

FCC SAR Measurement and Test Report

For

Bak USA Technologies Corp.

425 Michigan Avenue, Buffalo, New York 14203, USA

FCC ID: 2AEY7-S8A001

FCC Rules: FCC Part 2.1093
ANSI / IEEE C95.1 :2005
ANSI / IEEE C95.3 :2002

Product Description: Seal

Tested Model: 8

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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: Bak USA Technologies Corp.
Address of applicant: 425 Michigan Avenue, Buffalo, New York 14203, USA

Manufacturer: Shenzhen Wisky Technology Co.,LTD.
Address of manufacturer: 5th Floor,W2-A Building, Hi-tech Park South 1st Road, Nanshan District, Shenzhen

General Description of EUT	
Product Name:	Seal
Brand Name:	/
Model No.:	8
Hardware version:	T01-V1.1-0113
Software version:	Windows 10
Dimensions (Approx.)	156 × 235 × 22mm
IMEI	8262595020024440
Rated Voltage:	DC 3.7V
The EUT is GSM850/PCS1900, WCDMA Band 2/4/5, LTE Band 2/4/13/17 tablet. The tablet is not support GSM voice mode. It is equipped with GPRS/EDGE class 12 for GSM850/PCS1900, and WIFI(2.4G, 5G), Bluetooth, and camera functions. WIFI(2.4G) is support the hotspot but the WIFI(5G) is not. For more information see the following datasheet 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 850: 824~849MHz GSM/GPRS 1900: 1850~1910MHz
Downlink Frequency:	GSM/GPRS 850: 869~894MHz GSM/GPRS 1900: 1930~1990MHz
RF Output Power:	GSM850: 29.31dBm, GSM1900: 26.07dBm
Type of Modulation:	GMSK,8PSK
Antenna Type:	Integral Antenna
Antenna Gain:	GSM850: 1.1dBi, GSM1900: -1.5dBi
GPRS/EDGE Class:	Class 12

3G	
Support Networks:	WCDMA, HSDPA, HSUPA
Support Band:	WCDMA Band 2, WCDMA Band 5, WCDMA Band 4
Uplink Frequency:	WCDMA Band 2: 1850~1910MHz WCDMA Band 5: 824~849MHz WCDMA Band 4: 1710~1755MHz
Downlink Frequency:	WCDMA Band 2: 1930~1990MHz WCDMA Band 5: 869~894MHz WCDMA Band 4: 2110~2155MHz
RF Output Power:	WCDMA Band 2: 22.49dBm, WCDMA Band 5: 24.66dBm WCDMA Band 4: 24.42dBm
Type of Modulation:	BPSK
Antenna Type:	Integral Antenna
Antenna Gain:	WCDMA Band 2: -1.5dBi, WCDMA Band 4: -0.9dBi, WCDMA Band 5: 1.1dBi
WIFI(2.4G)	
Support Standards:	802.11b, 802.11g, 802.11n
Frequency Range:	2412-2462MHz for 802.11b/g/n(HT20) 2422-2452MHz for 11n(HT40)
AV Output Power:	Antenna 1:17.05dBm, Antenna 2: 16.01dBm (Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Data Rate:	1-11Mbps, 6-54Mbps, up to 150Mbps
Quantity of Channels:	11/7
Channel Separation:	5MHz
Antenna Type:	Integral Antenna
Antenna Gain:	Antenna 1:4.12dBi, Antenna 2:4.27dBi
Bluetooth	
Bluetooth Version:	V4.0
Frequency Range:	2402-2480MHz
AV Output Power:	3.051dBm (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:	4.12dBi
4G	
Support Networks:	FDD-LTE
Support Band:	FDD-LTE Band 2, 4,13,17
Uplink Frequency:	FDD-LTE Band 2: Tx: 1850-1910MHz, FDD-LTE Band 4: Tx: 1710-1755MHz,

	FDD-LTE Band 13: Tx: 777-787MHz FDD-LTE Band 17: Tx: 704-716MHz
Downlink Frequency:	FDD-LTE Band 2: Rx: 1930-1990MHz, FDD-LTE Band 4: Rx: 2110-2155MHz, FDD-LTE Band 13: Rx: 746-756MHz, FDD-LTE Band 17: Tx: 734-746MHz
RF Output Power:	FDD-LTE Band 2: 24.88dBm, FDD-LTE Band 4: 24.40dBm FDD-LTE Band 13: 23.62dBm FDD-LTE Band 17: 24.30dBm
Type of Modulation:	QPSK, 16QAM
Antenna Type:	Integral Antenna
Antenna Gain:	FDD-LTE Band 2: -1.5dBi, FDD-LTE Band 4: -0.9dBi, FDD-LTE Band 13: -2.0dBi, FDD-LTE Band 17: -1.0dBi,
WIFI (5G)	
Support Standards:	802.11a, 802.11n(HT20), 802.11n(HT40)
Frequency Range:	5180-5240MHz, 5260 ~ 5320MHz , 5500 ~ 5720MHz ,5745-5825MHz
RF Output Power:	Antenna 1:15.76dBm, Antenna 2: 14.80dBm (Conducted)
Type of Modulation:	OFDM, 64-QAM,16-QAM, QPSK, BPSK, 256-QAM
Data Rate:	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to MCS7
Type of Antenna:	Integral Antenna
Antenna Gain:	Antenna 1:3.89dBi, Antenna 2:5.06dBi

1.2 Test Standards

The following report is prepared on behalf of the Bak USA Technologies Corp. in accordance with FCC 47 CFR Part 2.1093, ANSI/IEEE C95.1-2005, IEEE 1528-2013 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

- **FCC – Registration No.: 934118**

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 and the Registration is 934118.

- **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.

- **CNAS Registration No.: L4062**

Shenzhen SEM.Test Technology Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C (518101)

2. Summary of Test Results

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

Frequency Band	Body (0mm Gap)	SAR _{1g} Limit (W/kg)
	Maximum SAR _{1g} (W/kg)	
GSM850	0.341	1.6
GSM1900	0.281	1.6
WCDMA Band V	0.261	1.6
WCDMA Band II	0.248	1.6
WCDMA Band IV	0.366	1.6
LTE Band 2	0.356	1.6
LTE Band 4	0.368	1.6
LTE Band 13	0.257	1.6
LTE Band 17	0.323	1.6
Antenna 1:WLAN 2.4GHz	0.360	1.6
Antenna 2:WLAN 2.4GHz	0.226	1.6
Simultaneous Transmission	1.081	1.6

Remark:

*The highest reported SAR values for body, and simultaneous transmission conditions are **0.368W/kg, and 1.081W/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 KDB 865664 D01 v01r04 and KDB 865664 D02 v01r02

3. Specific Absorption Rate (SAR)

3.1 Introduction

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

3.2 SAR Definition

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

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

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

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

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

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

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

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

4. SAR Measurement System

4.1 The Measurement System

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

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

The following figure shows the system.



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

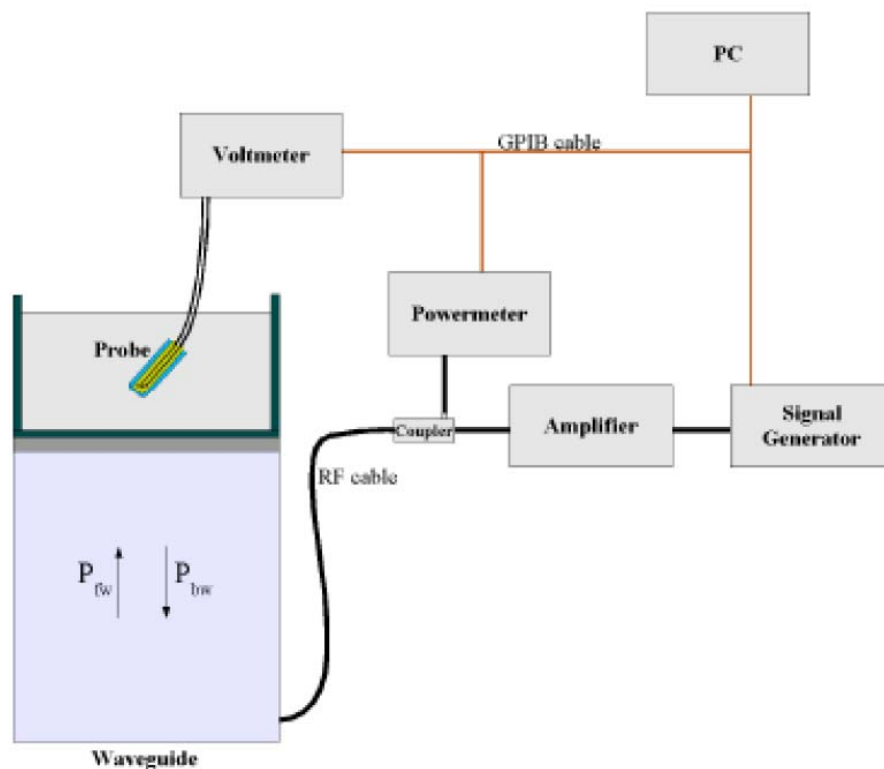
4.2 Probe

For the measurements the Specific Dosimetric E-Field Probe 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 surface normal line: less 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 annex technique using reference guide at the five frequencies.



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

Where :

P_{fw} = Forward Power

P_{bw} = Backward Power

a and b = Waveguide dimensions

l = 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:

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

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

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

where DCP is the diode compression point in mV.

4.3 Probe Calibration Process

Dosimetric Assessment Procedure

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

Free Space Assessment Procedure

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

Temperature Assessment Procedure

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

Where:

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

Δt = exposure time (30 seconds),

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

ΔT = temperature increase due to RF exposure.

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

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

Where:

σ = simulated tissue conductivity,

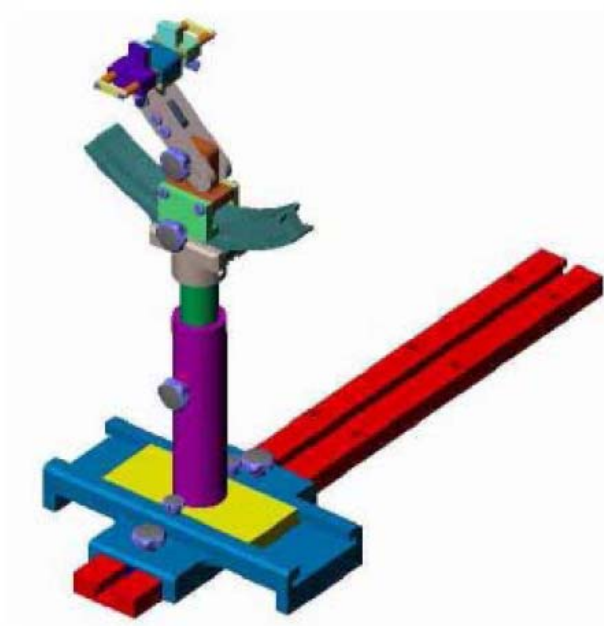
ρ = Tissue density (1.25 g/cm³ for brain tissue)

4.4 Phantom

For the measurements the Specific Anthropomorphic Mannequin (SAM) defined by the IEEE SCC-34/SC2 group is used. The phantom is a polyurethane shell integrated in a wooden table. The thickness of the phantom amounts to 2mm +/- 0.2mm. It enables the dosimetric evaluation of left and right phone usage and includes an additional flat phantom part for the simplified performance check. The phantom set-up includes a cover, which prevents the evaporation of the liquid.

4.5 Device Holder

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



System Material	Permittivity	Loss Tangent
Delrin	3.7	0.005

4.6 Test Equipment List

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
E-Field Probe	SATIMO	SSE5	SN 09/13 EP168	2016-06-01	2017-05-31
750MHz Dipole	SATIMO	SID750	SN 47/12 DIP 0G750-203	2016-03-20	2017-03-19
835MHz Dipole	SATIMO	SID835	SN 47/12 DIP 0G835-204	2016-03-20	2017-03-19
1800MHz Dipole	SATIMO	SID1800	SN 47/12 DIP 1G800-206	2016-03-20	2017-03-19
1900MHz Dipole	SATIMO	SID1900	SN 47/12 DIP 1G900-207	2016-03-20	2017-03-19
2450MHz Dipole	SATIMO	SID2450	SN 13/15 DIP 2G450-364	2016-03-20	2017-03-19
Dielectric Probe Kit	SATIMO	SCLMP	SN 47/12 OCPG49	2016-03-20	2017-03-19
SAM Phantom	SATIMO	SAM	SN/ 47/12 SAM95	N/A	N/A
MULTIMETER	KEITHLEY	Keithley 2000	4006367	2016-06-04	2017-06-03
Signal Generator	Rohde & Schwarz	SMR20	100047	2016-06-04	2017-06-03
Universal Tester	Rohde & Schwarz	CMU200	112012	2016-06-04	2017-06-03
Network Analyzer	HP	8753C	2901A00831	2016-06-04	2017-06-03
Directional Couplers	Agilent	778D	20160	2016-06-04	2017-06-03

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 (%)	Triton (%)	HEC (%)	Preventol (%)	DGBE (%)
Head						
750	34.29	1.05	0.00	0.00	64.66	0.00
835	35.34	0.98	0.00	0.00	63.68	0.00
1800	55.19	0.66	30.35	0.00	0.00	13.80
1900	55.26	0.52	30.40	0.00	0.00	13.82
2450	55.44	0.32	30.50	0.00	0.00	13.74
Body						
750	51.75	1.17	0.00	0.00	47.08	0.00
835	52.87	1.07	0.00	0.00	46.10	0.00
1800	70.81	0.52	20.01	0.00	0.00	8.65
1900	69.99	0.41	20.66	0.00	0.00	8.93
2450	55.44	0.32	30.50	0.00	0.00	13.74

5.2 Tissue Dielectric Parameters for Head and Body Phantoms

The IEEE Std. 1528, FCC KDBs and CEI/IEC 62209 standards state that the system validation measurements must be performed using a reference dipole meeting the fore mentioned return loss and mechanical dimension requirements. The validation measurement must be performed against a liquid filled flat phantom, with the phantom constructed as outlined in the fore mentioned standards. Per the standards, the dipole shall be positioned below the bottom of the phantom, with the dipole length centered and parallel to the longest dimension of the flat phantom, with the top surface of the dipole at the described distance from the bottom surface of the phantom.

Target Frequency (MHz)	Head		Body	
	Conductivity (σ)	Permittivity (ϵ_r)	Conductivity (σ)	Permittivity (ϵ_r)
150	0.76	52.3	0.80	61.9
300	0.87	45.3	0.92	58.2
450	0.87	43.5	0.94	56.7
750	0.89	41.9	0.96	55.5
835	0.90	41.5	0.97	55.2
900	0.97	41.5	1.05	55.0
915	0.98	41.5	1.06	55.0
1450	1.20	40.5	1.30	54.0
1610	1.29	40.3	1.40	53.8
1800-2000	1.40	40.0	1.52	53.3
2450	1.80	39.2	1.95	52.7
3000	2.40	38.5	2.73	52.0
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

Body Tissue Simulating Liquid									
Freq. MHz.	Temp. (°C)	Conductivity			Permittivity			Limit (%)	Date
		Reading (σ)	Target (σ)	Delta (%)	Reading (ϵ_r)	Target (ϵ_r)	Delta (%)		
750	21.2	0.93	0.96	-3.12	54.96	55.50	-0.97	± 5	2016-06-20
835	21.2	0.95	0.97	-2.06	54.85	55.20	-0.63	± 5	2016-06-20
1800	21.3	1.46	1.52	-3.95	51.22	53.30	-3.90	± 5	2016-06-20
1900	21.3	1.50	1.52	-1.32	52.42	53.30	-1.65	± 5	2016-06-20
2450	21.3	1.91	1.95	-2.05	52.01	52.70	-1.31	± 5	2016-06-20

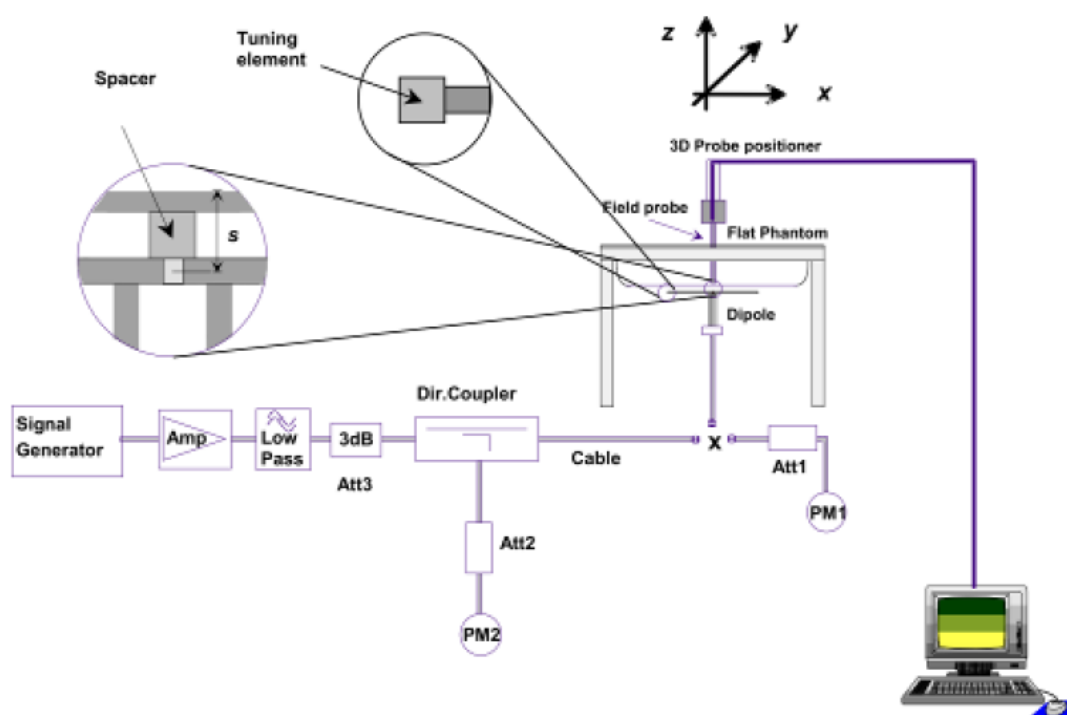
6. SAR Measurement Evaluation

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 835 MHz and 1900 MHz. 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 24dBm (250mW) before dipole is connected.

6.3 Validation Results

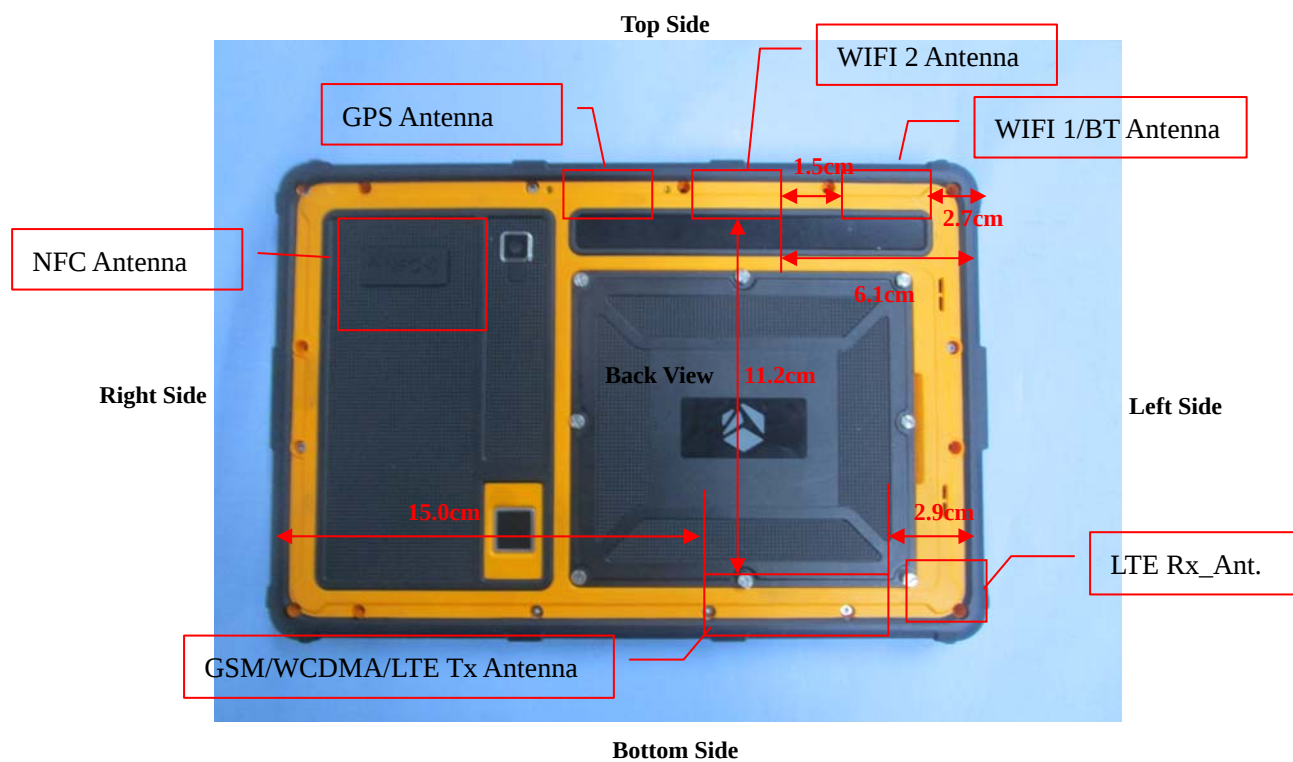
Comparing to the original SAR value provided by SATIMO, the validation data should be within its specification of 10 %. Table 6.1 shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion.

Frequency	Targeted SAR _{1g}	Measured SAR _{1g}	Normalized SAR _{1g}	Tolerance
MHz	(W/kg)	(W/kg)	(W/kg)	(%)
Body				
750	8.40	2.12	8.48	0.95
835	9.38	2.35	9.4	0.21
1800	38.31	9.58	38.32	0.03
1900	39.10	9.78	39.12	0.05
2450	50.41	12.59	50.36	-0.10

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

7. EUT Testing Position

7.1 EUT Antenna Position



7.2 EUT Testing Position

Exclusion Distance Calculation				
Frequency Bands	Service	Maximum Tune-up Power	Average Power	Exclusion Distance
GPRS850	GPRS(3slots)	29.5dBm	25.25dBm	90mm
GPRS1900	GPRS(3slots)	26.5dBm	22.25dBm	60mm
WCDMA Band II	RMC 12.2k	22.5dBm	22.5dBm	60mm
WCDMA Band V	RMC 12.2k	25.0dBm	25.0dBm	80mm
WCDMA Band IV	RMC 12.2k	24.5dBm	24.5dBm	70mm
LTE_ Band 2	QPSK(20 MHz)	25.0dBm	25.0dBm	80mm
LTE_ Band 4	QPSK(20 MHz)	24.5dBm	24.5dBm	70mm
LTE_ Band 13	QPSK(10 MHz)	24.0dBm	24.0dBm	70mm
LTE_ Band 17	QPSK(10 MHz)	24.5dBm	24.5dBm	80mm
WLAN(2.4G) Antenna 1	802.11b	17.5dBm	17.5dBm	30mm
WLAN(2.4G) Antenna 2	802.11b	16.5dBm	16.5dBm	25mm
Note: Refer to Chapter 9.1 Conducted RF Output Power				

Remark:

Referring to KDB 447498 D01v06 and KDB616217 D04 v01r02, the distance of the antennas to all adjacent edges SAR test exclusion for adjacent edges.

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:

Body SAR tests, Test distance: 0mm						
Antennas	Front	Back	Right Side	Left Side	Top Side	Bottom Side
WWAN_GPRS850	Yes	Yes	No	Yes	No	Yes
WWAN_GPRS1900	Yes	Yes	No	Yes	No	Yes
WWAN_WCDMA Band II	Yes	Yes	No	Yes	No	Yes
WWAN_WCDMA Band V	Yes	Yes	No	Yes	No	Yes
WWAN_WCDMA Band IV	Yes	Yes	No	Yes	No	Yes
WWAN_LTE_ Band 2	Yes	Yes	No	Yes	No	Yes
WWAN_LTE_ Band 4	Yes	Yes	No	Yes	No	Yes
WWAN_LTE_ Band 13	Yes	Yes	No	Yes	No	Yes
WWAN_LTE_ Band 17	Yes	Yes	No	Yes	No	Yes
WLAN(2.4G) Antenna 1	Yes	Yes	No	Yes	Yes	No
WLAN(2.4G) Antenna 2	Yes	Yes	No	No	Yes	No

Remark:

- Referring to KDB 616217 D04 v01r02, KDB 248227 D01 v02r02and KDB 447498 D01 v06, this device is overall diagonal dimension(>20cm) tablet, tested in direct contact (no gap) with flat phantom.

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 E demonstrates.
- (e) Set scan area, grid size and other setting on the SATIMO software.
- (f) Measure SAR results for the highest power channel on each testing position.
- (g) Find out the largest SAR result on these testing positions of each band
- (h) Measure SAR results for other channels in worst SAR testing position if the SAR of highest power channel is larger than 0.8 W/kg

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

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

8.2 Spatial Peak SAR Evaluation

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

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine. The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

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

8.3 Area & Zoom Scan Procedures

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

8.4 Volume Scan Procedures

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

8.5 SAR Averaged Methods

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

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

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

8.6 Power Drift Monitoring

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

9. SAR Test Result

9.1 Conducted RF Output Power

GSM - Burst Average Power (dBm)						
Band	GSM850			PCS1900		
Channel	128	190	251	512	661	810
Frequency (MHz)	824.2	836.4	848.8	1850.2	1880	1909.8
GSM	/	/	/	/	/	/
GPRS (1 slot)	31.77	31.1	32.07	28.74	28.88	28.75
GPRS (2 slots)	29.84	30.12	29.94	26.8	26.95	26.78
GPRS (3 slots)	29.09	29.31	29.06	25.91	26.07	25.91
GPRS (4 slots)	27.31	27.56	27.33	24.03	24.02	23.99
EDGE(1 slot)	27.96	27.78	27.51	25.23	25.33	25.16
EDGE (2 slots)	26.18	26.04	25.78	23.37	23.49	23.3
EDGE (3 slots)	25.29	25.13	24.9	22.3	22.51	22.17
EDGE (4 slots)	23.76	23.63	23.12	20.22	20.3	20.26

GSM - Source-Based Time-Average Power (dBm)						
Band	GSM850			PCS1900		
Channel	128	190	251	512	661	810
Frequency (MHz)	824.2	836.4	848.8	1850.2	1880	1909.8
GSM	/	/	/	/	/	/
GPRS (1 slot)	22.77	22.10	23.07	19.74	19.88	19.75
GPRS (2 slots)	23.84	24.12	23.94	20.80	20.95	20.78
GPRS (3 slots)	24.84	25.06	24.81	21.66	21.82	21.66
GPRS (4 slots)	24.31	24.56	24.33	21.03	21.02	20.99
EDGE(1 slot)	18.96	18.78	18.51	16.23	16.33	16.16
EDGE (2 slots)	20.18	20.04	19.78	17.37	17.49	17.30
EDGE (3 slots)	21.04	20.88	20.65	18.05	18.26	17.92
EDGE (4 slots)	20.76	20.63	20.12	17.22	17.30	17.26

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

Remark:

1. For Body SAR testing, GPRS should be evaluated, therefore the EUT was set in GPRS (3Tx slots) for GSM850 and GSM1900 due to its highest source-based time-average power.
2. Per KDB 447498 D01 v06 , the maximum output power channel is used for SAR testing and for further SAR test reduction.
3. The DUT do not support DTM function.

WCDMA - Average Power (dBm)						
Band	WCDMA Band II			WCDMA Band V		
Channel	9262	9400	9538	4132	4183	4233
Frequency (MHz)	1852.4	1880.0	1907.6	826.4	836.6	846.6
RMC 12.2k	22.3	22.4	22.49	24.12	24.28	24.66
HSDPA Subtest-1	20.34	21.58	22	22.47	22.85	23.52
HSDPA Subtest-2	20.38	21.55	21.98	22.39	22.79	23.44
HSDPA Subtest-3	20.24	21.42	21.96	22.29	22.65	23.32
HSDPA Subtest-4	20.26	21.44	21.84	22.17	22.63	23.37
HSUPA Subtest-1	22.17	22.26	22.18	22.37	22.39	22.42
HSUPA Subtest-2	22.15	22.23	22.15	22.31	22.33	22.34
HSUPA Subtest-3	22.18	22.19	22.06	22.23	22.29	22.29
HSUPA Subtest-4	22.12	22.13	22.04	22.15	22.17	22.19
HSUPA Subtest-5	22.10	22.08	22.01	22.04	22.11	22.17

WCDMA - Average Power (dBm)						
Band	WCDMA Band IV					
Channel	1312	1412	1513			
Frequency (MHz)	1712.4	1732.4	1752.6			
RMC 12.2k	24.42	23.75	23.77			
HSDPA Subtest-1	23.23	22.48	21.05			
HSDPA Subtest-2	23.13	22.30	21.06			
HSDPA Subtest-3	22.60	22.28	21.00			
HSDPA Subtest-4	22.43	22.12	20.99			
HSUPA Subtest-1	21.78	21.19	20.45			
HSUPA Subtest-2	21.67	21.09	21.38			
HSUPA Subtest-3	21.63	21.04	21.24			
HSUPA Subtest-4	21.47	21.00	21.17			
HSUPA Subtest-5	21.39	21.03	21.14			

Remark:

1. For Body SAR, per KDB 941225 D01 v03, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA subset-1 output power is < 1/4 dB higher than RMC, and SAR with RMC 12.2kbps setting is $\leq 1.2\text{W/kg}$, HSDPA SAR evaluation can be excluded.

LTE Band 2:

Channel Bandwidth: 1.4 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	
		Size	Offset		
QPSK	LCH	1	0	24.71	
		1	3	24.67	
		1	5	24.65	
		3	0	24.66	
		3	2	24.72	
		3	3	24.68	
		6	0	23.64	
	MCH	1	0	24.21	
		1	3	24.09	
		1	5	24.09	
		3	0	24.13	
		3	2	23.86	
		3	3	23.79	
		6	0	23.01	
	HCH	1	0	21.99	
		1	3	21.93	
		1	5	21.90	
		3	0	22.08	
		3	2	22.04	
		3	3	21.99	
		6	0	21.20	
16QAM	LCH	1	0	23.77	
		1	3	23.79	
		1	5	23.76	
		3	0	23.73	
		3	2	23.67	
		3	3	23.73	
		6	0	22.51	
	MCH	1	0	23.47	
		1	3	23.42	
		1	5	23.43	
		3	0	23.04	
		3	2	23.06	
		3	3	23.03	
		6	0	21.95	
	HCH	1	0	21.33	
		1	3	21.28	

		1	5	21.25	
		3	0	21.36	
		3	2	21.30	
		3	3	21.31	
		6	0	21.68	

Channel Bandwidth: 3 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	
		Size	Offset		
QPSK	LCH	1	0	24.55	
		1	7	24.53	
		1	14	24.51	
		8	0	23.63	
		8	4	23.59	
		8	7	23.57	
		15	0	23.65	
	MCH	1	0	23.78	
		1	7	23.70	
		1	14	23.63	
		8	0	23.01	
		8	4	22.94	
		8	7	22.91	
		15	0	23.00	
	HCH	1	0	22.20	
		1	7	22.06	
		1	14	21.96	
		8	0	21.29	
		8	4	21.22	
		8	7	21.22	
		15	0	21.28	
16QAM	LCH	1	0	23.85	
		1	7	23.86	
		1	14	23.84	
		8	0	22.66	
		8	4	22.65	
		8	7	22.69	
		15	0	22.64	
	MCH	1	0	23.36	
		1	7	23.18	
		1	14	23.09	
		8	0	22.12	
		8	4	22.12	
		8	7	21.98	

		15	0	22.05	
	HCH	1	0	21.59	
		1	7	21.58	
		1	14	21.42	
		8	0	22.23	
		8	4	22.16	
		8	7	22.18	
		15	0	22.29	

Channel Bandwidth: 5 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	
		Size	Offset		
QPSK	LCH	1	0	24.79	
		1	12	24.74	
		1	24	24.73	
		12	0	23.68	
		12	6	23.62	
		12	13	23.67	
		25	0	23.70	
	MCH	1	0	24.01	
		1	12	23.82	
		1	24	23.70	
		12	0	23.10	
		12	6	23.00	
		12	13	22.97	
		25	0	22.98	
	HCH	1	0	22.30	
		1	12	22.08	
		1	24	21.86	
		12	0	21.41	
		12	6	21.31	
		12	13	21.24	
		25	0	21.31	
16QAM	LCH	1	0	24.01	
		1	12	24.02	
		1	24	23.98	
		12	0	22.75	
		12	6	22.73	
		12	13	22.72	
		25	0	22.70	
	MCH	1	0	23.58	
		1	12	23.41	
		1	24	23.24	

		12	0	22.21	
		12	6	22.16	
		12	13	22.01	
		25	0	22.04	
	HCH	1	0	21.63	
		1	12	21.45	
		1	24	21.21	
		12	0	21.43	
		12	6	21.33	
		12	13	21.26	
		25	0	21.30	

Channel Bandwidth: 10 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	
		Size	Offset		
QPSK	LCH	1	0	24.81	
		1	24	24.65	
		1	49	24.64	
		25	0	23.83	
		25	12	23.74	
		25	25	23.73	
		50	0	23.66	
	MCH	1	0	24.12	
		1	24	23.71	
		1	49	23.46	
		25	0	23.22	
		25	12	23.01	
		25	25	22.87	
		50	0	23.00	
	HCH	1	0	22.83	
		1	24	22.25	
		1	49	22.06	
		25	0	21.69	
		25	12	21.42	
		25	25	21.30	
		50	0	21.43	
16QAM	LCH	1	0	24.13	
		1	24	23.95	
		1	49	23.94	
		25	0	22.76	
		25	12	22.58	
		25	25	22.63	
		50	0	22.63	

	MCH	1	0	23.74	
		1	24	23.24	
		1	49	22.97	
		25	0	22.23	
		25	12	21.97	
		25	25	21.91	
		50	0	22.04	
	HCH	1	0	22.34	
		1	24	21.70	
		1	49	21.59	
		25	0	21.72	
		25	12	21.42	
		25	25	21.30	
		50	0	21.49	

Channel Bandwidth: 15 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	
		Size	Offset		
QPSK	LCH	1	0	24.08	
		1	37	24.13	
		1	74	24.35	
		37	0	23.91	
		37	18	23.69	
		37	38	23.69	
		75	0	23.77	
	MCH	1	0	24.44	
		1	37	23.72	
		1	74	23.40	
		37	0	23.43	
		37	18	23.04	
		37	38	22.87	
		75	0	23.11	
	HCH	1	0	23.24	
		1	37	22.25	
		1	74	21.96	
		37	0	22.07	
		37	18	21.59	
		37	38	21.32	
		75	0	21.72	
16QAM	LCH	1	0	24.39	
		1	37	23.81	
		1	74	23.86	
		37	0	22.88	

		37	18	22.64	
		37	38	22.66	
		75	0	22.73	
	MCH	1	0	24.16	
		1	37	23.32	
		1	74	23.09	
		37	0	22.41	
		37	18	21.98	
		37	38	21.86	
		75	0	22.12	
	HCH	1	0	22.75	
		1	37	21.80	
		1	74	21.52	
		37	0	21.03	
		37	18	21.62	
		37	38	21.37	
		75	0	21.69	

Channel Bandwidth: 20 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	
		Size	Offset		
QPSK	LCH	1	0	24.88	
		1	49	24.83	
		1	99	23.99	
		50	0	23.90	
		50	25	23.61	
		50	50	23.52	
		100	0	23.61	
	MCH	1	0	24.47	
		1	49	23.65	
		1	99	23.05	
		50	0	23.45	
		50	25	22.85	
		50	50	22.60	
		100	0	22.98	
	HCH	1	0	23.58	
		1	49	22.31	
		1	99	21.81	
		50	0	22.32	
		50	25	21.68	
		50	50	21.36	
		100	0	21.91	
16QAM	LCH	1	0	24.10	

		1	49	23.69	
		1	99	23.31	
		50	0	22.76	
		50	25	22.50	
		50	50	22.45	
		100	0	22.55	
	MCH	1	0	23.94	
		1	49	23.07	
		1	99	22.64	
		50	0	22.37	
		50	25	21.76	
		50	50	21.52	
		100	0	21.95	
	HCH	1	0	23.14	
		1	49	21.85	
		1	99	21.36	
		50	0	21.28	
		50	25	21.64	
		50	50	22.38	
		100	0	21.83	

LTE Band 4:

Channel Bandwidth: 1.4 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	Verdict
		Size	Offset		
QPSK	LCH	1	0	24.18	
		1	3	24.05	
		1	5	24.07	
		3	0	23.96	
		3	2	23.92	
		3	3	23.91	
		6	0	22.91	
	MCH	1	0	23.13	
		1	3	23.09	
		1	5	23.13	
		3	0	23.10	
		3	2	23.05	
		3	3	23.02	
		6	0	22.01	
	HCH	1	0	22.62	
		1	3	22.55	

		1	5	22.61	
		3	0	22.71	
		3	2	22.71	
		3	3	22.72	
		6	0	21.54	
16QAM	LCH	1	0	23.12	
		1	3	23.10	
		1	5	23.13	
		3	0	23.02	
		3	2	22.93	
		3	3	22.94	
		6	0	21.80	
	MCH	1	0	22.40	
		1	3	22.44	
		1	5	22.42	
		3	0	22.01	
		3	2	22.02	
		3	3	21.99	
		6	0	20.88	
	HCH	1	0	21.92	
		1	3	21.89	
		1	5	21.92	
		3	0	21.52	
		3	2	21.54	
		3	3	21.57	
		6	0	21.58	

Channel Bandwidth: 3 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	
		Size	Offset		
QPSK	LCH	1	0	23.86	
		1	7	23.77	
		1	14	23.71	
		8	0	22.82	
		8	4	22.73	
		8	7	22.68	
		15	0	22.77	
	MCH	1	0	23.02	
		1	7	22.84	
		1	14	22.85	
		8	0	21.96	
		8	4	21.92	
		8	7	21.92	

	HCH	15	0	21.99	
		1	0	22.70	
		1	7	22.55	
		1	14	22.59	
		8	0	21.68	
		8	4	21.58	
		8	7	21.63	
		15	0	21.54	
16QAM	LCH	1	0	23.08	
		1	7	23.07	
		1	14	22.96	
		8	0	21.87	
		8	4	21.82	
		8	7	21.78	
		15	0	21.74	
	MCH	1	0	22.23	
		1	7	22.16	
		1	14	22.08	
		8	0	21.00	
		8	4	21.02	
		8	7	21.03	
		15	0	20.94	
	HCH	1	0	22.06	
		1	7	21.95	
		1	14	21.94	
		8	0	21.51	
		8	4	21.45	
		8	7	21.48	
		15	0	21.51	

Channel Bandwidth: 5 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	
		Size	Offset		
QPSK	LCH	1	0	23.95	
		1	12	23.76	
		1	24	23.65	
		12	0	22.78	
		12	6	22.71	
		12	13	22.67	
		25	0	22.75	
	MCH	1	0	23.21	
		1	12	23.04	
		1	24	22.96	

		12	0	22.07	
		12	6	22.03	
		12	13	21.98	
		25	0	22.01	
	HCH	1	0	22.69	
		1	12	22.66	
		1	24	22.53	
		12	0	21.67	
		12	6	21.67	
		12	13	21.68	
		25	0	21.60	
16QAM	LCH	1	0	23.24	
		1	12	23.14	
		1	24	23.04	
		12	0	21.92	
		12	6	21.81	
		12	13	21.74	
		25	0	21.68	
	MCH	1	0	22.46	
		1	12	22.35	
		1	24	22.25	
		12	0	21.18	
		12	6	21.09	
		12	13	21.04	
		25	0	20.96	
	HCH	1	0	21.80	
		1	12	21.73	
		1	24	21.68	
		12	0	21.65	
		12	6	21.57	
		12	13	21.55	
		25	0	21.62	

Channel Bandwidth: 10 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	
		Size	Offset		
QPSK	LCH	1	0	24.11	
		1	24	23.70	
		1	49	23.56	
		25	0	22.91	
		25	12	22.70	
		25	25	22.61	
		50	0	22.68	

	MCH	1	0	23.35	
		1	24	22.94	
		1	49	22.89	
		25	0	22.20	
		25	12	21.99	
		25	25	21.94	
		50	0	22.00	
	HCH	1	0	22.80	
		1	24	22.63	
		1	49	22.63	
		25	0	21.76	
		25	12	21.56	
		25	25	21.52	
		50	0	21.76	
16QAM	LCH	1	0	23.36	
		1	24	22.97	
		1	49	22.79	
		25	0	21.80	
		25	12	21.59	
		25	25	21.54	
		50	0	21.60	
	MCH	1	0	22.67	
		1	24	22.21	
		1	49	22.16	
		25	0	21.10	
		25	12	21.91	
		25	25	21.89	
		50	0	21.96	
	HCH	1	0	22.33	
		1	24	21.98	
		1	49	21.99	
		25	0	21.78	
		25	12	21.65	
		25	25	21.59	
		50	0	21.63	

Channel Bandwidth: 15 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	
		Size	Offset		
QPSK	LCH	1	0	24.38	
		1	37	23.57	
		1	74	23.42	
		37	0	22.98	

		37	18	22.60	
		37	38	22.48	
		75	0	22.68	
	MCH	1	0	23.74	
		1	37	22.87	
		1	74	22.97	
		37	0	22.38	
		37	18	22.06	
		37	38	22.04	
		75	0	22.14	
	HCH	1	0	23.02	
		1	37	22.41	
		1	74	22.42	
		37	0	21.96	
		37	18	21.71	
		37	38	21.72	
		75	0	21.84	
16QAM	LCH	1	0	23.66	
		1	37	22.94	
		1	74	22.75	
		37	0	21.85	
		37	18	21.49	
		37	38	21.38	
		75	0	21.63	
	MCH	1	0	23.13	
		1	37	22.24	
		1	74	22.32	
		37	0	21.37	
		37	18	21.00	
		37	38	21.92	
		75	0	21.12	
	HCH	1	0	22.57	
		1	37	22.01	
		1	74	21.95	
		37	0	21.92	
		37	18	21.66	
		37	38	21.63	
		75	0	21.78	

Channel Bandwidth: 20 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	
		Size	Offset		
QPSK	LCH	1	0	24.20	

		1	49	24.40	
		1	99	23.03	
		50	0	22.81	
		50	25	22.33	
		50	50	22.19	
		100	0	22.49	
	MCH	1	0	23.52	
		1	49	22.67	
		1	99	22.53	
		50	0	22.33	
		50	25	21.96	
		50	50	21.87	
		100	0	22.04	
	HCH	1	0	23.17	
		1	49	22.40	
		1	99	22.27	
		50	0	21.92	
		50	25	21.65	
		50	50	21.72	
		100	0	21.80	
16QAM	LCH	1	0	23.41	
		1	49	22.55	
		1	99	22.26	
		50	0	21.69	
		50	25	21.28	
		50	50	21.16	
		100	0	21.38	
	MCH	1	0	22.93	
		1	49	22.06	
		1	99	22.01	
		50	0	21.21	
		50	25	21.74	
		50	50	21.71	
		100	0	21.92	
	HCH	1	0	22.67	
		1	49	22.21	
		1	99	21.84	
		50	0	21.96	
		50	25	21.68	
		50	50	21.55	
		100	0	21.72	

FDD-LTE Band 13:

Channel Bandwidth: 5 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	
		Size	Offset		
QPSK	LCH	1	0	23.52	
		1	12	23.47	
		1	24	23.22	
		12	0	22.44	
		12	6	22.39	
		12	13	22.29	
		25	0	22.30	
	MCH	1	0	23.34	
		1	12	23.15	
		1	24	22.95	
		12	0	22.30	
		12	6	22.14	
		12	13	22.06	
		25	0	22.09	
	HCH	1	0	23.04	
		1	12	22.81	
		1	24	22.56	
		12	0	21.99	
		12	6	21.84	
		12	13	21.76	
		25	0	21.93	
16QAM	LCH	1	0	22.81	
		1	12	22.74	
		1	24	22.61	
		12	0	21.53	
		12	6	21.43	
		12	13	21.31	
		25	0	21.24	
	MCH	1	0	22.41	
		1	12	22.26	
		1	24	22.06	
		12	0	21.15	
		12	6	21.02	
		12	13	20.87	
		25	0	21.04	
	HCH	1	0	22.14	
		1	12	21.91	

		1	24	21.73	
		12	0	21.88	
		12	6	21.78	
		12	13	21.72	
		25	0	21.78	

Channel Bandwidth: 10 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	
		Size	Offset		
QPSK	LCH	1	0	22.99	
		1	24	22.85	
		1	49	22.32	
		25	0	22.37	
		25	12	22.11	
		25	25	21.97	
		50	0	22.31	
	MCH	1	0	23.62	
		1	24	22.93	
		1	49	22.19	
		25	0	22.36	
		25	12	22.05	
		25	25	21.95	
		50	0	22.31	
	HCH	1	0	22.99	
		1	24	22.89	
		1	49	22.35	
		25	0	22.36	
		25	12	22.02	
		25	25	21.97	
		50	0	22.28	
16QAM	LCH	1	0	22.36	
		1	24	22.12	
		1	49	21.46	
		25	0	21.34	
		25	12	21.09	
		25	25	21.86	
		50	0	21.06	
	MCH	1	0	22.39	
		1	24	22.11	
		1	49	21.43	
		25	0	21.32	
		25	12	21.05	
		25	25	21.82	

	HCH	50	0	21.01	
		1	0	22.37	
		1	24	22.09	
		1	49	21.54	
		25	0	21.32	
		25	12	21.07	
		25	25	21.84	
		50	0	21.03	

LTE Band 17:

Channel Bandwidth: 5 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	
		Size	Offset		
QPSK	LCH	1	0	24.29	
		1	12	24.21	
		1	24	24.22	
		12	0	23.32	
		12	6	23.28	
		12	13	23.25	
		25	0	23.33	
	MCH	1	0	24.06	
		1	12	24.16	
		1	24	24.24	
		12	0	23.33	
		12	6	23.41	
		12	13	23.44	
		25	0	23.34	
	HCH	1	0	24.20	
		1	12	24.23	
		1	24	24.17	
		12	0	23.35	
		12	6	23.35	
		12	13	23.40	
		25	0	23.34	
16QAM	LCH	1	0	23.58	
		1	12	23.54	
		1	24	23.54	
		12	0	22.38	
		12	6	22.32	
		12	13	22.29	
		25	0	22.25	
	MCH	1	0	23.22	
		1	12	23.39	

		1	24	23.38	
		12	0	22.23	
		12	6	22.22	
		12	13	22.26	
		25	0	22.29	
	HCH	1	0	23.41	
		1	12	23.38	
		1	24	23.26	
		12	0	22.32	
		12	6	22.28	
		12	13	22.29	
		25	0	22.25	

Channel Bandwidth: 10 MHz					
Modulation	Channel	RB Configuration		Average Power [dBm]	
		Size	Offset		
QPSK	LCH	1	0	24.14	
		1	24	24.17	
		1	49	24.17	
		25	0	23.38	
		25	12	23.34	
		25	25	23.27	
		50	0	23.42	
	MCH	1	0	24.30	
		1	24	24.27	
		1	49	24.30	
		25	0	23.34	
		25	12	23.33	
		25	25	23.34	
		50	0	23.49	
	HCH	1	0	24.08	
		1	24	24.29	
		1	49	24.13	
		25	0	23.40	
		25	12	23.45	
		25	25	23.40	
		50	0	23.37	
16QAM	LCH	1	0	23.59	
		1	24	23.57	
		1	49	23.54	
		25	0	22.12	
		25	12	22.17	
		25	25	22.26	

		50	0	22.27	
	MCH	1	0	23.64	
		1	24	23.71	
		1	49	23.73	
		25	0	22.17	
		25	12	22.30	
		25	25	22.31	
		50	0	22.22	
	HCH	1	0	23.32	
		1	24	23.58	
		1	49	23.47	
		25	0	22.20	
		25	12	22.13	
		25	25	22.29	
		50	0	22.29	

Remark:

1. Per KDB941225 D05 v02r05, Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power 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.8 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 section 4.2.1 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 sections 4.2.1 and 4.2.2 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 sections 4.2.1, 5.2.2 and 4.2.3 to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is $> \frac{1}{2}$ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

Antenna 1: WLAN(2.4G) - Maximum Average Power				
Test Mode	Data Rate	Channel	Frequency (MHz)	Average Power (dBm)
802.11b	1Mbps	CH 01	2412	17.05
		CH 06	2437	16.7
		CH 11	2462	16.47
802.11g	54Mbps	CH 01	2412	16.46
		CH 06	2437	16.02
		CH 11	2462	15.8
802.11n (20MHz)	MCS7	CH 01	2412	14.28
		CH 06	2437	13.83
		CH 11	2462	13.57
802.11n (40MHz)	MCS7	CH 03	2422	12.98
		CH 06	2437	12.82
		CH 09	2452	12.55

Antenna 2: WLAN(2.4G) - Maximum Average Power				
Test Mode	Data Rate	Channel	Frequency (MHz)	Average Power (dBm)
802.11b	1Mbps	CH 01	2412	16.01
		CH 06	2437	15.53
		CH 11	2462	15.28
802.11g	54Mbps	CH 01	2412	15.5
		CH 06	2437	14.96
		CH 11	2462	14.61
802.11n (20MHz)	MCS7	CH 01	2412	13.6
		CH 06	2437	13.11
		CH 11	2462	12.69
802.11n (40MHz)	MCS7	CH 03	2422	12.54
		CH 06	2437	12.26
		CH 09	2452	11.93

Remark:

1. Per KDB 248227 D01 v02r02, choose the highest output power channel to test SAR and determine further SAR exclusion
2. Per KDB 248227 D01 v02r02, if 11g and 11n average output power is higher than 1/4 dB higher than 11b mode, SAR will be verified.
3. For each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of these configurations is less than 1/4 dB higher than those measured at the lowest data rate. For 802.11n mode, SAR test according to the highest power channel with correspondence data rates.

Bluetooth - Maximum Average Power		
Test Mode	Data Rate	Average Power(dBm)
GFSK	1Mbps	3.051
Pi/4 QDPSK	2Mbps	2.682
8DPSK	3Mbps	1.688

Bluetooth - Maximum Average Power				
Test Mode	Data Rate	Channel	Frequency (MHz)	Average Power (dBm)
BLE	1Mbps	CH 00	2402	-5.768
		CH 19	2440	-6.091
		CH 39	2480	-5.967

Remark:

Bluetooth maximum output power is 3.051dBm, and Tune-Up output power is 3.5dBm. Per KDB 447498 D01 V06, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR,16 where

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

Tune-Up Power (dBm)	Max. Power (mW)	Distance (mm)	Frequency (GHz)	Result	Limit
3.5	2.24	5	2.402	0.69	3

The exclusion thresholds is $0.69 < 3$, therefore, the RF exposure evaluation is not required.

9.2 Test Results for Standalone SAR Test

Body SAR

GSM850 – Body SAR Test (Gap: 0mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
1.	GPRS_3TX	Back Side	190	836.4	29.31	29.5	1.0447	0.3265	0.3411
2.	GPRS_3TX	Front Side	190	836.4	29.31	29.5	1.0447	0.2328	0.2432
3.	GPRS_3TX	Bottom side	190	836.4	29.31	29.5	1.0447	0.2109	0.2203
4.	GPRS_3TX	Left side	190	836.4	29.31	29.5	1.0447	0.1083	0.1131

GSM1900 – Body SAR Test (Gap: 0mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
5.	GPRS_3TX	Back Side	661	1880	26.07	26.5	1.1041	0.2544	0.2809
6.	GPRS_3TX	Front Side	661	1880	26.07	26.5	1.1041	0.2239	0.2472
7.	GPRS_3TX	Bottom side	661	1880	26.07	26.5	1.1041	0.1939	0.2141
8.	GPRS_3TX	Left side	661	1880	26.07	26.5	1.1041	0.0928	0.1025

WCDMA Band V – Body SAR Test (Gap: 0mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
9.	RMC 12.2k	Back Side	4233	846.6	24.66	25.0	1.0814	0.2417	0.2614
10.	RMC 12.2k	Front Side	4233	846.6	24.66	25.0	1.0814	0.2192	0.2371
11.	RMC 12.2k	Bottom side	4233	846.6	24.66	25.0	1.0814	0.1763	0.1907
12.	RMC 12.2k	Left side	4233	846.6	24.66	25.0	1.0814	0.1228	0.1328

WCDMA Band II – Body SAR Test (Gap: 0mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
13.	RMC 12.2k	Back Side	9538	1907.6	22.49	22.5	1.0023	0.2474	0.2480
14.	RMC 12.2k	Front Side	9538	1907.6	22.49	22.5	1.0023	0.2109	0.2114
15.	RMC 12.2k	Bottom side	9538	1907.6	22.49	22.5	1.0023	0.1591	0.1595
16.	RMC 12.2k	Left side	9538	1907.6	22.49	22.5	1.0023	0.1167	0.1170

WCDMA Band IV–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					
17.	RMC 12.2k	Back Side	1312	1712.4	24.42	24.5	1.0186	0.3591	0.3658
18.	RMC 12.2k	Front Side	1312	1712.4	24.42	24.5	1.0186	0.2472	0.2518
19.	RMC 12.2k	Bottom side	1312	1712.4	24.42	24.5	1.0186	0.2573	0.2621
20.	RMC 12.2k	Left side	1312	1712.4	24.42	24.5	1.0186	0.2281	0.2323

LTE Band 2–Body SAR Test (Gap: 0mm)								
Plot No.	Mode	Test Position Body	Freque ncy	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth, RB		MHz					
21.	RMC QPSK 20MHz 1RB	Back Side	1860.0	24.88	25.0	1.0280	0.3465	0.3562
22.	RMC QPSK 20MHz 1RB	Front Side	1860.0	24.88	25.0	1.0280	0.2621	0.2694
23.	RMC QPSK 20MHz 1RB	Bottom side	1860.0	24.88	25.0	1.0280	0.2521	0.2592
24.	RMC QPSK 20MHz 1RB	Left side	1860.0	24.88	25.0	1.0280	0.1183	0.1216
25.	RMC QPSK 20MHz 50%RB	Back Side	1860.0	23.90	25.0	1.2882	0.2564	0.3303
26.	RMC QPSK 20MHz 50%RB	Front Side	1860.0	23.90	25.0	1.2882	0.2049	0.2640
27.	RMC QPSK 20MHz 50%RB	Bottom side	1860.0	23.90	25.0	1.2882	0.2123	0.2735
28.	RMC QPSK 20MHz 50%RB	Left side	1860.0	23.90	25.0	1.2882	0.0922	0.1188

LTE Band 4–Body SAR Test (Gap: 0mm)								
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					
29.	RMC QPSK 20MHz 1RB	Back Side	1720.0	24.40	24.5	1.0233	0.3599	0.3683
30.	RMC QPSK 20MHz 1RB	Front Side	1720.0	24.40	24.5	1.0233	0.2468	0.2525
31.	RMC QPSK 20MHz 1RB	Bottom side	1720.0	24.40	24.5	1.0233	0.2321	0.2375
32.	RMC QPSK 20MHz 1RB	Left side	1720.0	24.40	24.5	1.0233	0.1313	0.1344
33.	RMC QPSK 20MHz 50%RB	Back Side	1720.0	22.81	24.5	1.4757	0.2032	0.2999
34.	RMC QPSK 20MHz 50%RB	Front Side	1720.0	22.81	24.5	1.4757	0.1453	0.2144
35.	RMC QPSK 20MHz 50%RB	Bottom side	1720.0	22.81	24.5	1.4757	0.1124	0.1659
36.	RMC QPSK 20MHz 50%RB	Left side	1720.0	22.81	24.5	1.4757	0.1055	0.1557

LTE Band 13–Body SAR Test (Gap: 0mm)								
Plot No.	Mode	Test Position Body	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth, RB		MHz					
37.	RMC QPSK 10MHz 1RB	Back Side	782.0	23.62	24.0	1.0914	0.2350	0.2565
38.	RMC QPSK 10MHz 1RB	Front Side	782.0	23.62	24.0	1.0914	0.1962	0.2141
39.	RMC QPSK 10MHz 1RB	Bottom side	782.0	23.62	24.0	1.0914	0.1672	0.1825
40.	RMC QPSK 10MHz 1RB	Left side	782.0	23.62	24.0	1.0914	0.1083	0.1182
41.	RMC QPSK 10MHz 50%RB	Back Side	782.0	22.37	24.0	1.4555	0.1689	0.2458
42.	RMC QPSK 10MHz 50%RB	Front Side	782.0	22.37	24.0	1.4555	0.1477	0.2150
43.	RMC QPSK 10MHz 50%RB	Bottom side	782.0	22.37	24.0	1.4555	0.1163	0.1693
44.	RMC QPSK 10MHz 50%RB	Left side	782.0	22.37	24.0	1.4555	0.0936	0.1362

LTE Band 17–Body SAR Test (Gap: 0mm)								
Plot No.	Mode	Test Position Body	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth		MHz					
45.	RMC,QPSK 10MHz 1RB	Back Side	710.0	24.30	24.5	1.0471	0.3084	0.3229
46.	RMC,QPSK 10MHz 1RB	Front Side	710.0	24.30	24.5	1.0471	0.2379	0.2491
47.	RMC,QPSK 10MHz 1RB	Bottom side	710.0	24.30	24.5	1.0471	0.1713	0.1794
48.	RMC,QPSK 10MHz 1RB	Left side	710.0	24.30	24.5	1.0471	0.1103	0.1155
49.	RMC,QPSK 10MHz 50%RB	Back Side	711.0	23.45	24.5	1.2735	0.2425	0.3088
50.	RMC,QPSK 10MHz 50%RB	Front Side	711.0	23.45	24.5	1.2735	0.1921	0.2446
51.	RMC,QPSK 10MHz 50%RB	Bottom side	711.0	23.45	24.5	1.2735	0.1482	0.1887
52.	RMC,QPSK 10MHz 50%RB	Left side	711.0	23.45	24.5	1.2735	0.0821	0.1046

Antenna 1: 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					
53.	802.11b	Back Side	01	2412	17.05	17.5	1.1092	0.2551	0.2830
54.	802.11b	Front Side	01	2412	17.05	17.5	1.1092	0.2126	0.2358
55.	802.11b	Left side	01	2412	17.05	17.5	1.1092	0.0648	0.0719
56.	802.11b	Top Side	01	2412	17.05	17.5	1.1092	0.3249	0.3604

Antenna 2: 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					
57.	802.11b	Back Side	01	2412	16.01	16.5	1.1194	0.1902	0.2129
58.	802.11b	Front Side	01	2412	16.01	16.5	1.1194	0.2015	0.2256
59.	802.11b	Top Side	01	2412	16.01	16.5	1.1194	0.1183	0.1324

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

9.3 Simultaneous Multi-band Transmission SAR Analysis

List of Mode for Simultaneous Multi-band Transmission

No.	Configurations	Head SAR	Body SAR
1	Antenna 1: WLAN(2.4G)(Data) + Antenna 2: WLAN(2.4G)WLAN(Data)	-	Yes
2	Antenna 1: WLAN(5.2,5.3G)(Data) + Antenna 2: WLAN(5.2,5.3G)WLAN(Data)		Yes
3	Antenna 1: WLAN(5.6G)(Data) + Antenna 2: WLAN(5.6G)WLAN(Data)		Yes
4	Antenna 1: WLAN(5.8G)(Data) + Antenna 2: WLAN(5.8G)WLAN(Data)		Yes
5	GPRS/ EDGE(Data)/WCDMA(Data)/HSDPA(Data)/ HSUPA(Data)/ LTE(Data) + Antenna 1: WLAN(2.4G)(Data) + Antenna 2: WLAN(2.4G) (Data)	-	Yes
6	GPRS/ EDGE(Data)/WCDMA(Data)/HSDPA(Data)/ HSUPA(Data)/LTE(Data) + Antenna 1: WLAN(5.2,5.3G)(Data) + Antenna 2: WLAN(5.2,5.3G) (Data)	-	Yes
7	GPRS/ EDGE(Data)/WCDMA(Data)/HSDPA(Data)/ HSUPA(Data)/ LTE(Data) + Antenna 1: WLAN(5.6G)(Data) + Antenna 2: WLAN(5.6G) (Data)	-	Yes
8	GPRS/ EDGE(Data)/WCDMA(Data)/HSDPA(Data)/ HSUPA(Data)/ LTE(Data) + Antenna 1: WLAN(5.8G)(Data) + Antenna 2: WLAN(5.8G) (Data)	-	Yes
9	GPRS/ EDGE(Data)/WCDMA(Data)/HSDPA(Data)/ HSUPA(Data) /LTE(Data) + Bluetooth(Data)+ Antenna 2: WLAN(2.4G) (Data)	-	Yes
10	GPRS/ EDGE(Data)/WCDMA(Data)/HSDPA(Data)/ HSUPA(Data)/ LTE(Data)+ Bluetooth(Data)+ Antenna 2: WLAN(5.3G) (Data)	-	Yes
11	GPRS/ EDGE(Data)/WCDMA(Data)/HSDPA(Data)/ HSUPA(Data)/ LTE(Data)+ Bluetooth(Data)+ Antenna 2: WLAN(5.6G) (Data)	-	Yes
12	PRS/ EDGE(Data)/WCDMA(Data)/HSDPA(Data)/ HSUPA(Data)/ LTE(Data)+ Bluetooth(Data)+ Antenna 2: WLAN(5.8G) (Data)	-	Yes

Remark:

1. GSM and WCDMA share the same antenna, and cannot transmit simultaneously.
2. WLAN1and Bluetooth share the same antenna, and cannot transmit simultaneously.
3. According to the KDB 447498 D01v06, when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

$(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm}) \cdot [\sqrt{f(\text{GHz})}/x]$ W/kg for test separation distances ≤ 50 mm;

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

For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01v06 as below:

Bluetooth:

Tune-Up Power (dBm)	Max. Power (mW)	Distance (mm)	Frequency (GHz)	X	SAR(1g) 5mm
3.5	2.24	5/10	2.402	7.5	0.0926

4. 2.4G WiFi and 5G WiFi cannot transmit simultaneously. The report of WLAN(5G) Please refer to the report No BL-SZ16A0274-701.

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

6. According to the KDB616217 D04 SAR for laptop and tablets v01r02, The standalone and simultaneous transmission SAR tests required for tablets are more conservative than the hotspot mode use configurations; therefore, additional testing for hotspot SAR is not required when the procedures in this document are applied.

Body SAR

WLAN and WLAN

	Antenna 1: WLAN(2.4G)	Antenna 2: WLAN(2.4G)	Summed SAR (W/kg)
Position	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	0.2830	0.2129	0.4959
Front	0.2358	0.2256	0.4614
Top side	0.3604	0.1324	0.4928
Bottom side	--	--	--
Right side	--	--	--
Left side	0.0719	--	0.0719

	Antenna 1: WLAN(5.2G,5.3G)	Antenna 2: WLAN(5.2G,5.3G)	Summed SAR (W/kg)
Position	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	0.412	0.301	0.713
Front	--	--	--
Top side	0.594	0.449	1.043
Bottom side	--	--	--
Right side	--	--	--
Left side	0.666	--	0.666

	Antenna 1: WLAN(5.6G)	Antenna 2: WLAN(5.6G)	Summed SAR (W/kg)
Position	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	0.270	0.211	0.481
Front	--	--	--
Top side	0.291	0.262	0.553
Bottom side	--	--	--
Right side	--	--	--
Left side	0.300	--	0.300

	Antenna 1: WLAN(5.8G)	Antenna 2: WLAN(5.8G)	Summed SAR (W/kg)
Position	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	0.288	0.331	0.619
Front	--	--	--
Top side	0.269	0.290	0.559
Bottom side	--	--	--
Right side	--	--	--
Left side	0.295	--	0.295

WWAN and WLAN

	WWAN		Antenna 1: WLAN(2.4G)	Antenna 2: WLAN(2.4G)	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM850	0.3411	0.2830	0.2129	0.837
Front	GSM850	0.2432	0.2358	0.2256	0.7046
Top side	GSM850	--	0.3604	0.1324	0.4928
Bottom side	GSM850	0.2203	--	--	0.2203
Right side	GSM850	--	--	--	--
Left side	GSM850	0.1131	0.0719	--	0.185
Back	GSM1900	0.2809	0.2830	0.2129	0.7768
Front	GSM1900	0.2472	0.2358	0.2256	0.7086
Top side	GSM1900	--	0.3604	0.1324	0.4928
Bottom side	GSM1900	0.2141	--	--	0.2141
Right side	GSM1900	--	--	--	--
Left side	GSM1900	0.1025	0.0719	--	0.1744
Back	WCDMA Band V	0.2614	0.2830	0.2129	0.7573
Front	WCDMA Band V	0.2371	0.2358	0.2256	0.6985
Top side	WCDMA Band V	--	0.3604	0.1324	0.4928
Bottom side	WCDMA Band V	0.1907	--	--	0.1907
Right side	WCDMA Band V	--	--	--	--
Left side	WCDMA Band V	0.1328	0.0719	--	0.2047
Back	WCDMA Band II	0.2480	0.2830	0.2129	0.7439
Front	WCDMA Band II	0.2114	0.2358	0.2256	0.6728
Top side	WCDMA Band II	--	0.3604	0.1324	0.4928
Bottom side	WCDMA Band II	0.1595	--	--	0.1595
Right side	WCDMA Band II	--	--	--	--
Left side	WCDMA Band II	0.1170	0.0719	--	0.1889
Back	WCDMA Band	0.3658	0.2830	0.2129	0.8617

	IV				
Front	WCDMA Band IV	0.2518	0.2358	0.2256	0.7132
Top side	WCDMA Band IV	--	0.3604	0.1324	0.4928
Bottom side	WCDMA Band IV	0.2621	--	--	0.2621
Right side	WCDMA Band IV	--	--	--	--
Left side	WCDMA Band IV	0.2323	0.0719	--	0.3042
Back	LTE Band 2	0.3562	0.2830	0.2129	0.8521
Front	LTE Band 2	0.2694	0.2358	0.2256	0.7308
Top side	LTE Band 2	--	0.3604	0.1324	0.4928
Bottom side	LTE Band 2	0.2592	--	--	0.2592
Right side	LTE Band 2	--	--	--	--
Left side	LTE Band 2	0.1216	0.0719	--	0.1935
Back	LTE Band 4	0.3683	0.2830	0.2129	0.8642
Front	LTE Band 4	0.2525	0.2358	0.2256	0.7139
Top side	LTE Band 4	--	0.3604	0.1324	0.4928
Bottom side	LTE Band 4	0.2375	--	--	0.2375
Right side	LTE Band 4	--	--	--	--
Left side	LTE Band 4	0.1344	0.0719	--	0.2063
Back	LTE Band 13	0.2565	0.2830	0.2129	0.7524
Front	LTE Band 13	0.2141	0.2358	0.2256	0.6755
Top side	LTE Band 13	--	0.3604	0.1324	0.4928
Bottom side	LTE Band 13	0.1825	--	--	0.1825
Right side	LTE Band 13	--	--	--	--
Left side	LTE Band 13	0.1182	0.0719	--	0.1901
Back	LTE Band 17	0.3229	0.2830	0.2129	0.8188
Front	LTE Band 17	0.2491	0.2358	0.2256	0.7105
Top side	LTE Band 17	--	0.3604	0.1324	0.4928
Bottom side	LTE Band 17	0.1794	--	--	0.1794
Right side	LTE Band 17	--	--	--	--
Left side	LTE Band 17	0.1155	0.0719	--	0.1874

	WWAN		Antenna 1: WLAN(5.2G,5.3G)	Antenna 2: WLAN(5.2G,5.3G)	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM850	0.3411	0.412	0.301	1.0541
Front	GSM850	0.2432	--	--	0.2432
Top side	GSM850	--	0.594	0.449	1.043
Bottom side	GSM850	0.2203	--	--	0.2203
Right side	GSM850	--	--	--	--
Left side	GSM850	0.1131	0.666	--	0.7791
Back	GSM1900	0.2809	0.412	0.301	0.9939
Front	GSM1900	0.2472	--	--	0.2472
Top side	GSM1900	--	0.594	0.449	1.043
Bottom side	GSM1900	0.2141	--	--	0.2141
Right side	GSM1900	--	--	--	--
Left side	GSM1900	0.1025	0.666	--	0.7685
Back	WCDMA Band V	0.2614	0.412	0.301	0.9744
Front	WCDMA Band V	0.2371	--	--	0.2371
Top side	WCDMA Band V	--	0.594	0.449	1.043
Bottom side	WCDMA Band V	0.1907	--	--	0.1907
Right side	WCDMA Band V	--	--	--	--
Left side	WCDMA Band V	0.1328	0.666	--	0.7988
Back	WCDMA Band II	0.2480	0.412	0.301	0.961
Front	WCDMA Band II	0.2114	--	--	0.2114
Top side	WCDMA Band II	--	0.594	0.449	1.043
Bottom side	WCDMA Band II	0.1595	--	--	0.1595
Right side	WCDMA Band II	--	--	--	--
Left side	WCDMA Band II	0.1170	0.666	--	0.783
Back	WCDMA Band IV	0.3658	0.412	0.301	1.0788

Front	WCDMA Band IV	0.2518	--	--	0.2518
Top side	WCDMA Band IV	--	0.594	0.449	1.043
Bottom side	WCDMA Band IV	0.2621	--	--	0.2621
Right side	WCDMA Band IV	--	--	--	--
Left side	WCDMA Band IV	0.2323	0.666	--	0.8983
Back	LTE Band 2	0.3562	0.412	0.301	1.0692
Front	LTE Band 2	0.2694	--	--	0.2694
Top side	LTE Band 2	--	0.594	0.449	1.043
Bottom side	LTE Band 2	0.2592	--	--	0.2592
Right side	LTE Band 2	--	--	--	--
Left side	LTE Band 2	0.1216	0.666	--	0.7876
Back	LTE Band 4	0.3683	0.412	0.301	1.0813
Front	LTE Band 4	0.2525	--	--	0.2525
Top side	LTE Band 4	--	0.594	0.449	1.043
Bottom side	LTE Band 4	0.2375	--	--	0.2375
Right side	LTE Band 4	--	--	--	--
Left side	LTE Band 4	0.1344	0.666	--	0.8004
Back	LTE Band 13	0.2565	0.412	0.301	0.9695
Front	LTE Band 13	0.2141	--	--	0.2141
Top side	LTE Band 13	--	0.594	0.449	1.043
Bottom side	LTE Band 13	0.1825	--	--	0.1825
Right side	LTE Band 13	--	--	--	--
Left side	LTE Band 13	0.1182	0.666	--	0.7842
Back	LTE Band 17	0.3229	0.412	0.301	1.0359
Front	LTE Band 17	0.2491	--	--	0.2491
Top side	LTE Band 17	--	0.594	0.449	1.043
Bottom side	LTE Band 17	0.1794	--	--	0.1794
Right side	LTE Band 17	--	--	--	--
Left side	LTE Band 17	0.1155	0.666	--	0.7815

	WWAN		Antenna 1: WLAN(5.6G)	Antenna 2: WLAN(5.6G)	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM850	0.3411	0.270	0.211	0.8221
Front	GSM850	0.2432	--	--	0.2432
Top side	GSM850	--	0.291	0.262	0.553
Bottom side	GSM850	0.2203	--	--	0.2203
Right side	GSM850	--	--	--	--
Left side	GSM850	0.1131	0.300	--	0.4131
Back	GSM1900	0.2809	0.270	0.211	0.7619
Front	GSM1900	0.2472	--	--	0.2472
Top side	GSM1900	--	0.291	0.262	0.553
Bottom side	GSM1900	0.2141	--	--	0.2141
Right side	GSM1900	--	--	--	--
Left side	GSM1900	0.1025	0.300	--	0.4025
Back	WCDMA Band V	0.2614	0.270	0.211	0.7424
Front	WCDMA Band V	0.2371	--	--	0.2371
Top side	WCDMA Band V	--	0.291	0.262	0.553
Bottom side	WCDMA Band V	0.1907	--	--	0.1907
Right side	WCDMA Band V	--	--	--	--
Left side	WCDMA Band V	0.1328	0.300	--	0.4328
Back	WCDMA Band II	0.2480	0.270	0.211	0.729
Front	WCDMA Band II	0.2114	--	--	0.2114
Top side	WCDMA Band II	--	0.291	0.262	0.553
Bottom side	WCDMA Band II	0.1595	--	--	0.1595
Right side	WCDMA Band II	--	--	--	--
Left side	WCDMA Band II	0.1170	0.300	--	0.417
Back	WCDMA Band IV	0.3658	0.270	0.211	0.8468

Front	WCDMA Band IV	0.2518	--	--	0.2518
Top side	WCDMA Band IV	--	0.291	0.262	0.553
Bottom side	WCDMA Band IV	0.2621	--	--	0.2621
Right side	WCDMA Band IV	--	--	--	--
Left side	WCDMA Band IV	0.2323	0.300	--	0.5323
Back	LTE Band 2	0.3562	0.270	0.211	0.8372
Front	LTE Band 2	0.2694	--	--	0.2694
Top side	LTE Band 2	--	0.291	0.262	0.553
Bottom side	LTE Band 2	0.2592	--	--	0.2592
Right side	LTE Band 2	--	--	--	--
Left side	LTE Band 2	0.1216	0.300	--	0.4216
Back	LTE Band 4	0.3683	0.270	0.211	0.8493
Front	LTE Band 4	0.2525	--	--	0.2525
Top side	LTE Band 4	--	0.291	0.262	0.553
Bottom side	LTE Band 4	0.2375	--	--	0.2375
Right side	LTE Band 4	--	--	--	--
Left side	LTE Band 4	0.1344	0.300	--	0.4344
Back	LTE Band 13	0.2565	0.270	0.211	0.7375
Front	LTE Band 13	0.2141	--	--	0.2141
Top side	LTE Band 13	--	0.291	0.262	0.553
Bottom side	LTE Band 13	0.1825	--	--	0.1825
Right side	LTE Band 13	--	--	--	--
Left side	LTE Band 13	0.1182	0.300	--	0.4182
Back	LTE Band 17	0.3229	0.270	0.211	0.8039
Front	LTE Band 17	0.2491	--	--	0.2491
Top side	LTE Band 17	--	0.291	0.262	0.553
Bottom side	LTE Band 17	0.1794	--	--	0.1794
Right side	LTE Band 17	--	--	--	--
Left side	LTE Band 17	0.1155	0.300	--	0.4155

	WWAN		Antenna 1: WLAN(5.8G)	Antenna 2: WLAN(5.8G)	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM850	0.3411	0.288	0.331	0.9601
Front	GSM850	0.2432	--	--	0.2432
Top side	GSM850	--	0.269	0.290	0.559
Bottom side	GSM850	0.2203	--	--	0.2203
Right side	GSM850	--	--	--	--
Left side	GSM850	0.1131	0.295	--	0.4081
Back	GSM1900	0.2809	0.288	0.331	0.8999
Front	GSM1900	0.2472	--	--	0.2472
Top side	GSM1900	--	0.269	0.290	0.559
Bottom side	GSM1900	0.2141	--	--	0.2141
Right side	GSM1900	--	--	--	--
Left side	GSM1900	0.1025	0.295	--	0.3975
Back	WCDMA Band V	0.2614	0.288	0.331	0.8804
Front	WCDMA Band V	0.2371	--	--	0.2371
Top side	WCDMA Band V	--	0.269	0.290	0.559
Bottom side	WCDMA Band V	0.1907	--	--	0.1907
Right side	WCDMA Band V	--	--	--	--
Left side	WCDMA Band V	0.1328	0.295	--	0.4278
Back	WCDMA Band II	0.2480	0.288	0.331	0.867
Front	WCDMA Band II	0.2114	--	--	0.2114
Top side	WCDMA Band II	--	0.269	0.290	0.559
Bottom side	WCDMA Band II	0.1595	--	--	0.1595
Right side	WCDMA Band II	--	--	--	--
Left side	WCDMA Band II	0.1170	0.295	--	0.412
Back	WCDMA Band IV	0.3658	0.288	0.331	0.9848

Front	WCDMA Band IV	0.2518	--	--	0.2518
Top side	WCDMA Band IV	--	0.269	0.290	0.559
Bottom side	WCDMA Band IV	0.2621	--	--	0.2621
Right side	WCDMA Band IV	--	--	--	--
Left side	WCDMA Band IV	0.2323	0.295	--	0.5273
Back	LTE Band 2	0.3562	0.288	0.331	0.9752
Front	LTE Band 2	0.2694	--	--	0.2694
Top side	LTE Band 2	--	0.269	0.290	0.559
Bottom side	LTE Band 2	0.2592	--	--	0.2592
Right side	LTE Band 2	--	--	--	--
Left side	LTE Band 2	0.1216	0.295	--	0.4166
Back	LTE Band 4	0.3683	0.288	0.331	0.9873
Front	LTE Band 4	0.2525	--	--	0.2525
Top side	LTE Band 4	--	0.269	0.290	0.559
Bottom side	LTE Band 4	0.2375	--	--	0.2375
Right side	LTE Band 4	--	--	--	--
Left side	LTE Band 4	0.1344	0.295	--	0.4294
Back	LTE Band 13	0.2565	0.288	0.331	0.8755
Front	LTE Band 13	0.2141	--	--	0.2141
Top side	LTE Band 13	--	0.269	0.290	0.559
Bottom side	LTE Band 13	0.1825	--	--	0.1825
Right side	LTE Band 13	--	--	--	--
Left side	LTE Band 13	0.1182	0.295	--	0.4132
Back	LTE Band 17	0.3229	0.288	0.331	0.9419
Front	LTE Band 17	0.2491	--	--	0.2491
Top side	LTE Band 17	--	0.269	0.290	0.559
Bottom side	LTE Band 17	0.1794	--	--	0.1794
Right side	LTE Band 17	--	--	--	--
Left side	LTE Band 17	0.1155	0.295	--	0.4105

WLAN and Bluetooth

	WWAN		Bluetooth	Antenna 2: WLAN(2.4G)	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM850	0.3411	0.0926	0.2129	0.6466
Front	GSM850	0.2432	0.0926	0.2256	0.5614
Top side	GSM850	--	0.0926	0.1324	0.225
Bottom side	GSM850	0.2203	--	--	0.2203
Right side	GSM850	--	--	--	--
Left side	GSM850	0.1131	0.0926	--	0.2057
Back	GSM1900	0.2809	0.0926	0.2129	0.5864
Front	GSM1900	0.2472	0.0926	0.2256	0.5654
Top side	GSM1900	--	0.0926	0.1324	0.225
Bottom side	GSM1900	0.2141	--	--	0.2141
Right side	GSM1900	--	--	--	--
Left side	GSM1900	0.1025	0.0926	--	0.1951
Back	WCDMA Band V	0.2614	0.0926	0.2129	0.5669
Front	WCDMA Band V	0.2371	0.0926	0.2256	0.5553
Top side	WCDMA Band V	--	0.0926	0.1324	0.225
Bottom side	WCDMA Band V	0.1907	--	--	0.1907
Right side	WCDMA Band V	--	--	--	--
Left side	WCDMA Band V	0.1328	0.0926	--	0.2254
Back	WCDMA Band II	0.2480	0.0926	0.2129	0.5535
Front	WCDMA Band II	0.2114	0.0926	0.2256	0.5296
Top side	WCDMA Band II	--	0.0926	0.1324	0.225
Bottom side	WCDMA Band II	0.1595	--	--	0.1595
Right side	WCDMA Band II	--	--	--	--
Left side	WCDMA Band II	0.1170	0.0926	--	0.2096

Back	WCDMA Band IV	0.3658	0.0926	0.2129	0.6713
Front	WCDMA Band IV	0.2518	0.0926	0.2256	0.57
Top side	WCDMA Band IV	--	0.0926	0.1324	0.225
Bottom side	WCDMA Band IV	0.2621	--	--	0.2621
Right side	WCDMA Band IV	--	--	--	--
Left side	WCDMA Band IV	0.2323	0.0926	--	0.3249
Back	LTE Band 2	0.3562	0.0926	0.2129	0.6617
Front	LTE Band 2	0.2694	0.0926	0.2256	0.5876
Top side	LTE Band 2	--	0.0926	0.1324	0.225
Bottom side	LTE Band 2	0.2592	--	--	0.2592
Right side	LTE Band 2	--	--	--	--
Left side	LTE Band 2	0.1216	0.0926	--	0.2142
Back	LTE Band 4	0.3683	0.0926	0.2129	0.6738
Front	LTE Band 4	0.2525	0.0926	0.2256	0.5707
Top side	LTE Band 4	--	0.0926	0.1324	0.225
Bottom side	LTE Band 4	0.2375	--	--	0.2375
Right side	LTE Band 4	--	--	--	--
Left side	LTE Band 4	0.1344	0.0926	--	0.227
Back	LTE Band 13	0.2565	0.0926	0.2129	0.562
Front	LTE Band 13	0.2141	0.0926	0.2256	0.5323
Top side	LTE Band 13	--	0.0926	0.1324	0.225
Bottom side	LTE Band 13	0.1825	--	--	0.1825
Right side	LTE Band 13	--	--	--	--
Left side	LTE Band 13	0.1182	0.0926	--	0.2108
Back	LTE Band 17	0.3229	0.0926	0.2129	0.6284
Front	LTE Band 17	0.2491	0.0926	0.2256	0.5673
Top side	LTE Band 17	--	0.0926	0.1324	0.225
Bottom side	LTE Band 17	0.1794	--	--	0.1794
Right side	LTE Band 17	--	--	--	--
Left side	LTE Band 17	0.1155	0.0926	--	0.2081

	WWAN		Bluetooth	Antenna 2: WLAN(5.3G)	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM850	0.3411	0.0926	0.307	0.7407
Front	GSM850	0.2432	0.0926	--	0.3358
Top side	GSM850	--	0.0926	0.460	0.5526
Bottom side	GSM850	0.2203	--	--	0.2203
Right side	GSM850	--	--	--	--
Left side	GSM850	0.1131	0.0926	--	0.2057
Back	GSM1900	0.2809	0.0926	0.307	0.6805
Front	GSM1900	0.2472	0.0926	--	0.3398
Top side	GSM1900	--	0.0926	0.460	0.5526
Bottom side	GSM1900	0.2141	--	--	0.2141
Right side	GSM1900	--	--	--	--
Left side	GSM1900	0.1025	0.0926	--	0.1951
Back	WCDMA Band V	0.2614	0.0926	0.307	0.661
Front	WCDMA Band V	0.2371	0.0926	--	0.3297
Top side	WCDMA Band V	--	0.0926	0.460	0.5526
Bottom side	WCDMA Band V	0.1907	--	--	0.1907
Right side	WCDMA Band V	--	--	--	--
Left side	WCDMA Band V	0.1328	0.0926	--	0.2254
Back	WCDMA Band II	0.2480	0.0926	0.307	0.6476
Front	WCDMA Band II	0.2114	0.0926	--	0.304
Top side	WCDMA Band II	--	0.0926	0.460	0.5526
Bottom side	WCDMA Band II	0.1595	--	--	0.1595
Right side	WCDMA Band II	--	--	--	--
Left side	WCDMA Band II	0.1170	0.0926	--	0.2096
Back	WCDMA Band IV	0.3658	0.0926	0.307	0.7654

Front	WCDMA Band IV	0.2518	0.0926	--	0.3444
Top side	WCDMA Band IV	--	0.0926	0.460	0.5526
Bottom side	WCDMA Band IV	0.2621	--	--	0.2621
Right side	WCDMA Band IV	--	--	--	--
Left side	WCDMA Band IV	0.2323	0.0926	--	0.3249
Back	LTE Band 2	0.3562	0.0926	0.307	0.7558
Front	LTE Band 2	0.2694	0.0926	--	0.362
Top side	LTE Band 2	--	0.0926	0.460	0.5526
Bottom side	LTE Band 2	0.2592	--	--	0.2592
Right side	LTE Band 2	--	--	--	--
Left side	LTE Band 2	0.1216	0.0926	--	0.2142
Back	LTE Band 4	0.3683	0.0926	0.307	0.7679
Front	LTE Band 4	0.2525	0.0926	--	0.3451
Top side	LTE Band 4	--	0.0926	0.460	0.5526
Bottom side	LTE Band 4	0.2375	--	--	0.2375
Right side	LTE Band 4	--	--	--	--
Left side	LTE Band 4	0.1344	0.0926	--	0.227
Back	LTE Band 13	0.2565	0.0926	0.307	0.6561
Front	LTE Band 13	0.2141	0.0926	--	0.3067
Top side	LTE Band 13	--	0.0926	0.460	0.5526
Bottom side	LTE Band 13	0.1825	--	--	0.1825
Right side	LTE Band 13	--	--	--	--
Left side	LTE Band 13	0.1182	0.0926	--	0.2108
Back	LTE Band 17	0.3229	0.0926	0.307	0.7225
Front	LTE Band 17	0.2491	0.0926	--	0.3417
Top side	LTE Band 17	--	0.0926	0.460	0.5526
Bottom side	LTE Band 17	0.1794	--	--	0.1794
Right side	LTE Band 17	--	--	--	--
Left side	LTE Band 17	0.1155	0.0926	--	0.2081

	WWAN		Bluetooth	Antenna 2: WLAN(5.6G)	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM850	0.3411	0.0926	0.211	0.6447
Front	GSM850	0.2432	0.0926	--	0.3358
Top side	GSM850	--	0.0926	0.262	0.3546
Bottom side	GSM850	0.2203	--	--	0.2203
Right side	GSM850	--	--	--	--
Left side	GSM850	0.1131	0.0926	--	0.2057
Back	GSM1900	0.2809	0.0926	0.211	0.5845
Front	GSM1900	0.2472	0.0926	--	0.3398
Top side	GSM1900	--	0.0926	0.262	0.3546
Bottom side	GSM1900	0.2141	--	--	0.2141
Right side	GSM1900	--	--	--	--
Left side	GSM1900	0.1025	0.0926	--	0.1951
Back	WCDMA Band V	0.2614	0.0926	0.211	0.565
Front	WCDMA Band V	0.2371	0.0926	--	0.3297
Top side	WCDMA Band V	--	0.0926	0.262	0.3546
Bottom side	WCDMA Band V	0.1907	--	--	0.1907
Right side	WCDMA Band V	--	--	--	--
Left side	WCDMA Band V	0.1328	0.0926	--	0.2254
Back	WCDMA Band II	0.2480	0.0926	0.211	0.5516
Front	WCDMA Band II	0.2114	0.0926	--	0.304
Top side	WCDMA Band II	--	0.0926	0.262	0.3546
Bottom side	WCDMA Band II	0.1595	--	--	0.1595
Right side	WCDMA Band II	--	--	--	--
Left side	WCDMA Band II	0.1170	0.0926	--	0.2096
Back	WCDMA Band IV	0.3658	0.0926	0.211	0.6694

Front	WCDMA Band IV	0.2518	0.0926	--	0.3444
Top side	WCDMA Band IV	--	0.0926	0.262	0.3546
Bottom side	WCDMA Band IV	0.2621	--	--	0.2621
Right side	WCDMA Band IV	--	--	--	--
Left side	WCDMA Band IV	0.2323	0.0926	--	0.3249
Back	LTE Band 2	0.3562	0.0926	0.211	0.6598
Front	LTE Band 2	0.2694	0.0926	--	0.362
Top side	LTE Band 2	--	0.0926	0.262	0.3546
Bottom side	LTE Band 2	0.2592	--	--	0.2592
Right side	LTE Band 2	--	--	--	--
Left side	LTE Band 2	0.1216	0.0926	--	0.2142
Back	LTE Band 4	0.3683	0.0926	0.211	0.6719
Front	LTE Band 4	0.2525	0.0926	--	0.3451
Top side	LTE Band 4	--	0.0926	0.262	0.3546
Bottom side	LTE Band 4	0.2375	--	--	0.2375
Right side	LTE Band 4	--	--	--	--
Left side	LTE Band 4	0.1344	0.0926	--	0.227
Back	LTE Band 13	0.2565	0.0926	0.211	0.5601
Front	LTE Band 13	0.2141	0.0926	--	0.3067
Top side	LTE Band 13	--	0.0926	0.262	0.3546
Bottom side	LTE Band 13	0.1825	--	--	0.1825
Right side	LTE Band 13	--	--	--	--
Left side	LTE Band 13	0.1182	0.0926	--	0.2108
Back	LTE Band 17	0.3229	0.0926	0.211	0.6265
Front	LTE Band 17	0.2491	0.0926	--	0.3417
Top side	LTE Band 17	--	0.0926	0.262	0.3546
Bottom side	LTE Band 17	0.1794	--	--	0.1794
Right side	LTE Band 17	--	--	--	--
Left side	LTE Band 17	0.1155	0.0926	--	0.2081

	WWAN		Bluetooth	Antenna 2: WLAN(5.8G)	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM850	0.3411	0.0926	0.331	0.7647
Front	GSM850	0.2432	0.0926	--	0.3358
Top side	GSM850	--	0.0926	0.290	0.3826
Bottom side	GSM850	0.2203	--	--	0.2203
Right side	GSM850	--	--	--	--
Left side	GSM850	0.1131	0.0926	--	0.2057
Back	GSM1900	0.2809	0.0926	0.331	0.7045
Front	GSM1900	0.2472	0.0926	--	0.3398
Top side	GSM1900	--	0.0926	0.290	0.3826
Bottom side	GSM1900	0.2141	--	--	0.2141
Right side	GSM1900	--	--	--	--
Left side	GSM1900	0.1025	0.0926	--	0.1951
Back	WCDMA Band V	0.2614	0.0926	0.331	0.685
Front	WCDMA Band V	0.2371	0.0926	--	0.3297
Top side	WCDMA Band V	--	0.0926	0.290	0.3826
Bottom side	WCDMA Band V	0.1907	--	--	0.1907
Right side	WCDMA Band V	--	--	--	--
Left side	WCDMA Band V	0.1328	0.0926	--	0.2254
Back	WCDMA Band II	0.2480	0.0926	0.331	0.6716
Front	WCDMA Band II	0.2114	0.0926	--	0.304
Top side	WCDMA Band II	--	0.0926	0.290	0.3826
Bottom side	WCDMA Band II	0.1595	--	--	0.1595
Right side	WCDMA Band II	--	--	--	--
Left side	WCDMA Band II	0.1170	0.0926	--	0.2096
Back	WCDMA Band IV	0.3658	0.0926	0.331	0.7894

Front	WCDMA Band IV	0.2518	0.0926	--	0.3444
Top side	WCDMA Band IV	--	0.0926	0.290	0.3826
Bottom side	WCDMA Band IV	0.2621	--	--	0.2621
Right side	WCDMA Band IV	--	--	--	--
Left side	WCDMA Band IV	0.2323	0.0926	--	0.3249
Back	LTE Band 2	0.3562	0.0926	0.331	0.7798
Front	LTE Band 2	0.2694	0.0926	--	0.362
Top side	LTE Band 2	--	0.0926	0.290	0.3826
Bottom side	LTE Band 2	0.2592	--	--	0.2592
Right side	LTE Band 2	--	--	--	--
Left side	LTE Band 2	0.1216	0.0926	--	0.2142
Back	LTE Band 4	0.3683	0.0926	0.331	0.7919
Front	LTE Band 4	0.2525	0.0926	--	0.3451
Top side	LTE Band 4	--	0.0926	0.290	0.3826
Bottom side	LTE Band 4	0.2375	--	--	0.2375
Right side	LTE Band 4	--	--	--	--
Left side	LTE Band 4	0.1344	0.0926	--	0.227
Back	LTE Band 13	0.2565	0.0926	0.331	0.6801
Front	LTE Band 13	0.2141	0.0926	--	0.3067
Top side	LTE Band 13	--	0.0926	0.290	0.3826
Bottom side	LTE Band 13	0.1825	--	--	0.1825
Right side	LTE Band 13	--	--	--	--
Left side	LTE Band 13	0.1182	0.0926	--	0.2108
Back	LTE Band 17	0.3229	0.0926	0.331	0.7465
Front	LTE Band 17	0.2491	0.0926	--	0.3417
Top side	LTE Band 17	--	0.0926	0.290	0.3826
Bottom side	LTE Band 17	0.1794	--	--	0.1794
Right side	LTE Band 17	--	--	--	--
Left side	LTE Band 17	0.1155	0.0926	--	0.2081

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	$\sqrt{3}$	$(1_{Cp})^{1/2}$	$(1_{Cp})^{1/2}$	1.02	1.02	∞
Hemispherical Isotropy	E.2.2	4.0	R	$\sqrt{3}$	$(Cp)^{1/2}$	$(Cp)^{1/2}$	1.63	1.63	∞
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	E.2.4	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
System detection limits	E.2.5	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Readout Electronics	E.2.6	0.02	N	1	1	1	0.02	0.02	∞
Reponse Time	E.2.7	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Integration Time	E.2.8	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
RF ambient Conditions – Noise	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient Conditions - Reflections	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	E.5	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Test Sample Related									
Test sample positioning	E.4.2	0.03	N	1	1	1	0.03	0.03	N-1
Device Holder Uncertainty	E.4.1	5.00	N	1	1	1	5.00	5.00	
Output power Variation - SAR drift measurement	E.2.9	12.02	R	$\sqrt{3}$	1	1	6.94	6.94	∞
SAR scaling	E6.5	0.0	R	$\sqrt{3}$	1	1	0.0	0.0	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E3.2	1.9	R	$\sqrt{3}$	1	0.84	1.10	0.90	∞
Liquid conductivity - deviation	E.3.2	5.00	R	$\sqrt{3}$	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	$\sqrt{3}$	0.6	0.49	0.13	0.10	∞
Liquid permittivity measurement uncertainty	-	E.3.3	10.00	N	1	0.6	0.49	6.00	4.90	∞
Combined Standard Uncertainty				RSS				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	$\sqrt{3}$	$(1_Cp)^{1/2}$	$(1_Cp)^{1/2}$	1.02	1.02	∞
Hemispherical Isotropy	E.2.2	4.0	R	$\sqrt{3}$	$(Cp)^{1/2}$	$(Cp)^{1/2}$	1.63	1.63	∞
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	E.2.4	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
System detection limits	E.2.5	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	E.2.5	0	R	$\sqrt{3}$	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	$\sqrt{3}$	1	1	1.73	1.73	∞
Integration Time	E.2.8	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
RF ambient Conditions – Noise	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient Conditions - Reflections	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Extrapolation, interpolation and integration Algorithms for Max.	E.5.2	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞

SAR Evaluation									
Dipole									
Dipole axis to liquid Distance	8,E.4.2	1.00	N	$\sqrt{3}$	1	1	0.58	0.58	N-1
Input power and SAR drift measurement	8,6.6.2	12.02	R	$\sqrt{3}$	1	1	6.94	6.94	∞
Deviation of experimental dipole from numerical dipole	E.6.4	5.5	R	$\sqrt{3}$	1	1	3.20	3.20	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	2.0	R	$\sqrt{3}$	1	0.84	1.10	1.10	∞
Liquid conductivity - deviation from target value	E.3.2	5.00	R	$\sqrt{3}$	0.64	0.43	1.85	1.24	
Liquid conductivity - measurement uncertainty	E.3.3	5.00	N	1	0.64	0.43	3.20	2.15	
Liquid permittivity - deviation from target value	E.3.2	0.37	R	$\sqrt{3}$	0.6	0.49	0.13	0.10	
Liquid permittivity - measurement uncertainty	E.3.3	10.00	N	1	0.6	0.49	6.00	4.90	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 Body Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 06/20/2016

Measurement duration: 12 minutes 21 seconds

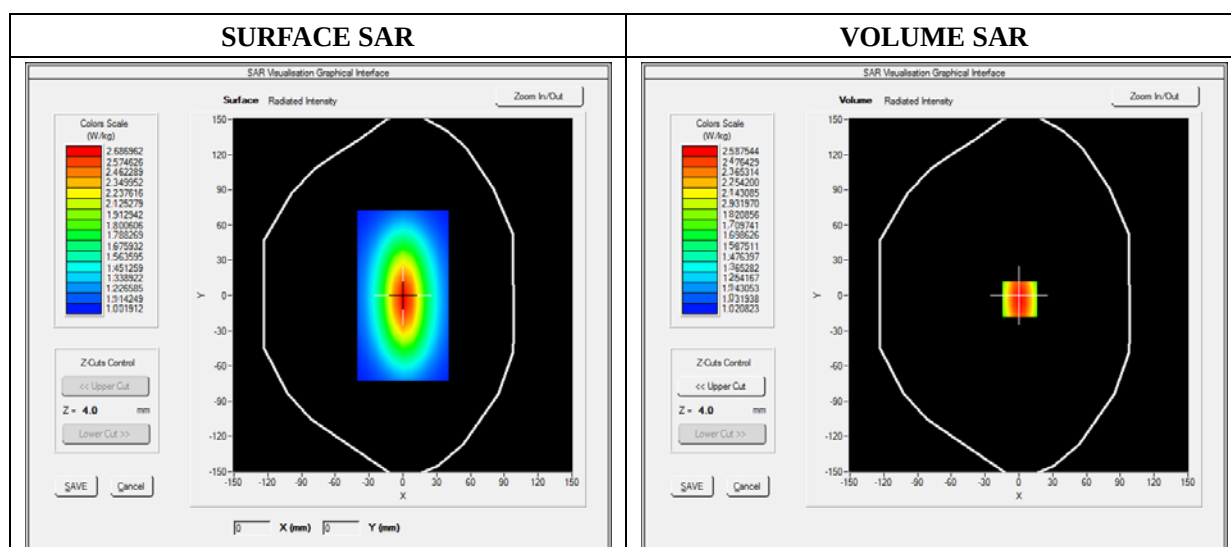
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 7.28; Calibrated: 06/01/2016

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Validation plane
Device Position	Dipole
Band	CW750
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	750.000000
Relative Permittivity (real part)	54.964739
Conductivity (S/m)	0.931048
Power Variation (%)	0.034745
Ambient Temperature	21.1
Liquid Temperature	21.3

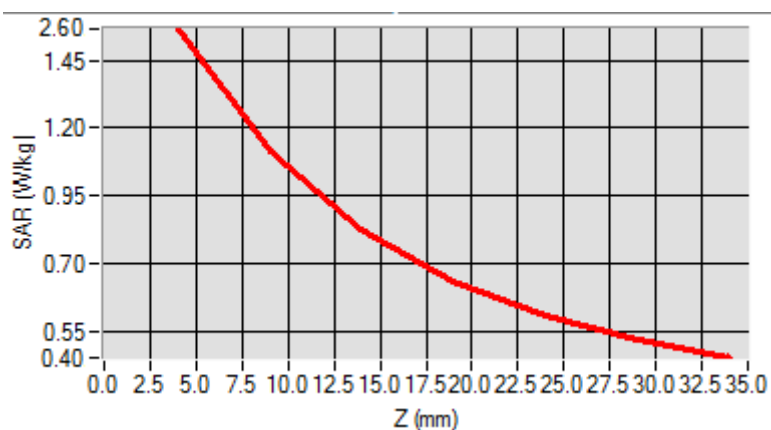


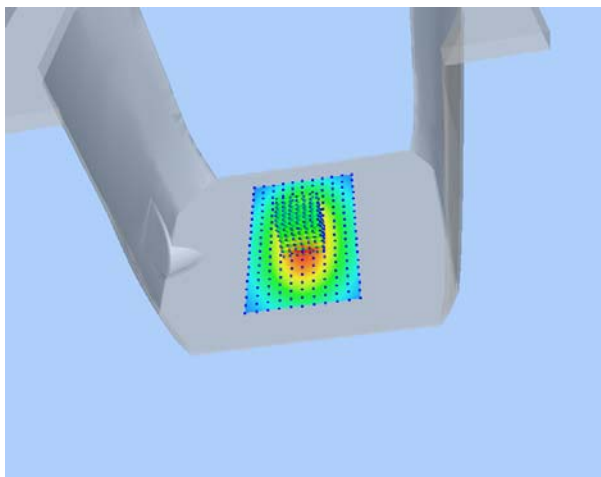
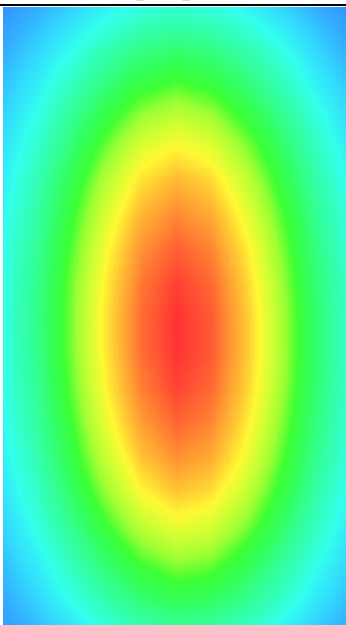
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	1.000865
SAR 1g (W/Kg)	2.124211

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	2.5132	1.1087	0.8214	0.5160	0.4875	0.4864



3D screen shot	Hot spot position
	

MEASUREMENT 2

For Body Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 06/20/2016

Measurement duration: 12 minutes 21 seconds

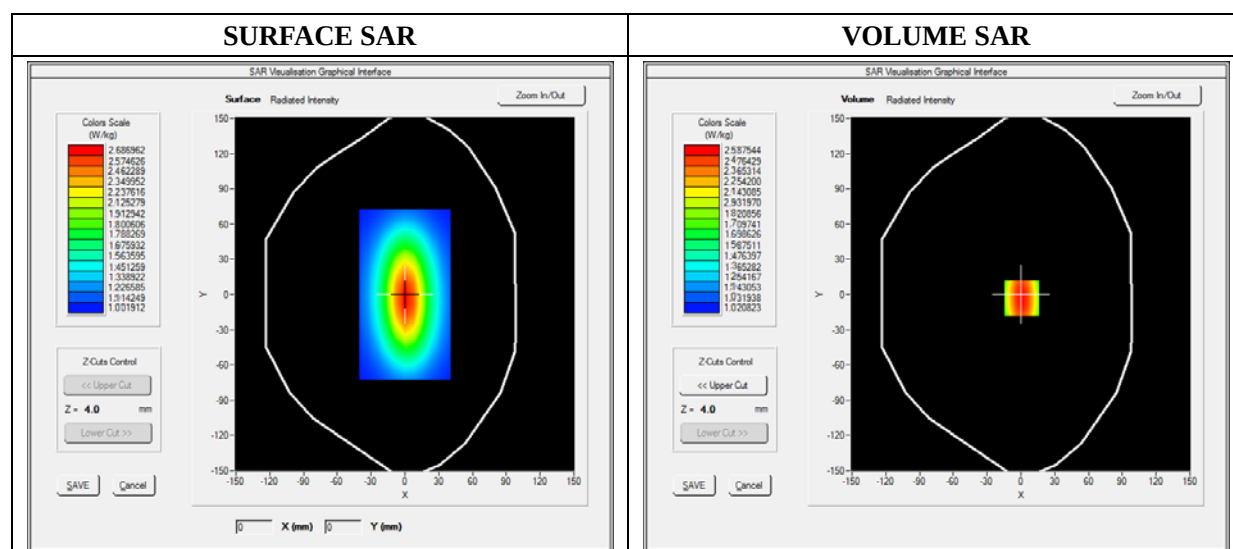
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 7.13; Calibrated: 06/01/2016

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

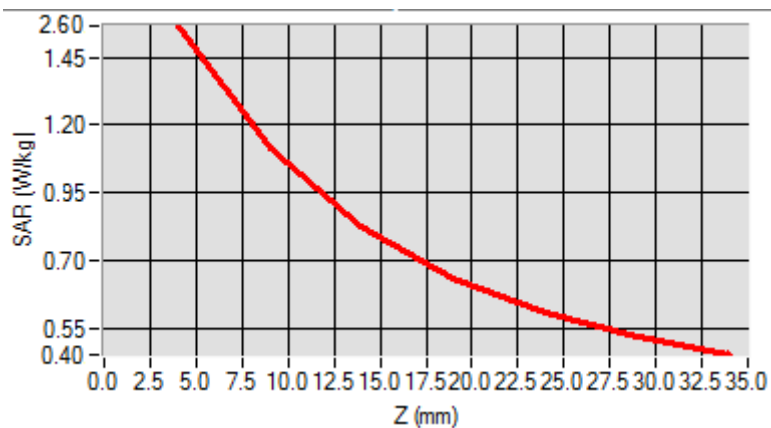


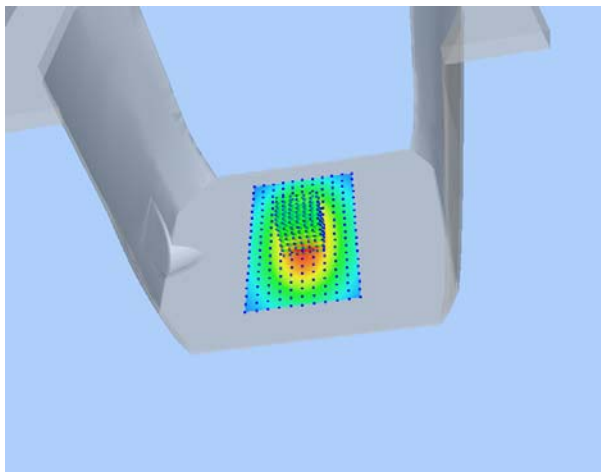
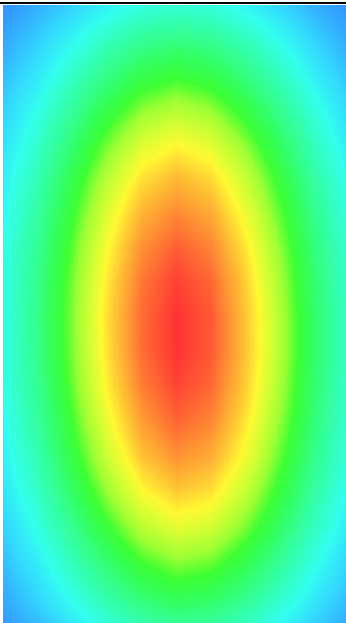
Maximum location: X=0.00, Y=0.00

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 3

For Body Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 06/20/2016

Measurement duration: 12 minutes 21 seconds

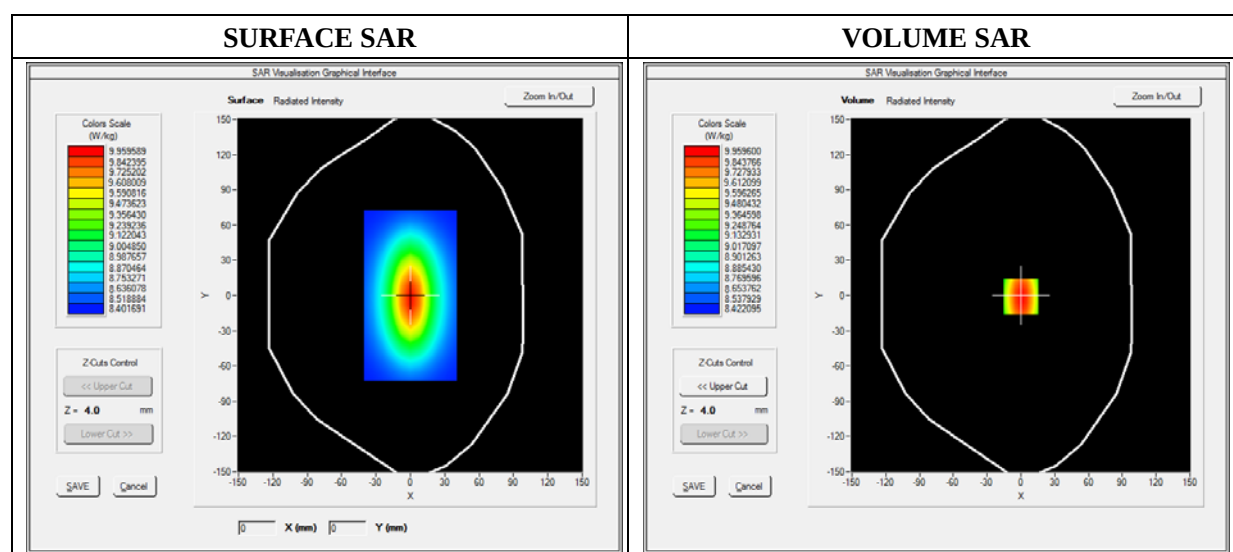
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.06; Calibrated: 06/01/2016

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

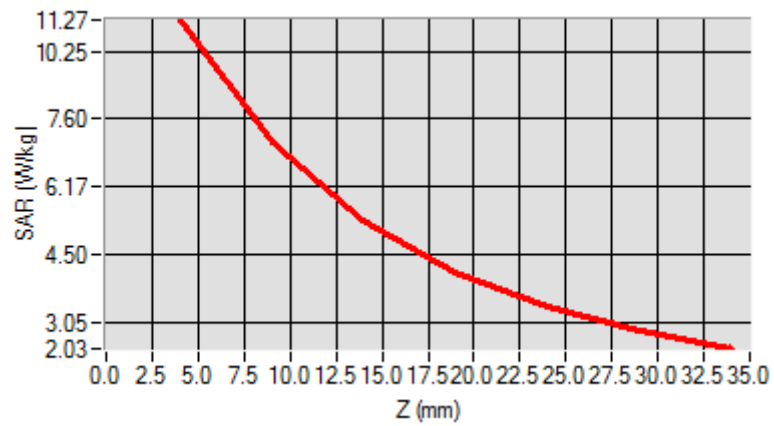


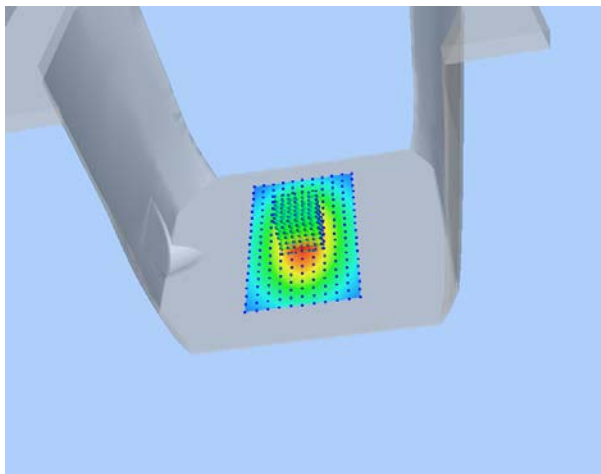
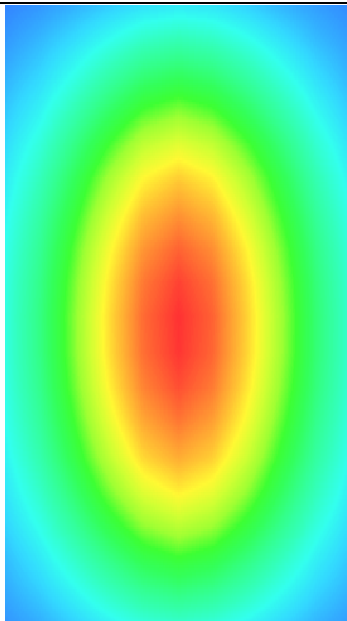
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	5.221202
SAR 1g (W/Kg)	9.582560

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	11.2425	9.4123	8.0345	6.9125	6.3092	3.9460



3D screen shot	Hot spot position
	

MEASUREMENT 4

For Body Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 06/20/2016

Measurement duration: 12 minutes 21 seconds

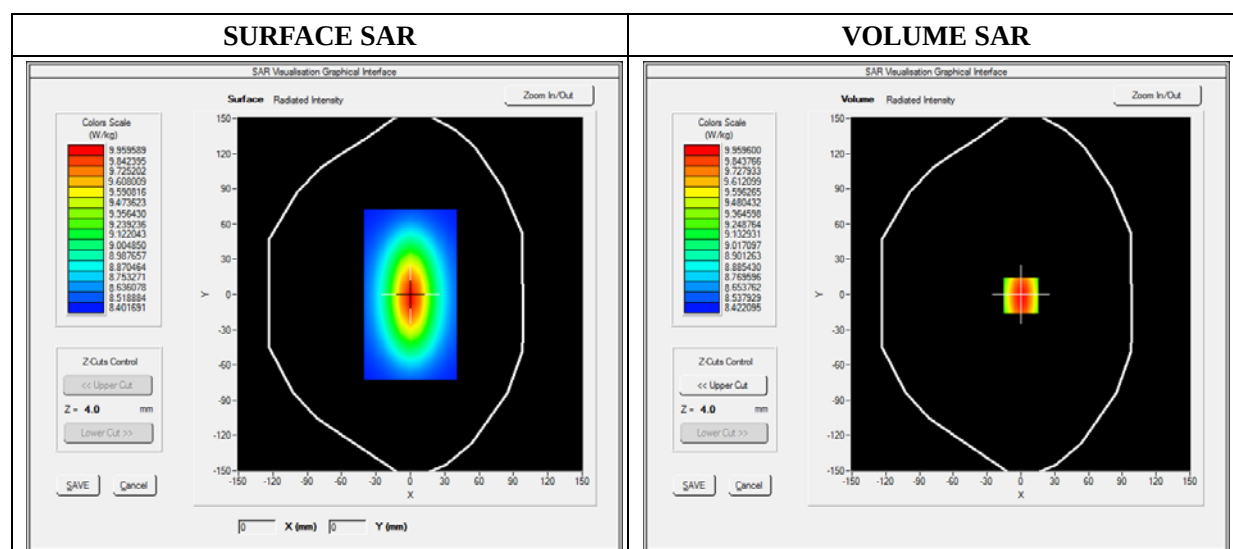
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.55; Calibrated: 06/01/2016

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)	52.420415
Conductivity (S/m)	1.501966
Power Variation (%)	0.541872
Ambient Temperature	21.1
Liquid Temperature	21.3

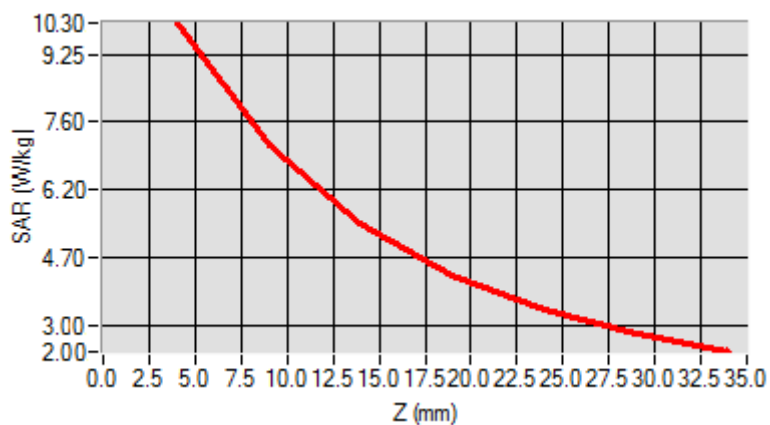


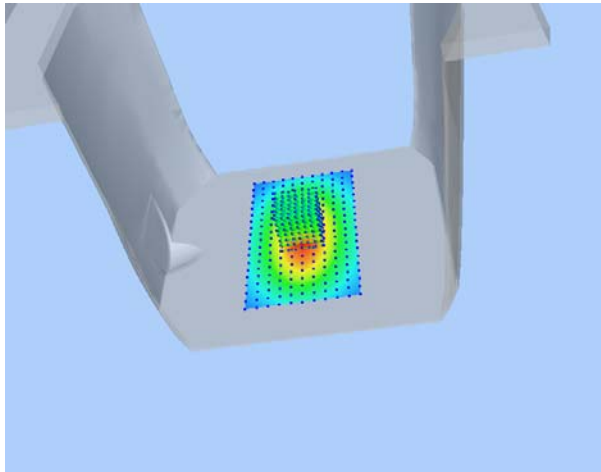
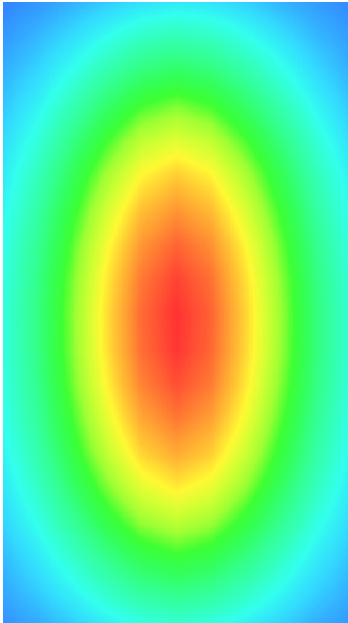
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	5.134651
SAR 1g (W/Kg)	9.781550

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	10.2031	6.43001	4.9011	4.5325	3.1201	2.5024



3D screen shot	Hot spot position
	

MEASUREMENT 5

For Body Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 06/20/2016

Measurement duration: 12 minutes 21 seconds

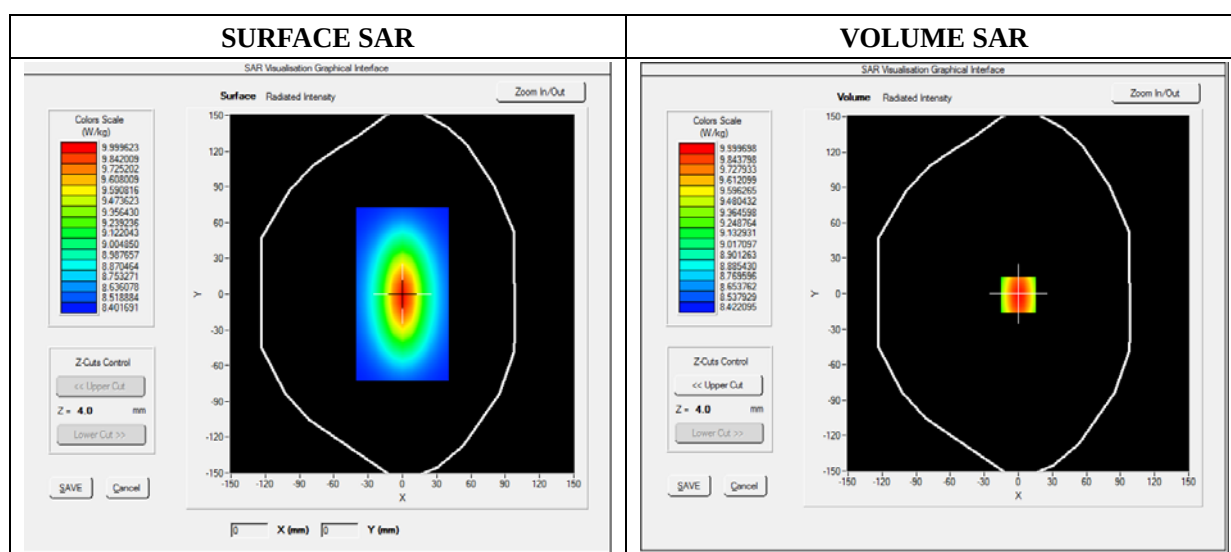
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 5.80; Calibrated: 06/01/2016

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)	52.010212
Conductivity (S/m)	1.910255
Power Variation (%)	1.369745
Ambient Temperature	21.1
Liquid Temperature	21.2

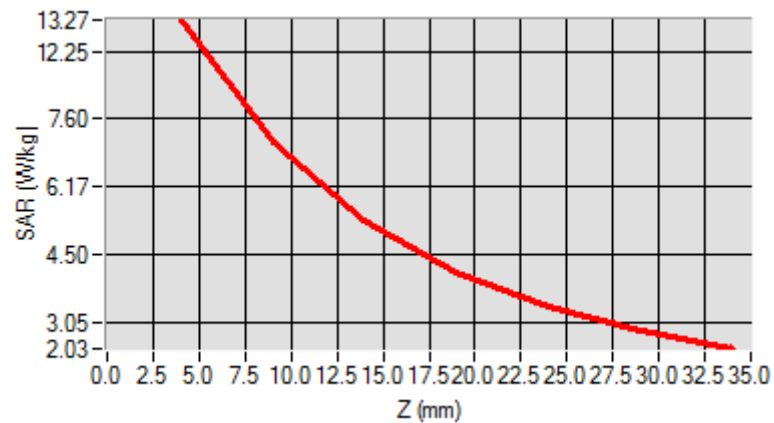


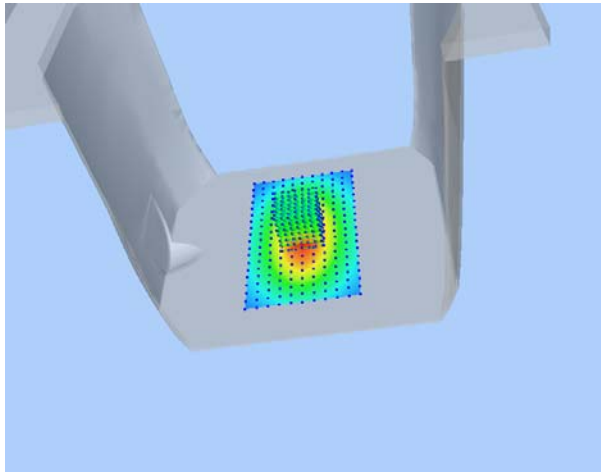
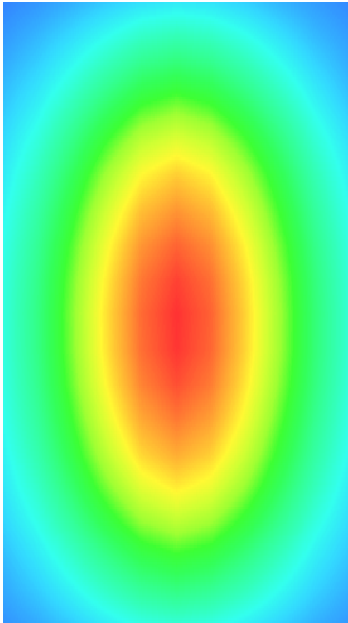
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	7.119522
SAR 1g (W/Kg)	12.592360

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	13.3911	11.7951	9.2945	8.5400	6.3712	4.6225



3D screen shot	Hot spot position
	

Annex B. Plots of SAR Measurement

<u>TYPE</u>	<u>BAND</u>	<u>PARAMETERS</u>
Tablet	GPRS850_3TX	Measurement 1: Flat Plane with Back device position on Middle Channel in GPRS mode
Tablet	GPRS1900_3TX	Measurement 5: Flat Plane with Back device position on Middle Channel in GPRS mode
Tablet	WCDMA850_RMC	Measurement 9: Flat Plane with Back device position on High Channel in WCDMA mode
Tablet	WCDMA1900_RMC	Measurement 13: Flat Plane with Back device position on High Channel in WCDMA mode
Tablet	WCDMA1700_RMC	Measurement 17: Flat Plane with Back device position on Low Channel in WCDMA mode
Tablet	LTE Band 2_RMC	Measurement 21: Flat Plane with Back device position on Low Channel in LTE QPSK 20MHz 1RB mode
Tablet	LTE Band 4_RMC	Measurement 29: Flat Plane with Back device position on Low Channel in LTE QPSK 20MHz 1RB mode
Tablet	LTE Band 13_RMC	Measurement 37: Flat Plane with Back device position on Middle Channel in LTE QPSK 10MHz 1RB mode
Tablet	LTE Band 17_RMC	Measurement 45: Flat Plane with Back device position on Middle Channel in LTE QPSK 10MHz 1RB mode
Tablet	Antenna 1:WiFi_802.11b	Measurement 56: Flat Plane with Top side device position on Low Channel in 802.11b mode
Tablet	Antenna 2:WiFi_802.11b	Measurement 58: Flat Plane with Front side device position on Low Channel in 802.11b mode
Remark: SAR plot is showed the highest measured SAR in each exposure configuration, wireless mode and frequency band combination.		

MEASUREMENT 1

Type: Phone measurement (Complete)

Date of measurement: 06/20/2016

Measurement duration: 12 minutes 3 seconds

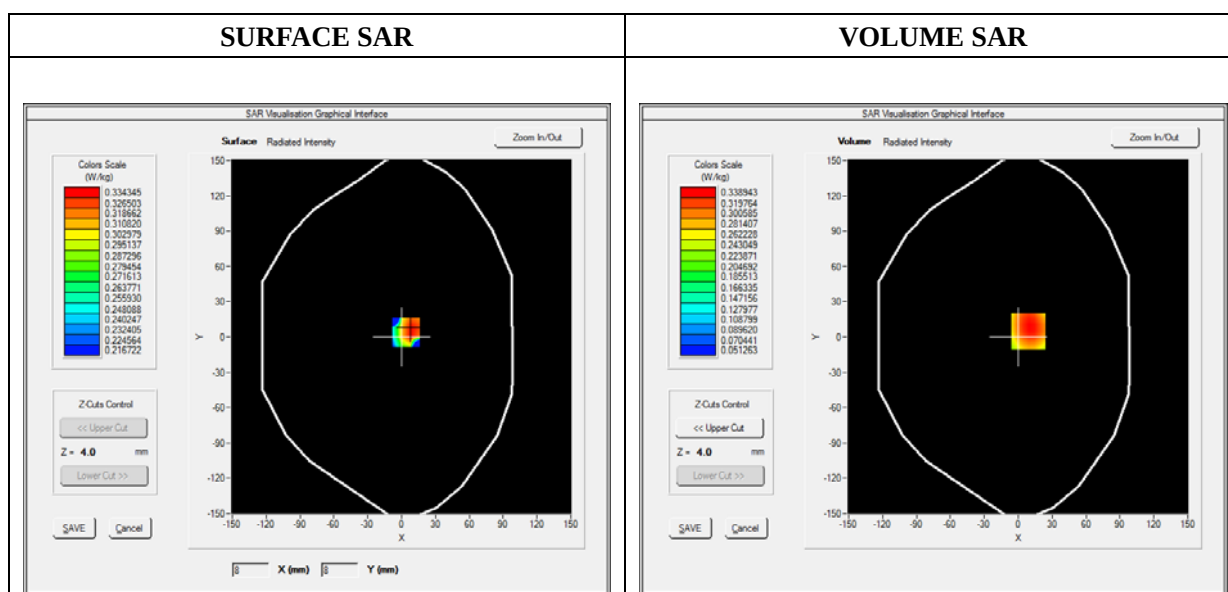
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 7.13; Calibrated: 06/01/2016

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Back
Band	GPRS850_3TX
Channels	Middle
Signal	Duty Cycle 1:2.66

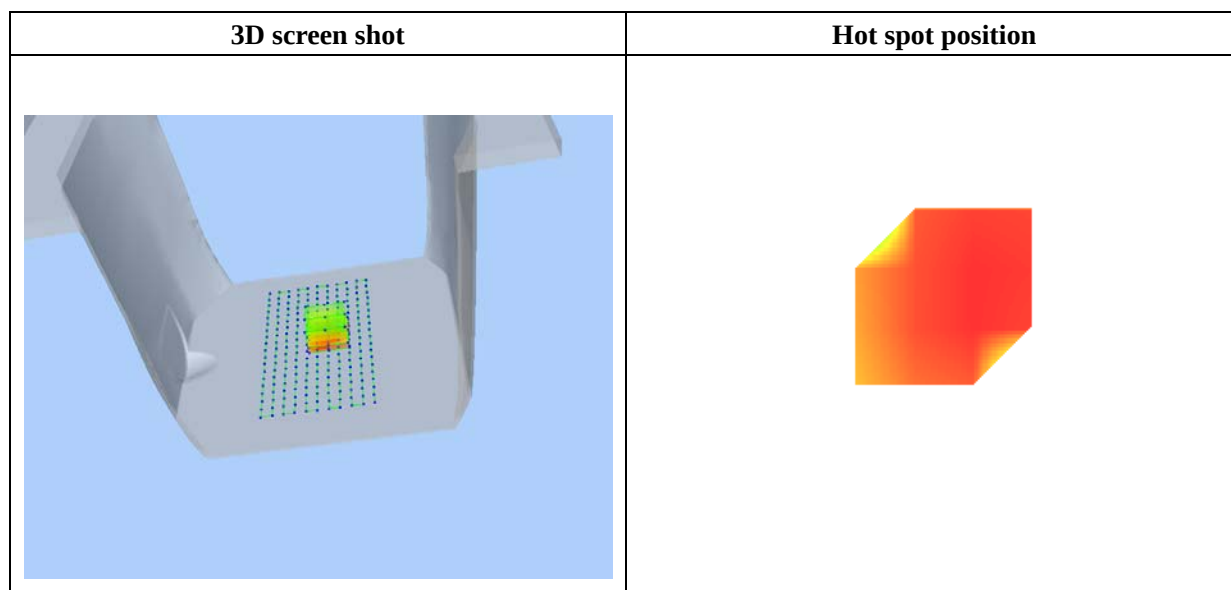
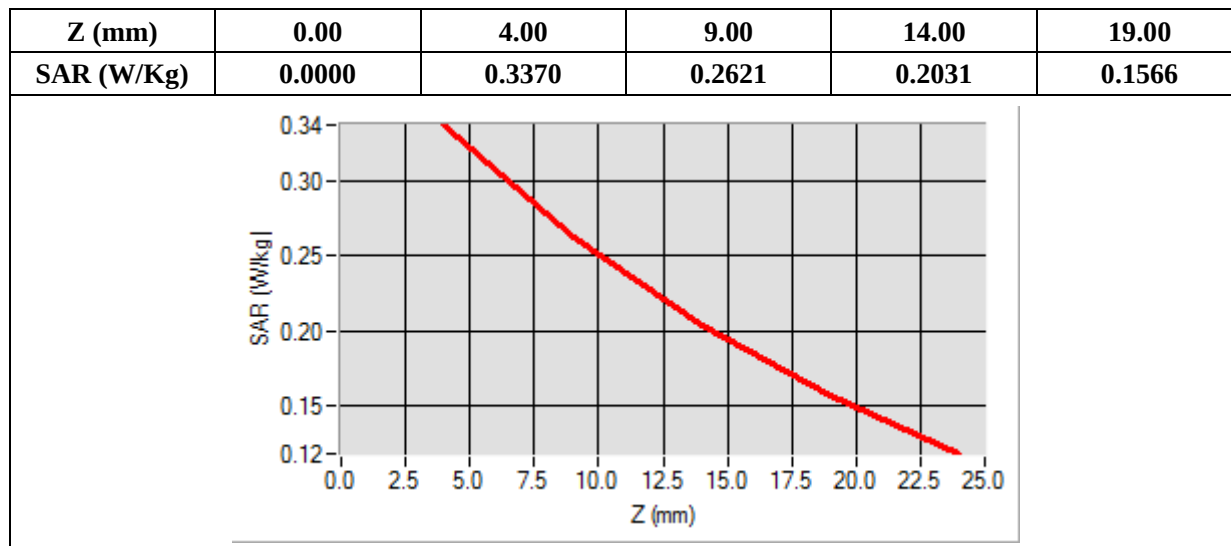
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative Permittivity (real part)	54.851214
Conductivity (S/m)	0.951454
Power Variation (%)	0.976584
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=9.00, Y=5.00

SAR 10g (W/Kg)	0.241206
SAR 1g (W/Kg)	0.326503



MEASUREMENT 5

Type: Phone measurement (Complete)

Date of measurement: 06/20/2016

Measurement duration: 12 minutes 3 seconds

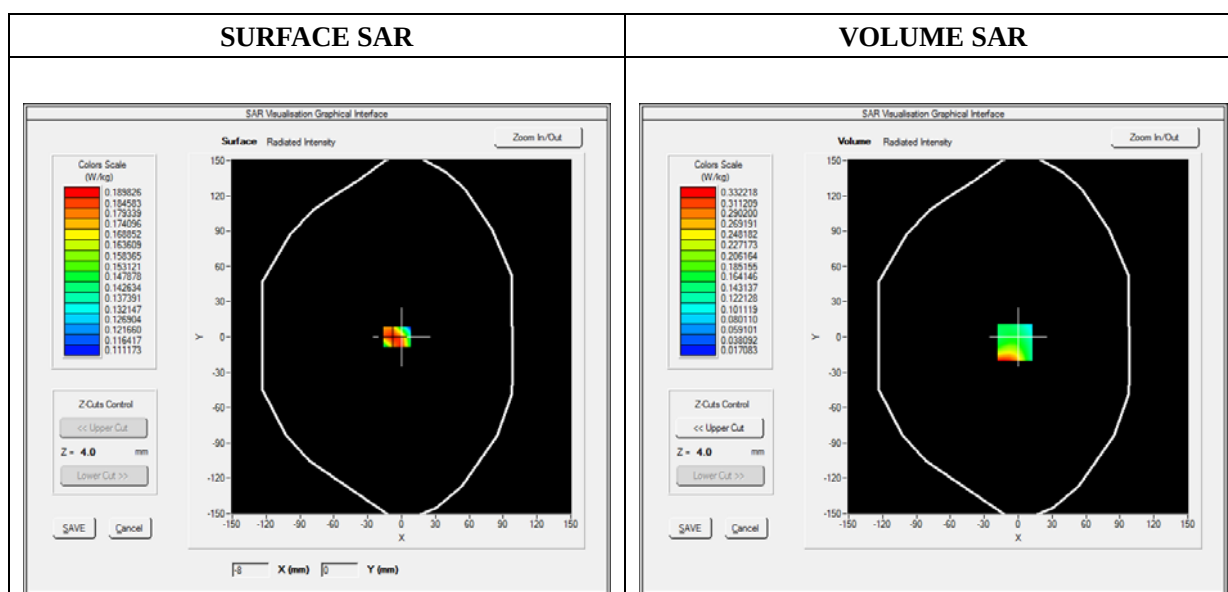
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.55; Calibrated: 06/01/2016

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Back
Band	GPRS1900_3TX
Channels	Middle
Signal	Duty Cycle 1:2.66

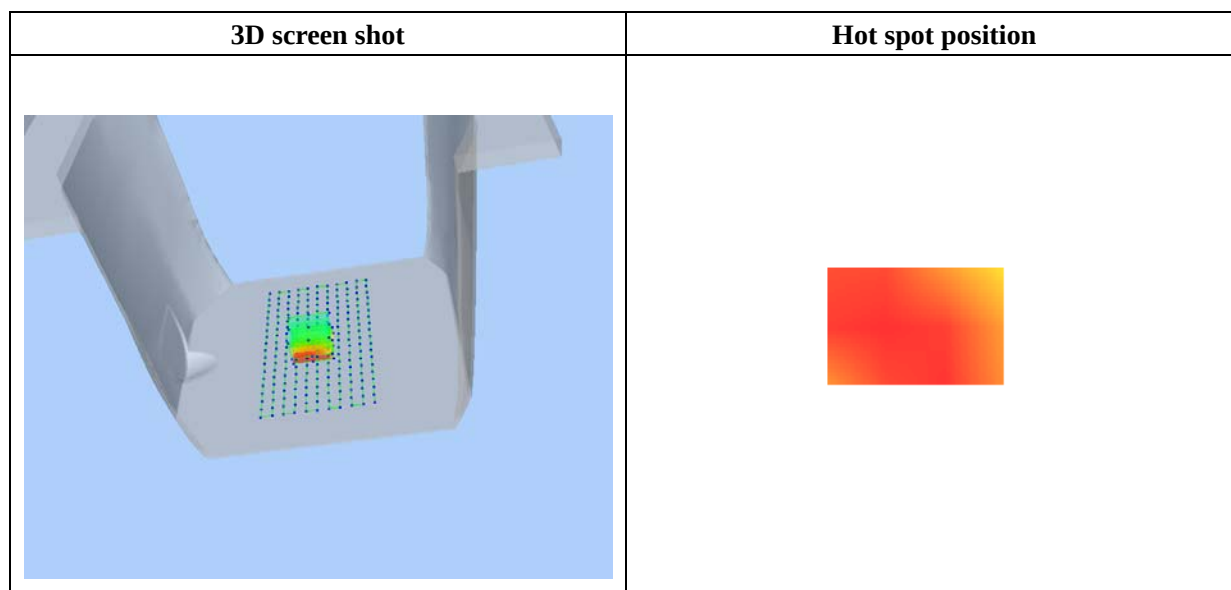
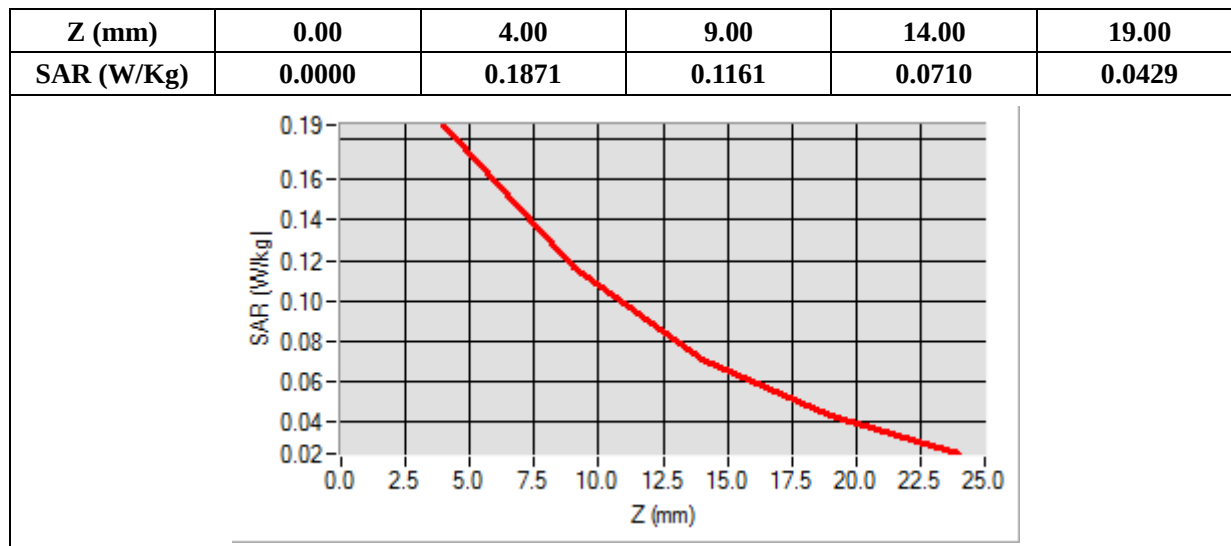
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative Permittivity (real part)	52.420415
Conductivity (S/m)	1.501966
Power Variation (%)	0.658599
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-3.00, Y=-5.00

SAR 10g (W/Kg)	0.133081
SAR 1g (W/Kg)	0.254405



MEASUREMENT 9

Type: Phone measurement (Complete)

Date of measurement: 06/20/2016

Measurement duration: 12 minutes 3 seconds

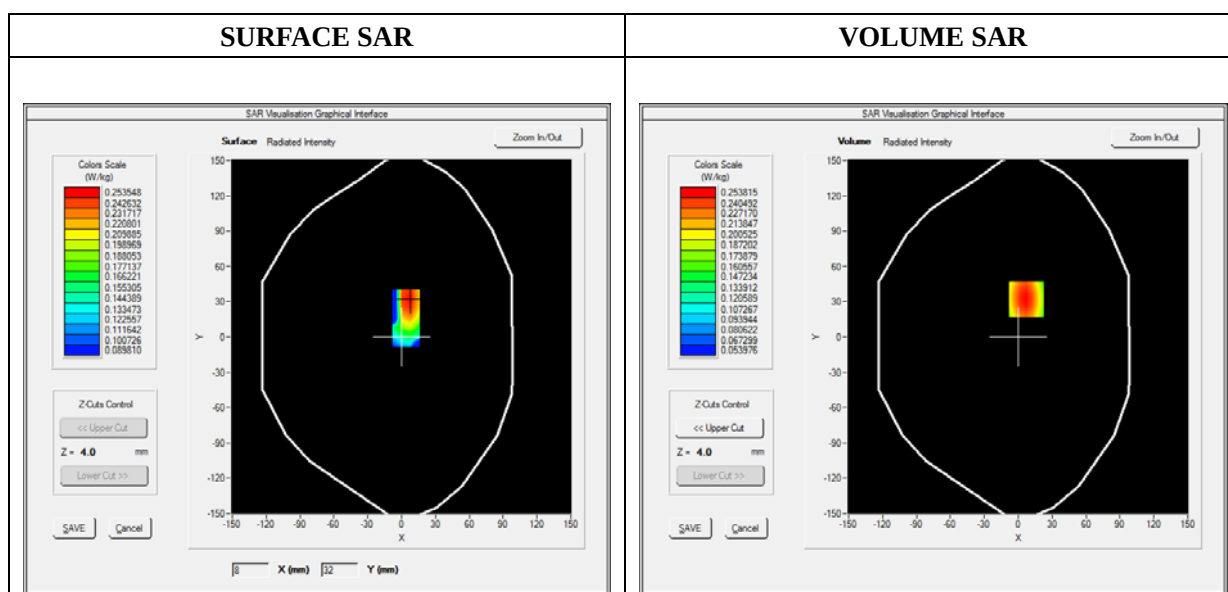
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 7.13; Calibrated: 06/01/2016

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat Plane
Device Position	Back
Band	WCDMA850_RMC
Channels	High
Signal	Duty Cycle 1:1

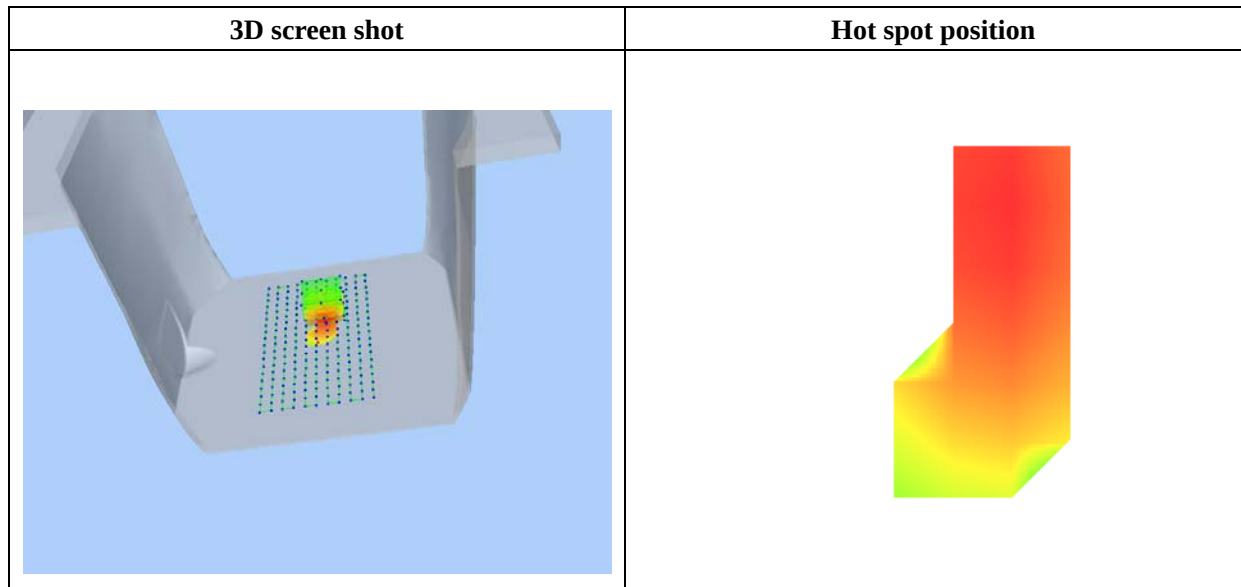
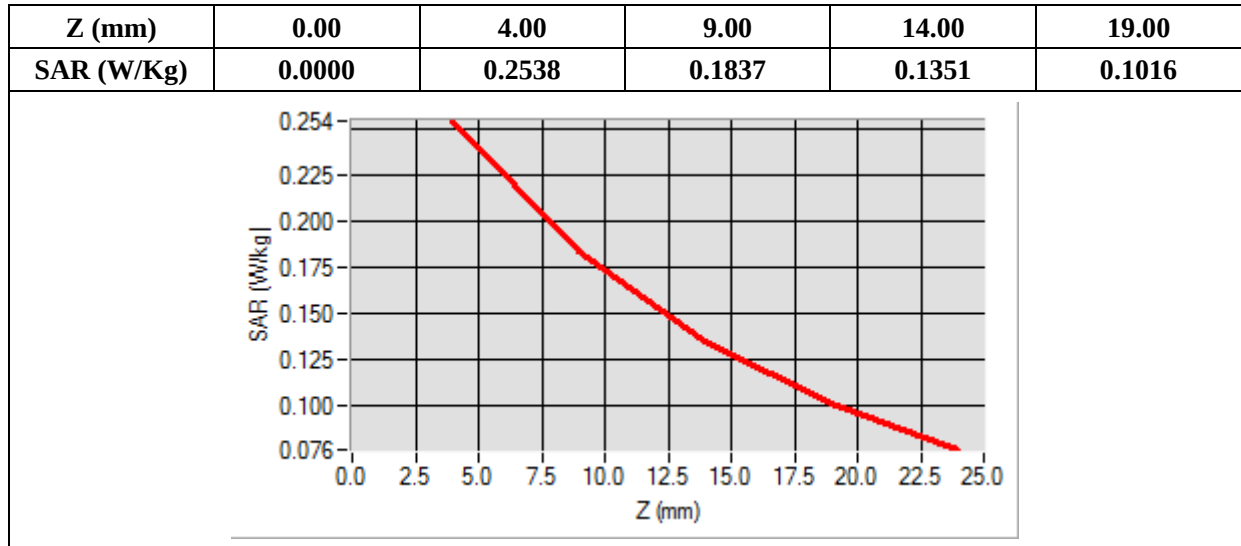
B. SAR Measurement Results

Frequency (MHz)	846.600000
Relative Permittivity (real part)	54.851214
Conductivity (S/m)	0.951454
Power Variation (%)	0.754261
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=7.00, Y=32.00

SAR 10g (W/Kg)	0.168898
SAR 1g (W/Kg)	0.241677



MEASUREMENT 13

Type: Phone measurement (Complete)

Date of measurement: 06/20/2016

Measurement duration: 12 minutes 3 seconds

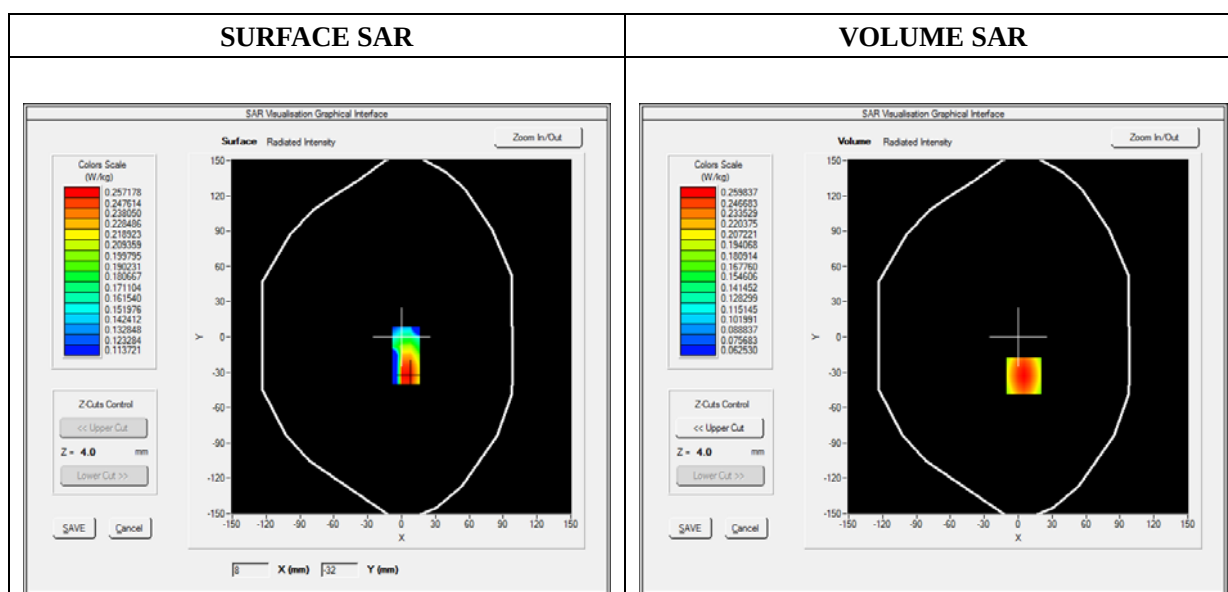
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.55; Calibrated: 06/01/2016

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat Plane
Device Position	Back
Band	WCDMA1900_RMC
Channels	High
Signal	Duty Cycle 1:1

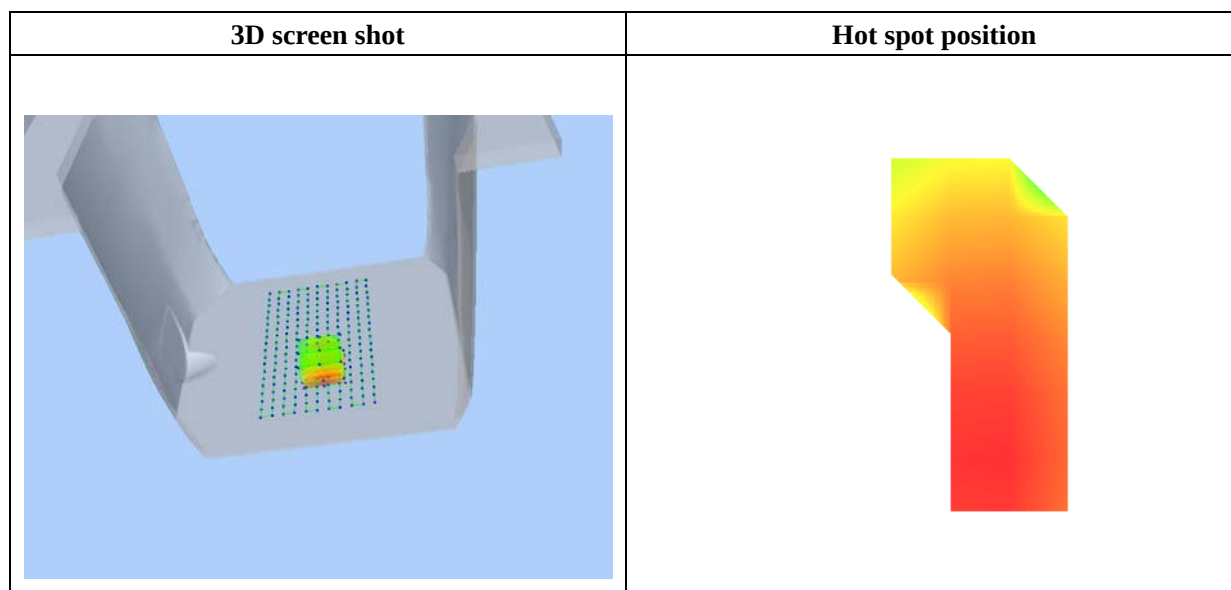
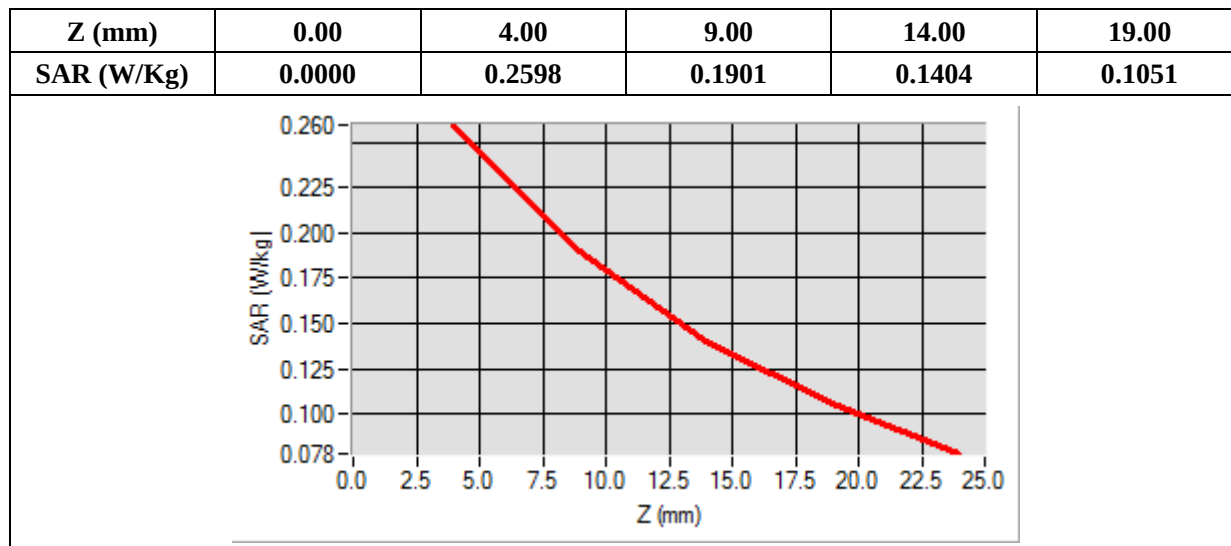
B. SAR Measurement Results

Frequency (MHz)	1907.600000
Relative Permittivity (real part)	52.420415
Conductivity (S/m)	1.501966
Power Variation (%)	0.734538
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=5.00, Y=-33.00

SAR 10g (W/Kg)	0.174505
SAR 1g (W/Kg)	0.247386



MEASUREMENT 17

Type: Phone measurement (Complete)

Date of measurement: 06/20/2016

Measurement duration: 12 minutes 3 seconds

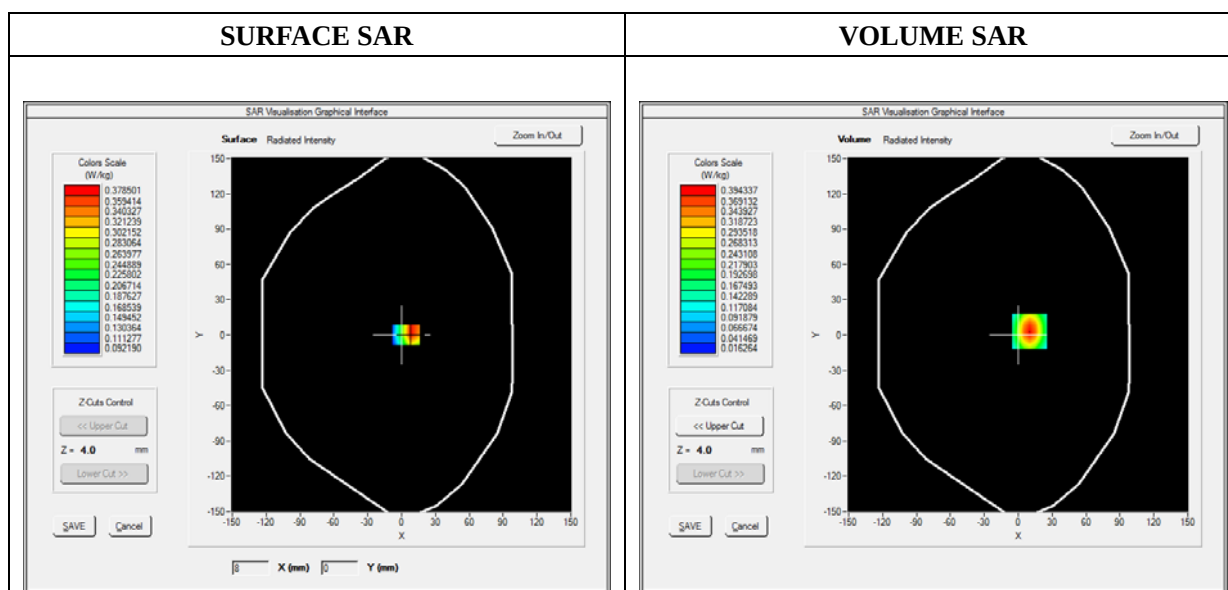
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.06; Calibrated: 06/01/2016

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat Plane
Device Position	Back
Band	WCDMA1700_RMC
Channels	Low
Signal	Duty Cycle 1:1

B. SAR Measurement Results

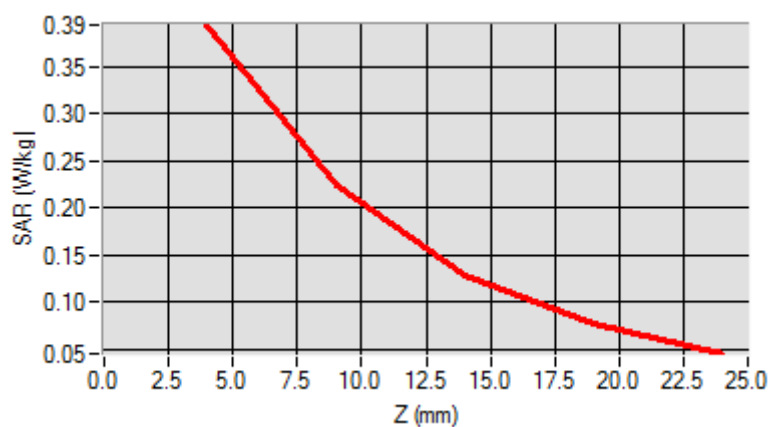
Frequency (MHz)	1712.400000
Relative Permittivity (real part)	51.224510
Conductivity (S/m)	1.461261
Power Variation (%)	0.541872
Ambient Temperature	21.1
Liquid Temperature	21.3

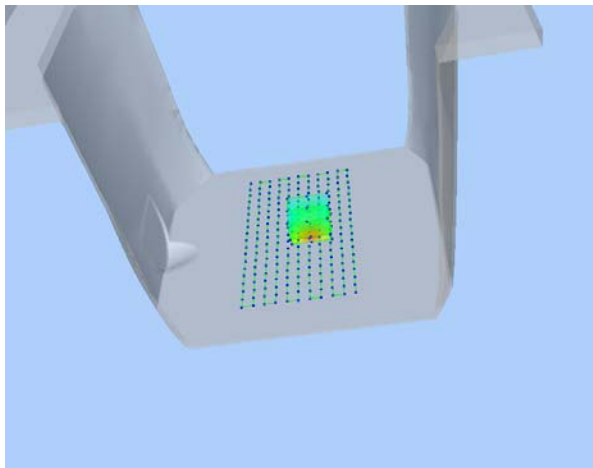
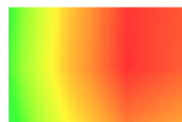


Maximum location: X=10.00, Y=3.00

SAR 10g (W/Kg)	0.191416
SAR 1g (W/Kg)	0.359131

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.3943	0.2242	0.1285	0.0769



3D screen shot	Hot spot position
	

MEASUREMENT 21

Type: Phone measurement (Complete)

Date of measurement: 06/20/2016

Measurement duration: 12 minutes 3 seconds

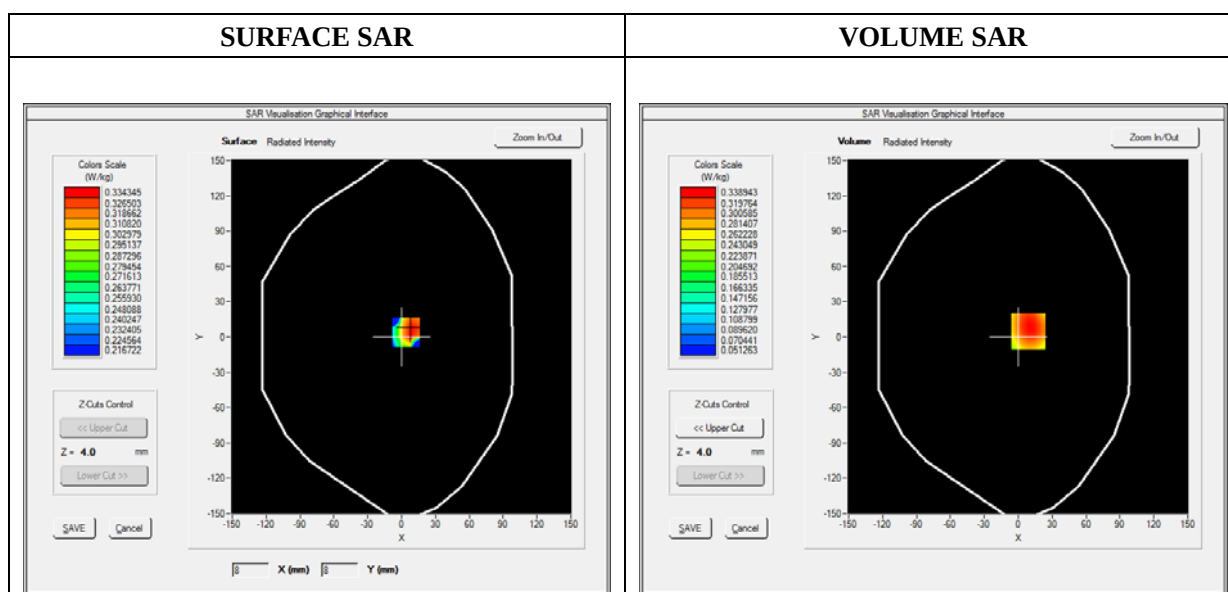
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.55; Calibrated: 06/01/2016

A. Experimental conditions

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

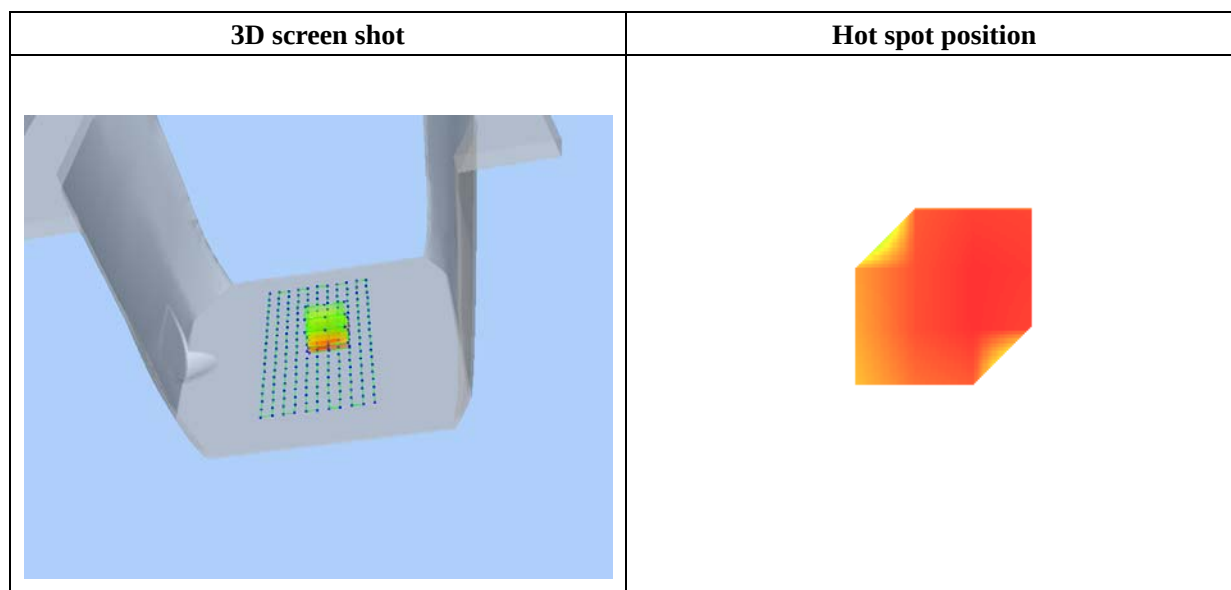
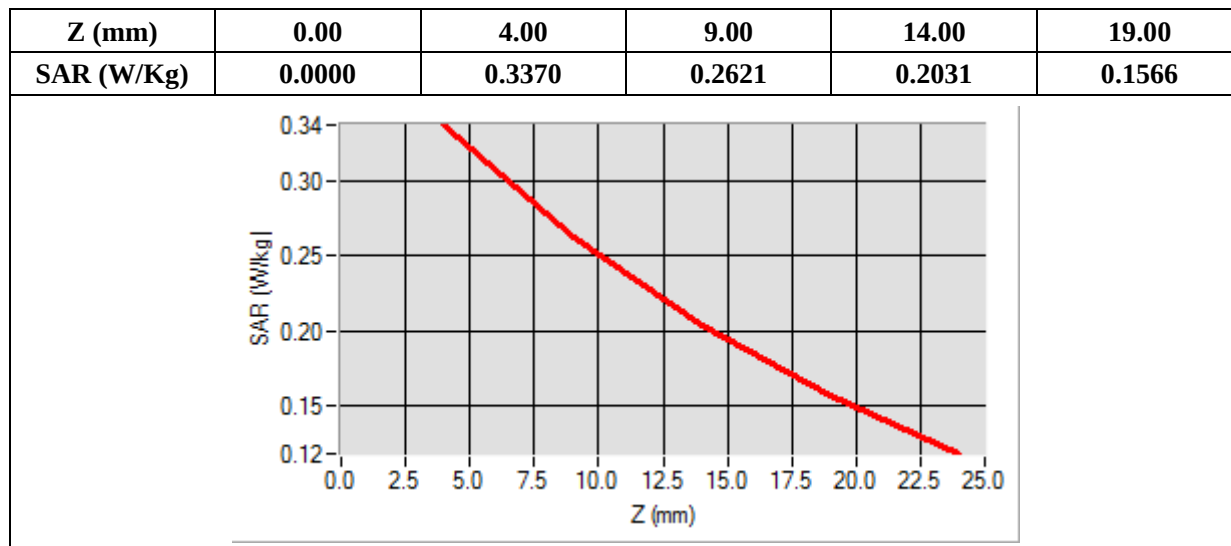
B. SAR Measurement Results

Frequency (MHz)	1860.000000
Relative Permittivity (real part)	52.420415
Conductivity (S/m)	1.501966
Power Variation (%)	1.523573
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-8.00, Y=-31.00

SAR 10g (W/Kg)	0.241206
SAR 1g (W/Kg)	0.346527



MEASUREMENT 29

Type: Phone measurement (Complete)

Date of measurement: 06/20/2016

Measurement duration: 12 minutes 3 seconds

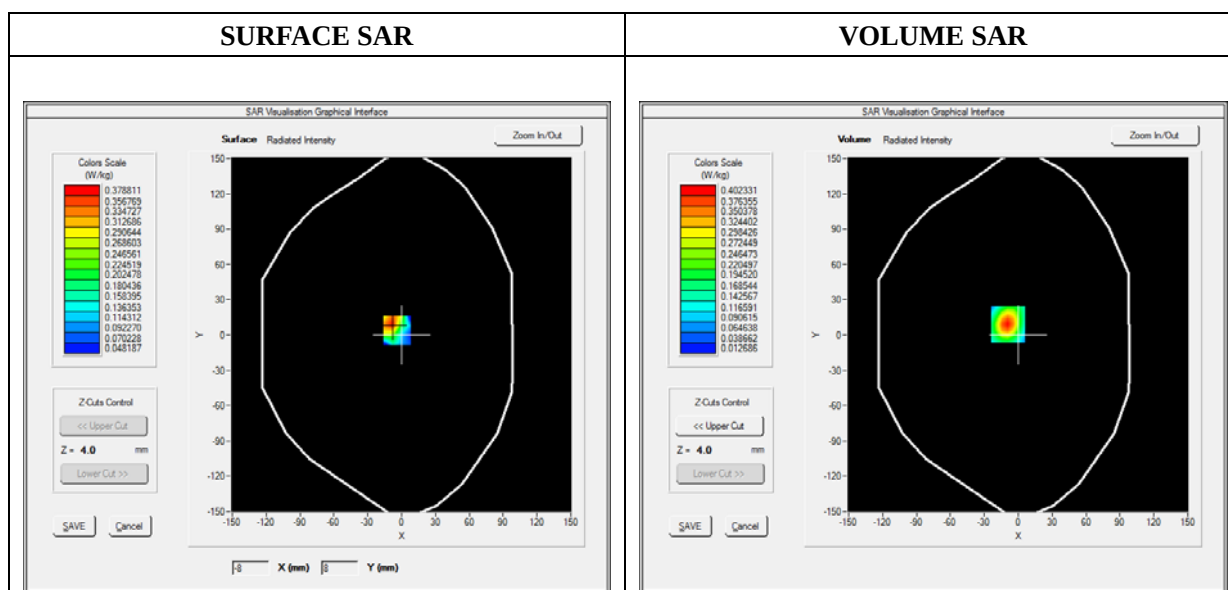
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.06; Calibrated: 06/01/2016

A. Experimental conditions

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

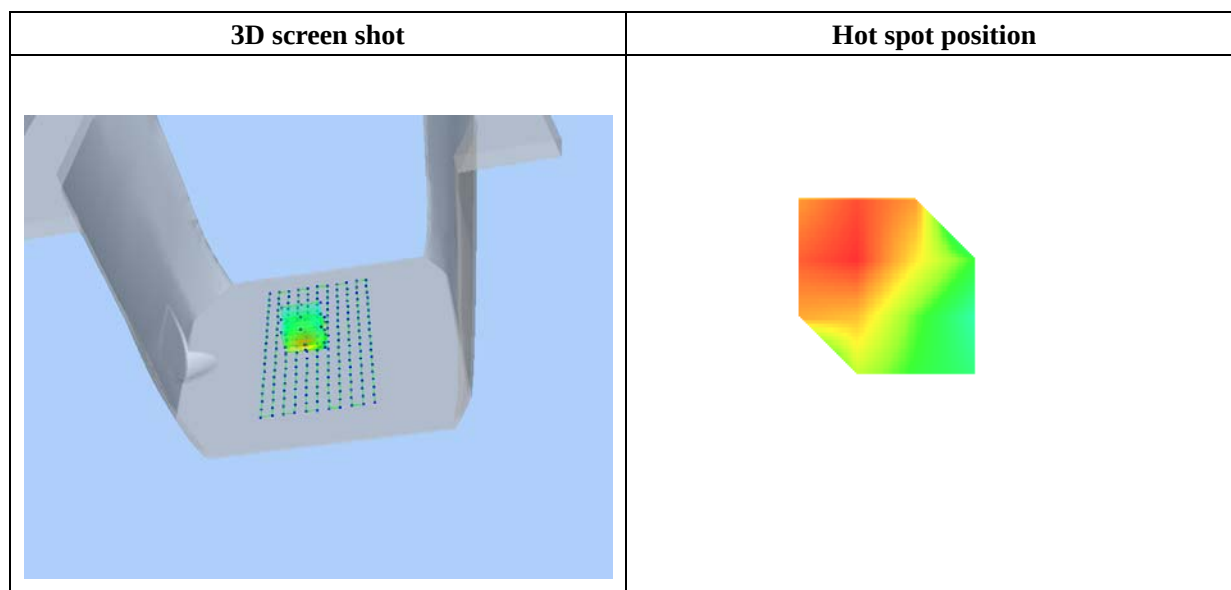
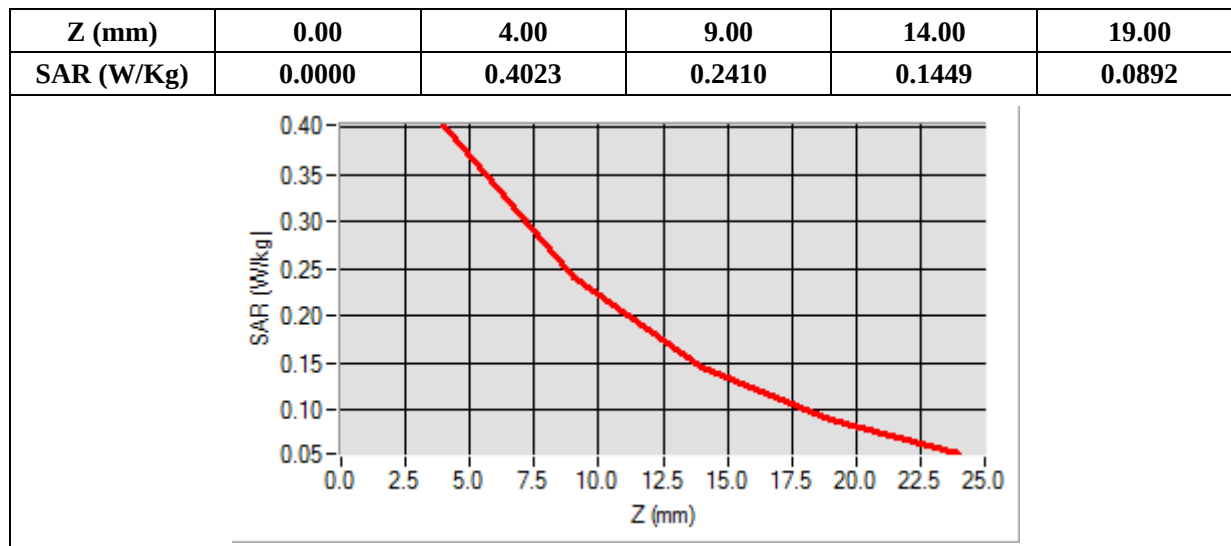
B. SAR Measurement Results

Frequency (MHz)	1720.000000
Relative Permittivity (real part)	51.224510
Conductivity (S/m)	1.461261
Power Variation (%)	0.858383
Ambient Temperature	21.1
Liquid Temperature	21.2



Maximum location: X=-9.00, Y=9.00

SAR 10g (W/Kg)	0.190630
SAR 1g (W/Kg)	0.359858



MEASUREMENT 37

Type: Phone measurement (Complete)

Date of measurement: 06/20/2016

Measurement duration: 12 minutes 3 seconds

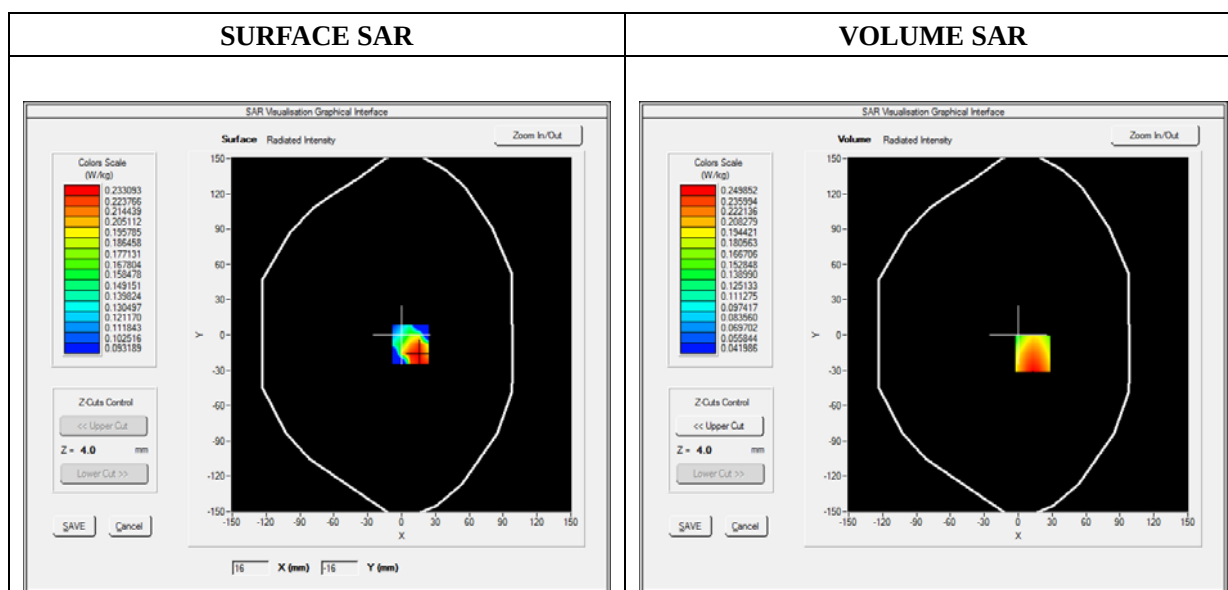
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 7.28; Calibrated: 06/01/2016

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat Plane
Device Position	Back
Band	LTE Band 13_RMC
Channels	QPSK, 10MHz, 1RB, Middle
Signal	Duty Cycle 1:1

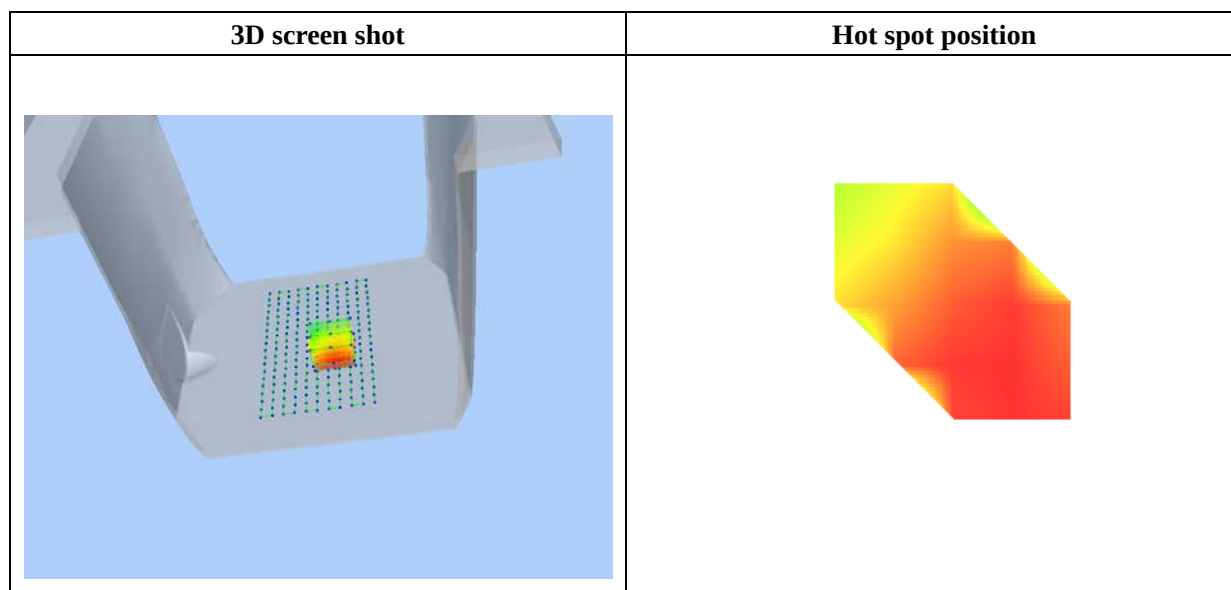
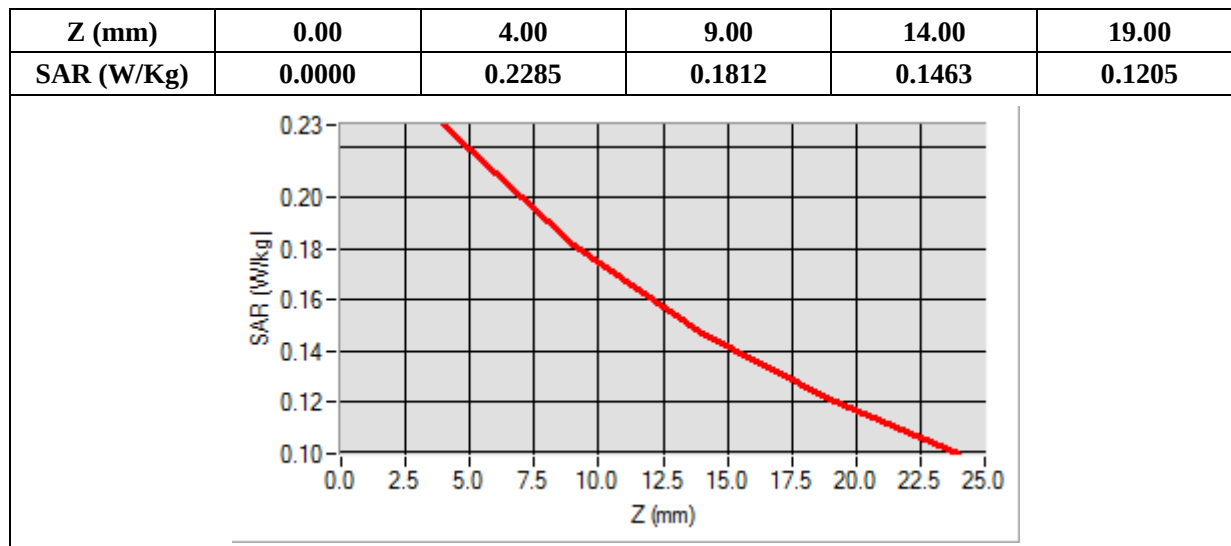
B. SAR Measurement Results

Frequency (MHz)	782.000000
Relative Permittivity (real part)	54.964739
Conductivity (S/m)	0.931048
Power Variation (%)	3.672346
Ambient Temperature	21.1
Liquid Temperature	21.2



Maximum location: X=13.00, Y=-16.00

SAR 10g (W/Kg)	0.177979
SAR 1g (W/Kg)	0.234961



MEASUREMENT 45

Type: Phone measurement (Complete)

Date of measurement: 06/20/2016

Measurement duration: 12 minutes 3 seconds

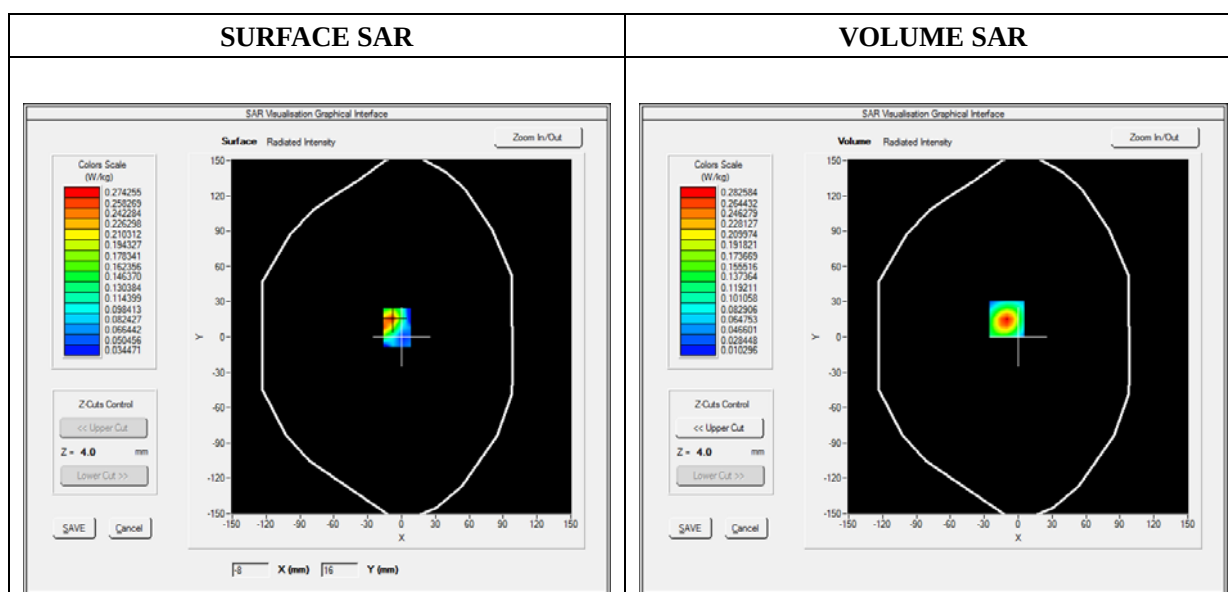
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 7.28; Calibrated: 06/01/2016

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat Plane
Device Position	Back
Band	LTE Band 17_RMC
Channels	QPSK, 10MHz, Middle
Signal	Duty Cycle 1:1

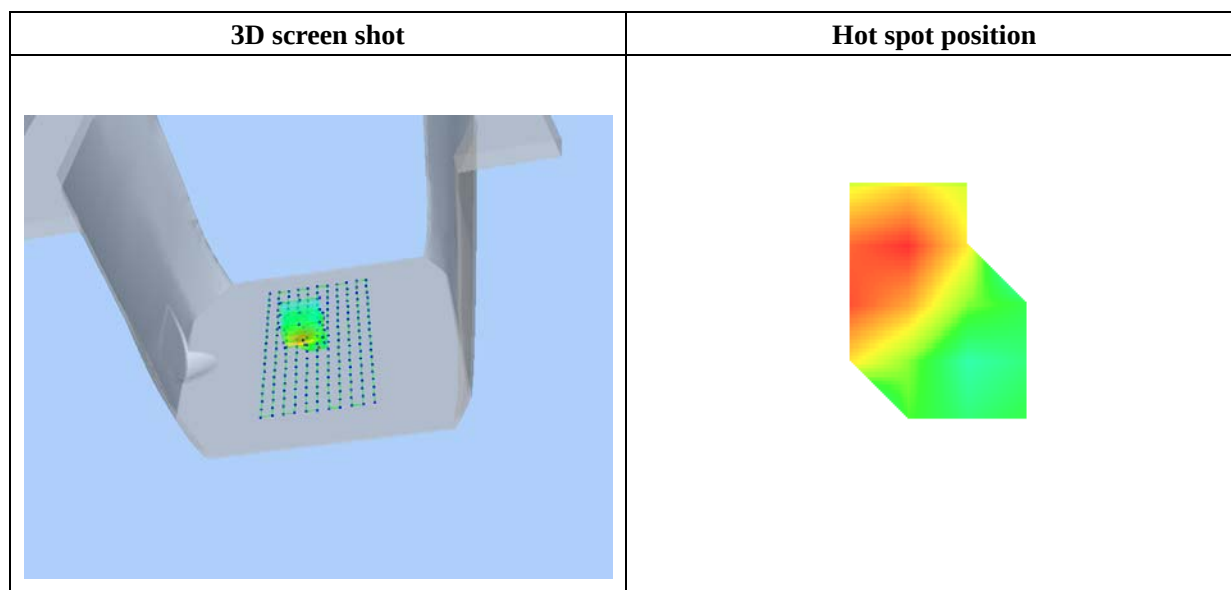
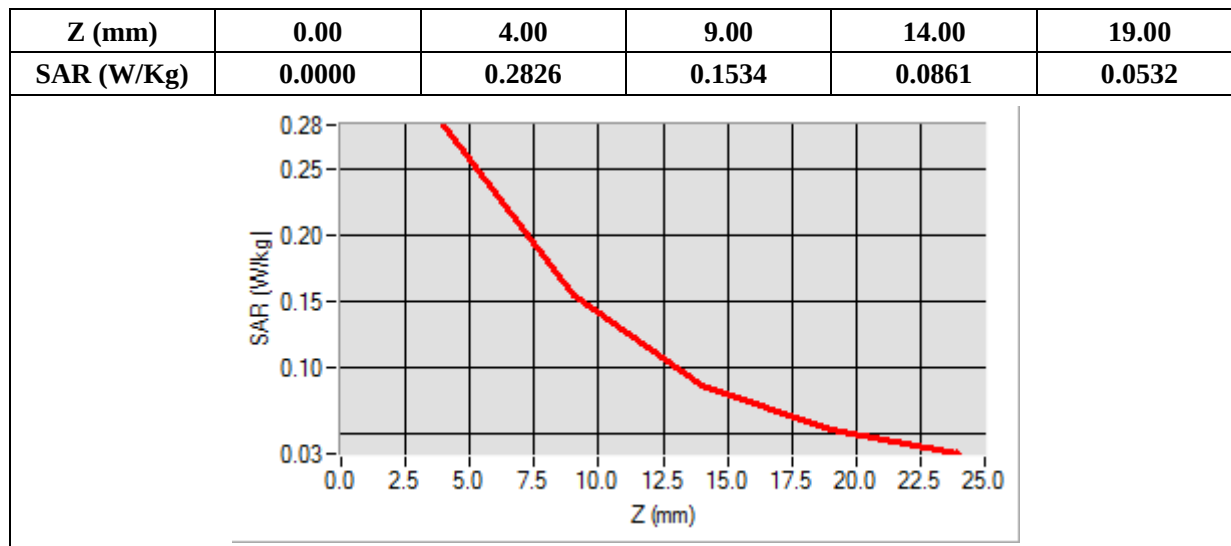
B. SAR Measurement Results

Frequency (MHz)	710.000000
Relative Permittivity (real part)	54.964739
Conductivity (S/m)	0.931048
Power Variation (%)	0.954431
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-10.00, Y=15.00

SAR 10g (W/Kg)	0.156535
SAR 1g (W/Kg)	0.308395



MEASUREMENT 56

Type: Phone measurement (Complete)

Date of measurement: 06/20/2016

Measurement duration: 12 minutes 3 seconds

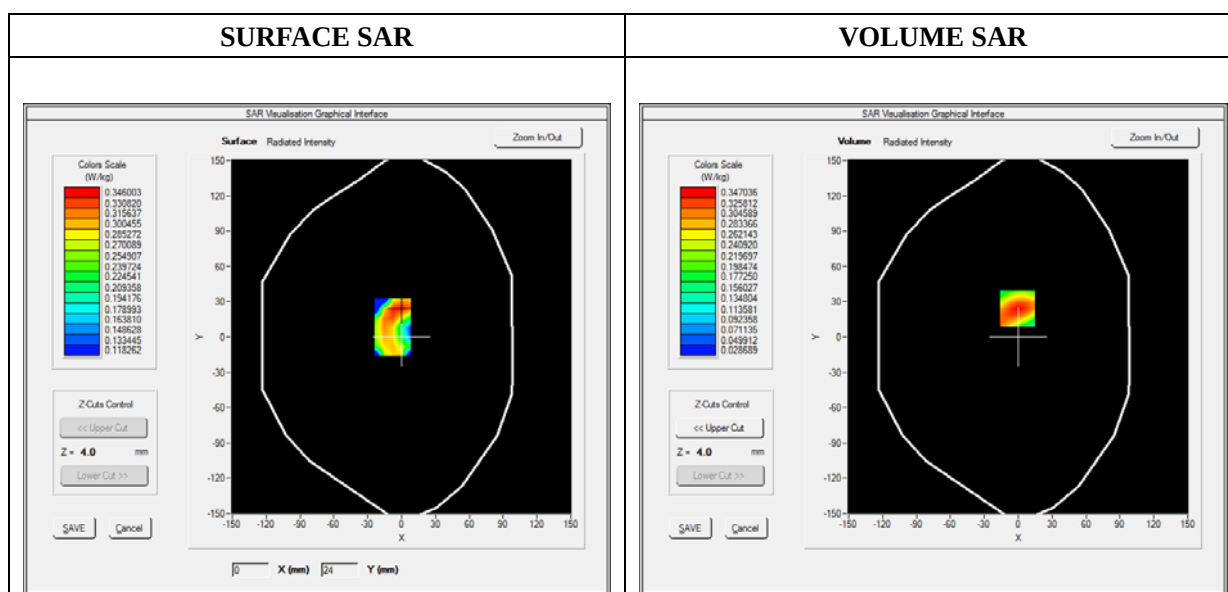
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 5.80; Calibrated: 06/01/2016

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat Plane
Device Position	Top
Band	Antenna 1:WiFi_802.11b
Channels	Low
Signal	Duty Cycle 1:1

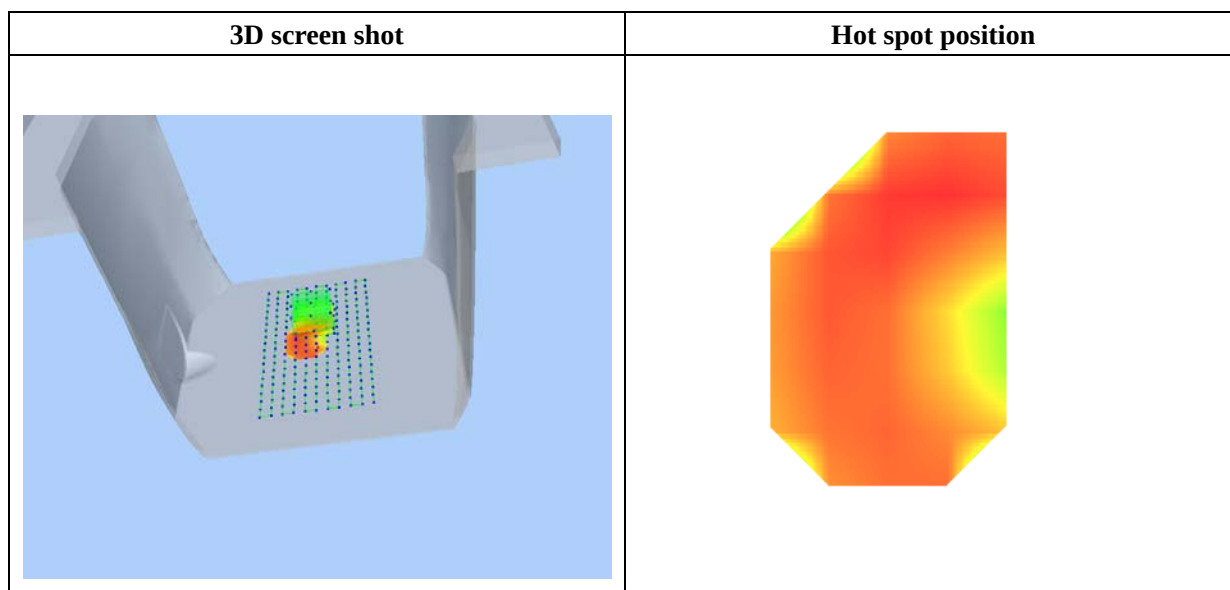
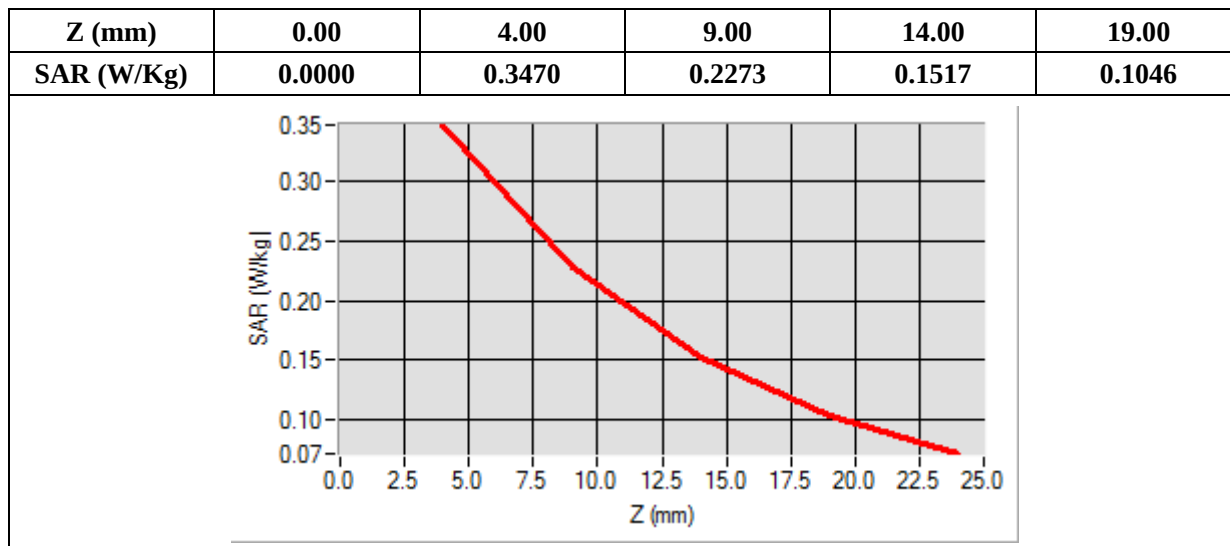
B. SAR Measurement Results

Frequency (MHz)	2412.000000
Relative Permittivity (real part)	52.010212
Conductivity (S/m)	1.910255
Power Variation (%)	0.462345
Ambient Temperature	21.1
Liquid Temperature	21.2



Maximum location: X=-1.00, Y=24.00

SAR 10g (W/Kg)	0.205959
SAR 1g (W/Kg)	0.324885



MEASUREMENT 58

Type: Phone measurement (Complete)

Date of measurement: 06/20/2016

Measurement duration: 12 minutes 3 seconds

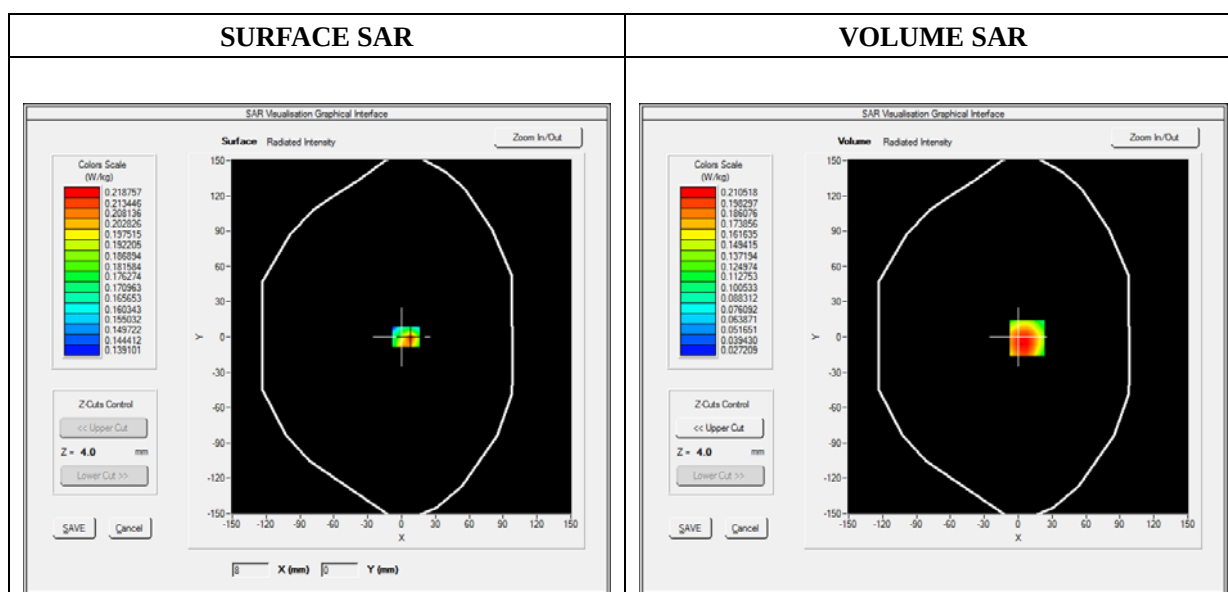
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 5.80; Calibrated: 06/01/2016

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat Plane
Device Position	Front
Band	Antenna 2:WiFi_802.11b
Channels	Low
Signal	Duty Cycle 1:1

B. SAR Measurement Results

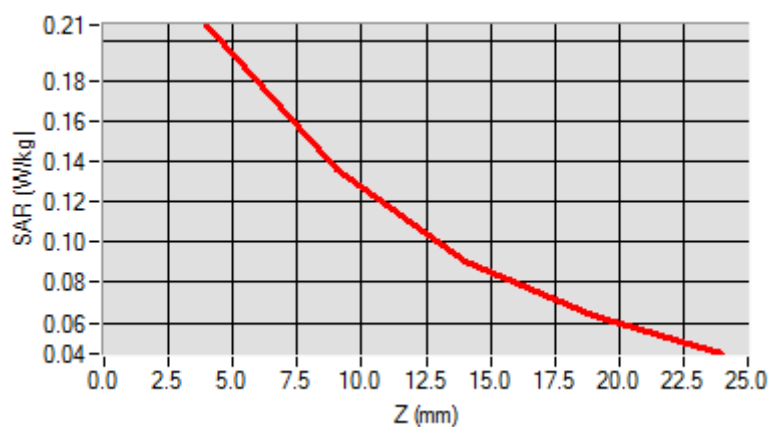
Frequency (MHz)	2412.000000
Relative Permittivity (real part)	52.010212
Conductivity (S/m)	1.910255
Power Variation (%)	0.598795
Ambient Temperature	21.1
Liquid Temperature	21.2

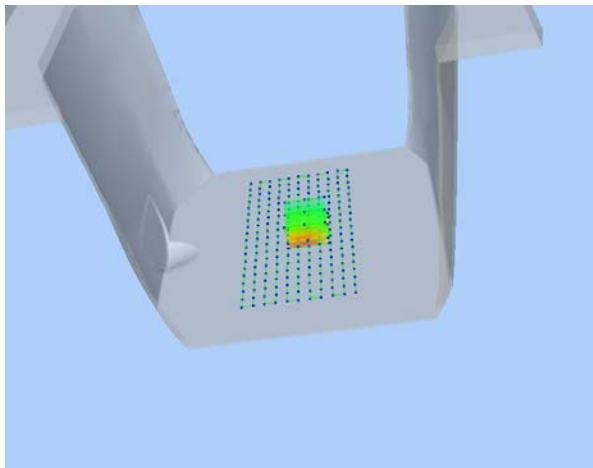


Maximum location: X=8.00, Y=-1.00

SAR 10g (W/Kg)	0.128410
SAR 1g (W/Kg)	0.201515

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.2081	0.1359	0.0909	0.0634



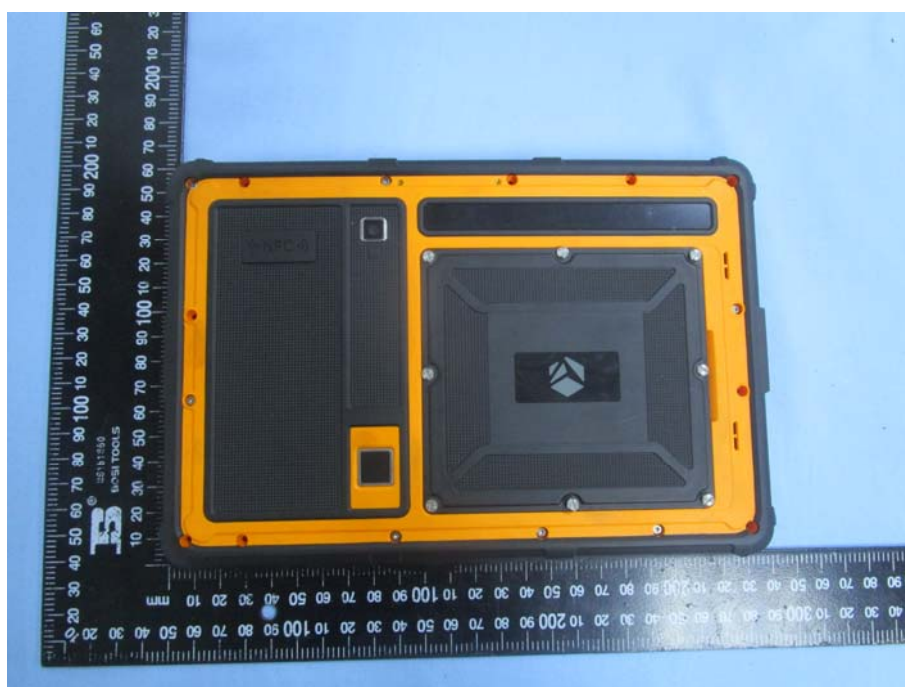
3D screen shot	Hot spot position
	

Annex C. EUT Photos

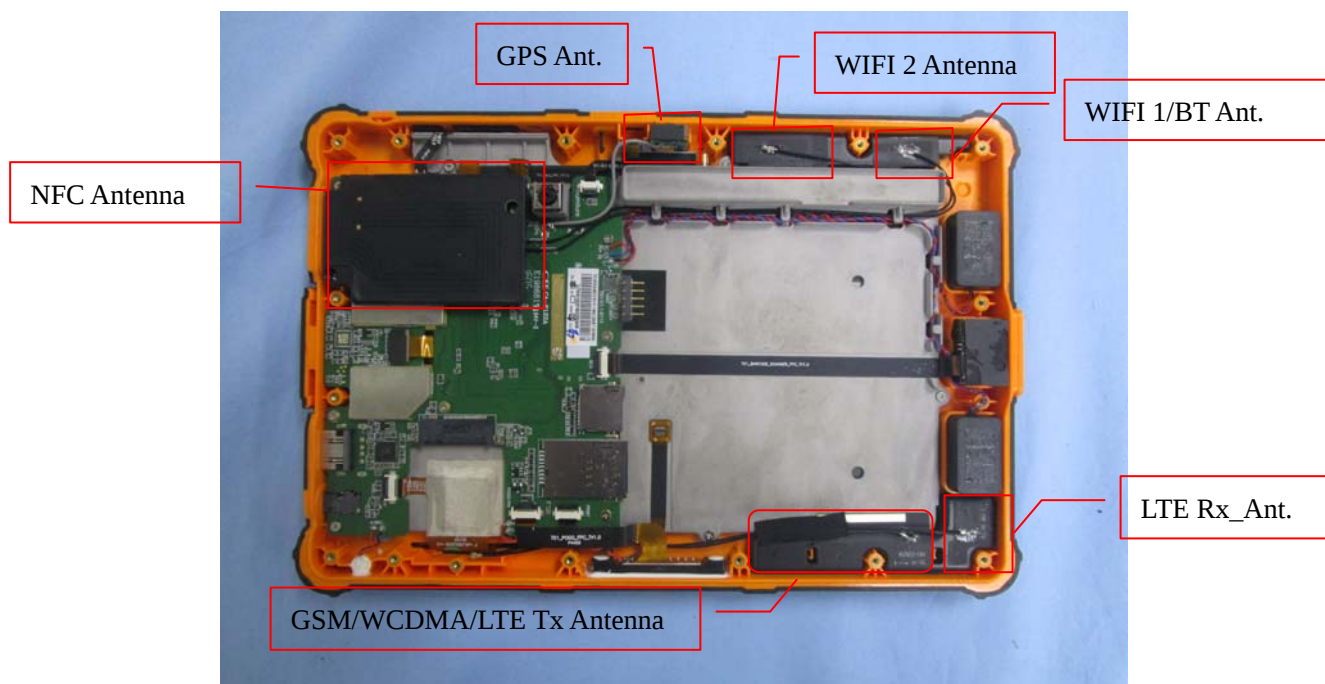
EUT View Front



EUT View Back



Antenna View



Annex D. Test Setup Photos

Body Exposure Conditions

Body Front



Body Back



Body Left**Body Top**

Body Bottom



Annex E. Calibration Certificate

Please refer to the Exhibit for the Calibration Certificate

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