
233.	802.11b	Back Side	01	2412	15.87	16.0	1.030	0.138	0.142
234.	802.11b	Front Side	01	2412	15.87	16.0	1.030	0.029	0.030
235.	802.11b	Right side	01	2412	15.87	16.0	1.030	0.023	0.024
236.	802.11b	Top side	01	2412	15.87	16.0	1.030	0.018	0.019

BT –Body SAR Test									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
237.	GFSK	Back Side	39	2441	4.761	5.0	1.057	0.018	0.019
238.	GFSK	Front Side	39	2441	4.761	5.0	1.057	0.009	0.010
239.	GFSK	Right side	39	2441	4.761	5.0	1.057	0.004	0.004
240.	GFSK	Top side	39	2441	4.761	5.0	1.057	0.005	0.005

WLAN 5.2GHz –Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR10g (W/kg)	Scaled SAR10g (W/kg)
			CH.	MHz					
241.	802.11n(20)	Back Side	48	5240	12.78	13.0	1.052	0.174	0.183
242.	802.11n(20)	Front Side	48	5240	12.78	13.0	1.052	0.041	0.043
243.	802.11n(20)	Right side	48	5240	12.78	13.0	1.052	0.056	0.059
244.	802.11n(20)	Top side	48	5240	12.78	13.0	1.052	0.069	0.073

WLAN 5.8GHz –Body SAR Test									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR10g (W/kg)	Scaled SAR10g (W/kg)
			CH.	MHz					
245.	802.11a	Back Side	157	5785	11.86	12.0	1.033	0.097	0.100
246.	802.11a	Front Side	157	5785	11.86	12.0	1.033	0.021	0.022
247.	802.11a	Right side	157	5785	11.86	12.0	1.033	0.077	0.080
248.	802.11a	Top side	157	5785	11.86	12.0	1.033	0.171	0.177

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.

Repeated SAR

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					
249.	GPRS_4TX	Back Side	512	1850.2	25.40	25.5	1.023	0.911	0.932

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(2.4G)(Data)	Yes	Yes
2	WCDMA (Voice/Data)+ (2.4G)(Data)	Yes	Yes
3	LTE(Data) + (2.4G)(Data)	Yes	Yes
4	GSM(Voice/Data) + WLAN(5G)(Data)	Yes	Yes
5	WCDMA (Voice/Data)+ (5G)(Data)	Yes	Yes
6	LTE(Data) + (5G)(Data)	Yes	Yes
7	GSM(Voice/Data) + Bluetooth(Data)	Yes	Yes
8	WCDMA (Voice/Data) + Bluetooth(Data)	Yes	Yes
9	LTE(Data) + Bluetooth(Data)	Yes	Yes

Remark:

1. GSM ,WCDMA and LTE share the same antenna, and cannot transmit simultaneously.
2. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.

Head SAR

WWAN and WLAN

	WWAN		WLAN(2.4G)	Summed SAR (W/kg)
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Right Cheek	GSM850	0.060	0.040	0.100
Right Tilted	GSM850	0.035	0.020	0.055
Left Cheek	GSM850	0.059	0.090	0.149
Left Tilted	GSM850	0.032	0.049	0.081
Right Cheek	GSM1900	0.022	0.040	0.062
Right Tilted	GSM1900	0.012	0.020	0.032
Left Cheek	GSM1900	0.032	0.090	0.122
Left Tilted	GSM1900	0.017	0.049	0.066
Right Cheek	GPRS850	0.136	0.040	0.176
Right Tilted	GPRS850	0.065	0.020	0.085
Left Cheek	GPRS850	0.128	0.090	0.218
Left Tilted	GPRS850	0.062	0.049	0.111
Right Cheek	GPRS1900	0.056	0.040	0.096
Right Tilted	GPRS1900	0.030	0.020	0.050
Left Cheek	GPRS1900	0.116	0.090	0.206
Left Tilted	GPRS1900	0.056	0.049	0.105
Right Cheek	WCDMA Band 2	0.066	0.040	0.106
Right Tilted	WCDMA Band 2	0.036	0.020	0.056
Left Cheek	WCDMA Band 2	0.096	0.090	0.186
Left Tilted	WCDMA Band 2	0.046	0.049	0.095
Right Cheek	WCDMA Band 5	0.043	0.040	0.083
Right Tilted	WCDMA Band 5	0.021	0.020	0.041
Left Cheek	WCDMA Band 5	0.048	0.090	0.138
Left Tilted	WCDMA Band 5	0.026	0.049	0.075
Right Cheek	LTE Band 2	0.031	0.040	0.071
Right Tilted	LTE Band 2	0.023	0.020	0.043
Left Cheek	LTE Band 2	0.057	0.090	0.147
Left Tilted	LTE Band 2	0.037	0.049	0.086
Right Cheek	LTE Band 4	0.035	0.040	0.075
Right Tilted	LTE Band 4	0.019	0.020	0.039
Left Cheek	LTE Band 4	0.034	0.090	0.124
Left Tilted	LTE Band 4	0.018	0.049	0.067
Right Cheek	LTE Band 5	0.039	0.040	0.079
Right Tilted	LTE Band 5	0.020	0.020	0.040
Left Cheek	LTE Band 5	0.033	0.090	0.123
Left Tilted	LTE Band 5	0.016	0.049	0.065
Right Cheek	LTE Band 7	0.187	0.040	0.227

Right Tilted	LTE Band 7	0.123	0.020	0.143
Left Cheek	LTE Band 7	0.327	0.090	0.417
Left Tilted	LTE Band 7	0.183	0.049	0.232
Right Cheek	LTE Band 38	0.217	0.040	0.257
Right Tilted	LTE Band 38	0.137	0.020	0.157
Left Cheek	LTE Band 38	0.214	0.090	0.304
Left Tilted	LTE Band 38	0.133	0.049	0.182
Right Cheek	LTE Band 40	0.118	0.040	0.158
Right Tilted	LTE Band 40	0.071	0.020	0.091
Left Cheek	LTE Band 40	0.168	0.090	0.258
Left Tilted	LTE Band 40	0.083	0.049	0.132
Right Cheek	LTE Band 41	0.340	0.040	0.380
Right Tilted	LTE Band 41	0.189	0.020	0.209
Left Cheek	LTE Band 41	0.350	0.090	**0.440**
Left Tilted	LTE Band 41	0.197	0.049	0.246

	WWAN		**WLAN(5.2G)**	**Summed SAR (W/kg)**
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Right Cheek	GSM850	0.060	0.095	0.155
Right Tilted	GSM850	0.035	0.054	0.089
Left Cheek	GSM850	0.059	0.216	0.275
Left Tilted	GSM850	0.032	0.128	0.160
Right Cheek	GSM1900	0.022	0.095	0.117
Right Tilted	GSM1900	0.012	0.054	0.066
Left Cheek	GSM1900	0.032	0.216	0.248
Left Tilted	GSM1900	0.017	0.128	0.145
Right Cheek	GPRS850	0.136	0.095	0.231
Right Tilted	GPRS850	0.065	0.054	0.119
Left Cheek	GPRS850	0.128	0.216	0.344
Left Tilted	GPRS850	0.062	0.128	0.190
Right Cheek	GPRS1900	0.056	0.095	0.151
Right Tilted	GPRS1900	0.030	0.054	0.084
Left Cheek	GPRS1900	0.116	0.216	0.332
Left Tilted	GPRS1900	0.056	0.128	0.184
Right Cheek	WCDMA Band 2	0.066	0.095	0.161
Right Tilted	WCDMA Band 2	0.036	0.054	0.090
Left Cheek	WCDMA Band 2	0.096	0.216	0.312
Left Tilted	WCDMA Band 2	0.046	0.128	0.174
Right Cheek	WCDMA Band 5	0.043	0.095	0.138
Right Tilted	WCDMA Band 5	0.021	0.054	0.075
Left Cheek	WCDMA Band 5	0.048	0.216	0.264
Left Tilted	WCDMA Band 5	0.026	0.128	0.154

Right Cheek	LTE Band 2	0.031	0.095	0.126
Right Tilted	LTE Band 2	0.023	0.054	0.077
Left Cheek	LTE Band 2	0.057	0.216	0.273
Left Tilted	LTE Band 2	0.037	0.128	0.165
Right Cheek	LTE Band 4	0.035	0.095	0.130
Right Tilted	LTE Band 4	0.019	0.054	0.073
Left Cheek	LTE Band 4	0.034	0.216	0.250
Left Tilted	LTE Band 4	0.018	0.128	0.146
Right Cheek	LTE Band 5	0.039	0.095	0.134
Right Tilted	LTE Band 5	0.020	0.054	0.074
Left Cheek	LTE Band 5	0.033	0.216	0.249
Left Tilted	LTE Band 5	0.016	0.128	0.144
Right Cheek	LTE Band 7	0.187	0.095	0.282
Right Tilted	LTE Band 7	0.123	0.054	0.177
Left Cheek	LTE Band 7	0.327	0.216	0.543
Left Tilted	LTE Band 7	0.183	0.128	0.311
Right Cheek	LTE Band 38	0.217	0.095	0.312
Right Tilted	LTE Band 38	0.137	0.054	0.191
Left Cheek	LTE Band 38	0.214	0.216	0.430
Left Tilted	LTE Band 38	0.133	0.128	0.261
Right Cheek	LTE Band 40	0.118	0.095	0.213
Right Tilted	LTE Band 40	0.071	0.054	0.125
Left Cheek	LTE Band 40	0.168	0.216	0.384
Left Tilted	LTE Band 40	0.083	0.128	0.211
Right Cheek	LTE Band 41	0.340	0.095	0.435
Right Tilted	LTE Band 41	0.189	0.054	0.243
Left Cheek	LTE Band 41	0.350	0.216	**0.566**
Left Tilted	LTE Band 41	0.197	0.128	0.325

	WWAN		**WLAN(5.8G)**	**Summed SAR (W/kg)**
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Right Cheek	GSM850	0.060	0.212	0.272
Right Tilted	GSM850	0.035	0.122	0.157
Left Cheek	GSM850	0.059	0.298	0.357
Left Tilted	GSM850	0.032	0.152	0.184
Right Cheek	GSM1900	0.022	0.212	0.234
Right Tilted	GSM1900	0.012	0.122	0.134
Left Cheek	GSM1900	0.032	0.298	0.330
Left Tilted	GSM1900	0.017	0.152	0.169
Right Cheek	GPRS850	0.136	0.212	0.348
Right Tilted	GPRS850	0.065	0.122	0.187
Left Cheek	GPRS850	0.128	0.298	0.426

Left Tilted	GPRS850	0.062	0.152	0.214
Right Cheek	GPRS1900	0.056	0.212	0.268
Right Tilted	GPRS1900	0.030	0.122	0.152
Left Cheek	GPRS1900	0.116	0.298	0.414
Left Tilted	GPRS1900	0.056	0.152	0.208
Right Cheek	WCDMA Band 2	0.066	0.212	0.278
Right Tilted	WCDMA Band 2	0.036	0.122	0.158
Left Cheek	WCDMA Band 2	0.096	0.298	0.394
Left Tilted	WCDMA Band 2	0.046	0.152	0.198
Right Cheek	WCDMA Band 5	0.043	0.212	0.255
Right Tilted	WCDMA Band 5	0.021	0.122	0.143
Left Cheek	WCDMA Band 5	0.048	0.298	0.346
Left Tilted	WCDMA Band 5	0.026	0.152	0.178
Right Cheek	LTE Band 2	0.031	0.212	0.243
Right Tilted	LTE Band 2	0.023	0.122	0.145
Left Cheek	LTE Band 2	0.057	0.298	0.355
Left Tilted	LTE Band 2	0.037	0.152	0.189
Right Cheek	LTE Band 4	0.035	0.212	0.247
Right Tilted	LTE Band 4	0.019	0.122	0.141
Left Cheek	LTE Band 4	0.034	0.298	0.332
Left Tilted	LTE Band 4	0.018	0.152	0.170
Right Cheek	LTE Band 5	0.039	0.212	0.251
Right Tilted	LTE Band 5	0.020	0.122	0.142
Left Cheek	LTE Band 5	0.033	0.298	0.331
Left Tilted	LTE Band 5	0.016	0.152	0.168
Right Cheek	LTE Band 7	0.187	0.212	0.399
Right Tilted	LTE Band 7	0.123	0.122	0.245
Left Cheek	LTE Band 7	0.327	0.298	0.625
Left Tilted	LTE Band 7	0.183	0.152	0.335
Right Cheek	LTE Band 38	0.217	0.212	0.429
Right Tilted	LTE Band 38	0.137	0.122	0.259
Left Cheek	LTE Band 38	0.214	0.298	0.512
Left Tilted	LTE Band 38	0.133	0.152	0.285
Right Cheek	LTE Band 40	0.118	0.212	0.330
Right Tilted	LTE Band 40	0.071	0.122	0.193
Left Cheek	LTE Band 40	0.168	0.298	0.466
Left Tilted	LTE Band 40	0.083	0.152	0.235
Right Cheek	LTE Band 41	0.340	0.212	0.552
Right Tilted	LTE Band 41	0.189	0.122	0.311
Left Cheek	LTE Band 41	0.350	0.298	**0.648**
Left Tilted	LTE Band 41	0.197	0.152	0.349

WWAN and Bluetooth

	WWAN		Bluetooth	Summed SAR (W/kg)
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Right Cheek	GSM850	0.060	0.008	0.068
Right Tilted	GSM850	0.035	0.005	0.040
Left Cheek	GSM850	0.059	0.006	0.065
Left Tilted	GSM850	0.032	0.003	0.035
Right Cheek	GSM1900	0.022	0.008	0.030
Right Tilted	GSM1900	0.012	0.005	0.017
Left Cheek	GSM1900	0.032	0.006	0.038
Left Tilted	GSM1900	0.017	0.003	0.020
Right Cheek	GPRS850	0.136	0.008	0.144
Right Tilted	GPRS850	0.065	0.005	0.070
Left Cheek	GPRS850	0.128	0.006	0.134
Left Tilted	GPRS850	0.062	0.003	0.065
Right Cheek	GPRS1900	0.056	0.008	0.064
Right Tilted	GPRS1900	0.030	0.005	0.035
Left Cheek	GPRS1900	0.116	0.006	0.122
Left Tilted	GPRS1900	0.056	0.003	0.059
Right Cheek	WCDMA Band 2	0.066	0.008	0.074
Right Tilted	WCDMA Band 2	0.036	0.005	0.041
Left Cheek	WCDMA Band 2	0.096	0.006	0.102
Left Tilted	WCDMA Band 2	0.046	0.003	0.049
Right Cheek	WCDMA Band 5	0.043	0.008	0.051
Right Tilted	WCDMA Band 5	0.021	0.005	0.026
Left Cheek	WCDMA Band 5	0.048	0.006	0.054
Left Tilted	WCDMA Band 5	0.026	0.003	0.029
Right Cheek	LTE Band 2	0.031	0.008	0.039
Right Tilted	LTE Band 2	0.023	0.005	0.028
Left Cheek	LTE Band 2	0.057	0.006	0.063
Left Tilted	LTE Band 2	0.037	0.003	0.040
Right Cheek	LTE Band 4	0.035	0.008	0.043
Right Tilted	LTE Band 4	0.019	0.005	0.024
Left Cheek	LTE Band 4	0.034	0.006	0.040
Left Tilted	LTE Band 4	0.018	0.003	0.021
Right Cheek	LTE Band 5	0.039	0.008	0.047
Right Tilted	LTE Band 5	0.020	0.005	0.025
Left Cheek	LTE Band 5	0.033	0.006	0.039
Left Tilted	LTE Band 5	0.016	0.003	0.019
Right Cheek	LTE Band 7	0.187	0.008	0.195
Right Tilted	LTE Band 7	0.123	0.005	0.128

Left Cheek	LTE Band 7	0.327	0.006	0.333
Left Tilted	LTE Band 7	0.183	0.003	0.186
Right Cheek	LTE Band 38	0.217	0.008	0.225
Right Tilted	LTE Band 38	0.137	0.005	0.142
Left Cheek	LTE Band 38	0.214	0.006	0.220
Left Tilted	LTE Band 38	0.133	0.003	0.136
Right Cheek	LTE Band 40	0.118	0.008	0.126
Right Tilted	LTE Band 40	0.071	0.005	0.076
Left Cheek	LTE Band 40	0.168	0.006	0.174
Left Tilted	LTE Band 40	0.083	0.003	0.086
Right Cheek	LTE Band 41	0.340	0.008	0.348
Right Tilted	LTE Band 41	0.189	0.005	0.194
Left Cheek	LTE Band 41	0.350	0.006	**0.356**
Left Tilted	LTE Band 41	0.197	0.003	0.200

Body-worn SAR

WWAN and WLAN

	WWAN		WLAN(2.4G)	Summed SAR (W/kg)
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Back	GSM850	0.079	0.142	0.221
Front	GSM850	0.047	0.030	0.077
Back	GSM1900	0.414	0.142	0.556
Front	GSM1900	0.074	0.030	0.104
Back	WCDMA Band 2	0.574	0.142	0.716
Front	WCDMA Band 2	0.192	0.030	0.222
Back	WCDMA Band 5	0.075	0.142	0.217
Front	WCDMA Band 5	0.048	0.030	0.078
Back	LTE Band 2	0.652	0.142	0.794
Front	LTE Band 2	0.154	0.030	0.184
Back	LTE Band 4	0.730	0.142	**0.872**
Front	LTE Band 4	0.123	0.030	0.153
Back	LTE Band 5	0.073	0.142	0.215
Front	LTE Band 5	0.037	0.030	0.067
Back	LTE Band 7	0.618	0.142	0.760
Front	LTE Band 7	0.192	0.030	0.222
Back	LTE Band 38	0.203	0.142	0.345
Front	LTE Band 38	0.086	0.030	0.116
Back	LTE Band 40	0.280	0.142	0.422
Front	LTE Band 40	0.092	0.030	0.122
Back	LTE Band 41	0.272	0.142	0.414
Front	LTE Band 41	0.123	0.030	0.153

	WWAN		WLAN(5.2G)	Summed SAR (W/kg)
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Back	GSM850	0.079	0.183	0.262
Front	GSM850	0.047	0.043	0.090
Back	GSM1900	0.414	0.183	0.597
Front	GSM1900	0.074	0.043	0.117
Back	WCDMA Band 2	0.574	0.183	0.757
Front	WCDMA Band 2	0.192	0.043	0.235
Back	WCDMA Band 5	0.075	0.183	0.258
Front	WCDMA Band 5	0.048	0.043	0.091
Back	LTE Band 2	0.652	0.183	0.835
Front	LTE Band 2	0.154	0.043	0.197
Back	LTE Band 4	0.730	0.183	**0.913**

Front	LTE Band 4	0.123	0.043	0.166
Back	LTE Band 5	0.073	0.183	0.256
Front	LTE Band 5	0.037	0.043	0.080
Back	LTE Band 7	0.618	0.183	0.801
Front	LTE Band 7	0.192	0.043	0.235
Back	LTE Band 38	0.203	0.183	0.386
Front	LTE Band 38	0.086	0.043	0.129
Back	LTE Band 40	0.280	0.183	0.463
Front	LTE Band 40	0.092	0.043	0.135
Back	LTE Band 41	0.272	0.183	0.455
Front	LTE Band 41	0.123	0.043	0.166

	WWAN		**WLAN(5.8G)**	**Summed SAR (W/kg)**
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Back	GSM850	0.079	0.100	0.179
Front	GSM850	0.047	0.022	0.069
Back	GSM1900	0.414	0.100	0.514
Front	GSM1900	0.074	0.022	0.096
Back	WCDMA Band 2	0.574	0.100	0.674
Front	WCDMA Band 2	0.192	0.022	0.214
Back	WCDMA Band 5	0.075	0.100	0.175
Front	WCDMA Band 5	0.048	0.022	0.070
Back	LTE Band 2	0.652	0.100	0.752
Front	LTE Band 2	0.154	0.022	0.176
Back	LTE Band 4	0.730	0.100	**0.830**
Front	LTE Band 4	0.123	0.022	0.145
Back	LTE Band 5	0.073	0.100	0.173
Front	LTE Band 5	0.037	0.022	0.059
Back	LTE Band 7	0.618	0.100	0.718
Front	LTE Band 7	0.192	0.022	0.214
Back	LTE Band 38	0.203	0.100	0.303
Front	LTE Band 38	0.086	0.022	0.108
Back	LTE Band 40	0.280	0.100	0.380
Front	LTE Band 40	0.092	0.022	0.114
Back	LTE Band 41	0.272	0.100	0.372
Front	LTE Band 41	0.123	0.022	0.145

Hotspot SAR

WWAN and WLAN

	WWAN		WLAN(2.4G)	Summed SAR (W/kg)
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Back	GSM850	0.208	0.142	0.350
Front	GSM850	0.114	0.030	0.144
Right side	GSM850	--	0.024	0.024
Left side	GSM850	0.054	--	0.054
Bottom side	GSM850	0.049	--	0.049
Top side	GSM850	--	0.019	0.019
Back	GSM1900	0.944	0.142	**1.086**
Front	GSM1900	0.225	0.030	0.255
Right side	GSM1900	--	0.024	0.024
Left side	GSM1900	0.182	--	0.182
Bottom side	GSM1900	0.035	--	0.035
Top side	GSM1900	--	0.019	0.019
Back	WCDMA Band 2	0.182	0.142	0.324
Front	WCDMA Band 2	0.035	0.030	0.065
Right side	WCDMA Band 2	--	0.024	0.024
Left side	WCDMA Band 2	0.159	--	0.159
Bottom side	WCDMA Band 2	0.062	--	0.062
Top side	WCDMA Band 2	--	0.019	0.019
Back	WCDMA Band 5	0.075	0.142	0.217
Front	WCDMA Band 5	0.048	0.030	0.078
Right side	WCDMA Band 5	--	0.024	0.024
Left side	WCDMA Band 5	0.012	--	0.012
Bottom side	WCDMA Band 5	0.022	--	0.022
Top side	WCDMA Band 5	--	0.019	0.019
Back	LTE Band 2	0.652	0.142	0.794
Front	LTE Band 2	0.154	0.030	0.184
Right side	LTE Band 2	--	0.024	0.024
Left side	LTE Band 2	0.137	--	0.137
Bottom side	LTE Band 2	0.046	--	0.046
Top side	LTE Band 2	--	0.019	0.019
Back	LTE Band 4	0.730	0.142	0.872
Front	LTE Band 4	0.123	0.030	0.153
Right side	LTE Band 4	--	0.024	0.024
Left side	LTE Band 4	0.067	--	0.067
Bottom side	LTE Band 4	0.020	--	0.020
Top side	LTE Band 4	--	0.019	0.019

Back	LTE Band 5	0.073	0.142	0.215
Front	LTE Band 5	0.037	0.030	0.067
Right side	LTE Band 5	--	0.024	0.024
Left side	LTE Band 5	0.019	--	0.019
Bottom side	LTE Band 5	0.020	--	0.020
Top side	LTE Band 5	--	0.019	0.019
Back	LTE Band 7	0.618	0.142	0.760
Front	LTE Band 7	0.192	0.030	0.222
Right side	LTE Band 7	--	0.024	0.024
Left side	LTE Band 7	0.234	--	0.234
Bottom side	LTE Band 7	0.086	--	0.086
Top side	LTE Band 7	--	0.019	0.019
Back	LTE Band 38	0.203	0.142	0.345
Front	LTE Band 38	0.086	0.030	0.116
Right side	LTE Band 38	--	0.024	0.024
Left side	LTE Band 38	0.197	--	0.197
Bottom side	LTE Band 38	0.031	--	0.031
Top side	LTE Band 38	--	0.019	0.019
Back	LTE Band 40	0.280	0.142	0.422
Front	LTE Band 40	0.092	0.030	0.122
Right side	LTE Band 40	--	0.024	0.024
Left side	LTE Band 40	0.104	--	0.104
Bottom side	LTE Band 40	0.051	--	0.051
Top side	LTE Band 40	--	0.019	0.019
Back	LTE Band 41	0.272	0.142	0.414
Front	LTE Band 41	0.123	0.030	0.153
Right side	LTE Band 41	--	0.024	0.024
Left side	LTE Band 41	0.242	--	0.242
Bottom side	LTE Band 41	0.089	--	0.089
Top side	LTE Band 41	--	0.019	0.019

	WWAN		**WLAN(5.2G)**	**Summed SAR (W/kg)**
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Back	GSM850	0.208	0.183	0.391
Front	GSM850	0.114	0.043	0.157
Right side	GSM850	--	0.059	0.059
Left side	GSM850	0.054	--	0.054
Bottom side	GSM850	0.049	--	0.049
Top side	GSM850	--	0.073	0.073
Back	GSM1900	0.944	0.183	**1.127**
Front	GSM1900	0.225	0.043	0.268
Right side	GSM1900	--	0.059	0.059

Left side	GSM1900	0.182	--	0.182
Bottom side	GSM1900	0.035	--	0.035
Top side	GSM1900	--	0.073	0.073
Back	WCDMA Band 2	0.182	0.183	0.365
Front	WCDMA Band 2	0.035	0.043	0.078
Right side	WCDMA Band 2	--	0.059	0.059
Left side	WCDMA Band 2	0.159	--	0.159
Bottom side	WCDMA Band 2	0.062	--	0.062
Top side	WCDMA Band 2	--	0.073	0.073
Back	WCDMA Band 5	0.075	0.183	0.258
Front	WCDMA Band 5	0.048	0.043	0.091
Right side	WCDMA Band 5	--	0.059	0.059
Left side	WCDMA Band 5	0.012	--	0.012
Bottom side	WCDMA Band 5	0.022	--	0.022
Top side	WCDMA Band 5	--	0.073	0.073
Back	LTE Band 2	0.652	0.183	0.835
Front	LTE Band 2	0.154	0.043	0.197
Right side	LTE Band 2	--	0.059	0.059
Left side	LTE Band 2	0.137	--	0.137
Bottom side	LTE Band 2	0.046	--	0.046
Top side	LTE Band 2	--	0.073	0.073
Back	LTE Band 4	0.730	0.183	0.913
Front	LTE Band 4	0.123	0.043	0.166
Right side	LTE Band 4	--	0.059	0.059
Left side	LTE Band 4	0.067	--	0.067
Bottom side	LTE Band 4	0.020	--	0.020
Top side	LTE Band 4	--	0.073	0.073
Back	LTE Band 5	0.073	0.183	0.256
Front	LTE Band 5	0.037	0.043	0.080
Right side	LTE Band 5	--	0.059	0.059
Left side	LTE Band 5	0.019	--	0.019
Bottom side	LTE Band 5	0.020	--	0.020
Top side	LTE Band 5	--	0.073	0.073
Back	LTE Band 7	0.618	0.183	0.801
Front	LTE Band 7	0.192	0.043	0.235
Right side	LTE Band 7	--	0.059	0.059
Left side	LTE Band 7	0.234	--	0.234
Bottom side	LTE Band 7	0.086	--	0.086
Top side	LTE Band 7	--	0.073	0.073
Back	LTE Band 38	0.203	0.183	0.386
Front	LTE Band 38	0.086	0.043	0.129
Right side	LTE Band 38	--	0.059	0.059
Left side	LTE Band 38	0.197	--	0.197

Bottom side	LTE Band 38	0.031	--	0.031
Top side	LTE Band 38	--	0.073	0.073
Back	LTE Band 40	0.280	0.183	0.463
Front	LTE Band 40	0.092	0.043	0.135
Right side	LTE Band 40	--	0.059	0.059
Left side	LTE Band 40	0.104	--	0.104
Bottom side	LTE Band 40	0.051	--	0.051
Top side	LTE Band 40	--	0.073	0.073
Back	LTE Band 41	0.272	0.183	0.455
Front	LTE Band 41	0.123	0.043	0.166
Right side	LTE Band 41	--	0.059	0.059
Left side	LTE Band 41	0.242	--	0.242
Bottom side	LTE Band 41	0.089	--	0.089
Top side	LTE Band 41	--	0.073	0.073

	WWAN		**WLAN(5.8G)**	**Summed SAR (W/kg)**
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Back	GSM850	0.208	0.100	0.308
Front	GSM850	0.114	0.022	0.136
Right side	GSM850	--	0.080	0.080
Left side	GSM850	0.054	--	0.054
Bottom side	GSM850	0.049	--	0.049
Top side	GSM850	--	0.177	0.177
Back	GSM1900	0.944	0.100	**1.044**
Front	GSM1900	0.225	0.022	0.247
Right side	GSM1900	--	0.080	0.080
Left side	GSM1900	0.182	--	0.182
Bottom side	GSM1900	0.035	--	0.035
Top side	GSM1900	--	0.177	0.177
Back	WCDMA Band 2	0.182	0.100	0.282
Front	WCDMA Band 2	0.035	0.022	0.057
Right side	WCDMA Band 2	--	0.080	0.080
Left side	WCDMA Band 2	0.159	--	0.159
Bottom side	WCDMA Band 2	0.062	--	0.062
Top side	WCDMA Band 2	--	0.177	0.177
Back	WCDMA Band 5	0.075	0.100	0.175
Front	WCDMA Band 5	0.048	0.022	0.070
Right side	WCDMA Band 5	--	0.080	0.080
Left side	WCDMA Band 5	0.012	--	0.012
Bottom side	WCDMA Band 5	0.022	--	0.022
Top side	WCDMA Band 5	--	0.177	0.177

Back	LTE Band 2	0.652	0.100	0.752
Front	LTE Band 2	0.154	0.022	0.176
Right side	LTE Band 2	--	0.080	0.080
Left side	LTE Band 2	0.137	--	0.137
Bottom side	LTE Band 2	0.046	--	0.046
Top side	LTE Band 2	--	0.177	0.177
Back	LTE Band 4	0.730	0.100	0.830
Front	LTE Band 4	0.123	0.022	0.145
Right side	LTE Band 4	--	0.080	0.080
Left side	LTE Band 4	0.067	--	0.067
Bottom side	LTE Band 4	0.020	--	0.020
Top side	LTE Band 4	--	0.177	0.177
Back	LTE Band 5	0.073	0.100	0.173
Front	LTE Band 5	0.037	0.022	0.059
Right side	LTE Band 5	--	0.080	0.080
Left side	LTE Band 5	0.019	--	0.019
Bottom side	LTE Band 5	0.020	--	0.020
Top side	LTE Band 5	--	0.177	0.177
Back	LTE Band 7	0.618	0.100	0.718
Front	LTE Band 7	0.192	0.022	0.214
Right side	LTE Band 7	--	0.080	0.080
Left side	LTE Band 7	0.234	--	0.234
Bottom side	LTE Band 7	0.086	--	0.086
Top side	LTE Band 7	--	0.177	0.177
Back	LTE Band 38	0.203	0.100	0.303
Front	LTE Band 38	0.086	0.022	0.108
Right side	LTE Band 38	--	0.080	0.080
Left side	LTE Band 38	0.197	--	0.197
Bottom side	LTE Band 38	0.031	--	0.031
Top side	LTE Band 38	--	0.177	0.177
Back	LTE Band 40	0.280	0.100	0.380
Front	LTE Band 40	0.092	0.022	0.114
Right side	LTE Band 40	--	0.080	0.080
Left side	LTE Band 40	0.104	--	0.104
Bottom side	LTE Band 40	0.051	--	0.051
Top side	LTE Band 40	--	0.177	0.177
Back	LTE Band 41	0.272	0.100	0.372
Front	LTE Band 41	0.123	0.022	0.145
Right side	LTE Band 41	--	0.080	0.080
Left side	LTE Band 41	0.242	--	0.242
Bottom side	LTE Band 41	0.089	--	0.089
Top side	LTE Band 41	--	0.177	0.177

WWAN and Bluetooth

	WWAN		Bluetooth	Summed SAR (W/kg)
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Back	GSM850	0.208	0.019	0.227
Front	GSM850	0.114	0.010	0.124
Right side	GSM850	--	0.004	0.004
Left side	GSM850	0.054	--	0.054
Bottom side	GSM850	0.049	--	0.049
Top side	GSM850	--	0.005	0.005
Back	GSM1900	0.944	0.019	**0.963**
Front	GSM1900	0.225	0.010	0.235
Right side	GSM1900	--	0.004	0.004
Left side	GSM1900	0.182	--	0.182
Bottom side	GSM1900	0.035	--	0.035
Top side	GSM1900	--	0.005	0.005
Back	WCDMA Band 2	0.182	0.019	0.201
Front	WCDMA Band 2	0.035	0.010	0.045
Right side	WCDMA Band 2	--	0.004	0.004
Left side	WCDMA Band 2	0.159	--	0.159
Bottom side	WCDMA Band 2	0.062	--	0.062
Top side	WCDMA Band 2	--	0.005	0.005
Back	WCDMA Band 5	0.075	0.019	0.094
Front	WCDMA Band 5	0.048	0.010	0.058
Right side	WCDMA Band 5	--	0.004	0.004
Left side	WCDMA Band 5	0.012	--	0.012
Bottom side	WCDMA Band 5	0.022	--	0.022
Top side	WCDMA Band 5	--	0.005	0.005
Back	LTE Band 2	0.652	0.019	0.671
Front	LTE Band 2	0.154	0.010	0.164
Right side	LTE Band 2	--	0.004	0.004
Left side	LTE Band 2	0.137	--	0.137
Bottom side	LTE Band 2	0.046	--	0.046
Top side	LTE Band 2	--	0.005	0.005
Back	LTE Band 4	0.730	0.019	0.749
Front	LTE Band 4	0.123	0.010	0.133
Right side	LTE Band 4	--	0.004	0.004
Left side	LTE Band 4	0.067	--	0.067
Bottom side	LTE Band 4	0.020	--	0.020
Top side	LTE Band 4	--	0.005	0.005
Back	LTE Band 5	0.073	0.019	0.092
Front	LTE Band 5	0.037	0.010	0.047

Right side	LTE Band 5	--	0.004	0.004
Left side	LTE Band 5	0.019	--	0.019
Bottom side	LTE Band 5	0.020	--	0.020
Top side	LTE Band 5	--	0.005	0.005
Back	LTE Band 7	0.618	0.019	0.637
Front	LTE Band 7	0.192	0.010	0.202
Right side	LTE Band 7	--	0.004	0.004
Left side	LTE Band 7	0.234	--	0.234
Bottom side	LTE Band 7	0.086	--	0.086
Top side	LTE Band 7	--	0.005	0.005
Back	LTE Band 38	0.203	0.019	0.222
Front	LTE Band 38	0.086	0.010	0.096
Right side	LTE Band 38	--	0.004	0.004
Left side	LTE Band 38	0.197	--	0.197
Bottom side	LTE Band 38	0.031	--	0.031
Top side	LTE Band 38	--	0.005	0.005
Back	LTE Band 40	0.280	0.019	0.299
Front	LTE Band 40	0.092	0.010	0.102
Right side	LTE Band 40	--	0.004	0.004
Left side	LTE Band 40	0.104	--	0.104
Bottom side	LTE Band 40	0.051	--	0.051
Top side	LTE Band 40	--	0.005	0.005
Back	LTE Band 41	0.272	0.019	0.291
Front	LTE Band 41	0.123	0.010	0.133
Right side	LTE Band 41	--	0.004	0.004
Left side	LTE Band 41	0.242	--	0.242
Bottom side	LTE Band 41	0.089	--	0.089
Top side	LTE Band 41	--	0.005	0.005

10. Measurement Uncertainty

10.1 Uncertainty for EUT 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	3.0	R	√3	1	1	1.73	1.73	∝
RF ambient Conditions - Reflections	E.6.1	3.0	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	E.3.2	5.00	R	√3	0.64	0.43	1.85	1.24	∝

from target value									
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				12.98	12.53	
Expanded Uncertainty (95% Confidence interval)			K=2				25.32	24.43	

10.2 Uncertainty for System Performance Check

a	b	c	d	e= f(d,k)	f	g	h= c*f/e	i= c*g/e	k
Uncertainty Component	**Sec.**	**Tol (+- %)**	**Prob. Dist.**	**Div.**	**Ci (1g)**	**Ci (10g)**	**1g Ui (+-%)**	**10g Ui (+-%)**	**Vi**
Measurement System									
Probe calibration	E.2.1	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	∝
Modulation response	E.2.5	0	R	√3	0	0	0.0	0.0	∝
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	3.0	R	√3	1	1	1.73	1.73	∝
RF ambient Conditions - Reflections	E.6.1	3.0	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.	E.5.2	5.0	R	√3	1	1	2.89	2.89	∝

SAR Evaluation									
Dipole									
Dipole axis to liquid Distance	8,E.4.2	1.00	N	√3	1	1	0.58	0.58	N−1
Input power and SAR drift measurement	8,6.6.2	12.02	R	√3	1	1	6.94	6.94	∝
Deviation of experimental dipole from numerical dipole	E.6.4	5.5	R	√3	1	1	3.20	3.20	∝
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	2.0	R	√3	1	0.84	1.10	1.10	∝
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	M
Combined Standard Uncertainty			RSS				12.00	11.50	
Expanded Uncertainty (95% Confidence interval)			K=2				23.39	22.43	

Annex A. Plots of System Performance Check

MEASUREMENT 1

For Head Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 11/25/2019

Measurement duration: 7 minutes 21 seconds

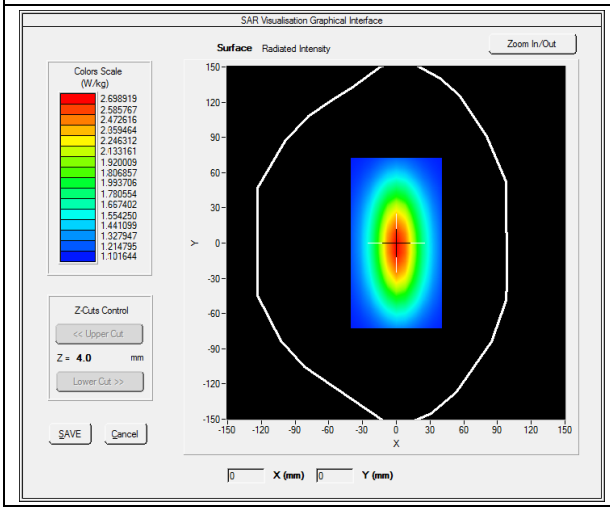
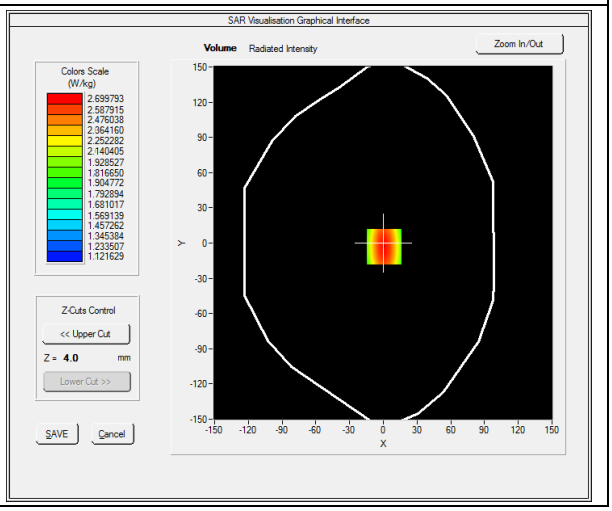
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.93; Calibrated: 05/22/2019

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)	41.110245
Conductivity (S/m)	0.871245
Power Variation (%)	0.038437
Ambient Temperature	21.1
Liquid Temperature	21.3

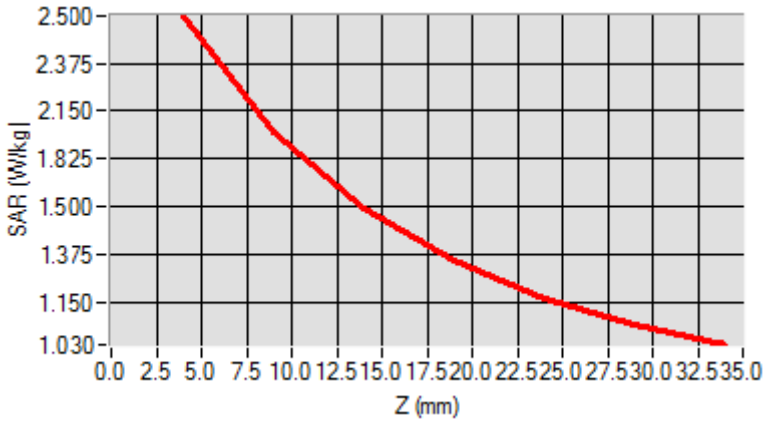
SURFACE SAR	VOLUME SAR
	

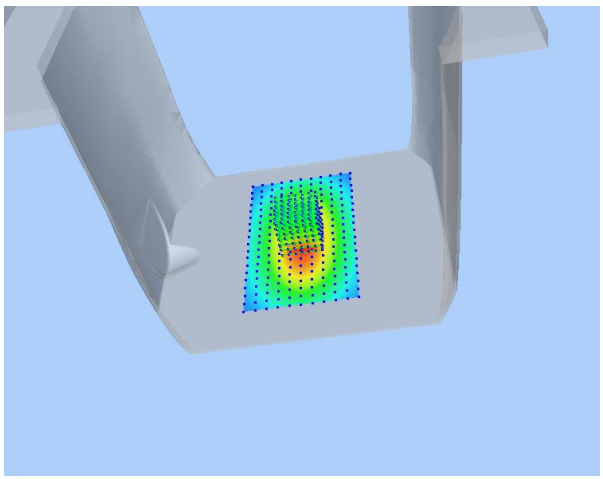
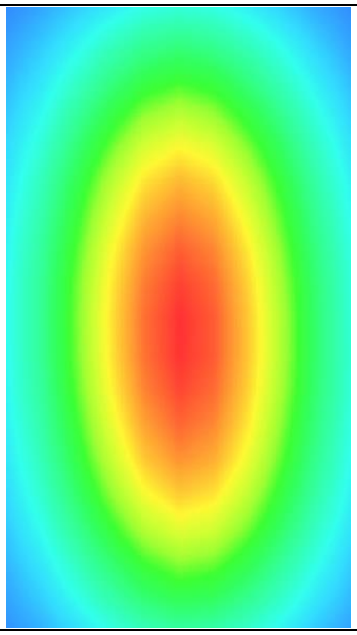
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	**1.519489**
SAR 1g (W/Kg)	**2.411253**

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

For Head Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 11/26/2019

Measurement duration: 12 minutes 21 seconds

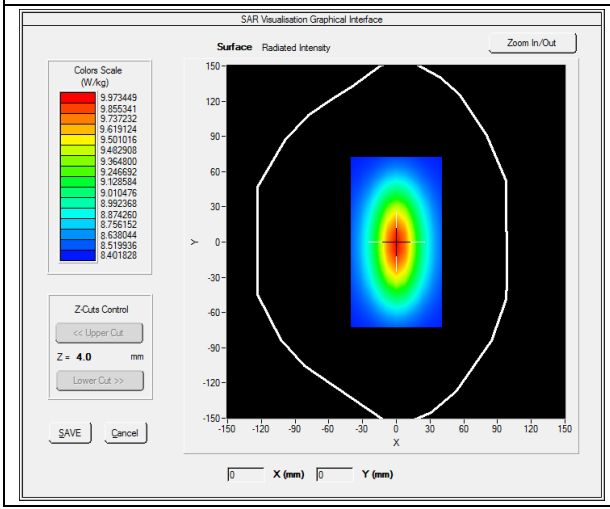
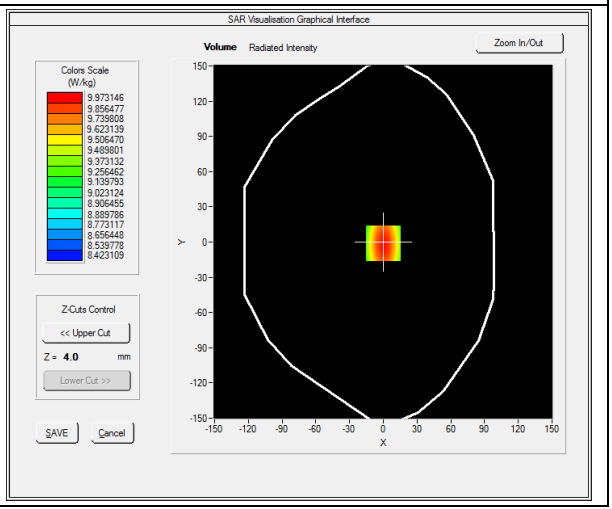
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 5.84; Calibrated: 05/22/2019

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)	39.024890
Conductivity (S/m)	1.371250
Power Variation (%)	1.401232
Ambient Temperature	21.1
Liquid Temperature	21.2

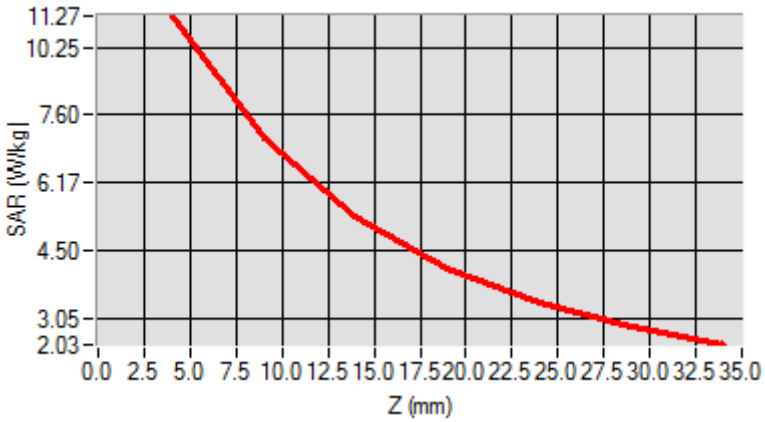
SURFACE SAR	VOLUME SAR
	

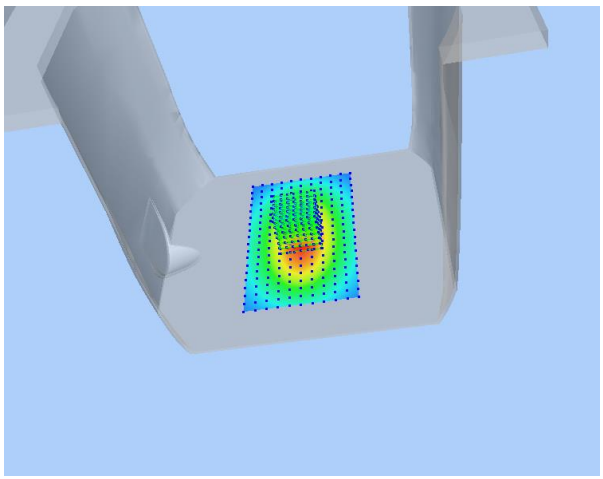
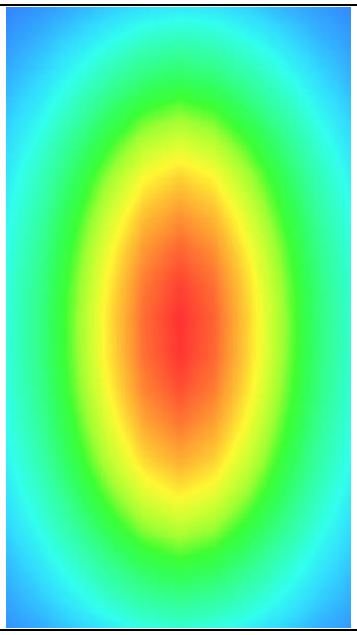
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	**5.171252**
SAR 1g (W/Kg)	**9.611250**

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

For Head Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 11/26/2019

Measurement duration: 12 minutes 21 seconds

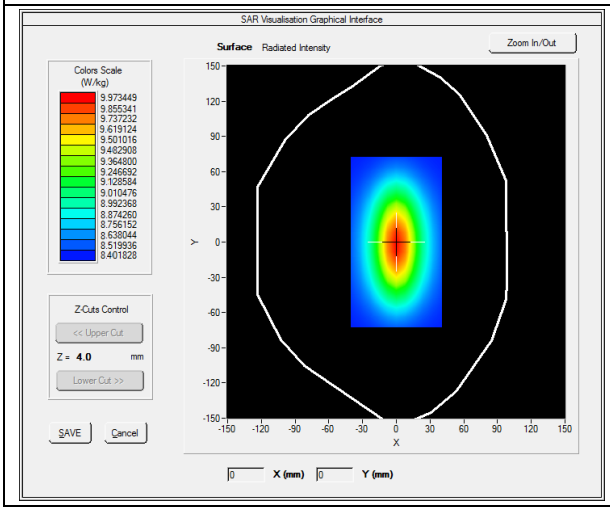
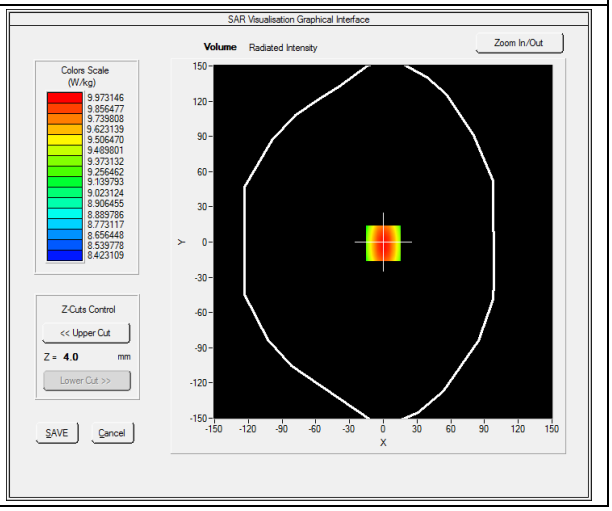
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.35; Calibrated: 05/22/2019

A. Experimental conditions

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

B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative Permittivity (real part)	38.560124
Conductivity (S/m)	1.380369
Power Variation (%)	1.022540
Ambient Temperature	21.1
Liquid Temperature	21.3

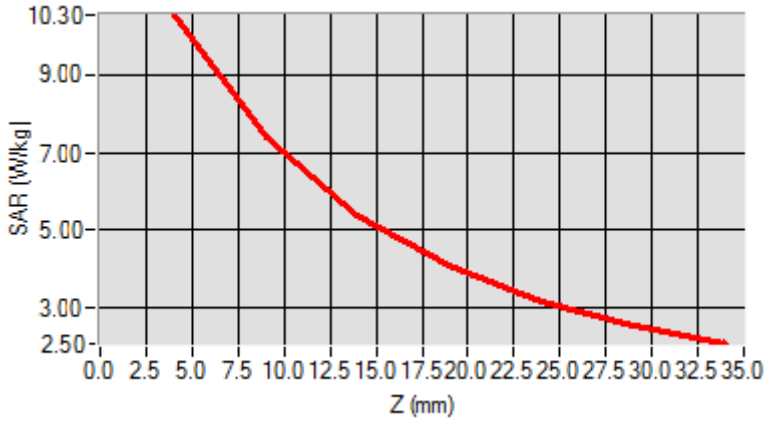
SURFACE SAR	VOLUME SAR
	

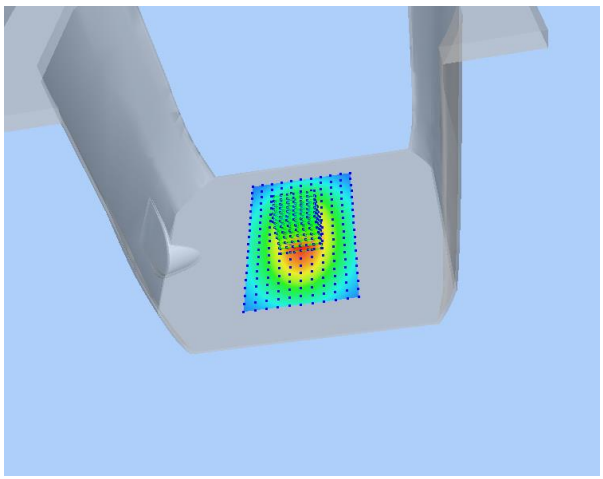
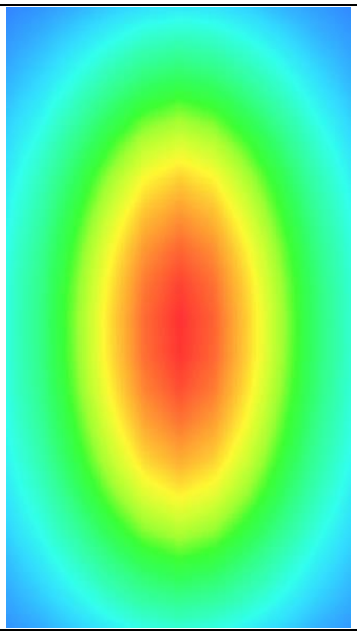
Maximum location: X=0.00, Y=0.00

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**	**6.8400**	**5.0121**	**4.1189**	**3.0522**	**2.8424**



3D screen shot	**Hot spot position**
	

MEASUREMENT 4

For Head Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 11/27/2019

Measurement duration: 12 minutes 21 seconds

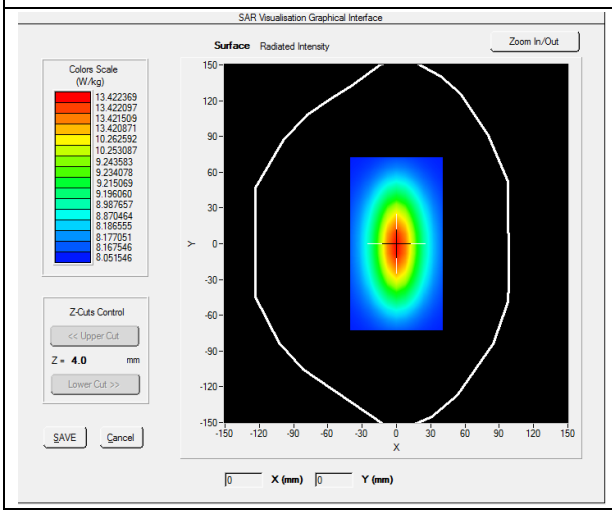
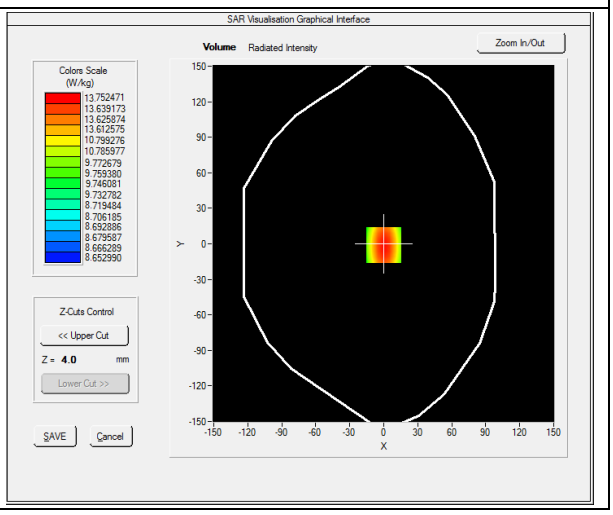
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 5.64; Calibrated: 05/22/2019

A. Experimental conditions

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

B. SAR Measurement Results

Frequency (MHz)	2450.000000
Relative Permittivity (real part)	38.153660
Conductivity (S/m)	1.740236
Power Variation (%)	1.141452
Ambient Temperature	21.1
Liquid Temperature	21.2

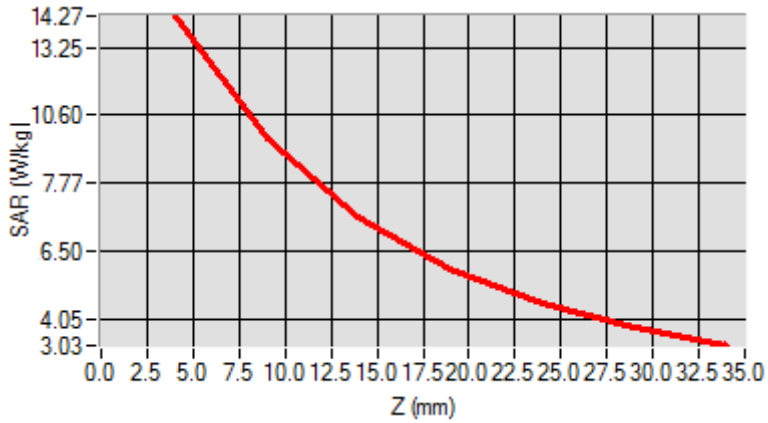
SURFACE SAR	VOLUME SAR
	

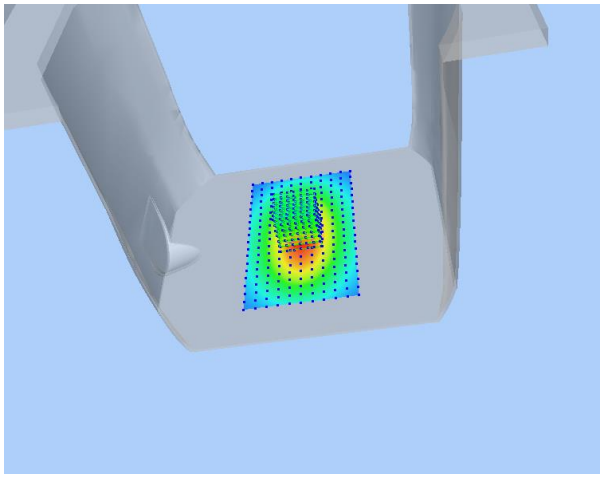
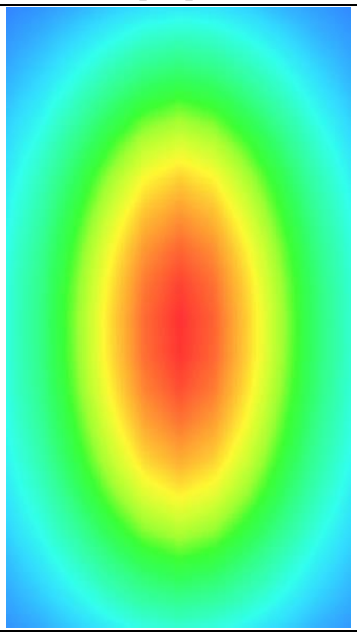
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	**8.020427**
SAR 1g (W/Kg)	**13.452457**

Z Axis Scan

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



3D screen shot	**Hot spot position**
	

MEASUREMENT 5

For Head Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 11/27/2019

Measurement duration: 12 minutes 21 seconds

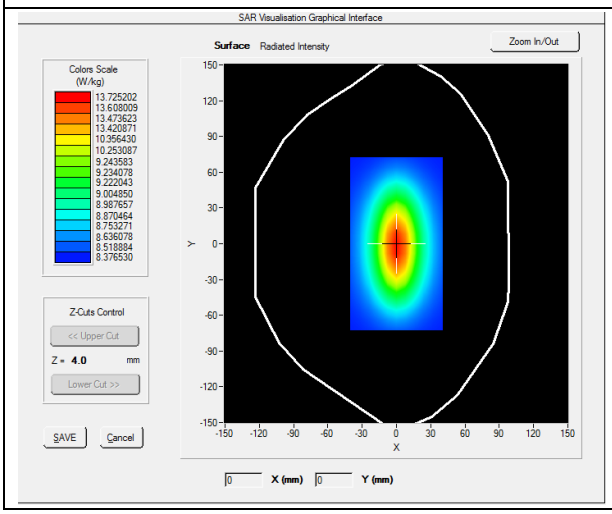
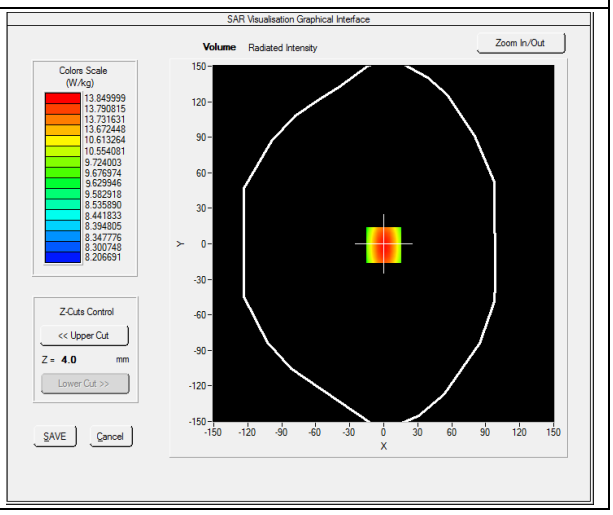
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 5.37; Calibrated: 05/22/2019

A. Experimental conditions

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

B. SAR Measurement Results

Frequency (MHz)	2600.000000
Relative Permittivity (real part)	38.631092
Conductivity (S/m)	1.930182
Power Variation (%)	1.028221
Ambient Temperature	21.1
Liquid Temperature	21.2

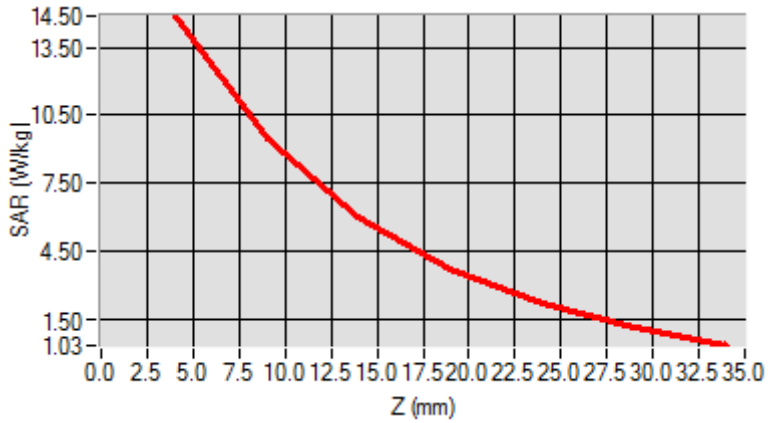
SURFACE SAR	VOLUME SAR
	

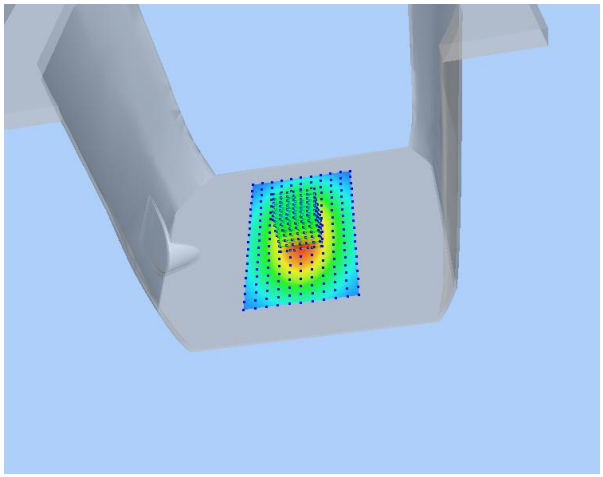
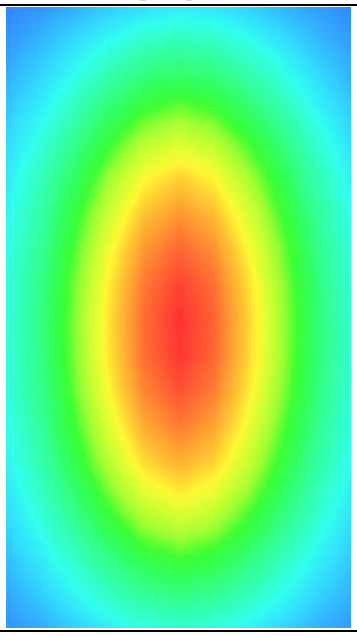
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	**8.270822**
SAR 1g (W/Kg)	**13.670282**

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

For Head Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 11/28/2019

Measurement duration: 12 minutes 21 seconds

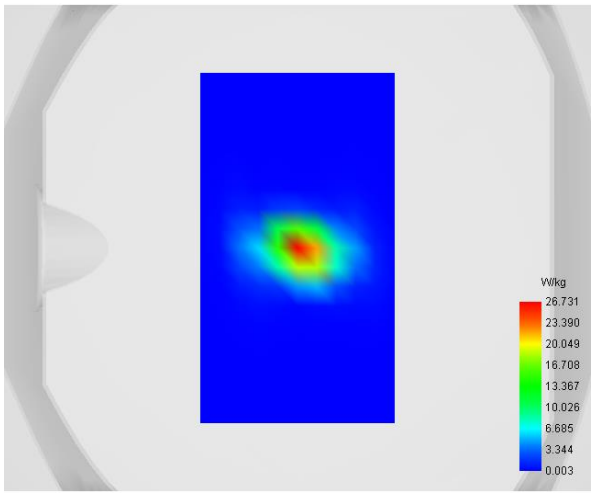
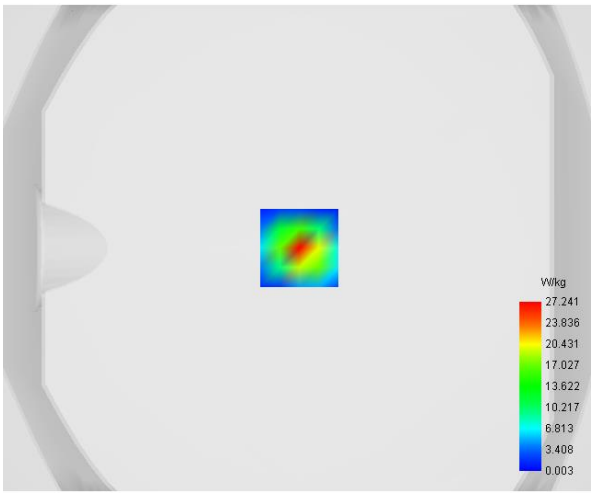
E-field Probe: SSE2 - SN 45/15 EPGO280; ConvF: 2.44; Calibrated: 07/08/2019

A. Experimental conditions

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

B. SAR Measurement Results

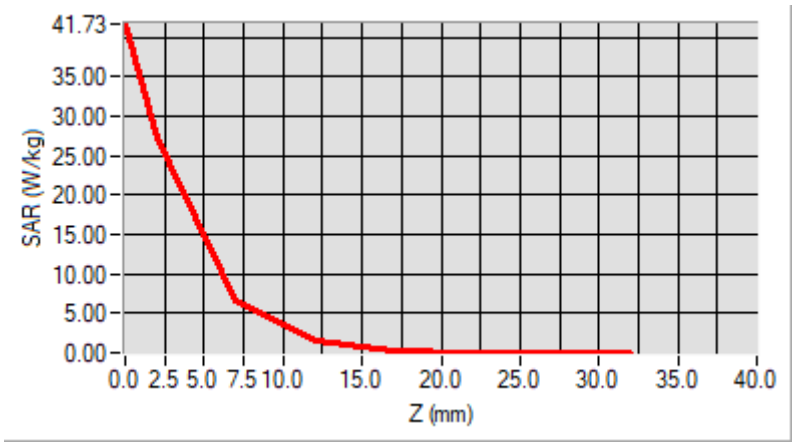
Frequency (MHz)	5200.000000
Relative Permittivity (real part)	35.612911
Conductivity (S/m)	4.871483
Power Variation (%)	0.943213
Ambient Temperature	21.1
Liquid Temperature	21.2

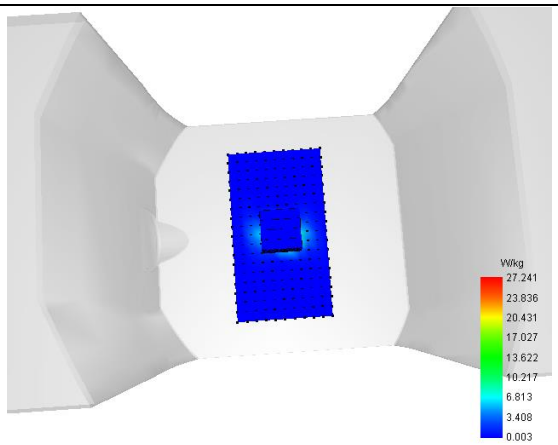
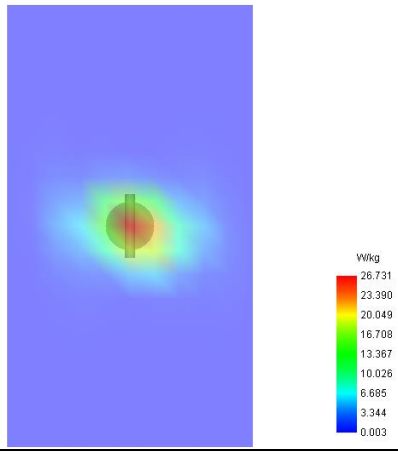
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=0.00

SAR 10g (W/Kg)	**5.310334**
SAR 1g (W/Kg)	**16.946226**

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



3D screen shot	**Hot spot position**
	

MEASUREMENT 7

For Head Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 11/28/2019

Measurement duration: 12 minutes 21 seconds

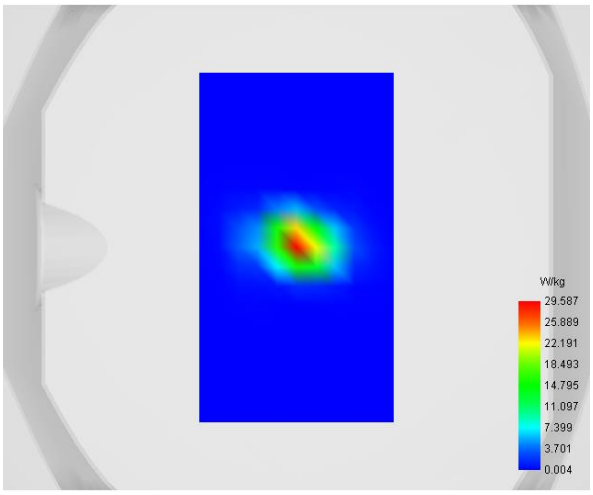
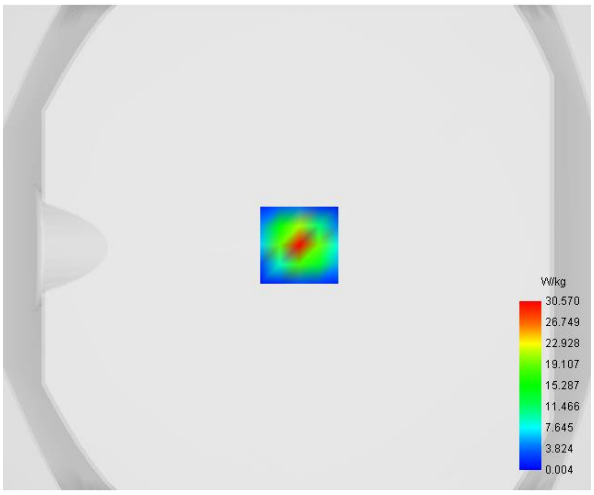
E-field Probe: SSE2 - SN 45/15 EPGO280; ConvF: 2.52; Calibrated: 07/08/2019

A. Experimental conditions

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

B. SAR Measurement Results

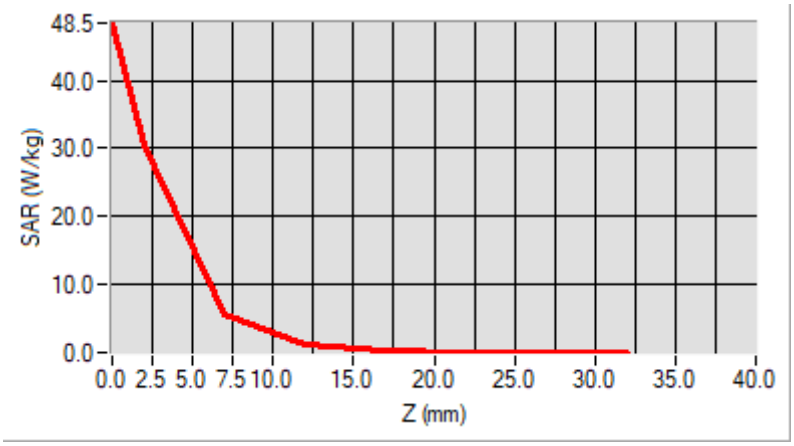
Frequency (MHz)	5800.000000
Relative Permittivity (real part)	35.612911
Conductivity (S/m)	5.171483
Power Variation (%)	0.943782
Ambient Temperature	21.1
Liquid Temperature	21.2

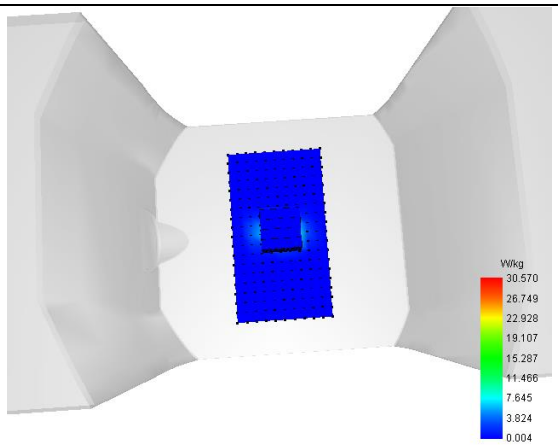
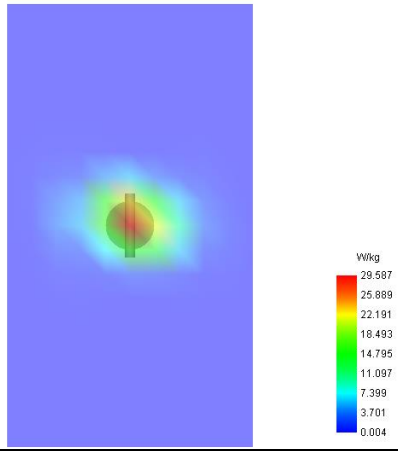
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=1.00

SAR 10g (W/Kg)	**5.879544**
SAR 1g (W/Kg)	**17.190731**

Z (mm)	**0.00**	**2.00**	**7.00**	**12.00**	**17.00**	**22.00**	**27.00**
SAR (W/Kg)	**48.4695**	**30.5699**	**5.7100**	**1.0698**	**0.1906**	**0.0364**	**0.0052**



3D screen shot	**Hot spot position**
	

MEASUREMENT 8

For Body Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 11/25/2019

Measurement duration: 12 minutes 21 seconds

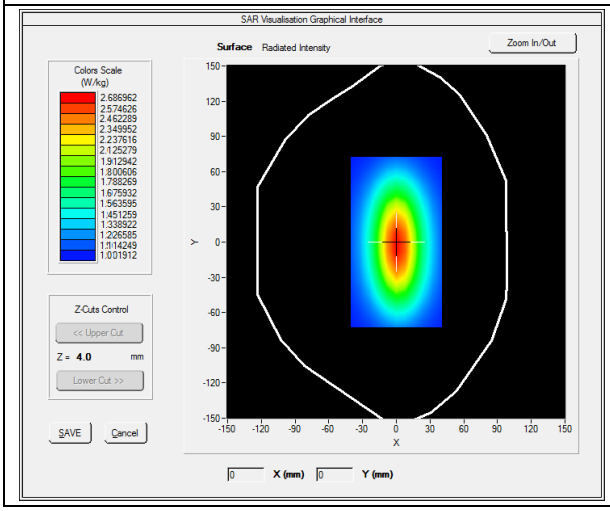
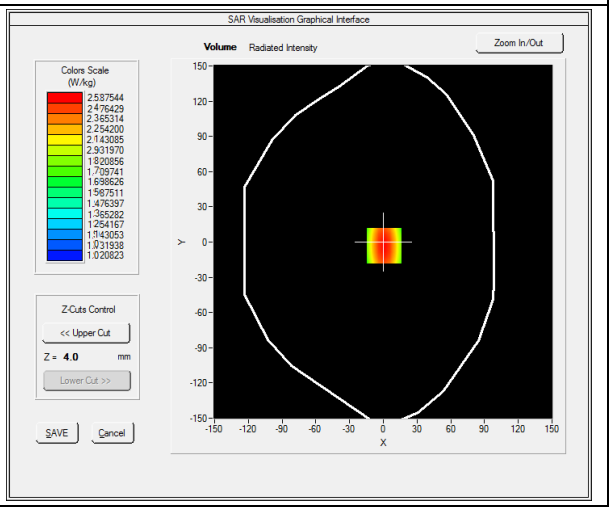
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 7.13; Calibrated: 05/22/2019

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)	54.851214
Conductivity (S/m)	0.951454
Power Variation (%)	0.901472
Ambient Temperature	21.1
Liquid Temperature	21.3

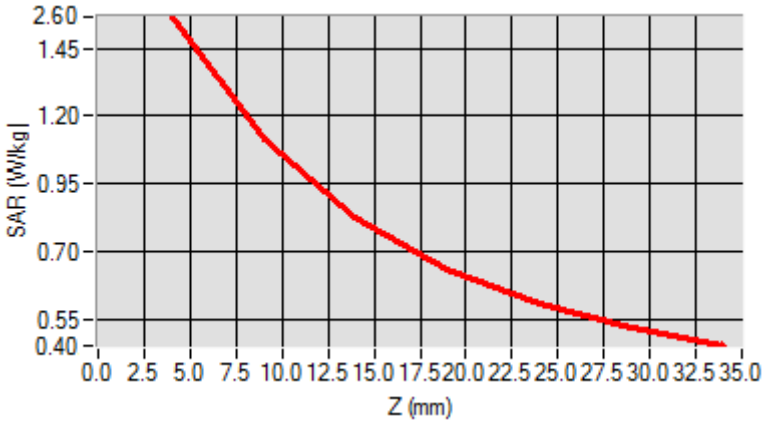
SURFACE SAR	VOLUME SAR
	

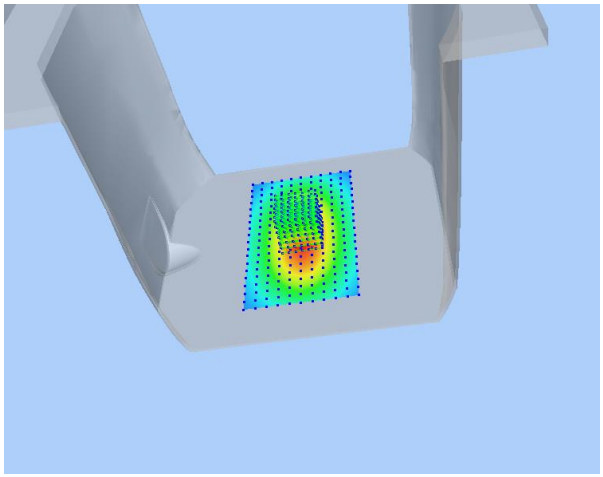
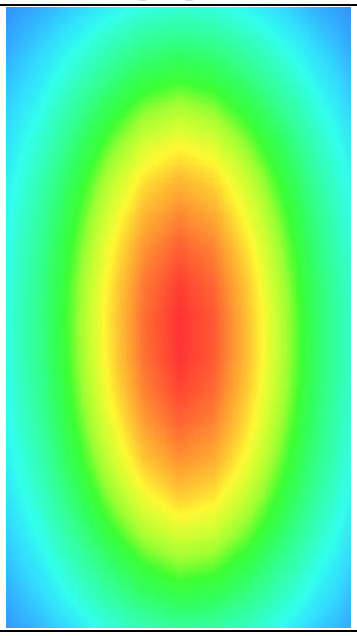
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	**1.028956**
SAR 1g (W/Kg)	**2.354211**

Z Axis Scan

Z (mm)	**0.00**	**4.00**	**9.00**	**14.00**	**19.00**	**24.00**	**29.00**
SAR (W/Kg)	**0.0000**	**2.5789**	**1.1300**	**0.8795**	**0.5940**	**0.5011**	**0.5100**



3D screen shot	**Hot spot position**
	

MEASUREMENT 9

For Body Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 11/26/2019

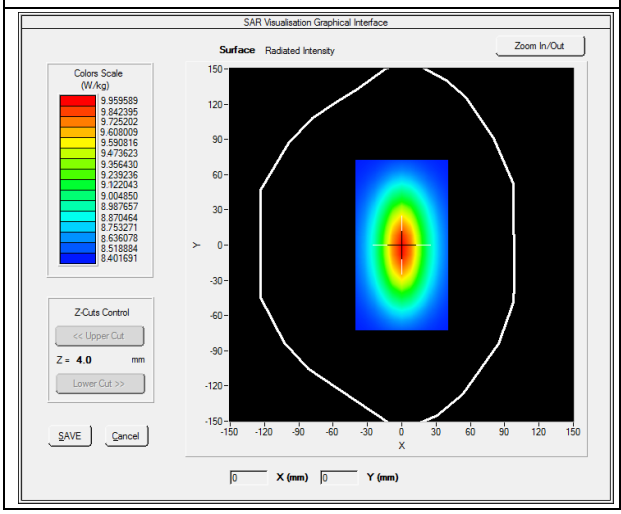
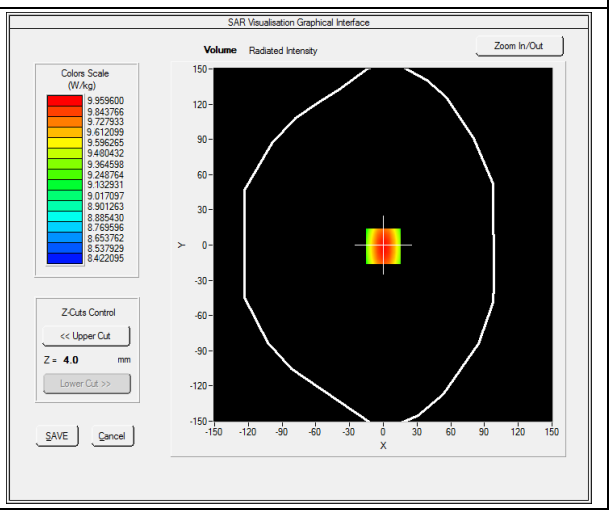
Measurement duration: 12 minutes 21 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.06; Calibrated: 05/22/2019

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)	51.224510
Conductivity (S/m)	1.461261
Power Variation (%)	0.845690
Ambient Temperature	21.1
Liquid Temperature	21.2

SURFACE SAR	VOLUME SAR