

FCC/IC

SAR

TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
Mobile Phone

ISSUED TO
OnePlus Technology(Shenzhen) Co., Ltd.

18/F, Tower C, Tai Ran Building, No.8 Tai Ran Road, Shenzhen, China



Tested by: *Heng Aiping*
Heng Aiping
(Engineer)

Date: *Oct. 8, 2015*

Approved by: *Wei Yanguan*
Wei Yanguan
(Chief Engineer)

Date: *Oct. 8, 2015*

Report No.: BL-SZ1580044-701

EUT Type: Mobile Phone

Model Name: ONE E1005

Brand Name: ONEPLUS

FCC ID: 2ABZ2-E1005

IC Number: 12739A-E1005

Test Standard: FCC 47 CFR Part 2.1093

IC RSS-102 issue 5 (Others refer chapters 3.1)

Maximum SAR: Head (1 g): 1.018 W/kg

Body (1 g): 1.110 W/kg

Test Conclusion: Pass

Test Date: Sep. 17, 2015 ~ Sep. 21, 2015

Date of Issue: Oct. 8, 2015

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Revision History

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1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co.,Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province,P. R. China
Phone Number	+86 755 66850100
Fax Number	+86 755 6182 4271

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co.,Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province,P. R. China
Accreditation Certificate	<p>The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1.</p> <p>The laboratory has been listed by US Federal Communications Commission to perform electromagnetic emission measurements. The recognition numbers of test site are 832625.</p> <p>The laboratory has met the requirements of the IAS Accreditation Criteria for Testing Laboratories (AC89), has demonstrated compliance with ISO/IEC Standard 17025:2005. The accreditation certificate number is TL-588.</p> <p>The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.</p>
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Test Environment Condition

Ambient Temperature	21 to 23°C
Ambient Relative Humidity	40 to 50%
Ambient Pressure	100 to 102KPa

1.4 Announce

- (1) The test report reference to the report template version v1.1.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
- (5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.
- (6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

2 PRODUCT INFORMATION

2.1 Applicant

Applicant	OnePlus Technology(Shenzhen) Co., Ltd
Address	18/F, Tower C, Tai Ran Building, No.8 Tai Ran Road, Shenzhen, China

2.2 Manufacturer

Manufacturer	OnePlus Technology(Shenzhen) Co., Ltd.
Address	18/F, Tower C, Tai Ran Building, No.8 Tai Ran Road, Shenzhen, China

2.3 General Description for Equipment under Test (EUT)

EUT Type	Mobile Phone
EUT Model Name	ONE E1005
Hardware Version	N/A
Software Version	ONE E1003_11_150707
Dimensions	140 × 69 × 6.9 mm
Weight	138 g (with battery)
Network and Wireless connectivity	2G Network GSM 850/900/1800/1900; GPRS ; EDGE ; 3G Network WCDMA Band 1/ 2/ 4/ 5/ 8; HSDPA, HSUPA 4G Network FDD LTE Band 1/ 2/ 4/ 5/ 7/ 8; 2.4G WLAN, Bluetooth, GNOLASS

2.4 Technical Information

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

Operating Mode	GSM, WCDMA, FDD-LTE, 2.4G WLAN, Bluetooth		
Frequency Range	GSM 850	TX: 824 MHz ~ 849 MHz	RX: 869 MHz ~ 894 MHz
	GSM 1900	TX: 1850 MHz ~ 1910 MHz	RX: 1930 MHz ~ 1990 MHz
	WCDMA Band 2	TX: 1850 MHz ~ 1910 MHz	RX: 1930 MHz ~ 1990 MHz
	WCDMA Band 4	TX: 1710 MHz ~ 1755 MHz	RX: 2110 MHz ~ 2155 MHz
	WCDMA Band 5	TX: 824 MHz ~ 849 MHz	RX: 869 MHz ~ 894 MHz
	FDD-LTE Band 2	TX: 1850 MHz ~ 1910 MHz	RX: 1930 MHz ~ 1990 MHz
	FDD-LTE Band 4	TX: 1710 MHz ~ 1755 MHz	RX: 2110 MHz ~ 2155 MHz
	FDD-LTE Band 5	TX: 824 MHz ~ 849 MHz	RX: 869 MHz ~ 894 MHz
	FDD-LTE Band 7	TX: 2500 MHz ~ 2570 MHz	RX: 2620 MHz ~ 2690 MHz
	802.11b/g	2400 MHz~2483.5 MHz	
	802.11n (HT20/HT40)	2400 MHz~2483.5 MHz	
	Bluetooth	2400 MHz~2483.5 MHz	
DTM	Not Support		
Hotspot Function	Support		
Power Reduction	Support (When device operating under hotspot mode, that the WCDMA B2/B4, LTE B2/B4 power reduction will applied for SAR compliance. The reduction power details please refer section 8.)		
Exposure Category	General Population/Uncontrolled exposure		
EUT Stage	Portable Device		
Product	Type		
	<input checked="" type="checkbox"/> Production unit	<input type="checkbox"/> Identical prototype	

2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	ONEPLUS
	Model No.	BLP607
	Serial No.	N/A
	Capacitance	2450 mAh
	Rated Voltage	3.8 V
	Limit Charge Voltage	4.35 V
Ancillary Equipment 2	Charger 1	
	Brand Name	ONEPLUS
	Model No.	AY0520
	Serial No.	N/A
	Rated Input	100-240 V~, 0.3 A, 50/60 Hz
	Rated Output	5 V=, 2 A
Ancillary Equipment 3	Charger 2	
	Brand Name	ONEPLUS
	Model No.	ONE0520
	Serial No.	N/A
	Rated Input	100-240 V~, 0.4 A, 50/60 Hz
	Rated Output	5 V=, 2 A
Ancillary Equipment 4	USB Data Cable	
	Brand Name	ONEPLUS
	Model No.	N/A
	Length (Approx)	1.1 m

3 SUMMARY OF TEST RESULT

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	ANSI/IEEE Std. C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz
3	RSS-102: 2015 (Issue 5)	Radio Frequency (RF) Exposure Compliance of Radio Communication Apparatus (All Frequency Bands)
4	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
5	FCC KDB 447498 D01 v05r02	Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies
6	FCC KDB 941225 D01 v03	3G SAR MEAUREMENT PROCEDURES
7	FCC KDB 941225 D05 v02r03	SAR Evaluation Considerations for LTE Devices
8	FCC KDB 941225 D06 v01r01	SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities
9	FCC KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
10	FCC KDB 865664 D02 v01r01	RF Exposure Reporting
11	FCC KDB 648474 D04 v01r02	SAR Evaluation Considerations for Wireless Handsets

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)

Position	Band	Maximum Scaled SAR (W/kg)	Maximum Report SAR (W/kg)	Limit (W/kg)	Verdict
Head	GSM 850	0.272	1.108	1.6	Pass
	GSM 1900	0.150			Pass
	WCDMA Band 2	0.294			Pass
	WCDMA Band 4	0.285			Pass
	WCDMA Band 5	0.222			Pass
	FDD-LTE Band 2	0.185			Pass
	FDD-LTE Band 4	0.235			Pass
	FDD-LTE Band 5	0.199			Pass
	FDD-LTE Band 7	0.230			Pass
	WLAN	1.108			Pass
Body-worn	GSM 850	0.352	0.549	1.6	Pass
	GSM 1900	0.418			Pass
	WCDMA Band 2	0.549			Pass
	WCDMA Band 4	0.492			Pass
	WCDMA Band 5	0.307			Pass
	FDD-LTE Band 2	0.509			Pass
	FDD-LTE Band 4	0.366			Pass
	FDD-LTE Band 5	0.253			Pass
	FDD-LTE Band 7	0.453			Pass
	WLAN	0.130			Pass
Hotspot Mode	GSM 850	0.584	1.110	1.6	Pass
	GSM 1900	1.110			Pass
	WCDMA Band 2	0.748			Pass
	WCDMA Band 4	0.616			Pass
	WCDMA Band 5	0.521			Pass
	FDD-LTE Band 2	0.831			Pass
	FDD-LTE Band 4	0.615			Pass
	FDD-LTE Band 5	0.698			Pass
	FDD-LTE Band 7	0.812			Pass
	WLAN	0.217			Pass

3.3.2 Highest Simultaneous SAR

Position	Simultaneous Configuration	Simultaneous SAR (W/kg)	Limit	Verdict
Head	WCDMA +WLAN	1.402	1.6	Pass
	WCDMA +Bluetooth	0.563		Pass
	WCDMA +BLE	0.377		Pass
Body-worn	WCDMA + WLAN	0.679	1.6	Pass
	WCDMA +Bluetooth	0.684		Pass
	WCDMA +BLE	0.591		Pass
Hotspot Mode	GSM + WLAN	1.327	1.6	Pass
	GSM + Bluetooth	1.245		Pass
	GSM +BLE	1.152		Pass

3.4 Test Uncertainty

3.4.1 Measurement uncertainty evaluation for SAR test

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in IEEE 1528: 2013. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

System Measurement Uncertainty (frequency range from 300 MHz to 3 GHz)

Uncertainty Component	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	Vi
Measurement System								
Probe calibration	6.0	N	1	1	1	6.00	6.00	∞
Axial Isotropy	4.7	R	$\sqrt{3}$	0.7	0.7	1.90	1.90	∞
Hemispherical Isotropy	9.6	R	$\sqrt{3}$	0.7	0.7	3.90	3.90	∞
Boundary effect	1.0	R	$\sqrt{3}$	1	1	0.60	0.60	∞
Linearity	4.7	R	$\sqrt{3}$	1	1	2.70	2.70	∞
System detection limits	1.0	R	$\sqrt{3}$	1	1	0.60	0.60	∞
Readout Electronics	0.3	N	1	1	1	0.30	0.30	∞
Reponse Time	0.8	R	$\sqrt{3}$	1	1	0.50	0.50	∞
Integration Time	2.6	R	$\sqrt{3}$	1	1	1.50	1.50	∞
RF ambient Conditions - Noise	3.0	R	$\sqrt{3}$	1	1	1.70	1.70	∞
RF ambient Conditions - Reflections	3.0	R	$\sqrt{3}$	1	1	1.70	1.70	∞
Probe positioner Mechanical Tolerance	0.4	R	$\sqrt{3}$	1	1	0.20	0.20	∞
Probe positioning with respect to Phantom Shell	2.9	R	$\sqrt{3}$	1	1	1.70	1.70	∞
Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	2.0	R	$\sqrt{3}$	1	1	1.20	1.20	∞
Test sample Related								
Test sample positioning	2.9	N	1	1	1	2.90	2.90	N-1
Device Holder Uncertainty	3.6	N	1	1	1	3.60	3.60	N-1
Output power Variation - SAR drift measurement	5.0	R	$\sqrt{3}$	1	1	2.90	2.90	∞
SAR scaling	0.0	R	$\sqrt{3}$	1	1	0.00	0.00	∞
Phantom and Tissue Parameters								
Phantom Uncertainty (Shape and thickness tolerances)	4.0	R	$\sqrt{3}$	1	1	3.50	3.50	∞
SAR correction	1.9	R	$\sqrt{3}$	1	0.84	1.10	0.90	∞
Liquid conductivity - measurement uncertainty	2.5	N	$\sqrt{3}$	0.78	0.71	1.10	1.00	∞
Liquid permittivity - measurement uncertainty	2.5	N	$\sqrt{3}$	0.26	0.26	0.30	0.40	∞
Liquid conductivity - temperature uncertainty	3.4	N	$\sqrt{3}$	0.78	0.71	1.50	1.40	∞
Liquid permittivity - temperature uncertainty	0.4	N	$\sqrt{3}$	0.26	0.26	0.10	0.10	∞
Combined Standard Uncertainty		RSS				13.1	13.0	
Expanded Uncertainty (95% Confidence interval)		K=2				26.1	26.1	

System Measurement Uncertainty (frequency range from 3 GHz to 6 GHz)

Uncertainty Component	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	Vi
Measurement System								
Probe calibration	6.55	N	1	1	1	6.55	6.55	∞
Axial Isotropy	4.7	R	$\sqrt{3}$	0.7	0.7	1.90	1.90	∞
Hemispherical Isotropy	9.6	R	$\sqrt{3}$	0.7	0.7	3.90	3.90	∞
Boundary effect	2.0	R	$\sqrt{3}$	1	1	1.20	1.20	∞
Linearity	4.7	R	$\sqrt{3}$	1	1	2.70	2.70	∞
System detection limits	1.0	R	$\sqrt{3}$	1	1	0.60	0.60	∞
Readout Electronics	0.3	N	1	1	1	0.30	0.30	∞
Reponse Time	0.8	R	$\sqrt{3}$	1	1	0.50	0.50	∞
Integration Time	2.6	R	$\sqrt{3}$	1	1	1.50	1.50	∞
RF ambient Conditions - Noise	3.0	R	$\sqrt{3}$	1	1	1.70	1.70	∞
RF ambient Conditions - Reflections	3.0	R	$\sqrt{3}$	1	1	1.70	1.70	∞
Probe positioner Mechanical Tolerance	0.8	R	$\sqrt{3}$	1	1	0.50	0.50	∞
Probe positioning with respect to Phantom Shell	6.7	R	$\sqrt{3}$	1	1	3.90	3.90	∞
Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	4.0	R	$\sqrt{3}$	1	1	2.30	2.30	∞
Test sample Related								
Test sample positioning	2.9	N	1	1	1	2.90	2.90	N-1
Device Holder Uncertainty	3.6	N	1	1	1	3.60	3.60	N-1
Output power Variation - SAR drift measurement	5.0	R	$\sqrt{3}$	1	1	2.90	2.90	∞
SAR scaling	0.0	R	$\sqrt{3}$	1	1	0.00	0.00	∞
Phantom and Tissue Parameters								
Phantom Uncertainty (Shape and thickness tolerances)	6.6	R	$\sqrt{3}$	1	1	3.80	3.80	∞
SAR correction	1.9	R	$\sqrt{3}$	1	0.84	1.10	0.90	∞
Liquid conductivity - measurement uncertainty	2.5	N	$\sqrt{3}$	0.78	0.71	1.10	1.00	∞
Liquid permittivity - measurement uncertainty	2.5	N	$\sqrt{3}$	0.26	0.26	0.30	0.40	∞
Liquid conductivity - temperature uncertainty	3.4	N	$\sqrt{3}$	0.78	0.71	1.50	1.40	∞
Liquid permittivity - temperature uncertainty	0.4	N	$\sqrt{3}$	0.26	0.26	0.10	0.10	∞
Combined Standard Uncertainty		RSS				14.0	14.0	
Expanded Uncertainty (95% Confidence interval)		K=2				28.1	28.0	

3.4.2 Measurement uncertainty evaluation for system check

This measurement uncertainty budget is suggested by IEEE 1528. The break down of the individual uncertainties is as follows:

Uncertainty Component	Tol (+-%)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	Vi
Measurement System								
Probe calibration	5.8	N	1	1	1	5.80	5.80	∞
Axial Isotropy	3.5	R	$\sqrt{3}$	0.7	0.7	1.41	1.41	∞
Hemispherical Isotropy	5.9	R	$\sqrt{3}$	0.7	0.7	2.38	2.38	∞
Boundary effect	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Probe Linearity	4.7	R	$\sqrt{3}$	1	1	2.71	2.71	∞
System detection limits	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Readout Electronics	0.5	N	1	1	1	0.50	0.50	∞
Reponse Time	0.0	R	$\sqrt{3}$	1	1	0.00	0.00	∞
Integration Time	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
RF ambient Conditions - Noise	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient Conditions - Reflections	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner Mechanical Tolerance	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to Phantom Shell	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
Dipole								
Deviation of experimental dipole	5.5	R	$\sqrt{3}$	1	1	3.20	3.20	∞
Dipole axis to liquid distance	2.0	R	1	1	1	1.20	1.20	∞
Power drift	4.7	R	$\sqrt{3}$	1	1	2.70	2.70	∞
Phantom and Tissue Parameters								
Phantom Uncertainty (Shape and thickness tolerances)	4.0	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Liquid conductivity (deviation from target values)	2.5	N	$\sqrt{3}$	0.64	0.43	0.92	0.62	∞
Liquid conductivity - measurement uncertainty	5.0	N	1	0.64	0.43	3.20	2.15	M
Liquid permittivity (deviation from target values)	2.5	N	$\sqrt{3}$	0.60	0.49	0.87	0.71	∞
Liquid permittivity - measurement uncertainty	5.0	N	1	0.60	0.49	3.00	2.45	M
Combined Standard Uncertainty		RSS				10.22	9.75	
Expanded Uncertainty (95% Confidence interval)		k				20.44	19.50	

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

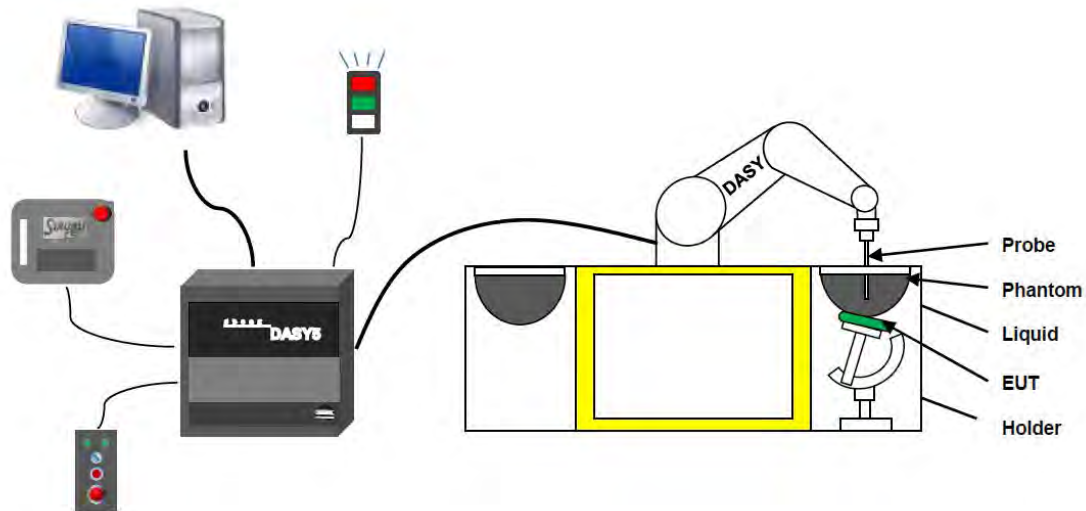
$$\text{SAR} = \frac{\sigma E^2}{\rho}$$

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
(brushless synchron motors; no stepper motors)
- Low ELF interference
(motor control fields shielded via the closed metallic constructions shields)

4.2.3 E-FieldProbe

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

Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection system Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., glycoether)
Calibration	ISO/IEC 17025 calibration service available
Frequency	10 MHz to 6 GHz; Linearity: ± 0.2 dB (30 MHz to 4 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, Antenna proprietary calibration system. The calibration is performed with the EN 62209-1/2 annexe technique using reference guide at the five frequencies.

4.2.4 Data Acquisition Electronics

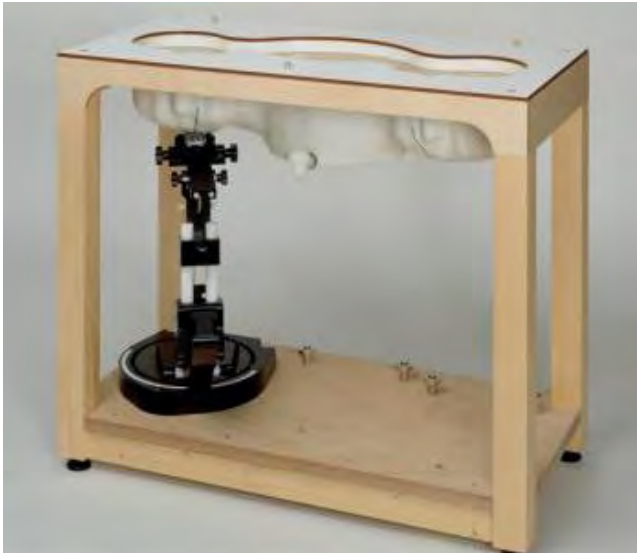
The data acquisition electronics (DAE) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converte and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an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



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

4.2.5 Phantoms

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



- Left hand
- Right hand
- Flat phantom

Photo of Phantom SN1857

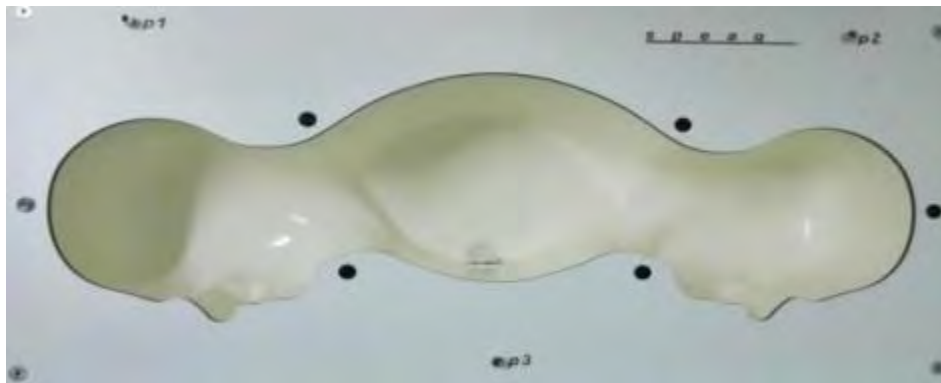
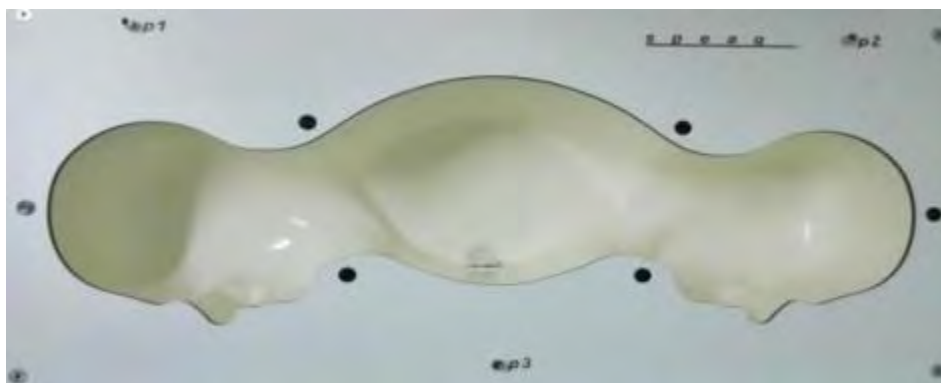


Photo of Phantom SN1859



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

4.2.6 Device Holder

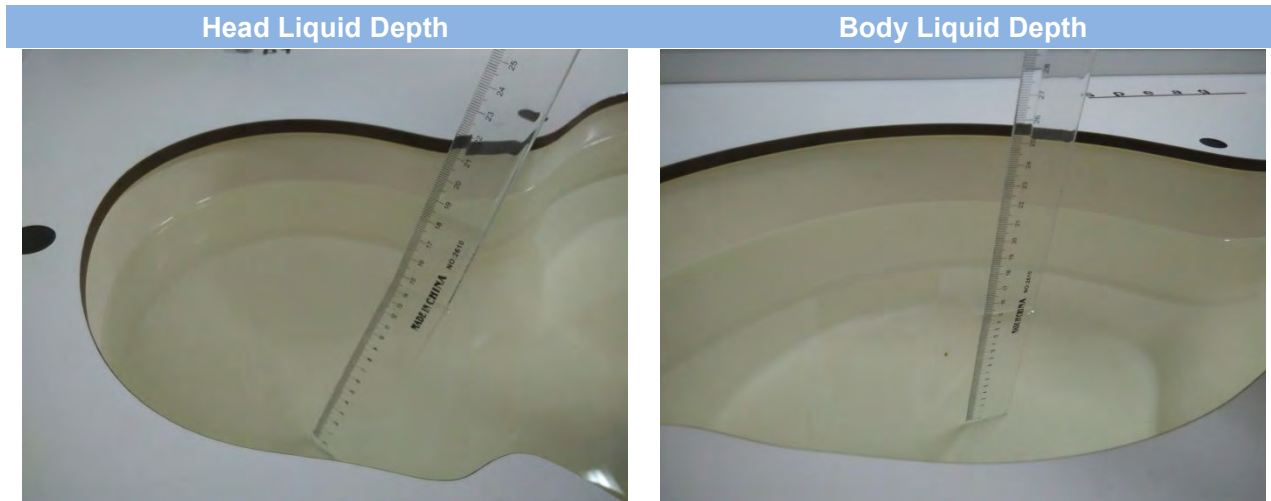
The DASY5 device holder has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of 65° . The bottom plate contains three pair of bolts for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



The positioning system allows obtaining cheek and tilting position with a very good accuracy. In compliance 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%.



The following table gives the recipes for tissue simulating liquid.

Frequency (MHz)	Water %	Sugar %	Cellulose %	Salt %	Preventol %	DGBE %	Conductivity σ	Permittivity ϵ
Head(Reference IEEE1528)								
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
Body(From instrument manufacturer: SPEAG)								
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	Diethylenglycol		Monohexylether		Triton X-100	Conductivity	Permittivity
5200,5600	65.53	17.24		17.24		17.24	4.66	36.0
5800	65.53	17.24		17.24		17.24	5.07	35.3

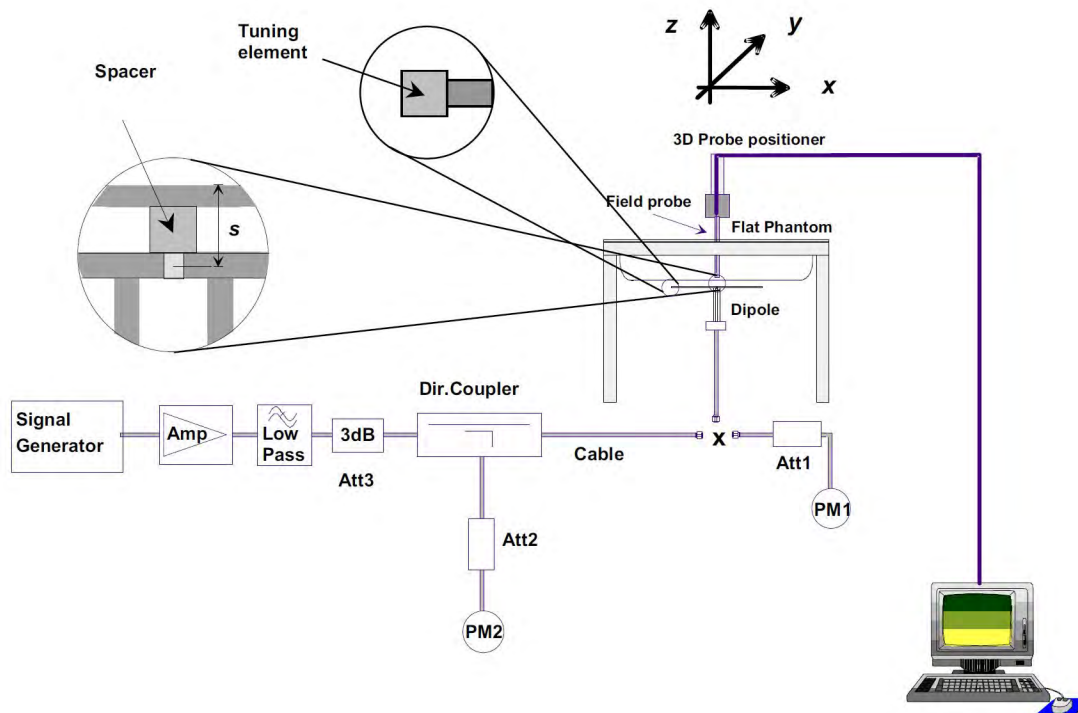
5 SYSTEM VERIFICATION

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

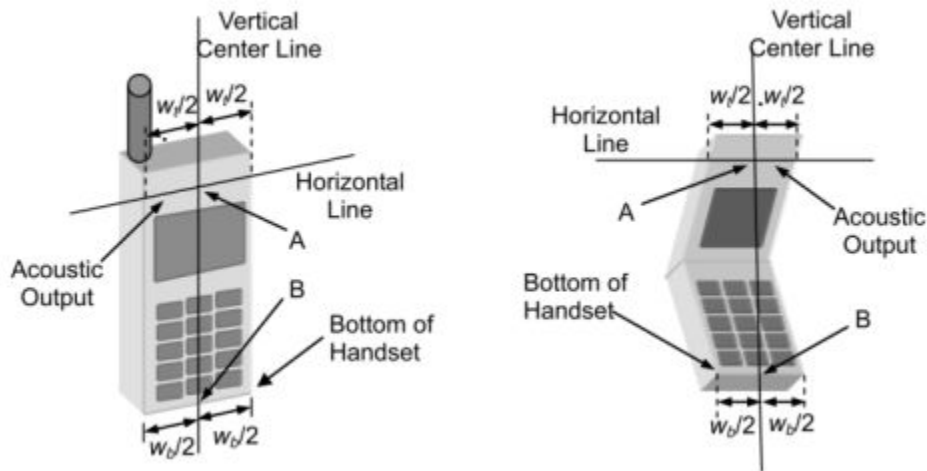
According to KDB 648474 D04 Handset v01r02, handsets are tested for SAR compliance in head, body-worn accessory and other use configurations described in the following subsections.

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 1528-2003 using the SAM phantom illustrated as below.

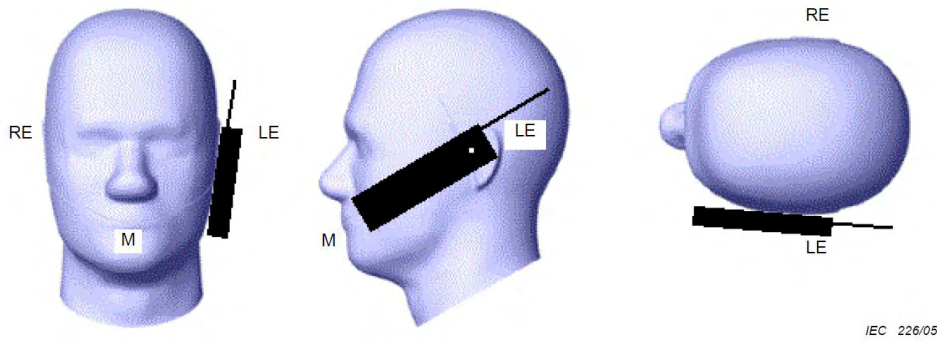
6.1.1 Two Imaginary Lines on the Handset

- The vertical centerline 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.
- 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.
- 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 centerline 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

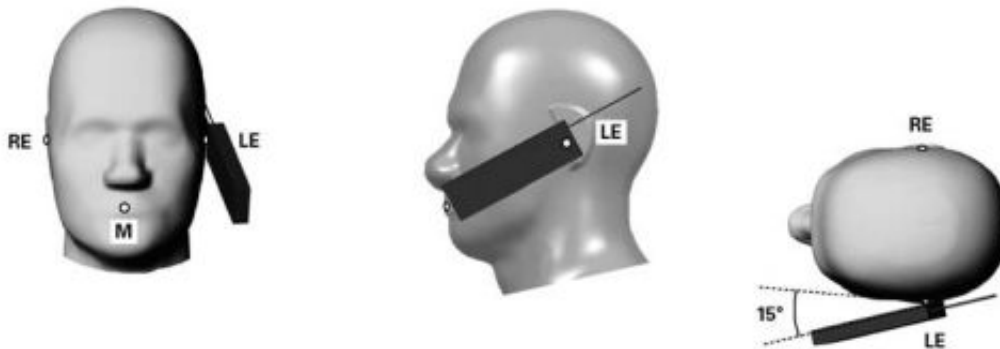
- To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the 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.
- 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.



IEC 226/05

6.1.3 Tilted Position

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



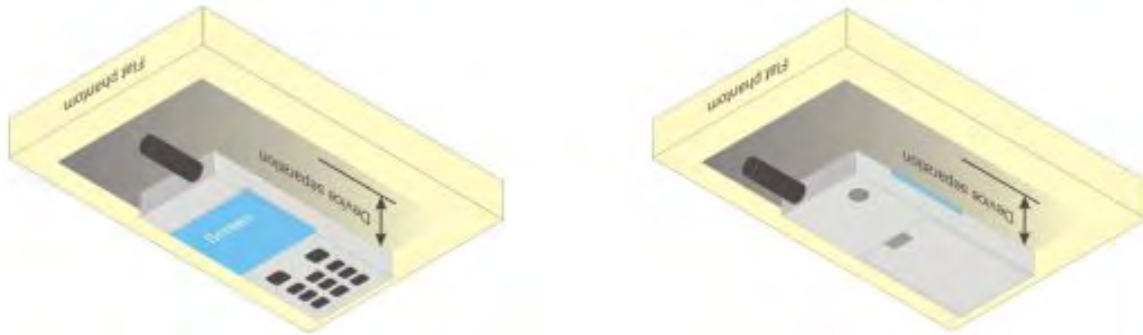
6.2 Body-worn Position Conditions

Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in EN 62209-2 are used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode. When the reported SAR for a body-worn accessory.

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

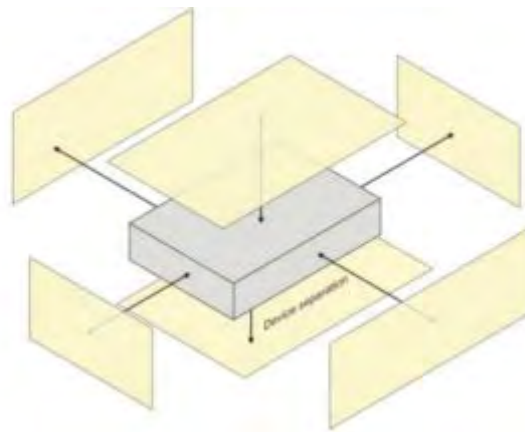
Body-worn accessory SAR compliance is based on a single minimum test separation distance for all wireless and operating modes applicable to each body-worn accessory used by the host, and according to the relevant voice and/or data mode transmissions and operations. If a body-worn accessory supports voice only operations in its normal and expected use conditions, testing of data mode for body-worn compliance is not required. A conservative minimum test separation distance for supporting off-the-shelf body-worn accessories that may be

acquired by users of consumer handsets is used to test for body-worn accessory SAR compliance. This distance is determined by the handset manufacturer, according to the requirements of Supplement C 01-01. Devices that are designed to operate on the body of users using lanyards and straps, or without requiring additional body-worn accessories, will be tested using a conservative minimum test separation distance ≤ 5 mm to support compliance.



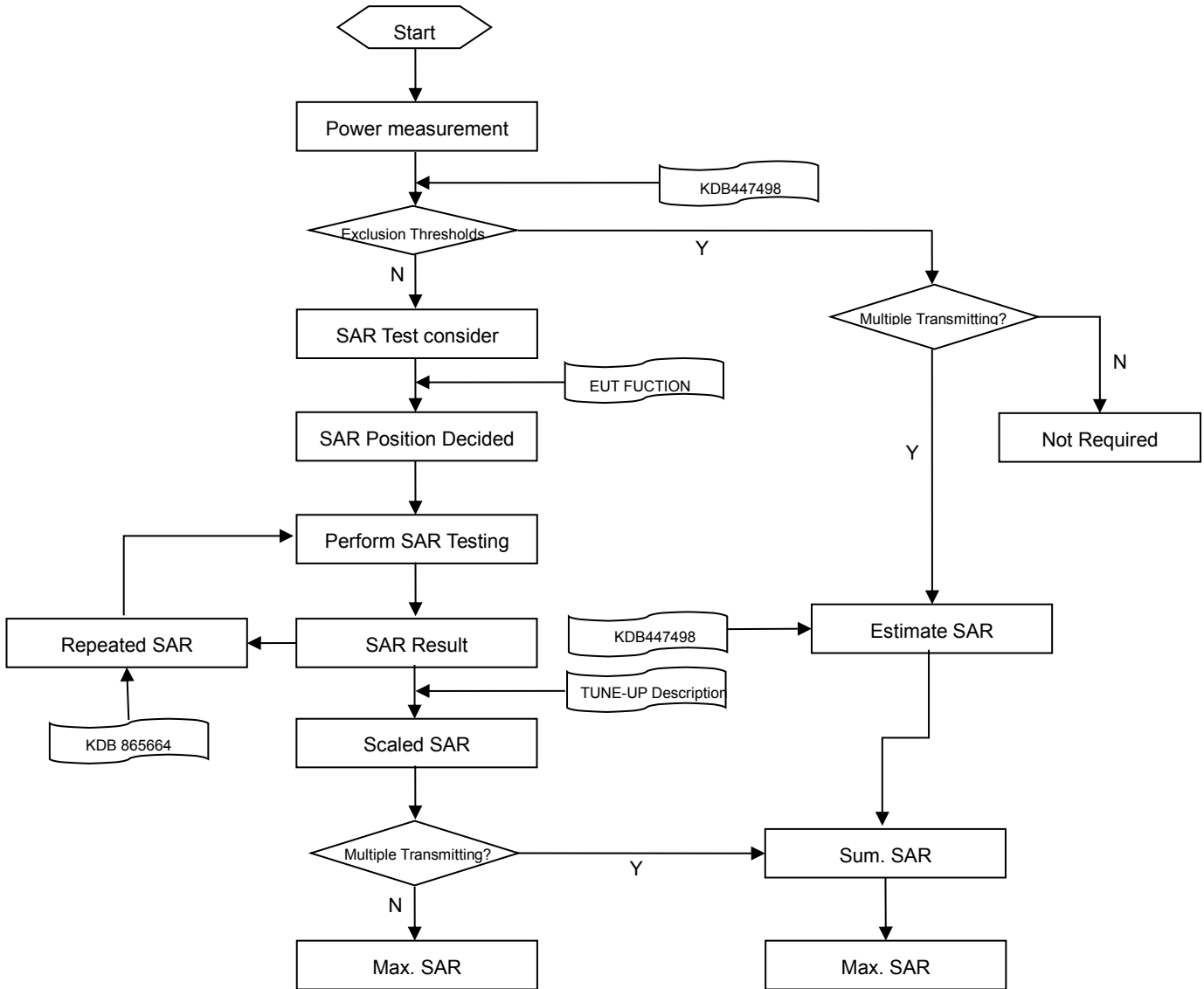
6.3 Hotspot Mode Exposure Position Conditions

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



7 MEASUREMENT PROCEDURE

7.1 Measurement Process Diagram



7.2 SAR Scan General Requirement

Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. 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 1528-2003.

			≤3GHz	>3GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5±1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ 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
Δz Zoom (n>1): between subsequent points		4–5 GHz: ≤ 2.5 mm		
			5–6 GHz: ≤ 2 mm	
			≤ 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: <ol style="list-style-type: none"> δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details. * 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.

8 CONDUCTED RF OUTPUT POWER

GSM						
GSM 850 Band	Burst Average Power(dBm)			Frame-averaged power(dBm)		
Channel	128	190	251	128	190	251
GSM (GMSK, 1-Slot)	33.22	33.55	33.71	24.22	24.55	24.71
GPRS (GMSK, 1-Slot)	33.31	33.55	33.71	24.31	24.55	24.71
GPRS (GMSK, 2-Slots)	31.27	31.55	31.73	25.27	25.55	25.73
GPRS (GMSK, 3-Slots)	29.48	29.72	29.96	25.22	25.46	25.70
GPRS (GMSK, 4-Slots)	28.07	28.31	28.53	25.07	25.31	25.53
EGPRS (8PSK, 1-Slot)	30.11	30.21	30.27	21.11	21.21	21.27
EGPRS (8PSK, 2-Slots)	27.93	28.03	28.08	21.93	22.03	22.08
EGPRS (8PSK, 3-Slots)	26.24	26.31	26.31	21.98	22.05	22.05
EGPRS (8PSK, 4-Slots)	25.38	25.65	25.88	22.38	22.65	22.88
GSM 1900 Band	Burst Average Power(dBm)			Frame-averaged power(dBm)		
Channel	512	661	810	512	661	810
GSM (GMSK, 1-Slot)	31.00	31.07	31.14	22.00	22.07	22.14
GPRS (GMSK, 1-Slot)	31.11	31.14	31.13	22.11	22.14	22.13
GPRS (GMSK, 2-Slots)	28.46	28.37	28.40	22.46	22.37	22.40
GPRS (GMSK, 3-Slots)	27.21	27.20	27.30	22.95	22.94	23.04
GPRS (GMSK, 4-Slots)	25.70	25.60	25.51	22.70	22.60	22.51
EGPRS (8PSK, 1-Slot)	28.71	28.64	28.57	19.71	19.64	19.57
EGPRS (8PSK, 2-Slots)	27.44	27.26	27.15	21.44	21.26	21.15
EGPRS (8PSK, 3-Slots)	26.10	26.01	25.96	21.84	21.75	21.70
EGPRS (8PSK, 4-Slots)	24.93	24.87	24.76	21.93	21.87	21.76

Note:

- SAR testing was performed on the maximum frame-averaged power mode.
- The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:

Frame-averaged power = Burst averaged power (1 Tx Slot) - 9 dB

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

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

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

WCDMA						
Band	Band 2			Band 4		
Channel	9262	9400	9537	1312	1413	1513
RMC 12.2Kbps	23.41	23.48	23.55	23.84	24.04	23.91
HSDPA Subtest-1	22.43	22.61	22.62	22.93	23.03	22.93
HSDPA Subtest-2	22.43	22.58	22.70	22.92	23.01	22.77
HSDPA Subtest-3	22.01	22.09	22.12	22.43	22.45	22.45
HSDPA Subtest-4	21.97	22.09	22.13	22.44	22.42	22.44
HSUPA Subtest-1	21.95	21.89	22.61	22.85	22.75	22.63
HSUPA Subtest-2	20.96	21.31	21.40	21.66	21.40	21.42
HSUPA Subtest-3	21.25	21.51	21.65	21.88	21.55	21.84
HSUPA Subtest-4	21.80	21.58	21.62	21.93	21.76	22.53
HSUPA Subtest-5	22.47	22.43	22.50	22.82	23.08	22.76
Band	Band 5			-		
Channel	4133	4183	4232	-	-	-
RMC 12.2Kbps	22.67	22.81	22.79	-	-	-
HSDPA Subtest-1	21.77	21.88	21.75	-	-	-
HSDPA Subtest-2	21.80	21.88	21.68	-	-	-
HSDPA Subtest-3	21.30	21.38	21.32	-	-	-
HSDPA Subtest-4	21.28	21.37	21.31	-	-	-
HSUPA Subtest-1	21.33	21.55	21.66	-	-	-
HSUPA Subtest-2	20.33	20.43	20.24	-	-	-
HSUPA Subtest-3	20.58	20.81	20.74	-	-	-
HSUPA Subtest-4	21.09	21.38	20.63	-	-	-
HSUPA Subtest-5	21.63	21.93	21.87	-	-	-

LTE Band 2							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
20 MHz	Channel	18700	18900	19100	18700	18900	19100
	1 (RB_Pos:0)	22.23	22.60	22.75	21.39	21.65	22.01
	1 (RB_Pos:50)	22.42	22.59	22.25	21.56	21.65	21.63
	1 (RB_Pos:99)	22.62	22.66	22.07	21.77	21.73	21.47
	50 (RB_Pos:0)	21.51	21.60	21.86	20.46	20.49	20.82
	50 (RB_Pos:25)	21.50	21.64	21.46	20.41	20.55	20.46
	50 (RB_Pos:50)	21.63	21.68	21.30	20.56	20.57	20.30
	100 (RB_Pos:0)	21.51	21.65	21.51	20.46	20.56	20.54
15 MHz	Channel	18675	18900	19125	18675	18900	19125
	1 (RB_Pos:0)	22.30	22.61	22.92	21.08	21.75	22.24
	1 (RB_Pos:38)	22.43	22.63	22.35	21.26	21.77	21.65
	1 (RB_Pos:74)	22.60	22.72	22.38	21.43	21.83	21.69
	36 (RB_Pos:0)	21.54	21.59	21.50	20.43	20.55	20.50
	36 (RB_Pos:20)	21.55	21.65	21.43	20.43	20.60	20.44
	36 (RB_Pos:39)	21.59	21.71	21.46	20.46	20.66	20.45

	75 (RB_Pos:0)	21.63	21.63	21.41	20.53	20.61	20.44
10 MHz	Channel	18650	18900	19150	18650	18900	19150
	1 (RB_Pos:0)	22.40	22.56	22.28	21.14	21.70	21.37
	1 (RB_Pos:25)	22.53	22.59	22.38	21.29	21.76	21.44
	1 (RB_Pos:49)	22.53	22.72	22.35	21.31	21.83	21.42
	25 (RB_Pos:0)	21.37	21.60	21.43	20.27	20.54	20.54
	25 (RB_Pos:12)	21.51	21.67	21.51	20.46	20.55	20.63
	25 (RB_Pos:25)	21.55	21.69	21.52	20.48	20.62	20.63
	50 (RB_Pos:0)	21.54	21.59	21.47	20.46	20.58	20.53
5 MHz	Channel	18625	18900	19175	18625	18900	19175
	1 (RB_Pos:0)	22.17	22.36	22.49	20.96	21.68	21.57
	1 (RB_Pos:13)	22.21	22.45	22.53	21.02	21.71	21.60
	1 (RB_Pos:24)	22.36	22.47	22.35	21.20	21.71	21.46
	12 (RB_Pos:0)	21.24	21.58	21.55	20.17	20.52	20.61
	12 (RB_Pos:6)	21.32	21.56	21.50	20.18	20.54	20.56
	12 (RB_Pos:13)	21.41	21.63	21.50	20.34	20.59	20.58
	25 (RB_Pos:0)	21.28	21.64	21.50	20.27	20.57	20.47
3 MHz	Channel	18615	18900	19185	18615	18900	19185
	1 (RB_Pos:0)	22.31	22.61	22.48	21.07	21.72	21.56
	1 (RB_Pos:8)	22.27	22.58	22.43	21.03	21.75	21.53
	1 (RB_Pos:14)	22.33	22.66	22.34	21.11	21.81	21.44
	8 (RB_Pos:0)	21.17	21.55	21.53	20.17	20.56	20.56
	8 (RB_Pos:3)	21.17	21.61	21.51	20.16	20.57	20.63
	8 (RB_Pos:7)	21.29	21.62	21.49	20.20	20.60	20.53
	15 (RB_Pos:0)	21.25	21.58	21.52	20.16	20.53	20.50
1.4 MHz	Channel	18607	18900	19193	18607	18900	19193
	1 (RB_Pos:0)	22.19	22.61	22.37	21.26	21.83	21.43
	1 (RB_Pos:3)	22.15	22.60	22.39	21.23	21.78	21.45
	1 (RB_Pos:5)	22.20	22.69	22.28	21.29	21.79	21.39
	3 (RB_Pos:0)	22.25	22.68	22.33	21.16	21.58	21.57
	3 (RB_Pos:1)	22.22	22.61	22.36	21.14	21.56	21.61
	3 (RB_Pos:3)	22.27	22.70	22.29	21.16	21.56	21.52
	6 (RB_Pos:0)	21.22	21.64	21.42	20.21	20.40	20.64

LTE Band 4							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
20 MHz	Channel	20050	20175	20300	20050	20175	20300
	1 (RB_Pos:0)	22.83	22.99	22.72	22.02	22.05	22.04
	1 (RB_Pos:50)	22.89	22.96	22.68	22.07	21.99	21.93
	1 (RB_Pos:99)	22.80	22.96	22.56	21.99	21.99	21.83
	50 (RB_Pos:0)	21.90	22.07	21.91	20.92	21.08	20.85
	50 (RB_Pos:25)	22.04	22.10	21.87	20.96	21.12	20.85
	50 (RB_Pos:50)	21.91	22.04	21.76	20.93	21.01	20.69

	100 (RB_Pos:0)	21.93	22.10	21.92	20.90	21.08	20.86
15 MHz	Channel	20025	20175	20325	20025	20175	20325
	1 (RB_Pos:0)	22.84	23.04	22.92	21.65	22.20	22.36
	1 (RB_Pos:38)	22.96	22.97	22.79	21.77	22.16	22.22
	1 (RB_Pos:74)	22.84	22.98	22.80	21.65	22.19	22.26
	36 (RB_Pos:0)	21.91	22.12	22.02	20.79	21.09	20.99
	36 (RB_Pos:20)	22.01	22.07	21.89	20.91	21.11	20.86
	36 (RB_Pos:39)	21.97	22.04	21.79	20.89	21.02	20.77
	75 (RB_Pos:0)	21.97	22.13	22.01	20.89	21.14	20.93
10 MHz	Channel	20000	20175	20350	20000	20175	20350
	1 (RB_Pos:0)	22.81	23.03	23.00	21.59	22.21	21.87
	1 (RB_Pos:25)	22.86	22.91	22.77	21.61	22.09	21.64
	1 (RB_Pos:49)	22.86	22.91	22.93	21.62	22.14	21.70
	25 (RB_Pos:0)	21.72	22.05	21.98	20.73	21.08	21.06
	25 (RB_Pos:12)	21.73	22.07	21.87	20.72	21.08	20.97
	25 (RB_Pos:25)	21.83	22.02	21.92	20.83	21.00	21.06
	50 (RB_Pos:0)	21.75	22.05	21.96	20.74	21.07	21.01
5 MHz	Channel	19975	20175	20375	19975	20175	20375
	1 (RB_Pos:0)	22.66	22.96	22.91	21.75	21.93	21.64
	1 (RB_Pos:13)	22.60	22.83	23.02	21.72	21.80	21.70
	1 (RB_Pos:24)	22.74	22.93	23.06	21.86	21.83	21.76
	12 (RB_Pos:0)	21.62	22.06	21.98	20.65	20.99	20.95
	12 (RB_Pos:6)	21.61	22.09	22.00	20.62	20.96	20.99
	12 (RB_Pos:13)	21.66	22.01	22.04	20.67	20.92	20.97
	25 (RB_Pos:0)	21.61	22.08	22.02	20.67	21.03	21.08
3 MHz	Channel	19965	20175	20385	19965	20175	20385
	1 (RB_Pos:0)	23.41	23.72	23.57	22.13	22.80	22.44
	1 (RB_Pos:8)	23.33	23.68	23.57	22.07	22.78	22.35
	1 (RB_Pos:14)	23.35	23.75	23.59	22.16	22.81	22.43
	8 (RB_Pos:0)	22.26	22.69	22.56	21.26	21.67	21.54
	8 (RB_Pos:3)	22.29	22.69	22.60	21.27	21.62	21.52
	8 (RB_Pos:7)	22.28	22.68	22.63	21.27	21.69	21.50
	15 (RB_Pos:0)	22.30	22.68	22.63	21.30	21.62	21.55
1.4 MHz	Channel	19957	20175	20393	19957	20175	20393
	1 (RB_Pos:0)	23.18	23.70	23.51	22.31	22.91	22.30
	1 (RB_Pos:3)	23.17	23.70	23.43	22.26	22.81	22.36
	1 (RB_Pos:5)	23.22	23.66	23.54	22.29	22.88	22.41
	3 (RB_Pos:0)	23.18	23.74	23.42	22.17	22.66	22.67
	3 (RB_Pos:1)	23.19	23.67	23.42	22.13	22.58	22.67
	3 (RB_Pos:3)	23.23	23.70	23.43	22.20	22.67	22.69
	6 (RB_Pos:0)	22.23	22.72	22.53	21.28	21.54	21.66

LTE Band 5							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
10 MHz	Channel	20450	20525	20600	20450	20525	20600
	1 (RB_Pos:0)	22.94	22.82	22.98	21.80	22.00	21.92
	1 (RB_Pos:38)	22.87	22.93	22.84	21.76	22.10	21.71
	1 (RB_Pos:74)	22.98	22.80	22.95	21.79	21.94	21.81
	36 (RB_Pos:0)	21.92	21.90	21.96	20.95	20.88	21.06
	36 (RB_Pos:20)	21.94	21.87	21.94	20.88	20.89	21.03
	36 (RB_Pos:39)	21.89	21.91	21.91	20.89	20.98	21.02
	75 (RB_Pos:0)	21.89	21.83	21.97	20.93	20.87	20.98
5 MHz	Channel	20425	20525	20625	20425	20525	20625
	1 (RB_Pos:0)	22.65	22.73	22.77	21.71	22.04	21.80
	1 (RB_Pos:13)	22.86	22.77	22.89	21.68	22.04	21.87
	1 (RB_Pos:24)	22.79	22.78	22.88	21.72	22.05	21.86
	12 (RB_Pos:0)	21.93	21.83	21.88	20.99	20.89	20.85
	12 (RB_Pos:6)	21.97	21.98	21.98	20.95	21.04	20.94
	12 (RB_Pos:13)	21.98	21.93	21.95	20.97	21.00	20.93
	25 (RB_Pos:0)	21.95	21.90	21.86	21.07	20.91	20.89
3 MHz	Channel	20415	20525	20635	20415	20525	20635
	1 (RB_Pos:0)	22.81	22.87	22.95	21.70	22.04	21.81
	1 (RB_Pos:13)	23.16	22.97	22.90	21.78	22.12	21.72
	1 (RB_Pos:24)	22.93	22.99	22.93	21.83	22.14	21.72
	8 (RB_Pos:0)	21.94	21.86	21.96	21.04	20.91	20.93
	8 (RB_Pos:6)	21.96	21.97	21.94	20.99	20.99	20.94
	8 (RB_Pos:13)	21.94	21.94	21.96	21.03	21.03	20.93
	15 (RB_Pos:0)	21.98	21.88	21.99	21.01	20.94	20.97
1.4 MHz	Channel	20407	20525	20643	20407	20525	20643
	1 (RB_Pos:0)	22.89	22.99	22.89	21.94	22.14	21.78
	1 (RB_Pos:3)	22.86	22.92	22.89	22.12	22.12	21.80
	1 (RB_Pos:5)	22.95	22.92	22.94	22.05	22.17	21.85
	3 (RB_Pos:0)	22.93	23.01	22.91	21.97	21.96	22.07
	3 (RB_Pos:1)	22.93	22.96	22.85	21.93	21.89	22.06
	3 (RB_Pos:3)	22.94	22.94	22.90	21.96	21.91	22.13
	6 (RB_Pos:0)	22.01	21.99	22.00	21.07	20.85	21.07

LTE Band 7							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
20 MHz	Channel	20850	21100	21350	20850	21100	21350
	1 (RB_Pos:0)	22.96	22.63	22.64	22.15	21.72	21.87
	1 (RB_Pos:50)	22.73	22.69	22.73	21.89	21.74	21.98
	1 (RB_Pos:99)	22.52	22.61	22.56	21.73	21.64	22.10
	50 (RB_Pos:0)	21.90	21.77	21.81	20.89	20.76	20.77
	50 (RB_Pos:25)	21.73	21.76	21.83	20.83	20.75	20.76
	50 (RB_Pos:50)	21.72	21.68	21.91	20.73	20.63	20.82
	100 (RB_Pos:0)	21.81	21.77	21.86	20.77	20.75	20.79
15 MHz	Channel	20825	21100	21375	20825	21100	21375
	1 (RB_Pos:0)	22.99	22.67	22.76	21.84	21.88	22.14
	1 (RB_Pos:38)	22.83	22.74	22.78	21.65	21.86	22.16
	1 (RB_Pos:74)	22.67	22.57	23.00	21.52	21.70	22.38
	36 (RB_Pos:0)	21.92	21.72	21.83	20.87	20.83	20.71
	36 (RB_Pos:20)	21.83	21.77	21.82	20.84	20.76	20.73
	36 (RB_Pos:39)	21.71	21.69	21.95	20.77	20.71	20.87
	75 (RB_Pos:0)	21.82	21.74	21.82	20.85	20.76	20.76
10 MHz	Channel	20800	21100	21400	20800	21100	21400
	1 (RB_Pos:0)	23.09	22.72	22.67	21.89	21.88	21.51
	1 (RB_Pos:25)	22.95	22.70	22.87	21.68	21.89	21.69
	1 (RB_Pos:49)	22.87	22.61	22.98	21.63	21.77	21.80
	25 (RB_Pos:0)	21.90	21.82	21.84	20.96	20.80	20.84
	25 (RB_Pos:12)	21.91	21.72	21.85	20.88	20.74	20.93
	25 (RB_Pos:25)	21.84	21.73	21.93	20.90	20.68	20.99
	50 (RB_Pos:0)	21.86	21.76	21.90	20.92	20.72	20.82
5 MHz	Channel	20775	21100	21425	20775	21100	21425
	1 (RB_Pos:0)	23.04	22.56	22.97	22.17	21.6	21.63
	1 (RB_Pos:13)	22.90	22.67	23.05	22.06	21.61	21.69
	1 (RB_Pos:24)	22.95	22.65	23.15	22.01	21.59	21.86
	12 (RB_Pos:0)	21.99	21.80	21.96	21.09	20.72	20.84
	12 (RB_Pos:6)	22.01	21.79	22.04	21.01	20.70	20.93
	12 (RB_Pos:13)	21.89	21.72	22.01	21.03	20.64	20.94
	25 (RB_Pos:0)	21.93	21.72	22.00	21.00	20.71	21.02

WLAN 2.4G						
Mode	802.11b			802.11g		
Channel	1	6	11	1	6	11
Peak Power (dBm)	14.50	15.28	15.49	13.32	14.22	14.31
Mode	802.11n(HT-20)			802.11n(HT-40)		
Channel	1	6	11	3	6	9
Peak Power (dBm)	13.35	14.21	14.28	13.41	13.57	13.27

BLUETOOTH						
Mode	GFSK			$\pi/4$ -DQPSK		
Channel	0	39	78	0	39	78
Peak Power (dBm)	5.32	6.67	3.80	6.31	7.66	4.78
Mode	8-DPSK			BLE		
Frequency (MHz)	2402	2441	2480	2402	2440	2480
Peak Power (dBm)	6.79	8.07	5.15	1.76	2.93	0.37

Power Reduction List (When device operating under hotspot mode, that the WCDMA B2/B4, LTE B2/B4 power reduction will applied for SAR compliance)

WCDMA						
Band	Band 2			Band 4		
Channel	9262	9400	9538	1312	1413	1513
RMC 12.2Kbps	19.16	19.37	19.32	19.54	19.85	19.76
HSDPA Subtest-1	18.09	18.25	18.25	18.51	18.81	18.69
HSDPA Subtest-2	18.13	18.34	18.09	18.53	18.83	18.54
HSDPA Subtest-3	17.63	17.73	17.72	18.06	18.34	18.17
HSDPA Subtest-4	17.61	17.74	17.73	18.05	18.32	18.17
HSUPA Subtest-1	17.92	18.13	17.93	18.69	18.53	18.11
HSUPA Subtest-2	16.69	16.85	16.86	17.55	17.23	17.10
HSUPA Subtest-3	16.71	16.96	16.96	17.96	17.76	17.29
HSUPA Subtest-4	17.69	17.03	17.71	18.29	18.31	17.90
HSUPA Subtest-5	18.06	18.18	18.08	18.47	18.85	18.56

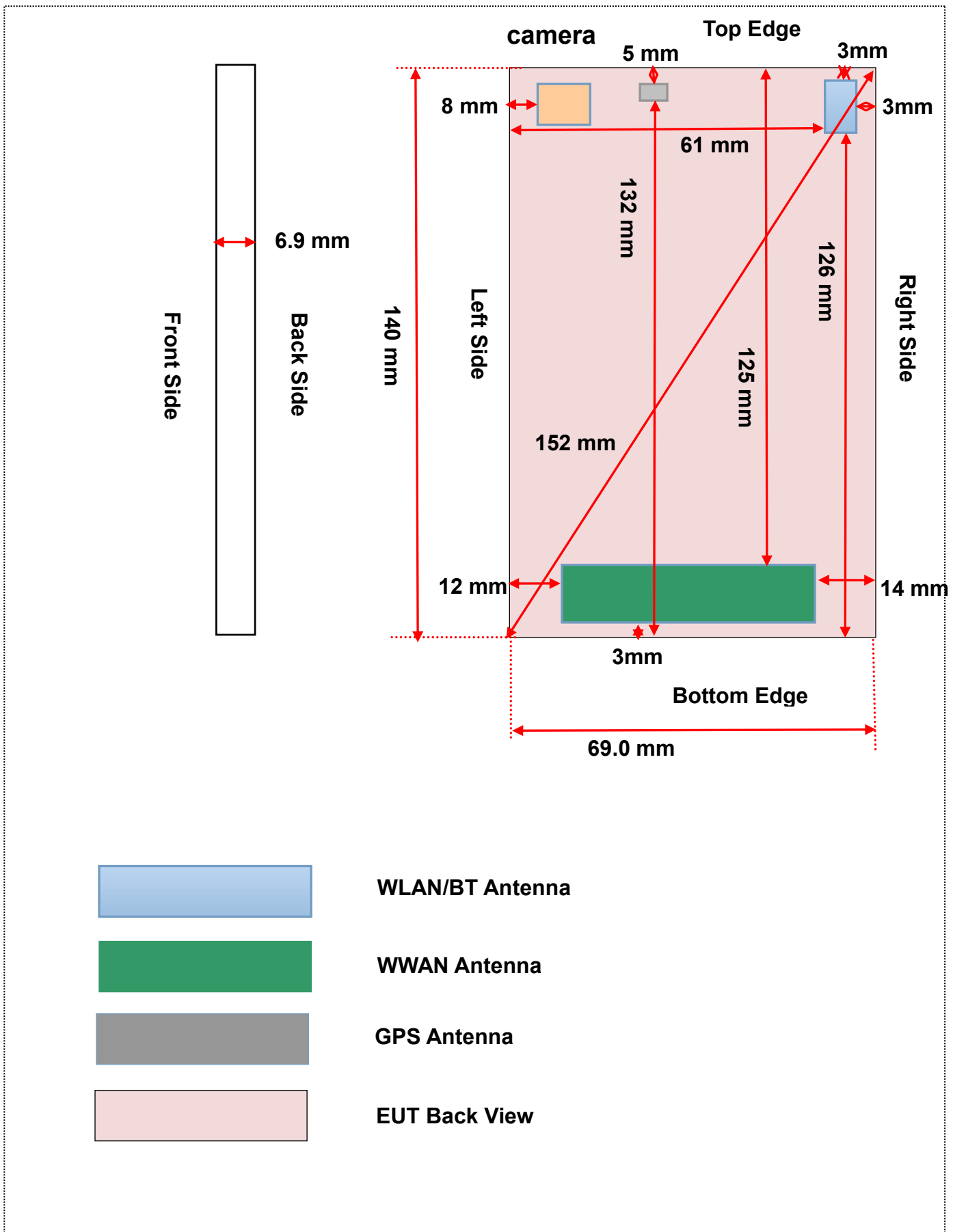
FDD LTE Band 2							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
Channel		18700	18900	19100	18700	18900	19100
20MHz	1 (RB_Pos:0)	19.37	19.37	19.43	19.52	19.38	19.67
	1 (RB_Pos:50)	19.46	19.37	19.41	19.64	19.36	19.71
	1 (RB_Pos:99)	19.33	19.47	19.36	19.54	19.46	19.67
	50 (RB_Pos:0)	19.43	19.32	19.67	19.59	19.32	19.61
	50 (RB_Pos:25)	19.51	19.32	19.60	19.56	19.34	19.62
	50 (RB_Pos:50)	19.50	19.42	19.51	19.53	19.42	19.54
	100 (RB_Pos:0)	19.50	19.37	19.55	19.56	19.35	19.57
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
Channel		18675	18900	19125	18675	18900	19125
15MHz	1 (RB_Pos:0)	19.51	19.27	19.66	19.27	19.49	20.06
	1 (RB_Pos:38)	19.52	19.34	19.55	19.32	19.54	19.96
	1 (RB_Pos:74)	19.52	19.32	19.49	19.30	19.52	19.96
	36 (RB_Pos:0)	19.52	19.32	19.71	19.50	19.33	19.64
	36 (RB_Pos:20)	19.56	19.34	19.60	19.49	19.39	19.53
	36 (RB_Pos:39)	19.59	19.41	19.55	19.54	19.41	19.50
	75 (RB_Pos:0)	19.59	19.40	19.61	19.58	19.42	19.59
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
Channel		18650	18900	19150	18650	18900	19150
10MHz	1 (RB_Pos:0)	19.52	19.31	19.62	19.26	19.44	19.40
	1 (RB_Pos:25)	19.38	19.39	19.50	19.20	19.50	19.38
	1 (RB_Pos:49)	19.61	19.35	19.49	19.32	19.49	19.32
	25 (RB_Pos:0)	19.47	19.33	19.53	19.48	19.34	19.66
	25 (RB_Pos:12)	19.40	19.36	19.53	19.32	19.36	19.67

	25 (RB_Pos:25)	19.47	19.36	19.49	19.48	19.38	19.64
	50 (RB_Pos:0)	19.52	19.32	19.55	19.54	19.34	19.59
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	18625	18900	19175	18625	18900	19175
5MHz	1 (RB_Pos:0)	19.27	19.18	19.50	19.12	19.40	19.43
	1 (RB_Pos:13)	19.34	19.21	19.49	19.12	19.44	19.43
	1 (RB_Pos:24)	19.20	19.25	19.48	19.09	19.46	19.44
	12 (RB_Pos:0)	19.40	19.31	19.58	19.38	19.39	19.49
	12 (RB_Pos:6)	19.46	19.34	19.58	19.39	19.38	19.51
	12 (RB_Pos:13)	19.44	19.37	19.52	19.42	19.38	19.47
	25 (RB_Pos:0)	19.45	19.36	19.57	19.49	19.43	19.52
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
		18615	18900	19185	18615	18900	19185
3.0MHz	1 (RB_Pos:0)	19.41	19.36	19.61	19.14	19.50	19.40
	1 (RB_Pos:13)	19.41	19.37	19.57	19.13	19.53	19.40
	1 (RB_Pos:24)	19.39	19.43	19.58	19.20	19.60	19.41
	8 (RB_Pos:0)	19.32	19.33	19.58	19.41	19.38	19.56
	8 (RB_Pos:6)	19.38	19.31	19.54	19.39	19.35	19.54
	8 (RB_Pos:13)	19.37	19.36	19.62	19.38	19.40	19.56
	15 (RB_Pos:0)	19.38	19.39	19.63	19.39	19.37	19.59
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	18607	18900	19193	18607	18900	19193
1.4MHz	1 (RB_Pos:0)	19.35	19.35	19.60	19.44	19.60	19.42
	1 (RB_Pos:3)	19.25	19.34	19.56	19.35	19.56	19.43
	1 (RB_Pos:5)	19.35	19.37	19.58	19.44	19.58	19.49
	3 (RB_Pos:0)	19.39	19.39	19.53	19.34	19.35	19.76
	3 (RB_Pos:1)	19.40	19.39	19.53	19.30	19.31	19.72
	3 (RB_Pos:3)	19.43	19.38	19.59	19.31	19.30	19.72
	6 (RB_Pos:0)	19.39	19.37	19.64	19.44	19.21	19.69

FDD LTE Band 4							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20050	20175	20300	20050	20175	20300
20MHz	1 (RB_Pos:0)	18.90	18.97	18.97	19.01	19.22	19.18
	1 (RB_Pos:50)	18.94	18.94	18.71	18.97	19.15	18.91
	1 (RB_Pos:99)	18.94	18.84	18.60	18.96	19.12	18.86
	50 (RB_Pos:0)	18.98	19.03	18.92	18.98	19.04	18.96
	50 (RB_Pos:25)	19.06	19.05	18.89	19.02	19.07	18.92
	50 (RB_Pos:50)	19.04	19.07	18.87	19.09	19.03	18.90
	100 (RB_Pos:0)	18.98	19.09	18.87	19.01	19.11	18.90
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20025	20175	20325	20025	20175	20325
15MHz	1 (RB_Pos:0)	18.95	19.09	18.96	18.71	19.28	19.31
	1 (RB_Pos:38)	18.91	19.05	18.96	18.70	19.21	19.28
	1 (RB_Pos:74)	18.93	19.06	18.88	18.70	19.21	19.19
	36 (RB_Pos:0)	18.94	19.05	18.98	18.85	19.11	18.98
	36 (RB_Pos:20)	18.92	19.04	19.01	18.94	19.11	18.90
	36 (RB_Pos:39)	18.93	19.06	18.99	18.99	19.14	18.98
	75 (RB_Pos:0)	18.95	19.12	18.99	18.99	19.16	19.01
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20000	20175	20350	20000	20175	20650
10MHz	1 (RB_Pos:0)	18.90	19.14	19.08	18.63	19.26	18.87
	1 (RB_Pos:25)	18.84	19.08	18.99	18.63	19.24	18.76
	1 (RB_Pos:49)	18.84	19.18	18.94	18.64	19.35	18.73
	25 (RB_Pos:0)	18.83	19.02	19.01	18.75	19.07	19.14
	25 (RB_Pos:12)	18.92	19.07	19.07	18.85	19.06	19.16
	25 (RB_Pos:25)	18.86	19.06	19.06	18.84	19.09	19.16
	50 (RB_Pos:0)	18.86	19.04	19.04	18.88	19.08	19.10
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	19975	20175	20375	19975	20175	20375
5MHz	1 (RB_Pos:0)	18.84	18.89	19.05	18.46	19.11	18.91
	1 (RB_Pos:13)	18.77	18.86	18.99	18.40	19.14	18.93
	1 (RB_Pos:24)	18.77	18.91	18.96	18.49	19.16	18.89
	12 (RB_Pos:0)	18.72	19.03	19.09	18.72	19.10	19.04
	12 (RB_Pos:6)	18.77	19.06	19.09	18.70	19.05	19.06
	12 (RB_Pos:13)	18.76	19.06	19.02	18.73	19.06	18.95
	25 (RB_Pos:0)	18.78	19.06	19.09	18.83	19.14	19.07
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	19965	20175	20385	19965	20175	20385
3.0MHz	1 (RB_Pos:0)	18.79	19.05	19.11	18.57	19.17	18.87

	1 (RB_Pos:13)	18.77	19.08	18.97	18.42	19.22	18.78
	1 (RB_Pos:24)	18.77	19.11	19.03	18.47	19.18	18.77
	8 (RB_Pos:0)	18.63	19.05	19.05	18.68	19.08	19.05
	8 (RB_Pos:6)	18.75	19.00	18.99	18.75	19.08	18.93
	8 (RB_Pos:13)	18.68	19.02	19.02	18.79	19.08	18.94
	15 (RB_Pos:0)	18.78	19.04	18.97	18.80	19.11	18.96
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	19957	20175	20393	19957	20175	20393
1.4MHz	1 (RB_Pos:0)	18.73	19.05	19.00	18.80	19.25	18.78
	1 (RB_Pos:3)	18.59	19.09	18.99	18.72	19.14	18.81
	1 (RB_Pos:5)	18.67	19.06	19.01	18.81	19.19	18.90
	3 (RB_Pos:0)	18.65	19.07	19.00	18.58	19.01	19.15
	3 (RB_Pos:1)	18.71	19.10	19.01	18.67	18.97	19.10
	3 (RB_Pos:3)	18.75	19.10	18.97	18.69	18.98	19.13
	6 (RB_Pos:0)	18.79	19.10	19.02	18.80	18.94	19.11

9 EUT ANTENNA LOCATION SKETCH



9.1 SAR Test Exclusion Consider Table

According with FCC KDB 447498 D01v05r02, 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	<5 mm	12 mm	14 mm	125 mm	3 mm
	Voice	33.71	2349.63	Yes	Yes	Yes	Yes	No	Yes
	Data	31.73	1489.36	No	Yes	Yes	Yes	No	Yes
GSM 1900	Distance to User			<5mm	<5 mm	12 mm	14 mm	125 mm	3 mm
	Voice	31.14	1300.17	Yes	Yes	Yes	Yes	No	Yes
	Data	27.30	537.03	No	Yes	Yes	Yes	No	Yes
WCDMA Band 2	Distance to User			<5mm	<5 mm	12 mm	14 mm	125 mm	3 mm
	RMC	23.55	226.46	Yes	Yes	Yes	Yes	No	Yes
WCDMA Band 4	Distance to User			<5mm	<5 mm	12 mm	14 mm	125 mm	3 mm
	RMC	24.04	253.51	Yes	Yes	Yes	Yes	No	Yes
WCDMA Band 5	Distance to User			<5mm	<5 mm	12 mm	14 mm	125 mm	3 mm
	RMC	22.81	190.99	Yes	Yes	Yes	Yes	No	Yes
LTE Band 2	Distance to User			<5mm	<5 mm	12 mm	14 mm	125 mm	3 mm
	QPSK	22.75	188.36	Yes	Yes	Yes	Yes	No	Yes
LTE Band 4	Distance to User			<5mm	<5 mm	12 mm	14 mm	125 mm	3 mm
	QPSK	22.99	199.07	Yes	Yes	Yes	Yes	No	Yes
LTE Band 5	Distance to User			<5mm	<5 mm	12 mm	14 mm	125 mm	3 mm
	QPSK	22.98	198.61	Yes	Yes	Yes	Yes	No	Yes
LTE Band 7	Distance to User			<5mm	<5 mm	12 mm	14 mm	125 mm	3 mm
	QPSK	22.96	197.70	Yes	Yes	Yes	Yes	No	Yes
WLAN 2.4 G	Distance to User			<5mm	<5mm	61mm	3mm	3mm	126 mm
	802.11b	15.49	35.40	Yes	Yes	No	Yes	Yes	No
	802.11g	14.31	26.98	No	No	No	No	No	No
	802.11n(HT20)	14.28	26.79	No	No	No	No	No	No
	802.11n(HT40)	13.57	22.75	No	No	No	No	No	No
Bluetooth	Distance to User			<5mm	<5mm	61mm	3mm	3mm	126 mm
	Bluetooth	8.07	6.41	No	No	No	No	No	No
	BLE	2.93	1.96	No	No	No	No	No	No

Note:

- Maximum power is the source-based time-average power and represents the maximum RF output power among production units
- Per KDB 447498 D01v05r02, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
- Per KDB 447498 D01v05r02, 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
- Per KDB 447498 D01v05r02, 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:

$$\left[\frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} \cdot \sqrt{f(\text{GHz})} \right] \leq 3.0$$
 for 1-g

SAR and ≤ 7.5 for 10-g extremity SAR

- a. f (GHz) is the RF channel transmit frequency in GHz
- b. Power and distance are rounded to the nearest mW and mm before calculation
- c. The result is rounded to one decimal place for comparison
- d. For < 50 mm distance, we just calculate mW of the exclusion threshold value (3.0) to do compare.

This formula is $[3.0] / [\sqrt{f(\text{GHz})}] \cdot [(\text{min. test separation distance, mm})] = \text{exclusion threshold of mW}$.

5. Per KDB 447498 D01v05r02, 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. $[\text{Threshold at 50 mm in step 1}] + (\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)$ mW, at 100 MHz to 1500 MHz
 - b. $[\text{Threshold at 50 mm in step 1}] + (\text{test separation distance} - 50 \text{ mm}) \cdot 10$ mW at > 1500 MHz and ≤ 6 GHz
6. Per KDB 941225 D01v03, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA/HSUPA/DC-HSDPA output power is < 0.25 dB higher than RMC12.2Kbps, or reported SAR with RMC 12.2kbps setting is ≤ 1.2 W/kg, HSDPA/HSUPA/DC-HSDPA SAR evaluation can be excluded.
7. Per KDB 248227 D01 v02, choose the highest output power channel to test SAR and determine further SAR exclusion.8. For each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of these configurations is less than 1/4dB higher than those measured at the lowest data rate
8. Apply the test exclusion rule in KDB 248227 D01 v02 11g, 11n-HT20 and HT40 output power is less than 1/4dB higher than 11b mode, thus the SAR can be excluded.

9.2 10g Extremity Exposure Consider

According with FCC KDB 648474 D04 v01r02, 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 1.09 W/Kg, which is less than 1.2W/Kg, 10-g extremity SAR is not required.

10 TEST RESULT

10.1 Head SAR (1 g Value)

Band	Mode	Position	Ch.	Freq. (MHz)	Power Drift	Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power(dBm)	Scaling Factor	Scaled SAR(W/Kg)	Meas. No.
GSM 850	Voice	Left Cheek	251	848.8	0.31	0.266	33.71	33.80	1.021	0.272	1#
		Left Tilt	251	848.8	0.06	0.125	33.71	33.80	1.021	0.128	/
		Right Cheek	251	848.8	0.18	0.187	33.71	33.80	1.021	0.191	/
		Right Tilt	251	848.8	-0.00	0.113	33.71	33.80	1.021	0.115	/
GSM 1900	Voice	Left Cheek	810	1909.8	0.23	0.119	31.14	31.20	1.014	0.121	/
		Left Tilt	810	1909.8	0.18	0.054	31.14	31.20	1.014	0.055	/
		Right Cheek	810	1909.8	0.06	0.148	31.14	31.20	1.014	0.150	2#
		Right Tilt	810	1909.8	-0.10	0.076	31.14	31.20	1.014	0.077	/
WCDMA Band 2	RMC	Left Cheek	9537	1907.4	-0.08	0.275	23.55	23.60	1.012	0.278	/
		Left Tilt	9537	1907.4	0.06	0.116	23.55	23.60	1.012	0.117	/
		Right Cheek	9537	1907.4	-0.08	0.291	23.55	23.60	1.012	0.294	3#
		Right Tilt	9537	1907.4	0.04	0.124	23.55	23.60	1.012	0.125	/
WCDMA Band 4	RMC	Left Cheek	1413	1732.6	0.03	0.207	24.04	24.10	1.014	0.210	/
		Left Tilt	1413	1732.6	0.06	0.096	24.04	24.10	1.014	0.097	/
		Right Cheek	1413	1732.6	0.04	0.281	24.04	24.10	1.014	0.285	4#
		Right Tilt	1413	1732.6	0.12	0.127	24.04	24.10	1.014	0.129	/
WCDMA Band 5	RMC	Left Cheek	4183	836.4	0.19	0.217	22.81	22.90	1.021	0.222	5#
		Left Tilt	4183	836.4	0.17	0.095	22.81	22.90	1.021	0.097	/
		Right Cheek	4183	836.4	0.08	0.165	22.81	22.90	1.021	0.168	/
		Right Tilt	4183	836.4	-0.00	0.073	22.81	22.90	1.021	0.075	/
LTE Band 2 20MHz 1 RB Pos: 0	QPSK	Left Cheek	19100	1900.0	0.04	0.160	22.75	22.80	1.012	0.162	/
		Left Tilt	19100	1900.0	0.06	0.079	22.75	22.80	1.012	0.080	/
		Right Cheek	19100	1900.0	0.66	0.183	22.75	22.80	1.012	0.185	6#
		Right Tilt	19100	1900.0	0.15	0.097	22.75	22.80	1.012	0.098	/
LTE Band 2 20MHz 50%RB Pos: 0	QPSK	Left Cheek	19100	1900.0	0.19	0.135	21.86	21.90	1.009	0.136	/
		Left Tilt	19100	1900.0	0.09	0.063	21.86	21.90	1.009	0.064	/
		Right Cheek	19100	1900.0	0.31	0.147	21.86	21.90	1.009	0.148	/
		Right Tilt	19100	1900.0	0.12	0.075	21.86	21.90	1.009	0.076	/
LTE Band 4 20MHz 1 RB Pos: 99	QPSK	Left Cheek	20175	1732.5	0.43	0.207	22.99	23.10	1.026	0.212	/
		Left Tilt	20175	1732.5	0.11	0.075	22.99	23.10	1.026	0.077	/
		Right Cheek	20175	1732.5	-0.14	0.229	22.99	23.10	1.026	0.235	7#
		Right Tilt	20175	1732.5	0.15	0.095	22.99	23.10	1.026	0.097	/
LTE Band 4 20MHz 50% RB Pos: 25	QPSK	Left Cheek	20175	1732.5	0.20	0.168	22.10	22.20	1.023	0.172	/
		Left Tilt	20175	1732.5	-0.00	0.061	22.10	22.20	1.023	0.062	/
		Right Cheek	20175	1732.5	0.19	0.181	22.10	22.20	1.023	0.185	/
		Right Tilt	20175	1732.5	0.15	0.074	22.10	22.20	1.023	0.076	/
LTE Band 5	QPSK	Left Cheek	20600	844.0	0.43	0.194	22.98	23.10	1.028	0.199	8#
		Left Tilt	20600	844.0	0.17	0.072	22.98	23.10	1.028	0.074	/

10MHz 1 RB Pos: 0		Right Cheek	20600	844.0	0.18	0.133	22.98	23.10	1.028	0.137	/
		Right Tilt	20600	844.0	0.12	0.049	22.98	23.10	1.028	0.050	/
LTE Band 5 10MHz 50%RB Pos: 0	QPSK	Left Cheek	20600	844.0	0.16	0.013	21.96	22.00	1.009	0.013	/
		Left Tilt	20600	844.0	0.14	0.052	21.96	22.00	1.009	0.052	/
		Right Cheek	20600	844.0	-0.01	0.096	21.96	22.00	1.009	0.097	/
		Right Tilt	20600	844.0	0.05	0.031	21.96	22.00	1.009	0.031	/
LTE Band 7 10MHz 1 RB Pos: 0	QPSK	Left Cheek	20850	2510.0	0.12	0.222	22.96	23.00	1.009	0.224	/
		Left Tilt	20850	2510.0	0.13	0.118	22.96	23.00	1.009	0.119	/
		Right Cheek	20850	2510.0	-0.19	0.228	22.96	23.00	1.009	0.230	9#
		Right Tilt	20850	2510.0	0.14	0.125	22.96	23.00	1.009	0.126	/
LTE Band 7 20MHz 50%RB Pos: 0	QPSK	Left Cheek	21350	2560.0	0.05	0.173	21.91	22.00	1.021	0.177	/
		Left Tilt	21350	2560.0	-0.04	0.094	21.91	22.00	1.021	0.096	/
		Right Cheek	21350	2560.0	0.01	0.178	21.91	22.00	1.021	0.182	/
		Right Tilt	21350	2560.0	0.03	0.098	21.91	22.00	1.021	0.100	/
WLAN 802.11 b	Data	Left Cheek	11	2462.0	-0.01	1.080	15.49	15.60	1.026	1.108	10#
		Left Tilt	11	2462.0	-0.01	0.884	15.49	15.60	1.026	0.907	11#
		Right Cheek	11	2462.0	0.04	0.597	15.49	15.60	1.026	0.612	/
		Right Tilt	11	2462.0	-0.09	0.493	15.49	15.60	1.026	0.506	/
Additional Channels											
WLAN 802.11 b	Data	Left cheek	1	2412.0	-0.07	0.841	14.50	15.60	1.288	1.083	12#
			6	2437.0	-0.01	1.020	15.28	15.60	1.076	1.098	13#
		Left Tilt	1	2412.0	-0.09	0.728	14.50	15.60	1.288	0.938	14#
			11	2437.0	-0.01	0.796	15.328	15.60	1.065	0.847	15#

10.2 Body-worn Mode SAR (15 mm Separation)

Band	Mode	Position	Ch.	Freq. (MHz)	Power Drift	Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power(dBm)	Scaling Factor	Scaled SAR(W/Kg)	Meas. No.
GSM 850	Voice (Body-worn)	Front Side	251	848.8	-0.10	0.338	33.71	33.80	1.021	0.345	/
		Back Side	251	848.8	0.00	0.345	33.71	33.80	1.021	0.352	16#
	GPRS Data (Body-worn)	Front Side	251	848.8	0.03	0.198	28.53	28.60	1.016	0.201	/
		Back Side	251	848.8	0.05	0.273	28.53	28.60	1.016	0.277	17#
	EDGE Data (Body-worn)	Front Side	251	848.8	0.02	0.106	25.88	25.90	1.005	0.106	/
		Back Side	251	848.8	0.04	0.138	25.88	25.90	1.005	0.139	18#
GSM 1900	Voice (Body-worn)	Front Side	810	1909.8	0.00	0.319	31.14	31.20	1.014	0.323	/
		Back Side	810	1909.8	-0.00	0.347	31.14	31.20	1.014	0.352	19#
	GPRS Data (4 slots)	Front Side	512	1850.2	0.06	0.301	25.70	25.80	1.023	0.308	/
		Back Side	512	1850.2	-0.08	0.404	25.70	25.80	1.023	0.413	20#
	GPRS Data (3 slots)	Front Side	810	1909.8	0.12	0.312	27.30	27.40	1.023	0.319	/
		Back Side	810	1909.8	0.01	0.408	27.30	27.40	1.023	0.418	46#
EDGE Data (Body-worn)	Front Side	810	1909.8	-0.18	0.148	24.93	25.00	1.016	0.150	/	
	Back Side	810	1909.8	-0.19	0.224	24.93	25.00	1.016	0.228	21#	
WCDMA Band 2	RMC (Body-Worn)	Front Side	9537	1907.4	-0.06	0.543	23.55	23.60	1.012	0.549	22#
		Back Side	9537	1907.4	0.03	0.527	23.55	23.60	1.012	0.533	/
WCDMA Band 4	RMC (Body-Worn)	Front Side	1413	1732.6	-0.05	0.479	24.04	24.10	1.014	0.486	/
		Back Side	1413	1732.6	0.02	0.485	24.04	24.10	1.014	0.492	23#
WCDMA Band 5	RMC (Body-Worn)	Front Side	4183	836.4	-0.07	0.293	22.81	22.90	1.021	0.299	/
		Back Side	4183	836.4	-0.00	0.301	22.81	22.90	1.021	0.307	24#
LTE Band 2 20MHz 1 RB Pos: 0	QPSK (Body-Worn)	Front Side	19100	1900.0	0.01	0.499	22.75	22.80	1.012	0.505	/
		Back Side	19100	1900.0	-0.05	0.503	22.75	22.80	1.012	0.509	25#
LTE Band2 20MHz 50% RB Pos: 0	QPSK (Body-Worn)	Front Side	19100	1900.0	-0.04	0.408	21.86	21.90	1.009	0.412	/
		Back Side	19100	1900.0	-0.03	0.402	21.86	21.90	1.009	0.406	/
LTE Band 4 20MHz 1 RB Pos: 99	QPSK (Body-Worn)	Front Side	20175	1732.5	-0.04	0.358	22.99	23.10	1.026	0.366	26#
		Back Side	20175	1732.5	0.04	0.201	22.99	23.10	1.026	0.206	/
LTE Band 4 20MHz 50% RB Pos: 0	QPSK (Body-Worn)	Front Side	20175	1732.5	0.05	0.159	22.10	22.20	1.023	0.163	/
		Back Side	20175	1732.5	0.02	0.204	22.10	22.20	1.023	0.206	/
LTE Band 5 20MHz 1 RB Pos: 49	QPSK (Body-Worn)	Front Side	20600	844.0	0.10	0.224	22.98	23.10	1.028	0.230	/
		Back Side	20600	844.0	-0.05	0.246	22.98	23.10	1.028	0.253	27#
LTE Band 5 20MHz 50% RB Pos:0	QPSK (Body-Worn)	Front Side	20600	844.0	-0.01	0.187	21.96	22.00	1.009	0.189	/
		Back Side	20600	844.0	0.03	0.201	21.96	22.00	1.009	0.203	/
LTE Band 7 10MHz 1 RB Pos: 0	QPSK (Body-Worn)	Front Side	21350	2560.0	-0.05	0.418	22.96	23.00	1.009	0.422	/
		Back Side	21350	2560.0	-0.06	0.449	22.96	23.00	1.009	0.453	28#
LTE Band 7 10MHz 50% RB Pos:50	QPSK (Body-Worn)	Front Side	20850	2510.0	-0.07	0.328	21.91	22.00	1.021	0.335	/
		Back Side	20850	2510.0	0.08	0.334	21.91	22.00	1.021	0.341	/
802.11b	Data (Body-Worn)	Front Side	11	2462.0	0.12	0.116	15.49	15.60	1.026	0.119	/
		Back Side	11	2462.0	0.14	0.127	15.49	15.60	1.026	0.130	29#

10.3 Hotspot Mode SAR (10 mm Separation)

Band	Mode	Position	Ch.	Freq. (MHz)	Power Drift	Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power(dBm)	Scaling Factor	Scaled SAR(W/Kg)	Meas. No.
GSM 850	GPRS Data (Hotspot)	Front Side	251	848.8	0.04	0.546	28.53	28.60	1.016	0.555	/
		Back Side	251	848.8	0.05	0.575	28.53	28.60	1.016	0.584	30#
		Left Edge	251	848.8	0.02	0.098	28.53	28.60	1.016	0.100	/
		Right Edge	251	848.8	0.10	0.337	28.53	28.60	1.016	0.342	/
		Bottom Edge	251	848.8	-0.05	0.428	28.53	28.60	1.016	0.435	/
	EDGE Data (Hotspot)	Front Side	251	848.8	-0.01	0.169	25.88	25.90	1.005	0.170	/
		Back Side	251	848.8	0.03	0.187	25.88	25.90	1.005	0.188	31#
		Left Edge	251	848.8	0.04	0.125	25.88	25.90	1.005	0.126	/
		Right Edge	251	848.8	0.05	0.051	25.88	25.90	1.005	0.051	/
		Bottom Edge	251	848.8	0.02	0.139	25.88	25.90	1.005	0.140	/
GSM 1900	GPRS Data (4 slots)	Front Side	512	1850.2	0.10	0.618	25.70	25.80	1.023	0.632	/
		Back Side	512	1850.2	-0.05	0.609	25.70	25.80	1.023	0.623	/
		Left Edge	512	1850.2	-0.01	0.169	25.70	25.80	1.023	0.173	/
		Right Edge	512	1850.2	0.08	0.132	25.70	25.80	1.023	0.135	/
		Bottom Edge	512	1850.2	0.01	1.085	25.70	25.80	1.023	1.110	32#
	GPRS Data (3 slots)	Front Side	810	1909.8	-0.06	0.620	27.30	27.40	1.023	0.620	/
		Back Side	810	1909.8	0.13	0.615	27.30	27.40	1.023	0.615	/
		Left Edge	810	1909.8	0.09	0.167	27.30	27.40	1.023	0.167	/
		Right Edge	810	1909.8	-0.06	0.135	27.30	27.40	1.023	0.135	/
		Bottom Edge	810	1909.8	0.07	1.083	27.30	27.40	1.023	1.108	47#
	EDGE Data (Hotspot)	Front Side	512	1850.2	-0.05	0.348	24.93	25.00	1.016	0.354	/
		Back Side	512	1850.2	0.00	0.359	24.93	25.00	1.016	0.365	/
		Left Edge	512	1850.2	-0.03	0.112	24.93	25.00	1.016	0.114	/
		Right Edge	512	1850.2	-0.01	0.105	24.93	25.00	1.016	0.107	/
		Bottom Edge	512	1850.2	-0.02	0.501	24.93	25.00	1.016	0.509	33#
WCDMA Band 2	RMC (Hotspot)	Front Side	9400	1880.0	-0.06	0.408	19.37	19.40	1.007	0.411	/
		Back Side	9400	1880.0	0.02	0.405	19.37	19.40	1.007	0.408	/
		Left Edge	9400	1880.0	0.10	0.132	19.37	19.40	1.007	0.133	/
		Right Edge	9400	1880.0	-0.05	0.079	19.37	19.40	1.007	0.080	/
		Bottom Edge	9400	1880.0	-0.10	0.743	19.37	19.40	1.007	0.748	34#
WCDMA Band 4	RMC (Hotspot)	Front Side	1413	1732.6	0.03	0.321	19.85	19.90	1.012	0.325	/
		Back Side	1413	1732.6	0.01	0.332	19.85	19.90	1.012	0.336	/
		Left Edge	1413	1732.6	-0.05	0.075	19.85	19.90	1.012	0.076	/
		Right Edge	1413	1732.6	0.00	0.079	19.85	19.90	1.012	0.080	/
		Bottom Edge	1413	1732.6	0.20	0.609	19.85	19.90	1.012	0.616	35#
WCDMA Band 5	RMC (Hotspot)	Front Side	4183	836.4	-0.01	0.477	22.81	22.90	1.285	0.487	/
		Back Side	4183	836.4	-0.12	0.510	22.81	22.90	1.012	0.521	36#
		Left Edge	4183	836.4	0.01	0.268	22.81	22.90	1.012	0.274	/
		Right Edge	4183	836.4	-0.06	0.105	22.81	22.90	1.012	0.107	/
		Bottom Edge	4183	836.4	-0.07	0.289	22.81	22.90	1.012	0.295	/
LTE Band 2 20MHz	QPSK	Front Side	18900	1880.0	0.08	0.391	19.47	19.80	1.079	0.422	/

Band	Mode	Position	Ch.	Freq. (MHz)	Power Drift	Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power(dBm)	Scaling Factor	Scaled SAR(W/Kg)	Meas. No.
1 RB Pos:99	(Hotspot)	Back Side	18900	1880.0	0.01	0.358	19.47	19.80	1.079	0.386	/
		Left Edge	18900	1880.0	-0.05	0.124	19.47	19.80	1.079	0.134	/
		Right Edge	18900	1880.0	0.00	0.079	19.47	19.80	1.079	0.085	/
		Bottom Edge	18900	1880.0	-0.01	0.770	19.47	19.80	1.079	0.831	37#
LTE Band 2 20MHz 50% RB Pos: 0	QPSK (Hotspot)	Front Side	18900	1880.0	0.00	0.381	19.67	19.70	1.007	0.384	/
		Back Side	18900	1880.0	-0.01	0.337	19.67	19.70	1.007	0.339	/
		Left Edge	18900	1880.0	0.03	0.108	19.67	19.70	1.007	0.109	/
		Right Edge	18900	1880.0	0.02	0.071	19.67	19.70	1.007	0.071	/
		Bottom Edge	18900	1880.0	0.10	0.743	19.67	19.70	1.007	0.748	/
LTE Band 4 20MHz 1 RB Pos: 0	QPSK (Hotspot)	Front Side	20300	1745.0	-0.05	0.325	18.97	19.30	1.079	0.351	/
		Back Side	20300	1745.0	-0.01	0.345	18.97	19.30	1.079	0.372	/
		Left Edge	20300	1745.0	0.03	0.049	18.97	19.30	1.079	0.053	/
		Right Edge	20300	1745.0	-0.01	0.051	18.97	19.30	1.079	0.055	/
		Bottom Edge	20300	1745.0	0.02	0.570	18.97	19.30	1.079	0.615	38#
LTE Band 4 20MHz 50% RB Pos: 50	QPSK (Hotspot)	Front Side	20175	1732.5	0.10	0.317	19.07	19.20	1.030	0.327	/
		Back Side	20175	1732.5	-0.05	0.319	19.07	19.20	1.030	0.329	/
		Left Edge	20175	1732.5	-0.01	0.044	19.07	19.20	1.030	0.045	/
		Right Edge	20175	1732.5	0.03	0.048	19.07	19.20	1.030	0.049	/
		Bottom Edge	20175	1732.5	0.02	0.552	19.07	19.20	1.030	0.569	/
LTE Band 5 10MHz 1 RB Pos: 0	QPSK (Hotspot)	Front Side	20450	829.0	0.10	0.342	22.98	23.10	1.028	0.352	/
		Back Side	20450	829.0	-0.05	0.363	22.98	23.10	1.028	0.373	/
		Left Edge	20450	829.0	-0.01	0.185	22.98	23.10	1.028	0.190	/
		Right Edge	20450	829.0	0.03	0.095	22.98	23.10	1.028	0.098	/
		Bottom Edge	20450	829.0	0.02	0.215	22.98	23.10	1.028	0.221	/
LTE Band 5 10MHz 50% RB Pos: 0	QPSK (Hotspot)	Front Side	20600	844.0	0.10	0.342	21.96	22.00	1.009	0.345	/
		Back Side	20600	844.0	-0.05	0.367	21.96	22.00	1.009	0.370	/
		Left Edge	20600	844.0	-0.01	0.075	21.96	22.00	1.009	0.076	/
		Right Edge	20600	844.0	0.03	0.189	21.96	22.00	1.009	0.191	/
		Bottom Edge	20600	844.0	0.03	0.692	21.96	22.00	1.009	0.698	39#
LTE Band 7 20MHz 1 RB Pos: 0	QPSK (Hotspot)	Front Side	20850	2510.0	-0.18	0.359	22.96	23.00	1.009	0.362	/
		Back Side	20850	2510.0	0.16	0.387	22.96	23.00	1.009	0.391	/
		Left Edge	20850	2510.0	-0.02	0.087	22.96	23.00	1.009	0.088	/
		Right Edge	20850	2510.0	0.02	0.204	22.96	23.00	1.009	0.206	/
		Bottom Edge	20850	2510.0	-0.07	0.805	22.96	23.00	1.009	0.812	40#
LTE Band 7 20MHz 50% RB Pos: 50	QPSK (Hotspot)	Front Side	20850	2510.0	0.05	0.342	21.91	22.00	1.021	0.349	/
		Back Side	20850	2510.0	0.01	0.367	21.91	22.00	1.021	0.375	/
		Left Edge	20850	2510.0	0.02	0.075	21.91	22.00	1.021	0.077	/
		Right Edge	20850	2510.0	-0.01	0.189	21.91	22.00	1.021	0.193	/
		Bottom Edge	20850	2510.0	0.03	0.692	21.91	22.00	1.021	0.706	/
WLAN 802.11 b	Data (Body-Worn)	Front Side	11	2462	0.01	0.164	15.49	15.60	1.026	0.168	/
		Back Side	11	2462	-0.01	0.187	15.49	15.60	1.026	0.192	/
		Left Side	11	2462	0.10	0.089	15.49	15.60	1.026	0.091	/
		Right Edge	11	2462	-0.07	0.086	15.49	15.60	1.026	0.088	/

Band	Mode	Position	Ch.	Freq. (MHz)	Power Drift	Meas. SAR (W/Kg)	Meas. Power (dBm)	Max. tune-up Power(dBm)	Scaling Factor	Scaled SAR(W/Kg)	Meas. No.
		Top Edge	11	2462	0.06	0.212	15.49	15.60	1.026	0.217	41#
Additional Channels											
GSM1900	GPRS Data (4 slots)	Bottom Edge	661	1880.0	0.00	0.896	25.51	25.80	1.069	0.958	42#
			810	1909.8	-0.12	0.986	25.60	25.80	1.047	1.032	43#
	GPRS Data (3 slots)	Bottom Edge	512	1850.2	0.13	0.843	27.21	27.40	1.045	0.881	48#
			661	1880.0	-0.16	0.911	27.20	27.40	1.047	0.954	49#
LTE Band 7 20MHz 1 RB Pos: 0	QPSK (Hotspot)	Bottom Edge	21100	2535.0	-0.07	0.695	22.63	23.00	1.089	0.757	44#
			21350	2560.0	-0.04	0.719	22.64	23.00	1.086	0.781	45#

Note:When device operating under hotspot mode, that the WCDMA B2/B4, LTE B2/B4 power reduction.

10.4 SAR Measurement Variability

According to KDB 865664 D01 v01r03, 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.

SAR Repeated Measurement

Band	Mode	Position	Ch.	Freq.	Original	First repeated	Ratio	Second repeated	Ratio	Third repeated	Ratio
GSM1900	GPRS Data (4 slots)	Bottom Edge	512	1850.2	1.085	1.000	1.09	--	--	--	--
			661	1880.0	0.896	0.885	1.01	--	--	--	--
			810	1909.8	0.986	0.974	1.01	--	--	--	--
	GPRS Data (3 slots)	Bottom Edge	512	1850.2	0.835	0.843	1.01				
			661	1880.0	0.911	0.892	1.02				
			810	1909.8	1.072	1.083	1.01				
LTE Band 7 20MHz 1 RB Pos: 0	QPSK (Hotspot)	Bottom Edge	20850	2510.0	0.805	0.799	1.01	--	--	--	--
WLAN 802.11 b	Data	Left cheek	11	2462.0	1.020	0.990	1.03	--	--	--	--
			1	2412.0	0.841	0.799	1.05	--	--	--	--
			6	2437.0	1.060	0.986	1.08	--	--	--	--

11 SIMULTANEOUS TRANSMISSION

11.1 Simultaneous Transmission Mode Consider

Simultaneous Transmitting (Yes/NO)	BT	WLAN	LTE QPSK	WCDMA RMC	GSM Data	GSM Voice
GSM Voice	Yes	Yes	No	No	No	-
GSM Data	Yes	Yes	No	No	-	-
WCDMA RMC	Yes	Yes	No	-	-	-
LTE QPSK	Yes	Yes	No	-	-	-
WLAN	NO	-	-	-	-	-
BT	-	-	-	-	-	-

Note: The Bluetooth and WLAN share the same antenna, cannot transmitting together.

11.2 Estimated SAR Calculation

According to KDB 447498 D01v05r02, when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR was estimated according to following formula to result in substantially conservative SAR values of ≤ 0.4 W/kg to determine simultaneous transmission SAR test exclusion.

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

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

Band	Mode	Position	Antenna To user (mm)	SAR Testing	Max. Tune-up Power (dBm)	Max. Tune-up Power (mW)	Frequency (GHz)	Calculation Distance/Gap (mm)	Estimated SAR (W/kg)
Bluetooth	GFSK	Right Cheek	5	NO	8.10	6.46	2.441	5	0.269
		Left Cheek	5	NO	8.10	6.46	2.441	5	0.269
		Front side	10	NO	8.10	6.46	2.441	10	0.135
		Back Side	10	NO	8.10	6.46	2.441	10	0.135
		Right Edge	10	NO	8.10	6.46	2.441	10	0.135
		Top Edge	10	NO	8.10	6.46	2.441	10	0.135

Band	Mode	Position	Antenna To user (mm)	SAR Testing	Max. Tune-up Power (dBm)	Max. Tune-up Power (mW)	Frequency (GHz)	Calculation Distance/Gap (mm)	Estimated SAR (W/kg)
Bluetooth	BLE	Right Cheek	5	NO	3.00	2.00	2.440	5	0.083
		Left Cheek	5	NO	3.00	2.00	2.440	5	0.083
		Front side	10	NO	3.00	2.00	2.440	10	0.042
		Back Side	10	NO	3.00	2.00	2.440	10	0.042
		Right Edge	10	NO	3.00	2.00	2.440	10	0.042
		Top Edge	10	NO	3.00	2.00	2.440	10	0.042

11.3 Sum SAR of Simultaneous Transmission

11.3.1 Sum Head SAR of Simultaneous Transmission

Simultaneous Mode	Position	Mode	Max. 1g SAR (W/kg)	1g Sum SAR (W/kg)
GSM Voice +Bluetooth	Head	GSM 850	0.272	0.541
		Bluetooth	0.269	
GSM Voice +BLE	Head	GSM 850	0.272	0.355
		BLE	0.083	
GSM Voice + WLAN	Head	GSM 850	0.272	1.380
		WLAN	1.108	
WCDMA RMC +Bluetooth	Head	WCDMA Band 2	0.294	0.563
		Bluetooth	0.269	
WCDMA RMC +BLE	Head	WCDMA Band 2	0.294	0.377
		BLE	0.083	
WCDMA RMC +WLAN	Head	WCDMA Band 2	0.294	1.402
		WLAN	1.108	
LTE QPSK + Bluetooth	Head	LTE Band 4	0.235	0.504
		Bluetooth	0.269	
LTE QPSK + BLE	Head	LTE Band 4	0.235	0.318
		BLE	0.083	
LTE QPSK + WLAN	Head	LTE Band 4	0.235	1.343
		WLAN	1.108	

11.3.2 Sum Body-worn SAR of Simultaneous Transmission

Simultaneous Mode	Position	Mode	Max. 1g SAR (W/kg)	1g Sum SAR (W/kg)
GSM Voice +Bluetooth	Body-worn	GSM 850	0.352	0.487
		Bluetooth	0.135	
GSM Voice +BLE	Body-worn	GSM 850	0.352	0.394
		BLE	0.042	
GSM Voice + WLAN	Body-worn	GSM 850	0.352	0.482
		WLAN	0.130	
GSM DATA +Bluetooth	Body-worn	GSM 1900	0.418	0.553
		Bluetooth	0.135	
GSM DATA +BLE	Body-worn	GSM 1900	0.418	0.460
		BLE	0.042	
GSM DATA + WLAN	Body-worn	GSM 1900	0.418	0.548
		WLAN	0.130	
WCDMA RMC +Bluetooth	Body-worn	WCDMA Band 2	0.549	0.684
		Bluetooth	0.135	
WCDMA RMC +BLE	Body-worn	WCDMA Band 2	0.549	0.591
		BLE	0.042	
WCDMA RMC +WLAN	Body-worn	WCDMA Band 2	0.549	0.679
		WLAN	0.130	
LTE QPSK + Bluetooth	Body-worn	LTE Band 2	0.509	0.644
		Bluetooth	0.135	
LTE QPSK + BLE	Body-worn	LTE Band 2	0.509	0.551
		BLE	0.042	
LTE QPSK + WLAN	Body-worn	LTE Band 2	0.509	0.639
		WLAN	0.130	

11.3.3 Sum Hotspot mode SAR of Simultaneous Transmission

Simultaneous Mode	Position	Mode	Max. 1g SAR (W/kg)	1g Sum SAR (W/kg)
GSM DATA +Bluetooth	Hotspot mode	GSM1900	1.110	1.245
		Bluetooth	0.135	
GSM DATA +BLE	Hotspot mode	GSM1900	1.110	1.152
		BLE	0.042	
GSM DATA + WLAN	Hotspot mode	GSM 1900	1.110	1.327
		WLAN	0.217	
WCDMA RMC +Bluetooth	Hotspot mode	WCDM Band2	0.748	0.883
		Bluetooth	0.135	
WCDMA RMC +BLE	Hotspot mode	WCDM Band2	0.748	0.790
		BLE	0.042	
WCDMA RMC +WLAN	Hotspot mode	WCDMA Band2	0.755	0.972
		WLAN	0.217	
LTE QPSK + Bluetooth	Hotspot mode	LTE Band2	0.831	0.966
		Bluetooth	0.135	
LTE QPSK + BLE	Hotspot mode	LTE Band2	0.831	0.873
		BLE	0.042	
LTE QPSK + WLAN	Hotspot mode	LTE Band2	0.831	1.058
		WLAN	0.217	

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 SPLSR.

12 TEST EQUIPMENTS LIST

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
PC	Dell	N/A	N/A	N/A	N/A
835MHz Validation Dipole	Speag	D835V2	SN: 4d187	2014/11/26	2015/11/25
1750MHz Validation Dipole	Speag	D1750V2	SN: 1130	2014/11/28	2015/11/27
1900MHz Validation Dipole	Speag	D1900V2	SN: 5d193	2014/11/28	2015/11/27
2450MHz Validation Dipole	Speag	D2450V2	SN: 952	2014/11/27	2015/11/26
2600MHz Validation Dipole	Speag	D2600V2	SN: 1095	2014/11/27	2015/11/26
E-Field Probe	Speag	EX3DV4	SN: 7340	2014/12/02	2015/12/01
Phantom1	Speag	SAM	SN: 1859	N/A	N/A
Phantom2	Speag	SAM	SN: 1857	N/A	N/A
Data acquisition electronics	Speag	DAE4	SN: 1454	2014/12/01	2015/11/30
Signal Generator	R&S	SMBV100A	260592	2015/07/16	2016/07/15
Power Meter	Agilent	5738A	11290	2014/10/18	2015/10/17
Power Sensor	R&S	NRP-Z21	103971	2014/11/03	2015/11/02
Power Amplifier	SATIMO	6552B	22374	N/A	N/A
Dielectric Probe Kit	SATIMO	SCLMP	SN 25/13 OCPG56	2015/08/17	2016/08/16
Wireless Communication Test Set	R&S	ZVL-6	101380	2015/07/16	2016/07/15
Wireless Communications Test Set	R&S	CMW 500	138884	2015/07/16	2016/07/15
Wireless Communication Test Set	R&S	ZVL-6	101380	2015/07/16	2016/07/15
Attenuator	COM-MW	ZA-S1-31	1305003187	N/A	N/A
Directional coupler	AA-MCS	AAMCS-UDC	000272	N/A	N/A

ANNEX A SIMULATING LIQUID VERIFICATION RESULT

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

Date	Liquid Type	Fre. (MHz)	Temp. (°C)	Meas. Conductivity (σ)	Meas. Permittivity (ϵ)	Target Conductivity (σ)	Target Permittivity (ϵ)	Conductivity Tolerance (%)	Permittivity Tolerance (%)
2015.9.17	Head	835	22.0	0.89	41.50	0.90	41.50	-1.11	0.00
2015.9.17	Body	835	22.0	0.96	55.87	0.97	55.20	-1.03	1.21
2015.9.18	Head	1750	22.0	1.38	40.02	1.37	40.10	0.73	-0.20
2015.9.18	Body	1750	22.0	1.48	53.13	1.49	53.40	-0.67	-0.51
2015.9.19	Head	1900	22.0	1.45	39.75	1.40	40.00	3.57	-0.63
2015.9.19	Body	1900	22.0	1.57	51.05	1.52	53.30	3.29	-4.22
2015.9.20	Head	2450	22.0	1.88	37.97	1.80	39.20	4.44	-3.14
2015.9.20	Body	2450	22.0	2.02	50.71	1.95	52.70	3.59	-3.78
2015.9.21	Head	2600	22.0	1.96	39.01	1.96	39.00	0.00	0.03
2015.9.21	Body	2600	22.0	2.23	50.48	2.16	52.50	3.24	-3.85
2015.10.8	Body	1900	21.8	1.59	51.09	1.52	53.30	4.61	-4.15

Note: The tolerances 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).

Date	Liquid Type	Freq. (MHz)	Power (mW)	Measured SAR (W/kg)	Normalized SAR (W/kg)	Dipole SAR (W/kg)	Tolerance (%)	Targeted SAR (W/kg)	Tolerance (%)
2015.9.17	Head	835	100	0.935	9.35	9.24	1.19	9.56	-2.20
2015.9.17	Body	835	100	0.896	8.96	9.48	-5.49	9.56	-6.28
2015.9.18	Head	1750	100	3.410	34.10	36.56	-6.73	36.40	-6.32
2015.9.18	Body	1750	100	3.520	35.20	37.56	-6.28	36.40	-3.30
2015.9.19	Head	1900	100	3.790	37.90	40.40	-6.19	39.70	-4.53
2015.9.19	Body	1900	100	4.210	42.10	40.00	5.25	39.70	6.05
2015.9.20	Head	2450	100	5.330	53.30	53.20	0.19	52.40	1.72
2015.9.20	Body	2450	100	4.900	49.00	52.00	-5.77	52.40	-6.49
2015.9.21	Head	2600	100	5.970	59.70	58.40	2.23	55.30	7.96
2015.9.21	Body	2600	100	5.340	53.40	58.00	-7.93	55.30	-3.44
2015.10.8	Body	1900	100	4.220	42.20	40.00	5.50	39.70	6.30

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

System Performance Check Data (835MHz Head)

835-HEAD-2015-9-17

Communication System Band: D835 (835.0 MHz); Frequency: 835 MHz;
Medium parameters used: $f = 835$ MHz; $\sigma = 0.89$ S/m; $\epsilon_r = 41.5$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Probe: EX3DV4-SN: 7340; ConvF(9.91, 9.91, 9.91)

Configuration/CW 835 100mW HEAD/Area Scan (61x81x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm
Reference Value = 31.45 V/m; Power Drift = 0.05 dB

Fast SAR: SAR(1 g) = 0.830 W/kg; SAR(10 g) = 0.554 W/kg

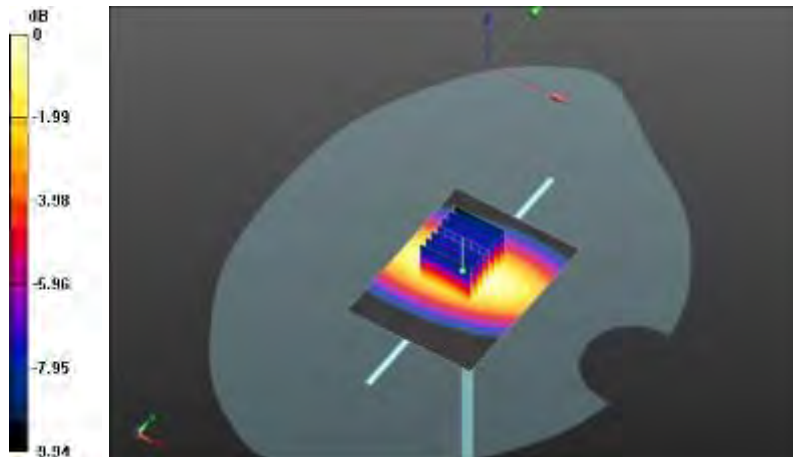
Maximum value of SAR (interpolated) = 0.893 W/kg

Configuration/CW 835 100mW HEAD/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm
Reference Value = 31.45 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.23 W/kg

SAR(1 g) = 0.935 W/kg; SAR(10 g) = 0.556 W/kg

Maximum value of SAR (measured) = 0.998 W/kg



0 dB = 0.998 W/kg = -0.009 dBW/kg

System Performance Check Data (835MHz Body)

835-Body-2015-9-17

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

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.96 \text{ S/m}$; $\epsilon_r 100 = 55.87$; $\rho = 0 \text{ kg/m}^3$

Phantom section: Flat Section

Probe: EX3DV4-SN: 7340; ConvF(9.97, 9.97, 9.97)

Configuration/CW 835 100mW HEAD/Area Scan (61x81x1):

Interpolated grid: $dx=1.200 \text{ mm}$, $dy=1.200 \text{ mm}$

Reference Value = 31.35 V/m ; Power Drift = 0.05 dB

Fast SAR: SAR(1 g) = 0.892 W/kg ; SAR(10 g) = 0.595 W/kg

Maximum value of SAR (interpolated) = 0.959 W/kg

Configuration/CW 835 100mW HEAD/Zoom Scan (7x7x7)/Cube 0:

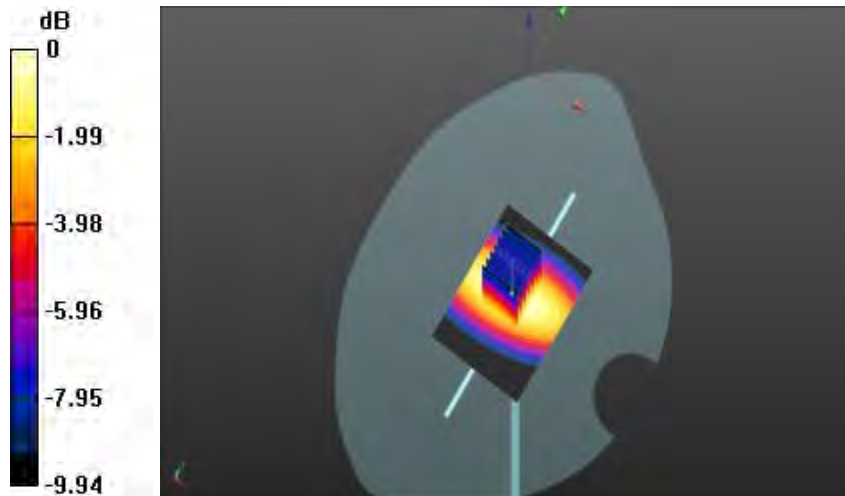
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 31.35 V/m ; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.32 W/kg

SAR(1 g) = 0.896 W/kg ; SAR(10 g) = 0.597 W/kg

Maximum value of SAR (measured) = 0.964 W/kg



0 dB = 0.964 W/kg = -0.16 dBW/kg

System Performance Check Data (1750MHz Head)

1750-HEAD-2015-9-18

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

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.38$ S/m; $\epsilon_r = 40.02$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4-SN: 7340; ConvF(9.13, 9.13, 9.13)

Configuration/CW 1750 100mW HEAD/Area Scan (61x81x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Reference Value = 52.32 V/m; Power Drift = 0.04 dB

Fast SAR: SAR(1 g) = 3.42 W/kg; SAR(10 g) = 1.86 W/kg

Maximum value of SAR (interpolated) = 3.90 W/kg

Configuration/CW 1750 100mW HEAD/Zoom Scan (7x7x7)/Cube 0:

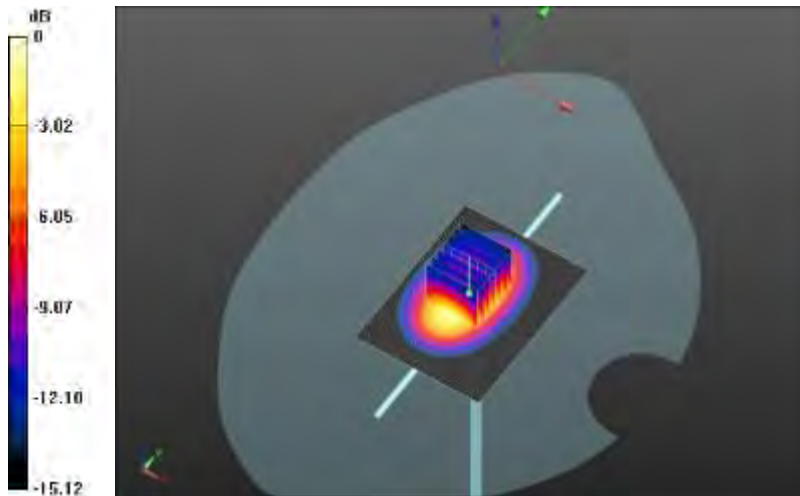
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 52.32 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 6.00 W/kg

SAR(1 g) = 3.41 W/kg; SAR(10 g) = 1.87 W/kg

Maximum value of SAR (measured) = 3.82 W/kg



0 dB = 3.82 W/kg = 5.82 dBW/kg

System Performance Check Data (1750MHz Body)

1750-BODY-2015-9-18

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

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.48$ S/m; $\epsilon_r = 53.13$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4-SN: 7340; ConvF(8.53, 8.53, 8.53)

Configuration/CW1750 100mW BODY/Area Scan (61x81x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Reference Value = 51.45 V/m; Power Drift = 0.01 dB

Fast SAR: SAR(1 g) = 3.56 W/kg; SAR(10 g) = 1.9 W/kg

Maximum value of SAR (interpolated) = 4.12 W/kg

Configuration/CW1750 100mW BODY/Zoom Scan (7x7x7)/Cube 0:

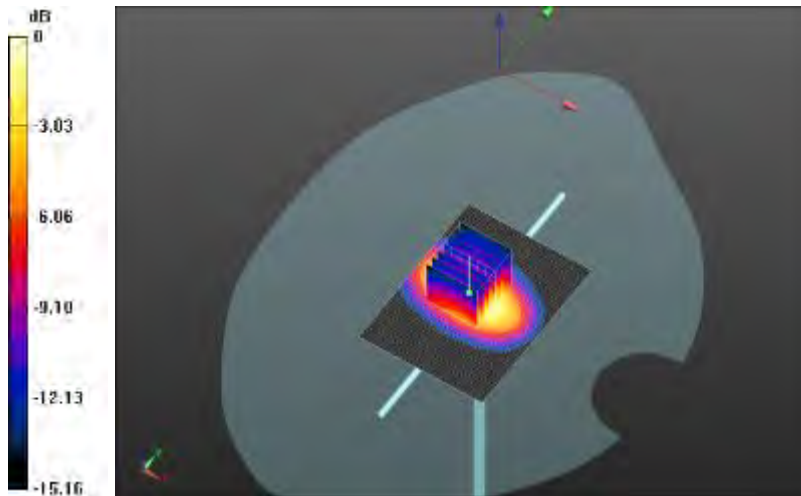
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 51.45 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 6.15 W/kg

SAR(1 g) = 3.52 W/kg; SAR(10 g) = 1.92 W/kg

Maximum value of SAR (measured) = 3.96 W/kg



0 dB = 3.96 W/kg = 5.98 dBW/kg

System Performance Check Data (1900MHz Head)

1900-HEAD-2015-9-19

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

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.45$ S/m; $\epsilon_r = 39.75$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4-SN: 7340; ConvF(8.77, 8.77, 8.77)

Configuration/CW 1900 100mW HEAD 2 2/Area Scan (61x81x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Reference Value = 54.95 V/m; Power Drift = -0.17 dB

Fast SAR: SAR(1 g) = 3.81 W/kg; SAR(10 g) = 2.01 W/kg

Maximum value of SAR (interpolated) = 4.39 W/kg

Configuration/CW 1900 100mW HEAD 2 2/Zoom Scan (7x7x7)/Cube 0:

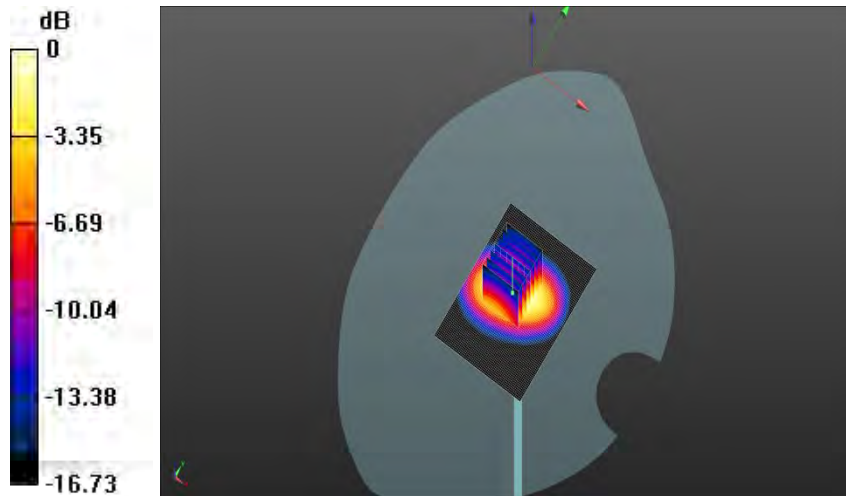
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 54.95 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 6.91 W/kg

SAR(1 g) = 3.79 W/kg; SAR(10 g) = 2 W/kg

Maximum value of SAR (measured) = 4.26 W/kg



0 dB = 4.26 W/kg = 6.29 dBW/kg

System Performance Check Data (1900MHz Body)

1900-BODY-2015-9-19

Communication System: UID 0, CW (0); Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.57$ S/m; $\epsilon_r = 51.05$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4-SN: 7340; ConvF(8.18, 8.18, 8.18)

Configuration/CW 1900 100mW BODY/Area Scan (61x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Reference Value = 53.28 V/m; Power Drift = 0.05 dB

Fast SAR: SAR(1 g) = 4.25 W/kg; SAR(10 g) = 2.2 W/kg

Maximum value of SAR (interpolated) = 5.00 W/kg

Configuration/CW 1900 100mW BODY/Zoom Scan (7x7x7)/Cube 0:

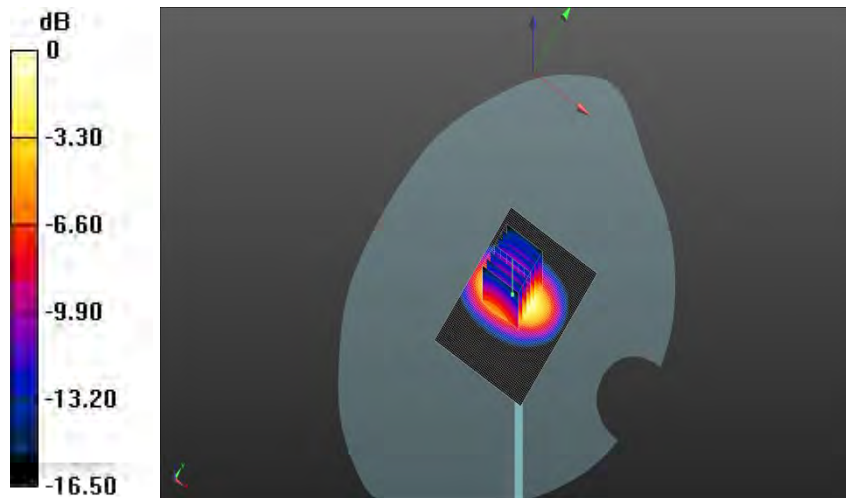
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 53.28 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 7.69 W/kg

SAR(1 g) = 4.21 W/kg; SAR(10 g) = 2.21 W/kg

Maximum value of SAR (measured) = 4.76 W/kg



0 dB = 4.76 W/kg = 6.78 dBW/kg

System Performance Check Data (2450MHz Head)

2450-HEAD-2015-9-20

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

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.88$ S/m; $\epsilon_r = 37.97$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4-SN: 7340; ConvF(7.83, 7.83, 7.83)

Configuration/CW 2450 100mW HEAD/Area Scan (61x81x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Reference Value = 54.15 V/m; Power Drift = 0.34 dB

Fast SAR: SAR(1 g) = 5.21 W/kg; SAR(10 g) = 2.45 W/kg

Maximum value of SAR (interpolated) = 6.25 W/kg

Configuration/CW 2450 100mW HEAD/Zoom Scan (7x7x7)/Cube 0:

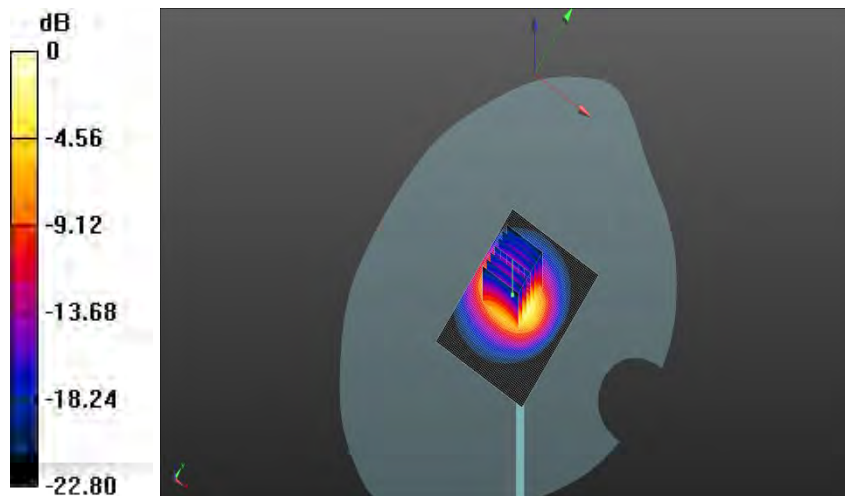
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 54.15 V/m; Power Drift = 0.34 dB

Peak SAR (extrapolated) = 11.6 W/kg

SAR(1 g) = 5.33 W/kg; SAR(10 g) = 2.43 W/kg

Maximum value of SAR (measured) = 6.07 W/kg



0 dB = 6.07 W/kg = 7.83 dBW/kg

System Performance Check Data (2450MHz Body)

2450-BODY-2015-9-20

Communication System Band: CD2450 (2450.0 MHz); Frequency: 2450 MHz;

Medium parameters used: $f = 2450$ MHz; $\sigma = 2.02$ S/m; $\epsilon_r = 50.71$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4-SN: 7340; ConvF(7.55, 7.55, 7.55)

Configuration/CW 2450 100mW BODY/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 52.83 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 10.6 W/kg

SAR(1 g) = 4.96 W/kg; SAR(10 g) = 2.24 W/kg

Maximum value of SAR (measured) = 5.65 W/kg

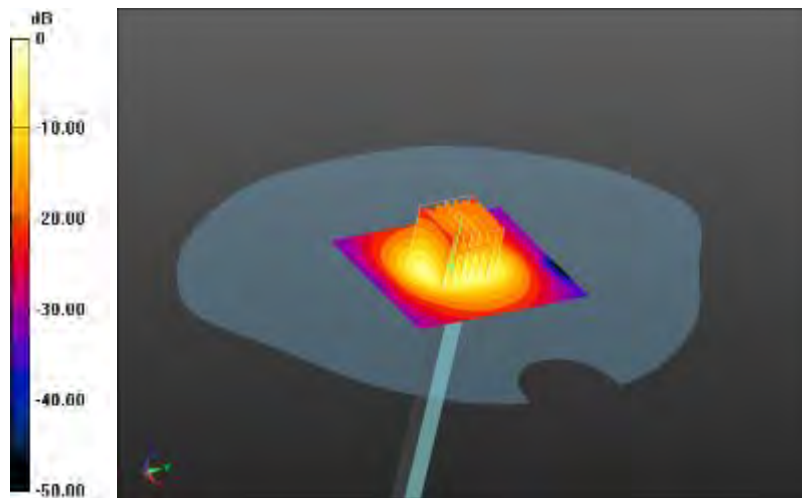
Configuration/CW 2450 100mW BODY/Area Scan (81x101x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 52.83 V/m; Power Drift = -0.01 dB

Fast SAR: SAR(1 g) = 4.9 W/kg; SAR(10 g) = 2.26 W/kg

Maximum value of SAR (interpolated) = 5.76 W/kg



0 dB = 5.76 W/kg = 7.60 dBW/kg

System Performance Check Data (2600MHz Head)

2600-HEAD-2015-9-21

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

Medium parameters used: $f = 2600$ MHz; $\sigma = 1.964$ S/m; $\epsilon_r = 39.01$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4-SN: 7340; ConvF(7.64, 7.64, 7.64)

Configuration/CW 2600 100mW HEAD/Area Scan (81x101x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Reference Value = 52.08 V/m; Power Drift = 0.10 dB

Fast SAR: SAR(1 g) = 4.85 W/kg; SAR(10 g) = 2.23 W/kg

Maximum value of SAR (interpolated) = 5.60 W/kg

Configuration/CW 2600 100mW HEAD/Zoom Scan (7x7x7)/Cube 0:

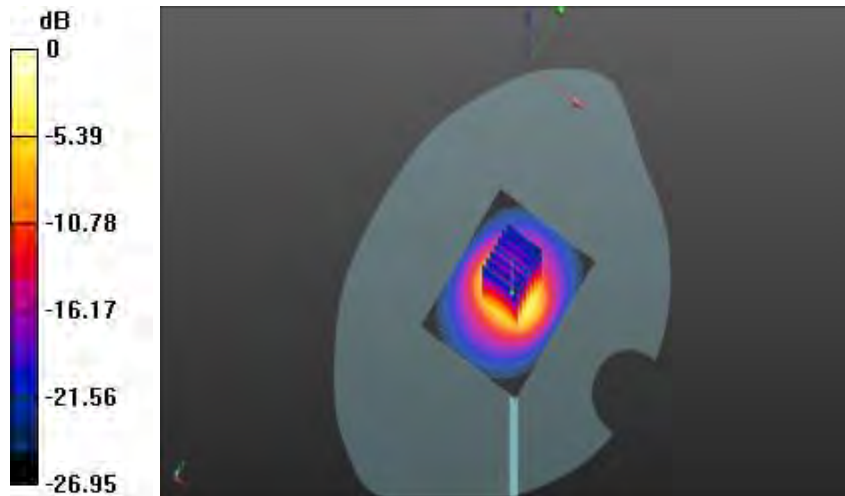
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 52.08 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 11.8 W/kg

SAR(1 g) = 5.97 W/kg; SAR(10 g) = 2.14 W/kg

Maximum value of SAR (measured) = 6.22 W/kg



0 dB = 6.22 W/kg = 7.94 dBW/kg

System Performance Check Data (2600MHz Body)

2600-BODY-2015-9-21

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

Medium parameters used: $f = 2600$ MHz; $\sigma = 2.23$ S/m; $\epsilon_r = 50.48$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4-SN: 7340; ConvF(7.11, 7.11, 7.11)

Configuration/CW 2600 100mW BODY/Area Scan (81x101x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Reference Value = 49.57 V/m; Power Drift = 0.02 dB

Fast SAR: SAR(1 g) = 5.1 W/kg; SAR(10 g) = 2.27 W/kg

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

Configuration/CW 2600 100mW BODY/Zoom Scan (7x7x7)/Cube 0:

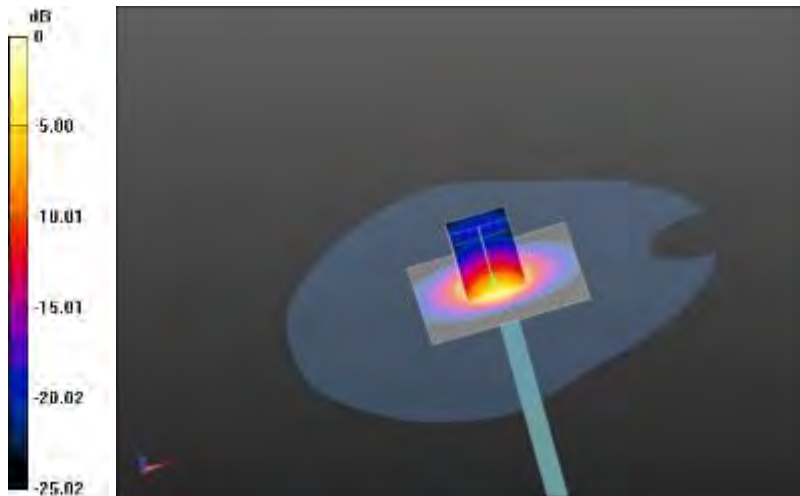
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 49.57 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 11.5 W/kg

SAR(1 g) = 5.34 W/kg; SAR(10 g) = 2.24 W/kg

Maximum value of SAR (measured) = 5.92 W/kg



0 dB = 5.92 W/kg = 7.72 dBW/kg

System Performance Check Data (1900MHz Body)

1900-BODY-2015-10-8

Communication System: UID 0, CW (0); Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.59$ S/m; $\epsilon_r = 51.09$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4-SN: 7340; ConvF(8.18, 8.18, 8.18)

Configuration/CW 1900 100mW BODY/Area Scan (61x81x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Reference Value = 53.29 V/m; Power Drift = 0.01 dB

Fast SAR: SAR(1 g) = 4.28 W/kg; SAR(10 g) = 2.23 W/kg

Maximum value of SAR (interpolated) = 5.01 W/kg

Configuration/CW 1900 100mW BODY/Zoom Scan (7x7x7)/Cube 0:

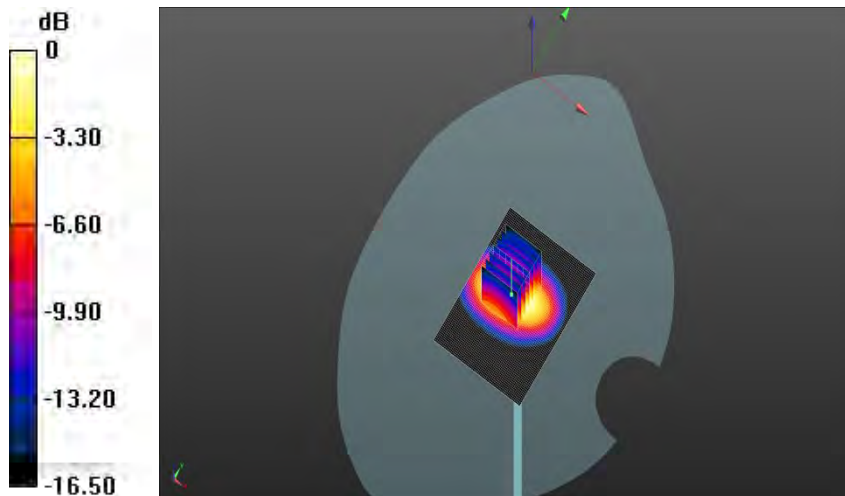
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 53.29 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 7.64 W/kg

SAR(1 g) = 4.22 W/kg; SAR(10 g) = 2.2 W/kg

Maximum value of SAR (measured) = 4.78 W/kg



0 dB = 4.78 W/kg = 6.75 dBW/kg

ANNEX C TEST DATA

MEAS.1 Leaf Head with Cheek on High Channel in GSM850 mode

Date/Time: 9/17/2015

Communication System Band: GSM 850 (824.0 - 849.0 MHz); Frequency: 848.6 MHz; Duty Cycle: 1:8.30042

Medium parameters used (interpolated): $f = 848.6$ MHz; $\sigma = 0.899$ S/m; $\epsilon_r = 41.327$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.91, 9.91, 9.91); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GSM 850 Head Left Cheek High/Area Scan (71x91x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.283 W/kg

Configuration/GSM 850 Head Left Cheek High/Zoom Scan (7x7x7)/Cube 0:

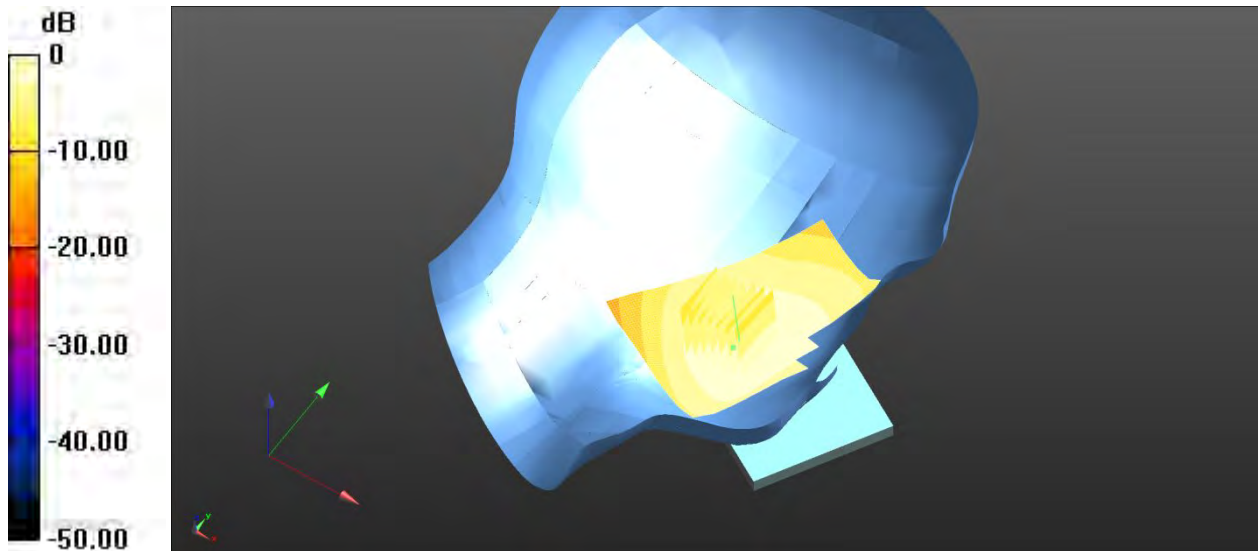
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.819 V/m; Power Drift = 0.31 dB

Peak SAR (extrapolated) = 0.328 W/kg

SAR(1 g) = 0.266 W/kg; SAR(10 g) = 0.204 W/kg

Maximum value of SAR (measured) = 0.279 W/kg



0 dB = 0.283 W/kg = -5.48 dBW/kg

MEAS.2 Right Head with Cheek on High Channel in GSM1900 mode

Date/Time: 9/19/2015

Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1909.8 MHz;

Duty Cycle: 1:8.30042

Medium parameters used: $f = 1909.8$ MHz; $\sigma = 1.48$ S/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- 7340; ConvF(8.77, 8.77, 8.77); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GSM 1900 Head Right Cheek High/Area Scan (71x91x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.165 W/kg

Configuration/GSM 1900 Head Right Cheek High/Zoom Scan (7x7x7)/Cube 0:]

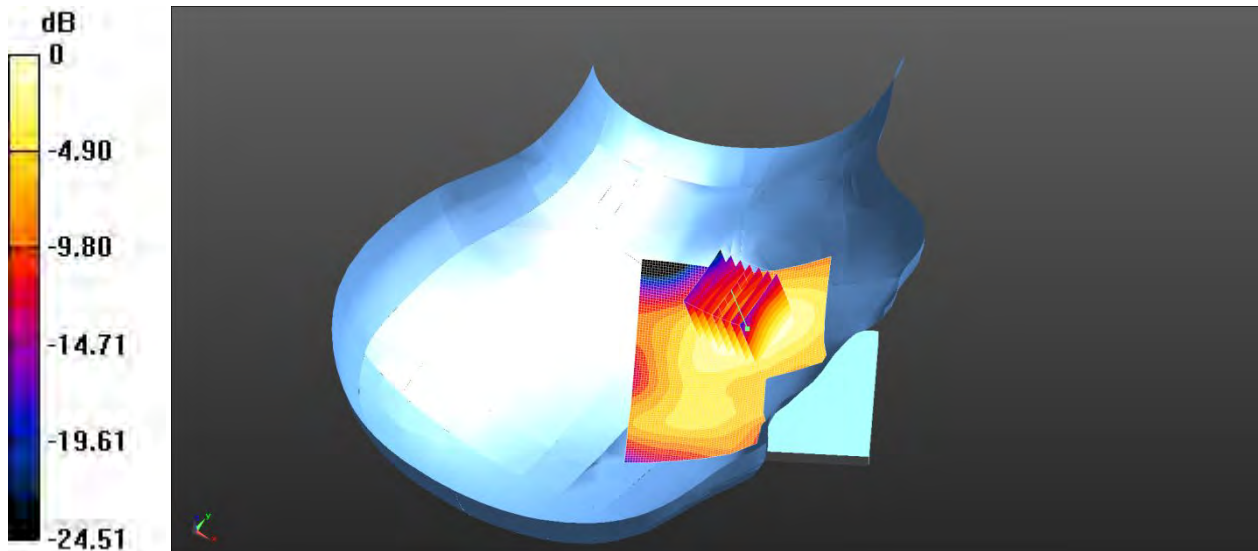
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.696 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.238 W/kg

SAR(1 g) = 0.148 W/kg; SAR(10 g) = 0.088 W/kg

Maximum value of SAR (measured) = 0.162 W/kg



0 dB = 0.162 W/kg = -7.90 dBW/kg

MEAS.3 Right Head with Cheek on Middle Channel in WCDMA Band 2 mode

Date/Time: 9/19/2015

Communication System Band: II; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1907.6$ MHz; $\sigma = 1.473$ S/m; $\epsilon_r = 39.634$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.77, 8.77, 8.77); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WCDMA Band 2 Head Right Cheek Middle/Area Scan (71x71x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.339 W/kg

Configuration/WCDMA Band 2 Head Right Cheek Middle/Zoom Scan (7x7x7)/Cube 0:

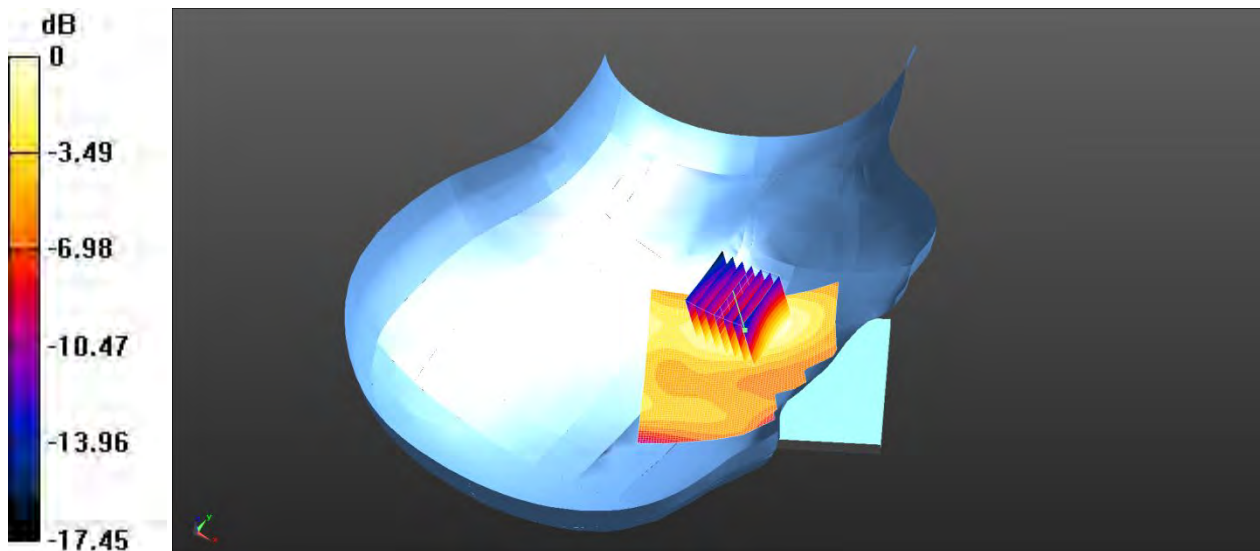
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.65 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.465 W/kg

SAR(1 g) = 0.291 W/kg; SAR(10 g) = 0.174 W/kg

Maximum value of SAR (measured) = 0.316 W/kg



0 dB = 0.316 W/kg = -5.00 dBW/kg

MEAS.4 Right Head with Cheek on Middle Channel in WCDMA Band 4 mode

Date/Time: 9/18/2015

Communication System Band: IV; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1732.6$ MHz; $\sigma = 1.35$ S/m; $\epsilon_r = 40.01$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.13, 9.13, 9.13); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WCDMA Band 4 Head Right Cheek Middle/Area Scan (71x71x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.312 W/kg

Configuration/WCDMA Band 4 Head Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0:

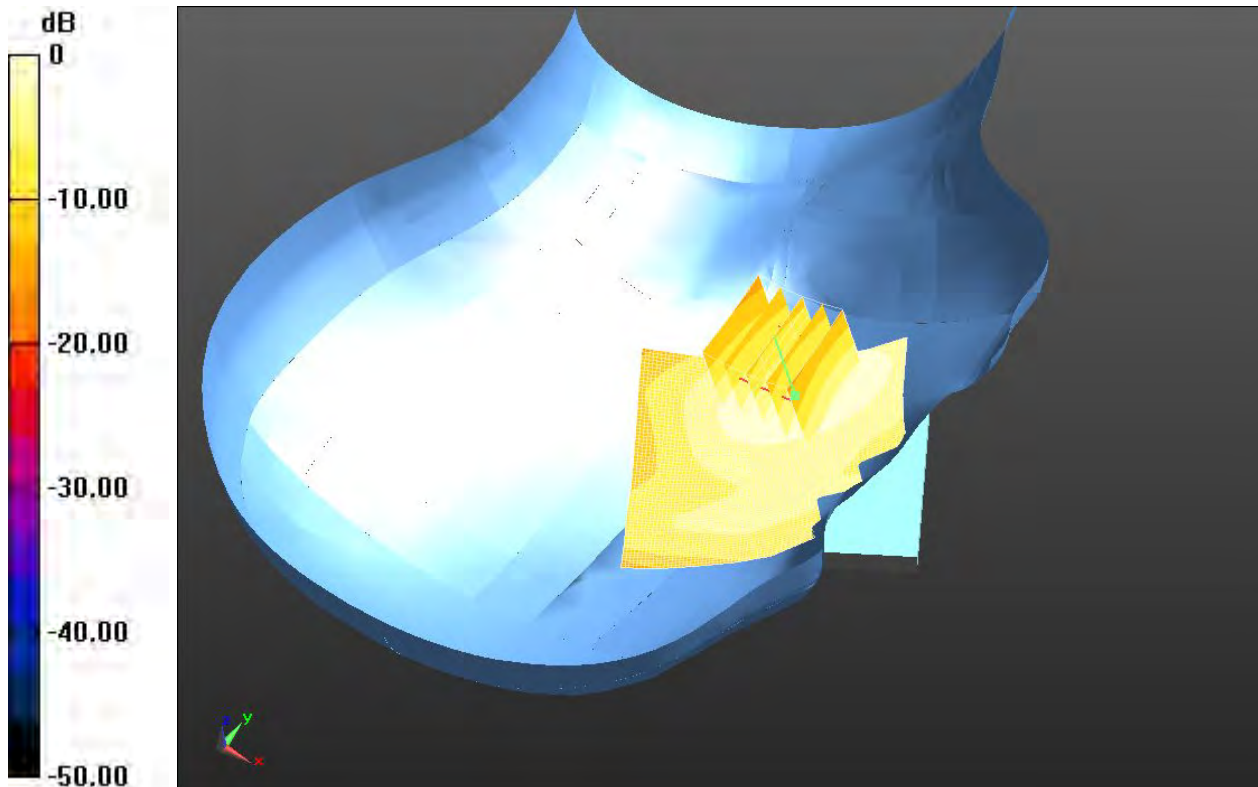
Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 5.665 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.432 W/kg

SAR(1 g) = 0.281 W/kg; SAR(10 g) = 0.173 W/kg

Maximum value of SAR (measured) = 0.308 W/kg



0 dB = 0.312 W/kg = -5.06 dBW/kg

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

Date/Time: 9/17/2015

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

Medium parameters used: $f = 836.41$ MHz; $\sigma = 0.89$ S/m; $\epsilon_r = 41.48$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.91, 9.91, 9.91); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WCDMA Band 5 Head Left Cheek Middle/Area Scan (71x71x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.230 W/kg

Configuration/WCDMA Band 5 Head Left Cheek Middle/Zoom Scan (7x7x7)/Cube 0:

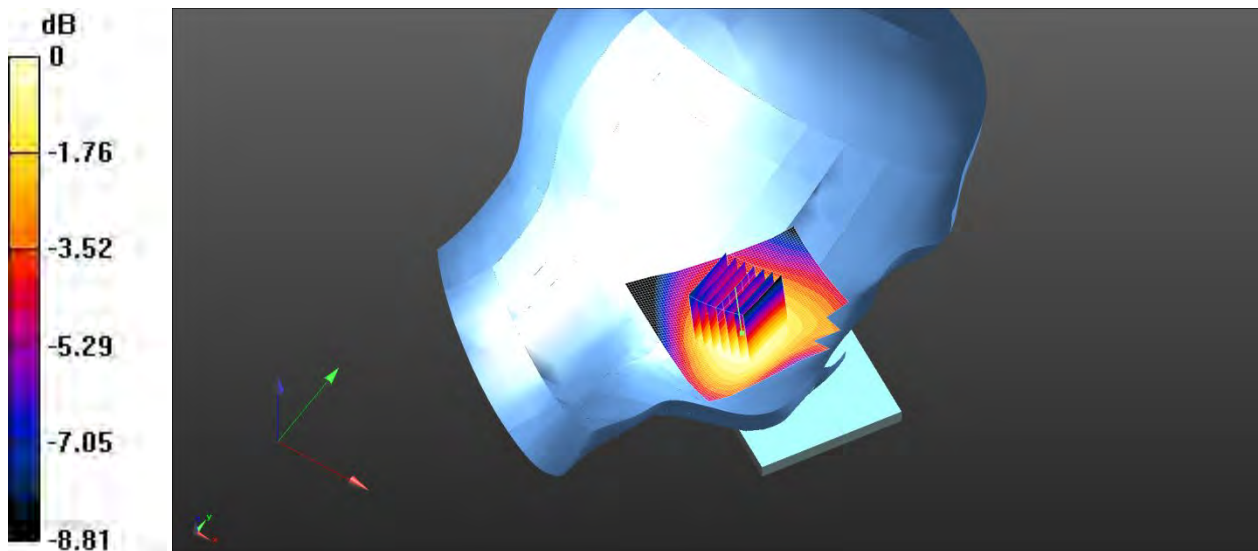
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 5.501 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 0.268 W/kg

SAR(1 g) = 0.217 W/kg; SAR(10 g) = 0.166 W/kg

Maximum value of SAR (measured) = 0.227 W/kg



0 dB = 0.227 W/kg = -6.44 dBW/kg

MEAS.6 Right Head with Cheek on High Channel in LTE Band 2 1RBmode

Date/Time: 9/19/2015

Communication System Band: Band 2, E-UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1900 MHz;

Duty Cycle: 1:1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.45$ S/m; $\epsilon_r = 39.75$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.77, 8.77, 8.77); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/LTE Band 2 Head Right Cheek High 1RB/Area Scan (71x81x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.202 W/kg

Configuration/LTE Band 2 Head Right Cheek High 1RB/Zoom Scan (7x7x7)/Cube 0:

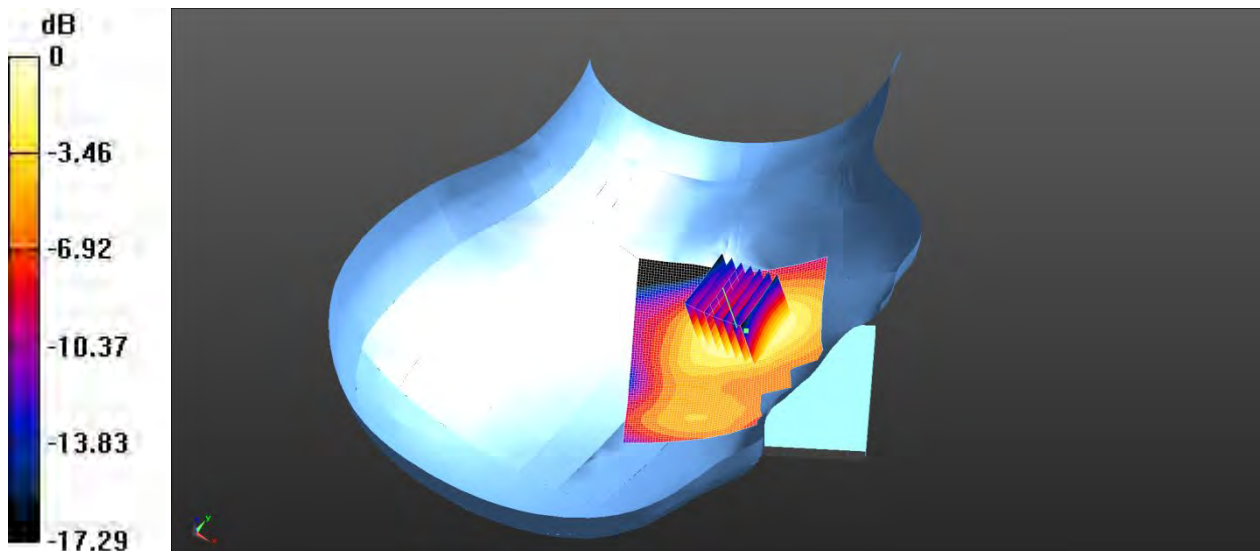
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.754 V/m; Power Drift = 0.66 dB

Peak SAR (extrapolated) = 0.292 W/kg

SAR(1 g) = 0.183 W/kg; SAR(10 g) = 0.109 W/kg

Maximum value of SAR (measured) = 0.200 W/kg



0 dB = 0.200 W/kg = -6.99 dBW/kg

MEAS.7 Right Head with Cheek on Middle Channel in LTE Band 4 1RBmode

Date/Time: 9/19/2015

Communication System Band: Band 4, E-UTRA/FDD (1710.0 - 1755.0 MHz); Frequency: 1732.5 MHz;

Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.367$ S/m; $\epsilon_r = 40.408$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.13, 9.13, 9.13); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/LTE Band 4 Head Right Cheek Middle 1RB/Area Scan (71x81x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.250 W/kg

Configuration/LTE Band 4 Head Right Cheek Middle 1RB/Zoom Scan (7x7x7)/Cube 0:

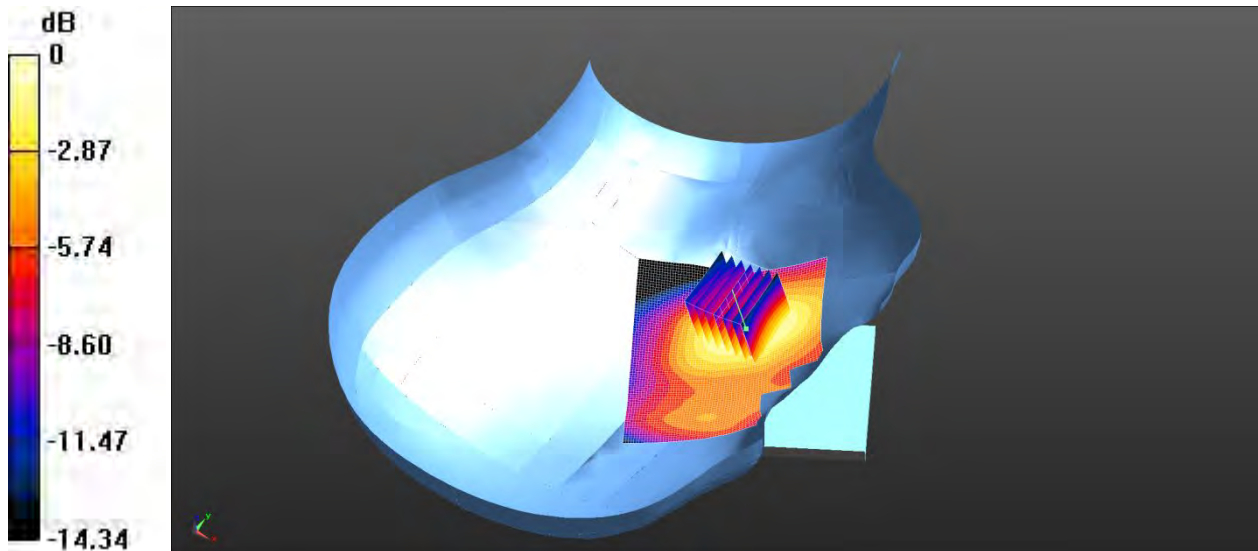
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.097 V/m; Power Drift = 0.-0.14dB

Peak SAR (extrapolated) = 0.344 W/kg

SAR(1 g) = 0.229 W/kg; SAR(10 g) = 0.143 W/kg

Maximum value of SAR (measured) = 0.249 W/kg



0 dB = 0.249 W/kg = -6.04 dBW/kg

MEAS.8 Left Head with Cheek on Low Channel in LTE Band 5 mode

Date/Time: 9/17/2015

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

Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 829$ MHz; $\sigma = 0.885$ S/m; $\epsilon_r = 41.571$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.91, 9.91, 9.91); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/LTE Band 5 Head Left Cheek Low 1RB/Area Scan (71x81x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.206 W/kg

Configuration/LTE Band 5 Head Left Cheek Low 1RB/Zoom Scan (7x7x7)/Cube 0:

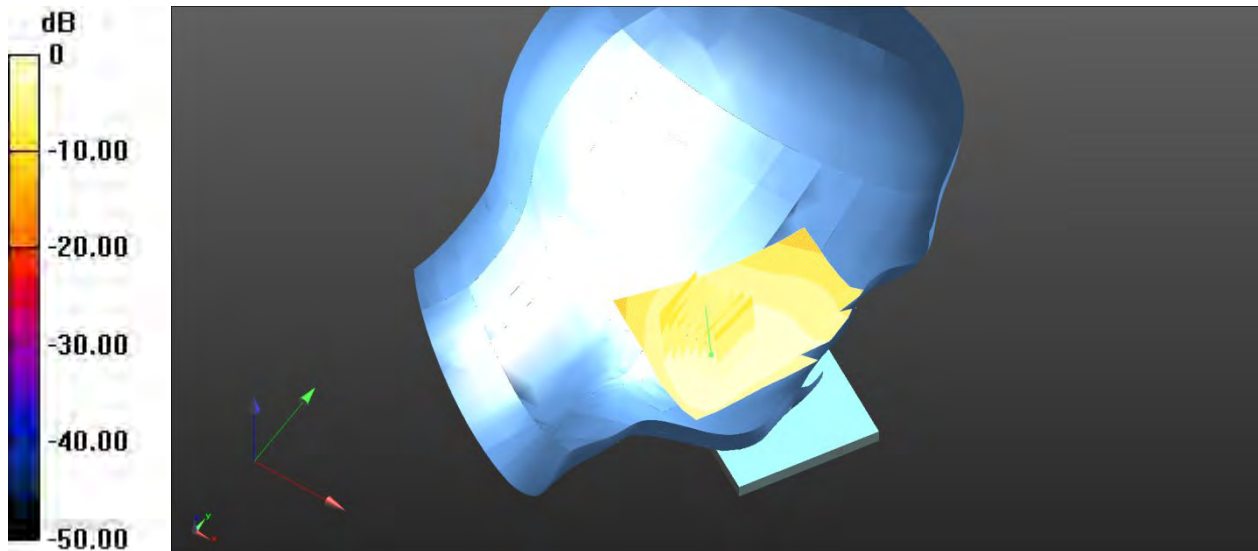
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 4.383 V/m; Power Drift = 0.43 dB

Peak SAR (extrapolated) = 0.243 W/kg

SAR(1 g) = 0.194 W/kg; SAR(10 g) = 0.147 W/kg

Maximum value of SAR (measured) = 0.203 W/kg



0 dB = 0.206 W/kg = -6.86 dBW/kg

MEAS.9 Right Head with Cheek on Low Channel in LTE Band 7 mode

Date/Time: 9/21/2015

Communication System Band: Band 7, E-UTRA/FDD (2500.0 - 2570.0 MHz); Frequency: 2510 MHz;

Duty Cycle: 1:1

Medium parameters used: $f = 2510$ MHz; $\sigma = 1.96$ S/m; $\epsilon_r = 37.54$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.64, 7.64, 7.64); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/LTE Band 7 Head Right Cheek Low 1RB/Area Scan (71x81x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.267 W/kg

Configuration/LTE Band 7 Head Right Cheek Low 1RB/Zoom Scan (7x7x7)/Cube 0:

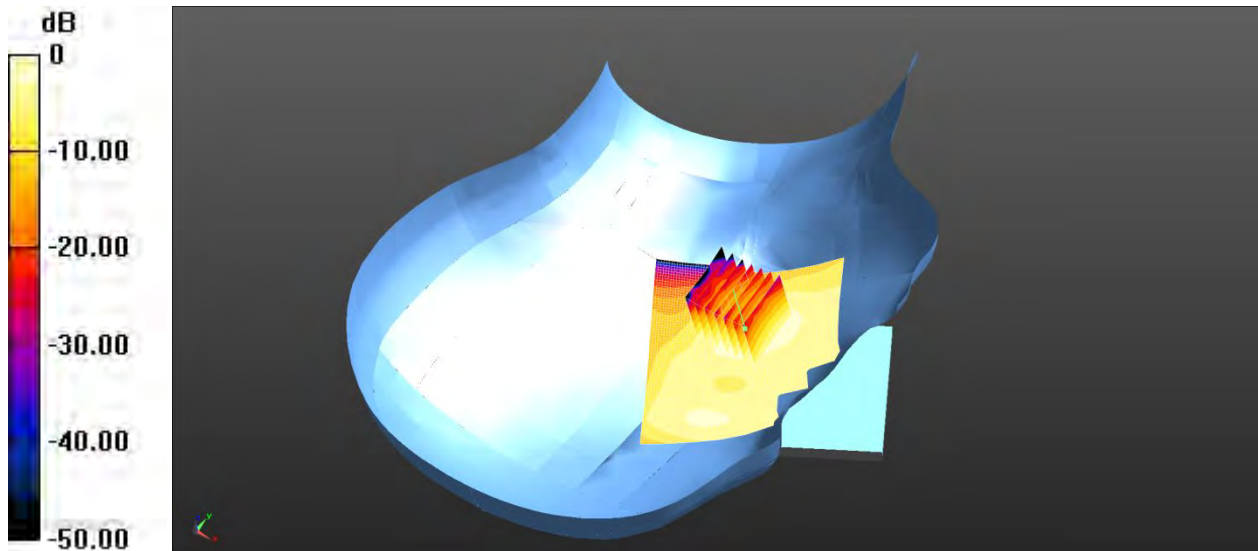
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.969 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 0.448 W/kg

SAR(1 g) = 0.228 W/kg; SAR(10 g) = 0.111 W/kg

Maximum value of SAR (measured) = 0.257 W/kg



0 dB = 0.257 W/kg = -5.90 dBW/kg

MEAS.10 Left Head with Cheek on High Channel in IEEE 802.11b mode

Date/Time: 9/20/2015

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

Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.908$ S/m; $\epsilon_r = 37.862$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.83, 7.83, 7.83); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WLAN b Head Left Cheek High/Area Scan (71x91x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.30 W/kg

Configuration/WLAN b Head Left Cheek High/Zoom Scan (7x7x7)/Cube 0:

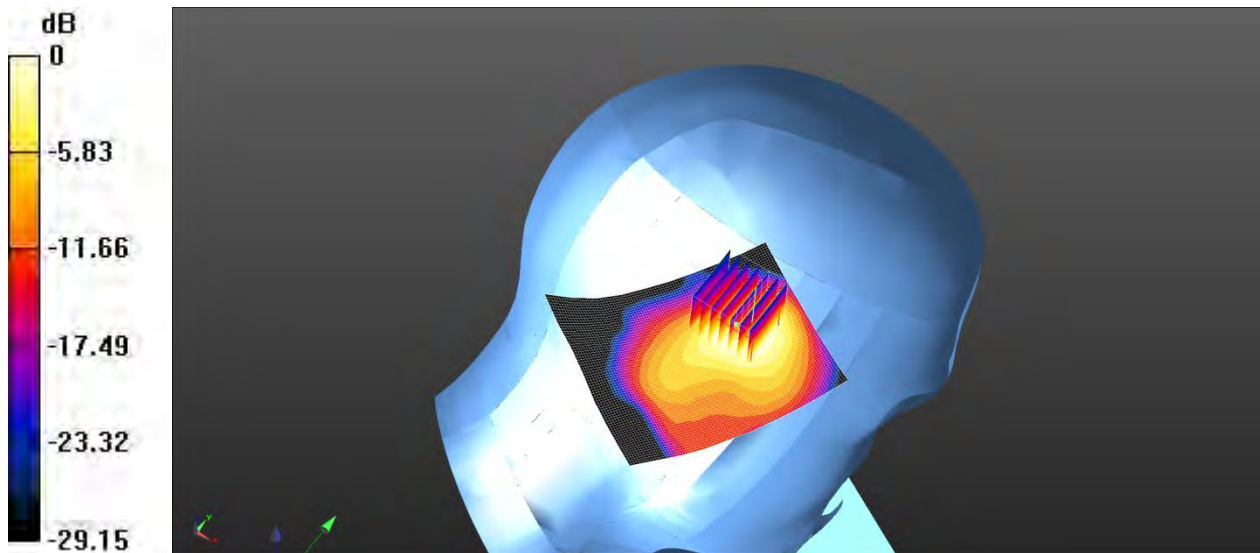
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.06 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 3.01 W/kg

SAR(1 g) = 1.080W/kg; SAR(10 g) = 0.541W/kg

Maximum value of SAR (measured) = 1.22 W/kg



0 dB = 1.22 W/kg = 0.86 dBW/kg

MEAS.11 Left Head with Tilt on High Channel in IEEE 802.11b mode

Date/Time: 9/20/2015

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

Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.838$ S/m; $\epsilon_r = 38.149$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.83, 7.83, 7.83); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WLAN b Head Tilt Cheek /Area Scan (71x91x1): Interpolated grid:

$dx=1.200$ mm, $dy=1.200$ mm

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

Configuration/WLAN b Head Tilt Cheek /Zoom Scan (7x7x7)/Cube 0:

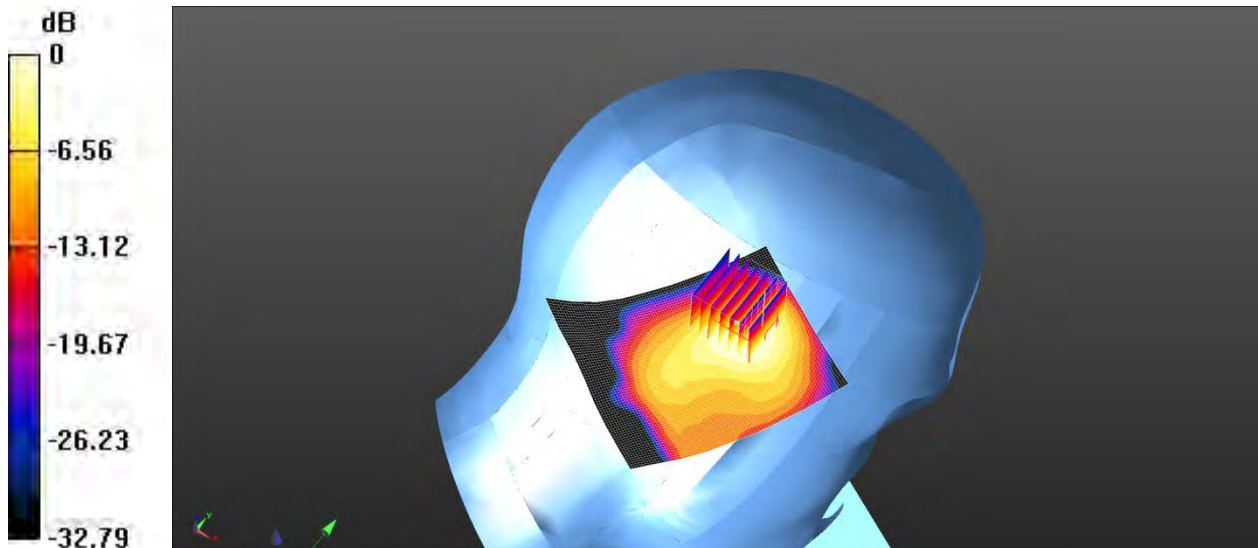
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 12.37 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 1.98 W/kg

SAR(1 g) = 0.884 W/kg; SAR(10 g) = 0.346 W/kg

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



0 dB = 0.815 W/kg = -0.89 dBW/kg

MEAS.12 Left Head with Cheek on Low Channel in IEEE 802.11b mode

Date/Time: 9/20/2015

Communication System Band: WLAN(b); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2412$ MHz; $\sigma = 1.883$ S/m; $\epsilon_r = 38.021$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.83, 7.83, 7.83); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WLAN b Head Left Cheek /Area Scan (71x91x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 1.22 W/kg

Configuration/WLAN b Head Left Cheek /Zoom Scan (7x7x7)/Cube 0:

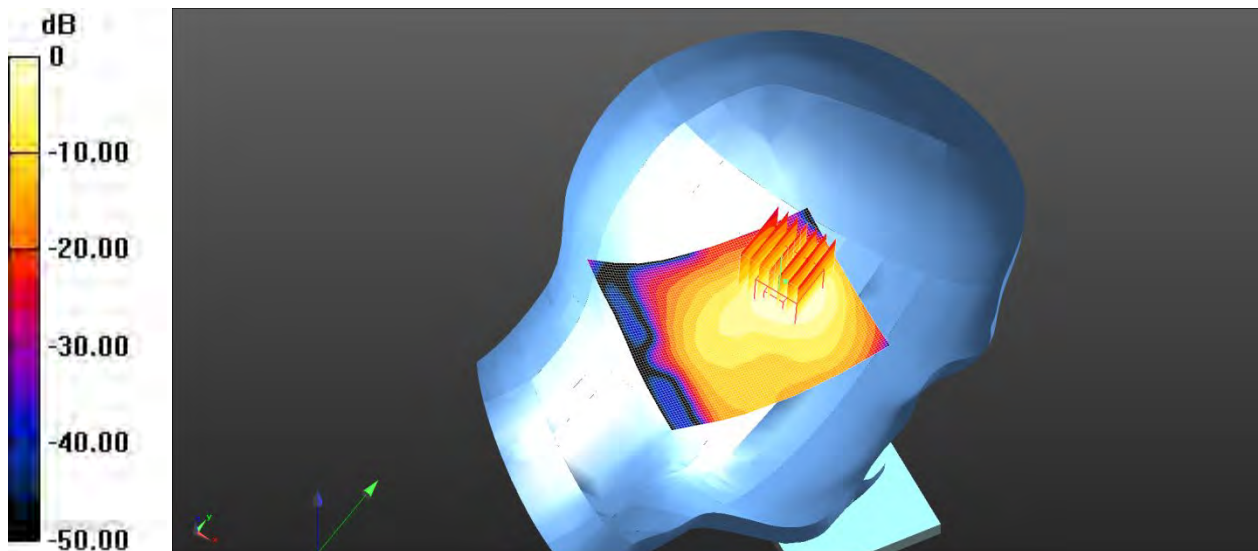
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 14.53 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 2.86 W/kg

SAR(1 g) = 0.841 W/kg; SAR(10 g) = 0.356 W/kg

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



0 dB = 1.32 W/kg = 1.21 dBW/kg

MEAS.13 Left Head with Cheek on Middle Channel in IEEE 802.11b mode

Date/Time: 9/20/2015

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

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.908$ S/m; $\epsilon_r = 37.862$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.83, 7.83, 7.83); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WLAN b Head Left Cheek High/Area Scan (71x91x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.30 W/kg

Configuration/WLAN b Head Left Cheek High/Zoom Scan (7x7x7)/Cube 0:

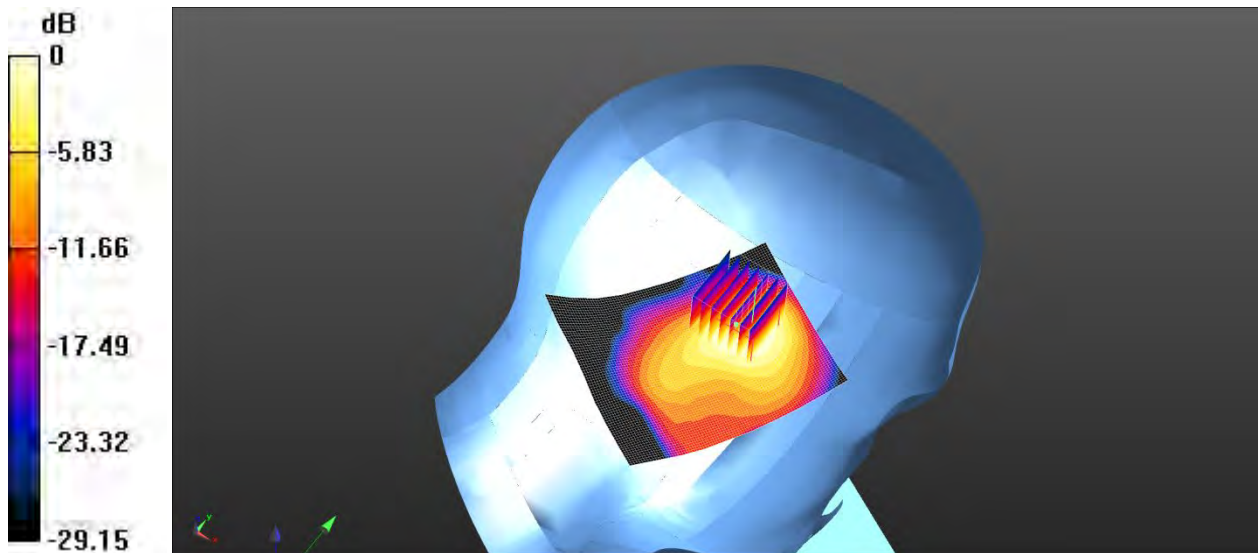
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.06 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 3.01 W/kg

SAR(1 g) = 1.020 W/kg; SAR(10 g) = 0.533 W/kg

Maximum value of SAR (measured) = 1.22 W/kg



0 dB = 1.22 W/kg = 0.86 dBW/kg

MEAS.14 Left Head with Tilt on Low Channel in IEEE 802.11b mode

Date/Time: 9/20/2015

Communication System Band: WLAN(b); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2412$ MHz; $\sigma = 1.838$ S/m; $\epsilon_r = 38.149$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.83, 7.83, 7.83); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WLAN b Head Tilt Cheek Low/Area Scan (71x91x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

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

Configuration/WLAN b Head Tilt Cheek Low/Zoom Scan (7x7x7)/Cube 0:

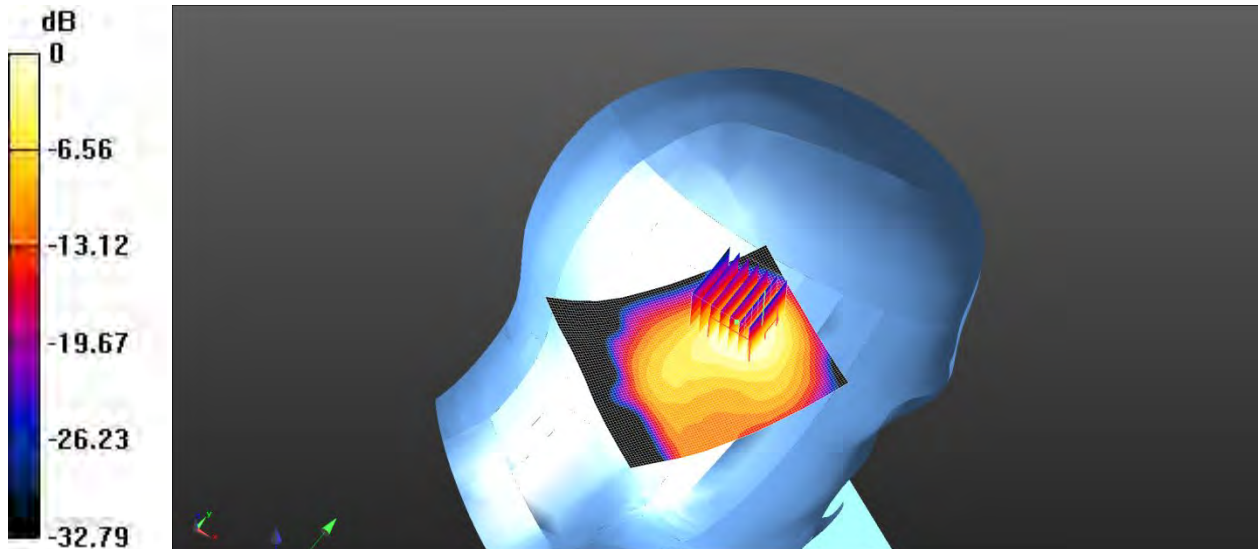
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.37 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 1.98 W/kg

SAR(1 g) = 0.728 W/kg; SAR(10 g) = 0.356 W/kg

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



0 dB = 0.815 W/kg = -0.89 dBW/kg

MEAS.15 Left Head with Tilt on Middle Channel in IEEE 802.11b mode

Date/Time: 9/20/2015

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

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.908$ S/m; $\epsilon_r = 37.862$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.83, 7.83, 7.83); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WLAN b Head Left Tilt High/Area Scan (71x91x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

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

Configuration/WLAN b Head Left Tilt High/Zoom Scan (7x7x7)/Cube 0:

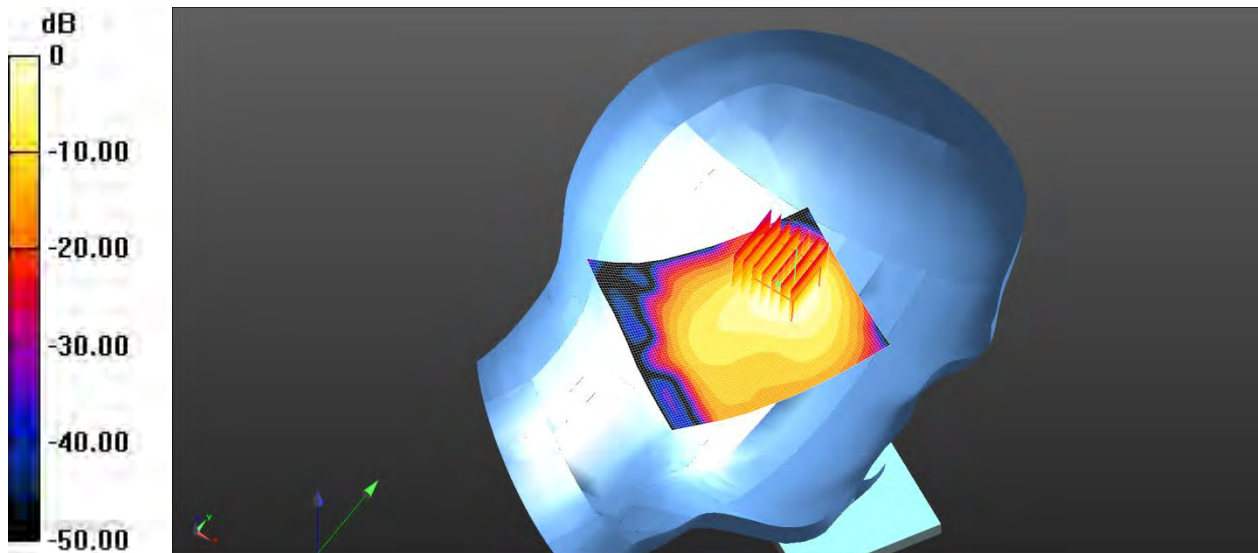
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.38 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 2.13 W/kg

SAR(1 g) = 0.796 W/kg; SAR(10 g) = 0.377 W/kg

Maximum value of SAR (measured) = 0.863 W/kg



0 dB = 1.02 W/kg = 0.09 dBW/kg

MEAS. 16 Body Plane with Body-worn in Back side on High Channel in GSM

850 mode

Date/Time: 9/17/2015

Communication System Band: GSM 850 (824.0 - 849.0 MHz); Frequency: 848.8 MHz; Duty Cycle: 1:8.30042

Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 0.969$ S/m; $\epsilon_r = 55.75$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.97, 9.97, 9.97); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GSM 850 Body-worn in Back High/Area Scan (71x81x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

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

Configuration/ GSM 850 Body-worn in Back High /Zoom Scan (5x5x7)/Cube 0:

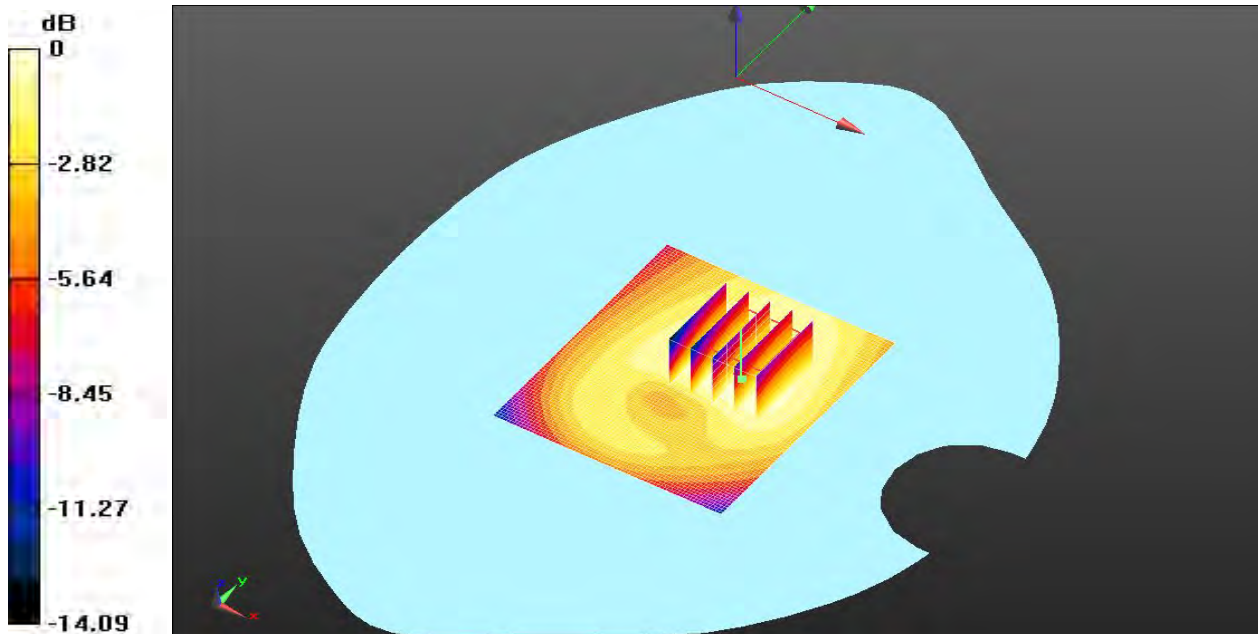
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.49 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.344 W/kg

SAR(1 g) = 0.345 W/kg; SAR(10 g) = 0.177 W/kg

Maximum value of SAR (measured) = 0.256 W/kg



0 dB = 0.256 W/kg = -5.72 dBW/kg

MEAS. 17 Body Plane with Body-worn in Back side on High Channel in GPRS

850 mode

Date/Time: 9/17/2015

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

Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 0.969$ S/m; $\epsilon_r = 55.75$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.97, 9.97, 9.97); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GPRS 850 Body-worn in Back on High/Area Scan (71x81x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.287 W/kg

Configuration/GPRS 850 Body-worn in Back on High/Zoom Scan (5x5x7)/Cube 0:

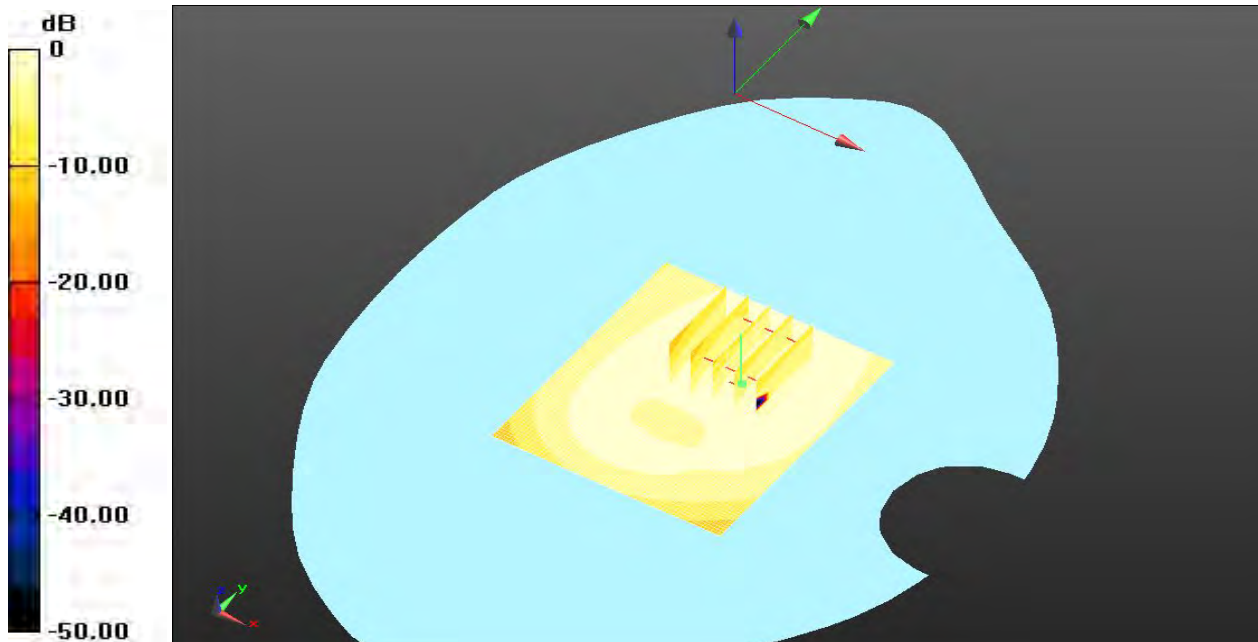
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.05 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.370 W/kg

SAR(1 g) = 0.273 W/kg; SAR(10 g) = 0.292 W/kg

Maximum value of SAR (measured) = 0.286 W/kg



0 dB = 0.286 W/kg = -5.44 dBW/kg

MEAS. 18 Body Plane with Body-worn in Back side on High Channel in EGPRS 850 mode

Date/Time: 9/17/2015

Communication System Band: EGPRS850; 848.8 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 0.969$ S/m; $\epsilon_r = 55.75$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.97, 9.97, 9.97); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/EGPRS 850 Body-worn in Back on High/Area Scan (71x81x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.177 W/kg

Configuration/ EGPRS 850 Body-worn in Back on High /Zoom Scan (5x5x7)/Cube 0:

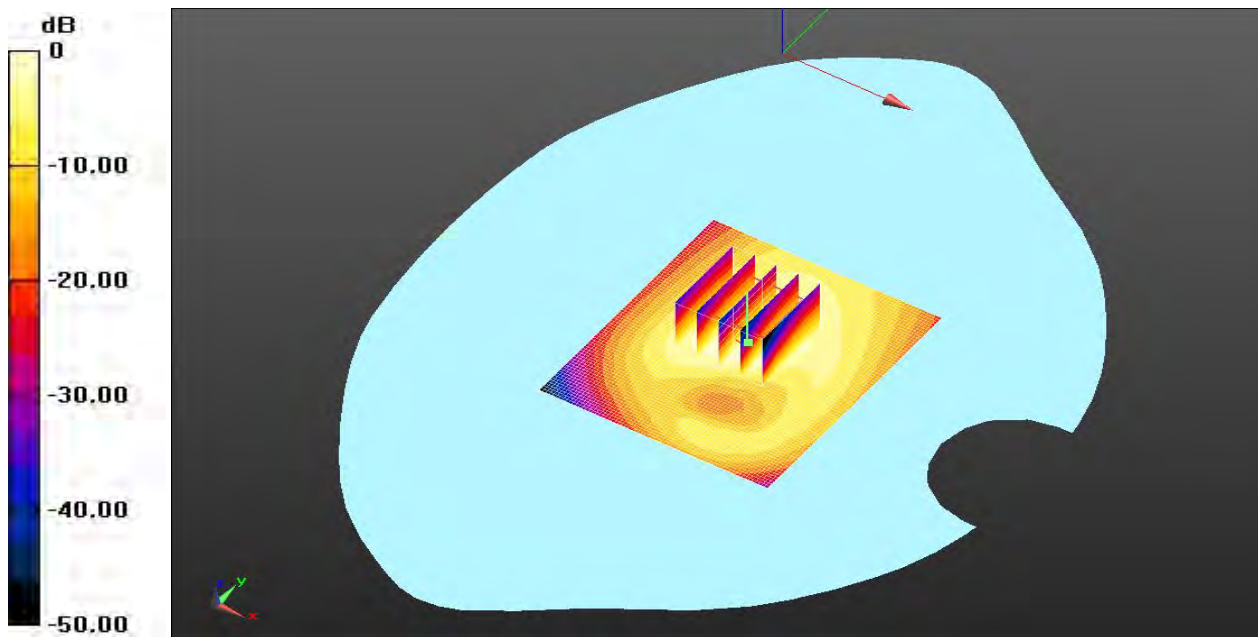
Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 16.58 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.206 W/kg

SAR(1 g) = 0.138 W/kg; SAR(10 g) = 0.092 W/kg

Maximum value of SAR (measured) = 0.167 W/kg



0 dB = 0.167 W/kg = -5.44 dBW/kg

MEAS. 19 Body Plane with Body-worn in Back side on High Channel in GSM

1900 mode

Date/Time: 9/19/2015

Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1910 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.58$ S/m; $\epsilon_r = 51.08$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GSM 1900 Body-worn in Back High/Area Scan (71x81x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.384 W/kg

Configuration/GSM 1900 Body-worn in Back High/Zoom Scan (5x5x7)/Cube 0:

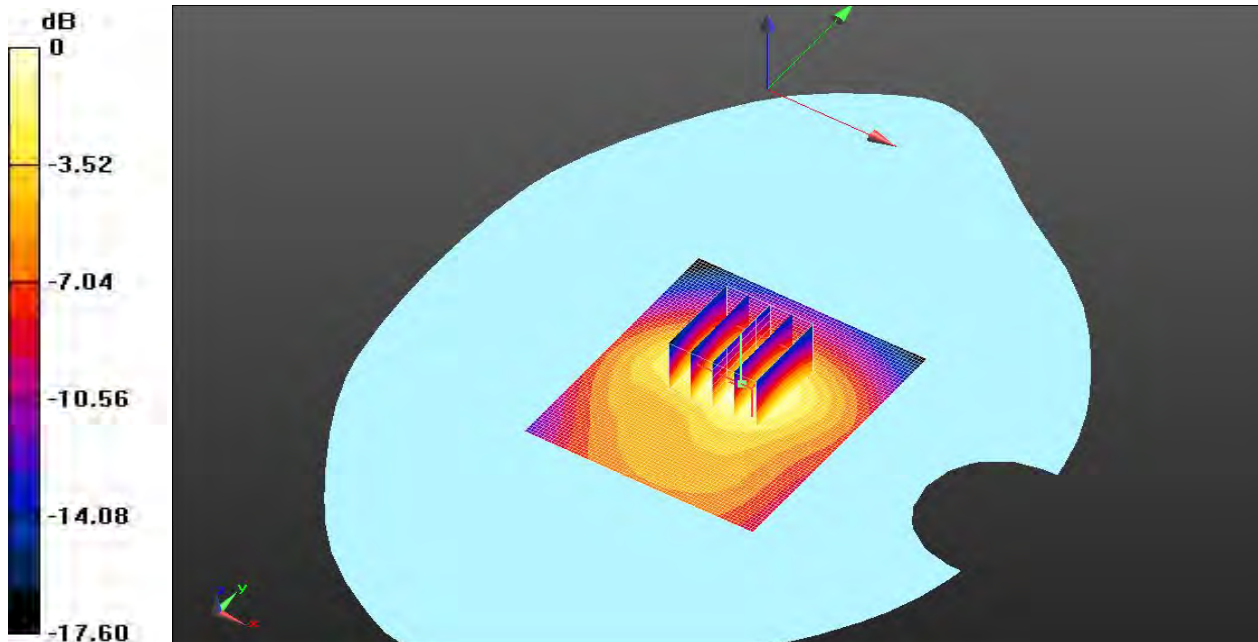
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.66 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.562 W/kg

SAR(1 g) = 0.347 W/kg; SAR(10 g) = 0.201 W/kg

Maximum value of SAR (measured) = 0.381 W/kg



0 dB = 0.381 W/kg = -4.19 dBW/kg

MEAS. 20 Body Plane with Body-worn in Back side on Low Channel in GPRS

1900 mode

Date/Time: 9/19/2015

Communication System Band: GPRS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1850.2$ MHz; $\sigma = 1.53$ S/m; $\epsilon_r = 51.24$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GPRS 1900 Body -Worn in Back on Low/Area Scan (71x81x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.535 W/kg

Configuration/GPRS 1900 Body -Worn in Back on Low/Zoom Scan (5x5x7)/Cube 0:

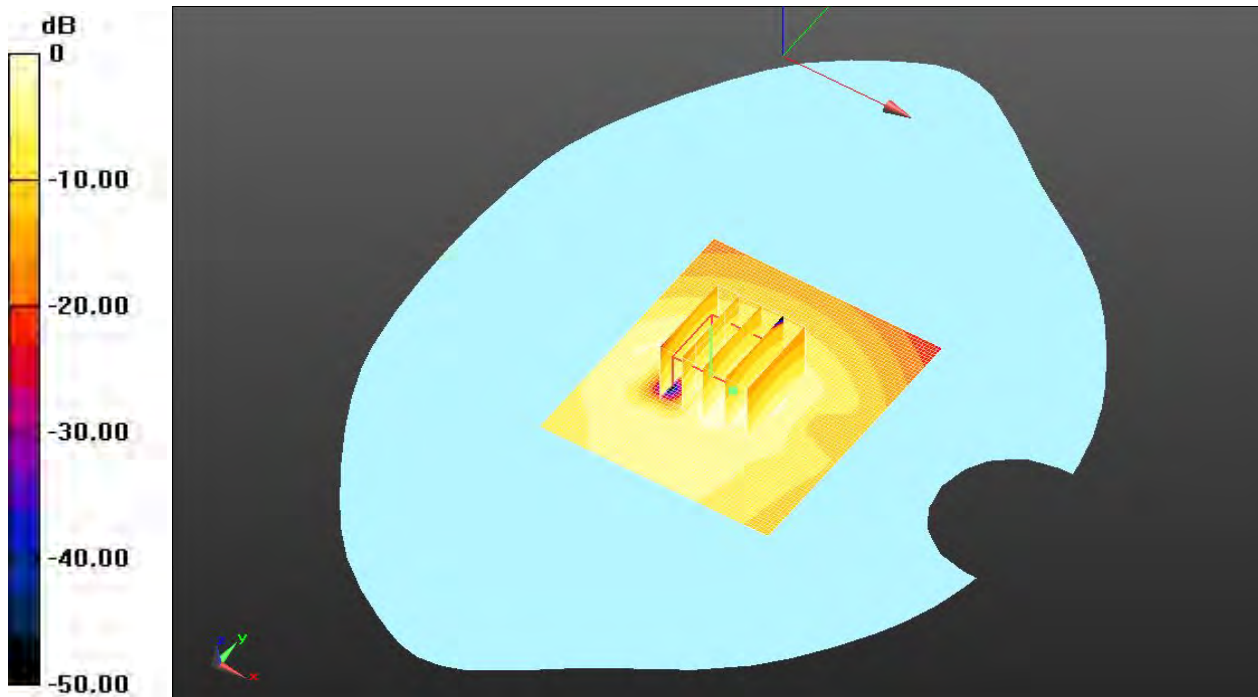
Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 16.98 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.668 W/kg

SAR(1 g) = 0.404 W/kg; SAR(10 g) = 0.237 W/kg

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



0 dB = 0.535 W/kg = -2.72 dBW/kg

MEAS. 21 Body Plane with Body-worn in Back side on High Channel in EGPRS 1900 mode

Date/Time: 9/19/2015

Communication System Band: EGPRS1900; Frequency: 1850 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1850.2$ MHz; $\sigma = 1.53$ S/m; $\epsilon_r = 51.24$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/EGPRS 1900 Body-worn in Back Low/Area Scan (71x81x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.245 W/kg

Configuration/EGPRS 1900 Body-worn in Back Low/Zoom Scan (5x5x7)/Cube 0:

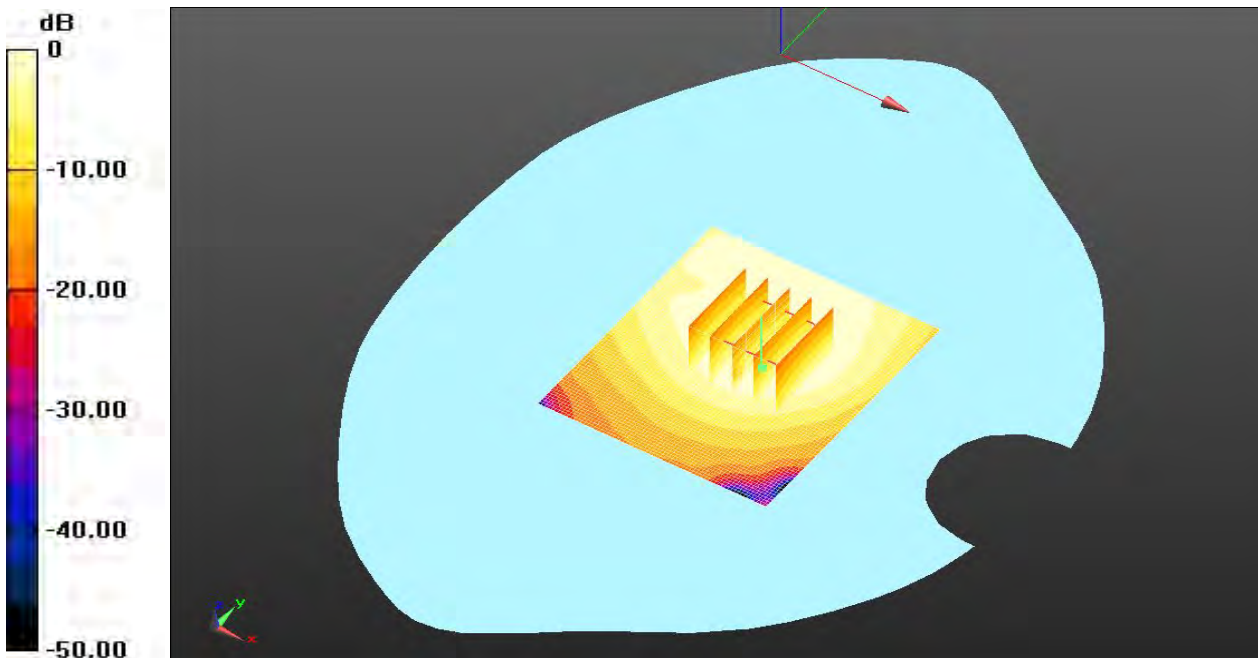
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.88 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 0.413 W/kg

SAR(1 g) = 0.224 W/kg; SAR(10 g) = 0.122 W/kg

Maximum value of SAR (measured) = 0.245 W/kg



0 dB = 0.245 W/kg = -6.11 dBW/kg

MEAS. 22 Body Plane with Body-worn in Front side on High Channel in WCDMA Band 2 mode

Date/Time: 9/19/2015

Communication System Band: II; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1907.6$ MHz; $\sigma = 1.593$ S/m; $\epsilon_r = 51.042$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WCDMA Band 2 Body-worn Front on High/Area Scan (71x91x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.599 W/kg

Configuration/WCDMA Band 2 Body-worn Front on High/Zoom Scan (7x7x7)/Cube 0:

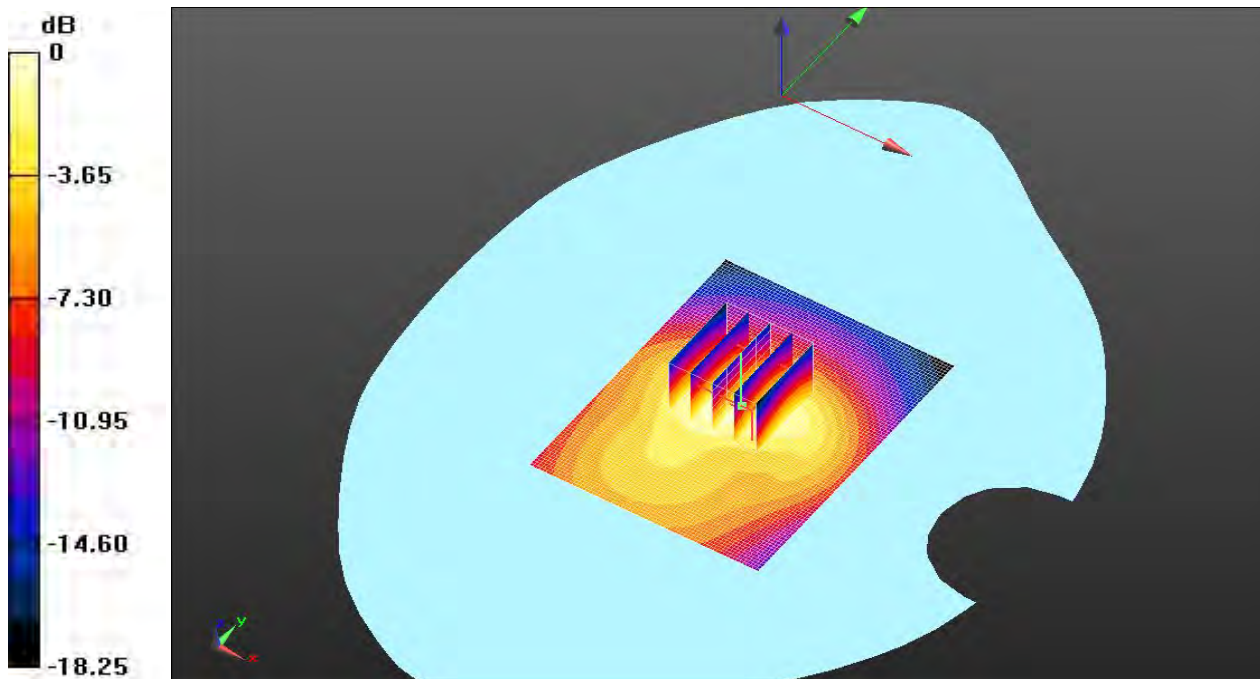
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 19.44 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.921 W/kg

SAR(1 g) = 0.543 W/kg; SAR(10 g) = 0.307 W/kg

Maximum value of SAR (measured) = 0.600 W/kg



0 dB = 0.600 W/kg = -2.22 dBW/kg

MEAS. 23 Body Plane with Body-worn in Back side on Middle Channel in WCDMA Band 4 mode

Date/Time: 9/18/2015

Communication System Band: IV; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1732.6$ MHz; $\sigma = 1.49$ S/m; $\epsilon_r = 53.07$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.53, 8.53, 8.53); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WCDMA Band 4 Body-worn in Back Middle/Area Scan (81x71x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.507 W/kg

Configuration/WCDMA Band 4 Body-worn in Back Middle/Zoom Scan (7x7x7)/Cube 0:

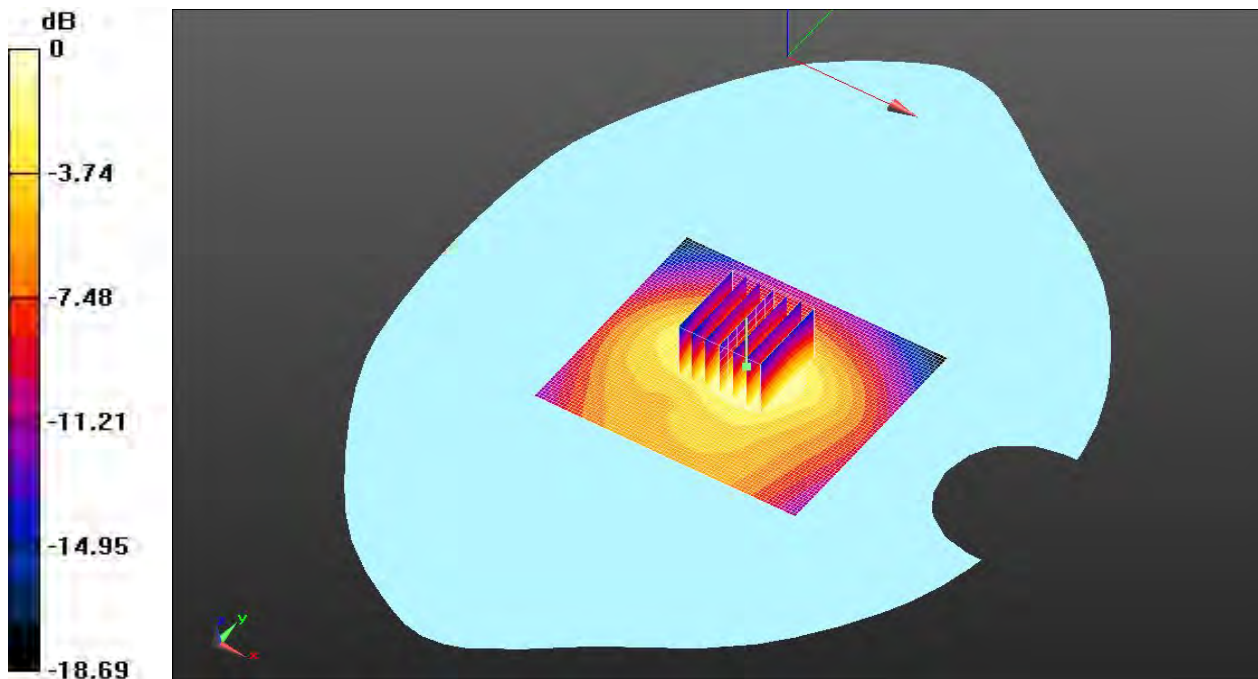
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 20.11 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.973 W/kg

SAR(1 g) = 0.485 W/kg; SAR(10 g) = 0.245 W/kg

Maximum value of SAR (measured) = 0.450 W/kg



0 dB = 0.507 W/kg = -1.89 dBW/kg

MEAS. 24 Body Plane with Body-worn in Back side on Middle Channel in WCDMA Band 5 mode

Date/Time: 9/17/2015

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

Medium parameters used: $f = 836.4$ MHz; $\sigma = 0.96$ S/m; $\epsilon_r = 55.86$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.97, 9.97, 9.97); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WCDMA Band 5 Body Back Middle/Area Scan (71x81x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.243 W/kg

Configuration/WCDMA Band 5 Body Back Middle/Zoom Scan (5x5x7)/Cube 0:

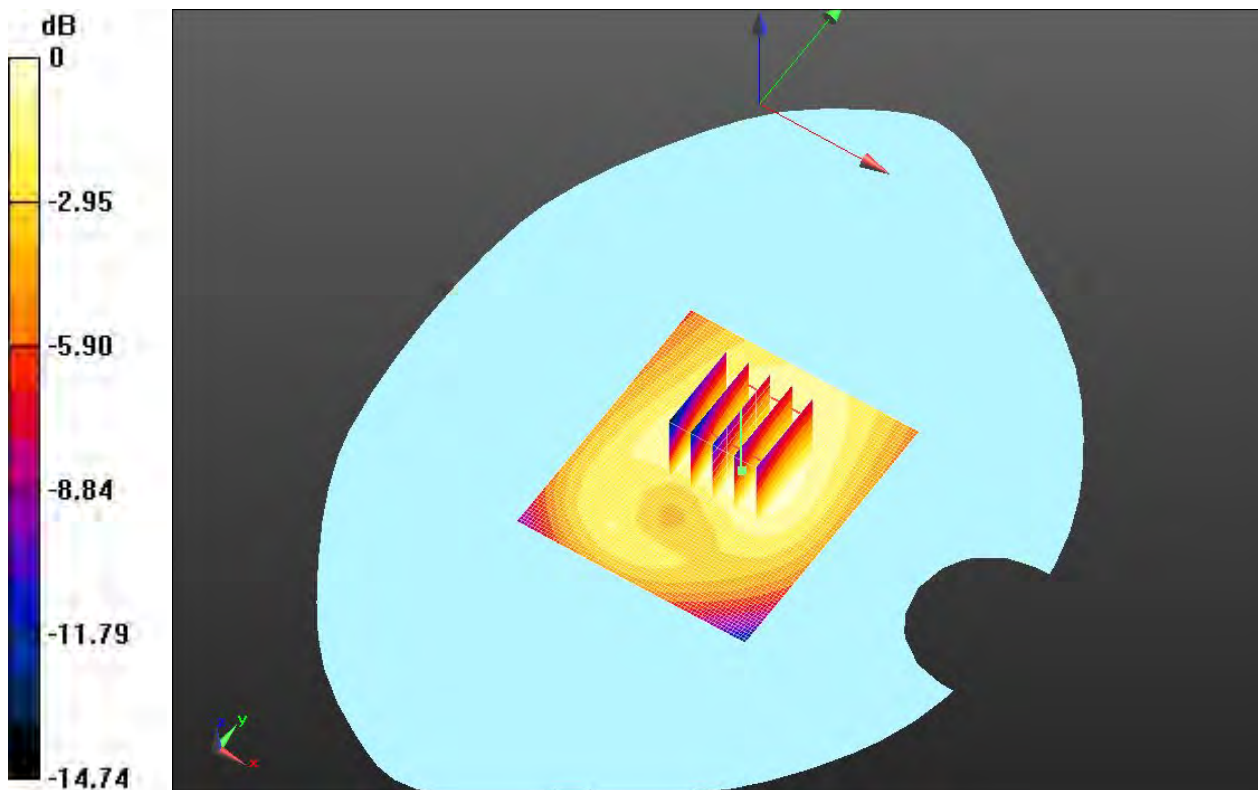
Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 15.11 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 0.308 W/kg

SAR(1 g) = 0.301 W/kg; SAR(10 g) = 0.142 W/kg

Maximum value of SAR (measured) = 0.238 W/kg



0 dB = 0.238 W/kg = -6.23 dBW/kg

MEAS. 25 Body Plane with Body-worn in Back side on High Channel in LTE

Band 2 1RB mode

Date/Time: 9/19/2015

Communication System Band: Band 2, E-UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1900 MHz;

Duty Cycle: 1:1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.57$ S/m; $\epsilon_r = 51.05$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/LTE Band 2 Body-worn Back in High 1RB/Area Scan (71x91x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.550 W/kg

Configuration/LTE Band 2 Body-worn Back in High 1RB/Zoom Scan (5x5x7)/Cube 0:

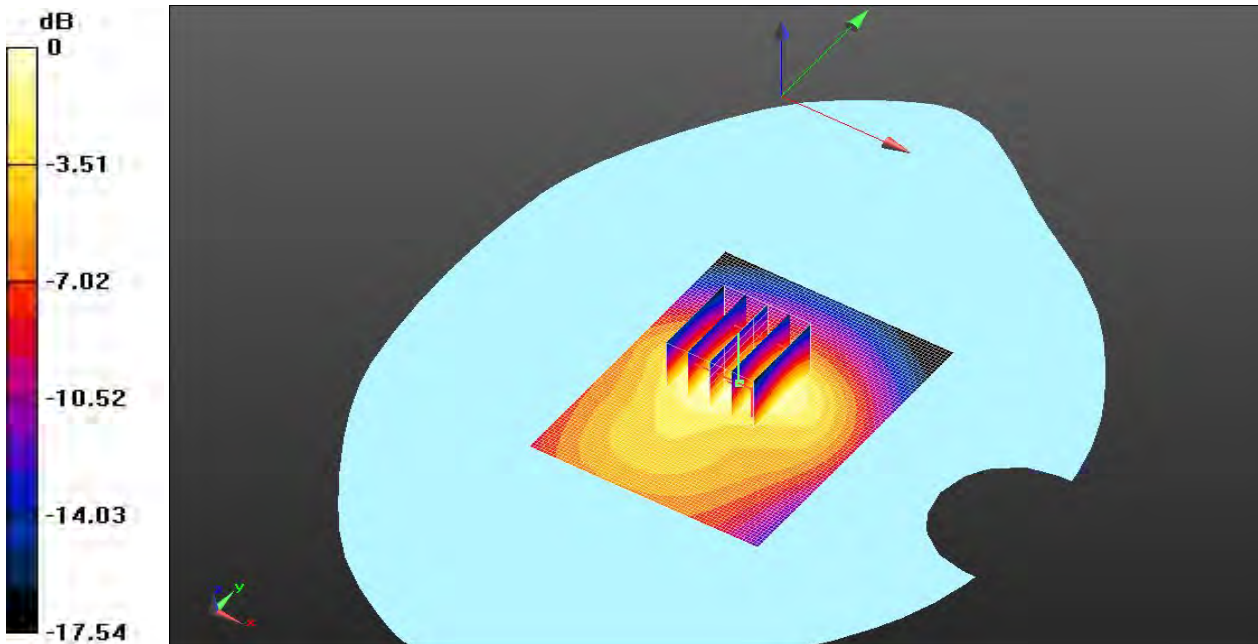
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.09 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.836 W/kg

SAR(1 g) = 0.503 W/kg; SAR(10 g) = 0.286 W/kg

Maximum value of SAR (measured) = 0.547 W/kg



0 dB = 0.547 W/kg = -2.62 dBW/kg

MEAS. 26 Body Plane with Body-worn in Front side on Middle Channel in LTE

Band 4 1RB mode

Date/Time: 9/18/2015

Communication System Band: Band 4, E-UTRA/FDD (1710.0 - 1755.0 MHz); Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.404$ S/m; $\epsilon_r = 51.622$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.53, 8.53, 8.53); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/LTE Band 4 Body-worn Front in on Middle 1RB/Area Scan (71x91x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.499 W/kg

Configuration/LTE Band 4 Body-worn Front in on Middle 1RB/Zoom Scan (5x5x7)/Cube 0:

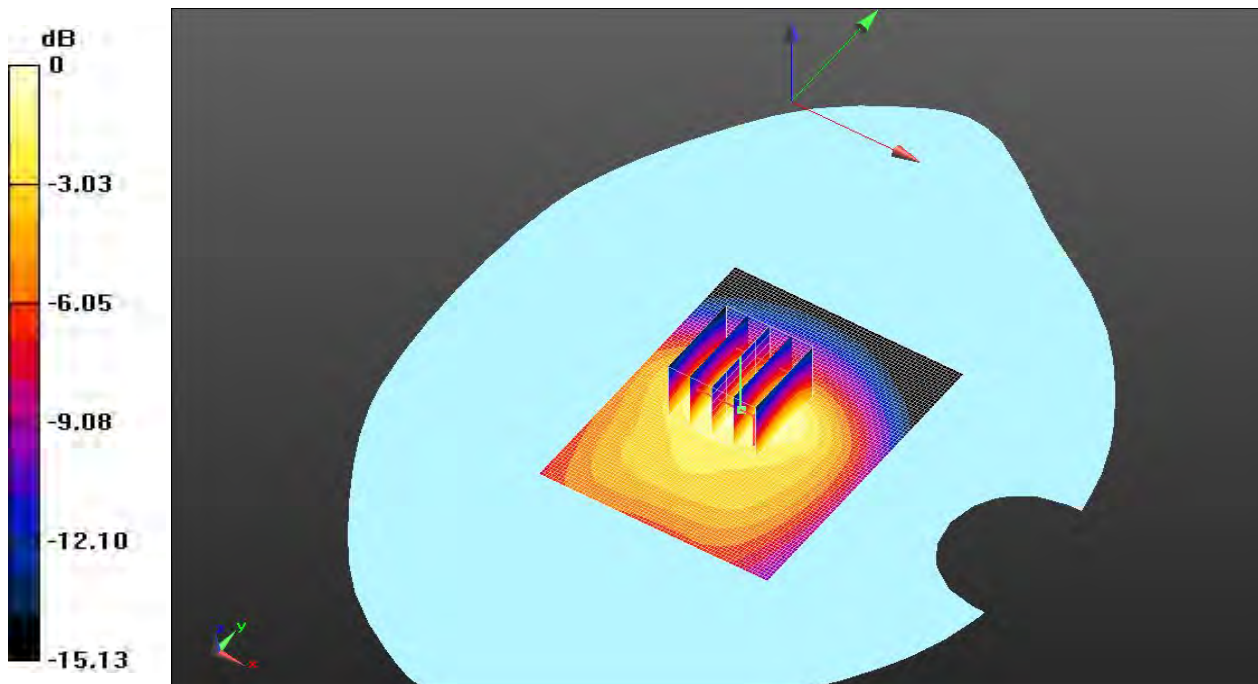
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.57 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.700 W/kg

SAR(1 g) = 0.358 W/kg; SAR(10 g) = 0.271 W/kg

Maximum value of SAR (measured) = 0.493 W/kg



0 dB = 0.493 W/kg = -3.07 dBW/kg

MEAS. 27 Body Plane with Body-worn in Back side on Low Channel in LTE

Band 5 1RB mode

Date/Time: 8/17/2015

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

Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 829$ MHz; $\sigma = 0.955$ S/m; $\epsilon_r = 55.919$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.97, 9.97, 9.97); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/LTE Babd 5 Body-worn in Back Middle/Area Scan (71x81x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.265 W/kg

Configuration/LTE Babd 5 Body-worn in Back Middle/Zoom Scan (5x5x7)/Cube 0:

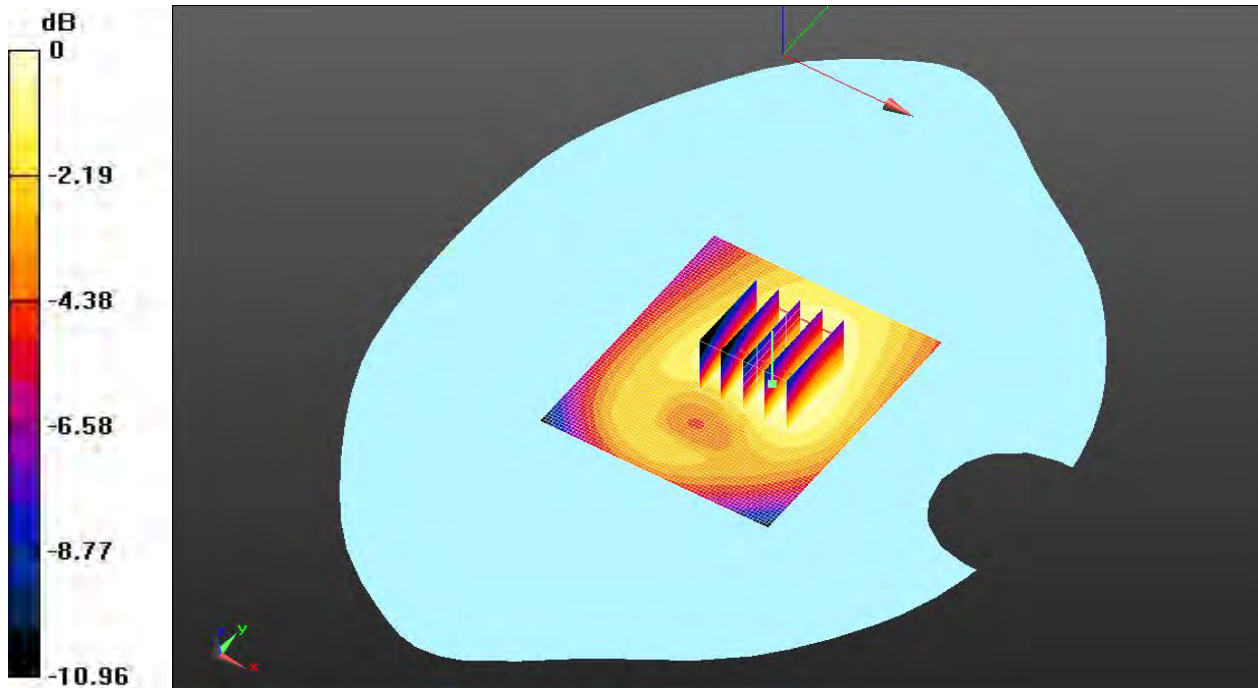
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.70 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.326 W/kg

SAR(1 g) = 0.246 W/kg; SAR(10 g) = 0.177 W/kg

Maximum value of SAR (measured) = 0.257 W/kg



0 dB = 0.265 W/kg = -5.77 dBW/kg

MEAS. 28 Body Plane with Body-worn in Back side on Low Channel in LTE

Band 7 1RB mode

Date/Time: 9/21/2015

Communication System Band: Band 7, E-UTRA/FDD (2500.0 - 2570.0 MHz); Frequency: 2510 MHz;

Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2510$ MHz; $\sigma = 2.09$ S/m; $\epsilon_r = 50.392$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.11, 7.11, 7.11); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/LTE Band 7 Body-worn in Back on Low 1RB/Area Scan (71x91x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.504 W/kg

Configuration/LTE Band 7 Body-worn in Back on Low 1RB/Zoom Scan (7x7x7)/Cube 0:

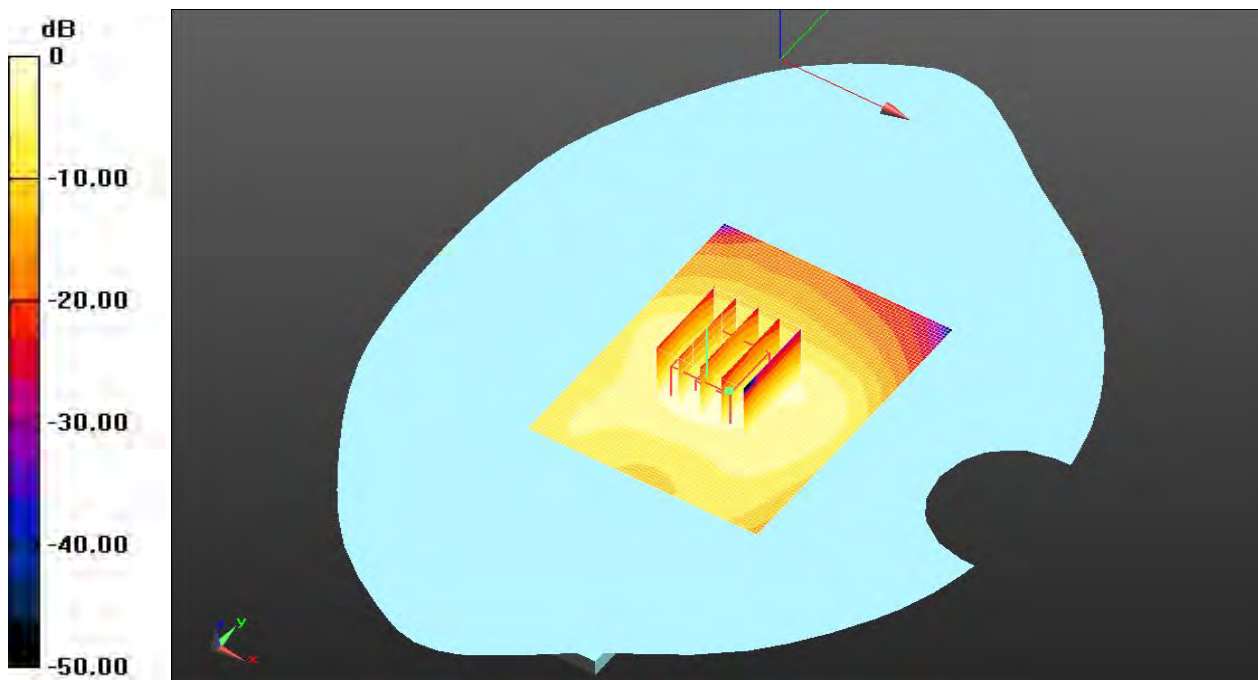
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.55 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.904 W/kg

SAR(1 g) = 0.449W/kg; SAR(10 g) = 0.242 W/kg

Maximum value of SAR (measured) = 0.478 W/kg



0 dB = 0.504 W/kg = -2.98 dBW/kg

MEAS. 29 Body Plane with Body-worn in Back Side on Middle Channel in IEEE 802.b mode

Date/Time: 9/20/2015

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

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 2.013$ S/m; $\epsilon_r = 50.739$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.55, 7.55, 7.55); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WIFI b Body Back in on Middle/Area Scan (71x81x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.154 W/kg

Configuration/WIFI b Body Back in on Middle/Zoom Scan (5x5x7)/Cube 0:

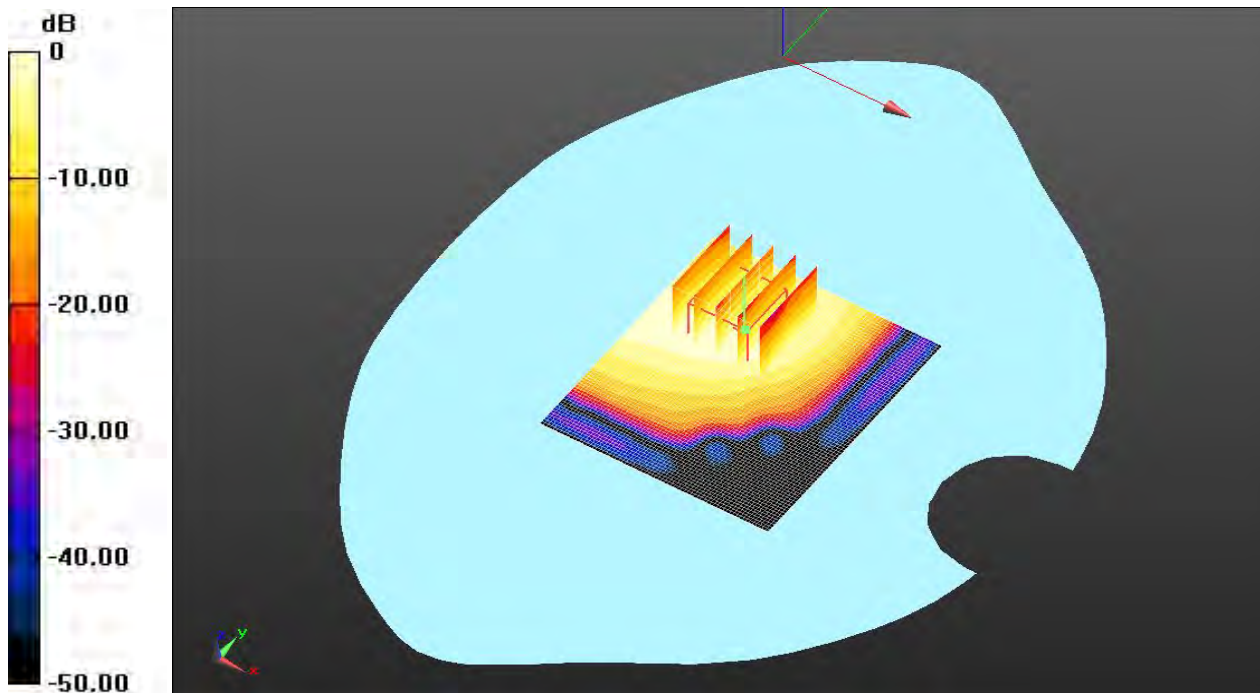
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.410 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.282 W/kg

SAR(1 g) = 0.127 W/kg; SAR(10 g) = 0.079 W/kg

Maximum value of SAR (measured) = 0.146 W/kg



0 dB = 0.154 W/kg = -6.80 dBW/kg

MEAS.30 Body Plane with Back Side in Hotspot on High Channel in GPRS 850

mode

Date/Time: 9/17/2015

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

Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 0.969$ S/m; $\epsilon_r = 55.75$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.97, 9.97, 9.97); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GPRS 850 Body Back Back side in Hotspot on High/Area Scan (71x81x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.616 W/kg

Configuration/GPRS 850 Body Back Back side in Hotspot on High/Zoom Scan (5x5x7)/Cube 0:

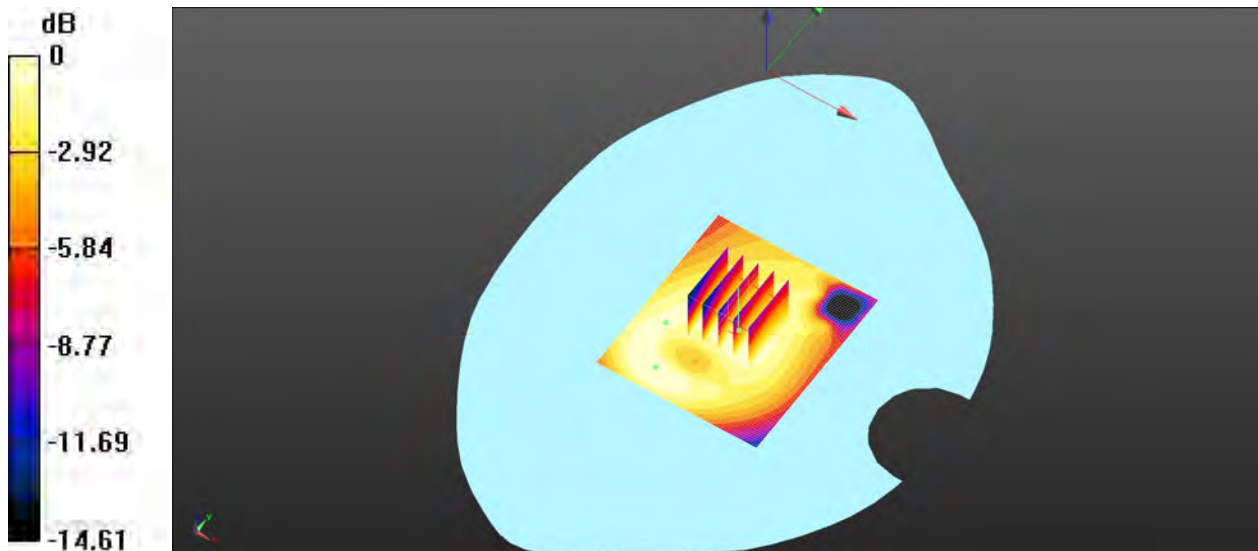
Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 25.24 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.847 W/kg

SAR(1 g) = 0.575 W/kg; SAR(10 g) = 0.396 W/kg

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



0 dB = 0.603 W/kg = -2.20 dBW/kg

MEAS.31 Body Plane with Back Side in Hotspot on High Channel in EGPRS

850 mode

Date/Time: 9/17/2015

Communication System Band: EGPRS 850 (824.0 - 849.0 MHz); Frequency: 848.8 MHz; Duty Cycle: 1:8.30042

Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 0.969$ S/m; $\epsilon_r = 55.75$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.97, 9.97, 9.97); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/EGPRS850 Body Back in hotspot on High/Area Scan (71x81x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.174 W/kg

Configuration/EGPRS850 Body Back in hotspot on High/Zoom Scan (5x5x7)/Cube 0:

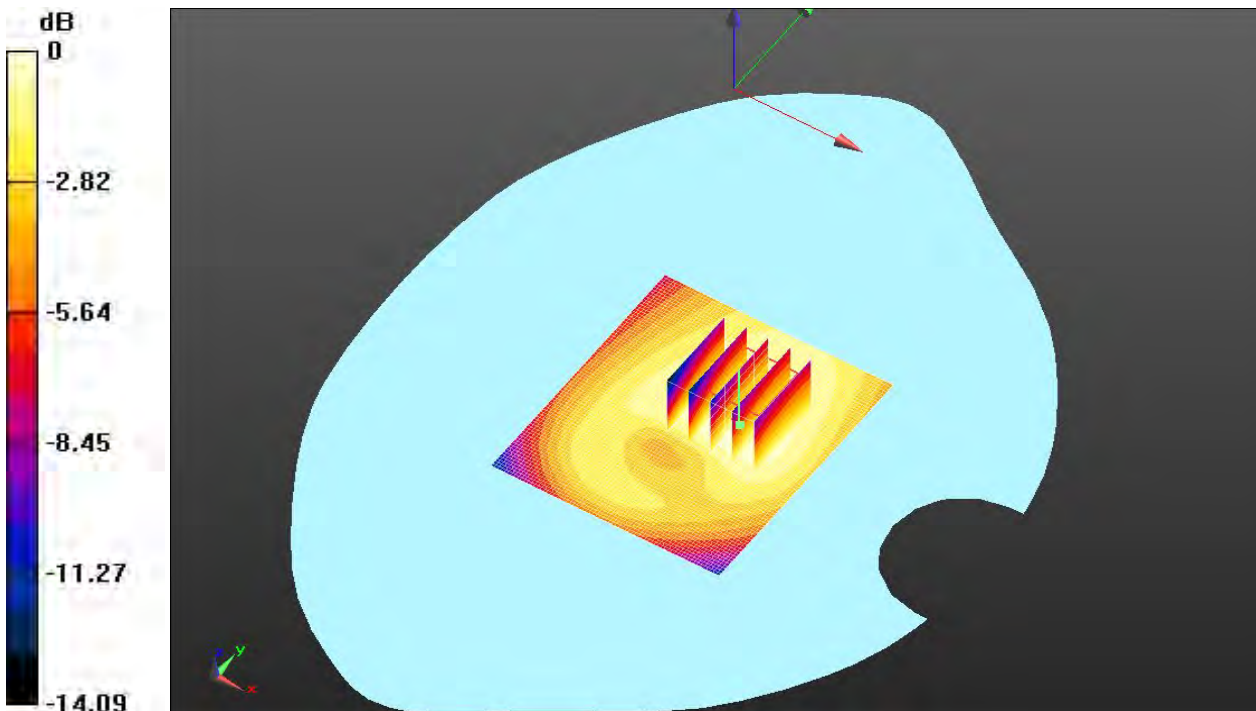
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.49 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.264 W/kg

SAR(1 g) = 0.187 W/kg; SAR(10 g) = 0.122 W/kg

Maximum value of SAR (measured) = 0.198 W/kg



0 dB = 0.268 W/kg = -5.72 dBW/kg

MEAS.32 Body Plane with Bottom Side in Hotspot on Low Channel in GPRS

1900 mode

Date/Time: 9/19/2015

Communication System Band: GPRS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1850.2$ MHz; $\sigma = 1.6$ S/m; $\epsilon_r = 51.04$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GPRS 1900 Body Bottom in Hotspot on Low/Area Scan (71x81x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

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

Configuration/GPRS 1900 Body Bottom in Hotspot on Low/Zoom Scan (5x5x7)/Cube 0:

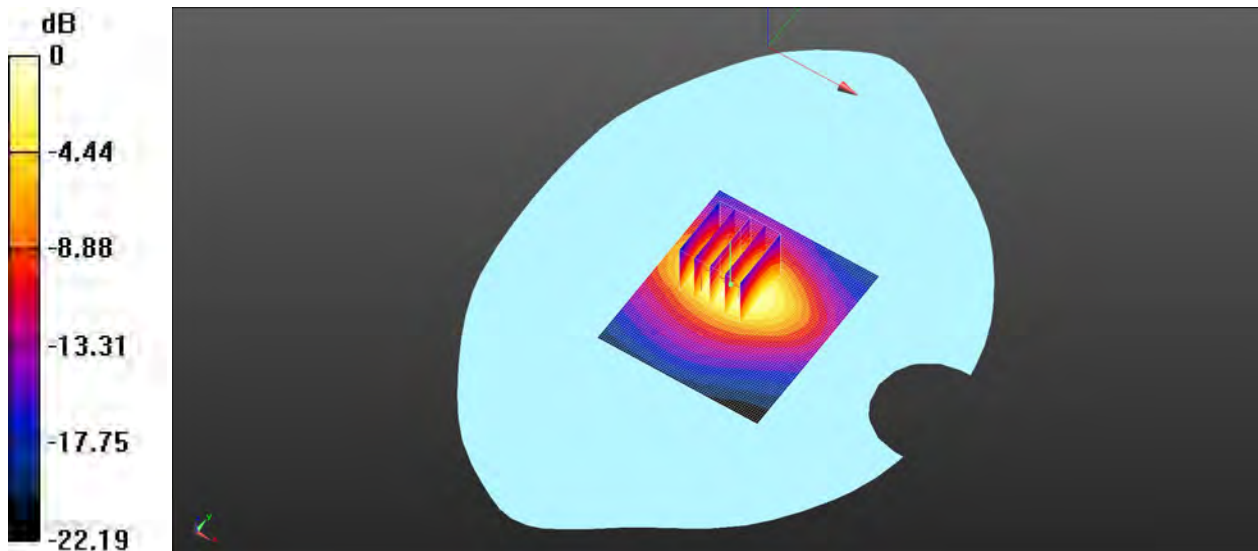
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 21.67 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.53 W/kg

SAR(1 g) = 1.085 W/kg; SAR(10 g) = 0.758 W/kg

Maximum value of SAR (measured) = 0.104 W/kg



0 dB = 1.03 W/kg = 0.13 dBW/kg

MEAS.33 Body Plane with Bottom Side in Hotspot on Low Channel in EGPRS

1900 mode

Date/Time: 9/19/2015

Communication System Band: EGPRS; Frequency: 1850 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1850.2$ MHz; $\sigma = 1.53$ S/m; $\epsilon_r = 51.24$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/EGPRS 1900 Body Bottom in Hotspot on Low/Area Scan (71x81x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.604 W/kg

Configuration/EGPRS 1900 Body Bottom in Hotspot on Low/Zoom Scan (5x5x7)/Cube 0:

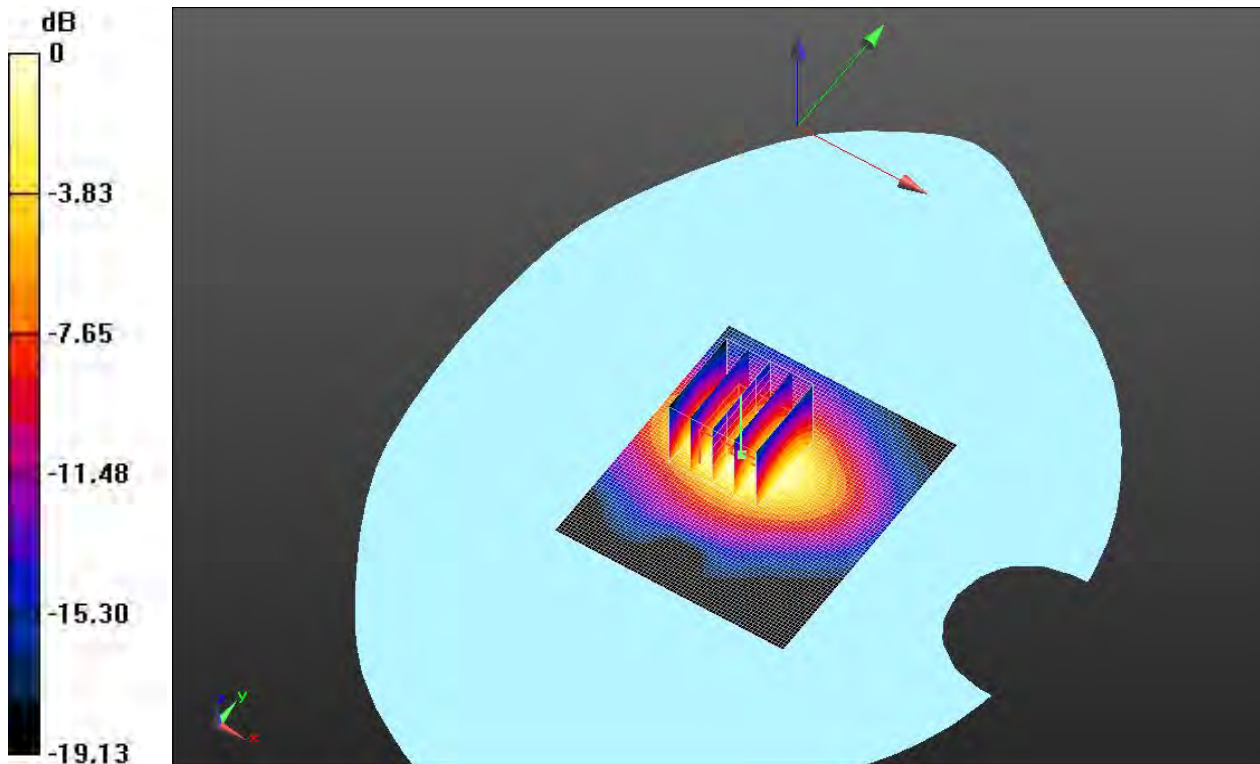
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.44 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.30 W/kg

SAR(1 g) = 0.501 W/kg; SAR(10 g) = 0.278 W/kg

Maximum value of SAR (measured) = 0.581 W/kg



0 dB = 0.581 W/kg = -2.36 dBW/kg

MEAS.34 Body Plane with Bottom Side in Hotspot on High Channel in WCDMA Band 2 mode

Date/Time: 9/19/2015

Communication System Band: II; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1907.6$ MHz; $\sigma = 1.593$ S/m; $\epsilon_r = 51.042$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WCDMA Band 2 Body Bottom in Hotspot on High/Area Scan (71x91x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.854 W/kg

Configuration/WCDMA Band 2 Body Bottom in Hotspot on High/Zoom Scan (5x5x7)/Cube 0:

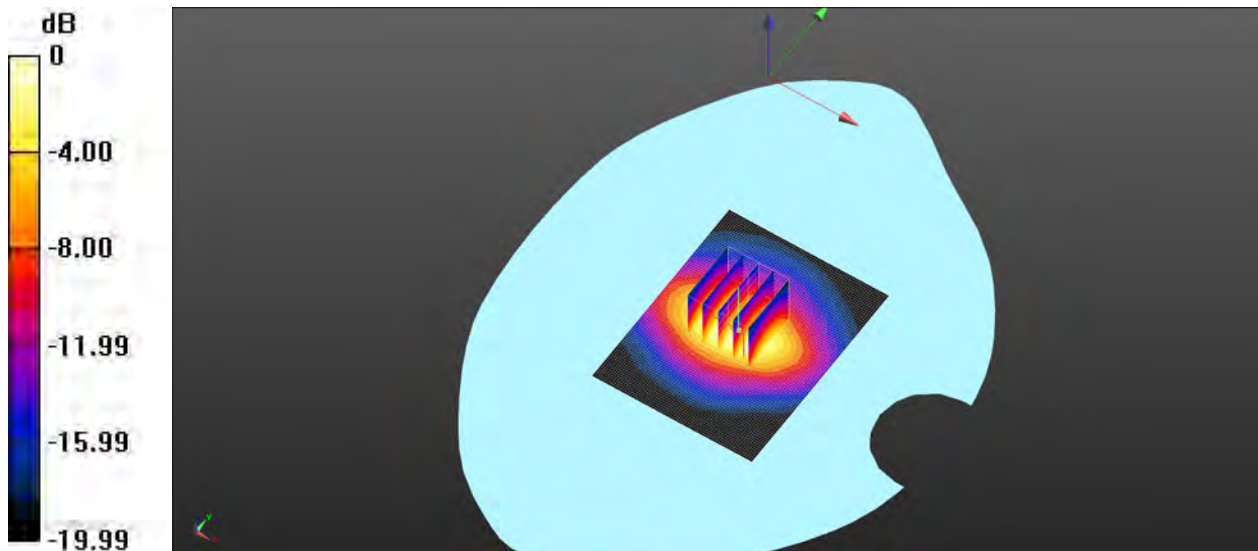
Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 23.06 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 1.33 W/kg

SAR(1 g) = 0.743 W/kg; SAR(10 g) = 0.388 W/kg

Maximum value of SAR (measured) = 0.831 W/kg



0 dB = 0.831 W/kg = -0.80 dBW/kg

MEAS.35 Body Plane with Bottom Side in Hotspot on High Channel in

WCDMA Band 4 mode

Date/Time: 9/18/2015

Communication System Band: IV; Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1752.6$ MHz; $\sigma = 1.49$ S/m; $\epsilon_r = 53.07$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.53, 8.53, 8.53); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WCDMA Band 4 Body Bottom in Hotspot on High/Area Scan (71x91x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.707 W/kg

Configuration/WCDMA Band 4 Body Bottom in Hotspot on High/Zoom Scan (5x5x7)/Cube 0:

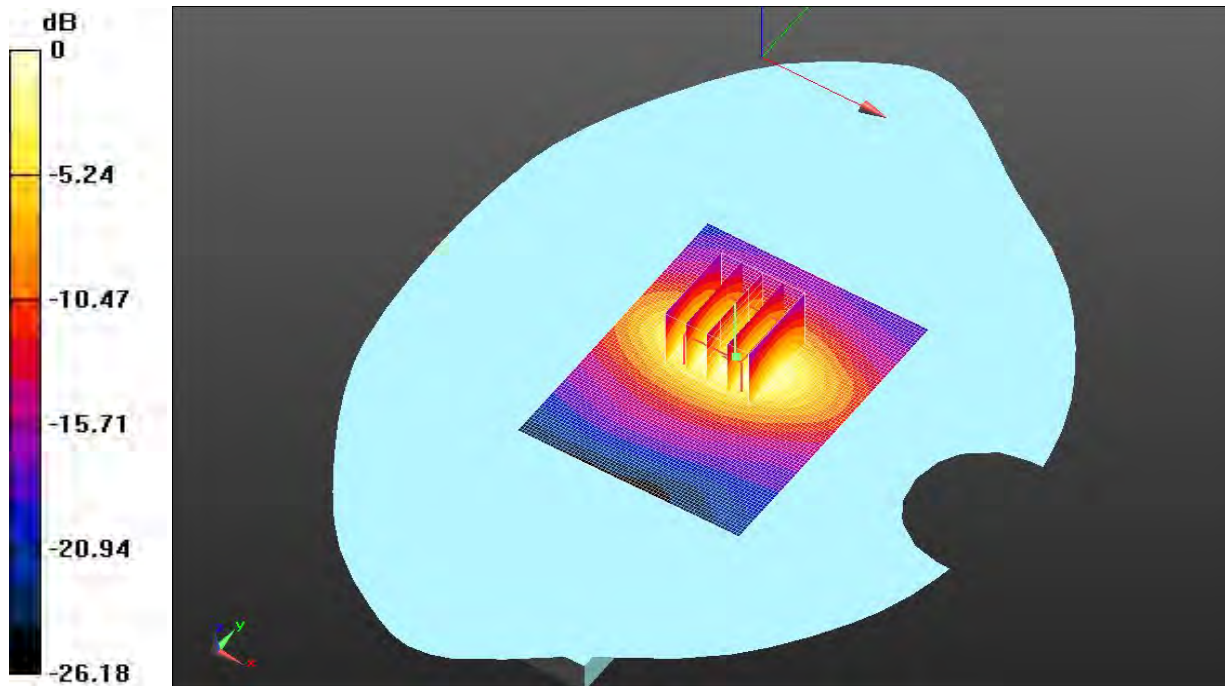
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.02 V/m; Power Drift = 0.20 dB

Peak SAR (extrapolated) = 1.02 W/kg

SAR(1 g) = 0.609 W/kg; SAR(10 g) = 0.334 W/kg

Maximum value of SAR (measured) = 0.667 W/kg



0 dB = 0.707 W/kg = -1.51 dBW/kg

MEAS.36 Body Plane with Back Side in Hotspot on Middle Channel in WCDMA

Band 5 mode

Date/Time: 9/17/2015

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

Medium parameters used: $f = 836.41$ MHz; $\sigma = 0.96$ S/m; $\epsilon_r = 55.86$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.97, 9.97, 9.97); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WCDMA Band 5 Body Back in Hotspot on Middle/Area Scan (71x91x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.536 W/kg

Configuration/WCDMA Band 5 Body Back in Hotspot on Middle/Zoom Scan (5x5x7)/Cube 0:

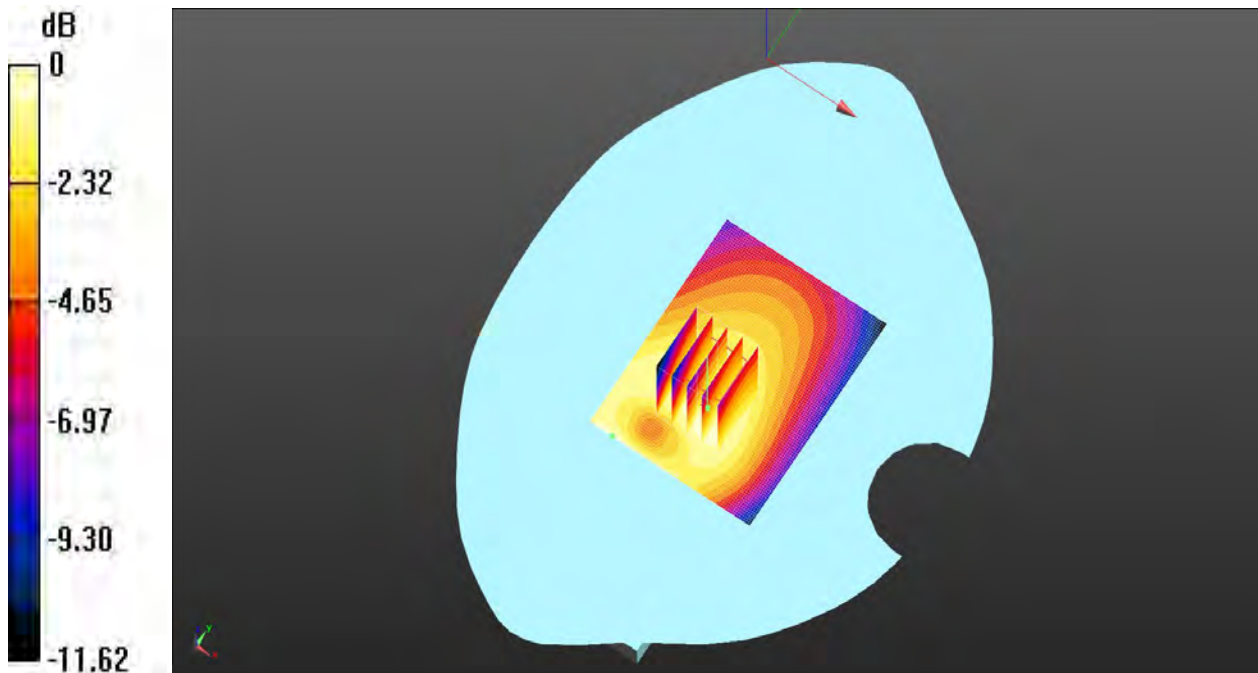
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 21.07 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.663 W/kg

SAR(1 g) = 0.510 W/kg; SAR(10 g) = 0.393 W/kg

Maximum value of SAR (measured) = 0.536 W/kg



0 dB = 0.536 W/kg = -2.71 dBW/kg

MEAS.37 Body Plane with Bottom Side in Hotspot on High Channel in LTE

Band 2 mode

Date/Time: 9/19/2015

Communication System Band: Band 2, E-UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1880.0 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1800.0$ MHz; $\sigma = 1.57$ S/m; $\epsilon_r = 51.05$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/LTE Band 2 Body Bottom in Hotspot on High 1RB/Area Scan (71x91x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.891 W/kg

Configuration/LTE Band 2 Body Bottom in Hotspot on High 1RB/Zoom Scan (5x5x7)/Cube 0:

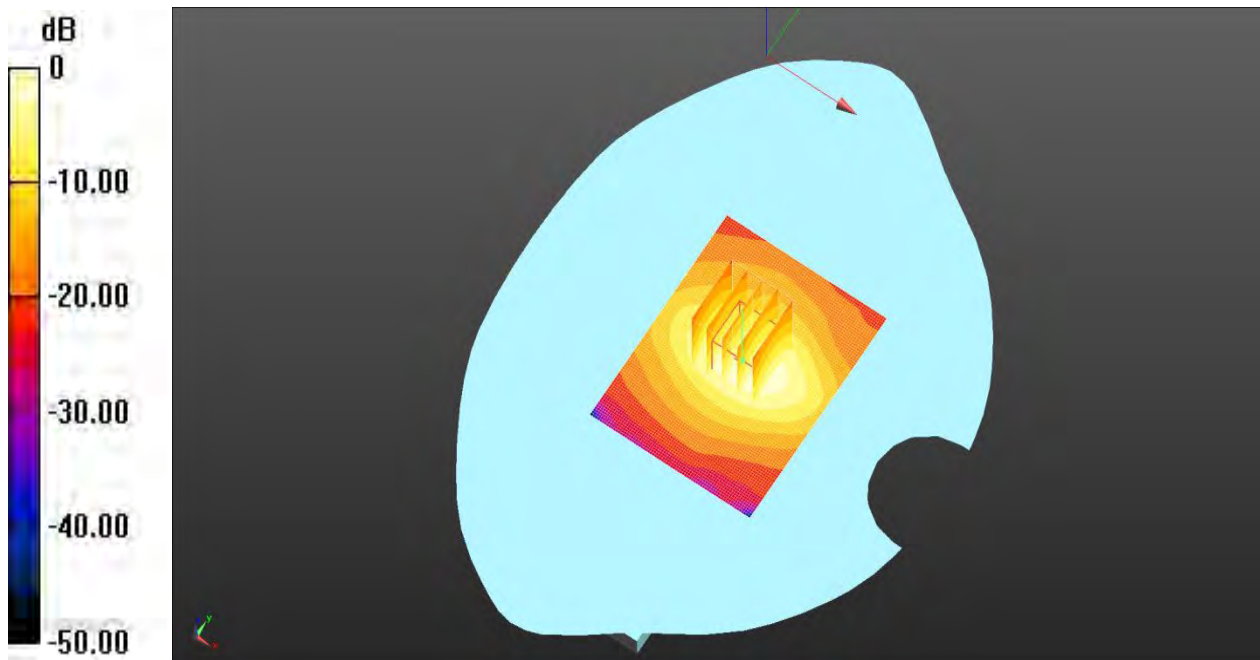
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 22.75 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.38 W/kg

SAR(1 g) = 0.770 W/kg; SAR(10 g) = 0.402 W/kg

Maximum value of SAR (measured) = 0.856 W/kg



0 dB = 0.891 W/kg = -0.50 dBW/kg

MEAS.38 Body Plane with Bottom Side in Hotspot on Middle Channel in LTE

Band 4 mode

Date/Time: 9/18/2015

Communication System Band: Band 4, E-UTRA/FDD (1710.0 - 1755.0 MHz); Frequency: 1745.0 MHz;

Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1745.0$ MHz; $\sigma = 1.404$ S/m; $\epsilon_r = 51.622$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.53, 8.53, 8.53); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/LTE Band 4 Body Bottom in Hotspot on Middle 1RB/Area Scan (71x91x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.652 W/kg

Configuration/LTE Band 4 Body Bottom in Hotspot on Middle 1RB/Zoom Scan (5x5x7)/Cube 0:

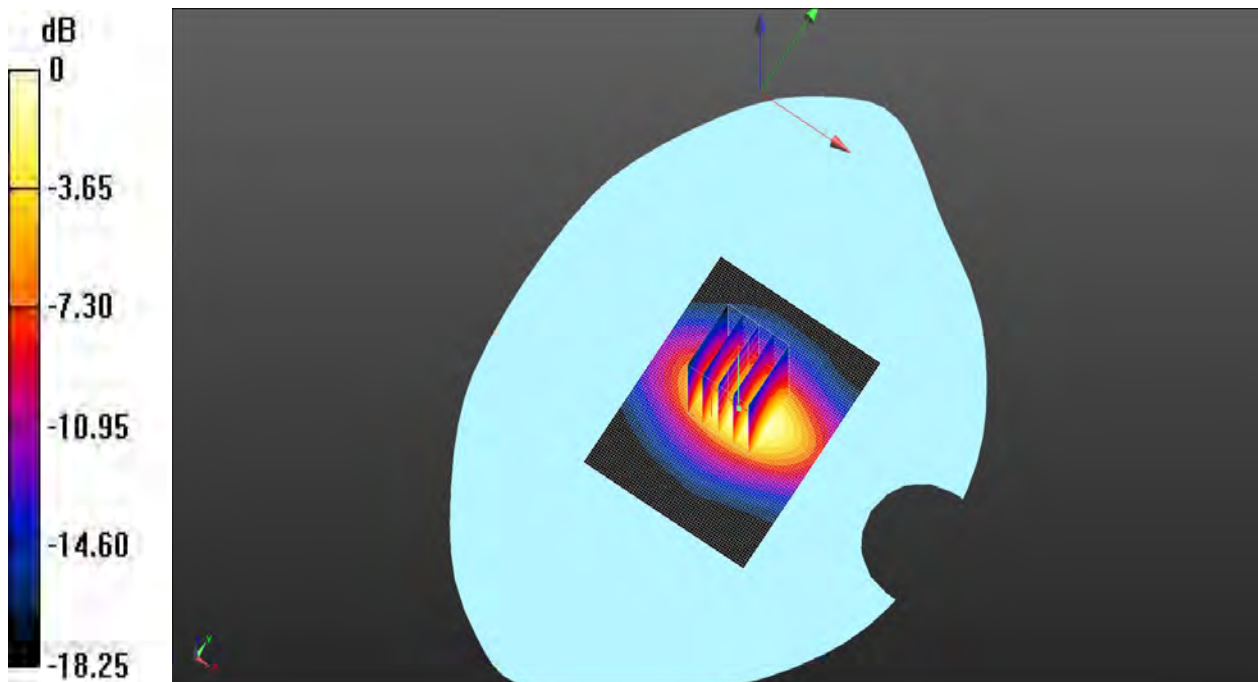
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.07 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.958 W/kg

SAR(1 g) = 0.570 W/kg; SAR(10 g) = 0.310 W/kg

Maximum value of SAR (measured) = 0.629 W/kg



0 dB = 0.629 W/kg = -2.01 dBW/kg

MEAS.39 Body Plane with Back Side in Hotspot on Low Channel in LTE Band

5 mode

Date/Time: 9/17/2015

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

Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 829$ MHz; $\sigma = 0.955$ S/m; $\epsilon_r = 55.919$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(9.97, 9.97, 9.97); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/LTE Band 5 Body Back in Hotspot on Low 1RB/Area Scan (71x91x1): Interpolated grid:

$dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.397 W/kg

Configuration/LTE Band 5 Body Back in Hotspot on Low 1RB/Zoom Scan (5x5x7)/Cube 0:

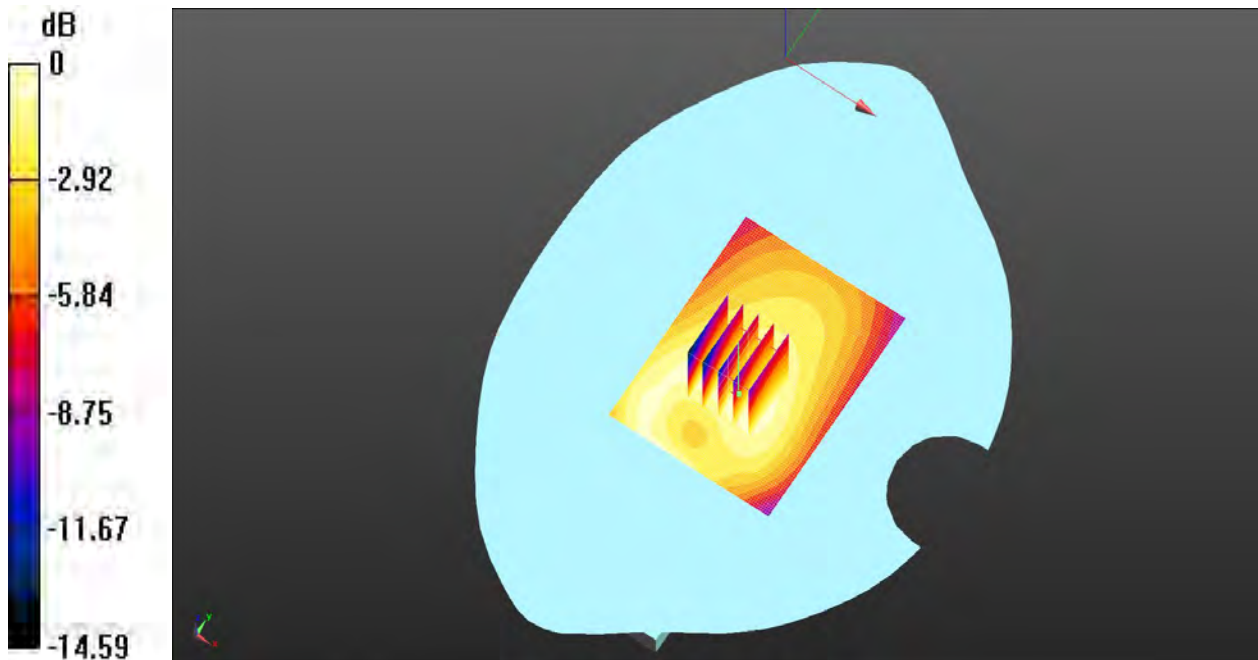
Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 18.38 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.516 W/kg

SAR(1 g) = 0.692 W/kg; SAR(10 g) = 0.256 W/kg

Maximum value of SAR (measured) = 0.385 W/kg



0 dB = 0.385 W/kg = -4.15 dBW/kg

MEAS.40 Body Plane with Bottom Side in Hotspot on Low Channel in LTE

Band 7 mode

Date/Time: 9/21/2015

Communication System Band: Band 7, E-UTRA/FDD (2500.0 - 2570.0 MHz); Frequency: 2510 MHz;

Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2510$ MHz; $\sigma = 2.09$ S/m; $\epsilon_r = 50.392$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.11, 7.11, 7.11); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/LTE Band 7 Body Bottom in Hotspot on Low 1RB/Area Scan (71x91x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.908 W/kg

Configuration/LTE Band 7 Body Bottom in Hotspot on Low 1RB/Zoom Scan (5x5x7)/Cube 0:

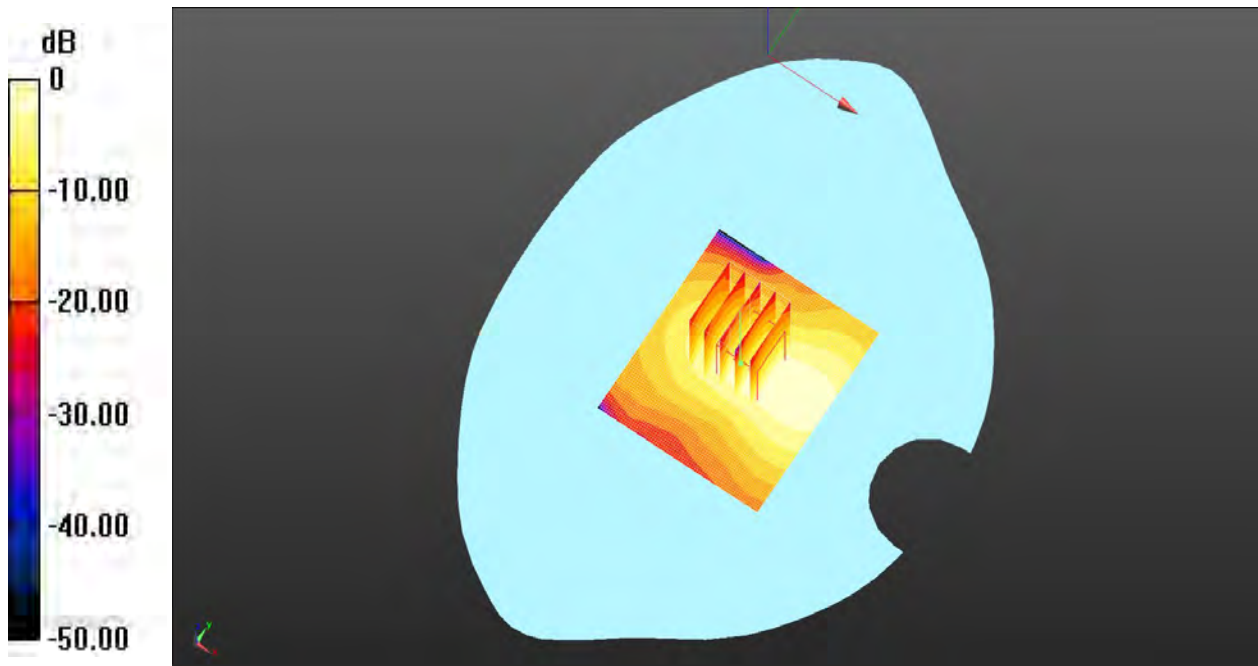
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.77 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 1.73 W/kg

SAR(1 g) = 0.805 W/kg; SAR(10 g) = 0.385 W/kg

Maximum value of SAR (measured) = 0.886 W/kg



0 dB = 0.908 W/kg = -0.42 dBW/kg

MEAS.41 Body Plane with Top Side in Hotspot on Middle Channel in IEEE

802.11b mode

Date/Time: 9/20/2015

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

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 2.013$ S/m; $\epsilon_r = 50.739$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.55, 7.55, 7.55); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WIFI b Body Top in Hotspot on Middle/Area Scan (71x81x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.237 W/kg

Configuration/WIFI b Body Top in Hotspot on Middle/Zoom Scan (5x5x7)/Cube 0:

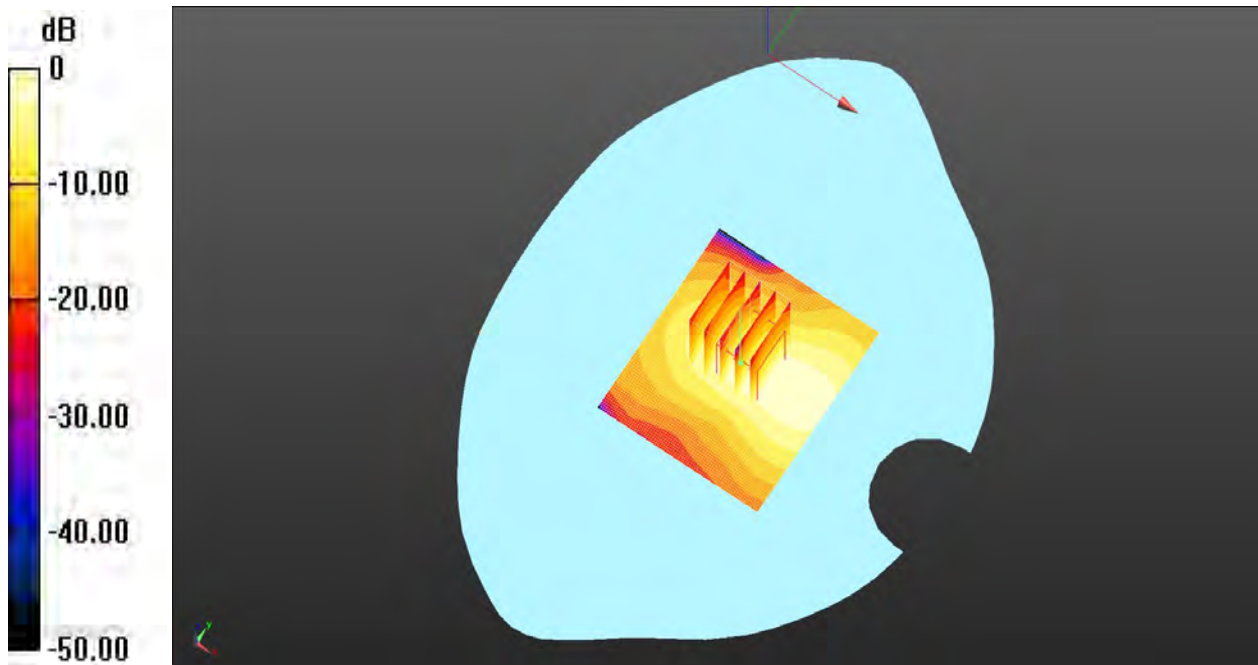
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.64 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.452 W/kg

SAR(1 g) = 0.212 W/kg; SAR(10 g) = 0.103 W/kg

Maximum value of SAR (measured) = 0.238 W/kg



0 dB = 0.237 W/kg = -6.25 dBW/kg

MEAS.42 Body Plane with Bottom Side in Hotspot on Middle Channel in GPRS 1900 mode

Date/Time: 9/19/2015

Communication System Band: GPRS1900; Frequency: 1880.0 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880.0$ MHz; $\sigma = 1.53$ S/m; $\epsilon_r = 51.24$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GPRS 1900 Body Bottom in Hotspot /Area Scan (71x81x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

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

Configuration/GPRS 1900 Body Bottom in Hotspot /Zoom Scan (5x5x7)/Cube 0:

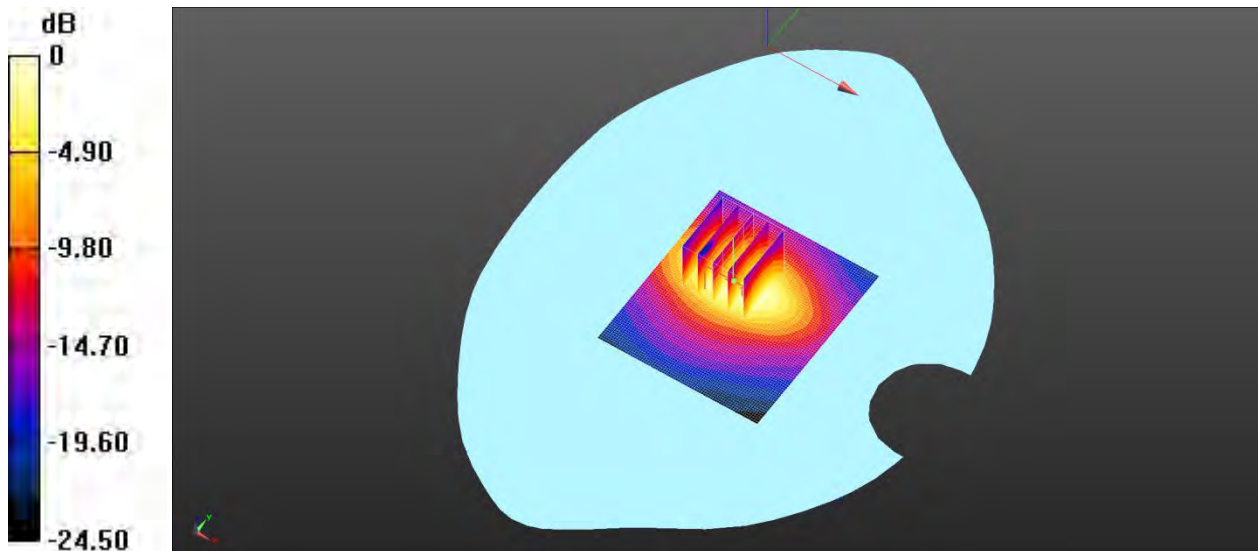
Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 21.69 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 1.80 W/kg

SAR(1 g) = 0.896 W/kg; SAR(10 g) = 0.549 W/kg

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



0 dB = 1.16 W/kg = 0.64 dBW/kg

MEAS.43 Body Plane with Bottom Side in Hotspot on High Channel in GPRS

1900 mode

Date/Time: 9/19/2015

Communication System Band: GPRS1900; Frequency: 1909.8 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1909.8\text{MHz}$; $\sigma = 1.57\text{ S/m}$; $\epsilon_r = 51.14$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

Ambient Temperature: 22.3 Liquid Temperature: 21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GPRS 1900 Body Bottom in Hotspot /Area Scan (71x81x1):

Interpolated grid: $dx=1.200\text{ mm}$, $dy=1.200\text{ mm}$

Maximum value of SAR (interpolated) = 0.958 W/kg

Configuration/GPRS 1900 Body Bottom in Hotspot /Zoom Scan (5x5x7)/Cube 0:

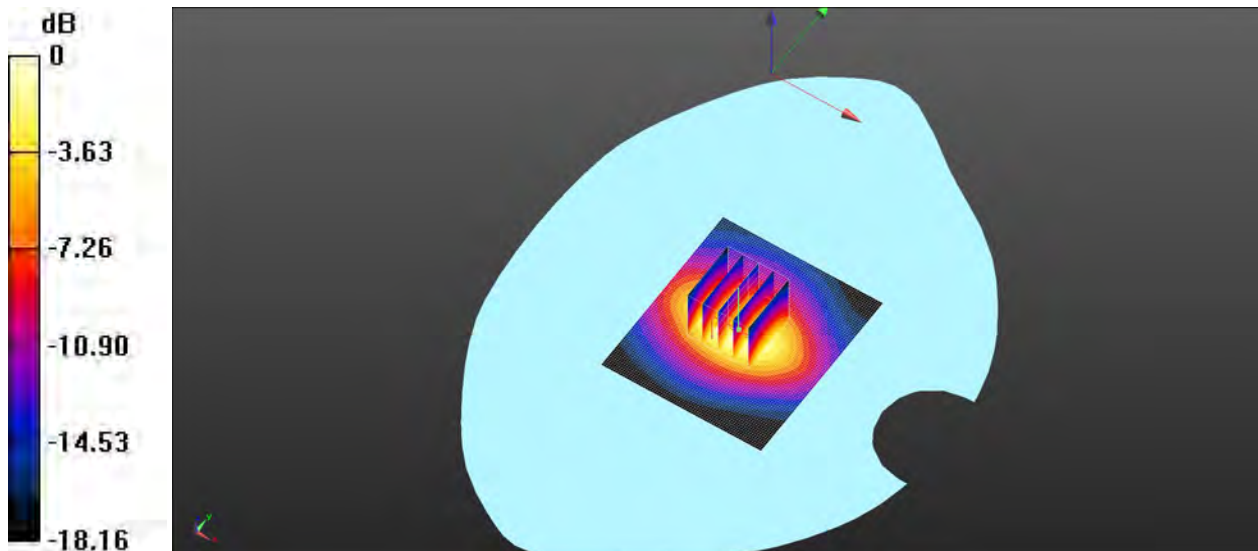
Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 24.69 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 1.37 W/kg

SAR(1 g) = 0.986 W/kg; SAR(10 g) = 0.489 W/kg

Maximum value of SAR (measured) = 0.956 W/kg



0 dB = 0.956 W/kg = -0.20 dBW/kg

MEAS.44 Body Plane with Bottom Side in Hotspot on Middle Channel in LTE

Band 7 mode

Date/Time: 9/20/2015

Communication System Band: Band 7, E-UTRA/FDD (2500.0 - 2570.0 MHz); Frequency: 2535 MHz;

Duty Cycle: 1:1

Medium parameters used: $f = 2535$ MHz; $\sigma = 2.09$ S/m; $\epsilon_r = 50.31$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(7.11, 7.11, 7.11); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/LTE Band 7 Body Bottom in Hotspot on Middle 1RB/Area Scan (71x91x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.777 W/kg

Configuration/LTE Band 7 Body Bottom in Hotspot on Middle 1RB/Zoom Scan (5x5x7)/Cube 0:

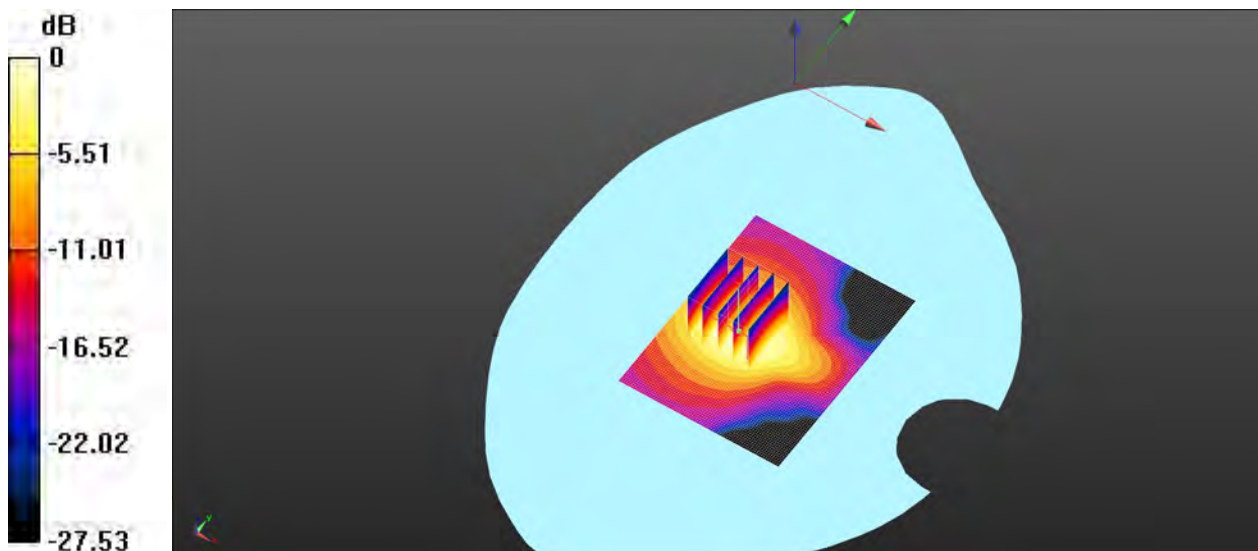
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.32 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 1.49 W/kg

SAR(1 g) = 0.695 W/kg; SAR(10 g) = 0.336 W/kg

Maximum value of SAR (measured) = 0.766 W/kg



0 dB = 0.766 W/kg = -1.16 dBW/kg

MEAS.45 Body Plane with Bottom Side in Hotspot on High Channel in LTE

Band 7 mode

Date/Time: 9/20/2015

Communication System Band: Band 7, E-UTRA/FDD (2500.0 - 2570.0 MHz); Frequency: 2560.0 MHz;

Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2560.0$ MHz; $\sigma = 2.09$ S/m; $\epsilon_r = 50.392$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature:22.3 Liquid Temperature:21.4

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/LTE Band 7 Body Bottom in Hotspot 1RB2/Area Scan (71x91x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.900 W/kg

Configuration/LTE Band 7 Body Bottom in Hotspot on /Zoom Scan (5x5x7)/Cube 0:

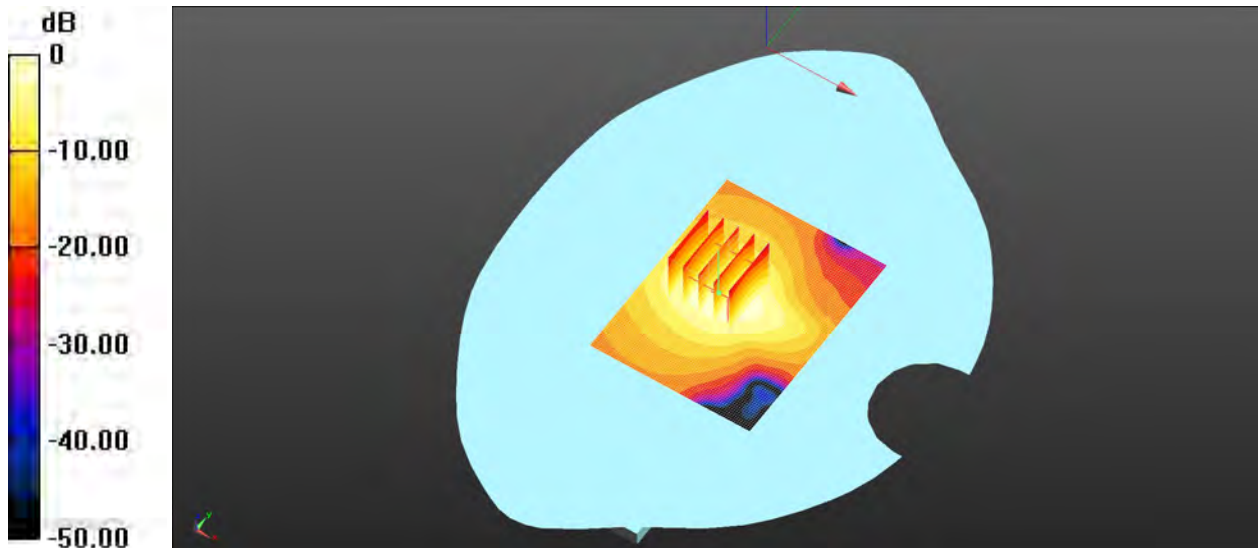
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.68 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.72 W/kg

SAR(1 g) = 0.719 W/kg; SAR(10 g) = 0.383 W/kg

Maximum value of SAR (measured) = 0.880 W/kg



0 dB = 0.900 W/kg = -0.46 dBW/kg

MEAS.46 Body Plane with Back Side in Body-worn on High Channel in

GPRS1900 3 slots mode

Date/Time: 10/8/2015

Communication System Band: GPRS1900; Frequency: 1909.8 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1909.8$ MHz; $\sigma = 1.56$ S/m; $\epsilon_r = 51.06$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.5 Liquid Temperature: 21.8

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GPRS 1900 Body-worn in Back on High/Area Scan (71x81x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.489 W/kg

Configuration/GPRS 1900 Body-worn in Back on High/Zoom Scan (5x5x7)/Cube 0:

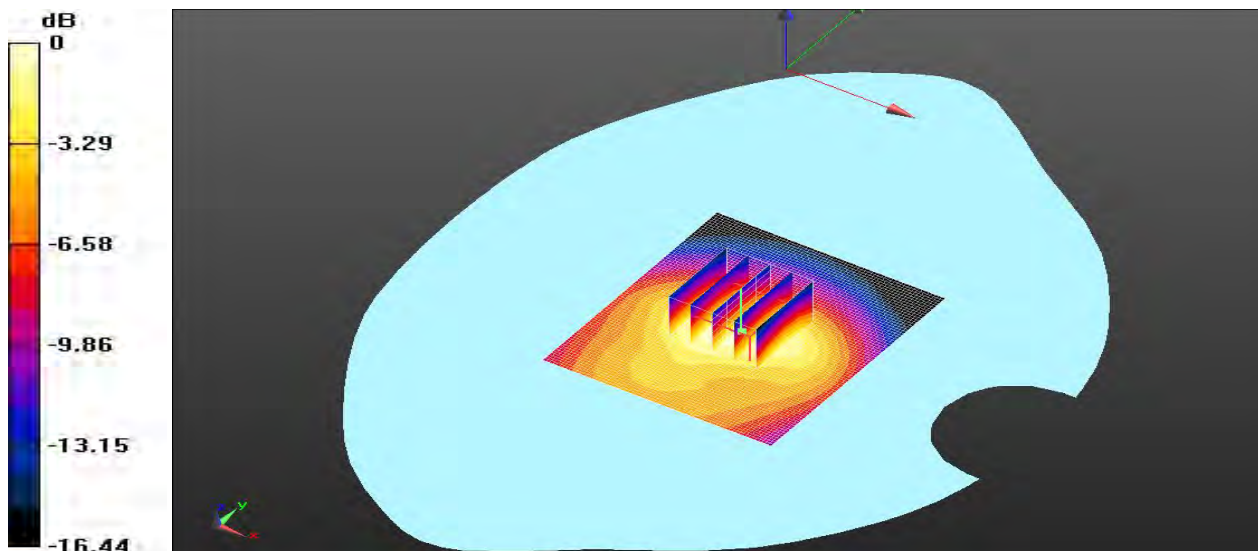
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.88 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.693 W/kg

SAR(1 g) = 0.408 W/kg; SAR(10 g) = 0.259 W/kg

Maximum value of SAR (measured) = 0.480 W/kg



0 dB = 0.489 W/kg = -3.107 dBW/kg

MEAS.47 Body Plane with Bottom Edge in Hotspot on High Channel in GPRS1900 3 slots mode

Date/Time: 10/8/2015

Communication System Band: GPRS1900; Frequency: 1909.8 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1909.8$ MHz; $\sigma = 1.56$ S/m; $\epsilon_r = 51.06$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.5 Liquid Temperature: 21.8

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GPRS 1900 Body-worn in Back on High/Area Scan (71x81x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.12 W/kg

Configuration/GPRS 1900 Body-worn in Back on High/Zoom Scan (5x5x7)/Cube 0:

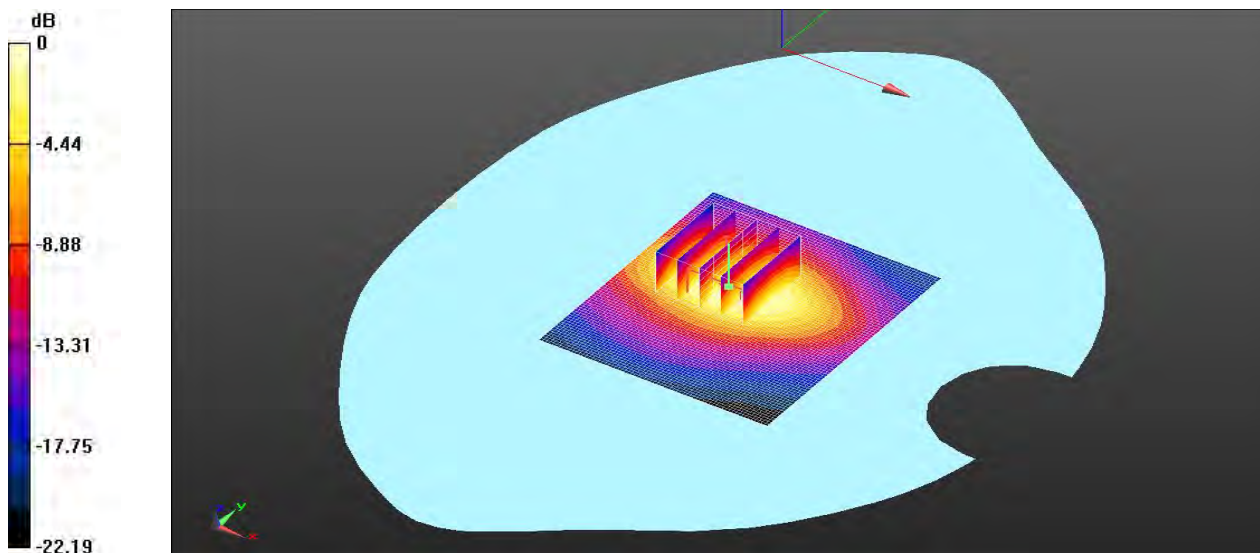
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 21.67 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 1.53 W/kg

SAR(1 g) = 1.083 W/kg; SAR(10 g) = 0.545 W/kg

Maximum value of SAR (measured) = 1.10 W/kg



0 dB = 1.12 W/kg = 0.492 dBW/kg

MEAS. 48 Body Plane with Bottom Edge in Hotspot on Low Channel in GPRS1900 3 slots mode

Date/Time: 10/8/2015

Communication System Band: GPRS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1850.2$ MHz; $\sigma = 1.54$ S/m; $\epsilon_r = 51.35$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.5 Liquid Temperature: 21.8

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GPRS 1900 Body-worn in Back on High/Area Scan (71x81x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.869 W/kg

Configuration/GPRS 1900 Body-worn in Back on High/Zoom Scan (5x5x7)/Cube 0:

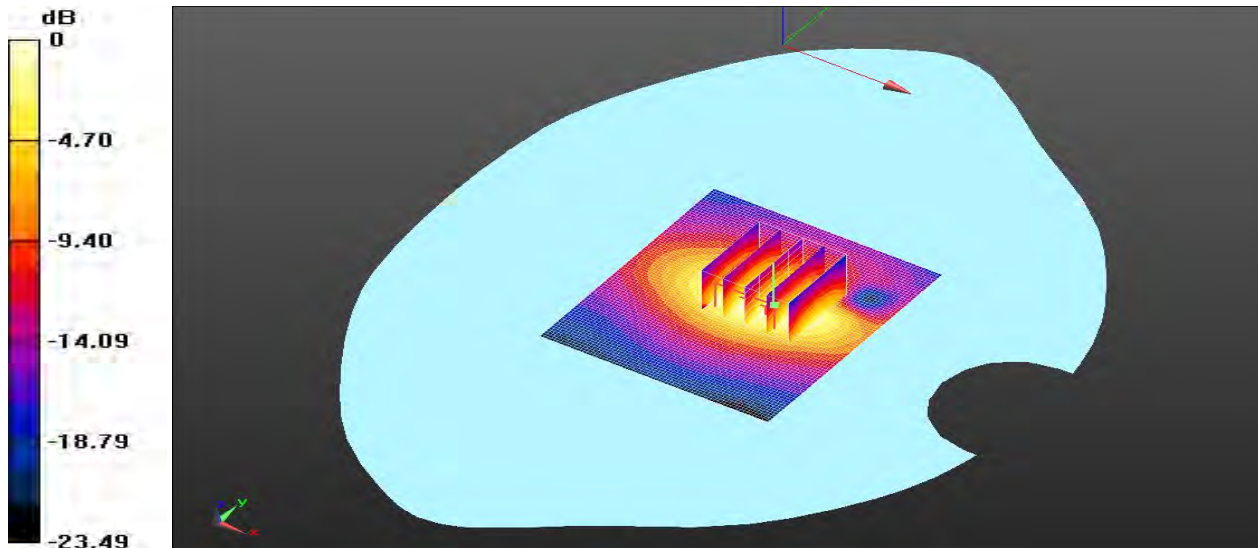
Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 21.00 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 1.32 W/kg

SAR(1 g) = 0.843 W/kg; SAR(10 g) = 0.439 W/kg

Maximum value of SAR (measured) = 0.853 W/kg



0 dB = 0.869 W/kg = -0.609 dBW/kg

MEAS. 49 Body Plane with Bottom Edge in Hotspot on Middle Channel in

GPRS1900 3 slots mode

Date/Time: 10/8/2015

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.57$ S/m; $\epsilon_r = 51.14$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.5 Liquid Temperature: 21.8

DASY5 Configuration:

- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GPRS 1900 Body-worn in Back on High/Area Scan (71x81x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 1.06 W/kg

Configuration/GPRS 1900 Body-worn in Back on High/Zoom Scan (5x5x7)/Cube 0:

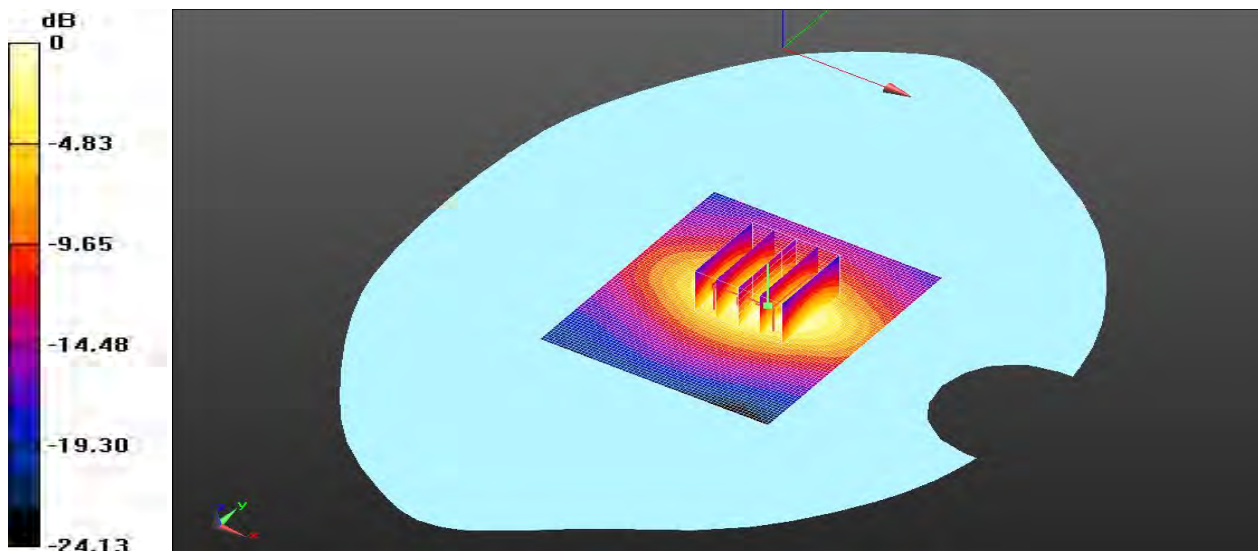
Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 23.40 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 1.92 W/kg

SAR(1 g) = 0.911 W/kg; SAR(10 g) = 0.485 W/kg

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



0 dB = 1.06 W/kg = 0.253 dBW/kg

ANNEX D EUT EXTERNAL PHOTOS

Please refer the document "Annex No.:BL-SZ1580044-AW.PDF".

ANNEX E SAR TEST SETUP PHOTOS

Please refer the document "Annex No.:BL-SZ1580044-AS.PDF".