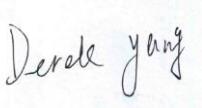
FCC SAR TEST REPORT

Report No:	HR/2019/90003
Applicant:	Unimax communications
Manufacturer:	Unimax communications
Factory:	Unimax communications
Product Name:	Smartphone
Model No.(EUT):	U693CL
Trade Mark:	UMX
FCC ID:	P46-U693CL
Standards:	FCC 47CFR §2.1093
Date of Receipt:	2019-11-12
Date of Test:	2019-11-13 to 2019-11-22
Date of Issue:	2019-12-06
Test conclusion:	**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.

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REVISION HISTORY

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2019-12-06		Original

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TEST SUMMARY

Frequency Band	Maximum Reported SAR(W/kg)		
	Head	Body-worn	Hotspot
WCDMA Band II	0.56	0.51	0.96
WCDMA Band IV	0.49	0.43	0.77
WCDMA Band V	0.48	0.51	0.57
CDMA BC0	0.39	0.46	0.51
CDMA BC1	0.60	0.59	1.07
CDMA BC10	0.40	0.47	0.52
LTE Band 2	**0.70**	**0.65**	1.12
LTE Band 4/66	0.44	0.56	0.96
LTE Band 5/26	0.46	0.65	0.73
LTE Band 12	0.22	0.28	0.35
LTE Band 25	0.63	0.55	**1.27**
LTE Band 41	0.15	0.18	0.47
LTE Band 71	0.16	0.22	0.23
WI-FI (2.4GHz)	0.31	<0.10	<0.10
SAR Limited(W/kg)	1.6		
Maximum Simultaneous Transmission SAR (W/kg)			
Scenario	Head	Body-worn	Hotspot
Sum SAR	1.00	0.69	1.33
SPLSR	NA	NA	NA
SPLSR Limited	0.04		

Remark:
This device supports both LTE B5/B26 and LTE B4/B66. Since the supported frequency span for LTE B5/ B4 falls completely within the supports frequency span for LTE B26/ B66, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B26 and B66.

Approved & Released by

Simon Ling

SAR Manager

Tested by

Jackson Li

SAR Engineer

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1 General Information

1.1 Details of Client

Applicant:	Unimax communications
Address:	18201 McDurmott St.West Suite E,Irvine,CA 92614.
Manufacturer:	Unimax communications
Address:	18201 McDurmott St.West Suite E,Irvine,CA 92614.
Factory:	Unimax communications
Address:	18201 McDurmott St.West Suite E,Irvine,CA 92614.

1.2 Test Location

Company: SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Address: No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China

Post code: 518057

Telephone: +86 (0) 755 2601 2053

Fax: +86 (0) 755 2671 0594

E-mail: ee.shenzhen@sgs.com

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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 –Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

• 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.

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SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch Testing Center EMC Laboratory

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1.4 General Description of EUT

Device Type :	portable device		
Exposure Category:	uncontrolled environment / general population		
Product Name:	Smartphone		
Model No.(EUT):	U693CL		
FCC ID:	P46-U693CL		
Trade Mark:	UMX		
Product Phase:	production unit		
SN:	c7903134 / c790317c		
Hardware Version:	Q5009-V1.0		
Software Version:	U693CL_01.01.01.182518		
Antenna Type:	Inner Antenna		
Device Operating Configurations :			
Modulation Mode:	**CDMA:** QPSK; **WCDMA:** QPSK; **LTE:** QPSK,16QAM **WIFI:** DSSS, OFDM; **BT:** GFSK, π/4DQPSK,8DPSK		
HSDPA UE Category:	14	HSUPA UE Category	6
DC-HSDPA UE Category:	24		
Power Class	3, tested with power control “All Up”(CDMA BC0/1/10)		
	3, tested with power control “all 1”(WCDMA Band II/IV/V)		
	3, tested with power control Max Power(LTE Band 2/4/5/12/25/26/41/66/71)		
Frequency Bands:	Band	Tx (MHz)	Rx (MHz)
	WCDMA Band II	1850~1910	1930~1990
	WCDMA Band IV	1710~1755	2110~2155
	WCDMA Band V	824~849	869~894
	CDMA BC0	824~849	869~894
	CDMA BC1	1850-1910	1930-1990
	CDMA BC10	817~824	862~869
	LTE Band 2	1850~1910	1930~1990
	LTE Band 4	1710~1755	2110~2155
	LTE Band 5	824~849	869~894
	LTE Band 12	699~716	729~746
	LTE Band 25	1850~1915	1930~1995
	LTE Band 26	814~849	859~894
	LTE Band 41	2496~2690	2496~2690
	LTE Band 66	1710~1780	2110~2180
	LTE Band 71	663~698	617~652
	Bluetooth	2402~2480	2402~2480
	2.4G Wi-Fi	2412~2462	2412~2462
Battery Information:	Model:	ChinoBATT01	
	Normal Voltage:	+3.85V	
	Rated capacity:	2000mAh	
	Manufacturer:	DONGGUAN MILEY ELECTRONIC CO.,LTD	

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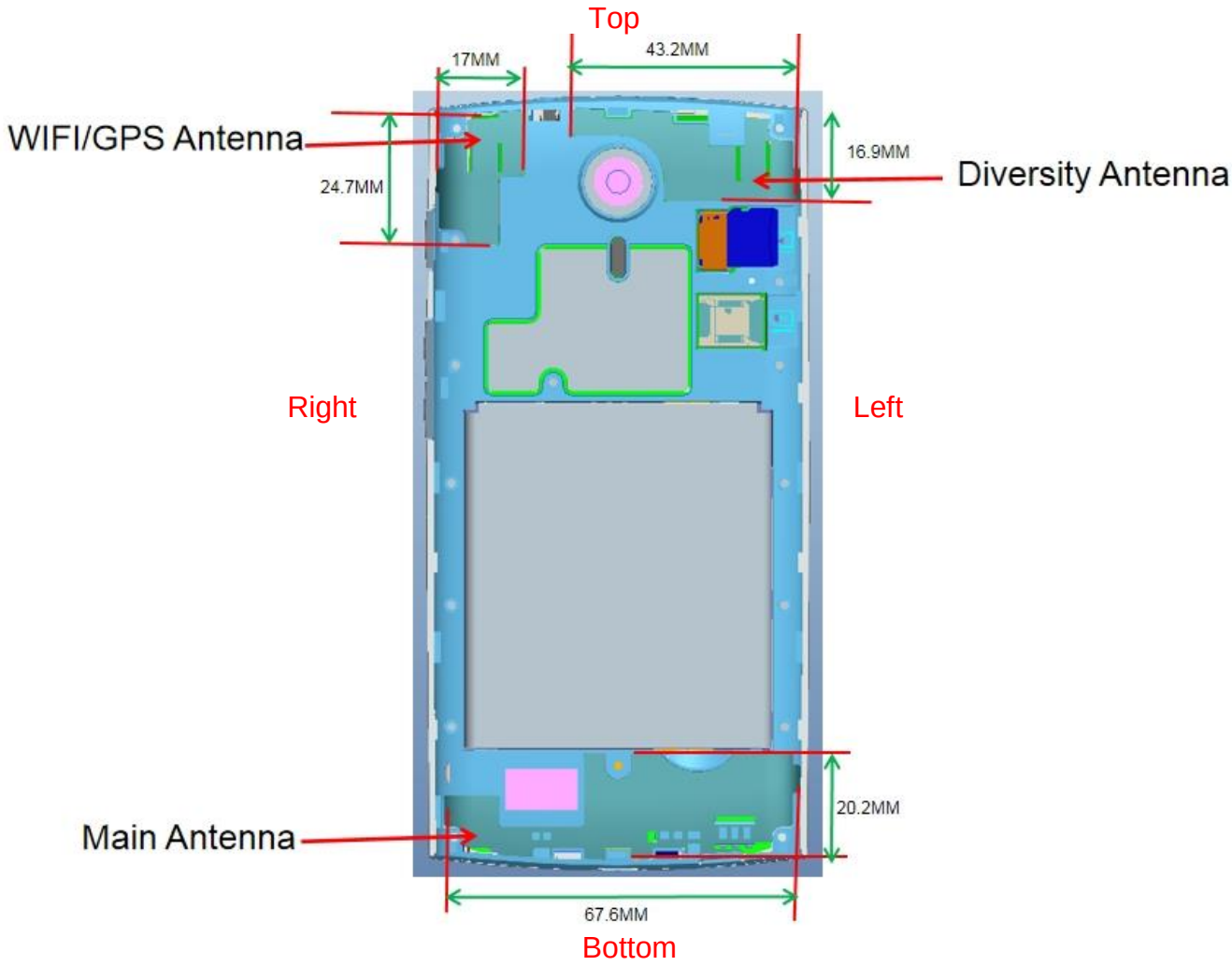
1.4.1 DUT Antenna Locations(Back View)



Note:

1) The test device is a Smartphone. The display diagonal dimension is 127mm and the overall diagonal dimension of this device is 156mm.
2) The Div antennas does not support transmitter function.

According to the distance between LTE/WCDMA/CDMA&WIFI&BT antennas and the sides of the EUT we can draw the conclusion that:

EUT Sides for SAR Testing							
Mode	Exposure Condition	Front	Back	Left	Right	Top	Bottom
Main Ant.	Hotspot	Yes	Yes	Yes	Yes	No	Yes
WIFI2.4G&BT Ant.	Hotspot	Yes	Yes	No	Yes	Yes	No

Table 1： EUT Sides for SAR Testing

Note:

1) When the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.

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1.5 Test Specification

Identity	Document Title
FCC 47CFR §2.1093	Radiofrequency Radiation Exposure Evaluation: Portable Devices
ANSI/IEEE Std C95.1 – 1992	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	3G SAR Measurement Procedures v03r01
KDB 941225 D05	SAR for LTE Devices v02r05
KDB 941225 D06	Hotspot Mode SAR v02r01
KDB 248227 D01	SAR Guidance for IEEE 802 11 Wi-Fi SAR v02r02
KDB 648474 D04	Handset SAR v01r03
KDB 447498 D01	General RF Exposure Guidance v06
KDB 865664 D01	SAR Measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02	RF Exposure Reporting v01r02
KDB 690783 D01	SAR Listings on Grants v01r03

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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.)

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2 Laboratory Environment

Temperature	Min. = 18℃, Max. = 25 ℃
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

Table 2： The Ambient Conditions

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3 SAR Measurements System Configuration

3.1 The SAR Measurement System

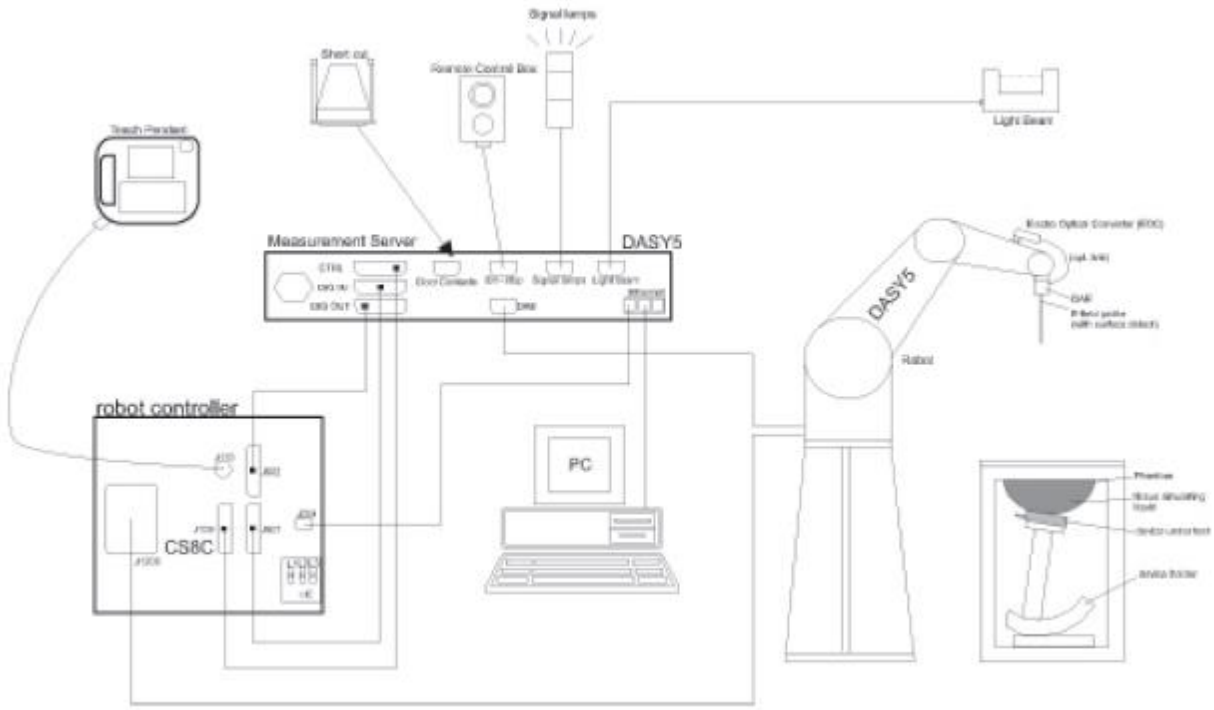
This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY5 professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the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

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- 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.

3.2 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

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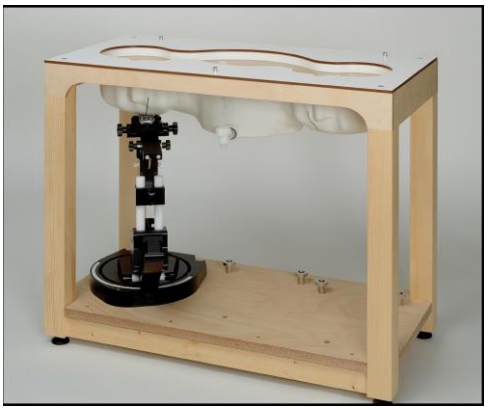
3.3 Data Acquisition Electronics (DAE)

Model	DAE
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

3.4 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.

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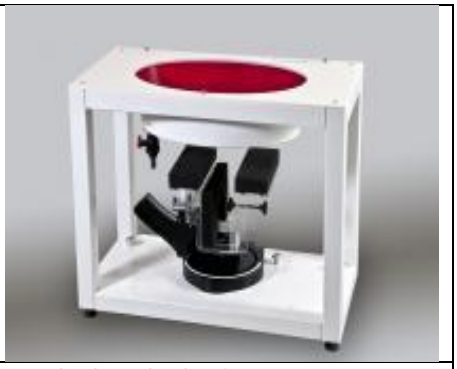
3.5 ELI Phantom

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.

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3.6 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.

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3.7 Measurement procedure

3.7.1 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 32mm*32mm*30mm (f≤2GHz), 30mm*30mm*30mm (f for 2-3GHz) and 24mm*24mm*22mm (f for 5-6GHz) was assessed by measuring 5x5x7 points (f≤2GHz), 7x7x7 points (f for 2-3GHz) and 7x7x12 points (f for 5-6GHz). 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.

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			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}			≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
			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.	
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

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 %

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3.7.2 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 ".DAE4". 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.

3.7.3 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:

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

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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.

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

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

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4 SAR measurement variability and uncertainty

4.1 SAR measurement variability

Per KDB865664 D01 SAR measurement 100 MHz to 6 GHz v01r04, SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. The additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

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

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

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

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

The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.

4.2 SAR measurement uncertainty

Per KDB865664 D01 SAR Measurement 100 MHz to 6 GHz, 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.

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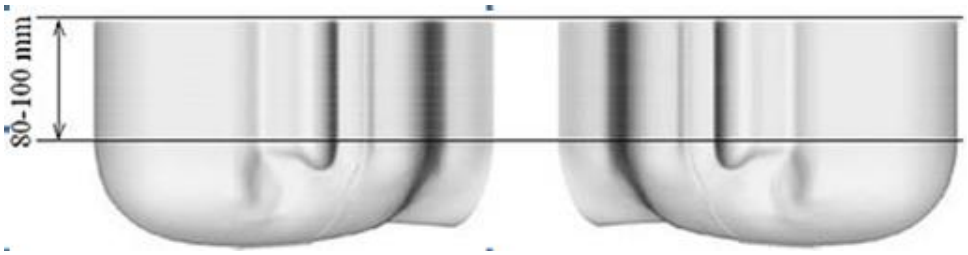
5 Description of Test Position

5.1 Head Exposure Condition

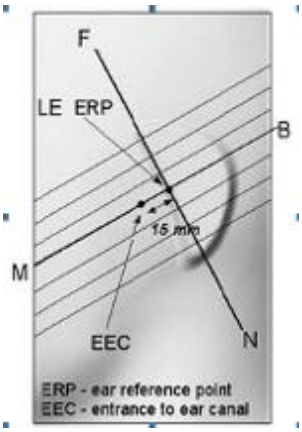
5.1.1 SAM Phantom Shape

F-3. Front, back, and side views of SAM (model for the phantom shell). Full-head model is for illustration purposes only-procedures in this recommended practice are intended primarily for the phantom setup.

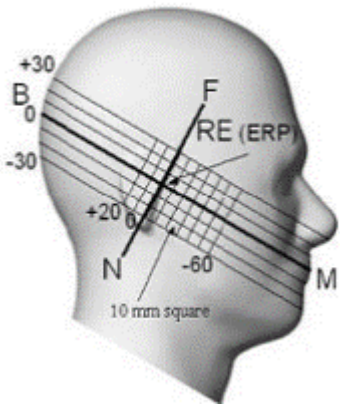
Note: The centre strip including the nose region has a different thickness tolerance.



F-4. Sagittally bisected phantom with extended perimeter (shown placed on its side as used for SAR measurements)



F-5. Close-up side view of phantom, showing the ear region, N-F and B-M lines, and seven cross-sectional plane locations



F-6. Side view of the phantom showing relevant markings and seven cross-sectional plane locations

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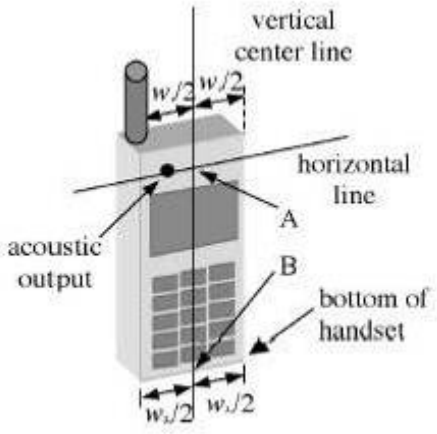
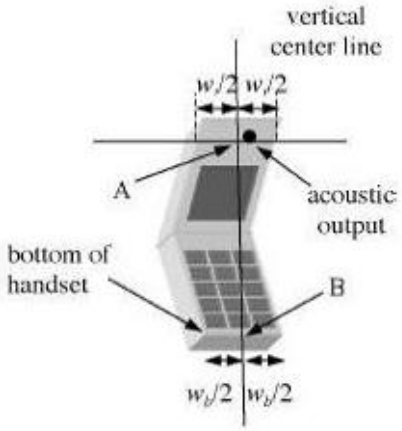
5.1.2 EUT constructions



F-7. Handset vertical and horizontal reference lines-“fixed case”



F-8. Handset vertical and horizontal reference lines-“clam-shell case”

5.1.3 Definition of the “cheek” position

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

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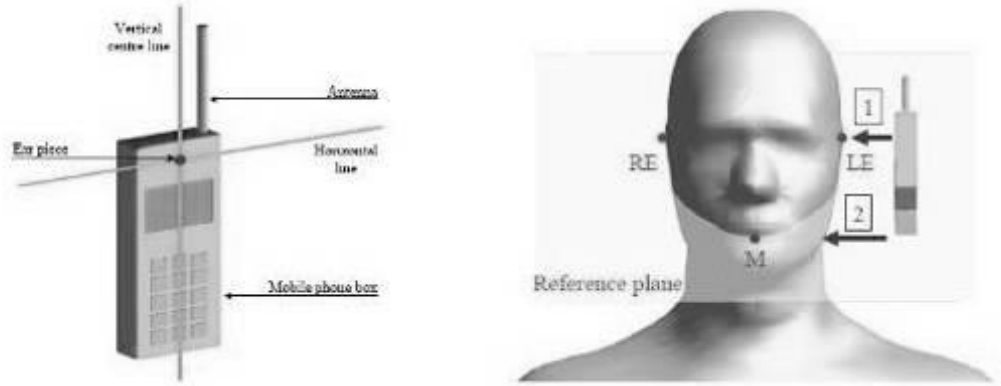
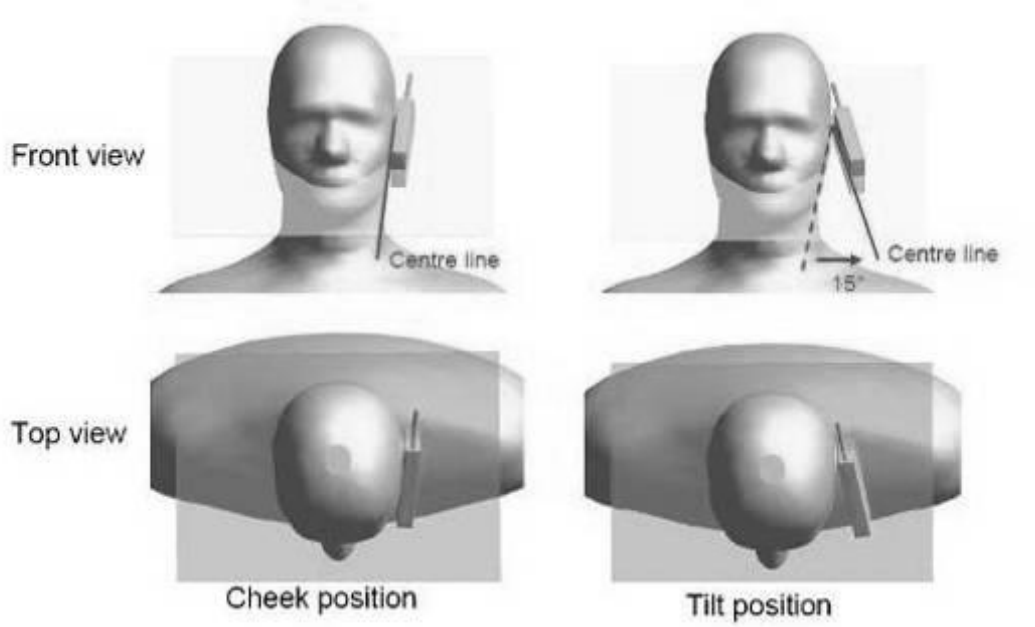
5.1.4 Definition of the “tilted” position

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



F-9. **Definition of the reference lines and points, on the phone and on the phantom and initial position**



F-10. **“Cheek” and “tilt” positions of the mobile phone on the left side**

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5.2 Body Exposure Condition

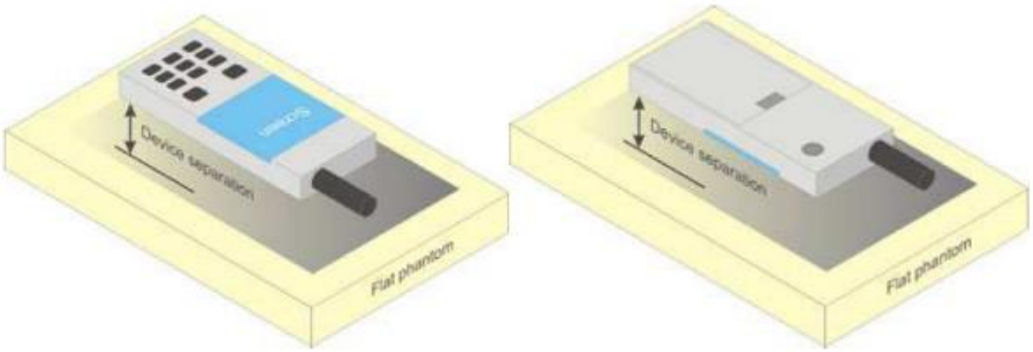
5.2.1 Body-worn accessory exposure conditions

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations.

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration. Per FCC KDB Publication 648474 D04, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented. Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.



F-11. **Test positions for body-worn devices**

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5.2.2 Wireless Router exposure conditions

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10 mm from the front, back and edges of the device containing transmitting antennas within 2.5 cm of their edges, determined from general mixed use conditions for this type of devices. For devices with form factors smaller than 9 cm x 5 cm, a test separation distance of 5 mm is required.

5.3 Extremity exposure conditions

Per FCC KDB 648474D04, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the device is marketed as “Phablet”.
The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for Product Specific 10-g SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, Product Specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

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6 SAR System Verification Procedure

6.1 Tissue Simulate Liquid

6.1.1 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)				
	450	700-900	1800-2000	2300-2500	2500-4000
Water	38.56	40.30	55.24	55.00	54.92
Salt (NaCl)	3.95	1.38	0.31	0.2	0.23
Sucrose	56.32	57.90	0	0	0
HEC	0.98	0.24	0	0	0
Bactericide	0.19	0.18	0	0	0
Tween	0	0	44.45	44.80	44.85
Salt: 99⁺% Pure Sodium Chloride Water: De-ionized, 16 MΩ⁺ resistivity Tween: Polyoxyethylene (20) sorbitan monolaurate			Sucrose: 98⁺% Pure Sucrose HEC: Hydroxyethyl Cellulose		
HSL5GHz is composed of the following ingredients： Water：50-65% Mineral oil：10-30% Emulsifiers：8-25% Sodium salt：0-1.5%					

Table 3： Recipe of Tissue Simulate Liquid

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6.1.2 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 bellow table. 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 Head	750	41.9 (39.81~44)	0.89 (0.85~0.94)	41.656	0.895	22.1	2019/11/13
835 Head	835	41.5 (39.43~43.58)	0.90 (0.86~0.95)	40.798	0.886	22.1	2019/11/14
1750 Head	1750	40.1 (38.10~42.11)	1.37 (1.30~1.44)	40.757	1.332	22.2	2019/11/16
1900 Head	1900	40.0 (38.00~42.00)	1.40 (1.33~1.47)	41.171	1.437	22.3	2019/11/17
1900 Head	1900	40.0 (38.00~42.00)	1.40 (1.33~1.47)	40.58	1.396	22.3	2019/11/18
2450 Head	2450	39.20 (37.24~41.16)	1.80 (1.71~1.89)	38.232	1.806	22	2019/11/22
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	37.767	1.968	22.1	2019/11/21

Table 4： Measurement result of Tissue electric parameters

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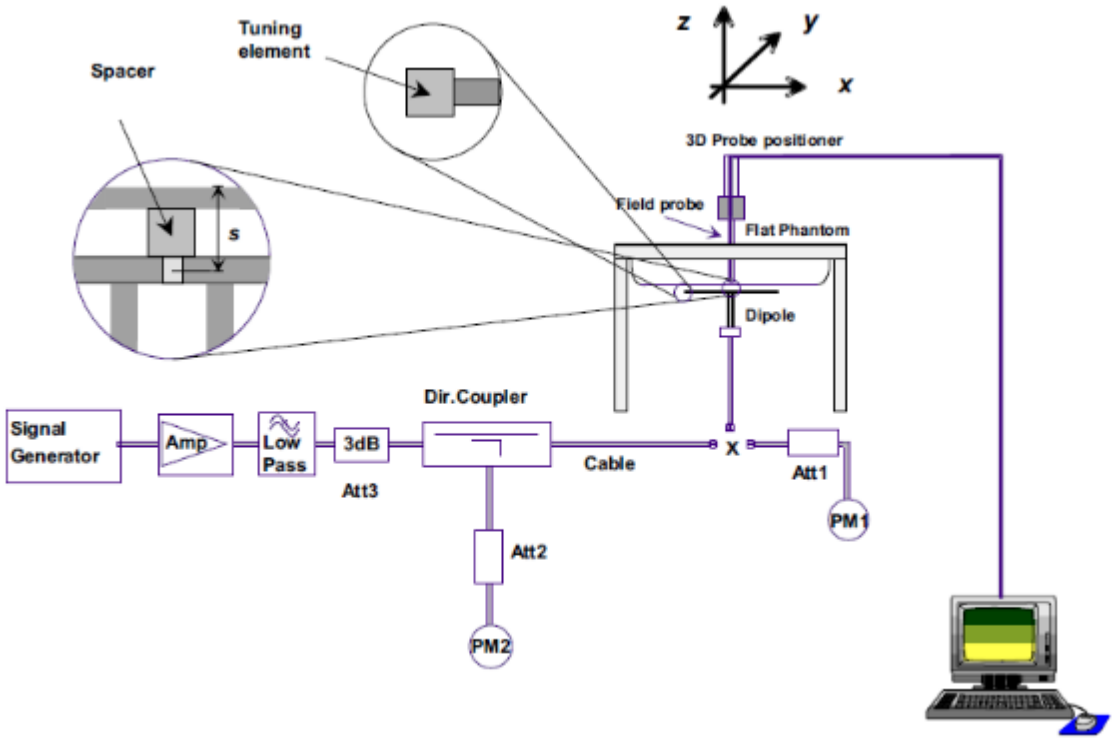
6.2 SAR System Check

The microwave circuit arrangement for system Check is sketched in F-12. 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 following table (A power level of 250mW (below 3GHz) or 100mW (3-6GHz) was input to the dipole antenna). 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±0.5 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-12. the microwave circuit arrangement used for SAR system check

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6.2.1 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.

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6.2.2 Summary System Check Result(s)

Validation Kit		Measured SAR 250mW	Measured SAR 250mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W) (±10%)	Target SAR (normalized to 1W) (±10%)	Liquid Temp. (℃)	Measured Date
		1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)		
D750V2	Head	2.18	1.43	8.72	5.72	8.39 (7.55~9.23)	5.63 (5.07~6.19)	22.1	2019/11/13
D835V2	Head	2.63	1.72	10.52	6.88	9.59 (8.63~10.55)	6.29 (5.66~6.92)	22.1	2019/11/14
D1750V2	Head	8.55	4.61	34.2	18.44	36.3 (32.67~39.93)	19.2 (17.28~21.12)	22.2	2019/11/16
D1900V2	Head	10.6	5.49	42.4	21.96	40.7 (36.63~44.77)	21.1 (18.99~23.21)	22.3	2019/11/17
D1900V2	Head	10.3	5.33	41.2	21.32	40.7 (36.63~44.77)	21.1 (18.99~23.21)	22.3	2019/11/18
D2450V2	Head	12.7	5.83	50.8	23.32	53.1 (47.79~58.41)	24.9 (22.41~27.39)	22	2019/11/22
D2600V2	Head	13.6	6.06	54.4	24.24	56.8 (51.12~62.48)	24.9 (22.41~27.39)	22.1	2019/11/21

Table 5： SAR System Check Result

6.2.3 Detailed System Check Results

Please see the Appendix A

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7 Test Configuration

7.1 3G SAR Test Reduction Procedure

According to KDB 941225D01, 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.

7.2 Operation Configurations

7.2.1 CDMA Test Configuration

1）. 1x RTT Handsets

The following procedures apply to CDMA 2000 Release 0 and Release A single carrier (1x RTT) handsets operating with Mobile Protocol Revision 6 or 7 (MOB_P_REV 6 or 7). The default test configuration is to measure SAR in RC3 with an established radio link between the handset and a communication test set. SAR in RC1 is selectively confirmed according to the 3G SAR test reduction procedure with RC3 as the primary mode. The forward and reverse links are configured with the same RC for SAR measurement. Maximum output power is verified by applying the procedures defined in 3GPP2 C. S0011 and TIA-98-E. SAR must be measured according to these maximum output conditions and requirements in KDB Publication 447498 D01.

2）. Output Power Verification

Maximum output power is verified on the high, middle and low channels according to procedures in section 4.4.5.2 of 3GPP2 C.S0011/TIA-98-E. Results for at least steps 3, 4 and 10 of the power measurement procedures are required in the SAR report. Steps 3 and 4 are measured using Loopback Service Option SO55 with power control bits in “All Up” condition. TDSO/SO32 may be used instead of SO55 for step 4. Step 10 is measured using TDSO/SO32 with power control bits in the “Bits Hold” condition (i.e. alternative Up/Down Bits). All power measurements defined in C.S0011/TIA-98-E that are inapplicable to the handset or cannot be measured due to technical or equipment limitations must be clearly identified in the test report.

3）. Head SAR

SAR for next to the ear head exposure is measured in RC3 with the handset configured to transmit at full rate in SO55. The 3G SAR test reduction procedure is applied to RC1 with RC3 as the primary mode; otherwise, SAR is required for the channel with maximum measured output in RC1 using the head exposure configuration that results in the highest reported SAR in RC3.

4）. Body-Worn Accessory SAR

Body-worn accessory SAR is measured in RC3 with the handset configured in TDSO/SO32 to transmit at full rate on FCH only with all other code channels disabled. The body-worn accessory procedures in KDB Publication 447498 D01 are applied. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCHn), with FCH only as the primary mode. Otherwise, SAR is required for

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multiple code channel configuration (FCH + SCHn), with FCH at full rate and SCH0 enabled at 9600 bps, using the highest reported SAR configuration for FCH only. When multiple code channels are enabled, the transmitter output can shift by more than 0.5 dB and may lead to higher SAR drifts and SCH dropouts.

The 3G SAR test reduction procedure is applied to body-worn accessory SAR in RC1 with RC3 as the primary mode. Otherwise, SAR is required for RC1, with SO55 and full rate, using the highest reported SAR configuration for body-worn accessory exposure in RC3.

5）. Handsets with built-in Ev-Do

For handsets with Ev-Do capabilities, the 3G SAR test reduction procedure is applied to Ev-Do Rev. 0 with 1x RTT RC3 as the primary mode to determine body-worn accessory test requirements. Otherwise, body-worn accessory SAR is required for Rev. 0, at 153.6 kbps, using the highest reported SAR configuration for body-worn accessory exposure in RC3.

The 3G SAR test reduction procedure is applied separately to Rev. A and Rev. B, with Rev. 0 as the primary mode to determine body-worn accessory SAR test requirements. When SAR is not required for Rev. 0, the 3G SAR test reduction is applied with 1x RTT RC3 as the primary mode. Otherwise, SAR is required for Rev. A or Rev. B, with a Reverse Data Channel payload size of 4096 bits and a Termination Target of 16 slots defined for Subtype 2 and 3 Physical Layer configurations, using the highest reported SAR configuration for body-worn accessory exposure in Rev. 0 or RC3, as appropriate.

A Forward Traffic Channel data rate corresponding to the 2-slot version of 307.2 kbps with ACK Channel transmitting in all slots is configured in the downlink for Rev. 0, Rev. A and Rev. B

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7.2.2 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）. Head SAR

SAR for next to the ear head exposure 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 AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure

3）. 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.

4）. HSDPA / HSUPA

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 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 to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA.

a) HSDPA

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.

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

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch Testing Center EMC Laboratory

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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 7： HSDPA UE category

b) HSUPA

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.

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Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs}(1)	β_{ec}	β_{ed}	β_c (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 8： 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 9： HSUPA UE category

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c) DC-HSDPA

SAR is required for Rel. 8 DC-HSDPA when SAR is required for Rel. 5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a Second serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.
The following tests were completed according to procedures in section 7.3.13 of 3GPP TS 34.108 v9.5.0.
A summary of these settings are illustrated below:
Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

Table E.5.0: Levels for HSDPA connection setup

Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH _Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13.
The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.
The measurements were performed with a Fixed Reference Channel (FRC) H-Set 12 with QPSK.

Parameter	Value
Nominal average inf. bit rate	60 kbit/s
Inter-TTI Distance	1 TTI's
Number of HARQ Processes	6 Processes
Information Bit Payload	120 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	960 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	3200 SMLs
Coding Rate	0.15
Number of Physical Channel Codes	1

Table 10：settings of required H-Set 12 QPSK acc. to 3GPP 34.121

Note:
1. The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table above.
2. Maximum number of transmission is limited to 1,i.e.,retransmission is not allowed. The redundancy and constellation version 0 shall be used.

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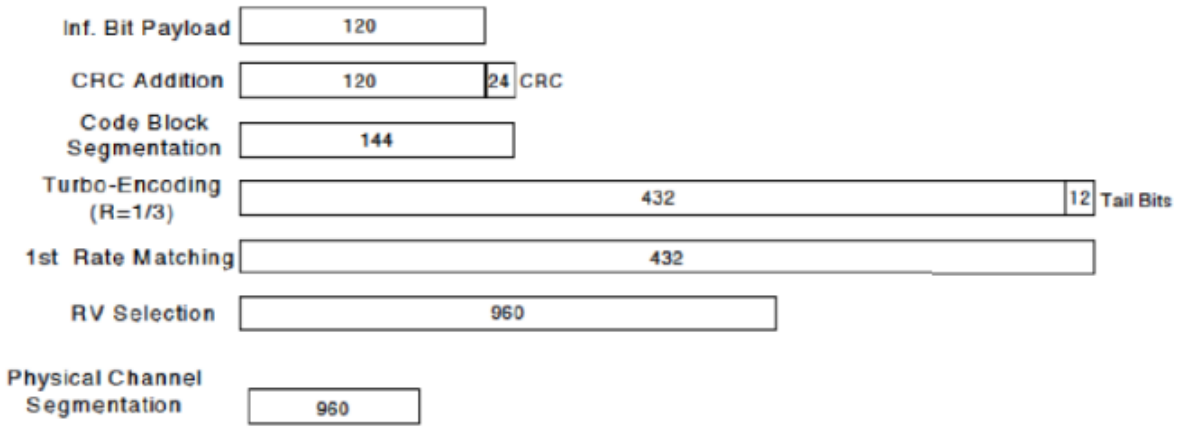

Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

The following 4 Sub-tests for HSDPA were completed according to Release 5 procedures. A summary of subtest settings are illustrated below:

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (1)	CM(dB)(2)	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

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 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.

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

Up commands are set continuously to set the UE to Max power.

Note:

1. The Dual Carriers transmission only applies to HSDPA physical channels
2. The Dual Carriers belong to the same Node and are on adjacent carriers.
3. The Dual Carriers do not support MIMO to serve UEs configured for dual cell operation
4. The Dual Carriers operate in the same frequency band.
5. The device doesn't support the modulation of 16QAM in uplink but 64QAM in downlink for DC-HSDPA mode.
6. The device doesn't support carrier aggregation for it just can operate in Release 8.

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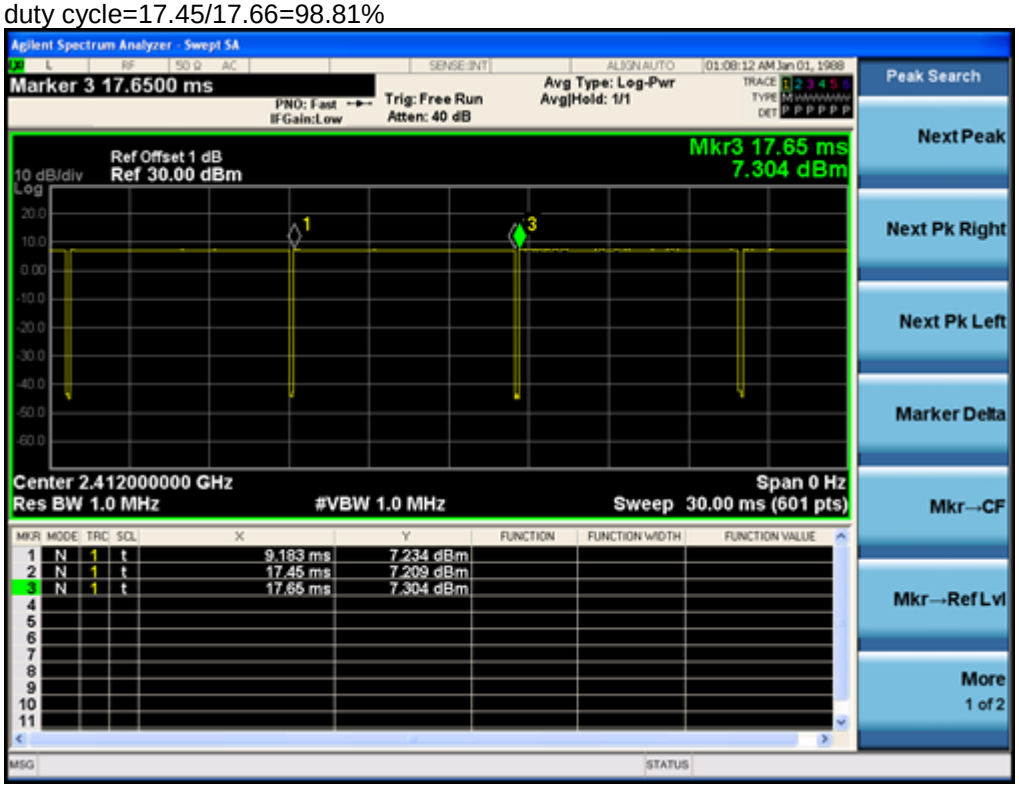
7.2.3 WiFi Test Configuration

A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement.

7.2.3.1 Duty cycle

2.4GHz 802.11b:
duty cycle=17.45/17.66=98.81%



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7.2.3.2 Initial Test Position SAR Test Reduction Procedure

DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures. The initial test position procedure is described in the following:

1）. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other (remaining) test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band. SAR is also not required for that exposure configuration in the subsequent test configuration(s).
2）. When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest extrapolated or estimated 1-g SAR conditions determined by area scans or next closest/smallest test separation distance and maximum RF coupling test positions based on manufacturer justification, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions (left, right, touch, tilt or subsequent surfaces and edges) are tested.
3）. For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested. a) Additional power measurements may be required for this step, which should be limited to those necessary for identifying the subsequent highest output power channels.

7.2.3.3 Initial Test Configuration Procedures

An initial test configuration is determined for OFDM transmission modes according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. SAR is measured using the highest measured maximum output power channel. For configurations with the same specified or measured maximum output power, additional transmission mode and test channel selection procedures are required. SAR test reduction for subsequent highest output test channels is determined according to *reported* SAR of the initial test configuration.
For next to the ear, hotspot mode and UMC mini-tablet exposure configurations where multiple test positions are required, the initial test position procedure is applied to minimize the number of test positions required for SAR measurement using the initial test configuration transmission mode. For fixed exposure conditions that do not have multiple SAR test positions, SAR is measured in the transmission mode determined by the initial test configuration.
When the *reported* SAR of the initial test configuration is > 0.8 W/kg, SAR measurement is required for subsequent next highest measured output power channel(s) in the initial test configuration until *reported* SAR is ≤ 1.2 W/kg or all required channels are tested.

7.2.3.4 Subsequent Test Configuration Procedures

SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units. The initial test position procedure is applied to next to the ear, UMPC mini-tablet and hotspot mode configurations. When the same maximum output power is specified for multiple transmission modes, additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. The subsequent test configuration and SAR measurement procedures are described in the following.

1）. When SAR test exclusion provisions of KDB Publication 447498 are applicable and SAR measurement is not required for the initial test configuration, SAR is also not required for the next highest maximum output power transmission mode subsequent test configuration(s) in that frequency band or aggregated band and exposure configuration.

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2）. When the highest *reported* SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.

3）. The number of channels in the initial test configuration and subsequent test configuration can be different due to differences in channel bandwidth. When SAR measurement is required for a subsequent test configuration and the channel bandwidth is smaller than that in the initial test configuration, all channels in the subsequent test configuration that overlap with the larger bandwidth channel tested in the initial test configuration should be used to determine the highest maximum output power channel. This step requires additional power measurement to identify the highest maximum output power channel in the subsequent test configuration to determine SAR test reduction.

a) SAR should first be measured for the channel with highest measured output power in the subsequent test configuration.

b) SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the *reported* SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is > 1.2 W/kg or until all required channels are tested. i) For channels with the same measured maximum output power, SAR should be measured using the channel closest to the center frequency of the larger channel bandwidth channel in the initial test configuration.

4）. SAR measurements for the remaining highest specified maximum output power OFDM transmission mode configurations that have not been tested in the initial test configuration (highest maximum output) or subsequent test configuration(s) (subsequent next highest maximum output power) is determined by recursively applying the subsequent test configuration procedures in this section to the remaining configurations according to the following:

a) replace “subsequent test configuration” with “next subsequent test configuration” (i.e., subsequent next highest specified maximum output power configuration)

b) replace “initial test configuration” with “all tested higher output power configurations”

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7.2.3.5 2.4 GHz WiFi SAR Procedures

Separate SAR procedures are applied to DSSS and OFDM configurations in the 2.4 GHz band to simplify DSSS test requirements. For 802.11b DSSS SAR measurements, DSSS SAR procedure applies to fixed exposure test position and initial test position procedure applies to multiple exposure test positions. When SAR measurement is required for an OFDM configuration, the initial test configuration, subsequent test configuration and initial test position procedures are applied. The SAR test exclusion requirements for 802.11g/n OFDM configurations are described in following.

- **802.11b DSSS SAR Test Requirements**

SAR is measured for 2.4 GHz 802.11b DSSS using either a fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

1）. When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.

2）. When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

- **2.4 GHz 802.11g/n OFDM SAR Test Exclusion Requirements**

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied (section 5.3, including sub-sections). SAR is not required for the following 2.4 GHz OFDM conditions.

1）. When KDB Publication 447498 SAR test exclusion applies to the OFDM configuration.

2）. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

- **SAR Test Requirements for OFDM configurations**

When SAR measurement is required for 802.11 g/n OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

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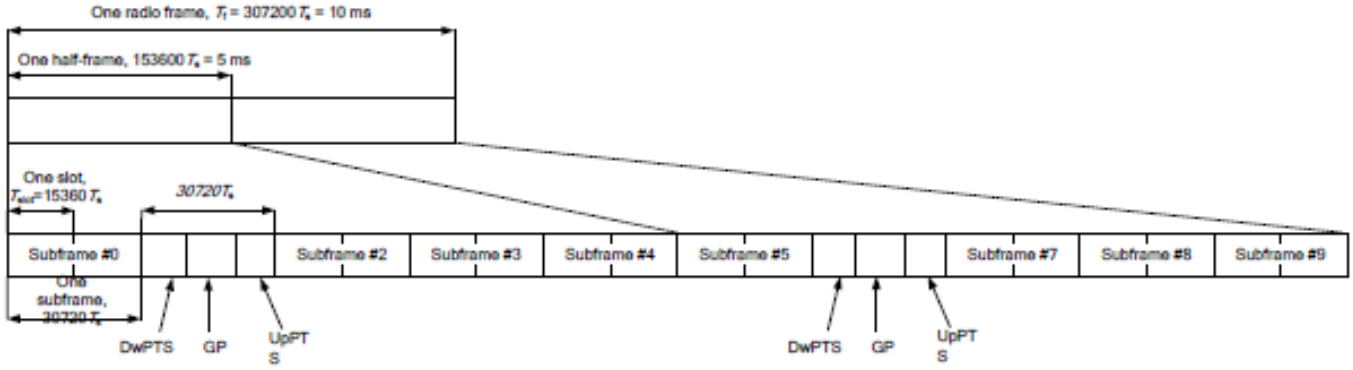
7.2.4 LTE Test Configuration

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 Anritsu MT8821C 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 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:



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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			-	-	-

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

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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
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3

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.

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8 Test Result

8.1 Measurement of RF conducted Power

8.1.1 Conducted Power of WCDMA

WCDMA Band II					
Average Conducted Power(dBm)					
Channel		9262	9400	9538	Tune up
WCDMA	12.2kbps RMC	23.09	**23.12**	23.07	23.7
	12.2kbps AMR	23.1	23.11	23.04	23.7
HSDPA	Subtest 1	22.36	22.28	22.06	23.2
	Subtest 2	22.46	21.83	21.71	23.2
	Subtest 3	21.95	21.85	21.72	22.2
	Subtest 4	21.95	21.77	21.73	22.2
HSUPA	Subtest 1	21.51	21.44	21.55	21.7
	Subtest 2	21.08	21.17	20.54	21.7
	Subtest 3	20.98	20.50	21.16	21.7
	Subtest 4	21.29	21.11	21.19	21.7
	Subtest 5	22.31	22.06	21.91	23.2
DC-HSDPA	Subtest 1	22.23	22.19	21.97	23.2
	Subtest 2	22.31	21.69	21.62	23.2
	Subtest 3	21.81	21.76	21.6	22.2
	Subtest 4	21.80	21.68	21.67	22.2
WCDMA Band IV					
Average Conducted Power(dBm)					
Channel		1312	1412	1513	Tune up
WCDMA	12.2kbps RMC	23.49	**23.54**	23.45	23.7
	12.2kbps AMR	23.45	23.51	23.43	23.7
HSDPA	Subtest 1	22.74	22.63	22.51	23.2
	Subtest 2	22.23	22.07	22.07	23.2
	Subtest 3	22.12	22.03	22.02	22.2
	Subtest 4	22.13	22.04	22.01	22.2
HSUPA	Subtest 1	21.57	21.61	21.58	21.7
	Subtest 2	21.25	21.39	21.40	21.7
	Subtest 3	21.14	20.93	20.90	21.7
	Subtest 4	21.50	21.47	21.21	21.7
	Subtest 5	22.48	22.31	22.51	23.2
DC-HSDPA	Subtest 1	22.64	22.51	22.38	23.2
	Subtest 2	22.09	21.97	21.95	23.2
	Subtest 3	21.97	21.92	21.90	22.2
	Subtest 4	21.98	21.93	21.94	22.2

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WCDMA Band V					
Average Conducted Power(dBm)					
Channel		4132	4182	4233	Tune up
WCDMA	12.2kbps RMC	22.87	**22.89**	22.86	23.7
	12.2kbps AMR	22.84	22.85	22.82	23.7
HSDPA	Subtest 1	22.18	21.94	22.13	23.2
	Subtest 2	21.67	21.50	21.58	23.2
	Subtest 3	21.61	21.55	21.61	22.2
	Subtest 4	21.53	21.56	21.64	22.2
HSUPA	Subtest 1	21.61	21.35	21.38	21.7
	Subtest 2	20.46	20.75	20.85	21.7
	Subtest 3	20.35	20.67	20.79	21.7
	Subtest 4	21.19	20.76	20.90	21.7
	Subtest 5	21.78	21.70	21.95	23.2
DC-HSDPA	Subtest 1	22.07	21.79	21.99	23.2
	Subtest 2	21.57	21.43	21.46	23.2
	Subtest 3	21.55	21.45	21.46	22.2
	Subtest 4	21.44	21.42	21.53	22.2

Table 11：Conducted Power of WCDMA

Note:

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.

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8.1.2 Conducted Power of CDMA

CDMA BC0(850MHz)				
Average Conducted Power(dBm)				
Channel	1013	384	777	Tune up
1XRTT RC1 SO55	23.12	23.20	23.18	23.50
1XRTT RC3 SO55	23.10	23.15	23.14	23.50
1XRTT RC3 SO32 (FCH)	23.13	23.16	23.20	23.50
1XRTT RC3 SO32 (+ SCH)	23.11	23.15	23.12	23.50
1XEVDO RTAP 153.6Kbps	23.10	23.15	23.14	23.50
1XEVDO RETAP 4096Bits	23.06	23.10	23.12	23.50
CDMA BC1(1900MHz)				
Average Conducted Power(dBm)				
Channel	25	600	1175	Tune up
1XRTT RC1 SO55	22.64	22.74	22.50	23.00
1XRTT RC3 SO55	22.40	22.42	22.21	23.00
1XRTT RC3 SO32 (FCH)	22.41	22.42	22.21	23.00
1XRTT RC3 SO32 (+ SCH)	22.40	22.43	22.14	23.00
1XEVDO RTAP 153.6Kbps	22.41	22.42	22.21	23.00
1XEVDO RETAP 4096Bits	22.35	22.35	22.15	23.00
CDMA BC10(850MHz)				
Average Conducted Power(dBm)				
Channel	476	580	684	Tune up
1XRTT RC1 SO55	23.33	23.42	23.07	23.50
1XRTT RC3 SO55	23.33	23.39	23.01	23.50
1XRTT RC3 SO32 (FCH)	23.36	23.34	23.09	23.50
1XRTT RC3 SO32 (+ SCH)	23.35	23.48	23.10	23.50
1XEVDO RTAP 153.6Kbps	23.22	23.39	23.01	23.50
1XEVDO RETAP 4096Bits	23.24	23.31	22.94	23.50

Table 12：Conducted Power of CDMA

Note:

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.

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8.1.3 Conducted Power of LTE

LTE Band 2				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 18607	Channel 18900	Channel 19193	Tune up
1.4MHz	QPSK	1	0	23.61	23.71	23.55	24
		1	2	23.7	23.65	23.2	24
		1	5	23.59	23.8	23.63	24
		3	0	23.63	23.66	23.76	24
		3	2	23.61	23.88	23.4	24
		3	3	23.87	23.89	23.69	24
		6	0	22.67	22.66	22.74	23
	16QAM	1	0	22.58	22.61	22.43	23
		1	2	22.05	22.11	22.15	23
		1	5	22.43	22.22	22.64	23
		3	0	22.85	22.82	22.81	23
		3	2	22.97	22.8	22.79	23
		3	3	22.89	22.8	22.78	23
		6	0	21.74	21.86	21.66	22
Bandwidth	Modulation	RB size	RB offset	Channel 18615	Channel 18900	Channel 19185	Tune up
3MHz	QPSK	1	0	23.65	23.62	23.3	24
		1	7	23.85	23.65	23.27	24
		1	14	23.49	23.78	23.78	24
		8	0	22.66	22.77	22.52	23
		8	4	22.73	22.63	22.56	23
		8	7	22.46	22.83	22.37	23
		15	0	22.56	22.74	22.78	23
	16QAM	1	0	22.26	22.18	22.24	23
		1	7	22.22	22.52	22.19	23
		1	14	22.31	22.09	22.19	23
		8	0	21.55	21.59	21.48	22
		8	4	21.67	21.53	21.48	22
		8	7	21.63	21.48	21.75	22
		15	0	21.71	21.81	21.73	22
Bandwidth	Modulation	RB size	RB offset	Channel 18625	Channel 18900	Channel 19175	Tune up
5MHz	QPSK	1	0	23.76	23.67	23.68	24
		1	13	23.73	23.73	23.24	24
		1	24	23.54	23.52	23.09	24
		12	0	22.69	22.68	22.78	23
		12	6	22.54	22.49	22.46	23
		12	13	22.75	22.77	22.33	23
		25	0	22.62	22.71	22.67	23
	16QAM	1	0	22.01	22.25	22.14	23
		1	13	22.63	22.81	21.94	23
		1	24	22.69	22.12	22.39	23
		12	0	21.77	21.52	21.57	22
		12	6	21.5	21.48	21.41	22
		12	13	21.62	21.63	21.66	22
		25	0	21.67	21.67	21.65	22

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Bandwidth	Modulation	RB size	RB offset	Channel 18650	Channel 18900	Channel 19150	Tune up
10MHz	QPSK	1	0	23.67	23.9	23.25	24
		1	25	23.55	23.62	23.16	24
		1	49	23.36	23.79	23.47	24
		25	0	22.78	22.67	22.54	23
		25	13	22.87	22.83	22.62	23
		25	25	22.62	22.88	22.84	23
		50	0	22.64	22.67	22.54	23
	16QAM	1	0	22.82	22.25	22.46	23
		1	25	22.31	22.16	22.63	23
		1	49	22.17	22.41	22.13	23
		25	0	21.77	21.67	21.59	22
		25	13	21.76	21.71	21.57	22
		25	25	21.74	21.82	21.85	22
		50	0	21.77	21.73	21.6	22
Bandwidth	Modulation	RB size	RB offset	Channel 18675	Channel 18900	Channel 19125	Tune up
15MHz	QPSK	1	0	23	23.46	23.32	24
		1	38	23.74	23.56	23.75	24
		1	74	23.73	23.6	23.44	24
		36	0	22.49	22.6	22.85	23
		36	18	22.73	22.89	22.61	23
		36	39	22.69	22.81	22.69	23
		75	0	22.76	22.74	22.65	23
	16QAM	1	0	22.66	22.22	22.51	23
		1	38	22.77	22.17	22.61	23
		1	74	22.69	22.22	22.54	23
		36	0	21.72	21.79	21.76	22
		36	18	21.81	21.62	21.5	22
		36	39	21.76	21.76	21.77	22
		75	0	21.72	21.69	21.8	22
Bandwidth	Modulation	RB size	RB offset	Channel 18700	Channel 18900	Channel 19100	Tune up
20MHz	QPSK	1	0	**23.74**	**23.81**	**23.75**	24
		1	50	23.71	23.51	23.73	24
		1	99	23.54	23.63	23.52	24
		50	0	22.7	22.73	22.69	23
		50	25	22.55	22.71	22.8	23
		50	50	22.32	22.84	**22.97**	23
		100	0	**22.79**	22.65	22.67	23
	16QAM	1	0	22.35	22.11	22.38	23
		1	50	22.23	22.41	22.22	23
		1	99	22.46	22.26	22.17	23
		50	0	21.69	21.69	21.55	22
		50	25	21.81	21.77	21.78	22
		50	50	21.84	21.78	21.68	22
		100	0	21.74	21.79	21.57	22

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LTE Band 4				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 19957	Channel 20175	Channel 20393	Tune up
1.4MHz	QPSK	1	0	22.99	23.17	23	24.5
		1	2	23.11	23.38	23.19	24.5
		1	5	23.05	23.25	23	24.5
		3	0	23.21	23.41	23.22	24.5
		3	2	23.26	23.47	23.13	24.5
		3	3	23.32	23.36	23.34	24.5
		6	0	22.16	22.38	22.21	23.5
	16QAM	1	0	21.64	21.99	21.93	23.5
		1	2	22.02	22.03	21.6	23.5
		1	5	21.67	21.94	21.86	23.5
		3	0	22.42	22.52	22.36	23.5
		3	2	22.5	22.46	22.33	23.5
		3	3	22.35	22.61	22.08	23.5
		6	0	21.18	21.1	21.19	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 19965	Channel 20175	Channel 20385	Tune up
3MHz	QPSK	1	0	23.09	23.06	23.15	24.5
		1	7	23.34	23.37	23.16	24.5
		1	14	23.29	22.96	23.24	24.5
		8	0	22.12	22.31	22.23	23.5
		8	4	21.86	22.43	21.94	23.5
		8	7	22.21	22.34	22.15	23.5
		15	0	22.18	22.41	22.08	23.5
	16QAM	1	0	21.93	21.97	21.63	23.5
		1	7	21.68	21.96	21.61	23.5
		1	14	21.56	22.03	22.01	23.5
		8	0	21.41	21.52	21	22.5
		8	4	21	21.5	20.94	22.5
		8	7	21.21	21.08	20.96	22.5
		15	0	21.2	21.33	21.09	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 19975	Channel 20175	Channel 20375	Tune up
5MHz	QPSK	1	0	23.41	22.82	23.61	24.5
		1	13	23.07	23.49	23.13	24.5
		1	24	23.02	23.13	23.19	24.5
		12	0	22.1	22.41	22.09	23.5
		12	6	21.84	22.23	22.4	23.5
		12	13	22.31	22.23	22.29	23.5
		25	0	22.12	22.34	22.3	23.5
	16QAM	1	0	21.99	22.12	21.62	23.5
		1	13	21.93	21.84	22.25	23.5
		1	24	22.09	21.87	21.74	23.5
		12	0	21.06	21.21	21.24	22.5
		12	6	20.95	21.32	21.17	22.5
		12	13	21.08	21.11	20.95	22.5
		25	0	21.13	21.26	21.09	22.5
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up

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				20000	20175	20350	
10MHz	QPSK	1	0	22.97	23.46	23.6	24.5
		1	25	23.56	22.87	23.61	24.5
		1	49	23.17	22.95	23.07	24.5
		25	0	22.17	22.25	22.39	23.5
		25	13	22.35	22.1	22.36	23.5
		25	25	22.33	22.61	22.07	23.5
		50	0	22.17	22.37	22.15	23.5
	16QAM	1	0	21.85	21.7	21.84	23.5
		1	25	21.72	22.16	21.72	23.5
		1	49	21.73	21.71	21.88	23.5
		25	0	21.33	21.43	21.45	22.5
		25	13	21.07	21.22	21.32	22.5
		25	25	21.34	21.29	21.41	22.5
		50	0	21.31	21.3	21.18	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 20025	Channel 20175	Channel 20325	Tune up
15MHz	QPSK	1	0	23.48	22.7	23.63	24.5
		1	38	23.13	23	23.18	24.5
		1	74	23.72	23.54	23.67	24.5
		36	0	22.43	22.65	21.83	23.5
		36	18	22.29	22.22	22.37	23.5
		36	39	21.91	22.16	22.44	23.5
		75	0	22.14	22.4	22.15	23.5
	16QAM	1	0	22.04	22.06	21.82	23.5
		1	38	21.75	22.25	22.21	23.5
		1	74	21.94	21.62	21.63	23.5
		36	0	21.14	21.21	21.26	22.5
		36	18	21.2	21.34	21.29	22.5
		36	39	21.36	21.14	21.19	22.5
		75	0	21.15	21.34	21.19	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 20050	Channel 20175	Channel 20300	Tune up
20MHz	QPSK	1	0	23.15	22.93	23.47	24.5
		1	50	23.55	23.65	23.34	24.5
		1	99	23.06	22.76	23.25	24.5
		50	0	22.4	22.68	22.06	23.5
		50	25	22.22	22.07	22.43	23.5
		50	50	22.38	22.18	22.4	23.5
		100	0	22.13	22.38	22.28	23.5
	16QAM	1	0	21.56	22.05	22.34	23.5
		1	50	22.02	22.29	22.08	23.5
		1	99	22.28	21.78	21.76	23.5
		50	0	21.19	21.38	21.46	22.5
		50	25	21.29	21.45	21.34	22.5
		50	50	21.22	21.34	21.29	22.5
		100	0	21.14	21.3	21.14	22.5

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LTE Band 5				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 20407	Channel 20525	Channel 20643	Tune up
1.4MHz	QPSK	1	0	23.29	23.36	23.09	24.5
		1	2	23.52	23.38	23.39	24.5
		1	5	23.3	23.38	23.3	24.5
		3	0	23.39	23.42	23.54	24.5
		3	2	23.67	23.66	23.45	24.5
		3	3	23.52	23.46	23.43	24.5
		6	0	22.41	22.43	22.52	23.5
	16QAM	1	0	21.94	21.93	22.55	23.5
		1	2	22.46	21.84	21.95	23.5
		1	5	21.8	21.75	21.8	23.5
		3	0	22.66	22.5	22.47	23.5
		3	2	22.61	22.49	22.45	23.5
		3	3	22.6	22.4	22.53	23.5
		6	0	21.59	21.44	21.5	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 20415	Channel 20525	Channel 20635	Tune up
3MHz	QPSK	1	0	23.46	23.6	23.31	24.5
		1	7	23.5	23.09	23.61	24.5
		1	14	23.37	23.44	23.16	24.5
		8	0	22.4	22.48	22.7	23.5
		8	4	22.54	22.35	22.42	23.5
		8	7	22.44	22.36	22.39	23.5
		15	0	22.51	22.44	22.48	23.5
	16QAM	1	0	22.28	21.92	21.92	23.5
		1	7	21.92	21.98	22.05	23.5
		1	14	22	21.78	22.43	23.5
		8	0	21.33	21.4	21.58	22.5
		8	4	21.37	21.2	21.21	22.5
		8	7	21.55	21.29	21.6	22.5
		15	0	21.47	21.4	21.41	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 20425	Channel 20525	Channel 20625	Tune up
5MHz	QPSK	1	0	23.45	23.41	23.29	24.5
		1	13	23.5	23.4	23.41	24.5
		1	24	23.37	23.09	23.38	24.5
		12	0	22.22	22.28	22.52	23.5
		12	6	22.45	22.35	22.55	23.5
		12	13	22.53	22.36	22.38	23.5
		25	0	22.36	22.31	22.33	23.5
	16QAM	1	0	21.86	21.76	22.49	23.5
		1	13	22	22.02	21.89	23.5

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		1	24	21.83	21.71	21.84	23.5
		12	0	21.44	21.3	21.21	22.5
		12	6	21.38	21.3	21.47	22.5
		12	13	21.34	21.18	21.35	22.5
		25	0	21.53	21.37	21.46	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 20450	Channel 20525	Channel 20600	Tune up
10MHz	QPSK	1	0	23.2	23.36	23.59	24.5
		1	25	23.56	23.23	23.31	24.5
		1	49	23.49	23.64	23.23	24.5
		25	0	22.46	22.39	22.41	23.5
		25	13	22.61	22.54	22.43	23.5
		25	25	22.41	22.41	22.5	23.5
		50	0	22.5	22.39	22.47	23.5
	16QAM	1	0	21.92	22.26	21.95	23.5
		1	25	21.88	22.21	21.8	23.5
		1	49	22.17	21.81	21.87	23.5
		25	0	21.48	21.47	21.17	22.5
		25	13	21.56	21.32	21.33	22.5
		25	25	21.48	21.38	21.4	22.5
		50	0	21.39	21.36	21.54	22.5

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LTE Band 12				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 23017	Channel 23095	Channel 23173	Tune up
1.4MHz	QPSK	1	0	23.25	23.24	23.06	24.5
		1	2	23.42	23.6	23.43	24.5
		1	5	23.4	23.49	23.44	24.5
		3	0	23.42	23.48	23.57	24.5
		3	2	23.52	23.68	23.65	24.5
		3	3	23.57	23.67	23.4	24.5
		6	0	22.48	22.56	22.63	23.5
	16QAM	1	0	22.28	22.19	22.26	23.5
		1	2	21.96	22.26	22.03	23.5
		1	5	21.92	22.11	21.95	23.5
		3	0	22.54	22.43	22.42	23.5
		3	2	22.67	22.84	22.77	23.5
		3	3	22.61	22.84	22.61	23.5
		6	0	21.51	21.73	21.62	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 23025	Channel 23095	Channel 23165	Tune up
3MHz	QPSK	1	0	23.53	23.37	23.16	24.5
		1	7	23.61	23.18	23.4	24.5
		1	14	23.55	23.58	23.53	24.5
		8	0	22.44	22.49	22.55	23.5
		8	4	22.65	22.64	22.53	23.5
		8	7	22.57	22.52	22.6	23.5
		15	0	22.51	22.71	22.62	23.5
	16QAM	1	0	21.97	22.14	22.26	23.5
		1	7	21.82	22.1	22.34	23.5
		1	14	21.95	22.08	22.09	23.5
		8	0	21.38	21.38	21.38	22.5
		8	4	21.4	21.35	21.24	22.5
		8	7	21.3	21.35	21.24	22.5
		15	0	21.62	21.57	21.7	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 23035	Channel 23095	Channel 23155	Tune up
5MHz	QPSK	1	0	23.35	23.28	23.48	24.5
		1	13	23.62	23.17	23.13	24.5
		1	24	23.6	23.66	23.45	24.5
		12	0	22.67	22.41	22.39	23.5
		12	6	22.75	22.58	22.56	23.5
		12	13	22.52	22.64	22.49	23.5
		25	0	22.59	22.57	22.39	23.5
	16QAM	1	0	21.94	21.9	22.19	23.5
		1	13	22.69	22.47	21.86	23.5
		1	24	21.88	22.01	22.49	23.5

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		12	0	21.56	21.42	21.33	22.5
		12	6	21.45	21.37	21.27	22.5
		12	13	21.41	21.38	21.32	22.5
		25	0	21.73	21.55	21.35	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 23060	Channel 23095	Channel 23130	Tune up
10MHz	QPSK	1	0	23.59	23.68	23.37	24.5
		1	25	22.7	23.23	**23.69**	24.5
		1	49	23.27	23.36	23.31	24.5
		25	0	22.82	22.3	**22.88**	23.5
		25	13	22.61	22.78	22.54	23.5
		25	25	22.26	22.4	22.61	23.5
		50	0	22.63	22.66	22.52	23.5
	16QAM	1	0	22.1	21.77	22.49	23.5
		1	25	22.07	21.89	22.07	23.5
		1	49	22.19	22.14	21.83	23.5
		25	0	21.62	21.41	21.62	22.5
		25	13	21.68	21.51	21.56	22.5
		25	25	21.57	21.46	21.4	22.5
		50	0	21.57	21.54	21.51	22.5

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LTE Band 25				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 26047	Channel 26365	Channel 26683	Tune up
1.4MHz	QPSK	1	0	23.39	23.32	23.74	24
		1	2	23.71	23.37	23.53	24
		1	5	23.34	23.56	23.29	24
		3	0	23.6	23.39	23.46	24
		3	2	23.52	23.42	23.59	24
		3	3	23.63	23.42	23.61	24
		6	0	22.51	22.38	22.43	23
	16QAM	1	0	21.8	21.76	22.65	23
		1	2	21.95	22.07	22.55	23
		1	5	21.71	22.34	22.41	23
		3	0	22.5	22.53	22.76	23
		3	2	22.82	22.82	22.56	23
		3	3	22.68	22.62	22.64	23
		6	0	21.59	21.65	21.61	22
Bandwidth	Modulation	RB size	RB offset	Channel 26055	Channel 26365	Channel 26675	Tune up
3MHz	QPSK	1	0	23.57	23.3	23.46	24
		1	7	23.62	23.31	23.41	24
		1	14	23.33	23.69	23.5	24
		8	0	22.53	22.47	22.84	23
		8	4	22.46	22.45	22.27	23
		8	7	22.48	22.52	22.73	23
		15	0	22.54	22.54	22.54	23
	16QAM	1	0	21.59	21.84	21.9	23
		1	7	22.03	21.73	22	23
		1	14	21.97	21.84	21.99	23
		8	0	21.22	21.35	21.75	22
		8	4	21.29	21.28	21.53	22
		8	7	21.42	21.22	21.46	22
		15	0	21.5	21.5	21.54	22
Bandwidth	Modulation	RB size	RB offset	Channel 26065	Channel 26365	Channel 26665	Tune up
5MHz	QPSK	1	0	23.39	23.23	23.27	24
		1	13	23.29	23.48	23.15	24
		1	24	23.54	23.07	23.4	24
		12	0	22.39	22.38	22.1	23
		12	6	22.55	22.46	22.39	23
		12	13	22.39	22.52	22.82	23
		25	0	22.55	22.48	22.41	23
	16QAM	1	0	21.73	21.79	22.12	23
		1	13	22.27	22.52	21.74	23
		1	24	22.29	21.77	22.47	23
		12	0	21.42	21.44	21.43	22
		12	6	21.4	21.24	21.41	22
		12	13	21.34	21.34	21.49	22
		25	0	21.52	21.43	21.41	22
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up

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				26090	26365	26640	
10MHz	QPSK	1	0	23.67	23.31	22.85	24
		1	25	23.35	23.43	23.89	24
		1	49	22.93	23.7	23.81	24
		25	0	22.39	22.79	22.79	23
		25	13	22.91	22.52	22.42	23
		25	25	22.31	22.43	22.19	23
		50	0	22.47	22.53	22.65	23
	16QAM	1	0	22.26	22.09	22.38	23
		1	25	22.29	21.99	22.63	23
		1	49	22.11	21.95	21.96	23
		25	0	21.59	21.54	21.58	22
		25	13	21.43	21.64	21.61	22
		25	25	21.41	21.53	21.67	22
		50	0	21.41	21.4	21.57	22
Bandwidth	Modulation	RB size	RB offset	Channel 26115	Channel 26365	Channel 26615	Tune up
15MHz	QPSK	1	0	23.17	23.06	23.23	24
		1	38	23.67	23.43	23.39	24
		1	74	23.14	23.48	23.63	24
		36	0	22.39	22.81	22.47	23
		36	18	22.34	22.37	22.83	23
		36	39	22.82	22.53	22.14	23
		75	0	22.47	22.65	22.81	23
	16QAM	1	0	22.51	21.96	22.27	23
		1	38	22	22.57	22.05	23
		1	74	22.21	22	22.1	23
		36	0	21.56	21.64	21.59	22
		36	18	21.35	21.58	21.53	22
		36	39	21.29	21.61	21.53	22
		75	0	21.5	21.47	21.63	22
Bandwidth	Modulation	RB size	RB offset	Channel 26140	Channel 26365	Channel 26590	Tune up
20MHz	QPSK	1	0	23.58	22.92	**23.34**	24
		1	50	23.31	23.55	23.24	24
		1	99	**23.66**	**23.76**	22.96	24
		50	0	22.41	22.64	22.75	23
		50	25	**22.69**	**22.92**	**22.77**	23
		50	50	22.38	22.37	22.24	23
		100	0	22.53	**22.66**	22.62	23
	16QAM	1	0	22.08	22.35	22.41	23
		1	50	21.98	22.09	22.62	23
		1	99	22.08	22.52	22.23	23
		50	0	21.54	21.53	21.74	22
		50	25	21.46	21.62	21.64	22
		50	50	21.55	21.66	21.78	22
		100	0	21.39	21.59	21.65	22

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LTE Band 26				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 26697	Channel 26865	Channel 27033	Tune up
1.4MHz	QPSK	1	0	23.24	22.63	22.73	24.5
		1	2	23.14	23.63	22.75	24.5
		1	5	23.15	22.84	23.57	24.5
		3	0	22.81	22.73	22.06	24.5
		3	2	22.17	22.14	21.84	24.5
		3	3	22.56	22.11	22.01	24.5
		6	0	21.84	22.69	22.55	23.5
	16QAM	1	0	22.88	21.67	22.71	23.5
		1	2	22.44	22.57	22.24	23.5
		1	5	22.23	21.81	21.64	23.5
		3	0	21.64	21.54	20.77	23.5
		3	2	21.01	21.07	21.43	23.5
		3	3	20.91	20.87	21.03	23.5
		6	0	20.92	21.62	20.8	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 26705	Channel 26865	Channel 27025	Tune up
3MHz	QPSK	1	0	22.95	22.68	22.63	24.5
		1	7	23.09	23.54	22.81	24.5
		1	14	23.08	22.59	23.59	24.5
		8	0	22.74	21.81	22.05	23.5
		8	4	22.08	22.21	22.07	23.5
		8	7	21.88	22.15	21.97	23.5
		15	0	21.84	22.78	22.62	23.5
	16QAM	1	0	23.14	21.67	22.18	23.5
		1	7	22.5	22.53	22.14	23.5
		1	14	22.3	21.76	21.51	23.5
		8	0	21.61	21.62	20.89	22.5
		8	4	21.06	20.8	21.36	22.5
		8	7	20.82	20.97	20.82	22.5
		15	0	21.16	21.61	20.6	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 26715	Channel 26865	Channel 27015	Tune up
5MHz	QPSK	1	0	23.17	22.53	22.74	24.5
		1	13	23.01	23.53	22.93	24.5
		1	24	23.09	22.53	23.54	24.5
		12	0	22.83	22.71	21.9	23.5
		12	6	22.15	21.97	22.09	23.5
		12	13	22.49	22.11	21.87	23.5
		25	0	22.03	22.68	22.64	23.5
	16QAM	1	0	23.05	21.81	22.71	23.5
		1	13	22.33	22.46	22.18	23.5
		1	24	22.47	21.85	21.42	23.5

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		12	0	21.77	21.61	20.75	22.5
		12	6	21.06	20.99	21.5	22.5
		12	13	20.8	20.79	20.86	22.5
		25	0	21.16	21.74	20.81	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 26740	Channel 26865	Channel 26990	Tune up
10MHz	QPSK	1	0	23.07	22.58	22.6	24.5
		1	25	23.15	23.52	22.95	24.5
		1	49	23.09	22.84	23.5	24.5
		25	0	22.68	21.89	22.13	23.5
		25	13	22.11	22.11	21.9	23.5
		25	25	21.75	21.95	22.07	23.5
		50	0	22	22.7	22.74	23.5
	16QAM	1	0	22.99	21.61	22.03	23.5
		1	25	22.45	22.59	22.31	23.5
		1	49	22.41	21.92	21.68	23.5
		25	0	21.57	21.59	20.72	22.5
		25	13	20.92	20.81	21.48	22.5
		25	25	20.92	21.01	20.96	22.5
		50	0	20.92	21.72	20.61	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 26765	Channel 26865	Channel 26965	Tune up
15MHz	QPSK	1	0	23.44	**23.52**	23.02	24.5
		1	38	23.42	23.28	23.15	24.5
		1	74	23.33	23.07	23.29	24.5
		36	0	22.39	**22.47**	22.35	23.5
		36	18	22.37	22.33	22.29	23.5
		36	39	22.24	22.36	22.27	23.5
		75	0	22.24	22.29	22.26	23.5
	16QAM	1	0	22.67	22.1	22.48	23.5
		1	38	22.76	22.8	21.88	23.5
		1	74	22.73	22.14	21.9	23.5
		36	0	21.35	21.22	21.11	22.5
		36	18	21.33	21.27	21.08	22.5
		36	39	21.15	21.22	21.25	22.5
		75	0	21.42	21.24	21.06	22.5

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LTE Band 41 (Class 2)				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	23.87	23.75	24.68	23.79	24.1	25.5
		1	13	24.17	24.08	24.57	24.05	24.73	25.5
		1	24	23.78	23.73	24.56	23.7	23.87	25.5
		12	0	24.11	24.05	24.65	24.02	24.63	25.5
		12	6	24.16	24.1	24.59	24.06	24.51	25.5
		12	13	23.85	23.78	24.52	23.75	24.69	25.5
		25	0	24.04	23.95	24.34	23.95	24.55	25.5
	16QAM	1	0	23.72	23.63	23.61	23.59	23.93	25.5
		1	13	24.19	24.14	24.12	24.07	24.74	25.5
		1	24	24.07	24.02	23.68	23.93	23.63	25.5
		12	0	24.01	23.94	24.33	23.92	24.24	25.5
		12	6	24	23.91	24.55	23.91	24.54	25.5
		12	13	24.08	24	24.41	23.99	24.33	25.5
		25	0	23.93	23.86	24.38	23.85	24.49	25.5
Bandwidth	Modulation	RB size	RB offset	Channel 39700	Channel 40160	Channel 40620	Channel 41080	Channel 41540	Tune up
10MHz	QPSK	1	0	24.1	24.61	24.69	24.6	24.03	25.5
		1	25	24.35	24.41	24.54	24.43	24.54	25.5
		1	49	23.71	24.65	24.73	24.61	23.89	25.5
		25	0	23.95	24.42	24.56	24.48	24.64	25.5
		25	13	24.04	24.67	24.76	24.68	24.49	25.5
		25	25	23.98	24.21	24.35	24.25	24.55	25.5
		50	0	24.12	24.35	24.48	24.33	24.52	25.5
	16QAM	1	0	23.87	23.54	23.66	23.51	23.84	25.5
		1	25	24.36	23.84	23.94	23.81	24.91	25.5
		1	49	23.9	23.62	23.7	23.57	23.66	25.5
		25	0	23.92	24.46	24.61	24.47	24.23	25.5
		25	13	23.99	24.51	24.6	24.48	24.48	25.5
		25	25	24.03	24.43	24.54	24.41	24.5	25.5
		50	0	24.07	24.49	24.58	24.47	24.46	25.5
Bandwidth	Modulation	RB size	RB offset	Channel 39725	Channel 40173	Channel 40620	Channel 41068	Channel 41515	Tune up
15MHz	QPSK	1	0	23.87	24.22	24.46	24.15	24.3	25.5
		1	38	24.34	24.54	24.68	24.59	24.68	25.5
		1	74	23.74	24	24.61	23.98	24.11	25.5
		36	0	23.95	24.61	24.47	24.64	24.73	25.5
		36	18	24.04	24.44	24.59	24.47	24.57	25.5
		36	39	24.04	24.45	24.42	24.39	24.53	25.5
		75	0	24	24.57	24.51	24.58	24.7	25.5
	16QAM	1	0	23.6	23.94	23.77	23.91	24.06	25.5
		1	38	24.25	24.73	24.17	24.68	24.81	25.5
		1	74	23.98	23.58	23.75	23.65	23.73	25.5

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		36	0	23.86	24.19	24.58	24.25	24.33	25.5
		36	18	24.28	24.61	24.56	24.65	24.73	25.5
		36	39	23.99	24.11	24.51	24.08	24.23	25.5
		75	0	24.07	24.58	24.45	24.55	24.66	25.5
Bandwidth	Modulation	RB size	RB offset	Channel 39750	Channel 40185	Channel 40620	Channel 41055	Channel 41490	Tune up
20MHz	QPSK	1	0	24.34	24.76	24.89	24.8	24.5	25.5
		1	50	24.61	24.86	**24.97**	24.87	24.91	25.5
		1	99	23.98	24.81	24.93	24.79	24.35	25.5
		50	0	24.33	24.77	24.85	24.72	24.95	25.5
		50	25	24.47	24.89	24.92	24.85	24.94	25.5
		50	50	24.33	24.66	24.79	24.68	**24.96**	25.5
		100	0	24.37	24.71	24.82	24.7	24.9	25.5
	16QAM	1	0	24.07	24.01	24.1	23.97	24.32	25.5
		1	50	24.6	24.28	24.41	24.33	24.9	25.5
		1	99	24.28	23.94	24.07	23.92	24.12	25.5
		50	0	24.33	24.75	24.83	24.69	24.71	25.5
		50	25	24.49	24.86	24.91	24.86	24.98	25.5
		50	50	24.36	24.72	24.82	24.7	24.73	25.5
		100	0	24.35	24.73	24.82	24.67	24.92	25.5

LTE Band 41 (Class 3)				**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	22.2	22.13	22.65	22.56	22.85	23.5
		1	13	23.1	22.97	23.24	23.17	23.16	23.5
		1	24	22.7	22.52	22.8	22.66	22.41	23.5
		12	0	22.6	22.45	23.03	22.9	22.8	23.5
		12	6	22.84	22.72	23.11	23.01	22.94	23.5
		12	13	22.59	22.5	22.88	22.79	22.88	23.5
		25	0	22.59	22.45	23.11	22.9	22.83	23.5
	16QAM	1	0	22.11	22.06	22.39	22.28	22.33	23.5
		1	13	22.37	22.26	22.72	22.61	22.73	23.5
		1	24	22.05	21.97	22.47	22.31	22.38	23.5
		12	0	22.64	22.59	22.81	22.66	22.91	23.5
		12	6	21.87	21.79	22.98	22.9	23.01	23.5
		12	13	22.67	22.6	22.88	22.75	22.83	23.5
		25	0	22.65	22.5	22.84	22.79	22.76	23.5
Bandwidth	Modulation	RB size	RB offset	Channel 39700	Channel 40160	Channel 40620	Channel 41080	Channel 41540	Tune up
10MHz	QPSK	1	0	22.19	22.08	22.67	22.59	22.84	23.5
		1	25	23.15	22.96	23.3	23.16	23.15	23.5
		1	49	22.68	22.53	22.79	22.69	22.46	23.5
		25	0	22.59	22.45	23.03	22.91	22.87	23.5
		25	13	22.84	22.71	23.14	23	22.9	23.5

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		25	25	22.65	22.54	22.89	22.79	22.86	23.5
		50	0	22.6	22.46	23.04	22.93	22.81	23.5
		1	0	22.15	22.07	22.36	22.29	22.34	23.5
		1	25	22.43	22.28	22.72	22.65	22.72	23.5
		1	49	22.08	21.96	22.46	22.36	22.38	23.5
	16QAM	25	0	22.66	22.57	22.8	22.7	22.9	23.5
		25	13	21.93	21.81	22.94	22.85	23	23.5
		25	25	22.7	22.58	22.88	22.71	22.83	23.5
		50	0	22.63	22.51	22.89	22.8	22.8	23.5
Bandwidth	Modulation	RB size	RB offset	Channel 39725	Channel 40173	Channel 40620	Channel 41068	Channel 41515	Tune up
15MHz		1	0	22.25	22.08	22.7	22.6	22.82	23.5
		1	38	23.12	22.97	23.29	23.18	23.16	23.5
		1	74	22.66	22.56	22.83	22.7	22.45	23.5
	QPSK	36	0	22.56	22.41	23.02	22.92	22.84	23.5
		36	18	22.88	22.69	23.12	22.98	22.93	23.5
		36	39	22.62	22.51	22.88	22.75	22.84	23.5
		75	0	22.6	22.49	23.07	22.96	22.83	23.5
		1	0	22.17	22.04	22.41	22.28	22.33	23.5
		1	38	22.43	22.27	22.73	22.67	22.75	23.5
		1	74	22.09	22	22.5	22.32	22.31	23.5
	16QAM	36	0	22.68	22.6	22.83	22.66	22.89	23.5
		36	18	21.93	21.8	23.01	22.88	23.01	23.5
		36	39	22.65	22.56	22.88	22.72	22.89	23.5
		75	0	22.66	22.51	22.91	22.78	22.83	23.5
Bandwidth	Modulation	RB size	RB offset	Channel 39750	Channel 40185	Channel 40620	Channel 41055	Channel 41490	Tune up
20MHz		1	0	22.34	22.23	22.8	22.71	22.93	23.5
		1	50	23.24	23.1	23.38	23.28	23.29	23.5
		1	99	22.79	22.66	22.91	22.78	22.55	23.5
	QPSK	50	0	22.7	22.55	23.16	23.05	22.95	23.5
		50	25	22.96	22.82	23.26	23.11	23.04	23.5
		50	50	22.74	22.62	23.01	22.87	22.98	23.5
		100	0	22.69	22.58	23.19	23.04	22.95	23.5
		1	0	22.26	22.18	22.51	22.43	22.48	23.5
		1	50	22.51	22.37	22.87	22.75	22.85	23.5
		1	99	22.18	22.1	22.58	22.44	22.46	23.5
	16QAM	50	0	22.78	22.68	22.91	22.79	22.99	23.5
		50	25	22.02	21.89	23.09	22.98	23.12	23.5
		50	50	22.8	22.68	22.99	22.84	22.97	23.5
		100	0	22.75	22.65	22.99	22.89	22.91	23.5

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LTE Band 66				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 131979	Channel 132322	Channel 132665	Tune up
1.4MHz	QPSK	1	0	23.23	23.28	23.48	24.5
		1	2	23.47	23.24	23.15	24.5
		1	5	23.3	23.41	23.28	24.5
		3	0	23.43	23.36	23.42	24.5
		3	2	23.38	23.49	23.53	24.5
		3	3	23.5	23.36	23.62	24.5
		6	0	22.46	22.29	22.4	23.5
	16QAM	1	0	21.68	21.76	22.26	23.5
		1	2	21.72	21.64	21.81	23.5
		1	5	21.82	22.26	22.02	23.5
		3	0	22.54	22.53	22.31	23.5
		3	2	22.66	22.34	22.61	23.5
		3	3	22.5	22.55	22.58	23.5
		6	0	21.35	21.35	21.44	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 131987	Channel 132322	Channel 132657	Tune up
3MHz	QPSK	1	0	23.51	23.34	23.16	24.5
		1	7	23.45	23.28	23.34	24.5
		1	14	23.48	23.42	23.48	24.5
		8	0	22.34	22.36	22.44	23.5
		8	4	22.46	22.38	22.5	23.5
		8	7	22.46	22.48	22.39	23.5
		15	0	22.43	22.35	22.52	23.5
	16QAM	1	0	21.77	21.82	22.28	23.5
		1	7	21.78	21.83	21.83	23.5
		1	14	21.52	21.84	22.22	23.5
		8	0	21.23	21.25	21.58	22.5
		8	4	21.16	21.2	21.18	22.5
		8	7	21.3	21.02	21.29	22.5
		15	0	21.33	21.38	21.44	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 131997	Channel 132322	Channel 132647	Tune up
5MHz	QPSK	1	0	23.64	23.4	23.48	24.5
		1	13	23.42	23.37	23.17	24.5
		1	24	23.41	23.03	23.4	24.5
		12	0	22.51	22.38	22.35	23.5
		12	6	22.28	22.2	22.36	23.5
		12	13	22.51	22.29	22.34	23.5
		25	0	22.42	22.37	22.47	23.5
	16QAM	1	0	21.83	21.67	21.8	23.5
		1	13	21.87	21.92	21.76	23.5
		1	24	21.68	21.67	22.31	23.5
		12	0	21.3	21.22	21.29	22.5
		12	6	21.24	21.12	21.35	22.5
		12	13	21.32	21.24	21.32	22.5
		25	0	21.44	21.4	21.35	22.5

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Bandwidth	Modulation	RB size	RB offset	Channel 132022	Channel 132322	Channel 132622	Tune up
10MHz	QPSK	1	0	23.41	23.34	23.19	24.5
		1	25	24.03	23.31	23.03	24.5
		1	49	23.61	23.58	23.44	24.5
		25	0	22.74	22.35	22.59	23.5
		25	13	22.1	22.41	22.22	23.5
		25	25	22.5	22.37	22.29	23.5
		50	0	22.42	22.42	22.45	23.5
	16QAM	1	0	21.93	21.77	22.39	23.5
		1	25	22.04	21.84	21.94	23.5
		1	49	21.8	21.81	21.81	23.5
		25	0	21.36	21.52	21.5	22.5
		25	13	21.49	21.45	21.41	22.5
		25	25	21.5	21.42	21.44	22.5
		50	0	21.34	21.35	21.34	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 132047	Channel 132322	Channel 132597	Tune up
15MHz	QPSK	1	0	23.69	23.36	23	24.5
		1	38	23.24	23.35	22.77	24.5
		1	74	23.93	23.45	23.65	24.5
		36	0	22.57	22.15	22.24	23.5
		36	18	22.71	22.43	22.83	23.5
		36	39	22	22.32	22.07	23.5
		75	0	22.3	22.35	22.62	23.5
	16QAM	1	0	22.31	21.66	22.03	23.5
		1	38	21.96	21.75	22.03	23.5
		1	74	21.97	22.29	21.97	23.5
		36	0	21.41	21.36	21.36	22.5
		36	18	21.5	21.33	21.46	22.5
		36	39	21.46	21.35	21.4	22.5
		75	0	21.42	21.39	21.4	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 132072	Channel 132322	Channel 132572	Tune up
20MHz	QPSK	1	0	23.34	**23.61**	**23.64**	24.5
		1	50	**24.42**	23.54	22.84	24.5
		1	99	23.36	23.25	22.71	24.5
		50	0	**22.99**	22.41	22.98	23.5
		50	25	22.05	22.08	22.11	23.5
		50	50	22.51	22.39	21.83	23.5
		100	0	22.28	22.37	**22.67**	23.5
	16QAM	1	0	21.83	22.09	22.27	23.5
		1	50	21.88	21.89	22.35	23.5
		1	99	21.86	22.17	22.04	23.5
		50	0	21.28	21.44	21.47	22.5
		50	25	21.33	21.39	21.44	22.5
		50	50	21.47	21.32	21.41	22.5
		100	0	21.4	21.22	21.27	22.5

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LTE Band 71				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 133147	Channel 133247	Channel 133447	Tune up
5MHz	QPSK	1	0	23.31	23.52	23.06	24.5
		1	13	23.24	23.44	23.48	24.5
		1	24	23.58	23.1	23.19	24.5
		12	0	22.33	22.58	22.55	23.5
		12	6	22.31	22.35	22.38	23.5
		12	13	22.5	22.5	22.38	23.5
		25	0	22.46	22.48	22.55	23.5
	16QAM	1	0	21.83	21.99	22.43	23.5
		1	13	22.41	22.18	21.89	23.5
		1	24	21.93	21.92	22.26	23.5
		12	0	21.45	21.15	21.39	22.5
		12	6	21.27	21.3	21.28	22.5
		12	13	21.42	21.3	21.26	22.5
		25	0	21.58	21.65	21.38	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 133172	Channel 133272	Channel 133422	Tune up
10MHz	QPSK	1	0	23.63	23.68	23.46	24.5
		1	25	23.85	23.32	23.31	24.5
		1	49	23.38	23.09	23.25	24.5
		25	0	22.09	22.49	22.65	23.5
		25	13	22.53	22.8	22.55	23.5
		25	25	22.81	22.24	22.57	23.5
		50	0	22.46	22.58	22.44	23.5
	16QAM	1	0	22.31	21.93	21.98	23.5
		1	25	22.07	22.38	21.98	23.5
		1	49	22.22	21.96	22	23.5
		25	0	21.6	21.57	21.63	22.5
		25	13	21.52	21.71	21.48	22.5
		25	25	21.53	21.51	21.37	22.5
		50	0	21.56	21.53	21.42	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 133197	Channel 133297	Channel 133397	Tune up
15MHz	QPSK	1	0	23.39	23.72	23.15	24.5
		1	38	23.74	23.42	23.17	24.5
		1	74	23.45	22.94	23.24	24.5
		36	0	22.36	22.76	22.46	23.5
		36	18	22.59	22.22	22.48	23.5
		36	39	22.58	22.4	22.65	23.5
		75	0	22.35	22.54	22.36	23.5
	16QAM	1	0	22.52	22.03	22.4	23.5
		1	38	22.05	21.95	22.44	23.5
		1	74	22.15	21.83	22.32	23.5

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		36	0	21.62	21.57	21.47	22.5
		36	18	21.55	21.51	21.58	22.5
		36	39	21.62	21.54	21.56	22.5
		75	0	21.49	21.46	21.35	22.5
Bandwidth	Modulation	RB size	RB offset	Channel 133222	Channel 133322	Channel 133372	Tune up
20MHz	QPSK	1	0	22.54	23.5	23.64	24.5
		1	50	**24.03**	23.2	23.17	24.5
		1	99	23.27	23.17	22.86	24.5
		50	0	22.79	22.39	22.61	23.5
		50	25	**22.86**	22.74	22.41	23.5
		50	50	22.25	22.43	22.59	23.5
		100	0	22.56	22.52	22.47	23.5
	16QAM	1	0	21.97	22.01	22.11	23.5
		1	50	22.29	22.03	22.45	23.5
		1	99	22.6	21.98	22.16	23.5
		50	0	21.51	21.47	21.43	22.5
		50	25	21.53	21.58	21.45	22.5
		50	50	21.53	21.46	21.59	22.5
		100	0	21.56	21.53	21.4	22.5

Table 13：Conducted Power of LTE

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8.1.4 Conducted Power of WIFI and BT

Mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Tune up	Average Power (dBm)	SAR Test
802.11b	1	2412	1	14	**13.54**	Yes
	6	2437		14	13.36	No
	11	2462		14	13.45	No
802.11g	1	2412	6	13	12.20	No
	6	2437		13	12.29	No
	11	2462		13	12.13	No
802.11n HT20	1	2412	6.5	13	12.13	No
	6	2437		13	12.26	No
	11	2462		13	12.17	No

Table 14：Conducted Power of WiFi

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BT			Tune up (dBm)	Average Conducted Power(dBm)
Modulation	Channel	Frequency(MHz)		
GFSK	0	2402	5	3.79
	39	2441	5	4.61
	78	2480	5	3.47
π/4DQPSK	0	2402	5	1.62
	39	2441	5	2.47
	78	2480	5	1.29
8DPSK	0	2402	5	1.59
	39	2441	5	2.45
	78	2480	5	1.29

BLE			Tune up (dBm)	Average Conducted Power(dBm)
Modulation	Channel	Frequency(MHz)		
GFSK	0	2402	-0.5	-2.12
	19	2440	-0.5	-1.52
	39	2480	-0.5	-2.09

Table 15：Conducted Power of BT

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8.2 Stand-alone SAR test evaluation

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and Product specific 10g 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				
Wi-Fi	2.45	Head	14	25.1	0	7.9	3	N
		Body-worn	14	25.1	15	2.6	3	Y
		hotspot	14	25.1	10	3.9	3	N
Bluetooth	2.48	Head	5	3.2	0	1.0	3	Y
		Body-worn	5	3.2	15	0.3	3	Y
		hotspot	5	3.2	10	0.5	3	Y

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

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8.3 Measurement of SAR Data

8.3.1 SAR Result of WCDMA Band II

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
Head Test data										
Left cheek	RMC	9400/1880	1:1	**0.490**	-0.05	23.12	23.7	1.143	**0.560**	22.3
Left tilted	RMC	9400/1880	1:1	0.282	0.00	23.12	23.7	1.143	0.322	22.3
Right cheek	RMC	9400/1880	1:1	0.334	0.17	23.12	23.7	1.143	0.382	22.3
Right tilted	RMC	9400/1880	1:1	0.240	0.06	23.12	23.7	1.143	0.274	22.3
Body worn Test data(Separate 15mm)										
Front side	RMC	9400/1880	1:1	0.442	0.00	23.12	23.7	1.143	0.505	22.3
Back side	RMC	9400/1880	1:1	**0.448**	0.04	23.12	23.7	1.143	**0.512**	22.3
Hotspot Test data(Separate 10mm)										
Front side	RMC	9400/1880	1:1	0.824	0.17	23.12	23.7	1.143	0.942	22.3
Back side	RMC	9400/1880	1:1	0.802	0.10	23.12	23.7	1.143	0.917	22.3
Left side	RMC	9400/1880	1:1	0.441	0.02	23.12	23.7	1.143	0.504	22.3
Right side	RMC	9400/1880	1:1	0.289	0.18	23.12	23.7	1.143	0.330	22.3
Bottom side	RMC	9400/1880	1:1	0.531	0.07	23.12	23.7	1.143	0.607	22.3
Front side	RMC	9262/1852.4	1:1	0.808	0.09	23.09	23.7	1.151	0.930	22.3
Front side	RMC	9538/1907.6	1:1	0.764	0.04	23.07	23.7	1.156	0.883	22.3
Back side	RMC	9262/1852.4	1:1	0.785	-0.01	23.09	23.7	1.151	0.903	22.3
Back side	RMC	9538/1907.6	1:1	**0.831**	0.08	23.07	23.7	1.156	**0.961**	22.3
Back side-repeat	RMC	9538/1907.6	1:1	0.805	0.08	23.07	23.7	1.156	0.931	22.3

Table 16：SAR of WCDMA Band II for Head and 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	9538/1907.6	0.831	0.805	1.032	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 performed 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						

Table 17：SAR Measurement Variability Results

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8.3.2 SAR Result of WCDMA Band IV

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
Head Test data										
Left cheek	RMC	1412/1732.4	1:1	**0.471**	-0.02	23.54	23.7	1.038	**0.489**	22.2
Left tilted	RMC	1412/1732.4	1:1	0.159	0.01	23.54	23.7	1.038	0.165	22.2
Right cheek	RMC	1412/1732.4	1:1	0.356	0.08	23.54	23.7	1.038	0.369	22.2
Right tilted	RMC	1412/1732.4	1:1	0.158	0.04	23.54	23.7	1.038	0.164	22.2
Body worn Test data(Separate 15mm)										
Front side	RMC	1412/1732.4	1:1	**0.414**	0.15	23.54	23.7	1.038	**0.430**	22.2
Back side	RMC	1412/1732.4	1:1	0.414	0.08	23.54	23.7	1.038	0.430	22.2
Hotspot Test data(Separate 10mm)										
Front side	RMC	1412/1732.4	1:1	0.724	0.03	23.54	23.7	1.038	0.751	22.2
Back side	RMC	1412/1732.4	1:1	**0.741**	-0.18	23.54	23.7	1.038	**0.769**	22.2
Left side	RMC	1412/1732.4	1:1	0.433	0.09	23.54	23.7	1.038	0.449	22.2
Right side	RMC	1412/1732.4	1:1	0.258	0.06	23.54	23.7	1.038	0.268	22.2
Bottom side	RMC	1412/1732.4	1:1	0.529	0.07	23.54	23.7	1.038	0.549	22.2

Table 18：SAR of WCDMA Band IV for Head and 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).

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8.3.3 SAR Result of WCDMA Band V

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
Head Test data										
Left cheek	RMC	4182/836.4	1:1	0.323	-0.05	22.89	23.7	1.205	0.389	22.1
Left tilted	RMC	4182/836.4	1:1	0.189	0.15	22.89	23.7	1.205	0.228	22.1
Right cheek	RMC	4182/836.4	1:1	**0.400**	0.05	22.89	23.7	1.205	**0.482**	22.1
Right tilted	RMC	4182/836.4	1:1	0.213	0.19	22.89	23.7	1.205	0.257	22.1
Body worn Test data(Separate 15mm)										
Front side	RMC	4182/836.4	1:1	0.360	0.00	22.89	23.7	1.205	0.434	22.1
Back side	RMC	4182/836.4	1:1	**0.421**	0.09	22.89	23.7	1.205	**0.507**	22.1
Hotspot Test data(Separate 10mm)										
Front side	RMC	4182/836.4	1:1	0.372	0.06	22.89	23.7	1.205	0.448	22.1
Back side	RMC	4182/836.4	1:1	**0.471**	0.01	22.89	23.7	1.205	**0.568**	22.1
Left side	RMC	4182/836.4	1:1	0.301	0.00	22.89	23.7	1.205	0.363	22.1
Right side	RMC	4182/836.4	1:1	0.380	0.02	22.89	23.7	1.205	0.458	22.1
Bottom side	RMC	4182/836.4	1:1	0.108	0.12	22.89	23.7	1.205	0.130	22.1

Table 19： SAR of WCDMA Band V for Head and 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).

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8.3.4 SAR Result of CDMA BC0

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
Head Test data										
Left cheek	1xRTT(RC3 SO55)	384/836.52	1:1	0.337	-0.16	23.20	23.50	1.072	0.361	22.1
Left tilted	1xRTT(RC3 SO55)	384/836.52	1:1	0.188	0.08	23.20	23.50	1.072	0.201	22.1
Right cheek	1xRTT(RC3 SO55)	384/836.52	1:1	**0.361**	0.07	23.20	23.50	1.072	**0.387**	22.1
Right tilted	1xRTT(RC3 SO55)	384/836.52	1:1	0.193	0.04	23.20	23.50	1.072	0.207	22.1
Body worn Test data(Separate 15mm)										
Front side	1xRTT(RC3 SO32)	384/836.52	1:1	0.353	-0.03	23.15	23.50	1.084	0.383	22.1
Back side	1xRTT(RC3 SO32)	384/836.52	1:1	**0.423**	-0.03	23.15	23.50	1.084	**0.459**	22.1
Hotspot Test data(Separate 10mm)										
Front side	1xRTT(RC3 SO32)	384/836.52	1:1	0.370	-0.01	23.15	23.50	1.084	0.401	22.1
Back side	1xRTT(RC3 SO32)	384/836.52	1:1	**0.471**	0.01	23.15	23.50	1.084	**0.511**	22.1
Left side	1xRTT(RC3 SO32)	384/836.52	1:1	0.310	-0.02	23.15	23.50	1.084	0.336	22.1
Right side	1xRTT(RC3 SO32)	384/836.52	1:1	0.377	0.02	23.15	23.50	1.084	0.409	22.1
Bottom side	1xRTT(RC3 SO32)	384/836.52	1:1	0.112	0.08	23.15	23.50	1.084	0.121	22.1
Back side	1XEVDO RTAP 153.6Kbps	384/836.52	1:1	0.431	0.07	23.15	23.50	1.084	0.467	22.1
Back side	1XEVDO RETAP 4096Bits	384/836.52	1:1	0.442	-0.11	23.10	23.50	1.096	0.485	22.1

Table 20： SAR of CDMA BC0 for Head and 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).

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8.3.5 SAR Result of CDMA BC1

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
Head Test data										
Left cheek	1xRTT(RC3 SO55)	600/1880	1:1	**0.565**	0.05	22.74	23.00	1.062	**0.600**	22.3
Left tilted	1xRTT(RC3 SO55)	600/1880	1:1	0.191	0.08	22.74	23.00	1.062	0.203	22.3
Right cheek	1xRTT(RC3 SO55)	600/1880	1:1	0.360	0.05	22.74	23.00	1.062	0.382	22.3
Right tilted	1xRTT(RC3 SO55)	600/1880	1:1	0.226	0.12	22.74	23.00	1.062	0.240	22.3
Body worn Test data(Separate 15mm)										
Front side	1xRTT(RC3 SO32)	600/1880	1:1	**0.513**	0.15	22.43	23.00	1.140	**0.585**	22.3
Back side	1xRTT(RC3 SO32)	600/1880	1:1	0.465	0.12	22.43	23.00	1.140	0.530	22.3
Hotspot Test data(Separate 10mm)										
Front side	1xRTT(RC3 SO32)	600/1880	1:1	**0.934**	0.03	22.43	23.00	1.140	**1.065**	22.3
Front side-Repeat	1xRTT(RC3 SO32)	600/1880	1:1	0.902	0.17	22.43	23.00	1.140	1.029	22.3
Back side	1xRTT(RC3 SO32)	600/1880	1:1	0.842	-0.08	22.43	23.00	1.140	0.960	22.3
Left side	1xRTT(RC3 SO32)	600/1880	1:1	0.577	0.03	22.43	23.00	1.140	0.658	22.3
Right side	1xRTT(RC3 SO32)	600/1880	1:1	0.301	0.05	22.43	23.00	1.140	0.343	22.3
Bottom side	1xRTT(RC3 SO32)	600/1880	1:1	0.582	0.03	22.43	23.00	1.140	0.664	22.3
Front side	1xRTT(RC3 SO32)	25/1851.25	1:1	0.922	0.13	22.40	23.00	1.148	1.059	22.3
Front side	1xRTT(RC3 SO32)	1175/1908.75	1:1	0.866	0.02	22.14	23.00	1.219	1.056	22.3
Back side	1xRTT(RC3 SO32)	25/1851.25	1:1	0.820	0.15	22.40	23.00	1.148	0.941	22.3
Back side	1xRTT(RC3 SO32)	1175/1908.75	1:1	0.818	0.06	22.14	23.00	1.219	0.997	22.3
Front side	1XEVDO RTAP 153.6Kbps	600/1880	1:1	0.908	0.12	22.42	23.00	1.143	1.038	22.1
Front side	1XEVDO RETAP 4096Bits	600/1880	1:1	0.898	0.02	22.35	23.00	1.161	1.043	22.1
Front side	1XEVDO RTAP 153.6Kbps	25/1851.25	1:1	0.882	-0.04	22.41	23.00	1.146	1.010	22.3
Front side	1XEVDO RTAP 153.6Kbps	1175/1908.75	1:1	0.851	0.09	22.21	23.00	1.199	1.021	22.3
Front side	1XEVDO RETAP 4096Bits	25/1851.25	1:1	0.890	-0.12	22.35	23.00	1.161	1.034	22.3
Front side	1XEVDO RETAP 4096Bits	1175/1908.75	1:1	0.840	0.05	22.15	23.00	1.216	1.022	22.3

Table 21：SAR of CDMA BC1 for Head and 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).

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Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Front side	1xRTT(RC3 SO32)	0.934	0.902	1.035	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 performed 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						

Table 22：SAR Measurement Variability Results

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8.3.6 SAR Result of CDMA BC10

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
Head Test data										
Left cheek	1xRTT(RC3 SO55)	580/820.5	1:1	0.357	0.08	23.42	23.50	1.019	0.364	22.1
Left tilted	1xRTT(RC3 SO55)	580/820.5	1:1	0.202	0.02	23.42	23.50	1.019	0.206	22.1
Right cheek	1xRTT(RC3 SO55)	580/820.5	1:1	**0.390**	0.07	23.42	23.50	1.019	**0.397**	22.1
Right tilted	1xRTT(RC3 SO55)	580/820.5	1:1	0.206	0.09	23.42	23.50	1.019	0.210	22.1
Body worn Test data(Separate 15mm)										
Front side	1xRTT(RC3 SO32)	580/820.5	1:1	0.398	-0.03	23.48	23.50	1.005	0.400	22.1
Back side	1xRTT(RC3 SO32)	580/820.5	1:1	**0.469**	0.12	23.48	23.50	1.005	**0.471**	22.1
Hotspot Test data(Separate 10mm)										
Front side	1xRTT(RC3 SO32)	580/820.5	1:1	0.410	0.02	23.48	23.50	1.005	0.412	22.1
Back side	1xRTT(RC3 SO32)	580/820.5	1:1	**0.518**	0.01	23.48	23.50	1.005	**0.520**	22.1
Left side	1xRTT(RC3 SO32)	580/820.5	1:1	0.337	0.01	23.48	23.50	1.005	0.339	22.1
Right side	1xRTT(RC3 SO32)	580/820.5	1:1	0.392	0.01	23.48	23.50	1.005	0.394	22.1
Bottom side	1xRTT(RC3 SO32)	580/820.5	1:1	0.101	0.08	23.48	23.50	1.005	0.101	22.1
Back side	1XEVDO RTAP 153.6Kbps	580/820.5	1:1	0.505	0.05	23.39	23.50	1.026	0.518	22.1
Back side	1XEVDO RETAP 4096Bits	580/820.5	1:1	0.502	-0.03	23.31	23.50	1.045	0.524	22.1

Table 23：SAR of CDMA BC10 for Head and 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).

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8.3.7 SAR Result of LTE Band 2

Test position	BW.	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.
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_0	18900/1880	1:1	**0.666**	0.04	23.81	24.00	1.045	**0.696**	22.3
Left tilted	20	QPSK 1RB_0	18900/1880	1:1	0.209	-0.09	23.81	24.00	1.045	0.218	22.3
Right cheek	20	QPSK 1RB_0	18900/1880	1:1	0.363	0.03	23.81	24.00	1.045	0.379	22.3
Right tilted	20	QPSK 1RB_0	18900/1880	1:1	0.249	0.05	23.81	24.00	1.045	0.260	22.3
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_50	19100/1900	1:1	0.457	-0.15	22.97	23.00	1.007	0.460	22.3
Left tilted	20	QPSK 50RB_50	19100/1900	1:1	0.158	0.16	22.97	23.00	1.007	0.159	22.3
Right cheek	20	QPSK 50RB_50	19100/1900	1:1	0.245	0.06	22.97	23.00	1.007	0.247	22.3
Right tilted	20	QPSK 50RB_50	19100/1900	1:1	0.172	0.03	22.97	23.00	1.007	0.173	22.3
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_0	18900/1880	1:1	0.555	0.12	23.81	24.00	1.045	0.580	22.3
Back side	20	QPSK 1RB_0	18900/1880	1:1	**0.618**	0.02	23.81	24.00	1.045	**0.646**	22.3
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_50	19100/1900	1:1	0.413	0.09	22.97	23.00	1.007	0.416	22.3
Back side	20	QPSK 50RB_50	19100/1900	1:1	0.473	0.07	22.97	23.00	1.007	0.476	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_0	18900/1880	1:1	0.984	0.12	23.81	24.00	1.045	1.028	22.3
Back side	20	QPSK 1RB_0	18900/1880	1:1	0.991	0.05	23.81	24.00	1.045	1.035	22.3
Left side	20	QPSK 1RB_0	18900/1880	1:1	0.607	0.02	23.81	24.00	1.045	0.634	22.3
Right side	20	QPSK 1RB_0	18900/1880	1:1	0.311	0.08	23.81	24.00	1.045	0.325	22.3
Bottom side	20	QPSK 1RB_0	18900/1880	1:1	0.575	0.20	23.81	24.00	1.045	0.601	22.3
Front side	20	QPSK 1RB_0	18700/1860	1:1	1.040	0.06	23.74	24.00	1.062	1.104	22.3
Front side-repeat	20	QPSK 1RB_0	18700/1860	1:1	**1.050**	-0.04	23.74	24.00	1.062	**1.115**	22.3
Front side	20	QPSK 1RB_0	19100/1900	1:1	0.907	0.19	23.75	24.00	1.059	0.961	22.3
Back side	20	QPSK 1RB_0	18700/1860	1:1	0.985	0.44	23.74	24.00	1.062	1.046	22.3
Back side	20	QPSK 1RB_0	19100/1900	1:1	0.972	-0.13	23.75	24.00	1.059	1.030	22.3
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_50	19100/1900	1:1	0.692	0.02	22.97	23.00	1.007	0.697	22.3
Back side	20	QPSK 50RB_50	19100/1900	1:1	0.762	0.08	22.97	23.00	1.007	0.767	22.3
Left side	20	QPSK 50RB_50	19100/1900	1:1	0.455	0.08	22.97	23.00	1.007	0.458	22.3
Right side	20	QPSK 50RB_50	19100/1900	1:1	0.278	0.02	22.97	23.00	1.007	0.280	22.3
Bottom side	20	QPSK 50RB_50	19100/1900	1:1	0.584	0.06	22.97	23.00	1.007	0.588	22.3
Hotspot Test data (Separate 10mm 100%RB)											
Front side	20	QPSK 100RB_0	18700/1860	1:1	0.889	0.15	22.79	23.00	1.050	0.933	22.3
Back side	20	QPSK 100RB_0	18700/1860	1:1	0.873	0.01	22.79	23.00	1.050	0.916	22.3

Table 24：SAR of LTE Band 2 for Head and 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).

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Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Front side	18700/1860	1.040	1.050	1.00962	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 performed 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						

Table 25：SAR Measurement Variability Results

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8.3.8 SAR Result of LTE Band 12

Test position	BW.	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.
Head Test data(1RB)											
Left cheek	10	QPSK 1RB_25	23130/711	1:1	0.179	0.05	23.69	24.50	1.205	0.216	22.1
Left tilted	10	QPSK 1RB_25	23130/711	1:1	0.094	0.17	23.69	24.50	1.205	0.113	22.1
Right cheek	10	QPSK 1RB_25	23130/711	1:1	**0.185**	0.04	23.69	24.50	1.205	**0.223**	22.1
Right tilted	10	QPSK 1RB_25	23130/711	1:1	0.110	0.01	23.69	24.50	1.205	0.133	22.1
Head Test data(50%RB)											
Left cheek	10	QPSK 25RB_0	23130/711	1:1	0.140	0.16	22.88	23.50	1.153	0.161	22.1
Left tilted	10	QPSK 25RB_0	23130/711	1:1	0.077	0.07	22.88	23.50	1.153	0.088	22.1
Right cheek	10	QPSK 25RB_0	23130/711	1:1	0.149	0.01	22.88	23.50	1.153	0.172	22.1
Right tilted	10	QPSK 25RB_0	23130/711	1:1	0.079	0.05	22.88	23.50	1.153	0.091	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	10	QPSK 1RB_25	23130/711	1:1	0.175	0.06	23.69	24.50	1.205	0.211	22.1
Back side	10	QPSK 1RB_25	23130/711	1:1	**0.232**	-0.02	23.69	24.50	1.205	**0.280**	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	10	QPSK 25RB_0	23130/711	1:1	0.140	-0.04	22.88	23.50	1.153	0.161	22.1
Back side	10	QPSK 25RB_0	23130/711	1:1	0.187	-0.02	22.88	23.50	1.153	0.216	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1RB_25	23130/711	1:1	0.205	0.07	23.69	24.50	1.205	0.247	22.1
Back side	10	QPSK 1RB_25	23130/711	1:1	**0.289**	0.07	23.69	24.50	1.205	**0.348**	22.1
Left side	10	QPSK 1RB_25	23130/711	1:1	0.171	0.02	23.69	24.50	1.205	0.206	22.1
Right side	10	QPSK 1RB_25	23130/711	1:1	0.201	0.15	23.69	24.50	1.205	0.242	22.1
Bottom side	10	QPSK 1RB_25	23130/711	1:1	0.047	0.04	23.69	24.50	1.205	0.057	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	10	QPSK 25RB_0	23130/711	1:1	0.163	-0.05	22.88	23.50	1.153	0.188	22.1
Back side	10	QPSK 25RB_0	23130/711	1:1	0.235	-0.14	22.88	23.50	1.153	0.271	22.1
Left side	10	QPSK 25RB_0	23130/711	1:1	0.140	-0.07	22.88	23.50	1.153	0.161	22.1
Right side	10	QPSK 25RB_0	23130/711	1:1	0.160	-0.08	22.88	23.50	1.153	0.185	22.1
Bottom side	10	QPSK 25RB_0	23130/711	1:1	0.037	0.04	22.88	23.50	1.153	0.043	22.1

Table 26：SAR of LTE Band 12 for Head and 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).

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8.3.9 SAR Result of LTE Band 25

Test position	BW.	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.
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_99	26365/1882.5	1:1	**0.591**	0.02	23.76	24.00	1.057	**0.625**	22.3
Left tilted	20	QPSK 1RB_99	26365/1882.5	1:1	0.189	0.04	23.76	24.00	1.057	0.200	22.3
Right cheek	20	QPSK 1RB_99	26365/1882.5	1:1	0.366	0.06	23.76	24.00	1.057	0.387	22.3
Right tilted	20	QPSK 1RB_99	26365/1882.5	1:1	0.214	0.01	23.76	24.00	1.057	0.226	22.3
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	26365/1882.5	1:1	0.477	0.03	22.92	23.00	1.019	0.486	22.3
Left tilted	20	QPSK 50RB_25	26365/1882.5	1:1	0.160	-0.02	22.92	23.00	1.019	0.163	22.3
Right cheek	20	QPSK 50RB_25	26365/1882.5	1:1	0.302	0.06	22.92	23.00	1.019	0.308	22.3
Right tilted	20	QPSK 50RB_25	26365/1882.5	1:1	0.185	0.17	22.92	23.00	1.019	0.188	22.3
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_99	26365/1882.5	1:1	**0.523**	0.05	23.76	24.00	1.057	**0.553**	22.3
Back side	20	QPSK 1RB_99	26365/1882.5	1:1	0.522	-0.08	23.76	24.00	1.057	0.552	22.3
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	26365/1882.5	1:1	0.470	0.03	22.92	23.00	1.019	0.479	22.3
Back side	20	QPSK 50RB_25	26365/1882.5	1:1	0.461	0.15	22.92	23.00	1.019	0.470	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_99	26365/1882.5	1:1	0.963	0.12	23.76	24.00	1.057	1.018	22.3
Back side	20	QPSK 1RB_99	26365/1882.5	1:1	0.846	0.04	23.76	24.00	1.057	0.894	22.3
Left side	20	QPSK 1RB_99	26365/1882.5	1:1	0.600	-0.13	23.76	24.00	1.057	0.634	22.3
Right side	20	QPSK 1RB_99	26365/1882.5	1:1	0.344	0.05	23.76	24.00	1.057	0.364	22.3
Bottom side	20	QPSK 1RB_99	26365/1882.5	1:1	0.762	0.10	23.76	24.00	1.057	0.805	22.3
Front side	20	QPSK 1RB_99	26140/1860	1:1	1.130	0.04	23.66	24.00	1.081	1.222	22.3
Front side-repeat	20	QPSK 1RB_99	26140/1860	1:1	**1.170**	-0.02	23.66	24.00	1.081	**1.265**	22.3
Front side	20	QPSK 1RB_0	26590/1905	1:1	1.010	0.17	23.34	24.00	1.164	1.176	22.3
Back side	20	QPSK 1RB_99	26140/1860	1:1	1.090	0.04	23.66	24.00	1.081	1.179	22.3
Back side	20	QPSK 1RB_0	26590/1905	1:1	0.898	-0.08	23.34	24.00	1.164	1.045	22.3
Bottom side	20	QPSK 1RB_99	26140/1860	1:1	0.630	0.18	23.66	24.00	1.081	0.681	22.3
Bottom side	20	QPSK 1RB_0	26590/1905	1:1	0.581	-0.20	23.34	24.00	1.164	0.676	22.3
Front side with headset	20	QPSK 1RB_99	26140/1860	1:1	0.872	0.09	23.66	24.00	1.081	0.943	22.3
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	26365/1882.5	1:1	0.801	0.07	22.92	23.00	1.019	0.816	22.3
Back side	20	QPSK 50RB_25	26365/1882.5	1:1	0.783	0.03	22.92	23.00	1.019	0.798	22.3
Left side	20	QPSK 50RB_25	26365/1882.5	1:1	0.503	0.00	22.92	23.00	1.019	0.512	22.3
Right side	20	QPSK 50RB_25	26365/1882.5	1:1	0.301	0.10	22.92	23.00	1.019	0.307	22.3
Bottom side	20	QPSK 50RB_25	26365/1882.5	1:1	0.654	0.06	22.92	23.00	1.019	0.666	22.3
Front side	20	QPSK 50RB_25	26140/1860	1:1	0.887	0.03	22.69	23.00	1.074	0.953	22.3
Front side	20	QPSK 50RB_25	26590/1905	1:1	0.828	0.08	22.77	23.00	1.054	0.873	22.3
Hotspot Test data (Separate 10mm 100%RB)											
Front side	20	QPSK 100RB_0	26365/1882.5	1:1	0.780	-0.02	22.66	23.00	1.081	0.844	22.3
Back side	20	QPSK 100RB_0	26365/1882.5	1:1	0.694	0.07	22.66	23.00	1.081	0.751	22.3
Bottom side	20	QPSK 100RB_0	26365/1882.5	1:1	0.509	-0.08	22.66	23.00	1.081	0.550	22.3

Table 27：SAR of LTE Band 25 for Head and Body.
Note:

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

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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)
Front side	26140/1860	1.130	1.170	1.035	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 performed 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						

Table 28：SAR Measurement Variability Results

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8.3.10 SAR Result of LTE Band 26

Test position	BW.	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.
Head Test data(1RB)											
Left cheek	15	QPSK 1RB_0	26865/831.5	1:1	0.355	0.07	23.52	24.5	1.253	0.445	22.1
Left tilted	15	QPSK 1RB_0	26865/831.5	1:1	0.196	0.04	23.52	24.5	1.253	0.246	22.1
Right cheek	15	QPSK 1RB_0	26865/831.5	1:1	**0.365**	0.09	23.52	24.5	1.253	**0.457**	22.1
Right tilted	15	QPSK 1RB_0	26865/831.5	1:1	0.196	0.06	23.52	24.5	1.253	0.246	22.1
Head Test data(50%RB)											
Left cheek	15	QPSK 36RB_0	26865/831.5	1:1	0.289	0.06	22.47	23.5	1.268	0.366	22.1
Left tilted	15	QPSK 36RB_0	26865/831.5	1:1	0.162	0.05	22.47	23.5	1.268	0.205	22.1
Right cheek	15	QPSK 36RB_0	26865/831.5	1:1	0.304	0.07	22.47	23.5	1.268	0.385	22.1
Right tilted	15	QPSK 36RB_0	26865/831.5	1:1	0.162	0.08	22.47	23.5	1.268	0.205	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	15	QPSK 1RB_0	26865/831.5	1:1	0.444	0.15	23.52	24.5	1.253	0.556	22.1
Back side	15	QPSK 1RB_0	26865/831.5	1:1	**0.516**	-0.05	23.52	24.5	1.253	**0.647**	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	15	QPSK 36RB_0	26865/831.5	1:1	0.302	-0.08	22.47	23.5	1.268	0.383	22.1
Back side	15	QPSK 36RB_0	26865/831.5	1:1	0.425	0.08	22.47	23.5	1.268	0.539	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	15	QPSK 1RB_0	26865/831.5	1:1	0.415	-0.01	23.52	24.5	1.253	0.520	22.1
Back side	15	QPSK 1RB_0	26865/831.5	1:1	**0.583**	0.01	23.52	24.5	1.253	**0.731**	22.1
Left side	15	QPSK 1RB_0	26865/831.5	1:1	0.327	0.15	23.52	24.5	1.253	0.410	22.1
Right side	15	QPSK 1RB_0	26865/831.5	1:1	0.421	-0.01	23.52	24.5	1.253	0.528	22.1
Bottom side	15	QPSK 1RB_0	26865/831.5	1:1	0.091	0.18	23.52	24.5	1.253	0.114	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	15	QPSK 36RB_0	26865/831.5	1:1	0.323	-0.01	22.47	23.5	1.268	0.409	22.1
Back side	15	QPSK 36RB_0	26865/831.5	1:1	0.481	-0.04	22.47	23.5	1.268	0.610	22.1
Left side	15	QPSK 36RB_0	26865/831.5	1:1	0.263	0.04	22.47	23.5	1.268	0.333	22.1
Right side	15	QPSK 36RB_0	26865/831.5	1:1	0.361	-0.03	22.47	23.5	1.268	0.458	22.1
Bottom side	15	QPSK 36RB_0	26865/831.5	1:1	0.090	0.15	22.47	23.5	1.268	0.114	22.1

Table 29： SAR of LTE Band 26 for Head and 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).

3) According to April 2015 TCB workshop, SAR for LTE Band 5 (Frequency range: 824 - 849 MHz) is covered by LTE Band 26 (Frequency range: 814 – 849 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

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8.3.11 SAR Result of LTE Band 41

Test position	BW.	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.
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_50	40620/2593	1:1.58	**0.129**	0.00	24.97	25.50	1.130	**0.146**	22.1
Left tilted	20	QPSK 1RB_50	40620/2593	1:1.58	0.030	0.05	24.97	25.50	1.130	0.033	22.1
Right cheek	20	QPSK 1RB_50	40620/2593	1:1.58	0.071	0.07	24.97	25.50	1.130	0.081	22.1
Right tilted	20	QPSK 1RB_50	40620/2593	1:1.58	0.066	0.00	24.97	25.50	1.130	0.075	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_50	41490/2680	1:1.58	0.076	0.00	24.96	25.50	1.132	0.086	22.1
Left tilted	20	QPSK 50RB_50	41490/2680	1:1.58	0.018	0.00	24.96	25.50	1.132	0.020	22.1
Right cheek	20	QPSK 50RB_50	41490/2680	1:1.58	0.067	0.00	24.96	25.50	1.132	0.075	22.1
Right tilted	20	QPSK 50RB_50	41490/2680	1:1.58	0.079	0.00	24.96	25.50	1.132	0.089	22.1
Head Test Data at the worst case with Power of Class 3											
Left cheek	20	QPSK 1RB_50	40620/2593	1:1.58	0.058	0.00	23.38	23.50	1.028	0.059	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_50	40620/2593	1:1.58	0.152	0.03	24.97	25.50	1.130	0.172	22.1
Back side	20	QPSK 1RB_50	40620/2593	1:1.58	**0.159**	0.03	24.97	25.50	1.130	**0.180**	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_50	41490/2680	1:1.58	0.133	0.02	24.96	25.50	1.132	0.151	22.1
Back side	20	QPSK 50RB_50	41490/2680	1:1.58	0.156	0.08	24.96	25.50	1.132	0.177	22.1
Body worn Test Data at the worst case with Power of Class 3											
Back side	20	QPSK 1RB_50	40620/2593	1:1.58	0.062	-0.11	23.38	23.50	1.028	0.064	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_50	40620/2593	1:1.58	0.314	-0.01	24.97	25.50	1.130	0.355	22.1
Back side	20	QPSK 1RB_50	40620/2593	1:1.58	0.327	0.07	24.97	25.50	1.130	0.369	22.1
Left side	20	QPSK 1RB_50	40620/2593	1:1.58	0.117	0.08	24.97	25.50	1.130	0.132	22.1
Right side	20	QPSK 1RB_50	40620/2593	1:1.58	0.052	0.04	24.97	25.50	1.130	0.058	22.1
Bottom side	20	QPSK 1RB_50	40620/2593	1:1.58	**0.416**	0.02	24.97	25.50	1.130	**0.470**	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_50	41490/2680	1:1.58	0.247	0.00	24.96	25.50	1.132	0.280	22.1
Back side	20	QPSK 50RB_50	41490/2680	1:1.58	0.306	0.01	24.96	25.50	1.132	0.347	22.1
Left side	20	QPSK 50RB_50	41490/2680	1:1.58	0.081	0.07	24.96	25.50	1.132	0.092	22.1
Right side	20	QPSK 50RB_50	41490/2680	1:1.58	0.040	0.05	24.96	25.50	1.132	0.046	22.1
Bottom side	20	QPSK 50RB_50	41490/2680	1:1.58	0.377	0.05	24.96	25.50	1.132	0.427	22.1

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Hotspot Test Data at the worst case with Power of Class 3											
Bottom side	20	QPSK 1RB_50	40620/2593	1:1.58	0.160	-0.01	23.38	23.50	1.028	0.164	22.1

Table 30：SAR of LTE Band 41 for Head and 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).

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:

a) ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz

b) ≤ 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

c) ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

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8.3.12 SAR Result of LTE Band 66

Test position	BW.	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.
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_50	132072/1720	1:1	**0.436**	0.08	24.42	24.50	1.019	**0.444**	22.2
Left tilted	20	QPSK 1RB_50	132072/1720	1:1	0.138	0.16	24.42	24.50	1.019	0.141	22.2
Right cheek	20	QPSK 1RB_50	132072/1720	1:1	0.334	0.03	24.42	24.50	1.019	0.340	22.2
Right tilted	20	QPSK 1RB_50	132072/1720	1:1	0.128	0.04	24.42	24.50	1.019	0.130	22.2
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_0	132072/1720	1:1	0.327	0.07	22.99	23.50	1.125	0.368	22.2
Left tilted	20	QPSK 50RB_0	132072/1720	1:1	0.098	0.04	22.99	23.50	1.125	0.110	22.2
Right cheek	20	QPSK 50RB_0	132072/1720	1:1	0.220	0.03	22.99	23.50	1.125	0.247	22.2
Right tilted	20	QPSK 50RB_0	132072/1720	1:1	0.089	0.10	22.99	23.50	1.125	0.100	22.2
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_50	132072/1720	1:1	**0.550**	0.17	24.42	24.50	1.019	**0.560**	22.2
Back side	20	QPSK 1RB_50	132072/1720	1:1	0.533	0.07	24.42	24.50	1.019	0.543	22.2
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_0	132072/1720	1:1	0.377	0.03	22.99	23.50	1.125	0.424	22.2
Back side	20	QPSK 50RB_0	132072/1720	1:1	0.360	0.17	22.99	23.50	1.125	0.405	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_50	132072/1720	1:1	0.916	0.02	24.42	24.50	1.019	0.933	22.2
Front side-repeat	20	QPSK 1RB_50	132072/1720	1:1	**0.924**	0.16	24.42	24.50	1.019	0.941	22.2
Back side	20	QPSK 1RB_50	132072/1720	1:1	0.874	0.04	24.42	24.50	1.019	0.890	22.2
Left side	20	QPSK 1RB_50	132072/1720	1:1	0.390	0.01	24.42	24.50	1.019	0.397	22.2
Right side	20	QPSK 1RB_50	132072/1720	1:1	0.188	0.08	24.42	24.50	1.019	0.191	22.2
Bottom side	20	QPSK 1RB_50	132072/1720	1:1	0.509	0.06	24.42	24.50	1.019	0.518	22.2
Front side	20	QPSK 1RB_0	132322/1745	1:1	0.784	0.11	23.61	24.50	1.227	**0.962**	22.2
Front side	20	QPSK 1RB_0	132572/1770	1:1	0.778	0.15	23.64	24.50	1.219	0.948	22.2
Back side	20	QPSK 1RB_0	132322/1745	1:1	0.763	0.01	23.61	24.50	1.227	0.937	22.2
Back side	20	QPSK 1RB_0	132572/1770	1:1	0.741	-0.04	23.64	24.50	1.219	0.903	22.2
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_0	132072/1720	1:1	0.672	0.05	22.99	23.50	1.125	0.756	22.2
Back side	20	QPSK 50RB_0	132072/1720	1:1	0.622	0.14	22.99	23.50	1.125	0.700	22.2
Left side	20	QPSK 50RB_0	132072/1720	1:1	0.276	0.04	22.99	23.50	1.125	0.310	22.2
Right side	20	QPSK 50RB_0	132072/1720	1:1	0.142	0.01	22.99	23.50	1.125	0.160	22.2
Bottom side	20	QPSK 50RB_0	132072/1720	1:1	0.385	0.14	22.99	23.50	1.125	0.433	22.2
Hotspot Test data (Separate 10mm 100%RB)											
Front side	20	QPSK 100RB_0	132572/1770	1:1	0.710	0.16	22.67	23.50	1.211	0.860	22.2
Back side	20	QPSK 100RB_0	132572/1770	1:1	0.620	0.09	22.67	23.50	1.211	0.751	22.2

Table 31： SAR of LTE Band 66 for Head and 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).

3)According to April 2015 TCB workshop, SAR for LTE Band 4 (Frequency range: 1710 - 1755 MHz) is covered by LTE Band 66 (Frequency range: 1710 - 1780 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

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Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Front side	132072/1720	0.916	0.924	1.009	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 performed 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						

Table 32：SAR Measurement Variability Results

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8.3.13 SAR Result of LTE Band 71

Test position	BW.	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.
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_50	133222/673	1:1	0.131	0.04	24.03	24.50	1.114	0.146	22.1
Left tilted	20	QPSK 1RB_50	133222/673	1:1	0.060	0.05	24.03	24.50	1.114	0.067	22.1
Right cheek	20	QPSK 1RB_50	133222/673	1:1	**0.141**	-0.12	24.03	24.50	1.114	**0.157**	22.1
Right tilted	20	QPSK 1RB_50	133222/673	1:1	0.059	0.01	24.03	24.50	1.114	0.066	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	133222/673	1:1	0.099	0.05	22.86	23.50	1.159	0.115	22.1
Left tilted	20	QPSK 50RB_25	133222/673	1:1	0.046	0.02	22.86	23.50	1.159	0.053	22.1
Right cheek	20	QPSK 50RB_25	133222/673	1:1	0.098	0.03	22.86	23.50	1.159	0.113	22.1
Right tilted	20	QPSK 50RB_25	133222/673	1:1	0.047	0.08	22.86	23.50	1.159	0.054	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_50	133222/673	1:1	0.106	-0.03	24.03	24.50	1.114	0.118	22.1
Back side	20	QPSK 1RB_50	133222/673	1:1	**0.201**	-0.04	24.03	24.50	1.114	**0.224**	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	133222/673	1:1	0.087	0.03	22.86	23.50	1.159	0.100	22.1
Back side	20	QPSK 50RB_25	133222/673	1:1	0.160	-0.12	22.86	23.50	1.159	0.185	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_50	133222/673	1:1	0.164	0.07	24.03	24.50	1.114	0.183	22.1
Back side	20	QPSK 1RB_50	133222/673	1:1	**0.207**	-0.06	24.03	24.50	1.114	**0.231**	22.1
Left side	20	QPSK 1RB_50	133222/673	1:1	0.144	0.03	24.03	24.50	1.114	0.160	22.1
Right side	20	QPSK 1RB_50	133222/673	1:1	0.147	-0.01	24.03	24.50	1.114	0.164	22.1
Bottom side	20	QPSK 1RB_50	133222/673	1:1	0.042	-0.14	24.03	24.50	1.114	0.047	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	133222/673	1:1	0.116	0.02	22.86	23.50	1.159	0.134	22.1
Back side	20	QPSK 50RB_25	133222/673	1:1	0.148	0.01	22.86	23.50	1.159	0.171	22.1
Left side	20	QPSK 50RB_25	133222/673	1:1	0.117	-0.05	22.86	23.50	1.159	0.136	22.1
Right side	20	QPSK 50RB_25	133222/673	1:1	0.155	0.04	22.86	23.50	1.159	0.180	22.1
Bottom side	20	QPSK 50RB_25	133222/673	1:1	0.035	0.06	22.86	23.50	1.159	0.040	22.1

Table 33： SAR of LTE Band 71 for Head and 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).

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8.3.14 SAR Result of WIFI 2.4G

Test position	Test mode	Test Ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg)1-g	Power drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.
Head Test data											
Left cheek	802.11b	1/2412	98.81%	1.012	**0.274**	0.05	13.54	14.00	1.112	**0.308**	22
Left tilted	802.11b	1/2412	98.81%	1.012	0.245	0.05	13.54	14.00	1.112	0.276	22
Right cheek	802.11b	1/2412	98.81%	1.012	0.102	0.09	13.54	14.00	1.112	0.115	22
Right tilted	802.11b	1/2412	98.81%	1.012	0.072	0.01	13.54	14.00	1.112	0.081	22
Body worn Test data(Separate 15mm)											
Front side	802.11b	1/2412	98.81%	1.012	**0.028**	0.03	13.54	14.00	1.112	**0.031**	22
Back side	802.11b	1/2412	98.81%	1.012	0.018	0.02	13.54	14.00	1.112	0.020	22
Hotspot Test data (Separate 10mm)											
Front side	802.11b	1/2412	98.81%	1.012	0.051	0.07	13.54	14.00	1.112	0.057	22
Back side	802.11b	1/2412	98.81%	1.012	**0.067**	-0.17	13.54	14.00	1.112	**0.075**	22
Right side	802.11b	1/2412	98.81%	1.012	0.041	0.00	13.54	14.00	1.112	0.046	22
Top side	802.11b	1/2412	98.81%	1.012	0.005	0.01	13.54	14.00	1.112	0.006	22

Table 34： SAR of WIFI 2.4G for Head and 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).

3)Each channel was tested at the lowest data rate.

Mode	Tune-up (dBm)	Tune-up (mW)	Max Reported SAR(W/kg)	Adjusted SAR(W/kg)	SAR Test (Yes/No)
802.11b	14.00	25.12	0.308	/	Yes
802.11g	13.00	19.95	/	0.245	No
802.11n-HT20	13.00	19.95	/	0.245	No

Note:

Per KDB248227D01, for SAR test of WiFi 2.4G

1)SAR is measured for 2.4 GHz 802.11b DSSS using the initial test position procedure.

2)As the highest reported SAR for DSSS is adjusted by the ratio of OFDM 802.11g/n to DSSS specified maximum output power and the adjusted SAR is < 1.2 W/kg, so SAR for 802.11g/n is not required.

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8.4 Multiple Transmitter Evaluation

8.4.1 Simultaneous SAR SAR test evaluation

Simultaneous Transmission Possibilities

NO.	Simultaneous Transmission Configuration	Head	Body worn	Hotspot
1	CDMA(Voice) + WiFi	Yes	Yes	No
2	CDMA(Voice) + BT	Yes	Yes	No
3	WCDMA(Voice) + WiFi	Yes	Yes	No
4	WCDMA(Voice) + BT	Yes	Yes	No
5	CDMA(Data) + WiFi	No	Yes	Yes
6	CDMA(Data) + BT	No	Yes	Yes
7	WCDMA(Data) + WiFi	No	Yes	Yes
8	WCDMA(Data) + BT	No	Yes	Yes
9	LTE + WiFi	Yes	Yes	Yes
10	LTE + BT	Yes	Yes	Yes
11	BT+WIFI (They share the same antenna and cannot transmit at the same time by design.)	No	No	No

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8.4.2 Estimated SAR

When the standalone SAR test exclusion is applied to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to the following to determine simultaneous transmission SAR test exclusion:

• (max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)/x] W/kg for test separation distances ≤ 50 mm;

Where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Estimated SAR Result

Freq. Band	Frequency (GHz)	Test Position	max. power(dBm)	Test Separation (mm)	Estimated 1g SAR (W/kg)
Bluetooth	2.48	Head	5	0	0.133
		Body-worn	5	15	0.044
		hotspot	5	10	0.066

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8.4.3 Simultaneous Transmission SAR Summation Scenario

Test position		Main Antenna SARmax (W/kg)													WiFi Antenna SARmax (W/kg)		Summed 1g SARmax (W/kg)
		WCDMA Band II	WCDMA Band IV	WCDMA Band V	CDMA BC0	CDMA BC1	CDMA BC10	LTE Band 2	LTE Band 4/66	LTE Band 5/26	LTE Band 12	LTE Band 25	LTE Band 41	LTE Band 71	WLAN 2.4G	BT	
Head	Left Touch	0.56	0.489	0.389	0.361	0.6	0.364	0.696	0.444	0.445	0.216	0.625	0.146	0.146	0.308	0.133	**1.004**
	Left Tilt	0.322	0.165	0.228	0.201	0.203	0.206	0.218	0.141	0.246	0.113	0.2	0.033	0.067	0.276	0.133	0.598
	Right Touch	0.382	0.369	0.482	0.387	0.382	0.397	0.379	0.34	0.457	0.223	0.387	0.081	0.157	0.115	0.133	0.615
	Right Tilt	0.274	0.164	0.257	0.207	0.24	0.21	0.26	0.13	0.246	0.133	0.226	0.075	0.066	0.081	0.133	0.407
Body 15mm	Front	0.505	0.43	0.434	0.383	0.585	0.4	0.58	0.56	0.556	0.211	0.553	0.172	0.118	0.031	0.044	0.629
	Back	0.512	0.43	0.507	0.459	0.53	0.471	0.646	0.543	0.647	0.28	0.552	0.18	0.224	0.02	0.044	**0.691**
Hotspot	Front	0.942	0.751	0.448	0.401	1.065	0.412	1.115	0.962	0.52	0.247	1.265	0.355	0.183	0.057	0.066	**1.331**
	Back	0.961	0.769	0.568	0.511	0.997	0.52	1.046	0.937	0.731	0.348	1.179	0.369	0.231	0.075	0.066	1.254
	Left	0.504	0.449	0.363	0.336	0.658	0.339	0.634	0.397	0.41	0.206	0.634	0.132	0.16	/	/	0.658
	Right	0.33	0.268	0.458	0.409	0.343	0.394	0.325	0.191	0.528	0.242	0.364	0.058	0.164	0.046	0.066	0.594
	Top	/	/	/	/	/	/	/	/	/	/	/	/	/	0.006	0.066	0.066
	Bottom	0.607	0.549	0.13	0.121	0.664	0.101	0.601	0.518	0.114	0.057	0.805	0.47	0.047	/	/	0.805

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9 Equipment list

Test Platform	SPEAG DASY5 Professional
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
☒	Twin Phantom	SPEAG	SAM 5	1481	NCR	NCR
☒	Twin Phantom	SPEAG	SAM 6	1824	NCR	NCR
☒	DAE	SPEAG	DAE4	1374	2019-09-24	2020-09-23
☒	DAE	SPEAG	DAE4	1267	2018-12-03	2019-12-02
☒	E-Field Probe	SPEAG	EX3DV4	3789	2019-05-25	2020-05-24
☒	E-Field Probe	SPEAG	EX3DV4	3962	2019-02-25	2020-02-24
☒	Validation Kits	SPEAG	D750V3	1160	2019-05-22	2022-05-21
☒	Validation Kits	SPEAG	D835V2	4d105	2016-12-08	2019-12-07
☒	Validation Kits	SPEAG	D1750V2	1149	2019-05-21	2022-05-20
☒	Validation Kits	SPEAG	D1900V2	5d028	2016-12-07	2019-12-06
☒	Validation Kits	SPEAG	D2450V2	733	2016-12-07	2019-12-06
☒	Validation Kits	SPEAG	D2600V2	1125	2019-05-20	2022-05-19
☒	Agilent Network Analyzer	Agilent	E5071C	MY46523590	2019-04-12	2020-04-11
☒	Dielectric Probe Kit	Agilent	85070E	US01440210	NCR	NCR
☒	Universal Radio Communication Tester	R&S	CMU500	124587	2019-04-09	2020-04-08
☒	Radio Communication Analyzer	Anritsu	MT8820C	6201010267	2019-06-27	2020-06-26
☒	RF Bi-Directional Coupler	Agilent	86205-60001	MY31400031	NCR	NCR
☒	Signal Generator	Agilent	N5171B	MY53050736	2019-04-12	2020-04-11
☒	Preamplifier	Mini-Circuits	ZHL-42W	15542	NCR	NCR
☒	Preamplifier	Compliance Directions Systems Inc.	AMP28-3W	073501433	NCR	NCR
☒	Power Meter	Agilent	E4416A	GB41292095	2019-04-12	2020-04-11

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☒	Power Sensor	Agilent	8481H	MY41091234	2019-04-12	2020-04-11
☒	Power Sensor	R&S	NRP-Z92	100025	2019-04-12	2020-04-11
☒	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
☒	DC POWER SUPPLY	SAKO	SK1730SL5A	NA	NCR	NCR
☒	Speed reading thermometer	MingGao	T809	NA	2019-04-15	2020-04-14
☒	Humidity and Temperature Indicator	MingGao	T809	NA	2019-04-15	2020-04-14

Note: All the equipments are within the valid period when the tests are performed.

10 Calibration certificate

Please see the Appendix C

11 Photographs

Please see the Appendix D

Appendix A: Detailed System Check Results

Appendix B: Detailed Test Results

Appendix C: Calibration certificate

Appendix D: Photographs

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Appendix A

Detailed System Check Results

1. System Performance Check
System Performance Check 750 MHz Head
System Performance Check 835 MHz Head
System Performance Check 1750 MHz Head
System Performance Check 1900 MHz Head
System Performance Check 2450 MHz Head
System Performance Check 2600 MHz Head

Date: 2019/11/13

Test Laboratory: SGS-SAR Lab

System Performance Check 750 MHz Head

DUT: D750V3; Type: D750V3; Serial: 1160

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

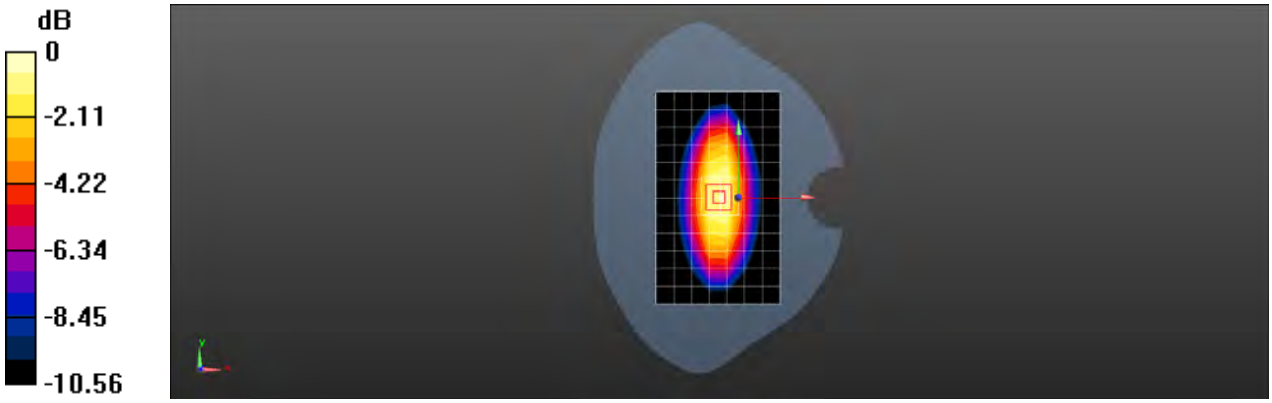
Medium: HSL750;Medium parameters used: f = 750 MHz; σ = 0.895 S/m; ε_r = 41.656; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.84, 8.84, 8.84); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Body/d=15mm, Pin=250mW/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.68 W/kg

Body/d=15mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 50.62 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 3.49 W/kg
SAR(1 g) = 2.18 W/kg; SAR(10 g) = 1.43 W/kg
Maximum value of SAR (measured) = 3.00 W/kg



0 dB = 3.00 W/kg = 4.77 dBW/kg

Date: 2019/11/14

Test Laboratory: SGS-SAR Lab

System Performance Check 835 MHz Head

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

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

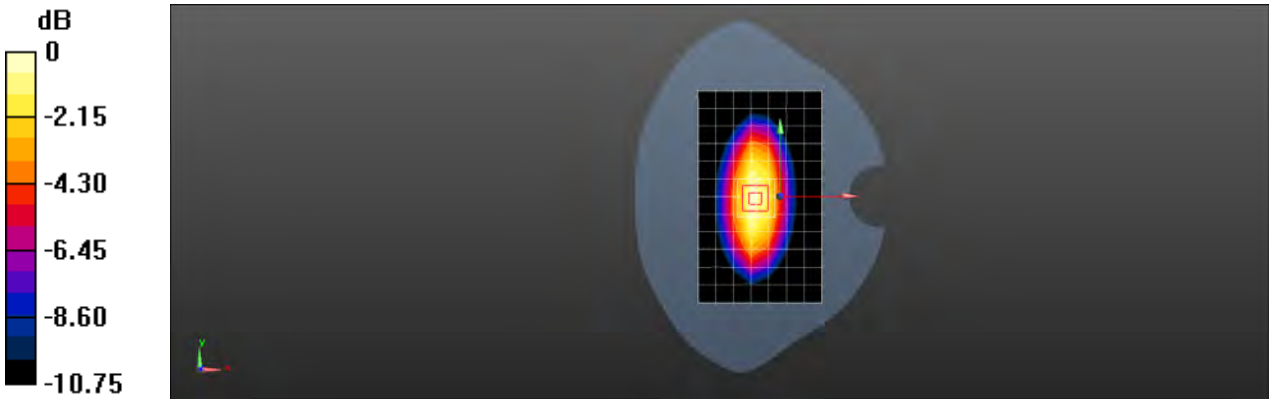
Medium: HSL835;Medium parameters used: f = 835 MHz; σ = 0.886 S/m; ε_r = 40.798; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.52, 8.52, 8.52); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Body/d=15mm, Pin=250mW/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.19 W/kg

Body/d=15mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 56.02 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 4.02 W/kg
SAR(1 g) = 2.63 W/kg; SAR(10 g) = 1.72 W/kg
Maximum value of SAR (measured) = 3.37 W/kg



0 dB = 3.37 W/kg = 5.28 dBW/kg

Date: 2019/11/16

Test Laboratory: SGS-SAR Lab

System Performance Check 1750 MHz Head

DUT: D1750V2; Type: D1750V2; Serial: 1149

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

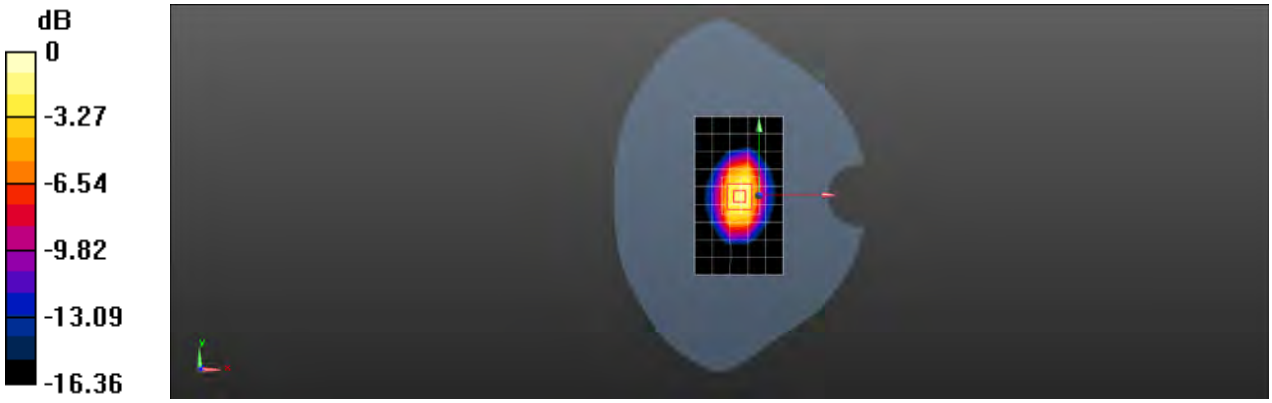
Medium: HSL1750;Medium parameters used: f = 1750 MHz; σ = 1.332 S/m; ε_r = 40.757; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.44, 8.44, 8.44); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Body/d=10mm, Pin=250mW/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 9.31 W/kg

Body/d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 83.77 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 15.8 W/kg
SAR(1 g) = 8.55 W/kg; SAR(10 g) = 4.61 W/kg
Maximum value of SAR (measured) = 13.2 W/kg



0 dB = 13.2 W/kg = 11.21 dBW/kg

Date: 2019/11/17

Test Laboratory: SGS-SAR Lab

System Performance Check 1900 MHz Head

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

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

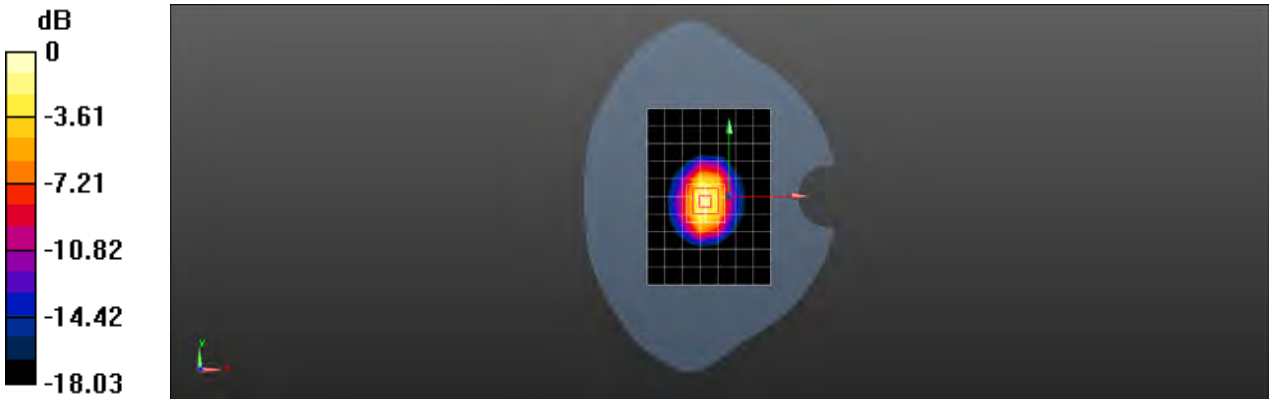
Medium: HSL1900;Medium parameters used: f = 1900 MHz; σ = 1.437 S/m; ε_r = 41.171; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.14, 8.14, 8.14); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Body/d=10mm, Pin=250mW/Area Scan (8x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 10.1 W/kg

Body/d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 88.71 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 19.6 W/kg
SAR(1 g) = 10.6 W/kg; SAR(10 g) = 5.49 W/kg
Maximum value of SAR (measured) = 11.9 W/kg



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

Date: 2019/11/18

Test Laboratory: SGS-SAR Lab

System Performance Check 1900 MHz Head

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

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

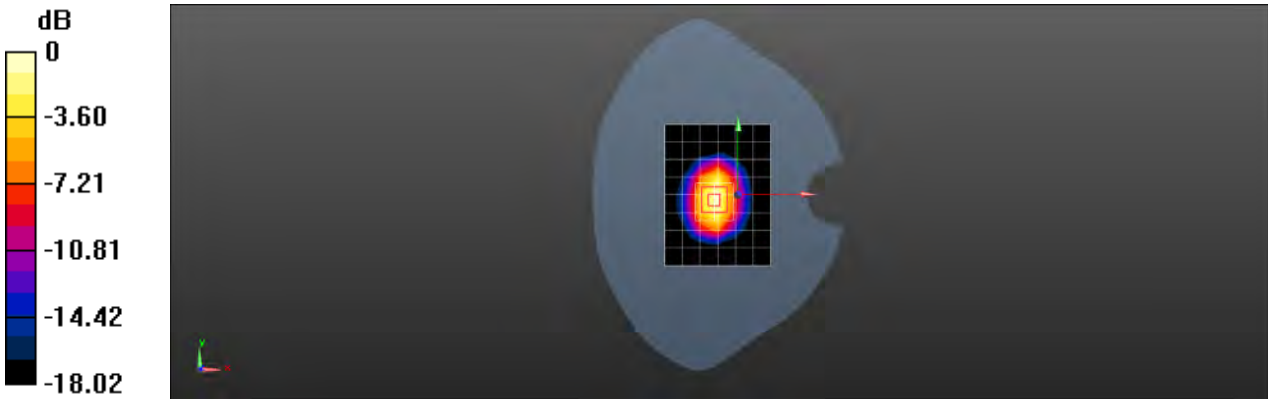
Medium: HSL1900;Medium parameters used: f = 1900 MHz; σ = 1.396 S/m; ε_r = 40.58; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.14, 8.14, 8.14); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Body/d=10mm, Pin=250mW/Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 10.9 W/kg

Body/d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 88.72 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 19.1 W/kg
SAR(1 g) = 10.3 W/kg; SAR(10 g) = 5.33 W/kg
Maximum value of SAR (measured) = 11.5 W/kg



0 dB = 11.5 W/kg = 10.61 dBW/kg

Date: 2019/11/22

Test Laboratory: SGS-SAR Lab

System Performance Check 2450MHz Head

DUT: D2450V2; Type: D2450V2; Serial: 733

Communication System: UID 0, CW; Frequency: 2450 MHz;Duty Cycle: 1:1

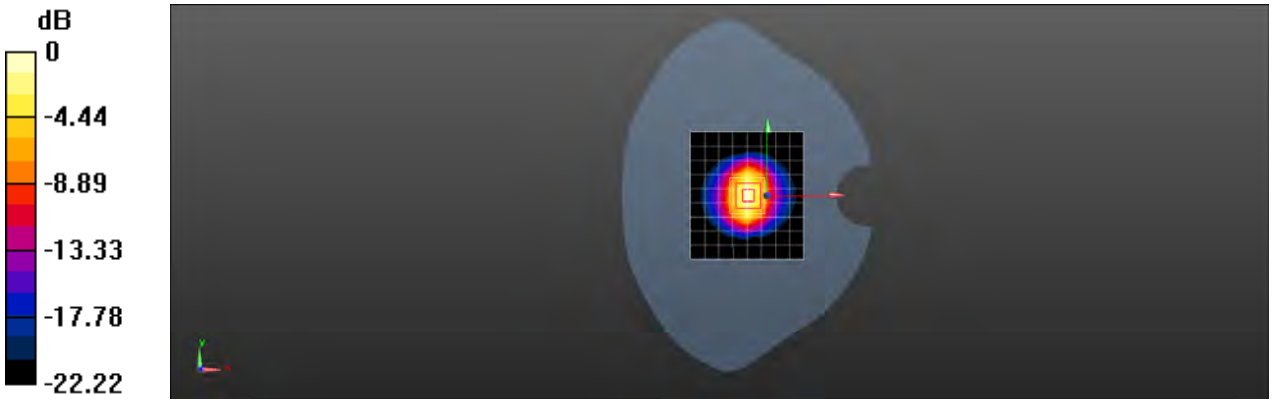
Medium: HSL2450;Medium parameters used: f = 2450 MHz; σ = 1.806 S/m; ε_r = 38.232; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(7.58, 7.58, 7.58); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Body/d=10mm, Pin=250mW/Area Scan (9x10x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 19.8 W/kg

Body/d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 89.46 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 27.0 W/kg
SAR(1 g) = 12.7 W/kg; SAR(10 g) = 5.83 W/kg
Maximum value of SAR (measured) = 21.7 W/kg



0 dB = 21.7 W/kg = 13.36 dBW/kg

Date: 2019/11/21

Test Laboratory: SGS-SAR Lab

System Performance Check 2600MHz Head

DUT: D2600V2; Type: D2600V2; Serial: 1125

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

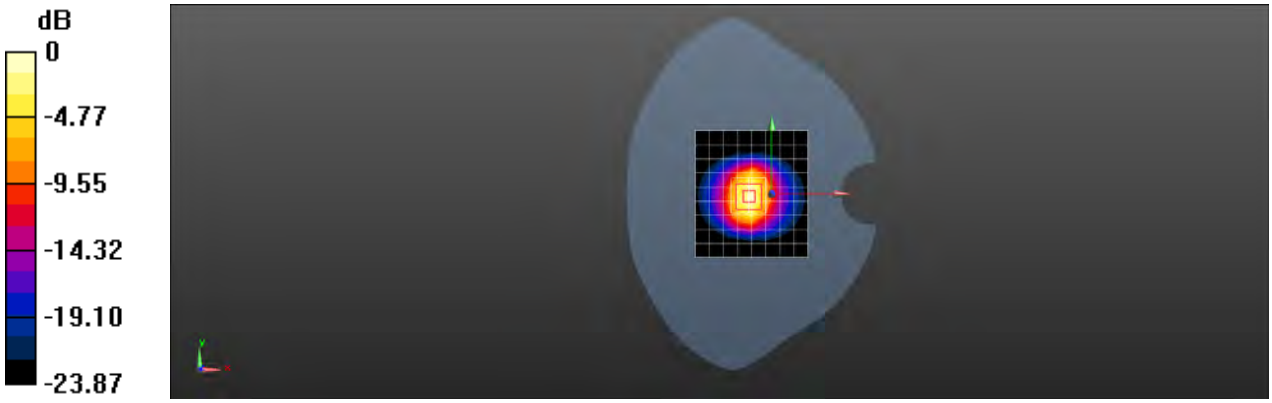
Medium: HSL2600;Medium parameters used: f = 2600 MHz; σ = 1.968 S/m; ε_r = 37.767; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(7.39, 7.39, 7.39); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Body/d=10mm, Pin=250mW/Area Scan (9x10x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 21.2 W/kg

Body/d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 86.92 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 29.3 W/kg
SAR(1 g) = 13.6 W/kg; SAR(10 g) = 6.06 W/kg
Maximum value of SAR (measured) = 23.4 W/kg



0 dB = 23.4 W/kg = 13.69 dBW/kg

Appendix B

Detailed Test Results

1. WCDMA
WCDMA Band II for Head &Body
WCDMA Band IV for Head &Body
WCDMA Band V for Head &Body
2. CDMA
CDMA BC0 for Head &Body
CDMA BC1 for Head &Body
CDMA BC10 for Head &Body
3. LTE
LTE Band 2 for Head &Body
LTE Band 4/66 for Head &Body
LTE Band 5/26 for Head &Body
LTE Band 12 for Head &Body
LTE Band 25 for Head &Body
LTE Band 41 for Head &Body
LTE Band 71 for Head &Body
4. WIFI
WIFI 2.4G for Head &Body

Date: 2019/11/17

Test Laboratory: SGS-SAR Lab

U693CL WCDMA Band II 9400CH Left cheek

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz;Duty Cycle: 1:1

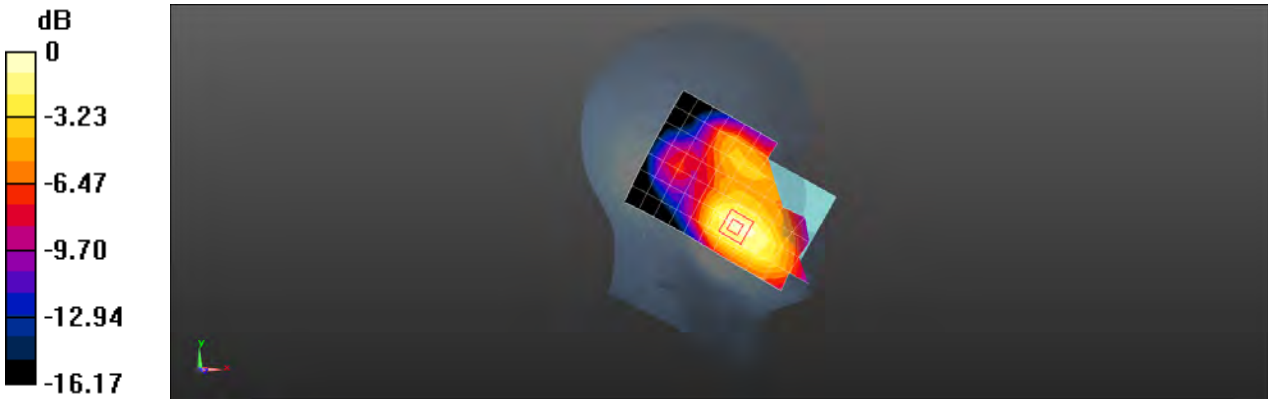
Medium: HSL1900;Medium parameters used: f = 1880 MHz; σ = 1.418 S/m; ε_r = 41.237; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.14, 8.14, 8.14); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.624 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.383 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.807 W/kg
SAR(1 g) = 0.490 W/kg; SAR(10 g) = 0.298 W/kg
Maximum value of SAR (measured) = 0.688 W/kg



0 dB = 0.688 W/kg = -1.62 dBW/kg

Date: 2019/11/17

Test Laboratory: SGS-SAR Lab

U693CL WCDMA Band II 9400CH Back side 15mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz;Duty Cycle: 1:1

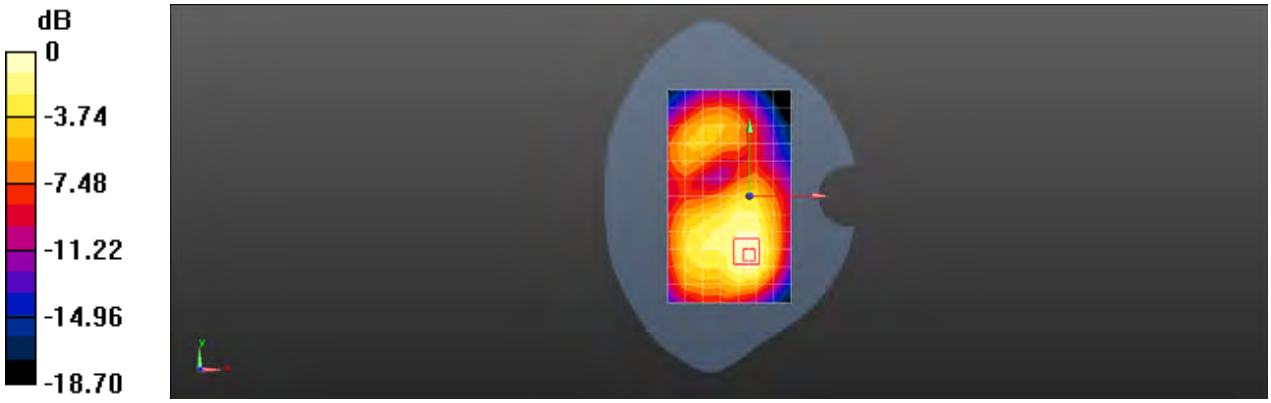
Medium: HSL1900;Medium parameters used: f = 1880 MHz; σ = 1.418 S/m; ε_r = 41.237; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.14, 8.14, 8.14); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.589 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.49 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.798 W/kg
SAR(1 g) = 0.448 W/kg; SAR(10 g) = 0.262 W/kg
Maximum value of SAR (measured) = 0.664 W/kg



0 dB = 0.664 W/kg = -1.78 dBW/kg

Date: 2019/11/17

Test Laboratory: SGS-SAR Lab

U693CL WCDMA Band II 9538CH Back side 10mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

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

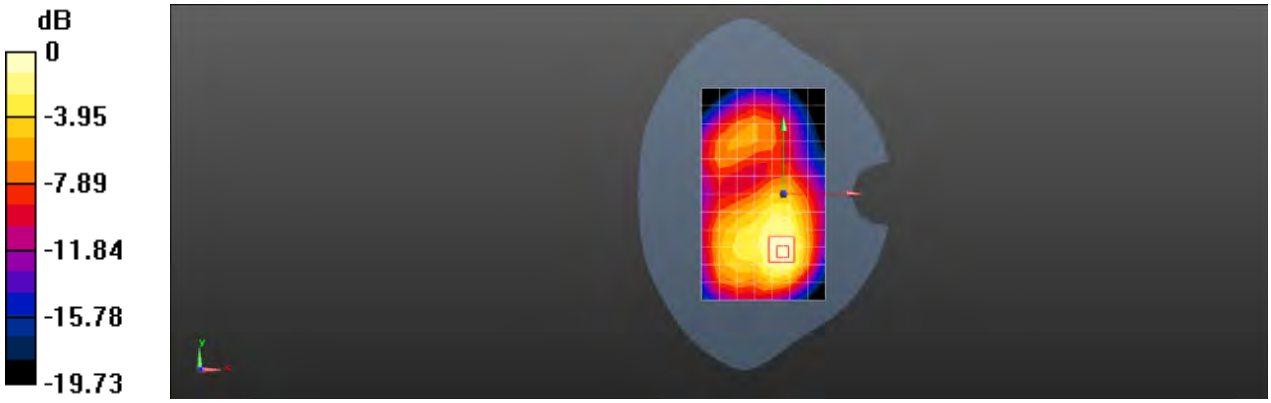
Medium: HSL1900;Medium parameters used: f = 1908 MHz; σ = 1.445 S/m; ε_r = 41.136; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.14, 8.14, 8.14); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.09 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.57 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.51 W/kg
SAR(1 g) = 0.831 W/kg; SAR(10 g) = 0.478 W/kg
Maximum value of SAR (measured) = 1.25 W/kg



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

Date: 2019/11/16

Test Laboratory: SGS-SAR Lab

U693CL WCDMA Band IV 1412CH Left cheek

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, WCDMA (0); Frequency: 1732.4 MHz;Duty Cycle: 1:1

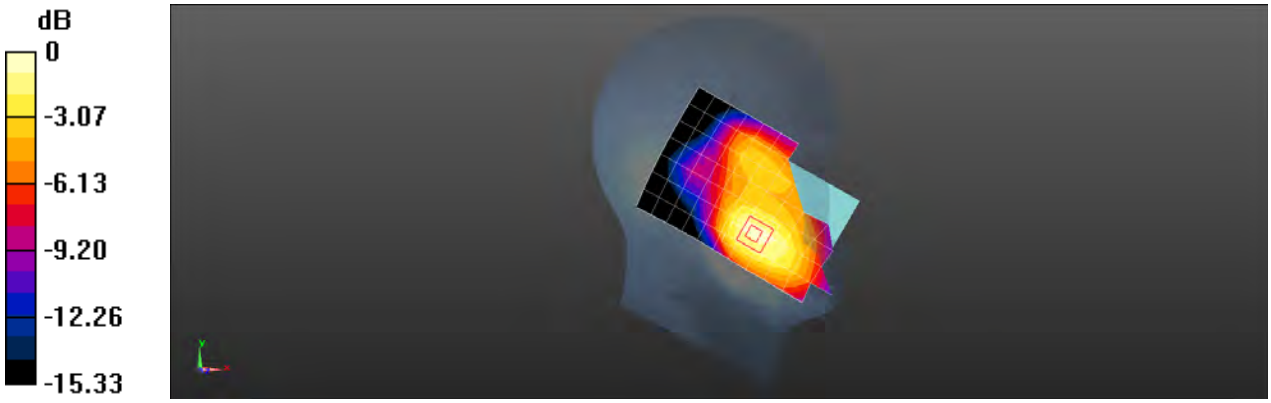
Medium: HSL1750;Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.32 S/m; ε_r = 40.669; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.44, 8.44, 8.44); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.579 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.007 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.730 W/kg
SAR(1 g) = 0.471 W/kg; SAR(10 g) = 0.300 W/kg
Maximum value of SAR (measured) = 0.639 W/kg



0 dB = 0.639 W/kg = -1.94 dBW/kg

Date: 2019/11/16

Test Laboratory: SGS-SAR Lab

U693CL WCDMA Band IV 1412CH Front side 15mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, WCDMA (0); Frequency: 1732.4 MHz;Duty Cycle: 1:1

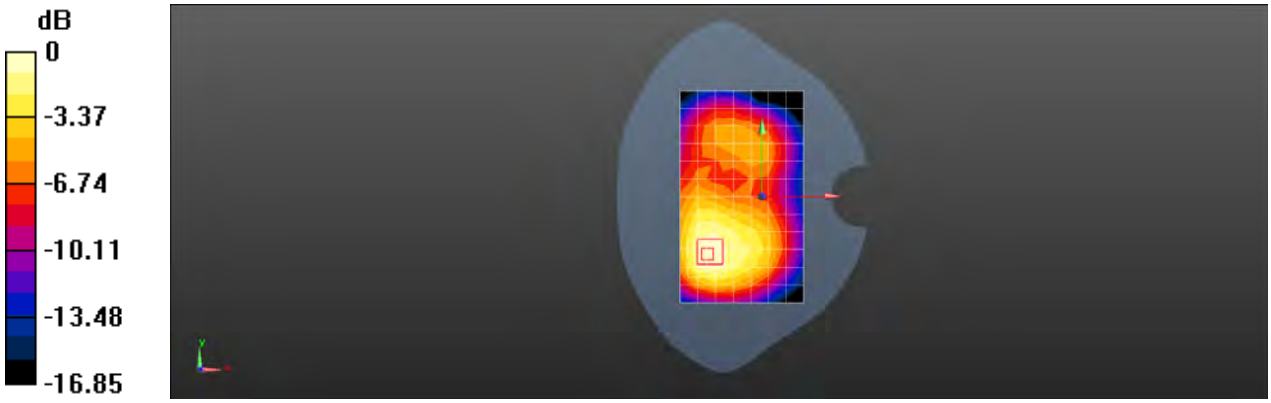
Medium: HSL1750;Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.32 S/m; ε_r = 40.669; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.44, 8.44, 8.44); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.540 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.775 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.694 W/kg
SAR(1 g) = 0.414 W/kg; SAR(10 g) = 0.255 W/kg
Maximum value of SAR (measured) = 0.588 W/kg



0 dB = 0.588 W/kg = -2.31 dBW/kg

Date: 2019/11/16

Test Laboratory: SGS-SAR Lab

U693CL WCDMA Band IV 1412CH Back side 10mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, WCDMA (0); Frequency: 1732.4 MHz;Duty Cycle: 1:1

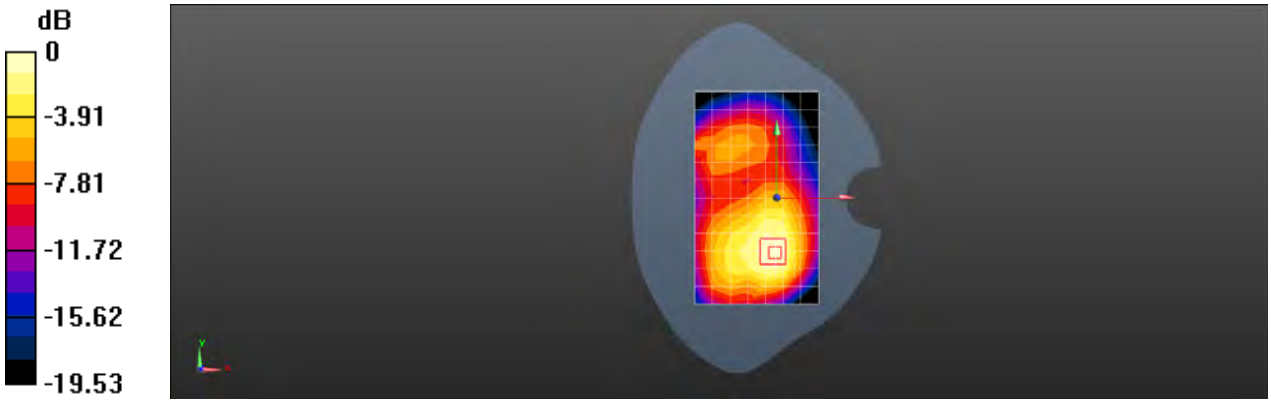
Medium: HSL1750;Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.32 S/m; ε_r = 40.669; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.44, 8.44, 8.44); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.951 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.57 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.741 W/kg; SAR(10 g) = 0.443 W/kg
Maximum value of SAR (measured) = 1.07 W/kg



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

Date: 2019/11/14

Test Laboratory: SGS-SAR Lab

U693CL WCDMA Band V 4182CH Right cheek

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, WCDMA (0); Frequency: 836.4 MHz;Duty Cycle: 1:1

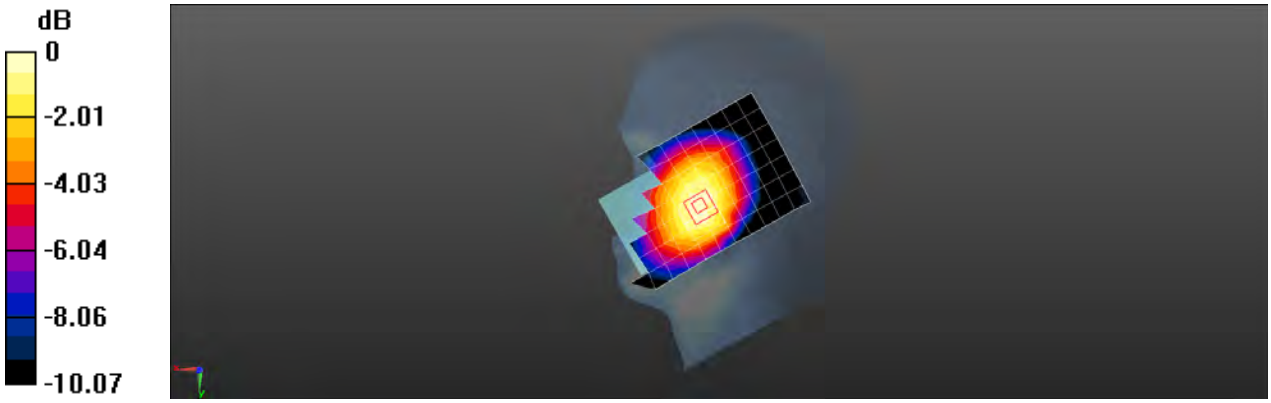
Medium: HSL835;Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.887 S/m; ε_r = 40.79; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.52, 8.52, 8.52); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.473 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.952 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.534 W/kg
SAR(1 g) = 0.400 W/kg; SAR(10 g) = 0.303 W/kg
Maximum value of SAR (measured) = 0.484 W/kg



0 dB = 0.484 W/kg = -3.15 dBW/kg

Date: 2019/11/14

Test Laboratory: SGS-SAR Lab

U693CL WCDMA Band V 4182CH Back side 15mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, WCDMA (0); Frequency: 836.4 MHz;Duty Cycle: 1:1

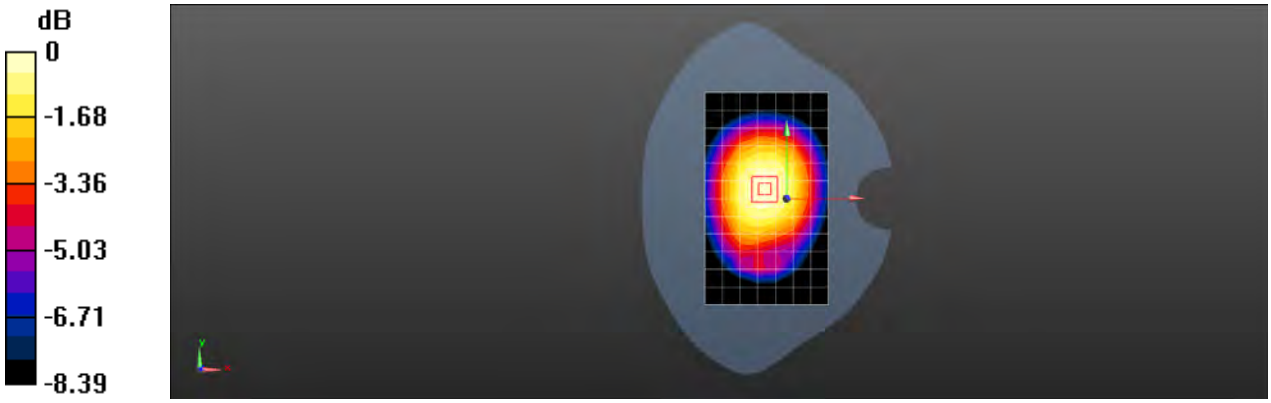
Medium: HSL835;Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.887 S/m; ε_r = 40.79; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.52, 8.52, 8.52); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.504 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.76 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.581 W/kg
SAR(1 g) = 0.421 W/kg; SAR(10 g) = 0.314 W/kg
Maximum value of SAR (measured) = 0.524 W/kg



0 dB = 0.524 W/kg = -2.81 dBW/kg

Date: 2019/11/14

Test Laboratory: SGS-SAR Lab

U693CL WCDMA Band V 4182CH Back side 10mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, WCDMA (0); Frequency: 836.4 MHz;Duty Cycle: 1:1

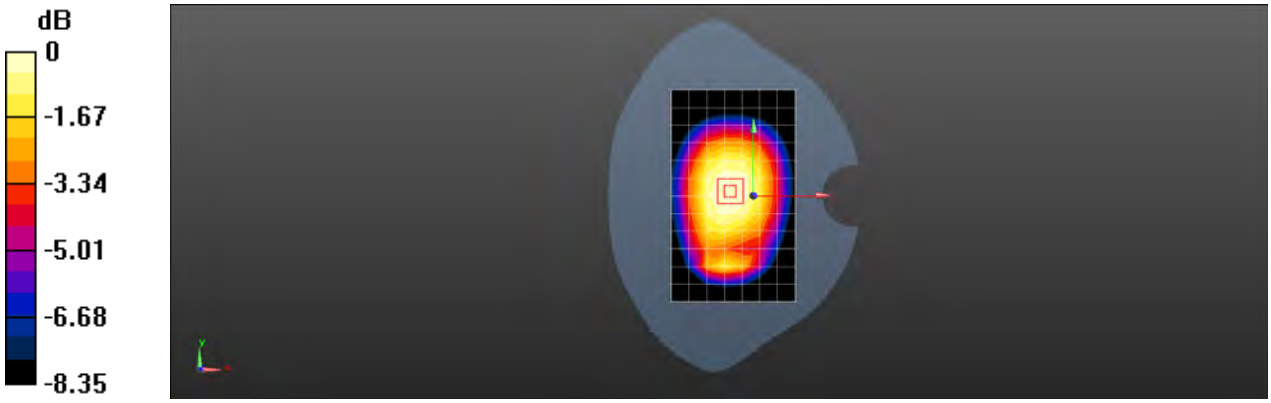
Medium: HSL835;Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.887 S/m; ε_r = 40.79; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.52, 8.52, 8.52); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.577 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.20 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.640 W/kg
SAR(1 g) = 0.471 W/kg; SAR(10 g) = 0.354 W/kg
Maximum value of SAR (measured) = 0.578 W/kg



0 dB = 0.578 W/kg = -2.38 dBW/kg

Date: 2019/11/14

Test Laboratory: SGS-SAR Lab

U693CL CDMA BC0 1xRTT RC3 SO55 384CH Right cheek

DUT: U693CL; Type: Smartphone; Serial: 99001565000187

Communication System: UID 0, CDMA (0); Frequency: 836.52 MHz;Duty Cycle: 1:1

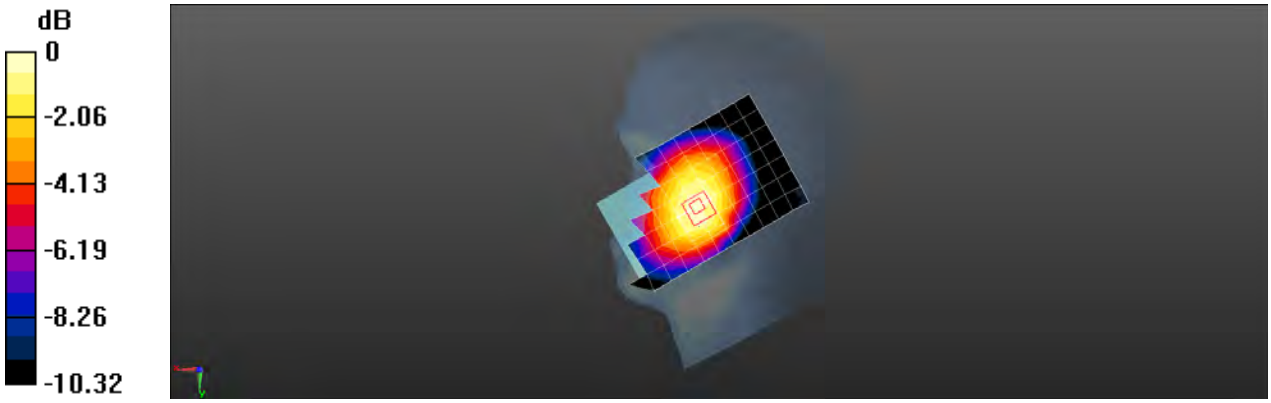
Medium: HSL835;Medium parameters used: f = 837 MHz; σ = 0.887 S/m; ε_r = 40.787; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.52, 8.52, 8.52); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.428 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.620 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.482 W/kg
SAR(1 g) = 0.361 W/kg; SAR(10 g) = 0.270 W/kg
Maximum value of SAR (measured) = 0.436 W/kg



0 dB = 0.436 W/kg = -3.61 dBW/kg

Date: 2019/11/14

Test Laboratory: SGS-SAR Lab

U693CL CDMA BC0 1xRTT RC3 SO32 384CH Back side 15mm

DUT: U693CL; Type: Smartphone; Serial: 99001565000187

Communication System: UID 0, CDMA (0); Frequency: 836.52 MHz;Duty Cycle: 1:1

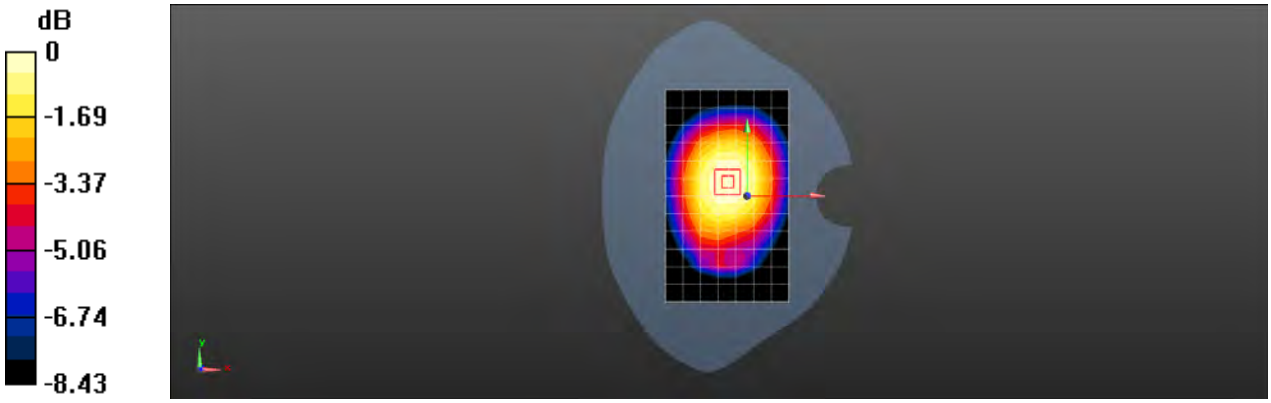
Medium: HSL835;Medium parameters used: f = 837 MHz; σ = 0.887 S/m; ε_r = 40.787; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.52, 8.52, 8.52); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.520 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.75 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.582 W/kg
SAR(1 g) = 0.423 W/kg; SAR(10 g) = 0.316 W/kg
Maximum value of SAR (measured) = 0.522 W/kg



0 dB = 0.522 W/kg = -2.82 dBW/kg

Date: 2019/11/14

Test Laboratory: SGS-SAR Lab

U693CL CDMA BC0 1xRTT RC3 SO32 384CH Back side 10mm

DUT: U693CL; Type: Smartphone; Serial: 99001565000187

Communication System: UID 0, CDMA (0); Frequency: 836.52 MHz;Duty Cycle: 1:1

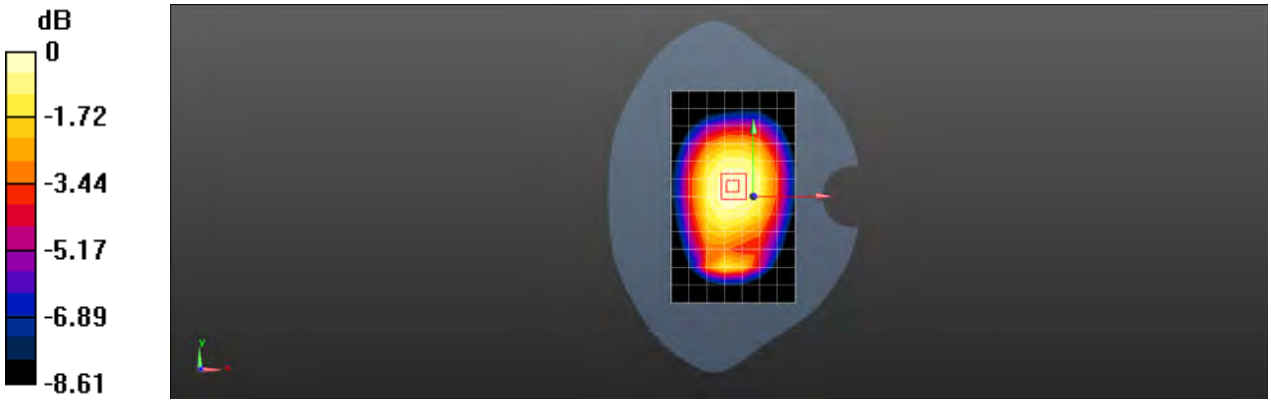
Medium: HSL835;Medium parameters used: f = 837 MHz; σ = 0.887 S/m; ε_r = 40.787; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.52, 8.52, 8.52); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.564 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.95 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.654 W/kg
SAR(1 g) = 0.471 W/kg; SAR(10 g) = 0.353 W/kg
Maximum value of SAR (measured) = 0.586 W/kg



0 dB = 0.586 W/kg = -2.32 dBW/kg

Date: 2019/11/17

Test Laboratory: SGS-SAR Lab

U693CL CDMA BC1 1xRTT RC3 SO55 600CH Left cheek

DUT: U693CL; Type: Smart Phone; Serial: c7903134

Communication System: UID 0, CDMA (0); Frequency: 1880 MHz;Duty Cycle: 1:1

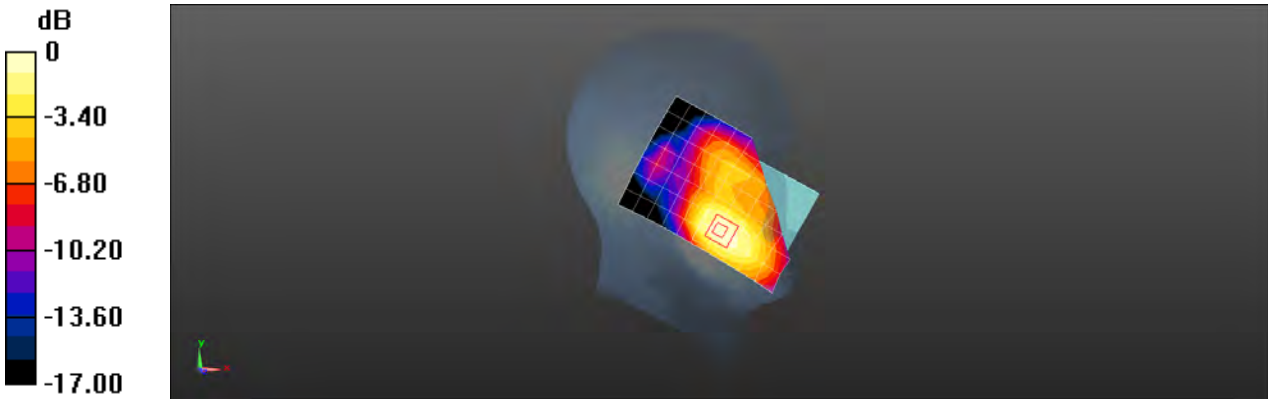
Medium: HSL1900;Medium parameters used: f = 1880 MHz; σ = 1.418 S/m; ε_r = 41.237; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.14, 8.14, 8.14); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.744 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.180 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.926 W/kg
SAR(1 g) = 0.565 W/kg; SAR(10 g) = 0.347 W/kg
Maximum value of SAR (measured) = 0.794 W/kg



0 dB = 0.794 W/kg = -1.00 dBW/kg

Date: 2019/11/17

Test Laboratory: SGS-SAR Lab

U693CL CDMA BC1 1xRTT RC3 SO32 600CH Front side 15mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, CDMA (0); Frequency: 1880 MHz;Duty Cycle: 1:1

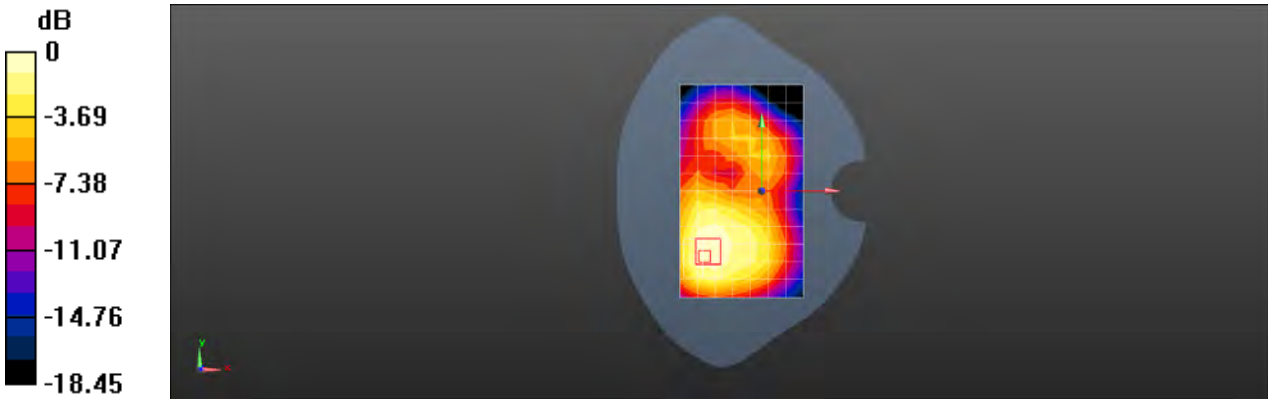
Medium: HSL1900;Medium parameters used: f = 1880 MHz; σ = 1.418 S/m; ε_r = 41.237; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.14, 8.14, 8.14); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.703 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.573 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.903 W/kg
SAR(1 g) = 0.513 W/kg; SAR(10 g) = 0.308 W/kg
Maximum value of SAR (measured) = 0.752 W/kg



0 dB = 0.752 W/kg = -1.24 dBW/kg

Date: 2019/11/17

Test Laboratory: SGS-SAR Lab

U693CL CDMA BC1 1xRTT RC3 SO32 600CH Front side 10mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, CDMA (0); Frequency: 1880 MHz;Duty Cycle: 1:1

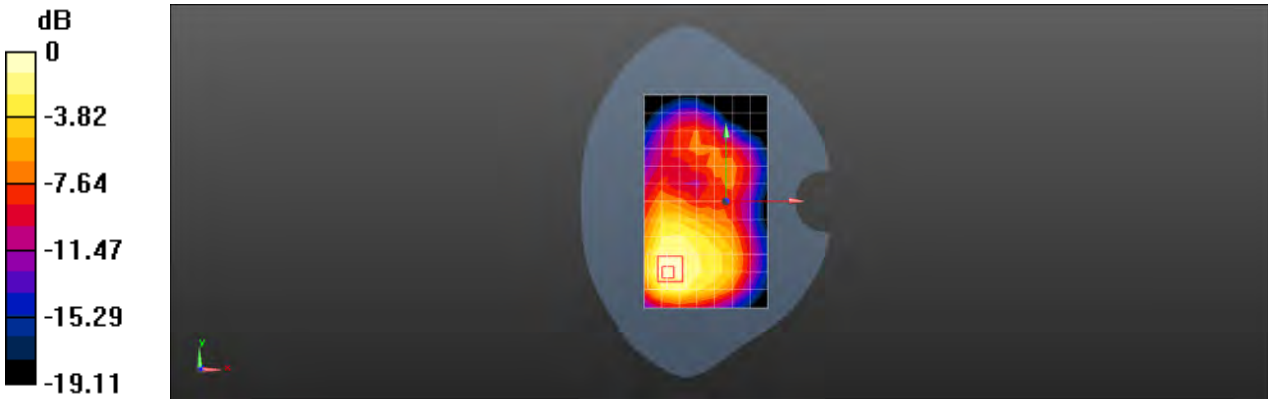
Medium: HSL1900;Medium parameters used: f = 1880 MHz; σ = 1.418 S/m; ε_r = 41.237; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.14, 8.14, 8.14); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
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 = 9.885 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.76 W/kg
SAR(1 g) = 0.934 W/kg; SAR(10 g) = 0.529 W/kg
Maximum value of SAR (measured) = 1.40 W/kg



0 dB = 1.40 W/kg = 1.46 dBW/kg

Date: 2019/11/14

Test Laboratory: SGS-SAR Lab

U693CL CDMA BC10 1xRTT RC3 SO55 580CH Right cheek

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, CDMA (0); Frequency: 820.5 MHz;Duty Cycle: 1:1

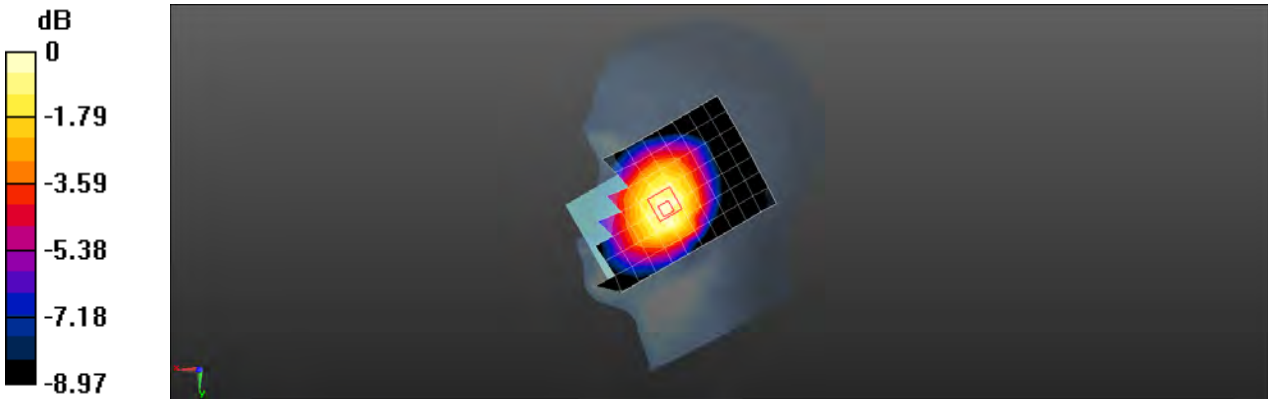
Medium: HSL835;Medium parameters used (interpolated): f = 820.5 MHz; σ = 0.876 S/m; ε_r = 40.893; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.52, 8.52, 8.52); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.462 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.615 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.520 W/kg
SAR(1 g) = 0.390 W/kg; SAR(10 g) = 0.298 W/kg
Maximum value of SAR (measured) = 0.472 W/kg



0 dB = 0.472 W/kg = -3.26 dBW/kg

Date: 2019/11/14

Test Laboratory: SGS-SAR Lab

U693CL CDMA BC10 1xRTT RC3 SO32 580CH Back side 15mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, CDMA (0); Frequency: 820.5 MHz;Duty Cycle: 1:1

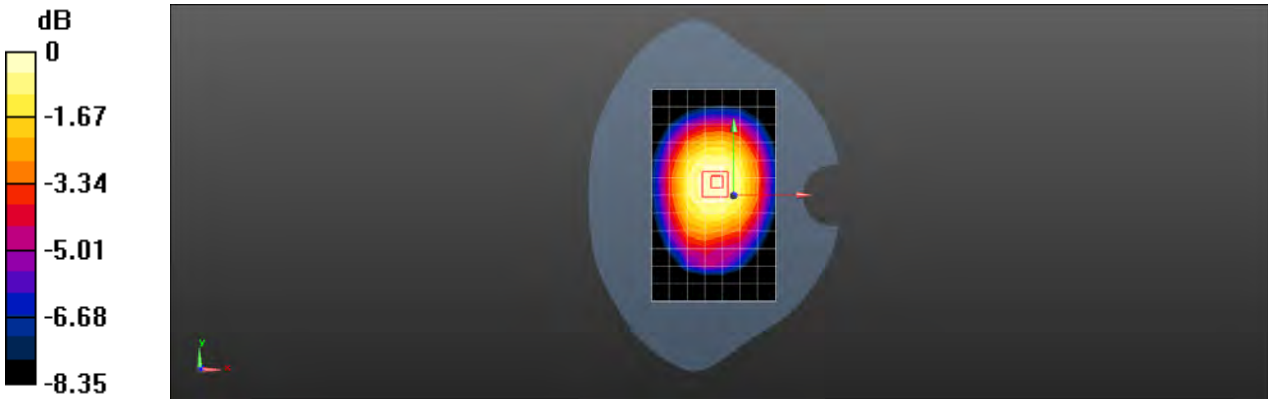
Medium: HSL835;Medium parameters used (interpolated): f = 820.5 MHz; σ = 0.876 S/m; ε_r = 40.893; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.52, 8.52, 8.52); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.564 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.91 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.655 W/kg
SAR(1 g) = 0.469 W/kg; SAR(10 g) = 0.351 W/kg
Maximum value of SAR (measured) = 0.584 W/kg



0 dB = 0.584 W/kg = -2.34 dBW/kg

Date: 2019/11/14

Test Laboratory: SGS-SAR Lab

U693CL CDMA BC10 1xRTT RC3 SO32 580CH Back side 10mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, CDMA (0); Frequency: 820.5 MHz;Duty Cycle: 1:1

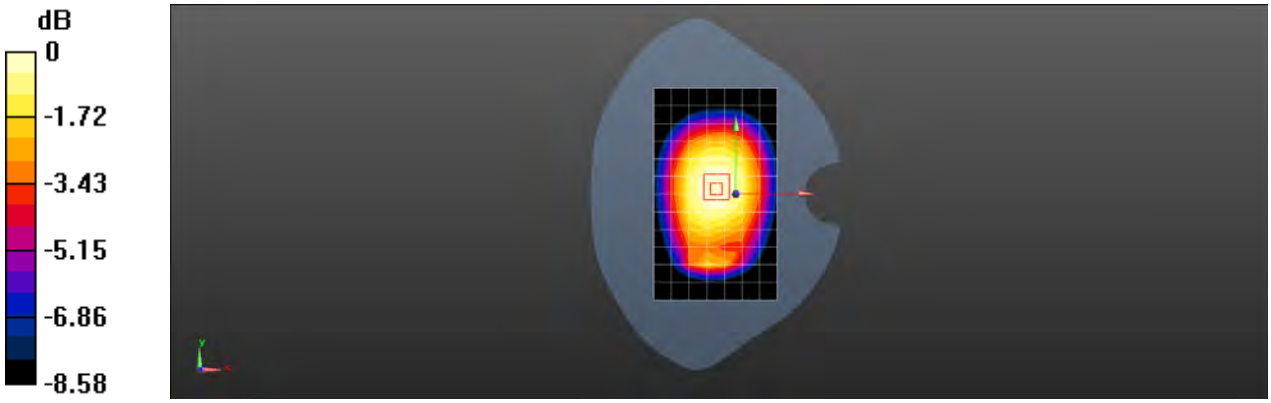
Medium: HSL835;Medium parameters used (interpolated): f = 820.5 MHz; σ = 0.876 S/m; ε_r = 40.893; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.52, 8.52, 8.52); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.619 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.60 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.708 W/kg
SAR(1 g) = 0.518 W/kg; SAR(10 g) = 0.391 W/kg
Maximum value of SAR (measured) = 0.634 W/kg



0 dB = 0.634 W/kg = -1.98 dBW/kg

Date: 2019/11/18

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 2 20M QPSK 1RB0 18900CH Left cheek

DUT: U693CL; Type: Smart Phone; Serial: c7903134

Communication System: UID 0, LTE-FDD BW 20MHz (0); Frequency: 1880 MHz;Duty Cycle: 1:1

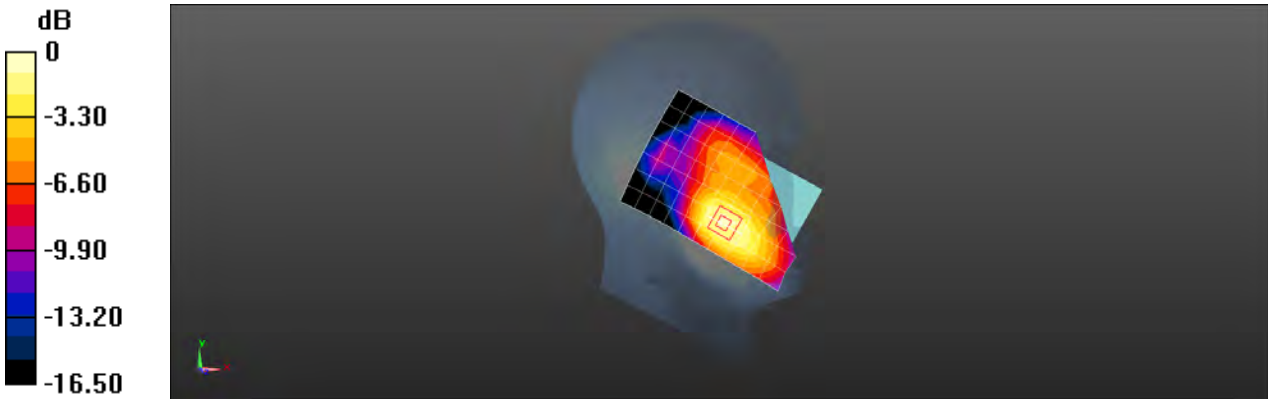
Medium: HSL1900;Medium parameters used: f = 1880 MHz; σ = 1.391 S/m; ε_r = 40.662; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.14, 8.14, 8.14); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.809 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.306 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.666 W/kg; SAR(10 g) = 0.402 W/kg
Maximum value of SAR (measured) = 0.956 W/kg



0 dB = 0.956 W/kg = -0.20 dBW/kg

Date: 2019/11/18

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 2 20M QPSK 1RB0 18900CH Back side 15mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, LTE-FDD BW 20MHz (0); Frequency: 1880 MHz;Duty Cycle: 1:1

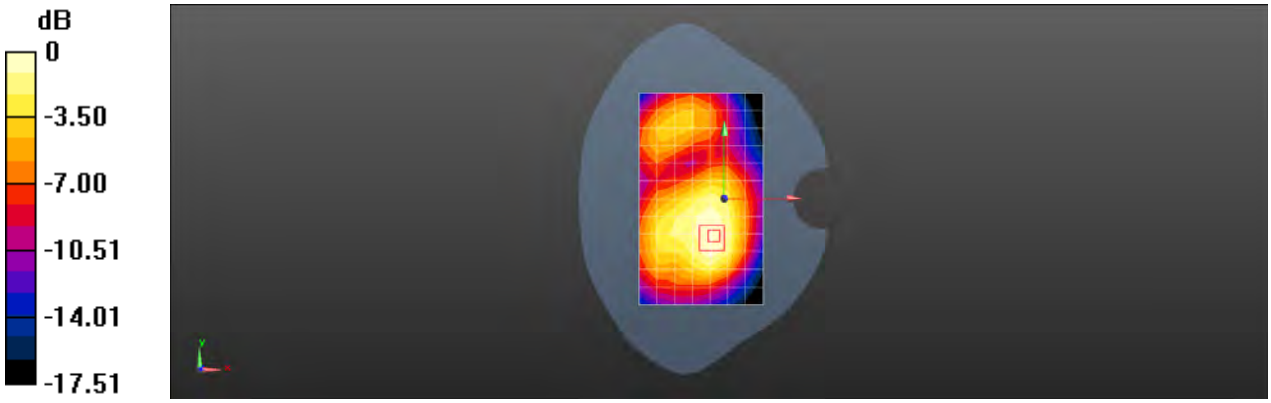
Medium: HSL1900;Medium parameters used: f = 1880 MHz; σ = 1.391 S/m; ε_r = 40.662; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.14, 8.14, 8.14); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.878 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.64 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.618 W/kg; SAR(10 g) = 0.373 W/kg
Maximum value of SAR (measured) = 0.877 W/kg



0 dB = 0.877 W/kg = -0.57 dBW/kg

Date: 2019/11/18

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 2 20M QPSK 1RB0 18700CH Front side-Repeat 10mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

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

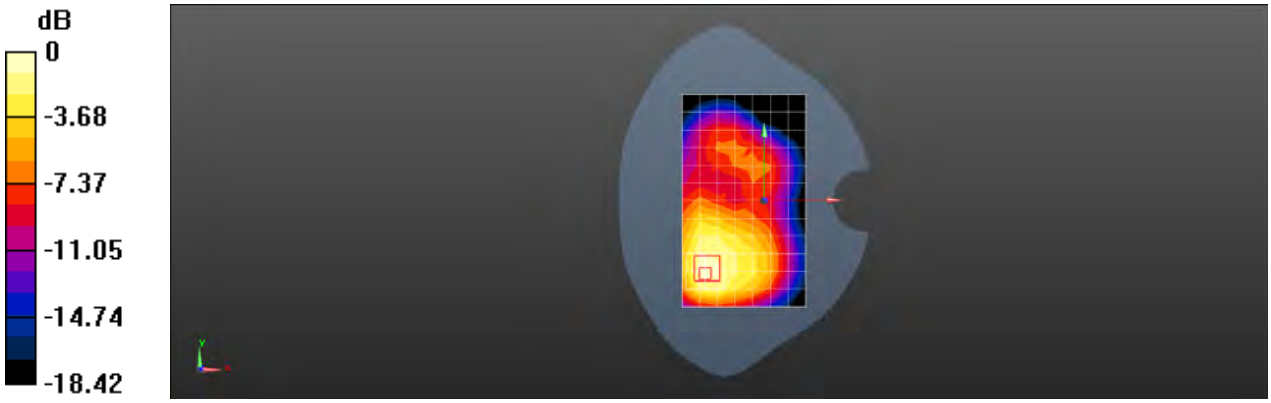
Medium: HSL1900;Medium parameters used: f = 1860 MHz; σ = 1.37 S/m; ε_r = 40.764; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.14, 8.14, 8.14); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.38 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.68 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.95 W/kg
SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.607 W/kg
Maximum value of SAR (measured) = 1.56 W/kg



0 dB = 1.56 W/kg = 1.93 dBW/kg

Date: 2019/11/13

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 12 10M QPSK 1RB25 23130CH Right cheek

DUT: U693CL; Type: Smartphone; Serial: c7903134

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

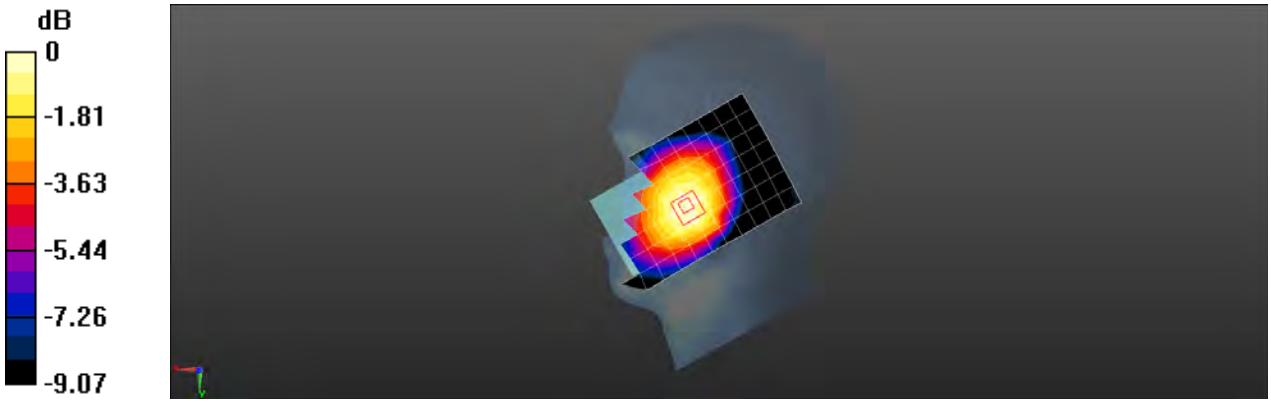
Medium: HSL750;Medium parameters used: f = 711 MHz; σ = 0.859 S/m; ε_r = 42.159; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.84, 8.84, 8.84); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.221 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.900 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.242 W/kg
SAR(1 g) = 0.185 W/kg; SAR(10 g) = 0.143 W/kg
Maximum value of SAR (measured) = 0.219 W/kg



0 dB = 0.219 W/kg = -6.60 dBW/kg

Date: 2019/11/13

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 12 10M QPSK 1RB25 23130CH Back side 15mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

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

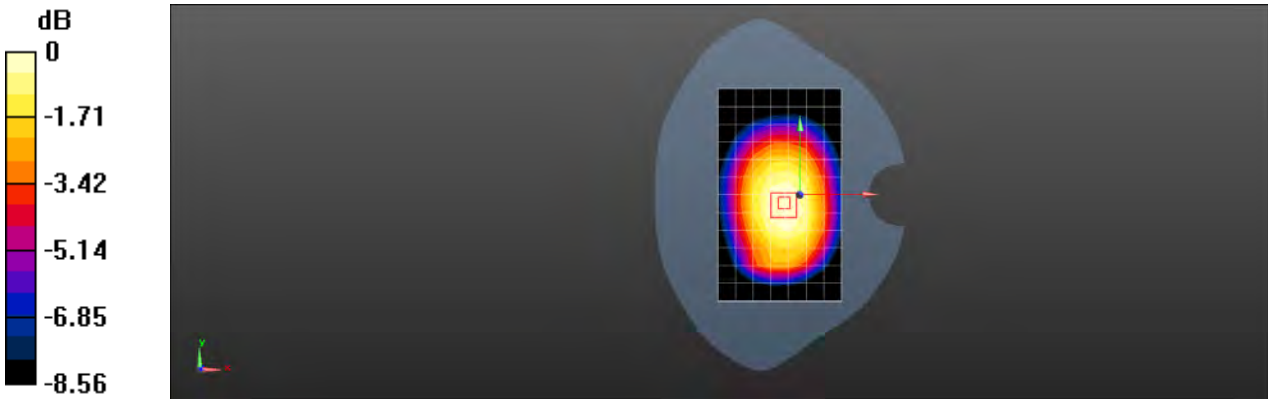
Medium: HSL750;Medium parameters used: f = 711 MHz; σ = 0.859 S/m; ε_r = 42.159; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.84, 8.84, 8.84); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.289 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.26 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.323 W/kg
SAR(1 g) = 0.232 W/kg; SAR(10 g) = 0.176 W/kg
Maximum value of SAR (measured) = 0.287 W/kg



0 dB = 0.287 W/kg = -5.42 dBW/kg

Date: 2019/11/13

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 12 10M QPSK 1RB25 23130CH Back side 10mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

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

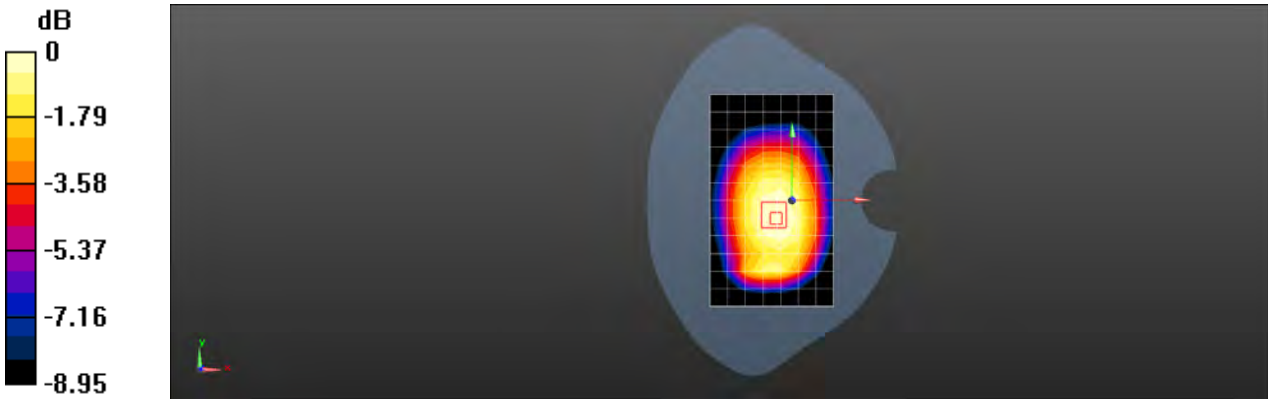
Medium: HSL750;Medium parameters used: f = 711 MHz; σ = 0.859 S/m; ε_r = 42.159; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.84, 8.84, 8.84); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.359 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.98 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.398 W/kg
SAR(1 g) = 0.289 W/kg; SAR(10 g) = 0.220 W/kg
Maximum value of SAR (measured) = 0.355 W/kg



0 dB = 0.355 W/kg = -4.50 dBW/kg

Date: 2019/11/18

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 25 20M QPSK 1RB99 26365CH Left cheek

DUT: U693CL; Type: Smart Phone; Serial: c7903134

Communication System: UID 0, LTE-FDD BW 20MHz (0); Frequency: 1882.5 MHz;Duty Cycle: 1:1

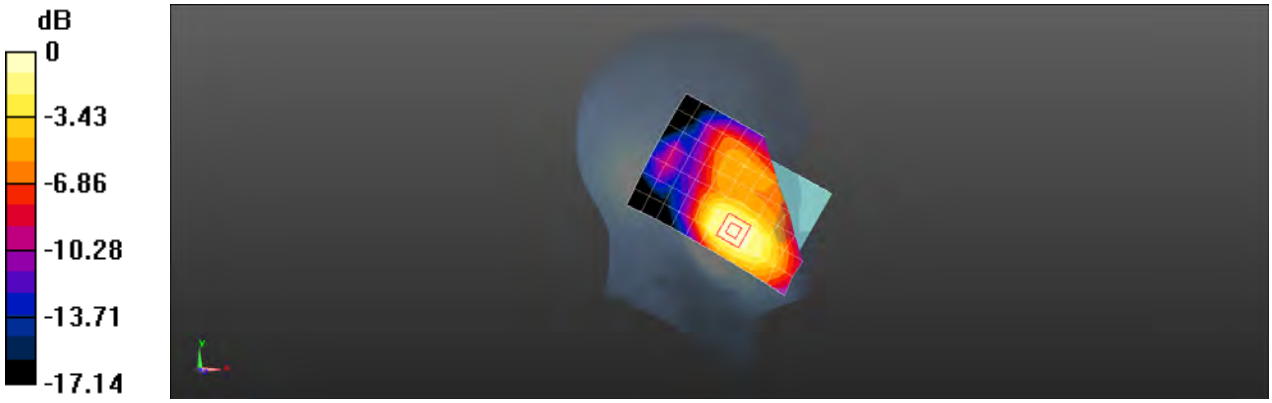
Medium: HSL1900;Medium parameters used (interpolated): f = 1882.5 MHz; σ = 1.384 S/m; ε_r = 40.581; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.14, 8.14, 8.14); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.746 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.422 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.990 W/kg
SAR(1 g) = 0.591 W/kg; SAR(10 g) = 0.357 W/kg
Maximum value of SAR (measured) = 0.844 W/kg



0 dB = 0.844 W/kg = -0.74 dBW/kg

Date: 2019/11/18

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 25 20M QPSK 1RB99 26365CH Front side 15mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, LTE-FDD BW 20MHz (0); Frequency: 1882.5 MHz;Duty Cycle: 1:1

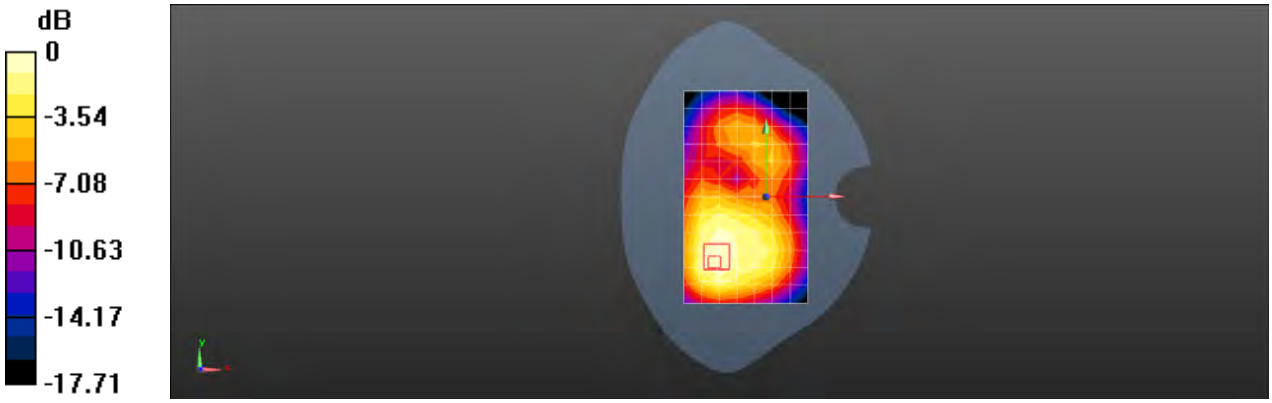
Medium: HSL1900;Medium parameters used (interpolated): f = 1882.5 MHz; σ = 1.384 S/m; ε_r = 40.581; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.14, 8.14, 8.14); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.744 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.294 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.935 W/kg
SAR(1 g) = 0.523 W/kg; SAR(10 g) = 0.311 W/kg
Maximum value of SAR (measured) = 0.756 W/kg



0 dB = 0.756 W/kg = -1.21 dBW/kg

Date: 2019/11/18

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 25 20M QPSK 1RB99 26140CH Front side-repeat 10mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

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

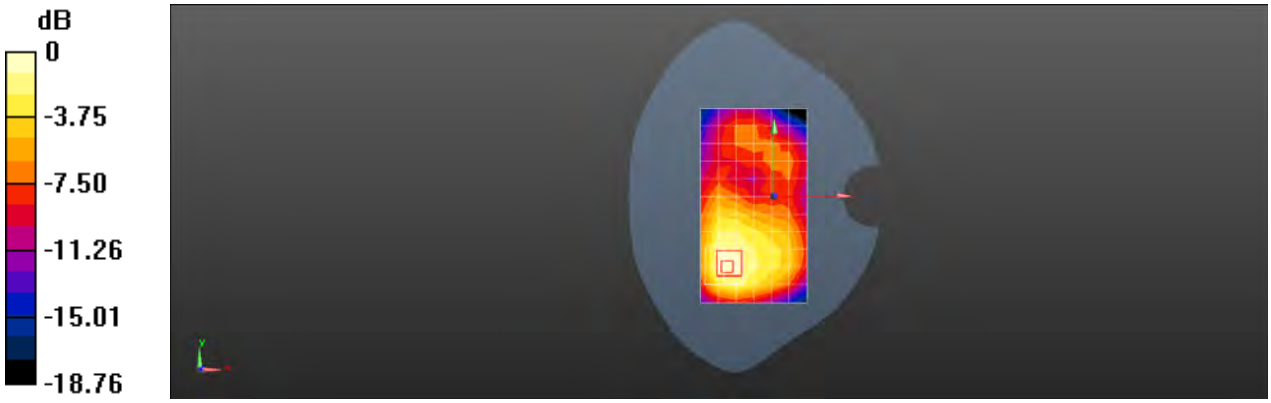
Medium: HSL1900;Medium parameters used: f = 1860 MHz; σ = 1.37 S/m; ε_r = 40.764; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.14, 8.14, 8.14); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.53 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.98 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 2.14 W/kg
SAR(1 g) = 1.17 W/kg; SAR(10 g) = 0.671 W/kg
Maximum value of SAR (measured) = 1.72 W/kg



0 dB = 1.72 W/kg = 2.36 dBW/kg

Date: 2019/11/14

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 26 15M QPSK 1RB0 26865CH Right cheek

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, LTE-FDD BW 15MHz (0); Frequency: 831.5 MHz;Duty Cycle: 1:1

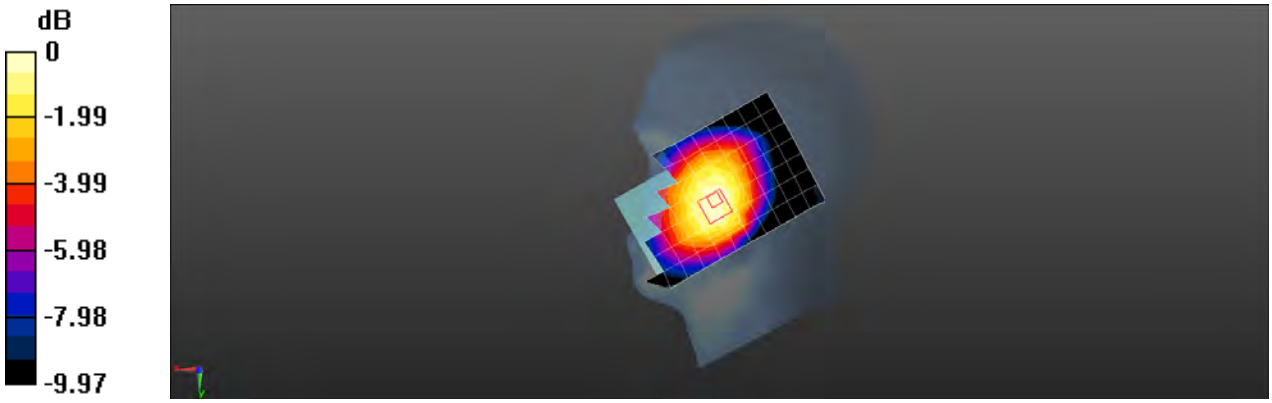
Medium: HSL835;Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.884 S/m; ε_r = 40.822; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.52, 8.52, 8.52); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.435 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.291 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.479 W/kg
SAR(1 g) = 0.365 W/kg; SAR(10 g) = 0.275 W/kg
Maximum value of SAR (measured) = 0.432 W/kg



0 dB = 0.432 W/kg = -3.65 dBW/kg

Date: 2019/11/14

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 26 15M QPSK 1RB0 26865CH Back side 15mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, LTE-FDD BW 15MHz (0); Frequency: 831.5 MHz;Duty Cycle: 1:1

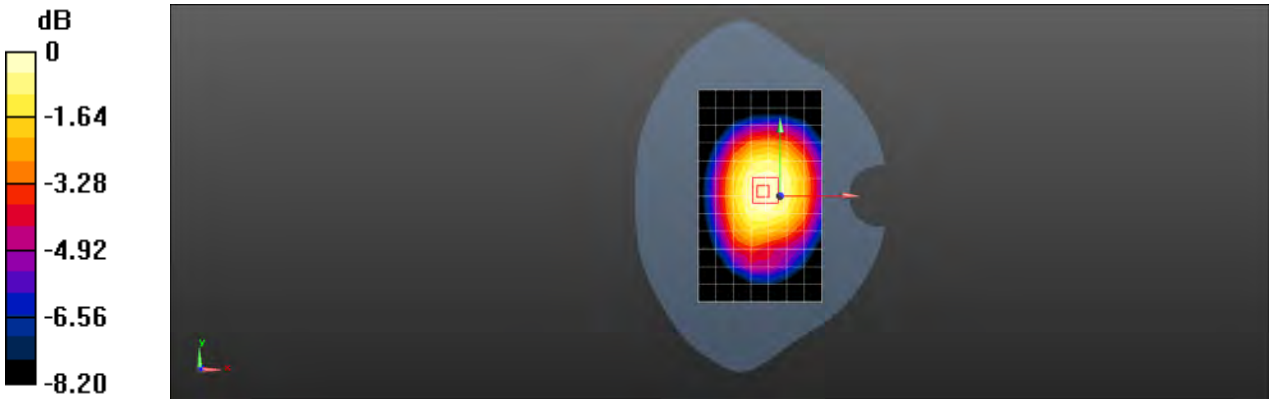
Medium: HSL835;Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.884 S/m; ε_r = 40.822; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.52, 8.52, 8.52); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.631 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.68 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.714 W/kg
SAR(1 g) = 0.516 W/kg; SAR(10 g) = 0.387 W/kg
Maximum value of SAR (measured) = 0.637 W/kg



0 dB = 0.637 W/kg = -1.96 dBW/kg

Date: 2019/11/14

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 26 15M QPSK 1RB0 26865CH Back side 10mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, LTE-FDD BW 15MHz (0); Frequency: 831.5 MHz;Duty Cycle: 1:1

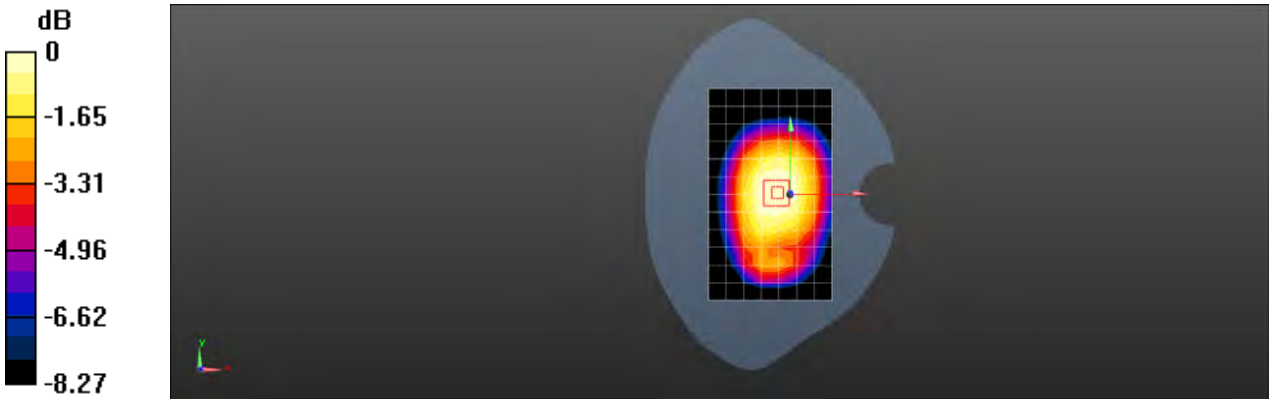
Medium: HSL835;Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.884 S/m; ε_r = 40.822; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.52, 8.52, 8.52); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.726 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.22 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.798 W/kg
SAR(1 g) = 0.583 W/kg; SAR(10 g) = 0.439 W/kg
Maximum value of SAR (measured) = 0.718 W/kg



0 dB = 0.718 W/kg = -1.44 dBW/kg

Date: 2019/11/21

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 41 20M QPSK 1RB50 40620CH Left cheek

DUT: U639CL; Type: Smart Phone; Serial: 99001565000187

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

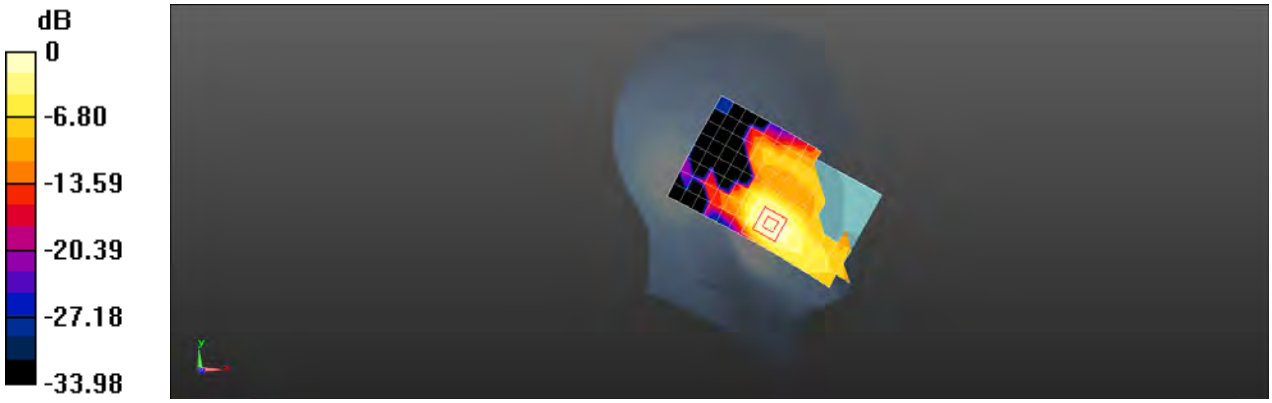
Medium: HSL2600;Medium parameters used: f = 2593 MHz; σ = 1.968 S/m; ε_r = 37.756; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(7.39, 7.39, 7.39); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (9x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.176 W/kg

Configuration/Head/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.253 W/kg
SAR(1 g) = 0.129 W/kg; SAR(10 g) = 0.066 W/kg
Maximum value of SAR (measured) = 0.199 W/kg



0 dB = 0.199 W/kg = -7.01 dBW/kg

Date: 2019/11/21

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 41 20M QPSK 1RB50 40620CH Back side 15mm

DUT: U639CL; Type: Smart Phone; Serial: 99001565000187

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

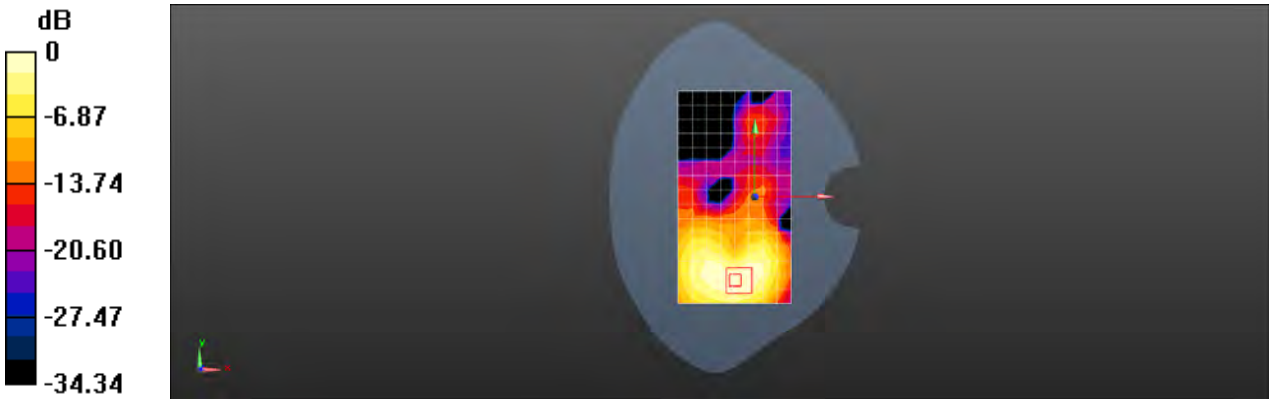
Medium: HSL2600;Medium parameters used: f = 2593 MHz; σ = 1.968 S/m; ε_r = 37.756; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(7.39, 7.39, 7.39); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (9x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.232 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.314 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.315 W/kg
SAR(1 g) = 0.159 W/kg; SAR(10 g) = 0.081 W/kg
Maximum value of SAR (measured) = 0.255 W/kg



0 dB = 0.255 W/kg = -5.93 dBW/kg

Date: 2019/11/21

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 41 20M QPSK 1RB50 40620CH Bottom side 10mm

DUT: U639CL; Type: Smart Phone; Serial: 99001565000187

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

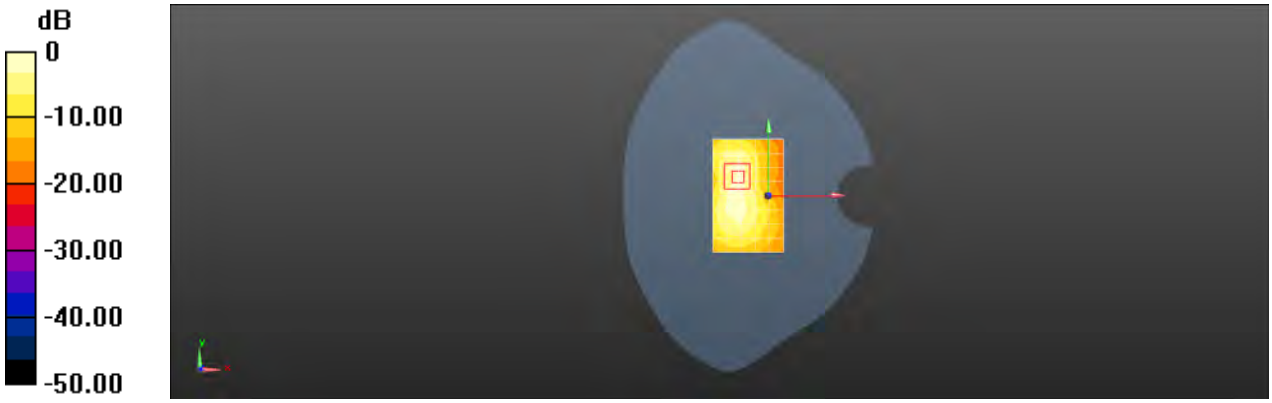
Medium: HSL2600;Medium parameters used: f = 2593 MHz; σ = 1.968 S/m; ε_r = 37.756; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(7.39, 7.39, 7.39); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (6x9x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.608 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.36 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.913 W/kg
SAR(1 g) = 0.416 W/kg; SAR(10 g) = 0.164 W/kg
Maximum value of SAR (measured) = 0.724 W/kg



0 dB = 0.724 W/kg = -1.40 dBW/kg

Date: 2019/11/16

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 66 20M QPSK 1RB50 132072CH Left cheek

DUT: U693CL; Type: Smart Phone; Serial: c7903134

Communication System: UID 0, LTE-FDD BW 20MHz (0); Frequency: 1720 MHz;Duty Cycle: 1:1

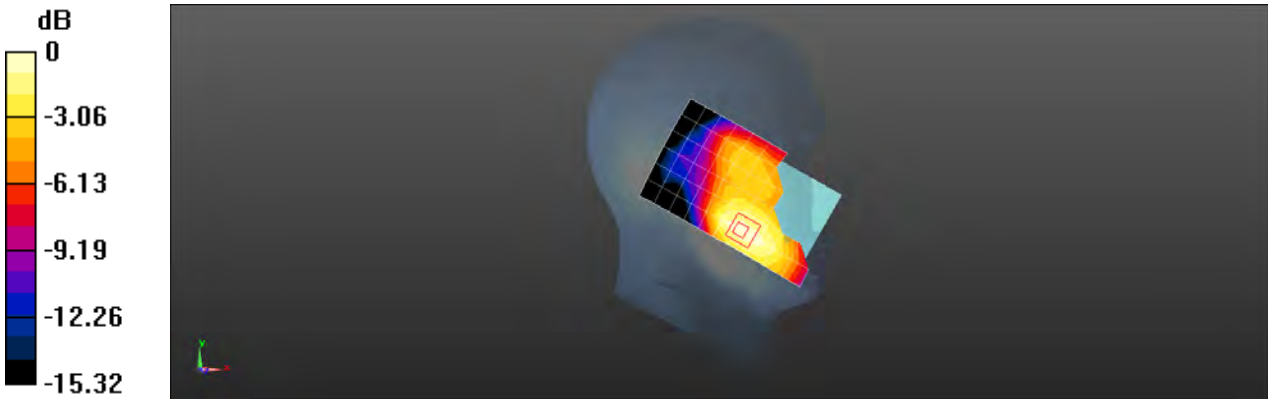
Medium: HSL1750;Medium parameters used: f = 1720 MHz; σ = 1.31 S/m; ε_r = 40.774; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.44, 8.44, 8.44); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.593 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.905 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.675 W/kg
SAR(1 g) = 0.436 W/kg; SAR(10 g) = 0.279 W/kg
Maximum value of SAR (measured) = 0.589 W/kg



0 dB = 0.589 W/kg = -2.30 dBW/kg

Date: 2019/11/16

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 66 20M QPSK 1RB50 132072CH Front side 15mm

DUT: U693CL; Type: Smart Phone; Serial: c7903134

Communication System: UID 0, LTE-FDD BW 20MHz (0); Frequency: 1720 MHz;Duty Cycle: 1:1

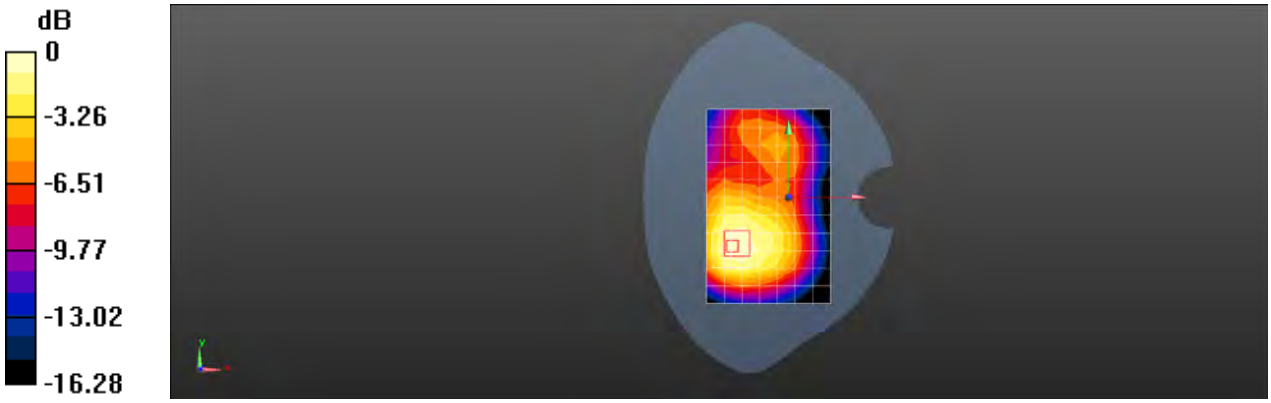
Medium: HSL1750;Medium parameters used: f = 1720 MHz; σ = 1.31 S/m; ε_r = 40.774; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.44, 8.44, 8.44); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.742 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.51 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.913 W/kg
SAR(1 g) = 0.550 W/kg; SAR(10 g) = 0.342 W/kg
Maximum value of SAR (measured) = 0.782 W/kg



0 dB = 0.782 W/kg = -1.07 dBW/kg

Date: 2019/11/16

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 66 20M QPSK 1RB0 132322CH Front side 10mm

DUT: U693CL; Type: Smart Phone; Serial: c7903134

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

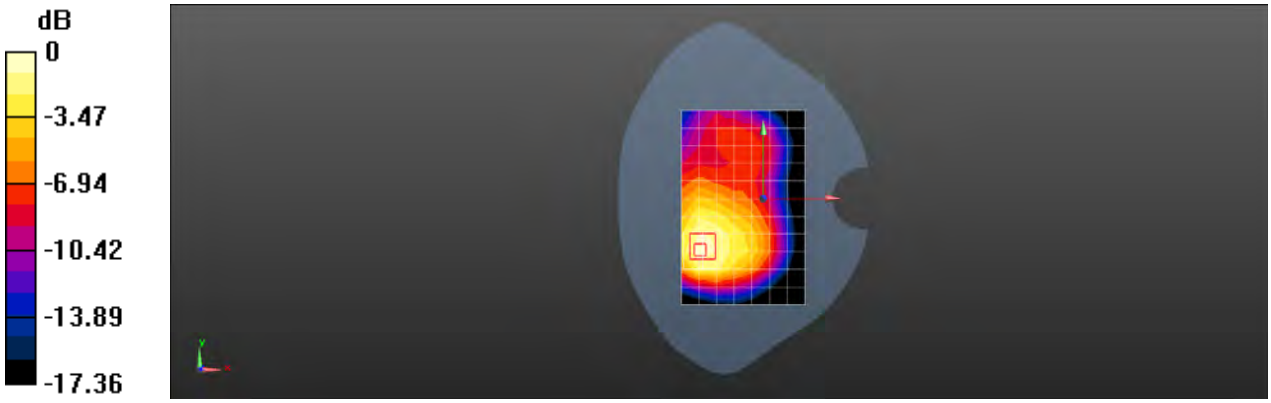
Medium: HSL1750;Medium parameters used: f = 1745 MHz; σ = 1.342 S/m; ε_r = 40.78; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(8.44, 8.44, 8.44); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.08 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.20 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 1.34 W/kg
SAR(1 g) = 0.784 W/kg; SAR(10 g) = 0.466 W/kg
Maximum value of SAR (measured) = 1.12 W/kg



0 dB = 1.12 W/kg = 0.49 dBW/kg

Date: 2019/11/13

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 71 20M QPSK 1RB50 133222CH Right cheek

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, LTE-FDD BW 20MHz (0); Frequency: 673 MHz;Duty Cycle: 1:1

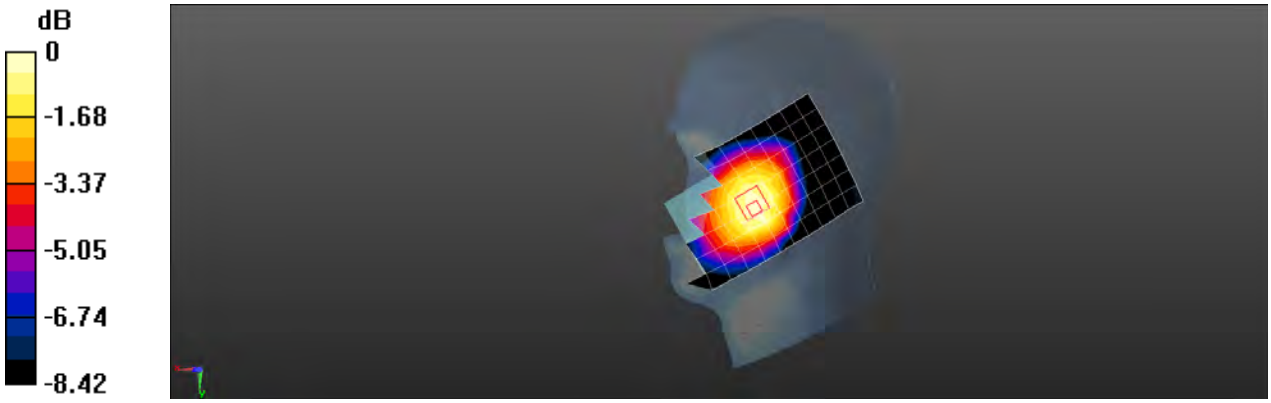
Medium: HSL750;Medium parameters used (extrapolated): f = 673 MHz; σ = 0.822 S/m; ε_r = 42.808; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.84, 8.84, 8.84); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.165 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.348 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.188 W/kg
SAR(1 g) = 0.141 W/kg; SAR(10 g) = 0.111 W/kg
Maximum value of SAR (measured) = 0.168 W/kg



0 dB = 0.168 W/kg = -7.75 dBW/kg

Date: 2019/11/13

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 71 20M QPSK 1RB50 133222CH Back side 15mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, LTE-FDD BW 20MHz (0); Frequency: 673 MHz;Duty Cycle: 1:1

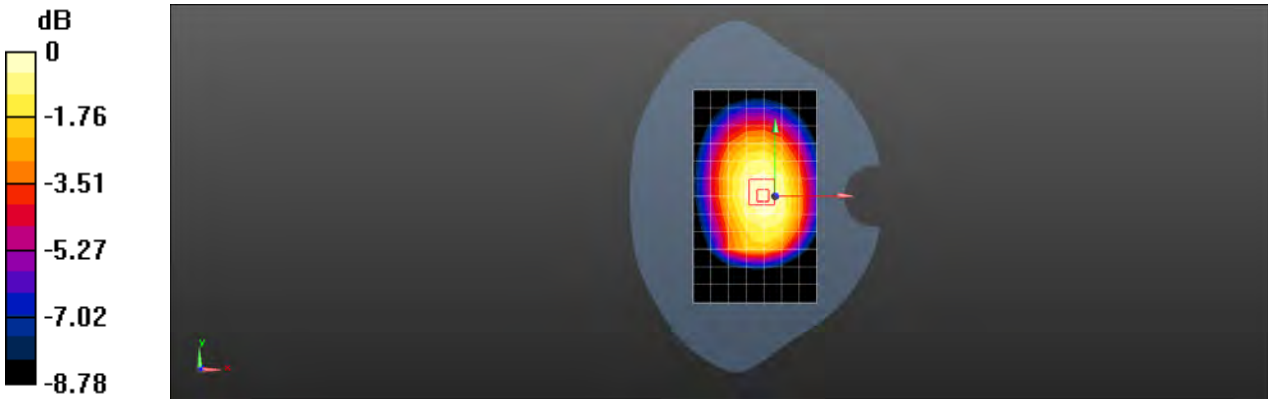
Medium: HSL750;Medium parameters used (extrapolated): f = 673 MHz; σ = 0.822 S/m; ε_r = 42.808; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.84, 8.84, 8.84); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.251 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.60 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.282 W/kg
SAR(1 g) = 0.201 W/kg; SAR(10 g) = 0.152 W/kg



0 dB = 0.251 W/kg = -6.00 dBW/kg

Date: 2019/11/13

Test Laboratory: SGS-SAR Lab

U693CL LTE Band 71 20M QPSK 1RB50 133222CH Back side 10mm

DUT: U693CL; Type: Smartphone; Serial: c7903134

Communication System: UID 0, LTE-FDD BW 20MHz (0); Frequency: 673 MHz;Duty Cycle: 1:1

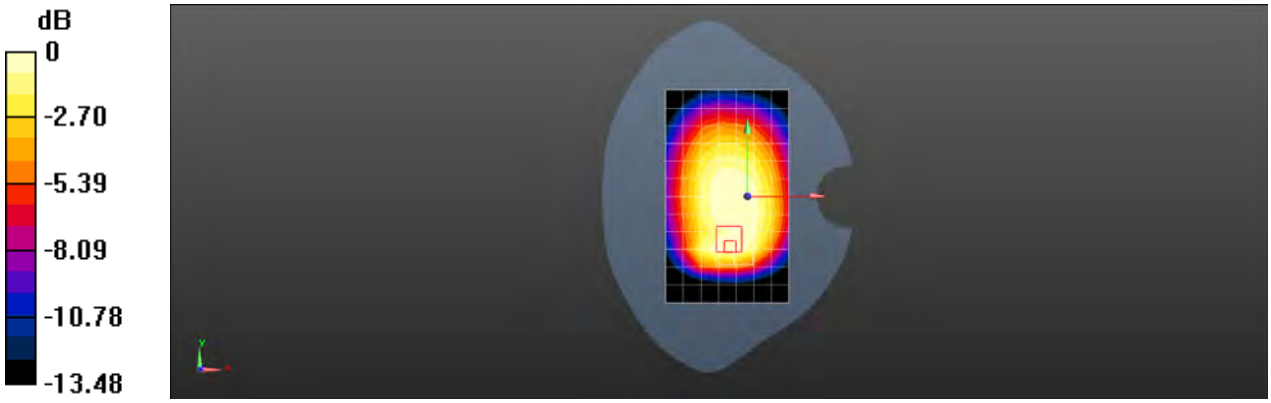
Medium: HSL750;Medium parameters used (extrapolated): f = 673 MHz; σ = 0.822 S/m; ε_r = 42.808; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3789; ConvF(8.84, 8.84, 8.84); Calibrated: 2019/5/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2019/9/24
- Phantom: SAM6; Type: SAM; Serial: 1824
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.304 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.65 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.365 W/kg
SAR(1 g) = 0.207 W/kg; SAR(10 g) = 0.145 W/kg
Maximum value of SAR (measured) = 0.290 W/kg



0 dB = 0.290 W/kg = -5.38 dBW/kg

Date: 2019/11/22

Test Laboratory: SGS-SAR Lab

U693CL Wifi2.4G 802.11b 1CH Left cheek

DUT: U693CL; Type: Smart Phone; Serial: 351736110028465

Communication System: UID 0, WI-FI(2.4GHz) (0); Frequency: 2412 MHz;Duty Cycle: 1:1

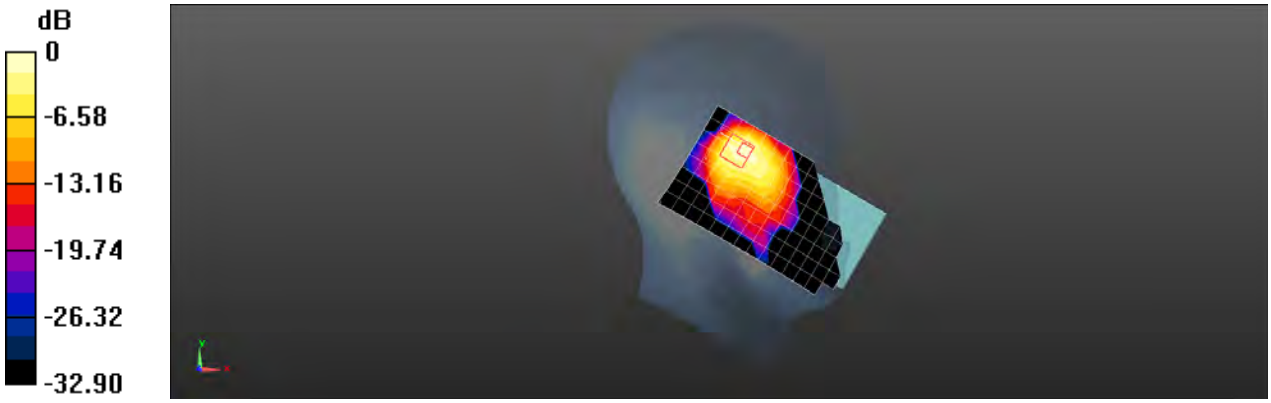
Medium: HSL2450;Medium parameters used: f = 2412 MHz; σ = 1.762 S/m; ε_r = 38.446; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(7.58, 7.58, 7.58); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (9x15x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.396 W/kg

Configuration/Head/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.393 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.557 W/kg
SAR(1 g) = 0.274 W/kg; SAR(10 g) = 0.125 W/kg
Maximum value of SAR (measured) = 0.436 W/kg



0 dB = 0.436 W/kg = -3.61 dBW/kg

Date: 2019/11/22

Test Laboratory: SGS-SAR Lab

U693CL Wifi2.4G 802.11b 1CH Front side 15mm

DUT: U693CL; Type: Smart Phone; Serial: 351736110028465

Communication System: UID 0, WI-FI(2.4GHz) (0); Frequency: 2412 MHz;Duty Cycle: 1:1

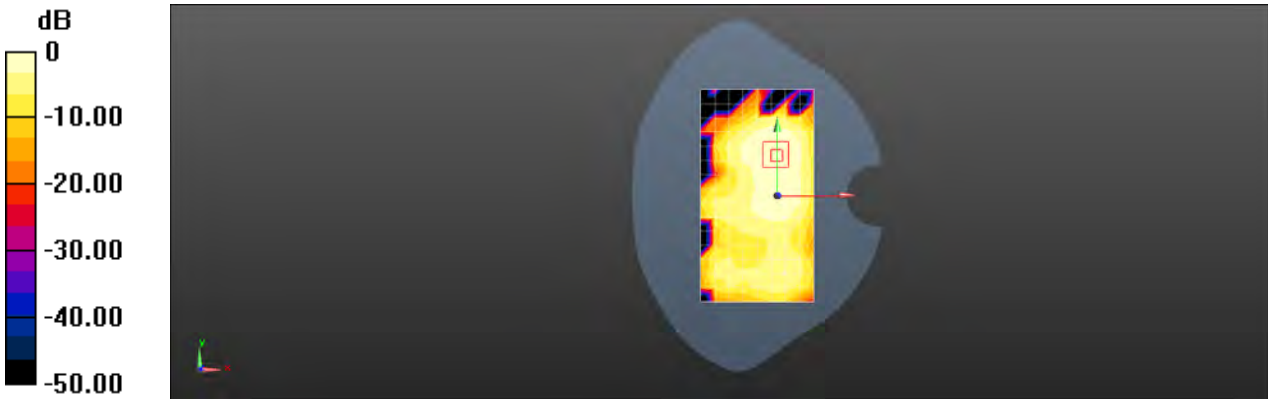
Medium: HSL2450;Medium parameters used: f = 2412 MHz; σ = 1.762 S/m; ε_r = 38.446; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(7.58, 7.58, 7.58); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (9x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.0400 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.573 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.0570 W/kg
SAR(1 g) = 0.028 W/kg; SAR(10 g) = 0.013 W/kg
Maximum value of SAR (measured) = 0.0445 W/kg



0 dB = 0.0445 W/kg = -13.52 dBW/kg

Date: 2019/11/22

Test Laboratory: SGS-SAR Lab

U693CL Wifi2.4G 802.11b 1CH Back side 10mm

DUT: U693CL; Type: Smart Phone; Serial: 351736110028465

Communication System: UID 0, WI-FI(2.4GHz) (0); Frequency: 2412 MHz;Duty Cycle: 1:1

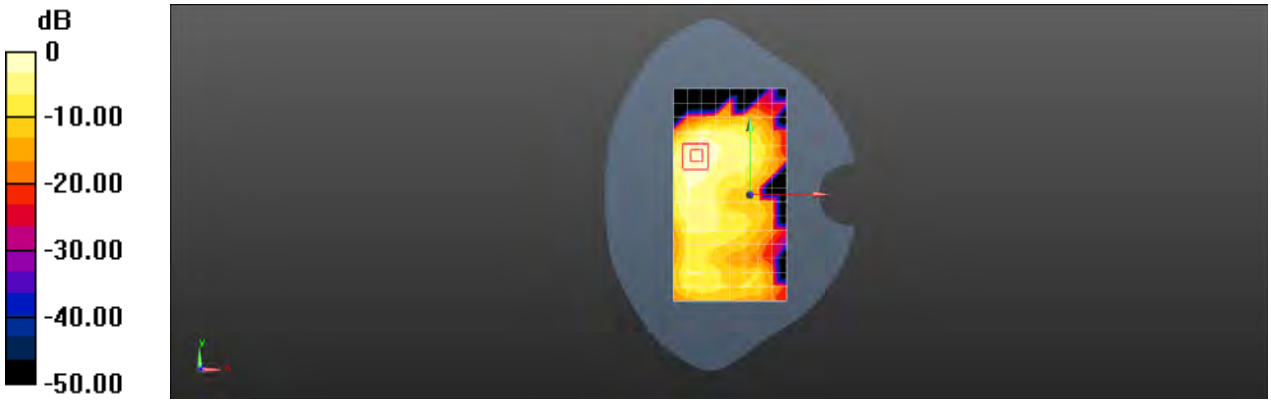
Medium: HSL2450;Medium parameters used: f = 2412 MHz; σ = 1.762 S/m; ε_r = 38.446; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(7.58, 7.58, 7.58); Calibrated: 2019/2/25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1267; Calibrated: 2018/12/3
- Phantom: SAM5; Type: SAM; Serial: 1481
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (9x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.103 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.219 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 0.145 W/kg
SAR(1 g) = 0.067 W/kg; SAR(10 g) = 0.033 W/kg
Maximum value of SAR (measured) = 0.111 W/kg



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

Appendix C

Calibration certificate

1. Dipole
D750V3-SN 1160(2019-05-22)
D835V2-SN 4d105(2016-12-08)
D1750V2-SN 1149(2019-05-21)
D1900V2-SN 5d028(2016-12-07)
D2450V2-SN 733(2016-12-07)
D2600V2-SN 1125(2019-05-20)
2. DAE
DAE4-SN 1267(2018-12-03)
DAE4-SN 1374(2019-09-24)
3. Probe
EX3DV4-SN 3789(2019-05-25)
EX3DV4-SN 3962(2019-02-25)

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CALIBRATION
CNAS L0570

Client SGS Certificate No: Z19-60152

CALIBRATION CERTIFICATE

Object D750V3 - SN: 1160

Calibration Procedure(s) FF-Z11-003-01
Calibration Procedures for dipole validation kits

Calibration date: May 22, 2019

This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements(SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature(22±3)℃ and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	106277	20-Aug-18 (CTTL, No.J18X06862)	Aug-19
Power sensor NRP8S	104291	20-Aug-18 (CTTL, No.J18X06862)	Aug-19
Reference Probe EX3DV4	SN 3617	31-Jan-19(SPEAG,No.EX3-3617_Jan19)	Jan-20
DAE4	SN 1331	06-Feb-19(SPEAG,No.DAE4-1331_Feb19)	Feb-20
Secondary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Signal Generator E4438C	MY49071430	23-Jan-19 (CTTL, No.J19X00336)	Jan-20
NetworkAnalyzer E5071C	MY46116073	24-Jan-19 (CTTL, No.J19X00547)	Jan-20

	Name	Function	Signature
Calibrated by:	Zhao Jing	SAR Test Engineer	
Reviewed by:	Lin Hao	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: May 25, 2019

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

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Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORMx,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013

b) IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016

c) IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010

d) KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of Measurement multiplied by the coverage factor k=2, which for a normal distribution Corresponds to a coverage probability of approximately 95%.

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Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	52.10.2.1495
Extrapolation	Advanced Extrapolation	
Phantom	Triple Flat Phantom 5.1C	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	42.3 ± 6 %	0.91 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.12 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**8.39 W/kg ± 18.8 % (k=2)**
SAR averaged over 10 cm^3 (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	1.42 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.63 W/kg ± 18.7 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	55.5	0.96 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	56.9 ± 6 %	0.95 mho/m ± 6 %
Body TSL temperature change during test	<1.0 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.12 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**8.62 W/kg ± 18.8 % (k=2)**
SAR averaged over 10 cm^3 (10 g) of Body TSL	Condition	
SAR measured	250 mW input power	1.39 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**5.63 W/kg ±18.7 % (k=2)**

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Appendix (Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.8Ω- 3.06jΩ
Return Loss	- 29.1dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.1Ω- 3.83jΩ
Return Loss	- 27.2dB

General Antenna Parameters and Design

Electrical Delay (one direction)	0.897 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

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DASY5 Validation Report for Head TSL Date: 05.22.2019

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1160

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

Medium parameters used: f = 750 MHz; σ = 0.905 S/m; ε_r = 42.28; ρ = 1000 kg/m3

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3617; ConvF(10.03, 10.03, 10.03) @ 750 MHz; Calibrated: 1/31/2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1331; Calibrated: 2/6/2019
- Phantom: MFP_V5.1C ; Type: QD 000 P51CA; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

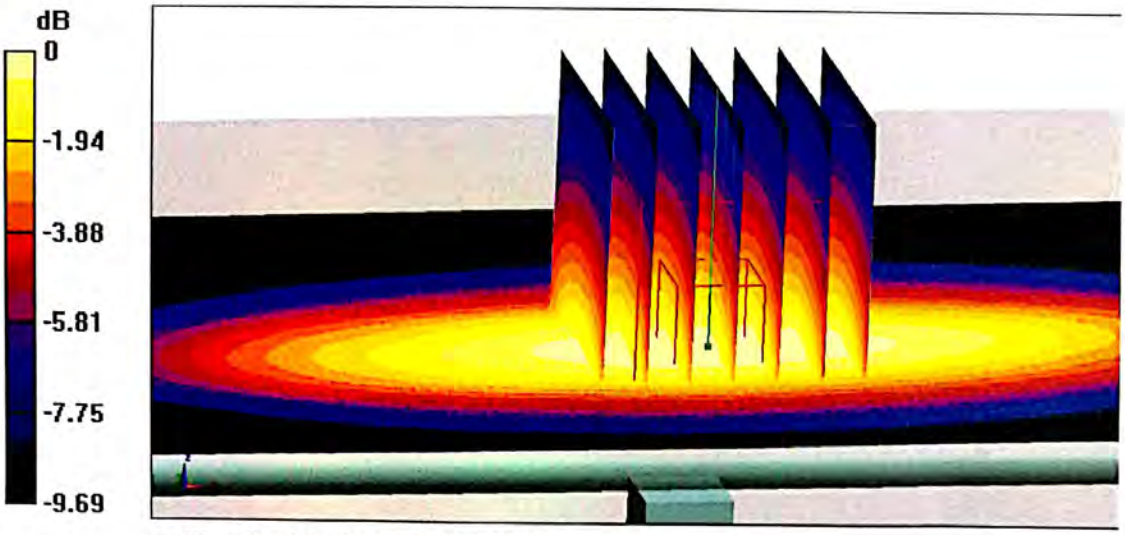
Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 51.91 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 3.06 W/kg

SAR(1 g) = 2.12 W/kg; SAR(10 g) = 1.42 W/kg

Maximum value of SAR (measured) = 2.76 W/kg



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

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Impedance Measurement Plot for Head TSL