FCC SAR TEST REPORT

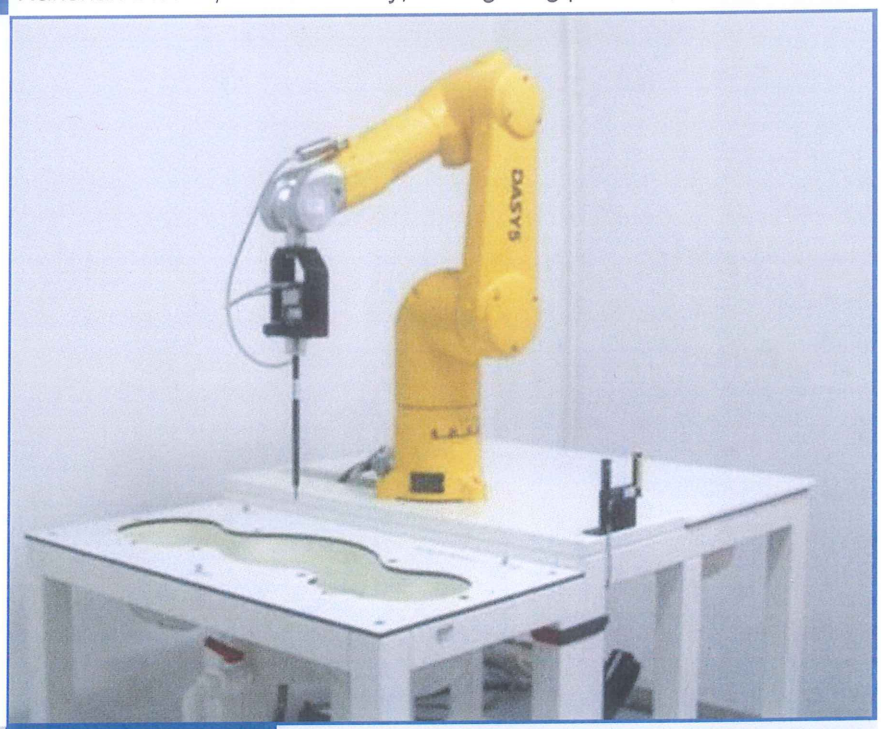
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

Mobile Phone

ISSUED TO
Shenzhen Sang Fei Consumer Communications Co., Ltd.

11,Science And Technology Road, Shenzhen Hi-tech Industrial Park, Nanshan District, Shenzhen City, GuangDong province, 518057, China



Report No.:	BL-SZ1750208-701
EUT Name:	Mobile Phone
Model Name:	Philips S327
Brand Name:	PHILIPS
FCC ID:	VQRCTS327
Test Standard:	FCC 47 CFR Part 2.1093
	ANSI C95.1: 1999, IEEE 1528: 2013
Maximum SAR:	Head (1 g): 0.792 W/kg
	Body-worn (1 g): 1.056 W/kg
	Hotspot (1 g): 1.056 W/kg
Test Conclusion:	Pass
Test Date:	May 22, 2017 ~ May 31, 2017
Date of Issue:	Jun. 20, 2017

Tested by: Zong Liyao
Zong Liyao
(Engineer)
Date Jun. 20, 2017

Approved by:
Liao Jianming
(Technical Director)
Date Jun. 20, 2017

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Revision History

Version	Issue Date	Revisions Content
Rev. 01	Jun. 20, 2017	Initial Issue

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1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co.,Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province,P. R. China
Phone Number	+86 755 6685 0100
Fax Number	+86 755 6182 4271

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co.,Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province,P. R. China
Accreditation Certificate	The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. The laboratory has been listed by US Federal Communications Commission to perform electromagnetic emission measurements. The recognition numbers of test site are 832625. The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Test Environment Condition

Ambient Temperature	20 to 23℃
Ambient Relative Humidity	39 to 53%
Ambient Pressure	100 to 102KPa

1.4 Announce

(1) The test report reference to the report template version v2.2.

(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.

(3) The test report is invalid if there is any evidence and/or falsification.

(4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.

(5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.

(6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

2 PRODUCT INFORMATION

2.1 Applicant

Applicant	Shenzhen Sang Fei Consumer Communications Co., Ltd.
Address	11,Science And Technology Road, Shenzhen Hi-tech Industrial Park, Nanshan District, Shenzhen City, GuangDong province, 518057, China

2.2 Manufacturer

Manufacturer	Shenzhen Sang Fei Consumer Communications Co., Ltd.
Address	11,Science And Technology Road, Shenzhen Hi-tech Industrial Park, Nanshan District, Shenzhen City, GuangDong province, 518057, China

2.3 Factory Information

Factory	N/A
Address	N/A

2.4 General Description for Equipment under Test (EUT)

EUT Name	Mobile Phone
Model Name Under Test	Philips S327
Series Model Name	N/A
Description of Model Name Differentiation	N/A
Hardware Version	N/A
Software Version	N/A
Dimensions (Approx.)	155mm x 80 x 8mm
Weight (Approx.)	N/A
Network and Wireless connectivity	2G Network GSM 850/900/1800/1900 MHz, GPRS/EDGE Class 12 3G Network WCDMA HSDPA/HSUPA Band 2/5 4G Network FDD Band 2/4/7/28 Bluetooth 3.0, Bluetooth 4.0 Low Energy (BLE), WIFI 802.11b, 802.11g and 802.11n (HT20/40), GPS

2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	PHILIPS
	Model No.	AB3000KWMT
	Serial No.	N/A
	Capacitance	3000 mAh
	Rated Voltage	3.8 V
	Limit Charge Voltage	4.35 V
Ancillary Equipment 2	Adapter	
	Brand Name	PHILIPS
	Model Name	A88A-050100U-AR1
	Rated Input	100-240 V ~, 50/60 Hz, 0.2 A
	Rated Output	5 V ⎓, 1.0 A
Ancillary Equipment 3	USB Cable	

2.6 Technical Information

The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	GSM, WCDMA, FDD-LTE, 2.4G WLAN, Bluetooth		
Frequency Range	GSM 850	TX: 824 MHz ~ 849 MHz	RX: 869 MHz ~ 894 MHz
	GSM 1900	TX: 1850 MHz ~ 1910 MHz	RX: 1930 MHz ~ 1990 MHz
	WCDMA Band 2	TX: 1850 MHz ~ 1910 MHz	RX: 1930 MHz ~ 1990 MHz
	WCDMA Band 5	TX: 824 MHz ~ 849 MHz	RX: 869 MHz ~ 894 MHz
	LTE Band 2	TX: 1850 MHz ~ 1910 MHz	RX: 1930 MHz ~ 1990 MHz
	LTE Band 4	TX: 1710 MHz ~ 1755 MHz	RX: 2110 MHz ~ 2155 MHz
	LTE Band 7	TX: 2500 MHz ~ 2570 MHz	RX: 2620 MHz ~ 2690 MHz
	802.11b/g /n(HT20/HT40)	2400~2483.5 MHz	
	Bluetooth	2400~2483.5 MHz	
Antenna Type	WWAN: PIFA Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna		
DTM	Not Support		
Hotspot Function	Support		
Power Reduction	Not Support		
Exposure Category	General Population/Uncontrolled exposure		
EUT Stage	Portable Device		
Product	Type		
	☒ Production unit	☐ Identical prototype	

3 SUMMARY OF TEST RESULT

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	ANSI/IEEE Std. C95.1-1999	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz
3	IEEE Std. 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
4	FCC KDB 447498 D01 v06	Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies
5	FCC KDB 941225 D01 v03r01	3G SAR MEAUREMENT PROCEDURES
6	FCC KDB 941225 D05 v02r05	SAR Evaluation Considerations for LTE Devices
7	FCC KDB 941225 D06 v02r01	SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities
8	FCC KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
9	FCC KDB 865664 D02 v01r02	RF Exposure Reporting
10	FCC KDB 648474 D04 v01r03	SAR Evaluation Considerations for Wireless Handsets
11	KDB 248227 D01 v02r02	SAR Guidance for IEEE 802.11 (Wi-Fi) Transmitters

3.2 Device Category and SAR Limit

This device belongs to portable device category because its radiating structure is allowed to be used within 20 centimeters of the body of the user.

Limit for General Population/Uncontrolled exposure should be applied for this device, it is 1.6 W/kg as averaged over any 1 gram of tissue.

Table of Exposure Limits:

Body Position	SAR Value (W/Kg)	
	General Population/ Uncontrolled Exposure	Occupational/ Controlled Exposure
Whole-Body SAR (averaged over the entire body)	0.08	0.4
Partial-Body SAR (averaged over any 1 gram of tissue)	1.60	8.0
SAR for hands, wrists, feet and ankles (averaged over any 10 grams of tissue)	4.0	20.0

NOTE:

General Population/Uncontrolled Exposure: Locations where there is the exposure of individuals who have no knowledge or control of their exposure. General population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

Occupational/Controlled Exposure: Locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

3.3 Test Result Summary

3.3.1 Highest SAR (1 g Value)

Band	Maximum Scaled SAR (W/kg)			Maximum Report SAR (W/kg)	
	Head	Body		Head	Body
		Body-worn	Hotspot		
GSM 850	0.162	0.275	0.454	0.792	1.056
GSM 1900	0.290	0.408	0.699		
WCDMA Band 2	0.450	0.701	0.701		
WCDMA Band 5	0.432	0.541	0.541		
LTE Band 2	0.580	**1.056**	**1.056**		
LTE Band 4	0.470	0.749	0.749		
LTE Band 7	0.683	0.601	0.601		
2.4G WLAN	**0.792**	0.221	0.221		
Limit (W/kg)	1.60				
Verdict	Pass				

3.3.2 Highest Simultaneous SAR

Position	Simultaneous Configuration	Simultaneous SAR (W/kg)	Limit (W/kg)	Verdict
Head	LTE QPSK + 2.4G WLAN	1.475	1.6	Pass
Body-worn	LTE QPSK + 2.4G WLAN	1.277	1.6	Pass
Hotspot Mode	LTE QPSK + 2.4G WLAN	1.277	1.6	Pass

3.4 Test Uncertainty

According to KDB 865664 D01, when the highest measured 1 g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis is not required in SAR reports submitted for equipment approval.

The maximum 1 g SAR for the EUT in this report is 1.056 W/kg, which is lower than 1.5 W/kg, so the extensive SAR measurement uncertainty analysis is not required in this report.

4 MEASUREMENT SYSTEM

4.1 Specific Absorption Rate (SAR) Definition

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:

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

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

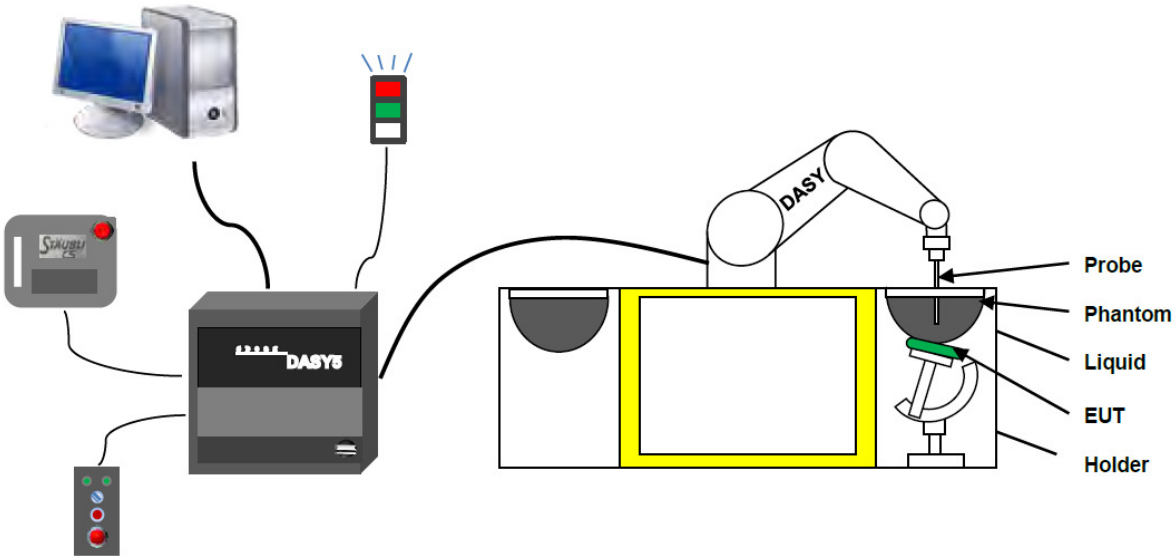
$$\mathbf{SAR} = \frac{\sigma \mathrm{E}^2}{\rho}$$

Where: σ is the conductivity of the tissue,

ρis the mass density of the tissue and E is the RMS electrical field strength.

4.2 DASY SAR System

4.2.1 DASY SAR System Diagram



The DASY5 system for performing compliance tests consists of the following items:

1. A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).
2. A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
3. A data acquisition electronic (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
4. A unit to operate the optical surface detector which is connected to the EOC.
5. The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY5 measurement server.
6. The DASY5 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation.
7. DASY5 software and SEMCAD data evaluation software.
8. Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
9. The generic twin phantom enabling the testing of left-hand and right-hand usage.
10. The device holder for handheld mobile phones.
11. Tissue simulating liquid mixed according to the given recipes.
12. System validation dipoles allowing to validate the proper functioning of the system.

4.2.2 Robot

The Dasy SAR system uses the high precision robots. Symmetrical design with triangular core Built-in optical fiber for surface detection system For the 6-axis controller system, Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents). The robot series have many features that are important for our application:

- High precision
  (repeatability ±0.02 mm)
- High reliability
  (industrial design)
- Low maintenance costs
  (virtually maintenance free due to direct drive gears; no belt drives)
- Jerk-free straight movements
  (brush less synchron motors; no stepper motors)
- Low ELF interference
  (motor control _elds shielded via the closed metallic construction shields)

4.2.3 E-Field Probe

The probe is specially designed and calibrated for use in liquids with high permittivities for the measurements the Specific Dosimetric E-Field Probe EX3DV4-SN:7340 with following specifications is used.

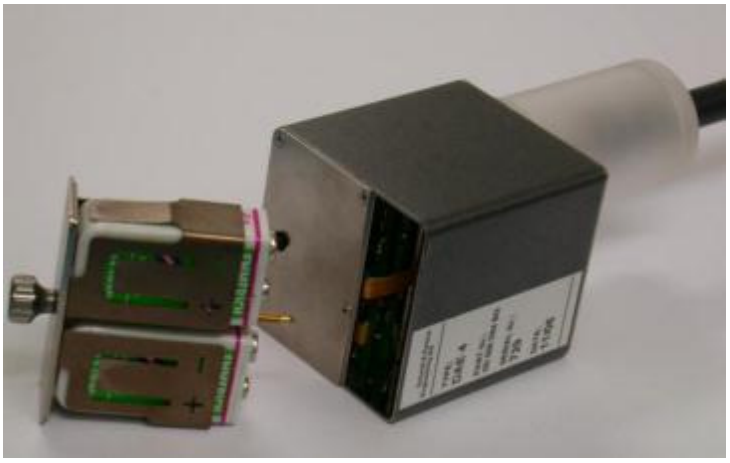
Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection systemBuilt-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., glycolether)
Calibration	ISO/IEC 17025 calibration service available
Frequency	10 MHz to 6 GHz; Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.2 dB in HSL (rotation around probe axis) ; ± 0.4 dB in HSL (rotation normal to probe axis)
Dynamic range	5 µW/g to > 100 mW/g; Linearity: ± 0.2 dB
Dimensions	Overall length: 337 mm (Tip: 9 mm) Tip diameter: 2.5 mm (Body: 10 mm) Distance from probe tip to dipole centers: 1.0 mm
Application	General dosimetry up to 3 GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms (EX3DV4)

E-Field Probe Calibration Process

Probe calibration is realized, in compliance with CENELEC EN 62209-1/-2 and IEEE 1528 std, with CALISAR, Antennessa proprietary calibration system. The calibration is performed with the EN 62209-1/2 annexe technique using reference guide at the five frequencies.

4.2.4 Data Acquisition Electronics

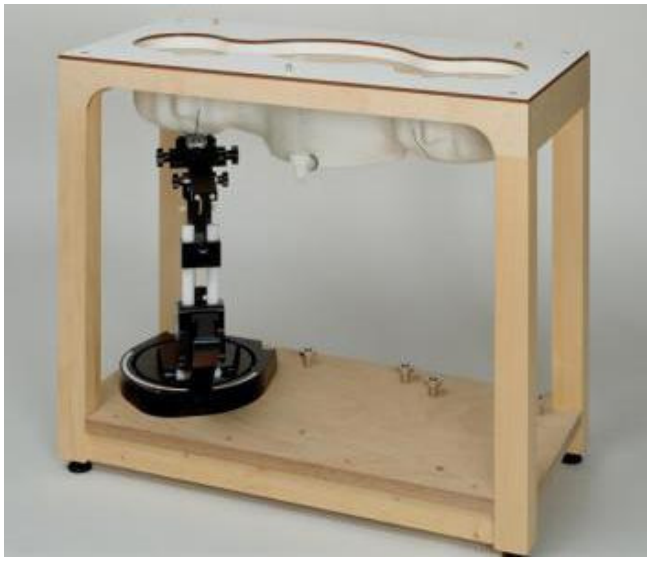
The data acquisition electronics (DAE) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converte and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information, as well as an optical uplink for commands and the clock.



- Input Impedance: 200MOhm
- The Inputs: Symmetrical and Floating
- Commom Mode Rejection: Above 80dB

4.2.5 Phantoms

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



- Left hand
- Right hand
- Flat phantom

Photo of Phantom SN1857

Photo of Phantom SN1859

Serial Number	Material	Length	Height
SN 1857 SAM1	Vinylester, glass fiber reinforced	1000	500
SN 1859 SAM2	Vinylester, glass fiber reinforced	1000	500

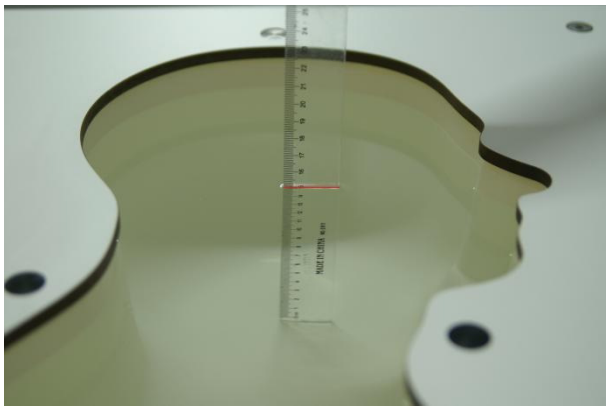
4.2.6 Device Holder

The DASY5 device holder has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of 65°. The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. This device holder is used for standard mobile phones or PDA"s only. If necessary an additional support of polystyrene material is used. Larger DUT"s (e.g. notebooks) cannot be tested using this device holder. Instead a support of bigger polystyrene cubes and thin polystyrene plates is used to position the DUT in all relevant positions to find and measure spots with maximum SAR values. Therefore those devices are normally only tested at the flat part of the SAM.

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

4.2.7 Simulating Liquid

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%.

Head Liquid Depth	Body Liquid Depth
	

The following table gives the recipes for tissue simulating liquid and the theoretical Conductivity/Permittivity.

Head (Reference IEEE1528)								
Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity σ (S/m)	Permittivity ε
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
900	40.3	57.9	0.2	1.4	0.2	0	0.97	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.4	40.0
2450	55.0	0	0	0.1	0	44.9	1.80	39.2
2600	54.9	0	0	0.1	0	45.0	1.96	39.0
Frequency (MHz)	Water (%)	Hexyl Carbitol (%)			Triton X-100 (%)		Conductivity σ (S/m)	Permittivity ε
5200	62.52	17.24			17.24		4.66	36.0
5800	62.52	17.24			17.24		5.27	35.3
Body (From instrument manufacturer)								
Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity σ (S/m)	Permittivity ε
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
900	50.8	48.2	0	0.9	0.1	0	1.05	55.0
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0.1	0	31.3	1.95	52.7
2600	68.2	0	0	0.1	0	31.7	2.16	52.5
Frequency(MHz)	Water	DGBE (%)			Salt (%)		Conductivity σ (S/m)	Permittivity ε
5200	78.60	21.40			/		5.54	47.86
5800	78.50	21.40			0.1		6.0	48.20

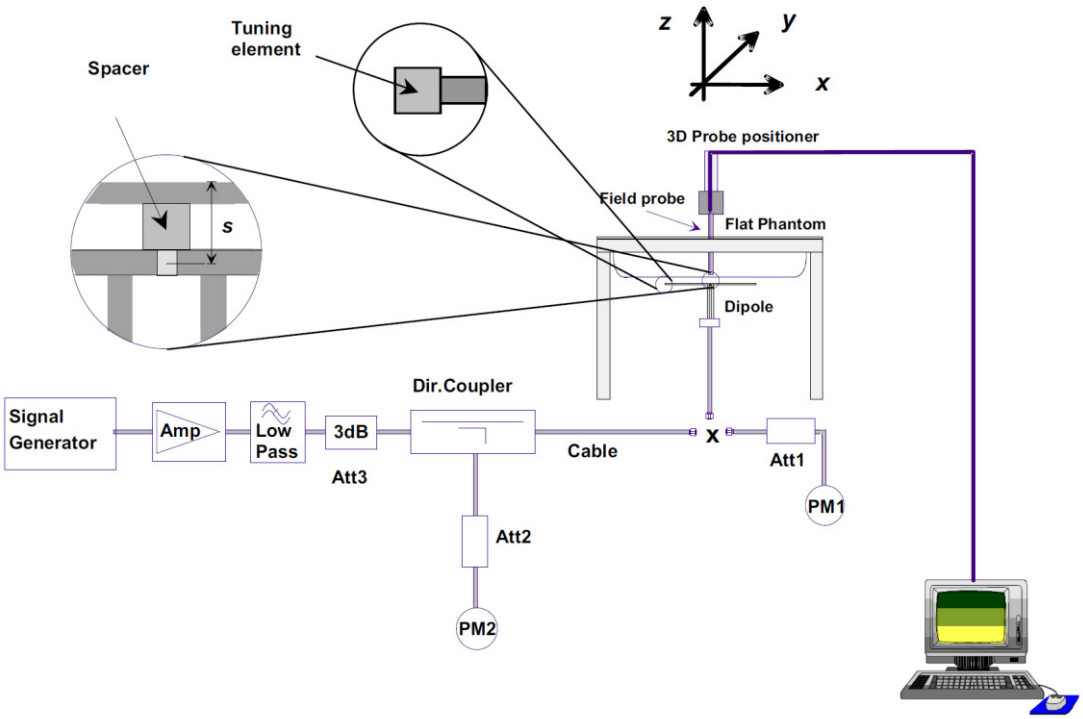
5 SYSTEM VERIFICATION

5.1 Purpose of System Check

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

5.2 System Check Setup

In the simplified setup for system evaluation, the EUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave that comes from a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The equipment setup is shown below:



6 TEST POSITION CONFIGURATIONS

According to KDB 648474 D04 Handset, handsets are tested for SAR compliance in head, body-worn accessory and other use configurations described in the following subsections.

6.1 Head Exposure Conditions

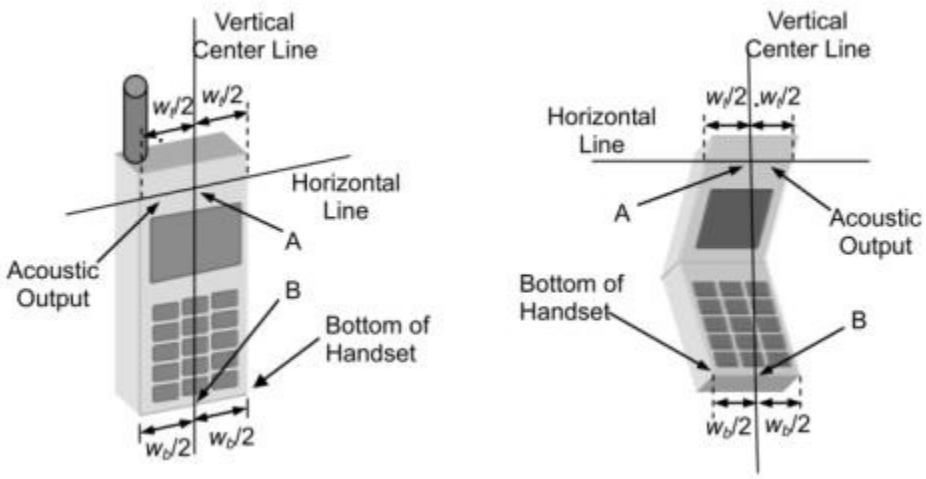
Head exposure is limited to next to the ear voice mode operations. Head SAR compliance is tested according to the test positions defined in IEEE Std 1528-2013 using the SAM phantom illustrated as below.

6.1.1 Two Imaginary Lines on the Handset

(a) The vertical center line passes through two points on the front side of the handset - the midpoint of the width w t of the handset at the level of the acoustic output, and the midpoint of the width w b of the bottom of the handset.

(b) The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.

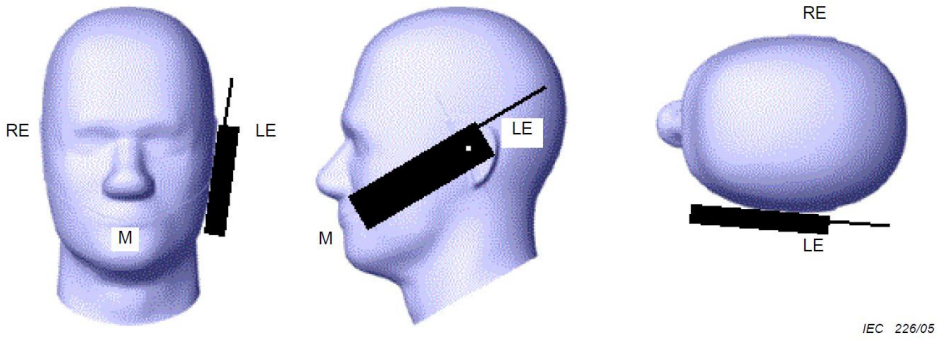
(c) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical center line is not necessarily parallel to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.



6.1.2 Cheek Position

(a) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.

(b) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost.



6.1.3 Tilted Position

(a) To position the device in the “cheek” position described above.

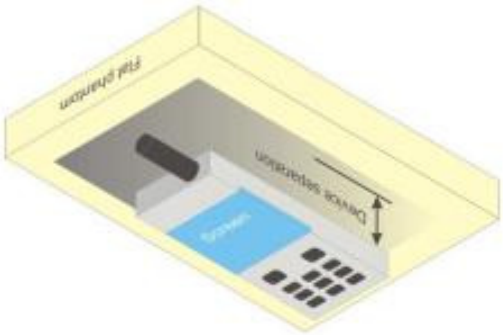
(b) While maintaining the device the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost.

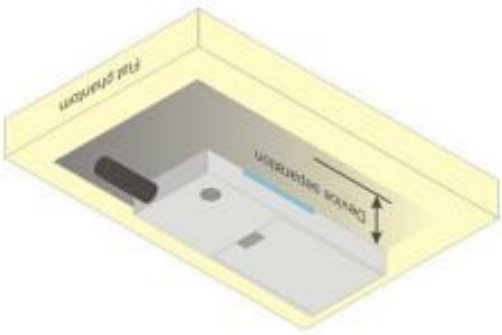
6.2 Body-worn Position Conditions

Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in KDB 447498 are used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode. When the reported SAR for a body-worn accessory.

Body-worn accessories that do not contain metallic or conductive components may be tested according to worst-case exposure configurations, typically according to the smallest test separation distance required for the group of body-worn accessories with similar operating and exposure characteristics. All body-worn accessories containing metallic components are tested in conjunction with the host device.

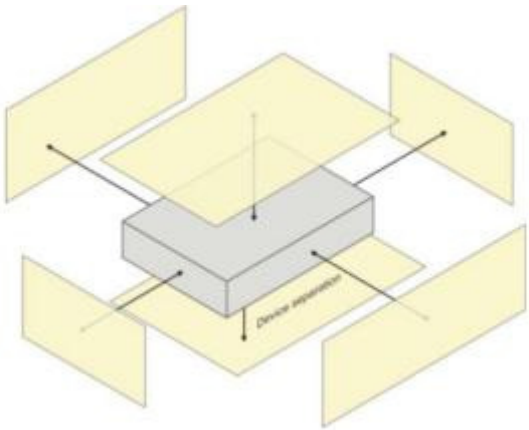
Body-worn accessory SAR compliance is based on a single minimum test separation distance for all wireless and operating modes applicable to each body-worn accessory used by the host, and according to the relevant voice and/or data mode transmissions and operations. If a body-worn accessory supports voice only operations in its normal and expected use conditions, testing of data mode for body-worn compliance is not required. A conservative minimum test separation distance for supporting off-the-shelf body-worn accessories that may be acquired by users of consumer handsets is used to test for body-worn accessory SAR compliance. This distance is determined by the handset manufacturer, according to the requirements of Supplement C 01-01. Devices that are designed to operate on the body of users using lanyards and straps, or without requiring additional body-worn accessories, will be tested using a conservative minimum test separation distance <= 5 mm to support compliance.





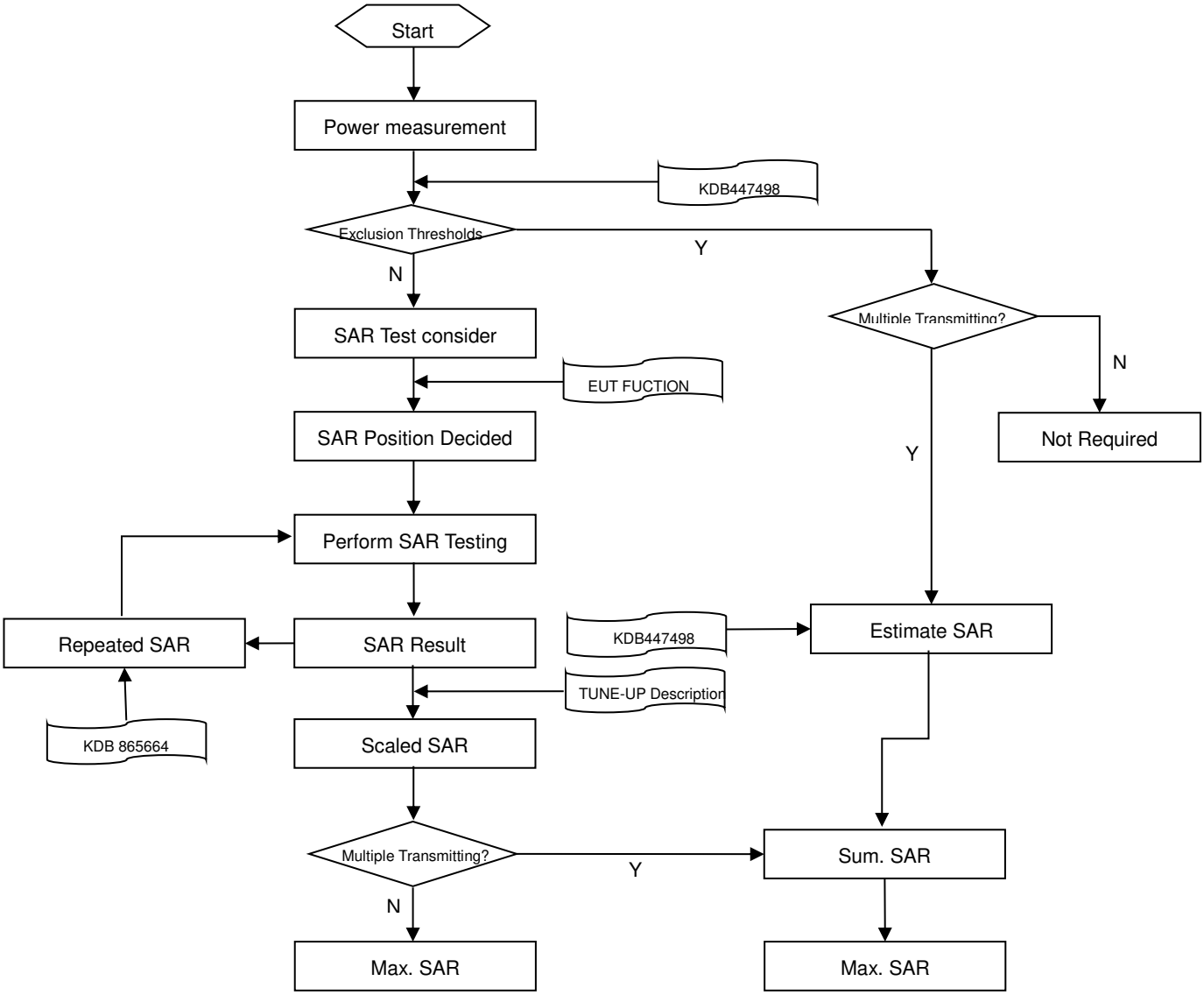
6.3 Hotspot Mode Exposure Position Conditions

For handsets that support hotspot mode operations, with wireless router capabilities and various web browsing functions, the relevant hand and body exposure conditions are tested according to the hotspot SAR procedures in KDB 941225. A test separation distance of 10 mm is required between the phantom and all surfaces and edges with a transmitting antenna located within 25 mm from that surface or edge. When the form factor of a handset is smaller than 9 cm x 5 cm, a test separation distance of 5 mm (instead of 10 mm) is required for testing hotspot mode. When the separation distance required for body-worn accessory testing is larger than or equal to that tested for hotspot mode, in the same wireless mode and for the same surface of the phone, the hotspot mode SAR data may be used to support body-worn accessory SAR compliance for that particular configuration (surface).



7 MEASUREMENT PROCEDURE

7.1 Measurement Process Diagram



7.2 SAR Scan General Requirement

Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Boththe probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1 g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std 1528-2013.

<table>
<tr><th colspan="3"></th><th>≤3GHz</th><th>>3GHz</th></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5±1 mm</td><td>½·δ·ln(2)±0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30°±1°</td><td>20°±1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan spatial resolution: Δx Area , Δy Area</td><td>≤ 2 GHz: ≤ 15 mm
2 – 3 GHz: ≤ 12 mm</td><td>3–4 GHz: ≤ 12 mm
4 – 6 GHz: ≤ 10 mm</td></tr>
<tr><td colspan="2">When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx Zoom , Δy Zoom</td><td>≤ 2 GHz: ≤ 8 mm
2 –3 GHz: ≤ 5 mm*</td><td>3–4 GHz: ≤ 5 mm*
4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="7">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2" rowspan="3">uniform grid: Δz Zoom (n)</td><td rowspan="3">≤ 5 mm</td><td>3–4 GHz: ≤ 4 mm</td></tr>
<tr><td>4–5 GHz: ≤ 3 mm</td></tr>
<tr><td>5–6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="3">graded grid</td><td rowspan="2">Δz Zoom (1): between 1st two points closest to phantom surface</td><td rowspan="3">≤ 4 mm</td><td>3–4 GHz: ≤ 3 mm</td></tr>
<tr><td>4–5 GHz: ≤ 2.5 mm</td></tr>
<tr><td>5–6 GHz: ≤ 2 mm</td></tr>
<tr><td>Δz Zoom (n>1): between subsequent points</td><td colspan="2">≤ 1.5·Δz Zoom (n-1)</td></tr>
<tr><td rowspan="3">Minimum zoom scan volume</td><td colspan="2" rowspan="3">x, y, z</td><td rowspan="3">≥30 mm</td><td>3–4 GHz: ≥ 28 mm</td></tr>
<tr><td>4–5 GHz: ≥ 25 mm</td></tr>
<tr><td>5–6 GHz: ≥ 22 mm</td></tr>
</table>

Note:

1. δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.
2. * When zoom scan is required and the reported SAR from the area scan based 1 g SAR estimation procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

7.3 Measurement Procedure

The following steps are used for each test position

a. Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface

b. Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.

c. Measurement of the SAR distribution with a grid of 8 to 16mm * 8 to16 mm and a constant distance to the inner surface of the phantom. Since the sensors cannot directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.

d. Around this point, a cube of 30 * 30 * 30 mm or 32 * 32 *32 mm is assessed by measuring 5 or 8 * 5 or 8*4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

7.4 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. Area scan and zoom scan resolution setting follows KDB 865664 D01v01r04 quoted below.

When the 1 g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR.

8 CONDUCTED RF OUPUT POWER

8.1 GSM

GSM 850 Band	Burst Peak Power(dBm)			Frame- Peak power(dBm)		
Channel	128	190	251	128	190	251
GSM (GMSK, 1-Slot)	**32.70**	32.67	32.62	**23.70**	23.67	23.62
GPRS (GMSK, 1-Slot)	32.76	32.71	32.69	23.76	23.71	23.69
GPRS (GMSK, 2-Slots)	31.77	31.73	31.70	25.77	25.73	25.70
GPRS (GMSK, 3-Slots)	29.97	29.97	29.94	25.71	25.71	25.68
GPRS (GMSK, 4-Slots)	**29.19**	29.16	29.15	**26.19**	26.16	26.15
EGPRS (8PSK, 1-Slot)	29.59	29.63	29.65	20.59	20.63	20.65
EGPRS (8PSK, 2-Slots)	28.67	28.65	**28.70**	**23.19**	22.65	22.70
EGPRS (8PSK, 3-Slots)	26.85	26.70	26.67	22.59	22.44	22.41
EGPRS (8PSK, 4-Slots)	25.44	25.66	25.63	22.44	22.66	22.63
GSM 1900 Band	Burst Peak Power(dBm)			Frame- Peak power(dBm)		
Channel	512	661	810	512	661	810
GSM (GMSK, 1-Slot)	**30.06**	29.96	29.93	**21.06**	20.96	20.93
GPRS (GMSK, 1-Slot)	30.02	30.01	30.01	21.02	21.01	21.01
GPRS (GMSK, 2-Slots)	29.06	29.06	29.08	23.06	23.06	23.08
GPRS (GMSK, 3-Slots)	27.27	27.28	27.34	23.01	23.02	23.08
GPRS (GMSK, 4-Slots)	26.48	26.49	**26.56**	23.48	23.49	**23.56**
EGPRS (8PSK, 1-Slot)	28.82	28.99	29.30	19.82	19.99	20.30
EGPRS (8PSK, 2-Slots)	28.10	28.21	28.54	22.10	22.21	22.54
EGPRS (8PSK, 3-Slots)	26.36	26.65	27.03	22.10	22.39	22.77
EGPRS (8PSK, 4-Slots)	25.53	25.68	**26.12**	22.53	22.68	**23.12**

Note:

1. SAR testing was performed on the maximum frame-Peaked 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 = Burst averaged power (1 Tx Slot) - 9 dB

   Frame-averaged power = Burst averaged power (2 Tx Slots) - 6 dB

   Frame-averaged power = Burst averaged power (3 Tx Slots) - 4.26 dB

   Frame-averaged power = Burst averaged power (4 Tx Slots) - 3 dB

8.2 WCDMA

WCDMA Band	Band 2			Band 5		
Channel	9262	9400	9538	4132	4182	4233
RMC 12.2Kbps	21.75	21.68	**22.36**	22.00	**22.27**	22.19
HSDPA Subtest-1	21.33	21.23	21.91	21.49	21.75	21.68
HSDPA Subtest-2	21.29	21.16	21.87	21.53	21.75	21.70
HSDPA Subtest-3	20.82	20.73	21.40	21.09	21.30	21.30
HSDPA Subtest-4	20.79	20.72	21.37	21.03	21.25	21.23
HSUPA Subtest-1	19.83	19.73	20.39	20.03	20.32	20.20
HSUPA Subtest-2	19.28	19.20	19.86	19.56	19.72	19.72
HSUPA Subtest-3	20.35	20.20	20.92	19.57	20.72	19.75
HSUPA Subtest-4	18.80	18.70	19.35	19.07	19.25	19.24
HSUPA Subtest-5	21.26	21.15	21.80	21.50	21.73	21.69

8.3 LTE

FDD LTE Band 2							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	18700	18900	19100	18700	18900	19100
20MHz	1 (RB_Pos:0)	22.12	**22.30**	22.24	21.60	21.69	21.49
	1 (RB_Pos:49)	22.18	22.06	21.95	21.75	21.49	21.26
	1 (RB_Pos:99)	22.25	22.11	21.46	21.78	21.40	20.87
	50 (RB_Pos:0)	21.17	21.22	21.09	20.19	20.23	20.05
	50 (RB_Pos:24)	21.24	21.10	20.92	20.24	20.10	19.88
	50 (RB_Pos:49)	**21.30**	21.10	20.72	20.33	20.10	19.70
	100 (RB_Pos:0)	**21.21**	21.11	20.90	20.24	20.12	19.89
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	18675	18900	19125	18675	18900	19125
15MHz	1 (RB_Pos:0)	22.12	22.27	22.39	20.94	21.59	21.56
	1 (RB_Pos:37)	22.15	22.09	22.06	21.03	21.41	21.34
	1 (RB_Pos:74)	22.22	22.11	21.65	21.11	21.37	21.02
	36 (RB_Pos:0)	21.24	21.24	21.31	20.16	20.24	20.20
	36 (RB_Pos:18)	21.25	21.19	21.11	20.19	20.19	20.02
	36 (RB_Pos:37)	21.30	21.17	20.91	20.24	20.14	19.83
	75 (RB_Pos:0)	21.28	21.24	21.11	20.21	20.20	20.04
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	18650	18900	19150	18650	18900	19150
10MHz	1 (RB_Pos:0)	22.25	22.17	22.26	21.04	21.49	21.23
	1 (RB_Pos:24)	22.28	22.07	22.02	21.08	21.42	21.09
	1 (RB_Pos:49)	22.34	22.11	21.75	21.16	21.37	20.86
	25 (RB_Pos:0)	21.14	21.08	21.18	20.17	20.14	20.25
	25 (RB_Pos:12)	21.18	21.06	21.08	20.22	20.10	20.16
	25 (RB_Pos:24)	21.22	21.06	20.93	20.26	20.08	20.04
	50 (RB_Pos:0)	21.21	21.08	21.07	20.20	20.10	20.11
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	18625	18900	19175	18625	18900	19175
5MHz	1 (RB_Pos:0)	22.31	22.06	22.06	21.46	21.59	21.16
	1 (RB_Pos:12)	22.34	22.04	21.95	21.49	21.55	21.04
	1 (RB_Pos:24)	22.33	22.04	21.83	21.50	21.54	20.93
	12 (RB_Pos:0)	21.36	21.13	21.03	20.43	20.26	20.10
	12 (RB_Pos:6)	21.37	21.07	20.97	20.43	20.22	20.02
	12 (RB_Pos:11)	21.39	21.09	20.90	20.47	20.21	19.96
	25 (RB_Pos:0)	21.32	21.03	20.91	20.35	20.12	19.86
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	18615	18900	19185	18615	18900	19185

3MHz	1 (RB_Pos:0)	22.34	22.01	21.75	21.14	21.37	20.87
	1 (RB_Pos:7)	22.45	22.06	21.75	21.24	21.40	20.85
	1 (RB_Pos:14)	22.35	21.98	21.63	21.16	21.32	20.73
	8 (RB_Pos:0)	21.43	21.08	20.88	20.49	20.16	19.95
	8 (RB_Pos:4)	21.45	21.06	20.85	20.51	20.16	19.91
	8 (RB_Pos:7)	21.43	21.10	20.83	20.49	20.17	19.87
	15 (RB_Pos:0)	21.36	21.04	20.83	20.38	20.08	19.80
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	18607	18900	19193	18607	18900	19193
1.4MHz	1 (RB_Pos:0)	22.37	22.01	21.61	21.38	21.37	20.74
	1 (RB_Pos: 2)	22.44	22.10	21.68	21.48	21.38	20.78
	1 (RB_Pos:5)	22.37	21.98	21.57	21.39	21.34	20.72
	3 (RB_Pos:0)	22.34	22.05	21.69	21.41	21.28	20.95
	3 (RB_Pos:1)	22.36	22.02	21.69	21.38	21.22	20.95
	3 (RB_Pos:2)	22.35	22.04	21.69	21.44	21.25	20.94
	6 (RB_Pos:0)	21.37	20.99	20.68	20.45	19.89	19.86

FDD LTE Band 4							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20050	20175	20300	20050	20175	20300
20MHz	1 (RB_Pos:0)	22.84	**23.07**	22.89	22.15	22.47	22.18
	1 (RB_Pos:49)	22.60	22.93	22.94	22.10	22.31	22.17
	1 (RB_Pos:99)	22.46	23.05	22.65	21.96	22.33	21.97
	50 (RB_Pos:0)	21.65	**22.01**	21.89	20.67	21.04	20.85
	50 (RB_Pos:24)	21.60	21.92	21.90	20.61	20.93	20.83
	50 (RB_Pos:49)	21.54	21.95	21.82	20.58	20.96	20.77
	100 (RB_Pos:0)	21.59	**21.96**	21.85	20.61	20.98	20.82
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20025	20175	20325	20025	20175	20325
15MHz	1 (RB_Pos:0)	22.91	23.06	23.14	21.61	22.41	22.28
	1 (RB_Pos:37)	22.69	22.94	23.07	21.54	22.27	22.24
	1 (RB_Pos:74)	22.55	23.00	22.74	21.49	22.26	22.03
	36 (RB_Pos:0)	21.88	22.08	22.18	20.77	21.08	21.03
	36 (RB_Pos:18)	21.80	22.03	22.16	20.72	21.02	21.03
	36 (RB_Pos:37)	21.75	22.05	22.01	20.68	21.02	20.89
	75 (RB_Pos:0)	21.84	22.07	22.10	20.76	21.02	21.00
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20000	20175	20350	20000	20175	20350
10MHz	1 (RB_Pos:0)	23.05	22.98	22.89	21.78	22.34	21.82
	1 (RB_Pos:24)	22.92	22.94	22.89	21.75	22.26	21.85
	1 (RB_Pos:49)	22.84	22.94	22.55	21.73	22.23	21.59

	25 (RB_Pos:0)	21.93	21.94	21.85	20.93	20.98	20.93
	25 (RB_Pos:12)	21.86	21.92	21.82	20.87	20.97	20.91
	25 (RB_Pos:24)	21.86	21.91	21.74	20.88	20.96	20.82
	50 (RB_Pos:0)	21.88	21.94	21.81	20.87	20.96	20.83
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	19975	20175	20375	19975	20175	20375
5MHz	1 (RB_Pos:0)	23.34	22.91	22.78	22.24	22.45	21.76
	1 (RB_Pos:12)	23.28	22.91	22.61	22.24	22.42	21.64
	1 (RB_Pos:24)	23.17	22.89	22.45	22.19	22.41	21.53
	12 (RB_Pos:0)	22.12	21.98	21.71	21.24	21.13	20.73
	12 (RB_Pos:6)	22.15	21.94	21.63	21.21	21.08	20.66
	12 (RB_Pos:11)	22.11	21.96	21.55	21.16	21.10	20.59
	25 (RB_Pos:0)	22.10	21.90	21.57	21.09	20.97	20.50
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	19965	20175	20385	19965	20175	20385
3.0MHz	1 (RB_Pos:0)	23.18	22.87	22.42	21.93	22.23	21.45
	1 (RB_Pos:7)	23.26	22.92	22.41	21.96	22.27	21.43
	1 (RB_Pos:14)	23.12	22.85	22.25	21.90	22.19	21.32
	8 (RB_Pos:0)	22.22	21.95	21.55	21.32	21.03	20.56
	8 (RB_Pos:4)	22.22	21.93	21.48	21.29	21.02	20.50
	8 (RB_Pos:7)	22.20	21.96	21.44	21.29	21.03	20.45
	15 (RB_Pos:0)	22.14	21.91	21.45	21.19	20.95	20.41
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	19957	20175	20393	19957	20175	20393
1.4MHz	1 (RB_Pos:0)	23.29	22.90	22.32	22.12	22.27	21.38
	1 (RB_Pos:2)	23.36	22.99	22.38	22.20	22.29	21.39
	1 (RB_Pos:5)	23.27	22.89	22.25	22.11	22.24	21.34
	3 (RB_Pos:0)	23.14	22.93	22.36	22.11	22.18	21.59
	3 (RB_Pos:1)	23.16	22.91	22.36	22.09	22.09	21.59
	3 (RB_Pos:2)	23.16	22.92	22.36	22.13	22.16	21.58
	6 (RB_Pos:0)	22.18	21.89	21.38	21.26	20.79	20.53

FDD LTE Band 7							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20850	21100	21350	20850	21100	21350
20MHz	1 (RB_Pos:0)	**22.29**	21.93	21.77	21.79	21.30	21.06
	1 (RB_Pos:49)	21.86	22.03	21.53	21.37	21.45	20.85
	1 (RB_Pos:99)	21.31	21.82	21.70	20.81	21.19	21.10
	50 (RB_Pos:0)	**21.14**	20.94	20.81	20.13	19.94	19.75
	50 (RB_Pos:24)	20.88	20.97	20.71	19.87	19.96	19.65
	50 (RB_Pos:49)	20.52	20.98	20.64	19.61	19.97	19.59
	100 (RB_Pos:0)	20.89	**20.96**	20.74	19.89	19.92	19.70
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20825	21100	21375	20825	21100	21375
15MHz	1 (RB_Pos:0)	22.20	21.93	21.82	21.10	21.23	21.04
	1 (RB_Pos:37)	21.94	22.00	20.97	20.84	21.36	20.28
	1 (RB_Pos:74)	21.35	21.89	21.62	20.23	21.21	20.92
	36 (RB_Pos:0)	21.25	21.00	20.73	20.17	20.02	19.64
	36 (RB_Pos:18)	21.05	21.03	20.25	19.98	20.05	19.30
	36 (RB_Pos:37)	20.85	21.03	20.58	19.76	20.02	19.53
	75 (RB_Pos:0)	21.10	21.04	20.69	20.01	20.00	19.62
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20800	21100	21400	20800	21100	21400
10MHz	1 (RB_Pos:0)	22.03	21.94	21.43	20.93	21.30	20.36
	1 (RB_Pos:24)	22.08	22.01	21.46	20.97	21.35	20.49
	1 (RB_Pos:49)	21.82	21.92	21.55	20.74	21.28	20.63
	25 (RB_Pos:0)	21.18	20.94	20.16	20.18	19.97	19.32
	25 (RB_Pos:12)	21.09	20.95	20.53	20.09	19.97	19.59
	25 (RB_Pos:24)	20.97	20.97	20.57	19.96	19.99	19.64
	50 (RB_Pos:0)	21.09	20.98	20.55	20.04	19.95	19.54
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20775	21100	21425	20775	21100	21425
5MHz	1 (RB_Pos:0)	22.40	21.93	21.57	21.43	21.48	20.68
	1 (RB_Pos:12)	22.32	21.99	21.64	21.37	21.53	20.75
	1 (RB_Pos:24)	22.21	21.96	21.68	21.28	21.46	20.77
	12 (RB_Pos:0)	21.33	21.03	20.66	20.37	20.14	19.68
	12 (RB_Pos:6)	21.25	21.02	20.67	20.30	20.13	19.70
	12 (RB_Pos:11)	21.22	21.03	20.72	20.27	20.14	19.74
	25 (RB_Pos:0)	21.23	20.99	20.64	20.23	20.02	19.57

8.4 WIFI

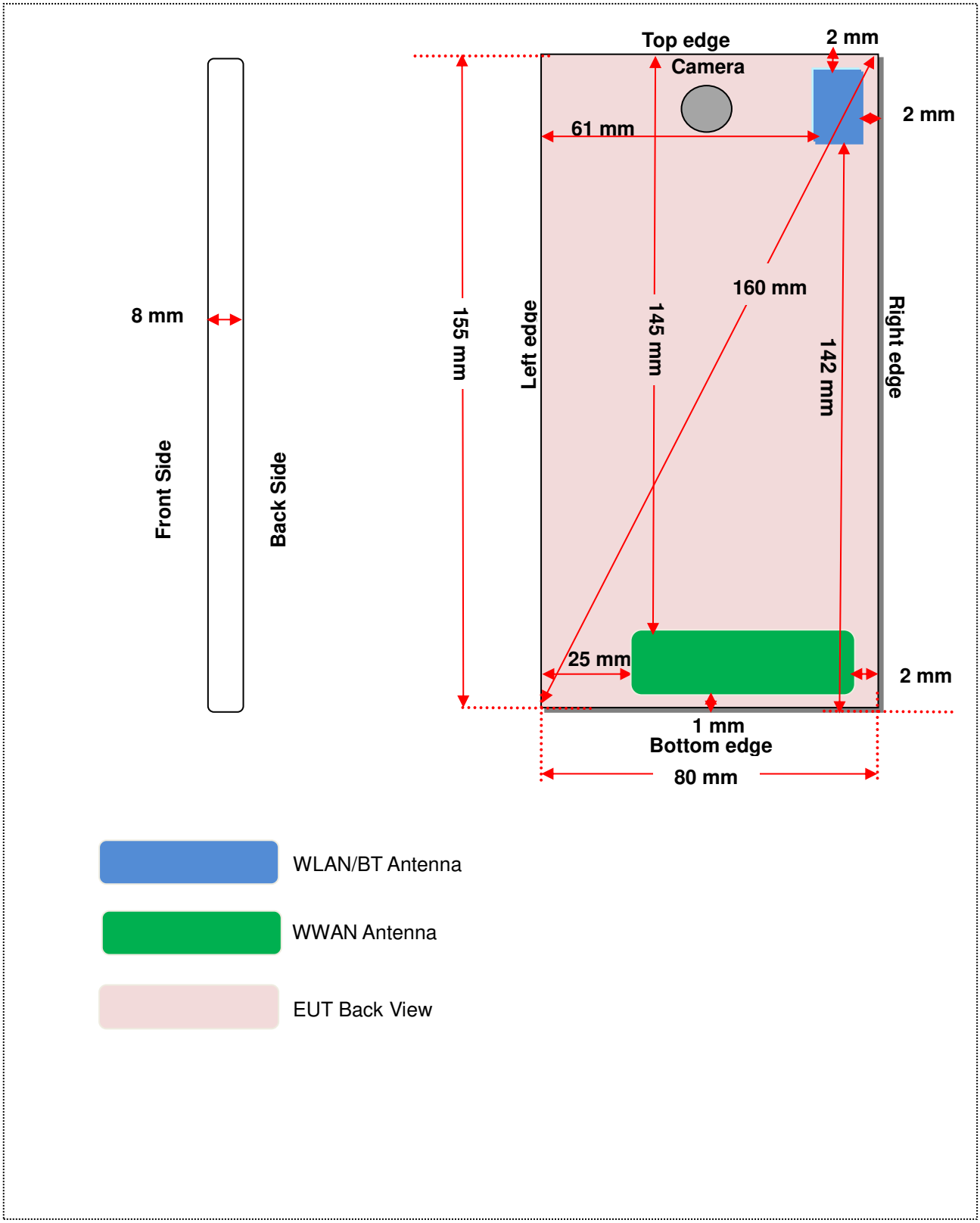
8.4.1 2.4G WIFI

Band (GHz)	Mode	Channel	Freq. (MHz)	Peak Power (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	15.91	No
		6	2437	**15.94**	Yes
		11	2462	15.83	No
	802.11g	1	2412	12.24	No
		6	2437	14.07	No
		11	2462	14.21	No
	802.11n(HT20)	1	2412	12.03	No
		6	2437	14.13	No
		11	2462	13.96	No
	802.11n(HT40)	3	2422	13.49	No
		6	2437	13.72	No
		9	2452	13.43	No

8.5 Bluetooth

Mode	GFSK			π/4-DQPSK		
Channel	0	39	78	0	39	78
Frequency (MHz)	2402	2441	2480	2402	2441	2480
Peak Power (dBm)	**6.43**	3.87	5.13	5.72	3.33	4.46
Mode	8-DPSK			BLE		
Channel	0	39	78	0	19	39
Frequency (MHz)	2402	2441	2480	2402	2440	2480
Peak Power (dBm)	5.85	3.50	4.71	6.26	3.54	5.15

9 TEST EXCLUSION CONSIDERATION



9.1 SAR Test Exclusion Consideration Table

According with FCC KDB 447498 D01, Appendix A, <SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm> Table, this Device SAR test configurations consider as following :

Band	Mode	Max. Peak Power		Test Position Configurations					
		dBm	mW	Head	Front/ Back	Left Edge	Right Edge	Top Edge	Bottom Edge
GSM 850	Distance to User			<5mm	<5mm	25mm	<5mm	145mm	<5mm
	Voice	32.80	1905.46	Yes	Yes	Yes	Yes	No	Yes
	Data	29.30	851.14	No	Yes	Yes	Yes	No	Yes
GSM 1900	Distance to User			<5mm	<5mm	25mm	<5mm	145mm	<5mm
	Voice	30.15	1035.14	Yes	Yes	Yes	Yes	No	Yes
	Data	26.65	462.38	No	Yes	Yes	Yes	No	Yes
WCDMA Band 2	Distance to User			<5mm	<5mm	25mm	<5mm	145mm	<5mm
	RMC	22.45	175.79	Yes	Yes	Yes	Yes	No	Yes
WCDMA Band 5	Distance to User			<5mm	<5mm	25mm	<5mm	145mm	<5mm
	RMC	22.35	171.79	Yes	Yes	Yes	Yes	No	Yes
LTE Band 2	Distance to User			<5mm	<5mm	25mm	<5mm	145mm	<5mm
	QPSK	22.40	173.78	Yes	Yes	Yes	Yes	No	Yes
LTE Band 4	Distance to User			<5mm	<5mm	25mm	<5mm	145mm	<5mm
	QPSK	23.15	206.54	Yes	Yes	Yes	Yes	No	Yes
LTE Band 7	Distance to User			<5mm	<5mm	25mm	<5mm	145mm	<5mm
	QPSK	22.40	173.78	Yes	Yes	Yes	Yes	No	Yes
WLAN 2.4 G	Distance to User			<5mm	<5mm	61mm	<5mm	<5mm	142mm
	802.11b	16.05	40.27	Yes	Yes	No	Yes	Yes	No
	802.11g	14.30	26.92	No	No	No	No	No	No
	802.11n(HT20)	14.05	25.41	No	No	No	No	No	No
	802.11n(HT40)	13.85	24.27	No	No	No	No	No	No
Bluetooth	Distance to User			<5mm	<5mm	61mm	<5mm	<5mm	142mm
	Bluetooth BR/EDR	6.55	4.52	No	No	No	No	No	No
	Bluetooth BLE	6.35	4.32	No	No	No	No	No	No

Note:

1. Maximum power is the source-based time-average power and represents the maximum RF output power including tune-up tolerance among production units
2. Per KDB 447498 D01, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
3. Per KDB 447498 D01, standalone SAR test exclusion threshold is applied; If the distance of the antenna to the user is < 5mm, 5mm is used to determine SAR exclusion threshold
4. Per KDB 447498 D01, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
   [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR
   a. f(GHz) is the RF channel transmit frequency in GHz
   b. Power and distance are rounded to the nearest mW and mm before calculation

c. The result is rounded to one decimal place for comparison

d. For < 50 mm distance, we just calculate mW of the exclusion threshold value (3.0) to do compare.

This formula is [3.0] / [√f(GHz)] ·[(min. test separation distance, mm)] = exclusion threshold of mW.

5. Per KDB 447498 D01, at 100 MHz to 6 GHz and for test separation distances > 50 mm, the SAR test exclusion threshold is determined according to the following

   a. [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·(f(MHz)/150)] mW, at 100 MHz to 1500 MHz

   b. [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·10] mW at > 1500 MHz and ≤ 6 GHz

6. Per KDB 941225 D01, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA /HSUPA /DC-HSDPA output power is < 0.25dB higher than RMC12.2Kbps, or reported SAR with RMC 12.2kbps setting is ≤ 1.2W/kg, HSDPA/HSUPA/DC-HSDPA SAR evaluation can be excluded.

7. Per KDB 248227 D01, choose the highest output power channel to test SAR and determine further SAR exclusion.8. For each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of these configurations is less than 1/4dB higher than those measured at the lowest data rate

8. Per KDB 248227 D01 SAR is not required for the following 2.4 GHz OFDM conditions.

   a. When KDB Publication 447498 D01 SAR test exclusion applies to the OFDM configuration.

   b. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

9. Per KDB 248227 D01 SAR is not required for the following U-NII-1 and U-NII-2A bands conditions.

   a. When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, each band is tested independently for SAR.

   b. When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration; otherwise, each band is tested independently for SAR.

9.2 10g Extremity Exposure Consideration

According with FCC KDB 648474 D04, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, unless it is confirmed otherwise through KDB inquiries, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance;

The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.

Conclusion:
The EUT hotspot mode 1-g reported SAR is 1.056 W/kg, which is less than 1.2 W/kg, 10 g extremity SAR is not required.

10 TEST RESULT

10.1 GSM 850

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power(dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head											
Voice	Left Cheek	0	128	824.2	-0.07	0.130	32.70	32.80	1.02	0.133	/
	Left Tilt	0	128	824.2	0.01	0.099	32.70	32.80	1.02	0.101	/
	Right Cheek	0	128	824.2	0.19	0.158	32.70	32.80	1.02	**0.162**	1#
	Right Tilt	0	128	824.2	-0.03	0.121	32.70	32.80	1.02	0.124	/
Body-worn Accessory											
Voice	Front Side	10	128	824.2	-0.01	0.176	32.70	32.80	1.02	0.180	/
	Back Side	10	128	824.2	0.05	0.269	32.70	32.80	1.02	0.275	/
Hotspot											
GPRS 4 slots	Front Side	10	128	824.2	0.03	0.292	29.19	29.30	1.03	0.299	/
	Back Side	10	128	824.2	-0.01	0.443	29.19	29.30	1.03	**0.454**	2#
	Left Edge	10	128	824.2	0.02	0.173	29.19	29.30	1.03	0.177	/
	Right Edge	10	128	824.2	-0.05	0.136	29.19	29.30	1.03	0.139	/
	Bottom Edge	10	128	824.2	-0.12	0.137	29.19	29.30	1.03	0.141	/
Note: SAR is not required for EGPRS (8PSK) mode because its output power is less than that of GPRS Mode.											

10.2 GSM 1900

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power(dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head											
Voice	Left Cheek	0	512	1850.20	0.16	0.284	30.06	30.15	1.02	**0.290**	3#
	Left Tilt	0	512	1850.20	0.01	0.053	30.06	30.15	1.02	0.054	/
	Right Cheek	0	512	1850.20	0.12	0.178	30.06	30.15	1.02	0.182	/
	Right Tilt	0	512	1850.20	-0.03	0.092	30.06	30.15	1.02	0.094	/
Body-worn Accessory											
Voice	Front Side	10	512	1850.20	-0.03	0.359	30.06	30.15	1.02	0.367	/
	Back Side	10	512	1850.20	0.11	0.400	30.06	30.15	1.02	0.408	/
Hotspot											
GPRS 4 slots	Front Side	10	810	1909.80	-0.05	0.685	26.56	26.65	1.02	**0.699**	4#
	Back Side	10	810	1909.80	-0.06	0.666	26.56	26.65	1.02	0.680	/
	Left Edge	10	810	1909.80	0.01	0.041	26.56	26.65	1.02	0.042	/
	Right Edge	10	810	1909.80	-0.04	0.331	26.56	26.65	1.02	0.338	/
	Bottom Edge	10	810	1909.80	-0.07	0.680	26.56	26.65	1.02	0.694	/
Note: SAR is not required for EGPRS (8PSK) mode because its output power is less than that of GPRS Mode.											

10.3 WCDMA Band 2

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power(dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head											
RMC	Left Cheek	0	9538	1907.60	-0.06	0.441	22.36	22.45	1.02	**0.450**	5#
	Left Tilt	0	9538	1907.60	-0.01	0.122	22.36	22.45	1.02	0.125	/
	Right Cheek	0	9538	1907.60	0.05	0.307	22.36	22.45	1.02	0.313	/
	Right Tilt	0	9538	1907.60	0.14	0.166	22.36	22.45	1.02	0.169	/
Body-worn Accessory & Hotspot											
RMC	Front Side	10	9538	1907.60	-0.05	0.687	22.36	22.45	1.02	**0.701**	6#
	Back Side	10	9538	1907.60	0.03	0.627	22.36	22.45	1.02	0.640	/
	Left Edge	10	9538	1907.60	-0.01	0.050	22.36	22.45	1.02	0.051	/
	Right Edge	10	9538	1907.60	0.04	0.559	22.36	22.45	1.02	0.571	/
	Bottom Edge	10	9538	1907.60	-0.14	0.668	22.36	22.45	1.02	0.682	/

10.4 WCDMA Band 5

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power(dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head											
RMC	Left Cheek	0	4182	836.40	0.16	0.349	22.27	22.35	1.02	0.355	/
	Left Tilt	0	4182	836.40	0.09	0.182	22.27	22.35	1.02	0.185	/
	Right Cheek	0	4182	836.40	0.07	0.424	22.27	22.35	1.02	**0.432**	7#
	Right Tilt	0	4182	836.40	0.02	0.308	22.27	22.35	1.02	0.314	/
Body-worn Accessory & Hotspot											
RMC	Front Side	10	4182	836.40	-0.01	0.400	22.27	22.35	1.02	0.407	/
	Back Side	10	4182	836.40	0.02	0.531	22.27	22.35	1.02	**0.541**	8#
	Left Edge	10	4182	836.40	-0.06	0.321	22.27	22.35	1.02	0.327	/
	Right Edge	10	4182	836.40	0.12	0.189	22.27	22.35	1.02	0.193	/
	Bottom Edge	10	4182	836.40	0.11	0.190	22.27	22.35	1.02	0.194	/

10.5 LTE Band 2 (20MHz Bandwidth)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Numb.	RB Start	Power Drift (dB)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power (dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head													
QPSK	Left Cheek	0	18900	1880	1	Low	-0.10	0.567	22.30	22.40	1.02	**0.580**	9#
			18700	1860	50	High	-0.08	0.525	21.30	21.40	1.02	0.537	/
	Left Tilt	0	18900	1880	1	Low	-0.12	0.178	22.30	22.40	1.02	0.182	/
			18700	1860	50	High	-0.03	0.150	21.30	21.40	1.02	0.153	/
	Right Cheek	0	18900	1880	1	Low	0.15	0.303	22.30	22.40	1.02	0.310	/
			18700	1860	50	High	0.05	0.249	21.30	21.40	1.02	0.255	/
	Right Tilt	0	18900	1880	1	Low	-0.19	0.255	22.30	22.40	1.02	0.261	/
			18700	1860	50	High	0.06	0.229	21.30	21.40	1.02	0.234	/
Body-worn Accessory& Hotspot													
QPSK	Front Side	10	18900	1880	1	Low	-0.03	0.955	22.30	22.40	1.02	0.977	/
			18700	1860	1	High	0.03	1.020	22.25	22.40	1.04	**1.056**	10#
			19100	1900	1	Low	0.06	0.915	22.24	22.40	1.04	0.949	/
			18700	1860	50	High	0.02	0.805	21.30	21.40	1.02	0.824	/
			18700	1860	100	Low	-0.02	0.762	21.21	21.30	1.02	0.778	/
	Back Side	10	18900	1880	1	Low	0.02	0.800	22.30	22.40	1.02	0.819	/
			18700	1860	1	High	0.05	0.794	22.25	22.40	1.04	0.822	/
			19100	1900	1	Low	0.06	0.705	22.24	22.40	1.04	0.731	/
			18700	1860	50	High	-0.01	0.577	21.30	21.40	1.02	0.590	/
			18700	1860	100	Low	0.07	0.638	21.21	21.30	1.02	0.651	/
	Left Edge	10	18900	1880	1	Low	-0.06	0.082	22.30	22.40	1.02	0.084	/
			18700	1860	50	High	0.05	0.078	21.30	21.40	1.02	0.080	/
	Right Edge	10	18900	1880	1	Low	-0.13	0.707	22.30	22.40	1.02	0.723	/
			18700	1860	50	High	0.04	0.560	21.30	21.40	1.02	0.573	/
	Bottom Edge	10	18900	1880	1	Low	0.01	0.761	22.30	22.40	1.02	0.779	/
			18700	1860	50	High	-0.03	0.494	21.30	21.40	1.02	0.506	/

10.6 LTE Band 4 (20MHz Bandwidth)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num b.	RB Start	Power Drift (dB)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power (dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head													
QPSK	Left Cheek	0	20175	1732.5	1	Low	0.07	0.461	23.07	23.15	1.02	**0.470**	11#
			20175	1732.5	50	Low	0.05	0.381	22.01	22.10	1.02	0.389	/
	Left Tilt	0	20175	1732.5	1	Low	-0.01	0.130	23.07	23.15	1.02	0.132	/
			20175	1732.5	50	Low	0.03	0.098	22.01	22.10	1.02	0.100	/
	Right Cheek	0	20175	1732.5	1	Low	0.05	0.375	23.07	23.15	1.02	0.382	/
			20175	1732.5	50	Low	-0.02	0.280	22.01	22.10	1.02	0.286	/
	Right Tilt	0	20175	1732.5	1	Low	0.04	0.389	23.07	23.15	1.02	0.396	/
			20175	1732.5	50	Low	0.06	0.335	22.01	22.10	1.02	0.342	/
Body-worn Accessory& Hotspot													
QPSK	Front Side	10	20175	1732.5	1	Low	-0.08	0.735	23.07	23.15	1.02	**0.749**	12#
			20175	1732.5	50	Low	-0.05	0.602	22.01	22.10	1.02	0.615	/
	Back Side	10	20175	1732.5	1	Low	0.04	0.609	23.07	23.15	1.02	0.620	/
			20175	1732.5	50	Low	0.03	0.499	22.01	22.10	1.02	0.509	/
	Left Edge	10	20175	1732.5	1	Low	0.11	0.080	23.07	23.15	1.02	0.081	/
			20175	1732.5	50	Low	-0.12	0.066	22.01	22.10	1.02	0.067	/
	Right Edge	10	20175	1732.5	1	Low	-0.16	0.481	23.07	23.15	1.02	0.490	/
			20175	1732.5	50	Low	0.16	0.394	22.01	22.10	1.02	0.402	/
	Bottom Edge	10	20175	1732.5	1	Low	-0.01	0.614	23.07	23.15	1.02	0.625	/
			20175	1732.5	50	Low	-0.13	0.503	22.01	22.10	1.02	0.514	/

10.7 LTE Band 7 (20MHz Bandwidth)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num b.	RB Start	Power Drift (dB)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power (dBm)	Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head													
QPSK	Left Cheek	0	20850	2510	1	Low	0.01	0.666	22.29	22.40	1.03	**0.683**	13#
			20850	2510	50	Low	0.02	0.613	21.14	21.25	1.03	0.629	/
	Left Tilt	0	20850	2510	1	Low	0.05	0.277	22.29	22.40	1.03	0.284	/
			20850	2510	50	Low	-0.06	0.231	21.14	21.25	1.03	0.237	/
	Right Cheek	0	20850	2510	1	Low	-0.17	0.488	22.29	22.40	1.03	0.501	/
			20850	2510	50	Low	0.15	0.336	21.14	21.25	1.03	0.345	/
	Right Tilt	0	20850	2510	1	Low	-0.09	0.425	22.29	22.40	1.03	0.436	/
			20850	2510	50	Low	-0.10	0.280	21.14	21.25	1.03	0.287	/
Body-worn Accessory& Hotspot													
QPSK	Front Side	10	20850	2510	1	Low	-0.08	0.586	22.29	22.40	1.03	**0.601**	14#
			20850	2510	50	Low	-0.03	0.547	21.14	21.25	1.03	0.561	/
	Back Side	10	20850	2510	1	Low	-0.04	0.381	22.29	22.40	1.03	0.391	/
			20850	2510	50	Low	0.11	0.332	21.14	21.25	1.03	0.341	/
	Left Edge	10	20850	2510	1	Low	0.18	0.062	22.29	22.40	1.03	0.064	/
			20850	2510	50	Low	-0.08	0.058	21.14	21.25	1.03	0.059	/
	Right Edge	10	20850	2510	1	Low	0.14	0.408	22.29	22.40	1.03	0.418	/
			20850	2510	50	Low	-0.09	0.317	21.14	21.25	1.03	0.325	/
	Bottom Edge	10	20850	2510	1	Low	0.02	0.360	22.29	22.40	1.03	0.369	/
			20850	2510	50	Low	0.13	0.335	21.14	21.25	1.03	0.344	/

10.8 WIFI 2.4GHz

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power (dBm)	Scaling Factor	Duty Cycle (%)	Duty Cycle Scaling Factor	1 g Scaled SAR (W/Kg)	Meas. No.
Head													
802.11 b	Left Cheek	0	6	2437	0.01	0.431	15.94	16.05	1.03	99.21	1.01	0.446	/
	Left Tilt	0	6	2437	-0.15	0.319	15.94	16.05	1.03	99.21	1.01	0.330	/
	Right Cheek	0	6	2437	-0.02	**0.765**	15.94	16.05	1.03	99.21	1.01	**0.792**	15#
	Right Tilt	0	6	2437	0.08	0.590	15.94	16.05	1.03	99.21	1.01	0.611	/
Body													
802.11 b	Front Side	10	6	2437	-0.01	0.136	15.94	16.05	1.03	99.21	1.01	0.141	/
	Back Side	10	6	2437	0.05	**0.213**	15.94	16.05	1.03	99.21	1.01	**0.221**	16#
	Right Edge	10	6	2437	0.13	0.116	15.94	16.05	1.03	99.21	1.01	0.120	/
	Top Edge	10	6	2437	0.07	0.199	15.94	16.05	1.03	99.21	1.01	0.206	/

11 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.

Frequency Band (MHz)	Wireless Band	RF Exposure Conditions	Test Position	Highest Measured SAR (W/kg)	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	Largest to Smallest SAR Radio
1900	LTE Band 2	Body	Front Side	1.020	Yes	1.003	1.02
Note: The ratio of largest to smallest SAR for the original and first repeated measurements is < 1.20, the second repeated measurement is not required.							

12 SIMULTANEOUS TRANSMISSION

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 SAR to Peak Location Ratio (SPLSR).

12.1 Simultaneous Transmission Mode Consider

NO.	Mode	2.4G WLAN & 2.4G Bluetooth		
		Head	Body-worn	Hotspot
1	GSM (Voice)	+ 2.4G WLAN	+ 2.4G WLAN	--
		--	+ Bluetooth	--
2	GSM (Data)	--	--	+ 2.4G WLAN
3	WCDMA RMC	+ 2.4G WLAN	+ 2.4G WLAN	+ 2.4G WLAN
		--	+ Bluetooth	--
4	LTE	+ 2.4G WLAN	+ 2.4G WLAN	+ 2.4G WLAN
		--	+ Bluetooth	--

Note:

1. 2G&3G&4G share the same antenna and can't transmit simultaneously.
2. The Bluetooth and 2.4G WLAN share the same antenna, can't transmitting together.
3. The 2.4G WLAN can transmit simultaneously with each WWAN.

12.2 Estimated SAR Calculation

According to KDB 447498 D01, when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR was estimated according to following formula to result in substantially conservative SAR values of <= 0.4 W/kg to determine simultaneous transmission SAR test exclusion.

$$\text{Estimated SAR} = \frac{Max.Tune\ Up\ Power(mw)}{Min\ Test\ Separation\ Distance} * \frac{\sqrt{f_{GHz}}}{x}$$ (where x = 7.5 for 1-g SAR)

If the minimum test separation distance is < 5 mm, a distance of 5 mm is used for estimated SAR calculation. When the test separation distance is > 50 mm, the 0.4 W/kg is used for SAR-1g.

Band	Mode	Position	Antenna To user (mm)	SAR Testing	Max. Tune-up Power (dBm)	Max. Tune-up Power (mW)	Frequency (GHz)	Calculation Distance/Gap (mm)	Estimated SAR (W/kg)
Bluetooth	GFSK	Front side	10	NO	6.55	4.52	2.402	10	0.093
		Back Side	10	NO	6.55	4.52	2.402	10	0.093
		Right Edge	10	NO	6.55	4.52	2.402	10	0.093
		Top Edge	10	NO	6.55	4.52	2.402	10	0.093

12.3 Sum SAR of Simultaneous Transmission

12.3.1 Sum Head SAR of Simultaneous Transmission

Simultaneous Mode	Mode	Max. 1g SAR (W/kg)	1g Sum SAR (W/kg)	SPLSR (Yes/No)
GSM Voice + 2.4G WLAN	GSM Voice	0.290	1.082	No
	2.4G WLAN	0.792		
WCDMA RMC +2.4G WLAN	WCDMA RMC	0.450	1.242	No
	2.4G WLAN	0.792		
LTE QPSK + 2.4G WLAN	LTE QPSK	0.683	**1.475**	No
	2.4G WLAN	0.792		

12.3.2 Sum Body-worn SAR of Simultaneous Transmission

Simultaneous Mode	Mode	Max. 1g SAR (W/kg)	1g Sum SAR (W/kg)	SPLSR (Yes/No)
GSM Voice +Bluetooth	GSM Voice	0.408	0.501	No
	Bluetooth	0.093		
GSM Voice + 2.4G WLAN	GSM Voice	0.408	0.629	No
	2.4G WLAN	0.221		
WCDMA RMC +Bluetooth	WCDMA RMC	0.701	0.794	No
	Bluetooth	0.093		
WCDMA RMC +2.4G WLAN	WCDMA RMC	0.701	0.922	No
	2.4G WLAN	0.221		
LTE QPSK + Bluetooth	LTE QPSK	1.056	1.149	No
	Bluetooth	0.093		
LTE QPSK + 2.4G WLAN	LTE QPSK	1.056	**1.277**	No
	2.4G WLAN	0.221		

12.3.3 Sum Hotspot mode SAR of Simultaneous Transmission

Simultaneous Mode	Mode	Max. 1g SAR (W/kg)	1g Sum SAR (W/kg)	SPLSR (Yes/No)
GSM DATA + 2.4G WLAN	GSM DATA	0.699	0.920	No
	2.4G WLAN	0.221		
WCDMA RMC + 2.4G WLAN	WCDMA RMC	0.701	0.922	No
	2.4G WLAN	0.221		
LTE QPSK + 2.4G WLAN	LTE QPSK	1.056	**1.277**	No
	2.4G WLAN	0.221		

13 TEST EQUIPMENTS LIST

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
PC	Dell	N/A	N/A	N/A	N/A
835MHz Validation Dipole	Speag	D835V2	SN: 4d187	2014/11/26	2017/11/25
1750MHz Validation Dipole	Speag	D1750V2	SN: 1130	2014/11/28	2017/11/27
1900MHz Validation Dipole	Speag	D1900V2	SN: 5d193	2014/11/28	2017/11/27
2450MHz Validation Dipole	Speag	D2450V2	SN: 952	2014/11/27	2017/11/26
2600MHz Validation Dipole	Speag	D2600V2	SN: 1095	2014/11/27	2017/11/26
E-Field Probe	Speag	EX3DV4	SN: 7340	2016/12/27	2017/12/26
Phantom1	Speag	SAM	SN: 1859	N/A	N/A
Phantom2	Speag	SAM	SN: 1857	N/A	N/A
Data acquisition electronics	Speag	DAE4	SN: 1454	2016/12/19	2017/12/18
Signal Generator	R&S	SMBV100A	260592	2016/07/13	2017/07/12
Power Meter	Agilent	E4419B	GB40201833	2016/07/13	2017/07/12
Power Sensor	R&S	NRP-Z21	103971	2016/07/13	2017/07/12
Power Sensor	Agilent	E9300A	MY41498012	2016/07/13	2017/07/12
Power Sensor	Agilent	E9300A	MY41499891	2016/07/13	2017/07/12
Power Amplifier	SATIMO	6552B	22374	N/A	N/A
Dielectric Probe Kit	SATIMO	SCLMP	SN 25/13 OCPG56	2016/07/13	2017/07/12
Wireless Communication Test Set	Agilent	8960-E5515C	MY50260493	2016/07/13	2017/07/12
Wireless Communication Test Set	R&S	CMW 500	138884	2016/07/13	2017/07/12
Network Analyzer	R&S	ZVL-6	EMY46103472	2016/07/13	2017/07/12
Attenuator	COM-MW	ZA-S1-31	1305003187	N/A	N/A
Directional coupler	AA-MCS	AAMCS-UDC	000272	N/A	N/A

Note:

Per KDB 865664 D01, Dipole SAR Validation Verification, BALUN LAB has adopted 3 years calibration intervals. On annual basis, every measurement dipole has been evaluated and is in compliance with the following criteria:

1. There is no physical damage on the dipole;
2. System validation with specific dipole is within 10% of calibrated value;
3. Return-loss in within 20% of calibrated measurement.

ANNEX A SIMULATING LIQUID VERIFICATION RESULT

The dielectric parameters of the liquids were verified prior to the SAR evaluation using an SCLMP Dielectric Probe Kit.

Date	Liquid Type	Fre. (MHz)	Temp. (℃)	Meas. Conductivity (σ) (S/m)	Meas. Permittivity (ε)	Target Conductivity (σ) (S/m)	Target Permittivity (ε)	Conductivity Tolerance (%)	Permittivity Tolerance (%)
2017.05.26	Head	835	21.4	0.89	41.6	0.90	41.50	-1.11	0.24
2017.05.26	Body	835	21.4	0.96	55.87	0.97	55.20	-1.03	1.21
2017.05.31	Head	1750	21.1	1.43	38.62	1.37	40.10	4.38	-3.69
2017.05.31	Body	1750	21.1	1.48	51.53	1.49	53.40	-0.67	-3.50
2017.05.22	Head	1900	21.8	1.46	39.76	1.40	40.00	4.29	-0.60
2017.05.24	Head	1900	21.3	1.45	39.75	1.40	40.00	3.57	-0.63
2017.05.22	Body	1900	21.8	1.58	52.06	1.52	53.30	3.95	-2.33
2017.05.24	Body	1900	21.3	1.57	52.05	1.52	53.30	3.29	-2.35
2017.05.25	Head	2450	21.5	1.88	38.97	1.80	39.20	4.44	-0.59
2017.05.25	Body	2450	21.5	2.02	50.71	1.95	52.70	3.59	-3.78
2017.05.23	Head	2600	21.5	1.99	39.00	1.96	39.00	1.53	0.00
2017.05.23	Body	2600	21.5	2.20	50.12	2.16	52.50	1.85	-4.53
Note: The tolerances limit of Conductivity and Permittivity is ± 5%.									

ANNEX B SYSTEM CHECK RESULT

Comparing to the original SAR value provided by SPEAG, the validation data should be within itsspecification of 10 %(for 1 g).

Date	Liquid Type	Freq. (MHz)	Power (mW)	Measured SAR (W/kg)	Normalized SAR (W/kg)	Dipole SAR (W/kg)	Tolerance (%)	Targeted SAR(W/kg)	Tolerance (%)
2017.05.26	Head	835	100	0.968	9.68	9.15	5.79	9.56	1.26
2017.05.26	Body	835	100	0.946	9.46	9.17	3.16	9.56	-1.05
2017.05.31	Head	1750	100	3.45	34.5	36.40	-5.22	36.40	-5.22
2017.05.31	Body	1750	100	3.57	35.7	37.30	-4.29	36.40	-1.92
2017.05.22	Head	1900	100	4.09	40.9	40.60	0.74	39.70	3.02
2017.05.24	Head	1900	100	3.91	39.1	40.60	-3.69	39.70	-1.51
2017.05.22	Body	1900	100	4.06	40.6	40.30	0.74	39.70	2.27
2017.05.24	Body	1900	100	4.04	40.4	40.30	0.25	39.70	1.76
2017.05.25	Head	2450	100	5.37	53.7	52.30	2.68	52.40	2.48
2017.05.25	Body	2450	100	5.27	52.7	50.60	4.15	52.40	0.57
2017.05.23	Head	2600	100	5.68	56.8	57.30	-0.87	55.30	2.71
2017.05.23	Body	2600	100	5.31	53.1	56.90	-6.68	55.30	-3.98
Note: The tolerance limit of System validation ±10%.									

System Performance Check Data (835MHz Head)

835-HEAD-2017.05.26

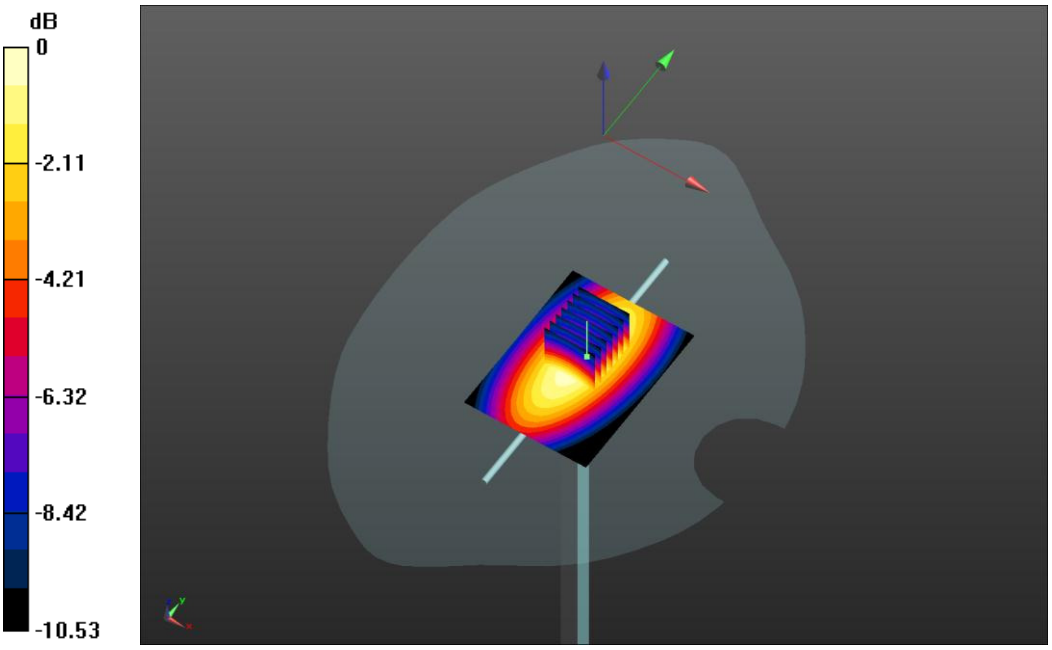
Communication System Band: D835 (835.0 MHz); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.89 S/m; ε_r = 41.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.45, 9.45, 9.45); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW835 100mW/Area Scan (61x81x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 1.04 W/kg
CW835 100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 34.28 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 0.968 W/kg; SAR(10 g) = 0.635 W/kg
Maximum value of SAR (measured) = 1.05 W/kg



0 dB = 1.05 W/kg

System Performance Check Data (835MHz Body)

835-Body-2017.05.26

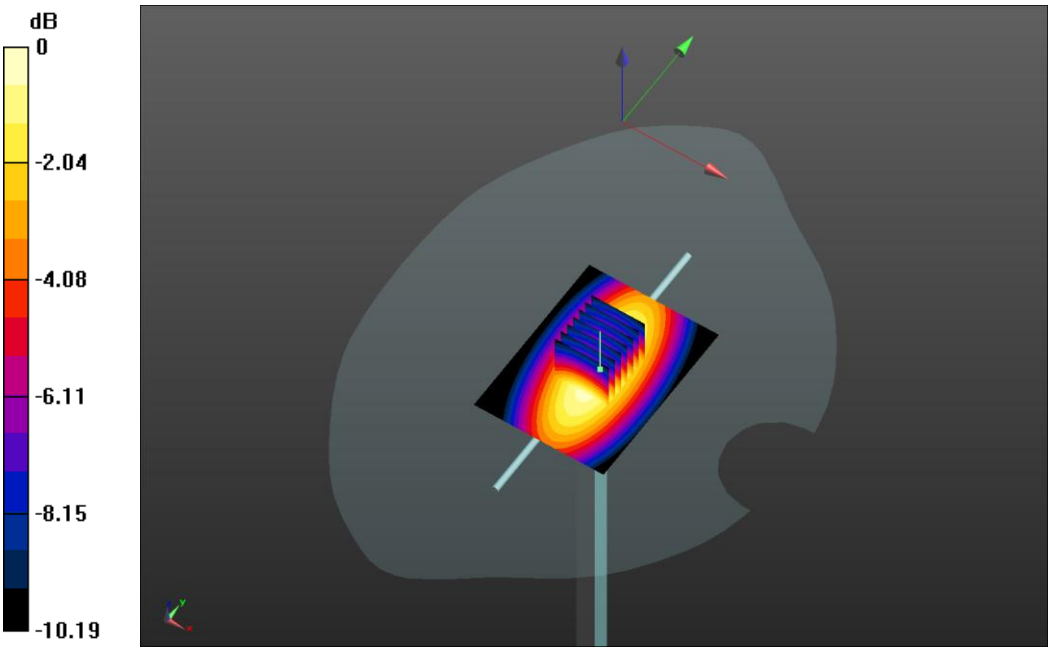
Communication System Band: D835 (835.0 MHz); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.96 S/m; ε_r = 55.87; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.91, 9.91, 9.91); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW 835 100mW/Area Scan (61x81x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 1.02 W/kg
CW 835 100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 31.69 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 1.38 W/kg
SAR(1 g) = 0.946 W/kg; SAR(10 g) = 0.625 W/kg
Maximum value of SAR (measured) = 1.02 W/kg



0 dB = 1.02 W/kg

System Performance Check Data (1750MHz Head)

1750-HEAD-2017.05.31

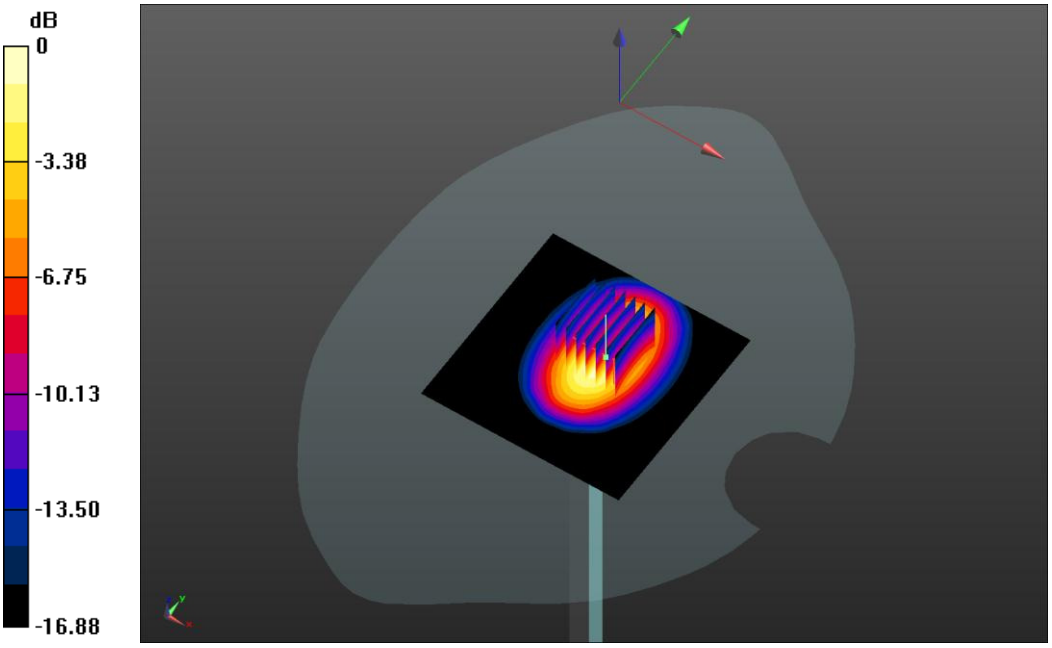
Communication System Band: D1750 (1750.0 MHz); Frequency: 1750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.43 S/m; ε_r = 38.62; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.2 Liquid Temperature:21.1

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.46, 8.46, 8.46); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW1750 100mW /Area Scan (101x101x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 3.95 W/kg
CW1750 100mW /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 49.70 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 6.50 W/kg
SAR(1 g) = 3.45 W/kg; SAR(10 g) = 1.75 W/kg
Maximum value of SAR (measured) = 3.97 W/kg



0 dB = 3.97 W/kg

System Performance Check Data (1750MHz Body)

1750-BODY-2017.05.31

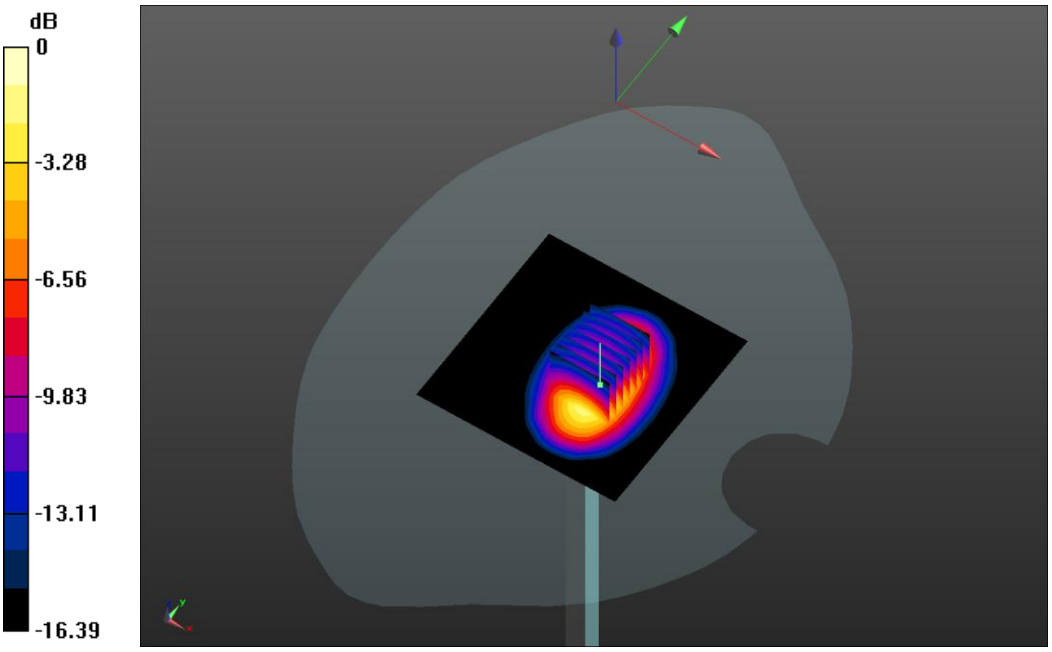
Communication System Band: D1750 (1750.0 MHz); Frequency: 1750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.48 S/m; ε_r = 51.53; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.2 Liquid Temperature:21.1

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.25, 8.25, 8.25); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW1750 100mW/Area Scan (101x101x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 4.08 W/kg
CW1750 100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 37.75 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 6.44 W/kg
SAR(1 g) = 3.57 W/kg; SAR(10 g) = 1.9 W/kg
Maximum value of SAR (measured) = 4.06 W/kg



0 dB = 4.06 W/kg

System Performance Check Data (1900MHz Head)

1900-HEAD-2017.05.22

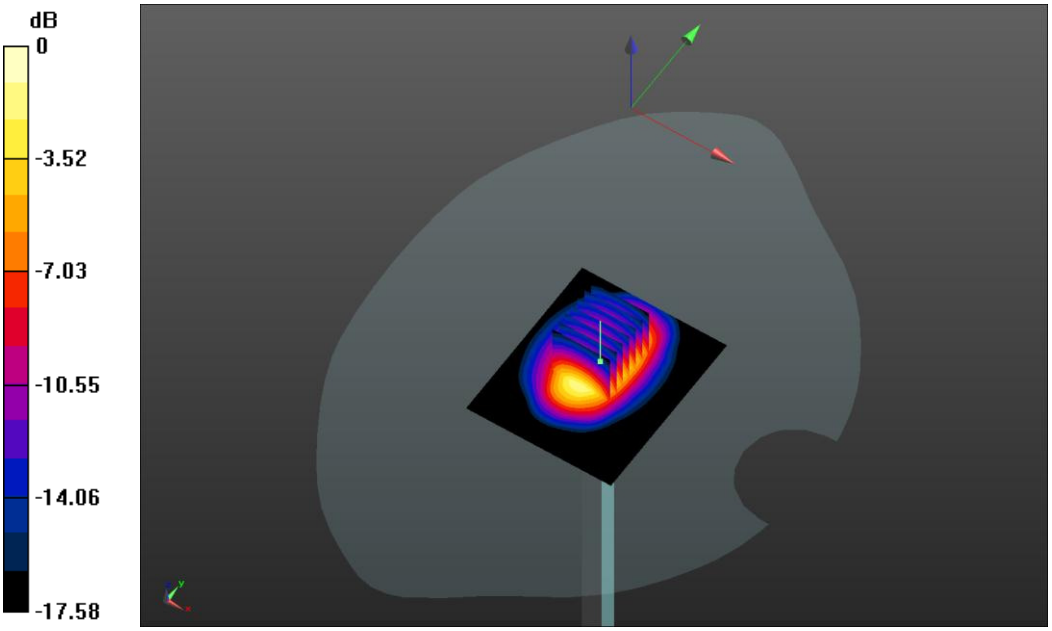
Communication System Band: D1900 (1900.0 MHz); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.46 S/m; ε_r = 39.758; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.6 Liquid Temperature:21.8

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.21, 8.21, 8.21); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW 1900 100mW/Area Scan (51x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 6.19 W/kg
CW 1900 100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 61.86 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 9.14 W/kg
SAR(1 g) = 4.09 W/kg; SAR(10 g) = 2.15 W/kg
Maximum value of SAR (measured) = 4.55 W/kg



0 dB = 4.55 W/kg

System Performance Check Data (1900MHz Head)

1900-HEAD-2017.05.24

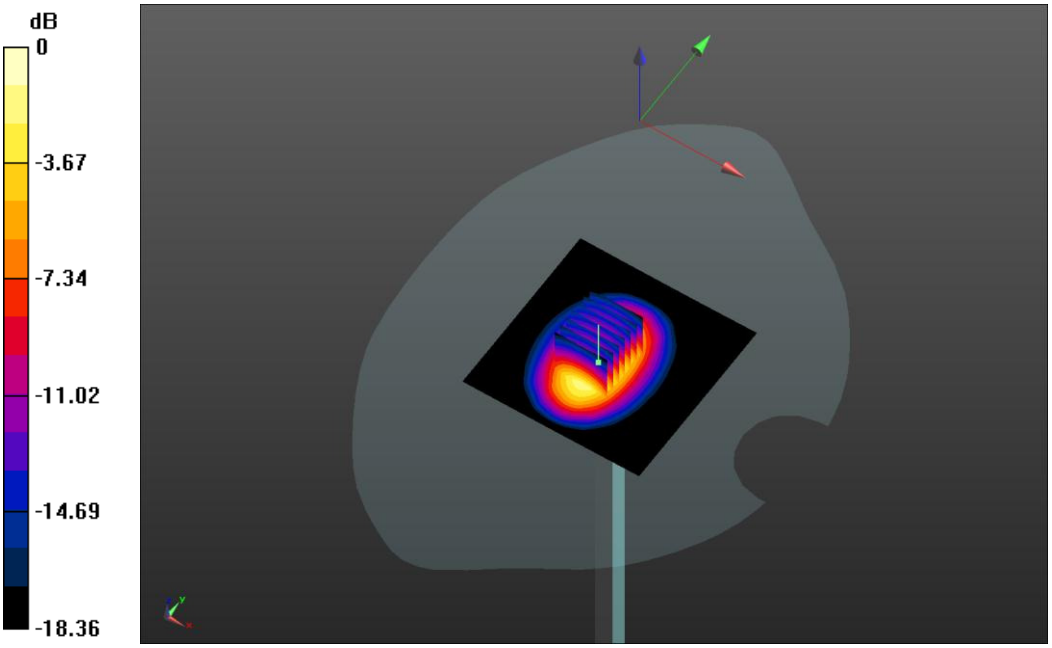
Communication System Band: D1900 (1900.0 MHz); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.45 S/m; ε_r = 39.75; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.3

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.21, 8.21, 8.21); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW1900 100mW/Area Scan (101x101x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 4.17 W/kg
CW1900 100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.96 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 7.04 W/kg
SAR(1 g) = 3.91 W/kg; SAR(10 g) = 1.97 W/kg
Maximum value of SAR (measured) = 4.16 W/kg



0 dB = 4.16 W/kg

System Performance Check Data (1900MHz Body)

1900-BODY-2017.05.22

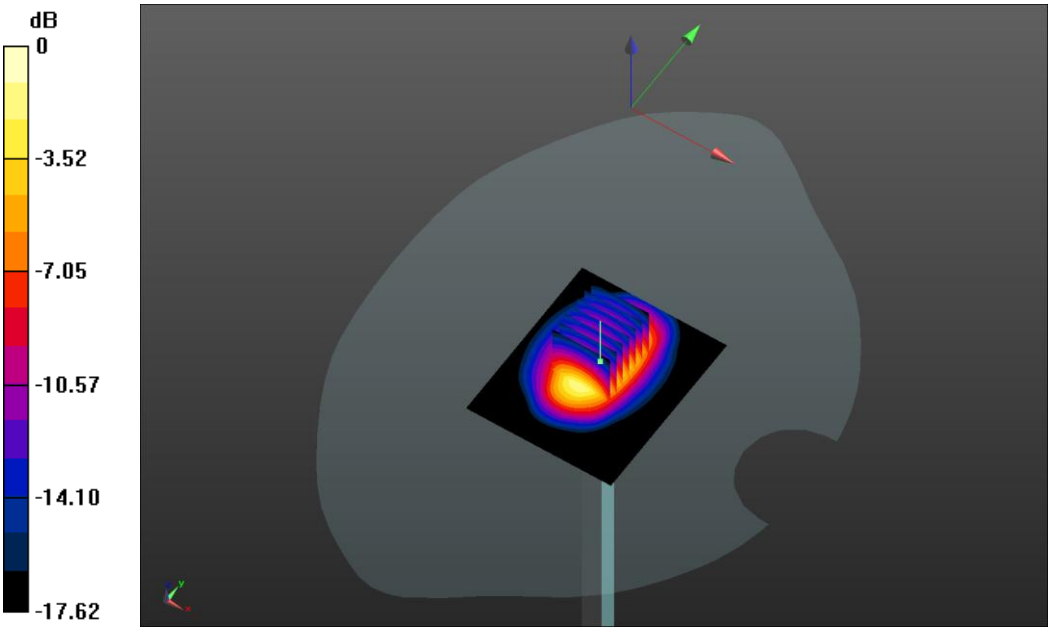
Communication System Band: D1900 (1900.0 MHz); Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.58 S/m; ε_r = 52.06; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.6 Liquid Temperature:21.8

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.96, 7.96, 7.96); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW 1900 100mW/Area Scan (51x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 6.93 W/kg
CW 1900 100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 62.04 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 10.2 W/kg
SAR(1 g) = 4.06 W/kg; SAR(10 g) = 2.11 W/kg
Maximum value of SAR (measured) = 4.20 W/kg



0 dB = 4.20 W/kg

System Performance Check Data (1900MHz Body)

1900-BODY-2017.05.24

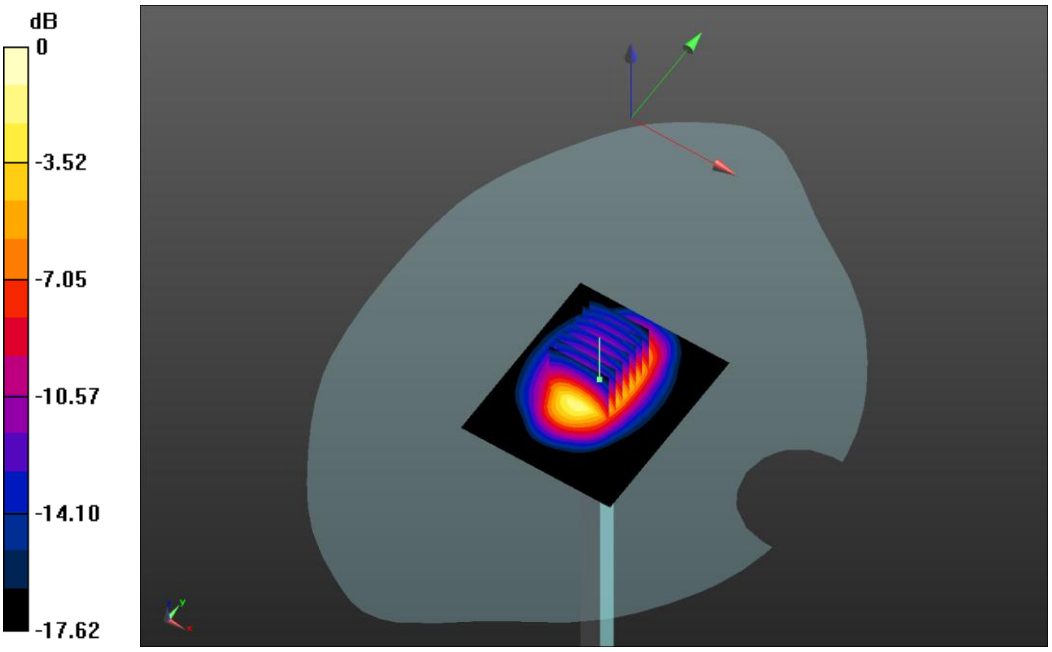
Communication System Band: D1900 (1900.0 MHz); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.57 S/m; ε_r = 52.05; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.3

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.96, 7.96, 7.96); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW1900 100mW/Area Scan (51x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 6.93 W/kg
CW1900 100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 62.04 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 10.2 W/kg
SAR(1 g) = 4.04 W/kg; SAR(10 g) = 2.15 W/kg
Maximum value of SAR (measured) = 4.13 W/kg



0 dB = 4.13 W/kg

System Performance Check Data (2450MHz Head)

2450-HEAD-2017.05.25

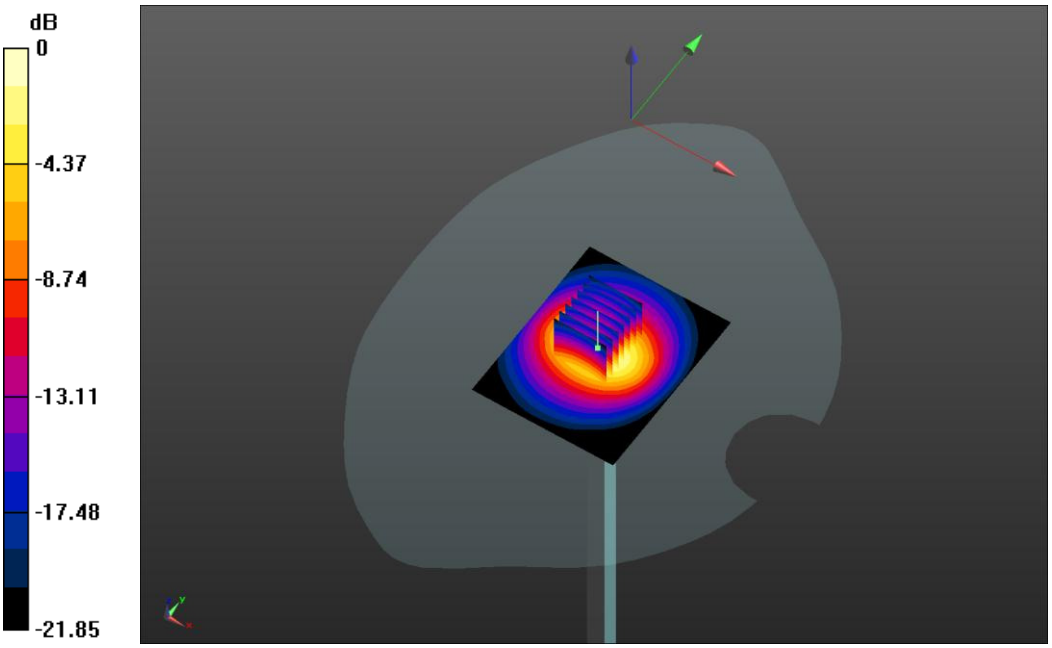
Communication System Band: CD2450 (2450.0 MHz); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.88 S/m; ε_r = 38.97; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.4 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.44, 7.44, 7.44); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW2450 100mW/Area Scan (81x101x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 2.73 W/kg
CW2450 100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 36.20 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 4.61 W/kg
SAR(1 g) = 5.37 W/kg; SAR(10 g) = 2.17 W/kg
Maximum value of SAR (measured) = 6.69 W/kg



0 dB = 6.69 W/kg

System Performance Check Data (2450MHz Body)

2450-BODY-2017.05.25

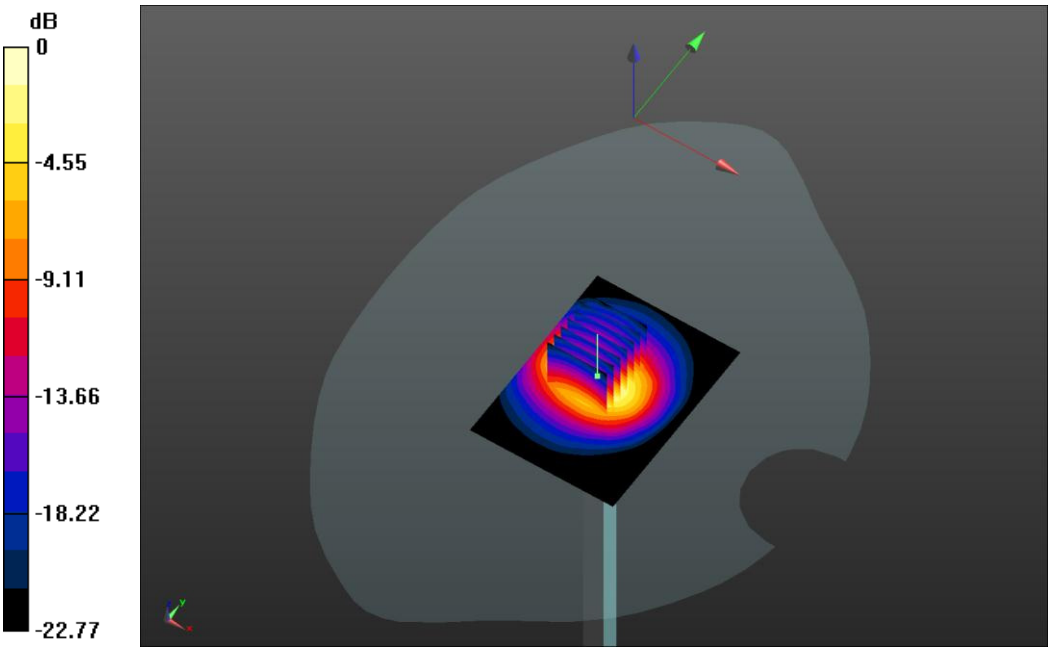
Communication System Band: D2450 (2450.0 MHz); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 2.02 S/m; ε_r = 50.71; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.4 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.71, 7.71, 7.71); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW2450 100mW/Area Scan (61x81x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 7.01 W/kg
CW 2450 100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.37 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 13.0 W/kg
SAR(1 g) = 5.27 W/kg; SAR(10 g) = 2.38 W/kg
Maximum value of SAR (measured) = 6.81 W/kg



0 dB = 6.81 W/kg

System Performance Check Data (2600MHz Head)

2600-HEAD-2017.05.23

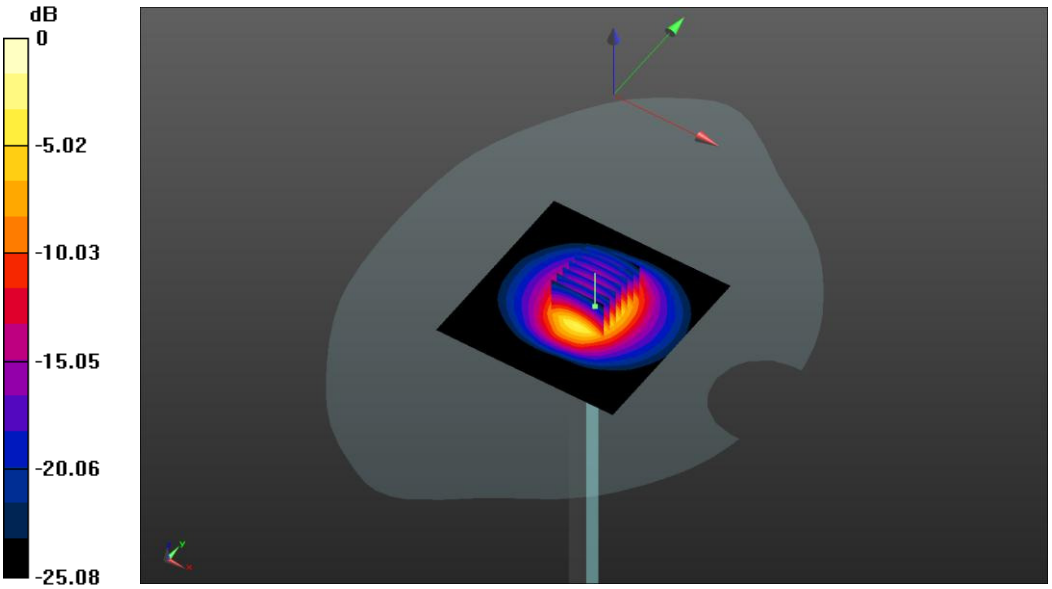
Communication System Band: D2600 (2600.0 MHz); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 1.99 S/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.4 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.31, 7.31, 7.31); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW2600 100mW/Area Scan (101x101x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 6.71 W/kg
CW2600 100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 54.13 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 12.9 W/kg
SAR(1 g) = 5.68 W/kg; SAR(10 g) = 2.52 W/kg
Maximum value of SAR (measured) = 6.55 W/kg



0 dB = 6.55 W/kg

System Performance Check Data (2600MHz Body)

2600-BODY-2017.05.23

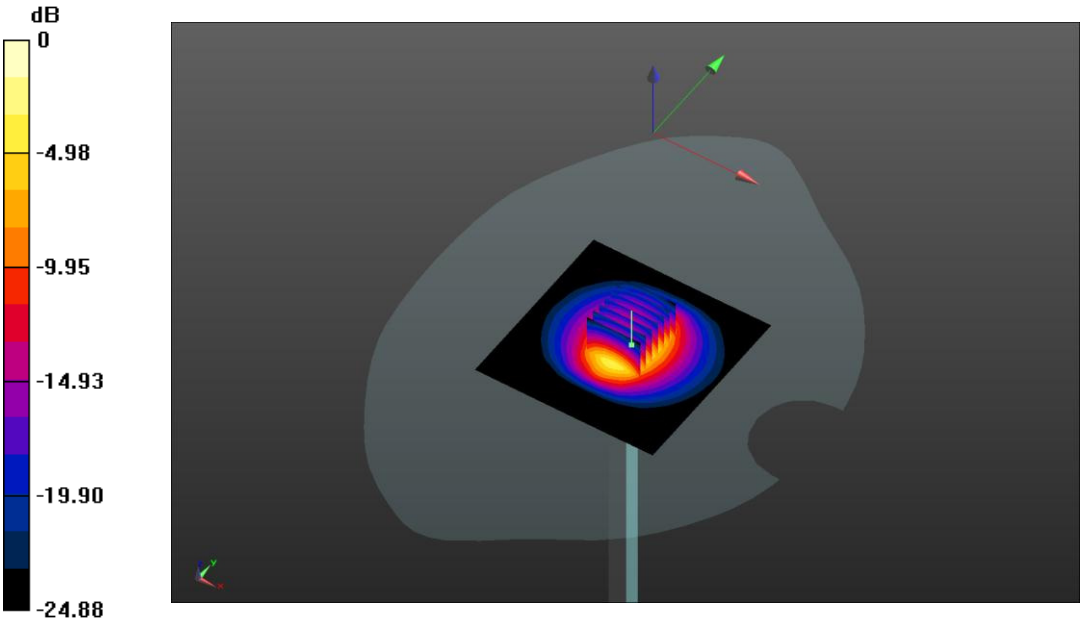
Communication System Band: D2600 (2600.0 MHz); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 2.2 S/m; ε_r = 50.123; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.4 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.48, 7.48, 7.48); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW2600 10mW/Area Scan (101x101x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 6.26 W/kg
CW2600 10mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 51.25 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 11.5 W/kg
SAR(1 g) = 5.31 W/kg; SAR(10 g) = 2.3 W/kg
Maximum value of SAR (measured) = 6.14 W/kg



0 dB = 6.14 W/kg

ANNEX C TEST DATA

MEAS.1 Right Head with Cheek on Low Channel in GSM 850_Voice mode

Data: 2017.05.26

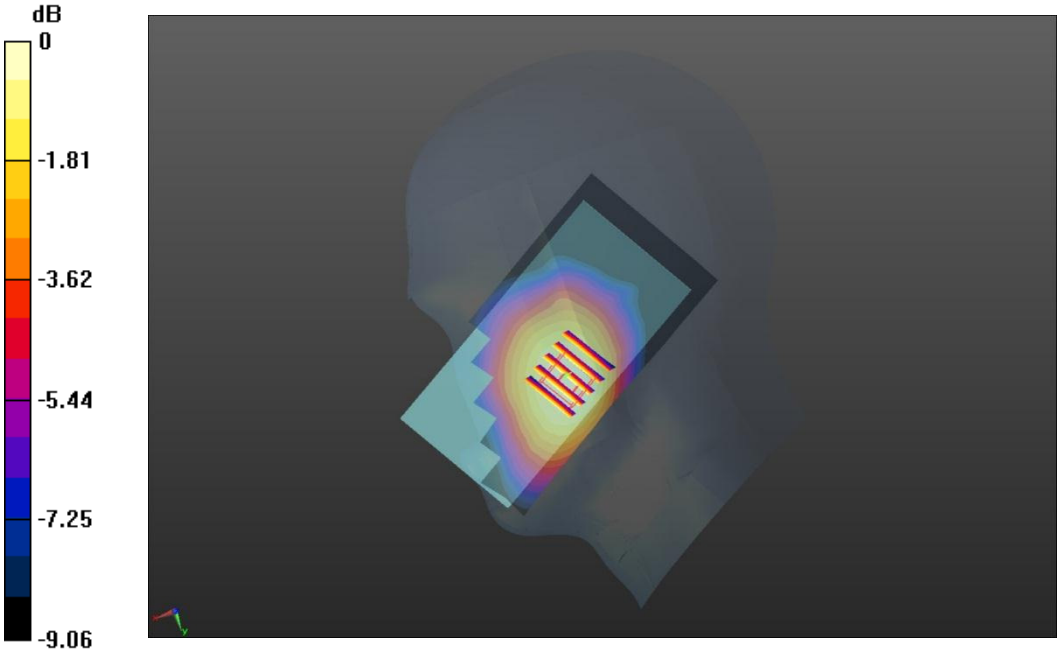
Communication System Band: GSM 850 (824.0 - 849.0 MHz); Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 824.2 MHz; σ = 0.88 S/m; εr = 41.628; ρ = 1000 kg/m3
Phantom section: Right Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.45, 9.45, 9.45); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch128/Area Scan (61x121x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.167 W/kg
Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.470 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.199 W/kg
SAR(1 g) = 0.158 W/kg; SAR(10 g) = 0.120 W/kg
Maximum value of SAR (measured) = 0.164 W/kg



0 dB = 0.164 W/kg

MEAS.2 Body Plane with Back Side on Low Channel in _GPRS850 (4TX Slots) mode

Date: 2017.05.26

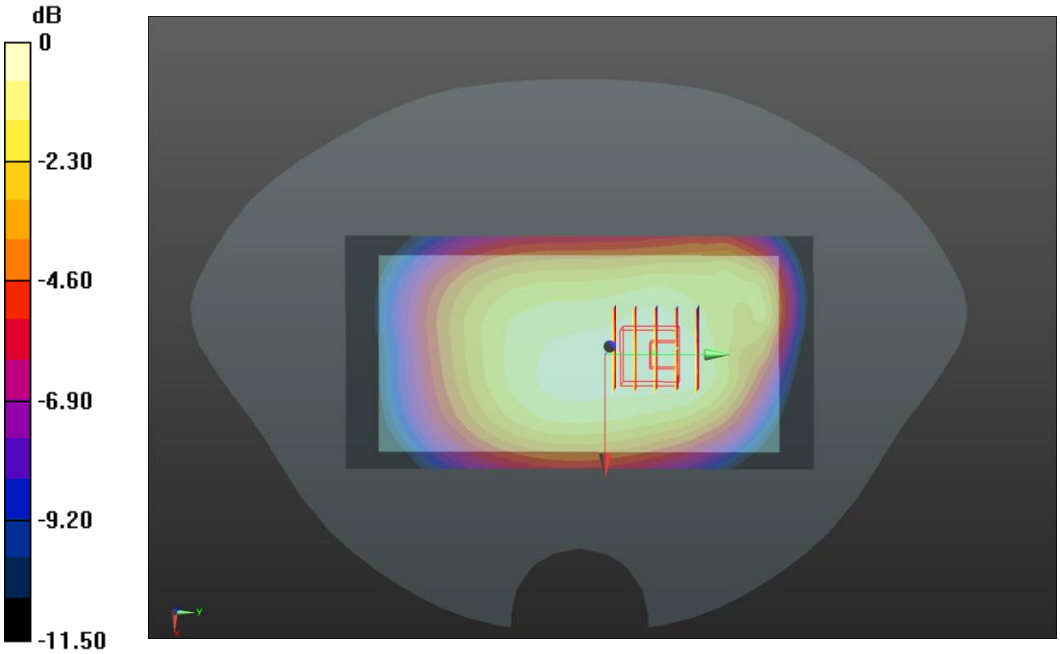
Communication System Band: GPRS850; Frequency: 824.2 MHz;Duty Cycle: 1:2.08
Medium parameters used: f = 824.2 MHz; σ = 0.95 S/m; ε_r = 55.959; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.91, 9.91, 9.91); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch128/Area Scan (61x121x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.465 W/kg
Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.97 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.577 W/kg
SAR(1 g) = 0.443 W/kg; SAR(10 g) = 0.337 W/kg
Maximum value of SAR (measured) = 0.464 W/kg



0 dB = 0.464 W/kg

MEAS.3 Left Head with Cheek on Low Channel in GSM 1900_Voice mode

Date: 2017.05.24

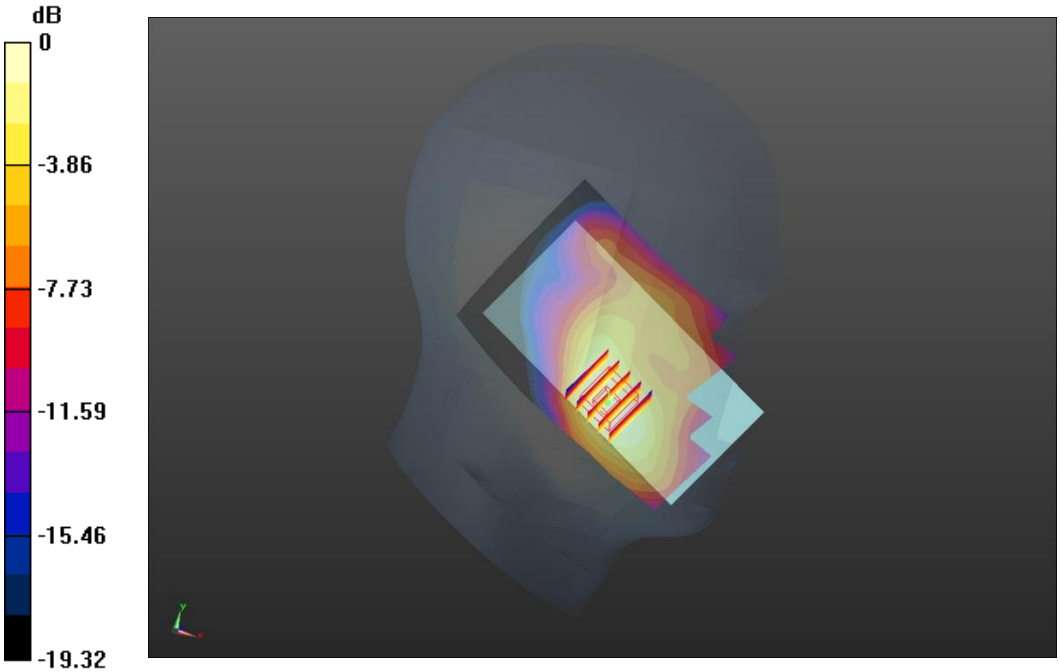
Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1850.2 MHz; σ = 1.42 S/m; ε_r = 39.87; ρ = 1000 kg/m^3
Phantom section: Left Section

Ambient Temperature:22.3 Liquid Temperature:21.3

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.21, 8.21, 8.21); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch512/Area Scan (71x111x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.317 W/kg
Ch512/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.694 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.439 W/kg
SAR(1 g) = 0.284 W/kg; SAR(10 g) = 0.176 W/kg
Maximum value of SAR (measured) = 0.310 W/kg



0 dB = 0.310 W/kg

MEAS.4 Body Plane with Front Side 10mm on High Channel in GPRS 1900(4TX Slots) mode

Date: 2017.05.24

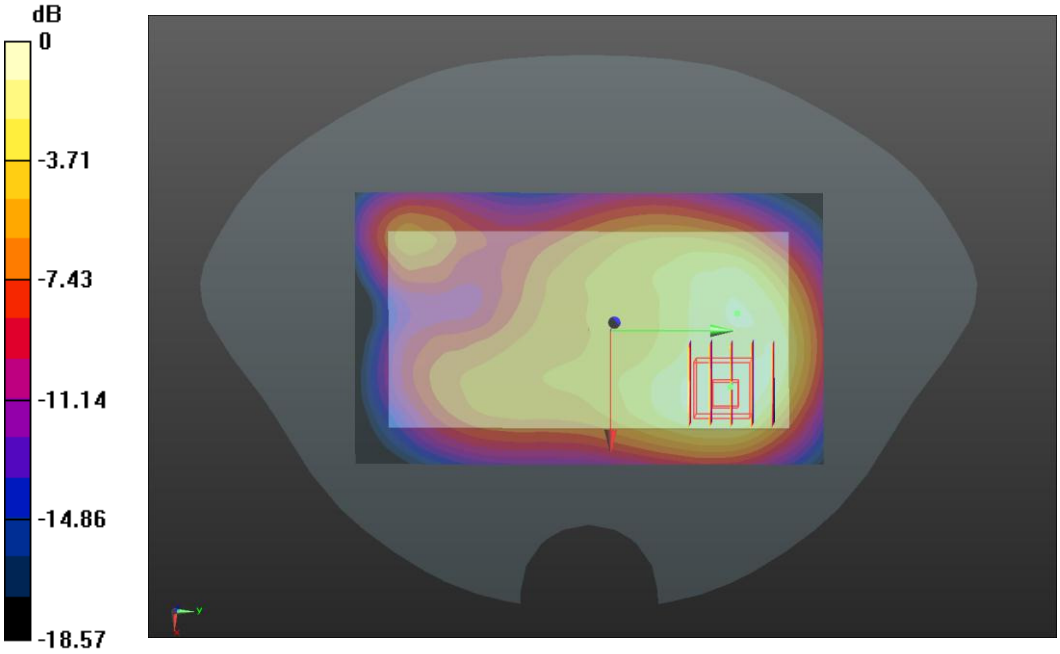
Communication System Band: GPRS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:2.08
Medium parameters used: f = 1909.8 MHz; σ = 1.5 S/m; ε_r = 51.04; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.3

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.96, 7.96, 7.96); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch810/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.687 W/kg
Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.08 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.685 W/kg; SAR(10 g) = 0.383 W/kg
Maximum value of SAR (measured) = 0.690 W/kg



0 dB = 0.690 W/kg

MEAS.5 Left Head with Cheek on High Channel in WCDMA Band 2 mode

Date: 2017.05.24

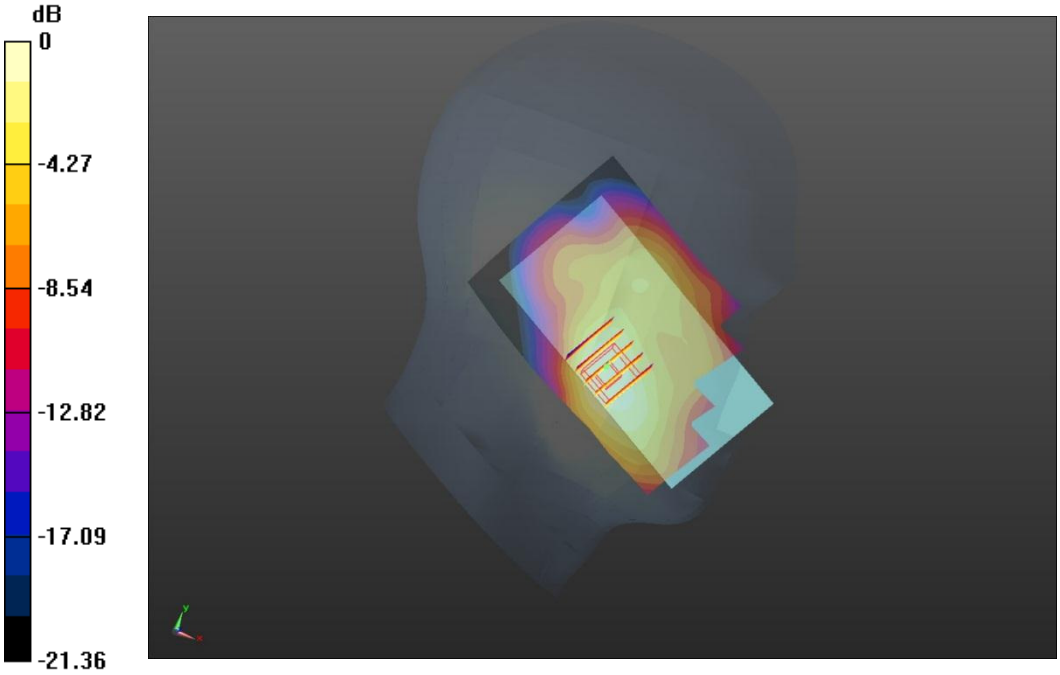
Communication System Band: II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1907.6 MHz; σ = 1.413 S/m; ε_r = 39.634; ρ = 1000 kg/m^3
Phantom section: Left Section

Ambient Temperature:22.3 Liquid Temperature:21.3

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.21, 8.21, 8.21); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch9538/Area Scan (71x111x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.463 W/kg
Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.118 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.661 W/kg
SAR(1 g) = 0.441 W/kg; SAR(10 g) = 0.275 W/kg
Maximum value of SAR (measured) = 0.466 W/kg



0 dB = 0.466 W/kg

MEAS.6 Body Plane with Front Side 10mm on High Channel in WCDMA Band 2 mode

Data: 2017.05.24

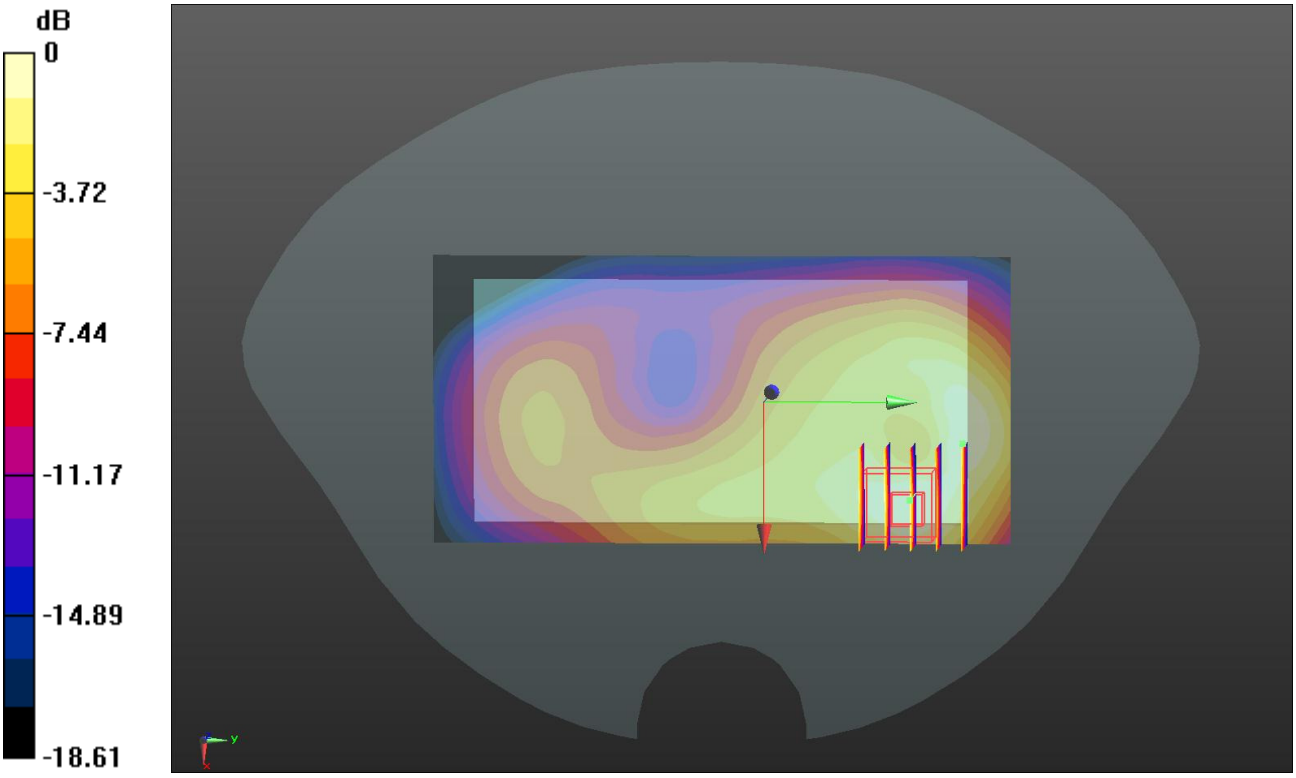
Communication System Band: II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1907.6 MHz; σ = 1.543 S/m; ε_r = 51.042; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.3

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.96, 7.96, 7.96); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch9538/Area Scan (61x121x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.676 W/kg
Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.606 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.687 W/kg; SAR(10 g) = 0.376 W/kg
Maximum value of SAR (measured) = 0.707 W/kg



0 dB = 0.707 W/kg

MEAS.7 Right Head with Cheek on Middle Channel in WCDMA Band 5 mode

Date: 2017.05.26

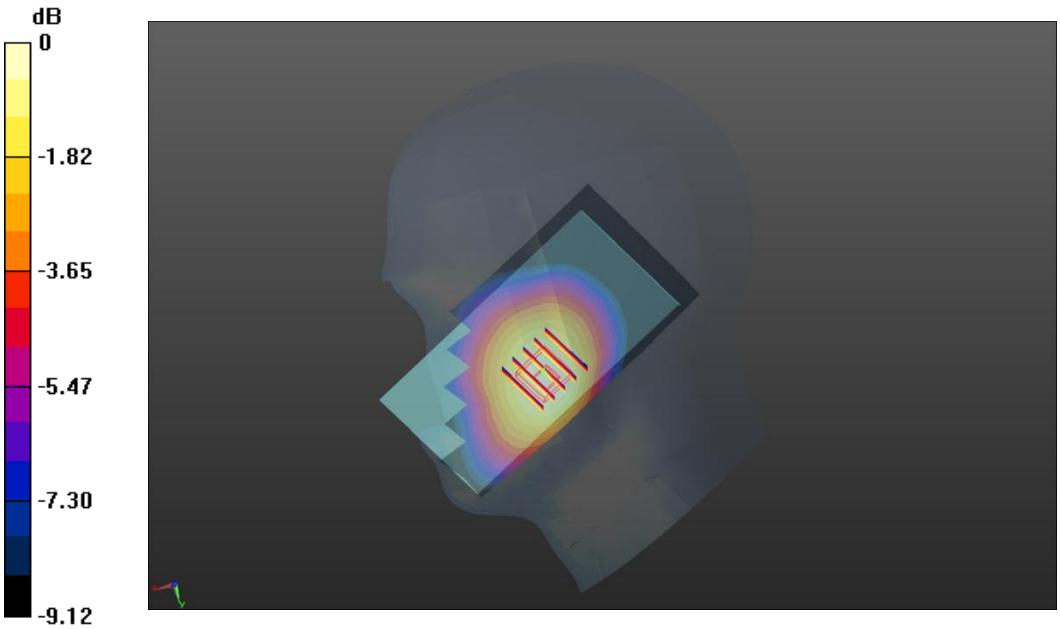
Communication System Band: V; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium parameters used: f = 836.41 MHz; σ = 0.92 S/m; ε_r = 41.48; ρ = 1000 kg/m^3
Phantom section: Right Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.45, 9.45, 9.45); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch4182/Area Scan (61x121x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.447 W/kg
Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.840 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.546 W/kg
SAR(1 g) = 0.424 W/kg; SAR(10 g) = 0.318 W/kg
Maximum value of SAR (measured) = 0.441 W/kg



0 dB = 0.430 W/kg

MEAS.8 Body Plane with Back Side 10mm on Middle Channel in WCDMA Band 5 mode

Date: 2017.05.26

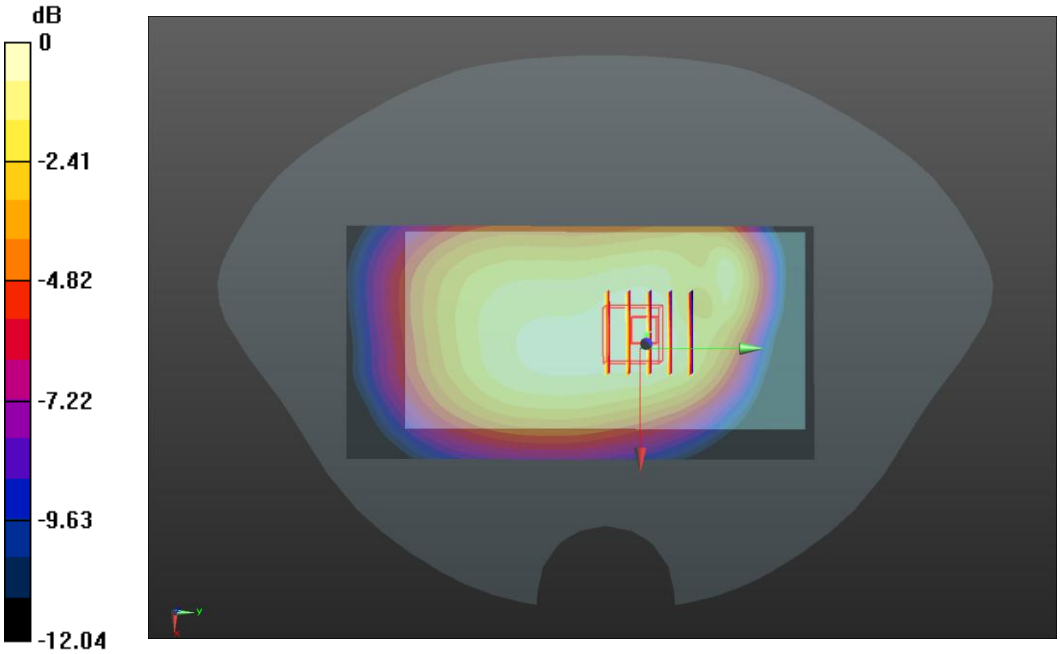
Communication System Band: V; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium parameters used: f = 836.41 MHz; σ = 0.963 S/m; ε_r = 55.86; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.91, 9.91, 9.91); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch4182/Area Scan (61x121x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.569 W/kg
Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.22 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.692 W/kg
SAR(1 g) = 0.531 W/kg; SAR(10 g) = 0.399 W/kg
Maximum value of SAR (measured) = 0.561 W/kg



0 dB = 0.561 W/kg

MEAS.9 Left Head with Cheek on Middle Channel in LTE Band 2 mode with 1RB

Date: 2017.05.22

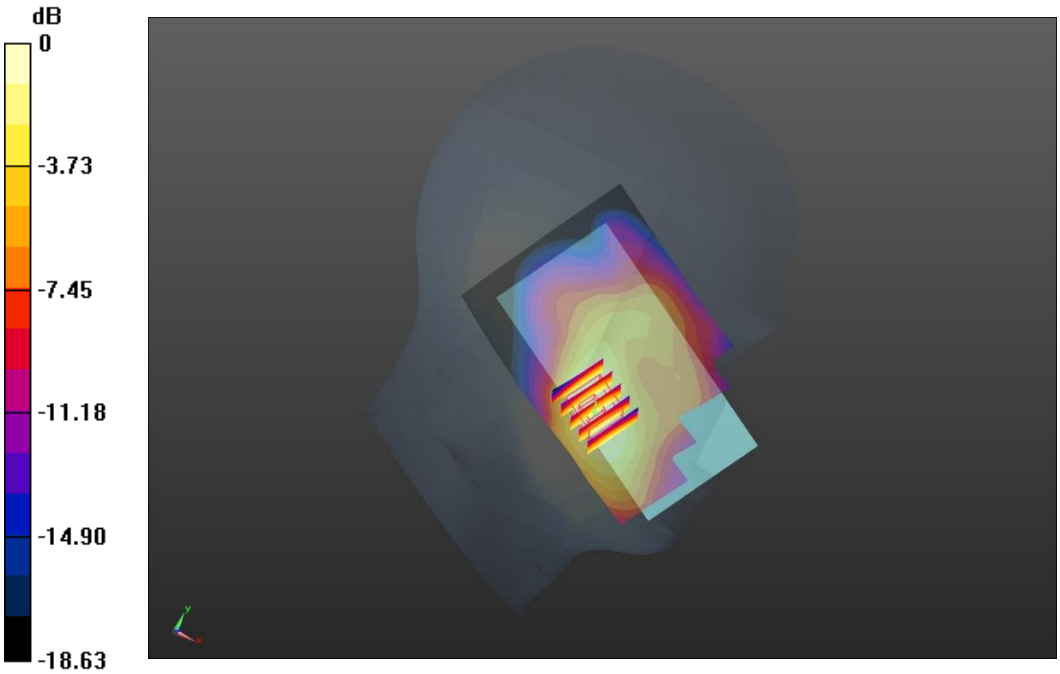
Communication System Band: Band 2, E-UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.43 S/m; ε_r = 39.78; ρ = 1000 kg/m^3
Phantom section: Left Section

Ambient Temperature:22.6 Liquid Temperature:21.8

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.21, 8.21, 8.21); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch18900/Area Scan (71x111x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.614 W/kg
Ch18900/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.896 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.849 W/kg
SAR(1 g) = 0.567 W/kg; SAR(10 g) = 0.355 W/kg
Maximum value of SAR (measured) = 0.608 W/kg



0 dB = 0.608 W/kg

MEAS.10 Body Plane with Front Side 10mm on Low Channel in LTE Band 2 mode with 1RB

Date: 2017.05.22

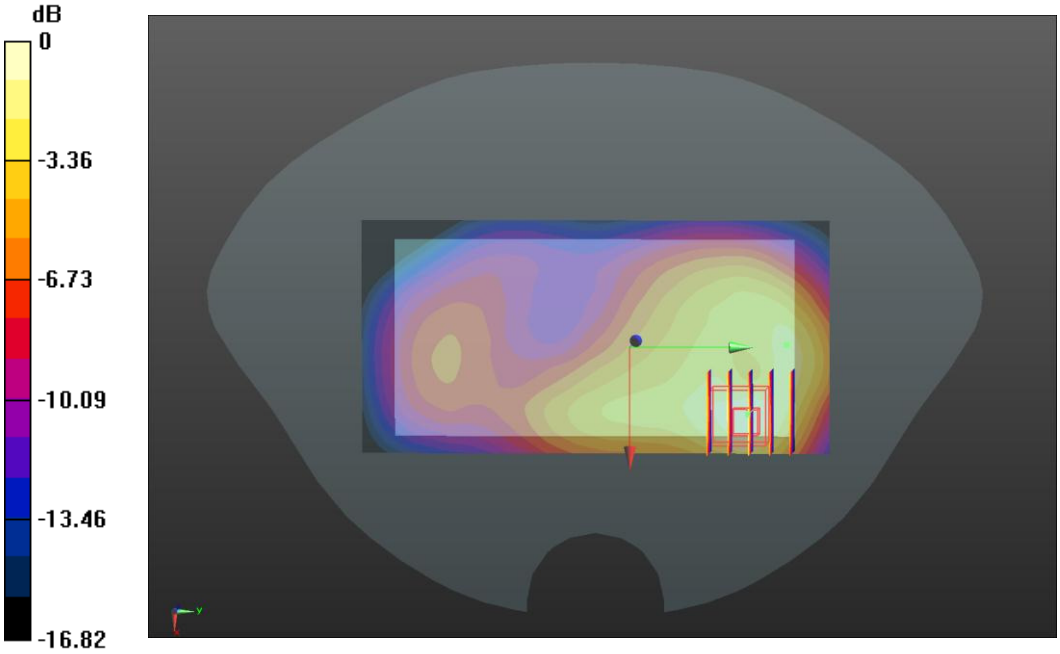
Communication System Band: Band 2, E-UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1860 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1860 MHz; σ = 1.543 S/m; ε_r = 51.207; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.6 Liquid Temperature:21.8

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.96, 7.96, 7.96); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch18700/Area Scan (61x121x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.10 W/kg
Ch18700/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.51 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.71 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.571 W/kg
Maximum value of SAR (measured) = 1.10 W/kg



MEAS.11 Left Head with Cheek on Middle Channel in LTE Band 4 mode with 1RB

Date: 2017.05.31

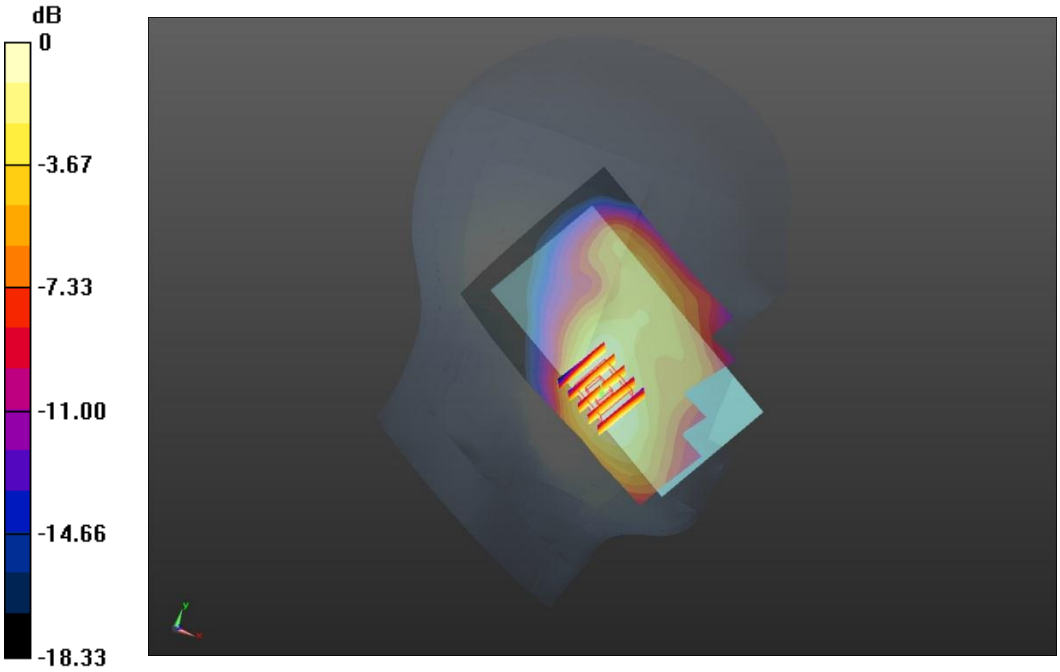
Communication System Band: Band 4, E-UTRA/FDD (1710.0 - 1755.0 MHz); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1732.5 MHz; σ = 1.334 S/m; ε_r = 40.408; ρ = 1000 kg/m^3
Phantom section: Left Section

Ambient Temperature:22.2 Liquid Temperature:21.1

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.46, 8.46, 8.46); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch20175/Area Scan (71x111x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.497 W/kg
Ch20175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.603 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.657 W/kg
SAR(1 g) = 0.461 W/kg; SAR(10 g) = 0.304 W/kg
Maximum value of SAR (measured) = 0.495 W/kg



0 dB = 0.495 W/kg

MEAS.12 Body Plane with Front Side 10mm on Middle Channel in LTE Band 4 mode with 1RB

Date: 2017.05.31

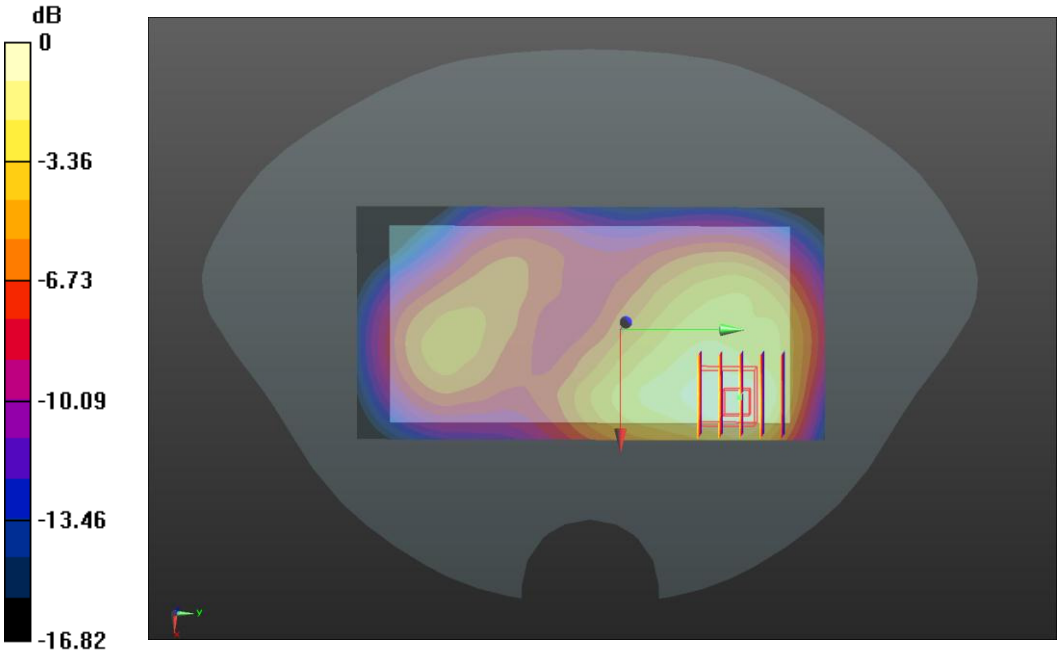
Communication System Band: Band 4, E-UTRA/FDD (1710.0 - 1755.0 MHz); Frequency: 1732.5 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1732.5 MHz; σ = 1.474 S/m; ε_r = 51.622; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.2 Liquid Temperature:21.1

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.25, 8.25, 8.25); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch20175/Area Scan (61x121x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.881 W/kg
Ch20175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.974 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.735 W/kg; SAR(10 g) = 0.440 W/kg
Maximum value of SAR (measured) = 0.796 W/kg



0 dB = 0.668 W/kg

MEAS.13 Left Head with Cheek on Low Channel in LTE Band 7 mode with 1RB

Date: 2017.05.23

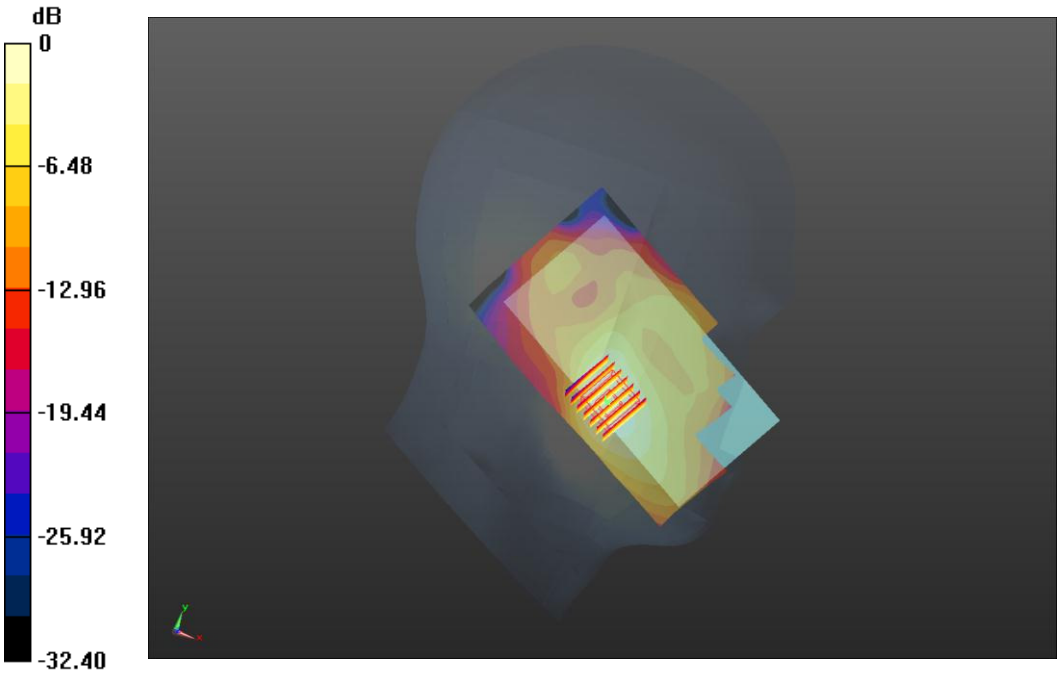
Communication System Band: Band 7, E-UTRA/FDD (2500.0 - 2570.0 MHz); Frequency: 2510 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2510 MHz; σ = 1.907 S/m; ε_r = 39.165; ρ = 1000 kg/m^3
Phantom section: Left Section

Ambient Temperature:22.4 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(744, 7.44, 7.44); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch20850/Area Scan (81x131x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.764 W/kg
Ch20850/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.619 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.22 W/kg
SAR(1 g) = 0.666 W/kg; SAR(10 g) = 0.352 W/kg
Maximum value of SAR (measured) = 0.733 W/kg



0 dB = 0.733 W/kg

MEAS.14 Body Plane with Front Side on Low Channel in LTE Band 7 mode with 1RB

Date: 2017.05.23

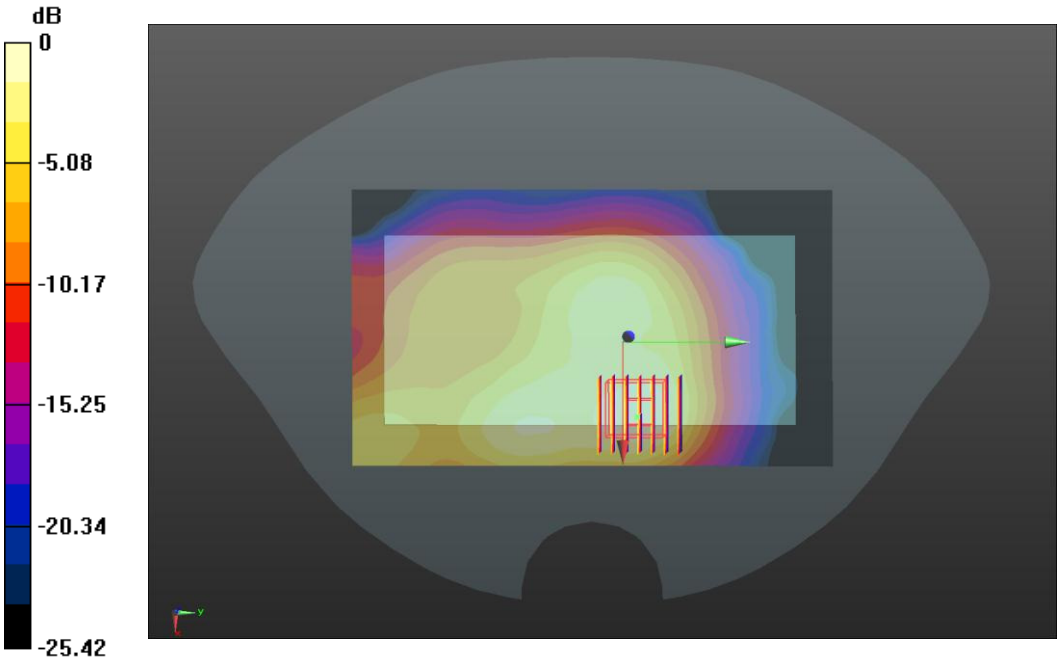
Communication System Band: Band 7, E-UTRA/FDD (2500.0 - 2570.0 MHz); Frequency: 2510 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2510 MHz; σ = 2.14 S/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.4 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.71, 7.71, 7.71); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch20850/Area Scan (91x151x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.658 W/kg
Ch20850/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.66 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.586 W/kg; SAR(10 g) = 0.299 W/kg
Maximum value of SAR (measured) = 0.646 W/kg



0 dB = 0.646 W/kg

MEAS.15 Right Head with Cheek on Channel 6 in IEEE802.11b mode

Date: 2017.05.25

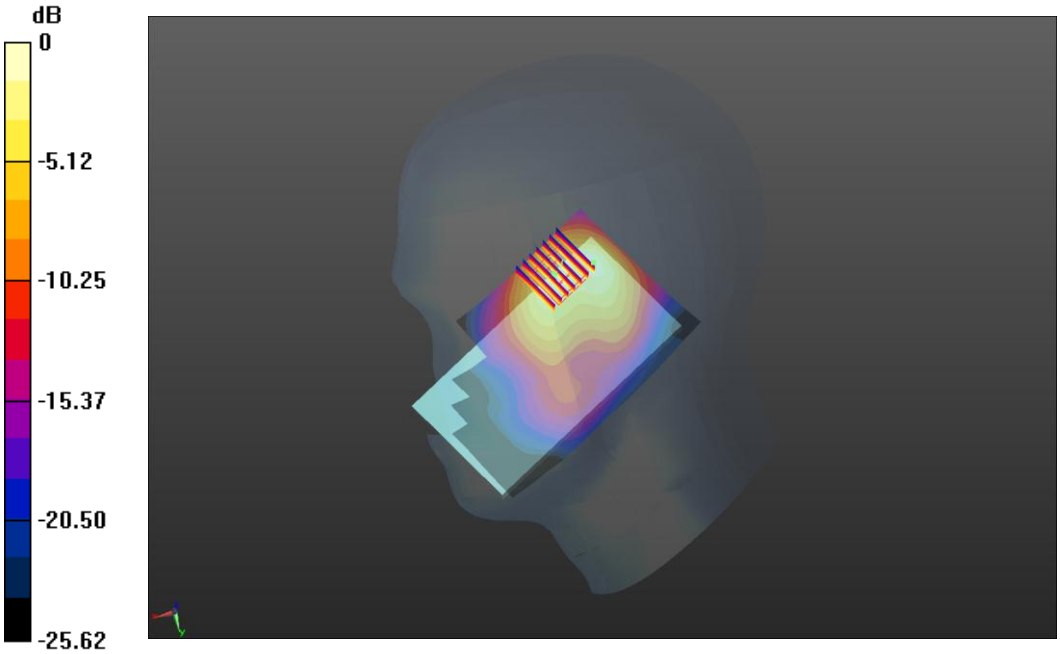
Communication System Band: WLAN(b); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.862 S/m; ε_r = 39.024; ρ = 1000 kg/m^3
Phantom section: Right Section

Ambient Temperature:22.4 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.44, 7.44, 7.44); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch6/Area Scan (81x121x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.869 W/kg
Ch6/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.90 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.94 W/kg
SAR(1 g) = 0.765 W/kg; SAR(10 g) = 0.347 W/kg
Maximum value of SAR (measured) = 0.898 W/kg



MEAS.16 Body Plane with Back Side 10mm on Channel 6 in IEEE802.11b mode

Date: 2017.05.25

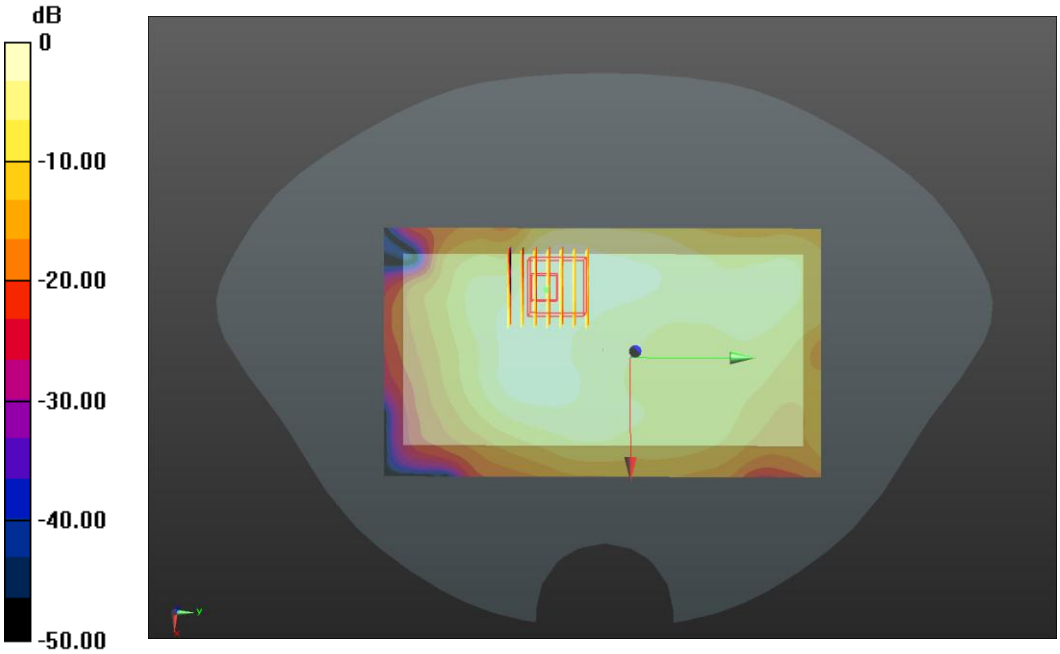
Communication System Band: WLAN(b); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 2.013 S/m; ε_r = 50.739; ρ = 1000 kg/m^3
Phantom section: Flat Section

Ambient Temperature:22.4 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.71, 7.71, 7.71); Calibrated: 2016.12.27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2016.12.19
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch6/Area Scan (81x141x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.258 W/kg
Ch6/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.077 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.495 W/kg
SAR(1 g) = 0.213 W/kg; SAR(10 g) = 0.105 W/kg
Maximum value of SAR (measured) = 0.230 W/kg



0 dB = 0.230 W/kg

ANNEX D EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ1750208-AW.pdf”.

ANNEX E SAR TEST SETUP PHOTOS

Please refer the document “BL-SZ1750208-AS.pdf”.

ANNEX F CALIBRATION REPORT

Please refer the document “CALIBRATION REPORT.pdf”.

--END OF REPORT--