FCC SAR TEST REPORT

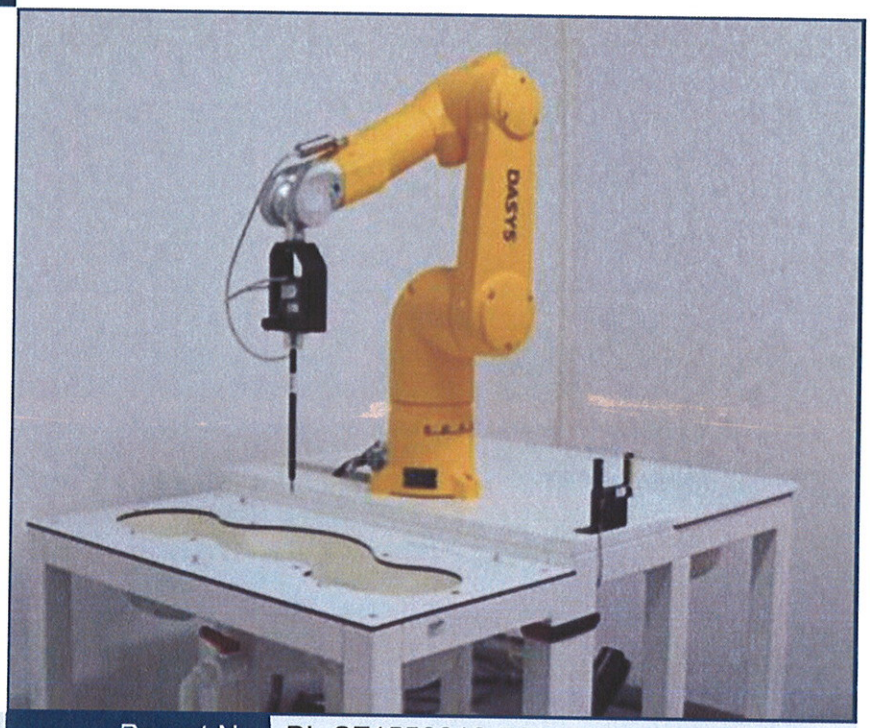
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

Mobile Phone

ISSUED TO
Shenzhen Huadoo Bright Group Limited

Room 13E, Jinsong Buiding, Tairan 4th Road, Chegong Miao, Futian District, Shenzhen



Prepared by: Heng Aiping
Heng Aiping
(Reporting Specialist)
Date May 15, 2015

Approved by:
Liao Jianming
(Technical Director)
Date May 25, 2015

Report No:	BL-SZ1550013-701
EUT Type:	Mobile Phone
Model Name:	Huadoo HG04
Brand Name:	Huadoo
FCC ID:	2ACXS-HG04
Test Standard:	FCC 47 CFR Part 2.1093
	ANSI C95.1: 1992
	IEEE 1528: 2013
Maximum SAR:	Head (1 g): 0.622 W/kg
	Body (1 g): 0.778 W/kg
Test Conclusion:	Pass
Test Date:	May 8, 2015 ~ May 21, 2015
Date of Issue:	May 25, 2015

Block B, 1st FL,Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong, P. R. China 518055
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Revision History

Version	Issue Date	Revisions
Rev. 01	May 25, 2015	Initial Issue

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1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co.,Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province,P. R. China
Phone Number	+86 755 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	The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. The laboratory has been listed by US Federal Communications Commission to perform electromagnetic emission measurements. The recognition numbers of test site are 832625. 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. The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Test Environment Condition

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

1.4 Announce

(1) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.

(2) The test report is invalid if there is any evidence and/or falsification.

(3) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.

(4) 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.

(5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

2 PRODUCT INFORMATION

2.1 Applicant

Applicant	Shenzhen Huadoo Bright Group Limited
Address	Room 13E, Jinsong Buiding, Tairan 4th Road, Chegong Miao, Futian District, Shenzhen

2.2 Manufacturer

Manufacturer	Shenzhen Huadoo Bright Group Limited
Address	Room 13E, Jinsong Buiding, Tairan 4th Road, Chegong Miao, Futian District, Shenzhen

2.3 General Description for Equipment under Test (EUT)

EUT Type	Mobile Phone
EUT Model Name	Huadoo HG04
Hardware Version	N/A
Software Version	Huadoo V1_Chinas_ENGLISH_13_V0.1_ V2_20140708
Dimensions	150 × 80 × 12mm
Weight	218.2 g
Network and Wireless connectivity	2G Network GSM 850/900/1800/1900,GPRS Class 12, EDGE Class 12; 3G Network WCDMA Band 1/ 2/ 5/ 8, HSDPA, HSUPA; 4G Network FDD LTE Band 1/ 3/ 7/ 20; 2.4G WLAN; Bluetooth; GPS

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 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/n (HT20/HT40)	2400~2483.5 MHz	
	Bluetooth	2400~2483.5 MHz	
Antenna Type	WWAN: PIFA Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna		
DTM	Not Support		

Hotspot Function	Support
Environment	Uncontrolled
EUT Stage	Portable Device

2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	N/A
	Model No.	HG04
	Serial No.	N/A
	Capacitance	3800 mAh
	Rated Voltage	3.8 V
	Extreme Voltage	Low: 3.3 V / High:4.2 V
Ancillary Equipment 2	Charger	
	Brand Name	HJ-0501000
	Rated Input	~ 100-240 V, 0.15 A, 50/60 Hz
	Rated Output	⎓ 5 V, 1 A
Ancillary Equipment 3	USB Cable	
	Length	1.0 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	IEEE Std. 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
4	FCC KDB 447498 D01 v05r02	Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies
5	FCC KDB 941225 D01 v03	3G SAR MEAUREMENT PROCEDURES
6	FCC KDB 941225 D05 v02r03	SAR Evaluation Considerations for LTE Devices
7	FCC KDB 941225 D06 v01r01	SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities
8	FCC KDB 865664 D01 v01r03	SAR Measurement 100 MHz to 6 GHz
9	FCC KDB 865664 D02 v01r01	RF Exposure Reporting

3.2 Device Categoryand SAR Limit

This device belongs to portable device category because its radiating structure is allowed to be used within 20 centimeters of the body of the user.

Limit for General Population/Uncontrolled exposure should be applied for this device, it is 1.6 W/kg as averaged over any 1 gram of tissue.

Table of Exposure Limits:

Body Position	SAR Value (W/Kg)	
	General Population/ Uncontrolled Exposure	Occupational/ ControlledExposure
Whole-Body SAR (averaged over the entire body)	0.08	0.4
Partial-Body SAR (averaged over any 1 gram of tissue)	1.60	8.0
SAR for hands, wrists, feet and ankles (averaged over any 1 grams of tissue)	4.0	20.0

NOTE:

General Population/Uncontrolled Exposure: Locationswhere 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 thegeneral public may be exposed or in which persons who are exposed as a consequence of theiremployment may not be made fully aware of the potential for exposure or cannot exercise control overtheir exposure. Members of the general public would come under this category when exposure is notemployment-related; for example, in the case of a wireless transmitter that exposes persons in itsvicinity.

Occupational/ControlledExposure: 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 personsare exposed as a consequence of their employment, who have been made fully aware of the potentialfor exposure and can exercise control over their exposure. This exposure category is also applicablewhen the exposure is of a transient nature due to incidental passage through a location where theexposure levels may be higher than the general population/uncontrolled limits, but the exposed person isfully aware of the potential for exposure and can exercise control over his or her exposure by leaving thearea 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	0.054	0.622	1.6	Pass
	GSM 1900	0.128			Pass
	WCDMA Band 2	0.239			Pass
	WCDMA Band 5	0.076			Pass
	FDD-LTE Band 7	0.099			Pass
	WLAN	0.622			Pass
Body-worn	GSM 850	0.125	0.768	1.6	Pass
	GSM 1900	0.768			Pass
	WCDMA Band 2	0.483			Pass
	WCDMA Band 5	0.149			Pass
	FDD-LTE Band 7	0.212			Pass
	WLAN	0.183			Pass
Hotspot Mode	GSM 850	0.306	0.778	1.6	Pass
	GSM 1900	0.778			Pass
	WCDMA Band 2	0.483			Pass
	WCDMA Band 5	0.149			Pass
	FDD-LTE Band 7	0.212			Pass
	WLAN	0.183			Pass

3.3.2 Highest Simultaneous SAR

Position	Simultaneous Configuration	Simultaneous SAR (W/kg)	Limit (W/kg)	Verdict
Head	WCDMA RMC + WLAN	0.861	1.6	Pass
Body-worn	GSM + WLAN	0.951	1.6	Pass
Hotspot Mode	GSM + WLAN	0.961	1.6	Pass

3.4 Test Uncertainty

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 Algoritms 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 Algoritms 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	

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 generalpopulation/uncontrolled, based on a person's awarenessand ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

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

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

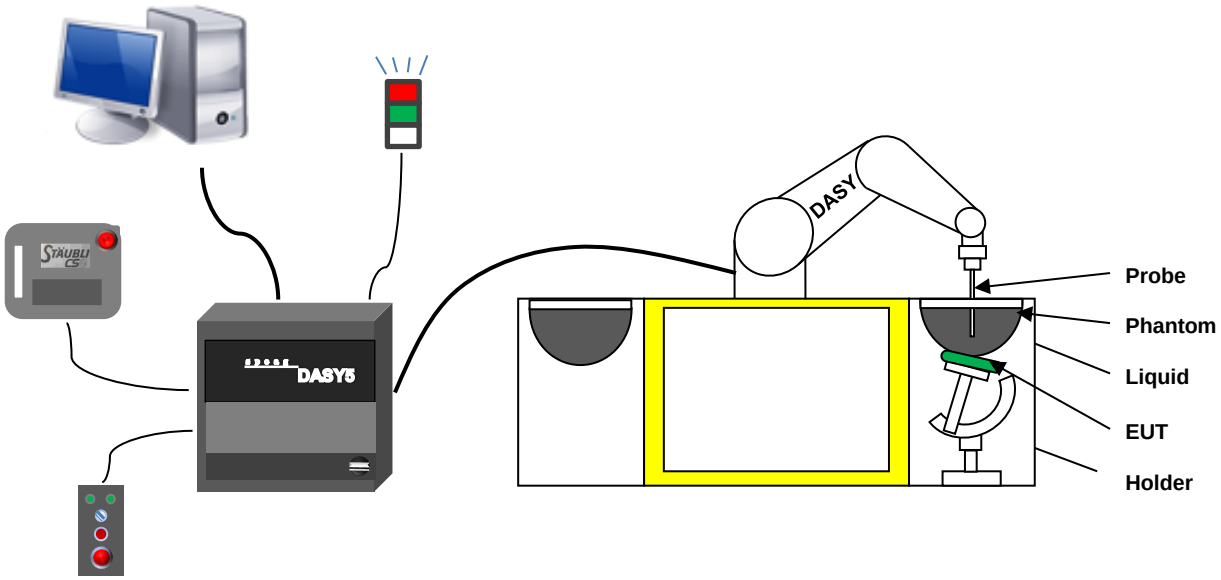
$$\mathbf{SAR} = \frac{\boldsymbol{\sigma}\mathbf{E}^2}{\boldsymbol{\rho}}$$

Where: σ is the conductivity of the tissue,

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

4.2 DASY SAR System

4.2.1 DASY SAR System Diagram



The DASY5 system for performing compliance tests consists of the following items:

1. A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).
2. A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
3. A data acquisition electronic (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
4. A unit to operate the optical surface detector which is connected to the EOC.
5. The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY5 measurement server.
6. The DASY5 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation.
7. DASY5 software and SEMCAD data evaluation software.
8. Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
9. The generic twin phantom enabling the testing of left-hand and right-hand usage.
10. The device holder for handheld mobile phones.
11. Tissue simulating liquid mixed according to the given recipes.
12. System validation dipoles allowing to validate the proper functioning of the system.

4.2.2 Robot

The Dasy SAR system uses the high precision robots.Symmetrical design with triangular coreBuilt-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 maintenancefree due to direct drive gears; no belt drives)
- Jerk-free straight movements
  (brushless synchron motors; no stepper motors)
- Low ELF interference
  (motor control _elds shielded via the closed metallic constructionshields)

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.

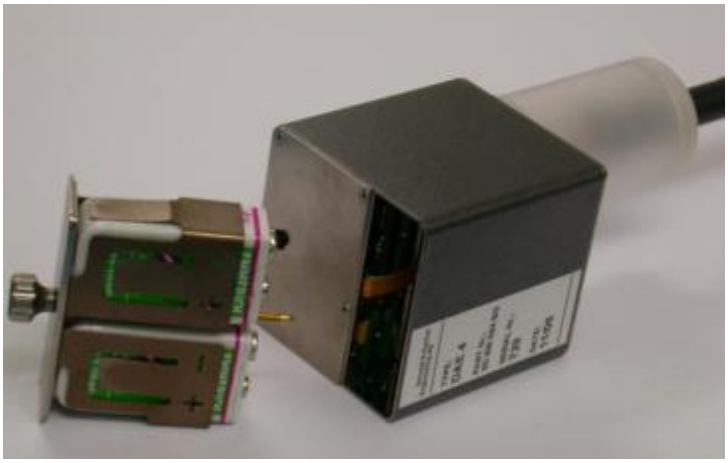
Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection systemBuilt-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., glycolether)
Calibration	ISO/IEC 17025 calibration service available
Frequency	10 MHz to 6 GHz; Linearity: ± 0.2 dB (30 MHz to 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 µW/g to > 100 mW/g; Linearity: ± 0.2 dB
Dimensions	Overall length: 337 mm (Tip: 9 mm) Tip diameter: 2.5 mm (Body: 10 mm) Distance from probe tip to dipole centers: 1.0 mm
Application	General dosimetry up to 3 GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms (EX3DV4)

E-Field Probe Calibration Process

Probe calibration is realized, in compliance with CENELEC EN 62209-1/-2 and IEEE 1528 std, withCALISAR, Antennessa proprietary calibration system. The calibration is performed with the EN 62209-1/2 annexe technique using reference guide at the five frequencies.

4.2.4 Data Acquisition Electronics

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



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

4.2.5 Phantoms

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

- Left hand
- Right hand
- Flat phantom

Photo of Phantom SN1857

Photo of Phantom SN1859

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

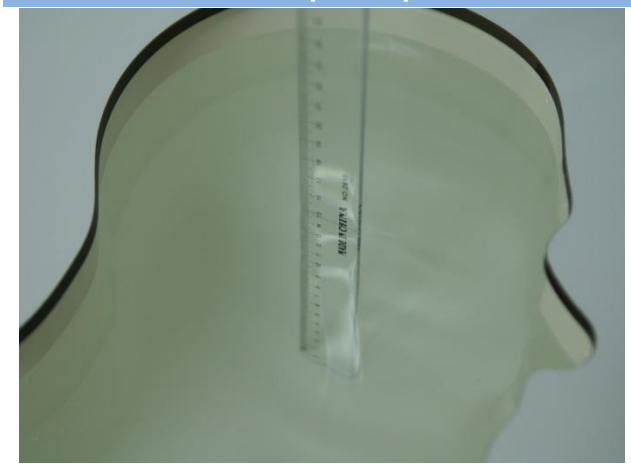
4.2.6 Device Holder

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

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

4.2.7 Simulating Liquid

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5%.

Head Liquid Depth	Body Liquid Depth
	

The following table gives the recipes for tissue simulating liquid.

Frequency (MHz)	Water %	Sugar %	Cellulose %	Salt %	Preventol %	DGBE %	Conductivity σ	Permittivity ε
Head								
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								
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

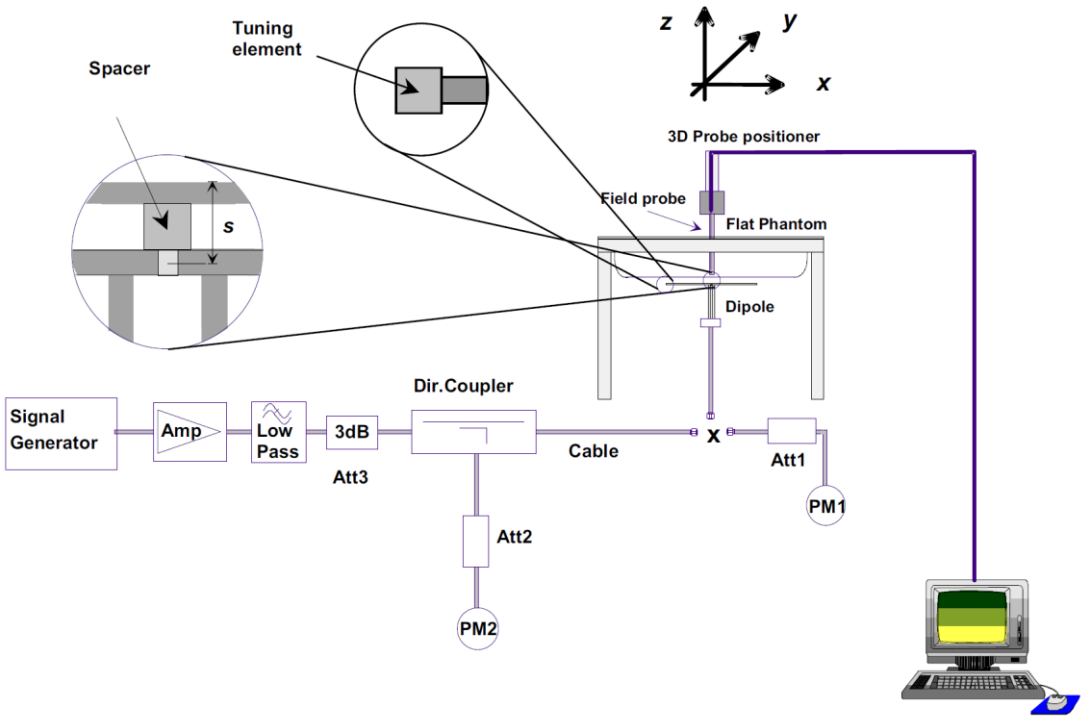
5 SYSTEM VERIFICATION

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

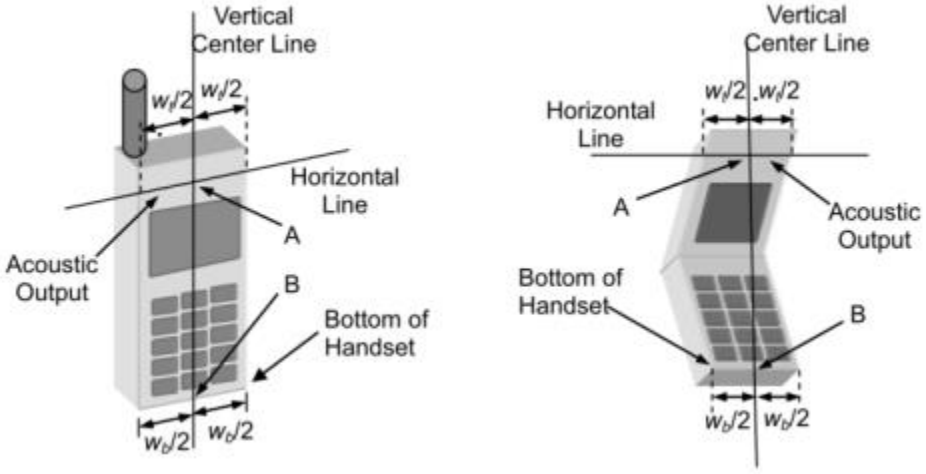
Head exposure is limited to next to the ear voice mode operations. Head SAR compliance is tested according to the test positions defined in IEEE Std 1528-2013 using the SAM phantom illustrated as below.

6.1.1 Two Imaginary Lines on the Handset

(a) 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.

(b) The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.

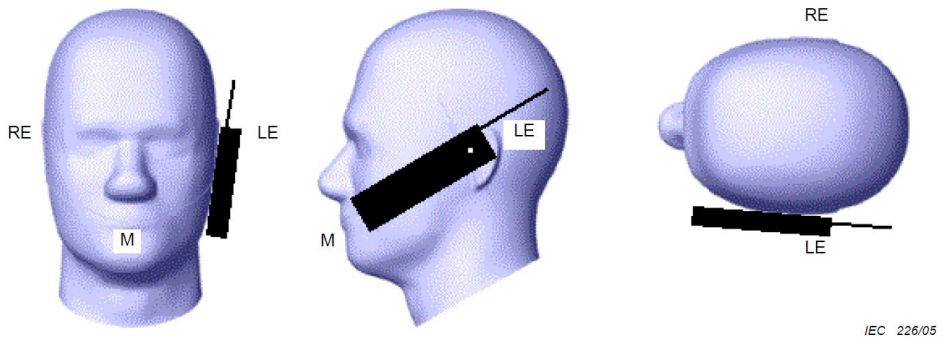
(c) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset,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



6.1.2 Cheek Position

(a) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.

(b) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost.



6.1.3 Tilted Position

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

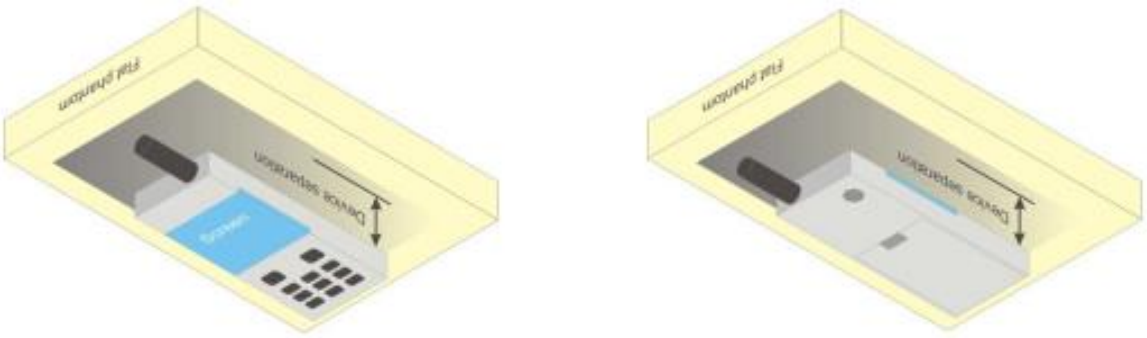
6.2 Body-worn Position Conditions

Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in KDB 447498 are used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode. When the reported SAR for a body-wornaccessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

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

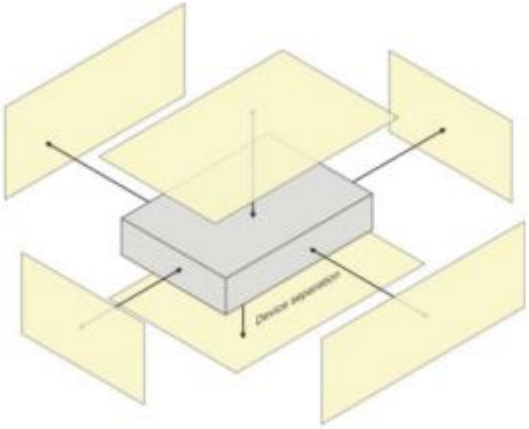
Body-worn accessory SAR compliance is based on a single minimum test separation distance for all wireless and operating modes applicable to each body-worn accessory used by the host, and according to the relevant voice and/or data mode transmissions and operations. If a body-worn accessory supports voice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

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



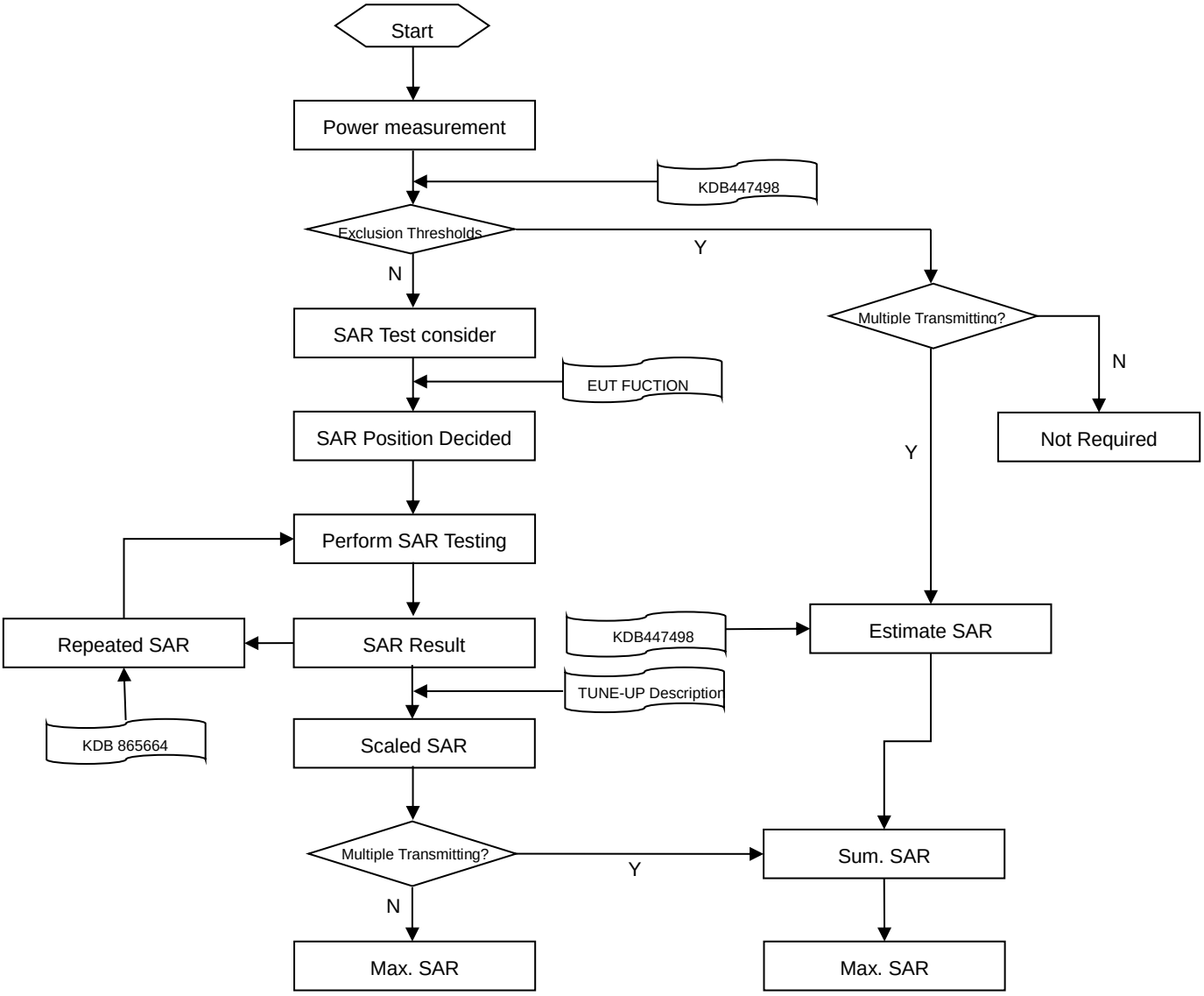
6.3 Hotspot Mode Exposure Position Conditions

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



7 MEASUREMENT PROCEDURE

7.1 Measurement Process Diagram



7.2 SAR Scan General Requirement

Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Boththe probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1 g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std 1528-2013.

<table>
<tr><th colspan="3"></th><th>≤3GHz</th><th>>3GHz</th></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5±1 mm</td><td>½·δ·ln(2)±0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30°±1°</td><td>20°±1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan spatial resolution: Δx Area , Δy Area</td><td>≤ 2 GHz: ≤ 15 mm
2 – 3 GHz: ≤ 12 mm</td><td>3–4 GHz: ≤ 12 mm
4 – 6 GHz: ≤ 10 mm</td></tr>
<tr><td colspan="2">When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx Zoom , Δy Zoom</td><td>≤ 2 GHz: ≤ 8 mm
2 –3 GHz: ≤ 5 mm*</td><td>3–4 GHz: ≤ 5 mm*
4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="5">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2" rowspan="2">uniform grid: Δz Zoom (n)</td><td rowspan="2">≤ 5 mm</td><td>3–4 GHz: ≤ 4 mm</td></tr>
<tr><td>4–5 GHz: ≤ 3 mm</td></tr>
<tr><td>5–6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="3">graded grid</td><td rowspan="2">Δz Zoom (1): between 1st two points closest to phantom surface</td><td rowspan="3">≤ 4 mm</td><td>3–4 GHz: ≤ 3 mm</td></tr>
<tr><td>4–5 GHz: ≤ 2.5 mm</td></tr>
<tr><td>Δz Zoom (n>1): between subsequent points</td><td>5–6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="3">Minimum zoom scan volume</td><td colspan="2" rowspan="3">x, y, z</td><td rowspan="3">≥30 mm</td><td>3–4 GHz: ≥ 28 mm</td></tr>
<tr><td>4–5 GHz: ≥ 25 mm</td></tr>
<tr><td>5–6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">Note:
1. δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.
2. * When zoom scan is required and the reported SAR from the area scan based 1 g SAR estimation procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

7.3 Measurement Procedure

The following steps are used for each test position

a. Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
b. Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.
c. Measurement of the SAR distribution with a grid of 8 to 16mm * 8 to16 mm and a constant distance to the inner surface of the phantom. Since the sensors cannot directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.
d. Around this point, a cube of 30 * 30 * 30 mm or 32 * 32 *32 mm is assessed by measuring 5 or 8 * 5 or 8*4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

7.4 Area & Zoom Scan Procedure

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. Area scan andzoom scan resolution setting follows KDB 865664 D01v01r03 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 otherpeaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR.

8 CONDUCTED RF OUPUT POWER

GSM						
GSM 850 Band	Burst Average Power(dBm)			Frame-averaged power(dBm)		
Channel	128	190	251	128	190	251
Frequency (MHz)	824.2	836.6	848.8	824.2	836.6	848.8
GSM (GMSK, 1-Slot)	**34.24**	34.23	34.17	25.24	25.23	25.17
GPRS (GMSK, 1-Slot)	33.24	33.20	33.13	24.24	24.20	24.13
GPRS (GMSK, 2-Slots)	33.02	32.94	32.88	27.02	26.94	26.88
GPRS (GMSK, 3-Slots)	32.85	32.77	32.72	28.59	28.51	28.46
GPRS (GMSK, 4-Slots)	**32.76**	32.65	32.68	29.76	29.65	29.68
EGPRS (8PSK, 1-Slot)	30.88	30.78	30.64	21.88	21.78	21.64
EGPRS (8PSK, 2-Slots)	30.72	30.47	30.49	24.72	24.47	24.49
EGPRS (8PSK, 3-Slots)	30.50	30.30	30.32	26.24	26.04	26.06
EGPRS (8PSK, 4-Slots)	**30.47**	30.21	30.13	27.47	27.21	27.13
GSM 1900 Band	Burst Average Power(dBm)			Frame-averaged power(dBm)		
Channel	512	661	810	512	661	810
Frequency (MHz)	1850.2	1880.0	1909.8	1850.2	1880.0	1909.8
GSM (GMSK, 1-Slot)	**30.45**	30.14	30.17	21.45	21.14	21.17
GPRS (GMSK, 1-Slot)	30.40	30.32	30.16	21.40	21.32	21.16
GPRS (GMSK, 2-Slots)	30.18	30.13	29.95	24.18	24.13	23.95
GPRS (GMSK, 3-Slots)	30.10	29.97	29.78	25.84	25.71	25.52
GPRS (GMSK, 4-Slots)	**30.01**	29.59	29.58	27.01	26.59	26.58
EGPRS (8PSK, 1-Slot)	29.52	29.48	29.44	20.44	20.48	20.52
EGPRS (8PSK, 2-Slots)	29.37	29.28	29.29	23.29	23.28	23.37
EGPRS (8PSK, 3-Slots)	29.28	29.20	29.21	24.95	24.94	25.02
EGPRS (8PSK, 4-Slots)	**29.15**	29.06	29.14	26.14	26.06	26.15

Note:

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

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

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

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

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

WCDMA						
Band	Band 2			Band 5		
Channel	9262	9400	9538	4132	4175	4233
Frequency (MHz)	1852.4	1880.0	1907.6	826.4	835	846.6
RMC 12.2Kbps	**22.89**	22.87	22.80	23.03	**23.08**	22.90
HSDPA Subtest-1	21.86	21.86	21.83	21.99	21.99	21.84
HSDPA Subtest-2	21.71	21.75	21.85	22.07	22.05	21.95
HSDPA Subtest-3	21.37	21.21	21.16	21.38	21.51	21.23
HSDPA Subtest-4	21.35	21.38	21.35	21.56	21.67	21.43
HSUPA Subtest-1	21.72	21.97	21.54	22.06	21.99	21.25
HSUPA Subtest-2	20.42	20.59	20.32	21.03	20.86	20.31
HSUPA Subtest-3	20.80	20.78	20.80	21.20	20.51	20.57
HSUPA Subtest-4	20.84	20.92	21.17	21.27	21.11	21.14
HSUPA Subtest-5	21.58	21.67	21.63	21.93	21.82	21.78

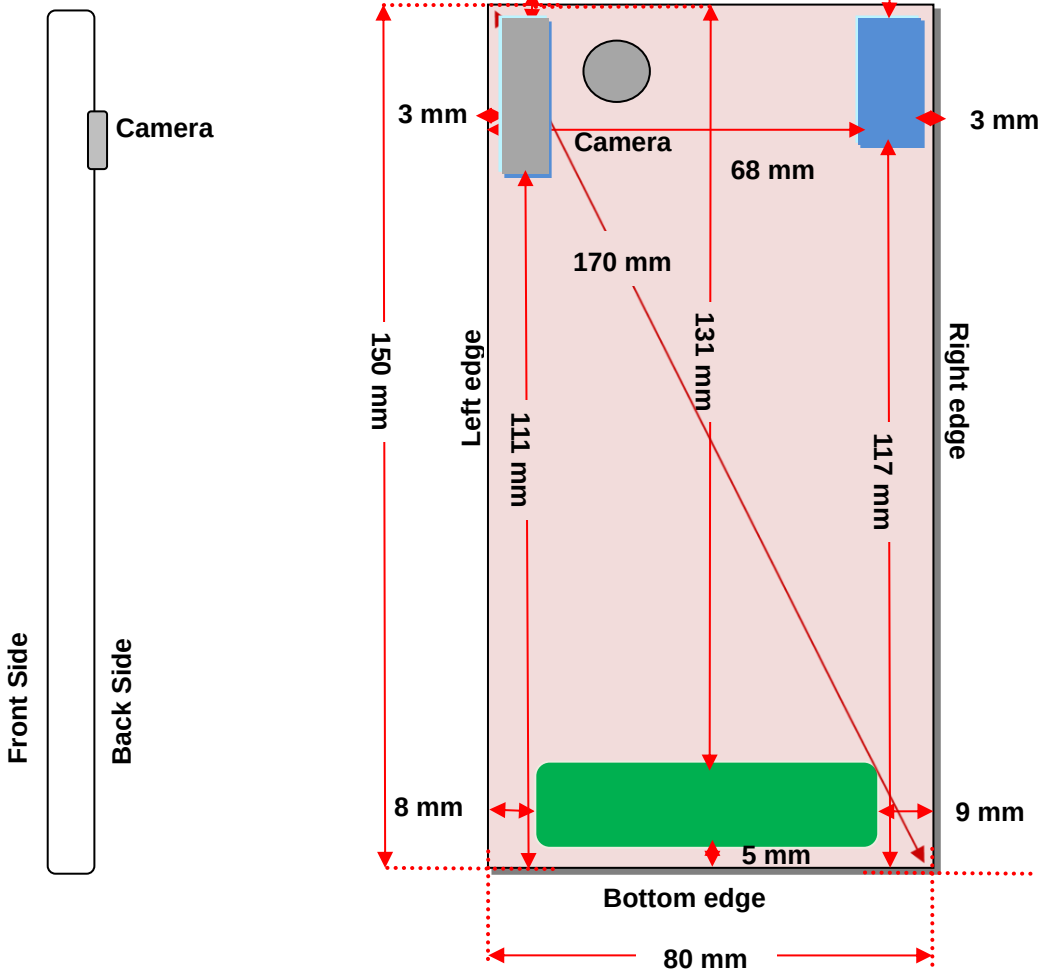
LTE Band 7							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
20 MHz	Channel	20850	21100	21350	20850	21100	21350
	1 (RB_Pos:0)	21.95	22.54	21.18	21.90	21.66	21.35
	1 (RB_Pos:50)	**22.63**	22.53	22.36	21.84	21.70	21.43
	1 (RB_Pos:99)	21.73	21.89	21.78	21.73	21.58	21.54
	50 (RB_Pos:0)	21.64	21.49	21.33	20.67	20.69	20.46
	50 (RB_Pos:25)	21.67	21.43	21.29	20.56	20.62	20.43
	50 (RB_Pos:50)	21.55	21.42	21.39	20.67	20.67	20.47
	100 (RB_Pos:0)	21.59	21.45	21.40	20.60	20.66	20.49
15 MHz	Channel	20825	21100	21375	20825	21100	21375
	1 (RB_Pos:0)	22.61	22.61	21.83	21.57	21.51	21.18
	1 (RB_Pos:38)	22.62	22.45	22.30	21.50	21.40	21.16
	1 (RB_Pos:74)	21.95	22.29	22.30	21.72	21.31	21.29
	36 (RB_Pos:0)	21.60	21.50	21.32	20.62	20.59	20.34
	36 (RB_Pos:20)	21.70	21.45	21.40	20.64	20.58	20.41
	36 (RB_Pos:39)	21.66	21.35	21.44	20.60	20.50	20.50
	75 (RB_Pos:0)	21.70	21.44	21.42	20.63	20.66	20.47
10 MHz	Channel	20800	21100	21400	20800	21100	21400
	1 (RB_Pos:0)	22.65	22.58	22.26	21.51	21.52	21.18
	1 (RB_Pos:25)	22.44	22.45	22.37	21.41	21.42	21.24
	1 (RB_Pos:49)	22.24	22.39	22.48	21.49	21.38	21.29
	25 (RB_Pos:0)	21.59	21.57	21.33	20.53	20.72	20.48
	25 (RB_Pos:12)	21.59	21.48	21.45	20.56	20.65	20.47
	25 (RB_Pos:25)	21.71	21.39	21.48	20.65	20.56	20.48
	50 (RB_Pos:0)	21.67	21.49	21.46	20.66	20.66	20.47
5 MHz	Channel	20775	21100	21425	20775	21100	21425

	1 (RB_Pos:0)	22.70	22.48	22.39	21.41	21.38	21.25
	1 (RB_Pos:13)	22.66	22.46	22.45	21.36	21.35	21.19
	1 (RB_Pos:24)	22.57	22.41	22.45	21.36	21.32	21.22
	12 (RB_Pos:0)	21.64	21.54	21.50	20.64	20.69	20.48
	12 (RB_Pos:6)	21.64	21.45	21.51	20.69	20.64	20.53
	12 (RB_Pos:13)	21.72	21.44	21.49	20.56	20.59	20.45
	25 (RB_Pos:0)	21.58	21.47	21.43	20.60	20.72	20.58

WLAN 2.4G						
Mode	802.11b			802.11g		
Channel	1	6	11	1	6	11
Frequency (MHz)	2412	2437	2462	2412	2437	2462
Peak Power (dBm)	14.7	15.1	**15.9**	12.7	13.5	14.3
Average Power (dBm)	13.76	13.90	14.83	12.50	12.81	13.83
Mode	802.11n(HT-20)			802.11n(HT-40)		
Channel	1	6	11	3	6	9
Frequency (MHz)	2412	2437	2462	2422	2437	2452
Peak Power (dBm)	12.2	12.4	13.3	11.9	12.6	14.4
Average Power (dBm)	11.22	11.25	12.47	11.31	11.80	13.03

BLUETOOTH						
Mode	GFSK			π/4-DQPSK		
Channel	0	39	78	0	39	78
Frequency (MHz)	2402	2441	2480	2402	2441	2480
Peak Power (dBm)	0.36	-0.78	0.09	0.39	-0.68	0.22
Mode	8-DPSK			BLE		
Channel	0	39	78	0	19	39
Frequency (MHz)	2402	2441	2480	2402	2440	2480
Peak Power (dBm)	**0.74**	**-0.37**	0.49	-0.74	-2.26	-1.04

9 TEST EXCLUSION CONSIDERATION



WLAN/BT Antenna

WWAN Antenna

EUT Back View

WWAN Diversity Antenna (Receive only, No requirement in this report)

9.1 SAR Test Exclusion Consideration 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	<5mm	8mm	9mm	131mm	5mm
	Voice	34.24	2654.61	Yes	Yes	Yes	Yes	No	Yes
	Data	32.76	1887.99	No	Yes	Yes	Yes	No	Yes
GSM 1900	Distance to User			<5mm	<5mm	8mm	9mm	131mm	5mm
	Voice	30.45	1109.17	Yes	Yes	Yes	Yes	No	Yes
	Data	30.01	1002.31	No	Yes	Yes	Yes	No	Yes
WCDMA Band 2	Distance to User			<5mm	<5mm	8mm	9mm	131mm	5mm
	RMC	22.89	194.54	Yes	Yes	Yes	Yes	No	Yes
WCDMA Band 5	Distance to User			<5mm	<5mm	8mm	9mm	131mm	5mm
	RMC	23.08	203.24	Yes	Yes	Yes	Yes	No	Yes
LTE Band 7	Distance to User			<5mm	<5mm	8mm	9mm	131mm	5mm
	VOIP	22.63	183.23	Yes	Yes	Yes	Yes	No	Yes
WLAN 2.4 G	Distance to User			<5mm	<5mm	68mm	3mm	4mm	117mm
	802.11b	15.9	38.90	Yes	Yes	No	Yes	Yes	No
	802.11g	14.3	26.92	No	No	No	No	No	No
	802.11n(HT20)	13.3	21.38	No	No	No	No	No	No
	802.11n(HT40)	14.4	27.54	No	No	No	No	No	No
Bluetooth	Distance to User			<5mm	<5mm	68mm	3mm	4mm	117mm
	BT	0.74	1.19	No	No	No	No	No	No

Note:

1. Maximum power is the source-based time-average power and represents the maximum RF output power among production units
2. 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.
3. 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
4. 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:
   [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR
   a. f(GHz) is the RF channel transmit frequency in GHz
   b. Power and distance are rounded to the nearest mW and mm before calculation
   c. The result is rounded to one decimal place for comparison
   d. For < 50 mm distance, we just calculate mW of the exclusion threshold value (3.0) to do compare. This formula is [3.0] / [√f(GHz)] ·[(min. test separation distance, mm)] = exclusion threshold of mW.
5. Per KDB 447498 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. [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·(f(MHz)/150)] mW, at 100 MHz

to 1500 MHz

b. [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·10] mW at > 1500 MHz and ≤ 6 GHz

6. Per KDB 941225 D01v03, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA /HSUPA /DC-HSDPA output power is < 0.25dB higher than RMC12.2Kbps, or reported SAR with RMC 12.2kbps setting is ≤ 1.2W/kg, HSDPA/HSUPA/DC-HSDPA SAR evaluation can be excluded.
7. Per KDB 248227 D01 v01r02, 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 v01r02 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 Consideration

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 max 1-g reported SAR with hotspot mode is 0.778W/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	128	824.2	0.28	0.053	34.24	34.30	1.014	**0.054**	1#
		Left Tilt	128	824.2	0.46	0.029	34.24	34.30	1.014	0.029	/
		Right Cheek	128	824.2	1.45	0.037	34.24	34.30	1.014	0.038	/
		Right Tilt	128	824.2	0.44	0.026	34.24	34.30	1.014	0.026	/
GSM 1900	Voice	Left Cheek	512	1850.2	0.30	0.044	30.45	30.50	1.012	0.045	/
		Left Tilt	512	1850.2	-0.06	0.013	30.45	30.50	1.012	0.013	/
		Right Cheek	512	1850.2	0.33	0.127	30.45	30.50	1.012	**0.128**	2#
		Right Tilt	512	1850.2	0.60	0.027	30.45	30.50	1.012	0.027	/
WCDMA Band 2	RMC	Left Cheek	9262	1852.4	1.31	0.116	22.89	22.90	1.002	0.116	/
		Left Tilt	9262	1852.4	0.81	0.032	22.89	22.90	1.002	0.032	/
		Right Cheek	9262	1852.4	1.71	0.238	22.89	22.90	1.002	**0.239**	3#
		Right Tilt	9262	1852.4	-0.18	0.061	22.89	22.90	1.002	0.061	/
WCDMA Band 5	RMC	Left Cheek	4175	835	-2.33	0.074	23.08	23.20	1.028	**0.076**	4#
		Left Tilt	4175	835	0.46	0.032	23.08	23.20	1.028	0.033	/
		Right Cheek	4175	835	0.76	0.050	23.08	23.20	1.028	0.051	/
		Right Tilt	4175	835	0.10	0.037	23.08	23.20	1.028	0.038	/
LTE Band 7 20MHz 1 RB Pos: 50	VOIP	Left Cheek	20850	2510	-2.22	0.056	22.63	22.70	1.016	0.057	/
		Left Tilt	20850	2510	0.76	0.019	22.63	22.70	1.016	0.019	/
		Right Cheek	20850	2510	-0.84	0.097	22.63	22.70	1.016	**0.099**	5#
		Right Tilt	20850	2510	0.81	0.051	22.63	22.70	1.016	0.052	/
802.11b	DATA	Left Cheek	11	2462	0.71	0.314	15.90	16.00	1.023	0.321	/
		Left Tilt	11	2462	-0.35	0.162	15.90	16.00	1.023	0.166	/
		Right Cheek	11	2462	0.05	0.608	15.90	16.00	1.023	**0.622**	6#
		Right Tilt	11	2462	0.45	0.388	15.90	16.00	1.023	0.397	/

10.2 Body-worn and Hotspot Mode SAR (10mm 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	128	824.2	1.75	0.040	34.24	34.30	1.014	0.041	/
		Back Side	128	824.2	0.03	0.123	34.24	34.30	1.014	**0.125**	7#
		Left Edge	128	824.2	0.30	0.034	34.24	34.30	1.014	0.034	/
		Right Edge	128	824.2	0.07	0.060	34.24	34.30	1.014	0.061	/
		BottomEdge	128	824.2	-0.14	0.022	34.24	34.30	1.014	0.022	/
	GPRS Data (Hotspot) Slot 4	Front Side	128	824.2	-0.69	0.132	32.76	32.80	1.009	0.133	/
		Back Side	128	824.2	0.13	0.303	32.76	32.80	1.009	**0.306**	8#
		Left Edge	128	824.2	-0.50	0.136	32.76	32.80	1.009	0.137	/
		Right Edge	128	824.2	0.13	0.139	32.76	32.80	1.009	0.140	/
		BottomEdge	128	824.2	-0.33	0.054	32.76	32.80	1.009	0.054	/
	EDGE Data (Hotspot) Slot 4	Front Side	128	824.2	1.88	0.074	30.47	30.50	1.007	0.075	/
		Back Side	128	824.2	-0.02	0.180	30.47	30.50	1.007	**0.181**	9#
		Left Edge	128	824.2	-1.35	0.053	30.47	30.50	1.007	0.053	/
		Right Edge	128	824.2	-0.12	0.067	30.47	30.50	1.007	0.067	/
		BottomEdge	128	824.2	2.82	0.020	30.47	30.50	1.007	0.020	/
GSM 1900	Voice (Body-worn)	Front Side	512	1850.2	-0.21	0.215	30.45	30.50	1.012	0.217	/
		Back Side	512	1850.2	-0.25	0.759	30.45	30.50	1.012	**0.768**	10#
		Left Edge	512	1850.2	0.12	0.046	30.45	30.50	1.012	0.047	/
		Right Edge	512	1850.2	0.27	0.056	30.45	30.50	1.012	0.057	/
		BottomEdge	512	1850.2	-0.14	0.185	30.45	30.50	1.012	0.187	/
	GPRS Data (Hotspot) Slot 4	Front Side	512	1850.2	-0.34	0.762	30.01	30.10	1.021	**0.778**	11#
		Back Side	512	1850.2	0.11	0.556	30.01	30.10	1.021	0.568	/
		Left Edge	512	1850.2	0.10	0.220	30.01	30.10	1.021	0.225	/
		Right Edge	512	1850.2	0.42	0.108	30.01	30.10	1.021	0.110	/
		BottomEdge	512	1850.2	-0.10	0.743	30.01	30.10	1.021	0.759	/
	EDGE Data (Hotspot) Slot 4	Front Side	512	1850.2	-0.02	0.303	29.15	29.20	1.012	0.307	/
		Back Side	512	1850.2	0.27	0.293	29.15	29.20	1.012	0.296	/
		Left Edge	512	1850.2	-4.58	0.084	29.15	29.20	1.012	0.085	/
		Right Edge	512	1850.2	0.20	0.038	29.15	29.20	1.012	0.038	/
		BottomEdge	512	1850.2	0.46	0.322	29.15	29.20	1.012	**0.326**	12#
WCDMA Band 2	RMC (Body-Worn and hotspot)	Front Side	9262	1852.4	-0.10	0.482	22.89	22.90	1.002	**0.483**	13#
		Back Side	9262	1852.4	-0.13	0.381	22.89	22.90	1.002	0.382	/
		Left Edge	9262	1852.4	0.07	0.145	22.89	22.90	1.002	0.145	/
		Right Edge	9262	1852.4	0.09	0.053	22.89	22.90	1.002	0.053	/
		BottomEdge	9262	1852.4	-0.20	0.443	22.89	22.90	1.002	0.444	/
WCDMA Band 5	RMC (Body-Worn and hotspot)	Front Side	4175	835	0.05	0.055	23.08	23.20	1.028	0.057	/
		Back Side	4175	835	0.35	0.145	23.08	23.20	1.028	**0.149**	14#
		Left Edge	4175	835	-0.01	0.047	23.08	23.20	1.028	0.048	/
		Right Edge	4175	835	-0.05	0.069	23.08	23.20	1.028	0.071	/
		BottomEdge	4175	835	-0.07	0.029	23.08	23.20	1.028	0.030	/
LTE	VOIP	Front Side	20850	2510	0.06	0.137	22.63	22.70	1.016	0.139	/

Band 7 20MHz 1 RB Pos: 50	(Body-Worn and hotspot)	Back Side	20850	2510	0.54	0.209	22.63	22.70	1.016	**0.212**	15#
		Left Edge	20850	2510	-0.49	0.023	22.63	22.70	1.016	0.039	/
		Right Edge	20850	2510	-0.06	0.038	22.63	22.70	1.016	0.023	/
		BottomEdge	20850	2510	-0.00	0.169	22.63	22.70	1.016	0.172	/
802.11b	DATA (Hotspot)	Front Side	11	2462	0.84	0.153	15.90	16.00	1.023	0.157	/
		Back Side	11	2462	1.44	0.153	15.90	16.00	1.023	0.157	/
		Right Edge	11	2462	3.09	0.121	15.90	16.00	1.023	0.124	/
		Top Edge	11	2462	-0.17	0.179	15.90	16.00	1.023	**0.183**	16#

10.3 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.

Conclusion:

The highest measured SAR is 0.762W/Kg, which is less than 0.8W/Kg, repeated measurement is not required.

11 SIMULTANEOUS TRANSMISSION

11.1 Simultaneous Transmission Mode Consideration

Simultaneous Transmitting (Yes/NO)	BT	WLAN	LTE VOIP	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	Yes	Yes	-	-		
WLAN	NO	-	-	-	-	-
BT	-	-	-	-	-	-
Note: The BT 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.

$$\text{Estimated SAR} = \frac{Max.Tune\ Up\ Power_{(mW)}}{Min.Test\ Separation\ Distance_{(mm)}} * \frac{\sqrt{f_{GHz}}}{7.5}$$

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	0.80	1.20	2.441	5	0.050
		Left Cheek	5	NO	0.80	1.20	2.441	5	0.050
		Front side	10	NO	0.80	1.20	2.441	10	0.025
		Back Side	10	NO	0.80	1.20	2.441	10	0.025
		Right Edge	10	NO	0.80	1.20	2.441	10	0.025
		Top Edge	10	NO	0.80	1.20	2.441	10	0.025

11.3 Sum SAR of Simultaneous Transmission

Simultaneous Mode	Position	Mode	Max. 1 g SAR (W/kg)	1 g Sum SAR (W/kg)
GSM Voice + BT	Head	GSM Voice	0.128	0.178
		BT	0.050	
	Body-worn	GSM Voice	0.768	0.793
		BT	0.025	
GSM DATA + BT	Hotspot Mode	GSM DATA	0.778	0.803
		BT	0.025	
GSM Voice + WLAN	Head	GSM Voice	0.128	0.750
		WLAN	0.622	
	Body-worn	GSM Voice	0.768	0.951
		WLAN	0.183	
GSM DATA + WLAN	Hotspot Mode	GSM DATA	0.778	0.961
		WLAN	0.183	
WCDMA RMC + BT	Head	WCDMA RMC	0.239	0.289
		BT	0.050	
	Body-worn Hotspot	WCDMA RMC	0.483	0.508
		BT	0.025	
WCDMA RMC + WLAN	Head	WCDMA RMC	0.239	0.861
		WLAN	0.622	
	Body-worn Hotspot	WCDMA RMC	0.483	0.666
		WLAN	0.183	
LTE VOIP + BT	Head	LTE VOIP	0.099	0.149
		BT	0.050	
	Body-worn Hotspot	LTE VOIP	0.212	0.237
		BT	0.025	
LTE VOIP + WLAN	Head	LTE VOIP	0.099	0.721
		WLAN	0.622	
	Body-worn Hotspot	LTE VOIP	0.212	0.395
		WLAN	0.183	

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
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
5G Validation Dipole	Speag	D5GHzV2	SN 1200	2014/12/04	2015/12/03
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	SMF100A	1167.0000k02/104260	2014/07/07	2015/07/06
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	2014/05/16	2015/05/15
Dielectric Probe Kit	SATIMO	SCLMP	SN 25/13 OCPG56	2014/08/17	2015/08/16
Wireless Communication Test Set	Agilent	8960-E5515C	MY50260493	2014/10/18	2015/10/17
Wireless Communications Test Set	R&S	CMW 500	138884	2014.07.07	2015.07.06
Network Analyzer	RS	5071C	EMY46103472	2014/11/03	2015/11/02
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 VERIFICATIONRESULT

The dielectric parameters of the liquids were verified prior to the SAR evaluation using an SATIMO SCLMP Dielectric Probe Kit and a RS Network Analyzer.

Date	Liquid Type	Fre. (MHz)	Temp. (℃)	Meas. Conductivity (σ)	Meas. Permittivity (ε)	Target Conductivity (σ)	Target Permittivity (ε)	Conductivity Tolerance (%)	Permittivity Tolerance (%)
2015.05.08	Head	835	22.1	0.92	41.80	0.90	41.50	2.22	0.72
2015.05.08	Body	835	22.1	0.94	54.65	0.97	55.20	-3.09	-1.00
2015.05.09	Head	1900	22.1	1.38	39.86	1.40	40.00	-1.43	-0.35
2015.05.09	Body	1900	22.1	1.49	52.35	1.52	53.30	-1.97	-1.78
2015.05.19	Head	2450	22.1	1.86	38.25	1.80	39.20	3.33	-2.42
2015.05.19	Body	2450	22.1	2.03	51.03	1.95	52.70	4.10	-3.17
2015.05.12	Head	2600	22.1	1.92	39.15	1.96	39.00	-2.04	0.38
2015.05.12	Body	2600	22.1	2.25	51.13	2.16	52.50	4.17	-2.61
Note: The tolerances limit of Conductivity and Permittivity is ± 5%.									

ANNEX B SYSTEM CHECK RESULT

Comparing to the original SAR value provided by SPEAG, the validation data should be within itsspecification of 10 %(for 1 g).

Date	Liquid Type	Freq. (MHz)	Power (mW)	Measured SAR (W/kg)	Normalized SAR (W/kg)	DipoleSAR (W/kg)	Tolerance (%)	Targeted SAR(W/kg)	Tolerance (%)
2015.05.08	Head	835	100	0.936	9.36	9.15	2.30	9.56	-2.09
2015.05.08	Body	835	100	0.938	9.38	9.17	2.29	9.56	-1.88
2015.05.09	Head	1900	100	3.790	37.90	40.60	-6.65	39.70	-4.53
2015.05.09	Body	1900	100	4.120	41.20	40.30	2.23	39.70	3.78
2015.05.19	Head	2450	100	5.460	54.60	52.30	4.40	52.40	4.20
2015.05.19	Body	2450	100	5.350	53.50	50.60	5.73	52.40	2.10
2015.05.12	Head	2600	100	5.630	56.30	57.30	-1.75	55.30	1.81
2015.05.12	Body	2600	100	5.280	52.80	56.90	-7.21	55.30	-4.52
Note: The tolerance limit of System validation ±10%.									

System Performance Check Data (835MHz Head)

835-HEAD-2015-5-8

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

Medium parameters used: f = 835 MHz; σ = 0.92 S/m; ε_r = 41.8; ρ = 1000 kg/m^3

Phantom section: Flat Section Probe: EX3DV4 - SN7340; 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 = 32.15 V/m; Power Drift = 0.13 dB

Fast SAR: SAR(1 g) = 0.835 W/kg; SAR(10 g) = 0.565 W/kg

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

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

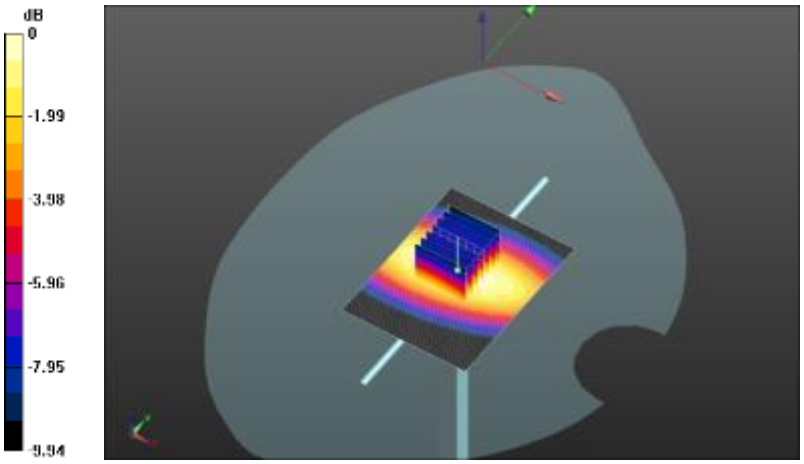
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 32.15 V/m; Power Drift = 0.13 dB

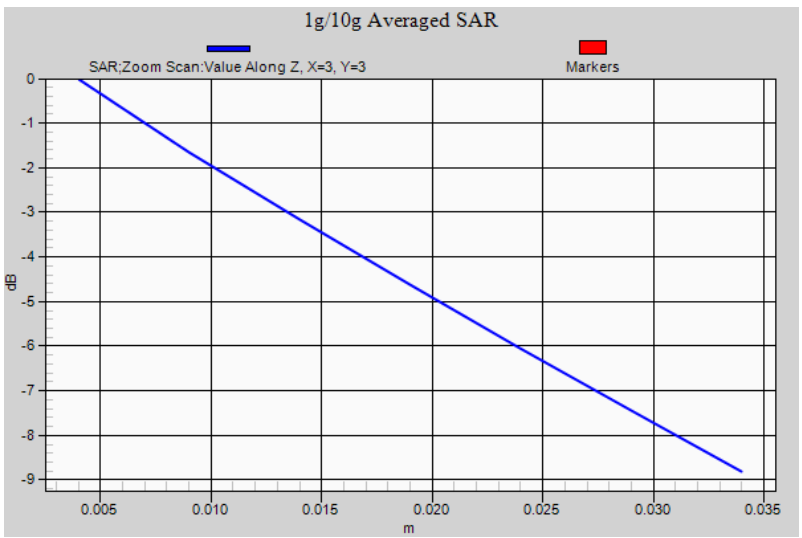
Peak SAR (extrapolated) = 1.19 W/kg

SAR(1 g) = 0.936 W/kg; SAR(10 g) = 0.578 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-2015-5-8

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

Medium parameters used: f = 835 MHz; σ = 0.94 S/m; ε_r 100 = 54.65; ρ =0 kg/m^3

Phantom section: Flat Section Probe: EX3DV4 - SN7340; ConvF(9.97, 9.97, 9.97)

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

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

Reference Value = 31.15 V/m; Power Drift = 0.09 dB

Fast SAR: SAR(1 g) = 0.886 W/kg; SAR(10 g) = 0.579 W/kg

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

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

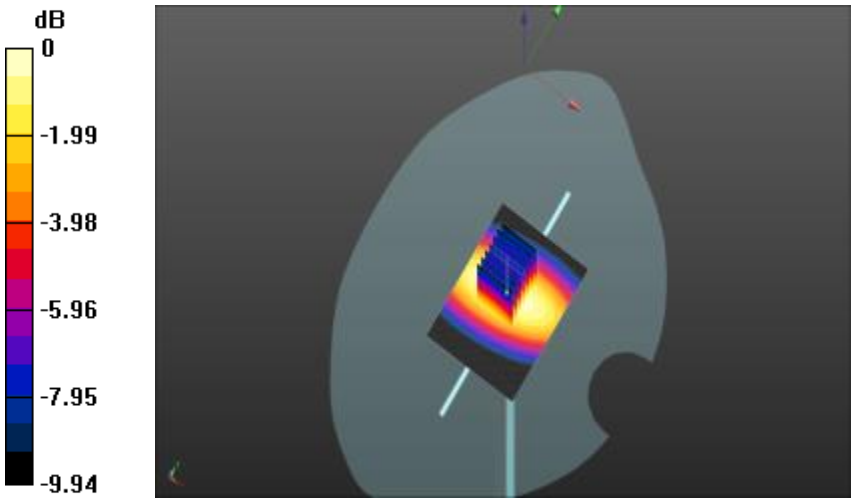
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 31.15 V/m; Power Drift = 0.09 dB

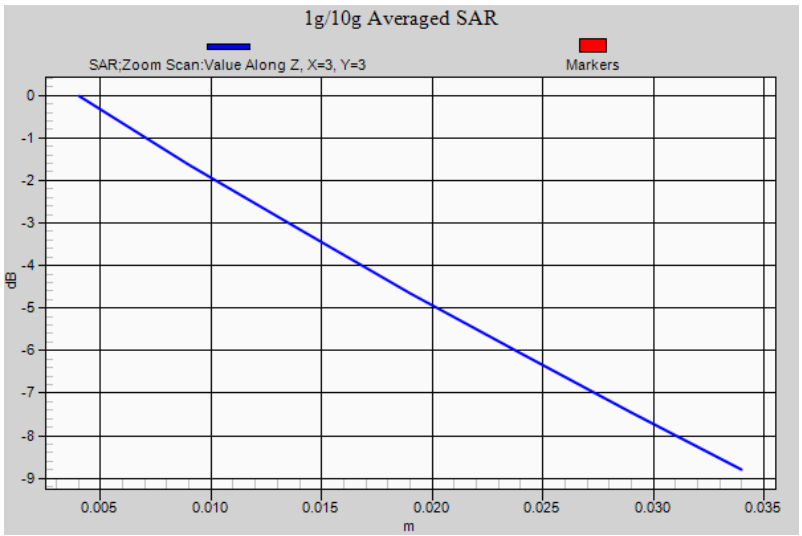
Peak SAR (extrapolated) = 1.32 W/kg

SAR(1 g) = 0.938 W/kg; SAR(10 g) = 0.585 W/kg

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



0 dB = 0.972 W/kg = -0.12 dBW/kg



System Performance Check Data (1900MHz Head)

1900-HEAD-2015-5-9

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

Medium parameters used: f = 1900 MHz; σ = 1.38 S/m; ε_r = 39.86; ρ = 1000 kg/m^3

Phantom section: Flat Section Probe: EX3DV4 - SN7340; ConvF(8.77, 8.77, 8.77)

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

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

Reference Value = 54.83 V/m; Power Drift = -0.32 dB

Fast SAR: SAR(1 g) = 3.56 W/kg; SAR(10 g) = 1.98 W/kg

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

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

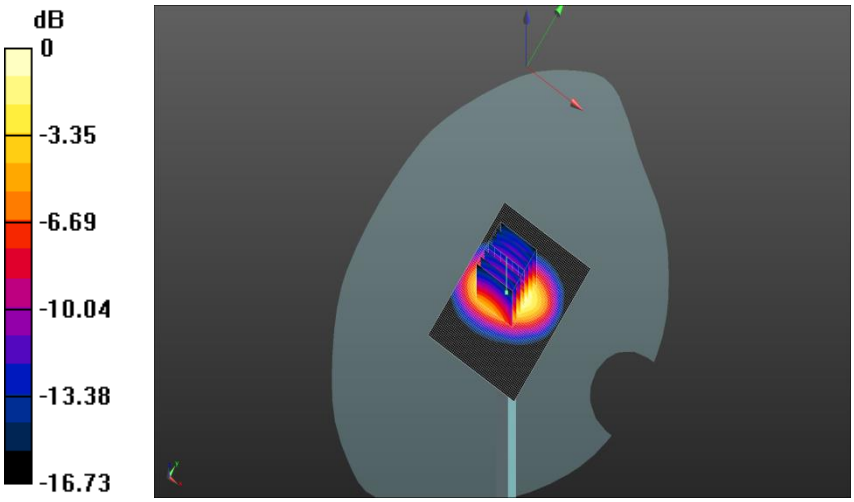
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 54.83 V/m; Power Drift = -0.32 dB

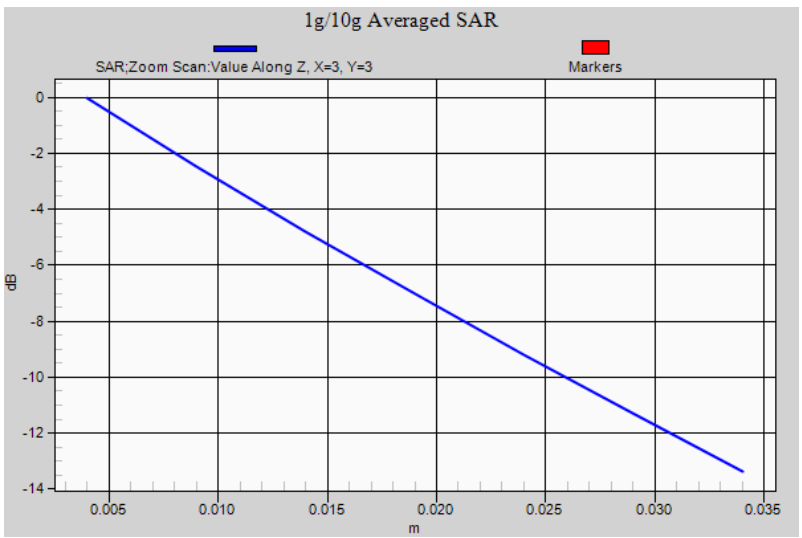
Peak SAR (extrapolated) = 6.91 W/kg

SAR(1 g) = 3.79 W/kg; SAR(10 g) = 2.23 W/kg

Maximum value of SAR (measured) = 4.35 W/kg



0 dB = 4.35 W/kg = 6.38 dBW/kg



System Performance Check Data (1900MHz Body)

1900-BODY-2015-5-9

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

Medium parameters used: f = 1900 MHz; σ = 1.49 S/m; ε_r = 52.35; ρ = 1000 kg/m^3

Phantom section: Flat Section Probe: EX3DV4 - SN7340; 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 = 53.18 V/m; Power Drift = 0.16 dB

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

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

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

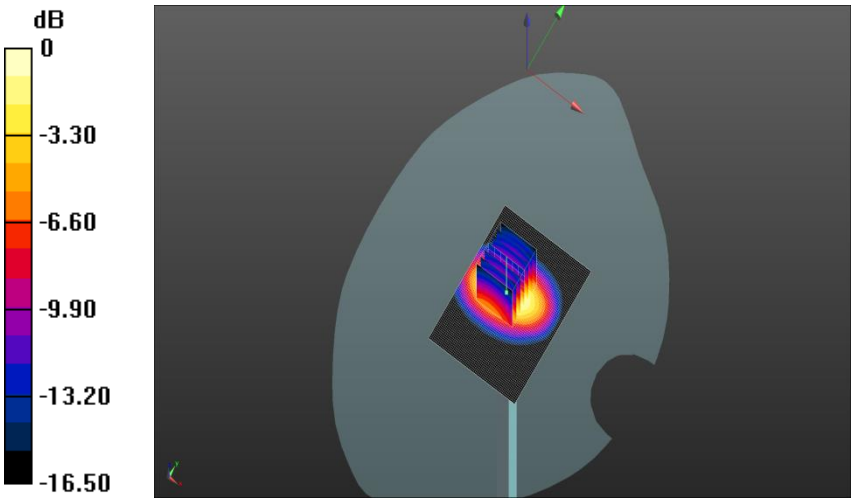
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 53.18 V/m; Power Drift = 0.16 dB

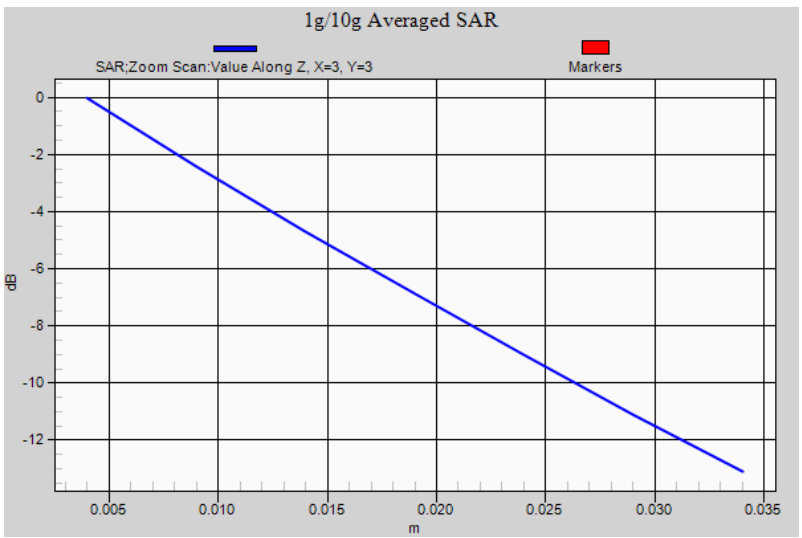
Peak SAR (extrapolated) = 7.69 W/kg

SAR(1 g) = 4.12 W/kg; SAR(10 g) = 2.19 W/kg

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



0 dB = 4.58 W/kg = 6.61 dBW/kg



System Performance Check Data (2450MHz Head)

2450-HEAD-2015-5-19

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

Medium parameters used: f = 2450 MHz; σ = 1.86 S/m; ε_r = 38.25; ρ = 1000 kg/m^3

Phantom section: Flat Section Probe: EX3DV4 - SN7340; 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 = 54.23 V/m; Power Drift = 0.68 dB

Fast SAR: SAR(1 g) = 5.16 W/kg; SAR(10 g) = 2.25 W/kg

Maximum value of SAR (interpolated) = 6.19 W/kg

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

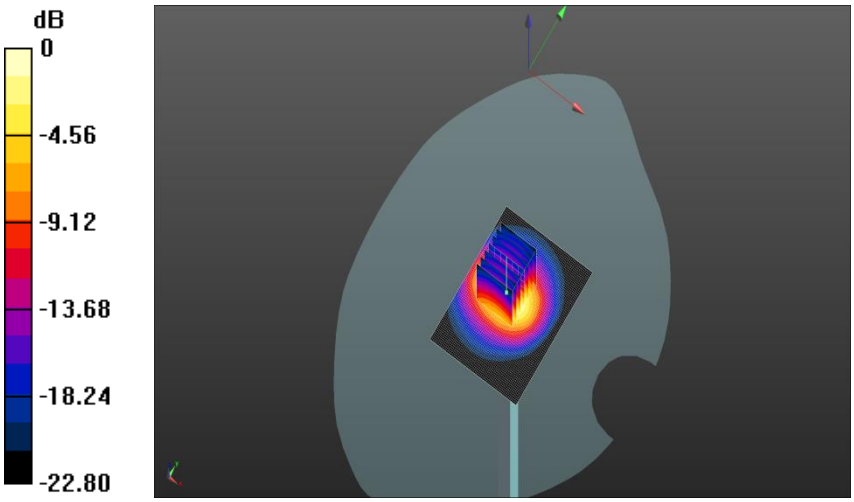
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 54.23 V/m; Power Drift = 0.68 dB

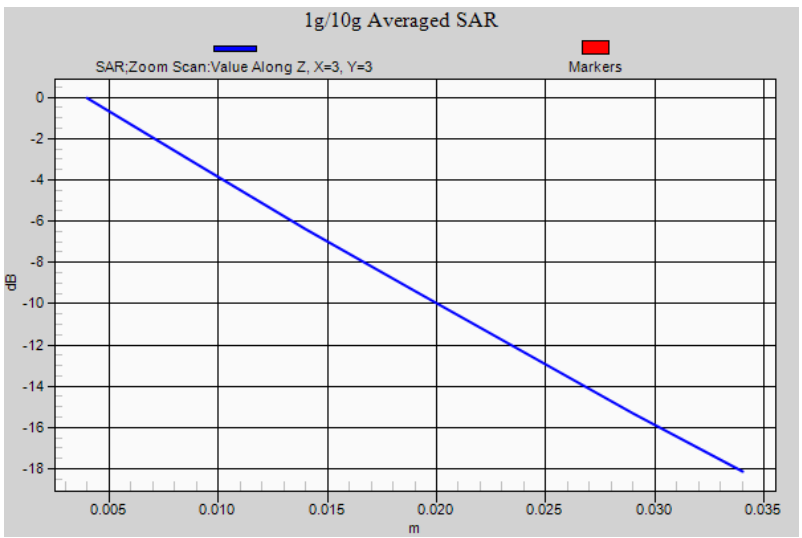
Peak SAR (extrapolated) = 11.3 W/kg

SAR(1 g) = 5.46 W/kg; SAR(10 g) = 2.38 W/kg

Maximum value of SAR (measured) = 5.96 W/kg



0 dB = 5.96 W/kg = 7.75 dBW/kg



System Performance Check Data (2450MHz Body)

2450-BODY-2015-5-19

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

Medium parameters used: f = 2450 MHz; σ = 2.03 S/m; ε_r = 51.03; ρ = 1000 kg/m^3

Phantom section: Flat Section Probe: EX3DV4 - SN7340; ConvF(7.55, 7.55, 7.55)

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

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

Reference Value = 52.56 V/m; Power Drift = -0.15 dB

Fast SAR: SAR(1 g) =4.86 W/kg; SAR(10 g) = 2.12 W/kg

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

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

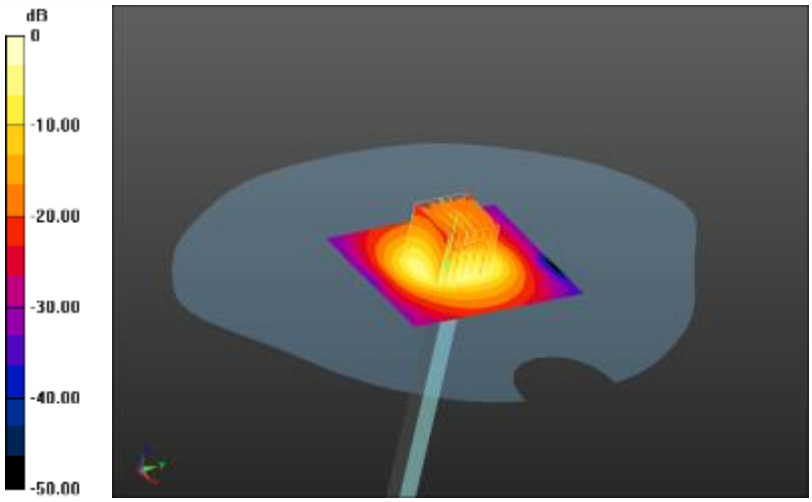
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 52.56 V/m; Power Drift = -0.15 dB

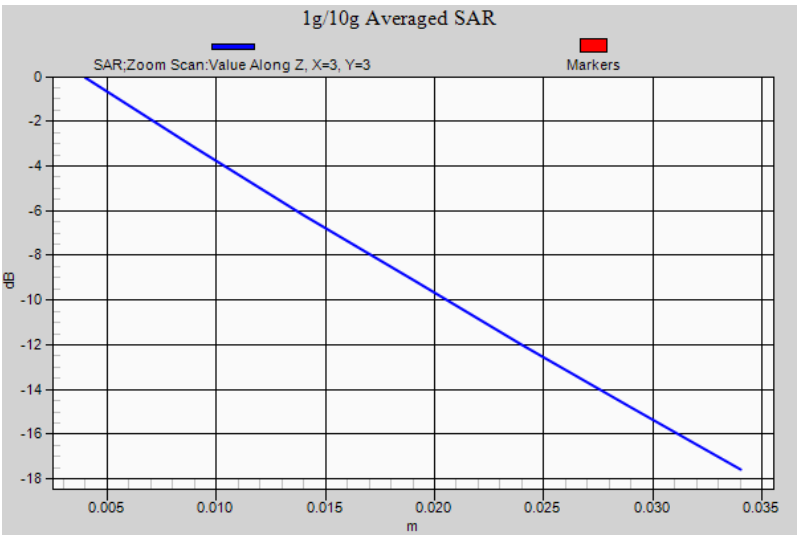
Peak SAR (extrapolated) = 10.9 W/kg

SAR(1 g) = 5.35 W/kg; SAR(10 g) = 2.32 W/kg

Maximum value of SAR (measured) = 5.68 W/kg



0 dB = 5.68 W/kg = 7.54 dBW/kg



System Performance Check Data (2600MHz Head)

2600-HEAD-2015-5-12

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

Medium parameters used: f = 2600 MHz; σ = 1.92 S/m; ε_r = 39.15; ρ = 1000 kg/m^3

Phantom section: Flat Section Probe: EX3DV4 - SN7340; 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 = 51.98 V/m; Power Drift = 0.16 dB

Fast SAR: SAR(1 g) = 4.75 W/kg; SAR(10 g) = 2.10 W/kg

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

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

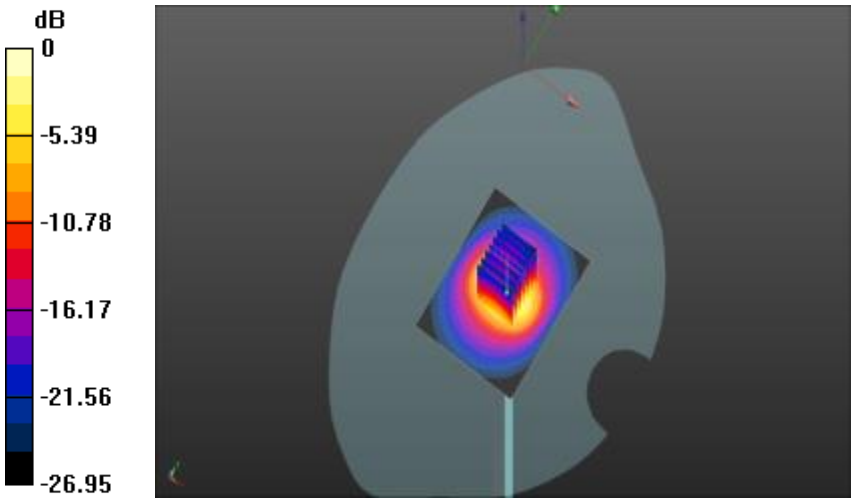
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 51.98 V/m; Power Drift = 0.16 dB

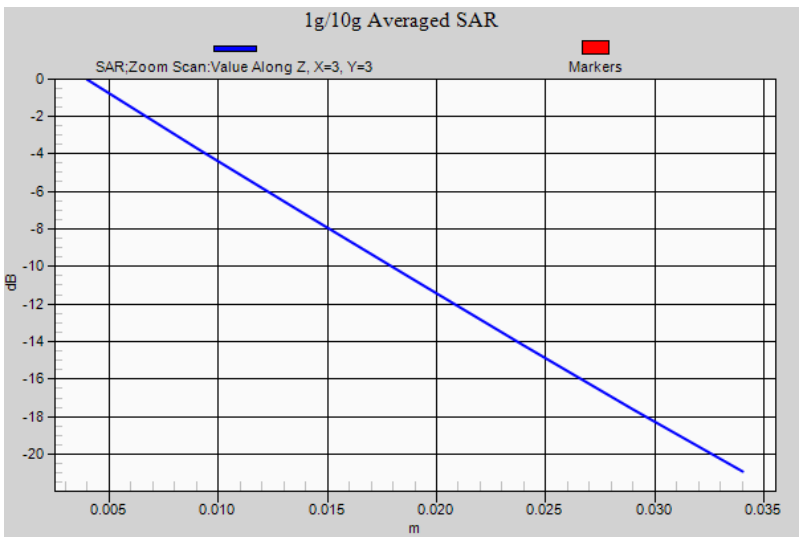
Peak SAR (extrapolated) = 11.8 W/kg

SAR(1 g) = 5.63 W/kg; SAR(10 g) = 2.23 W/kg

Maximum value of SAR (measured) = 6.28 W/kg



0 dB = 6.28 W/kg = 7.98 dBW/kg



System Performance Check Data (2600MHz Body)

2600-BODY-2015-5-12

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

Medium parameters used: f = 2600 MHz; σ = 2.25 S/m; ε_r = 51.13; ρ = 1000 kg/m^3

Phantom section: Flat Section Probe: EX3DV4 - SN7340; 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 = 49.68 V/m; Power Drift = -1.23 dB

Fast SAR: SAR(1 g) = 5.09 W/kg; SAR(10 g) = 2.32 W/kg

Maximum value of SAR (interpolated) = 6.12 W/kg

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

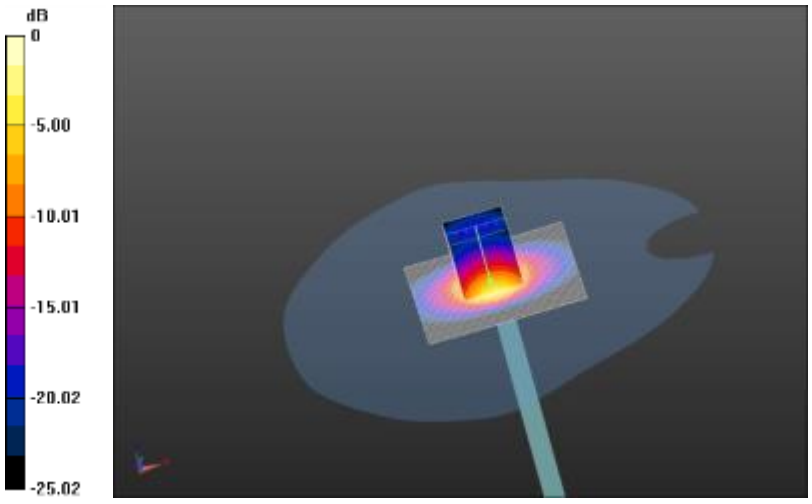
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 49.68 V/m; Power Drift = -1.23 dB

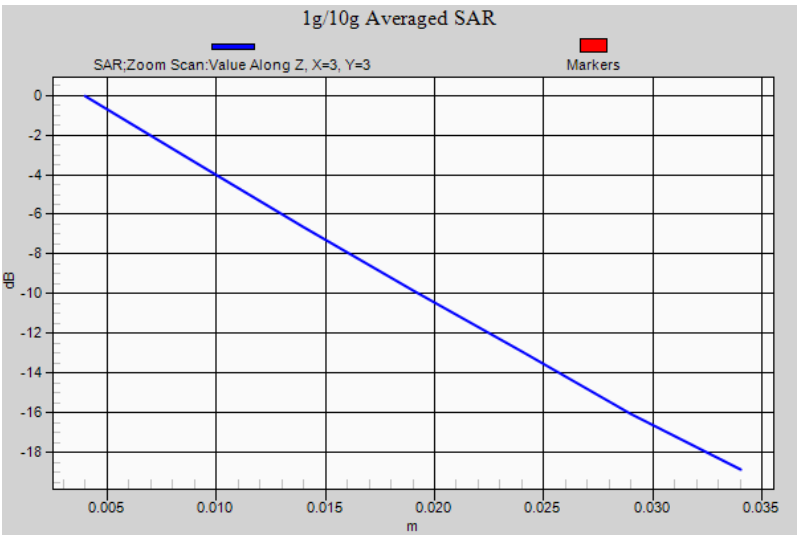
Peak SAR (extrapolated) = 11.5 W/kg

SAR(1 g) = 5.28 W/kg; SAR(10 g) = 2.38 W/kg

Maximum value of SAR (measured) = 6.02 W/kg



0 dB = 6.02 W/kg = 7.80 dBW/kg



ANNEX C TEST DATA

MEAS.1 Left Head with Cheek on Low Channel in GSM850 mode

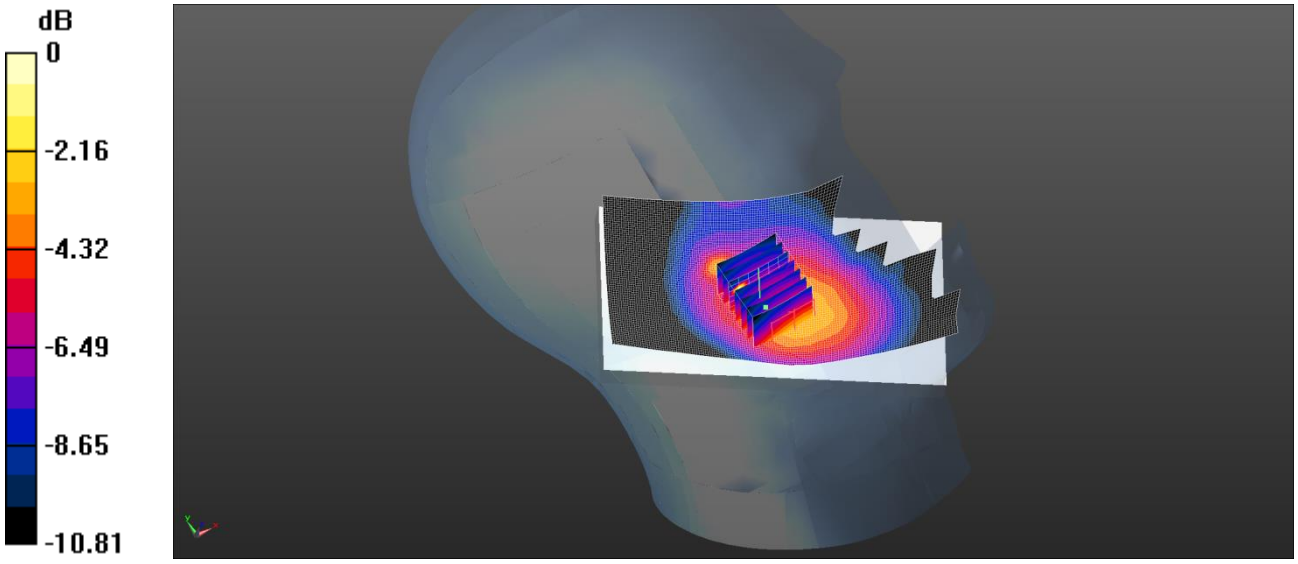
Date/Time: 5/15/2015 10:56:46 AM
Communication System Band: GSM 850(824.0-849.0 MHz); Frequency: 824.2MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.88 S/m; ε_r = 41.628; ρ = 1000 kg/m^3
Phantom section: Left Section
Ambient Temperature:22.6 Liquid Temperature:22.1

DASY5 Configuration:

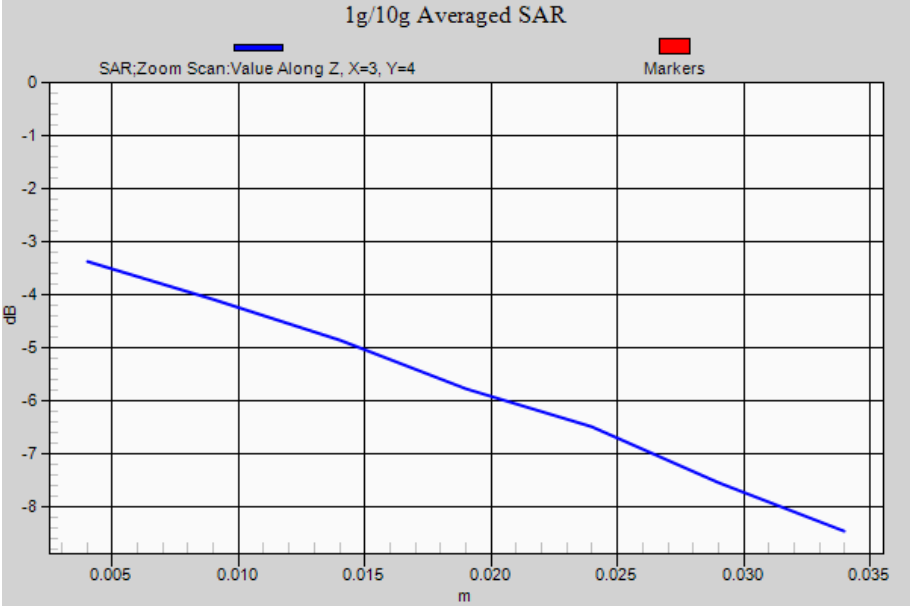
- Probe: EX3DV4 - SN7340; ConvF(9.91, 9.91, 9.91); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GSM850 HEAD LEFT CHEEK LOW/Area Scan (81x151x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 1.780 V/m; Power Drift = 0.28 dB
Fast SAR: SAR(1 g) = 0.129 W/kg; SAR(10 g) = 0.053 W/kg
Maximum value of SAR (interpolated) = 0.206 W/kg

Configuration/GSM850 HEAD LEFT CHEEK LOW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.780 V/m; Power Drift = 0.28 dB
Peak SAR (extrapolated) = 0.101 W/kg
SAR(1 g) = 0.053 W/kg; SAR(10 g) = 0.040 W/kg
Maximum value of SAR (measured) = 0.101 W/kg



0 dB = 0.101 W/kg = -9.96 dBW/kg


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=3, Y=4
Markers
dB
0
-1
-2
-3
-4
-5
-6
-7
-8
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

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

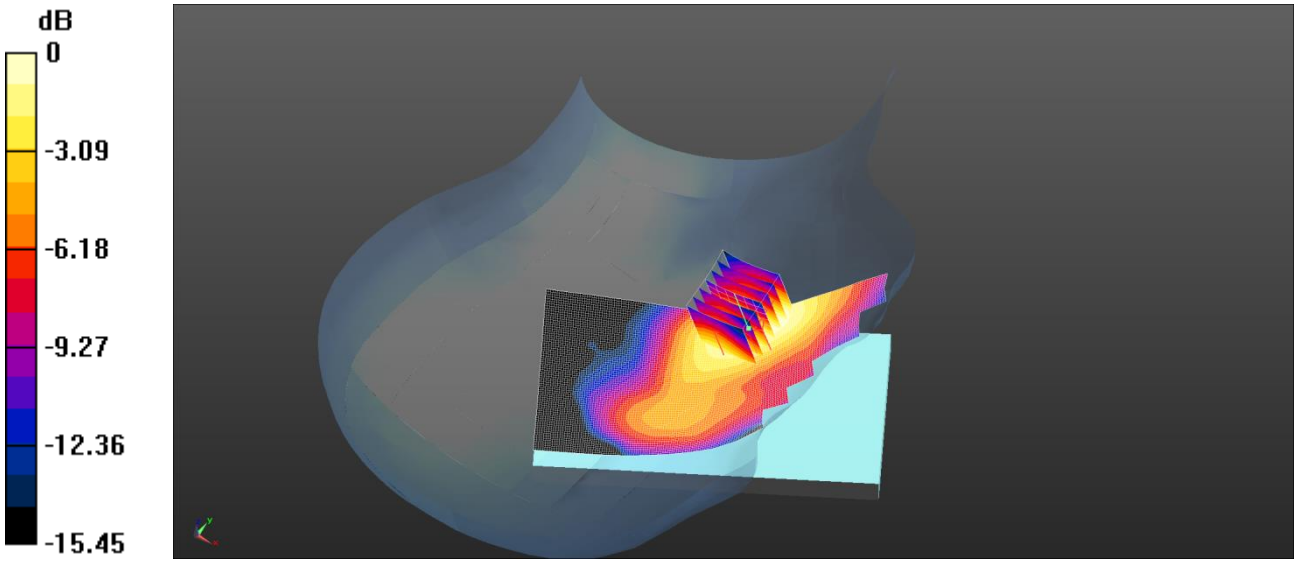
Date/Time: 5/9/2015 2:27:40 PM
Communication System Band: PCS1900(1850.0-1910.0MHz); Frequency: 1850.2MHz; Duty Cycle: 1:8.30042
Medium parameters used: f = 1850.2 MHz; σ = 1.42 S/m; ε_r = 39.87; ρ = 1000 kg/m^3
Phantom section: Right Section
Ambient Temperature:22.6 Liquid Temperature:22.1

DASY5 Configuration:

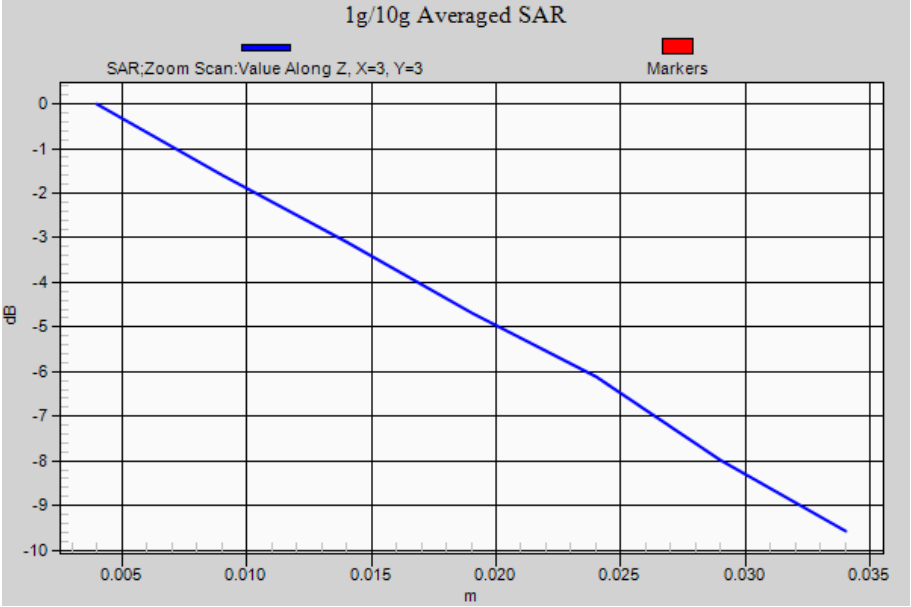
- Probe: EX3DV4 - SN7340; ConvF(8.77, 8.77, 8.77); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GSM1900 HEAD RIGHT CHEEK LOW/Area Scan (81x151x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 1.400 V/m; Power Drift = 0.33 dB
Fast SAR: SAR(1 g) = 0.127 W/kg; SAR(10 g) = 0.072 W/kg
Maximum value of SAR (interpolated) = 0.140 W/kg

Configuration/GSM1900 HEAD RIGHT CHEEK LOW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.400 V/m; Power Drift = 0.33 dB
Peak SAR (extrapolated) = 0.192 W/kg
SAR(1 g) = 0.127 W/kg; SAR(10 g) = 0.080 W/kg
Maximum value of SAR (measured) = 0.138 W/kg



0 dB = 0.138 W/kg = -8.60 dBW/kg


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=3, Y=3
Markers
dB
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

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

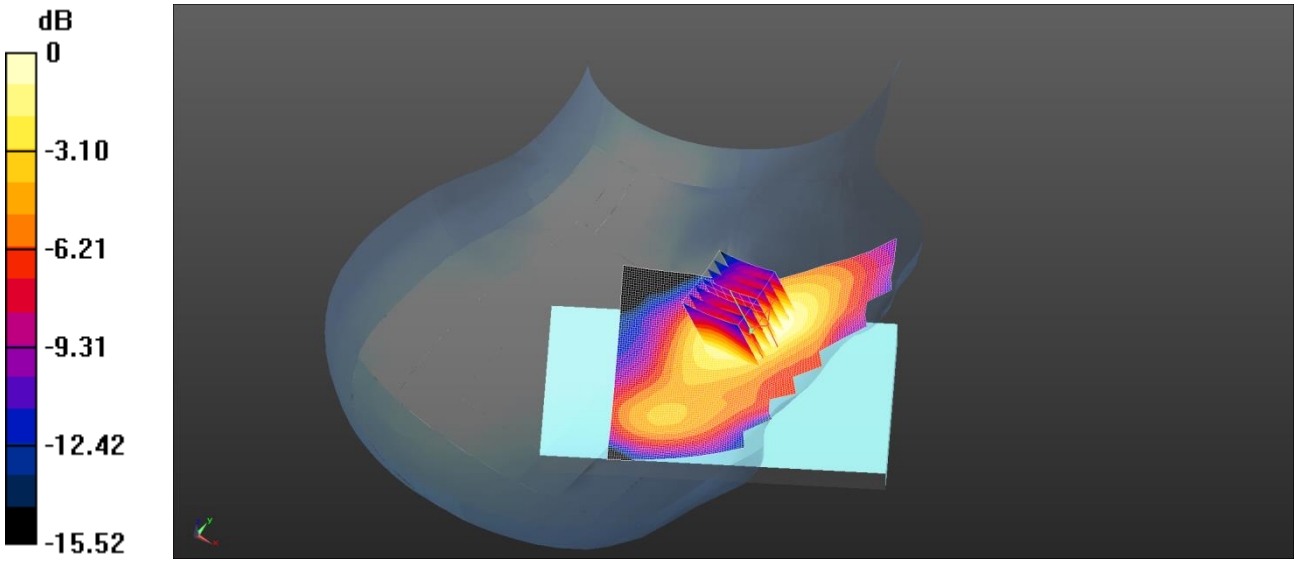
Date/Time: 5/11/2015 10:43:55 AM
Communication System Band: WCDMA BAND 2; Frequency: 1852.4 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.422 S/m; ε_r = 39.86; ρ = 1000 kg/m^3
Phantom section: Right Section
Ambient Temperature:22.6 Liquid Temperature:22.1

DASY5 Configuration:

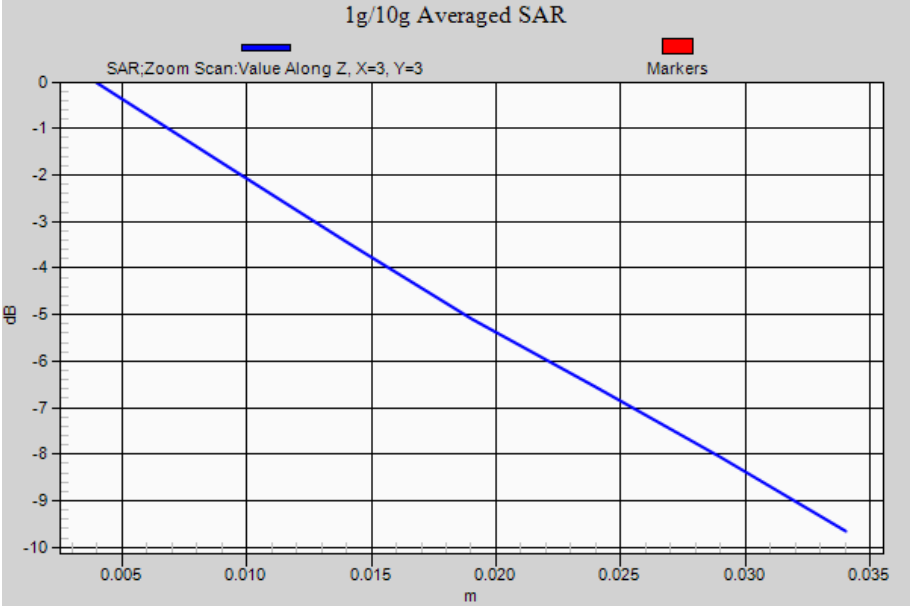
- Probe: EX3DV4 - SN7340; ConvF(8.77, 8.77, 8.77); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WCDMA1900 HEAD RIGHT CHEEK LOW/Area Scan (101x121x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 2.156 V/m; Power Drift = 1.71 dB
Fast SAR: SAR(1 g) = 0.240 W/kg; SAR(10 g) = 0.139 W/kg
Maximum value of SAR (interpolated) = 0.266 W/kg

Configuration/WCDMA1900 HEAD RIGHT CHEEK LOW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.156 V/m; Power Drift = 1.71 dB
Peak SAR (extrapolated) = 0.362 W/kg
SAR(1 g) = 0.238 W/kg; SAR(10 g) = 0.149 W/kg
Maximum value of SAR (measured) = 0.258 W/kg



0 dB = 0.258 W/kg = -5.88 dBW/kg


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=3, Y=3
Markers
dB
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

MEAS.4 Left Head with Cheek on Middle Channel in WCDMA Band 5 mode

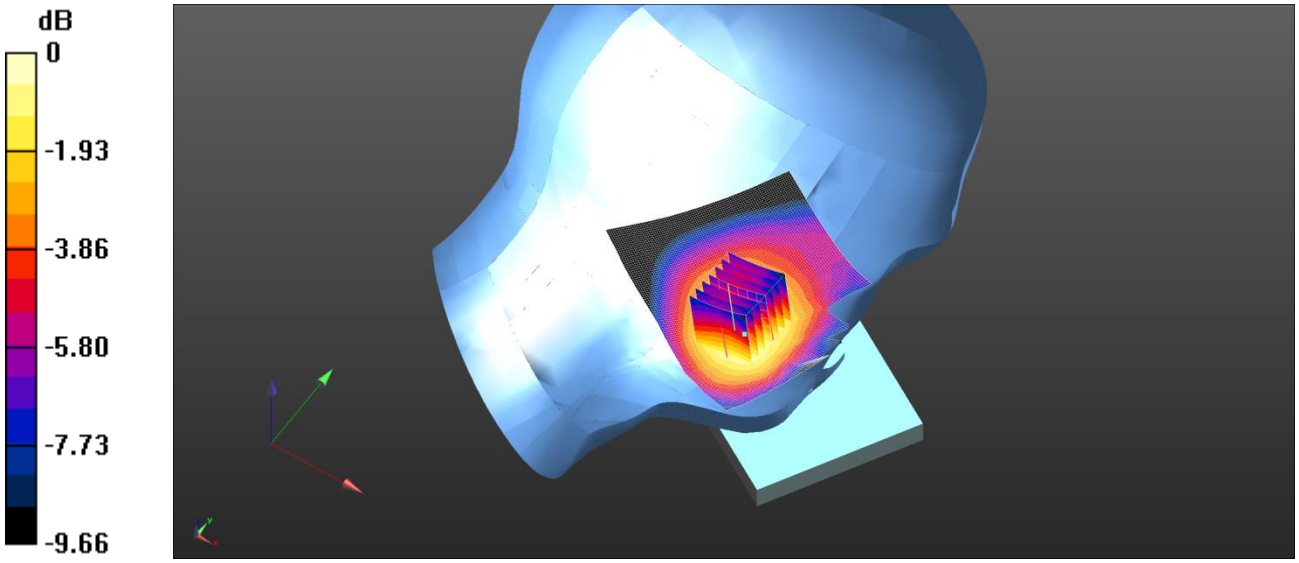
Date/Time: 5/15/2015 3:21:35 PM
Communication System Band: WADMA BAND 5; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.89 S/m; ε_r = 41.5; ρ = 1000 kg/m^3
Phantom section: Left Section
Ambient Temperature:22.6 Liquid Temperature:22.1

DASY5 Configuration:

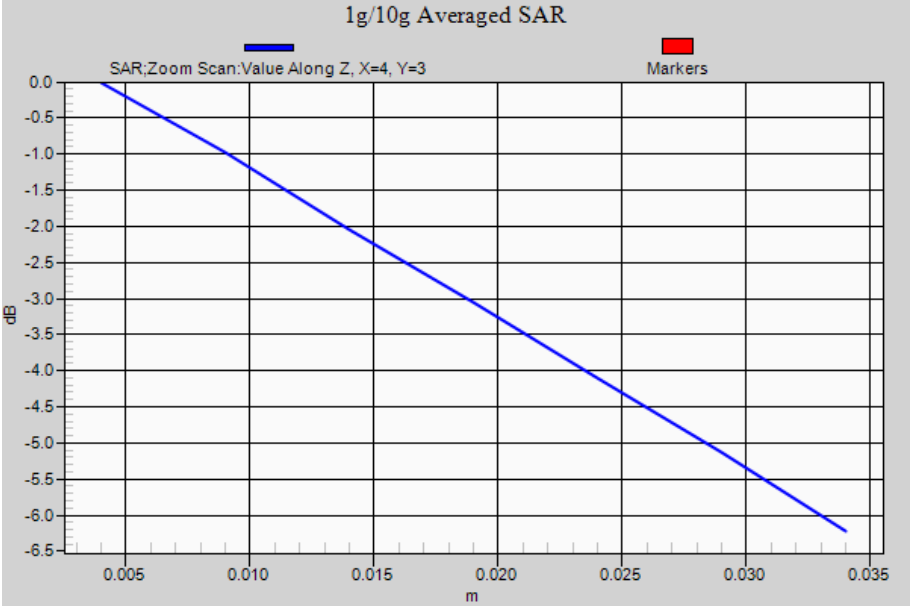
- Probe: EX3DV4 - SN7340; ConvF(9.91, 9.91, 9.91); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WCDMABAND5 HEAD LEFT CHEEK MID/Area Scan (91x121x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 3.302 V/m; Power Drift = -2.33 dB
Fast SAR: SAR(1 g) = 0.074 W/kg; SAR(10 g) = 0.050 W/kg
Maximum value of SAR (interpolated) = 0.0796 W/kg

Configuration/WCDMABAND5 HEAD LEFT CHEEK MID/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.302 V/m; Power Drift = -2.33 dB
Peak SAR (extrapolated) = 0.0970 W/kg
SAR(1 g) = 0.074 W/kg; SAR(10 g) = 0.055 W/kg
Maximum value of SAR (measured) = 0.0773 W/kg



0 dB = 0.0773 W/kg = -11.12 dBW/kg


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=4, Y=3
Markers
dB
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
-5.5
-6.0
-6.5
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

MEAS.5 Right Head with Cheek on Low Channel in LTE Band 7 mode

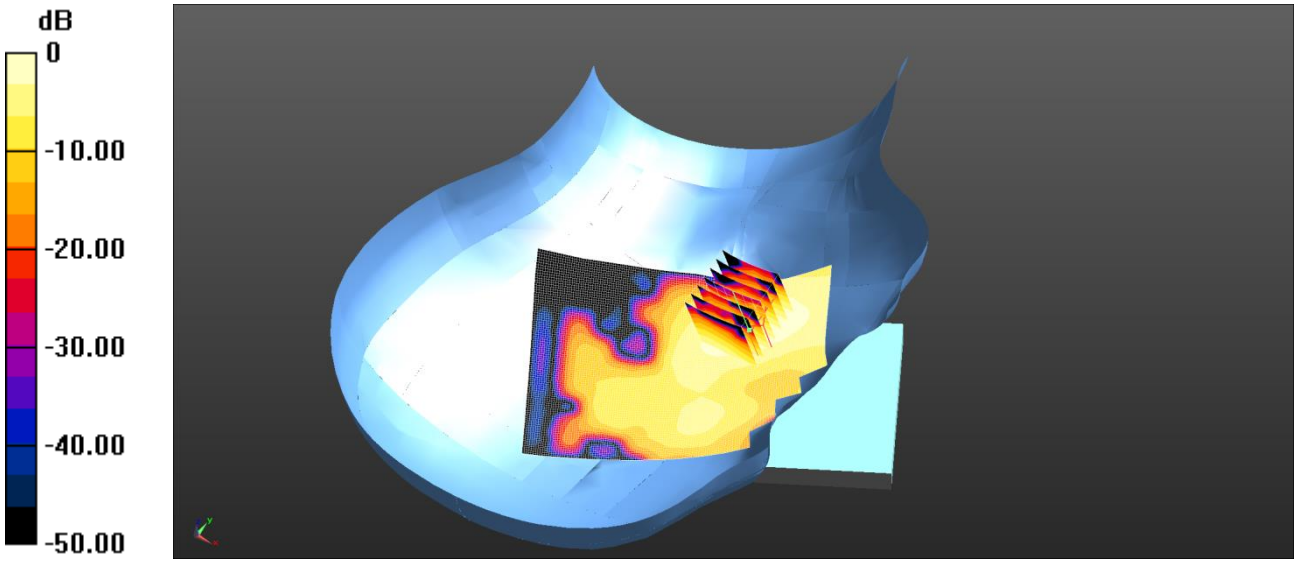
Date/Time: 5/12/2015 2:00:21 PM
Communication System Band: Band 7, E-UTRA/FDD (2500.0 - 2570.0 MHz);
Frequency: 2510 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2510 MHz; σ = 1.89 S/m; ε_r = 39.11; ρ = 1000 kg/m^3
Phantom section: Right Section
Ambient Temperature:22.6 Liquid Temperature:22.1

DASY5 Configuration:

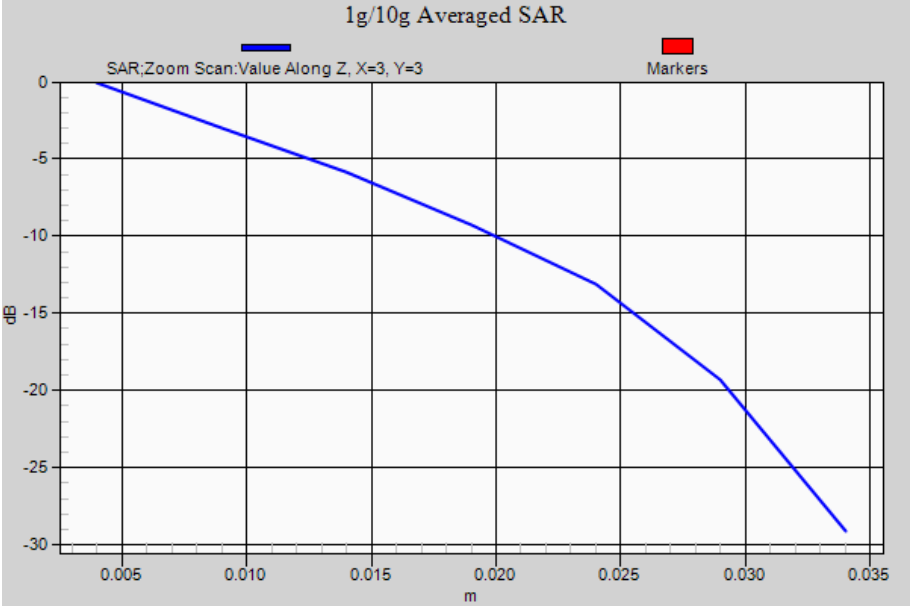
- Probe: EX3DV4 - SN7340; ConvF(7.64, 7.64, 7.64); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/LTE BAND7 HEAD RIGHT CHEEK LOW/Area Scan (101x131x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 1.904 V/m; Power Drift = -0.84 dB
Fast SAR: SAR(1 g) = 0.098 W/kg; SAR(10 g) = 0.050 W/kg
Maximum value of SAR (interpolated) = 0.112 W/kg

Configuration/LTE BAND7 HEAD RIGHT CHEEK LOW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.904 V/m; Power Drift = -0.84 dB
Peak SAR (extrapolated) = 0.194 W/kg
SAR(1 g) = 0.097 W/kg; SAR(10 g) = 0.047 W/kg
Maximum value of SAR (measured) = 0.110 W/kg



0 dB = 0.110 W/kg = -9.59 dBW/kg


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=3, Y=3
Markers
dB
0
-5
-10
-15
-20
-25
-30
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

MEAS.6 Right Head with Cheek on Middle Channel in IEEE 802.11b mode

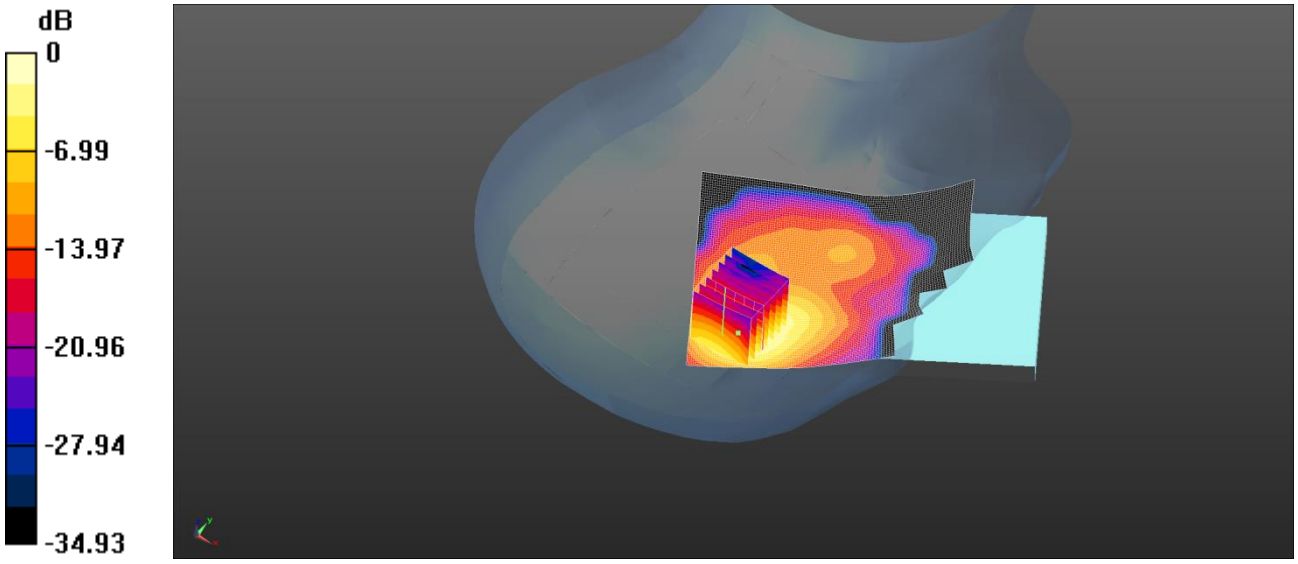
Date/Time: 5/21/2015 4:14:21 PM
Communication System Band: WLAN(n); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.908 S/m; ε_r = 37.862; ρ = 1000 kg/m^3
Phantom section: Right Section
Ambient Temperature:22.6 Liquid Temperature:22.1

DASY5 Configuration:

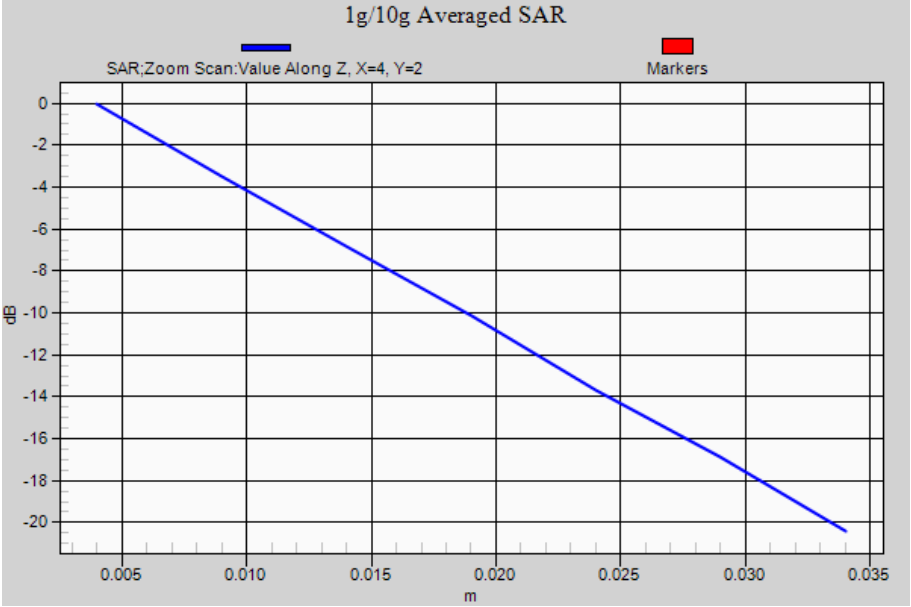
- Probe: EX3DV4 - SN7340; ConvF(7.83, 7.83, 7.83); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version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

Configuration/WLAN HEAD RIGHT CHEEK HIGH 2 2/Area Scan (101x121x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 4.607 V/m; Power Drift = 0.05 dB
Fast SAR: SAR(1 g) = 0.584 W/kg; SAR(10 g) = 0.275 W/kg
Maximum value of SAR (interpolated) = 0.702 W/kg

Configuration/WLAN HEAD RIGHT CHEEK HIGH 2 2/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.607 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.49 W/kg
SAR(1 g) = 0.608 W/kg; SAR(10 g) = 0.260 W/kg
Maximum value of SAR (measured) = 0.673 W/kg



0 dB = 0.673 W/kg = -1.72 dBW/kg


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=4, Y=2
Markers
dB
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

MEAS.7 Body Plane with Back Side on Low Channel in GSM850 mode

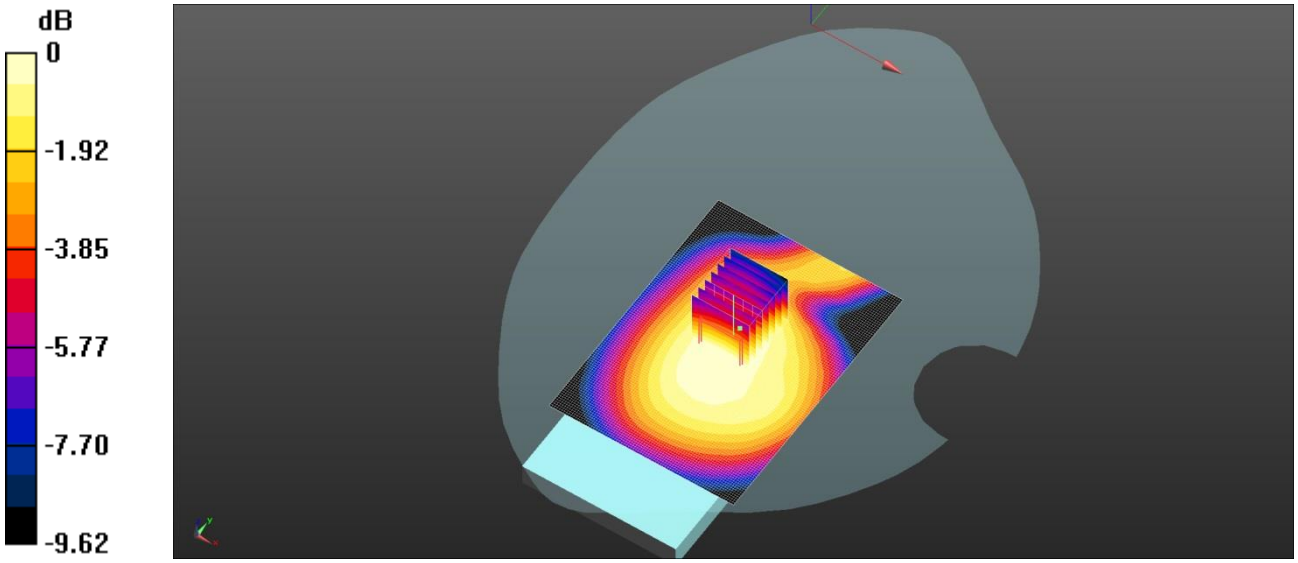
Date/Time: 5/8/2015 10:52:30 AM
Communication System Band: GSM 850 (824.0 - 849.0 MHz); Frequency: 824.2 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.95 S/m; ε_r = 55.959; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient Temperature:22.6 Liquid Temperature:22.1

DASY5 Configuration:

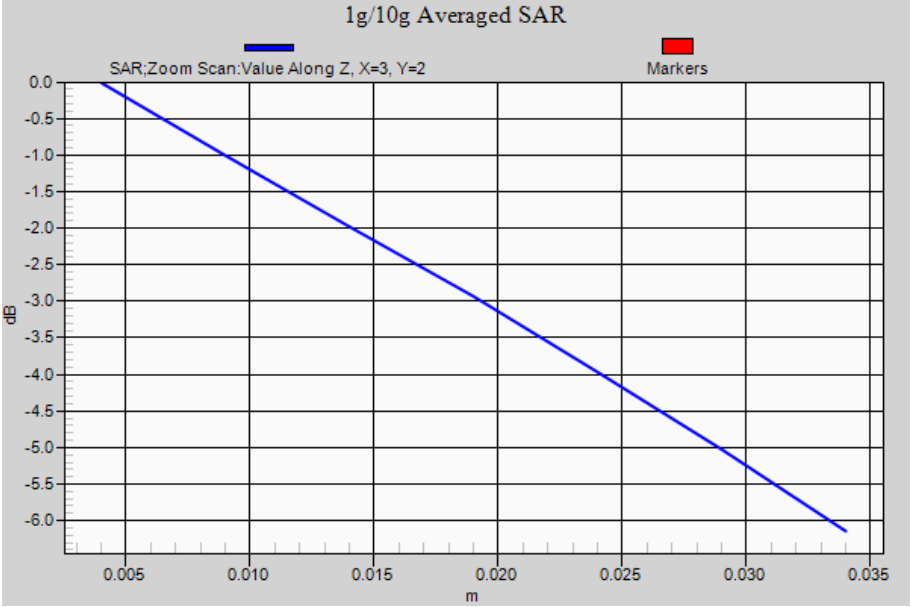
- Probe: EX3DV4 - SN7340; ConvF(9.97, 9.97, 9.97); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version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

Configuration/GSM 850 BODY BACK LOW 2/Area Scan (81x111x1):
Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 8.819 V/m; Power Drift = 0.03 dB
Fast SAR: SAR(1 g) = 0.122 W/kg; SAR(10 g) = 0.086 W/kg
Maximum value of SAR (interpolated) = 0.129 W/kg

Configuration/GSM 850 BODY BACK LOW 2/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.819 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.155 W/kg
SAR(1 g) = 0.123 W/kg; SAR(10 g) = 0.095 W/kg
Maximum value of SAR (measured) = 0.129 W/kg



0 dB = 0.129 W/kg = -8.89 dBW/kg


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=3, Y=2
Markers
dB
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
-5.5
-6.0
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

MEAS.8 Body Plane with Back Side on Low Channel in GPRS850 mode

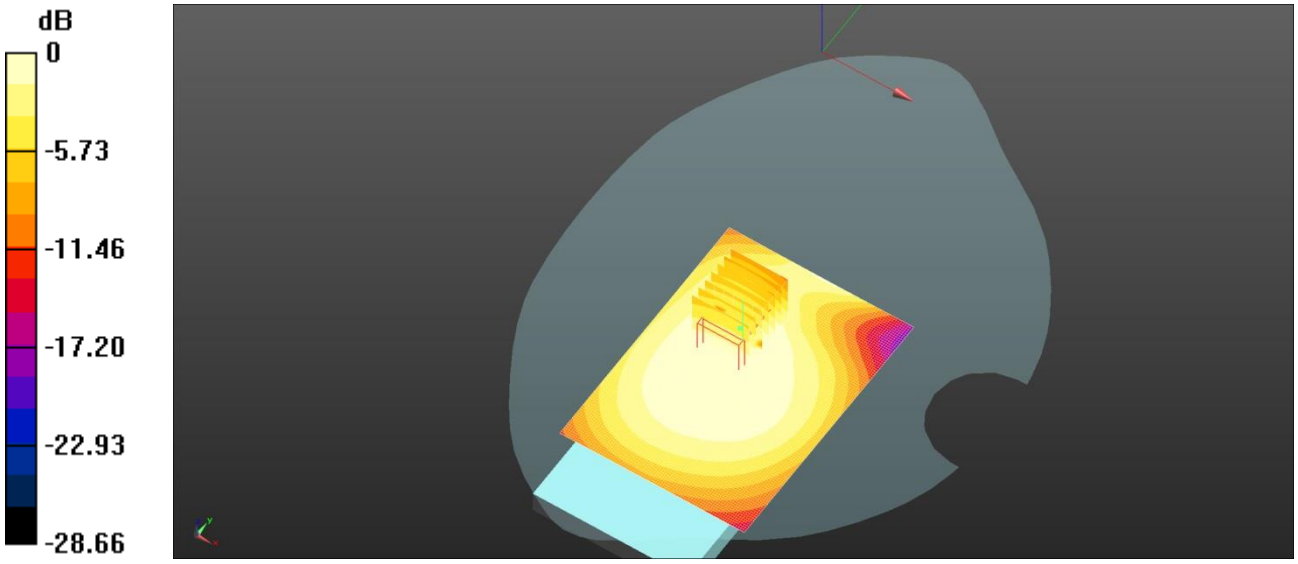
Date/Time: 5/8/2015 2:43:57 PM
Communication System Band: GPRS850; Frequency: 824.2 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.95 S/m; ε_r = 55.959; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient Temperature:22.6 Liquid Temperature:22.1

DASY5 Configuration:

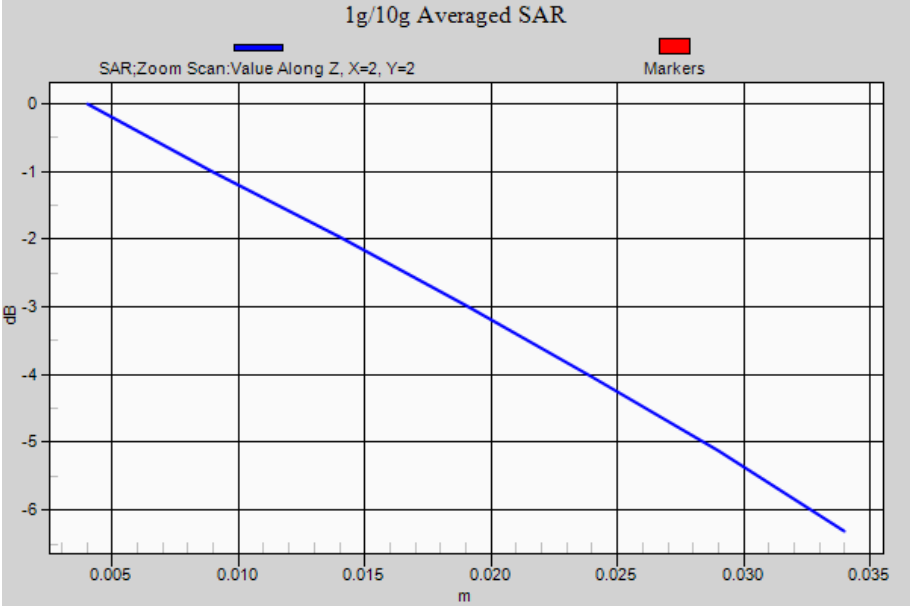
- Probe: EX3DV4 - SN7340; ConvF(9.97, 9.97, 9.97); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version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

Configuration/GPRS 850 BODY BACK LOW/Area Scan (81x111x1):
Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 13.03 V/m; Power Drift = 0.13 dB
Fast SAR: SAR(1 g) = 0.299 W/kg; SAR(10 g) = 0.211 W/kg
Maximum value of SAR (interpolated) = 0.319 W/kg

Configuration/GPRS 850 BODY BACK LOW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.03 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.632 W/kg
SAR(1 g) = 0.303 W/kg; SAR(10 g) = 0.232 W/kg
Maximum value of SAR (measured) = 0.316 W/kg



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


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=2, Y=2
Markers
dB
0
-1
-2
-3
-4
-5
-6
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

MEAS.9 Body Plane with Back Side on Low Channel in EGPRS850 mode

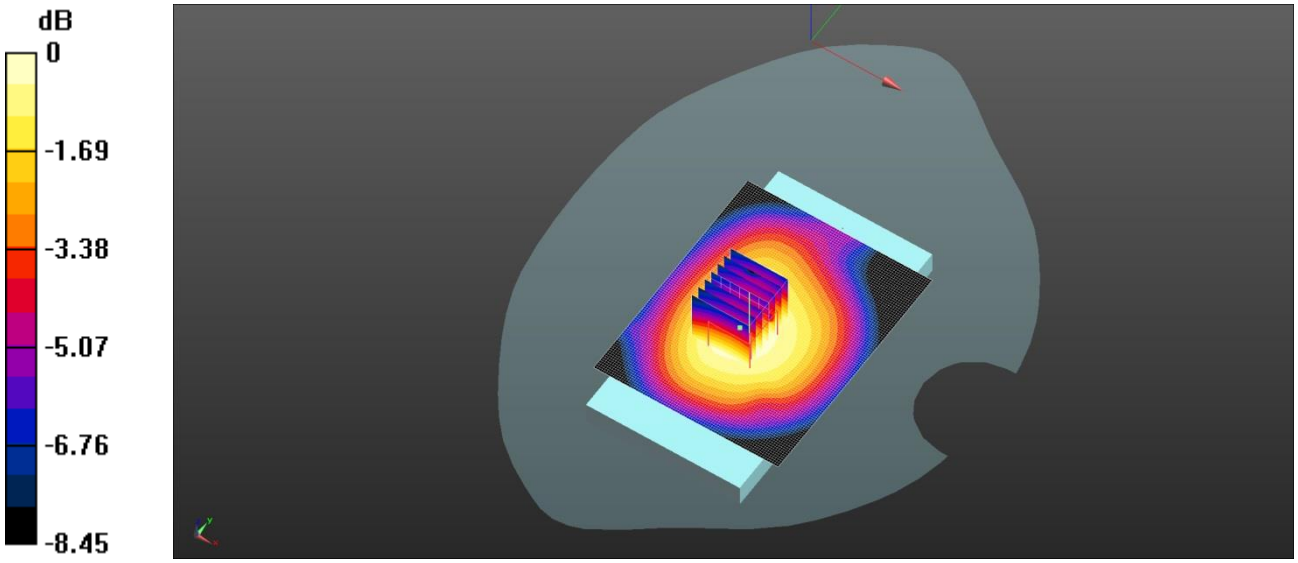
Date/Time: 5/15/2015 9:17:07 AM
Communication System Band: EGPRS850; Frequency: 824.2 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.95 S/m; ε_r = 55.959; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient Temperature:22.6 Liquid Temperature:22.1

DASY5 Configuration:

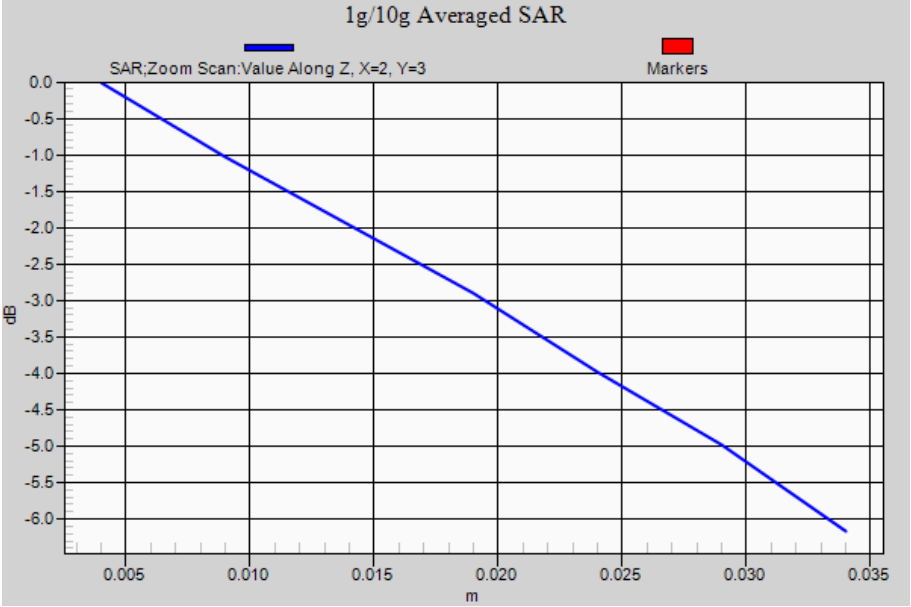
- Probe: EX3DV4 - SN7340; ConvF(9.97, 9.97, 9.97); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version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

Configuration/EGPRS 850 BODY BACK LOW/Area Scan (81x101x1):
Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 12.78 V/m; Power Drift = -0.02 dB
Fast SAR: SAR(1 g) = 0.175 W/kg; SAR(10 g) = 0.123 W/kg
Maximum value of SAR (interpolated) = 0.185 W/kg

Configuration/EGPRS 850 BODY BACK LOW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.78 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.231 W/kg
SAR(1 g) = 0.180 W/kg; SAR(10 g) = 0.136 W/kg
Maximum value of SAR (measured) = 0.190 W/kg



0 dB = 0.190 W/kg = -7.21 dBW/kg


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=2, Y=3
Markers
dB
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
-5.5
-6.0
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

MEAS.10 Body Plane with Back Side on Low Channel in GSM1900 mode

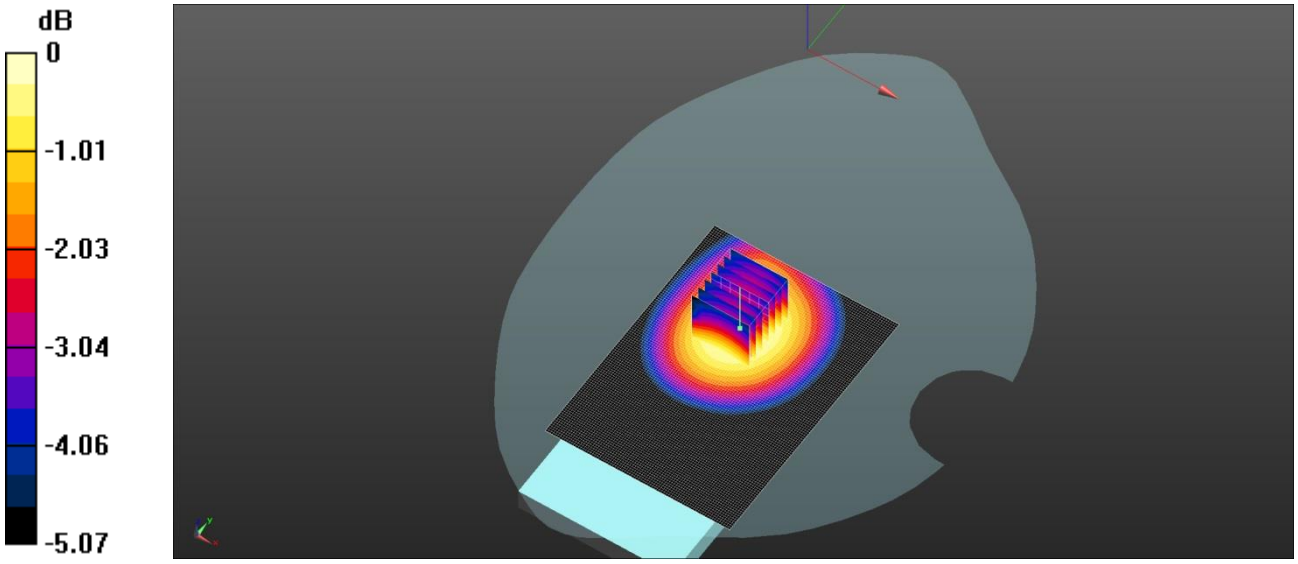
Date/Time: 5/13/2015 10:11:48 AM
Communication System Band: PCS 1900(1850.0 - 1910.0 MHz); Frequency: 1850.2 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1850.2 MHz; σ = 1.53 S/m; ε_r = 51.24; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient Temperature:22.6 Liquid Temperature:22.1

DASY5 Configuration:

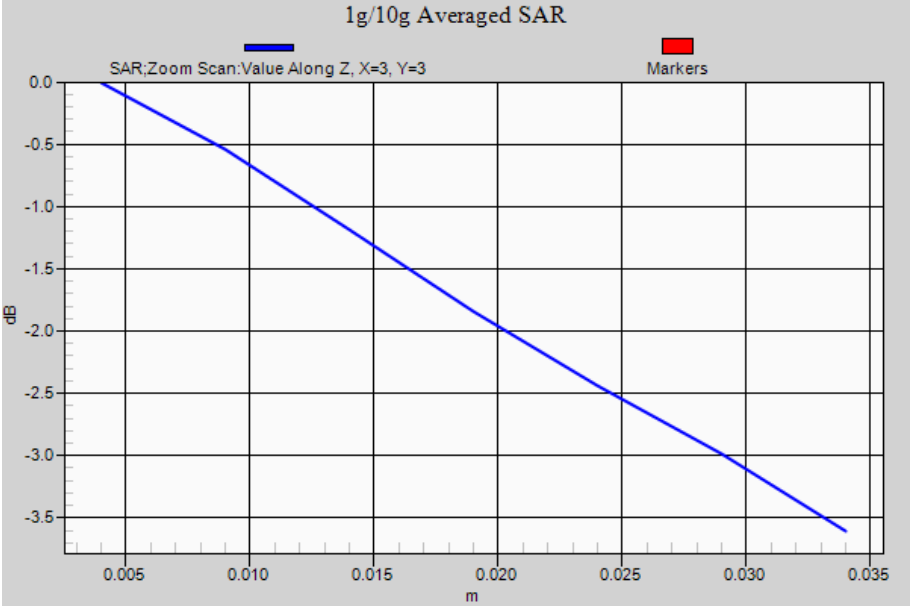
- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GSM 1900 BODY BACK LOW 2/Area Scan (81x111x1):
Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 21.65 V/m; Power Drift = -0.25 dB
Fast SAR: SAR(1 g) = 0.743 W/kg; SAR(10 g) = 0.471 W/kg
Maximum value of SAR (interpolated) = 0.794 W/kg

Configuration/GSM 1900 BODY BACK LOW 2/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.65 V/m; Power Drift = -0.25 dB
Peak SAR (extrapolated) = 0.843 W/kg
SAR(1 g) = 0.759 W/kg; SAR(10 g) = 0.632 W/kg
Maximum value of SAR (measured) = 0.786 W/kg



0 dB = 0.786 W/kg = -1.05 dBW/kg


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=3, Y=3
Markers
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
dB
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

MEAS.11 Body Plane with Front Side on Low Channel in GPRS1900 mode

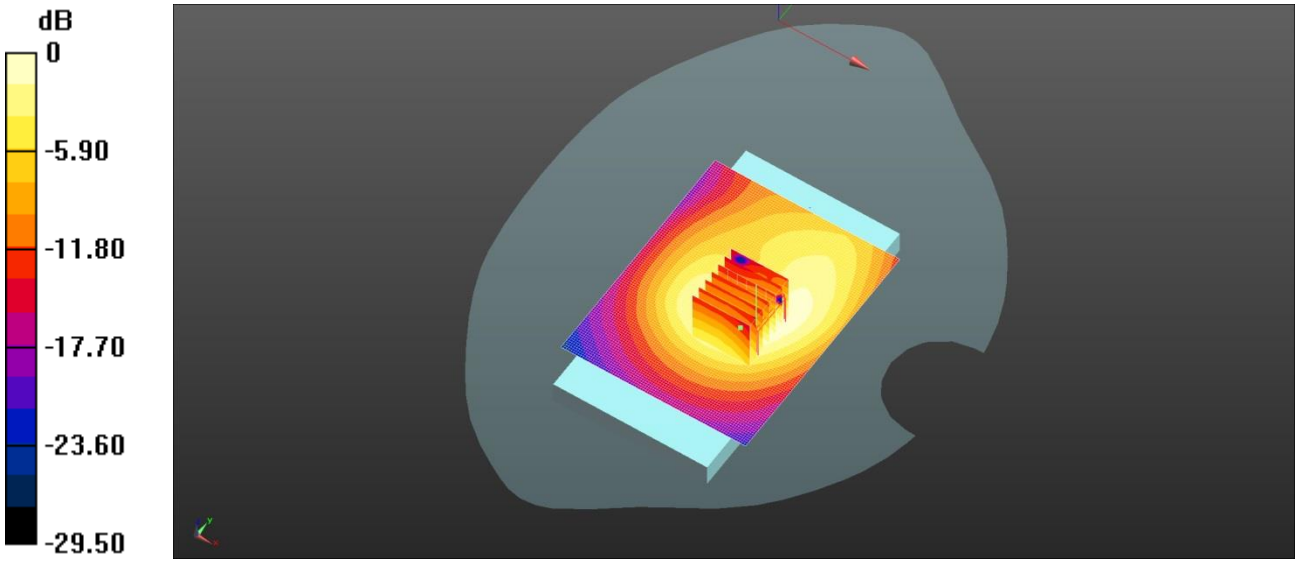
Date/Time: 5/14/2015 10:59:15 AM
Communication System Band: GPRS1900(1850.0 - 1910.0 MHz); Frequency: 1850.2 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1850.2 MHz; σ = 1.53 S/m; ε_r = 51.24; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient Temperature:22.6 Liquid Temperature:22.1

DASY5 Configuration:

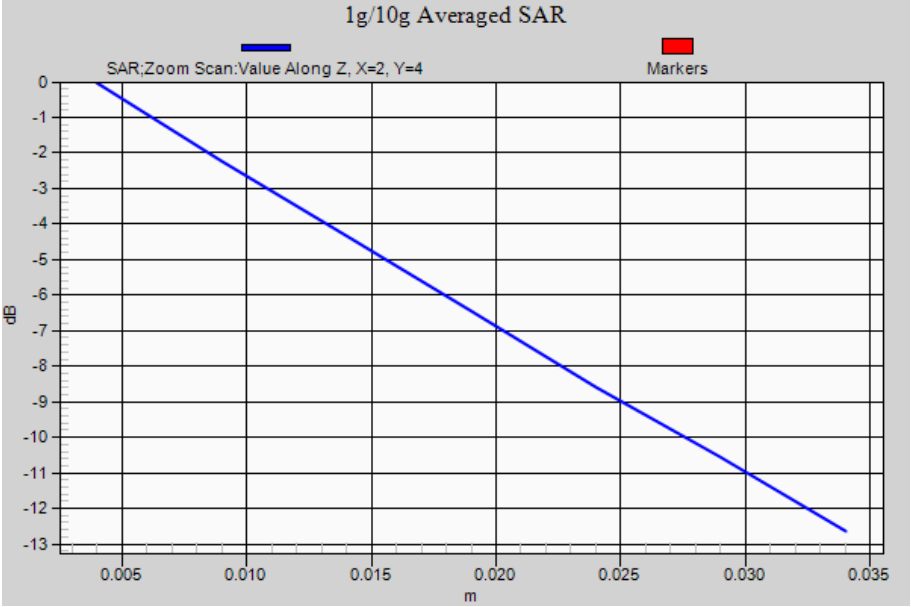
- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/GPRS 1900 BODY FRONT LOW/Area Scan (81x101x1):
Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 12.33 V/m; Power Drift = -0.34 dB
Fast SAR: SAR(1 g) = 0.754 W/kg; SAR(10 g) = 0.439 W/kg
Maximum value of SAR (interpolated) = 0.852 W/kg

Configuration/GPRS 1900 BODY FRONT LOW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.33 V/m; Power Drift = -0.34 dB
Peak SAR (extrapolated) = 1.32 W/kg
SAR(1 g) = 0.762 W/kg; SAR(10 g) = 0.435 W/kg
Maximum value of SAR (measured) = 0.850 W/kg



0 dB = 0.850 W/kg = -0.71 dBW/kg


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=2, Y=4
Markers
dB
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

MEAS.12 Body Plane with Bottom Edge on Low Channel in EGPRS1900 mode

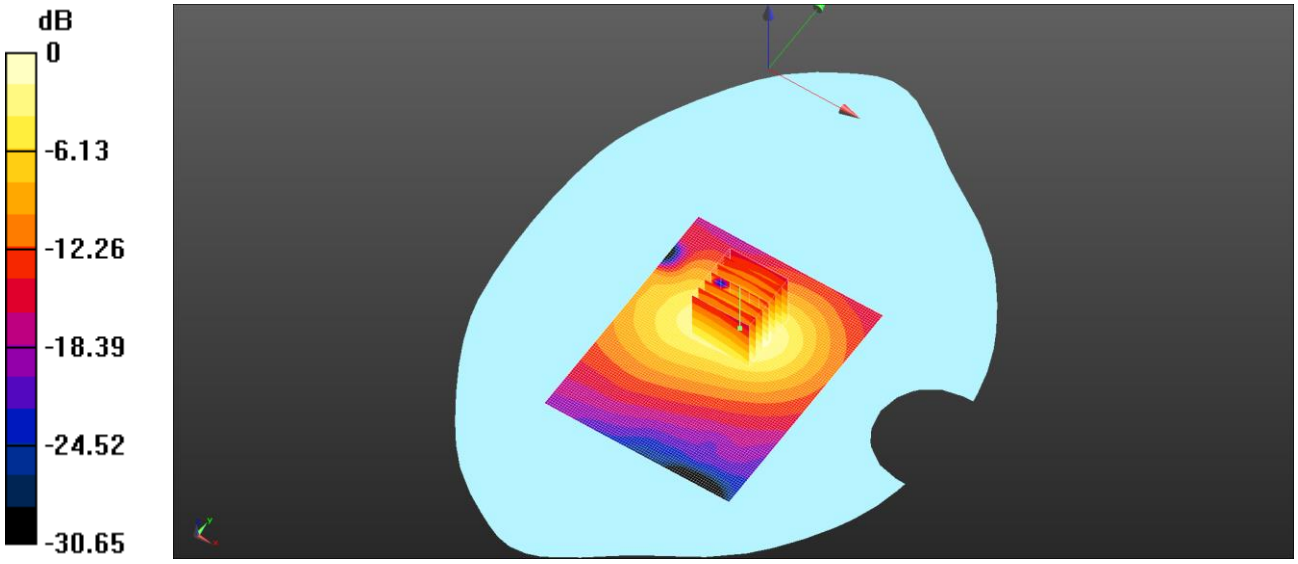
Date/Time: 5/14/2015 5:44:33 PM
Communication System Band: EGPRS; Frequency: 1850.2 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1850.2 MHz; σ = 1.53 S/m; ε_r = 51.24; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient Temperature:22.6 Liquid Temperature:22.1

DASY5 Configuration:

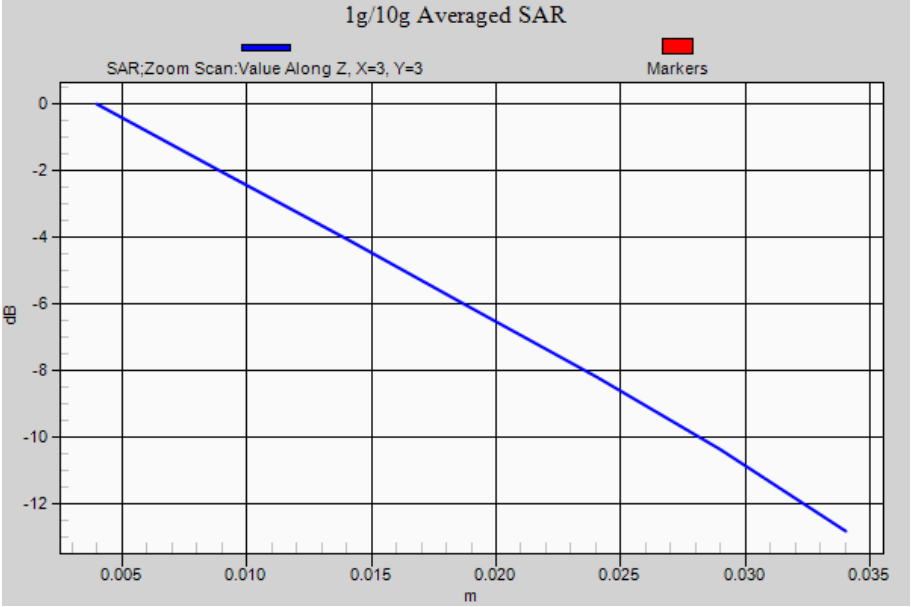
- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/EGPRS1900 BODY Bottom LOW/Area Scan (81x101x1):
Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 15.27 V/m; Power Drift = 0.46 dB
Fast SAR: SAR(1 g) = 0.314 W/kg; SAR(10 g) = 0.174 W/kg
Maximum value of SAR (interpolated) = 0.358 W/kg

Configuration/EGPRS1900 BODY Bottom LOW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.27 V/m; Power Drift = 0.46 dB
Peak SAR (extrapolated) = 0.577 W/kg
SAR(1 g) = 0.322 W/kg; SAR(10 g) = 0.181 W/kg
Maximum value of SAR (measured) = 0.392 W/kg



0 dB = 0.392 W/kg = -4.07 dBW/kg


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=3, Y=3
Markers
dB
0
-2
-4
-6
-8
-10
-12
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

MEAS.13 Body Plane with Front Side on Low Channel in WCDMA band2 mode

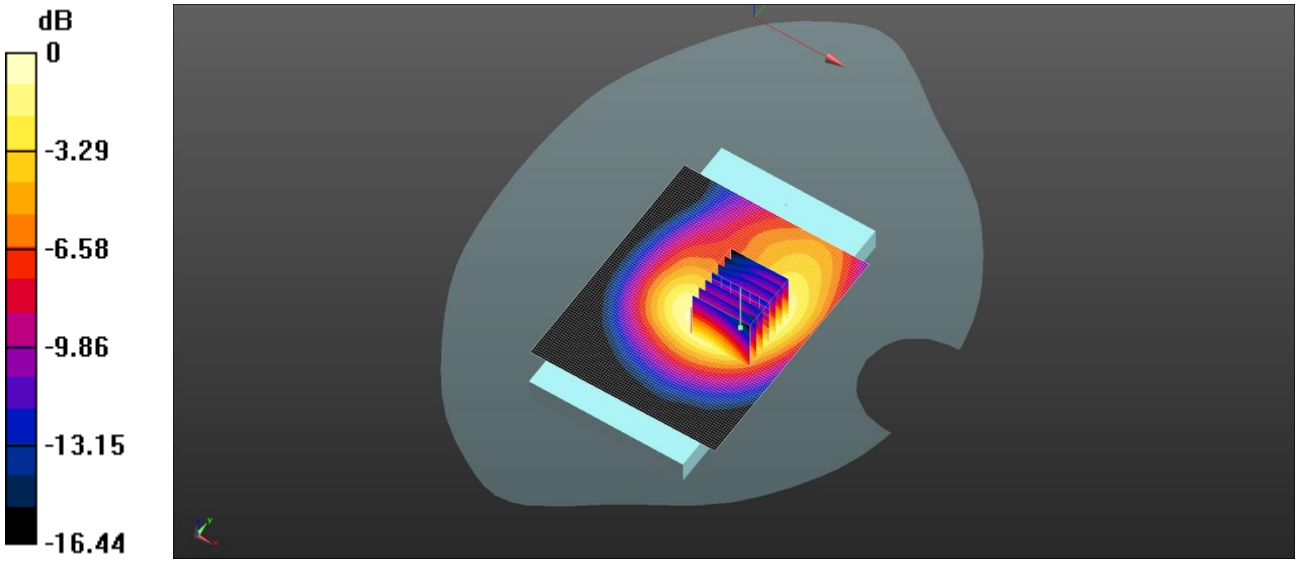
Date/Time: 5/14/2015 11:55:39 AM
Communication System Band: WCDMA BAND 2; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.533 S/m; ε_r = 51.233; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient Temperature:22.6 Liquid Temperature:22.1

DASY5 Configuration:

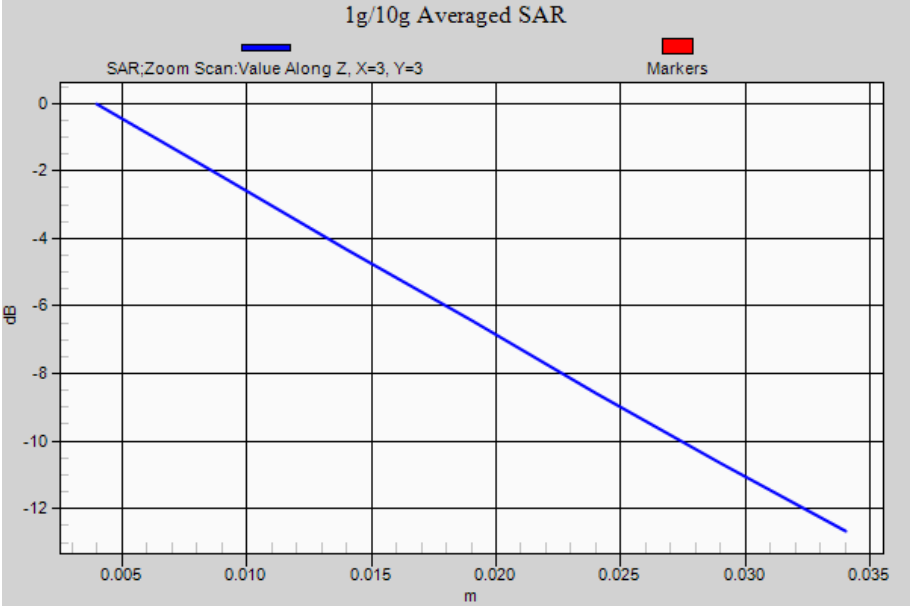
- Probe: EX3DV4 - SN7340; ConvF(8.18, 8.18, 8.18); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 Right 1857; Type: QD000P40CD; Serial: TP1857
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration/WCDMA BAND2 BODY FRONT LOW/Area Scan (81x101x1):
Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 9.246 V/m; Power Drift = -0.10 dB
Fast SAR: SAR(1 g) = 0.470 W/kg; SAR(10 g) = 0.274 W/kg
Maximum value of SAR (interpolated) = 0.529 W/kg

Configuration/WCDMA BAND2 BODY FRONT LOW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.246 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.803 W/kg
SAR(1 g) = 0.482 W/kg; SAR(10 g) = 0.280 W/kg
Maximum value of SAR (measured) = 0.529 W/kg



0 dB = 0.529 W/kg = -2.77 dBW/kg


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=3, Y=3
Markers
0
-2
-4
-6
-8
-10
-12
dB
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

MEAS.14 Body Plane with Back Side on Middle Channel in WCDMA band5 mode

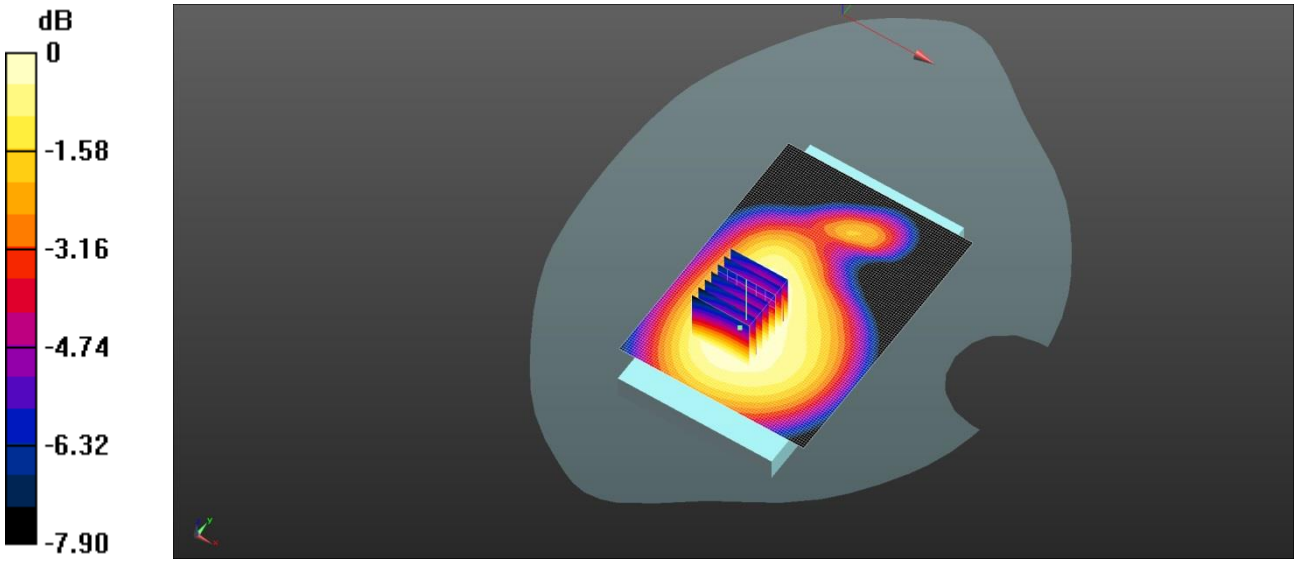
Date/Time: 5/11/2015 3:31:23 PM
Communication System Band: WADMA BAND 5; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.96 S/m; ε_r = 55.87; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient Temperature:22.6 Liquid Temperature:22.1

DASY5 Configuration:

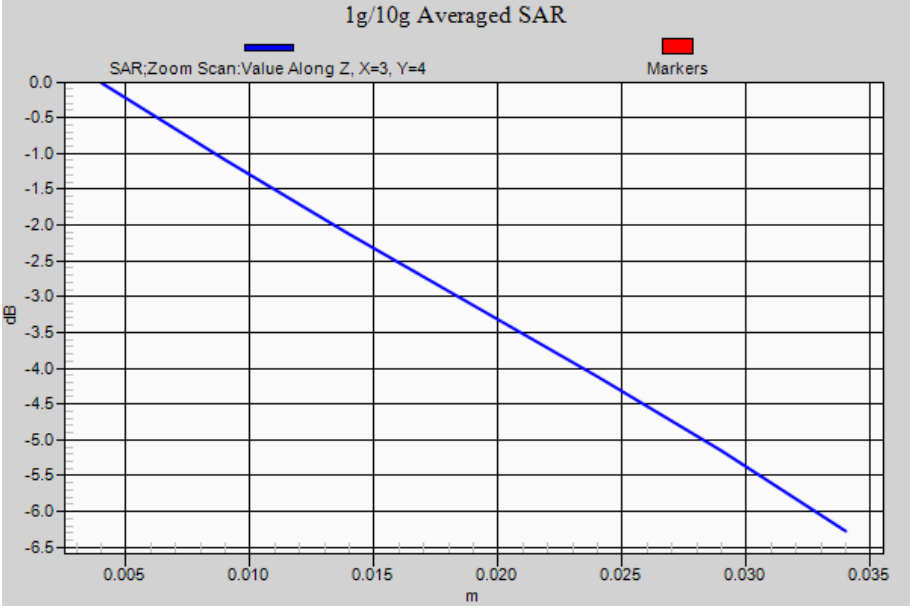
- Probe: EX3DV4 - SN7340; ConvF(9.97, 9.97, 9.97); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version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

Configuration/WCDMA BAND5 BODY BACK MID/Area Scan (81x111x1):
Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 9.831 V/m; Power Drift = 0.35 dB
Fast SAR: SAR(1 g) = 0.146 W/kg; SAR(10 g) = 0.103 W/kg
Maximum value of SAR (interpolated) = 0.154 W/kg

Configuration/WCDMA BAND5 BODY BACK MID/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.831 V/m; Power Drift = 0.35 dB
Peak SAR (extrapolated) = 0.186 W/kg
SAR(1 g) = 0.145 W/kg; SAR(10 g) = 0.112 W/kg
Maximum value of SAR (measured) = 0.152 W/kg



0 dB = 0.152 W/kg = -8.18 dBW/kg


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=3, Y=4
Markers
dB
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
-5.5
-6.0
-6.5
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

MEAS.15 Body Plane with Back Side on Low Channel in LTE band7 mode

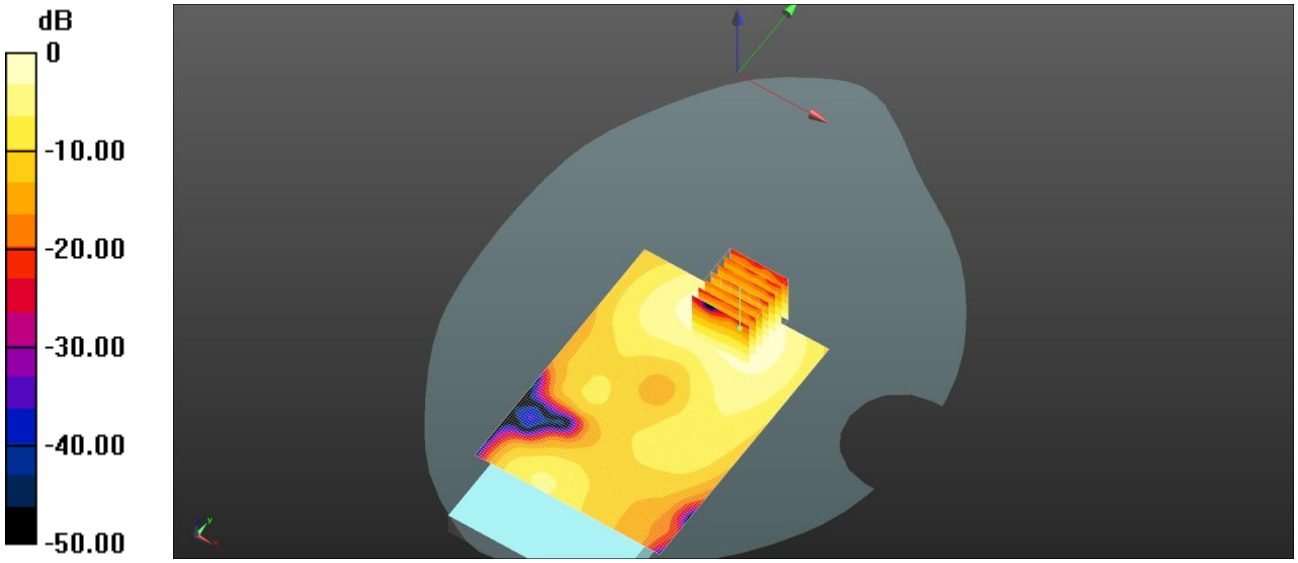
Date/Time: 5/18/2015 11:06:56 AM
Communication System Band: Band 7; Frequency: 2510 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2510 MHz; σ = 2.051 S/m; ε_r = 52.58; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient Temperature:22.6 Liquid Temperature:22.1

DASY5 Configuration:

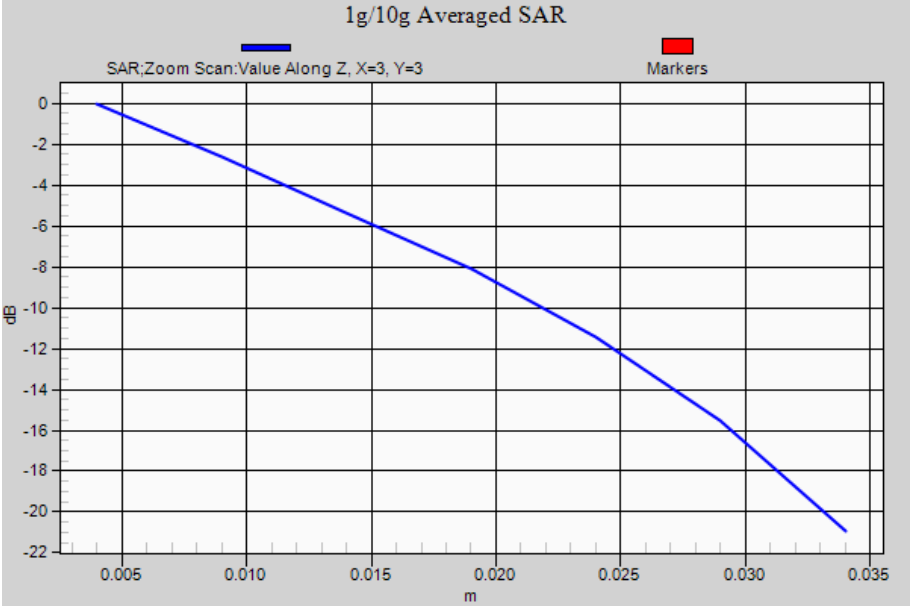
- Probe: EX3DV4 - SN7340; ConvF(7.11, 7.11, 7.11); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version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

Configuration/LTE BAND7 BODY BACK LOW 2/Area Scan (81x111x1):
Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 7.641 V/m; Power Drift = 0.54 dB
Fast SAR: SAR(1 g) = 0.210 W/kg; SAR(10 g) = 0.112 W/kg
Maximum value of SAR (interpolated) = 0.233 W/kg

Configuration/LTE BAND7 BODY BACK LOW 2/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.641 V/m; Power Drift = 0.54 dB
Peak SAR (extrapolated) = 0.374 W/kg
SAR(1 g) = 0.209 W/kg; SAR(10 g) = 0.113 W/kg
Maximum value of SAR (measured) = 0.229 W/kg



0 dB = 0.229 W/kg = -6.40 dBW/kg


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=3, Y=3
Markers
dB
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

MEAS.16 Body Plane with Top Edge on High Channel in IEEE 802.11b mode

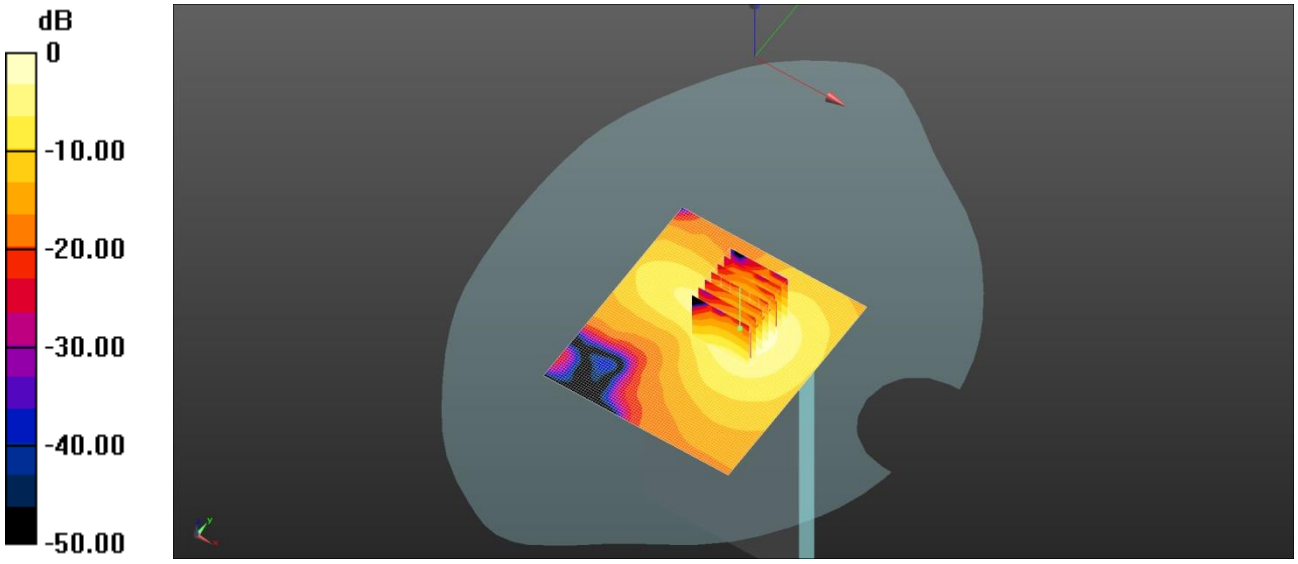
Date/Time: 5/19/2015 1:53:46 PM
Communication System Band: WLAN(b); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; σ = 2.048 S/m; ε_r = 50.622; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient Temperature:22.6 Liquid Temperature:22.1

DASY5 Configuration:

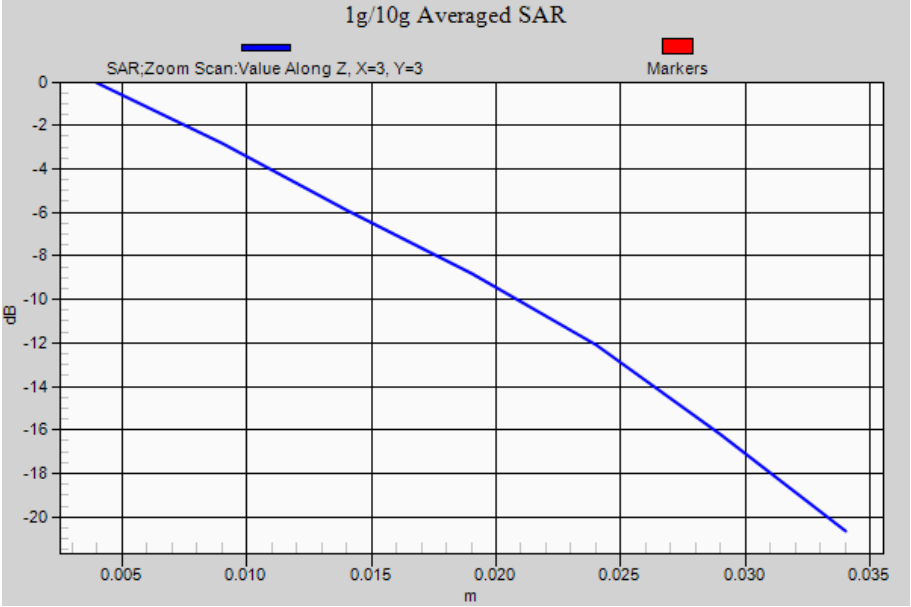
- Probe: EX3DV4 - SN7340; ConvF(7.55, 7.55, 7.55); Calibrated: 12/2/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1454; Calibrated: 12/1/2014
- Phantom: SAM (30deg probe tilt) with CRP v5.0 on left 1859; Type: QD000P40CD; Serial: TP:1859
- Measurement SW: DASY52, Version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

Configuration/WLAN b BODY TOP HIGH/Area Scan (81x91x1):
Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 8.235 V/m; Power Drift = -0.17 dB
Fast SAR: SAR(1 g) = 0.169 W/kg; SAR(10 g) = 0.081 W/kg
Maximum value of SAR (interpolated) = 0.203 W/kg

Configuration/WLAN b BODY TOP HIGH/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.235 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 0.351 W/kg
SAR(1 g) = 0.179 W/kg; SAR(10 g) = 0.083 W/kg
Maximum value of SAR (measured) = 0.206 W/kg



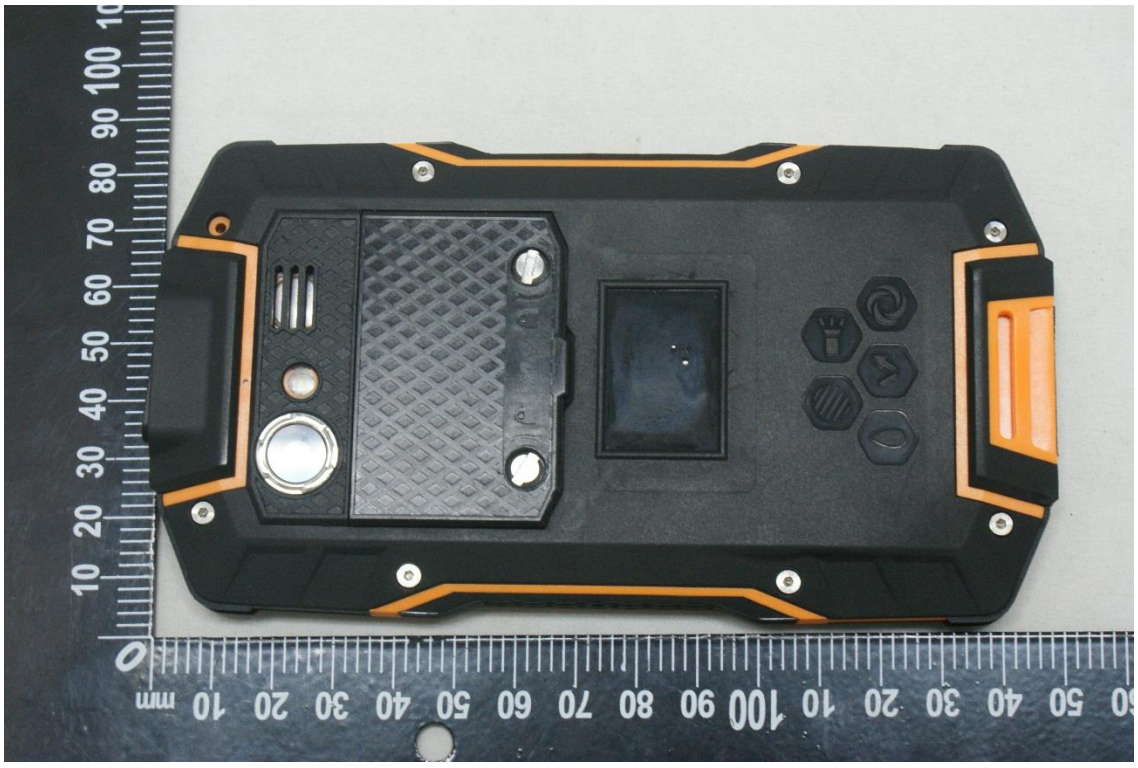
0 dB = 0.206 W/kg = -6.86 dBW/kg


1g/10g Averaged SAR
SAR;Zoom Scan:Value Along Z, X=3, Y=3
Markers
dB
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

ANNEX D EUT PHOTO

THE FRONT OF EUT

THE BACK OF EUT



THE LEFT OF EUT

THE RIGHT OF EUT

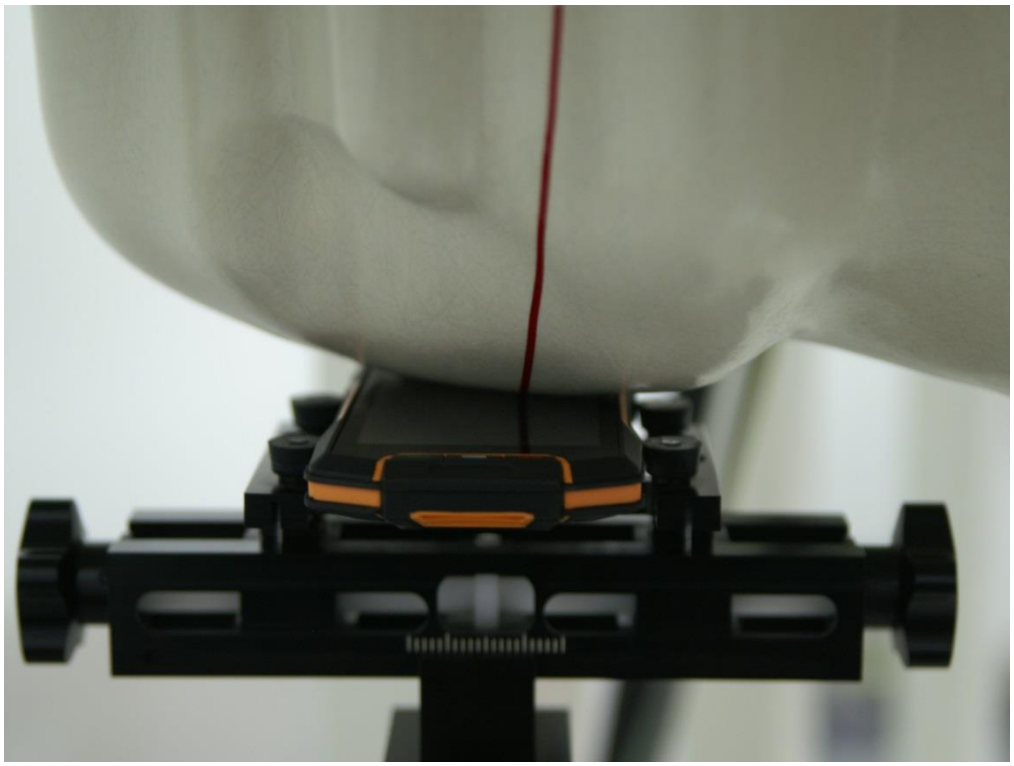
THE UP OF EUT

THE DOWN OF EUT

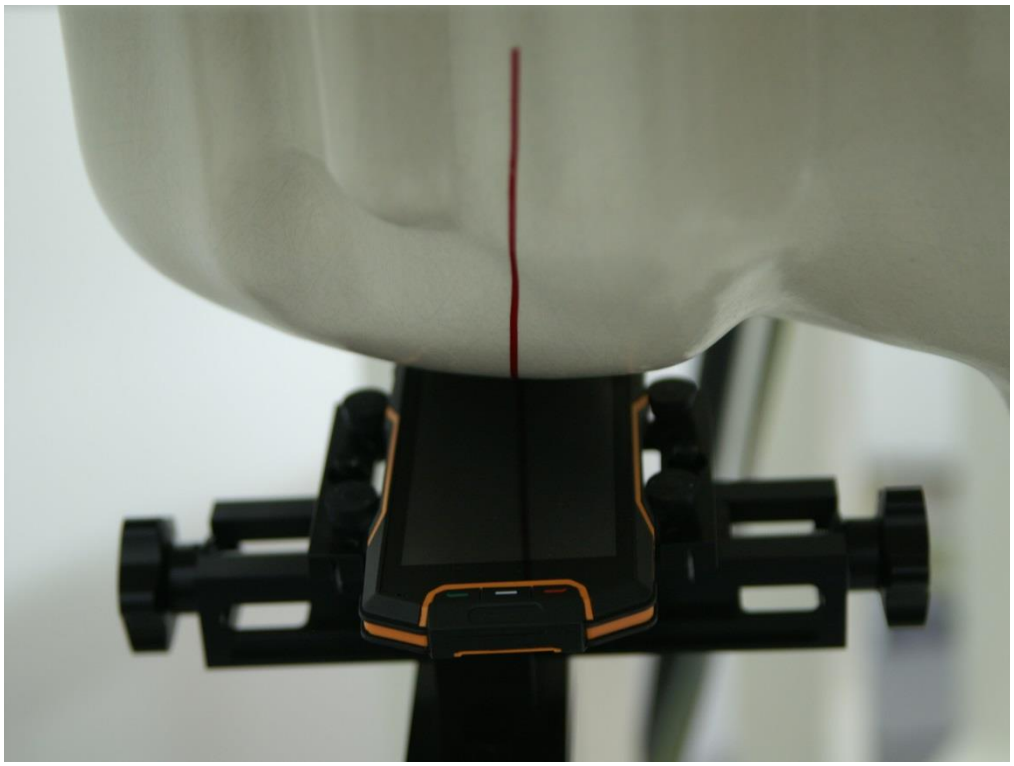
THE INSIDE OF EUT

ANNEX E TEST SETUP PHOTO

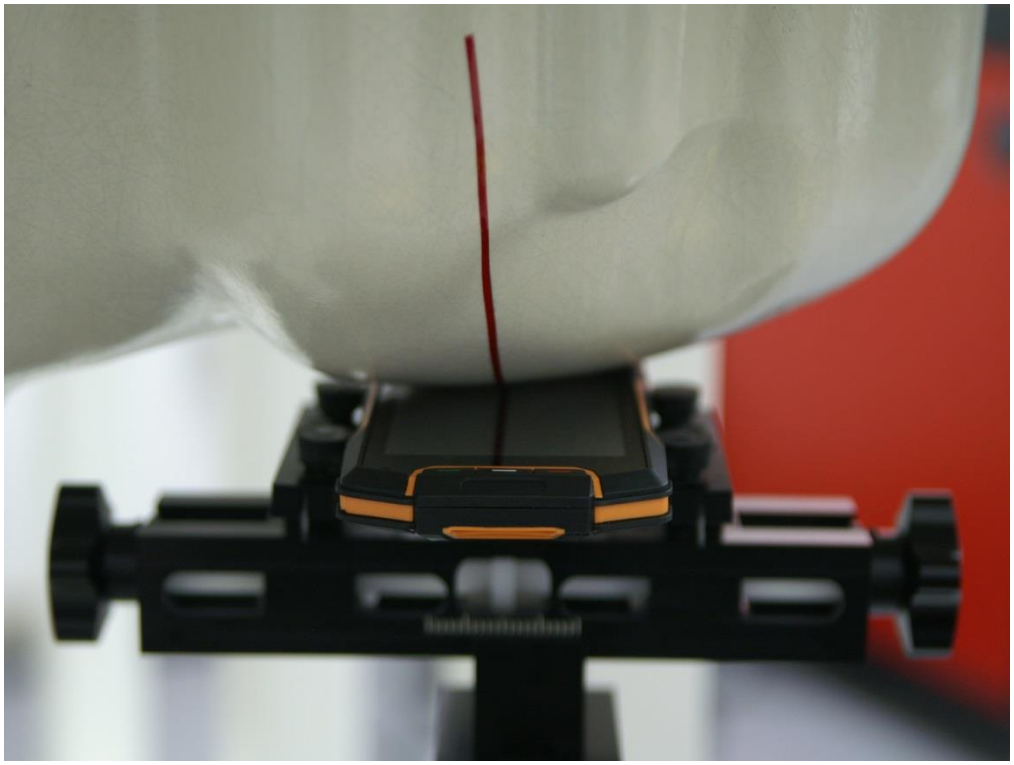
Right Head Cheek



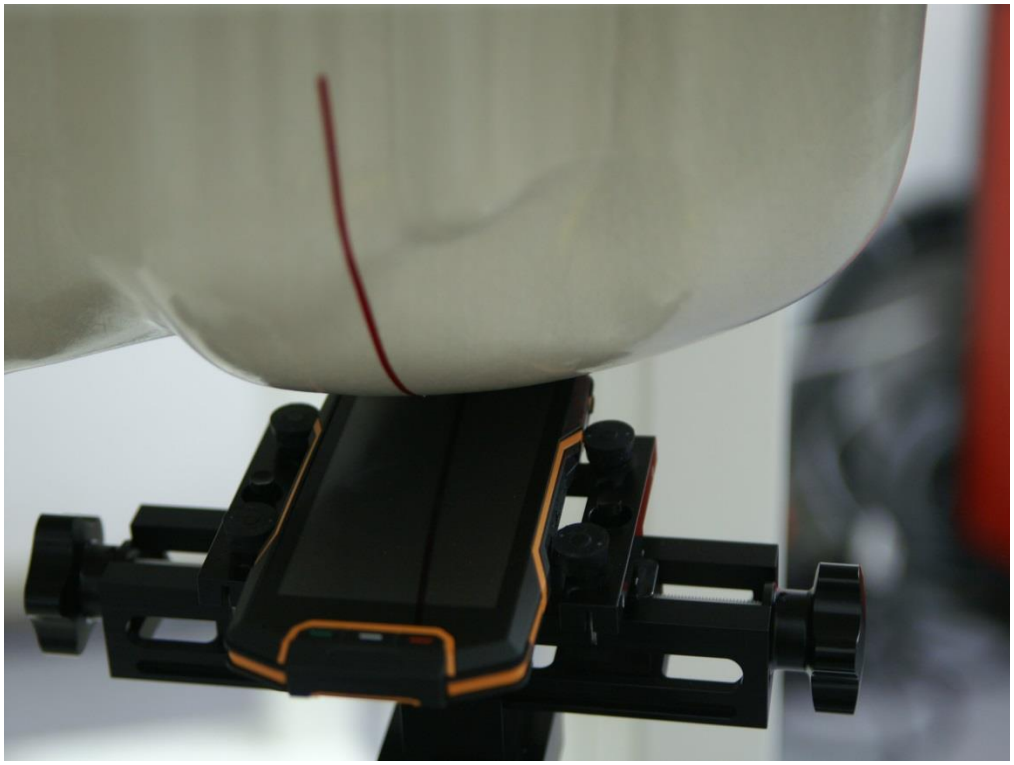
Right Head Tilt



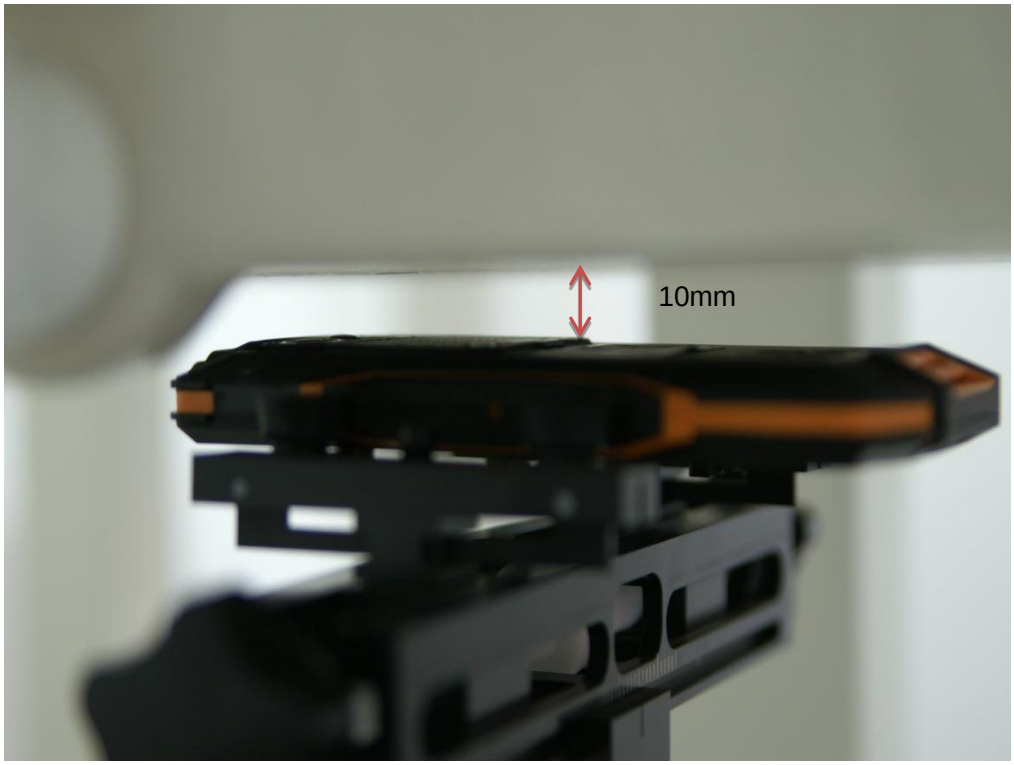
Left Head Cheek



Left Head Tilt



Back Side (10mm)



Front Side (10mm)

Left Side (10mm)

Right Side (10mm)

Bottom Edge (10mm)

Top Edge (10mm)

ANNEX F CALIBRATION REPORT

Refer to appendix Calibration Report.

--END OF REPORT--