# SAR TEST REPORT

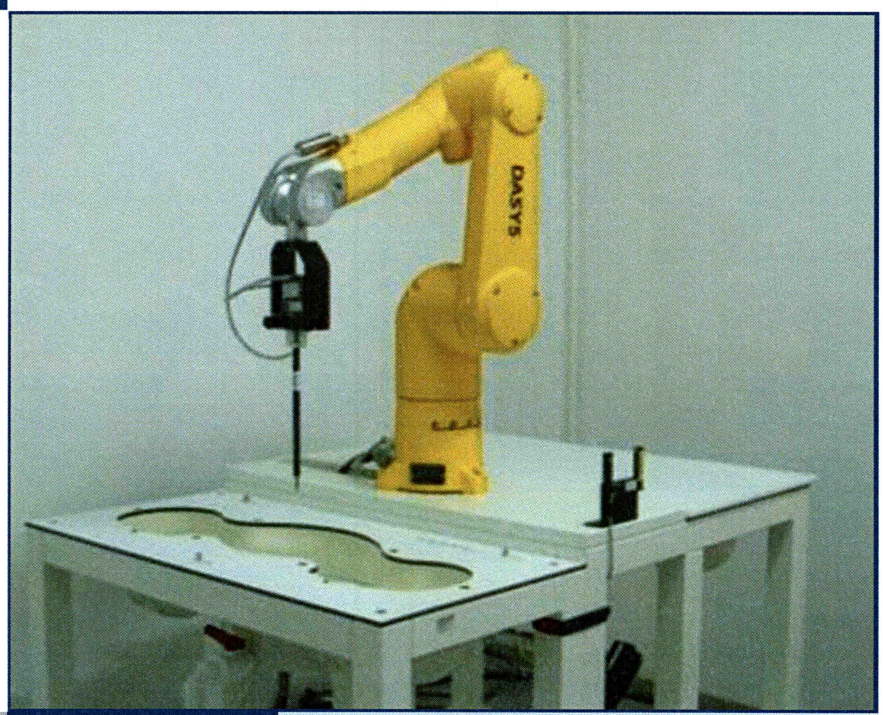
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

## Punkt. MP 02 4G Feature phone

ISSUED TO
Punkt Tronics AG

Via Losanna 4, Lugano 6900, Switzerland




Tested by: Miao Yan
Miao Yan
Date Oct. 29, 2021

Approved by:
Liao Jianming
(Technical Director)
Date Oct. 29, 2021

| | |
|---|---|
| Report No.: | BL-SZ2181089-701 |
| EUT Name: | Punkt. MP 02 4G Feature phone |
| Model Name: | MP02A |
| Brand Name: | Punkt. |
| FCC ID: | Z3PMP02A |
| Test Standard: | 47 CFR Part 2.1093 |
| | ANSI C95.1-1992, IEEE Std. 1528-2013 |
| Maximum SAR: | Head (1 g): 1.167 W/kg |
| | Body (1 g): 1.132 W/kg |
| | Hotspot (1 g): 1.132 W/kg |
| Test Conclusion: | Pass |
| Test Date: | Sep. 09, 2021 ~ Sep. 19, 2021 |
| Date of Issue: | Oct. 29, 2021 |

*NOTE: This test report of test results only related to testing samples, which can be duplicated completely for the legal use with the approval of the applicant; it shall not be reproduced except in full, without the written approval of Shenzhen BALUN Technology Co., Ltd. Any objections should be raised within thirty days from the date of issue. To validate the report, please contact us.*

Block B, 1st FL,Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong, P. R. China 518055
TEL: +86-755-66850100,FAX: +86-755-61824271
Email: qc@baluntek.com
www.baluntek.com

**Revision History**

| Version | Issue Date | Revisions Content |
|---|---|---|
| Rev. 01 | Oct. 09, 2021 | Initial Issue |
| Rev. 02 | Oct. 29, 2021 | Updated the WCDMA Band 5 and LTE Band 2/4/5/12/17 tune-up and related data, made corrections to the battery model name. |

# TABLE OF CONTENTS

# 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 is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196. |
| 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 | 35% to 48% |
| Ambient Pressure | 100 KPa to 102 KPa |

## 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.

(7) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

# 2 PRODUCT INFORMATION

## 2.1 Applicant Information

| | |
|---|---|
| Applicant | Punkt Tronics AG |
| Address | Via Losanna 4, Lugano 6900, Switzerland |

## 2.2 Manufacturer Information

| | |
|---|---|
| Manufacturer | Shenzhen Unicair Communication Technology Co., Ltd. |
| Address | 8-9/F, Block1, Wutong Island, Shunchang Rd., Xixiang, Bao'an District, Shenzhen China. |

## 2.3 Factory Information

| | |
|---|---|
| Factory | Dongguan Unicair Communication Tech Co., Ltd |
| Address | No.49 Yinhu Road, Yinhu Industrial Zone, Qiaotou Town, Dongguan City, Guangdong Province, China |

## 2.4 General Description for Equipment under Test (EUT)

| | |
|---|---|
| EUT Name | Punkt. MP 02 4G Feature phone |
| Model Name Under Test | MP02A |
| Series Model Name | N/A |
| Description of Model name differentiation | N/A |
| Hardware Version | MP02_Main_Rev.B |
| Software Version | 03.00.0301 |
| Dimensions (Approx.) | 117*51.3*14.3 mm |
| Weight (Approx.) | 100g (with battery) |

## 2.5 Ancillary Equipment

| | | |
|---|---|---|
| Ancillary Equipment 1 | Battery | |
| | Brand Name | Punkt. |
| | Model No. | MP02 |
| | Serial No. | N/A |
| | Capacity | 1280 mAh |
| | Rated Voltage | 3.8 V |
| | Limit Charge Voltage | 4.35 V |

## 2.6 Technical Information

| | |
|---|---|
| Network and Wireless connectivity | 2G Network GSM/GPRS/EDGE 850/1900 MHz<br>3G Network WCDMA/HSDPA/HSUPA/DC-HSDPA<br>Band 2/4/5<br>4G Network LTE FDD Band 2/4/5/7/12/17<br>Bluetooth (BR+EDR+BLE)<br>2.4G WIFI 802.11b, 802.11g, 802.11n(HT20/40)<br>GPS, GLONASS, BDS |

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

| | | | |
|---|---|---|---|
| Operating Mode | GSM, WCDMA, LTE, WLAN, Bluetooth | | |
| Frequency Range | GSM 850 | TX: 824 ~ 849 MHz | RX: 869 ~ 894 MHz |
| | GSM 1900 | TX: 1850 ~ 1910 MHz | RX: 1930 ~ 1990 MHz |
| | WCDMA Band 2 | TX: 1850 ~ 1910 MHz | RX: 1930 ~ 1990 MHz |
| | WCDMA Band 4 | TX: 1710 ~ 1755 MHz | RX: 2110 ~ 2155 MHz |
| | WCDMA Band 5 | TX: 824 ~ 849 MHz | RX: 869 ~ 894 MHz |
| | LTE Band 2 | TX: 1850 ~ 1910 MHz | RX: 1930 ~ 1990 MHz |
| | LTE Band 4 | TX: 1710 ~ 1755 MHz | RX: 2110 ~ 2155 MHz |
| | LTE Band 5 | TX: 824 ~ 849 MHz | RX: 869 ~ 894 MHz |
| | LTE Band 7 | TX: 2500 ~ 2570 MHz | RX: 2620 ~ 2690 MHz |
| | LTE Band 12 | TX: 699 ~ 716 MHz | RX: 729 ~ 746 MHz |
| | LTE Band 17 | TX: 704 ~ 716 MHz | RX: 734 ~ 746 MHz |
| | 802.11b/g /n(HT20/HT40) | 2412 ~ 2462 MHz | |
| | Bluetooth | 2402 ~ 2480 MHz | |
| Antenna Type | WWAN: PIFA Antenna<br>WLAN: PIFA Antenna<br>Bluetooth: PIFA Antenna | | |
| Hotspot Function | Support | | |
| Power Reduction | 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 2.1093 | Radiofrequency radiation exposure evaluation: portable devices |
| 2 | ANSI C95.1-1992 | 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/ ControlledExposure |
| 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-worn Accessory & Hotspot | Head | Body-worn Accessory & Hotspot |
| GSM 850 | 1.064 | 0.927 | **1.167** | **1.132** |
| GSM 1900 | 0.468 | 0.719 | | |
| WCDMA Band 2 | 0.843 | **1.132** | | |
| WCDMA Band 4 | 1.028 | 1.131 | | |
| WCDMA Band 5 | 1.129 | 1.119 | | |
| LTE Band 2 | 0.758 | 1.128 | | |
| LTE Band 4 | 0.937 | 1.129 | | |
| LTE Band 5 | 1.017 | 1.015 | | |
| LTE Band 7 | **1.167** | 0.726 | | |
| LTE Band 12 | 0.688 | 0.593 | | |
| LTE Band 17 | 0.631 | 0.658 | | |
| 2.4G WLAN | 0.402 | 0.074 | | |
| Bluetooth | 0.210 | 0.031 | | |
| Limit (W/kg) | 1.6 | | 1.6 | |
| Verdict | Pass | | | |

### 3.3.2 Highest Simultaneous SAR

| Position | Simultaneous Configuration | Simultaneous SAR (W/kg) | Limit (W/kg) | Verdict |
|---|---|---|---|---|
| Head (1g) | LTE Band 7 + 2.4G WIFI | **1.569** | 1.6 | Pass |
| Body-worn Accessory & Hotspot (1g) | WCDMA Band 2 + 2.4G WIFI | 1.191 | 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 1.167 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:

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

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

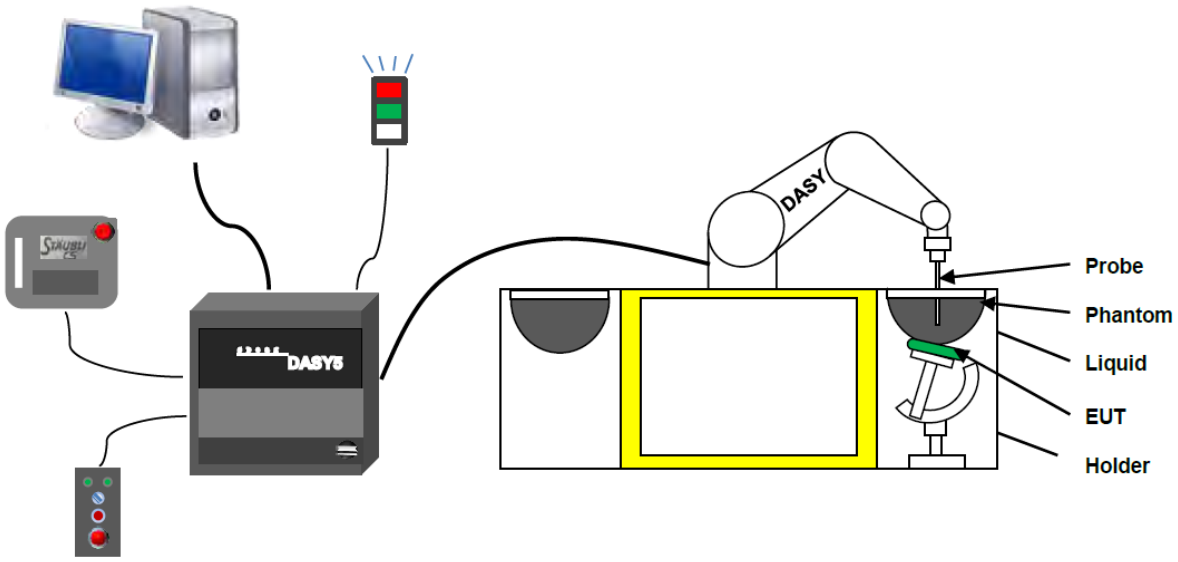
$$\mathbf{SAR} = \frac{\boldsymbol{\sigma}\mathbf{E}^2}{\boldsymbol{\rho}}$$

Where: σ is the conductivity of the tissue,

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

## 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:7510 with following specifications is used.

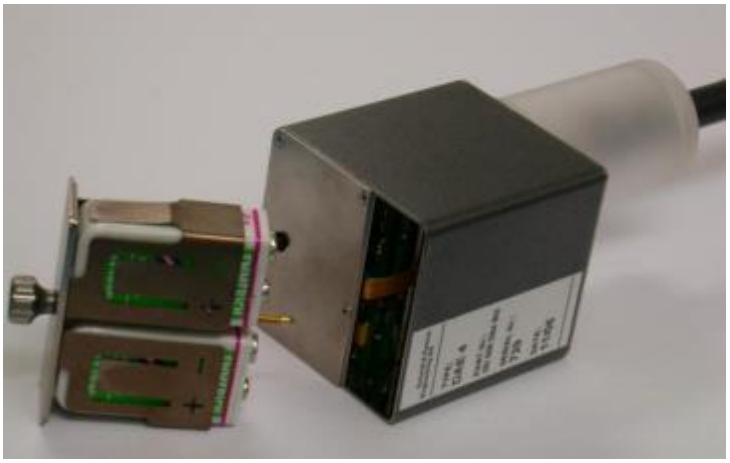
| | |
|---|---|
| Construction | Symmetrical design with triangular core Built-in optical fiber for surface detection systemBuilt-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., glycolether) |
| Calibration | ISO/IEC 17025 calibration service available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

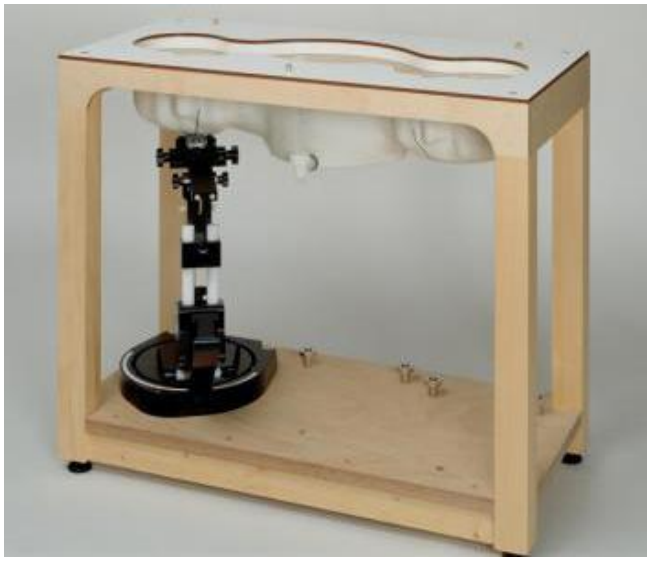
The data acquisition electronics (DAE) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converte and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an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

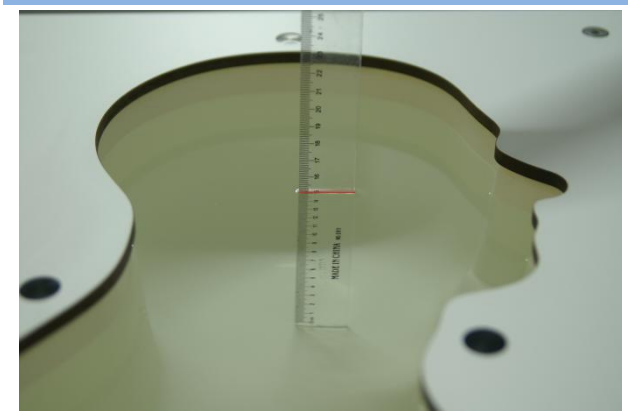
### 4.2.6 Device Holder

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 |

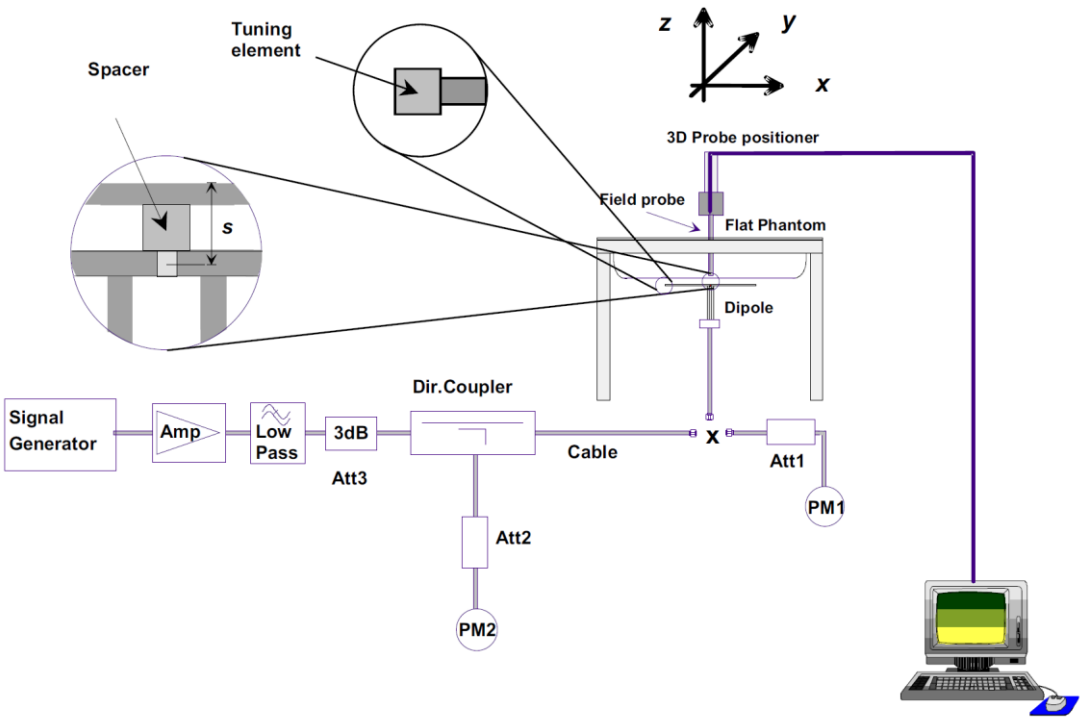
# 5 SYSTEM VERIFICATION

## 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

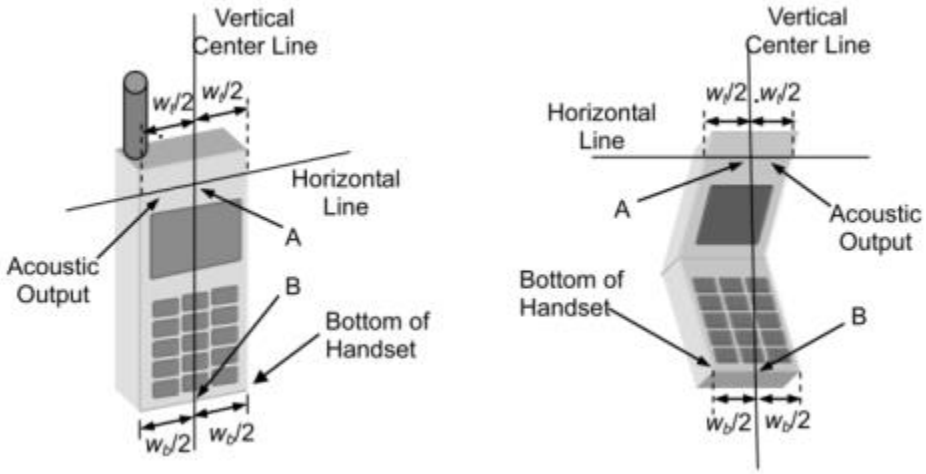
Head exposure is limited to next to the ear voice mode operations. Head SAR compliance is tested according to the test positions defined in IEEE Std 1528-2013 using the SAM phantom illustrated as below.

### 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.

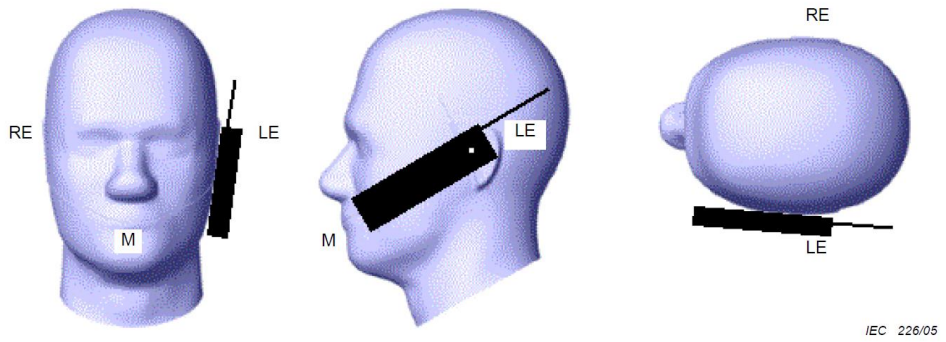
(c) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical center line is not necessarily parallel to the front face of the handset,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

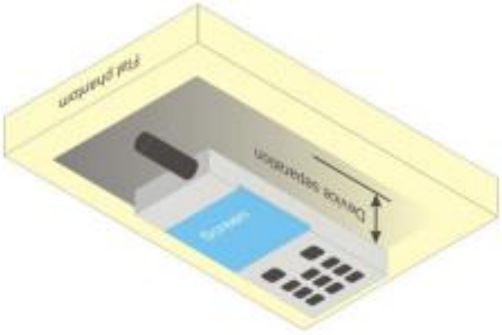
(b) While maintaining the device the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost.

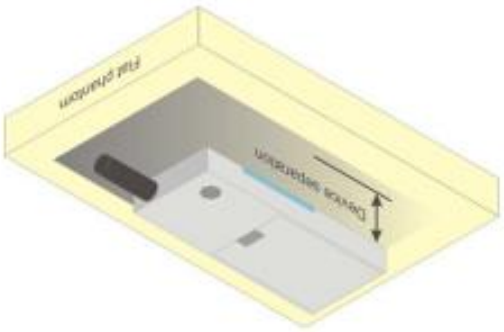
## 6.2 Body-worn Position Conditions

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.

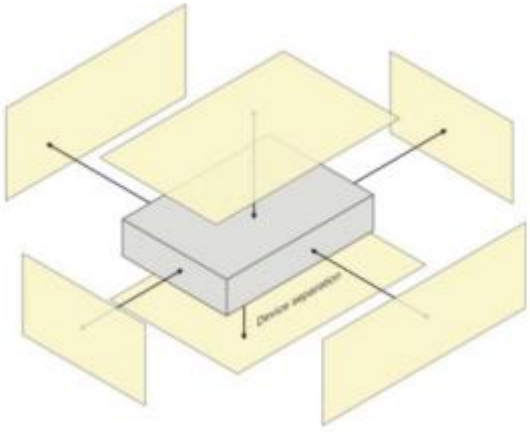
Body-worn accessory SAR compliance is based on a single minimum test separation distance for all wireless and operating modes applicable to each body-worn accessory used by the host, and according to the relevant voice and/or data mode transmissions and operations. If a body-worn accessory supports voice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





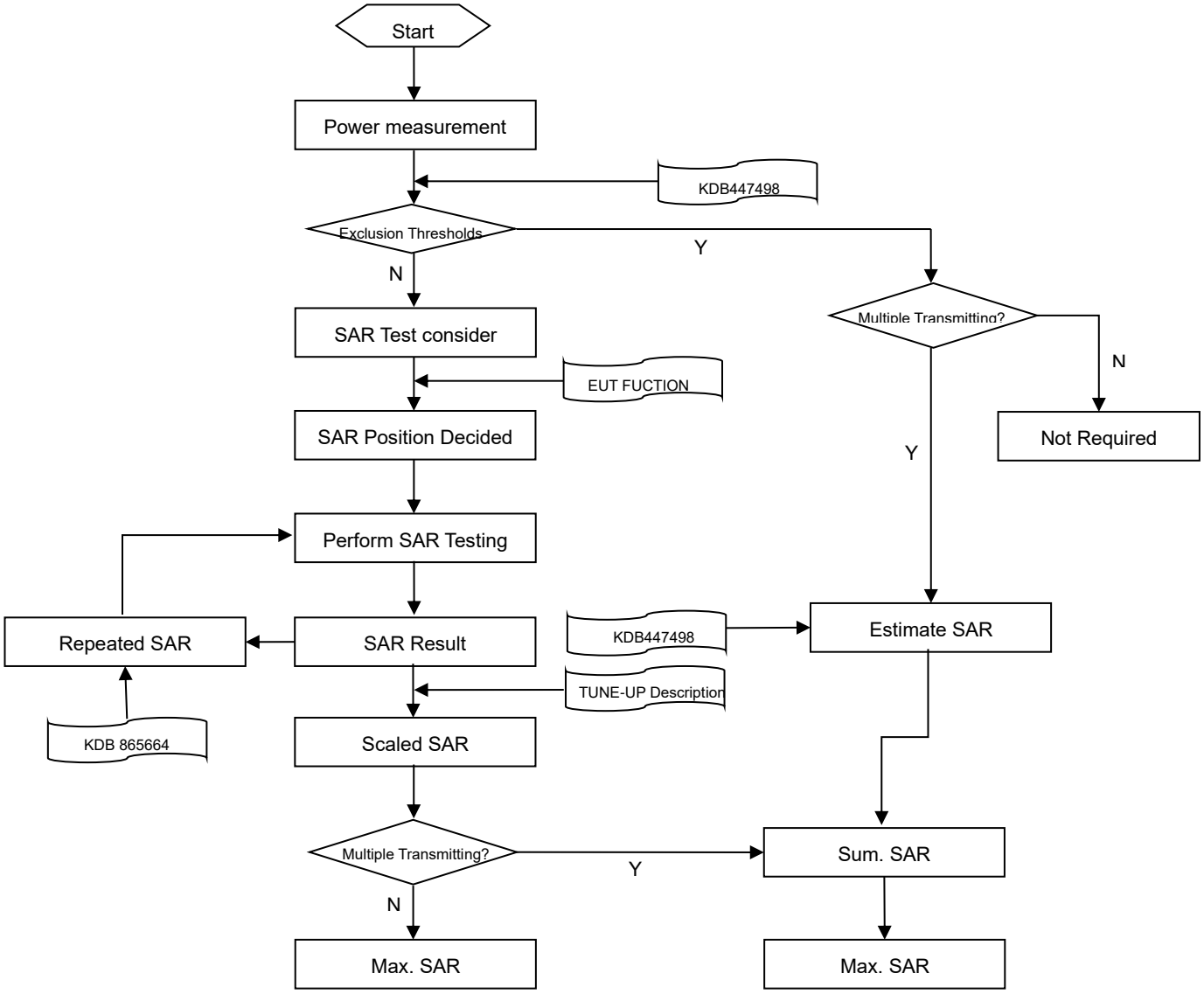
## 6.3 Hotspot Mode Exposure Position Conditions

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="5">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2" rowspan="2">uniform grid: Δz Zoom (n)</td><td rowspan="2">≤ 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="2">≤ 4 mm</td><td>3–4 GHz: ≤ 3 mm</td></tr>
<tr><td>4–5 GHz: ≤ 2.5 mm</td></tr>
<tr><td>Δz Zoom (n>1): between subsequent points</td><td>5–6 GHz: ≤ 2 mm</td><td>≤ 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

Please refer the document “Conducted RF Output Power List.pdf”.

## 8.2 WCDMA

Please refer the document “Conducted RF Output Power List.pdf”.

## 8.3 LTE

Please refer the document “Conducted RF Output Power List.pdf”.

## 8.4 WIFI

### 8.4.1 2.4G WIFI

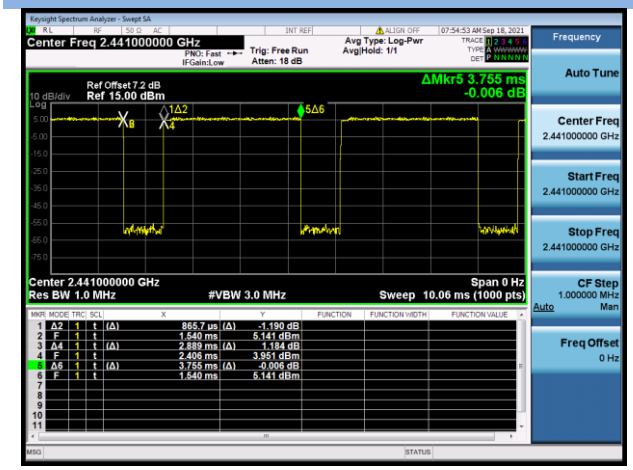
| Band (GHz) | Mode | Channel | Freq. (MHz) | Conducted Power (dBm) | Tune-up Limit (dBm) | SAR Test Require. |
|---|---|---|---|---|---|---|
| 2.4 (2.4~2.4835) | 802.11b | 1 | 2412 | 9.29 | 9.50 | No |
| | | 2 | 2417 | 9.50 | 9.50 | No |
| | | 3 | 2422 | 11.58 | 12.00 | No |
| | | 4 | 2427 | 14.09 | 14.50 | Yes |
| | | 6 | 2437 | 13.14 | 13.50 | Yes |
| | | 11 | 2462 | **15.00** | 15.00 | Yes |
| | 802.11g | 1 | 2412 | 11.51 | 12.00 | No |
| | | 2 | 2417 | 12.52 | 13.00 | No |
| | | 6 | 2437 | 10.47 | 10.50 | No |
| | | 10 | 2457 | 11.72 | 12.00 | No |
| | | 11 | 2462 | 10.79 | 11.00 | No |
| | 802.11n(HT20) | 1 | 2412 | 10.92 | 11.00 | No |
| | | 2 | 2417 | 10.41 | 11.00 | No |
| | | 6 | 2437 | 9.54 | 10.00 | No |
| | | 10 | 2457 | 10.10 | 10.50 | No |
| | | 11 | 2462 | 9.21 | 9.50 | No |
| | 802.11n(HT40) | 3 | 2422 | 9.69 | 10.00 | No |
| | | 4 | 2427 | 9.60 | 10.00 | No |
| | | 5 | 2432 | 8.79 | 9.00 | No |
| | | 6 | 2437 | 9.91 | 10.00 | No |
| | | 9 | 2452 | 9.87 | 10.00 | No |

## 8.5 Bluetooth

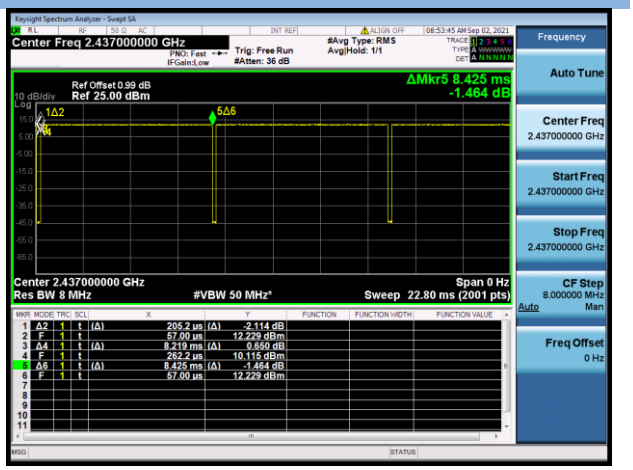
| Mode | GFSK | | | π/4-DQPSK | | |
|---|---|---|---|---|---|---|
| Channel | 0 | 39 | 78 | 0 | 39 | 78 |
| Frequency (MHz) | 2402 | 2441 | 2480 | 2402 | 2441 | 2480 |
| Conducted Power (dBm) | 4.71 | 5.58 | 5.04 | 5.71 | 6.73 | 6.07 |
| Tune-Up Limit (dBm) | 6.00 | | | 7.00 | | |
| Mode | 8-DPSK | | | BLE | | |
| Channel | 0 | 39 | 78 | 0 | 19 | 39 |
| Frequency (MHz) | 2402 | 2441 | 2480 | 2402 | 2440 | 2480 |
| Conducted Power (dBm) | 6.01 | **7.04** | 6.39 | 0.645 | 1.340 | 0.839 |
| Tune-Up Limit (dBm) | 7.50 | | | 1.50 | | |

Duty Cycle

8-DPSK




802.11b



## 8.6 Power Reduction List

1. This mobile phone device supports the receiver detection mechanism. This device uses the receiver to indicate whether the user is making a call in head or body.
2. When there is a voice call (including VOIP) and the audio is actively routed through the earpiece receiver, which indicating the head exposure condition it will trigger the head exposure reduced the power.
3. When there is a voice call (including VOIP), and the audio is actively routed through the headset or speaker, which indicating the body exposure conditions will trigger the body exposure reduced the power.
4. When this device used data mode only, and the receiver will not work too, the reduced the power are same as body exposure.

**WWAN Power Table**

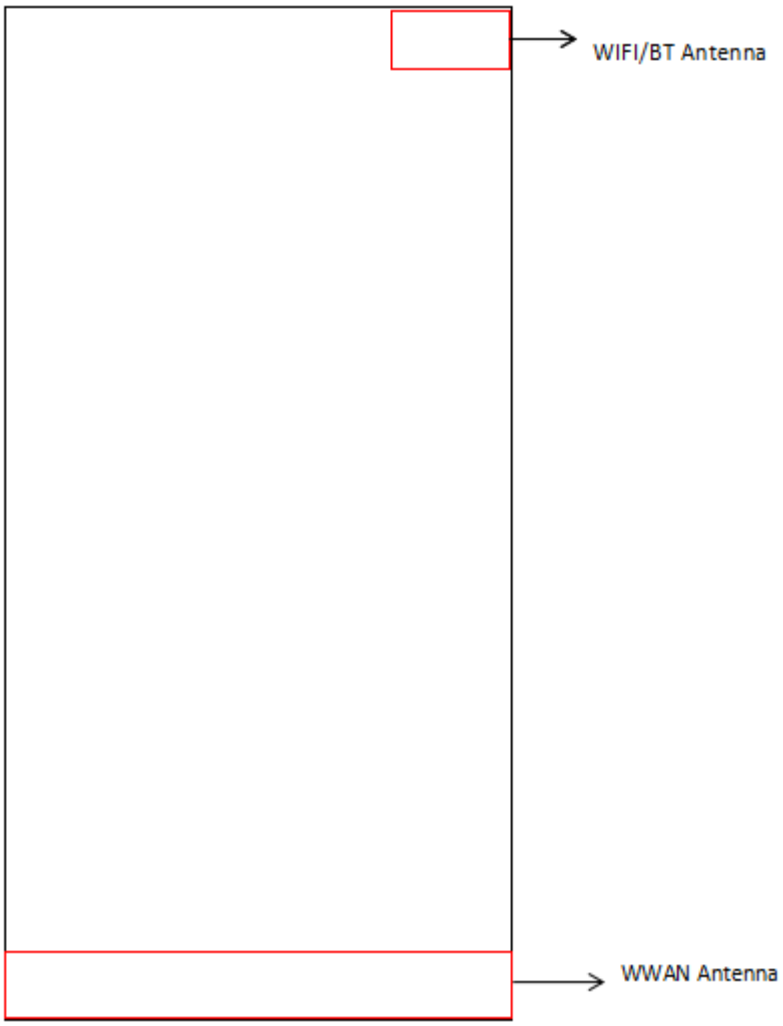
| Mode | WWAN Antenna Up | | | | |
|---|---|---|---|---|---|
| | Full power | Head | | Body-worn Accessory & Hotspot | |
| | | Standalone | Simultaneous transmission +2.4G WLAN/BT | Standalone | Simultaneous transmission +2.4G WLAN/BT |
| GSM850 | 33.00 | 33.00 | 33.00 | 33.00 | 33.00 |
| GPRS850 1 Tx Slot | 33.00 | 33.00 | 33.00 | 33.00 | 33.00 |
| GPRS850 2 Tx Slots | 29.00 | 29.00 | 29.00 | 29.00 | 29.00 |
| GPRS850 3 Tx Slots | 27.00 | 27.00 | 27.00 | 27.00 | 27.00 |
| GPRS8504 Tx Slots | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 |
| EGPRS850 1 Tx Slot | 27.50 | 27.50 | 27.50 | 27.50 | 27.50 |
| EGPRS850 2 Tx Slots | 27.00 | 27.00 | 27.00 | 27.00 | 27.00 |
| EGPRS850 3 Tx Slots | 26.50 | 26.50 | 26.50 | 26.50 | 26.50 |
| EGPRS850 4 Tx Slots | 24.00 | 24.00 | 24.00 | 24.00 | 24.00 |
| GSM1900 | 31.00 | 31.00 | 31.00 | 31.00 | 31.00 |
| GPRS1900 1 Tx Slot | 31.00 | 31.00 | 31.00 | 31.00 | 31.00 |
| GPRS1900 2 Tx Slots | 28.00 | 28.00 | 28.00 | 28.00 | 28.00 |
| GPRS1900 3 Tx Slots | 26.00 | 26.00 | 26.00 | 26.00 | 26.00 |
| GPRS1900 4 Tx Slots | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 |
| EGPRS1900 1 Tx Slot | 27.00 | 27.00 | 27.00 | 27.00 | 27.00 |
| EGPRS1900 2 Tx Slots | 27.00 | 27.00 | 27.00 | 27.00 | 27.00 |
| EGPRS1900 3 Tx Slots | 26.00 | 26.00 | 26.00 | 26.00 | 26.00 |
| EGPRS1900 4 Tx Slots | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 |
| WCDMA B2 | 23.50 | 23.50 | 23.50 | 23.50 | 23.50 |
| HSDPA Subtest-1 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 |
| HSDPA Subtest-2 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 |
| HSDPA Subtest-3 | 22.00 | 22.00 | 22.00 | 22.00 | 22.00 |
| HSDPA Subtest-4 | 22.00 | 22.00 | 22.00 | 22.00 | 22.00 |
| HSUPA Subtest-1 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 |
| HSUPA Subtest-2 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 |
| HSUPA Subtest-3 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 |
| HSUPA Subtest-4 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 |

| | | | | | |
|---|---|---|---|---|---|
| HSUPA Subtest-5 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 |
| WCDMA B4 | 23.50 | 23.50 | 23.50 | 23.50 | 23.50 |
| HSDPA Subtest-1 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 |
| HSDPA Subtest-2 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 |
| HSDPA Subtest-3 | 22.00 | 22.00 | 22.00 | 22.00 | 22.00 |
| HSDPA Subtest-4 | 22.00 | 22.00 | 22.00 | 22.00 | 22.00 |
| HSUPA Subtest-1 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 |
| HSUPA Subtest-2 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 |
| HSUPA Subtest-3 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 |
| HSUPA Subtest-4 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 |
| HSUPA Subtest-5 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 |
| WCDMA B5 | 24.50 | 24.50 | 24.50 | 24.50 | 24.50 |
| HSDPA Subtest-1 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 |
| HSDPA Subtest-2 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 |
| HSDPA Subtest-3 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 |
| HSDPA Subtest-4 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 |
| HSUPA Subtest-1 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 |
| HSUPA Subtest-2 | 22.00 | 22.00 | 22.00 | 22.00 | 22.00 |
| HSUPA Subtest-3 | 22.00 | 22.00 | 22.00 | 22.00 | 22.00 |
| HSUPA Subtest-4 | 22.00 | 22.00 | 22.00 | 22.00 | 22.00 |
| HSUPA Subtest-5 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 |
| LTE B2 | 23.50 | 23.50 | 23.50 | 23.50 | 23.50 |
| LTE B4 | 23.50 | 23.50 | 23.50 | 23.50 | 23.50 |
| LTE B5 | 24.00 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE B7 | 22.00 | 22.00 | 22.00 | 22.00 | 22.00 |
| LTE B12 | 24.00 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE B17 | 24.00 | 24.00 | 24.00 | 24.00 | 24.00 |

**WLAN Power Table**

| Mode | WLAN Antenna | | | | |
|---|---|---|---|---|---|
| | Full power | Head | | Body-worn Accessory & Hotspot | |
| | | Standalone | Simultaneous transmission WWAN+2.4G WIFI/BT | Standalone | Simultaneous transmission WWAN+2.4G WIFI/BT |
| 2.4G WLAN 802.11b | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 |
| 2.4G WLAN 802.11g | 13.00 | 13.00 | 13.00 | 13.00 | 13.00 |
| 2.4G WLAN 802.11n20 | 11.00 | 11.00 | 11.00 | 11.00 | 11.00 |
| 2.4G WLAN 802.11n40 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 |
| Bluetooth | 7.50 | 7.50 | 7.50 | 7.50 | 7.50 |

# 9 TEST EXCLUSION CONSIDERATION




<Back view>

| Antenna | Support Bands |
|---|---|
| WWAN | GSM850/1900 |
| | WCDMA B2/4/5 |
| | LTE B2/4/5/7/12/17 |
| WLAN/BT | WLAN 2.4G/BT |

| Antenna | Front Side (mm) | Back Side (mm) | Left Edge (mm) | Right Edge (mm) | Top Edge (mm) | Bottom Edge (mm) |
|---|---|---|---|---|---|---|
| WWAN | <5 | <5 | <5 | <5 | 108 | <5 |
| WLAN/BT | <5 | <5 | 33 | <5 | <5 | 110 |

## 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 :

WWAN Antenna

| 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 | <5mm | <5mm | 108mm | <5mm |
| | Voice | 32.00 | 1584.89 | Yes | Yes | Yes | Yes | Yes | Yes |
| | Data | 32.00 | 1584.89 | Yes | Yes | Yes | Yes | Yes | Yes |
| GSM 1900 | Distance to User | | | <5mm | <5mm | <5mm | <5mm | 108mm | <5mm |
| | Voice | 30.00 | 1000.00 | Yes | Yes | Yes | Yes | Yes | Yes |
| | Data | 30.00 | 1000.00 | Yes | Yes | Yes | Yes | Yes | Yes |
| WCDMA Band 2 | Distance to User | | | <5mm | <5mm | <5mm | <5mm | 108mm | <5mm |
| | RMC | 23.50 | 223.87 | Yes | Yes | Yes | Yes | No | Yes |
| WCDMA Band 4 | Distance to User | | | <5mm | <5mm | <5mm | <5mm | 108mm | <5mm |
| | RMC | 23.50 | 223.87 | Yes | Yes | Yes | Yes | No | Yes |
| WCDMA Band 5 | Distance to User | | | <5mm | <5mm | <5mm | <5mm | 108mm | <5mm |
| | RMC | 23.50 | 223.87 | Yes | Yes | Yes | Yes | No | Yes |
| LTE Band 2 | Distance to User | | | <5mm | <5mm | <5mm | <5mm | 108mm | <5mm |
| | QPSK | 23.00 | 199.53 | Yes | Yes | Yes | Yes | No | Yes |
| LTE Band 4 | Distance to User | | | <5mm | <5mm | <5mm | <5mm | 108mm | <5mm |
| | QPSK | 23.00 | 199.53 | Yes | Yes | Yes | Yes | No | Yes |
| LTE Band 5 | Distance to User | | | <5mm | <5mm | <5mm | <5mm | 108mm | <5mm |
| | QPSK | 23.00 | 199.53 | Yes | Yes | Yes | Yes | No | Yes |
| LTE Band 7 | Distance to User | | | <5mm | <5mm | <5mm | <5mm | 108mm | <5mm |
| | QPSK | 22.00 | 158.49 | Yes | Yes | Yes | Yes | No | Yes |
| LTE Band 12 | Distance to User | | | <5mm | <5mm | <5mm | <5mm | 108mm | <5mm |
| | QPSK | 23.00 | 199.53 | Yes | Yes | Yes | Yes | No | Yes |
| LTE Band 17 | Distance to User | | | <5mm | <5mm | <5mm | <5mm | 108mm | <5mm |
| | QPSK | 23.00 | 199.53 | Yes | Yes | Yes | Yes | No | Yes |

WLAN Antenna

| Band | Mode | Max. Peak Power | | Test Position Configurations | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | dBm | mW | Head | Front/ Back | Left Edge | Right Edge | Top Edge | Bottom Edge |
| WLAN 2.4 G | Distance to User | | | <5mm | <5mm | 33mm | <5mm | <5mm | 110mm |
| | 802.11b | 15.00 | 31.62 | Yes | Yes | Yes | Yes | Yes | No |
| | 802.11g | 13.00 | 19.95 | No | No | No | No | No | No |
| | 802.11n(HT20) | 11.00 | 12.59 | No | No | No | No | No | No |
| | 802.11n(HT40) | 10.00 | 10.00 | No | No | No | No | No | No |
| Bluetooth | Distance to User | | | <5mm | <5mm | 33mm | <5mm | <5mm | 110mm |
| | BR+EDR | 7.50 | 5.62 | Yes | Yes | Yes | Yes | Yes | No |
| | BLE | 1.50 | 1.41 | 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.
   c. When KDB Publication 447498 D01 SAR test exclusion applies to the OFDM configuration.
   d. 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.

## 9.2 10g Extremity Exposure Consideration

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

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

**Conclusion:**
The EUT hotspot mode 1-g reported SAR is 1.132 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) | 1g Meas SAR (W/kg) | Meas. Power (dBm) | Max. tune-up power (dBm) | Scaling Factor | 1g Scaled SAR (W/kg) | Meas. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Head** | | | | | | | | | | | |
| GPRS (2slots) | Left Cheek | 0 | 251 | 848.8 | -0.13 | 0.995 | 28.71 | 29.00 | 1.069 | **1.064** | 1# |
| | | 0 | 128 | 824.2 | -0.02 | 0.864 | 28.48 | 29.00 | 1.127 | 0.974 | / |
| | | 0 | 190 | 836.6 | -0.11 | 0.927 | 28.51 | 29.00 | 1.119 | 1.038 | / |
| | Left Tilt | 0 | 251 | 848.8 | 0.10 | 0.516 | 28.71 | 29.00 | 1.069 | 0.552 | / |
| | Right Cheek | 0 | 251 | 848.8 | 0.01 | 0.772 | 28.71 | 29.00 | 1.069 | 0.825 | / |
| | | 0 | 128 | 824.2 | 0.15 | 0.682 | 28.48 | 29.00 | 1.127 | 0.769 | / |
| | | 0 | 190 | 836.6 | 0.15 | 0.766 | 28.51 | 29.00 | 1.119 | 0.857 | / |
| | Right Tilt | 0 | 251 | 848.8 | -0.06 | 0.549 | 28.71 | 29.00 | 1.069 | 0.587 | / |
| **Body-worn Accessory&Hotspot** | | | | | | | | | | | |
| GPRS (2slots) | Front Side | 10 | 251 | 848.8 | -0.09 | 0.726 | 28.71 | 29.00 | 1.069 | 0.776 | / |
| | Back Side | 10 | 251 | 848.8 | 0.10 | 0.749 | 28.71 | 29.00 | 1.069 | 0.801 | / |
| | | 10 | 128 | 824.2 | 0.15 | 0.777 | 28.48 | 29.00 | 1.127 | 0.875 | / |
| | | 10 | 190 | 836.6 | 0.04 | 0.828 | 28.51 | 29.00 | 1.119 | **0.927** | 2# |
| | Left Edge | 10 | 251 | 848.8 | -0.06 | 0.594 | 28.71 | 29.00 | 1.069 | 0.635 | / |
| | Right Edge | 10 | 251 | 848.8 | -0.19 | 0.543 | 28.71 | 29.00 | 1.069 | 0.580 | / |
| | Top Edge | 10 | 251 | 848.8 | 0.03 | 0.029 | 28.71 | 29.00 | 1.069 | 0.031 | / |
| | Bottom Edge | 10 | 251 | 848.8 | -0.02 | 0.120 | 28.71 | 29.00 | 1.069 | 0.128 | / |
| Note: Refer to ANNEX C for the detailed test data for each test configuration. | | | | | | | | | | | |

## 10.2 GSM 1900

| Mode | Position | Dist. (mm) | Ch. | Freq. (MHz) | Power Drift (dB) | 1g Meas SAR (W/kg) | Meas. Power (dBm) | Max. tune-up power (dBm) | Scaling Factor | 1g Scaled SAR (W/kg) | Meas. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Head** | | | | | | | | | | | |
| GPRS (2slots) | Left Cheek | 0 | 661 | 1880.0 | -0.03 | 0.432 | 27.96 | 28.00 | 1.009 | 0.436 | / |
| | Left Tilt | 0 | 661 | 1880.0 | -0.15 | 0.163 | 27.96 | 28.00 | 1.009 | 0.165 | / |
| | Right Cheek | 0 | 661 | 1880.0 | 0.08 | 0.464 | 27.96 | 28.00 | 1.009 | **0.468** | 3# |
| | | 0 | 512 | 1850.2 | 0.04 | 0.409 | 27.59 | 28.00 | 1.100 | 0.450 | / |
| | | 0 | 810 | 1909.8 | -0.12 | 0.425 | 27.77 | 28.00 | 1.054 | 0.448 | / |
| | Right Tilt | 0 | 661 | 1880.0 | -0.14 | 0.203 | 27.96 | 28.00 | 1.009 | 0.205 | / |
| **Body-worn Accessory&Hotspot** | | | | | | | | | | | |
| GPRS (2slots) | Front Side | 10 | 661 | 1880.0 | -0.06 | 0.712 | 27.96 | 28.00 | 1.009 | **0.719** | 4# |
| | | 10 | 512 | 1850.2 | 0.09 | 0.649 | 27.59 | 28.00 | 1.100 | 0.714 | / |
| | | 10 | 810 | 1909.8 | -0.03 | 0.678 | 27.77 | 28.00 | 1.054 | 0.715 | / |
| | Back Side | 10 | 661 | 1880.0 | -0.06 | 0.664 | 27.96 | 28.00 | 1.009 | 0.670 | / |
| | Left Edge | 10 | 661 | 1880.0 | -0.02 | 0.456 | 27.96 | 28.00 | 1.009 | 0.460 | / |
| | Right Edge | 10 | 661 | 1880.0 | -0.05 | 0.128 | 27.96 | 28.00 | 1.009 | 0.129 | / |
| | Top Edge | 10 | 661 | 1880.0 | 0.03 | 0.084 | 27.96 | 28.00 | 1.009 | 0.085 | / |
| | Bottom Edge | 10 | 661 | 1880.0 | 0.11 | 0.495 | 27.96 | 28.00 | 1.009 | 0.500 | / |
| Note: Refer to ANNEX C for the detailed test data for each test configuration. | | | | | | | | | | | |

## 10.3WCDMA Band 2

| Mode | Position | Dist. (mm) | Ch. | Freq. (MHz) | Power Drift (dB) | 1g Meas SAR (W/kg) | Meas. Power (dBm) | Max. tune-up power (dBm) | Scaling Factor | 1g Scaled SAR (W/kg) | Meas. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Head** | | | | | | | | | | | |
| RMC | Left Cheek | 0 | 9400 | 1880.0 | 0.10 | 0.671 | 23.04 | 23.50 | 1.112 | 0.746 | / |
| | Left Tilt | 0 | 9400 | 1880.0 | 0.00 | 0.254 | 23.04 | 23.50 | 1.112 | 0.282 | / |
| | Right Cheek | 0 | 9400 | 1880.0 | 0.05 | 0.744 | 23.04 | 23.50 | 1.112 | 0.827 | / |
| | | 0 | 9262 | 1852.4 | 0.04 | 0.712 | 22.95 | 23.50 | 1.135 | 0.808 | / |
| | | 0 | 9538 | 1907.6 | 0.12 | 0.703 | 22.71 | 23.50 | 1.199 | **0.843** | 5# |
| | Right Tilt | 0 | 9400 | 1880.0 | -0.11 | 0.310 | 23.04 | 23.50 | 1.112 | 0.345 | / |
| **Body-worn Accessory&Hotspot** | | | | | | | | | | | |
| RMC | Front Side | 10 | 9400 | 1880.0 | 0.09 | 0.972 | 23.04 | 23.50 | 1.112 | 1.081 | / |
| | | 10 | 9262 | 1852.4 | 0.03 | 0.997 | 22.95 | 23.50 | 1.135 | **1.132** | 6# |
| | | 10 | 9538 | 1907.6 | 0.06 | 0.899 | 22.71 | 23.50 | 1.199 | 1.078 | / |
| | Back Side | 10 | 9400 | 1880.0 | 0.18 | 0.934 | 23.04 | 23.50 | 1.112 | 1.038 | / |
| | Left Edge | 10 | 9400 | 1880.0 | -0.05 | 0.646 | 23.04 | 23.50 | 1.112 | 0.718 | / |
| | Right Edge | 10 | 9400 | 1880.0 | 0.13 | 0.187 | 23.04 | 23.50 | 1.112 | 0.208 | / |
| | Bottom Edge | 10 | 9400 | 1880.0 | 0.08 | 0.679 | 23.04 | 23.50 | 1.112 | 0.755 | / |
| Note: Refer to ANNEX C for the detailed test data for each test configuration. | | | | | | | | | | | |

## 10.4WCDMA Band 4

| Mode | Position | Dist. (mm) | Ch. | Freq. (MHz) | Power Drift (dB) | 1g Meas SAR (W/kg) | Meas. Power (dBm) | Max. tune-up power (dBm) | Scaling Factor | 1g Scaled SAR (W/kg) | Meas. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Head** | | | | | | | | | | | |
| RMC | Left Cheek | 0 | 1312 | 1712.4 | -0.11 | 0.553 | 23.21 | 23.50 | 1.069 | 0.591 | / |
| | Left Tilt | 0 | 1312 | 1712.4 | 0.00 | 0.239 | 23.21 | 23.50 | 1.069 | 0.256 | / |
| | Right Cheek | 0 | 1312 | 1712.4 | -0.01 | 0.713 | 23.21 | 23.50 | 1.069 | 0.762 | / |
| | | 0 | 1412 | 1732.4 | -0.07 | 0.865 | 22.75 | 23.50 | 1.189 | **1.028** | 7# |
| | | 0 | 1513 | 1752.6 | -0.15 | 0.843 | 23.00 | 23.50 | 1.122 | 0.946 | / |
| | Right Tilt | 0 | 1312 | 1712.4 | -0.07 | 0.331 | 23.21 | 23.50 | 1.069 | 0.354 | / |
| **Body-worn Accessory&Hotspot** | | | | | | | | | | | |
| RMC | Front Side | 10 | 1312 | 1712.4 | 0.02 | 0.924 | 23.21 | 23.50 | 1.069 | 0.988 | / |
| | | 10 | 1412 | 1732.4 | -0.15 | 0.939 | 22.75 | 23.50 | 1.189 | 1.116 | / |
| | | 10 | 1513 | 1752.6 | 0.14 | 0.908 | 23.00 | 23.50 | 1.122 | 1.019 | / |
| | Back Side | 10 | 1312 | 1712.4 | 0.08 | 0.742 | 23.21 | 23.50 | 1.069 | 0.793 | / |
| | Left Edge | 10 | 1312 | 1712.4 | -0.19 | 0.617 | 23.21 | 23.50 | 1.069 | 0.660 | / |
| | Right Edge | 10 | 1312 | 1712.4 | 0.14 | 0.132 | 23.21 | 23.50 | 1.069 | 0.141 | / |
| | Bottom Edge | 10 | 1312 | 1712.4 | -0.12 | 0.948 | 23.21 | 23.50 | 1.069 | 1.013 | / |
| | | 10 | 1412 | 1732.4 | 0.12 | 0.952 | 22.75 | 23.50 | 1.189 | **1.131** | 8# |
| | | 10 | 1513 | 1752.6 | 0.15 | 0.931 | 23.00 | 23.50 | 1.122 | 1.045 | / |
| Note: Refer to ANNEX C for the detailed test data for each test configuration. | | | | | | | | | | | |

## 10.5WCDMA Band 5

| Mode | Position | Dist. (mm) | Ch. | Freq. (MHz) | Power Drift (dB) | 1g Meas SAR (W/kg) | Meas. Power (dBm) | Max. tune-up power (dBm) | Scaling Factor | 1g Scaled SAR (W/kg) | Meas. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Head** | | | | | | | | | | | |
| RMC | Left Cheek | 0 | 4233 | 846.6 | -0.01 | 0.774 | 23.31 | 24.50 | 1.315 | 1.018 | / |
| | | 0 | 4132 | 826.4 | 0.03 | 0.792 | 22.96 | 24.50 | 1.426 | **1.129** | 9# |
| | | 0 | 4182 | 836.4 | 0.19 | 0.668 | 22.85 | 24.50 | 1.462 | 0.977 | / |
| | Left Tilt | 0 | 4233 | 846.6 | 0.16 | 0.487 | 23.31 | 24.50 | 1.315 | 0.641 | / |
| | Right Cheek | 0 | 4233 | 846.6 | 0.04 | 0.622 | 23.31 | 24.50 | 1.315 | 0.818 | / |
| | | 0 | 4132 | 826.4 | -0.05 | 0.630 | 22.96 | 24.50 | 1.426 | 0.898 | / |
| | | 0 | 4182 | 836.4 | -0.11 | 0.597 | 22.85 | 24.50 | 1.462 | 0.873 | / |
| | Right Tilt | 0 | 4233 | 846.6 | 0.13 | 0.478 | 23.31 | 24.50 | 1.315 | 0.629 | / |
| **Body-worn Accessory&Hotspot** | | | | | | | | | | | |
| RMC | Front Side | 10 | 4233 | 846.6 | 0.02 | 0.827 | 23.31 | 24.50 | 1.315 | 1.088 | / |
| | | 10 | 4132 | 826.4 | 0.19 | 0.785 | 22.96 | 24.50 | 1.426 | **1.119** | 10# |
| | | 10 | 4182 | 836.4 | 0.02 | 0.672 | 22.85 | 24.50 | 1.462 | 0.983 | / |
| | Back Side | 10 | 4233 | 846.6 | -0.07 | 0.720 | 23.31 | 24.50 | 1.315 | 0.947 | / |
| | | 10 | 4132 | 826.4 | 0.06 | 0.705 | 22.96 | 24.50 | 1.426 | 1.005 | / |
| | | 10 | 4182 | 836.4 | -0.16 | 0.616 | 22.85 | 24.50 | 1.462 | 0.901 | / |
| | Left Edge | 10 | 4233 | 846.6 | 0.12 | 0.507 | 23.31 | 24.50 | 1.315 | 0.667 | / |
| | Right Edge | 10 | 4233 | 846.6 | -0.11 | 0.521 | 23.31 | 24.50 | 1.315 | 0.685 | / |
| | Bottom Edge | 10 | 4233 | 846.6 | -0.08 | 0.143 | 23.31 | 24.50 | 1.315 | 0.188 | / |
| Note: Refer to ANNEX C for the detailed test data for each test configuration. | | | | | | | | | | | |

## 10.6 LTE Band 2 (20MHz Bandwidth)

| Mode | Position | Dist. (mm) | Ch. | Freq. (MHz) | RB Num. | RB Start | Power Drift (dB) | 1g Meas SAR (W/kg) | Meas. Power (dBm) | Max. tune-up power (dBm) | Scaling Factor | 1g Scaled SAR (W/kg) | Meas. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Head** | | | | | | | | | | | | | |
| QPSK | Left Cheek | 0 | 18700 | 1860 | 1 | Low | -0.10 | 0.521 | 22.89 | 23.50 | 1.151 | 0.600 | / |
| | | 0 | 18900 | 1880 | 50 | Low | 0.08 | 0.403 | 21.60 | 22.50 | 1.230 | 0.496 | / |
| | Left Tilt | 0 | 18700 | 1860 | 1 | Low | -0.16 | 0.237 | 22.89 | 23.50 | 1.151 | 0.273 | / |
| | | 0 | 18900 | 1880 | 50 | Low | -0.16 | 0.192 | 21.60 | 22.50 | 1.230 | 0.236 | / |
| | Right Cheek | 0 | 18700 | 1860 | 1 | Low | -0.04 | 0.620 | 22.89 | 23.50 | 1.151 | 0.713 | / |
| | | 0 | 18900 | 1880 | 1 | High | -0.04 | 0.629 | 22.69 | 23.50 | 1.205 | **0.758** | 11# |
| | | 0 | 19100 | 1900 | 1 | Mid | 0.12 | 0.548 | 22.58 | 23.50 | 1.236 | 0.677 | / |
| | | 0 | 18900 | 1880 | 50 | Low | 0.15 | 0.486 | 21.60 | 22.50 | 1.230 | 0.598 | / |
| | | 0 | 18900 | 1880 | 100 | Low | 0.11 | 0.490 | 21.56 | 22.50 | 1.242 | 0.608 | / |
| | Right Tilt | 0 | 18700 | 1860 | 1 | Low | -0.02 | 0.287 | 22.89 | 23.50 | 1.151 | 0.330 | / |
| | | 0 | 18900 | 1880 | 50 | Low | -0.15 | 0.227 | 21.60 | 22.50 | 1.230 | 0.279 | / |
| **Body-worn Accessory&Hotspot** | | | | | | | | | | | | | |
| QPSK | Front Side | 10 | 18700 | 1860 | 1 | Low | 0.08 | 0.980 | 22.89 | 23.50 | 1.151 | **1.128** | 12# |
| | | 10 | 18900 | 1880 | 1 | High | 0.04 | 0.929 | 22.69 | 23.50 | 1.205 | 1.119 | / |
| | | 10 | 19100 | 1900 | 1 | Mid | -0.12 | 0.871 | 22.58 | 23.50 | 1.236 | 1.077 | / |
| | | 10 | 18900 | 1880 | 50 | Low | 0.10 | 0.692 | 21.60 | 22.50 | 1.230 | 0.851 | / |
| | | 10 | 18700 | 1860 | 50 | Low | -0.18 | 0.728 | 21.52 | 22.50 | 1.253 | 0.912 | / |
| | | 10 | 19100 | 1900 | 50 | Mid | -0.17 | 0.690 | 21.53 | 22.50 | 1.250 | 0.863 | / |
| | | 10 | 18900 | 1880 | 100 | Low | 0.02 | 0.671 | 21.56 | 22.50 | 1.242 | 0.833 | / |
| | Back Side | 10 | 18700 | 1860 | 1 | Low | -0.15 | 0.851 | 22.89 | 23.50 | 1.151 | 0.979 | / |
| | | 10 | 18900 | 1880 | 1 | High | 0.00 | 0.832 | 22.69 | 23.50 | 1.205 | 1.003 | / |
| | | 10 | 19100 | 1900 | 1 | Mid | 0.00 | 0.804 | 22.58 | 23.50 | 1.236 | 0.994 | / |
| | | 10 | 18900 | 1880 | 50 | Low | -0.04 | 0.648 | 21.60 | 22.50 | 1.230 | 0.797 | / |
| | | 10 | 18900 | 1880 | 100 | Low | -0.13 | 0.629 | 21.56 | 22.50 | 1.242 | 0.781 | / |
| | Left Edge | 10 | 18700 | 1860 | 1 | Low | -0.17 | 0.597 | 22.89 | 23.50 | 1.151 | 0.687 | / |
| | | 10 | 18900 | 1880 | 50 | Low | 0.03 | 0.450 | 21.60 | 22.50 | 1.230 | 0.554 | / |
| | Right Edge | 10 | 18700 | 1860 | 1 | Low | 0.02 | 0.166 | 22.89 | 23.50 | 1.151 | 0.191 | / |
| | | 10 | 18900 | 1880 | 50 | Low | -0.16 | 0.129 | 21.60 | 22.50 | 1.230 | 0.159 | / |
| | Bottom Edge | 10 | 18700 | 1860 | 1 | Low | -0.18 | 0.663 | 22.89 | 23.50 | 1.151 | 0.763 | / |
| | | 10 | 18900 | 1880 | 50 | Low | -0.07 | 0.504 | 21.60 | 22.50 | 1.230 | 0.620 | / |
| Note: Refer to ANNEX C for the detailed test data for each test configuration. | | | | | | | | | | | | | |

## 10.7 LTE Band 4 (20MHz Bandwidth)

| Mode | Position | Dist. (mm) | Ch. | Freq. (MHz) | RB Num. | RB Start | Power Drift (dB) | 1g Meas SAR (W/kg) | Meas. Power (dBm) | Max. tune-up power (dBm) | Scaling Factor | 1g Scaled SAR (W/kg) | Meas. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Head** | | | | | | | | | | | | | |
| QPSK | Left Cheek | 0 | 20050 | 1720 | 1 | Low | 0.14 | 0.523 | 22.48 | 23.50 | 1.265 | 0.661 | / |
| | | 0 | 20175 | 1732.5 | 50 | High | 0.00 | 0.423 | 21.25 | 22.50 | 1.334 | 0.564 | / |
| | Left Tilt | 0 | 20050 | 1720 | 1 | Low | 0.14 | 0.183 | 22.48 | 23.50 | 1.265 | 0.231 | / |
| | | 0 | 20175 | 1732.5 | 50 | High | -0.04 | 0.144 | 21.25 | 22.50 | 1.334 | 0.192 | / |
| | Right Cheek | 0 | 20050 | 1720 | 1 | Low | 0.17 | 0.733 | 22.48 | 23.50 | 1.265 | 0.927 | / |
| | | 0 | 20175 | 1732.5 | 1 | High | -0.05 | 0.728 | 22.41 | 23.50 | 1.285 | 0.936 | / |
| | | 0 | 20300 | 1745 | 1 | High | -0.03 | 0.731 | 22.42 | 23.50 | 1.282 | **0.937** | 13# |
| | | 0 | 20175 | 1732.5 | 50 | High | -0.13 | 0.596 | 21.25 | 22.50 | 1.334 | 0.795 | / |
| | | 0 | 20175 | 1732.5 | 100 | Low | 0.03 | 0.602 | 21.20 | 22.50 | 1.349 | 0.812 | / |
| | Right Tilt | 0 | 20050 | 1720 | 1 | Low | -0.04 | 0.240 | 22.48 | 23.50 | 1.265 | 0.304 | / |
| | | 0 | 20175 | 1732.5 | 50 | High | 0.05 | 0.201 | 21.25 | 22.50 | 1.334 | 0.268 | / |
| **Body-worn Accessory&Hotspot** | | | | | | | | | | | | | |
| QPSK | Front Side | 10 | 20050 | 1720 | 1 | Low | 0.03 | 0.833 | 22.48 | 23.50 | 1.265 | 1.054 | / |
| | | 10 | 20175 | 1732.5 | 1 | High | 0.18 | 0.831 | 22.41 | 23.50 | 1.285 | 1.068 | / |
| | | 10 | 20300 | 1745 | 1 | High | 0.15 | 0.810 | 22.42 | 23.50 | 1.282 | 1.039 | / |
| | | 10 | 20175 | 1732.5 | 50 | High | -0.19 | 0.663 | 21.25 | 22.50 | 1.334 | 0.885 | / |
| | | 10 | 20050 | 1720 | 50 | High | 0.04 | 0.648 | 21.16 | 22.50 | 1.361 | 0.882 | / |
| | | 10 | 20300 | 1745 | 50 | Low | 0.13 | 0.615 | 21.21 | 22.50 | 1.346 | 0.828 | / |
| | | 10 | 20175 | 1732.5 | 100 | Low | -0.06 | 0.655 | 21.20 | 22.50 | 1.349 | 0.884 | / |
| | Back Side | 10 | 20050 | 1720 | 1 | Low | -0.15 | 0.762 | 22.48 | 23.50 | 1.265 | 0.964 | / |
| | | 10 | 20175 | 1732.5 | 1 | High | -0.14 | 0.739 | 22.41 | 23.50 | 1.285 | 0.950 | / |
| | | 10 | 20300 | 1745 | 1 | High | -0.07 | 0.723 | 22.42 | 23.50 | 1.282 | 0.927 | / |
| | | 10 | 20175 | 1732.5 | 50 | High | 0.08 | 0.598 | 21.25 | 22.50 | 1.334 | 0.797 | / |
| | | 10 | 20175 | 1732.5 | 100 | Low | 0.06 | 0.607 | 21.20 | 22.50 | 1.349 | 0.819 | / |
| | Left Edge | 10 | 20050 | 1720 | 1 | Low | 0.06 | 0.543 | 22.48 | 23.50 | 1.265 | 0.687 | / |
| | | 10 | 20175 | 1732.5 | 50 | High | -0.15 | 0.448 | 21.25 | 22.50 | 1.334 | 0.597 | / |
| | Right Edge | 10 | 20050 | 1720 | 1 | Low | -0.17 | 0.121 | 22.48 | 23.50 | 1.265 | 0.153 | / |
| | | 10 | 20175 | 1732.5 | 50 | High | 0.07 | 0.098 | 21.25 | 22.50 | 1.334 | 0.131 | / |
| | Bottom Edge | 10 | 20050 | 1720 | 1 | Low | -0.12 | 0.893 | 22.48 | 23.50 | 1.265 | **1.129** | 14# |
| | | 10 | 20175 | 1732.5 | 1 | High | 0.08 | 0.872 | 22.41 | 23.50 | 1.285 | 1.121 | / |
| | | 10 | 20300 | 1745 | 1 | High | 0.06 | 0.879 | 22.42 | 23.50 | 1.282 | 1.127 | / |
| | | 10 | 20175 | 1732.5 | 50 | High | 0.04 | 0.669 | 21.25 | 22.50 | 1.334 | 0.892 | / |
| | | 10 | 20050 | 1720 | 50 | High | -0.17 | 0.652 | 21.16 | 22.50 | 1.361 | 0.888 | / |
| | | 10 | 20300 | 1745 | 50 | Low | 0.00 | 0.656 | 21.21 | 22.50 | 1.346 | 0.883 | / |
| | | 10 | 20175 | 1732.5 | 100 | Low | 0.03 | 0.673 | 21.20 | 22.50 | 1.349 | 0.908 | / |
| | | 10 | 20050 | 1720 | 1 | Low | 0.03 | 0.833 | 22.48 | 23.50 | 1.265 | 1.054 | / |
| | | 10 | 20175 | 1732.5 | 1 | High | 0.18 | 0.831 | 22.41 | 23.50 | 1.285 | 1.068 | / |

Note: Refer to ANNEX C for the detailed test data for each test configuration.

## 10.8LTE Band 5 (10MHz Bandwidth)

| Mode | Position | Dist. (mm) | Ch. | Freq. (MHz) | RB Num. | RB Start | Power Drift (dB) | 1g Meas SAR (W/kg) | Meas. Power (dBm) | Max. tune-up power (dBm) | Scaling Factor | 1g Scaled SAR (W/kg) | Meas. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Head** | | | | | | | | | | | | | |
| QPSK | Left Cheek | 0 | 20600 | 844 | 1 | High | 0.04 | 0.718 | 22.84 | 24.00 | 1.306 | 0.938 | / |
| | | 0 | 20525 | 836.5 | 1 | High | 0.12 | 0.709 | 22.69 | 24.00 | 1.352 | 0.959 | / |
| | | 0 | 20450 | 829 | 1 | Mid | -0.18 | 0.727 | 22.54 | 24.00 | 1.400 | **1.017** | 15# |
| | | 0 | 20600 | 844 | 25 | High | 0.17 | 0.583 | 21.77 | 23.00 | 1.327 | 0.774 | / |
| | | 0 | 20450 | 829 | 100 | Low | -0.14 | 0.576 | 21.64 | 23.00 | 1.368 | 0.788 | / |
| | Left Tilt | 0 | 20600 | 844 | 1 | High | 0.10 | 0.560 | 22.84 | 24.00 | 1.306 | 0.731 | / |
| | | 0 | 20600 | 844 | 25 | High | 0.11 | 0.426 | 21.77 | 23.00 | 1.327 | 0.565 | / |
| | Right Cheek | 0 | 20600 | 844 | 1 | High | -0.01 | 0.694 | 22.84 | 24.00 | 1.306 | 0.906 | / |
| | | 0 | 20525 | 836.5 | 1 | High | 0.03 | 0.652 | 22.69 | 24.00 | 1.352 | 0.882 | / |
| | | 0 | 20450 | 829 | 1 | Mid | -0.14 | 0.639 | 22.54 | 24.00 | 1.400 | 0.894 | / |
| | | 0 | 20600 | 844 | 25 | High | 0.08 | 0.535 | 21.77 | 23.00 | 1.327 | 0.710 | / |
| | | 0 | 20450 | 829 | 100 | Low | 0.06 | 0.523 | 21.64 | 23.00 | 1.368 | 0.715 | / |
| | Right Tilt | 0 | 20600 | 844 | 1 | High | 0.04 | 0.530 | 22.84 | 24.00 | 1.306 | 0.692 | / |
| | | 0 | 20600 | 844 | 25 | High | -0.03 | 0.414 | 21.77 | 23.00 | 1.327 | 0.550 | / |
| **Body-worn Accessory&Hotspot** | | | | | | | | | | | | | |
| QPSK | Front Side | 10 | 20600 | 844 | 1 | High | 0.08 | 0.679 | 22.84 | 24.00 | 1.306 | 0.887 | / |
| | | 10 | 20525 | 836.5 | 1 | High | 0.04 | 0.653 | 22.69 | 24.00 | 1.352 | 0.883 | / |
| | | 10 | 20450 | 829 | 1 | Mid | -0.04 | 0.725 | 22.54 | 24.00 | 1.400 | **1.015** | 16# |
| | | 10 | 20600 | 844 | 25 | High | -0.03 | 0.552 | 21.77 | 23.00 | 1.327 | 0.733 | / |
| | | 10 | 20450 | 829 | 100 | Low | 0.02 | 0.575 | 21.64 | 23.00 | 1.368 | 0.786 | / |
| | Back Side | 10 | 20600 | 844 | 1 | High | 0.01 | 0.645 | 22.84 | 24.00 | 1.306 | 0.842 | / |
| | | 10 | 20525 | 836.5 | 1 | High | 0.07 | 0.653 | 22.69 | 24.00 | 1.352 | 0.883 | / |
| | | 10 | 20450 | 829 | 1 | Mid | -0.17 | 0.689 | 22.54 | 24.00 | 1.400 | 0.964 | / |
| | | 10 | 20600 | 844 | 25 | High | -0.16 | 0.527 | 21.77 | 23.00 | 1.327 | 0.700 | / |
| | | 10 | 20450 | 829 | 100 | Low | -0.14 | 0.533 | 21.64 | 23.00 | 1.368 | 0.729 | / |
| | Left Edge | 10 | 20600 | 844 | 1 | High | -0.04 | 0.454 | 22.84 | 24.00 | 1.306 | 0.593 | / |
| | | 10 | 20600 | 844 | 25 | High | -0.02 | 0.350 | 21.77 | 23.00 | 1.327 | 0.465 | / |
| | Right Edge | 10 | 20600 | 844 | 1 | High | 0.17 | 0.463 | 22.84 | 24.00 | 1.306 | 0.605 | / |
| | | 10 | 20600 | 844 | 25 | High | -0.17 | 0.382 | 21.77 | 23.00 | 1.327 | 0.507 | / |
| | Bottom Edge | 10 | 20600 | 844 | 1 | High | 0.19 | 0.138 | 22.84 | 24.00 | 1.306 | 0.180 | / |
| | | 10 | 20600 | 844 | 25 | High | -0.10 | 0.107 | 21.77 | 23.00 | 1.327 | 0.142 | / |
| Note: Refer to ANNEX C for the detailed test data for each test configuration. | | | | | | | | | | | | | |

## 10.9 LTE Band 7 (20MHz Bandwidth)

| Mode | Position | Dist. (mm) | Ch. | Freq. (MHz) | RB Num. | RB Start | Power Drift (dB) | 1g Meas SAR (W/kg) | Meas. Power (dBm) | Max. tune-up power (dBm) | Scaling Factor | 1g Scaled SAR (W/kg) | Meas. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Head** | | | | | | | | | | | | | |
| QPSK | Left Cheek | 0 | 20850 | 2510 | 1 | Low | -0.07 | 0.691 | 21.98 | 22.00 | 1.005 | 0.694 | / |
| | | 0 | 20850 | 2510 | 50 | Low | 0.10 | 0.533 | 20.63 | 21.00 | 1.089 | 0.580 | / |
| | Left Tilt | 0 | 20850 | 2510 | 1 | Low | -0.16 | 0.236 | 21.98 | 22.00 | 1.005 | 0.237 | / |
| | | 0 | 20850 | 2510 | 50 | Low | -0.09 | 0.179 | 20.63 | 21.00 | 1.089 | 0.195 | / |
| | Right Cheek | 0 | 20850 | 2510 | 1 | Low | -0.09 | 0.942 | 21.98 | 22.00 | 1.005 | 0.946 | / |
| | | 0 | 21100 | 2535 | 1 | Low | -0.17 | 0.928 | 21.33 | 22.00 | 1.167 | 1.083 | / |
| | | 0 | 21350 | 2560 | 1 | Low | -0.15 | 0.982 | 21.25 | 22.00 | 1.189 | **1.167** | 17# |
| | | 0 | 20850 | 2510 | 50 | Low | -0.04 | 0.765 | 20.63 | 21.00 | 1.089 | 0.833 | / |
| | | 0 | 21100 | 2535 | 50 | Low | 0.05 | 0.746 | 20.32 | 21.00 | 1.169 | 0.872 | / |
| | | 0 | 21350 | 2560 | 50 | Low | 0.03 | 0.804 | 20.28 | 21.00 | 1.180 | 0.949 | / |
| | | 0 | 20850 | 2510 | 100 | Low | -0.12 | 0.788 | 20.55 | 21.00 | 1.109 | 0.874 | / |
| | Right Tilt | 0 | 20850 | 2510 | 1 | Low | 0.08 | 0.361 | 21.98 | 22.00 | 1.005 | 0.363 | / |
| | | 0 | 20850 | 2510 | 50 | Low | 0.15 | 0.276 | 20.63 | 21.00 | 1.089 | 0.301 | / |
| **Body-worn Accessory&Hotspot** | | | | | | | | | | | | | |
| QPSK | Front Side | 10 | 20850 | 2510 | 1 | Low | -0.11 | 0.576 | 21.98 | 22.00 | 1.005 | 0.579 | / |
| | | 10 | 21100 | 2535 | 1 | Low | 0.08 | 0.539 | 21.33 | 22.00 | 1.167 | 0.629 | / |
| | | 10 | 21350 | 2560 | 1 | Low | -0.14 | 0.611 | 21.25 | 22.00 | 1.189 | **0.726** | 18# |
| | | 10 | 20850 | 2510 | 50 | Low | 0.12 | 0.464 | 20.63 | 21.00 | 1.089 | 0.505 | / |
| | | 10 | 20850 | 2510 | 100 | Low | 0.12 | 0.472 | 20.55 | 21.00 | 1.109 | 0.524 | / |
| | Back Side | 10 | 20850 | 2510 | 1 | Low | -0.03 | 0.503 | 21.98 | 22.00 | 1.005 | 0.505 | / |
| | | 10 | 20850 | 2510 | 50 | Low | 0.01 | 0.419 | 20.63 | 21.00 | 1.089 | 0.456 | / |
| | Left Edge | 10 | 20850 | 2510 | 1 | Low | -0.07 | 0.541 | 21.98 | 22.00 | 1.005 | 0.543 | / |
| | | 10 | 20850 | 2510 | 50 | Low | 0.08 | 0.456 | 20.63 | 21.00 | 1.089 | 0.497 | / |
| | Right Edge | 10 | 20850 | 2510 | 1 | Low | -0.15 | 0.219 | 21.98 | 22.00 | 1.005 | 0.220 | / |
| | | 10 | 20850 | 2510 | 50 | Low | 0.19 | 0.168 | 20.63 | 21.00 | 1.089 | 0.183 | / |
| | Bottom Edge | 10 | 20850 | 2510 | 1 | Low | 0.03 | 0.533 | 21.98 | 22.00 | 1.005 | 0.535 | / |
| | | 10 | 20850 | 2510 | 50 | Low | 0.11 | 0.428 | 20.63 | 21.00 | 1.089 | 0.466 | / |
| Note: Refer to ANNEX C for the detailed test data for each test configuration. | | | | | | | | | | | | | |

## 10.10 LTE Band 12 (10MHz Bandwidth)

| Mode | Position | Dist. (mm) | Ch. | Freq. (MHz) | RB Num. | RB Start | Power Drift (dB) | 1g Meas SAR (W/kg) | Meas. Power (dBm) | Max. tune-up power (dBm) | Scaling Factor | 1g Scaled SAR (W/kg) | Meas. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Head** | | | | | | | | | | | | | |
| QPSK | Left Cheek | 0 | 23095 | 707.5 | 1 | Mid | 0.04 | 0.519 | 22.98 | 24.00 | 1.265 | 0.656 | / |
| | | 0 | 23060 | 704 | 1 | High | 0.07 | 0.508 | 22.83 | 24.00 | 1.309 | 0.665 | / |
| | | 0 | 23130 | 711 | 1 | Low | -0.03 | 0.534 | 22.90 | 24.00 | 1.288 | **0.688** | 19# |
| | | 0 | 23130 | 711 | 25 | Low | 0.15 | 0.429 | 22.05 | 23.00 | 1.245 | 0.534 | / |
| | | 0 | 23060 | 704 | 50 | Low | -0.10 | 0.431 | 22.04 | 23.00 | 1.247 | 0.538 | / |
| | Left Tilt | 0 | 23095 | 707.5 | 1 | Mid | 0.00 | 0.218 | 22.98 | 24.00 | 1.265 | 0.276 | / |
| | | 0 | 23130 | 711 | 25 | Low | -0.03 | 0.173 | 22.05 | 23.00 | 1.245 | 0.215 | / |
| | Right Cheek | 0 | 23095 | 707.5 | 1 | Mid | 0.12 | 0.386 | 22.98 | 24.00 | 1.265 | 0.488 | / |
| | | 0 | 23130 | 711 | 25 | Low | -0.03 | 0.306 | 22.05 | 23.00 | 1.245 | 0.381 | / |
| | Right Tilt | 0 | 23095 | 707.5 | 1 | Mid | -0.13 | 0.217 | 22.98 | 24.00 | 1.265 | 0.274 | / |
| | | 0 | 23130 | 711 | 25 | Low | 0.06 | 0.175 | 22.05 | 23.00 | 1.245 | 0.218 | / |
| **Body-worn Accessory&Hotspot** | | | | | | | | | | | | | |
| QPSK | Front Side | 10 | 23095 | 707.5 | 1 | Mid | 0.09 | 0.428 | 22.98 | 24.00 | 1.265 | 0.541 | / |
| | | 10 | 23060 | 704 | 1 | High | -0.04 | 0.407 | 22.83 | 24.00 | 1.309 | 0.533 | / |
| | | 10 | 23130 | 711 | 1 | Low | -0.01 | 0.460 | 22.90 | 24.00 | 1.288 | **0.593** | 20# |
| | | 10 | 23130 | 711 | 25 | Low | 0.06 | 0.373 | 22.05 | 23.00 | 1.245 | 0.464 | / |
| | | 10 | 23060 | 704 | 50 | Low | -0.09 | 0.369 | 22.04 | 23.00 | 1.247 | 0.460 | / |
| | Back Side | 10 | 23095 | 707.5 | 1 | Mid | 0.06 | 0.433 | 22.98 | 24.00 | 1.265 | 0.548 | / |
| | | 10 | 23130 | 711 | 25 | Low | -0.12 | 0.342 | 22.05 | 23.00 | 1.245 | 0.426 | / |
| | Left Edge | 10 | 23095 | 707.5 | 1 | Mid | 0.19 | 0.343 | 22.98 | 24.00 | 1.265 | 0.434 | / |
| | | 10 | 23130 | 711 | 25 | Low | 0.07 | 0.274 | 22.05 | 23.00 | 1.245 | 0.341 | / |
| | Right Edge | 10 | 23095 | 707.5 | 1 | Mid | -0.19 | 0.407 | 22.98 | 24.00 | 1.265 | 0.515 | / |
| | | 10 | 23130 | 711 | 25 | Low | 0.00 | 0.329 | 22.05 | 23.00 | 1.245 | 0.409 | / |
| | Bottom Edge | 10 | 23095 | 707.5 | 1 | Mid | 0.19 | 0.061 | 22.98 | 24.00 | 1.265 | 0.077 | / |
| | | 10 | 23130 | 711 | 25 | Low | 0.09 | 0.049 | 22.05 | 23.00 | 1.245 | 0.061 | / |
| Note: Refer to ANNEX C for the detailed test data for each test configuration. | | | | | | | | | | | | | |

## 10.11 LTE Band 17 (10MHz Bandwidth)

| Mode | Position | Dist. (mm) | Ch. | Freq. (MHz) | RB Num. | RB Start | Power Drift (dB) | 1g Meas SAR (W/kg) | Meas. Power (dBm) | Max. tune-up power (dBm) | Scaling Factor | 1g Scaled SAR (W/kg) | Meas. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Head** | | | | | | | | | | | | | |
| QPSK | Left Cheek | 0 | 23780 | 709 | 1 | Low | 0.14 | 0.472 | 22.94 | 24.00 | 1.276 | 0.602 | / |
| | | 0 | 23790 | 710 | 1 | Low | -0.19 | 0.490 | 22.90 | 24.00 | 1.288 | **0.631** | 21# |
| | | 0 | 23800 | 711 | 1 | Low | 0.09 | 0.484 | 22.92 | 24.00 | 1.282 | 0.621 | / |
| | | 0 | 23780 | 709 | 25 | Low | 0.06 | 0.408 | 21.99 | 23.00 | 1.262 | 0.515 | / |
| | | 0 | 23780 | 709 | 50 | Low | 0.06 | 0.412 | 21.78 | 23.00 | 1.324 | 0.546 | / |
| | Left Tilt | 0 | 23780 | 709 | 1 | Low | 0.13 | 0.225 | 22.94 | 24.00 | 1.276 | 0.287 | / |
| | | 0 | 23780 | 709 | 25 | Low | 0.14 | 0.185 | 21.99 | 23.00 | 1.262 | 0.233 | / |
| | Right Cheek | 0 | 23780 | 709 | 1 | Low | -0.08 | 0.383 | 22.94 | 24.00 | 1.276 | 0.489 | / |
| | | 0 | 23780 | 709 | 25 | Low | -0.07 | 0.310 | 21.99 | 23.00 | 1.262 | 0.391 | / |
| | Right Tilt | 0 | 23780 | 709 | 1 | Low | 0.08 | 0.208 | 22.94 | 24.00 | 1.276 | 0.265 | / |
| | | 0 | 23780 | 709 | 25 | Low | -0.09 | 0.171 | 21.99 | 23.00 | 1.262 | 0.216 | / |
| **Body-worn Accessory&Hotspot** | | | | | | | | | | | | | |
| QPSK | Front Side | 10 | 23780 | 709 | 1 | Low | 0.04 | 0.508 | 22.94 | 24.00 | 1.276 | 0.648 | / |
| | | 10 | 23790 | 710 | 1 | Low | 0.19 | 0.511 | 22.90 | 24.00 | 1.288 | **0.658** | 22# |
| | | 10 | 23800 | 711 | 1 | Low | 0.07 | 0.492 | 22.92 | 24.00 | 1.282 | 0.631 | / |
| | | 10 | 23780 | 709 | 25 | Low | -0.12 | 0.417 | 21.99 | 23.00 | 1.262 | 0.526 | / |
| | | 10 | 23780 | 709 | 50 | Low | -0.12 | 0.417 | 21.78 | 23.00 | 1.324 | 0.552 | / |
| | Back Side | 10 | 23780 | 709 | 1 | Low | 0.02 | 0.503 | 22.94 | 24.00 | 1.276 | 0.642 | / |
| | | 10 | 23780 | 709 | 25 | Low | -0.11 | 0.407 | 21.99 | 23.00 | 1.262 | 0.514 | / |
| | Left Edge | 10 | 23780 | 709 | 1 | Low | 0.02 | 0.376 | 22.94 | 24.00 | 1.276 | 0.480 | / |
| | | 10 | 23780 | 709 | 25 | Low | 0.11 | 0.308 | 21.99 | 23.00 | 1.262 | 0.389 | / |
| | Right Edge | 10 | 23780 | 709 | 1 | Low | -0.11 | 0.465 | 22.94 | 24.00 | 1.276 | 0.594 | / |
| | | 10 | 23780 | 709 | 25 | Low | 0.00 | 0.370 | 21.99 | 23.00 | 1.262 | 0.467 | / |
| | Bottom Edge | 10 | 23780 | 709 | 1 | Low | -0.06 | 0.066 | 22.94 | 24.00 | 1.276 | 0.084 | / |
| | | 10 | 23780 | 709 | 25 | Low | 0.18 | 0.053 | 21.99 | 23.00 | 1.262 | 0.067 | / |
| Note: Refer to ANNEX C for the detailed test data for each test configuration. | | | | | | | | | | | | | |

## 10.12 WIFI 2.4GHz

| Mode | Position | Dist. (mm) | Ch. | Freq. (MHz) | Power Drift (dB) | 1g Meas SAR (W/kg) | Meas. Power (dBm) | Max. tune-up power (dBm) | Scaling Factor | Duty cycle Setting | Duty cycle Factor | 1g Scaled SAR (W/kg) | Meas. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Head** | | | | | | | | | | | | | |
| 802.11 b | Left Cheek | 0 | 11 | 2462 | 0.06 | 0.217 | 15.00 | 15.00 | 1.000 | 97.56 | 1.025 | 0.222 | / |
| | Left Tilt | 0 | 11 | 2462 | 0.06 | 0.207 | 15.00 | 15.00 | 1.000 | 97.56 | 1.025 | 0.212 | / |
| | Right Cheek | 0 | 11 | 2462 | -0.19 | 0.392 | 15.00 | 15.00 | 1.000 | 97.56 | 1.025 | **0.402** | 23# |
| | | 0 | 4 | 2427 | 0.07 | 0.315 | 14.09 | 14.50 | 1.099 | 97.56 | 1.025 | 0.355 | / |
| | | 0 | 6 | 2437 | 0.12 | 0.261 | 13.14 | 13.50 | 1.086 | 97.56 | 1.025 | 0.291 | / |
| | Right Tilt | 0 | 11 | 2462 | 0.09 | 0.223 | 15.00 | 15.00 | 1.000 | 97.56 | 1.025 | 0.229 | / |
| **Body-worn Accessory&Hotspot** | | | | | | | | | | | | | |
| 802.11 b | Front Side | 10 | 11 | 2462 | 0.08 | 0.058 | 15.00 | 15.00 | 1.000 | 97.56 | 1.025 | 0.059 | / |
| | Back Side | 10 | 11 | 2462 | 0.18 | 0.023 | 15.00 | 15.00 | 1.000 | 97.56 | 1.025 | 0.024 | / |
| | Left Edge | 10 | 11 | 2462 | -0.05 | 0.012 | 15.00 | 15.00 | 1.000 | 97.56 | 1.025 | 0.012 | / |
| | Right Edge | 10 | 11 | 2462 | 0.16 | 0.043 | 15.00 | 15.00 | 1.000 | 97.56 | 1.025 | 0.044 | / |
| | Top Edge | 10 | 11 | 2462 | 0.14 | 0.072 | 15.00 | 15.00 | 1.000 | 97.56 | 1.025 | **0.074** | 24# |
| | | 10 | 4 | 2427 | 0.09 | 0.059 | 14.09 | 14.50 | 1.099 | 97.56 | 1.025 | 0.066 | / |
| | | 10 | 6 | 2437 | 0.12 | 0.046 | 13.14 | 13.50 | 1.086 | 97.56 | 1.025 | 0.051 | / |
| Note: Refer to ANNEX C for the detailed test data for each test configuration. | | | | | | | | | | | | | |

## 10.13 Bluetooth

| Mode | Position | Dist. (mm) | Ch. | Freq. (MHz) | Power Drift (dB) | 1g Meas SAR (W/kg) | Meas. Power (dBm) | Max. tune-up power (dBm) | Scaling Factor | Duty cycle Setting | Duty cycle Factor | 1g Scaled SAR (W/kg) | Meas. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Head** | | | | | | | | | | | | | |
| 3DH5 | Left Cheek | 0 | 39 | 2441 | 0.07 | 0.079 | 7.04 | 7.50 | 1.112 | 76.94 | 1.300 | 0.114 | / |
| | Left Tilt | 0 | 39 | 2441 | -0.06 | 0.066 | 7.04 | 7.50 | 1.112 | 76.94 | 1.300 | 0.095 | / |
| | Right Cheek | 0 | 39 | 2441 | 0.04 | 0.145 | 7.04 | 7.50 | 1.112 | 76.94 | 1.300 | **0.210** | 25# |
| | | 0 | 0 | 2402 | -0.01 | 0.113 | 6.01 | 7.50 | 1.409 | 76.94 | 1.300 | 0.207 | / |
| | | 0 | 78 | 2480 | -0.02 | 0.116 | 6.39 | 7.50 | 1.291 | 76.94 | 1.300 | 0.195 | / |
| | Right Tilt | 0 | 39 | 2441 | 0.18 | 0.073 | 7.04 | 7.50 | 1.112 | 76.94 | 1.300 | 0.105 | / |
| **Body-worn Accessory&Hotspot** | | | | | | | | | | | | | |
| 3DH5 | Front Side | 10 | 39 | 2441 | -0.07 | 0.007 | 7.04 | 7.50 | 1.112 | 76.94 | 1.300 | 0.010 | / |
| | Back Side | 10 | 39 | 2441 | -0.03 | 0.005 | 7.04 | 7.50 | 1.112 | 76.94 | 1.300 | 0.007 | / |
| | Left Edge | 10 | 39 | 2441 | -0.11 | 0.003 | 7.04 | 7.50 | 1.112 | 76.94 | 1.300 | 0.004 | / |
| | Right Edge | 10 | 39 | 2441 | 0.02 | 0.009 | 7.04 | 7.50 | 1.112 | 76.94 | 1.300 | 0.013 | / |
| | Top Edge | 10 | 39 | 2441 | 0.09 | 0.021 | 7.04 | 7.50 | 1.112 | 76.94 | 1.300 | **0.031** | 26# |
| | | 10 | 0 | 2402 | 0.11 | 0.016 | 6.01 | 7.50 | 1.409 | 76.94 | 1.300 | 0.029 | / |
| | | 10 | 78 | 2480 | -0.05 | 0.015 | 6.39 | 7.50 | 1.291 | 76.94 | 1.300 | 0.025 | / |
| Note: Refer to ANNEX C for the detailed test data for each test configuration. | | | | | | | | | | | | | |

# 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) | Repeated 1th Measured SAR (W/kg) | Largest to Smallest SAR Radio |
|---|---|---|---|---|---|---|---|
| 848.8 | GSM 850 | Head | Left Cheek | 0.995 | Yes | 0.978 | 1.02 |
| 836.6 | GSM 850 | Body-worn Accessory&Hotspot | Back Side | 0.828 | Yes | 0.812 | 1.02 |
| 1852.4 | WCDMA Band 2 | Body-worn Accessory&Hotspot | Front Side | 0.997 | Yes | 0.948 | 1.05 |
| 1732.4 | WCDMA Band 4 | Head | Left Cheek | 0.865 | Yes | 0.823 | 1.05 |
| 1732.4 | WCDMA Band 4 | Body-worn Accessory&Hotspot | Bottom Edge | 0.953 | Yes | 0.919 | 1.04 |
| 846.6 | WCDMA Band 5 | Body-worn Accessory&Hotspot | Front Side | 0.827 | Yes | 0.803 | 1.03 |
| 1860 | LTE Band 2 | Body-worn Accessory&Hotspot | Front Side | 0.982 | Yes | 0.915 | 1.07 |
| 1720 | LTE Band 4 | Body-worn Accessory&Hotspot | Bottom Edge | 0.906 | Yes | 0.848 | 1.03 |
| 2560 | LTE Band 7 | Head | Right Cheek | 0.982 | Yes | 0.916 | 1.07 |
| 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. | Simultaneous Tx Combination | Head | Body-worn Accessory&Hotspot |
|---|---|---|---|
| 1 | GSM Voice + 2.4GHz WLAN | Yes | Yes |
| 2 | GPRS/EDGE + 2.4GHz WLAN | Yes | Yes |
| 3 | WCDMA + 2.4GHz WLAN | Yes | Yes |
| 4 | LTE + 2.4GHz WLAN | Yes | Yes |
| 5 | GSM Voice + Bluetooth | Yes | Yes |
| 6 | GPRS/EDGE + Bluetooth | Yes | Yes |
| 7 | WCDMA + Bluetooth | Yes | Yes |
| 8 | LTE + Bluetooth | Yes | Yes |

Note:

1. 2G&3G&4G share the same antenna and can’t transmit simultaneously.
2. WWAN antennas can switch automatically, but can't transmit simultaneously.
3. The maximum SAR summation is calculated based on the same configuration and test position.
4. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.

## 12.2 Sum SAR of Simultaneous Transmission

### 12.2.1 Head Simultaneous Transmission SAR Evaluation for WWAN Antenna with WLAN and Bluetooth

| Band | Position | Stand alone SAR | | | SUM SAR | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | | |
| | | WWAN | 2.4GWIFI | Bluetooth | Sum SAR (1+2) | Sum SAR (1+3) |
| GSM850 | Left Cheek | 1.064 | 0.222 | 0.114 | 1.286 | 1.178 |
| | Left Tilt | 0.552 | 0.212 | 0.095 | 0.764 | 0.647 |
| | Right Cheek | 0.857 | 0.402 | 0.210 | 1.259 | 1.067 |
| | Right Tilt | 0.587 | 0.229 | 0.105 | 0.816 | 0.692 |
| GSM1900 | Left Cheek | 0.436 | 0.222 | 0.114 | 0.658 | 0.550 |
| | Left Tilt | 0.165 | 0.212 | 0.095 | 0.377 | 0.260 |
| | Right Cheek | 0.468 | 0.402 | 0.210 | 0.870 | 0.678 |
| | Right Tilt | 0.205 | 0.229 | 0.105 | 0.434 | 0.310 |
| WCDMA B2 | Left Cheek | 0.746 | 0.222 | 0.114 | 0.968 | 0.860 |
| | Left Tilt | 0.282 | 0.212 | 0.095 | 0.494 | 0.377 |
| | Right Cheek | 0.843 | 0.402 | 0.210 | 1.245 | 1.053 |
| | Right Tilt | 0.345 | 0.229 | 0.105 | 0.574 | 0.450 |
| WCDMA B4 | Left Cheek | 0.591 | 0.222 | 0.114 | 0.813 | 0.705 |
| | Left Tilt | 0.256 | 0.212 | 0.095 | 0.468 | 0.351 |
| | Right Cheek | 1.028 | 0.402 | 0.210 | 1.430 | 1.238 |
| | Right Tilt | 0.354 | 0.229 | 0.105 | 0.583 | 0.459 |
| WCDMA B5 | Left Cheek | 0.897 | 0.222 | 0.114 | 1.119 | 1.011 |
| | Left Tilt | 0.509 | 0.212 | 0.095 | 0.721 | 0.604 |
| | Right Cheek | 0.650 | 0.402 | 0.210 | 1.052 | 0.860 |
| | Right Tilt | 0.499 | 0.229 | 0.105 | 0.728 | 0.604 |
| LTE B2 | Left Cheek | 0.571 | 0.222 | 0.114 | 0.793 | 0.685 |
| | Left Tilt | 0.260 | 0.212 | 0.095 | 0.472 | 0.355 |
| | Right Cheek | 0.719 | 0.402 | 0.210 | 1.121 | 0.929 |
| | Right Tilt | 0.315 | 0.229 | 0.105 | 0.544 | 0.420 |
| LTE B4 | Left Cheek | 0.590 | 0.222 | 0.114 | 0.812 | 0.704 |
| | Left Tilt | 0.206 | 0.212 | 0.095 | 0.418 | 0.301 |
| | Right Cheek | 0.835 | 0.402 | 0.210 | 1.237 | 1.045 |
| | Right Tilt | 0.271 | 0.229 | 0.105 | 0.500 | 0.376 |
| LTE B5 | Left Cheek | 0.808 | 0.222 | 0.114 | 1.030 | 0.922 |
| | Left Tilt | 0.581 | 0.212 | 0.095 | 0.793 | 0.676 |
| | Right Cheek | 0.720 | 0.402 | 0.210 | 1.122 | 0.930 |
| | Right Tilt | 0.550 | 0.229 | 0.105 | 0.779 | 0.655 |
| LTE B7 | Left Cheek | 0.694 | 0.222 | 0.114 | 0.916 | 0.808 |
| | Left Tilt | 0.237 | 0.212 | 0.095 | 0.449 | 0.332 |
| | Right Cheek | 1.167 | 0.402 | 0.210 | **1.569** | 1.377 |
| | Right Tilt | 0.363 | 0.229 | 0.105 | 0.592 | 0.468 |
| LTE B12 | Left Cheek | 0.546 | 0.222 | 0.114 | 0.768 | 0.660 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Left Tilt | 0.219 | 0.212 | 0.095 | 0.431 | 0.314 |
| | Right Cheek | 0.388 | 0.402 | 0.210 | 0.790 | 0.598 |
| | Right Tilt | 0.218 | 0.229 | 0.105 | 0.447 | 0.323 |
| LTE B17 | Left Cheek | 0.501 | 0.222 | 0.114 | 0.723 | 0.615 |
| | Left Tilt | 0.228 | 0.212 | 0.095 | 0.440 | 0.323 |
| | Right Cheek | 0.388 | 0.402 | 0.210 | 0.790 | 0.598 |
| | Right Tilt | 0.211 | 0.229 | 0.105 | 0.440 | 0.316 |

Note:

1: The simultaneous transmission combinations of the three antennas contain combinations of two antennas, so only the worst simultaneous transmission combinations was shown in this table.

2: The highest Summed 1g SAR is 1.569 W/Kg < 1.6 W/kg, so Simultaneous Transmission SAR test is not required.

### 12.2.2 Body-worn Accessory and Hotspot Simultaneous Transmission SAR Evaluation for WWAN Antenna with WLAN and Bluetooth

| Band | Position | Stand alone SAR | | | SUM SAR | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 4 | | |
| | | WWAN | 2.4GWIFI | Bluetooth | Sum SAR (1+2) | Sum SAR (1+3) |
| GSM850 | Front Side 10mm | 0.776 | 0.059 | 0.010 | 0.835 | 0.786 |
| | Back Side 10mm | 0.927 | 0.024 | 0.007 | 0.951 | 0.934 |
| | Left Edge 10mm | 0.635 | 0.012 | 0.004 | 0.647 | 0.639 |
| | Right Edge 10mm | 0.580 | 0.044 | 0.013 | 0.624 | 0.593 |
| | Top Edge 10mm | 0.031 | 0.074 | 0.031 | 0.105 | 0.031 |
| | Bottom Edge 10mm | 0.128 | 0.000 | 0.000 | 0.128 | 0.128 |
| GSM1900 | Front Side 10mm | 0.719 | 0.059 | 0.010 | 0.778 | 0.729 |
| | Back Side 10mm | 0.670 | 0.024 | 0.007 | 0.694 | 0.677 |
| | Left Edge 10mm | 0.460 | 0.012 | 0.004 | 0.472 | 0.464 |
| | Right Edge 10mm | 0.129 | 0.044 | 0.013 | 0.173 | 0.142 |
| | Top Edge 10mm | 0.085 | 0.074 | 0.031 | 0.159 | 0.031 |
| | Bottom Edge 10mm | 0.500 | 0.000 | 0.000 | 0.500 | 0.500 |
| WCDMA B2 | Front Side 10mm | 1.132 | 0.059 | 0.010 | **1.191** | 1.142 |
| | Back Side 10mm | 1.038 | 0.024 | 0.007 | 1.062 | 1.045 |
| | Left Edge 10mm | 0.718 | 0.012 | 0.004 | 0.730 | 0.722 |
| | Right Edge 10mm | 0.208 | 0.044 | 0.013 | 0.252 | 0.221 |
| | Top Edge 10mm | 0.000 | 0.074 | 0.031 | 0.074 | 0.031 |
| | Bottom Edge 10mm | 0.755 | 0.000 | 0.000 | 0.755 | 0.755 |
| WCDMA B4 | Front Side 10mm | 1.116 | 0.059 | 0.010 | 1.175 | 1.126 |
| | Back Side 10mm | 0.793 | 0.024 | 0.007 | 0.817 | 0.800 |
| | Left Edge 10mm | 0.660 | 0.012 | 0.004 | 0.672 | 0.664 |
| | Right Edge 10mm | 0.141 | 0.044 | 0.013 | 0.185 | 0.154 |
| | Top Edge 10mm | 0.000 | 0.074 | 0.031 | 0.074 | 0.031 |
| | Bottom Edge 10mm | 1.131 | 0.000 | 0.000 | 1.131 | 1.131 |
| WCDMA B5 | Front Side 10mm | 0.889 | 0.059 | 0.010 | 0.948 | 0.899 |
| | Back Side 10mm | 0.752 | 0.024 | 0.007 | 0.776 | 0.759 |
| | Left Edge 10mm | 0.530 | 0.012 | 0.004 | 0.542 | 0.534 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Right Edge 10mm | 0.544 | 0.044 | 0.013 | 0.588 | 0.557 |
| | Top Edge 10mm | 0.000 | 0.074 | 0.031 | 0.074 | 0.031 |
| | Bottom Edge 10mm | 0.149 | 0.000 | 0.000 | 0.149 | 0.149 |
| LTE B2 | Front Side 10mm | 1.077 | 0.059 | 0.010 | 1.136 | 1.087 |
| | Back Side 10mm | 0.956 | 0.024 | 0.007 | 0.980 | 0.963 |
| | Left Edge 10mm | 0.655 | 0.012 | 0.004 | 0.667 | 0.659 |
| | Right Edge 10mm | 0.182 | 0.044 | 0.013 | 0.226 | 0.195 |
| | Top Edge 10mm | 0.000 | 0.074 | 0.031 | 0.074 | 0.031 |
| | Bottom Edge 10mm | 0.727 | 0.000 | 0.000 | 0.727 | 0.727 |
| LTE B4 | Front Side 10mm | 0.952 | 0.059 | 0.010 | 1.011 | 0.962 |
| | Back Side 10mm | 0.859 | 0.024 | 0.007 | 0.883 | 0.866 |
| | Left Edge 10mm | 0.612 | 0.012 | 0.004 | 0.624 | 0.616 |
| | Right Edge 10mm | 0.136 | 0.044 | 0.013 | 0.180 | 0.149 |
| | Top Edge 10mm | 0.000 | 0.074 | 0.031 | 0.074 | 0.031 |
| | Bottom Edge 10mm | 1.021 | 0.000 | 0.000 | 1.021 | 1.021 |
| LTE B5 | Front Side 10mm | 0.806 | 0.059 | 0.010 | 0.865 | 0.816 |
| | Back Side 10mm | 0.669 | 0.024 | 0.007 | 0.693 | 0.676 |
| | Left Edge 10mm | 0.471 | 0.012 | 0.004 | 0.483 | 0.475 |
| | Right Edge 10mm | 0.480 | 0.044 | 0.013 | 0.524 | 0.493 |
| | Top Edge 10mm | 0.000 | 0.074 | 0.031 | 0.074 | 0.031 |
| | Bottom Edge 10mm | 0.143 | 0.000 | 0.000 | 0.143 | 0.143 |
| LTE B7 | Front Side 10mm | 0.726 | 0.059 | 0.010 | 0.785 | 0.736 |
| | Back Side 10mm | 0.505 | 0.024 | 0.007 | 0.529 | 0.512 |
| | Left Edge 10mm | 0.543 | 0.012 | 0.004 | 0.555 | 0.547 |
| | Right Edge 10mm | 0.220 | 0.044 | 0.013 | 0.264 | 0.233 |
| | Top Edge 10mm | 0.000 | 0.074 | 0.031 | 0.074 | 0.031 |
| | Bottom Edge 10mm | 0.535 | 0.000 | 0.000 | 0.535 | 0.535 |
| LTE B12 | Front Side 10mm | 0.471 | 0.059 | 0.010 | 0.530 | 0.481 |
| | Back Side 10mm | 0.435 | 0.024 | 0.007 | 0.459 | 0.442 |
| | Left Edge 10mm | 0.345 | 0.012 | 0.004 | 0.357 | 0.349 |
| | Right Edge 10mm | 0.409 | 0.044 | 0.013 | 0.453 | 0.422 |
| | Top Edge 10mm | 0.000 | 0.074 | 0.031 | 0.074 | 0.031 |
| | Bottom Edge 10mm | 0.061 | 0.000 | 0.000 | 0.061 | 0.061 |
| LTE B17 | Front Side 10mm | 0.523 | 0.059 | 0.010 | 0.582 | 0.533 |
| | Back Side 10mm | 0.510 | 0.024 | 0.007 | 0.534 | 0.517 |
| | Left Edge 10mm | 0.381 | 0.012 | 0.004 | 0.393 | 0.385 |
| | Right Edge 10mm | 0.471 | 0.044 | 0.013 | 0.515 | 0.484 |
| | Top Edge 10mm | 0.000 | 0.074 | 0.031 | 0.074 | 0.031 |
| | Bottom Edge 10mm | 0.067 | 0.000 | 0.000 | 0.067 | 0.067 |

Note:

1: The simultaneous transmission combinations of the three antennas contain combinations of two antennas, so only the worst simultaneous transmission combinations was shown in this table.

2: The highest Summed 1g SAR is 1.191 W/Kg < 1.6 W/kg, so Simultaneous Transmission SAR test is not required.

# 13 TEST EQUIPMENTS LIST

| Description | Manufacturer | Model | Serial No./Version | Cal. Date | Cal. Due |
|---|---|---|---|---|---|
| PC | Dell | N/A | N/A | N/A | N/A |
| Test Software | Speag | DASY5 | 52.8.8.1222 | N/A | N/A |
| 750MHz Validation Dipole | Speag | D750V3 | SN: 1201 | 2020/11/11 | 2023/11/10 |
| 835MHz Validation Dipole | Speag | D835V2 | SN: 4d187 | 2021/05/17 | 2024/05/16 |
| 1750MHz Validation Dipole | Speag | D1750V2 | SN: 1130 | 2021/05/17 | 2024/05/16 |
| 1900MHz Validation Dipole | Speag | D1900V2 | SN: 5d193 | 2021/05/20 | 2024/05/19 |
| 2450MHz Validation Dipole | Speag | D2450V2 | SN: 952 | 2021/05/19 | 2024/05/18 |
| 2600MHz Validation Dipole | Speag | D2600V2 | SN: 1095 | 2021/05/19 | 2024/05/18 |
| E-Field Probe | Speag | EX3DV4 | SN: 7510 | 2020/11/30 | 2021/11/29 |
| Data Acquisition Electronics | Speag | DAE4 | SN: 1454 | 2020/11/06 | 2021/11/05 |
| Signal Generator | R&S | SMB100A | 182396 | 2020/12/21 | 2021/12/20 |
| Power Meter | R&S | NRVD-B2 | 7250BJ-0112/2011 | 2020/09/25 | 2021/09/24 |
| Power Sensor | R&S | NRV-Z4 | 100381 | 2020/09/25 | 2021/09/24 |
| Power Sensor | R&S | NRV-Z2 | 100211 | 2020/09/25 | 2021/09/24 |
| Wireless Communication Test Set | Anritsu | MT8820C | 6201502974 | 2021/03/16 | 2022/03/15 |
| Wireless Communication Test Set | Anritsu | MT8820C | 6201502991 | 2021/03/16 | 2022/03/15 |
| Network Analyzer | Agilent | E5071B | MY42404001 | 2021/04/01 | 2022/03/31 |
| Thermometer | Elitech | RC-4HC | EF720B004820 | 2020/12/24 | 2021/12/23 |
| Power Amplifier | SATIMO | 6552B | 22374 | N/A | N/A |
| Dielectric Probe Kit | SATIMO | SCLMP | SN 25/13 OCPG56 | N/A | N/A |
| Phantom1 | Speag | SAM | SN: 1859 | N/A | N/A |
| Phantom2 | Speag | SAM | SN: 1857 | N/A | N/A |
| Attenuator | COM-MW | ZA-S1-31 | 1305003187 | N/A | N/A |
| Directional coupler | AA-MCS | AAMCS-UDC | 000272 | N/A | N/A |

Note: For dipole antennas, BALUN has adopted 3 years as calibration intervals, and 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.
4. Impedance (real or imaginary parts) in within 5 Ohms 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.

Head Liquid

| 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 (%) |
|---|---|---|---|---|---|---|---|---|---|
| 2021.09.19 | Head | 750 | 21.2 | 0.91 | 40.81 | 0.89 | 41.94 | 2.25 | -2.69 |
| 2021.09.18 | Head | 835 | 21.1 | 0.92 | 40.89 | 0.90 | 41.50 | 2.22 | -1.47 |
| 2021.09.17 | Head | 835 | 21.6 | 0.91 | 40.91 | 0.90 | 41.50 | 1.11 | -1.42 |
| 2021.09.11 | Head | 1750 | 21.5 | 1.39 | 39.66 | 1.37 | 40.08 | 1.46 | -1.05 |
| 2021.09.12 | Head | 1750 | 21.5 | 1.37 | 39.14 | 1.37 | 40.08 | 0.00 | -2.35 |
| 2021.09.14 | Head | 1900 | 21.5 | 1.43 | 39.56 | 1.40 | 40.00 | 2.14 | -1.10 |
| 2021.09.15 | Head | 1900 | 21.6 | 1.39 | 39.33 | 1.40 | 40.00 | -0.71 | -1.68 |
| 2021.09.09 | Head | 2450 | 21.4 | 1.84 | 38.27 | 1.80 | 39.20 | 2.22 | -2.37 |
| 2021.09.10 | Head | 2600 | 21.5 | 2.00 | 38.58 | 1.96 | 39.01 | 2.04 | -1.10 |
| Note: The tolerance 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 its specification of 10 %(for 1 g).

Head liquid 1g

| Date | Liquid Type | Freq. (MHz) | Power (mW) | Measured SAR (W/kg) | Normalized SAR (W/kg) | Dipole SAR (W/kg) | Tolerance (%) |
|---|---|---|---|---|---|---|---|
| 2021.09.19 | Head | 750 | 100 | 0.854 | 8.54 | 8.29 | 3.02 |
| 2021.09.18 | Head | 835 | 100 | 0.926 | 9.26 | 9.76 | -5.12 |
| 2021.09.17 | Head | 835 | 100 | 0.937 | 9.37 | 9.76 | -4.00 |
| 2021.09.11 | Head | 1750 | 100 | 3.620 | 36.20 | 36.70 | -1.36 |
| 2021.09.12 | Head | 1750 | 100 | 3.530 | 35.30 | 36.70 | -3.81 |
| 2021.09.14 | Head | 1900 | 100 | 4.090 | 40.90 | 40.30 | 1.49 |
| 2021.09.15 | Head | 1900 | 100 | 4.110 | 41.10 | 40.30 | 1.99 |
| 2021.09.09 | Head | 2450 | 100 | 5.230 | 52.30 | 53.00 | -1.32 |
| 2021.09.10 | Head | 2600 | 100 | 5.700 | 57.00 | 56.80 | 0.35 |
| Note: The tolerance limit of System validation ±10%. | | | | | | | |

# System Performance Check Data (750MHz)

Date: 2021.09.19

Communication System Band: D750 (750.0 MHz); Frequency: 750 MHz;Duty Cycle: 1:1

Medium parameters used (extrapolated): f = 750 MHz; $\sigma$ = 0.905 S/m; $\varepsilon_r$ = 40.805; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

Ambient Temperature:22.2 Liquid Temperature:21.2

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(10.31, 10.31, 10.31); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.10.06
- Phantom: SAM (20deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**CW 750 100mW/Area Scan (61x121x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.907 W/kg

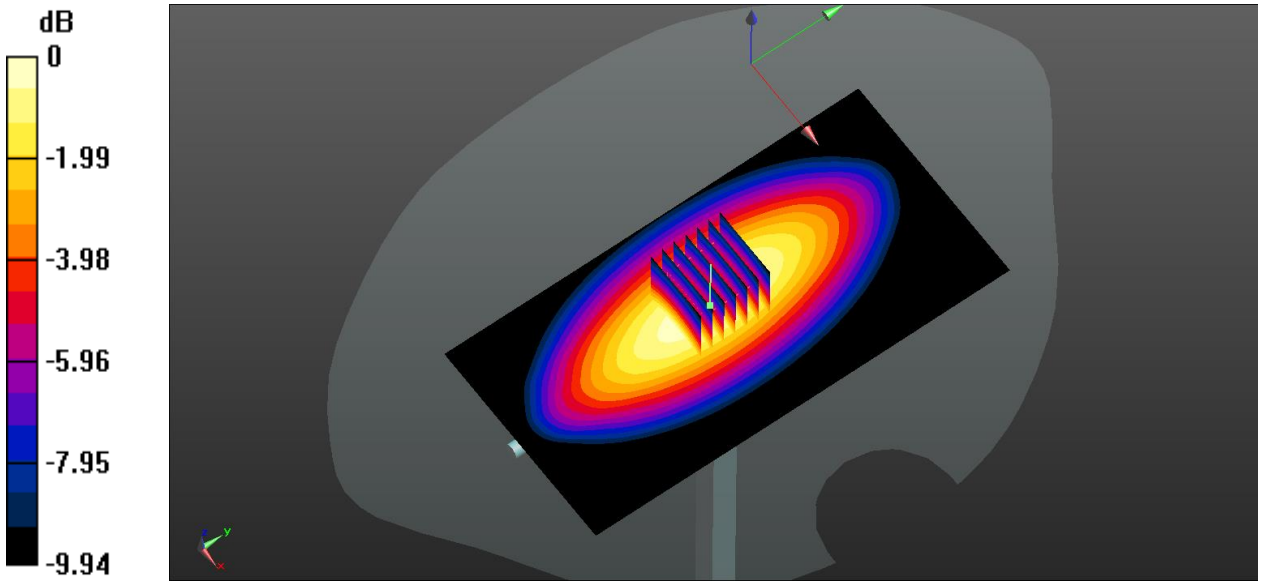
**CW 750 100mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 31.05 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.24 W/kg

**SAR(1 g) = 0.854 W/kg; SAR(10 g) = 0.573 W/kg**

Maximum value of SAR (measured) = 0.915 W/kg




0 dB = 0.915 W/kg

# System Performance Check Data (835MHz)

Date: 2021.09.18

Communication System Band: D835 (835.0 MHz); Frequency: 835 MHz;Duty Cycle: 1:1

Medium parameters used: f = 835 MHz; $\sigma$ = 0.921 S/m; $\varepsilon_r$ = 40.894; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

Ambient Temperature:22.2 Liquid Temperature:21.1

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.94, 9.94, 9.94); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.10.06
- Phantom: SAM (20deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**CW 835-Head-100mW/Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.02 W/kg

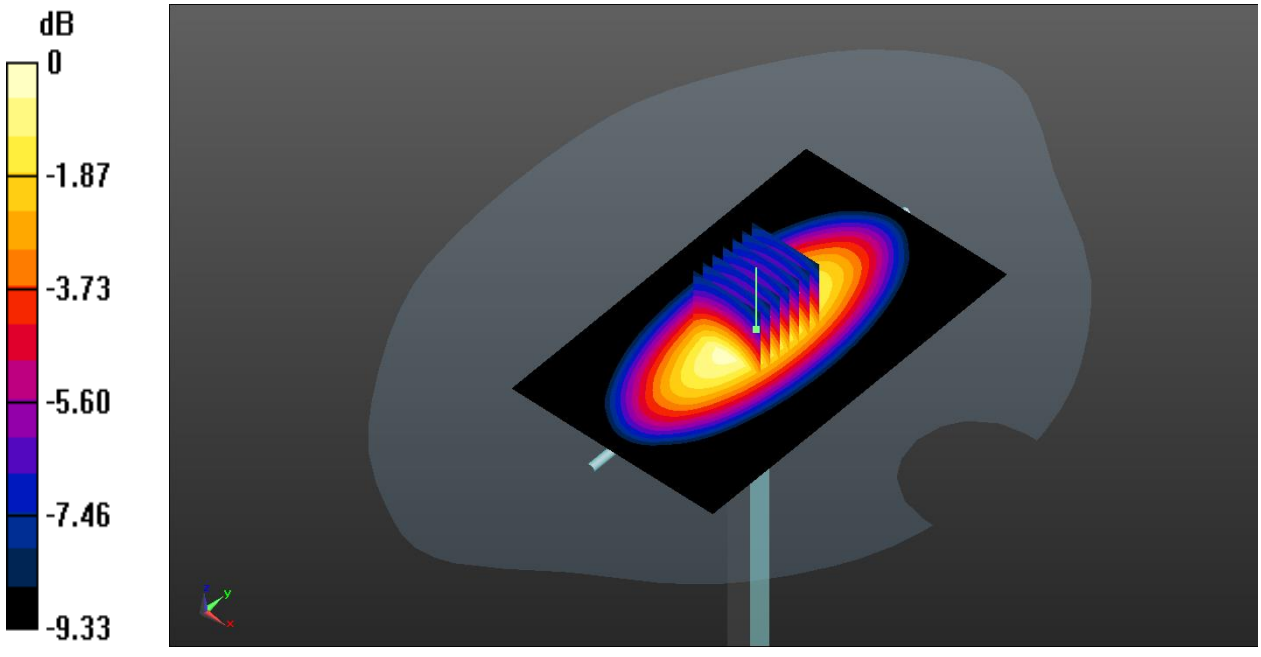
**CW 835-Head-100mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 31.95 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 1.29 W/kg

**SAR(1 g) = 0.926 W/kg; SAR(10 g) = 0.627 W/kg**

Maximum value of SAR (measured) = 1.00 W/kg




0 dB = 1.00 W/kg

# System Performance Check Data (835MHz)

Date: 2021.09.17

Communication System Band: D835 (835.0 MHz); Frequency: 835 MHz;Duty Cycle: 1:1

Medium parameters used: f = 835 MHz; $\sigma$ = 0.912 S/m; $\varepsilon_r$ = 40.909; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

Ambient Temperature:22.4 Liquid Temperature:21.6

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.94, 9.94, 9.94); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.10.06
- Phantom: SAM (20deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**CW 835 100mW/Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.01 W/kg

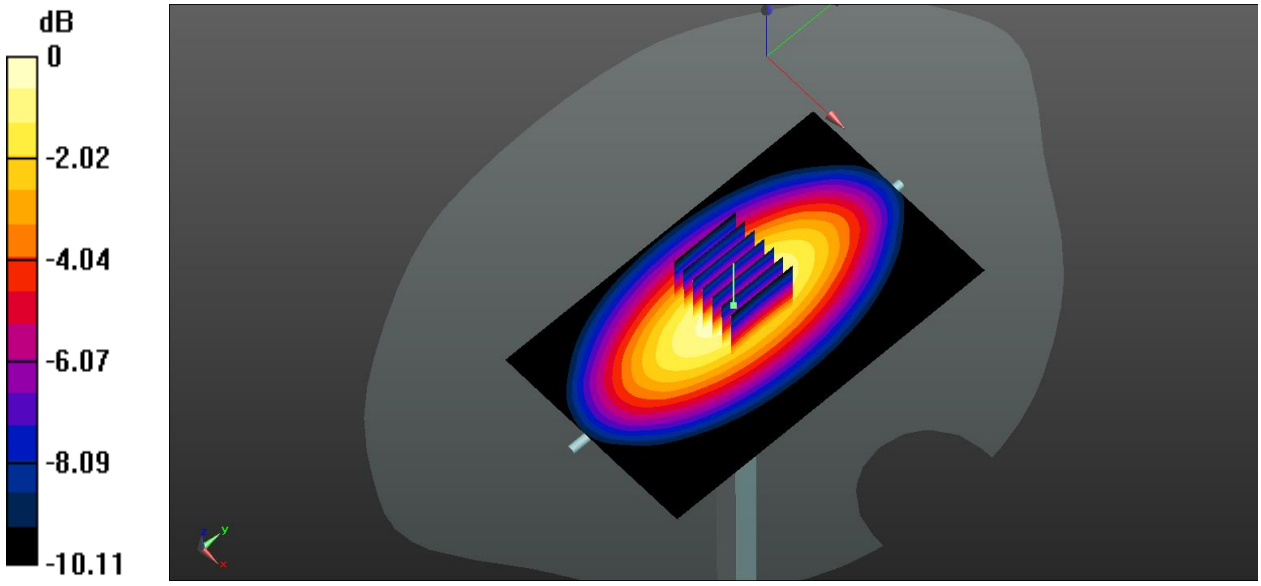
**CW 835 100mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 33.15 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 1.40 W/kg

**SAR(1 g) = 0.937 W/kg; SAR(10 g) = 0.614 W/kg**

Maximum value of SAR (measured) = 1.02 W/kg




0 dB = 1.02 W/kg

# System Performance Check Data (1750MHz)

Date: 2021.09.11

Communication System Band: D1750 (1750.0 MHz); Frequency: 1750 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1750 MHz; $\sigma$ = 1.39 S/m; $\varepsilon_r$ = 39.663; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

Ambient Temperature:22.2 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.6, 8.6, 8.6); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.10.06
- Phantom: SAM (20deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**CW1750 Head 100mW /Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 4.03 W/kg

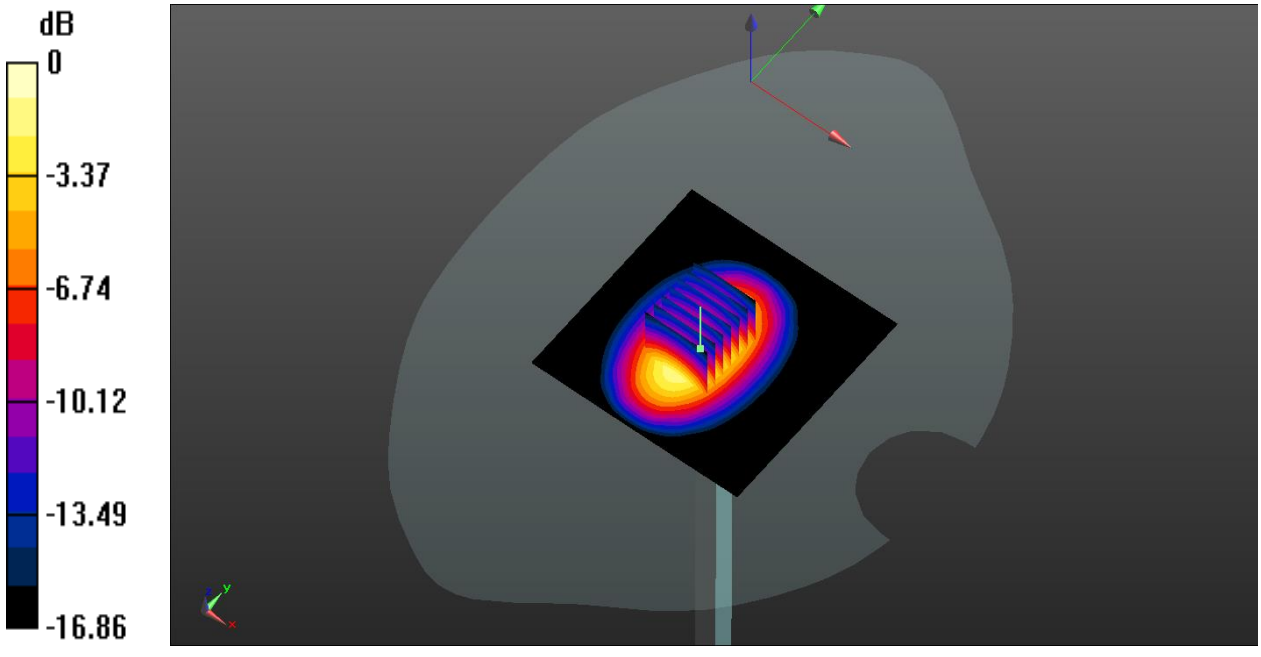
**CW1750 Head 100mW /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 51.46 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 6.83 W/kg

**SAR(1 g) = 3.62 W/kg; SAR(10 g) = 1.94 W/kg**

Maximum value of SAR (measured) = 4.13 W/kg




0 dB = 4.13 W/kg

# System Performance Check Data (1750MHz)

Date: 2021.09.12

Communication System Band: D1750 (1750.0 MHz); Frequency: 1750 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1750 MHz; $\sigma$ = 1.371 S/m; $\varepsilon_r$ = 39.135; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

Ambient Temperature:22.4 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.6, 8.6, 8.6); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.10.06
- Phantom: SAM (20deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**CW 1750-Head-100mW/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 4.03 W/kg

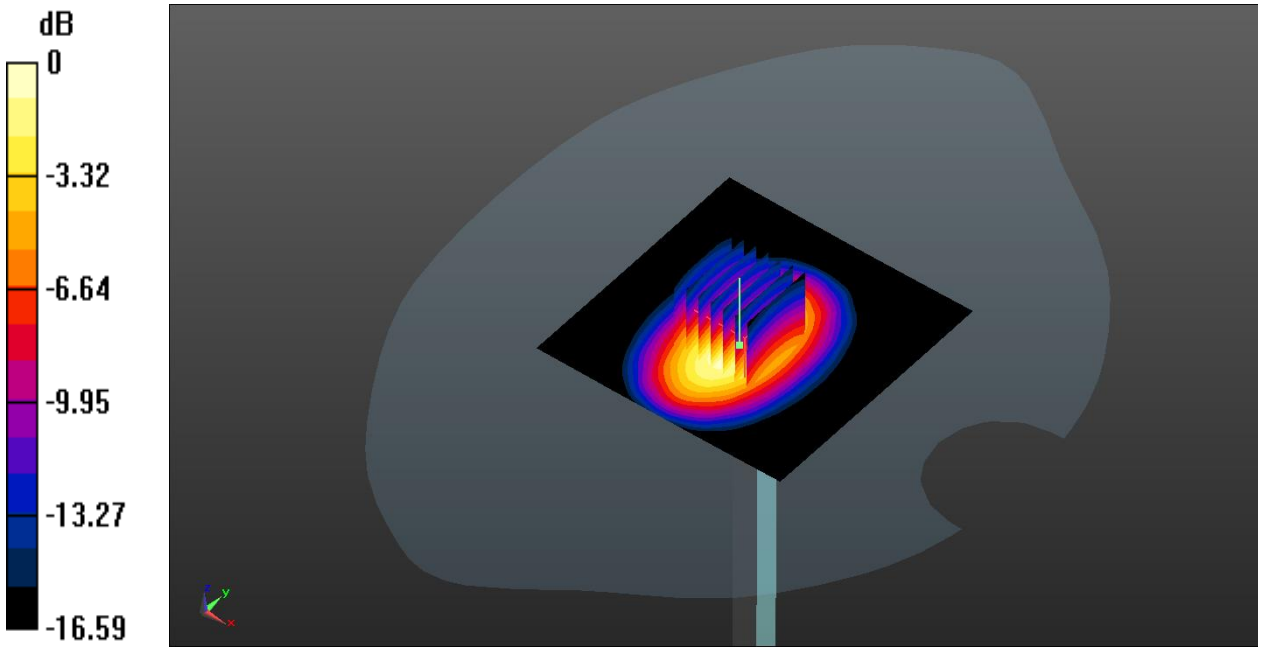
**CW 1750-Head-100mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 51.59 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 6.65 W/kg

**SAR(1 g) = 3.53 W/kg; SAR(10 g) = 1.82 W/kg**

Maximum value of SAR (measured) = 4.02 W/kg




0 dB = 4.02 W/kg

# System Performance Check Data (1900MHz)

Date: 2021.09.14

Communication System Band: D1900 (1900.0 MHz); Frequency: 1900 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1900 MHz; $\sigma$ = 1.431 S/m; $\varepsilon_r$ = 39.561; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

Ambient Temperature:22.6 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.3, 8.3, 8.3); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.10.06
- Phantom: SAM (20deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**CW1900-Head-100mW /Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 4.64 W/kg

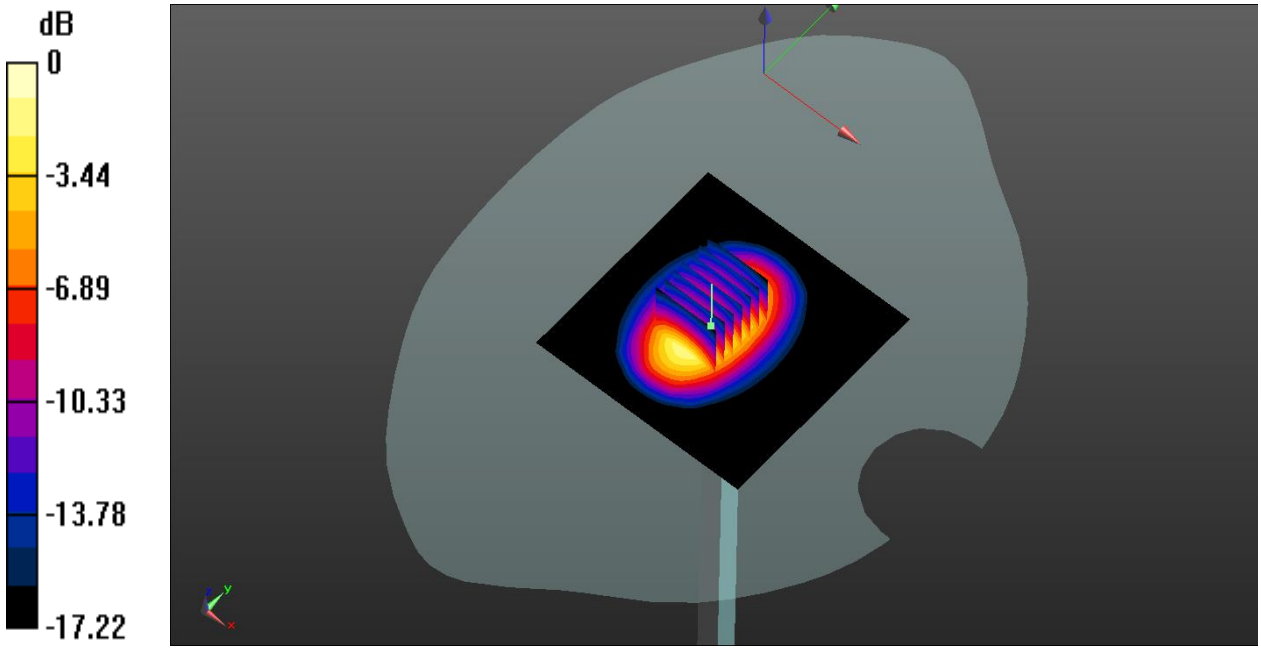
**CW1900-Head-100mW /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 52.35 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 7.47 W/kg

**SAR(1 g) = 4.09 W/kg; SAR(10 g) = 2.13 W/kg**

Maximum value of SAR (measured) = 4.58 W/kg




0 dB = 4.58 W/kg

# System Performance Check Data (1900MHz)

Date: 2021.09.15

Communication System Band: D1900 (1900.0 MHz); Frequency: 1900 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1900 MHz; $\sigma$ = 1.389 S/m; $\varepsilon_r$ = 39.328; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

Ambient Temperature:22.4 Liquid Temperature:21.6

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.3, 8.3, 8.3); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.10.06
- Phantom: SAM (20deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**CW1900-Head-100mW/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 4.64 W/kg

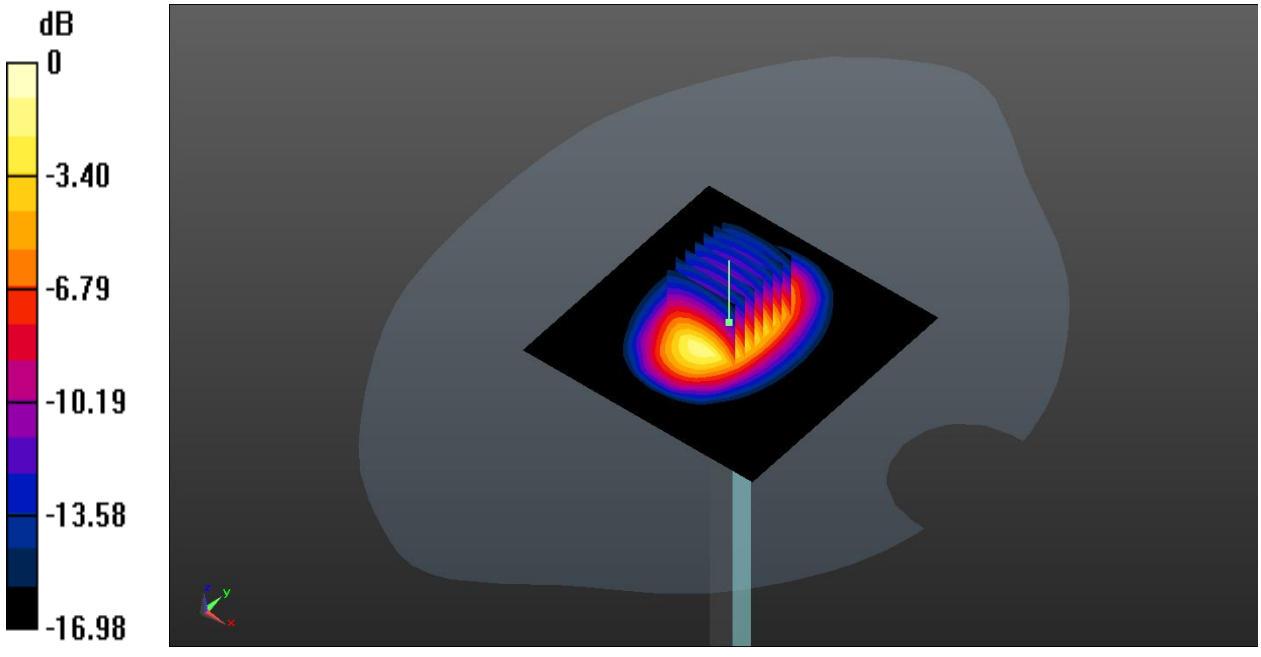
**CW1900-Head-100mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 53.99 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 7.55 W/kg

**SAR(1 g) = 4.11 W/kg; SAR(10 g) = 2.14 W/kg**

Maximum value of SAR (measured) = 4.59 W/kg




0 dB = 4.59 W/kg

# System Performance Check Data (2450MHz)

Date: 2021.09.09

Communication System Band: D2450 (2450.0 MHz); Frequency: 2450 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2450 MHz; $\sigma$ = 1.836 S/m; $\varepsilon_r$ = 38.274; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

Ambient Temperature:22.5 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.54, 7.54, 7.54); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.10.06
- Phantom: SAM (20deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**CW2450-Head-100mW/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 6.08 W/kg

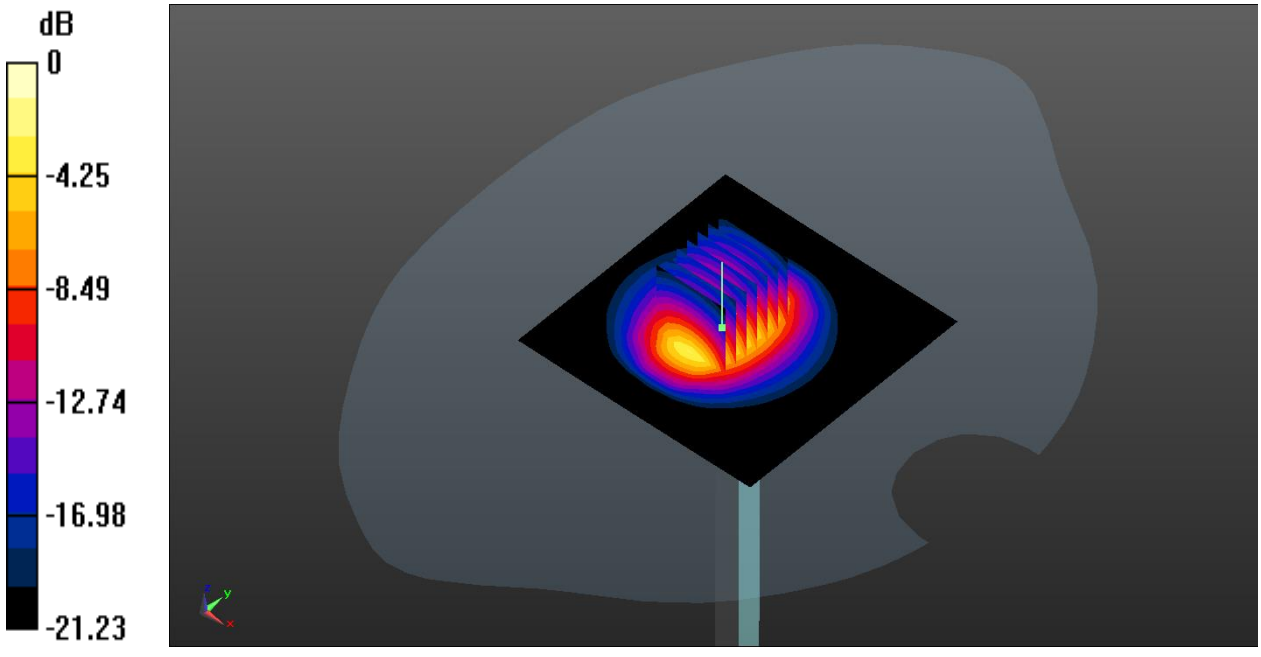
**CW2450-Head-100mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 49.84 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 10.5 W/kg

**SAR(1 g) = 5.23 W/kg; SAR(10 g) = 2.37 W/kg**

Maximum value of SAR (measured) = 5.94 W/kg




0 dB = 5.94 W/kg

# System Performance Check Data (2600MHz)

Date: 2021.09.10

Communication System Band: D2600 (2600.0 MHz); Frequency: 2600 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 2600 MHz; $\sigma$ = 2.002 S/m; $\varepsilon_r$ = 38.58; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.5, 7.5, 7.5); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.10.06
- Phantom: SAM (20deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**CW 2600 100mW /Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 6.56 W/kg

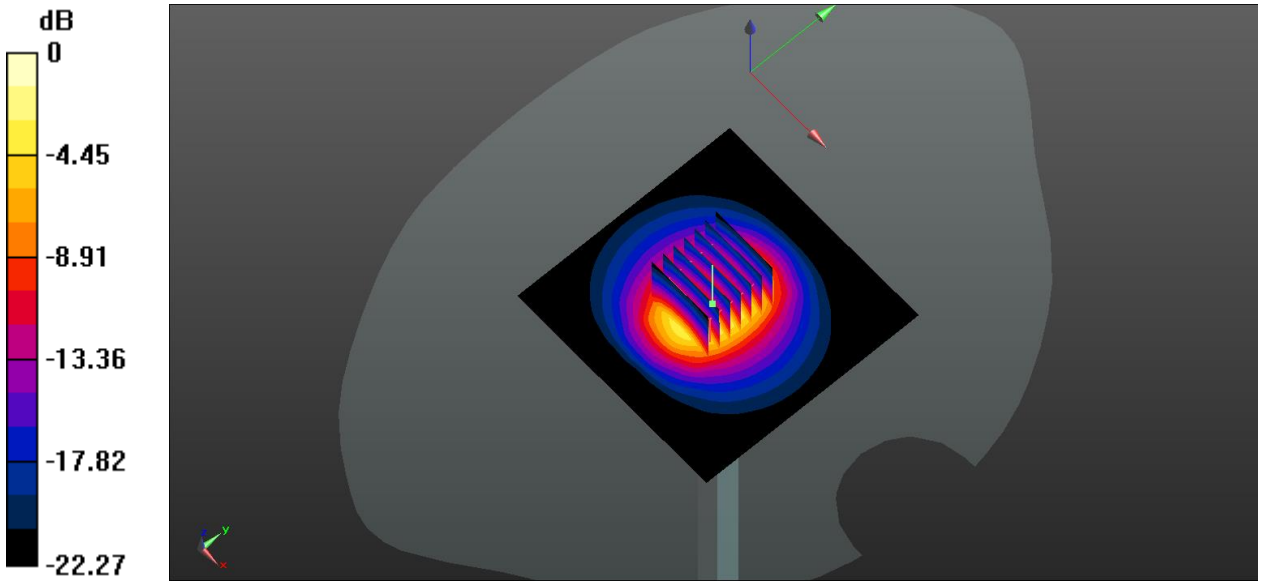
**CW 2600 100mW /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.58 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 13.2 W/kg

**SAR(1 g) = 5.7 W/kg; SAR(10 g) = 2.49 W/kg**

Maximum value of SAR (measured) = 6.50 W/kg




0 dB = 6.50 W/kg

# ANNEX C TEST DATA

**Meas.1 Left Head with Cheek on High Channel in GPRS850 2Slots Mode**

Date: 2021.09.18

Communication System Band: GPRS850; Frequency: 848.8 MHz;Duty Cycle: 1:4.1

Medium parameters used: f = 848.8 MHz; $\sigma$ = 0.941 S/m; $\varepsilon_r$ = 40.365; $\rho$ = 1000 kg/m$^3$

Phantom section: Left Section

Ambient Temperature:22.2 Liquid Temperature:21.1

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.94, 9.94, 9.94); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch251/Area Scan (51x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.04 W/kg

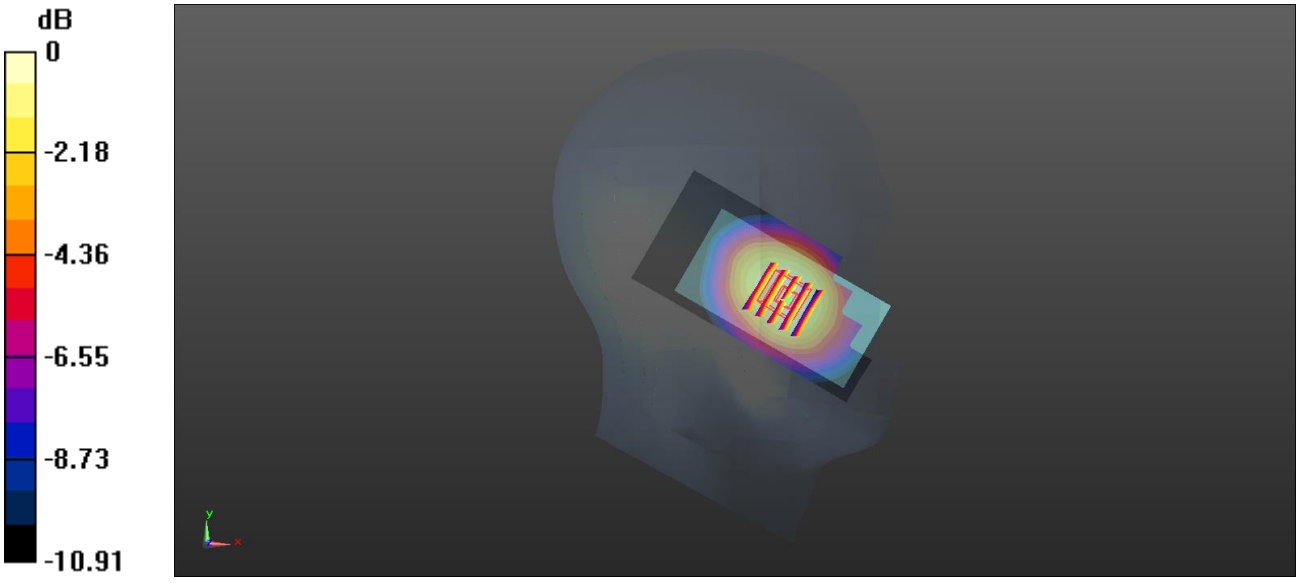
**Ch251/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.426 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 1.26 W/kg

**SAR(1 g) = 0.995 W/kg; SAR(10 g) = 0.732 W/kg**

Maximum value of SAR (measured) = 1.05 W/kg




0 dB = 1.05 W/kg

**Meas.2 Body Plane with Back Side 10mm on Middle Channel in GPRS850 2Slots mode**

Date: 2021.09.18

Communication System Band: GPRS850; Frequency: 836.6 MHz;Duty Cycle: 1:4.1

Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.925 S/m; $\varepsilon_r$ = 40.649; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

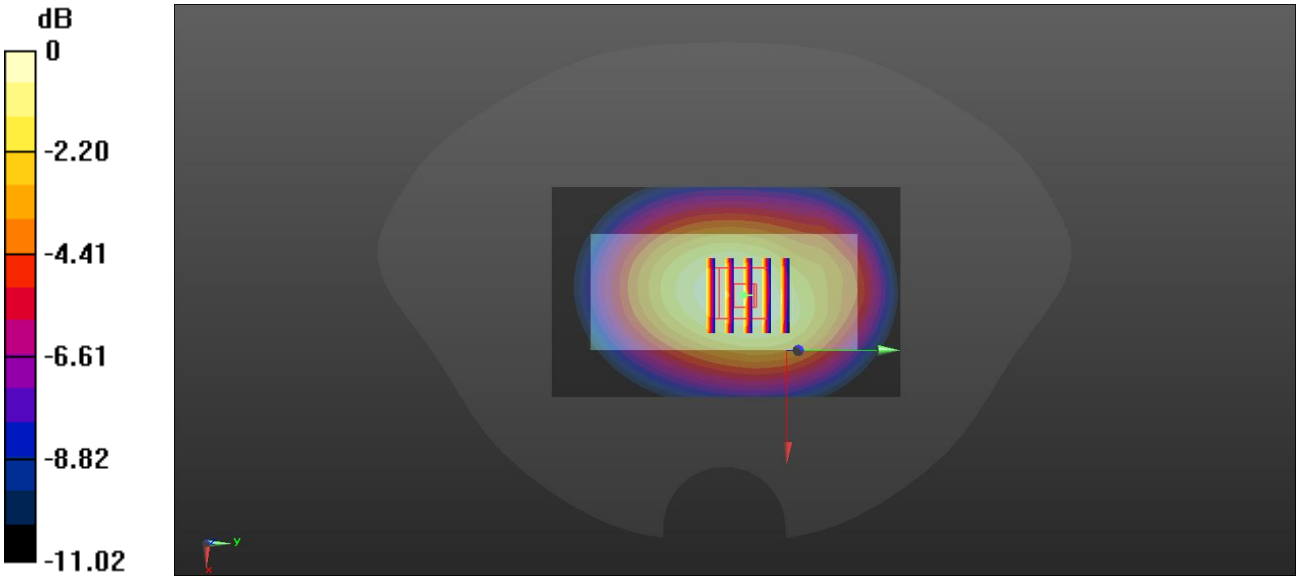
Ambient Temperature:22.2 Liquid Temperature:21.1

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.94, 9.94, 9.94); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch190/Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.891 W/kg

**Ch190/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.88 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.11 W/kg
**SAR(1 g) = 0.828 W/kg; SAR(10 g) = 0.582 W/kg**
Maximum value of SAR (measured) = 0.880 W/kg




0 dB = 0.880 W/kg

**Meas.3 Right Head with Cheek on Middle Channel in GPRS1900 2Slots Mode**

Date: 2021.09.14

Communication System Band: GPRS 1900; Frequency: 1880 MHz;Duty Cycle: 1:4.1

Medium parameters used (interpolated): f = 1880 MHz; $\sigma$ = 1.429 S/m; $\varepsilon_r$ = 39.72; $\rho$ = 1000 kg/m$^3$

Phantom section: Right Section

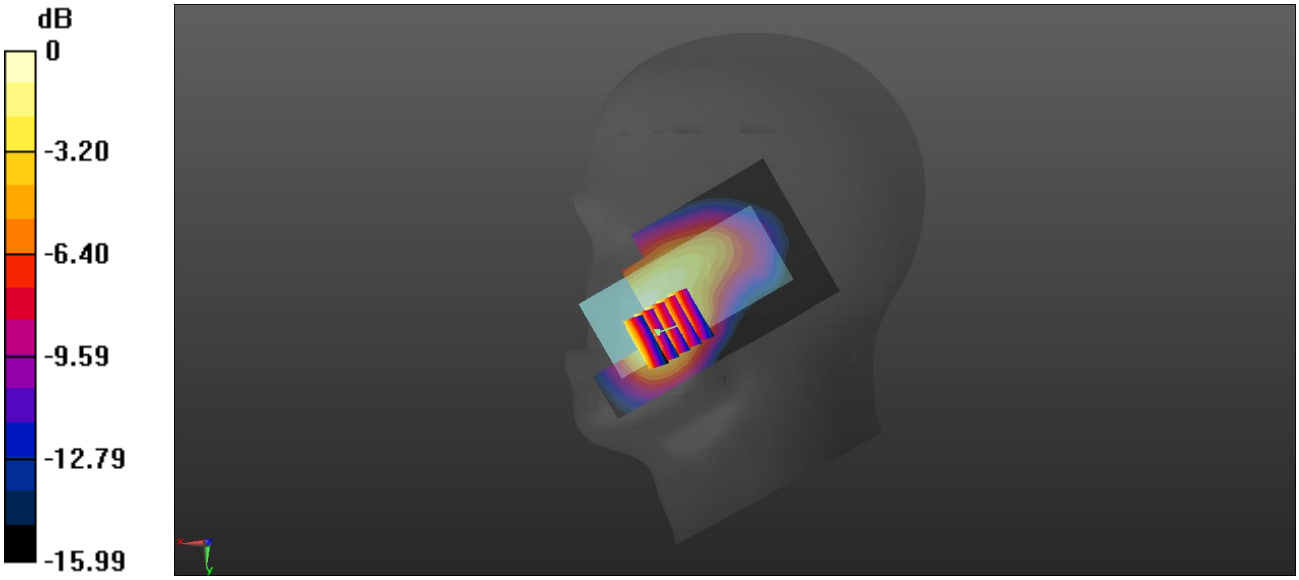
Ambient Temperature:22.6 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.3, 8.3, 8.3); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch661/Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.524 W/kg

**Ch661/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.881 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.755 W/kg
**SAR(1 g) = 0.464 W/kg; SAR(10 g) = 0.287 W/kg**
Maximum value of SAR (measured) = 0.504 W/kg




0 dB = 0.504 W/kg

**Meas.4 Body Plane with Front Side 10mm on Middle Channel in GPRS1900 2Slots mode**

Date: 2021.09.14

Communication System Band: GPRS 1900; Frequency: 1880 MHz;Duty Cycle: 1:4.1

Medium parameters used (interpolated): f = 1880 MHz; $\sigma$ = 1.429 S/m; $\varepsilon_r$ = 39.72; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

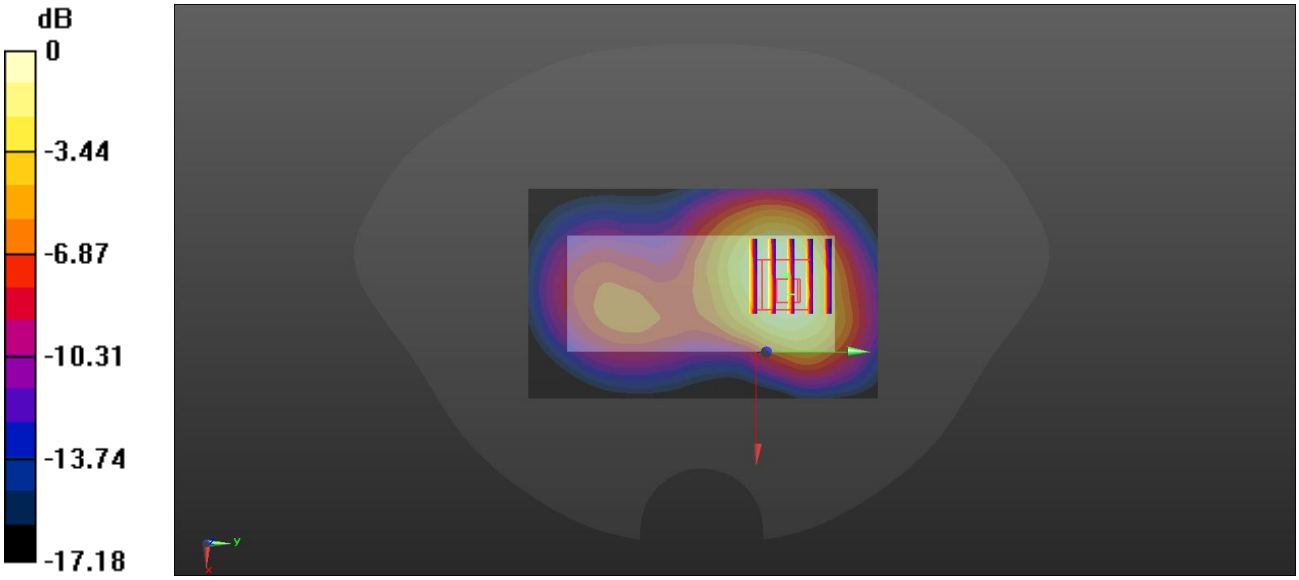
Ambient Temperature:22.6 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.3, 8.3, 8.3); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch661/Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.807 W/kg

**Ch661/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.29 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.14 W/kg
**SAR(1 g) = 0.712 W/kg; SAR(10 g) = 0.430 W/kg**
Maximum value of SAR (measured) = 0.768 W/kg




0 dB = 0.768 W/kg

**Meas.5 Right Head with Cheek on Low Channel in WCDMA Band 2 Mode**

Date: 2021.09.14

Communication System Band: II; Frequency: 1852.4 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma$ = 1.424 S/m; $\varepsilon_r$ = 39.8; $\rho$ = 1000 kg/m$^3$

Phantom section: Right Section

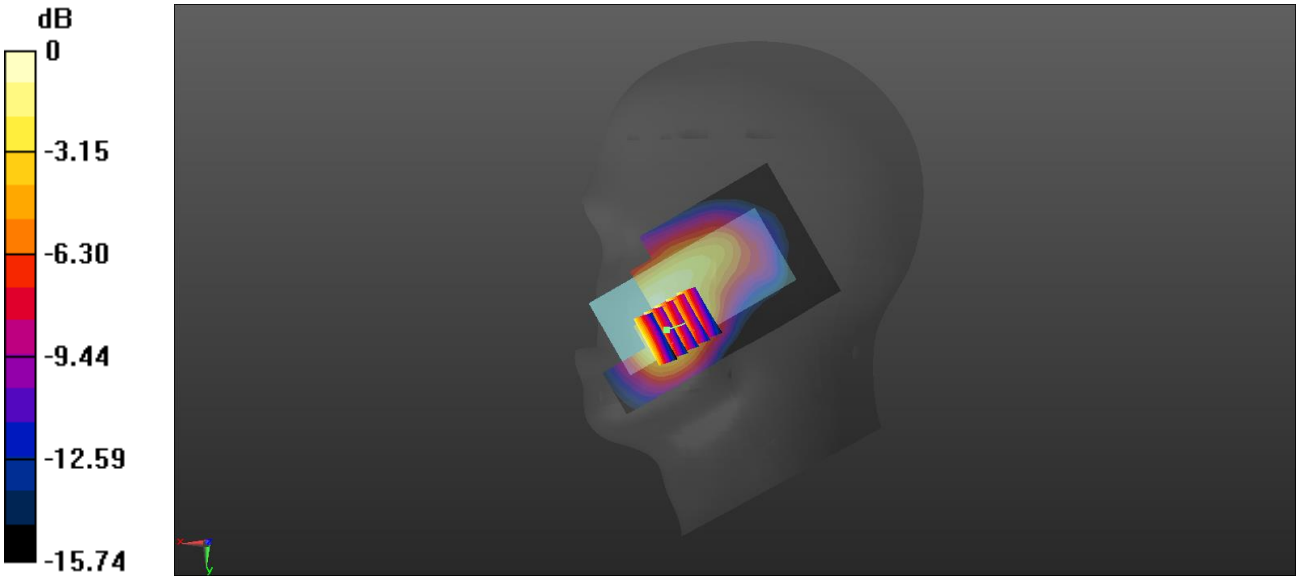
Ambient Temperature:22.6 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.3, 8.3, 8.3); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch9262/Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.801 W/kg

**Ch9262/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.550 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.14 W/kg
**SAR(1 g) = 0.712 W/kg; SAR(10 g) = 0.441 W/kg**
Maximum value of SAR (measured) = 0.769 W/kg




0 dB = 0.769 W/kg

**Meas.6 Body Plane with Front Side 10mm on Middle Channel in WCDMA Band 2 mode**

Date: 2021.09.14

Communication System Band: II; Frequency: 1852.4 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma$ = 1.424 S/m; $\varepsilon_r$ = 39.8; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

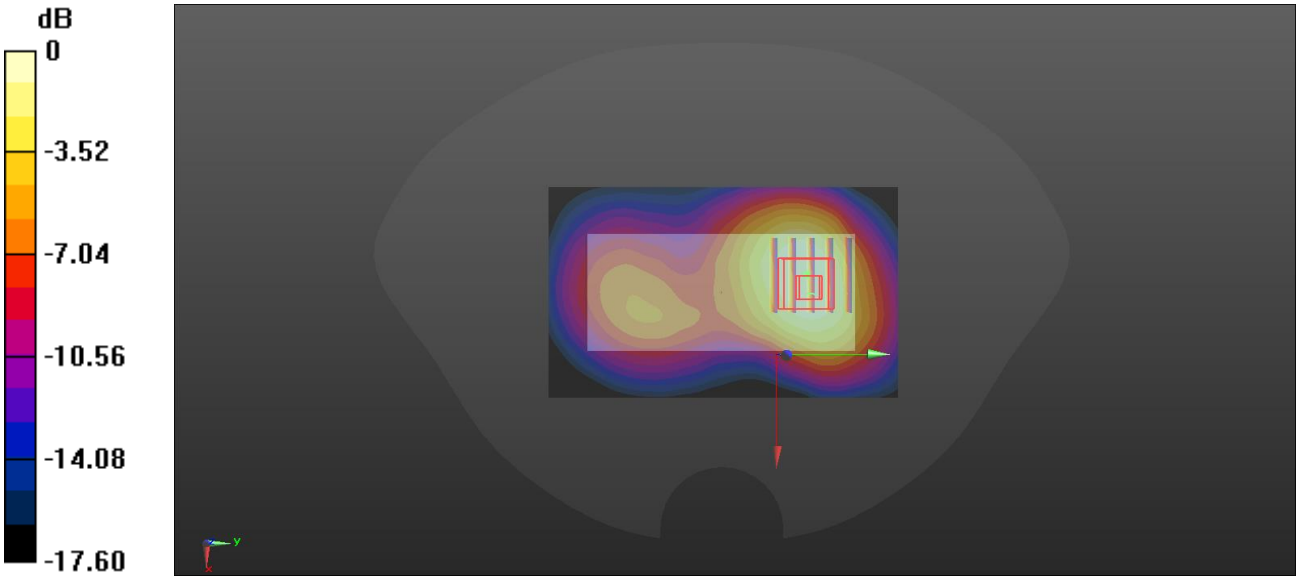
Ambient Temperature:22.6 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.3, 8.3, 8.3); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch9262/Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.16 W/kg

**Ch9262/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.07 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.62 W/kg
**SAR(1 g) = 0.997 W/kg; SAR(10 g) = 0.611 W/kg**
Maximum value of SAR (measured) = 1.08 W/kg




0 dB = 1.08 W/kg

**Meas.7 Right Head with Cheek on Middle Channel in WCDMA Band 4 Mode**

Date: 2021.09.11

Communication System Band: IV; Frequency: 1732.4 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1732.4 MHz; $\sigma$ = 1.374 S/m; $\varepsilon_r$ = 39.862; $\rho$ = 1000 kg/m$^3$

Phantom section: Right Section

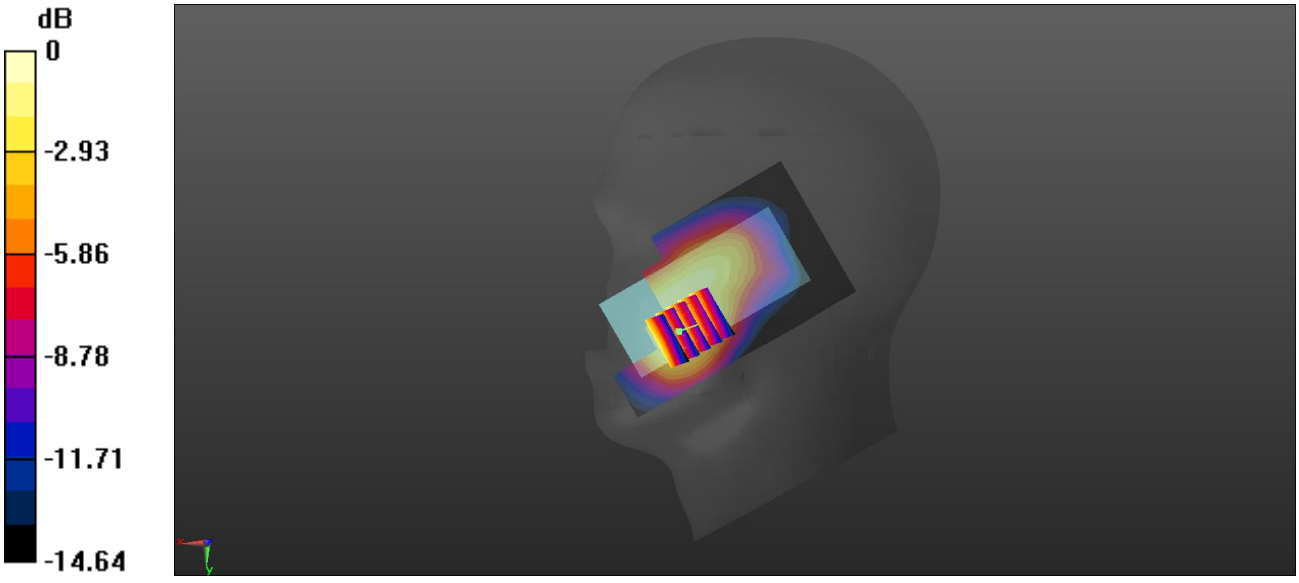
Ambient Temperature:22.2 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.6, 8.6, 8.6); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch1412/Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.01 W/kg

**Ch1412/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.385 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.33 W/kg
**SAR(1 g) = 0.865 W/kg; SAR(10 g) = 0.552 W/kg**
Maximum value of SAR (measured) = 0.932 W/kg




0 dB = 0.932 W/kg

**Meas.8 Body Plane with Bottom Edge 10mm on Middle Channel in WCDMA Band 4 mode**

Date: 2021.09.11

Communication System Band: IV; Frequency: 1732.4 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1732.4 MHz; $\sigma$ = 1.374 S/m; $\varepsilon_r$ = 39.862; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

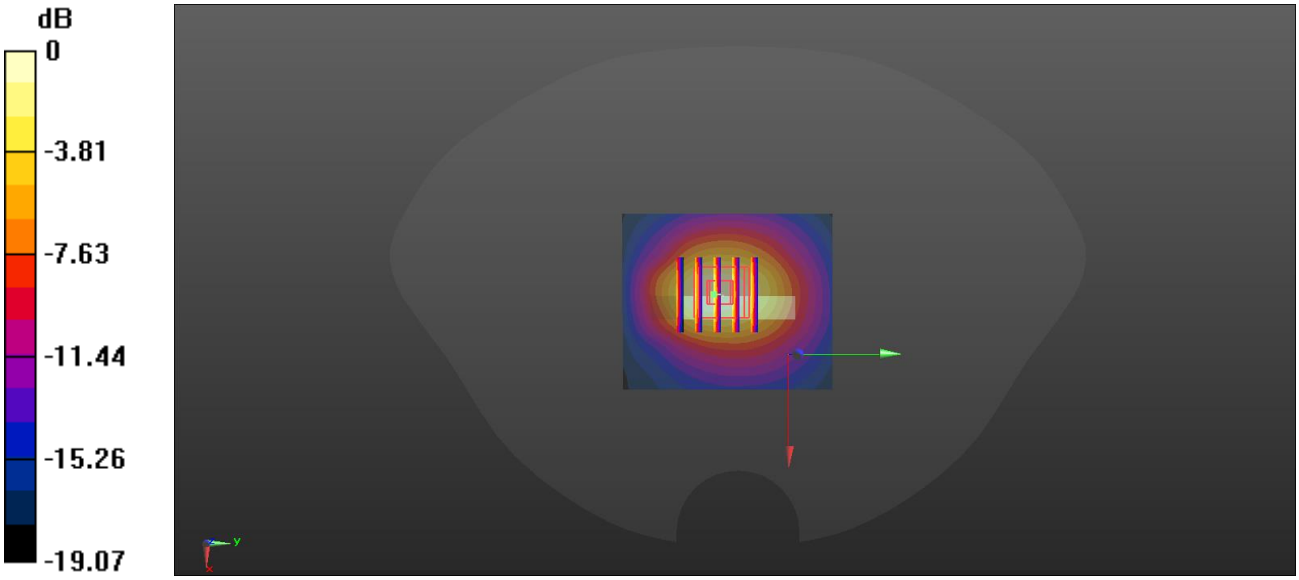
Ambient Temperature:22.2 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.6, 8.6, 8.6); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch1412/Area Scan (51x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.16 W/kg

**Ch1412/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.76 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 1.71 W/kg
**SAR(1 g) = 0.952 W/kg; SAR(10 g) = 0.504 W/kg**
Maximum value of SAR (measured) = 1.05 W/kg




0 dB = 1.05 W/kg

**Meas.9 Left Head with Cheek on Low Channel in WCDMA Band 5 Mode**

Date: 2021.09.18

Communication System Band:V; Frequency: 826.4 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 826.4 MHz; $\sigma$ = 0.918 S/m; $\varepsilon_r$ = 40.976; $\rho$ = 1000 kg/m$^3$

Phantom section: Left Section

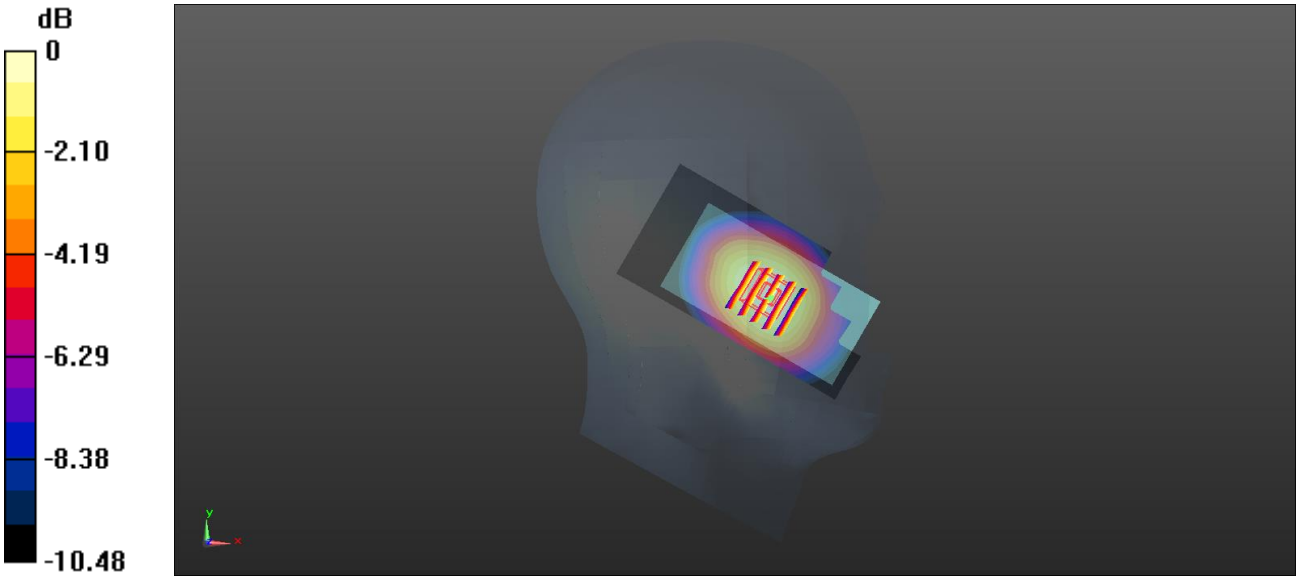
Ambient Temperature:22.2 Liquid Temperature:21.1

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.94, 9.94, 9.94); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch4132/Area Scan (51x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.820 W/kg

**Ch4132/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.30 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.998 W/kg
**SAR(1 g) = 0.792 W/kg; SAR(10 g) = 0.583 W/kg**
Maximum value of SAR (measured) = 0.835 W/kg




0 dB = 0.835 W/kg

**Meas.10 Body Plane with Front Side 10mm on Low Channel in WCDMA Band 5 mode**

Date: 2021.09.18

Communication System Band:V; Frequency: 826.4 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 826.4 MHz; $\sigma$ = 0.918 S/m; $\varepsilon_r$ = 40.976; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

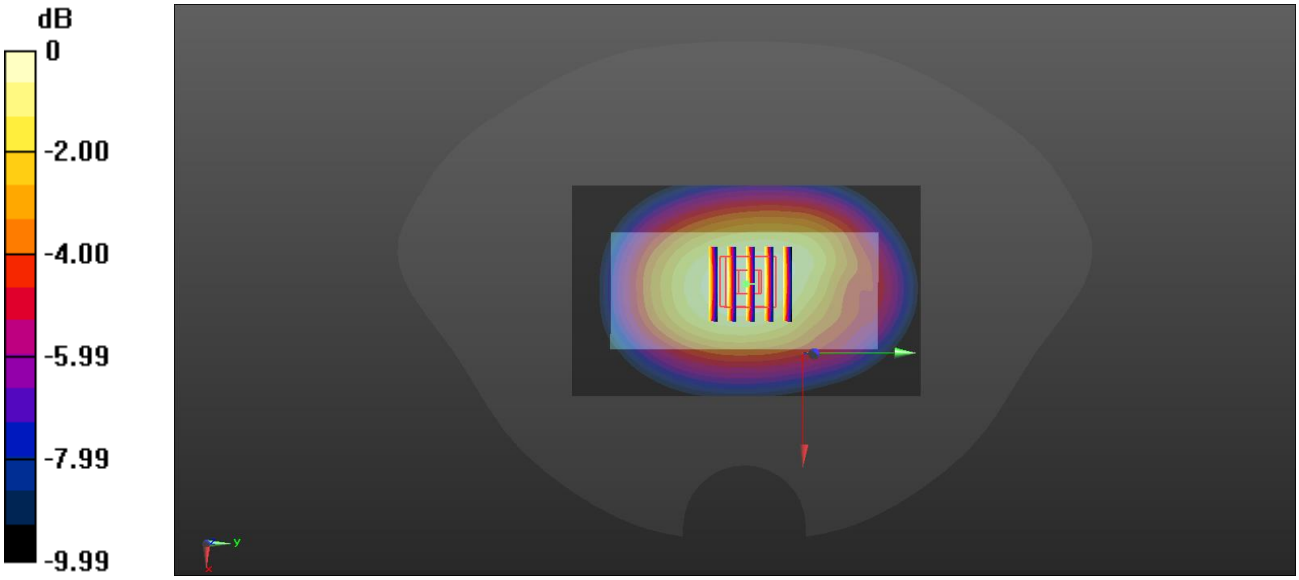
Ambient Temperature:22.2 Liquid Temperature:21.1

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.94, 9.94, 9.94); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch4132/Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.849 W/kg

**Ch4132/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.06 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 1.04 W/kg
**SAR(1 g) = 0.785 W/kg; SAR(10 g) = 0.558 W/kg**
Maximum value of SAR (measured) = 0.831 W/kg




0 dB = 0.831 W/kg

**Meas.11 Right Head with Cheek on Middle Channel in LTE Band 2 Mode**

Date: 2021.09.15

Communication System Band: Band 2, E-UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1880 MHz; $\sigma$ = 1.386 S/m; $\varepsilon_r$ = 39.475; $\rho$ = 1000 kg/m$^3$

Phantom section: Right Section

Ambient Temperature:22.3 Liquid Temperature:21.3

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.3, 8.3, 8.3); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch18900/Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.692 W/kg

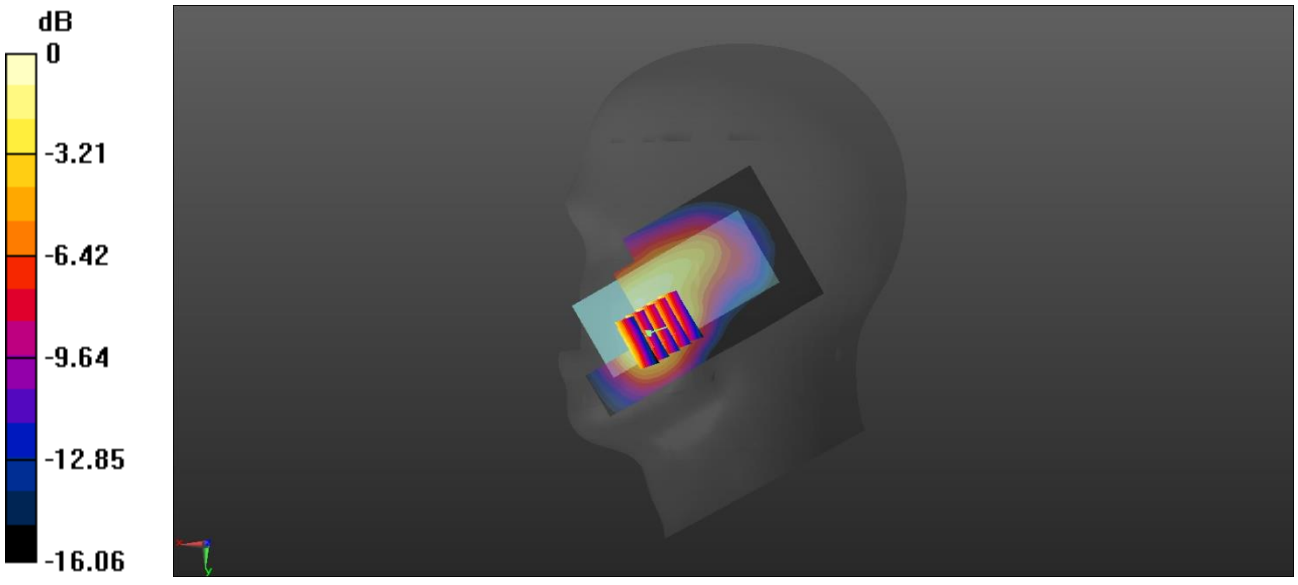
**Ch18900/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.251 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.02 W/kg

**SAR(1 g) = 0.629 W/kg; SAR(10 g) = 0.385 W/kg**

Maximum value of SAR (measured) = 0.686 W/kg




0 dB = 0.686 W/kg

**Meas.12 Body Plane with Front Side 10mm on Low Channel in LTE Band 2 mode**

Date: 2021.09.15

Communication System Band: Band 2, E-UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1860 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1860 MHz; $\sigma$ = 1.383 S/m; $\varepsilon_r$ = 39.623; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.3

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.3, 8.3, 8.3); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch18700/Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.13 W/kg

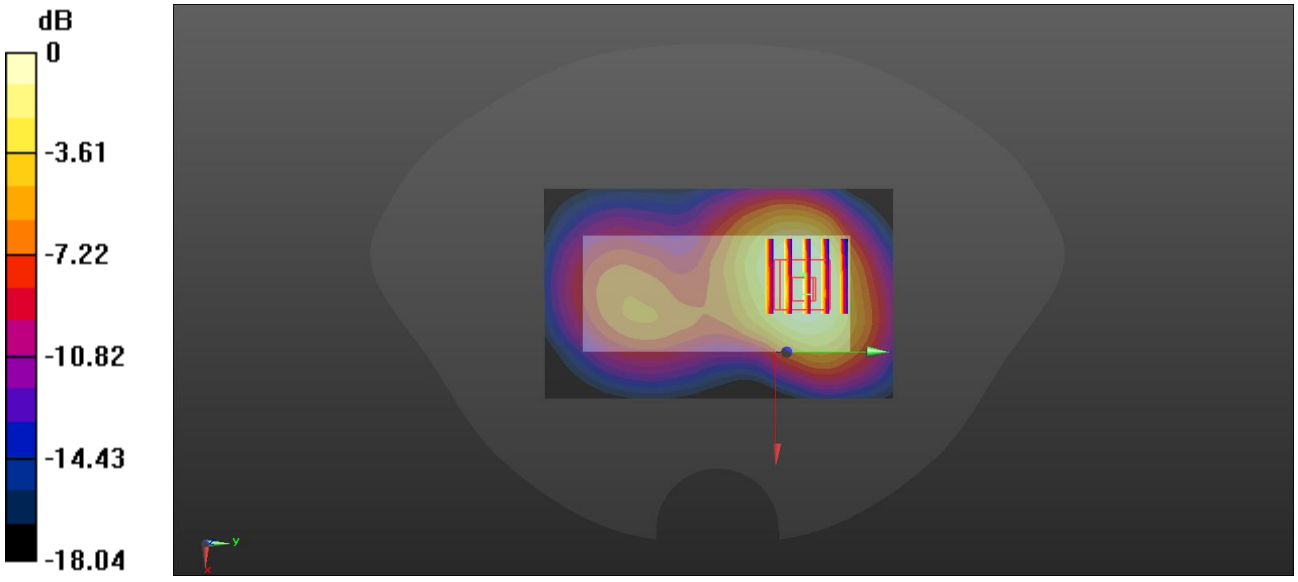
**Ch18700/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.39 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.58 W/kg

**SAR(1 g) = 0.980 W/kg; SAR(10 g) = 0.584 W/kg**

Maximum value of SAR (measured) = 1.04 W/kg




0 dB = 1.04 W/kg

**Meas.13 Right Head with Cheek on High Channel in LTE Band 4 Mode**

Date: 2021.09.12

Communication System Band: Band 4, E-UTRA/FDD (1710.0 - 1755.0 MHz); Frequency: 1745 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1745 MHz; $\sigma$ = 1.365 S/m; $\varepsilon_r$ = 39.41; $\rho$ = 1000 kg/m$^3$

Phantom section: Right Section

Ambient Temperature:22.4 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.6, 8.6, 8.6); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch20300/Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.832 W/kg

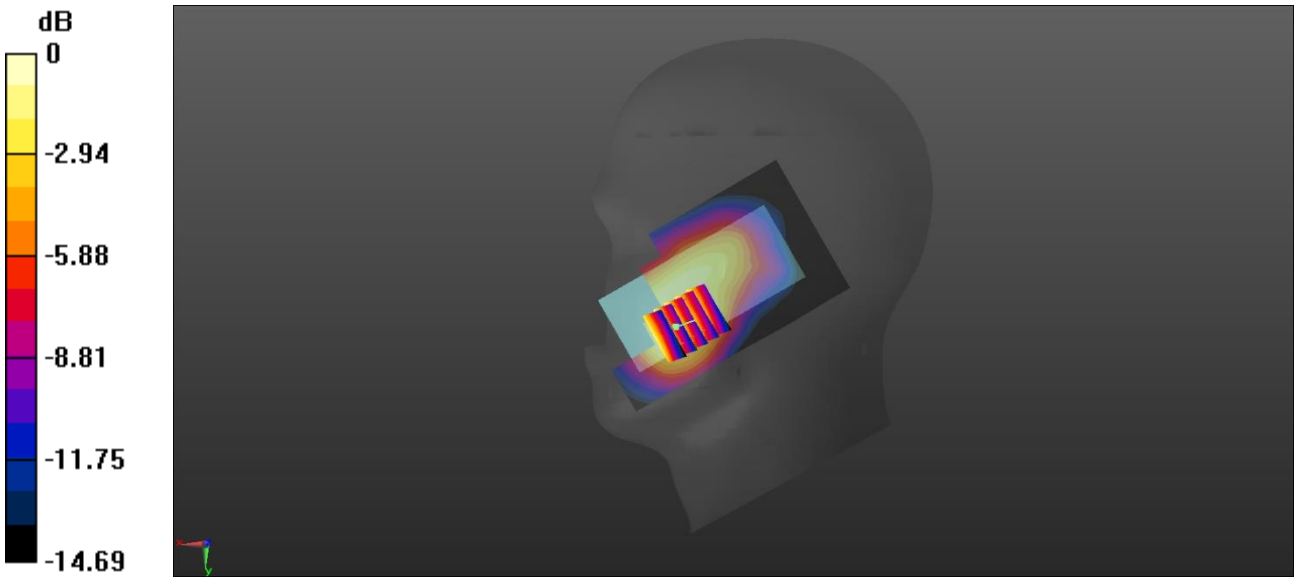
**Ch20300/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.502 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.17 W/kg

**SAR(1 g) = 0.731 W/kg; SAR(10 g) = 0.462 W/kg**

Maximum value of SAR (measured) = 0.790 W/kg




0 dB = 0.790 W/kg

**Meas.14 Body Plane with Bottom Edge 10mm on Low Channel in LTE Band 4 mode**

Date: 2021.09.12

Communication System Band: Band 4, E-UTRA/FDD (1710.0 - 1755.0 MHz); Frequency: 1720 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1720 MHz; $\sigma$ = 1.35 S/m; $\varepsilon_r$ = 40.39; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

Ambient Temperature:22.4 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.6, 8.6, 8.6); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch20050/Area Scan (51x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.11 W/kg

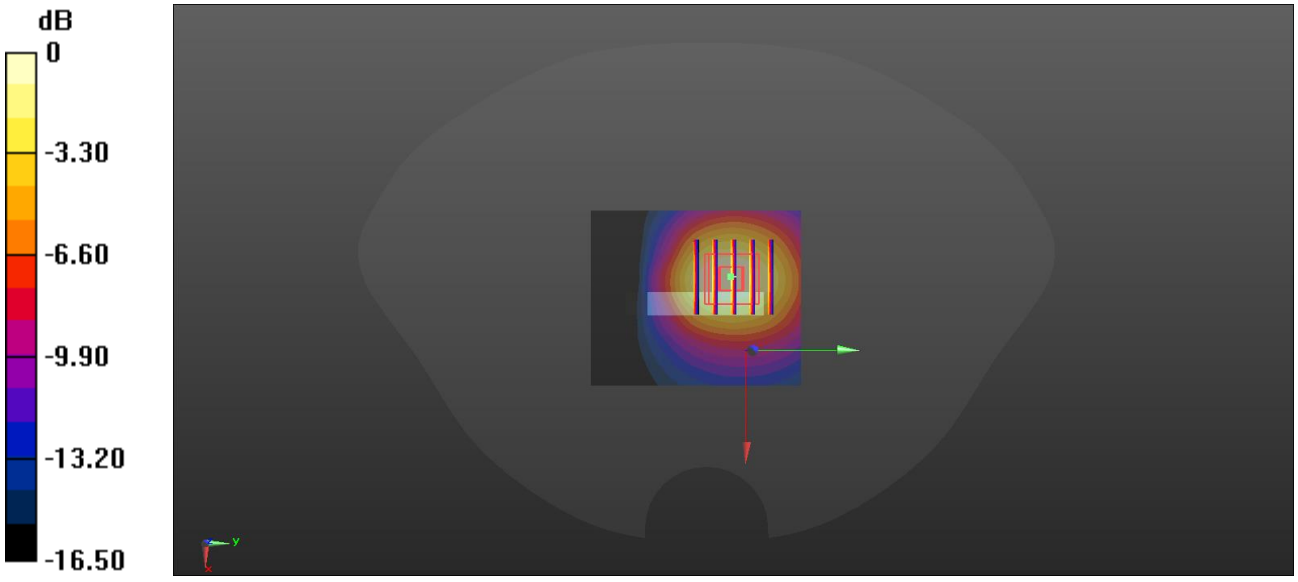
**Ch20050/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 24.23 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 1.58 W/kg

**SAR(1 g) = 0.893 W/kg; SAR(10 g) = 0.501 W/kg**

Maximum value of SAR (measured) = 1.01 W/kg




0 dB = 1.01 W/kg

**Meas.15 Left Head with Cheek on Low Channel in LTE Band 5 Mode**

Date: 2021.09.17

Communication System Band: Band 5, E-UTRA/FDD (824.0 - 849.0 MHz); Frequency: 829 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 829 MHz; $\sigma$ = 0.91 S/m; $\varepsilon_r$ = 40.991; $\rho$ = 1000 kg/m$^3$

Phantom section: Left Section

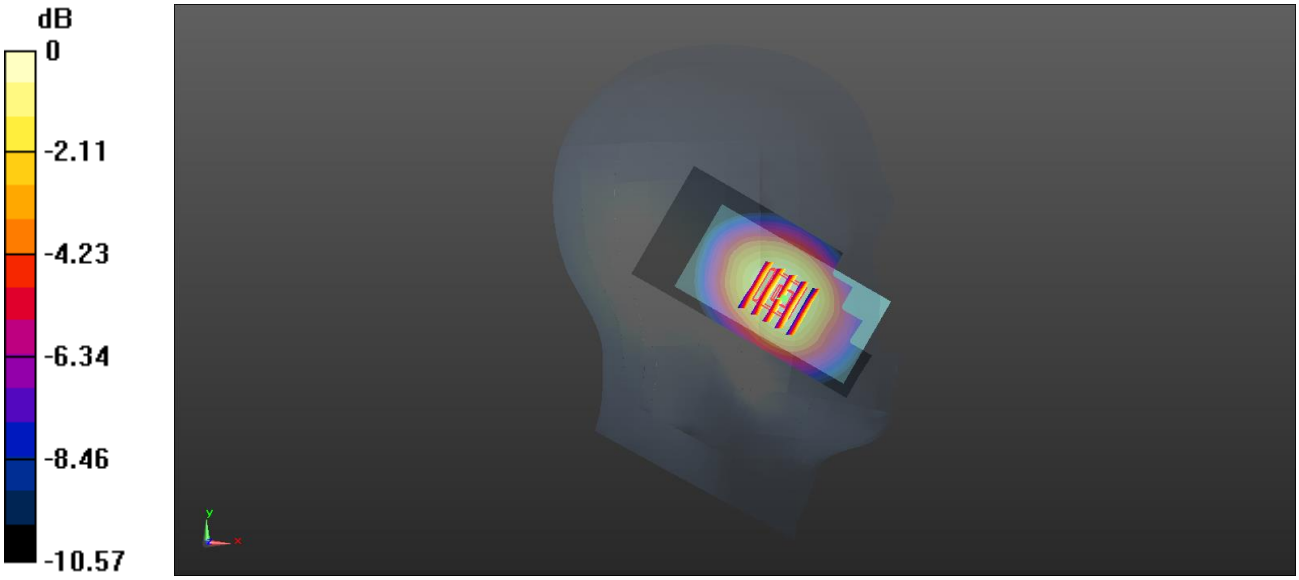
Ambient Temperature:22.4 Liquid Temperature:21.6

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.94, 9.94, 9.94); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch20450/Area Scan (51x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.756 W/kg

**Ch20450/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.737 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.924 W/kg
**SAR(1 g) = 0.727 W/kg; SAR(10 g) = 0.535 W/kg**
Maximum value of SAR (measured) = 0.778 W/kg




0 dB = 0.778 W/kg

**Meas.16 Body Plane with Front Side 10mm on Low Channel in LTE Band 5 mode**

Date: 2021.09.17

Communication System Band: Band 5, E-UTRA/FDD (824.0 - 849.0 MHz); Frequency: 829 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 829 MHz; $\sigma$ = 0.91 S/m; $\varepsilon_r$ = 40.991; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

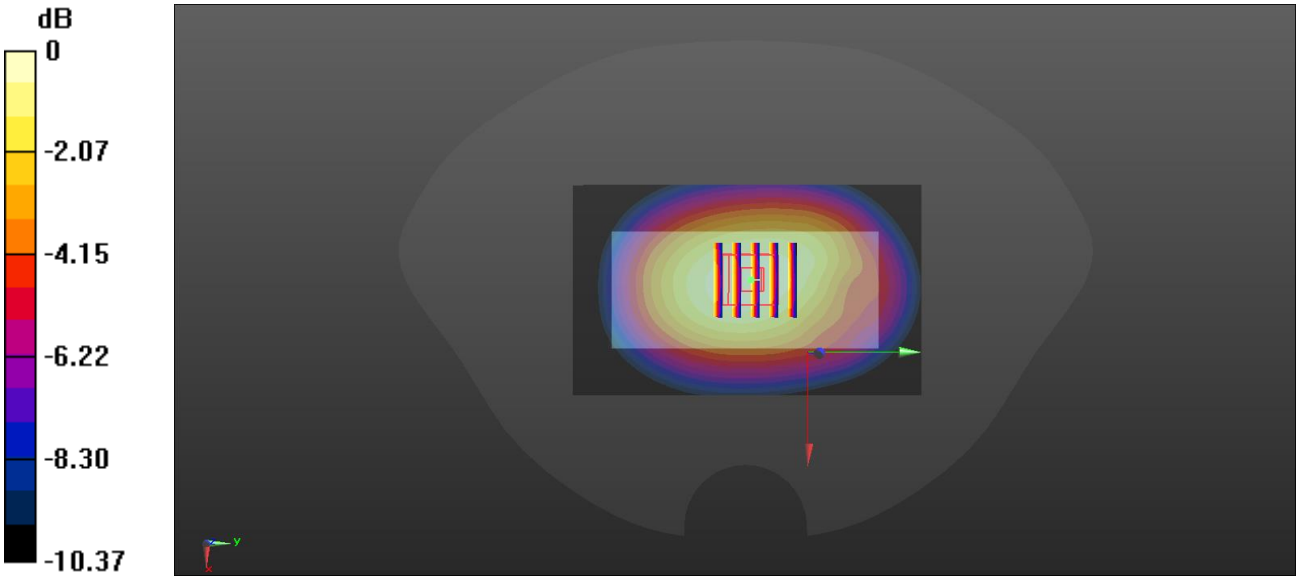
Ambient Temperature:22.4 Liquid Temperature:21.6

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.94, 9.94, 9.94); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch20450/Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.766 W/kg

**Ch20450/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.90 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.969 W/kg
**SAR(1 g) = 0.725 W/kg; SAR(10 g) = 0.515 W/kg**
Maximum value of SAR (measured) = 0.771 W/kg




0 dB = 0.771 W/kg

**Meas.17 Right Head with Cheek on High Channel in LTE Band 7 Mode**

Date: 2021.09.10

Communication System Band: Band 7, E-UTRA/FDD (2500.0 - 2570.0 MHz); Frequency: 2560 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 2560 MHz; $\sigma$ = 1.953 S/m; $\varepsilon_r$ = 38.813; $\rho$ = 1000 kg/m$^3$

Phantom section: Right Section

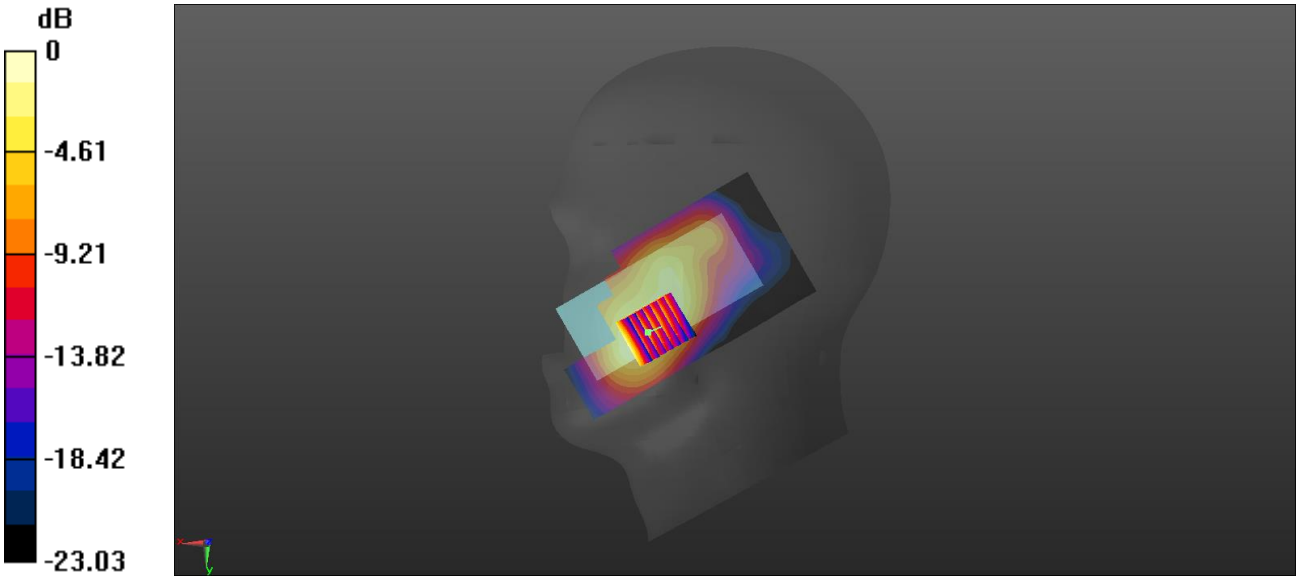
Ambient Temperature:22.3 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.5, 7.5, 7.5); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch21350/Area Scan (71x131x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.15 W/kg

**Ch21350/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.426 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 1.77 W/kg
**SAR(1 g) = 0.982 W/kg; SAR(10 g) = 0.529 W/kg**
Maximum value of SAR (measured) = 1.08 W/kg




0 dB = 1.08 W/kg

**Meas.18 Body Plane with Front Side 10mm on High Channel in LTE Band 7 mode**

Date: 2021.09.10

Communication System Band: Band 7, E-UTRA/FDD (2500.0 - 2570.0 MHz); Frequency: 2560 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 2560 MHz; $\sigma$ = 1.953 S/m; $\varepsilon_r$ = 38.813; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

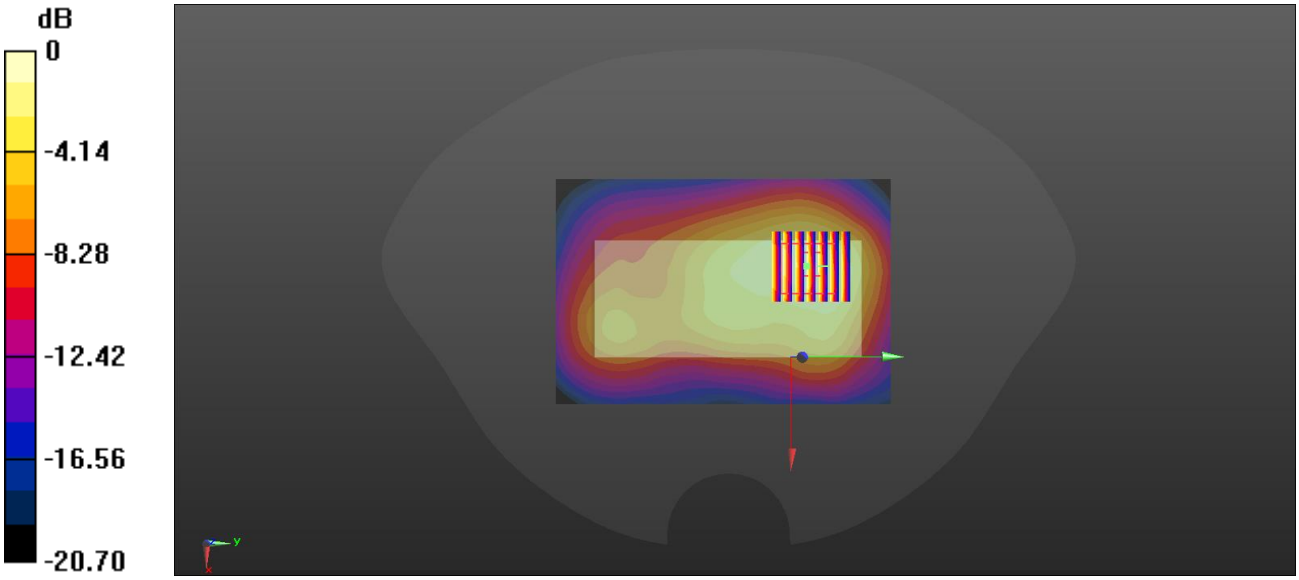
Ambient Temperature:22.3 Liquid Temperature:21.5

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.5, 7.5, 7.5); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch21350/Area Scan (81x121x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.643 W/kg

**Ch21350/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.65 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 1.15 W/kg
**SAR(1 g) = 0.611 W/kg; SAR(10 g) = 0.330 W/kg**
Maximum value of SAR (measured) = 0.663 W/kg




0 dB = 0.663 W/kg

**Meas.19 Left Head with Cheek on High Channel in LTE Band 12 Mode**

Date: 2021.09.19

Communication System Band: Band 12, E-UTRA/FDD (698.0 - 716.0 MHz); Frequency: 711 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 711 MHz; $\sigma$ = 0.9 S/m; $\varepsilon_r$ = 40.928; $\rho$ = 1000 kg/m$^3$

Phantom section: Left Section

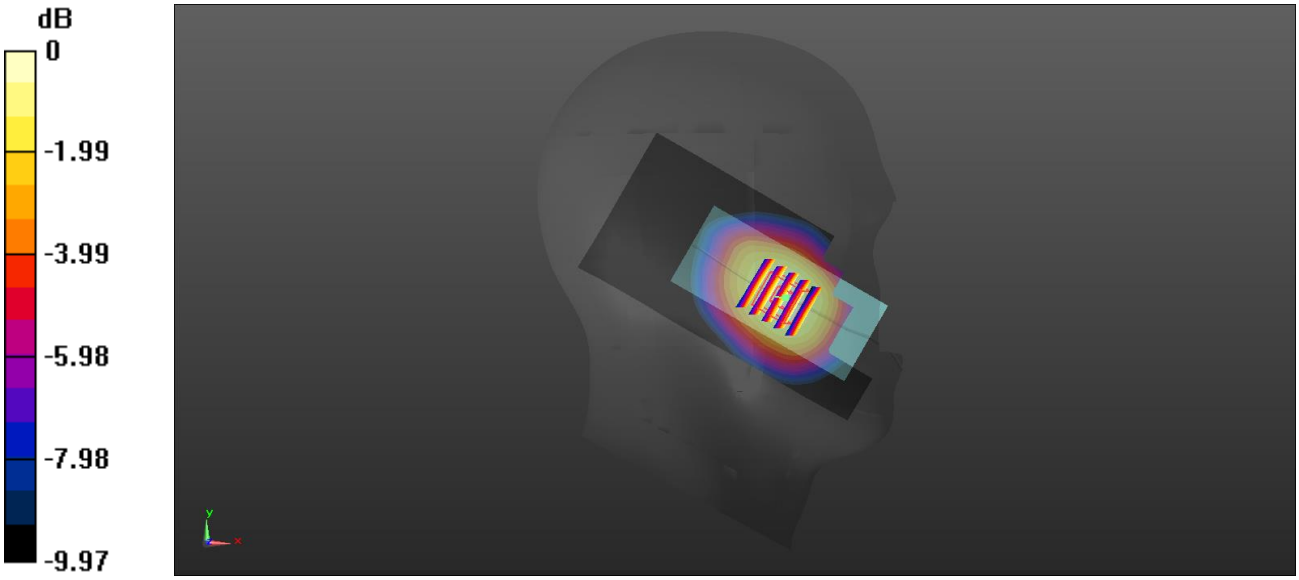
Ambient Temperature:22.2 Liquid Temperature:21.2

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(10.31, 10.31, 10.31); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch23130/Area Scan (61x121x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.527 W/kg

**Ch23130/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.115 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.10 W/kg
**SAR(1 g) = 0.534 W/kg; SAR(10 g) = 0.310 W/kg**
Maximum value of SAR (measured) = 0.522 W/kg




0 dB = 0.522 W/kg

**Meas.20 Body Plane with Front Side 10mm on High Channel in LTE Band 12 mode**

Date: 2021.09.19

Communication System Band: Band 12, E-UTRA/FDD (698.0 - 716.0 MHz); Frequency: 711 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 711 MHz; $\sigma$ = 0.9 S/m; $\varepsilon_r$ = 40.928; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

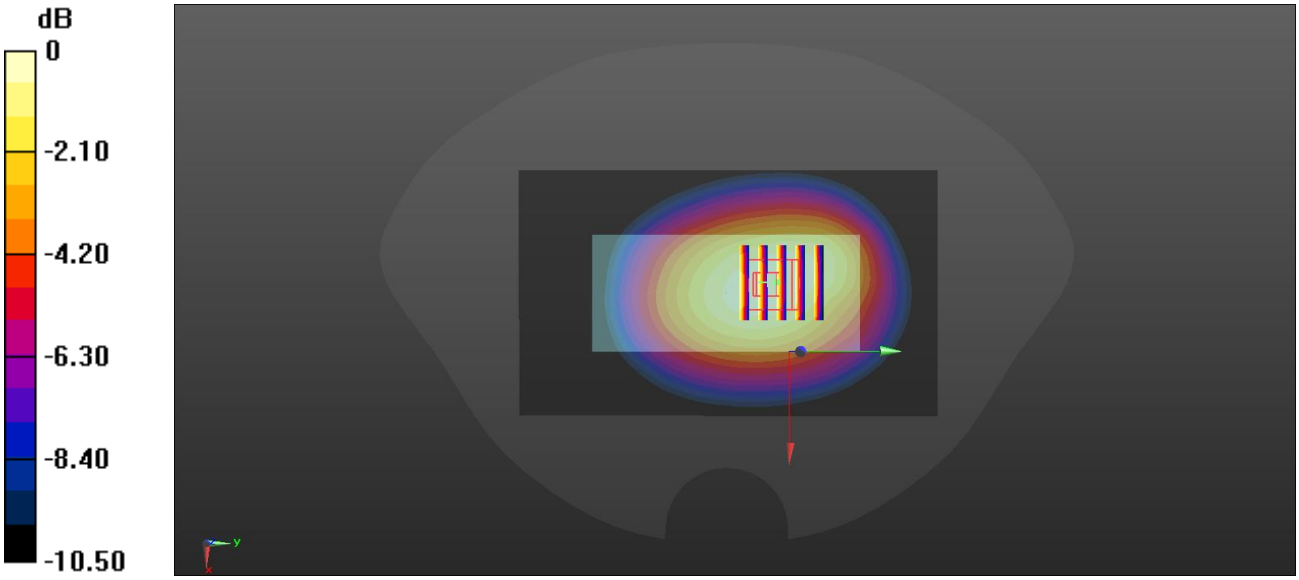
Ambient Temperature:22.2 Liquid Temperature:21.2

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(10.31, 10.31, 10.31); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch23130/Area Scan (71x121x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.495 W/kg

**Ch23130/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.52 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.614 W/kg
**SAR(1 g) = 0.460 W/kg; SAR(10 g) = 0.327 W/kg**
Maximum value of SAR (measured) = 0.486 W/kg




0 dB = 0.486 W/kg

**Meas.21 Left Head with Cheek on Middle Channel in LTE Band 17 Mode**

Date: 2021.09.19

Communication System Band: Band 17, E-UTRA/FDD (704.0 - 716.0 MHz); Frequency: 710 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 710 MHz; $\sigma$ = 0.899 S/m; $\varepsilon_r$ = 41.092; $\rho$ = 1000 kg/m$^3$

Phantom section: Left Section

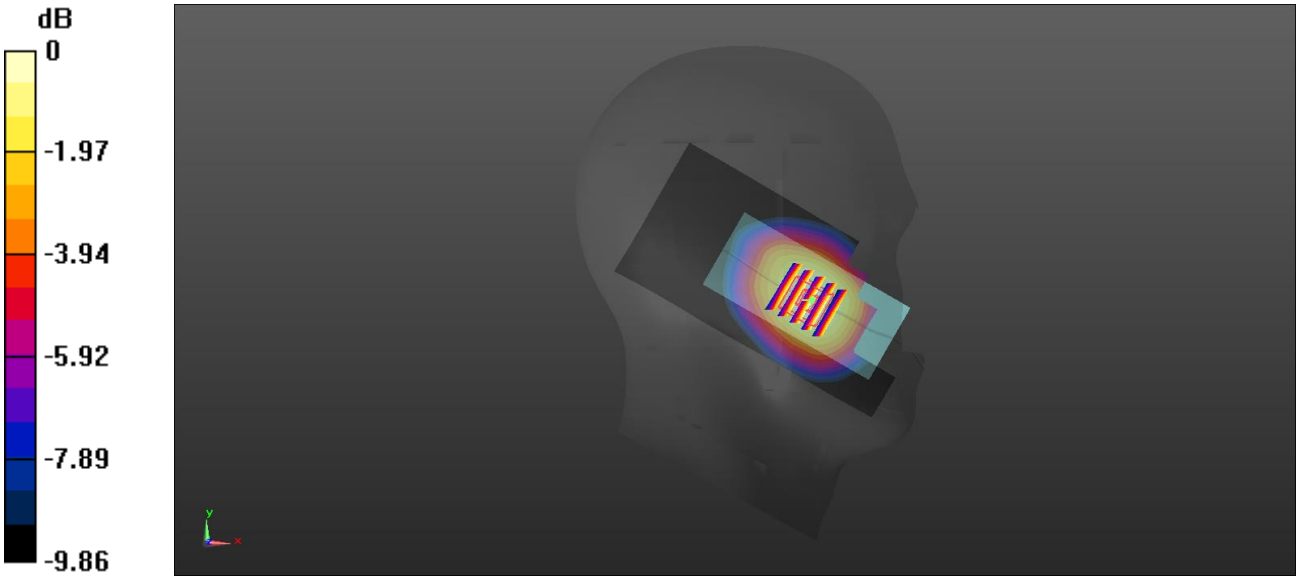
Ambient Temperature:22.2 Liquid Temperature:21.2

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(10.31, 10.31, 10.31); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch23790/Area Scan (61x121x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.509 W/kg

**Ch23790/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.397 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.634 W/kg
**SAR(1 g) = 0.490 W/kg; SAR(10 g) = 0.349 W/kg**
Maximum value of SAR (measured) = 0.516 W/kg




0 dB = 0.516 W/kg

**Meas.22 Body Plane with Front Side 10mm on Middle Channel in LTE Band 17 mode**

Date: 2021.09.19

Communication System Band: Band 17, E-UTRA/FDD (704.0 - 716.0 MHz); Frequency: 710 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 710 MHz; $\sigma$ = 0.899 S/m; $\varepsilon_r$ = 41.092; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

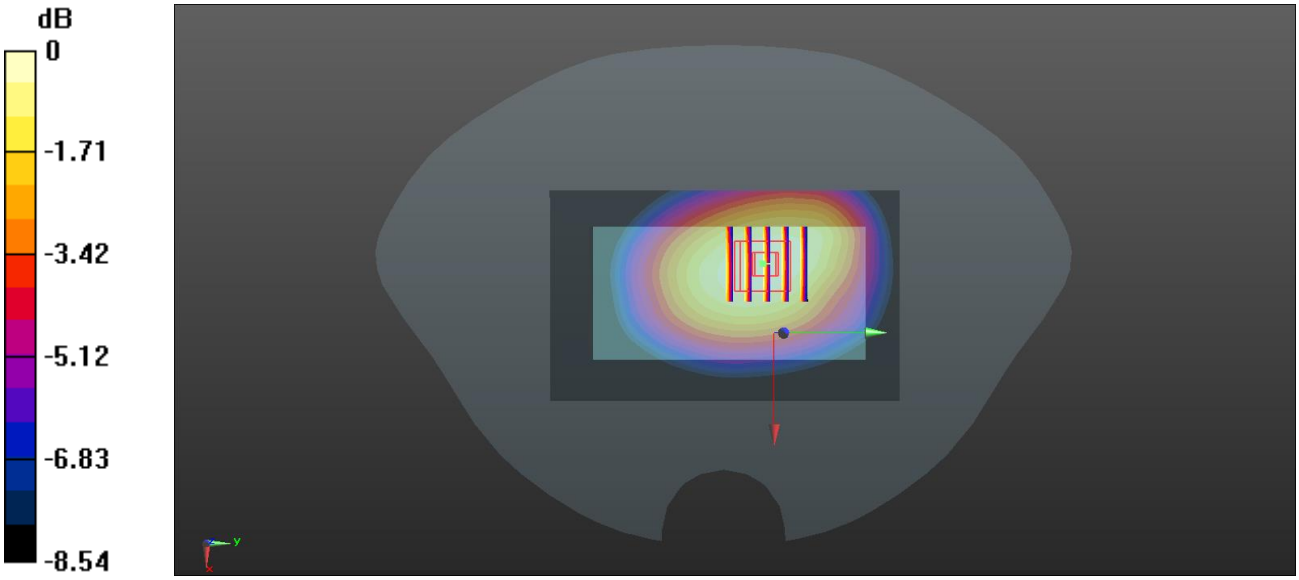
Ambient Temperature:22.2 Liquid Temperature:21.2

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(10.31, 10.31, 10.31); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch23790/Area Scan (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.547 W/kg

**Ch23790/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.13 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.656 W/kg
**SAR(1 g) = 0.511 W/kg; SAR(10 g) = 0.380 W/kg**
Maximum value of SAR (measured) = 0.536 W/kg




0 dB = 0.536 W/kg

**Meas.23 Right Head with Cheek on Middle Channel in IEEE802.11b Mode**

Date: 2021.09.09

Communication System Band: WLAN(b); Frequency: 2462 MHz;Duty Cycle: 1:1.025

Medium parameters used (interpolated): f = 2462 MHz; $\sigma$ = 1.853 S/m; $\varepsilon_r$ = 38.197; $\rho$ = 1000 kg/m$^3$

Phantom section: Right Section

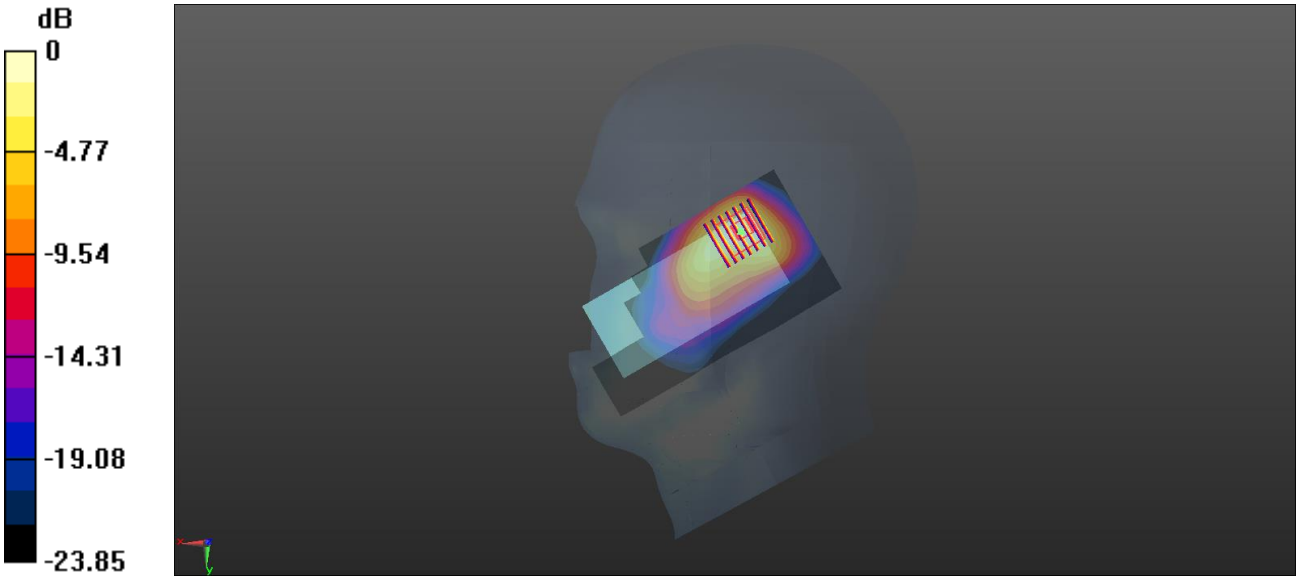
Ambient Temperature:22.5 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.54, 7.54, 7.54); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch11/Area Scan (91x181x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.436 W/kg

**Ch11/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.42 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.807 W/kg
**SAR(1 g) = 0.392 W/kg; SAR(10 g) = 0.191 W/kg**
Maximum value of SAR (measured) = 0.445 W/kg




0 dB = 0.445 W/kg

**Meas.24 Body Plane with Top Edge 10mm on Middle Channel in IEEE802.11b mode**

Date: 2021.09.09

Communication System Band: WLAN(b); Frequency: 2462 MHz;Duty Cycle: 1:1.025

Medium parameters used (interpolated): f = 2462 MHz; $\sigma$ = 1.853 S/m; $\varepsilon_r$ = 38.197; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

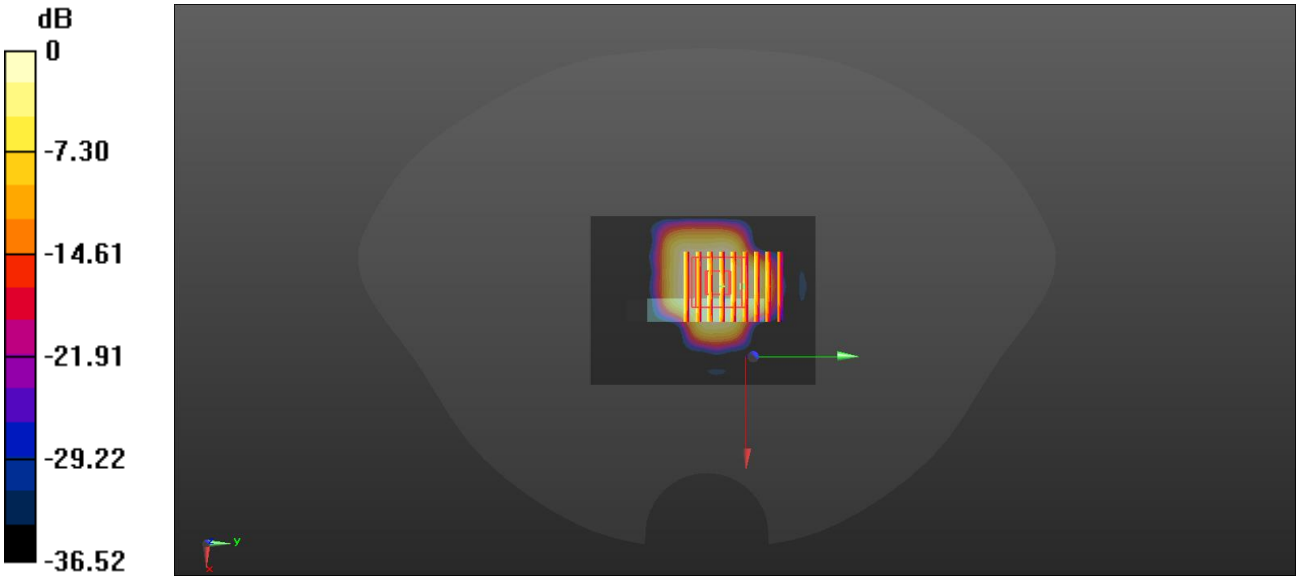
Ambient Temperature:22.5 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.54, 7.54, 7.54); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch11/Area Scan (61x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.111 W/kg

**Ch11/Zoom Scan (7x9x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.009 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.149 W/kg
**SAR(1 g) = 0.072 W/kg; SAR(10 g) = 0.036 W/kg**
Maximum value of SAR (measured) = 0.0797 W/kg




0 dB = 0.0797 W/kg

**Meas.25 Right Head with Cheek on Middle Channel in Bluetooth 3DH5 Mode**

Date: 2021.09.09

Communication System Band: BT; Frequency: 2441 MHz;Duty Cycle: 1:1.3

Medium parameters used (interpolated): f = 2441 MHz; $\sigma$ = 1.821 S/m; $\varepsilon_r$ = 38.428; $\rho$ = 1000 kg/m$^3$

Phantom section: Right Section

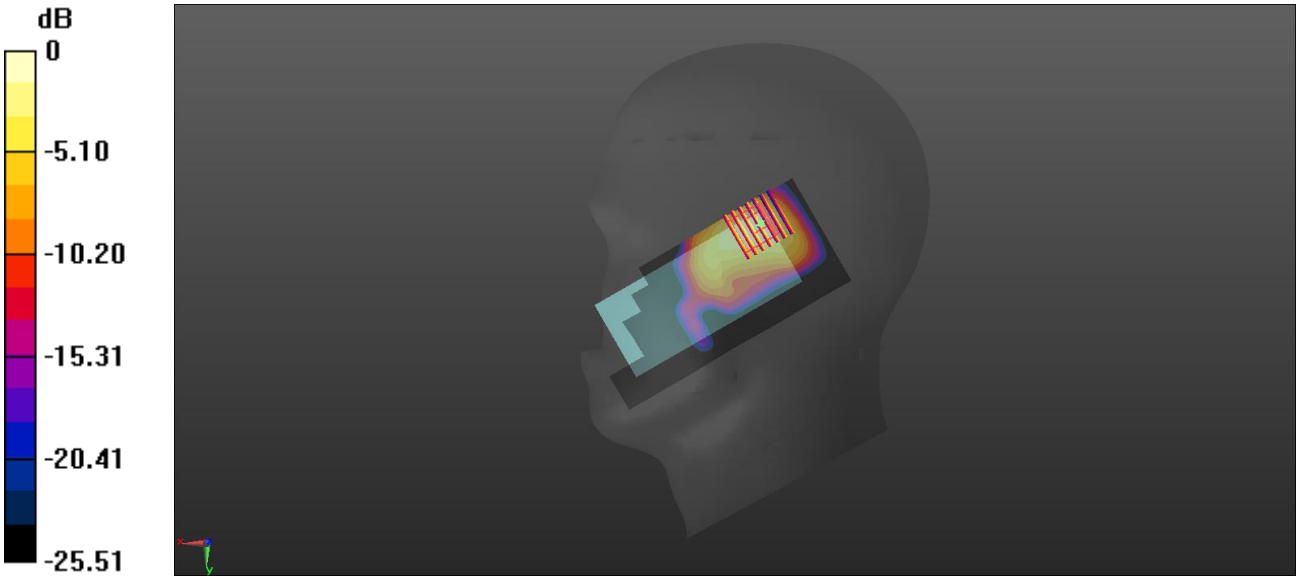
Ambient Temperature:22.5 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.54, 7.54, 7.54); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch39/Area Scan (61x131x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.151 W/kg

**Ch39/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.836 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.290 W/kg
**SAR(1 g) = 0.139 W/kg; SAR(10 g) = 0.065 W/kg**
Maximum value of SAR (measured) = 0.146 W/kg




0 dB = 0.146 W/kg

**Meas.26 Body Plane with Top Edge 10mm on Middle Channel in Bluetoo 3DH5 mode**

Date: 2021.09.09

Communication System Band: BT; Frequency: 2441 MHz;Duty Cycle: 1:1.3

Medium parameters used (interpolated): f = 2441 MHz; $\sigma$ = 1.821 S/m; $\varepsilon_r$ = 38.428; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

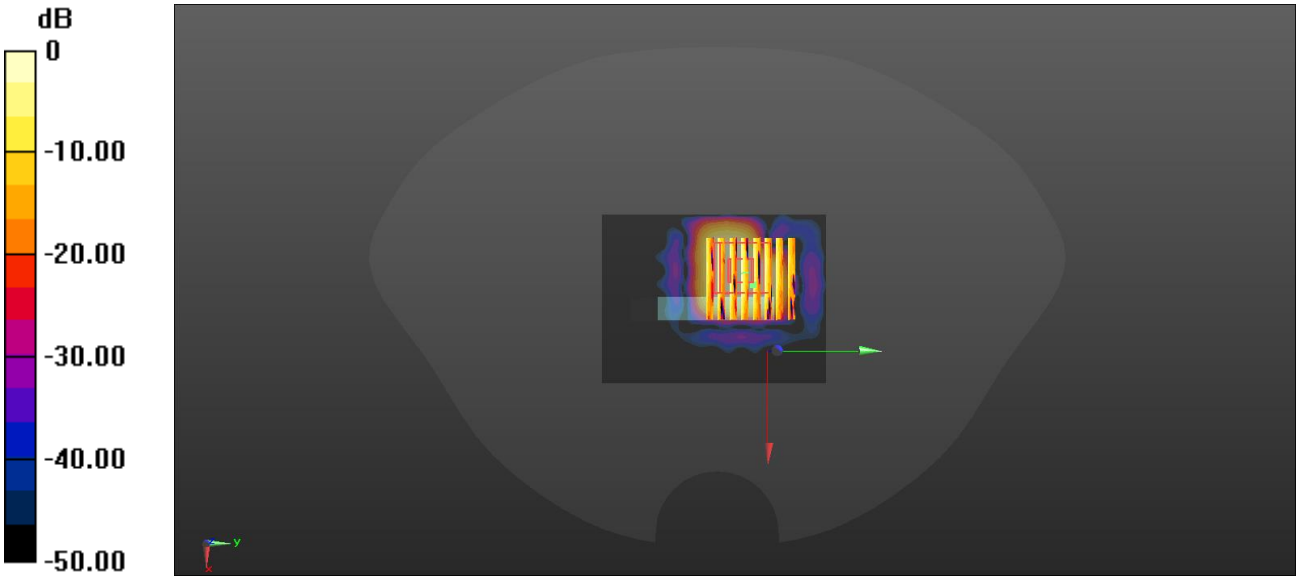
Ambient Temperature:22.5 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.54, 7.54, 7.54); Calibrated: 2020.11.30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2020.11.06
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CC; Serial: TP:1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Ch39/Area Scan (61x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0532 W/kg

**Ch39/Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.0420 W/kg
**SAR(1 g) = 0.021 W/kg; SAR(10 g) = 0.010 W/kg**
Maximum value of SAR (measured) = 0.0247 W/kg




0 dB = 0.0247 W/kg

# ANNEX D EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2181089-AW.pdf”.

# ANNEX E SAR TEST SETUP PHOTOS

Please refer the document “BL-SZ2181089-AS.pdf”.

# ANNEX F CALIBRATION REPORT

Please refer the document “CALIBRATION REPORT.pdf”.

--END OF REPORT--