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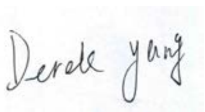
FCC SAR TEST REPORT

Application No:	SZEM1701000231RG
Applicant:	Huawei Technologies Co.,Ltd.
Manufacturer:	Huawei Technologies Co.,Ltd.
Product Name:	LTE USB Stick
Model No.(EUT):	604HW
Trade Mark:	HUAWEI
FCC ID:	QIS604HW
Standards:	FCC 47CFR §2.1093
Date of Receipt:	2017-01-12
Date of Test:	2017-01-13 to 2017-01-17
Date of Issue:	2017-02-04
Test Result :	**PASS ***

* In the configuration tested, the EUT detailed in this report complied with the standards specified above.

Authorized Signature:



Derek Yang

Wireless Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.
If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

REVISION HISTORY

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2017-02-04		Original

TEST SUMMARY

Frequency Band	Test position	Test mode	Max Report SAR (W/kg)	SAR limit (W/kg)	Verdict
GSM850	Body	GPRS 3TS	1.17	1.6	PASS
GSM1900	Body	GPRS 3TS	1.13	1.6	PASS
WCDMA Band II	Body	RMC	0.92	1.6	PASS
WCDMA Band IV	Body	RMC	1.03	1.6	PASS
WCDMA Band V	Body	RMC	0.89	1.6	PASS
LTE Band 2	Body	QPSK	1.13	1.6	PASS
LTE Band 4	Body	QPSK	1.10	1.6	PASS
LTE Band 12	Body	QPSK	0.55	1.6	PASS
LTE Band 17	Body	QPSK	0.58	1.6	PASS
LTE Band 25	Body	QPSK	1.12	1.6	PASS
LTE Band 26	Body	QPSK	1.05	1.6	PASS
LTE Band 41	Body	QPSK	0.88	1.6	PASS

Approved & Released by

Simon Ling

SAR Manager

Tested by

Evan Mi

SAR Engineer

CONTENTS

1 General Information

1.1 Details of Client

Applicant:	Huawei Technologies Co., Ltd.
Address:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C
Manufacturer:	Huawei Technologies Co., Ltd.
Address:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

1.2 Test Location

Company:	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
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E-mail:	ee.shenzhen@sgs.com

1.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

• FCC – Registration No.: 556682

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 556682.

• Industry Canada (IC)

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

1.4 General Description of EUT

Product Name:	LTE USB Stick		
Model No.(EUT):	604HW		
Trade Mark:	HUAWEI		
Product Phase:	production unit		
Device Type :	portable device		
Exposure Category:	uncontrolled environment / general population		
FCC ID:	QIS604HW		
SN/ IMEI:	H2Y0116C13000192/ 863201030021810		
Hardware Version:	CL1SBD01MU		
Software Version:	12.450.03.14.1420		
Antenna Type:	Inner Antenna		
Device Operating Configurations :			
Modulation Mode:	**GSM:** GMSK, 8PSK; **WCDMA**: QPSK; **LTE**:QPSK, 16QAM, 64QAM		
GPRS Multi-slots Class:	12	EGPRS Multi-slots Class:	12
HSDPA UE Category:	14	HSUPA UE Category	6
LTE UE category:	5		
Frequency Bands:	Band	Tx (MHz)	Rx (MHz)
	GSM850	824-849	869-894
	GSM1900	1850-1910	1930-1990
	WCDMA850	824-849	869-894
	WCDMA1700	1710-1755	2110- 2155
	WCDMA1900	1850-1910	1930-1990
	LTE Band 2	1850-1910	1930-1990
	LTE Band 4	1710-1755	2110- 2155
	LTE Band 12	699-716	729- 746
	LTE Band 17	704-716	734-746
	LTE Band 25	1850-1915	1930-1995
	LTE Band 26	814-849	859-894
	LTE Band 41	2496-2690	2496-2690

1.5 Test Specification

Identity	Document Title
FCC 47CFR §2.1093	Radiofrequency Radiation Exposure Evaluation: Portable Devices
IEEE Std C95.1 – 1991	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.
IEEE 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
KDB 941225 D01 v03r01	3G SAR Procedures
KDB 941225 D05 v02r05	SAR for LTE Devices
KDB 941225 D05A v01r02	LTE Rel.10 KDB Inquiry Sheet
KDB447498 D01 v06	General RF Exposure Guidance
KDB 447498 D02 v02r01	SAR Procedures for Dongle Xmtr v02r01
KDB 447498 D03 v01	Supplement C Cross-Reference
KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
KDB 865664 D02 v01r02	RF Exposure Reporting

1.6 RF exposure limits

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Spatial Peak SAR* (Brain*Trunk)	**1.60 mW/g**	8.00 mW/g
Spatial Average SAR** (Whole Body)	0.08 mW/g	0.40 mW/g
Spatial Peak SAR*** (Hands/Feet/Ankle/Wrist)	4.00 mW/g	20.00 mW/g

Notes:

* The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time

** The Spatial Average value of the SAR averaged over the whole body.

*** The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation.)

2 SAR Measurements System Configuration

2.1 The SAR Measurement System

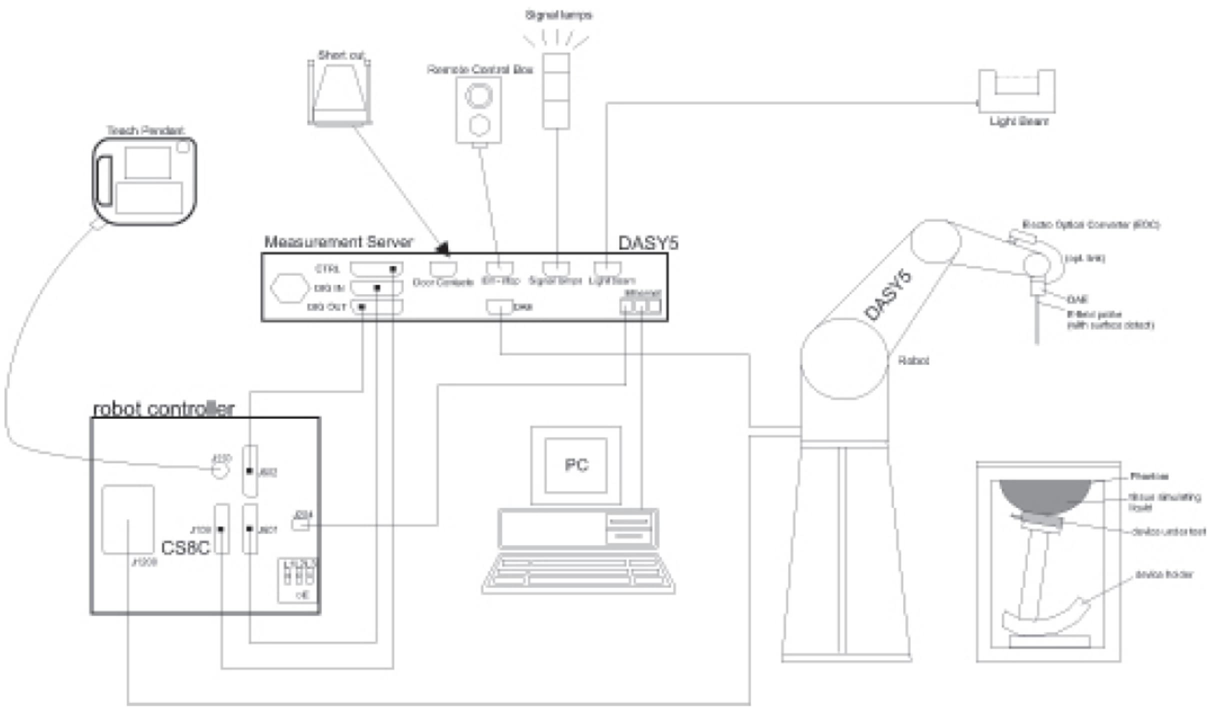
This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY5 professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the tissue-Simulate.

The DASY5 system for performing compliance tests consists of the following items:
A standard high precision 6-axis robot (Stabile RX family) with controller, teach pendant and software .An arm extension for accommodation the data acquisition electronics (DAE).

A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.

A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.



F-1. SAR Measurement System Configuration

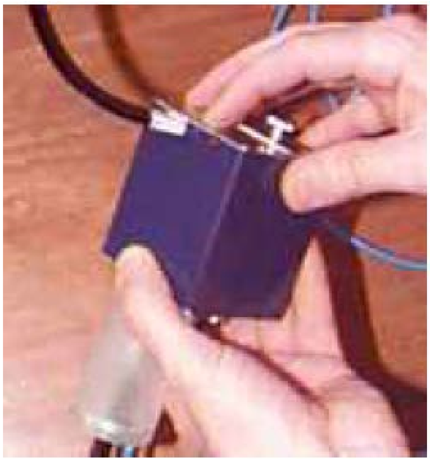
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows 7.
- DASY5 software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand, right-hand and Body Worn usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- Validation dipole kits allowing to validating the proper functioning of the system.

2.2 Isotropic E-field Probe EX3DV4

	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available.
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)
Dynamic Range	10 µW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields); the only probe that enables compliance testing for frequencies up to 6 GHz with precision of better 30%.
Compatibility	DASY3, DASY4, DASY52 SAR and higher, EASY4/MRI

2.3 Data Acquisition Electronics (DAE)

Model	DAE3,DAE4
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY4/5 embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop.
Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4mV,400mV)
Input Offset Voltage	< 5μV (with auto zero)
Input Bias Current	< 50 f A
Dimensions	60 x 60 x 68 mm



2.4 SAM Twin Phantom

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

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.

Twin SAM V5.0 has the same shell geometry and is manufactured from the same material as Twin SAM V4.0, but has reinforced top structure.

2.5 ELI Phantom

Material	Vinylester, glass fiber reinforced (VE-GF)	
Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)	
Shell Thickness	2.0 ± 0.2 mm (bottom plate)	
Dimensions	Major axis: 600 mm Minor axis: 400 mm	
Filling Volume	approx. 30 liters	
Wooden Support	SPEAG standard phantom table	

Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.

ELI V5.0 has the same shell geometry and is manufactured from the same material as ELI4, but has reinforced top structure.

2.6 Device Holder for Transmitters

F-2. **Device Holder for Transmitters**

- 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 centres for both scales are the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.
- The DASY device holder has been made out of low-loss 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.

2.7 Measurement procedure

2.7.1 Scanning procedure

Step 1: Power reference measurement

The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure.

Step 2: *Area scan*

The SAR distribution at the exposed side of the head was measured at a distance of 4mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 15mm*15mm or 12mm*12mm or 10mm*10mm.Based on the area scan data, the area of the maximum absorption was determined by spline interpolation.

Step 3: *Zoom scan*

Around this point, a volume of 30mm*30mm*30mm (fine resolution volume scan, zoom scan) was assessed by measuring 5x5x7 points (≤2GHz) and 7x7x7 points (≥2GHz). On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

The data at the surface was extrapolated, since the centre of the dipoles is 2.0mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2mm. (This can be variable. Refer to the probe specification).The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip. The maximum interpolated value was searched with a straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1g or 10g) were computed using the 3D-Spline interpolation algorithm. The volume was integrated with the trapezoidal algorithm. One thousand points were interpolated to calculate the average. All neighbouring volumes were evaluated until no neighboring volume with a higher average value was found.

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

<table>
<tr><td colspan="3"></td><td>≤ 3 GHz</td><td>> 3 GHz</td></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5 ± 1 mm</td><td>½·δ·ln(2) ± 0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30° ± 1°</td><td>20° ± 1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}</td><td>≤ 2 GHz: ≤ 15 mm
2 – 3 GHz: ≤ 12 mm</td><td>3 – 4 GHz: ≤ 12 mm
4 – 6 GHz: ≤ 10 mm</td></tr>
<tr><td colspan="2">When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}</td><td>≤ 2 GHz: ≤ 8 mm
2 – 3 GHz: ≤ 5 mm*</td><td>3 – 4 GHz: ≤ 5 mm*
4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>≤ 5 mm</td><td>3 – 4 GHz: ≤ 4 mm
4 – 5 GHz: ≤ 3 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>≤ 4 mm</td><td>3 – 4 GHz: ≤ 3 mm
4 – 5 GHz: ≤ 2.5 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">≤ 1.5·$\Delta z_{Zoom}(n-1)$</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3 – 4 GHz: ≥ 28 mm
4 – 5 GHz: ≥ 25 mm
5 – 6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.
* When zoom scan is required and the <u>reported</u> SAR from the area scan based 1-g SAR estimation procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

Step 4: Power reference measurement (drift)

The Power Drift Measurement job measures the field at the same location as the most recent power reference measurement job within the same procedure, and with the same settings. The indicated drift is mainly the variation of the DUT's output power and should vary max. ± 5%.

2.7.2 Data Storage

The DASY software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".DAE". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated. The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [m W/g], [m W/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

2.7.3 Data Evaluation by SEMCAD

The SEMCAD software 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 Normi, ai0, ai1, ai2
- Conversion factor ConvFi
- Diode compression point Dcpi
Device parameters: - Frequency f
- Crest factor cf
Media parameters: - Conductivity ε
- 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 multimeter 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:

$$V_i = U_i + U_i^2 \cdot cf / dcp_i$$

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

Ui = 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:

$$E_i = (V_i / Norm_i \cdot ConvF)^{1/2}$$

H-field probes:

$$H_i = (V_i)^{1/2} \cdot (a_{i0} + a_{i1} f + a_{i2} f^2) / f$$

With Vi = compensated signal of channel i (i = x, y, z)
Normi = sensor sensitivity of channel I (i = x, y, z)
[mV/(V/m)2] for E-field Probes
ConvF = sensitivity enhancement in solution
aij = sensor sensitivity factors for H-field probes
f = carrier frequency [GHz]
Ei = 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):

$$E_{tot} = (E_x^2 + E_Y^2 + E_z^2)^{1/2}$$

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

$$SAR = (Etot^2 \cdot \sigma) / (\varepsilon \cdot 1000)$$

with SAR = local specific absorption rate in mW/g

Etot = total field strength in V/m

σ= conductivity in [mho/m] or [Siemens/m]

ε= equivalent tissue density in g/cm3

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid. The power flow density is calculated assuming the excitation field to be a free space field.

$$P_{pwe} = E_{tot}{}^2{}_2 / 3770 \text{ or } P_{pwe} = H_{tot}{}^2 \cdot 37.7$$

with Ppwe = equivalent power density of a plane wave in mW/cm2
Etot = total electric field strength in V/m

Htot = total magnetic field strength in A/m

3 Description of Test Position

3.1 The Body Test Position

3.1.1 USB Dongle Transmitters exposure conditions

1) Simple Dongle Procedures

Test all USB orientations [see figure below: (A) Horizontal-Up, (B) Horizontal-Down, (C) Vertical-Front, and (D) Vertical-Back] with a device-to-phantom separation distance of 5 mm or less, according to KDB Publication 447498 D01 requirements. These test orientations are intended for the exposure conditions found in typical laptop/notebook/netbook or tablet computers with either horizontal or vertical USB connector configurations at various locations in the keyboard section of the computer. Current generation portable host computers should be used to establish the required SAR measurement separation distance. The same test separation distance must be used to test all frequency bands and modes in each USB orientation.

2) Dongle With Swivel Or Rotating Connectors

A swivel or rotating USB connector may enable the dongle to connect in different orientations to host computers. When the antenna is built-in within the housing of a dongle, a swivel or rotating connector may allow the antenna to assume different positions. The combination of these possible configurations must be considered to determine the SAR test requirements. When the antenna is located near the tip of a dongle, it may operate at closer proximity to users in certain connector orientations where dongle tip testing may be required.

The 5 mm test separation distance used for testing simple dongles has been established based on the overall host platform (laptop/notebook/netbook) and device variations, and varying user operating configurations and exposure conditions expected for a peripheral device. The same test distance should generally apply to dongles with swivel or rotating connectors. The procedures described for simple dongles should be used to position the four surfaces of the dongle at 5 mm from the phantom to evaluate SAR. If the antenna is within 1 cm from the tip of the dongle (the end without the USB connector), the tip of the dongle should also be tested at 5 mm perpendicular to the phantom. For antennas located within 2.5 cm from the USB connector and if the dongle can be positioned at 45º to 90º from the horizontal position [(A) or (B)], testing in one or more of these configurations may need to be considered. For This device, through the KDB inquiry the position at 45º and 90º from the horizontal position are applicable tested. For all test in this report, the device connection was implemented on a laptop computer with model No. ThinkPad 11e 3rd Gen, which made by Lenovo (Beijing) Co., Ltd.

(A) Horizontal-Up (B) Horizontal-Down (C) Vertical-Front (D) Vertical-Back

F-3. **USB Connector Orientations Implemented on Laptop Computers**

4 SAR System Verification Procedure

4.1 Tissue Simulate Liquid

4.1.1 Recipes for Tissue Simulate Liquid

The bellowing tables give the recipes for tissue simulating liquids to be used in different frequency bands：

Ingredients (% by weight)	Frequency (MHz)				
	750	800-900	1800-2000	2300-2500	2500-2700
Tissue Type	**Body**	**Body**	**Body**	**Body**	**Body**
Water	50.3	50.75	70.17	68.53	72.26
Salt (NaCl)	1.60	0.94	0.39	0.1	0.1
Sucrose	47.0	48.21	0	0	0
HEC	0.52	0	0	0	0
Bactericide	0.05	0.10	0	0	0
Tween	0	0	29.44	31.37	27.74
Salt: 99^{+}% Pure Sodium Chloride Water: De-ionized, 16 $M\Omega^{+}$ resistivity Tween: Polyoxyethylene (20) sorbitan monolaurate			Sucrose: 98^{+}% Pure Sucrose HEC: Hydroxyethyl Cellulose		

Table 1： Recipe of Tissue Simulate Liquid

4.1.2 Measurement for Tissue Simulate Liquid

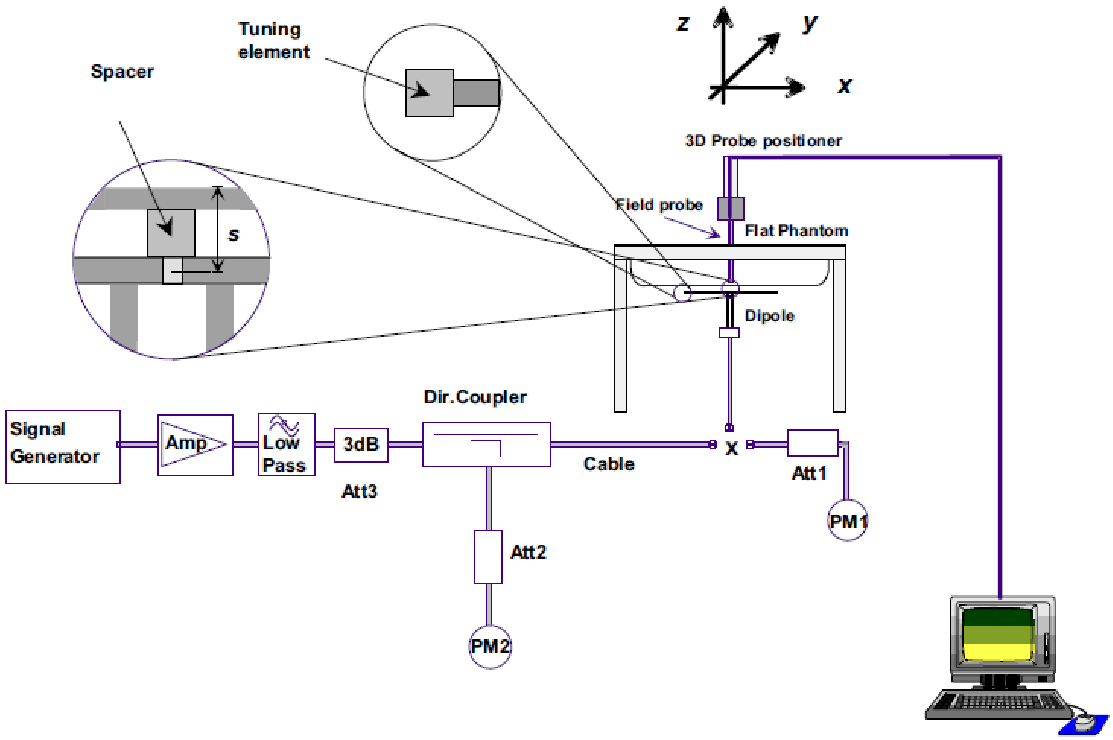
The dielectric properties for this Tissue Simulate Liquids were measured by using the Agilent Model 85070E Dielectric Probe in conjunction with Agilent E5071C Network Analyzer (300 KHz-8500 MHz). The Conductivity (σ) and Permittivity (ρ) are listed in Table 1.For the SAR measurement given in this report. The temperature variation of the Tissue Simulate Liquids was 22±2°C.

Tissue Type	Measured Frequency（MHz）	Target Tissue (±5%)		Measured Tissue		Liquid Temp. (℃)	Measured Date
		$ε_r$	σ(S/m)	$ε_r$	σ(S/m)		
750 Body	750	55.5 (52.73~58.28)	0.96 (0.91~1.00)	55.821	0.943	22.1	2017/1/17
835 Body	835	55.2 (52.44~57.96)	0.97 (0.92~1.02)	54.389	0.986	22.1	2017/1/13
1750 Body	1750	53.4 (50.73~56.07)	1.49 (1.42~1.56)	51.003	1.481	22.2	2017/1/15
1900 Body	1900	53.3 (50.64~55.97)	1.52 (1.44~1.60)	53.216	1.498	22.3	2017/1/14
1900 Body	1900	53.3 (50.64~55.97)	1.52 (1.44~1.60)	53.025	1.476	22.3	2017/1/17
2600 Body	2600	52.50 (49.88~55.13)	2.16 (2.05~2.27)	50.237	2.187	22.1	2017/1/16

Table 2： Measurement result of Tissue electric parameters

4.2 SAR System Validation

The microwave circuit arrangement for system verification is sketched in bellow figure. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. The tests were conducted on the same days as the measurement of the EUT. The obtained results from the system accuracy verification are displayed in the table 5 (A power level of 250mw was input to the dipole antenna for bellow 5GHz). During the tests, the ambient temperature of the laboratory was in the range 22±2°C, the relative humidity was in the range 60% and the liquid depth above the ear reference points was above 15 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.



F-4. the microwave circuit arrangement used for SAR system verification

4.2.1 Justification for Extended SAR Dipole Calibrations

1) Referring to KDB865664 D01 requirements for dipole calibration, instead of the typical annual calibration recommended by measurement standards, longer calibration intervals of up to three years may be considered when it is demonstrated that the SAR target, impedance and return loss of a dipole have remain stable according to the following requirements. Each measured dipole is expected to evaluate with the following criteria at least on annual interval in Appendix C.

a) There is no physical damage on the dipole;
b) System check with specific dipole is within 10% of calibrated value;
c) Return-loss is within 10% of calibrated measurement;
d) Impedance is within 5Ω from the previous measurement.

2) Network analyzer probe calibration against air, distilled water and a shorting block performed before measuring liquid parameters.

4.2.2 Summary System Validation Result(s)

Validation Kit		Measured SAR 250mW	Measured SAR (normalized to 1w)	Target SAR (normalized to 1w) (±10%)	Liquid Temp. (℃)	Measured Date
		1g (W/kg)	1g (W/kg)	1g(W/kg)		
D750V2	Body	2.15	8.6	8.57 (7.71~9.43)	22.1	2017/1/17
D835V2	Body	2.56	10.24	9.65 (8.69~10.62)	22.1	2017/1/13
D1750V2	Body	9.68	38.72	37 (33.30~40.70)	22.2	2017/1/15
D1900V2	Body	10.7	42.8	41.6 (37.44~45.76)	22.3	2017/1/14
D1900V2	Body	10.5	42	41.6 (37.44~45.76)	22.3	2017/1/17
D2600V2	Body	14.3	57.2	54.2 (48.78~59.62)	22.1	2017/1/16

Table 3： SAR System Validation Result

4.2.3 Detailed System Validation Results

Please see the Appendix A

5 Test results and Measurement Data

5.1 3G SAR Test Reduction Procedure

According to KDB 941225D01 v03, in the following procedures, the mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as "otherwise" in the applicable procedures; SAR measurement is required for the secondary mode.

5.2 Operation Configurations

5.2.1 GSM Test Configuration

SAR tests for GSM 850 and GSM 1900, a communication link is set up with a base station by air link. Using CMU200 the power lever is set to "5"and "0" in SAR of GSM 850 and GSM 1900. The tests in the band of GSM 850 and GSM 1900 are performed in the mode of GPRS/EGPRS function. Since the GPRS class is 12 for this EUT, it has at most 4 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslot is 5. The EGPRS class is 12 for this EUT, it has at most 4 timeslots in uplink, and at most 4 timeslots in downlink, the maximum total timeslot is 5.

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.

The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode.

5.2.2 WCDMA Test Configuration

1）. Output Power Verification

Maximum output power is verified on the high, middle and low channels according to procedures described in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all "1's" for WCDMA/HSDPA or by applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HSDPA, HSPA) are required in the SAR report. All configurations that are not supported by the handset or cannot be measured due to technical or equipment limitations must be clearly identified.

2）. Body SAR

SAR for body configurations is measured using a 12.2 kbps RMC with TPC bits configured to all "1's". The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the handset with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding spreaing code or DPDCHn, for the highest reported body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When more than 2 DPDCHn are supported by the handset, it may be necessary to configure additional DPDCHn using FTM (Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384 kbps and 768 kbps RMC.

3）. HSDPA / HSUPA / DC-HSDPA

According to KDB 941225 D01v03, RMC 12.2kbps setting is used to evaluate SAR. If the maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA

a) <u>HSDPA</u>

HSDPA is configured according to the applicable UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms and a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors(βc, βd), and HS-DPCCH power offset parameters (ΔACK, ΔNACK, ΔCQI) are set according to values indicated in the following table The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Sub-test	βc	Bd	βd(SF)	βc/βd	βhs	CM(dB)	MPR (dB)
1	2/15	15/15	64	2/15	4/15	0.0	0
2	12/15(3)	15/15(3)	64	12/15(3)	24/15	1.0	0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note1: △ACK, △NACK and △CQI= 8 Ahs = βhs/βc=30/15 βhs=30/15*βc
Note2:For the HS-DPCCH power mask requirement test in clause 5.2C,5.7A,and the Error Vector Magnitude(EVM) with HS-DPCCH test in clause 5.13.1.A,and HSDPA EVM with phase discontinuity in clause 5.13.1AA, △ACK and △NACK= 8 (Ahs=30/15) with βhs=30/15*βc,and △CQI= 7 (Ahs=24/15) with βhs=24/15*βc.
Note3: CM=1 forβc/βd =12/15, βhs/βc=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

The measurements were performed with a Fixed Reference Channel (FRC) and H-Set 1 QPSK.

Parameter	Value
Nominal average inf. bit rate	534 kbit/s
Inter-TTI Distance	3 TTI‟s
Number of HARQ Processes	2 Processes
Information Bit Payload	3202 Bits
MAC-d PDU size	336 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	4800 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	9600 SMLs
Coding Rate	0.67
Number of Physical Channel Codes	5

Table 4： settings of required H-Set 1 QPSK acc. to 3GPP 34.121

HS-DSCH Category	Maximum HS-DSCH Codes Received	Minimum Inter-TTI Interval	MaximumH S-DSCH Transport BlockBits/HS-DSCH TTI	Total Soft Channel Bits
1	5	3	7298	19200
2	5	3	7298	28800
3	5	2	7298	28800
4	5	2	7298	38400
5	5	1	7298	57600
6	5	1	7298	67200
7	10	1	14411	115200
8	10	1	14411	134400
9	15	1	25251	172800
10	15	1	27952	172800
11	5	2	3630	14400
12	5	1	3630	28800
13	15	1	34800	259200
14	15	1	42196	259200
15	15	1	23370	345600
16	15	1	27952	345600

Table 5： HSDPA UE category

b) <u>HSUPA</u>

Due to inner loop power control requirements in HSUPA, a commercial communication test set should be used for the output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSUPA should be configured according to the values indicated below as well as other applicable procedures described in the „WCDMA Handset" and „Release 5 HSUPA Data Device" sections of 3G device.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (1)	β_{ec}	β_{ed}	β_{ec} (SF)	β_{ed} (code)	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 $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. 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 signalled gain factors for the reference TFC (TF1,TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$

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 signalled gain factors for the reference TFC (TF1,TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$

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} can not be set directly; it is set by Absolute Grant Value.

Table 6： Subtests for UMTS Release 6 HSUPA

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCH TTI(ms)	Minimum Speading Factor	Maximum E-DCH Transport Block Bits	Max Rate (Mbps)
1	1	4	10	4	7110	0.7296
2	2	8	2	4	2798	1.4592
	2	4	10	4	14484	
3	2	4	10	4	14484	1.4592
4	2	8	2	2	5772	2.9185
	2	4	10	2	20000	2.00
5	2	4	10	2	20000	2.00
6 (No DPDCH)	4	8	10	2SF2&2SF4	11484	5.76
	4	4	2		20000	2.00
7 (No DPDCH)	4	8	2	2SF2&2SF4	22996	?
	4	4	10		20000	?
NOTE: When 4 codes are transmitted in parallel, two codes shall be transmitted with SF2 and two with SF4.UE categories 1 to 6 support QPSK only. UE category 7 supports QPSK and 16QAM.(TS25.306-7.3.0).						

Table 7： HSUPA UE category

5.2.3 LTE Test Configuration

LTE modes were tested according to FCC KDB 941225 D05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The R&S CMW500 was used for LTE output power measurements and SAR testing. Max power control was used so the UE transmits with maximum output power during SAR testing. SAR must be measured with the maximum TTI (transmit time interval) supported by the device in each LTE configuration.

TDD LTE test consideration

For Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

SAR was tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7.

LTE TDD Band 41 support 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Frame structure type 2:

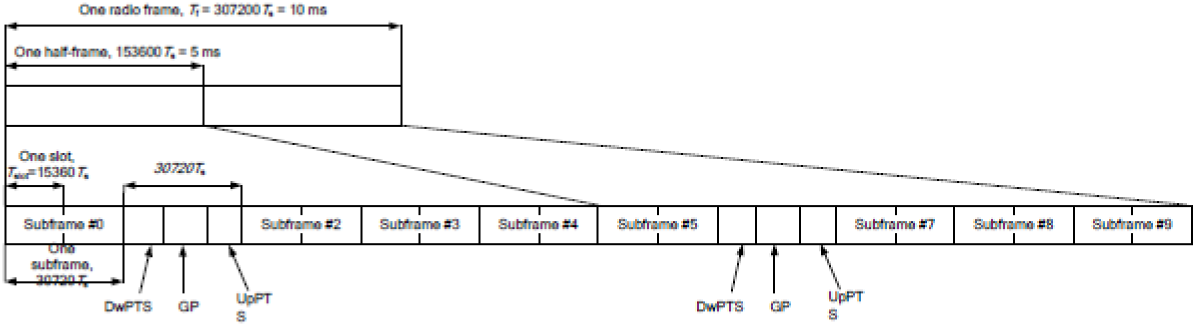


Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	6592.Ts	2192.Ts	2560.Ts	7680.Ts	2192.Ts	2560.Ts
1	19760.Ts			20480.Ts		
2	21952.Ts			23040.Ts		
3	24144.Ts			25600.Ts		
4	26336.Ts			7680.Ts	4384.Ts	5120.Ts
5	6592.Ts	4384.Ts	5120.Ts	20480.Ts		
6	19760.Ts			23040.Ts		
7	21952.Ts			25600.Ts		
8	24144.Ts			-	-	-
9	13168.Ts			-	-	-

Table 4.2-2: Uplink-downlink configurations.

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

Calculated Duty Cycle=[Extended cyclic prefix in uplink x (Ts) x # of S + # of U]/10ms

Uplink-Downlink Configuration	Downlink-to-Uplink Switch-point Periodicity	Subframe Number										Calculated Duty Cycle (%)
		0	1	2	3	4	5	6	7	8	9	
0	5 ms	D	S	U	U	U	D	S	U	U	U	63.33
1	5 ms	D	S	U	U	D	D	S	U	U	D	43.33
2	5 ms	D	S	U	D	D	D	S	U	D	D	23.33
3	10 ms	D	S	U	U	U	D	D	D	D	D	31.67
4	10 ms	D	S	U	U	D	D	D	D	D	D	21.67
5	10 ms	D	S	U	D	D	D	D	D	D	D	11.67
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.33

A) Spectrum Plots for RB Configurations

A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

B) MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

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

C) A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

D) Largest channel bandwidth standalone SAR test requirements

1) 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 for 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. 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.

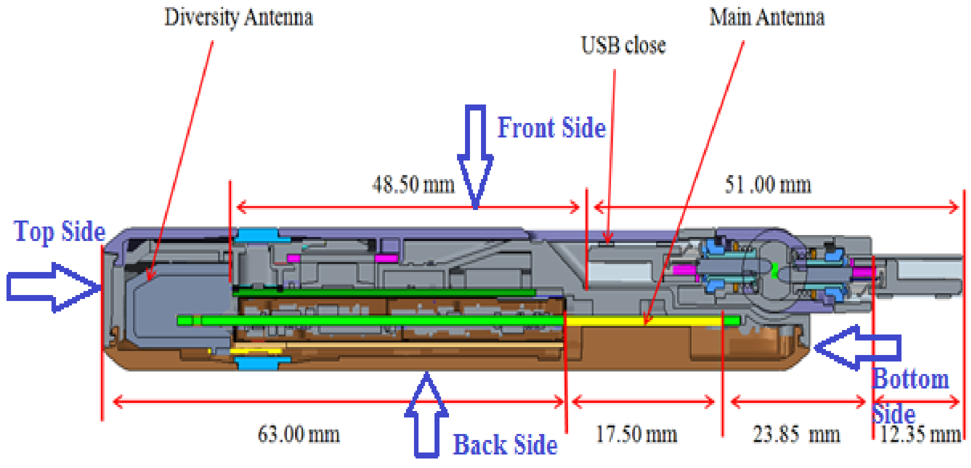
2) QPSK with 50% RB allocation
The procedures required for 1 RB allocation in 1) are applied to measure the SAR for QPSK with 50% RB allocation.

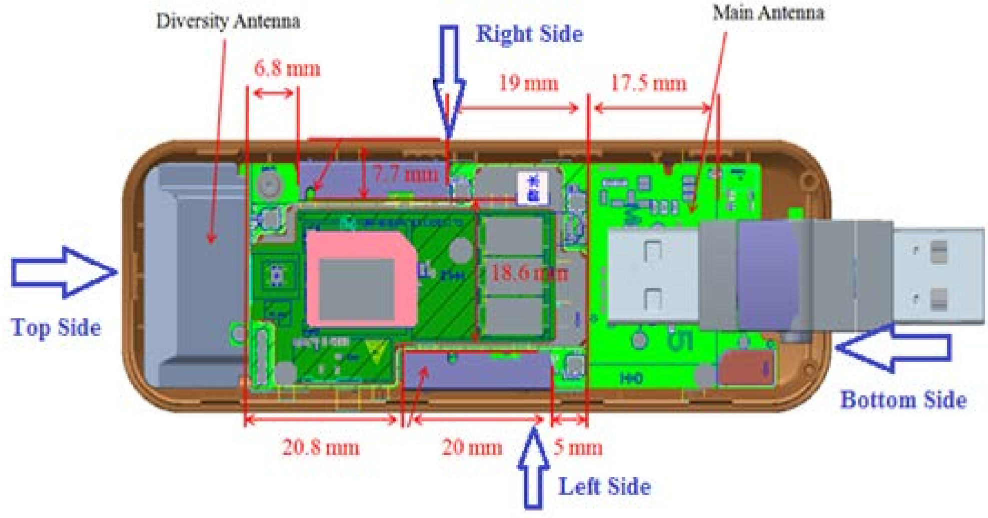
3) QPSK with 100% RB allocation
For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in 1) and 2) are ≤ 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.

4) Higher order modulations
For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections 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.

E) 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 A) 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.

5.2.4 DUT Antenna Locations





Note: The Div antenna does not have transmit function.

5.2.5 EUT side for SAR Testing

According to the distance between GSM/LTE/WCDAM antenna and the sides of the EUT we can draw the conclusion that:

EUT Sides for SAR Testing							
Mode	Front	Back	Back side positioned at 45°	Back side positioned at 90°	Left	Right	Tip
GSM	Yes	Yes	Yes	Yes	Yes	Yes	No
WCDMA	Yes	Yes	Yes	Yes	Yes	Yes	No
LTE	Yes	Yes	Yes	Yes	Yes	Yes	No

Table 8： EUT Sides for SAR Testing

Note: When the antenna is greater than 1 cm from the tip of the dongle, such position does not need to be tested.

5.2.6 Stand-alone SAR test evaluation

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition is satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions.

Freq. Band	Frequency (GHz)	Position	Average Power		Test Separation (mm)	Calculate Value	Exclusion Threshold	Exclusion (Y/N)
			dBm	mW				
GSM850	0.85	Body	31	1258.93	5	232.1	3.0	N
GSM1900	1.9	Body	26	398.11	5	109.8	3.0	N
WCDMA B5	0.85	Body	22	158.49	5	29.2	3.0	N
WCDMA B4	1.7	Body	17	50.12	5	13.1	3.0	N
WCDMA B2	1.9	Body	20	100.00	5	27.6	3.0	N
LTE B 2	1.9	Body	18	63.10	5	17.4	3.0	N
LTE B 4	1.75	Body	19.5	89.13	5	23.6	3.0	N
LTE B12	0.75	Body	23.5	223.87	5	38.8	3.0	N
LTE B17	0.75	Body	23.5	223.87	5	38.8	3.0	N
LTE B 25	1.9	Body	18	63.10	5	17.4	3.0	N
LTE B 26	0.85	Body	22	158.49	5	29.2	3.0	N
LTE B 41	2.6	Body	18	63.10	5	20.3	3.0	N

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [$\sqrt{f(GHz)}$] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity 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

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

5.3 Measurement of RF conducted Power

5.3.1 Conducted Power of GSM

GSM 850										
Burst Output Power(dBm)					Tune up	Division Factors	Frame-Average Output Power(dBm)			Tune up
Channel		128	190	251			128	190	251	
GSM(GMSK)	GSM	30.47	30.58	30.5	31	-9.19	21.28	21.39	21.31	21.81
GPRS/EGPRS (GMSK)	1 TX Slot	30.36	30.51	30.49	31	-9.19	21.17	21.32	21.3	21.81
	2 TX Slots	27.51	27.79	27.75	28.5	-6.18	21.33	21.61	21.57	22.32
	3 TX Slots	25.97	26.05	26.02	27	-4.42	**21.55**	**21.63**	**21.6**	**22.58**
	4 TX Slots	24.59	24.75	24.72	25.5	-3.17	21.42	21.58	21.55	22.33
EGPRS(8PSK)	1 TX Slot	26.96	26.98	26.99	27	-9.19	17.77	17.79	17.8	17.81
	2 TX Slots	23.93	23.94	23.92	24	-6.18	17.75	17.76	17.74	17.82
	3 TX Slots	21.71	21.91	21.87	22	-4.42	17.29	17.49	17.45	17.58
	4 TX Slots	20.65	20.78	20.79	21	-3.17	17.48	17.61	17.62	17.83
GSM 1900										
Burst Output Power(dBm)					Tune up	Division Factors	Frame-Average Output Power(dBm)			Tune up
Channel		512	661	810			512	661	810	
GSM(GMSK)	GSM	25.84	25.92	25.89	26	-9.19	16.65	16.73	16.7	16.81
GPRS/EGPRS (GMSK)	1 TX Slot	25.75	25.9	25.79	26	-9.19	16.56	16.71	16.6	16.81
	2 TX Slots	22.67	22.83	22.57	23	-6.18	16.49	16.65	16.39	16.82
	3 TX Slots	21.13	21.34	21.04	21.5	-4.42	**16.71**	**16.92**	**16.62**	**17.08**
	4 TX Slots	19.74	19.85	19.64	20	-3.17	16.57	16.68	16.47	16.83
EGPRS(8PSK)	1 TX Slot	23.81	23.97	23.82	24	-9.19	14.62	14.78	14.63	14.81
	2 TX Slots	18.71	18.97	18.85	19	-6.18	12.53	12.79	12.67	12.82
	3 TX Slots	17.69	17.86	17.63	18	-4.42	13.27	13.44	13.21	13.58
	4 TX Slots	15.88	15.99	15.87	16	-3.17	12.71	12.82	12.7	12.83

Table 9： Conducted Power of GSM

Note:

1) CMU200 measures GSM peak and average output power for active timeslots. For SAR the time based average power is relevant. The difference in between depends on the duty cycle of the TDMA signal:

No. of timeslots	1	2	3	4
Duty Cycle	1:8.3	1:4.15	1:2.77	1:2.075
Time based avg. power compared to slotted avg. power	-9.19	-6.18	-4.42	-3.17

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

Frame-averaged power = 10 x log (Burst-averaged power mW x Slot used / 8

3) Per KDB 447498 D01v05r02,When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used

4) SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance.

5.3.2 Conducted Power of WCDMA

WCDMA850					
Average Conducted Power(dBm)					Tune up
Channel		4132	4182	4233	
WCDMA	12.2kbps RMC	21.39	21.41	21.4	22
	64kbps RMC	21.35	21.4	21.37	22
	144kbps RMC	21.36	21.37	21.38	22
	384kbps RMC	21.36	21.38	21.39	22
HSDPA	Subtest 1	20.24	20.32	20.31	21
	Subtest 2	20.13	20.21	20.22	21
	Subtest 3	19.58	19.64	19.65	20
	Subtest 4	19.53	19.65	19.62	20
HSUPA	Subtest 1	19.94	20.01	19.99	21
	Subtest 2	18.93	18.98	18.99	19
	Subtest 3	19.92	19.99	19.98	20
	Subtest 4	18.9	18.95	18.93	19
	Subtest 5	19.95	20.01	20.04	21
WCDMA1700					
Average Conducted Power(dBm)					Tune up
Channel		1312	1412	1513	
WCDMA	12.2kbps RMC	19.81	19.9	19.89	20
	64kbps RMC	19.81	19.9	19.89	20
	144kbps RMC	19.8	19.85	19.71	20
	384kbps RMC	19.8	19.82	19.67	20
HSDPA	Subtest 1	18.78	18.82	18.69	19
	Subtest 2	18.58	18.57	18.48	19
	Subtest 3	17.46	17.47	17.35	18
	Subtest 4	17.9	17.89	17.76	18
HSUPA	Subtest 1	18.28	18.27	18.13	19
	Subtest 2	16.25	16.28	16.14	17
	Subtest 3	17.27	17.26	17.13	18
	Subtest 4	16.28	16.24	16.12	17
	Subtest 5	18.26	18.23	18.15	19

WCDMA1900					
Average Conducted Power(dBm)					Tune up
Channel		9262	9400	9538	
WCDMA	12.2kbps RMC	16.83	16.87	16.89	17
	64kbps RMC	16.8	16.73	16.85	17
	144kbps RMC	16.77	16.69	16.76	17
	384kbps RMC	16.76	16.69	16.78	17
HSDPA	Subtest 1	15.28	15.21	15.35	16
	Subtest 2	15.18	15.11	15.19	16
	Subtest 3	14.61	14.53	14.69	15
	Subtest 4	14.59	14.51	14.68	15
HSUPA	Subtest 1	14.97	14.9	15.01	16
	Subtest 2	13.93	13.91	13.98	14
	Subtest 3	14.96	14.9	14.97	15
	Subtest 4	13.97	13.95	13.98	14
	Subtest 5	14.99	14.89	15.09	16

Table 10：Conducted Power of WCDMA

1) When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used.

5.3.3 Conducted Power of LTE

LTE FDD Band 2				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 18607	Channel 18900	Channel 19193	Tune up
1.4MHz	QPSK	1	0	17	17.09	17.14	18
		1	2	17.1	17.23	17.2	18
		1	5	17.04	17.17	17.1	18
		3	0	17.07	17.2	17.19	18
		3	2	17.09	17.25	17.2	18
		3	3	17.06	17.21	17.15	18
		6	0	17.07	17.21	17.17	18
	16QAM	1	0	17.3	17.45	17.41	18
		1	2	17.43	17.55	17.47	18
		1	5	17.29	17.43	17.36	18
		3	0	17.08	17.22	17.19	18
		3	2	17.13	17.27	17.24	18
		3	3	17.1	17.21	17.17	18
		6	0	17.12	17.27	17.23	18
	64QAM	1	0	17.42	17.42	17.41	18
		1	2	17.54	17.43	17.43	18
		1	5	17.47	17.45	17.46	18
		3	0	17.34	17.42	17.46	18
		3	2	17.41	17.45	17.43	18
		3	3	17.33	17.36	17.42	18
		6	0	17.26	17.42	17.4	18
Bandwidth	Modulation	RB size	RB offset	Channel 18615	Channel 18900	Channel 19185	Tune up
3MHz	QPSK	1	0	17.13	17.18	17.26	18
		1	7	17.22	17.36	17.32	18
		1	14	17.1	17.23	17.19	18
		8	0	17.18	17.31	17.25	18
		8	4	17.15	17.3	17.28	18
		8	7	17.13	17.28	17.22	18
		15	0	17.16	17.28	17.24	18
	16QAM	1	0	17.44	17.45	17.42	18
		1	7	17.41	17.43	17.43	18
		1	14	17.38	17.44	17.41	18
		8	0	17.27	17.34	17.32	18
		8	4	17.26	17.39	17.33	18
		8	7	17.22	17.33	17.28	18
		15	0	17.17	17.32	17.27	18
	64QAM	1	0	17.45	17.24	17.42	18
		1	7	17.43	17.36	17.45	18
		1	14	17.5	17.22	17.43	18
		8	0	17.31	17.47	17.41	18
		8	4	17.38	17.42	17.41	18
		8	7	17.35	17.43	17.44	18
		15	0	17.34	17.44	17.42	18

Bandwidth	Modulation	RB size	RB offset	Channel 18625	Channel 18900	Channel 19175	Tune up
5MHz	QPSK	1	0	17.25	17.33	17.32	18
		1	13	17.18	17.35	17.28	18
		1	24	17.12	17.28	17.24	18
		12	0	17.19	17.3	17.28	18
		12	6	17.2	17.36	17.32	18
		12	13	17.14	17.27	17.23	18
		25	0	17.18	17.31	17.26	18
	16QAM	1	0	17.4	17.42	17.43	18
		1	13	17.41	17.41	17.42	18
		1	24	17.43	17.43	17.43	18
		12	0	17.22	17.34	17.29	18
		12	6	17.22	17.3	17.33	18
		12	13	17.17	17.32	17.27	18
		25	0	17.2	17.33	17.28	18
	64QAM	1	0	17.34	17.41	17.45	18
		1	13	17.63	17.42	17.43	18
		1	24	17.59	17.47	17.45	18
		12	0	17.37	17.47	17.46	18
		12	6	17.33	17.46	17.52	18
		12	13	17.29	17.44	17.43	18
		25	0	17.22	17.42	17.39	18
Bandwidth	Modulation	RB size	RB offset	Channel 18650	Channel 18900	Channel 19150	Tune up
10MHz	QPSK	1	0	17.18	17.33	17.16	18
		1	25	17.13	17.28	17.14	18
		1	49	17.14	17.25	17.12	18
		25	0	17.24	17.36	17.23	18
		25	13	17.19	17.34	17.24	18
		25	25	17.16	17.34	17.15	18
		50	0	17.19	17.36	17.22	18
	16QAM	1	0	17.52	17.67	17.43	18
		1	25	17.39	17.51	17.4	18
		1	49	17.37	17.53	17.37	18
		25	0	17.23	17.33	17.25	18
		25	13	17.24	17.38	17.21	18
		25	25	17.15	17.28	17.16	18
		50	0	17.23	17.35	17.23	18
	64QAM	1	0	17.57	17.34	17.43	18
		1	25	17.46	17.28	17.47	18
		1	49	17.49	17.23	17.45	18
		25	0	17.32	17.43	17.35	18
		25	13	17.32	17.45	17.36	18
		25	25	17.29	17.5	17.28	18
		50	0	17.36	17.47	17.29	18

Bandwidth	Modulation	RB size	RB offset	Channel 18675	Channel 18900	Channel 19125	Tune up
15MHz	QPSK	1	0	17.34	17.46	17.42	18
		1	38	17.12	17.3	17.15	18
		1	74	17.12	17.29	17.14	18
		36	0	17.28	17.4	17.29	18
		36	18	17.21	17.39	17.24	18
		36	39	17.18	17.32	17.2	18
		75	0	17.22	17.4	17.25	18
	16QAM	1	0	17.61	17.78	17.62	18
		1	38	17.41	17.45	17.46	18
		1	74	17.41	17.43	17.44	18
		36	0	17.26	17.4	17.31	18
		36	18	17.25	17.38	17.22	18
		36	39	17.15	17.3	17.18	18
		75	0	17.23	17.39	17.25	18
	64QAM	1	0	17.33	17.43	17.43	18
		1	38	17.16	17.45	17.44	18
		1	74	17.22	17.73	17.42	18
		36	0	17.43	17.47	17.41	18
		36	18	17.39	17.44	17.45	18
		36	39	17.41	17.43	17.44	18
		75	0	17.39	17.41	17.42	18

Bandwidth	Modulation	RB size	RB offset	Channel 18700	Channel 18900	Channel 19100	Tune up
20MHz	QPSK	1	0	17.33	17.46	17.26	18
		1	50	17.1	17.24	17.06	18
		1	99	17.09	17.26	17.08	18
		50	0	17.26	17.41	17.27	18
		50	25	17.2	17.37	17.19	18
		50	50	17.17	17.31	17.16	18
		100	0	17.25	17.34	17.15	18
	16QAM	1	0	17.45	17.4	17.45	18
		1	50	17.4	17.41	17.39	18
		1	99	17.41	17.43	17.37	18
		50	0	17.21	17.41	17.2	18
		50	25	17.18	17.31	17.15	18
		50	50	17.18	17.32	17.17	18
		100	0	17.18	17.34	17.12	18
	64QAM	1	0	17.38	17.43	17.44	18
		1	50	17.27	17.42	17.45	18
		1	99	17.33	17.38	17.37	18
		50	0	17.42	17.41	17.38	18
		50	25	17.38	17.44	17.34	18
		50	50	17.39	17.43	17.31	18
		100	0	17.43	17.45	17.28	18

LTE FDD Band 4				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 19957	Channel 20175	Channel 20393	Tune up
1.4MHz	QPSK	1	0	18.66	18.62	18.57	19.5
		1	2	18.69	18.7	18.63	19.5
		1	5	18.64	18.63	18.58	19.5
		3	0	18.7	18.67	18.64	19.5
		3	2	18.72	18.71	18.66	19.5
		3	3	18.65	18.69	18.62	19.5
		6	0	18.7	18.69	18.62	19.5
	16QAM	1	0	18.87	18.93	18.87	19.5
		1	2	18.96	18.97	18.93	19.5
		1	5	18.85	18.9	18.86	19.5
		3	0	18.72	18.71	18.65	19.5
		3	2	18.73	18.77	18.7	19.5
		3	3	18.72	18.69	18.66	19.5
		6	0	18.73	18.74	18.69	19.5
	64QAM	1	0	19.43	19.11	19.26	19.5
		1	2	19.49	19.18	19.34	19.5
		1	5	19.43	19.1	19.21	19.5
		3	0	19.03	18.97	18.85	19.5
		3	2	19.08	19.06	18.9	19.5
		3	3	18.98	18.96	18.88	19.5
		6	0	18.92	18.92	18.87	19.5
Bandwidth	Modulation	RB size	RB offset	Channel 19965	Channel 20175	Channel 20385	Tune up
3MHz	QPSK	1	0	18.71	18.74	18.73	19.5
		1	7	18.83	18.85	18.79	19.5
		1	14	18.71	18.67	18.66	19.5
		8	0	18.75	18.76	18.75	19.5
		8	4	18.76	18.79	18.71	19.5
		8	7	18.76	18.73	18.72	19.5
		15	0	18.76	18.75	18.71	19.5
	16QAM	1	0	19.03	19.02	18.99	19.5
		1	7	19.13	19.12	19.09	19.5
		1	14	19	18.96	18.9	19.5
		8	0	18.82	18.83	18.8	19.5
		8	4	18.84	18.84	18.82	19.5
		8	7	18.81	18.79	18.76	19.5
		15	0	18.77	18.78	18.77	19.5
	64QAM	1	0	19.47	18.73	19.12	19.5
		1	7	19.56	18.84	19.18	19.5
		1	14	19.48	18.71	19.05	19.5
		8	0	19.05	19.01	18.86	19.5
		8	4	19.07	19.02	18.94	19.5
		8	7	19.03	18.99	18.88	19.5
		15	0	18.97	18.93	18.96	19.5

Bandwidth	Modulation	RB size	RB offset	Channel 19975	Channel 20175	Channel 20375	Tune up
5MHz	QPSK	1	0	18.77	18.79	18.65	19.5
		1	13	18.82	18.78	18.64	19.5
		1	24	18.74	18.73	18.56	19.5
		12	0	18.78	18.78	18.61	19.5
		12	6	18.81	18.77	18.67	19.5
		12	13	18.76	18.75	18.59	19.5
		25	0	18.77	18.75	18.61	19.5
	16QAM	1	0	19.05	19.1	18.95	19.5
		1	13	19.07	19.09	18.94	19.5
		1	24	19.02	19.02	18.86	19.5
		12	0	18.8	18.85	18.65	19.5
		12	6	18.84	18.81	18.66	19.5
		12	13	18.77	18.76	18.65	19.5
		25	0	18.78	18.81	18.66	19.5
	64QAM	1	0	19.27	19.03	19.44	19.5
		1	13	19.25	19.03	19.47	19.5
		1	24	19.16	19	19.46	19.5
		12	0	18.97	18.98	18.97	19.5
		12	6	18.98	19.03	18.96	19.5
		12	13	18.93	18.95	18.93	19.5
		25	0	18.89	18.93	18.83	19.5

Bandwidth	Modulation	RB size	RB offset	Channel 20000	Channel 20175	Channel 20350	Tune up
10MHz	QPSK	1	0	18.83	18.89	18.74	19.5
		1	25	18.74	18.75	18.61	19.5
		1	49	18.74	18.72	18.58	19.5
		25	0	18.83	18.82	18.7	19.5
		25	13	18.81	18.79	18.66	19.5
		25	25	18.8	18.75	18.65	19.5
		50	0	18.83	18.82	18.64	19.5
	16QAM	1	0	19.1	19.17	19.05	19.5
		1	25	19	19.01	18.93	19.5
		1	49	19.01	18.98	18.89	19.5
		25	0	18.83	18.82	18.71	19.5
		25	13	18.84	18.8	18.71	19.5
		25	25	18.77	18.75	18.61	19.5
		50	0	18.84	18.84	18.7	19.5
	64QAM	1	0	19.19	18.84	19.39	19.5
		1	25	19.14	18.75	19.34	19.5
		1	49	19.15	18.77	19.38	19.5
		25	0	18.95	19.03	18.87	19.5
		25	13	18.9	19.03	18.83	19.5
		25	25	18.88	19.02	18.82	19.5
		50	0	18.97	18.99	18.82	19.5

Bandwidth	Modulation	RB size	RB offset	Channel 20025	Channel 20175	Channel 20325	Tune up
15MHz	QPSK	1	0	18.91	18.97	18.82	19.5
		1	38	18.71	18.72	18.59	19.5
		1	74	18.74	18.73	18.58	19.5
		36	0	18.86	18.87	18.77	19.5
		36	18	18.8	18.82	18.71	19.5
		36	39	18.78	18.79	18.59	19.5
		75	0	18.8	18.83	18.7	19.5
	16QAM	1	0	19.2	19.27	19.15	19.5
		1	38	19.06	19.04	18.93	19.5
		1	74	19.04	19.02	18.89	19.5
		36	0	18.89	18.92	18.78	19.5
		36	18	18.84	18.86	18.72	19.5
		36	39	18.77	18.76	18.64	19.5
		75	0	18.85	18.85	18.73	19.5
	64QAM	1	0	19.26	18.87	19.48	19.5
		1	38	19.17	18.79	19.32	19.5
		1	74	19.23	18.81	19.34	19.5
		36	0	19	19.08	19	19.5
		36	18	19.02	19.03	18.95	19.5
		36	39	18.99	19.04	18.92	19.5
		75	0	19.01	19.02	18.92	19.5
Bandwidth	Modulation	RB size	RB offset	Channel 20050	Channel 20175	Channel 20300	Tune up
20MHz	QPSK	1	0	19.2	19.16	19.01	19.5
		1	50	19.02	18.98	18.78	19.5
		1	99	19.01	18.8	18.9	19.5
		50	0	19.11	19.08	19.07	19.5
		50	25	19.05	19.03	18.99	19.5
		50	50	18.98	18.95	18.91	19.5
		100	0	19.05	19.02	18.98	19.5
	16QAM	1	0	19.37	19.21	19.19	19.5
		1	50	19.05	19.12	18.99	19.5
		1	99	19.01	19.02	19.13	19.5
		50	0	18.94	18.99	18.95	19.5
		50	25	18.88	18.94	18.88	19.5
		50	50	18.85	18.81	18.85	19.5
		100	0	18.9	18.89	18.89	19.5
	64QAM	1	0	19.23	19.28	19.32	19.5
		1	50	19.31	19.26	19.19	19.5
		1	99	19.23	19.24	19.09	19.5
		50	0	19.09	19.13	19.08	19.5
		50	25	19.07	19.04	19.02	19.5
		50	50	19.1	19.03	18.98	19.5
		100	0	19.08	19.05	18.99	19.5

LTE FDD Band 12				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 23017	Channel 23095	Channel 23173	Tune up
1.4MHz	QPSK	1	0	22.41	22.42	22.35	23.5
		1	2	22.45	22.43	22.41	23.5
		1	5	22.4	22.42	22.38	23.5
		3	0	22.42	22.39	22.36	23.5
		3	2	22.46	22.41	22.4	23.5
		3	3	22.41	22.39	22.39	23.5
		6	0	21.39	21.36	21.39	22.5
	16QAM	1	0	21.58	21.51	21.54	22.5
		1	2	21.66	21.59	21.65	22.5
		1	5	21.58	21.55	21.5	22.5
		3	0	21.39	21.4	21.41	22.5
		3	2	21.49	21.48	21.44	22.5
		3	3	21.41	21.38	21.36	22.5
		6	0	20.44	20.45	20.46	21.5
	64QAM	1	0	20.7	20.96	21.08	21.5
		1	2	20.77	21.05	21.14	21.5
		1	5	20.69	20.98	21.02	21.5
		3	0	20.65	20.63	20.71	21.5
		3	2	20.74	20.64	20.8	21.5
		3	3	20.63	20.56	20.69	21.5
		6	0	19.62	19.66	19.65	20.5
Bandwidth	Modulation	RB size	RB offset	Channel 23025	Channel 23095	Channel 23165	Tune up
3MHz	QPSK	1	0	22.46	22.47	22.46	23.5
		1	7	22.58	22.58	22.52	23.5
		1	14	22.44	22.43	22.42	23.5
		8	0	21.45	21.47	21.48	22.5
		8	4	21.49	21.52	21.51	22.5
		8	7	21.44	21.43	21.45	22.5
		15	0	21.47	21.46	21.47	22.5
	16QAM	1	0	21.65	21.65	21.7	22.5
		1	7	21.8	21.77	21.81	22.5
		1	14	21.64	21.59	21.61	22.5
		8	0	20.53	20.49	20.53	21.5
		8	4	20.53	20.54	20.57	21.5
		8	7	20.52	20.53	20.51	21.5
		15	0	20.49	20.47	20.51	21.5
	64QAM	1	0	20.85	20.58	21.19	21.5
		1	7	21.03	20.64	21.23	21.5
		1	14	20.82	20.48	21.12	21.5
		8	0	19.79	19.76	19.79	20.5
		8	4	19.78	19.78	19.78	20.5
		8	7	19.76	19.72	19.77	20.5
		15	0	19.75	19.68	19.72	20.5

Bandwidth	Modulation	RB size	RB offset	Channel 23035	Channel 23095	Channel 23155	Tune up
5MHz	QPSK	1	0	22.72	22.7	22.73	23.5
		1	13	22.7	22.68	22.81	23.5
		1	24	22.71	22.68	22.72	23.5
		12	0	21.78	21.82	21.84	22.5
		12	6	21.81	21.84	21.85	22.5
		12	13	21.78	21.79	21.82	22.5
		25	0	21.78	21.79	21.82	22.5
	16QAM	1	0	21.95	21.97	22	22.5
		1	13	22.02	21.98	22.06	22.5
		1	24	21.95	21.92	21.91	22.5
		12	0	20.83	20.81	20.84	21.5
		12	6	20.83	20.83	20.88	21.5
		12	13	20.8	20.8	20.79	21.5
		25	0	20.82	20.81	20.83	21.5
	64QAM	1	0	20.83	20.78	20.99	21.5
		1	13	20.74	20.72	21.01	21.5
		1	24	20.69	20.69	20.87	21.5
		12	0	19.73	19.73	19.74	20.5
		12	6	19.77	19.78	19.73	20.5
		12	13	19.71	19.69	19.67	20.5
		25	0	19.8	19.73	19.66	20.5
Bandwidth	Modulation	RB size	RB offset	Channel 23060	Channel 23095	Channel 23130	Tune up
10MHz	QPSK	1	0	22.63	22.71	22.84	23.5
		1	25	22.53	22.55	22.72	23.5
		1	49	22.31	22.48	22.68	23.5
		25	0	21.56	21.73	21.79	22.5
		25	13	21.51	21.68	21.78	22.5
		25	25	21.49	21.61	21.69	22.5
		50	0	21.5	21.69	21.74	22.5
	16QAM	1	0	21.86	22.19	22.06	22.5
		1	25	21.72	22.04	21.97	22.5
		1	49	21.64	21.99	21.83	22.5
		25	0	20.61	20.76	20.84	21.5
		25	13	20.57	20.75	20.79	21.5
		25	25	20.52	20.7	20.75	21.5
		50	0	20.54	20.72	20.81	21.5
	64QAM	1	0	21.26	20.95	20.68	21.5
		1	25	21.15	20.82	20.61	21.5
		1	49	21.11	20.76	20.56	21.5
		25	0	19.71	19.69	19.86	20.5
		25	13	19.74	19.68	19.84	20.5
		25	25	19.65	19.61	19.8	20.5
		50	0	19.68	19.72	19.79	20.5

LTE FDD Band 17				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 23755	Channel 23790	Channel 23825	Tune up
5MHz	QPSK	1	0	22.68	22.55	22.72	23.5
		1	13	22.71	22.6	22.74	23.5
		1	24	22.6	22.52	22.59	23.5
		12	0	21.69	21.59	21.71	22.5
		12	6	21.64	21.58	21.68	22.5
		12	13	21.61	21.56	21.69	22.5
		25	0	21.63	21.61	21.66	22.5
	16QAM	1	0	21.96	21.96	21.97	22.5
		1	13	21.95	21.99	21.98	22.5
		1	24	21.86	21.88	21.81	22.5
		12	0	20.76	20.69	20.72	21.5
		12	6	20.8	20.71	20.67	21.5
		12	13	20.71	20.62	20.66	21.5
		25	0	20.67	20.65	20.72	21.5
	64QAM	1	0	21.23	20.87	20.8	21.5
		1	13	21.27	20.93	20.78	21.5
		1	24	21.22	20.86	20.74	21.5
		12	0	19.85	19.62	19.79	20.5
		12	6	19.83	19.66	19.83	20.5
		12	13	19.78	19.61	19.71	20.5
		25	0	19.7	19.58	19.73	20.5
Bandwidth	Modulation	RB size	RB offset	Channel 23780	Channel 23790	Channel 23800	Tune up
10MHz	QPSK	1	0	22.68	22.62	22.58	23.5
		1	25	22.57	22.48	22.45	23.5
		1	49	22.51	22.41	22.41	23.5
		25	0	21.67	21.65	21.65	22.5
		25	13	21.62	21.61	21.63	22.5
		25	25	21.54	21.58	21.59	22.5
		50	0	21.61	21.62	21.6	22.5
	16QAM	1	0	21.96	21.89	21.98	22.5
		1	25	21.82	21.78	21.91	22.5
		1	49	21.77	21.71	21.83	22.5
		25	0	20.69	20.59	20.68	21.5
		25	13	20.64	20.58	20.62	21.5
		25	25	20.61	20.55	20.56	21.5
		50	0	20.65	20.58	20.63	21.5
	64QAM	1	0	20.96	20.54	21.18	21.5
		1	25	20.84	20.51	21.13	21.5
		1	49	20.78	20.36	21.08	21.5
		25	0	19.67	19.76	19.66	20.5
		25	13	19.63	19.72	19.69	20.5
		25	25	19.56	19.67	19.62	20.5
		50	0	19.68	19.66	19.64	20.5

LTE FDD Band 25				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 26047	Channel 26365	Channel 26683	Tune up
1.4MHz	QPSK	1	0	16.69	16.78	16.97	18
		1	2	16.73	16.85	17.06	18
		1	5	16.67	16.77	16.98	18
		3	0	16.75	16.84	17.03	18
		3	2	16.73	16.86	17.05	18
		3	3	16.73	16.85	17.04	18
		6	0	16.7	16.82	17.03	18
	16QAM	1	0	16.94	17.08	17.24	18
		1	2	17.04	17.16	17.42	18
		1	5	16.94	17.06	17.31	18
		3	0	16.7	16.9	17.09	18
		3	2	16.77	16.94	17.11	18
		3	3	16.69	16.86	17.07	18
		6	0	16.76	16.91	17.15	18
	64QAM	1	0	17.12	17.38	17.73	18
		1	2	17.2	17.47	17.77	18
		1	5	17.06	17.35	17.69	18
		3	0	16.98	17.05	17.33	18
		3	2	17	17.07	17.4	18
		3	3	16.98	16.99	17.35	18
		6	0	16.96	17.03	17.27	18
Bandwidth	Modulation	RB size	RB offset	Channel 26055	Channel 26365	Channel 26675	Tune up
3MHz	QPSK	1	0	16.75	16.87	17.08	18
		1	7	16.85	16.96	17.18	18
		1	14	16.72	16.83	17.06	18
		8	0	16.78	16.91	17.12	18
		8	4	16.81	16.91	17.12	18
		8	7	16.75	16.88	17.1	18
		15	0	16.78	16.89	17.14	18
	16QAM	1	0	17.05	17.23	17.4	18
		1	7	17.14	17.34	17.53	18
		1	14	16.95	17.16	17.36	18
		8	0	16.86	16.99	17.2	18
		8	4	16.9	17.03	17.22	18
		8	7	16.83	16.97	17.2	18
		15	0	16.81	16.93	17.17	18
	64QAM	1	0	17.18	16.85	17.84	18
		1	7	17.26	16.98	17.87	18
		1	14	17.15	16.89	17.78	18
		8	0	17.01	17.1	17.35	18
		8	4	16.99	17.19	17.41	18
		8	7	16.98	17.06	17.34	18
		15	0	17.03	16.99	17.34	18

Bandwidth	Modulation	RB size	RB offset	Channel 26065	Channel 26365	Channel 26665	Tune up
5MHz	QPSK	1	0	16.83	16.95	16.97	18
		1	13	16.84	16.95	16.92	18
		1	24	16.78	16.88	16.88	18
		12	0	16.8	16.89	16.98	18
		12	6	16.81	16.9	16.97	18
		12	13	16.77	16.87	16.91	18
		25	0	16.82	16.91	16.95	18
	16QAM	1	0	17.05	17.22	17.22	18
		1	13	17.06	17.24	17.22	18
		1	24	16.96	17.11	17.17	18
		12	0	16.81	16.96	16.97	18
		12	6	16.83	16.98	17	18
		12	13	16.74	16.89	16.91	18
		25	0	16.8	16.95	16.94	18
	64QAM	1	0	17.23	17.11	17.7	18
		1	13	17.26	17.17	17.73	18
		1	24	17.21	17.12	17.66	18
		12	0	17	17.08	17.27	18
		12	6	16.94	17.09	17.25	18
		12	13	16.95	17.05	17.24	18
		25	0	16.91	17.03	17.08	18
Bandwidth	Modulation	RB size	RB offset	Channel 26090	Channel 26365	Channel 26640	Tune up
10MHz	QPSK	1	0	16.89	17.02	17.02	18
		1	25	16.76	16.9	16.9	18
		1	49	16.72	16.83	16.87	18
		25	0	16.83	16.95	17	18
		25	13	16.82	16.95	17	18
		25	25	16.77	16.9	16.95	18
		50	0	16.81	16.92	16.97	18
	16QAM	1	0	17.15	17.29	17.29	18
		1	25	16.96	17.14	17.14	18
		1	49	16.91	17.1	17.13	18
		25	0	16.81	16.97	16.98	18
		25	13	16.82	16.97	16.99	18
		25	25	16.73	16.92	16.91	18
		50	0	16.84	16.99	17.03	18
	64QAM	1	0	17.23	16.96	17.71	18
		1	25	17.12	16.79	17.68	18
		1	49	17.16	16.89	17.69	18
		25	0	16.98	17.16	17.12	18
		25	13	16.93	17.17	17.18	18
		25	25	16.89	17.12	17.08	18
		50	0	16.91	17.08	17.08	18

Bandwidth	Modulation	RB size	RB offset	Channel 26115	Channel 26365	Channel 26615	Tune up
15MHz	QPSK	1	0	17.18	17.08	17.12	18
		1	38	16.95	16.85	16.9	18
		1	74	16.93	16.87	16.89	18
		36	0	17.09	16.99	17.03	18
		36	18	17.03	16.94	17.01	18
		36	39	17	16.92	16.95	18
		75	0	17.06	16.97	16.99	18
	16QAM	1	0	17.47	17.39	17.38	18
		1	38	17.24	17.22	17.17	18
		1	74	17.26	17.22	17.16	18
		36	0	17.11	17.02	17.07	18
		36	18	17.08	16.99	17.04	18
		36	39	16.98	16.91	16.9	18
		75	0	17.07	16.97	17.03	18
	64QAM	1	0	17.54	17.02	17.82	18
		1	38	17.37	16.91	17.73	18
		1	74	17.43	16.97	17.71	18
		36	0	17.23	17.18	17.28	18
		36	18	17.21	17.17	17.23	18
		36	39	17.15	17.16	17.22	18
		75	0	17.22	17.08	17.21	18
Bandwidth	Modulation	RB size	RB offset	Channel 26140	Channel 26365	Channel 26590	Tune up
20MHz	QPSK	1	0	17.31	17.25	17.39	18
		1	50	17.06	17.07	17.2	18
		1	99	17.06	17.04	17.15	18
		50	0	17.19	17.12	17.27	18
		50	25	17.14	17.09	17.2	18
		50	50	17.09	17.04	17.12	18
		100	0	17.13	17.09	17.2	18
	16QAM	1	0	17.38	17.33	17.36	18
		1	50	17.31	17.39	17.35	18
		1	99	17.33	17.43	17.34	18
		50	0	17.22	17.22	17.22	18
		50	25	17.17	17.17	17.21	18
		50	50	17.12	17.12	17.14	18
		100	0	17.13	17.13	17.17	18
	64QAM	1	0	17.32	17.34	17.32	18
		1	50	17.31	17.33	17.32	18
		1	99	17.32	17.35	17.34	18
		50	0	17.3	17.19	17.28	18
		50	25	17.27	17.16	17.23	18
		50	50	17.26	17.14	17.2	18
		100	0	17.27	1712	17.24	18

LTE FDD Band 26				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 26697	Channel 26865	Channel 27033	Tune up
1.4MHz	QPSK	1	0	21.3	21.08	21.07	22
		1	2	20.97	21.12	21.12	22
		1	5	20.92	21.06	21.06	22
		3	0	20.99	21.14	21.12	22
		3	2	21	21.13	21.14	22
		3	3	20.98	21.12	21.11	22
		6	0	20.94	21.1	21.07	22
	16QAM	1	0	21.26	21.4	21.29	22
		1	2	21.33	21.48	21.37	22
		1	5	21.27	21.38	21.27	22
		3	0	21.02	21.16	21.12	22
		3	2	21.08	21.2	21.21	22
		3	3	21.01	21.11	21.11	22
		6	0	20.05	20.18	20.18	21
	64QAM	1	0	20.28	20.52	20.65	21
		1	2	20.39	20.65	20.72	21
		1	5	20.27	20.49	20.63	21
		3	0	20.17	20.18	20.25	21
		3	2	20.16	20.16	20.31	21
		3	3	20.15	20.13	20.25	21
		6	0	19.1	19.21	19.19	20
Bandwidth	Modulation	RB size	RB offset	Channel 26705	Channel 26865	Channel 27025	Tune up
3MHz	QPSK	1	0	21.01	21.19	21.17	22
		1	7	21.09	21.23	21.27	22
		1	14	20.94	21.08	21.13	22
		8	0	21.04	21.19	21.19	22
		8	4	21.06	21.2	21.22	22
		8	7	20.99	21.14	21.18	22
		15	0	21.03	21.16	21.18	22
	16QAM	1	0	21.29	21.5	21.44	22
		1	7	21.47	21.57	21.53	22
		1	14	21.29	21.45	21.38	22
		8	0	20.06	20.25	20.25	21
		8	4	20.12	20.25	20.26	21
		8	7	20.06	20.21	20.23	21
		15	0	20.07	20.2	20.21	21
	64QAM	1	0	20.37	20	20.71	21
		1	7	20.52	20.09	20.79	21
		1	14	20.31	20.03	20.68	21
		8	0	19.09	19.27	19.29	20
		8	4	19.12	19.29	19.32	20
		8	7	19.09	19.24	19.25	20
		15	0	19.13	19.2	19.23	20

Bandwidth	Modulation	RB size	RB offset	Channel 26715	Channel 26865	Channel 27015	Tune up
5MHz	QPSK	1	0	20.98	21.13	21.11	22
		1	13	21.01	21.14	21.12	22
		1	24	20.91	21.03	21.03	22
		12	0	20.99	21.13	21.15	22
		12	6	21	21.14	21.16	22
		12	13	20.97	21.07	21.09	22
		25	0	20.97	21.13	21.15	22
	16QAM	1	0	21.23	21.43	21.4	22
		1	13	21.29	21.43	21.38	22
		1	24	21.16	21.38	21.28	22
		12	0	20.07	20.12	20.15	21
		12	6	20.03	20.18	20.17	21
		12	13	20.05	20.11	20.12	21
		25	0	20.08	20.14	20.14	21
	64QAM	1	0	20.36	20.27	20.8	21
		1	13	20.45	20.32	20.91	21
		1	24	20.32	20.2	20.82	21
		12	0	19.14	19.23	19.39	20
		12	6	19.12	19.27	19.38	20
		12	13	19.05	19.18	19.34	20
		25	0	19.03	19.21	19.24	20

Bandwidth	Modulation	RB size	RB offset	Channel 26750	Channel 26865	Channel 26990	Tune up
10MHz	QPSK	1	0	21.95	21.1	21.03	22
		1	25	20.93	21.02	20.96	22
		1	49	20.85	20.92	20.9	22
		25	0	20.97	21.08	21.01	22
		25	13	20.99	21.05	20.99	22
		25	25	20.9	21	20.94	22
		50	0	20.94	21.04	20.98	22
	16QAM	1	0	21.26	21.37	21.29	22
		1	25	21.17	21.28	21.17	22
		1	49	21.1	21.2	21.1	22
		25	0	20.07	20.04	20.01	21
		25	13	20	20.05	20	21
		25	25	20.01	20.04	20.03	21
		50	0	20.05	20.06	20	21
	64QAM	1	0	20.77	20.49	19.96	21
		1	25	20.72	20.47	19.92	21
		1	49	20.68	20.41	19.89	21
		25	0	19.16	19.15	19.26	20
		25	13	19.15	19.14	19.23	20
		25	25	19.08	19.08	19.21	20
		50	0	19.13	19.18	19.17	20

Bandwidth	Modulation	RB size	RB offset	Channel 26775	Channel 26865	Channel 26965	Tune up
15MHz	QPSK	1	0	21.18	21.28	21.27	22
		1	38	21.04	21.14	21.11	22
		1	74	20.9	21.01	20.92	22
		36	0	21.11	21.27	21.21	22
		36	18	21.07	21.23	21.2	22
		36	39	21.02	21.17	21.13	22
		75	0	21.08	21.16	21.16	22
	16QAM	1	0	21.35	21.31	21.34	22
		1	38	21.33	21.32	21.35	22
		1	74	21.35	21.33	21.28	22
		36	0	20.18	20.31	20.24	21
		36	18	20.14	20.28	20.23	21
		36	39	20.01	20.16	20.08	21
		75	0	20.11	20.22	20.01	21
	64QAM	1	0	20.01	20.57	20.87	21
		1	38	20	20.54	20.75	21
		1	74	19.86	20.42	20.56	21
		36	0	19.3	19.28	19.32	20
		36	18	19.28	19.25	19.3	20
		36	39	19.21	19.17	19.2	20
		75	0	19.19	19.26	19.25	20

LTE TDD Band 41				Conducted Power(dBm)					
Bandwidth	Modulation	RB size	RB offset	Channel 39675	Channel 40148	Channel 40620	Channel 41093	Channel 41565	Tune up
5MHz	QPSK	1	0	17.2	17.12	17.14	16.92	16.97	18
		1	13	17.23	17.16	17.15	17.02	16.97	18
		1	24	17.14	17.09	17.01	16.9	16.82	18
		12	0	17.29	17.17	17.13	16.98	16.94	18
		12	6	17.33	17.23	17.17	16.95	16.96	18
		12	13	17.21	17.17	17.12	16.93	16.87	18
		25	0	17.29	17.19	17.2	17.01	17.01	18
	16QAM	1	0	17.36	17.33	17.28	17.16	17.12	18
		1	13	17.34	17.35	17.32	17.19	17.14	18
		1	24	17.34	17.27	17.22	17.08	17.04	18
		12	0	17.32	17.29	17.21	17.05	17.03	18
		12	6	17.31	17.31	17.32	17.07	17.02	18
		12	13	17.32	17.18	17.13	16.99	16.95	18
		25	0	17.33	17.24	17.23	17.05	17.03	18
	64QAM	1	0	17.74	17.39	17.31	17.65	17.43	18
		1	13	17.77	17.34	17.38	17.57	17.39	18
		1	24	17.71	17.26	17.27	17.54	17.32	18
		12	0	17.41	17.24	17.3	17.22	17.06	18
		12	6	17.34	17.28	17.32	17.26	17.05	18
		12	13	17.26	17.14	17.21	17.22	17.03	18
		25	0	17.16	17.26	17.26	17	16.99	18
Bandwidth	Modulation	RB size	RB offset	Channel 39700	Channel 40160	Channel 40620	Channel 41080	Channel 41540	Tune up
10MHz	QPSK	1	0	17.26	17.21	17.22	17.05	17.03	18
		1	25	17.16	17.1	17.05	16.95	16.89	18
		1	49	17.07	17.07	17.04	16.84	16.89	18
		25	0	17.38	17.22	17.18	17.08	17.03	18
		25	13	17.37	17.24	17.24	17.06	17.04	18
		25	25	17.29	17.16	17.17	17.03	16.93	18
		50	0	17.33	17.16	17.17	17	17.02	18
	16QAM	1	0	17.45	17.4	17.41	17.26	17.24	18
		1	25	17.38	17.29	17.23	17.13	17.16	18
		1	49	17.37	17.21	17.21	17.05	17.09	18
		25	0	17.34	17.29	17.27	17.09	17.05	18
		25	13	17.35	17.32	17.23	17.06	17.03	18
		25	25	17.31	17.19	17.16	16.98	16.92	18
		50	0	17.3	17.26	17.21	17.02	17.01	18
	64QAM	1	0	17.78	17.22	17.19	17.71	17.37	18
		1	25	17.68	17.18	17.07	17.56	17.24	18
		1	49	17.66	17.08	17	17.52	17.21	18
		25	0	17.26	17.36	17.31	17.12	17.07	18
		25	13	17.17	17.28	17.25	17.09	17.07	18
		25	25	17.23	17.26	17.21	17.01	16.97	18
		50	0	17.21	17.23	17.22	17.1	17.09	18

Bandwidth	Modulation	RB size	RB offset	Channel 39725	Channel 40173	Channel 40620	Channel 41068	Channel 41515	Tune up
15MHz	QPSK	1	0	17.22	17.3	17.3	17.15	17.08	18
		1	38	17.04	17.12	17.13	16.99	16.9	18
		1	74	16.98	17.06	17.04	16.89	16.82	18
		36	0	17.28	17.32	17.24	17.11	17	18
		36	18	17.22	17.24	17.13	17.05	16.97	18
		36	39	17.15	17.12	17.1	17	16.84	18
		75	0	17.13	17.2	17.16	17.07	16.95	18
	16QAM	1	0	17.42	17.42	17.42	17.35	17.25	18
		1	38	17.21	17.21	17.27	17.15	17.03	18
		1	74	17.23	17.16	17.18	17.04	16.93	18
		36	0	17.23	17.19	17.2	17.02	16.99	18
		36	18	17.21	17.23	17.13	17.04	16.91	18
		36	39	17.12	17.13	17.13	16.94	16.79	18
		75	0	17.18	17.26	17.19	17.08	16.92	18
	64QAM	1	0	17.74	17.23	17.21	17.83	17.32	18
		1	38	17.58	17.09	17.06	17.64	17.13	18
		1	74	17.59	17.02	17.03	17.57	17	18
		36	0	17.26	17.29	17.26	17.23	17.05	18
		36	18	17.25	17.26	17.28	17.22	17.08	18
		36	39	17.08	17.19	17.18	17.19	16.97	18
		75	0	17.12	17.14	17.19	17.16	17.07	18
Bandwidth	Modulation	RB size	RB offset	Channel 39750	Channel 40185	Channel 40620	Channel 41055	Channel 41490	Tune up
20MHz	QPSK	1	0	17.28	17.36	17.48	17.47	17.25	18
		1	50	17.02	17.25	17.29	17.19	17.01	18
		1	99	17.03	17.01	17.12	17.02	17.02	18
		50	0	17.12	17.25	17.28	17.18	17.08	18
		50	25	17.11	17.23	17.23	17.06	17.01	18
		50	50	17.01	17.14	17.14	17.01	17.02	18
		100	0	17.01	17.15	17.19	17.08	17.01	18
	16QAM	1	0	17.58	17.86	17.59	17.49	17.57	18
		1	50	17.33	17.62	17.38	17.21	17.36	18
		1	99	17.25	17.47	17.17	17.09	17.22	18
		50	0	17.16	17.41	17.29	17.24	17.13	18
		50	25	17.14	17.29	17.22	17.12	17.07	18
		50	50	17.03	17.18	17.16	17.02	17.02	18
		100	0	17.07	17.19	17.2	17.08	17	18
	64QAM	1	0	17.35	17.97	17.91	17.57	17.68	18
		1	50	17.22	17.72	17.73	17.32	17.45	18
		1	99	17.23	17.66	17.68	17.24	17.34	18
		50	0	17.18	17.27	17.29	17.3	17.21	18
		50	25	17.1	17.23	17.17	17.27	17.12	18
		50	50	17.04	17.13	17.1	17.17	17.06	18
		100	0	17.07	17.19	17.14	17.23	17.09	18

Table 11：Conducted Power of LTE

5.3.4 Conducted power measurements of Downlink LTE CA

In this section, the following conducted power measurement results of downlink LTE carrier aggregation are provided to quantify downlink only carrier aggregation SAR tests exclusion per KDB 941225 D05A. Uplink maximum output power is measured with downlink carrier aggregation active, using the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.

The device supports Rel. 11 downlink only LTE Carrier Aggregation and certain network enhancement features (UE Category: cat 5). It supports a maximum of 2 carriers in the downlink. Other Release 11 or higher features are not supported, including Uplink Carrier Aggregation, Enhanced SC-FDMA and Uplink MIMO or other antenna diversity configurations etc.

The possible downlink LTE CA combinations supported by this device are as below tables per 3GPP TS 36.101 V12.8.0. The detailed conducted power measurement results of downlink LTE CA are provided in the SAR report per 3GPP TS 36.521 V12.8.0. According to KDB 941225 D05A, the downlink only carrier aggregation conditions for this device can be excluded from SAR testing and PAG requirements.

intra-band contiguous CA (per 3GPP TS 36.101 V12.8.0 Table 5.6A.1-1)

E-UTRA CA configuration	Component carriers in order of increasing carrier frequency		Maximum aggregated bandwidth [MHz]	Bandwidth combination set
	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_41C	10	20	40	0
	15	15, 20		
	20	10, 15, 20		

Power test equipment: a KEYSIGHT UXM Wireless Test Set E7515A was used.

<table>
<tr><td colspan="7">Initial Conditions</td></tr>
<tr><td colspan="2">Test Environment as specified in TS 36.508[7] subclause 4.1</td><td colspan="5">NC[, TL/VL, TL/VH, TH/VL, TH/VH]</td></tr>
<tr><td colspan="2">Test Frequencies as specified in TS36.508 [7] subclause 4.3.1 for different CA bandwidth classes.</td><td colspan="5">A: Mid range for PCC and SCC</td></tr>
<tr><td colspan="2">Test CC Combination setting (N_{RB_agg}) as specified in subclause 5.4.2A.1 for the CA Configuration</td><td colspan="5">Lowest N_{RB_agg} Highest N_{RB_agg}</td></tr>
<tr><td colspan="7">Test Parameters for CA Configurations</td></tr>
<tr><td colspan="2">CA Configuration / N_{RB_agg}</td><td>DL Allocation</td><td rowspan="2">CC MOD</td><td colspan="3">UL Allocation</td></tr>
<tr><td>PCC NRB</td><td>SCCs NRB</td><td>PCC & SCC RB allocation</td><td>NRB_alloc</td><td colspan="2">PCC RB allocations (L_{CRB} @ RB_{start})</td></tr>
<tr><td>6</td><td>25</td><td rowspan="6">N/A
for this test</td><td>QPSK</td><td>5</td><td>P_5@0</td><td>-</td></tr>
<tr><td>15</td><td>25</td><td>QPSK</td><td>4</td><td>P_4@0</td><td>-</td></tr>
<tr><td>25</td><td>50</td><td>QPSK</td><td>8</td><td>P_8@0</td><td>-</td></tr>
<tr><td>50</td><td>75</td><td>QPSK</td><td>12</td><td>P_12@0</td><td>-</td></tr>
<tr><td>75</td><td>100</td><td>QPSK</td><td>16</td><td>P_16@0</td><td>-</td></tr>
<tr><td>100</td><td>75</td><td>QPSK</td><td>18</td><td>P_18@0</td><td>-</td></tr>
<tr><td colspan="7">Note 1: CA Configuration Test CC Combination settings are checked separately for each CA Configuration, which applicable aggregated channel bandwidths are specified in Table 5.4.2A.1-1</td></tr>
</table>

The conducted power measurement results of downlink LTE CA Conducted Power are as below, so the downlink only carrier aggregation conditions for this device can be excluded from SAR testing:

DL LTE CA Class	PCC								SCC			Power	
	PCC Band	PCC Bandwidth (MHz)	PCC UL RB Size	PCC UL RB Offset	PCC DL RB Size	PCC DL RB Offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC Bandwidth (MHz)	SCC DL Channel	LTE Rel 8 Tx.Power (dBm)	LTE Rel 11 Tx.Power (dBm)
CA_41C	LTE Band 41	20	1	0	100	0	41490	41490	LTE Band 41	20	41292	17.68	17.64

5.4 Measurement of SAR Data

5.4.1 SAR Result of GSM850

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp	SAR limit (W/kg)
Body Test data(Separate 5mm)											
Front side	GPRS 3TS	190/836.6	1:2.77	0.614	-0.09	26.05	27	1.245	0.764	22.1	1.6
Back side	GPRS 3TS	190/836.6	1:2.77	0.846	-0.09	26.05	27	1.245	1.053	22.1	1.6
Left side	GPRS 3TS	190/836.6	1:2.77	0.08	0.04	26.05	27	1.245	0.100	22.1	1.6
Right side	GPRS 3TS	190/836.6	1:2.77	0.321	0.11	26.05	27	1.245	0.399	22.1	1.6
Back side positioned at 45°	GPRS 3TS	190/836.6	1:2.77	0.413	0	26.05	27	1.245	0.514	22.1	1.6
Back side positioned at 90°	GPRS 3TS	190/836.6	1:2.77	0.475	0.09	26.05	27	1.245	0.591	22.1	1.6
Back side	GPRS 3TS	128/824.2	1:2.77	0.926	-0.09	25.97	27	1.268	**1.174**	22.1	1.6
Back side	GPRS 3TS	251/848.8	1:2.77	0.826	-0.04	26.02	27	1.253	1.035	22.1	1.6
Back side Repeat	GPRS 3TS	128/824.2	1:2.77	0.898	-0.02	25.97	27	1.268	1.138	22.1	1.6

Table 12：SAR of GSM850 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Back Side	128/824.2	0.926	0.898	1.03	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

5.4.2 SAR Result of GSM1900

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp	SAR limit (W/kg)
Body Test data(Separate 5mm)											
Front side	GPRS 3TS	661/1880	1:2.77	0.541	0.06	21.34	21.5	1.038	0.561	22.3	1.6
Back side	GPRS 3TS	661/1880	1:2.77	0.915	0.2	21.34	21.5	1.038	0.949	22.3	1.6
Left side	GPRS 3TS	661/1880	1:2.77	0.331	0.03	21.34	21.5	1.038	0.343	22.3	1.6
Right side	GPRS 3TS	661/1880	1:2.77	0.477	0.13	21.34	21.5	1.038	0.495	22.3	1.6
Back side positioned at 45°	GPRS 3TS	661/1880	1:2.77	0.146	0.1	21.34	21.5	1.038	0.151	22.3	1.6
Back side positioned at 90°	GPRS 3TS	661/1880	1:2.77	0.237	0.19	21.34	21.5	1.038	0.246	22.3	1.6
Back side	GPRS 3TS	512/1850.2	1:2.77	0.763	0.02	21.13	21.5	1.089	0.831	22.3	1.6
Back side	GPRS 3TS	810/1909.8	1:2.77	1.02	0.13	21.04	21.5	1.112	**1.134**	22.3	1.6
Back side Repeat	GPRS 3TS	810/1909.8	1:2.77	1.01	0.15	21.04	21.5	1.112	1.123	22.3	1.6

Table 13：SAR of GSM1900 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Back Side	810/1909.8	1.02	1.01	1.01	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

5.4.3 SAR Result of WCDMA850

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp	SAR limit (W/kg)
Body Test data(Separate 5mm)											
Front side	RMC	4182/836.4	1:1	0.665	0.03	21.41	22	1.146	0.762	22.1	1.6
Back side	RMC	4182/836.4	1:1	0.773	-0.14	21.41	22	1.146	0.885	22.1	1.6
Left side	RMC	4182/836.4	1:1	0.164	-0.01	21.41	22	1.146	0.188	22.1	1.6
Right side	RMC	4182/836.4	1:1	0.398	0.1	21.41	22	1.146	0.456	22.1	1.6
Back side positioned at 45°	RMC	4182/836.4	1:1	0.378	0.09	21.41	22	1.146	0.433	22.1	1.6
Back side positioned at 90°	RMC	4182/836.4	1:1	0.452	0.1	21.41	22	1.146	0.518	22.1	1.6
Back side	RMC	4132/826.4	1:1	0.692	0.09	21.39	22	1.151	0.796	22.1	1.6
Back side	RMC	4233/846.6	1:1	0.774	0.1	21.4	22	1.148	**0.889**	22.1	1.6

Table 14：SAR of WCDMA850 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

5.4.4 SAR Result of WCDMA1700

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp	SAR limit (W/kg)
Body Test data(Separate 5mm)											
Front side	RMC	1412/1732.4	1:1	0.666	0.03	19.9	20	1.023	0.682	22.2	1.6
Back side	RMC	1412/1732.4	1:1	0.823	-0.04	19.9	20	1.023	0.842	22.2	1.6
Left side	RMC	1412/1732.4	1:1	0.153	0.15	19.9	20	1.023	0.157	22.2	1.6
Right side	RMC	1412/1732.4	1:1	0.692	0.12	19.9	20	1.023	0.708	22.2	1.6
Back side positioned at 45°	RMC	1412/1732.4	1:1	0.218	-0.06	19.9	20	1.023	0.223	22.2	1.6
Back side positioned at 90°	RMC	1412/1732.4	1:1	0.22	0	19.9	20	1.023	0.225	22.2	1.6
Back side	RMC	1312/1712.4	1:1	0.990	-0.09	19.81	20	1.045	**1.034**	22.2	1.6
Back side	RMC	1513/1752.6	1:1	0.724	-0.06	19.89	20	1.026	0.743	22.2	1.6
Back side repeat	RMC	1312/1712.4	1:1	0.983	-0.04	19.81	20	1.045	1.027	22.2	1.6

Table 15：SAR of WCDMA1700 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Back Side	1312/1712.4	0.99	0.983	1.01	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

5.4.5 SAR Result of WCDMA1900

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp	SAR limit (W/kg)
Body Test data(Separate 5mm)											
Front side	RMC	9400/1880	1:1	0.424	-0.01	16.87	17	1.030	0.437	22.3	1.6
Back side	RMC	9400/1880	1:1	0.832	0.04	16.87	17	1.030	0.857	22.3	1.6
Left side	RMC	9400/1880	1:1	0.263	-0.03	16.87	17	1.030	0.271	22.3	1.6
Right side	RMC	9400/1880	1:1	0.379	0.12	16.87	17	1.030	0.391	22.3	1.6
Back side positioned at 45°	RMC	9400/1880	1:1	0.109	0.01	16.87	17	1.030	0.112	22.3	1.6
Back side positioned at 90°	RMC	9400/1880	1:1	0.179	0.06	16.87	17	1.030	0.184	22.3	1.6
Back side	RMC	9262/1852.4	1:1	0.772	0.08	16.83	17	1.040	0.803	22.3	1.6
Back side	RMC	9538/1907.6	1:1	0.899	0.06	16.89	17	1.026	**0.922**	22.3	1.6
Back side_Repeat	RMC	9538/1907.6	1:1	0.873	0.03	16.89	17	1.026	0.895	22.3	1.6

Table 16：SAR of WCDMA1900 for Body.

Note:

3) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B

4) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Back Side	9538/1907.6	0.899	0.873	1.03	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

5.4.6 SAR Result of LTE Band 2(20MHz)

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp.	SAR limit (W/kg)
Body Test data(Separate 5mm 1RB)											
Front side	QPSK	18900/1880	1:1	0.48	-0.07	17.46	18	1.132	0.544	22.3	1.6
Back side	QPSK	18900/1880	1:1	0.949	0.06	17.46	18	1.132	1.075	22.3	1.6
Left side	QPSK	18900/1880	1:1	0.22	-0.03	17.46	18	1.132	0.249	22.3	1.6
Right side	QPSK	18900/1880	1:1	0.5	0.05	17.46	18	1.132	0.566	22.3	1.6
Back side positioned at 45°	QPSK	18900/1880	1:1	0.0879	0.03	17.46	18	1.132	0.100	22.3	1.6
Back side positioned at 90°	QPSK	18900/1880	1:1	0.159	-0.07	17.46	18	1.132	0.180	22.3	1.6
Back side	QPSK	18700/1860	1:1	0.971	0.11	17.33	18	1.167	**1.133**	22.3	1.6
Back side	QPSK	19100/1900	1:1	0.837	0.01	17.26	18	1.186	0.992	22.3	1.6
Back side_Repeat	QPSK	18700/1860	1:1	0.963	0.06	17.33	18	1.167	1.124	22.3	1.6
Body Test data (Separate 5mm 50%RB)											
Front side	QPSK	18900/1880	1:1	0.467	0.09	17.41	18	1.146	0.535	22.3	1.6
Back side	QPSK	18900/1880	1:1	0.911	0.11	17.41	18	1.146	1.044	22.3	1.6
Left side	QPSK	18900/1880	1:1	0.21	0.09	17.41	18	1.146	0.241	22.3	1.6
Right side	QPSK	18900/1880	1:1	0.476	0.16	17.41	18	1.146	0.545	22.3	1.6
Back side positioned at 45°	QPSK	18900/1880	1:1	0.0873	0.09	17.41	18	1.146	0.100	22.3	1.6
Back side positioned at 90°	QPSK	18900/1880	1:1	0.154	0.03	17.41	18	1.146	0.176	22.3	1.6
Back side	QPSK	18700/1860	1:1	0.954	0.11	17.26	18	1.186	1.131	22.3	1.6
Back side	QPSK	19100/1900	1:1	0.783	0.11	17.27	18	1.183	0.926	22.3	1.6
Body Test data (Separate 5mm 100%RB)											
Back side	QPSK	18900/1880	1:1	0.855	0.09	17.34	18	1.164	0.995	22.3	1.6

Table 17：SAR of LTE Band 2 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Back Side	18700/1860	0.971	0.963	1.01	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

5.4.1 SAR Result of LTE Band 4(20MHz)

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp.	SAR limit (W/kg)
Body Test data(Separate 5mm 1RB)											
Front side	QPSK	20050/1720	1:1	0.421	-0.09	19.2	19.5	1.072	0.451	22.2	1.6
Back side	QPSK	20050/1720	1:1	0.785	-0.03	19.2	19.5	1.072	0.841	22.2	1.6
Left side	QPSK	20050/1720	1:1	0.102	0.02	19.2	19.5	1.072	0.109	22.2	1.6
Right side	QPSK	20050/1720	1:1	0.416	-0.07	19.2	19.5	1.072	0.446	22.2	1.6
Back side positioned at 45°	QPSK	20050/1720	1:1	0.234	0.11	19.2	19.5	1.072	0.251	22.2	1.6
Back side positioned at 90°	QPSK	20050/1720	1:1	0.313	-0.02	19.2	19.5	1.072	0.335	22.2	1.6
Back side	QPSK	20175/1732.5	1:1	0.839	-0.01	19.16	19.5	1.081	0.907	22.2	1.6
Back side	QPSK	20300/1745	1:1	0.95	-0.06	19.01	19.5	1.119	1.063	22.2	1.6
Body Test data (Separate 5mm 50%RB)											
Front side	QPSK	20050/1720	1:1	0.411	0.08	19.11	19.5	1.094	0.450	22.2	1.6
Back side	QPSK	20050/1720	1:1	0.808	-0.07	19.11	19.5	1.094	0.884	22.2	1.6
Left side	QPSK	20050/1720	1:1	0.0996	0.03	19.11	19.5	1.094	0.109	22.2	1.6
Right side	QPSK	20050/1720	1:1	0.386	-0.17	19.11	19.5	1.094	0.422	22.2	1.6
Back side positioned at 45°	QPSK	20050/1720	1:1	0.235	-0.01	19.11	19.5	1.094	0.257	22.2	1.6
Back side positioned at 90°	QPSK	20050/1720	1:1	0.324	-0.18	19.11	19.5	1.094	0.354	22.2	1.6
Back side	QPSK	20175/1732.5	1:1	0.873	-0.06	19.08	19.5	1.102	0.962	22.2	1.6
Back side	QPSK	20300/1745	1:1	0.993	-0.17	19.07	19.5	1.104	1.096	22.2	1.6
Back side Repeat	QPSK	20300/1745	1:1	1	-0.01	19.07	19.5	1.104	**1.104**	22.2	1.6
Body Test data (Separate 5mm 100%RB)											
Back side	QPSK	20050/1720	1:1	0.853	0	19.05	19.5	1.109	0.946	22.2	1.6

Table 18： SAR of LTE Band 4 for Body.

Note:
1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B
2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Back Side	20300/1745	0.993	1	1.01	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

5.4.2 SAR Result of LTE Band 12(10MHz)

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp.	SAR limit (W/kg)
Body Test data(Separate 5mm 1RB)											
Front side	QPSK	23130/711	1:1	0.316	0.1	22.84	23.5	1.164	0.368	22.1	1.6
Back side	QPSK	23130/711	1:1	0.47	0.03	22.84	23.5	1.164	**0.547**	22.1	1.6
Left side	QPSK	23130/711	1:1	0.0614	0.06	22.84	23.5	1.164	0.071	22.1	1.6
Right side	QPSK	23130/711	1:1	0.195	0.12	22.84	23.5	1.164	0.227	22.1	1.6
Back side positioned at 45°	QPSK	23130/711	1:1	0.147	0.04	22.84	23.5	1.164	0.171	22.1	1.6
Back side positioned at 90°	QPSK	23130/711	1:1	0.159	0.09	22.84	23.5	1.164	0.185	22.1	1.6
Body Test data (Separate 5mm 50%RB)											
Front side	QPSK	23130/711	1:1	0.261	0.03	21.79	22.5	1.178	0.307	22.1	1.6
Back side	QPSK	23130/711	1:1	0.398	0.02	21.79	22.5	1.178	0.469	22.1	1.6
Left side	QPSK	23130/711	1:1	0.0598	-0.01	21.79	22.5	1.178	0.070	22.1	1.6
Right side	QPSK	23130/711	1:1	0.16	0.08	21.79	22.5	1.178	0.188	22.1	1.6
Back side positioned at 45°	QPSK	23130/711	1:1	0.117	0.03	21.79	22.5	1.178	0.138	22.1	1.6
Back side positioned at 90°	QPSK	23130/711	1:1	0.128	0.09	21.79	22.5	1.178	0.151	22.1	1.6

Table 19： SAR of LTE Band 12 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

5.4.3 SAR Result of LTE Band 17(10MHz)

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp.	SAR limit (W/kg)
Body Test data(Separate 5mm 1RB)											
Front side	QPSK	23780/709	1:1	0.332	-0.07	22.68	23.5	1.208	0.401	22.1	1.6
Back side	QPSK	23780/709	1:1	0.476	-0.01	22.68	23.5	1.208	**0.575**	22.1	1.6
Left side	QPSK	23780/709	1:1	0.0666	0.09	22.68	23.5	1.208	0.080	22.1	1.6
Right side	QPSK	23780/709	1:1	0.209	0.06	22.68	23.5	1.208	0.252	22.1	1.6
Back side positioned at 45°	QPSK	23780/709	1:1	0.145	0.07	22.68	23.5	1.208	0.175	22.1	1.6
Back side positioned at 90°	QPSK	23780/709	1:1	0.149	-0.09	22.68	23.5	1.208	0.180	22.1	1.6
Body Test data (Separate 5mm 50%RB)											
Front side	QPSK	23780/709	1:1	0.276	-0.08	21.67	22.5	1.211	0.334	22.1	1.6
Back side	QPSK	23780/709	1:1	0.394	-0.03	21.67	22.5	1.211	0.477	22.1	1.6
Left side	QPSK	23780/709	1:1	0.0531	0.07	21.67	22.5	1.211	0.064	22.1	1.6
Right side	QPSK	23780/709	1:1	0.175	0.1	21.67	22.5	1.211	0.212	22.1	1.6
Back side positioned at 45°	QPSK	23780/709	1:1	0.117	0.01	21.67	22.5	1.211	0.142	22.1	1.6
Back side positioned at 90°	QPSK	23780/709	1:1	0.12	0.03	21.67	22.5	1.211	0.145	22.1	1.6

Table 20： SAR of LTE Band 17 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

5.4.1 SAR Result of LTE Band 25(20MHz)

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp.	SAR limit (W/kg)
Body Test data(Separate 5mm 1RB)											
Front side	QPSK	26590/1905	1:1	0.45	0.03	17.39	18	1.151	0.518	22.3	1.6
Back side	QPSK	26590/1905	1:1	0.753	0.01	17.39	18	1.151	0.867	22.3	1.6
Left side	QPSK	26590/1905	1:1	0.145	-0.02	17.39	18	1.151	0.167	22.3	1.6
Right side	QPSK	26590/1905	1:1	0.453	0.09	17.39	18	1.151	0.521	22.3	1.6
Back side positioned at 45°	QPSK	26590/1905	1:1	0.0736	0.01	17.39	18	1.151	0.085	22.3	1.6
Back side positioned at 90°	QPSK	26590/1905	1:1	0.131	0.1	17.39	18	1.151	0.151	22.3	1.6
Back side	QPSK	26140/1860	1:1	0.952	0.1	17.31	18	1.172	**1.116**	22.3	1.6
Back side	QPSK	26365/1882.5	1:1	0.858	0.1	17.25	18	1.189	1.020	22.3	1.6
Back side_Repeat	QPSK	26140/1860	1:1	0.935	0.11	17.31	18	1.172	1.096	22.3	1.6
Body Test data (Separate 5mm 50%RB)											
Front side	QPSK	26590/1905	1:1	0.403	0.1	17.27	18	1.183	0.477	22.3	1.6
Back side	QPSK	26590/1905	1:1	0.674	0.09	17.27	18	1.183	0.797	22.3	1.6
Left side	QPSK	26590/1905	1:1	0.112	-0.03	17.27	18	1.183	0.133	22.3	1.6
Right side	QPSK	26590/1905	1:1	0.405	0.02	17.27	18	1.183	0.479	22.3	1.6
Back side positioned at 45°	QPSK	26590/1905	1:1	0.0809	-0.08	17.27	18	1.183	0.096	22.3	1.6
Back side positioned at 90°	QPSK	26590/1905	1:1	0.135	0.14	17.27	18	1.183	0.160	22.3	1.6
Body Test data (Separate 5mm 100%RB)											
Back side	QPSK	26590/1905	1:1	0.721	0.08	17.2	18	1.202	0.867	22.3	1.6

Table 21： SAR of LTE Band 25 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Back Side	26140/1860	0.952	0.935	1.02	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

5.4.2 SAR Result of LTE Band 26(15MHz)

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp.	SAR limit (W/kg)
Body Test data(Separate 5mm 1RB)											
Front side	QPSK	26865/831.5	1:1	0.413	0.05	21.28	22	1.180	0.487	22.1	1.6
Back side	QPSK	26865/831.5	1:1	0.736	-0.07	21.28	22	1.180	0.869	22.1	1.6
Left side	QPSK	26865/831.5	1:1	0.104	0.02	21.28	22	1.180	0.123	22.1	1.6
Right side	QPSK	26865/831.5	1:1	0.32	0.03	21.28	22	1.180	0.378	22.1	1.6
Back side positioned at 45°	QPSK	26865/831.5	1:1	0.132	0.05	21.28	22	1.180	0.156	22.1	1.6
Back side positioned at 90°	QPSK	26865/831.5	1:1	0.148	0.06	21.28	22	1.180	0.175	22.1	1.6
Back side	QPSK	26775/822.5	1:1	0.735	0.05	21.18	22	1.208	0.888	22.1	1.6
Back side	QPSK	26965/841.5	1:1	0.822	0.1	21.27	22	1.183	0.972	22.1	1.6
Body Test data (Separate 5mm 50%RB)											
Front side	QPSK	26865/831.5	1:1	0.434	0.07	21.27	22	1.183	0.513	22.1	1.6
Back side	QPSK	26865/831.5	1:1	0.762	0.06	21.27	22	1.183	0.901	22.1	1.6
Left side	QPSK	26865/831.5	1:1	0.0986	0.08	21.27	22	1.183	0.117	22.1	1.6
Right side	QPSK	26865/831.5	1:1	0.29	0.05	21.27	22	1.183	0.343	22.1	1.6
Back side positioned at 45°	QPSK	26865/831.5	1:1	0.145	-0.13	21.27	22	1.183	0.172	22.1	1.6
Back side positioned at 90°	QPSK	26865/831.5	1:1	0.163	0.16	21.27	22	1.183	0.193	22.1	1.6
Back side	QPSK	26775/822.5	1:1	0.727	0.08	21.11	22	1.227	0.892	22.1	1.6
Back side	QPSK	26965/841.5	1:1	0.847	0.05	21.21	22	1.199	1.016	22.1	1.6
Body Test data (Separate 5mm 100%RB)											
Back side	QPSK	26965/841.5	1:1	0.869	0.08	21.16	22	1.213	**1.054**	22.1	1.6
Back side_Repeat	QPSK	26965/841.5	1:1	0.848	0.03	21.16	22	1.213	1.029	22.1	1.6

Table 22： SAR of LTE Band 26 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Back Side	26965/841.5	0.869	0.848	1.02	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

5.4.1 SAR Result of LTE Band 41(20MHz)

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp.	SAR limit (W/kg)
Body Test data(Separate 5mm 1RB)											
Front side	QPSK	40620/2593	1:1.579	0.471	-0.06	17.48	18	1.127	0.531	22.1	1.6
Back side	QPSK	40620/2593	1:1.579	0.728	-0.08	17.48	18	1.127	0.821	22.1	1.6
Left side	QPSK	40620/2593	1:1.579	0.113	0.01	17.48	18	1.127	0.127	22.1	1.6
Right side	QPSK	40620/2593	1:1.579	0.325	0.03	17.48	18	1.127	0.366	22.1	1.6
Back side positioned at 45°	QPSK	40620/2593	1:1.579	0.0709	0.06	17.48	18	1.127	0.080	22.1	1.6
Back side positioned at 90°	QPSK	40620/2593	1:1.579	0.146	-0.08	17.48	18	1.127	0.165	22.1	1.6
Back side	QPSK	39750/2506	1:1.579	0.597	-0.02	17.28	18	1.180	0.705	22.1	1.6
Back side	QPSK	40185/2549.5	1:1.579	0.699	0.1	17.36	18	1.159	0.810	22.1	1.6
Back side	QPSK	41055/2636.5	1:1.579	0.7	0.06	17.47	18	1.130	0.791	22.1	1.6
Back side	QPSK	41490/2680	1:1.579	0.596	-0.08	17.25	18	1.189	0.708	22.1	1.6
Body Test data (Separate 5mm 50%RB)											
Front side	QPSK	40620/2593	1:1.579	0.458	-0.14	17.28	18	1.180	0.541	22.1	1.6
Back side	QPSK	40620/2593	1:1.579	0.714	-0.17	17.28	18	1.180	0.843	22.1	1.6
Left side	QPSK	40620/2593	1:1.579	0.106	-0.05	17.28	18	1.180	0.125	22.1	1.6
Right side	QPSK	40620/2593	1:1.579	0.319	0.08	17.28	18	1.180	0.377	22.1	1.6
Back side positioned at 45°	QPSK	40620/2593	1:1.579	0.0762	-0.09	17.28	18	1.180	0.090	22.1	1.6
Back side positioned at 90°	QPSK	40620/2593	1:1.579	0.156	-0.07	17.28	18	1.180	0.184	22.1	1.6
Back side	QPSK	39750/2506	1:1.579	0.574	-0.08	17.12	18	1.225	0.703	22.1	1.6
Back side	QPSK	40185/2549.5	1:1.579	0.7	-0.02	17.25	18	1.189	0.832	22.1	1.6
Back side	QPSK	41055/2636.5	1:1.579	0.695	-0.1	17.18	18	1.208	0.839	22.1	1.6
Back side	QPSK	41490/2680	1:1.579	0.571	-0.1	17.08	18	1.236	0.706	22.1	1.6
Body Test data (Separate 5mm 100%RB)											
Back side	QPSK	40620/2593	1:1.579	0.729	0.02	17.19	18	1.205	**0.878**	22.1	1.6

Table 23：SAR of LTE Band 41 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

3) Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:

≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz

5.5 Multiple Transmitter Evaluation

There is only one antenna, so there is no simultaneous transmission.

6 Equipment list

Test Platform	SPEAG DASY5 Professional
Location	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
Description	SAR Test System (Frequency range 300MHz-6GHz)
Software Reference	DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Hardware Reference

	Equipment	Manufacturer	Model	Serial Number	Calibration Date	Due date of calibration
☒	Robot	Staubli	RX90L	F03/5V32A1/A01	NCR	NCR
☒	Twin Phantom	SPEAG	SAM 1	1912	NCR	NCR
☒	Twin Phantom	SPEAG	SAM 2	1640	NCR	NCR
☒	Flat Phantom	SPEAG	ELI v4.0	1123	NCR	NCR
☒	DAE	SPEAG	DAE4	1267	2016-02-05	2017-02-04
☒	E-Field Probe	SPEAG	EX3DV4	3962	2016-12-19	2017-12-18
☒	Validation Kits	SPEAG	D750V3	1160	2016-06-22	2019-06-21
☒	Validation Kits	SPEAG	D835V2	4d105	2016-12-08	2019-12-07
☒	Validation Kits	SPEAG	D1750V2	1149	2016-06-23	2019-06-22
☒	Validation Kits	SPEAG	D1900V2	5d028	2016-12-07	2019-12-06
☒	Validation Kits	SPEAG	D2600V2	1125	2016-06-22	2019-06-21
☒	Agilent Network Analyzer	Agilent	E5071C	MY46523590	2016-03-08	2017-03-08
☒	Dielectric Probe Kit	Agilent	85070E	US01440210	NCR	NCR
☒	Radio Communication Analyzer	Anritsu Corporation	MT8820C	6201465414	2016-04-25	2017-04-24
☒	UXM Wireless Test Set	KEYSIGHT	E7515A	MY56040323	2016-08-06	2017-08-05
☒	RF Bi-Directional Coupler	Agilent	86205-60001	MY31400031	NCR	NCR
☒	Signal Generator	Agilent	N5171B	MY53050736	2016-03-08	2017-03-08
☒	Preamplifier	Mini-Circuits	ZHL-42W	15542	NCR	NCR
☒	Power Meter	Agilent	E4416A	GB41292095	2016-03-08	2017-03-08
☒	Power Sensor	Agilent	8481H	MY41091234	2016-03-08	2017-03-08
☒	Power Sensor	R&S	NRP-Z92	100025	2016-03-08	2017-03-08
☒	Attenuator	SHX	TS2-3dB	30704	NCR	NCR
☒	Coaxial low pass filter	Mini-Circuits	VLF-2500(+)	NA	NCR	NCR
☒	Coaxial low pass filter	Microlab Fxr	LA-F13	NA	NCR	NCR
☒	50 Ω coaxial load	Mini-Circuits	KARN-50+	00850	NCR	NCR
☒	DC POWER SUPPLY	SAKO	SK1730SL5A	NA	NCR	NCR
☒	Speed reading thermometer	MingGao	T809	NA	2016-03-31	2017-03-30
☒	Humidity and Temperature Indicator	KIMTOKA	KT-905	NA	2016-03-09	2017-03-09
☒	Portable computer	Lenovo	ThinkPad 11e 3rd Gen	LR-06W05V	NCR	NCR

7 Measurement Uncertainty

Per KDB865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04,when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. The equivalent ratio (1.5/1.6) is applied to extremity and occupational exposure conditions.

8 Calibration certificate

Please see the Appendix C

9 Photographs

Please see the Appendix D

Appendix A: Detailed System Validation Results

Appendix B: Detailed Test Results

Appendix C: Calibration certificate

Appendix D: Photographs

---END---

Appendix A

Detailed System Validation Results

1. System Performance Check for Body
System Performance Check 750MHz Body
System Performance Check 835MHz Body
System Performance Check 1750MHz Body
System Performance Check 1900MHz Body
System Performance Check 2600MHz Body

Date: 2017/1/17

Test Laboratory: SGS-SAR/HAC Lab

System Performance Check 750 MHz Body

DUT: D750V3; Type: D750V3; Serial: 1160

Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1

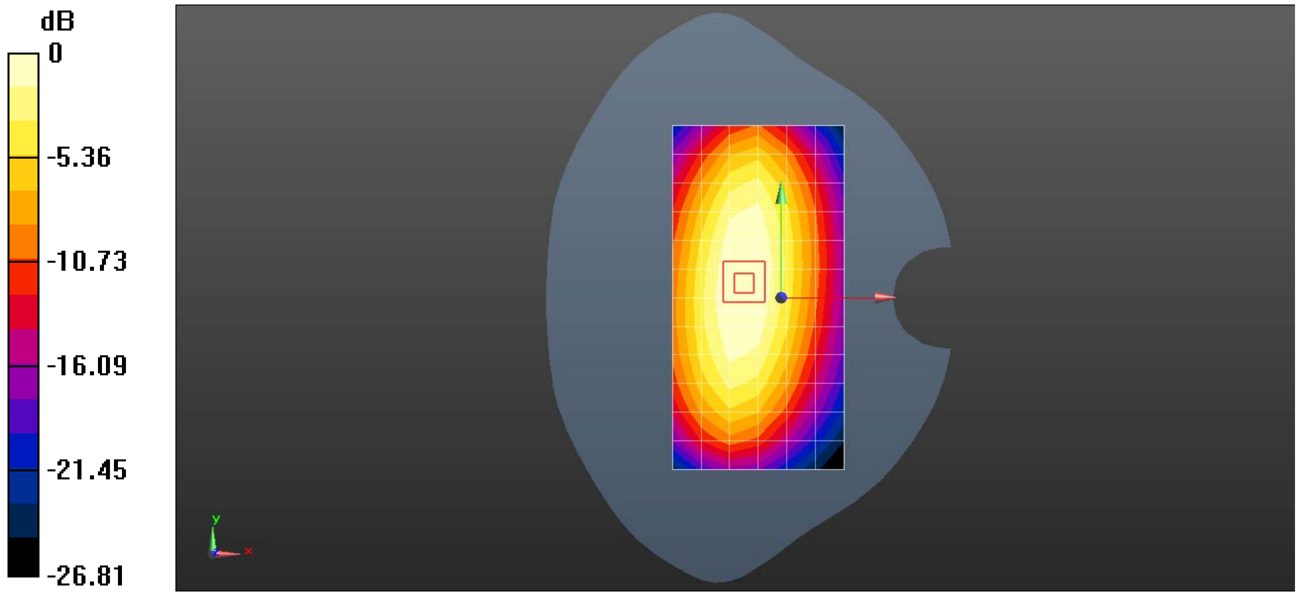
Medium: MSL750;Medium parameters used: f = 750 MHz; $\sigma = 0.943$ S/m; $\varepsilon_r = 55.821$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(10.08, 10.08, 10.08); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: SAM2; Type: SAM; Serial: 1640
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Body/d=15mm, Pin=250mW/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.02 W/kg

Body/d=15mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 48.38 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 3.15 W/kg
SAR(1 g) = 2.15 W/kg; SAR(10 g) = 1.43 W/kg
Maximum value of SAR (measured) = 2.31 W/kg



0 dB = 2.02 W/kg = 3.04 dBW/kg

Date: 2017/1/13

Test Laboratory: SGS-SAR/HAC Lab

System Performance Check 835 MHz Body

DUT: D835V2; Type: D835V2; Serial: 4d105

Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1

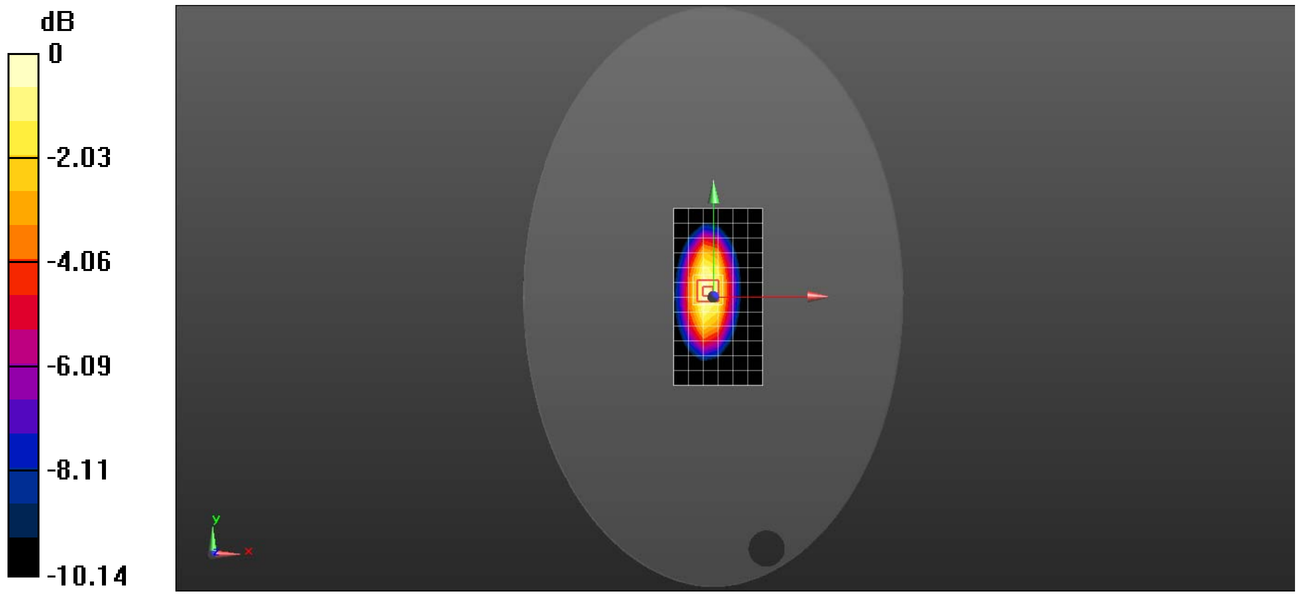
Medium: MSL835;Medium parameters used: f = 835 MHz; σ = 0.986 S/m; ε_r = 54.389; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(9.87, 9.87, 9.87); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: ELI v4.0; Type: ELI; Serial: 1123
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Body/d=15mm, Pin=250mW/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.58 W/kg

Body/d=15mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.39 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 3.73 W/kg
SAR(1 g) = 2.56 W/kg; SAR(10 g) = 1.69 W/kg
Maximum value of SAR (measured) = 2.76 W/kg



0 dB = 2.76 W/kg = 4.41 dBW/kg

Date: 2017/1/15

Test Laboratory: SGS-SAR/HAC Lab

System Performance Check 1750 MHz Body

DUT: D1750V2; Type: D1750V2; Serial: 1149

Communication System: UID 0, CW (0); Frequency: 1750 MHz;Duty Cycle: 1:1

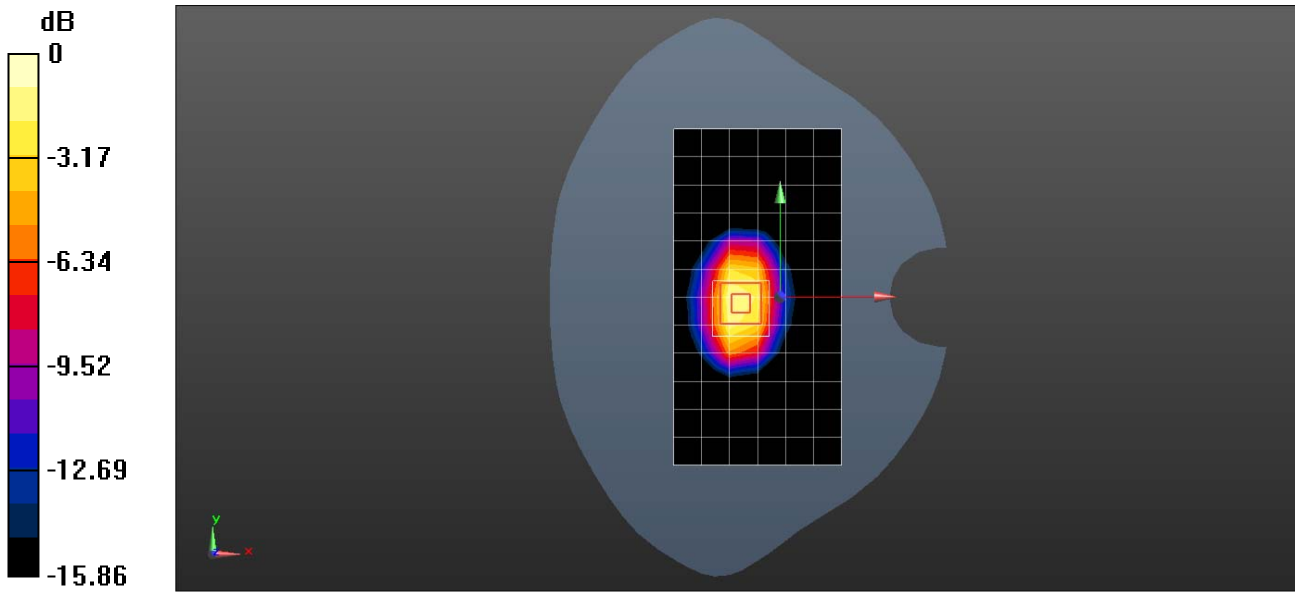
Medium: MSL1750;Medium parameters used: f = 1750 MHz; σ = 1.481 S/m; ε_r = 51.003; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.41, 8.41, 8.41); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: SAM1; Type: SAM; Serial: 1912
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Body/d=10mm, Pin=250mW/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 8.56 W/kg

Body/d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 80.56 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 17.0 W/kg
SAR(1 g) = 9.68 W/kg; SAR(10 g) = 5.26 W/kg
Maximum value of SAR (measured) = 10.8 W/kg



0 dB = 10.8 W/kg = 10.33 dBW/kg

Date: 2017/1/14

Test Laboratory: SGS-SAR/HAC Lab

System Performance Check 1900 MHz Body

DUT: D1900V2; Type: D1900V2; Serial: 5d028

Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1

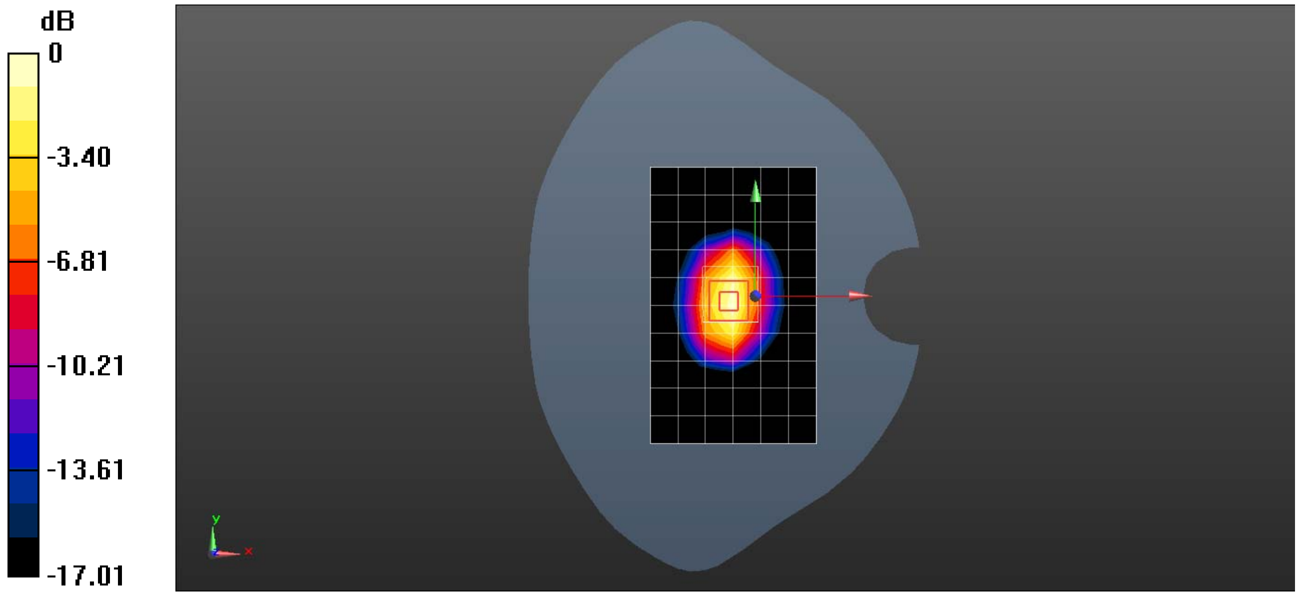
Medium: MSL1900;Medium parameters used: f = 1900 MHz; σ = 1.498 S/m; ε_r = 53.216; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(7.82, 7.82, 7.82); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: SAM1; Type: SAM; Serial: 1912
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Body/d=10mm, Pin=250mW/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 11.3 W/kg

Body/d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 88.01 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 18.8 W/kg
SAR(1 g) = 10.7 W/kg; SAR(10 g) = 5.69 W/kg
Maximum value of SAR (measured) = 11.9 W/kg



0 dB = 11.9 W/kg = 10.76 dBW/kg

Date: 2017/1/17

Test Laboratory: SGS-SAR/HAC Lab

System Performance Check 1900 MHz Body

DUT: D1900V2; Type: D1900V2; Serial: 5d028

Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1

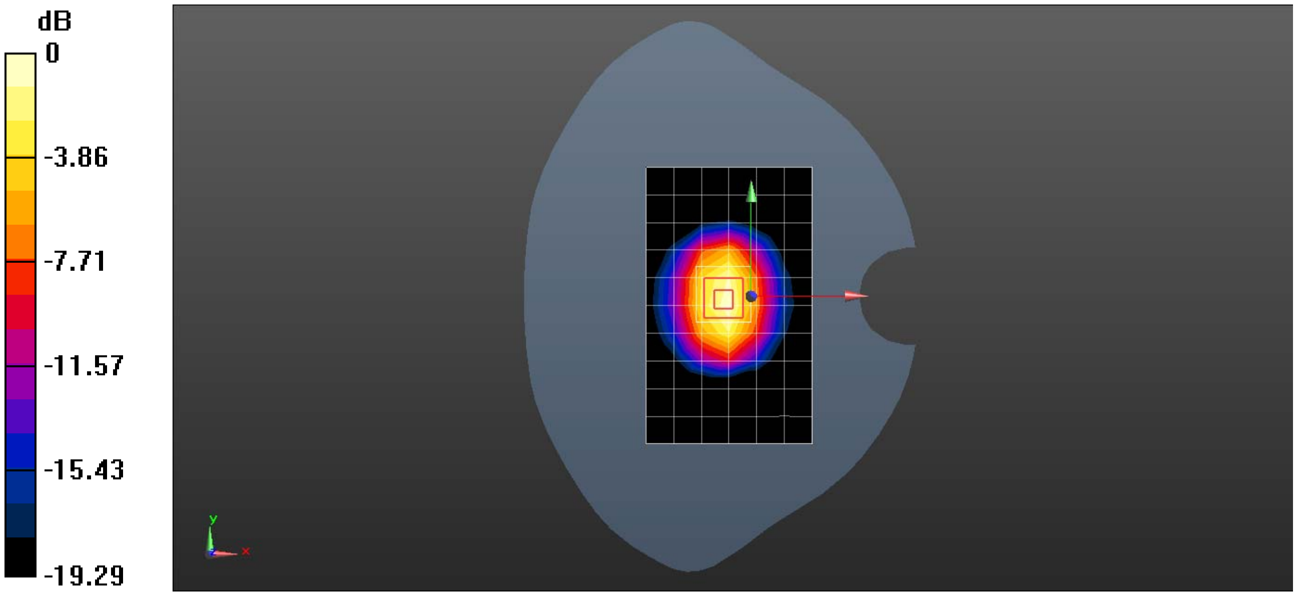
Medium: MSL1900;Medium parameters used: f = 1900 MHz; σ = 1.476 S/m; ε_r = 53.025; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(7.82, 7.82, 7.82); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: SAM1; Type: SAM; Serial: 1912
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Body/d=10mm, Pin=250mW/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 11.0 W/kg

Body/d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 88.69 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 20.4 W/kg
SAR(1 g) = 10.5 W/kg; SAR(10 g) = 5.29 W/kg
Maximum value of SAR (measured) = 11.7 W/kg



0 dB = 11.7 W/kg = 10.68 dBW/kg

Date: 2017/1/16

Test Laboratory: SGS-SAR/HAC Lab

System Performance Check 2600MHz Body

DUT: D2600V2; Type: D2600V2; Serial: 1125

Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1

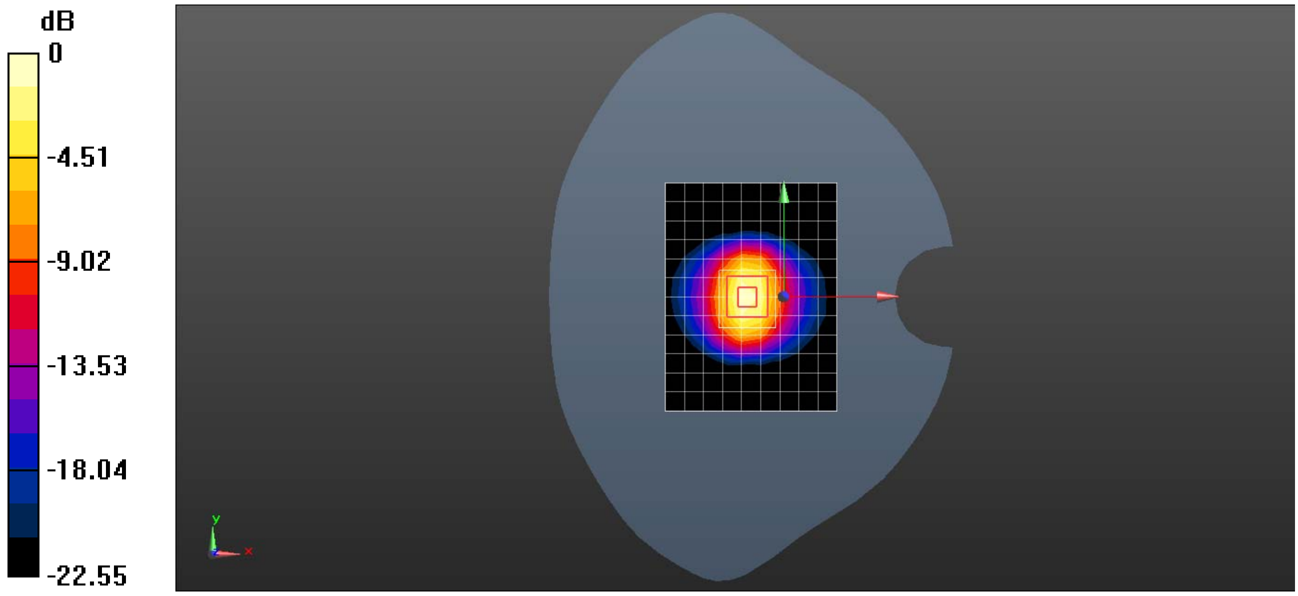
Medium: MSL2600;Medium parameters used: f = 2600 MHz; σ = 2.187 S/m; ε_r = 50.237; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(7.26, 7.26, 7.26); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: SAM2; Type: SAM; Serial: 1640
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Body/d=10mm, Pin=250mW/Area Scan (10x13x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 15.4 W/kg

Body/d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 91.13 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 30.4 W/kg
SAR(1 g) = 14.3 W/kg; SAR(10 g) = 6.38 W/kg
Maximum value of SAR (measured) = 16.7 W/kg



0 dB = 16.7 W/kg = 12.18 dBW/kg

Appendix B

Detailed Test Results

1. GSM
GSM850 for Body
GSM1900 for Body
2. WCDMA
WCDMA850 for Body
WCDMA1700 for Body
WCDMA1900 for Body
3. LTE
LTE Band 2 for Body
LTE Band 4 for Body
LTE Band 12 for Body
LTE Band 17 for Body
LTE Band 25 for Body
LTE Band 26 for Body
LTE Band 41 for Body

Date: 2017/1/13

Test Laboratory: SGS-SAR/HAC Lab

604HW GSM850 GPRS 3TS 128CH Back side 5mm

DUT: 604HW; Type: LTE USB Stick; Serial: H2Y0116C13000192

Communication System: UID 0, GPRS/EGPRS Mode(3up) Communication System (0); Frequency: 824.2 MHz;Duty Cycle: 1:2.77013

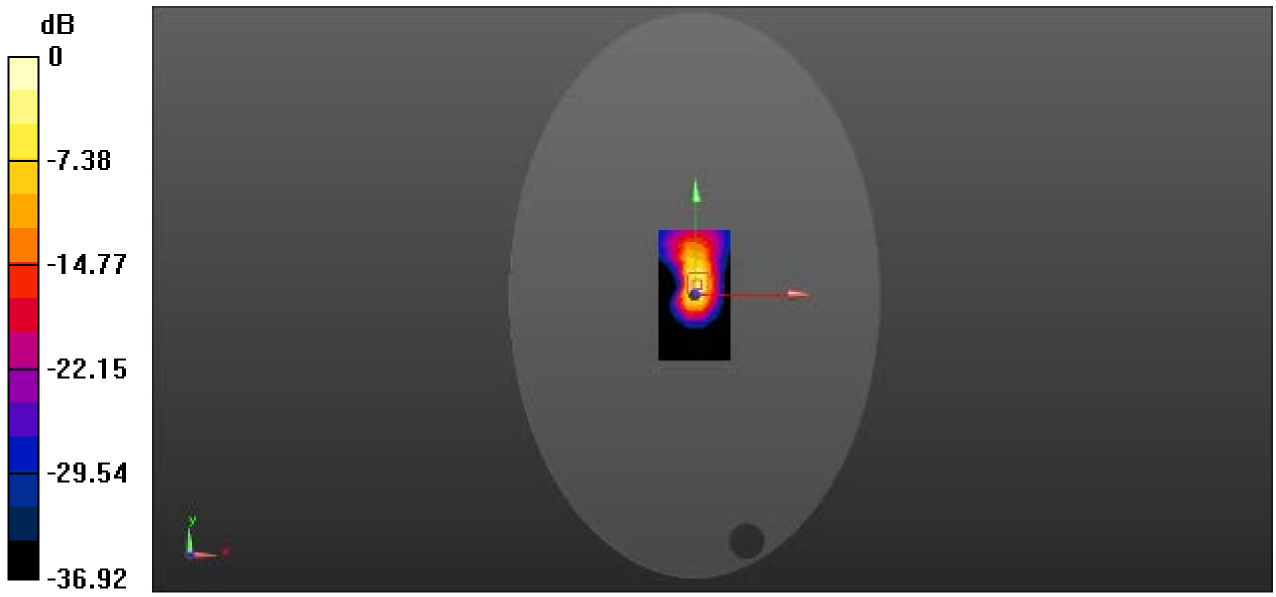
Medium: MSL835;Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.976 S/m; ε_r = 54.422; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(9.87, 9.87, 9.87); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: ELI v4.0; Type: ELI; Serial: 1123
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (6x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.999 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.20 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.69 W/kg
SAR(1 g) = 0.926 W/kg; SAR(10 g) = 0.565 W/kg
Maximum value of SAR (measured) = 1.33 W/kg



0 dB = 0.999 W/kg = -0.00 dBW/kg

Date: 2017/1/14

Test Laboratory: SGS-SAR/HAC Lab

604HW GSM1900 GPRS 3TS 810CH Back side 5mm

DUT: 604HW; Type: LTE USB Stick; Serial: H2Y0116C13000192

Communication System: UID 0, GPRS/EGPRS Mode(3up) Communication System (0); Frequency: 1909.8 MHz;Duty Cycle: 1:2.77013

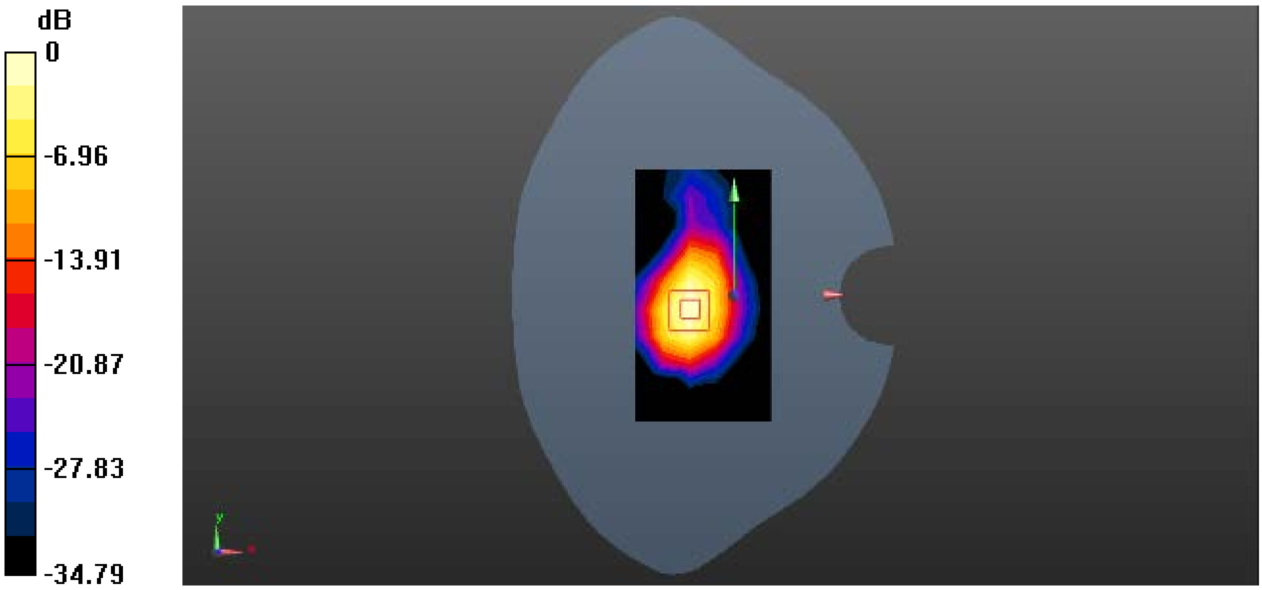
Medium: MSL1900;Medium parameters used: f = 1910 MHz; σ = 1.493 S/m; ε_r = 53.009; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(7.82, 7.82, 7.82); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: SAM1; Type: SAM; Serial: 1912
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (6x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.32 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.67 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.601 W/kg
Maximum value of SAR (measured) = 1.30 W/kg



0 dB = 1.32 W/kg = 1.20 dBW/kg

Date: 2017/1/13

Test Laboratory: SGS-SAR/HAC Lab

604HW WCDMA Band V RMC 4233CH Back side 5mm

DUT: 604HW; Type: LTE USB Stick; Serial: H2Y0116C13000192

Communication System: UID 0, WCDMA (0); Frequency: 846.6 MHz;Duty Cycle: 1:1

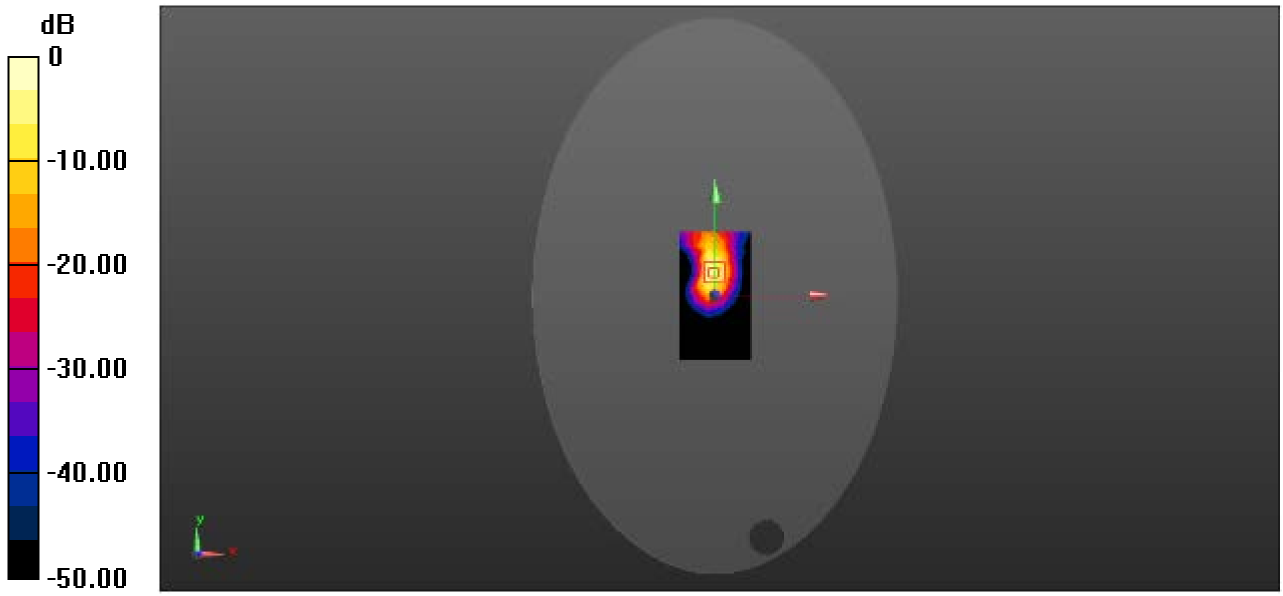
Medium: MSL835;Medium parameters used: f = 847 MHz; $\sigma = 0.999$ S/m; $\varepsilon_r = 54.172$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(9.87, 9.87, 9.87); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: ELI v4.0; Type: ELI; Serial: 1123
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (6x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.896 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.75 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.29 W/kg
SAR(1 g) = 0.774 W/kg; SAR(10 g) = 0.448 W/kg
Maximum value of SAR (measured) = 1.03 W/kg



0 dB = 0.896 W/kg = -0.48 dBW/kg

Date: 2017/1/15

Test Laboratory: SGS-SAR/HAC Lab

604HW WCDMA Band IV RMC 1412CH Back side 5mm

DUT: 604HW; Type: LTE USB Stick; Serial: H2Y0116C13000192

Communication System: UID 0, WCDMA (0); Frequency: 1712.4 MHz;Duty Cycle: 1:1

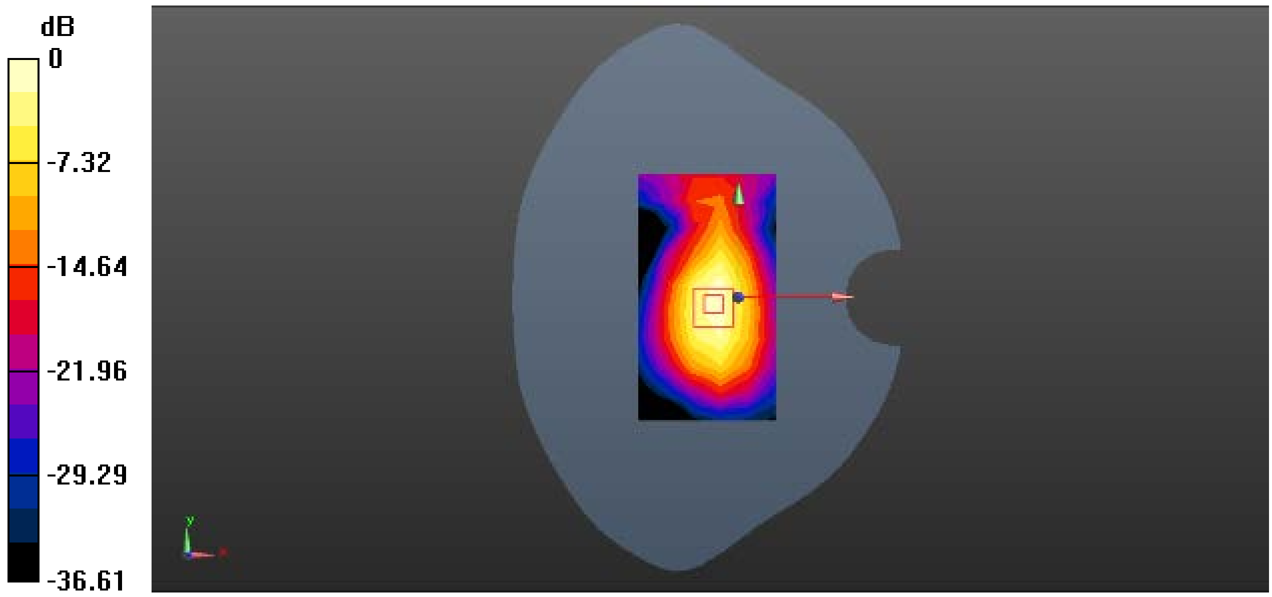
Medium: MSL1750;Medium parameters used (interpolated): f = 1712.4 MHz; σ = 1.446 S/m; ε_r = 51.13; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.41, 8.41, 8.41); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: SAM1; Type: SAM; Serial: 1912
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body 2/Area Scan (6x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.18 W/kg

Configuration/Body 2/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.58 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 0.990 W/kg; SAR(10 g) = 0.607 W/kg
Maximum value of SAR (measured) = 1.25 W/kg



0 dB = 1.18 W/kg = 0.73 dBW/kg

Date: 2017/1/14

Test Laboratory: SGS-SAR/HAC Lab

604HW WCDMA Band II RMC 9538CH Back side 5mm

DUT: 604HW; Type: LTE USB Stick; Serial: H2Y0116C13000192

Communication System: UID 0, WCDMA (0); Frequency: 1907.6 MHz;Duty Cycle: 1:1

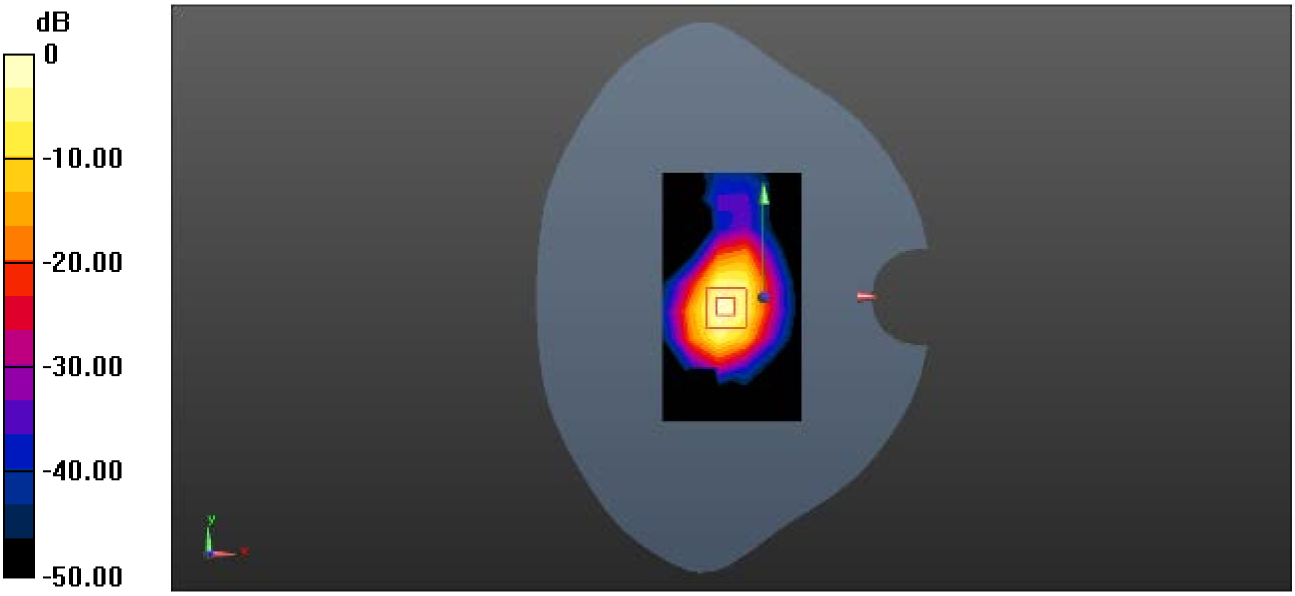
Medium: MSL1900;Medium parameters used: f = 1908 MHz; σ = 1.484 S/m; ε_r = 52.999; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(7.82, 7.82, 7.82); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: SAM1; Type: SAM; Serial: 1912
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (6x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.07 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.21 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.38 W/kg
SAR(1 g) = 0.899 W/kg; SAR(10 g) = 0.526 W/kg
Maximum value of SAR (measured) = 1.15 W/kg



0 dB = 1.07 W/kg = 0.31 dBW/kg

Date: 2017/1/17

Test Laboratory: SGS-SAR/HAC Lab

604HW LTE Band2 20MHz Bandwidth QPSK 1RB0Offset 18700CH Back side 5mm

DUT: 604HW; Type: LTE USB Stick; Serial: H2Y0116C13000192

Communication System: UID 0, LTE-FDD BW 20MHz (0); Frequency: 1860 MHz;Duty Cycle: 1:1

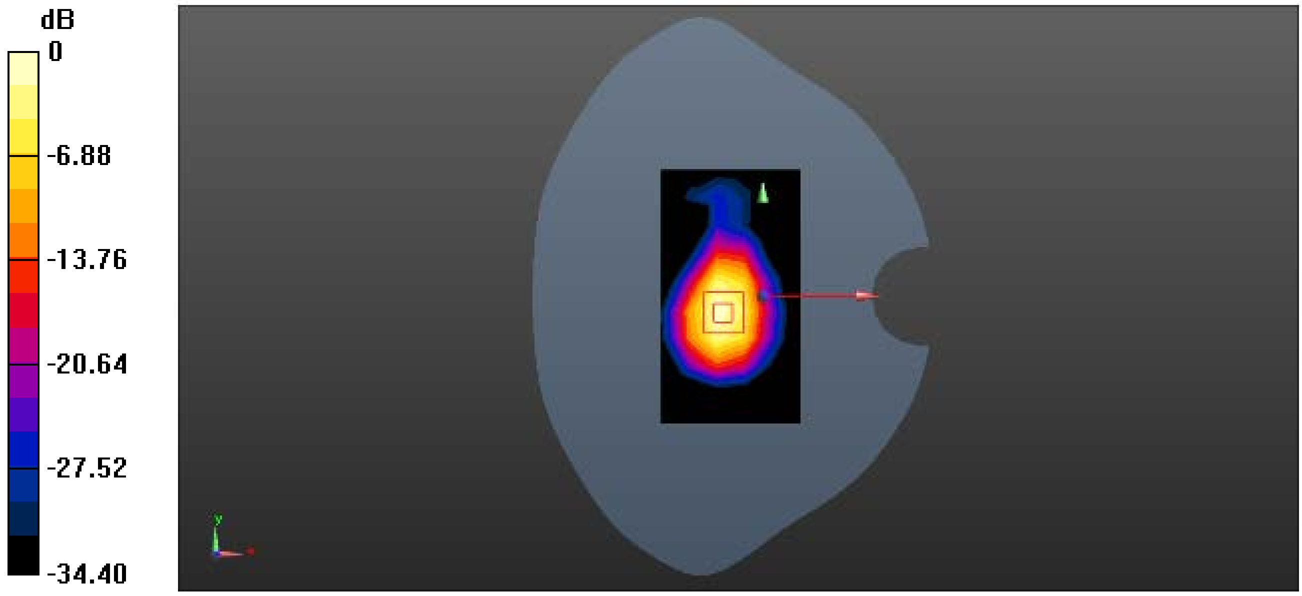
Medium: MSL1900;Medium parameters used: f = 1860 MHz; $\sigma = 1.438$ S/m; $\varepsilon_r = 53.125$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(7.82, 7.82, 7.82); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: SAM1; Type: SAM; Serial: 1912
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (6x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.18 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.40 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 1.46 W/kg
SAR(1 g) = 0.971 W/kg; SAR(10 g) = 0.578 W/kg
Maximum value of SAR (measured) = 1.23 W/kg



0 dB = 1.18 W/kg = 0.72 dBW/kg

Date: 2017/1/15

Test Laboratory: SGS-SAR/HAC Lab

604HW LTE Band4 20MHz Bandwidth QPSK 50RB0Offset 20300CH Back side Repeat 5mm

DUT: 604HW; Type: LTE USB Stick; Serial: H2Y0116C13000192

Communication System: UID 0, LTE-FDD BW 20MHz (0); Frequency: 1745 MHz;Duty Cycle: 1:1

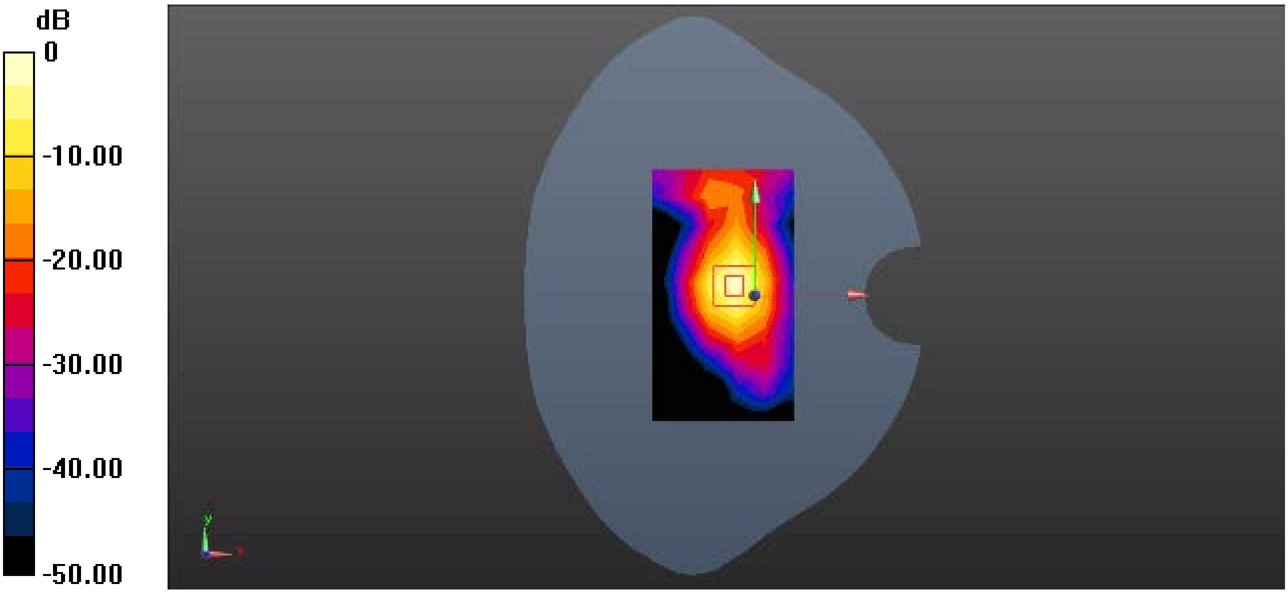
Medium: MSL1750;Medium parameters used: f = 1745 MHz; σ = 1.477 S/m; ε_r = 51.052; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.41, 8.41, 8.41); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: SAM1; Type: SAM; Serial: 1912
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body 3/Area Scan (6x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.33 W/kg

Configuration/Body 3/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.62 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.62 W/kg
SAR(1 g) = 1 W/kg; SAR(10 g) = 0.557 W/kg
Maximum value of SAR (measured) = 1.35 W/kg



0 dB = 1.33 W/kg = 1.24 dBW/kg

Date: 2017/1/17

Test Laboratory: SGS-SAR/HAC Lab

604HW LTE Band12 10MHz Bandwidth QPSK 1RB0Offset 23130CH Back side 5mm

DUT: 604HW; Type: LTE USB Stick; Serial: H2Y0116C13000192

Communication System: UID 0, LTE-FDD BW 10MHZ (0); Frequency: 711 MHz;Duty Cycle: 1:1

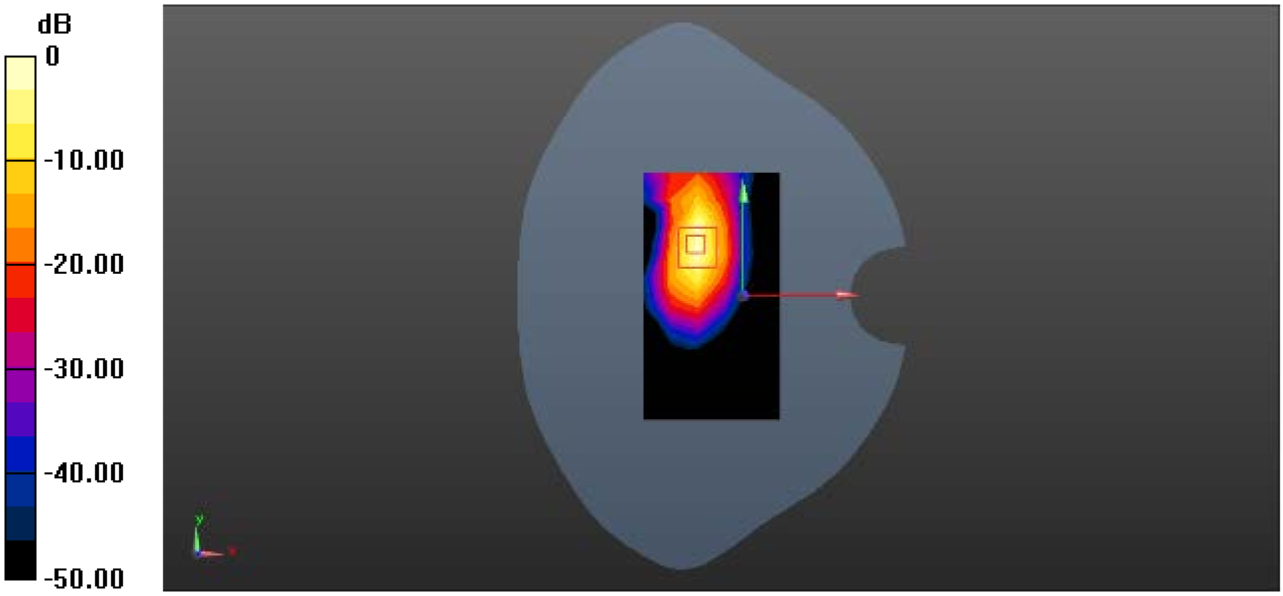
Medium: MSL750;Medium parameters used: f = 711 MHz; σ = 0.908 S/m; ε_r = 56.285; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(10.08, 10.08, 10.08); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: SAM2; Type: SAM; Serial: 1640
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (6x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.584 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.79 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.805 W/kg
SAR(1 g) = 0.470 W/kg; SAR(10 g) = 0.276 W/kg
Maximum value of SAR (measured) = 0.631 W/kg



0 dB = 0.584 W/kg = -2.33 dBW/kg

Date: 2017/1/17

Test Laboratory: SGS-SAR/HAC Lab

604HW LTE Band17 10MHz Bandwidth QPSK 1RB0Offset 23780CH Back side 5mm

DUT: 604HW; Type: LTE USB Stick; Serial: H2Y0116C13000192

Communication System: UID 0, LTE-FDD BW 10MHZ (0); Frequency: 709 MHz;Duty Cycle: 1:1

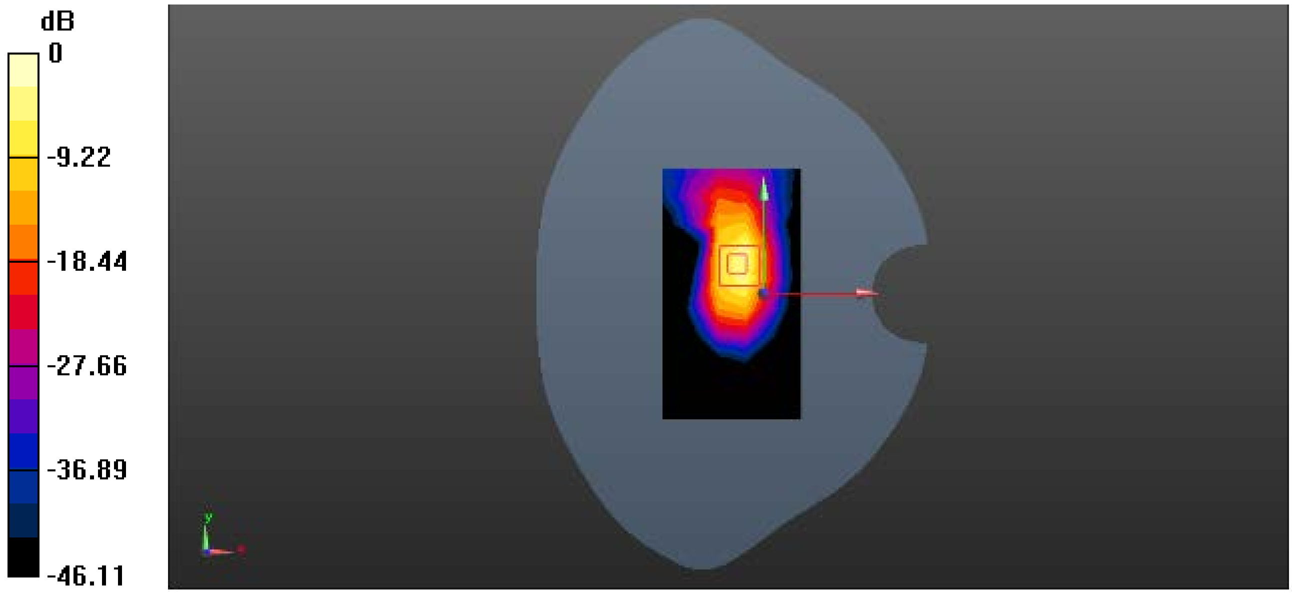
Medium: MSL750;Medium parameters used: f = 709 MHz; σ = 0.907 S/m; ε_r = 56.223; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(10.08, 10.08, 10.08); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: SAM2; Type: SAM; Serial: 1640
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (6x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.544 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.41 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.834 W/kg
SAR(1 g) = 0.476 W/kg; SAR(10 g) = 0.277 W/kg
Maximum value of SAR (measured) = 0.641 W/kg



0 dB = 0.544 W/kg = -2.64 dBW/kg

Date: 2017/1/14

Test Laboratory: SGS-SAR/HAC Lab

604HW LTE Band25 20MHz Bandwidth QPSK 1RB0Offset 26140CH Back side 5mm

DUT: 604HW; Type: LTE USB Stick; Serial: H2Y0116C13000192

Communication System: UID 0, LTE-FDD BW 20MHz (0); Frequency: 1860 MHz;Duty Cycle: 1:1

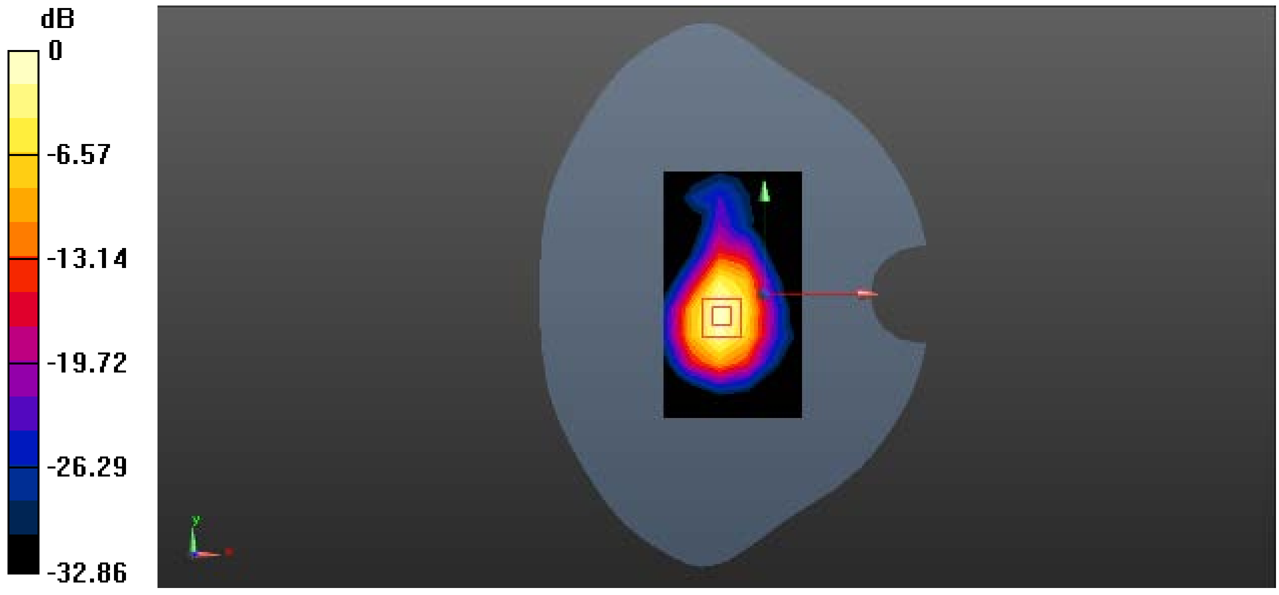
Medium: MSL1900;Medium parameters used: f = 1860 MHz; σ = 1.438 S/m; ε_r = 53.125; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(7.82, 7.82, 7.82); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: SAM1; Type: SAM; Serial: 1912
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (6x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.17 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.50 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.43 W/kg
SAR(1 g) = 0.952 W/kg; SAR(10 g) = 0.567 W/kg
Maximum value of SAR (measured) = 1.21 W/kg



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

Date: 2017/1/13

Test Laboratory: SGS-SAR/HAC Lab

604HW LTE Band26 15MHz Bandwidth QPSK 75RB0Offset 26965CH Back side 5mm

DUT: 604HW; Type: LTE USB Stick; Serial: H2Y0116C13000192

Communication System: UID 0, LTE-FDD BW 15MHz (0); Frequency: 841.5 MHz;Duty Cycle: 1:1

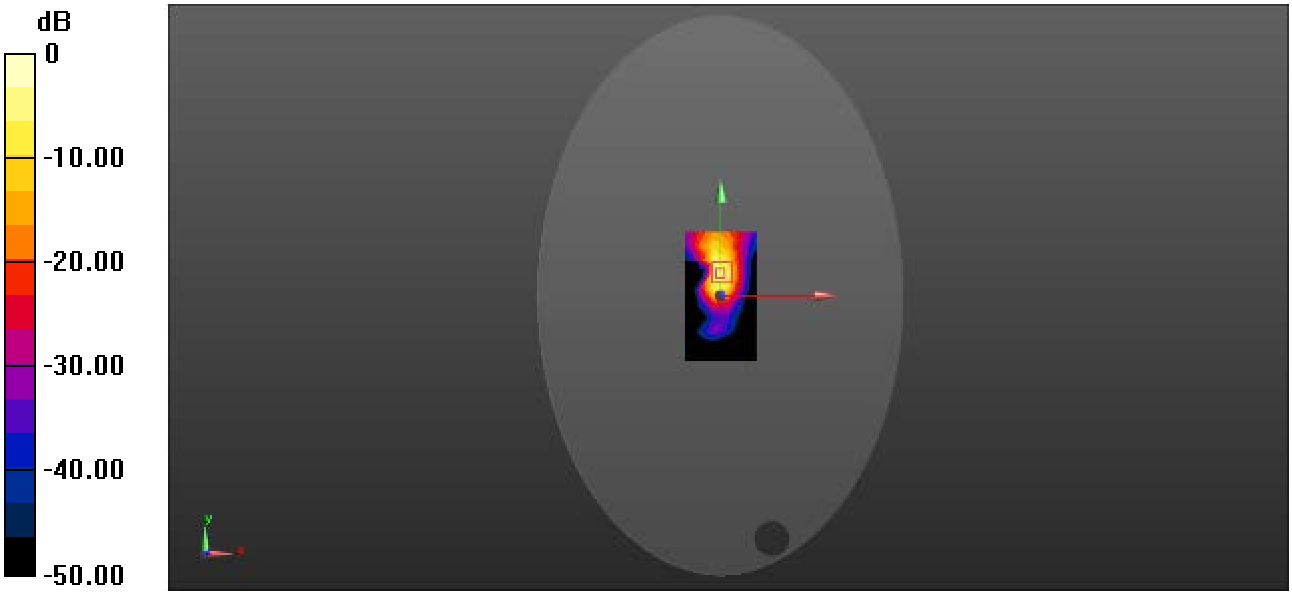
Medium: MSL835;Medium parameters used (interpolated): f = 841.5 MHz; σ = 0.991 S/m; ε_r = 54.246; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(9.87, 9.87, 9.87); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: ELI v4.0; Type: ELI; Serial: 1123
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (6x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.876 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.65 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.54 W/kg
SAR(1 g) = 0.869 W/kg; SAR(10 g) = 0.489 W/kg
Maximum value of SAR (measured) = 1.20 W/kg



0 dB = 0.876 W/kg = -0.57 dBW/kg

Date: 2017/1/16

Test Laboratory: SGS-SAR/HAC Lab

604HW LTE Band41 20MHz Bandwidth QPSK 100RB0Offset 40620CH Back side 5mm

DUT: 604HW; Type: LTE USB Stick; Serial: H2Y0116C13000192

Communication System: UID 0, LTE-TDD BW 20MHz (0); Frequency: 2593 MHz;Duty Cycle: 1:1.57906

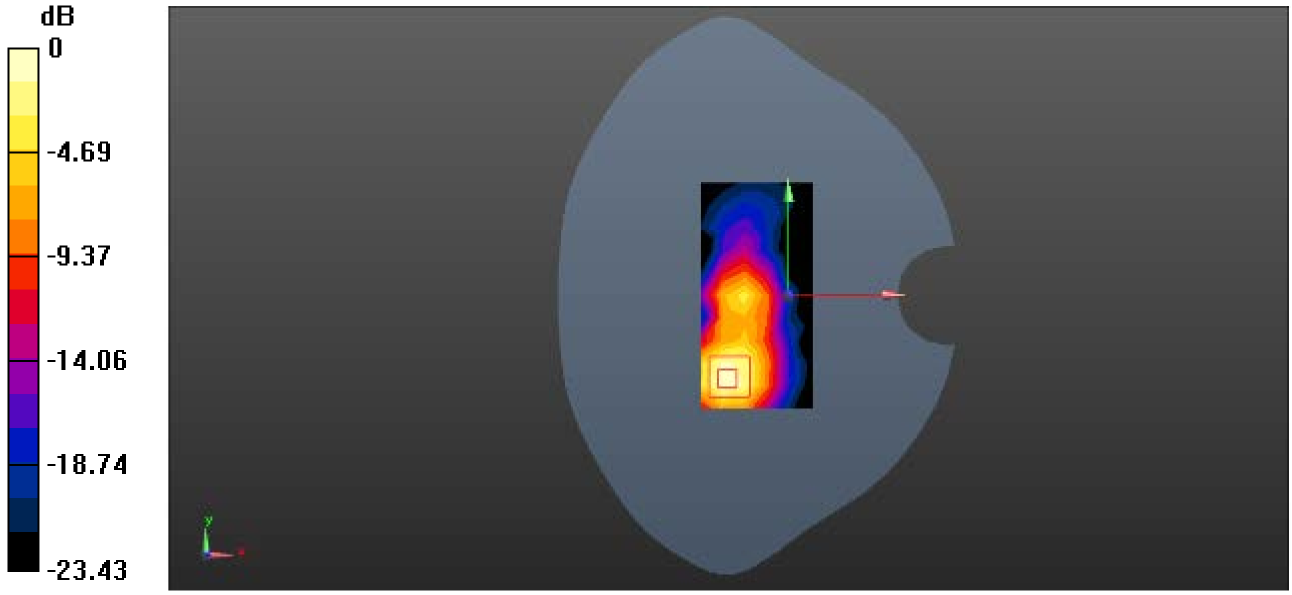
Medium: MSL2600;Medium parameters used: f = 2593 MHz; $\sigma = 2.18$ S/m; $\varepsilon_r = 50.255$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(7.26, 7.26, 7.26); Calibrated: 2016/12/19;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1267; Calibrated: 2016/2/5
- Phantom: SAM2; Type: SAM; Serial: 1640
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (6x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.925 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.34 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.729 W/kg; SAR(10 g) = 0.372 W/kg
Maximum value of SAR (measured) = 1.01 W/kg



0 dB = 0.925 W/kg = -0.34 dBW/kg