# FCC SAR TEST REPORT

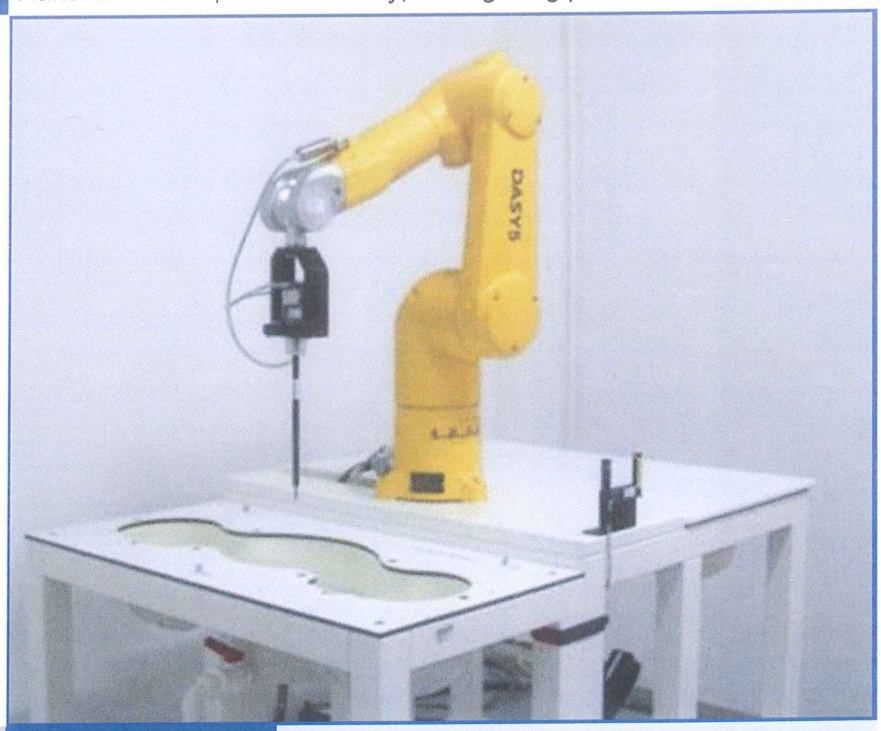
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

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.<br>The laboratory has been listed by US Federal Communications Commission to perform electromagnetic emission measurements. The recognition numbers of test site are 832625.<br>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<br>3G Network WCDMA HSDPA/HSUPA Band 2/5<br>4G Network FDD Band 2/4/7/28<br>Bluetooth 3.0, Bluetooth 4.0 Low Energy (BLE),<br>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<br>WLAN: PIFA Antenna<br>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:

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

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

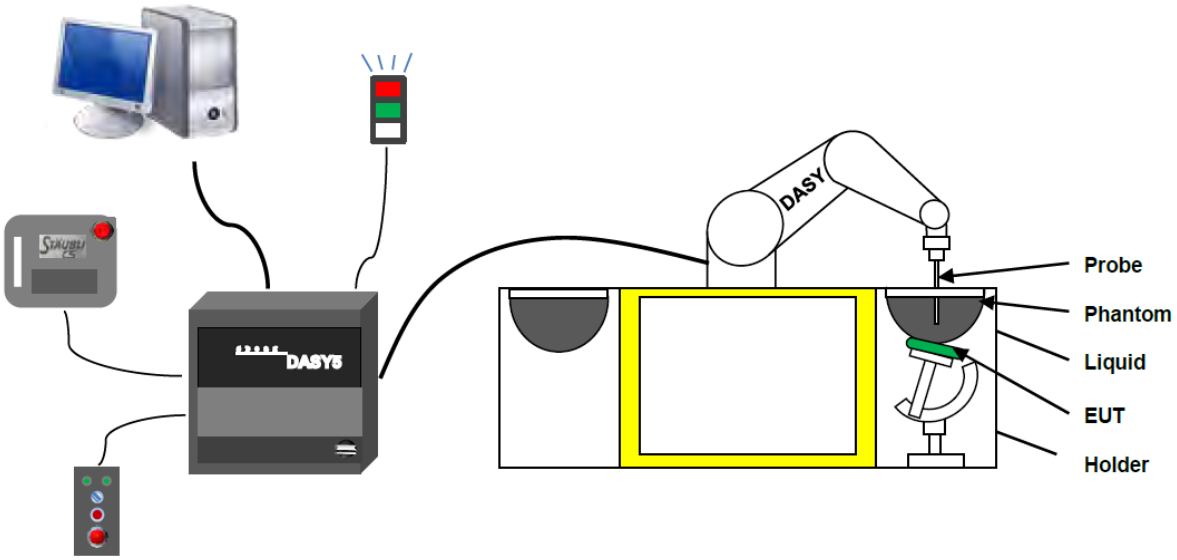
$$\mathbf{SAR} = \frac{\boldsymbol{\sigma}\mathbf{E}^2}{\boldsymbol{\rho}}$$

Where: σ is the conductivity of the tissue,

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.

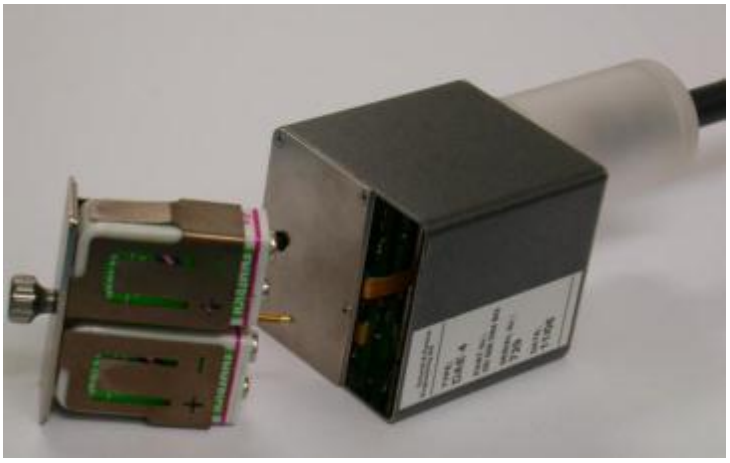
| | |
|---|---|
| Construction | Symmetrical design with triangular core Built-in optical fiber for surface detection systemBuilt-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., glycolether) |
| Calibration | ISO/IEC 17025 calibration service available |
| 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

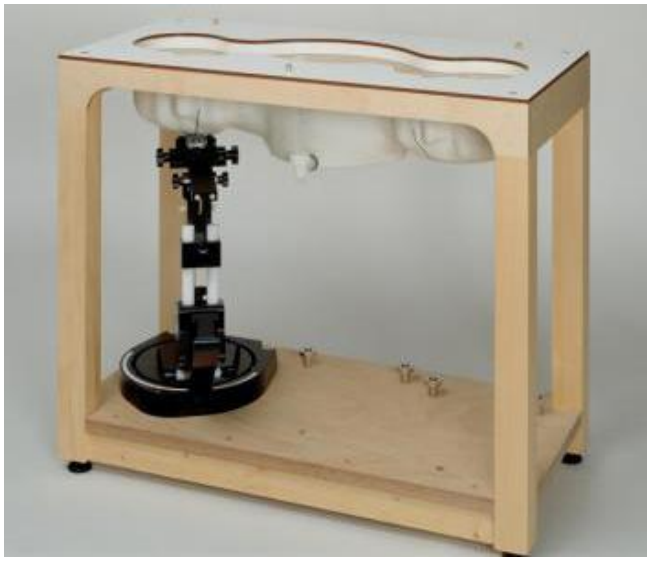
The data acquisition electronics (DAE) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converte and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an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

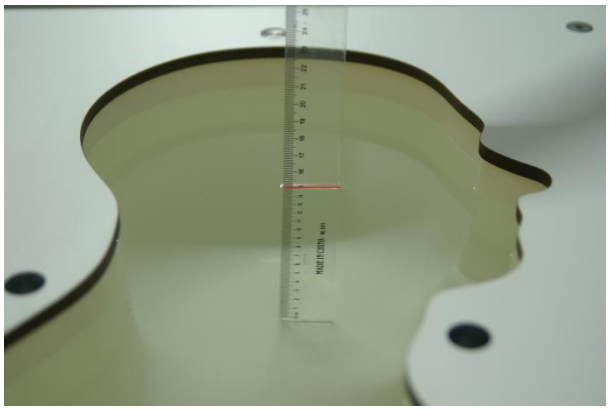
### 4.2.6 Device Holder

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 |

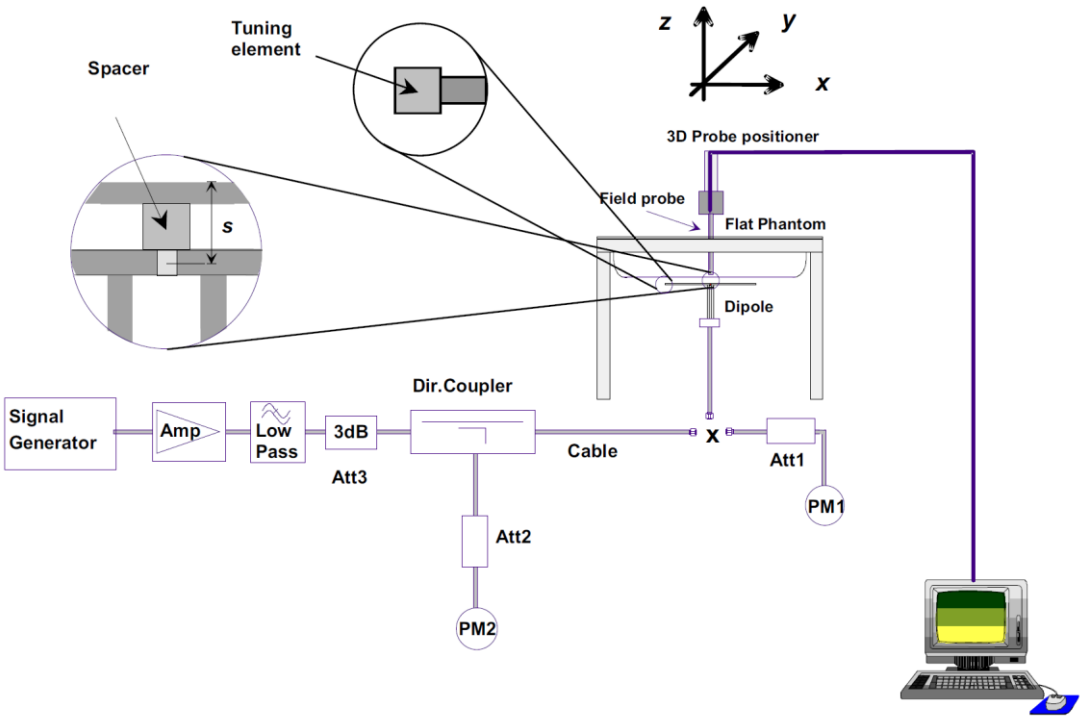
# 5 SYSTEM VERIFICATION

## 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

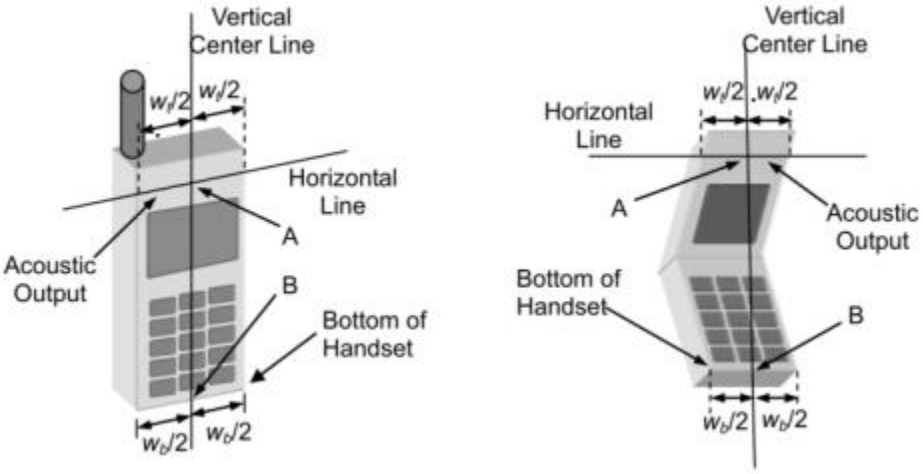
Head exposure is limited to next to the ear voice mode operations. Head SAR compliance is tested according to the test positions defined in IEEE Std 1528-2013 using the SAM phantom illustrated as below.

### 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.

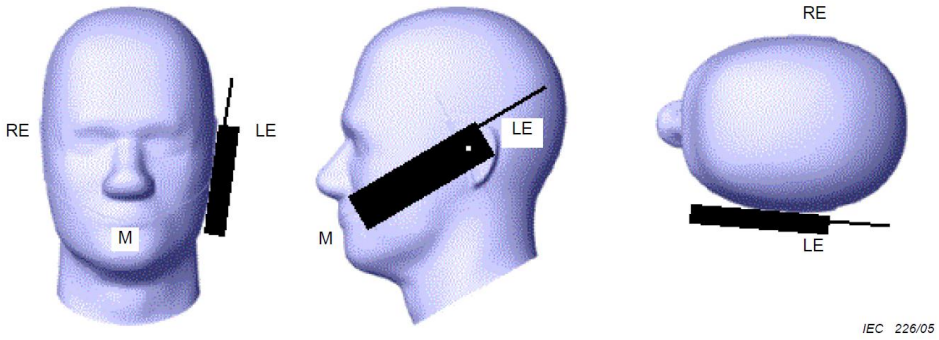
(c) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical center line is not necessarily parallel to the front face of the handset,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

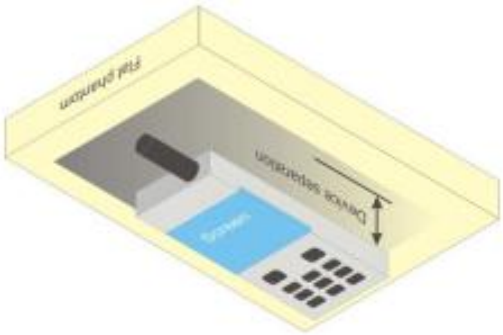
(b) While maintaining the device the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost.

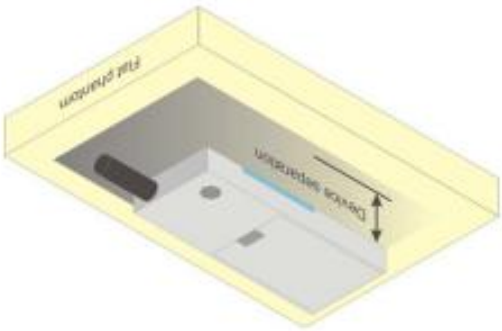
## 6.2 Body-worn Position Conditions

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.

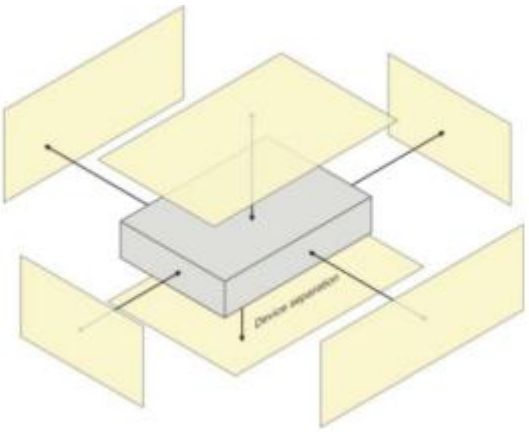
Body-worn accessory SAR compliance is based on a single minimum test separation distance for all wireless and operating modes applicable to each body-worn accessory used by the host, and according to the relevant voice and/or data mode transmissions and operations. If a body-worn accessory supports voice 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.





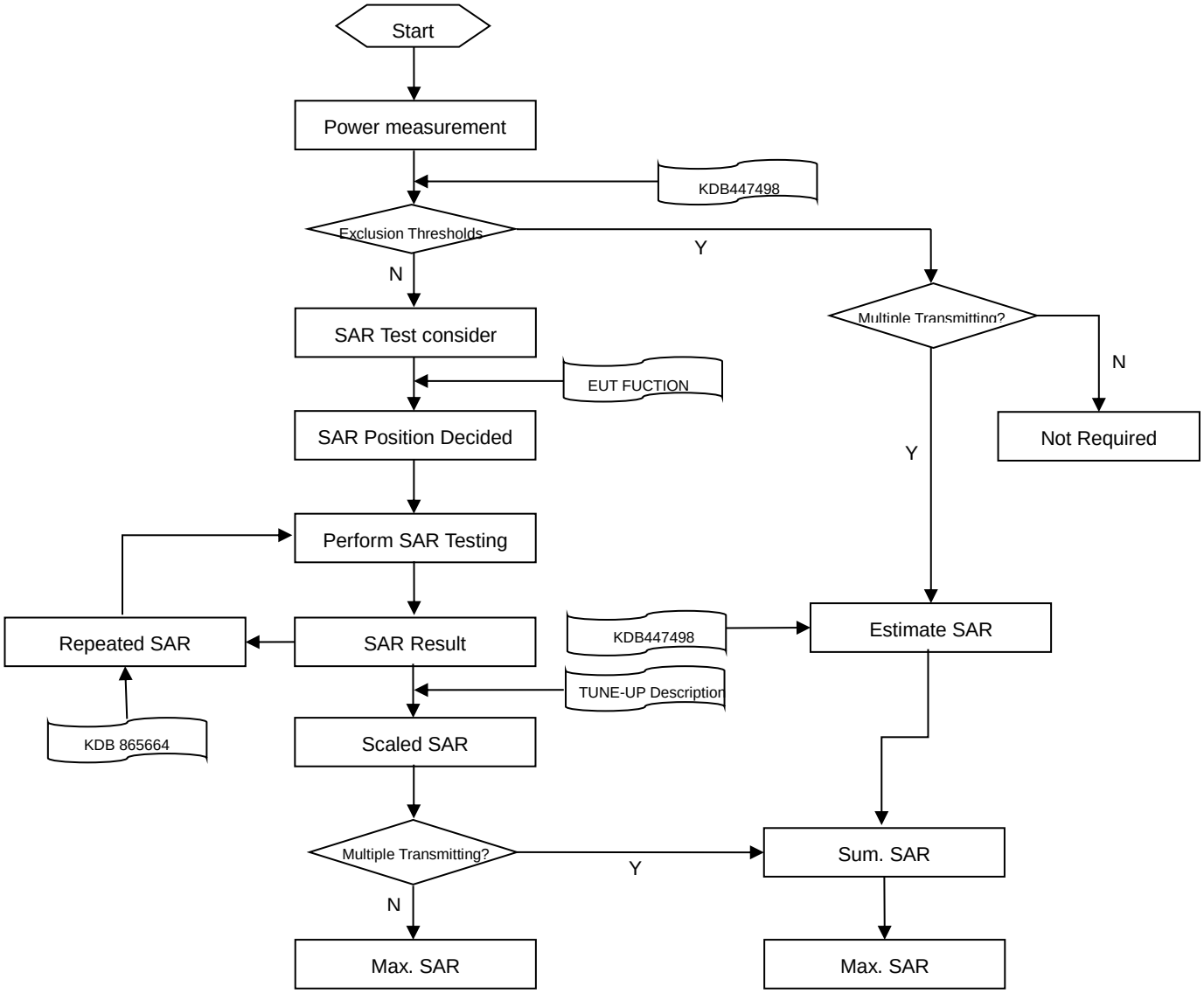
## 6.3 Hotspot Mode Exposure Position Conditions

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<br>2 – 3 GHz: ≤ 12 mm</td><td>3–4 GHz: ≤ 12 mm<br>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<br>2 –3 GHz: ≤ 5 mm*</td><td>3–4 GHz: ≤ 5 mm*<br>4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="6">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>
<tr><td colspan="5">Note:<br>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.<br>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.</td></tr>
</table>

## 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

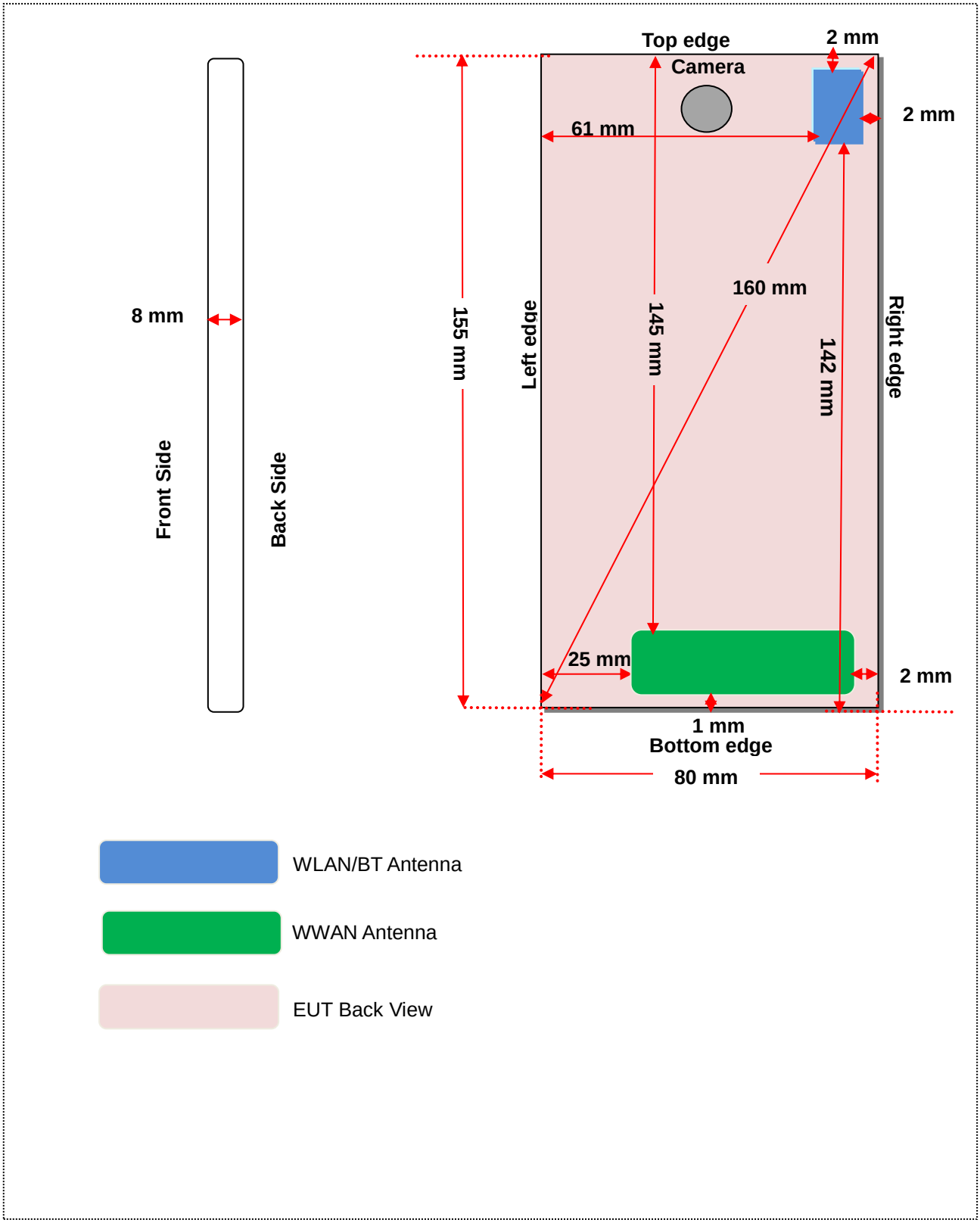
### 8.4.1 2.4G WIFI

| 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 $\leqslant$ 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. | | | | | | | | | | | |

## 10.3WCDMA 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 | / |

## 10.4WCDMA 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 | / |

## 10.5LTE 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 | / |

## 10.6LTE Band 4 (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 | 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 | / |

## 10.7LTE Band 7 (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 | 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 | / |

## 10.8WIFI 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**

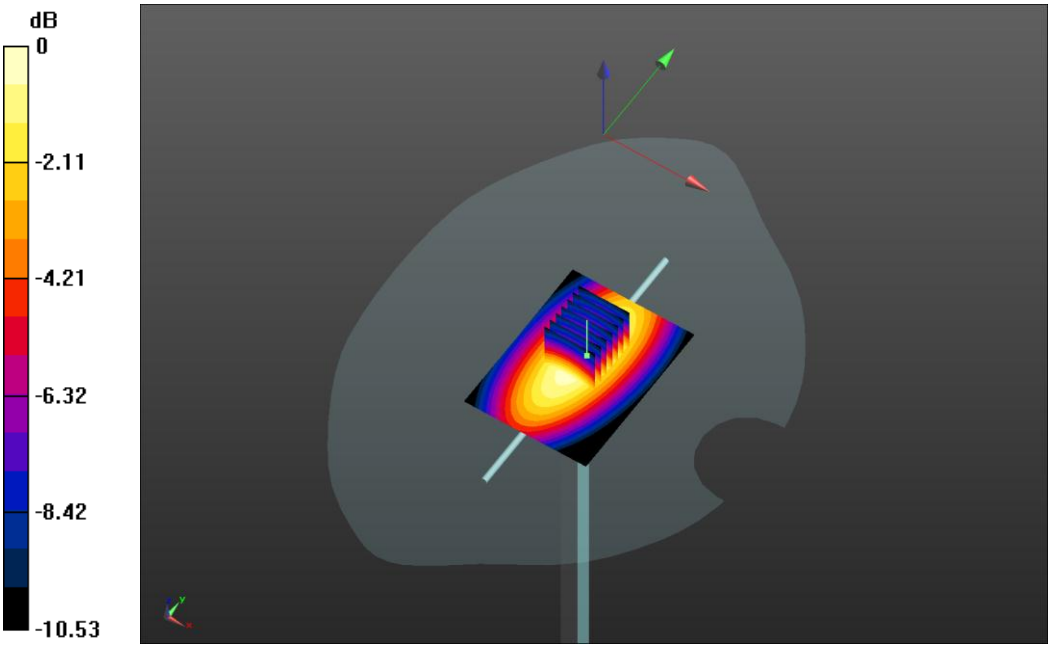
Communication System Band: D835 (835.0 MHz); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; $\sigma$ = 0.89 S/m; $\varepsilon_r$ = 41.6; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

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**

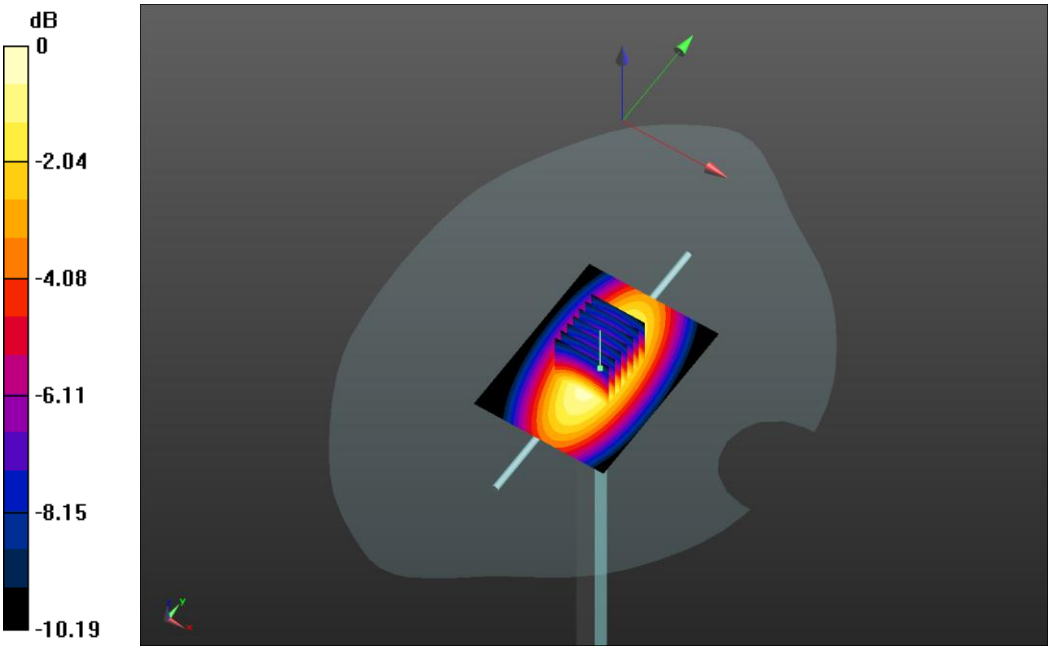
Communication System Band: D835 (835.0 MHz); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; $\sigma$ = 0.96 S/m; $\varepsilon_r$ = 55.87; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

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**

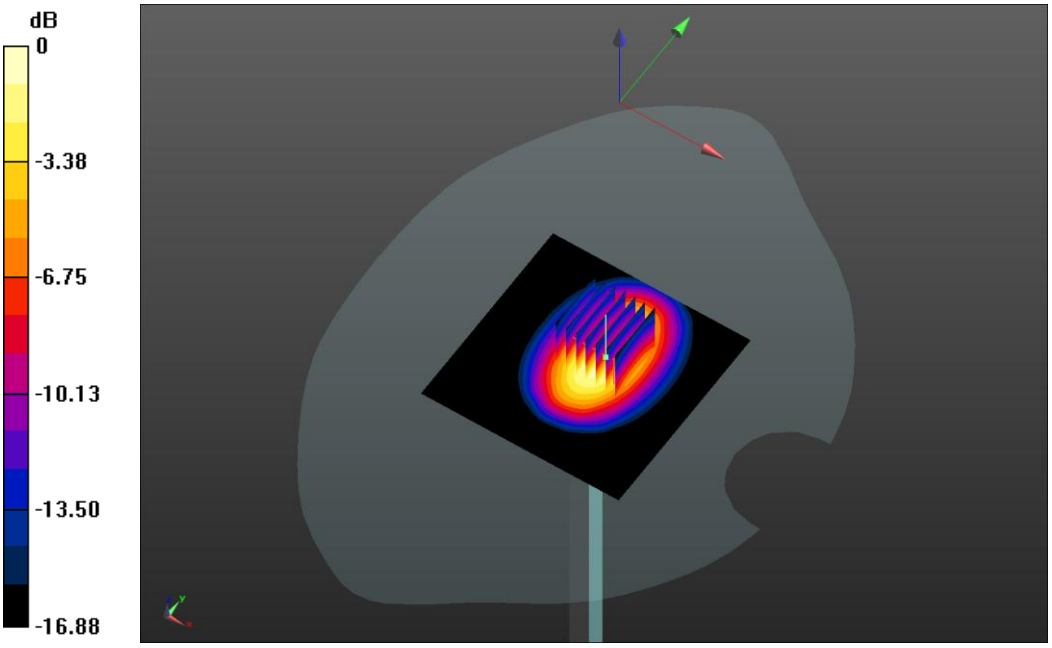
Communication System Band: D1750 (1750.0 MHz); Frequency: 1750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; $\sigma$ = 1.43 S/m; $\varepsilon_r$ = 38.62; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

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**

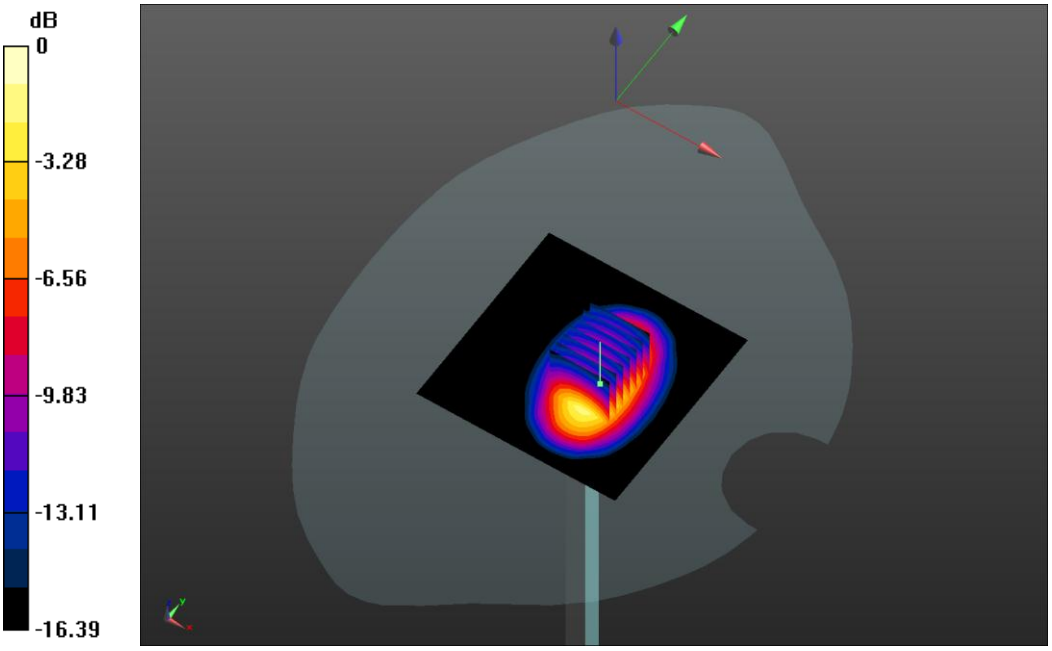
Communication System Band: D1750 (1750.0 MHz); Frequency: 1750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; $\sigma$ = 1.48 S/m; $\varepsilon_r$ = 51.53; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

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**

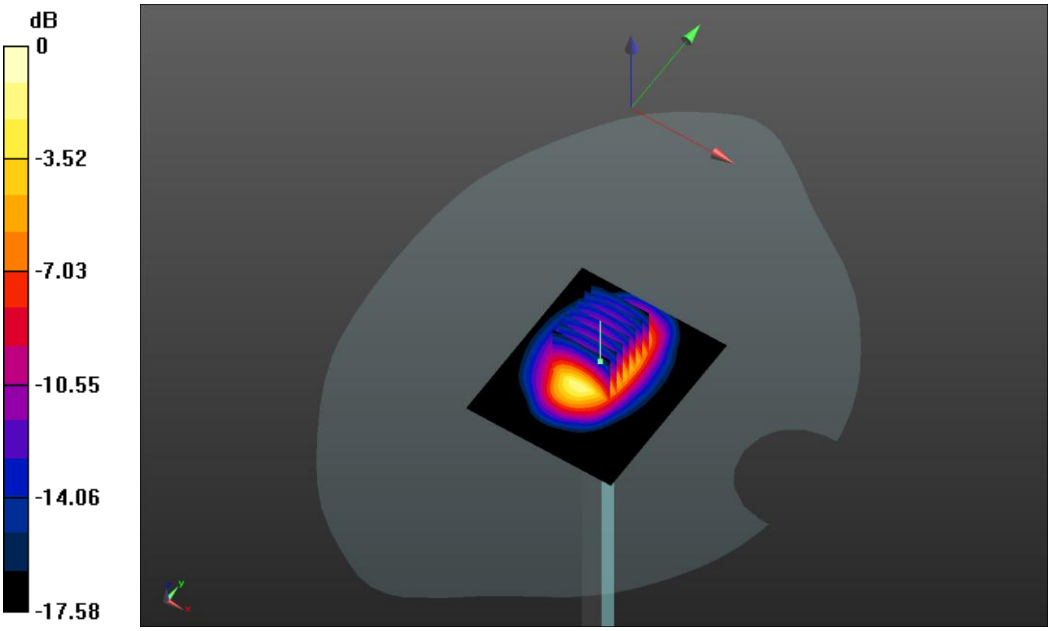
Communication System Band: D1900 (1900.0 MHz); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; $\sigma$ = 1.46 S/m; $\varepsilon_r$ = 39.758; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section

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**

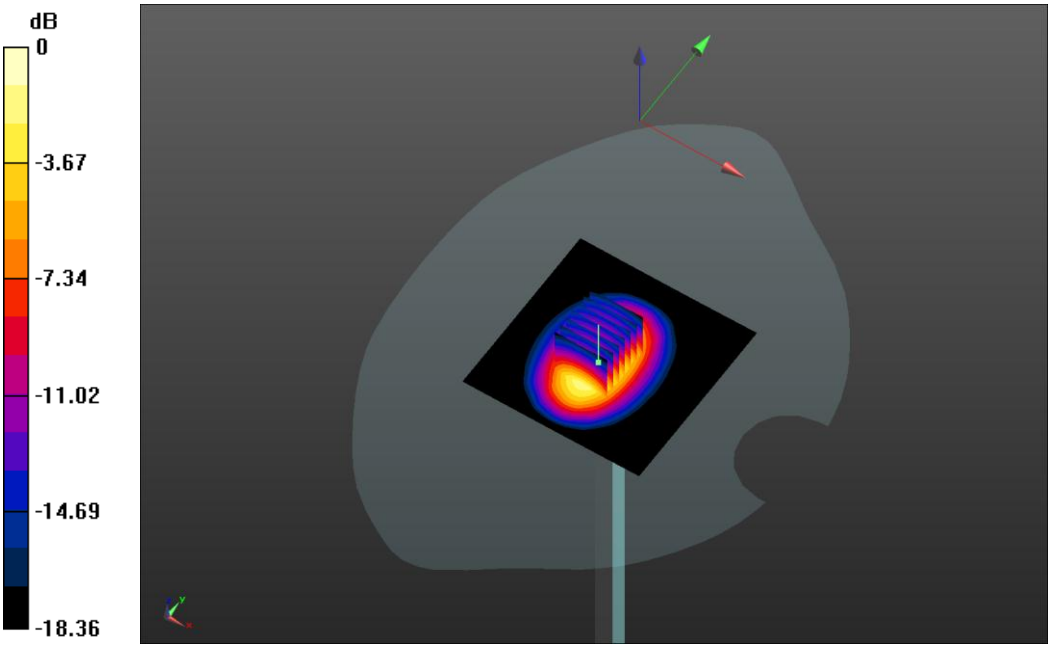
Communication System Band: D1900 (1900.0 MHz); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; $\sigma$ = 1.45 S/m; $\varepsilon_r$ = 39.75; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section

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**

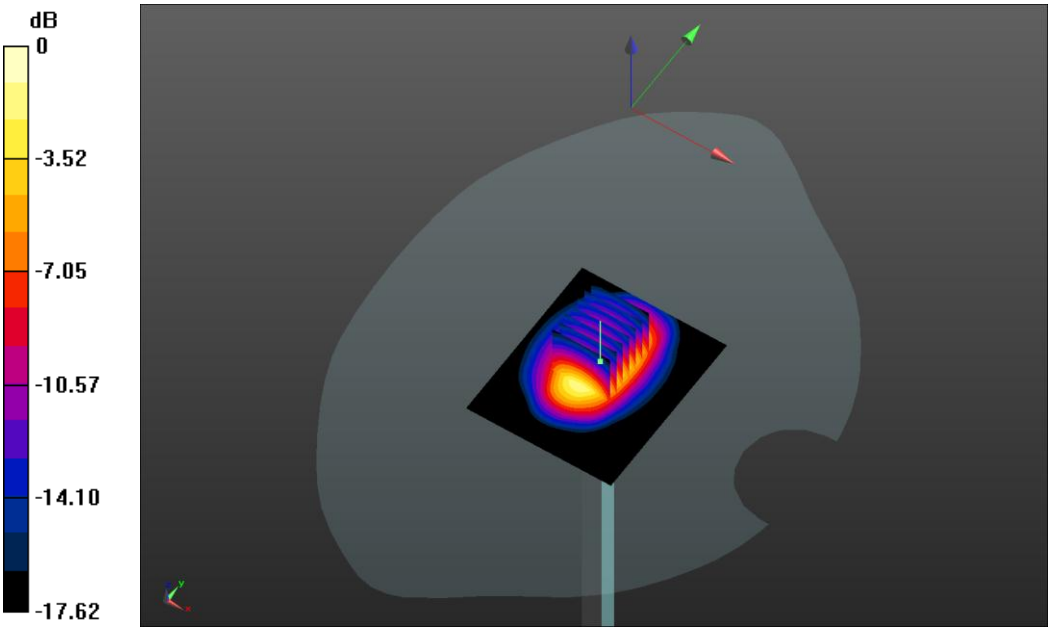
Communication System Band: D1900 (1900.0 MHz); Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; $\sigma$ = 1.58 S/m; $\varepsilon_r$ = 52.06; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

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**

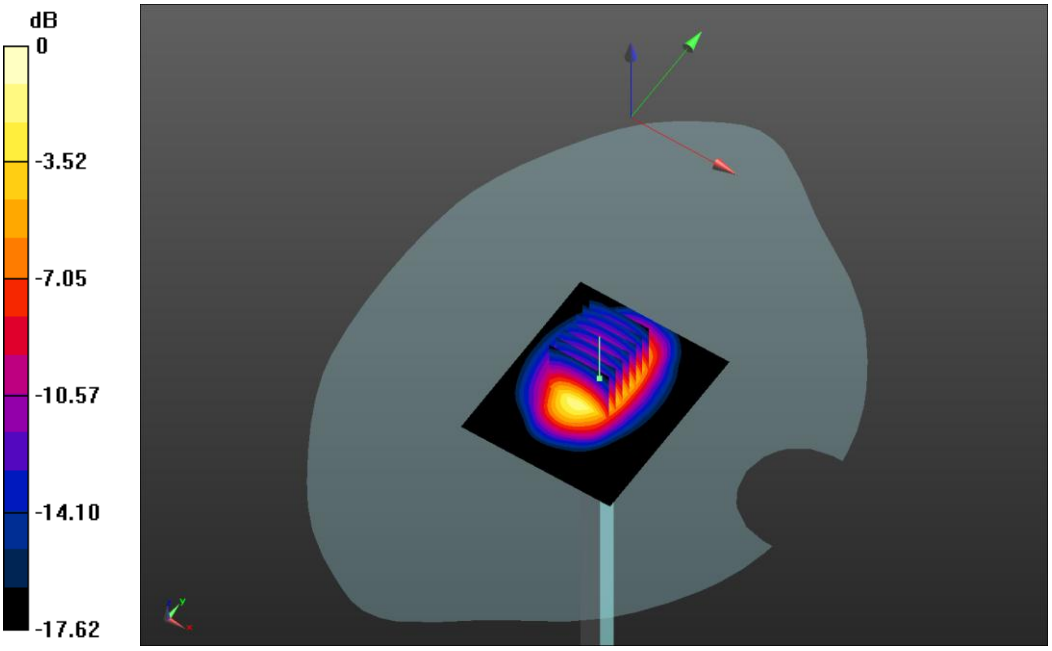
Communication System Band: D1900 (1900.0 MHz); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; $\sigma$ = 1.57 S/m; $\varepsilon_r$ = 52.05; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

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**

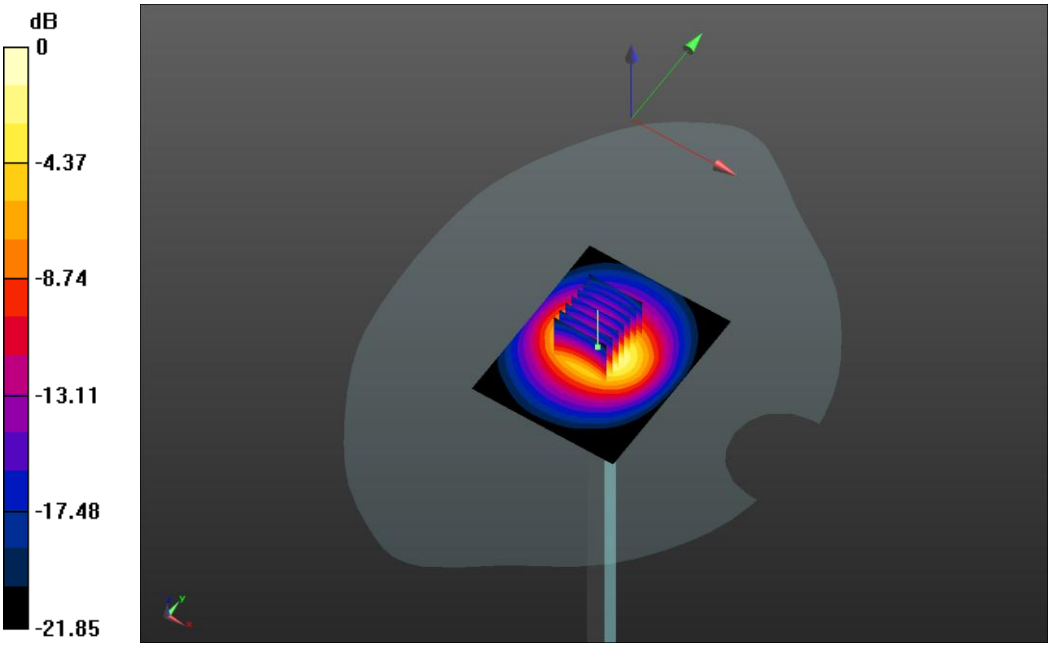
Communication System Band: CD2450 (2450.0 MHz); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; $\sigma$ = 1.88 S/m; $\varepsilon_r$ = 38.97; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

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**

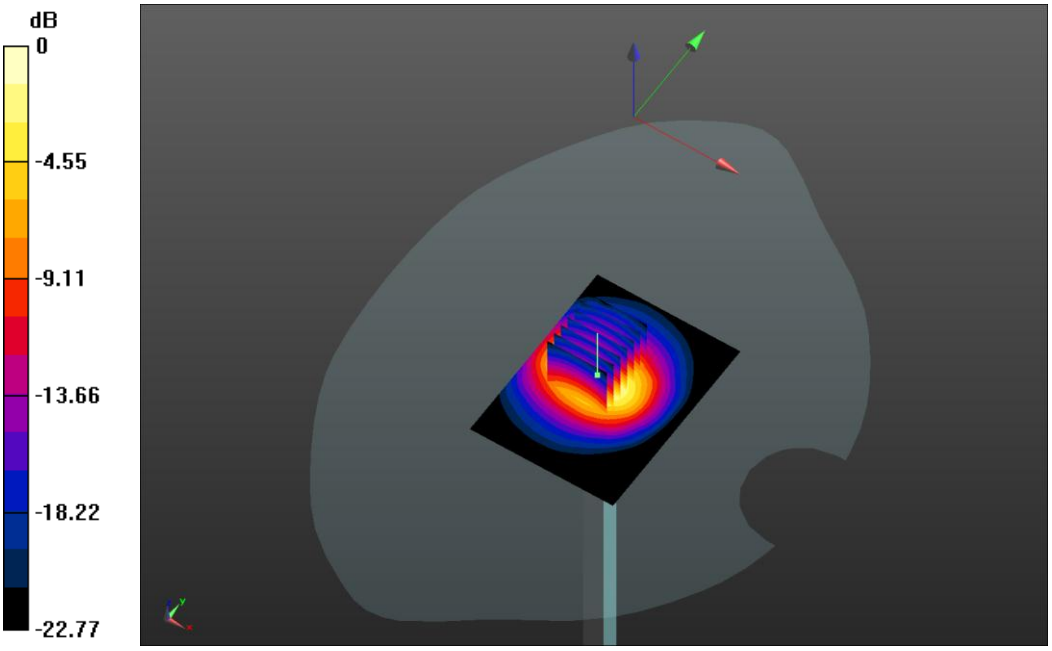
Communication System Band: D2450 (2450.0 MHz); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; $\sigma$ = 2.02 S/m; $\varepsilon_r$ = 50.71; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

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**

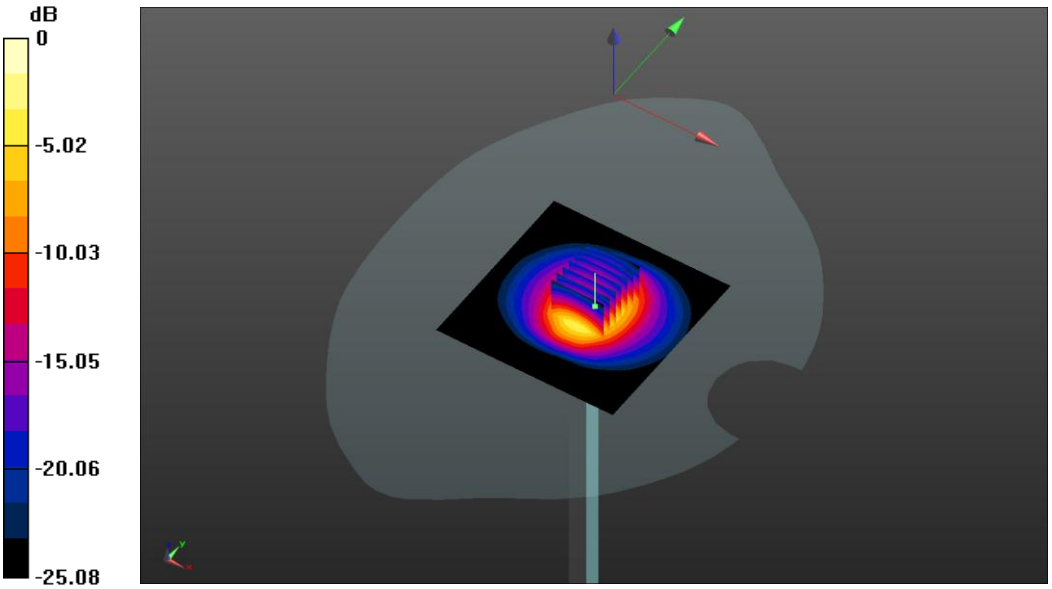
Communication System Band: D2600 (2600.0 MHz); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; $\sigma$ = 1.99 S/m; $\varepsilon_r$ = 39; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section

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**

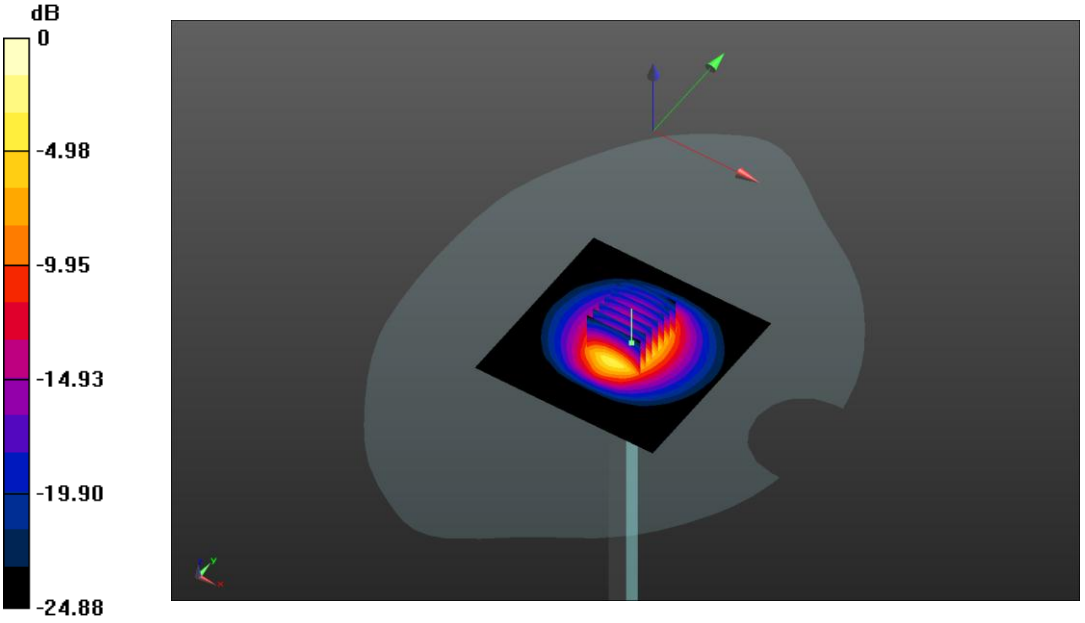
Communication System Band: D2600 (2600.0 MHz); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; $\sigma$ = 2.2 S/m; $\varepsilon_r$ = 50.123; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

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

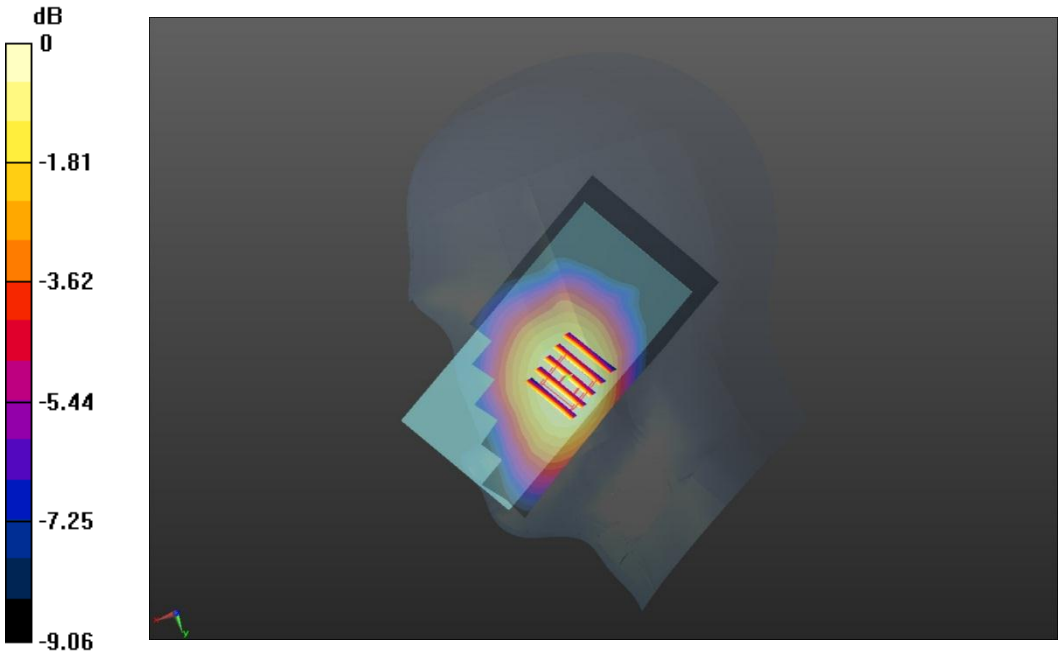
Communication System Band: GSM 850 (824.0 - 849.0 MHz); Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 824.2 MHz; $\sigma$ = 0.88 S/m; $\varepsilon r$ = 41.628; $\rho$ = 1000 kg/m3
Phantom section: Right Section

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

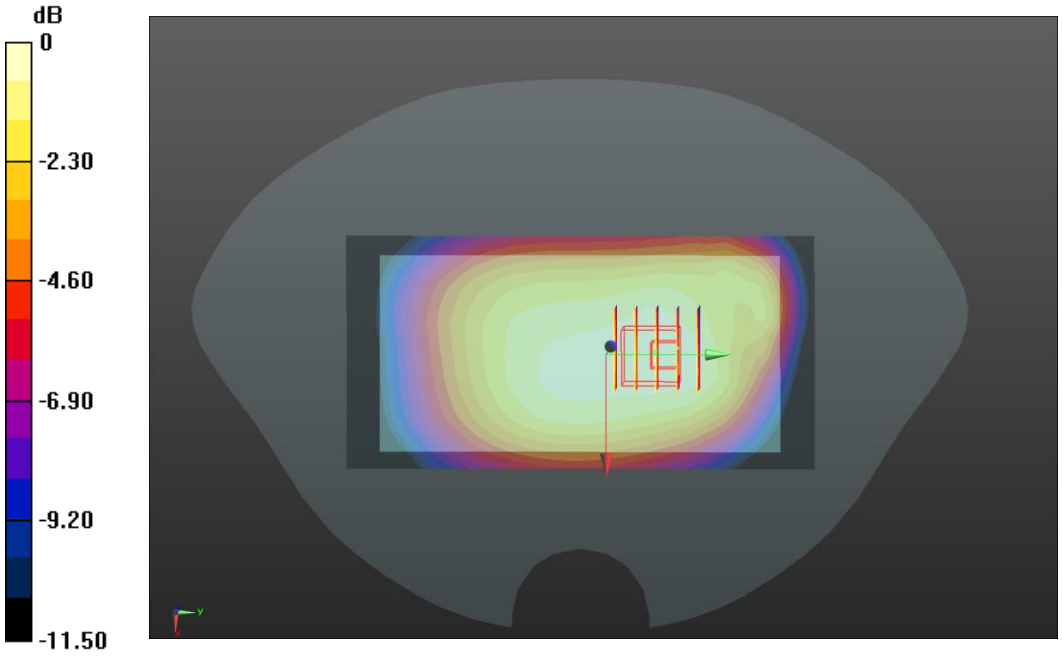
Communication System Band: GPRS850; Frequency: 824.2 MHz;Duty Cycle: 1:2.08
Medium parameters used: f = 824.2 MHz; $\sigma$ = 0.95 S/m; $\varepsilon_r$ = 55.959; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

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

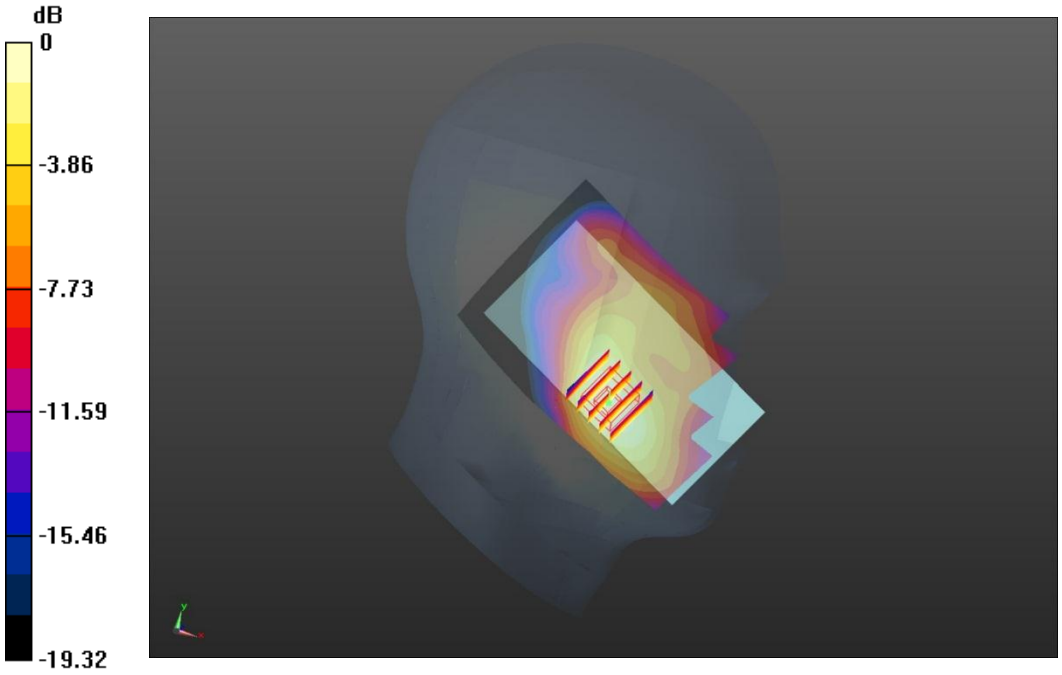
Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1850.2 MHz; $\sigma$ = 1.42 S/m; $\varepsilon_r$ = 39.87; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section

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

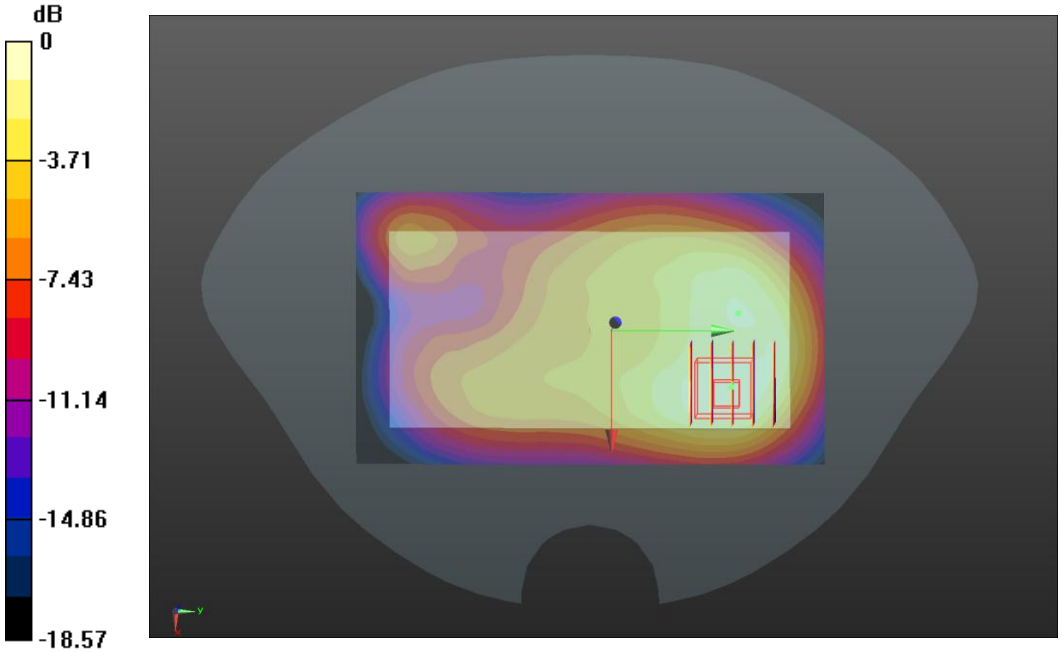
Communication System Band: GPRS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:2.08
Medium parameters used: f = 1909.8 MHz; $\sigma$ = 1.5 S/m; $\varepsilon_r$ = 51.04; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section

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

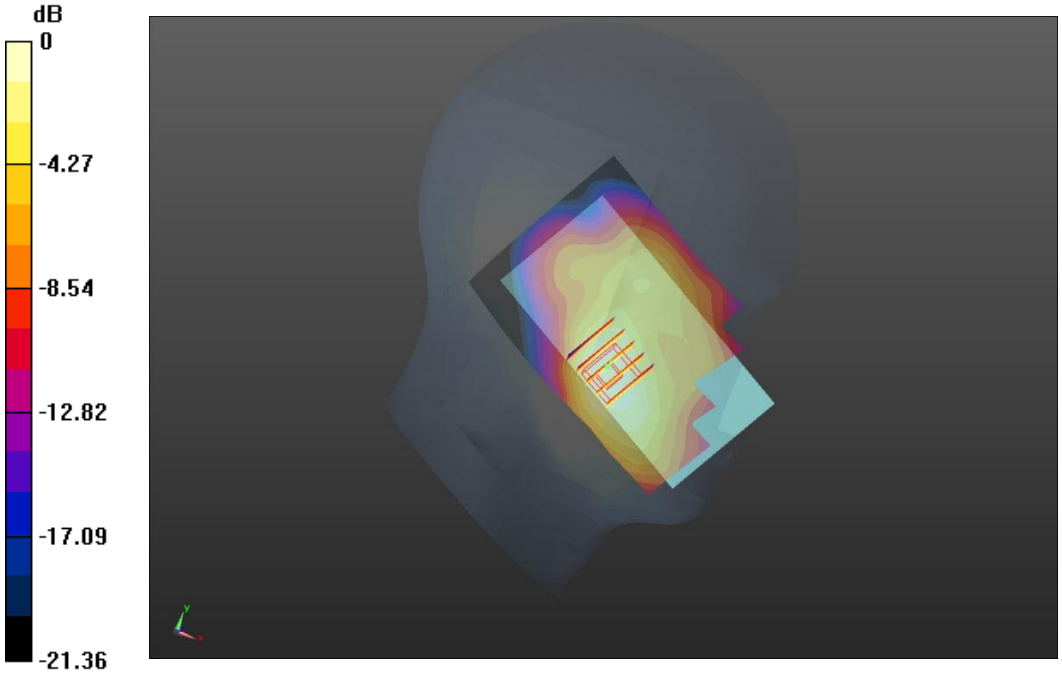
Communication System Band: II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1907.6 MHz; $\sigma$ = 1.413 S/m; $\varepsilon_r$ = 39.634; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section

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

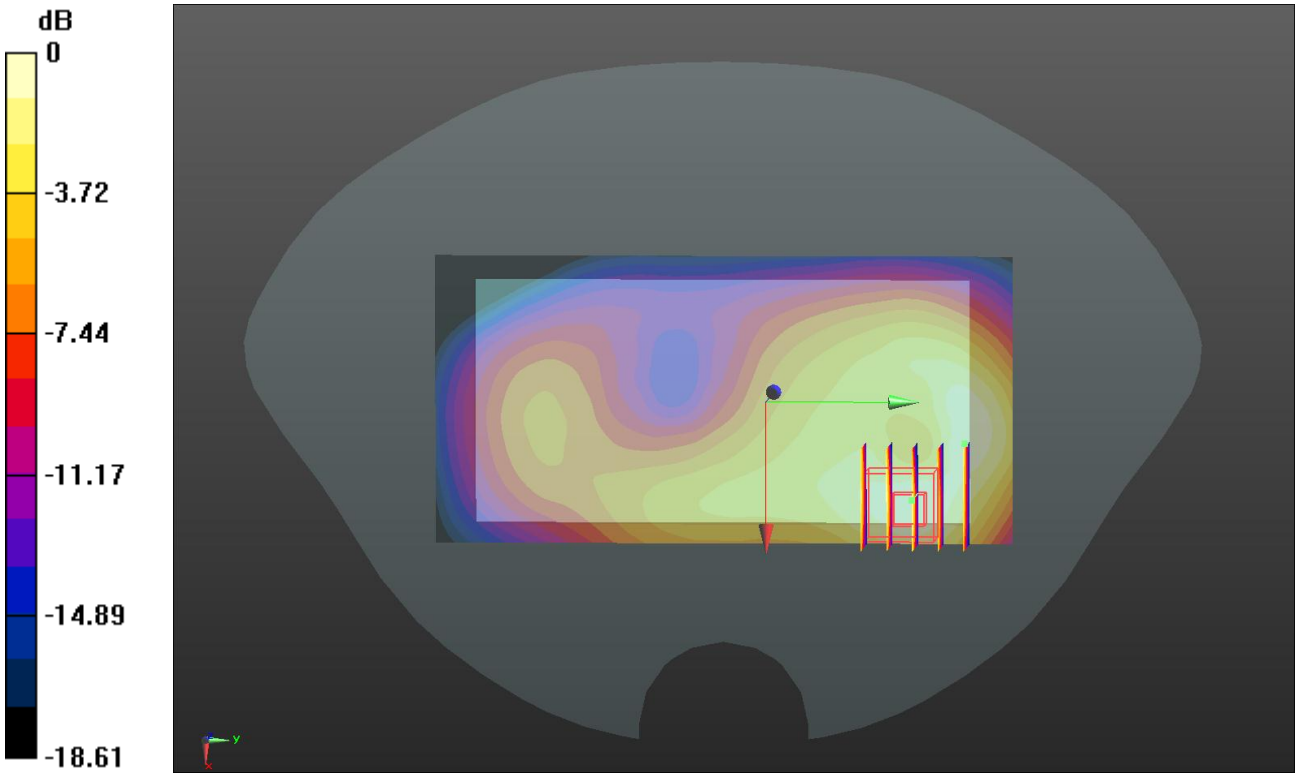
Communication System Band: II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1907.6 MHz; $\sigma$ = 1.543 S/m; $\varepsilon_r$ = 51.042; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

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

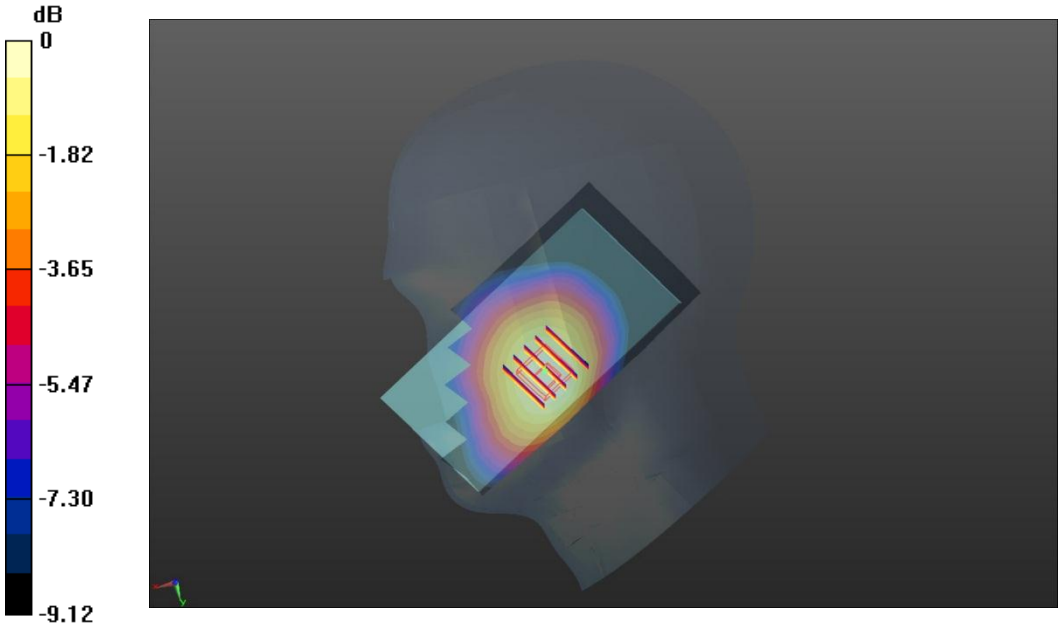
Communication System Band: V; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium parameters used: f = 836.41 MHz; $\sigma$ = 0.92 S/m; $\varepsilon_r$ = 41.48; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section

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

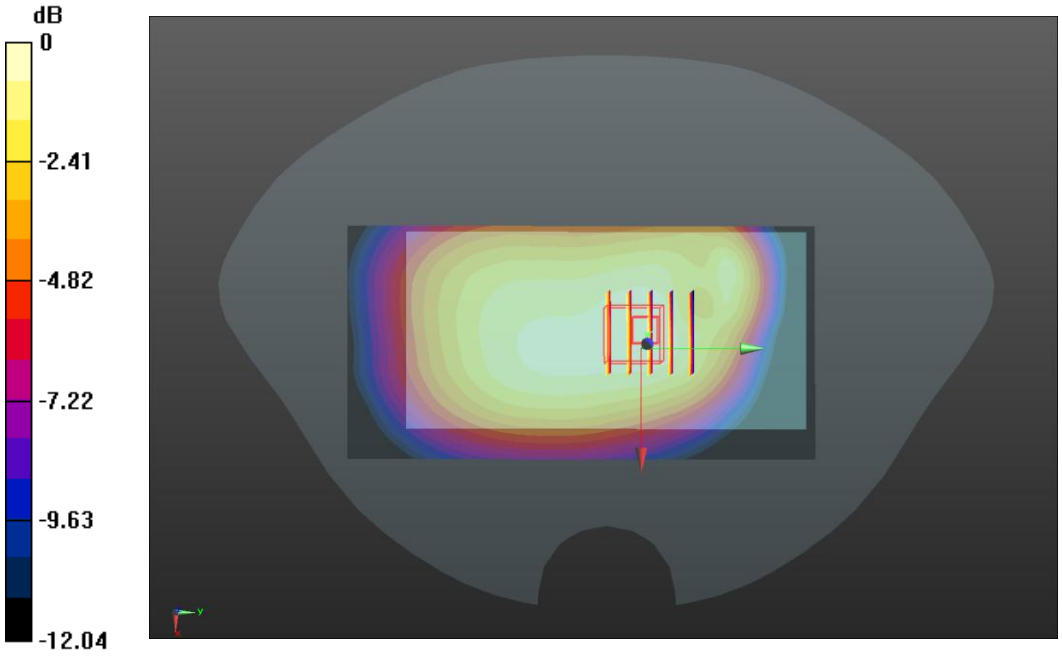
Communication System Band: V; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium parameters used: f = 836.41 MHz; $\sigma$ = 0.963 S/m; $\varepsilon_r$ = 55.86; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

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

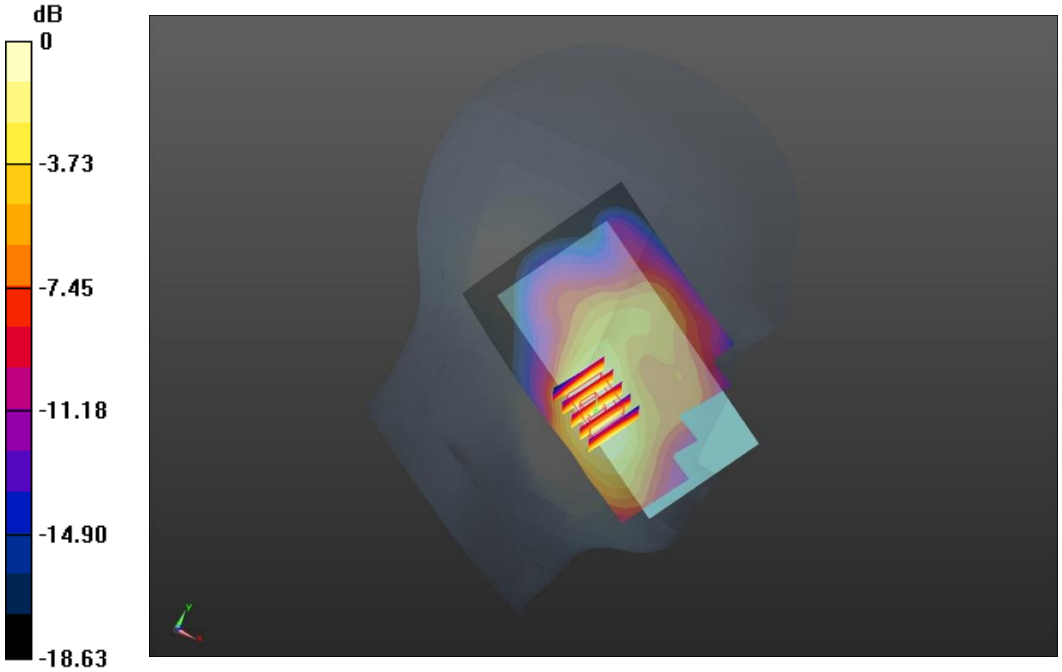
Communication System Band: Band 2, E-UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.43 S/m; $\varepsilon_r$ = 39.78; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section

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

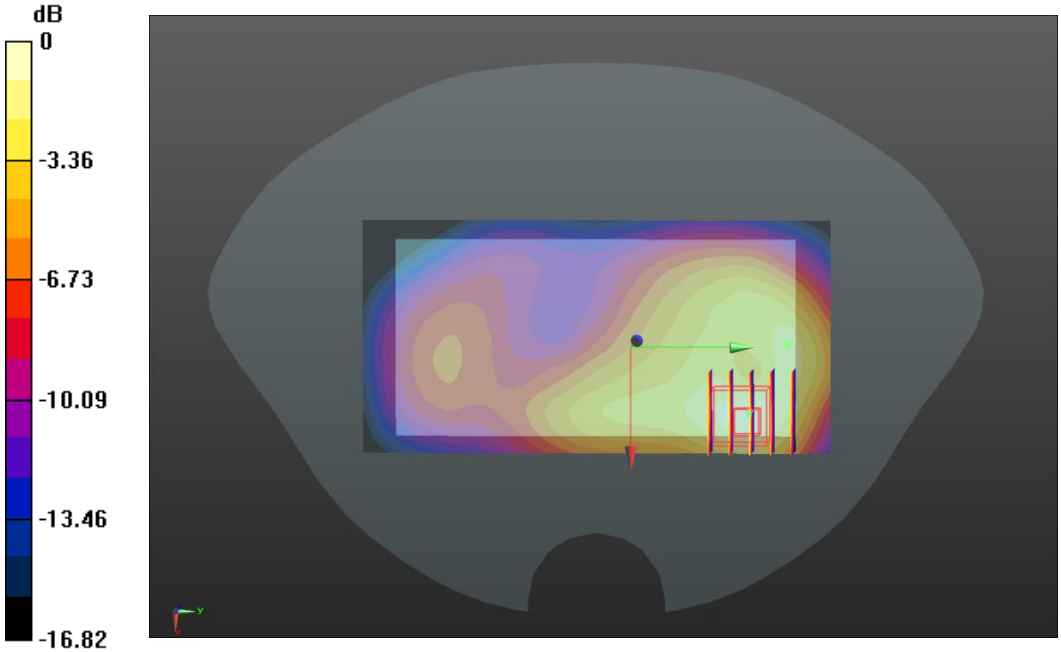
Communication System Band: Band 2, E-UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1860 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1860 MHz; $\sigma$ = 1.543 S/m; $\varepsilon_r$ = 51.207; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section

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

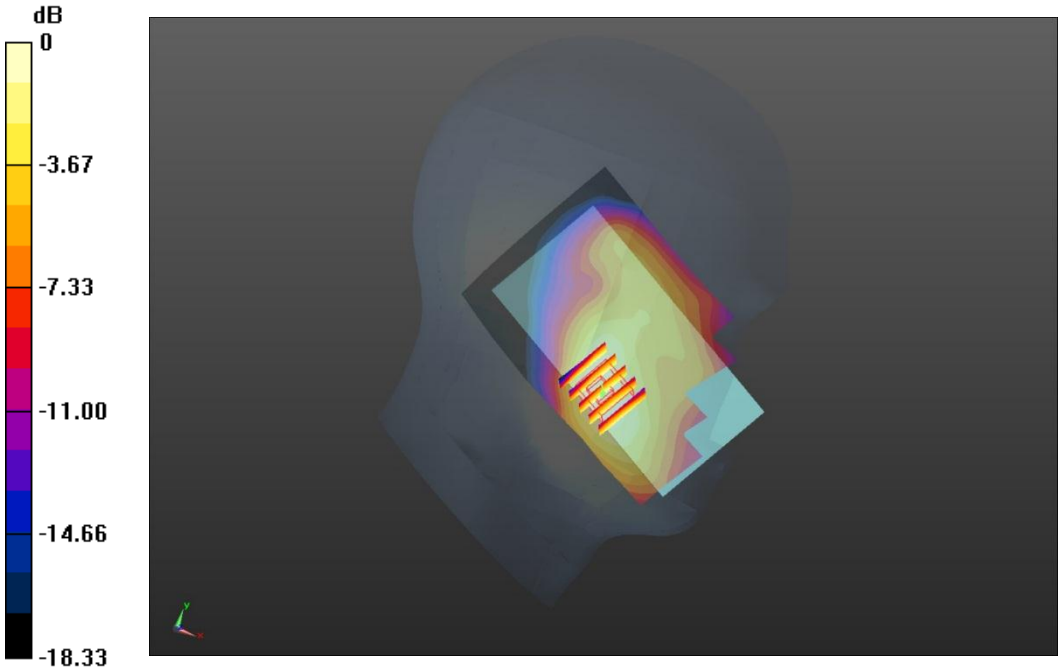
Communication System Band: Band 4, E-UTRA/FDD (1710.0 - 1755.0 MHz); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1732.5 MHz; $\sigma$ = 1.334 S/m; $\varepsilon_r$ = 40.408; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section

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

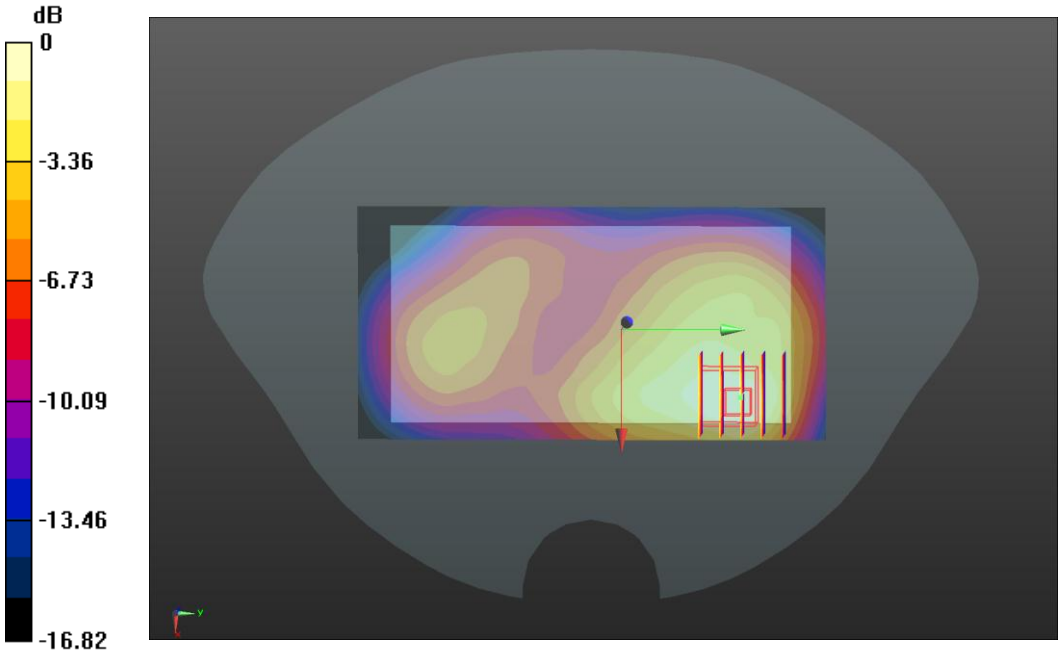
Communication System Band: Band 4, E-UTRA/FDD (1710.0 - 1755.0 MHz); Frequency: 1732.5 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1732.5 MHz; $\sigma$ = 1.474 S/m; $\varepsilon_r$ = 51.622; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

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

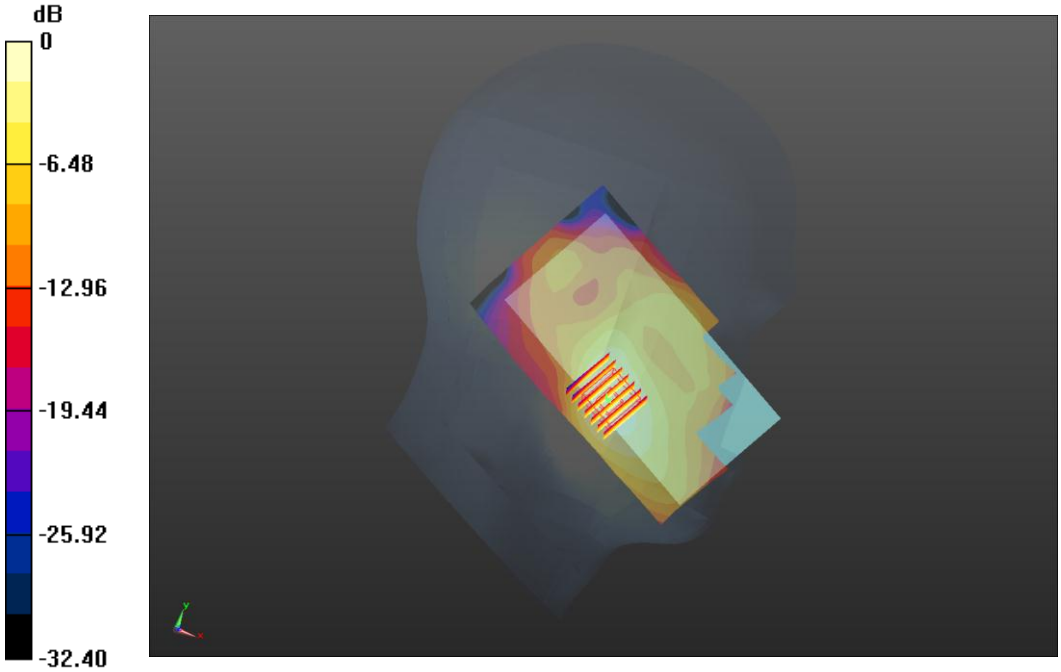
Communication System Band: Band 7, E-UTRA/FDD (2500.0 - 2570.0 MHz); Frequency: 2510 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2510 MHz; $\sigma$ = 1.907 S/m; $\varepsilon_r$ = 39.165; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section

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

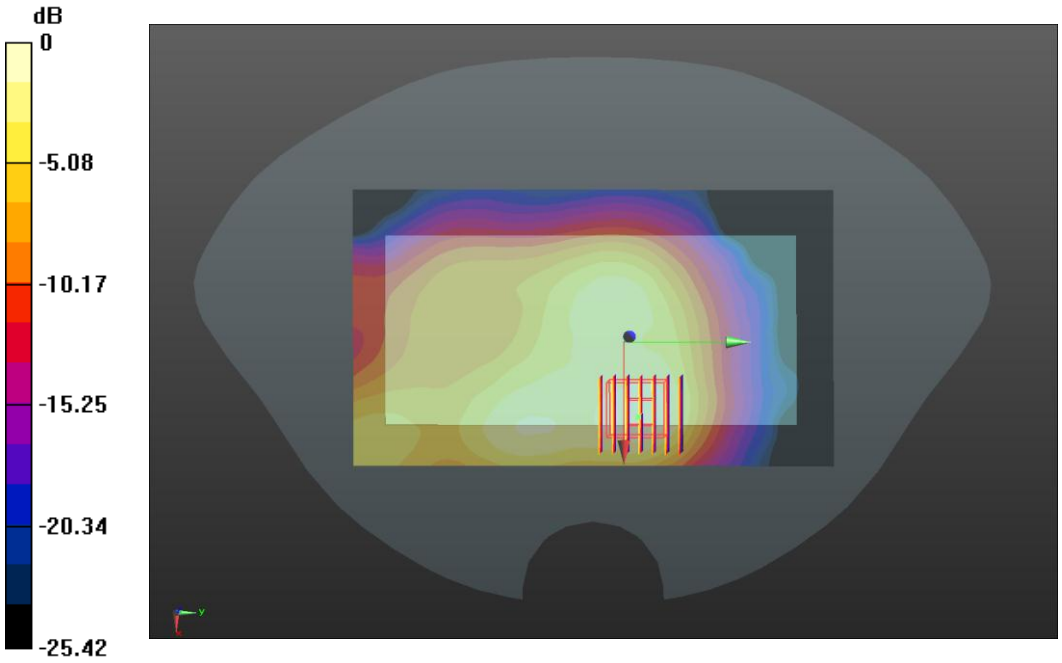
Communication System Band: Band 7, E-UTRA/FDD (2500.0 - 2570.0 MHz); Frequency: 2510 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2510 MHz; $\sigma$ = 2.14 S/m; $\varepsilon_r$ = 53.2; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

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

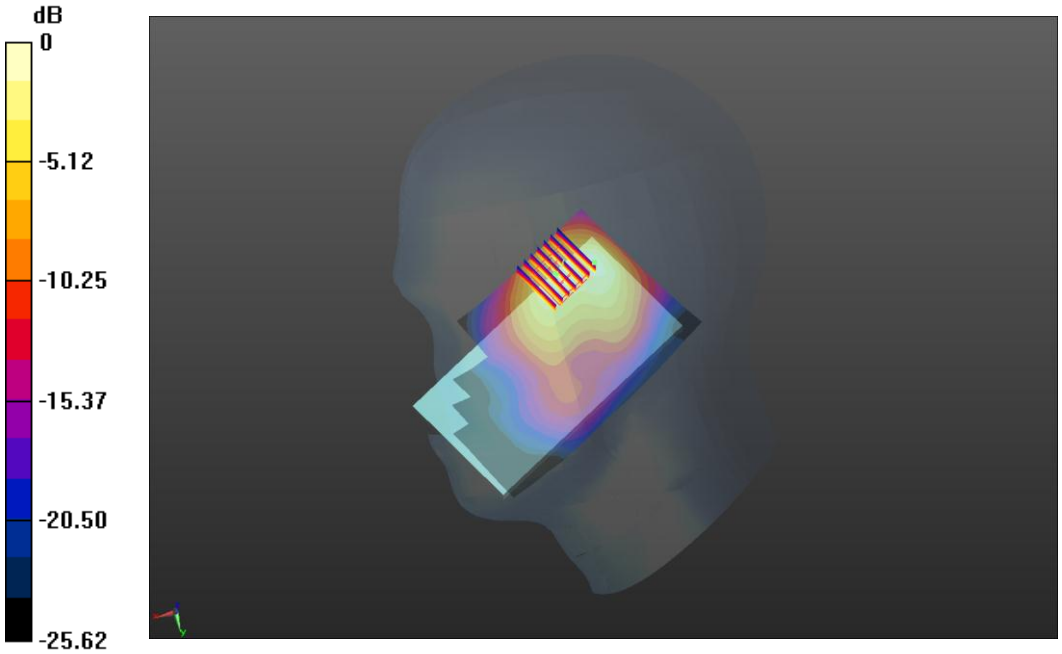
Communication System Band: WLAN(b); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; $\sigma$ = 1.862 S/m; $\varepsilon_r$ = 39.024; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section

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

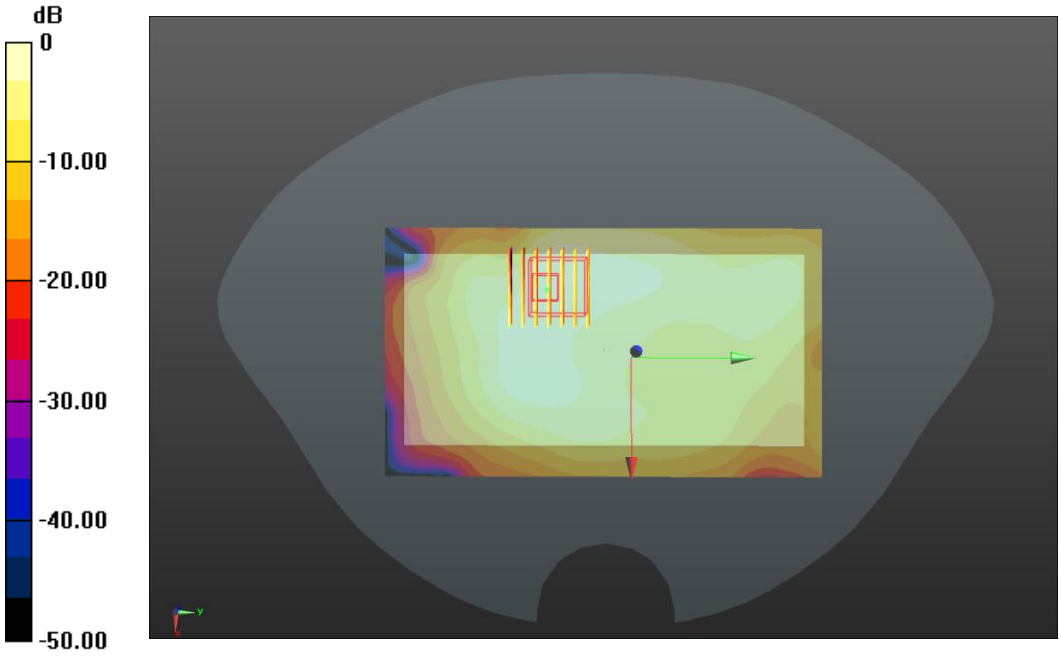
Communication System Band: WLAN(b); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; $\sigma$ = 2.013 S/m; $\varepsilon_r$ = 50.739; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

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--