TEST REPORT

APPLICANT	:	Power Idea Technology (Shenzhen) Co., Ltd.
PRODUCT NAME	:	LTE SMARTPHONE
MODEL NAME	:	RG170
BRAND NAME	:	RugGear
FCC ID	:	ZLE-RG170
STANDARD(S)	:	47CFR 2.1093 IEEE 1528-2013
RECEIPT DATE	:	2019-08-01
TEST DATE	:	2019-08-21 to 2019-08-24
ISSUE DATE	:	2019-09-01

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1 SAR Results Summary 6
2 Technical Information 7
2.1 Applicant and Manufacturer Information 7
2.2 Equipment Under Test (EUT) Description 7
2.3 Environment of Test Site 9
3 Introduction 10
3.1 Introduction 10
3.2 SAR Definition 10
4 RF Exposure Limits 11
5 Applied Reference Documents 11
6 SAR Measurement System 12
6.1 E-Field Probe 13
6.2 Data Acquisition Electronics (DAE) 14
6.3 Robot 15
6.4 Measurement Server 15
6.5 Light Beam Unit 15
6.6 Phantom 16
6.7 Device Holder 16
6.8 Data storage and Evaluation 18
6.9 Test Equipment List 20
6.10 Tissue Simulating Liquids 21
7 SAR System Verification 24
8 EUT Testing Position 26
8.1 Handset Reference Points 26
8.2 Positioning for Cheek / Touch 27
8.3 Positioning for Ear / 15° Tilt 27

8.4 SAR Evaluations near the Mouth/Jaw Regions of the SAM Phantom 28
8.5 Body Worn Accessory Configurations 28
8.6 Hotspot Mode Exposure Position Conditions 29
9 Measurement Procedures 30
9.1 Spatial Peak SAR Evaluation 30
9.2 Power Reference Measurement 31
9.3 Area Scan Procedures 31
9.4 Zoom Scan Procedures 31
9.5 SAR Averaged Methods 32
9.6 Power Drift Monitoring 32
10 Conducted RF Output Power 33
10.1 GSM Conducted Power 33
10.2 WCDMA Conducted Power 34
10.3 LTE Conducted Power 37
11 Exposure Positions Consideration 53
11.1 EUT Antenna Location 53
11.2 Test Positions Consideration 53
12 Block diagram of the tests to be performed 54
12.1 Head 54
12.2 Body 55
13 Test Guidance 56
14 SAR Test Results Summary 57
14.1 Standalone Head SAR 57
14.2 Standalone Body-worn SAR 60
14.3 Standalone Hotspot SAR 62
14.4 Battery test at worst condition 65
15 Repeated SAR Measurement 66

16 Multi-Band Simultaneous Transmission Considerations 67

16.1 SAR Simultaneous Transmission Analysis 69

17 Measurement Uncertainty...73

18 Measurement Conclusion 75

Annex A General Information

Annex B Test Setup Photos

Annex C Plots of System PerformanceCheck

Annex D Plots of Maximum SAR Test Results

Annex E DASY Calibration Certificate

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Change History		
Version	**Date**	**Description**
1.0	2019-09-01	Original

1 SAR Results Summary

The maximum results of Specific Absorption Rate (SAR) found during test as bellows:

<Highest Reported standalone SAR Summary>

Frequency Band		Highest SAR Summary		
		Head (Separation 0mm)	Body-worn (Separation 10mm)	Hotspot (Separation 10mm)
		1g SAR (W/kg)		
GSM	GSM850	0.693	1.154	1.154
	GSM1900	0.208	0.722	0.722
WCDMA	WCDMA Band II	0.162	0.751	0.751
	WCDMA Band IV	0.204	0.741	0.741
	WCDMA Band V	0.367	0.474	0.474
LTE	LTE Band 2	0.252	0.744	0.744
	LTE Band 4	0.270	0.888	0.888
	LTE Band 5	0.331	0.483	0.483
	LTE Band 7	0.199	1.087	1.178
WLAN	2.4GHz WLAN	0.139	0.052	0.054
2.4GHz Band	Bluetooth	N/A	0.046	0.046

Max Scaled SAR1g (W/Kg):	Head	0.693W/kg	Limit(W/kg): 1.6 W/kg
	Body-worn	1.154W/kg	
	Hotspot	1.178W/kg	

Highest Simultaneous Transmission 1g SAR (W/kg)	1.228W/kg	Limit(W/kg): 1.6 W/kg

Note:

1. The highest simultaneous transmission is scalar summation of Reported standalone SAR per FCCKDB 690783 D01 v01r03, and scalar SAR summation of all possible simultaneous transmission scenarios are< 1.6W/kg.
2. This device is compliance with Specific Absorption Rate (SAR) for general population/uncontrolledexposure limits (1.6 W/kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-2005, and hadbeen tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013.
3. The Bluetooth 2.4GHz Band is estimated result.

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2 Technical Information

Note: Provide by Applicant.

2.1 Applicant and Manufacturer Information

Applicant:	Power Idea Technology (Shenzhen) Co., Ltd.
Applicant Address:	4th Floor, A Section, Languang Science&technology Building, No.7 Xinxi RD, Hi-Tech Industrial Park North, Nanshan District, ShenZhen, P.R.C.
Manufacturer:	Power Idea Technology (Shenzhen) Co., Ltd.
Manufacturer Address:	4th Floor, A Section, Languang Science&technology Building, No.7 Xinxi RD, Hi-Tech Industrial Park North, Nanshan District, ShenZhen, P.R.C.

2.2 Equipment Under Test (EUT) Description

EUT Name:	LTE SMARTPHONE
Hardware Version:	V1.0
Software Version:	RG170_US_1.0.0.0.0_1_20190903
Frequency Bands:	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1710 MHz~1755 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz WLAN 2.4GHz: 2412 MHz ~ 2472 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Modulation Mode:	GSM/GPRS: GMSK, EDGE: 8PSK LTE: QPSK/16QAM/64QAM 802.11b: DSSS 802.11a/g/n-HT20/n-HT40:OFDM Bluetooth: GFSK, π/4-DQPSK, 8-DPSK BLE:GFSK
Multi-slot Class:	Multi-Slot Class33
Operation Class	Class B
Hotspot Mode:	Support
Antenna Type:	WWAN: Fixed Intemal WLAN: PIFAAntenna Bluetooth: PIFAAntenna
SIM cards description:	Only single SIM cards

Battery List:

Main Test Battery	**Model Name:**	BL280MP
	Brand Name:	N/A
	Capacity:	2800mAh
	Rated Voltage:	3.7V
	Manufacturer:	ZHUHAI SUNDA TECHNOLOGY CO., LTD.
Battery 1	**Model Name:**	BL312NP
	Brand Name:	N/A
	Capacity:	3120 mAh
	Rated Voltage:	3.6V
	Manufacturer:	SHENZHEN YJC TECHNOLOGY CO.LTD.

Note:

1. For a more detailed description, please refer to specification or user's manual supplied by the applicant and/or manufacturer.

2.3 Environment of Test Site

Temperature:	20 ... 25 ° C
Humidity:	30 ... 75 %
Atmospheric Pressure:	980 ... 1020 hPa

Test frequency:	GSM 850MHz/1900MHz; WCDMA Band II/IV/V; FDD-LTE Band 2/4/5/7; WLAN;
Operation mode:	Call established
Power Level:	GSM 850MHz Maximum output power(level 5); GSM 1900MHz Maximum output power(level 0); WCDMA Band II/IV/V (All Up Bits); FDD-LTE Band 2/4/5/7 (Maximum output power); WLAN;

During SAR test, EUT is in Traffic Mode (Channel Allocated) at Normal Voltage Condition. A communication link is set up with a System Simulator (SS) by air link, and a call is established.

The EUT shall use its internal transmitter. The antenna(s), battery and accessories shall be those specified by the Factory. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output. If a wireless link is used, the antenna connected to the output of the base station simulator shall be placed at least 50 cm away from the handset.

The signal transmitted by the simulator to the antenna feeding point shall be lower than the output power level of the handset by at least 35 dB.

For SAR testing, EUT is in GPRS mode. In GPRS link mode, its crest factor is 2, because EUT is set in GPRS multi-slot class 12 with 4 uplink slots.

3 Introduction

3.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SARdistribution in a biological body is complicated and is usually carried out by experimental techniques or numericalmodeling. The standard recommends limits for two tiers of groups, occupational/controlled and generalpopulation/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. Ingeneral, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

3.2 SAR Definition

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

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

SAR is expressed in units of Watts per kilogram (W/kg)

SAR measurement can be either related to the temperature elevation in tissue by

$$\text{SAR} = C\left(\frac{\delta T}{\delta t}\right)$$

Where: C is the specific heat capacity, δT is the temperature rise and δt is the exposure duration, or related to theelectrical field in the tissue by

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

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

4 RF Exposure Limits

Limits for General Population/Uncontrolled Exposure (W/kg)

Type Exposure	Uncontrolled Environment Limit
Spatial Peak SAR (1g cube tissue for head and trunk)	1.60W/kg
Spatial Peak SAR (10g cube tissue for limbs)	4.00W/kg
Spatial Peak SAR (1g cube tissue for whole body)	0.08W/kg

Note:

1. This limit is according to recommendation1999/519/EC, Annex II (Basic Restrictions)
2. Occupational/Uncontrolled Environments are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure,(i.e. as a result of employment or occupation)

5 Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title	Method determination /Remark
1	47 CFR§2.1093	Radio Frequency Radiation Exposure Evaluation: Portable Devices	No deviation
2	IEEE 1528-2013	IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques	No deviation
3	KDB 447498 D01v06	General RF Exposure Guidance	No deviation
4	KDB 248227 D01v02r02	SAR Measurement Procedures for 802.11 Transmitters	No deviation
5	KDB 865664 D01v01r04	SAR Measurement 100 MHz to 6 GHz	No deviation
6	KDB 865664 D02v01r02	RF Exposure Reporting	No deviation
7	KDB 648474 D04v01r03	Handset SAR	No deviation
8	KDB 941225 D01v03r01	3G SAR MEAUREMENT PROCEDURES	No deviation
9	KDB 941225 D05v02r05	SAR Evaluation Consideration for LTE Devices	No deviation
10	KDB 941225 D06v02r01	SAR EvaluationProcedures For Portable Devices With Wireless Router Capabilities	No deviation

6 SAR Measurement System

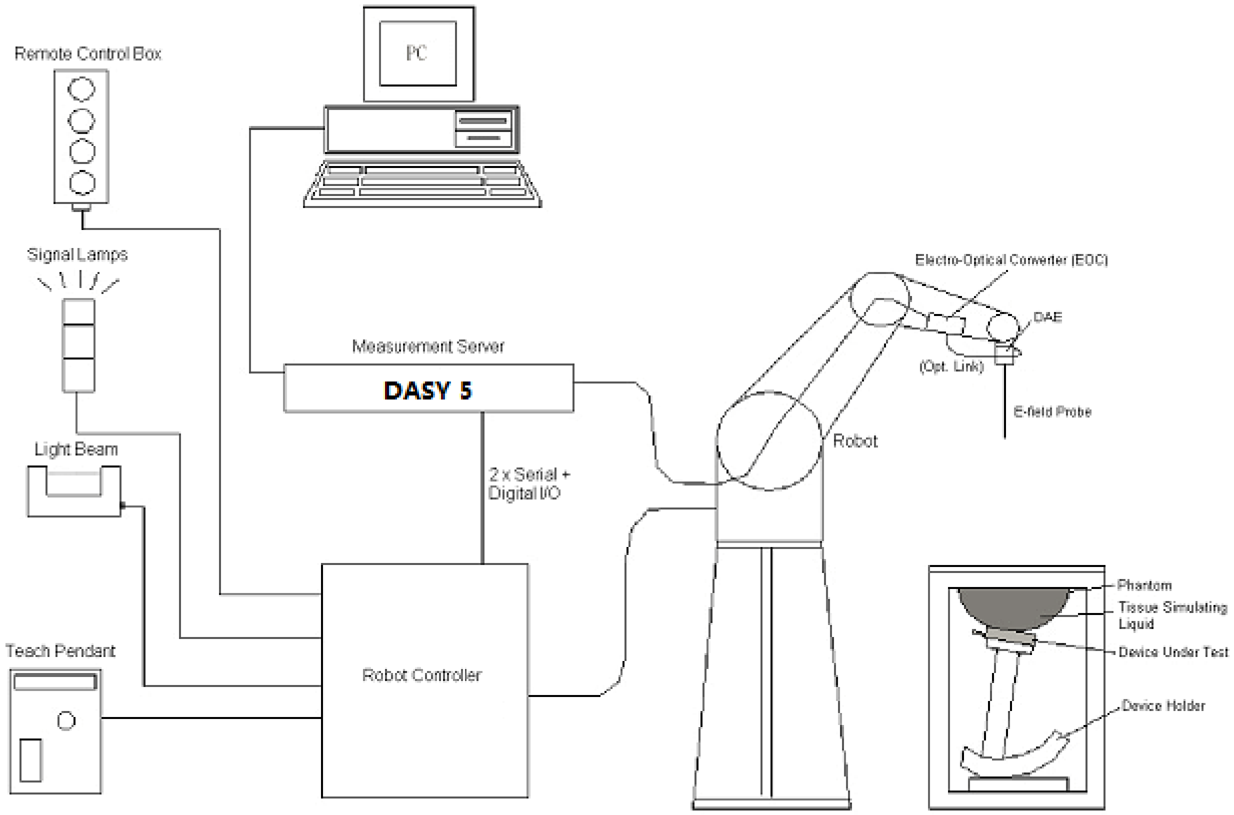


Fig.6.1 SPEAG DASY System Configurations

The DASY system for performance compliance tests is illustrated above graphically. This system consists of thefollowing items:

- A standard high precision 6-axis robot with controller, a teach pendant and software
- A data acquisition electronic (DAE) attached to the robot arm extension
- A dosimetric probe equipped with an optical surface detector system
- The electro-optical converter (EOC) performs the conversion between optical and electrical signals
- A measurement server performs the time critical tasks such as signal filtering, control of the robot operationand fast movement interrupts.
- A probe alignment unit which improves the accuracy of the probe positioning
- A computer operating Windows XP
- DASY software
- Remove control with teach pendant and additional circuitry for robot safety such as warming lamps, etc.
- The SAM twin phantom

- A device holder
- Tissue simulating liquid
- Dipole for evaluating the proper functioning of the system

Component details are described in the following sub-sections.

6.1 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG). The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

- **E-Field Probe Specification**

  <EX3DV4 Probe>

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	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	10 µW/g to 100 mW/g; Linearity: ± 0.2 dB	
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

- **E-Field Probe Calibration**

  Each probe needs to be calibrated according to a dosimetric assessment procedure with accuracy better than ±10%. The spherical isotropy shall be evaluated and within ±0.25 dB. The sensitivity parameters (Norm X, Norm Y and Norm Z), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested. The calibration data can be referred to appendix E of this report.

6.2 Data Acquisition Electronics (DAE)

The Data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock. The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Fig. 6.2 Photo of DAE

6.3 Robot

The SPEAG DASY system uses the high precision robots (DASY5: TX60XL) type from Stäubli SA (France). For the 6-axis controller system, the robot controller version (DASY5: CS8c) from Stäubliis used. The Stäublirobot series have many features that are important for our application:

- High precision (repeat ability 0.02 mm)
- High reliability (industrial design)
- Low maintenance costs (virtually maintenance free due to direct drive gears; nobelt drives)
- Jerk-free straight movements
- Low ELF interference (motor control fields shielded via the closed metallic constructionshields)

Fig. 6.3 Photo of Robot

6.4 Measurement Server

The measurement server is based on a PC/104 CPU board with CPU (DASY 5: 400MHz, Intel Celeron), chip-disk (DASY5: 128 MB), RAM (DASY5: 128 MB). The necessary circuits for communication with the DAE electronic box, as well as the 16 bit AD converter system for optical detection and digital I/O interface are contained on the DASY I/O board, which is directly connected to the PC/104 bus of the CPU board.

The measurement server performs all the real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operations.

Fig. 6.4 Photo of Server for DASY5

6.5 Light Beam Unit

The light beam switch allows automatic "tooling" of the probe. During the process, the actualposition of the probe tip with respect to the robot arm is measured, as well as the probe lengthand the horizontal probe offset. The software then corrects all movements, such that the robotcoordinates are valid for the probe tip.

The repeatability of this process is better than0.1 mm. If a position has been taught with analigned probe, the same position will be reachedwith another aligned probe within 0.1 mm, even ifthe other probe has different dimensions. Duringprobe rotations, the probe tip will keep its actualposition.

Fig. 6.5 Photo of Light Beam

6.6 Phantom

<SAM Twin Phantom>

Shell Thickness	2 ± 0.2 mm (sagging: <1%) Center ear point: 6 ± 0.2 mm
Filling Volume Dimensions	Approx. 25 liters Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Head, Right Head, Flat phantom

Fig. 6.6Photo of SAM Phantom

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

6.7 Device Holder

<Device Holder for SAM Twin Phantom>

The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5 mm distance, a positioning uncertainty of ±0.5 mm would produce a SAR uncertainty of ± 20 %. Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.

The DASY device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (ERP).

Thus the device needs no repositioning when changing the angles.

The DASY device holder is constructed of low-low POM material having the following dielectric parameters: relative permittivity ε = 3 and loss tangent δ = 0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

Fig. 6.7Photo of Device Holder

<Laptop Extension Kit>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.

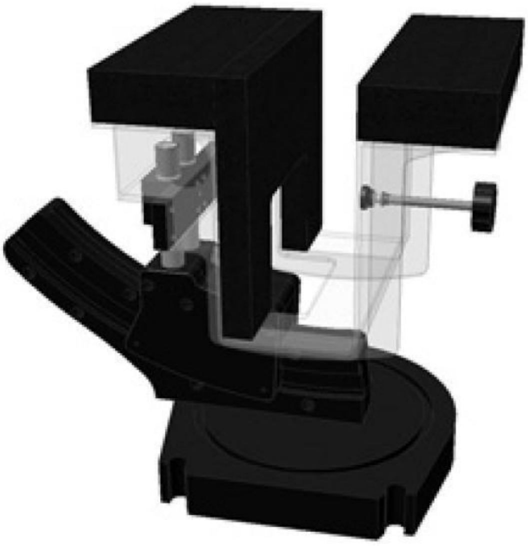


Fig 6.8 Laptop Extension Kit

6.8 Data storage and Evaluation

- **Data Storage**

The DASY software stores the assessed data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all the necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files. The post-processing software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verifications of the complete software setup even after the measurement and allows correction of erroneous parameter settings. For example, if a measurement has been performed with an incorrect crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be reevaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type (e.g., [V/m], [mW/g]). Some of these units are not available in certain situations or give meaningless results, e.g., a SAR-output in a non-lose media, will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

- **Data Evaluation**

The DASY post-processing software (SEMCAD) automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe Parameters:	- Sensitivity	$Norm_i$, a_{i0}, a_{i1}, a_{i2}
	- Conversion	$ConvF_i$
	- Diode compression point	dcp_i
Device Parameters:	- Frequency	f
	- Crest	cf
Media Parameters:	- Conductivity	σ
	- Density	ρ

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY components. In the direct measuring mode of the multi-meter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power.

The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}$$

WithV_i = compensated signal of channel i, (i = x, y, z)

U_i= input signal of channel i, (i = x, y, z)

cf = crest factor of exciting field (DASY parameter)

dcp^i= diode compression point (DASY parameter)

From the compensated input signals, the primary field data for each channel can be evaluated:

E- Field Probes: $E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}$

H-Field Probes: $H_i = \sqrt{V_i} \cdot \frac{a_{i0} + a_{i1} f + a_{i2} f^2}{f}$

WithV_i = compensated signal of channel i, (i = x, y, z)

$Norm_i$= senor sensitivity of channel i, (i = x, y, z), µV/ (V/m) ^{2}

ConvF = sensitivity enhancement in solution

a_{ij} = sensor sensitivity factors for H-field probes

f = carrier frequency (GHz)

E_i = electric field strength of channel i in V/m

Hi = magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The primary field data are used to calculate the derived field units.

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1000}$$

With SAR = local specific absorption rate in mW/g

E_{tot}= total field strength in V/m

σ = conductivity in (mho/m) or (Siemens/m)

ρ= equipment tissue density in g/cm^3

Note that the density is set to 1, to account for actual head tissue density rather than the density of the tissue simulating liquid.

6.9 Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	835MHz System Validation Kit	D835V2	4d227	2019.06.22	2020.06.21
SPEAG	1750MHz System Validation Kit	D1750V2	1160	2018.10.31	2019.10.30
SPEAG	1900MHz System Validation Kit	D1900V2	5d221	2019.06.22	2020.06.21
SPEAG	2450MHz System Validation Kit	D2450V2	805	2018.10.26	2019.10.25
SPEAG	2600MHz System Validation Kit	D2600V2	1139	2019.06.25	2020.06.24
SPEAG	Dosimetric E-Field Probe	EX3DV4	3823	2018.11.12	2019.11.11
SPEAG	Data Acquisition Electronics	DAE4	480	2019.04.11	2020.04.10
SPEAG	Dielectric Assessment KIT	DAK-3.5	1279	2018.11.03	2019.11.02
SPEAG	SAM Twin Phantom 1	QD 000 P40 CB	TP-1471	NCR	NCR
SPEAG	SAM Twin Phantom 2	QD 000 P40 CB	TP-1464	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
R&S	Network Emulator	CMW500	124534	2019.04.17	2020.04.16
Agilent	Network Analyzer	E5071B	MY42404762	2019.04.15	2020.04.14
mini-circuits	Amplifier	ZHL-42W+	608501717	NCR	NCR
mini-circuits	Amplifier	ZVE-8G+	754401735	NCR	NCR
Agilent	Signal Generator	N5182B	MY53050509	2019.04.17	2020.04.16
Agilent	Power Senor	N8482A	MY41090849	2018.11.23	2019.11.22
Agilent	Power Meter	E4416A	MY45102093	2018.11.23	2019.11.22
Anritsu	Power Sensor	MA2411B	N/A	2018.11.23	2019.11.22
Anritsu	Power Meter	NRVD	101066	2018.11.23	2019.11.22
Agilent	Dual Directional Coupler	778D	50422	NA	NA
MCL	Attenuation1	351-218-010	N/A	NA	NA
THERMOMETER	Thermo meter	DC-803	N/A	2018.11.22	2019.11.21
N/A	Tissue Simulating Liquids	800-2600MHz	N/A	24H	

Note:

1. The calibration certificate of DASY can be referred to appendix E of this report.
2. The Insertion Loss calibration of Dual Directional Coupler and Attenuator were characterized via the networkanalyzer and compensated during system check.
3. The dielectric probe kit was calibrated via the network analyzer, with the specified procedure (calibrated in purewater) and calibration kit (standard) short circuit, before the dielectric measurement. The specific procedure andcalibration kit are provided by Speag.

4. In system check we need to monitor the level on the power meter, and adjust the power amplifier level to haveprecise power level to the dipole; the measured SAR will be normalized to 1W input power according to the ratio of1W to the input power to the dipole. For system check, the calibration of the power amplifier is deemed not criticallyrequired for correct measurement; the power meter is critical and we do have calibration for it
5. Attenuator insertion loss is calibrated by the network Analyzer, which the calibration is valid, before systemcheck.
6. N.C.R means No Calibration Requirement.

6.10 Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 6.11, for body SAR testing, the liquid height from the center of the flat phantom to liquid top surface is larger than 15 cm, which is shown in Fig. 6.12.

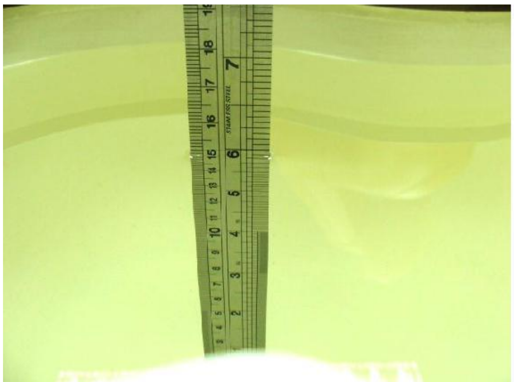


Fig 6.10 Photo of Liquid Height for Head SAR

Fig 6.11 Photo of Liquid Height for Body SAR

Thefollowingtablegivestherecipesfortissuesimulatingliquids

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0
Body								
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0	0	31.4	1.96	52.7
2600	68.1	0	0	0.1	0	31.8	2.16	52.5

Simulating Liquid for 5GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	64~78%
Mineral oil	11~18%
Emulsifiers	9~15%
Additives and Salt	2~3%

The relative permittivity and conductivity of the tissue material should be within±5% of the values given in the table below recommended by the FCC OET 65supplement C and RSS 102 Issue 5.

Target Frequency	Head		Body	
(MHz)	ε r	σ (S/m)	ε r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800-2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5800	35.3	5.27	48.2	6.00

(ε r = relative permittivity, σ = conductivity and ρ = 1000 kg/m^3)

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

The following table shows the measuring results for simulating liquid.

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Conductivity Target (σ)	Delta (σ) (%)	Limit (%)	Date
835	HSL	22.3	0.922	0.90	2.44	±5	2019.8.21
1750	HSL	22.1	1.379	1.37	0.66	±5	2019.8.22
1900	HSL	22.6	1.396	1.40	-0.29	±5	2019.8.23
2450	HSL	22.5	1.750	1.80	-2.78	±5	2019.8.24
2600	HSL	22.5	2.010	1.96	2.55	±5	2019.8.24
Frequency (MHz)	**Tissue Type**	**Liquid Temp. (℃)**	**Permittivity (εr)**	**Permittivity Target (εr)**	**Delta (εr) (%)**	**Limit (%)**	**Date**
835	HSL	22.3	42.273	41.50	1.86	±5	2019.8.21
1750	HSL	22.1	40.595	40.10	1.23	±5	2019.8.22
1900	HSL	22.6	39.985	40.00	-0.04	±5	2019.8.23
2450	HSL	22.5	39.882	39.20	1.74	±5	2019.8.24
2600	HSL	22.5	39.958	39.00	2.46	±5	2019.8.24

Note: Effective February 19, 2019, FCC has permitted the use of single head-tissuesimulating liquid specified in IEC 62209-1 for allSAR tests.

7 SAR System Verification

Each DASY system is equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the DASY software, enable the user to conduct the system performance check and system validation. System validation kit includes a dipole, tripod holder to fix it underneath the flat phantom and a corresponding distance holder.

- **Purpose of System Performance check**

  The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system performance check uses normal SAR measurements in a simplified setup with a well characterized source. This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

- **System Setup**

  In the simplified setup for system evaluation, the EUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave that comes from a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The equipment setup is shown below:

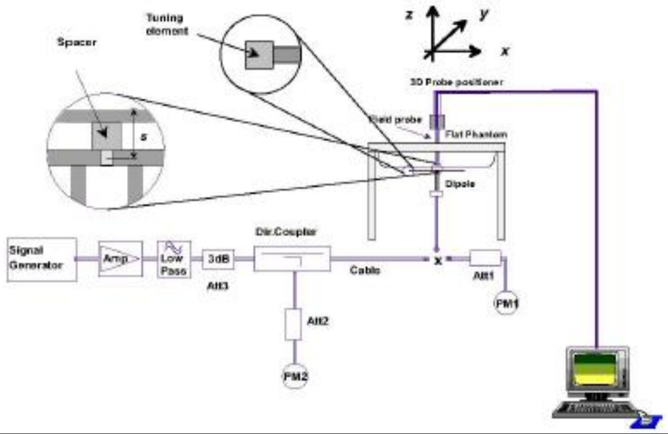


Fig 7.1 Photo of Dipole SetupFig 7.2 System Setup for System Evaluation

- **System Verification Results**

  Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10%. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table as below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix C of this report.

Dipole S/N	Probe S/N	DAE S/N
D835V2-4d227	3823	480
D1750V2-1160	3823	480
D1900V2_5d221	3823	480
D2450V2-805	3823	480
D2600V2-1139	3823	480

<1g SAR>

Date	Freq. (MHz)	Tissue Type	Input Power (mW)	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2019.8.21	835	HSL	250	2.36	9.34	9.44	1.07
2019.8.22	1750	HSL	250	9.28	37.10	37.12	0.05
2019.8.23	1900	HSL	250	9.59	39.50	38.36	-2.89
2019.8.24	2450	HSL	250	13.21	52.00	52.84	1.62
2019.8.24	2600	HSL	250	13.56	54.00	54.24	0.44
2019.8.21	835	MSL	250	2.38	9.61	9.52	-0.94
2019.8.22	1750	MSL	250	9.49	37.40	37.96	1.50
2019.8.23	1900	MSL	250	9.78	39.90	39.12	-1.95
2019.8.24	2450	MSL	250	12.30	50.50	49.2	-2.57
2019.8.24	2600	MSL	250	13.20	54.00	52.8	-2.22

<10g SAR>

Date	Freq. (MHz)	Tissue Type	Input Power (mW)	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2019.8.21	835	HSL	250	1.50	6.07	6	-1.15
2019.8.22	1750	HSL	250	4.98	20.00	19.92	-0.40
2019.8.23	1900	HSL	250	5.18	20.60	20.72	0.58
2019.8.24	2450	HSL	250	6.09	24.10	24.36	1.08
2019.8.24	2600	HSL	250	6.20	24.50	24.8	1.22
2019.8.21	835	MSL	250	1.59	6.31	6.36	0.79
2019.8.22	1750	MSL	250	4.96	19.90	19.84	-0.30
2019.8.23	1900	MSL	250	5.21	20.70	20.84	0.68
2019.8.24	2450	MSL	250	5.73	23.50	22.92	-2.47
2019.8.24	2600	MSL	250	5.96	24.20	23.84	-1.49

Note: System checks the specific test data please see Annex C

8 EUT Testing Position

This EUT was tested in ten different positions. They are right cheek/right tilted/left cheek/left tilted for head, Front/Back/Right Side/Top Side/Bottom Side of the EUT with phantom 10 mm gap, as illustrated below, please refer to Appendix B for the test setup photos.

8.1 Handset Reference Points

- The vertical centreline passes through two points on the front side of the handset – the midpoint of the width w_t of the handset at the level of the acoustic output, and the midpoint of the width w_b of the bottom of the handset.
- The horizontal line is perpendicular to the vertical centreline and passes the center of the acoustic output. The horizontal line is also tangential to the handset at point A.
- The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centreline is not necessarily parallel to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.

Fig.8.1 Illustration for Front, Back and Side of SAM Phantom

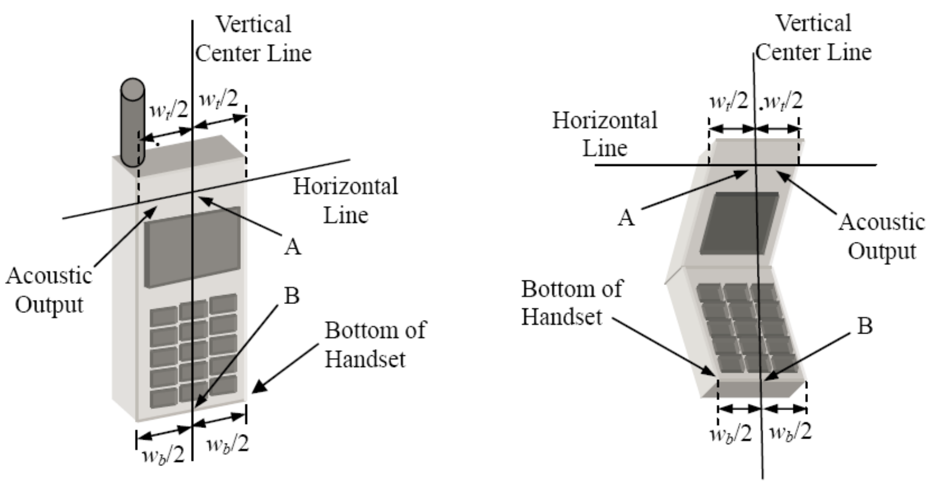


Fig. 8.2Illustration for Handset Vertical and Horizontal Reference Lines

8.2 Positioning for Cheek / Touch

- To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference point (M: Mouth, RE: Right Ear and LE: Left Ear) and align the center of the ear piece with the line RE-LE.
- To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost (see below figure)

Fig. 8.3 Illustration for Cheek Position

8.3 Positioning for Ear / 15º Tilt

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

Fig.8.4 Illustration for Tilted Position

8.4 SAR Evaluations near the Mouth/Jaw Regions of the SAM Phantom

Antennas located near the bottom of a phone may require SAR measurements around the mouth and jaw regions of the SAM head phantom. This typically applies to clam-shell style phones that are generally longer in the unfolded normal use positions or to certain older style long rectangular phones.

Under these circumstances, the following procedures apply, adopted from the FCC guidance on SAR handsets document FCC KDB Publication 648474 D04v01r03. The SAR required in these regions of SAM should be measured using a flat phantom. The phone should be positioned with a separation distance of 4 mm between the ear reference point (ERP) and the outer surface of the flat phantom shell. While maintaining this distance at the ERP location, the low (bottom) edge of the phone should be lowered from the phantom to establish the same separation distance between the peak SAR locations identified by the truncated partial SAR distribution measured with the SAM phantom. The distance from the peak SAR location to the phone is determined by the straight line passing perpendicularly through the phantom surface. When it is not feasible to maintain 4 mm separation at the ERP while also establishing the required separation at the peak SAR location, the top edge of the phone will be allowed to touch the phantom with a separation < 4 mm at the ERP. The phone should not be tilted to the left or right while placed in this inclined position to the flat phantom.

8.5 Body Worn Accessory Configurations

- To position the device parallel to the phantom surface with either keypad up or down.
- To adjust the device parallel to the flat phantom.
- To adjust the distance between the device surface and the flat phantom to 10 mm or holster surface and the flat phantom to 0 mm.

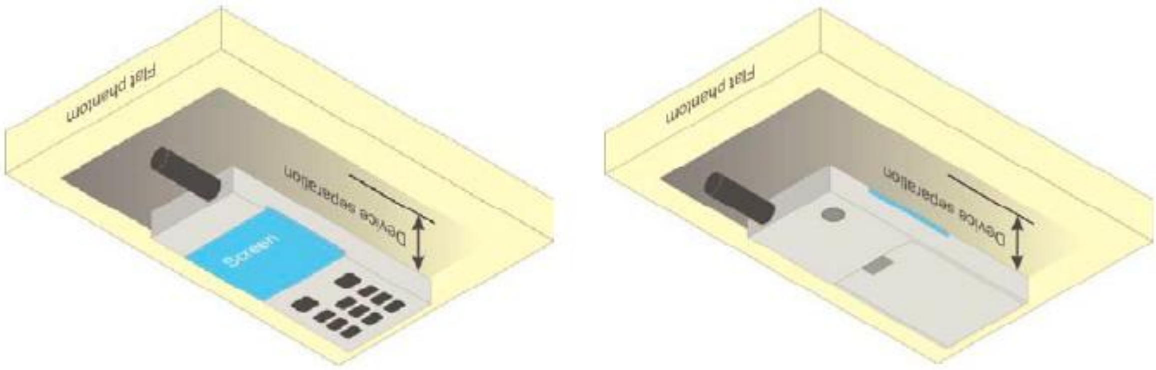


Fig.8.5 Illustration for Body Worn Position

8.6 Hotspot Mode Exposure Position Conditions

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

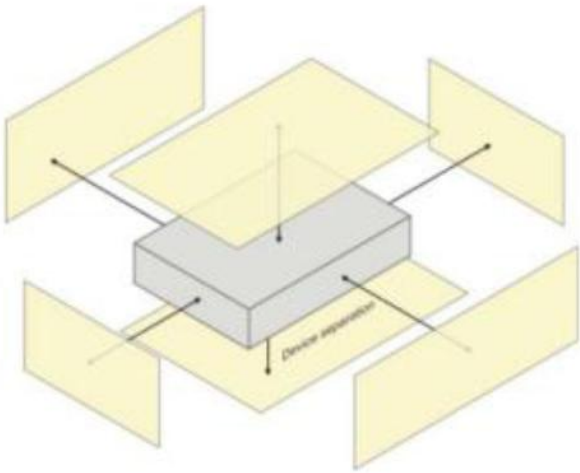


Fig 8.6 Illustrationfor Hotspot Position

9 Measurement Procedures

The measurement procedures are as bellows:

<Conducted power measurement>

- For WWAN power measurement, use base station simulator to configure EUT WWAN transition in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
- Read the WWAN RF power level from the base station simulator.
- For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band.
- Connect EUT RF port through RF cable to the power meter or spectrum analyzer, and measure WLAN/BT output power.

<Conducted power measurement>

- Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
- Place the EUT in positions as Appendix B demonstrates.
- Set scan area, grid size and other setting on the DASY software.
- Measure SAR results for the highest power channel on each testing position.
- Find out the largest SAR result on these testing positions of each band.
- Measure SAR results for other channels in worst SAR testing position if the Reported SAR or highest power channel is larger than 0.8 W/kg.

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

- Power reference measurement
- Area scan
- Zoom scan
- Power drift measurement

9.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a “cube” measurement. The measured volume must include the 1g and 10 g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

- Extraction of the measured data (grid and values) from the Zoom Scan.
- Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters).
- Generation of a high-resolution mesh within the measured volume.
- Interpolation of all measured values form the measurement grid to the high-resolution grid
- Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
- Calculation of the averaged SAR within masses of 1g and 10g.

9.2 Power Reference Measurement

The Power Reference Measurement and Power Drift Measurement are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

9.3 Area Scan Procedures

Area scans are defined prior to the measurement process being executed with a userdefined variable spacing between each measurement point (integral) allowing lowuncertainty measurements to be conducted. Scans defined for FCC applications utilize a10mm^2 step integral, with 1mm interpolation used to locate the peak SAR area used forzoom scan assessments.

When an Area Scan has measured all reachable points, it computes the field maxima foundin the scanned area, within a range of the global maximum. The range (in dB) is specified inthe standards for compliance testing. For example, a 2 dB range is required in IEEE1528-2003, EN 50361 and IEC 62209 standards, whereby 3 dB is a requirement whencompliance is assessed in accordance with the ARIB standard (Japan).

9.4 Zoom Scan Procedures

Zoom Scans are used to assess the peak spatial SAR values within a cubic averagingvolume containing 1 g and 10 g of simulated tissue. A density of 1000 kg/m^3 is used torepresent the head and body tissue density and not the phantom liquid density, in order tobe consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1g cube is 10mm, with the side length of the 10 g cube 21,5mm.The zoom scan integer steps can be user defined so as to reduce uncertainty, but normalpractice for typical test applications utilize a physical step of 5x5x7 (8mmx8mmx5mm)providing a volume of 32mm in the X & Y axis, and 30mm in the Z axis.

9.5 SAR Averaged Methods

In DASY, the interpolation and extrapolation are both based on the modified Quadratic Sheppard's method. The interpolation scheme combines a least-square fitted function method and a weighted average method which are the two basic types of computational interpolation and approximation.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1g and 10g cubes, the extrapolation distance should not be larger than 5 mm.

9.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.

10 Conducted RF Output Power

10.1 GSM Conducted Power

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM	31.91	31.92	31.76	32.00	22.91	22.92	22.76	23.00
GPRS 1Tx slots	31.87	31.88	31.73	32.00	22.87	22.88	22.73	23.00
GPRS 2Tx slots	31.13	31.14	31.02	31.50	25.13	25.14	25.02	25.50
GPRS 3Tx slots	29.42	29.43	29.31	29.50	25.16	25.17	25.05	25.24
GPRS 4Tx slots	28.37	28.39	28.29	28.50	25.37	25.39	25.29	25.50
EDGE1Tx slots	30.60	30.60	30.70	31.00	21.60	21.60	21.70	22.00
EDGE 2Tx slots	29.40	29.50	29.50	30.00	23.40	23.50	23.50	24.00
EDGE 3Tx slots	27.10	27.10	27.30	27.50	22.84	22.84	23.04	23.24
EDGE 4Tx slots	25.80	25.60	25.90	26.00	22.80	22.60	22.90	23.00

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM	29.46	29.49	29.35	29.50	20.46	20.49	20.35	20.50
GPRS 1Tx slots	29.20	29.20	29.10	29.50	20.20	20.20	20.10	20.50
GPRS 2Tx slots	28.40	28.50	28.40	29.00	22.40	22.50	22.40	23.00
GPRS 3Tx slots	26.60	26.70	26.60	27.00	22.34	22.44	22.34	22.74
GPRS 4Tx slots	25.50	25.61	25.60	26.00	22.50	22.61	22.60	23.00
EDGE1Tx slots	25.94	25.69	25.65	26.00	16.94	16.69	16.65	17.00
EDGE 2Tx slots	24.61	24.35	24.46	25.00	18.61	18.35	18.46	19.00
EDGE 3Tx slots	22.45	22.13	22.06	22.50	18.19	17.87	17.80	18.24
EDGE 4Tx slots	21.15	20.78	20.68	21.50	18.15	17.78	17.68	18.50

Timeslot consignations:

Remark:

1. The frame-averaged power is linearly reported the maximum burst averaged power over 8 time slots. The calculated method are shown as below:
   The duty cycle “x” of different time slots as below:
   1 TX slot is 1/8, 2 TX slots is 2/8, 3 TX slots is 3/8 and 4 TX slots is 4/8
   Based on the calculation formula:
   Frame-averaged power = Burst averaged power + 10 1og (x)
   So,
   Frame-averaged power (1 TX slot) = Burst averaged power (1 TX slot)– 9.03
   Frame-averaged power (2 TX slots) = Burst averaged power (2 TX slots)– 6.02
   Frame-averaged power (3 TX slots) = Burst averaged power (3 TX slots)– 4.26
   Frame-averaged power (4 TX slots) = Burst averaged power (4 TX slots) – 3.01
2. CS1 coding scheme was used in GPRS conducted power measurements and SAR testing, MCS5 coding scheme was used in EGPRS conducted power measurements and SAR testing (if necessary).

No. of Slots:	Slot 1	Slot 2	Slot 3	Slot 4
Slot Consignation:	1Up4Down	2Up3Down	3Up2Down	4Up1Down
Duty Cycle:	1:8.3	1:4.15	1:2.77	1:2.08
Correct Factor:	-9.03dB	-6.02dB	-4.26dB	-3.01dB

10.2 WCDMA Conducted Power

The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

a. The EUT was connected to Base Station Rohde & Schwarz CMW500 referred to the SetupConfiguration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set Gain Factors (βc and βd) and parameters were set according to each
   ii. Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
   iii. Set RMC 12.2kbps + HSDPA mode.
   iv. Set Cell Power = -86 dBm
   v. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
   vi. Select HSDPA Uplink Parameters
   vii. Set Delta ACK, Delta NACK and Delta CQI = 8
   viii. Set Ack-Nack Repetition Factor to 3
   ix. Set CQI Feedback Cycle (k) to 4 ms
   x. Set CQI Repetition Factor to 2
   xi. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

Table 1

Sub-test	β_c	β_d	β_d *(SF)*	β_c/β_d	β_{hs} $^{(1)}$	CM (dB)$^{(2)}$
1	2/15	15/15	64	2/15	4/15	0.0
2	12/15$^{(3)}$	15/15$^{(3)}$	64	12/15$^{(3)}$	24/15	1.0
3	15/15	8/15	64	15/8	30/15	1.5
4	15/15	4/15	64	15/4	30/15	1.5

Note 1: Δ_{ACK}, Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$

Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15.

Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

HSDPA Sub-test setup configuration

HSUPA Setup Configuration:

a. The EUT was connected to Base Station Rohde & Schwarz CMW500 referred to the SetupConfiguration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting * :
   i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
   ii. Set the Gain Factors (βc and βd) and parameters (AG Index) were set according to each specific sub-test inthe following table, C11.1.3, quoted from the TS 34.121
   iii. Set Cell Power = -86 dBm
   iv. Set Channel Type = 12.2k + HSPA
   v. Set UE Target Power
   vi. Power Ctrl Mode= Alternating bits
   vii. Set and observe the E-TFCI
   viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

Table 2

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (1)	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (codes)	CM(2) (dB)	MPR (dB)	AG(4) Index	E-TFCI
1	11/15(3)	15/15(3)	64	11/15(3)	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1}: 47/15 β_{ed2}: 47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15(4)	15/15(4)	64	15/15(4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 8 ⇔ $A_{hs} = \beta_{hs}/\beta_c = 30/15$ ⇔ $\beta_{hs} = 30/15 * \beta_c$.
Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.
Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.
Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 14/15 and β_d = 15/15.
Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g.
Note 6: β_{ed} cannot be set directly; it is set by Absolute Grant Value.

HSUPA Sub-test setup configuration

Band		WCDMA II			Tune-up Limit (dBm)
TX Channel		9262	9400	9538	
Rx Channel		9662	9800	9938	
Frequency (MHz)		1852.4	1880	1907.6	
3GPP Rel 99	RMC 12.2Kbps	22.24	22.26	22.24	22.50
3GPP Rel 6	HSDPA Subtest-1	21.58	21.61	21.58	22.00
3GPP Rel 6	HSDPA Subtest-2	21.55	21.59	21.58	22.00
3GPP Rel 6	HSDPA Subtest-3	21.02	21.10	21.11	22.00
3GPP Rel 6	HSDPA Subtest-4	21.00	21.10	21.07	21.50
3GPP Rel 6	HSUPA Subtest-1	19.45	19.52	19.51	20.00
3GPP Rel 6	HSUPA Subtest-2	19.47	19.52	19.51	20.00
3GPP Rel 6	HSUPA Subtest-3	20.42	20.48	20.47	20.50
3GPP Rel 6	HSUPA Subtest-4	18.99	19.02	19.03	19.50
3GPP Rel 6	HSUPA Subtest-5	20.37	20.43	20.43	20.50
3GPP Rel 6	HSPA+ (16QAM) Subtest-1	19.28	19.51	19.26	20.00

Band		WCDMA IV			Tune-up Limit (dBm)
TX Channel		1312	1413	1513	
Rx Channel		1537	1638	1738	
Frequency (MHz)		1712.4	1732.6	1752.6	
3GPP Rel 99	RMC 12.2Kbps	22.21	22.13	22.03	22.50
3GPP Rel 6	HSDPA Subtest-1	21.23	21.34	21.23	21.50
3GPP Rel 6	HSDPA Subtest-2	21.24	21.32	21.20	21.50
3GPP Rel 6	HSDPA Subtest-3	20.74	20.82	20.70	21.00
3GPP Rel 6	HSDPA Subtest-4	20.70	20.81	20.69	21.00
3GPP Rel 6	HSUPA Subtest-1	19.28	19.32	19.25	19.50
3GPP Rel 6	HSUPA Subtest-2	19.28	19.29	19.21	19.50
3GPP Rel 6	HSUPA Subtest-3	20.21	20.25	20.21	20.50
3GPP Rel 6	HSUPA Subtest-4	18.80	18.85	18.76	19.00
3GPP Rel 6	HSUPA Subtest-5	20.20	20.22	20.16	20.50
3GPP Rel 6	HSPA+ (16QAM) Subtest-1	19.21	19.32	19.09	19.50

Band		WCDMA V			Tune-up Limit (dBm)
TX Channel		4132	4183	4233	
Rx Channel		4357	4408	4458	
Frequency (MHz)		826.4	836.6	846.6	
3GPP Rel 99	RMC 12.2Kbps	22.84	22.83	22.89	23.00
3GPP Rel 6	HSDPA Subtest-1	21.45	21.44	21.46	21.50
3GPP Rel 6	HSDPA Subtest-2	21.43	21.4	21.46	21.50
3GPP Rel 6	HSDPA Subtest-3	20.97	20.95	20.95	21.00
3GPP Rel 6	HSDPA Subtest-4	20.91	20.96	20.98	21.00
3GPP Rel 6	HSUPA Subtest-1	19.46	19.49	19.46	19.50
3GPP Rel 6	HSUPA Subtest-2	19.45	19.45	19.47	19.50
3GPP Rel 6	HSUPA Subtest-3	20.39	20.45	20.44	20.50
3GPP Rel 6	HSUPA Subtest-4	19.00	18.99	18.98	19.50
3GPP Rel 6	HSUPA Subtest-5	20.37	20.39	20.36	20.50
3GPP Rel 6	HSPA+ (16QAM) Subtest-1	19.29	19.28	19.27	19.50

10.3 LTE Conducted Power

10.3.1 Largest channel bandwidth standalone SAR test requirements

QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel.8 When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

QPSK with 50% RB allocation

The procedures required for 1 RB allocation in section 4.2.1 are applied to measure the SAR for QPSK with 50% RB allocation.9

QPSK with 100% RB allocation

For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in sections 4.2.1 and 4.2.2 are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

Higher order modulations

For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in sections 4.2.1, 5.2.2 and 4.2.3 to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section 4.2 to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg. The equivalent channel configuration for the RB allocation, RB offset and modulation etc. is determined for the smaller channel bandwidth according to the same number of RB allocated in the largest channel bandwidth. For example, 50 RB in 10 MHz channel bandwidth does not apply to 5 MHz channel bandwidth; therefore, this cannot be tested in the smaller channel bandwidth. However, 50% RB allocation in 10 MHz channel bandwidth is equivalent to 100% RB allocation in 5 MHz channel bandwidth; therefore, these are the equivalent configurations to be compared to determine the specific channel and configuration in the smaller channel bandwidth that need SAR testing.

<FDD LTE Band 2 >

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				18700	18900	19100	
Frequency (MHz)				1860	1880	1900	
20	QPSK	1	0	23.49	23.25	23.36	23.50
20	QPSK	1	49	23.24	23.21	23.33	
20	QPSK	1	99	23.12	23.12	23.25	
20	QPSK	50	0	22.45	22.43	22.38	22.50
20	QPSK	50	24	22.21	22.35	22.28	
20	QPSK	50	50	22.19	22.14	22.46	
20	QPSK	100	0	22.22	22.23	22.34	
20	16QAM	1	0	22.66	22.64	22.84	23.00
20	16QAM	1	49	22.57	22.52	22.74	
20	16QAM	1	99	22.49	22.45	22.66	
20	16QAM	50	0	21.18	21.16	21.28	21.50
20	16QAM	50	24	21.19	21.20	21.18	
20	16QAM	50	50	21.15	21.30	21.29	
20	16QAM	100	0	21.11	21.23	21.27	
20	64QAM	1	0	22.21	22.16	22.19	22.50
20	64QAM	1	49	22.21	22.11	22.00	
20	64QAM	1	99	21.83	21.76	21.86	
20	64QAM	50	0	21.25	21.12	21.33	21.50
20	64QAM	50	24	21.22	21.15	21.19	
20	64QAM	50	50	21.20	21.18	21.25	
20	64QAM	100	0	21.14	21.11	21.39	
Channel				18675	18900	19125	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	QPSK	1	0	23.18	23.18	23.18	23.50
15	QPSK	1	37	23.09	23.31	23.42	
15	QPSK	1	74	23.08	23.04	23.09	
15	QPSK	36	0	22.22	22.24	22.19	22.50
15	QPSK	36	20	22.30	22.25	22.15	
15	QPSK	36	39	21.99	22.34	22.21	

15	QPSK	75	0	22.20	22.17	22.27	
15	16QAM	1	0	22.56	22.45	22.46	23.00
15	16QAM	1	37	22.81	22.82	22.56	
15	16QAM	1	74	22.47	22.51	22.41	
15	16QAM	36	0	21.28	21.25	21.15	21.50
15	16QAM	36	20	21.33	21.37	21.24	
15	16QAM	36	39	21.09	21.15	21.20	
15	16QAM	75	0	21.23	21.22	21.19	
15	64QAM	1	0	22.57	22.66	22.51	23.00
15	64QAM	1	37	22.42	22.46	22.21	
15	64QAM	1	74	22.56	22.30	22.60	
15	64QAM	36	0	21.29	21.15	21.24	21.50
15	64QAM	36	20	21.19	21.14	21.23	
15	64QAM	36	39	21.24	21.13	21.11	
15	64QAM	75	0	21.32	21.19	21.31	
Channel				18650	18900	19150	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	QPSK	1	0	23.23	23.16	23.28	23.50
10	QPSK	1	25	23.33	23.45	23.17	
10	QPSK	1	49	23.10	23.19	23.05	
10	QPSK	25	0	22.28	22.15	22.14	22.50
10	QPSK	25	12	22.31	22.21	22.22	
10	QPSK	25	25	22.34	22.22	22.21	
10	QPSK	50	0	22.25	22.30	22.24	
10	16QAM	1	0	22.61	22.20	22.34	23.00
10	16QAM	1	25	22.46	22.66	22.40	
10	16QAM	1	49	22.64	22.60	22.28	
10	16QAM	25	0	21.25	21.27	21.11	21.50
10	16QAM	25	12	21.28	21.15	21.10	
10	16QAM	25	25	21.21	21.35	21.30	
10	16QAM	50	0	21.17	21.26	21.16	
10	64QAM	1	0	22.74	22.28	22.39	23.00
10	64QAM	1	25	22.67	22.67	22.45	
10	64QAM	1	49	22.39	22.39	22.35	
10	64QAM	25	0	21.20	21.09	21.19	22.00
10	64QAM	25	12	21.25	21.14	21.14	
10	64QAM	25	25	21.51	21.11	21.21	
10	64QAM	50	0	21.14	21.24	21.18	
Channel				18625	18900	19175	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	QPSK	1	0	23.24	23.32	23.04	23.50
5	QPSK	1	12	23.34	23.43	23.21	
5	QPSK	1	24	23.22	23.04	23.12	
5	QPSK	12	0	22.21	22.15	22.05	22.50

5	QPSK	12	7	22.27	22.14	22.09	
5	QPSK	12	13	22.15	22.27	22.05	
5	QPSK	25	0	22.30	22.17	22.14	
5	16QAM	1	0	22.65	22.38	22.70	23.00
5	16QAM	1	12	22.61	22.37	22.67	
5	16QAM	1	24	22.59	22.23	22.53	
5	16QAM	12	0	21.15	21.14	20.99	21.50
5	16QAM	12	7	21.31	21.20	21.12	
5	16QAM	12	13	21.16	21.28	21.06	
5	16QAM	25	0	21.20	21.15	21.16	
5	64QAM	1	0	22.59	22.56	22.44	23.00
5	64QAM	1	12	22.63	22.53	22.35	
5	64QAM	1	24	22.42	22.41	22.31	
5	64QAM	12	0	21.20	21.19	20.93	21.50
5	64QAM	12	7	21.23	21.32	21.21	
5	64QAM	12	13	21.19	21.13	21.14	
5	64QAM	25	0	21.22	21.24	21.06	
Channel				18615	18900	19185	Tune-up limit (dBm)
Frequency (MHz)				1851.5	1880	1908.5	
3	QPSK	1	0	23.25	23.15	23.12	23.50
3	QPSK	1	8	23.14	23.22	23.08	
3	QPSK	1	14	23.23	23.22	22.98	
3	QPSK	8	0	22.31	22.18	22.03	22.50
3	QPSK	8	4	22.33	22.25	22.05	
3	QPSK	8	7	22.29	22.20	22.07	
3	QPSK	15	0	22.33	22.23	22.17	
3	16QAM	1	0	22.48	22.25	22.16	22.50
3	16QAM	1	8	22.33	22.20	22.46	
3	16QAM	1	14	22.44	22.17	22.42	
3	16QAM	8	0	21.39	21.13	21.19	21.50
3	16QAM	8	4	21.21	21.32	21.05	
3	16QAM	8	7	21.29	21.23	21.07	
3	16QAM	15	0	21.36	21.16	21.01	
3	64QAM	1	0	22.64	22.65	22.18	22.50
3	64QAM	1	8	22.38	22.63	22.13	
3	64QAM	1	14	22.32	22.53	22.23	
3	64QAM	8	0	21.23	21.24	21.12	21.50
3	64QAM	8	4	21.24	21.10	21.06	
3	64QAM	8	7	21.45	21.12	21.01	
3	64QAM	15	0	21.16	21.20	20.98	
Channel				18607	18900	19193	Tune-up limit (dBm)
Frequency (MHz)				1850.7	1880	1909.3	
1.4	QPSK	1	0	23.28	23.10	23.00	23.50
1.4	QPSK	1	3	23.28	23.43	23.11	

1.4	QPSK	1	5	23.16	23.17	23.00	
1.4	QPSK	3	0	23.29	23.21	23.17	
1.4	QPSK	3	1	23.38	23.28	23.28	
1.4	QPSK	3	3	23.28	23.19	23.25	
1.4	QPSK	6	0	22.30	22.17	22.12	22.50
1.4	16QAM	1	0	22.46	22.79	22.39	23.00
1.4	16QAM	1	3	22.37	22.67	22.38	
1.4	16QAM	1	5	22.36	22.53	22.31	
1.4	16QAM	3	0	22.24	22.15	22.04	
1.4	16QAM	3	1	22.26	22.13	22.22	
1.4	16QAM	3	3	22.28	22.04	22.14	
1.4	16QAM	6	0	21.43	21.19	21.22	21.50
1.4	64QAM	1	0	22.31	22.18	21.87	22.50
1.4	64QAM	1	3	22.33	22.23	22.05	
1.4	64QAM	1	5	22.28	22.15	21.83	
1.4	64QAM	3	0	22.35	22.47	22.12	
1.4	64QAM	3	1	22.35	22.42	22.11	
1.4	64QAM	3	3	22.31	22.19	22.09	
1.4	64QAM	6	0	21.33	21.14	21.18	21.50

<FDD LTE Band 4 >

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				20050	20175	20300	
Frequency (MHz)				1720	1732.5	1745	
20	QPSK	1	0	23.00	22.98	22.97	23.50
20	QPSK	1	49	23.22	22.82	23.24	
20	QPSK	1	99	22.88	22.81	22.75	
20	QPSK	50	0	22.02	21.96	22.01	22.50
20	QPSK	50	24	22.05	21.98	22.09	
20	QPSK	50	50	21.91	22.03	22.00	
20	QPSK	100	0	22.06	21.98	22.07	
20	16QAM	1	0	22.35	22.43	22.34	22.50
20	16QAM	1	49	22.29	22.33	22.44	
20	16QAM	1	99	22.14	21.99	22.20	
20	16QAM	50	0	21.04	21.09	21.10	21.50
20	16QAM	50	24	21.02	21.05	21.01	
20	16QAM	50	50	21.05	21.08	20.98	
20	16QAM	100	0	21.02	21.02	21.07	
20	64QAM	1	0	21.99	22.06	21.74	22.50
20	64QAM	1	49	22.05	22.00	22.00	
20	64QAM	1	99	21.57	21.67	21.58	
20	64QAM	50	0	20.99	21.09	21.07	21.50
20	64QAM	50	24	21.08	20.97	21.00	

20	64QAM	50	50	21.04	21.02	21.05	
20	64QAM	100	0	20.98	21.03	20.98	
Channel				20025	20175	20325	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1732.5	1747.5	
15	QPSK	1	0	22.98	22.96	22.95	23.50
15	QPSK	1	37	23.20	22.80	23.22	
15	QPSK	1	74	22.86	22.79	22.73	
15	QPSK	36	0	22.00	21.94	21.99	22.50
15	QPSK	36	20	22.07	21.96	22.02	
15	QPSK	36	39	21.89	22.01	21.98	
15	QPSK	75	0	22.04	21.96	22.05	
15	16QAM	1	0	22.33	22.41	22.32	22.50
15	16QAM	1	37	22.27	22.31	22.42	
15	16QAM	1	74	22.12	21.97	22.18	
15	16QAM	36	0	21.02	21.07	21.08	21.50
15	16QAM	36	20	21.00	21.03	20.99	
15	16QAM	36	39	21.03	21.06	20.96	
15	16QAM	75	0	21.00	21.00	21.05	
15	64QAM	1	0	21.97	22.04	21.72	22.00
15	64QAM	1	37	22.03	21.98	21.98	
15	64QAM	1	74	21.55	21.65	21.56	
15	64QAM	36	0	20.97	21.07	21.05	21.50
15	64QAM	36	20	21.06	20.95	20.98	
15	64QAM	36	39	21.02	21.00	21.03	
15	64QAM	75	0	20.96	21.01	20.96	
Channel				20000	20175	20350	Tune-up limit (dBm)
Frequency (MHz)				1715	1732.5	1750	
10	QPSK	1	0	22.96	22.95	23.03	23.50
10	QPSK	1	25	23.12	23.02	23.23	
10	QPSK	1	49	22.86	23.03	22.99	
10	QPSK	25	0	22.00	22.09	22.12	22.50
10	QPSK	25	12	22.03	22.16	22.01	
10	QPSK	25	25	22.08	22.02	22.02	
10	QPSK	50	0	22.04	22.12	21.92	
10	16QAM	1	0	22.43	22.06	22.20	22.50
10	16QAM	1	25	22.18	22.48	22.41	
10	16QAM	1	49	22.16	22.39	22.11	
10	16QAM	25	0	21.01	21.24	21.14	21.50
10	16QAM	25	12	21.18	21.12	21.13	
10	16QAM	25	25	21.22	21.03	20.99	
10	16QAM	50	0	21.18	21.11	21.01	
10	64QAM	1	0	22.10	22.35	21.90	22.50
10	64QAM	1	25	22.32	22.16	22.20	
10	64QAM	1	49	21.86	21.95	21.96	

10	64QAM	25	0	21.09	21.12	21.04	21.50
10	64QAM	25	12	21.11	21.16	21.11	
10	64QAM	25	25	21.06	21.08	21.16	
10	64QAM	50	0	21.23	21.03	20.99	
Channel				19975	20175	20375	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1732.5	1752.5	
5	QPSK	1	0	22.88	22.87	22.90	23.50
5	QPSK	1	12	23.17	23.08	22.99	
5	QPSK	1	24	22.89	22.90	22.86	
5	QPSK	12	0	21.99	22.01	21.95	22.50
5	QPSK	12	7	22.06	22.06	22.02	
5	QPSK	12	13	22.06	21.89	21.87	
5	QPSK	25	0	22.10	21.96	22.00	
5	16QAM	1	0	22.15	22.19	22.20	22.50
5	16QAM	1	12	22.20	22.45	22.43	
5	16QAM	1	24	22.06	22.25	22.19	
5	16QAM	12	0	21.03	21.09	20.99	21.50
5	16QAM	12	7	21.13	21.24	21.05	
5	16QAM	12	13	21.06	21.00	21.03	
5	16QAM	25	0	21.20	21.15	21.13	
5	64QAM	1	0	21.78	21.74	22.23	22.50
5	64QAM	1	12	22.23	22.22	22.16	
5	64QAM	1	24	21.88	21.91	21.89	
5	64QAM	12	0	20.98	21.03	21.10	21.50
5	64QAM	12	7	21.14	21.17	20.93	
5	64QAM	12	13	21.08	20.92	20.95	
5	64QAM	25	0	20.99	21.12	20.94	
Channel				19965	20175	20385	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1732.5	1753.5	
3	QPSK	1	0	22.90	22.89	22.92	23.50
3	QPSK	1	8	23.19	23.10	23.01	
3	QPSK	1	14	22.91	22.92	22.88	
3	QPSK	8	0	22.01	22.03	21.97	22.50
3	QPSK	8	4	22.08	22.08	22.04	
3	QPSK	8	7	22.08	21.91	21.89	
3	QPSK	15	0	22.12	21.98	22.02	
3	16QAM	1	0	22.17	22.21	22.22	22.50
3	16QAM	1	8	22.22	22.47	22.45	
3	16QAM	1	14	22.08	22.27	22.21	
3	16QAM	8	0	21.05	21.11	21.01	21.50
3	16QAM	8	4	21.15	21.26	21.07	
3	16QAM	8	7	21.08	21.02	21.05	
3	16QAM	15	0	21.22	21.17	21.15	
3	64QAM	1	0	21.80	21.76	22.25	22.50

3	64QAM	1	8	22.25	22.24	22.18	
3	64QAM	1	14	21.90	21.93	21.91	
3	64QAM	8	0	21.00	21.05	21.12	21.50
3	64QAM	8	4	21.16	21.19	20.95	
3	64QAM	8	7	21.10	20.94	20.97	
3	64QAM	15	0	21.01	21.14	20.96	
Channel				19957	20175	20393	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1732.5	1754.3	
1.4	QPSK	1	0	22.95	22.86	22.79	23.50
1.4	QPSK	1	3	23.10	23.08	23.04	
1.4	QPSK	1	5	22.87	22.93	22.84	
1.4	QPSK	3	0	23.05	23.06	23.00	
1.4	QPSK	3	1	23.16	23.14	22.89	
1.4	QPSK	3	3	22.97	23.01	22.89	
1.4	QPSK	6	0	22.04	21.95	21.84	22.50
1.4	16QAM	1	0	22.15	21.85	22.15	22.50
1.4	16QAM	1	3	21.95	22.16	22.23	
1.4	16QAM	1	5	21.99	21.80	22.09	
1.4	16QAM	3	0	21.96	22.04	21.76	
1.4	16QAM	3	1	21.90	22.08	22.00	
1.4	16QAM	3	3	22.02	22.00	21.84	
1.4	16QAM	6	0	21.33	21.01	20.97	21.50
1.4	64QAM	1	0	21.91	22.27	21.98	22.50
1.4	64QAM	1	3	22.08	22.32	22.27	
1.4	64QAM	1	5	22.05	21.94	21.89	
1.4	64QAM	3	0	22.20	22.02	21.98	
1.4	64QAM	3	1	22.01	22.20	22.13	
1.4	64QAM	3	3	21.93	22.23	21.77	
1.4	64QAM	6	0	20.95	21.11	21.19	21.50

<FDD LTE Band 5 >

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				20450	20525	20600	
Frequency (MHz)				829	836.5	844	
10	QPSK	1	0	21.66	21.93	21.73	22.00
10	QPSK	1	25	21.60	21.80	21.87	
10	QPSK	1	49	21.89	21.77	21.84	
10	QPSK	25	0	20.82	20.78	20.88	21.00
10	QPSK	25	12	20.85	20.83	20.90	
10	QPSK	25	25	20.88	20.98	20.83	
10	QPSK	50	0	20.95	20.94	20.89	
10	16QAM	1	0	20.79	20.78	20.77	21.50

10	16QAM	1	25	21.24	21.18	20.84	
10	16QAM	1	49	20.75	20.87	21.23	
10	16QAM	25	0	19.80	19.78	19.88	20.50
10	16QAM	25	12	19.86	19.83	19.96	
10	16QAM	25	25	20.01	19.91	20.02	
10	16QAM	50	0	19.98	19.86	19.84	
10	64QAM	1	0	20.68	21.01	20.82	21.50
10	64QAM	1	25	21.13	21.10	20.68	
10	64QAM	1	49	20.87	20.76	20.90	
10	64QAM	25	0	19.87	19.84	19.94	20.00
10	64QAM	25	12	19.87	19.82	19.86	
10	64QAM	25	25	19.98	19.80	19.90	
10	64QAM	50	0	19.99	19.93	19.95	
Channel				20425	20525	20625	Tune-up limit (dBm)
Frequency (MHz)				826.5	836.5	846.5	
5	QPSK	1	0	21.65	21.66	21.58	22.00
5	QPSK	1	12	21.71	21.81	21.81	
5	QPSK	1	24	21.74	21.61	21.79	
5	QPSK	12	0	20.72	20.70	20.73	21.00
5	QPSK	12	7	20.77	20.79	20.84	
5	QPSK	12	13	20.74	20.82	20.86	
5	QPSK	25	0	20.84	20.70	20.88	
5	16QAM	1	0	20.88	20.91	21.18	21.50
5	16QAM	1	12	20.86	20.87	21.35	
5	16QAM	1	24	20.85	20.92	20.86	
5	16QAM	12	0	19.72	19.78	19.96	20.00
5	16QAM	12	7	19.82	19.90	19.99	
5	16QAM	12	13	19.77	19.81	19.97	
5	16QAM	25	0	19.98	19.77	19.85	
5	64QAM	1	0	20.98	21.04	20.75	21.50
5	64QAM	1	12	20.64	21.06	21.03	
5	64QAM	1	24	20.60	20.57	20.65	
5	64QAM	12	0	19.77	19.76	19.87	20.00
5	64QAM	12	7	19.79	19.72	19.90	
5	64QAM	12	13	19.95	19.93	19.86	
5	64QAM	25	0	19.85	19.98	19.86	
Channel				20415	20525	20635	Tune-up limit (dBm)
Frequency (MHz)				825.5	836.5	847.5	
3	QPSK	1	0	21.81	21.68	21.71	22.00
3	QPSK	1	8	21.74	21.67	21.83	
3	QPSK	1	14	21.75	21.69	21.86	
3	QPSK	8	0	20.79	20.72	20.92	21.00
3	QPSK	8	4	20.75	20.91	20.96	
3	QPSK	8	7	20.72	20.73	20.85	

3	QPSK	15	0	20.64	20.78	20.85	
3	16QAM	1	0	20.84	21.20	20.99	21.50
3	16QAM	1	8	20.80	21.11	21.23	
3	16QAM	1	14	20.77	21.01	21.26	
3	16QAM	8	0	19.96	19.84	20.11	20.50
3	16QAM	8	4	19.88	19.90	20.10	
3	16QAM	8	7	19.93	19.80	20.07	
3	16QAM	15	0	19.86	19.92	19.77	
3	64QAM	1	0	20.82	20.84	21.18	21.50
3	64QAM	1	8	21.03	20.84	21.24	
3	64QAM	1	14	20.87	20.85	21.28	
3	64QAM	8	0	19.86	19.80	19.99	20.00
3	64QAM	8	4	19.88	19.88	19.98	
3	64QAM	8	7	19.76	19.80	19.80	
3	64QAM	15	0	19.74	19.80	19.97	
Channel				20407	20525	20643	Tune-up limit (dBm)
Frequency (MHz)				824.7	836.5	848.3	
1.4	QPSK	1	0	21.70	21.61	21.71	22.00
1.4	QPSK	1	3	21.65	21.61	21.77	
1.4	QPSK	1	5	21.55	21.60	21.71	
1.4	QPSK	3	0	21.66	21.66	21.76	
1.4	QPSK	3	1	21.67	21.74	21.91	
1.4	QPSK	3	3	21.61	21.75	21.82	
1.4	QPSK	6	0	20.68	20.64	20.91	21.00
1.4	16QAM	1	0	20.73	20.64	21.12	21.50
1.4	16QAM	1	3	20.72	20.88	21.13	
1.4	16QAM	1	5	20.73	20.96	20.68	
1.4	16QAM	3	0	20.52	20.70	20.82	
1.4	16QAM	3	1	20.68	20.69	20.86	
1.4	16QAM	3	3	20.65	20.62	20.79	
1.4	16QAM	6	0	19.88	19.96	19.83	20.00
1.4	64QAM	1	0	20.62	20.63	20.49	21.00
1.4	64QAM	1	3	20.56	20.85	20.91	
1.4	64QAM	1	5	20.58	20.73	20.74	
1.4	64QAM	3	0	20.57	20.74	20.85	
1.4	64QAM	3	1	20.76	20.55	21.00	
1.4	64QAM	3	3	20.54	20.74	20.79	
1.4	64QAM	6	0	19.64	19.81	19.86	20.00

<FDD LTE Band 7 >

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				20850	21100	21350	
Frequency (MHz)				2510	2535	2560	
20	QPSK	1	0	20.46	20.87	20.52	21.00
20	QPSK	1	49	20.46	20.72	20.57	
20	QPSK	1	99	20.32	20.44	20.52	
20	QPSK	50	0	19.42	19.91	19.73	20.00
20	QPSK	50	24	19.50	19.69	19.74	
20	QPSK	50	50	19.59	19.59	19.51	
20	QPSK	100	0	19.43	19.70	19.84	
20	16QAM	1	0	19.10	19.52	19.89	20.50
20	16QAM	1	49	19.93	20.20	19.79	
20	16QAM	1	99	19.81	19.63	19.70	
20	16QAM	50	0	18.54	18.59	18.82	19.50
20	16QAM	50	24	18.55	18.78	18.77	
20	16QAM	50	50	18.65	18.66	19.00	
20	16QAM	100	0	18.57	18.67	18.81	
20	64QAM	1	0	19.28	19.68	19.54	20.00
20	64QAM	1	49	19.38	19.96	19.90	
20	64QAM	1	99	19.39	19.58	19.74	
20	64QAM	50	0	18.56	18.50	18.76	19.00
20	64QAM	50	24	18.62	18.78	18.82	
20	64QAM	50	50	18.55	18.74	18.87	
20	64QAM	100	0	18.58	18.69	18.86	
Channel				20825	21100	21375	Tune-up limit (dBm)
Frequency (MHz)				2507.5	2535	2562.5	
15	QPSK	1	0	20.31	20.48	20.72	21.00
15	QPSK	1	37	20.57	20.83	20.81	

15	QPSK	1	74	20.49	20.57	20.81	
15	QPSK	36	0	19.54	19.69	19.83	20.00
15	QPSK	36	20	19.55	19.66	19.78	
15	QPSK	36	39	19.56	19.73	19.85	
15	QPSK	75	0	19.51	19.68	19.85	
15	16QAM	1	0	19.59	19.84	19.57	20.50
15	16QAM	1	37	19.91	20.13	20.46	
15	16QAM	1	74	19.77	19.74	19.87	
15	16QAM	36	0	18.63	18.75	18.79	19.00
15	16QAM	36	20	18.64	18.77	18.93	
15	16QAM	36	39	18.59	18.75	18.89	
15	16QAM	75	0	18.58	18.73	18.90	
15	64QAM	1	0	19.56	19.66	19.48	20.50
15	64QAM	1	37	19.80	20.19	20.07	
15	64QAM	1	74	19.76	19.98	19.89	
15	64QAM	36	0	18.55	18.67	18.91	19.50
15	64QAM	36	20	18.70	18.71	18.93	
15	64QAM	36	39	18.71	18.79	19.00	
15	64QAM	75	0	18.61	18.73	18.87	
Channel				20800	21100	21400	Tune-up limit (dBm)
Frequency (MHz)				2505	2535	2565	
10	QPSK	1	0	20.47	20.60	20.65	21.00
10	QPSK	1	25	20.61	20.81	20.80	
10	QPSK	1	49	20.55	20.65	20.83	
10	QPSK	25	0	19.51	19.72	19.87	20.00
10	QPSK	25	12	19.61	19.68	19.83	
10	QPSK	25	25	19.61	19.68	19.86	
10	QPSK	50	0	19.61	19.71	19.90	
10	16QAM	1	0	19.97	19.82	20.24	20.50
10	16QAM	1	25	19.95	19.82	20.04	
10	16QAM	1	49	19.96	20.13	20.27	

10	16QAM	25	0	18.49	18.62	18.92	19.50
10	16QAM	25	12	18.66	18.75	18.94	
10	16QAM	25	25	18.79	18.84	19.01	
10	16QAM	50	0	18.62	18.71	18.97	
10	64QAM	1	0	19.43	19.50	20.10	20.50
10	64QAM	1	25	19.76	19.79	19.93	
10	64QAM	1	49	19.63	19.60	20.06	
10	64QAM	25	0	18.59	18.73	18.84	19.50
10	64QAM	25	12	18.67	18.80	19.00	
10	64QAM	25	25	18.65	18.92	18.90	
10	64QAM	50	0	18.51	18.69	18.84	
Channel				20775	21100	21425	Tune-up limit (dBm)
Frequency (MHz)				2502.5	2535	2567.5	
5	QPSK	1	0	20.41	20.37	20.66	21.00
5	QPSK	1	12	20.73	20.83	20.81	
5	QPSK	1	24	20.44	20.42	20.76	
5	QPSK	12	0	19.43	19.58	19.82	20.00
5	QPSK	12	7	19.49	19.66	19.82	
5	QPSK	12	13	19.50	19.69	19.81	
5	QPSK	25	0	19.50	19.66	19.79	
5	16QAM	1	0	19.51	19.73	19.81	20.50
5	16QAM	1	12	20.11	20.20	20.25	
5	16QAM	1	24	19.59	19.83	19.83	
5	16QAM	12	0	18.53	18.56	18.90	19.50
5	16QAM	12	7	18.63	18.79	19.00	
5	16QAM	12	13	18.62	18.73	18.83	
5	16QAM	25	0	18.52	18.57	18.86	
5	64QAM	1	0	19.31	19.64	19.51	20.00
5	64QAM	1	12	19.75	19.78	19.94	
5	64QAM	1	24	19.39	19.63	19.62	
5	64QAM	12	0	18.48	18.62	18.78	19.00

5	64QAM	12	7	18.67	18.84	19.02	
5	64QAM	12	13	18.56	18.58	18.87	
5	64QAM	25	0	18.50	18.67	18.92	

➢ **WLAN 2.4 GHz Conducted Power**

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Power Setting	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	CH 1	2412	12.84	13.00	15.00	100.00
		CH 6	2437	12.87	13.00	15.00	
		CH 7	2442	12.86	13.00	15.00	
		CH 11	2462	12.89	13.00	15.00	
		CH 13	2472	12.88	13.00	15.00	
	802.11g 6Mbps	CH 1	2412	10.82	11.00	12.50	97.54
		CH 6	2437	10.88	11.00	12.50	
		CH 7	2442	10.85	11.00	12.50	
		CH 11	2462	10.72	11.00	12.50	
		CH 13	2472	10.70	11.00	12.50	
	802.11n-HT20 MCS0	CH 1	2412	10.82	11.00	12.50	97.38
		CH 6	2437	10.91	11.00	12.50	
		CH 7	2442	10.92	11.00	12.50	
		CH 11	2462	10.71	11.00	12.50	
		CH 13	2472	10.70	11.00	12.50	
	802.11n-HT40 MCS0	CH 3	2422	10.65	11.00	12.50	94.74
		CH 6	2442	10.66	11.00	12.50	
		CH 9	2452	10.61	11.00	12.50	
		CH 12	2467	10.60	11.00	12.50	

Note:

1. Per KDB 447498 D01v06, the 1-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤50 mm are determined by:
   [(*max. power of channel, including tune-up tolerance, mW*)/ (*min. test separation distance, mm*)] · [√f(GHz)] ≤ 3.0 for1-g SAR, where
   - f(GHz) is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation
   - The result is rounded to one decimal place for comparison

Channel	Frequency (GHz)	Max. Tune-up Power (dBm)	Max. Power (mW)	Test distance (mm)	Result	exclusion thresholds for 1-g SAR
b/CH 11	2.462	13.00	19.95	5	6.26	3.0
n-20/CH 07	2.442	11.00	12.59	5	3.93	3.0

2. Base on the result of note1, RF exposure evaluation of 802.11 b and g mode is required.
3. Per KDB 248227 D01v02r02, choose the highest output power channel to test SAR and determine further SAR exclusion.
4. Per KDB 248227 D01v02r02, In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements.SAR is not required for the following 2.4 GHz OFDM conditions:
   1) When KDB Publication 447498 SAR test exclusion applies to the OFDM configuration.
   2) When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
5. The output power of all data rate were pre-scan, just the worst case (the lowest data rate) of all mode were shown in report.

- **Bluetooth Conducted Power**

Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
BR / EDR	CH 00	2402	3.42	0.77	0.80
	CH 39	2441	2.98	0.38	0.77
	CH 78	2480	1.89	-0.96	-0.92
Tune-up Limit (dBm)			3.50	-0.50	-0.50

Mode	Channel	Frequency (MHz)	Average power (dBm)
			GFSK
BLE	CH 00	2402	1.86
	CH 19	2440	1.23
	CH 39	2480	0.36
Tune-up Limit (dBm)			2.00

Note:

1. Per KDB 447498 D01v06, the 1-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:
   [(*max. power of channel, including tune-up tolerance, mW*) / (*min. test separation distance, mm*)] · [√f(GHz)] ≤ 3.0 for 1-g SAR, where
   - f(GHz) is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation
   - The result is rounded to one decimal place for comparison

Channel	Frequency (GHz)	Max. tune-up Power (dBm)	Max. Power (mW)	Test distance (mm)	Result	exclusion thresholds for 1-g SAR
CH 00	2.402	3.5	2.24	5	0.69	3.0

2. The max. tune-up power was provided by manufacturer, base on the result of note 1, RF exposure evaluation is not required.
3. The output power of all data rate were pre-scan, just the worst case of all mode were shown in report.
4. When the minimum *test separation distance* is < 5 mm, a distance of 5 mm according is applied to determine SAR test exclusion.

11 Exposure Positions Consideration

11.1 EUT Antenna Location

Note: Please see Annex B

11.2 Test Positions Consideration

Distance of Antennas to EUT edge/surface Test distance: 10mm						
Antennas	**Back**	**Front**	**Top Side**	**Bottom Side**	**Right Side**	**Left Side**
GSM/WCDMA/LTE	<25mm	<25mm	145mm	<25mm	<25mm	<25mm
WLAN/Bluetooth	<25mm	<25mm	<25mm	146mm	<25mm	45mm

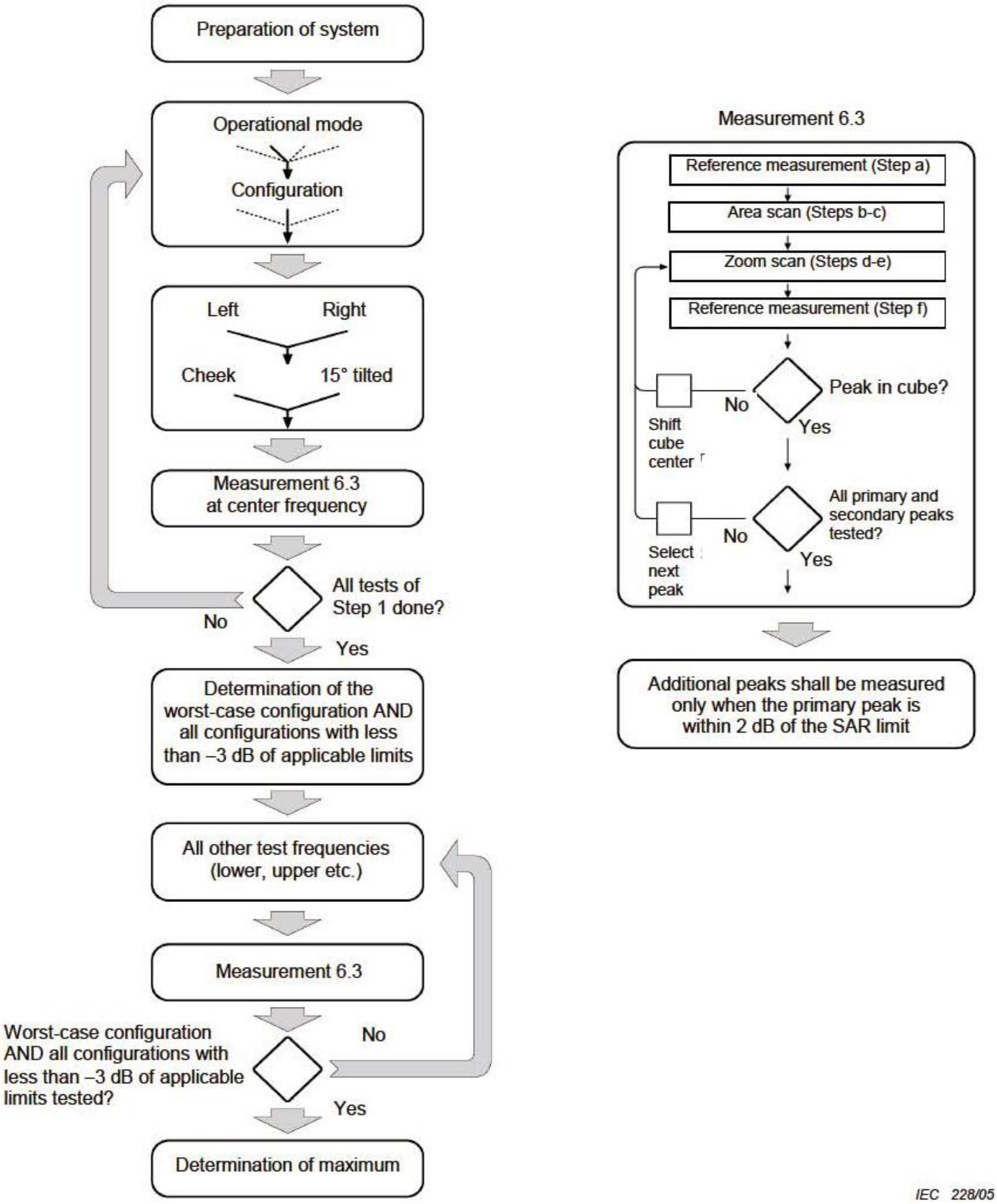
Test Positions Test distance: 10mm						
Antennas	**Back**	**Front**	**Top Side**	**Bottom Side**	**Right Side**	**Left Side**
GSM/WCDMA/LTE	Yes	Yes	No	Yes	Yes	Yes
WLAN/Bluetooth	Yes	Yes	Yes	No	No	Yes

Note:

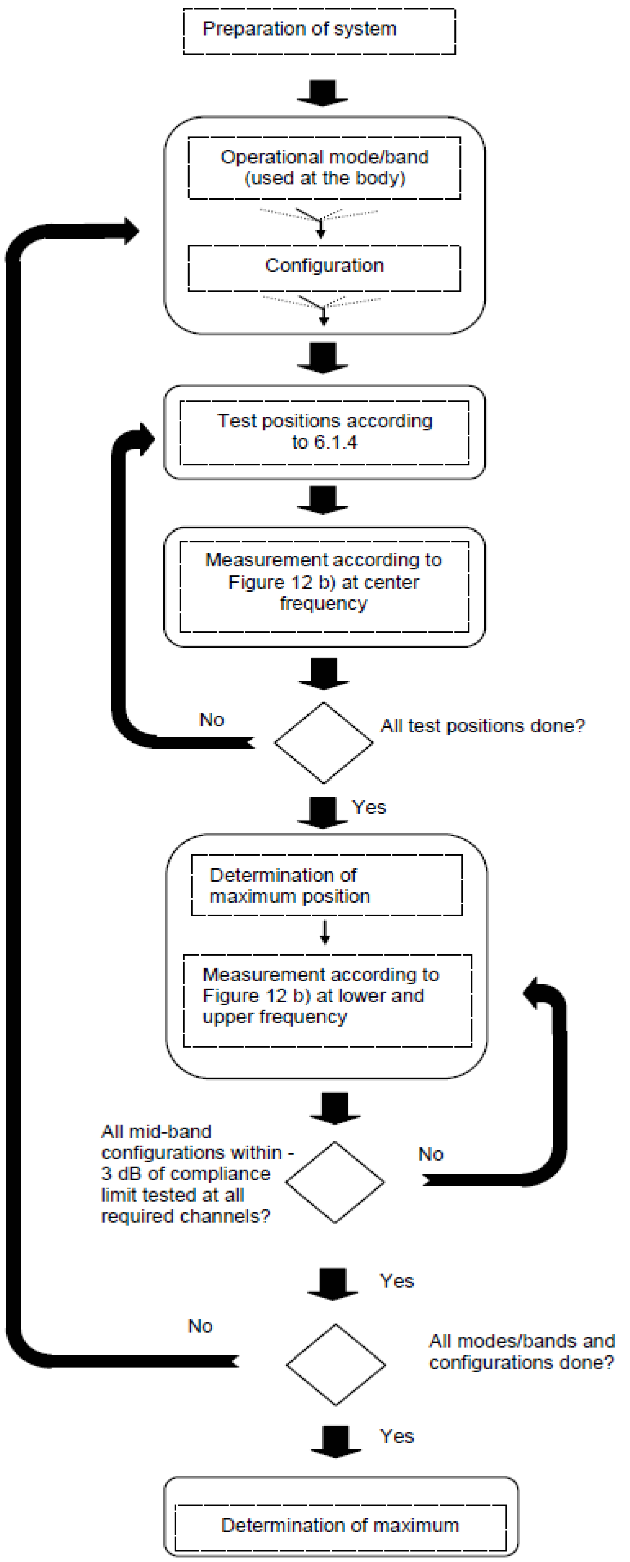
1. Head/Body-worn/hotspot mode SAR assessments are required.
2. Per KDB 447498 D01v06, for handsets the test separation distance is determined by the smallest distance between the outer surface of the device and the user, which is 0 mm for head SAR and 10 mm for body-worn and hotspot SAR.

12 Block diagram of the tests to be performed

12.1 Head



12.2 Body



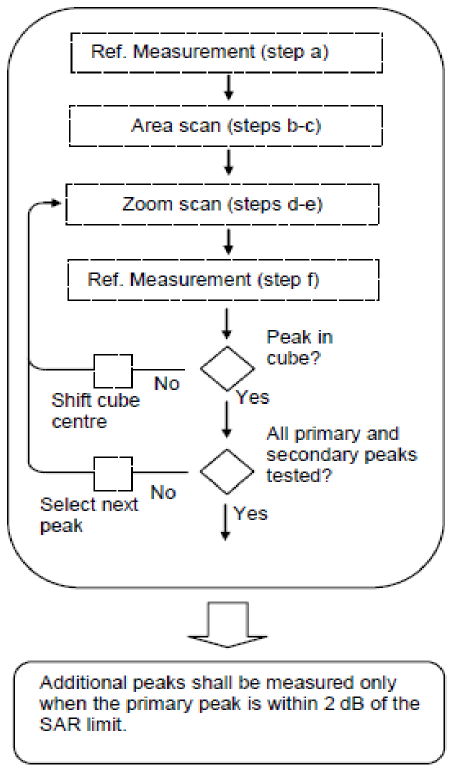


Figure 12b – General procedure

13 Test Guidance

1. The reported SAR is the measured SAR value adjusted for maximumtune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum ratedpower among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scalingfactor which is equal to "1/(duty cycle)"
   c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   d. For WLAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
2. Per KDB 447498 D01v06, for each exposure position, if the highest output power channel Reported SAR ≤ 0.8W/kg, other channels SAR testing is not necessary.
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required when the measured SAR is ≥ 0.8W/kg.
4. Per KDB 941225 D05v02r05, 100% RB allocation SAR measurement is not required when the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg.
5. Per KDB 248227 D01v02r02, for 802.11b DSSS , when the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required in that exposure configuration.
6. Per KDB 648474 D04v01r03, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, SAR testing with a headset connected to the handset is not required.

14 SAR Test Results Summary

14.1 Standalone Head SAR

➢ **GSM Head SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
	GSM850/4Tx slots	Right Cheek	189	28.39	28.50	1.026	0.646	0.663
	GSM850/4Tx slots	Right Tilt	189	28.39	28.50	1.026	0.540	0.554
1#	GSM850/4Tx slots	Left Cheek	189	28.39	28.50	1.026	0.676	0.693
	GSM850/4Tx slots	Left Tilt	189	28.39	28.50	1.026	0.482	0.494
	GSM1900/4Tx slots	Right Cheek	661	25.61	26.00	1.094	0.143	0.156
	GSM1900/4Tx slots	Right Tilt	661	25.61	26.00	1.094	0.044	0.048
2#	GSM1900/4Tx slots	Left Cheek	661	25.61	26.00	1.094	0.190	0.208
	GSM1900/4Tx slots	Left Tilt	661	25.61	26.00	1.094	0.024	0.026

➢ **WCDMA Head SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
3#	Band II/RMC	Right Cheek	9400	22.26	22.50	1.057	0.153	0.162
	Band II/RMC	Right Tilt	9400	22.26	22.50	1.057	0.026	0.028
	Band II/RMC	Left Cheek	9400	22.26	22.50	1.057	0.143	0.151
	Band II/RMC	Left Tilt	9400	22.26	22.50	1.057	0.050	0.053
	Band IV/RMC	Right Cheek	1312	22.21	22.50	1.069	0.154	0.165
	Band IV/RMC	Right Tilt	1312	22.21	22.50	1.069	0.066	0.071
4#	Band IV/RMC	Left Cheek	1312	22.21	22.50	1.069	0.191	0.204
	Band IV/RMC	Left Tilt	1312	22.21	22.50	1.069	0.046	0.049
	Band V/RMC	Right Cheek	4233	22.89	23.00	1.026	0.337	0.346
	Band V/RMC	Right Tilt	4233	22.89	23.00	1.026	0.276	0.283
5#	Band V/RMC	Left Cheek	4233	22.89	23.00	1.026	0.358	0.367
	Band V/RMC	Left Tilt	4233	22.89	23.00	1.026	0.262	0.269

Note:

1. Per KDB 447498 D01v06, for each exposure position, if the highest output channel Reported SAR ≤0.8W/kg, other channels SAR testing is not necessary.
2. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required when the measuredSAR is ≥ 0.8W/kg.

➢ **FDD-LTE 10/20MHz QPSK Head SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
	Band2/1RB#0	Right Cheek	18700	23.49	23.50	1.002	0.189	0.189
	Band2/1RB#0	Right Tilt	18700	23.49	23.50	1.002	0.047	0.047
6#	Band2/1RB#0	Left Cheek	18700	23.49	23.50	1.002	0.251	0.252
	Band2/1RB#0	Left Tilt	18700	23.49	23.50	1.002	0.032	0.032
	Band2/50RB#0	Right Cheek	18700	22.45	22.50	1.012	0.152	0.154
	Band2/50RB#0	Right Tilt	18700	22.45	22.50	1.012	0.060	0.061
	Band2/50RB#0	Left Cheek	18700	22.45	22.50	1.012	0.205	0.207
	Band2/50RB#0	Left Tilt	18700	22.45	22.50	1.012	0.025	0.025
	Band4/1RB#49	Right Cheek	20300	23.24	23.50	1.062	0.191	0.203
	Band4/1RB#49	Right Tilt	20300	23.24	23.50	1.062	0.083	0.088
7#	Band4/1RB#49	Left Cheek	20300	23.24	23.50	1.062	0.254	0.270
	Band4/1RB#49	Left Tilt	20300	23.24	23.50	1.062	0.052	0.056
	Band4/50RB#24	Right Cheek	20300	22.09	22.50	1.099	0.148	0.163
	Band4/50RB#24	Right Tilt	20300	22.09	22.50	1.099	0.071	0.078
	Band4/50RB#24	Left Cheek	20300	22.09	22.50	1.099	0.210	0.231
	Band4/50RB#24	Left Tilt	20300	22.09	22.50	1.099	0.042	0.046
	Band5/1RB#0	Right Cheek	20525	21.93	22.00	1.016	0.309	0.314
	Band5/1RB#0	Right Tilt	20525	21.93	22.00	1.016	0.174	0.177
8#	Band5/1RB#0	Left Cheek	20525	21.93	22.00	1.016	0.326	0.331
	Band5/1RB#0	Left Tilt	20525	21.93	22.00	1.016	0.198	0.201
	Band5/25RB#25	Right Cheek	20525	20.98	21.00	1.005	0.236	0.237
	Band5/25RB#25	Right Tilt	20525	20.98	21.00	1.005	0.136	0.137
	Band5/25RB#25	Left Cheek	20525	20.98	21.00	1.005	0.245	0.246
	Band5/25RB#25	Left Tilt	20525	20.98	21.00	1.005	0.152	0.153
9#	Band7/1RB#0	Right Cheek	21100	20.87	21.00	1.030	0.193	0.199
	Band7/1RB#0	Right Tilt	21100	20.87	21.00	1.030	0.049	0.050
	Band7/1RB#0	Left Cheek	21100	20.87	21.00	1.030	0.147	0.151
	Band7/1RB#0	Left Tilt	21100	20.87	21.00	1.030	0.022	0.023
	Band7/50RB#0	Right Cheek	21100	19.91	20.00	1.021	0.169	0.173
	Band7/50RB#0	Right Tilt	21100	19.91	20.00	1.021	0.026	0.027
	Band7/50RB#0	Left Cheek	21100	19.91	20.00	1.021	0.115	0.117
	Band7/50RB#0	Left Tilt	21100	19.91	20.00	1.021	0.018	0.018

➢ **WLAN 2.4 GHz Head SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
10#	2.4GHz/802.11b	Right Cheek	11	12.89	13.00	1.026	0.136	0.139
	2.4GHz/802.11b	Right Tilt	11	12.89	13.00	1.026	0.090	0.093
	2.4GHz/802.11b	Left Cheek	11	12.89	13.00	1.026	0.121	0.124
	2.4GHz/802.11b	Left Tilt	11	12.89	13.00	1.026	0.104	0.107

Note:

1. Per KDB 447498 D01v06, for each exposure position, if the highest output power channel Reported SAR ≤ 0.8W/kg, other channels SAR testing is not necessary.
2. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required when the measuredSAR is ≥ 0.8W/kg.
3. Per KDB 941225 D05v02r05, 100% RB allocation SAR measurement is not required when the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg.
4. PerKDB248227 D01v02r02, for 802.11b DSSS , when the reported SAR of the highest measured maximum output power channel for the exposure configuration is ⩽ 0.8 W/kg, no further SAR testing is required in that exposure configuration.
5. Per KDB248227 D01v02r02, OFDM SARis not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ⩽ 1.2 W/kg. Cuz the maximum output powerspecified for OFDM and DSSS are 12.36mW(10.92dBm) and 19.45mW(12.89 dBm), the scaled SAR would be0.139×(12.36/19.45)=0.088W/Kg<1.2W/kg, therefore, SAR is not required for OFDM.
6. According toKDB 865664 D02v01r02, SAR plot is required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination.

14.2 Standalone Body-worn SAR

➢ **GSM Body-worn SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
	GPRS850/4TX Slots	Front Side	189	28.39	28.50	1.026	0.801	0.822
	GPRS850/4TX Slots	Back Side	189	28.39	28.50	1.026	0.975	1.000
	GPRS850/4TX Slots	Front Side	128	28.37	28.50	1.030	0.763	0.786
	GPRS850/4TX Slots	Front Side	251	28.29	28.50	1.050	0.821	0.862
	GPRS850/4TX Slots	Back Side	128	28.37	28.50	1.030	1.010	1.041
11#	GPRS850/4TX Slots	Back Side	251	28.29	28.50	1.050	1.100	1.154
	GPRS1900/4TX Slots	Front Side	661	25.61	26.00	1.094	0.144	0.158
12#	GPRS1900/4TX Slots	Back Side	661	25.61	26.00	1.094	0.660	0.722

➢ **WCDMA Body-worn SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
	WCDMA Band II	Front Side	9400	22.26	22.50	1.057	0.140	0.148
13#	WCDMA Band II	Back Side	9400	22.26	22.50	1.057	0.711	0.751
	WCDMA Band IV	Front Side	1312	22.21	22.50	1.069	0.147	0.157
14#	WCDMA Band IV	Back Side	1312	22.21	22.50	1.069	0.693	0.741
	WCDMA Band V	Front Side	4233	22.89	23.00	1.026	0.347	0.356
15#	WCDMA Band V	Back Side	4233	22.89	23.00	1.026	0.462	0.474

➢ **FDD-LTE 10/20MHz QPSK Body-worn SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
	Band2/1RB#0	Front Side	18700	23.49	23.50	1.002	0.147	0.147
16#	Band2/1RB#0	Back Side	18700	23.49	23.50	1.002	0.742	0.744
	Band2/50RB#0	Front Side	18700	22.45	22.50	1.012	0.119	0.120
	Band2/50RB#0	Back Side	18700	22.45	22.50	1.012	0.669	0.677
	Band4/1RB#49	Front Side	20300	23.24	23.50	1.062	0.202	0.214
	Band4/1RB#49	Back Side	20300	23.24	23.50	1.062	0.808	0.858
	Band4/1RB#49	Back Side	20050	23.22	23.50	1.067	0.697	0.743
17#	Band4/1RB#49	Back Side	20175	22.82	23.50	1.169	0.759	0.888
	Band4/50RB#24	Front Side	20300	22.09	22.50	1.099	0.151	0.166
	Band4/50RB#24	Back Side	20300	22.09	22.50	1.099	0.607	0.667
	Band5/1RB#25	Front Side	20525	21.93	22.00	1.016	0.423	0.430
18#	Band5/1RB#25	Back Side	20525	21.93	22.00	1.016	0.475	0.483
	Band5/25RB#25	Front Side	20525	20.98	21.00	1.005	0.325	0.327
	Band5/25RB#25	Back Side	20525	20.98	21.00	1.005	0.427	0.429
	Band7/1RB#0	Front Side	21100	20.87	21.00	1.030	0.150	0.155
	Band7/1RB#0	Back Side	21100	20.87	21.00	1.030	0.934	0.962

19#	Band7/1RB#0	Back Side	20850	20.46	21.00	1.132	0.960	1.087
	Band7/1RB#0	Back Side	21350	20.52	21.00	1.117	0.906	1.012
	Band7/50RB#0	Front Side	21100	19.91	20.00	1.021	0.122	0.125
	Band7/50RB#0	Back Side	21100	19.91	20.00	1.021	0.761	0.777

- **WLAN 2.4GHz Body-worn SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
	2.4GHz/802.11b	Front Side	11	12.89	13.00	1.026	0.044	0.045
20#	2.4GHz/802.11b	Back Side	11	12.89	13.00	1.026	0.051	0.052

Note:

1. Per KDB 447498 D01v06, for each exposure position, if the highest output channel Reported SAR ≤ 0.8W/kg, other channels SAR testing is not necessary.
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA output power is < 0.25dB higher than RMC 12.2kbps, or Reported SAR with RMC 12.2kbps setting is ≤ 1.2W/kg, HSDPA SAR evaluation can be excluded.
3. According to KDB 865664 D02v01r02, SAR plot is required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination.

14.3 Standalone Hotspot SAR

➢ **GSM Hotspot SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
	GPRS850/4TX Slots	Front Side	189	28.39	28.50	1.026	0.801	0.822
	GPRS850/4TX Slots	Back Side	189	28.39	28.50	1.026	0.975	1.000
	GPRS850/4TX Slots	Left Side	189	28.39	28.50	1.026	0.723	0.742
	GPRS850/4TX Slots	Right Side	189	28.39	28.50	1.026	0.523	0.536
	GPRS850/4TX Slots	Bottom Side	189	28.39	28.50	1.026	0.122	0.125
	GPRS850/4TX Slots	Front Side	128	28.37	28.50	1.030	0.763	0.786
	GPRS850/4TX Slots	Front Side	251	28.29	28.50	1.050	0.821	0.862
	GPRS850/4TX Slots	Back Side	128	28.37	28.50	1.030	1.010	1.041
21#	GPRS850/4TX Slots	Back Side	251	28.29	28.50	1.050	1.100	1.154
	GPRS1900/4TX Slots	Front Side	661	25.61	26.00	1.094	0.144	0.158
22#	GPRS1900/4TX Slots	Back Side	661	25.61	26.00	1.094	0.660	0.722
	GPRS1900/4TX Slots	Left Side	661	25.61	26.00	1.094	0.083	0.091
	GPRS1900/4TX Slots	Right Side	661	25.61	26.00	1.094	0.054	0.060
	GPRS1900/4TX Slots	Bottom Side	661	25.61	26.00	1.094	0.561	0.614

➢ **WCDMAHotspot SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
	Band II/RMC	Front Side	9400	22.26	22.50	1.057	0.140	0.148
23#	Band II/RMC	Back Side	9400	22.26	22.50	1.057	0.711	0.751
	Band II/RMC	Left Side	9400	22.26	22.50	1.057	0.085	0.090
	Band II/RMC	Right Side	9400	22.26	22.50	1.057	0.057	0.060
	Band II/RMC	Bottom Side	9400	22.26	22.50	1.057	0.581	0.614
	Band IV/RMC	Front Side	1312	22.21	22.50	1.069	0.147	0.157
24#	Band IV/RMC	Back Side	1312	22.21	22.50	1.069	0.693	0.741
	Band IV/RMC	Left Side	1312	22.21	22.50	1.069	0.100	0.107
	Band IV/RMC	Right Side	1312	22.21	22.50	1.069	0.053	0.056
	Band IV/RMC	Bottom Side	1312	22.21	22.50	1.069	0.451	0.482
	Band V/RMC	Front Side	4233	22.89	23.00	1.026	0.347	0.356
25#	Band V/RMC	Back Side	4233	22.89	23.00	1.026	0.462	0.474
	Band V/RMC	Left Side	4233	22.89	23.00	1.026	0.244	0.250
	Band V/RMC	Right Side	4233	22.89	23.00	1.026	0.155	0.159
	Band V/RMC	Bottom Side	4233	22.89	23.00	1.026	0.013	0.013

➢ **FDD-LTE 10/20MHz QPSK Hotspot SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
	Band2/1RB#0	Front Side	18700	23.49	23.50	1.002	0.147	0.147
26#	Band2/1RB#0	Back Side	18700	23.49	23.50	1.002	0.742	0.744
	Band2/1RB#0	Left Side	18700	23.49	23.50	1.002	0.103	0.103
	Band2/1RB#0	Right Side	18700	23.49	23.50	1.002	0.071	0.071
	Band2/1RB#0	Bottom Side	18700	23.49	23.50	1.002	0.636	0.637
	Band2/50RB#0	Front Side	18700	22.45	22.50	1.012	0.119	0.120

	Band2/50RB#0	Back Side	18700	22.45	22.50	1.012	0.669	0.677
	Band2/50RB#0	Left Side	18700	22.45	22.50	1.012	0.086	0.087
	Band2/50RB#0	Right Side	18700	22.45	22.50	1.012	0.056	0.057
	Band2/50RB#0	Bottom Side	18700	22.45	22.50	1.012	0.563	0.570
	Band4/1RB#49	Front Side	20300	23.24	23.50	1.062	0.202	0.214
	Band4/1RB#49	Back Side	20300	23.24	23.50	1.062	0.808	0.858
	Band4/1RB#49	Back Side	20300	23.24	23.50	1.062	0.801	0.850
	Band4/1RB#49	Left Side	20300	23.24	23.50	1.062	0.120	0.127
	Band4/1RB#49	Right Side	20300	23.24	23.50	1.062	0.067	0.071
	Band4/1RB#49	Bottom Side	20300	23.24	23.50	1.062	0.539	0.572
	Band4/1RB#49	Back Side	20050	23.22	23.50	1.067	0.697	0.743
27#	Band4/1RB#49	Back Side	20175	22.82	23.50	1.169	0.759	0.888
	Band4/100RB#0	Back Side	20175	21.98	22.50	1.169	0.566	0.638
	Band4/50R#24	Front Side	20300	22.09	22.50	1.099	0.151	0.166
	Band4/50R#24	Back Side	20300	22.09	22.50	1.099	0.607	0.667
	Band4/50R#24	Left Side	20300	22.09	22.50	1.099	0.099	0.109
	Band4/50R#24	Right Side	20300	22.09	22.50	1.099	0.057	0.063
	Band4/50R#24	Bottom Side	20300	22.09	22.50	1.099	0.445	0.489
	Band5/1RB#0	Front Side	20525	21.93	22.00	1.016	0.423	0.430
28#	Band5/1RB#0	Back Side	20525	21.93	22.00	1.016	0.475	0.483
	Band5/1RB#0	Left Side	20525	21.93	22.00	1.016	0.423	0.430
	Band5/1RB#0	Right Side	20525	21.93	22.00	1.016	0.296	0.301
	Band5/1RB#0	Bottom Side	20525	21.93	22.00	1.016	0.092	0.094
	Band5/25RB#25	Front Side	20525	20.98	21.00	1.005	0.325	0.327
	Band5/25RB#25	Back Side	20525	20.98	21.00	1.005	0.427	0.429
	Band5/25RB#25	Left Side	20525	20.98	21.00	1.005	0.322	0.323
	Band5/25RB#25	Right Side	20525	20.98	21.00	1.005	0.231	0.232
	Band5/25RB#25	Bottom Side	20525	20.98	21.00	1.005	0.073	0.073
	Band 7/1RB#0	Front Side	21100	20.87	21.00	1.030	0.150	0.155
	Band 7/1RB#0	Back Side	21100	20.87	21.00	1.030	0.934	0.962
	Band 7/1RB#0	Left Side	21100	20.87	21.00	1.030	0.080	0.083
	Band 7/1RB#0	Right Side	21100	20.87	21.00	1.030	0.060	0.062
	Band 7/1RB#0	Bottom Side	21100	20.87	21.00	1.030	0.955	0.984
	Band 7/1RB#0	Back Side	20850	20.46	21.00	1.132	0.960	1.087
	Band 7/1RB#0	Back Side	21350	20.52	21.00	1.117	0.906	1.012
29#	Band 7/1RB#0	Bottom Side	20850	20.46	21.00	1.132	1.040	1.178
	Band 7/1RB#0	Bottom Side	21350	20.52	21.00	1.117	0.923	1.031
	Band 7/1RB#0	Bottom Side	20850	20.46	21.00	1.132	1.030	1.166
	Band 7/100RB#0	Bottom Side	20850	19.43	20.00	1.140	0.651	0.742
	Band 7/50RB#0	Front Side	21100	19.91	20.00	1.021	0.122	0.125
	Band 7/50RB#0	Back Side	21100	19.91	20.00	1.021	0.761	0.777
	Band 7/50RB#0	Left Side	21100	19.91	20.00	1.021	0.049	0.050
	Band 7/50RB#0	Right Side	21100	19.91	20.00	1.021	0.030	0.031
	Band 7/50RB#0	Bottom Side	21100	19.91	20.00	1.021	0.825	0.842
	Band 7/50RB#0	Bottom Side	20850	19.42	20.00	1.143	0.855	0.977
	Band 7/50RB#0	Bottom Side	21350	19.73	20.00	1.064	0.741	0.789

- **WLAN 2.4GHz Hotspot SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
	2.4GHz/802.11b	Front Side	11	12.89	13.00	1.026	0.044	0.045
	2.4GHz/802.11b	Back Side	11	12.89	13.00	1.026	0.051	0.052
	2.4GHz/802.11b	Left Side	11	12.89	13.00	1.026	0.033	0.034
	2.4GHz/802.11b	Right Side	11	12.89	13.00	1.026	0.012	0.012
30#	2.4GHz/802.11b	Top Side	11	12.89	13.00	1.026	0.052	0.054

Note:

1. Per KDB 447498 D01v06, for each exposure position, if the highest output channel Reported SAR ≤ 0.8W/kg, other channels SAR testing is not necessary.
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA output power is < 0.25dB higher than RMC 12.2kbps, or Reported SAR with RMC 12.2kbps setting is ≤ 1.2W/kg, HSDPA SAR evaluation can be excluded.
3. According to KDB 865664 D02v01r02, SAR plot is required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination.

14.4 Battery test at worst condition

➢ **Head**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
OR	GSM850/4Tx slots	Left Cheek	189	28.39	28.50	1.026	0.676	0.693
Bat.1	GSM850/4Tx slots	Left Cheek	189	28.39	28.50	1.026	0.670	0.687

➢ **Body-worn**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
OR	GPRS850/4TX Slots	Back Side	251	28.29	28.50	1.050	1.100	1.154
Bat.1	GPRS850/4TX Slots	Back Side	251	28.29	28.50	1.050	1.040	1.092

➢ **Hotspot**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
OR	Band 7/1RB#0 20M	Bottom Side	20850	20.46	21.00	1.132	1.040	1.178
Bat.1	Band 7/1RB#0 20M	Bottom Side	20850	20.46	21.00	1.132	0.927	1.050

15 Repeated SAR Measurement

In accordance with published RF Exposure KDB procedure 865664 D01 SAR measurement 100 MHz to 6 GHz. These additional measurements are repeated after the completion of all measurements requiring the samehead or body tissue-equivalent medium in a frequency band. The test device should be returned to ambientconditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder forthe repeated measurement(s) to minimize any unexpected variations in the repeated results.

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2)through 4) do not apply.

2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and firstrepeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% fromthe 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kgand the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
OR	GPRS850/4TX Slots	Back Side	251	28.29	28.50	1.050	1.100	1.154
	GPRS850/4TX Slots	Back Side	251	28.29	28.50	1.050	1.080	1.134
OR	Band4/1RB#49	Back Side	20300	23.24	23.50	1.062	0.808	0.858
	Band4/1RB#49	Back Side	20300	23.24	23.50	1.062	0.801	0.850
OR	Band 7/1RB#0	Bottom Side	20850	20.46	21.00	1.132	1.040	1.178
	Band 7/1RB#0	Bottom Side	20850	20.46	21.00	1.132	1.030	1.166

16 Multi-Band Simultaneous Transmission Considerations

➢ **Simultaneous Transmission Capabilities**

According to FCC KDB Publication 447498 D01v06, transmitters are considered to be transmittingsimultaneously when there is overlapping transmission, with the exception of transmissions duringnetwork hand-offs with maximum hand-off duration less than 30 seconds. Possible transmission paths forthe EUT are shown in below Figure and are color-coded to indicate communication modes which share thesame path. Modes which share the same transmission path cannot transmit simultaneously with oneanother.

Fig.15.1 Simultaneous Transmission Paths

➢ **Simultaneous Transmission Procedures**

This device contains transmitters that may operate simultaneously. Therefore simultaneous transmissionanalysis is required. Per FCC KDB 447498 D01v06, simultaneous transmission SAR testexclusion may be applied when the sum of the 1-g SAR for all the simultaneous transmitting antennas ina specific a physical test configuration is ≤1.6 W/kg. When standalone SAR is not required to bemeasured, per FCC KDB 447498 D01v06 4.3.2), the following equation must be used to estimate thestandalone 1g SAR for simultaneous transmission assessment involving that transmitter.

$$\text{Estimated SAR} = \frac{\sqrt{f(GHz)}}{7.5} \cdot \frac{\text{Max. power of channel, mW}}{\text{Min. Separation Distance, mm}}$$

Mode	Max. tune-up Power (dBm)	Exposure Position	Head	Body-worn	Hotspot
		Test Distance (mm)	0	10	10
Bluetooth	3.50	Estimated SAR (W/kg)	N/A	0.046	0.046

Note:

1. When the minimum *test separation distance* is < 5 mm, a distance of 5 mm according is applied to determine estimated SAR.

➢ **Multi-Band simultaneous Transmission Consideration**

	Position	**Applicable Combination**
Simultaneous Transmission Consideration	Head	2G/3G/4G+WLAN 2.4GHz
		2G/3G/4G+Bluetooth
	Body	2G/3G/4G+WLAN 2.4GHz
		2G/3G/4G+Bluetooth
	Hotspot	2G/3G/4G+WLAN 2.4GHz
		2G/3G/4G+Bluetooth

Note:

1. GSM/WCDMA/ LTE shares the same antenna, and cannot transmit simultaneously.

2. WLAN/Bluetooth shares the same antenna, and cannot transmit simultaneously.
3. The Report SAR summation is calculated based on the same configuration and test position.
4. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
   i. Scalar SAR summation < 1.6W/kg.
   ii. SPLSR = $(SAR_1 + SAR_2)^{1.5}$ / (*min. separation distance, mm*), and the peak separation distance is determinedfrom the square root of $[(x_1\text{-}x_2)^2 + (y_1\text{-}y_2)^2 + (z_1\text{-}z_2)^2]$, where (x_1, y_1, z_1) and (x_2, y_2, z_2) are the coordinates of theextrapolated peak SAR locations in the zoom scanIf SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary
   iii. Simultaneously transmission SAR measurement, and the Reported multi-band SAR < 1.6W/kg

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16.1 SAR Simultaneous Transmission Analysis

➢ **Head Simultaneous Transmission**

WWAN Band		Exposure Position	1	2	1+2
			WWAN	2.4GHz WLAN	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
GSM	GSM850	Right Cheek	0.663	0.139	0.802
		Right Tilt	0.554	0.093	0.647
		Left Cheek	0.693	0.124	0.817
		Left Tilt	0.494	0.107	0.601
	GSM1900	Right Cheek	0.156	0.139	0.295
		Right Tilt	0.048	0.093	0.141
		Left Cheek	0.208	0.124	0.332
		Left Tilt	0.026	0.107	0.133
WCDMA	WCDMA Band II	Right Cheek	0.162	0.139	0.301
		Right Tilt	0.028	0.093	0.121
		Left Cheek	0.151	0.124	0.275
		Left Tilt	0.053	0.107	0.160
	WCDMA Band IV	Right Cheek	0.165	0.139	0.304
		Right Tilt	0.071	0.093	0.164
		Left Cheek	0.204	0.124	0.328
		Left Tilt	0.049	0.107	0.156
	WCDMA Band V	Right Cheek	0.346	0.139	0.485
		Right Tilt	0.283	0.093	0.376
		Left Cheek	0.367	0.124	0.491
		Left Tilt	0.269	0.107	0.376
LTE	LTE Band 2	Right Cheek	0.189	0.139	0.328
		Right Tilt	0.061	0.093	0.154
		Left Cheek	0.252	0.124	0.376
		Left Tilt	0.032	0.107	0.139
	LTE Band 4	Right Cheek	0.203	0.139	0.342
		Right Tilt	0.088	0.093	0.181
		Left Cheek	0.270	0.124	0.394
		Left Tilt	0.056	0.107	0.163
	LTE Band 5	Right Cheek	0.314	0.139	0.453
		Right Tilt	0.177	0.093	0.270
		Left Cheek	0.331	0.124	0.455
		Left Tilt	0.201	0.107	0.308
	LTE Band 7	Right Cheek	0.199	0.139	0.338
		Right Tilt	0.050	0.093	0.143

		Left Cheek	0.151	0.124	0.275
		Left Tilt	0.023	0.107	0.130

➢ **Body worn Simultaneous Transmission**

WWAN Band		Exposure Position	1	2	3	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN	Bluetooth Ant 1		
			1g SAR (W/kg)	1g SAR (W/kg)	Estimated 1g SAR (W/kg)		
GSM	GSM850	Front	0.822	0.045	0.046	0.867	0.868
		Back	1.154	0.052	0.046	1.206	1.200
	GSM1900	Front	0.158	0.045	0.046	0.203	0.204
		Back	0.722	0.052	0.046	0.774	0.768
WCDMA	WCDMA Band II	Front	0.148	0.045	0.046	0.193	0.194
		Back	0.751	0.052	0.046	0.803	0.797
	WCDMA Band IV	Front	0.157	0.045	0.046	0.202	0.203
		Back	0.741	0.052	0.046	0.793	0.787
	WCDMA Band V	Front	0.356	0.045	0.046	0.401	0.402
		Back	0.474	0.052	0.046	0.526	0.520
LTE	LTE Band 2	Front	0.147	0.045	0.046	0.192	0.193
		Back	0.744	0.052	0.046	0.796	0.790
	LTE Band 4	Front	0.214	0.045	0.046	0.259	0.260
		Back	0.888	0.052	0.046	0.940	0.934
	LTE Band 5	Front	0.430	0.045	0.046	0.475	0.476
		Back	0.483	0.052	0.046	0.535	0.529
	LTE Band 7	Front	0.155	0.045	0.046	0.200	0.201
		Back	1.087	0.052	0.046	1.139	1.133

➢ **Hotspot Simultaneous Transmission**

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	3 Bluetooth Ant 1 Estimated 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)
GSM	GSM850	Front	0.822	0.045	0.046	0.867	0.868
		Back	1.154	0.052	0.046	1.206	1.200
		Left side	0.742	0.034	0.046	0.776	0.788
		Right side	0.536	0.012	0.046	0.548	0.582
		Top side	/	0.054	0.046	0.054	0.046
		Bottom side	0.125	/	0.046	0.125	0.171
	GSM1900	Front	0.158	0.045	0.046	0.203	0.204
		Back	0.722	0.052	0.046	0.774	0.768
		Left side	0.091	0.034	0.046	0.125	0.137
		Right side	0.060	0.012	0.046	0.072	0.106
		Top side	/	0.054	0.046	0.054	0.046
		Bottom side	0.614	/	0.046	0.614	0.660
WCDMA	WCDMA Band II	Front	0.148	0.045	0.046	0.193	0.194
		Back	0.751	0.052	0.046	0.803	0.797
		Left side	0.090	0.034	0.046	0.124	0.136
		Right side	0.060	0.012	0.046	0.072	0.106
		Top side	/	0.054	0.046	0.054	0.046
		Bottom side	0.614	/	0.046	0.614	0.660
	WCDMA Band IV	Front	0.157	0.045	0.046	0.202	0.203
		Back	0.741	0.052	0.046	0.793	0.787
		Left side	0.107	0.034	0.046	0.141	0.153
		Right side	0.056	0.012	0.046	0.068	0.102
		Top side	/	0.054	0.046	0.054	0.046
		Bottom side	0.482	/	0.046	0.482	0.528
	WCDMA Band V	Front	0.356	0.045	0.046	0.401	0.402
		Back	0.474	0.052	0.046	0.526	0.520
		Left side	0.250	0.034	0.046	0.284	0.296
		Right side	0.159	0.012	0.046	0.171	0.205
		Top side	/	0.054	0.046	0.054	0.046
		Bottom side	0.013	/	0.046	0.013	0.059
LTE	LTE Band 2	Front	0.147	0.045	0.046	0.192	0.193
		Back	0.744	0.052	0.046	0.796	0.790
		Left side	0.103	0.034	0.046	0.137	0.149
		Right side	0.071	0.012	0.046	0.083	0.117
		Top side	/	0.054	0.046	0.054	0.046

		Bottom side	0.637	/	0.046	0.637	0.683
	LTE Band 4	Front	0.214	0.045	0.046	0.259	0.260
		Back	0.888	0.052	0.046	0.940	0.934
		Left side	0.127	0.034	0.046	0.161	0.173
		Right side	0.071	0.012	0.046	0.083	0.117
		Top side	/	0.054	0.046	0.054	0.046
		Bottom side	0.572	/	0.046	0.572	0.618
	LTE Band 5	Front	0.430	0.045	0.046	0.475	0.476
		Back	0.483	0.052	0.046	0.535	0.529
		Left side	0.430	0.034	0.046	0.464	0.476
		Right side	0.301	0.012	0.046	0.313	0.347
		Top side	/	0.054	0.046	0.054	0.046
		Bottom side	0.094	/	0.046	0.094	0.140
	LTE Band 7	Front	0.155	0.045	0.046	0.200	0.201
		Back	1.087	0.052	0.046	1.139	1.133
		Left side	0.083	0.034	0.046	0.117	0.129
		Right side	0.062	0.012	0.046	0.074	0.108
		Top side	/	0.054	0.046	0.054	0.046
		Bottom side	1.178	/	0.046	1.178	1.224

17 Measurement Uncertainty

The component of uncertainly may generally be categorized according to the methods used to evaluate them. Theevaluation of uncertainly by the statistical analysis of a series of observations is termed a Type A evaluation ofuncertainty. The evaluation of uncertainty by means other than the statistical analysis of a series of observation istermed a Type B evaluation of uncertainty. Each component of uncertainty, however evaluated, is represented by anestimated standard deviation, termed standard uncertainty, which is determined by the positive square root of theestimated variance.

A Type A evaluation of standard uncertainty may be based on any valid statistical method for treating data. Thisincludes calculating the standard deviation of the mean of a series of independent observations; using the method ofleast squares to fit a curve to the data in order to estimate the parameter of the curve and their standard deviations; orcarrying out an analysis of variance in order to identify and quantify random effects in certain kinds of measurement.

A Type B evaluation of standard uncertainty is typically based on scientific judgment using all of the relevantinformation available. These may include previous measurement data, experience, and knowledge of the behaviorand properties of relevant materials and instruments, manufacture's specification, data provided in calibration reportsand uncertainties assigned to reference data taken from handbooks. Broadly speaking, the uncertainty is eitherobtained from an outdoor source or obtained from an assumed distribution, such as the normal distribution,rectangular or triangular distributions indicated in below Table.

UncertaintyDistributions	Normal	Rectangular	Triangular	U-Shape
Multi-plying Factor	1/k(b)	$1/\sqrt{3}$	$1/\sqrt{6}$	$1/\sqrt{2}$

Standard Uncertainty for Assumed Distribution

The combined standard uncertainty of the measurement result represents the estimated standard deviation of theresult. It is obtained by combining the individual standard uncertainties of both Type A and Type B evaluation usingthe usual "root-sum-squares" (RSS) methods of combining standard deviations by taking the positive square root ofthe estimated variances.

Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within whichthe measured value is confidently believed to lie. It is obtained by multiplying the combined standard uncertainty by acoverage factor. Typically, the coverage factor ranges from 2 to 3. Using a coverage factor allows the true value of ameasured quantity to be specified with a defined probability within the specified uncertainty range. For purpose of thisdocument, a coverage factor two is used, which corresponds to confidence interval of about 95 %. The DASYuncertainty Budget is shown in the following tables.

a	b	c	d	e= f(d,k)	f	g	h= c*f/e	i= c*g/e	k
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	Vi
Measurement System									
Probe calibration	E.2.1	5.83	N	1	1	1	5.83	5.83	∞
Axial Isotropy	E.2.2	3.5	R	$\sqrt{3}$	1	1	2.02	2.02	∞
Hemispherical Isotropy	E.2.2	5.9	R	$\sqrt{3}$	1	1	3.41	3.41	∞
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	E.2.4	4.7	R	$\sqrt{3}$	1	1	2.71	2.71	∞
System detection limits	E.2.5	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Readout Electronics	E.2.6	0.5	N	1	1	1	0.5	0.5	∞
Reponse Time	E.2.7	3.0	R	$\sqrt{3}$	1	1	3.0	3.0	∞
Integration Time	E.2.8	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
RF ambient Conditions	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner Mechanical Tolerance	E.6.2	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to Phantom Shell	E.6.3	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation	E.5.2	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
Test sample Related									
Test sample positioning	E.4.2.1	2.6	N	1	1	1	2.6	2.6	N-1
Device Holder Uncertainty	E.4.1.1	3.0	N	1	1	1	5.11	5.11	∞
Output power Power drift - SAR drift measurement	6.6.2	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	4.0	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Liquid conductivity - deviation from target value	E.3.2	2.0	R	$\sqrt{3}$	0.64	0.43	1.69	1.13	∞
Liquid conductivity - measurement uncertainty	E.3.3	2.5	N	1	0.64	0.43	3.20	2.15	M
Liquid permittivity - deviation from target value	E.3.2	2.5	R	$\sqrt{3}$	0.6	0.49	1.28	1.04	∞
Liquid permittivity - measurement uncertainty	E.3.3	5.0	N	1	0.6	0.49	6.00	4.90	M
Liquid conductivity – temperature uncertainty	E.3.4		R	$\sqrt{3}$	0.78	0.41			∞
Liquid permittivity – temperature uncertainty	E.3.4		R	$\sqrt{3}$	0.23	0.26			∞
Combined Standard Uncertainty			RSS				11.55	12.07	

Expanded Uncertainty (95% Confidence interval)			K=2				±23.20	±24.17	

18 Measurement Conclusion

The SAR evaluation indicates that the EUT complies with the RF radiation exposure limits of the India, with respect to all parameters subject to this test. These measurements were taken to simulate the RF effects of RF exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested. Please note that the absorption and distribution of electromagnetic energy in the body are very complex phenomena that depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because various factors may interact with one another to vary the specific biological outcome of an exposure to electromagnetic fields, any protection guide should consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables.

Annex A General Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

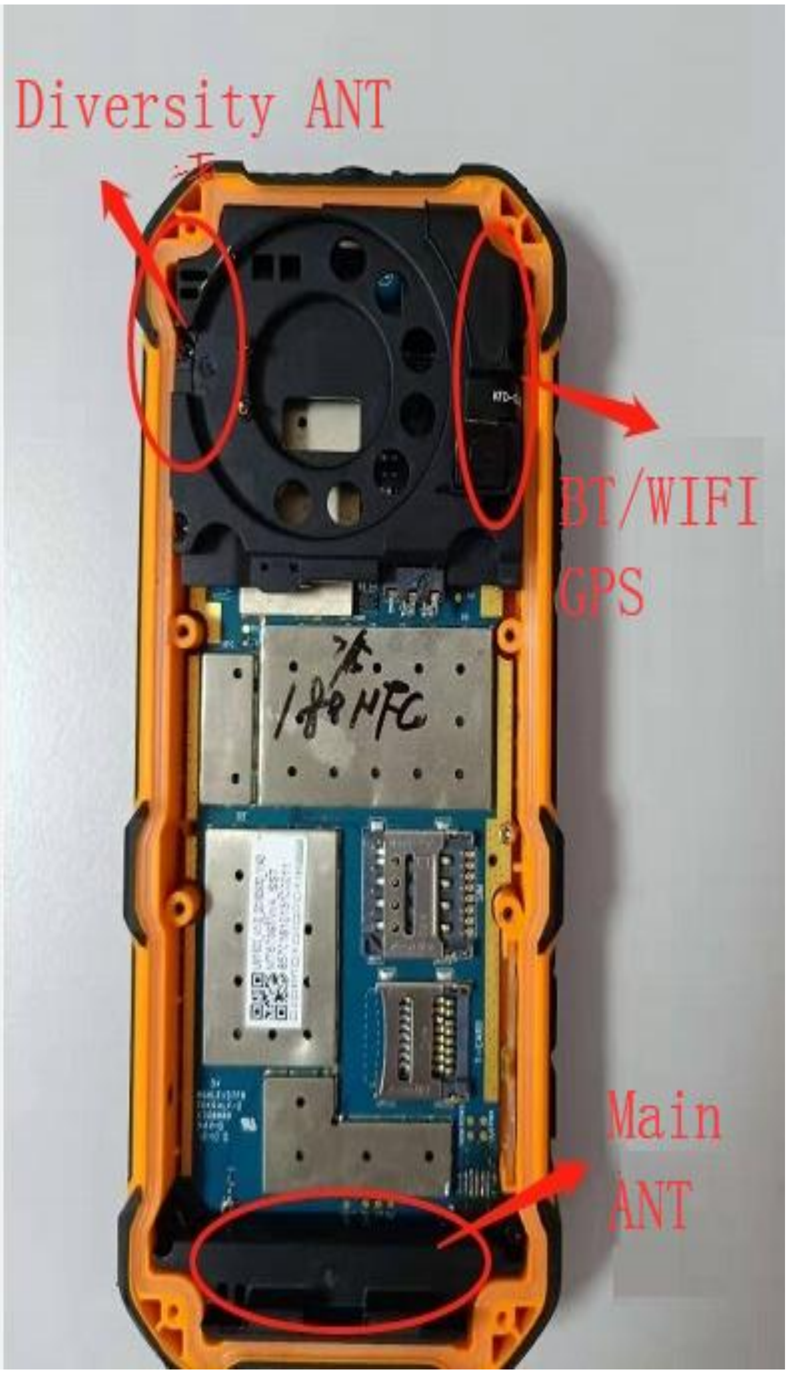
2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

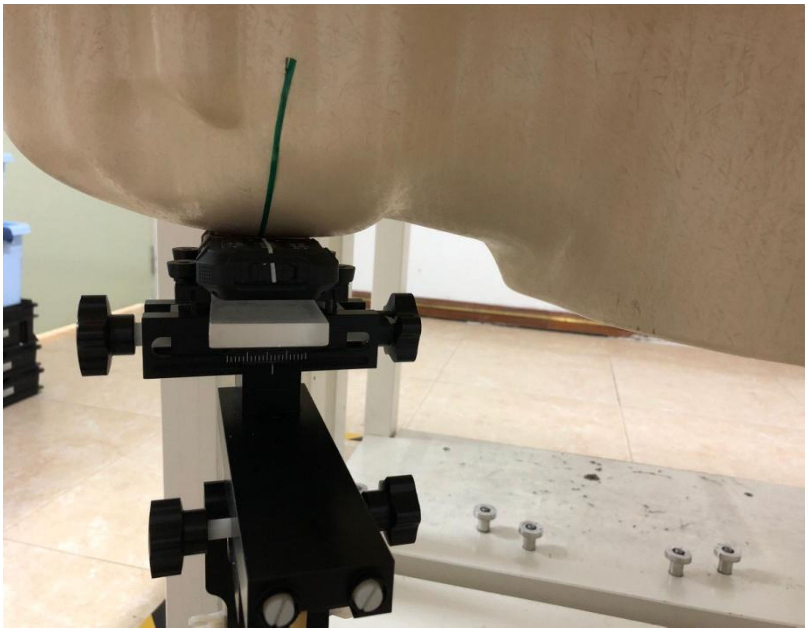
Annex B Test Setup Photos

Dimensions (L*W*H):135mm (L) × 60mm (W) × 21mm (H)

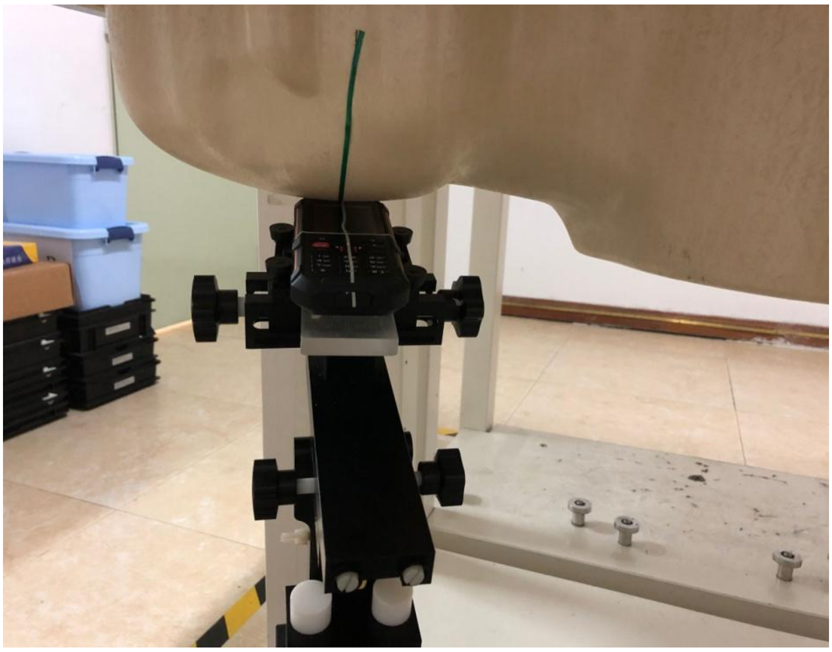
Antenna map



Head

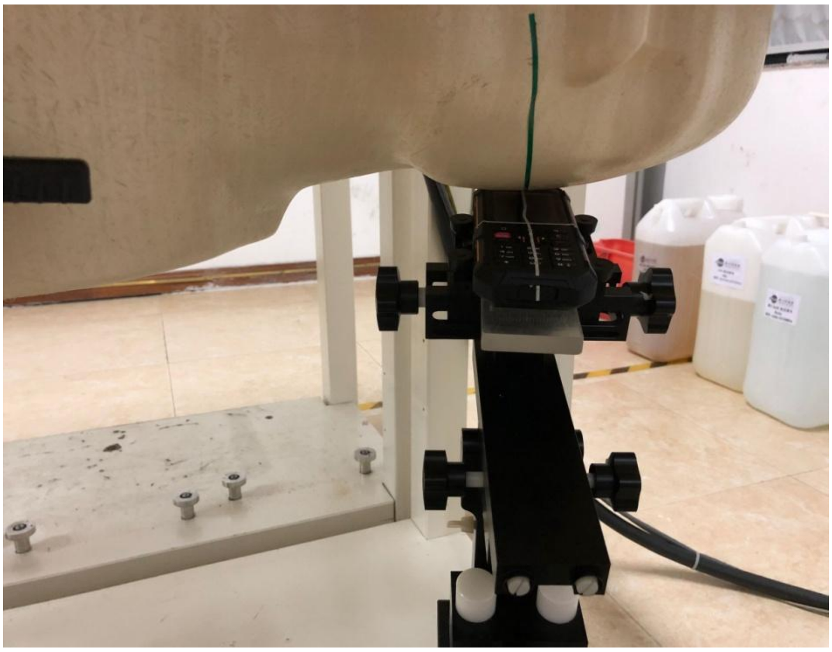


Right Cheek



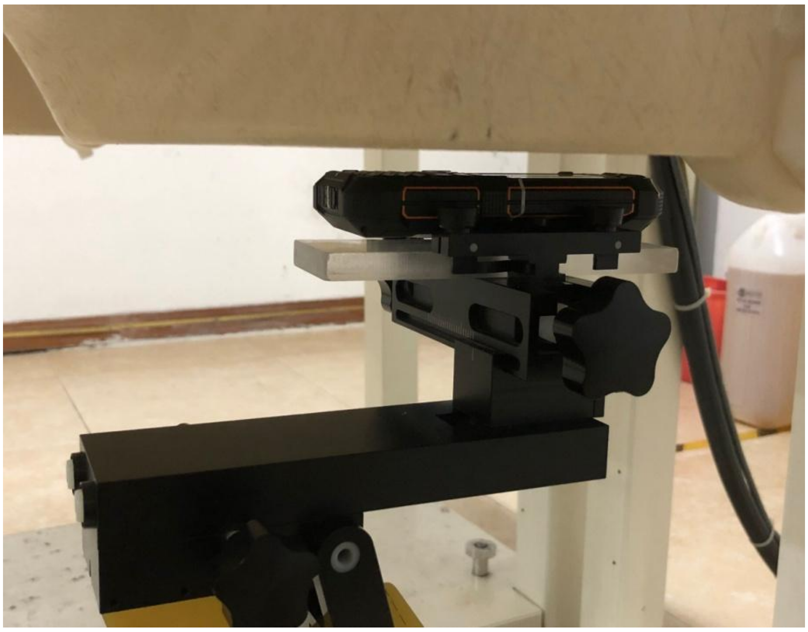
Right Tilt

Left Cheek



Left Tilt

Body



Front Side

(Test distance: 10mm, Thickness of EUT: 21mm)

Back Side

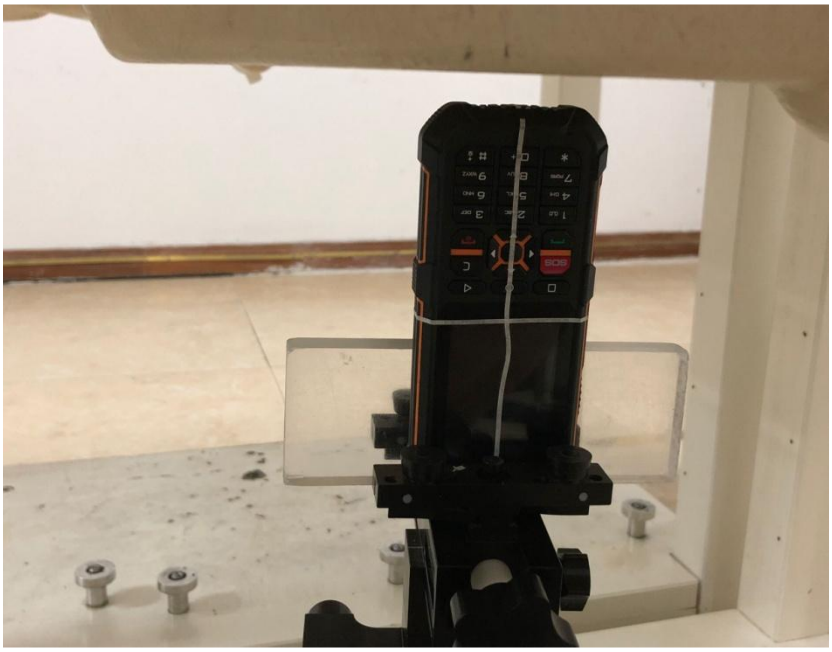
(Test distance: 10mm, Thickness of EUT: 21mm)

Left Side

(Test distance: 10mm, Thickness of EUT: 21mm)

Right Side

(Test distance: 10mm, Thickness of EUT: 21mm)



Bottom Side

(Test distance: 10mm, Thickness of EUT: 21mm)

Top Side

(Test distance: 10mm, Thickness of EUT: 21mm)

Annex C Plots of System Performance Check

Test Laboratory: SAR Lab. of Shenzhen Morlab Communications Technology Co., Ltd. Date: 2019.08.21

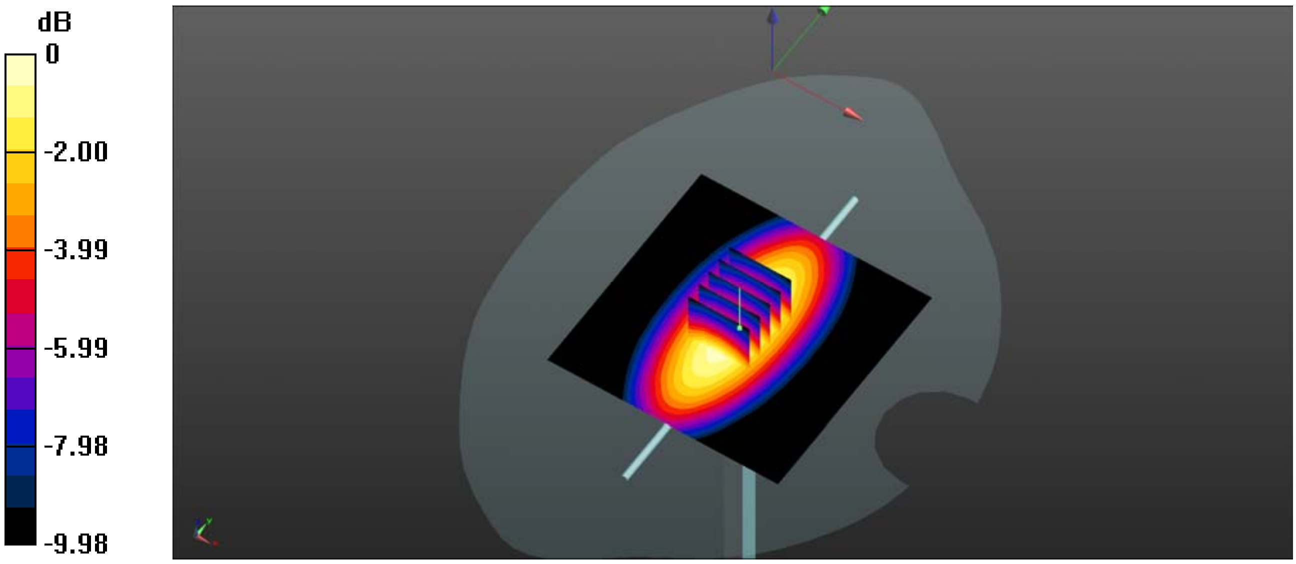
System Check_835MHz_Head_190821

Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 835 MHz; σ = 0.922 S/m; ε_r = 42.273; ρ = 1000 kg/m^3
Ambient Temperature：22.9 ℃; Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(9.32, 9.32, 9.32); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW835/Area Scan (81x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.45 W/kg

CW835/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.72 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 3.28 W/kg
SAR(1 g) = 2.36 W/kg; SAR(10 g) = 1.5 W/kg
Maximum value of SAR (measured) = 2.43 W/kg



0 dB = 2.45 W/kg

Test Laboratory: SAR Lab. of Shenzhen Morlab Communications Technology Co., Ltd. Date: 2019.08.22

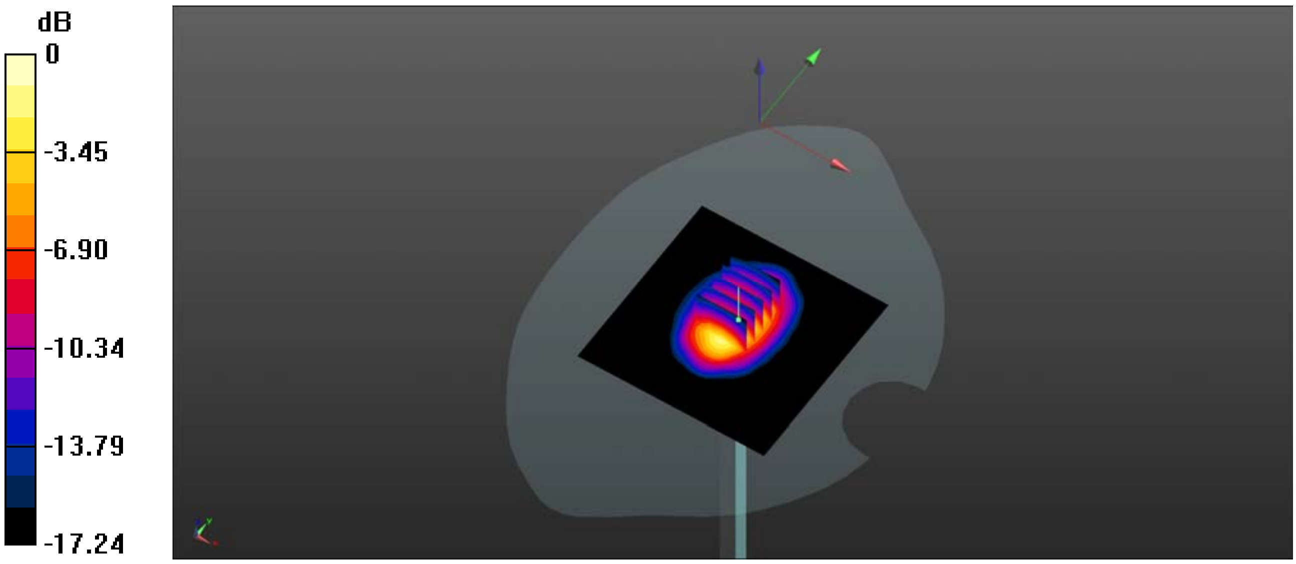
System Check_1750MHz_Head_190822

Communication System: UID 0, CW (0); Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: HSL_1750 Medium parameters used: f = 1750 MHz; σ = 1.379 S/m; ε_r = 40.595; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.98, 7.98, 7.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1516; Calibrated: 2018.07.14
- Phantom: SAM 2; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW1750/Area Scan (81x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 10.6 W/kg

CW1750/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 86.15 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 17.1 W/kg
SAR(1 g) = 9.28 W/kg; SAR(10 g) = 4.98 W/kg
Maximum value of SAR (measured) = 10.3 W/kg



0 dB = 10.6 W/kg

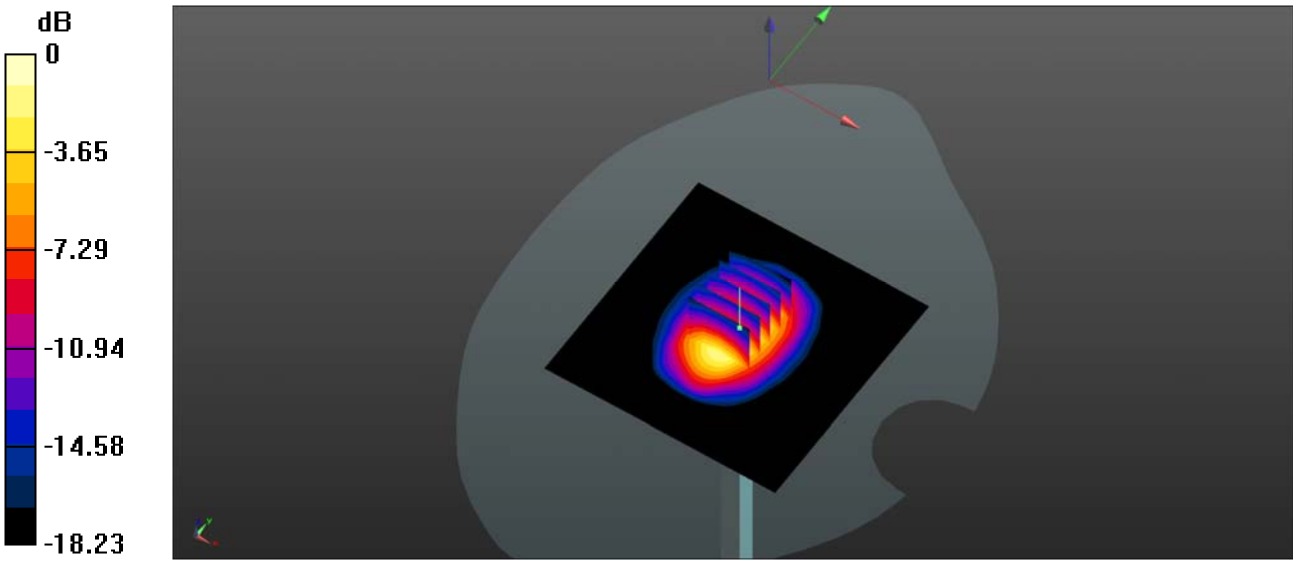
System Check_1900MHz_Head_190823

Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1900 MHz; σ = 1.396 S/m; ε_r = 39.985; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.68, 7.68, 7.68); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW 1900/Area Scan (81x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 10.6 W/kg

CW 1900/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 86.62 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 17.5 W/kg
SAR(1 g) = 9.59 W/kg; SAR(10 g) = 5.18 W/kg
Maximum value of SAR (measured) = 10.4 W/kg



0 dB = 10.6 W/kg

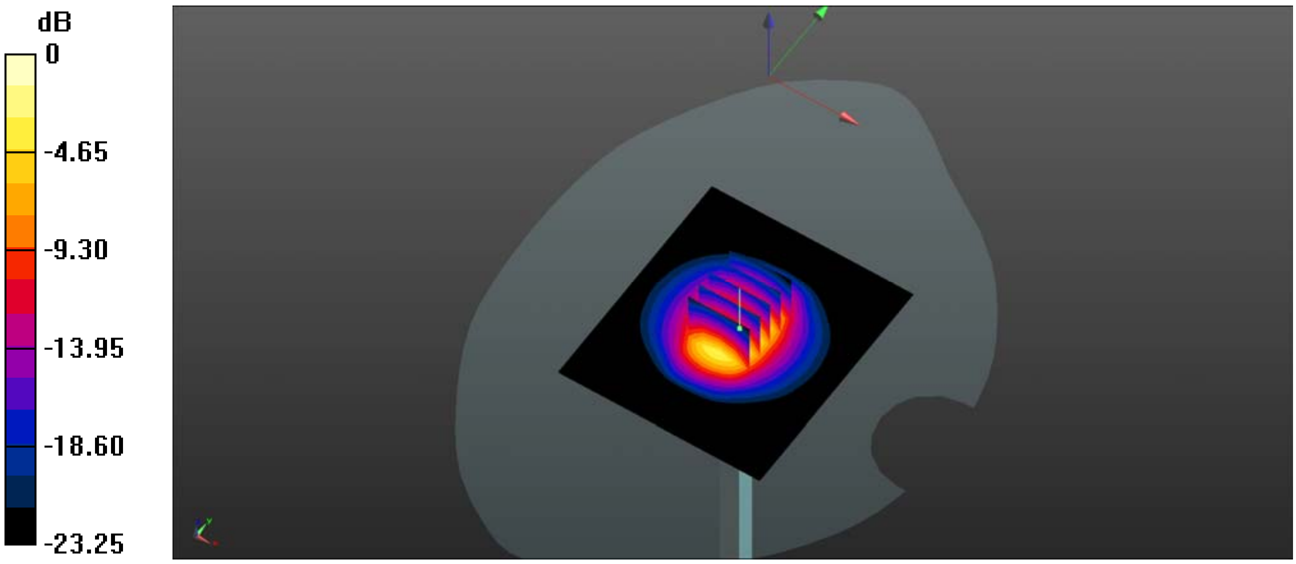
System Check_2450MHz_Head_190824

Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: HSL_2450 Medium parameters used: f = 2450 MHz; σ = 1.750 S/m; ε_r = 39.882; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
-Probe: EX3DV4 - SN3823; ConvF(6.98, 6.98, 6.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 2; Type: QD000P40CC; Serial: TP:1464
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW2450/Area Scan (71x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 16.6 W/kg

CW2450/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 90.71 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 28.5 W/kg
SAR(1 g) = 13.21 W/kg; SAR(10 g) = 6.09 W/kg
Maximum value of SAR (measured) = 15.1 W/kg



0 dB = 16.6 W/kg

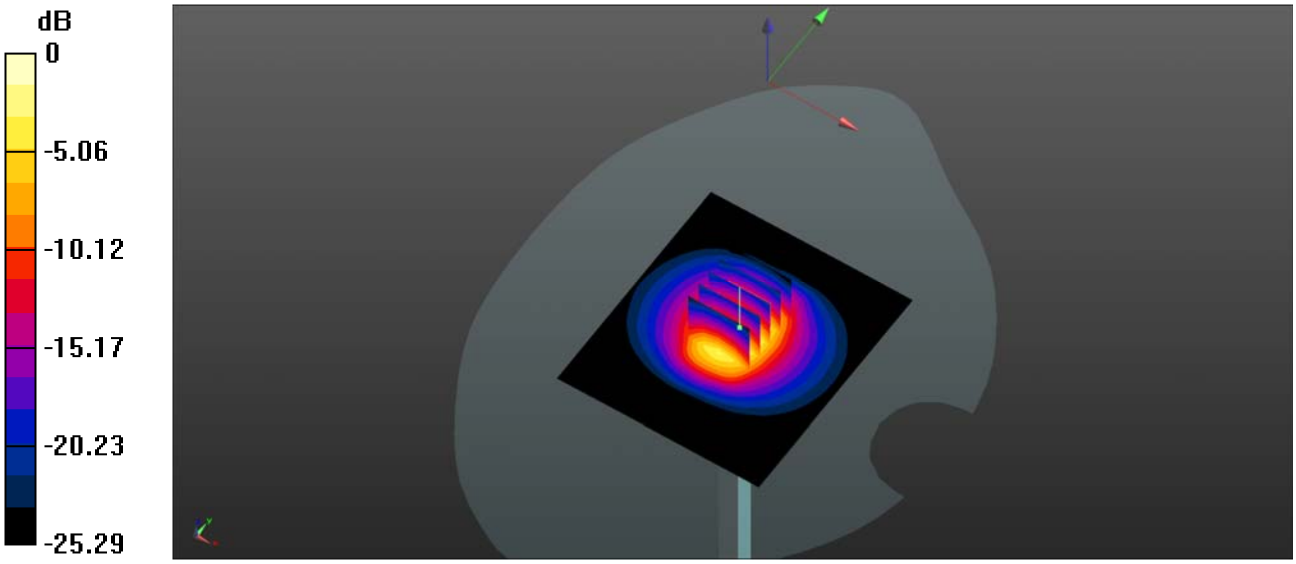
System Check_2600MHz_Head_190824

Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: HSL_2600 Medium parameters used: f = 2600 MHz; σ = 2.010 S/m; ε_r = 39.958; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(6.98, 6.98, 6.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW2600/Area Scan (71x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 17.7 W/kg

CW2600/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.67 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 31.7 W/kg
SAR(1 g) = 13.56 W/kg; SAR(10 g) = 6.20 W/kg
Maximum value of SAR (measured) = 15.7 W/kg



0 dB = 17.7 W/kg

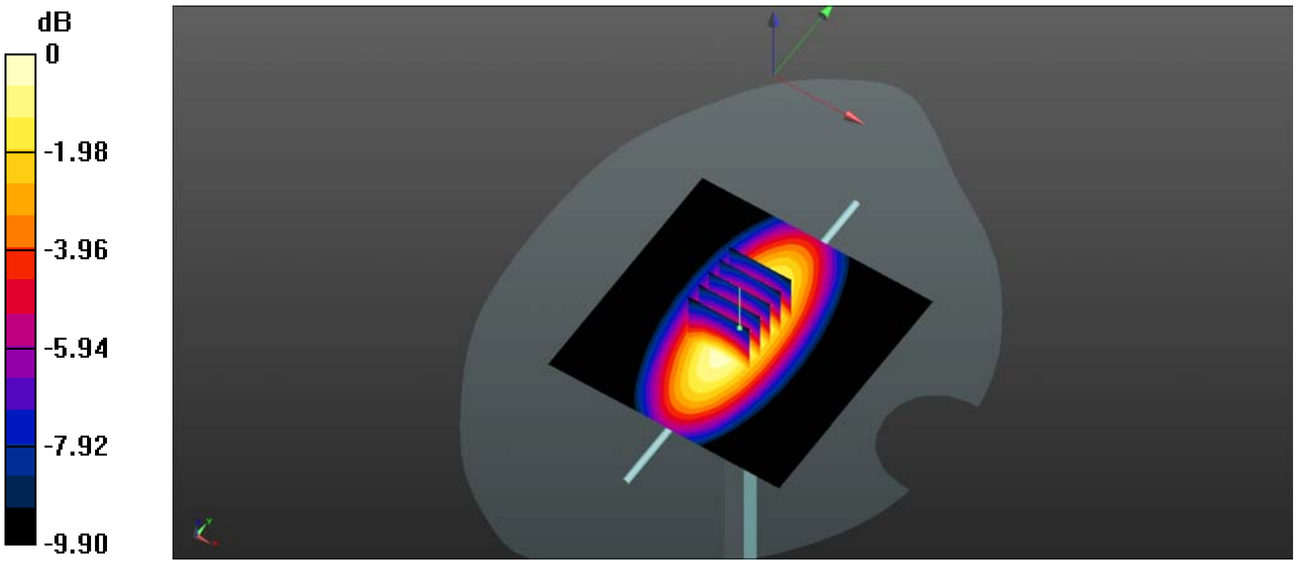
System Check_835MHz_Body_190821

Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium: MSL_835 Medium parameters used: f = 835 MHz; σ = 0.980 S/m; ε_r = 55.749; ρ = 1000 kg/m^3
Ambient Temperature：22.9 ℃; Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(9.32, 9.32, 9.32); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW835/Area Scan (81x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.56 W/kg

CW835/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 51.37 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.44 W/kg
SAR(1 g) = 2.38 W/kg; SAR(10 g) = 1.59 W/kg
Maximum value of SAR (measured) = 2.56 W/kg



0 dB = 2.56 W/kg

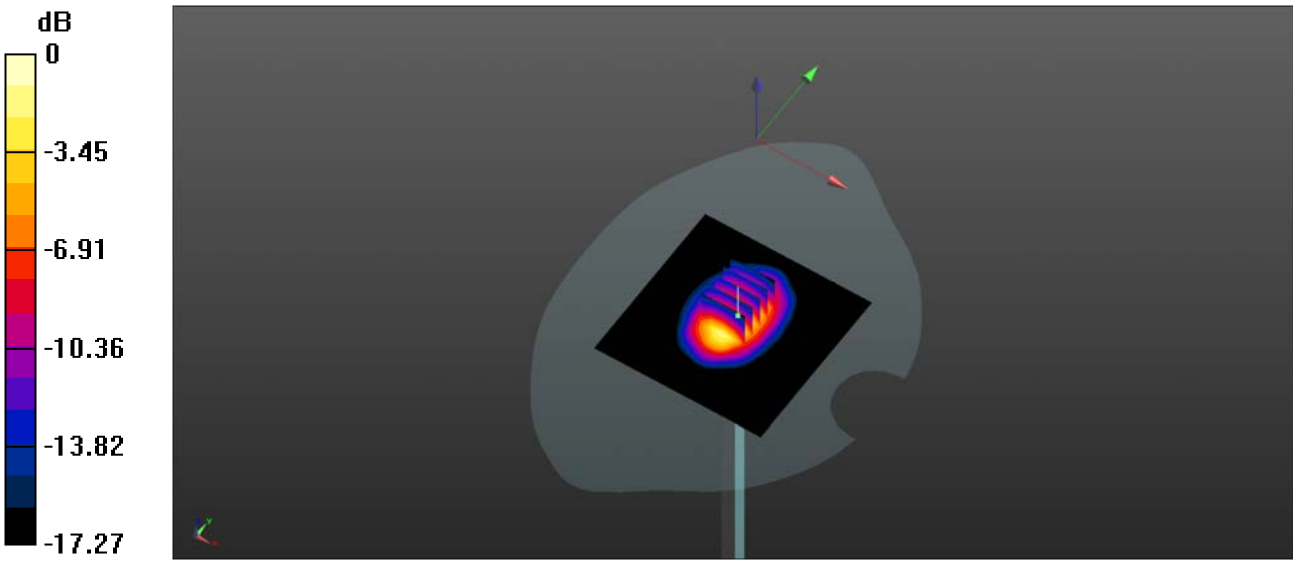
System Check_1750MHz_Body_190822

Communication System: UID 0, CW (0); Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: MSL_1750 Medium parameters used: f = 1750 MHz; σ = 1.498 S/m; ε_r = 53.912; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.98, 7.98, 7.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1516; Calibrated: 2018.07.14
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW1750/Area Scan (81x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 12.0 W/kg

CW1750/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 88.23 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 20.7 W/kg
SAR(1 g) = 9.49 W/kg; SAR(10 g) = 4.96 W/kg
Maximum value of SAR (measured) = 11.7 W/kg



0 dB = 12.0 W/kg

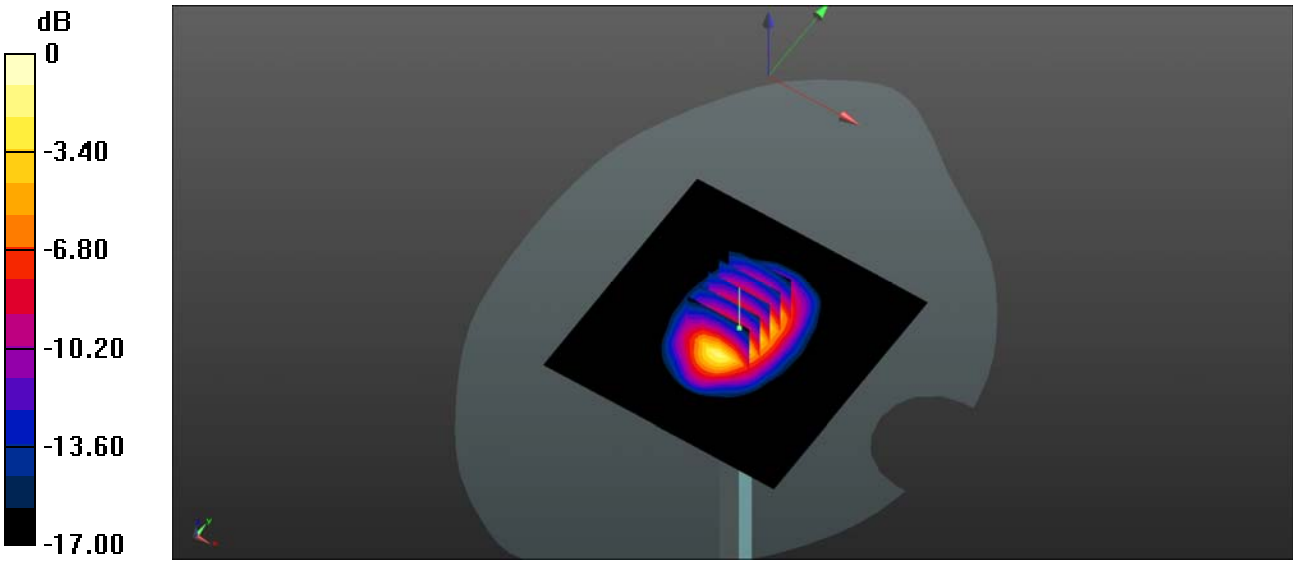
System Check_1900MHz_Body_190823

Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: MSL_1900 Medium parameters used: f = 1900 MHz; σ = 1.518 S/m; ε_r = 54.556; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.68, 7.68, 7.68); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW 1900/Area Scan (81x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 11.0 W/kg

CW 1900/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 84.47 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 17.2 W/kg
SAR(1 g) = 9.78 W/kg; SAR(10 g) = 5.21 W/kg
Maximum value of SAR (measured) = 10.8 W/kg



0 dB = 11.0 W/kg

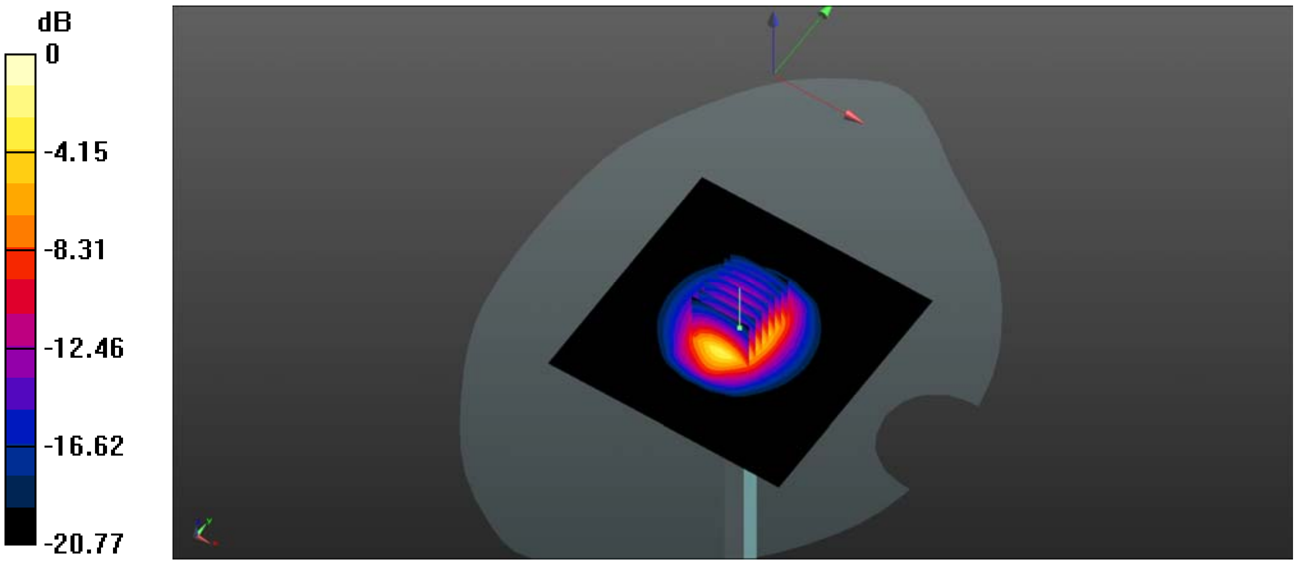
System Check_2450MHz_Body_190824

Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: MSL_2450 Medium parameters used: f = 2450 MHz; σ = 1.898 S/m; ε_r = 53.046; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(6.98, 6.98, 6.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 2; Type: QD000P40CC; Serial: TP:1464
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW 2450/Area Scan (101x101x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 14.3 W/kg

CW 2450/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.03 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 24.5 W/kg
SAR(1 g) = 12.3 W/kg; SAR(10 g) = 5.73 W/kg
Maximum value of SAR (measured) = 14.2 W/kg



0 dB = 14.3 W/kg

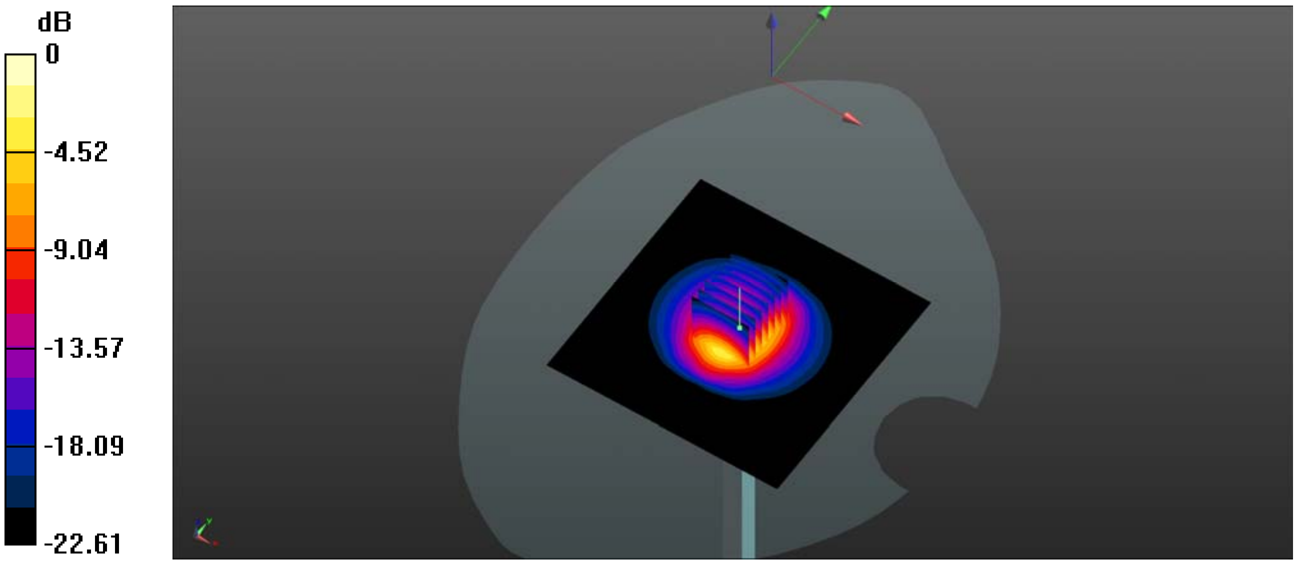
System Check_2600MHz_Body_190824

Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: MSL_2600 Medium parameters used: f = 2600 MHz; σ = 2.170 S/m; ε_r = 52.511; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(6.98, 6.98, 6.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 2; Type: QD000P40CC; Serial: TP:1464
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

CW 2600/Area Scan (101x101x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 14.7 W/kg

CW 2600/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 83.27 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 26.2 W/kg
SAR(1 g) = 13.2 W/kg; SAR(10 g) = 5.96 W/kg
Maximum value of SAR (measured) = 14.6 W/kg



0 dB = 14.7 W/kg

Annex D Plots of Maximum SAR Test Results

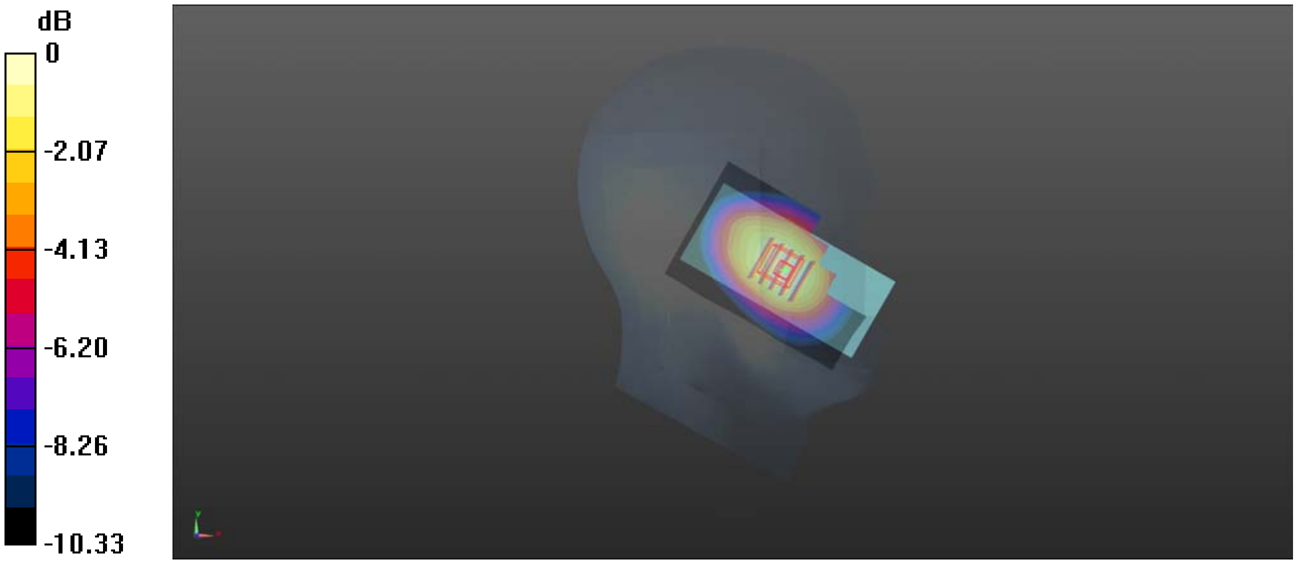
GSM850_GPRS(4 TX slots)_Left Cheek_Ch189

Communication System: UID 0, GSM850(class 12) (0); Frequency: 836.4 MHz;Duty Cycle: 1:2.08
Medium: HSL_835 Medium parameters used: f = 836.4 MHz; σ = 0.904 S/m; ε_r = 41.033; ρ = 1000 kg/m^3
Ambient Temperature：22.9 ℃; Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(9.32, 9.32, 9.32); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch189/Area Scan (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.707 W/kg

Ch189/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.09 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.887 W/kg
SAR(1 g) = 0.676 W/kg; SAR(10 g) = 0.495 W/kg
Maximum value of SAR (measured) = 0.721 W/kg



0 dB = 0.721 W/kg

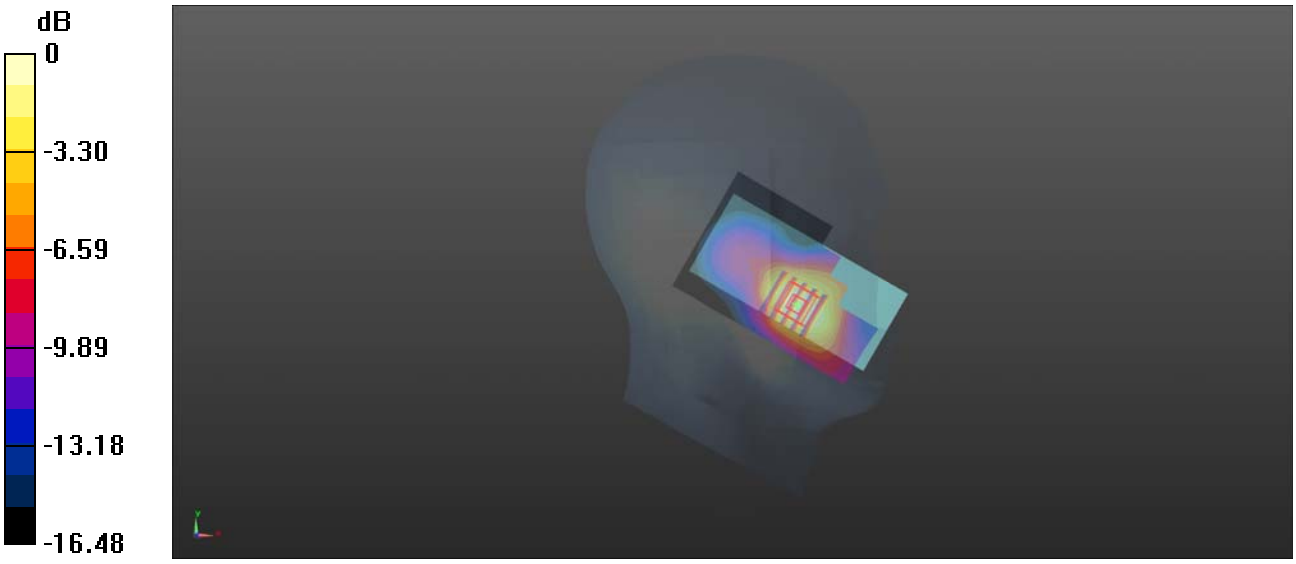
GSM1900_GPRS(4 TX slots)_Left Cheek_Ch661

Communication System: UID 0, PCS1900(class 12) (0); Frequency: 1880 MHz;Duty Cycle: 1:2.08
Medium: HSL_1900 Medium parameters used: f = 1880 MHz; σ = 1.366 S/m; ε_r = 40.167; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.68, 7.68, 7.68); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch661/Area Scan (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.222 W/kg

Ch661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.036 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.279 W/kg
SAR(1 g) = 0.190 W/kg; SAR(10 g) = 0.117 W/kg
Maximum value of SAR (measured) = 0.207 W/kg



0 dB = 0.207 W/kg

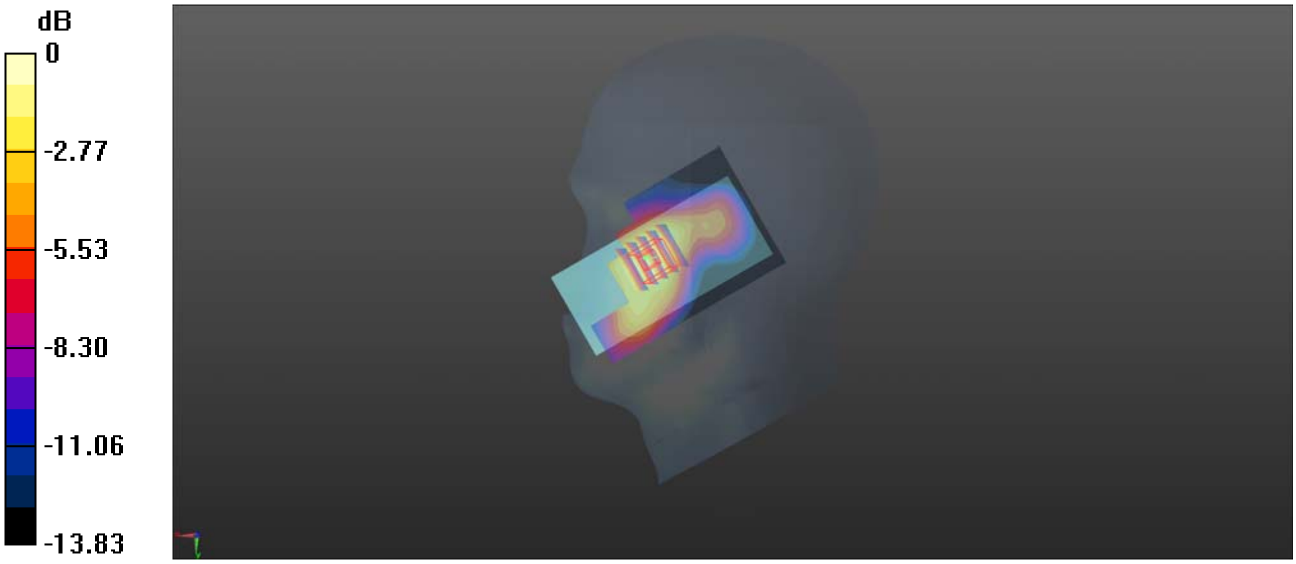
WCDMA Band II_RMC 12.2Kbps_Right Cheek_Ch9400

Communication System: UID 0, UMTS-FDD (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1880 MHz; σ = 1.366 S/m; ε_r = 40.167; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.68, 7.68, 7.68); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch9400/Area Scan (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.155 W/kg

Ch9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.776 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.207 W/kg
SAR(1 g) = 0.153 W/kg; SAR(10 g) = 0.098 W/kg
Maximum value of SAR (measured) = 0.152 W/kg



0 dB = 0.152 W/kg

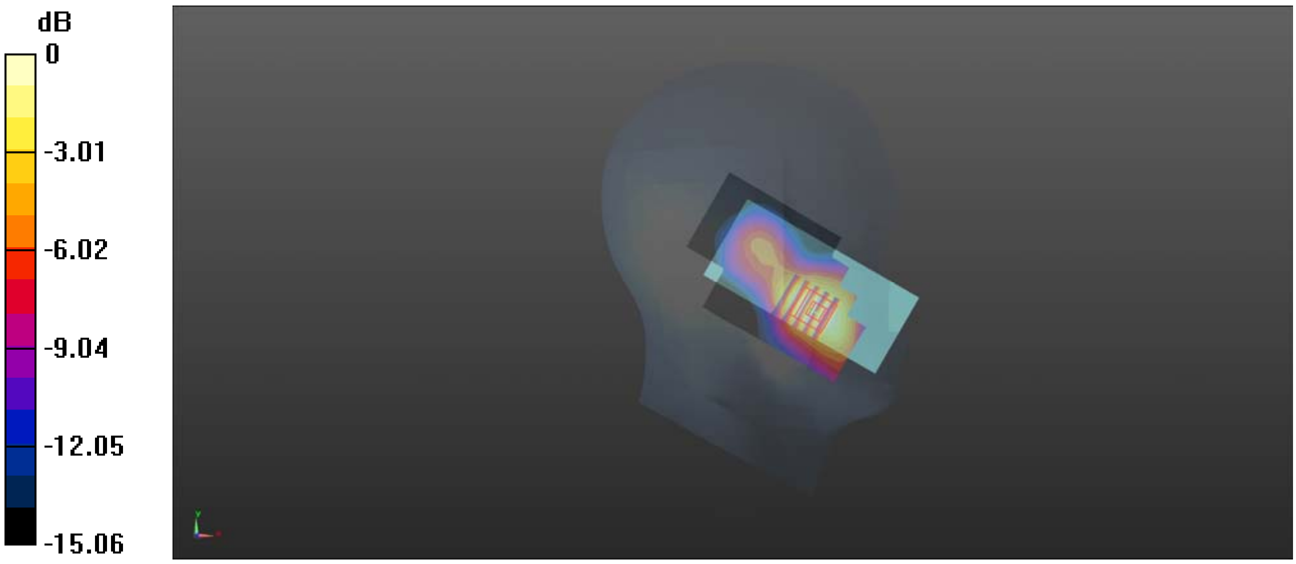
WCDMA Band IV_RMC 12.2Kbps_Left Cheek_Ch1312

Communication System: UID 0, UMTS-FDD (0); Frequency: 1712.4 MHz;Duty Cycle: 1:1
Medium: HSL_1750 Medium parameters used: f = 1712.4 MHz; σ = 1.29 S/m; ε_r = 40.558; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.98, 7.98, 7.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch1312/Area Scan (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.223 W/kg

Ch1312/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.452 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.269 W/kg
SAR(1 g) = 0.191 W/kg; SAR(10 g) = 0.125 W/kg
Maximum value of SAR (measured) = 0.205 W/kg



0 dB = 0.205 W/kg

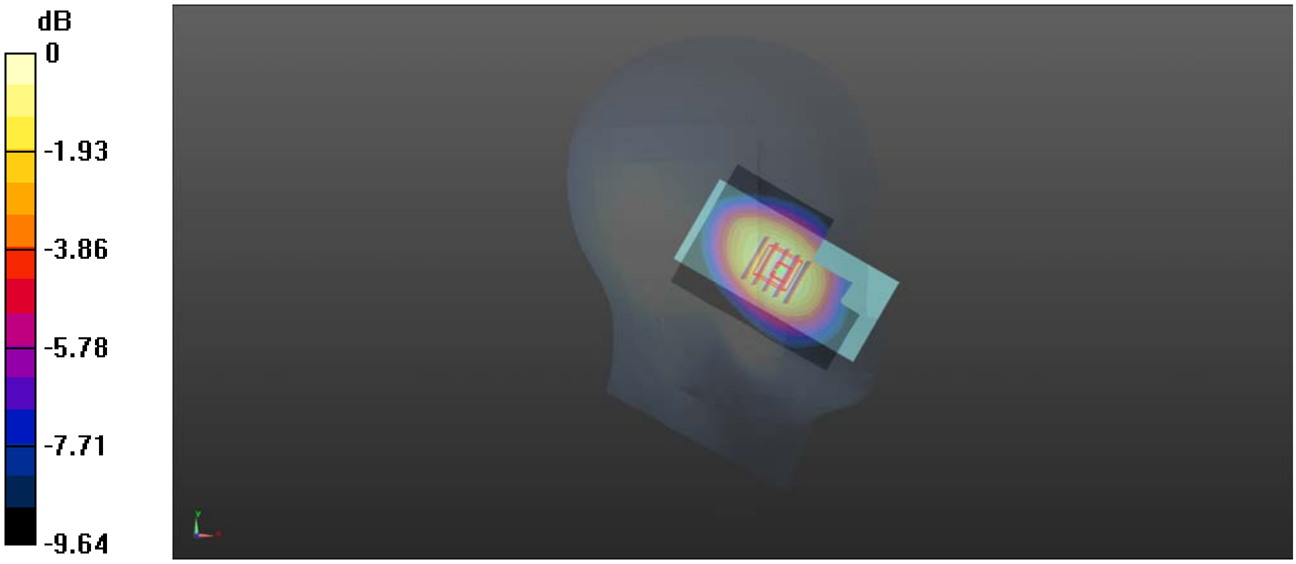
WCDMA Band V_RMC 12.2Kbps_Left Cheek_Ch4233

Communication System: UID 0, UMTS-FDD (0); Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 847 MHz; σ = 0.917 S/m; ε_r = 40.987; ρ = 1000 kg/m^3
Ambient Temperature：22.9 ℃; Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(9.32, 9.32, 9.32); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch4233/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.382 W/kg

Ch4233/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.641 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.450 W/kg
SAR(1 g) = 0.358 W/kg; SAR(10 g) = 0.264 W/kg
Maximum value of SAR (measured) = 0.384 W/kg



0 dB = 0.384 W/kg

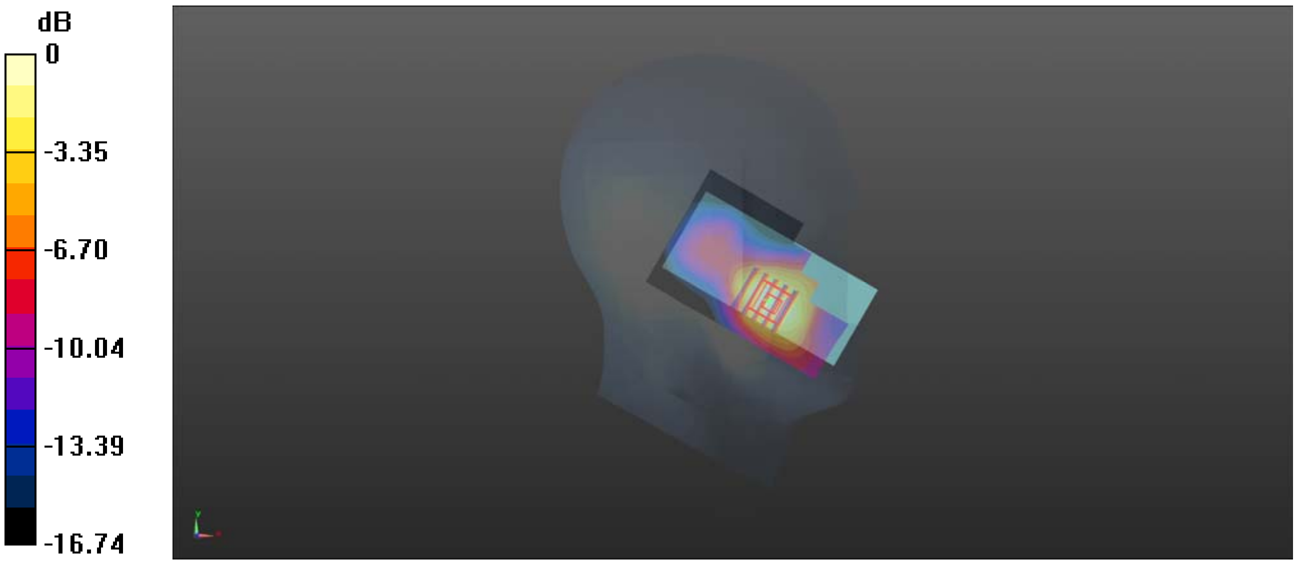
LTE Band 2_20MHz_QPSK_1RB_0Offset_Left Cheek_Ch18700

Communication System: UID 0, LTE (0); Frequency: 1860 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1860 MHz; σ = 1.341 S/m; ε_r = 40.084; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.68, 7.68, 7.68); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch18700/Area Scan (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.299 W/kg

Ch18700/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.165 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.371 W/kg
SAR(1 g) = 0.251 W/kg; SAR(10 g) = 0.155 W/kg
Maximum value of SAR (measured) = 0.271 W/kg



0 dB = 0.271 W/kg

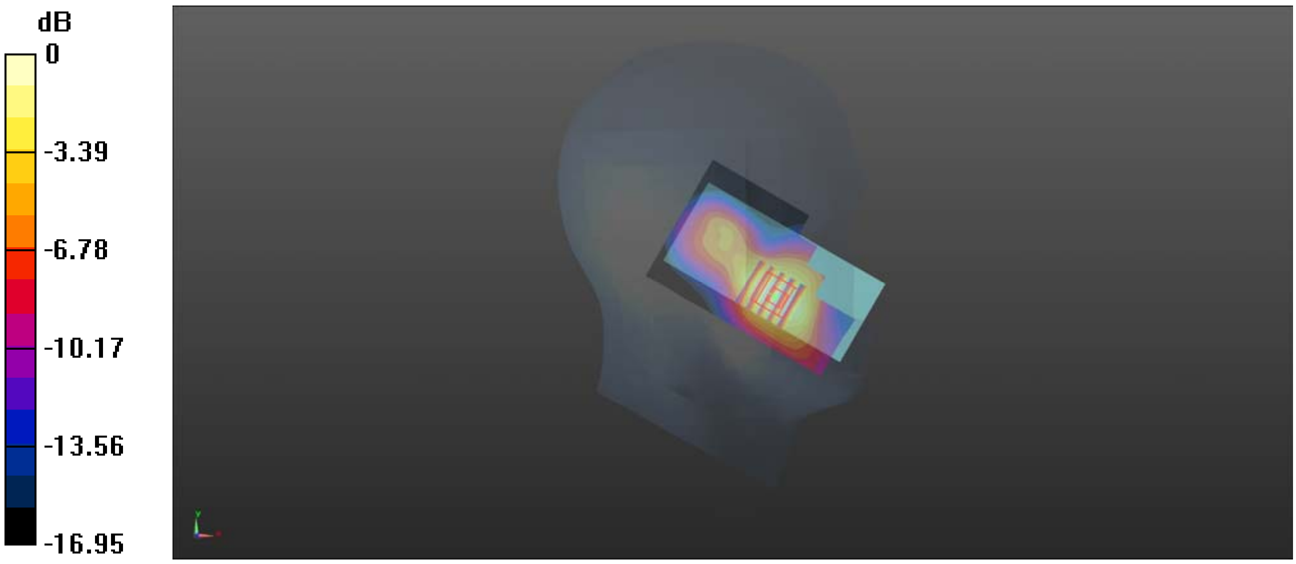
LTE Band 4_20MHz_QPSK_1RB_49Offset_Left Cheek_Ch20300

Communication System: UID 0, LTE (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium: HSL_1750 Medium parameters used: f = 1745 MHz; σ = 1.315 S/m; ε_r = 40.337; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.98, 7.98, 7.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch20300/Area Scan (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.290 W/kg

Ch20300/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.529 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.361 W/kg
SAR(1 g) = 0.254 W/kg; SAR(10 g) = 0.163 W/kg
Maximum value of SAR (measured) = 0.275 W/kg



0 dB = 0.275 W/kg

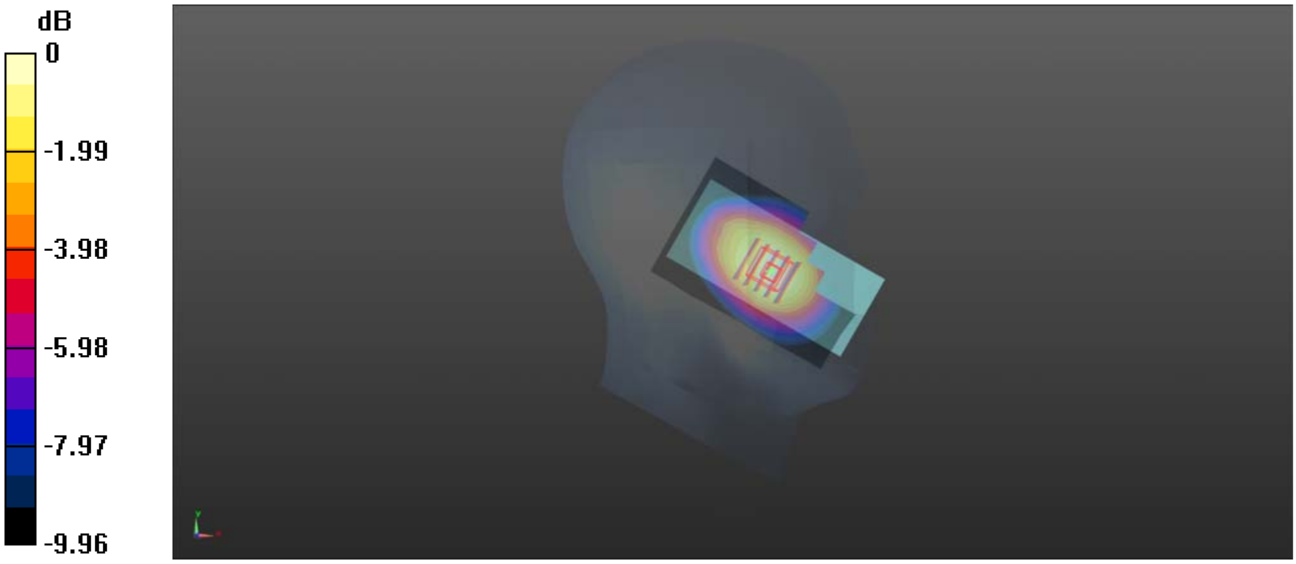
LTE Band 5_10MHz_QPSK_1RB_0Offset_Left Cheek_Ch20525

Communication System: UID 0, LTE (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 836.5 MHz; σ = 0.904 S/m; ε_r = 41.018; ρ = 1000 kg/m^3
Ambient Temperature：22.9 ℃; Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(9.32, 9.32, 9.32); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch20525/Area Scan (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.342 W/kg

Ch20525/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.909 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.424 W/kg
SAR(1 g) = 0.326 W/kg; SAR(10 g) = 0.235 W/kg
Maximum value of SAR (measured) = 0.348 W/kg



0 dB = 0.348 W/kg

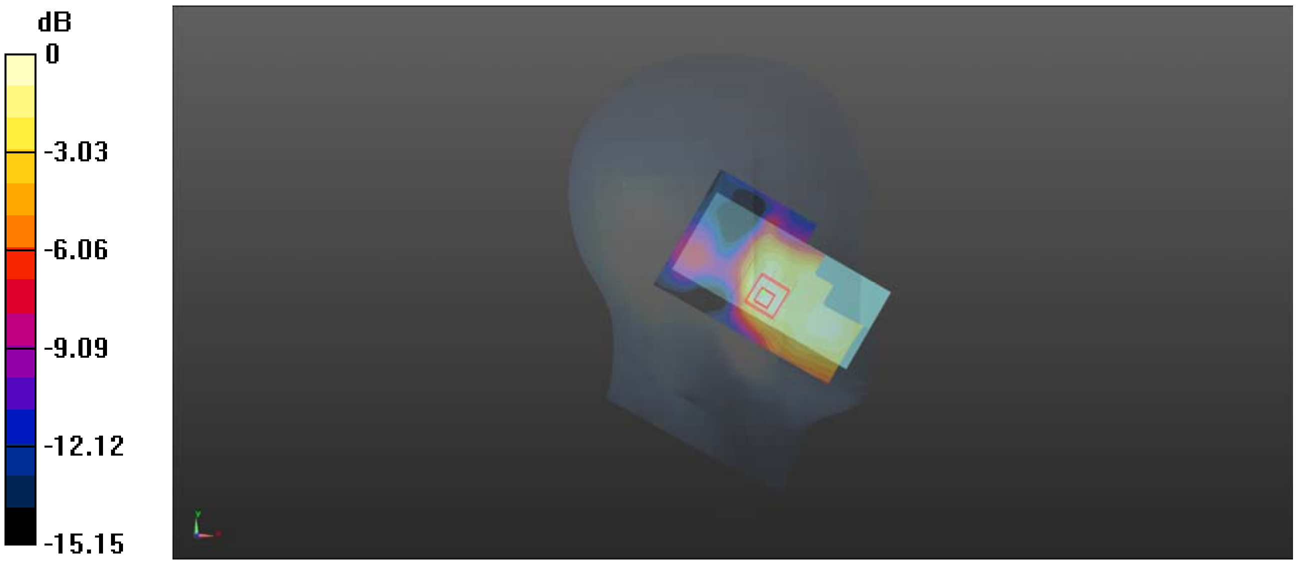
LTE Band 7_20MHz_QPSK_1RB_0Offset_Left Cheek_Ch21100

Communication System: UID 0, LTE (0); Frequency: 2535 MHz;Duty Cycle: 1:1
Medium: HSL_2600 Medium parameters used: f = 2535 MHz; σ = 1.966 S/m; ε_r = 39.813; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(6.98, 6.98, 6.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 2; Type: QD000P40CC; Serial: TP:1464
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch21100/Area Scan (61x91x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.172 W/kg

Ch21100/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.181 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.254 W/kg
SAR(1 g) = 0.193 W/kg; SAR(10 g) = 0.108 W/kg
Maximum value of SAR (measured) = 0.151 W/kg



0 dB = 0.151 W/kg

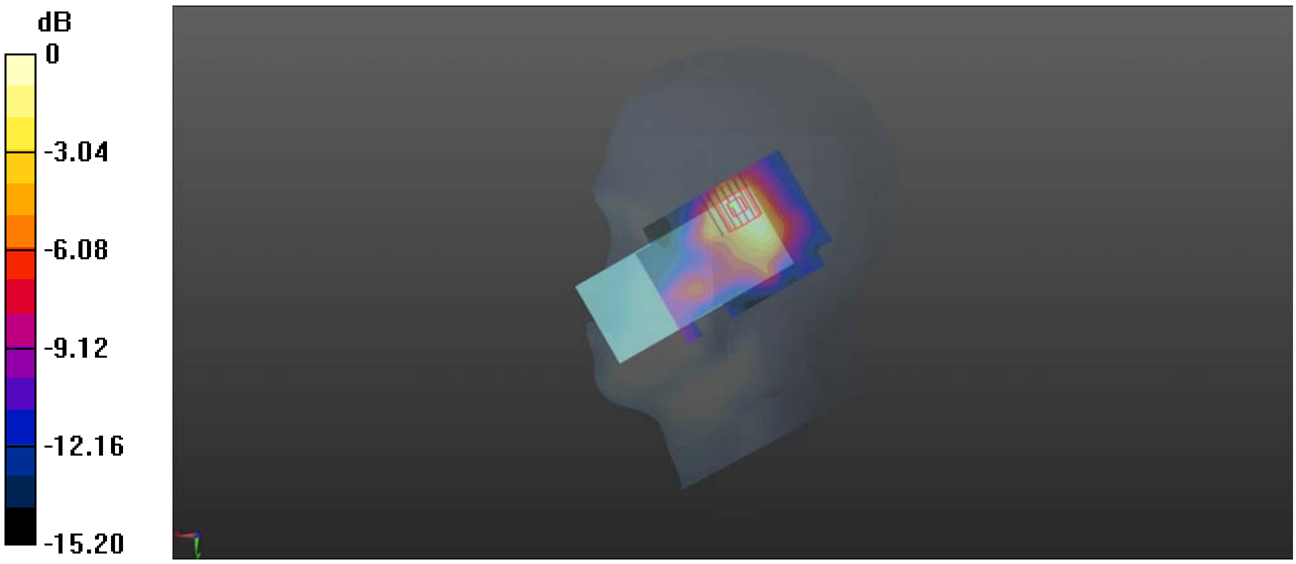
WLAN 2.4GHz_802.11b 1Mbps_Right Cheek_Ch11

Communication System: UID 0, WLAN 2.4GHz 802.11b (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: HSL_2450 Medium parameters used: f = 2462 MHz; σ = 1.869 S/m; ε_r = 39.88; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(6.98, 6.98, 6.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 2; Type: QD000P40CC; Serial: TP:1464
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch11/Area Scan (71x101x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.142 W/kg

Ch11/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.214 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.363 W/kg
SAR(1 g) = 0.136 W/kg; SAR(10 g) = 0.063 W/kg
Maximum value of SAR (measured) = 0.147 W/kg



0 dB = 0.147 W/kg

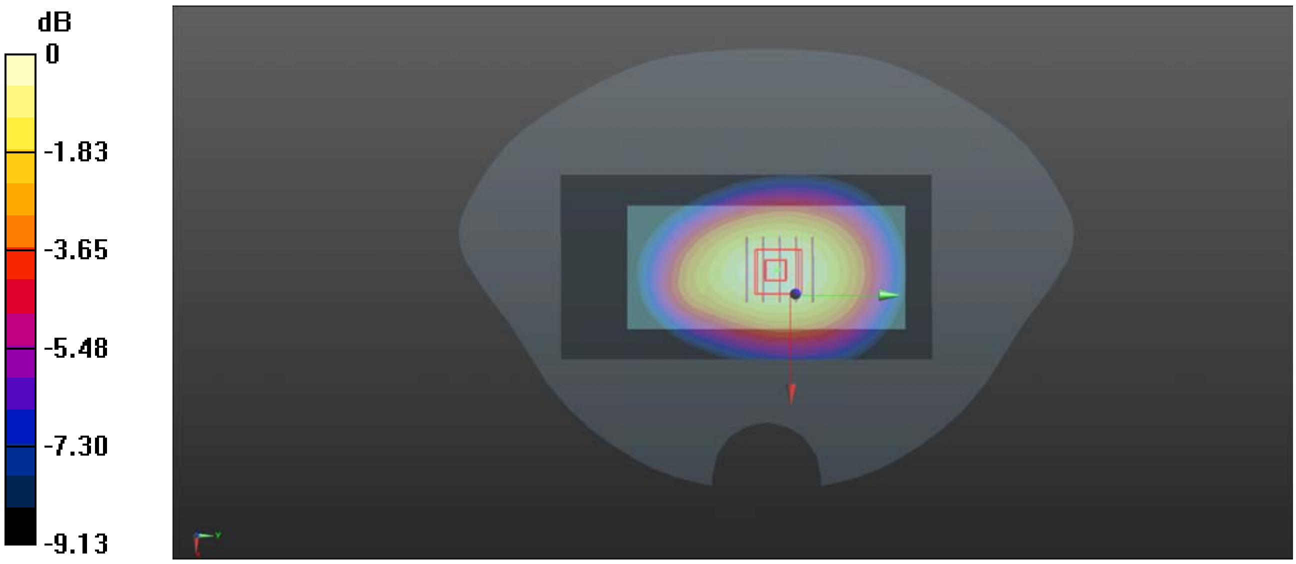
GSM850_GPRS(4 TX slots)_Back Side_10mm_Ch251

Communication System: UID 0, GSM850(class 12) (0); Frequency: 848.8 MHz;Duty Cycle: 1:2.08
Medium: HSL_835 Medium parameters used: f = 849 MHz; σ = 0.922 S/m; ε_r = 41.033; ρ = 1000 kg/m^3
Ambient Temperature：22.9 ℃; Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(9.32, 9.32, 9.32); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch251/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.03 W/kg

Ch251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.98 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 1.1 W/kg; SAR(10 g) = 0.794 W/kg
Maximum value of SAR (measured) = 1.16 W/kg



0 dB = 1.16 W/kg

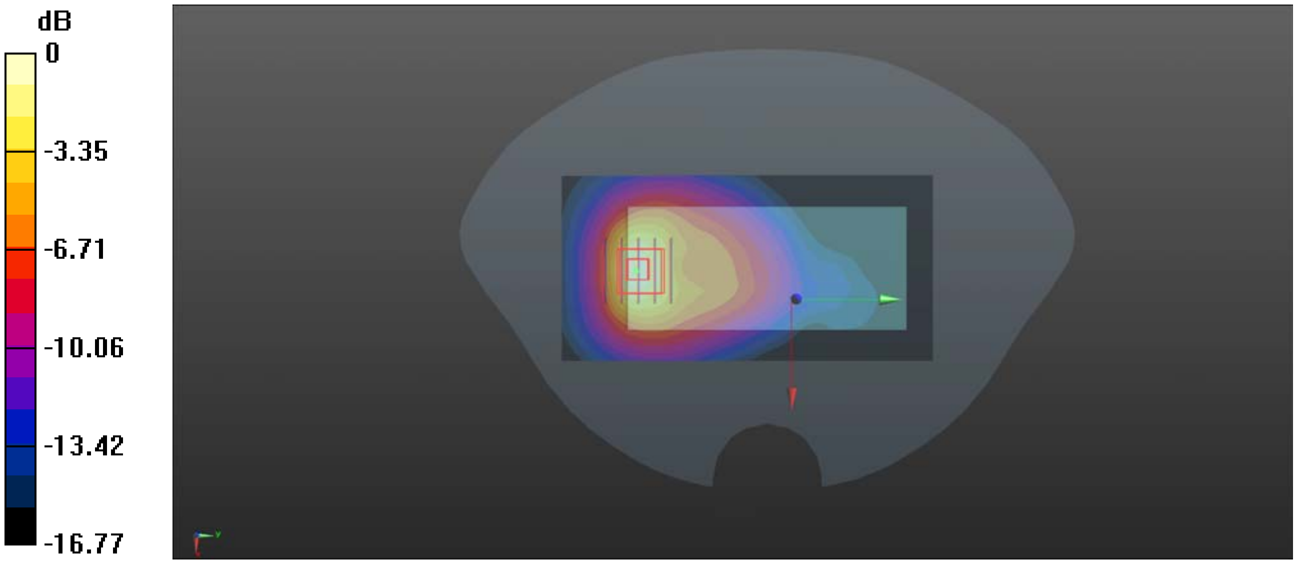
GSM1900_GPRS(4 TX slots)_Back Side_10mm_Ch661

Communication System: UID 0, PCS1900(class 12) (0); Frequency: 1880 MHz;Duty Cycle: 1:2.08
Medium: HSL_1900 Medium parameters used: f = 1880 MHz; σ = 1.366 S/m; ε_r = 40.167; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.68, 7.68, 7.68); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch661/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.687 W/kg

Ch661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.561 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.660 W/kg; SAR(10 g) = 0.353 W/kg
Maximum value of SAR (measured) = 0.741 W/kg



0 dB = 0.741 W/kg

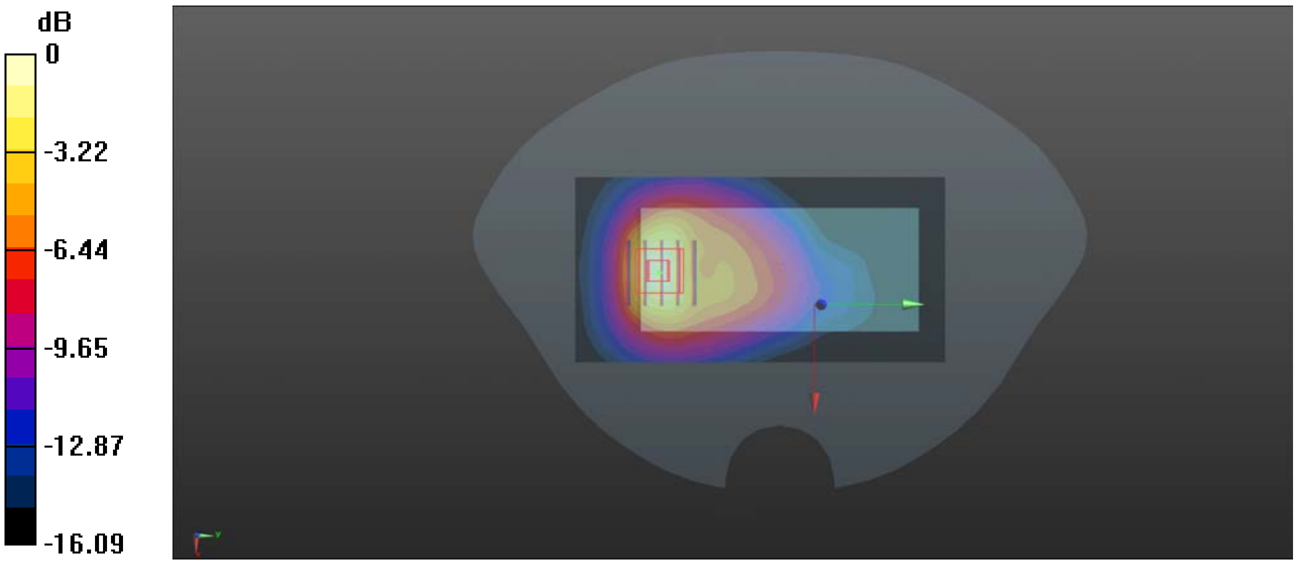
WCDMA Band II_RMC 12.2Kbps_Back Side_10mm_Ch9400

Communication System: UID 0, UMTS-FDD (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1880 MHz; σ = 1.366 S/m; ε_r = 40.167; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.68, 7.68, 7.68); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch9400/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.741 W/kg

Ch9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.512 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.22 W/kg
SAR(1 g) = 0.711 W/kg; SAR(10 g) = 0.384 W/kg
Maximum value of SAR (measured) = 0.807 W/kg



0 dB = 0.807 W/kg

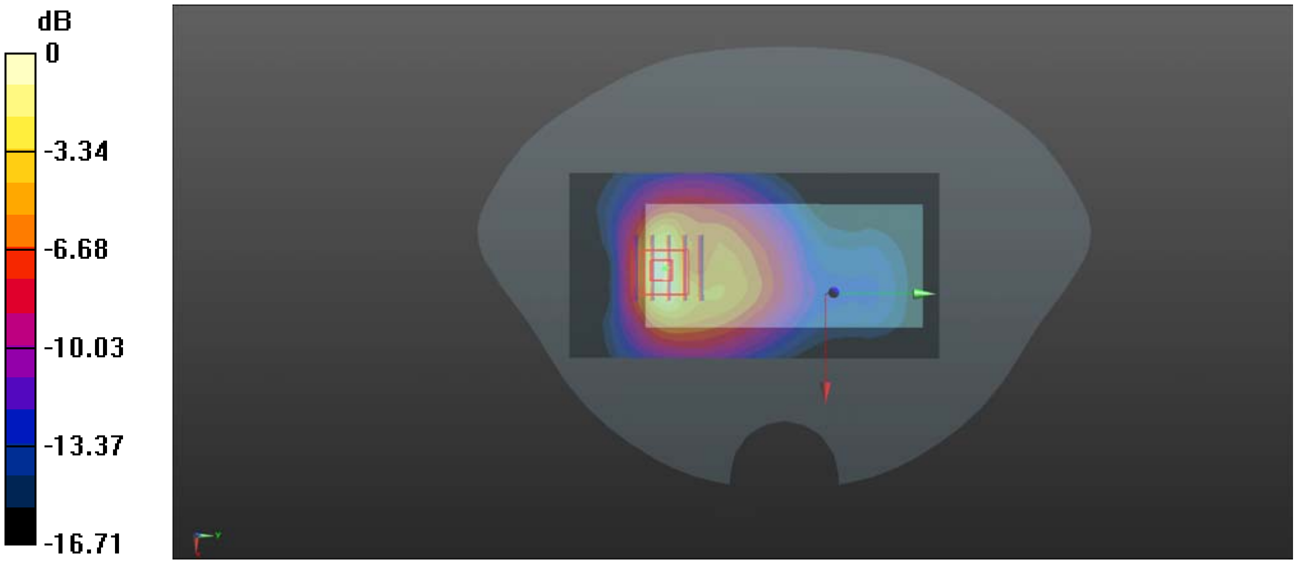
WCDMA Band IV_RMC 12.2Kbps_Back Side_10mm_Ch1312

Communication System: UID 0, UMTS-FDD (0); Frequency: 1712.4 MHz;Duty Cycle: 1:1
Medium: HSL_1800 Medium parameters used: f = 1712.4 MHz; σ = 1.29 S/m; ε_r = 40.558; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.98, 7.98, 7.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch1312/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.800 W/kg

Ch1312/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.527 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.693 W/kg; SAR(10 g) = 0.362 W/kg
Maximum value of SAR (measured) = 0.792 W/kg



0 dB = 0.792 W/kg

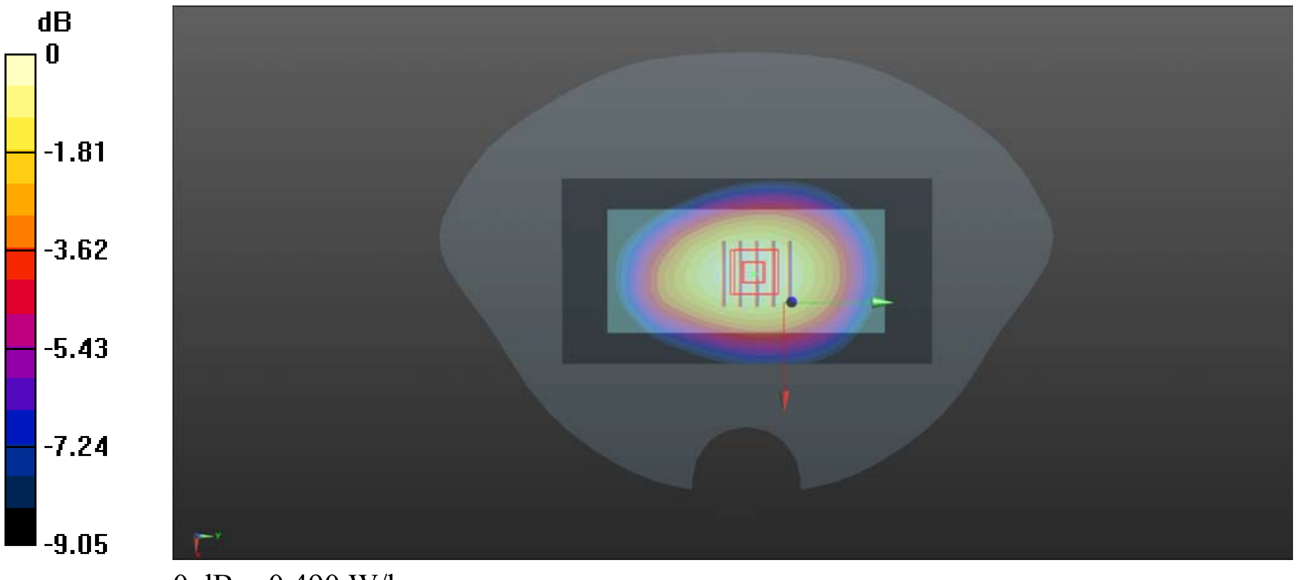
WCDMA Band V_RMC 12.2Kbps_Back Side_10mm_Ch4233

Communication System: UID 0, UMTS-FDD (0); Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 847 MHz; σ = 0.917 S/m; ε_r = 40.987; ρ = 1000 kg/m^3
Ambient Temperature：22.9 ℃; Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(9.32, 9.32, 9.32); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch4233/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.492 W/kg

Ch4233/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.24 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.600 W/kg
SAR(1 g) = 0.462 W/kg; SAR(10 g) = 0.334 W/kg
Maximum value of SAR (measured) = 0.490 W/kg



0 dB = 0.490 W/kg

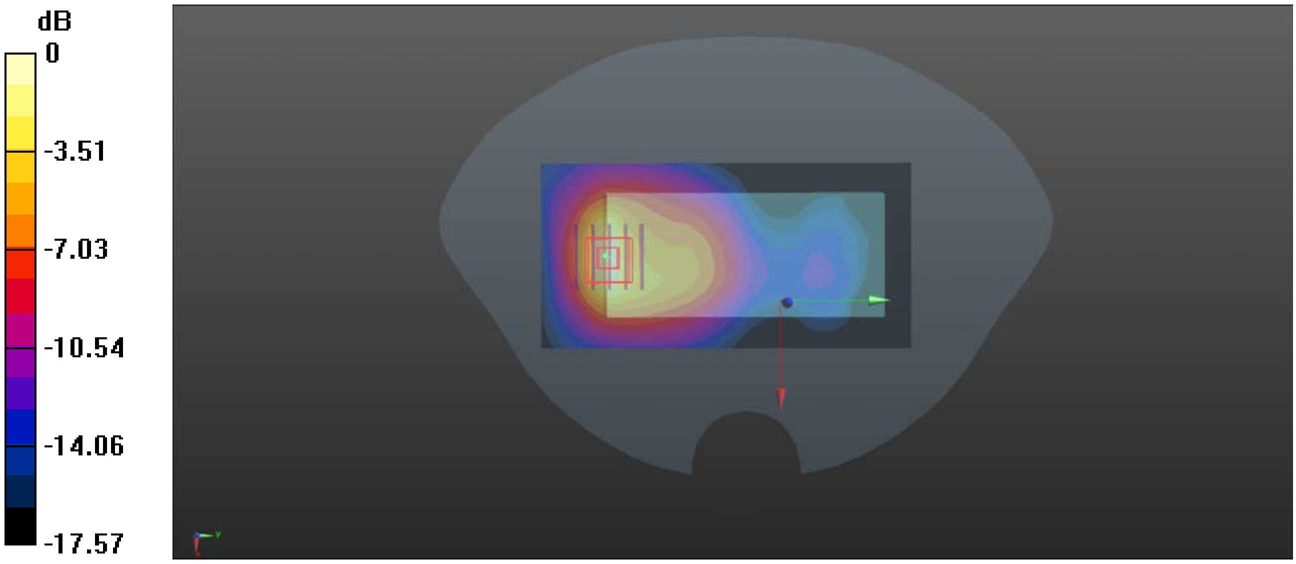
LTE Band 2_20MHz_QPSK_1RB_0Offset_Back Side_10mm_Ch18700

Communication System: UID 0, LTE (0); Frequency: 1860 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1860 MHz; σ = 1.341 S/m; ε_r = 40.084; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.68, 7.68, 7.68); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch18700/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.843 W/kg

Ch18700/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.245 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.29 W/kg
SAR(1 g) = 0.742 W/kg; SAR(10 g) = 0.392 W/kg
Maximum value of SAR (measured) = 0.843 W/kg



0 dB = 0.843 W/kg

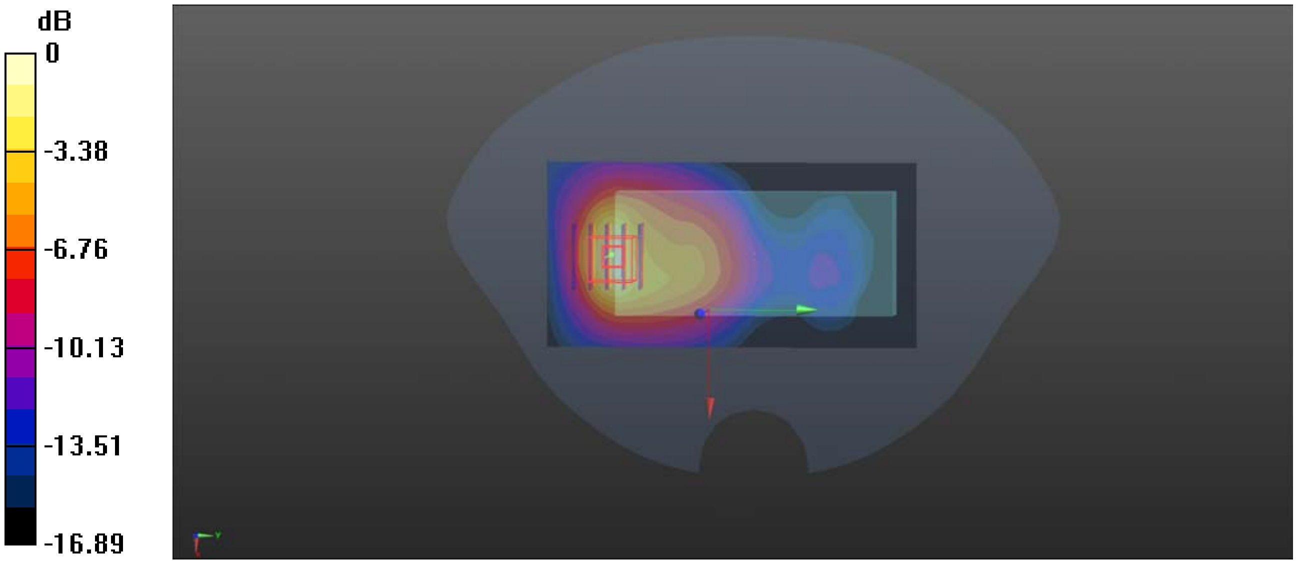
LTE Band 4_20MHz_QPSK_1RB_49Offset_Back Side_10mm_Ch20175

Communication System: UID 0, LTE (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium: HSL_1800 Medium parameters used: f = 1732.5 MHz; σ = 1.304 S/m; ε_r = 40.334; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.98, 7.98, 7.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch20175/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.888 W/kg

Ch20175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.417 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 1.30 W/kg
SAR(1 g) = 0.759 W/kg; SAR(10 g) = 0.401 W/kg
Maximum value of SAR (measured) = 0.874 W/kg



0 dB = 0.874 W/kg

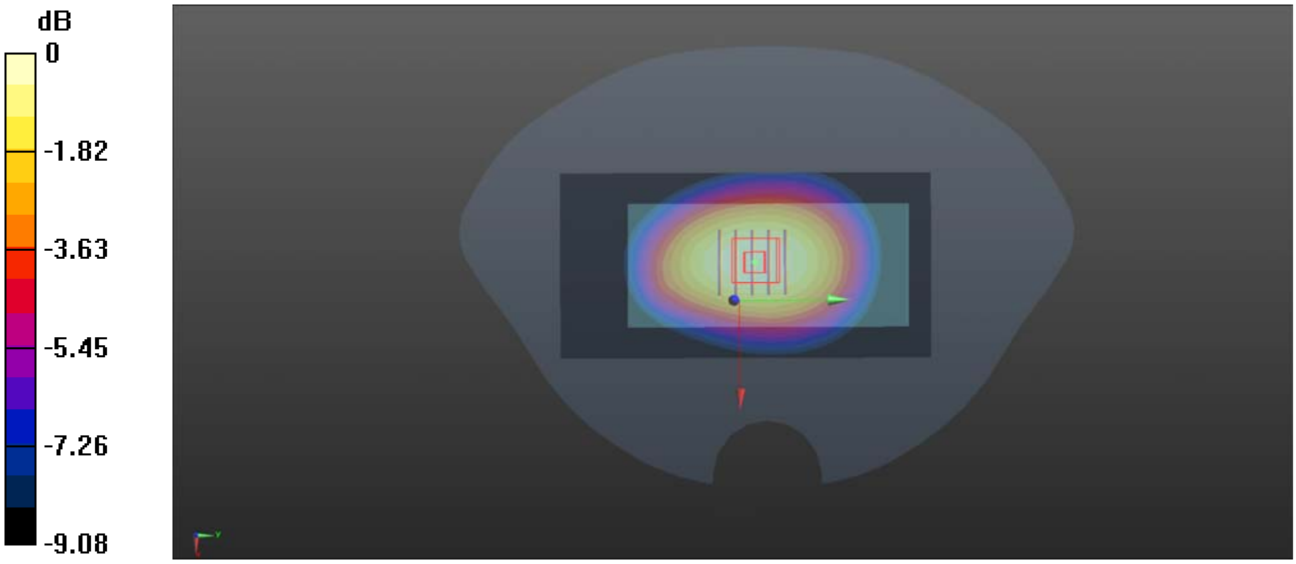
LTE Band 5_10MHz_QPSK_1RB_0Offset_Back Side_10mm_Ch20525

Communication System: UID 0, LTE (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 836.5 MHz; $\sigma = 0.904$ S/m; $\varepsilon_r = 41.018$; $\rho = 1000$ kg/m^3
Ambient Temperature：22.29℃; Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(9.32, 9.32, 9.32); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch20525/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.504 W/kg

Ch20525/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.49 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.621 W/kg
SAR(1 g) = 0.475 W/kg; SAR(10 g) = 0.344 W/kg
Maximum value of SAR (measured) = 0.504 W/kg



0 dB = 0.504 W/kg

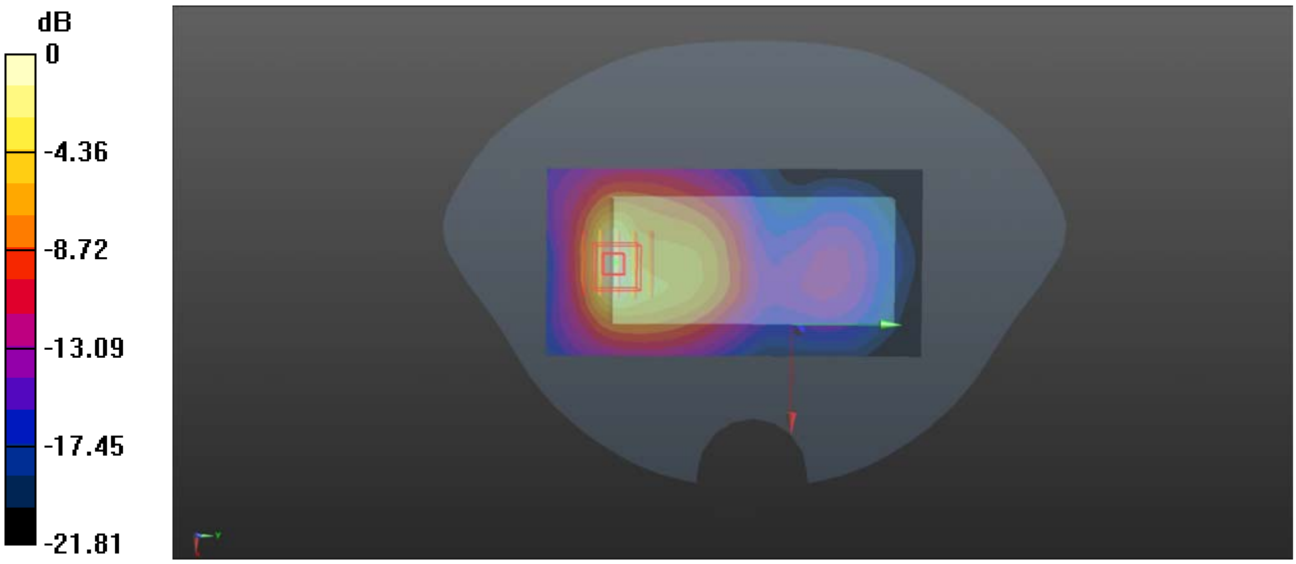
LTE Band 7_20MHz_QPSK_1RB_0Offset_Back Side_10mm_Ch20850

Communication System: UID 0, LTE (0); Frequency: 2510 MHz;Duty Cycle: 1:1
Medium: HSL_2600 Medium parameters used: f = 2510 MHz; σ = 1.931 S/m; ε_r = 39.739; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(6.98, 6.98, 6.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 2; Type: QD000P40CC; Serial: TP:1464
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch20850/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.78 W/kg

Ch20850/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.153 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 3.43 W/kg
SAR(1 g) = 0.960 W/kg; SAR(10 g) = 0.455 W/kg
Maximum value of SAR (measured) = 1.84 W/kg



0 dB = 1.78 W/kg

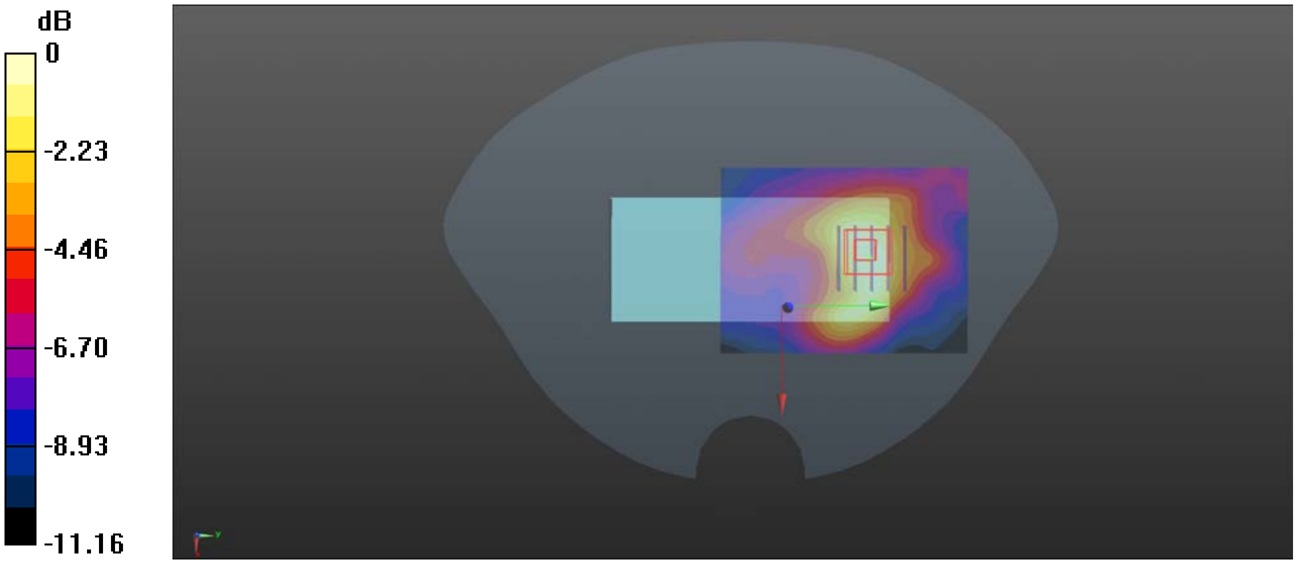
WLAN 2.4GHz_802.11b 1Mbps_Back Side_10mm_Ch11

Communication System: UID 0, WLAN 2.4GHz 802.11b (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: HSL_2450 Medium parameters used: f = 2462 MHz; σ = 1.869 S/m; ε_r = 39.88; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(6.98, 6.98, 6.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 2; Type: QD000P40CC; Serial: TP:1464
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch11/Area Scan (61x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0537 W/kg

Ch11/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.793 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.100 W/kg
SAR(1 g) = 0.051 W/kg; SAR(10 g) = 0.029 W/kg
Maximum value of SAR (measured) = 0.0543 W/kg



0 dB = 0.0543 W/kg

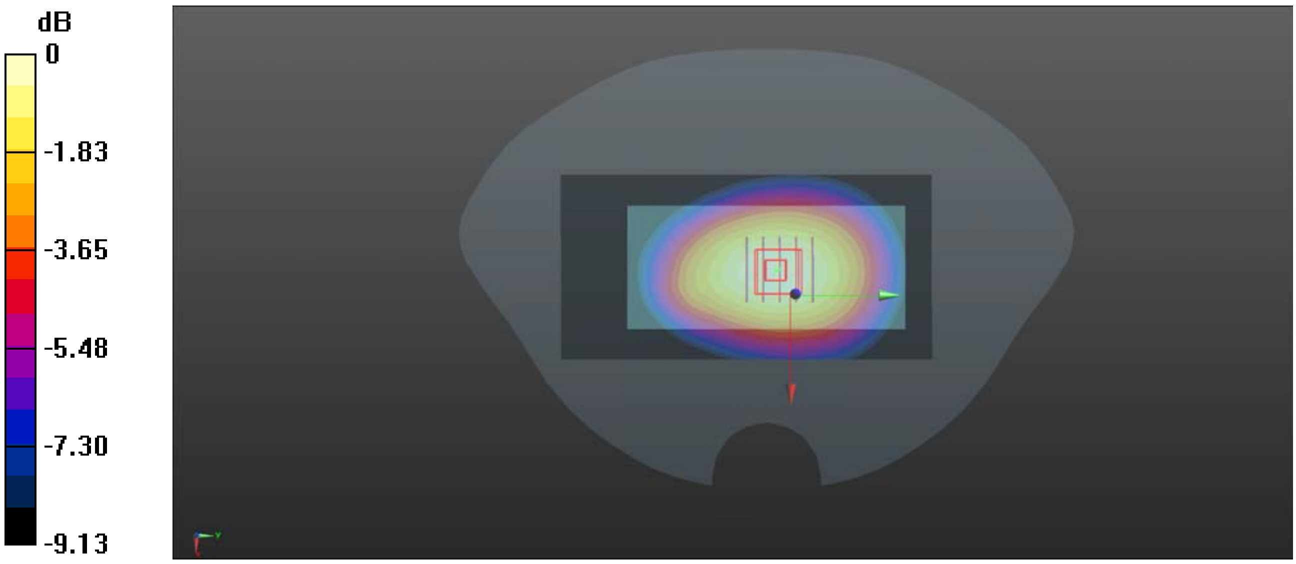
GSM850_GPRS(4 TX slots)_Back Side_10mm_Ch251

Communication System: UID 0, GSM850(class 12) (0); Frequency: 848.8 MHz;Duty Cycle: 1:2.08
Medium: HSL_835 Medium parameters used: f = 849 MHz; σ = 0.922 S/m; ε_r = 41.033; ρ = 1000 kg/m^3
Ambient Temperature：22.9 ℃; Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(9.32, 9.32, 9.32); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch251/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.03 W/kg

Ch251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.98 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 1.1 W/kg; SAR(10 g) = 0.794 W/kg
Maximum value of SAR (measured) = 1.16 W/kg



0 dB = 1.16 W/kg

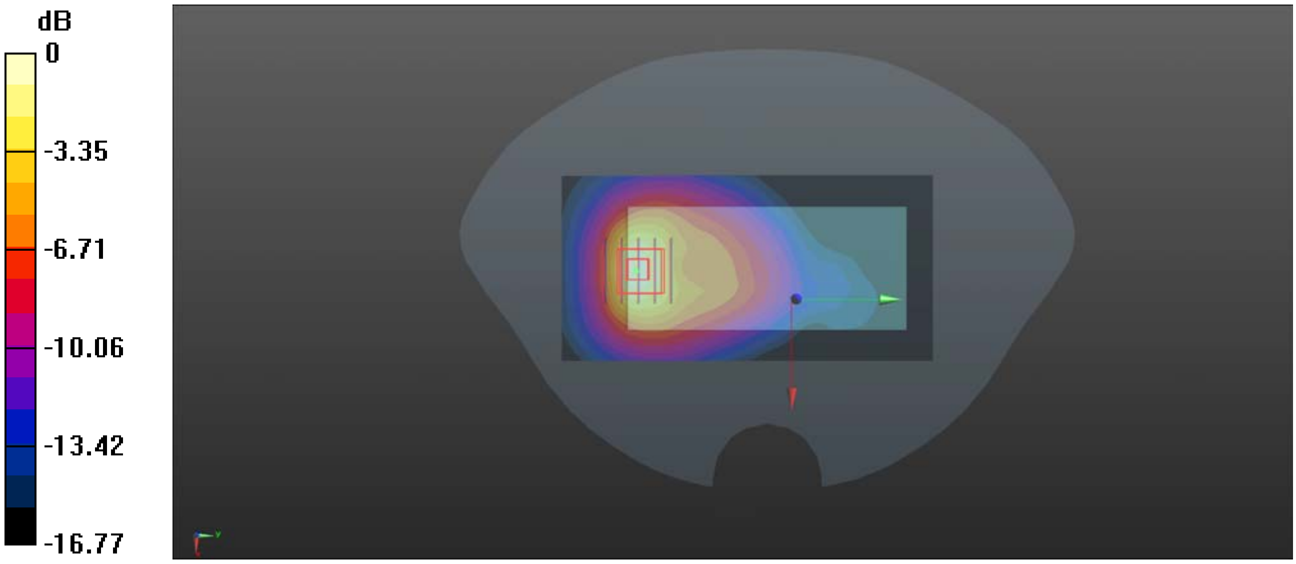
GSM1900_GPRS(4 TX slots)_Back Side_10mm_Ch661

Communication System: UID 0, PCS1900(class 12) (0); Frequency: 1880 MHz;Duty Cycle: 1:2.08
Medium: HSL_1900 Medium parameters used: f = 1880 MHz; σ = 1.366 S/m; ε_r = 40.167; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.68, 7.68, 7.68); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch661/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.687 W/kg

Ch661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.561 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.660 W/kg; SAR(10 g) = 0.353 W/kg
Maximum value of SAR (measured) = 0.741 W/kg



0 dB = 0.741 W/kg

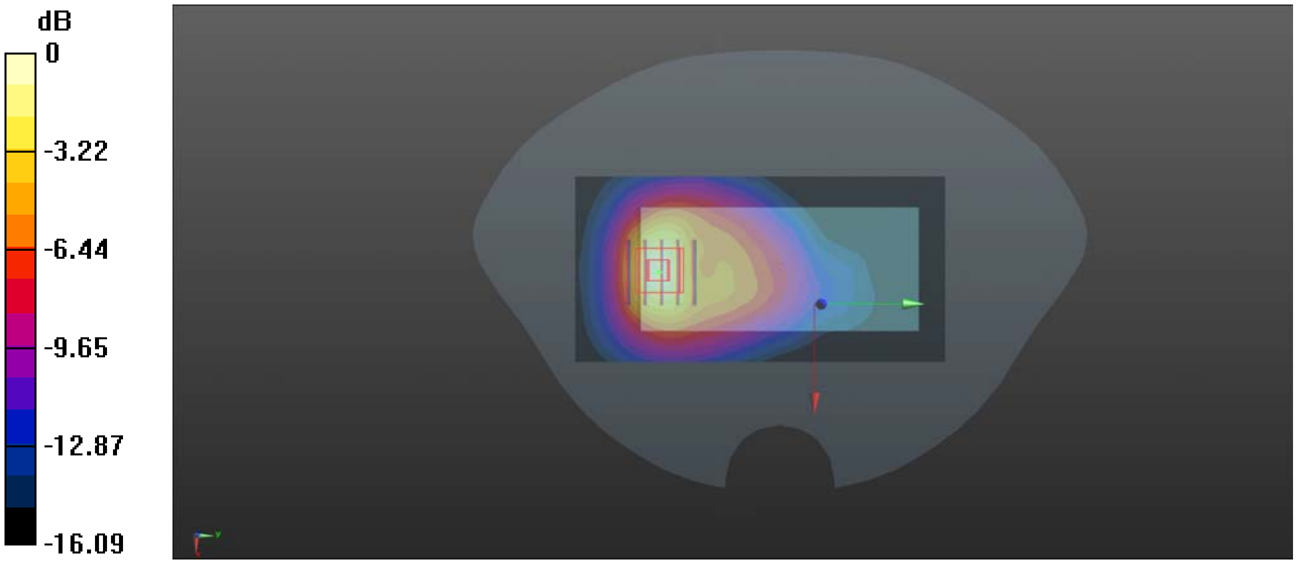
WCDMA Band II_RMC 12.2Kbps_Back Side_10mm_Ch9400

Communication System: UID 0, UMTS-FDD (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1880 MHz; σ = 1.366 S/m; ε_r = 40.167; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.68, 7.68, 7.68); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch9400/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.741 W/kg

Ch9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.512 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.22 W/kg
SAR(1 g) = 0.711 W/kg; SAR(10 g) = 0.384 W/kg
Maximum value of SAR (measured) = 0.807 W/kg



0 dB = 0.807 W/kg

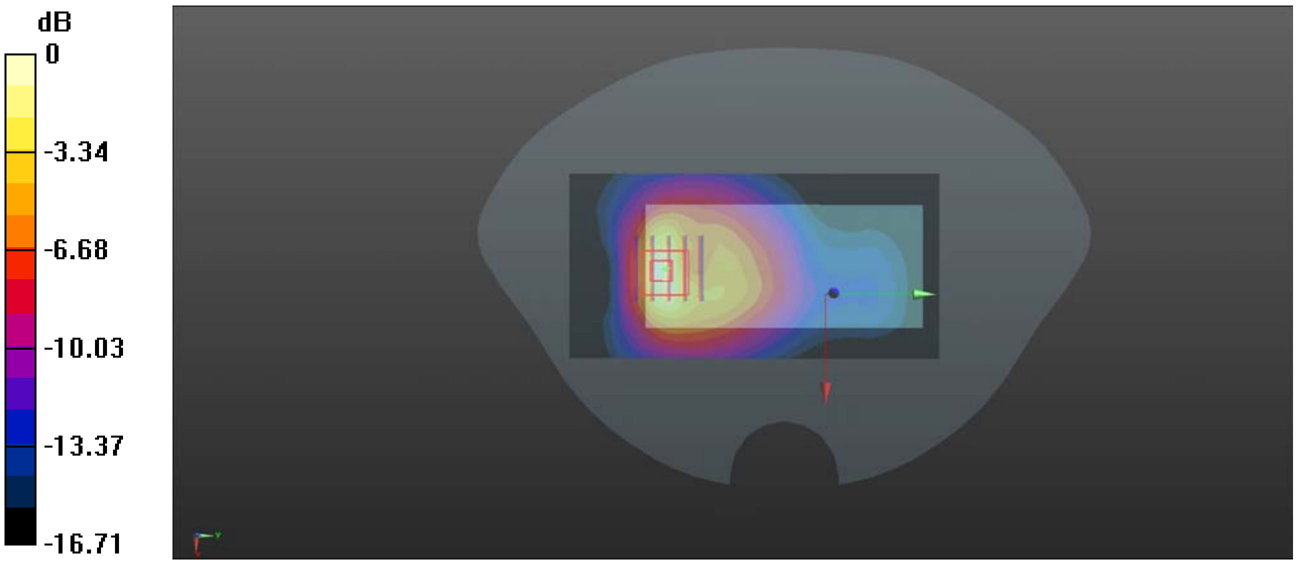
WCDMA Band IV_RMC 12.2Kbps_Back Side_10mm_Ch1312

Communication System: UID 0, UMTS-FDD (0); Frequency: 1712.4 MHz;Duty Cycle: 1:1
Medium: HSL_1800 Medium parameters used: f = 1712.4 MHz; σ = 1.29 S/m; ε_r = 40.558; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.98, 7.98, 7.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch1312/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.800 W/kg

Ch1312/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.527 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.693 W/kg; SAR(10 g) = 0.362 W/kg
Maximum value of SAR (measured) = 0.792 W/kg



0 dB = 0.792 W/kg

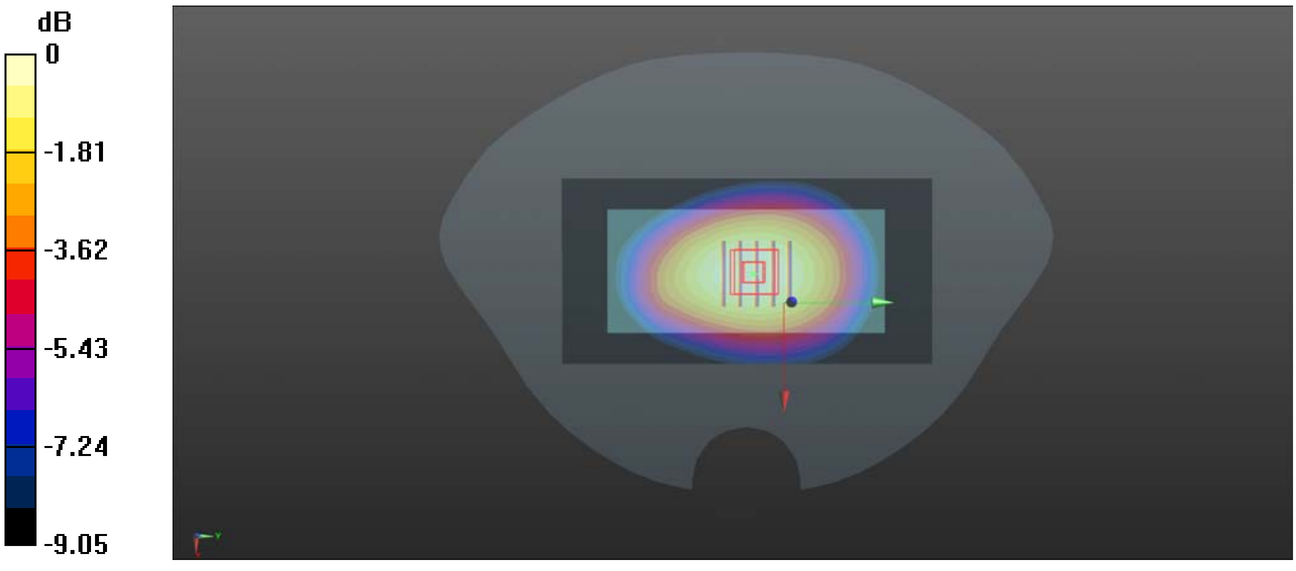
WCDMA Band V_RMC 12.2Kbps_Back Side_10mm_Ch4233

Communication System: UID 0, UMTS-FDD (0); Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 847 MHz; σ = 0.917 S/m; ε_r = 40.987; ρ = 1000 kg/m^3
Ambient Temperature：22.9 ℃; Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(9.32, 9.32, 9.32); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch4233/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.492 W/kg

Ch4233/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.24 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.600 W/kg
SAR(1 g) = 0.462 W/kg; SAR(10 g) = 0.334 W/kg
Maximum value of SAR (measured) = 0.490 W/kg



0 dB = 0.490 W/kg

Test Laboratory: SAR Lab. of Shenzhen Morlab Communications Technology Co., Ltd. Date: 2019.08.23

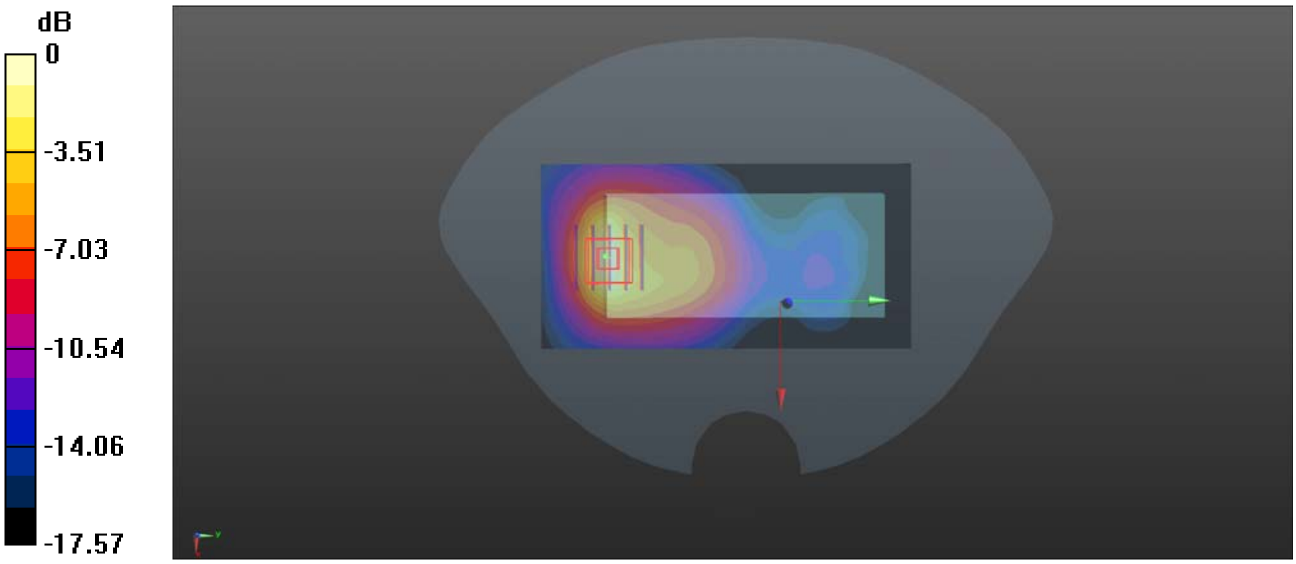
LTE Band 2_20MHz_QPSK_1RB_0Offset_Back Side_10mm_Ch18700

Communication System: UID 0, LTE (0); Frequency: 1860 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1860 MHz; σ = 1.341 S/m; ε_r = 40.084; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.68, 7.68, 7.68); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch18700/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.843 W/kg

Ch18700/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.245 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.29 W/kg
SAR(1 g) = 0.742 W/kg; SAR(10 g) = 0.392 W/kg
Maximum value of SAR (measured) = 0.843 W/kg



0 dB = 0.843 W/kg

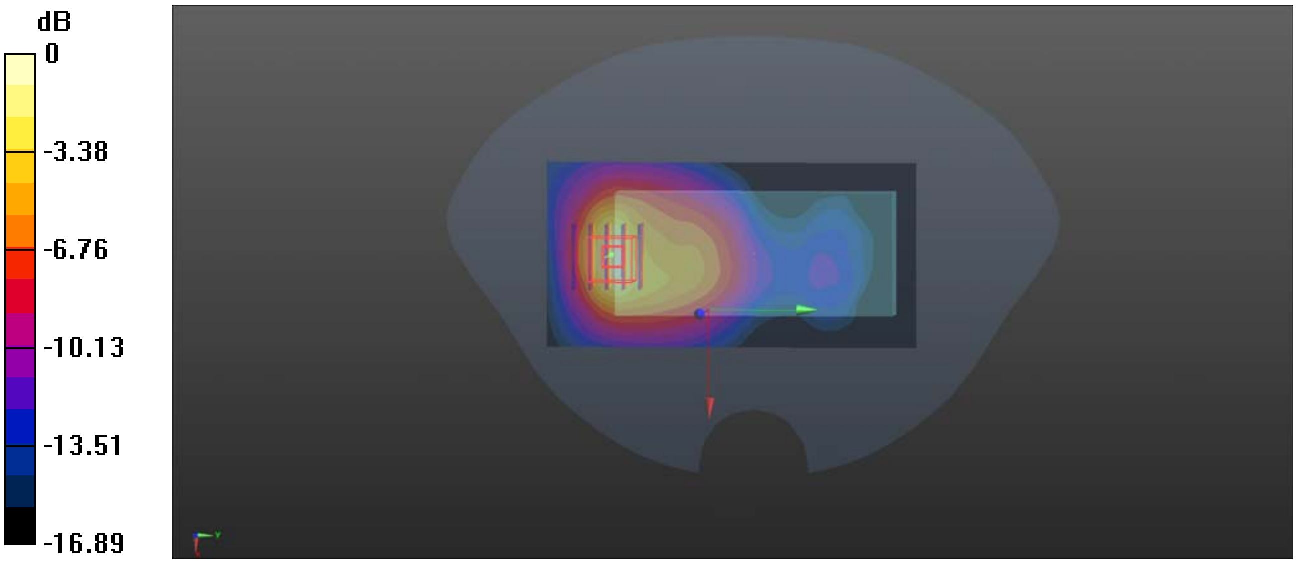
LTE Band 4_20MHz_QPSK_1RB_49Offset_Back Side_10mm_Ch20175

Communication System: UID 0, LTE (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium: HSL_1800 Medium parameters used: f = 1732.5 MHz; σ = 1.304 S/m; ε_r = 40.334; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(7.98, 7.98, 7.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1471
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch20175/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.888 W/kg

Ch20175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.417 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 1.30 W/kg
SAR(1 g) = 0.759 W/kg; SAR(10 g) = 0.401 W/kg
Maximum value of SAR (measured) = 0.874 W/kg



0 dB = 0.874 W/kg

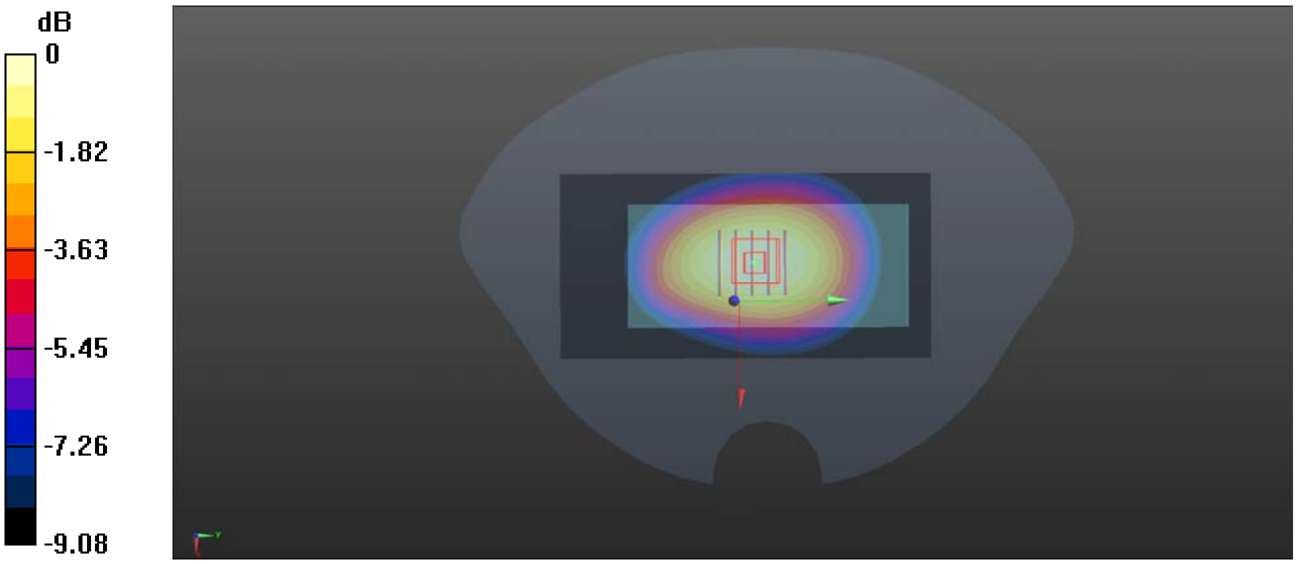
LTE Band 5_10MHz_QPSK_1RB_0Offset_Back Side_10mm_Ch20525

Communication System: UID 0, LTE (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium: HSL_835 Medium parameters used: f = 836.5 MHz; σ = 0.904 S/m; ε_r = 41.018; ρ = 1000 kg/m^3
Ambient Temperature：22.29℃; Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(9.32, 9.32, 9.32); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch20525/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.504 W/kg

Ch20525/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.49 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.621 W/kg
SAR(1 g) = 0.475 W/kg; SAR(10 g) = 0.344 W/kg
Maximum value of SAR (measured) = 0.504 W/kg



0 dB = 0.504 W/kg

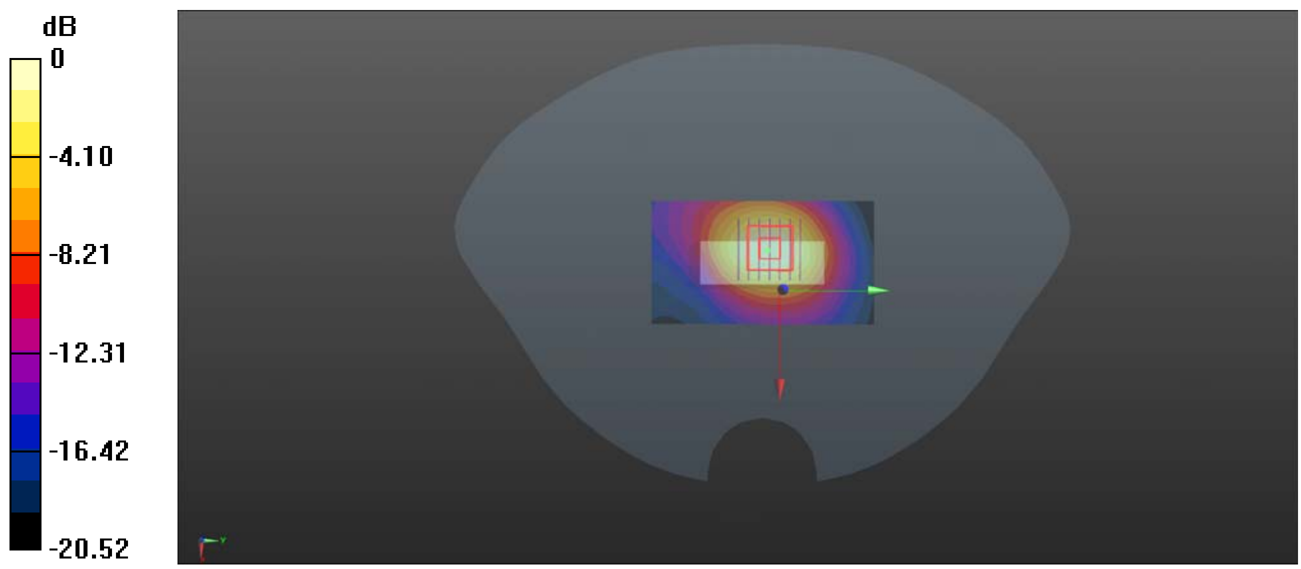
LTE Band 7_20MHz_QPSK_1RB_0Offset_Bottom Side_10mm_Ch20850

Communication System: UID 0, LTE (0); Frequency: 2510 MHz;Duty Cycle: 1:1
Medium: HSL_2600 Medium parameters used: f = 2510 MHz; σ = 1.931 S/m; ε_r = 39.739; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(6.98, 6.98, 6.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 2; Type: QD000P40CC; Serial: TP:1464
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch20850/Area Scan (51x91x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.28 W/kg

Ch20850/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.95 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 2.09 W/kg
SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.506 W/kg
Maximum value of SAR (measured) = 1.16 W/kg



0 dB = 1.16 W/kg

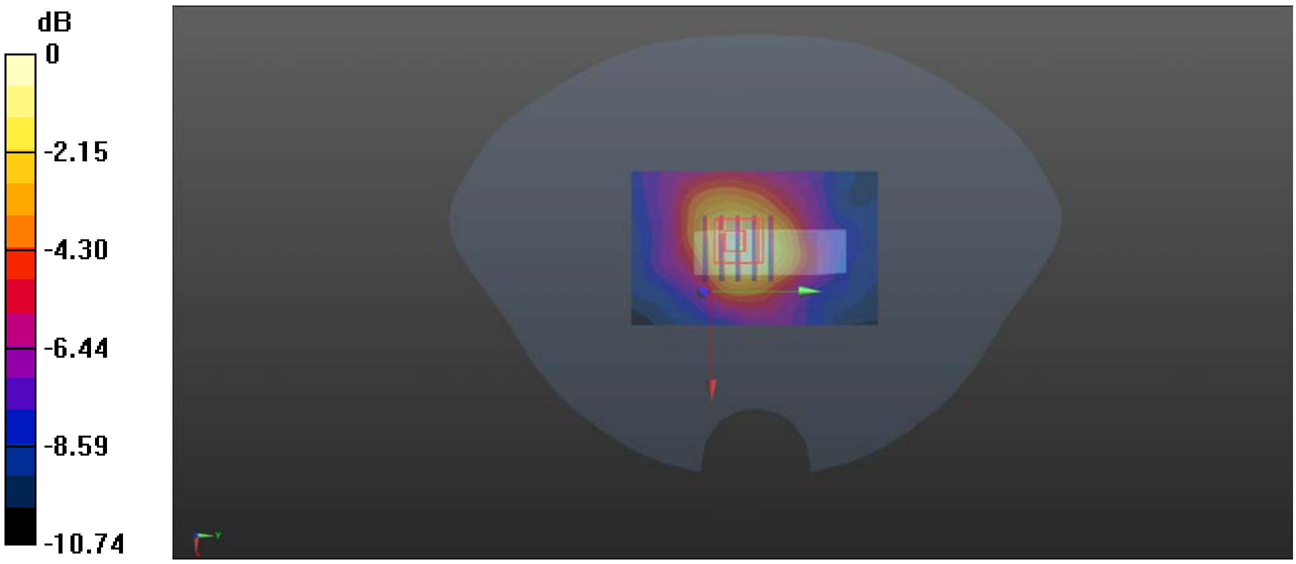
WLAN 2.4GHz_802.11b 1Mbps_Top Side_10mm_Ch11

Communication System: UID 0, WLAN 2.4GHz 802.11b (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: HSL_2450 Medium parameters used: f = 2462 MHz; σ = 1.869 S/m; ε_r = 39.88; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(6.98, 6.98, 6.98); Calibrated: 2018.11.12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn480; Calibrated: 2019.04.11
- Phantom: SAM 2; Type: QD000P40CC; Serial: TP:1464
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch11/Area Scan (51x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0577 W/kg

Ch11/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.207 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.0990 W/kg
SAR(1 g) = 0.052 W/kg; SAR(10 g) = 0.032 W/kg
Maximum value of SAR (measured) = 0.0550 W/kg



0 dB = 0.0550 W/kg