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DEKRA

ENAC ENSAYOS Nº 51/LE147

Test report No:
NIE: 57478RAN.001

Test report
IEEE Std 1528™-2013

(*) Identification of item tested	Secure Smartphone
(*) Trademark	Bittium
(*) Model and /or type reference tested	Though Mobile 2
Other identification of the product	FCC ID: V27SD-61 IC: 3282B-SD61
(*) Features	GSM/GPRS/EDGE, UMTS/HSPA, LTE Wi-Fi 802.11 a/b/g/n/ac (2.4 and 5 GHz), 2 x 2 MIMO BT 5.0, NFC
Manufacturer	BITTIUM WIRELESS OY Ritaharjuntie 1, 90590 Oulu, Finland
Test method requested, standard	1. IEEE Std 1528™-2013: Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques. 2. FCC 47 CFR Part 2.1093. (10-1-15 Edition) Radiofrequency radiation exposure evaluation: portable devices. 3. ISED RSS-102 Issue 5 (2015-03) – Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)
Summary	Considering the results of the performed test according to IEEE Std 1528™-2013, the item under test is IN COMPLIANCE with FCC 47CFR Part 2.1093 and IC RSS-102 Issue 5 exposure limits. The maximum 1g volume averaged SAR found during this test for head exposure condition has been 1.301 W/kg, for 802.11b mode. The maximum 1g volume averaged SAR found during this test for body exposure condition has been 1.443 W/kg, for LTE Band 7.
Approved by (name / position & signature)	Rafael López EMC Consumer & RF Lab. Manager RAFAEL LÓPEZ MARTÍN 2019.08.05 12:41:34 +02'00'
Date of issue	2019-08-05
Report template No	FDT08_22 (*) "Data provided by the client"

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Competences and guarantees

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DEKRA Testing and Certification 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 Testing and Certification at the time of performance of the test.

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

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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 Testing and Certification.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Testing and Certification 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).

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested").
2. Maximum output power information.
3. Test separation distance for body-worn measurements.

DEKRA declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Instrumentation

The instrumentation utilized to perform the tests covered in this test report is listed in the following table.

Equipment	S/N
Dosimetric E-field probe SPEAG EX3DV4	7461
Data acquisition device SPEAG DAE4	669
Electro-optical converter SPEAG EOC3	391
Robot Stäubli RX60BL, Robot controller Stäubli CS7MB	F04/SOP5A1/A/01
Measurement server SPEAG DASY5 SE UMS 011 BS	1227
SAM head-body simulator TWIN SAM V4.0	-
SAR measurement software SPEAG DASY52 V52.8.8.1222	-
SAR postprocessing software SPEAG SEMCAD X	-
750 MHz dipole validation kit SPEAG D750V3	1036
900 MHz dipole validation kit SPEAG D900V2	1D007
1800 MHz dipole validation kit SPEAG D1800V2	2D099
2000 MHz dipole validation kit SPEAG D2000V2	1021
2450 MHz dipole validation kit SPEAG D2450V2	756
2600 MHz dipole validation kit SPEAG D2600V2	1023
5 GHZ dipole validation kit SEPAG D5GHzV2	1071
Head Tissue Equivalent Liquid for 750 MHz, 850MHz, 1700 MHz, 1900 MHz, 2300 MHz, 2450 MHz, 2600 MHz and 5 GHz bands	-
Universal Radio Communication Tester R&S CMW 500	1201.0002K50-113616-jG
Universal Radio Communication Tester R&S CMW 500	100974
Vector network analyzer Agilent FieldFox N9923A	US49470126
Dielectric probe kit SPEAG DAK-3.5	1080
Power meter Agilent E4419B	MY45103349
RF Generator R&S SMU200	102234
DC Power supply Agilent U8002A	MY53500016
Dual directional coupler HP 778D	15821
Power amplifier MITEQ AMF-4D-00400600-50-30P	1456425
6 dB attenuator Weinschel 75 A-6-11	902
SPEAG Mounting Device for Hand-held devices.	-
Power sensor DC 50 MHz to 18 GHz R&S model NRP-Z81	100527
Digital thermometer LKM Electronics model DTM300-Spezial	2989
Temperature and humidity probe HUMIDIPROBE Pico Technology	UAL02/077

Usage of samples

Samples undergoing test have been selected by: the client.

Sample M/01 is composed of the following elements:

Control Nº	Description	Model	Serial Nº	Date of reception
57478/18	Secure Smartphone	Tough Mobile 2	IMEI:356244060527151	2018-11-08

Sample M/02 is composed of the following elements:

Control Nº	Description	Model	Serial Nº	Date of reception
57478/28	Secure Smartphone	Tough Mobile 2	IMEI:356244060528696	2018-11-26
57478/29	Secure Smartphone	Tough Mobile 2	IMEI:356244060528357	2018-11-26
57478/84	Secure Smartphone	Tough Mobile 2	IMEI:356244060531310	2018-05-02

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 Bluetooth modes.

Test sample description

Description of product ..... :	Secure Smartphone			
Software version..... :	40.1			
Hardware version ..... :	0302			
Mounting position ..... :	☐	Table top equipment		
	☐	Wall/Ceiling mounted equipment		
	☒	Equipment used next to the ear		
	☒	Hand-held equipment		
	☒	Other: Body-worn device		
Accessories (not part of the test item)..... :	Description		Type	Manufacturer
	Charging adapter		---	
	USB cable		---	

Identification of the client

BITTIUM WIRELESS OY

Ritaharjuntie 1, 90590 Oulu, Finland

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2018-11-12
Date (finish)	2019-05-14

Document history

Report number	Date	Description
57478RAN.001	2019-08-05	First release

Environmental conditions

Date	Max. Temp. ºC	Min. Temp. ºC	Max. Hum. %	Min. Hum. %	Limit
From 2018-11-12 to 2019-03-06	23.86	19.92	69.96	31.63	18-25 ºC, 30-70%
From 2019-05-09 to 2019-05-14	24.37	22.31	59.65	44.32	18-25 ºC, 30-70%

References

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IC RSS-102 Issue 5 (2015-03) – Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands) 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: 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”

2: Testing of HSDPA/HSPA/HSPA+/DC-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.

3: Zoom scan is not required according to FCC OET KDB 447498 D01 General RF Exposure Guidance 06, paragraph “4.4.2. Area scan based 1-g estimation”.

4: 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”.

5: Testing other LTE channels is not required due to the SAR test procedures mentioned in FCC OET KDB 941225 D05 – SAR for LTE Devices v02r05.

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

7: SAR tests present in this report have been performed using a DUT version which does not include the final version of the Gorilla Glass cover. End-product version supports a Corning Gorilla Glass 5, therefore a SAR spot-check test have been performed to demonstrate that SAR results are not altered by the cover glass update. See Appendix B, section 5.43, for spot-check results.

Testing verdicts

Not applicable :	N/A
Pass :	P
Fail :	F
Not measured :	N/M

FCC 47CFR Part 2.1093 & ISED RSS-102 Issue 5	VERDICT			
	N/A	P	F	N/M
GSM 850		P		
GSM 1900		P		
WCDMA II		P		
WCDMA IV		P		
WCDMA V		P		
LTE 2		P		
LTE 4		P		
LTE 5		P		
LTE 7		P		
LTE 12		P		
LTE 13		P		
LTE 14		P		
LTE 17		P		
LTE 25		P		
LTE 26		P		
LTE 30		P		
LTE 38		P		
LTE 66		P		
802.11b/g/n		P		
802.11a/g/n/ac		P		
Bluetooth		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).

Industry of Canada (ISED) sets the limits for General Population/Uncontrolled environment when the expsosure occurs at a distance of 0.2 m or less into the RSS-102 Issue 5, paragraph 4 "Exposure Limits", Table 3.

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 18ºC to 25ºC and the variation shall not exceed +/- 2ºC 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:

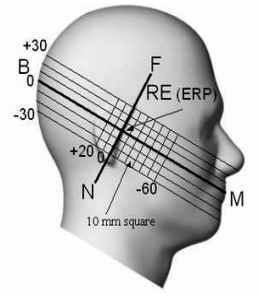

Figure 1: Proportions of Phantom

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

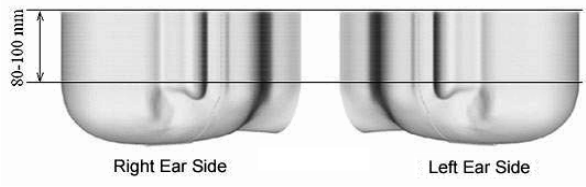

Figure 2: Proportions and shape of Phantom shell

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

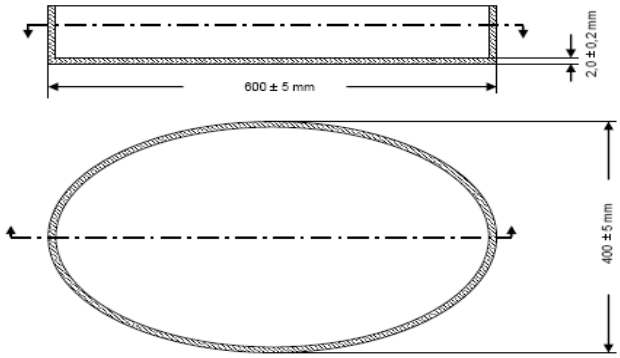

Figure 3: Proportions and shape of Phantom shell

1.5. Measurement Liquids requirements.

The liquids used to simulate the human tissues, must fulfils 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:

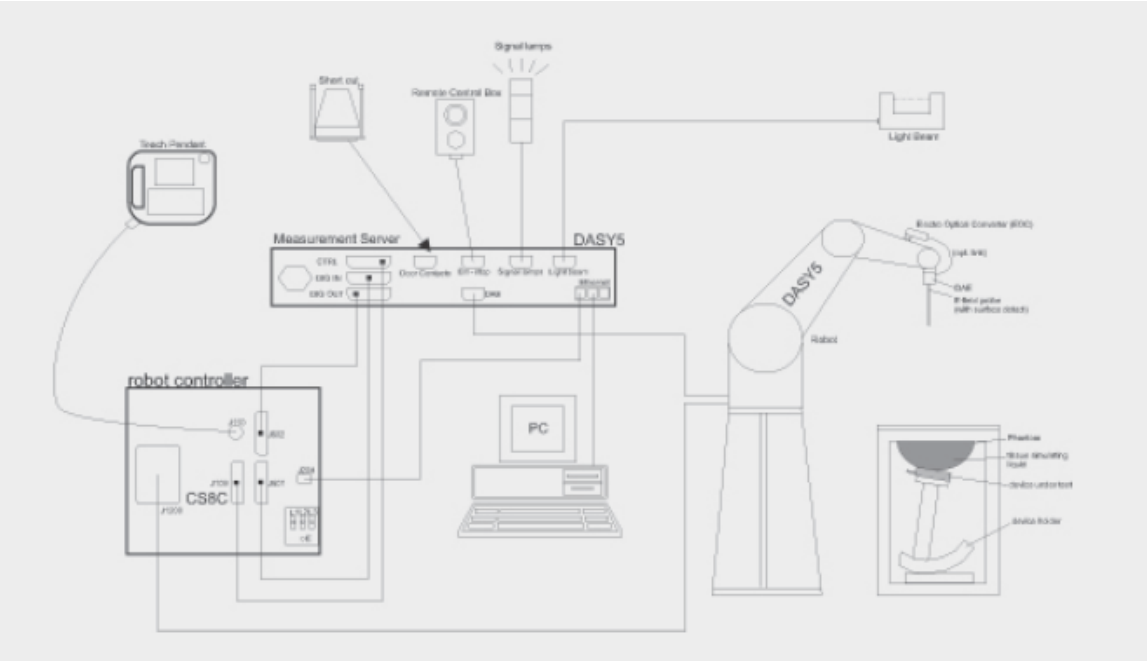

Figure 4: SAR Measurement system

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.

	Model	EX3DV4
	Construction	Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).
	Frequency	10 MHz to > 6 GHz; Linearity: ± 0.2 dB (30 MHz to 6 GHz)
	Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)
	Dynamic Range	10 µW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)
	Dimensions	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

	Model	DAE4
	Construction	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.
	Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)
	Input Offset Voltage	< 5 µV (with auto zero)
	Input Resistance	200 MOhm
	Input Bias Current	< 50 fA

	Model	Twin SAM
	Construction	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.
	Material	Vinylester, glass fiber reinforced (VE-GF)
	Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)
	Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)
	Dimensions	Length: 1000 mm Width: 500 mm Height: adjustable feet
	Filling Volume	Approx. 25 liters
	Wooden Support	SPEAG standard phantom table

Model	ELI
Construction	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.
Material	Vinylester, glass fiber reinforced (VE-GF)
Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)
Shell Thickness	2 ± 0.2 mm (bottom plate)
Dimensions	Major axis: 600 mm, Minor axis: 400 mm
Filling Volume	Approx. 30 liters
Wooden Support	SPEAG standard phantom table

Model	Mounting Device for Hand-Held Transmitters
Construction	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).
Material	Polyoxymethylene (POM)

Model	System Validations Kits 450 MHz – 6 GHz		
Construction	Symmetrical dipole with I/4 balun. Enables measurement of feedpoint impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions.		
Frequency	450 MHz to 5800 MHz		
Return Loss	20 dB at specified validation position		
Dimensions (length and overall height in mm)	**Product**	**Dipole length**	**Overall height**
	D450V3	290.0	330.0
	D750V3	179.0	330.0
	D900V2	148.5	340.0
	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.

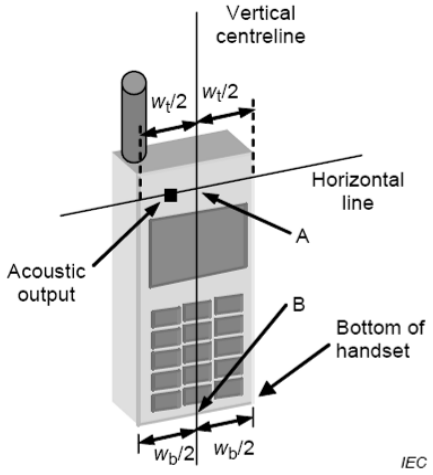

Figure 5: DUT’s basic scheme

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, 15º Tilted position.
- Left side of Phantom, Cheek position.
- Left side of Phantom, 15º 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 sagital 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.

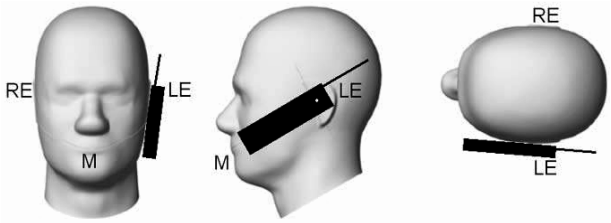

Figure 6: “Cheek” position of DUT

Definition of the tilted position:

The "15º 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.

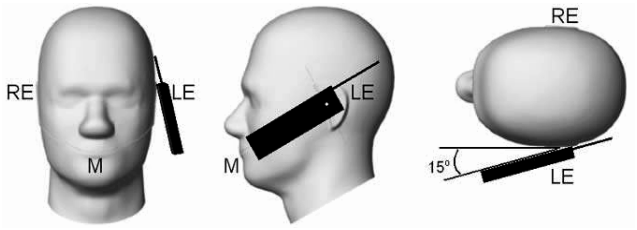

Figure 7: “Tilted” position of DUT

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 place against the flat phantom with a test separation distance of 10 mm according to the manufacturer’s instructions.

Beside the common use as a 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.

2.4. Test to be performed

Test shall be performed at both phone positions previously described for head, on each side of the head (left and right side) and at each applicable face/edge positions for body, 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 15º 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 15º position of the DUT.
- Measurements at Central Channel of application band, positioning each device face/edge with a distance to a transmitting antenna minor to 25mm, facing the flat Phantom.
- 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.

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	(ci) 1g	(ci) 10g	Standard uncertainty (1g) (± %)	Standard uncertainty (10g) (± %)
Measurement Equipment							
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
Hemisfericall 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
Test Sample Related							
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
Phantom and Setup							
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	0.6.38	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
Combined standard uncertainty	$u_c = \sqrt{\sum_{1=1}^{m} c_i^2 \cdot u_i^2}$					**12.82**	**12.76**
Expanded uncertainty (confidence interval of 95%)	*ue =2.00 uc*					**25.64**	**25.53**

Table 1: 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 and averaged over a mass of 10 gr (Extremity SAR 10 gr). These levels 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) RSS-102 Issue 5 (2015-03), Paragraph 4	General population/Uncontrolled	SAR 1-g.	1.6
FCC 47 CFR Part 2.1093, Paragraph (d)(2) RSS-102 Issue 5 (2015-03), Paragraph 4	General population/Uncontrolled Extremity	SAR 10-g.	4.0

Table 2: SAR limit

5. DEVICE UNDER TEST

5.1. Dimensions

Dimensions	Millimetres
Height x Width x Depth	141.0 x 77.0 x 9.0
Overall Diagonal:	161.0
Display Diagonal:	133.0

Table 3: Dimensions

5.2. Wireless Technologies.

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	2/4/5/12/13/14/17/25/26/30/38/66	- QPSK and 16-QAM (Rel. 9)
Wi-Fi	Required	2.4 GHz	- 802.11b/g/n20/n40/ac20
	Required	5 GHz	- 802.11a/n20/n40/ac80
Bluetooth	Required	2.4 GHz	- Bluetooth

Table 4: 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	Transmission conditions	Simultaneous transmission configurations
Head & Body	Condition 1	WWAN+Wi-Fi 2.45GHz SISO (Chain 0)
	Condition 2	WWAN+Wi-Fi 2.45GHz SISO (Chain 1)+BT
	Condition 3	WWAN+Wi-Fi 2.45GHz MIMO (Both Chains)
	Condition 4	WWAN+Wi-Fi 5GHz SISO (Chain 0)
	Condition 5	WWAN+Wi-Fi 5GHz SISO (Chain 1)+BT
	Condition 6	WWAN+Wi-Fi 5GHz MIMO (Both Chains)
	Condition 7	Wi-Fi 2.45GHz SISO (Chain 0)+Wi-Fi 5GHz SISO (Chain 1)

Table 5: Simultaneous transmission

5.4. Antenna Location

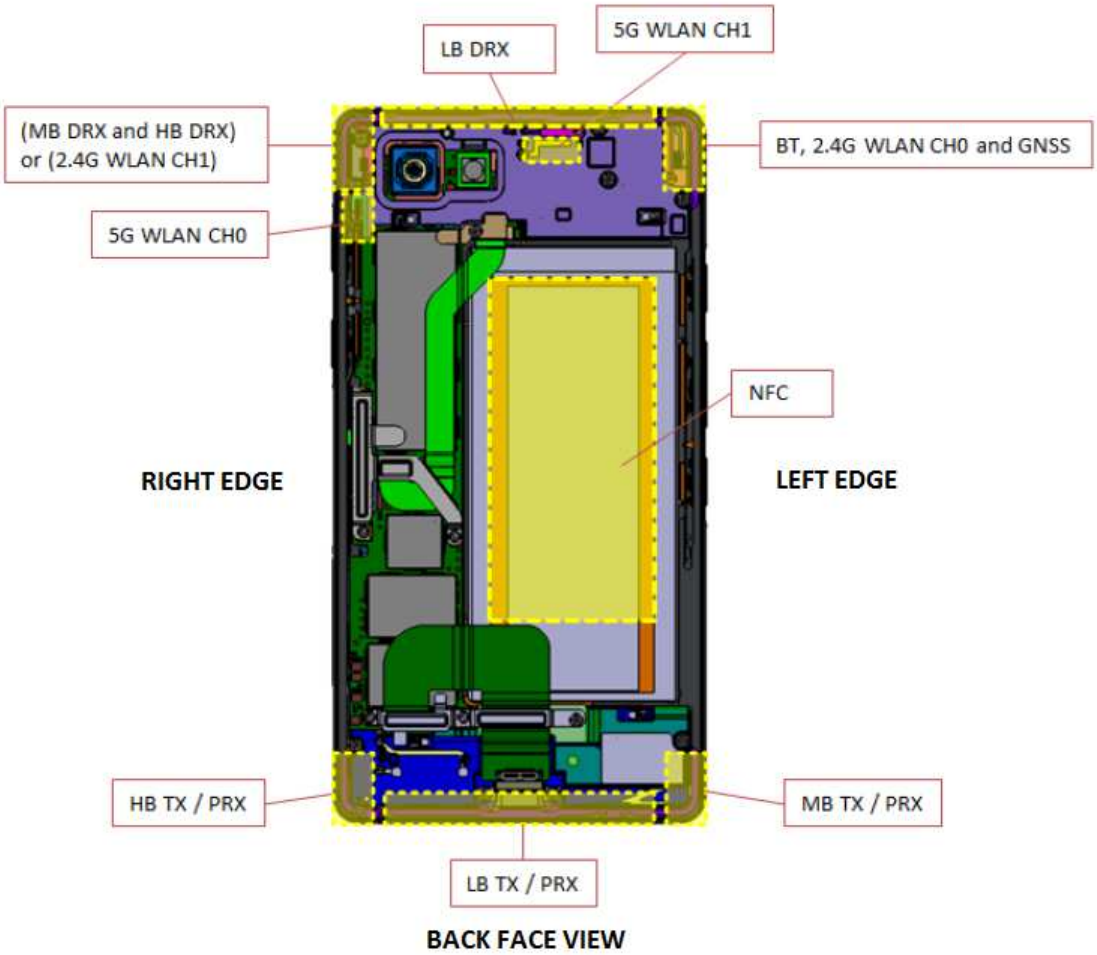

Figure 8: Antenna diagram location sketch

According to KDB 941125 D06 Hotspot SAR, SAR testing is not required for faces/edges with a distance greater than 25 mm from a transmitting antenna.

Mode	Distance to antenna < 25 mm. SAR testing needed					
	Front	Back	Top	Bottom	Left	Right
GSM/GPRS/EGPRS 850	Yes	Yes	No	Yes	Yes	Yes
GSM/GPRS/EGPRS 1900	Yes	Yes	No	Yes	Yes	Yes
WCDMA II	Yes	Yes	No	Yes	Yes	Yes
WCDMA IV	Yes	Yes	No	Yes	Yes	Yes
WCDMA V	Yes	Yes	No	Yes	Yes	Yes
LTE 2	Yes	Yes	No	Yes	Yes	Yes
LTE 4	Yes	Yes	No	Yes	Yes	Yes
LTE 5	Yes	Yes	No	Yes	Yes	Yes
LTE 7	Yes	Yes	No	Yes	No	Yes
LTE 12	Yes	Yes	No	Yes	Yes	Yes
LTE 13	Yes	Yes	No	Yes	Yes	Yes
LTE 14	Yes	Yes	No	Yes	Yes	Yes
LTE 17	Yes	Yes	No	Yes	Yes	Yes
LTE 25	Yes	Yes	No	Yes	Yes	Yes
LTE 26	Yes	Yes	No	Yes	Yes	Yes
LTE 30	Yes	Yes	No	Yes	No	Yes
LTE 38	Yes	Yes	No	Yes	No	Yes
LTE 66	Yes	Yes	No	Yes	Yes	Yes
Wi-Fi 2.4 GHz Chain 0	Yes	Yes	Yes	No	Yes	No
Wi-Fi 2.4 GHz Chain 1	Yes	Yes	Yes	No	No	Yes
Wi-Fi 5 GHz Chain 0	Yes	Yes	Yes	No	No	Yes
Wi-Fi 5 GHz Chain 1	Yes	Yes	Yes	No	Yes	Yes
Bluetooth	Yes	Yes	Yes	No	Yes	No

Table 6: 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-polymer rechargeable battery

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

1.2. Temperature (ºC):

T_n = +19.00 to +25.00

The subscript n indicates normal test conditions.

1.3. Test signal, Output Power and Frequencies

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

For the 802.11a/b/g/n/ac and Bluetooth 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%).

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, including tune-up tolerance, for RF components declared by the manufacturer for each supported technology are:

Mode	Burst Averaged Output Power (dBm)				Frame Averaged Output Power (dBm)			
	1 Tx slot	2 Tx slots	3 Tx slots	4 Tx Slots	1 Tx slot	2 Tx slots	3 Tx slots	4 Tx slots
GPRS/E-GPRS 850	33.3	31.0	29.0	27.5	24.27	25.0	24.75	24.5
GPRS/E-GPRS 1900	30.3	28.0	26.0	24.5	21.27	22.0	21.75	21.5

Maximum Output Power (dBm)										
Mode	RMC 12,2K	HDSPA Subtest-1	HDSPA Subtest-2	HDSPA Subtest-3	HDSPA Subtest-4	HSUPA Subtest-1	HSUPA Subtest-2	HSUPA Subtest-3	HSUPA Subtest-4	HSUPA Subtest-5
WCDMA I	25.0	24.0	24.0	23.0	23.0	24.0	23.0	24.0	24.0	24.0
WCDMA IV	25.0	24.0	24.0	23.0	23.0	24.0	23.0	24.0	24.0	24.0
WCDMA V	25.0	24.0	24.0	23.0	23.0	24.0	23.0	24.0	24.0	24.0

Maximum Output Power (dBm)													
LTE Band	2	4	5	7	12	13	14	17	25	26	30	38	66
Normal mode	25.0	25.0	25.0	24.0	25.0	25.0	25.0	25.0	25.0	25.0	24.0	25.0	25.0
Hotspot mode	25.0	25.0	25.0	22.0	25.0	25.0	25.5	25.0	25.0	25.0	22.0	25.0	25.0

Maximum Output Power (dBm)							
Band	Mode	802.11b	802.11g	802.11n20	802.11n40	Bluetooth 5.0	Bluetooth LE
2.4 GHz	Chain 0	16.5	16.0	16.0	15.0	12.50	8.0
	Chain 1	16.5	16.0	16.0	15.0	-	-
	MIMO	15.5	14.5	14.5	11.5	-	-

Maximum Output Power (dBm)					
Band	Mode	802.11a	802.11n20	802.11n40	802.11ac
5 GHz	Chain 0	18.5	18.5	18.5	18.5
	Chain 1	17.0	17.0	17.0	17.0
	MIMO	17.0	17.0	17.0	17.0

1.4. DUT and test-site configurations

All supported modes have been tested over head and body exposure conditions:

- For head tests, the DUT was placed in cheek and tilt position on the right/left side of the SAM phantom.

- For body tests, the DUT was placed in each face/edge position with a transmitting antenna located at ≤ 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, according to the manufacturer's instructions.

2. CONDUCTED AVERAGE POWER MEASUREMENTS

2.1. GSM/GPRS/EGPRS Bands

GSM 850: For voice mode PCL 5 was set to allow max power transmission.

GSM 900 - Average Output Power					
Channel Number	**Frequency (MHz)**	**Frame Average Output Power (dBm)**	**Average Burst Output Power (dBm)**	**PCL**	**Modulation**
128	824.2	23.2	32.2	5	GMSK
190	836.6	23.0	32.1	5	GMSK
251	848.8	23.3	32.4	5	GMSK

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

GPRS 850 - Frame Average Output Power							
Channel Number	**Frequency (MHz)**	**Power (dBm)**				**PCL**	**Modulation**
		1 Slot	**2 Slots**	**3 Slots**	**4 Slots**		
128	824.2	23.0	23.7	23.5	23.6	5	GMSK-CS1
190	836.6	22.9	23.4	23.2	23.1	5	GMSK-CS1
251	848.8	23.1	23.5	23.5	23.5	5	GMSK-CS1

GPRS 850 - Average Burst Output Power							
Channel Number	**Frequency (MHz)**	**Power (dBm)**				**PCL**	**Modulation**
		1 Slot	**2 Slots**	**3 Slots**	**4 Slots**		
128	824.2	32.0	29.7	27.8	26.7	5	GMSK-CS1
190	836.6	31.9	29.4	27.4	26.1	5	GMSK-CS1
251	848.8	32.1	29.6	27.7	26.5	5	GMSK-CS1

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

EDGE 850 - Frame Average Output Power							
Channel Number	**Frequency (MHz)**	**Power (dBm)**				**PCL**	**Modulation**
		1 Slot	**2 Slots**	**3 Slots**	**4 Slots**		
128	824.2	17.3	17.5	17.4	17.4	8	8PSK-MCS5
190	836.6	16.9	17.3	17.3	16.9	8	8PSK-MCS5
251	848.8	17.2	17.6	17.4	17.0	8	8PSK-MCS5

EDGE 850 - Average Burst Output Power							
Channel Number	**Frequency (MHz)**	**Power (dBm)**				**PCL**	**Modulation**
		1 Slot	**2 Slots**	**3 Slots**	**4 Slots**		
128	824.2	26.3	23.6	21.7	20.4	8	8PSK-MCS5
190	836.6	25.9	23.4	21.6	20.0	8	8PSK-MCS5
251	848.8	26.2	23.6	21.7	20.0	8	8PSK-MCS5

GSM 1900: For voice mode PCL 0 was set to allow max power transmission.

GSM 1800 - Average Output Power					
Channel Number	**Frequency (MHz)**	**Frame Average Output Power (dBm)**	**Average Burst OutputPower (dBm)**	**PCL**	**Modulation**
512	1850.2	20.1	29.1	0	GMSK
661	1880.0	20.2	29.2	0	GMSK
810	1909.8	20.1	29.1	0	GMSK

GPRS 1900: For data mode. PCL 0, CS1 coding scheme and Gamma 3 were set to allow max power transmission for each slot.

GPRS 1900 - Frame Average Output Power							
Channel Number	**Frequency (MHz)**	**Power (dBm)**				**PCL**	**Modulation**
		1 Slot	**2 Slots**	**3 Slots**	**4 Slots**		
512	1850.2	19.9	20.3	20.2	19.9	0	GMSK-CS1
661	1880.0	19.9	20.3	20.1	20.0	0	GMSK-CS1
810	1909.8	20.0	20.3	20.1	20.0	0	GMSK-CS1

GPRS 1900 - Average Burst Output Power							
Channel Number	**Frequency (MHz)**	**Power (dBm)**				**PCL**	**Modulation**
		1 Slot	**2 Slots**	**3 Slots**	**4 Slots**		
512	1850.2	28.9	26.3	24.4	22.9	0	GMSK-CS1
661	1880.0	28.9	26.3	24.4	23.0	0	GMSK-CS1
810	1909.8	29.1	26.3	24.4	23.0	0	GMSK-CS1

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

EDGE 1900 - Frame Average Output Power							
Channel Number	**Frequency (MHz)**	**Power (dBm)**				**PCL**	**Modulation**
		1 Slot	**2 Slots**	**3 Slots**	**4 Slots**		
512	1850.2	14.4	16.4	16.0	15.8	2	8PSK-MCS5
661	1880.0	14.1	16.3	16.0	15.9	2	8PSK-MCS5
810	1909.8	14.2	16.3	16.0	15.9	2	8PSK-MCS5

EDGE 1900 - Average Burst Output Power							
Channel Number	**Frequency (MHz)**	**Power (dBm)**				**PCL**	**Modulation**
		1 Slot	**2 Slots**	**3 Slots**	**4 Slots**		
512	1850.2	23.4	22.4	20.3	18.8	2	8PSK-MCS5
661	1880.0	23.1	22.3	20.3	18.9	2	8PSK-MCS5
810	1909.8	23.2	22.3	20.3	18.9	2	8PSK-MCS5

2.2. WCDMA/HSDPA/HSPA 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
	βc/βd	8/15

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD II 1900	WCDMA	9262	1852.4	24.43
FDD II 1900	WCDMA	9400	1880.0	24.24
FDD II 1900	WCDMA	9538	1907.6	24.14

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD IV 1700	WCDMA	1312	1712.4	25.07
FDD IV 1700	WCDMA	1412	1732.6	25.47
FDD IV 1700	WCDMA	1512	1752.6	25.66

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD V 850	WCDMA	4132	826.4	24.55
FDD V 850	WCDMA	4182	836.4	24.50
FDD V 850	WCDMA	4233	846.6	24.16

- HSDPA:

Mode	Subtest	1	2	3	4
HSDPA	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2Kbps RMC			
	HSDPA FRC	H-Set1			
	HSUPA Test	HSUPA Loopback			
	Power Control Algorithm	Algorithm 2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	Bd (SF)	64	64	64	64
	βc/βd	2/15	12/15	15/8	15/4
	βhs	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			
	Ahs =βhs/βc	30/15			

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)			
				Subtest			
				1	2	3	4
FDD II 1900	HSDPA	9262	1852.4	23.83	23.23	23.36	23.21
FDD II 1900	HSDPA	9400	1880.0	23.56	23.06	23.09	22.95
FDD II 1900	HSDPA	9538	1907.6	23.38	22.78	22.77	22.66

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)			
				Subtest			
				1	2	3	4
FDD IV 1700	HSDPA	1312	1712.4	23.83	23.97	23.83	23.83
FDD IV 1700	HSDPA	1412	1732.6	24.42	24.36	24.34	24.42
FDD IV 1700	HSDPA	1512	1752.6	24.60	21.85	24.41	24.60

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)			
				Subtest			
				1	2	3	4
FDD V 850	HSDPA	4132	826.4	23.51	23.30	23.46	23.46
FDD V 850	HSDPA	4182	836.4	23.46	23.26	23.40	23.39
FDD V 850	HSDPA	4233	846.6	23.12	23.00	23.07	22.76

- HSPA:

Mode	Subtest	1	2	3	4	5
HSPA	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2Kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm 2				
	βc	11/15	6/15	15/15	2/15	15/15
	βd	15/15	15/15	9/15	15/15	15/15
	βec	209/225	12/15	30/15	2/15	24/15
	βc/βd	11/15	6/15	15/9	2/15	15/15
	βhs	22/15	12/15	30/15	4/15	30/15
	βed	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				
	Ahs =βhs/βc	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**	**Subtest 2**	**Subtest 3**	**Subtest 4**	**Subtest 5**
FDD II 1900	HSPA	9262	1852.4	22.93	22.84	23.43	23.34	23.45
FDD II 1900	HSPA	9400	1880.0	23.04	22.58	23.15	23.07	23.18
FDD II 1900	HSPA	9538	1907.6	22.73	22.44	22.46	22.26	22.89

				Average Output Power (dBm)				
Band	**Mode**	**CH**	**Frequency (MHz)**	**Subtest 1**	**Subtest 2**	**Subtest 3**	**Subtest 4**	**Subtest 5**
FDD IV 1700	HSPA	1312	1712.4	23.96	24.08	24.07	23.99	24.09
FDD IV 1700	HSPA	1412	1732.6	24.40	23.84	24.34	24.51	24.54
FDD IV 1700	HSPA	1512	1752.6	24.46	24.06	24.67	24.46	24.58

				Average Output Power (dBm)				
Band	**Mode**	**CH**	**Frequency (MHz)**	**Subtest 1**	**Subtest 2**	**Subtest 3**	**Subtest 4**	**Subtest 5**
FDD V 850	HSPA	4132	826.4	23.46	22.97	23.56	23.44	23.68
FDD V 850	HSPA	4182	836.4	23.40	22.91	23.51	23.40	23.53
FDD V 850	HSPA	4233	846.6	23.14	22.67	23.24	23.22	23.27

2.3. LTE Bands.

LTE MPR is permanently implemented for the device. A-MPR was disabled for all SAR tests. The following power reductions are used for higher RB allocations and 16-QAM 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

- LTE B2

SAR for LTE Band 2 has not been measured because it is covered by LTE Band 25 due to overlapping frequency range (LTE Band 2 frequency range: 1850 – 1910 MHz, LTE Band 25 frequency range: 1850 – 1915 MHz) and same maximum tune-up and channel bandwidth.

- **LTE B4**

SAR for LTE Band 4 has not been measured because it is covered by LTE Band 66 due to overlapping frequency range (LTE Band 4 frequency range: 1710 – 1755 MHz, LTE Band 66 frequency range: 1710 – 1780 MHz) and same maximum tune-up and channel bandwidth.

- **LTE B5**

SAR for LTE Band 5 has not been measured because it is covered by LTE Band 26 due to overlapping frequency range (LTE Band 5 frequency range: 824 – 849 MHz, LTE Band 26 frequency range: 814 – 849 MHz) and same maximum tune-up and channel bandwidth.

- **LTE B7**

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2510.0 MHz	**2535.0 MHz**	**2560.0 MHz**
LTE B7	20 MHz	QPSK	1RB Low	0	23.59	23.9	23.82
			1RB Mid	0	23.73	24.01	23.78
			1RB High	0	23.83	23.96	23.72
			50% Low	1	22.73	23.06	22.85
			50% Mid	1	22.88	23.06	22.87
			50% High	1	22.88	23.04	22.82
			100%	1	22.84	23.05	22.82
		16-QAM	1RB Low	1	23.02	23.19	23.13
			1RB Mid	1	23.11	23.24	23.14
			1RB High	1	23.24	23.25	23.07
			50% Low	2	21.82	23.06	21.94
			50% Mid	2	21.98	22.17	21.96
			50% High	2	21.97	22.13	21.91
			100%	2	21.91	22.10	21.91
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2507.5 MHz	**2535.0 MHz**	**2562.5 MHz**
LTE B7	15 MHz	QPSK	1RB Low	0	23.57	23.92	23.83
			1RB Mid	0	23.75	24.01	23.8
			1RB High	0	23.92	24.03	23.8
			50% Low	1	22.71	23.06	22.81
			50% Mid	1	22.73	23.06	22.85
			50% High	1	22.85	23.01	22.79
			100%	1	22.71	23.04	22.84
		16-QAM	1RB Low	1	22.99	23.10	23.03
			1RB Mid	1	23.17	23.13	23.05
			1RB High	1	23.27	23.19	23.06
			50% Low	2	21.82	23.06	21.92
			50% Mid	2	21.85	22.18	21.94
			50% High	2	21.97	22.13	21.89
			100%	2	21.78	22.10	21.97

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2505.0 MHz	**2535.0 MHz**	**2565.0 MHz**
LTE B7	10 MHz	QPSK	1RB Low	0	23.57	23.91	23.82
			1RB Mid	0	23.72	24.01	23.76
			1RB High	0	23.82	23.99	23.78
			50% Low	1	22.68	23.06	22.80
			50% Mid	1	22.73	23.06	22.83
			50% High	1	22.74	23.03	22.80
			100%	1	22.71	23.05	22.81
		16-QAM	1RB Low	1	22.95	23.24	23.02
			1RB Mid	1	23.14	23.3	23.03
			1RB High	1	23.10	23.35	23.07
			50% Low	2	21.78	23.03	21.91
			50% Mid	2	21.83	22.15	21.92
			50% High	2	21.82	22.13	21.88
			100%	2	21.77	22.10	21.92
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2502.5 MHz	**2535.0 MHz**	**2567.5 MHz**
LTE B7	5 MHz	QPSK	1RB Low	0	23.5	23.99	23.81
			1RB Mid	0	23.55	23.99	23.74
			1RB High	0	23.76	23.98	23.78
			50% Low	1	22.59	23.05	22.77
			50% Mid	1	22.64	23.05	22.82
			50% High	1	22.63	23.04	22.79
			100%	1	22.70	23.04	22.80
		16-QAM	1RB Low	1	23.01	23.22	23.00
			1RB Mid	1	23.07	23.19	23.10
			1RB High	1	23.19	23.2	23.06
			50% Low	2	21.66	23.04	21.93
			50% Mid	2	21.71	22.16	21.97
			50% High	2	21.70	22.14	21.93
			100%	2	21.77	22.10	21.9

- **LTE B7 Hotspot mode**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					2510.0 MHz	2535.0 MHz	2560.0 MHz
LTE B7	20 MHz	QPSK	1RB Low	0	21.51	21.87	21.83
			1RB Mid	0	21.69	21.97	21.78
			1RB High	0	21.76	21.91	21.72
			50% Low	0	21.91	22.03	21.82
			50% Mid	0	21.96	22.04	21.83
			50% High	0	21.87	22.01	21.79
			100%	0	21.84	21.96	21.78
		16-QAM	1RB Low	0	21.81	22.18	21.95
			1RB Mid	0	21.92	22.19	21.86
			1RB High	0	22.08	22.19	21.87
			50% Low	0	21.81	22.11	21.94
			50% Mid	0	21.96	22.18	21.96
			50% High	0	21.96	22.11	21.92
			100%	0	21.9	22.09	21.90
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2507.5 MHz	**2535.0 MHz**	**2562.5 MHz**
LTE B7	15 MHz	QPSK	1RB Low	0	21.49	21.89	21.78
			1RB Mid	0	21.71	21.97	21.75
			1RB High	0	21.85	21.98	21.77
			50% Low	0	21.69	22.03	21.78
			50% Mid	0	21.70	22.04	21.81
			50% High	0	21.81	21.98	21.76
			100%	0	21.71	21.95	21.8
		16-QAM	1RB Low	0	21.78	22.09	21.85
			1RB Mid	0	21.98	22.08	21.77
			1RB High	0	22.11	22.13	21.86
			50% Low	0	21.81	22.11	21.92
			50% Mid	0	21.83	22.19	21.94
			50% High	0	21.96	22.11	21.90
			100%	0	21.77	22.09	21.96

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2505.0 MHz	**2535.0 MHz**	**2565.0 MHz**
LTE B7	10 MHz	QPSK	1RB Low	0	21.49	21.88	21.77
			1RB Mid	0	21.68	21.97	21.71
			1RB High	0	21.75	21.94	21.75
			50% Low	0	21.66	22.03	21.77
			50% Mid	0	21.70	22.04	21.79
			50% High	0	21.70	22.00	21.77
			100%	0	21.71	21.96	21.77
		16-QAM	1RB Low	0	21.74	22.23	21.84
			1RB Mid	0	21.95	22.25	21.75
			1RB High	0	21.94	22.29	21.87
			50% Low	0	21.77	22.08	21.91
			50% Mid	0	21.81	22.16	21.92
			50% High	0	21.81	22.11	21.89
			100%	0	21.76	22.09	21.91
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2502.5 MHz	**2535.0 MHz**	**2567.5 MHz**
LTE B7	5 MHz	QPSK	1RB Low	0	21.42	21.96	21.76
			1RB Mid	0	21.51	21.95	21.69
			1RB High	0	21.69	21.93	21.75
			50% Low	0	21.57	22.02	21.74
			50% Mid	0	21.61	22.03	21.78
			50% High	0	21.59	22.01	21.76
			100%	0	21.70	21.95	21.76
		16-QAM	1RB Low	0	21.80	22.21	21.82
			1RB Mid	0	21.88	22.14	21.82
			1RB High	0	22.03	22.14	21.86
			50% Low	0	21.65	22.09	21.93
			50% Mid	0	21.69	22.17	21.97
			50% High	0	21.69	22.12	21.94
			100%	0	21.76	22.09	21.89

- **LTE B12**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					-	707.5 MHz	-
LTE B12	10 MHz	QPSK	1RB Low	0	-	24.17	-
			1RB Mid	0	-	24.21	-
			1RB High	0	-	24.12	-
			50% Low	1	-	23.81	-
			50% Mid	1	-	23.94	-
			50% High	1	-	23.79	-
			100%	1	-	23.72	-
		16-QAM	1RB Low	1	-	23.84	-
			1RB Mid	1	-	23.86	-
			1RB High	1	-	23.83	-
			50% Low	2	-	22.85	-
			50% Mid	2	-	22.85	-
			50% High	2	-	22.77	-
			100%	2	-	22.79	-
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					701.5 MHz	**707.5 MHz**	**713.5 MHz**
LTE B12	5 MHz	QPSK	1RB Low	0	24.1	24.02	24.11
			1RB Mid	0	24.13	24.06	24.05
			1RB High	0	24.07	24.02	24.05
			50% Low	1	23.66	23.66	23.58
			50% Mid	1	23.65	23.67	23.59
			50% High	1	23.63	23.63	23.55
			100%	1	23.69	23.65	23.59
		16-QAM	1RB Low	1	23.87	23.71	23.82
			1RB Mid	1	23.88	23.76	23.8
			1RB High	1	23.82	23.73	23.45
			50% Low	2	22.78	22.74	22.69
			50% Mid	2	22.74	22.75	22.69
			50% High	2	22.71	22.71	22.67
			100%	2	22.69	22.74	22.63

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					700.5 MHz	**707.5 MHz**	**714.5 MHz**
LTE B12	3 MHz	QPSK	1RB Low	0	24.06	24.00	24.06
			1RB Mid	0	24.09	24.17	24.12
			1RB High	0	24.08	24.04	24.01
			50% Low	1	23.53	23.64	23.57
			50% Mid	1	23.54	23.64	23.58
			50% High	1	23.60	23.62	23.52
			100%	1	23.62	23.59	23.57
		16-QAM	1RB Low	1	23.72	23.72	23.65
			1RB Mid	1	23.80	23.92	23.70
			1RB High	1	23.74	23.79	23.26
			50% Low	2	22.60	22.75	22.62
			50% Mid	2	22.65	22.77	22.66
			50% High	2	22.68	22.72	22.61
			100%	2	22.68	22.67	22.62
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					699.7 MHz	**707.5 MHz**	**715.3 MHz**
LTE B12	1.4 MHz	QPSK	1RB Low	0	23.95	24.06	23.96
			1RB Mid	0	24.03	24.12	24.03
			1RB High	0	23.94	24.06	23.96
			50% Low	1	23.96	24.06	23.95
			50% Mid	1	24.02	24.12	24.02
			50% High	1	24.00	24.11	24.01
			100%	1	23.48	23.57	23.45
		16-QAM	1RB Low	1	23.61	23.66	23.55
			1RB Mid	1	23.69	23.73	23.62
			1RB High	1	23.64	23.64	23.40
			50% Low	2	23.59	23.66	23.55
			50% Mid	2	23.64	23.71	23.59
			50% High	2	23.63	23.71	23.47
			100%	2	22.61	22.68	22.53

- **LTE B13**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					-	782.0 MHz	-
LTE B13	10 MHz	QPSK	1RB Low	0	-	23.99	-
			1RB Mid	0	-	24.01	-
			1RB High	0	-	23.91	-
			50% Low	1	-	23.51	-
			50% Mid	1	-	23.52	-
			50% High	1	-	23.47	-
			100%	1	-	23.49	-
		16-QAM	1RB Low	1	-	22.64	-
			1RB Mid	1	-	23.62	-
			1RB High	1	-	23.29	-
			50% Low	2	-	22.57	-
			50% Mid	2	-	22.58	-
			50% High	2	-	22.54	-
			100%	2	-	22.53	-
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					779.5 MHz	**782.0 MHz**	**784.5 MHz**
LTE B13	5 MHz	QPSK	1RB Low	0	-	23.94	-
			1RB Mid	0	-	23.92	-
			1RB High	0	-	23.89	-
			50% Low	1	-	23.41	-
			50% Mid	1	-	23.43	-
			50% High	1	-	23.42	-
			100%	1	-	23.4	-
		16-QAM	1RB Low	1	-	23.45	-
			1RB Mid	1	-	23.7	-
			1RB High	1	-	23.66	-
			50% Low	2	-	22.52	-
			50% Mid	2	-	22.54	-
			50% High	2	-	22.52	-
			100%	2	-	22.54	-

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

- **LTE B14**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					-	793.0 MHz	-
LTE B14	10 MHz	QPSK	1RB Low	0	-	23.89	-
			1RB Mid	0	-	23.99	-
			1RB High	0	-	23.88	-
			50% Low	0	-	23.90	-
			50% Mid	0	-	23.98	-
			50% High	0	-	23.85	-
			100%	0	-	23.96	-
		16-QAM	1RB Low	0	-	23.96	-
			1RB Mid	0	-	23.94	-
			1RB High	0	-	23.95	-
			50% Low	1	-	22.98	-
			50% Mid	1	-	22.97	-
			50% High	1	-	22.92	-
			100%	1	-	22.93	-
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					-	**793.0 MHz**	**-**
LTE B14	5 MHz	QPSK	1RB Low	0	-	23.88	-
			1RB Mid	0	-	23.80	-
			1RB High	0	-	23.81	-
			50% Low	0	-	23.87	-
			50% Mid	0	-	23.86	-
			50% High	0	-	23.84	-
			100%	0	-	23.82	-
		16-QAM	1RB Low	0	-	23.91	-
			1RB Mid	0	-	23.89	-
			1RB High	0	-	23.88	-
			50% Low	1	-	22.97	-
			50% Mid	1	-	22.96	-
			50% High	1	-	22.95	-
			100%	1	-	22.92	-

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

- **LTE B17**

SAR for LTE Band 17 has not been measured because it is covered by LTE Band 12 due to overlapping frequency range ((LTE Band 17 frequency range: 704 – 716 MHz, LTE Band 12 frequency range: 699 – 716 MHz) and same maximum tune-up and channel bandwidth.

- **LTE B25**

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1860.0 MHz	**1882.5 MHz**	**1905.0 MHz**
LTE B25	20 MHz	QPSK	1RB Low	0	24.31	24.21	23.87
			1RB Mid	0	24.00	23.87	23.47
			1RB High	0	23.76	23.72	21.96
			50% Low	1	22.69	22.02	21.95
			50% Mid	1	22.68	21.96	21.88
			50% High	1	22.62	21.90	21.86
			100%	1	22.37	21.99	21.89
		16-QAM	1RB Low	0	23.89	23.75	22.05
			1RB Mid	0	23.43	23.76	22.51
			1RB High	0	22.54	22.95	21.38
			50% Low	2	21.24	21.12	21.04
			50% Mid	2	21.18	21.08	21.00
			50% High	2	21.11	21.01	20.97
			100%	2	21.17	21.08	20.95
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1857.5 MHz	**1882.5 MHz**	**1907.5 MHz**
LTE B25	15 MHz	QPSK	1RB Low	0	24.10	23.95	23.15
			1RB Mid	0	23.94	23.80	23.51
			1RB High	0	22.83	23.79	21.98
			50% Low	0	23.60	23.41	22.80
			50% Mid	0	23.54	23.38	23.24
			50% High	0	23.51	23.34	23.00
			100%	0	23.44	23.27	22.95
		16-QAM	1RB Low	0	23.76	23.68	22.52
			1RB Mid	0	23.68	23.55	23.18
			1RB High	0	22.27	23.50	21.39
			50% Low	1	22.63	22.55	21.72
			50% Mid	1	22.59	22.51	22.25
			50% High	1	22.54	22.45	22.31
			100%	1	22.53	22.45	22.22

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1855.0 MHz	**1882.5 MHz**	**1910.0 MHz**
LTE B25	10 MHz	QPSK	1RB Low	0	24.32	24.18	23.51
			1RB Mid	0	24.06	23.89	23.84
			1RB High	0	23.89	24.05	21.92
			50% Low	1	23.60	23.41	23.19
			50% Mid	1	23.59	23.42	23.28
			50% High	1	23.55	23.37	22.68
			100%	1	23.08	22.38	22.08
		16-QAM	1RB Low	1	23.70	23.88	22.66
			1RB Mid	1	23.69	23.60	23.35
			1RB High	1	23.62	23.75	21.36
			50% Low	2	22.68	22.51	22.20
			50% Mid	2	22.67	22.50	22.23
			50% High	2	22.64	22.47	21.78
			100%	2	22.65	22.49	21.90
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1852.5 MHz	**1882.2 MHz**	**1912.5 MHz**
LTE B25	5 MHz	QPSK	1RB Low	0	24.10	23.89	23.83
			1RB Mid	0	24.03	23.84	22.73
			1RB High	0	24.05	23.83	21.75
			50% Low	1	23.59	23.39	22.84
			50% Mid	1	23.57	23.38	22.46
			50% High	1	23.55	23.37	22.02
			100%	1	23.56	23.37	22.60
		16-QAM	1RB Low	1	23.84	23.72	23.16
			1RB Mid	1	23.80	23.70	22.11
			1RB High	1	23.79	23.69	21.01
			50% Low	2	22.67	22.48	21.91
			50% Mid	2	22.66	22.47	21.51
			50% High	2	22.64	22.45	20.98
			100%	2	22.63	22.47	21.45

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1851.5 MHz	**1882.5 MHz**	**1913.5 MHz**
LTE B25	3 MHz	QPSK	1RB Low	0	24.03	23.84	23.05
			1RB Mid	0	24.12	23.96	22.27
			1RB High	0	24.01	23.81	21.73
			50% Low	1	23.51	23.35	21.81
			50% Mid	1	23.55	23.37	21.45
			50% High	1	23.54	23.34	21.15
			100%	1	23.53	23.34	21.13
		16-QAM	1RB Low	1	23.62	23.62	22.42
			1RB Mid	1	23.73	23.66	21.78
			1RB High	1	23.61	23.52	21.00
			50% Low	2	22.65	22.48	21.08
			50% Mid	2	22.66	22.48	20.75
			50% High	2	22.64	22.45	20.45
			100%	2	22.62	22.43	21.26
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1850.7 MHz	**1882.5 MHz**	**1914.3 MHz**
LTE B25	1.4 MHz	QPSK	1RB Low	0	23.96	23.73	22.12
			1RB Mid	0	24.06	23.79	22.09
			1RB High	0	24.00	23.73	21.70
			50% Low	1	23.96	23.72	21.98
			50% Mid	1	24.06	23.77	22.04
			50% High	1	24.03	23.75	21.83
			100%	1	23.41	23.22	20.99
		16-QAM	1RB Low	1	23.58	23.35	21.39
			1RB Mid	1	23.66	23.43	21.30
			1RB High	1	23.59	23.42	20.95
			50% Low	2	23.53	23.38	21.23
			50% Mid	2	23.59	23.43	21.22
			50% High	2	23.63	23.41	21.20
			100%	2	22.29	22.33	20.21

- **LTE B26**

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					-	**831.5 MHz**	**-**
LTE B26	15 MHz	QPSK	1RB Low	0	-	24.01	-
			1RB Mid	0	-	24.20	-
			1RB High	0	-	24.02	-
			50% Low	1	-	23.68	-
			50% Mid	1	-	23.69	-
			50% High	1	-	23.64	-
			100%	1	-	23.66	-
		16-QAM	1RB Low	1	-	23.79	-
			1RB Mid	1	-	23.93	-
			1RB High	1	-	23.84	-
			50% Low	2	-	22.78	-
			50% Mid	2	-	22.79	-
			50% High	2	-	22.73	-
			100%	2	-	22.73	-
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					819.0 MHz	**831.5 MHz**	**844.0 MHz**
LTE B26	10 MHz	QPSK	1RB Low	0	23.70	24.12	23.94
			1RB Mid	0	23.85	24.23	23.80
			1RB High	0	24.02	24.01	23.75
			50% Low	1	23.44	23.73	23.48
			50% Mid	1	23.43	23.74	23.39
			50% High	1	23.49	23.69	23.34
			100%	1	23.49	23.70	23.45
		16-QAM	1RB Low	1	23.36	23.84	23.78
			1RB Mid	1	23.54	23.89	23.61
			1RB High	1	23.69	23.74	23.55
			50% Low	2	22.52	22.81	22.54
			50% Mid	2	22.53	22.81	22.46
			50% High	2	22.57	22.76	22.40
			100%	2	22.57	22.78	22.50

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					816.5 MHz	**831.5 MHz**	**846.5 MHz**
LTE B26	5 MHz	QPSK	1RB Low	0	23.69	24.15	23.79
			1RB Mid	0	23.77	24.19	23.78
			1RB High	0	23.78	23.98	23.77
			50% Low	1	23.32	23.70	23.34
			50% Mid	1	23.33	23.71	23.35
			50% High	1	23.39	23.69	23.33
			100%	1	23.40	23.68	23.33
		16-QAM	1RB Low	1	23.38	23.96	23.48
			1RB Mid	1	23.53	23.97	23.47
			1RB High	1	23.57	23.88	23.42
			50% Low	2	22.39	22.78	22.39
			50% Mid	2	22.40	22.79	22.40
			50% High	2	22.48	22.76	22.39
			100%	2	22.45	22.77	22.42
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					815.5 MHz	**831.5 MHz**	**847.5 MHz**
LTE B26	3 MHz	QPSK	1RB Low	0	23.65	24.21	23.73
			1RB Mid	0	23.86	24.29	23.85
			1RB High	0	23.74	24.20	23.71
			50% Low	1	23.28	23.67	23.32
			50% Mid	1	23.31	23.67	23.36
			50% High	1	23.27	23.66	23.32
			100%	1	23.30	23.68	23.28
		16-QAM	1RB Low	1	23.35	23.76	23.56
			1RB Mid	1	23.57	23.88	23.64
			1RB High	1	23.47	23.78	23.51
			50% Low	2	22.42	22.76	22.44
			50% Mid	2	22.43	22.82	22.46
			50% High	2	22.38	22.75	22.41
			100%	2	22.37	22.76	22.40
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					814.5 MHz	**831.5 MHz**	**848.3 MHz**
LTE B26	1.4 MHz	QPSK	1RB Low	0	23.59	24.14	23.72
			1RB Mid	0	23.65	24.20	23.79
			1RB High	0	23.56	24.11	23.72
			50% Low	1	23.58	24.15	23.71
			50% Mid	1	23.61	24.21	23.79
			50% High	1	23.63	24.17	23.76
			100%	1	23.10	23.57	23.26
		16-QAM	1RB Low	1	23.18	23.70	23.35
			1RB Mid	1	23.24	23.78	23.42
			1RB High	1	23.22	23.72	23.41
			50% Low	2	23.15	23.70	23.36
			50% Mid	2	23.20	23.79	23.40
			50% High	2	23.20	23.76	23.39
			100%	2	22.18	22.69	22.37

- **LTE B30**

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					-	**2310.0 MHz**	**-**
LTE B30	10 MHz	QPSK	1RB Low	0		23.09	
			1RB Mid	0		22.57	
			1RB High	0		22.35	
			50% Low	1		21.61	
			50% Mid	1		21.59	
			50% High	1		21.44	
			100%	1		21.56	
		16-QAM	1RB Low	1		21.96	
			1RB Mid	1		21.74	
			1RB High	1		21.47	
			50% Low	2		20.66	
			50% Mid	2		20.63	
			50% High	2		20.47	
			100%	2		20.58	
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					-	**2310.0 MHz**	**-**
LTE B30	5 MHz	QPSK	1RB Low	0		22.59	
			1RB Mid	0		22.51	
			1RB High	0		22.45	
			50% Low	1		21.57	
			50% Mid	1		21.56	
			50% High	1		21.55	
			100%	1		21.56	
		16-QAM	1RB Low	1		21.77	
			1RB Mid	1		21.66	
			1RB High	1		21.61	
			50% Low	2		20.59	
			50% Mid	2		20.59	
			50% High	2		20.55	
			100%	2		20.62	

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

- **LTE B30 Hotspot mode**

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					-	**2310.0 MHz**	**-**
LTE B30	10 MHz	QPSK	1RB Low	0		20.88	
			1RB Mid	0		20.84	
			1RB High	0		20.82	
			50% Low	0		20.87	
			50% Mid	0		20.81	
			50% High	0		20.83	
			100%	0		20.84	
		16-QAM	1RB Low	0		20.87	
			1RB Mid	0		20.72	
			1RB High	0		20.78	
			50% Low	0		20.82	
			50% Mid	0		20.72	
			50% High	0		20.76	
			100%	0		20.81	
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					-	**2310.0 MHz**	**-**
LTE B30	5 MHz	QPSK	1RB Low	0		20.82	
			1RB Mid	0		20.81	
			1RB High	0		20.75	
			50% Low	0		20.61	
			50% Mid	0		20.69	
			50% High	0		20.67	
			100%	0		20.72	
		16-QAM	1RB Low	0		20.81	
			1RB Mid	0		20.83	
			1RB High	0		20.84	
			50% Low	0		20.71	
			50% Mid	0		20.75	
			50% High	0		20.66	
			100%	0		20.68	

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

- **LTE B38**

To perform LTE TDD measurements, CMW LTE TDD options “Uplink Downlink Configuration” was set to “0” and “Special Subframe” was set to “7”.

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2580.0 MHz	**2595.0 MHz**	**2610.0 MHz**
LTE B38	20 MHz	QPSK	1RB Low	0	22.00	22.24	22.08
			1RB Mid	0	22.16	22.33	21.84
			1RB High	0	22.27	22.01	21.62
			50% Low	1	21.46	21.71	21.53
			50% Mid	1	21.55	21.83	21.43
			50% High	1	21.69	21.68	21.36
			100%	1	21.50	21.69	21.38
		16-QAM	1RB Low	1	21.37	21.69	21.60
			1RB Mid	1	21.45	21.76	21.33
			1RB High	1	21.80	21.69	21.09
			50% Low	2	20.43	20.82	20.58
			50% Mid	2	20.50	20.92	20.49
			50% High	2	20.54	20.76	20.43
			100%	2	20.32	20.67	20.43
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2577.5 MHz	**2595.0 MHz**	**2612.5 MHz**
LTE B38	15 MHz	QPSK	1RB Low	0	22.01	22.17	22.00
			1RB Mid	0	22.00	22.22	21.71
			1RB High	0	22.11	22.02	21.62
			50% Low	1	21.47	21.80	21.44
			50% Mid	1	21.57	21.81	21.37
			50% High	1	21.57	21.76	21.22
			100%	1	21.24	21.81	21.35
		16-QAM	1RB Low	1	21.19	21.68	21.63
			1RB Mid	1	21.55	21.77	21.37
			1RB High	1	21.49	21.67	21.31
			50% Low	2	20.41	20.85	20.54
			50% Mid	2	20.51	20.88	20.45
			50% High	2	20.56	20.82	20.29
			100%	2	20.29	20.73	20.41

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2575.0 MHz	**2595.0 MHz**	**2615.0 MHz**
LTE B38	10 MHz	QPSK	1RB Low	0	21.97	22.28	21.87
			1RB Mid	0	22.05	22.27	21.72
			1RB High	0	22.13	22.16	21.60
			50% Low	1	21.38	21.81	21.36
			50% Mid	1	21.45	21.80	21.24
			50% High	1	21.46	21.79	21.24
			100%	1	21.20	21.75	21.22
		16-QAM	1RB Low	1	21.33	21.68	21.45
			1RB Mid	1	21.36	21.74	21.31
			1RB High	1	21.50	21.70	21.18
			50% Low	2	20.32	20.85	20.42
			50% Mid	2	20.37	20.86	20.32
			50% High	2	20.46	20.84	20.29
			100%	2	20.17	20.74	20.28
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2572.5 MHz	**2595.0 MHz**	**2617.5 MHz**
LTE B38	5 MHz	QPSK	1RB Low	0	22.02	22.19	21.73
			1RB Mid	0	22.01	22.20	21.58
			1RB High	0	22.09	22.09	21.58
			50% Low	1	21.43	21.79	21.20
			50% Mid	1	21.41	21.81	21.21
			50% High	1	21.44	21.82	21.10
			100%	1	21.34	21.76	21.20
		16-QAM	1RB Low	1	21.30	21.79	21.37
			1RB Mid	1	21.22	21.74	21.25
			1RB High	1	21.38	21.68	21.27
			50% Low	2	20.40	20.85	20.25
			50% Mid	2	20.38	20.88	20.26
			50% High	2	20.35	20.86	20.15
			100%	2	20.33	20.80	20.29

- **LTE B66**

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1720.0 MHz	**1745.0 MHz**	**1770.0 MHz**
LTE B66	20 MHz	QPSK	1RB Low	0	24,05	24,43	24,28
			1RB Mid	0	24,01	24,23	23,90
			1RB High	0	23,88	24,24	23,86
			50% Low	1	23,29	23,40	23,26
			50% Mid	1	23,14	23,33	23,07
			50% High	1	23,08	23,26	23,03
			100%	1	23,01	23,22	22,99
		16-QAM	1RB Low	1	23,15	24,13	24,16
			1RB Mid	1	23,33	23,91	23,84
			1RB High	1	24,21	23,92	23,59
			50% Low	2	22,65	21,46	21,32
			50% Mid	2	22,61	21,40	21,24
			50% High	2	22,58	21,33	21,26
			100%	2	21,55	21,37	21,26
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1717.5 MHz	**1745.0 MHz**	**1772.5 MHz**
LTE B66	15 MHz	QPSK	1RB Low	0	23.70	24.41	24.22
			1RB Mid	0	24.46	24.23	23.70
			1RB High	0	24.33	24.21	23.87
			50% Low	1	22.91	23.85	23.60
			50% Mid	1	22.88	23.81	23.22
			50% High	1	23.51	23.75	22.90
			100%	1	24.10	23.80	23.63
		16-QAM	1RB Low	1	23.10	24.24	23.88
			1RB Mid	1	22.12	24.01	22.10
			1RB High	1	23.96	24.03	23.35
			50% Low	2	22.34	22.94	22.76
			50% Mid	2	22.48	22.91	22.75
			50% High	2	22.84	22.85	22.51
			100%	2	23.01	22.89	22.71

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1715.0 MHz	1745.0 MHz	1775.0 MHz
LTE B66	10 MHz	QPSK	1RB Low	0	23.81	24.35	23.70
			1RB Mid	0	23.07	24.25	23.58
			1RB High	0	23.31	24.21	23.61
			50% Low	1	22.81	23.84	23.54
			50% Mid	1	22.56	23.82	23.50
			50% High	1	22.71	23.77	23.57
			100%	1	22.94	22.88	22.62
		16-QAM	1RB Low	1	23.50	24.25	23.61
			1RB Mid	1	23.03	24.17	23.34
			1RB High	1	22.92	24.14	23.7
			50% Low	2	21.96	22.93	22.16
			50% Mid	2	21.79	22.90	22.13
			50% High	2	21.73	22.86	22.22
			100%	2	22.36	22.85	22.73
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1712.5 MHz	**1745.0 MHz**	**1777.5 MHz**
LTE B66	5 MHz	QPSK	1RB Low	0	24.18	24.31	23.38
			1RB Mid	0	23.83	24.22	23.98
			1RB High	0	23.40	24.23	24.01
			50% Low	1	23.04	23.80	22.44
			50% Mid	1	22.74	23.78	22.51
			50% High	1	22.52	23.77	22.81
			100%	1	22.29	23.78	23.35
		16-QAM	1RB Low	1	23.40	24.15	23.03
			1RB Mid	1	23.65	24.08	23.89
			1RB High	1	22.60	24.09	23.86
			50% Low	2	21.97	22.88	21.94
			50% Mid	2	21.88	22.88	21.90
			50% High	2	21.69	22.84	22.32
			100%	2	22.01	22.85	22.42

2.4. Wi-Fi

- 2.4 GHz Band:

Band	Mode	Channel / Freq (MHz)	Average Output Power (dBm)				
			Chain 0	Chain 1	MIMO Chain 0	MIMO Chain 1	Total MIMO
2.4 GHz	802.11b	1/2412	16.31	15.55	14.15	14.40	17.29
		6/2437	16.32	15.57	14.28	14.50	17.40
		11/2462	16.30	15.89	14.13	14.61	17.39
	802.11g	1/2412	13.86	14.37	13.24	13.93	16.61
		6/2437	13.94	14.40	13.16	13.94	16.58
		11/2462	13.89	14.65	13.23	13.92	16.60
	802.11n20	1/2412	13.70	14.31	13.07	13.94	16.54
		6/2437	13.76	14.29	13.06	13.84	16.48
		11/2462	13.72	14.43	13.08	13.81	16.47
	802.11n40	3/2422	13.30	13.75	9.67	10.60	13.17
		6/2437	13.33	13.74	9.62	10.58	13.14
		9/2452	13.20	13.56	9.51	10.08	12.81

- 5.2 GHz Band:

Band	Mode	Channel / Freq (MHz)	Average Output Power (dBm)				
			Chain 0	Chain 1	MIMO Chain 0	MIMO Chain 1	Total MIMO
5.2 GHz	802.11a	36/5180	18.27	15.61	16.67	15.95	19.34
		40/5200	18.44	15.65	16.87	16.01	19.47
		44/5200	18.41	15.70	16.62	16.03	19.35
		48/5240	18.09	15.76	16.51	16.11	19.32
	802.11n20	36/5180	18.10	15.75	16.74	15.73	19.27
		40/5200	18.35	15.75	16.61	15.76	19.22
		44/5200	18.06	15.73	16.55	15.71	19.16
		48/5240	18.01	15.81	16.58	15.72	19.18
	802.11ac20	36/5180	18.20	15.71	16.58	15.99	19.31
		40/5200	18.34	15.86	16.87	16.06	19.49
		44/5200	18.25	15.19	16.68	16.01	19.37
		48/5240	18.02	15.88	16.57	16.05	19.33
	802.11n40	38/5190	18.60	15.55	17.07	16.13	19.64
		46/5230	18.58	15.99	16.95	16.44	19.71
	802.11ac40	38/5190	18.56	16.32	17.10	16.28	19.72
		46/5230	18.61	16.34	16.97	16.43	19.72
	802.11ac80	42/5210	17.67	15.43	16.38	15.75	19.09

- 5.3 GHz Band:

Band	Mode	Channel / Freq (MHz)	Average Output Power (dBm)				
			Chain 0	Chain 1	MIMO Chain 0	MIMO Chain 1	Total MIMO
5.2 GHz	802.11a	52/5260	18.35	16.10	16.37	16.21	19.30
		56/5280	17.78	16.06	16.22	16.19	19.22
		60/5300	17.81	16.07	15.57	16.21	18.91
		64/5320	17.68	15.91	15.51	16.19	18.87
	802.11n20	52/5260	17.79	15.98	16.15	16.23	19.20
		56/5280	17.32	15.60	15.90	16.08	19.00
		60/5300	17.08	15.14	15.41	16.14	18.80
		64/5320	16.89	15.87	15.30	16.11	18.73
	802.11ac20	52/5260	17.79	16.09	16.21	16.16	19.20
		56/5280	17.13	16.03	15.96	16.10	19.04
		60/5300	17.06	15.96	15.52	16.13	18.85
		64/5320	16.88	15.86	15.37	16.11	18.77
	802.11n40	54/5270	17.99	16.31	16.49	16.48	19.50
		62/5310	17.46	16.28	15.91	16.49	19.22
	802.11ac40	54/5270	17.95	16.31	16.54	16.52	19.54
		62/5310	17.47	16.30	15.90	16.43	19.18
	802.11ac80	58/5290	16.95	15.56	15.32	15.74	18.55

- 5.6 GHz Band:

Band	Mode	Channel / Freq (MHz)	Average Output Power (dBm)				
			Chain 0	Chain 1	MIMO Chain 0	MIMO Chain 1	Total MIMO
5.6 GHz	802.11a	100/5500	16.80	15.33	15.01	15.04	18.04
		104/5520	17.56	15.84	15.29	16.17	18.76
		108/5540	16.98	15.10	15.45	15.02	18.25
		112/5560	17.26	14.95	15.66	14.83	18.28
		116/5580	17.81	15.30	16.12	15.65	18.90
		136/5680	17.74	15.29	16.09	15.49	18.81
		140/5700	17.52	14.89	16.01	14.58	18.36
	802.11n20	100/5500	17.30	14.99	15.81	14.67	18.29
		104/5520	16.75	15.11	15.38	14.78	18.10
		108/5540	16.69	15.76	14.74	16.13	18.50
		112/5560	15.82	15.21	14.10	15.16	17.67
		116/5580	15.76	15.15	13.84	15.03	17.49
		136/5680	18.01	14.93	14.93	15.03	17.99
		140/5700	18.19	15.87	15.29	16.07	18.71
	802.11ac20	100/5500	17.22	15.03	15.24	15.46	18.36
		104/5520	17.31	14.90	15.47	14.95	18.23
		108/5540	17.79	14.70	15.82	14.48	18.21
		112/5560	17.78	15.13	15.96	15.46	18.73
		116/5580	17.35	14.85	15.95	14.91	18.47
		136/5680	17.10	14.92	15.66	15.04	18.37
		140/5700	16.56	15.05	15.25	15.05	18.16
	802.11n40	102/5510	16.28	15.42	14.57	15.69	18.18
		110/5550	15.92	15.07	14.04	14.75	17.42
		118/5590	15.86	15.04	13.58	15.01	17.36
		126/5630	16.46	14.97	14.93	15.07	18.01
		134/5670	16.87	15.64	15.27	15.99	18.66
	802.11ac40	102/5510	17.13	15.06	15.38	15.17	18.29
		110/5550	17.31	14.90	15.62	14.99	18.33
		118/5590	17.65	14.74	15.96	14.71	18.39
		126/5630	17.79	14.85	16.04	15.22	18.66
		134/5670	17.59	14.85	15.97	14.99	18.52
		142/5710	17.50	14.91	15.77	15.14	18.48
	802.11ac80	106/5530	16.86	15.02	15.37	15.17	18.28
		122/5610	16.29	15.40	14.65	15.81	18.28
		138/5690	15.67	15.10	14.13	15.35	17.79

2.5. Bluetooth

Band	Mode	Channel / Freq (MHz)	Average Output Power (dBm)
2.4 GHz	Bluetooth BR (GFSK)	0 / 2402	11.04
		39 / 2441	10.88
		78 / 2480	10.53
	Bluetooth EDR2 (π/4-DQPSK)	0 / 2402	7.93
		39 / 2441	6.67
		78 / 2480	6.63
	Bluetooth EDR3 (8-DPSK)	0 / 2402	7.92
		39 / 2441	6.65
		78 / 2480	6.64
	Bluetooth LE	0 / 2402	4.06
		39 / 2441	2.99
		78 / 2480	2.98

3. TISSUE PARAMETERS MEASUREMENTS

- **Head Tissue measurements**

Frequency (MHz)	Target Head Tissue		Measured Head Tissue		Deviation %		Measured Date
	Permittivity ε	Conductivity σ [S/m]	Permittivity ε	Conductivity σ [S/m]	Permittivity ε	Conductivity σ [S/m]	
750	41.94	0.89	42.70	0.92	1.80	3.47	2018-12-10
835	41.50	0.90	41.00	0.91	-1.20	1.00	2018-12-03
900	41.50	0.97	40.32	0.97	-2.85	0.45	2018-12-03
1750	40.07	1.37	39.18	1.33	-2.22	-2.93	2018-12-11
1800	40.00	1.40	39.93	1.36	-0.17	-2.67	2018-12.13
2300	39.46	1.67	40.05	1.72	1.50	3.17	2019-01-22
2450	39.20	1.80	39.26	1.83	0.16	1.42	2019-01-22
2450	39.20	1.80	38.27	1.84	-2.37	2.49	2019-03-06
2600	39.00	1.96	38.98	2.01	-0.05	2.57	2019-01-22
5200	36.00	4.66	36.40	4.77	1.10	2.33	2019-02-13
5200	36.00	4.66	36.56	4.73	1.55	1.46	2019-02-18
5200	36.00	4.66	36.71	4.81	1.98	3.25	2019-02-21
5200	36.00	4.66	36.18	4.79	0.51	2.76	2019-02-25
5500	35.65	4.97	35.99	5.08	0.97	2.36	2019-02-13
5500	35.65	4.97	36.13	5.11	1.36	2.91	2019-02-18
5500	35.65	4.97	36.31	5.13	1.85	3.42	2019-02-21
5500	35.65	4.97	35.80	5.11	0.43	2.88	2019-02-25
5800	35.30	5.27	35.53	5.42	0.65	2.81	2019-02-13
5800	35.30	5.27	35.69	5.45	1.11	3.36	2019-02-18
5800	35.30	5.27	35.86	5.47	1.59	3.87	2019-02-21
5800	35.30	5.27	35.33	5.45	0.10	3.34	2019-02-25

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

- **Body Tissue measurements**

Frequency (MHz)	Target Body Tissue		Measured Body Tissue		Deviation %		Measured Date
	Permittivity ε	Conductivity σ [S/m]	Permittivity ε	Conductivity σ [S/m]	Permittivity ε	Conductivity σ [S/m]	
750	55.53	0.96	56.07	0.96	0.97	-0.30	2018-12-26
835	55.20	0.97	55.03	0.96	-0.31	-1.34	2019-01-09
900	55.00	1.05	54.31	1.03	-1.26	-2.15	2019-01-09
1750	53.43	1.49	51.56	1.51	-3.51	1.74	2019-02-04
1800	53.30	1.52	51.44	1.57	-3.49	3.39	2019-02-04
1800	53.30	1.52	55.26	1.58	3.67	4.17	2019-02-05
2300	52.9	1.81	52.84	1.89	-0.11	4.61	2019-02-04
2450	52.7	1.95	52.31	2.02	-0.73	3.44	2018-12-18
2450	52.7	1.95	52.14	2.02	-1.05	3.77	2019-01-28
2450	52.7	1.95	52.24	2.02	-0.87	3.53	2019-02-04
2450	52.7	1.95	52.39	2.01	-0.59	3.05	2019-03-05
2600	52,51	2,16	51.89	2.19	-1.17	1.33	2018-12-18
2600	52,51	2,16	52.01	2.21	-0.95	2.37	2019-01-28
2600	52,51	2,16	52.11	2.21	-0.77	2.14	2019-02-04
5200	49.01	5.30	48.72	5.34	-0.59	0.84	2019-02-07
5200	49.01	5.30	48.84	5.39	-0.36	1.67	2019-02-11
5200	49.01	5.30	48.91	5.38	-0.21	1.58	2019-03-04
5500	48.61	5.65	48.04	5.78	-1.16	2.36	2019-02-07
5500	48.61	5.65	48.16	5.83	-0.92	3.19	2019-02-11
5500	48.61	5.65	48.23	5.82	-0.77	3.04	2019-03-04
5800	48.20	6.00	47.36	6.26	-1.75	4.26	2019-02-07
5800	48.20	6.00	47.47	6.22	-1.51	3.60	2019-02-11
5800	48.20	6.00	47.64	6.21	-1.17	3.51	2019-03-04

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 HSL750V2/MSL750V2

H_2O	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-methyyl-3(2H)-isothiazolone, 0.1 – 0.7%

Head and Muscle Tissue Simulation Liquids HSL900/MSL900

H_2O	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-methyyl-3(2H)-isothiazolone, 0.1 – 0.7%

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

H_2O	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-methyyl-3(2H)-isothiazolone
CAS-No. 9005-64-5	<50 % polyoxyethylenesorbitan monolaurate

Head and Muscle Tissue Simulation Liquids HSL1800/MSL1800

H_2O	Water, 52 – 75%
C8H18O3	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 HBBL1900-3800V3/M HBBL1900-3800V3

H_2O	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-methyyl-3(2H)-isothiazolone
CAS-No. 9005-64-5	<50 % polyoxyethylenesorbitan monolaurate

Head and Muscle Tissue Simulation Liquids HBBL5GHzV2

H_2O	76 – 80 %
Mineral Oil	10 – 12 %
Emulsifiers	8 – 10 %
Additives and Salt	1 – 3%

4. SYSTEM CHECK MEASUREMENTS

4.1. Validation results for Head TSL

Date	Frequency (MHz)	SAR over	Fast SAR (W/kg)	SAR (W/kg)	1 W Target SAR (W/kg)	1 W Norm. SAR (W/kg)	Drift (%)
2018-12-10	750	1 gr.	2.18	2.12	8.33	8.48	1.76
		10 gr.	1.48	1.39	5.39	5.56	3.11
2018-12-03	900	1 gr.	2.67	2.63	10.9	10.52	-3.49
		10 gr.	1.80	1.69	6.98	6.76	-3.15
2018-12-12	1800	1 gr.	9.81	9.57	39.0	38.51	-1.24
		10 gr.	5.21	4.94	20.3	19.88	-2.06
2018-12-13	1800	1 gr.	9.84	9.58	39.0	38.26	-1.90
		10 gr.	5.19	4.93	20.3	19.69	-3.01
2019-01-23	2450	1 gr.	13.40	13.10	50.1	52.34	4.47
		10 gr.	6.23	6.02	23.6	24.05	1.91
2019-03-05	2450	1 gr.	13.10	12.90	50.1	51.24	2.28
		10 gr.	6.09	5.87	23.6	23.32	-1.20
2019-01-22	2600	1 gr.	14.50	14.10	57.3	56.73	-1.00
		10 gr.	6.48	6.15	25.5	24.74	-2.97
2019-02-13	5200	1 gr.	7.44	7.59	76.4	75.75	-0.85
		10 gr.	2.03	2.18	21.9	21.76	-0.66
2019-02-13	5200	1 gr.	7.44	7.59	76.4	75.75	-0.85
		10 gr.	2.03	2.18	21.9	21.76	-0.66
2019-02-26	5200	1 gr.	7.44	7.60	76.4	75.85	-0.72
		10 gr.	2.04	2.16	21.9	21.56	-1.57
2019-02-18	5500	1 gr.	7.46	7.82	82.4	78.04	-5.29
		10 gr.	2.04	2.22	23.3	22.16	-4.91
2019-02-21	5500	1 gr.	7.48	7.95	82.4	79.71	-3.27
		10 gr.	2.07	2.21	23.3	22.16	-4.90
2019-02-25	5500	1 gr.	7.50	7.87	82.4	79.08	-4.03
		10 gr.	2.03	2.22	23.3	22.31	-4.27

4.2. Validation results for Body TSL

Date	Frequency (MHz)	SAR over	Fast SAR (W/kg)	SAR (W/kg)	1 W Target SAR (W/kg)	1 W Norm. SAR (W/kg)	Drift (%)
2018-12-26	750	1 gr.	2.23	2.21	8.68	8.80	1.33
		10 gr.	1.52	1.47	5.72	5.85	2.28
2019-01-09	900	1 gr.	2.67	2.64	11.1	10.70	-3.58
		10 gr.	1.78	1.72	7.25	6.97	-3.82
2019-02-04	1800	1 gr.	10.20	9.93	38.7	39.10	1.03
		10 gr.	5.26	5.17	20.5	20.36	-0.70
2019-02-06	1800	1 gr.	9.95	9.80	38.7	39.18	1.25
		10 gr.	5.14	5.08	20.5	20.31	-0.92
2019-01-28	2450	1 gr.	13.10	12.80	50.1	51.16	2.11
		10 gr.	5.94	5.87	23.6	23.46	-0.59
2019-02-04	2450	1 gr.	12.90	12.80	50.1	51.10	2.00
		10 gr.	5.91	5.81	23.6	23.19	-1.72
2019-03-05	2450	1 gr.	12.20	12.10	50.1	48.57	-3.06
		10 gr.	5.58	5.52	23.6	22.16	-6.12
2018-12-18	2600	1 gr.	14.20	13.80	54.7	54.86	0.29
		10 gr.	6.19	6.04	24.4	24.01	-1.59
2019-02-07	5200	1 gr.	6.73	6.76	74.1	68.78	-7.18
		10 gr.	1.84	1.90	20.7	19.33	-6.61
2019-03-04	5200	1 gr.	6.72	6.85	74.1	69.45	-6.27
		10 gr.	1.84	1.93	20.7	19.57	-5.47
2019-02-08	5500	1 gr.	7.59	7.69	79.6	76.83	-3.47
		10 gr.	2.06	2.13	22.0	21.28	-3.26
2019-02-11	5500	1 gr.	7.34	7.55	79.6	75.61	-5.01
		10 gr.	2.01	2.10	22.0	21.03	-4.41
2019-03-04	5500	1 gr.	7.40	7.62	79.6	76.40	-4.02
		10 gr.	1.99	2.12	22.0	21.26	-3.38

5. MEASUREMENT RESULTS FOR SAR (SPECIFIC ABSORPTION RATE)

5.1. Summary maximum results for 1-g Head SAR measurements.

Mode	Side/Position	Channel (Frequency)	Reported SAR 1-g (W/kg)	Limit SAR 1-g (W/kg)
GPRS 2 slots 850 MHz	Left/Cheek	CH 251 (848.8 MHz)	0.604	1.6
GPRS 2 slots 1900 MHz	Right/Cheek	CH 661 (1880 MHz)	0.183	1.6
WCDMA Band II	Right/Cheek	CH 9400 (1880 MHz)	0.271	1.6
WCDMA Band IV	Right/Cheek	CH 1412 (1732.6 MHz	0.457	1.6
WCDMA Band V	Left/Cheek	CH 4233 (846.6 MHz)	0.472	1.6
LTE Band 7	Right/Cheek	CH 21100 (2535.0 MHz)	0.260	1.6
LTE Band 12	Right/Cheek	CH 23090 (707.0 MHz)	0.228	1.6
LTE Band 13	Left/Cheek	CH 23230 (782 MHz)	0.423	1.6
LTE Band 14	Left/Cheek	CH 23330 (793.0 MHz)	0.585	1.6
LTE Band 25	Right/Cheek	CH 26140 (1860.0 MHz)	0.225	1.6
LTE Band 26	Right/Cheek	CH 26865 (831.5 MHz)	0.522	1.6
LTE Band 30	Right/Cheek	CH 27710 (2310.0 MHz)	0.134	1.6
LTE Band 38	Right/Cheek	CH 38000 (2595.0 MHz)	0.289	1.6
LTE Band 66	Right/Cheek	CH 132322 (1745.0 MHz)	0.484	1.6
Wi-Fi 2.45 GHz (Variability measurement)	Left Cheek	CH 11 (2462.0 MHz)	1.301	1.6
Wi-Fi 5.2 GHz	Right/Cheek	CH 36 (5180.0 MHz)	0.585	1.6
Wi-Fi 5.6 GHz	Right/Cheek	CH 116 (5580.0 MHz)	1.050	1.6
Bluetooth	Right/Cheek	CH 40 (2441.0 MHz	0.290	1.6

5.2. Summary maximum results for 1-g Body SAR measurements.

Mode	Position/Distance	Channel (Frequency)	Reported SAR 1-g (W/kg)	Limit SAR 1-g (W/kg)
GPRS 2 slots 850 MHz	Front face/10 mm	CH 251 (848.8 MHz)	1.083	1.6
GPRS 2 slots 1900 MHz	Bottom edge/10 mm	CH 661 (1880 MHz)	0.629	1.6
WCDMA Band II	Bottom edge/10 mm	CH 9262 (1852.4 MHz)	1.329	1.6
WCDMA Band IV	Bottom edge/10 mm	CH 1512 (1752.6 MHz)	1.360	1.6
WCDMA Band V (Variability measurement)	Back face/10 mm	CH 4233 (846.6 MHz)	1.097	1.6
LTE Band 7	Bottom edge/10 mm	CH 20850 (2510.0 MHz)	1.443	1.6
LTE Band 12	Front face/10 mm	CH 23090 (707.0 MHz)	0.759	1.6
LTE Band 13	Front face/10 mm	CH 23230 (782 MHz)	1.011	1.6
LTE Band 14	Back face/10 mm	CH 23330 (793.0 MHz)	1.37	1.6
LTE Band 25	Bottom edge/10 mm	CH 26140 (1860.0 MHz)	1.201	1.6
LTE Band 26	Front face/10 mm	CH 26865 (831.5 MHz)	1.056	1.6
LTE Band 30 (Variability measurement)	Bottom edge/10 mm	CH 27710 (2310.0 MHz)	1.440	1.6
LTE Band 38	Bottom edge/10 mm	CH 38000 (2595.0 MHz)	1.435	1.6
LTE Band 66	Front face/10 mm	CH 132572 (1770.0 MHz)	1.019	1.6
Wi-Fi 2.45 GHz	Top edge/10 mm	CH 11 (2462.0 MHz)	0.417	1.6
Wi-Fi 5.2 GHz	Back face/10 mm	CH 48 (5240.0 MHz)	0.188	1.6
Wi-Fi 5.6 GHz	Back face/10 mm	CH 116 (5580.0 MHz)	0.298	1.6
Bluetooth	Front face/10 mm	CH 40 (2441.0 MHz	0.029	1.6

5.3. Summary maximum results for 10-g Extremity SAR measurements

According to KDB 648474 D04, Handset SAR v01r03, For smart phones, with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.

Mode	Position/Distance	Channel (Frequency)	Reported SAR 10-g (W/kg)	Limit SAR 10-g (W/kg)
WCDMA Band II	Bottom edge/0 mm	CH 9262 (1852.4 MHz)	0.935	4.0
WCDMA Band IV	Bottom edge/0 mm	CH 1512 (1752.6 MHz)	1.302	4.0
LTE Band 7 (Variability measurement)	Back face/0 mm	CH 21350 (2560.0 MHz)	2.465	4.0
LTE Band 14	Back face/0 mm	CH 23330 (793.0 MHz)	1.370	1.6
LTE Band 25	Bottom edge/0 mm	CH 26140 (1860.0 MHz)	0.760	4.0
LTE Band 30	Bottom edge/0 mm	CH 27710 (2310.0 MHz)	2.900	4.0
LTE Band 38	Bottom edge/0 mm	CH 38150 (2610.0 MHz)	2.262	4.0

5.4. Result for simultaneous multi-band transmission

Following results correspond to multi transmission cases with a total 1-g SAR value higher than 1.6 W/kg, according to 447498 D01 General RF Exposure Guidance v06, the simultaneously transmitting antennas in each operating mode and exposure condition combination must be considered one pair at a time to determine the SAR to peak location separation ratio (SPLSR) to qualify for test exclusion, and must be ≤ 0.04 for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion.

Transmission Modes	Position	Σ SARi (W/kg)	SPLSR case	Verdict
GPRS 850+Wi-Fi 2.45 GHz CH1+BT	Left Cheek	2.001	1	Pass
GPRS 850+Wi-Fi 5 GHz CH1+BT	Right Cheek	1.666	2	Pass
WCDMA II+Wi-Fi 2.45 GHz CH1+BT	Left Cheek	1.611	3	Pass
WCDMA IV+Wi-Fi 2.45 GHz CH1+BT	Left Cheek	1.819	4	Pass
WCDMA IV+Wi-Fi 5 GHz CH1+BT	Right Cheek	1.776	5	Pass
WCDMA V+Wi-Fi 2.45 GHz CH1+BT	Left Cheek	1.879	6	Pass
WCDMA V+Wi-Fi 5 GHz CH1+BT	Right Cheek	1.674	7	Pass
LTE 12+Wi-Fi 2.45 GHz CH1+BT	Left Cheek	1.612	8	Pass
LTE 13+Wi-Fi 2.45 GHz CH1+BT	Left Cheek	1.830	9	Pass
LTE 13+Wi-Fi 5 GHz CH1+BT	Right Cheek	1.689	10	Pass
LTE 14+Wi-Fi 2.45 GHz CH1+BT	Left Cheek	1.992	11	Pass
LTE 14+Wi-Fi 5 GHz CH1+BT	Right Cheek	1.846	12	Pass
LTE 14+Wi-Fi 2.45 GHz CH1+BT	Back Face	1.689	13	Pass
LTE 14+Wi-Fi 2.45 GHz MIMO+BT	Back Face	1.717	14	Pass
LTE 14 +Wi-Fi 5 GHz CH0 +BT	Back Face	1.651	15	Pass
LTE 14+ Wi-Fi 5 GHz CH1+BT	Back Face	1.630	16	Pass
LTE 14+Wi-Fi 5 GHz MIMO	Back Face	1.668	17	Pass
LTE 26+Wi-Fi 2.45 GHz CH1+BT	Left Cheek	1.853	18	Pass
LTE 38+Wi-Fi 5 GHz CH1+BT	Right Cheek	1.841	19	Pass
LTE 38+Wi-Fi 5 GHz CH1+BT	Right Cheek	1.670	20	Pass
LTE 66+Wi-Fi 5 GHz CH1+BT	Right Cheek	1.759	21	Pass
LTE 66+Wi-Fi 5 GHz CH1+BT	Right Cheek	1.803	22	Pass
Wi-Fi 2.45 GHz CH0+Wi-Fi 5 GHz CH1	Right Cheek	1.655	23	Pass

- SPLSR Worst case:

Position:	Left Cheek	**Modes:**	GPRS 850 + Wi-Fi SISO CH1 2.4GHz + BT

	1-g SAR				Coordinates (mm)		
	Reported 1-g SAR (W/kg)		Result	Verdict	x	y	z
GPRS 850	**SAR 1:**	0.604	0.0292	PASS	71.510	252.500	-171.100
SISO CH1 2.4GHz	**SAR 2:**	1.301			22.990	328.500	-172.000
	Separation distance (mm):	90.17					

	1-g SAR				Coordinates (mm)		
	Reported 1-g SAR (W/kg)		Result	Verdict	x	y	z
GPRS 850	**SAR 1:**	0.604	0.0089	PASS	71.510	252.500	-171.100
BT	**SAR 2:**	0.106			12.065	284.500	-169.100
	Separation distance (mm):	67.54					

	1-g SAR				Coordinates (mm)		
	Reported 1-g SAR (W/kg)		Result	Verdict	x	y	z
SISO CH1 2.4GHz	**SAR 1:**	1.301	0.0367	PASS	22.990	328.500	-172.000
BT	**SAR 2:**	0.106			12.065	284.500	-169.100
	Separation distance (mm):	45.43					

		Worst case combination			Total SAR 1-g (W/kg)	Distance	SPLSR	Verdict
		GPRS 850	Wi-Fi	BT				
Position:	Left Cheek	0.604	1.301	0.106	2.011			
		0.604	1.301		1.905	90.17	0.0292	PASS
		0.604		0.106	0.71	67.54	0.0089	PASS
			1.301	0.106	1.407	45.43	0.0367	PASS

5.5. Results for GPRS 850 MHz band – 2 slots

- **Head measurements**

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 251 (848.8 MHz)	0.398	0.415	-0.34	1.445	0.604	1
Left / Tilted	0	CH 251 (848.8 MHz)	0.0476	NM[3]	1.39	1.445	0.069	
Right / Cheek	0	CH 251 (848.8 MHz)	0.231	NM[3]	2.09	1.445	0.347	
Right / Tilted	0	CH 251 (848.8 MHz)	0.0507	NM[3]	3.51	1.445	0.073	
Right / Cheek	0	CH 128 (824.2 MHz)	0.394	0.411	-0.34	1.349	0.558	
Right / Cheek	0	CH 190 (836.6 MHz)	0.407	0.424	-0.34	1.413	0.603	

3: See remarks and comments.

- **Body measurements**

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 251 (848.8 MHz)	0.721	0.739	-0.69	1.445	1.083	2
Back face	10	CH 251 (848.8 MHz)	0.671	0.684	-1.26	1.445	1.014	
Left edge	10	CH 251 (848.8 MHz)	0.321	NM[3]	0.46	1.445	0.464	
Right edge	10	CH 251 (848.8 MHz)	0.259	NM[3]	-0.12	1.445	0.375	
Bottom edge	10	CH 251 (848.8 MHz)	0.341	0.350	-1.26	1.445	0.519	
Back face	10	CH 128 (824.2 MHz)	0.669	0.69	-2.16	1.349	0.972	
Back face	10	CH 190 (836.6 MHz)	0.667	0.694	-2.28	1.413	1.027	

3: See remarks and comments.

5.6. Results for GPRS 1900 MHz Band – 2 slots

- **Head measurements**

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	0.067	NM[3]	1.274	1.48	0.100	
Left / Tilted	0	CH 661 (1880 MHz)	0.038	NM[3]	-1.938	1.48	0.058	
Right / Cheek	0	CH 661 (1880 MHz)	0.113	0.124	0.462	1.48	0.183	3
Right / Tilted	0	CH 661 (1880 MHz)	0.030	NM[3]	1.508	1.48	0.045	
Right / Cheek	0	CH 512 (1850.2 MHz)	0.066	0.073	-1.599	1.48	0.112	
Right / Cheek	0	CH 810 (1909.8 MHz)	0.070	0.077	-1.599	1.48	0.118	

3: See remarks and comments.

- **Body measurements**

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	0.296	NM[3]	0.809	1.48	0.450	
Back face	10	CH 661 (1880 MHz)	0.324	NM[3]	-0.688	1.48	0.502	
Left edge	10	CH 661 (1880 MHz)	0.161	NM[3]	0.231	1.48	0.238	
Right edge	10	CH 661 (1880 MHz)	0.048	NM[3]	-0.574	1.48	0.072	
Bottom edge	10	CH 661 (1880 MHz)	0.409	0.425	1.042	1.48	0.629	4
Back face	10	CH 512 (1850.2 MHz)	0.380	0.395	0.231	1.48	0.584	
Back face	10	CH 810 (1909.8 MHz)	0.395	0.416	0.346	1.48	0.615	

3: See remarks and comments.

5.7. Results for WCDMA Band II

- **Head measurements**

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)	0.171	NM[3]	1.508	1.19	0.204	
Left / Tilted	0	CH 9400 (1880 MHz)	0.098	NM[3]	0.023	1.19	0.116	
Right / Cheek	0	CH 9400 (1880 MHz)	0.205	0.227	-0.115	1.19	0.271	5
Right / Tilted	0	CH 9400 (1880 MHz)	0.090	NM[3]	1.625	1.19	0.108	
Right / Cheek	0	CH 9262 (1852.4 MHz)	0.200	0.220	-0.115	1.14	0.251	
Right / Cheek	0	CH 9538 (1907.6 MHz)	0.193	0.212	-2.164	1.22	0.270	

3: See remarks and comments.

- **Body measurements**

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)	0.845	0.870	0.925	1.19	1.036	
Back face	10	CH 9400 (1880 MHz)	0.753	0.762	0.346	1.19	0.908	
Left edge	10	CH 9400 (1880 MHz)	0.437	0.437	1.976	1.19	0.521	
Right edge	10	CH 9400 (1880 MHz)	0.145	NM[3]	1.625	1.19	0.173	
Bottom edge	10	CH 9400 (1880 MHz)	1.020	1.050	0.346	1.19	1.251	
Bottom edge	10	CH 9262 (1852.4 MHz)	1.140	1.160	-0.230	1.14	1.329	6
Bottom edge	10	CH 9538 (1907.6 MHz)	0.946	0.964	0.462	1.22	1.175	

3: See remarks and comments.

- **10-g Extremity SAR measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 10-g (W/kg)	Plot No.
Bottom edge	0	CH 9262 (1852.4 MHz)	0.895	0.82	1.51	1.14	0.935	7

4: See remarks and comments.

5.8. Results for WCDMA Band IV

- **Head measurements**

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)	0.375	NM[3]	0.000	1.00	0.412	
Left / Tilted	0	CH 1412 (1732.6 MHz)	0.236	NM[3]	0.925	1.00	0.236	
Right / Cheek	0	CH 1412 (1732.6 MHz)	0.425	0.457	1.742	1.00	0.457	8
Right / Tilted	0	CH 1412 (1732.6 MHz)	0.291	NM[3]	0.81	1.00	0.291	
Right / Cheek	0	CH 1312 (1712.4 MHz)	0.420	0.450	1.742	1.00	0.450	
Right / Cheek	0	CH 1512 (1752.6 MHz)	0.371	0.422	-0.574	1.00	0.427	

3: See remarks and comments.

- **Body measurements**

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)	1.050	1.060	-3.061	1.00	1.128	
Back face	10	CH 1412 (1732.6 MHz)	1.000	0.938	-2.276	1.00	0.982	
Left edge	10	CH 1412 (1732.6 MHz)	0.743	0.757	0.231	1.00	0.757	
Right edge	10	CH 1412 (1732.6 MHz)	0.324	NM[3]	0.115	1.00	0.319	
Bottom edge	10	CH 1412 (1732.6 MHz)	1.290	1.310	-1.599	1.00	1.353	
Bottom edge	10	CH 1312 (1712.4 MHz)	0.979	0.984	1.158	1.00	0.984	
Bottom edge	10	CH 1512 (1752.6 MHz)	1.340	1.360	1.042	1.00	1.360	9

3: See remarks and comments.

- **10-g Extremity SAR measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 10-g (W/kg)	Plot No.
Bottom edge	0	CH 1512 (1752.6 MHz)	1.310	1.290	-0.459	1.000	1.302	10

4: See remarks and comments.

5.9. Results for WCDMA Band V

- **Head measurements**

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)	0.363	0.381	0.35	1.122	0.427	
Left / Tilted	0	CH 4183 (836.6 MHz)	0.195	NM[3]	-0.92	1.122	0.223	
Right / Cheek	0	CH 4183 (836.6 MHz)	0.313	NM[3]	-0.57	1.122	0.371	
Right / Tilted	0	CH 4183 (836.6 MHz)	0.0805	NM[3]	0.58	1.122	0.09	
Left / Cheek	0	CH 4132 (826.4 MHz)	0.383	0.400	0.35	1.109	0.444	
Left / Cheek	0	CH 4233 (846.6 MHz)	0.37	0.389	0.35	1.213	0.472	11

3: See remarks and comments.

- **Body measurements**

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)	0.853	0.894	0.00	1.122	1.003	
Back face	10	CH 4183 (836.6 MHz)	0.883	0.912	0.12	1.122	1.023	
Left edge	10	CH 4183 (836.6 MHz)	0.388	NM[3]	0.23	1.122	0.435	
Right edge	10	CH 4183 (836.6 MHz)	0.321	NM[3]	0.12	1.122	0.36	
Bottom edge	10	CH 4183 (836.6 MHz)	0.495	0.521	0.23	1.122	0.585	
Back face	10	CH 4132 (826.4 MHz)	0.942	0.975	0.00	1.109	1.081	12
Back face	10	CH 4233 (846.6 MHz)	0.708	0.725	0.23	1.213	0.88	

3: See remarks and comments.

5.10. Results for LTE Band 7 (1 Rb, 20 MHz, QPSK)

- **Head measurements**

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 21100 (2535.0 MHz)	0.103	NM[3]	3.633	1.00	0.103	
Left / Tilted	0	CH 21100 (2535.0 MHz)	0.126	NM[3]	0.115	1.00	0.134	
Right / Cheek	0	CH 21100 (2535.0 MHz)	0.257	0.260	0.346	1.00	0.260	13
Right / Tilted	0	CH 21100 (2535.0 MHz)	0.076	NM[3]	3.633	1.00	0.076	
Right / Cheek	0	CH 20850 (2510.0 MHz)	0.256	0.245	-0.230	1.00	0.246	
Right / Cheek	0	CH 21350 (2560.0 MHz)	0.259	0.256	0.577	1.00	0.256	

3: See remarks and comments.

- **Body measurements**

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 21100 (2535.0 MHz)	1.040	1.060	0.000	1.00	1.060	
Back face	10	CH 21100 (2535.0 MHz)	1.220	1.220	0.577	1.00	1.220	
Right edge	10	CH 21100 (2535.0 MHz)	0.404	0.401	1.158	1.01	0.407	
Bottom edge	10	CH 21100 (2535.0 MHz)	1.390	1.380	1.508	1.01	1.390	
Bottom edge	10	CH 20850 (2510.0 MHz)	1.200	1.200	-0.345	1.06	1.277	
Bottom edge	10	CH 21350 (2560.0 MHz)	1.370	1.360	0.115	1.04	1.414	

- **10-g Extremity SAR measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 10-g (W/kg)	Plot No.
Back face	0	CH 21100 (2535.0 MHz)	1.830	2.260	1.158	1.007	2.276	
Bottom edge	0	CH 21100 (2535.0 MHz)	1.750	1.770	2.565	1.007	1.782	
Back face	0	CH 20850 (2510.0 MHz)	2.380	2.180	0.809	1.057	2.304	
Back face	0	CH 21350 (2560.0 MHz)	2.510	2.310	0.809	1.040	2.402	

5.11. Results for LTE Band 7 (50% Rb, 20 MHz, QPSK)

- **Head measurements**

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.
Right / Cheek	0	CH 21100 (2535.0 MHz)	0.218	0.218	1.742	1.00	0.218	

5: See remarks and comments.

- **Body measurements**

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 21100 (2535.0 MHz)	0.975	0.975	-0.115	1.00	0.977	
Back face	10	CH 21100 (2535.0 MHz)	1.180	1.210	0.000	1.00	1.210	
Right edge	10	CH 21100 (2535.0 MHz)	0.535	0.536	0.000	1.00	0.535	
Bottom edge	10	CH 21100 (2535.0 MHz)	1.420	1.400	1.042	1.00	1.400	
Bottom edge	10	CH 20850 (2510.0 MHz)	1.470	1.430	1.508	1.01	1.443	14
Bottom edge	10	CH 21350 (2560.0 MHz)	1.370	1.320	0.809	1.04	1.373	

3: See remarks and comments.

- **10-g Extremity SAR measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 10-g (W/kg)	Plot No.
Back face	0	CH 21100 (2535.0 MHz)	2.610	2.290	-0.230	1.000	2.301	
Bottom edge	0	CH 21100 (2535.0 MHz)	1.720	1.740	2.565	1.000	1.740	
Back face	0	CH 20850 (2510.0 MHz)	2.480	2.280	-0.230	1.009	2.312	
Back face	0	CH 21350 (2560.0 MHz)	2.520	2.330	0.115	1.040	2.423	15

5.12. Results for LTE Band 7 (100% Rb, 20 MHz, QPSK)

- **Head measurements**

Testing of this LTE configuration is not required due to the SAR test procedures mentioned in FCC OET KDB 941225 D05 – SAR for LTE Devices v02r05.

- **Body measurements**

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.
Bottom edge	10	CH 21100 (2535.0 MHz)	1.380	1.350	2.920	1.00	1.350	

5: See remarks and comments.

- **10-g Extremity SAR measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 10-g (W/kg)	Plot No.
Back face	0	CH 21100 (2535.0 MHz)	2.610	2.280	-0.574	1.000	2.306	
Bottom face	0	CH 21100 (2535.0 MHz)	1.700	1.680	0.693	1.000	1.680	

4: See remarks and comments.

5.13. Results for LTE Band 12 (1 Rb, 10 MHz, QPSK)

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, the middle channel of the group of overlapping channels should be selected for testing.

- **Head measurements**

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 23090 (707.0 MHz)	0.171	NM[3]	0.46	1.199	0.205	
Left / Tilted	0	CH 23090 (707.0 MHz)	0.0245	NM[3]	2.92	1.199	0.029	
Right / Cheek	0	CH 23090 (707.0 MHz)	0.19	0.19	0.12	1.199	0.228	16
Right / Tilted	0	CH 23090 (707.0 MHz)	0.0476	NM[3]	0.93	1.199	0.057	

3: See remarks and comments.

- **Body measurements**

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 23090 (707.0 MHz)	0.629	0.633	0.35	1.199	0.759	17
Back face	10	CH 23090 (707.0 MHz)	0.624	NM[3]	0.12	1.199	0.746	
Left edge	10	CH 23090 (707.0 MHz)	0.223	NM[3]	0.12	1.199	0.267	
Right edge	10	CH 23090 (707.0 MHz)	0.215	NM[3]	0.58	1.199	0.258	
Bottom edge	10	CH 23090 (707.0 MHz)	0.23	NM[3]	0.93	1.199	0.324	

3: See remarks and comments.

5.14. Results for LTE Band 12 (50% Rb, 10 MHz, QPSK)

- **Head measurements**

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.
Right / Cheek	0	CH 23090 (707.0 MHz)	0.172	0.173	0.81	1.014	0.175	

- **Body measurements**

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 23090 (707.0 MHz)	0.575	0.575	0.35	1.014	0.583	

5.15. Results for LTE Band 12 (100% Rb, 10 MHz, QPSK)

Testing of this LTE configuration is not required due to the SAR test procedures mentioned in FCC OET KDB 941225 D05 – SAR for LTE Devices v02r05.

5.16. Results for LTE Band 13 (1 Rb, 10 MHz, QPSK)

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, the middle channel of the group of overlapping channels should be selected for testing.

- **Head measurements**

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 23230 (782 MHz)	0.324	0.337	0.00	1.256	0.423	18
Left / Tilted	0	CH 23230 (782 MHz)	0.0285	NM[3]	1.27	1.256	0.036	
Right / Cheek	0	CH 23230 (782 MHz)	0.294	NM[3]	-0.12	1.256	0.37	
Right / Tilted	0	CH 23230 (782 MHz)	0.0428	NM[3]	0.81	1.256	0.054	

3: See remarks and comments.

- **Body measurements**

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 23230 (782 MHz)	0.810	0.805	0.231	1.26	1.011	19
Back face	10	CH 23230 (782 MHz)	0.789	0.802	0.462	1.26	1.007	
Left edge	10	CH 23230 (782 MHz)	0.410	0.401	0.000	1.26	0.515	
Right edge	10	CH 23230 (782 MHz)	0.235	NM[3]	0.346	1.26	0.295	
Bottom edge	10	CH 23230 (782 MHz)	0.304	NM[3]	-0.803	1.26	0.388	

3: See remarks and comments.

5.17. Results for LTE Band 13 (50% Rb, 10 MHz, QPSK)

- **Head measurements**

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 23230 (782 MHz)	0.294	0.306	0.23	1.117	0.342	

- **Body measurements**

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 23230 (782 MHz)	0.76	0.739	-0.34	1.117	0.831	

5.18. Results for LTE Band 13 (100% Rb, 10 MHz, QPSK)

- **Head measurements**

Testing of this LTE configuration is not required due to the SAR test procedures mentioned in FCC OET KDB 941225 D05 – SAR for LTE Devices v02r05.

- **Body measurements**

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 23230 (782 MHz)	0.704	0.714	0.00	1.125	0.803	

5.19. Results for LTE Band 14 (1 Rb, 10 MHz, QPSK)

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, the middle channel of the group of overlapping channels should be selected for testing.

- **Head measurements**

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 23330 (793.0 MHz)	0.392	0.411	0.00	1.4	0.575	
Left / Tilted	0	CH 23330 (793.0 MHz)	0.0763	NM[3]	2.80	1.4	0.107	
Right / Cheek	0	CH 23330 (793.0 MHz)	0.374	NM[3]	0.23	1.4	0.523	
Right / Tilted	0	CH 23330 (793.0 MHz)	0.0996	NM[3]	1.04	1.4	0.139	

3: See remarks and comments.

- **Body measurements**

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 23330 (793.0 MHz)	0.908	0.907	0.00	1.4	1.269	
Back face	10	CH 23330 (793.0 MHz)	0.928	0.958	-0.12	1.4	1.344	
Left edge	10	CH 23330 (793.0 MHz)	0.466	0.466	0.12	1.4	0.652	
Right edge	10	CH 23330 (793.0 MHz)	0.315	NM[3]	0.46	1.4	0.441	
Bottom edge	10	CH 23330 (793.0 MHz)	0.465	NM[3]	0.23	1.4	0.651	

3: See remarks and comments.

- **10-g Extremity SAR measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 10-g (W/kg)	Plot No.
Front face	0	CH 23330 (793.0 MHz)	1.970	1.650	0.693	1.400	2.309	
Back face	0	CH 23330 (793.0 MHz)	1.600	1.350	-0.115	1.400	1.894	

5.20. Results for LTE Band 14 (50% Rb, 10 MHz, QPSK)

- **Head measurements**

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 23330 (793.0 MHz)	0.399	0.416	0.00	1.406	0.585	20
Left / Tilted	0	CH 23330 (793.0 MHz)	0.0696	NM[3]	1.04	1.406	0.098	
Right / Cheek	0	CH 23330 (793.0 MHz)	0.375	NM[3]	0.12	1.406	0.527	
Right / Tilted	0	CH 23330 (793.0 MHz)	0.101	NM[3]	1.27	1.406	0.142	

3: See remarks and comments.

- **Body measurements**

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 23330 (793.0 MHz)	0.918	0.907	0.23	1.406	1.287	
Back face	10	CH 23330 (793.0 MHz)	0.934	0.964	0.00	1.406	1.355	
Left edge	10	CH 23330 (793.0 MHz)	0.468	NM[3]	0.23	1.406	0.658	
Right edge	10	CH 23330 (793.0 MHz)	0.316	NM[3]	0.69	1.406	0.444	
Bottom edge	10	CH 23330 (793.0 MHz)	0.472	0.472	0.00	1.406	0.664	

3: See remarks and comments.

- **10-g Extremity SAR measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 10-g (W/kg)	Plot No.
Front face	0	CH 23330 (793.0 MHz)	1.980	1.660	-0.230	1.406	2.345	21
Back face	0	CH 23330 (793.0 MHz)	1.610	1.360	-0.115	1.406	1.917	

5.21. Results for LTE Band 14 (100% Rb, 10 MHz, QPSK)

- **Head measurements**

  Testing of this LTE configuration is not required due to the SAR test procedures mentioned in FCC OET KDB 941225 D05 – SAR for LTE Devices v02r05.

- **Body measurements**

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 23330 (793.0 MHz)	0.959	0.961	0.00	1.426	1.37	22

- **10-g Extremity SAR measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 10-g (W/kg)	Plot No.
Front face	0	CH 23330 (793.0 MHz)	1.990	1.600	0.577	1.426	2.281	
Back face	0	CH 23330 (793.0 MHz)	1.590	1.340	0.231	1.426	1.910	

5.22. Results for LTE Band 25 (1 Rb, 20 MHz, QPSK)

- **Head measurements**

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 26140 (1860.0 MHz)	0.160	NM[3]	2.683	1.17	0.188	
Left / Tilted	0	CH 26140 (1860.0 MHz)	0.097	NM[3]	-0.803	1.17	0.116	
Right / Cheek	0	CH 26140 (1860.0 MHz)	0.174	0.190	-0.574	1.17	0.225	23
Right / Tilted	0	CH 26140 (1860.0 MHz)	0.090	NM[3]	3.276	1.17	0.106	
Right / Cheek	0	CH 26365 (1882.5 MHz)	0.126	0.134	-1.599	1.20	0.166	
Right / Cheek	0	CH 26590 (1905.0 MHz)	0.128	0.137	-1.599	1.30	0.184	

3: See remarks and comments.

- **Body measurements**

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 26140 (1860.0 MHz)	0.774	0.779	-0.574	1.17	0.924	
Back face	10	CH 26140 (1860.0 MHz)	0.711	0.752	-0.688	1.17	0.894	
Left edge	10	CH 26140 (1860.0 MHz)	0.402	0.416	0.231	1.17	0.488	
Right edge	10	CH 26140 (1860.0 MHz)	0.124	NM[3]	-0.917	1.17	0.148	
Bottom edge	10	CH 26140 (1860.0 MHz)	1.000	1.020	-0.230	1.17	1.201	24
Bottom edge	10	CH 26365 (1882.5 MHz)	0.960	0.990	1.859	1.20	1.188	
Bottom edge	10	CH 26590 (1905.0 MHz)	0.736	0.753	0.809	1.30	0.977	

3: See remarks and comments.

- **10-g Extremity SAR measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 10-g (W/kg)	Plot No.
Bottom edge	0	CH 26140 (1860.0 MHz)	0.733	0.648	0.231	1.172	0.760	25

4: See remarks and comments.

5.23. Results for LTE Band 25 (50% Rb, 20 MHz, QPSK)

- **Head measurements**

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.
Right / Cheek	0	CH 26140 (1860.0 MHz)	0.110	0.121	2.329	1.35	0.164	

5: See remarks and comments.

- **Body measurements**

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.
Bottom edge	10	CH 26140 (1860.0 MHz)	0.617	0.631	0.577	1.35	0.853	
Bottom edge	10	CH 26365 (1882.5 MHz)	0.597	0.617	1.274	1.44	0.888	
Bottom edge	10	CH 26590 (1905.0 MHz)	0.572	0.585	1.859	1.57	0.917	

5.24. Results for LTE Band 25 (100% Rb, 20 MHz, QPSK)

- **Head measurements**

Testing of this LTE configuration is not required due to the SAR test procedures mentioned in FCC OET KDB 941225 D05 – SAR for LTE Devices v02r05.

- **Body measurements**

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.
Bottom edge	10	CH 26365 (1882.5 MHz)	0.598	0.615	1.042	1.46	0.895	

5: See remarks and comments.

5.25. Results for LTE Band 26 (1 Rb, 15 MHz, QPSK)

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, the middle channel of the group of overlapping channels should be selected for testing.

- **Head measurements**

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 26865 (831.5 MHz)	0.371	NM[3]	0.23	1.202	0.446	
Left / Tilted	0	CH 26865 (831.5 MHz)	0.172	NM[3]	0.81	1.202	0.207	
Right / Cheek	0	CH 26865 (831.5 MHz)	0.406	0.431	-0.34	1.202	0.522	26
Right / Tilted	0	CH 26865 (831.5 MHz)	0.185	NM[3]	1.04	1.202	0.155	

3: See remarks and comments.

- **Body measurements**

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 26865 (831.5 MHz)	0.819	0.878	0.23	1.202	1.056	27
Back face	10	CH 26865 (831.5 MHz)	0.806	0.852	0.35	1.202	1.033	
Left edge	10	CH 26865 (831.5 MHz)	0.322	NM[3]	0.00	1.202	0.387	
Right edge	10	CH 26865 (831.5 MHz)	0.31	NM[3]	0.58	1.202	0.373	
Bottom edge	10	CH 26865 (831.5 MHz)	0.399	0.411	0.81	1.202	0.494	

3: See remarks and comments.

5.26. Results for LTE Band 26 (50% Rb, 15 MHz, QPSK)

- **Head measurements**

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.
Right / Cheek	0	CH 26865 (831.5 MHz)	0.366	0.379	-0.23	1.074	0.409	

- **Body measurements**

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	0	CH 26865 (831.5 MHz)	0.685	0.717	0.00	1.074	0.77	

5.27. Results for LTE Band 26 (100% Rb, 15 MHz, QPSK)

- **Head measurements**

Testing of this LTE configuration is not required due to the SAR test procedures mentioned in FCC OET KDB 941225 D05 – SAR for LTE Devices v02r05.

- **Body measurements**

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 26865 (831.5 MHz)	0.702	0.735	0.12	1.081	0.795	

5.28. Results for LTE Band 30 (1 Rb, 10 MHz, QPSK)

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, the middle channel of the group of overlapping channels should be selected for testing.

- **Head measurements**

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 27710 (2310.0 MHz)	0.058	NM[3]	4.232	1.23	0.072	
Left / Tilted	0	CH 27710 (2310.0 MHz)	0.054	NM[3]	1.391	1.23	0.067	
Right / Cheek	0	CH 27710 (2310.0 MHz)	0.110	0.109	1.274	1.23	0.134	28
Right / Tilted	0	CH 27710 (2310.0 MHz)	0.035	NM[3]	0.462	1.23	0.043	

3: See remarks and comments.

- **Body measurements**

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 27710 (2310.0 MHz)	0.838	0.856	0.231	1.23	1.056	
Back face	10	CH 27710 (2310.0 MHz)	0.989	0.991	0.000	1.23	1.222	
Right edge	10	CH 27710 (2310.0 MHz)	0.420	0.430	-0.345	1.29	0.560	
Bottom edge	10	CH 27710 (2310.0 MHz)	1.050	1.050	0.577	1.29	1.359	

3: See remarks and comments.

- **10-g Extremity SAR measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 10-g (W/kg)	Plot No.
Back face	0	CH 27710 (2310.0 MHz)	1.700	1.760	-0.115	1.297	2.283	
Bottom edge	0	CH 27710 (2310.0 MHz)	2.200	2.180	3.157	1.297	2.821	

5.29. Results for LTE Band 30 (50% Rb, 10 MHz, QPSK)

- **Head measurements**

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 27710 (2310.0 MHz)	0.051	0.051	3.039	1.38	0.071	
Left / Tilted	0	CH 27710 (2310.0 MHz)	0.045	0.045	2.329	1.38	0.061	
Right / Cheek	0	CH 27710 (2310.0 MHz)	0.088	0.088	1.859	1.38	0.121	
Right / Tilted	0	CH 27710 (2310.0 MHz)	0.027	0.027	3.276	1.38	0.037	

3: See remarks and comments.

- **Body measurements**

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 27710 (2310.0 MHz)	0.728	0.738	0.462	1.38	1.016	
Back face	10	CH 27710 (2310.0 MHz)	0.780	0.788	0.115	1.38	1.085	
Right edge	10	CH 27710 (2310.0 MHz)	0.338	0.347	1.158	1.30	0.450	
Bottom edge	10	CH 27710 (2310.0 MHz)	1.090	1.080	0.693	1.30	1.401	29

- **10-g Extremity SAR measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 10-g (W/kg)	Plot No.
Bottom edge	0	CH 27710 (2310.0 MHz)	2.370	2.210	2.920	1.297	2.867	

5.30. Results for LTE Band 30 (100% Rb, 10 MHz, QPSK)

- **Head measurements**

  Testing of this LTE configuration is not required due to the SAR test procedures mentioned in FCC OET KDB 941225 D05 – SAR for LTE Devices v02r05.

- **Body measurements**

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.
Bottom edge	10	CH 27710 (2310.0 MHz)	1.090	1.070	0.693	1.31	1.398	

- **10-g Extremity SAR measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 10-g (W/kg)	Plot No.
Bottom edge	0	CH 27710 (2310.0 MHz)	2.310	2.220	2.094	1.306	2.900	30

5.31. Results for LTE Band 38 (1 Rb, 20 MHz, QPSK)

- **Head measurements**

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 38000 (2595.0 MHz)	0.066	NM[3]	1.625	1.17	0.077	
Left / Tilted	0	CH 38000 (2595.0 MHz)	0.083	NM[3]	2.920	1.17	0.097	
Right / Cheek	0	CH 38000 (2595.0 MHz)	0.260	0.248	0.693	1.17	0.289	
Right / Tilted	0	CH 38000 (2595.0 MHz)	0.047	NM[3]	3.992	1.17	0.055	
Right / Cheek	0	CH 37850 (2580.0 MHz)	0.255	0.261	1.391	1.18	0.309	
Right / Cheek	0	CH 38150 (2610.0 MHz)	0.295	0.284	0.925	1.24	0.351	31

3: See remarks and comments.

- **Body measurements**

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 38000 (2595.0 MHz)	0.728	0.727	1.042	1.17	0.849	
Back face	10	CH 38000 (2595.0 MHz)	0.768	0.786	1.391	1.17	0.917	
Right edge	10	CH 38000 (2595.0 MHz)	0.514	0.514	-0.230	1.17	0.603	
Bottom edge	10	CH 38000 (2595.0 MHz)	1.250	1.230	0.577	1.17	1.435	32
Bottom edge	10	CH 37850 (2580.0 MHz)	1.240	1.210	0.693	1.18	1.431	
Bottom edge	10	CH 38150 (2610.0 MHz)	1.150	1.130	0.693	1.24	1.397	

- **10-g Extremity SAR measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 10-g (W/kg)	Plot No.
Bottom edge	0	CH 38000 (2595.0 MHz)	1.970	1.920	0.925	1.167	2.240	
Bottom edge	0	CH 37850 (2580.0 MHz)	1.760	1.720	3.157	1.183	2.035	
Bottom edge	0	CH 38150 (2610.0 MHz)	1.850	1.830	2.565	1.236	2.262	33

5.32. Results for LTE Band 38 (50% Rb, 20 MHz, QPSK)

- **Head measurements**

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.
Right / Cheek	0	CH 38000 (2595.0 MHz)	0.250	0.250	0.577	1.04	0.260	

5: See remarks and comments.

- **Body measurements**

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 38000 (2595.0 MHz)	0.534	NM[3]	1.158	1.31	0.699	
Back face	10	CH 38000 (2595.0 MHz)	0.574	0.578	0.346	1.31	0.757	
Right edge	10	CH 38000 (2595.0 MHz)	0.461	NM[3]	-0.115	1.04	0.481	
Bottom edge	10	CH 38000 (2595.0 MHz)	0.961	0.947	2.329	1.04	0.985	
Bottom edge	10	CH 37850 (2580.0 MHz)	1.010	0.995	1.625	1.07	1.069	
Bottom edge	10	CH 38150 (2610.0 MHz)	0.925	0.948	3.039	1.11	1.056	

3: See remarks and comments.

- **10-g Extremity SAR measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 10-g (W/kg)	Plot No.
Bottom edge	0	CH 38000 (2595.0 MHz)	1.490	1.470	2.802	1.040	1.529	

4: See remarks and comments.

5.33. Results for LTE Band 38 (100% Rb, 20 MHz, QPSK)

- **Head measurements**

Testing of this LTE configuration is not required due to the SAR test procedures mentioned in FCC OET KDB 941225 D05 – SAR for LTE Devices v02r05.

- **Body measurements**

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.
Bottom edge	10	CH 38000 (2595.0 MHz)	0.839	0.820	1.742	1.07	0.881	

5: See remarks and comments.

- **10-g Extremity SAR measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 10-g (W/kg)	Plot No.
Bottom edge	0	CH 38000 (2595.0 MHz)	1.490	1.470	2.802	1.040	1.529	

4: See remarks and comments.

5.34. Results for LTE Band 66 (1 Rb, 20 MHz, QPSK)

- **Head measurements**

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 132322 (1745.0 MHz)	0.309	NM[3]	0.809	1.14	0.352	
Left / Tilted	0	CH 132322 (1745.0 MHz)	0.180	NM[3]	0.231	1.14	0.205	
Right / Cheek	0	CH 132322 (1745.0 MHz)	0.369	0.420	-0.574	1.14	0.484	34
Right / Tilted	0	CH 132322 (1745.0 MHz)	0.187	NM[3]	0.925	1.14	0.213	
Right / Cheek	0	CH 132072 (1720.0 MHz)	0.361	0.411	-0.574	1.14	0.474	
Right / Cheek	0	CH 132572 (1770.0 MHz)	0.310	0.329	0.000	1.14	0.375	

3: See remarks and comments.

- **Body measurements**

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 132322 (1745.0 MHz)	0.714	0.717	0.462	1.14	0.818	
Back face	10	CH 132322 (1745.0 MHz)	0.624	0.617	-0.345	1.14	0.708	
Left edge	10	CH 132322 (1745.0 MHz)	0.541	NM[3]	0.231	1.14	0.617	
Right edge	10	CH 132322 (1745.0 MHz)	0.215	NM[3]	0.577	1.14	0.245	
Bottom edge	10	CH 132322 (1745.0 MHz)	0.579	NM[3]	0.809	1.14	0.664	
Front face	10	CH 132072 (1720.0 MHz)	0.710	0.739	0.115	1.25	0.920	
Front face	10	CH 132572 (1770.0 MHz)	0.830	0.863	0.693	1.18	1.019	35

3: See remarks and comments.

5.35. Results for LTE Band 66 (50% Rb, 20 MHz, QPSK)

- **Head measurements**

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.
Right / Cheek	0	CH 132322 (1745.0 MHz)	0.216	0.247	0.577	1.15	0.284	

5: See remarks and comments.

- **Body measurements**

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 132322 (1745.0 MHz)	0.467	0.477	0.462	1.15	0.548	

5: See remarks and comments.

5.36. Results for LTE Band 66 (100% Rb, 20 MHz, QPSK)

- **Head measurements**

Testing of this LTE configuration is not required due to the SAR test procedures mentioned in FCC OET KDB 941225 D05 – SAR for LTE Devices v02r05.

- **Body measurements**

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 132322 (1745.0 MHz)	0.479	0.495	0.693	1.20	0.592	

5: See remarks and comments.

5.37. Results for Wi-Fi 2450 MHz Band

- **Head measurements Chain 0**

Position	Dist (mm)	Mode	CH	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	0.220	0.220	1.508	1.04	0.229	
Left Tilted	0	802.11b	6	2437	0.193	0.193	2.447	1.04	0.201	
Right Cheek	0	802.11b	6	2437	0.536	0.601	3.039	1.04	0.626	
Right Tilted	0	802.11b	6	2437	0.366	0.417	-1.145	1.04	0.445	
Right Cheek	0	802.11b	1	2412	0.465	0.515	0.462	1.05	0.538	
Right Cheek	0	802.11b	11	2462	0.543	0.596	0.346	1.05	0.624	

- **Body measurements Chain 0**

Position	Dist (mm)	Mode	CH	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	0.067	0.065	1.625	1.04	0.067	
Back face	10	802.11b	6	2437	0.086	0.085	1.274	1.04	0.089	
Right edge	10	802.11b	6	2437	0.044	0.042	0.577	1.04	0.044	
Top edge	10	802.11b	6	2437	0.066	0.069	2.212	1.04	0.072	
Back face	10	802.11b	1	2412	0.071	0.074	2.094	1.05	0.078	
Back face	10	802.11b	11	2462	0.100	0.097	-1.258	1.05	0.104	

- **Head measurements Chain 1**

Position	Dist (mm)	Mode	CH	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	0.975	1.000	1.625	1.24	1.239	
Left Tilted	0	802.11b	6	2437	0.827	0.877	0.231	1.24	1.086	
Right Cheek	0	802.11b	6	2437	0.437	0.460	-1.825	1.24	0.591	
Right Tilted	0	802.11b	6	2437	0.422	0.422	3.157	1.24	0.523	
Left Cheek	0	802.11b	1	2412	0.884	0.946	4.232	1.25	1.177	
Left Cheek	0	802.11b	11	2462	1.020	1.080	1.742	1.15	1.243	36

- **Body measurements Chain 1**

Position	Dist (mm)	Mode	CH	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	0.166	0.166	-3.172	1.24	0.219	
Back face	10	802.11b	6	2437	0.225	0.234	0.462	1.24	0.290	
Left edge	10	802.11b	6	2437	0.121	0.121	1.859	1.24	0.150	
Top edge	10	802.11b	6	2437	0.268	0.297	2.212	1.24	0.368	
Top edge	10	802.11b	1	2412	0.230	0.251	4.592	1.25	0.312	
Top edge	10	802.11b	11	2462	0.336	0.362	0.809	1.15	0.417	37

- **Head measurements MIMO**

Position	Dist (mm)	Mode	CH	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	0.936	0.955	-0.115	1.00	0.957	
Left Tilted	0	802.11b	6	2437	0.783	0.881	-2.164	1.00	0.920	
Right Cheek	0	802.11b	6	2437	0.369	0.369	1.391	1.00	0.369	
Right Tilted	0	802.11b	6	2437	0.464	0.464	4.352	1.00	0.464	
Left Cheek	0	802.11b	1	2412	0.787	0.870	0.231	1.00	0.870	
Left Cheek	0	802.11b	11	2462	1.040	0.983	-0.345	1.00	0.990	

- **Body measurements MIMO**

Position	Dist (mm)	Mode	CH	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	0.218	0.197	1.508	1.00	0.197	
Back face	10	802.11b	6	2437	0.258	0.261	3.872	1.00	0.261	
Right edge	10	802.11b	6	2437	0.077	0.081	0.462	1.00	0.081	
Left edge	10	802.11b	6	2437	0.151	0.151	2.329	1.00	0.151	
Top edge	10	802.11b	6	2437	0.281	0.253	0.809	1.00	0.253	
Back face	10	802.11b	1	2412	0.217	0.217	3.039	1.00	0.217	
Back face	10	802.11b	11	2462	0.394	0.347	0.577	1.00	0.347	

- 2.4 GHz 802.11g/n OFDM modes

The highest reported SAR for the 802.11b mode has been 1.301 W/kg for the repeated Variability Measurement, therefore taking into account this 802.11b SAR value:

802.11b Max declared Power= 16.5 dBm → 44.67 mW
802.11g Max declared Power = 16.0 dBm → 39.81 mW
802.11n20 Max declared Power = 16.0 dBm → 39.81 mW
802.11n40 Max declared Power = 15.0 dBm → 31.62 mW

Adjusted SAR for 802.11g: 1.301 W/Kg x (39.81/44.67) = 1.16 W/kg
Adjusted SAR for 802.11n20: 1.301 W/Kg x (39.81/44.67) = 1.16 W/kg
Adjusted SAR for 802.11n40: 1.301 W/Kg x (31.62/44.67) = 0.92 W/kg

As the Adjusted SAR value for all 2.4 GHz 802.11g/n OFDM modes is ≤ 1.2 W/Kg, SAR measurements are not required for these 802.11 g/n OFDM modes.

5.38. Results for Wi-Fi 5200 MHz Band

- **Head measurements Chain 0**

Position	Dist (mm)	Mode	CH	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	802.11a	40	5200	0.295	0.346	2.447	1.01	0.351	
Left Tilted	0	802.11a	40	5200	0.187	0.187	-0.688	1.01	0.192	
Right Cheek	0	802.11a	40	5200	0.199	0.213	-0.459	1.01	0.218	
Right Tilted	0	802.11a	40	5200	0.154	0.154	4.352	1.01	0.156	
Left Cheek	0	802.11n40	46	5230	0.322	0.347	3.633	1.00	0.347	
Left Cheek	0	802.11ac80	42	5210	0.330	0.386	0.925	1.21	0.467	

- **Body measurements Chain 0**

Position	Dist (mm)	Mode	CH	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	802.11a	40	5200	0.057	0.024	3.395	1.01	0.024	
Back face	10	802.11a	40	5200	0.123	0.108	-2.725	1.01	0.116	
Left edge	10	802.11a	40	5200	0.046	0.046	-4.060	1.01	0.050	
Top edge	10	802.11a	40	5200	0.047	0.047	-0.917	1.01	0.048	
Back face	10	802.11n40	38	5190	0.139	0.111	0.809	1.00	0.111	
Back face	10	802.11ac80	42	5210	0.110	0.091	0.115	1.21	0.110	
Back face	10	802.11a	36	5180	0.122	0.136	4.592	1.05	0.143	
Back face	10	802.11a	48	5240	0.121	0.128	2.802	1.10	0.141	

- **Head measurements Chain 1**

Position	Dist (mm)	Mode	CH	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	802.11a	40	5200	0.199	0.200	1.391	1.37	0.273	
Left Tilted	0	802.11a	40	5200	0.185	0.185	0.462	1.37	0.252	
Right Cheek	0	802.11a	40	5200	0.309	0.296	-0.345	1.37	0.407	
Right Tilted	0	802.11a	40	5200	0.306	0.289	1.042	1.37	0.394	
Right Cheek	0	802.11n40	38	5190	0.348	0.317	3.753	1.40	0.443	
Right Cheek	0	802.11ac80	42	5210	0.310	0.298	1.859	1.44	0.428	
Right Cheek	0	802.11n40	46	5230	0.419	0.399	0.346	1.26	0.503	

- **Body measurements Chain 1**

Position	Dist (mm)	Mode	CH	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	802.11a	40	5200	0.044	0.044	-3.949	1.37	0.065	
Back face	10	802.11a	40	5200	0.111	0.106	-1.145	1.37	0.148	
Right edge	10	802.11a	40	5200	0.044	0.044	0.000	1.37	0.060	
Left edge	10	802.11a	40	5200	0.003	0.003	1.859	1.37	0.003	
Top edge	10	802.11a	40	5200	0.035	0.035	2.920	1.37	0.047	
Back face	10	802.11n40	38	5190	0.133	0.120	0.693	1.40	0.168	
Back face	10	802.11ac80	42	5210	0.116	0.103	2.212	1.44	0.148	
Back face	10	802.11n40	46	5230	0.130	0.122	2.094	1.26	0.154	

- **Head measurements MIMO**

Position	Dist (mm)	Mode	CH	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	802.11a	40	5200	0.352	0.363	1.158	1.00	0.363	
Left Tilted	0	802.11a	40	5200	0.308	0.308	-1.825	1.00	0.320	
Right Cheek	0	802.11a	40	5200	0.526	0.564	0.577	1.00	0.564	
Right Tilted	0	802.11a	40	5200	0.497	0.497	1.859	1.00	0.497	
Right Cheek	0	802.11n40	38	5190	0.606	0.560	1.274	1.00	0.560	
Right Cheek	0	802.11ac80	42	5210	0.484	0.465	2.683	1.00	0.465	
Right Cheek	0	802.11a	36	5180	0.505	0.585	0.577	1.00	0.585	38
Right Cheek	0	802.11a	48	5240	0.524	0.497	3.157	1.00	0.497	

- **Body measurements MIMO**

Position	Dist (mm)	Mode	CH	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	802.11a	40	5200	0.076	0.076	3.753	1.00	0.076	
Back face	10	802.11a	40	5200	0.169	0.192	0.577	1.00	0.192	39
Right edge	10	802.11a	40	5200	0.055	0.055	0.693	1.00	0.055	
Left edge	10	802.11a	40	5200	0.048	0.048	-2.276	1.00	0.050	
Top edge	10	802.11a	40	5200	0.061	0.061	0.809	1.00	0.061	
Back face	10	802.11n40	38	5190	0.171	0.172	3.395	1.00	0.172	
Back face	10	802.11ac80	42	5210	0.122	0.109	4.472	1.00	0.109	
Back face	10	802.11a	36	5180	0.159	0.151	-0.115	1.00	0.151	
Back face	10	802.11a	48	5240	0.181	0.184	-1.031	1.00	0.188	

5.39. Results for Wi-Fi 5300 MHz Band

Testing U-NII-1 band is not required due to the testing reduction mentioned in FCC OET KDB 248227 D01 802.11 Wi-Fi SAR v02r02, paragraph "5.3.1 U-NII-1 and U-NII-2A Bands".

Maximum reported SAR value for U-NII-1 band is lower than 1.2 W/kg, having the same specified maximum output power, the adjusted SAR for U-NII-2A band is also ≤ 1.2 W/kg.

5.40. Results for Wi-Fi 5600 MHz Band

- **Head measurements Chain 0**

Position	Dist (mm)	Mode	CH	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	802.11a	116	5580	0.538	0.597	0.577	1.00	0.597	
Left Cheek	0	802.11n40	118	5590	0.606	0.723	1.158	1.00	0.723	
Left Cheek	0	802.11ac80	122	5610	0.490	0.687	0.231	1.05	0.724	
Left Cheek	0	802.11 ac80	106	5530	0.410	0.450	-0.115	1.06	0.480	
Left Cheek	0	802.11 ac80	138	5690	0.357	0.435	1.742	1.03	0.447	

- **Body measurements Chain 0**

Position	Dist (mm)	Mode	CH	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.
Back face	10	802.11a	116	5580	0.278	0.281	4.472	1.00	0.281	
Back face	10	802.11n40	118	5590	0.223	0.215	0.462	1.00	0.215	
Back face	10	802.11ac80	122	5610	0.188	0.170	-2.164	1.05	0.187	
Back face	10	802.11a	104	5520	0.259	0.261	2.447	1.00	0.261	
Back face	10	802.11a	136	5680	0.190	0.190	2.565	1.07	0.204	

- **Head measurements Chain 1**

Position	Dist (mm)	Mode	CH	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.
Right Cheek	0	802.11a	116	5580	0.677	0.696	1.391	1.48	1.029	
Right Cheek	0	802.11n40	118	5590	0.634	0.673	0.462	1.32	0.885	
Right Cheek	0	802.11ac80	122	5610	0.539	0.552	1.391	1.57	0.865	
Right Cheek	0	802.11n20	104	5520	0.597	0.652	1.508	1.31	0.852	
Right Cheek	0	802.11n40	136	5680	0.578	0.646	1.859	1.33	0.859	

- **Body measurements Chain 1**

Position	Dist (mm)	Mode	CH	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.
Back face	10	802.11a	116	5580	0.162	0.156	3.514	1.48	0.231	
Back face	10	802.11n40	118	5590	0.170	0.156	0.115	1.32	0.205	
Back face	10	802.11ac80	122	5610	0.151	0.140	-1.258	1.57	0.225	
Back face	10	802.11a	104	5520	0.169	0.165	2.329	1.31	0.216	
Back face	10	802.11a	136	5680	0.160	0.156	1.042	1.33	0.208	

- **Head measurements MIMO**

Position	Dist (mm)	Mode	CH	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.
Right Cheek	0	802.11a	116	5580	0.989	1.050	1.158	1.00	1.050	40
Right Cheek	0	802.11n40	118	5590	0.947	0.912	1.274	1.00	0.912	
Right Cheek	0	802.11ac80	122	5610	0.904	0.961	1.391	1.00	0.961	
Right Cheek	0	802.11a	104	5520	0.916	0.925	2.094	1.00	0.925	
Right Cheek	0	802.11a	136	5680	0.929	0.988	0.462	1.00	0.988	

- **Body measurements MIMO**

Position	Dist (mm)	Mode	CH	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.
Back face	10	802.11a	116	5580	0.326	0.298	1.158	1.00	0.298	41
Back face	10	802.11n40	118	5590	0.243	0.225	1.742	1.00	0.225	
Back face	10	802.11ac80	122	5610	0.208	0.211	0.925	1.00	0.211	
Back face	10	802.11a	104	5520	0.219	0.217	-2.613	1.00	0.229	
Back face	10	802.11a	136	5680	0.238	0.231	1.274	1.00	0.231	

5.41. Results for Bluetooth

- **Head measurements**

Position	Dist (mm)	Mode	CH	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	0.073	NM[3]	1.859	1.45	0.106	
Left Tilted	0	BR	40	2441	0.058	NM[3]	4.112	1.45	0.085	
Right Cheek	0	BR	40	2441	0.169	0.200	0.577	1.45	0.290	42
Right Tilted	0	BR	40	2441	0.119	NM[3]	-1.258	1.45	0.177	
Right Cheek	0	BR	1	2402	0.137	0.166	0.693	1.40	0.232	
Right Cheek	0	BR	79	2480	0.125	0.161	2.094	1.57	0.253	

3: See remarks and comments.

- **Body measurements**

Position	Dist (mm)	Mode	CH	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	0.026	0.020	-0.345	1.45	0.029	43
Back face	10	BR	40	2441	0.021	NM[3]	-0.345	1.45	0.029	
Right edge	10	BR	40	2441	0.012	NM[3]	1.859	1.45	0.017	
Top edge	10	BR	40	2441	0.020	NM[3]	3.157	1.45	0.029	
Front face	10	BR	1	2402	0.021	0.018	4.472	1.40	0.026	
Front face	10	BR	79	2480	0.022	0.019	1.976	1.57	0.029	

3: See remarks and comments.

5.42. Variability results

According to KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, paragraph "2.8.1. SAR measurement variability", SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device masurements. Repeated measurements are required only when the measured 1-g SAR is ≥ 0.80 W/kg, or 10-g SAR is ≥ 2.0 W/kg, using the highest measured SAR configuration for that tissue-equivalent medium.

Mode	Position/Distance	Channel (Frequency)	Max. measured SAR 1-g (W/kg)	Variability measured SAR 1-g (W/kg)	Variability reported SAR 1-g (W/kg)	Plot No.
WCDMA Band II	Bottom edge/10 mm	CH 9262 (1852.4 MHz)	1.17	1.13	1.294	44
WCDMA Band IV	Bottom edge/10 mm	CH 1512 (1752.6 MHz)	1.36	1.29	1.290	45
WCDMA Band V	Back face/10 mm	CH 4233 (846.6 MHz)	0.975	0.989	1.097	46
LTE Band 7	Bottom edge/10 mm	CH 20850 (2510.0 MHz)	1.43	1.41	1.423	47
LTE Band 14	Back face/10 mm	CH 23330 (793.0 MHz)	0.961	0.962	1.353	48
LTE Band 30	Bottom edge/10 mm	CH 27710 (2310.0 MHz)	1.08	1.11	1.440	49
802.11b	Left Cheek	CH 11 (2462.0 MHz)	1.08	1.11	1.301	50
802.11a	Right Cheek	CH 116 (5580.0 MHz)	1.05	0.941	0.941	51

Mode	Position/Distance	Channel (Frequency)	Max. measured SAR 10-g (W/kg)	Variability measured SAR 10-g (W/kg)	Variability reported SAR 10-g (W/kg)	Plot No.
LTE Band 7	Bottom edge/0 mm	CH 20850 (2510.0 MHz)	2.33	2.37	2.465	52
LTE Band 30	Bottom edge/0 mm	CH 27710 (2310.0 MHz)	2.22	2.21	2.887	53

5.43. Spot-Check results

A spot-check SAR testing has been performed using the final commercial version of the DUT (sample 57478/84). The only difference between tested sample (57478/28 and 57478/29) and final version of the DUT is a Corning Gorila Glass 5 upgrade.

This spot-check test consist of a re-testing of the worst case SAR condition found during the tests, which corresponds to the highest simultaneous transmission condition:

Device	Transmission Modes	Position	SAR (W/kg)	Σ SARi (W/kg)
57478/28-57478/29 (DUTs without Corning Gorilla Glass 5)	GPRS 850 2 slots	Left Cheek	0.604	2.001
	WI-FI 2.45 GHz CH1		1.301	
	BT		0.106	
57478/84 (DUT with Corning Gorilla Glass 5)	GPRS 850 2 slots	Left Cheek	0.519	1.543
	WI-FI 2.45 GHz CH1		0.930	
	BT		0.094	

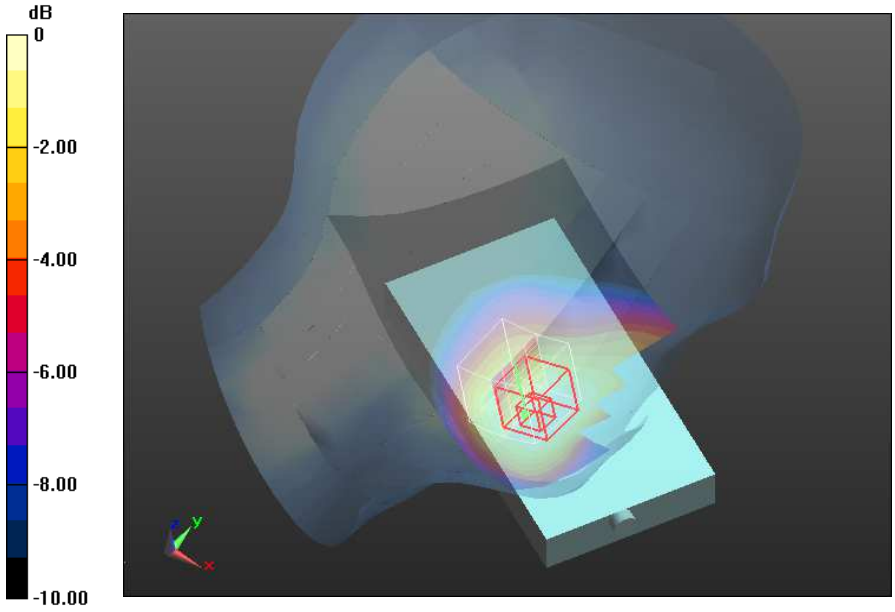
Appendix C: Measurement Reports

GPRS 850 MHz 2 slots – Head – Left Cheek – Middle Channel – Plot Nº1

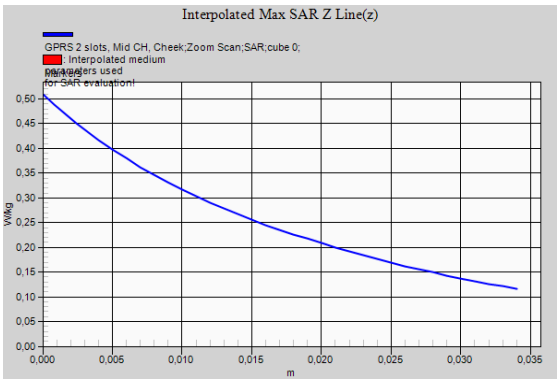
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-05
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10024 - DAB, GPRS-FDD (TDMA, GMSK, TN 0-1); Frequency: 836.6 MHz; Duty Cycle: 1:4.52898
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.903 S/m; ε_r = 41.614; ρ = 1000 kg/m^3
Phantom section: Left Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(9.67, 9.67, 9.67); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/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) = 0.464 W/kg

Left Hand Side/GPRS 2 slots, Mid CH, Cheek/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.91 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.510 W/kg
SAR(1 g) = 0.415 W/kg; SAR(10 g) = 0.326 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.429 W/kg



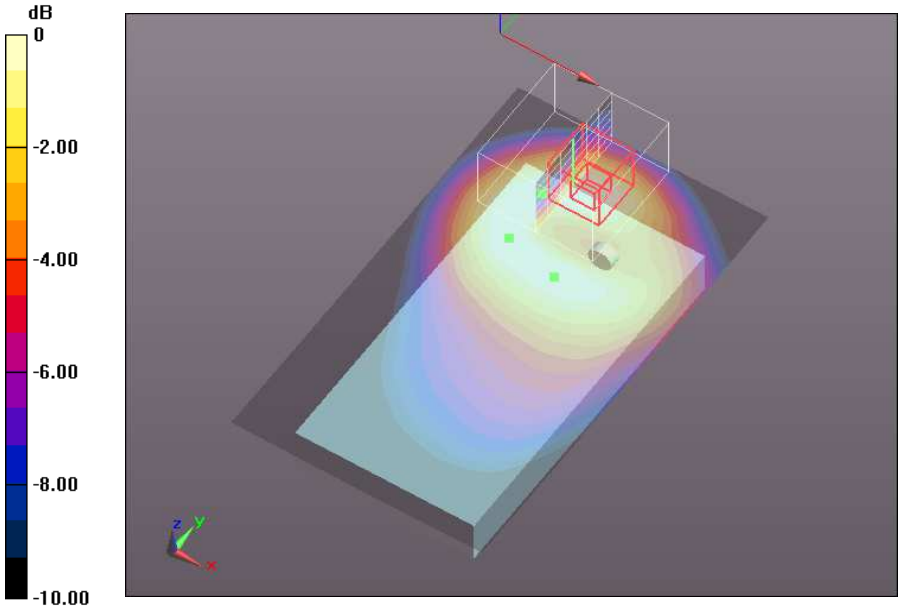
0 dB = 0.429 W/kg = -3.68 dBW/kg



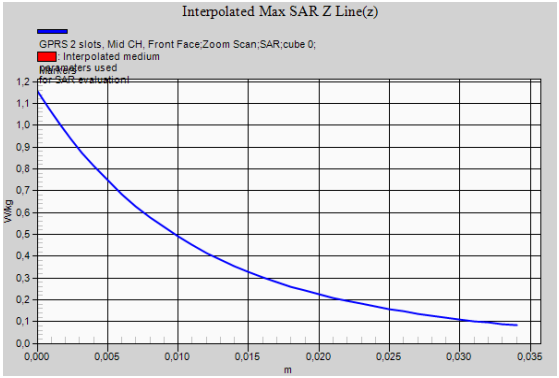
GPRS 850 MHz 2 slots – Body – Front Face, d=10mm – Middle Channel – Plot Nº2

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-01-09
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
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; σ = 0.96 S/m; ε_r = 55.014; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(9.78, 9.78, 9.78); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/GPRS 2 slots, Mid CH, Front 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) = 0.853 W/kg
Flat Phantom, d=10mm/GPRS 2 slots, Mid CH, Front Face/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.20 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.16 W/kg
SAR(1 g) = 0.739 W/kg; SAR(10 g) = 0.445 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.792 W/kg



0 dB = 0.792 W/kg = -1.01 dBW/kg

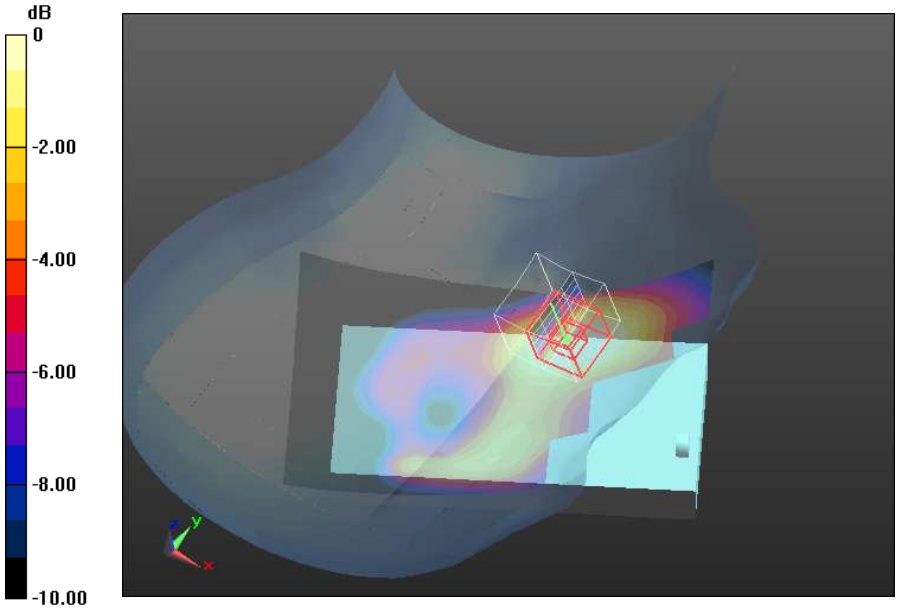


GPRS 1900 MHz 2 slots – Head – Right Cheek – Middle Channel – Plot Nº3

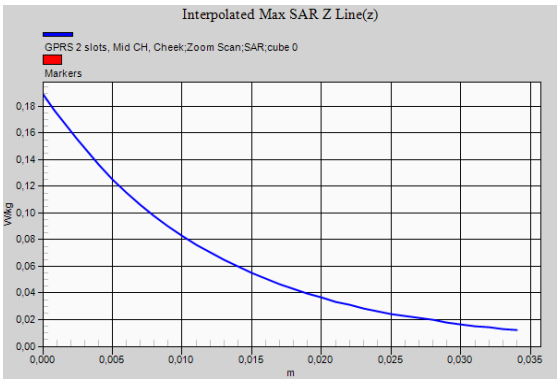
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-13
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10024 - DAC, GPRS-FDD (TDMA, GMSK, TN 0-1); Frequency: 1880 MHz; Duty Cycle: 1:4.52898
Medium parameters used: f = 1880 MHz; σ = 1.43 S/m; ε_r = 39.65; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.31, 8.31, 8.31); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/GPRS 2 slots, Mid CH, Cheek/Area Scan (71x121x1):
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.147 W/kg

Right Hand Side/GPRS 2 slots, Mid CH, Cheek/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.830 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.189 W/kg
SAR(1 g) = 0.124 W/kg; SAR(10 g) = 0.077 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.137 W/kg



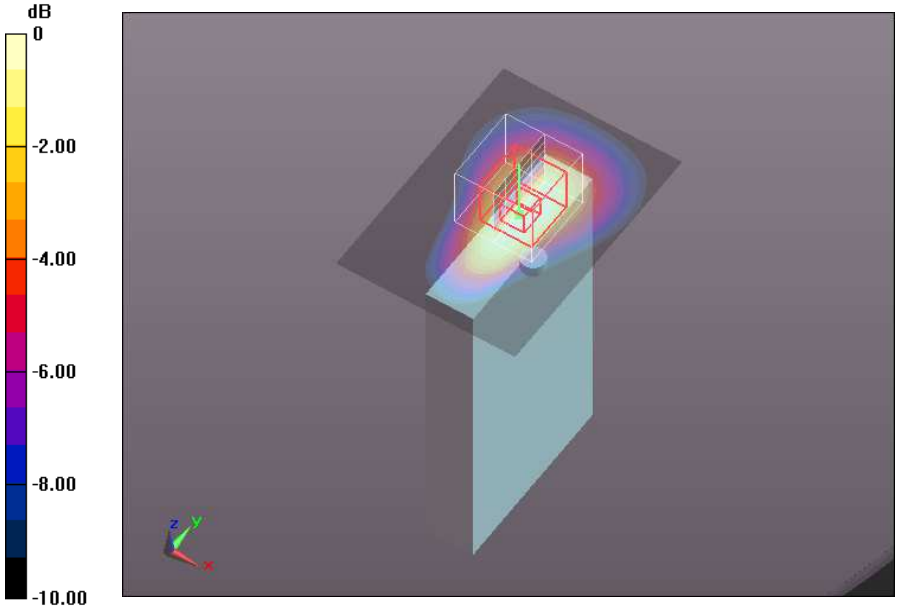
0 dB = 0.137 W/kg = -8.63 dBW/kg



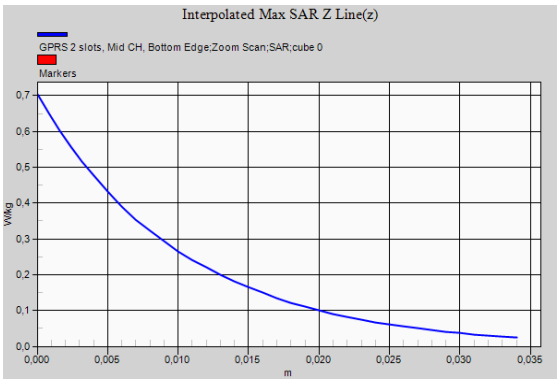
GPRS 1900 MHz 2 slots – Body – Bottom Edge, d=10mm – Middle Channel – Plot Nº4
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-06
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528696
Communication System: UID 10024 - DAB, GPRS-FDD (TDMA, GMSK, TN 0-1); Frequency: 1880 MHz; Duty Cycle: 1:4.52898
Medium parameters used: f = 1880 MHz; σ = 1.58 S/m; ε_r = 54.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.24, 8.24, 8.24); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/GPRS 2 slots, Mid CH, Bottom Edge/Area Scan (51x71x1):
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.526 W/kg

Flat Phantom, d=10mm/GPRS 2 slots, Mid CH, Bottom Edge/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.087 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.704 W/kg
SAR(1 g) = 0.425 W/kg; SAR(10 g) = 0.240 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.475 W/kg



0 dB = 0.475 W/kg = -3.23 dBW/kg

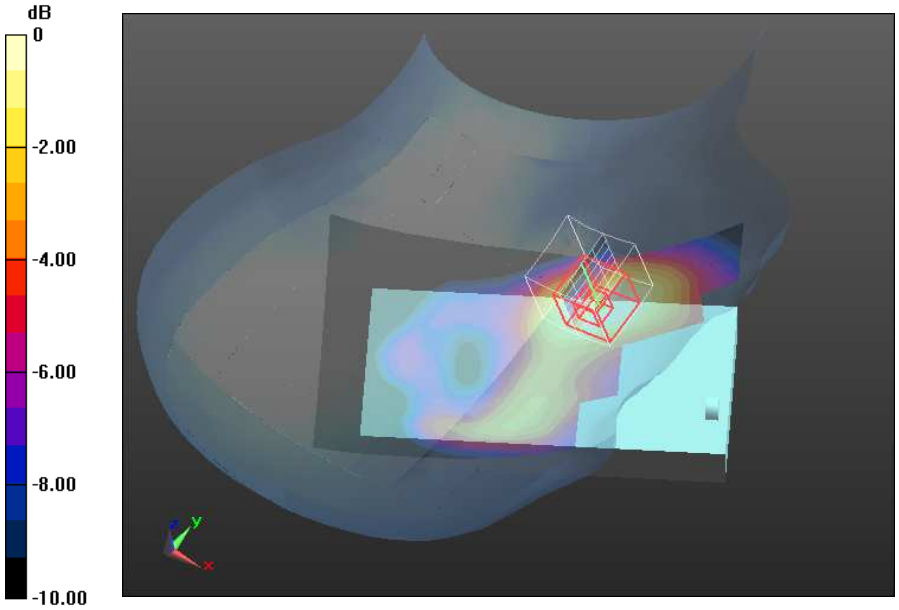


WCDMA Band II – Head – Right Cheek – Middle Channel – Plot Nº5

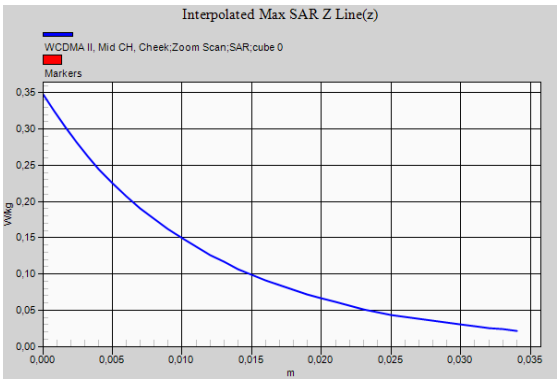
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-13
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1880 MHz; Duty Cycle: 1:1.95434
Medium parameters used: f = 1880 MHz; σ = 1.43 S/m; ε_r = 39.65; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.31, 8.31, 8.31); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/WCDMA II, Mid CH, Cheek/Area Scan (71x121x1):
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.265 W/kg

Right Hand Side/WCDMA II, Mid CH, Cheek/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.20 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.348 W/kg
SAR(1 g) = 0.227 W/kg; SAR(10 g) = 0.140 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.246 W/kg



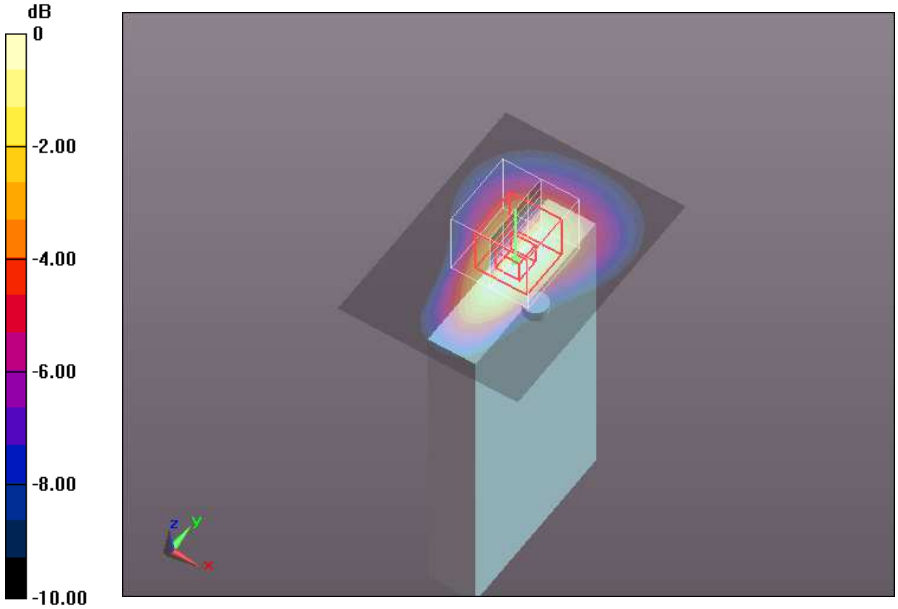
0 dB = 0.246 W/kg = -6.09 dBW/kg



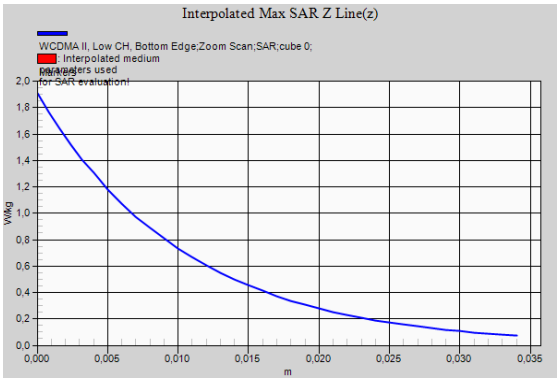
WCDMA Band II – Body – Bottom Edge, d=10mm – Low Channel – Plot Nº6
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-06
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1852 MHz; Duty Cycle: 1:1.95434
Medium parameters used (interpolated): f = 1852 MHz; σ = 1.588 S/m; ε_r = 54.708; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.24, 8.24, 8.24); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/WCDMA II, Low CH, Bottom Edge/Area Scan (51x71x1):
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.49 W/kg

Flat Phantom, d=10mm/WCDMA II, Low CH, Bottom Edge/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.70 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.91 W/kg
SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.659 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.30 W/kg



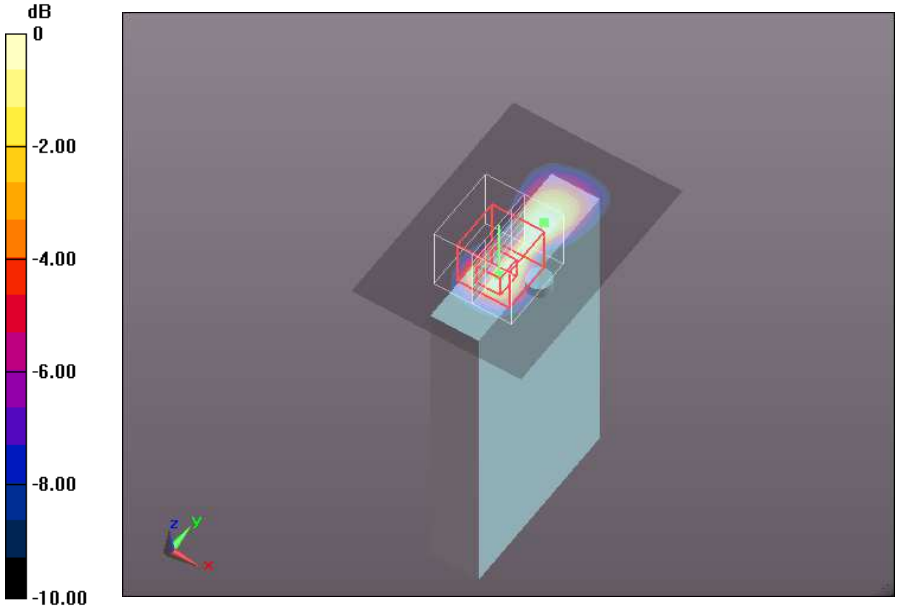
0 dB = 1.30 W/kg = 1.14 dBW/kg



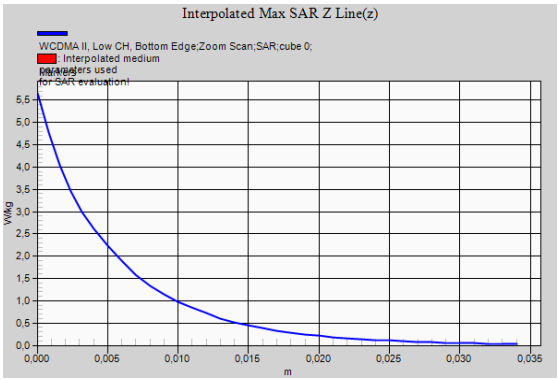
WCDMA Band II – Extremity – Bottom Edge, d=0mm – Low Channel – Plot Nº7
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-06
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1852 MHz; Duty Cycle: 1:1.95434
Medium parameters used (interpolated): f = 1852 MHz; σ = 1.588 S/m; ε_r = 54.708; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.24, 8.24, 8.24); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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=0 mm/WCDMA II, Low CH, Bottom Edge/Area Scan (71x101x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 3.07 W/kg

Flat Phantom, d=0 mm/WCDMA II, Low CH, Bottom Edge/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.56 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 5.66 W/kg
SAR(1 g) = 2.18 W/kg; SAR(10 g) = 0.820 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 2.62 W/kg



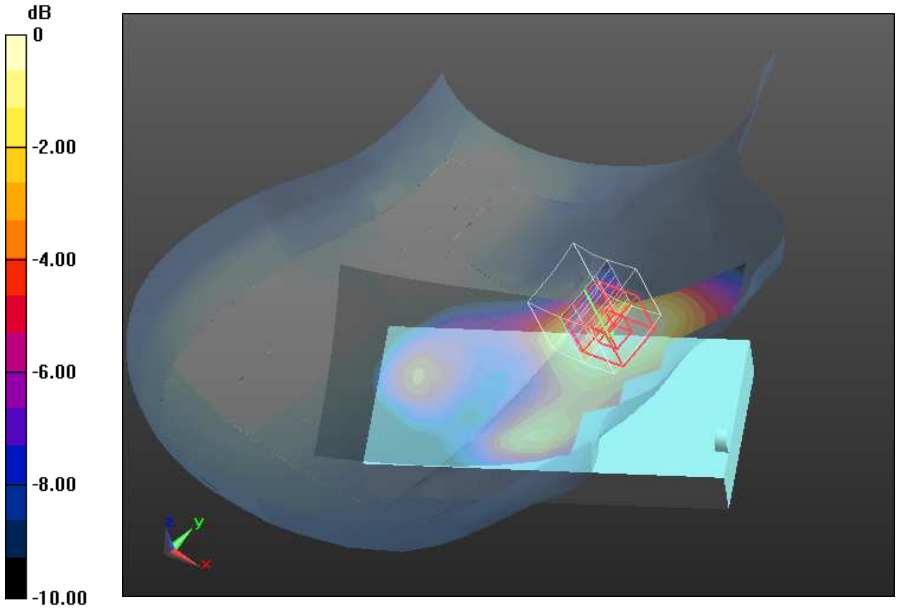
0 dB = 2.62 W/kg = 4.18 dBW/kg



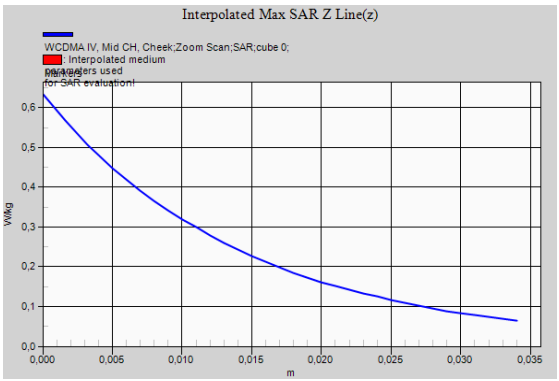
WCDMA Band IV – Head – Right Cheek – Middle Channel – Plot Nº8

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-12
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
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; σ = 1.313 S/m; ε_r = 39.408; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.31, 8.31, 8.31); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/WCDMA IV, Mid CH, Cheek/Area Scan (61x121x1):
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.517 W/kg
Right Hand Side/WCDMA IV, Mid CH, Cheek/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.94 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.634 W/kg
SAR(1 g) = 0.457 W/kg; SAR(10 g) = 0.299 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.473 W/kg



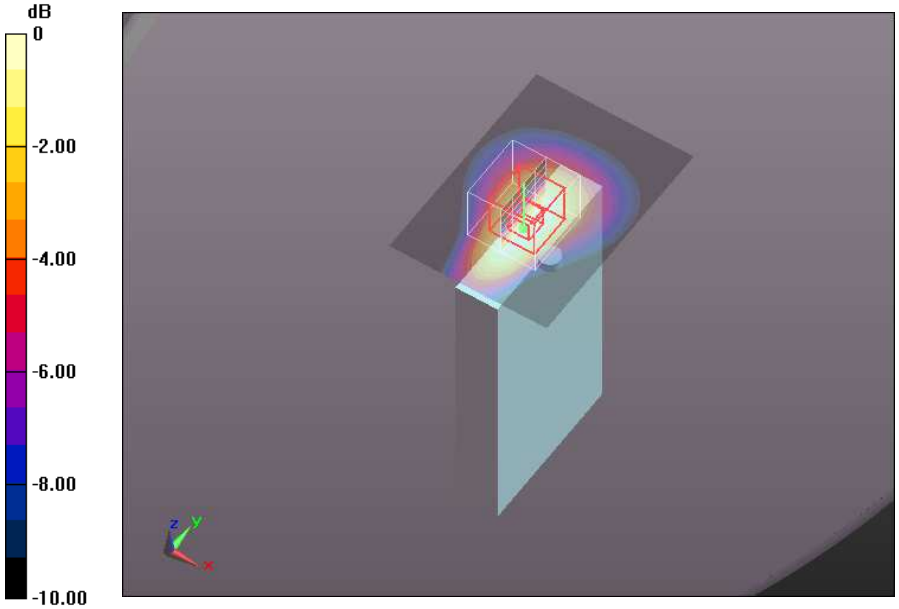
0 dB = 0.473 W/kg = -3.25 dBW/kg



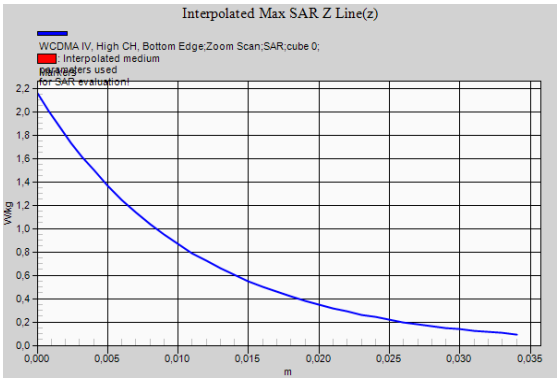
WCDMA Band IV – Body – Bottom Edge, d=10mm – High Channel – Plot Nº9
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-05
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1752.6 MHz; Duty Cycle: 1:1.95434
Medium parameters used (interpolated): f = 1752.6 MHz; σ = 1.515 S/m; ε_r = 51.55; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.24, 8.24, 8.24); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/WCDMA IV, High CH, Bottom Edge/Area Scan (51x71x1):
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.78 W/kg

Flat Phantom, d=10mm/WCDMA IV, High CH, Bottom Edge/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.49 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 2.16 W/kg
SAR(1 g) = 1.36 W/kg; SAR(10 g) = 0.790 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.49 W/kg

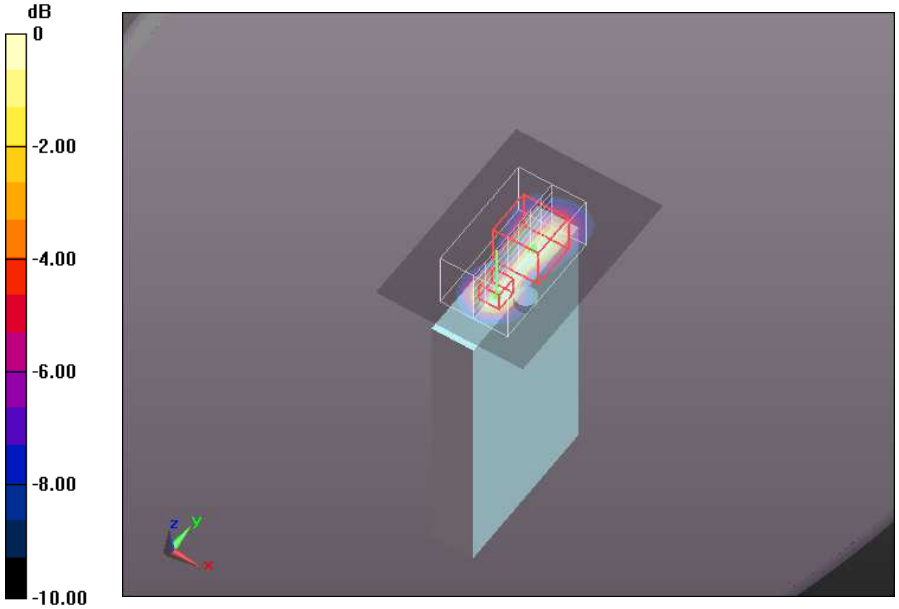


0 dB = 1.49 W/kg = 1.73 dBW/kg

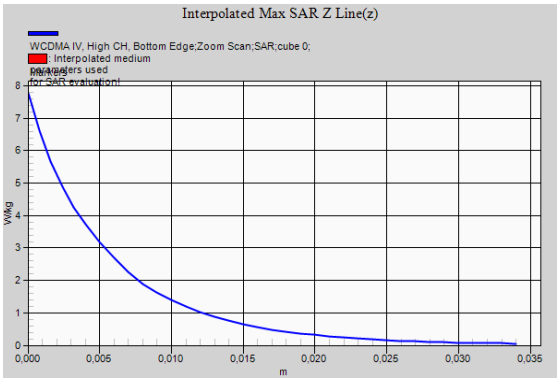


WCDMA Band IV – Extremity – Bottom Edge, d=0mm – High Channel – Plot Nº10
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-05
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1752.6 MHz; Duty Cycle: 1:1.95434
Medium parameters used (interpolated): f = 1752.6 MHz; σ = 1.515 S/m; ε_r = 51.55; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.24, 8.24, 8.24); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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=0mm/WCDMA IV, High CH, Bottom Edge/Area Scan (71x101x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 4.79 W/kg
Flat Phantom, d=0mm/WCDMA IV, High CH, Bottom Edge/Zoom Scan (5x8x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 49.91 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 7.77 W/kg
SAR(1 g) = 3.03 W/kg; SAR(10 g) = 1.29 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 3.61 W/kg



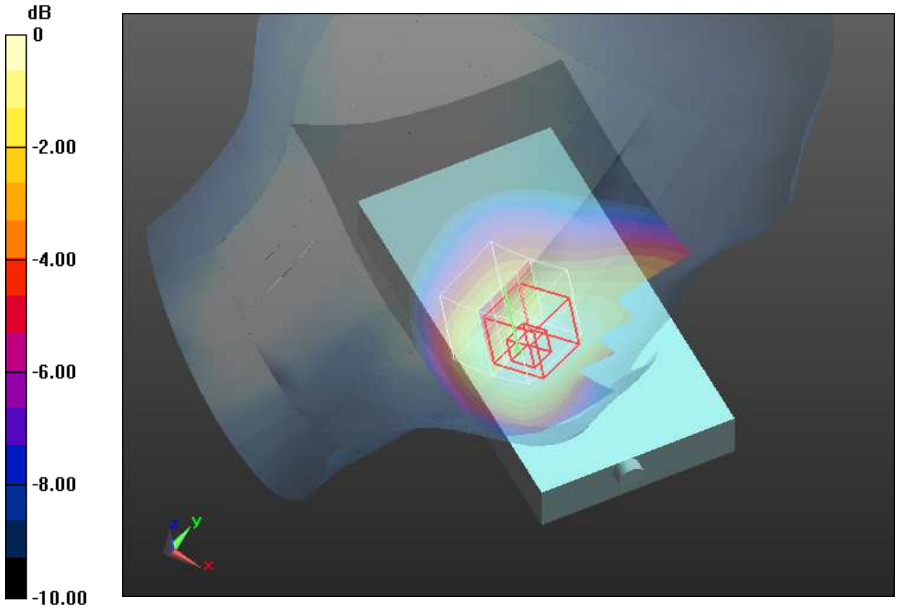
0 dB = 3.61 W/kg = 5.58 dBW/kg



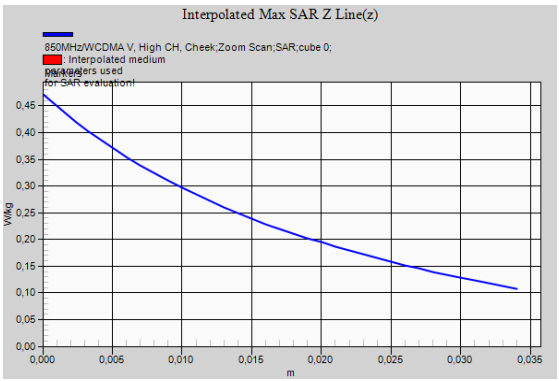
WCDMA Band V – Head – Left Cheek – High Channel – Plot №11

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-05
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 846.6 MHz; Duty Cycle: 1:1.95434
Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.92 S/m; ε_r = 41.481; ρ = 1000 kg/m^3
Phantom section: Left Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(9.67, 9.67, 9.67); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/WCDMA V, 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) = 0.431 W/kg
Left Hand Side/WCDMA V, High CH, Cheek/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.40 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.472 W/kg
SAR(1 g) = 0.389 W/kg; SAR(10 g) = 0.306 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.401 W/kg

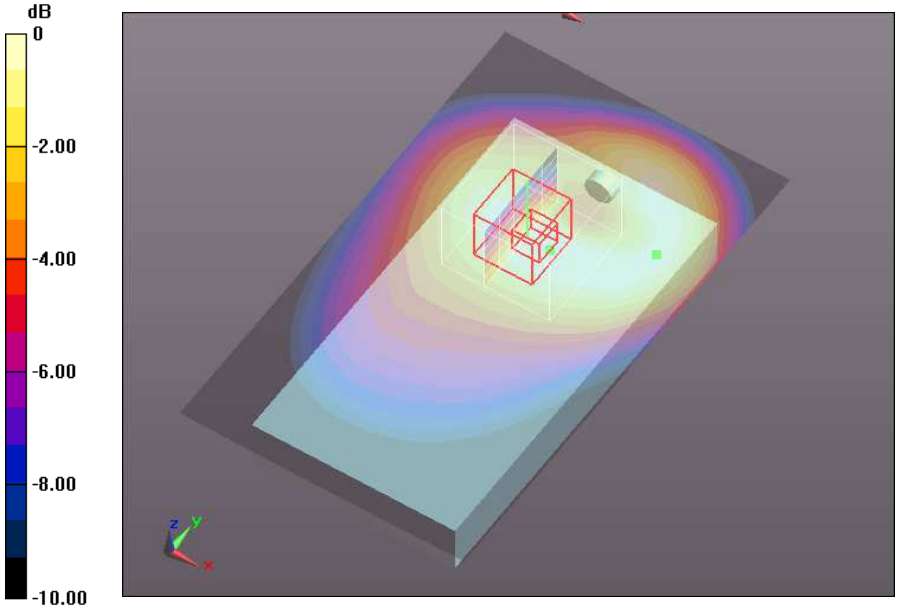


0 dB = 0.401 W/kg = -3.97 dBW/kg

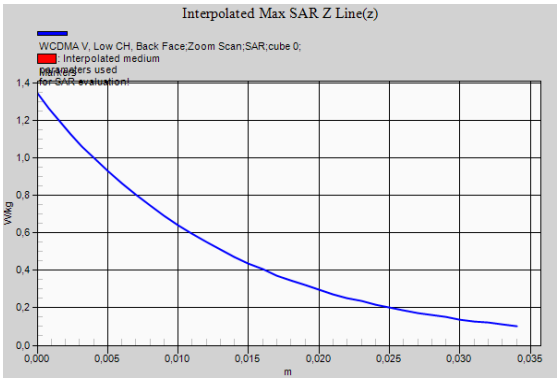


WCDMA Band V – Body – Back Face, d=10mm – Low Channel – Plot Nº12
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-01-10
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 826.6 MHz; Duty Cycle: 1:1.95434
Medium parameters used (interpolated): f = 826.6 MHz; σ = 0.95 S/m; ε_r = 55.151; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(9.78, 9.78, 9.78); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/WCDMA V, Low 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) = 1.10 W/kg
Flat Phantom, d=10mm/WCDMA V, Low CH, Back Face/Zoom Scan (6x6x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.51 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 1.35 W/kg
SAR(1 g) = 0.975 W/kg; SAR(10 g) = 0.681 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.02 W/kg



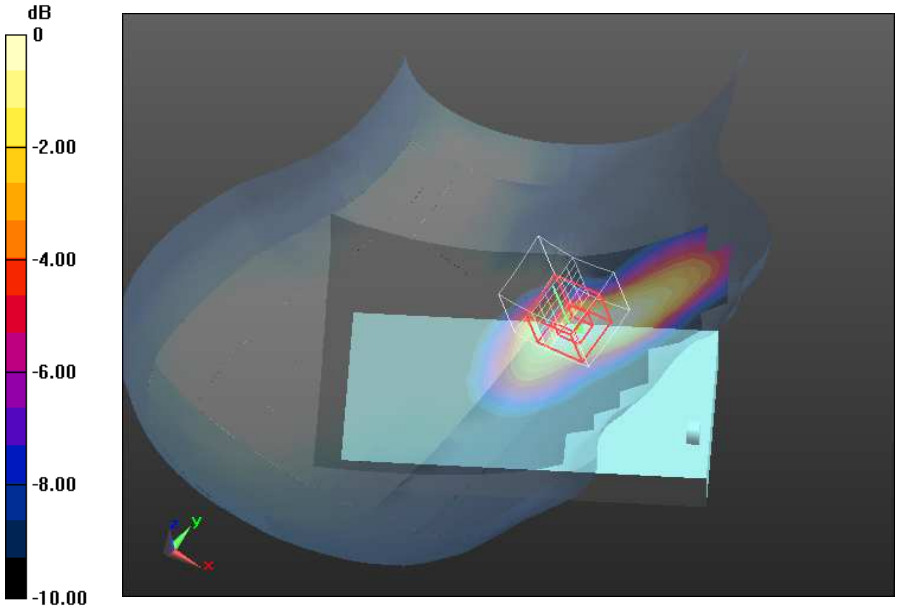
0 dB = 1.02 W/kg = 0.09 dBW/kg



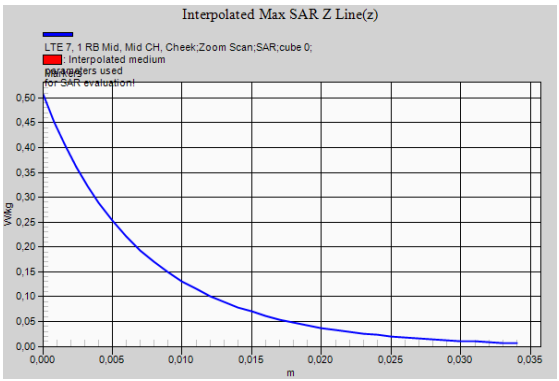
LTE Band 7 – Head – Right Cheek – Middle Channel – Plot Nº13

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-01-22
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10169 - CAD, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2535 MHz; Duty Cycle: 1:3.74111
Medium parameters used (interpolated): f = 2535 MHz; σ = 1.91 S/m; ε_r = 39.26; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.31, 7.31, 7.31); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 7, 1 RB Mid, 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) = 0.340 W/kg
Right Hand Side/LTE 7, 1 RB Mid, Mid CH, Cheek/Zoom Scan (8x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.45 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.507 W/kg
SAR(1 g) = 0.260 W/kg; SAR(10 g) = 0.135 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.288 W/kg

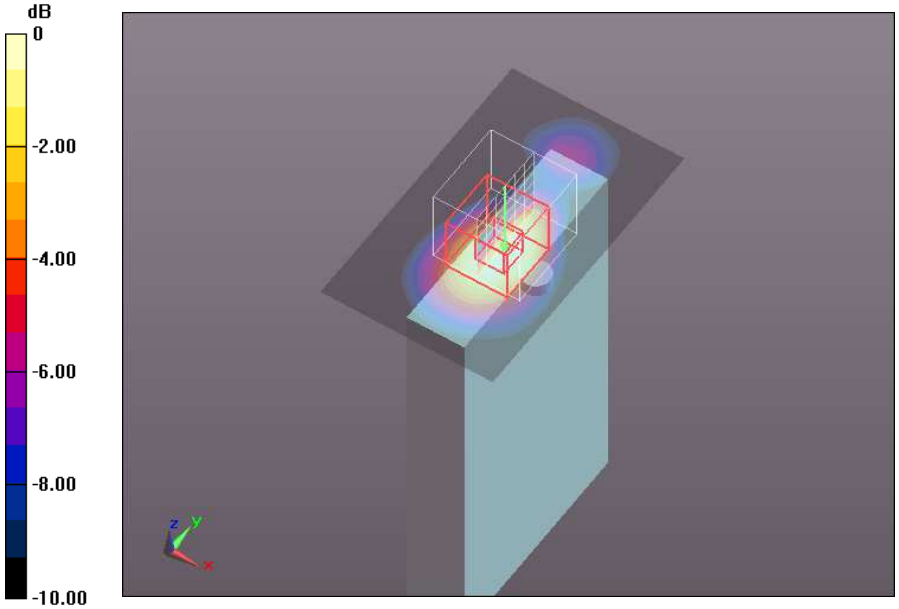


0 dB = 0.288 W/kg = -5.41 dBW/kg

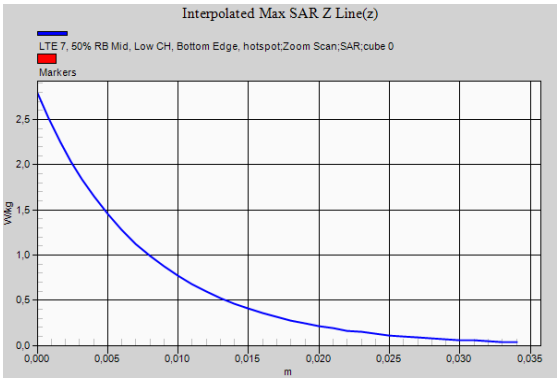


LTE Band 7 – Body – Bottom Edge, d=10mm – Low Channel – Plot Nº14
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-18
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10297 - AAC, LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK); Frequency: 2510 MHz; Duty Cycle: 1:3.81066
Medium parameters used: f = 2510 MHz; σ = 2.09 S/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.52, 7.52, 7.52); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 7, 50% RB Mid, Low CH, Bottom Edge, hotspot/Area Scan (61x101x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.97 W/kg
Flat Phantom, d=10mm/LTE 7, 50% RB Mid, Low CH, Bottom Edge, hotspot/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.01 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 2.79 W/kg
SAR(1 g) = 1.43 W/kg; SAR(10 g) = 0.674 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 1.64 W/kg



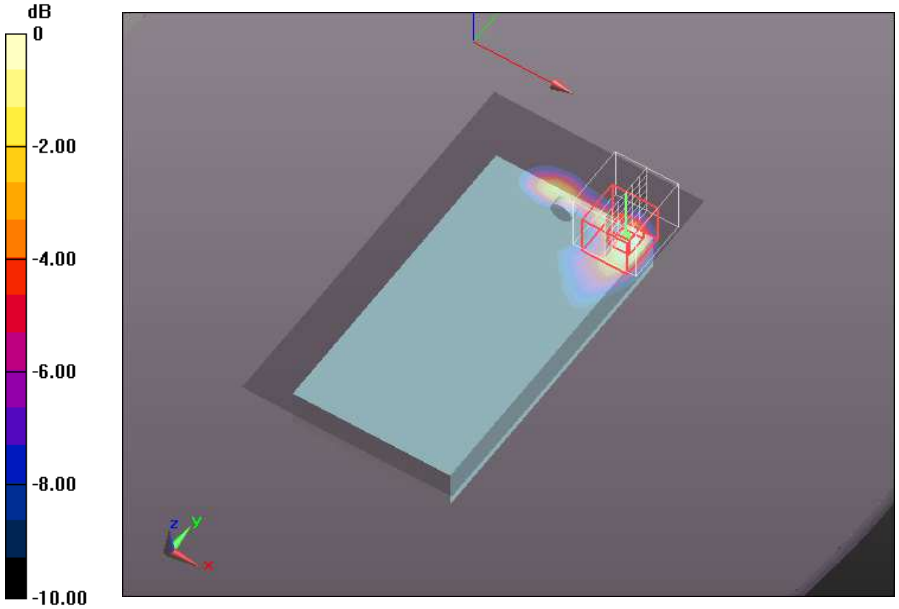
0 dB = 1.64 W/kg = 2.15 dBW/kg



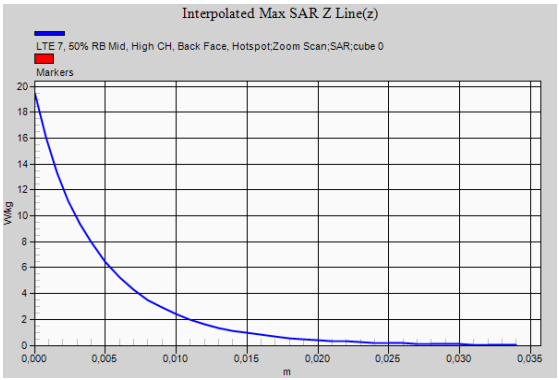
LTE Band 7 – Extremity – Back Face, d=0mm – High Channel – Plot Nº15
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-19
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10297 - AAC, LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK); Frequency: 2560 MHz; Duty Cycle: 1:3.81066
Medium parameters used: f = 2560 MHz; σ = 2.15 S/m; ε_r = 52; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.52, 7.52, 7.52); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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=0mm/LTE 7, 50% RB Mid, High CH, Back Face, Hotspot/Area Scan (101x181x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 9.73 W/kg

Flat Phantom, d=0mm/LTE 7, 50% RB Mid, High CH, Back Face, Hotspot/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.30 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 19.5 W/kg
SAR(1 g) = 6.34 W/kg; SAR(10 g) = 2.33 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 8.10 W/kg



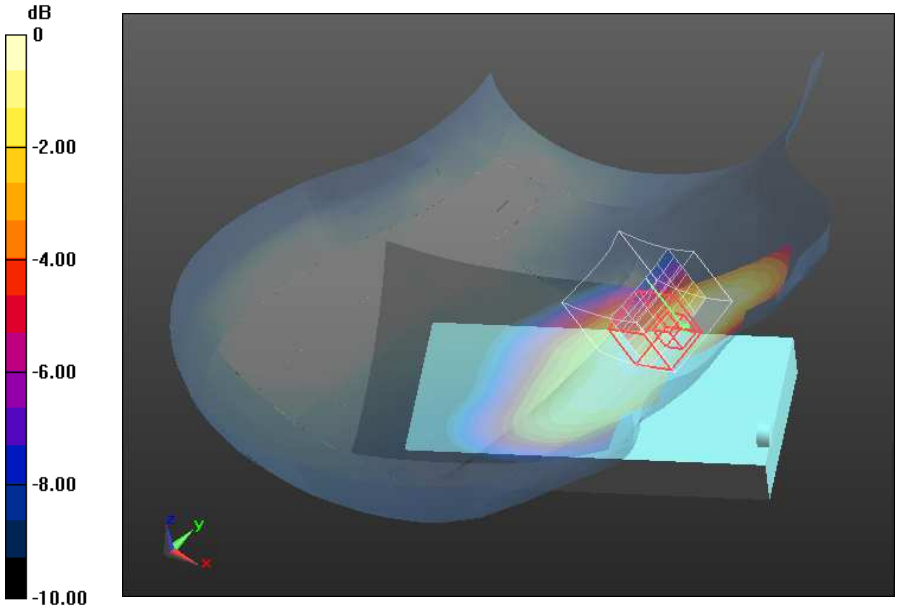
0 dB = 8.10 W/kg = 9.08 dBW/kg



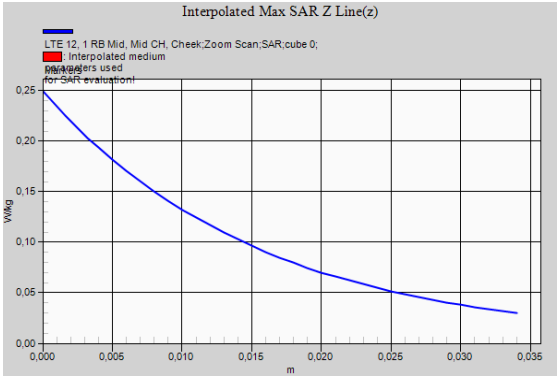
LTE Band 12 – Head – Right Cheek – Middle Channel – Plot Nº16

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-10
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528696
Communication System: UID 10175 - CAE, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 707.5 MHz; Duty Cycle: 1:3.7325
Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.855 S/m; ε_r = 43.335; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(10.33, 10.33, 10.33); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 12, 1 RB Mid, 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) = 0.210 W/kg
Right Hand Side/LTE 12, 1 RB Mid, Mid CH, Cheek/Zoom Scan (6x6x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.04 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.249 W/kg
SAR(1 g) = 0.190 W/kg; SAR(10 g) = 0.135 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.194 W/kg



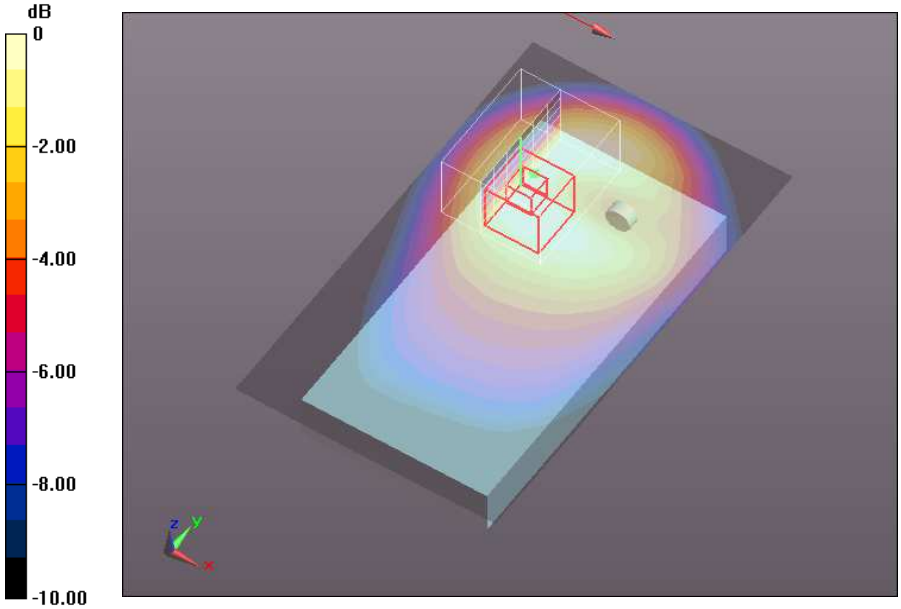
0 dB = 0.194 W/kg = -7.12 dBW/kg



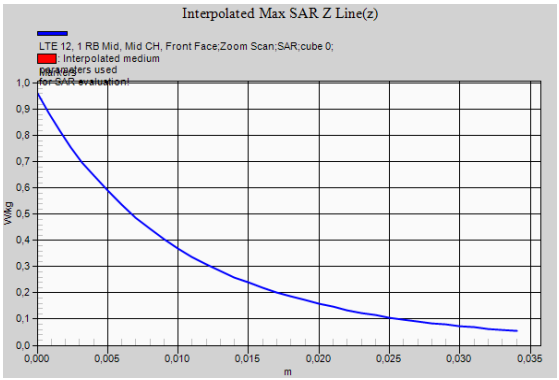
LTE Band 12 – Body – Front Face, d=10mm – Middle Channel – Plot Nº17
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-27
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10175 - CAE, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 707.5 MHz; Duty Cycle: 1:3.7325
Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.93 S/m; ε_r = 56.49; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(10.11, 10.11, 10.11); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 12, 1 RB Mid, Mid CH, Front 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) = 0.714 W/kg

Flat Phantom, d=10mm/LTE 12, 1 RB Mid, Mid CH, Front Face/Zoom Scan (6x7x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.35 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.961 W/kg
SAR(1 g) = 0.633 W/kg; SAR(10 g) = 0.417 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.656 W/kg



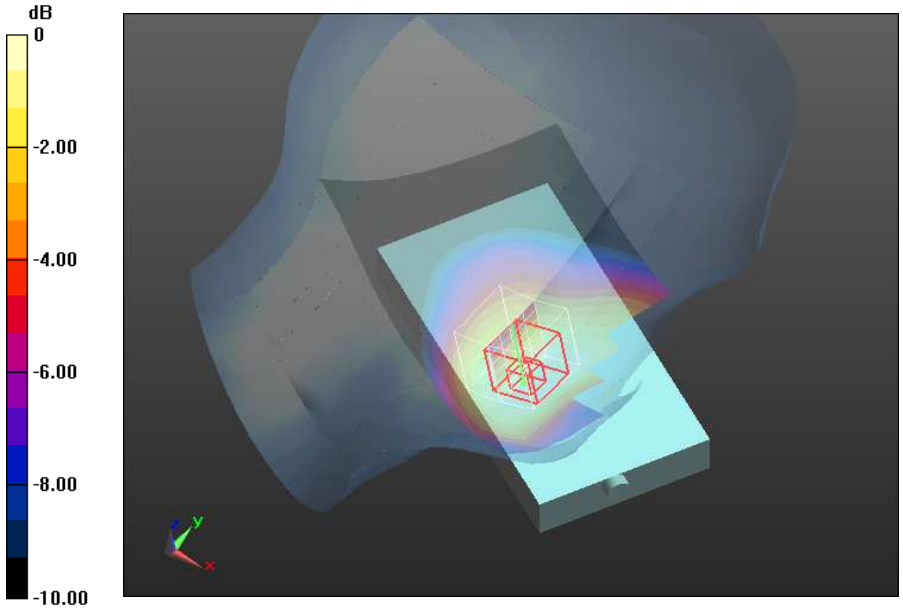
0 dB = 0.656 W/kg = -1.83 dBW/kg



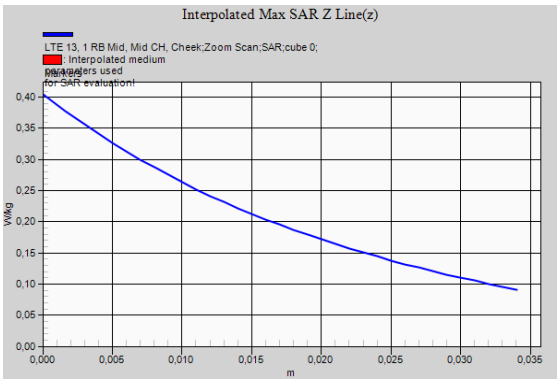
LTE Band 13 – Head – Left Cheek – Middle Channel – Plot №18

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-10
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528696
Communication System: UID 10175 - CAE, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 782 MHz; Duty Cycle: 1:3.7325
Medium parameters used (interpolated): f = 782 MHz; σ = 0.93 S/m; ε_r = 43.102; ρ = 1000 kg/m^3
Phantom section: Left Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(10.33, 10.33, 10.33); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 13, 1 RB Mid, 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) = 0.374 W/kg
Left Hand Side/LTE 13, 1 RB Mid, Mid CH, Cheek/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.07 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.405 W/kg
SAR(1 g) = 0.337 W/kg; SAR(10 g) = 0.265 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.351 W/kg



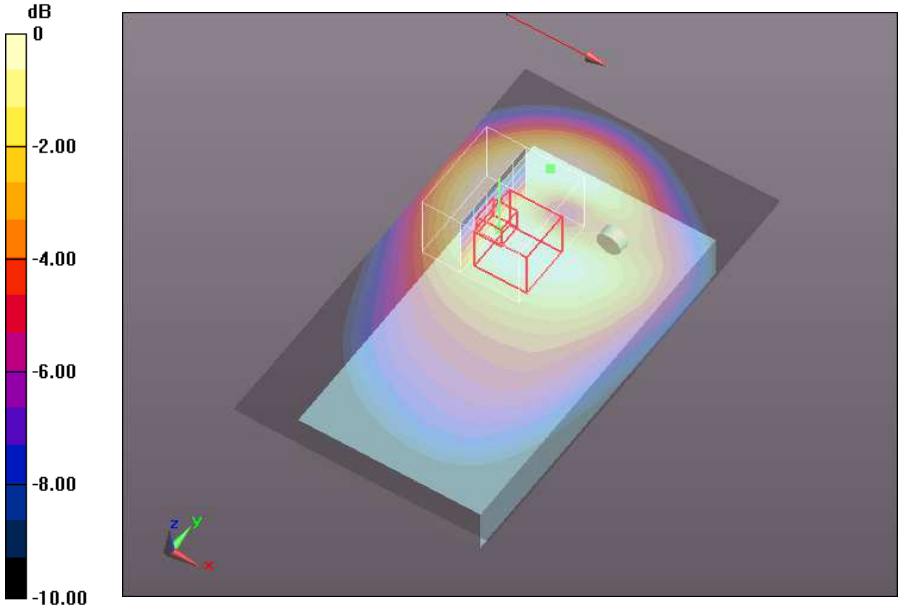
0 dB = 0.351 W/kg = -4.55 dBW/kg



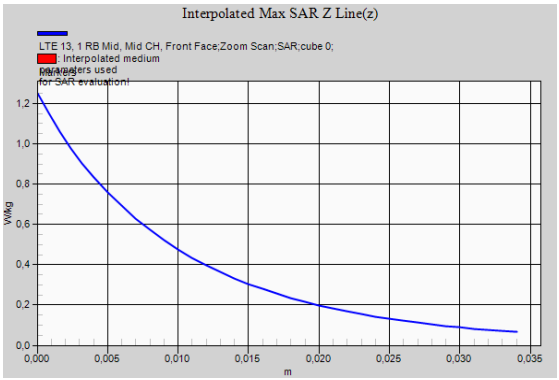
LTE Band 13 – Body – Front Face, d=10mm – Middle Channel – Plot Nº19
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-26
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10175 - CAE, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 782 MHz; Duty Cycle: 1:3.7325
Medium parameters used (interpolated): f = 782 MHz; σ = 0.99 S/m; ε_r = 55.834; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(10.11, 10.11, 10.11); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 13, 1 RB Mid, Mid CH, Front 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) = 0.943 W/kg

Flat Phantom, d=10mm/LTE 13, 1 RB Mid, Mid CH, Front Face/Zoom Scan (6x6x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.38 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.805 W/kg; SAR(10 g) = 0.545 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.861 W/kg



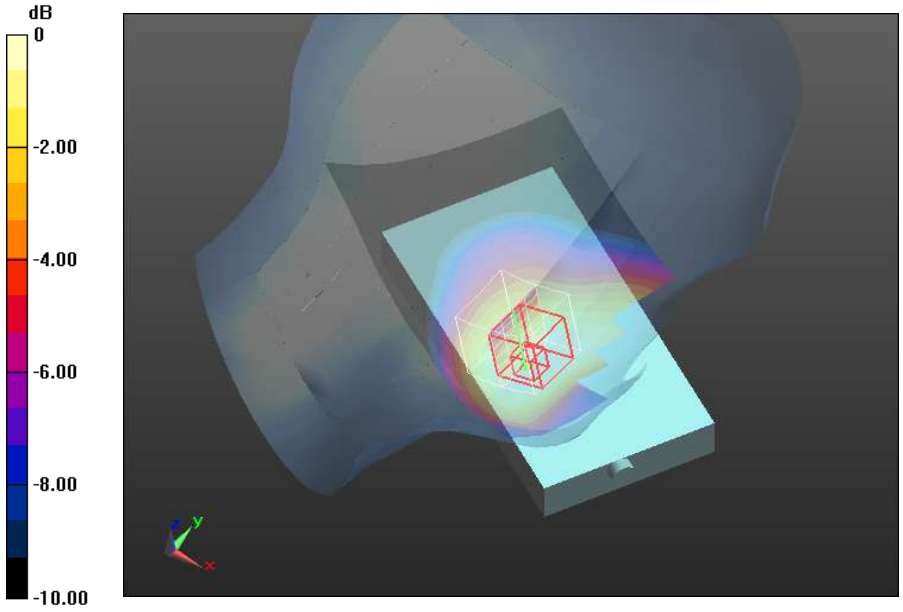
0 dB = 0.861 W/kg = -0.65 dBW/kg



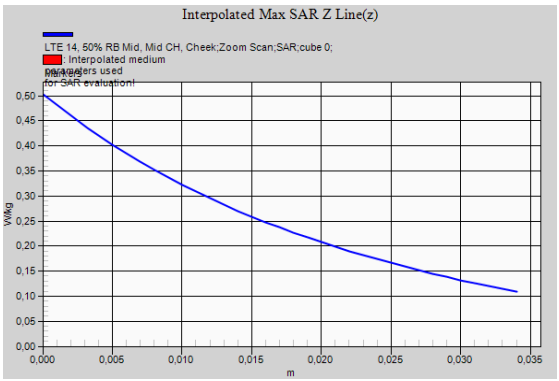
LTE Band 14 – Head – Left Cheek – Middle Channel – Plot Nº20

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-11
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528696
Communication System: UID 10175 - CAE, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 793 MHz; Duty Cycle: 1:3.7325
Medium parameters used (interpolated): f = 793 MHz; σ = 0.93 S/m; ε_r = 42.954; ρ = 1000 kg/m^3
Phantom section: Left Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(10.33, 10.33, 10.33); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 14, 50% RB Mid, 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) = 0.461 W/kg
Left Hand Side/LTE 14, 50% RB Mid, Mid CH, Cheek/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.11 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.503 W/kg
SAR(1 g) = 0.416 W/kg; SAR(10 g) = 0.324 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.434 W/kg



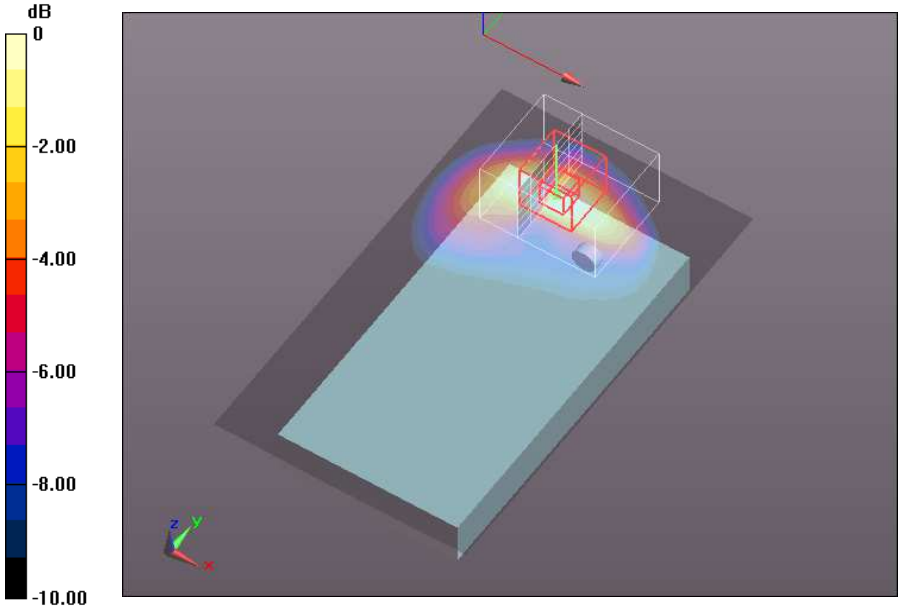
0 dB = 0.434 W/kg = -3.63 dBW/kg



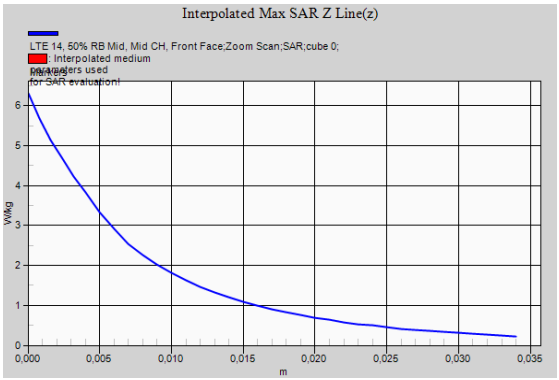
LTE Band 14 – Extremity – Front Face, d=0mm – Middle Channel – Plot Nº21
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-26
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528696
Communication System: UID 10154 - CAE, LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK); Frequency: 793 MHz; Duty Cycle: 1:3.75837
Medium parameters used (interpolated): f = 793 MHz; σ = 1 S/m; ε_r = 55.708; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(10.11, 10.11, 10.11); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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=0mm/LTE 14, 50% RB Mid, Mid CH, Front 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) = 4.37 W/kg

Flat Phantom, d=0mm/LTE 14, 50% RB Mid, Mid CH, Front Face/Zoom Scan (7x6x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.75 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 6.31 W/kg
SAR(1 g) = 3.21 W/kg; SAR(10 g) = 1.66 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 3.82 W/kg

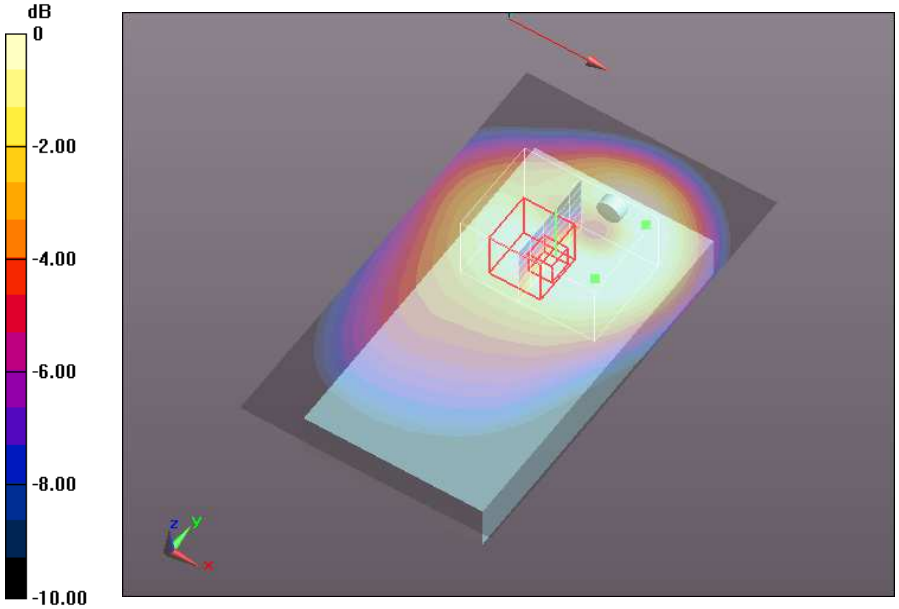


0 dB = 3.82 W/kg = 5.82 dBW/kg

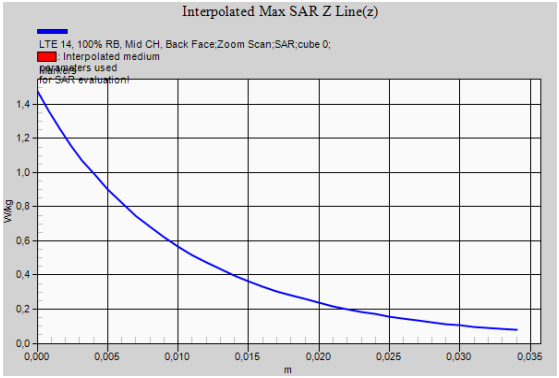


LTE Band 14 – Body – Back Face, d=10mm – Middle Channel – Plot Nº22
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-26
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10108 - CAE, LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK); Frequency: 793 MHz; Duty Cycle: 1:3.80189
Medium parameters used (interpolated): f = 793 MHz; σ = 1 S/m; ε_r = 55.708; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(10.11, 10.11, 10.11); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 14, 100% RB, 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) = 1.12 W/kg
Flat Phantom, d=10mm/LTE 14, 100% RB, Mid CH, Back Face/Zoom Scan (8x6x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.16 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.48 W/kg
SAR(1 g) = 0.961 W/kg; SAR(10 g) = 0.666 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.01 W/kg



0 dB = 1.01 W/kg = 0.04 dBW/kg

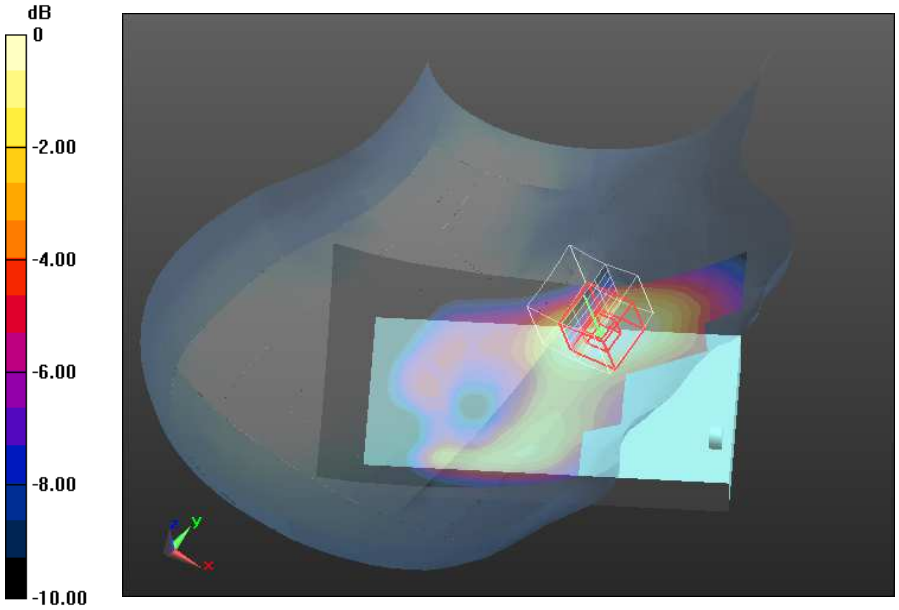


LTE Band 25 – Head – Right Cheek – Low Channel – Plot Nº23

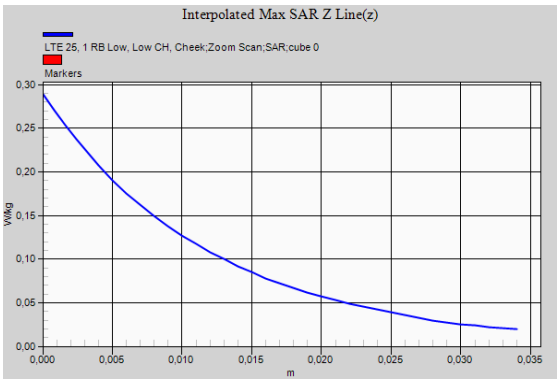
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-13
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10169 - CAD, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1860 MHz; Duty Cycle: 1:3.74111
Medium parameters used: f = 1860 MHz; σ = 1.41 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.31, 8.31, 8.31); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 25, 1 RB Low, Low CH, Cheek/Area Scan (71x121x1):
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.227 W/kg

Right Hand Side/LTE 25, 1 RB Low, Low CH, Cheek/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.04 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.289 W/kg
SAR(1 g) = 0.190 W/kg; SAR(10 g) = 0.118 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.208 W/kg



0 dB = 0.208 W/kg = -6.82 dBW/kg

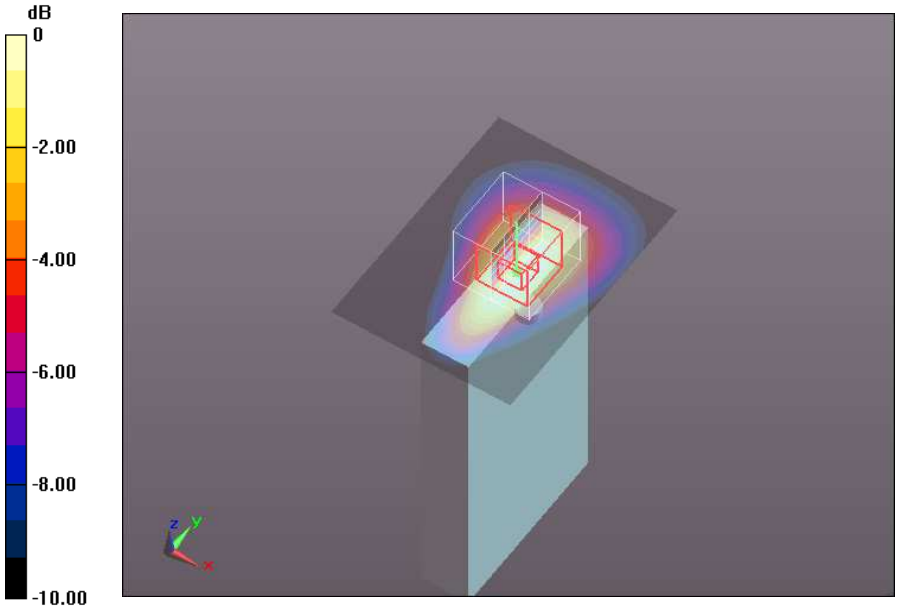


LTE Band 25 – Body – Bottom Edge, d=10mm – Low Channel – Plot Nº24

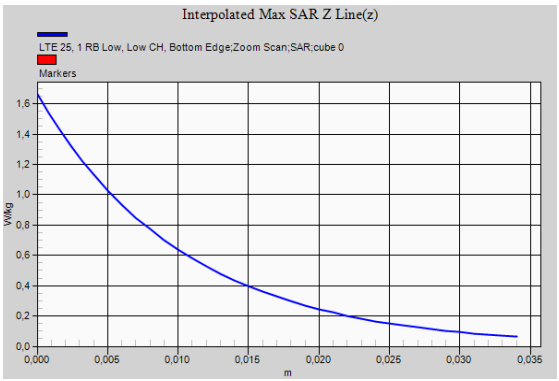
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-06
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528696
Communication System: UID 10169 - CAD, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1860 MHz;
Duty Cycle: 1:3.74111
Medium parameters used: f = 1860 MHz; σ = 1.58 S/m; ε_r = 54.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.24, 8.24, 8.24); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 25, 1 RB Low, Low CH, Bottom Edge/Area Scan (51x71x1):
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.28 W/kg

Flat Phantom, d=10mm/LTE 25, 1 RB Low, Low CH, Bottom Edge/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.69 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.66 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.578 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 1.13 W/kg



0 dB = 1.13 W/kg = 0.53 dBW/kg



LTE Band 25 – Extremity – Bottom Edge, d=0mm – Low Channel – Plot Nº25

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-06

DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528696

Communication System: UID 10169 - CAD, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1860 MHz; Duty Cycle: 1:3.74111

Medium parameters used: f = 1860 MHz; σ = 1.58 S/m; ε_r = 54.7; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.24, 8.24, 8.24); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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=0mm/1900MHz/LTE 25, 1 RB Low, Low CH, Bottom Edge/Area Scan (71x101x1):

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

Maximum value of SAR (interpolated) = 2.52 W/kg

Flat Phantom, d=0mm/1900MHz/LTE 25, 1 RB Low, Low CH, Bottom Edge/Zoom Scan (5x5x7)/Cube 0:

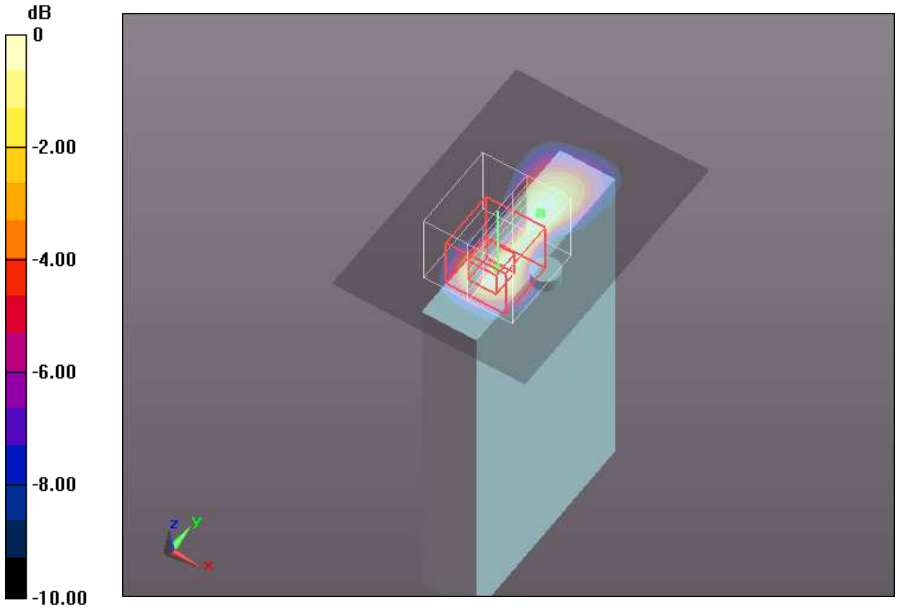
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.981 V/m; Power Drift = 0.02 dB

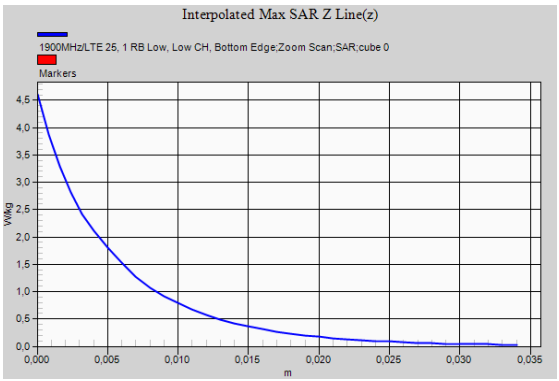
Peak SAR (extrapolated) = 4.61 W/kg

SAR(1 g) = 1.75 W/kg; SAR(10 g) = 0.648 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 2.09 W/kg



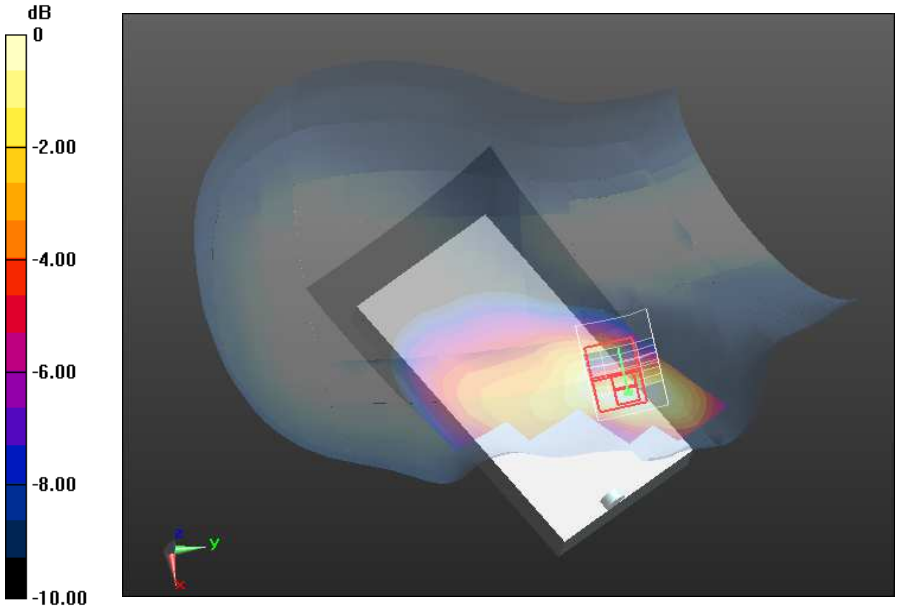
0 dB = 2.09 W/kg = 3.20 dBW/kg



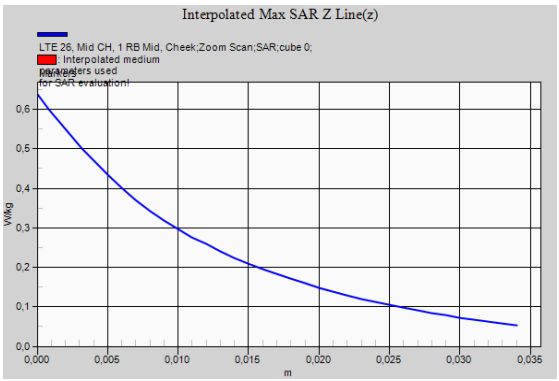
LTE Band 26 – Head – Right Cheek – Middle Channel – Plot Nº26

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-04
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10181 - CAD, LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK); Frequency: 831.5 MHz; Duty Cycle: 1:3.7325
Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.9 S/m; ε_r = 41.686; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(9.67, 9.67, 9.67); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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)

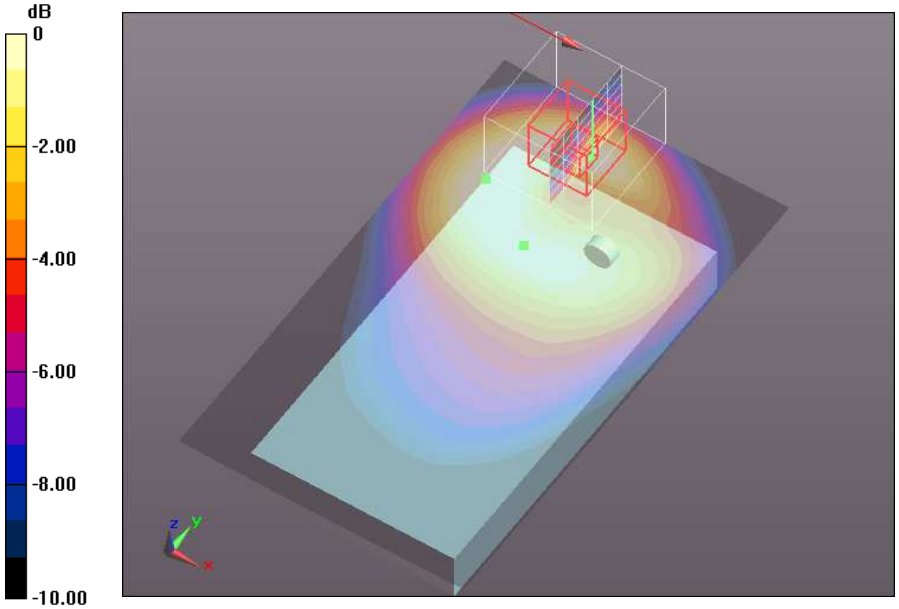
Right Hand Side/LTE 26, Mid CH, 1 RB Mid, Cheek/Area Scan (71x121x1):
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.485 W/kg
Right Hand Side/LTE 26, Mid CH, 1 RB Mid, Cheek/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.10 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.638 W/kg
SAR(1 g) = 0.431 W/kg; SAR(10 g) = 0.286 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.471 W/kg



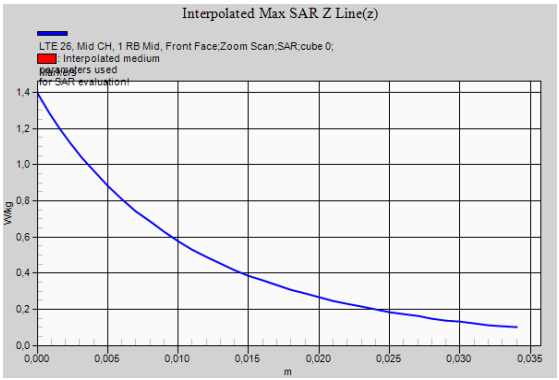
0 dB = 0.471 W/kg = -3.27 dBW/kg



LTE Band 26 – Body – Front Face, d=10mm – Middle Channel – Plot Nº27
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-01-09
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10181 - CAD, LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK); Frequency: 831.5 MHz; Duty Cycle: 1:3.7325
Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.953 S/m; ε_r = 55.072; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(9.78, 9.78, 9.78); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 26, Mid CH, 1 RB Mid, Front 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) = 0.955 W/kg
Flat Phantom, d=10mm/LTE 26, Mid CH, 1 RB Mid, Front Face/Zoom Scan (6x6x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.27 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.40 W/kg
SAR(1 g) = 0.878 W/kg; SAR(10 g) = 0.525 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.910 W/kg



0 dB = 0.910 W/kg = -0.41 dBW/kg

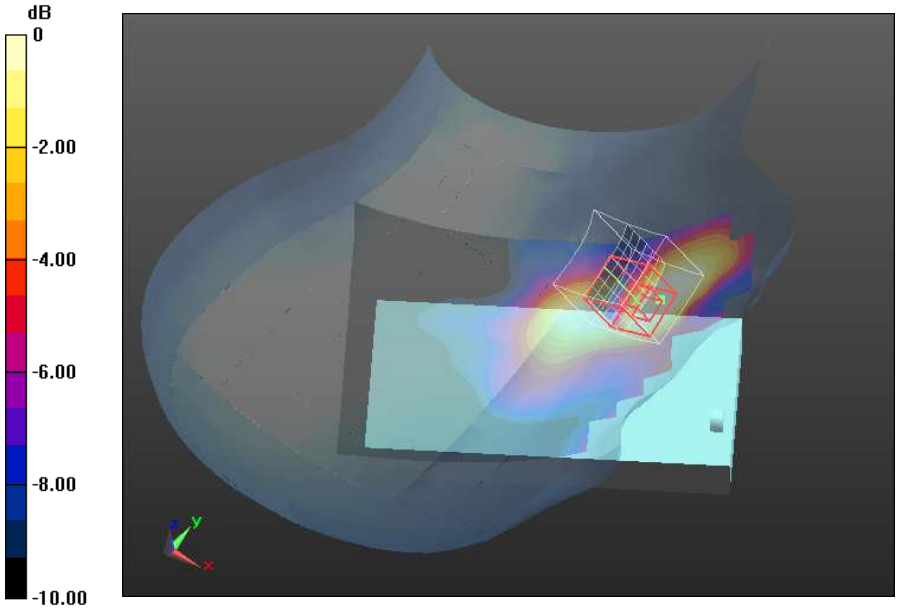


LTE Band 30 – Head – Right Cheek – Middle Channel – Plot Nº28

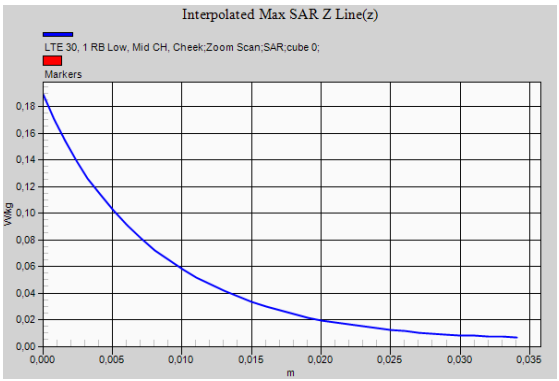
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-01-23
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10175 - CAE, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 2310 MHz;
Duty Cycle: 1:3.7325
Medium parameters used: f = 2310 MHz; σ = 1.73 S/m; ε_r = 40.12; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.8, 7.8, 7.8); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 30, 1 RB Low, Mid CH, Cheek/Area Scan (111x181x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.139 W/kg

Right Hand Side/LTE 30, 1 RB Low, Mid CH, Cheek/Zoom Scan (8x8x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.024 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.189 W/kg
SAR(1 g) = 0.109 W/kg; SAR(10 g) = 0.060 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.117 W/kg



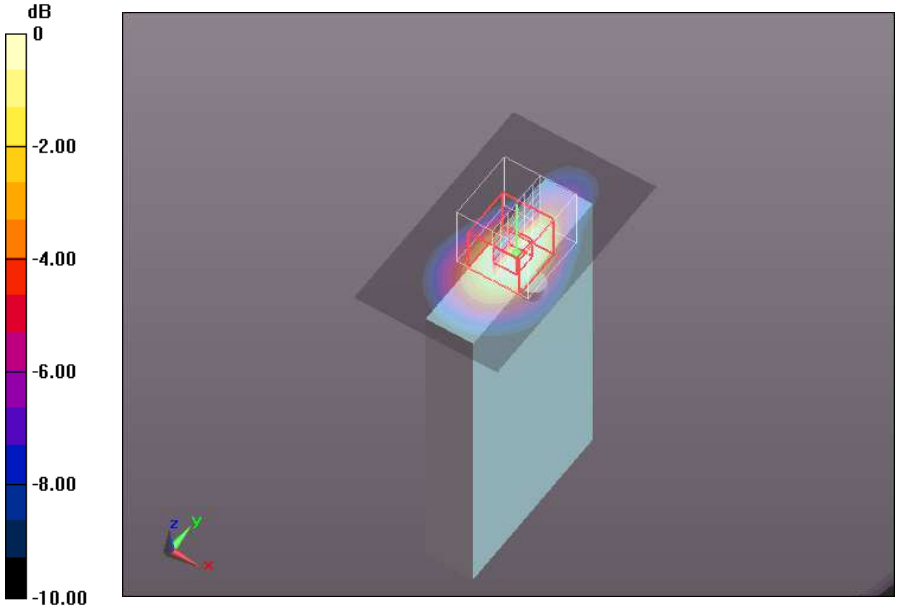
0 dB = 0.117 W/kg = -9.32 dBW/kg



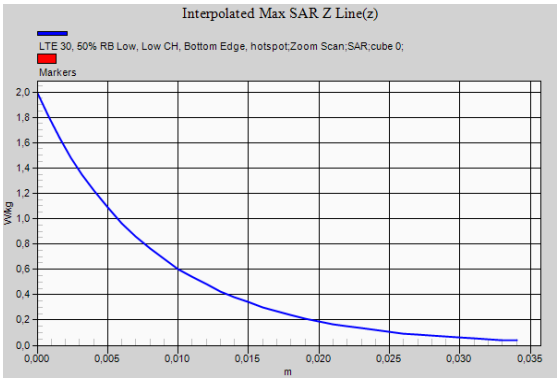
LTE Band 30 – Body – Bottom Edge, d=10mm – Middle Channel – Plot Nº29
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-04
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10154 - CAE, LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK); Frequency: 2310 MHz; Duty Cycle: 1:3.75837
Medium parameters used: f = 2310 MHz; σ = 1.89 S/m; ε_r = 52.83; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.88, 7.88, 7.88); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 30, 50% RB Low, Low CH, Bottom Edge, hotspot/Area Scan (61x101x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.41 W/kg

Flat Phantom, d=10mm/LTE 30, 50% RB Low, Low CH, Bottom Edge, hotspot/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.77 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.99 W/kg
SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.543 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 1.22 W/kg



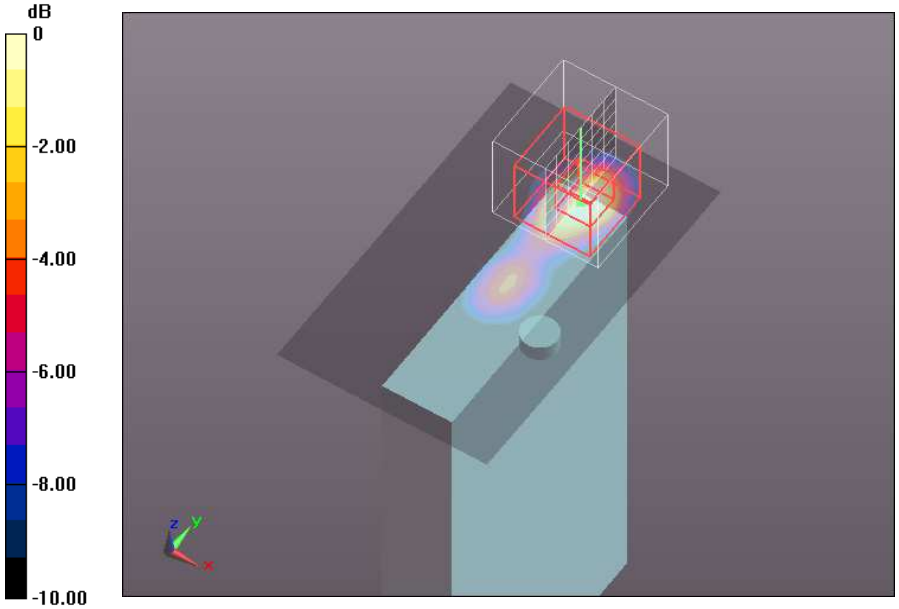
0 dB = 1.22 W/kg = 0.86 dBW/kg



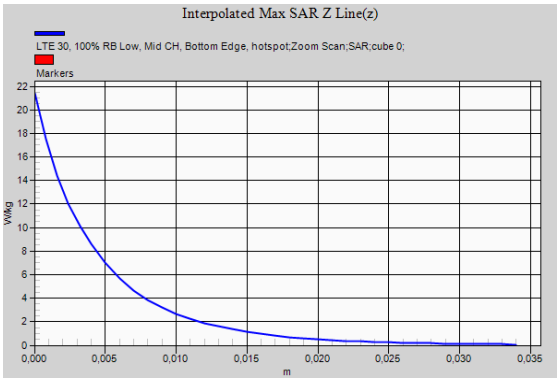
LTE Band 30 – Extremity – Bottom Edge, d=0mm – Middle Channel – Plot Nº30
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-04
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10108 - CAE, LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK); Frequency: 2310 MHz; Duty Cycle: 1:3.80189
Medium parameters used: f = 2310 MHz; σ = 1.89 S/m; ε_r = 52.83; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.88, 7.88, 7.88); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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=0mm/LTE 30, 100% RB Low, Mid CH, Bottom Edge, hotspot/Area Scan (61x101x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 11.2 W/kg

Flat Phantom, d=0mm/LTE 30, 100% RB Low, Mid CH, Bottom Edge, hotspot/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 60.99 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 21.4 W/kg
SAR(1 g) = 6.74 W/kg; SAR(10 g) = 2.22 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 8.00 W/kg



0 dB = 8.00 W/kg = 9.03 dBW/kg

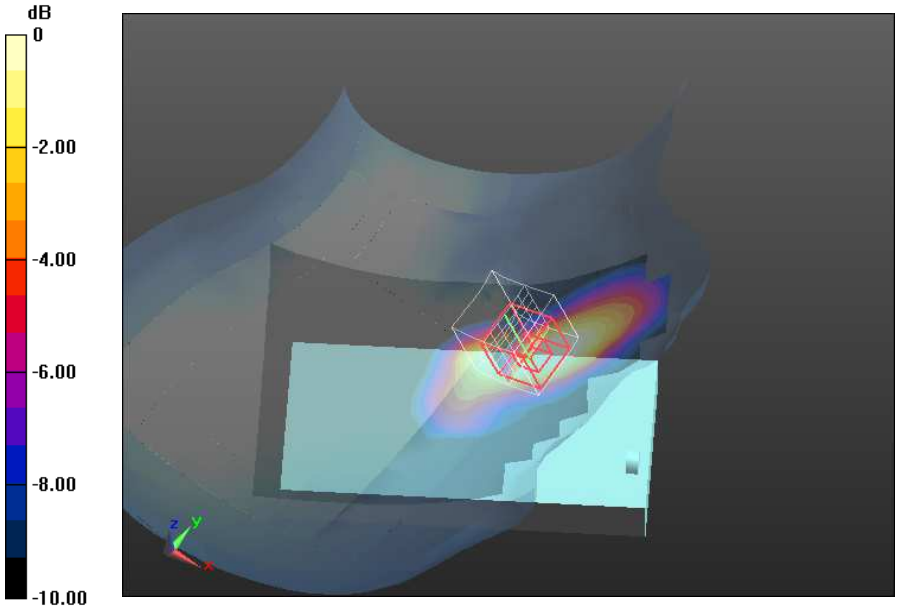


LTE Band 38 – Head – Right Cheek – High Channel – Plot Nº31

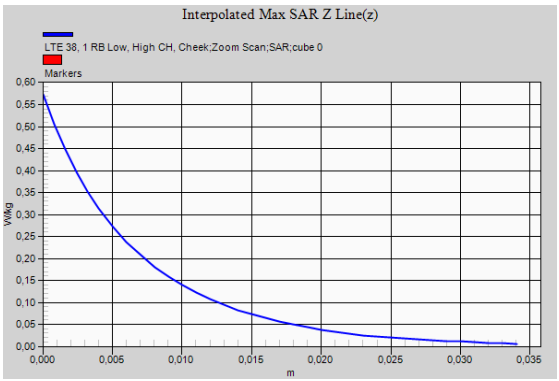
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-01-23
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10435 - AAC, LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9); Frequency: 2609.9 MHz; Duty Cycle: 1:6.05341
Medium parameters used: f = 2610 MHz; σ = 2.02 S/m; ε_r = 39.09; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.31, 7.31, 7.31); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 38, 1 RB Low, High CH, Cheek/Area Scan (111x181x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.393 W/kg

Right Hand Side/LTE 38, 1 RB Low, High CH, Cheek/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.44 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.574 W/kg
SAR(1 g) = 0.284 W/kg; SAR(10 g) = 0.144 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.311 W/kg

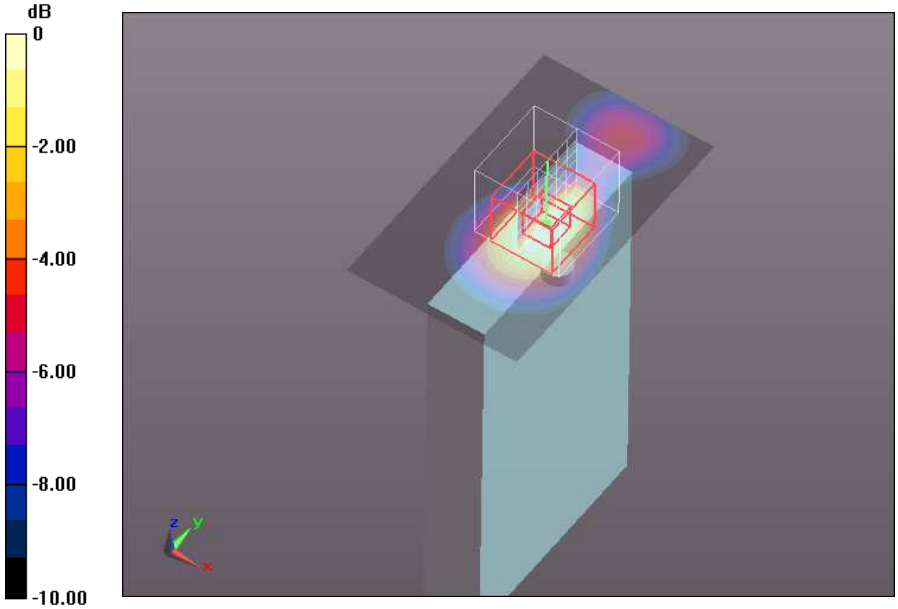


0 dB = 0.311 W/kg = -5.07 dBW/kg

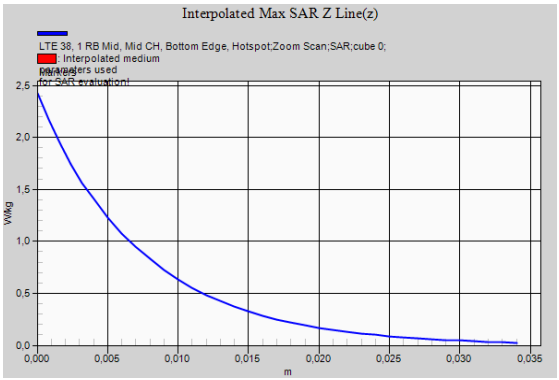


LTE Band 38 – Body – Bottom Edge, d=10mm – Middle Channel – Plot Nº32
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-19
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528696
Communication System: UID 10435 - AAC, LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9); Frequency: 2609.9 MHz; Duty Cycle: 1:6.05341
Medium parameters used (interpolated): f = 2595 MHz; σ = 2.185 S/m; ε_r = 51.91; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.52, 7.52, 7.52); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 38, 1 RB Mid, Mid CH, Bottom Edge, Hotspot/Area Scan (61x101x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.65 W/kg
Flat Phantom, d=10mm/LTE 38, 1 RB Mid, Mid CH, Bottom Edge, Hotspot/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.40 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 2.42 W/kg
SAR(1 g) = 1.23 W/kg; SAR(10 g) = 0.576 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.41 W/kg



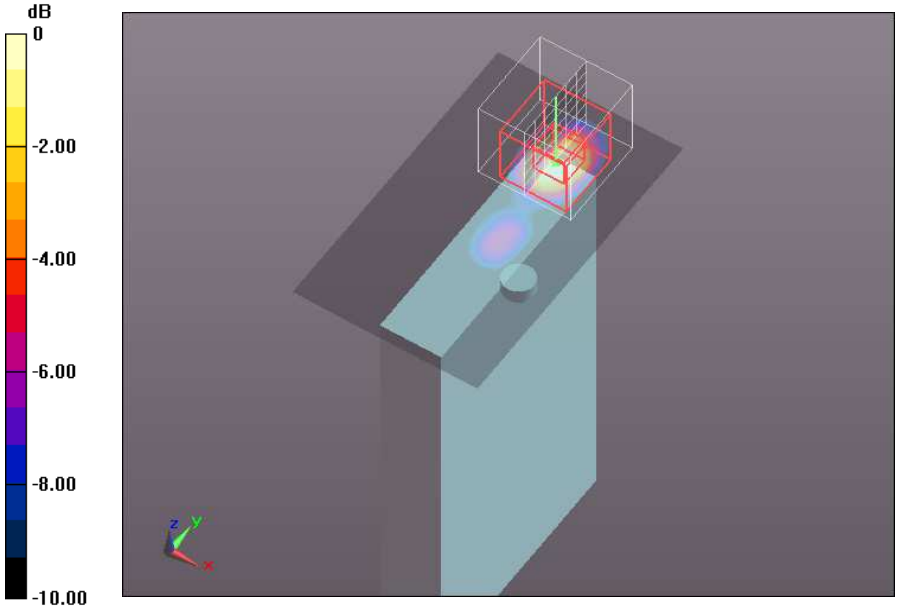
0 dB = 1.41 W/kg = 1.49 dBW/kg



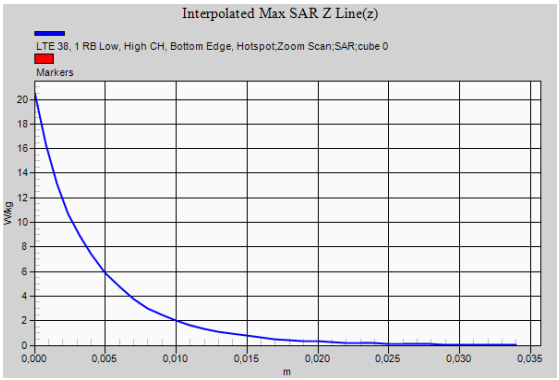
LTE Band 38 – Extremity – Bottom Edge, d=0mm – Middle Channel – Plot Nº33
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-20
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10435 - AAC, LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9); Frequency: 2609.9 MHz; Duty Cycle: 1:6.05341
Medium parameters used: f = 2610 MHz; σ = 2.2 S/m; ε_r = 51.87; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.52, 7.52, 7.52); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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=0mm/LTE 38, 1 RB Low, High CH, Bottom Edge, Hotspot/Area Scan (61x101x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 10.3 W/kg

Flat Phantom, d=0mm/LTE 38, 1 RB Low, High CH, Bottom Edge, Hotspot/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 28.82 V/m; Power Drift = 0.22 dB
Peak SAR (extrapolated) = 20.5 W/kg
SAR(1 g) = 5.94 W/kg; SAR(10 g) = 1.83 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 7.14 W/kg



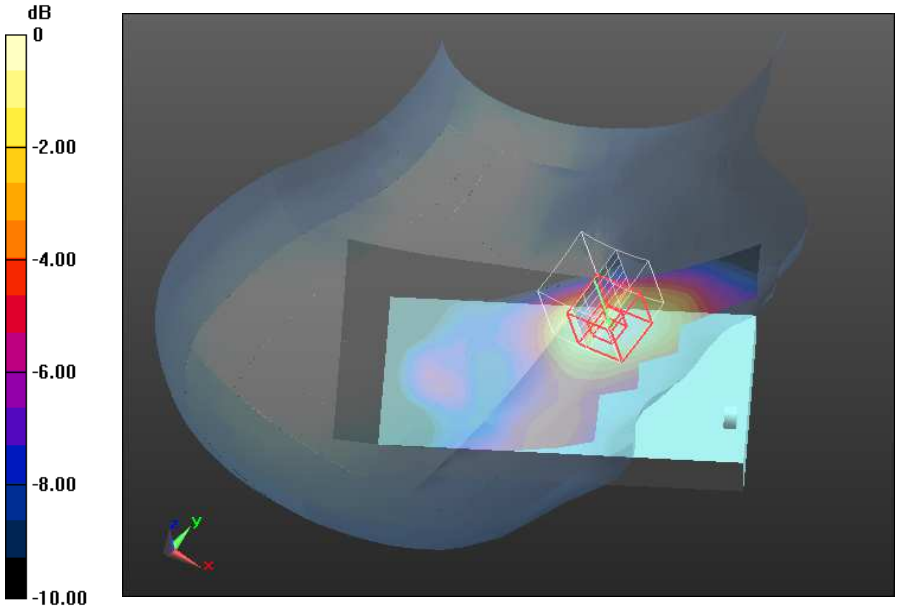
0 dB = 7.14 W/kg = 8.54 dBW/kg



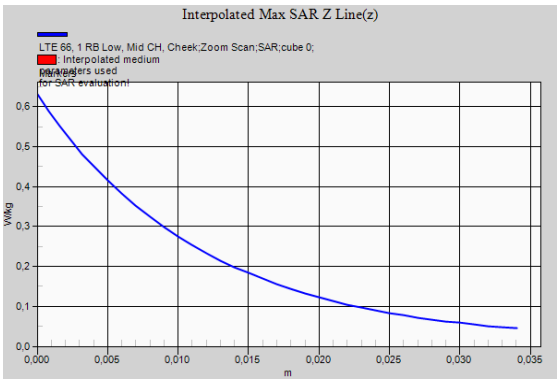
LTE Band 66 – Head – Right Cheek – Middle Channel – Plot Nº34

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-12
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10169 - CAD, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1745 MHz; Duty Cycle: 1:3.74111
Medium parameters used (interpolated): f = 1745 MHz; σ = 1.325 S/m; ε_r = 39.235; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.31, 8.31, 8.31); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 66, 1 RB Low, Mid CH, Cheek/Area Scan (61x121x1):
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.468 W/kg
Right Hand Side/LTE 66, 1 RB Low, Mid CH, Cheek/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.80 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.631 W/kg
SAR(1 g) = 0.420 W/kg; SAR(10 g) = 0.260 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.449 W/kg



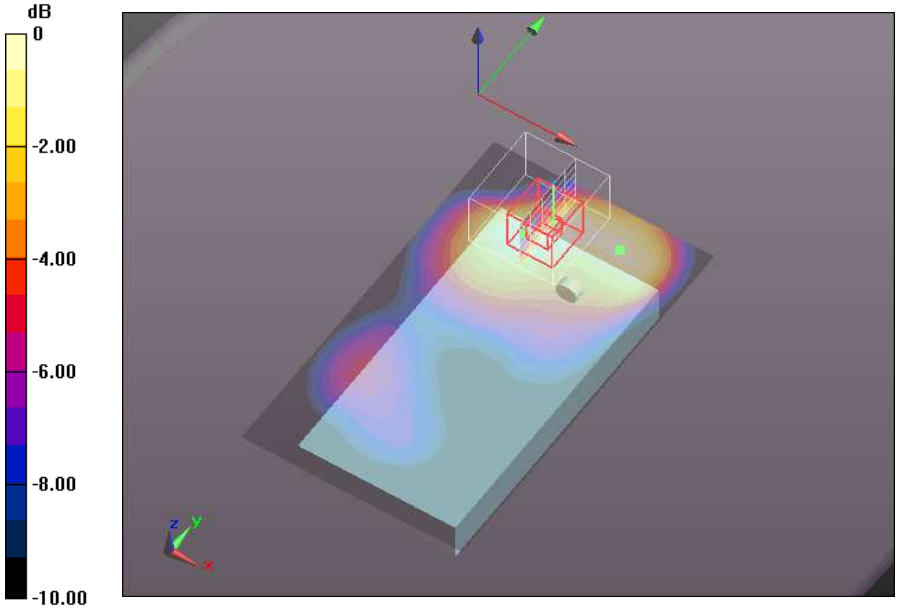
0 dB = 0.449 W/kg = -3.48 dBW/kg



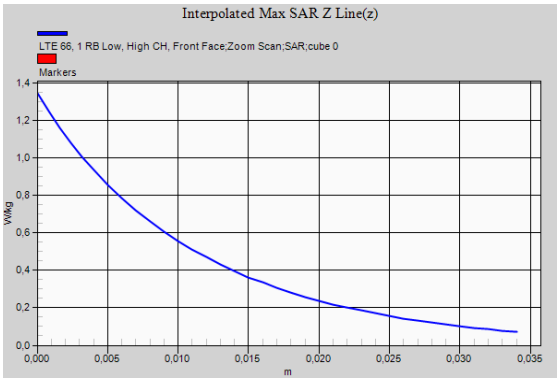
LTE Band 66 – Body – Front Face, d=10mm – High Channel – Plot Nº35
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-05
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528696
Communication System: UID 10169 - CAD, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1770 MHz; Duty Cycle: 1:3.74111
Medium parameters used: f = 1770 MHz; σ = 1.54 S/m; ε_r = 51.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.24, 8.24, 8.24); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 66, 1 RB Low, High CH, Front Face/Area Scan (71x121x1):
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.03 W/kg

Flat Phantom, d=10mm/LTE 66, 1 RB Low, High CH, Front Face/Zoom Scan (6x6x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.90 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.34 W/kg
SAR(1 g) = 0.863 W/kg; SAR(10 g) = 0.536 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.931 W/kg



0 dB = 0.931 W/kg = -0.31 dBW/kg

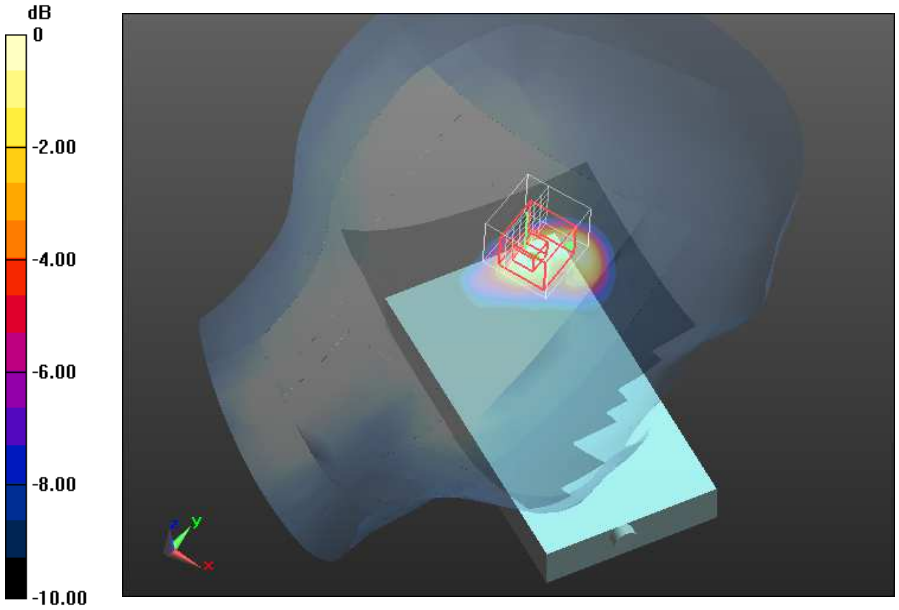


802.11b – 2450MHz – Head – Left Cheek – High Channel – Plot Nº36

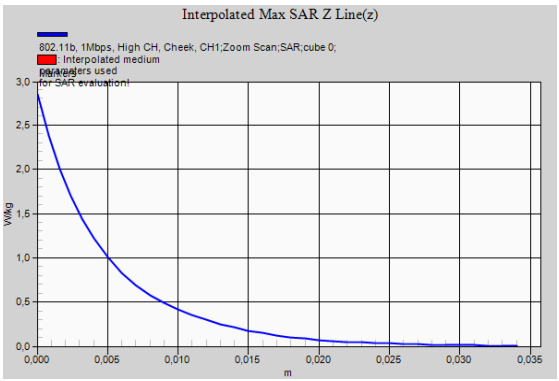
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-03-06
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10415 - AAA, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle);
Frequency: 2462 MHz; Duty Cycle: 1:1.42561
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.854 S/m; ε_r = 38.134; ρ = 1000 kg/m^3
Phantom section: Left Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.8, 7.8, 7.8); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/802.11b, 1Mbps, High CH, Cheek, CH1/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) = 1.47 W/kg

Left Hand Side/802.11b, 1Mbps, High CH, Cheek, CH1/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.38 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 2.85 W/kg
SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.443 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.23 W/kg

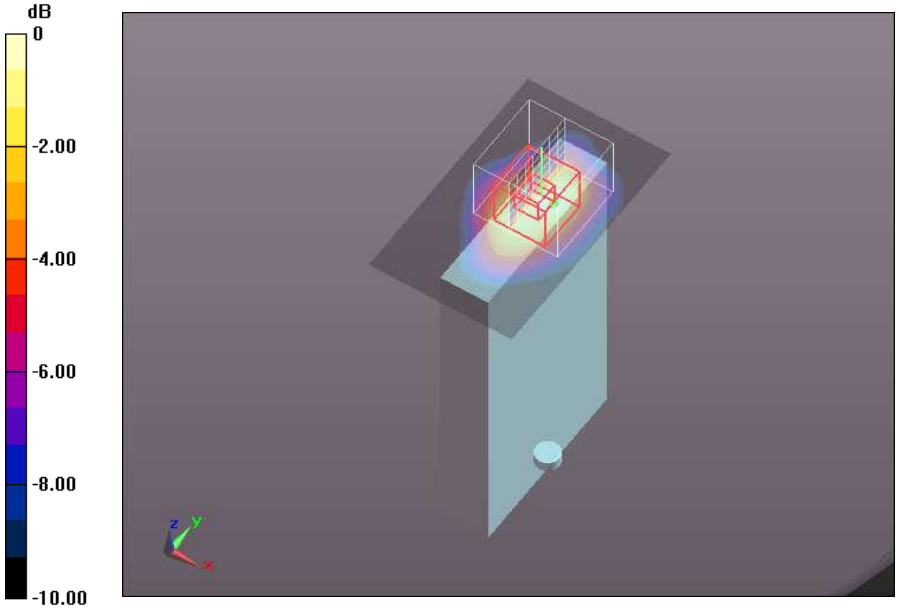


0 dB = 1.23 W/kg = 0.90 dBW/kg

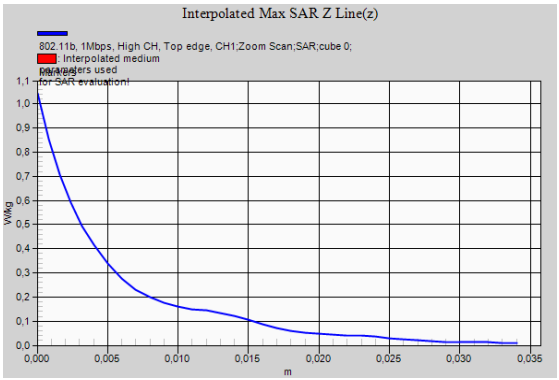


802.11b – 2450MHz – Body – Top Edge, d=10mm – High Channel – Plot Nº37
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-03-05
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528696
Communication System: UID 10415 - AAA, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle);
Frequency: 2462 MHz; Duty Cycle: 1:1.42561
Medium parameters used (interpolated): f = 2462 MHz; σ = 2.022 S/m; ε_r = 52.32; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.88, 7.88, 7.88); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/802.11b, 1Mbps, High CH, Top edge, CH1/Area Scan (61x101x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.459 W/kg
Flat Phantom, d=10mm/802.11b, 1Mbps, High CH, Top edge, CH1/Zoom Scan (8x8x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.75 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.04 W/kg
SAR(1 g) = 0.362 W/kg; SAR(10 g) = 0.178 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.447 W/kg



0 dB = 0.447 W/kg = -3.50 dBW/kg

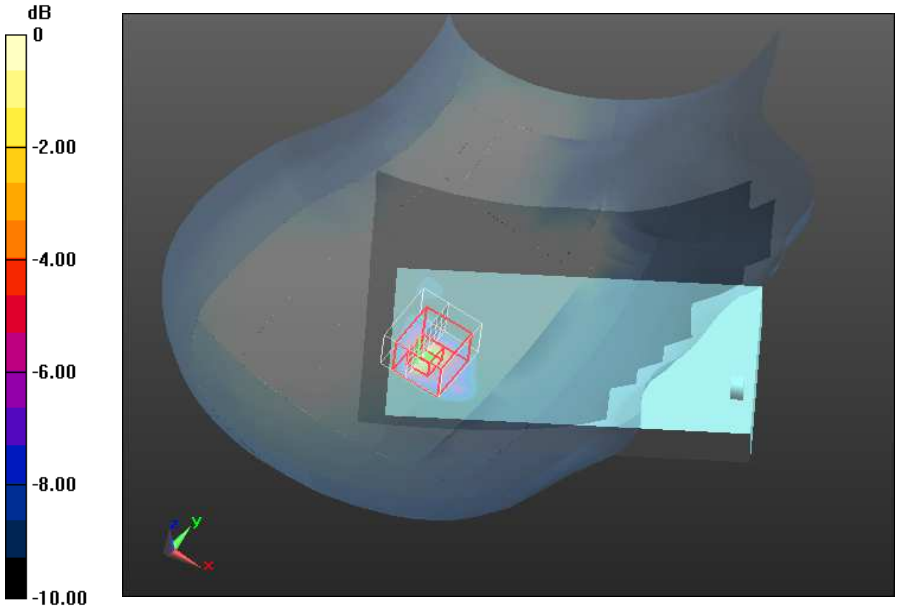


802.11a 5200 MHz – Head – Right Cheek – Low Channel – Plot Nº38

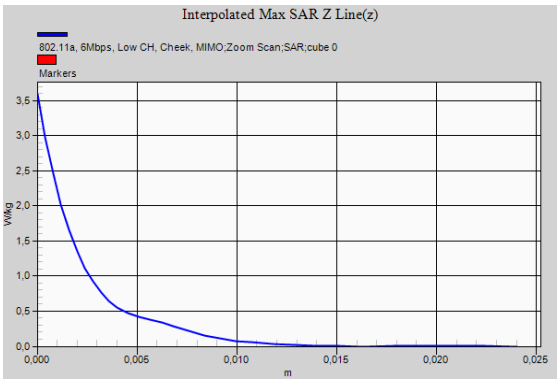
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-15
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10417 - AAB, IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle);
Frequency: 5180 MHz; Duty Cycle: 1:6.65273
Medium parameters used: f = 5180 MHz; σ = 4.76 S/m; ε_r = 36.45; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(5.83, 5.83, 5.83); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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, 5200MHz/802.11a, 6Mbps, Low CH, Cheek, MIMO/Area Scan (111x181x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.835 W/kg

Right Hand Side, 5200MHz/802.11a, 6Mbps, Low CH, Cheek, MIMO/Zoom Scan (8x8x6)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 6.101 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 3.59 W/kg
SAR(1 g) = 0.585 W/kg; SAR(10 g) = 0.192 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 1.36 W/kg



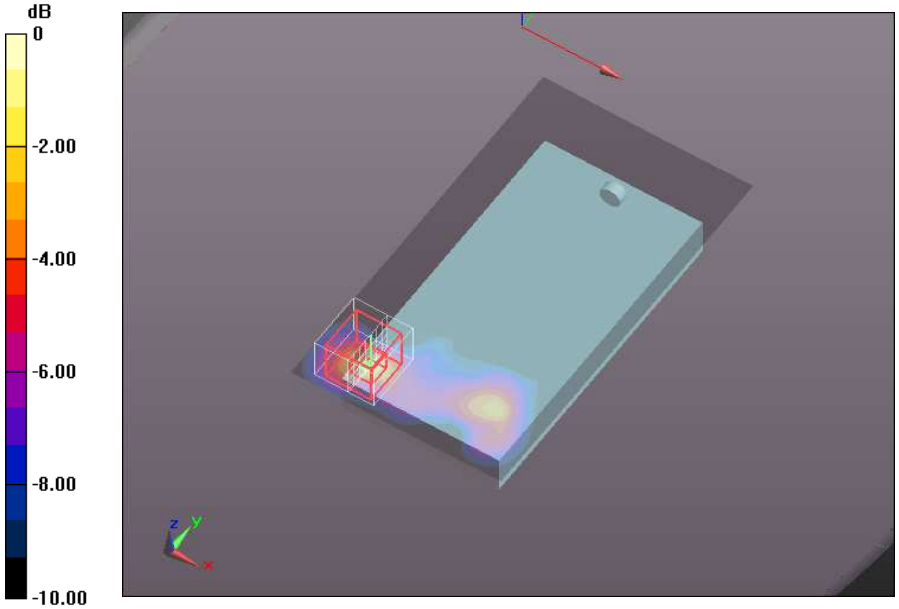
0 dB = 1.36 W/kg = 1.34 dBW/kg



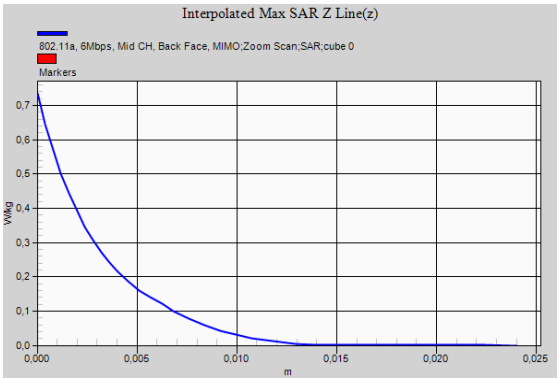
802.11a 5200 MHz – Body – Back Face, d=10mm – Middle Channel – Plot Nº39
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-08
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528696
Communication System: UID 10417 - AAB, IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle);
Frequency: 5200 MHz; Duty Cycle: 1:6.65273
Medium parameters used: f = 5200 MHz; σ = 5.34 S/m; ε_r = 48.72; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(4.96, 4.96, 4.96); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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, 5200 MHz/802.11a, 6Mbps, Mid CH, Back Face, MIMO/Area Scan (101x181x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.248 W/kg

Flat Phantom, 5200 MHz/802.11a, 6Mbps, Mid CH, Back Face, MIMO/Zoom Scan (8x8x6)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 5.418 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.736 W/kg
SAR(1 g) = 0.192 W/kg; SAR(10 g) = 0.063 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.396 W/kg



0 dB = 0.396 W/kg = -4.02 dBW/kg

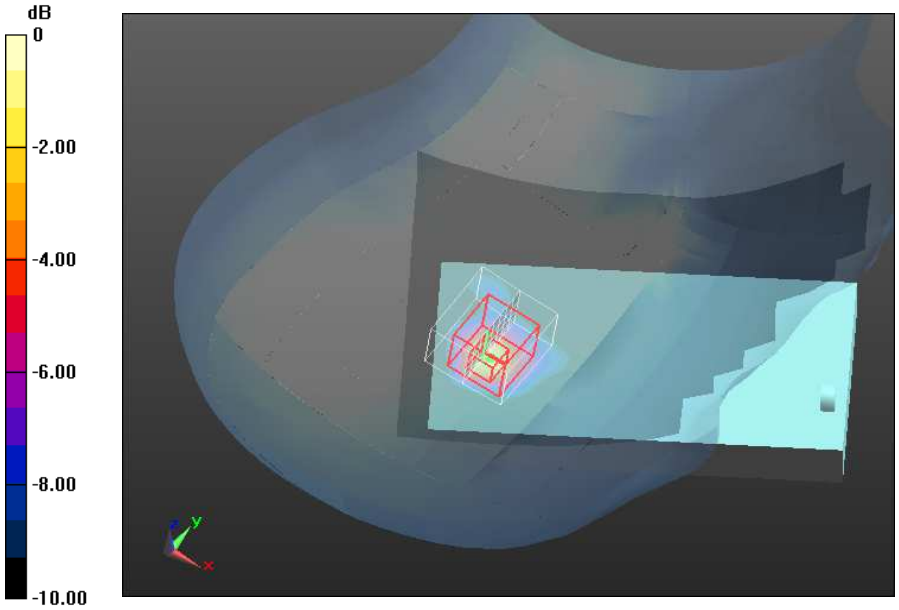


802.11a 5600 MHz – Head – Right Cheek – Middle Channel – Plot Nº40

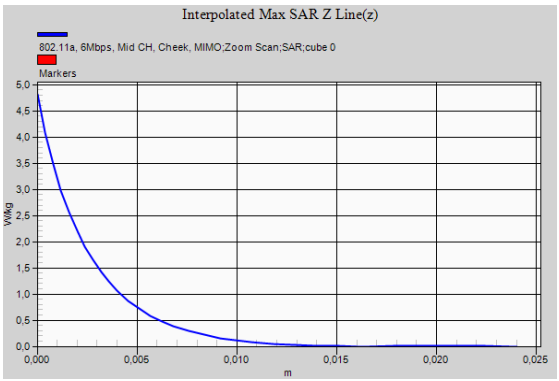
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-22
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10417 - AAB, IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle);
Frequency: 5580 MHz; Duty Cycle: 1:6.65273
Medium parameters used: f = 5580 MHz; σ = 5.22 S/m; ε_r = 36.13; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(5.05, 5.05, 5.05); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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, 5500MHz/802.11a, 6Mbps, Mid CH, Cheek, MIMO/Area Scan (111x181x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.52 W/kg

Right Hand Side, 5500MHz/802.11a, 6Mbps, Mid CH, Cheek, MIMO/Zoom Scan (9x9x6)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 10.99 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 4.82 W/kg
SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.332 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 2.11 W/kg



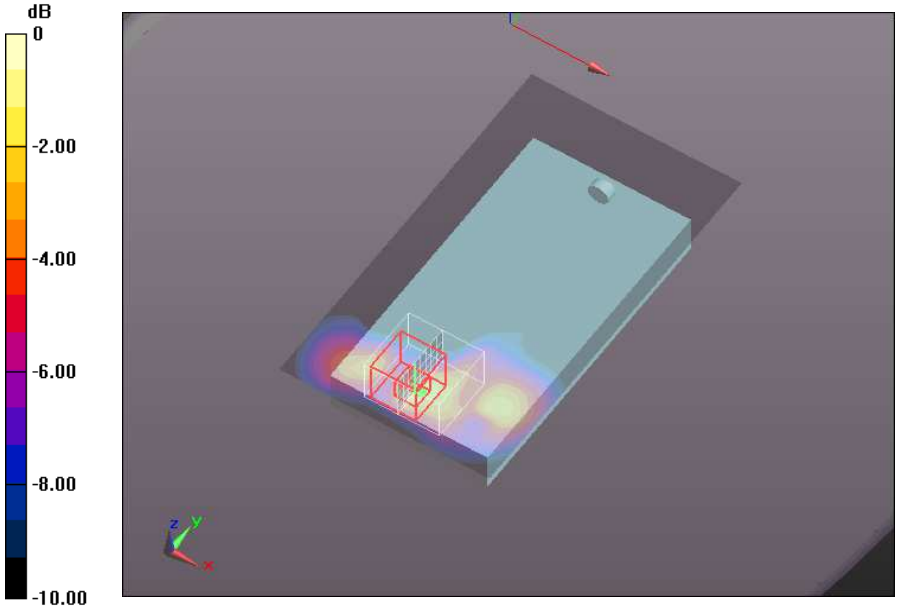
0 dB = 2.11 W/kg = 3.24 dBW/kg



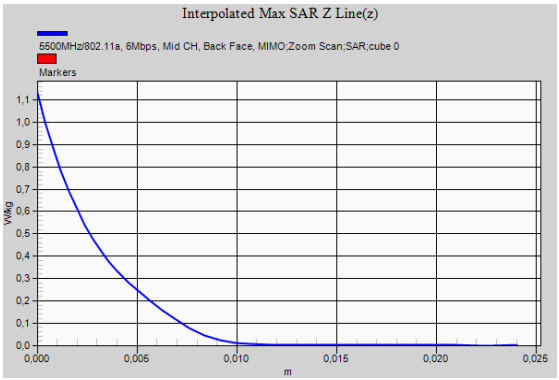
802.11a 5600 MHz – Body – Back Face, d=10mm – Middle Channel – Plot Nº41
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-11
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528696
Communication System: UID 10417 - AAB, IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle);
Frequency: 5580 MHz; Duty Cycle: 1:6.65273
Medium parameters used: f = 5580 MHz; σ = 5.88 S/m; ε_r = 47.93; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(4.18, 4.18, 4.18); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/5500MHz/802.11a, 6Mbps, Mid CH, Back Face, MIMO/Area Scan (101x181x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.478 W/kg

Flat Phantom/5500MHz/802.11a, 6Mbps, Mid CH, Back Face, MIMO/Zoom Scan (10x9x6)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 7.581 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.13 W/kg
SAR(1 g) = 0.298 W/kg; SAR(10 g) = 0.095 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.609 W/kg



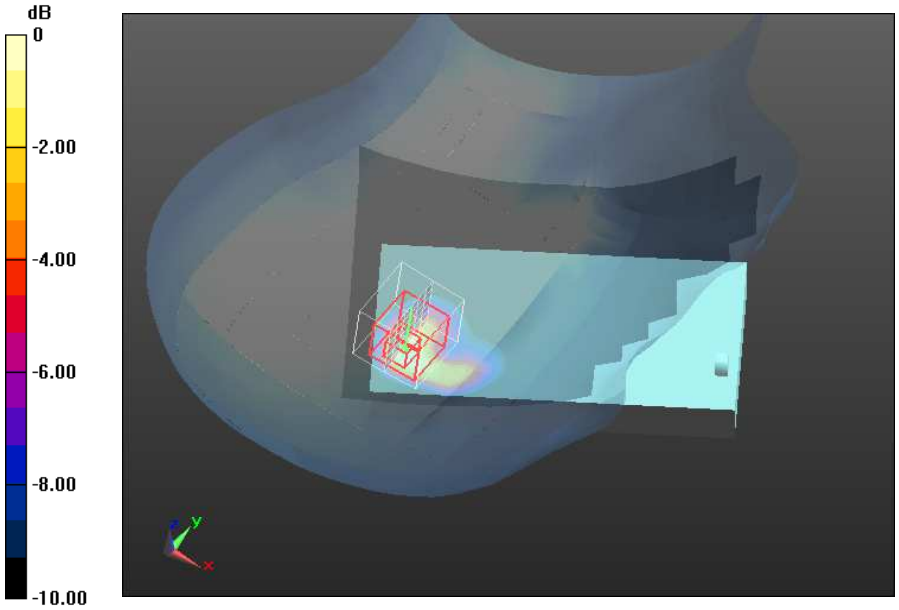
0 dB = 0.609 W/kg = -2.15 dBW/kg



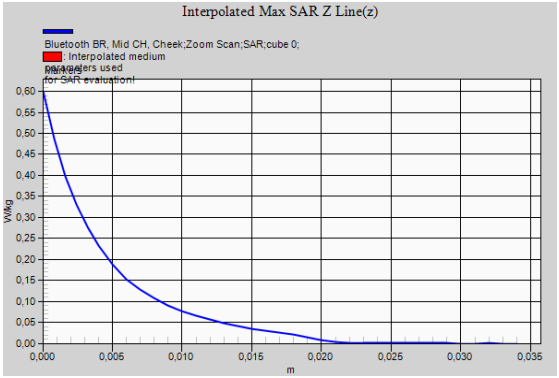
Bluetooth – 2450MHz – Head – Right Cheek – Middle Channel – Plot Nº42

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-01-24
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
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; σ = 1.821 S/m; ε_r = 39.422; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.8, 7.8, 7.8); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/Bluetooth BR, 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) = 0.267 W/kg
Right Hand Side/Bluetooth BR, Mid CH, Cheek/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.048 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.600 W/kg
SAR(1 g) = 0.200 W/kg; SAR(10 g) = 0.077 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.244 W/kg



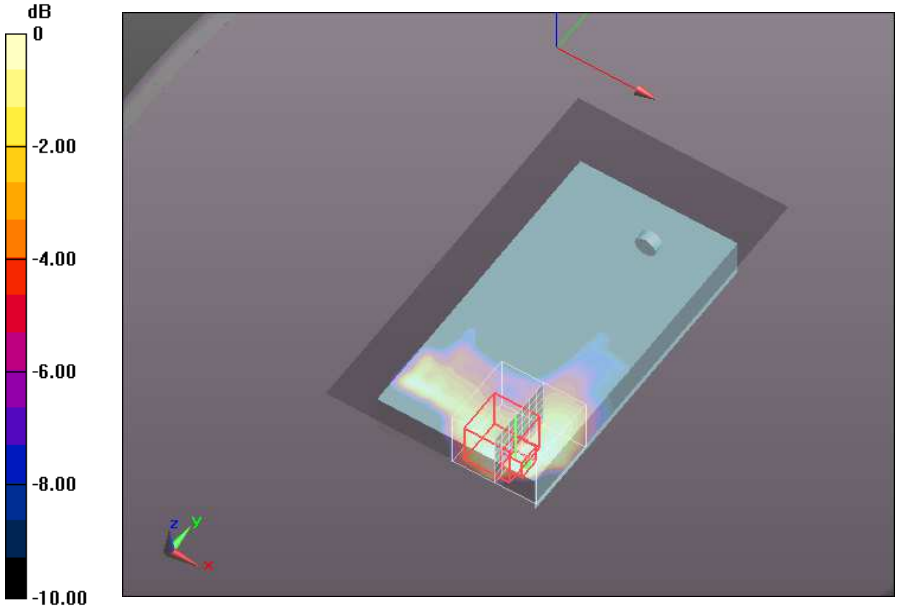
0 dB = 0.244 W/kg = -6.13 dBW/kg



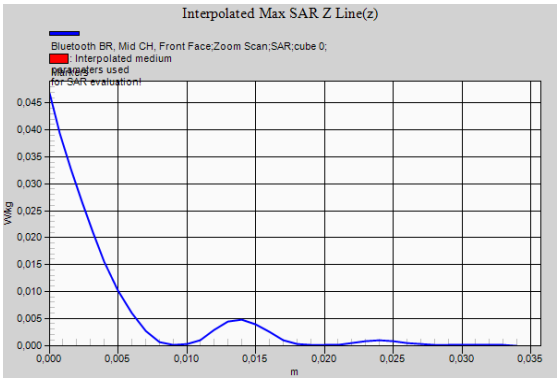
Bluetooth – 2450MHz – Body – Front Face, d=10mm – Middle Channel – Plot Nº43
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-01-31
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10032 - CAA, IEEE 802.15.1 Bluetooth (GFSK, DH5); Frequency: 2441 MHz; Duty Cycle: 1:1.30617
Medium parameters used (interpolated): f = 2441 MHz; σ = 2.02 S/m; ε_r = 52.212; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.88, 7.88, 7.88); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/Bluetooth BR, Mid CH, Front Face/Area Scan (101x181x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.0395 W/kg

Flat Phantom, d=10mm/Bluetooth BR, Mid CH, Front Face/Zoom Scan (9x8x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.229 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.0470 W/kg
SAR(1 g) = 0.020 W/kg; SAR(10 g) = 0.00926 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.0240 W/kg



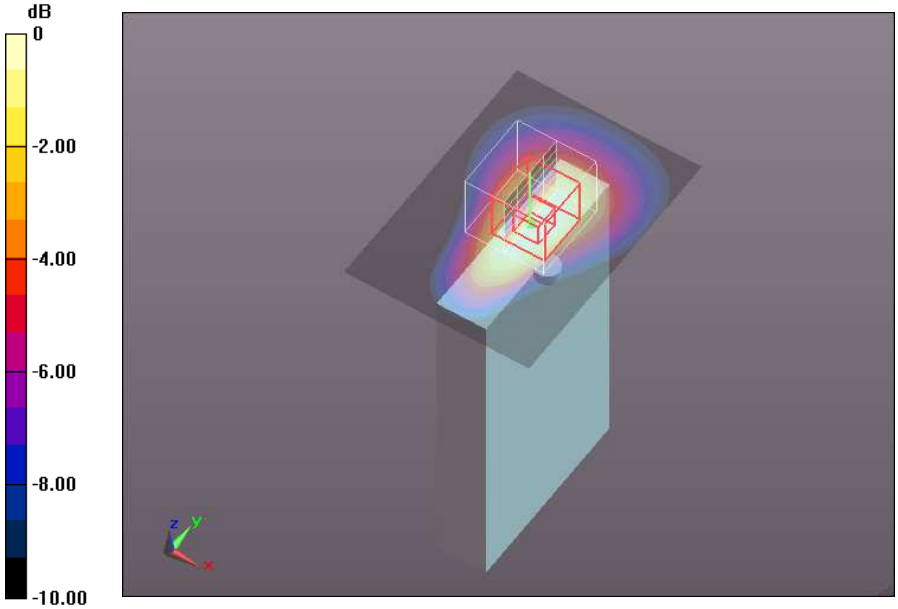
0 dB = 0.0240 W/kg = -16.20 dBW/kg



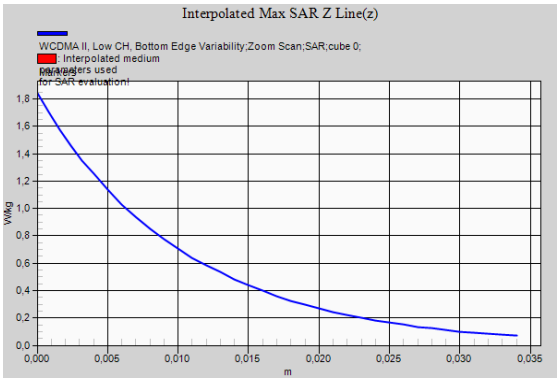
WCDMA Band II – Variability – Body – Bottom Edge, d=10mm – Low Channel – Plot Nº44
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-06
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1852 MHz; Duty Cycle: 1:1.95434
Medium parameters used (interpolated): f = 1852 MHz; σ = 1.588 S/m; ε_r = 54.708; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.24, 8.24, 8.24); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/WCDMA II, Low CH, Bottom Edge Variability/Area Scan (51x71x1):
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.42 W/kg

Flat Phantom, d=10mm/WCDMA II, Low CH, Bottom Edge Variability/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.16 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.84 W/kg
SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.643 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.25 W/kg



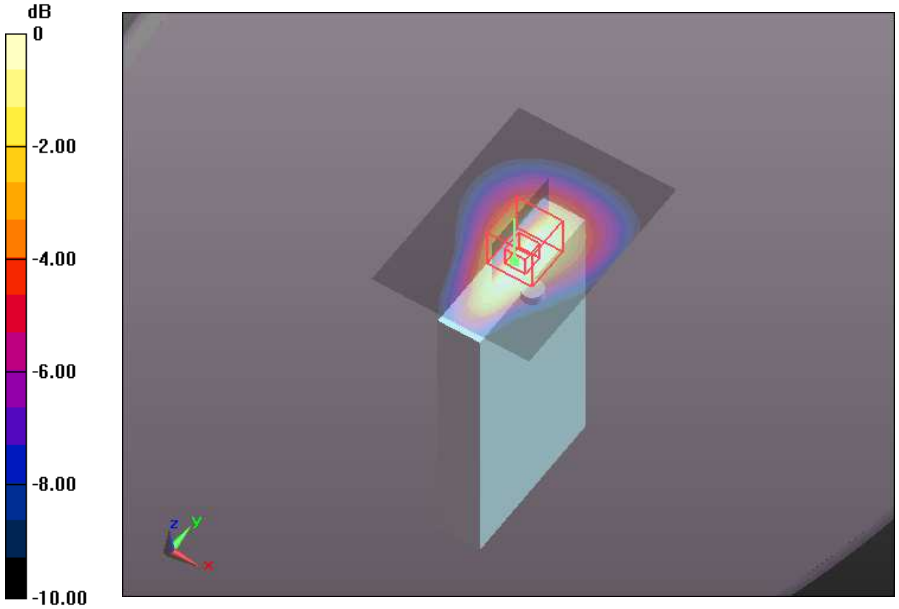
0 dB = 1.25 W/kg = 0.97 dBW/kg



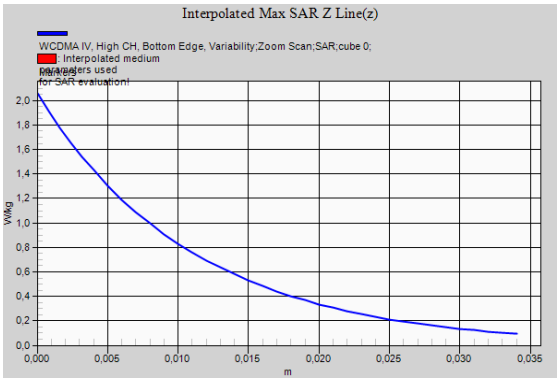
WCDMA Band IV – Variability – Body – Bottom Edge, d=10mm – High Channel – Plot Nº45
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-05
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1752.6 MHz; Duty Cycle: 1:1.95434
Medium parameters used (interpolated): f = 1752.6 MHz; σ = 1.515 S/m; ε_r = 51.55; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.24, 8.24, 8.24); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/WCDMA IV, High CH, Bottom Edge, Variability/Area Scan (51x71x1):
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.58 W/kg

Flat Phantom, d=10mm/WCDMA IV, High CH, Bottom Edge, Variability/Zoom Scan (5x6x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.43 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.06 W/kg
SAR(1 g) = 1.29 W/kg; SAR(10 g) = 0.761 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.41 W/kg

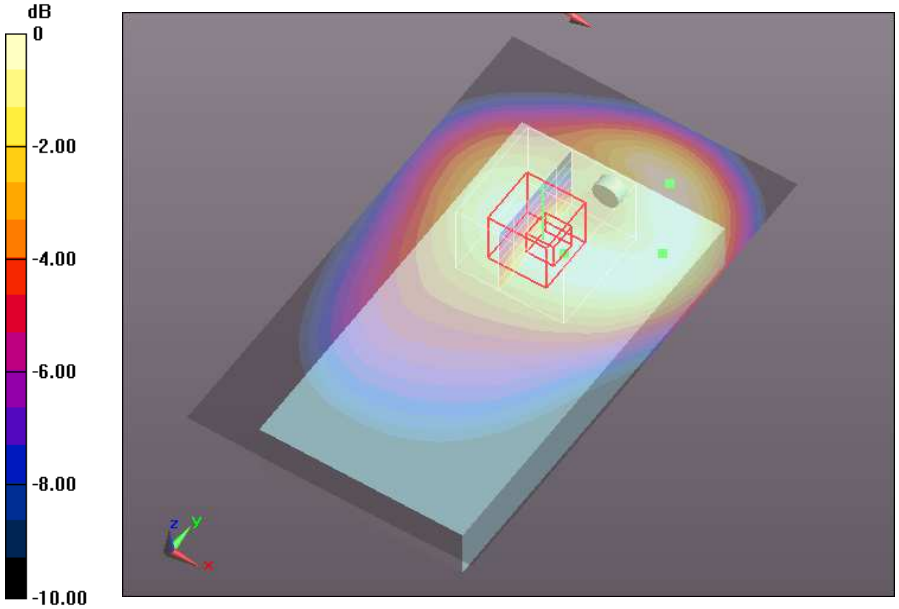


0 dB = 1.41 W/kg = 1.49 dBW/kg

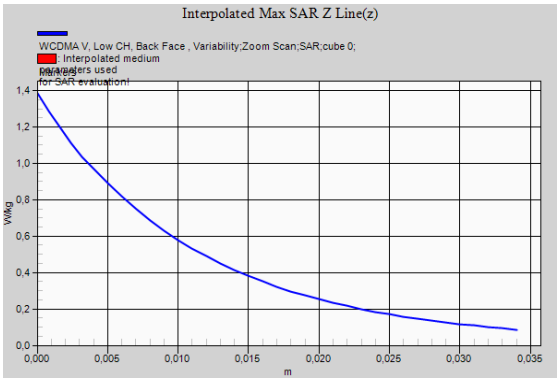


WCDMA Band V – Variability – Body – Back Face, d=10mm – Low Channel – Plot Nº46
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-01-10
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 826.6 MHz; Duty Cycle: 1:1.95434
Medium parameters used (interpolated): f = 826.6 MHz; σ = 0.95 S/m; ε_r = 55.151; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(9.78, 9.78, 9.78); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/WCDMA V, Low CH, Back Face, Variability/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) = 1.11 W/kg
Flat Phantom, d=10mm/WCDMA V, Low CH, Back Face, Variability/Zoom Scan (6x6x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.06 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.39 W/kg
SAR(1 g) = 0.989 W/kg; SAR(10 g) = 0.688 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.03 W/kg



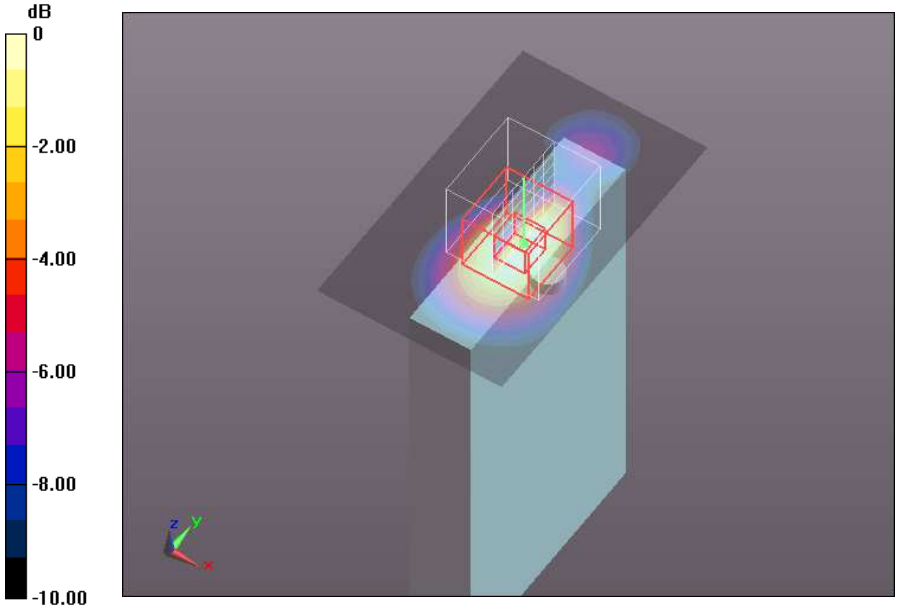
0 dB = 1.03 W/kg = 0.13 dBW/kg



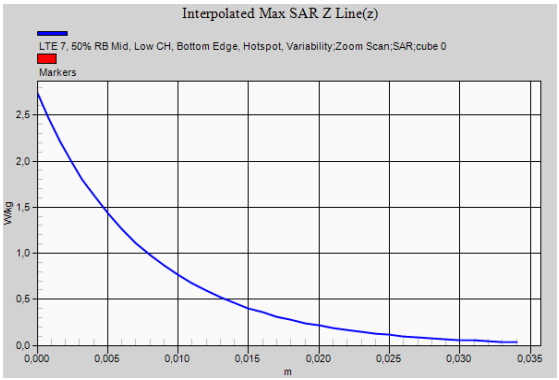
LTE Band 7 – Variability – Body – Bottom Edge, d=10mm – Low Channel – Plot Nº47
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-19
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10297 - AAC, LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK); Frequency: 2510 MHz; Duty Cycle: 1:3.81066
Medium parameters used: f = 2510 MHz; σ = 2.09 S/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.52, 7.52, 7.52); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 7, 50% RB Mid, Low CH, Bottom Edge, Hotspot, Variability/Area Scan (61x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.91 W/kg

Flat Phantom, d=10mm/LTE 7, 50% RB Mid, Low CH, Bottom Edge, Hotspot, Variability/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.41 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 2.74 W/kg
SAR(1 g) = 1.41 W/kg; SAR(10 g) = 0.670 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 1.62 W/kg



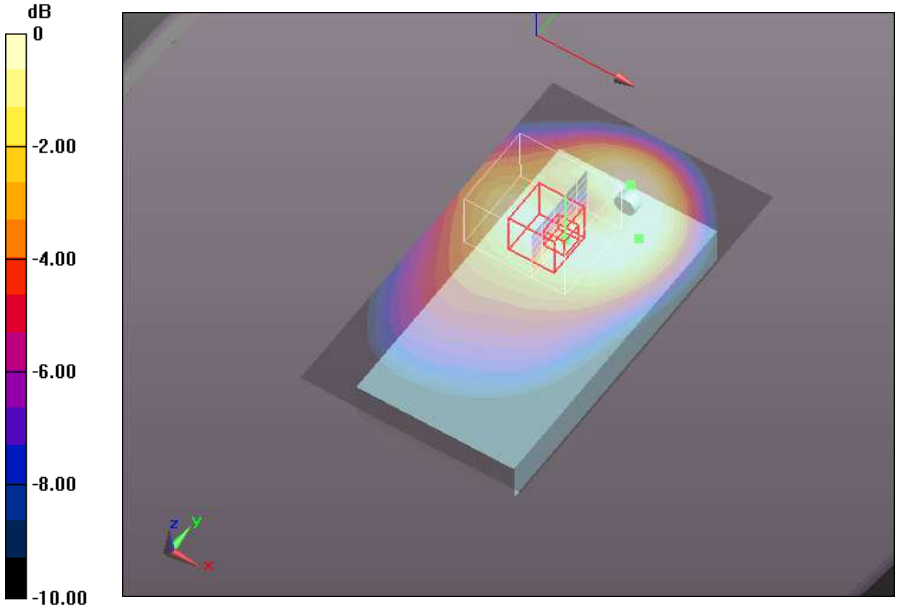
0 dB = 1.62 W/kg = 2.10 dBW/kg



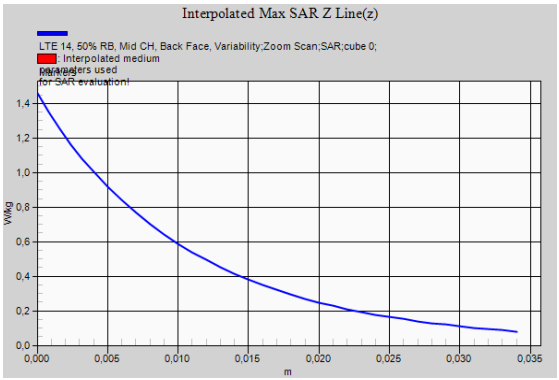
LTE Band 14 – Variability – Body – Front Face, d=10mm – Middle Channel – Plot №48
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-27
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10154 - CAE, LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK); Frequency: 793 MHz; Duty Cycle: 1:3.75837
Medium parameters used (interpolated): f = 793 MHz; σ = 1 S/m; ε_r = 55.708; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(10.11, 10.11, 10.11); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/LTE 14, 50% RB, Mid CH, Back Face, Variability/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) = 1.13 W/kg

Flat Phantom, d=10mm/LTE 14, 50% RB, Mid CH, Back Face, Variability/Zoom Scan (7x6x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.77 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.46 W/kg
SAR(1 g) = 0.962 W/kg; SAR(10 g) = 0.665 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.03 W/kg



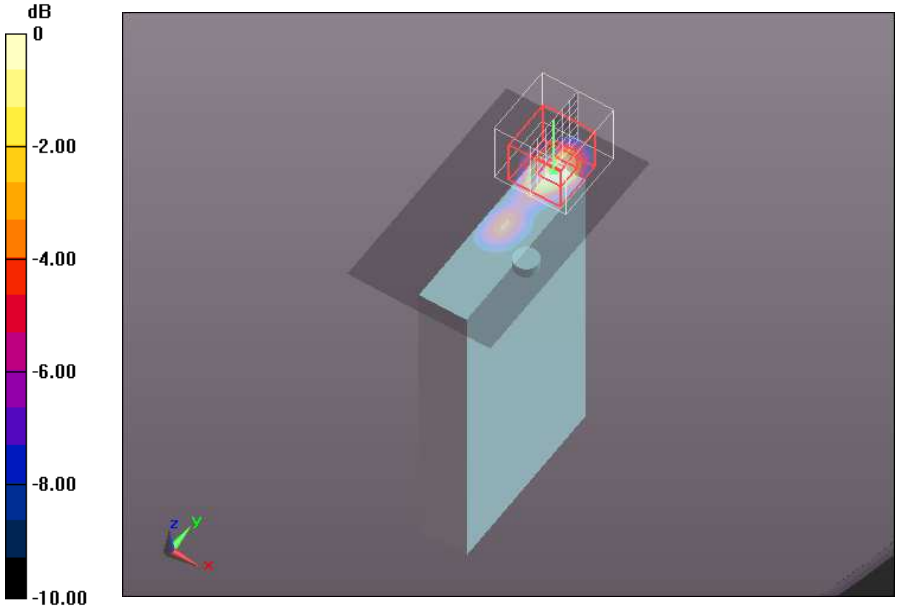
0 dB = 1.03 W/kg = 0.13 dBW/kg



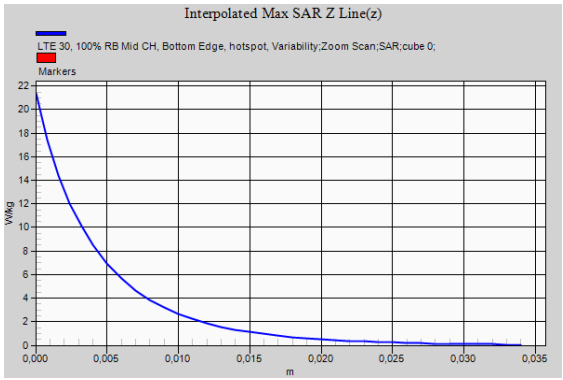
LTE Band 30 – Variability – Body – Bottom Edge, d=10mm – Middle Channel – Plot Nº49
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-04
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10108 - CAE, LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK); Frequency: 2310 MHz; Duty Cycle: 1:3.80189
Medium parameters used: f = 2310 MHz; σ = 1.89 S/m; ε_r = 52.83; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.88, 7.88, 7.88); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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=0mm/LTE 30, 100% RB Mid CH, Bottom Edge, hotspot, Variability/Area Scan (61x101x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 11.2 W/kg

Flat Phantom, d=0mm/LTE 30, 100% RB Mid CH, Bottom Edge, hotspot, Variability/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 60.05 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 21.4 W/kg
SAR(1 g) = 6.71 W/kg; SAR(10 g) = 2.21 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 8.02 W/kg



0 dB = 8.02 W/kg = 9.04 dBW/kg

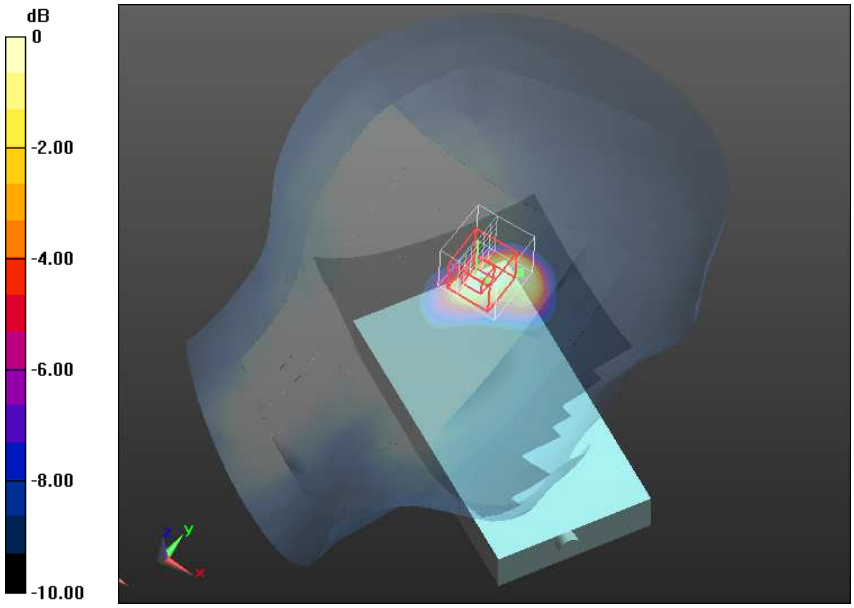


802.11b – 2450MHz – Variability – Head – Left Cheek – High Channel – Plot Nº50

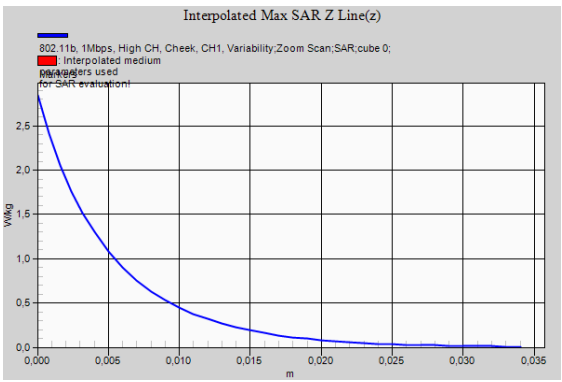
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-03-06
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10415 - AAA, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle);
Frequency: 2462 MHz; Duty Cycle: 1:1.42561
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.854 S/m; ε_r = 38.134; ρ = 1000 kg/m^3
Phantom section: Left Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.8, 7.8, 7.8); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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/802.11b, 1Mbps, High CH, Cheek, CH1, Variability/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) = 1.48 W/kg

Left Hand Side/802.11b, 1Mbps, High CH, Cheek, CH1, Variability/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.32 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 2.85 W/kg
SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.453 W/kg (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.28 W/kg



0 dB = 1.28 W/kg = 1.07 dBW/kg

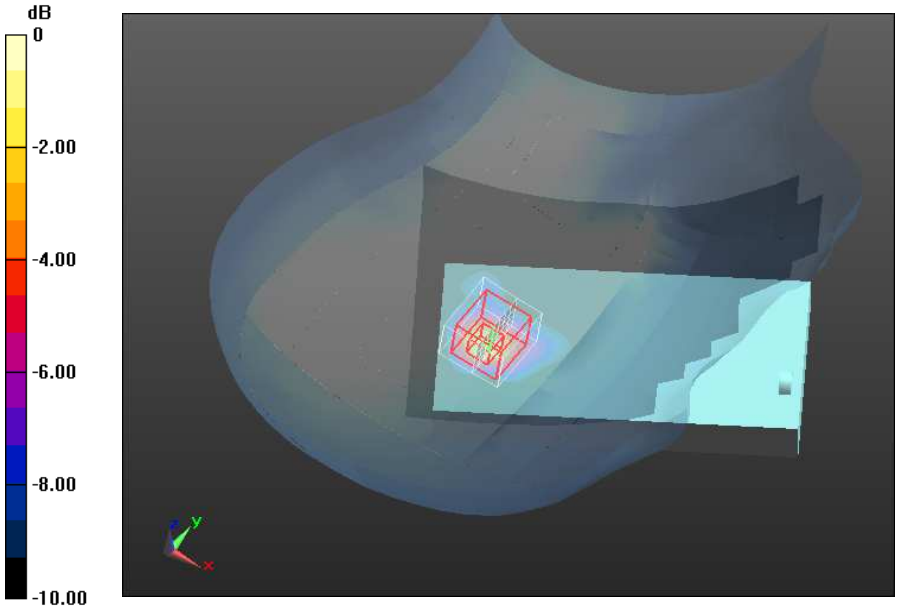


802.11a 5600 MHz – Variability – Head – Right Cheek – Middle Channel – Plot Nº51

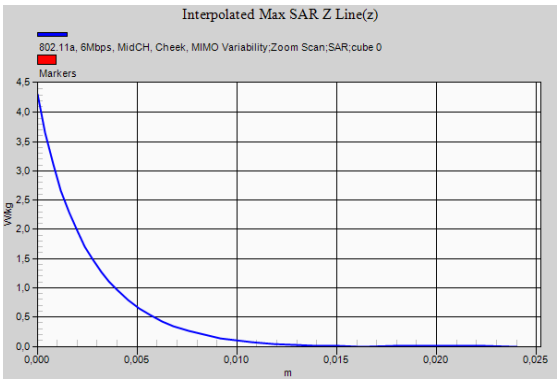
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-25
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10417 - AAB, IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle);
Frequency: 5580 MHz; Duty Cycle: 1:6.65273
Medium parameters used: f = 5580 MHz; σ = 5.22 S/m; ε_r = 36.13; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(5.05, 5.05, 5.05); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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, 5500MHz,/802.11a, 6Mbps, MidCH, Cheek, MIMO Variability/Area Scan (111x181x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.46 W/kg

Right Hand Side, 5500MHz,/802.11a, 6Mbps, MidCH, Cheek, MIMO Variability/Zoom Scan (8x8x6)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 10.89 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 4.31 W/kg
SAR(1 g) = 0.941 W/kg; SAR(10 g) = 0.308 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 1.91 W/kg



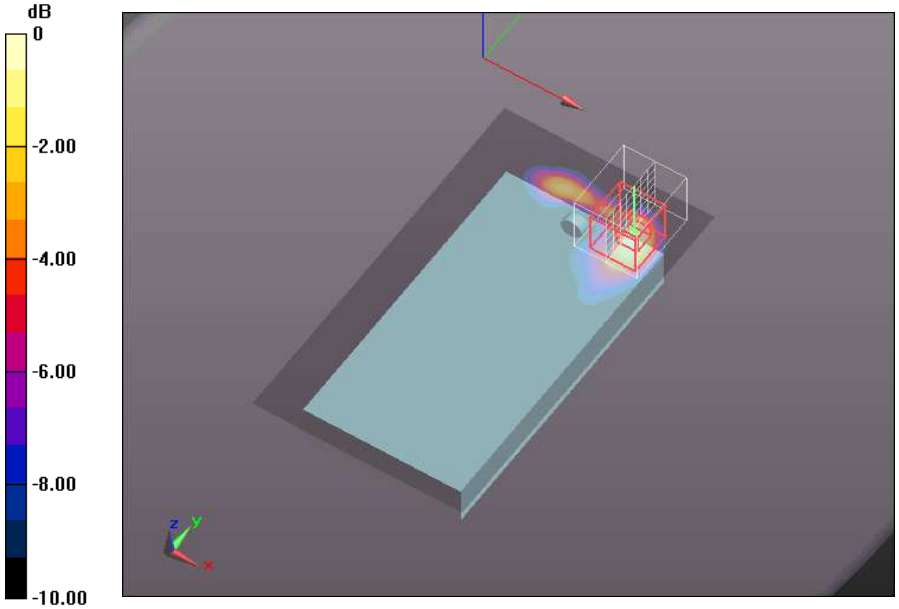
0 dB = 1.91 W/kg = 2.81 dBW/kg



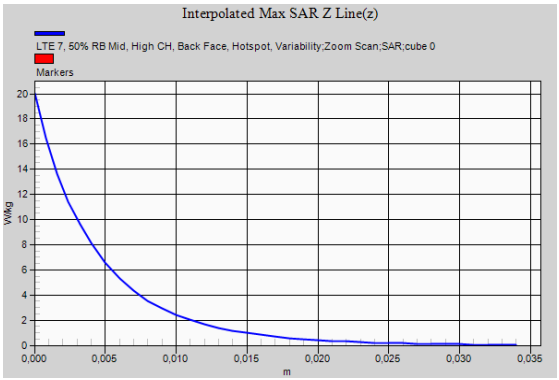
LTE Band 7 – Variability – Extremity – Back Face, d=0mm – High Channel – Plot Nº52
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-19
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10297 - AAC, LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK); Frequency: 2560 MHz; Duty Cycle: 1:3.81066
Medium parameters used: f = 2560 MHz; σ = 2.15 S/m; ε_r = 52; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.52, 7.52, 7.52); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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=0mm/LTE 7, 50% RB Mid, High CH, Back Face, Hotspot, Variability/Area Scan (101x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 10.7 W/kg

Flat Phantom, d=0mm/LTE 7, 50% RB Mid, High CH, Back Face, Hotspot, Variability/Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.44 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 20.0 W/kg
SAR(1 g) = 6.51 W/kg; SAR(10 g) = 2.37 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 8.21 W/kg



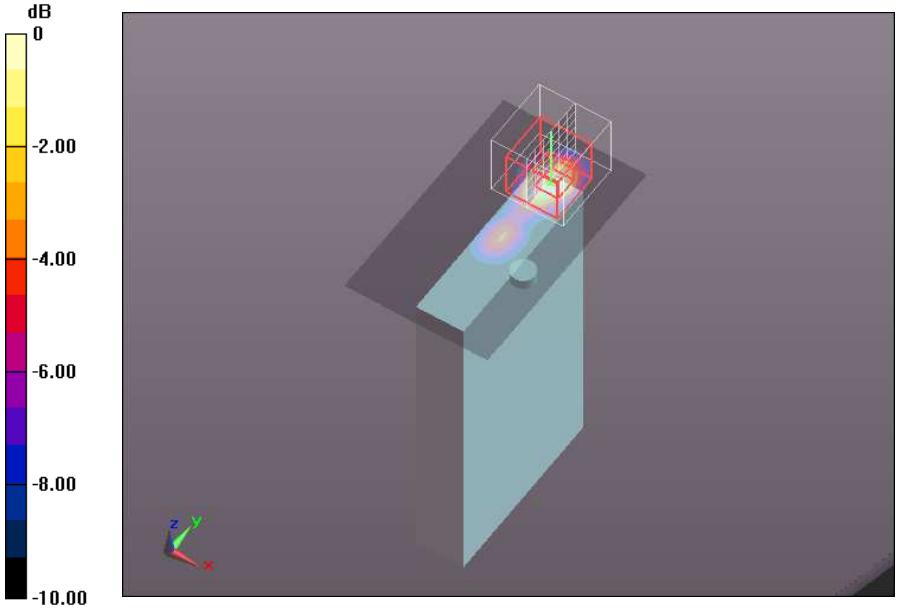
0 dB = 8.21 W/kg = 9.14 dBW/kg



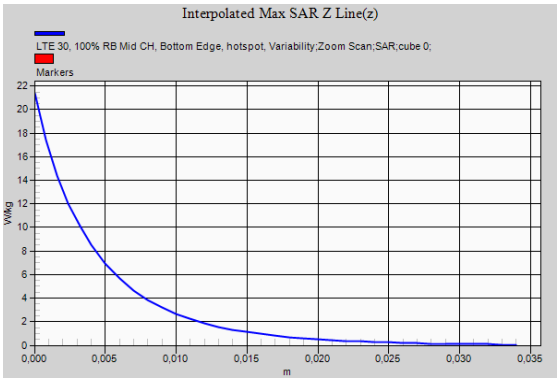
LTE Band 30 – Variability – Extremity – Bottom Edge, d=0mm – Middle Channel – Plot Nº53
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-04
DUT: Tough Mobile 2; Type: Smartphone; Serial: IMEI:356244060528357
Communication System: UID 10108 - CAE, LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK); Frequency: 2310 MHz; Duty Cycle: 1:3.80189
Medium parameters used: f = 2310 MHz; σ = 1.89 S/m; ε_r = 52.83; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.88, 7.88, 7.88); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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=0mm/LTE 30, 100% RB Mid CH, Bottom Edge, hotspot, Variability/Area Scan (61x101x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 11.2 W/kg

Flat Phantom, d=0mm/LTE 30, 100% RB Mid CH, Bottom Edge, hotspot, Variability/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 60.05 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 21.4 W/kg
SAR(1 g) = 6.71 W/kg; SAR(10 g) = 2.21 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 8.02 W/kg



0 dB = 8.02 W/kg = 9.04 dBW/kg

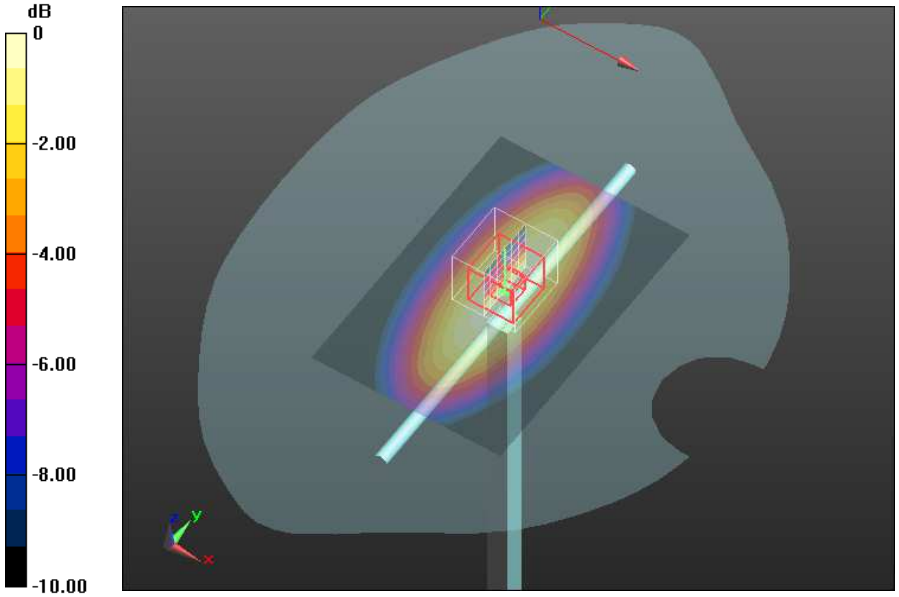


Appendix D: System Validation Reports

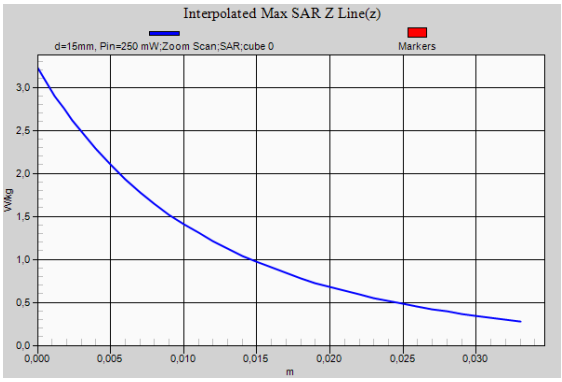
Validation results in 750 MHz Band for Head TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-10
DUT: Dipole 750 MHz D750V3; Type: D750V3; Serial: D750V3 - SN:1036
Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.92 S/m; ε_r = 42.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(10.33, 10.33, 10.33); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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 750MHz, 2018-12-10/d=15mm, Pin=250 mW/Area Scan (61x91x1):
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.49 W/kg

Head 750MHz, 2018-12-10/d=15mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.38 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.22 W/kg
SAR(1 g) = 2.12 W/kg; SAR(10 g) = 1.39 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 2.48 W/kg



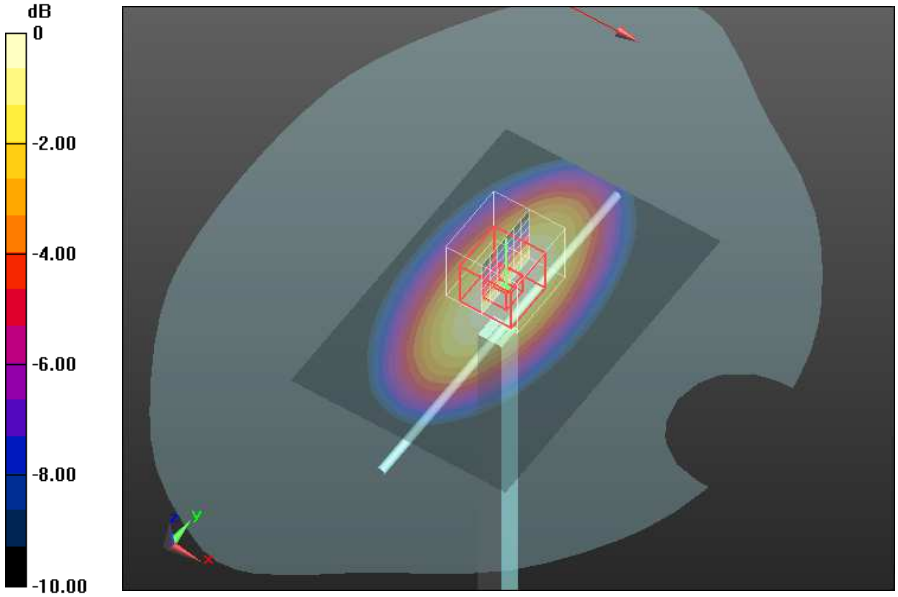
0 dB = 2.48 W/kg = 3.94 dBW/kg



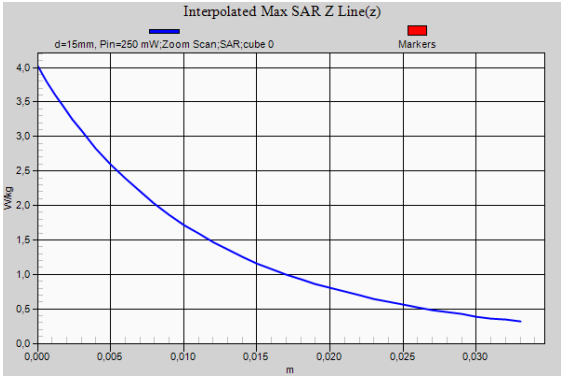
Validation results in 900 MHz Band for Head TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-03
DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:1d007
Communication System: UID 0, CW; Frequency: 900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 900 MHz; σ = 0.97 S/m; ε_r = 40.32; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(9.67, 9.67, 9.67); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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, 2018-12-03/d=15mm, Pin=250 mW/Area Scan (61x91x1):
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.08 W/kg

Head 900MHz, 2018-12-03/d=15mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.90 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 4.02 W/kg
SAR(1 g) = 2.63 W/kg; SAR(10 g) = 1.69 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 3.08 W/kg



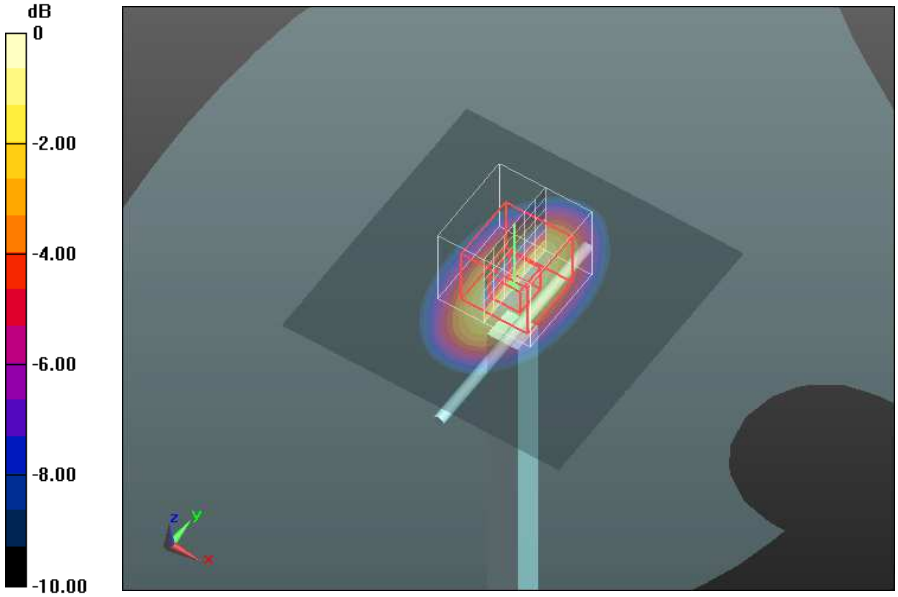
0 dB = 3.08 W/kg = 4.89 dBW/kg



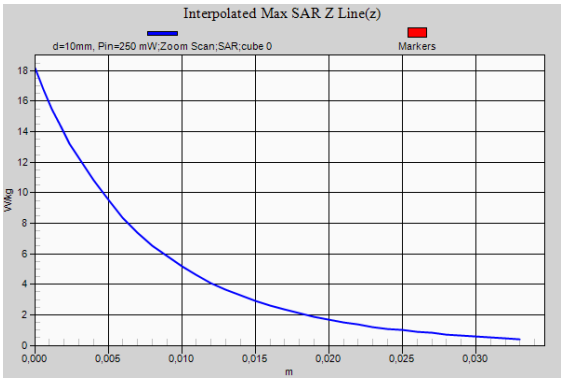
Validation results in 1800 MHz Band for Head TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-12
DUT: Dipole 1800 MHz D1800V2; Type: D1800V2; Serial: D1800V2 - SN:2d099
Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.41 S/m; ε_r = 39.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.31, 8.31, 8.31); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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, 2018-12-12/d=10mm, Pin=250 mW/Area Scan (91x91x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 12.2 W/kg

Head 1800MHz, 2018-12-12/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.26 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 18.2 W/kg
SAR(1 g) = 9.57 W/kg; SAR(10 g) = 4.94 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 12.3 W/kg



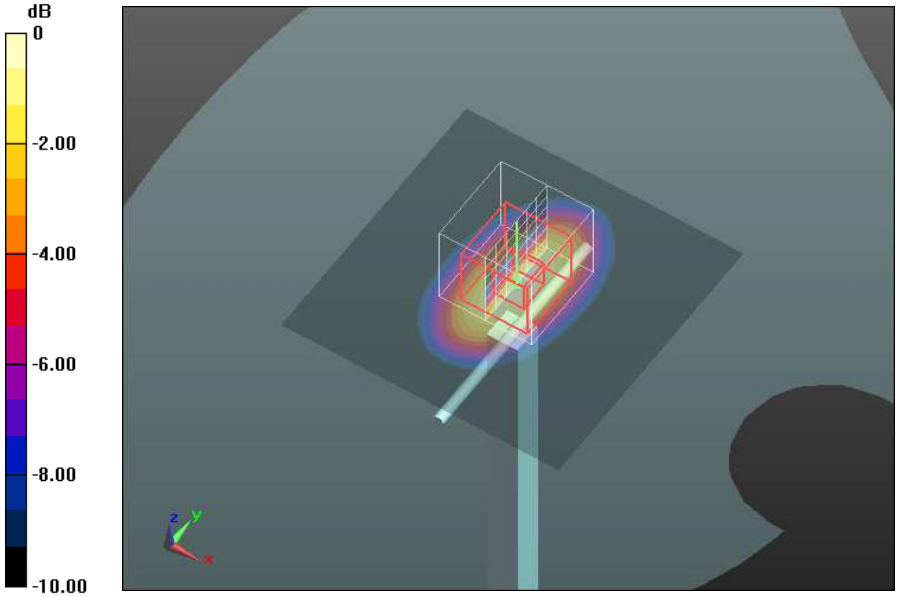
0 dB = 12.3 W/kg = 10.90 dBW/kg



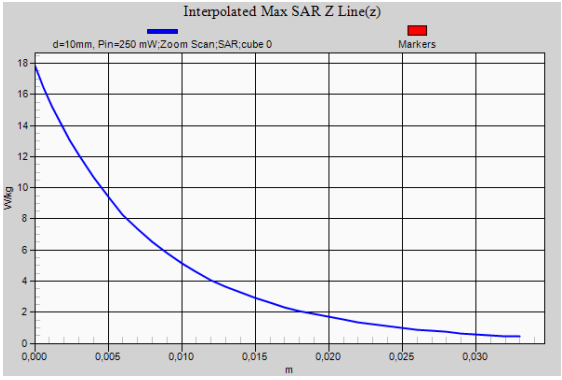
Validation results in 1800 MHz Band for Head TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-13
DUT: Dipole 1800 MHz D1800V2; Type: D1800V2; Serial: D1800V2 - SN:2d099
Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.36 S/m; ε_r = 39.93; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.31, 8.31, 8.31); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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, 2018-12-13/d=10mm, Pin=250 mW/Area Scan (91x91x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 12.1 W/kg

Head 1800MHz, 2018-12-13/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 94.04 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 17.8 W/kg
SAR(1 g) = 9.58 W/kg; SAR(10 g) = 4.93 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 12.1 W/kg



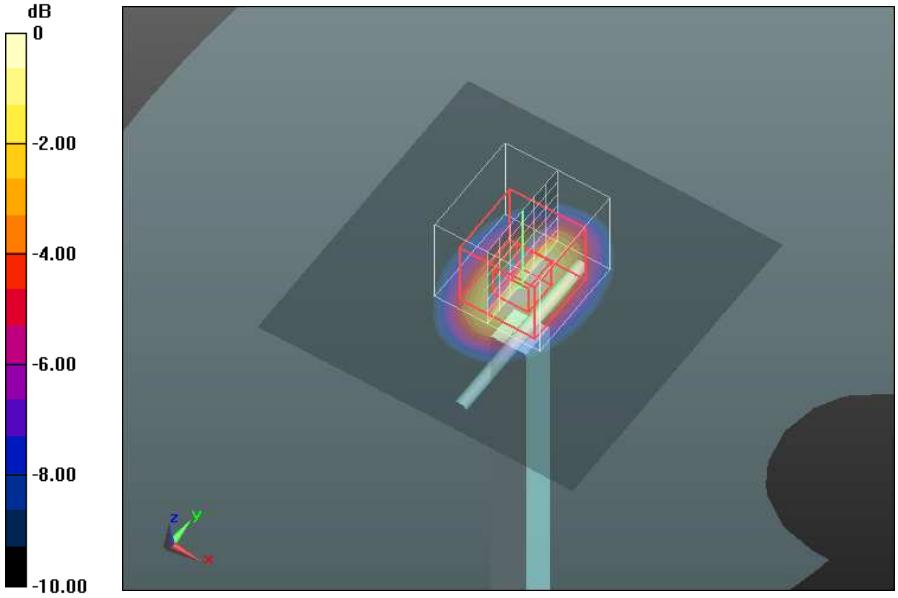
0 dB = 12.1 W/kg = 10.83 dBW/kg



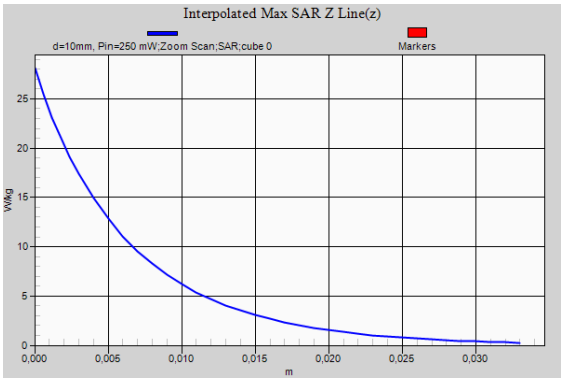
Validation results in 2450 MHz Band for Head TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-01-23
DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:756
Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.83 S/m; ε_r = 39.26; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.8, 7.8, 7.8); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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, 2019-01-23/d=10mm, Pin=250 mW/Area Scan (91x91x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 17.6 W/kg

Head 2450MHz, 2019-01-23/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97.76 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 28.1 W/kg
SAR(1 g) = 13.1 W/kg; SAR(10 g) = 6.02 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 17.4 W/kg



0 dB = 17.4 W/kg = 12.41 dBW/kg

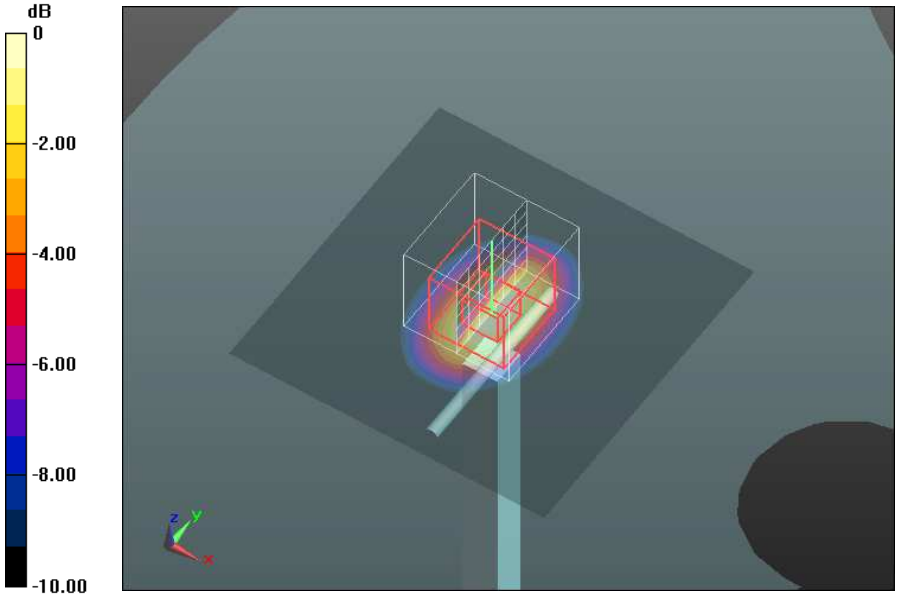


Validation results in 2450 MHz Band for Head TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-03-05
DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:756
Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.84 S/m; ε_r = 38.27; ρ = 1000 kg/m^3
Phantom section: Flat Section

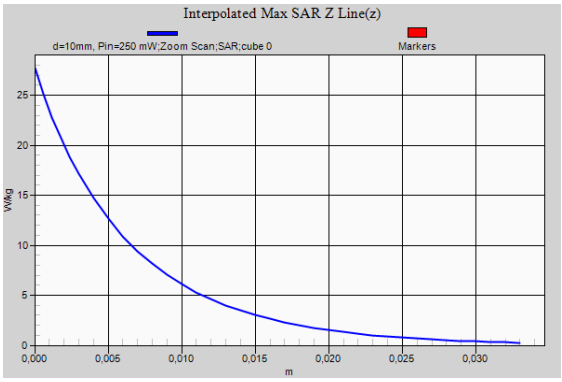
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.8, 7.8, 7.8); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Head 2450MHz, 2019-03-05/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, 2019-03-05/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.92 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 27.7 W/kg
SAR(1 g) = 12.9 W/kg; SAR(10 g) = 5.87 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 17.2 W/kg



0 dB = 17.2 W/kg = 12.36 dBW/kg

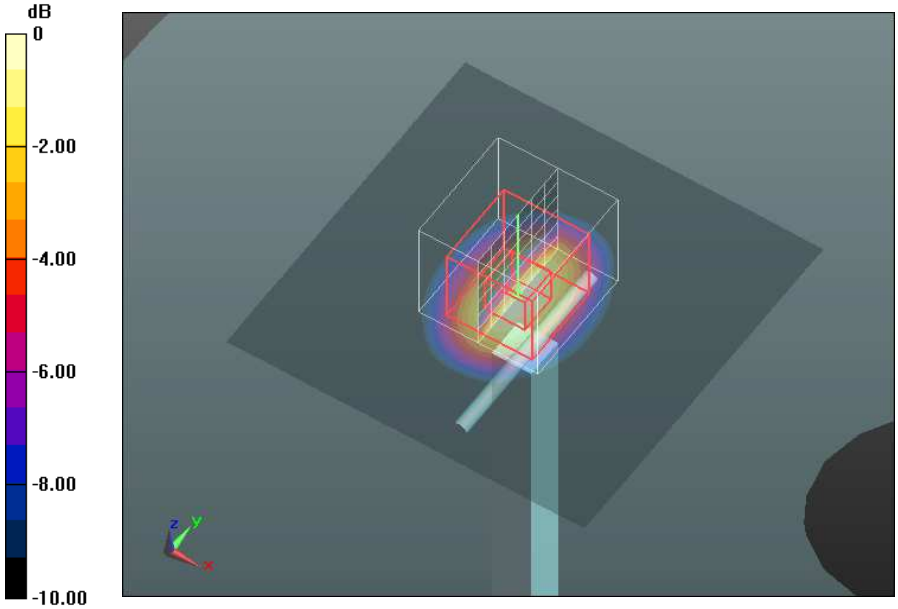


Validation results in 2600 MHz Band for Head TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-01-22
DUT: Dipole 2600 MHz D2600V2; Type: D2600V2; Serial: D2600V2 - SN:1023
Communication System: UID 0, CW (0); Frequency: 2600 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 2.01 S/m; ε_r = 38.98; ρ = 1000 kg/m^3
Phantom section: Flat Section

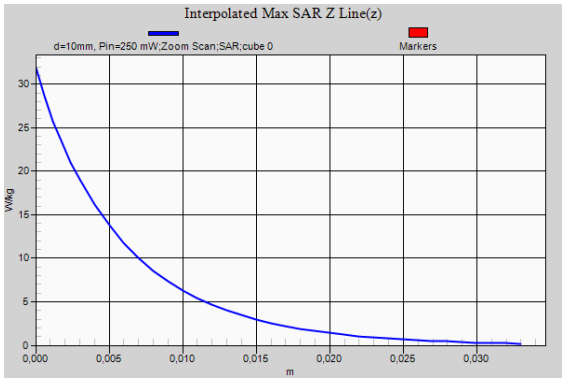
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.31, 7.31, 7.31); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Head 2600MHz, 2019-01-22/d=10mm, Pin=250 mW/Area Scan (91x91x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 19.3 W/kg

Head 2600MHz, 2019-01-22/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97.27 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 31.8 W/kg
SAR(1 g) = 14.1 W/kg; SAR(10 g) = 6.15 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 19.1 W/kg



0 dB = 19.1 W/kg = 12.81 dBW/kg

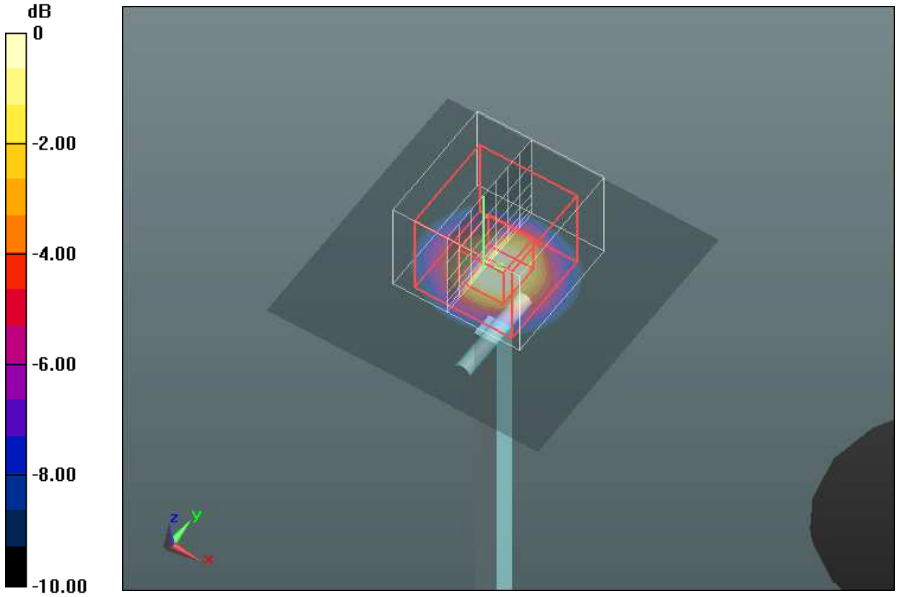


Validation results in 5200 MHz Band for Head TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-13
DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN:1071
Communication System: UID 0, CW (0); Frequency: 5200 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5200 MHz; σ = 4.77 S/m; ε_r = 36.4; ρ = 1000 kg/m^3
Phantom section: Flat Section

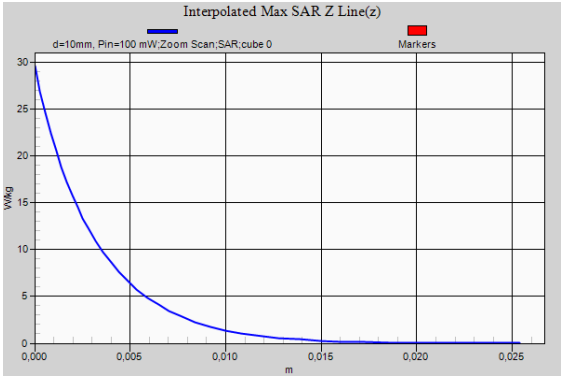
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(5.83, 5.83, 5.83); Calibrated: 2018-06-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Head 5200MHz, 2019-02-13/d=10mm, Pin=100 mW/Area Scan (61x61x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 19.9 W/kg

Head 5200MHz, 2019-02-13/d=10mm, Pin=100 mW/Zoom Scan (8x8x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 50.15 V/m; Power Drift = 0.20 dB
Peak SAR (extrapolated) = 29.6 W/kg
SAR(1 g) = 7.59 W/kg; SAR(10 g) = 2.18 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 17.5 W/kg



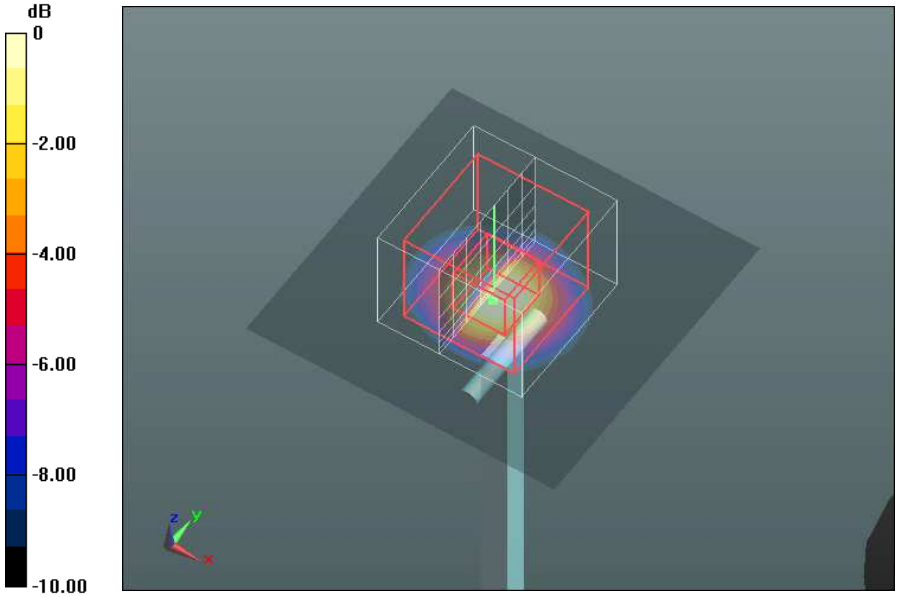
0 dB = 17.5 W/kg = 12.43 dBW/kg



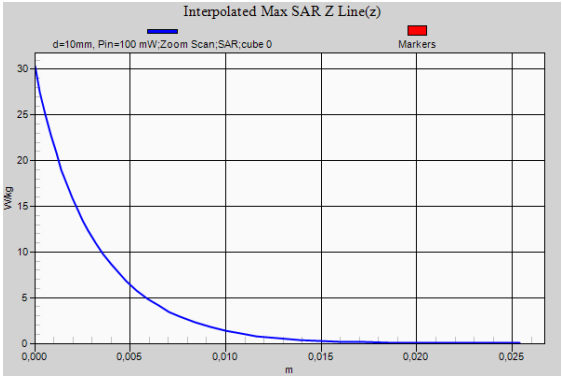
Validation results in 5200 MHz Band for Head TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-26
DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN:1071
Communication System: UID 0, CW (0); Frequency: 5200 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5200 MHz; σ = 4.79 S/m; ε_r = 36.18; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(5.83, 5.83, 5.83); Calibrated: 2018-06-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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 5200MHz, 2019-02-26/d=10mm, Pin=100 mW/Area Scan (61x61x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 20.0 W/kg

Head 5200MHz, 2019-02-26/d=10mm, Pin=100 mW/Zoom Scan (8x8x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 48.90 V/m; Power Drift = 0.22 dB
Peak SAR (extrapolated) = 30.3 W/kg
SAR(1 g) = 7.6 W/kg; SAR(10 g) = 2.16 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 18.3 W/kg



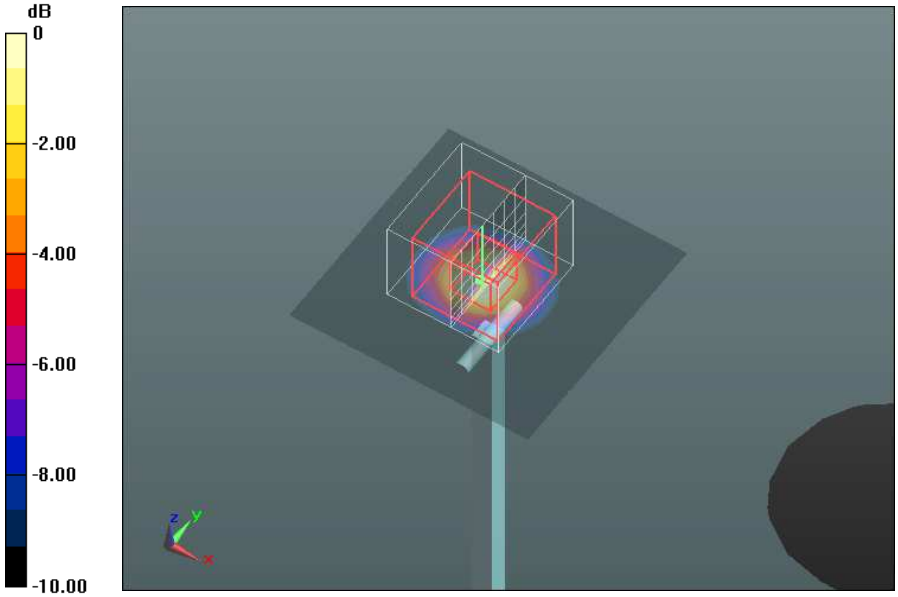
0 dB = 18.3 W/kg = 12.62 dBW/kg



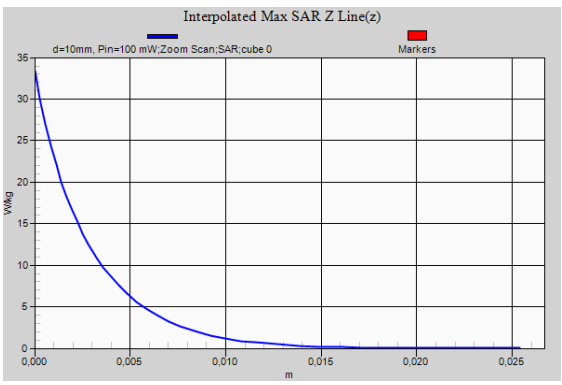
Validation results in 5500 MHz Band for Head TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-18
DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN:1071
Communication System: UID 0, CW (0); Frequency: 5500 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5500 MHz; σ = 5.11 S/m; ε_r = 36.13; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(5.05, 5.05, 5.05); Calibrated: 2018-06-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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 5500MHz, 2019-02-18/d=10mm, Pin=100 mW/Area Scan (61x61x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 20.2 W/kg

Head 5500MHz, 2019-02-18/d=10mm, Pin=100 mW/Zoom Scan (8x8x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 49.52 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 33.3 W/kg
SAR(1 g) = 7.82 W/kg; SAR(10 g) = 2.22 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 18.7 W/kg



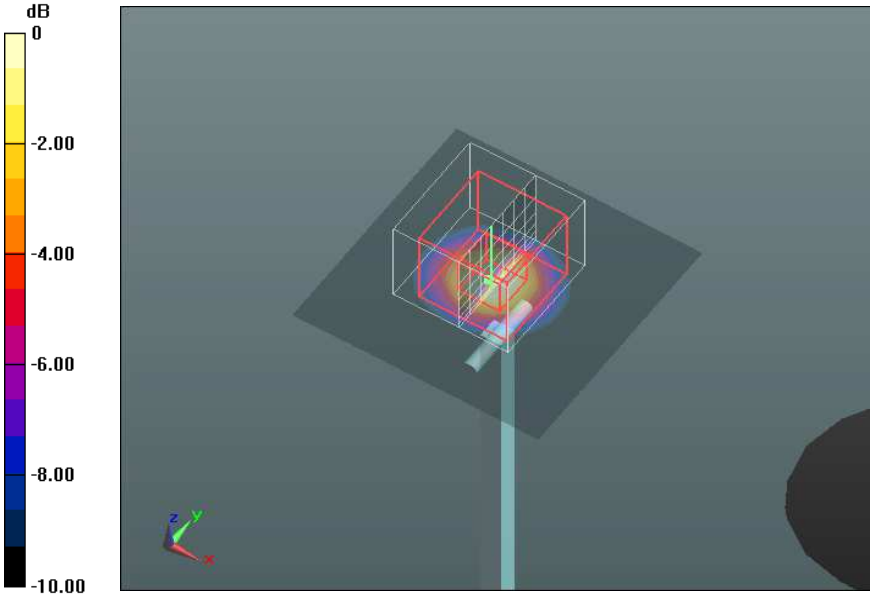
0 dB = 18.7 W/kg = 12.72 dBW/kg



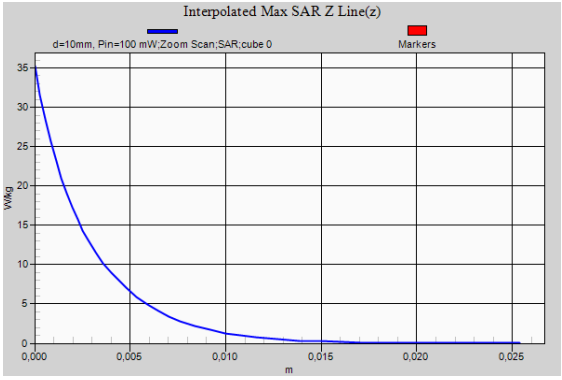
Validation results in 5500 MHz Band for Head TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-22
DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN:1071
Communication System: UID 0, CW (0); Frequency: 5500 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5500 MHz; σ = 5.13 S/m; ε_r = 36.31; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(5.05, 5.05, 5.05); Calibrated: 2018-06-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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 5500MHz, 2019-02-21/d=10mm, Pin=100 mW/Area Scan (61x61x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 20.9 W/kg

Head 5500MHz, 2019-02-21/d=10mm, Pin=100 mW/Zoom Scan (9x8x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 47.94 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 35.2 W/kg
SAR(1 g) = 7.95 W/kg; SAR(10 g) = 2.21 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 20.1 W/kg



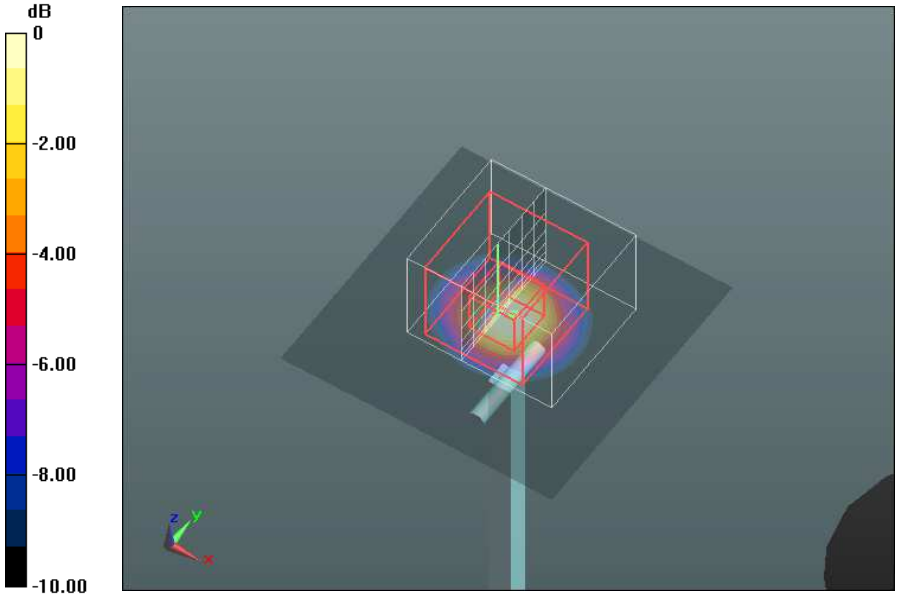
0 dB = 20.1 W/kg = 13.03 dBW/kg



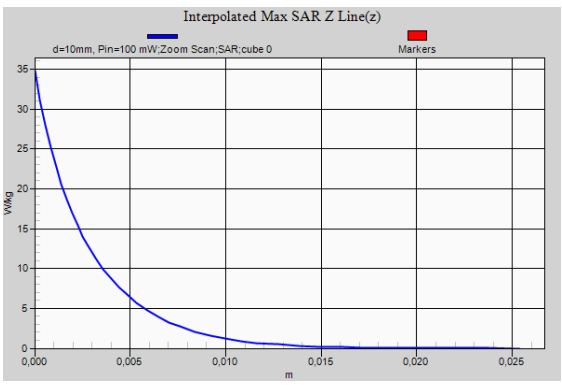
Validation results in 5500 MHz Band for Head TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-25
DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN:1071
Communication System: UID 0, CW (0); Frequency: 5500 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5500 MHz; σ = 5.11 S/m; ε_r = 35.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(5.05, 5.05, 5.05); Calibrated: 2018-06-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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 5500MHz, 2019-02-25/d=10mm, Pin=100 mW/Area Scan (61x61x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 20.7 W/kg

Head 5500MHz, 2019-02-25/d=10mm, Pin=100 mW/Zoom Scan (9x8x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 49.13 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 34.7 W/kg
SAR(1 g) = 7.87 W/kg; SAR(10 g) = 2.22 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 19.5 W/kg



0 dB = 19.5 W/kg = 12.90 dBW/kg

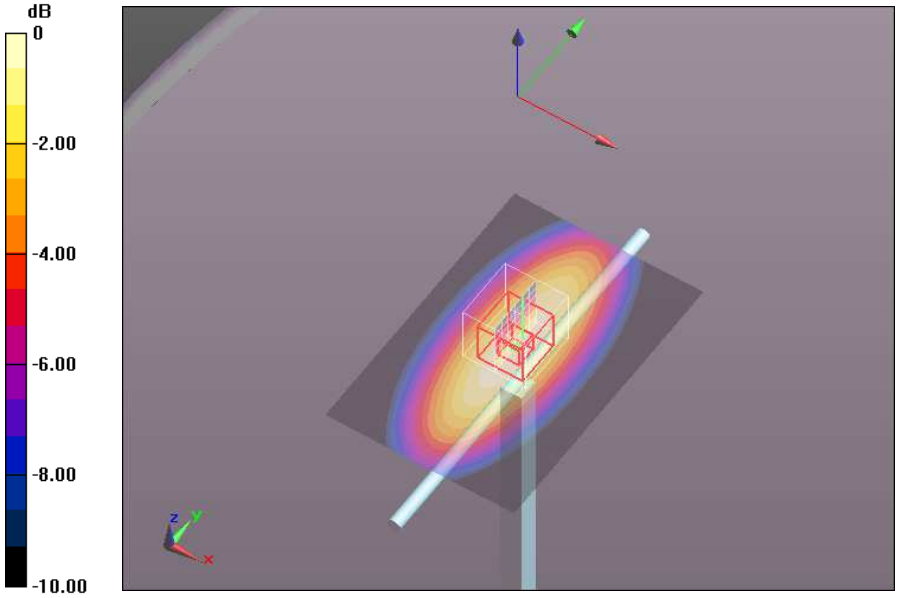


Validation results in 750 MHz Band for Body TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-26
DUT: Dipole 750 MHz D750V3; Type: D750V3; Serial: D750V3 - SN:1036
Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.96 S/m; ε_r = 56.07; ρ = 1000 kg/m^3
Phantom section: Flat Section

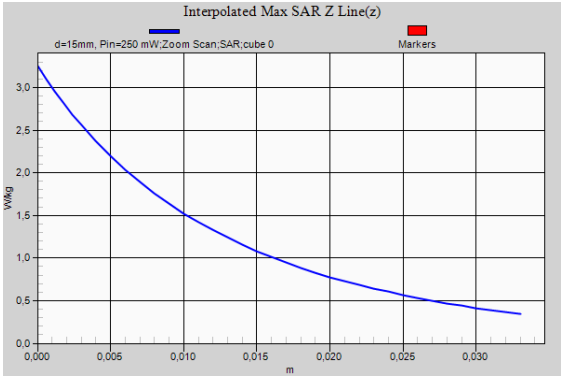
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(10.11, 10.11, 10.11); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Body 750MHz, 2018-12-26/d=15mm, Pin=250 mW/Area Scan (61x91x1):
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.56 W/kg

Body 750MHz, 2018-12-26/d=15mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 51.76 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.25 W/kg
SAR(1 g) = 2.21 W/kg; SAR(10 g) = 1.47 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 2.56 W/kg



0 dB = 2.56 W/kg = 4.08 dBW/kg

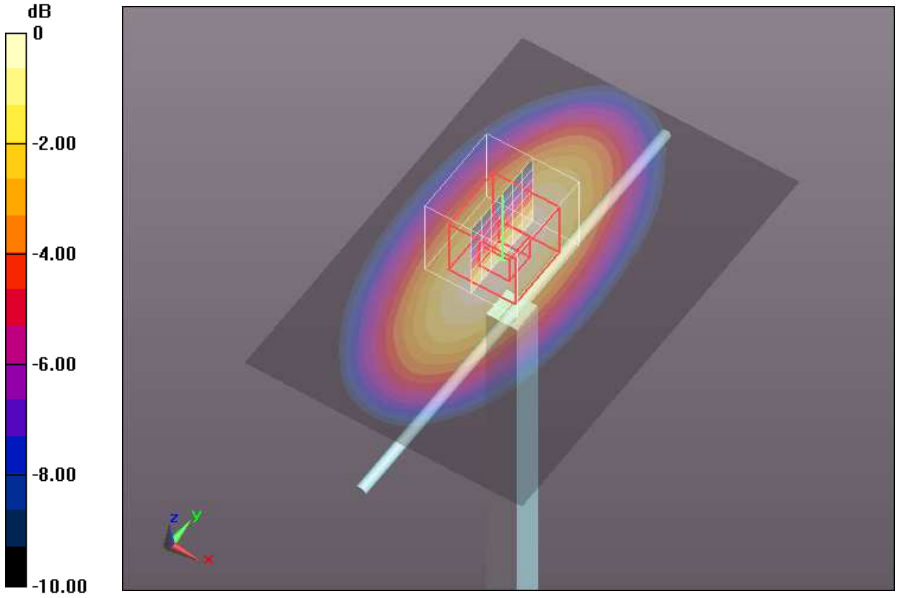


Validation results in 900 MHz Band for Body TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-01-09
DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:1d007
Communication System: UID 0, CW; Frequency: 900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 900 MHz; σ = 1.03 S/m; ε_r = 54.31; ρ = 1000 kg/m^3
Phantom section: Flat Section

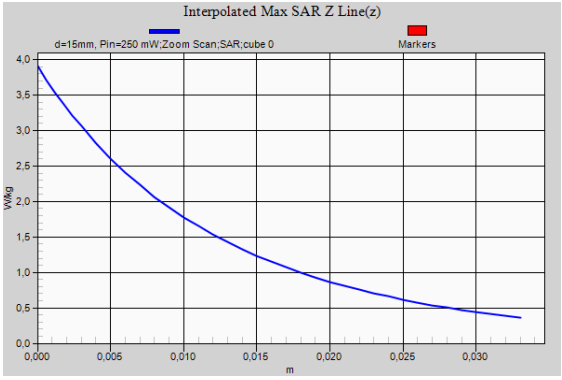
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(9.78, 9.78, 9.78); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Body 900MHz, 2019-01-09/d=15mm, Pin=250 mW/Area Scan (61x91x1):
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.05 W/kg

Body 900MHz, 2019-01-09/d=15mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 54.82 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 3.91 W/kg
SAR(1 g) = 2.64 W/kg; SAR(10 g) = 1.72 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 3.06 W/kg



0 dB = 3.06 W/kg = 4.86 dBW/kg

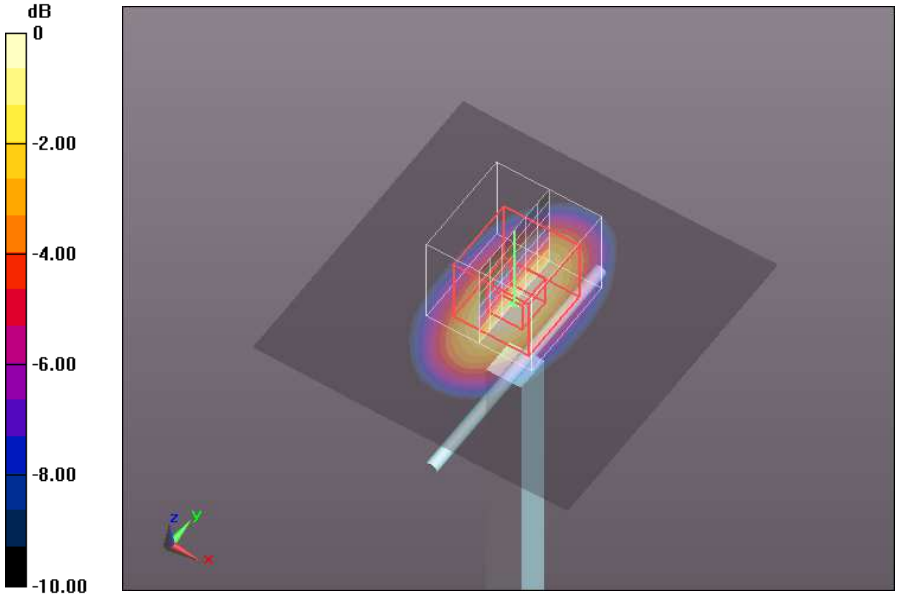


Validation results in 1800 MHz Band for Body TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-04
DUT: Dipole 1800 MHz D1800V2; Type: D1800V2; Serial: D1800V2 - SN:2d099
Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.57 S/m; ε_r = 51.44; ρ = 1000 kg/m^3
Phantom section: Flat Section

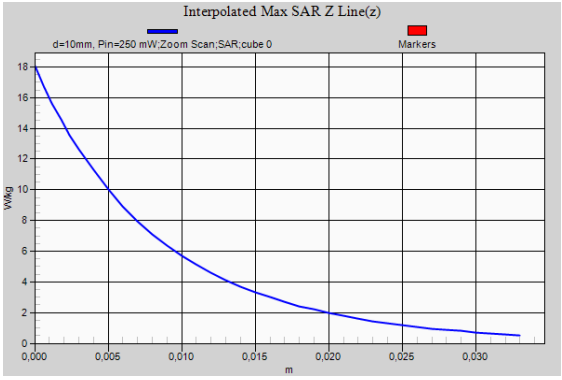
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.24, 8.24, 8.24); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Body 1800MHz, 2019-02-04/d=10mm, Pin=250 mW/Area Scan (91x91x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 12.8 W/kg

Body 1800MHz, 2019-02-04/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 88.34 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 18.0 W/kg
SAR(1 g) = 9.93 W/kg; SAR(10 g) = 5.17 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 12.7 W/kg



0 dB = 12.7 W/kg = 11.04 dBW/kg

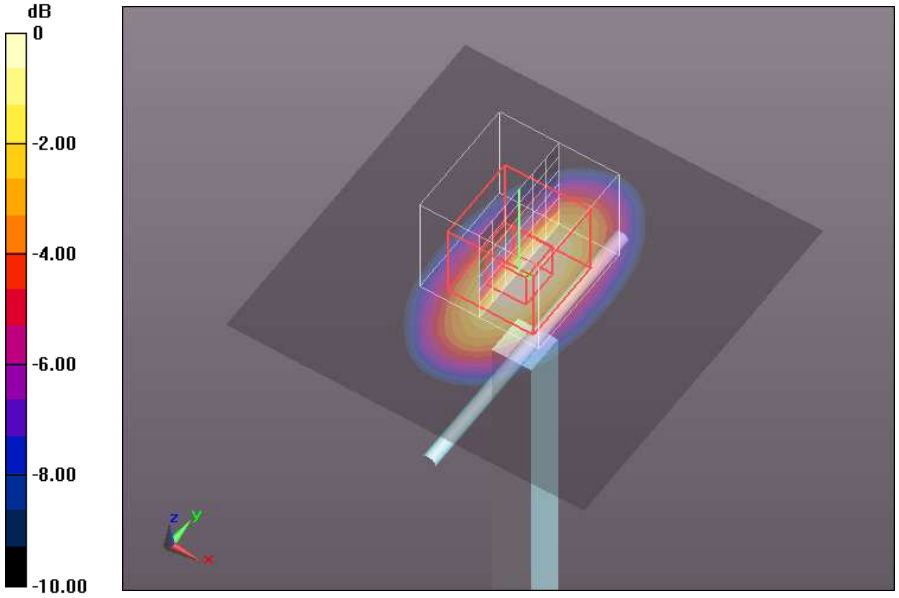


Validation results in 1800 MHz Band for Body TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-06
DUT: Dipole 1800 MHz D1800V2; Type: D1800V2; Serial: D1800V2 - SN:2d099
Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.58 S/m; ε_r = 55.26; ρ = 1000 kg/m^3
Phantom section: Flat Section

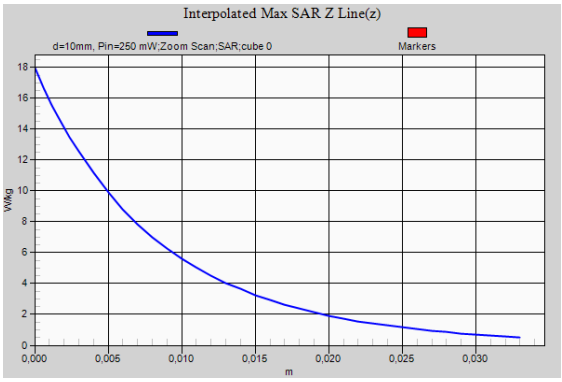
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(8.24, 8.24, 8.24); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Body 1800MHz, 2019-02-06/d=10mm, Pin=250 mW/Area Scan (91x91x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 12.6 W/kg

Body 1800MHz, 2019-02-06/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.26 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 17.9 W/kg
SAR(1 g) = 9.8 W/kg; SAR(10 g) = 5.08 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 12.6 W/kg



0 dB = 12.6 W/kg = 11.00 dBW/kg

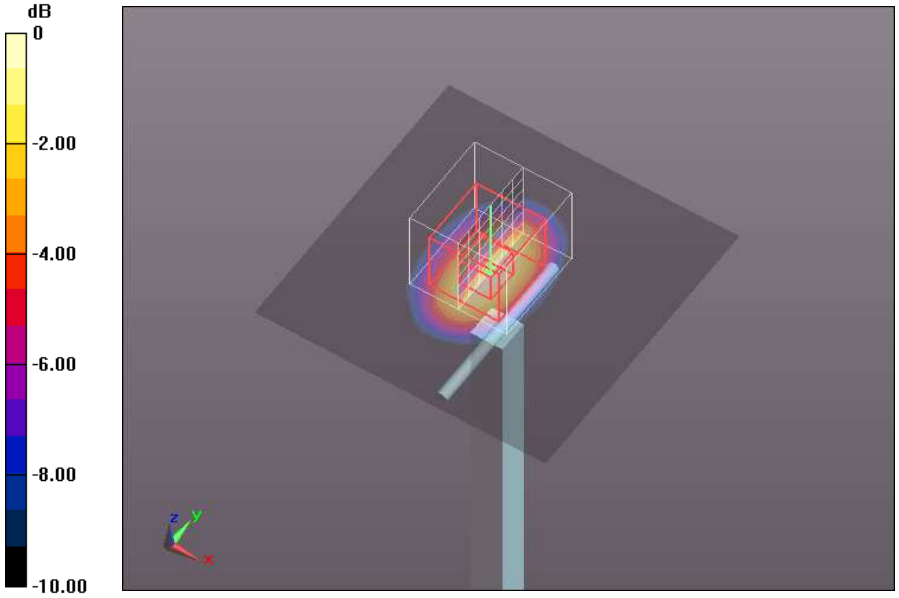


Validation results in 2450 MHz Band for Body TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-01-28
DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:756
Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 2.02 S/m; ε_r = 52.14; ρ = 1000 kg/m^3
Phantom section: Flat Section

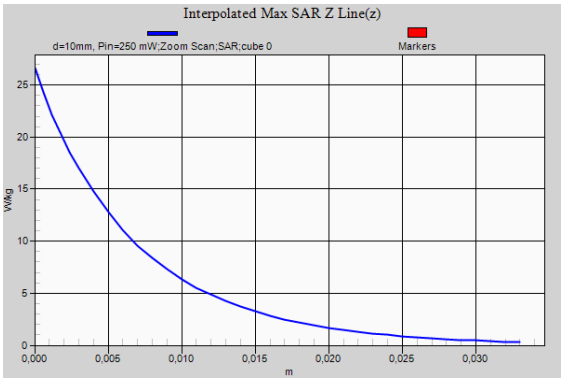
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.88, 7.88, 7.88); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Configuration 2450 MHz - 2019-01-28/d=10mm, Pin=250 mW/Area Scan (91x91x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 17.3 W/kg

Configuration 2450 MHz - 2019-01-28/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 88.97 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 26.6 W/kg
SAR(1 g) = 12.8 W/kg; SAR(10 g) = 5.87 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 17.0 W/kg



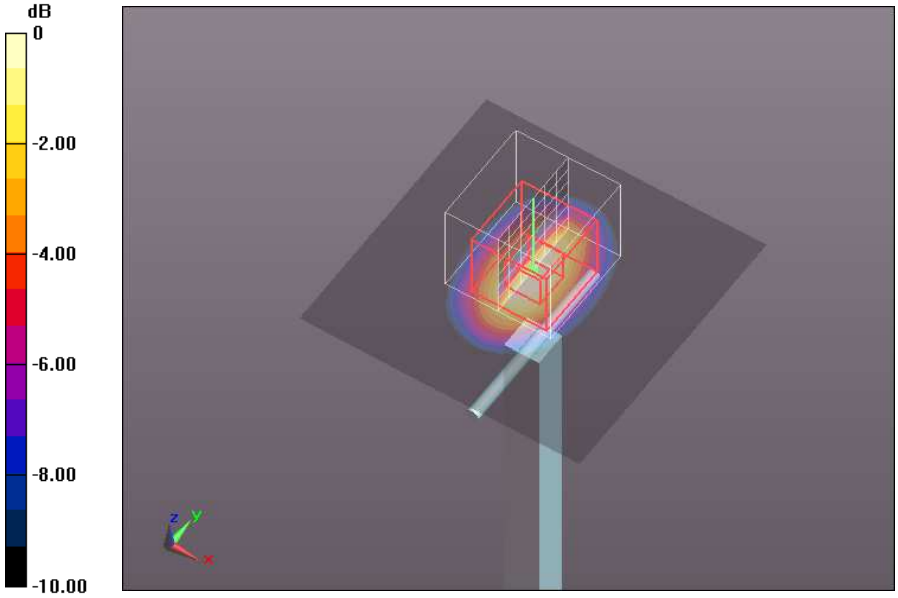
0 dB = 17.0 W/kg = 12.30 dBW/kg



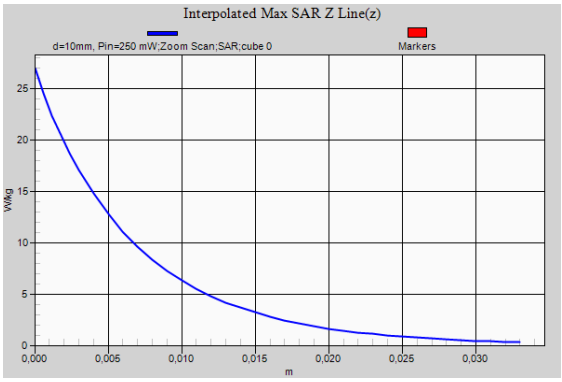
Validation results in 2450 MHz Band for Body TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-04
DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:756
Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 2.02 S/m; ε_r = 52.24; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.88, 7.88, 7.88); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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, 2019-02-04/d=10mm, Pin=250 mW/Area Scan (81x81x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 17.0 W/kg

Body 2450MHz, 2019-02-04/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 90.18 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 26.9 W/kg
SAR(1 g) = 12.8 W/kg; SAR(10 g) = 5.81 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 17.0 W/kg



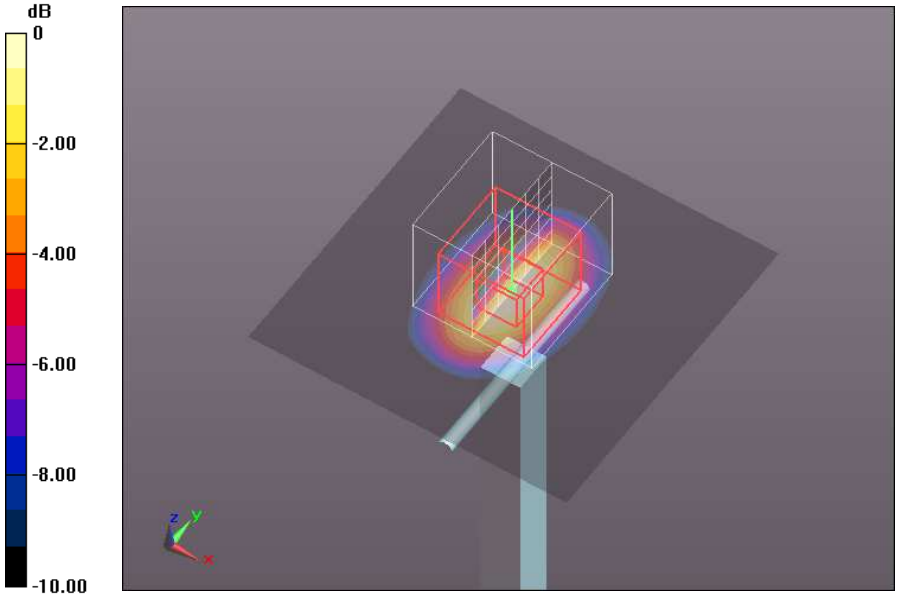
0 dB = 17.0 W/kg = 12.30 dBW/kg



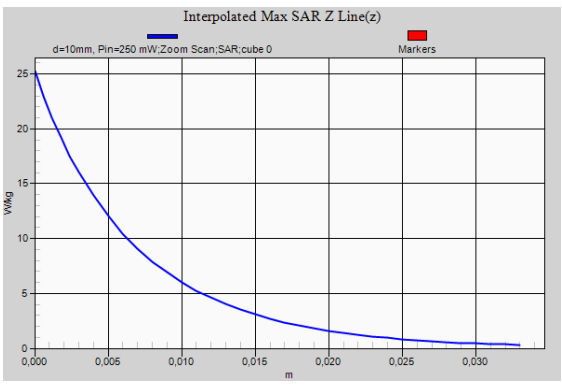
Validation results in 2450 MHz Band for Body TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-03-05
DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:756
Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 2.01 S/m; ε_r = 52.39; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.88, 7.88, 7.88); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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, 2019-03-05/d=10mm, Pin=250 mW/Area Scan (81x81x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 16.0 W/kg

Body 2450MHz, 2019-03-05/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 88.16 V/m; Power Drift = 0.21 dB
Peak SAR (extrapolated) = 25.2 W/kg
SAR(1 g) = 12.1 W/kg; SAR(10 g) = 5.52 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 16.1 W/kg



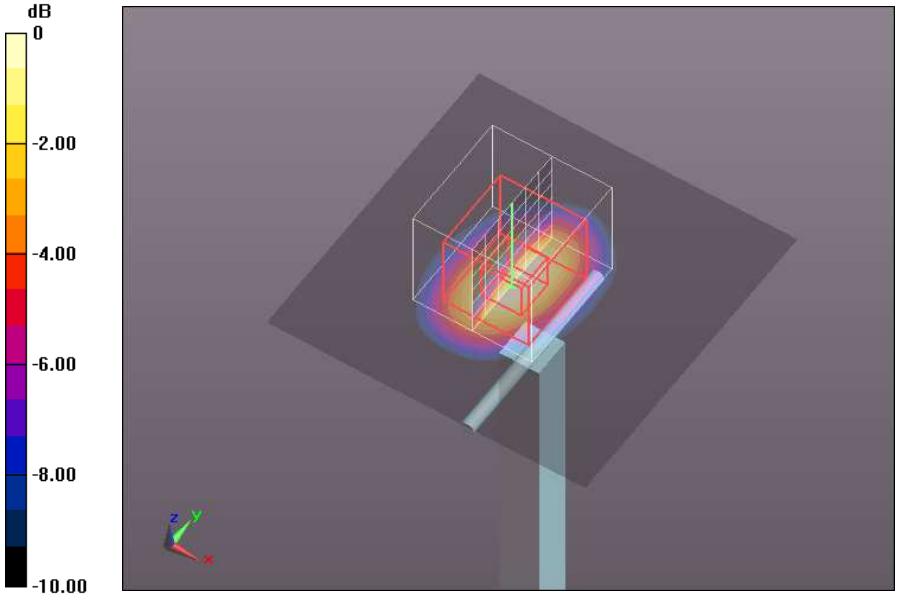
0 dB = 16.1 W/kg = 12.07 dBW/kg



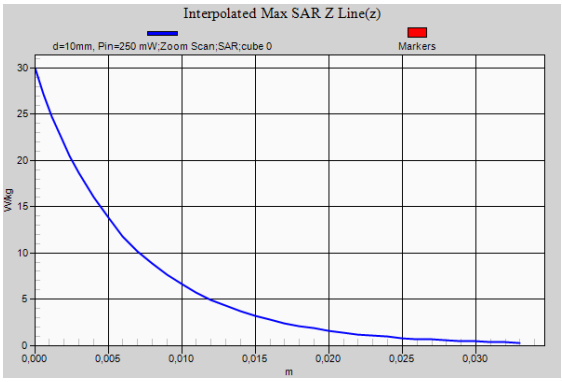
Validation results in 2600 MHz Band for Body TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2018-12-18
DUT: Dipole 2600 MHz D2600V2; Type: D2600V2; Serial: D2600V2 - SN:1023
Communication System: UID 0, CW (0); Frequency: 2600 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 2.19 S/m; ε_r = 51.89; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(7.52, 7.52, 7.52); Calibrated: 2018-06-25;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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 2600MHz, 2018-12-18/d=10mm, Pin=250 mW/Area Scan (81x81x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 19.1 W/kg

Body 2600MHz, 2018-12-18/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 88.29 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 30.0 W/kg
SAR(1 g) = 13.8 W/kg; SAR(10 g) = 6.04 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 18.6 W/kg



0 dB = 18.6 W/kg = 12.70 dBW/kg

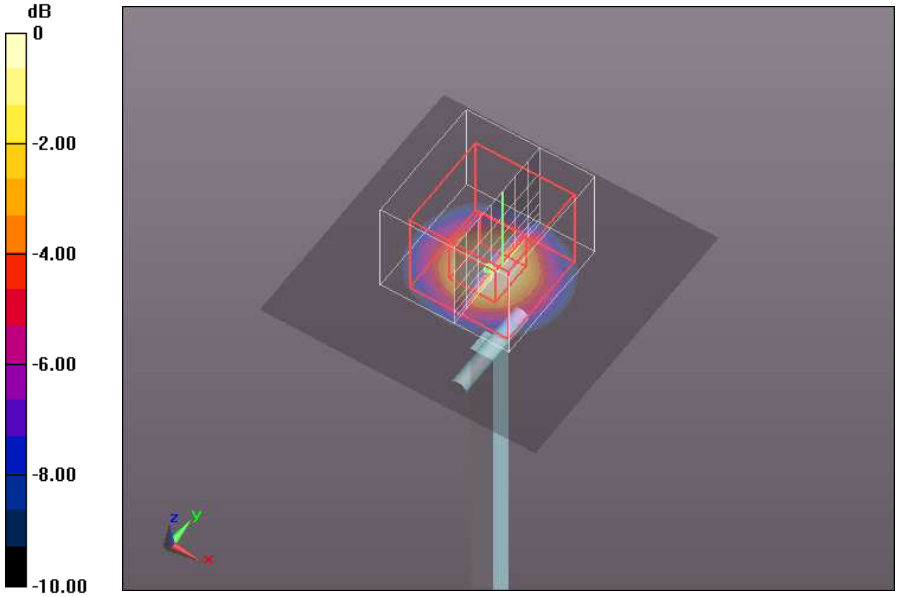


Validation results in 5200 MHz Band for Body TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-07
DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN:1071
Communication System: UID 0, CW (0); Frequency: 5200 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5200 MHz; σ = 5.34 S/m; ε_r = 48.72; ρ = 1000 kg/m^3
Phantom section: Flat Section

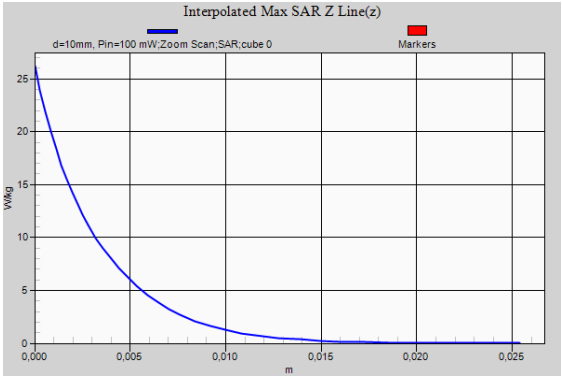
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(4.96, 4.96, 4.96); Calibrated: 2018-06-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Body 5200MHz, 2019-02-07/d=10mm, Pin=100 mW/Area Scan (61x61x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 17.9 W/kg

Body 5200MHz, 2019-02-07/d=10mm, Pin=100 mW/Zoom Scan (8x8x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 46.33 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 26.2 W/kg
SAR(1 g) = 6.76 W/kg; SAR(10 g) = 1.9 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 15.6 W/kg



0 dB = 15.6 W/kg = 11.93 dBW/kg

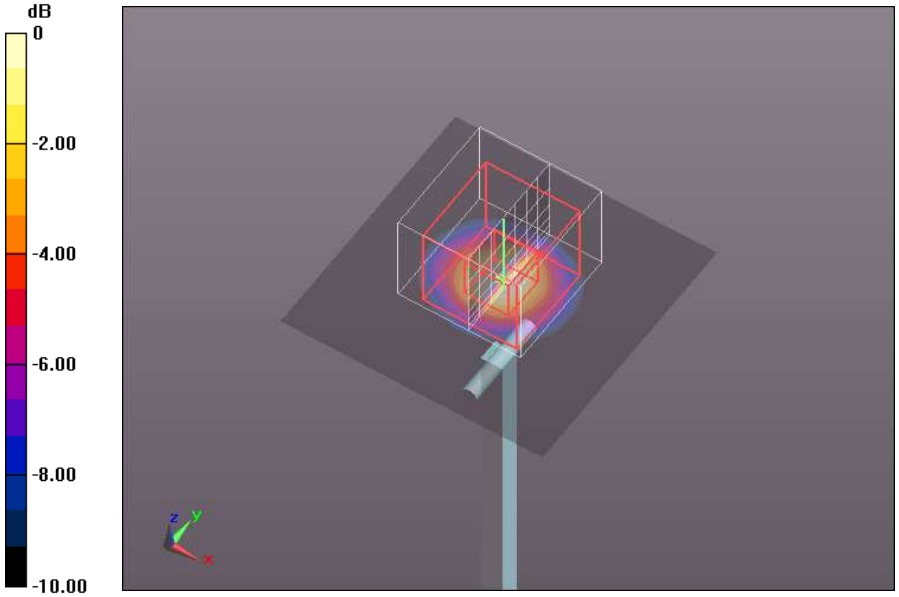


Validation results in 5200 MHz Band for Body TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-03-04
DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN:1071
Communication System: UID 0, CW (0); Frequency: 5200 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5200 MHz; σ = 5.38 S/m; ε_r = 48.91; ρ = 1000 kg/m^3
Phantom section: Flat Section

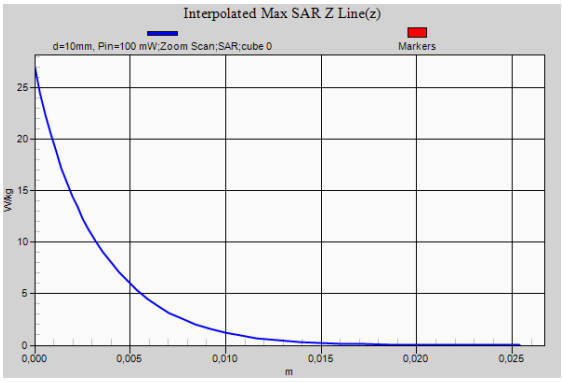
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(4.96, 4.96, 4.96); Calibrated: 2018-06-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Body 5200MHz, 2019-03-04/d=10mm, Pin=100 mW/Area Scan (61x61x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 18.1 W/kg

Body 5200MHz, 2019-03-04/d=10mm, Pin=100 mW/Zoom Scan (8x8x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 47.07 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 26.9 W/kg
SAR(1 g) = 6.85 W/kg; SAR(10 g) = 1.93 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 16.3 W/kg



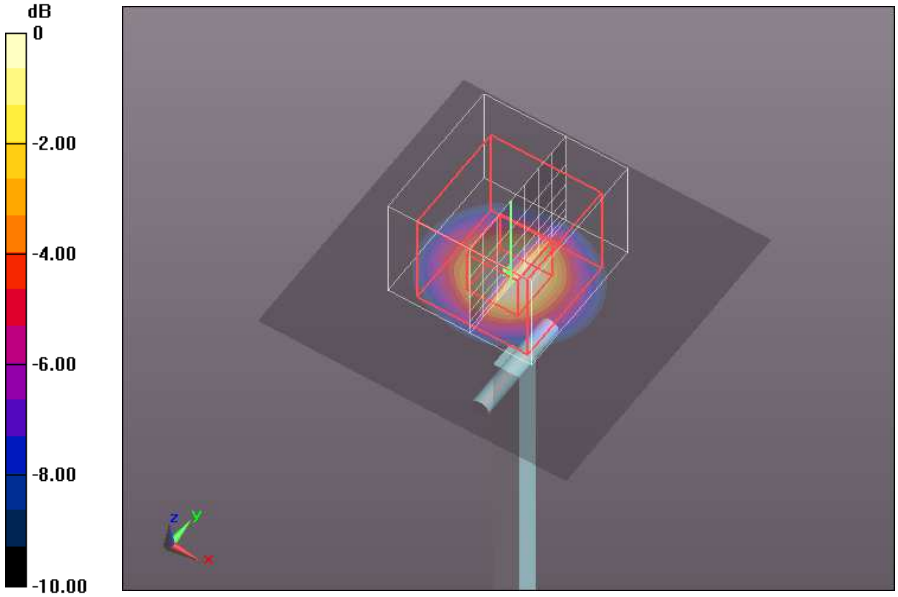
0 dB = 16.3 W/kg = 12.12 dBW/kg



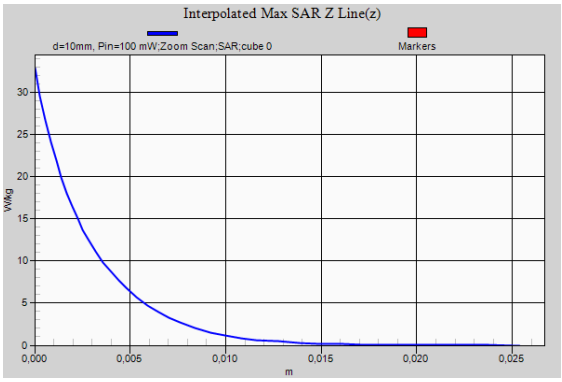
Validation results in 5500 MHz Band for Body TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-08
DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN:1071
Communication System: UID 0, CW (0); Frequency: 5500 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5500 MHz; σ = 5.78 S/m; ε_r = 48.04; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(4.18, 4.18, 4.18); Calibrated: 2018-06-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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 5500MHz, 2019-02-08/d=10mm, Pin=100 mW/Area Scan (61x61x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 20.9 W/kg

Body 5500MHz, 2019-02-08/d=10mm, Pin=100 mW/Zoom Scan (8x8x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 46.82 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 32.9 W/kg
SAR(1 g) = 7.69 W/kg; SAR(10 g) = 2.13 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 18.9 W/kg



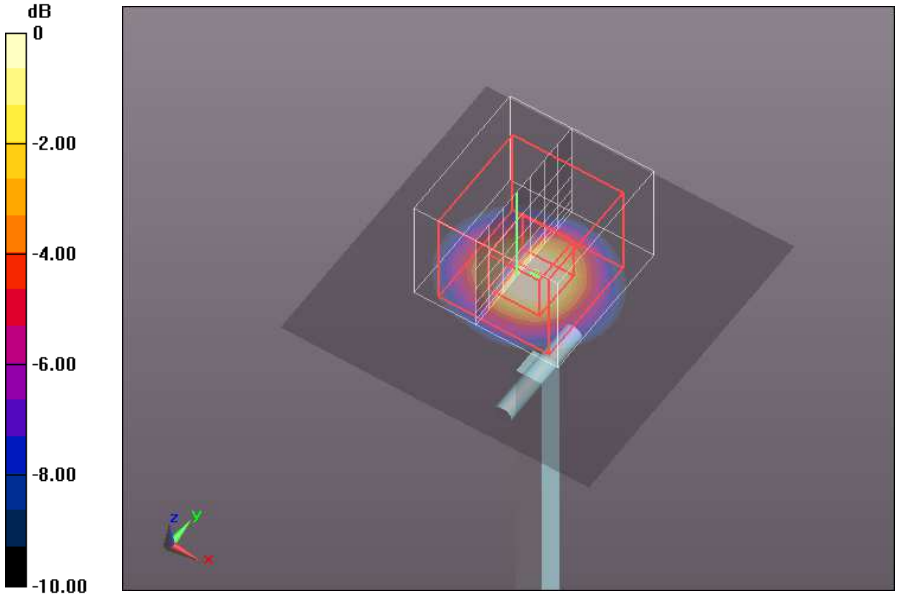
0 dB = 18.9 W/kg = 12.76 dBW/kg



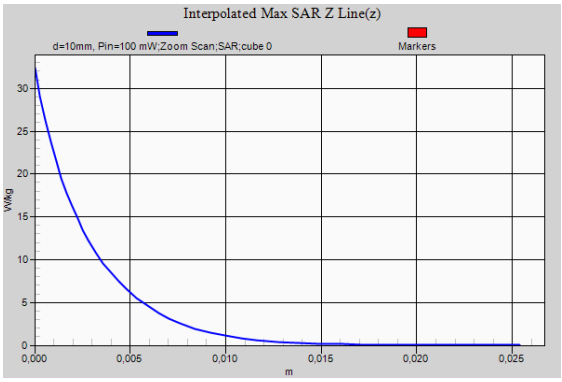
Validation results in 5500 MHz Band for Body TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-02-11
DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN:1071
Communication System: UID 0, CW (0); Frequency: 5500 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5500 MHz; σ = 5.83 S/m; ε_r = 48.16; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(4.18, 4.18, 4.18); Calibrated: 2018-06-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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 5500MHz, 2019-02-11/d=10mm, Pin=100 mW/Area Scan (61x61x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 20.4 W/kg

Body 5500MHz, 2019-02-11/d=10mm, Pin=100 mW/Zoom Scan (8x8x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 45.01 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 32.3 W/kg
SAR(1 g) = 7.55 W/kg; SAR(10 g) = 2.1 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 18.3 W/kg



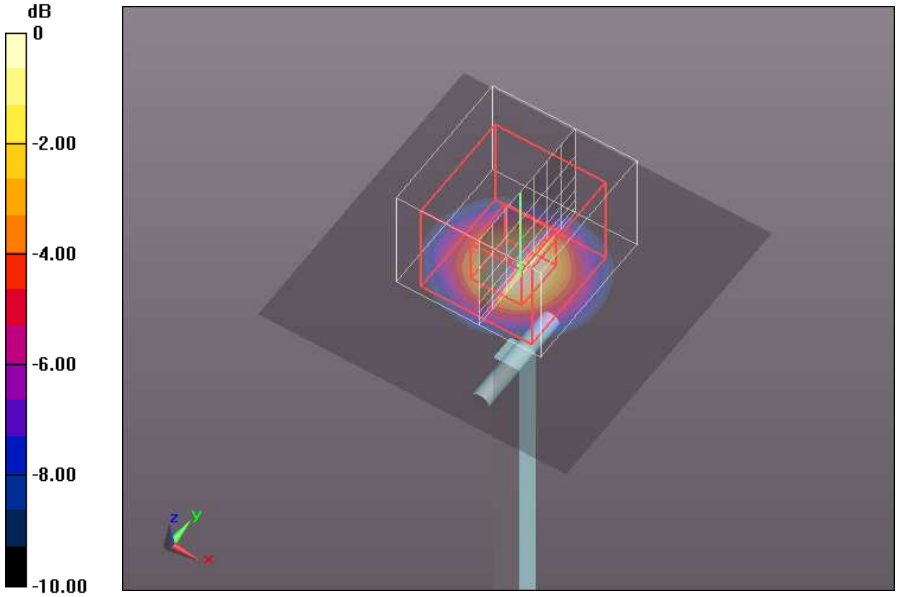
0 dB = 18.3 W/kg = 12.62 dBW/kg



Validation results in 5500 MHz Band for Body TSL
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2019-03-04
DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN:1071
Communication System: UID 0, CW (0); Frequency: 5500 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5500 MHz; σ = 5.82 S/m; ε_r = 48.23; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN7461; ConvF(4.18, 4.18, 4.18); Calibrated: 2018-06-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2018-06-18
- 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 5500MHz, 2019-03-04/d=10mm, Pin=100 mW/Area Scan (61x61x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 20.5 W/kg

Body 5500MHz, 2019-03-04/d=10mm, Pin=100 mW/Zoom Scan (8x8x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 46.14 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 33.1 W/kg
SAR(1 g) = 7.62 W/kg; SAR(10 g) = 2.12 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 19.0 W/kg



0 dB = 19.0 W/kg = 12.79 dBW/kg