



Test report No:  
**NIE: 51746RAN.001**

**Test report**  
**REFERENCE STANDARDS:**  
**FCC 47 CFR Part 2.1093**

Identification of item tested.....:	Satellite Smartphone
Trademark .....	Bittium
Model and /or type reference .....	Mx Smart
Other identification of the product .....	FCC ID: V27SSD-51
Final HW version .....	0201
Final SW version .....	1.8.31
Features.....:	GSM/GPRS/EDGE (850/1900MHz Bands), UMTS/HSPA II, IV, V Bands, LTE Band 4, Wi-Fi 802.11 b/g/n, Bluetooth 4.0 and Satellite (L-band)
Manufacturer.....:	BITTIUM WIRELESS LTD. Tutkijantie 8 90590 Oulu, Finland
Test method requested, standard.....:	FCC 47 CFR Part 2.1093. (10-1-15 Edition) Radiofrequency radiation exposure evaluation: portable devices.
Summary.....:	<p>Considering the results of the performed test according to FCC 47CFR Part 2.1093, the item under test is <b>IN COMPLIANCE</b> with the requested specifications specified in the standards.</p> <p>The maximum reported 1g volume averaged SAR found during this test has been 1.55 W/kg, for Satellite L-Band, into the head exposure condition with external antenna.</p> <p>The maximum 1g volume averaged SAR for multiband transmission found during this test has been 1.586 W/kg.</p> <p>NOTE: The results presented in this Test Report apply only to the particular item under test established in page 1 of this document, as presented for test on the date(s) shown in section, “USAGE OF SAMPLES, TESTING PERIOD AND ENVIRONMENTAL CONDITIONS”.</p>
Approved by (name / position & signature) .....	Miguel Lacave Antennas Lab Manager
Date of issue .....	2017-05-09
Report template No.....:	FDT08_19

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## Competences and guarantees

DEKRA Testing and Certification S.A.U. is a testing laboratory accredited by the National Accreditation Body (ENAC - Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

**IMPORTANT:** No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

## General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA and the Accreditation Bodies.

## Uncertainty

Uncertainty (factor  $k=2$ ) was calculated according to the following documents:

1. FCC OET KDB 865664 D01 - SAR Measurement Requirements for 100 MHz to 6 GHz v01r04 (August 2015).

## Usage of samples

Samples undergoing test have been selected by: the client

Sample M/01 is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
51746/17	Smartphone	Mx Smart (SSD-51)	S/N:290 IMEI:356244060504556	2017/01/16
51746/19	Dummy battery	DB-6BM proto 02	-	2017/01/16

Sample M/02 is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
51746/17	Smartphone	Mx Smart (SSD-51)	S/N:270 IMEI:356244060504564	2017/01/16
51746/42	External antenna	-	-	2017/01/16

1. Sample M/01 has undergone the test(s) specified in subclause “Test method requested”: Conducted average output power.
2. Sample M/02 has undergone the test(s) specified in subclause “Test method requested”: SAR evaluation for 2G, 3G, LTE 802.11 and L-Band modes.

## Test sample description

The test sample consists of a satellite and terrestrial phone targeted for professional public safety use.

## Identification of the client

BITTIUM WIRELESS LTD.

Tutkijantie 8 90590 Oulu, Finland

## Testing period

The performed test started on 2017-01-16 and finished on 2017-02-16.

The tests have been performed at DEKRA.

## Environmental conditions

In the laboratory for measurements, the following limits were not exceeded during the test:

<b>Temperature</b>	Min. = 20.04 °C Max. = 24.24 °C
<b>Relative humidity</b>	Min. = 30.01 % Max. = 59.05 %

## References

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093 and the following FCC Published RF exposure KDB procedures:

1. FCC OET KDB 447498 D01 General RF Exposure Guidance v06 (October 2015)
2. FCC OET KDB 865664 D01 - SAR Measurement Requirements for 100 MHz to 6 GHz v01r04 (August 2015).
3. FCC OET KDB 865664 D02 RF Exposure Reporting v01r02 (October 2015)
4. FCC OET KDB 648474 D04 Handset SAR v01r03 (October 2015)
5. FCC OET KDB 941225 D01 3G SAR Procedures v03r01 (October 2015).
6. FCC OET KDB 941225 D05 SAR for LTE Devices v02r05 (October 2015).
7. FCC OET KDB 941225 D06 Hot Spot SAR v02r01 (October 2014).
8. FCC OET KDB 248227 D01 802.11 Wi-Fi SAR v02r02 (October 2015).

## Remarks and comments

1: According to FCC OET KDB 941225 D01 3G SAR Procedures, SAR test reduction for 2G has been determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The mode with highest specified time-averaged output power has been tested for SAR compliance in the applicable exposure conditions.

2: Testing of GPRS EDGE mode is not required according to test reductions mentioned in FCC OET KDB 941225 D01 3G SAR Procedures, paragraph “5. GSM, GPRS and EDGE”, as its output power is lower than GPRS modes.

3: As the maximum output power including tune-up tolerance for 3G secondary modes is  $\leq 0.25$  higher than the primary modes, testing of HSDPA/HSPA modes are not required according to paragraph “2.1 3G SAR test reduction procedure” mentioned in FCC OET KDB 941225 D01 3G SAR Procedures.

4: Test reduction for LTE has been determined according to SAR test procedures mentioned in FCC OET KDB 941225 D05 – SAR for LTE Devices v02r05.

5: Zoom scan is not required according to FCC OET KDB 447498 D01 General RF Exposure Guidance v06, paragraph “4.4.2. Area scan based 1-g estimation”

6: Testing of other required channels is not required according to FCC OET KDB 447498 D01 General RF Exposure Guidance v06, paragraph “4.4.1. General SAR test reduction considerations”.

7: Only the plots of the highest reported SAR for each test position and mode/band are included in appendix C.

## Used instrumentation

1. Dosimetric E-field probe SPEAG EX3DV4
2. Data acquisition device SPEAG DAE4
3. Electro-optical converter SPEAG EOC3
4. 900 MHz dipole validation kit SPEAG D900V2
5. 1640 MHz dipole validation kit SPEAG D1640V2
6. 1800MHz dipole validation kit SPEAG D1800V2
7. 2450 MHz dipole validation kit SPEAG D2450V2
8. Robot Stäubli RX60BL
9. Robot controller Stäubli CM7MB
10. SAR measurement software SPEAG DASY52 V52.8.8.1222
11. SAR post processing software SPEAG SEMCAD X
12. Measurement server SPEAG DASY5 SE UMS 011 BS
13. SAM head-body simulator SPEAG Twin SAM V4.0
14. Oval flat phantom SPEAG ELI 4
15. Head and Body Tissue Equivalent Liquids for 850MHz, 1640MHz, 1700Mhz, 1900Mhz and 2450MHz bands
16. Radio Communication Tester R&S CMU 200
17. Wideband Radio Communication Tester R&S CMW 500
18. Vector network analyzer Agilent FieldFox N9923A
19. Dielectric probe kit SPEAG DAK-3.5
20. Power sensor DC 50 MHz to 18 GHz R&S model NRP-Z81
21. Power meter Agilent E4419B
22. RF Generator R&S SMU200A
23. DC Power supply Agilent U8002A
24. Dual directional coupler NARDA FSCM 99899
25. Dual directional coupler HP 778D.
26. Power amplifier MITEQ AMF-4D-00400600-50-30P
27. 6 dB attenuator Weinschel 75 A-6-11
28. 20 dB attenuator Weinschel 75 A-20-11
29. SPEAG Mounting Device for Hand-Held Transmitters.
30. Anritsu MT8852A Bluetooth testing unit.
31. Digital thermometer LKM Electronics model DTM300-Spezial
32. Temperature and humidity probe HUMIDIROBE Pico Technology.

## Testing verdicts

<b>Not applicable</b> .....	N/A
<b>Pass</b> .....	P
<b>Fail</b> .....	F
<b>Not measured</b> .....	N/M

FCC 47CFR Part 2.1093, paragraph	VERDICT			
	NA	P	F	NM
(d)(2) GSM/GPRS/EDGE 850		P		
(d)(2) GSM/GPRS/EDGE 1900		P		
(d)(2) WCDMA, HSPA Band II		P		
(d)(2) WCDMA, HSPA Band IV		P		
(d)(2) WCDMA, HSPA Band V		P		
(d)(2) LTE FDD Band 4		P		
(d)(2) 802.11 b/g/n		P		
(d)(2) Bluetooth 4.0		P		
(d)(2) Satellite L-Band		P		
(d)(2) Simultaneous multi-band transmission		P		

## Appendix A – Test configuration

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## 1. GENERAL INTRODUCTION

### 1.1. Application Standard

The Federal Communications Commission (FCC) sets the limits for General Population/Uncontrolled exposure to radio frequency electromagnetic fields for transmitting devices designed to be used within 20 centimetres of the body of the user under FCC 47 CFR Part 2.1093 - "Radiofrequency radiation exposure evaluation: portable devices", paragraph (d)(2).

### 1.2. General requirements

The SAR measurement has been performed continuing the following considerations and environment conditions:

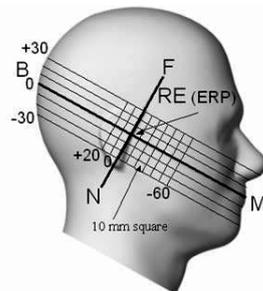
- The ambient temperature shall be in the range of 18°C to 25°C and the variation shall not exceed +/- 2°C during the test.
- The ambient humidity shall be in the range of and 30% - 70%.
- The device battery shall be fully charged before each measurement.

### 1.3. Measurement system requirements

The measurement system used for SAR tests fulfils the procedural and technical requirements described at the reference standards used.

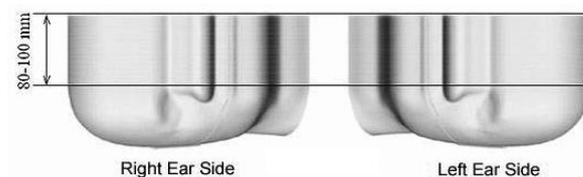
### 1.4. Phantom requirements

The phantom for head worn is a simplified representation of the human anatomy and comprised of material with electrical properties similar to the corresponding tissues in human body. The human model has the following proportions:



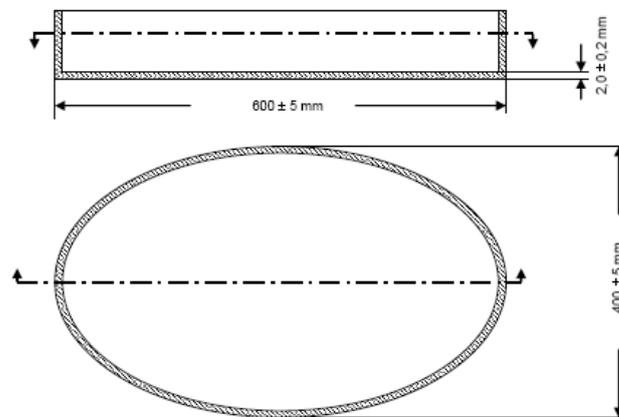
**Figure 1:** Proportions of Phantom

The shell model is a shaped container and it has the representation shown in the following figure:



**Figure 2:** Proportions and shape of Phantom shell

The phantom model for body measurements is an elliptical open-top container with a flat bottom, with the following shape and dimensions:



**Figure 3:** Proportions and shape of Phantom shell

### 1.5. Measurement Liquids requirements.

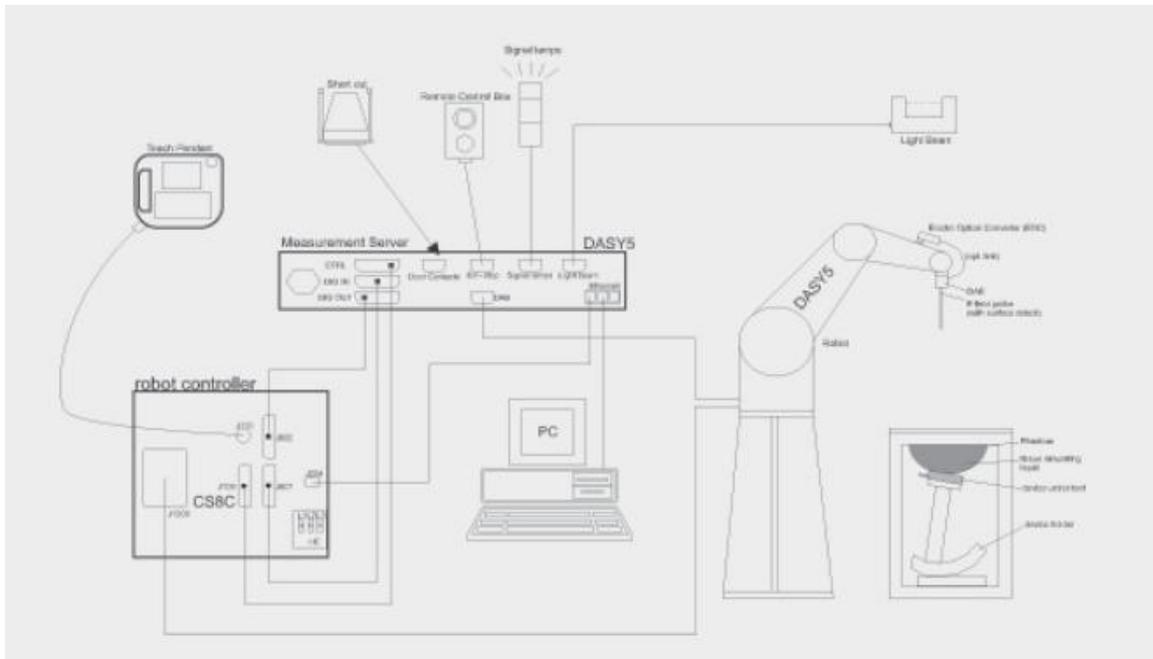
The liquids used to simulate the human tissues, must fulfil the requirements of the dielectric properties required. These target dielectric properties per FCC OET KDB 865664 D01 instructions come from the dipole and probe calibration data which are included in Appendix B, Section 3, of this document.

To minimize the effect of reflections on peak spatial-average SAR values, from the upper surface of the tissue-equivalent liquid, the depth of the liquid should be at least 15 cm.

## 2. MEASUREMENT SYSTEM

### 2.1. Measurement System

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



**Figure 4:** SAR Measurement system

- A standard high precision 6-axis robot (Stäubli TX=RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (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.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win7 professional operating system and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

Manufacturer	Device	Type
Schmid & Partner Engineering AG	Dosimetric E-Field Probe	EX3DV4
Schmid & Partner Engineering AG	Data Acquisition Electronics	DAE4
Schmid & Partner Engineering AG	Electro-Optical Converter	EOC3
Stäubli	Robot	RX60BL
Stäubli	Robot controller	CS7MB
Schmid & Partner Engineering AG	Measurement Server	DASY5 SE UMS 011 BS
Schmid & Partner Engineering AG	SAM head-body simulator	TWIN SAM V4.0
Schmid & Partner Engineering AG	Oval flat phantom	SPEAG ELI 4
Schmid & Partner Engineering AG	Mounting Device for Hand-Held Transmitters	SD000 HD1HA
Schmid & Partner Engineering AG	Measurement Software	DASY52 V52.8.8.1222
Schmid & Partner Engineering AG	Postprocessing Software	SEMCAD X
Schmid & Partner Engineering AG	900 MHz System Validation Dipole	D900V2
Schmid & Partner Engineering AG	16400 MHz System Validation Dipole	D1640V2
Schmid & Partner Engineering AG	1800 MHz System Validation Dipole	D1800V2
Schmid & Partner Engineering AG	2450 MHz System Validation Dipole	D2450V2
Agilent	Vector Network Analyser	FieldFox N9923A
Schmid & Partner Engineering AG	Dielectric Probe Kit	DAK-3.5

**Table 1:** Measurement Equipment

	<b>Model</b>	<b>EX3DV4</b>
	<b>Construction</b>	Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).
	<b>Frequency</b>	10 MHz to > 6 GHz; Linearity: $\pm 0.2$ dB (30 MHz to 6 GHz)
	<b>Directivity</b>	$\pm 0.3$ dB in TSL (rotation around probe axis) $\pm 0.5$ dB in TSL (rotation normal to probe axis)
	<b>Dynamic Range</b>	10 $\mu$ W/g to > 100 mW/g Linearity: $\pm 0.2$ dB (noise: typically < 1 $\mu$ W/g)
	<b>Dimensions</b>	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1.0 mm

	<b>Model</b>	<b>DAE4</b>
	<b>Construction</b>	Signal amplifier, multiplexer, A/D converter, and control logic. Serial optical link communication with DASY4/5 embedded system (fully remote controlled). Two-step probe touch detector for mechanical surface detection and emergency robot stop.
	<b>Measurement Range</b>	-100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)
	<b>Input Offset Voltage</b>	< 5 $\mu$ V (with auto zero)
	<b>Input Resistance</b>	200 MOhm
<b>Input Bias Current</b>	< 50 fA	

	<b>Model</b>	<b>ELI</b>
	<b>Construction</b>	Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.
	<b>Material</b>	Vinylester, glass fiber reinforced (VE-GF)
	<b>Liquid Compatibility</b>	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)
	<b>Shell Thickness</b>	$2 \pm 0.2$ mm (bottom plate)
	<b>Dimensions</b>	Major axis: 600 mm Minor axis: 400 mm
	<b>Filling Volume</b>	Approx. 30 liters
<b>Wooden Support</b>	SPEAG standard phantom table	

	<b>Model</b>	<b>Twin SAM</b>
	<b>Construction</b>	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.
	<b>Material</b>	Vinylester, glass fiber reinforced (VE-GF)
	<b>Liquid Compatibility</b>	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)
	<b>Shell Thickness</b>	2 ± 0.2 mm (6 ± 0.2 mm at ear point)
	<b>Dimensions</b>	Length: 1000 mm Width: 500 mm Height: adjustable feet
	<b>Filling Volume</b>	Approx. 25 liters
	<b>Wooden Support</b>	SPEAG standard phantom table

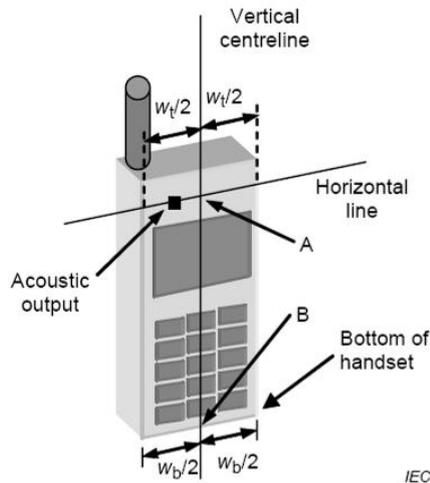
	<b>Model</b>	<b>Mounting Device for Hand-Held Transmitters</b>
	<b>Construction</b>	In combination with the Twin SAM V5.0/V5.0c or ELI Phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat).
	<b>Material</b>	Polyoxymethylene (POM)

	<b>Model</b>	<b>System Validations Kits 450 MHz – 6 GHz</b>			
	<b>Construction</b>	Symmetrical dipole with I/4 balun. Enables measurement of feedpoint impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions.			
	<b>Frequency</b>	450 MHz to 5800 MHz			
	<b>Return Loss</b>	20 dB at specified validation position			
	<b>Dimensions (length and overall height in mm)</b>	<b>Product</b>	<b>Dipole length</b>	<b>Overall height</b>	
		D450V3	290.0	330.0	
D750V3		179.0	330.0		
D900V2		148.5	340.0		
D1640V2		79.0	305.0		
D1800V2		72.5	300.0		
D2000V2		65.0	300.0		
D2450V2		52.0	290.0		
D2600V2	49.2	290.0			
D5GHzV2	20.6	300.0			

## 2.2. Test positions of device relative to head

The standard requires two test positions for the handset in the head. These positions are the "cheek" position and the "tilted" position. The tests positions used are described below. The handset should be tested in both positions (left and right sides) in the SAM phantom.

The DUT shall be placed in the Phantom in such way that the main point of the mobile terminal (acoustic output) coincides with the reference point located at the Phantom's ear.



**Figure 5:** DUT's basic scheme

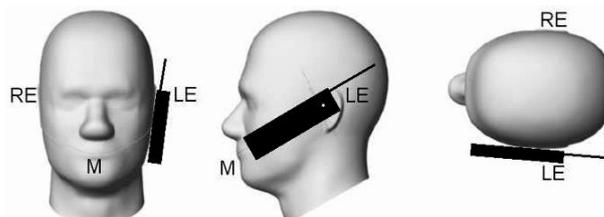
SAR measurements will be performed for the following configurations as indicated in the reference standard:

- Right side of Phantom, Cheek position.
- Right side of Phantom, 15° Tilted position.
- Left side of Phantom, Cheek position.
- Left side of Phantom, 15° Tilted position.

### Definition of the "cheek" position

The "cheek" position relative to Phantom is described as follows:

1. - Position the device with the vertical centre line of the body of the device and the horizontal line crossing the centre of the ear piece in a plane parallel to the sagittal plane of the Phantom. While maintaining the device in this plane, align the centre line with the reference plane containing the three ear and mouth reference points (M, RE and LE).
2. - Translate the mobile phone box towards the Phantom until the ear-piece touches the ear reference point (RE or LE). While maintaining the device in the reference plane, move the bottom of the box until any point of the front side is in contact with the cheek of the Phantom.

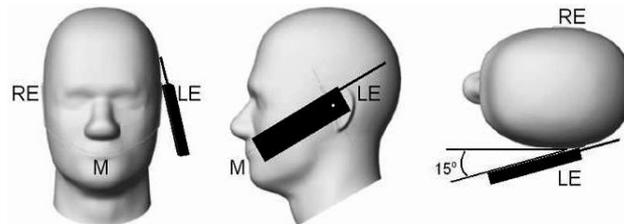


**Figure 6:** "Cheek" position of DUT

### Definition of the tilted position:

The "15° tilted" position relative to Phantom is described as follows:

1. - Position the device in the "cheek" position described above.
2. - While maintaining the device in the reference plane described above and pivoting against the ear, move it outward away from the mouth by an angle of 15 degrees.



**Figure 7:** "Tilted" position of DUT

### 2.3. Test positions of device relative to body.

Body-worn accessory exposure shall be tested according to the procedures in KDB 447498. To perform testing each face of the DUT must be placed against the phantom with a test separation distance of 15 mm according to the manufacturer's instructions.

Beside the common use as handset, the device under test could be used as a mobile hotspot, so hotspot mode exposure shall be tested according to the hotspot mode SAR procedures in KDB 941225, all faces and edges with a transmitting antenna located within 25 mm from that surface or edge have been measured facing the flat phantom surface at 10 mm distance for hotspot mode.

As the separation distance required for body-worn accessory is larger than the hotspot mode distance, only hotspot SAR measurements for each face of the DUT have been measured as they are a worst testing case condition.

### 2.4. Test to be performed

Test shall be performed at both phone positions previously described, on each side of the head (left and right side) and using the centre frequency of each operating band.

Additionally, the configuration giving to the maximum mass averaged SAR shall be used to test the low-end and the high-end frequencies of each transmitting band. Thus, the tests to be performed in mobile phones are as follows:

- Measurements at Central Channel of application band:
  1. SAR measurement at the left side of Phantom and the cheek position of the DUT.
  2. SAR measurement at the left side of Phantom and the tilted 15° position of the DUT.
  3. SAR measurement at the right side of Phantom and the cheek position of the DUT.
  4. SAR measurement at the right side of Phantom and the tilted 15° position of the DUT.
- Measurements at Low Channel of application band: SAR measurement at the side and position where the maximum SAR level, measured at Central channel, was found.
- Measurements at High Channel of application band: SAR measurement at the side and position where the maximum SAR level, measured at Central channel, was found.

For body SAR test, measurements shall be performed using a flat phantom and the DUT will be placed at the center of flat phantom, according to the test positions and test separation described above. The DUT position using during the body SAR tests will be the one where the maximum peak SAR was found. Low and high channels for each band should be tested at this position.

If the mobile phone is also designed to transmit with other configurations (antenna fully extended/retracted, keypad cover opened/closed...), all tests described above shall be performed for each configuration. When considering multi-mode and multi-band mobile phones, all of the above tests shall be performed at each transmitting mode/band with the corresponding maximum peak power level.

## **2.5. Description of interpolation/extrapolation scheme**

The local SAR inside the Phantom is measured using small dipole sensing elements inside a probe element. The probe tip must not be in contact with the Phantoms surface in order to minimise measurement errors, but the highest local SAR is obtained from measurements at a certain distances from the shell trough extrapolation. The accurate assessment of the maximum SAR averaged over 1 gr. requires a very fine resolution in the three dimensional scanned data array. Since the measurements have to be performed over a limited time, the measured data have to be interpolated to provide an array of sufficient resolution.

The interpolation of 2D area scan is used after the initial area scan, at a fixed distance from the Phantom shell wall. The initial scan data is collected with approx. 15 mm spatial resolution and this interpolation is used to find the location of the local maximum for positioning the subsequent 3D scanning within a 1mm resolution.

For the 3D scan, data is collected on a spatially regular 3D grid having 5 mm steps in both directions. After the data collection by the SAR probe, the data are extrapolated in the depth direction to assign values to points in the 3D array closer to the shell wall. A notional extrapolation value is also assigned to the first point outside the shell wall so that subsequent interpolation schemes will be applicable right up to the shell wall boundary.

## **2.6. Determination of the largest peak spatial-average SAR**

To determine the maximum value of the peak spatial-average SAR of a DUT, all device positions, configurations and operational modes should be tested for each frequency band.

The averaging volume shall be chosen as 1gr. of contiguous tissue. The cubic volumes, over which the SAR measurements are averaged after extrapolation and interpolation, are chosen in order to include the highest values of local SAR.

The maximum SAR level for the DUT will be the maximum level obtained of the performed measurements, and indicated in the previous points.

## **2.7. System Validation**

Prior to the SAR measurements, system verification is done daily to verify the system accuracy. A complete SAR evaluation is done using a half-wavelength dipole as source with the frequency of the mid-band channel of the operating band, or within 10% of this channel.

The measured one-gram SAR should be within 10% of the expected target values specified in the calibration certificate of the dipole, for the specific tissue and frequency used.

### 3. UNCERTAINTY

According to FCC OET KDB 865664 D01 - SAR Measurement Requirements for 100 MHz to 6 GHz v01r04 (August 2015), as the highest measured 1-g SAR has been < 1.5 W/kg, SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in the actual SAR report, but it has been included for ISO 17025 accreditation.

#### Uncertainty for 300 MHz – 6 GHz

ERROR SOURCES	Uncertainty value (± %)	Probability distribution	Divisor	(c) <sub>1g</sub>	(c) <sub>10g</sub>	Standard uncertainty (1g) (± %)	Standard uncertainty (10g) (± %)
<b>Measurement Equipment</b>							
Probe Calibration	6.550	N	1	1	1	6.550	6.550
Axial Isotropy	4.700	R	√3	0.7	0.7	1.899	1.899
Hemispherical Isotropy	9.600	R	√3	0.7	0.7	3.880	3.880
Boundary effect	2.000	R	√3	1	1	1.155	1.155
Linearity	4.700	R	√3	1	1	2.714	2.714
System Detection limits	1.000	R	√3	1	1	0.577	0.577
Probe modulation response	6.100	R	√3	1	1	3.522	3.522
Readout electronics	0.300	N	1	1	1	0.300	0.300
Response time	0.800	R	√3	1	1	0.462	0.462
Integration time	2.600	R	√3	1	1	1.501	1.501
RF Ambient noise	3.000	R	√3	1	1	1.732	1.732
RF Ambient reflections	3.000	R	√3	1	1	1.732	1.732
Probe positioner mech. restrictions	0.800	R	√3	1	1	0.462	0.462
Probe positioning with respect to phantom shell	6.700	R	√3	1	1	3.868	3.868
Max. SAR Eval.	4.000	R	√3	1	1	2.309	2.309
<b>Test Sample Related</b>							
Device holder uncertainty	2.900	N	1	1	1	2.900	2.900
Test sample positioning	3.600	N	1	1	1	3.600	3.600
Drift of output power	5.000	R	√3	1	1	2.887	2.887
<b>Phantom and Setup</b>							
Phantom uncertainty (shape and thickness tolerances)	6.600	R	√3	1	1	3.811	3.811
Algorithm for correcting SAR for deviations in permittivity and conductivity	1.900	R	√3	1	0.84	1.097	0.921
Liquid conductivity (meas.)	2.454	N	1	0.78	0.71	1.914	1.742
Liquid permittivity (meas.)	2.454	N	1	0.26	0.26	0.638	0.638
Liquid conductivity – temperature uncertainty	3.400	R	√3	0.78	0.71	1.531	1.394
Liquid permittivity – temperature uncertainty	0.400	R	√3	0.23	0.26	0.053	0.060
<b>Combined standard uncertainty</b>	$u_c = \sqrt{\sum_{i=1}^m c_i^2 \cdot u_i^2}$					<b>12.82</b>	<b>12.76</b>
<b>Expanded uncertainty (confidence interval of 95%)</b>	$ue = 2.00 u_c$					<b>25.64</b>	<b>25.53</b>

**Table 2:** Uncertainty Assessment for 300 MHz - 6 GHz

## 4. SAR LIMIT

Having a worst case measurement, the SAR limit is valid for general population/uncontrolled exposure.

The SAR values have to be averaged over a mass of 1 gr. (SAR 1 gr.) with the shape of a cube. This level couldn't exceed the values indicated in the application Standard:

Standard	Exposure	SAR	SAR Limit (W/kg)
FCC 47 CFR Part 2.1093, Paragraph (d)(2)	General population/Uncontrolled	SAR <sub>1 gr.</sub>	1.6

**Table 3:** SAR limit

## 5. DEVICE UNDER TEST

### 5.1. Dimensions

Dimensions	Millimetres
Height x Width x Depth	145.0 x 76.0 x 18.0
Overall Diagonal:	152.0
Display Diagonal:	126.0
External antenna:	61.0
External antenna diameter:	25.0

**Table 4:** Dimensions

### 5.2. Wireless Technology

Wireless Technology	SAR Testing	Frequency Bands	Modes
GSM	Required	850 / 1900	- Voice (GMSK) - GPRS (GMSK, Multi-slot class 33) - EGPRS (8PSK, Multi-slot class 33)
W-CDMA	Required	II/IV/V	- UMTS Rel. 99 - HSDPA (Rel. 5) - HSPA (Rel. 6)
LTE	Required	4	- QPSK and 16-QAM (Rel. 9)
Wi-Fi	Required	2.45 GHz	- 802.11b/g/n(20MHz & 40MHz)
Bluetooth	Required	2.45 GHz	- Bluetooth
Satellite L-band	Required	1.64 GHz	- Satellite

**Table 5:** Supported modes

### 5.3. Simultaneous Transmission

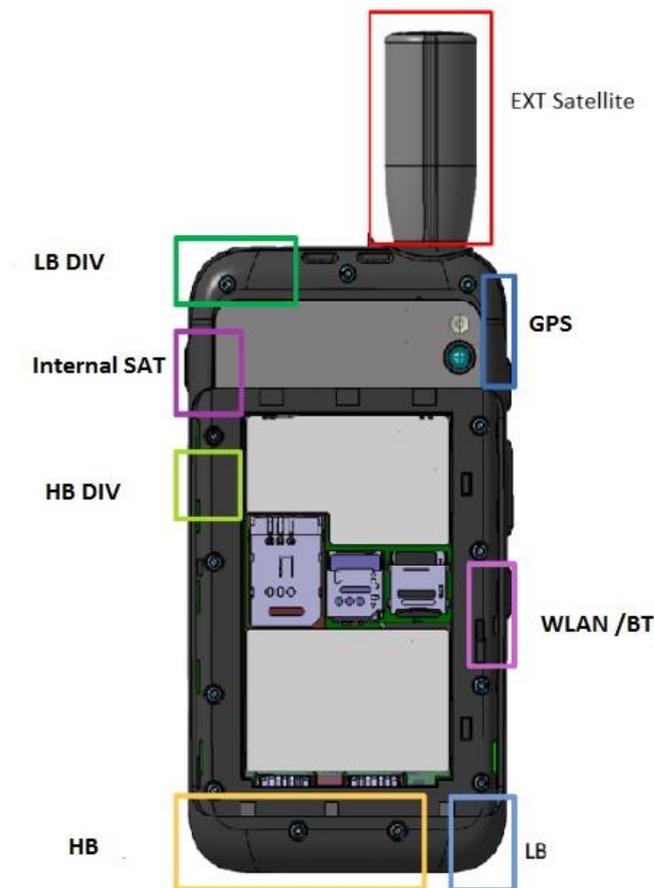
Simultaneous transmission evaluation was performed according to FCC OET KDB 447498 D01 General RF Exposure Guidance v06 (October 2015). The detailed simultaneous transmission combination is:

RF Exposure Condition	Capable Transmit Configurations*
Head	1. GSM/GPRS/EDGE 850/1900 + WiFi 2.45GHz + Bluetooth 2. WCDMA Band II/IV/V + WiFi 2.45GHz + Bluetooth 3. LTE /B4 + WiFi 2.45GHz + Bluetooth 4. Satellite + WiFi 2.45GHz + Bluetooth
Body-worn Accessory/Hotspot	1. GSM/GPRS/EDGE 850/1900 + WiFi 2.45GHz + Bluetooth 2. WCDMA Band II/IV/V + WiFi 2.45GHz + Bluetooth 3. LTE B4 + WiFi 2.45GHz + Bluetooth 4. Satellite + WiFi 2.45GHz + Bluetooth

**Table 6:** Simultaneous transmission

\* Bluetooth EDR and LE modes cannot be enabled at the same time.

### 5.4. Antenna Location



**Figure 8:** Antenna's location

According to KDB 941125 D06 Hotspot SAR, SAR testing is required for the following faces/edges:

Mode	Front	Back	Top	Bottom	Left	Right
GSM/GPRS/EGPRS 850	Yes	Yes	No	Yes	No	Yes
GSM/GPRS/EGPRS 1900	Yes	Yes	No	Yes	Yes	No
WCDMA II	Yes	Yes	No	Yes	Yes	No
WCDMA IV	Yes	Yes	No	Yes	Yes	No
WCDMA V	Yes	Yes	No	Yes	No	Yes
LTE Band 4	Yes	Yes	No	Yes	Yes	No
Wifi 2.4 GHz/BT	Yes	Yes	No	No	Yes	No
Satellite Internal	Yes	Yes	Yes	No	No	Yes
Satellite External	Yes	Yes	Yes	No	Yes	No

**Table 7:** Hotspot SAR testing position measurements required per mode

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## 1. TEST CONDITIONS

### 1.1. Power supply (V):

$V_n = 3.8$  Li-Ion polymer rechargeable battery

Type of power supply = DC Voltage from rechargeable Li-Ion 3.8 V battery.

### 1.2. Temperature (°C):

$T_n = +20.00$  to  $+25.00$

The subscript n indicates normal test conditions.

### 1.3. Test signal, Output Power and Frequencies

For the GPRS/EDGE, WCDMA and LTE modes, the sample (M/02) was put into operation by using a R&S CMU 200 and a R&S CMW 500 as base station simulators. The output power of the device was set to Power Control Level (PCL) maximum for all tests.

For the 802.11a/b/g modes, the device was put into operation by using a manufacturer proprietary test mode, setting the maximum output power for each mode. The duty factor was set to maximum (aprox. 100%).

Bluetooth modes were put into operation by using an Anritsu MT8852A Bluetooth testing unit.

Satellite L-Band mode was put into operation following the manufacturer instructions, using AT commands to set the maximum transmission mode for this technology.

The actual SAR sample does not have accessible antenna connectors for conducted measurements, so the conducted average output power was measured using others identical samples (M/01) provided by the manufacturer with auxiliary external connectors that makes the measurements representative and applicable for all the tested samples. See 'usage of samples' paragraph of this report.

The maximum conducted time-averaged power of the device for each mode was measured with a power sensor R&S NRP-Z81.

A fully charged battery was used for every test sequence. In all operating bands and test positions, the measurements were performed on the middle channel. In each band, for those positions where the maximum averaged SAR was found, measurements were performed on the remaining required channels except those with applicable test reductions

The target power alignments declared by the manufacturer for each supported technology are:

Band/Mode	Output Power (dBm)	Transmission Mode				
		Voice mode	1 Tx slot	2 Tx slots	3 Tx slots	4 Tx slots
GSM 850	Maximum	33.8	-	-	-	-
	Nominal	33.0	-	-	-	-
GPRS 850	Maximum	-	33.8	32.0	30.0	28.5
	Nominal	-	33.0	31.0	29.0	27.5
EGPRS 850	Maximum	-	28.5	26.0	24.0	23.0
	Nominal	-	28.0	25.0	23.0	22.0

Band/Mode	Output Power (dBm)	Transmission Mode				
		Voice mode	1 Tx slot	2 Tx slots	3 Tx slots	4 Tx slots
GSM 1900	Maximum	31.0	-	-	-	-
	Nominal	30.0	-	-	-	-
GPRS 1900	Maximum	-	31.0	29.0	27.0	26.0
	Nominal	-	30.0	28.0	26.0	25.0
EGPRS 1900	Maximum	-	27.0	25.0	23.0	22.0
	Nominal	-	26.0	24.0	22.0	21.0

Band/Mode	Output Power (dBm)	Transmission Mode				
		RMC 12.2K	HSDPA Subtest 1	HSDPA Subtest 2	HSDPA Subtest 3	HSDPA Subtest 4
WCDMA II	Maximum	24.5	23.5	23.5	23.0	23.0
	Nominal	24.0	23.0	22.0	22.0	22.0
WCDMA IV	Maximum	24.5	23.5	23.5	23.0	23.0
	Nominal	24.0	23.0	22.0	22.0	22.0
WCDMA V	Maximum	24.5	23.5	23.5	23.0	23.0
	Nominal	24.0	23.0	22.0	22.0	22.0
Band/Mode	Output Power (dBm)	Transmission Mode				
		HSUPA Subtest 1	HSUPA Subtest 2	HSUPA Subtest 3	HSUPA Subtest 4	HSUPA Subtest 5
WCDMA II	Maximum	24.0	23.0	24.0	24.0	24.0
	Nominal	23.0	22.0	23.0	23.0	23.0
WCDMA IV	Maximum	24.0	23.0	24.0	24.0	24.0
	Nominal	23.0	22.0	23.0	23.0	23.0
WCDMA V	Maximum	24.0	23.0	24.0	24.0	24.0
	Nominal	23.0	22.0	23.0	23.0	23.0

Band	Output Power (dBm)	
	LTE B4	Maximum
Nominal		24.0

Band	Output Power (dBm)	Mode			
		802.11b	802.11g	802.11n	Bluetooth
2.45 GHz	Maximum	18.6	17.5	17.5	11.06
	Nominal	18.0	17.0	17.0	10.56

Band	Output Power (dBm)	Mode				
		31.25KHz PI/2 BPSK+KAB3	31.25KHz PI/2 BPSK	31.25KHz PI/4 QPSK	62.5KHz PI/4 QPSK	156.25KHz PI/4 QPSK
1.64 GHz	Maximum	30.0	30.0	30.0	30.0	30.0
	Nominal	29.5	29.5	29.5	29.5	29.5

#### 1.4. DUT and test-site configurations

For all transmitting modes, the DUT was tested over head and body exposure conditions, into two different configurations, with and without the external antenna.

For head tests, the DUT was placed in cheek and tilt position on the right/left side of the SAM phantom. Due to antenna diameter, a non-standard setup was used for SAR testing based on guidance from the FCC. The operational description contains additional information.

For body tests, the DUT was placed in each face/edge position with a transmitting antenna located at  $\leq 25$  mm distance from that surface or edge against the flat phantom surface.

The separation distance between DUT and flat phantom surface was 10 mm for all testing, except for the L-Band Satellite measurements with external antenna. For this concrete setup a distance of 10 mm was set between the transmitting external antenna and the flat phantom.

## CONDUCTED AVERAGE POWER MEASUREMENTS

### 1.5. GSM/GPRS/EGPRS Bands

- GSM 850: For voice mode PCL 5 was set in the CMU-200 to allow DUT's max power transmission.

GSM 850 - Average Output Power					
Channel Number	Frequency (MHz)	Frame Average Output Power (dBm)	Average Burst Output Power (dBm)	PCL	Modulation
128	824.2	24.3	33.3	5	GMSK
190	836.6	24.2	33.3	5	GMSK
251	848.8	24.2	33.2	5	GMSK

- GPRS 850: For data mode. PCL 5, CS1 coding scheme and Gamma 3 were set in the CMU-200 to allow DUT's max power transmission for each slot.

GPRS 850 - Frame Average Output Power							
Channel Number	Frequency (MHz)	Power (dBm) 1 Slot	Power (dBm) 2 Slots	Power (dBm) 3 Slots	Power (dBm) 4 Slots	PCL	Modulation
128	824.2	24.2	25.6	24.9	24.5	5	GMSK-CS1
190	836.6	24.2	25.5	24.8	24.5	5	GMSK-CS1
251	848.8	24.2	25.5	24.7	24.4	5	GMSK-CS1

GPRS 850 - Average Burst Output Power							
Channel Number	Frequency (MHz)	Power (dBm) 1 Slot	Power (dBm) 2 Slots	Power (dBm) 3 Slots	Power (dBm) 4 Slots	PCL	Modulation
128	824.2	33.2	31.6	29.1	27.6	5	GMSK-CS1
190	836.6	33.3	31.6	29.1	27.5	5	GMSK-CS1
251	848.8	33.2	31.5	29.0	27.4	5	GMSK-CS1

- EGPRS 850: For data mode. PCL 8, MCS5 coding scheme and Gamma 6 were set in the CMU-200 to allow DUT's max power transmission for each slot.

EDGE 850 - Frame Average Output Power							
Channel Number	Frequency (MHz)	Power (dBm) 1 Slot	Power (dBm) 2 Slots	Power (dBm) 3 Slots	Power (dBm) 4 Slots	PCL	Modulation
128	824.2	18.8	19.1	18.4	18.1	8	8PSK-MCS5
190	836.6	18.9	19.1	18.4	18.3	8	8PSK-MCS5
251	848.8	18.6	18.9	18.2	18.1	8	8PSK-MCS5

EDGE 850 - Average Burst Output Power							
Channel Number	Frequency (MHz)	Power (dBm) 1 Slot	Power (dBm) 2 Slots	Power (dBm) 3 Slots	Power (dBm) 4 Slots	PCL	Modulation
128	824.2	27.8	25.1	22.7	21.1	8	8PSK-MCS5
190	836.6	27.9	25.1	22.7	21.3	8	8PSK-MCS5
251	848.8	27.7	25.0	22.5	21.1	8	8PSK-MCS5

- GSM 1900: For voice mode PCL 0 was set in the CMU-200 to allow DUT's max power transmission.

GSM 1900 - Average Output Power					
Channel Number	Frequency (MHz)	Frame Average Output Power (dBm)	Average Burst Output Power (dBm)	PCL	Modulation
512	1850.2	21.1	30.3	0	GMSK-CS1
661	1880	20.9	30.1	0	GMSK-CS1
810	1909.8	20.8	29.9	0	GMSK-CS1

- GPRS1900: For data mode. PCL 0, CS1 coding scheme and Gamma 3 were set in the CMU-200 to allow max power transmission for each slot.

GPRS 1900 - Frame Average Output Power							
Channel Number	Frequency (MHz)	Power (dBm) 1 Slot	Power (dBm) 2 Slots	Power (dBm) 3 Slots	Power (dBm) 4 Slots	PCL	Modulation
512	1850.2	20.9	21.6	21.3	21.2	0	GMSK-CS1
661	1880	20.8	21.4	21.2	21.1	0	GMSK-CS1
810	1909.8	20.6	21.6	21.5	21.3	0	GMSK-CS1

GPRS 1900 - Average Burst Output Power							
Channel Number	Frequency (MHz)	Power (dBm) 1 Slot	Power (dBm) 2 Slots	Power (dBm) 3 Slots	Power (dBm) 4 Slots	PCL	Modulation
512	1850.2	30.0	27.6	25.6	24.2	0	GMSK-CS1
661	1880	29.8	27.4	25.5	24.1	0	GMSK-CS1
810	1909.8	29.6	27.6	25.8	24.3	0	GMSK-CS1

- EGPRS 1900: For data mode, PCL 2, MCS5 coding scheme and Gamma 5 were set in the CMU-200 to allow max power transmission for each slot.

EDGE 1900 - Frame Average Output Power							
Channel Number	Frequency (MHz)	Power (dBm) 1 Slot	Power (dBm) 2 Slots	Power (dBm) 3 Slots	Power (dBm) 4 Slots	PCL	Modulation
512	1850.2	16.7	17.7	17.5	17.2	2	8PSK-MCS5
661	1880	16.6	17.6	17.4	17.0	2	8PSK-MCS5
810	1909.8	16.7	17.8	17.5	17.0	2	8PSK-MCS5

EDGE 1900 - Average Burst Output Power							
Channel Number	Frequency (MHz)	Power (dBm) 1 Slot	Power (dBm) 2 Slots	Power (dBm) 3 Slots	Power (dBm) 4 Slots	PCL	Modulation
512	1850.2	25.7	23.7	21.7	20.2	2	8PSK-MCS5
661	1880	25.6	23.6	21.6	20.0	2	8PSK-MCS5
810	1909.8	25.7	23.8	21.8	20.1	2	8PSK-MCS5

## 1.6. WCDMA/HSDPA/HSPA/HSPA+/DC-HSDPA Bands

- **WCDMA:** The DUT supports power Class 3, with a nominal maximum output power of 24 dBm (+1.7/-3.7). The tests were completed according to 3GPP TS34.121, section 5.

Mode	Subtest	Rel99
WCDMA	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2Kbps RMC
	Power Control Algorithm	Algorithm2
	$\beta_c/\beta_d$	8/15

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD II 1900	WCDMA	9262	1852.4	23.92
FDD II 1900	WCDMA	9400	1880	24.06
FDD II 1900	WCDMA	9538	1907.6	24.17

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD IV 1700	WCDMA	1312	1712.4	24.03
FDD IV 1700	WCDMA	1412	1732.6	24.30
FDD IV 1700	WCDMA	1512	1752.6	24.52

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD V 850	WCDMA	4132	826.4	24.29
FDD V 850	WCDMA	4182	836.4	24.39
FDD V 850	WCDMA	4233	846.6	24.36

**- HSDPA:**

Mode	Subtest	1	2	3	4
<b>HSDPA</b>	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2Kbps RMC			
	HSDPA FRC	H-Set1			
	HSUPA Test	HSUPA Loopback			
	Power Control Algorithm	Algorithm 2			
	$\beta_c$	2/15	12/15	15/15	15/15
	$\beta_d$	15/15	15/15	8/15	4/15
	Bd (SF)	64	64	64	64
	$\beta_c/\beta_d$	2/15	12/15	15/8	15/4
	$\beta_{hs}$	4/15	24/15	30/15	30/15
	MPR	0	0	0.5	0.5
	Dack	8			
	Dnak	8			
	Ack-Nack repetition factor	3			
	DCQI	8			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
$A_{hs} = \beta_{hs}/\beta_c$	30/15				

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)			
				Subtest 1 HSDPA	Subtest 2 HSDPA	Subtest 3 HSDPA	Subtest 4 HSDPA
FDD II 1900	HSDPA	9262	1852.4	22.84	22.72	22.50	22.57
FDD II 1900	HSDPA	9400	1880	22.86	22.64	22.57	22.57
FDD II 1900	HSDPA	9538	1907.6	22.91	22.79	22.72	22.66

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)			
				Subtest 1 HSDPA	Subtest 2 HSDPA	Subtest 3 HSDPA	Subtest 4 HSDPA
FDD IV 1700	HSDPA	1312	1712.4	22.76	22.71	22.63	22.63
FDD IV 1700	HSDPA	1412	1732.6	23.05	22.90	22.87	22.96
FDD IV 1700	HSDPA	1512	1752.6	23.25	23.15	23.11	23.10

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)			
				Subtest 1 HSDPA	Subtest 2 HSDPA	Subtest 3 HSDPA	Subtest 4 HSDPA
FDD V 850	HSDPA	4132	826.4	22.75	22.72	22.67	22.69
FDD V 850	HSDPA	4182	836.4	23.03	23.01	22.84	22.89
FDD V 850	HSDPA	4233	846.6	23.12	23.11	22.94	22.98

- **HSPA:**

Mode	Subtest	1	2	3	4	5
<b>HSPA</b>	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2Kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm 2				
	$\beta_c$	11/15	6/15	15/15	2/15	15/15
	$\beta_d$	15/15	15/15	9/15	15/15	15/15
	$\beta_{ec}$	209/225	12/15	30/15	2/15	24/15
	$\beta_c/\beta_d$	11/15	6/15	15/9	2/15	15/15
	$\beta_{hs}$	22/15	12/15	30/15	4/15	30/15
	$\beta_{ed}$	1309/225	94/75	47/15	56/75	134/15
	MPR (dB)	0	2	1	2	0
	Dack	8				
	Dnak	8				
	Ack-Nack repetition factor	3				
	DCQI	8				
	CQI Feedback	4ms				
	CQI Repetition Factor	2				
	$A_{hs} = \beta_{hs}/\beta_c$	30/15				
	AG Index	20	12	15	17	21
ETFCI	75	67	92	71	81	
Associated Max UL DataRate Kbps	242.1	174.9	482.8	205.8	308.9	

				Average Output Power (dBm)				
Band	Mode	CH	Frequency (MHz)	Subtest 1 HSPA	Subtest 2 HSPA	Subtest 3 HSPA	Subtest 4 HSPA	Subtest 5 HSPA
FDD II 1900	HSPA	9262	1852.4	23.33	22.81	23.35	23.32	23.34
FDD II 1900	HSPA	9400	1880	23.31	22.80	23.37	23.30	23.39
FDD II 1900	HSPA	9538	1907.6	23.47	22.97	23.50	23.33	23.52

				Average Output Power (dBm)				
Band	Mode	CH	Frequency (MHz)	Subtest 1 HSPA	Subtest 2 HSPA	Subtest 3 HSPA	Subtest 4 HSPA	Subtest 5 HSPA
FDD IV 1700	HSPA	1312	1712.4	23.34	23.13	23.33	23.26	23.37
FDD IV 1700	HSPA	1412	1732.6	23.58	23.13	23.61	23.52	23.61
FDD IV 1700	HSPA	1512	1752.6	23.79	23.38	23.84	23.87	23.95

				Average Output Power (dBm)				
Band	Mode	CH	Frequency (MHz)	Subtest 1 HSPA	Subtest 2 HSPA	Subtest 3 HSPA	Subtest 4 HSPA	Subtest 5 HSPA
FDD V 850	HSPA	4132	826.4	23.34	22.84	23.41	23.33	23.44
FDD V 850	HSPA	4182	836.4	23.70	23.18	23.73	23.69	23.75
FDD V 850	HSPA	4233	846.6	23.85	23.30	23.86	23.71	23.88

## 1.7. LTE Bands.

LTE MPR is permanently implemented for the device. Following power reductions are used for higher RB allocations and 16QAM modulation:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1720.0 MHz	1732.5 MHz	1745.0 MHz
LTE B4	20 MHz	QPSK	1RB Low	0	24.24	24.56	24.38
			1RB Mid	0	24.35	24.45	24.42
			1RB High	0	24.4	24.71	24.3
			50% Low	1	23.93	23.61	23.68
			50% Mid	1	23.94	23.61	23.61
			50% High	1	23.71	23.63	23.59
			100%	1	23.74	23.56	23.54
		16-QAM	1RB Low	1	23.6	23.48	23.58
			1RB Mid	1	23.71	23.49	23.62
			1RB High	1	23.53	23.66	23.61
			50% Low	2	22.97	22.62	23.01
			50% Mid	2	22.87	22.6	23.15
			50% High	2	22.77	22.75	23.15
			100%	2	22.77	22.6	23.14
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1717.5 MHz	1732.5 MHz	1747.5 MHz
LTE B4	15 MHz	QPSK	1RB Low	0	24.21	24.51	24.55
			1RB Mid	0	24.33	24.43	24.51
			1RB High	0	24.43	24.62	24.59
			50% Low	1	23.38	23.62	23.82
			50% Mid	1	23.43	23.59	23.86
			50% High	1	23.5	23.7	23.93
			100%	1	23.47	23.58	23.62
		16-QAM	1RB Low	1	23.21	23.82	23.48
			1RB Mid	1	23.28	23.67	23.44
			1RB High	1	23.44	23.87	23.28
			50% Low	2	22.82	22.67	23.12
			50% Mid	2	22.86	22.65	23.15
			50% High	2	22.93	22.74	23.06
			100%	2	22.9	22.6	23.15

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1715.0 MHz	1732.5MHz	1750.0 MHz
LTE B4	10 MHz	QPSK	1RB Low	0	24.28	24.42	24.33
			1RB Mid	0	24.24	24.4	24.35
			1RB High	0	24.21	24.54	24.22
			50% Low	1	23.3	23.61	23.53
			50% Mid	1	23.35	23.62	23.48
			50% High	1	23.4	23.64	23.44
			100%	1	23.42	23.6	23.57
		16-QAM	1RB Low	1	23.47	23.73	23.58
			1RB Mid	1	23.51	23.65	23.52
			1RB High	1	23.6	23.9	23.57
			50% Low	2	23.35	22.63	23.07
			50% Mid	2	23.37	22.6	23.02
			50% High	2	23.36	22.67	23.01
			100%	2	22.84	22.61	23.14
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1712.5 MHz	1732.5MHz	1752.5 MHz
LTE B4	5 MHz	QPSK	1RB Low	0	24.26	24.43	24.31
			1RB Mid	0	24.32	24.42	24.38
			1RB High	0	24.35	24.46	24.54
			50% Low	1	23.3	23.61	23.46
			50% Mid	1	23.32	23.58	23.48
			50% High	1	23.28	23.6	23.47
			100%	1	23.35	23.54	23.47
		16-QAM	1RB Low	1	23.29	23.6	23.55
			1RB Mid	1	23.28	23.68	23.44
			1RB High	1	23.32	23.67	23.59
			50% Low	2	22.72	22.64	23.02
			50% Mid	2	22.71	22.6	23.02
			50% High	2	22.72	22.64	23.00
			100%	2	22.77	22.63	23.05

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1711.5 MHz	1732.5MHz	1753.5 MHz
LTE B4	3 MHz	QPSK	1RB Low	0	24.2	24.49	24.48
			1RB Mid	0	24.18	24.41	24.46
			1RB High	0	24.24	24.46	24.45
			50% Low	1	23.28	23.57	23.44
			50% Mid	1	23.32	23.59	23.43
			50% High	1	23.31	23.57	23.44
			100%	1	23.29	23.56	23.51
		16-QAM	1RB Low	1	23.35	23.74	23.68
			1RB Mid	1	23.31	23.73	23.75
			1RB High	1	23.33	23.71	23.77
			50% Low	2	22.68	22.61	23.1
			50% Mid	2	22.66	22.65	23.04
			50% High	2	22.69	22.63	23.19
			100%	2	22.73	22.58	23.03
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1710.7 MHz	1732.5MHz	1754.3 MHz
LTE B4	1.4 MHz	QPSK	1RB Low	0	24.23	24.4	24.54
			1RB Mid	0	24.21	24.5	24.58
			1RB High	0	24.27	24.45	24.55
			50% Low	1	23.31	24.46	23.63
			50% Mid	1	23.28	24.42	23.64
			50% High	1	23.29	24.45	23.68
			100%	1	23.35	23.58	23.16
		16-QAM	1RB Low	1	23.33	23.59	23.32
			1RB Mid	1	23.3	23.63	23.3
			1RB High	1	23.34	23.6	23.36
			50% Low	2	23.23	23.67	23.2
			50% Mid	2	23.2	23.69	23.23
			50% High	2	23.21	23.69	23.23
			100%	2	22.8	22.65	23.01

## 1.8. Wi-Fi & Bluetooth

### - 2.4 GHz Band:

Band	Mode	Channel / Freq (MHz)	Average Output Power (dBm)
2.4 GHz	802.11b	1/2412	17.58
		6/2437	17.89
		11/2462	17.96
	802.11g	1/2412	16.54
		6/2437	16.80
		11/2462	16.89
	802.11n20	1/2412	16.52
		6/2437	16.89
		11/2462	16.93
	802.11n40	3/2422	15.52
		6/2437	15.68
		9/2452	15.79

Band	Mode	Channel / Freq (MHz)	Average Output Power (dBm)
2.4 GHz	Bluetooth BR (GFSK)	0 / 2402	9.57
		39 / 2441	9.77
		78 / 2480	9.72
	Bluetooth EDR2 ( $\pi/4$ -DQPSK)	0 / 2402	7.41
		39 / 2441	7.63
		78 / 2480	7.59
	Bluetooth EDR3 (8-DPSK)	0 / 2402	7.42
		39 / 2441	7.64
		78 / 2480	7.59
	Bluetooth LE	0 / 2402	-0.74
		19 / 2441	-0.45
		39 / 2480	-0.43

## 1.9. Satellite L-Band

Maximum output power was measured according to manufacturer's instructions, using the same measurement setup used for the tune-up procedure.

Band	Mode	Channel	Frequency (MHZ)	Average output power (dBm)	Maximum output power (dBm)	SAR Testing
1.64 GHz	31..25KHz PI/2 BPSK +KAB3	1	1626.5	21.47	29.68	Head Measurements
		220	1643.5	21.48	29.75	
		43F	1660.5	21.45	29.71	
	31.25KHz PI/2 BPSK	1	1626.5	23.78	29.63	Body Measurements
		220	1643.5	23.73	29.72	
		43F	1660.5	23.71	29.71	
	31.25KHz PI/4 QPSK	1	1626.5	23.41	Not measured	Not needed
		220	1643.5	23.42		
		43F	1660.5	23.40		
	62.5KHz PI/4 QPSK	1	1626.5	23.64	Not measured	Not needed
		220	1643.5	23.67		
		43F	1660.5	23.68		
	156.25KHz PI/4 QPSK	1	1626.5	23.51	Not measured	Not needed
		220	1643.5	23.55		
		43F	1660.5	23.57		

## 2. TISSUE PARAMETERS MEASUREMENTS

Frequency (MHz)	Target Head Tissue		Measured Head Tissue		Deviation %		Measured Date
	Permittivity $\epsilon$	Conductivity $\sigma$ [S/m]	Permittivity $\epsilon$	Conductivity $\sigma$ [S/m]	Permittivity $\epsilon$	Conductivity $\sigma$ [S/m]	
835	41.50	0.90	41.63	0.90	0.31	0.47	2017-02-06
900	41.50	0.97	40.73	0.97	-1.82	-0.03	2017-02-06
1640	40.25	1.31	40.18	1.30	-0.17	-0.46	2017-02-09
1750	40.07	1.37	39.25	1.37	-2.06	-0.09	2017-01-25
1800	40.00	1.40	38.92	1.41	-2.71	0.97	2017-01-25
1750	40.07	1.37	39.28	1.40	-1.97	1.90	2017-02-08
1800	40.00	1.40	38.86	1.42	-2.84	1.17	2017-02-08
2450	39.20	1.80	38.16	1.87	-2.64	3.92	2017-02-14

Frequency (MHz)	Target Body Tissue		Measured Body Tissue		Deviation %		Measured Date
	Permittivity $\epsilon$	Conductivity $\sigma$ [S/m]	Permittivity $\epsilon$	Conductivity $\sigma$ [S/m]	Permittivity $\epsilon$	Conductivity $\sigma$ [S/m]	
835	55.2	0.97	54.12	0.97	-1.96	-0.44	2017-02-02
900	55.0	1.05	53.49	1.04	-2.74	-1.17	2017-02-02
1640	53.74	1.43	53.02	1.43	-1.33	0.63	2017-01-31
1750	53.43	1.49	55.91	1.48	4.64	-0.45	2017-01-26
1800	53.3	1.52	55.72	1.53	4.54	0.95	2017-01-26
1750	53.4	1.49	55.21	1.47	3.33	-1.43	2017-02-07
1800	53.3	1.52	55.02	1.52	3.22	-0.03	2017-02-07
2450	52.7	1.95	50.95	2.00	-3.32	2.75	2017-02-13

Note: The dielectric properties have been measured by the contact probe method at 22° C.

## **- Composition / Information on ingredients**

### **Head and Muscle Tissue Simulation Liquids HSL900/MSL900V2**

H <sub>2</sub> O	Water, 35 – 58%
Sucrose	Sugar, white, refined, 40 – 60%
NaCl	Sodium Chloride, 0 – 6%
Hydroxyethyl-cellulose	Medium Viscosity (CAS# 9004-62-0), <0.3%
Preventol-D7	Preservative: aqueous preparation, (CAS# 55965-84-9), containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyl-3(2H)-isothiazolone, 0.1 – 0.7%

### **Head and Muscle Tissue Simulation Liquids HSL1800/MSL1800V2**

H <sub>2</sub> O	Water, 52 – 75%
C <sub>8</sub> H <sub>18</sub> O <sub>3</sub>	Diethylene glycol monobutyl ether (DGBE), 25 – 48% (CAS-No. 112-34-5, EC-No. 203-961-6, EC-index-No. 603-096-00-8)
NaCl	Sodium Chloride, <1.0%

### **Head and Muscle Tissue Simulation Liquids HBBL1350-1850V3/M HBBL1350-1850V3**

Water	50 – 73 %
Non-ionic detergents	27 – 50 % polyoxyethylenesorbitan monolaurate
NaCl	0 – 2 %
Preservative	0.05 – 0.1% Preventol-D7
Safety relevant ingredients: CAS-No. 55965-84-9	< 0.1 % aqueous preparation, containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyl-3(2H)-isothiazolone
CAS-No. 9005-64-5	<50 % polyoxyethylenesorbitan monolaurate

### **Head and Muscle Tissue Simulation Liquids HBBL1900-3800V3/M HBBL1900-3800V3**

Water	50 – 73 %
Non-ionic detergents	27 – 50 % polyoxyethylenesorbitan monolaurate
NaCl	0 – 2 %
Preservative	0.05 – 0.1% Preventol-D7
Safety relevant ingredients: CAS-No. 55965-84-9	< 0.1 % aqueous preparation, containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyl-3(2H)-isothiazolone
CAS-No. 9005-64-5	<50 % polyoxyethylenesorbitan monolaurate

### 3. SYSTEM CHECK MEASUREMENTS

#### 3.1. Validation results for Head TSL

Date	Frequency (MHz)	SAR over	Estimated SAR (W/kg)	SAR (W/kg)	$\Delta$ SAR - Estimated SAR	1 W Target SAR (W/kg)	1 W Norm. SAR (W/kg)	Drift (%)
2017/02/06	900	1 gr.	2.81	2.79	< $\pm 3\%$	10.6	11.10	4.68
		10 gr.	1.89	1.80	< $\pm 7\%$	6.82	7.16	4.97
2017/02/09	1640	1 gr.	8.02	7.95	< $\pm 3\%$	34.1	32.39	-5.01
		10 gr.	4.42	4.26	< $\pm 7\%$	18.5	17.36	-6.18
2017/01/25	1800	1 gr.	9.46	9.24	< $\pm 3\%$	39.1	37.29	-4.63
		10 gr.	5.02	4.79	< $\pm 7\%$	20.6	19.33	-6.16
2017/02/08	1800	1 gr.	9.54	9.31	< $\pm 3\%$	39.1	37.15	-4.98
		10 gr.	5.08	4.85	< $\pm 7\%$	20.6	19.36	-6.04
2017/02/14	2450	1 gr.	13.28	12.90	< $\pm 3\%$	53.7	51.48	-4.13
		10 gr.	6.20	5.9	< $\pm 7\%$	25.4	23.47	-7.61

#### 3.2. Validation results for Body TSL

Date	Frequency (MHz)	SAR over	Estimated SAR (W/kg)	SAR (W/kg)	$\Delta$ SAR - Estimated SAR	1 W Target SAR (W/kg)	1 W Norm. SAR (W/kg)	Drift (%)
2017/02/02	900	1 gr.	2.76	2.77	< $\pm 3\%$	10.5	10.94	4.19
		10 gr.	1.84	1.81	< $\pm 7\%$	6.79	7.15	5.28
2017/01/31	1640	1 gr.	8.15	8.07	< $\pm 3\%$	34.2	32.58	-4.20
		10 gr.	4.41	4.39	< $\pm 7\%$	18.5	17.72	-4.01
2017/01/26	1800	1 gr.	9.60	9.33	< $\pm 3\%$	37.4	37.72	0.86
		10 gr.	4.95	4.90	< $\pm 7\%$	19.8	19.81	0.06
2017/02/07	1800	1 gr.	9.53	9.29	< $\pm 3\%$	37.4	37.27	-0.34
		1 gr.	4.93	4.91	< $\pm 3\%$	37.4	19.70	-0.50
2017/02/13	2450	1 gr.	12.40	12.10	< $\pm 3\%$	52.1	48.96	-6.03
		10 gr.	5.65	5.55	< $\pm 7\%$	24.4	22.46	-7.96

## 4. MEASUREMENT RESULTS FOR SAR (SPECIFIC ABSORPTION RATE)

### 4.1. Summary maximum results for head measurements (Internal Antenna).

Band	Mode	Side / Position	Channel (Frequency)	Reported SAR 1-g (W/kg)	Limit SAR 1-g (W/kg)
850 MHz	GPRS 2 slots	Right / Cheek	CH 190 (836.6 MHz)	0.509	1.6
	WCDMA Band V	Right / Cheek	CH 4183 (836.6 MHz)	0.317	1.6
1640 MHz	L-Band	Right / Tilt	CH 1 (1626.5 MHz)	0.550	1.6
1700 MHz	WCDMA Band IV	Left / Cheek	CH 1412 (1732.6 MHz)	0.209	1.6
	LTE 4 1 RB 20 MHz QPSK	Left / Cheek	CH 20300 (1745 MHz)	0.291	1.6
1900 MHz	GPRS 2 slots	Left / Cheek	CH 661 (1880 MHz)	0.796	1.6
	WCDMA Band II	Left / Cheek	CH 9400 (1909.8 MHz)	1.044	1.6
2450 MHz	802.11b	Left / Cheek	CH 6 (2437 MHz)	0.102	1.6
	Bluetooth	Left / Cheek	CH 40 (2441 MHz)	0.034	1.6

### 4.2. Summary maximum results for body measurements (Internal Antenna).

Band	Mode	Side / Position	Channel (Frequency)	Reported SAR 1-g (W/kg)	Limit SAR 1-g (W/kg)
850 MHz	GPRS 2 slots	Back Face/ 10mm	CH 251 (848.8 MHz)	1.201	1.6
	WCDMA Band V	Back Face/ 10mm	CH 4183 (836.6 MHz)	0.744	1.6
1640 MHz	L-Band	Right Edge/ 10mm	CH 1 (1626.5 MHz)	1.082	1.6
1700 MHz	WCDMA Band IV	Back Face/ 10mm	CH 1412 (1732.6 MHz)	0.519	1.6
	LTE 4 1 RB 20 MHz QPSK	Back Face/ 10mm	CH 20300 (1745 MHz)	0.412	1.6
1900 MHz	GPRS 2 slots	Back Face/ 10mm	CH 661 (1880 MHz)	0.711	1.6
	WCDMA Band II	Left Edge/ 10mm	CH 9538 (1907.6 MHz)	1.049	1.6
2450 MHz	802.11b	Left Edge/ 10mm	CH 6 (2437 MHz)	0.254	1.6
	Bluetooth	Left Edge/ 10mm	CH 40 (2441 MHz)	0.055	1.6

#### 4.3. Summary maximum results for head measurements (External Antenna).

Band	Mode	Side / Position	Channel (Frequency)	Reported SAR 1-g (W/kg)	Limit SAR 1-g (W/kg)
850 MHz	GPRS 2 slots	Right / Cheek	CH 190 (836.6 MHz)	0.490	1.6
	WCDMA Band V	Right / Cheek	CH 4183 (836.6 MHz)	0.316	1.6
1640 MHz	L-Band (Variability)	Right / Tilt	CH 1 (1626.5 MHz)	1.55	1.6
1700 MHz	WCDMA Band IV	Left / Cheek	CH 1412 (1732.6 MHz)	0.229	1.6
	LTE 4 1 RB 20 MHz QPSK	Left / Cheek	CH 20300 (1745 MHz)	0.192	1.6
1900 MHz	GPRS 2 slots	Left / Cheek	CH 661 (1880 MHz)	0.678	1.6
	WCDMA II (Variability)	Left / Cheek	CH 9400 (1880 MHz)	1.184	1.6
2450 MHz	802.11b	Left / Cheek	CH 6 (2437 MHz)	0.097	1.6
	Bluetooth	Left / Cheek	CH 6 (2437 MHz)	0.036	1.6

#### 4.4. Summary maximum results for body measurements (External Antenna).

Band	Mode	Side / Position	Channel (Frequency)	Reported SAR 1-g (W/kg)	Limit SAR 1-g (W/kg)
850 MHz	GPRS 2 slots	Back Face /10mm	CH 190 (836.6 MHz)	1.38	1.6
	WCDMA Band V	Back Face/ 10mm	CH 4183 (836.6 MHz)	0.891	1.6
1640 MHz	L-Band	Top Edge/ 10mm	CH 1 (1626.5 MHz)	1.058	1.6
1700 MHz	WCDMA Band IV	Back Face/ 10mm	CH 1412 (1732.6 MHz)	0.450	1.6
	LTE 4 1 RB 20 MHz QPSK	Back Face/ 10mm	CH 20300 (1745 MHz)	0.434	1.6
1900 MHz	GPRS 2 slots	Left Edge /10mm	CH 661 (1880 MHz)	0.744	1.6
	WCDMA II (Variability)	Left Edge /10mm	CH 9538 (1907.6 MHz)	1.09	1.6
2450 MHz	802.11b	Left Edge/ 10mm	CH 6 (2437 MHz)	0.244	1.6
	Bluetooth	Left Edge/ 10mm	CH 40 (2441 MHz)	0.052	1.6

#### 4.5. Result for head simultaneous multi-band transmission using internal antenna configuration

Transmission Mode	Position	Band	Max SAR 1-g (W/kg)	$\Sigma$ SARi (W/kg)	Limit SAR 1-g (W/kg)	Verdict
GSM / GPRS /EDGE	Right/Cheek	850MHz	0.509	0.645	1.6	Pass
802.11b/g/n	Left/Cheek	2.45GHz	0.102			
Bluetooth BR	Left/Cheek	2.45GHz	0.034			
GSM / GPRS /EDGE	Left/Cheek	1900MHz	0.796	0.932	1.6	Pass
802.11b/g/n	Left/Cheek	2.45GHz	0.102			
Bluetooth BR	Left/Cheek	2.45GHz	0.034			
WCDMA/HSPA	Left/Cheek	FDD II	1.044	1.180	1.6	Pass
802.11b/g/n	Left/Cheek	2.45GHz	0.102			
Bluetooth BR	Left/Cheek	2.45GHz	0.034			
WCDMA/HSPA	Left/Cheek	FDD IV	0.209	0.345	1.6	Pass
802.11b/g/n	Left/Cheek	2.45GHz	0.102			
Bluetooth BR	Left/Cheek	2.45GHz	0.034			
WCDMA/HSPA	Right/Cheek	FDD V	0.317	0.453	1.6	Pass
802.11b/g/n	Left/Cheek	2.45GHz	0.102			
Bluetooth BR	Left/Cheek	2.45GHz	0.034			
LTE	Left/Cheek	Band 4	0.291	0.433	1.6	Pass
802.11b/g/n	Left/Cheek	2.45GHz	0.102			
Bluetooth BR	Left/Cheek	2.45GHz	0.034			
Satellite L-Band	Right/Tilt	1.64 GHz	0.550	0.686	1.6	Pass
802.11b/g/n	Left/Cheek	2.45GHz	0.102			
Bluetooth BR	Left/Cheek	2.45GHz	0.034			

#### 4.6. Result for body simultaneous multi-band transmission using internal antenna configuration

Transmission Mode	Positon	Band	Max SAR 1-g (W/kg)	$\Sigma$ SARi (W/kg)	Limit SAR 1-g (W/kg)	Verdict
GSM / GPRS /EDGE	Back Face	850MHz	1.201	1.510	1.6	Pass
802.11b/g/n	Left Edge	2.45GHz	0.254			
Bluetooth BR	Left Edge	2.45GHz	0.055			
GSM / GPRS /EDGE	Back Face	1900MHz	0.711	1.020	1.6	Pass
802.11b/g/n	Left Edge	2.45GHz	0.254			
Bluetooth BR	Left Edge	2.45GHz	0.055			
WCDMA/HSPA	Back Face	FDD II	1.049	1.358	1.6	Pass
802.11b/g/n	Left Edge	2.45GHz	0.254			
Bluetooth BR	Left Edge	2.45GHz	0.055			
WCDMA/HSPA	Back Face	FDD IV	0.519	0.828	1.6	Pass
802.11b/g/n	Left Edge	2.45GHz	0.254			
Bluetooth BR	Left Edge	2.45GHz	0.055			
WCDMA/HSPA	Back Face	FDD V	0.744	1.053	1.6	Pass
802.11b/g/n	Left Edge	2.45GHz	0.254			
Bluetooth BR	Left Edge	2.45GHz	0.055			
LTE	Back Face	Band 4	0.412	0.721	1.6	Pass
802.11b/g/n	Left Edge	2.45GHz	0.254			
Bluetooth BR	Left Edge	2.45GHz	0.055			
Satellite L-Band	Right Edge	1.64 GHz	1.082	1.391	1.6	Pass
802.11b/g/n	Left Edge	2.45GHz	0.254			
Bluetooth BR	Left Edge	2.45GHz	0.055			

#### 4.7. Result for head simultaneous multi-band transmission using external antenna configuration

Transmission Mode	Position	Band	Max SAR 1-g (W/kg)	$\Sigma$ SARi (W/kg)	Limit SAR 1-g (W/kg)	Verdict
GSM / GPRS /EDGE	Right/Cheek	850MHz	0.490	0.623	1.6	Pass
802.11b/g/n	Left/Cheek	2.45GHz	0.097			
Bluetooth BR	Left/Cheek	2.45GHz	0.036			
GSM / GPRS /EDGE	Left/Cheek	1900MHz	0.678	0.811	1.6	Pass
802.11b/g/n	Left/Cheek	2.45GHz	0.097			
Bluetooth BR	Left/Cheek	2.45GHz	0.036			
WCDMA/HSPA	Left/Cheek	FDD II	1.184	1.317	1.6	Pass
802.11b/g/n	Left/Cheek	2.45GHz	0.097			
Bluetooth BR	Left/Cheek	2.45GHz	0.036			
WCDMA/HSPA	Left/Cheek	FDD IV	0.229	0.362	1.6	Pass
802.11b/g/n	Left/Cheek	2.45GHz	0.097			
Bluetooth BR	Left/Cheek	2.45GHz	0.036			
WCDMA/HSPA	Right/Cheek	FDD V	0.316	0.449	1.6	Pass
802.11b/g/n	Left/Cheek	2.45GHz	0.097			
Bluetooth BR	Left/Cheek	2.45GHz	0.036			
LTE	Left/Cheek	Band 4	0.192	0.325	1.6	Pass
802.11b/g/n	Left/Cheek	2.45GHz	0.097			
Bluetooth BR	Left/Cheek	2.45GHz	0.036			
Satellite L-Band	Right/Tilt	1.64 GHz	1.55	1.683	1.6	Max. position
802.11b/g/n	Left/Cheek	2.45GHz	0.097			
Bluetooth BR	Left/Cheek	2.45GHz	0.036			

Transmission Mode	Max. position	Band	Max SAR 1-g (W/kg)	$\Sigma$ SARi (W/kg)	Limit SAR 1-g (W/kg)	Verdict
Satellite L-Band	Right Tilt	1.64 GHz	1.55	1.571	1.6	Pass
802.11b/g/n	Right Tilt	2.45GHz	0.018			
Bluetooth BR	Right Tilt	2.45GHz	0.003			

#### 4.8. Result for body simultaneous multi-band transmission using external antenna configuration

Transmission Mode	Band	Band	Max SAR 1-g (W/kg)	$\Sigma$ SARi (W/kg)	Limit SAR 1-g (W/kg)	Verdict	
GSM / GPRS /EDGE	Back Face	850MHz	1.38	1.676	1.6	Max. position	
	802.11b/g/n	Left Edge	2.45GHz				0.244
	Bluetooth BR	Left Edge	2.45GHz				0.052
GSM / GPRS /EDGE	Left Edge	1900MHz	0.744	1.040	1.6	Pass	
	802.11b/g/n	Left Edge	2.45GHz				0.244
	Bluetooth BR	Left Edge	2.45GHz				0.052
WCDMA/HDSPA	Left Edge	FDD II	1.09	1.386	1.6	Pass	
	802.11b/g/n	Left Edge	2.45GHz				0.244
	Bluetooth BR	Left Edge	2.45GHz				0.052
WCDMA/HDSPA	Back Face	FDD IV	0.450	0.746	1.6	Pass	
	802.11b/g/n	Left Edge	2.45GHz				0.244
	Bluetooth BR	Left Edge	2.45GHz				0.052
WCDMA/HDSPA	Back Face	FDD V	0.891	1.187	1.6	Pass	
	802.11b/g/n	Left Edge	2.45GHz				0.244
	Bluetooth BR	Left Edge	2.45GHz				0.052
LTE	Back Face	Band 4	0.434	0.730	1.6	Pass	
	802.11b/g/n	Left Edge	2.45GHz				0.244
	Bluetooth BR	Left Edge	2.45GHz				0.052
Satellite L-Band	Top Edge	1.64 GHz	1.058	1.354	1.6	Pass	
	802.11b/g/n	Left Edge	2.45GHz				0.244
	Bluetooth BR	Left Edge	2.45GHz				0.052

Transmission Mode	Max. position	Band	Max SAR 1-g (W/kg)	$\Sigma$ SARi (W/kg)	Limit SAR 1-g (W/kg)	Verdict	
GSM / GPRS /EDGE	Back Face	850MHz	1.38	1.586	1.6	Pass	
	802.11b/g/n	Back Face	2.45GHz				0.166
	Bluetooth BR	Back Face	2.45GHz				0.040

#### 4.9. Results for GSM/GPRS/EDGE 850 MHz band, GPRS 2 slots mode (Internal antenna).

- **Head measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	CH 190 (836.6 MHz)	0.346	NM <sup>5</sup>	-1.71	1.122	0.402	
Left / Tilted	0	CH 190 (836.6 MHz)	0.287	NM <sup>5</sup>	0.46	1.122	0.322	
Right / Cheek	0	CH 190 (836.6 MHz)	0.424	0.454	1.98	1.122	0.509	1
Right / Tilted	0	CH 190 (836.6 MHz)	0.309	NM <sup>5</sup>	0.12	1.122	0.481	
Right / Cheek	0	CH 128 (824.2 MHz)	NM <sup>6</sup>					
Right / Cheek	0	CH 251 (848.8 MHz)	NM <sup>6</sup>					

5 and 6: See remarks and comments.

- **Body measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	CH 190 (836.6 MHz)	0.375	NM <sup>5</sup>	0.23	1.122	0.421	
Back face	10	CH 190 (836.6 MHz)	1.04	1.06	0.23	1.122	1.189	
Right edge	10	CH 190 (836.6 MHz)	0.662	0.677	1.16	1.122	0.76	
Bottom edge	10	CH 190 (836.6 MHz)	0.428	NM <sup>5</sup>	-1.14	1.122	0.491	
Back face	10	CH 128 (824.2 MHz)	0.837	0.862	1.62	1.096	0.945	
Back face	10	CH 251 (848.8 MHz)	1.03	1.07	0.12	1.122	1.201	2

5: See remarks and comments.

#### 4.10. Results for GSM/GPRS/EDGE 850 MHz band, GPRS 2 slots mode (External antenna).

- **Head measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	CH 190 (836.6 MHz)	0.283	NM <sup>5</sup>	0.35	1.122	0.318	
Left / Tilted	0	CH 190 (836.6 MHz)	0.178	NM <sup>5</sup>	0.12	1.122	0.2	
Right / Cheek	0	CH 190 (836.6 MHz)	0.413	0.431	-0.69	1.122	0.49	3
Right / Tilted	0	CH 190 (836.6 MHz)	0.255	NM <sup>5</sup>	0.58	1.122	0.286	
Right / Cheek	0	CH 128 (824.2 MHz)	NM <sup>6</sup>					
Right / Cheek	0	CH 251 (848.8 MHz)	NM <sup>6</sup>					

5 and 6: See remarks and comments.

- **Body measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	CH 190 (836.6 MHz)	0.348	NM <sup>5</sup>	0.69	1.122	0.39	
Back face	10	CH 190 (836.6 MHz)	1.24	1.23	0.69	1.122	1.38	4
Right edge	10	CH 190 (836.6 MHz)	0.522	0.518	1.04	1.122	0.581	
Bottom edge	10	CH 190 (836.6 MHz)	0.51	NM <sup>5</sup>	1.86	1.122	0.572	
Back face	10	CH 128 (824.2 MHz)	1.12	1.1	0.69	1.096	1.206	
Back face	10	CH 251 (848.8 MHz)	1.22	1.2	0.81	1.122	1.346	

5: See remarks and comments.

#### 4.11. Results for GSM/GPRS/EDGE 1900 MHz Band, GPRS 2 slots mode (Internal antenna).

- **Head measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	CH 661 (1880 MHz)	0.487	0.548	-0.23	1.445	0.796	5
Left / Tilted	0	CH 661 (1880 MHz)	0.265	NM <sup>5</sup>	2.09	1.445	0.383	
Right / Cheek	0	CH 661 (1880 MHz)	0.284	NM <sup>5</sup>	-2.16	1.445	0.429	
Right / Tilted	0	CH 661 (1880 MHz)	0.277	NM <sup>5</sup>	0.69	1.445	0.4	
Left / Cheek	0	CH 512 (1850.2 MHz)	NM <sup>6</sup>					
Left / Cheek	0	CH 810 (1909.8 MHz)	NM <sup>6</sup>					

5 and 6: See remarks and comments.

- **Body measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	CH 661 (1880 MHz)	0.353	NM <sup>5</sup>	0.00	1.445	0.51	
Back face	10	CH 661 (1880 MHz)	0.471	0.492	0.81	1.445	0.711	6
Left edge	10	CH 661 (1880 MHz)	0.462	0.466	1.74	1.445	0.674	
Bottom edge	10	CH 661 (1880 MHz)	0.331	NM <sup>5</sup>	2.33	1.445	0.478	
Back face	10	CH 512 (1850.2 MHz)	NM <sup>6</sup>					
Back face	10	CH 810 (1909.8 MHz)	NM <sup>6</sup>					

5 and 6: See remarks and comments.

#### 4.12. Results for GSM/GPRS/EDGE 1900 MHz Band, GPRS 2 slots mode (External antenna).

- **Head measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	CH 661 (1880 MHz)	0.468	0.469	0.12	1.445	0.678	7
Left / Tilted	0	CH 661 (1880 MHz)	0.222	NM <sup>5</sup>	-0.12	1.445	0.322	
Right / Cheek	0	CH 661 (1880 MHz)	0.304	NM <sup>5</sup>	-0.23	1.445	0.441	
Right / Tilted	0	CH 661 (1880 MHz)	0.213	NM <sup>5</sup>	-0.57	1.445	0.311	
Left / Cheek	0	CH 512 (1850.2 MHz)	NM <sup>6</sup>					
Left / Cheek	0	CH 810 (1909.8 MHz)	NM <sup>6</sup>					

5 and 6: See remarks and comments.

- **Body measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	CH 661 (1880 MHz)	0.333	NM <sup>5</sup>	-1.14	1.445	0.493	
Back face	10	CH 661 (1880 MHz)	0.452	0.463	2.45	1.445	0.669	
Left edge	10	CH 661 (1880 MHz)	0.535	0.515	0.35	1.445	0.744	8
Bottom edge	10	CH 661 (1880 MHz)	0.267	NM <sup>5</sup>	1.27	1.445	0.386	
Left edge	10	CH 512 (1850.2 MHz)	NM <sup>6</sup>					
Left edge	10	CH 810 (1909.8 MHz)	NM <sup>6</sup>					

5 and 6: See remarks and comments.

#### 4.13. Results for WCDMA Band II (Internal antenna).

- **Head measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	CH 9400 (1880 MHz)	0.875	0.918	-1.37	1.107	1.044	
Left / Tilted	0	CH 9400 (1880 MHz)	0.476	NM <sup>5</sup>	-0.23	1.107	0.529	
Right / Cheek	0	CH 9400 (1880 MHz)	0.552	0.591	-0.34	1.107	0.659	
Right / Tilted	0	CH 9400 (1880 MHz)	0.507	NM <sup>5</sup>	-0.57	1.107	0.568	
Left / Cheek	0	CH 9262 (1852.4 MHz)	0.838	0.854	-1.60	1.143	1.008	
Left / Cheek	0	CH 9538 (1907.6 MHz)	0.93	0.954	-0.69	1.079	1.044	9

5: See remarks and comments.

- **Body measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	CH 9400 (1880 MHz)	0.616	0.624	0.23	1.107	0.691	
Back face	10	CH 9400 (1880 MHz)	0.832	0.84	0.81	1.107	0.93	
Left edge	10	CH 9400 (1880 MHz)	0.88	0.889	1.98	1.107	0.984	
Bottom edge	10	CH 9400 (1880 MHz)	0.564	NM <sup>5</sup>	-0.57	1.107	0.631	
Left edge	10	CH 9262 (1852.4 MHz)	0.867	0.853	0.93	1.143	0.975	
Left edge	10	CH 9538 (1907.6 MHz)	1.00	0.972	1.27	1.079	1.049	10

5: See remarks and comments.

#### 4.14. Results for WCDMA Band II (External antenna).

- **Head measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	CH 9400 (1880 MHz)	0.933	0.97	0.93	1.107	1.073	11
Left / Tilted	0	CH 9400 (1880 MHz)	0.43	NM <sup>5</sup>	-0.12	1.107	0.477	
Right / Cheek	0	CH 9400 (1880 MHz)	0.548	0.567	1.62	1.081	0.613	
Right / Tilted	0	CH 9400 (1880 MHz)	0.389	NM <sup>5</sup>	0.00	1.107	0.43	
Left / Cheek	0	CH 9262 (1852.4 MHz)	0.862	0.888	0.00	1.143	1.015	
Left / Cheek	0	CH 9538 (1907.6 MHz)	0.903	0.96	1.16	1.079	1.036	

5: See remarks and comments.

- **Body measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	CH 9400 (1880 MHz)	0.584	0.602	-0.12	1.107	0.668	
Back face	10	CH 9400 (1880 MHz)	0.804	0.826	2.57	1.107	0.914	
Left edge	10	CH 9400 (1880 MHz)	0.994	0.973	0.93	1.107	1.077	
Bottom edge	10	CH 9400 (1880 MHz)	0.561	NM <sup>5</sup>	0.69	1.107	0.621	
Left edge	10	CH 9262 (1852.4 MHz)	0.888	0.885	0.93	1.143	1.011	
Left edge	10	CH 9538 (1907.6 MHz)	1.00	0.980	1.04	1.079	1.058	12

5: See remarks and comments.

#### 4.15. Results for WCDMA Band IV (Internal antenna).

- **Head measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	CH 1412 (1732.6 MHz)	0.192	0.200	1.04	1.047	0.209	13
Left / Tilted	0	CH 1412 (1732.6 MHz)	0.0965	NM <sup>5</sup>	2.92	1.047	0.101	
Right / Cheek	0	CH 1412 (1732.6 MHz)	0.135	NM <sup>5</sup>	-2.95	1.047	0.15	
Right / Tilted	0	CH 1412 (1732.6 MHz)	0.0759	NM <sup>5</sup>	0.23	1.047	0.079	
Right / Cheek	0	CH 1312 (1712.4 MHz)	NM <sup>6</sup>					
Right / Cheek	0	CH 1512 (1752.6 MHz)	NM <sup>6</sup>					

5 and 6: See remarks and comments.

- **Body measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	CH 1412 (1732.6 MHz)	0.152	NM <sup>5</sup>	2.57	1.047	0.159	
Back face	10	CH 1412 (1732.6 MHz)	0.45	0.493	2.45	1.047	0.519	14
Left edge	10	CH 1412 (1732.6 MHz)	0.214	NM <sup>5</sup>	0.12	1.047	0.224	
Bottom edge	10	CH 1412 (1732.6 MHz)	0.153	NM <sup>5</sup>	2.68	1.047	0.16	
Back face	10	CH 1312 (1712.4 MHz)	NM <sup>6</sup>					
Back face	10	CH 1512 (1752.6 MHz)	NM <sup>6</sup>					

5 and 6: See remarks and comments.

#### 4.16. Results for WCDMA Band IV (External antenna).

- **Head measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	CH 1412 (1732.6 MHz)	0.201	0.219	0.23	1.047	0.229	15
Left / Tilted	0	CH 1412 (1732.6 MHz)	0.106	NM <sup>5</sup>	0.12	1.047	0.111	
Right / Cheek	0	CH 1412 (1732.6 MHz)	0.133	NM <sup>5</sup>	-1.26	1.047	0.143	
Right / Tilted	0	CH 1412 (1732.6 MHz)	0.0819	NM <sup>5</sup>	0.23	1.047	0.086	
Right / Cheek	0	CH 1312 (1712.4 MHz)	NM <sup>6</sup>					
Right / Cheek	0	CH 1512 (1752.6 MHz)	NM <sup>6</sup>					

5 and 6: See remarks and comments.

- **Body measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	CH 1412 (1732.6 MHz)	0.176	NM <sup>5</sup>	2.09	1.047	0.184	
Back face	10	CH 1412 (1732.6 MHz)	0.416	0.430	1.16	1.047	0.45	16
Left edge	10	CH 1412 (1732.6 MHz)	0.3	NM <sup>5</sup>	2.68	1.047	0.314	
Bottom edge	10	CH 1412 (1732.6 MHz)	0.144	NM <sup>5</sup>	2.09	1.047	0.151	
Back face	10	CH 1312 (1712.4 MHz)	NM <sup>6</sup>					
Back face	10	CH 1512 (1752.6 MHz)	NM <sup>6</sup>					

5 and 6: See remarks and comments.

#### 4.17. Results for WCDMA Band V (Internal antenna).

- **Head measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	CH 4183 (836.6 MHz)	0.246	NM <sup>5</sup>	0.35	1.026	0.252	
Left / Tilted	0	CH 4183 (836.6 MHz)	0.192	NM <sup>5</sup>	0.00	1.026	0.197	
Right / Cheek	0	CH 4183 (836.6 MHz)	0.292	0.309	0.69	1.026	0.317	17
Right / Tilted	0	CH 4183 (836.6 MHz)	0.215	NM <sup>5</sup>	0.69	1.026	0.221	
Right / Cheek	0	CH 4132 (826.4 MHz)	NM <sup>6</sup>					
Right / Cheek	0	CH 4233 (846.6 MHz)	NM <sup>6</sup>					

5 and 6: See remarks and comments.

- **Body measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	CH 4183 (836.6 MHz)	0.276	NM <sup>5</sup>	0.35	1.026	0.283	
Back face	10	CH 4183 (836.6 MHz)	0.729	0.725	0.58	1.026	0.744	18
Right edge	10	CH 4183 (836.6 MHz)	0.486	NM <sup>5</sup>	0.46	1.026	0.498	
Bottom edge	10	CH 4183 (836.6 MHz)	0.33	NM <sup>5</sup>	-0.34	1.026	0.341	
Back face	10	CH 4132 (826.4 MHz)	NM <sup>6</sup>					
Back face	10	CH 4233 (846.6 MHz)	NM <sup>6</sup>					

5 and 6: See remarks and comments.

#### 4.18. Results for WCDMA Band V (External antenna).

- **Head measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	CH 4183 (836.6 MHz)	0.204	NM <sup>5</sup>	0.81	1.026	0.209	
Left / Tilted	0	CH 4183 (836.6 MHz)	0.149	NM <sup>5</sup>	0.69	1.026	0.153	
Right / Cheek	0	CH 4183 (836.6 MHz)	0.3	0.308	0.58	1.026	0.316	19
Right / Tilted	0	CH 4183 (836.6 MHz)	0.223	NM <sup>5</sup>	-0.12	1.026	0.229	
Right / Cheek	0	CH 4132 (826.4 MHz)	NM <sup>6</sup>					
Right / Cheek	0	CH 4233 (846.6 MHz)	NM <sup>6</sup>					

5 and 6: See remarks and comments.

- **Body measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	CH 4183 (836.6 MHz)	0.266	NM <sup>5</sup>	0.00	1.026	0.273	
Back face	10	CH 4183 (836.6 MHz)	0.876	0.869	1.16	1.026	0.891	20
Right edge	10	CH 4183 (836.6 MHz)	0.349	0.366	0.46	1.026	0.375	
Bottom edge	10	CH 4183 (836.6 MHz)	0.331	NM <sup>5</sup>	-1.03	1.026	0.347	
Back face	10	CH 4132 (826.4 MHz)	0.853	0.845	0.35	1.05	0.887	
Back face	10	CH 4233 (846.6 MHz)	0.834	0.829	0.35	1.033	0.856	

5: See remarks and comments.

#### 4.19. Results for LTE Band 4 (Internal antenna).

- 1 Rb, 20 MHz, QPSK mode

- Head measurements

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	CH 20300 (1745 MHz)	0.275	0.291	0.46	1	0.291	21
Left / Tilted	0	CH 20300 (1745 MHz)	0.16	NM <sup>5</sup>	1.04	1	0.16	
Right / Cheek	0	CH 20300 (1745 MHz)	0.188	NM <sup>5</sup>	0.58	1	0.188	
Right / Tilted	0	CH 20300 (1745 MHz)	0.134	NM <sup>5</sup>	0.46	1	0.134	
Left / Cheek	0	CH 20050 (1720 MHz)	NM <sup>6</sup>					
Left / Cheek	0	CH 20175 (1732.5 MHz)	NM <sup>6</sup>					

5 and 6: See remarks and comments.

- Body measurements

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	CH 20300 (1745 MHz)	0.159	NM <sup>5</sup>	1.16	1	0.159	
Back face	10	CH 20300 (1745 MHz)	0.387	0.412	2.80	1	0.412	22
Left edge	10	CH 20300 (1745 MHz)	0.266	NM <sup>5</sup>	1.39	1	0.266	
Bottom edge	10	CH 20300 (1745 MHz)	0.205	NM <sup>5</sup>	1.16	1	0.205	
Back face	10	CH 20050 (1720 MHz)	NM <sup>6</sup>					
Back face	10	CH 20175 (1732.5 MHz)	NM <sup>6</sup>					

5 and 6: See remarks and comments.

- **50% Rb, 20 MHz, QPSK mode**

• **Head measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	CH 20300 (1745 MHz)	0.0821	0.086	0.46	1.138	0.098	23
Left / Cheek	0	CH 20050 (1720 MHz)	NM <sup>6</sup>					
Left / Cheek	0	CH 20175 (1732.5 MHz)	NM <sup>6</sup>					

6: See remarks and comments.

• **Body measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Back face	10	CH 20300 (1745 MHz)	0.189	0.200	1.86	1.138	0.228	24
Back face	10	CH 20050 (1720 MHz)	NM <sup>6</sup>					
Back face	10	CH 20175 (1732.5 MHz)	NM <sup>6</sup>					

6: See remarks and comments.

- **100% Rb, 20 MHz, QPSK mode**

According to “KDB 941225 D05 SAR for LTE Devices v02r05”, Paragraph “5.2.3.QPSK with 100% RB allocation”, for QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations, and the highest reported SAR for 1 RB and 50% RB allocation are  $\leq 0.8$  W/kg.

#### 4.20. Results for LTE Band 4 (External antenna).

- 1 Rb, 20 MHz, QPSK mode

- Head measurements

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	CH 20300 (1745 MHz)	0.183	0.192	2.57	1	0.192	25
Left / Tilted	0	CH 20300 (1745 MHz)	0.0809	NM <sup>5</sup>	-0.69	1	0.082	
Right / Cheek	0	CH 20300 (1745 MHz)	0.152	NM <sup>5</sup>	0.69	1	0.152	
Right / Tilted	0	CH 20300 (1745 MHz)	0.0846	NM <sup>5</sup>	-0.92	1	0.086	
Left / Cheek	0	CH 20050 (1720 MHz)	NM <sup>6</sup>					
Left / Cheek	0	CH 20175 (1732.5 MHz)	NM <sup>6</sup>					

5 and 6: See remarks and comments.

- Body measurements

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	CH 20300 (1745 MHz)	0.219	NM <sup>5</sup>	0.69	1	0.219	
Back face	10	CH 20300 (1745 MHz)	0.391	0.434	0.12	1	0.434	26
Left edge	10	CH 20300 (1745 MHz)	0.349	NM <sup>5</sup>	2.68	1	0.349	
Bottom edge	10	CH 20300 (1745 MHz)	0.173	NM <sup>5</sup>	1.86	1	0.173	
Back face	10	CH 20050 (1720 MHz)	NM <sup>6</sup>					
Back face	10	CH 20175 (1732.5 MHz)	NM <sup>6</sup>					

5 and 6: See remarks and comments.

- **50% Rb, 20 MHz, QPSK mode**

• **Head measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	CH 20300 (1745 MHz)	0.0973	0.102	0.69	1.138	0.116	27
Left / Cheek	0	CH 20050 (1720 MHz)	NM <sup>6</sup>					
Left / Cheek	0	CH 20175 (1732.5 MHz)	NM <sup>6</sup>					

6: See remarks and comments.

• **Body measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Back face	10	CH 20300 (1745 MHz)	0.187	0.202	-1.49	1.138	0.237	28
Back face	10	CH 20050 (1720 MHz)	NM <sup>6</sup>					
Back face	10	CH 20175 (1732.5 MHz)	NM <sup>6</sup>					

6: See remarks and comments.

- **100% Rb, 20 MHz, QPSK mode**

According to “KDB 941225 D05 SAR for LTE Devices v02r05”, Paragraph “5.2.3.QPSK with 100% RB allocation”, for QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations, and the highest reported SAR for 1 RB and 50% RB allocation are  $\leq 0.8$  W/kg.

#### 4.21. Results for Wi-Fi 2450 MHz Band (Internal antenna).

- **Head measurements**

Side / Position	Dist (mm)	Mode	Channel	Freq (MHz)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	802.11b	6	2437	0.0911	0.087	1.16	1.178	0.102	29
Left / 15° Tilted	0	802.11b	6	2437	0.00964	NM <sup>5</sup>	3.40	1.178	0.011	
Right / Cheek	0	802.11b	6	2437	0.0455	NM <sup>5</sup>	2.80	1.178	0.054	
Right / 15° Tilted	0	802.11b	6	2437	0.0345	NM <sup>5</sup>	1.98	1.178	0.041	
Left / 15° Tilted	0	802.11b	1	2412	NM <sup>6</sup>					
Left / 15° Tilted	0	802.11b	11	2462	NM <sup>6</sup>					

5 and 6: See remarks and comments.

- **Body measurements**

Side / Position	Dist (mm)	Mode	Channel	Freq (MHz)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	802.11b	6	2437	0.0296	NM <sup>5</sup>	3.51	1.178	0.035	
Back face	10	802.11b	6	2437	0.157	NM <sup>5</sup>	0.93	1.178	0.185	
Left edge	10	802.11b	6	2437	0.198	0.209	-1.60	1.178	0.254	30
Left edge	10	802.11b	1	2412	NM <sup>6</sup>					
Left edge	10	802.11b	11	2462	NM <sup>6</sup>					

5 and 6: See remarks and comments.

#### - 2.4 GHz 802.11g/n OFDM modes

The highest reported SAR for 802.11b mode and worst case exposure condition is 0.254 W/Kg.

802.11b Max declared Power = 18.6 dBm → 72.44 mW

802.11g Max declared Power = 17.5 dBm → 56.23 mW

802.11n Max declared Power = 17.5 dBm → 56.23 mW

Adjusted SAR for 802.11g:  $0.254 \text{ W/Kg} \times (56.23/72.44) = 0.197 \text{ W/Kg}$

Adjusted SAR for 802.11n:  $0.254 \text{ W/Kg} \times (56.23/72.44) = 0.197 \text{ W/Kg}$

As Adjusted SAR value for all 2.4 GHz 802.11g/n OFDM modes is  $\leq 1.2 \text{ W/Kg}$ , SAR measurements are not required for these 802.11 g/n OFDM modes.

#### 4.22. Results for Wi-Fi 2450 MHz Band (External antenna).

- **Head measurements**

Side / Position	Dist (mm)	Mode	Channel	Freq (MHz)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	802.11b	6	2437	0.0821	0.082	1.86	1.178	0.097	31
Left / 15° Tilted	0	802.11b	6	2437	0.00803	NM <sup>5</sup>	4.11	1.178	0.009	
Right / Cheek	0	802.11b	6	2437	0.0341	NM <sup>5</sup>	2.21	1.178	0.040	
Right / 15° Tilted	0	802.11b	6	2437	0.0156	NM <sup>5</sup>	3.04	1.178	0.018	
Left / 15° Tilted	0	802.11b	1	2412	NM <sup>6</sup>					
Left / 15° Tilted	0	802.11b	11	2462	NM <sup>6</sup>					

5 and 6: See remarks and comments.

- **Body measurements**

Side / Position	Dist (mm)	Mode	Channel	Freq (MHz)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	802.11b	6	2437	0.0475	NM <sup>5</sup>	2.45	1.178	0.056	
Back face	10	802.11b	6	2437	0.14	NM <sup>5</sup>	-0.23	1.178	0.166	
Left edge	10	802.11b	6	2437	0.206	0.207	1.16	1.178	0.244	32
Left edge	10	802.11b	1	2412	NM <sup>6</sup>					
Left edge	10	802.11b	11	2462	NM <sup>6</sup>					

5 and 6: See remarks and comments.

#### - 2.4 GHz 802.11g/n OFDM modes

The highest reported SAR for 802.11b mode and worst case exposure condition is 0.244 W/Kg.

802.11b Max declared Power = 18.6 dBm → 72.44 mW  
 802.11g Max declared Power = 17.5 dBm → 56.23 mW  
 802.11n Max declared Power = 17.5 dBm → 56.23 mW

Adjusted SAR for 802.11g:  $0.244 \text{ W/Kg} \times (56.23/72.44) = 0.190 \text{ W/Kg}$   
 Adjusted SAR for 802.11n:  $0.244 \text{ W/Kg} \times (56.23/72.44) = 0.190 \text{ W/Kg}$

As Adjusted SAR value for all 2.4 GHz 802.11g/n OFDM modes is  $\leq 1.2 \text{ W/Kg}$ , SAR measurements are not required for these 802.11 g/n OFDM modes.

#### 4.23. Results for Bluetooth BR 2450MHz Band (Internal antenna).

- **Head measurements**

Side / Position	Dist (mm)	Mode	Channel	Freq (MHz)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	BR	40	2441	0.027	0.025	3.75	1.346	0.034	33
Left / 15° Tilted	0	BR	40	2441	0.0052	NM <sup>5</sup>	-2.28	1.346	0.007	
Right / Cheek	0	BR	40	2441	0.0118	NM <sup>5</sup>	3.51	1.346	0.016	
Right / 15° Tilted	0	BR	40	2441	0.000106	NM <sup>5</sup>	0.0	1.346	0.0002	
Left / 15° Tilted	0	BR	0	2402	NM <sup>6</sup>					
Left / 15° Tilted	0	BR	40	2480	NM <sup>6</sup>					

5 and 6: See remarks and comments.

- **Body measurements**

Side / Position	Dist (mm)	Mode	Channel	Freq (MHz)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	BR	40	2441	0.00455	NM <sup>5</sup>	1.16	1.346	0.006	
Back face	10	BR	40	2441	0.00495	NM <sup>5</sup>	1.98	1.346	0.007	
Left edge	10	BR	40	2441	0.0386	0.039	-2.73	1.346	0.055	34
Left edge	10	BR	0	2402	NM <sup>6</sup>					
Left edge	10	BR	40	2480	NM <sup>6</sup>					

5 and 6: See remarks and comments.

#### 4.24. Results for Bluetooth BR 2450MHz Band (External antenna).

- **Head measurements**

Side / Position	Dist (mm)	Mode	Channel	Freq (MHz)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	BR	40	2441	0.0344	0.027	2.57	1.346	0.036	35
Left / 15° Tilted	0	BR	40	2441	0.0136	NM <sup>5</sup>	4.35	1.346	0.018	
Right / Cheek	0	BR	40	2441	0.0145	NM <sup>5</sup>	-3.95	1.346	0.021	
Right / 15° Tilted	0	BR	40	2441	0.0021	NM <sup>5</sup>	-2.73	1.346	0.003	
Left / 15° Tilted	0	BR	0	2402	NM <sup>6</sup>					
Left / 15° Tilted	0	BR	40	2480	NM <sup>6</sup>					

5 and 6: See remarks and comments.

- **Body measurements**

Side / Position	Dist (mm)	Mode	Channel	Freq (MHz)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	BR	40	2441	0.0139	NM <sup>5</sup>	-4.17	1.346	0.02	
Back face	10	BR	40	2441	0.0297	NM <sup>5</sup>	2.45	1.346	0.04	
Left edge	10	BR	40	2441	0.0393	0.039	2.33	1.346	0.052	36
Left edge	10	BR	0	2402	NM <sup>6</sup>					
Left edge	10	BR	40	2480	NM <sup>6</sup>					

5 and 6: See remarks and comments.

#### 4.25. Results for Satellite L-Band 1640 Mhz (Internal antenna).

- **Head measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	CH 220 (1643.5 MHz)	0.347	0.357	2.45	1.059	0.378	
Left / Tilted	0	CH 220 (1643.5 MHz)	0.323	0.315	2.31	1.059	0.334	
Right / Cheek	0	CH 220 (1643.5 MHz)	0.317	0.336	1.39	1.059	0.356	
Right / Tilted	0	CH 220 (1643.5 MHz)	0.438	0.443	-1.94	1.059	0.488	
Right / Tilted	0	CH 1 (1626.5 MHz)	0.5	0.498	-2.05	1.059	0.55	37
Right / Tilted	0	CH 43F (1660.5 MHz)	0.382	0.38	-1.83	1.059	0.418	

- **Body measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	CH 220 (1643.5 MHz)	0.323	NM <sup>5</sup>	-0.46	1.067	0.354	
Back face	10	CH 220 (1643.5 MHz)	0.687	0.728	-0.46	1.067	0.784	
Right edge	10	CH 220 (1643.5 MHz)	0.803	0.9	0.81	1.067	0.96	
Top edge	10	CH 220 (1643.5 MHz)	0.373	NM <sup>5</sup>	0.93	1.067	0.398	
Right edge	10	CH 1 (1626.5 MHz)	0.928	0.994	0.46	1.089	1.082	38
Right edge	10	CH 43F (1660.5 MHz)	0.75	0.834	-2.39	1.072	0.938	

5: See remarks and comments.

#### 4.26. Results for Satellite L-Band 1640 Mhz (External antenna).

- **Head measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Left / Cheek	0	CH 220 (1643.5 MHz)	0.238	0.254	0.35	1.059	0.269	
Left / Tilted	0	CH 220 (1643.5 MHz)	0.46	0.46	0.35	1.059	0.487	
Right / Cheek	0	CH 220 (1643.5 MHz)	0.468	0.482	1.51	1.059	0.511	
Right / Tilted	0	CH 220 (1643.5 MHz)	1.1	1.13	-1.03	1.059	1.222	
Right / Tilted	0	CH 1 (1626.5 MHz)	1.41	1.4	0.58	1.059	1.483	39
Right / Tilted	0	CH 43F (1660.5 MHz)	1.13	1.08	-0.80	1.067	1.171	

- **Body measurements**

Side / Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front face	10	CH 220 (1643.5 MHz)	0.532	NM <sup>5</sup>	-2.28	1.067	0.594	
Back face	10	CH 220 (1643.5 MHz)	0.596	0.633	3.63	1.067	0.675	
Left edge	10	CH 220 (1643.5 MHz)	0.311	NM <sup>5</sup>	0.58	1.067	0.332	
Top edge	10	CH 220 (1643.5 MHz)	0.75	0.781	1.74	1.067	0.833	
Top edge	10	CH 1 (1626.5 MHz)	0.928	0.972	0.23	1.089	1.058	40
Top edge	10	CH 43F (1660.5 MHz)	0.749	0.788	1.51	1.072	0.844	

5: See remarks and comments.

#### 4.27. Variability results.

According to KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, paragraph “2.8.1. SAR measurement variability”, repeated measurements are required only when the measured SAR is  $\geq 0.80$  W/kg, using the highest measured SAR configuration for that tissue-equivalent medium.

Band	Mode	RF Exposure	Side / Position	Channel (Frequency)	Measured SAR SAR 1-g (W/kg)	Repeated SAR SAR 1-g (W/kg)
850 MHz	GPRS 2 slots (Ext. Antenna)	Body	Back Face / 10 mm	CH 190 (836.6 MHz)	1.23	1.22
1640 MHz	L-Band (Ext. Antenna)	Head	Right tilt / 0 mm	CH 1 (1626.5 MHz)	1.40	1.44
1900 MHz	WCDMA II (Ext. Antenna)	Head	Left Cheek / 0 mm	CH 9400 (1880.0 MHz)	0.97	1.07
	WCDMA II (Ext. Antenna)	Body	Left edge/ 0 mm	CH 9538 (1907.6 MHz)	0.981	1.01

Reported SAR for variability results:

Mode	Side / Position	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
GPRS 2 slots (Ext. Antenna)	Back Face / 10 mm	CH 190 (836.6 MHz)	1.21	1.22	0.35	1.122	1.369	41
L-Band (Ext. Antenna)	Right tilt / 0 mm	CH 1 (1626.5 MHz)	1.48	1.44	2.45	1.076	1.55	42
WCDMA II (Ext. Antenna)	Left Cheek / 0 mm	CH 9400 (1880.0 MHz)	1.05	1.07	0.00	1.107	1.184	43
WCDMA II (Ext. Antenna)	Left edge/ 0 mm	CH 9538 (1907.6 MHz)	1.06	1.01	2.68	1.079	1.09	44

## Appendix C – Measurement report

**GSM/GPRS/EDGE 850 MHz – Internal antenna – Right hand side – Cheek position – Plot N°1**

**Test Laboratory: DEKRA; Date: 06/02/2017**

**DUT: Mx Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10024 - DAB, GPRS-FDD (TDMA, GMSK, TN 0-1); Frequency: 836.6 MHz; Duty Cycle: 1:4.52898

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.903$  S/m;  $\epsilon_r = 41.614$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(8.61, 8.61, 8.61); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Right Hand Side/850MHz/GPRS 2 slots, Mid CH, Cheek/Area Scan (71x121x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.486 W/kg

**Right Hand Side/850MHz/GPRS 2 slots, Mid CH, Cheek/Zoom Scan (5x5x7)/Cube 0:**

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

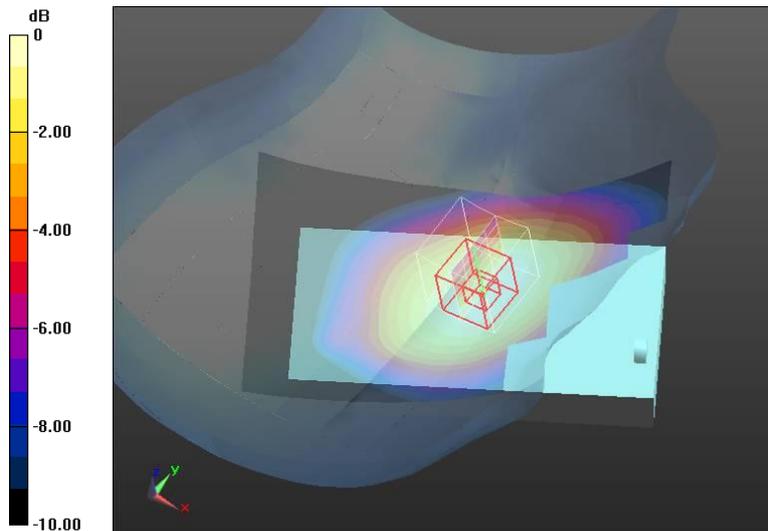
Reference Value = 8.801 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.566 W/kg

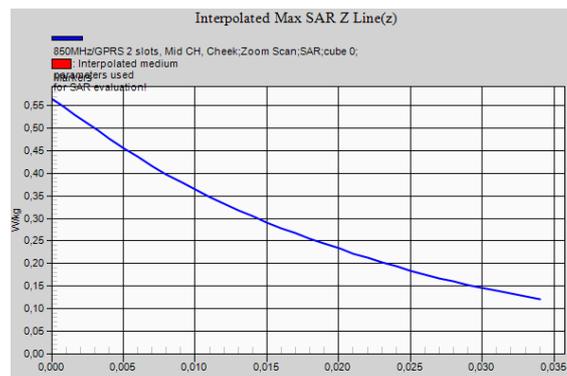
**SAR(1 g) = 0.454 W/kg; SAR(10 g) = 0.345 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



0 dB = 0.478 W/kg = -3.21 dBW/kg



**GSM/GPRS/EDGE 850 MHz – Internal antenna – Body – Back Face 10 mm – Plot N°2**

**Test Laboratory: DEKRA; Date: 03/02/2017**

**DUT: MX Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10024 - DAB, GPRS-FDD (TDMA, GMSK, TN 0-1); Frequency: 848.6 MHz; Duty Cycle: 1:4.52898

Medium parameters used (interpolated):  $f = 848.6$  MHz;  $\sigma = 0.987$  S/m;  $\epsilon_r = 53.991$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(8.59, 8.59, 8.59); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, d=10mm/850MHz/GPRS 2 slots, High CH, Back Face/Area Scan (71x121x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

**Flat Phantom, d=10mm/850MHz/GPRS 2 slots, High CH, Back Face/Zoom Scan (5x5x7)/Cube 0:**

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

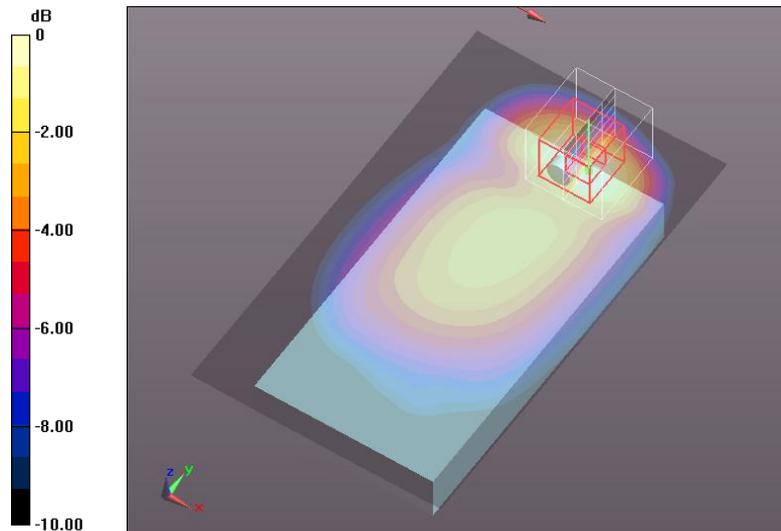
Reference Value = 25.22 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.81 W/kg

**SAR(1 g) = 1.07 W/kg; SAR(10 g) = 0.617 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.17 W/kg



0 dB = 1.17 W/kg = 0.68 dBW/kg



**GSM/GPRS/EDGE 850 MHz – External antenna – Right hand side – Cheek position – Plot N°3**

**Test Laboratory: DEKRA; Date: 06/02/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10024 - DAB, GPRS-FDD (TDMA, GMSK, TN 0-1); Frequency: 836.6 MHz; Duty Cycle: 1:4.52898

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.903$  S/m;  $\epsilon_r = 41.614$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(8.61, 8.61, 8.61); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Right Hand Side/850MHz/GPRS 2 slots, Mid CH, Cheek/Area Scan (71x161x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.471 W/kg

**Right Hand Side/850MHz/GPRS 2 slots, Mid CH, Cheek/Zoom Scan (5x5x7)/Cube 0:**

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

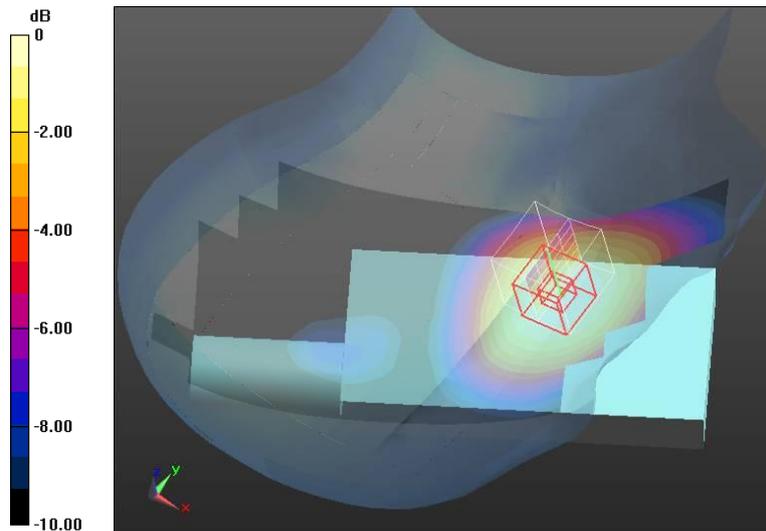
Reference Value = 7.512 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.559 W/kg

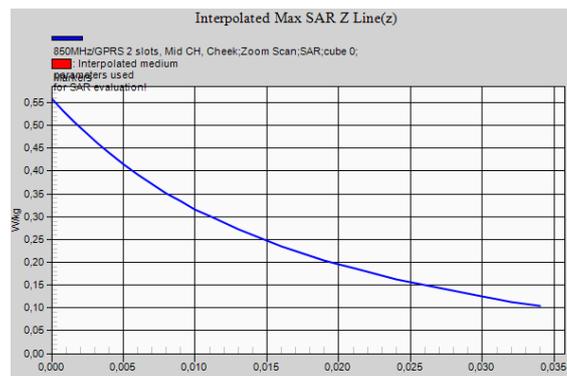
**SAR(1 g) = 0.431 W/kg; SAR(10 g) = 0.328 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.454 W/kg



0 dB = 0.454 W/kg = -3.43 dBW/kg



**GSM/GPRS/EDGE 850 MHz – External antenna – Body – Back Face 10 mm – Plot N°4**

**Test Laboratory: DEKRA; Date: 03/02/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10024 - DAB, GPRS-FDD (TDMA, GMSK, TN 0-1); Frequency: 836.6 MHz; Duty Cycle: 1:4.52898

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.97$  S/m;  $\epsilon_r = 54.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(8.59, 8.59, 8.59); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, d=10mm/850MHz/GPRS 2 slots, Mid CH, Back Face/Area Scan (71x161x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.52 W/kg

**Flat Phantom, d=10mm/850MHz/GPRS 2 slots, Mid CH, Back Face/Zoom Scan (5x5x7)/Cube 0:**

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

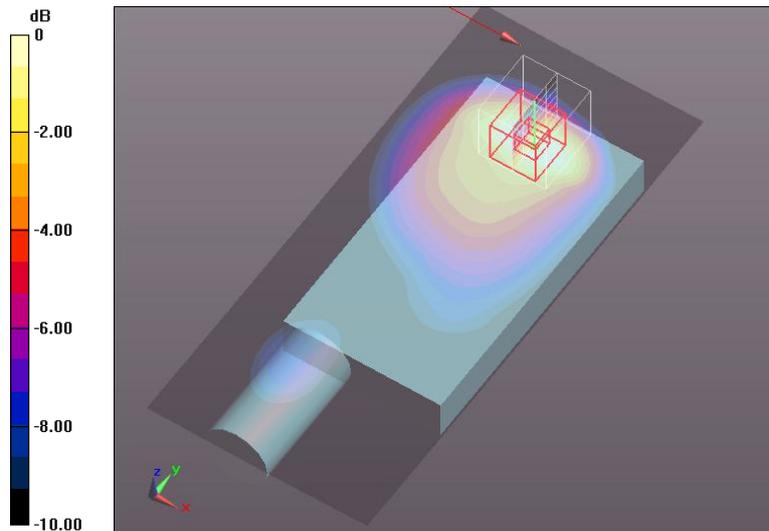
Reference Value = 16.78 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.95 W/kg

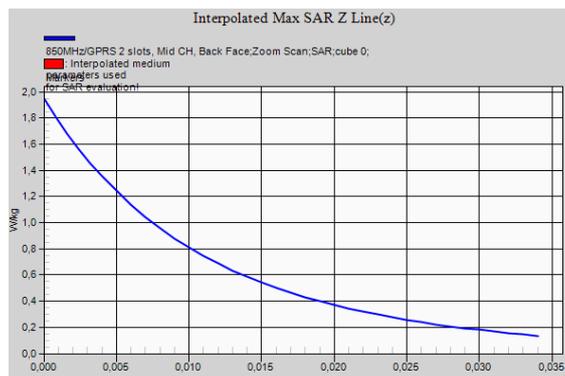
**SAR(1 g) = 1.23 W/kg; SAR(10 g) = 0.759 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.37 W/kg



0 dB = 1.37 W/kg = 1.37 dBW/kg



**GSM/GPRS/EDGE 1900 MHz – Internal antenna – Left hand side – Cheek position – Plot N°5**

**Test Laboratory: DEKRA; Date: 08/02/2017**

**DUT: MX Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10024 - DAB, GPRS-FDD (TDMA, GMSK, TN 0-1); Frequency: 1880 MHz; Duty Cycle: 1:4.52898

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.45 \text{ S/m}$ ;  $\epsilon_r = 38.59$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.31, 7.31, 7.31); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/1900MHz/GPRS 2 slots, Mid CH, Cheek/Area Scan (71x121x1):**

Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) =  $0.610 \text{ W/kg}$

**Left Hand Side/1900MHz/GPRS 2 slots, Mid CH, Cheek/Zoom Scan (5x5x7)/Cube 0:**

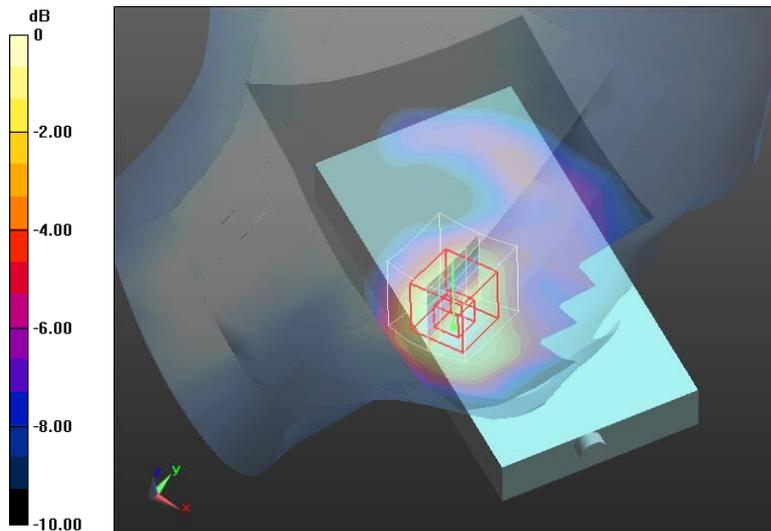
Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $8.816 \text{ V/m}$ ; Power Drift =  $-0.02 \text{ dB}$

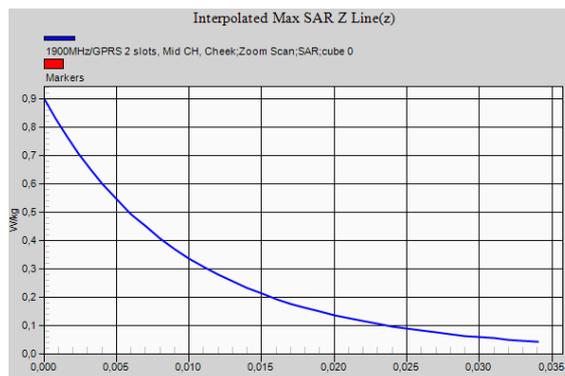
Peak SAR (extrapolated) =  $0.900 \text{ W/kg}$

**SAR(1 g) =  $0.548 \text{ W/kg}$ ; SAR(10 g) =  $0.322 \text{ W/kg}$**  (SAR corrected for target medium)

Maximum value of SAR (measured) =  $0.579 \text{ W/kg}$



0 dB =  $0.579 \text{ W/kg} = -2.37 \text{ dBW/kg}$



**GSM/GPRS/EDGE 1900 MHz – Internal antenna – Body – Back Face 10 mm – Plot N°6**

**Test Laboratory: DEKRA; Date: 07/02/2017**

**DUT: MX Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10024 - DAB, GPRS-FDD (TDMA, GMSK, TN 0-1); Frequency: 1880 MHz; Duty Cycle: 1:4.52898

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.56$  S/m;  $\epsilon_r = 54.62$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.19, 7.19, 7.19); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, d=10mm/1900MHz/GPRS 2 slots Mid CH, Back Face/Area Scan (71x121x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.591 W/kg

**Flat Phantom, d=10mm/1900MHz/GPRS 2 slots Mid CH, Back Face/Zoom Scan (5x5x7)/Cube 0:**

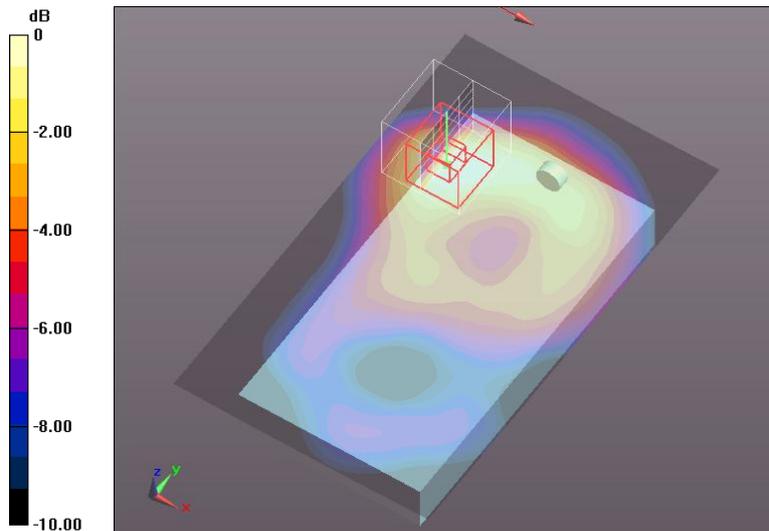
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.98 V/m; Power Drift = 0.07 dB

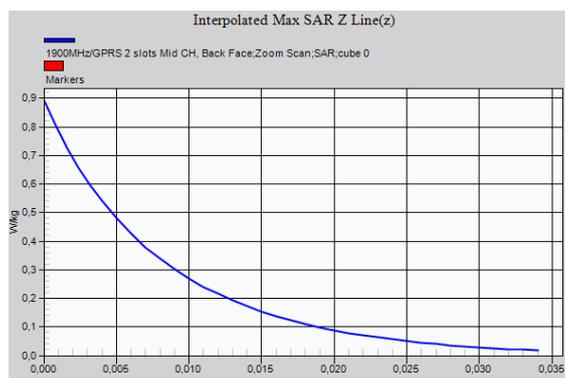
Peak SAR (extrapolated) = 0.891 W/kg

**SAR(1 g) = 0.492 W/kg; SAR(10 g) = 0.273 W/kg** (SAR corrected for target medium)

Maximum value of SAR (measured) = 0.545 W/kg



0 dB = 0.545 W/kg = -2.64 dBW/kg



**GSM/GPRS/EDGE 1900 MHz – External antenna – Left hand side – Cheek position – Plot N°7**

**Test Laboratory: DEKRA; Date: 09/02/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10024 - DAB, GPRS-FDD (TDMA, GMSK, TN 0-1); Frequency: 1880 MHz; Duty Cycle: 1:4.52898

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.45$  S/m;  $\epsilon_r = 38.59$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.31, 7.31, 7.31); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/1900MHz/GPRS 2 slots, Mid CH, Cheek/Area Scan (71x161x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.561 W/kg

**Left Hand Side/1900MHz/GPRS 2 slots, Mid CH, Cheek/Zoom Scan (6x5x7)/Cube 0:**

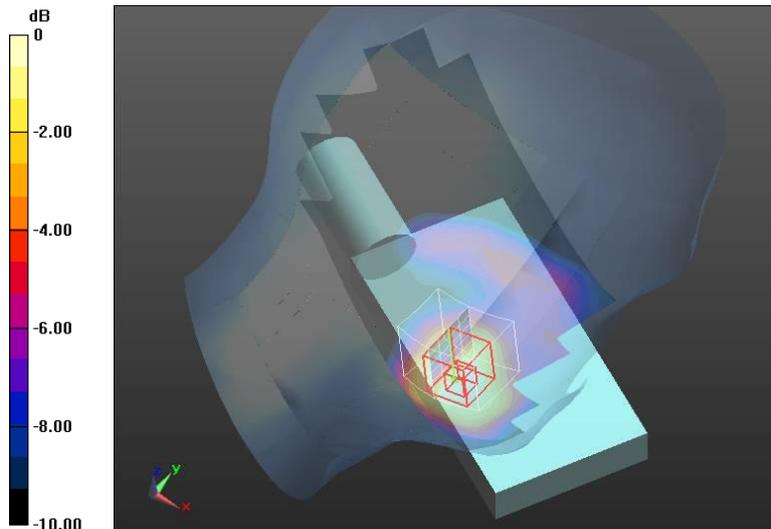
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.995 V/m; Power Drift = 0.01 dB

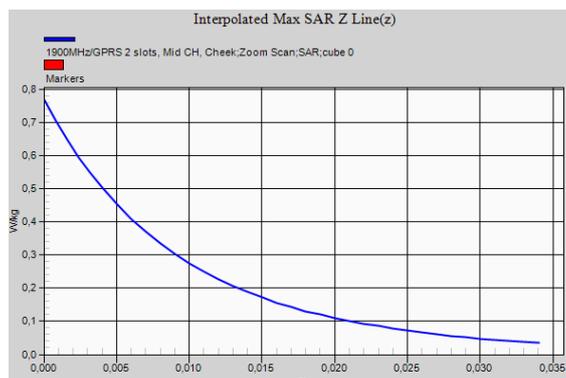
Peak SAR (extrapolated) = 0.769 W/kg

**SAR(1 g) = 0.469 W/kg; SAR(10 g) = 0.284 W/kg** (SAR corrected for target medium)

Maximum value of SAR (measured) = 0.505 W/kg



0 dB = 0.505 W/kg = -2.97 dBW/kg



**GSM/GPRS/EDGE 1900 MHz – External antenna – Body – Back Face 10 mm – Plot N°8**

**Test Laboratory: DEKRA; Date: 08/02/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10024 - DAB, GPRS-FDD (TDMA, GMSK, TN 0-1); Frequency: 1880 MHz; Duty Cycle: 1:4.52898

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.56$  S/m;  $\epsilon_r = 54.62$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.19, 7.19, 7.19); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom\_Edges, d=10 mm/1900MHz/GPRS 2 slots, Mid CH, Left Edge/Area Scan (51x161x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

**Flat Phantom\_Edges, d=10 mm/1900MHz/GPRS 2 slots, Mid CH, Left Edge/Zoom Scan (5x5x7)/Cube 0:**

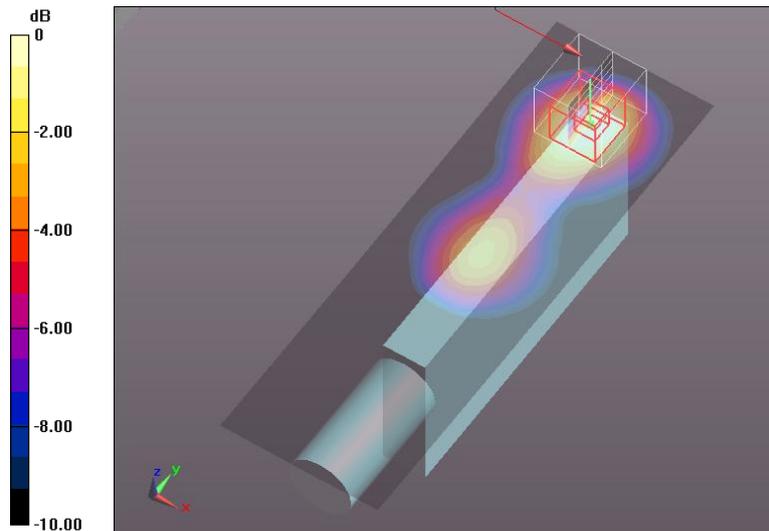
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.23 V/m; Power Drift = 0.03 dB

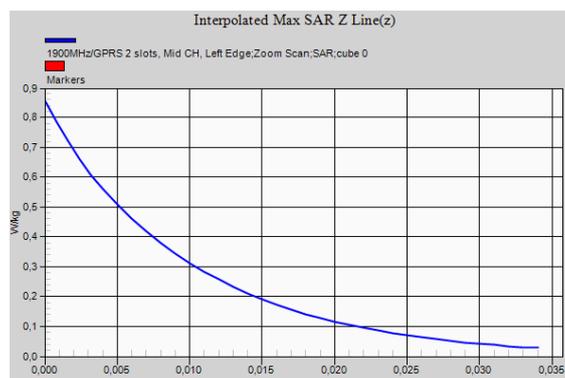
Peak SAR (extrapolated) = 0.855 W/kg

**SAR(1 g) = 0.515 W/kg; SAR(10 g) = 0.294 W/kg** (SAR corrected for target medium)

Maximum value of SAR (measured) = 0.564 W/kg



0 dB = 0.564 W/kg = -2.49 dBW/kg



**WCDMA Band II – Internal antenna – Left hand side – Cheek position – Plot N°9**

**Test Laboratory: DEKRA; Date: 09/02/2017**

**DUT: MX Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1907.6 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated):  $f = 1907.6$  MHz;  $\sigma = 1.46$  S/m;  $\epsilon_r = 38.45$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.31, 7.31, 7.31); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/1900MHz/WCDMA II, High CH, Cheek/Area Scan (71x121x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

**Left Hand Side/1900MHz/WCDMA II, High CH, Cheek/Zoom Scan (5x5x7)/Cube 0:**

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

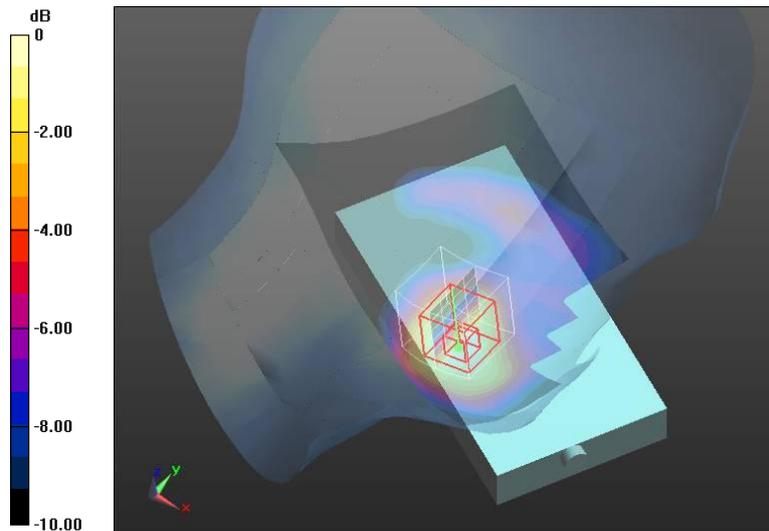
Reference Value = 12.03 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.61 W/kg

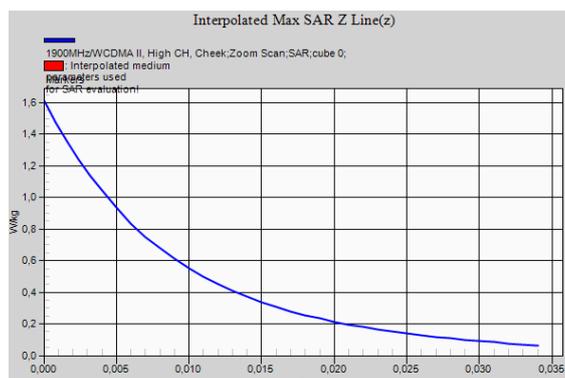
**SAR(1 g) = 0.954 W/kg; SAR(10 g) = 0.558 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



0 dB = 1.05 W/kg = 0.21 dBW/kg



**WCDMA Band II – Internal antenna – Body – Left Edge 10 mm – Plot N°10**

**Test Laboratory: DEKRA; Date: 07/02/2017**

**DUT: MX Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1907.6 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated):  $f = 1907.6$  MHz;  $\sigma = 1.56$  S/m;  $\epsilon_r = 54.532$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.19, 7.19, 7.19); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom\_Edges, d=10 mm/1900MHz/WCDMA II, High CH, Left Edge/Area Scan (51x121x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.33 W/kg

**Flat Phantom\_Edges, d=10 mm/1900MHz/WCDMA II, High CH, Left Edge/Zoom Scan (5x6x7)/Cube 0:**

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

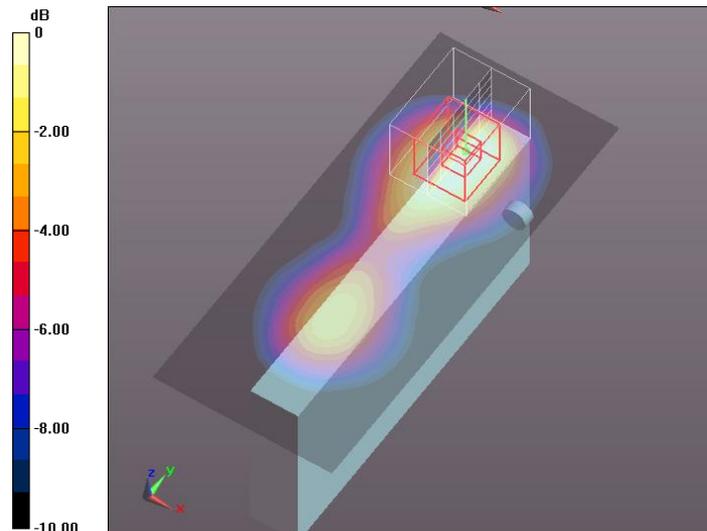
Reference Value = 10.95 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 1.64 W/kg

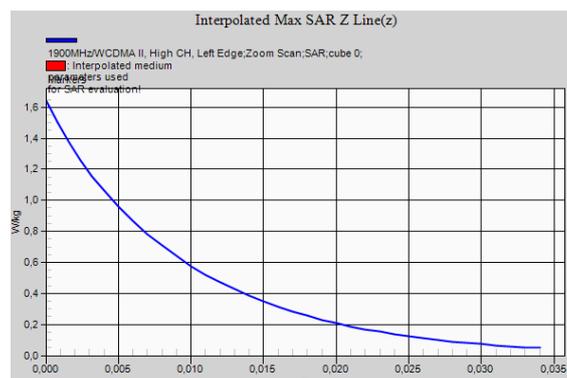
**SAR(1 g) = 0.972 W/kg; SAR(10 g) = 0.560 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.06 W/kg



0 dB = 1.06 W/kg = 0.25 dBW/kg



**WCDMA Band II – External antenna – Left hand side – Cheek position – Plot N°11**

**Test Laboratory: DEKRA; Date: 09/02/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1880 MHz; Duty Cycle: 1:1.95434

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.45$  S/m;  $\epsilon_r = 38.59$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.31, 7.31, 7.31); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/1900MHz/WCDMA II, Mid CH, Cheek/Area Scan (71x161x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

**Left Hand Side/1900MHz/WCDMA II, Mid CH, Cheek/Zoom Scan (5x5x7)/Cube 0:**

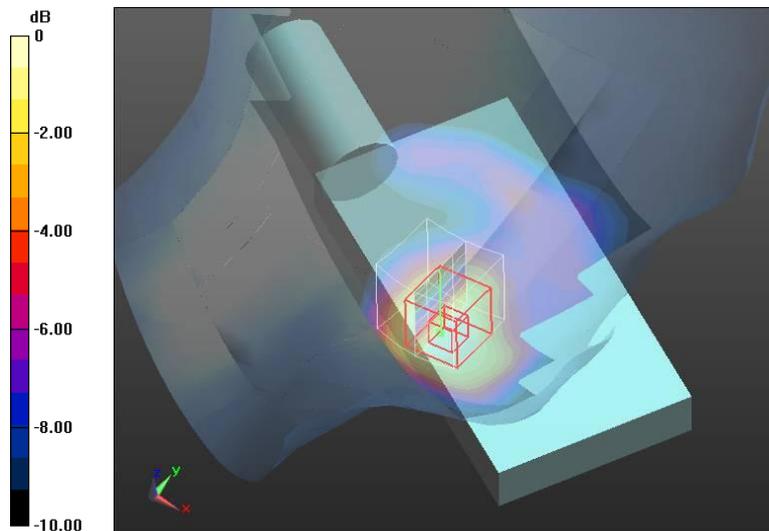
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 26.06 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.57 W/kg

**SAR(1 g) = 0.970 W/kg; SAR(10 g) = 0.581 W/kg** (SAR corrected for target medium)

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



0 dB = 1.05 W/kg = 0.21 dBW/kg



**WCDMA Band II – External antenna – Body – Left Edge 10 mm – Plot N°12**

**Test Laboratory: DEKRA; Date: 08/02/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1907.6 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated):  $f = 1907.6 \text{ MHz}$ ;  $\sigma = 1.56 \text{ S/m}$ ;  $\epsilon_r = 54.532$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.19, 7.19, 7.19); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom\_Edges, d=10 mm/1900MHz/WCDMA II, High CH, Left Edge/Area Scan (51x161x1):**

Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.27 W/kg

**Flat Phantom\_Edges, d=10 mm/1900MHz/WCDMA II, High CH, Left Edge/Zoom Scan (5x5x7)/Cube 0:**

Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

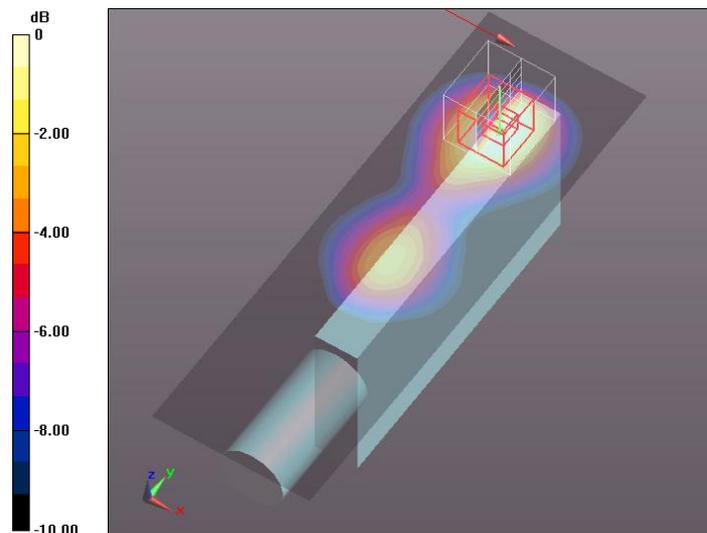
Reference Value = 14.74 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.64 W/kg

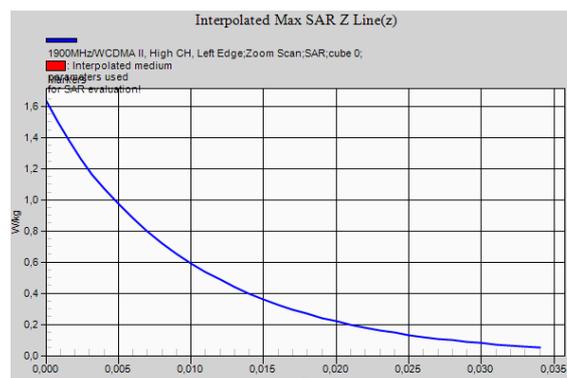
**SAR(1 g) = 0.980 W/kg; SAR(10 g) = 0.561 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.07 W/kg



0 dB = 1.07 W/kg = 0.29 dBW/kg



### **WCDMA Band IV – Internal antenna – Left hand side – Cheek position – Plot N°13**

**Test Laboratory: DEKRA; Date: 25/01/2017**

**DUT: MX Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1732.6 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated):  $f = 1732.6$  MHz;  $\sigma = 1.353$  S/m;  $\epsilon_r = 39.347$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.63, 7.63, 7.63); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

#### **Left Hand Side/1700MHz/WCDMA IV, Mid CH, Cheek/Area Scan (71x121x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.233 W/kg

#### **Left Hand Side/1700MHz/WCDMA IV, Mid CH, Cheek/Zoom Scan (5x5x7)/Cube 0:**

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

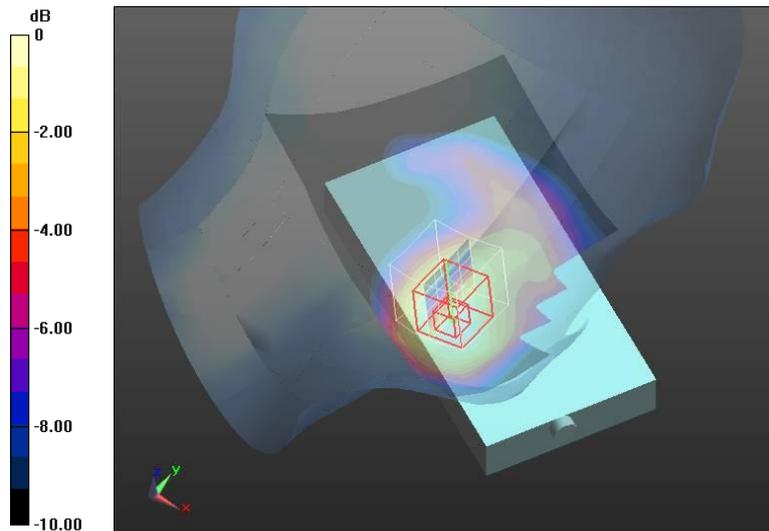
Reference Value = 12.63 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.310 W/kg

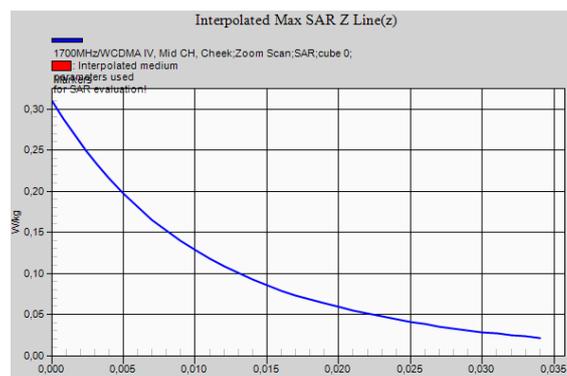
**SAR(1 g) = 0.200 W/kg; SAR(10 g) = 0.127 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.218 W/kg



0 dB = 0.218 W/kg = -6.62 dBW/kg



**WCDMA Band IV – Internal antenna – Body – Back Face 10 mm – Plot N°14**

**Test Laboratory: DEKRA; Date: 26/01/2017**

**DUT: MX Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1732.6 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated):  $f = 1732.6$  MHz;  $\sigma = 1.455$  S/m;  $\epsilon_r = 55.99$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.25, 7.25, 7.25); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, d=10mm/1700MHz/WCDMA IV, Mid CH, Back Face/Area Scan (71x121x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.608 W/kg

**Flat Phantom, d=10mm/1700MHz/WCDMA IV, Mid CH, Back Face/Zoom Scan (5x5x7)/Cube 0:**

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

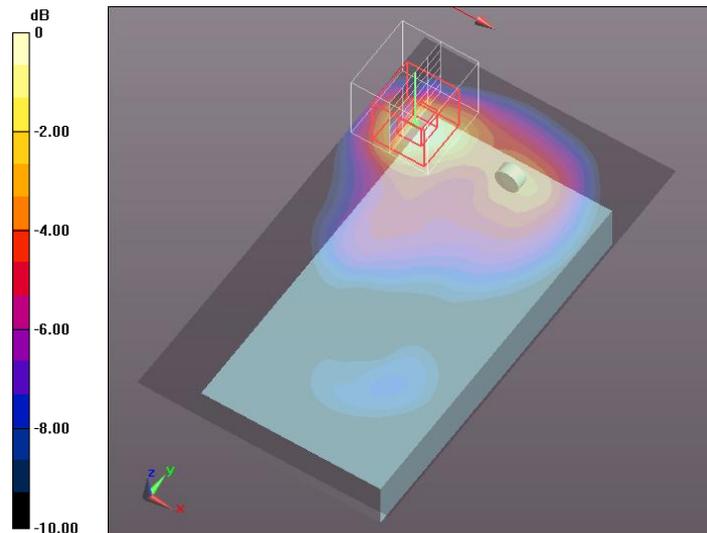
Reference Value = 7.221 V/m; Power Drift = 0.21 dB

Peak SAR (extrapolated) = 0.895 W/kg

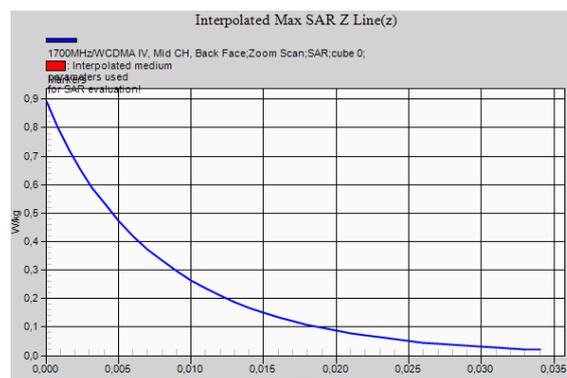
**SAR(1 g) = 0.493 W/kg; SAR(10 g) = 0.252 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.549 W/kg



0 dB = 0.549 W/kg = -2.60 dBW/kg



**WCDMA Band IV – External antenna – Left hand side – Cheek position – Plot N°15**

**Test Laboratory: DEKRA; Date: 25/01/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1732.6 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated):  $f = 1732.6$  MHz;  $\sigma = 1.353$  S/m;  $\epsilon_r = 39.347$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.63, 7.63, 7.63); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/1700MHz/WCDMA IV, Mid CH, Cheek/Area Scan (71x161x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.244 W/kg

**Left Hand Side/1700MHz/WCDMA IV, Mid CH, Cheek/Zoom Scan (5x5x7)/Cube 0:**

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

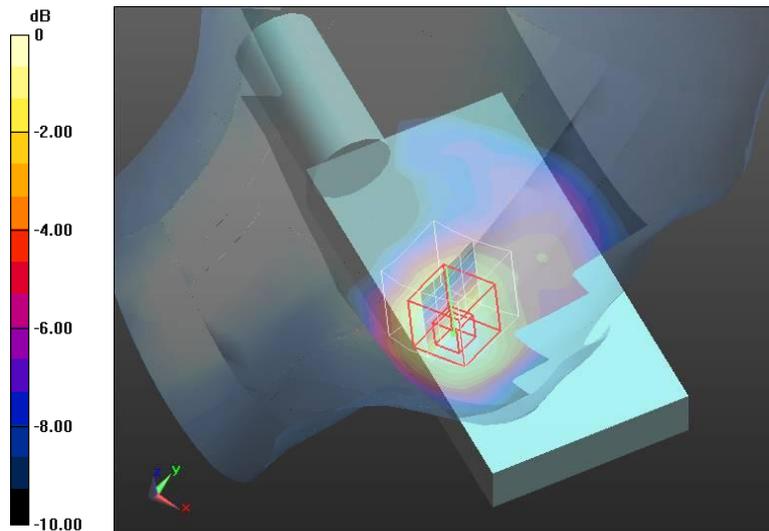
Reference Value = 5.169 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.345 W/kg

**SAR(1 g) = 0.219 W/kg; SAR(10 g) = 0.137 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.239 W/kg



0 dB = 0.239 W/kg = -6.22 dBW/kg



**WCDMA Band IV – External antenna – Body – Back Face 10 mm – Plot N°16**

**Test Laboratory: DEKRA; Date: 27/01/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1732.6 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated):  $f = 1732.6$  MHz;  $\sigma = 1.455$  S/m;  $\epsilon_r = 55.99$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.25, 7.25, 7.25); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, d=10mm/1700MHz/WCDMA IV, Mid CH, Back Face/Area Scan (71x161x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.546 W/kg

**Flat Phantom, d=10mm/1700MHz/WCDMA IV, Mid CH, Back Face/Zoom Scan (5x5x7)/Cube 0: Measurement grid:**

dx=8mm, dy=8mm, dz=5mm

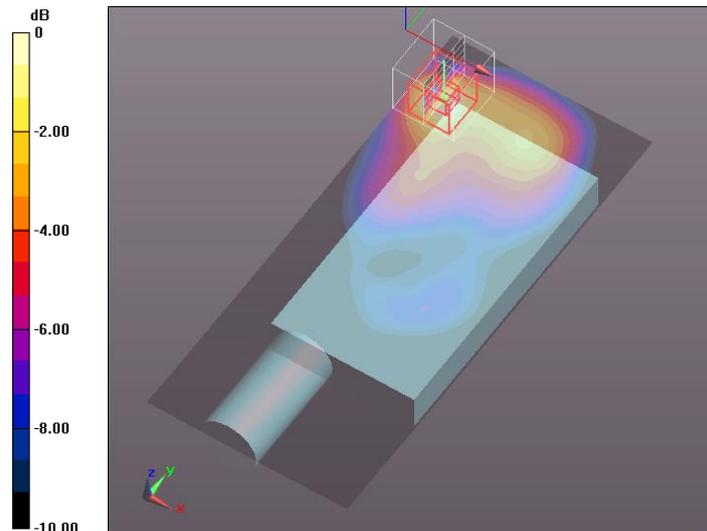
Reference Value = 5.729 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.749 W/kg

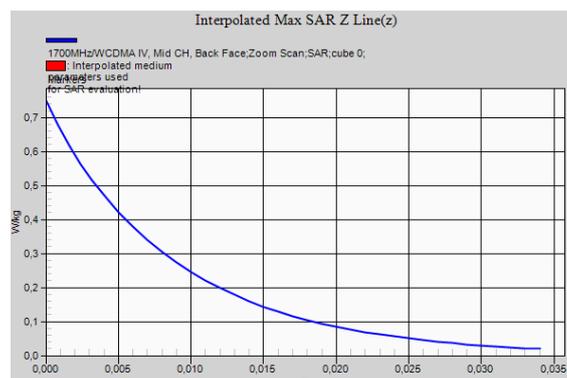
**SAR(1 g) = 0.430 W/kg; SAR(10 g) = 0.228 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.473 W/kg



0 dB = 0.473 W/kg = -3.25 dBW/kg



**WCDMA Band V – Internal antenna – Right hand side – Cheek position – Plot N°17**

**Test Laboratory: DEKRA; Date: 06/02/2017**

**DUT: Mx Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 836.6 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.903$  S/m;  $\epsilon_r = 41.614$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(8.61, 8.61, 8.61); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Right Hand Side/850MHz/WCDMA V, Mid CH, Cheek/Area Scan (71x121x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.333 W/kg

**Right Hand Side/850MHz/WCDMA V, Mid CH, Cheek/Zoom Scan (5x5x7)/Cube 0:**

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

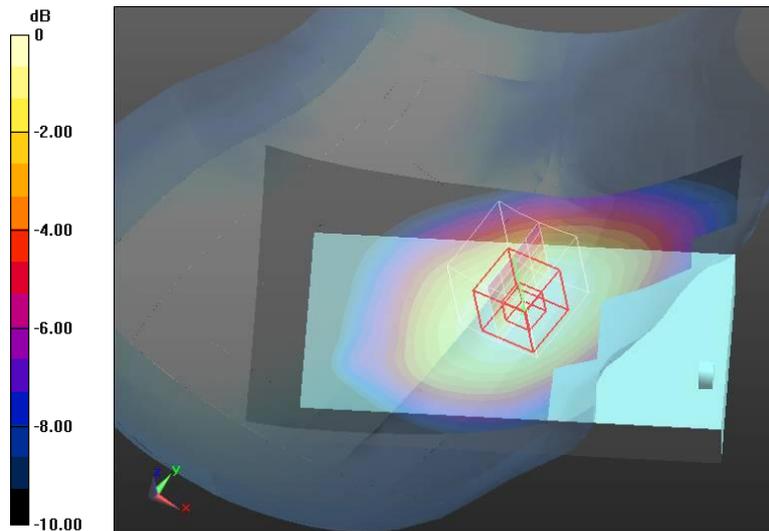
Reference Value = 18.95 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.379 W/kg

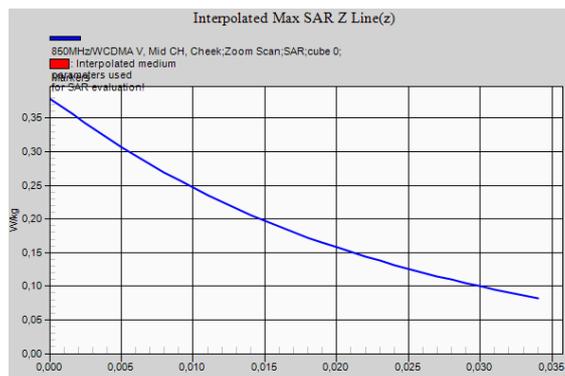
**SAR(1 g) = 0.309 W/kg; SAR(10 g) = 0.238 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.325 W/kg



0 dB = 0.325 W/kg = -4.88 dBW/kg



## WCDMA Band V – Internal antenna – Body – Back Face 10 mm – Plot N°18

Test Laboratory: DEKRA; Date: 03/02/2017

DUT: MX Smart; Type: Smartphone; Serial: PSN:270

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 836.6 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.97$  S/m;  $\epsilon_r = 54.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(8.59, 8.59, 8.59); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

### Flat Phantom, d=10mm/850MHz/WCDMA V, Mid CH, Back Face/Area Scan (71x121x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.874 W/kg

### Flat Phantom, d=10mm/850MHz/WCDMA V, Mid CH, Back Face/Zoom Scan (5x5x7)/Cube 0:

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

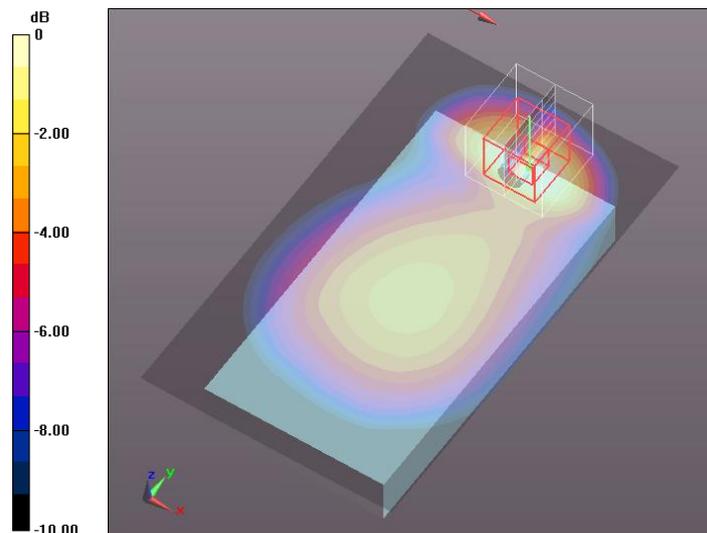
Reference Value = 28.59 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.23 W/kg

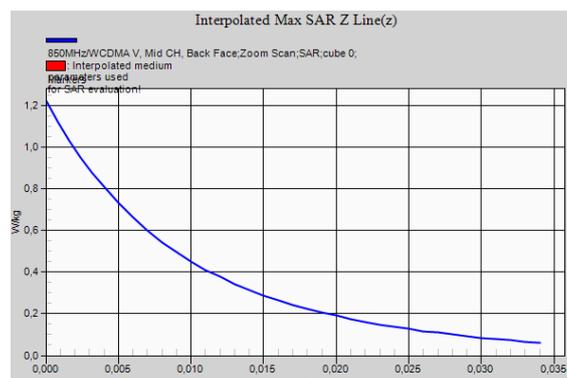
SAR(1 g) = 0.725 W/kg; SAR(10 g) = 0.415 W/kg (SAR corrected for target medium)

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.811 W/kg



0 dB = 0.811 W/kg = -0.91 dBW/kg



**WCDMA Band V – External antenna – Right hand side – Cheek position – Plot N°19**

**Test Laboratory: DEKRA; Date: 06/02/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 836.6 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated):  $f = 836.6 \text{ MHz}$ ;  $\sigma = 0.903 \text{ S/m}$ ;  $\epsilon_r = 41.614$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(8.61, 8.61, 8.61); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Right Hand Side/850MHz/WCDMA V, Mid CH, Cheek/Area Scan (71x161x1):**

Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.344 W/kg

**Right Hand Side/850MHz/WCDMA V, Mid CH, Cheek/Zoom Scan (5x5x7)/Cube 0:**

Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

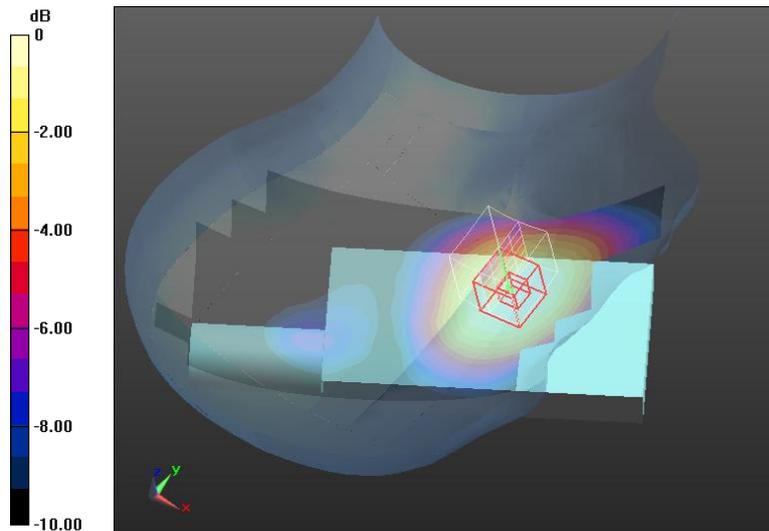
Reference Value = 18.52 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.394 W/kg

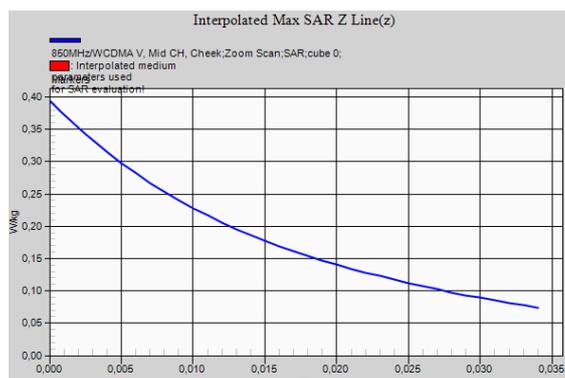
**SAR(1 g) = 0.308 W/kg; SAR(10 g) = 0.236 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.322 W/kg



0 dB = 0.322 W/kg = -4.92 dBW/kg



**WCDMA Band V – External antenna – Body – Back Face 10 mm – Plot N°20**

**Test Laboratory: DEKRA; Date: 03/02/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 836.6 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.97$  S/m;  $\epsilon_r = 54.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(8.59, 8.59, 8.59); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, d=10mm/850MHz/WCDMA V, Mid CH, Back Face/Area Scan (71x161x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

**Flat Phantom, d=10mm/850MHz/WCDMA V, Mid CH, Back Face/Zoom Scan (5x5x7)/Cube 0:**

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

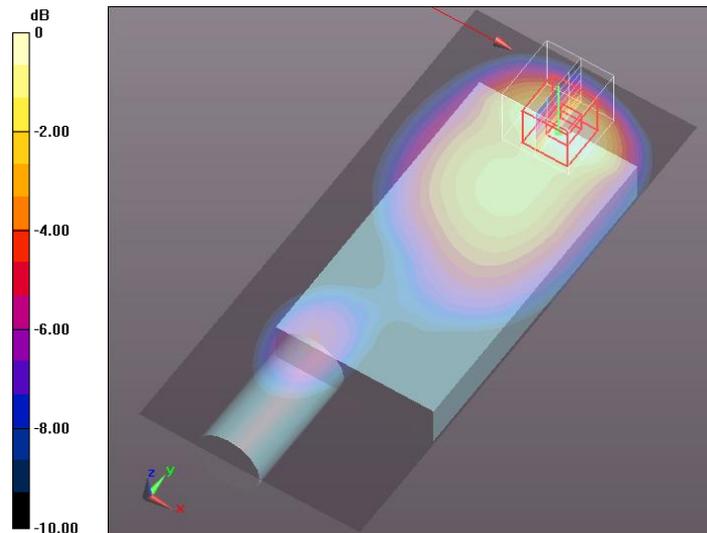
Reference Value = 14.64 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 1.36 W/kg

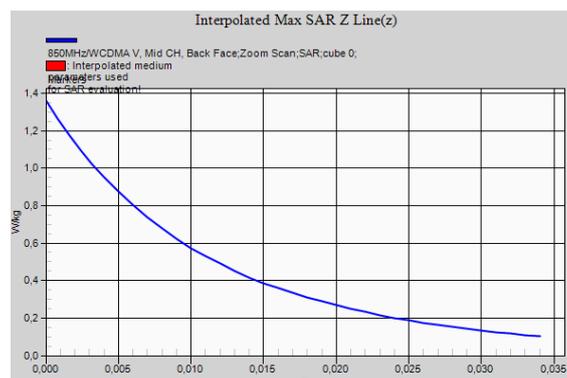
**SAR(1 g) = 0.869 W/kg; SAR(10 g) = 0.543 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.921 W/kg



0 dB = 0.921 W/kg = -0.36 dBW/kg



**LTE Band 4 1RB – Internal antenna – Left hand side – Cheek position – Plot N°21**

**Test Laboratory: DEKRA; Date: 25/01/2017**

**DUT: MX Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10169 - CAB, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1732.5 MHz; Duty Cycle: 1:3.74111

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.353$  S/m;  $\epsilon_r = 39.348$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.63, 7.63, 7.63); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/1700MHz/LTE 4, 1 RB High, Mid CH, Cheek/Area Scan (71x121x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.334 W/kg

**Left Hand Side/1700MHz/LTE 4, 1 RB High, Mid CH, Cheek/Zoom Scan (5x5x7)/Cube 0:**

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

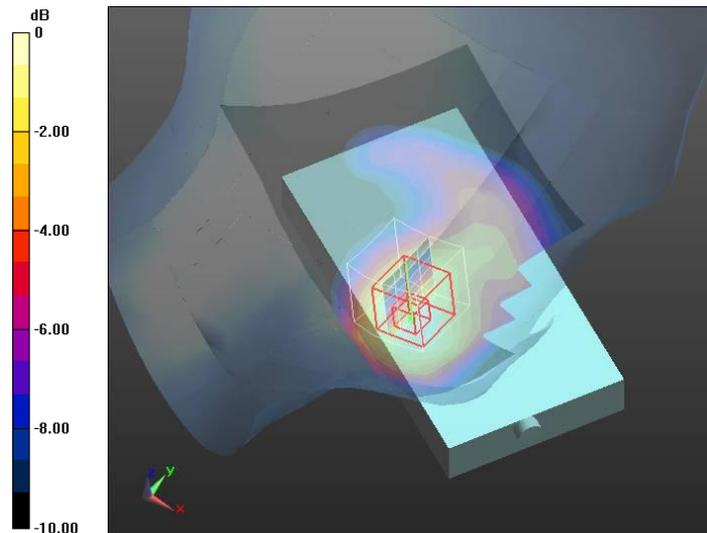
Reference Value = 15.07 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.448 W/kg

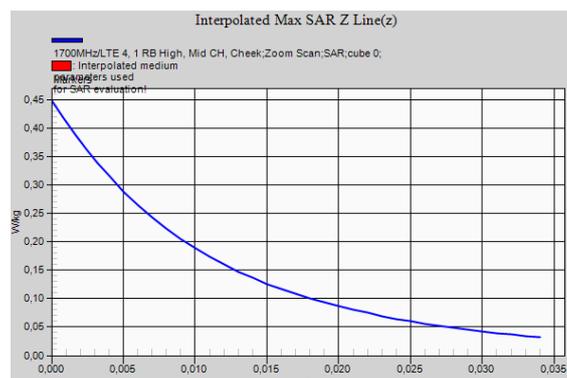
**SAR(1 g) = 0.291 W/kg; SAR(10 g) = 0.184 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.318 W/kg



0 dB = 0.318 W/kg = -4.98 dBW/kg



**LTE Band 4 1RB – Internal antenna – Body – Back Face 10 mm – Plot N°22**

**Test Laboratory: DEKRA; Date: 26/01/2017**

**DUT: MX Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10169 - CAB, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1732.5 MHz; Duty Cycle: 1:3.74111

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.455$  S/m;  $\epsilon_r = 55.99$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.25, 7.25, 7.25); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, d=10mm/1700MHz/LTE 4, 1 RB High, Mid CH, Back Face/Area Scan (71x121x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

**Flat Phantom, d=10mm/1700MHz/LTE 4, 1 RB High, Mid CH, Back Face/Zoom Scan (5x5x7)/Cube 0:**

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

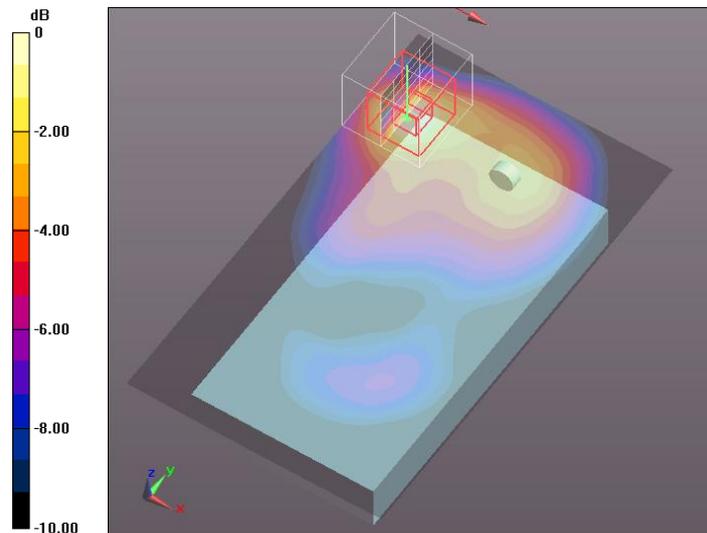
Reference Value = 6.046 V/m; Power Drift = 0.24 dB

Peak SAR (extrapolated) = 0.726 W/kg

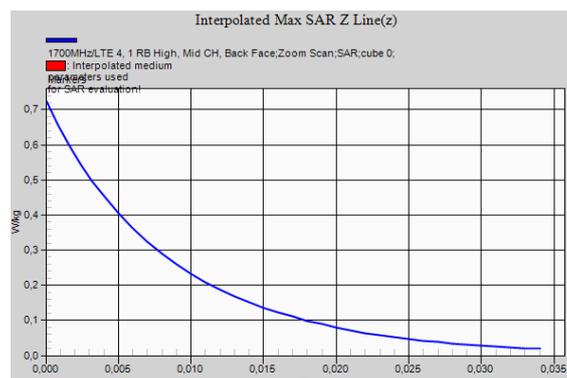
**SAR(1 g) = 0.412 W/kg; SAR(10 g) = 0.216 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



0 dB = 0.451 W/kg = -3.46 dBW/kg



**LTE Band 4 50%RB – Internal antenna – Left hand side – Cheek position – Plot N°23**

**Test Laboratory: DEKRA; Date: 25/01/2017**

**DUT: MX Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10297 - AAA, LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK); Frequency: 1720 MHz; Duty Cycle: 1:3.81066

Medium parameters used:  $f = 1720$  MHz;  $\sigma = 1.34$  S/m;  $\epsilon_r = 39.41$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.63, 7.63, 7.63); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/1700MHz/LTE 4, 50% RB Mid, Low CH, Cheek/Area Scan (71x121x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0995 W/kg

**Left Hand Side/1700MHz/LTE 4, 50% RB Mid, Low CH, Cheek/Zoom Scan (5x5x7)/Cube 0:**

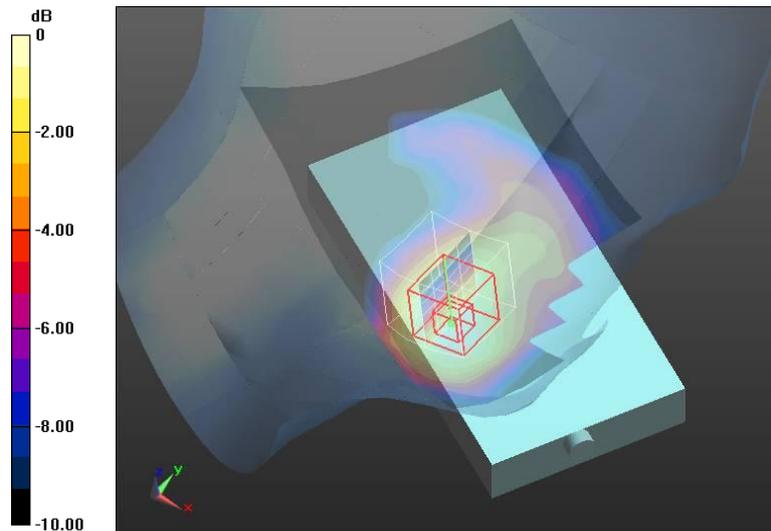
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.362 V/m; Power Drift = 0.04 dB

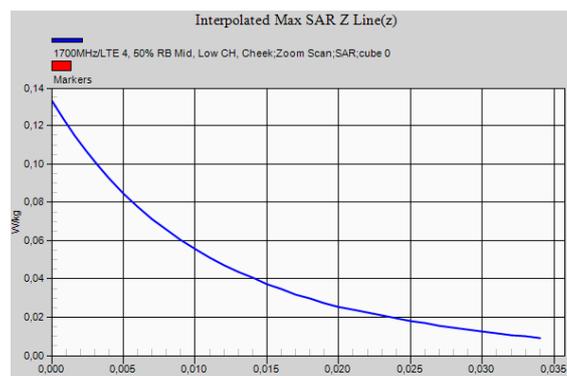
Peak SAR (extrapolated) = 0.133 W/kg

**SAR(1 g) = 0.086 W/kg; SAR(10 g) = 0.055 W/kg** (SAR corrected for target medium)

Maximum value of SAR (measured) = 0.0938 W/kg



0 dB = 0.0938 W/kg = -10.28 dBW/kg



**LTE Band 4 50%RB – Internal antenna – Body – Back Face 10 mm – Plot N°24**

**Test Laboratory: DEKRA; Date: 26/01/2017**

**DUT: MX Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10297 - AAA, LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK); Frequency: 1720 MHz; Duty Cycle: 1:3.81066

Medium parameters used:  $f = 1720$  MHz;  $\sigma = 1.44$  S/m;  $\epsilon_r = 56.04$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.25, 7.25, 7.25); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, d=10mm/1700MHz/LTE 4, 50% RB Mid, Low CH, Back Face/Area Scan (71x121x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.248 W/kg

**Flat Phantom, d=10mm/1700MHz/LTE 4, 50% RB Mid, Low CH, Back Face/Zoom Scan (5x5x7)/Cube 0:**

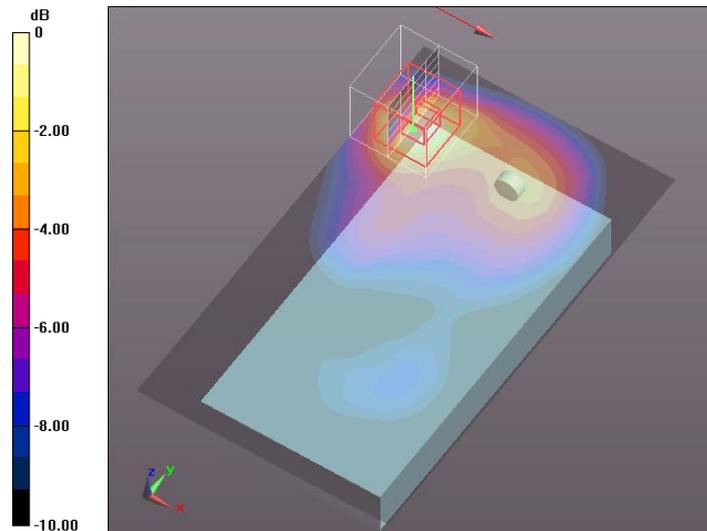
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.164 V/m; Power Drift = 0.16 dB

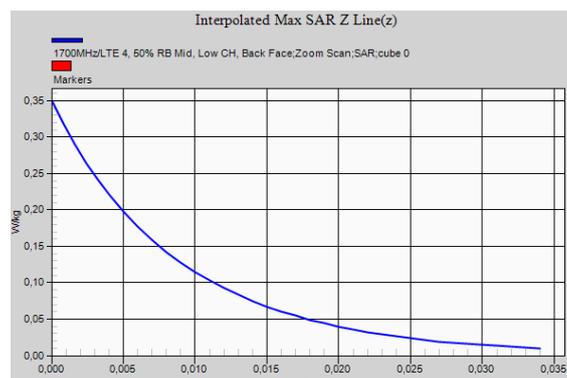
Peak SAR (extrapolated) = 0.350 W/kg

**SAR(1 g) = 0.200 W/kg; SAR(10 g) = 0.105 W/kg** (SAR corrected for target medium)

Maximum value of SAR (measured) = 0.217 W/kg



0 dB = 0.217 W/kg = -6.64 dBW/kg



**LTE Band 4 1RB – External antenna – Left hand side – Cheek position – Plot N°25**

**Test Laboratory: DEKRA; Date: 25/01/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10169 - CAB, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1732.5 MHz; Duty Cycle: 1:3.74111

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.353$  S/m;  $\epsilon_r = 39.348$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.63, 7.63, 7.63); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/1700MHz/LTE 4, 1 RB High, Mid CH, Cheek/Area Scan (71x161x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.220 W/kg

**Left Hand Side/1700MHz/LTE 4, 1 RB High, Mid CH, Cheek/Zoom Scan (5x5x7)/Cube 0:**

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

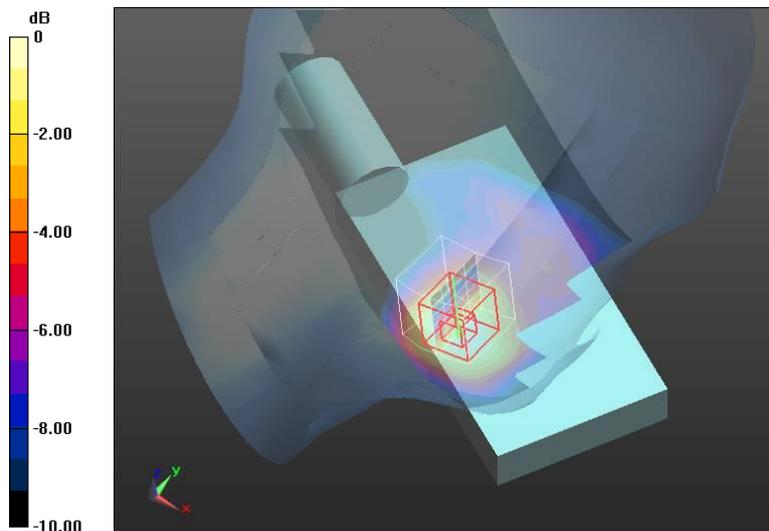
Reference Value = 12.09 V/m; Power Drift = 0.22 dB

Peak SAR (extrapolated) = 0.302 W/kg

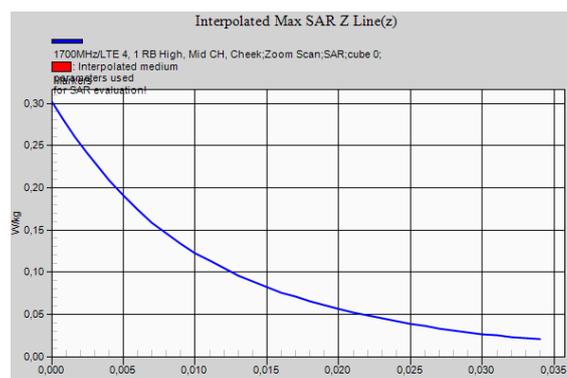
**SAR(1 g) = 0.192 W/kg; SAR(10 g) = 0.119 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.209 W/kg



0 dB = 0.209 W/kg = -6.80 dBW/kg



**LTE Band 4 1RB – External antenna – Body – Back Face 10 mm – Plot N°26**

**Test Laboratory: DEKRA; Date: 27/01/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10169 - CAB, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1732.5 MHz; Duty Cycle: 1:3.74111

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.455$  S/m;  $\epsilon_r = 55.99$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.25, 7.25, 7.25); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, d=10mm/1700MHz/LTE 4, 1 RB High, Mid CH, Back Face/Area Scan (71x161x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.490 W/kg

**Flat Phantom, d=10mm/1700MHz/LTE 4, 1 RB High, Mid CH, Back Face/Zoom Scan (5x5x7)/Cube 0:**

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

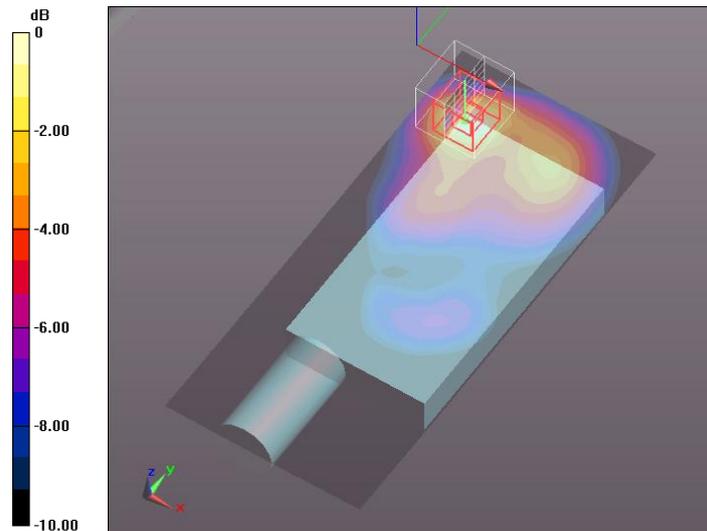
Reference Value = 5.746 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.740 W/kg

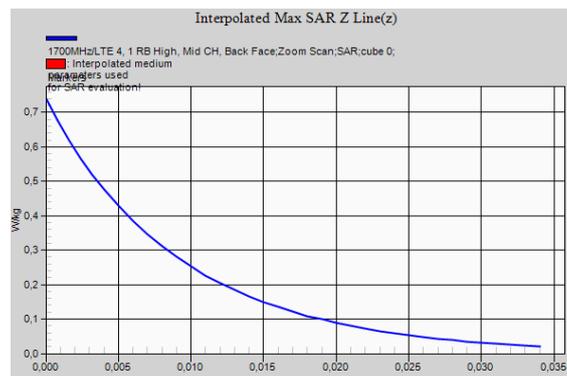
**SAR(1 g) = 0.434 W/kg; SAR(10 g) = 0.232 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.477 W/kg



0 dB = 0.477 W/kg = -3.21 dBW/kg



**LTE Band 4 50%RB – External antenna – Left hand side – Cheek position – Plot N°27**

**Test Laboratory: DEKRA; Date: 25/01/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10297 - AAA, LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK); Frequency: 1720 MHz; Duty Cycle: 1:3.81066

Medium parameters used:  $f = 1720 \text{ MHz}$ ;  $\sigma = 1.34 \text{ S/m}$ ;  $\epsilon_r = 39.41$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.63, 7.63, 7.63); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/1700MHz/LTE 4, 50% RB Mid, Low CH, Cheek/Area Scan (71x161x1):**

Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.117 W/kg

**Left Hand Side/1700MHz/LTE 4, 50% RB Mid, Low CH, Cheek/Zoom Scan (5x5x7)/Cube 0:**

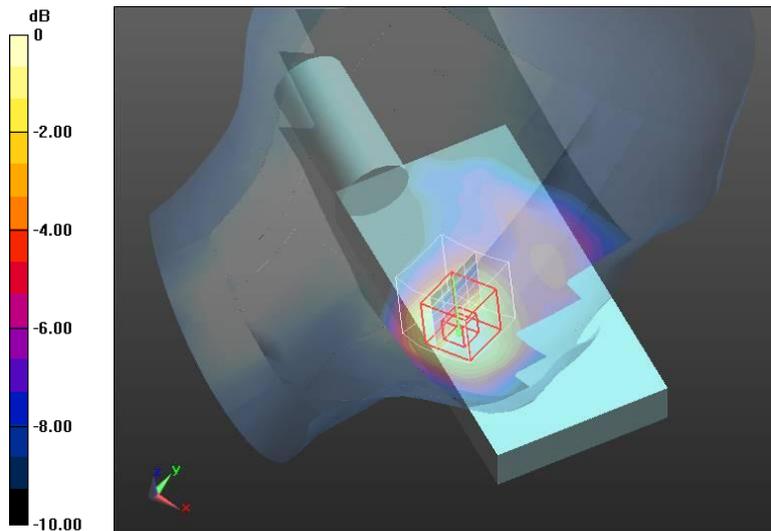
Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 9.025 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.160 W/kg

**SAR(1 g) = 0.102 W/kg; SAR(10 g) = 0.063 W/kg** (SAR corrected for target medium)

Maximum value of SAR (measured) = 0.111 W/kg



0 dB = 0.111 W/kg = -9.55 dBW/kg



**LTE Band 4 50%RB – External antenna – Body – Back Face 10 mm – Plot N°28**

**Test Laboratory: DEKRA; Date: 27/01/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10297 - AAA, LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK); Frequency: 1720 MHz; Duty Cycle: 1:3.81066

Medium parameters used:  $f = 1720$  MHz;  $\sigma = 1.44$  S/m;  $\epsilon_r = 56.04$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.25, 7.25, 7.25); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, d=10mm/1700MHz/LTE 4, 50% RB Mid, Low CH, Back Face/Area Scan (71x161x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.234 W/kg

**Flat Phantom, d=10mm/1700MHz/LTE 4, 50% RB Mid, Low CH, Back Face/Zoom Scan (5x5x7)/Cube 0:**

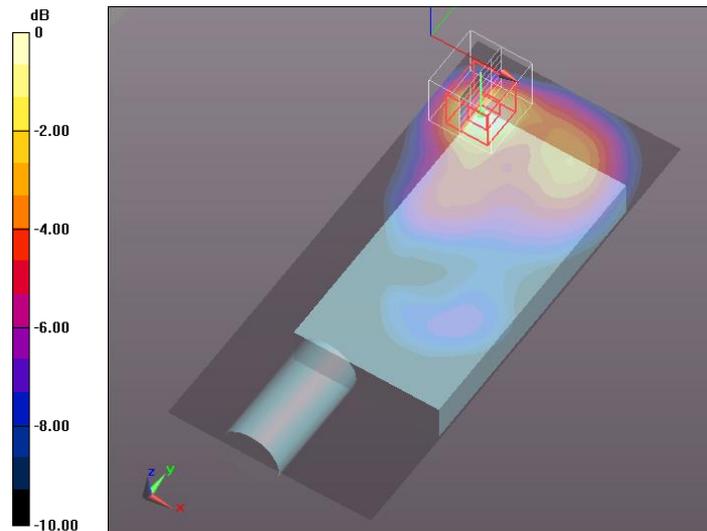
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.919 V/m; Power Drift = -0.13 dB

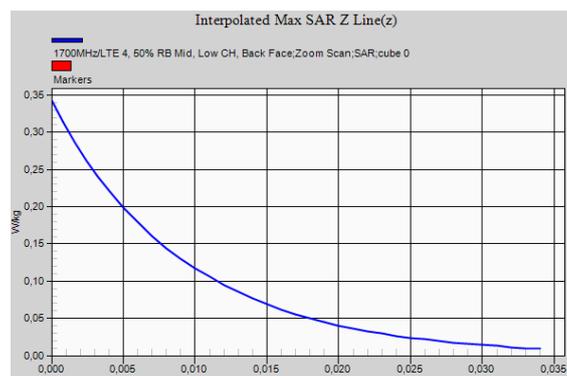
Peak SAR (extrapolated) = 0.342 W/kg

**SAR(1 g) = 0.202 W/kg; SAR(10 g) = 0.108 W/kg** (SAR corrected for target medium)

Maximum value of SAR (measured) = 0.221 W/kg



0 dB = 0.221 W/kg = -6.56 dBW/kg



**802.11b – Internal antenna – Left hand side – Cheek position – Plot N°29**

**Test Laboratory: DEKRA; Date: 14/02/2017**

**DUT: MX Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10415 - AAA, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle); Frequency: 2437 MHz; Duty Cycle: 1:1.42561

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.857$  S/m;  $\epsilon_r = 38.212$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(6.88, 6.88, 6.88); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/2450MHz/802.11b, 1Mbps, Mid CH, Cheek/Area Scan (111x181x1):**

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.123 W/kg

**Left Hand Side/2450MHz/802.11b, 1Mbps, Mid CH, Cheek/Zoom Scan (8x9x7)/Cube 0:**

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

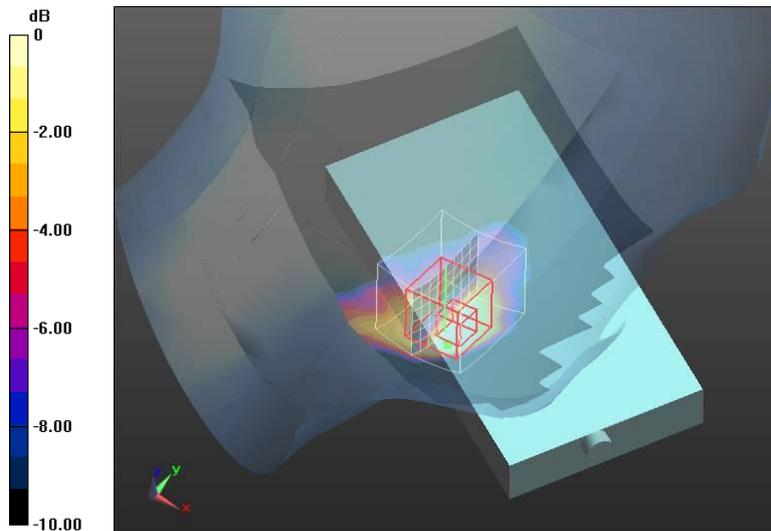
Reference Value = 7.030 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.186 W/kg

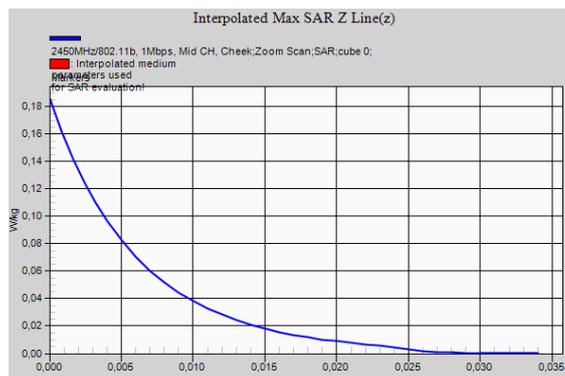
**SAR(1 g) = 0.087 W/kg; SAR(10 g) = 0.044 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0977 W/kg



0 dB = 0.0977 W/kg = -10.10 dBW/kg



**802.11b – Internal antenna – Left Edge 10 mm – Plot N°30**

**Test Laboratory: DEKRA; Date: 13/02/2017**

**DUT: MX Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10517 - AAA, IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle); Frequency: 2437 MHz; Duty Cycle: 1:1.4388

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.99$  S/m;  $\epsilon_r = 51.122$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(6.84, 6.84, 6.84); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom\_Edges, d=10 mm/2450MHz/802.11b, 1Mbps, Mid CH, Left Edge/Area Scan (81x181x1):**

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.260 W/kg

**Flat Phantom\_Edges, d=10 mm/2450MHz/802.11b, 1Mbps, Mid CH, Left Edge/Zoom Scan (7x7x7)/Cube 0:**

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

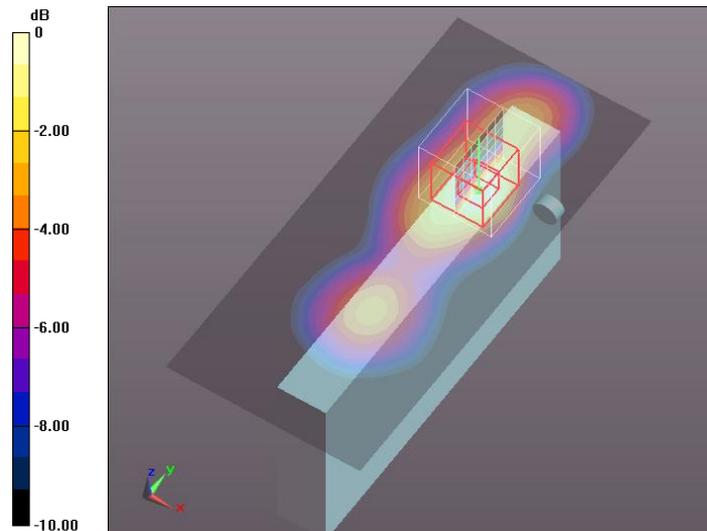
Reference Value = 5.584 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.402 W/kg

**SAR(1 g) = 0.209 W/kg; SAR(10 g) = 0.104 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.228 W/kg



0 dB = 0.228 W/kg = -6.42 dBW/kg



**802.11b – External antenna – Left hand side – Cheek position – Plot N°31**

**Test Laboratory: DEKRA; Date: 14/02/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10415 - AAA, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle); Frequency: 2437 MHz; Duty Cycle: 1:1.42561

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.857$  S/m;  $\epsilon_r = 38.212$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(6.88, 6.88, 6.88); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/2450MHz/802.11b, 1Mbps, Mid CH, Cheek/Area Scan (111x241x1):**

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.109 W/kg

**Left Hand Side/2450MHz/802.11b, 1Mbps, Mid CH, Cheek/Zoom Scan (7x8x7)/Cube 0:**

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

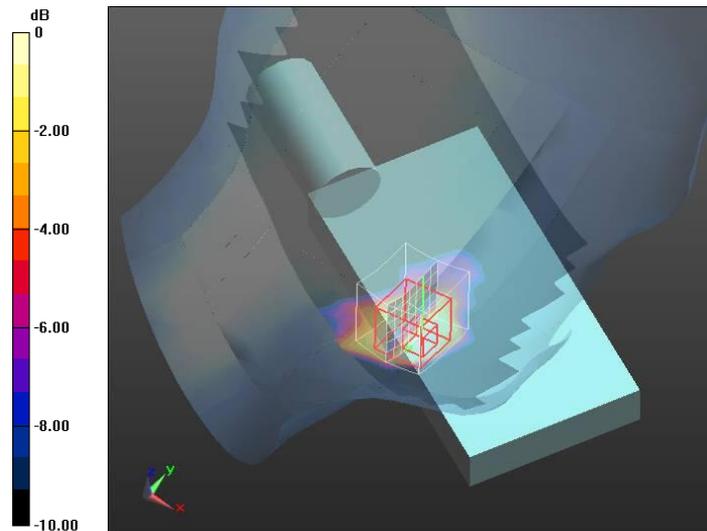
Reference Value = 6.825 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.177 W/kg

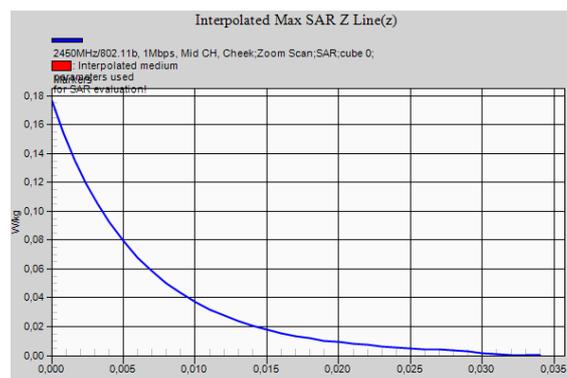
**SAR(1 g) = 0.082 W/kg; SAR(10 g) = 0.042 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0922 W/kg



0 dB = 0.0922 W/kg = -10.35 dBW/kg



**802.11b – External antenna – Left Edge 10 mm – Plot N°32**

**Test Laboratory: DEKRA; Date: 13/02/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10415 - AAA, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle); Frequency: 2437 MHz; Duty Cycle: 1:1.42561

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.99$  S/m;  $\epsilon_r = 51.122$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(6.84, 6.84, 6.84); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom\_Edges, d=10 mm/2450MHz/802.11b, 1Mbps, Mid CH, Left Edge/Area Scan (71x241x1):**

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.272 W/kg

**Flat Phantom\_Edges, d=10 mm/2450MHz/802.11b, 1Mbps, Mid CH, Left Edge/Zoom Scan (7x7x7)/Cube 0:**

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

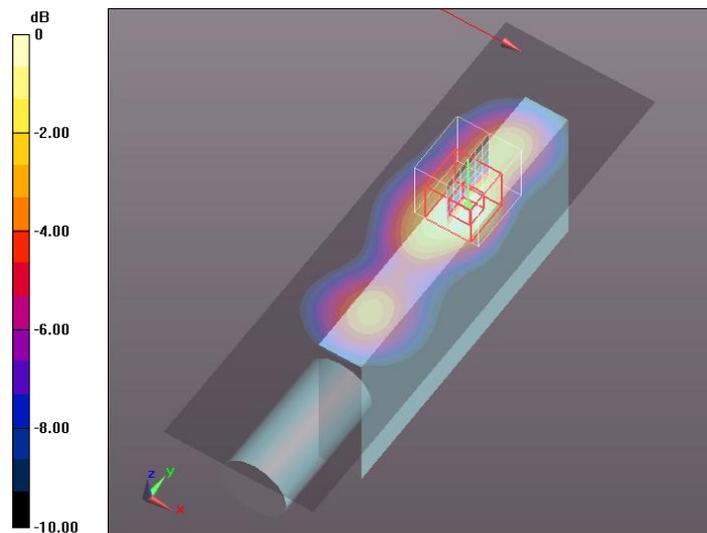
Reference Value = 5.471 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.404 W/kg

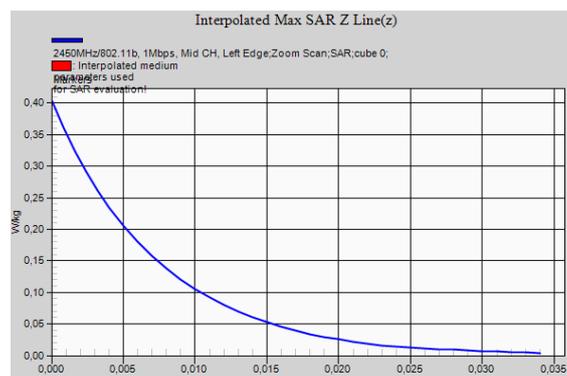
**SAR(1 g) = 0.207 W/kg; SAR(10 g) = 0.102 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.235 W/kg



0 dB = 0.235 W/kg = -6.29 dBW/kg



**Bluetooth – Internal antenna – Left hand side – Cheek position – Plot N°33**

**Test Laboratory: DEKRA; Date: 14/02/2017**

**DUT: MX Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10032 - CAA, IEEE 802.15.1 Bluetooth (GFSK, DH5); Frequency: 2441 MHz; Duty Cycle: 1:1.30617

Medium parameters used (interpolated):  $f = 2441$  MHz;  $\sigma = 1.861$  S/m;  $\epsilon_r = 38.196$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(6.88, 6.88, 6.88); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/2450MHz/Bluetooth BR, Mid CH, Cheek/Area Scan (11x181x1):**

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0538 W/kg

**Left Hand Side/2450MHz/Bluetooth BR, Mid CH, Cheek/Zoom Scan (9x9x7)/Cube 0:**

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

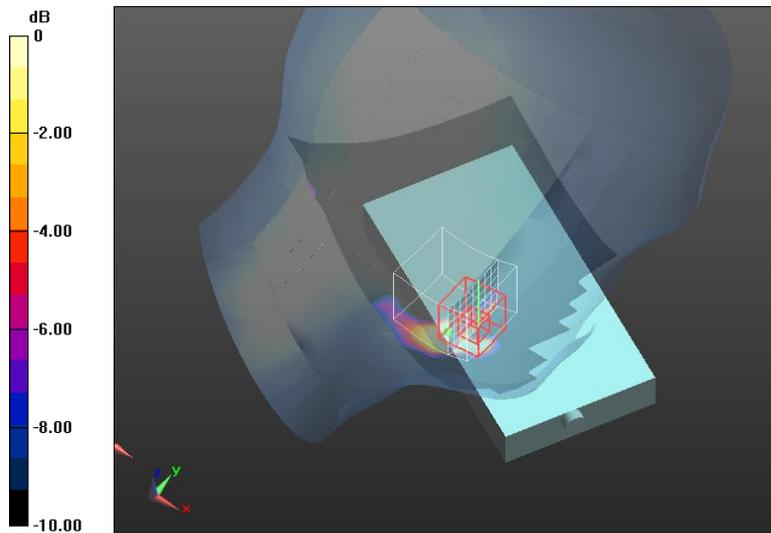
Reference Value = 3.381 V/m; Power Drift = 0.32 dB

Peak SAR (extrapolated) = 0.0490 W/kg

**SAR(1 g) = 0.025 W/kg; SAR(10 g) = 0.011 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0277 W/kg



0 dB = 0.0277 W/kg = -15.58 dBW/kg



**Bluetooth – Internal antenna – Left Edge 10 mm – Plot N°34**

**Test Laboratory: DEKRA; Date: 13/02/2017**

**DUT: MX Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10032 - CAA, IEEE 802.15.1 Bluetooth (GFSK, DH5); Frequency: 2441 MHz; Duty Cycle: 1:1.30617

Medium parameters used (interpolated):  $f = 2441$  MHz;  $\sigma = 1.991$  S/m;  $\epsilon_r = 51.067$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(6.84, 6.84, 6.84); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom\_Edges, d=10 mm/2450MHz/Bluetooth BR, Mid CH, Left Edge/Area Scan (81x181x1):**

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0489 W/kg

**Flat Phantom\_Edges, d=10 mm/2450MHz/Bluetooth BR, Mid CH, Left Edge/Zoom Scan (7x7x7)/Cube 0:**

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

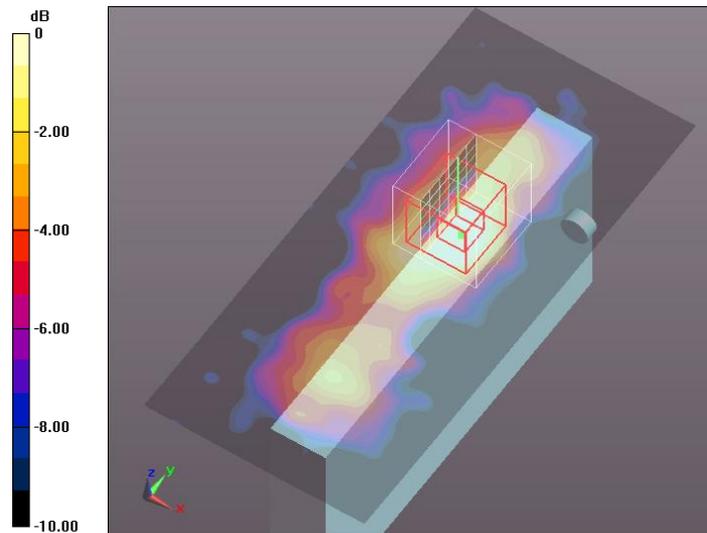
Reference Value = 3.034 V/m; Power Drift = -0.24 dB

Peak SAR (extrapolated) = 0.0870 W/kg

**SAR(1 g) = 0.039 W/kg; SAR(10 g) = 0.019 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0425 W/kg



0 dB = 0.0425 W/kg = -13.72 dBW/kg



**Bluetooth – External antenna – Left hand side – Cheek position – Plot N°35**

**Test Laboratory: DEKRA; Date: 14/02/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10032 - CAA, IEEE 802.15.1 Bluetooth (GFSK, DH5); Frequency: 2441 MHz; Duty Cycle: 1:1.30617

Medium parameters used (interpolated):  $f = 2441$  MHz;  $\sigma = 1.861$  S/m;  $\epsilon_r = 38.196$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(6.88, 6.88, 6.88); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/2450MHz/Bluetooth BR, Mid CH, Cheek/Area Scan (111x241x1):**

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0455 W/kg

**Left Hand Side/2450MHz/Bluetooth BR, Mid CH, Cheek/Zoom Scan (8x9x7)/Cube 0:**

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

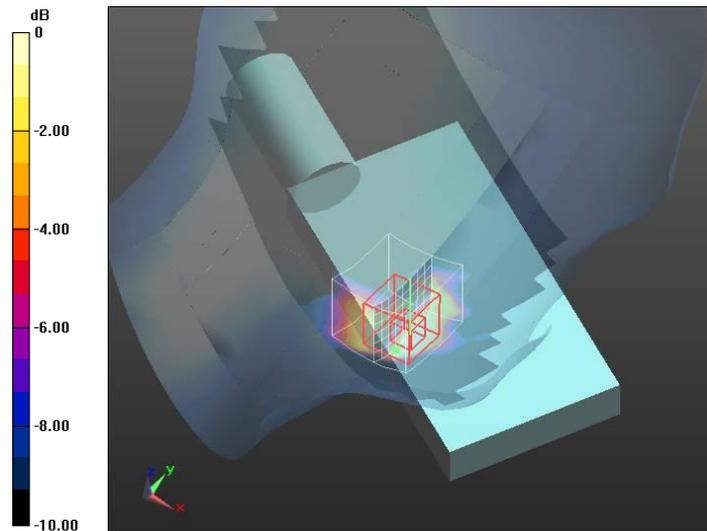
Reference Value = 4.009 V/m; Power Drift = 0.22 dB

Peak SAR (extrapolated) = 0.0560 W/kg

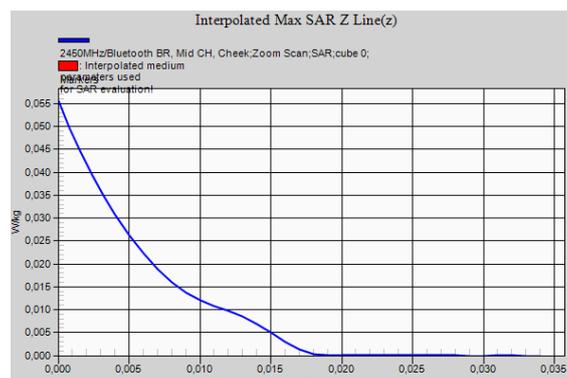
**SAR(1 g) = 0.027 W/kg; SAR(10 g) = 0.012 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0301 W/kg



0 dB = 0.0301 W/kg = -15.21 dBW/kg



**Bluetooth – External antenna – Left Edge 10 mm – Plot N°36**

**Test Laboratory: DEKRA; Date: 13/02/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10032 - CAA, IEEE 802.15.1 Bluetooth (GFSK, DH5); Frequency: 2441 MHz; Duty Cycle: 1:1.30617

Medium parameters used (interpolated):  $f = 2441$  MHz;  $\sigma = 1.991$  S/m;  $\epsilon_r = 51.067$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(6.84, 6.84, 6.84); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom\_Edges, d=10 mm/2450MHz/Bluetooth BR, Mid CH, Left Edge/Area Scan (71x241x1):**

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0504 W/kg

**Flat Phantom\_Edges, d=10 mm/2450MHz/Bluetooth BR, Mid CH, Left Edge/Zoom Scan (7x7x7)/Cube 0:**

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

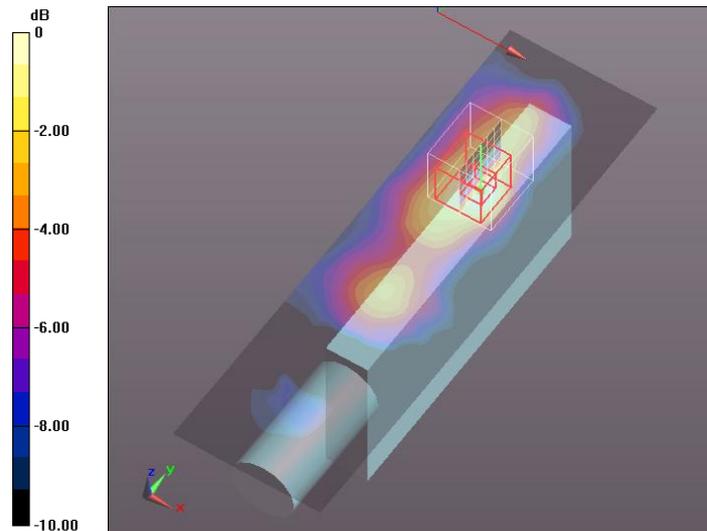
Reference Value = 3.883 V/m; Power Drift = 0.20 dB

Peak SAR (extrapolated) = 0.0790 W/kg

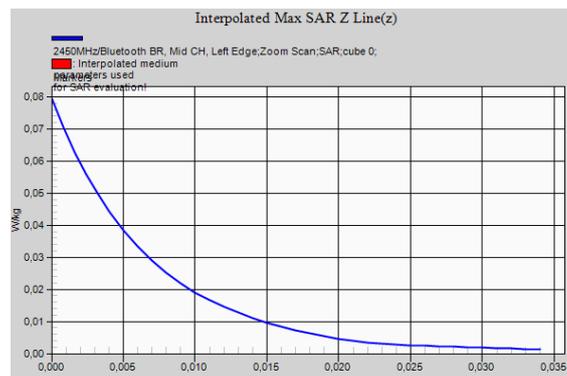
**SAR(1 g) = 0.039 W/kg; SAR(10 g) = 0.019 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0445 W/kg



0 dB = 0.0445 W/kg = -13.52 dBW/kg



### Satellite L-Band – Internal antenna – Right hand side – Tilt position – Plot N°37

**Test Laboratory: DEKRA; Date: 10/02/2017**

**DUT: MX Smart; Type: Smartphone; Serial: PSN:270**

Communication System: UID 0, L-Band Head (0); Frequency: 1626.53 MHz; Duty Cycle: 1:6.64049

Medium parameters used (interpolated):  $f = 1626.53$  MHz;  $\sigma = 1.29$  S/m;  $\epsilon_r = 40.235$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(8.1, 8.1, 8.1); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

#### **Right Hand Side/1640MHz/L-Band, Low CH,Tilt/Area Scan (71x121x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.637 W/kg

#### **Right Hand Side/1640MHz/L-Band, Low CH,Tilt/Zoom Scan (5x5x7)/Cube 0:**

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

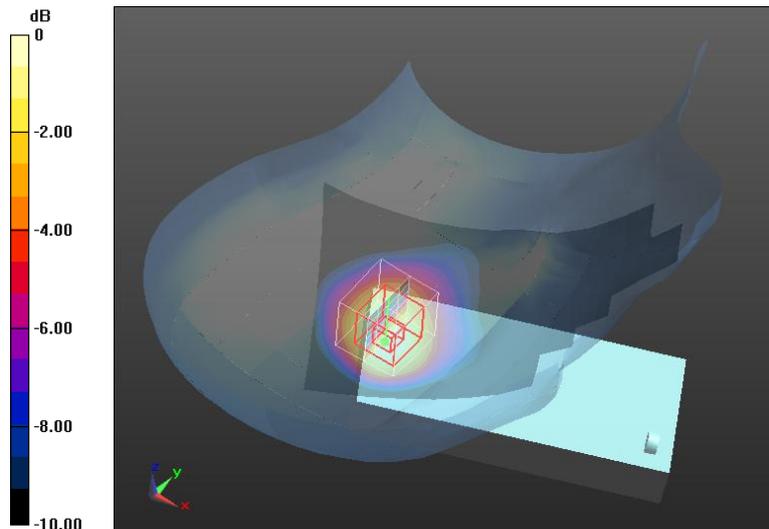
Reference Value = 20.17 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.761 W/kg

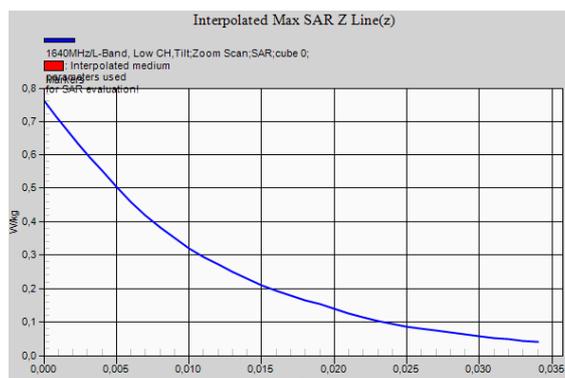
**SAR(1 g) = 0.498 W/kg; SAR(10 g) = 0.300 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.544 W/kg



0 dB = 0.544 W/kg = -2.64 dBW/kg



**Satellite L-Band – Internal antenna – Right Edge 10 mm – Plot N°38**

**Test Laboratory: DEKRA; Date: 31/01/2017**

**DUT: MexSat; Type: Smartphone; Serial: PSN:270**

Communication System: UID 0, L-Band (0); Frequency: 1626.53 MHz; Duty Cycle: 1:4.16677

Medium parameters used (interpolated):  $f = 1626.53$  MHz;  $\sigma = 1.42$  S/m;  $\epsilon_r = 53.141$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.73, 7.73, 7.73); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom\_Edges, d=10 mm/1640MHz/L-Band, Low CH, Right Edge/Area Scan (51x121x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.20 W/kg

**Flat Phantom\_Edges, d=10 mm/1640MHz/L-Band, Low CH, Right Edge/Zoom Scan (5x5x7)/Cube 0:**

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

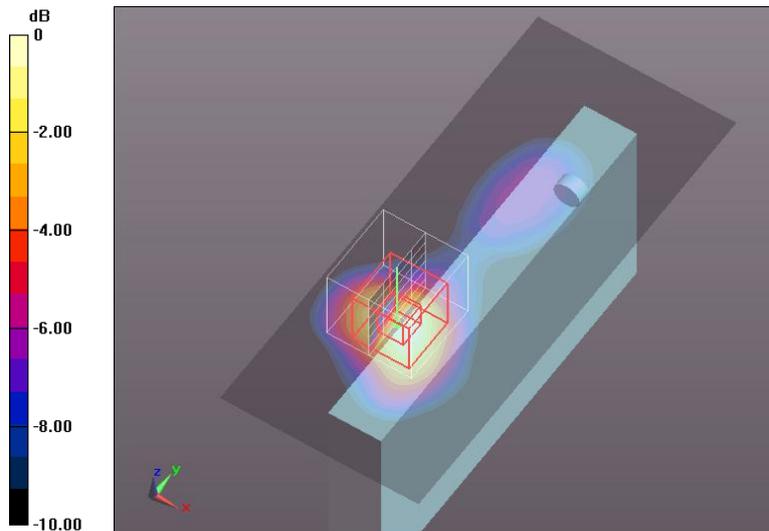
Reference Value = 8.698 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.87 W/kg

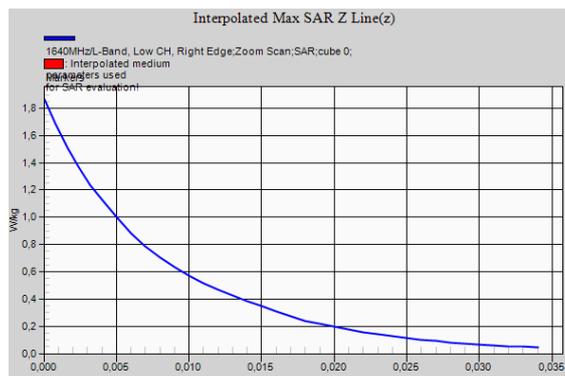
**SAR(1 g) = 0.994 W/kg; SAR(10 g) = 0.509 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.12 W/kg



0 dB = 1.12 W/kg = 0.49 dBW/kg



### Satellite L-Band – External antenna – Right hand side – Tilt position – Plot N°39

**Test Laboratory: DEKRA; Date: 10/02/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 0, L-Band Head (0); Frequency: 1626.53 MHz; Duty Cycle: 1:6.64049

Medium parameters used (interpolated):  $f = 1626.53$  MHz;  $\sigma = 1.29$  S/m;  $\epsilon_r = 40.235$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(8.1, 8.1, 8.1); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

#### **Right Hand Side/1640MHz/L-Band, Low CH,Tilt/Area Scan (71x161x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.79 W/kg

#### **Right Hand Side/1640MHz/L-Band, Low CH,Tilt/Zoom Scan (7x7x7)/Cube 0:**

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

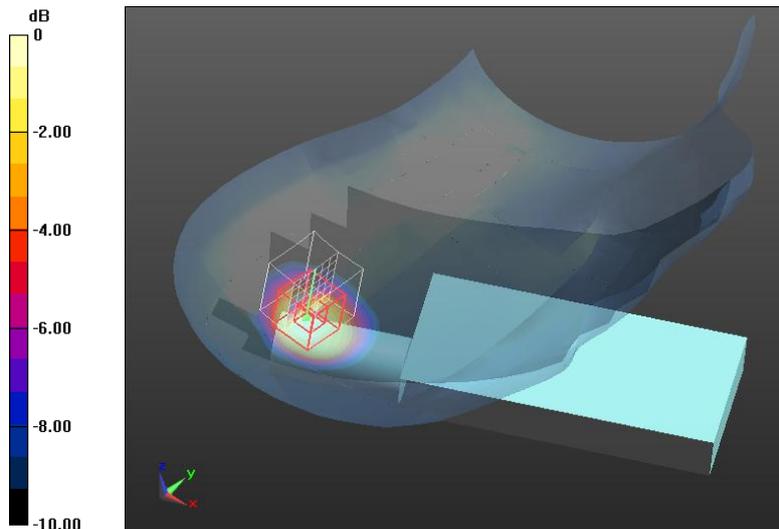
Reference Value = 30.35 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 2.86 W/kg

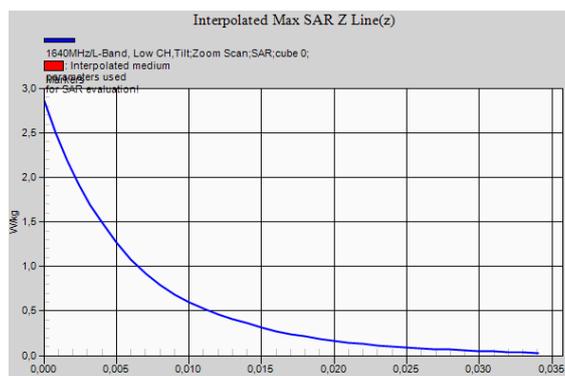
**SAR(1 g) = 1.4 W/kg; SAR(10 g) = 0.747 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.54 W/kg



0 dB = 1.54 W/kg = 1.88 dBW/kg



## Satellite L-Band – External antenna – Top Edge 10 mm – Plot N°40

Test Laboratory: DEKRA; Date: 31/01/2017

DUT: MexSat+Ant; Type: Smartphone; Serial: PSN:270

Communication System: UID 0, L-Band (0); Frequency: 1626.53 MHz; Duty Cycle: 1:4.16677

Medium parameters used (interpolated):  $f = 1626.53$  MHz;  $\sigma = 1.42$  S/m;  $\epsilon_r = 53.141$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.73, 7.73, 7.73); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

### Flat Phantom, d=10mm/1640MHz/L-Band, Low CH, Top Edge/Area Scan (61x71x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.17 W/kg

### Flat Phantom, d=10mm/1640MHz/L-Band, Low CH, Top Edge/Zoom Scan (5x5x7)/Cube 0:

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

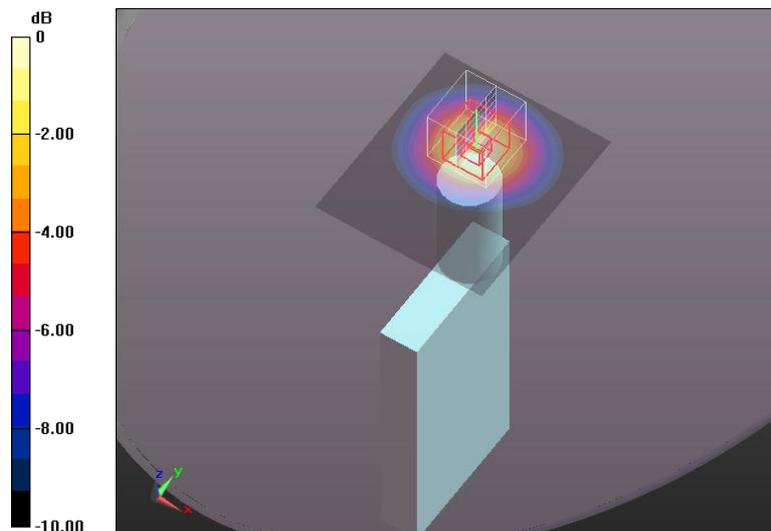
Reference Value = 4.486 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.50 W/kg

**SAR(1 g) = 0.972 W/kg; SAR(10 g) = 0.568 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



0 dB = 1.08 W/kg = 0.33 dBW/kg



**GSM/GPRS/EDGE 850 MHz – External antenna – Body – Back Face 10 mm – Variability – Plot N°41**

**Test Laboratory: DEKRA; Date: 03/02/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10024 - DAB, GPRS-FDD (TDMA, GMSK, TN 0-1); Frequency: 836.6 MHz; Duty Cycle: 1:4.52898

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.97$  S/m;  $\epsilon_r = 54.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(8.59, 8.59, 8.59); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, d=10mm/850MHz/GPRS 2 slots, Mid CH, Back Face, Variability/Area Scan (71x161x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.50 W/kg

**Flat Phantom, d=10mm/850MHz/GPRS 2 slots, Mid CH, Back Face, Variability/Zoom Scan (5x5x7)/Cube 0:**

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

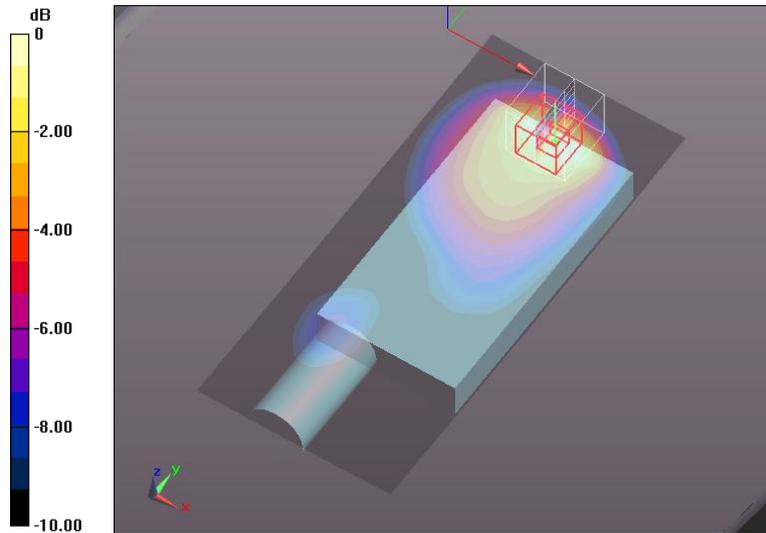
Reference Value = 35.01 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.92 W/kg

**SAR(1 g) = 1.22 W/kg; SAR(10 g) = 0.750 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



0 dB = 1.35 W/kg = 1.30 dBW/kg



**Satellite L-Band – Right hand side – Tilt position – Variability – Plot N°42**

**Test Laboratory: DEKRA; Date: 10/02/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 0, L-Band Head (0); Frequency: 1626.53 MHz; Duty Cycle: 1:6.64049

Medium parameters used (interpolated):  $f = 1626.53$  MHz;  $\sigma = 1.29$  S/m;  $\epsilon_r = 40.235$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(8.1, 8.1, 8.1); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Right Hand Side/1640MHz/L-Band, Low CH,Tilt Variability/Area Scan (71x161x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.90 W/kg

**Right Hand Side/1640MHz/L-Band, Low CH,Tilt Variability/Zoom Scan (7x7x7)/Cube 0:**

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

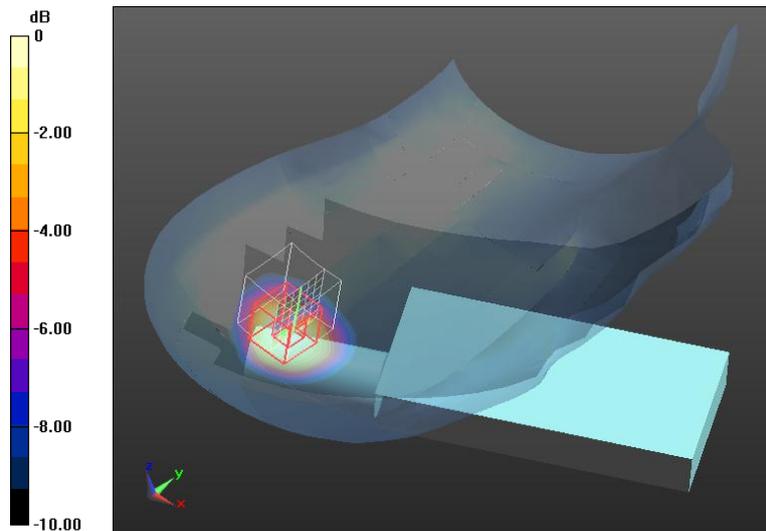
Reference Value = 29.22 V/m; Power Drift = 0.21 dB

Peak SAR (extrapolated) = 3.34 W/kg

**SAR(1 g) = 1.44 W/kg; SAR(10 g) = 0.741 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.59 W/kg



0 dB = 1.59 W/kg = 2.01 dBW/kg



**WCDMA Band II – External antenna – Left hand side – Cheek position – Variability – Plot N°43**

**Test Laboratory: DEKRA; Date: 09/02/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1880 MHz; Duty Cycle: 1:1.95434

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.45$  S/m;  $\epsilon_r = 38.59$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.31, 7.31, 7.31); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/1900MHz/WCDMA II, Mid CH, Cheek , variability/Area Scan (71x161x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.28 W/kg

**Left Hand Side/1900MHz/WCDMA II, Mid CH, Cheek , variability/Zoom Scan (5x5x7)/Cube 0:**

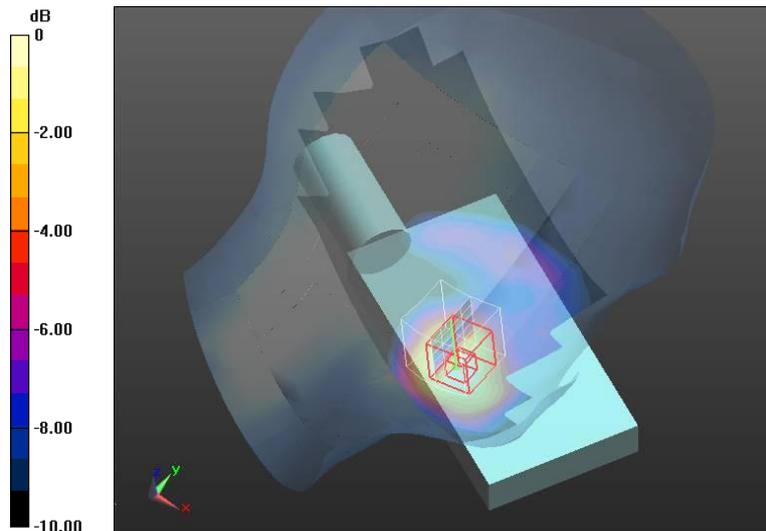
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.53 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 1.79 W/kg

**SAR(1 g) = 1.07 W/kg; SAR(10 g) = 0.625 W/kg** (SAR corrected for target medium)

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



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



## WCDMA Band II – External antenna – Body – Left Edge 10 mm – Variability – Plot N°44

**Test Laboratory: DEKRA; Date: 08/02/2017**

**DUT: MX Smart+Ant; Type: Smartphone; Serial: PSN:270**

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1907.6 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated):  $f = 1907.6$  MHz;  $\sigma = 1.56$  S/m;  $\epsilon_r = 54.532$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.19, 7.19, 7.19); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

### **Flat Phantom\_Edges, d=10 mm/1900MHz/WCDMA II, High CH, Left Edge, Variability/Area Scan (51x161x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.36 W/kg

### **Flat Phantom\_Edges, d=10 mm/1900MHz/WCDMA II, High CH, Left Edge, Variability/Zoom Scan (5x5x7)/Cube 0:**

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

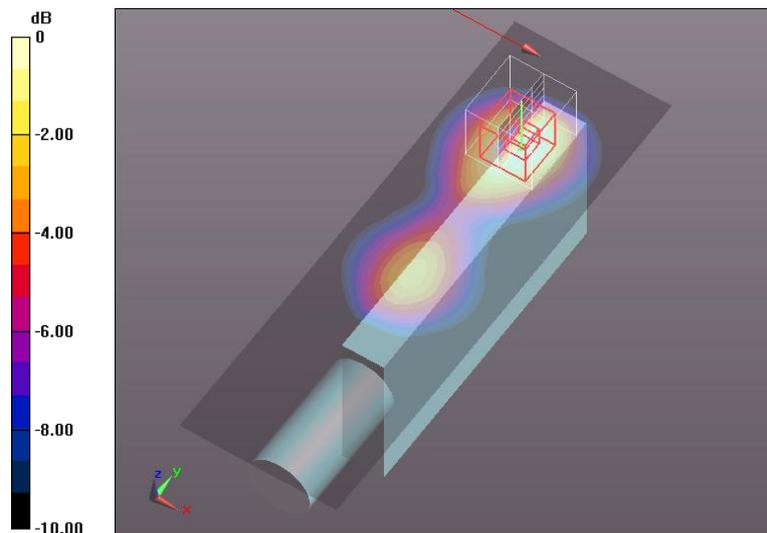
Reference Value = 14.15 V/m; Power Drift = 0.23 dB

Peak SAR (extrapolated) = 1.68 W/kg

**SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.578 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.09 W/kg



0 dB = 1.09 W/kg = 0.37 dBW/kg



## Appendix D – System Validation Reports

## Validation results in 900 MHz Band for Head TSL

Test Laboratory: DEKRA; Date: 06/02/2017

DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:1d007

Communication System: UID 0, CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 900$  MHz;  $\sigma = 0.97$  S/m;  $\epsilon_r = 40.73$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(8.25, 8.25, 8.25); Calibrated: 26/07/2016;

- Sensor-Surface: 3mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn669; Calibrated: 18/07/2016

- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---

- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Head 900MHz, 2017-02-06/d=15mm, Pin=250 mW/Area Scan (61x91x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 3.25 W/kg

Head 900MHz, 2017-02-06/d=15mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

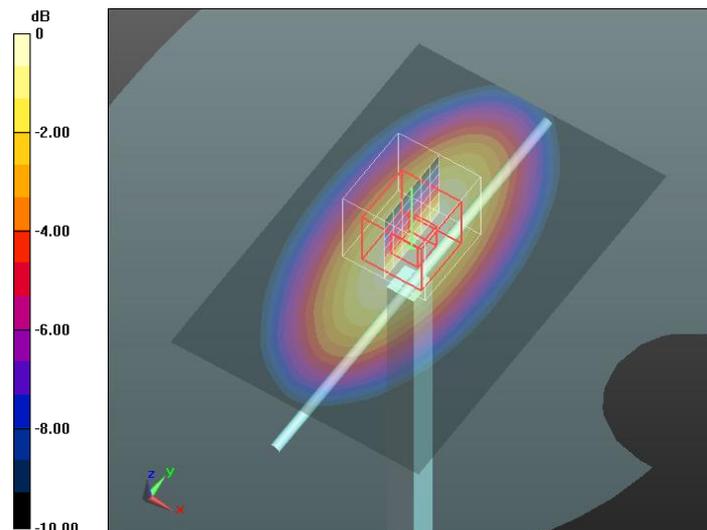
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 58.92 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 4.25 W/kg

SAR(1 g) = 2.79 W/kg; SAR(10 g) = 1.8 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 3.29 W/kg



0 dB = 3.29 W/kg = 5.17 dBW/kg



## Validation results in 900 MHz Band for Body TSL

**Test Laboratory: DEKRA; Date: 02/02/2017**

**DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:1d007**

Communication System: UID 0, CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 900$  MHz;  $\sigma = 1.04$  S/m;  $\epsilon_r = 53.49$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(8.49, 8.49, 8.49); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Body 900MHz, 2017-02-02/d=15mm, Pin=250 mW/Area Scan (61x91x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 3.20 W/kg

**Body 900MHz, 2017-02-02/d=15mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:**

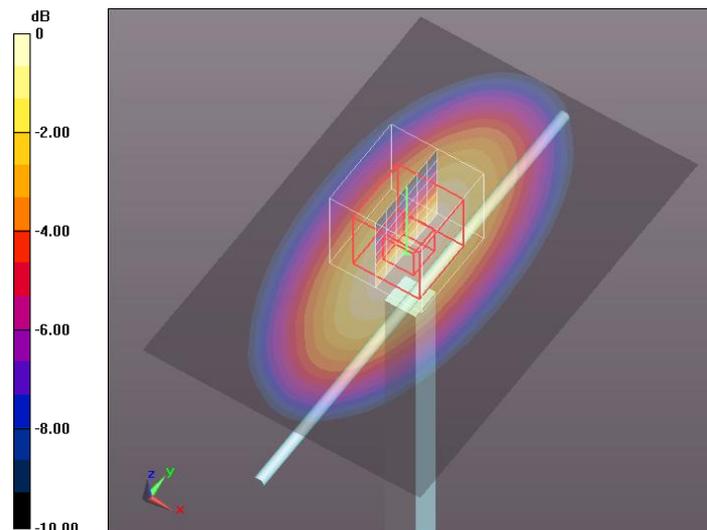
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.95 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 4.16 W/kg

**SAR(1 g) = 2.77 W/kg; SAR(10 g) = 1.81 W/kg** (SAR corrected for target medium)

Maximum value of SAR (measured) = 3.24 W/kg



0 dB = 3.24 W/kg = 5.11 dBW/kg



## Validation results in 1640 MHz Band for Head TSL

Test Laboratory: DEKRA; Date: 09/02/2017

DUT: Dipole 1640 MHz D1640V2; Type: D1640V2; Serial: D1640V2 - SN: 333

Communication System: UID 0, CW (0); Frequency: 1640 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1640$  MHz;  $\sigma = 1.3$  S/m;  $\epsilon_r = 40.18$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(8.1, 8.1, 8.1); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Head 1640MHz, 2017-02-09/d=10mm, Pin=250 mW/Area Scan (91x91x1):

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

Maximum value of SAR (interpolated) = 9.78 W/kg

Head 1640MHz, 2017-02-09/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

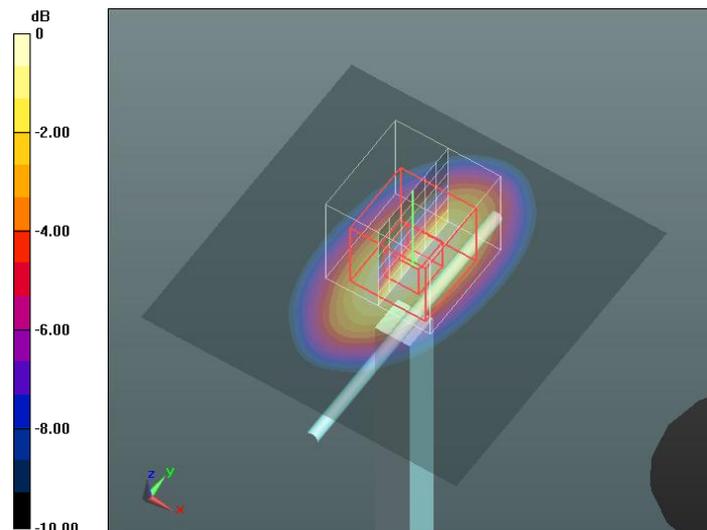
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 86.39 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 14.4 W/kg

SAR(1 g) = 7.95 W/kg; SAR(10 g) = 4.26 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 10.0 W/kg



0 dB = 10.0 W/kg = 10.00 dBW/kg



## Validation results in 1640 MHz Band for Body TSL

**Test Laboratory: DEKRA; Date: 31/01/2017**

**DUT: Dipole 1640 MHz D1640V2; Type: D1640V2; Serial: D1640V2 - SN333**

Communication System: UID 0, CW (0); Frequency: 1640 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1640$  MHz;  $\sigma = 1.43$  S/m;  $\epsilon_r = 53.02$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.73, 7.73, 7.73); Calibrated: 26/07/2016;

- Sensor-Surface: 3mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn669; Calibrated: 18/07/2016

- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060

- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Body 1640MHz, 2017-01-31/d=10mm, Pin=250 mW/Area Scan (91x91x1):**

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

Maximum value of SAR (interpolated) = 10.1 W/kg

**Body 1640MHz, 2017-01-31/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:**

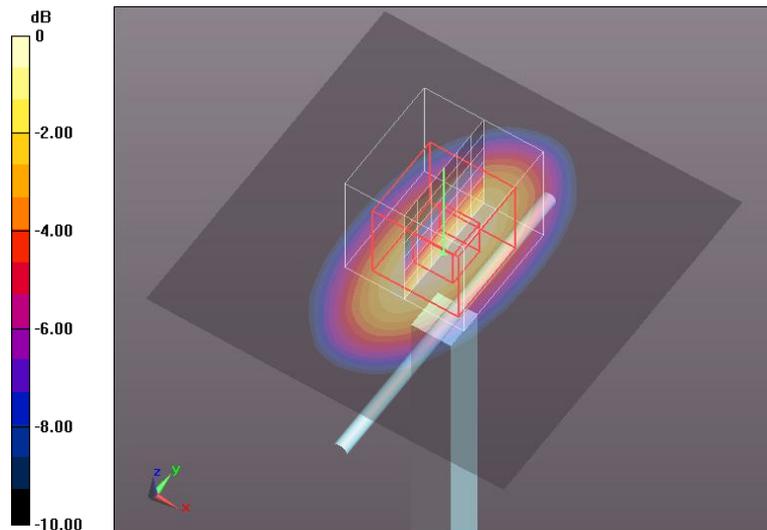
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 84.73 V/m; Power Drift = -0.01 dB

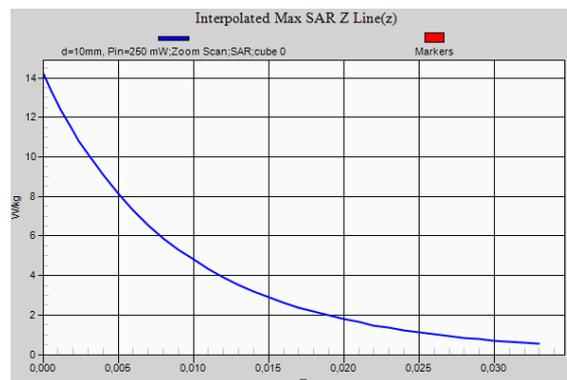
Peak SAR (extrapolated) = 14.2 W/kg

**SAR(1 g) = 8.07 W/kg; SAR(10 g) = 4.39 W/kg** (SAR corrected for target medium)

Maximum value of SAR (measured) = 10.1 W/kg



0 dB = 10.1 W/kg = 10.04 dBW/kg



## Validation results in 1800 MHz Band for Head TSL

Test Laboratory: DEKRA; Date: 25/01/2017

DUT: Dipole 1800 MHz D1800V2; Type: D1800V2; Serial: D1800V2 - SN:2d099

Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1800 \text{ MHz}$ ;  $\sigma = 1.41 \text{ S/m}$ ;  $\epsilon_r = 38.92$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.63, 7.63, 7.63); Calibrated: 26/07/2016;

- Sensor-Surface: 3mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn669; Calibrated: 18/07/2016

- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---

- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Head 1800MHz, 2017-01-25/d=10mm, Pin=250 mW/Area Scan (91x91x1):

Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 11.8 W/kg

Head 1800MHz, 2017-01-25/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

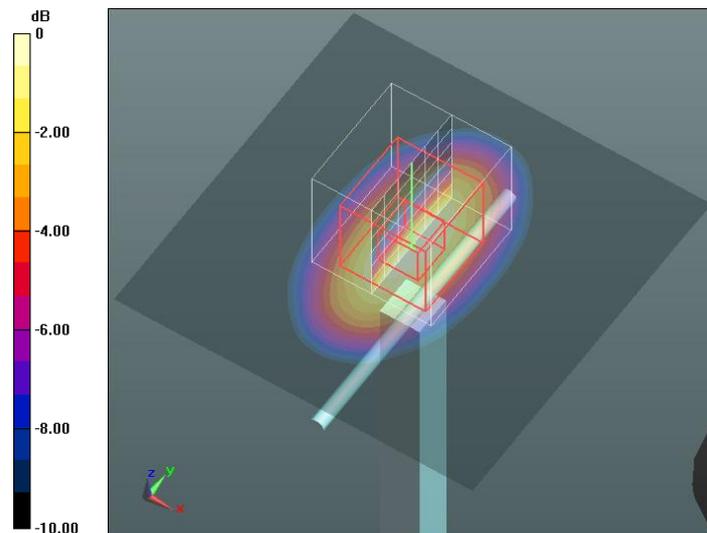
Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 91.61 V/m; Power Drift = 0.04 dB

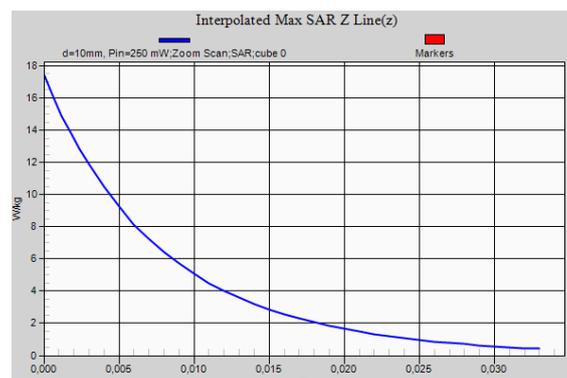
Peak SAR (extrapolated) = 17.4 W/kg

SAR(1 g) = 9.24 W/kg; SAR(10 g) = 4.79 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 11.9 W/kg



0 dB = 11.9 W/kg = 10.76 dBW/kg



## Validation results in 1800 MHz Band for Head TSL

**Test Laboratory: DEKRA; Date: 08/02/2017**

**DUT: Dipole 1800 MHz D1800V2; Type: D1800V2; Serial: D1800V2 - SN:2d099**

Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1  
 Medium parameters used:  $f = 1800 \text{ MHz}$ ;  $\sigma = 1.42 \text{ S/m}$ ;  $\epsilon_r = 38.86$ ;  $\rho = 1000 \text{ kg/m}^3$   
 Phantom section: Flat Section

DASY5 Configuration:

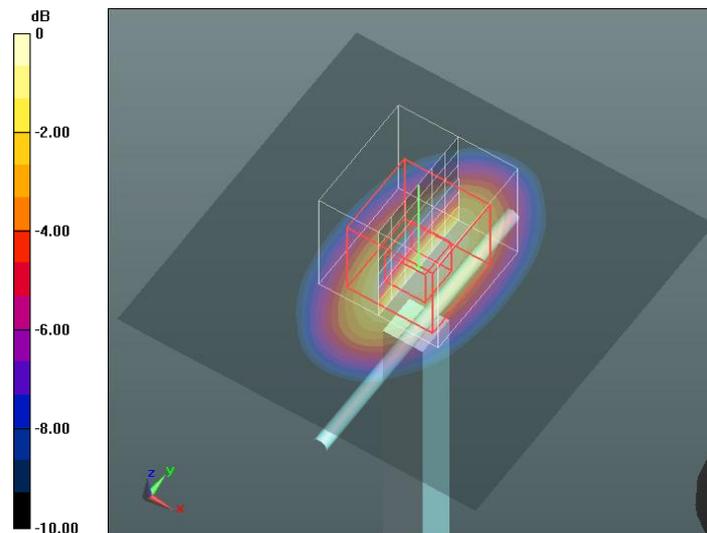
- Probe: EX3DV4 - SN3687; ConvF(7.63, 7.63, 7.63); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Head 1800MHz, 2017-02-08/d=10mm, Pin=250 mW/Area Scan (91x91x1):**

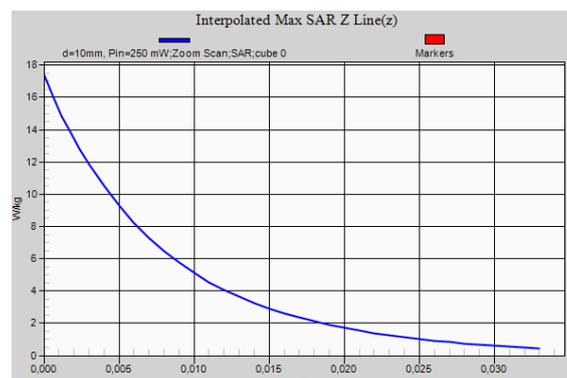
Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$   
 Maximum value of SAR (interpolated) =  $11.8 \text{ W/kg}$

**Head 1800MHz, 2017-02-08/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$   
 Reference Value =  $90.99 \text{ V/m}$ ; Power Drift =  $0.08 \text{ dB}$   
 Peak SAR (extrapolated) =  $17.4 \text{ W/kg}$   
**SAR(1 g) =  $9.31 \text{ W/kg}$ ; SAR(10 g) =  $4.85 \text{ W/kg}$**  (SAR corrected for target medium)  
 Maximum value of SAR (measured) =  $11.9 \text{ W/kg}$



0 dB =  $11.9 \text{ W/kg} = 10.76 \text{ dBW/kg}$



## Validation results in 1800 MHz Band for Body TSL

Test Laboratory: DEKRA; Date: 26/01/2017

DUT: Dipole 1800 MHz D1800V2; Type: D1800V2; Serial: D1800V2 - SN:2d099

Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1800$  MHz;  $\sigma = 1.53$  S/m;  $\epsilon_r = 55.72$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.25, 7.25, 7.25); Calibrated: 26/07/2016;

- Sensor-Surface: 3mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn669; Calibrated: 18/07/2016

- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060

- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Body 1800MHz, 2017-01-26/d=10mm, Pin=250 mW/Area Scan (91x91x1):

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

Maximum value of SAR (interpolated) = 12.0 W/kg

Body 1800MHz, 2017-01-26/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

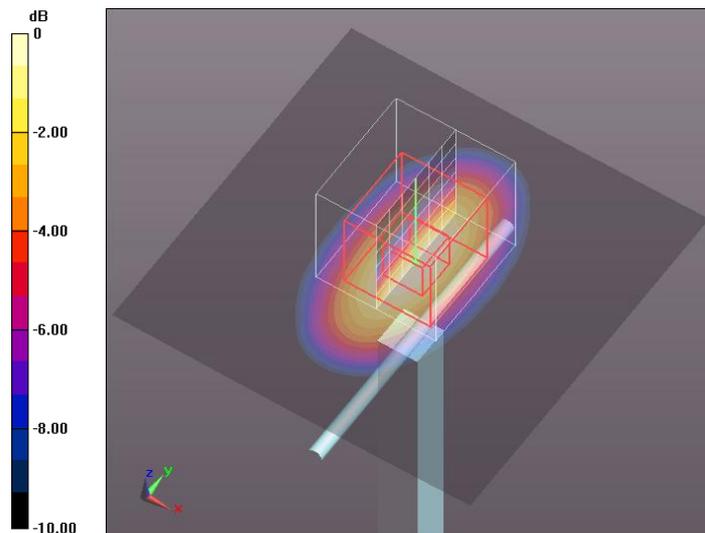
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 88.94 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 16.4 W/kg

SAR(1 g) = 9.33 W/kg; SAR(10 g) = 4.9 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 11.8 W/kg



0 dB = 11.8 W/kg = 10.72 dBW/kg



## Validation results in 1800 MHz Band for Body TSL

**Test Laboratory: DEKRA; Date: 07/02/2017**

**DUT: Dipole 1800 MHz D1800V2; Type: D1800V2; Serial: D1800V2 - SN:2d099**

Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1800 \text{ MHz}$ ;  $\sigma = 1.52 \text{ S/m}$ ;  $\epsilon_r = 55.02$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(7.25, 7.25, 7.25); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Body 1800MHz, 2017-02-07/d=10mm, Pin=250 mW/Area Scan (91x91x1):**

Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) =  $11.9 \text{ W/kg}$

**Body 1800MHz, 2017-02-07/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:**

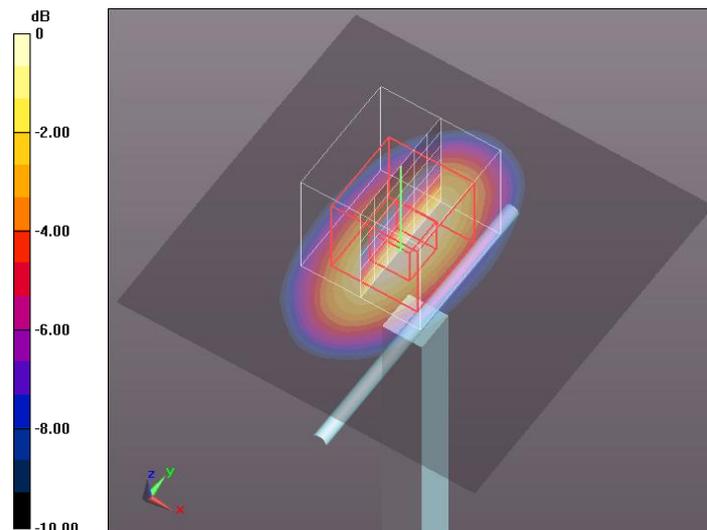
Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $84.90 \text{ V/m}$ ; Power Drift =  $0.09 \text{ dB}$

Peak SAR (extrapolated) =  $16.5 \text{ W/kg}$

**SAR(1 g) =  $9.29 \text{ W/kg}$ ; SAR(10 g) =  $4.91 \text{ W/kg}$**  (SAR corrected for target medium)

Maximum value of SAR (measured) =  $11.7 \text{ W/kg}$



0 dB =  $11.7 \text{ W/kg} = 10.68 \text{ dBW/kg}$



## Validation results in 2450 MHz Band for Head TSL

Test Laboratory: DEKRA; Date: 14/02/2017

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:756

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.87$  S/m;  $\epsilon_r = 38.16$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(6.88, 6.88, 6.88); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Head 2450MHz, 2017-02-14/d=10mm, Pin=250 mW/Area Scan (91x91x1):

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

Maximum value of SAR (interpolated) = 17.2 W/kg

Head 2450MHz, 2017-02-14/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

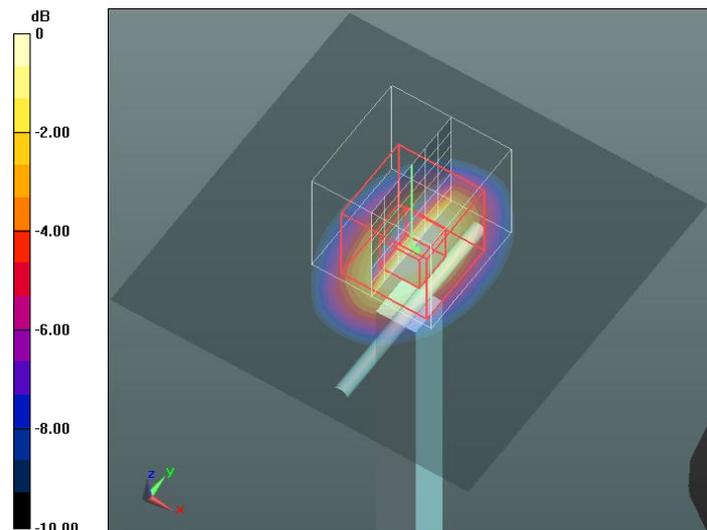
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 97.01 V/m; Power Drift = -0.06 dB

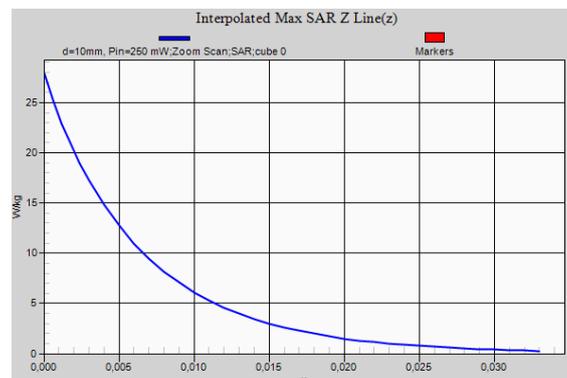
Peak SAR (extrapolated) = 27.9 W/kg

SAR(1 g) = 12.9 W/kg; SAR(10 g) = 5.9 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 17.3 W/kg



0 dB = 17.3 W/kg = 12.38 dBW/kg



## Validation results in 2450 MHz Band for Body TSL

Test Laboratory: DEKRA; Date: 13/02/2017

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:756

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 2$  S/m;  $\epsilon_r = 50.95$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3687; ConvF(6.84, 6.84, 6.84); Calibrated: 26/07/2016;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 18/07/2016
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Body 2450MHz, 2017-02-13/d=10mm, Pin=250 mW/Area Scan (91x91x1):

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

Maximum value of SAR (interpolated) = 16.3 W/kg

Body 2450MHz, 2017-02-13/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

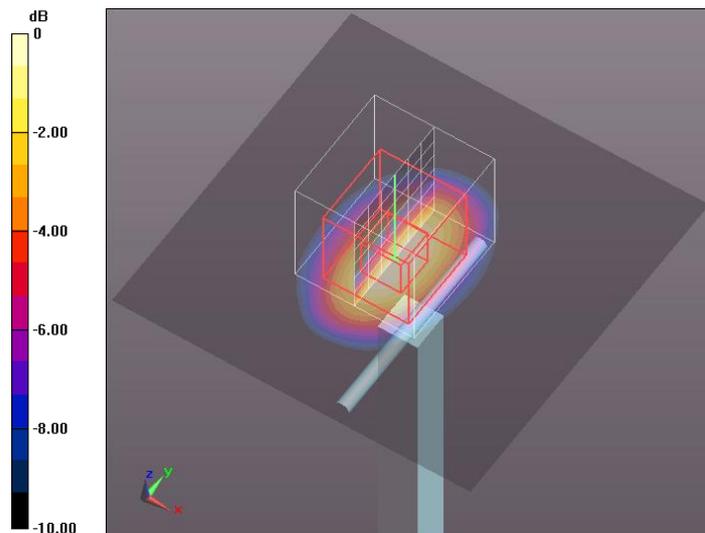
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 89.10 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 25.2 W/kg

SAR(1 g) = 12.1 W/kg; SAR(10 g) = 5.55 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 16.1 W/kg



0 dB = 16.1 W/kg = 12.07 dBW/kg

