SAR TEST REPORT

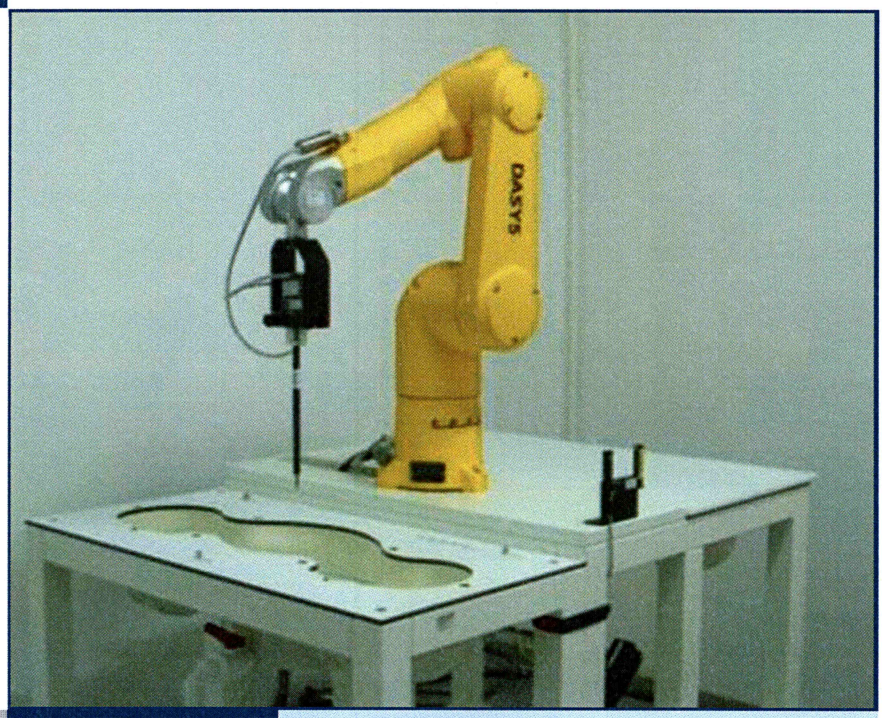
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

Punkt. MP 02 4G Feature phone

ISSUED TO
Punkt Tronics AG

Via Losanna 4, Lugano 6900, Switzerland



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

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

Approved by:
Liao Jianming
(Technical Director)
Date 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 5

1.1 Identification of the Testing Laboratory 5

1.2 Identification of the Responsible Testing Location 5

1.3 Test Environment Condition 5

1.4 Announce 5

2 PRODUCT INFORMATION 6

2.1 Applicant Information 6

2.2 Manufacturer Information 6

2.3 Factory Information 6

2.4 General Description for Equipment under Test (EUT) 6

2.5 Ancillary Equipment 6

2.6 Technical Information 7

3 SUMMARY OF TEST RESULT 8

3.1 Test Standards 8

3.2 Device Category and SAR Limit 9

3.3 Test Result Summary 10

3.4 Test Uncertainty 11

4 MEASUREMENT SYSTEM 12

4.1 Specific Absorption Rate (SAR) Definition 12

4.2 DASY SAR System 13

5 SYSTEM VERIFICATION 20

5.1 Purpose of System Check 20

5.2 System Check Setup 20

6 TEST POSITION CONFIGURATIONS 21

6.1 Head Exposure Conditions 21

6.2 Body-worn Position Conditions 23
6.3 Hotspot Mode Exposure Position Conditions 24
7 MEASUREMENT PROCEDURE 25
7.1 Measurement Process Diagram 25
7.2 SAR Scan General Requirement 26
7.3 Measurement Procedure 27
7.4 Area & Zoom Scan Procedure 27
8 CONDUCTED RF OUPUT POWER 28
8.1 GSM 28
8.2 WCDMA 28
8.3 LTE 28
8.4 WIFI 29
8.5 Bluetooth 30
8.6 Power Reduction List 31
9 TEST EXCLUSION CONSIDERATION 33
9.1 SAR Test Exclusion Consideration Table 34
9.2 10g Extremity Exposure Consideration 36
10 TEST RESULT 37
10.1 GSM 850 37
10.2 GSM 1900 38
10.3 WCDMA Band 2 39
10.4 WCDMA Band 4 40
10.5 WCDMA Band 5 41
10.6 LTE Band 2 (20MHz Bandwidth) 42
10.7 LTE Band 4 (20MHz Bandwidth) 43
10.8 LTE Band 5 (10MHz Bandwidth) 44
10.9 LTE Band 7 (20MHz Bandwidth) 45
10.10 LTE Band 12 (10MHz Bandwidth) 46
10.11 LTE Band 17 (10MHz Bandwidth) 47
10.12 WIFI 2.4GHz 48
10.13 Bluetooth 49
11 SAR Measurement Variability 50

12 SIMULTANEOUS TRANSMISSION.....51
12.1 Simultaneous Transmission Mode Consider.....51
12.2 Sum SAR of Simultaneous Transmission.....52
13 TEST EQUIPMENTS LIST.....55
ANNEX A SIMULATING LIQUID VERIFICATION RESULT.....56
ANNEX B SYSTEM CHECK RESULT.....57
ANNEX C TEST DATA.....67
ANNEX D EUT EXTERNAL PHOTOS.....93
ANNEX E SAR TEST SETUP PHOTOS.....93
ANNEX F CALIBRATION REPORT.....93

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 3G Network WCDMA/HSDPA/HSUPA/DC-HSDPA Band 2/4/5 4G Network LTE FDD Band 2/4/5/7/12/17 Bluetooth (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20/40) 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 WLAN: PIFA Antenna 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:

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

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

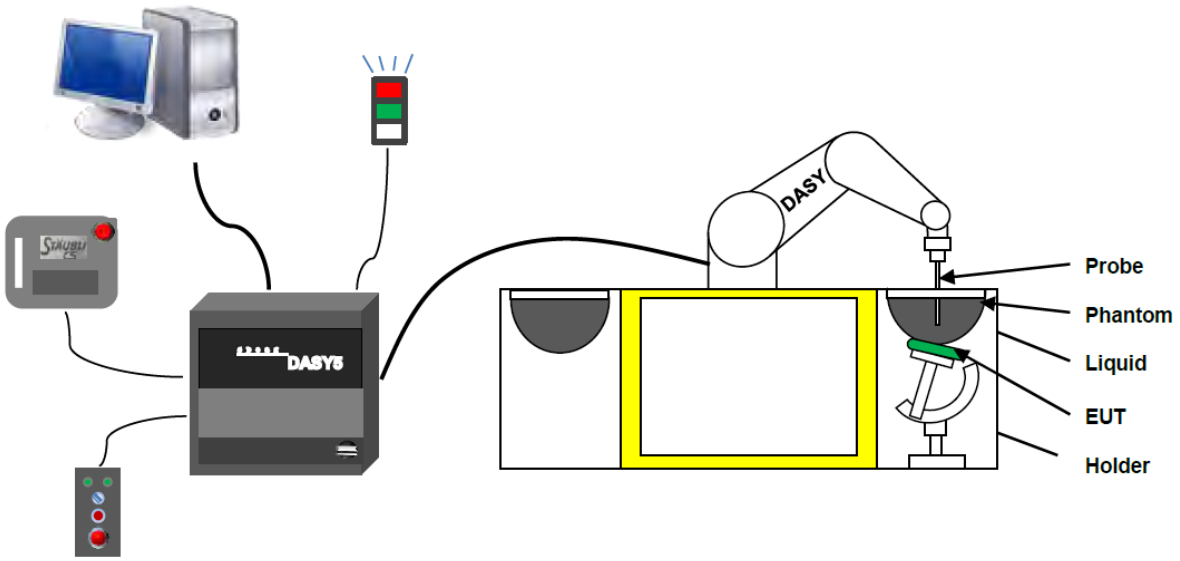
$$\mathbf{SAR} = \frac{\sigma E^2}{\rho}$$

Where: σ is the conductivity of the tissue,

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

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.

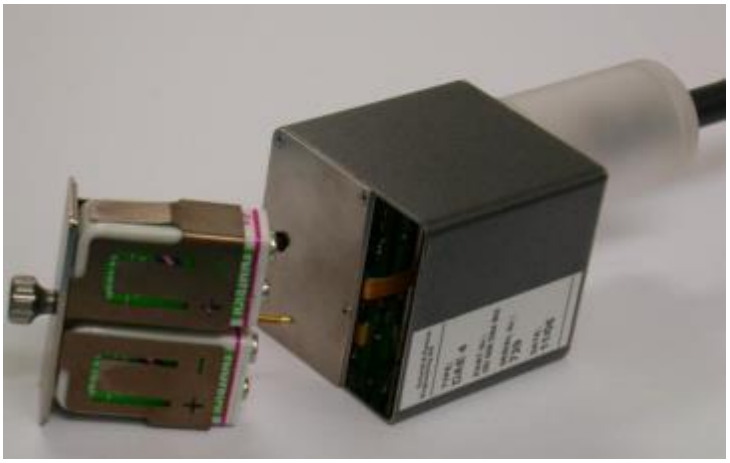
Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection systemBuilt-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., glycolether)
Calibration	ISO/IEC 17025 calibration service available
Frequency	10 MHz to 6 GHz; 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

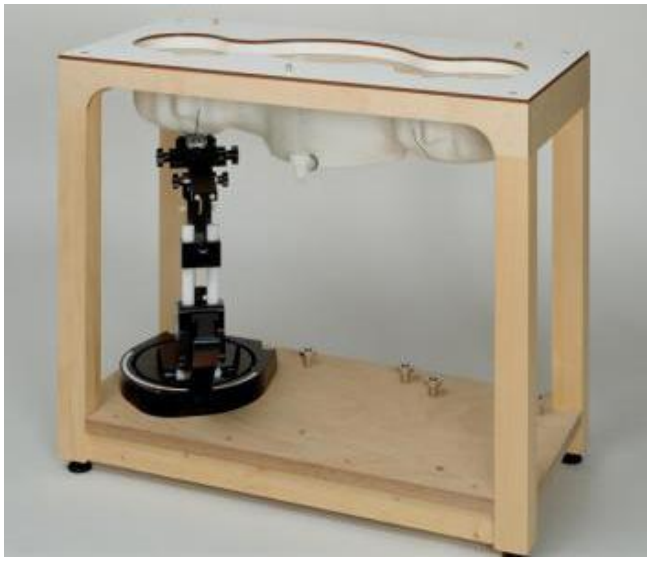
The data acquisition electronics (DAE) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converte and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an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

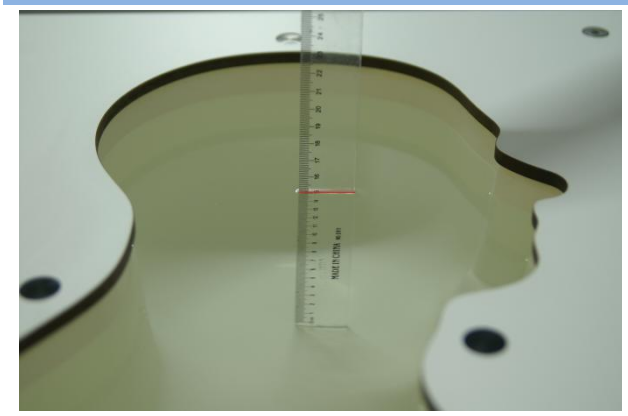
4.2.6 Device Holder

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

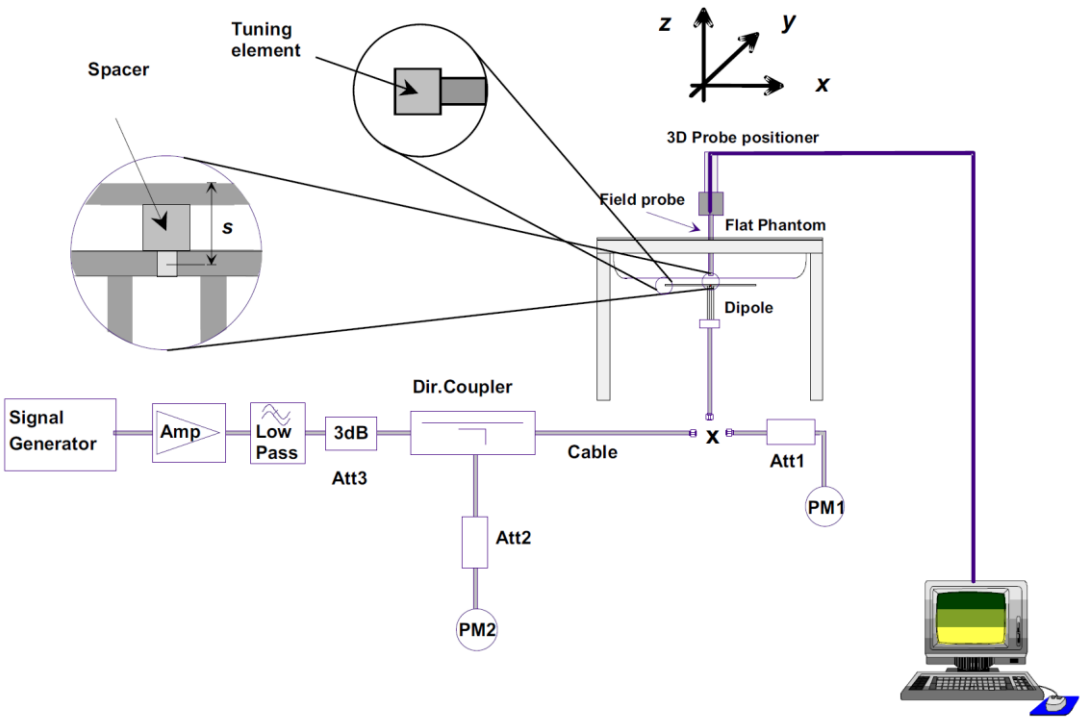
5 SYSTEM VERIFICATION

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

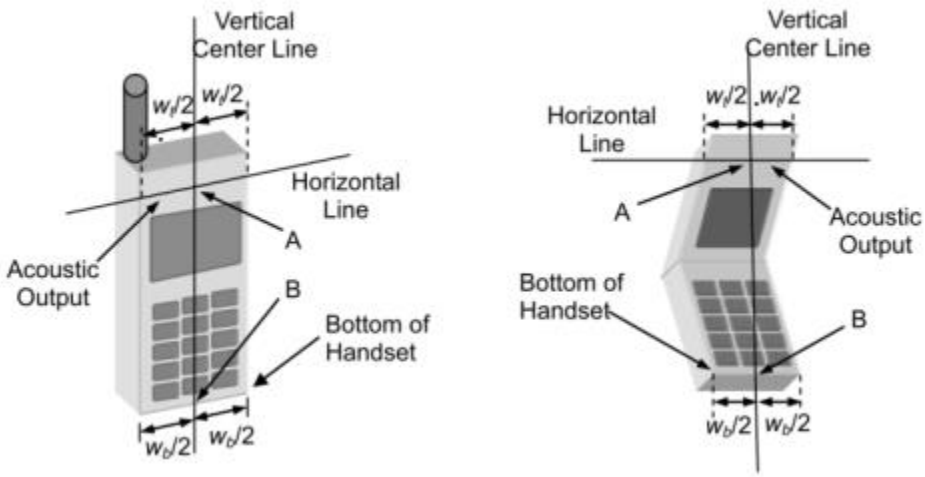
Head exposure is limited to next to the ear voice mode operations. Head SAR compliance is tested according to the test positions defined in IEEE Std 1528-2013 using the SAM phantom illustrated as below.

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.

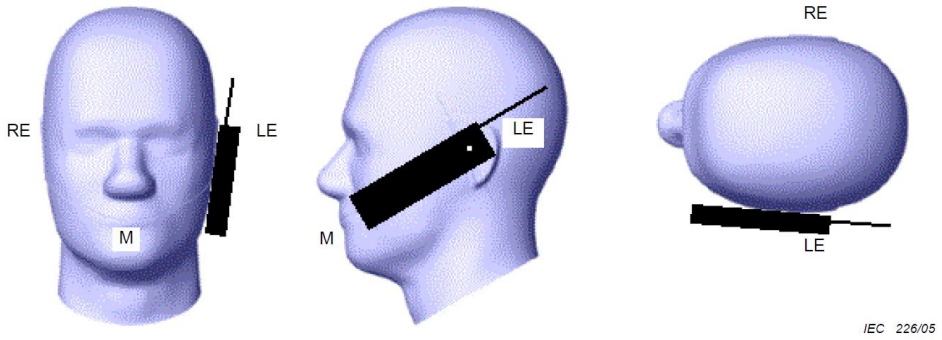
(c) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical center line is not necessarily parallel to the front face of the handset,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

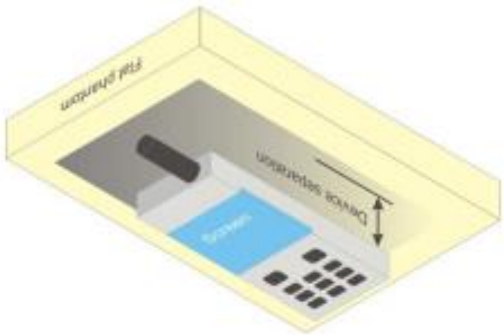
(b) While maintaining the device the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost.

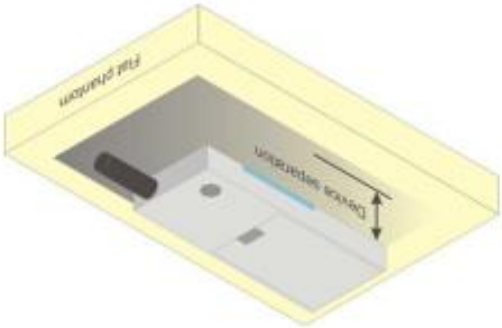
6.2 Body-worn Position Conditions

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.

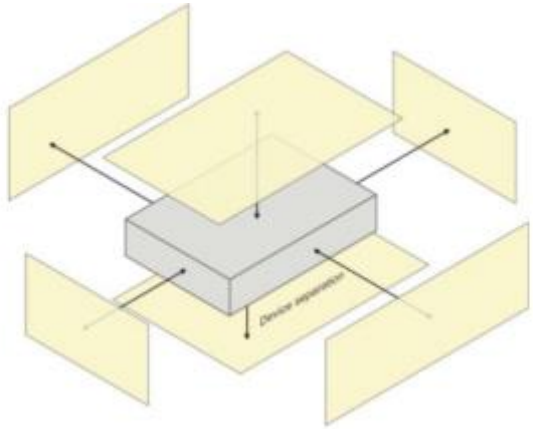
Body-worn accessory SAR compliance is based on a single minimum test separation distance for all wireless and operating modes applicable to each body-worn accessory used by the host, and according to the relevant voice and/or data mode transmissions and operations. If a body-worn accessory supports voice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





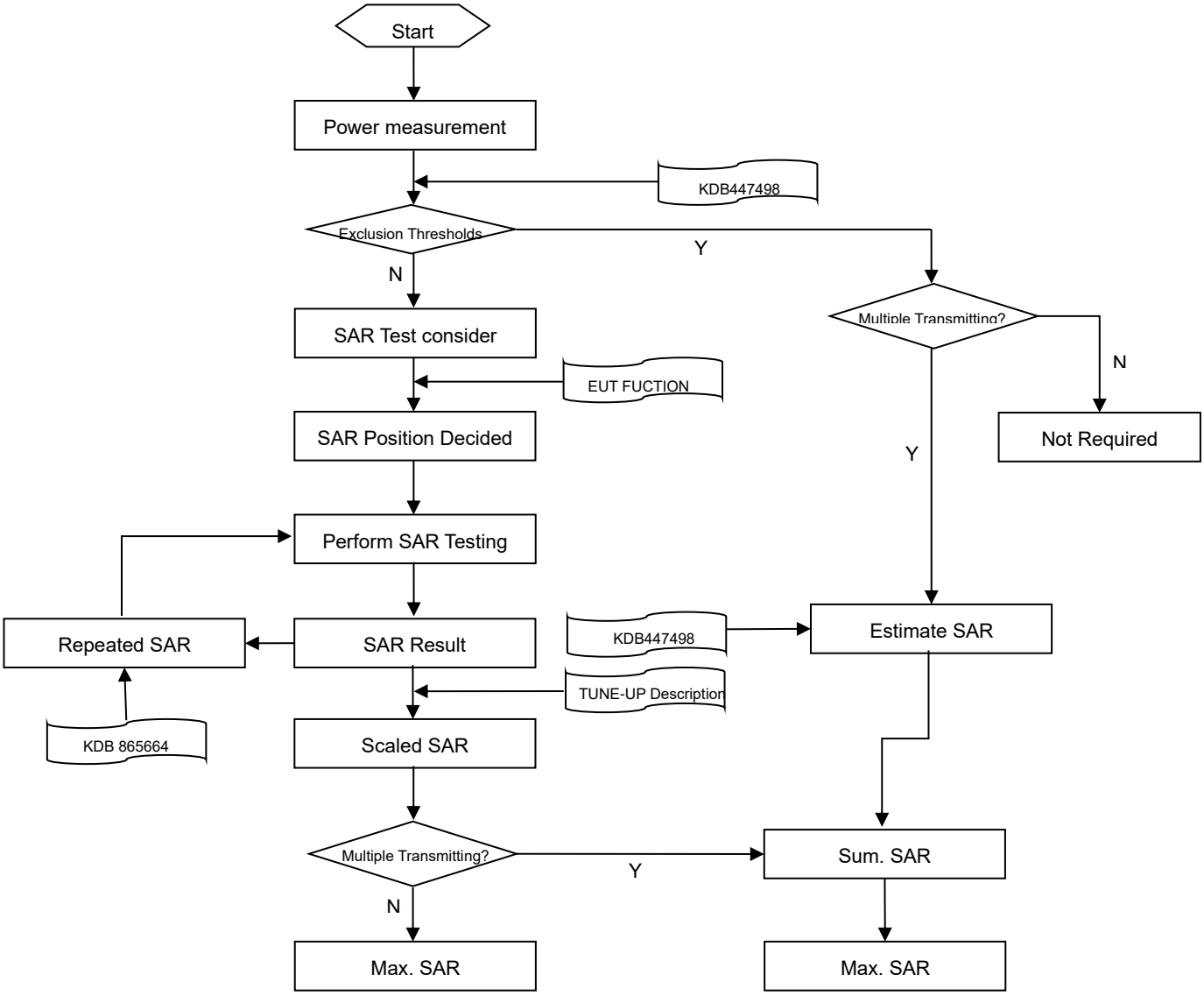
6.3 Hotspot Mode Exposure Position Conditions

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
2 – 3 GHz: ≤ 12 mm</td><td>3–4 GHz: ≤ 12 mm
4 – 6 GHz: ≤ 10 mm</td></tr>
<tr><td colspan="2">When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx Zoom , Δy Zoom</td><td>≤ 2 GHz: ≤ 8 mm
2 –3 GHz: ≤ 5 mm*</td><td>3–4 GHz: ≤ 5 mm*
4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="6">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2" rowspan="3">uniform grid: Δz Zoom (n)</td><td rowspan="3">≤ 5 mm</td><td>3–4 GHz: ≤ 4 mm</td></tr>
<tr><td>4–5 GHz: ≤ 3 mm</td></tr>
<tr><td>5–6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="3">graded grid</td><td rowspan="2">Δz Zoom (1): between 1st two points closest to phantom surface</td><td rowspan="2">≤ 4 mm</td><td>3–4 GHz: ≤ 3 mm</td></tr>
<tr><td>4–5 GHz: ≤ 2.5 mm
5–6 GHz: ≤ 2 mm</td></tr>
<tr><td>Δz Zoom (n>1): between subsequent points</td><td colspan="2">≤ 1.5·Δz Zoom (n-1)</td></tr>
<tr><td rowspan="3">Minimum zoom scan volume</td><td colspan="2" rowspan="3">x, y, z</td><td rowspan="3">≥30 mm</td><td>3–4 GHz: ≥ 28 mm</td></tr>
<tr><td>4–5 GHz: ≥ 25 mm</td></tr>
<tr><td>5–6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">Note:
1. δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.
2. * When zoom scan is required and the reported SAR from the area scan based 1 g SAR estimation procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</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

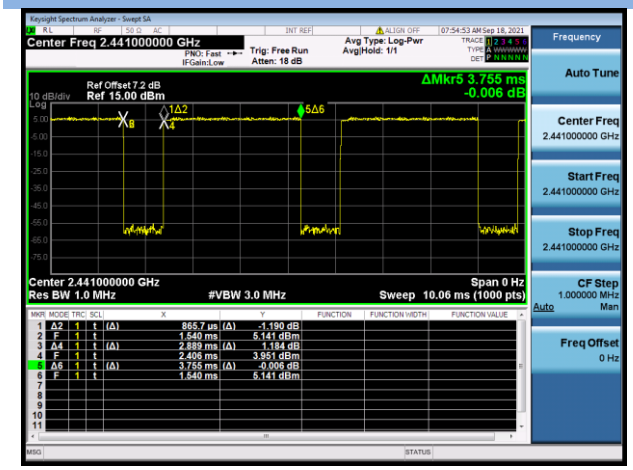
Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	9.29	9.50	No
		2	2417	9.50	9.50	No
		3	2422	11.58	12.00	No
		4	2427	14.09	14.50	Yes
		6	2437	13.14	13.50	Yes
		11	2462	**15.00**	15.00	Yes
	802.11g	1	2412	11.51	12.00	No
		2	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

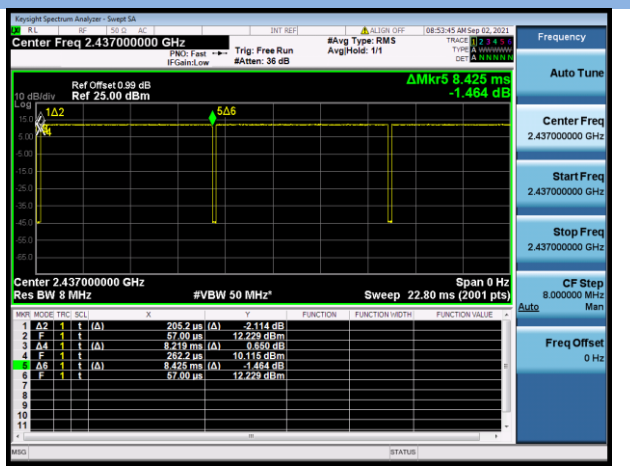
Mode	GFSK			π/4-DQPSK		
Channel	0	39	78	0	39	78
Frequency (MHz)	2402	2441	2480	2402	2441	2480
Conducted Power (dBm)	4.71	5.58	5.04	5.71	6.73	6.07
Tune-Up Limit (dBm)	6.00			7.00		
Mode	8-DPSK			BLE		
Channel	0	39	78	0	19	39
Frequency (MHz)	2402	2441	2480	2402	2440	2480
Conducted Power (dBm)	6.01	**7.04**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

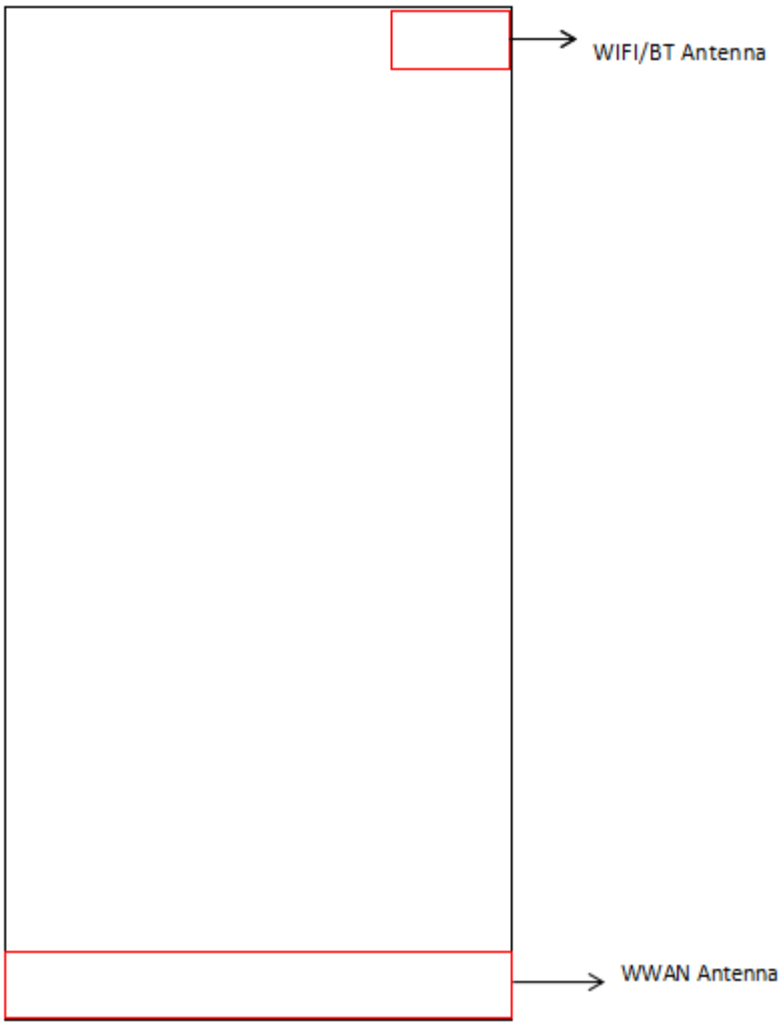
Mode	WWAN Antenna Up				
	Full power	Head		Body-worn Accessory & Hotspot	
		Standalone	Simultaneous transmission +2.4G WLAN/BT	Standalone	Simultaneous transmission +2.4G WLAN/BT
GSM850	33.00	33.00	33.00	33.00	33.00
GPRS850 1 Tx Slot	33.00	33.00	33.00	33.00	33.00
GPRS850 2 Tx Slots	29.00	29.00	29.00	29.00	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; σ = 0.905 S/m; ε_r = 40.805; ρ = 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

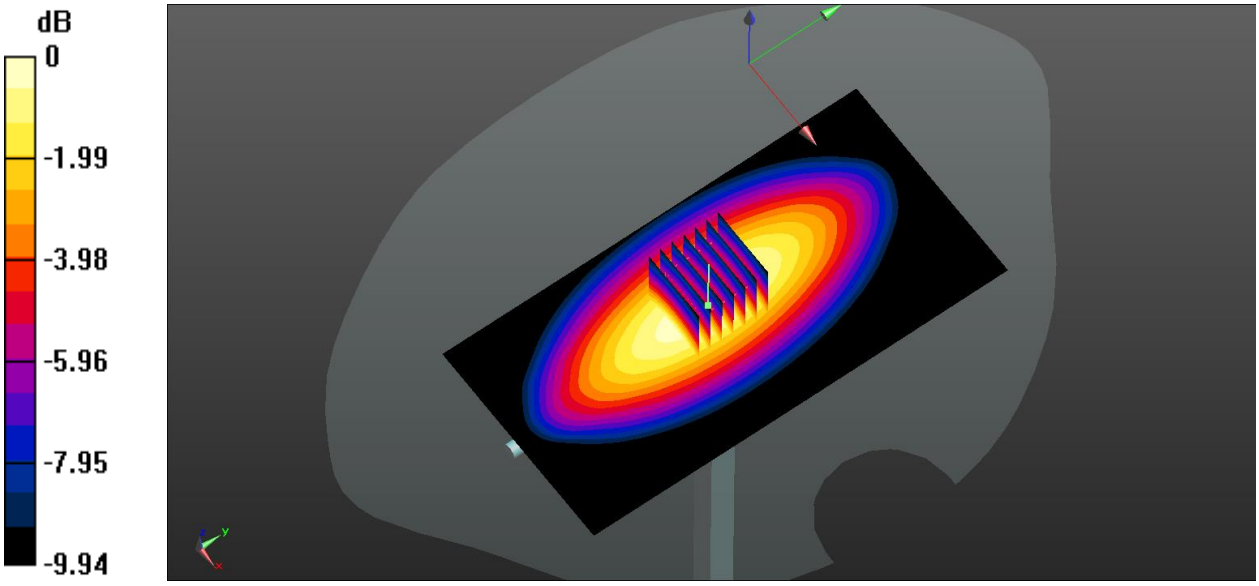
CW 750 100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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; σ = 0.921 S/m; ε_r = 40.894; ρ = 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

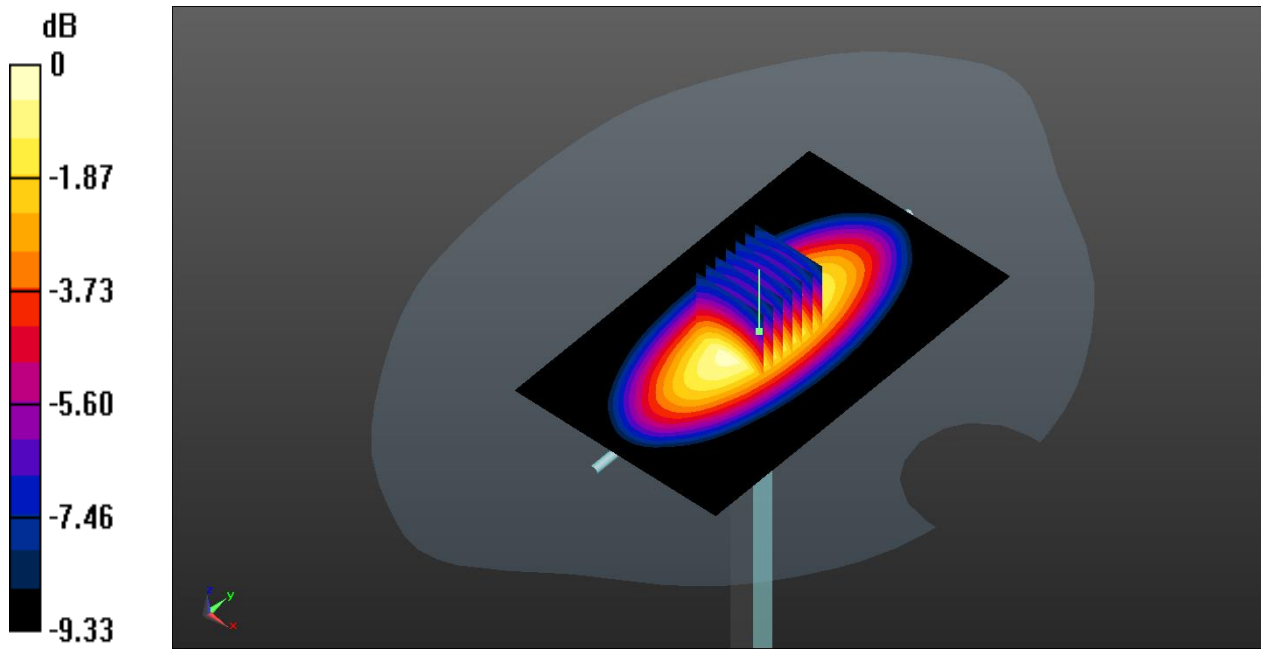
CW 835-Head-100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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; σ = 0.912 S/m; ε_r = 40.909; ρ = 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

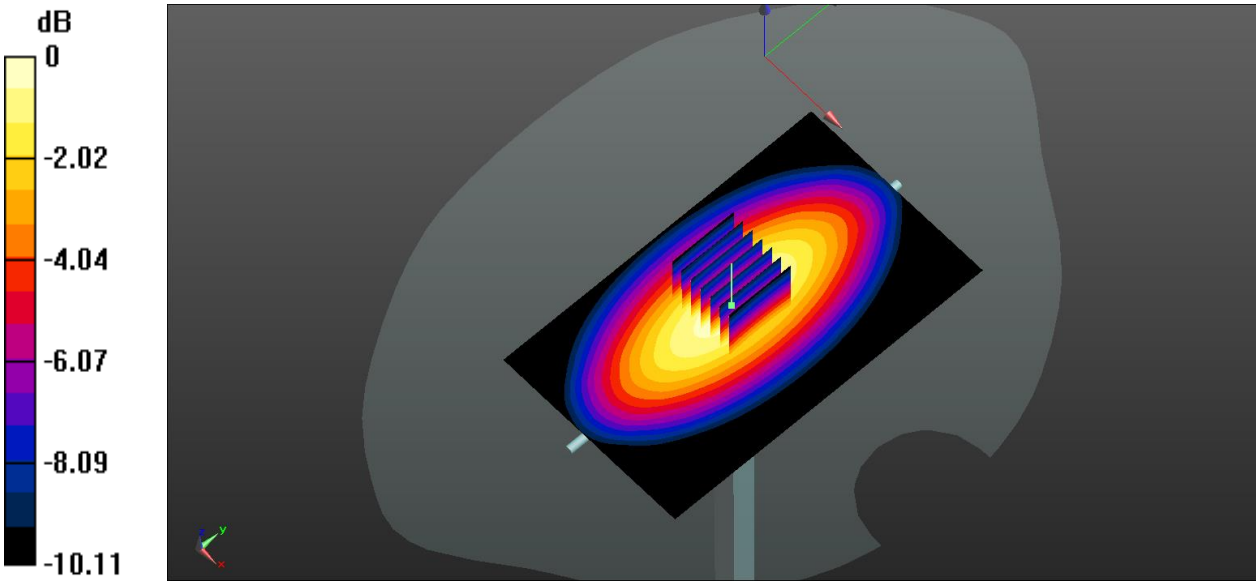
CW 835 100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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; σ = 1.39 S/m; ε_r = 39.663; ρ = 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

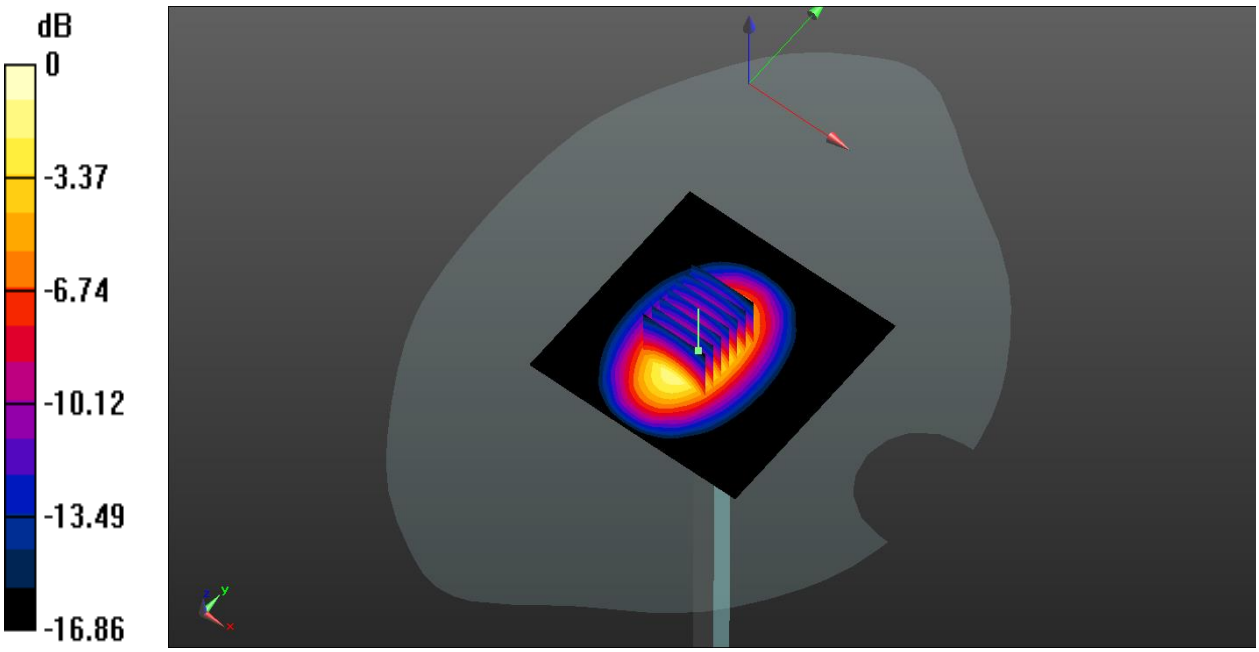
CW1750 Head 100mW /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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; σ = 1.371 S/m; ε_r = 39.135; ρ = 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

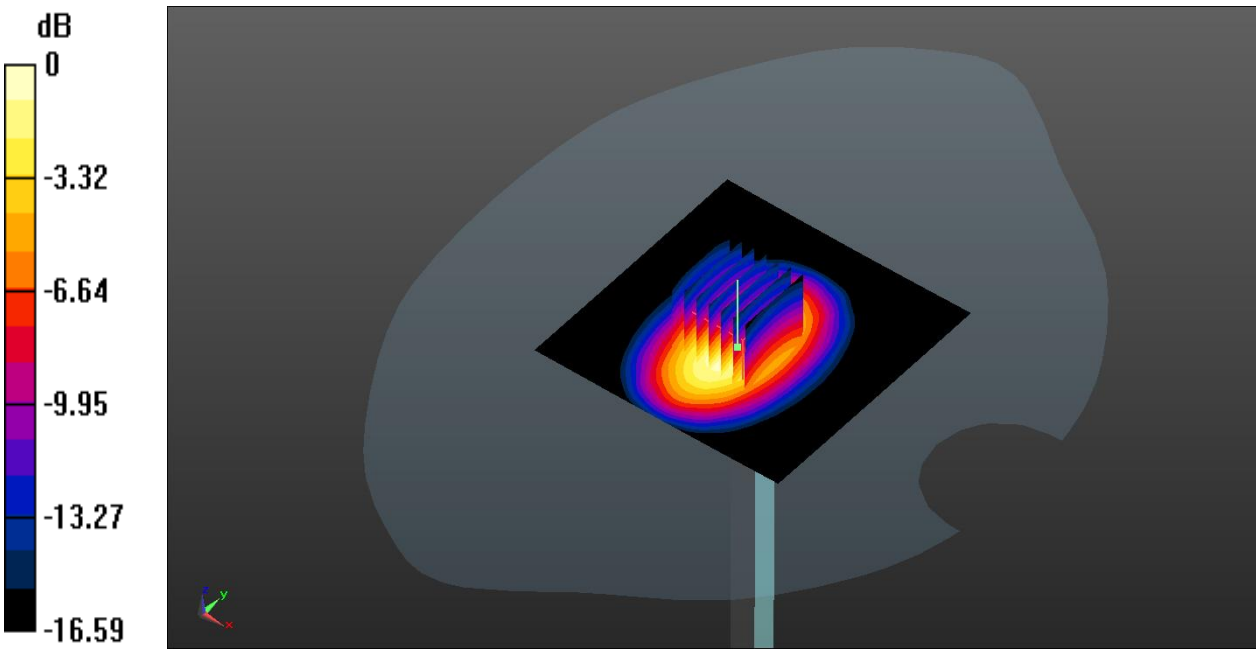
CW 1750-Head-100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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; σ = 1.431 S/m; ε_r = 39.561; ρ = 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

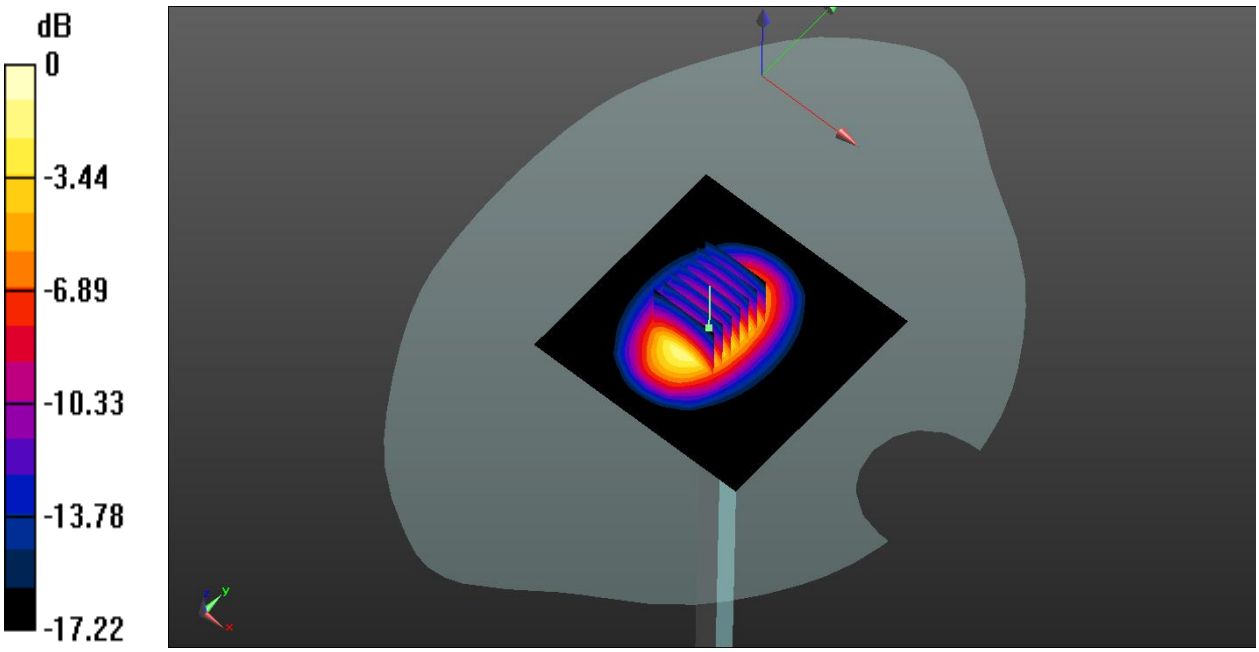
CW1900-Head-100mW /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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; σ = 1.389 S/m; ε_r = 39.328; ρ = 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

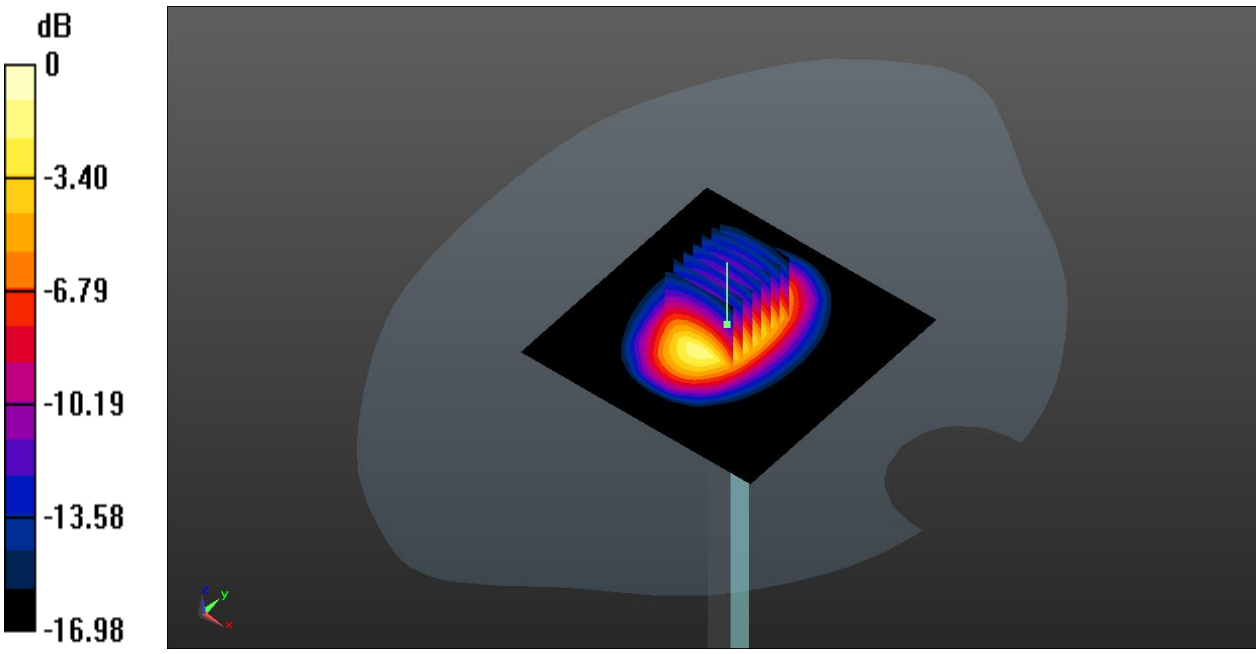
CW1900-Head-100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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; σ = 1.836 S/m; ε_r = 38.274; ρ = 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

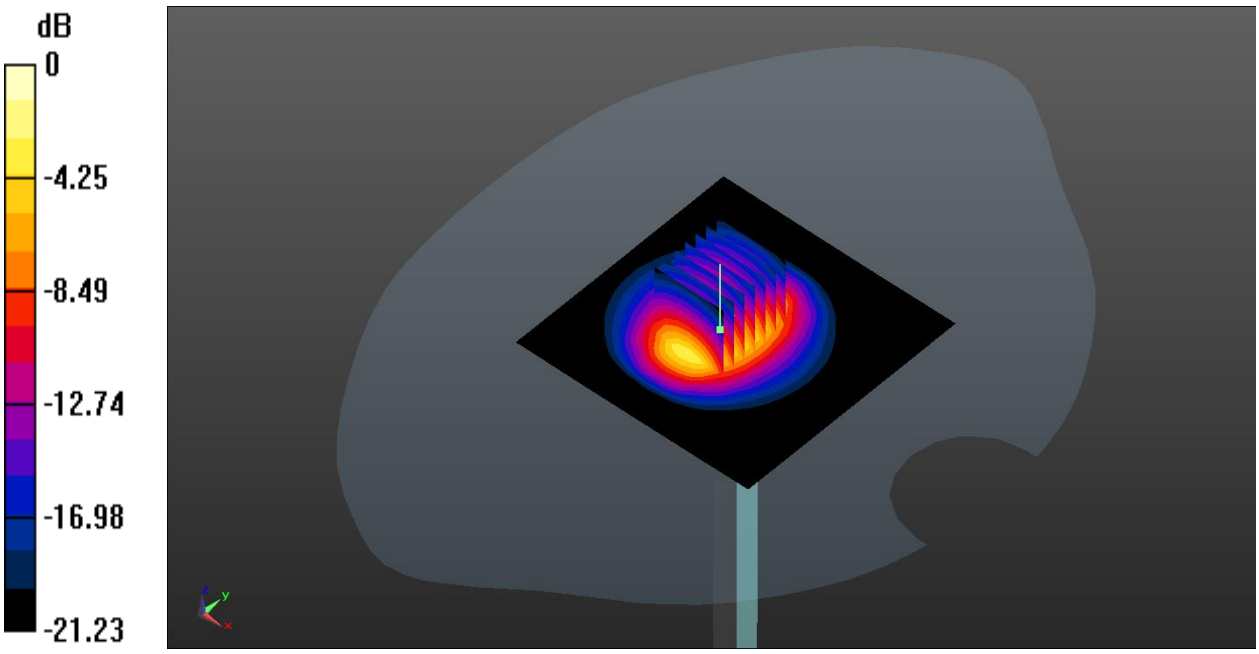
CW2450-Head-100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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; σ = 2.002 S/m; ε_r = 38.58; ρ = 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

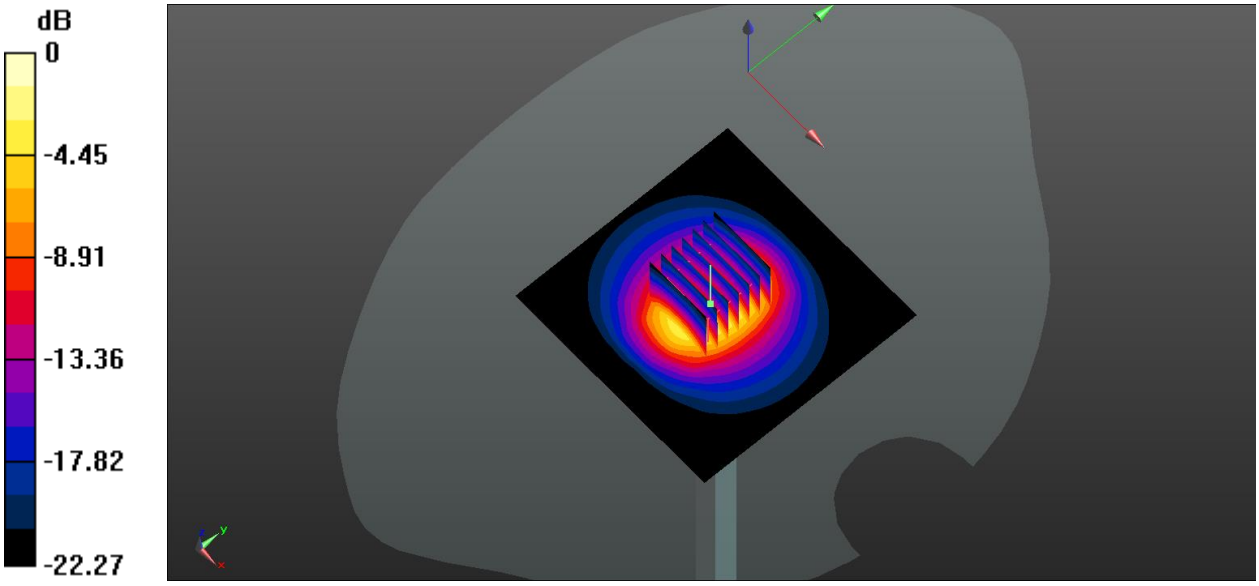
CW 2600 100mW /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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; σ = 0.941 S/m; ε_r = 40.365; ρ = 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

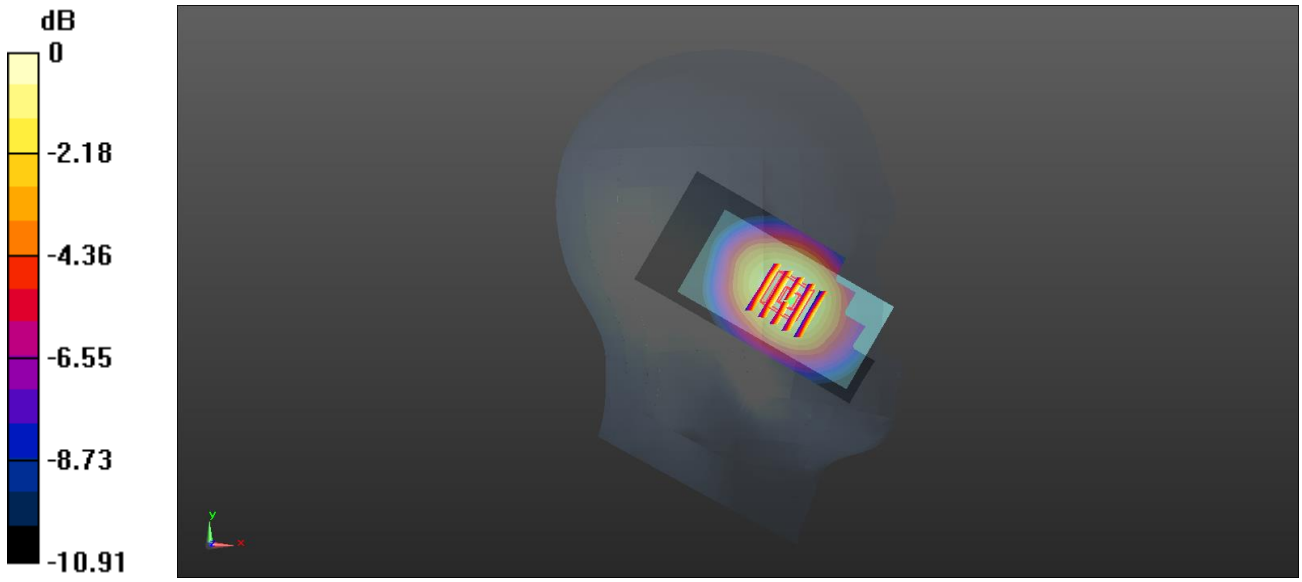
Ch251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; σ = 0.925 S/m; ε_r = 40.649; ρ = 1000 kg/m^3

Phantom section: Flat Section

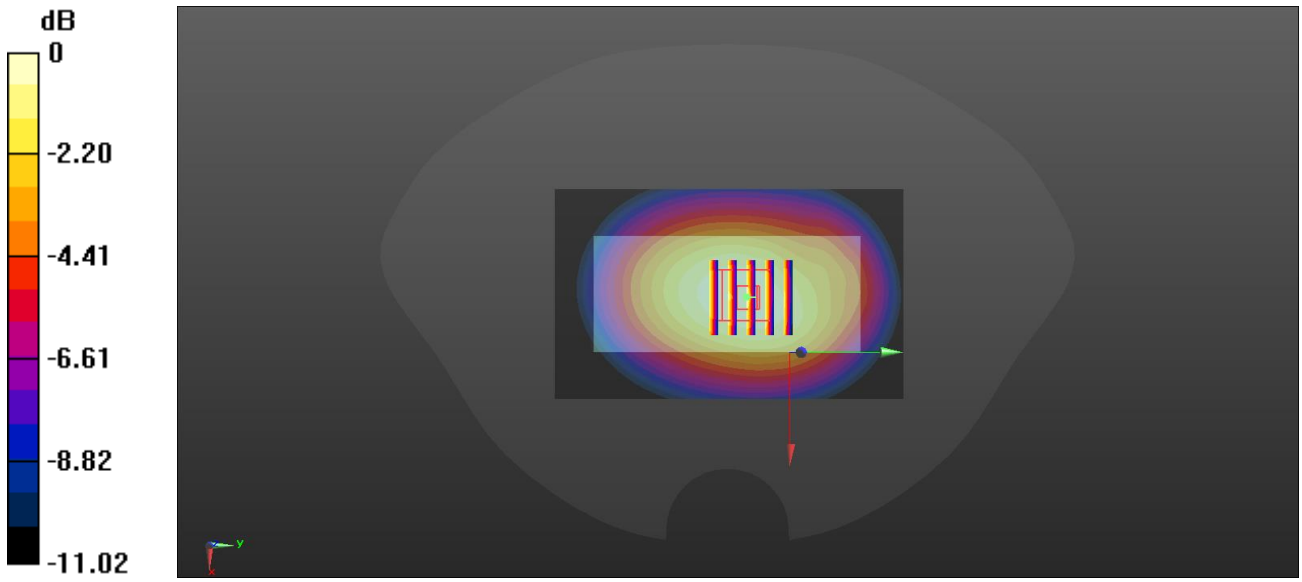
Ambient Temperature:22.2 Liquid Temperature:21.1

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; σ = 1.429 S/m; ε_r = 39.72; ρ = 1000 kg/m^3

Phantom section: Right Section

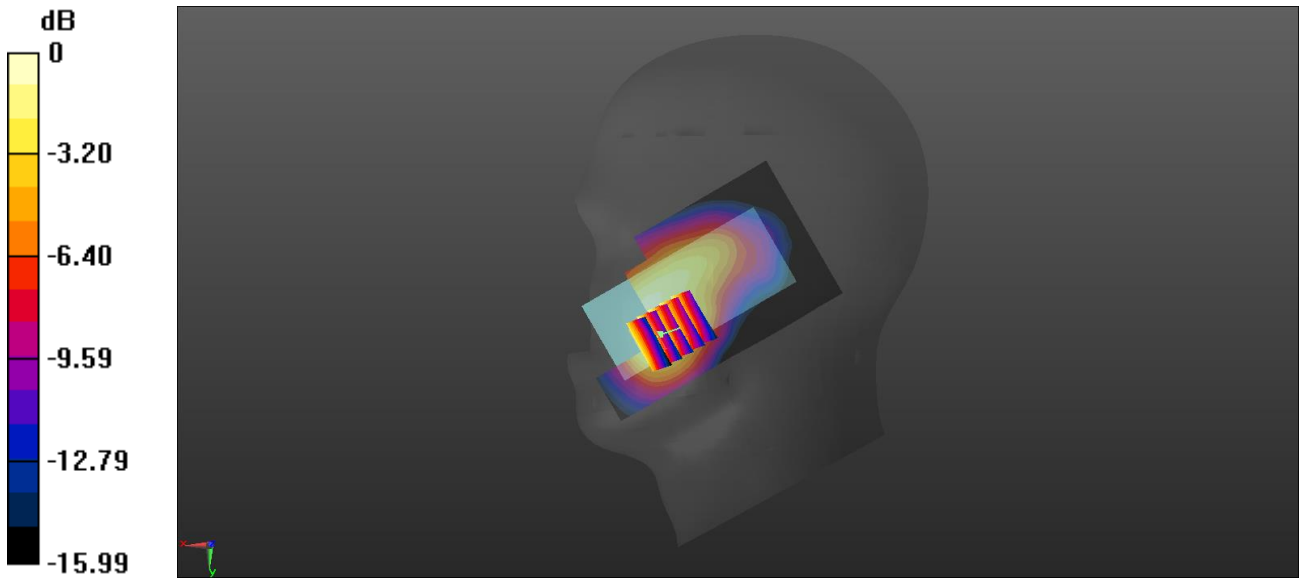
Ambient Temperature:22.6 Liquid Temperature:21.5

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; σ = 1.429 S/m; ε_r = 39.72; ρ = 1000 kg/m^3

Phantom section: Flat Section

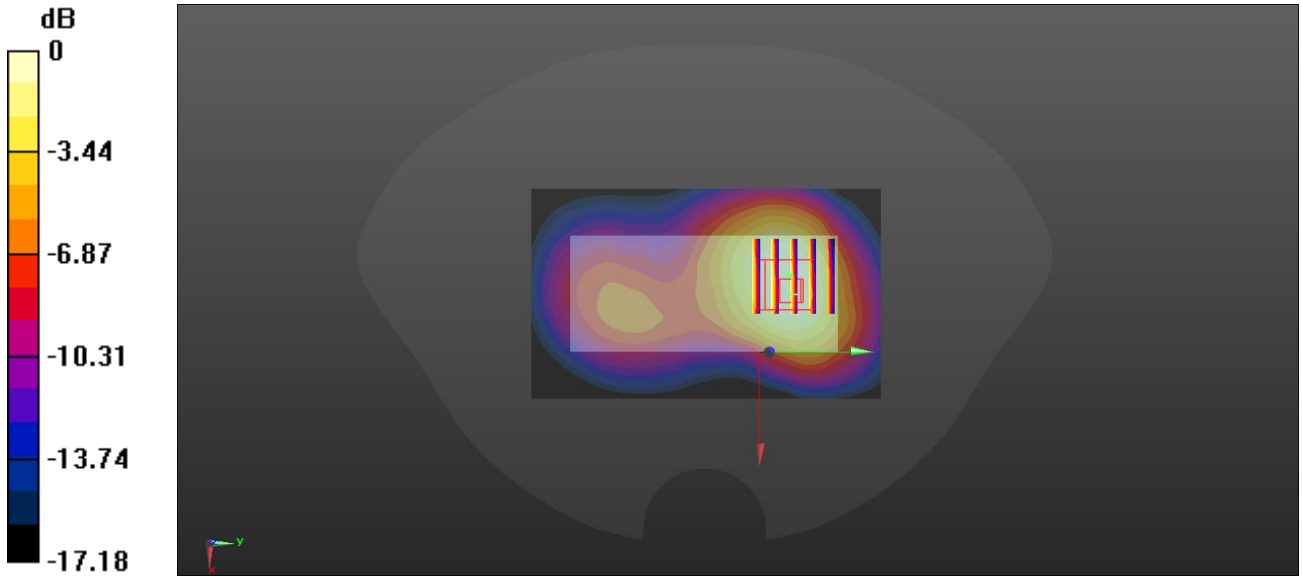
Ambient Temperature:22.6 Liquid Temperature:21.5

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; σ = 1.424 S/m; ε_r = 39.8; ρ = 1000 kg/m^3

Phantom section: Right Section

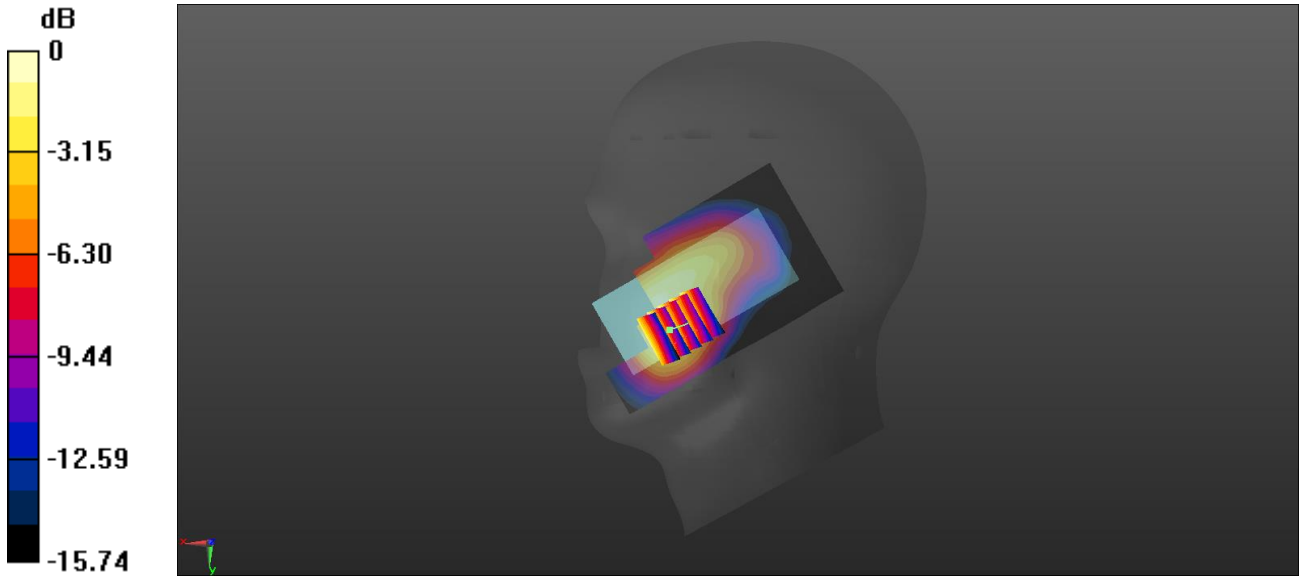
Ambient Temperature:22.6 Liquid Temperature:21.5

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; σ = 1.424 S/m; ε_r = 39.8; ρ = 1000 kg/m^3

Phantom section: Flat Section

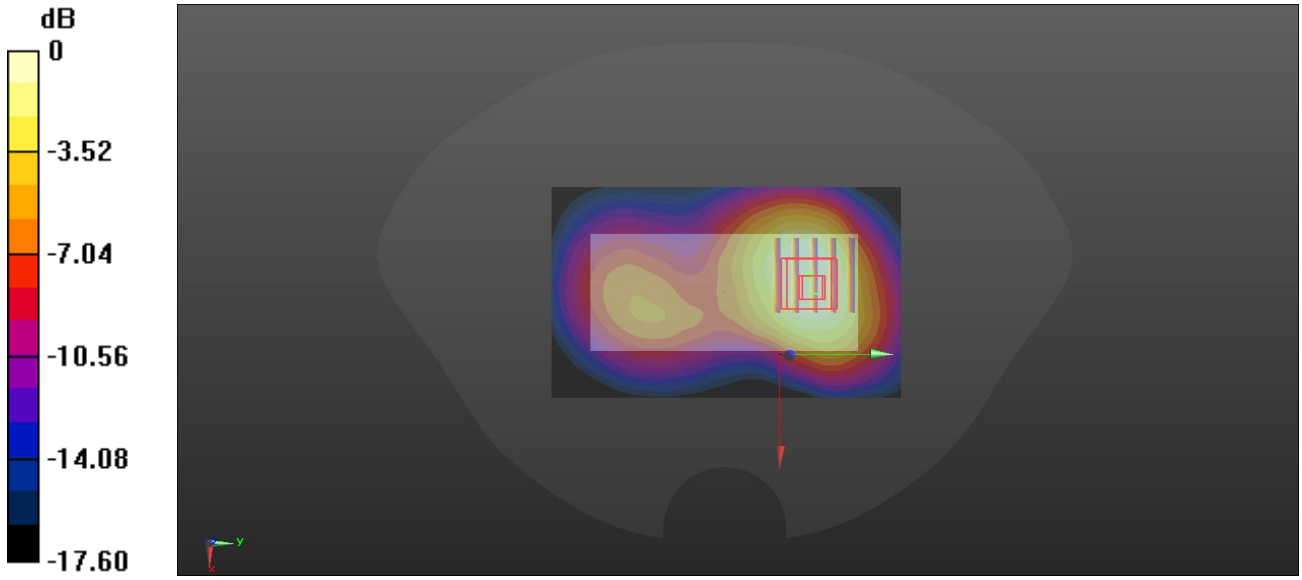
Ambient Temperature:22.6 Liquid Temperature:21.5

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; σ = 1.374 S/m; ε_r = 39.862; ρ = 1000 kg/m^3

Phantom section: Right Section

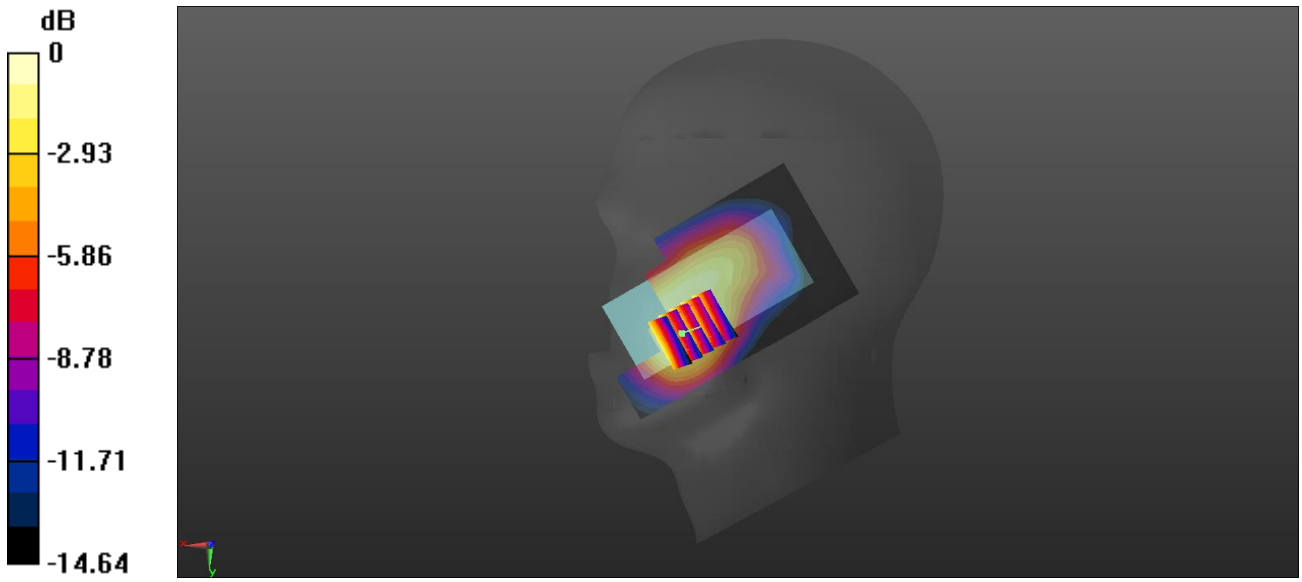
Ambient Temperature:22.2 Liquid Temperature:21.5

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; σ = 1.374 S/m; ε_r = 39.862; ρ = 1000 kg/m^3

Phantom section: Flat Section

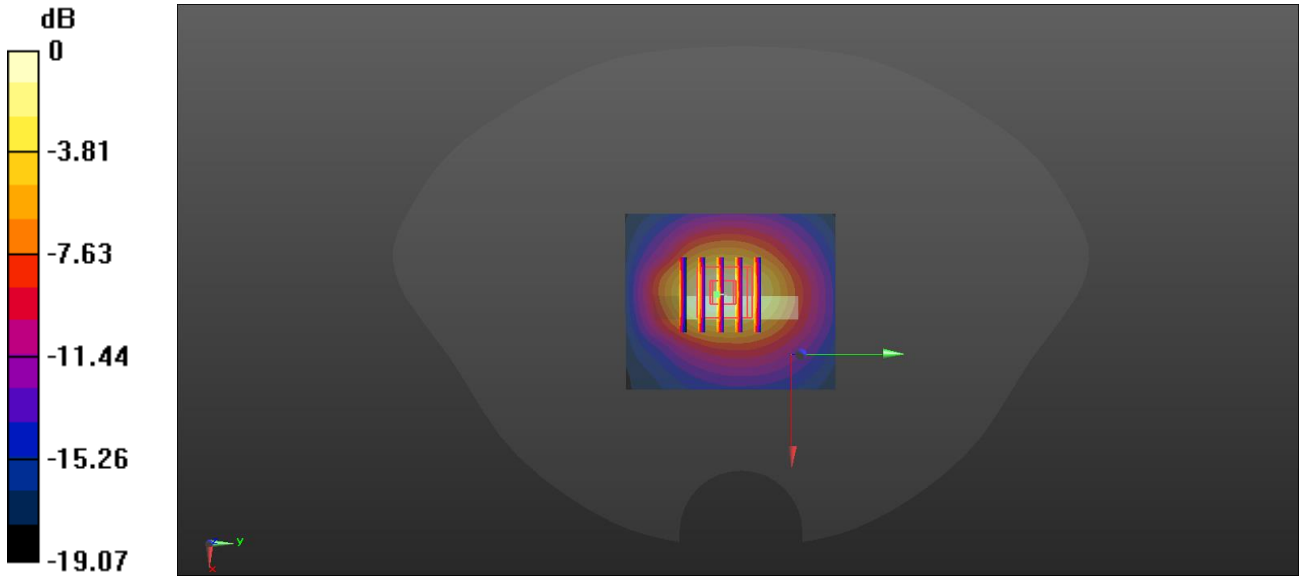
Ambient Temperature:22.2 Liquid Temperature:21.5

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; σ = 0.918 S/m; ε_r = 40.976; ρ = 1000 kg/m^3

Phantom section: Left Section

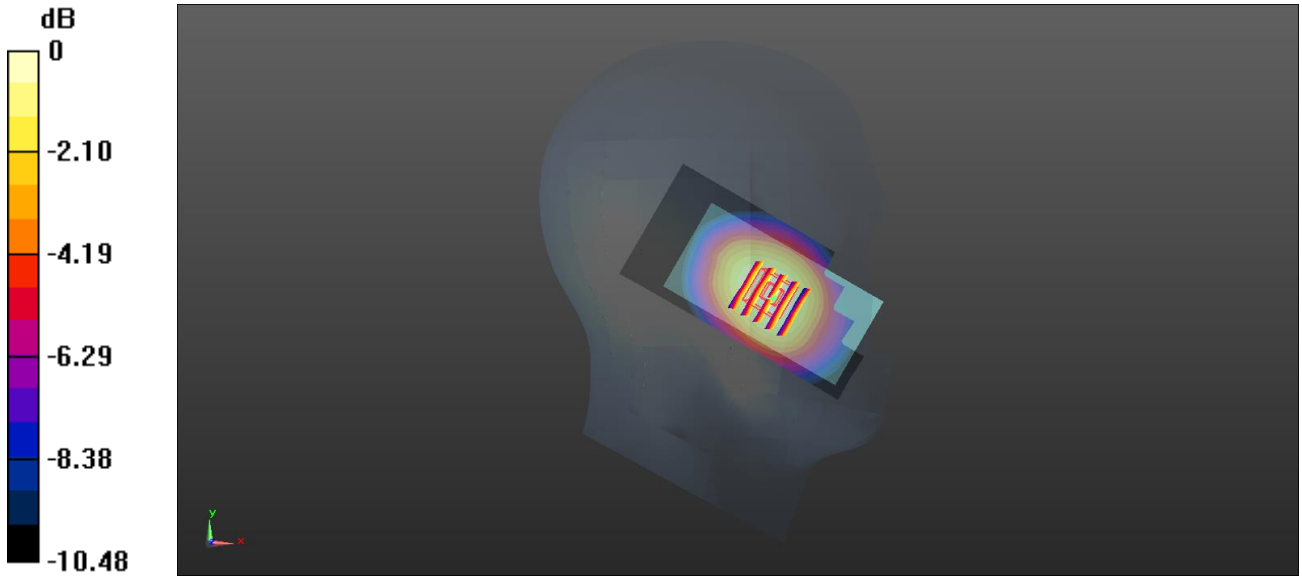
Ambient Temperature:22.2 Liquid Temperature:21.1

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; σ = 0.918 S/m; ε_r = 40.976; ρ = 1000 kg/m^3

Phantom section: Flat Section

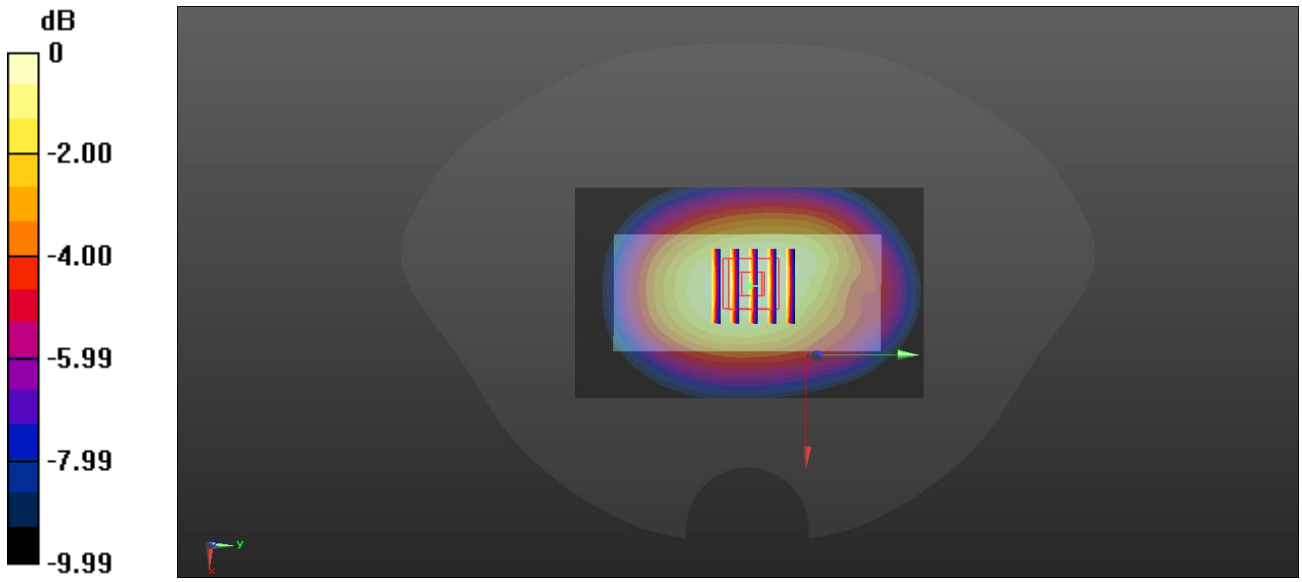
Ambient Temperature:22.2 Liquid Temperature:21.1

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; σ = 1.386 S/m; ε_r = 39.475; ρ = 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

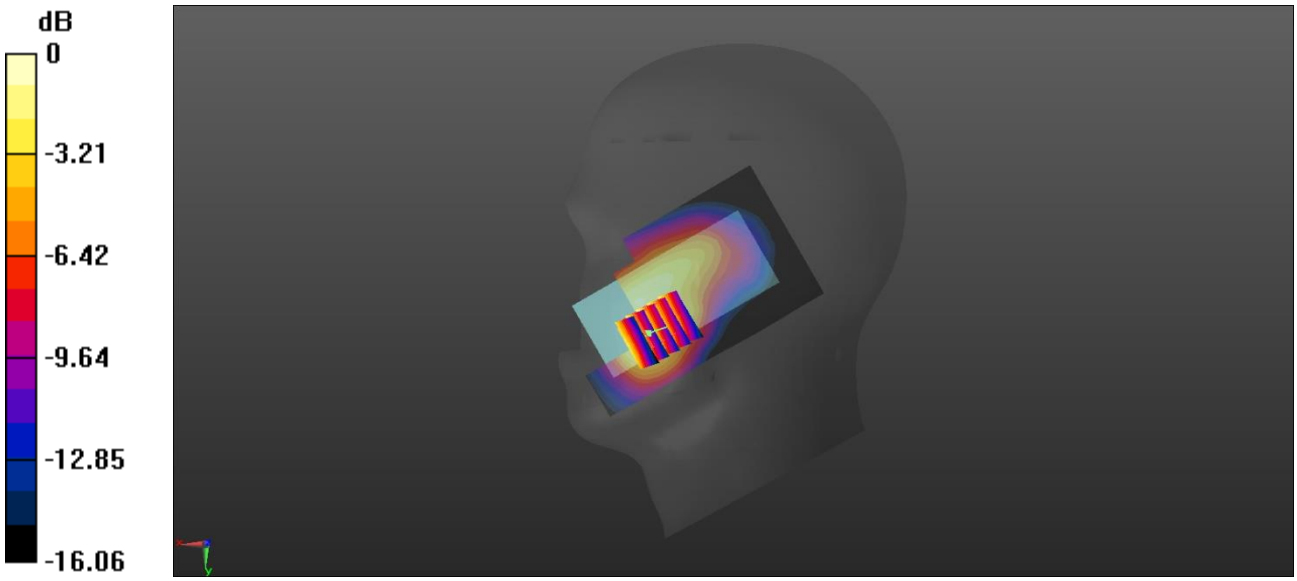
Ch18900/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; σ = 1.383 S/m; ε_r = 39.623; ρ = 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

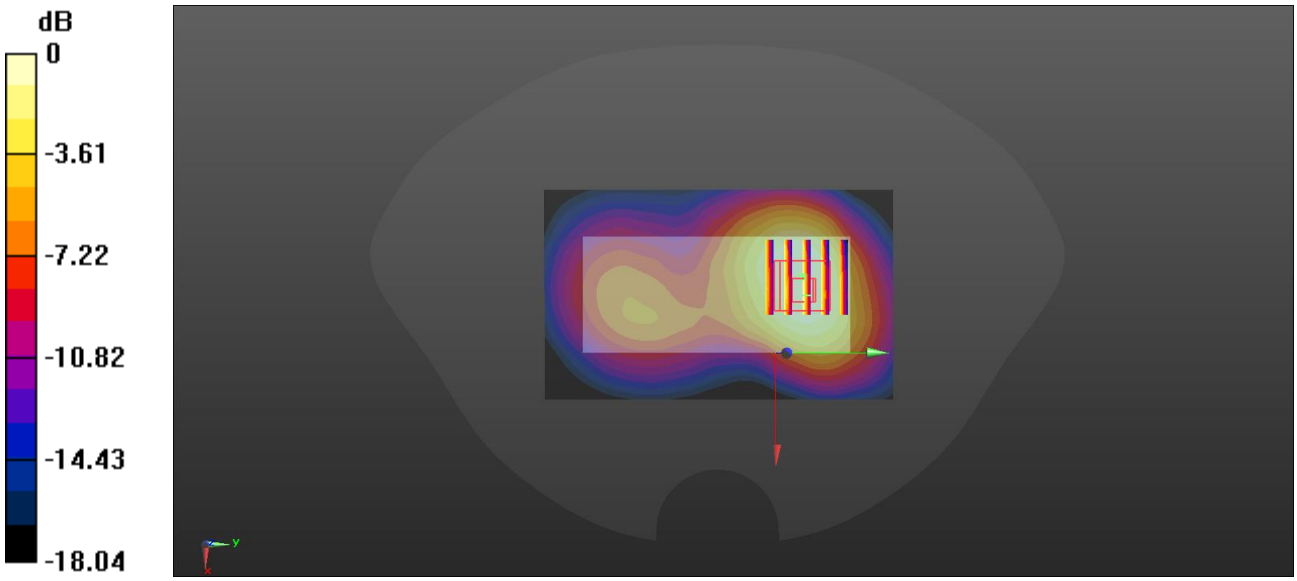
Ch18700/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; σ = 1.365 S/m; ε_r = 39.41; ρ = 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

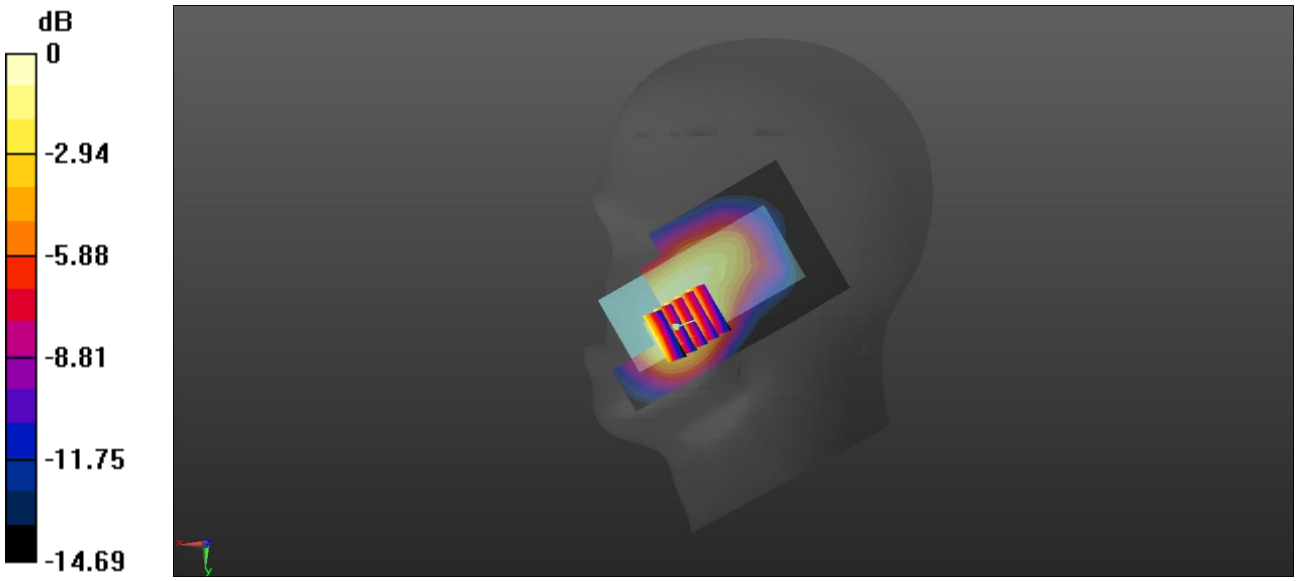
Ch20300/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; σ = 1.35 S/m; ε_r = 40.39; ρ = 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

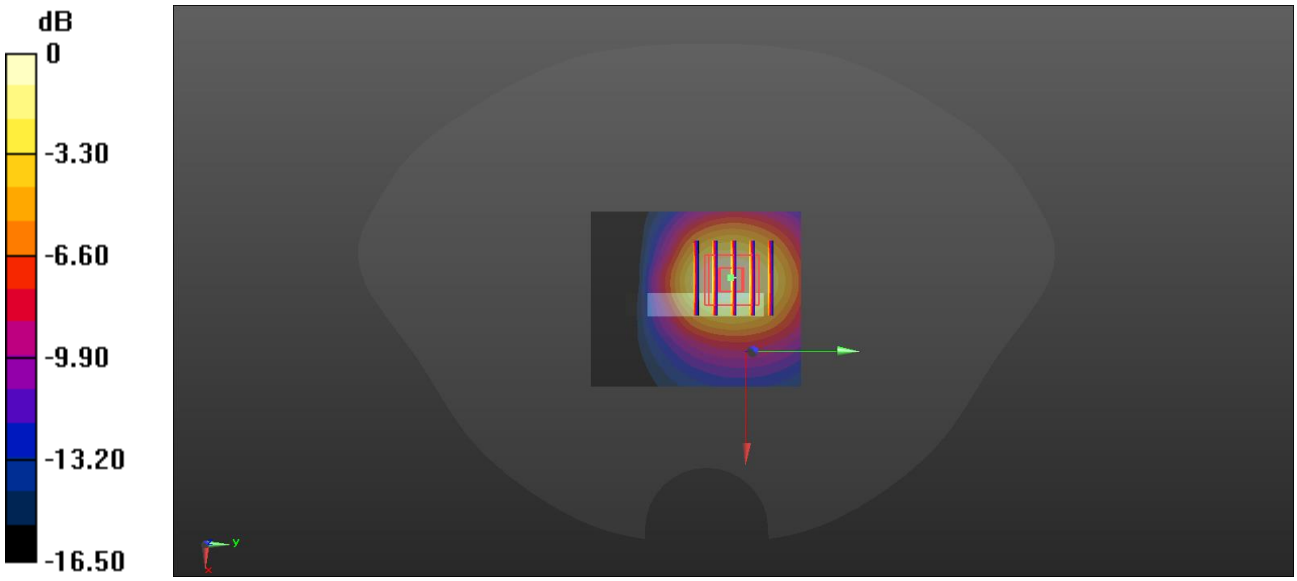
Ch20050/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; σ = 0.91 S/m; ε_r = 40.991; ρ = 1000 kg/m^3

Phantom section: Left Section

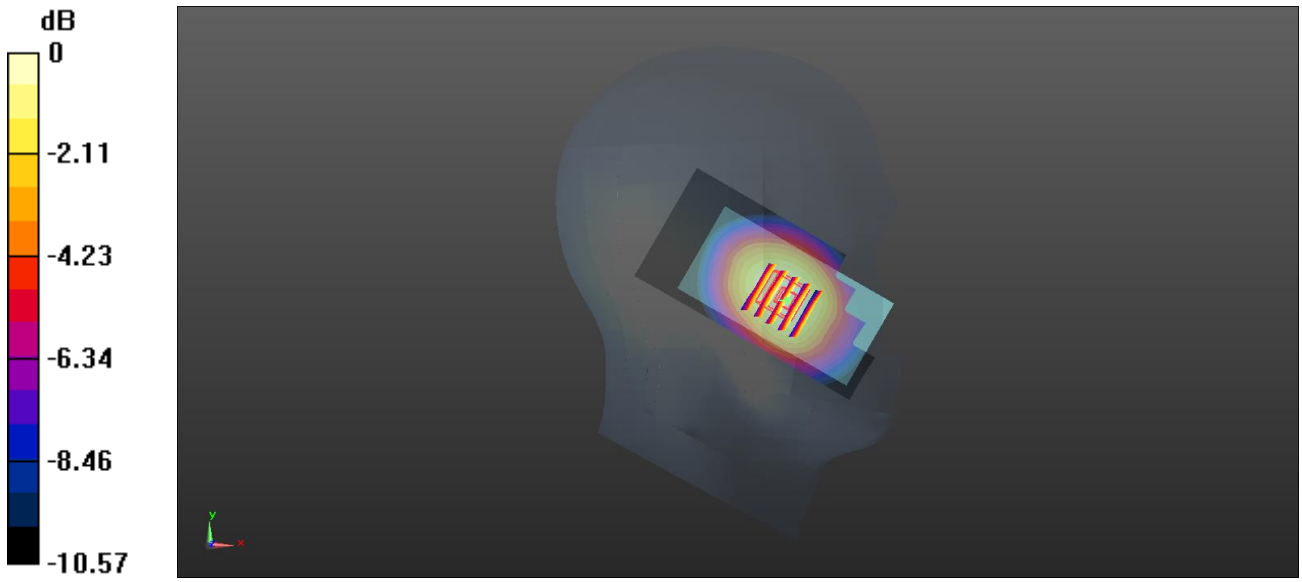
Ambient Temperature:22.4 Liquid Temperature:21.6

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; σ = 0.91 S/m; ε_r = 40.991; ρ = 1000 kg/m^3

Phantom section: Flat Section

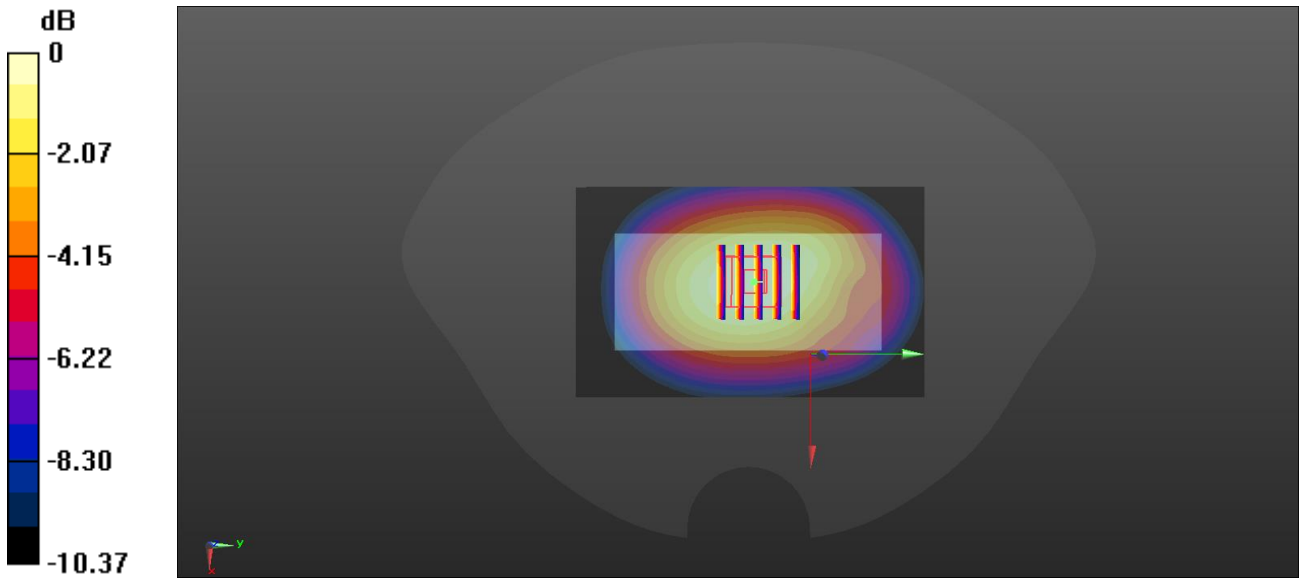
Ambient Temperature:22.4 Liquid Temperature:21.6

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; σ = 1.953 S/m; ε_r = 38.813; ρ = 1000 kg/m^3

Phantom section: Right Section

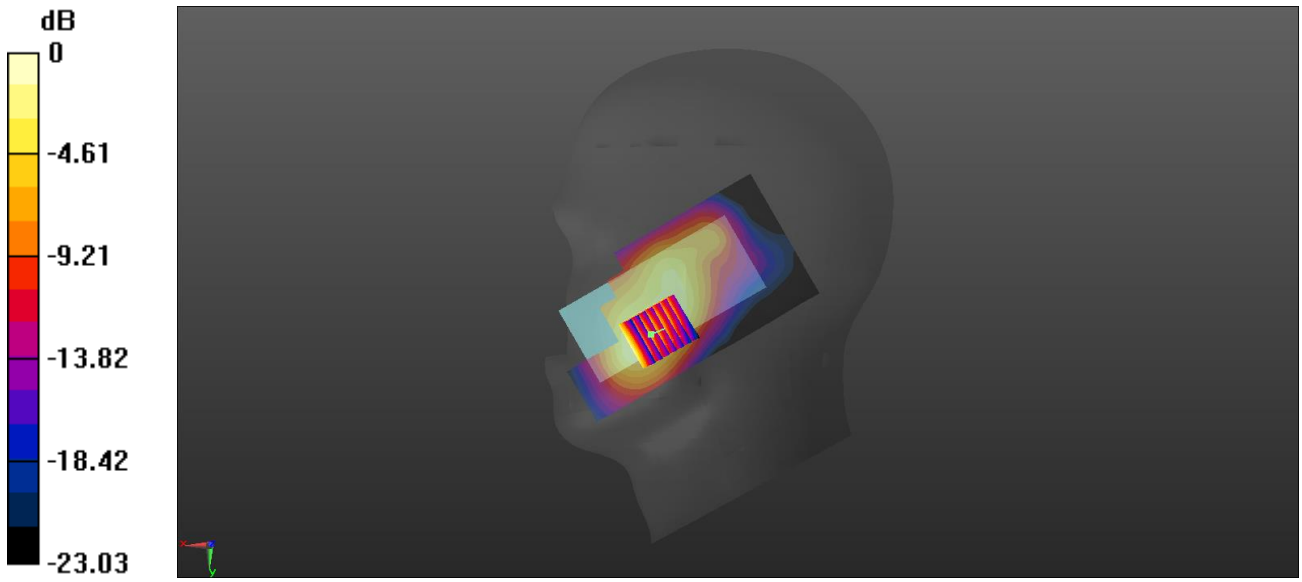
Ambient Temperature:22.3 Liquid Temperature:21.5

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; σ = 1.953 S/m; ε_r = 38.813; ρ = 1000 kg/m^3

Phantom section: Flat Section

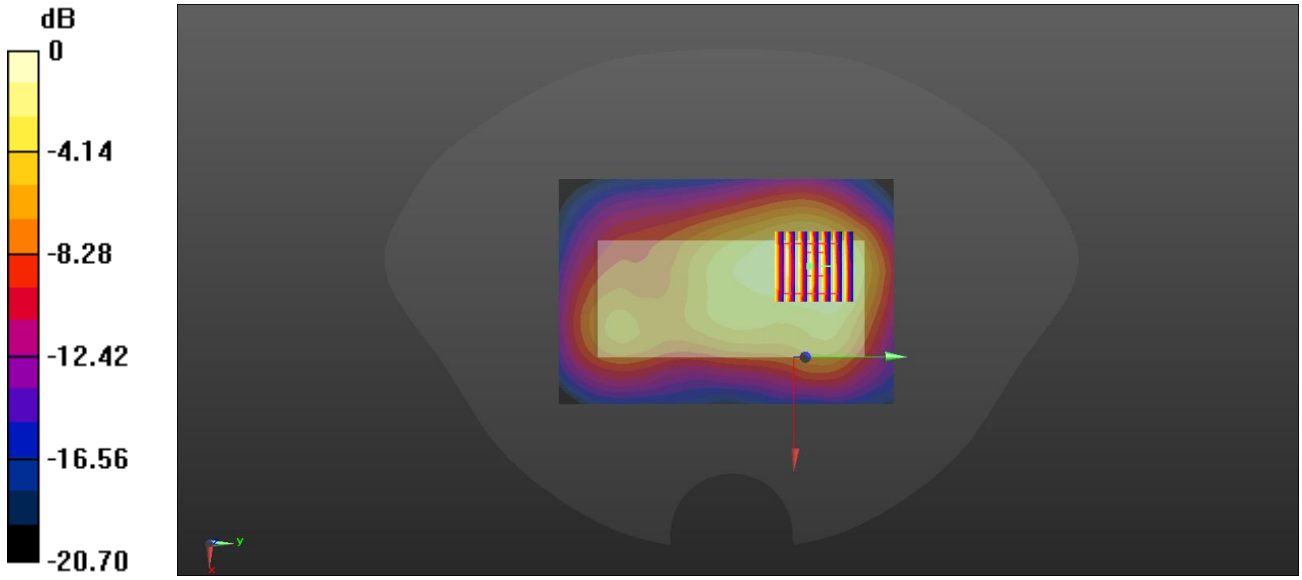
Ambient Temperature:22.3 Liquid Temperature:21.5

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; σ = 0.9 S/m; ε_r = 40.928; ρ = 1000 kg/m^3

Phantom section: Left Section

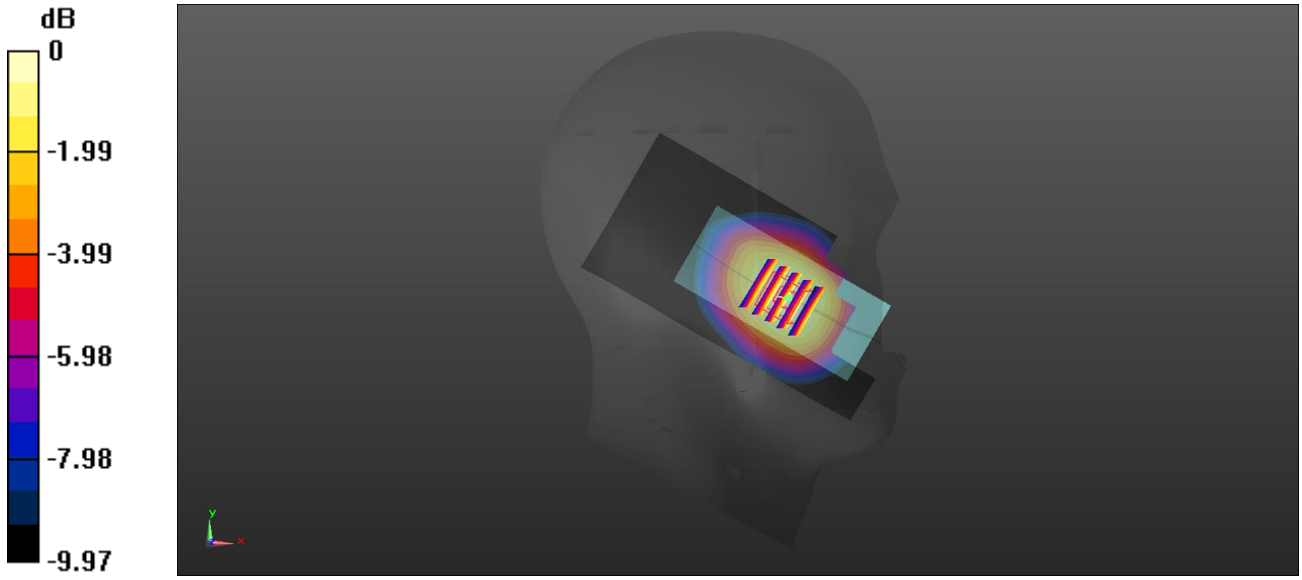
Ambient Temperature:22.2 Liquid Temperature:21.2

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; σ = 0.9 S/m; ε_r = 40.928; ρ = 1000 kg/m^3

Phantom section: Flat Section

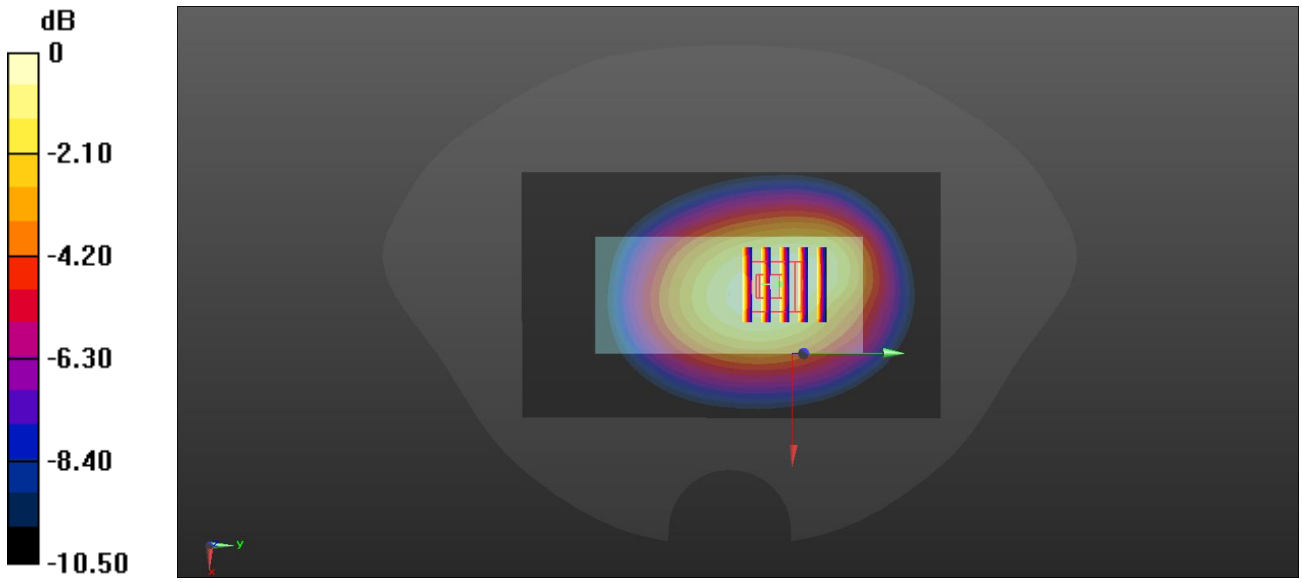
Ambient Temperature:22.2 Liquid Temperature:21.2

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; σ = 0.899 S/m; ε_r = 41.092; ρ = 1000 kg/m^3

Phantom section: Left Section

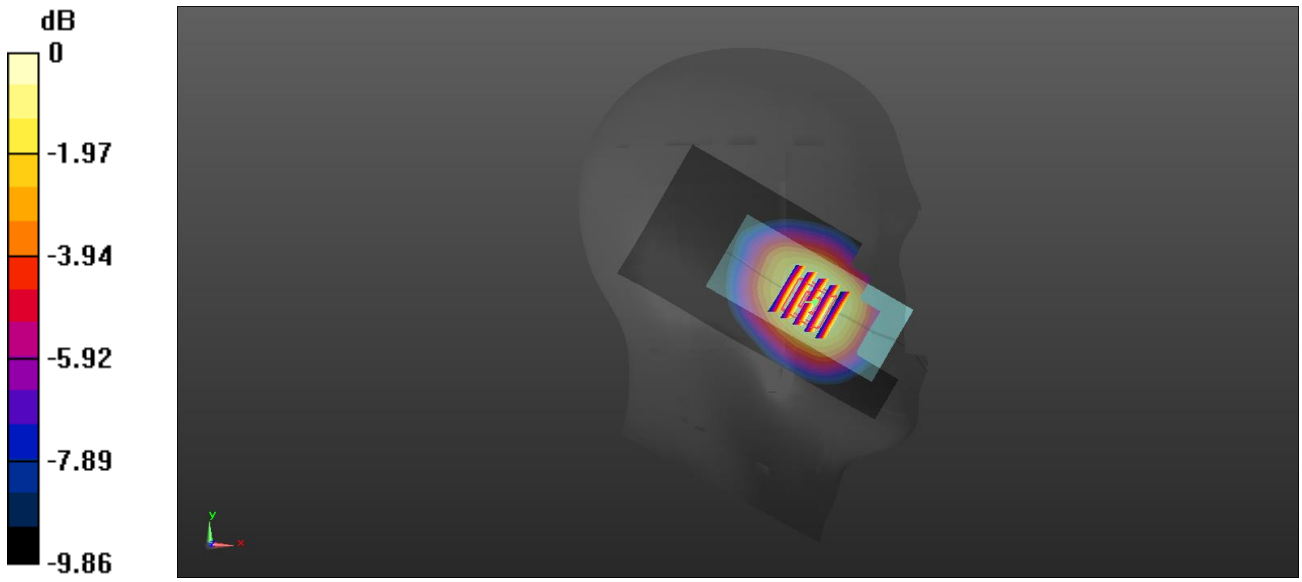
Ambient Temperature:22.2 Liquid Temperature:21.2

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; σ = 0.899 S/m; ε_r = 41.092; ρ = 1000 kg/m^3

Phantom section: Flat Section

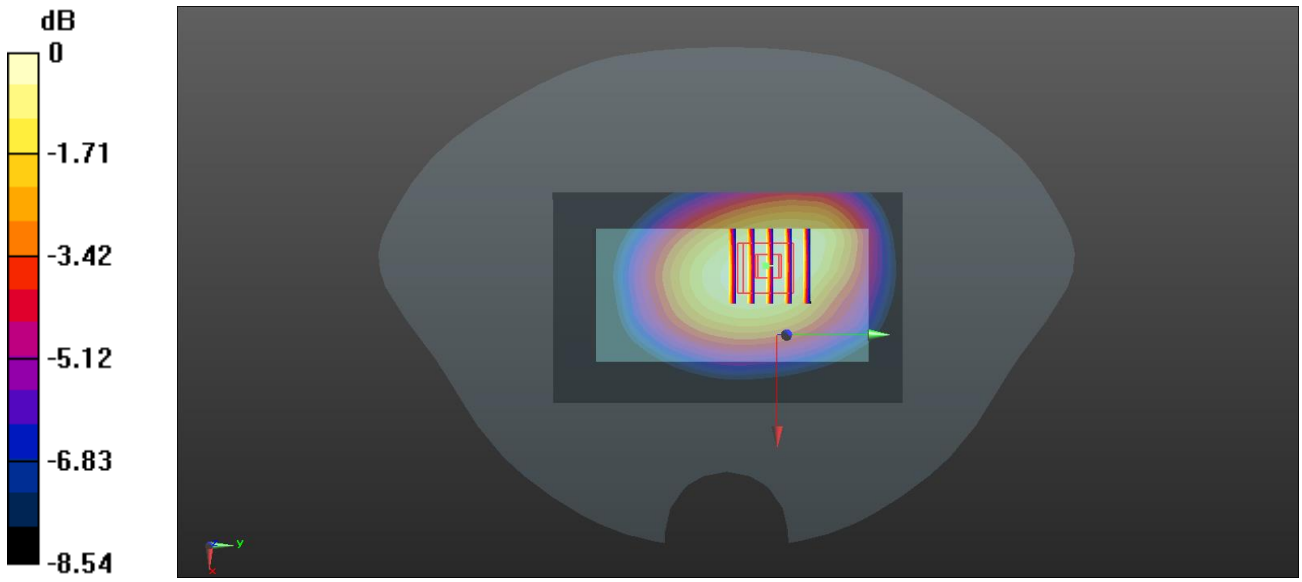
Ambient Temperature:22.2 Liquid Temperature:21.2

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; σ = 1.853 S/m; ε_r = 38.197; ρ = 1000 kg/m^3

Phantom section: Right Section

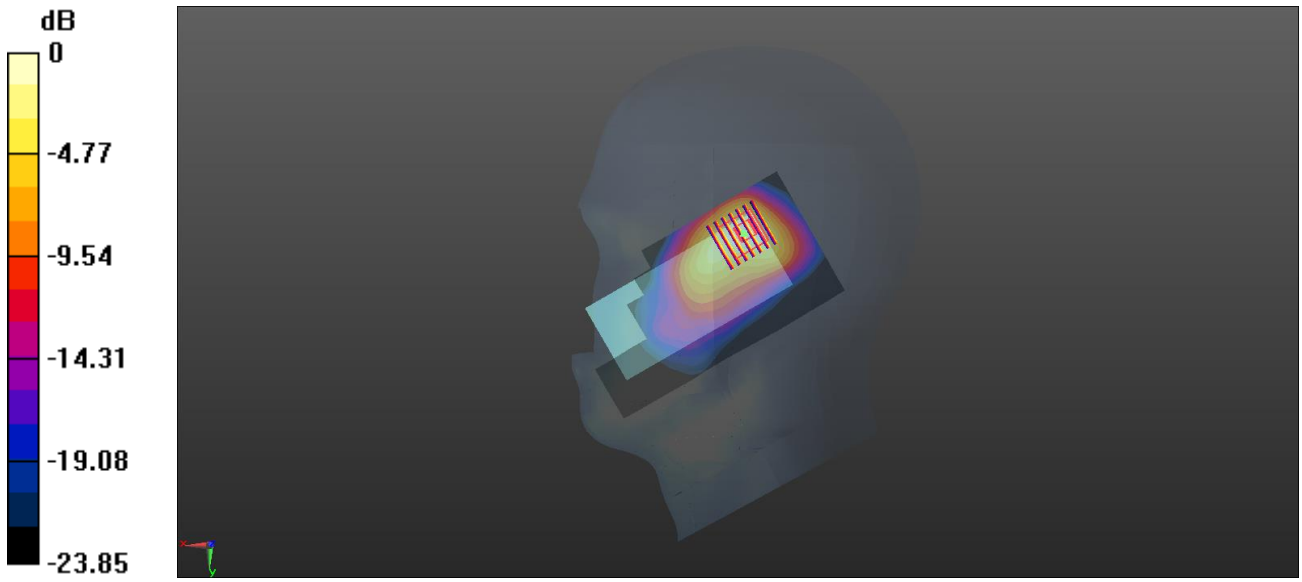
Ambient Temperature:22.5 Liquid Temperature:21.4

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; σ = 1.853 S/m; ε_r = 38.197; ρ = 1000 kg/m^3

Phantom section: Flat Section

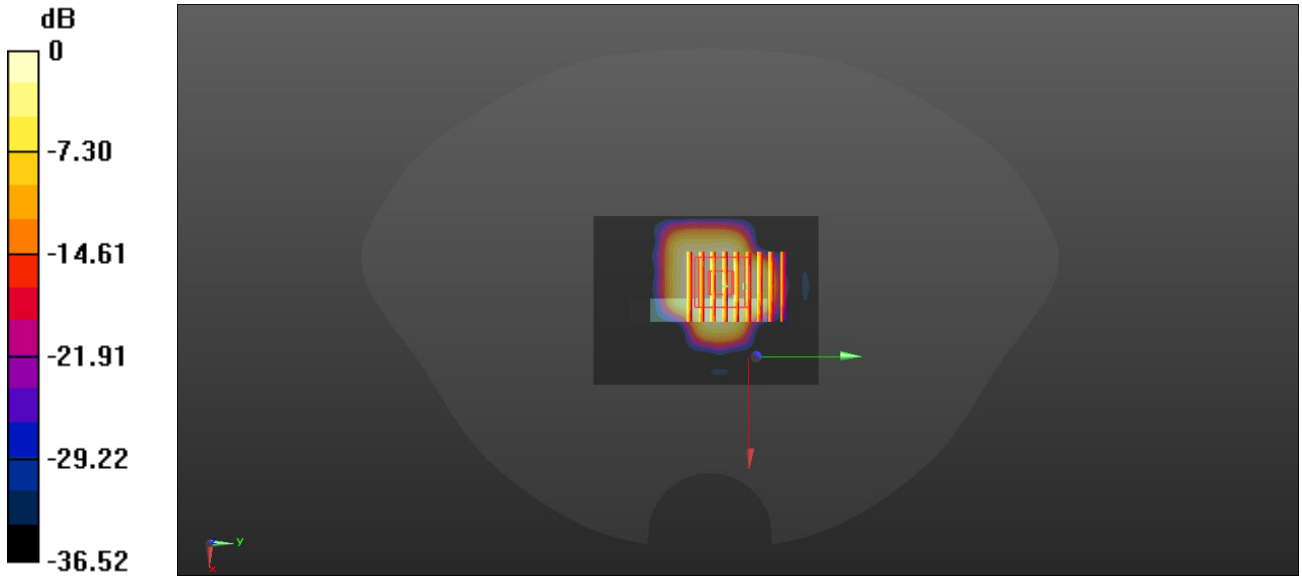
Ambient Temperature:22.5 Liquid Temperature:21.4

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; σ = 1.821 S/m; ε_r = 38.428; ρ = 1000 kg/m^3

Phantom section: Right Section

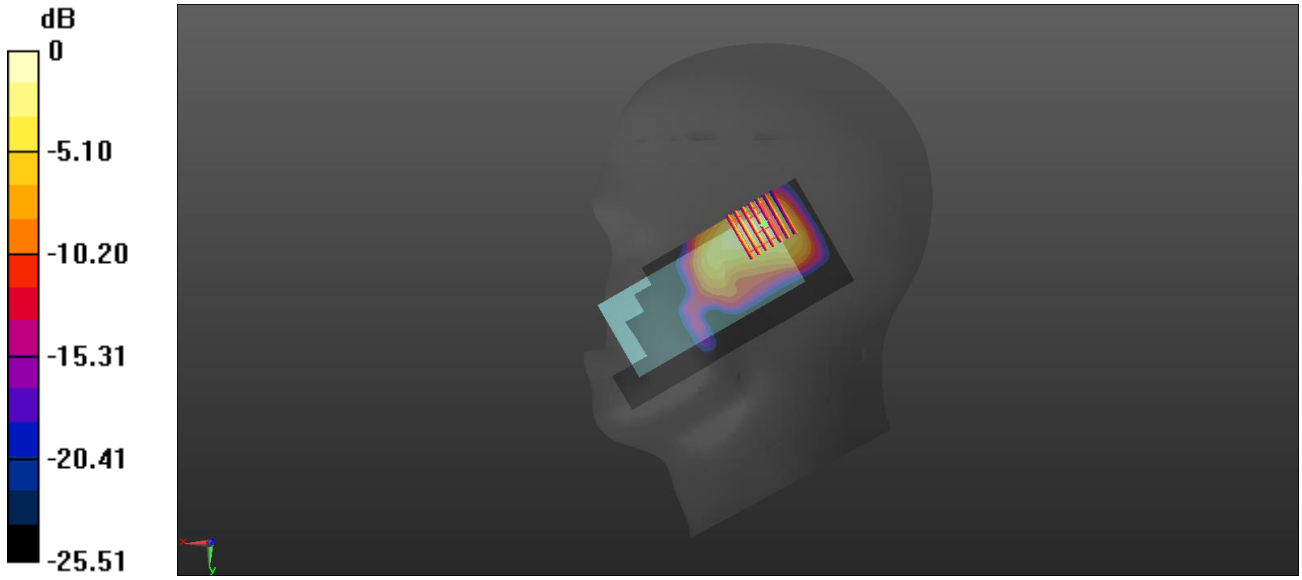
Ambient Temperature:22.5 Liquid Temperature:21.4

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; σ = 1.821 S/m; ε_r = 38.428; ρ = 1000 kg/m^3

Phantom section: Flat Section

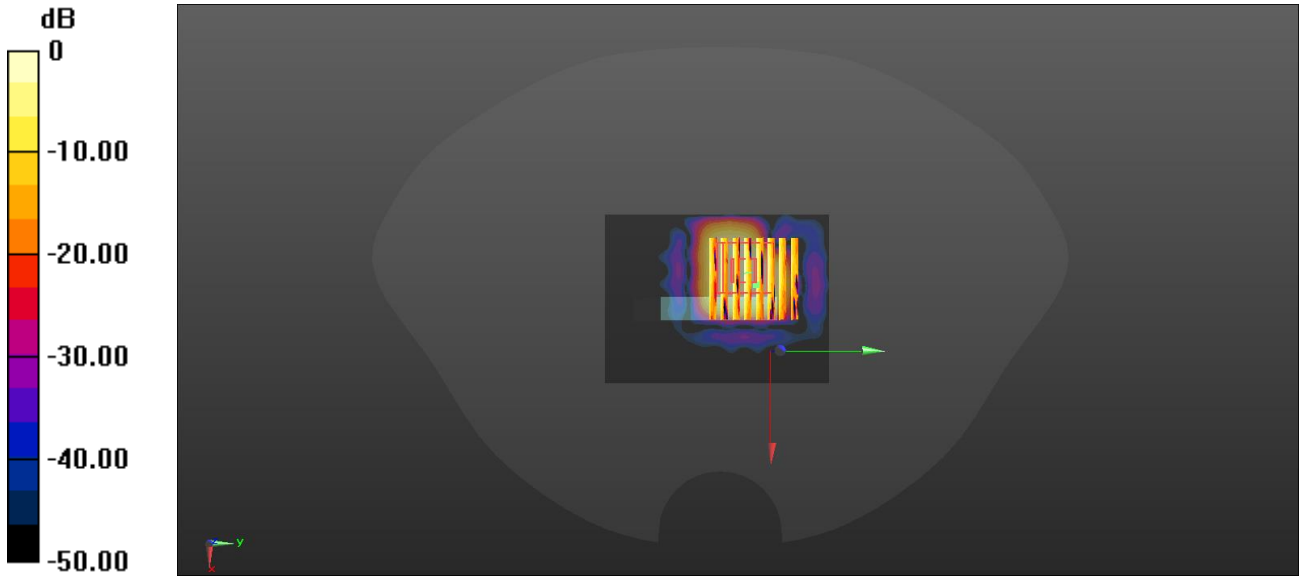
Ambient Temperature:22.5 Liquid Temperature:21.4

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--