

TEST REPORT

Applicant: SEUIC Technologies Co., Ltd.
Address: NO.15 Xinghuo Road, Nanjing New & High
Technology Industry Development Zone, 210061,
Nanjing City, Jiangsu Province, China
Equipment Type: Portable Data Collection Terminal
Model Name: AUTOID10 (refer section 2.4)
Brand Name: AUTOID, Seuic
FCC ID: 2AC68-AUTOID10
Test Standard: FCC 47 CFR Part 2.1093
(refer section 3.1)
Maximum SAR: Head (1 g): 0.91 W/kg
Body (1 g): 1.19 W/kg
Hotspot (1 g): 1.19 W/kg
Extremity (10 g): 0.698 W/kg
Test Date : Jul. 08, 2022 - Jul. 27, 2022
Date of Issue: Aug. 10, 2022

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

**Tested by:** Xu Rui**Checked by:** Liyao Zong**Approved by:** Wei Yanquan
(Chief Engineer)

Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>Aug. 10, 2022</u>	<u>Initial Issue</u>

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
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	9
3.1	Test Standards	9
3.2	Device Category and SAR Limit	10
3.3	Test Result Summary	11
3.4	Test Uncertainty	13
4	MEASUREMENT SYSTEM	14
4.1	Specific Absorption Rate (SAR) Definition	14
4.2	DASY SAR System	15
5	SYSTEM VERIFICATION	23
5.1	Purpose of System Check	23
5.2	System Check Setup	23
6	TEST POSITION CONFIGURATIONS	24
6.1	Head Exposure Conditions	24

6.2	Hotspot Mode Exposure Position Conditions	26
6.3	Product Specific 10g Exposure Consideration	26
7	MEASUREMENT PROCEDURE	27
7.1	Measurement Process Diagram	27
7.2	SAR Scan General Requirement	28
7.3	Measurement Procedure	29
7.4	Area & Zoom Scan Procedure	29
7.5	LTE (TDD) Considerations.....	30
8	CONDUCTED RF OUPUT POWER	32
8.1	GSM	32
8.2	CDMA BC0	32
8.3	WCDMA	32
8.4	LTE.....	32
8.5	WIFI.....	33
8.6	Bluetooth	36
9	TEST EXCLUSION CONSIDERATION	37
9.1	SAR Test Exclusion Consideration Table	38
9.2	10g Extremity Exposure Consideration	40
10	TEST RESULT	41
10.1	GSM 850	41
10.2	GSM 1900	42
10.3	CDMA BC0	43
10.4	WCDMA Band 2	44
10.5	WCDMA Band 5	45
10.6	LTE Band 5 (20MHz Bandwidth)	46
10.7	LTE Band 7 (20MHz Bandwidth)	47
10.8	LTE Band 38 (20MHz Bandwidth).....	48
10.9	LTE Band 41 (20MHz Bandwidth).....	49
10.10	WIFI 2.4GHz.....	50
10.11	WIFI 5GHz.....	51

10.12	Bluetooth	52
11	SAR Measurement Variability	53
12	SIMULTANEOUS TRANSMISSION.....	54
12.1	Simultaneous Transmission Mode Consider	54
12.2	Estimated SAR Calculation.....	55
13	TEST EQUIPMENTS LIST	61
ANNEX A	SIMULATING LIQUID VERIFICATION RESULT	62
ANNEX B	SYSTEM CHECK RESULT	63
ANNEX C	TEST DATA.....	76
ANNEX D	EUT EXTERNAL PHOTOS.....	107
ANNEX E	SAR TEST SETUP PHOTOS	107
ANNEX F	CALIBRATION REPORT	107

1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China
Phone Number	+86 755 6685 0100

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, 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, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China

1.3 Test Environment Condition

Ambient Temperature	18°C to 25°C
Ambient Relative Humidity	30% to 70%

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	SEUIC Technologies Co., Ltd.
Address	NO.15 Xinghuo Road, Nanjing New & High Technology Industry Development Zone, 210061, Nanjing City, Jiangsu Province, China

2.2 Manufacturer Information

Manufacturer	SEUIC Technologies Co., Ltd.
Address	NO.15 Xinghuo Road, Nanjing New & High Technology Industry Development Zone, 210061, Nanjing City, Jiangsu Province, China

2.3 Factory Information

Factory	SEUIC Technologies Co., Ltd.
Address	3rd Floor, No.4 Building, Zhicheng Industrial Park, Zhida Road, Nanjing Jiangbei New Area, Nanjing City, China

2.4 General Description for Equipment under Test (EUT)

EUT Name	Portable Data Collection Terminal
Model Name Under Test	AUTOID10
Series Model Name	AUTOID10N, AUTOID10HC, AUTOID10L, AUTOID10R, AUTOID10B, AUTOID10P, AUTOID10I, AUTOID10-6L, AUTOID10C, AUTOID10X, AUTOID10U, AUTOID10W, AUTOID10E, AUTOID10T, AUTOID10G, AUTOID10D, AUTOID10 1/2, AUTOID10F
Description of Model name differentiation	All models are same with electrical parameters and internal circuit structure, but only differ in model name and colour.
Hardware Version	D560_Main_PCB_V3.1
Software Version	V1.0.30
Dimensions (Approx.)	160.34*67.02*19.9mm
Weight (Approx.)	N/A
EUT ID	S24&S25&S26
IMEI Number	S24: 862744050401546/862744050401553
	S25: 862744050404425/862744050404433
	S26: 862744050404961/862744050404979
Note: It is performed to test SAR with the EUT S24&25 and conducted power with the EUT S26.	

2.5 Ancillary Equipment

Note: Not applicable.

2.6 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EGPRS 850/ 1900 MHz; 3G Network CDMA 1x Band Class 0 EVDO Rel. 0/Rev. A Band Class 0 WCDMA/HSDPA/HSUPA Band 2/ 5 4G Network FDD LTE Band 5/ 7 TDD LTE Band 38/ 41 Bluetooth (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20) 5G WIFI 802.11a, 802.11n(HT20/40) and 802.11ac(VHT20/40/80) U-NII-1/2A/2C/3, GPS, Beidou, GLONASS, Galileo, NFC
Note: The EUT is a Portable Data Collection Terminal, which supports dual SIM card under the same transceiver. Each SIM supports GSM, WCDMA and LTE, and both SIM share the same transmitting electro circuit, NV parameters, so only SIM1 was tested in this report.	

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

Operating Mode	GSM, WCDMA, LTE, 2.4G WLAN, 5G WLAN, Bluetooth		
Frequency Range	GSM 850	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	GSM 1900	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	CDMA BC 0	TX: 824.025 ~ 848.985 MHz	RX: 869.025 ~ 893.985 MHz
	WCDMA Band 2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	WCDMA Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 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 38	TX: 2570 ~ 2620 MHz	RX: 2570 ~ 2620 MHz
	LTE Band 41	TX: 2496 ~ 2690 MHz	RX: 2496 ~ 2690 MHz
	802.11b/g/n(HT20)	2412 ~ 2472 MHz	
	802.11a/ /n(HT20/HT40) /ac(VHT20/VHT40 /VHT80)	5150 ~ 5250 MHz	
		5250 ~ 5350 MHz	
		5470 ~ 5725 MHz	
		5725 ~ 5850 MHz	
	Bluetooth	2402 ~ 2480 MHz	
Antenna Type	WWAN: PIFA Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna		
DTM	N/A		
Hotspot Function	Support		
Power Reduction	Support		
Exposure Category	General Population/Uncontrolled exposure		

EUT Stage	Portable Device	
Product	Type	
	☒ Production unit	☐ Identical prototype
<p>Note:</p> <ol style="list-style-type: none">1. The device utilizes independent power reduction mechanisms for SAR compliance for the 2/3/4G transmitter for held-to-ear exposure conditions.2. The device utilizes independent power reduction mechanisms for SAR compliance for the 2/3/4G transmitter for near to body exposure conditions.3. The reduction power details please refer section 8.7.		

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

NOTE:

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

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

3.3 Test Result Summary

3.3.1 Highest SAR (1 g Value)

Band	Maximum Scaled SAR (W/kg)			Maximum Report SAR (W/kg)		
	Head	Body-worn Accessory	Hotspot	Head	Body-worn Accessory	Hotspot
GSM 850	0.53	1.08	1.08	0.91	1.19	1.19
GSM 1900	0.67	0.58	0.58			
CDMA BC0	0.49	0.89	0.89			
WCDMA Band 2	0.73	0.61	0.61			
WCDMA Band 5	0.20	0.40	0.40			
LTE Band 5	0.63	0.47	0.47			
LTE Band 7	0.05	1.10	1.10			
LTE Band 38	0.02	0.89	0.89			
LTE Band 41	0.09	1.19	1.19			
2.4G WLAN	0.79	0.26	0.35			
5.2G WLAN	/	/	0.47			
5.3G WLAN	0.91	0.18	/			
5.6G WLAN	0.79	0.24	/			
5.8G WLAN	0.70	0.20	0.33			
Bluetooth	0.00	0.01	0.01			
Limit (W/kg)	1.6			1.6		
Verdict	PASS					

3.3.2 Highest Specific SAR (10 g Value)

Band	Maximum Scaled SAR (W/kg)	Maximum Report SAR (W/kg)
	Specific 10g	
5.3G WLAN	0.58	0.70
5.6G WLAN	0.70	
Limit (W/kg)	4.0	4.0
Verdict	Pass	

3.3.3 Highest Simultaneous SAR

Note: The highest simultaneous SAR please refer section 12.

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 1.19 W/kg, which is lower than 1.5 W/kg, so the extensive SAR measurement uncertainty analysis is not required in this report.

The maximum 10 g SAR for the EUT in this report is 0.698 W/kg, which is lower than 3.75 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:

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

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

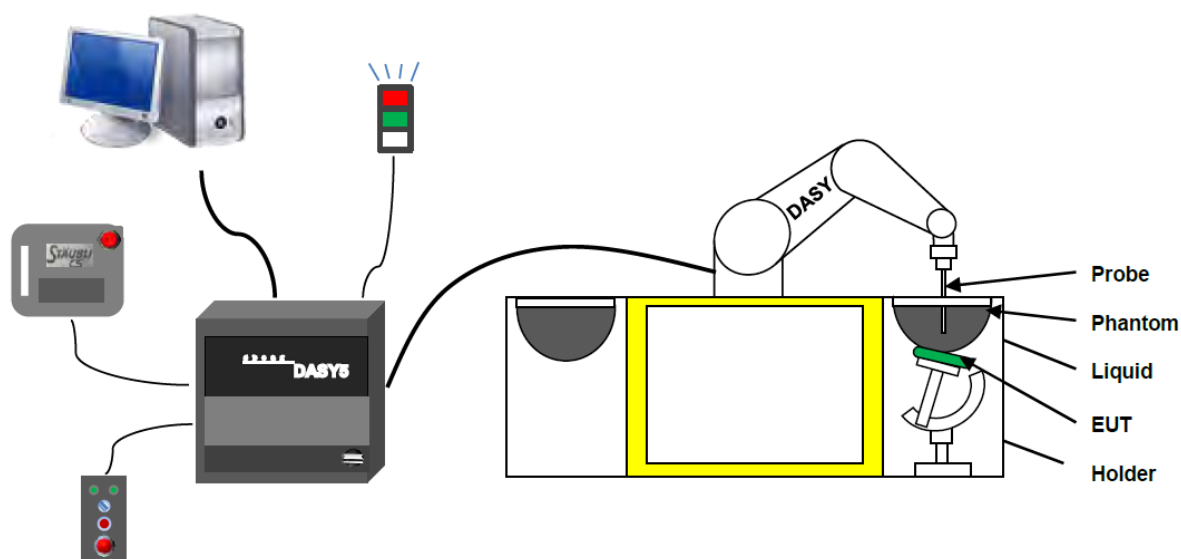
$$\text{SAR} = \frac{\sigma E^2}{\rho}$$

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 system Built-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 μ W/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-converter 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: 200M Ω m
- The Inputs: Symmetrical and Floating
- Common 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



Serial Number	Material	Length	Height
SN 1857 SAM	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.

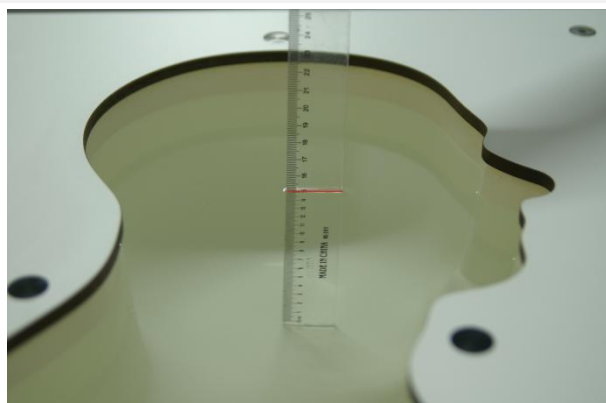


The positioning system allows obtaining cheek and tilting position with a very good accuracy. Incompliance with CENELEC, the tilt angle uncertainty is lower than 1° .

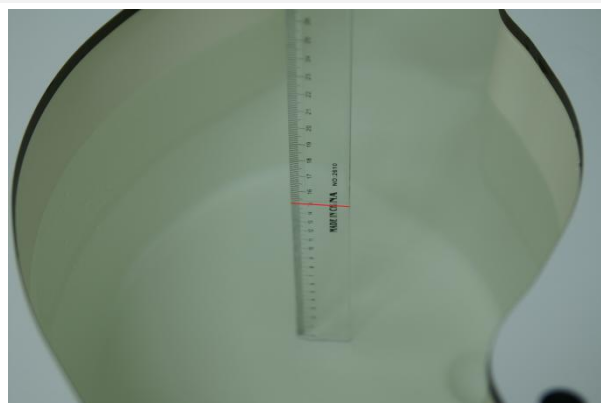
4.2.7 Simulating Liquid

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	Permittivity

		(%)	(%)	σ (S/m)	ε
5200	78.60	21.40	/	5.54	47.86
5800	78.50	21.40	0.1	6.0	48.20

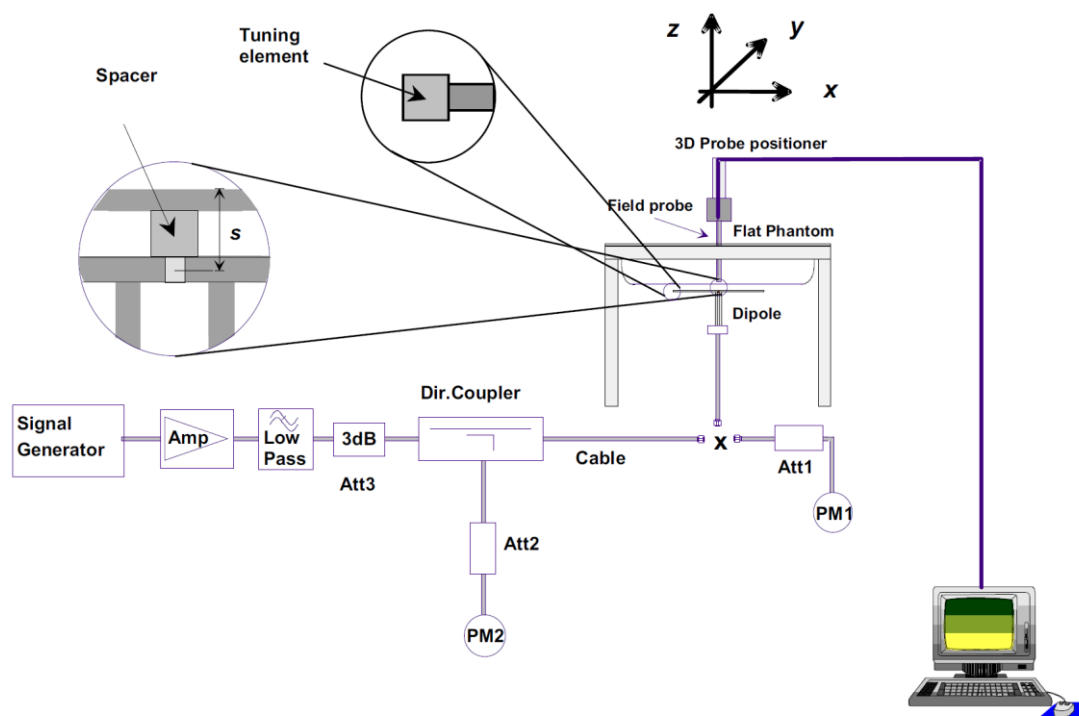
5 SYSTEM VERIFICATION

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

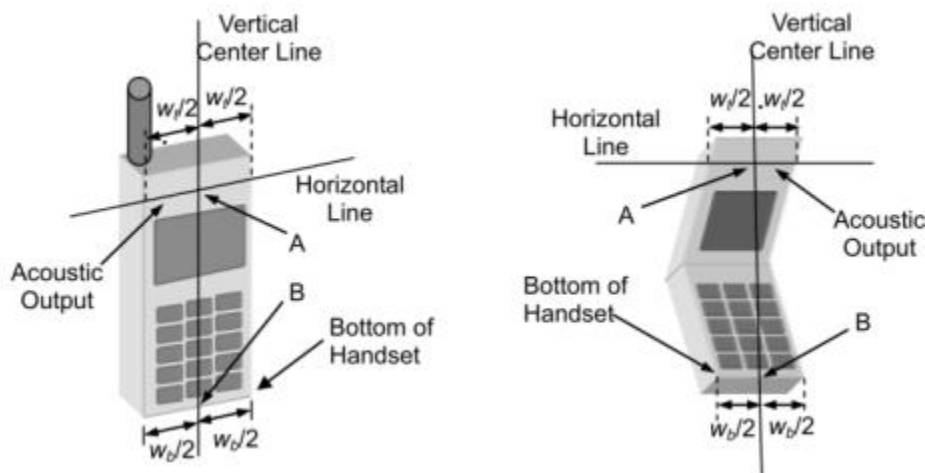
According to KDB 648474 D04 Handset, handsets are tested for SAR compliance in head, body-worn accessory and other use configurations described in the following subsections.

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.

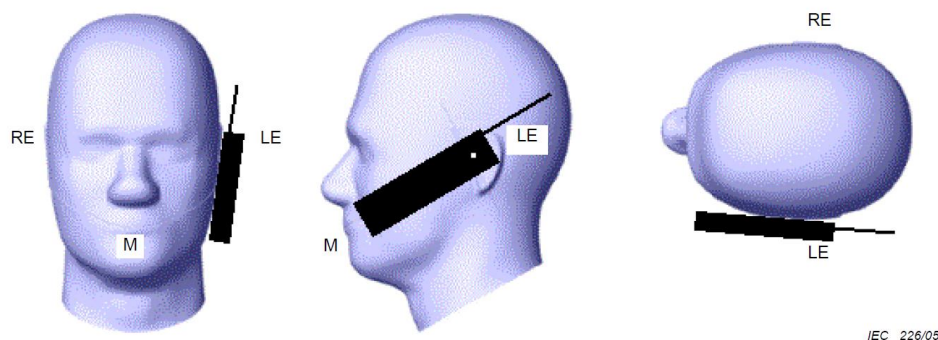
6.1.1 Two Imaginary Lines on the Handset

- (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.



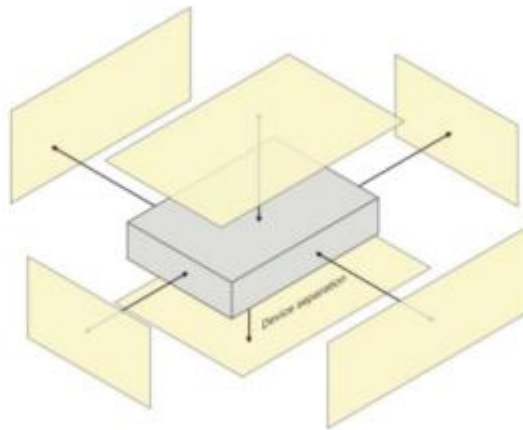
6.1.3 Tilted Position

- (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 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).



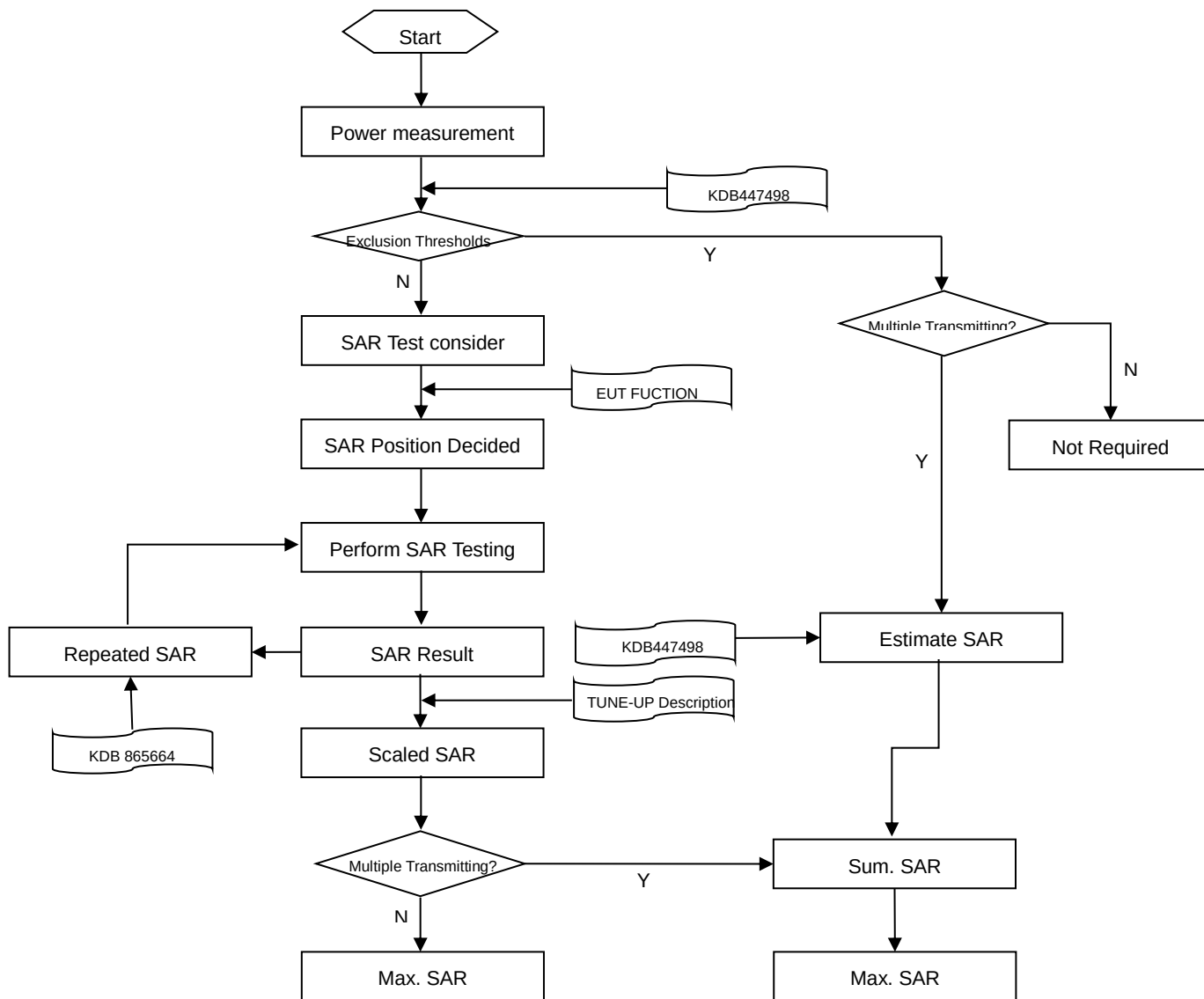
6.3 Product Specific 10g Exposure Consideration

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.

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. Both the 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.

			≤3GHz	>3GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5±1 mm	½·δ·ln(2)±0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30°±1°	20°±1°
Maximum area scan spatial resolution: Δx Area , Δy Area			≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3–4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
			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.	
Maximum zoom scan spatial resolution: Δx Zoom , Δy Zoom			≤ 2 GHz: ≤ 8 mm 2 –3 GHz: ≤ 5 mm*	3–4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: Δz Zoom (n)		≤ 5 mm	3–4 GHz: ≤ 4 mm
				4–5 GHz: ≤ 3 mm
				5–6 GHz: ≤ 2 mm
	graded grid	Δz Zoom (1): between 1st two points closest to phantom surface	≤ 4 mm	3–4 GHz: ≤ 3 mm
				4–5 GHz: ≤ 2.5 mm
		Δz Zoom (n>1): between subsequent points	≤ 1.5·Δz Zoom (n-1)	
Minimum zoom scan volume	x, y, z		≥30 mm	3–4 GHz: ≥ 28 mm
				4–5 GHz: ≥ 25 mm
				5–6 GHz: ≥ 22 mm

Note:

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

7.3 Measurement Procedure

The following steps are used for each test position

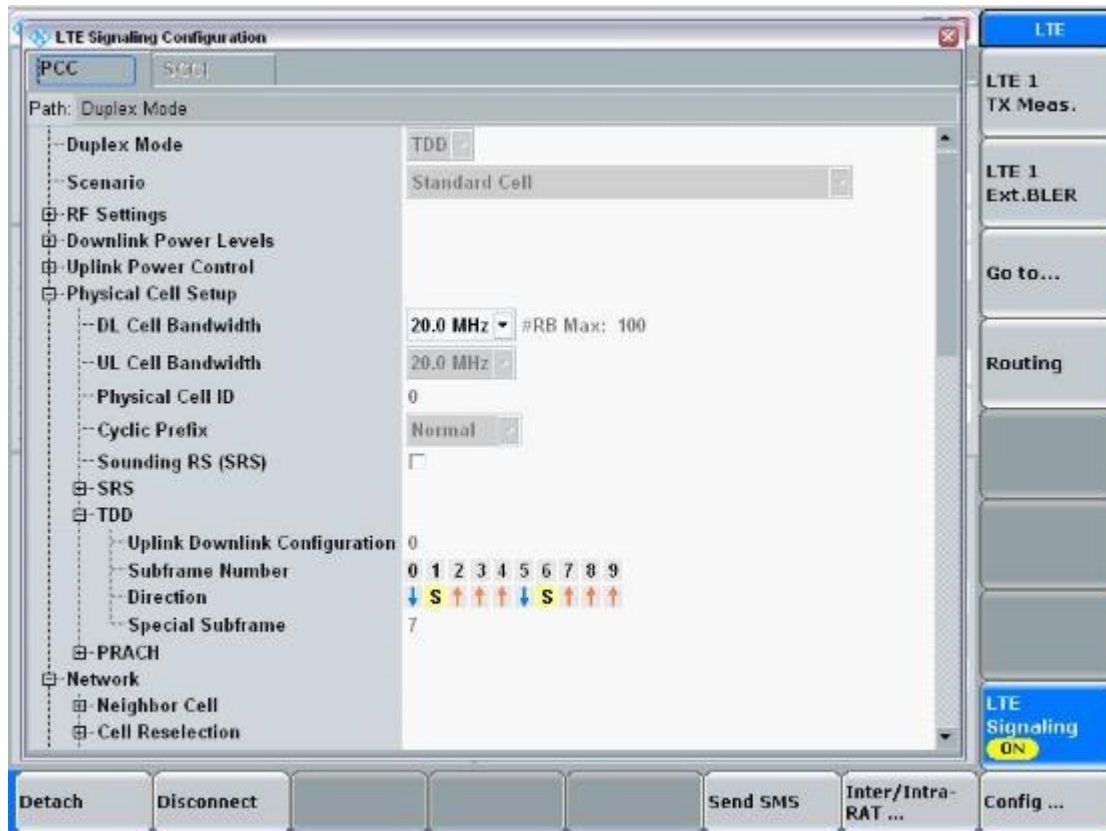
- a. Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
- b. Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.
- c. Measurement of the SAR distribution with a grid of 8 to 16mm * 8 to 16 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

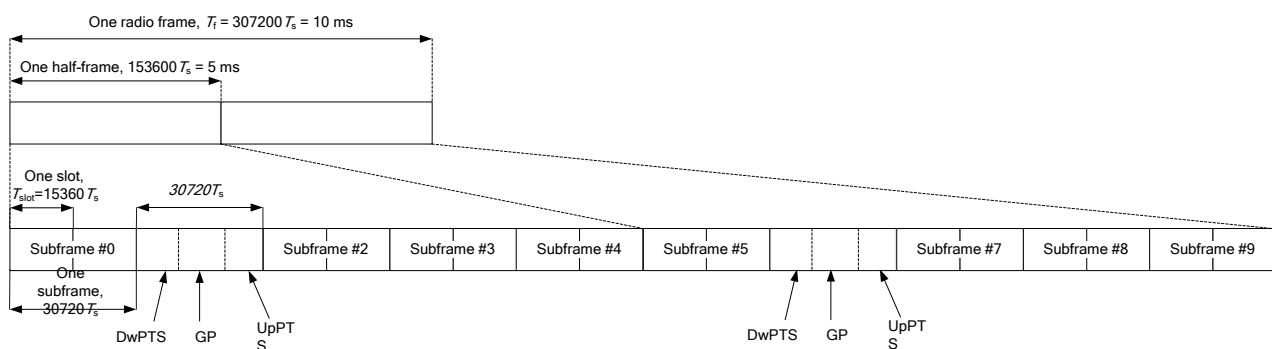
First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan 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.

7.5 LTE (TDD) Considerations

During TDD-LTE SAR testing, the EUT was commanded to transmit on maximum output power and maximum transmitting bandwidth. The uplink and downlink slot configuration as below in one radio frame.



According to 3GPP Per 3GPP TS 36.211. Each radio frame of length ($T_f = 307200 \cdot T_s = 10\text{ms}$) of two half-frames of length ($153600 \cdot T_s = 5\text{ms}$). Each half-frame consists of five sub-frames of length ($30720 \cdot T_s = 1\text{ms}$)



And the special sub-frame with the three fields DwPTS, GP and UpPTS.

The length of DwPTS and UpPTS is given by below table subject to the total length of DwPTS, GP and UpPTS being equal to $30720 \cdot T_s = 1\text{ms}$.

Configuration of special sub-frame (lengths of DwPTS/GP/UpPTS)

Special sub-frame configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21592 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$7680 \cdot T_s$	$2560 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$			$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21592 \cdot T_s$			$12800 \cdot T_s$	-	-
8	$24144 \cdot T_s$			-		
9	$13168 \cdot T_s$			-	-	-

For special sub-frame uplink time we used the largest cyclic prefix for duty cycle calculate;

Maximum uplink time of one special sub-frame=(largest cyclic prefix)/(one sub-frame of length)* time of one sub-frame= $5120 \cdot T_s / 30720 \cdot T_s \cdot 1\text{ms} = 0.167\text{ms}$

One radio frame with 6 uplink sub-frames and two special sub-frame,

there for the maximum Uplink time in one radio frame is: **$6 \cdot 1\text{ ms} + 2 \cdot 0.167\text{ ms} = 6.334\text{ms}$**

So, the duty cycle for TDD-LTE is: **$6.334\text{ms} / 10\text{ms} = 1: 1.58$**

8 CONDUCTED RF OUPUT POWER

8.1 GSM

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

8.2 CDMA BC0

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

8.3 WCDMA

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

8.4 LTE

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

8.5 WIFI

8.5.1 2.4G WIFI

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	16.78	18.5	Yes
		6	2437	17.67	18.5	Yes
		11	2462	17.03	18.5	Yes
		12	2467	17.19	18.5	Yes
		13	2472	15.79	17.5	Yes
	802.11g	1	2412	13.81	15.5	No
		6	2437	14.58	15.5	No
		11	2462	13.95	15.5	No
		12	2467	14.29	15.5	No
		13	2472	0.91	2.5	No
	802.11n(HT20)	1	2412	13.65	15.5	No
		6	2437	14.46	15.5	No
		11	2462	13.92	15.5	No
		12	2467	12.15	13.5	No
		13	2472	0.71	2.5	No

Note: When multiple channel bandwidth configurations in a frequency band have the same maximum tune-up output power, the test configuration is determined by applying the following steps sequentially.

1) The largest channel bandwidth configuration is selected between the multiple configurations in a frequency band with the same maximum tune-up output power.

2) When multiple transmission modes (802.11b/g/n) have the same maximum tune-up output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11b is chosen over 802.11g, and 802.11g chosen over 802.11n.

3) According KDB 247228, 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, OFDM SAR test is not required.

Adjusted SAR = $0.789 * (35.48\text{mW}/70.79\text{mW}) = 0.395$ W/Kg, so 2.4G OFDM SAR test is not required.

8.5.2 5G WIFI

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
5.2 (5.15~5.25)	802.11a	36	5180	15.24	16.5	No
		40	5200	15.33	16.5	No
		48	5240	15.57	16.5	No
	802.11n(HT20)	36	5180	15.26	16.5	No
		44	5220	15.31	16.5	No
		48	5240	15.41	16.5	No
	802.11n(HT40)	38	5190	16.70	17.5	No
		46	5230	16.81	17.5	No
	802.11ac(VHT20)	36	5180	15.60	16.5	No
		40	5200	15.26	16.5	No
		48	5240	15.42	16.5	No
	802.11ac(VHT40)	38	5190	16.82	17.5	No
		46	5230	16.85	17.5	No
	802.11ac(VHT80)	42	5210	16.63	17.5	Yes
5.3 (5.25~5.35)	802.11a	52	5260	14.73	16.5	No
		60	5300	15.11	16.5	No
		64	5320	15.36	16.5	No
	802.11n(HT20)	52	5260	15.46	16.5	No
		60	5300	15.76	16.5	No
		64	5320	15.94	16.5	No
	802.11n(HT40)	54	5270	17.25	17.5	No
		62	5310	17.45	17.5	No
	802.11ac(VHT20)	52	5260	15.30	16.5	No
		60	5300	15.72	16.5	No
		64	5320	16.01	16.5	No
	802.11ac(VHT40)	54	5270	17.11	17.5	No
		62	5310	17.35	17.5	No
	802.11ac(VHT80)	58	5290	16.95	17.5	Yes
5.6 (5.47~5.725)	802.11a	100	5500	15.02	16.5	No
		116	5580	15.22	16.5	No
		120	5600	15.36	16.5	No
		140	5700	15.59	16.5	No
		144	5720	15.57	16.5	No
	802.11n(HT20)	100	5500	15.64	16.5	No
		116	5580	15.76	16.5	No
		140	5700	15.44	16.5	No

		144	5720	15.38	16.5	No
	802.11n(HT40)	102	5510	17.32	17.5	No
		118	5590	17.45	17.5	No
		134	5670	17.22	17.5	No
		142	5710	17.30	17.5	No
	802.11ac(VHT20)	100	5500	15.64	16.5	No
		116	5580	15.80	16.5	No
		140	5700	15.48	16.5	No
		144	5720	15.40	16.5	No
	802.11ac(VHT40)	102	5510	17.32	17.5	No
		118	5590	17.47	17.5	No
		134	5670	17.37	17.5	No
		142	5710	17.25	17.5	No
	802.11ac(VHT80)	106	5530	16.72	17.5	Yes
		122	5610	16.92	17.5	Yes
		138	5690	16.42	17.5	Yes
5.8 (5.725~5.850)	802.11a	149	5745	15.13	16.5	No
		157	5785	15.41	16.5	No
		165	5825	15.37	16.5	No
	802.11n(HT20)	149	5745	15.01	16.5	No
		157	5785	15.26	16.5	No
		165	5825	15.25	16.5	No
	802.11n(HT40)	151	5755	16.83	17.5	No
		159	5795	16.94	17.5	No
	802.11ac(VHT20)	149	5745	15.02	16.5	No
		157	5785	15.24	16.5	No
		165	5825	15.21	16.5	No
	802.11ac(VHT40)	151	5755	16.68	17.5	No
		159	5795	16.94	17.5	No
	802.11ac(VHT80)	155	5775	16.55	17.5	Yes

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

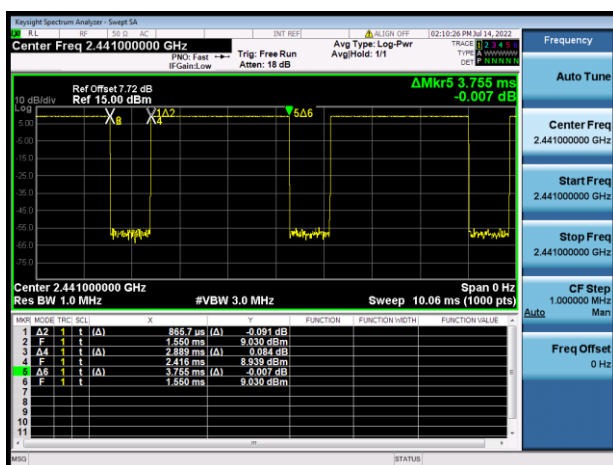
8.6 Bluetooth

Mode	GFSK			$\pi/4$ -DQPSK		
Channel	0	39	78	0	39	78
Frequency (MHz)	2402	2441	2480	2402	2441	2480
Average (dBm)	8.08	9.01	8.54	5.22	6.05	5.68
Tune-Up Limit (dBm)	10.00			7.00		
SAR Test Require	Yes	Yes	Yes	No	No	No
Mode	8-DPSK			/		
Channel	0	39	78	/	/	/
Frequency (MHz)	2402	2441	2480	/	/	/
Average (dBm)	5.22	5.98	5.49	/	/	/
Tune-Up Limit (dBm)	7.00			/		
SAR Test Require	No	No	No			
Mode	BLE-1Mbps			BLE-2Mbps		
Channel	0	19	39	0	19	39
Frequency (MHz)	2402	2440	2480	2402	2440	2480
Average (dBm)	2.06	3.34	3.88	2.62	3.76	4.36
Tune-Up Limit (dBm)	4.00	5.00	5.00	4.00	5.00	5.00
SAR Test Require	No	No	No	No	No	No

Note 1: Since bluetooth BR mode is the maximum output power mode, SAR measurements were performed with test software using DH5 modulation, and SAR measurement is not required for the EDR and LE. When the secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode.

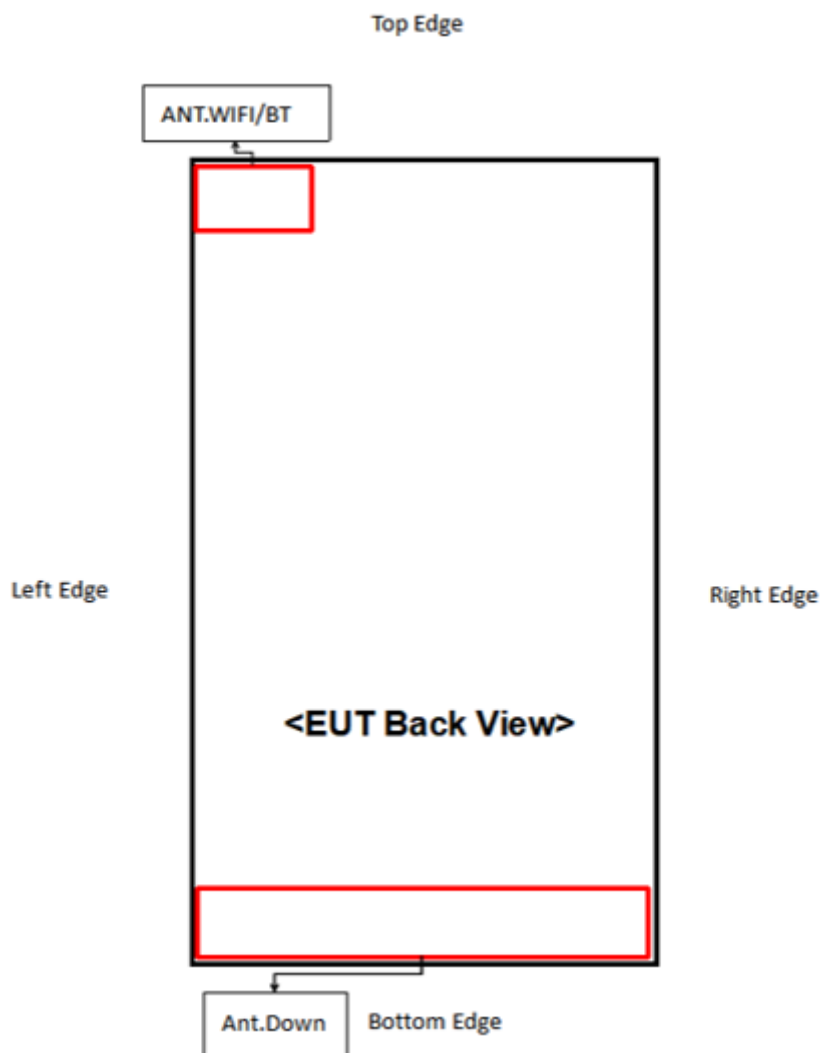
Duty Cycle Test Plots

GFSK



The Bluetooth duty cycle is 76.94 % as following figure, according to 2016 Oct. TCB workshop for Bluetooth SAR scaling need further consideration and the maximum duty cycle is 100%, therefore the actual duty cycle will be scaled up to 100% for Bluetooth reported SAR calculation.

9 TEST EXCLUSION CONSIDERATION



Antenna	Support Bands
Antenna.Down	GSM850/1900 , WCDMA B2/5 , CDMA BC0 , LTE B5/7/38/41
Antenna.WIFI/BT	WIFI&BT

9.1 SAR Test Exclusion Consideration Table

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

Band	Mode	Max. Peak Power		Test Position Configurations					
		dBm	mW	Head	Front/ Back	Left Edge	Right Edge	Top Edge	Bottom Edge
GSM 850	Distance to User			<5mm	<25mm	<25mm	<25mm	>25mm	<25mm
	Voice	33.0	1995	Yes	Yes	Yes	Yes	No	Yes
	Data	33.0	1995	Yes	Yes	Yes	Yes	No	Yes
GSM 1900	Distance to User			<5mm	<25mm	<25mm	<25mm	>25mm	<25mm
	Voice	28.5	708	Yes	Yes	Yes	Yes	No	Yes
	Data	28.5	708	Yes	Yes	Yes	Yes	No	Yes
WCDMA Band 2	Distance to User			<5mm	<25mm	<25mm	<25mm	>25mm	<25mm
	RMC	23.7	234	Yes	Yes	Yes	Yes	No	Yes
WCDMA Band 5	Distance to User			<5mm	<25mm	<25mm	<25mm	>25mm	<25mm
	RMC	24.0	251	Yes	Yes	Yes	Yes	No	Yes
CDMA BCO	Distance to User			<5mm	<25mm	<25mm	<25mm	>25mm	<25mm
	1xRTT	24.5	282	Yes	Yes	Yes	Yes	No	Yes
LTE Band 5	Distance to User			<5mm	<5mm	20mm	7mm	116mm	<5mm
	QPSK	24.0	251	Yes	Yes	Yes	Yes	No	Yes
LTE Band 7	Distance to User			<5mm	<25mm	<25mm	<25mm	>25mm	<25mm
	QPSK	22.0	158	Yes	Yes	Yes	Yes	No	Yes
WLAN 2.4 G	Distance to User			<5mm	<25mm	<25mm	>25mm	<25mm	>25mm
	802.11b	18.5	71.0	Yes	Yes	Yes	No	Yes	No
WLAN 5.2 G	Distance to User			<5mm	<25mm	<25mm	>25mm	<25mm	>25mm
	802.11ac(VHT80)	17.5	56	Yes	Yes	Yes	No	Yes	No
WLAN 5.3 G	Distance to User			<5mm	<25mm	<25mm	>25mm	<25mm	>25mm
	802.11ac(VHT80)	17.5	56	Yes	Yes	Yes	No	Yes	No
WLAN 5.6 G	Distance to User			<5mm	<25mm	<25mm	>25mm	<25mm	>25mm
	802.11ac(VHT80)	17.5	56	Yes	Yes	Yes	No	Yes	No
WLAN 5.8 G	Distance to User			<5mm	<25mm	<25mm	>25mm	<25mm	>25mm
	802.11ac(VHT80)	17.5	56	Yes	Yes	Yes	No	Yes	No
Bluetooth	Distance to User			<5mm	<25mm	<25mm	>25mm	<25mm	>25mm
	BT	10	10	Yes	Yes	Yes	No	Yes	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:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR}$$
 - a. $f(\text{GHz})$ 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 $[3.0] / [\sqrt{f(\text{GHz})}] \cdot [(\text{min. test separation distance, mm})] = \text{exclusion threshold of mW}$.
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 $< 0.25\text{dB}$ higher than RMC12.2Kbps, or reported SAR with RMC 12.2kbps setting is $\leq 1.2\text{W/kg}$, 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 $1/4\text{dB}$ higher than those measured at the lowest data rate
8. Per KDB 248227 D01 SAR is not required for the following 2.4 GHz OFDM conditions.
 - a. When KDB Publication 447498 D01 SAR test exclusion applies to the OFDM configuration.
 - b. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is $\leq 1.2 \text{ W/kg}$.
9. Per KDB 248227 D01 SAR is not required for the following U-NII-1 and U-NII-2A bands conditions.
 - a. When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is $\leq 1.2 \text{ W/kg}$, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, each band is tested independently for SAR.

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

9.2 10g Extremity Exposure Consideration

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

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

Conclusion:

The EUT hotspot mode 1-g reported SAR is 1.19 W/kg, which is less than 1.2 W/kg, 10 g extremity SAR is not required.

10 TEST RESULT

10.1 GSM 850

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Head												
Down	GPRS 4Slots	Left Cheek	0	190	836.6	0.15	0.349	31.84	32.50	1.164	0.406	/
		Left Tilt	0	190	836.6	0.01	0.216	31.84	32.50	1.164	0.251	/
		Right Cheek	0	190	836.6	0.10	0.455	31.84	32.50	1.164	0.530	1#
		Right Tilt	0	190	836.6	-0.14	0.229	31.84	32.50	1.164	0.267	/
Body-worn Accessory&Hotspot												
Down	GPRS 4Slots	Front Side	10	190	836.6	0.18	0.408	31.84	32.50	1.164	0.475	/
		Back Side	10	190	836.6	-0.14	0.927	31.84	32.50	1.164	1.079	2#
			10	128	824.2	0.08	0.806	31.75	32.50	1.189	0.958	/
			10	251	848.8	-0.02	0.722	31.82	32.50	1.169	0.844	/
		Left Edge	10	190	836.6	0.14	0.399	31.84	32.50	1.164	0.464	/
		Right Edge	10	190	836.6	0.15	0.485	31.84	32.50	1.164	0.565	/
		Bottom Edge	10	190	836.6	0.17	0.401	31.84	32.50	1.164	0.467	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.												

10.2GSM 1900

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Head												
Down	GPRS 4Slots	Left Cheek	0	661	1880	0.08	0.577	27.36	28.00	1.159	0.669	3#
		Left Tilt	0	661	1880	0.17	0.279	27.36	28.00	1.159	0.323	/
		Right Cheek	0	661	1880	0.06	0.352	27.36	28.00	1.159	0.408	/
		Right Tilt	0	661	1880	0.11	0.275	27.36	28.00	1.159	0.319	/
Body-worn Accessory&Hotspot												
Down	GPRS 4Slots	Front Side	10	661	1880	0.01	0.463	27.36	28.00	1.159	0.537	/
		Back Side	10	661	1880	0.02	0.503	27.36	28.00	1.159	0.583	4#
		Left Edge	10	661	1880	0.09	0.106	27.36	28.00	1.159	0.123	/
		Right Edge	10	661	1880	-0.06	0.461	27.36	28.00	1.159	0.534	/
		Bottom Edge	10	661	1880	-0.14	0.320	27.36	28.00	1.159	0.371	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.												

10.3CDMA BC0

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Head												
Down	1xRTT (RC3 SO55)	Left Cheek	0	777	848.31	-0.12	0.388	24.20	24.50	1.072	0.416	/
		Left Tilt	0	777	848.31	0.15	0.275	24.20	24.50	1.072	0.295	/
		Right Cheek	0	777	848.31	0.01	0.461	24.20	24.50	1.072	0.494	5#
		Right Tilt	0	777	848.31	0.01	0.301	24.20	24.50	1.072	0.323	/
Body-worn Accessory&Hotspot												
Down	EVDO Rel.0	Front Side	10	777	848.31	-0.14	0.352	24.20	24.50	1.072	0.377	/
		Back Side	10	777	848.31	-0.03	0.827	24.20	24.50	1.072	0.887	6#
			10	1013	824.7	-0.11	0.694	23.49	24.50	1.262	0.876	/
			10	384	836.52	0.07	0.579	23.78	24.50	1.180	0.683	/
		Left Edge	10	777	848.31	-0.10	0.414	24.20	24.50	1.072	0.444	/
		Right Edge	10	777	848.31	-0.04	0.452	24.20	24.50	1.072	0.485	/
		Bottom Edge	10	777	848.31	-0.15	0.303	24.20	24.50	1.072	0.325	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.												

10.4WCDMA Band 2

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Head												
Down	RMC	Left Cheek	0	9400	1880	-0.14	0.708	23.55	23.70	1.035	0.733	7#
		Left Tilt	0	9400	1880	-0.16	0.402	23.55	23.70	1.035	0.416	/
		Right Cheek	0	9400	1880	-0.07	0.487	23.55	23.70	1.035	0.504	/
		Right Tilt	0	9400	1880	-0.06	0.407	23.55	23.70	1.035	0.421	/
Body-worn Accessory&Hotspot												
Down	RMC	Front Side	10	9400	1880	-0.06	0.490	23.55	23.70	1.035	0.507	/
		Back Side	10	9400	1880	-0.03	0.592	23.55	23.70	1.035	0.613	8#
		Left Edge	10	9400	1880	0.18	0.124	23.55	23.70	1.035	0.128	/
		Right Edge	10	9400	1880	0.00	0.496	23.55	23.70	1.035	0.513	/
		Bottom Edge	10	9400	1880	-0.02	0.404	23.55	23.70	1.035	0.418	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.												

10.5WCDMA Band 5

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Head												
Down	RMC	Left Cheek	0	4182	836.4	-0.08	0.125	23.68	24.00	1.076	0.135	/
		Left Tilt	0	4182	836.4	0.18	0.066	23.68	24.00	1.076	0.071	/
		Right Cheek	0	4182	836.4	0.06	0.181	23.68	24.00	1.076	0.195	9#
		Right Tilt	0	4182	836.4	0.01	0.079	23.68	24.00	1.076	0.085	/
Body-worn Accessory&Hotspot												
Down	RMC	Front Side	10	4182	836.4	0.13	0.135	23.68	24.00	1.076	0.145	/
		Back Side	10	4182	836.4	-0.02	0.373	23.68	24.00	1.076	0.401	10#
		Left Edge	10	4182	836.4	0.09	0.182	23.68	24.00	1.076	0.196	/
		Right Edge	10	4182	836.4	-0.16	0.205	23.68	24.00	1.076	0.221	/
		Bottom Edge	10	4182	836.4	0.06	0.140	23.68	24.00	1.076	0.151	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.												

10.6LTE Band 5 (20MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up powe r(dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Head														
Down	QPSK	Left Cheek	0	20525	836.5	1	LOW	-0.17	0.403	23.58	24.00	1.102	0.444	/
			0	20450	829	25	HIGH	0.03	0.366	22.36	23.00	1.159	0.424	/
		Left Tilt	0	20525	836.5	1	LOW	-0.14	0.322	23.58	24.00	1.102	0.355	/
			0	20450	829	25	HIGH	-0.14	0.305	22.36	23.00	1.159	0.353	/
		Right Cheek	0	20525	836.5	1	LOW	0.04	0.570	23.58	24.00	1.102	0.628	11#
			0	20450	829	25	HIGH	-0.10	0.435	22.36	23.00	1.159	0.504	/
		Right Tilt	0	20525	836.5	1	LOW	0.18	0.323	23.58	24.00	1.102	0.356	/
			0	20450	829	25	HIGH	-0.12	0.331	22.36	23.00	1.159	0.384	/
Body-worn Accessory&Hotspot														
Down	QPSK	Front Side	10	20525	836.5	1	LOW	0.01	0.221	23.58	24.00	1.102	0.244	/
			10	20450	829	25	HIGH	-0.13	0.204	22.36	23.00	1.159	0.236	/
		Back Side	10	20525	836.5	1	LOW	-0.09	0.424	23.58	24.00	1.102	0.467	12#
			10	20450	829	25	HIGH	0.02	0.398	22.36	23.00	1.159	0.461	/
		Left Edge	10	20525	836.5	1	LOW	-0.01	0.237	23.58	24.00	1.102	0.261	/
			10	20450	829	25	HIGH	0.00	0.229	22.36	23.00	1.159	0.265	/
		Right Edge	10	20525	836.5	1	LOW	-0.08	0.278	23.58	24.00	1.102	0.306	/
			10	20450	829	25	HIGH	0.15	0.261	22.36	23.00	1.159	0.302	/
		Bottom Edge	10	20525	836.5	1	LOW	-0.01	0.219	23.58	24.00	1.102	0.241	/
			10	20450	829	25	HIGH	-0.13	0.190	22.36	23.00	1.159	0.220	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.7LTE Band 7 (20MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up powe r(dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Head														
Down	QPSK	Left Cheek	0	21350	2560	1	LOW	0.03	0.036	21.68	22.00	1.076	0.039	/
			0	21350	2560	50	LOW	0.11	0.032	20.57	21.00	1.104	0.035	/
		Left Tilt	0	21350	2560	1	LOW	0.16	0.028	21.68	22.00	1.076	0.030	/
			0	21350	2560	50	LOW	0.01	0.025	20.57	21.00	1.104	0.028	/
		Right Cheek	0	21350	2560	1	LOW	-0.11	0.050	21.68	22.00	1.076	0.054	13#
			0	21350	2560	50	LOW	0.06	0.041	20.57	21.00	1.104	0.045	/
		Right Tilt	0	21350	2560	1	LOW	0.13	0.036	21.68	22.00	1.076	0.039	/
			0	21350	2560	50	LOW	0.13	0.031	20.57	21.00	1.104	0.034	/
Body-worn Accessory&Hotspot														
Down	QPSK	Front Side	10	21350	2560	1	LOW	-0.02	0.121	21.68	22.00	1.076	0.130	/
			10	21350	2560	50	LOW	0.16	0.098	20.57	21.00	1.104	0.108	/
		Back Side	10	21350	2560	1	LOW	-0.08	1.020	21.68	22.00	1.076	1.098	14#
			10	20850	2510	1	LOW	-0.05	0.765	21.64	22.00	1.086	0.831	/
			10	21100	2535	1	LOW	-0.01	0.993	21.57	22.00	1.104	1.096	/
			10	21350	2560	50	LOW	-0.07	0.941	20.57	21.00	1.104	1.039	/
			10	20850	2510	50	LOW	0.09	0.594	20.52	21.00	1.117	0.663	/
			10	21100	2535	50	LOW	-0.08	0.833	20.56	21.00	1.107	0.922	/
			10	20850	2510	100	LOW	0.05	0.507	20.54	21.00	1.112	0.564	/
			Left Edge	10	21350	2560	1	LOW	0.04	0.064	21.68	22.00	1.076	0.069
		10		21350	2560	50	LOW	0.19	0.044	20.57	21.00	1.104	0.049	/
		Right Edge	10	21350	2560	1	LOW	-0.03	0.112	21.68	22.00	1.076	0.121	/
			10	21350	2560	50	LOW	-0.03	0.091	20.57	21.00	1.104	0.100	/
		Bottom Edge	10	21350	2560	1	LOW	-0.01	0.975	21.68	22.00	1.076	1.049	/
			10	20850	2510	1	LOW	-0.13	0.718	21.64	22.00	1.086	0.780	/
			10	21100	2535	1	LOW	-0.13	0.949	21.57	22.00	1.104	1.048	/
			10	21350	2560	50	LOW	-0.17	0.820	20.57	21.00	1.104	0.905	/
			10	20850	2510	50	LOW	-0.05	0.641	20.52	21.00	1.117	0.716	/
			10	21100	2535	50	LOW	0.10	0.770	20.56	21.00	1.107	0.852	/
			10	20850	2510	100	LOW	0.08	0.567	20.54	21.00	1.112	0.631	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.8LTE Band 38 (20MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR(W/kg)	Meas. Power (dBm)	Max. tune- up power(dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Head														
Down	QPSK	Left Cheek	0	38150	2610	1	LOW	-0.16	0.013	20.88	22.00	1.294	0.017	15#
			0	38000	2595	50	HIGH	0.02	0.011	19.77	21.00	1.327	0.015	/
		Left Tilt	0	38150	2610	1	LOW	-0.14	0.009	20.88	22.00	1.294	0.012	/
			0	38000	2595	50	HIGH	0.14	0.008	19.77	21.00	1.327	0.011	/
		Right Cheek	0	38150	2610	1	LOW	0.05	0.011	20.88	22.00	1.294	0.014	/
			0	38000	2595	50	HIGH	-0.18	0.010	19.77	21.00	1.327	0.013	/
		Right Tilt	0	38150	2610	1	LOW	0.04	0.007	20.88	22.00	1.294	0.009	/
			0	38000	2595	50	HIGH	0.10	0.005	19.77	21.00	1.327	0.007	/
Body-worn Accessory&Hotspot														
Down	QPSK	Front Side	10	38150	2610	1	LOW	0.14	0.056	20.88	22.00	1.294	0.072	/
			10	38000	2595	50	HIGH	-0.02	0.047	19.77	21.00	1.327	0.062	/
		Back Side	10	38150	2610	1	LOW	-0.08	0.691	20.88	22.00	1.294	0.894	16#
			10	38000	2595	1	HIGH	0.09	0.640	20.87	22.00	1.297	0.830	/
			10	37850	2580	1	HIGH	-0.09	0.582	20.84	22.00	1.306	0.760	/
			10	38000	2595	50	HIGH	-0.18	0.511	19.77	21.00	1.327	0.678	/
			10	38000	2595	100	LOW	-0.06	0.457	19.74	21.00	1.337	0.611	/
			10	38000	2595	50	HIGH	-0.05	0.021	19.77	21.00	1.327	0.028	/
		Left Edge	10	38150	2610	1	LOW	0.15	0.024	20.88	22.00	1.294	0.031	/
			10	38000	2595	50	HIGH	-0.05	0.021	19.77	21.00	1.327	0.028	/
		Right Edge	10	38150	2610	1	LOW	-0.02	0.088	20.88	22.00	1.294	0.114	/
			10	38000	2595	50	HIGH	0.15	0.047	19.77	21.00	1.327	0.062	/
		Bottom Edge	10	38150	2610	1	LOW	0.12	0.474	20.88	22.00	1.294	0.613	/
			10	38000	2595	50	HIGH	-0.01	0.459	19.77	21.00	1.327	0.609	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.9LTE Band 41 (20MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR(W/kg)	Meas. Power (dBm)	Max. tune- up power(dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Head														
Down	QPSK	Left Cheek	0	40740	2605	1	HIGH	0.03	0.085	23.89	24.00	1.026	0.087	17#
			0	40740	2605	50	HIGH	-0.08	0.080	22.88	23.00	1.028	0.082	/
		Left Tilt	0	40740	2605	1	HIGH	0.06	0.040	23.89	24.00	1.026	0.041	/
			0	40740	2605	50	HIGH	-0.12	0.037	22.88	23.00	1.028	0.038	/
		Right Cheek	0	40740	2605	1	HIGH	0.04	0.062	23.89	24.00	1.026	0.064	/
			0	40740	2605	50	HIGH	0.10	0.045	22.88	23.00	1.028	0.046	/
		Right Tilt	0	40740	2605	1	HIGH	-0.12	0.034	23.89	24.00	1.026	0.035	/
			0	40740	2605	50	HIGH	0.16	0.029	22.88	23.00	1.028	0.030	/
Body-worn Accessory&Hotspot														
Down	QPSK	Front Side	10	40740	2605	1	HIGH	-0.12	0.118	23.89	24.00	1.026	0.121	/
			10	40740	2605	50	HIGH	0.12	0.096	22.88	23.00	1.028	0.099	/
		Back Side	10	40740	2605	1	HIGH	0.13	1.160	23.89	24.00	1.026	1.190	18#
			10	40340	2565	1	HIGH	0.10	1.140	23.89	24.00	1.026	1.170	/
			10	41140	2645	1	HIGH	0.17	1.090	23.72	24.00	1.067	1.163	/
			10	40740	2605	50	HIGH	-0.15	0.703	22.88	23.00	1.028	0.723	/
			10	40340	2565	100	LOW	-0.12	0.655	22.97	23.00	1.007	0.660	/
		Left Edge	10	40740	2605	1	LOW	-0.01	0.085	23.89	24.00	1.026	0.087	/
			10	40740	2605	50	LOW	-0.01	0.056	22.88	23.00	1.028	0.058	/
		Right Edge	10	40740	2605	1	LOW	0.10	0.106	23.89	24.00	1.026	0.109	/
			10	40740	2605	50	LOW	-0.16	0.075	22.88	23.00	1.028	0.077	/
		Bottom Edge	10	40740	2605	1	LOW	-0.13	1.000	23.89	24.00	1.026	1.026	/
			10	40340	2565	1	LOW	0.03	0.743	23.89	24.00	1.026	0.762	/
			10	41140	2645	1	LOW	0.12	0.995	23.72	24.00	1.067	1.062	/
			10	40740	2605	50	LOW	0.17	0.693	22.88	23.00	1.028	0.712	/
			10	40340	2565	100	LOW	0.14	0.618	22.97	23.00	1.007	0.622	/

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

10.10 WIFI 2.4GHz

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	Duty cycle (%)	Duty Factor	1g Scaled SAR (W/kg)	Meas. No.
Head													
802.11b	Left Cheek	0	6	2437	0.15	0.645	17.67	18.50	1.211	99.03	1.010	0.789	19#
	Left Tilt	0	6	2437	0.16	0.378	17.67	18.50	1.211	99.03	1.010	0.462	/
	Right Cheek	0	6	2437	-0.02	0.289	17.67	18.50	1.211	99.03	1.010	0.353	/
	Right Tilt	0	6	2437	0.19	0.259	17.67	18.50	1.211	99.03	1.010	0.317	/
Body-worn Accessory&Hotspot													
802.11b	Front Side	10	6	2437	0.10	0.121	17.67	18.50	1.211	99.03	1.010	0.148	/
	Back Side	10	6	2437	0.02	0.213	17.67	18.50	1.211	99.03	1.010	0.261	/
	Left Edge	10	6	2437	-0.12	0.284	17.67	18.50	1.211	99.03	1.010	0.347	20#
	Top Edge	10	6	2437	-0.11	0.139	17.67	18.50	1.211	99.03	1.010	0.170	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

10.11 WIFI 5GHz

Fre. Band	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	Duty cycle (%)	Duty Factor	1g Scaled SAR (W/kg)	Meas. No.
Head														
5.3G	802.11 ac80	Left Cheek	0	58	5290	-0.19	0.520	16.95	17.50	1.135	92.84	1.077	0.636	/
		Left Tilt	0	58	5290	0.13	0.581	16.95	17.50	1.135	92.84	1.077	0.710	/
		Right Cheek	0	58	5290	0.11	0.653	16.95	17.50	1.135	92.84	1.077	0.798	/
		Right Tilt	0	58	5290	0.03	0.742	16.95	17.50	1.135	92.84	1.077	0.907	21#
			0	42	5210	-0.17	0.685	16.63	17.50	1.222	92.84	1.077	0.902	/
5.6G	802.11 ac80	Left Cheek	0	122	5610	0.07	0.455	16.92	17.50	1.143	92.84	1.077	0.560	/
		Left Tilt	0	122	5610	-0.13	0.583	16.92	17.50	1.143	92.84	1.077	0.718	/
		Right Cheek	0	122	5610	0.15	0.556	16.92	17.50	1.143	92.84	1.077	0.684	/
		Right Tilt	0	122	5610	-0.15	0.645	16.92	17.50	1.143	92.84	1.077	0.794	22#
5.8G	802.11 ac80	Left Cheek	0	155	5775	0.12	0.358	16.55	17.50	1.245	92.84	1.077	0.480	/
		Left Tilt	0	155	5775	0.01	0.502	16.55	17.50	1.245	92.84	1.077	0.673	/
		Right Cheek	0	155	5775	0.04	0.416	16.55	17.50	1.245	92.84	1.077	0.558	/
		Right Tilt	0	155	5775	-0.16	0.519	16.55	17.50	1.245	92.84	1.077	0.696	23#
Body-worn Accessory														
5.3G	802.11 ac80	Front Side	10	58	5290	0.12	0.145	16.95	17.50	1.135	92.84	1.077	0.177	24#
		Back Side	10	58	5290	0.11	0.069	16.95	17.50	1.135	92.84	1.077	0.084	/
5.6G	802.11 ac80	Front Side	10	122	5610	0.03	0.198	16.92	17.50	1.143	92.84	1.077	0.244	25#
		Back Side	10	122	5610	0.04	0.061	16.92	17.50	1.143	92.84	1.077	0.075	/
Hotspot														
5.2G	802.11 ac80	Front Side	10	42	5210	-0.12	0.193	16.63	17.50	1.222	92.84	1.077	0.254	/
		Back Side	10	42	5210	0.02	0.139	16.63	17.50	1.222	92.84	1.077	0.183	/
		Left Edge	10	42	5210	0.09	0.046	16.63	17.50	1.222	92.84	1.077	0.061	/
		Top Edge	10	42	5210	-0.12	0.355	16.63	17.50	1.222	92.84	1.077	0.467	26#
5.8G	802.11 ac80	Front Side	10	155	5775	-0.10	0.146	16.55	17.50	1.245	92.84	1.077	0.196	/
		Back Side	10	155	5775	0.01	0.051	16.55	17.50	1.245	92.84	1.077	0.068	/
		Left Edge	10	155	5775	-0.05	0.089	16.55	17.50	1.245	92.84	1.077	0.119	/
		Top Edge	10	155	5775	0.09	0.243	16.55	17.50	1.245	92.84	1.077	0.326	27#
Fre. Band	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	Duty cycle (%)	Duty Factor	10g Scaled SAR (W/kg)	Meas. No.
Extremity														
5.3G	802.11 ac80	Front Side	0	58	5290	0.08	0.331	16.95	17.50	1.135	92.84	1.077	0.405	/
		Back Side	0	58	5290	0.16	0.080	16.95	17.50	1.135	92.84	1.077	0.098	/
		Left Edge	0	58	5290	0.05	0.089	16.95	17.50	1.135	92.84	1.077	0.109	/
		Top Edge	0	58	5290	-0.16	0.475	16.95	17.50	1.135	92.84	1.077	0.581	28#
5.6G		Front Side	0	122	5610	-0.13	0.325	16.92	17.50	1.143	92.84	1.077	0.400	/

	802.11 ac80	Back Side	0	122	5610	-0.10	0.045	16.92	17.50	1.143	92.84	1.077	0.055	/
		Left Edge	0	122	5610	-0.19	0.120	16.92	17.50	1.143	92.84	1.077	0.148	/
		Top Edge	0	122	5610	0.19	0.567	16.92	17.50	1.143	92.84	1.077	0.698	29#

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

10.12 Bluetooth

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	Duty cycle (%)	Duty Factor	1g Scaled SAR (W/kg)	Meas. No.
Head													
DH5	Left Cheek	0	0	2402	-0.17	0.001	9.01	10.00	1.256	76.94	1.300	0.002	30#
	Left Tilt	0	0	2402	0.16	0.001	9.01	10.00	1.256	76.94	1.300	0.002	/
	Right Cheek	0	0	2402	0.12	0.001	9.01	10.00	1.256	76.94	1.300	0.002	/
	Right Tilt	0	0	2402	0.13	0.000	9.01	10.00	1.256	76.94	1.300	0.000	/
Body-worn Accessory&Hotspot													
DH5	Front Side	10	0	2402	0.00	0.003	9.01	10.00	1.256	76.94	1.300	0.005	/
	Back Side	10	0	2402	-0.02	0.001	9.01	10.00	1.256	76.94	1.300	0.002	/
	Left Edge	10	0	2402	-0.16	0.004	9.01	10.00	1.256	76.94	1.300	0.007	31#
	Top Edge	10	0	2402	-0.12	0.002	9.01	10.00	1.256	76.94	1.300	0.003	/

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 ^{1st} Measured SAR (W/kg)	Largest to Smallest SAR Radio
850	GSM	Hotspot	Back Side	0.927	Yes	0.919	1.01
848.31	CDMA BC0	Hotspot	Back Side	0.827	Yes	0.816	1.01
2560	LTE band 7	Hotspot	Back Side	1.020	Yes	0.997	1.02
2560	LTE band 7	Hotspot	Bottom Edge	0.975	Yes	0.967	1.01
2605	LTE band 41	Hotspot	Back Side	1.160	Yes	1.030	1.13
2500	LTE band 41	Hotspot	Bottom Edge	1.000	Yes	0.998	1.00

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	Hotspot
1	WWAN+2.4G WLAN	Yes	Yes	Yes
2	WWAN+5G WLAN	Yes	Yes	Yes
3	WWAN+BT	Yes	Yes	Yes

Note:

1. WiFi 2.4G and Bluetooth share the same antenna, and can't transmit simultaneously.
2. When stand-alone SAR is not required for a side of antenna, its SAR is considered zero in the SAR summing process to assess Multi-band transmission SAR compliance.
3. The maximum SAR summation is calculated based on the same configuration and test position.

12.2 Estimated SAR Calculation

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

Band	Antenna	Position	Stand alone SAR				SUM SAR		
			1	2	3	4	Sum SAR (1+2)	Sum SAR (1+3)	Sum SAR (1+4)
			WWAN	2.4GWIFI	MAX. 5GWIFI	Bluetooth			
GSM850	Ant.Down	Left Cheek	0.406	0.788	0.636	0.002	1.194	1.042	0.408
	Ant.Down	Left Tilt	0.251	0.462	0.718	0.002	0.713	0.969	0.253
	Ant.Down	Right Cheek	0.530	0.353	0.798	0.002	0.883	1.328	0.532
	Ant.Down	Right Tilt	0.267	0.317	0.907	0.000	0.584	1.174	0.267
GSM1900	Ant.Down	Left Cheek	0.669	0.788	0.636	0.002	1.457	1.305	0.671
	Ant.Down	Left Tilt	0.323	0.462	0.718	0.002	0.785	1.041	0.325
	Ant.Down	Right Cheek	0.408	0.353	0.798	0.002	0.761	1.206	0.410
	Ant.Down	Right Tilt	0.319	0.317	0.907	0.000	0.636	1.226	0.319
WCDMA B2	Ant.Down	Left Cheek	0.733	0.788	0.636	0.002	1.521	1.369	0.735
	Ant.Down	Left Tilt	0.416	0.462	0.718	0.002	0.878	1.134	0.418
	Ant.Down	Right Cheek	0.504	0.353	0.798	0.002	0.857	1.302	0.506
	Ant.Down	Right Tilt	0.421	0.317	0.907	0.000	0.738	1.328	0.421
WCDMA B5	Ant.Down	Left Cheek	0.135	0.788	0.636	0.002	0.923	0.771	0.137
	Ant.Down	Left Tilt	0.071	0.462	0.718	0.002	0.533	0.789	0.073
	Ant.Down	Right Cheek	0.195	0.353	0.798	0.002	0.548	0.993	0.197
	Ant.Down	Right Tilt	0.085	0.317	0.907	0.000	0.402	0.992	0.085
CDMA BC0	Ant.Down	Left Cheek	0.416	0.788	0.636	0.002	1.204	1.052	0.418
	Ant.Down	Left Tilt	0.295	0.462	0.718	0.002	0.757	1.013	0.297
	Ant.Down	Right Cheek	0.494	0.353	0.798	0.002	0.847	1.292	0.496
	Ant.Down	Right Tilt	0.323	0.317	0.907	0.000	0.640	1.230	0.323
LTE B5	Ant.Down	Left Cheek	0.444	0.788	0.636	0.002	1.232	1.080	0.446
	Ant.Down	Left Tilt	0.355	0.462	0.718	0.002	0.817	1.073	0.357
	Ant.Down	Right Cheek	0.628	0.353	0.798	0.002	0.981	1.426	0.630
	Ant.Down	Right Tilt	0.384	0.317	0.907	0.000	0.701	1.291	0.384
LTE B7	Ant.Down	Left Cheek	0.039	0.788	0.636	0.002	0.827	0.675	0.041
	Ant.Down	Left Tilt	0.030	0.462	0.718	0.002	0.492	0.748	0.032
	Ant.Down	Right Cheek	0.054	0.353	0.798	0.002	0.407	0.852	0.056
	Ant.Down	Right Tilt	0.039	0.317	0.907	0.000	0.356	0.946	0.039
LTE B38	Ant.Down	Left Cheek	0.016	0.788	0.636	0.002	0.804	0.652	0.018
	Ant.Down	Left Tilt	0.011	0.462	0.718	0.002	0.473	0.729	0.013
	Ant.Down	Right Cheek	0.014	0.353	0.798	0.002	0.367	0.812	0.016
	Ant.Down	Right Tilt	0.009	0.317	0.907	0.000	0.326	0.916	0.009
LTE B41	Ant.Down	Left Cheek	0.087	0.788	0.636	0.002	0.875	0.723	0.089
	Ant.Down	Left Tilt	0.041	0.462	0.718	0.002	0.503	0.759	0.043

	Ant.Down	Right Cheek	0.064	0.353	0.798	0.002	0.417	0.862	0.066
	Ant.Down	Right Tilt	0.035	0.317	0.907	0.000	0.352	0.942	0.035

Note:

1: The highest Summed 1g SAR is 1.521 W/Kg < 1.6 W/kg, so Simultaneous Transmission SAR test is not required.

12.2.2 Hotspot Simultaneous Transmission SAR Evaluation for WWAN Antenna with WLAN and Bluetooth

Band	Antenna	Position	Stand alone SAR				SUM SAR		
			1	2	3	4	Sum SAR	Sum SAR	Sum SAR
			WWAN	2.4G WIFI	MAX. 5GWIFI	Bluetooth	(1+2)	(1+3)	(1+4)
GSM850	Ant.Down	Front Side 10mm	0.475	0.148	0.254	0.005	0.623	0.729	0.480
	Ant.Down	Back Side 10mm	1.079	0.260	0.183	0.002	1.339	1.262	1.081
	Ant.Down	Left Edge 10mm	0.464	0.347	0.119	0.007	0.811	0.583	0.471
	Ant.Down	Right Edge 10mm	0.565	0.000	0.000	0.000	0.565	0.565	0.565
	Ant.Down	Bottom Edge 10mm	0.467	0.000	0.000	0.000	0.467	0.467	0.467
GSM1900	Ant.Down	Front Side 10mm	0.537	0.148	0.254	0.005	0.685	0.791	0.542
	Ant.Down	Back Side 10mm	0.583	0.260	0.183	0.002	0.843	0.766	0.585
	Ant.Down	Left Edge 10mm	0.123	0.347	0.119	0.007	0.470	0.242	0.130
	Ant.Down	Right Edge 10mm	0.534	0.000	0.000	0.000	0.534	0.534	0.534
	Ant.Down	Bottom Edge 10mm	0.371	0.000	0.000	0.000	0.371	0.371	0.371
WCDMA B2	Ant.Down	Front Side 10mm	0.507	0.148	0.254	0.005	0.655	0.761	0.512
	Ant.Down	Back Side 10mm	0.613	0.260	0.183	0.002	0.873	0.796	0.615
	Ant.Down	Left Edge 10mm	0.128	0.347	0.119	0.007	0.475	0.247	0.135
	Ant.Down	Right Edge 10mm	0.513	0.000	0.000	0.000	0.513	0.513	0.513
	Ant.Down	Bottom Edge 10mm	0.418	0.000	0.000	0.000	0.418	0.418	0.418
WCDMA B5	Ant.Down	Front Side 10mm	0.145	0.148	0.254	0.005	0.293	0.399	0.150
	Ant.Down	Back Side 10mm	0.402	0.260	0.183	0.002	0.662	0.585	0.404
	Ant.Down	Left Edge 10mm	0.196	0.347	0.119	0.007	0.543	0.315	0.203
	Ant.Down	Right Edge 10mm	0.221	0.000	0.000	0.000	0.221	0.221	0.221
	Ant.Down	Bottom Edge 10mm	0.151	0.000	0.000	0.000	0.151	0.151	0.151
CDMA BC0	Ant.Down	Front Side 10mm	0.377	0.148	0.254	0.005	0.525	0.631	0.382
	Ant.Down	Back Side 10mm	0.886	0.260	0.183	0.002	1.146	1.069	0.888
	Ant.Down	Left Edge 10mm	0.444	0.347	0.119	0.007	0.791	0.563	0.451
	Ant.Down	Right Edge 10mm	0.484	0.000	0.000	0.000	0.484	0.484	0.484
	Ant.Down	Bottom Edge 10mm	0.325	0.000	0.000	0.000	0.325	0.325	0.325
LTE B5	Ant.Down	Front Side 10mm	0.243	0.148	0.254	0.005	0.391	0.497	0.248
	Ant.Down	Back Side 10mm	0.467	0.260	0.183	0.002	0.727	0.650	0.469
	Ant.Down	Left Edge 10mm	0.265	0.347	0.119	0.007	0.612	0.384	0.272
	Ant.Down	Right Edge 10mm	0.306	0.000	0.000	0.000	0.306	0.306	0.306
	Ant.Down	Bottom Edge 10mm	0.241	0.000	0.000	0.000	0.241	0.241	0.241
LTE B7	Ant.Down	Front Side 10mm	0.130	0.148	0.254	0.005	0.278	0.384	0.135
	Ant.Down	Back Side 10mm	1.098	0.260	0.183	0.002	1.358	1.281	1.100
	Ant.Down	Left Edge 10mm	0.069	0.347	0.119	0.007	0.416	0.188	0.076
	Ant.Down	Right Edge 10mm	0.121	0.000	0.000	0.000	0.121	0.121	0.121
	Ant.Down	Bottom Edge 10mm	1.049	0.000	0.000	0.000	1.049	1.049	1.049

LTE B38	Ant.Down	Front Side 10mm	0.072	0.148	0.254	0.005	0.220	0.326	0.077
	Ant.Down	Back Side 10mm	0.894	0.260	0.183	0.002	1.154	1.077	0.896
	Ant.Down	Left Edge 10mm	0.031	0.347	0.119	0.007	0.378	0.150	0.038
	Ant.Down	Right Edge 10mm	0.114	0.000	0.000	0.000	0.114	0.114	0.114
	Ant.Down	Bottom Edge 10mm	0.613	0.000	0.000	0.000	0.613	0.613	0.613
LTE B41	Ant.Down	Front Side 10mm	0.121	0.148	0.254	0.005	0.269	0.375	0.126
	Ant.Down	Back Side 10mm	1.190	0.260	0.183	0.002	1.450	1.373	1.192
	Ant.Down	Left Edge 10mm	0.087	0.347	0.119	0.007	0.434	0.206	0.094
	Ant.Down	Right Edge 10mm	0.109	0.000	0.000	0.000	0.109	0.109	0.109
	Ant.Down	Bottom Edge 10mm	1.062	0.000	0.000	0.000	1.062	1.062	1.062

Note:

1: The highest Summed 1g SAR is 1.450 W/Kg < 1.6 W/kg, so Simultaneous Transmission SAR test is not required.

12.2.3 Extremity Simultaneous Transmission SAR Evaluation for WWAN Antenna with WLAN and Bluetooth

Band	Antenna	Position	Stand alone SAR						SUM SAR		
			1	2	3			4	Sum SAR (1+2)	Sum SAR (1+3)	Sum SAR (1+4)
			WWAN	2.4G WIFI	5.3G WIFI	5.6G WIFI	MAX.5G WIFI	Bluetooth			
GSM850	Ant.Down	Front Side 0mm	1.560	0.429	0.405	0.400	0.405	0.003	1.989	1.965	1.563
	Ant.Down	Back Side 0mm	3.395	0.237	0.098	0.055	0.098	0.001	3.632	3.493	3.396
	Ant.Down	Left Edge 0mm	0.566	0.515	0.109	0.148	0.148	0.005	1.081	0.714	0.571
	Ant.Down	Right Edge 0mm	0.553	0.000	0.000	0.000	0.000	0.000	0.553	0.553	0.553
	Ant.Down	Bottom Edge 0mm	1.618	0.000	0.000	0.000	0.000	0.000	1.618	1.618	1.618
GSM1900	Ant.Down	Front Side 0mm	1.703	0.429	0.405	0.400	0.405	0.003	2.132	2.108	1.706
	Ant.Down	Back Side 0mm	1.194	0.237	0.098	0.055	0.098	0.001	1.431	1.292	1.195
	Ant.Down	Left Edge 0mm	0.335	0.515	0.109	0.148	0.148	0.005	0.850	0.483	0.340
	Ant.Down	Right Edge 0mm	1.107	0.000	0.000	0.000	0.000	0.000	1.107	1.107	1.107
	Ant.Down	Bottom Edge 0mm	0.847	0.000	0.000	0.000	0.000	0.000	0.847	0.847	0.847
WCDMA B2	Ant.Down	Front Side 0mm	1.822	0.429	0.405	0.400	0.405	0.003	2.251	2.227	1.825
	Ant.Down	Back Side 0mm	1.108	0.237	0.098	0.055	0.098	0.001	1.345	1.206	1.109
	Ant.Down	Left Edge 0mm	0.324	0.515	0.109	0.148	0.148	0.005	0.839	0.472	0.329
	Ant.Down	Right Edge 0mm	1.035	0.000	0.000	0.000	0.000	0.000	1.035	1.035	1.035
	Ant.Down	Bottom Edge 0mm	0.825	0.000	0.000	0.000	0.000	0.000	0.825	0.825	0.825
WCDMA B5	Ant.Down	Front Side 0mm	0.575	0.429	0.405	0.400	0.405	0.003	1.004	0.980	0.578
	Ant.Down	Back Side 0mm	0.565	0.237	0.098	0.055	0.098	0.001	0.802	0.663	0.566
	Ant.Down	Left Edge 0mm	0.127	0.515	0.109	0.148	0.148	0.005	0.642	0.275	0.132
	Ant.Down	Right Edge 0mm	0.160	0.000	0.000	0.000	0.000	0.000	0.160	0.160	0.160
	Ant.Down	Bottom Edge 0mm	0.585	0.000	0.000	0.000	0.000	0.000	0.585	0.585	0.585
CDMA BC0	Ant.Down	Front Side 0mm	1.058	0.429	0.405	0.400	0.405	0.003	1.487	1.463	1.061
	Ant.Down	Back Side 0mm	0.967	0.237	0.098	0.055	0.098	0.001	1.204	1.065	0.968
	Ant.Down	Left Edge 0mm	0.375	0.515	0.109	0.148	0.148	0.005	0.890	0.523	0.380
	Ant.Down	Right Edge 0mm	0.486	0.000	0.000	0.000	0.000	0.000	0.486	0.486	0.486
	Ant.Down	Bottom Edge 0mm	0.979	0.000	0.000	0.000	0.000	0.000	0.979	0.979	0.979
LTE B5	Ant.Down	Front Side 0mm	0.716	0.429	0.405	0.400	0.405	0.003	1.145	1.121	0.719
	Ant.Down	Back Side 0mm	0.540	0.237	0.098	0.055	0.098	0.001	0.777	0.638	0.541
	Ant.Down	Left Edge 0mm	0.194	0.515	0.109	0.148	0.148	0.005	0.709	0.342	0.199
	Ant.Down	Right Edge 0mm	0.176	0.000	0.000	0.000	0.000	0.000	0.176	0.176	0.176
	Ant.Down	Bottom Edge 0mm	0.714	0.000	0.000	0.000	0.000	0.000	0.714	0.714	0.714
LTE B7	Ant.Down	Front Side 0mm	0.388	0.429	0.405	0.400	0.405	0.003	0.817	0.793	0.391
	Ant.Down	Back Side 0mm	1.991	0.237	0.098	0.055	0.098	0.001	2.228	2.089	1.992
	Ant.Down	Left Edge 0mm	0.146	0.515	0.109	0.148	0.148	0.005	0.661	0.294	0.151
	Ant.Down	Right Edge 0mm	0.356	0.000	0.000	0.000	0.000	0.000	0.356	0.356	0.356
	Ant.Down	Bottom Edge 0mm	1.787	0.000	0.000	0.000	0.000	0.000	1.787	1.787	1.787
LTE B38	Ant.Down	Front Side 0mm	0.167	0.429	0.405	0.400	0.405	0.003	0.596	0.572	0.170

	Ant.Down	Back Side 0mm	0.963	0.237	0.098	0.055	0.098	0.001	1.200	1.061	0.964
	Ant.Down	Left Edge 0mm	0.071	0.515	0.109	0.148	0.148	0.005	0.586	0.219	0.076
	Ant.Down	Right Edge 0mm	0.160	0.000	0.000	0.000	0.000	0.000	0.160	0.160	0.160
	Ant.Down	Bottom Edge 0mm	0.884	0.000	0.000	0.000	0.000	0.000	0.884	0.884	0.884
LTE B41	Ant.Down	Front Side 0mm	0.245	0.429	0.405	0.400	0.405	0.003	0.674	0.650	0.248
	Ant.Down	Back Side 0mm	1.138	0.237	0.098	0.055	0.098	0.001	1.375	1.236	1.139
	Ant.Down	Left Edge 0mm	0.075	0.515	0.109	0.148	0.148	0.005	0.590	0.223	0.080
	Ant.Down	Right Edge 0mm	0.226	0.000	0.000	0.000	0.000	0.000	0.226	0.226	0.226
	Ant.Down	Bottom Edge 0mm	1.241	0.000	0.000	0.000	0.000	0.000	1.241	1.241	1.241

Note:

1: The highest Summed 10g SAR is 3.632 W/Kg < 4.0 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
835MHz Validation Dipole	Speag	D835V2	SN: 4d187	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
5GHz Validation Dipole	Speag	D5GHzV2	SN: 1200	2021/05/18	2024/05/17
E-Field Probe	Speag	EX3DV4	SN: 7510	2021/12/29	2022/12/28
Data Acquisition Electronics	Speag	DAE4	SN: 1454	2021/11/05	2022/11/04
Signal Generator	R&S	SMB100A	177746	2021/08/24	2022/08/23
Power Meter	R&S	NRVD-B2	7250BJ-0112/2011	2021/09/08	2022/09/07
Power Sensor	R&S	NRV-Z4	100381	2021/09/08	2022/09/07
Power Sensor	R&S	NRV-Z2	100211	2021/09/08	2022/09/07
Wireless Communication Test Set	Anritsu	MT8820C	6201502991	2022/01/05	2023/01/04
Network Analyzer	Agilent	E5071C	MY46103472	2021/12/29	2022/12/28
Thermometer	Elitech	RC-4HC	EF720B004820	2021/12/01	2022/11/30
Power Amplifier	SATIMO	6552B	22374	N/A	N/A
Dielectric Probe Kit	Speag	DAK3.5	SN 1312	N/A	N/A
Phantom	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 a DAK3.5 Dielectric Probe Kit.

Head Liquid

Date	Liquid Type	Fre. (MHz)	Temp. (°C)	Meas. Conductivity (σ) (S/m)	Meas. Permittivity (ϵ)	Target Conductivity (σ) (S/m)	Target Permittivity (ϵ)	Conductivity Tolerance (%)	Permittivity Tolerance (%)
2022.07.08	Head	835	21.6	41.93	0.90	41.50	0.90	1.04	0.00
2022.07.11	Head	835	21.3	41.68	0.90	41.50	0.90	0.43	0.00
2022.07.25	Head	1900	21.1	39.89	1.40	40.00	1.40	-0.27	0.00
2022.07.14	Head	1900	21.6	39.84	1.40	40.00	1.40	-0.40	-0.29
2022.07.15	Head	2450	21.8	39.65	1.80	39.20	1.80	1.15	-0.06
2022.07.26	Head	2600	21.9	38.51	1.97	39.01	1.96	-1.29	0.71
2022.07.27	Head	2600	21.3	38.40	1.97	39.01	1.96	-1.56	0.46
2022.07.20	Head	2600	21.2	38.59	1.97	39.01	1.96	-1.08	0.46
2022.07.21	Head	5250	21.1	35.97	4.70	35.93	4.71	0.12	-0.25
2022.07.21	Head	5600	21.1	35.12	5.05	35.53	5.07	-1.16	-0.34
2022.07.22	Head	5750	21.2	35.53	5.17	35.36	5.22	0.49	-0.92

Note: The tolerance limit of Conductivity and Permittivity is $\pm 5\%$.

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 (%)
2022.07.08	Head	835	100	0.970	9.70	9.76	-0.61
2022.07.11	Head	835	100	0.980	9.80	9.76	0.41
2022.07.25	Head	1900	100	3.980	39.80	40.3	-1.24
2022.07.14	Head	1900	100	3.950	39.50	40.3	-1.99
2022.07.15	Head	2450	100	5.310	53.10	53	0.19
2022.07.26	Head	2600	100	5.520	55.20	56.8	-2.82
2022.07.27	Head	2600	100	5.610	56.10	56.8	-1.23
2022.07.20	Head	2600	100	5.550	55.50	56.8	-2.29
2022.07.21	Head	5250	100	7.830	78.30	77.8	0.64
2022.07.21	Head	5600	100	8.220	82.20	81.2	1.23
2022.07.22	Head	5750	100	7.910	79.10	77.2	2.46

Note: The tolerance limit of System validation $\pm 10\%$.

Head liquid 10g

Date	Freq. (MHz)	Power (mW)	Measured SAR (W/kg)	Normalized SAR (W/kg)	Dipole SAR (W/kg)	Tolerance (%)
2022.07.08	835	100	0.630	6.30	6.34	-0.63
2022.07.11	835	100	0.630	6.30	6.34	-0.63
2022.07.25	1900	100	1.970	19.70	20.30	-2.96
2022.07.14	1900	100	2.020	20.20	20.30	-0.49
2022.07.15	2450	100	2.380	23.80	24.10	-1.24
2022.07.26	2600	100	2.430	24.30	24.80	-2.02
2022.07.27	2600	100	2.470	24.70	24.80	-0.40
2022.07.20	2600	100	2.460	24.60	24.80	-0.81
2022.07.21	5250	100	2.180	21.80	22.10	-1.36
2022.07.21	5600	100	2.260	22.60	23.10	-2.16
2022.07.22	5750	100	2.150	21.50	21.70	-0.92
Note: The tolerance limit of System validation $\pm 10\%$.						

System Performance Check Data (835MHz Head)

System Check: Head 835MHz

Date: 2022.07.08

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

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.9 \text{ S/m}$; $\epsilon_r = 41.932$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient Temperature: 22.5°C Liquid Temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.72, 9.72, 9.72); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

CW 835/Area Scan (61x101x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.971 W/kg

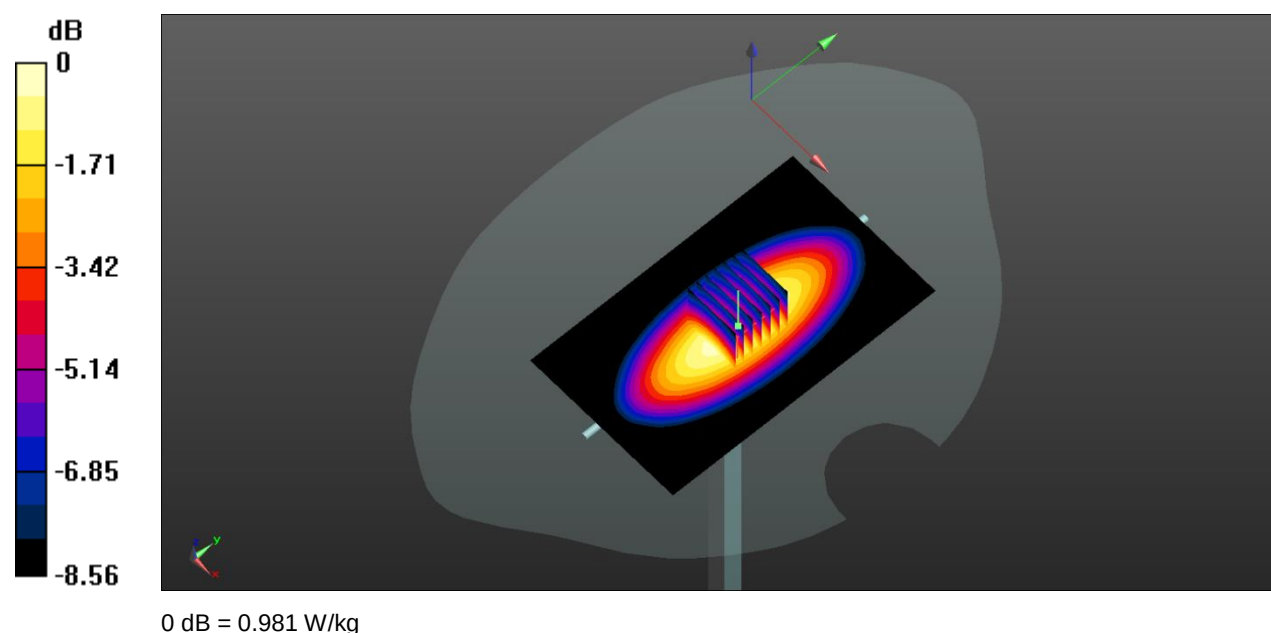
CW 835/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 31.01 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 1.21 W/kg

SAR(1 g) = 0.965 W/kg; SAR(10 g) = 0.626 W/kg

Maximum value of SAR (measured) = 0.981 W/kg



System Performance Check Data (835MHz Head)

System Check: Head 835 MHz

Date: 2022.07.11

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

Medium parameters used: $f = 835$ MHz; $\sigma = 0.889$ S/m; $\epsilon_r = 41.68$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.4°C Liquid Temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.72, 9.72, 9.72); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

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

Maximum value of SAR (interpolated) = 0.990 W/kg

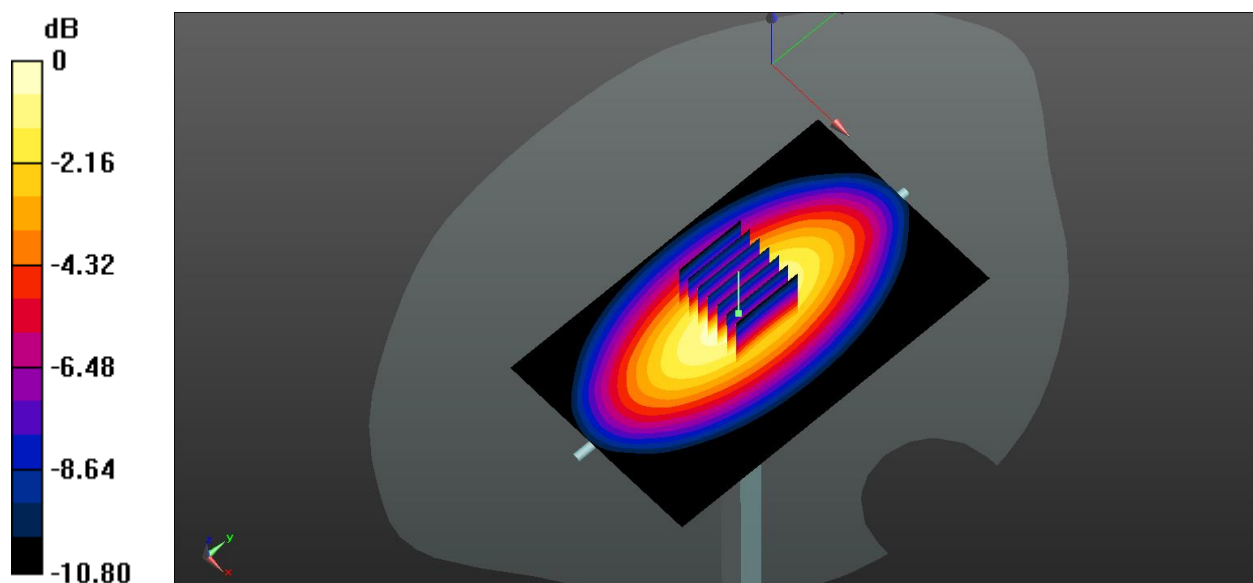
CW 835/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 34.63 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 1.44 W/kg

SAR(1 g) = 0.977 W/kg; SAR(10 g) = 0.629 W/kg

Maximum value of SAR (measured) = 1.08 W/kg



0 dB = 1.08 W/kg

System Performance Check Data (1900MHz Head)

System Check: Head 1900 MHz

Date: 2022.07.25

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

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.4$ S/m; $\epsilon_r = 39.892$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3°C Liquid Temperature: 21.1°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.13, 8.13, 8.13); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

CW 1900/Area Scan (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 4.38 W/kg

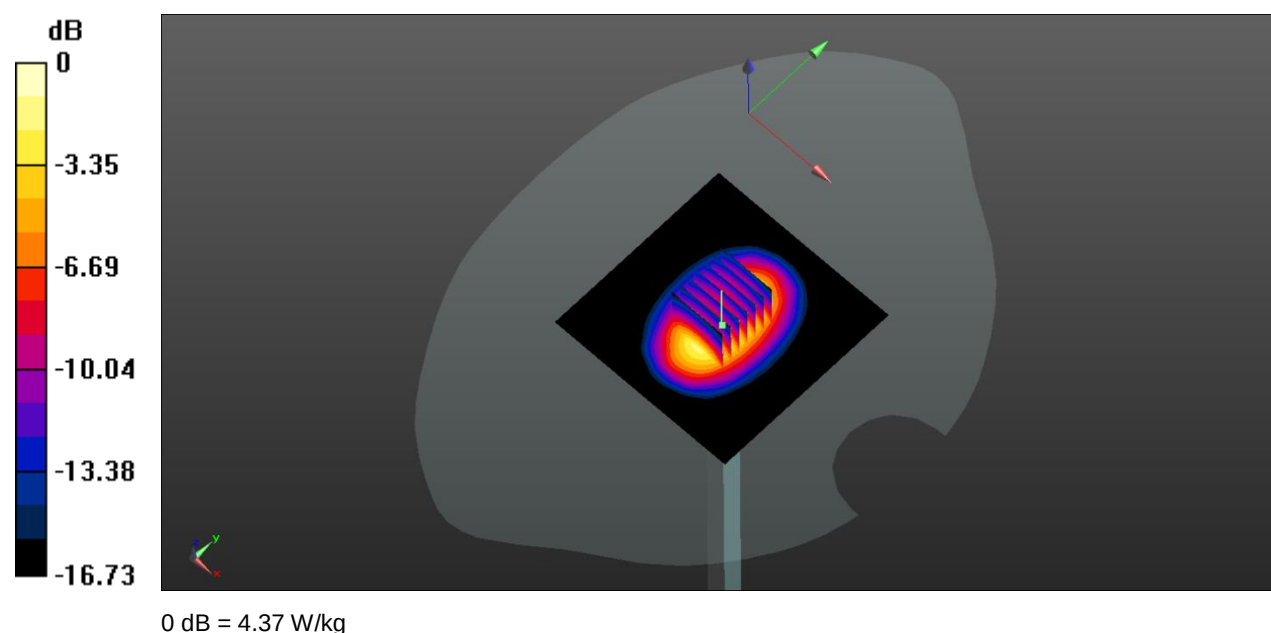
CW 1900/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 54.95 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 7.01 W/kg

SAR(1 g) = 3.98 W/kg; SAR(10 g) = 1.97 W/kg

Maximum value of SAR (measured) = 4.37 W/kg



System Performance Check Data (1900MHz Head)

System Check: Head 1900 MHz

Date: 2022.07.14

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

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.396$ S/m; $\epsilon_r = 39.838$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.6°C Liquid Temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.13, 8.13, 8.13); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

CW 1900/Area Scan (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

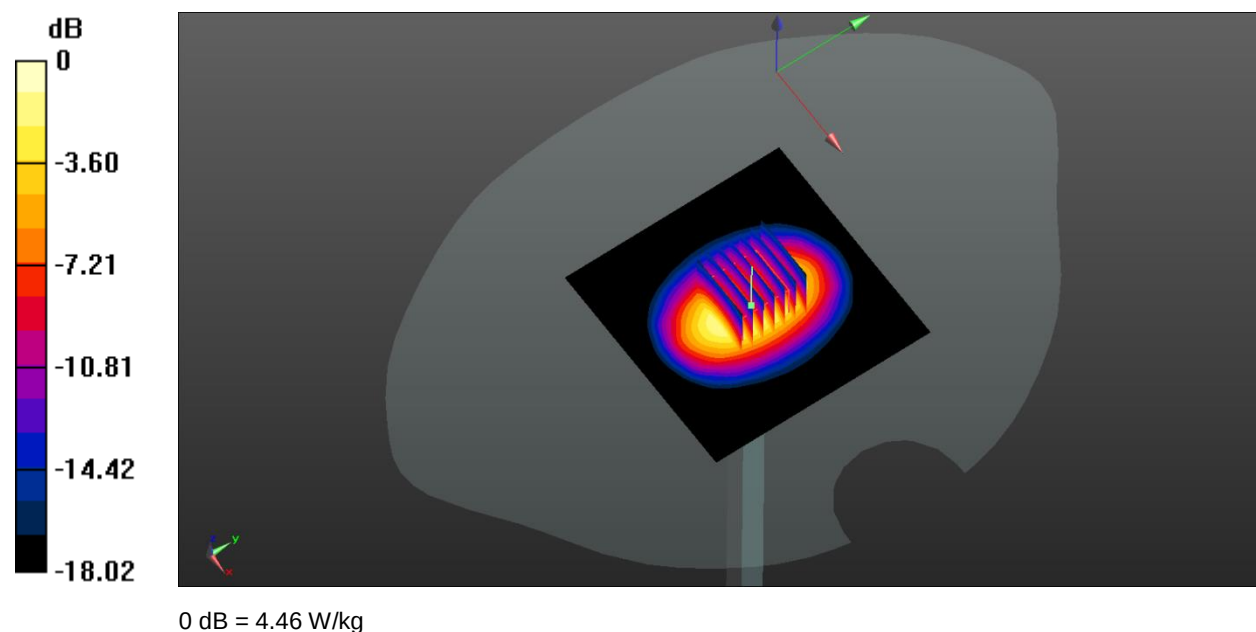
CW 1900/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.86 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 7.49 W/kg

SAR(1 g) = 3.95 W/kg; SAR(10 g) = 2.02 W/kg

Maximum value of SAR (measured) = 4.46 W/kg



System Performance Check Data (2450MHz Head)

System Check: Head 2450MHz

Date: 2022.07.15

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

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.799$ S/m; $\epsilon_r = 39.652$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.5°C Liquid Temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.63, 7.63, 7.63); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

CW 2450/Area Scan (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 6.41 W/kg

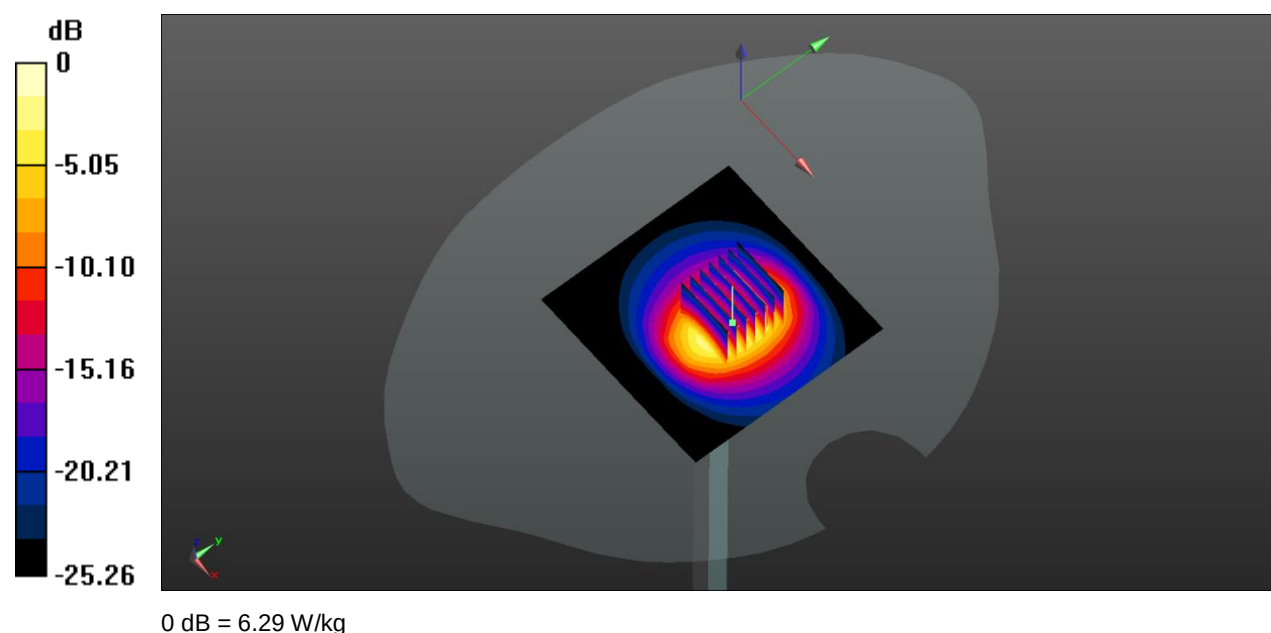
CW 2450/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 46.45 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 13.2 W/kg

SAR(1 g) = 5.31 W/kg; SAR(10 g) = 2.38 W/kg

Maximum value of SAR (measured) = 6.29 W/kg



System Performance Check Data (2600MHz Head)

System Check: Head 2600MHz

Date: 2022.07.26

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

Medium parameters used (extrapolated): $f = 2600$ MHz; $\sigma = 1.974$ S/m; $\epsilon_r = 38.508$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.7°C Liquid Temperature: 21.9°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.4, 7.4, 7.4); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

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

Maximum value of SAR (interpolated) = 6.45 W/kg

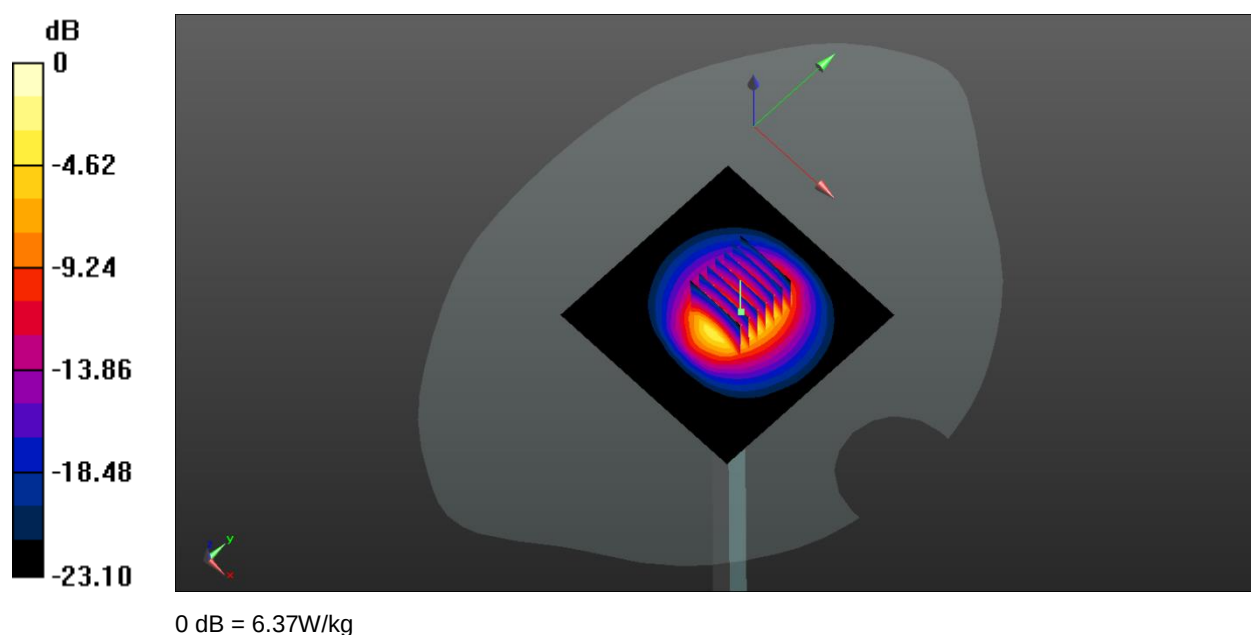
CW 2600 100mW /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 50.43 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 11.3 W/kg

SAR(1 g) = 5.52 W/kg; SAR(10 g) = 2.43 W/kg

Maximum value of SAR (measured) = 6.37 W/kg



System Performance Check Data (2600MHz Head)

System Check: Head 2600MHz

Date: 2022.07.27

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

Medium parameters used (extrapolated): $f = 2600$ MHz; $\sigma = 1.969$ S/m; $\epsilon_r = 38.402$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.6°C Liquid Temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.4, 7.4, 7.4); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

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

Maximum value of SAR (interpolated) = 6.46 W/kg

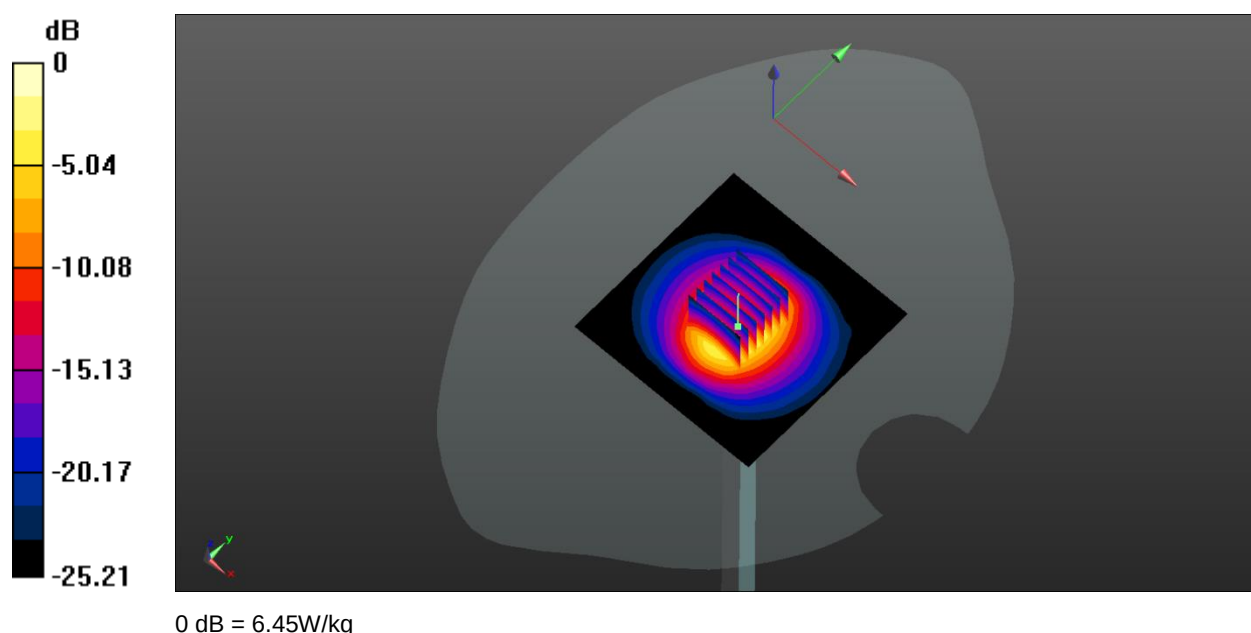
CW 2600 100mW /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 56.55 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 12.7 W/kg

SAR(1 g) = 5.61 W/kg; SAR(10 g) = 2.47 W/kg

Maximum value of SAR (measured) = 6.45 W/kg



System Performance Check Data (2600MHz Head)

System Check: Head 2600MHz

Date: 2022.07.20

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

Medium parameters used (extrapolated): $f = 2600$ MHz; $\sigma = 1.969$ S/m; $\epsilon_r = 38.587$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.4°C Liquid Temperature: 21.2°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.4, 7.4, 7.4); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

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

Maximum value of SAR (interpolated) = 6.60 W/kg

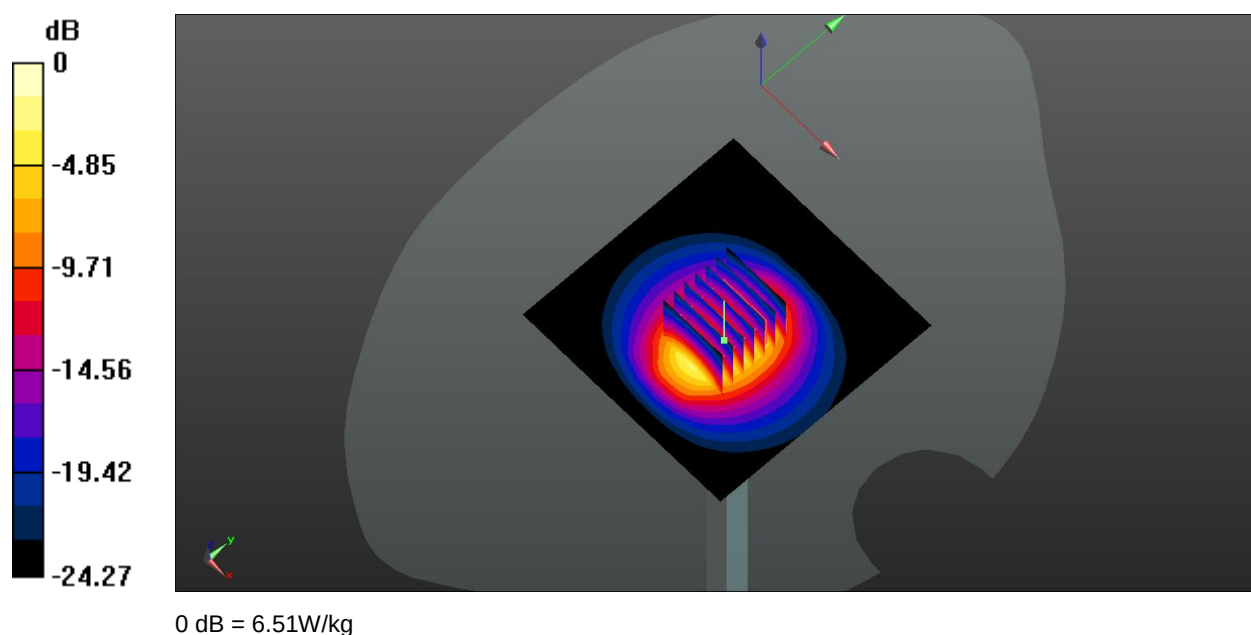
CW 2600 100mW /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 45.73 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 12.5 W/kg

SAR(1 g) = 5.55 W/kg; SAR(10 g) = 2.46W/kg

Maximum value of SAR (measured) = 6.51 W/kg



System Performance Check Data (5250MHz Head)

System Check: Head 5250 MHz

Date: 2022.07.21

Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5250 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5250$ MHz; $\sigma = 4.698$ S/m; $\epsilon_r = 35.974$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.1°C Liquid Temperature: 21.1°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(5.42, 5.42, 5.42); Calibrated: 2021.12.29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

CW 5250/Area Scan (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 8.39 W/kg

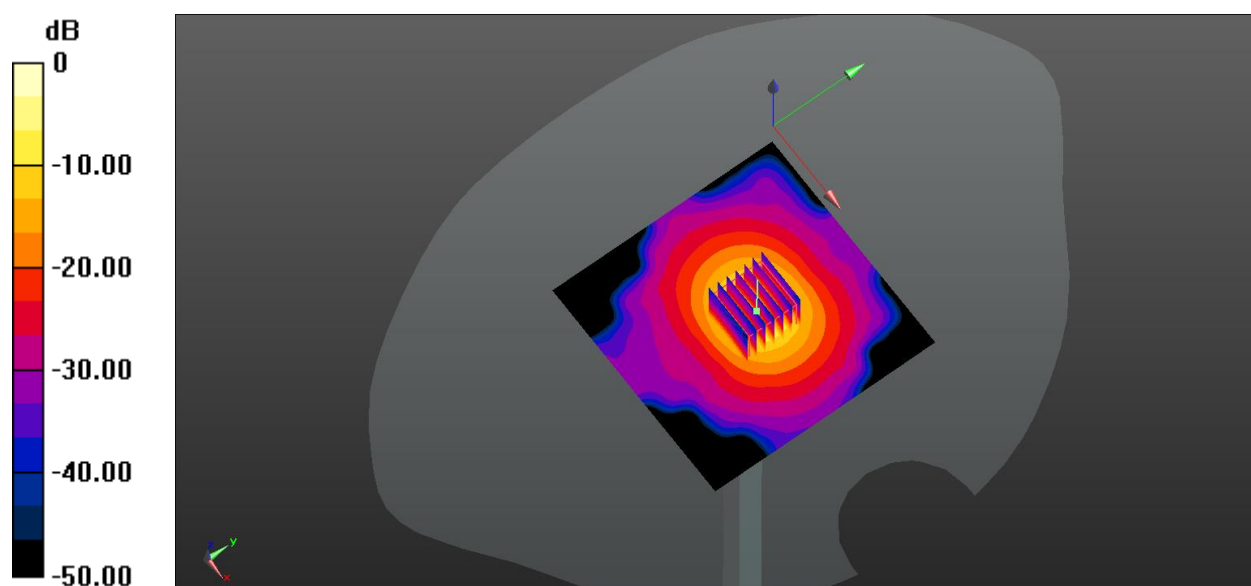
CW 5250/Zoom Scan (7x7x21)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 37.06 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 33.2 W/kg

SAR(1 g) = 7.83 W/kg; SAR(10 g) = 2.18 W/kg

Maximum value of SAR (measured) = 19.75 W/kg



0 dB = 19.75 W/kg

System Performance Check Data (5600MHz Head)

System Check: Head 5600MHz

Date: 2022.07.21

Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5600$ MHz; $\sigma = 5.053$ S/m; $\epsilon_r = 35.117$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.1°C Liquid Temperature: 21.1°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(4.81, 4.81, 4.81); Calibrated: 2021.12.29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

CW 5600/Area Scan (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 8.36 W/kg

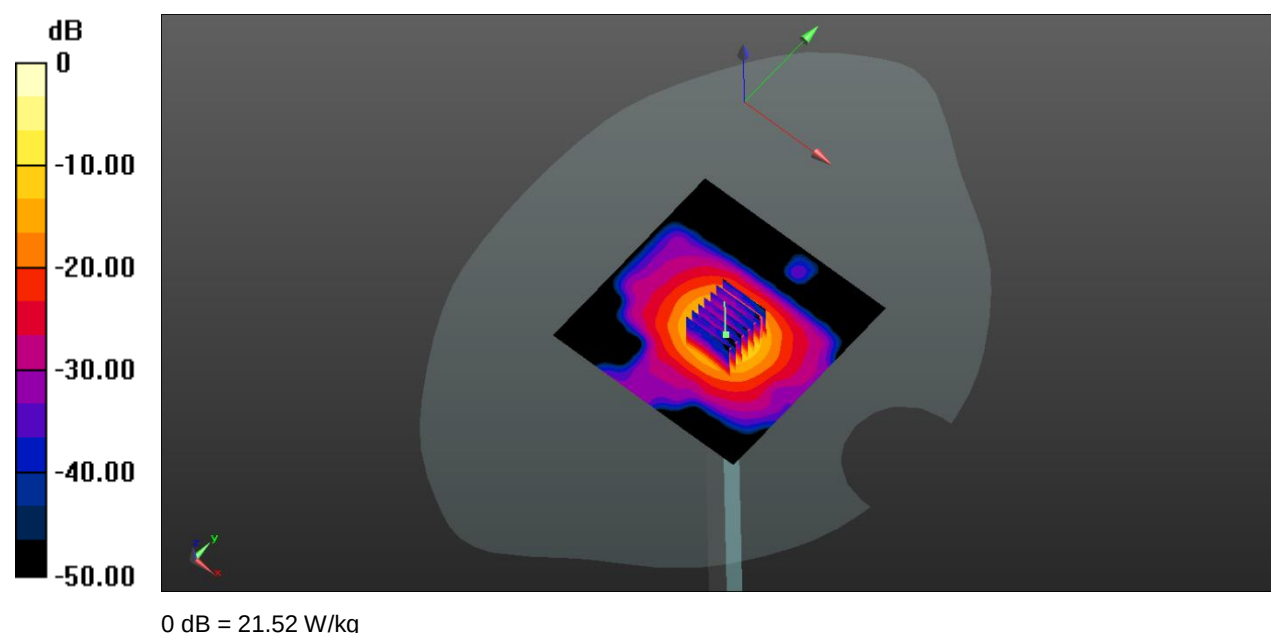
CW 5600/Zoom Scan (7x7x21)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 34.67 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 38.53 W/kg

SAR(1 g) = 8.22 W/kg; SAR(10 g) = 2.26 W/kg

Maximum value of SAR (measured) = 21.52 W/kg



System Performance Check Data (5750MHz Head)

System Check: Head 5750 MHz

Date: 2022.07.22

Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5750 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5750$ MHz; $\sigma = 5.172$ S/m; $\epsilon_r = 35.534$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.4°C Liquid Temperature: 21.2°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(4.9, 4.9, 4.9); Calibrated: 2021.12.29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

CW 5750/Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 8.92 W/kg

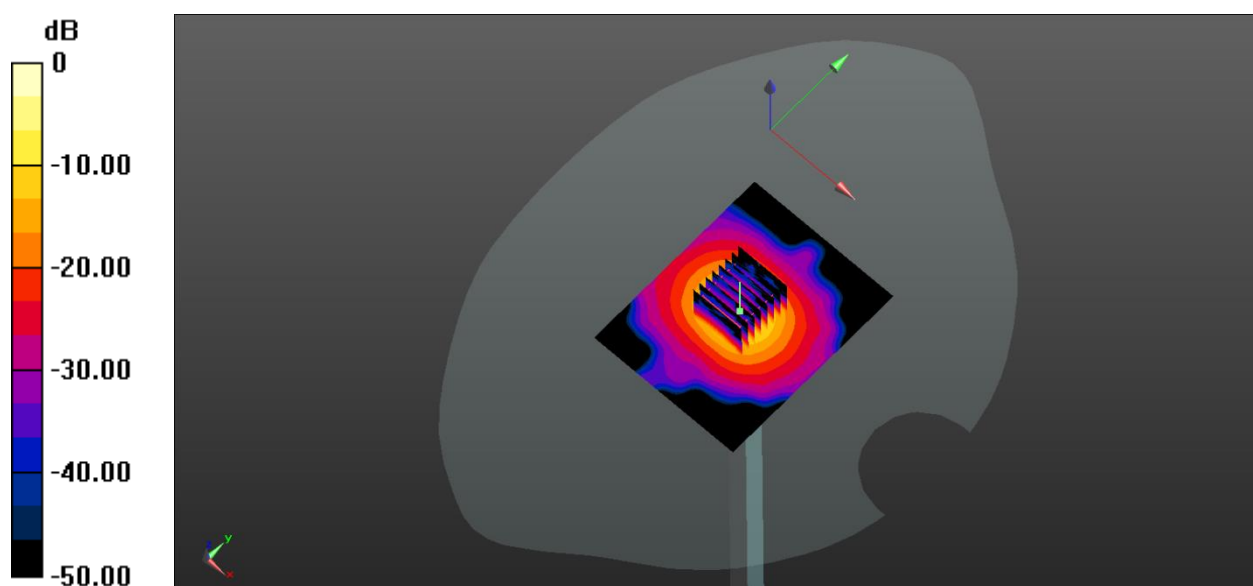
CW 5750/Zoom Scan (7x7x15)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 40.19 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 36.7 W/kg

SAR(1 g) = 7.91 W/kg; SAR(10 g) = 2.15 W/kg

Maximum value of SAR (measured) = 15.87 W/kg



0 dB = 15.87 W/kg

ANNEX C TEST DATA

Meas.1 Right with Cheek on Middle Channel in GPRS850 4Slots mode

Date: 2022.07.11

Communication System Band: GPRS850; Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.908$ S/m; $\epsilon_r = 41.631$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Ambient Temperature: 22.4°C Liquid Temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.72, 9.72, 9.72); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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 (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.474 W/kg

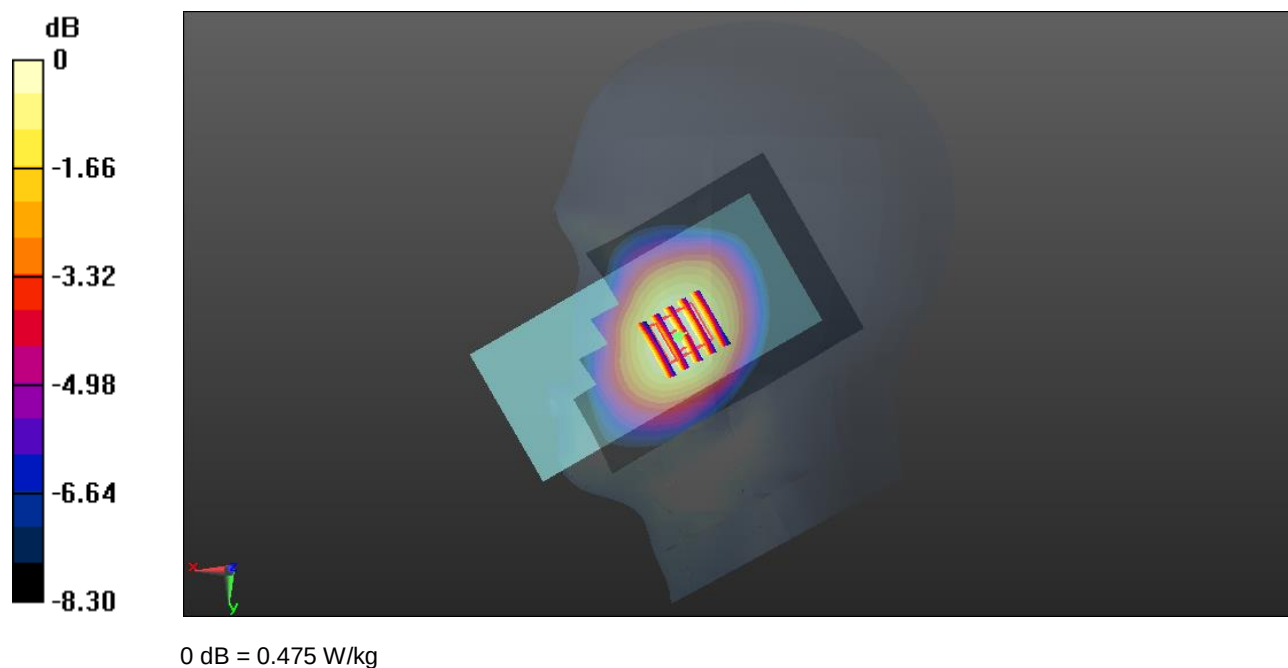
Ch190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.485 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.554 W/kg

SAR(1 g) = 0.455 W/kg; SAR(10 g) = 0.355 W/kg

Maximum value of SAR (measured) = 0.475 W/kg



Meas.2 Body Plane with Back Side 10mm on Middle Channel in GPRS850 4slots mode

Date: 2022.07.11

Communication System Band: GPRS850; Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.908$ S/m; $\epsilon_r = 41.631$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.4°C Liquid Temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.72, 9.72, 9.72); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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 (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.972 W/kg

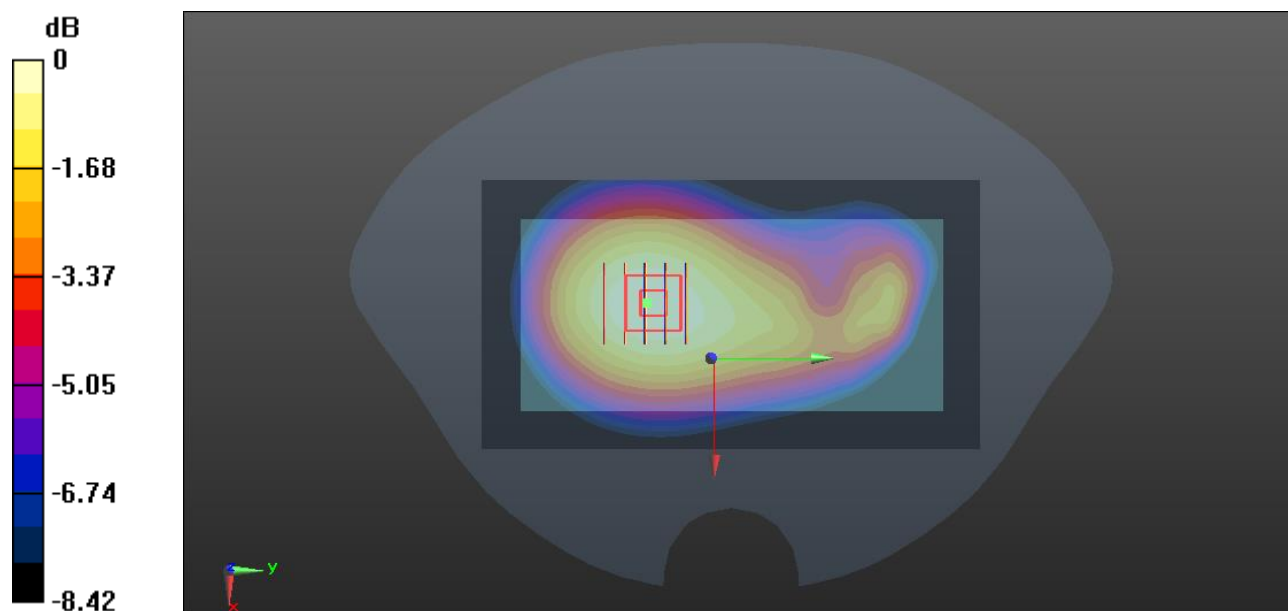
Ch190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 29.46 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 1.18 W/kg

SAR(1 g) = 0.927 W/kg; SAR(10 g) = 0.695 W/kg

Maximum value of SAR (measured) = 0.975 W/kg



Meas.3 Left Head with Cheek on Middle Channel in GPRS1900 4Slots mode

Date: 2022.07.25

Communication System Band: GPRS1900; Frequency: 1880 MHz; Duty Cycle: 1:2.08

Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.39$ S/m; $\epsilon_r = 40.146$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Ambient Temperature: 22.3°C Liquid Temperature: 21.1°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.13, 8.13, 8.13); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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 (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.638 W/kg

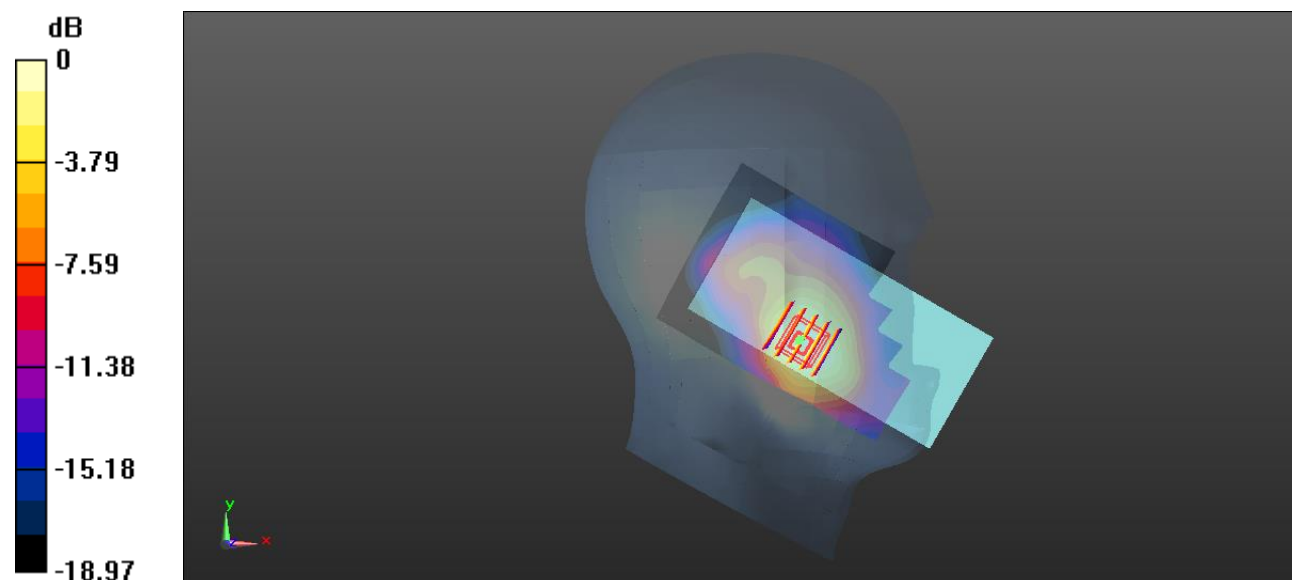
Ch661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.542 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.889 W/kg

SAR(1 g) = 0.577 W/kg; SAR(10 g) = 0.351 W/kg

Maximum value of SAR (measured) = 0.626 W/kg



0 dB = 0.626 W/kg

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

Date: 2022.07.25

Communication System Band: GPRS1900; Frequency: 1880 MHz; Duty Cycle: 1:2.08

Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.39$ S/m; $\epsilon_r = 40.146$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3°C Liquid Temperature: 21.1°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.13, 8.13, 8.13); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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 (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.537 W/kg

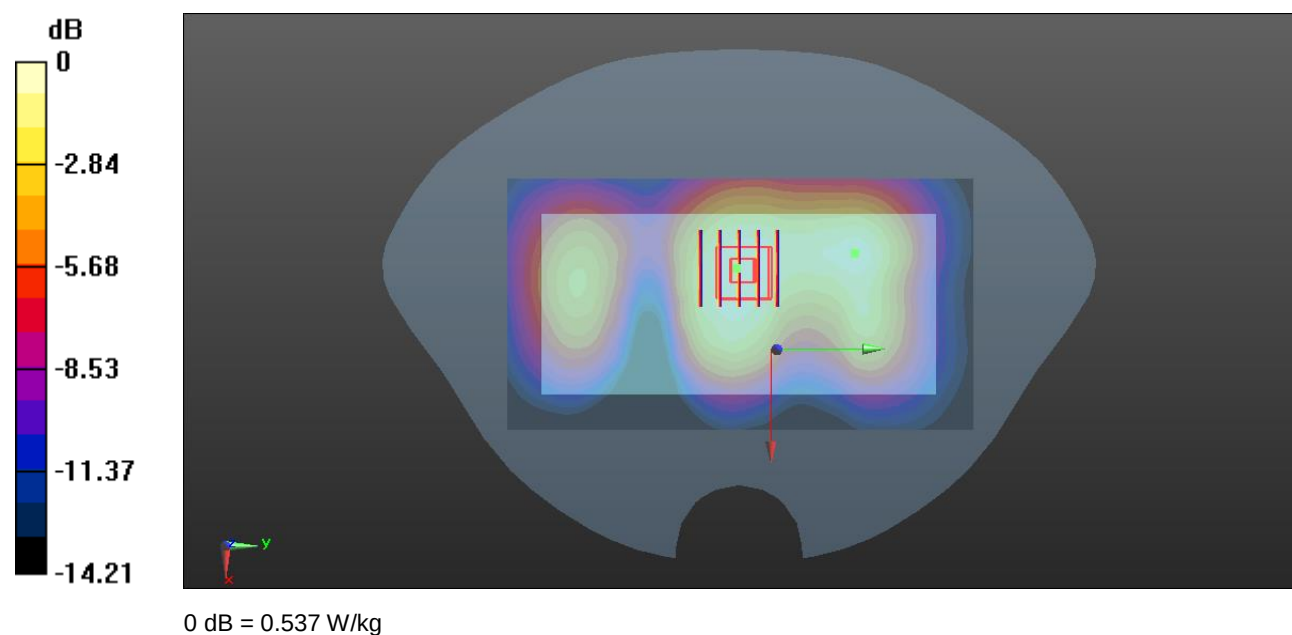
Ch661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.14 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.756 W/kg

SAR(1 g) = 0.503 W/kg; SAR(10 g) = 0.326 W/kg

Maximum value of SAR (measured) = 0.537 W/kg



Meas.5 Left Head with Cheek on Middle Channel in WCDMA Band2 mode

Date: 2022.07.14

Communication System Band: II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.386$ S/m; $\epsilon_r = 40.092$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Ambient Temperature: 22.6°C Liquid Temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.13, 8.13, 8.13); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch9400/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.781 W/kg

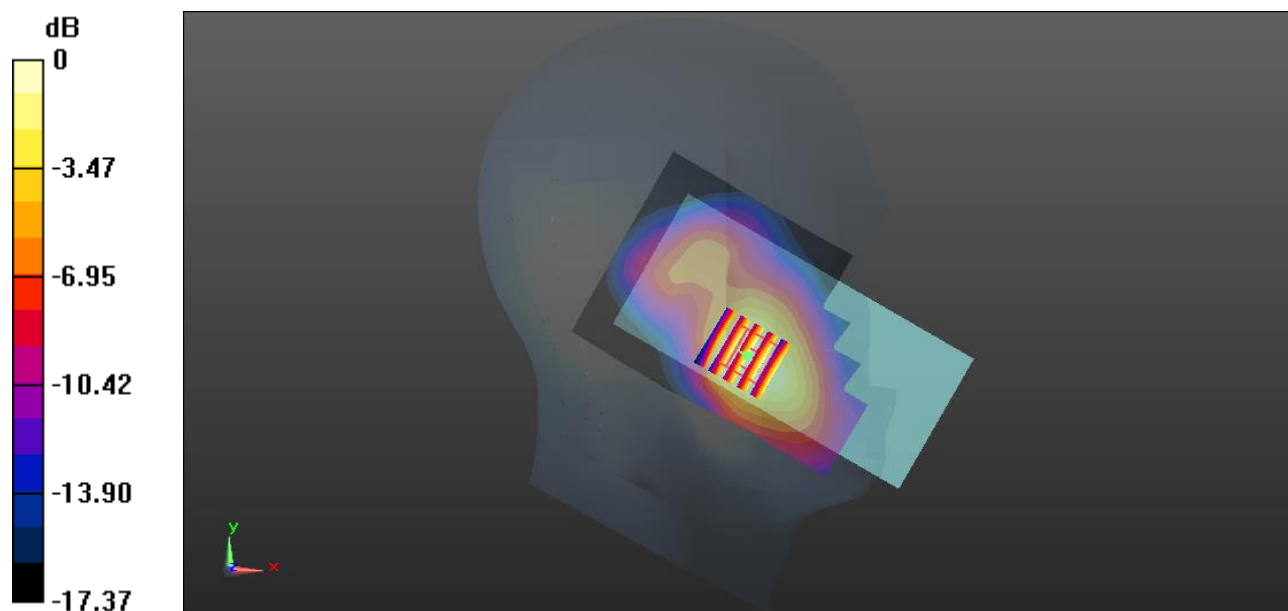
Ch9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.465 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 1.10 W/kg

SAR(1 g) = 0.708 W/kg; SAR(10 g) = 0.432 W/kg

Maximum value of SAR (measured) = 0.770 W/kg



0 dB = 0.770 W/kg

Meas.6 Body Plane with Back Side 10mm on Middle Channel in WCDMA Band2 mode

Date: 2022.07.14

Communication System Band: II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.386$ S/m; $\epsilon_r = 40.092$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.6°C Liquid Temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(8.13, 8.13, 8.13); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch9400/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.664 W/kg

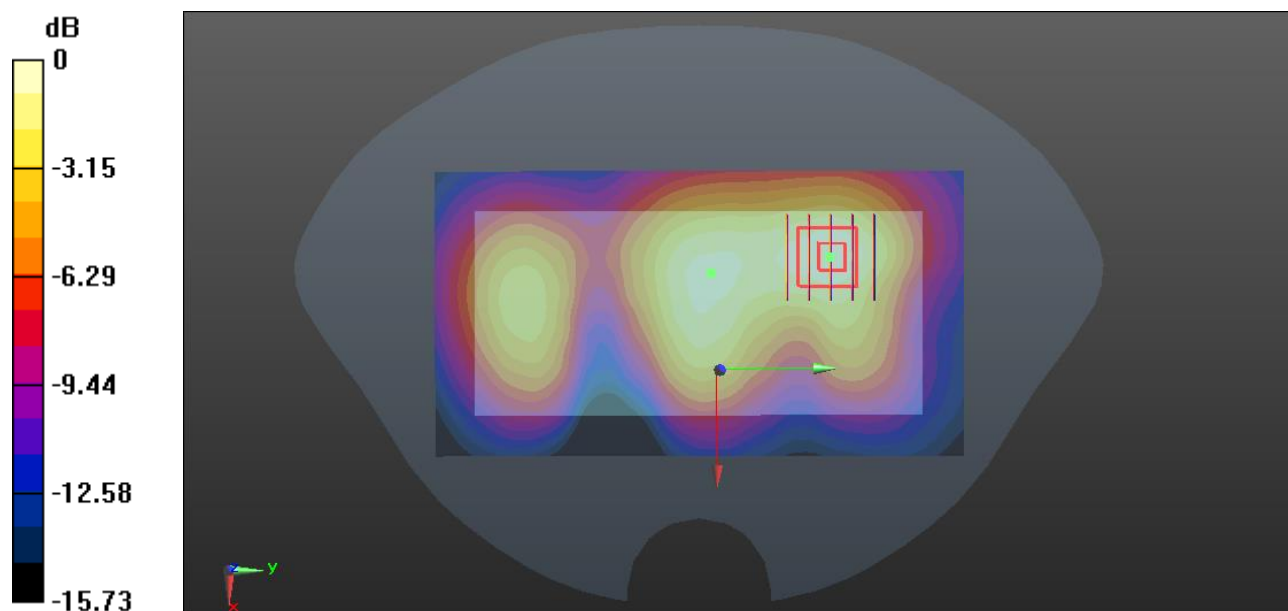
Ch9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.53 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.951 W/kg

SAR(1 g) = 0.592 W/kg; SAR(10 g) = 0.353 W/kg

Maximum value of SAR (measured) = 0.646 W/kg



0 dB = 0.646 W/kg

Meas.7 Right with Cheek on Middle Channel in WCDMA Band5 mode

Date: 2022.07.08

Communication System Band: V; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 0.902$ S/m; $\epsilon_r = 41.885$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Ambient Temperature: 22.5°C Liquid Temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.72, 9.72, 9.72); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch4182/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.188 W/kg

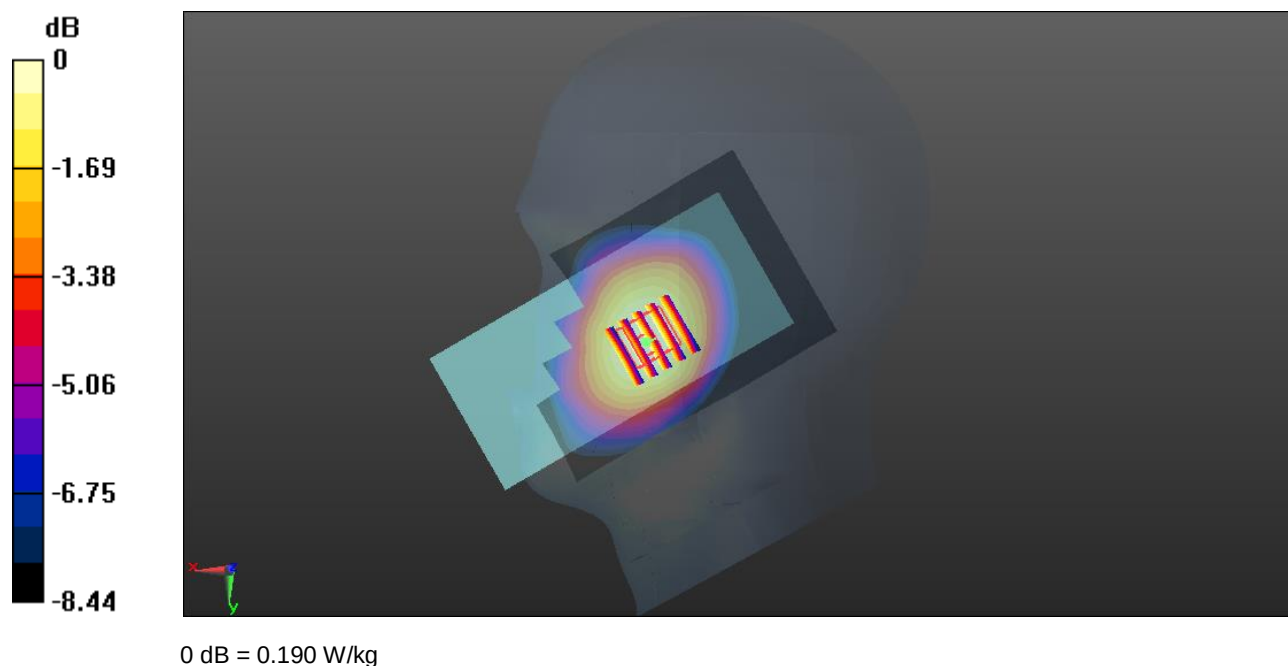
Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.862 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.221 W/kg

SAR(1 g) = 0.181 W/kg; SAR(10 g) = 0.141 W/kg

Maximum value of SAR (measured) = 0.190 W/kg



Meas.8 Body Plane with Back Side 10mm on Middle Channel in WCDMA Band5 mode

Date: 2022.07.08

Communication System Band: V; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 0.902$ S/m; $\epsilon_r = 41.885$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.5°C Liquid Temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.72, 9.72, 9.72); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch4182/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.377 W/kg

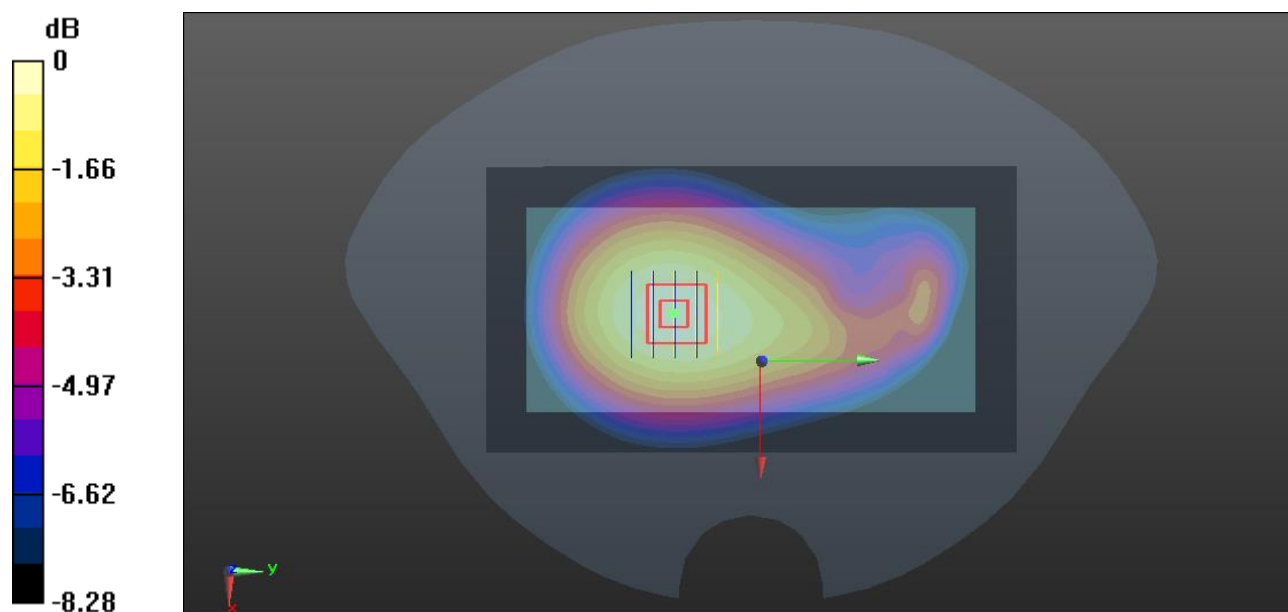
Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.18 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.472 W/kg

SAR(1 g) = 0.373 W/kg; SAR(10 g) = 0.280 W/kg

Maximum value of SAR (measured) = 0.392 W/kg



0 dB = 0.392 W/kg

Meas.9 Right with Cheek on Low Channel in CDMA BC0 mode

Date: 2022.07.11

Communication System Band: Band class0; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 824.7$ MHz; $\sigma = 0.896$ S/m; $\epsilon_r = 41.878$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Ambient Temperature: 22.4°C Liquid Temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.72, 9.72, 9.72); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch1013/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.603 W/kg

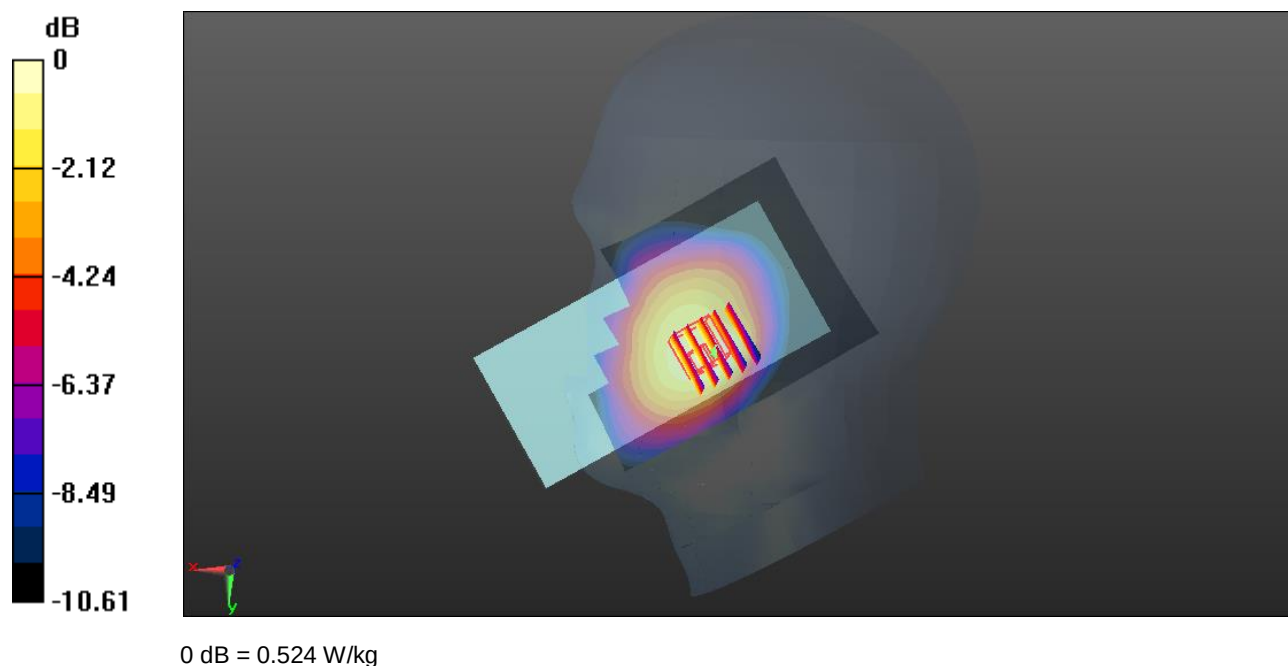
Ch1013/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.759 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.666 W/kg

SAR(1 g) = 0.461 W/kg; SAR(10 g) = 0.327 W/kg

Maximum value of SAR (measured) = 0.524 W/kg



Meas.10 Body Plane with Back Side 10mm on Low Channel in CDMA BC0 mode

Date: 2022.07.11

Communication System Band: Band class0; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 824.7$ MHz; $\sigma = 0.896$ S/m; $\epsilon_r = 41.878$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.4°C Liquid Temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.72, 9.72, 9.72); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch1013/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.870 W/kg

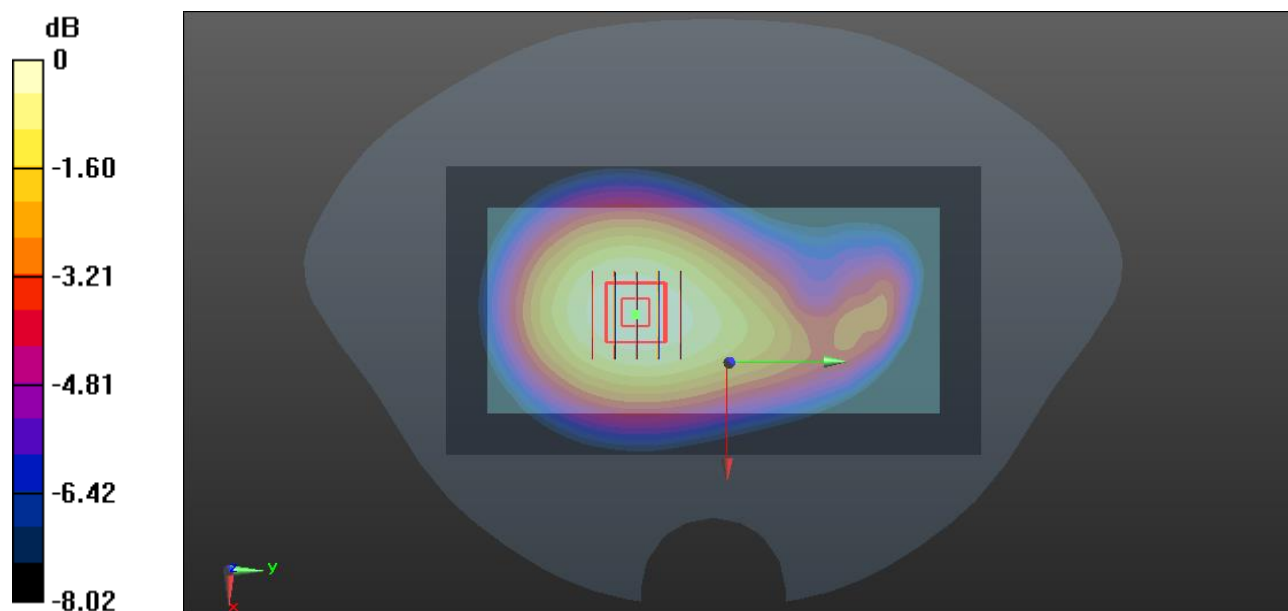
Ch1013/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.19 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.04 W/kg

SAR(1 g) = 0.827 W/kg; SAR(10 g) = 0.625 W/kg

Maximum value of SAR (measured) = 0.870 W/kg



0 dB = 0.870 W/kg

Meas.11 Right with Cheek on Middle Channel in LTE Band5 mode and 1RB

Date: 2022.07.08

Communication System Band: Band 5; Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.908$ S/m; $\epsilon_r = 41.865$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Ambient Temperature: 22.5°C Liquid Temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.72, 9.72, 9.72); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch20525/Area Scan (71x131x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.594 W/kg

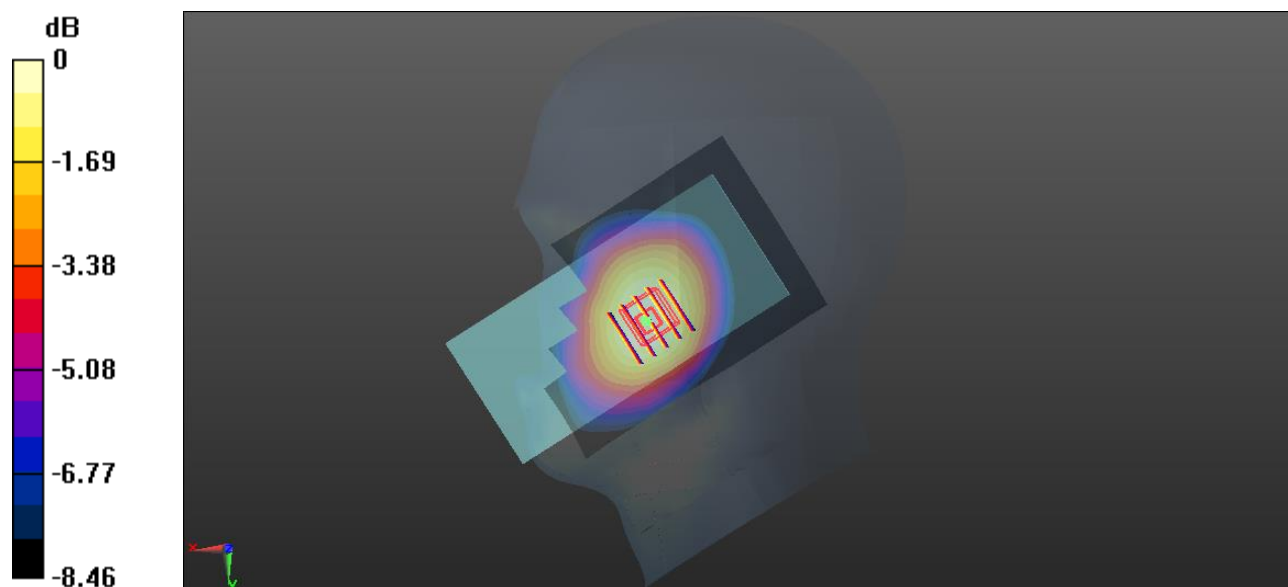
Ch20525/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 4.727 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.697 W/kg

SAR(1 g) = 0.570 W/kg; SAR(10 g) = 0.444 W/kg

Maximum value of SAR (measured) = 0.598 W/kg



0 dB = 0.598 W/kg

Meas.12 Body Plane with Back Side 10mm on Middle Channel in LTE Band5 mode and 1RB

Date: 2022.07.08

Communication System Band: Band 5; Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.908$ S/m; $\epsilon_r = 41.865$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.5°C Liquid Temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(9.72, 9.72, 9.72); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch20525/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.448 W/kg

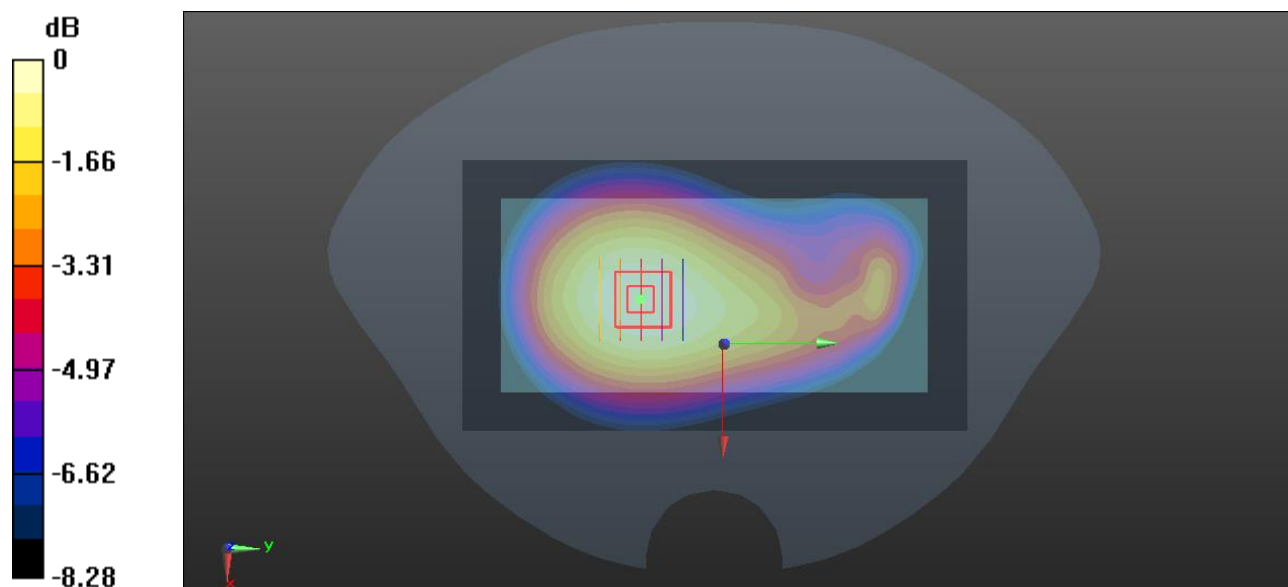
Ch20525/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 21.01 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.536 W/kg

SAR(1 g) = 0.424 W/kg; SAR(10 g) = 0.318 W/kg

Maximum value of SAR (measured) = 0.446 W/kg



0 dB = 0.446 W/kg

Meas.13 Right with Cheek on High Channel in LTE Band7 mode and 1RB

Date: 2022.07.26

Communication System Band: Band 7; Frequency: 2560 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2560$ MHz; $\sigma = 1.926$ S/m; $\epsilon_r = 38.817$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Ambient Temperature: 22.7°C Liquid Temperature: 21.9°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.4, 7.4, 7.4); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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 (81x161x1): Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.0549 W/kg

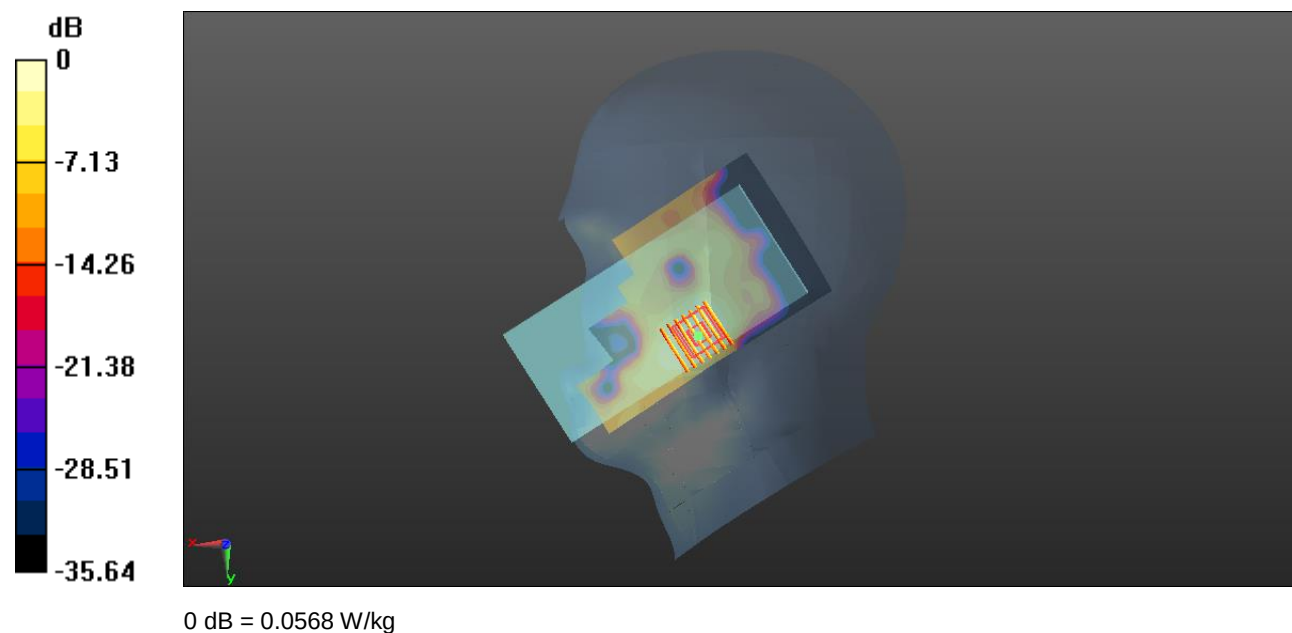
Ch21350/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 0.8350 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.0940 W/kg

SAR(1 g) = 0.050 W/kg; SAR(10 g) = 0.026 W/kg

Maximum value of SAR (measured) = 0.0568 W/kg



Meas.14 Body Plane with Back Side 10mm on High Channel in LTE Band7 mode and 1RB

Date: 2022.07.26

Communication System Band: Band 7; Frequency: 2560 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2560$ MHz; $\sigma = 1.926$ S/m; $\epsilon_r = 38.817$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.7°C Liquid Temperature: 21.9°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.4, 7.4, 7.4); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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 (81x161x1): Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 1.19 W/kg

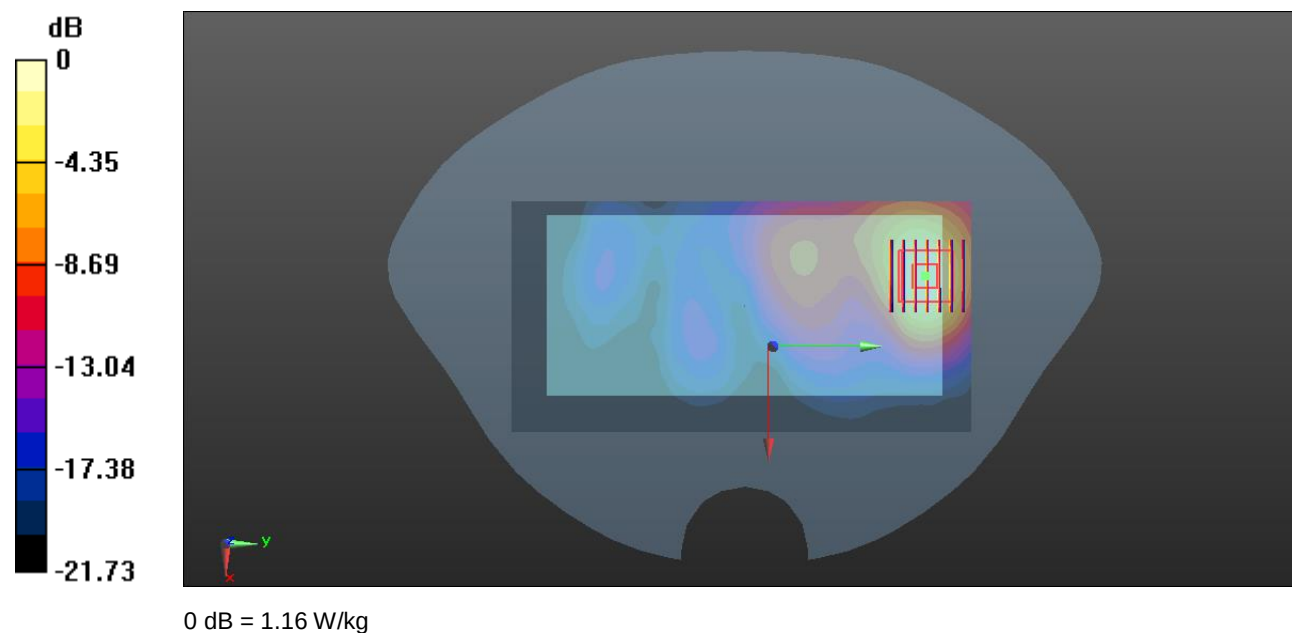
Ch21350/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 3.339 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 1.96 W/kg

SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.496 W/kg

Maximum value of SAR (measured) = 1.16 W/kg



Meas.15 Left Head with Cheek on High Channel in LTE Band38 mode and 1RB

Date: 2022.07.27

Communication System Band: Band 38; Frequency: 2610 MHz; Duty Cycle: 1:1.58

Medium parameters used (interpolated): $f = 2610$ MHz; $\sigma = 1.98$ S/m; $\epsilon_r = 38.324$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Ambient Temperature: 22.6°C Liquid Temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.4, 7.4, 7.4); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch38150/Area Scan (81x161x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0171 W/kg

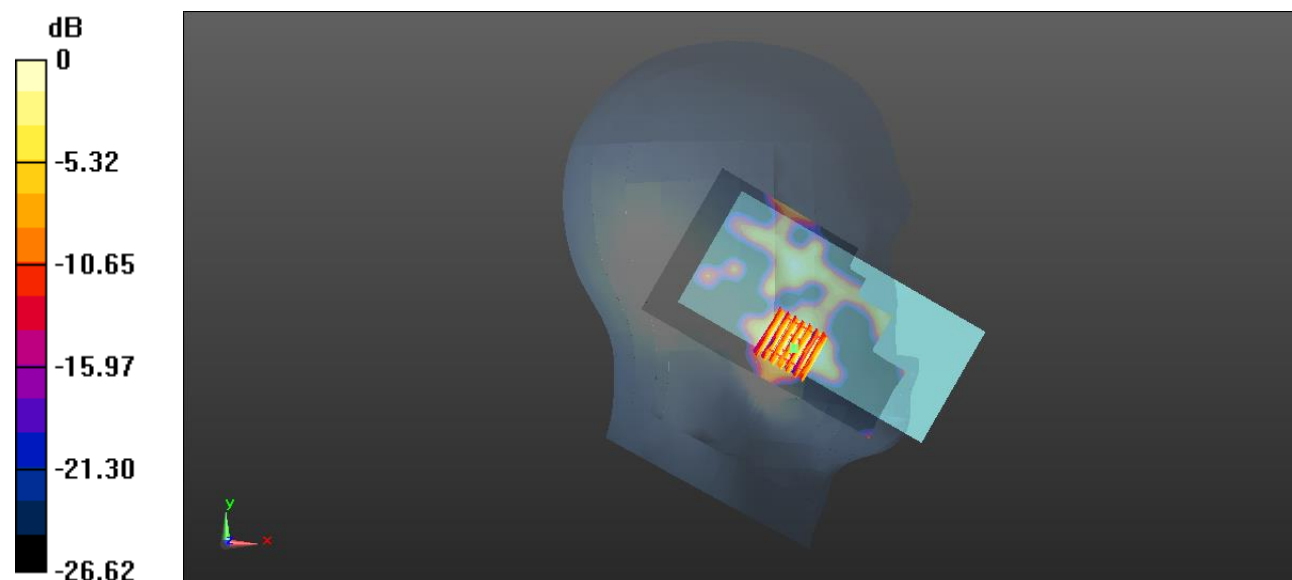
Ch38150/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 0.0240 W/kg

SAR(1 g) = 0.013 W/kg; SAR(10 g) = 0.00665 W/kg

Maximum value of SAR (measured) = 0.0145 W/kg



0 dB = 0.0145 W/kg

Meas.16 Body Plane with Back Side 10mm on High Channel in LTE Band38 mode and 1RB

Date: 2022.07.27

Communication System Band: Band 38; Frequency: 2610 MHz; Duty Cycle: 1:1.58

Medium parameters used (interpolated): $f = 2610$ MHz; $\sigma = 1.98$ S/m; $\epsilon_r = 38.324$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.6°C Liquid Temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.4, 7.4, 7.4); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch38150/Area Scan (81x161x1): Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.815 W/kg

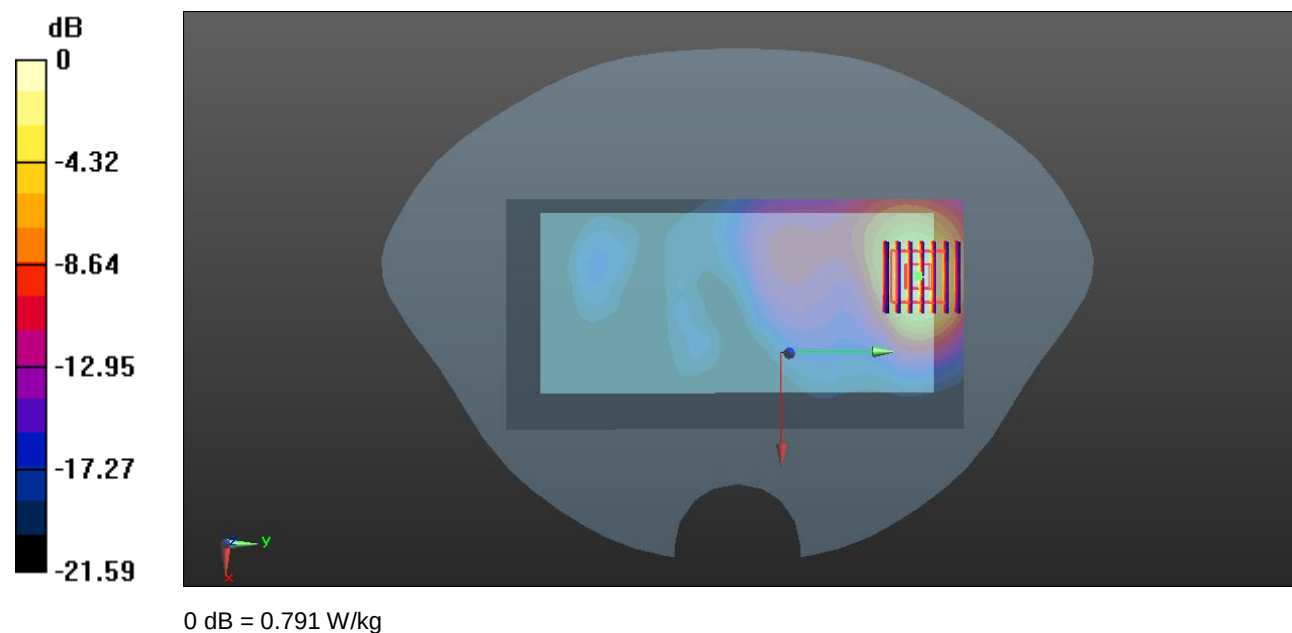
Ch38150/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 2.115 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 1.35 W/kg

SAR(1 g) = 0.691 W/kg; SAR(10 g) = 0.329 W/kg

Maximum value of SAR (measured) = 0.791 W/kg



Meas.17 Left Head with Cheek on Middle Channel in LTE Band41 mode and 1RB

Date: 2022.07.20

Communication System Band: Band 41; Frequency: 2605 MHz; Duty Cycle: 1:1.58

Medium parameters used (interpolated): $f = 2605$ MHz; $\sigma = 1.978$ S/m; $\epsilon_r = 38.541$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Ambient Temperature: 22.4°C Liquid Temperature: 21.2°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.4, 7.4, 7.4); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch40740/Area Scan (81x161x1): Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.0897 W/kg

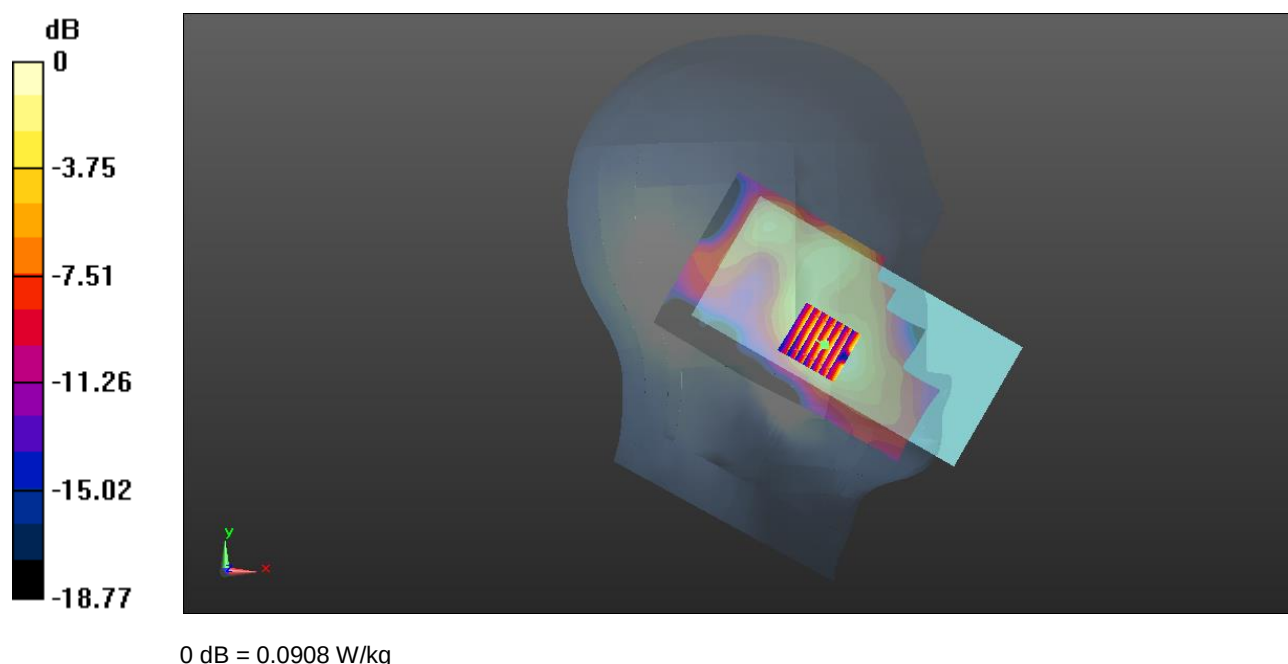
Ch40740/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 2.802 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.154 W/kg

SAR(1 g) = 0.085 W/kg; SAR(10 g) = 0.045 W/kg

Maximum value of SAR (measured) = 0.0908 W/kg



Meas.18 Body Plane with Back Side 10mm on Middle Channel in LTE Band41 mode and 1RB

Date: 2022.07.20

Communication System Band: Band 41; Frequency: 2605 MHz; Duty Cycle: 1:1.58

Medium parameters used (interpolated): $f = 2605$ MHz; $\sigma = 1.978$ S/m; $\epsilon_r = 38.541$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.4°C Liquid Temperature: 21.2°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.4, 7.4, 7.4); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch40740/Area Scan (81x161x1): Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 1.39 W/kg

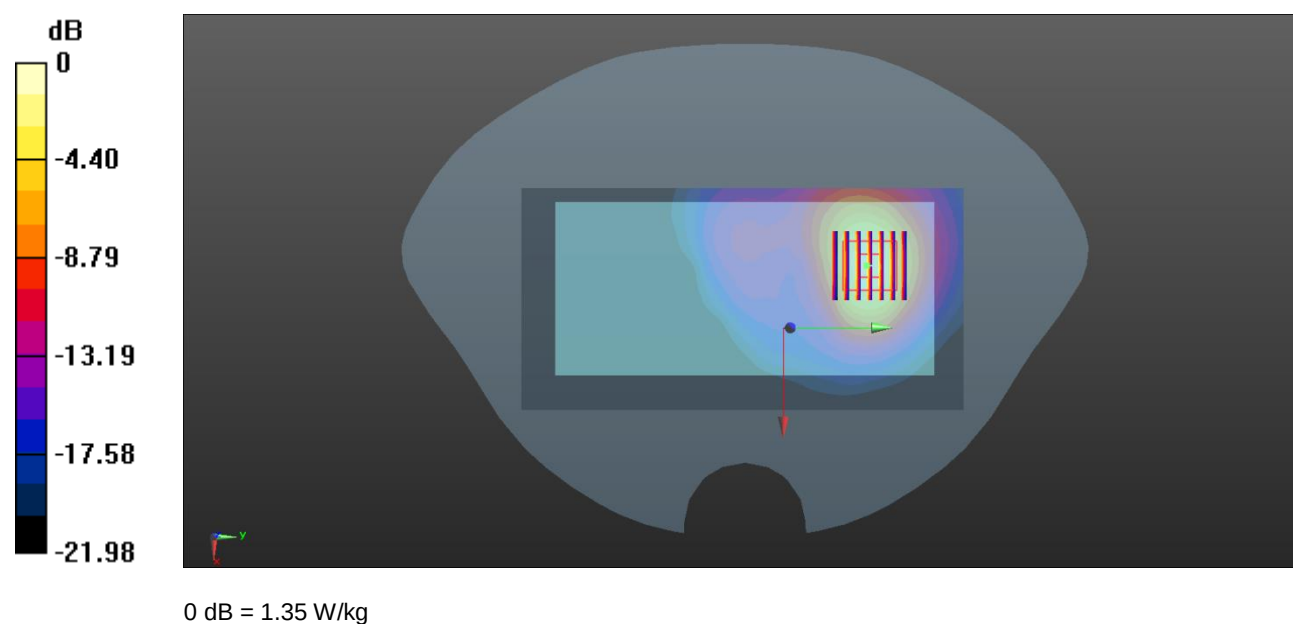
Ch40740/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 4.973 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 2.25 W/kg

SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.570 W/kg

Maximum value of SAR (measured) = 1.35 W/kg



Meas.19 Left Head with Cheek on 6 Channel in IEEE802.11b mode

Date: 2022.07.15

Communication System Band: WLAN(b); Frequency: 2437 MHz; Duty Cycle: 1:1.01

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.781$ S/m; $\epsilon_r = 39.703$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Ambient Temperature: 22.5°C Liquid Temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.63, 7.63, 7.63); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch6/Area Scan (81x161x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.730 W/kg

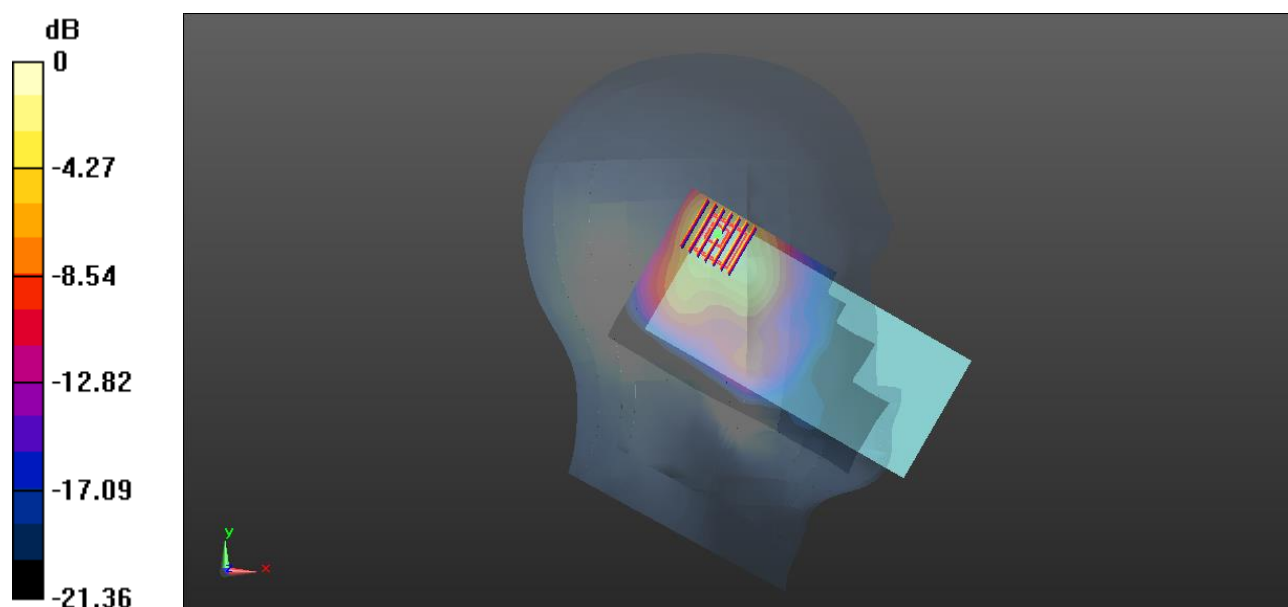
Ch6/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.01 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 1.40 W/kg

SAR(1 g) = 0.645 W/kg; SAR(10 g) = 0.306 W/kg

Maximum value of SAR (measured) = 0.740 W/kg



0 dB = 0.740 W/kg

Meas.20 Body Plane with Left Edge 10mm on 6 Channel in IEEE802.11b mode

Date: 2022.07.15

Communication System Band: WLAN(b); Frequency: 2437 MHz; Duty Cycle: 1:1.01

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.781$ S/m; $\epsilon_r = 39.703$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.5°C Liquid Temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.63, 7.63, 7.63); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch6/Area Scan (61x161x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.326 W/kg

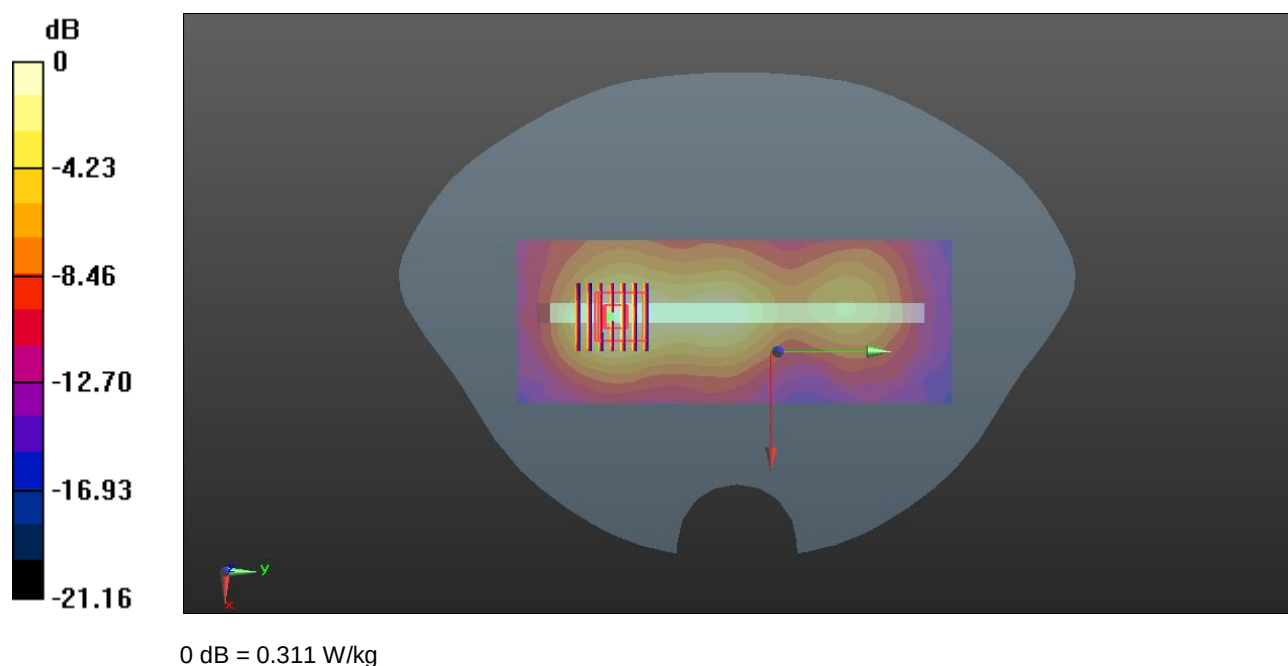
Ch6/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.46 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.546 W/kg

SAR(1 g) = 0.284 W/kg; SAR(10 g) = 0.150 W/kg

Maximum value of SAR (measured) = 0.311 W/kg



Meas.21 Right Head with Tilt on 58 Channel in IEEE802.11ac80 mode

Date: 2022.07.21

Communication System Band: WLAN(ac)80MHz; Frequency: 5290 MHz; Duty Cycle: 1:1077

Medium parameters used (interpolated): $f = 5290$ MHz; $\sigma = 4.785$ S/m; $\epsilon_r = 35.457$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Ambient Temperature: 22.1°C Liquid Temperature: 21.1°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(5.42, 5.42, 5.42); Calibrated: 2021.12.29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch58/Area Scan (101x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.48 W/kg

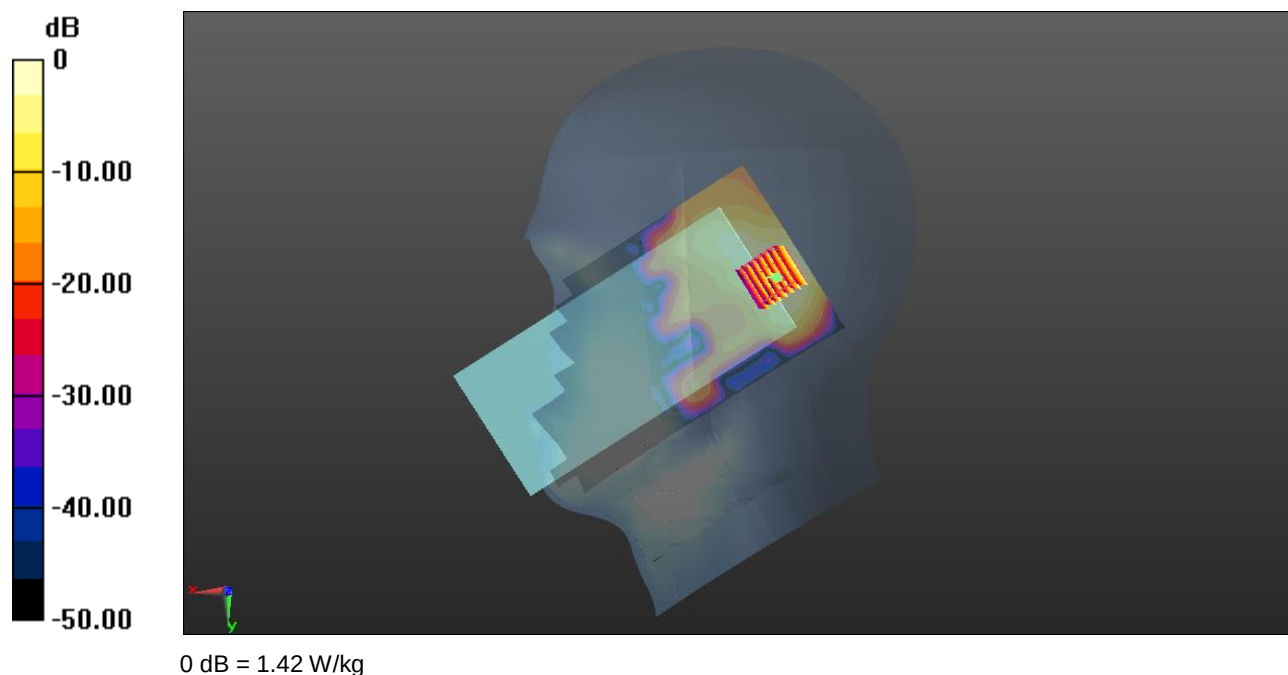
Ch58/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 8.883 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 2.55 W/kg

SAR(1 g) = 0.742 W/kg; SAR(10 g) = 0.260 W/kg

Maximum value of SAR (measured) = 1.42 W/kg



Meas.22 Right Head with Tilt on 122 Channel in IEEE802.11ac80 mode

Date: 2022.07.21

Communication System Band: WLAN(ac)80MHz; Frequency: 5610 MHz; Duty Cycle: 1:1.077

Medium parameters used (interpolated): $f = 5610$ MHz; $\sigma = 5.071$ S/m; $\epsilon_r = 34.983$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Ambient Temperature: 22.1°C Liquid Temperature: 21.1°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(5.42, 5.42, 5.42); Calibrated: 2021.12.29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch122/Area Scan (101x201x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.18 W/kg

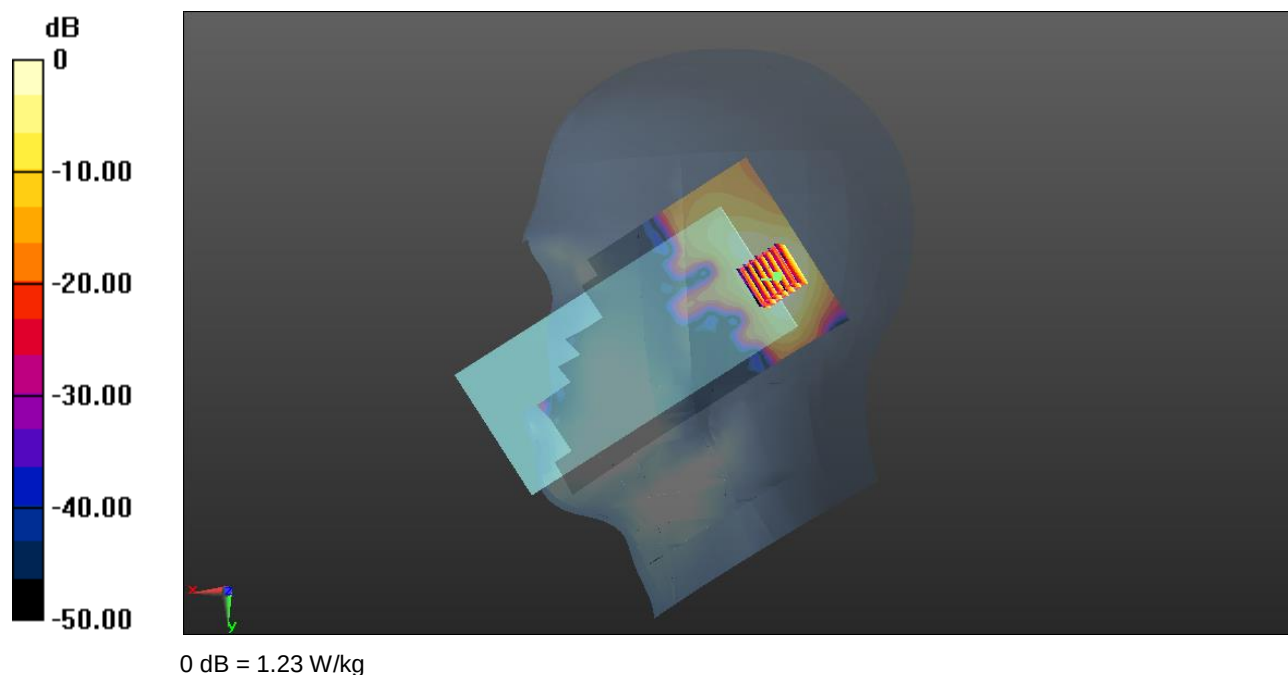
Ch122/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 7.210 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 2.21 W/kg

SAR(1 g) = 0.645 W/kg; SAR(10 g) = 0.232 W/kg

Maximum value of SAR (measured) = 1.23 W/kg



Meas.23 Right Head with Tilt on 155 Channel in IEEE802.11ac80 mode

Date: 2022.07.22

Communication System Band: WLAN(ac)80MHz; Frequency: 5775 MHz; Duty Cycle: 1:1.077

Medium parameters used (interpolated): $f = 5775$ MHz; $\sigma = 5.219$ S/m; $\epsilon_r = 35.214$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Ambient Temperature: 22.4°C Liquid Temperature: 21.2°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(4.9, 4.9, 4.9); Calibrated: 2021.12.29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch155/Area Scan (101x201x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.936 W/kg

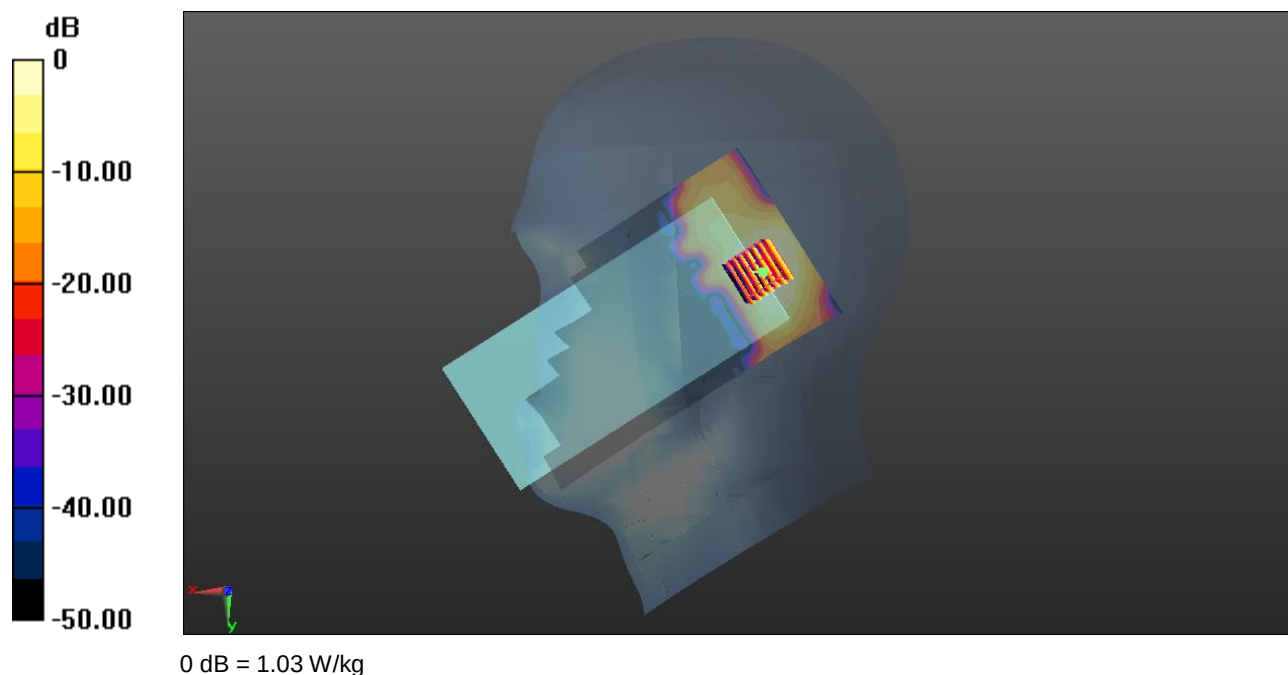
Ch155/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 7.152 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 1.89 W/kg

SAR(1 g) = 0.519 W/kg; SAR(10 g) = 0.181 W/kg

Maximum value of SAR (measured) = 1.03 W/kg



Meas.24 Body Plane with Front Side 10mm on 58 Channel in IEEE802.11ac80 mode

Date: 2022.07.21

Communication System Band: WLAN(ac)80MHz; Frequency: 5290 MHz; Duty Cycle: 1:1.077

Medium parameters used (interpolated): $f = 5290$ MHz; $\sigma = 4.785$ S/m; $\epsilon_r = 35.457$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.1°C Liquid Temperature: 21.1°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(5.42, 5.42, 5.42); Calibrated: 2021.12.29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch58/Area Scan (101x191x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.281 W/kg

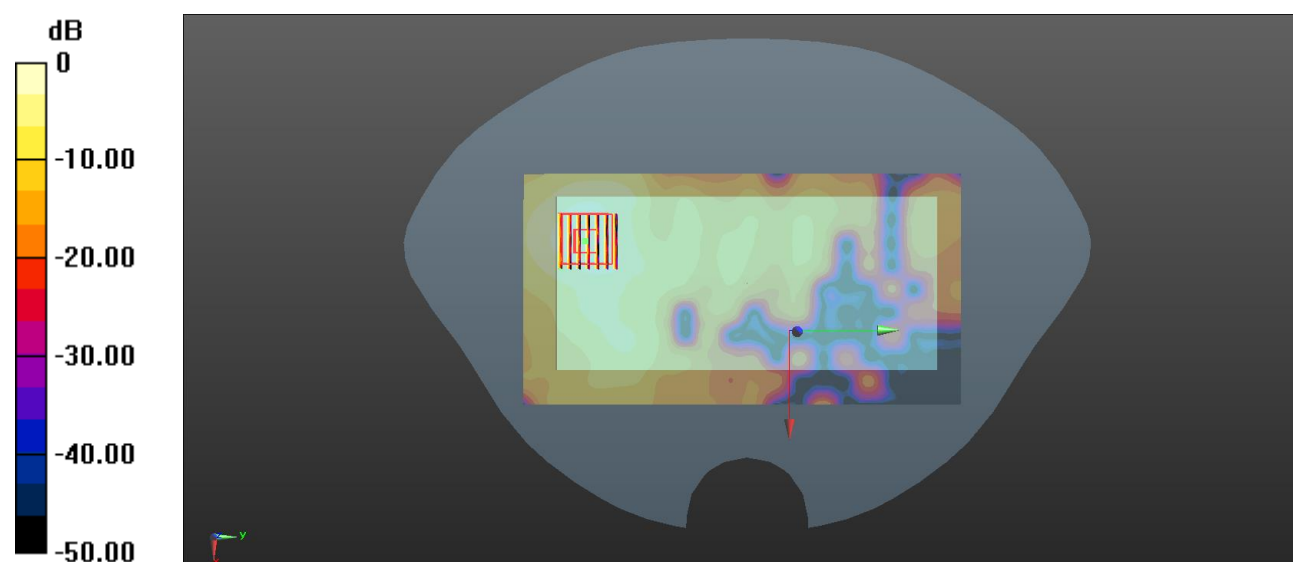
Ch58/Zoom Scan (7x7x12)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 1.257 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.492 W/kg

SAR(1 g) = 0.145 W/kg; SAR(10 g) = 0.054 W/kg

Maximum value of SAR (measured) = 0.274 W/kg



0 dB = 0.274 W/kg

Meas.25 Body Plane with Front Side 10mm on 122 Channel in IEEE802.11ac80 mode

Date: 2022.07.21

Communication System Band: WLAN(ac)80MHz; Frequency: 5610 MHz; Duty Cycle: 1:1.077

Medium parameters used (interpolated): $f = 5610$ MHz; $\sigma = 5.071$ S/m; $\epsilon_r = 34.983$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.1°C Liquid Temperature: 21.1°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(4.81, 4.81, 4.81); Calibrated: 2021.12.29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch122/Area Scan (101x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.410 W/kg

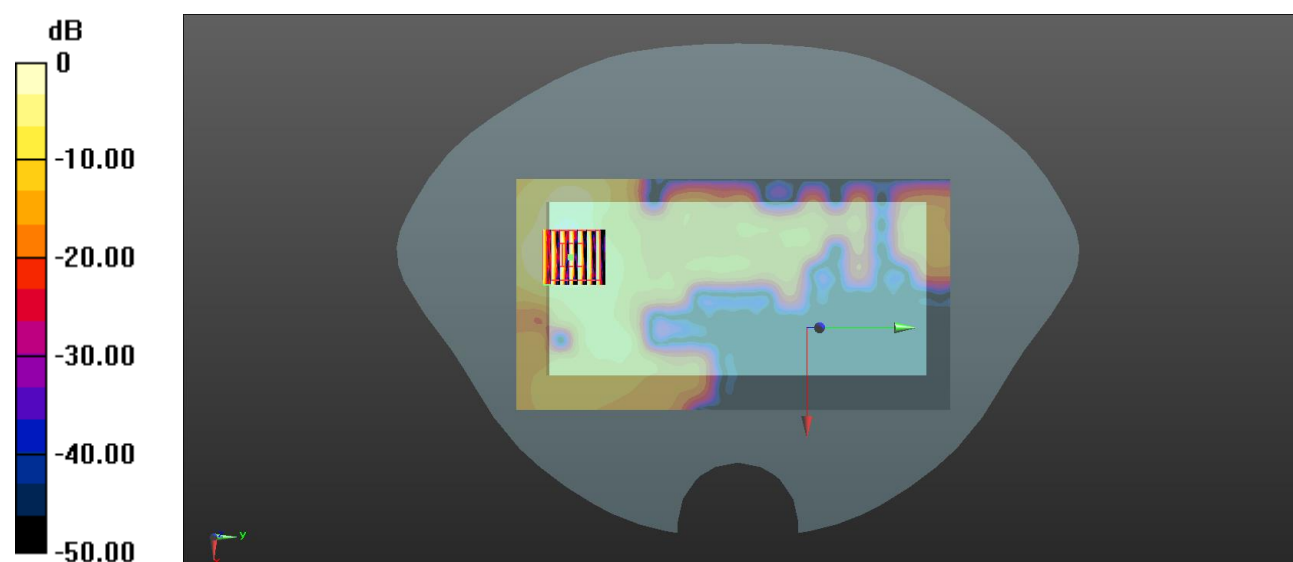
Ch122/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 0 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.782 W/kg

SAR(1 g) = 0.198 W/kg; SAR(10 g) = 0.066 W/kg

Maximum value of SAR (measured) = 0.398 W/kg



Meas.26 Body Plane with Top Edge 10mm on 42 Channel in IEEE802.11ac80 mode

Date: 2022.07.21

Communication System Band: WLAN(ac)80MHz; Frequency: 5210 MHz; Duty Cycle: 1:1.077

Medium parameters used (interpolated): $f = 5210$ MHz; $\sigma = 4.622$ S/m; $\epsilon_r = 36.497$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.1°C Liquid Temperature: 21.1°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(5.42, 5.42, 5.42); Calibrated: 2021.12.29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch42/Area Scan (81x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.670 W/kg

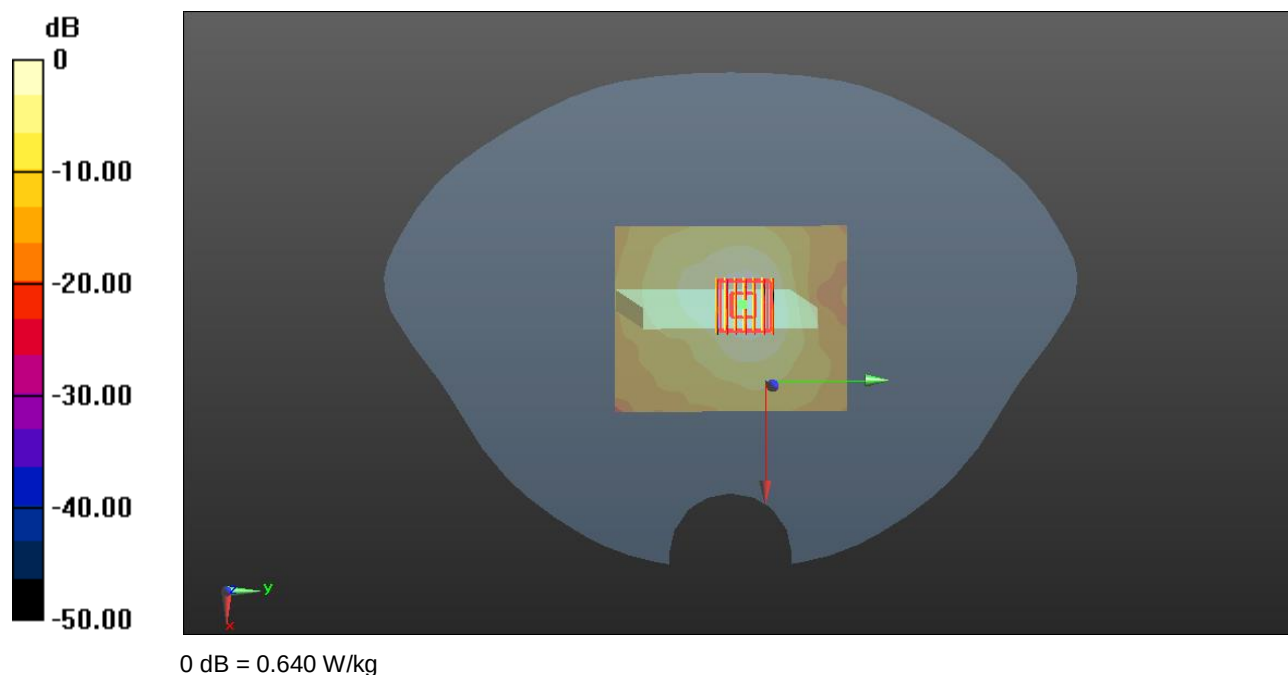
Ch42/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 7.694 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 1.26 W/kg

SAR(1 g) = 0.355 W/kg; SAR(10 g) = 0.134 W/kg

Maximum value of SAR (measured) = 0.640 W/kg



Meas.27 Body Plane with Top Edge 10mm on 155 Channel in IEEE802.11ac80 mode

Date: 2022.07.22

Communication System Band: WLAN(ac)80MHz; Frequency: 5775 MHz; Duty Cycle: 1:1.077

Medium parameters used (interpolated): $f = 5775$ MHz; $\sigma = 5.219$ S/m; $\epsilon_r = 35.214$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.4°C Liquid Temperature: 21.2°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(4.9, 4.9, 4.9); Calibrated: 2021.12.29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch155/Area Scan (81x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.435 W/kg

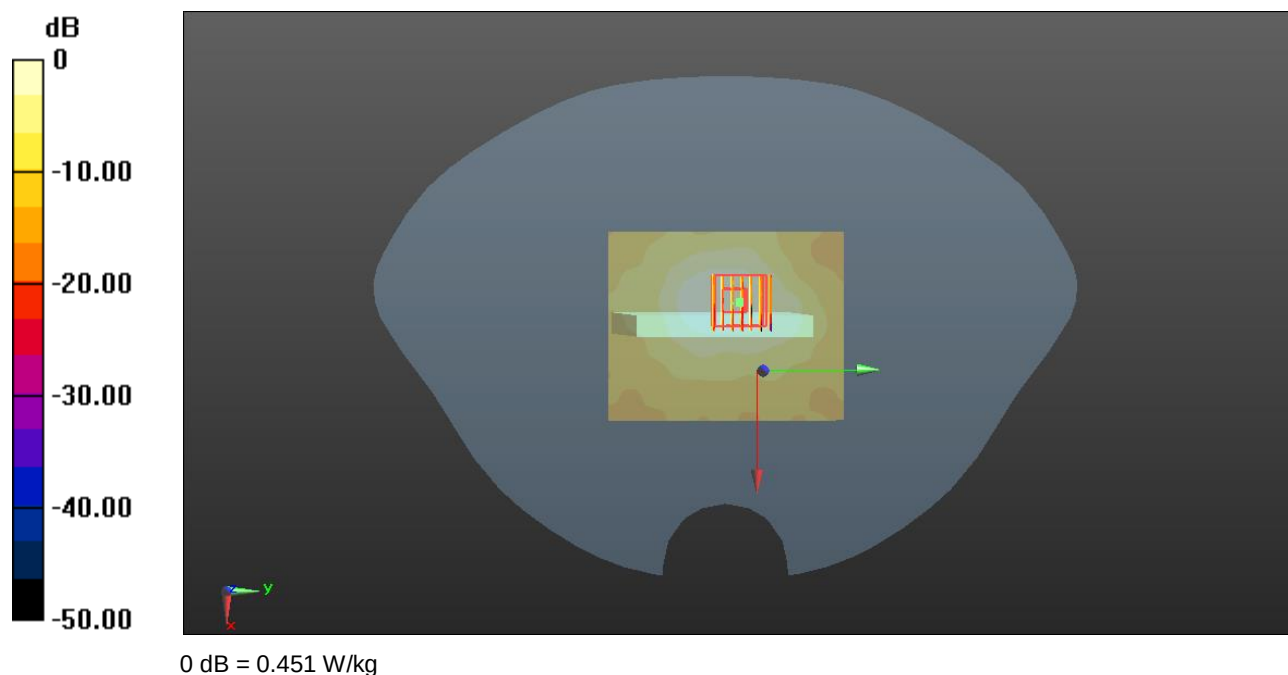
Ch155/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.777 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.01 W/kg

SAR(1 g) = 0.243 W/kg; SAR(10 g) = 0.095 W/kg

Maximum value of SAR (measured) = 0.451 W/kg



Meas.28 Body Plane with Top Edge 0mm on 58 Channel in IEEE802.11ac80 mode

Date: 2022.07.21

Communication System Band: WLAN(ac)80MHz; Frequency: 5290 MHz; Duty Cycle: 1:1.077

Medium parameters used (interpolated): $f = 5290$ MHz; $\sigma = 4.785$ S/m; $\epsilon_r = 35.457$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.1°C Liquid Temperature: 21.1°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(5.42, 5.42, 5.42); Calibrated: 2021.12.29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch58/Area Scan (81x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 3.52 W/kg

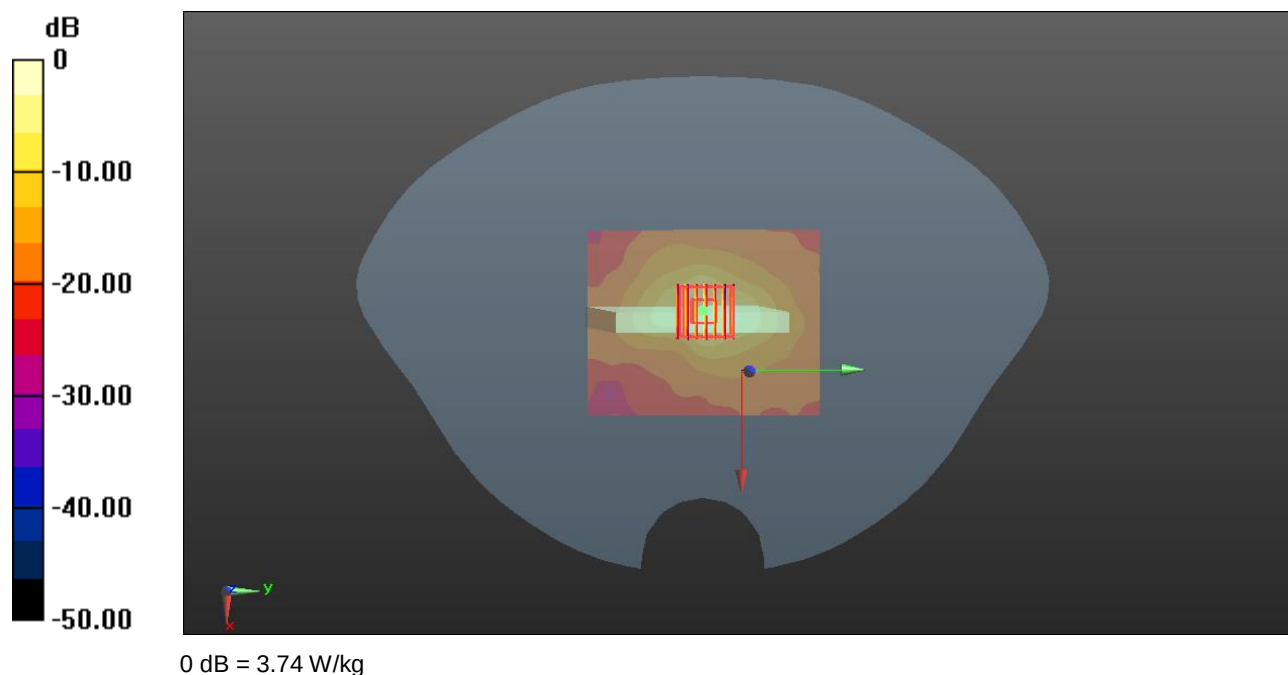
Ch58/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 17.98 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 7.12 W/kg

SAR(1 g) = 1.77 W/kg; SAR(10 g) = 0.475 W/kg

Maximum value of SAR (measured) = 3.74 W/kg



Meas.29 Body Plane with Top Edge 0mm on 122 Channel in IEEE802.11ac80 mode

Date: 2022.07.21

Communication System Band: WLAN(ac)80MHz; Frequency: 5610 MHz; Duty Cycle: 1:1.077

Medium parameters used (interpolated): $f = 5610$ MHz; $\sigma = 5.071$ S/m; $\epsilon_r = 34.983$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.1°C Liquid Temperature: 21.1°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(4.81, 4.81, 4.81); Calibrated: 2021.12.29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch122/Area Scan (81x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 4.25 W/kg

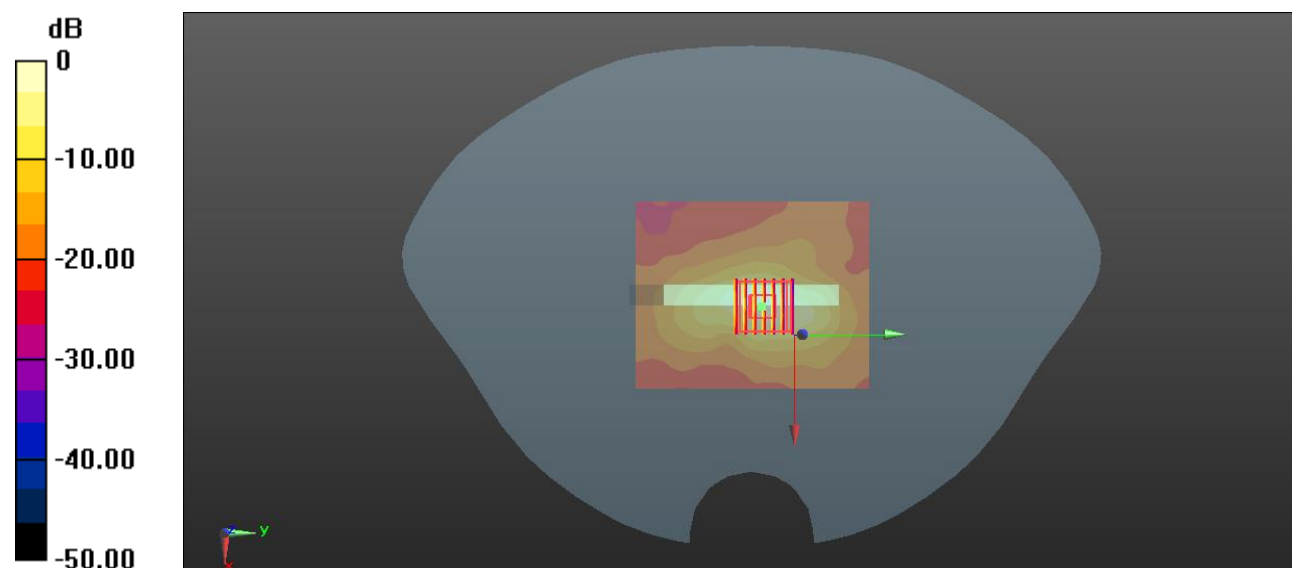
Ch122/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 17.59 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 7.77 W/kg

SAR(1 g) = 1.92 W/kg; SAR(10 g) = 0.567 W/kg

Maximum value of SAR (measured) = 3.95 W/kg



0 dB = 3.95 W/kg

Meas.30 Left Head with Cheek on 0 Channel in Bluetooth mode

Date: 2022.07.15

Communication System Band: BT; Frequency: 2402 MHz; Duty Cycle: 1:1.3

Medium parameters used (interpolated): $f = 2402$ MHz; $\sigma = 1.743$ S/m; $\epsilon_r = 39.994$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Ambient Temperature: 22.5°C Liquid Temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.63, 7.63, 7.63); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch0/Area Scan (101x161x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.00760 W/kg

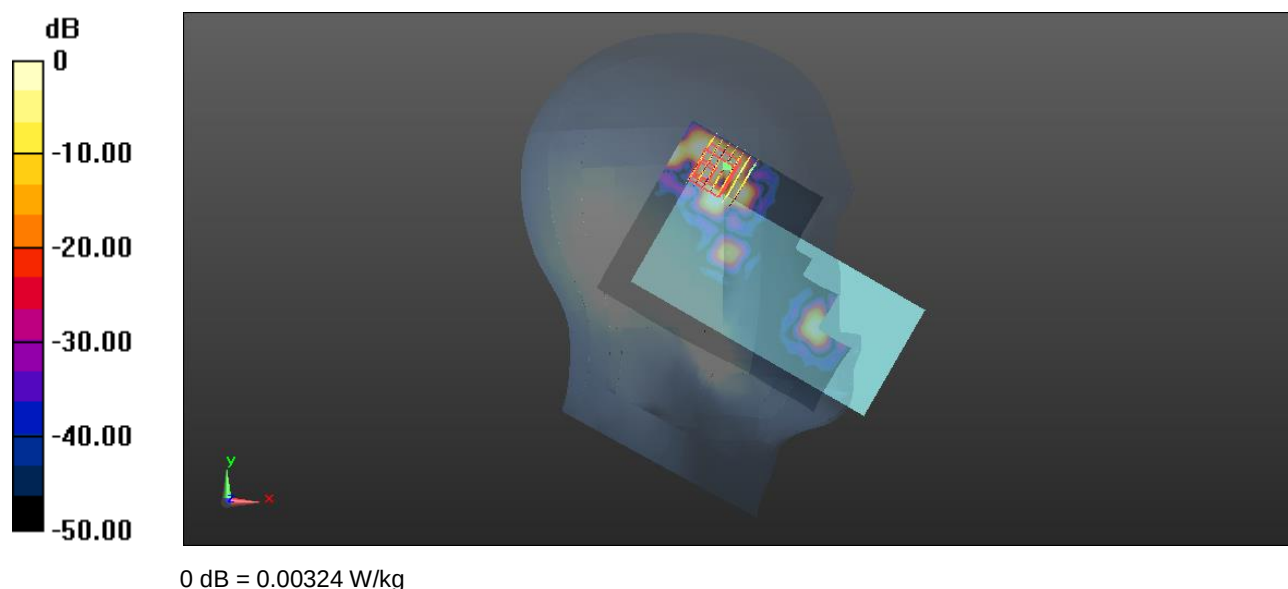
Ch0/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0 V/m; Power Drift = -0.17dB

Peak SAR (extrapolated) = 0.0130 W/kg

SAR(1 g) = 0.0011 W/kg; SAR(10 g) = 0.000183 W/kg

Maximum value of SAR (measured) = 0.00324 W/kg



Meas.31 Body Plane with Left Edge 10mm on 0 Channel in Bluetooth mode

Date: 2022.07.15

Communication System Band: BT; Frequency: 2402 MHz; Duty Cycle: 1:1.3

Medium parameters used (interpolated): $f = 2402$ MHz; $\sigma = 1.743$ S/m; $\epsilon_r = 39.994$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.5°C Liquid Temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7510; ConvF(7.63, 7.63, 7.63); Calibrated: 2021.12.29;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 2021.11.05
- Phantom: SAM 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)

Ch0/Area Scan (61x161x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.00876 W/kg

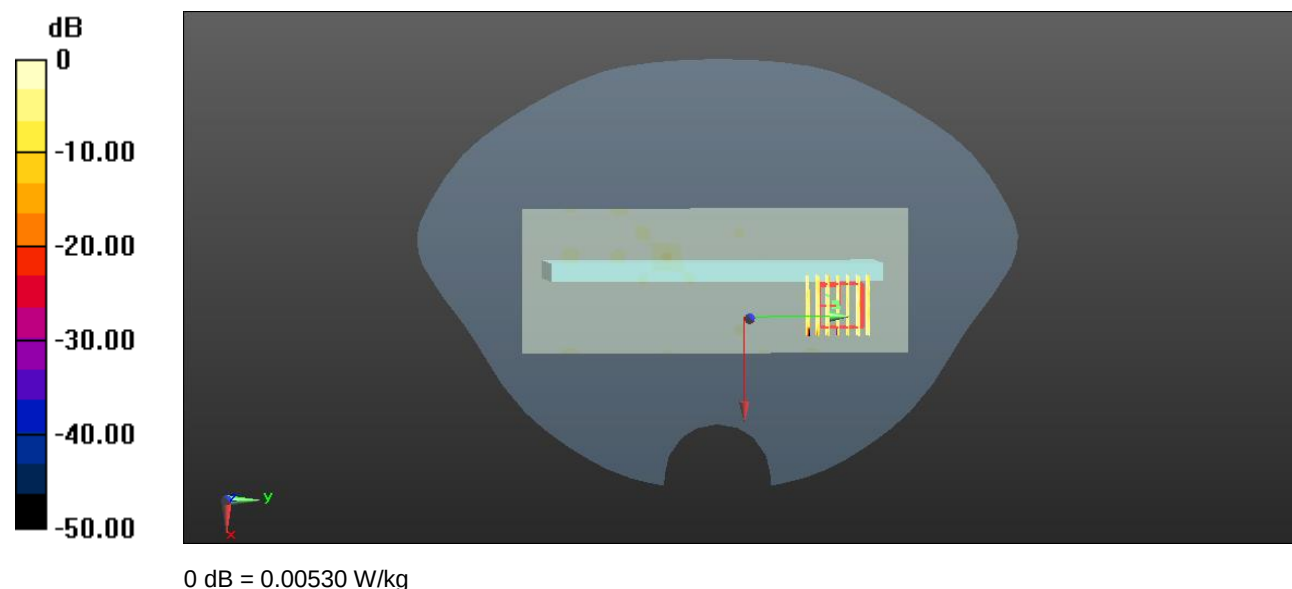
Ch0/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0.6980 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 0.0120 W/kg

SAR(1 g) = 0.00439 W/kg; SAR(10 g) = 0.00281 W/kg

Maximum value of SAR (measured) = 0.00530 W/kg



ANNEX D EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2270322-AW.pdf”.

ANNEX E SAR TEST SETUP PHOTOS

Please refer the document “BL-SZ2270322-AS.pdf”.

ANNEX F CALIBRATION REPORT

Please refer the document “CALIBRATION REPORT.pdf”.

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--END OF REPORT--