FCC SAR Test Report

Report No.	:	**SA171212C20**
Applicant	:	**Quectel Wireless Solutions Co., Ltd**
Address	:	**7th Floor, Hongye Building, No. 1801 Hongmei Road, Xuhui District, Shanghai 200233, China**
Product	:	**LTE Module**
FCC ID	:	**XMR201706SC20A**
Brand	:	**Quectel**
Model No.	:	**SC20-A**
Standards	:	**FCC 47 CFR Part 2 (2.1093), IEEE C95.1:1992, IEEE Std 1528:2013 KDB 865664 D01 v01r04, KDB 865664 D02 v01r02 KDB 248227 D01 v02r02, KDB 447498 D01 v06, KDB 941225 D01 v03r01 KDB 941225 D05 v02r05**
Sample Received Date	:	**Dec. 12, 2017**
Date of Testing	:	**Jan. 05, 2018 ~ Apr. 23, 2018**
Lab Address	:	**No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.**
Test Location	:	**No. 19, Hwa Ya 2nd Rd, Wen Hwa Vil, Kwei Shan Dist., Taoyuan City 33383, Taiwan (R.O.C)**

CERTIFICATION: The above equipment have been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch – Lin Kou Laboratories**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's SAR characteristics under the conditions specified in this report. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product certification, approval, or endorsement by TAF or any government agencies.

Prepared By : Gina Liu / Specialist

Approved By : Eli Hsu / Senior Engineer

FCC Accredited No.: TW0003

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.

Table of Contents

Release Control Record

Report No.	Reason for Change	Date Issued
SA171212C20	Initial release	Apr. 25, 2018

1. Summary of Maximum SAR Value

Equipment Class	Mode	Highest SAR-1g Body Tested at 0 mm (W/kg)	Highest SAR-10g Extremity Tested at 0 mm (W/kg)
PCB	GSM850	0.45	1.41
	GSM1900	1.42	1.06
	WCDMA II	1.18	0.65
	WCDMA IV	0.56	0.37
	WCDMA V	0.23	0.95
	LTE 2	1.04	0.62
	LTE 4	0.41	0.39
	LTE 5	0.23	0.93
	LTE 7	0.39	0.89
	LTE 12	0.42	0.60
	LTE 13	0.28	0.32
	LTE 25	1.08	0.72
	LTE 26	0.21	0.96
DTS	2.4G WLAN	0.09	0.50
NII	5G WLAN	0.14	0.27
DSS	Bluetooth	0.03	0.15
DXX	NFC	N/A	N/A
Highest Simultaneous Transmission SAR		Body	Extremity
		1.56	1.90

Note:

1. The SAR criteria **(Head & Body: SAR-1g 1.6 W/kg, and Extremity: SAR-10g 4.0 W/kg)** for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992.

2. Description of Equipment Under Test

EUT Type	LTE Module
FCC ID	XMR201706SC20A
Brand Name	Quectel
Model Name	SC20-A
Tx Frequency Bands (Unit: MHz)	GSM850 : 824.2 ~ 848.8 GSM1900 : 1850.2 ~ 1909.8 WCDMA Band II : 1852.4 ~ 1907.6 WCDMA Band IV : 1712.4 ~ 1752.6 WCDMA Band V : 826.4 ~ 846.6 LTE Band 2 : 1850.7 ~ 1909.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) LTE Band 4 : 1710.7 ~ 1754.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) LTE Band 5 : 824.7 ~ 848.3 (BW: 1.4M, 3M, 5M, 10M) LTE Band 7 : 2502.5 ~ 2567.5 (BW: 5M, 10M, 15M, 20M) LTE Band 12 : 699.7 ~ 715.3 (BW: 1.4M, 3M, 5M, 10M) LTE Band 13 : 779.5 ~ 784.5 (BW: 5M, 10M) LTE Band 25 : 1850.7 ~ 1914.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) LTE Band 26 : 814.7 ~ 848.3 (BW: 1.4M, 3M, 5M, 10M, 15M) WLAN : 2412 ~ 2462, 5180 ~ 5240, 5260 ~ 5320, 5500 ~ 5700, 5745 ~ 5825 Bluetooth : 2402 ~ 2480 NFC : 13.56
Uplink Modulations	GSM & GPRS : GMSK EDGE : 8PSK WCDMA : QPSK LTE : QPSK, 16QAM 802.11b : DSSS 802.11a/g/n : OFDM Bluetooth : GFSK, π/4-DQPSK, 8-DPSK NFC : ASK
Maximum Tune-up Conducted Power (Unit: dBm)	Please refer to section 4.6.1 of this report
Antenna Type	WWAN: Dipole Antenna WLAN/ BT: PIFA Antenna (Peak Antenna Gain : -1.9 dBi for 2.4GHz, -2.24 dBi for 5GHz)
EUT Stage	Identical Prototype

Note:

1. The EUT was installed in POS Terminal (Brand: CASTLES TECHNOLOGY, Model: SATURN1000).
2. The above EUT information is declared by manufacturer and for more detailed features description please refers to the manufacturer's specifications or User's Manual.

List of Accessory:

Battery	**Brand Name**	CHENG UEI PRECISION INDUSTRY CO., LTD.
	Model Name	S1-26H
	Power Rating	7.26Vdc, 2600mAh
	Type	Li-ion

3. SAR Measurement System

3.1 Definition of Specific Absorption Rate (SAR)

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.

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

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

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

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

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

3.2 SPEAG DASY52 System

DASY52 system consists of high precision robot, probe alignment sensor, phantom, robot controller, controlled measurement server and near-field probe. The robot includes six axes that can move to the precision position of the DASY52 software defined. The DASY52 software can define the area that is detected by the probe. The robot is connected to controlled box. Controlled measurement server is connected to the controlled robot box. The DAE includes amplifier, signal multiplexing, AD converter, offset measurement and surface detection. It is connected to the Electro-optical coupler (ECO). The ECO performs the conversion form the optical into digital electric signal of the DAE and transfers data to the PC.

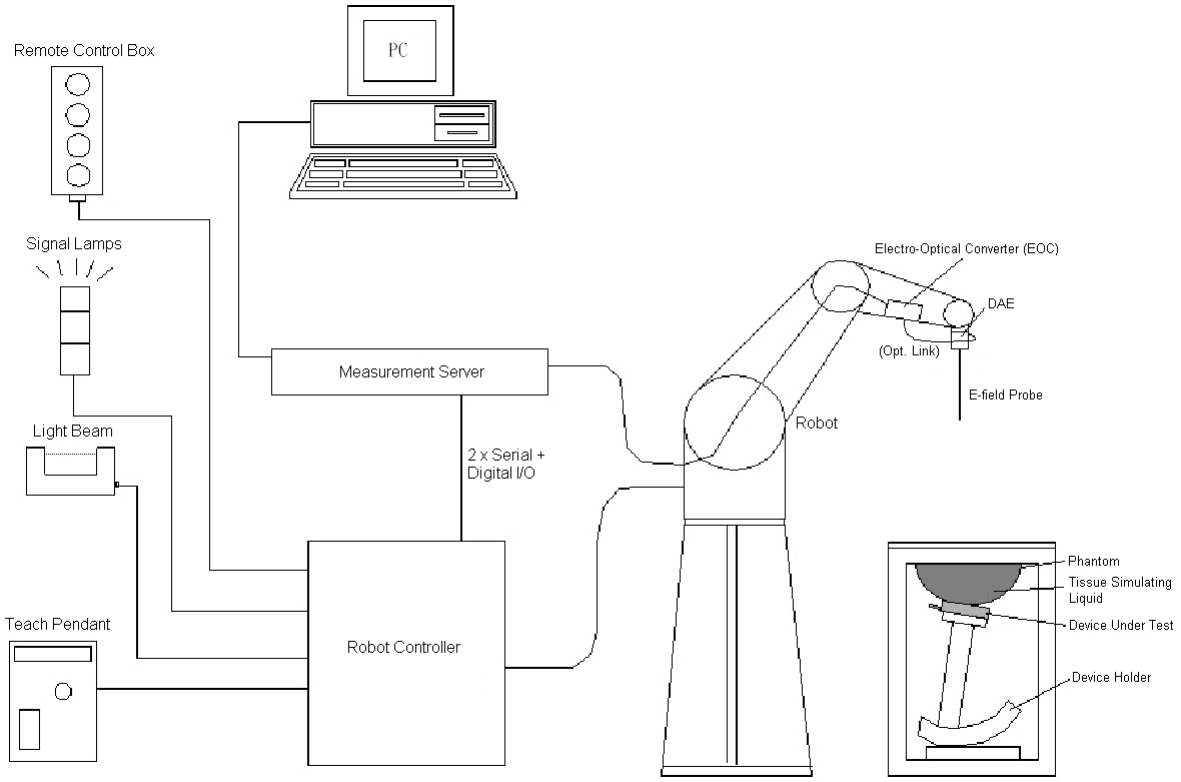


Fig-3.1 SPEAG DASY52 System Setup

3.2.1 Robot

The DASY52 systems use the high precision robots from Stäubli SA (France). For the 6-axis controller system, the robot controller version of CS8c from Stäubli is used. The Stäubli robot series have many features that are important for our application:

- High precision (repeatability ±0.035 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)

Fig-3.2 SPEAG DASY52 System

3.2.2 Probes

The SAR measurement is conducted with the dosimetric probe. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency.

Model	EX3DV4
Construction	Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).
Frequency	10 MHz to 6 GHz Linearity: ± 0.2 dB
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 µW/g to 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm

Model	ES3DV3
Construction	Symmetrical design with triangular core. Interleaved sensors. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).
Frequency	10 MHz to 4 GHz Linearity: ± 0.2 dB
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.3 dB in tissue material (rotation normal to probe axis)
Dynamic Range	5 µW/g to 100 mW/g Linearity: ± 0.2 dB
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm

Model	ET3DV6
Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection system. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Frequency	10 MHz to 2.3 GHz; Linearity: ± 0.2 dB
Directivity	± 0.2 dB in TSL (rotation around probe axis) ± 0.4 dB in TSL (rotation normal to probe axis)
Dynamic Range	5 µW/g to 100 mW/g; Linearity: ± 0.2 dB
Dimensions	Overall length: 337 mm (Tip: 16 mm) Tip diameter: 6.8 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.7 mm

3.2.3 Data Acquisition Electronics (DAE)

Model	DAE3, DAE4
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop.
Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)
Input Offset Voltage	< 5µV (with auto zero)
Input Bias Current	< 50 fA
Dimensions	60 x 60 x 68 mm

3.2.4 Phantoms

Model	Twin SAM	
Construction	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.	
Material	Vinylester, glass fiber reinforced (VE-GF)	
Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)	
Dimensions	Length: 1000 mm Width: 500 mm Height: adjustable feet	
Filling Volume	approx. 25 liters	

Model	ELI	
Construction	Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.	
Material	Vinylester, glass fiber reinforced (VE-GF)	
Shell Thickness	2.0 ± 0.2 mm (bottom plate)	
Dimensions	Major axis: 600 mm Minor axis: 400 mm	
Filling Volume	approx. 30 liters	

3.2.5 Device Holder

Model	Mounting Device	
Construction	In combination with the Twin SAM Phantom or ELI4, the Mounting Device enables the rotation of the mounted transmitter device in spherical coordinates. Rotation point is the ear opening point. Transmitter devices can be easily and accurately positioned according to IEC, IEEE, FCC or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat).	
Material	POM	

Model	Laptop Extensions Kit	
Construction	Simple but effective and easy-to-use extension for Mounting Device that facilitates the testing of larger devices according to IEC 62209-2 (e.g., laptops, cameras, etc.). It is lightweight and fits easily on the upper part of the Mounting Device in place of the phone positioner.	
Material	POM, Acrylic glass, Foam	

3.2.6 System Validation Dipoles

Model	D-Serial	
Construction	Symmetrical dipole with l/4 balun. Enables measurement of feed point impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions.	
Frequency	750 MHz to 5800 MHz	
Return Loss	> 20 dB	
Power Capability	> 100 W (f < 1GHz), > 40 W (f > 1GHz)	

3.2.7 Tissue Simulating Liquids

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. 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. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5% are listed in Table-3.1.

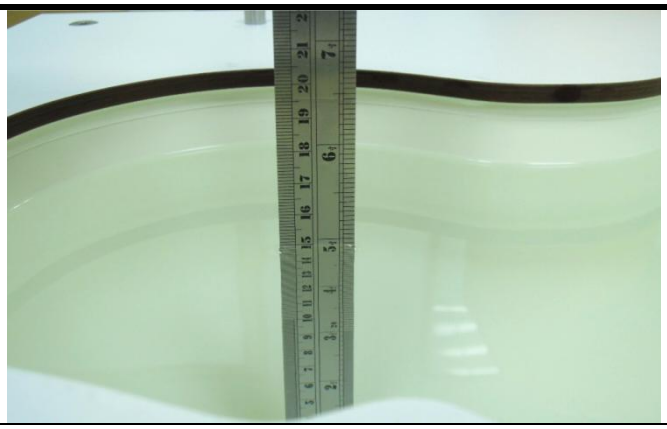
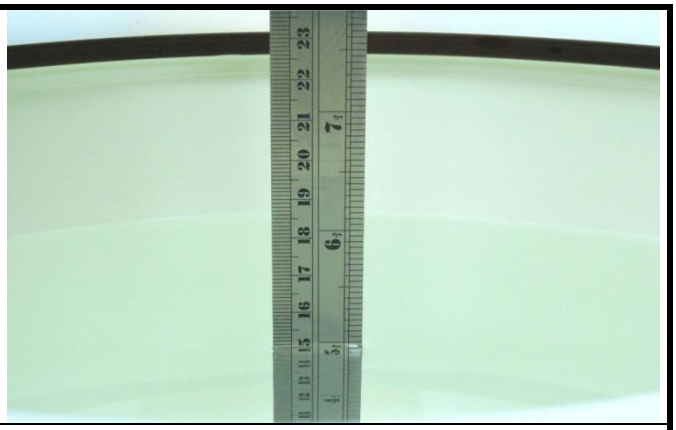
	

Photo of Liquid Height for Head Position	**Photo of Liquid Height for Body Position**

The dielectric properties of the head tissue simulating liquids are defined in IEEE 1528, and KDB 865664 D01 Appendix A. For the body tissue simulating liquids, the dielectric properties are defined in KDB 865664 D01 Appendix A. The dielectric properties of the tissue simulating liquids were verified prior to the SAR evaluation using a dielectric assessment kit and a network analyzer.

Table-3.1 Targets of Tissue Simulating Liquid

Frequency (MHz)	Target Permittivity	Range of ±5%	Target Conductivity	Range of ±5%
For Head				
750	41.9	39.8 ~ 44.0	0.89	0.85 ~ 0.93
835	41.5	39.4 ~ 43.6	0.90	0.86 ~ 0.95
900	41.5	39.4 ~ 43.6	0.97	0.92 ~ 1.02
1450	40.5	38.5 ~ 42.5	1.20	1.14 ~ 1.26
1640	40.3	38.3 ~ 42.3	1.29	1.23 ~ 1.35
1750	40.1	38.1 ~ 42.1	1.37	1.30 ~ 1.44
1800	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
1900	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
2000	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
2300	39.5	37.5 ~ 41.5	1.67	1.59 ~ 1.75
2450	39.2	37.2 ~ 41.2	1.80	1.71 ~ 1.89
2600	39.0	37.1 ~ 41.0	1.96	1.86 ~ 2.06
3500	37.9	36.0 ~ 39.8	2.91	2.76 ~ 3.06
5200	36.0	34.2 ~ 37.8	4.66	4.43 ~ 4.89
5300	35.9	34.1 ~ 37.7	4.76	4.52 ~ 5.00
5500	35.6	33.8 ~ 37.4	4.96	4.71 ~ 5.21
5600	35.5	33.7 ~ 37.3	5.07	4.82 ~ 5.32
5800	35.3	33.5 ~ 37.1	5.27	5.01 ~ 5.53
For Body				
750	55.5	52.7 ~ 58.3	0.96	0.91 ~ 1.01
835	55.2	52.4 ~ 58.0	0.97	0.92 ~ 1.02
900	55.0	52.3 ~ 57.8	1.05	1.00 ~ 1.10
1450	54.0	51.3 ~ 56.7	1.30	1.24 ~ 1.37
1640	53.8	51.1 ~ 56.5	1.40	1.33 ~ 1.47
1750	53.4	50.7 ~ 56.1	1.49	1.42 ~ 1.56
1800	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
1900	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
2000	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
2300	52.9	50.3 ~ 55.5	1.81	1.72 ~ 1.90
2450	52.7	50.1 ~ 55.3	1.95	1.85 ~ 2.05
2600	52.5	49.9 ~ 55.1	2.16	2.05 ~ 2.27
3500	51.3	48.7 ~ 53.9	3.31	3.14 ~ 3.48
5200	49.0	46.6 ~ 51.5	5.30	5.04 ~ 5.57
5300	48.9	46.5 ~ 51.3	5.42	5.15 ~ 5.69
5500	48.6	46.2 ~ 51.0	5.65	5.37 ~ 5.93
5600	48.5	46.1 ~ 50.9	5.77	5.48 ~ 6.06
5800	48.2	45.8 ~ 50.6	6.00	5.70 ~ 6.30

The following table gives the recipes for tissue simulating liquids.

Table-3.2 Recipes of Tissue Simulating Liquid

Tissue Type	Bactericide	DGBE	HEC	NaCl	Sucrose	Triton X-100	Water	Diethylene Glycol Mono-hexylether
H750	0.2	-	0.2	1.5	56.0	-	42.1	-
H835	0.2	-	0.2	1.5	57.0	-	41.1	-
H900	0.2	-	0.2	1.4	58.0	-	40.2	-
H1450	-	43.3	-	0.6	-	-	56.1	-
H1640	-	45.8	-	0.5	-	-	53.7	-
H1750	-	47.0	-	0.4	-	-	52.6	-
H1800	-	44.5	-	0.3	-	-	55.2	-
H1900	-	44.5	-	0.2	-	-	55.3	-
H2000	-	44.5	-	0.1	-	-	55.4	-
H2300	-	44.9	-	0.1	-	-	55.0	-
H2450	-	45.0	-	0.1	-	-	54.9	-
H2600	-	45.1	-	0.1	-	-	54.8	-
H3500	-	8.0	-	0.2	-	20.0	71.8	-
H5G	-	-	-	-	-	17.2	65.5	17.3
B750	0.2	-	0.2	0.8	48.8	-	50.0	-
B835	0.2	-	0.2	0.9	48.5	-	50.2	-
B900	0.2	-	0.2	0.9	48.2	-	50.5	-
B1450	-	34.0	-	0.3	-	-	65.7	-
B1640	-	32.5	-	0.3	-	-	67.2	-
B1750	-	31.0	-	0.2	-	-	68.8	-
B1800	-	29.5	-	0.4	-	-	70.1	-
B1900	-	29.5	-	0.3	-	-	70.2	-
B2000	-	30.0	-	0.2	-	-	69.8	-
B2300	-	31.0	-	0.1	-	-	68.9	-
B2450	-	31.4	-	0.1	-	-	68.5	-
B2600	-	31.8	-	0.1	-	-	68.1	-
B3500	-	28.8	-	0.1	-	-	71.1	-
B5G	-	-	-	-	-	10.7	78.6	10.7

3.3 SAR System Verification

The system check verifies that the system operates within its specifications. It is performed daily or before every SAR measurement. The system check uses normal SAR measurements in the flat section of the phantom with a matched dipole at a specified distance. The system verification setup is shown as below.

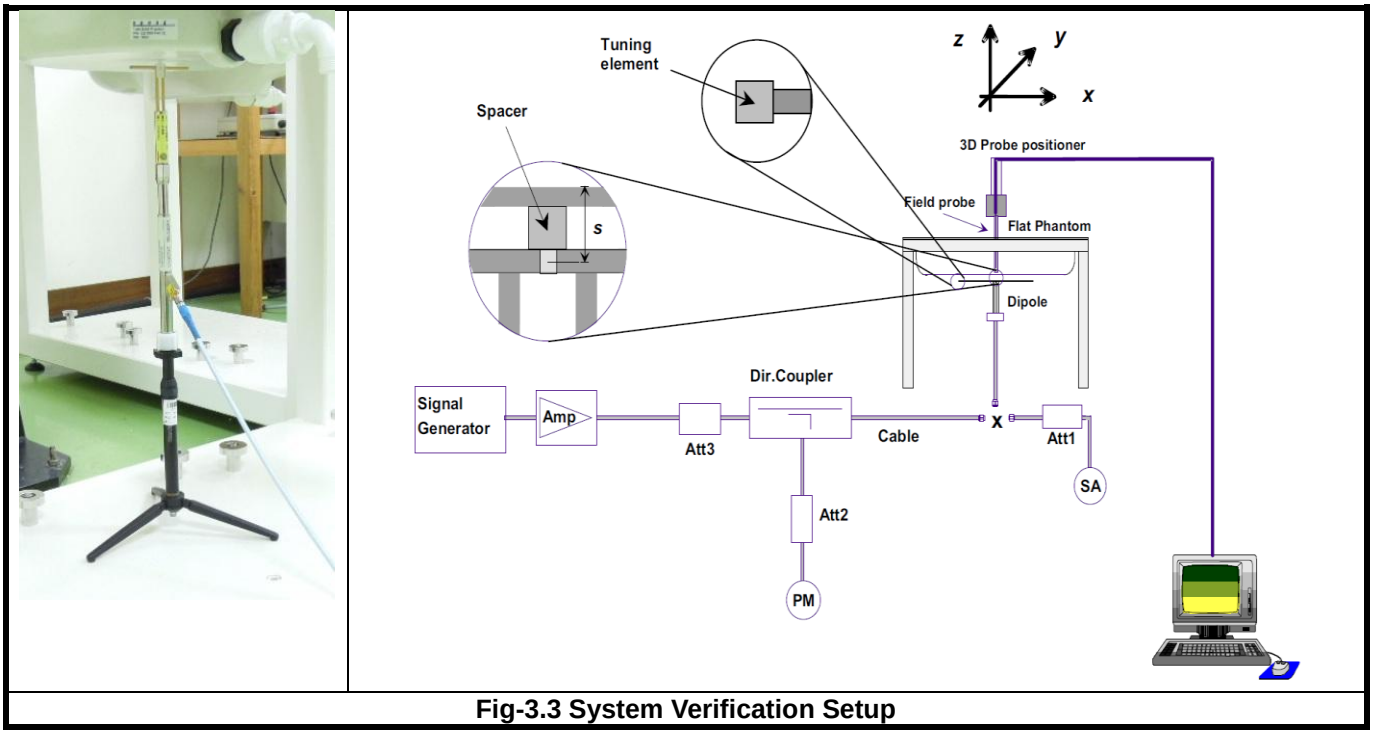


Fig-3.3 System Verification Setup

The validation dipole is placed beneath the flat phantom with the specific spacer in place. The distance spacer is touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The spectrum analyzer measures the forward power at the location of the system check dipole connector. The signal generator is adjusted for the desired forward power (250 mW is used for 700 MHz to 3 GHz, 100 mW is used for 3.5 GHz to 6 GHz) at the dipole connector and the power meter is read at that level. After connecting the cable to the dipole, the signal generator is readjusted for the same reading at power meter.

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

3.4 SAR Measurement Procedure

According to the SAR 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

The SAR measurement procedures for each of test conditions are as follows:

(a) Make EUT to transmit maximum output power
(b) Measure conducted output power through RF cable
(c) Place the EUT in the specific position of phantom
(d) Perform SAR testing steps on the DASY system
(e) Record the SAR value

3.4.1 Area & Zoom Scan Procedure

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 is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. According to KDB 865664 D01, the resolution for Area and Zoom scan is specified in the table below.

Items	<= 2 GHz	2-3 GHz	3-4 GHz	4-5 GHz	5-6 GHz
Area Scan (Δx, Δy)	<= 15 mm	<= 12 mm	<= 12 mm	<= 10 mm	<= 10 mm
Zoom Scan (Δx, Δy)	<= 8 mm	<= 5 mm	<= 5 mm	<= 4 mm	<= 4 mm
Zoom Scan (Δz)	<= 5 mm	<= 5 mm	<= 4 mm	<= 3 mm	<= 2 mm
Zoom Scan Volume	>= 30 mm	>= 30 mm	>= 28 mm	>= 25 mm	>= 22 mm

Note:

When zoom scan is required and report SAR is <= 1.4 W/kg, the zoom scan resolution of Δx / Δy (2-3GHz: <= 8 mm, 3-4GHz: <= 7 mm, 4-6GHz: <= 5 mm) may be applied.

3.4.2 Volume Scan Procedure

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. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

3.4.3 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY 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.

3.4.4 Spatial Peak SAR Evaluation

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

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

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

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

3.4.5 SAR Averaged Methods

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

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

4. SAR Measurement Evaluation

4.1 EUT Configuration and Setting

<Connections between EUT and System Simulator>

For WWAN SAR testing, the EUT was linked and controlled by base station emulator. Communication between the EUT and the emulator was established by air link. The distance between the EUT and the communicating antenna of the emulator is larger than 50 cm and the output power radiated from the emulator antenna is at least 30 dB smaller than the output power of EUT. The EUT was set from the emulator to radiate maximum output power during SAR testing.

<Considerations Related to GSM / GPRS / EDGE for Setup and Testing>

The maximum multi-slot capability supported by this device is as below.

1. This EUT is class B device
2. This EUT supports GPRS multi-slot class 8 (max. uplink: 1, max. downlink: 4, total timeslots: 5)
3. This EUT supports EDGE multi-slot class 8 (max. uplink: 1, max. downlink: 4, total timeslots: 5)

For GSM850 frequency band, the power control level is set to 5 for GSM mode and GPRS (GMSK: CS1), and set to 8 for EDGE (GMSK: MCS1, 8PSK: MCS9). For GSM1900 frequency band, the power control level is set to 0 for GSM mode and GPRS (GMSK: CS1), and set to 2 for EDGE (GMSK: MCS1, 8PSK: MCS9).

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

<Considerations Related to WCDMA for Setup and Testing>

Release 5 HSDPA Data Devices

The 3G SAR test reduction procedure is applied to body SAR with 12.2 kbps RMC as the primary mode. Otherwise, body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, for the highest reported SAR configuration in 12.2 kbps RMC without HSDPA. HSDPA is configured according to the applicable UE category of a test device. The number of HS-DSCH / HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms and a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors (β_c, β_d), and HS-DPCCH power offset parameters (Δ_{ACK}, Δ_{NACK}, Δ_{CQI}) are set according to values indicated in below. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (1)(2)	CM (3) (dB)	MPR (3) (dB)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (4)	15/15 (4)	64	12/15 (4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{HS} = 30/15 * β_c.
Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and Δ_{NACK} = 30/15 with β_{HS} = 30/15 * β_c, and Δ_{CQI} = 24/15 with β_{HS} = 24/15 * β_c.
Note 3: CM = 1 for β_c/β_d = 12/15, β_{HS}/β_c = 24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.
Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

Release 6 HSUPA Data Devices

The 3G SAR test reduction procedure is applied to body SAR with 12.2 kbps RMC as the primary mode. Otherwise, body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA. When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode. Otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing. Due to inner loop power control requirements in HSPA, a communication test set is required for output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA are configured according to the β values indicated in below.

Sub-test	β_c	β_d	β_d (SF)	β_c / β_d	β_{HS} (1)	β_{ec}	β_{ed} (4)(5)	β_{ed} (SF)	β_{ed} (Codes)	CM (2) (dB)	MPR (2)(6) (dB)	AG (5) Index	E-TFCI
1	11/15 (3)	15/15 (3)	64	11/15 (3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed}1: 47/15 β_{ed}2: 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

Note 1: For sub-test 1 to 4, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{HS} = 30/15 * β_c. For sub-test 5, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 5/15 with β_{HS} = 5/15 * β_c.
Note 2: CM = 1 for β_c/β_d = 12/15, β_{HS}/β_c = 24/15. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.
Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.
Note 4: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.
Note 5: β_{ed} can not be set directly; it is set by Absolute Grant Value.
Note 6: For subtests 2, 3 and 4, UE may perform E-DPDCH power scaling at max power which could results in slightly smaller MPR values.

<Considerations Related to LTE for Setup and Testing>

This device contains LTE transmitter which follows 3GPP standards, is category 3, supports both QPSK and QAM modulations, and supported LTE band and channel bandwidth is listed in below. The output power was tested per 3GPP TS 36.521-1 maximum transmit procedures for both QPSK and QAM modulation. The results please refer to section 4.6 of this report.

EUT Supported LTE Band and Channel Bandwidth						
LTE Band	**BW 1.4 MHz**	**BW 3 MHz**	**BW 5 MHz**	**BW 10 MHz**	**BW 15 MHz**	**BW 20 MHz**
2	**V**	**V**	**V**	**V**	**V**	**V**
4	**V**	**V**	**V**	**V**	**V**	**V**
5	**V**	**V**	**V**	**V**		
7			**V**	**V**	**V**	**V**
12	**V**	**V**	**V**	**V**		
13			**V**	**V**		
25	**V**	**V**	**V**	**V**	**V**	**V**
26	**V**	**V**	**V**	**V**	**V**	

The LTE maximum power reduction (MPR) in accordance with 3GPP TS 36.101 is active all times during LTE operation. The allowed MPR for the maximum output power is specified in below.

Modulation	Channel Bandwidth / RB Configurations						LTE MPR Setting (dB)
	BW 1.4 MHz	**BW 3 MHz**	**BW 5 MHz**	**BW 10 MHz**	**BW 15 MHz**	**BW 20 MHz**	
QPSK	**> 5**	**> 4**	**> 8**	**> 12**	**> 16**	**> 18**	**1**
16QAM	**<= 5**	**<= 4**	**<= 8**	**<= 12**	**<= 16**	**<= 18**	**1**
16QAM	**> 5**	**> 4**	**> 8**	**> 12**	**> 16**	**> 18**	**2**
64QAM	**<= 5**	**<= 4**	**<= 8**	**<= 12**	**<= 16**	**<= 18**	**2**
64QAM	**> 5**	**> 4**	**> 8**	**> 12**	**> 16**	**> 18**	**3**

Note: MPR is according to the standard and implemented in the circuit (mandatory).

In addition, the device is compliant with additional maximum power reduction (A-MPR) requirements defined in 3GPP TS 36.101 section 6.2.4 that was disabled for all FCC compliance testing.

During LTE SAR testing, the related parameters of operating band, channel bandwidth, uplink channel number, modulation type, and RB was set in base station simulator. When the EUT has registered and communicated to base station simulator, the simulator set to make EUT transmitting the maximum radiated power.

<Considerations Related to WLAN for Setup and Testing>

In general, various vendor specific external test software and chipset based internal test modes are typically used for SAR measurement. These chipset based test mode utilities are generally hardware and manufacturer dependent, and often include substantial flexibility to reconfigure or reprogram a device. A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement. The test frequencies established using test mode must correspond to the actual channel frequencies. When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92 - 96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. In addition, a periodic transmission duty factor is required for current generation SAR systems to measure SAR correctly. The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

According to KDB 248227 D01, this device has installed WLAN engineering testing software which can provide continuous transmitting RF signal. During WLAN SAR testing, this device was operated to transmit continuously at the maximum transmission duty with specified transmission mode, operating frequency, lowest data rate, and maximum output power.

Initial Test Configuration

An initial test configuration is determined for OFDM transmission modes in 2.4 GHz and 5 GHz bands according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.

Subsequent Test Configuration

SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units. Additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. When the highest reported SAR for the initial test configuration according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.

SAR Test Configuration and Channel Selection

When multiple channel bandwidth configurations in a frequency band have the same specified maximum output power, the initial test configuration is using largest channel bandwidth, lowest order modulation, lowest data rate, and lowest order 802.11 mode (i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n). After an initial test configuration is determined, if multiple test channels have the same measured maximum output power, the channel chosen for SAR measurement is determined according to the following.

1) The channel closest to mid-band frequency is selected for SAR measurement.

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

<Considerations Related to Bluetooth for Setup and Testing>

This device has installed Bluetooth engineering testing software which can provide continuous transmitting RF signal. During Bluetooth SAR testing, this device was operated to transmit continuously at the maximum transmission duty with specified transmission mode, operating frequency, lowest data rate, and maximum output power.

4.2 EUT Testing Position

This EUT was tested in Rear Face of EUT with phantom 0 cm gap for Body SAR. Extremity SAR evaluation was tested in Rear Face, Left Side, and Right Side of the EUT with phantom 0 cm gap.

4.3 Tissue Verification

The measuring results for tissue simulating liquid are shown as below.

Test Date	Tissue Type	Frequency (MHz)	Liquid Temp. (℃)	Measured Conductivity (σ)	Measured Permittivity (ε_r)	Target Conductivity (σ)	Target Permittivity (ε_r)	Conductivity Deviation (%)	Permittivity Deviation (%)
Jan. 09, 2018	Body	750	23.3	0.959	56.411	0.96	55.5	-0.10	1.64
Jan. 08, 2018	Body	835	23.2	1.012	56.703	0.97	55.2	4.33	2.72
Jan. 08, 2018	Body	1750	23.3	1.456	52.165	1.49	53.4	-2.28	-2.31
Jan. 08, 2018	Body	1900	23.3	1.584	51.781	1.52	53.3	4.21	-2.85
Apr. 23, 2018	Body	2450	23.6	2.02	50.572	1.95	52.7	3.59	-4.04
Apr. 23, 2018	Body	5250	23.6	5.24	51.015	5.36	48.9	-2.24	4.33
Apr. 23, 2018	Body	5600	23.6	5.825	50.395	5.77	48.5	0.95	3.91
Apr. 23, 2018	Body	5800	23.6	6.124	49.901	6	48.2	2.07	3.53
Jan. 09, 2018	Body	750	23.3	0.959	56.411	0.96	55.5	-0.10	1.64
Jan. 08, 2018	Body	835	23.2	1.012	56.703	0.97	55.2	4.33	2.72
Jan. 08, 2018	Body	1750	23.3	1.456	52.165	1.49	53.4	-2.28	-2.31
Jan. 08, 2018	Body	1900	23.3	1.584	51.781	1.52	53.3	4.21	-2.85
Apr. 23, 2018	Body	2450	23.6	2.02	50.572	1.95	52.7	3.59	-4.04
Apr. 23, 2018	Body	5250	23.6	5.24	51.015	5.36	48.9	-2.24	4.33
Apr. 23, 2018	Body	5600	23.6	5.825	50.395	5.77	48.5	0.95	3.91
Apr. 23, 2018	Body	5800	23.6	6.124	49.901	6	48.2	2.07	3.53

Note:

The dielectric properties of the tissue simulating liquid must be measured within 24 hours before the SAR testing and within ±5% of the target values. Liquid temperature during the SAR testing must be within ±2 ℃.

4.4 System Validation

The SAR measurement system was validated according to procedures in KDB 865664 D01. The validation status in tabulated summary is as below.

Test Date	Probe S/N	Calibration Point		Measured Conductivity (σ)	Measured Permittivity (ε_r)	Validation for CW			Validation for Modulation		
						Sensitivity Range	Probe Linearity	Probe Isotropy	Modulation Type	Duty Factor	PAR
Jan. 09, 2018	3650	Body	750	0.959	56.411	Pass	Pass	Pass	N/A	N/A	N/A
Jan. 08, 2018	3650	Body	835	1.012	56.703	Pass	Pass	Pass	GMSK	Pass	N/A
Jan. 08, 2018	3650	Body	1750	1.456	52.165	Pass	Pass	Pass	N/A	N/A	N/A
Jan. 08, 2018	3650	Body	1900	1.584	51.781	Pass	Pass	Pass	GMSK	Pass	N/A
Apr. 23, 2018	3650	Body	2450	2.02	50.572	Pass	Pass	Pass	OFDM	N/A	Pass
Apr. 23, 2018	3650	Body	5250	5.24	51.015	Pass	Pass	Pass	OFDM	N/A	Pass
Apr. 23, 2018	3650	Body	5600	5.825	50.395	Pass	Pass	Pass	OFDM	N/A	Pass
Apr. 23, 2018	3650	Body	5800	6.124	49.901	Pass	Pass	Pass	OFDM	N/A	Pass
Jan. 09, 2018	3650	Body	750	0.959	56.411	Pass	Pass	Pass	N/A	N/A	N/A
Jan. 08, 2018	3650	Body	835	1.012	56.703	Pass	Pass	Pass	GMSK	Pass	N/A
Jan. 08, 2018	3650	Body	1750	1.456	52.165	Pass	Pass	Pass	N/A	N/A	N/A
Jan. 08, 2018	3650	Body	1900	1.584	51.781	Pass	Pass	Pass	GMSK	Pass	N/A
Apr. 23, 2018	3650	Body	2450	2.02	50.572	Pass	Pass	Pass	OFDM	N/A	Pass
Apr. 23, 2018	3650	Body	5250	5.24	51.015	Pass	Pass	Pass	OFDM	N/A	Pass
Apr. 23, 2018	3650	Body	5600	5.825	50.395	Pass	Pass	Pass	OFDM	N/A	Pass
Apr. 23, 2018	3650	Body	5800	6.124	49.901	Pass	Pass	Pass	OFDM	N/A	Pass

4.5 System Verification

The measuring result for system verification is tabulated as below.

Test Date	Mode	Frequency (MHz)	1W Target SAR-1g (W/kg)	Measured SAR-1g (W/kg)	Normalized to 1W SAR-1g (W/kg)	Deviation (%)	Dipole S/N	Probe S/N	DAE S/N
Jan. 09, 2018	Body	750	8.72	2.17	8.68	-0.46	1013	3650	1431
Jan. 08, 2018	Body	835	9.61	2.29	9.16	-4.68	4d121	3650	1431
Jan. 08, 2018	Body	1750	37.10	9.46	37.84	1.99	1055	3650	1431
Jan. 08, 2018	Body	1900	40.10	10.50	42.00	4.74	5d036	3650	1431
Apr. 23, 2018	Body	2450	49.70	12.00	48.00	-3.42	737	3650	861
Apr. 23, 2018	Body	5250	76.50	7.85	78.50	2.61	1019	3650	861
Apr. 23, 2018	Body	5600	79.70	7.76	77.60	-2.63	1019	3650	861
Apr. 23, 2018	Body	5800	76.90	7.94	79.40	3.25	1019	3650	861

Test Date	Mode	Frequency (MHz)	1W Target SAR-10g (W/kg)	Measured SAR-10g (W/kg)	Normalized to 1W SAR-10g (W/kg)	Deviation (%)	Dipole S/N	Probe S/N	DAE S/N
Jan. 09, 2018	Body	750	5.72	1.47	5.88	2.80	1013	3650	1431
Jan. 08, 2018	Body	835	6.28	1.51	6.04	-3.82	4d121	3650	1431
Jan. 08, 2018	Body	1750	19.80	5.08	20.32	2.63	1055	3650	1431
Jan. 08, 2018	Body	1900	21.10	5.55	22.20	5.21	5d036	3650	1431
Apr. 23, 2018	Body	2450	23.40	5.54	22.16	-5.30	737	3650	861
Apr. 23, 2018	Body	5250	21.30	2.24	22.40	5.16	1019	3650	861
Apr. 23, 2018	Body	5600	22.30	2.19	21.90	-1.79	1019	3650	861
Apr. 23, 2018	Body	5800	21.30	2.24	22.40	5.16	1019	3650	861

Note:

Comparing to the reference SAR value provided by SPEAG, the validation data should be within its specification of 10 %. The result indicates the system check can meet the variation criterion and the plots can be referred to Appendix A of this report.

4.6 Maximum Output Power

4.6.1 Maximum Target Conducted Power

The maximum conducted average power (Unit: dBm) including tune-up tolerance is shown as below.

Mode	Maximum Burst-Averaged Output Power		Maximum Frame-Averaged Output Power	
	GSM850	GSM1900	GSM850	GSM1900
GPRS (GMSK, 1Tx-slot)	32.50	30.00	23.50	21.00
GPRS (GMSK, 2Tx-slot)	32.00	29.50	26.00	23.50
GPRS (GMSK, 3Tx-slot)	30.50	29.50	26.24	25.24
GPRS (GMSK, 4Tx-slot)	29.00	29.50	26.00	26.50
EDGE (8PSK, 1Tx-slot)	26.50	26.00	17.50	17.00
EDGE (8PSK, 2Tx-slot)	26.50	26.00	20.50	20.00
EDGE (8PSK, 3Tx-slot)	26.50	26.00	22.24	21.74
EDGE (8PSK, 4Tx-slot)	26.00	26.00	23.00	23.00

Note:

1. SAR testing was performed on the maximum frame-averaged power mode.
2. The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:
   Frame-averaged power = 10 x log (Burst-averaged power mW x Slot used / 8)

Mode	WCDMA Band II	WCDMA Band IV	WCDMA Band V
RMC 12.2K	23.00	23.00	23.00
HSDPA / HSUPA / DC-HSDPA	23.00	23.00	23.00

Mode	LTE 2	LTE 4	LTE 5	LTE 7
Maximum Target Power	22.00	21.50	22.50	20.00

Mode	LTE 12	LTE 13	LTE 25	LTE 26
Maximum Target Power	21.50	21.00	21.50	22.00

<WLAN 2.4G>

Mode	Channel	Frequency (MHz)	Average Power
802.11b	1	2412	15.5
	6	2437	15.5
	11	2462	15.5
802.11g	1	2412	13.5
	6	2437	13.5
	11	2462	13.5
802.11n (HT20)	1	2412	13.0
	6	2437	13.0
	11	2462	13.0
802.11n (HT40)	3	2422	13.0
	6	2437	13.0
	9	2452	13.0

<WLAN 5.2G>

Mode	Channel	Frequency (MHz)	Average Power
802.11a	36	5180	12.5
	40	5200	12.5
	44	5220	12.5
	48	5240	12.5
802.11n (HT20)	36	5180	13.5
	40	5200	13.5
	44	5220	13.5
	48	5240	13.5
802.11n (HT40)	38	5190	13.0
	46	5230	13.0

<WLAN 5.3G>

Mode	Channel	Frequency (MHz)	Average Power
802.11a	52	5260	13.0
	56	5280	13.0
	60	5300	13.0
	64	5320	13.0
802.11n (HT20)	52	5260	14.0
	56	5280	14.0
	60	5300	14.0
	64	5320	14.0
802.11n (HT40)	54	5270	13.0
	62	5310	13.0

<WLAN 5.6G>

Mode	Channel	Frequency (MHz)	Average Power
802.11a	100	5500	13.0
	116	5580	13.0
	120	5600	13.0
	124	5620	13.0
	132	5660	13.0
	140	5700	13.0
802.11n (HT20)	100	5500	13.0
	116	5580	13.0
	120	5600	13.0
	124	5620	13.0
	132	5660	13.0
	140	5700	13.0
802.11n (HT40)	102	5510	12.0
	110	5550	12.0
	118	5590	12.0
	126	5630	12.0
	134	5670	12.5

<WLAN 5.8G>

Mode	Channel	Frequency (MHz)	Average Power
802.11a	149	5745	12.0
	153	5765	12.0
	157	5785	12.0
	161	5805	12.0
	165	5825	12.0
802.11n (HT20)	149	5745	12.0
	153	5765	12.0
	157	5785	12.0
	161	5805	12.0
	165	5825	12.0
802.11n (HT40)	151	5755	12.0
	159	5795	12.0

<Bluetooth>

Mode	Channel	Frequency (MHz)	Average Power
Bluetooth EDR	0	2402	7.0
	39	2441	7.0
	78	2480	7.0

4.6.2 Measured Conducted Power Result

The measuring conducted average power (Unit: dBm) is shown as below.

Band	GSM850			GSM1900		
Channel	128	189	251	512	661	810
Frequency (MHz)	824.2	836.4	848.8	1850.2	1880.0	1909.8
Maximum Burst-Averaged Output Power						
GPRS (GMSK, 1Tx-slot)	32.48	32.43	32.06	29.56	29.40	29.23
GPRS (GMSK, 2Tx-slot)	31.93	31.88	31.51	29.40	29.24	29.07
GPRS (GMSK, 3Tx-slot)	30.13	30.08	29.71	29.27	29.11	28.94
GPRS (GMSK, 4Tx-slot)	28.99	28.94	28.57	29.04	28.88	28.71
EDGE (8PSK, 1Tx-slot)	26.38	26.33	25.96	25.56	25.40	25.23
EDGE (8PSK, 2Tx-slot)	26.29	26.24	25.87	25.35	25.19	25.02
EDGE (8PSK, 3Tx-slot)	26.09	26.04	25.67	25.14	24.98	24.81
EDGE (8PSK, 4Tx-slot)	25.89	25.84	25.47	25.11	24.95	24.78

Band	WCDMA Band II			WCDMA Band IV			WCDMA Band V			3GPP MPR (dB)
Channel	9262	9400	9538	1312	1413	1513	4132	4182	4233	
Frequency (MHz)	1852.4	1880.0	1907.6	1712.4	1732.6	1752.6	826.4	836.4	846.6	
RMC 12.2K	22.58	22.69	22.41	22.51	22.34	22.30	22.78	22.77	22.59	-
HSDPA Subtest-1	21.80	21.91	21.63	21.85	21.68	21.64	22.09	22.08	21.90	0
HSDPA Subtest-2	21.57	21.68	21.40	22.09	21.92	21.88	22.14	22.13	21.95	0
HSDPA Subtest-3	21.15	21.26	20.98	21.33	21.16	21.12	21.37	21.36	21.18	0.5
HSDPA Subtest-4	21.03	21.14	20.86	21.31	21.14	21.10	21.34	21.33	21.15	0.5
DC-HSDPA Subtest-1	22.54	22.65	22.37	22.47	22.30	22.26	22.75	22.74	22.56	0
DC-HSDPA Subtest-2	21.76	21.87	21.59	21.81	21.64	21.60	22.06	22.05	21.87	0
DC-HSDPA Subtest-3	21.53	21.64	21.36	22.05	21.88	21.84	22.11	22.10	21.92	0.5
DC-HSDPA Subtest-4	21.11	21.22	20.94	21.29	21.12	21.08	21.34	21.33	21.15	0.5
HSUPA Subtest-1	20.06	20.17	19.89	20.49	20.32	20.28	20.29	20.28	20.10	0
HSUPA Subtest-2	20.27	20.38	20.10	19.22	19.05	19.01	19.25	19.24	19.06	2
HSUPA Subtest-3	21.35	21.46	21.18	20.74	20.57	20.53	20.83	20.82	20.64	1
HSUPA Subtest-4	20.87	20.98	20.70	20.96	20.89	20.85	20.81	20.80	20.62	2
HSUPA Subtest-5	21.77	21.88	21.60	22.08	21.91	21.87	22.20	22.19	22.01	0

LTE Band 2															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		18700	18900	19100				Channel		18675	18900	19125	
		Frequency (MHz)		1860.0	1880.0	1900.0				Frequency (MHz)		1857.5	1880.0	1902.5	
20M	QPSK	1	0	21.56	22.00	21.38	0	15M	QPSK	1	0	21.54	21.92	21.36	0
		1	50	21.15	21.62	20.97	0			1	37	21.13	21.60	20.95	0
		1	99	20.96	21.43	20.78	0			1	74	20.94	21.41	20.76	0
		50	0	20.37	20.84	20.19	1			36	0	20.35	20.82	20.17	1
		50	25	20.26	20.73	20.08	1			36	19	20.24	20.71	20.06	1
		50	50	20.24	20.71	20.06	1			36	39	20.22	20.69	20.04	1
		100	0	20.38	20.85	20.20	1			75	0	20.36	20.83	20.18	1
	16QAM	1	0	20.54	20.91	20.36	1		16QAM	1	0	20.52	20.99	20.34	1
		1	50	20.13	20.60	19.95	1			1	37	20.11	20.58	19.93	1
		1	99	19.94	20.41	19.76	1			1	74	19.92	20.39	19.74	1
		50	0	19.35	19.82	19.17	2			36	0	19.33	19.80	19.15	2
		50	25	19.24	19.71	19.06	2			36	19	19.22	19.69	19.04	2
		50	50	19.22	19.69	19.04	2			36	39	19.20	19.67	19.02	2
		100	0	19.36	19.83	19.18	2			75	0	19.34	19.81	19.16	2
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		18650	18900	19150				Channel		18625	18900	19175	
		Frequency (MHz)		1855.0	1880.0	1905.0				Frequency (MHz)		1852.5	1880.0	1907.5	
10M	QPSK	1	0	21.53	21.98	21.35	0	5M	QPSK	1	0	21.51	21.98	21.33	0
		1	24	21.12	21.59	20.94	0			1	12	21.10	21.57	20.92	0
		1	49	20.93	21.40	20.75	0			1	24	20.91	21.38	20.73	0
		25	0	20.34	20.81	20.16	1			12	0	20.32	20.79	20.14	1
		25	12	20.23	20.70	20.05	1			12	6	20.21	20.68	20.03	1
		25	25	20.21	20.68	20.03	1			12	13	20.19	20.66	20.01	1
		50	0	20.35	20.82	20.17	1			25	0	20.33	20.80	20.15	1
	16QAM	1	0	20.50	20.97	20.32	1		16QAM	1	0	20.47	20.94	20.29	1
		1	24	20.09	20.56	19.91	1			1	12	20.06	20.53	19.88	1
		1	49	19.90	20.37	19.72	1			1	24	19.87	20.34	19.69	1
		25	0	19.31	19.78	19.13	2			12	0	19.28	19.75	19.10	2
		25	12	19.20	19.67	19.02	2			12	6	19.17	19.64	18.99	2
		25	25	19.18	19.65	19.00	2			12	13	19.15	19.62	18.97	2
		50	0	19.32	19.79	19.14	2			25	0	19.29	19.76	19.11	2
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		18615	18900	19185				Channel		18607	18900	19193	
		Frequency (MHz)		1851.5	1880.0	1908.5				Frequency (MHz)		1850.7	1880.0	1909.3	
3M	QPSK	1	0	21.50	21.97	21.32	0	1.4M	QPSK	1	0	21.48	21.95	21.30	0
		1	7	21.09	21.56	20.91	0			1	2	21.07	21.54	20.89	0
		1	14	20.90	21.37	20.72	0			1	5	20.88	21.35	20.70	0
		8	0	20.31	20.78	20.13	1			3	0	20.82	21.29	20.64	0
		8	3	20.20	20.67	20.02	1			3	1	20.71	21.18	20.53	0
		8	7	20.18	20.65	20.00	1			3	3	20.69	21.16	20.51	0
		15	0	20.32	20.79	20.14	1			6	0	20.30	20.77	20.12	1
	16QAM	1	0	20.45	20.92	20.27	1		16QAM	1	0	20.42	20.89	20.24	1
		1	7	20.04	20.51	19.86	1			1	2	20.01	20.48	19.83	1
		1	14	19.85	20.32	19.67	1			1	5	19.82	20.29	19.64	1
		8	0	19.26	19.73	19.08	2			3	0	19.76	20.23	19.58	1
		8	3	19.15	19.62	18.97	2			3	1	19.65	20.12	20.00	1
		8	7	19.13	19.60	18.95	2			3	3	19.63	20.10	19.98	1
		15	0	19.27	19.74	19.09	2			6	0	19.24	19.71	19.06	2

LTE Band 4															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20050	20175	20300				Channel		20025	20175	20325	
		Frequency (MHz)		1720.0	1732.5	1745.0				Frequency (MHz)		1717.5	1732.5	1747.5	
20M	QPSK	1	0	21.09	21.15	21.37	0	15M	QPSK	1	0	21.07	21.13	21.35	0
		1	50	20.96	21.02	21.24	0			1	37	20.94	21.00	21.22	0
		1	99	21.01	21.07	21.29	0			1	74	20.99	21.05	21.27	0
		50	0	20.00	20.06	20.28	1			36	0	19.98	20.04	20.26	1
		50	25	19.86	19.92	20.14	1			36	19	19.84	19.90	20.12	1
		50	50	19.89	19.95	20.17	1			36	39	19.87	19.93	20.15	1
		100	0	19.95	20.01	20.23	1			75	0	19.93	19.99	20.21	1
	16QAM	1	0	20.07	20.13	20.35	1		16QAM	1	0	20.04	20.10	20.32	1
		1	50	19.94	20.00	20.22	1			1	37	19.91	19.97	20.19	1
		1	99	19.99	20.05	20.27	1			1	74	19.96	20.02	20.24	1
		50	0	18.98	19.04	19.26	2			36	0	18.95	19.01	19.23	2
		50	25	18.84	18.90	19.12	2			36	19	18.81	18.87	19.09	2
		50	50	18.87	18.93	19.15	2			36	39	18.84	18.90	19.12	2
		100	0	18.93	18.99	19.21	2			75	0	18.90	18.96	19.18	2
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20000	20175	20350				Channel		19975	20175	20375	
		Frequency (MHz)		1715.0	1732.5	1750.0				Frequency (MHz)		1712.5	1732.5	1752.5	
10M	QPSK	1	0	21.05	21.11	21.33	0	5M	QPSK	1	0	21.04	21.10	21.32	0
		1	24	20.92	20.98	21.20	0			1	12	20.91	20.97	21.19	0
		1	49	20.97	21.03	21.25	0			1	24	20.96	21.02	21.24	0
		25	0	19.96	20.02	20.24	1			12	0	19.95	20.01	20.23	1
		25	12	19.82	19.88	20.10	1			12	6	19.81	19.87	20.09	1
		25	25	19.85	19.91	20.13	1			12	13	19.84	19.90	20.12	1
		50	0	19.91	19.97	20.19	1			25	0	19.90	19.96	20.18	1
	16QAM	1	0	20.01	20.07	20.29	1		16QAM	1	0	19.99	20.05	20.27	1
		1	24	19.88	19.94	20.16	1			1	12	19.86	19.92	20.14	1
		1	49	19.93	19.99	20.21	1			1	24	19.91	19.97	20.19	1
		25	0	18.92	18.98	19.20	2			12	0	18.90	18.96	19.18	2
		25	12	18.78	18.84	19.06	2			12	6	18.76	18.82	19.04	2
		25	25	18.81	18.87	19.09	2			12	13	18.79	18.85	19.07	2
		50	0	18.87	18.93	19.15	2			25	0	18.85	18.91	19.13	2
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		19965	20175	20385				Channel		19957	20175	20393	
		Frequency (MHz)		1711.5	1732.5	1753.5				Frequency (MHz)		1710.7	1732.5	1754.3	
3M	QPSK	1	0	21.03	21.09	21.31	0	1.4M	QPSK	1	0	21.01	21.07	21.29	0
		1	7	20.90	20.96	21.18	0			1	2	20.88	20.94	21.16	0
		1	14	20.95	21.01	21.23	0			1	5	20.93	20.99	21.21	0
		8	0	19.94	20.00	20.22	1			3	0	19.92	19.98	20.20	0
		8	3	19.80	19.86	20.08	1			3	1	19.78	19.84	20.06	0
		8	7	19.83	19.89	20.11	1			3	3	19.81	19.87	20.09	0
		15	0	19.89	19.95	20.17	1			6	0	19.87	19.93	20.15	1
	16QAM	1	0	19.98	20.04	20.26	1		16QAM	1	0	19.95	20.01	20.23	1
		1	7	19.85	19.91	20.13	1			1	2	19.82	19.88	20.10	1
		1	14	19.90	19.96	20.18	1			1	5	19.87	19.93	20.15	1
		8	0	18.89	18.95	19.17	2			3	0	18.86	18.92	19.14	1
		8	3	18.75	18.81	19.03	2			3	1	18.72	18.78	19.00	1
		8	7	18.78	18.84	19.06	2			3	3	18.75	18.81	19.03	1
		15	0	18.84	18.90	19.12	2			6	0	18.81	18.87	19.09	2

LTE Band 5																
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20450	20525	20600				Channel		20425	20525	20625	
		Frequency (MHz)		829.0	836.5	844.0				Frequency (MHz)		826.5	836.5	846.5	
10M	QPSK	1	0	21.68	22.14	21.81	0	5M	QPSK	1	0	21.66	22.12	21.79	0
		1	24	21.63	22.09	21.76	0			1	12	21.61	22.07	21.74	0
		1	49	21.50	21.96	21.63	0			1	24	21.48	21.94	21.61	0
		25	0	20.54	21.00	20.67	1			12	0	20.52	20.98	20.65	1
		25	12	20.35	20.81	20.48	1			12	6	20.33	20.79	20.46	1
		25	25	20.24	20.70	20.37	1			12	13	20.22	20.68	20.35	1
		50	0	20.40	20.86	20.53	1			25	0	20.38	20.84	20.51	1
	16QAM	1	0	20.66	21.12	20.79	1		16QAM	1	0	20.63	21.09	20.76	1
		1	24	20.61	21.07	20.74	1			1	12	20.58	21.04	20.71	1
		1	49	20.48	20.94	20.61	1			1	24	20.45	20.91	20.58	1
		25	0	19.52	19.98	19.65	2			12	0	19.49	19.95	19.62	2
		25	12	19.33	19.79	19.46	2			12	6	19.30	19.76	19.43	2
		25	25	19.22	19.68	19.35	2			12	13	19.19	19.65	19.32	2
		50	0	19.38	19.84	19.51	2			25	0	19.35	19.81	19.48	2
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20415	20525	20635				Channel		20407	20525	20643	
		Frequency (MHz)		825.5	836.5	847.5				Frequency (MHz)		824.7	836.5	848.3	
3M	QPSK	1	0	21.65	22.11	21.78	0	1.4M	QPSK	1	0	21.63	22.09	21.76	0
		1	7	21.60	22.06	21.73	0			1	2	21.58	22.04	21.71	0
		1	14	21.47	21.93	21.60	0			1	5	21.45	21.91	21.58	0
		8	0	20.51	20.97	20.64	1			3	0	20.74	21.20	20.87	0
		8	3	20.32	20.78	20.45	1			3	1	20.55	21.01	20.68	0
		8	7	20.21	20.67	20.34	1			3	3	20.51	20.90	20.57	0
		15	0	20.37	20.83	20.50	1			6	0	20.35	20.81	20.48	1
	16QAM	1	0	20.61	21.07	20.74	1		16QAM	1	0	20.57	21.03	20.70	1
		1	7	20.56	21.02	20.69	1			1	2	20.52	20.98	20.65	1
		1	14	20.43	20.89	20.56	1			1	5	20.39	20.85	20.52	1
		8	0	19.47	19.93	19.60	2			3	0	19.69	20.15	19.82	1
		8	3	19.28	19.74	19.41	2			3	1	19.60	19.96	19.63	1
		8	7	19.17	19.63	19.30	2			3	3	19.59	19.85	19.52	1
		15	0	19.33	19.79	19.46	2			6	0	19.29	19.75	19.42	2

LTE Band 7															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20850	21100	21350				Channel		20825	21100	21375	
		Frequency (MHz)		2510.0	2535.0	2560.0				Frequency (MHz)		2507.5	2535.0	2562.5	
20M	QPSK	1	0	19.38	19.53	19.63	0	15M	QPSK	1	0	19.35	19.50	19.60	0
		1	50	19.26	19.41	19.51	0			1	37	19.23	19.38	19.48	0
		1	99	19.21	19.36	19.46	0			1	74	19.18	19.33	19.43	0
		50	0	18.36	18.51	18.61	1			36	0	18.33	18.48	18.58	1
		50	25	18.41	18.56	18.66	1			36	19	18.38	18.53	18.63	1
		50	50	18.29	18.44	18.54	1			36	39	18.26	18.41	18.51	1
		100	0	18.42	18.57	18.67	1			75	0	18.39	18.54	18.64	1
	16QAM	1	0	18.36	18.51	18.61	1		16QAM	1	0	18.32	18.47	18.57	1
		1	50	18.24	18.39	18.49	1			1	37	18.20	18.35	18.45	1
		1	99	18.19	18.34	18.44	1			1	74	18.15	18.30	18.40	1
		50	0	17.34	17.49	17.59	2			36	0	17.30	17.45	17.55	2
		50	25	17.39	17.54	17.64	2			36	19	17.35	17.50	17.60	2
		50	50	17.27	17.42	17.52	2			36	39	17.23	17.38	17.48	2
		100	0	17.40	17.55	17.65	2			75	0	17.36	17.51	17.61	2
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20800	21100	21400				Channel		20775	21100	21425	
		Frequency (MHz)		2505.0	2535.0	2565.0				Frequency (MHz)		2502.5	2535.0	2567.5	
10M	QPSK	1	0	19.34	19.49	19.59	0	5M	QPSK	1	0	19.33	19.48	19.58	0
		1	24	19.22	19.37	19.47	0			1	12	19.21	19.36	19.46	0
		1	49	19.17	19.32	19.42	0			1	24	19.16	19.31	19.41	0
		25	0	18.32	18.47	18.57	1			12	0	18.31	18.46	18.56	1
		25	12	18.37	18.52	18.62	1			12	6	18.36	18.51	18.61	1
		25	25	18.25	18.40	18.50	1			12	13	18.24	18.39	18.49	1
		50	0	18.38	18.53	18.63	1			25	0	18.37	18.52	18.62	1
	16QAM	1	0	18.30	18.45	18.55	1		16QAM	1	0	18.27	18.42	18.52	1
		1	24	18.18	18.33	18.43	1			1	12	18.15	18.30	18.40	1
		1	49	18.13	18.28	18.38	1			1	24	18.10	18.25	18.35	1
		25	0	17.28	17.43	17.53	2			12	0	17.25	17.40	17.50	2
		25	12	17.33	17.48	17.58	2			12	6	17.30	17.45	17.55	2
		25	25	17.21	17.36	17.46	2			12	13	17.18	17.33	17.43	2
		50	0	17.34	17.49	17.59	2			25	0	17.31	17.46	17.56	2

LTE Band 12															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23060	23095	23130				Channel		23035	23095	23155	
		Frequency (MHz)		704.0	707.5	711.0				Frequency (MHz)		701.5	707.5	713.5	
10M	QPSK	1	0	20.88	21.25	21.20	0	5M	QPSK	1	0	20.86	21.23	21.18	0
		1	24	20.85	21.22	21.17	0			1	12	20.83	21.20	21.15	0
		1	49	20.82	21.19	21.14	0			1	24	20.80	21.17	21.12	0
		25	0	19.84	20.21	20.16	1			12	0	19.82	20.19	20.14	1
		25	12	19.83	20.20	20.15	1			12	6	19.81	20.18	20.13	1
		25	25	19.81	20.18	20.13	1			12	13	19.79	20.16	20.11	1
		50	0	19.89	20.26	20.21	1			25	0	19.87	20.24	20.19	1
	16QAM	1	0	19.86	20.23	20.18	1		16QAM	1	0	19.83	20.20	20.15	1
		1	24	19.83	20.20	20.15	1			1	12	19.80	20.17	20.12	1
		1	49	19.80	20.17	20.12	1			1	24	19.77	20.14	20.09	1
		25	0	18.82	19.19	19.14	2			12	0	18.79	19.16	19.11	2
		25	12	18.81	19.18	19.13	2			12	6	18.78	19.15	19.10	2
		25	25	18.79	19.16	19.11	2			12	13	18.76	19.13	19.08	2
		50	0	18.87	19.24	19.19	2			25	0	18.84	19.21	19.16	2
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23025	23095	23165				Channel		23017	23095	23173	
		Frequency (MHz)		700.5	707.5	714.5				Frequency (MHz)		699.7	707.5	715.3	
3M	QPSK	1	0	20.84	21.21	21.16	0	1.4M	QPSK	1	0	20.83	21.20	21.15	0
		1	7	20.81	21.18	21.13	0			1	2	20.80	21.17	21.12	0
		1	14	20.78	21.15	21.10	0			1	5	20.77	21.14	21.09	0
		8	0	19.80	20.17	20.12	1			3	0	19.79	20.16	20.11	0
		8	3	19.79	20.16	20.11	1			3	1	19.78	20.15	20.10	0
		8	7	19.77	20.14	20.09	1			3	3	19.76	20.13	20.08	0
		15	0	19.85	20.22	20.17	1			6	0	19.84	20.21	20.16	1
	16QAM	1	0	19.80	20.17	20.12	1		16QAM	1	0	19.78	20.15	20.10	1
		1	7	19.77	20.14	20.09	1			1	2	19.75	20.12	20.07	1
		1	14	19.74	20.11	20.06	1			1	5	19.72	20.09	20.04	1
		8	0	18.76	19.13	19.08	2			3	0	18.74	19.11	19.06	1
		8	3	18.75	19.12	19.07	2			3	1	18.73	19.10	19.05	1
		8	7	18.73	19.10	19.05	2			3	3	18.71	19.08	19.03	1
		15	0	18.81	19.18	19.13	2			6	0	18.79	19.16	19.11	2

LTE Band 13															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel			23230					Channel		23205	23230	23225	
		Frequency (MHz)			782.0					Frequency (MHz)		779.5	782.0	784.5	
10M	QPSK	1	0		20.73		0	5M	QPSK	1	0		19.69		0
		1	24		20.65		0			1	12		19.61		0
		1	49		20.69		0			1	24		19.65		0
		25	0		19.89		1			12	0		18.85		1
		25	12		19.72		1			12	6		18.68		1
		25	25		19.84		1			12	13		18.80		1
		50	0		19.88		1			25	0		18.84		1
	16QAM	1	0		19.71		1		16QAM	1	0		18.66		1
		1	24		19.63		1			1	12		18.58		1
		1	49		19.67		1			1	24		18.62		1
		25	0		18.87		2			12	0		17.82		2
		25	12		18.70		2			12	6		17.65		2
		25	25		18.82		2			12	13		17.77		2
		50	0		18.86		2			25	0		17.81		2

LTE Band 25															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26140	26365	26590				Channel		26115	26365	26615	
		Frequency (MHz)		1860.0	1882.5	1905.0				Frequency (MHz)		1857.5	1882.5	1907.5	
20M	QPSK	1	0	21.24	21.28	21.08	0	15M	QPSK	1	0	20.94	20.98	20.78	0
		1	50	21.02	21.06	20.86	0			1	37	20.72	20.76	20.56	0
		1	99	20.84	20.88	20.68	0			1	74	20.54	20.58	20.38	0
		50	0	20.13	20.17	19.97	1			36	0	19.83	19.87	19.67	1
		50	25	20.07	20.11	19.91	1			36	19	19.77	19.81	19.61	1
		50	50	19.98	20.02	19.82	1			36	39	19.68	19.72	19.52	1
		100	0	20.07	20.11	19.91	1			75	0	19.77	19.81	19.61	1
	16QAM	1	0	20.22	20.26	20.06	1		16QAM	1	0	19.92	19.96	19.76	1
		1	50	20.00	20.04	19.84	1			1	37	19.70	19.74	19.54	1
		1	99	19.82	19.86	19.66	1			1	74	19.52	19.56	19.36	1
		50	0	19.11	19.15	18.95	2			36	0	18.81	18.85	18.65	2
		50	25	19.05	19.09	18.89	2			36	19	18.75	18.79	18.59	2
		50	50	18.96	19.00	18.80	2			36	39	18.66	18.70	18.50	2
		100	0	19.05	19.09	18.89	2			75	0	18.75	18.79	18.59	2
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26090	26365	26640				Channel		26065	26365	26665	
		Frequency (MHz)		2855.0	1882.5	1910.0				Frequency (MHz)		1852.5	1882.5	1912.5	
10M	QPSK	1	0	21.19	21.23	21.03	0	5M	QPSK	1	0	21.18	21.22	21.02	0
		1	24	20.97	21.01	20.81	0			1	12	20.96	21.00	20.80	0
		1	49	20.79	20.83	20.63	0			1	24	20.78	20.82	20.62	0
		25	0	20.08	20.12	19.92	1			12	0	20.07	20.11	19.91	1
		25	12	20.02	20.06	19.86	1			12	6	20.01	20.05	19.85	1
		25	25	19.93	19.97	19.77	1			12	13	19.92	19.96	19.76	1
		50	0	20.02	20.06	19.86	1			25	0	20.01	20.05	19.85	1
	16QAM	1	0	20.17	20.21	20.01	1		16QAM	1	0	20.16	20.20	20.00	1
		1	24	19.95	19.99	19.79	1			1	12	19.94	19.98	19.78	1
		1	49	19.77	19.81	19.61	1			1	24	19.76	19.80	19.60	1
		25	0	19.06	19.10	18.90	2			12	0	19.05	19.09	18.89	2
		25	12	19.00	19.04	18.84	2			12	6	18.99	19.03	18.83	2
		25	25	18.91	18.95	18.75	2			12	13	18.90	18.94	18.74	2
		50	0	19.00	19.04	18.84	2			25	0	18.99	19.03	18.83	2
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26055	26365	26675				Channel		26047	26365	26683	
		Frequency (MHz)		1851.5	1882.5	1913.5				Frequency (MHz)		1850.7	1882.5	1914.3	
3M	QPSK	1	0	21.17	21.21	21.01	0	1.4M	QPSK	1	0	21.16	21.20	21.00	0
		1	7	20.95	20.99	20.79	0			1	2	20.94	20.98	20.78	0
		1	14	20.77	20.81	20.61	0			1	5	20.76	20.80	20.60	0
		8	0	20.06	20.10	19.90	1			3	0	20.05	20.09	19.89	0
		8	3	20.00	20.04	19.84	1			3	1	19.99	20.03	19.83	0
		8	7	19.91	19.95	19.75	1			3	3	19.90	19.94	19.74	0
		15	0	20.00	20.04	19.84	1			6	0	19.99	20.03	19.83	1
	16QAM	1	0	20.14	20.18	19.98	1		16QAM	1	0	20.14	20.18	19.98	1
		1	7	19.92	19.96	19.76	1			1	2	19.92	19.96	19.76	1
		1	14	19.74	19.78	19.58	1			1	5	19.74	19.78	19.58	1
		8	0	19.03	19.07	18.87	2			3	0	19.03	19.07	18.87	1
		8	3	18.97	19.01	18.81	2			3	1	18.97	19.01	18.81	1
		8	7	18.88	18.92	18.72	2			3	3	18.88	18.92	18.72	1
		15	0	18.97	19.01	18.81	2			6	0	18.97	19.01	18.81	2

LTE Band 26

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26765	26865	26965	
		Frequency (MHz)		821.5	831.5	841.5	
15M	QPSK	1	0	21.32	21.33	21.65	0
		1	37	21.45	21.46	21.78	0
		1	74	21.51	21.52	21.84	0
		36	0	20.31	20.32	20.64	1
		36	19	20.48	20.49	20.81	1
		36	39	20.47	20.48	20.80	1
		75	0	20.37	20.38	20.70	1
	16QAM	1	0	20.30	20.31	20.63	1
		1	37	20.43	20.44	20.76	1
		1	74	20.49	20.50	20.82	1
		36	0	19.29	19.30	19.62	2
		36	19	19.46	19.47	19.79	2
		36	39	19.45	19.46	19.78	2
		75	0	19.35	19.36	19.68	2

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26740	26865	26990	
		Frequency (MHz)		819.0	831.5	844.0	
10M	QPSK	1	0	21.30	21.31	21.63	0
		1	24	21.43	21.44	21.76	0
		1	49	21.49	21.50	21.82	0
		25	0	20.29	20.30	20.62	1
		25	12	20.46	20.47	20.79	1
		25	25	20.45	20.46	20.78	1
		50	0	20.35	20.36	20.68	1
	16QAM	1	0	20.28	20.29	20.61	1
		1	24	20.41	20.42	20.74	1
		1	49	20.47	20.48	20.80	1
		25	0	19.27	19.28	19.60	2
		25	12	19.44	19.45	19.77	2
		25	25	19.43	19.44	19.76	2
		50	0	19.33	19.34	19.66	2

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26715	26865	27015	
		Frequency (MHz)		816.5	831.5	846.5	
5M	QPSK	1	0	21.28	21.29	21.61	0
		1	12	21.41	21.42	21.74	0
		1	24	21.47	21.48	21.80	0
		12	0	20.27	20.28	20.60	1
		12	6	20.44	20.45	20.77	1
		12	13	20.43	20.44	20.76	1
		25	0	20.33	20.34	20.66	1
	16QAM	1	0	20.25	20.26	20.58	1
		1	12	20.38	20.39	20.71	1
		1	24	20.44	20.45	20.77	1
		12	0	19.24	19.25	19.57	2
		12	6	19.41	19.42	19.74	2
		12	13	19.40	19.41	19.73	2
		25	0	19.30	19.31	19.63	2

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26705	26865	27025	
		Frequency (MHz)		815.5	831.5	847.5	
3M	QPSK	1	0	21.26	21.27	21.59	0
		1	7	21.39	21.40	21.72	0
		1	14	21.45	21.46	21.78	0
		8	0	20.25	20.26	20.58	1
		8	3	20.42	20.43	20.75	1
		8	7	20.41	20.42	20.74	1
		15	0	20.31	20.32	20.64	1
	16QAM	1	0	20.23	20.24	20.56	1
		1	7	20.36	20.37	20.69	1
		1	14	20.42	20.43	20.75	1
		8	0	19.22	19.23	19.55	2
		8	3	19.39	19.40	19.72	2
		8	7	19.38	19.39	19.71	2
		15	0	19.28	19.29	19.61	2

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26697	26865	27033	
		Frequency (MHz)		814.7	831.5	848.3	
1.4M	QPSK	1	0	21.25	21.26	21.58	0
		1	2	21.38	21.39	21.71	0
		1	5	21.44	21.45	21.77	0
		3	0	20.24	20.25	20.57	0
		3	1	20.41	20.42	20.74	0
		3	3	20.40	20.41	20.73	0
		6	0	20.30	20.31	20.63	1
	16QAM	1	0	20.22	20.23	20.55	1
		1	2	20.35	20.36	20.68	1
		1	5	20.41	20.42	20.74	1
		3	0	19.21	19.22	19.54	1
		3	1	19.38	19.39	19.71	1
		3	3	19.37	19.38	19.70	1
		6	0	19.27	19.28	19.60	2

<WLAN 2.4G>

Mode	Channel	Frequency (MHz)	Average Power
802.11b	1	2412	15.42
	6	2437	14.86
	11	2462	15.29
802.11g	1	2412	13.5
	6	2437	13.16
	11	2462	12.05
802.11n (HT20)	1	2412	12.77
	6	2437	12.28
	11	2462	11.14
802.11n (HT40)	3	2422	12.25
	6	2437	12.23
	9	2452	11.94

<WLAN 5.2G>

Mode	Channel	Frequency (MHz)	Average Power
802.11a	36	5180	11.90
	40	5200	12.05
	44	5220	12.43
	48	5240	12.45
802.11n (HT20)	36	5180	12.5
	40	5200	12.49
	44	5220	13.26
	48	5240	13.35
802.11n (HT40)	38	5190	12.34
	46	5230	12.78

<WLAN 5.3G>

Mode	Channel	Frequency (MHz)	Average Power
802.11a	52	5260	12.9
	56	5280	12.93
	60	5300	12.9
	64	5320	12.56
802.11n (HT20)	52	5260	13.64
	56	5280	13.72
	60	5300	13.7
	64	5320	13.39
802.11n (HT40)	54	5270	12.77
	62	5310	12.51

<WLAN 5.6G>

Mode	Channel	Frequency (MHz)	Average Power
802.11a	100	5500	12.39
	116	5580	12.58
	120	5600	12.66
	124	5620	12.61
	132	5660	12.62
	140	5700	12.65
802.11n (HT20)	100	5500	12.03
	116	5580	12.11
	120	5600	12.41
	124	5620	12.23
	132	5660	12.26
	140	5700	12.67
802.11n (HT40)	102	5510	10.21
	110	5550	10.29
	118	5590	10.37
	126	5630	10.43
	134	5670	12.15

<WLAN 5.8G>

Mode	Channel	Frequency (MHz)	Average Power
802.11a	149	5745	11.64
	153	5765	11.61
	157	5785	11.55
	161	5805	11.5
	165	5825	11.45
802.11n (HT20)	149	5745	11.72
	153	5765	11.62
	157	5785	11.09
	161	5805	11.03
	165	5825	10.5
802.11n (HT40)	151	5755	10.24
	159	5795	10.59

<Bluetooth>

Mode	Channel	Frequency (MHz)	Average Power
Bluetooth EDR	0	2402	6.13
	39	2441	6.61
	78	2480	6.3

4.7 SAR Testing Results

4.7.1 SAR Test Reduction Considerations

<KDB 447498 D01, General RF Exposure Guidance>

Testing of other required channels within the operating mode of a frequency band is not required when the reported SAR for the mid-band or highest output power channel is:

(1) ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz

(2) ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz

(3) ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

<KDB 941225 D01, 3G SAR Measurement Procedures>

The mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ 1/4 dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

<KDB 941225 D05, SAR Evaluation Considerations for LTE Devices>

(1) QPSK with 1 RB and 50% RB allocation

Start with the largest channel bandwidth and measure SAR, 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; 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. 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) QPSK with 100% RB allocation

SAR is not required when the highest maximum output power for 100% RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

(3) Higher order modulations

SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > 1/2 dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

(4) Other channel bandwidth

SAR is required when the highest maximum output power of the smaller channel bandwidth is > 1/2 dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

<KDB 248227 D01, SAR Guidance for Wi-Fi Transmitters>

(1) For handsets operating next to ear, hotspot mode or mini-tablet configurations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When the reported SAR of initial test position is <= 0.4 W/kg, SAR testing for remaining test positions is not required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is <= 0.8 W/kg or all test positions are measured.

(2) For WLAN 2.4 GHz, the highest measured maximum output power channel for DSSS was selected for SAR measurement. When the reported SAR is <= 0.8 W/kg, no further SAR testing is required. Otherwise, SAR is evaluated at the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel. For OFDM modes (802.11g/n), SAR is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and it is <= 1.2 W/kg.

(3) For WLAN 5 GHz, the initial test configuration was selected according to the transmission mode with the highest maximum output power. When the reported SAR of initial test configuration is > 0.8 W/kg, SAR is required for the subsequent highest measured output power channel until the reported SAR result is <= 1.2 W/kg or all required channels are measured. For other transmission modes, SAR is not required when the highest reported SAR for initial test configuration is adjusted by the ratio of subsequent test configuration to initial test configuration specified maximum output power and it is <= 1.2 W/kg.

4.7.2 SAR Results for Body Exposure Condition (Test Separation Distance is 0 mm)

Plot No.	Band	Mode	Test Position	Ch.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
01	GSM850	GPRS11	Rear Face	128	30.5	30.13	1.09	0.03	0.410	**0.45**
	GSM850	GPRS11	Rear Face	189	30.5	30.08	1.10	0.11	0.371	0.41
	GSM850	GPRS11	Rear Face	251	30.5	29.71	1.20	0.12	0.324	0.39
	GSM1900	GPRS12	Rear Face	512	29.5	29.04	1.11	-0.02	0.659	0.73
	GSM1900	GPRS12	Rear Face	661	29.5	28.88	1.15	-0.17	0.946	1.09
02	GSM1900	GPRS12	Rear Face	810	29.5	28.71	1.20	0.07	1.18	**1.42**
	GSM1900	GPRS12	Rear Face	810	29.5	28.71	1.20	0.04	1.14	1.37
	WCDMA II	RMC 12.2K	Rear Face	9400	23.0	22.69	1.07	-0.04	0.870	0.93
	WCDMA II	RMC 12.2K	Rear Face	9262	23.0	22.58	1.10	-0.08	0.529	0.58
03	WCDMA II	RMC 12.2K	Rear Face	9538	23.0	22.41	1.15	0.08	1.03	**1.18**
	WCDMA II	RMC 12.2K	Rear Face	9538	23.0	22.41	1.15	0.08	0.990	1.13
	WCDMA IV	RMC 12.2K	Rear Face	1312	23.0	22.51	1.12	0.05	0.459	0.51
	WCDMA IV	RMC 12.2K	Rear Face	1413	23.0	22.34	1.16	-0.13	0.473	0.55
04	WCDMA IV	RMC 12.2K	Rear Face	1513	23.0	22.30	1.17	-0.05	0.479	**0.56**
05	WCDMA V	RMC 12.2K	Rear Face	4132	23.0	22.78	1.05	-0.10	0.215	**0.23**
	WCDMA V	RMC 12.2K	Rear Face	4182	23.0	22.77	1.05	0.10	0.195	0.21
	WCDMA V	RMC 12.2K	Rear Face	4233	23.0	22.59	1.10	0.13	0.193	0.21

Plot No.	Band	Mode	RB#	RB Offset	Test Position	Ch.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	LTE 2	QPSK20M	1	0	Rear Face	18900	22.0	22.00	1.00	-0.11	0.686	0.69
	LTE 2	QPSK20M	50	0	Rear Face	18900	21.0	20.84	1.04	-0.08	0.478	0.50
	LTE 2	QPSK20M	1	0	Rear Face	18700	22.0	21.56	1.11	-0.16	0.461	0.51
35	LTE 2	QPSK20M	1	0	Rear Face	19100	22.0	21.38	1.15	0.09	0.905	**1.04**
	LTE 2	QPSK20M	100	0	Rear Face	18900	21.0	20.85	1.04	0.02	0.466	0.48
	LTE 2	QPSK20M	1	0	Rear Face	19100	22.0	21.38	1.15	0.13	0.897	1.03
06	LTE 4	QPSK20M	1	0	Rear Face	20300	21.5	21.37	1.03	0.16	0.397	**0.41**
	LTE 4	QPSK20M	50	0	Rear Face	20300	20.5	20.28	1.05	-0.01	0.346	0.36
	LTE 4	QPSK20M	1	0	Rear Face	20050	21.5	21.09	1.10	0.09	0.341	0.37
	LTE 4	QPSK20M	1	0	Rear Face	20175	21.5	21.15	1.08	-0.13	0.372	0.40
	LTE 5	QPSK10M	1	0	Rear Face	20525	22.5	22.14	1.09	-0.09	0.193	0.21
	LTE 5	QPSK10M	25	0	Rear Face	20525	21.5	21.00	1.12	-0.15	0.142	0.16
	LTE 5	QPSK10M	1	0	Rear Face	20450	22.5	21.68	1.21	-0.07	0.190	0.23
07	LTE 5	QPSK10M	1	0	Rear Face	20600	22.5	21.81	1.17	-0.06	0.196	**0.23**
	LTE 7	QPSK20M	1	0	Rear Face	21350	20.0	19.63	1.09	0.03	0.269	0.29
	LTE 7	QPSK20M	50	25	Rear Face	21350	19.0	18.66	1.08	0.07	0.220	0.24
08	LTE 7	QPSK20M	1	0	Rear Face	20850	20.0	19.38	1.15	-0.05	0.339	**0.39**
	LTE 7	QPSK20M	1	0	Rear Face	21100	20.0	19.53	1.11	0.05	0.296	0.33
	LTE 12	QPSK10M	1	0	Rear Face	23095	21.5	21.25	1.06	0.03	0.340	0.36
	LTE 12	QPSK10M	25	0	Rear Face	23095	20.5	20.21	1.07	0.05	0.286	0.31
	LTE 12	QPSK10M	1	0	Rear Face	23060	21.5	20.88	1.15	0.02	0.299	0.34
09	LTE 12	QPSK10M	1	0	Rear Face	23130	21.5	21.20	1.07	-0.07	0.388	**0.42**
10	LTE 13	QPSK10M	1	0	Rear Face	23230	21.0	20.73	1.06	0.10	0.264	**0.28**
	LTE 13	QPSK10M	25	0	Rear Face	23230	20.0	19.89	1.03	0.07	0.222	0.23
	LTE 25	QPSK20M	1	0	Rear Face	26365	21.5	21.28	1.05	-0.12	0.671	0.71
	LTE 25	QPSK20M	50	0	Rear Face	26365	20.5	20.17	1.08	0.06	0.579	0.62
	LTE 25	QPSK20M	1	0	Rear Face	26140	21.5	21.24	1.06	-0.06	0.460	0.49
11	LTE 25	QPSK20M	1	0	Rear Face	26590	21.5	21.08	1.10	0.16	0.978	**1.08**
	LTE 25	QPSK20M	1	0	Rear Face	26590	21.5	21.08	1.10	0.08	0.962	1.06

Plot No.	Band	Mode	RB#	RB Offset	Test Position	Ch.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
12	LTE 26	QPSK15M	1	74	Rear Face	26965	22.0	21.84	1.04	-0.14	0.207	**0.21**
	LTE 26	QPSK15M	36	19	Rear Face	26965	21.0	20.81	1.04	-0.13	0.152	0.16
	LTE 26	QPSK15M	1	74	Rear Face	26765	22.0	21.51	1.12	0.05	0.189	0.21
	LTE 26	QPSK15M	1	74	Rear Face	26865	22.0	21.52	1.12	-0.02	0.181	0.20

Plot No.	Band	Mode	Test Position	Ch.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
13	WLAN2.4G	802.11b	Rear Face	1	15.5	15.42	1.02	-0.03	0.087	**0.09**
	WLAN2.4G	802.11b	Rear Face	6	15.5	14.86	1.16	-0.11	0.072	0.08
	WLAN2.4G	802.11b	Rear Face	11	15.5	15.29	1.05	0.02	0.076	0.08
	WLAN5G	802.11n HT20	Rear Face	52	14.0	13.64	1.09	-0.08	0.077	0.08
	WLAN5G	802.11n HT20	Rear Face	56	14.0	13.72	1.07	0.12	0.085	0.09
	WLAN5G	802.11n HT20	Rear Face	60	14.0	13.70	1.07	0.09	0.09	0.10
14	WLAN5G	802.11n HT20	Rear Face	64	14.0	13.39	1.15	0.03	0.094	**0.11**
	WLAN5G	802.11a	Rear Face	100	13.0	12.39	1.15	-0.09	0.066	0.08
15	WLAN5G	802.11a	Rear Face	116	13.0	12.58	1.10	-0.03	0.128	**0.14**
	WLAN5G	802.11a	Rear Face	120	13.0	12.66	1.08	0.12	0.124	0.13
	WLAN5G	802.11a	Rear Face	124	13.0	12.61	1.09	0.09	0.123	0.13
	WLAN5G	802.11a	Rear Face	132	13.0	12.62	1.09	-0.12	0.125	0.14
	WLAN5G	802.11a	Rear Face	140	13.0	12.65	1.08	0.08	0.055	0.06
16	WLAN5G	802.11n HT40	Rear Face	151	12.0	10.24	1.50	0.09	0.020	**0.03**
	WLAN5G	802.11n HT40	Rear Face	159	12.0	10.59	1.38	-0.05	0.019	0.03
17	BT	BR / EDR	Rear Face	0	7.0	6.13	1.22	0.06	0.022	**0.03**
	BT	BR / EDR	Rear Face	39	7.0	6.61	1.09	-0.04	0.017	0.02
	BT	BR / EDR	Rear Face	78	7.0	6.30	1.17	0.09	0.021	0.02

4.7.3 SAR Results for Extremity Exposure Condition (Test Separation Distance is 0 mm)

Plot No.	Band	Mode	Test Position	Ch.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-10g (W/kg)	Scaled SAR-10g (W/kg)
	GSM850	GPRS11	Rear Face	128	30.5	30.13	1.09	0.13	0.290	0.32
	GSM850	GPRS11	Left Side	128	30.5	30.13	1.09	0.08	0.401	0.44
	GSM850	GPRS11	Right Side	128	30.5	30.13	1.09	0.1	1.26	1.37
18	GSM850	GPRS11	Right Side	189	30.5	30.08	1.10	0.11	1.28	**1.41**
	GSM850	GPRS11	Right Side	251	30.5	29.71	1.20	0.08	1.15	1.38
	GSM1900	GPRS12	Rear Face	512	29.5	29.04	1.11	0.05	0.267	0.30
	GSM1900	GPRS12	Left Side	512	29.5	29.04	1.11	-0.03	0.792	0.88
19	GSM1900	GPRS12	Right Side	512	29.5	29.04	1.11	0.17	0.956	**1.06**
	GSM1900	GPRS12	Right Side	661	29.5	28.88	1.15	-0.14	0.792	0.91
	GSM1900	GPRS12	Right Side	810	29.5	28.71	1.20	0.05	0.807	0.97
	WCDMA II	RMC 12.2K	Rear Face	9400	23.0	22.69	1.07	-0.06	0.222	0.24
	WCDMA II	RMC 12.2K	Left Side	9400	23.0	22.69	1.07	0.02	0.571	0.61
20	WCDMA II	RMC 12.2K	Right Side	9400	23.0	22.69	1.07	0.17	0.605	**0.65**
	WCDMA II	RMC 12.2K	Right Side	9262	23.0	22.58	1.10	-0.13	0.582	0.64
	WCDMA II	RMC 12.2K	Right Side	9538	23.0	22.41	1.15	0.04	0.564	0.65
	WCDMA IV	RMC 12.2K	Rear Face	1312	23.0	22.51	1.12	-0.13	0.291	0.33
	WCDMA IV	RMC 12.2K	Left Side	1312	23.0	22.51	1.12	-0.09	0.317	0.35
21	WCDMA IV	RMC 12.2K	Right Side	1312	23.0	22.51	1.12	0.08	0.333	**0.37**
	WCDMA IV	RMC 12.2K	Right Side	1413	23.0	22.34	1.16	-0.05	0.296	0.34
	WCDMA IV	RMC 12.2K	Right Side	1513	23.0	22.30	1.17	0.09	0.234	0.27
	WCDMA V	RMC 12.2K	Rear Face	4132	23.0	22.78	1.05	0.01	0.179	0.19
	WCDMA V	RMC 12.2K	Left Side	4132	23.0	22.78	1.05	0.06	0.254	0.27
22	WCDMA V	RMC 12.2K	Right Side	4132	23.0	22.78	1.05	-0.17	0.904	**0.95**
	WCDMA V	RMC 12.2K	Right Side	4182	23.0	22.77	1.05	0.15	0.891	0.94
	WCDMA V	RMC 12.2K	Right Side	4233	23.0	22.59	1.10	-0.19	0.856	0.94

Plot No.	Band	Mode	RB#	RB Offset	Test Position	Ch.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-10g (W/kg)	Scaled SAR-10g (W/kg)
	LTE 2	QPSK20M	1	0	Rear Face	18900	22.0	22.00	1.00	0.05	0.185	0.19
	LTE 2	QPSK20M	1	0	Left Side	18900	22.0	22.00	1.00	-0.11	0.599	0.60
36	LTE 2	QPSK20M	1	0	Right Side	18900	22.0	22.00	1.00	0.06	0.621	**0.62**
	LTE 2	QPSK20M	50	0	Rear Face	18900	21.0	20.84	1.04	-0.13	0.149	0.15
	LTE 2	QPSK20M	50	0	Left Side	18900	21.0	20.84	1.04	-0.1	0.465	0.48
	LTE 2	QPSK20M	50	0	Right Side	18900	21.0	20.84	1.04	0.06	0.475	0.49
	LTE 2	QPSK20M	1	0	Right Side	18700	22.0	21.56	1.11	-0.05	0.511	0.57
	LTE 2	QPSK20M	1	0	Right Side	19100	22.0	21.38	1.15	-0.07	0.468	0.54
	LTE 4	QPSK20M	1	0	Rear Face	20300	21.5	21.37	1.03	-0.08	0.208	0.21
23	LTE 4	QPSK20M	1	0	Left Side	20300	21.5	21.37	1.03	-0.09	0.381	**0.39**
	LTE 4	QPSK20M	1	0	Right Side	20300	21.5	21.37	1.03	0.13	0.240	0.25
	LTE 4	QPSK20M	50	0	Rear Face	20300	20.5	20.28	1.05	0.15	0.175	0.18
	LTE 4	QPSK20M	50	0	Left Side	20300	20.5	20.28	1.05	-0.03	0.315	0.33
	LTE 4	QPSK20M	50	0	Right Side	20300	20.5	20.28	1.05	0.04	0.188	0.20
	LTE 4	QPSK20M	1	0	Left Side	20050	21.5	21.09	1.10	-0.14	0.249	0.27
	LTE 4	QPSK20M	1	0	Left Side	20175	21.5	21.15	1.08	0.05	0.271	0.29
	LTE 5	QPSK10M	1	0	Rear Face	20525	22.5	22.14	1.09	0.12	0.139	0.15
	LTE 5	QPSK10M	1	0	Left Side	20525	22.5	22.14	1.09	-0.06	0.182	0.20
24	LTE 5	QPSK10M	1	0	Right Side	20525	22.5	22.14	1.09	0.17	0.860	**0.93**
	LTE 5	QPSK10M	25	0	Rear Face	20525	21.5	21.00	1.12	-0.13	0.092	0.10
	LTE 5	QPSK10M	25	0	Left Side	20525	21.5	21.00	1.12	-0.06	0.143	0.16
	LTE 5	QPSK10M	25	0	Right Side	20525	21.5	21.00	1.12	-0.01	0.668	0.75
	LTE 5	QPSK10M	1	0	Right Side	20450	22.5	21.68	1.21	-0.08	0.710	0.86
	LTE 5	QPSK10M	1	0	Right Side	20600	22.5	21.81	1.17	0.01	0.783	0.92

Plot No.	Band	Mode	RB#	RB Offset	Test Position	Ch.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-10g (W/kg)	Scaled SAR-10g (W/kg)
	LTE 7	QPSK20M	1	0	Rear Face	21350	20.0	19.63	1.09	-0.08	0.149	0.16
	LTE 7	QPSK20M	1	0	Left Side	21350	20.0	19.63	1.09	0.07	0.136	0.15
	LTE 7	QPSK20M	1	0	Right Side	21350	20.0	19.63	1.09	0.04	0.643	0.70
	LTE 7	QPSK20M	50	25	Rear Face	21350	19.0	18.66	1.08	0.05	0.122	0.13
	LTE 7	QPSK20M	50	25	Left Side	21350	19.0	18.66	1.08	0.03	0.113	0.12
	LTE 7	QPSK20M	50	25	Right Side	21350	19.0	18.66	1.08	0.01	0.480	0.52
25	LTE 7	QPSK20M	1	0	Right Side	20850	20.0	19.38	1.15	-0.13	0.769	**0.89**
	LTE 7	QPSK20M	1	0	Right Side	21100	20.0	19.53	1.11	0.09	0.671	0.75
	LTE 12	QPSK10M	1	0	Rear Face	23095	21.5	21.25	1.06	0.03	0.247	0.26
	LTE 12	QPSK10M	1	0	Left Side	23095	21.5	21.25	1.06	0.07	0.191	0.20
	LTE 12	QPSK10M	1	0	Right Side	23095	21.5	21.25	1.06	-0.04	0.505	0.53
	LTE 12	QPSK10M	25	0	Rear Face	23095	20.5	20.21	1.07	0.05	0.212	0.23
	LTE 12	QPSK10M	25	0	Left Side	23095	20.5	20.21	1.07	-0.07	0.160	0.17
	LTE 12	QPSK10M	25	0	Right Side	23095	20.5	20.21	1.07	0.02	0.415	0.44
	LTE 12	QPSK10M	1	0	Right Side	23060	21.5	20.88	1.15	0.08	0.481	0.55
26	LTE 12	QPSK10M	1	0	Right Side	23130	21.5	21.20	1.07	-0.10	0.557	**0.60**
	LTE 13	QPSK10M	1	0	Rear Face	23230	21.0	20.73	1.06	-0.04	0.170	0.18
	LTE 13	QPSK10M	1	0	Left Side	23230	21.0	20.73	1.06	0.05	0.182	0.19
27	LTE 13	QPSK10M	1	0	Right Side	23230	21.0	20.73	1.06	0.01	0.298	**0.32**
	LTE 13	QPSK10M	25	0	Rear Face	23230	20.0	19.89	1.03	-0.06	0.135	0.14
	LTE 13	QPSK10M	25	0	Left Side	23230	20.0	19.89	1.03	0.09	0.156	0.16
	LTE 13	QPSK10M	25	0	Right Side	23230	20.0	19.89	1.03	0.03	0.250	0.26
	LTE 25	QPSK20M	1	0	Rear Face	26365	21.5	21.28	1.05	-0.16	0.216	0.23
28	LTE 25	QPSK20M	1	0	Left Side	26365	21.5	21.28	1.05	0.11	0.688	**0.72**
	LTE 25	QPSK20M	1	0	Right Side	26365	21.5	21.28	1.05	-0.06	0.668	0.70
	LTE 25	QPSK20M	50	0	Rear Face	26365	20.5	20.17	1.08	-0.05	0.187	0.20
	LTE 25	QPSK20M	50	0	Left Side	26365	20.5	20.17	1.08	-0.09	0.525	0.57
	LTE 25	QPSK20M	50	0	Right Side	26365	20.5	20.17	1.08	0.01	0.524	0.57
	LTE 25	QPSK20M	1	0	Left Side	26140	21.5	21.24	1.06	-0.17	0.630	0.67
	LTE 25	QPSK20M	1	0	Left Side	26590	21.5	21.08	1.10	-0.06	0.608	0.67
	LTE 26	QPSK15M	1	74	Rear Face	26965	22.0	21.84	1.04	-0.01	0.134	0.14
	LTE 26	QPSK15M	1	74	Left Side	26965	22.0	21.84	1.04	-0.07	0.179	0.19
29	LTE 26	QPSK15M	1	74	Right Side	26965	22.0	21.84	1.04	-0.09	0.928	**0.96**
	LTE 26	QPSK15M	36	19	Rear Face	26965	21.0	20.81	1.04	0.07	0.099	0.10
	LTE 26	QPSK15M	36	19	Left Side	26965	21.0	20.81	1.04	0.05	0.141	0.15
	LTE 26	QPSK15M	36	19	Right Side	26965	21.0	20.81	1.04	-0.16	0.714	0.75
	LTE 26	QPSK15M	1	74	Right Side	26765	22.0	21.51	1.12	-0.07	0.784	0.88
	LTE 26	QPSK15M	1	74	Right Side	26865	22.0	21.52	1.12	-0.16	0.850	0.95

Plot No.	Band	Mode	Test Position	Ch.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-10g (W/kg)	Scaled SAR-10g (W/kg)
	WLAN2.4G	802.11b	Rear Face	1	15.5	15.42	1.02	-0.08	0.059	0.06
30	WLAN2.4G	802.11b	Left Side	1	15.5	15.42	1.02	-0.06	0.492	**0.50**
	WLAN2.4G	802.11b	Right Side	1	15.5	15.42	1.02	0.02	0.482	0.49
	WLAN2.4G	802.11b	Left Side	6	15.5	14.86	1.16	0.11	0.040	0.05
	WLAN2.4G	802.11b	Left Side	11	15.5	15.29	1.05	0.03	0.453	0.48
	WLAN5G	802.11n HT20	Rear Face	56	14.0	13.72	1.07	-0.07	0.021	0.02
31	WLAN5G	802.11n HT20	Left Side	56	14.0	13.72	1.07	-0.02	0.202	**0.22**
	WLAN5G	802.11n HT20	Right Side	56	14.0	13.72	1.07	-0.11	0.001	0.00
	WLAN5G	802.11n HT20	Left Side	52	14.0	13.64	1.09	0.02	0.168	0.18
	WLAN5G	802.11n HT20	Left Side	60	14.0	13.70	1.07	-0.08	0.167	0.18
	WLAN5G	802.11n HT20	Left Side	64	14.0	13.39	1.15	0.13	0.165	0.19
	WLAN5G	802.11a	Rear Face	120	13.0	12.66	1.08	-0.08	0.019	0.02
	WLAN5G	802.11a	Left Side	120	13.0	12.66	1.08	0.03	0.107	0.12
	WLAN5G	802.11a	Right Side	120	13.0	12.66	1.08	-0.11	0.001	0.00
	WLAN5G	802.11a	Left Side	100	13.0	12.39	1.15	0.05	0.229	0.26
	WLAN5G	802.11a	Left Side	116	13.0	12.58	1.10	0.07	0.204	0.22
	WLAN5G	802.11a	Left Side	124	13.0	12.61	1.09	0.02	0.238	0.26
32	WLAN5G	802.11a	Left Side	132	13.0	12.62	1.09	0.06	0.243	**0.27**
	WLAN5G	802.11a	Left Side	140	13.0	12.65	1.08	-0.08	0.101	0.11
	WLAN5G	802.11n HT40	Rear Face	159	12.0	10.59	1.38	-0.08	0.014	0.02
	WLAN5G	802.11n HT40	Left Side	159	12.0	10.59	1.38	0.05	0.076	0.11
	WLAN5G	802.11n HT40	Right Side	159	12.0	10.59	1.38	-0.07	0.001	0.00
33	WLAN5G	802.11n HT40	Left Side	151	12.0	10.24	1.50	0.07	0.08	**0.12**
	BT	BR / EDR	Rear Face	39	7.0	6.61	1.09	-0.11	0.002	0.00
34	BT	BR / EDR	Left Side	39	7.0	6.61	1.09	-0.08	0.140	**0.15**
	BT	BR / EDR	Right Side	39	7.0	6.61	1.09	0.03	0.001	0.00
	BT	BR / EDR	Left Side	0	7.0	6.13	1.22	-0.05	0.113	0.14
	BT	BR / EDR	Left Side	78	7.0	6.30	1.17	0.01	0.108	0.13

Note: The "< 0.001" means there is no SAR value or the SAR is too low to be measured.

4.7.4 SAR Measurement Variability

According to KDB 865664 D01, SAR measurement variability was assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. Alternatively, if the highest measured SAR for both head and body tissue-equivalent media are ≤ 1.45 W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is ≤ 1.10, the highest SAR configuration for either head or body tissue-equivalent medium may be used to perform the repeated measurement. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR repeated measurement procedure:

1. When the highest measured SAR is < 0.80 W/kg, repeated measurement is not required.
2. When the highest measured SAR is >= 0.80 W/kg, repeat that measurement once.
3. If the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20, or when the original or repeated measurement is >= 1.45 W/kg, perform a second repeated measurement.
4. If the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20, and the original, first or second repeated measurement is >= 1.5 W/kg, perform a third repeated measurement.

Band	Mode	Test Position	Ch.	Original Measured SAR-1g (W/kg)	1st Repeated SAR-1g (W/kg)	L/S Ratio	2nd Repeated SAR-1g (W/kg)	L/S Ratio	3rd Repeated SAR-1g (W/kg)	L/S Ratio
GSM1900	GPRS12	Rear Face	810	1.18	1.14	1.04	N/A	N/A	N/A	N/A
WCDMA II	RMC12.2K	Rear Face	9538	1.03	0.99	1.04	N/A	N/A	N/A	N/A
LTE 25	QPSK20M	Rear Face	26590	0.978	0.962	1.02	N/A	N/A	N/A	N/A

4.7.5 Simultaneous Multi-band Transmission Evaluation

<Possibilities of Simultaneous Transmission>

The simultaneous transmission possibilities for this device are listed as below.

Simultaneous TX Combination	Capable Transmit Configurations	Body Exposure Condition	Extremity Exposure Condition
1	WWAN + WLAN	Yes	Yes
2	WWAN + BT	Yes	Yes
3	WWAN + WLAN + NFC	Yes	Yes
4	WWAN + BT + NFC	Yes	Yes

Note :

1. The WLAN 2.4G and WLAN 5G cannot transmit simultaneously.
2. The WLAN and Bluetooth cannot transmit simultaneously.

<SAR Summation Analysis>

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna. When the sum of SAR_{1g} of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR_{1g} 1.6 W/kg), the simultaneous transmission SAR is not required. When the sum of SAR_{1g} is greater than the SAR limit (SAR_{1g} 1.6 W/kg), SAR test exclusion is determined by the SPLSR.

No.	Conditions (SAR1 + SAR2)	Exposure Condition	Test Position	Max. SAR1	Max. SAR2	SAR Summation	SPLSR Analysis
1	GSM850 + WLAN (DTS)	Body	Rear Face	0.45	0.09	0.54	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.32	0.06	0.38	Σ SAR < 4.0, Not required
			Left Side	0.44	0.50	0.94	Σ SAR < 4.0, Not required
			Right Side	1.41	0.49	1.90	Σ SAR < 4.0, Not required
2	GSM850 + WLAN (NII)	Body	Rear Face	0.45	0.14	0.59	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.32	0.02	0.34	Σ SAR < 4.0, Not required
			Left Side	0.44	0.27	0.71	Σ SAR < 4.0, Not required
			Right Side	1.41	0.00	1.41	Σ SAR < 4.0, Not required
3	GSM850 + BT (DSS)	Body	Rear Face	0.45	0.03	0.48	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.32	0.00	0.32	Σ SAR < 4.0, Not required
			Left Side	0.44	0.15	0.59	Σ SAR < 4.0, Not required
			Right Side	1.41	0.00	1.41	Σ SAR < 4.0, Not required
4	GSM1900 + WLAN (DTS)	Body	Rear Face	1.42	0.09	1.51	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.30	0.06	0.36	Σ SAR < 4.0, Not required
			Left Side	0.88	0.50	1.38	Σ SAR < 4.0, Not required
			Right Side	1.06	0.49	1.55	Σ SAR < 4.0, Not required
5	GSM1900 + WLAN (NII)	Body	Rear Face	1.42	0.14	1.56	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.30	0.02	0.32	Σ SAR < 4.0, Not required
			Left Side	0.88	0.27	1.15	Σ SAR < 4.0, Not required
			Right Side	1.06	0.00	1.06	Σ SAR < 4.0, Not required
6	GSM1900 + BT (DSS)	Body	Rear Face	1.42	0.03	1.45	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.30	0.00	0.30	Σ SAR < 4.0, Not required
			Left Side	0.88	0.15	1.03	Σ SAR < 4.0, Not required
			Right Side	1.06	0.00	1.06	Σ SAR < 4.0, Not required

No.	Conditions (SAR1 + SAR2)	Exposure Condition	Test Position	Max. SAR1	Max. SAR2	SAR Summation	SPLSR Analysis
7	WCDMA II + WLAN (DTS)	Body	Rear Face	1.18	0.09	1.27	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.24	0.06	0.30	Σ SAR < 4.0, Not required
			Left Side	0.61	0.50	1.11	Σ SAR < 4.0, Not required
			Right Side	0.65	0.49	1.14	Σ SAR < 4.0, Not required
8	WCDMA II + WLAN (NII)	Body	Rear Face	1.18	0.14	1.32	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.24	0.02	0.26	Σ SAR < 4.0, Not required
			Left Side	0.61	0.27	0.88	Σ SAR < 4.0, Not required
			Right Side	0.65	0.00	0.65	Σ SAR < 4.0, Not required
9	WCDMA II + BT (DSS)	Body	Rear Face	1.18	0.03	1.21	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.24	0.00	0.24	Σ SAR < 4.0, Not required
			Left Side	0.61	0.15	0.76	Σ SAR < 4.0, Not required
			Right Side	0.65	0.00	0.65	Σ SAR < 4.0, Not required
10	WCDMA IV + WLAN (DTS)	Body	Rear Face	0.56	0.09	0.65	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.33	0.06	0.39	Σ SAR < 4.0, Not required
			Left Side	0.35	0.50	0.85	Σ SAR < 4.0, Not required
			Right Side	0.37	0.49	0.86	Σ SAR < 4.0, Not required
11	WCDMA IV + WLAN (NII)	Body	Rear Face	0.56	0.14	0.70	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.33	0.02	0.35	Σ SAR < 4.0, Not required
			Left Side	0.35	0.27	0.62	Σ SAR < 4.0, Not required
			Right Side	0.37	0.00	0.37	Σ SAR < 4.0, Not required
12	WCDMA IV + BT (DSS)	Body	Rear Face	0.56	0.03	0.59	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.33	0.00	0.33	Σ SAR < 4.0, Not required
			Left Side	0.35	0.15	0.50	Σ SAR < 4.0, Not required
			Right Side	0.37	0.00	0.37	Σ SAR < 4.0, Not required

No.	Conditions (SAR1 + SAR2)	Exposure Condition	Test Position	Max. SAR1	Max. SAR2	SAR Summation	SPLSR Analysis
13	WCDMA V + WLAN (DTS)	Body	Rear Face	0.23	0.09	0.32	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.19	0.06	0.25	Σ SAR < 4.0, Not required
			Left Side	0.27	0.50	0.77	Σ SAR < 4.0, Not required
			Right Side	0.95	0.49	1.44	Σ SAR < 4.0, Not required
14	WCDMA V + WLAN (NII)	Body	Rear Face	0.23	0.14	0.37	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.19	0.02	0.21	Σ SAR < 4.0, Not required
			Left Side	0.27	0.27	0.54	Σ SAR < 4.0, Not required
			Right Side	0.95	0.00	0.95	Σ SAR < 4.0, Not required
15	WCDMA V + BT (DSS)	Body	Rear Face	0.23	0.03	0.26	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.19	0.00	0.19	Σ SAR < 4.0, Not required
			Left Side	0.27	0.15	0.42	Σ SAR < 4.0, Not required
			Right Side	0.95	0.00	0.95	Σ SAR < 4.0, Not required
16	LTE 2 + WLAN (DTS)	Body	Rear Face	1.04	0.09	1.13	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.19	0.06	0.25	Σ SAR < 4.0, Not required
			Left Side	0.60	0.50	1.10	Σ SAR < 4.0, Not required
			Right Side	0.62	0.49	1.11	Σ SAR < 4.0, Not required
17	LTE 2 + WLAN (NII)	Body	Rear Face	1.04	0.14	1.18	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.19	0.02	0.21	Σ SAR < 4.0, Not required
			Left Side	0.60	0.27	0.87	Σ SAR < 4.0, Not required
			Right Side	0.62	0.00	0.62	Σ SAR < 4.0, Not required
18	LTE 2 + BT (DSS)	Body	Rear Face	1.04	0.03	1.07	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.19	0.00	0.19	Σ SAR < 4.0, Not required
			Left Side	0.60	0.15	0.75	Σ SAR < 4.0, Not required
			Right Side	0.62	0.00	0.62	Σ SAR < 4.0, Not required

No.	Conditions (SAR1 + SAR2)	Exposure Condition	Test Position	Max. SAR1	Max. SAR2	SAR Summation	SPLSR Analysis
19	LTE 4 + WLAN (DTS)	Body	Rear Face	0.41	0.09	0.50	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.21	0.06	0.27	Σ SAR < 4.0, Not required
			Left Side	0.39	0.50	0.89	Σ SAR < 4.0, Not required
			Right Side	0.25	0.49	0.74	Σ SAR < 4.0, Not required
20	LTE 4 + WLAN (NII)	Body	Rear Face	0.41	0.14	0.55	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.21	0.02	0.23	Σ SAR < 4.0, Not required
			Left Side	0.39	0.27	0.66	Σ SAR < 4.0, Not required
			Right Side	0.25	0.00	0.25	Σ SAR < 4.0, Not required
21	LTE 4 + BT (DSS)	Body	Rear Face	0.41	0.03	0.44	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.21	0.00	0.21	Σ SAR < 4.0, Not required
			Left Side	0.39	0.15	0.54	Σ SAR < 4.0, Not required
			Right Side	0.25	0.00	0.25	Σ SAR < 4.0, Not required
22	LTE 5 + WLAN (DTS)	Body	Rear Face	0.23	0.09	0.32	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.15	0.06	0.21	Σ SAR < 4.0, Not required
			Left Side	0.20	0.50	0.70	Σ SAR < 4.0, Not required
			Right Side	0.93	0.49	1.42	Σ SAR < 4.0, Not required
23	LTE 5 + WLAN (NII)	Body	Rear Face	0.23	0.14	0.37	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.15	0.02	0.17	Σ SAR < 4.0, Not required
			Left Side	0.20	0.27	0.47	Σ SAR < 4.0, Not required
			Right Side	0.93	0.00	0.93	Σ SAR < 4.0, Not required
24	LTE 5 + BT (DSS)	Body	Rear Face	0.23	0.03	0.26	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.15	0.00	0.15	Σ SAR < 4.0, Not required
			Left Side	0.20	0.15	0.35	Σ SAR < 4.0, Not required
			Right Side	0.93	0.00	0.93	Σ SAR < 4.0, Not required

No.	Conditions (SAR1 + SAR2)	Exposure Condition	Test Position	Max. SAR1	Max. SAR2	SAR Summation	SPLSR Analysis
25	LTE 7 + WLAN (DTS)	Body	Rear Face	0.39	0.09	0.48	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.16	0.06	0.22	Σ SAR < 4.0, Not required
			Left Side	0.15	0.50	0.65	Σ SAR < 4.0, Not required
			Right Side	0.89	0.49	1.38	Σ SAR < 4.0, Not required
26	LTE 7 + WLAN (NII)	Body	Rear Face	0.39	0.14	0.53	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.16	0.02	0.18	Σ SAR < 4.0, Not required
			Left Side	0.15	0.27	0.42	Σ SAR < 4.0, Not required
			Right Side	0.89	0.00	0.89	Σ SAR < 4.0, Not required
27	LTE 7 + BT (DSS)	Body	Rear Face	0.39	0.03	0.42	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.16	0.00	0.16	Σ SAR < 4.0, Not required
			Left Side	0.15	0.15	0.30	Σ SAR < 4.0, Not required
			Right Side	0.89	0.00	0.89	Σ SAR < 4.0, Not required
28	LTE 12 + WLAN (DTS)	Body	Rear Face	0.42	0.09	0.51	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.26	0.06	0.32	Σ SAR < 4.0, Not required
			Left Side	0.20	0.50	0.70	Σ SAR < 4.0, Not required
			Right Side	0.60	0.49	1.09	Σ SAR < 4.0, Not required
29	LTE 12 + WLAN (NII)	Body	Rear Face	0.42	0.14	0.56	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.26	0.02	0.28	Σ SAR < 4.0, Not required
			Left Side	0.20	0.27	0.47	Σ SAR < 4.0, Not required
			Right Side	0.60	0.00	0.60	Σ SAR < 4.0, Not required
30	LTE 12 + BT (DSS)	Body	Rear Face	0.42	0.03	0.45	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.26	0.00	0.26	Σ SAR < 4.0, Not required
			Left Side	0.20	0.15	0.35	Σ SAR < 4.0, Not required
			Right Side	0.60	0.00	0.60	Σ SAR < 4.0, Not required

No.	Conditions (SAR1 + SAR2)	Exposure Condition	Test Position	Max. SAR1	Max. SAR2	SAR Summation	SPLSR Analysis
31	LTE 13 + WLAN (DTS)	Body	Rear Face	0.28	0.09	0.37	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.18	0.06	0.24	Σ SAR < 4.0, Not required
			Left Side	0.19	0.50	0.69	Σ SAR < 4.0, Not required
			Right Side	0.32	0.49	0.81	Σ SAR < 4.0, Not required
32	LTE 13 + WLAN (NII)	Body	Rear Face	0.28	0.14	0.42	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.18	0.02	0.20	Σ SAR < 4.0, Not required
			Left Side	0.19	0.27	0.46	Σ SAR < 4.0, Not required
			Right Side	0.32	0.00	0.32	Σ SAR < 4.0, Not required
33	LTE 13 + BT (DSS)	Body	Rear Face	0.28	0.03	0.31	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.18	0.00	0.18	Σ SAR < 4.0, Not required
			Left Side	0.19	0.15	0.34	Σ SAR < 4.0, Not required
			Right Side	0.32	0.00	0.32	Σ SAR < 4.0, Not required
34	LTE 25 + WLAN (DTS)	Body	Rear Face	1.08	0.09	1.17	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.23	0.06	0.29	Σ SAR < 4.0, Not required
			Left Side	0.72	0.50	1.22	Σ SAR < 4.0, Not required
			Right Side	0.70	0.49	1.19	Σ SAR < 4.0, Not required
35	LTE 25 + WLAN (NII)	Body	Rear Face	1.08	0.14	1.22	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.23	0.02	0.25	Σ SAR < 4.0, Not required
			Left Side	0.72	0.27	0.99	Σ SAR < 4.0, Not required
			Right Side	0.70	0.00	0.70	Σ SAR < 4.0, Not required
36	LTE 25 + BT (DSS)	Body	Rear Face	1.08	0.03	1.11	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.23	0.00	0.23	Σ SAR < 4.0, Not required
			Left Side	0.72	0.15	0.87	Σ SAR < 4.0, Not required
			Right Side	0.70	0.00	0.70	Σ SAR < 4.0, Not required

No.	Conditions (SAR1 + SAR2)	Exposure Condition	Test Position	Max. SAR1	Max. SAR2	SAR Summation	SPLSR Analysis
37	LTE 26 + WLAN (DTS)	Body	Rear Face	0.21	0.09	0.30	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.14	0.06	0.20	Σ SAR < 4.0, Not required
			Left Side	0.19	0.50	0.69	Σ SAR < 4.0, Not required
			Right Side	0.96	0.49	1.45	Σ SAR < 4.0, Not required
38	LTE 26 + WLAN (NII)	Body	Rear Face	0.21	0.14	0.35	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.14	0.02	0.16	Σ SAR < 4.0, Not required
			Left Side	0.19	0.27	0.46	Σ SAR < 4.0, Not required
			Right Side	0.96	0.00	0.96	Σ SAR < 4.0, Not required
39	LTE 26 + BT (DSS)	Body	Rear Face	0.21	0.03	0.24	Σ SAR < 1.6, Not required
		Extremity	Rear Face	0.14	0.00	0.14	Σ SAR < 4.0, Not required
			Left Side	0.19	0.15	0.34	Σ SAR < 4.0, Not required
			Right Side	0.96	0.00	0.96	Σ SAR < 4.0, Not required

Test Engineer：Ben Liu, and James Chu

5. Calibration of Test Equipment

Equipment	Manufacturer	Model	SN	Cal. Date	Cal. Interval
System Validation Dipole	SPEAG	D750V3	1013	Aug. 21, 2017	1 Year
System Validation Dipole	SPEAG	D835V2	4d121	Aug. 21, 2017	1 Year
System Validation Dipole	SPEAG	D1750V2	1055	Aug. 21, 2017	1 Year
System Validation Dipole	SPEAG	D1900V2	5d036	Jan. 23, 2017	1 Year
System Validation Dipole	SPEAG	D2450V2	737	Aug. 17, 2017	1 Year
System Validation Dipole	SPEAG	D2600V2	1020	Aug. 17, 2017	1 Year
System Validation Dipole	SPEAG	D5GHzV2	1019	Aug. 23, 2017	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	3650	Jul. 24, 2017	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	3971	Mar. 24, 2017	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	7375	Dec. 18, 2017	1 Year
Data Acquisition Electronics	SPEAG	DAE3	579	Aug. 17, 2017	1 Year
Data Acquisition Electronics	SPEAG	DAE4	861	May. 22, 2017	1 Year
Data Acquisition Electronics	SPEAG	DAE4	1431	Mar. 20, 2017	1 Year
Data Acquisition Electronics	SPEAG	DAE4	679	Jul. 31, 2017	1 Year
Spectrum Analyzer	R&S	FSL6	102006	Mar. 27, 2017	1 Year
EXA Spectrum Analyzer	Agilent	N9010A	MY53470455	May. 19, 2017	1 Year
ENA Series Network Analyzer	Agilent	E5071C	MY46214281	Jun. 09, 2017	1 Year
Vector Signal Generator	Anritsu	MG3710A	6201599977	Mar. 27, 2017	1 Year
MXG Analong Signal Generator	Agilent	N5181A	MY50143868	Jul. 10, 2017	1 Year
Power Meter	Anritsu	ML2495A	1218009	Jul. 12, 2017	1 Year
Power Sensor	Anritsu	MA2411B	1207252	Jul. 12, 2017	1 Year
Thermometer	YFE	YF-160A	130504591	Mar. 24, 2017	1 Year
Thermometer	YFE	YF-160A	120702369	Aug. 15, 2017	1 Year

6. Measurement Uncertainty

Source of Uncertainty	Uncertainty (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.0	Normal	1	1	1	6.0	6.0	∞
Axial Isotropy	4.7	Rectangular	√3	√0.5	√0.5	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	√0.5	√0.5	3.9	3.9	∞
Boundary Effect	1.0	Rectangular	√3	1	1	0.6	0.6	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Probe Modulation Response	3.5	Rectangular	√3	1	1	2.0	2.0	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions – Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	Rectangular	√3	1	1	0.2	0.2	∞
Probe Positioning with Respect to Phantom	2.9	Rectangular	√3	1	1	1.7	1.7	∞
Post-processing	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Test Sample Related								
Test Sample Positioning	3.9 / 2.06	Normal	1	1	1	3.9	2.1	35
Device Holder Uncertainty	2.9 / 4.1	Normal	1	1	1	2.9	4.1	11
Power Drift of Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
Power Scaling	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Phantom and Setup								
Phantom Uncertainty (Shape and Thickness Tolerances)	6.1	Rectangular	√3	1	1	3.5	3.5	∞
Liquid Conductivity (Temperature Uncertainty)	3.24	Rectangular	√3	0.78	0.71	1.5	1.3	∞
Liquid Conductivity (Measured)	2.88	Normal	1	0.78	0.71	2.2	2.0	43
Liquid Permittivity (Temperature Uncertainty)	1.13	Rectangular	√3	0.23	0.26	0.2	0.2	∞
Liquid Permittivity (Measured)	2.50	Normal	1	0.23	0.26	0.6	0.7	54
Combined Standard Uncertainty						± 11.4 %	± 11.2 %	
Expanded Uncertainty (K=2)						**± 22.8 %**	**± 22.4 %**	

Head SAR Uncertainty Budget for Frequency Range of 300 MHz to 3 GHz

Source of Uncertainty	Uncertainty (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.55	Normal	1	1	1	6.55	6.55	∞
Axial Isotropy	4.7	Rectangular	√3	0.7	0.7	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	0.7	0.7	3.9	3.9	∞
Boundary Effect	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Probe Modulation Response	3.5	Rectangular	√3	1	1	2.0	2.0	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions – Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	Rectangular	√3	1	1	0.2	0.2	∞
Probe Positioning with Respect to Phantom	6.7	Rectangular	√3	1	1	3.9	3.9	∞
Post-processing	4.0	Rectangular	√3	1	1	2.3	2.3	∞
Test Sample Related								
Test Sample Positioning	3.9 / 2.06	Normal	1	1	1	3.9	2.1	35
Device Holder Uncertainty	2.9 / 4.1	Normal	1	1	1	2.9	4.1	11
Power Drift of Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
Power Scaling	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Phantom and Setup								
Phantom Uncertainty (Shape and Thickness Tolerances)	6.6	Rectangular	√3	1	1	3.8	3.8	∞
Liquid Conductivity (Temperature Uncertainty)	3.24	Rectangular	√3	0.78	0.71	1.5	1.3	∞
Liquid Conductivity (Measured)	2.88	Normal	1	0.78	0.71	2.2	2.0	43
Liquid Permittivity (Temperature Uncertainty)	1.13	Rectangular	√3	0.23	0.26	0.2	0.2	∞
Liquid Permittivity (Measured)	2.50	Normal	1	0.23	0.26	0.6	0.7	54
Combined Standard Uncertainty						± 12.5 %	± 12.3 %	
Expanded Uncertainty (K=2)						**± 25.0 %**	**± 24.6 %**	

Head SAR Uncertainty Budget for Frequency Range of 3 GHz to 6 GHz

Source of Uncertainty	Uncertainty (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.0	Normal	1	1	1	6.0	6.0	∞
Axial Isotropy	4.7	Rectangular	√3	√0.5	√0.5	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	√0.5	√0.5	3.9	3.9	∞
Boundary Effect	1.0	Rectangular	√3	1	1	0.6	0.6	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Probe Modulation Response	3.5	Rectangular	√3	1	1	2.0	2.0	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions – Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	Rectangular	√3	1	1	0.2	0.2	∞
Probe Positioning with Respect to Phantom	2.9	Rectangular	√3	1	1	1.7	1.7	∞
Post-processing	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Test Sample Related								
Test Sample Positioning	4.38 / 1.35	Normal	1	1	1	4.4	1.4	29
Device Holder Uncertainty	2.9 / 4.1	Normal	1	1	1	2.9	4.1	11
Power Drift of Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
Power Scaling	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Phantom and Setup								
Phantom Uncertainty (Shape and Thickness Tolerances)	7.2	Rectangular	√3	1	1	4.2	4.2	∞
Liquid Conductivity (Temperature Uncertainty)	3.24	Rectangular	√3	0.78	0.71	1.5	1.3	∞
Liquid Conductivity (Measured)	2.88	Normal	1	0.78	0.71	2.2	2.0	43
Liquid Permittivity (Temperature Uncertainty)	1.13	Rectangular	√3	0.23	0.26	0.2	0.2	∞
Liquid Permittivity (Measured)	2.50	Normal	1	0.23	0.26	0.6	0.7	54
Combined Standard Uncertainty						± 11.8 %	± 11.3 %	
Expanded Uncertainty (K=2)						**± 23.6 %**	**± 22.6 %**	

Body SAR Uncertainty Budget for Frequency Range of 300 MHz to 3 GHz

Source of Uncertainty	Uncertainty (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.55	Normal	1	1	1	6.55	6.55	∞
Axial Isotropy	4.7	Rectangular	√3	0.7	0.7	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	0.7	0.7	3.9	3.9	∞
Boundary Effect	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Probe Modulation Response	3.5	Rectangular	√3	1	1	2.0	2.0	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions – Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	Rectangular	√3	1	1	0.2	0.2	∞
Probe Positioning with Respect to Phantom	6.7	Rectangular	√3	1	1	3.9	3.9	∞
Post-processing	4.0	Rectangular	√3	1	1	2.3	2.3	∞
Test Sample Related								
Test Sample Positioning	4.38 / 1.35	Normal	1	1	1	4.4	1.4	29
Device Holder Uncertainty	2.9 / 4.1	Normal	1	1	1	2.9	4.1	11
Power Drift of Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
Power Scaling	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Phantom and Setup								
Phantom Uncertainty (Shape and Thickness Tolerances)	7.6	Rectangular	√3	1	1	4.4	4.4	∞
Liquid Conductivity (Temperature Uncertainty)	3.24	Rectangular	√3	0.78	0.71	1.5	1.3	∞
Liquid Conductivity (Measured)	2.88	Normal	1	0.78	0.71	2.2	2.0	43
Liquid Permittivity (Temperature Uncertainty)	1.13	Rectangular	√3	0.23	0.26	0.2	0.2	∞
Liquid Permittivity (Measured)	2.50	Normal	1	0.23	0.26	0.6	0.7	54
Combined Standard Uncertainty						± 12.8 %	± 12.4 %	
Expanded Uncertainty (K=2)						**± 25.6 %**	**± 24.8 %**	

Body SAR Uncertainty Budget for Frequency Range of 3 GHz to 6 GHz

7. Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Taiwan HwaYa EMC/RF/Safety/Telecom Lab:
Add: No. 19, Hwa Ya 2nd Rd, Wen Hwa Vil., Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.
Tel: 886-3-318-3232
Fax: 886-3-327-0892

Taiwan LinKo EMC/RF Lab:
Add: No. 47-2, 14th Ling, Chia Pau Vil., Linkou Dist., New Taipei City 244, Taiwan, R.O.C.
Tel: 886-2-2605-2180
Fax: 886-2-2605-1924

Taiwan HsinChu EMC/RF Lab:
Add: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 30078, Taiwan, R.O.C.
Tel: 886-3-593-5343
Fax: 886-3-593-5342

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

The road map of all our labs can be found in our web site also.

---END---

Appendix A. SAR Plots of System Verification

The plots for system verification with largest deviation for each SAR system combination are shown as follows.

Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/01/09

System Check_B750_180109

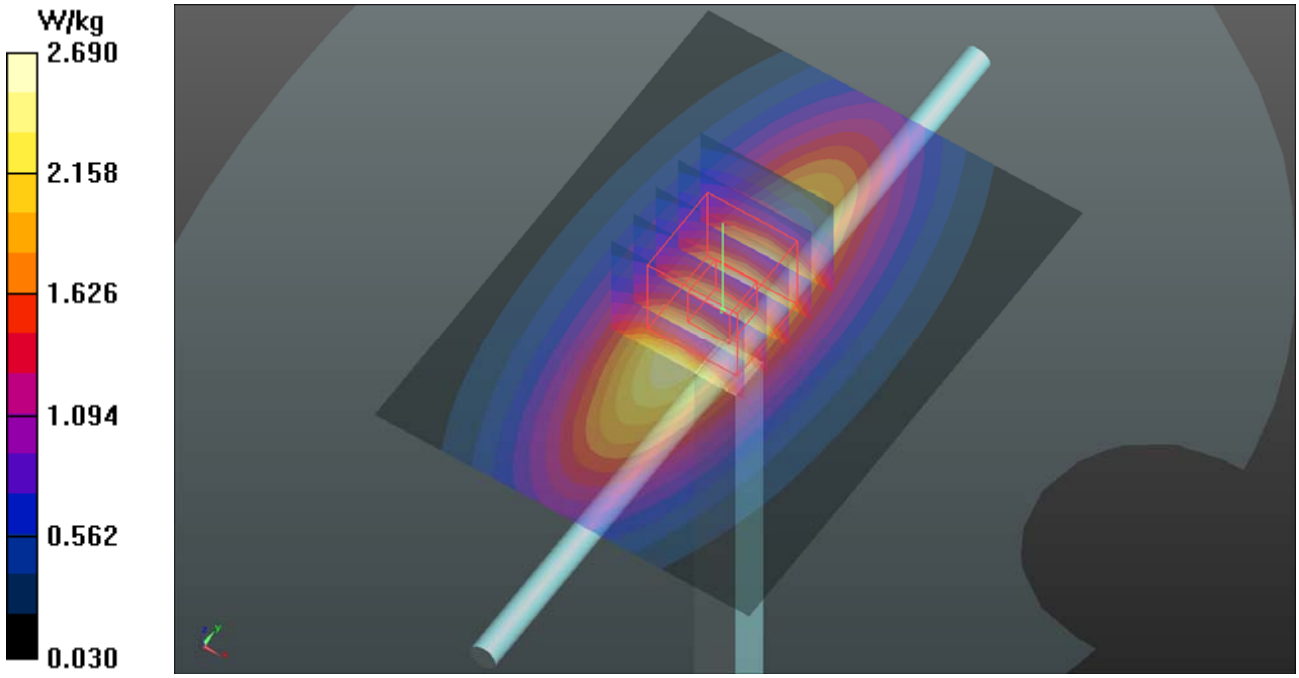
DUT: Dipole 750 MHz; Type: D750V3; SN: 1013

Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: B06T09N1_0109 Medium parameters used: f = 750 MHz; σ = 0.959 S/m; ε_r = 56.411; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.89, 9.89, 9.89); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.69 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.84 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.11 W/kg
SAR(1 g) = 2.17 W/kg; SAR(10 g) = 1.47 W/kg
Maximum value of SAR (measured) = 2.69 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2017/01/08

System Check_B835_180108

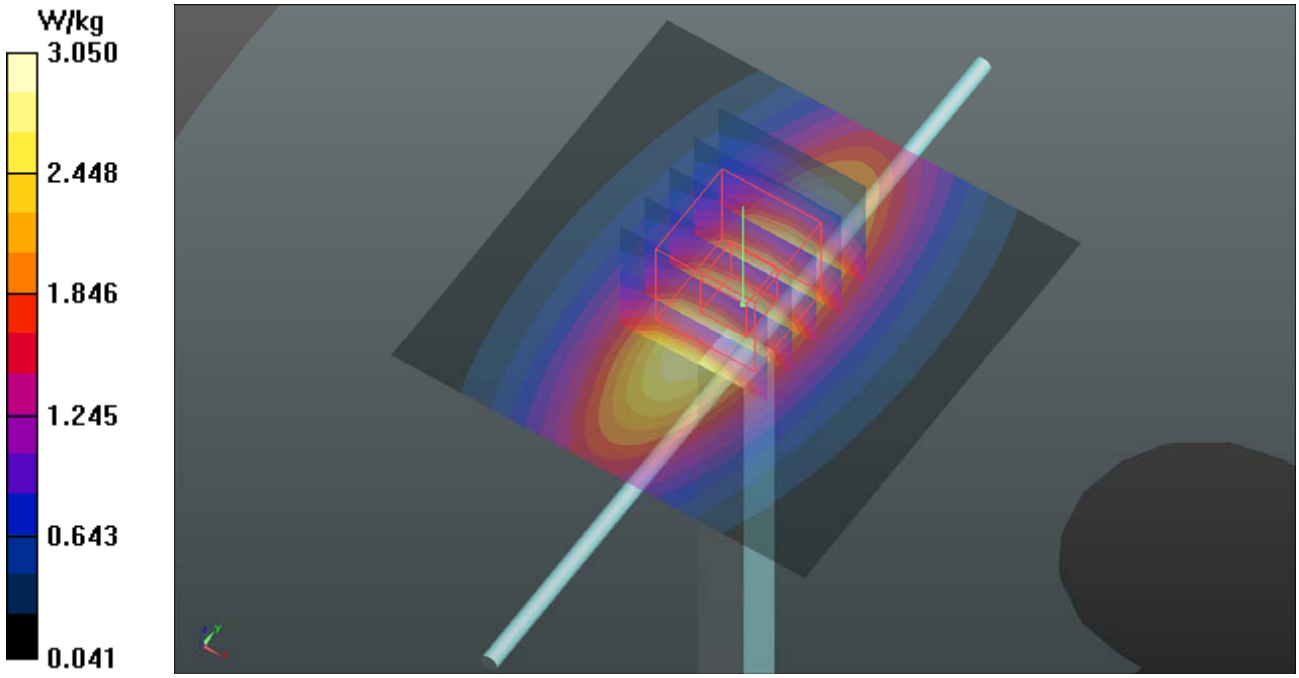
DUT: Dipole 835 MHz; Type: D835V2; SN: 4d121

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: B07T10N1_0108 Medium parameters used: f = 835 MHz; σ = 1.012 S/m; ε_r = 56.703; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.76, 9.76, 9.76); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.05 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 57.32 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 3.44 W/kg
SAR(1 g) = 2.29 W/kg; SAR(10 g) = 1.51 W/kg
Maximum value of SAR (measured) = 3.06 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/01/08

System Check_B1750_180108

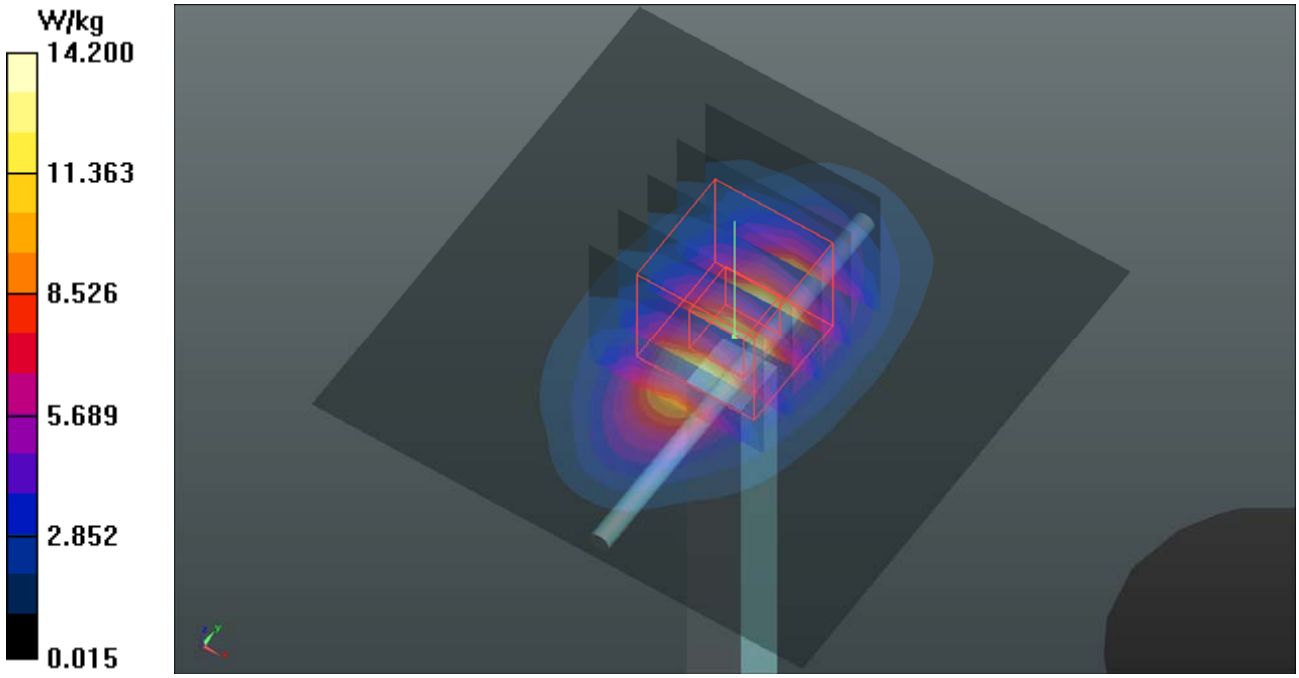
DUT: Dipole 1750 MHz; Type: D1750V2; SN: 1055

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: B16T20N1_0108 Medium parameters used: f = 1750 MHz; σ = 1.456 S/m; ε_r = 52.165; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8.27, 8.27, 8.27); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 14.2 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 102.3 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 16.6 W/kg
SAR(1 g) = 9.46 W/kg; SAR(10 g) = 5.08 W/kg
Maximum value of SAR (measured) = 14.3 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/01/08

System Check_B1900_180108

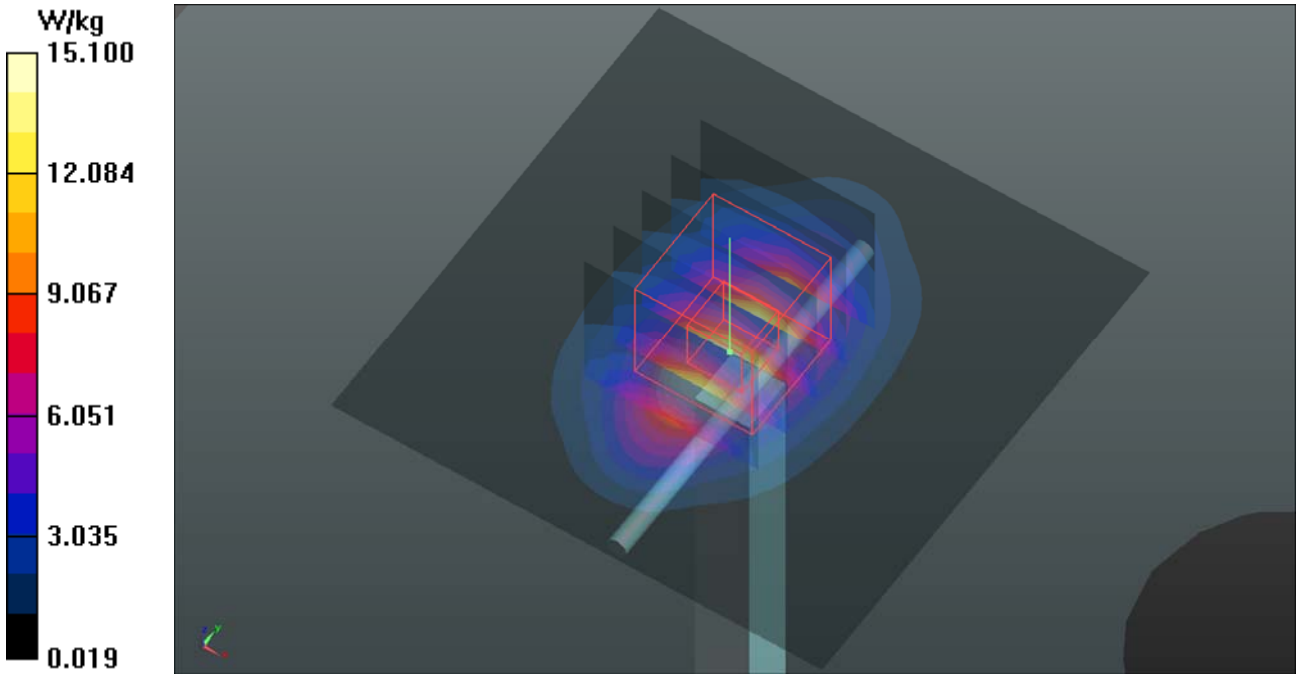
DUT: Dipole 1900 MHz; Type: D1900V2; SN: 5d036

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: B16T20N1_0108 Medium parameters used: f = 1900 MHz; σ = 1.584 S/m; ε_r = 51.781; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8, 8, 8); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 15.1 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 99.08 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 18.7 W/kg
SAR(1 g) = 10.5 W/kg; SAR(10 g) = 5.55 W/kg
Maximum value of SAR (measured) = 15.0 W/kg



System Check_B2450_180423

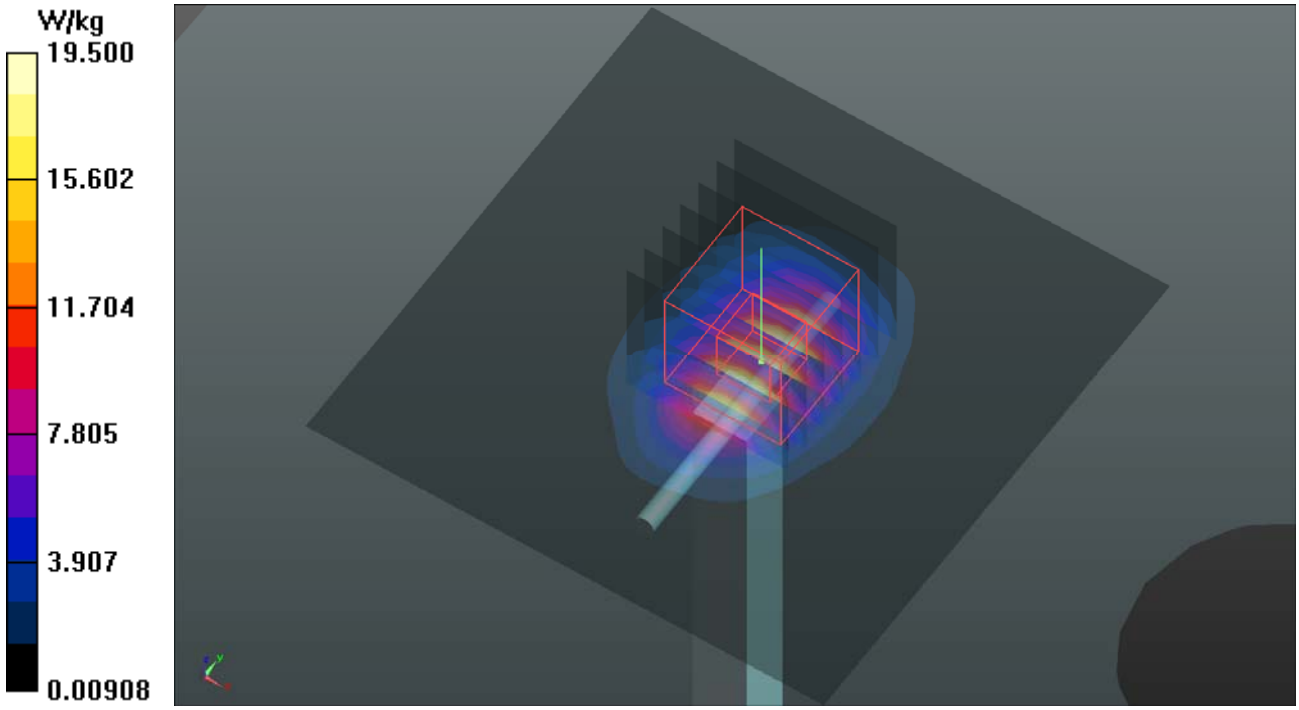
DUT: Dipole 2450 MHz; Type: D2450V2; SN: 737

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: B19T27N2_0423 Medium parameters used: f = 2450 MHz; σ = 2.02 S/m; ε_r = 50.572; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(7.68, 7.68, 7.68); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 19.5 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 91.15 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 24.8 W/kg
SAR(1 g) = 12 W/kg; SAR(10 g) = 5.54 W/kg
Maximum value of SAR (measured) = 20.1 W/kg



System Check_B5250_180423

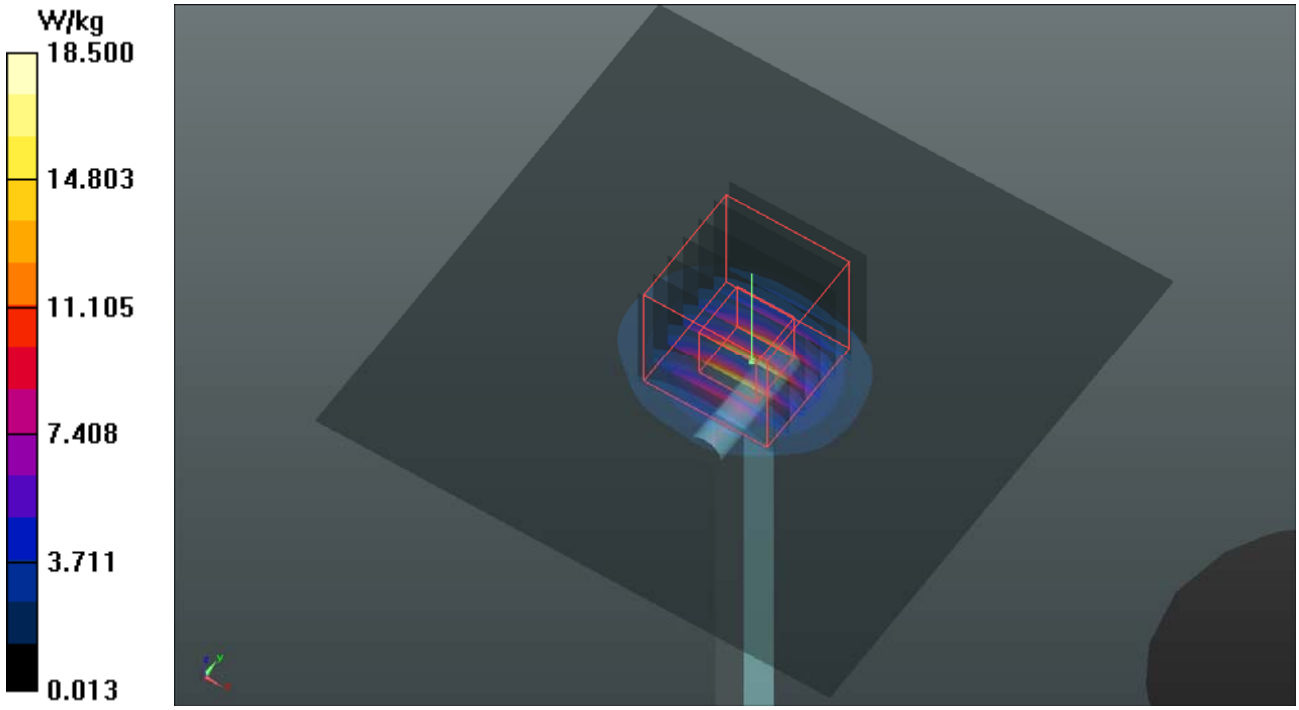
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: B34T60N1_0423 Medium parameters used: f = 5250 MHz; σ = 5.24 S/m; ε_r = 51.015; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(5.28, 5.28, 5.28); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 18.5 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 60.11 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 33.5 W/kg
SAR(1 g) = 7.85 W/kg; SAR(10 g) = 2.24 W/kg
Maximum value of SAR (measured) = 20.0 W/kg



System Check_B5600_180423

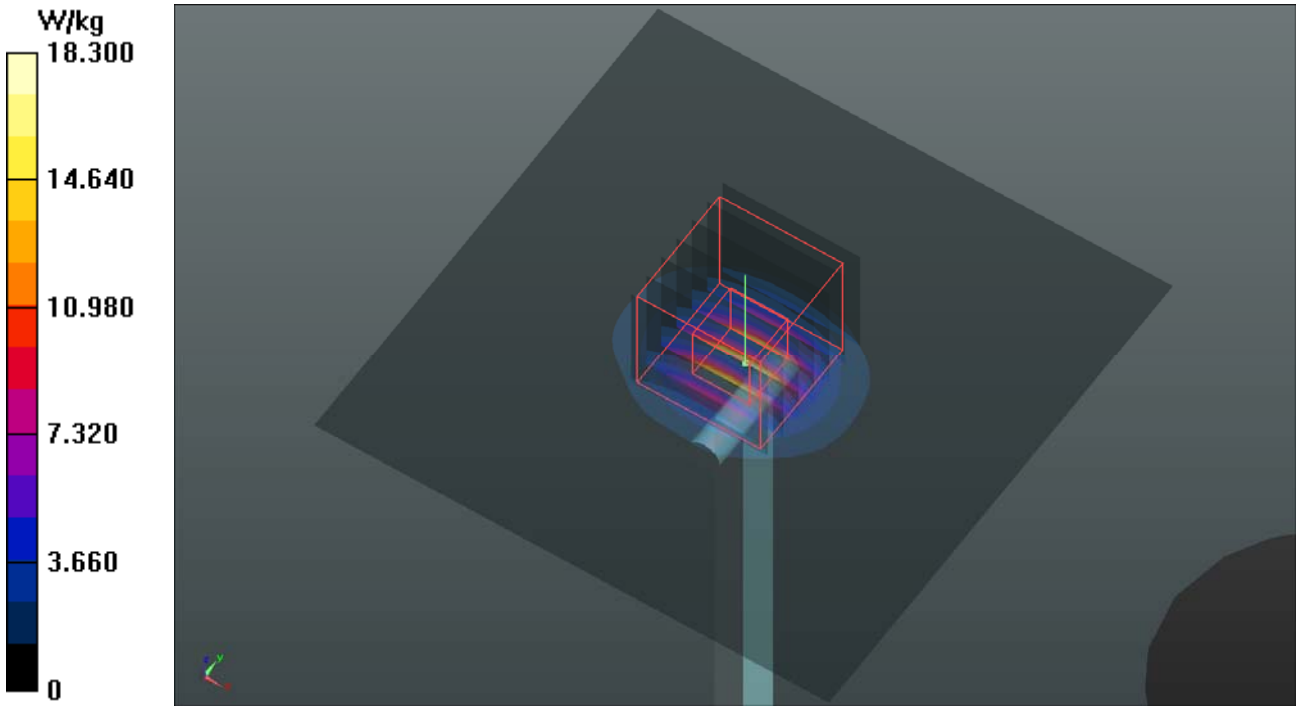
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: B34T60N1_0423 Medium parameters used: f = 5600 MHz; σ = 5.825 S/m; ε_r = 50.395; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(4.29, 4.29, 4.29); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 18.3 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 58.08 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 32.3 W/kg
SAR(1 g) = 7.76 W/kg; SAR(10 g) = 2.19 W/kg
Maximum value of SAR (measured) = 19.5 W/kg



System Check_B5800_180423

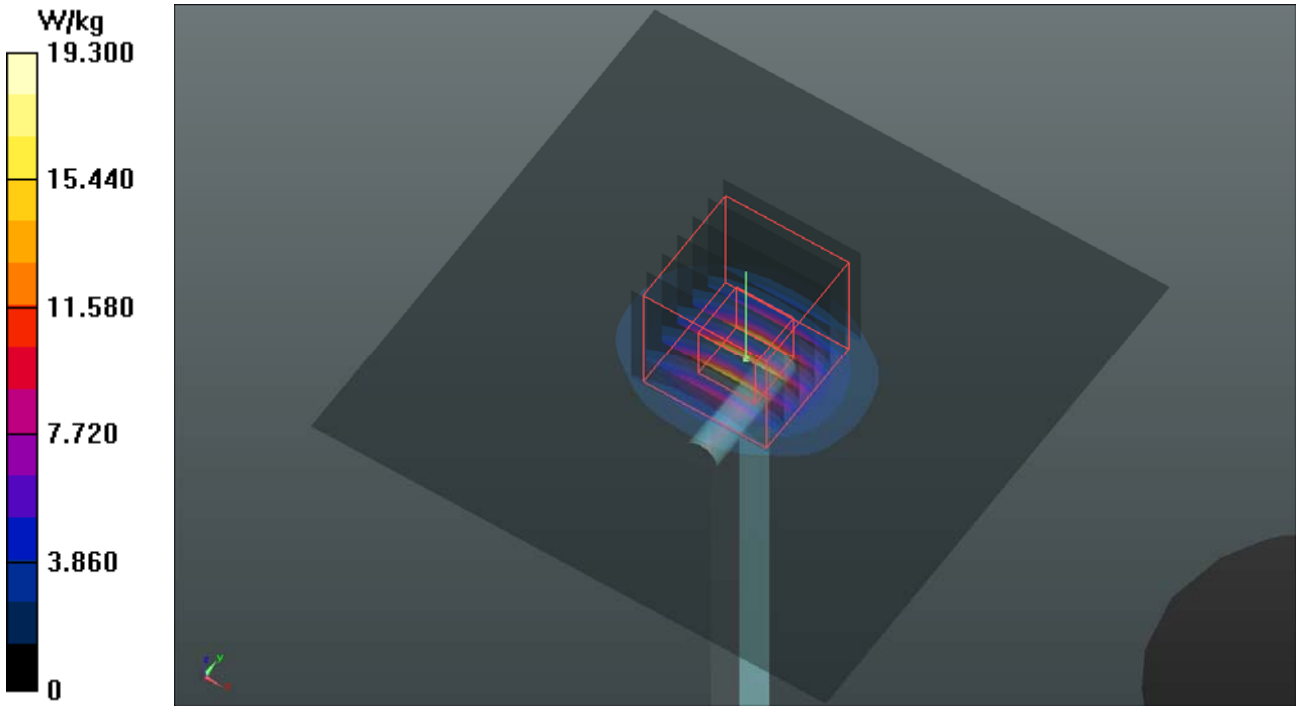
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: B34T60N1_0423 Medium parameters used: f = 5800 MHz; σ = 6.124 S/m; ε_r = 49.901; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(4.61, 4.61, 4.61); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 19.3 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 58.25 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 35.9 W/kg
SAR(1 g) = 7.94 W/kg; SAR(10 g) = 2.24 W/kg
Maximum value of SAR (measured) = 21.1 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/01/09

System Check_B750_180109

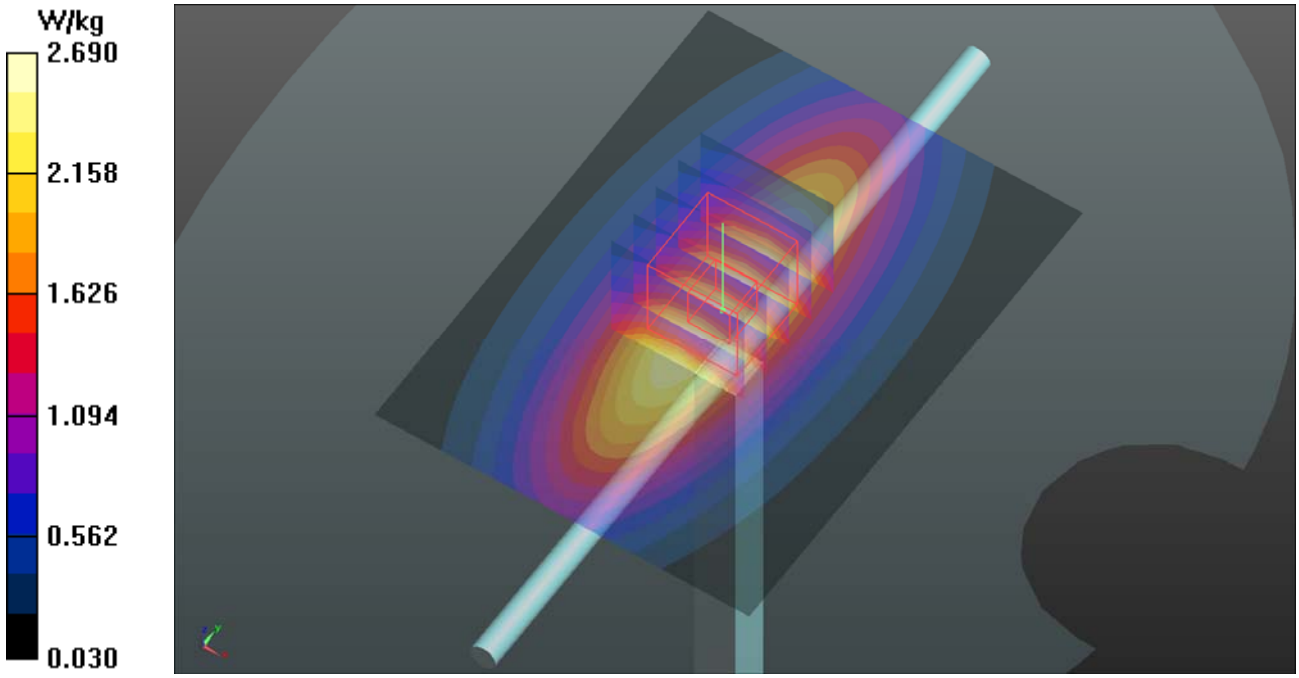
DUT: Dipole 750 MHz; Type: D750V3; SN: 1013

Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: B06T09N1_0109 Medium parameters used: f = 750 MHz; σ = 0.959 S/m; ε_r = 56.411; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.89, 9.89, 9.89); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.69 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.84 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.11 W/kg
SAR(1 g) = 2.17 W/kg; SAR(10 g) = 1.47 W/kg
Maximum value of SAR (measured) = 2.69 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2017/01/08

System Check_B835_180108

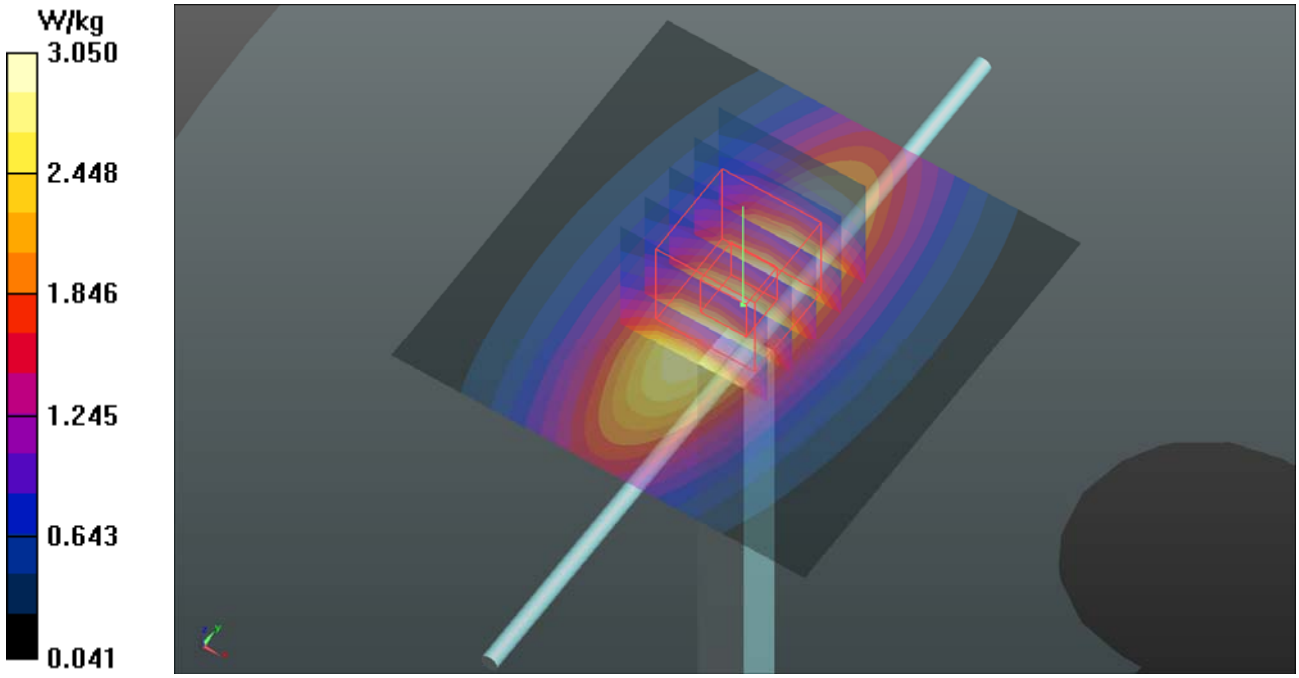
DUT: Dipole 835 MHz; Type: D835V2; SN: 4d121

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: B07T10N1_0108 Medium parameters used: f = 835 MHz; σ = 1.012 S/m; ε_r = 56.703; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.76, 9.76, 9.76); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.05 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 57.32 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 3.44 W/kg
SAR(1 g) = 2.29 W/kg; SAR(10 g) = 1.51 W/kg
Maximum value of SAR (measured) = 3.06 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/01/08

System Check_B1750_180108

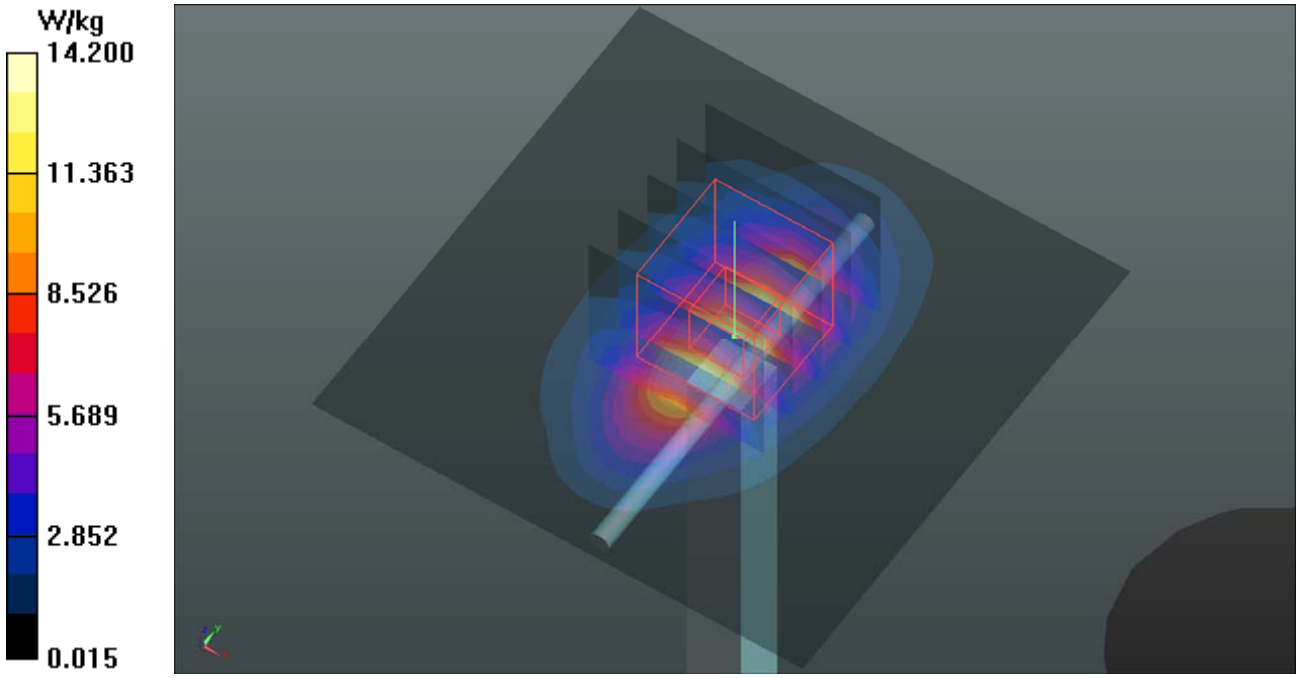
DUT: Dipole 1750 MHz; Type: D1750V2; SN: 1055

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: B16T20N1_0108 Medium parameters used: f = 1750 MHz; σ = 1.456 S/m; ε_r = 52.165; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8.27, 8.27, 8.27); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 14.2 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 102.3 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 16.6 W/kg
SAR(1 g) = 9.46 W/kg; SAR(10 g) = 5.08 W/kg
Maximum value of SAR (measured) = 14.3 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/01/08

System Check_B1900_180108

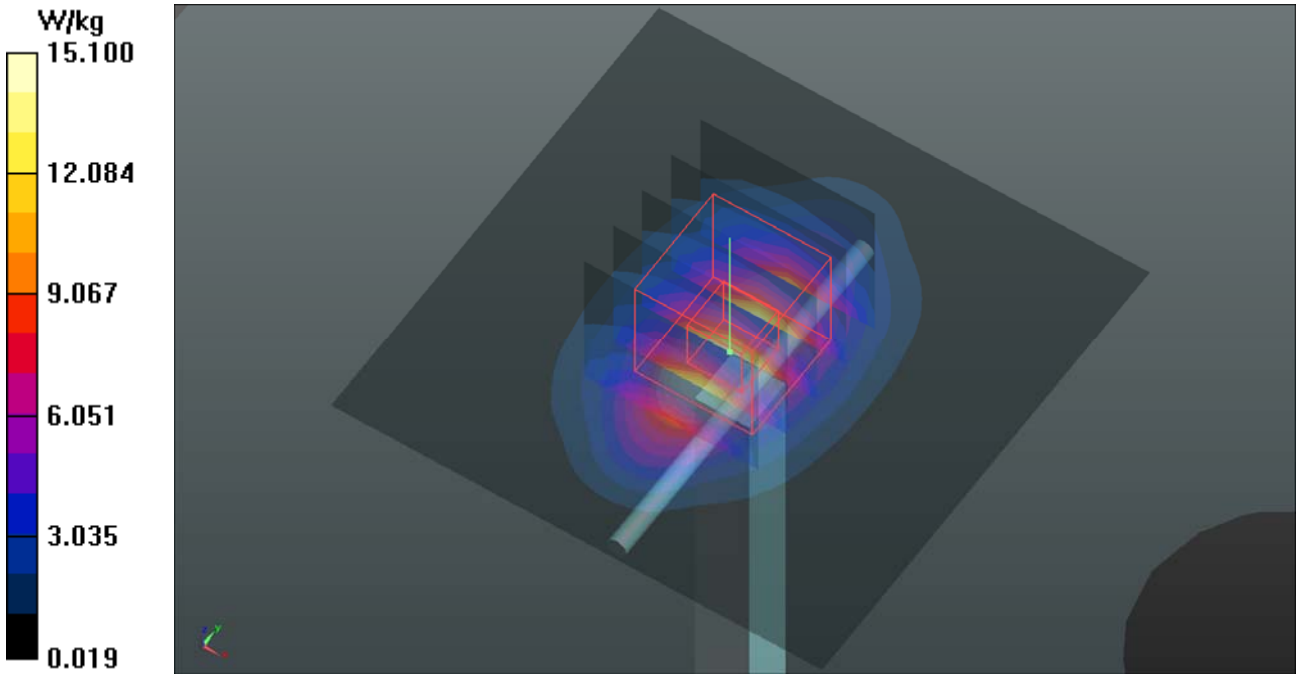
DUT: Dipole 1900 MHz; Type: D1900V2; SN: 5d036

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: B16T20N1_0108 Medium parameters used: f = 1900 MHz; σ = 1.584 S/m; ε_r = 51.781; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8, 8, 8); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 15.1 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 99.08 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 18.7 W/kg
SAR(1 g) = 10.5 W/kg; SAR(10 g) = 5.55 W/kg
Maximum value of SAR (measured) = 15.0 W/kg



System Check_B2450_180423

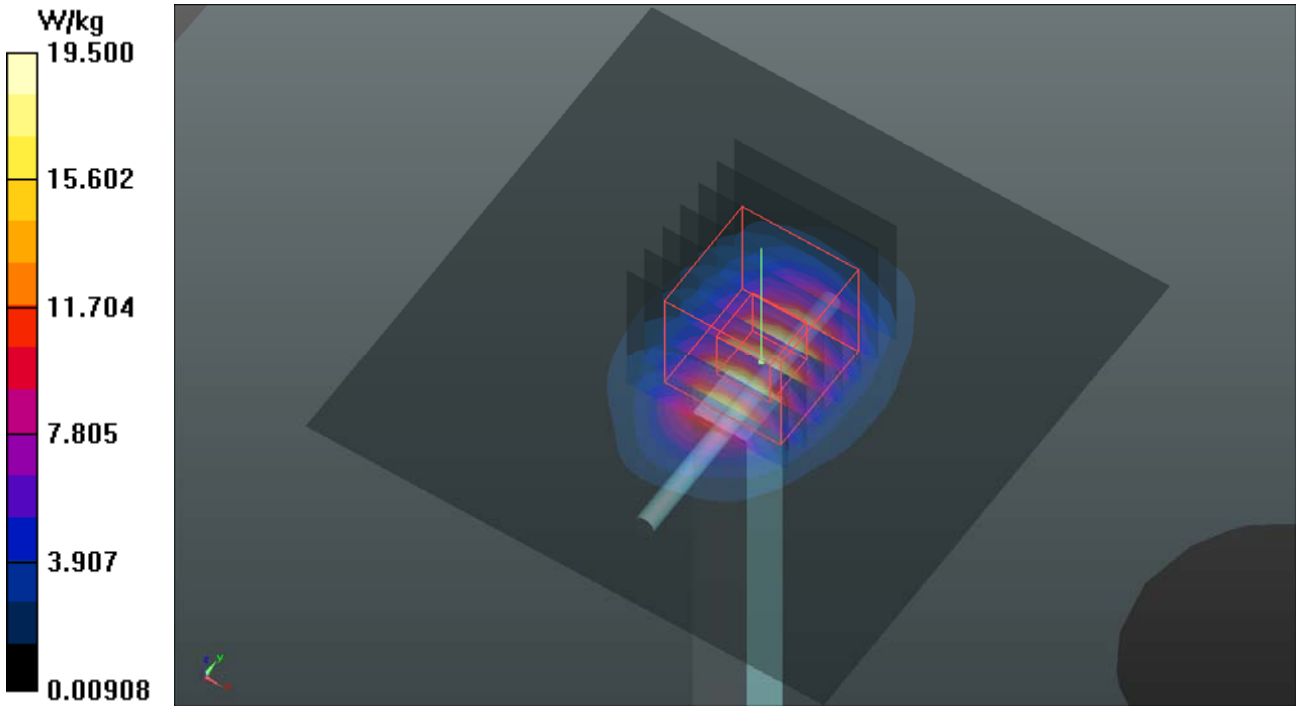
DUT: Dipole 2450 MHz; Type: D2450V2; SN: 737

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: B19T27N2_0423 Medium parameters used: f = 2450 MHz; σ = 2.02 S/m; ε_r = 50.572; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(7.68, 7.68, 7.68); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 19.5 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 91.15 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 24.8 W/kg
SAR(1 g) = 12 W/kg; SAR(10 g) = 5.54 W/kg
Maximum value of SAR (measured) = 20.1 W/kg



System Check_B5250_180423

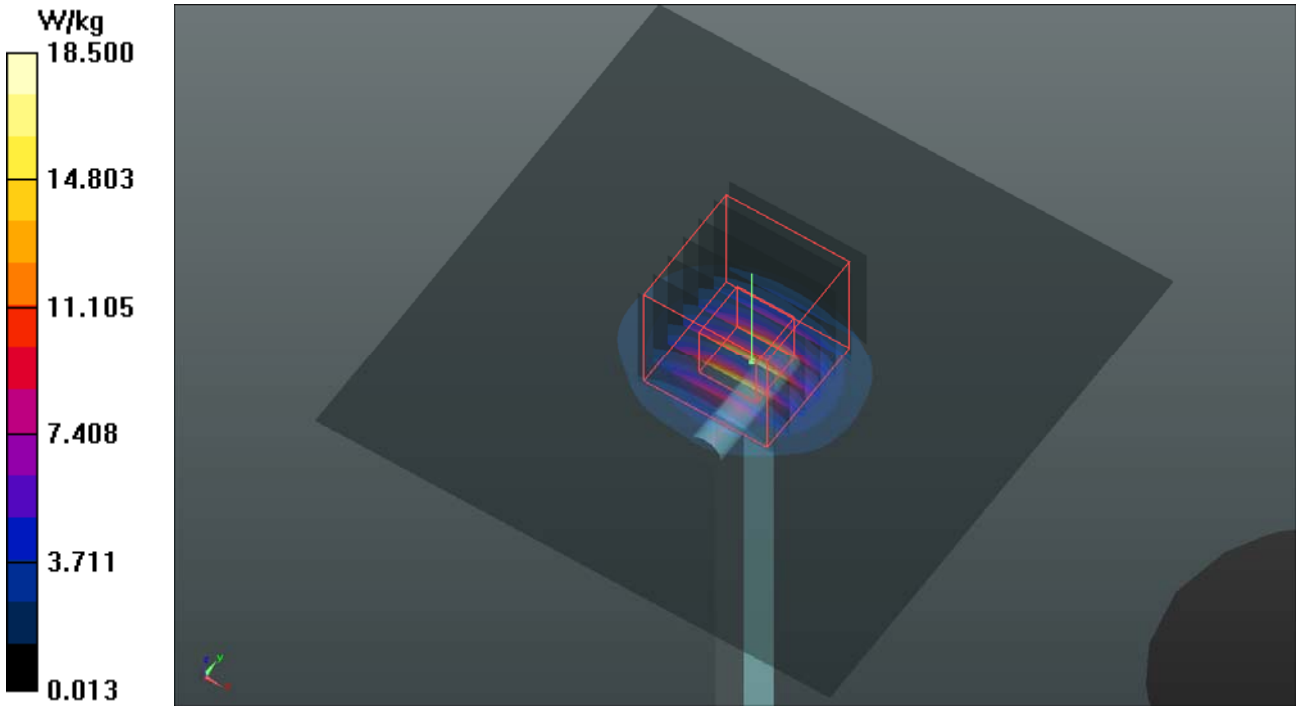
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: B34T60N1_0423 Medium parameters used: f = 5250 MHz; σ = 5.24 S/m; ε_r = 51.015; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(5.28, 5.28, 5.28); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 18.5 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 60.11 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 33.5 W/kg
SAR(1 g) = 7.85 W/kg; SAR(10 g) = 2.24 W/kg
Maximum value of SAR (measured) = 20.0 W/kg



System Check_B5600_180423

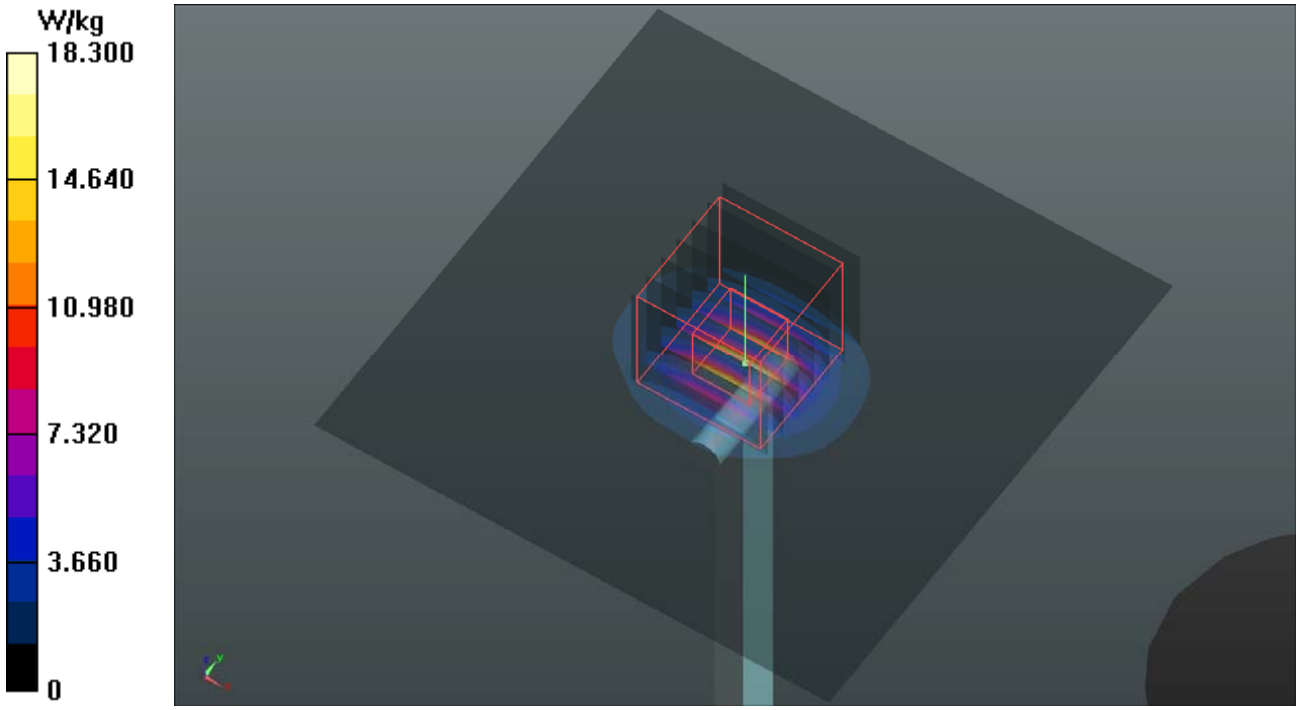
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: B34T60N1_0423 Medium parameters used: f = 5600 MHz; σ = 5.825 S/m; ε_r = 50.395; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(4.29, 4.29, 4.29); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 18.3 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 58.08 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 32.3 W/kg
SAR(1 g) = 7.76 W/kg; SAR(10 g) = 2.19 W/kg
Maximum value of SAR (measured) = 19.5 W/kg



System Check_B5800_180423

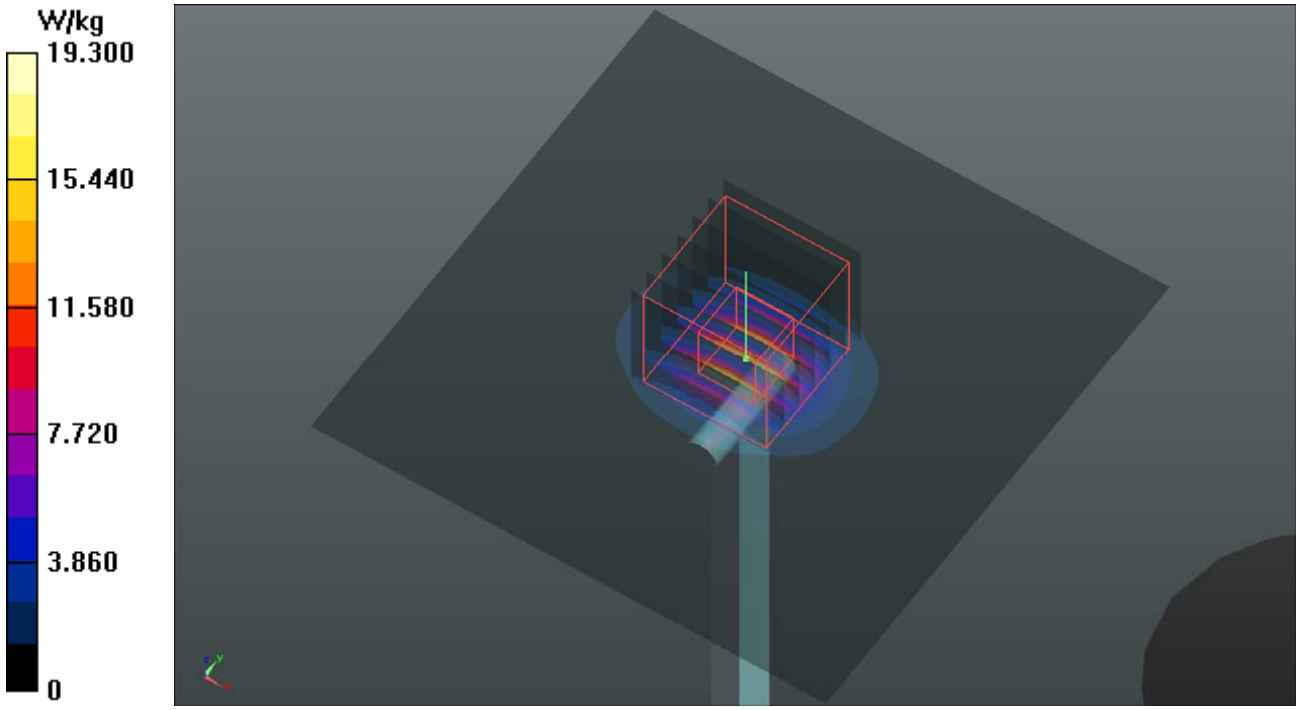
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: B34T60N1_0423 Medium parameters used: f = 5800 MHz; σ = 6.124 S/m; ε_r = 49.901; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(4.61, 4.61, 4.61); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 19.3 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 58.25 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 35.9 W/kg
SAR(1 g) = 7.94 W/kg; SAR(10 g) = 2.24 W/kg
Maximum value of SAR (measured) = 21.1 W/kg



Appendix B. SAR Plots of SAR Measurement

The SAR plots for highest measured SAR in each exposure configuration, wireless mode and frequency band combination, and measured SAR > 1.5 W/kg are shown as follows.

Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/01/08

P01 GSM850_GPRS11_Rear Face_0cm_Ch128

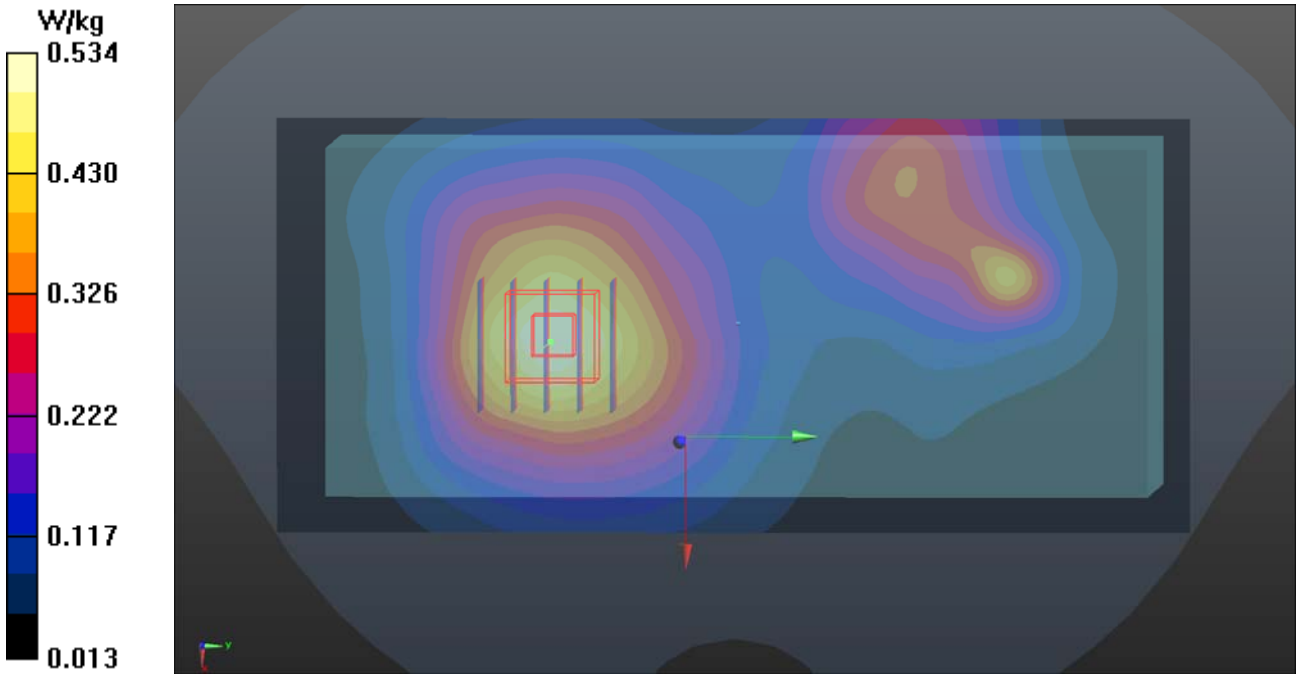
DUT: 171212C20

Communication System: GPRS11; Frequency: 824.2 MHz;Duty Cycle: 1:2.67
Medium: B07T10N1_0108 Medium parameters used: f = 824.2 MHz; σ = 1.002 S/m; ε_r = 56.773; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.76, 9.76, 9.76); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.534 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.20 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.553 W/kg
SAR(1 g) = 0.410 W/kg; SAR(10 g) = 0.302 W/kg
Maximum value of SAR (measured) = 0.504 W/kg



P02 GSM1900_GPRS12_Rear Face_0cm_Ch810

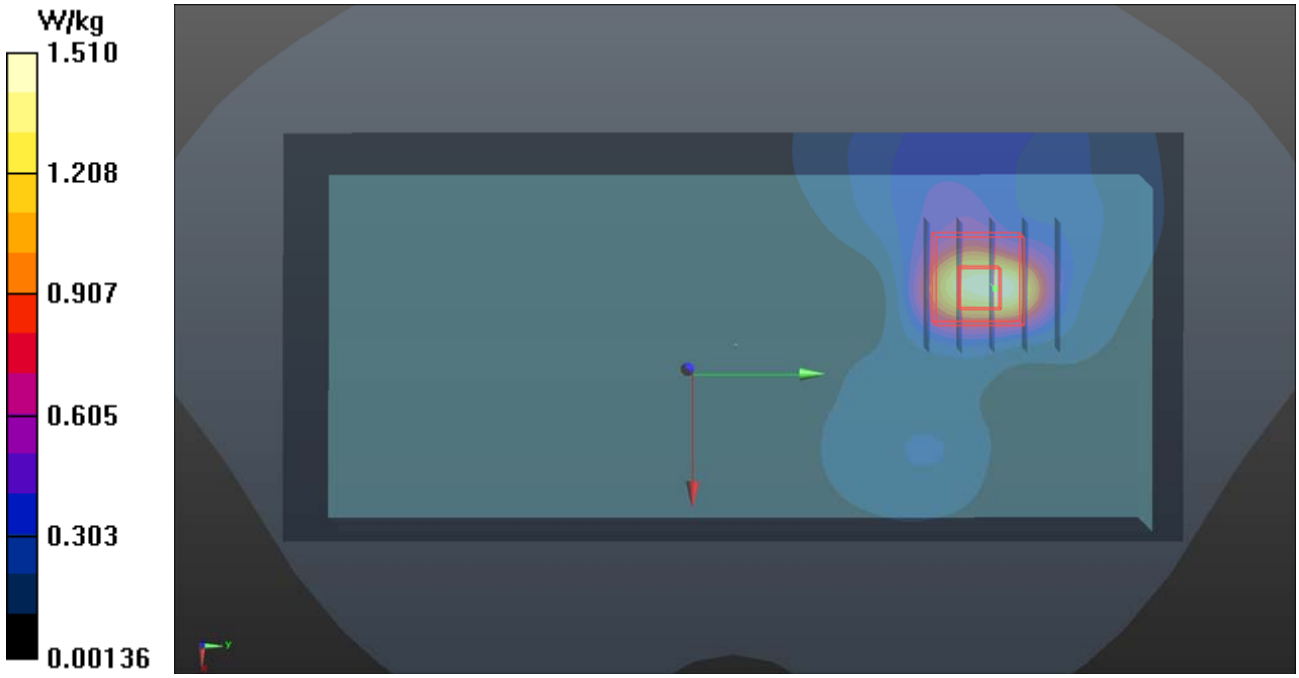
DUT: 171212C20

Communication System: GPRS12; Frequency: 1909.8 MHz;Duty Cycle: 1:2
Medium: B16T20N1_0108 Medium parameters used: f = 1910 MHz; σ = 1.596 S/m; ε_r = 51.749; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8, 8, 8); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.51 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.16 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 2.49 W/kg
SAR(1 g) = 1.18 W/kg; SAR(10 g) = 0.500 W/kg
Maximum value of SAR (measured) = 1.98 W/kg



P03 WCDMA II_RMC12.2K_Rear Face_0cm_Ch9538

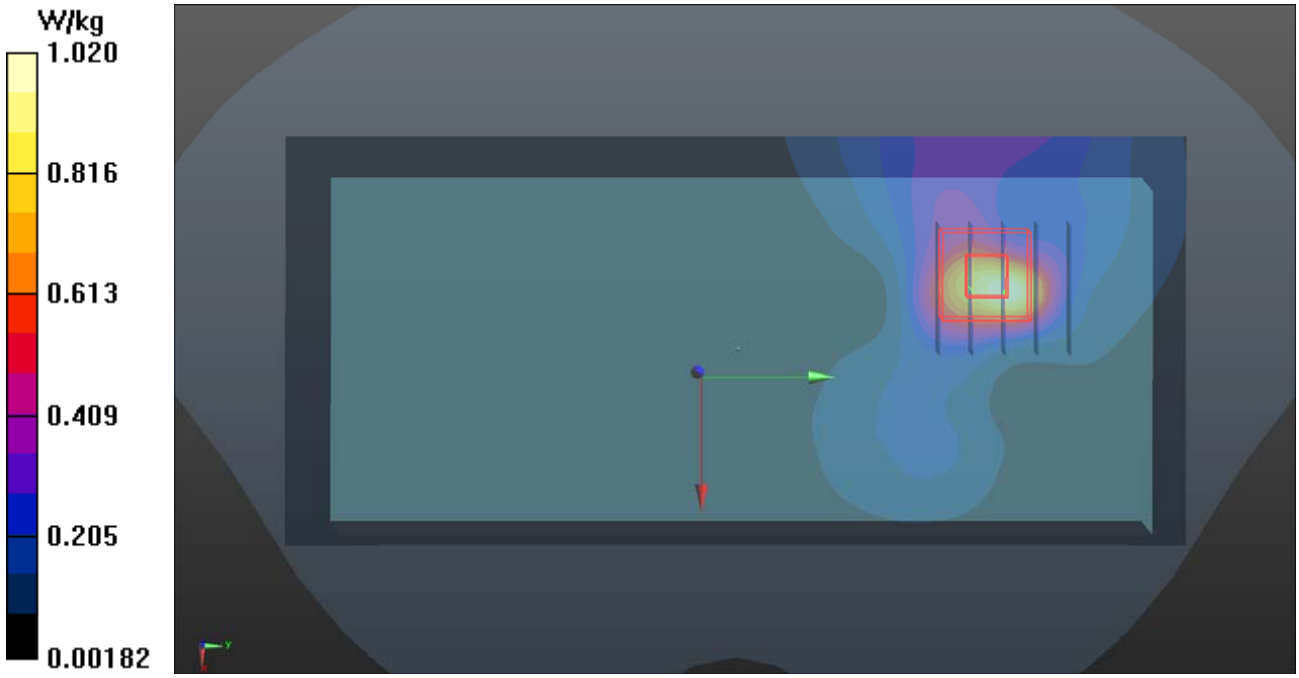
DUT: 171212C20

Communication System: WCDMA; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: B16T20N1_0108 Medium parameters used: f = 1908 MHz; σ = 1.593 S/m; ε_r = 51.757; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8, 8, 8); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.02 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.81 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 2.22 W/kg
SAR(1 g) = 1.03 W/kg; SAR(10 g) = 0.429 W/kg
Maximum value of SAR (measured) = 1.44 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/01/08

P04 WCDMA IV_RMC12.2K_Rear Face_0cm_Ch1513

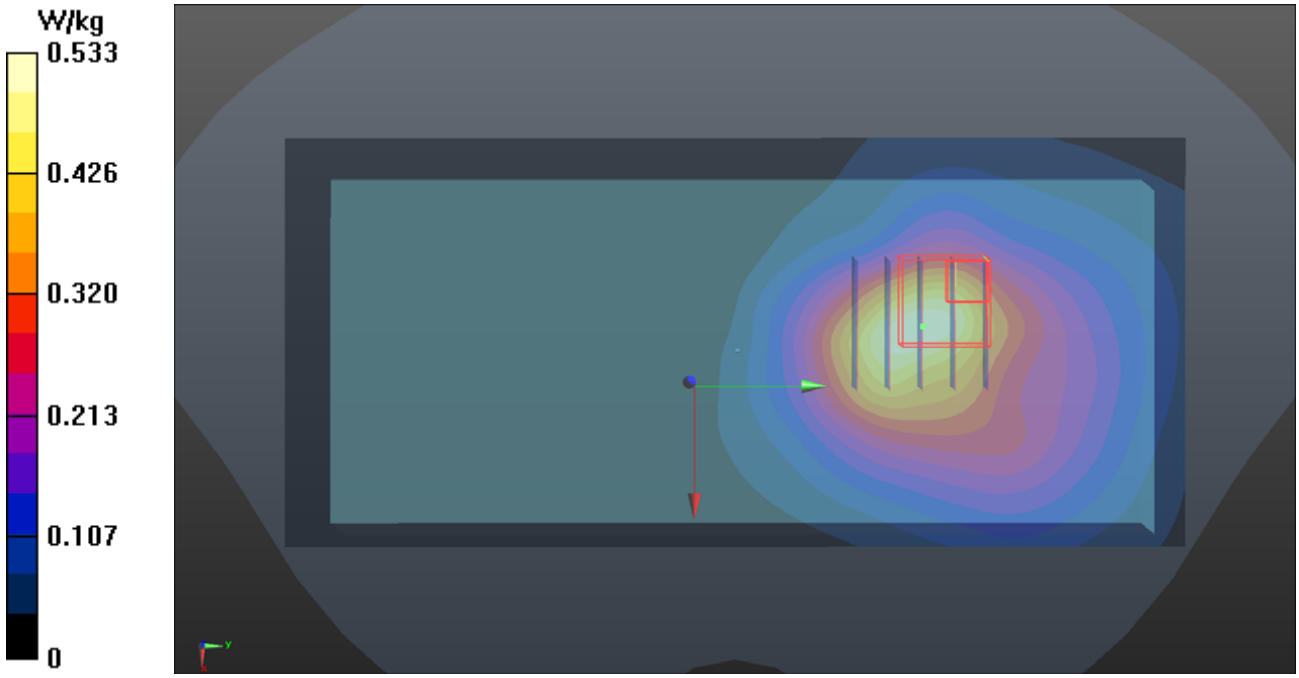
DUT: 171212C20

Communication System: WCDMA; Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium: B16T20N1_0108 Medium parameters used: f = 1753 MHz; σ = 1.458 S/m; ε_r = 52.153; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8.27, 8.27, 8.27); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.533 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.60 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.21 W/kg
SAR(1 g) = 0.479 W/kg; SAR(10 g) = 0.228 W/kg
Maximum value of SAR (measured) = 0.994 W/kg



P05 WCDMA V_RMC12.2K_Rear Face_0cm_Ch4132

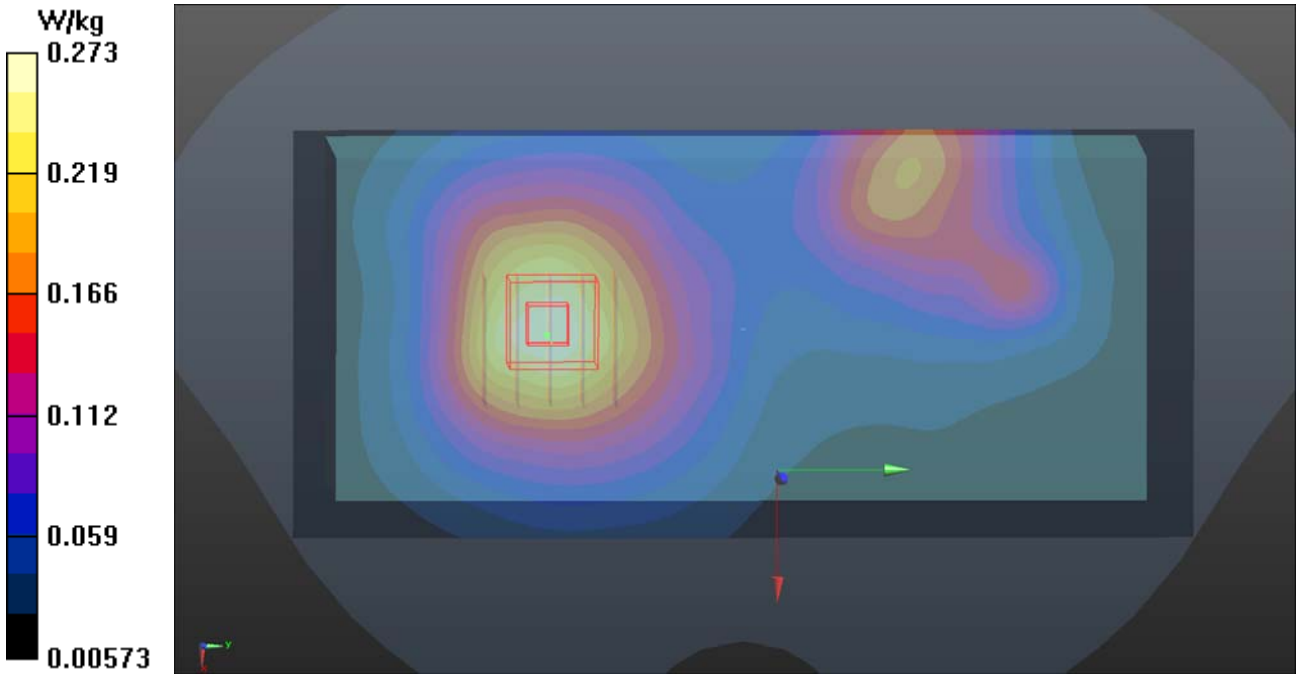
DUT: 171212C20

Communication System: WCDMA; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: B07T10N1_0108 Medium parameters used: f = 826.4 MHz; σ = 1.004 S/m; ε_r = 56.758; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.76, 9.76, 9.76); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.273 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.60 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.292 W/kg
SAR(1 g) = 0.215 W/kg; SAR(10 g) = 0.158 W/kg
Maximum value of SAR (measured) = 0.265 W/kg



P35 LTE 2_QPSK20M_Rear Face_0cm_Ch19100_1RB_OS0

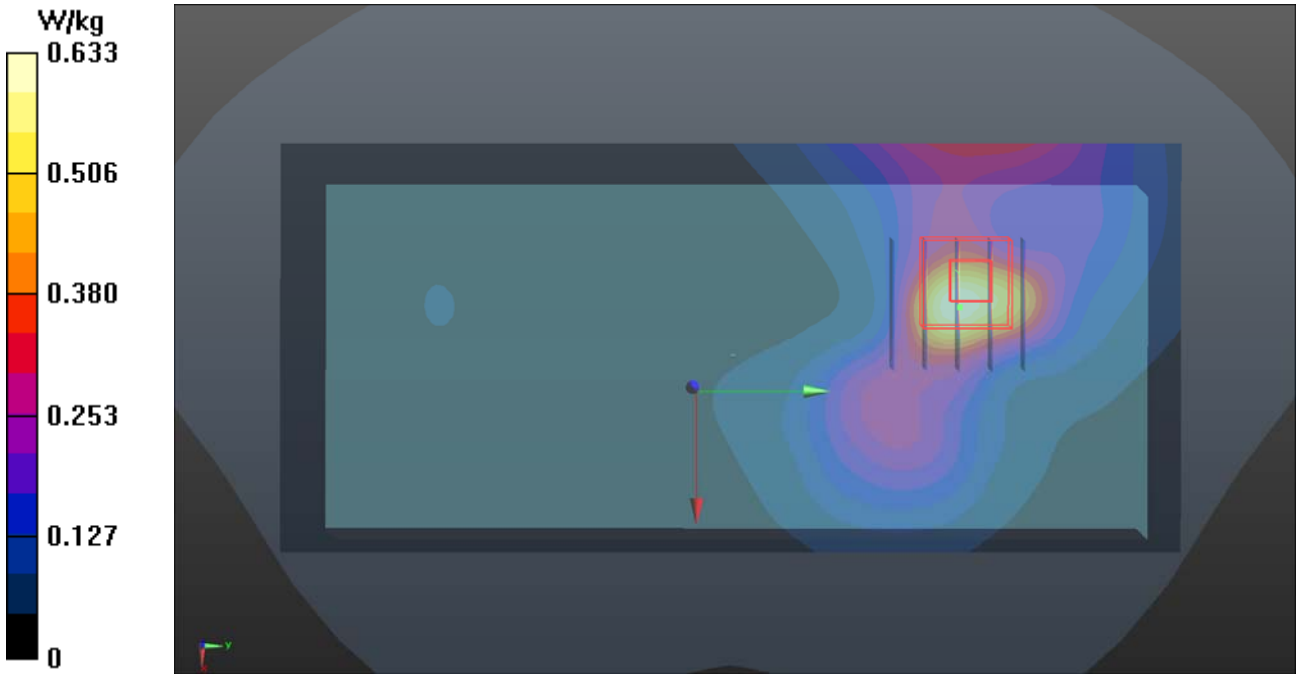
DUT: 171212C20

Communication System: LTE; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: B16T20N1_0108 Medium parameters used: f = 1900 MHz; σ = 1.584 S/m; ε_r = 51.781; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8, 8, 8); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.633 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.74 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.97 W/kg
SAR(1 g) = 0.905 W/kg; SAR(10 g) = 0.364 W/kg
Maximum value of SAR (measured) = 1.49 W/kg



P06 LTE 4_QPSK20M_Rear Face_0cm_Ch20300_1RB_OS0

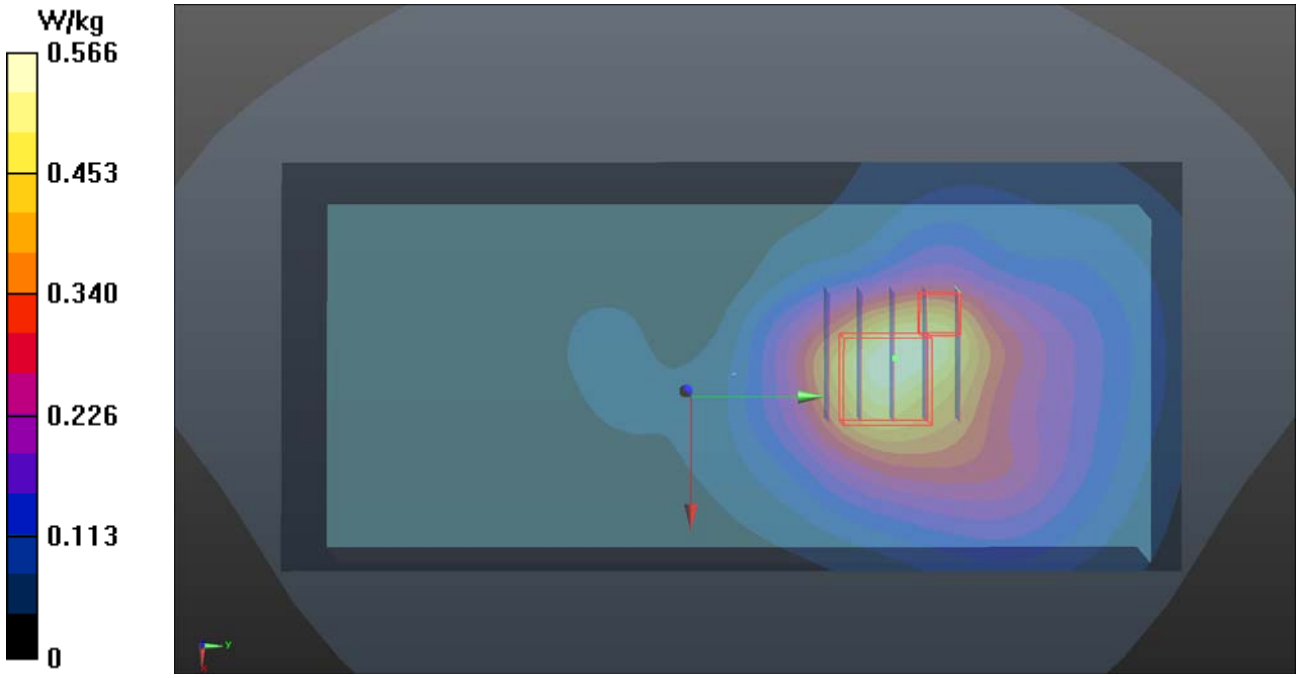
DUT: 171212C20

Communication System: LTE; Frequency: 1745 MHz;Duty Cycle: 1:1
Medium: B16T20N1_0108 Medium parameters used: f = 1745 MHz; σ = 1.453 S/m; ε_r = 52.183; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8.27, 8.27, 8.27); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.566 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.19 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.397 W/kg; SAR(10 g) = 0.241 W/kg
Maximum value of SAR (measured) = 0.927 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/01/08

P07 LTE 5_QPSK10M_Rear Face_0cm_Ch20600_1RB_OS0

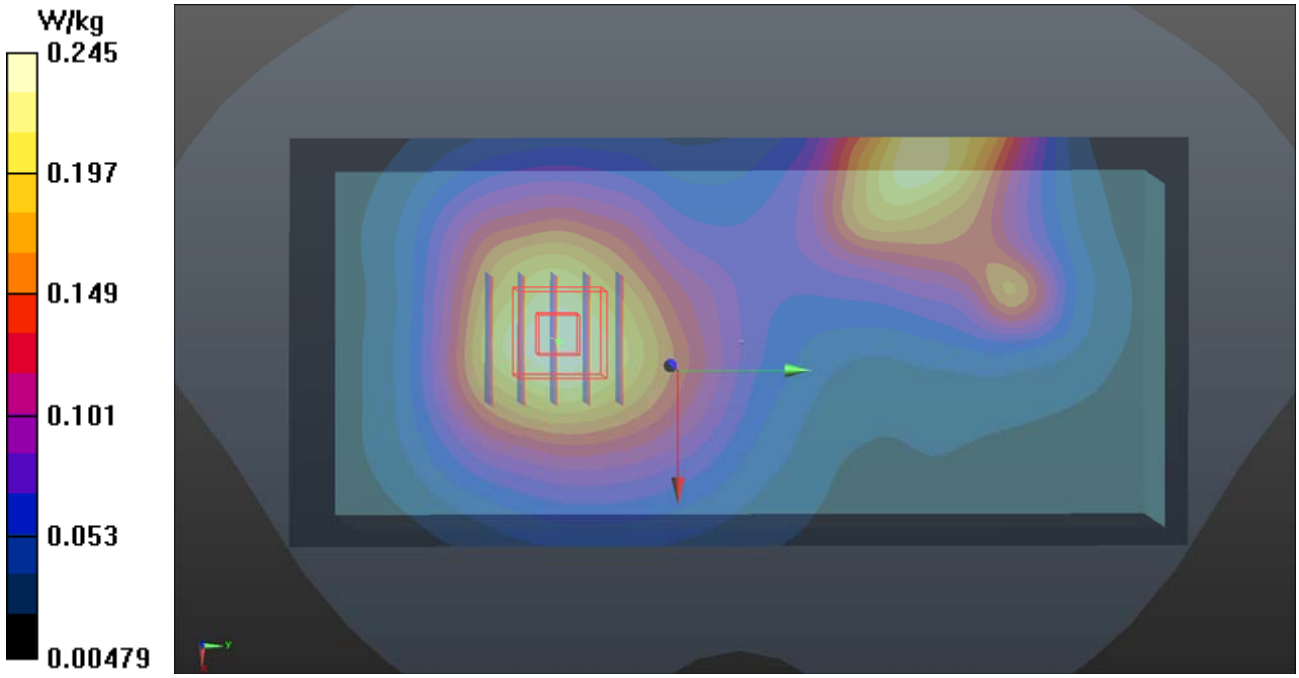
DUT: 171212C20

Communication System: LTE; Frequency: 844 MHz;Duty Cycle: 1:1
Medium: B07T10N1_0108 Medium parameters used: f = 844 MHz; σ = 1.02 S/m; ε_r = 56.634; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.76, 9.76, 9.76); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.245 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.31 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.271 W/kg
SAR(1 g) = 0.196 W/kg; SAR(10 g) = 0.143 W/kg
Maximum value of SAR (measured) = 0.244 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/01/09

P08 LTE 7_QPSK20M_Rear Face_0cm_Ch20850_1RB_OS0

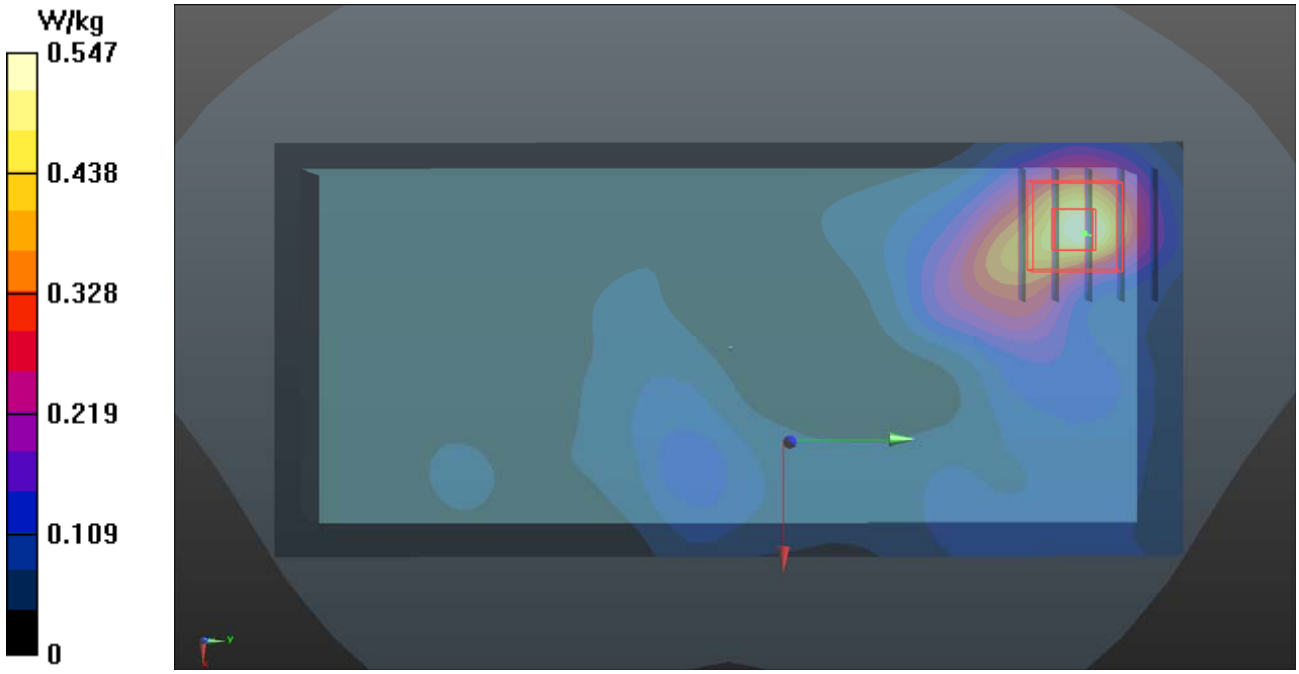
DUT: 171212C20

Communication System: LTE; Frequency: 2510 MHz;Duty Cycle: 1:1
Medium: B19T27N1_0109 Medium parameters used: f = 2510 MHz; σ = 2.108 S/m; ε_r = 51.738; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7375; ConvF(7.43, 7.43, 7.43); Calibrated: 2017/12/18;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2017/07/31
- Phantom: Twin SAM Phantom_1822; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (91x191x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.547 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.58 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.650 W/kg
SAR(1 g) = 0.339 W/kg; SAR(10 g) = 0.174 W/kg
Maximum value of SAR (measured) = 0.504 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/01/09

P09 LTE 12_QPSK10M_Rear Face_0cm_Ch23130_1RB_OS0

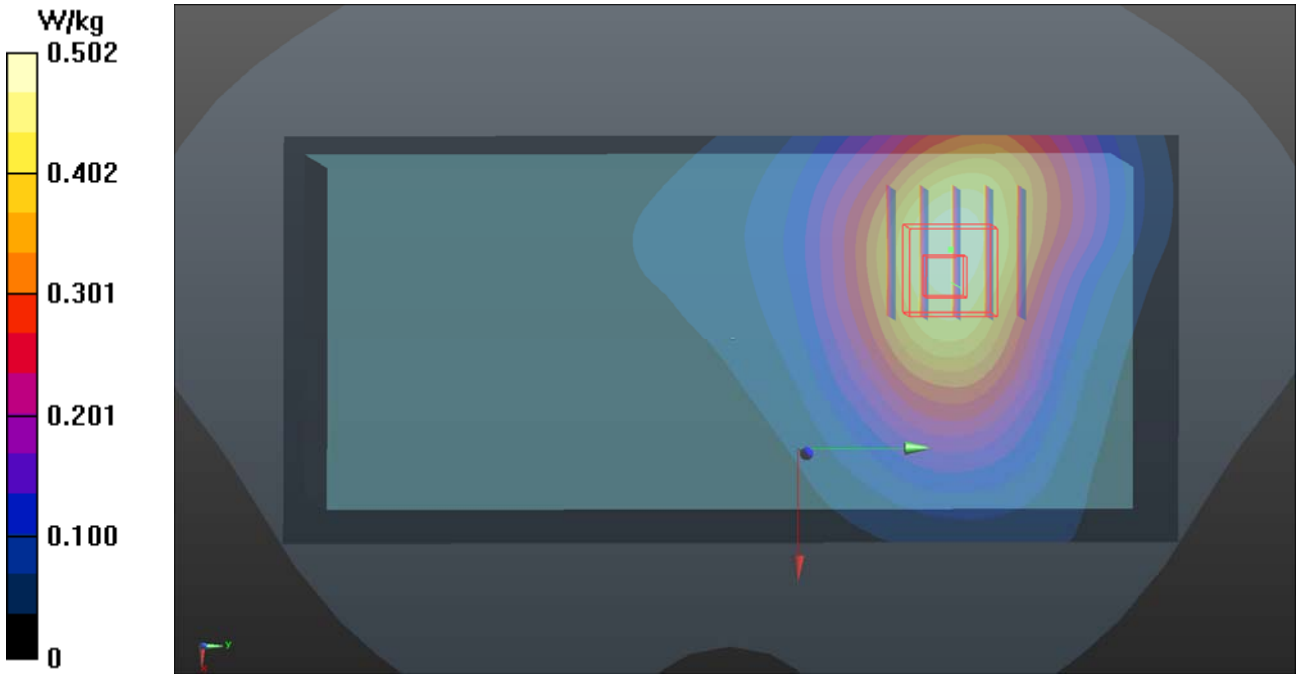
DUT: 171212C20

Communication System: LTE; Frequency: 711 MHz;Duty Cycle: 1:1
Medium: B06T09N1_0109 Medium parameters used: f = 711 MHz; σ = 0.924 S/m; ε_r = 56.802; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.89, 9.89, 9.89); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.502 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.54 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.538 W/kg
SAR(1 g) = 0.388 W/kg; SAR(10 g) = 0.278 W/kg
Maximum value of SAR (measured) = 0.486 W/kg



P10 LTE 13_QPSK10M_Rear Face_0cm_Ch23230_1RB_OS0

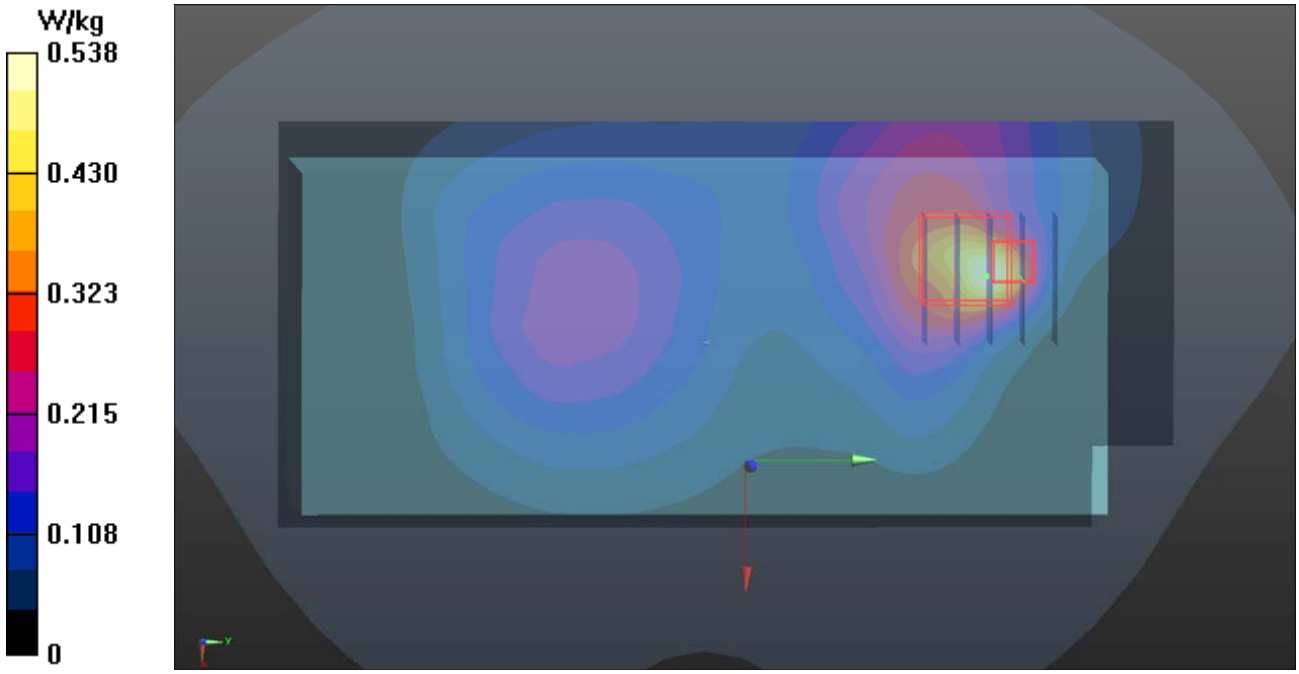
DUT: 171212C20

Communication System: LTE; Frequency: 782 MHz;Duty Cycle: 1:1
Medium: B06T09N1_0109 Medium parameters used: f = 782 MHz; σ = 0.99 S/m; ε_r = 56.118; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.89, 9.89, 9.89); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.538 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.34 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.711 W/kg
SAR(1 g) = 0.264 W/kg; SAR(10 g) = 0.167 W/kg
Maximum value of SAR (measured) = 0.533 W/kg



P11 LTE 25_QPSK20M_Rear Face_0cm_Ch26590_1RB_OS0

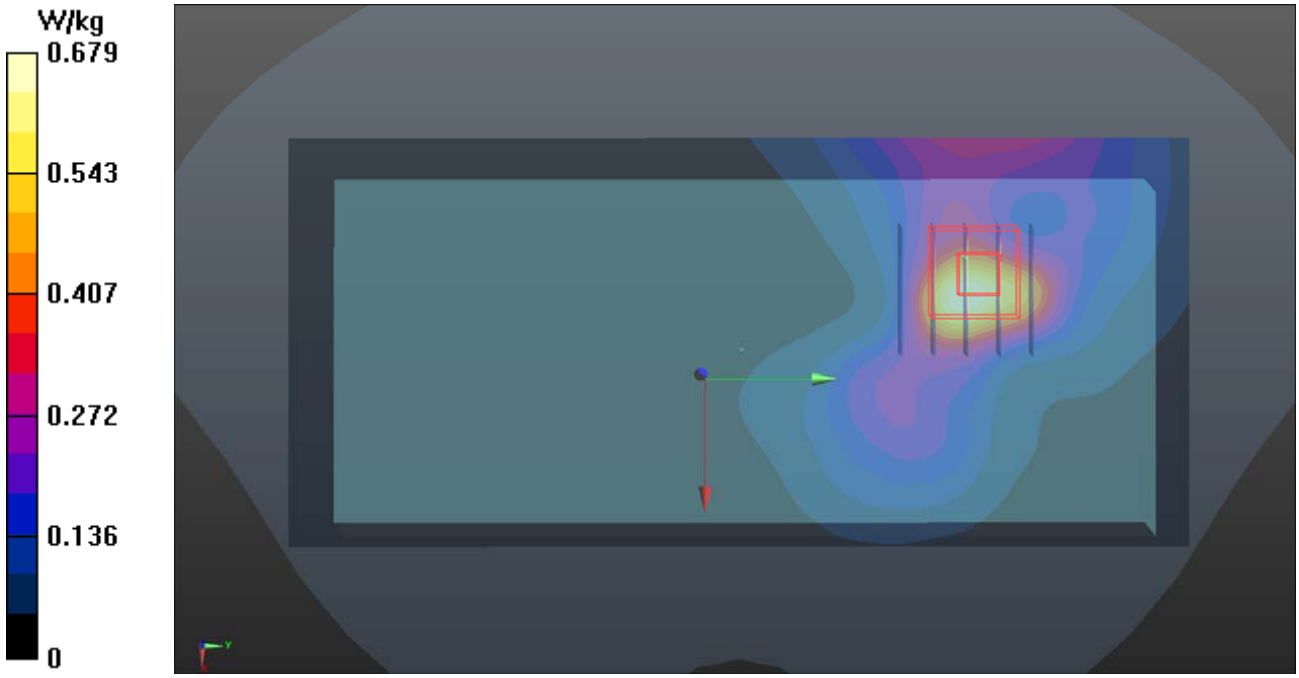
DUT: 171212C20

Communication System: LTE; Frequency: 1905 MHz;Duty Cycle: 1:1
Medium: B16T20N1_0108 Medium parameters used: f = 1905 MHz; σ = 1.589 S/m; ε_r = 51.765; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8, 8, 8); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.679 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.22 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 2.15 W/kg
SAR(1 g) = 0.978 W/kg; SAR(10 g) = 0.394 W/kg
Maximum value of SAR (measured) = 1.41 W/kg



P12 LTE 26_QPSK15M_Rear Face_0cm_Ch26965_1RB_OS74

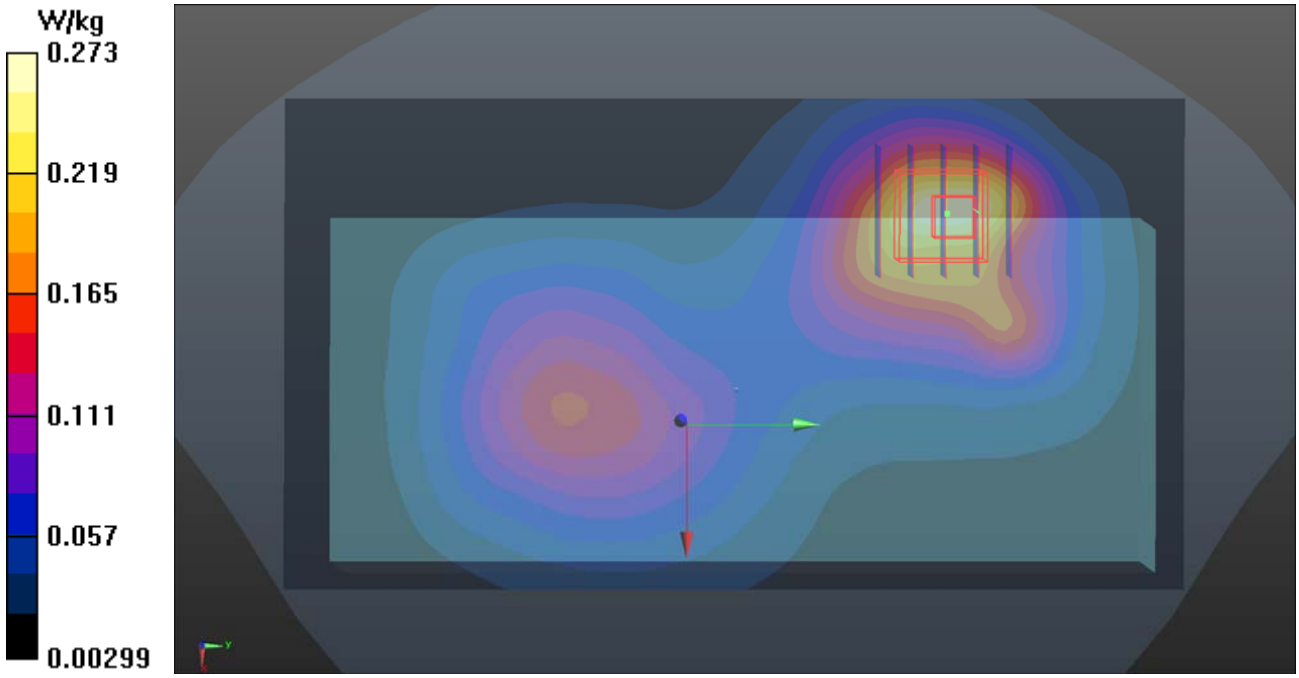
DUT: 171212C20

Communication System: LTE; Frequency: 841.5 MHz;Duty Cycle: 1:1
Medium: B07T10N1_0108 Medium parameters used: f = 841.5 MHz; σ = 1.018 S/m; ε_r = 56.648; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.76, 9.76, 9.76); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (81x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.273 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.67 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.321 W/kg
SAR(1 g) = 0.207 W/kg; SAR(10 g) = 0.135 W/kg
Maximum value of SAR (measured) = 0.274 W/kg



P13 WLAN2.4G_208.11b_Rear Face_0mm_Ch1

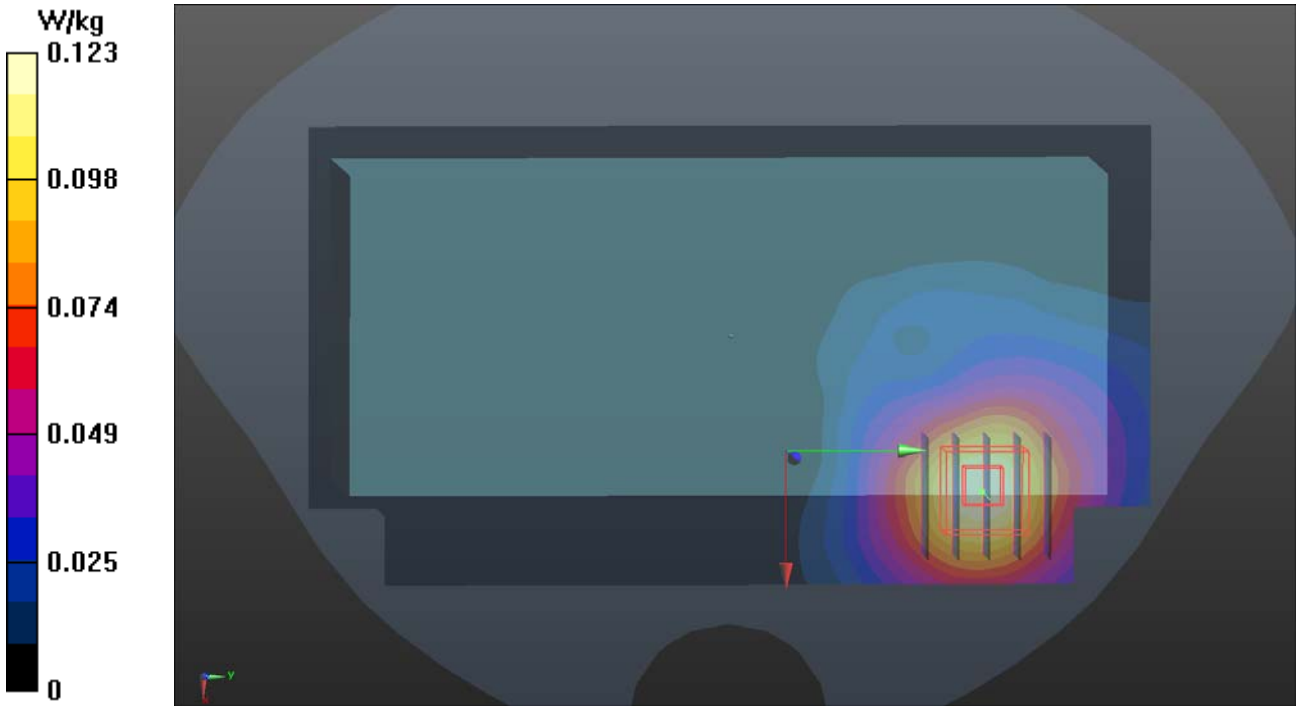
DUT: 171212C20

Communication System: WLAN_2.4G; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium: B19T27N2_0423 Medium parameters used: f = 2412 MHz; σ = 1.978 S/m; ε_r = 50.673; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(7.68, 7.68, 7.68); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

- Area Scan (101x191x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.123 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.957 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.158 W/kg
SAR(1 g) = 0.087 W/kg; SAR(10 g) = 0.049 W/kg
Maximum value of SAR (measured) = 0.129 W/kg



P14 WLAN5G_802.11n HT20_Rear Face_0mm_Ch64

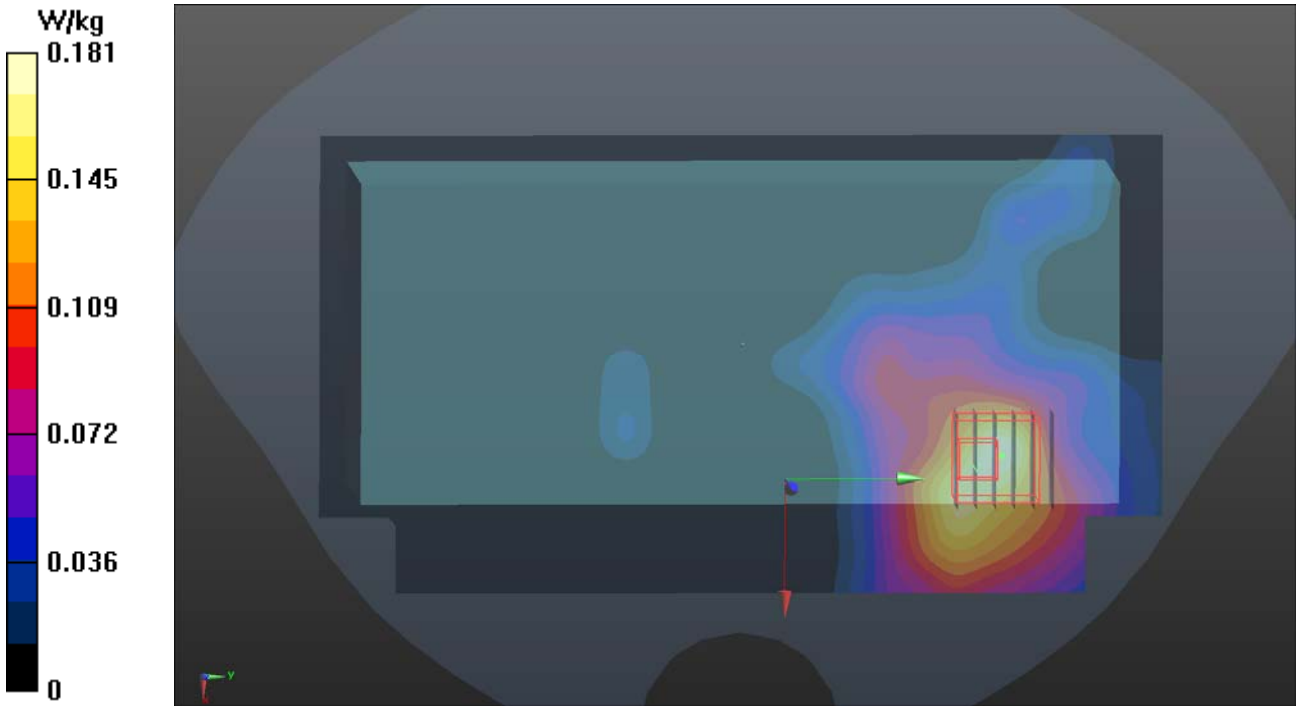
DUT: 171212C20

Communication System: WLAN_5G; Frequency: 5320 MHz;Duty Cycle: 1:1
Medium: B34T60N1_0423 Medium parameters used: f = 5320 MHz; σ = 5.353 S/m; ε_r = 50.908; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(5.28, 5.28, 5.28); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

- Area Scan (121x221x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.181 W/kg

- Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 6.353 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.319 W/kg
SAR(1 g) = 0.094 W/kg; SAR(10 g) = 0.039 W/kg
Maximum value of SAR (measured) = 0.205 W/kg



P15 WLAN5G_802.11a_Rear Face_0mm_Ch116

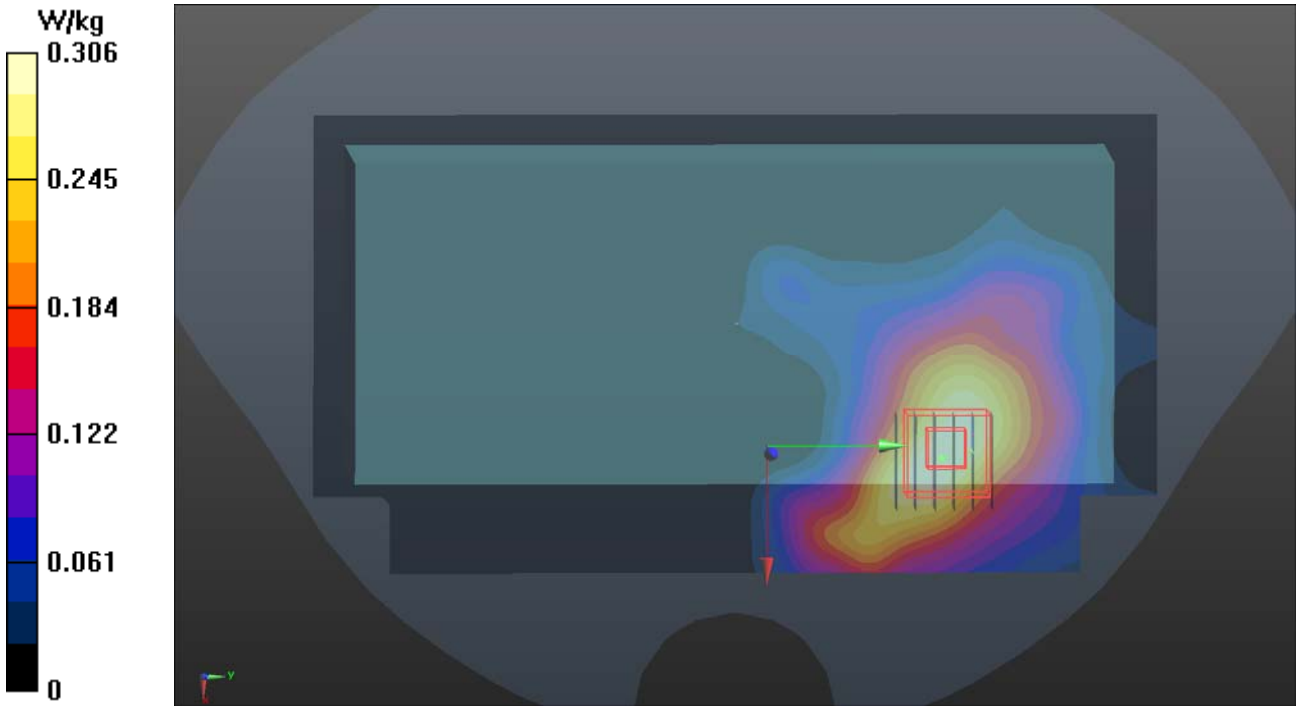
DUT: 171212C20

Communication System: WLAN_5G; Frequency: 5580 MHz;Duty Cycle: 1:1
Medium: B34T60N1_0423 Medium parameters used: f = 5580 MHz; σ = 5.789 S/m; ε_r = 50.419; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(4.29, 4.29, 4.29); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

- Area Scan (121x221x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.306 W/kg

- Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 7.689 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.696 W/kg
SAR(1 g) = 0.128 W/kg; SAR(10 g) = 0.050 W/kg
Maximum value of SAR (measured) = 0.318 W/kg



P16 WLAN5G_802.11n HT40_Rear Face_0mm_Ch151

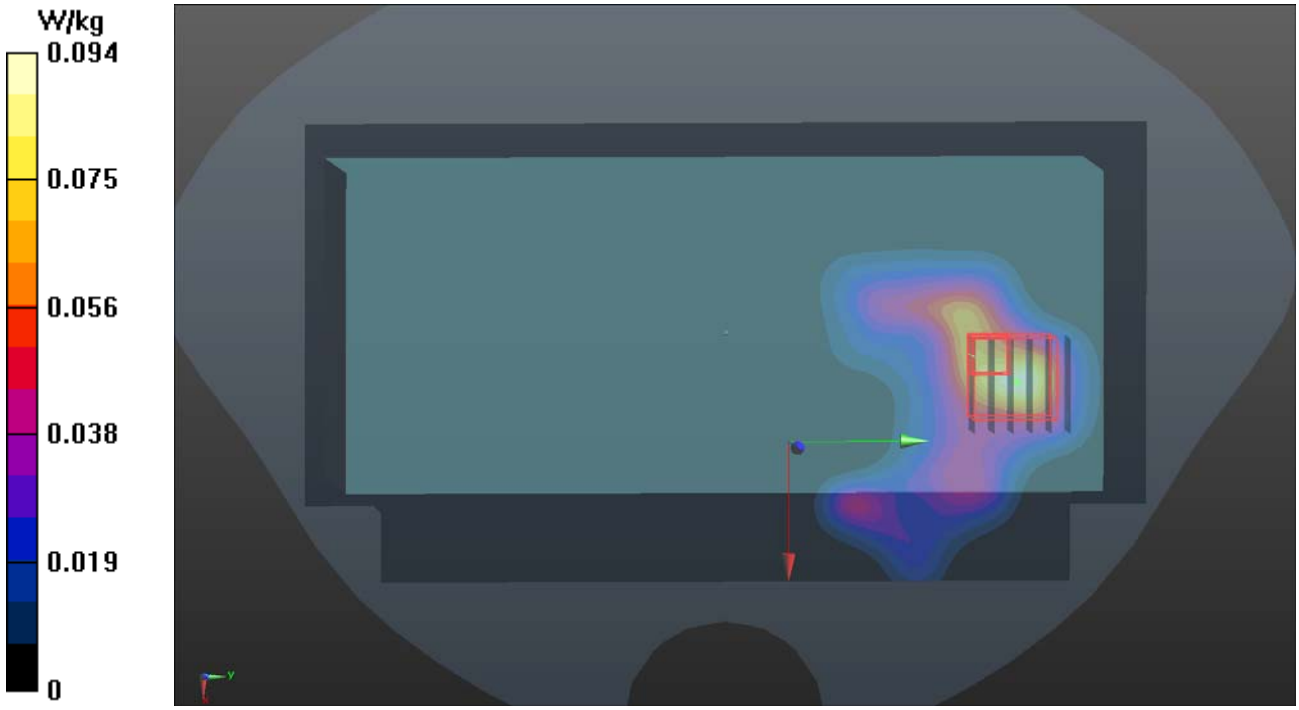
DUT: 171212C20

Communication System: WLAN_5G; Frequency: 5755 MHz;Duty Cycle: 1:1
Medium: B34T60N1_0423 Medium parameters used: f = 5755 MHz; σ = 6.059 S/m; ε_r = 50.035; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(4.61, 4.61, 4.61); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

- Area Scan (121x221x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0940 W/kg

- Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 3.539 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.227 W/kg
SAR(1 g) = 0.020 W/kg; SAR(10 g) = 0.00684 W/kg
Maximum value of SAR (measured) = 0.0659 W/kg



P17 BT_BR_EDR_Rear Face_0mm_Ch0

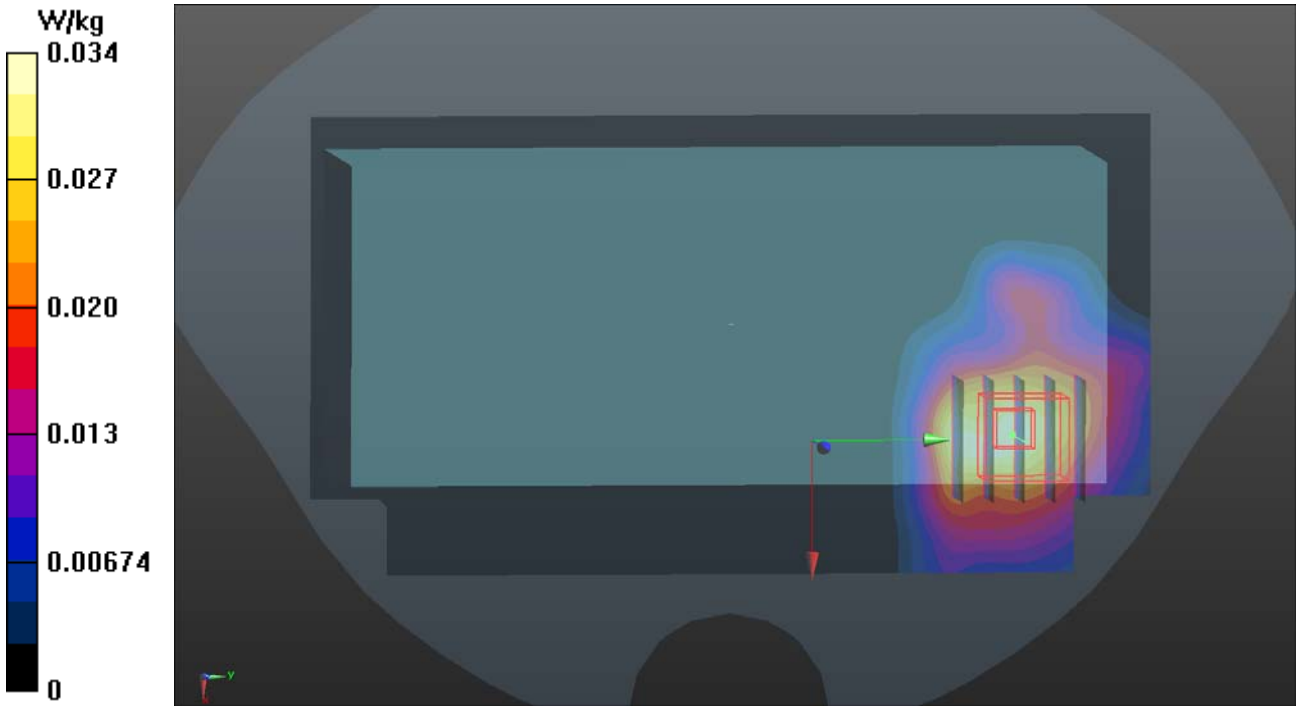
DUT: 171212C20

Communication System: BT; Frequency: 2402 MHz;Duty Cycle: 1:1
Medium: B19T27N2_0423 Medium parameters used: f = 2402 MHz; σ = 1.966 S/m; ε_r = 50.692; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(7.68, 7.68, 7.68); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

- Area Scan (101x191x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0337 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.183 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.0390 W/kg
SAR(1 g) = 0.022 W/kg; SAR(10 g) = 0.012 W/kg
Maximum value of SAR (measured) = 0.0323 W/kg



P18 GSM850_GPRS11_Right Side_0cm_Ch189

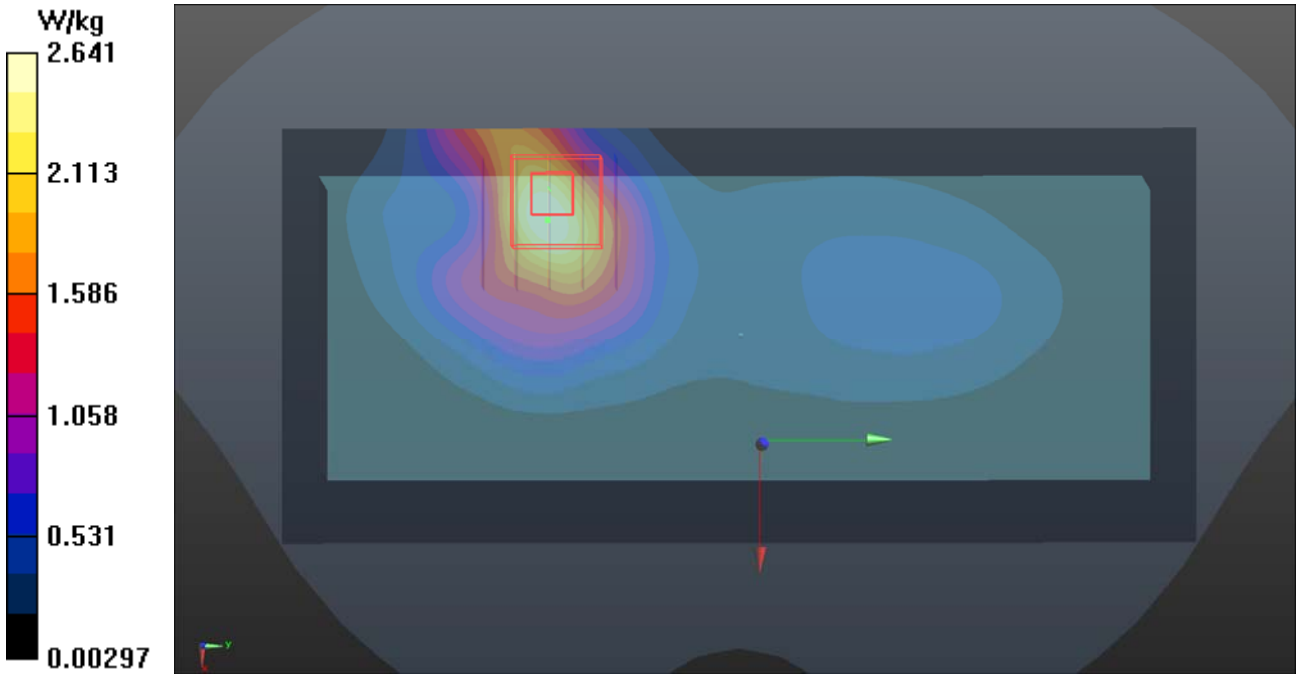
DUT: 171212C20

Communication System: GPRS11; Frequency: 836.4 MHz;Duty Cycle: 1:2.67
Medium: B07T10N1_0108 Medium parameters used: f = 836.4 MHz; σ = 1.013 S/m; ε_r = 56.682; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.76, 9.76, 9.76); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.64 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 49.22 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 4.17 W/kg
SAR(1 g) = 2.29 W/kg; SAR(10 g) = 1.28 W/kg
Maximum value of SAR (measured) = 3.51 W/kg



P19 GSM1900_GPRS12_Right Side_0cm_Ch512

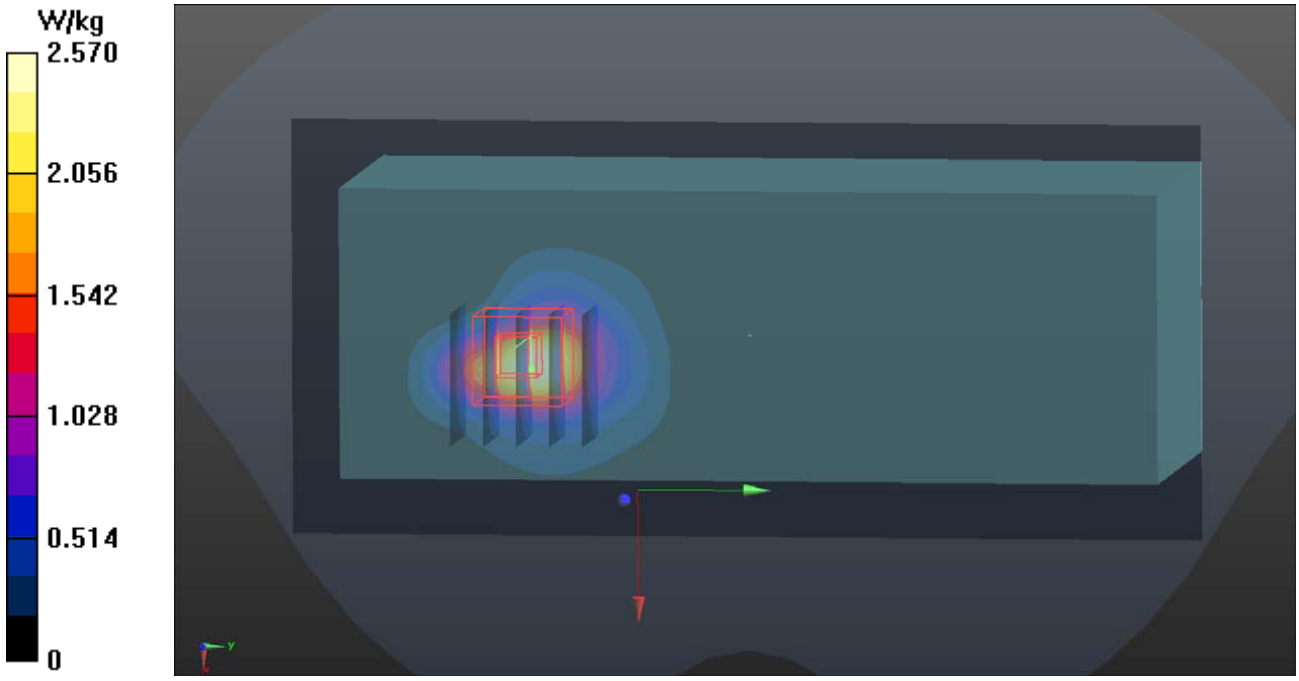
DUT: 171212C20

Communication System: GPRS12; Frequency: 1850.2 MHz;Duty Cycle: 1:2
Medium: B16T20N1_0108 Medium parameters used: f = 1851 MHz; σ = 1.537 S/m; ε_r = 51.846; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8, 8, 8); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.57 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 42.98 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 4.63 W/kg
SAR(1 g) = 2.13 W/kg; SAR(10 g) = 0.956 W/kg
Maximum value of SAR (measured) = 3.12 W/kg



P20 WCDMA II_RMC12.2K_Right Side_0cm_Ch9400

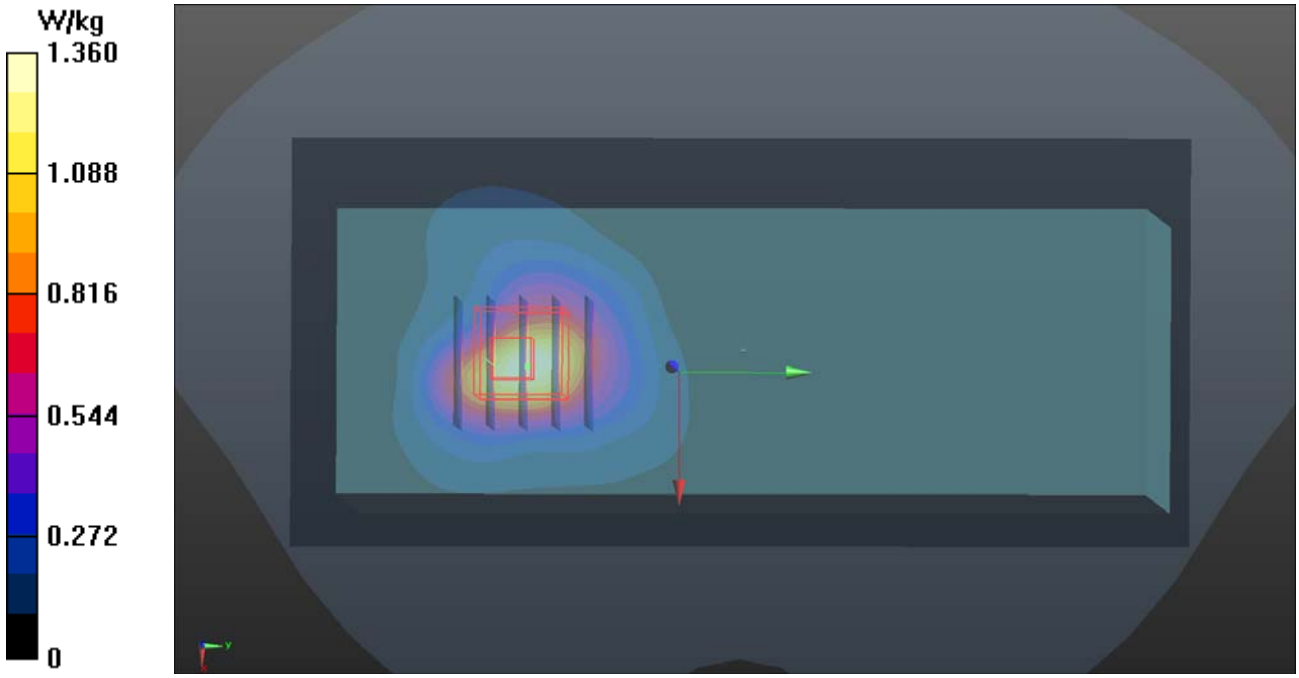
DUT: 171212C20

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: B16T20N1_0108 Medium parameters used: f = 1880 MHz; σ = 1.561 S/m; ε_r = 51.821; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8, 8, 8); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.36 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.26 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 2.70 W/kg
SAR(1 g) = 1.28 W/kg; SAR(10 g) = 0.605 W/kg
Maximum value of SAR (measured) = 2.02 W/kg



P21 WCDMA IV_RMC12.2K_Right Side_0cm_Ch1312

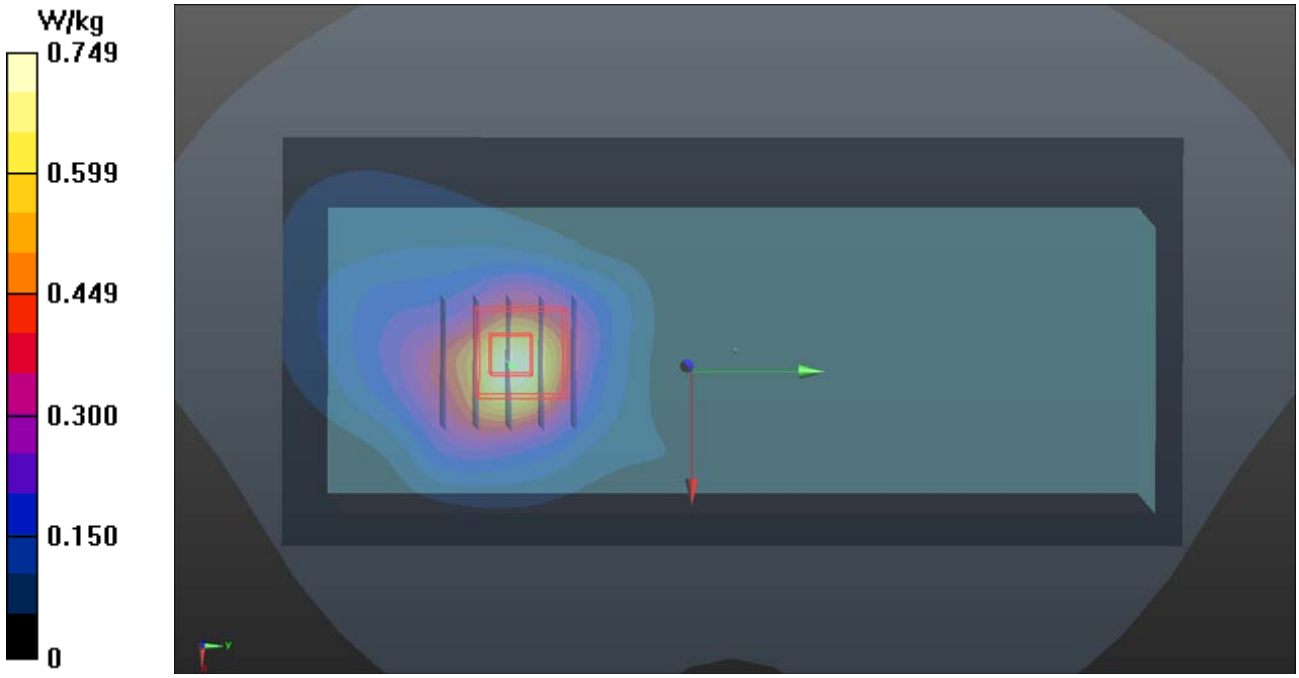
DUT: 171212C20

Communication System: WCDMA; Frequency: 1712.4 MHz;Duty Cycle: 1:1
Medium: B16T20N1_0108 Medium parameters used: f = 1712.4 MHz; σ = 1.421 S/m; ε_r = 52.297; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8.27, 8.27, 8.27); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.749 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.70 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.68 W/kg
SAR(1 g) = 0.750 W/kg; SAR(10 g) = 0.333 W/kg
Maximum value of SAR (measured) = 1.26 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/01/08

P22 WCDMA V_RMC12.2K_Right Side_0cm_Ch4132

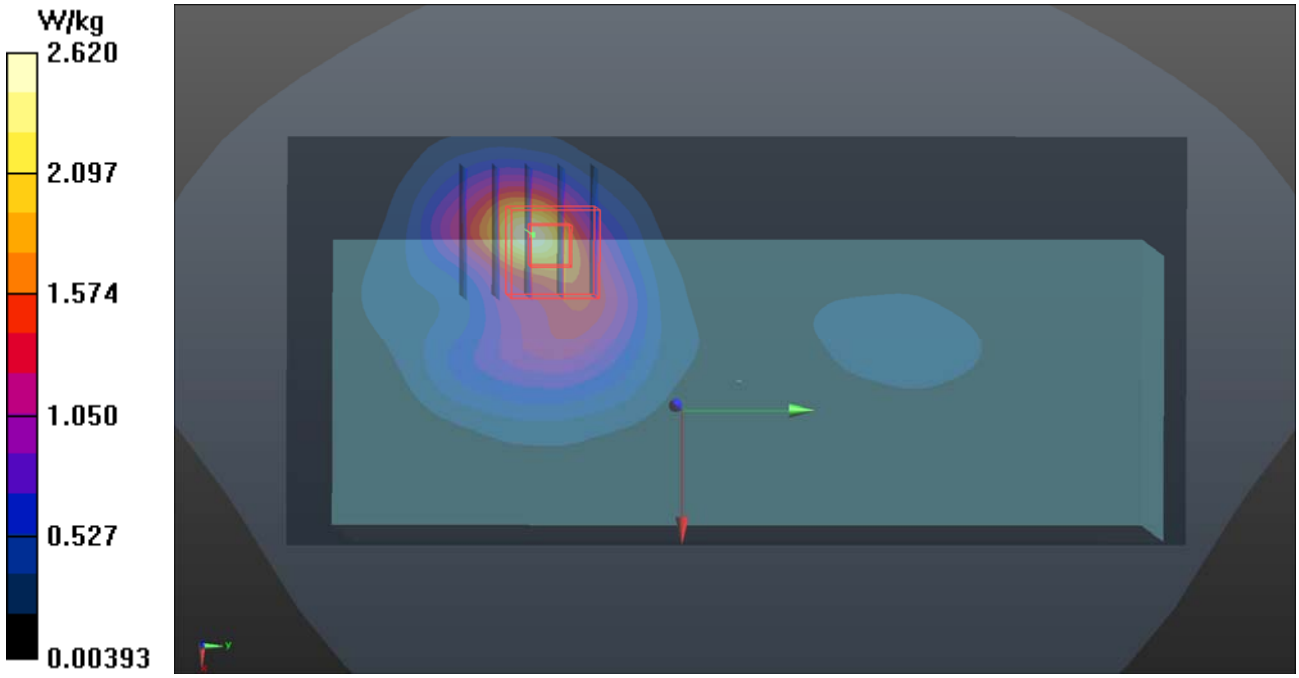
DUT: 171212C20

Communication System: WCDMA; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: B07T10N1_0108 Medium parameters used: f = 826.4 MHz; σ = 1.004 S/m; ε_r = 56.758; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.76, 9.76, 9.76); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.62 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 45.98 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 3.02 W/kg
SAR(1 g) = 1.64 W/kg; SAR(10 g) = 0.904 W/kg
Maximum value of SAR (measured) = 2.44 W/kg



P36 LTE 2_QPSK20M_Right Side_0cm_Ch18900_1RB_OS0

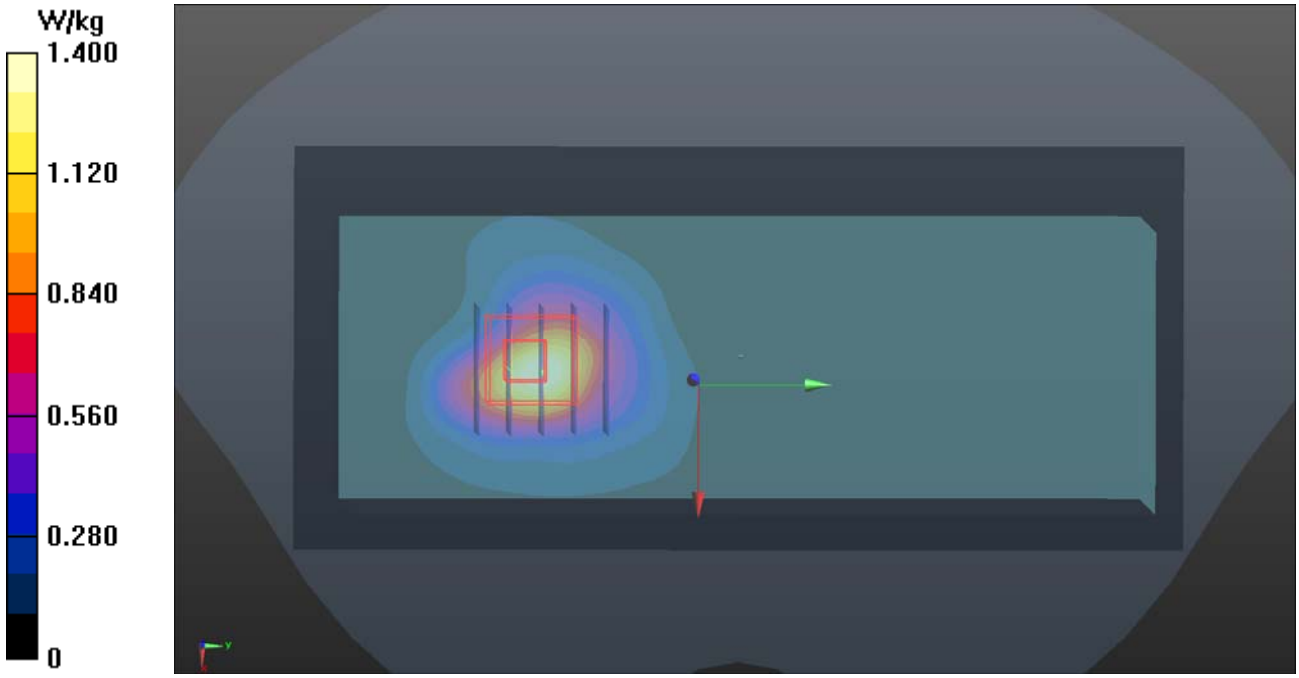
DUT: 171212C20

Communication System: LTE; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: B16T20N1_0108 Medium parameters used: f = 1880 MHz; σ = 1.561 S/m; ε_r = 51.821; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8, 8, 8); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.40 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.72 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 2.96 W/kg
SAR(1 g) = 1.36 W/kg; SAR(10 g) = 0.621 W/kg
Maximum value of SAR (measured) = 2.19 W/kg



P23 LTE 4_QPSK20M_Left Side_0cm_Ch20300_1RB_OS0

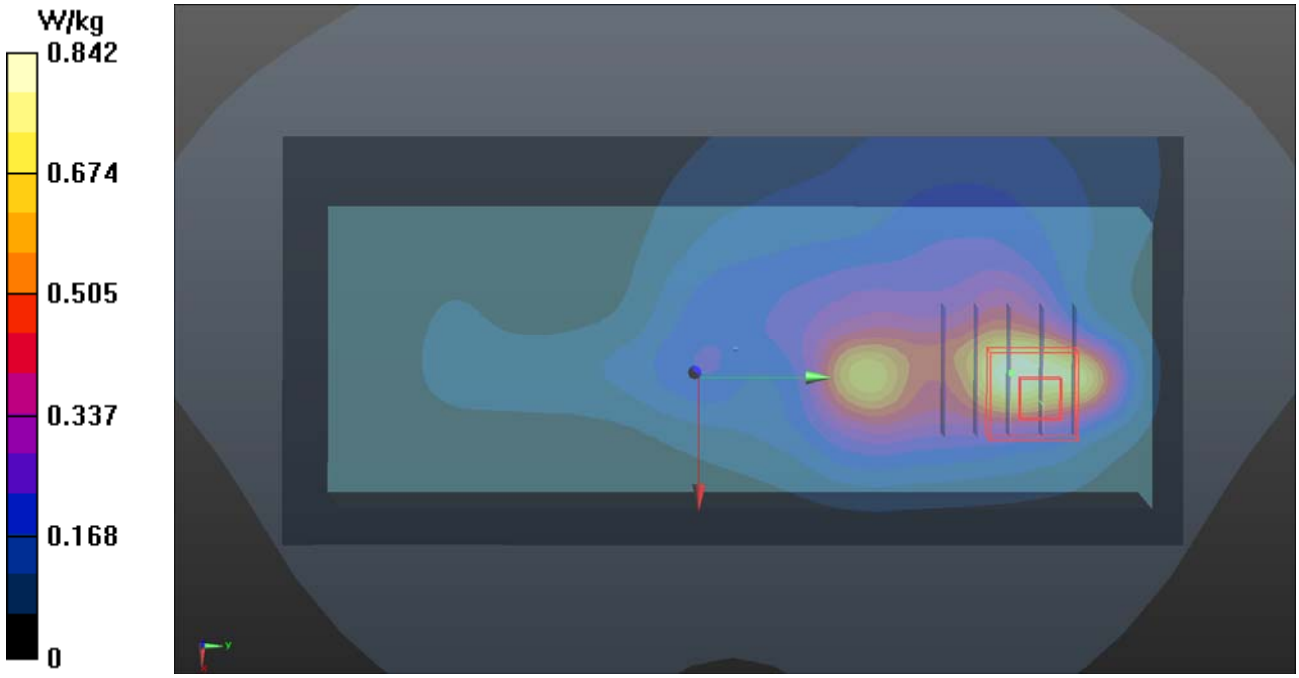
DUT: 171212C20

Communication System: LTE; Frequency: 1745 MHz;Duty Cycle: 1:1
Medium: B16T20N1_0108 Medium parameters used: f = 1745 MHz; σ = 1.453 S/m; ε_r = 52.183; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8.27, 8.27, 8.27); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.842 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.98 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.84 W/kg
SAR(1 g) = 0.813 W/kg; SAR(10 g) = 0.381 W/kg
Maximum value of SAR (measured) = 1.40 W/kg



P24 LTE 5_QPSK10M_Right Side_0cm_Ch20525_1RB_OS0

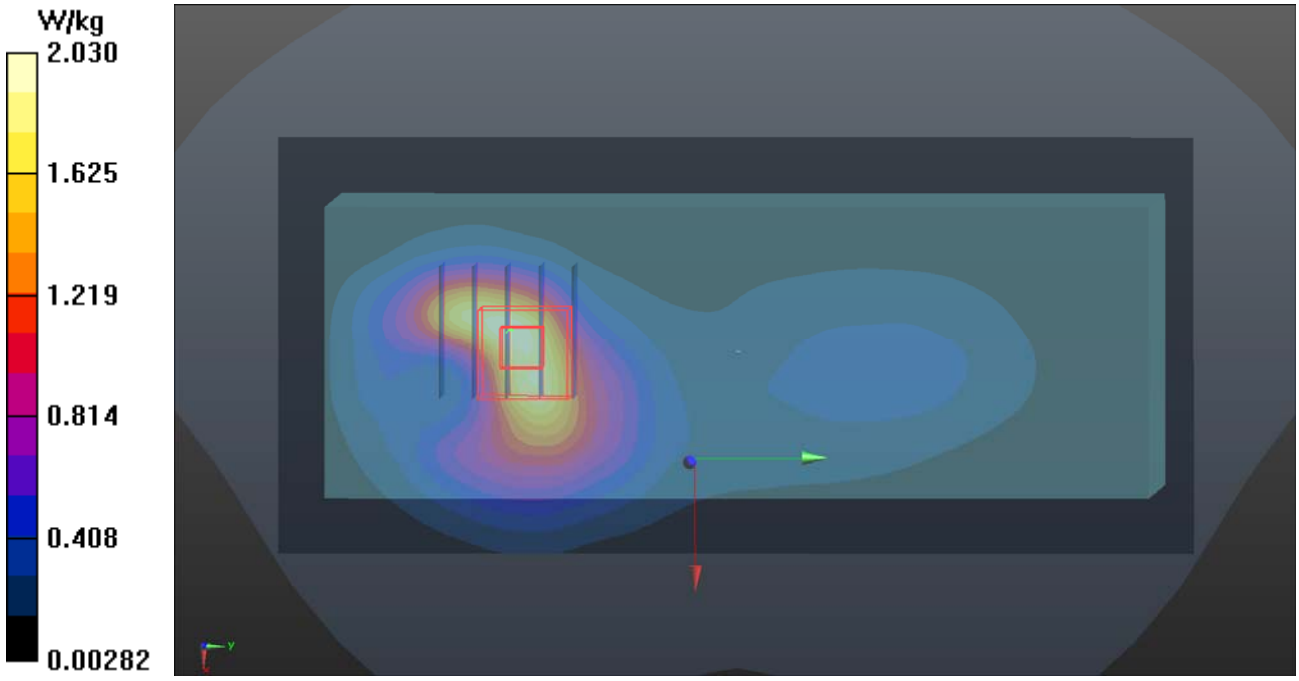
DUT: 171212C20

Communication System: LTE; Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium: B07T10N1_0108 Medium parameters used: f = 836.5 MHz; σ = 1.013 S/m; ε_r = 56.682; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.76, 9.76, 9.76); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.03 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 44.68 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 2.76 W/kg
SAR(1 g) = 1.52 W/kg; SAR(10 g) = 0.860 W/kg
Maximum value of SAR (measured) = 2.24 W/kg



P25 LTE 7_QPSK20M_Right Side_0cm_Ch20850_1RB_OS0

DUT: 171212C20

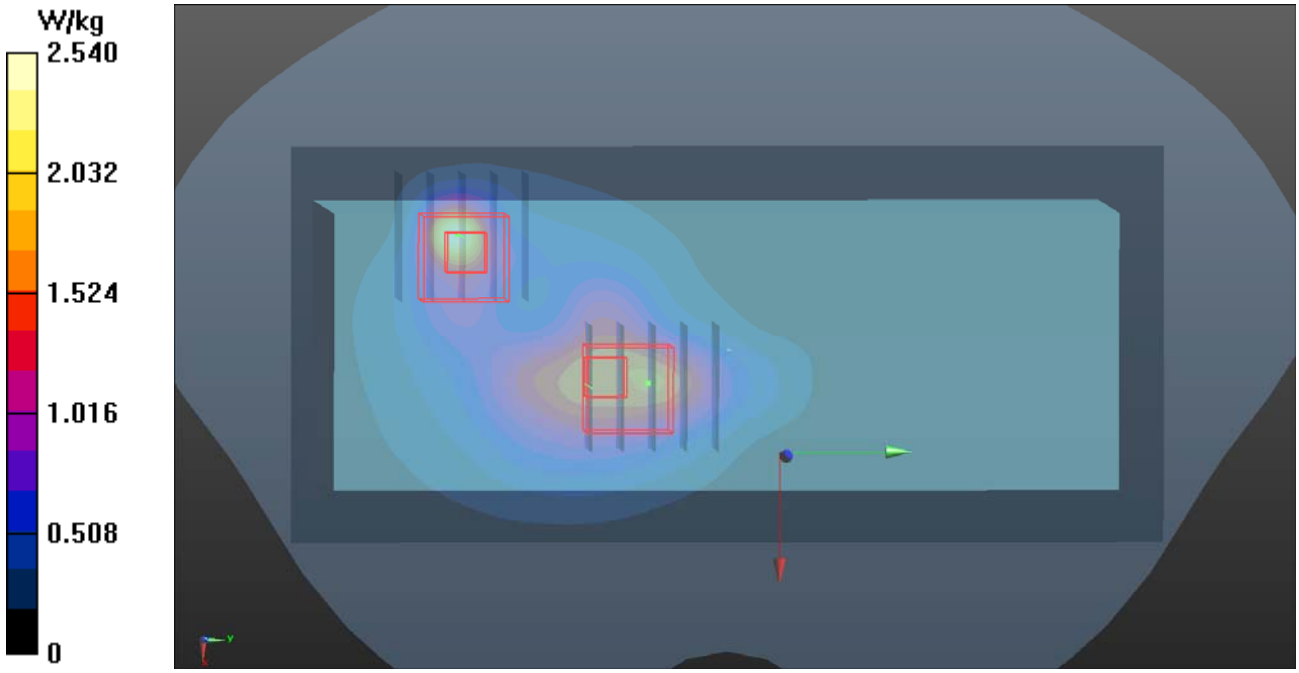
Communication System: LTE; Frequency: 2510 MHz;Duty Cycle: 1:1
Medium: B19T27N1_0109 Medium parameters used: f = 2510 MHz; σ = 2.108 S/m; ε_r = 51.738; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7375; ConvF(7.43, 7.43, 7.43); Calibrated: 2017/12/18;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2017/07/31
- Phantom: Twin SAM Phantom_1822; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (91x191x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 2.54 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.31 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 4.42 W/kg
SAR(1 g) = 1.86 W/kg; SAR(10 g) = 0.769 W/kg
Maximum value of SAR (measured) = 2.93 W/kg

- Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.31 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 2.40 W/kg
SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.575 W/kg
Maximum value of SAR (measured) = 1.90 W/kg



P26 LTE 12_QPSK10M_Right Side_0cm_Ch23130_1RB_OS0

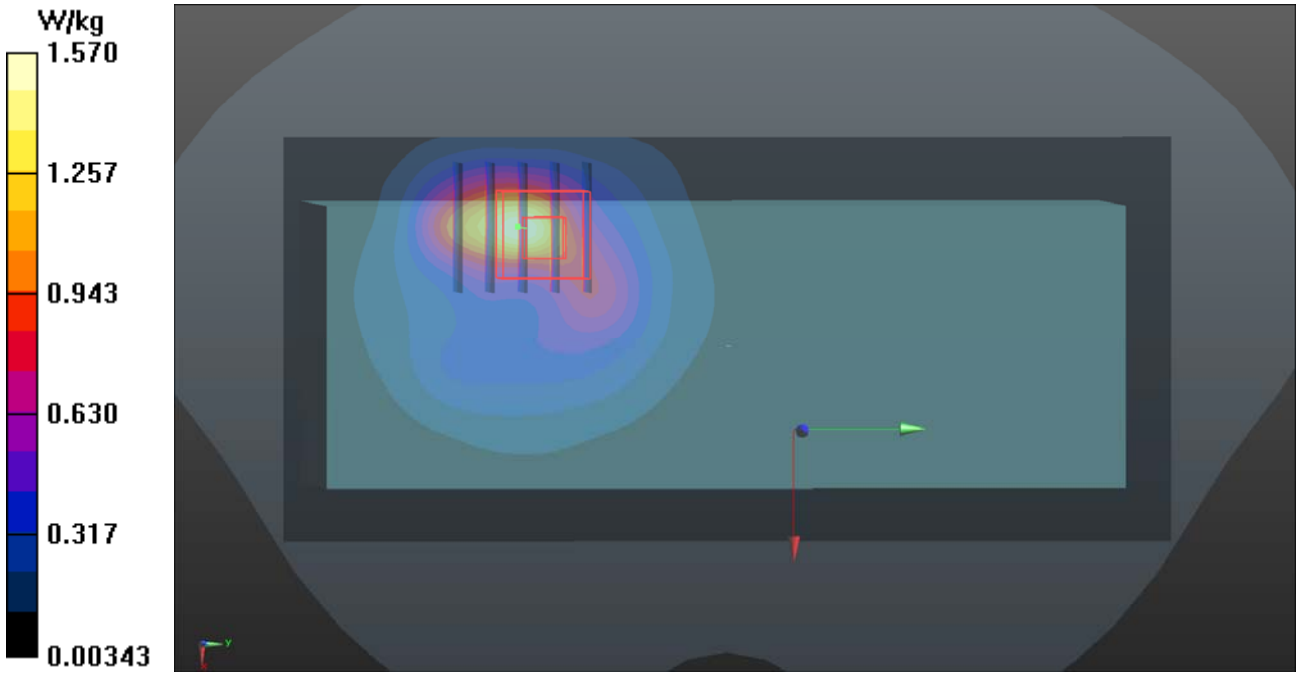
DUT: 171212C20

Communication System: LTE; Frequency: 711 MHz;Duty Cycle: 1:1
Medium: B06T09N1_0109 Medium parameters used: f = 711 MHz; σ = 0.924 S/m; ε_r = 56.802; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.89, 9.89, 9.89); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.57 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 43.55 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 1.97 W/kg
SAR(1 g) = 1.03 W/kg; SAR(10 g) = 0.557 W/kg
Maximum value of SAR (measured) = 1.51 W/kg



P27 LTE 13_QPSK10M_Right Side_0cm_Ch23230_1RB_OS0

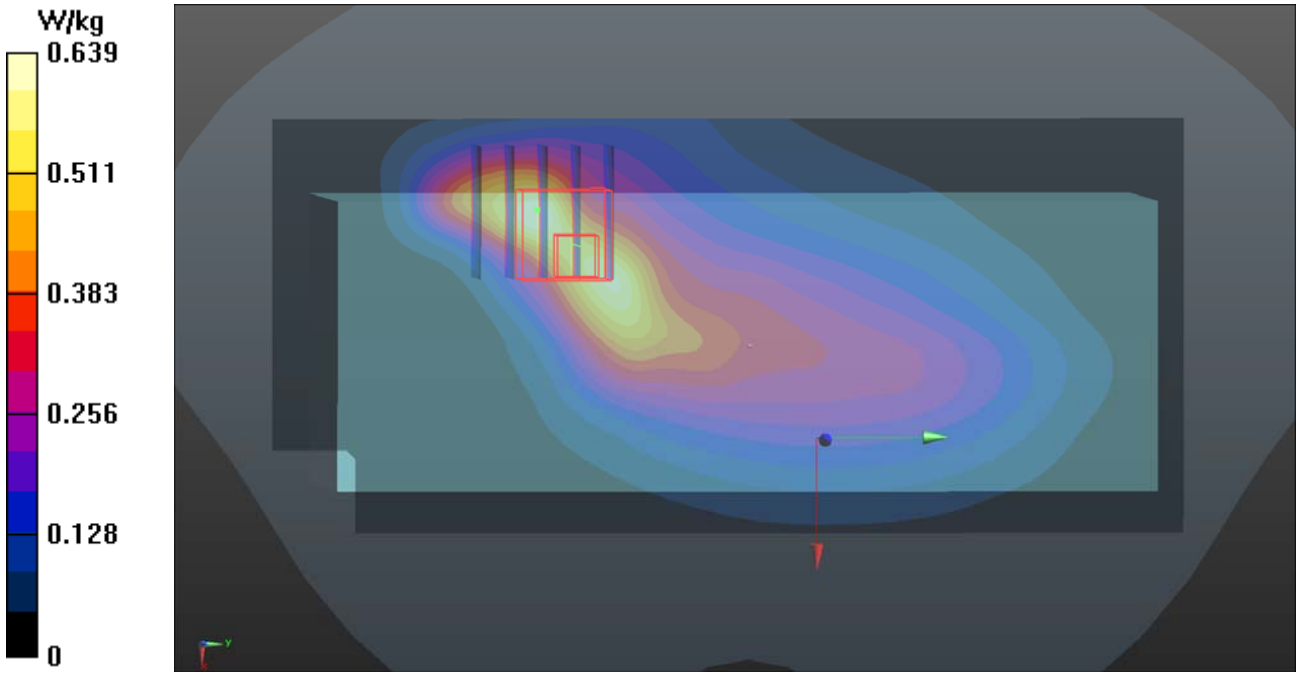
DUT: 171212C20

Communication System: LTE; Frequency: 782 MHz;Duty Cycle: 1:1
Medium: B06T09N1_0109 Medium parameters used: f = 782 MHz; σ = 0.99 S/m; ε_r = 56.118; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.89, 9.89, 9.89); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.639 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.82 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.874 W/kg
SAR(1 g) = 0.520 W/kg; SAR(10 g) = 0.298 W/kg
Maximum value of SAR (measured) = 0.754 W/kg



P28 LTE 25_QPSK20M_Left Side_0cm_Ch26365_1RB_OS0

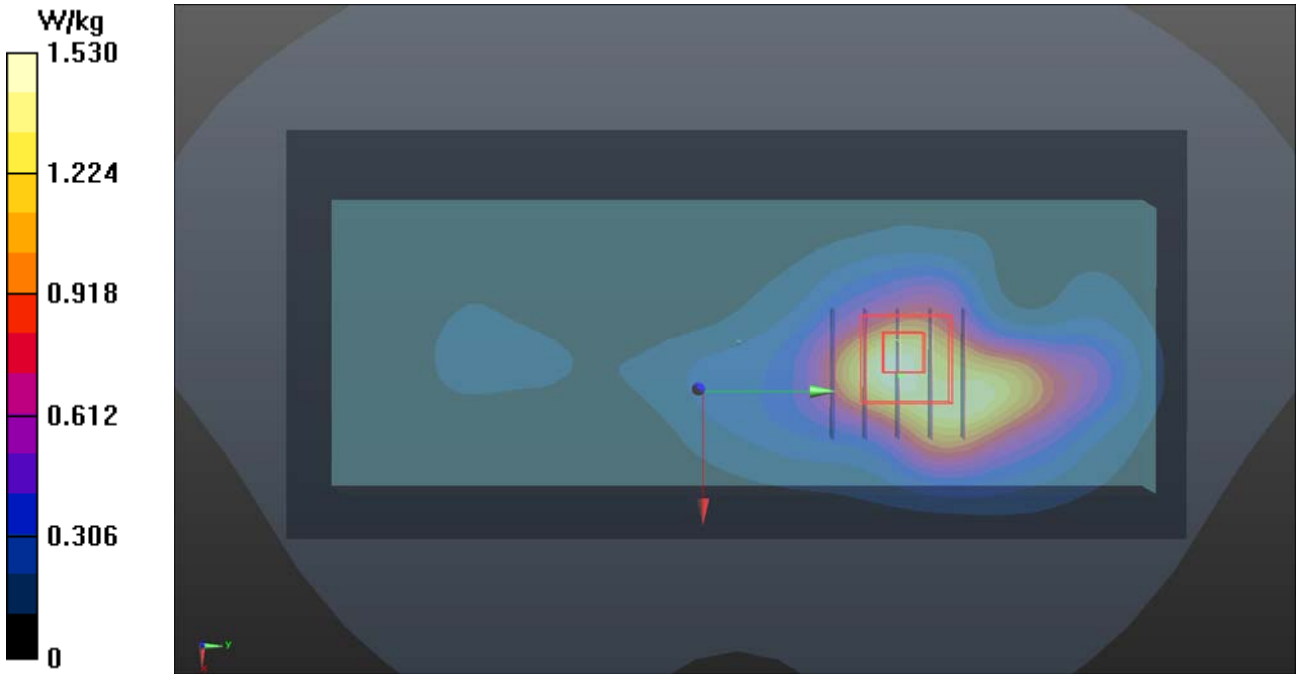
DUT: 171212C20

Communication System: LTE; Frequency: 1882.5 MHz;Duty Cycle: 1:1
Medium: B16T20N1_0108 Medium parameters used: f = 1882.5 MHz; σ = 1.564 S/m; ε_r = 51.82; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(8, 8, 8); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.53 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.24 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 2.31 W/kg
SAR(1 g) = 1.27 W/kg; SAR(10 g) = 0.688 W/kg
Maximum value of SAR (measured) = 1.88 W/kg



P29 LTE 26_QPSK15M_Right Side_0cm_Ch26965_1RB_OS74

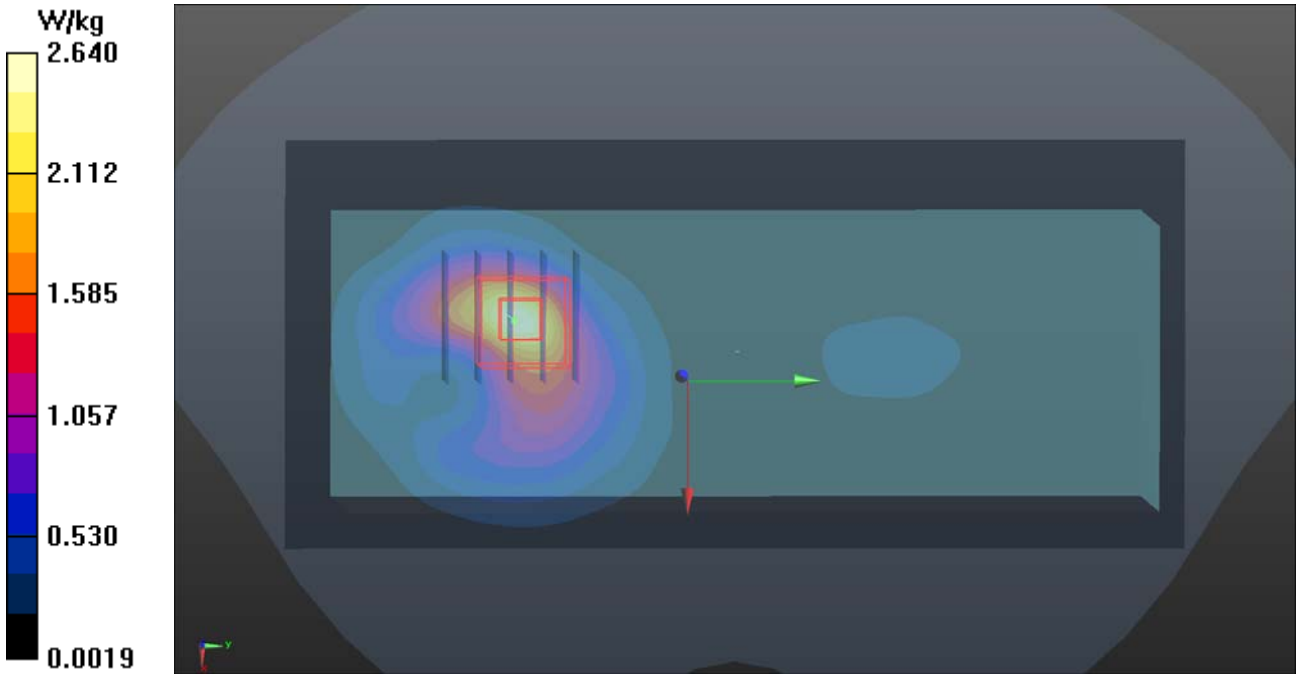
DUT: 171212C20

Communication System: LTE; Frequency: 841.5 MHz;Duty Cycle: 1:1
Medium: B07T10N1_0108 Medium parameters used: f = 841.5 MHz; σ = 1.018 S/m; ε_r = 56.648; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.76, 9.76, 9.76); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2017/03/20
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)

- Area Scan (71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.64 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.88 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 3.05 W/kg
SAR(1 g) = 1.68 W/kg; SAR(10 g) = 0.928 W/kg
Maximum value of SAR (measured) = 2.56 W/kg



P30 WLAN2.4G_802.11b_Left Side_0mm_Ch1

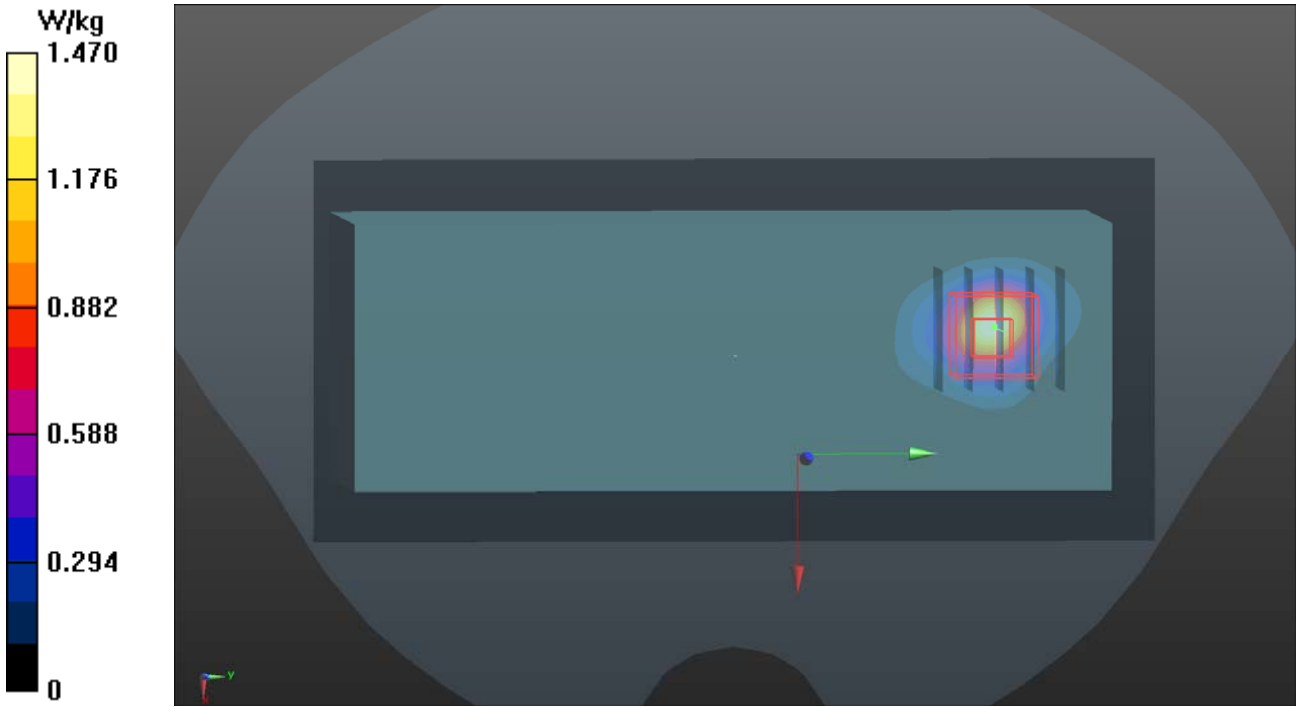
DUT: 171212C20

Communication System: WLAN_2.4G; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium: B19T27N2_0423 Medium parameters used: f = 2412 MHz; σ = 1.978 S/m; ε_r = 50.673; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(7.68, 7.68, 7.68); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

- Area Scan (91x191x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.47 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.61 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 2.86 W/kg
SAR(1 g) = 1.25 W/kg; SAR(10 g) = 0.492 W/kg
Maximum value of SAR (measured) = 2.08 W/kg



P31 WLAN5G_802.11n HT20_Left Side_0mm_Ch56

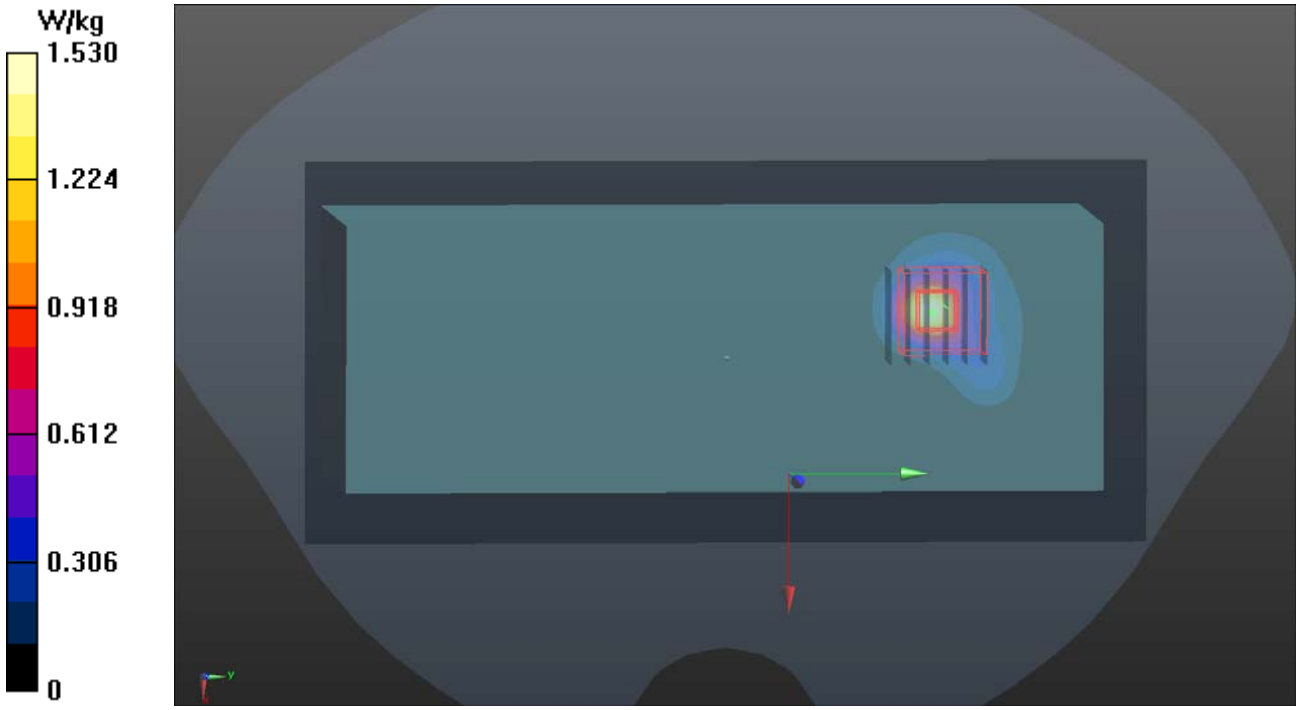
DUT: 171212C20

Communication System: WLAN_5G; Frequency: 5280 MHz;Duty Cycle: 1:1
Medium: B34T60N1_0423 Medium parameters used: f = 5280 MHz; σ = 5.289 S/m; ε_r = 50.988; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(5.28, 5.28, 5.28); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

- Area Scan (101x221x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.53 W/kg

- Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 17.91 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 2.73 W/kg
SAR(1 g) = 0.673 W/kg; SAR(10 g) = 0.202 W/kg
Maximum value of SAR (measured) = 1.58 W/kg



P32 WLAN5G_802.11a_Left Side_0mm_Ch132

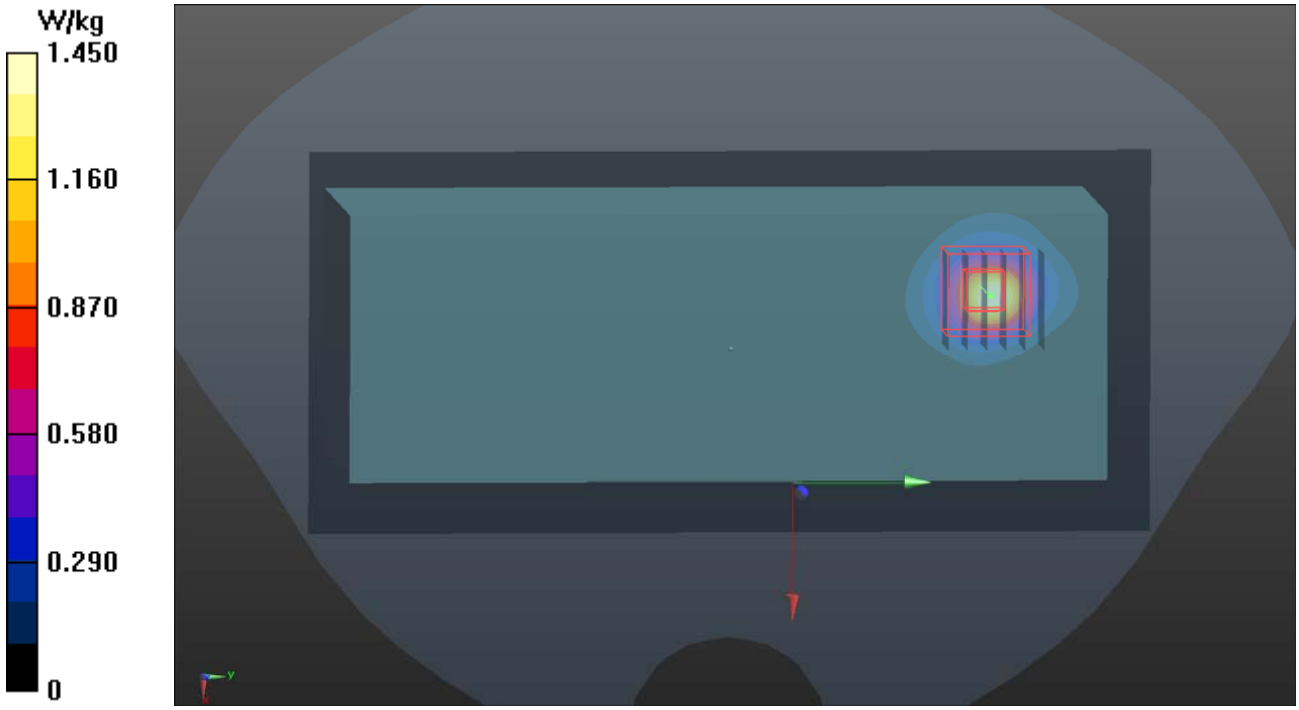
DUT: 171212C20

Communication System: WLAN_5G; Frequency: 5660 MHz;Duty Cycle: 1:1
Medium: B34T60N1_0423 Medium parameters used: f = 5660 MHz; σ = 5.91 S/m; ε_r = 50.244; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(4.29, 4.29, 4.29); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

- Area Scan (101x221x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.45 W/kg

- Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 17.73 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 3.76 W/kg
SAR(1 g) = 0.862 W/kg; SAR(10 g) = 0.243 W/kg
Maximum value of SAR (measured) = 2.04 W/kg



P33 WLAN5G_802.11n HT40_Left Side_0mm_Ch151

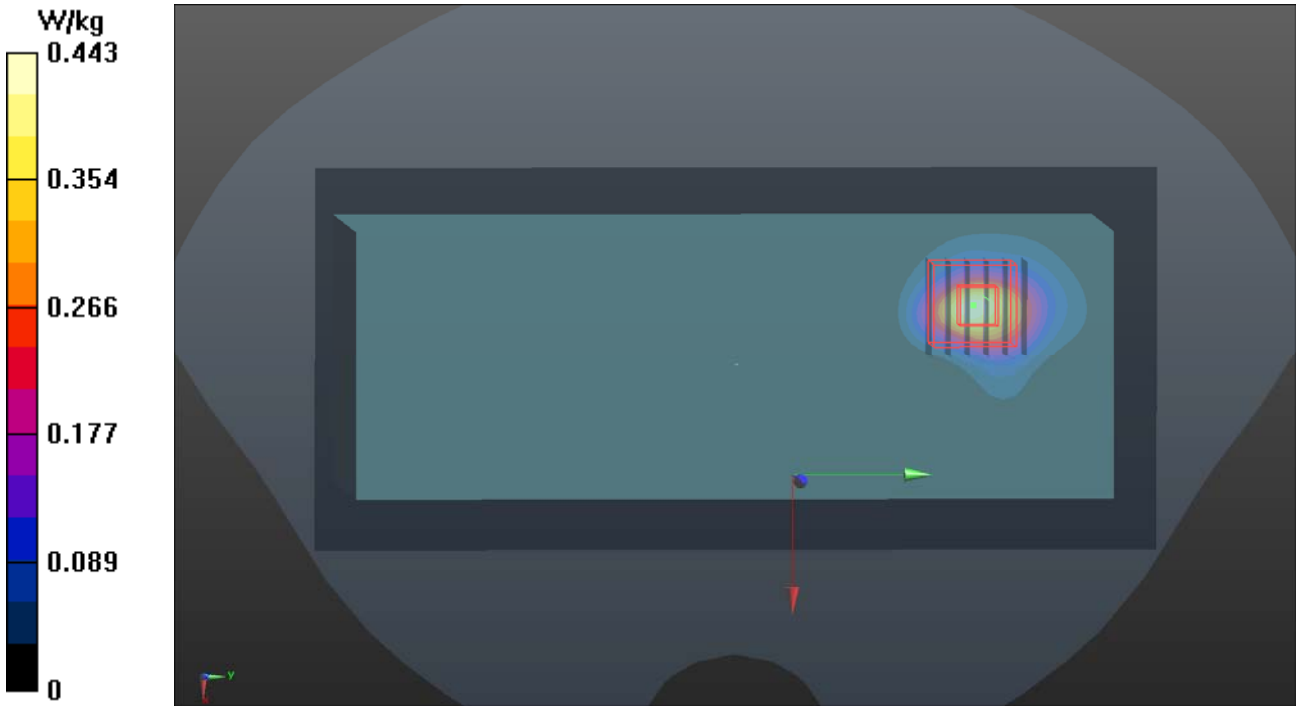
DUT: 171212C20

Communication System: WLAN_5G; Frequency: 5755 MHz;Duty Cycle: 1:1
Medium: B34T60N1_0423 Medium parameters used: f = 5755 MHz; σ = 6.059 S/m; ε_r = 50.035; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(4.61, 4.61, 4.61); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

- Area Scan (101x221x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.443 W/kg

- Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 8.494 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.290 W/kg; SAR(10 g) = 0.080 W/kg
Maximum value of SAR (measured) = 0.716 W/kg



P34 BT_BR_EDR_Left Side_0mm_Ch39

DUT: 171212C20

Communication System: BT; Frequency: 2441 MHz;Duty Cycle: 1:1
Medium: B19T27N2_0423 Medium parameters used: f = 2441 MHz; σ = 2.009 S/m; ε_r = 50.597; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(7.68, 7.68, 7.68); Calibrated: 2017/07/24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2017/05/22
- Phantom: Twin SAM Phantom_1652; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

- Area Scan (91x191x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.207 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.722 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.829 W/kg
SAR(1 g) = 0.363 W/kg; SAR(10 g) = 0.140 W/kg
Maximum value of SAR (measured) = 0.557 W/kg