FCC SAR Test Report

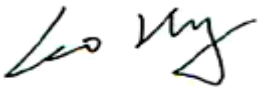
FCC ID: 2ABZ2-A2005

Project No.	:	1506C242
Equipment	:	Mobile Phone
Model Name	:	ONE A2005
Applicant	:	OnePlus Technology(Shenzhen) Co., Ltd.
Address	:	18/F, Tower C, Tai Ran Building, No.8 Tai Ran Road, Shenzhen, China

Date of Receipt	:	Jun. 25, 2015
Date of Test	:	Jun. 25, 2015~ Jul. 07, 2015; Jul. 25, 2015
Issued Date	:	Jul. 27, 2015
Tested by	:	BTL Inc.

Testing Engineer : 

(Super Jiang)

Technical Manager : 

(Leo Hung)

Authorized Signatory : 

(Steven Lu)

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Testing Laboratory 2640

Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**), or National Institute of Standards and Technology (**NIST**) .

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

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BTL's laboratory quality assurance procedures are in compliance with the **ISO Guide17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCC-SAR-1506C242	Original Issue.	Jul. 27, 2015

1. GENERAL SUMMARY

Equipment	Mobile Phone
Model Name	ONE A2005
Brand Name	ONEPLUS
Model Difference	N/A
Manufacturer	OnePlus Technology(Shenzhen) Co., Ltd.
Address	18/F, Tower C, Tai Ran Building, No.8 Tai Ran Road, Shenzhen, China
Factory	OnePlus Technology(Shenzhen) Co., Ltd.
Address	18/F, Tower C, Tai Ran Building, No.8 Tai Ran Road, Shenzhen, China
Standard(s)	**ANSI Std C95.1-1992**Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.(IEEE Std C95.1-1991) **IEEE Std 1528-2003**Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques **IEEE Std 1528a-2005**IEEE Recommended Practice for Determining the Peak Spatial-AvSpecific Absorption Rate (SAR) in the Human Head from WirelessCommunications Devices: Measurement Techniques Amendment 1: CAD File for Human Head Model (SAM Phantom) **KDB941225 D01** 3G SAR Procedures v03 **KDB941225 D05** SAR for LTE Devices v02r03 **KDB941225 D06** Hotspot Mode V02 **KDB447498 D01** General RF Exposure Guidance v05r02 **KDB648474 D04** SAR Handsets Multi Xmiter and Ant v01r02 **KDB248227 D01** 802.11 Wi-Fi SAR v02r01 **KDB865664 D01** SAR measurement 100 MHz to 6 GHz v01r03 **KDB865664 D02** SAR Reporting v01r01 **KDB690783 D01** SAR Listings on Grants v01r03 **KDB648474 D04** Handset SAR v01r02 **KDB941225 D04** SAR for GSM E GPRS Dual Transfer Mode v01 **KDB941225 D05** SAR for LTE Devices v02r03 **KDB447498 D01** General RF exposure Guidance v05r02

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCC-SAR-1506C242) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. RF EMISSIONS MEASUREMENT

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **SAR room** at the location of No.3,Jinshagang 1st Road, ShiXia, Dalang Town,Dong Guan, China.523792

2.2 MEASUREMENT UNCERTAINTY

Uncertainty Component	Uncertainty Value	Probability Distribution	Divisor	C_i (1g)	Standard Uncertainty ±1%(1-g)	V_i or V_{eff}
Measurement System						
Probe Calibration (*k*=1)	5.9	Normal	1	1	5.9	∞
Axial Isotropy	4.7	Rectangular	$\sqrt{3}$	$\sqrt{0.5}$	1.9	∞
Hemispherical Iso ropy	9.6	Rectangular	$\sqrt{3}$	$\sqrt{0.5}$	3.9	∞
Boundary Effect	1.0	Rectangular	$\sqrt{3}$	1	0.6	∞
Linearity	4 7	Rectangular	$\sqrt{3}$	1	2.7	∞
System Detection Limit	1.0	Rectangular	$\sqrt{3}$	1	0.6	∞
Readout Electronics	0.3	Normal	1	1	0.3	∞
Response Time	0.8	Rectangular	$\sqrt{3}$	1	0.5	∞
Integration Time	2.6	Rectangular	$\sqrt{3}$	1	1.5	∞
RF Ambient Conditions-Noise	3.0	Rectangular	$\sqrt{3}$	1	1.7	∞
RF Ambient Reflections	3.0	Rectangular	$\sqrt{3}$	1	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	Rectangular	$\sqrt{3}$	1	0.2	∞
Probe Positioning with respect to Phantom Shell	2.9	Rectangular	$\sqrt{3}$	1	1.7	∞
Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	1.0	Rectangular	$\sqrt{3}$	1	0.6	∞
Test Sample Related						
Test sample Positioning	2.9	Normal	1	1	2.9	145
Device Holder Uncertainty	3.6	Normal	1	1	3.6	5
Output Power Variation - SAR drift measurement	5.0	Rectangular	$\sqrt{3}$	1	2.9	∞
Phantom and Setup						
Phantom Uncertainty (shape and thickness tolerances)	4.0	Rectangular	$\sqrt{3}$	1	2.3	∞
Liquid Conductivity - deviation from target value	5.0	Rectangular	$\sqrt{3}$	0.64	1.2	∞
Liquid Conductivity - measurement uncertainty	2.5	Normal	1	0.64	1.1	∞
Liquid Permittivity - deviation from target values	5.0	Rectangular	$\sqrt{3}$	0.6	1.4	∞
Liquid Permittivity - measurement uncertainty	2.5	Normal	1	0.6	1.2	∞
Combined standard uncertainty		RSS	-	-	10.7	387
Expanded uncertainty		*k*=2	-	-	21.4	-

2.3 SYSTEM CHECK UNCERTAINTY

Uncertainty Component	Uncertainty Value	Probability Distribution	Divisor	C_i (1g)	Standard Uncertainty ±1%(1-g)	V_i or V_{eff}
Measurement System						
Probe Calibration (k=1)	6.55	Normal	1	1	6.55	∞
Axial Isotropy of the probe	4.7	Rectangular	$\sqrt{3}$	1	2.71	∞
Hemispherical Isotropy of the	9.6	Rectangular	$\sqrt{3}$	0	0.00	∞
Boundary Effect	1	Rectangular	$\sqrt{3}$	1	0.58	∞
Probe Linearity	4.7	Rectangular	$\sqrt{3}$	1	2.71	∞
System Detection Limit	1	Rectangular	$\sqrt{3}$	1	0.58	∞
Modulation Response	0	Rectangular	$\sqrt{3}$	1	0	∞
Readout Electronics	0.3	Normal	1	1	0.3	∞
Response Time	0	Rectangular	$\sqrt{3}$	1	0.00	∞
Integration Time	0	Rectangular	$\sqrt{3}$	1	0.00	∞
RF Ambient Conditions-Noise	1	Rectangular	$\sqrt{3}$	1	0.58	∞
RF Ambient Reflections	1	Rectangular	$\sqrt{3}$	1	0.58	∞
Probe Positioner Mechanical Tolerance	0.8	Rectangular	$\sqrt{3}$	1	0.46	∞
Probe Positioning with respect to Phantom Shell	6.7	Rectangular	$\sqrt{3}$	1	3.87	∞
Diople Related						
Deviation of exp	5.5	Rectangular	$\sqrt{3}$	1	3.18	71
Diople Axis to Liquid Dist	2	Rectangular	$\sqrt{3}$	1	1.15	5
Input Power & SAR drift	3.4	Rectangular	$\sqrt{3}$	1	1.96	∞
Phantom and Setup						
Phantom Production Tolerances (shape and thickness)	4	Rectangular	$\sqrt{3}$	1	2.31	∞
SAR correction	1.9	Rectangular	$\sqrt{3}$	1	1.10	∞
Measured Liquid Conductivity(meas.)	2.5	Normal	1	0.78	1.95	9
Measured Liquid Permittivity(meas.)	2.5	Normal	1	0.26	0.65	9
Temp. unc. - Conductivity	1.7	Rectangular	$\sqrt{3}$	0.78	0.77	∞
Temp. unc. - Permittivity	0.3	Rectangular	$\sqrt{3}$	0.23	0.04	9
Combined standard uncertainty		RSS	-	-	10.11	
Expanded uncertainty		*k*=2	-	-	20.22	-

3. GENERAL INFORMATION

3.1 STATEMENT OF COMPLIANCE

The maximum results of Specific Absorption Rate (SAR) found during testing for ONE A2005 are as below Table.

Equipment Class	Band	Max Reported SAR(W/kg)		
		1-g Head	1-g Body-worn (10mm) *	1-g Hotspot (10mm)
PCE	GSM850	0.22	0.75	1.17
	GSM1900	0.10	0.32	0.67
	UMTS Band 2	0.14	0.30	1.29
	UMTS Band 4	0.27	0.68	1.27
	UMTS Band 5	0.15	0.76	0.76
	LTE Band 2	0.17	0.59	0.95
	LTE Band 4	0.28	0.62	1.10
	LTE Band 5	0.10	0.48	0.48
	LTE Band 7	0.09	0.66	1.24
	LTE Band 12	0.10	0.26	0.26
	LTE Band 17	0.10	0.29	0.29
DTS	2.4G WLAN	0.83	0.14	0.16
NII	5.2G/5.3G WLAN	0.29	0.04	0.04
	5.6G WLAN	0.24	0.06	NA
	5.8G WLAN	0.26	0.04	0.06
The highest simultaneous SAR value is 1.50W/kg per KDB690783 D01				

Note:

1)* For body-worn operation, this device has been tested and meets FCC RF exposure guidelines when used with any accessory that contains no metal and that positions the handset a minimum of 10mm from the body. Use of other accessories may not ensure compliance with IC RF exposure guidelines.

The device is in compliance with Specific Absorption Rate（SAR）for general population/ uncontrolled exposure limits according to the FCC rule §2.1093, the ANSI/IEEE C95.1:1992, the NCRP Report Number 86 for uncontrolled environment, and had been tested in accordance with the measurement methods and procedures specified in IEEE-2003 & IEEE Std 1528a-2005

3.2 GENERAL DESCRIPTION OF EUT

Tested Mode(s)	GSM850/1900, UMTS Band 2/4/5 LTE Band 2/4/5/7/12/17,WiFi (tested),BT		
Modulation Technology	GSM(GMSK/8PSK),UMTS(QPSK),LTE(QPSK/16QAM), WiFi(DSSS/OFDM)		
Operation Frequency Range(s)	Band	TX (MHz)	RX (MHz)
	GSM850	824-849	869-894
	GSM1900	1850-1910	1930-1990
	UMTS Band 4	1710-1755	2110-2155
	UMTS Band 5	824-849	869-894
	UMTS Band 2	1850-1910	1930-1990
	LTE Band 2	1850-1910	1930-1990
	LTE Band 4	1710-1755	2110-2155
	LTE Band 5	824-849	869-894
	LTE Band 7	2500-2570	2620-2690
	LTE Band 12	699-716	729-746
	LTE Band 17	704-716	734-746
	Bluetooth	2400 ~2483.5	
	WIFI	2412 ~2462 5150 ~5250 5250 ~5350 5470 ~5725 5725 ~5850	
GPRS Multislot Class(12)	Max Number of Timeslots in Uplink:		4
	Max Number of Timeslots in Downlink:		4
	Max Total Timeslot:		5
EGPRS Multislot Class(12)	Max Number of Timeslots in Uplink:		4
	Max Number of Timeslots in Downlink:		4
	Max Total Timeslot:		5
HSDPA UE Category	14		
HSUPA UE Category	6		
DC-HSDPA UE Category	24 (The16QAM is only support downlink mode)		
HSPA+ Category	6 (The16QAM is only support downlink mode)		
Power Class:	4,tested with power level 5(GSM850)		
	1,tested with power level 0(GSM1900)		
	3, tested with power control “all 1”(UMTS Band 2/4/5)		
	3, tested with power control “all Max”(LTE Band 2/4/5/7/12/17)		
Test Channels (low-mid-high)	128-190-251 (GSM850)		
	512-661-810 (GSM1900)		
	4132-4182-4233 (UMTS Band 5)		
	9262-9400-9538 (UMTS Band 2)		
	1312-1413-1513 (UMTS Band 4)		
	18607-18900-19193(LTE Band 2 BW=1.4MHz)		
	18615-18900-19185(LTE Band 2 BW=3MHz)		
	18625-18900-19175(LTE Band 2 BW=5MHz)		
	18650-18900-19150(LTE Band 2 BW=10MHz)		
	18675-18900-19125(LTE Band 2 BW=15MHz)		
	18700-18900-19100(LTE Band 2 BW=20MHz)		
	19957-20175-20393(LTE Band 4 BW=1.4MHz)		
	19965-20175-20385(LTE Band 4 BW=3MHz)		

<table>
<tr><td rowspan="25">Test Channels
(low-mid-high)</td><td colspan="5">19975-20175-20375(LTE Band 4 BW=5MHz)</td></tr>
<tr><td colspan="5">20000-20175-20350(LTE Band 4 BW=10MHz)</td></tr>
<tr><td colspan="5">20025-20175-20325(LTE Band 4 BW=15MHz)</td></tr>
<tr><td colspan="5">20050-20175-20300(LTE Band 4 BW=20MHz)</td></tr>
<tr><td colspan="5">20407-20525-20643(LTE Band 5 BW=1.4MHz)</td></tr>
<tr><td colspan="5">20415-20525-20635(LTE Band 5 BW=3MHz)</td></tr>
<tr><td colspan="5">20425-20525-20625(LTE Band 5 BW=5MHz)</td></tr>
<tr><td colspan="5">20450-20525-20600(LTE Band 5 BW=10MHz)</td></tr>
<tr><td colspan="5">20775-21100-21425(LTE Band 7 BW=5MHz)</td></tr>
<tr><td colspan="5">20800-21100-21400(LTE Band 7 BW=10MHz)</td></tr>
<tr><td colspan="5">20825-21100-21375(LTE Band 7 BW=15MHz)</td></tr>
<tr><td colspan="5">20850-21100-21350(LTE Band 7 BW=20MHz)</td></tr>
<tr><td colspan="5">23017-23095-23173(LTE Band 12 BW=1.4MHz)</td></tr>
<tr><td colspan="5">23025-23095-23165(LTE Band 12 BW=3MHz)</td></tr>
<tr><td colspan="5">230035-23095-23155(LTE Band 12 BW=5MHz)</td></tr>
<tr><td colspan="5">23060-23095-23130(LTE Band 12 BW=10MHz)</td></tr>
<tr><td colspan="5">23755-23790-23825(LTE Band 17 BW=5MHz)</td></tr>
<tr><td colspan="5">23780-23790-23800(LTE Band 17 BW=10MHz)</td></tr>
<tr><td colspan="5">1-6 -11 (2.4G WIFI 802.11b/g/n HT20)</td></tr>
<tr><td colspan="5">3-6 - 9 (2.4G WIFI 802.11n HT40)</td></tr>
<tr><td>5G WIFI</td><td>Band 1</td><td>Band 2</td><td>Band 3</td><td>Band 4</td></tr>
<tr><td>a/n20/
ac20</td><td>36-40-44-48</td><td>52-56-60-64</td><td>100-104-108-112
-116-120-124-128
-132-136-140</td><td>149-153-157
-161-165</td></tr>
<tr><td>n40/
ac40</td><td>38-46</td><td>54-62</td><td>102-110-118-126
-134</td><td>151-159</td></tr>
<tr><td>ac80</td><td>42</td><td>58</td><td>106-122</td><td>155</td></tr>
<tr><td rowspan="6">Antenna Gain</td><td colspan="5">BT/2.4G WiFi: -0.2dBi</td></tr>
<tr><td colspan="5">5GWiFi: 0.52dBi</td></tr>
<tr><td colspan="5">GSM850/ UMTS850: -2.61dBi</td></tr>
<tr><td colspan="5">UMTS1700: -1.75dBi</td></tr>
<tr><td colspan="5">GSM1900/UMTS1900: -1.57dBi</td></tr>
<tr><td colspan="5">LTE Band2: -1.57dBi;
Band4: -1.75dBi;
Band5: -3.88dBi;
Band7: -1.01dBi;
Band12:-5.27dBi;
Band17: -3.88 dBi</td></tr>
</table>

Other Information		
Battery	Brand	OnePlus
	Model	BLP597
	Capacitance	3200/3300mAh
	Rated Voltage	3.8V
	Manufacturer	SCUD (FUJIAN) Electronics
Hardware	214049	
Software	ONE A2005_11_150417	

3.3 MAXIMUM TUNE-UP LIMIT

The maximum conducted average power(unit:dBm)including tune-up tolerance is shown as below.

Mode	Burst average power(dBm)		3GPP Release
	GSM 850	GSM 1900	
GSM(GMSK,1Tx slot)	34.00	31.50	98
GPRS(GMSK,1Tx slot)	34.00	31.00	
GPRS(GMSK,2Tx slots)	32.00	28.00	
GPRS(GMSK,3Tx slots)	30.50	27.50	
GPRS(GMSK,4Tx slots)	29.00	26.00	
EDGE(GMSK,1Tx slot)	28.00	27.00	
EDGE(GMSK,2Tx slots)	27.50	26.00	
EDGE(GMSK,3Tx slots)	26.00	26.00	
EDGE(GMSK,4Tx slots)	24.50	25.00	

Band		Mode	Average power(dBm)	3GPP Release
WCDMA	Band 2/4/5	12.2Kbps RMC	24	99
		HSDPA	23.5	6
		HSUPA	23.5	
		HSPA+	23.5	
		DC-HSDPA	23.5	8
LTE	Band 2	QPSK	24	8
		16QAM	23	
	Band 4	QPSK	24	
		16QAM	23	
	Band 5	QPSK	24	
		16QAM	23	
	Band 7	QPSK	24	
		16QAM	23	
	Band 12	QPSK	24	
		16QAM	23	
	Band 17	QPSK	24	
		16QAM	23	

Note: The HSPA+ and DC-HSDPA only support downlink mode

Mode	2.4G WLAN	5.2G WLAN	5.3G WLAN	5.6GHz WLAN	5.8GHz WLAN
802.11b	14	N/A	N/A	N/A	N/A
802.11g	12	N/A	N/A	N/A	N/A
802.11a	N/A	12	12	12	12
802.11n HT20	11	11	11	11	11
802.11n HT40	11	11	11	11	11
802.11ac20	N/A	10	10	10	10
802.11ac40	N/A	10	10	10	10
802.11ac80	N/A	10	10	10	10

Mode			Average power(dBm)
Bluetooth	BT	DH5	9.5
		3DH5	8.0
	4.0		7

3.4 LABORATORY ENVIRONMENT

Temperature	Min. = 18ºC, Max. = 25ºC
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5Ω
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.	

3.5 MAIN TEST INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Data Acquisition Electronics	Speag	DAE4	1390	Sep. 15, 2015
2	E-field Probe	Speag	EX3DV4	3932	Jan. 30, 2016
3	Electro Optical Converter	Speag	ECO90	1151	N/A
4	SAMT win Phantom	Speag	SAM	1784	N/A
5	ELI4 Phantom	Speag	ELI4 Phantom V5.0	1222	N/A
6	System Validation Dipole	Speag	D750V3	1095	Sep. 22, 2015
7	System Validation Dipole	Speag	D835V2	4d160	Sep. 22, 2015
8	System Validation Dipole	Speag	D1750V2	1101	Sep. 19, 2015
9	System Validation Dipole	Speag	D1900V2	5d179	Sep. 18, 2015
10	System Validation Dipole	Speag	D2450V2	919	Sep. 17, 2015
11	System Validation Dipole	Speag	D2600V2	1067	Sep. 18, 2015
12	System Validation Dipole	Speag	D5GHzV2	1160	Nov. 04, 2015
13	Power Amplifier	Mini-Circuits	ZHL-42W	N/A	N/A
14	Power Amplifier	Mini-Circuits	ZVE-8G	N/A	N/A
15	ENA Network Analyzer	Agilent	E5071C	MY46102965	Mar. 29, 2016
16	Dielectric Probe Kit	Agilent	85070E	2593	N/A
17	P-series power meter	Agilent	N1911A	MY45100473	Mar. 29, 2016
18	wideband power sensor	Agilent	N1921A	MY51100041	Mar. 29, 2016
19	Power Meter	Anritsu	ML2487A	6K00004714	Mar. 16, 2016
20	Power Meter Sensor	Anritsu	MA2491A	34138	Mar. 16, 2016
21	MXG Analog Signal Generator	Agilent	N5181A	MY49060710	Nov. 02, 2015
22	Low pass filter	Mini-Circuits	SLP-2950+	M108294	Mar. 29, 2016
23	Attenuator	Mini-Circuits	VAT-10+	31317-1	Mar. 29, 2016

24	Attenuator	Mini-Circuits	VAT-10+	31317-2	Mar. 29, 2016
25	Attenuator	MEB	300-affn-03	314	Mar. 29, 2016
26	Dual directional coupler	Agilent	777D	50208	Mar. 29, 2016
27	Wideband radio communication tester	R&S	CMW500	12010002K50-122125-PJ	Mar. 28, 2016
28	8960 Series 10 Wireless Com Test set	Agilent	E5515E	MY53211053	Mar. 29, 2016
29	Spectrum Analyzer	R&S	FSL 6	100423	Nov. 02, 2015
30	Directional Coupler	Telestone	TS-PCCOM-05	0107090019	Mar. 04, 2016
31	Coupler	Mini-Circuits	ZADC-10-63-S+	SF6631801334	Mar. 29, 2016

Remark: ” N/A” denotes no model name, serial No. or calibration specified.
All calibration period of equipment list is one year.

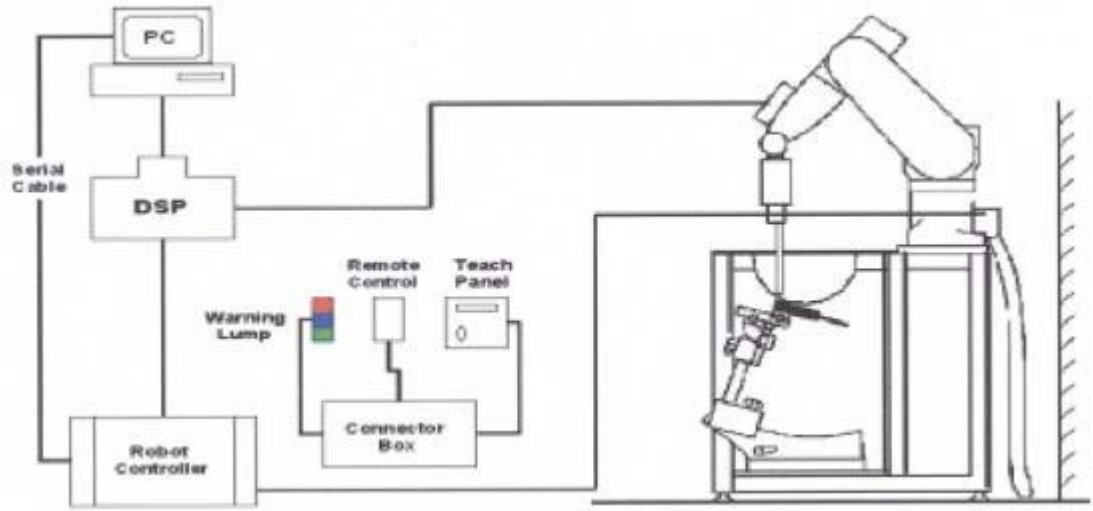
4.SAR MEASUREMENTS SYSTEM CONFIGURATION

4.1SAR MEASUREMENT SET-UP

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

1. A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).
2. 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.
3. A data acquisition electronic (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.
4. A unit to operate the optical surface detector which is connected to the EOC.
5. The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY5 measurement server.
6. TheDASY5 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 7
7. DASY5 software and SEMCAD data evaluation software.
8. Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
9. The generic twin phantom enabling the testing of left-hand and right-hand usage.
10. The device holder for handheld mobile phones.
11. Tissue simulating liquid mixed according to the given recipes.
12. System validation dipoles allowing to validate the proper functioning of the system.

4.1.1Test Setup Layout



4.2DASY5E-FIELDPROBESYSTEM

The SAR measurements were conducted with the dosimetric probe EX3DV4(manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

4.2.1EX3DV4 PROBE SPECIFICATION

Construction	Symmetrical design with triangular core Interleaved sensors 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 HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 µW/g to > 100 mW/g Linearity:± 0.2dB
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Distance from probe tip to dipole centers: 1.0 mm

EX3DV4 E-field Probe

4.2.2E-FIELD PROBE CALIBRATION

Each probe is calibrated according to a dosimetric assessment procedure with accuracy better than ±10%. The spherical isotropy was evaluated and found to be better than ± 0.25dB. The sensitivity parameters (NormX, NormY, NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies bellow 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$SAR = C\frac{\Delta T}{\Delta t}$$

Where: Δt = Exposure time (30 seconds),

C = Heat capacity of tissue (brain or muscle),

ΔT = Temperature increase due to RF exposure.

Or $$SAR = \frac{|E|^2 \sigma}{\rho}$$

Where: σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m3).

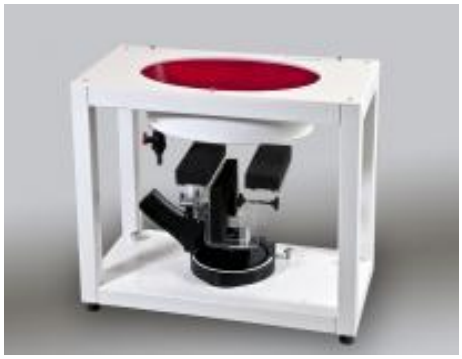
4.2.3OTHER TEST EQUIPMENT

4.2.3.1. Device Holder for Transmitters

Construction: Simple but effective and easy-to-use extension for Mounting Device that facilitates the testing of larger devices (e.g., laptops, cameras, etc.) It is light weight and fits easily on the upper part of the Mounting Device in place of the phone positioner. The extension is fully compatible with the Twin SAM, ELI4and SAM v6.0Phantoms.
Material: POM, Acrylic glass, Foam

4.2.3.2 Phantom

Model	ELI4 Phantom
Construction	Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.
Shell Thickness	2±0.1 mm
Filling Volume	Approx. 30 liters
Dimensions	Length: 600 mm ; Width: 190mm Height: adjustable feet
Aailable	Special



Model	Twin SAM
Construction	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.
Shell Thickness	2 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length:1000mm; Width: 500mm Height: adjustable feet
Aailable	Special

4.2.4SCANNING PROCEDURE

The DASY5 installation includes predefined files with recommended procedures for measurements and validation. They are read-only document files and destined as fully defined but unmeasured masks. All test positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different test positions.

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. The indicated drift is mainly the variation of the DUT’s output power and should vary max. ± 5 %.

The “surface check” measurement tests the optical surface detection system of the DASY5 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above ± 0.1mm). To prevent wrong results tests are only executed when the liquid is free of air bubbles. The difference between the optical surface detection and the actual surface depends on the probe and is specified with each probe. (It does not depend on the surface reflectivity or the probe angle to the surface within ± 30°.)

- Area Scan

The “area scan” measures the SAR above the DUT or verification dipole on a parallel plane to the surface. It is used to locate the approximate location of the peak SAR with 2D spline interpolation. The robot performs a stepped movement along one grid axis while the local electrical field strength is measured by the probe. The probe is touching the surface of the SAM during acquisition of measurement values. The standard scan uses large grid spacing for faster measurement.

Standard grid spacing for head measurements is 15 mm in x- and y- dimension(≤2GHz) , 12 mm in x- and y- dimension(2-4 GHz) and 10mm in x- and y- dimension(4-6GHz). If a finer resolution is needed, the grid spacing can be reduced. Grid spacing and orientation have no influence on the SAR result. For special applications where the standard scan method does not find the peak SAR within the grid, e.g. mobile phones with flip cover, the grid can be adapted in orientation.

- Zoom Scan

A “zoom scan” measures the field in a volume around the 2D peak SAR value acquired in the previous “coarse” scan. This is a fine grid with maximum scan spatial resolution: Δx_{zoom}, Δy_{zoom}≤ 2GHz -≤8mm, 2-4GHz -≤5 mm and 4-6 GHz-≤4mm; Δz_{zoom}≤3GHz -≤5 mm, 3-4 GHz-≤4mm and 4-6GHz-≤2mm where the robot additionally moves the probe along the z-axis away from the bottom of the Phantom. DASY is also able to perform repeated zoom scans if more than 1 peak is found during area scan. In this document, the evaluated peak 1g and 10g averaged SAR values are shown in the 2D-graphics in Appendix B. Test results relevant for the specified standard (see chapter 1.4.)are shown in table form form in chapter 7.2.

A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 2 mm steps. This measurement shows the continuity of the liquid and can - depending in the field strength – also show the liquid depth.

The following table summarizes the area scan and zoom scan resolutions per FCC KDB 865664D01:

Frequency	Maximun Area Scan resolution (Δx_{area}, Δy_{area})	Maximun Zoom Scan spatial resolution (Δx_{Zoom}, Δy_{Zoom})	Maximun Zoom Scan spatial resolution			Minimum zoom scan volume (x,y,z)
			Uniform Grid	Graded Grad		
			$\Delta z_{Zoom}(n)$	$\Delta z_{Zoom}(1)$*	$\Delta z_{Zoom}(n>1)$*	
≤2GHz	≤15mm	≤8mm	≤5mm	≤4mm	≤1.5*Δz_{Zoom}(n-1)	≥30mm
2-3GHz	≤12mm	≤5mm	≤5mm	≤4mm	≤1.5*Δz_{Zoom}(n-1)	≥30mm
3-4GHz	≤12mm	≤5mm	≤4mm	≤3mm	≤1.5*Δz_{Zoom}(n-1)	≥28mm
4-5GHz	≤10mm	≤4mm	≤3mm	≤2.5mm	≤1.5*Δz_{Zoom}(n-1)	≥25mm
5-6GHz	≤10mm	≤4mm	≤2mm	≤2mm	≤1.5*Δz_{Zoom}(n-1)	≥22mm

4.2.5SPATIAL PEAK SAR EVALUATION

The spatial peak SAR - value for 1 and 10 g is evaluated after the Cube measurements have been done. The basis of the evaluation are the SAR values measured at the points of the fine cube grid consisting of 5 x 5 x 7 points(with 8mm horizontal resolution) or 7 x 7 x 7 points(with 5mm horizontal resolution) or 8 x 8 x 7 points(with 4mm horizontal resolution). The algorithm that finds the maximal averaged volume is separated into three different stages.

- The data between the dipole center of the probe and the surface of the phantom are extrapolated. This data cannot be measured since the center of the dipole is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is about 1 mm (see probe calibration sheet). The extrapolated data from a cube measurement can be visualized by selecting “Graph Evaluated”.
- The maximum interpolated value is searched with a straight-forward algorithm. Around this maximum the SAR - values averaged over the spatial volumes (1g or 10 g) are computed using the 3d-spline interpolation algorithm. If the volume cannot be evaluated (i.e., if a part of the grid was cut off by the boundary of the measurement area) the evaluation will be started on the corners of the bottom plane of the cube.
- All neighboring volumes are evaluated until no neighboring volume with a higher average value is found.

Extrapolation

The extrapolation is based on a least square algorithm [W. Gander, Computermathematik, p.168-180]. Through the points in the first 3 cm along the z-axis, polynomials of order four are calculated. These polynomials are then used to evaluate the points between the surface and the probe tip. The points, calculated from the surface, have a distance of 1 mm from each other.

Interpolation

The interpolation of the points is done with a 3d-Spline. The 3d-Spline is composed of three one-dimensional splines with the "Not a knot"-condition [W. Gander, Computermathematik, p.141-150] (x, y and z -direction) [Numerical Recipes in C, Second Edition, p.123ff].

Volume Averaging

At First the size of the cube is calculated. Then the volume is integrated with the trapezoidal algorithm. 8000 points (20x20x20) are interpolated to calculate the average.

Advanced Extrapolation

DASY5 uses the advanced extrapolation option which is able to compansate boundary effects on E-field probes.

4.2.6DATA STORAGE AND EVALUATION

4.2.5.1Data Storage

The DASY5 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], [mW/g], [mW/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.

4.4.2 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, a_{i0}, a_{i1}, a_{i2}
	Conversion factor	$ConvF_i$
	Diode compression point	Dcp_i
Device parameters:	Frequency	f
	Crest factor	cf
Media parameters:	Conductivity	
	Density	

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 DASY5 components. In the direct measuring mode of the multi meter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics.

If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

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

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

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

cf = crest factor of exciting field (DASY parameter)

dcp_i = diode compression point (DASY parameter)

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

E-field probes: $E_i = (V_i / Norm_i \cdot ConvF)^{1/2}$

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

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

$Norm_i$ = 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]

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

H_i = 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.

$$SAR = (E_{tot})^2 \cdot \sigma / (\rho \cdot 1000)$$

With SAR = local specific absorption rate in mW/g

E_{tot} = total field strength in V/m
= conductivity in [mho/m] or [Siemens/m]
= equivalent tissue density in g/cm^3

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.

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

With P_{pwe} = equivalent power density of a plane wave in mW/cm^2

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

H_{tot} = total magnetic field strength in A/m

5. SYSTEM VERIFICATION PROCEDURE

5.1 TISSUE VERIFICATION

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine of the dielectic parameter are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within ± 5% of the target values.

The following materials are used for producing the tissue-equivalent materials.

Tissue Type	Bactericide	DGBE	HEC	NaCl	Sucrose	Triton X-100	Water	Diethylene Glycol Mono-hexylether
Head 750	0.2	-	0.2	1.5	56.0	-	42.1	-
Head 835	0.2	-	0.2	1.5	57.0	-	41.1	-
Head 1750	-	47.0	-	0.4	-	-	52.6	-
Head 1900	-	44.5	-	0.2	-	-	55.3	-
Head 2450	-	45.0	-	0.1	-	-	54.9	-
Head 2600	-	45.1	-	0.1	-	-	54.8	-
Head 5G	-	-	-	-	-	17.2	65.5	17.3

Tissue Type	Bactericide	DGBE	HEC	NaCl	Sucrose	Triton X-100	Water	Diethylene Glycol Mono-hexylether
Body 750	0.2	-	0.2	0.8	48.8	-	50.0	-
Body 835	0.2	-	0.2	0.9	48.5	-	50.2	-
Body 1750	-	31.0	-	0.2	-	-	68.8	-
Body 1900	-	29.5	-	0.3	-	-	70.2	-
Body 2450	-	31.4	-	0.1	-	-	68.5	-
Body 2600	-	31.8	-	0.1	-	-	68.1	-
Body 5G	-	-	-	-	-	10.7	78.6	10.7

Salt: 99+% Pure Sodium Chloride; Sugar: 98+% Pure Sucrose; Water: De-ionized, 16M + resistivity
HEC: Hydroxyethyl Cellulose; DGBE: 99+% Di(ethylene glycol) butyl ether,[2-(2-butoxyethoxy)ethanol]
Triton X-100(ultra pure): Polyethylene glycol mono [4-(1,1,3,3-tetramethylbutyl)phenyl]ether

Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue		Liquid Temp. (℃)	Test Date
		ε r (+/-5%)	σ (S/m) (+/-5%)	ε r	σ (S/m)		
750B	704	52.64 (50.01~55.272)	2.011 (1.910~2.111)	52.595	1.958	20.8	2015/6/30
	707.5	52.63 (50.00~55.26)	2.017 (1.916~2.118)	52.546	1.968	20.8	
	711.1	52.63 (50.00~55.26)	2.021 (1.920~2.122)	52.498	1.965	20.8	
750H	704	42.14 (40.03~44.25)	0.886 (0.842~0.930)	42.145	0.874	20.8	2015/7/2
	707.5	42.12 (40.01~44.23)	0.887 (0.843~0.931)	42.136	0.858	20.8	
	711.1	42.10 (40.00~44.21)	0.887 (0.843~0.931)	41.098	0.861	20.8	
835B	824.2	55.23 (52.47~57.99)	0.968 (0.920~1.016)	55.9	0.99	21.4	2015/6/28
	836.6	55.19 (52.43~57.95)	0.972 (0.923~1.021)	55.868	0.98	21.4	
	848.6	55.15 (52.39~57.91)	0.987 (0.938~1.036)	55.771	0.98	21.4	
835B	824.2	55.23 (52.47~57.99)	0.968 (0.920~1.016)	54.75	0.963	22.4	2015/7/25
	836.6	55.19 (52.43~57.95)	0.972 (0.923~1.021)	54.64	0.978	22.4	
	848.6	55.15 (52.39~57.91)	0.987 (0.938~1.036)	54.52	0.992	22.4	
835H	824.2	41.55 (39.47~43.63)	0.898 (0.853~0.943)	41.628	0.880	21.4	2015/6/30
	836.6	41.50 (39.43~43.58)	0.901 (0.856~0.946)	41.478	0.890	21.4	
	848.6	41.50 (39.43~43.58)	0.915 (0.869~0.961)	41.327	0.899	21.4	
1750B	1712.4	53.53 (50.85~56.21)	1.458 (1.385~1.531)	53.363	1.435	21.2	2015/6/27
	1732.6	53.46 (50.79~56.13)	1.476 (1.402~1.550)	53.238	1.459	21.2	
	1752.6	53.39 (50.72~56.06)	1.491 (1.416~1.566)	53.118	1.483	21.2	
1750H	1712.4	40.16 (38.15~42.17)	1.342 (1.275~1.409)	40.268	1.342	21.2	2015/7/2
	1732.6	40.13 (38.12~42.14)	1.357 (1.289~1.425)	40.135	1.363	21.2	
	1752.6	40.09 (38.09~42.09)	1.371 (1.302~1.440)	40.006	1.383	21.2	
1900B	1850.2	53.39 (50.64~55.97)	1.520 (1.444~1.596)	53.24	1.53	20.9	2015/6/29
	1880	53.39 (50.64~55.97)	1.520 (1.444~1.596)	53.14	1.57	20.9	
	1909.9	53.39 (50.64~55.97)	1.520 (1.444~1.596)	53.04	1.6	20.9	
1900B	1850.2	53.39 (50.64~55.97)	1.520 (1.444~1.596)	54.95	1.502	22.0	2015/7/25
	1880	53.39 (50.64~55.97)	1.520 (1.444~1.596)	54.83	1.539	22.0	

	1909.9	53.39 (50.64~55.97)	1.520 (1.444~1.596)	54.78	1.571	22.0	
1900H	1850.2	40 (38.00~42.00)	1.400 (1.330~1.470)	41.299	1.300	20.9	2015/7/1
	1880	40 (38.00~42.00)	1.400 (1.330~1.470)	41.18	1.300	20.9	
	1909.9	40 (38.00~42.00)	1.400 (1.330~1.470)	41.06	1.300	20.9	
2450B	2412	52.75 (50.11~55.39)	1.914 (1.818~2.010)	51.861	1.968	20.8	2015/6/30
	2437	52.71 (50.07~55.35)	1.937 (1.840~2 .034)	51.739	2.013	20.8	
	2462	52.68 (50.05~55.31)	1.966 (1.868~2.064)	51.622	2.048	20.8	
2450H	2412	39.27 (37.31~41.23)	1.767 (1.679~1.855)	39.376	1.800	20.8	2015/7/2
	2437	39.22 (37.26~41.18)	1.788 (1.699~ 1.877)	39.326	1.800	20.8	
	2462	39.18 (37.22~41.14)	1.812 (1.721~1.903)	39.252	1.824	20.8	
2600B	2510	52.62 (49.99~55.25)	2.034 (1.93~2.14)	52.462	2.096	21.3	2015/7/1
	2535	52.58 (49.95~55.21)	2.069 (1.97~2.17)	52.392	2.111	21.3	
	2560	52.55 (49.92~55.18)	2.104 (2.00~2.21)	52.388	2.126	21.3	
2600H	2510	39.12 (37.16~41.08)	1.864 (1.77~1.96)	39.06	1.900	21.3	2015/7/1
	2535	39.08 (37.13~41.03)	1.890 (1.80~1.98)	38.96	1.900	21.3	
	2560	39.05 (37.10~41.00)	1.917 (1.82~2.01)	38.86	1.920	21.3	
5200B	5180	49.02 (46.57~51.47)	5.28 (5.01~5.54)	49.44	5.352	21.5	2015/7/4
	5240	48.96 (46.51~51.41)	5.35 (5.08~5.62)	49.32	5.436	21.5	
	5320	48.87 (46.43~51.31)	5.44 (5.17~5.72)	49.16	5.548	21.5	
5200H	5180	36.02 (34.22~37.82)	4.639 (4.41~4.87)	35.132	4.735	21.5	2015/7/4
	5240	35.96 (34.16~37.76)	4.700 (4.47~4.94)	35.042	4.771	21.5	
	5320	35.88 (34.09~37.67)	4.780 (4.54~5.02)	34.817	4.863	21.5	
5600B	5500	48.60 (46.17~51.03)	5.65 (5.37~5.93)	48.65	5.876	20.7	2015/7/5
	5580	48.52 (46.09~50.95)	5.75 (5.46~6.03)	48.74	5.902	20.7	
	5700	48.35 (45.93~50.77)	5.89 (5.59~6.18)	48.50	6.080	20.7	
5600H	5500	35.60 (33.82~37.38)	4.960 (4.71~5.21)	34.334	5.057	20.7	2015/7/4
	5580	35.52 (33.74~37.30)	5.048 (4.80~5.30)	34.14	5.143	20.7	
	5700	35.40 (33.63~37.17)	5.170 (4.91~5.43)	33.842	5.263	20.7	
5800B	5745	48.28 (45.87~50.69)	5.94 (5.64~6.23)	48.41	6.143	20.9	2015/7/6

	5785	48.22 (45.81~50.63)	5.98 (5.68~6.28)	48.33	6.199	20.9	
	5825	48.16 (45.75~50.57)	6.03 (5.73~6.33)	48.30	6.220	20.9	
5800H	5745	35.35 (33.58~37.12)	5.215 (4.95~5.48)	33.737	5.309	20.9	2015/7/4
	5785	35.31 (33.54~37.08)	5.255 (4.99~5.52)	33.652	5.349	20.9	
	5825	35.27 (33.51~37.03)	5.296 (5.03~5.56)	33.551	5.391	20.9	

Note:
1)The dielectric parameters of the tissue-equivalent liquid should be measured under similar ambient conditions and within 2 °C of the conditions expected during the SAR evaluation to satisfy protocol requirements.
2)KDB 865664 was ensured to be applied for probe calibration frequencies greater than or equal to 50MHz of the EUT frequencies.
3)The above measured tissue parameters were used in the DASY software to perform interpolation via the DASY software to determine actual dielectric parameters at the test frequencies. The SAR test plots may slightly differ from the table above since the DASY rounds to three significant digits.

5.2 SYSTEM CHECK

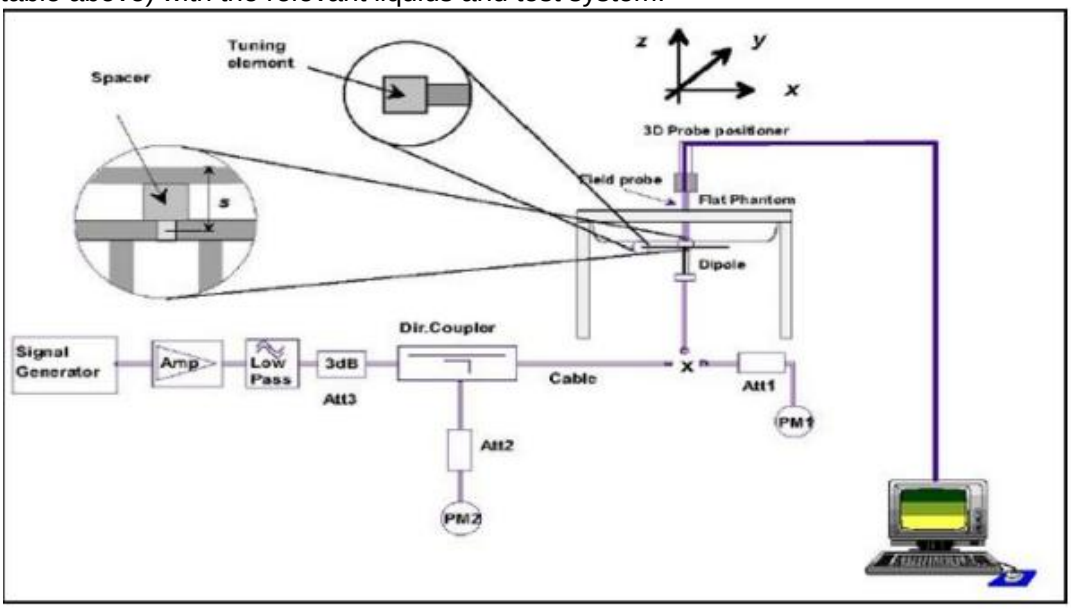
The system check is performed for verifying the accuracy of the complete measurement system and performance of the software. The system check is performed with tissue equivalent material according to IEEE P1528 (described above). The following table shows system check results for all frequency bands and tissue liquids used during the tests.

System Check	Frequency (MHz)	Test Date	Temp	250mW Measured SAR_{1g}	1W Normalized SAR_{1g}	1W Target SAR_{10g} (±10% deviation)
			(℃)	(W/kg)		
Body	750	06/30/2015	21.8	2.16	8.64	8.67 (7.803~9.537)
	835	06/28/2015	21.8	2.38	9.52	9.56 (8.604~10.516)
	835	07/25/2015	22.4	2.44	9.76	9.56 (8.604~10.516)
	1750	06/27/2015	20.8	9.47	37.88	37.90 (34.11~41.69)
	1900	06/29/2015	20.8	9.87	39.48	39.5 (35.55~43.45)
	1900	07/25/2015	22.0	9.42	37.68	39.5 (35.55~43.45)
	2450	06/30/2015	20.8	12.66	50.64	50.7 (45.63~55.77)
	2600	07/01/2015	20.8	14.34	57.36	57.40 (51.66~63.14)
Head	750	07/02/2015	21.7	2.09	8.36	8.46 (7.614~9.306)
	835	07/01/2015	21.7	2.35	9.40	9.43 (8.487~10.373)
	1750	07/02/2015	21.7	9.01	36.04	36.1 (32.49~39.71)
	1900	07/01/2015	21.7	9.93	39.72	39.8 (35.82~43.78)
	2450	07/02/2015	21.7	12.86	51.44	51.5 (46.35~56.65)
	2600	07/01/2015	21.7	14.48	57.92	58.0 (52.20~63.80)
Body	5200	07/04/2015	21.8	7.45	74.50	74.70 (67.23~82.17)
	5600	07/05/2015	21.8	8.29	82.90	83.00 (74.7~91.3)
	5800	07/05/2015	21.8	7.50	75.00	75.10 (67.59~82.61)
Head	5200	07/04/2015	21.7	7.94	79.40	79.50 (71.55~87.45)
	5600	07/04/2015	21.7	8.32	83.20	83.30 (72.54~88.66)
	5800	07/04/2015	21.7	8.14	81.40	81.50 (74.79~91.41)

5.3 SYSTEM CHECK PROCEDURE

The system check is performed by using a system check dipole which is positioned parallel to the planar part of the SAM phantom at the reference point. The distance of the dipole to the SAM phantom is determined by a plexiglass spacer. The dipole is connected to the signal source consisting of signal generator and amplifier via a directional coupler, N-connector cable and adaption to SMA. It is fed with a power of 250 mW(below 5GHz) or 100mW(above 5GHz). To adjust this power a power meter is used. The power sensor is connected to the cable before the system check to measure the power at this point and do adjustments at the signal generator. At the outputs of the directional coupler both return loss as well as forward power are controlled during the system check to make sure that emitted power at the dipole is kept constant. This can also be checked by the power drift measurement after the test.

System check results have to be equal or near the values determined during dipole calibration (target SAR in table above) with the relevant liquids and test system.



6.SAR MEASUREMENT VARIABILITY AND UNCERTAINTY

6.1SAR MEASUREMENT VARIABILITY

Per KDB865664 D01 SAR measurement 100 MHz to 6 GHz v01r03, 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.

7. OPERATIONAL CONDITIONS DURING TEST

7.1 SAR TEST CONFIGURATION

7.1.1 GSM TEST CONFIGURATION

SAR tests for GSM850 and GSM1900, a communication link is set up with a base station by air link. Using CMU200 the power lever is set to “5”and “0” in SAR of GSM850 and GSM1900. The tests in the band of GSM850 and GSM1900 are performed in the mode of GPRS/EGPRS function. Since the GPRS class is 12 for this EUT, it has at most 4 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslot is 5. The EGPRS class is 12 for this EUT, it has at most 4 timeslots in uplink, and at most 4 timeslots in downlink, the maximum total timeslot is 5.

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

According to specification 3GPP TS 51.010, the maximum power of the GSM can do the power reduction for the multi-slot.

The allowed power reduction in the multi-slot configuration is as following:

Number of timeslots in uplink assignment		Reduction of maximum output power (dB)		
Band	Time Slots	GPRS (GMSK)	EGPRS (GMSK)	EGPRS (8PSK)
GSM850	1 TX slot	0	0	6
	2 TX slots	2	2	6.5
	3 TX slots	3.5	3.5	8
	4 TX slots	5	5	9.5
GSM1900	1 TX slot	0.5	0.5	4.5
	2 TX slots	3.5	3.5	5.5
	3 TX slots	4	4	5.5
	4 TX slots	5.5	5.5	6.5

7.1.2 UMTS TEST CONFIGURATION

1. Output Power Verification

Maximum output power is verified on the High, Middle and Low channels according to the procedures description in section 5.2 of 3GPP TS 34.121,using the appropriate RMC or AMR with TPC(transmit power control) set to all “1s” for WCDMA/HSDPA or applying the required inner loop power control procedure to maintain maximum output power while HSUPA is active. Result for all applicable physical channel configurations(DPCCH,DPDCHn and spreading codes, HSDPA, HSPA)
Should be tabulated in the SAR report .All configuration that are not supported by the DUT or cannot be measured due to technical or equipment limitation should be clearly identified.

2. WCDMA

(1).Head SAR Measurements
SAR for Head exposure configurations in voice mode is measured using a 12.2 kbps RMC with TPC bits configured to all “1s”. SAR in AMR configurations is not required when the maximum average output of each RF channel for 12.2 kbps AMR is less than ¼ dB higher than that measured in 12.2 kbps RMC. Otherwise SAR is measured on the maximum output channel in 12.2 kbps AMR with 3.4kbps SRB(signalling radio bearer) using the exposure configuration that results in the highest SAR in12.2kbps RMC for that RF channel.

(2).Body SAR Measurements
SAR for body exposure configurations is measured using the 12.2 kbps RMC with the TPC bits configured to all “1s”. SAR for other spreading codes and multiple DPDCHn, when supported by the EUT, are not required when the maximum average outputs of each RF channel, for each spreading code and DPDCHn configuration, are less than ¼ dB higher than those measured in 12.2 kbps RMC.

3. HSDPA

SAR for body exposure configurations is measured according to the “Body SAR Measurements”” procedures of 3G device. In addition, body SAR is also measured for HSDPA when the maximum average outputs of each RF channel with HSDPA active is at ¼ dB higher than that measured without HSDPA using 12.2kbps RMC or the maximum SAR 12.2kbps RMC is above 75% of the SAR limit. Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2kbps RMC configured in Test Loop Mode 1, using the highest body SAR configuration in 12.2 kbps RMC without HSDPA.
HSDPA should be configured according to UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HAPRQ 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 condition, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. The β_c andβ_d gain factors for DPCCH and DPDCH were set according to the values in the below table,β_{hs} for HS-DPCCH is set automatically to the correct value when Δ ACK,Δ NACK, Δ CQI = 8. The variation of theβ_c /β_d ratio causes a power reduction at sub-tests 2 - 4.

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: ΔACK, ΔNACK and ΔCQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$
Note 2 : CM=1 for β_c/β_d= 12/15, β_{hs}/β_c = 24/15. For all other combinations of DPDCH,DPCCH 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 β_c = 11/15 and β_d = 15/15

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

Settings of required H-Set 1 QPSK acc. to 3GPP 34.121

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

HSDPA UE category

HS-DSCH Category	Maximum HS-DSCH Codes Received	Minimum Inter-TTI Interval	Maximum HS-DSCH Transport Block Bits/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

4. HSUPA

SAR for Body exposure configurations is measured according to the “Body SAR Measurements” procedures of 3G device. 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 primary mode and the adjusted SAR is ≤ 1.2W/kg, SAR measurement is not required for the secondary mode.

Per KDB941225 D01v03, the 3G SAR test reduction procedures is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures for the highest reported body exposure SAR configuration in 12.2 kbps RMC.

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 HSDPA should be configured according to the values indicated below as well as other applicable procedures described in the “WCDMA Handset“ and „Release 5 HSDPA Data Device” sections of 3G device.

Subtests for UMTS Release 6 HSUPA

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

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

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference

Note 3 : For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$

Note 4 : For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$

Note 5 : Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g

Note 6: β_{ed} can not be set directly; it is set by Absolute Grant Value.

HSUPA UE category

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).

5. DC-HSDPA

In DC-HSDPA implementation of this device, the uplink parameters are the same as HSDPA. No additional channels and modulations (16 QAM, and 64 QAM) are supported in uplink. The difference is only in the downlink parameters, where two carriers are supported. HSDPA settings were used on uplink.

For Rel. 8 DC-HSDPA apply the four subtests from HSDPA Release 5 except use fixed reference channel H-Set 12 for DC-HSDPA. And we can apply the same SAR test exclusion criteria used for Rel. 6 HSPA for Rel. 7 HSPA+ and Rel. 8 DC-HSDPA. That is, if the HSPA, HSPA+, or the DC-HSDPA maximum output is not more than 0.25 dB higher than WCDMA, SAR measurement for those modes is not required.
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
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

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.

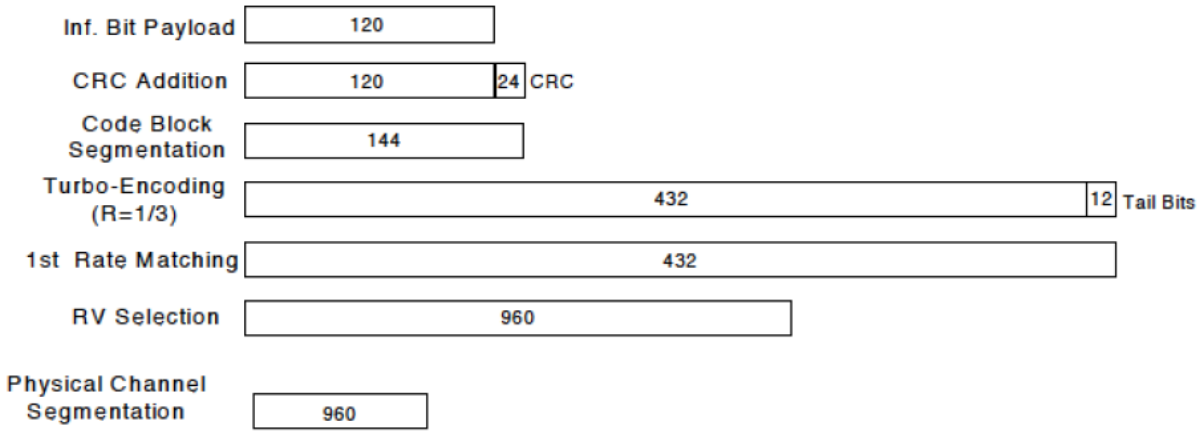


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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 β_c/β_d= 12/15, β_{hs}/β_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 β_c = 11/15 and β_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.

7.1.3 LTE TEST CONFIGURATION

SAR for LTE band exposure configurations is measured according to the procedures of KDB 941225 D05 SAR for LTE Devices v02r03. The CMW500 Wide Band Radio Communication Tester was used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR test were performed with the same number of RB and RB offsets transmitting on all TTI frames(Maximum TTI)

1. Spectrum Plots for RB configurations

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

2. MPR

When MPR is implemented permanently within the UE, regardless of network requirements, only those RB configurations allowed by 3GPP for the channel bandwidth and modulation combinations may be tested with MPR active. Configurations with RB allocations less than the RB thresholds required by 3GPP must be tested without MPR.
The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101:

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

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

The LTE Band VII(Hotspot disabled) MPR of the device is as below:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]				MPR
	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	≤8	≤ 12	≤16	≤ 18	0
QPSK	>8	> 12	>16	> 18	1
16 QAM	≤8	≤ 12	≤16	≤ 18	1
16 QAM	>8	> 12	>16	> 18	2

The LTE Band VII(Hotspot activated) MPR of the device is as below:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]				MPR
	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	≤8	≤ 12	≤16	≤ 18	0
QPSK	>8	> 12	>16	> 18	1
16 QAM	≤8	≤ 12	≤16	≤ 18	0
16 QAM	>8	> 12	>16	> 18	1

3. A-MPR

A-MPR(Additional MPR) has been disabled for all SAR tests by using Network Signalling Value of "NS_01"on the base station simulator.

4. LTE procedures for SAR testing

A) Largest channel bandwidth standalone SAR test requirements

i) 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.

ii) QPSK with 50% RB allocation

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

iii) 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 i) and ii) 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.

iv) 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.

B) 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.

7.1.4 WIFI TEST CONFIGURATION

For WLAN SAR testing, WLAN engineering testing software installed on the DUT can provide continuous transmitting RF signal.

Mode	802.11 a/b/g/n(20M/40M)/ac(20M/40M/80M)
Duty cycle	100%
Crest factor	1

For WLAN SAR tests, a communication link is set up with the test mode software for WIFI mode test. During the test, at the each test frequency channel, the EUT is operated at the RF continuous emission mode. Each channel should be tested at the lowest data rate.

7.1.4.1 2.4G SAR Test Requirements

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. 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.

7.1.4.2 5G SAR TEST REQUIREMENTS

✧ **U-NII-1 and U-NII-2A Band**

For devices that operate in both U-NII-1 and U-NII-2A bands, When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, both bands are tested independently for SAR. When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration; otherwise, both bands are tested independently for SAR.

✧ **U-NII-2C and U-NII-3 Band**

The frequency range covered by U-NII-2C and U-NII-3 is 380MHz(5.47-5.85GHz),which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurement. When Terminal Doppler Weather Radar(TDWR) restriction applies, the channels at 5.60-5.65GHz in U-NII-2C band must be disabled with acceptable mechanisms and documented in the equipment certification.

Unless band gap channels are permanently disabled, SAR must be considered for these channels. To maintain SAR measurement accuracy and to facilitate test reduction, the channels in U-NII-2C band to enable two SAR probe calibration frequency points to cover the bands, including the band gap channels. When band gap channels are disabled, each band is tested independently according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

7.1.4.3 OFDM transmission mode and SAR test channel selection

For the 2.4GHz and 5GHz bands, when the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration with the largest channel bandwidth, lowest order modulation and lowest data rate. When the maximum output power of a channel is the same for equivalent OFDM configurations(for example 802.11a,802.11n and 802.11ac,or 802.11g and 802.11n,with the same channel bandwidth, modulation, and data rate, etc.),the lower order 802.11 mode(i.e.802.11a then 802.11n and 802.11ac,or 802.11g then 802.11n) is used for SAR measurement. When the maximum output power are the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency band or aggregated band. When there are multiple channels with the same maximum output power, SAR is measured using the higher number channel.

7.1.4.4 Initial test configuration procedure

For OFDM, in both 2.4G and 5GHz bands, an initial test configuration is determined for each frequency band and aggregated band , according to the transmission mode with the highest maximum output power specified for SAR measurements. When the same maximum output power is specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration(s) with the largest channel bandwidth, lowest order modulation, and lowest data rate. If the average RF output powers of the highest identical transmission modes are within 0.25 dB of each other, mid channel of the transmission mode with highest average RF output powers is the initial test channel. Otherwise, the channel of the transmission mode with the highest average RF output power will be the initial test configuration.

When the reported SAR is≤ 0.8 W/kg, no additional measurements on other test channels are required. Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is ≤1.2 W/kg or all channels are measured. When there are multiple untested channels having the same subsequent highest average RF output power, the channel with higher frequency from the lowest 802.11 mode is considered for SAR measurement.

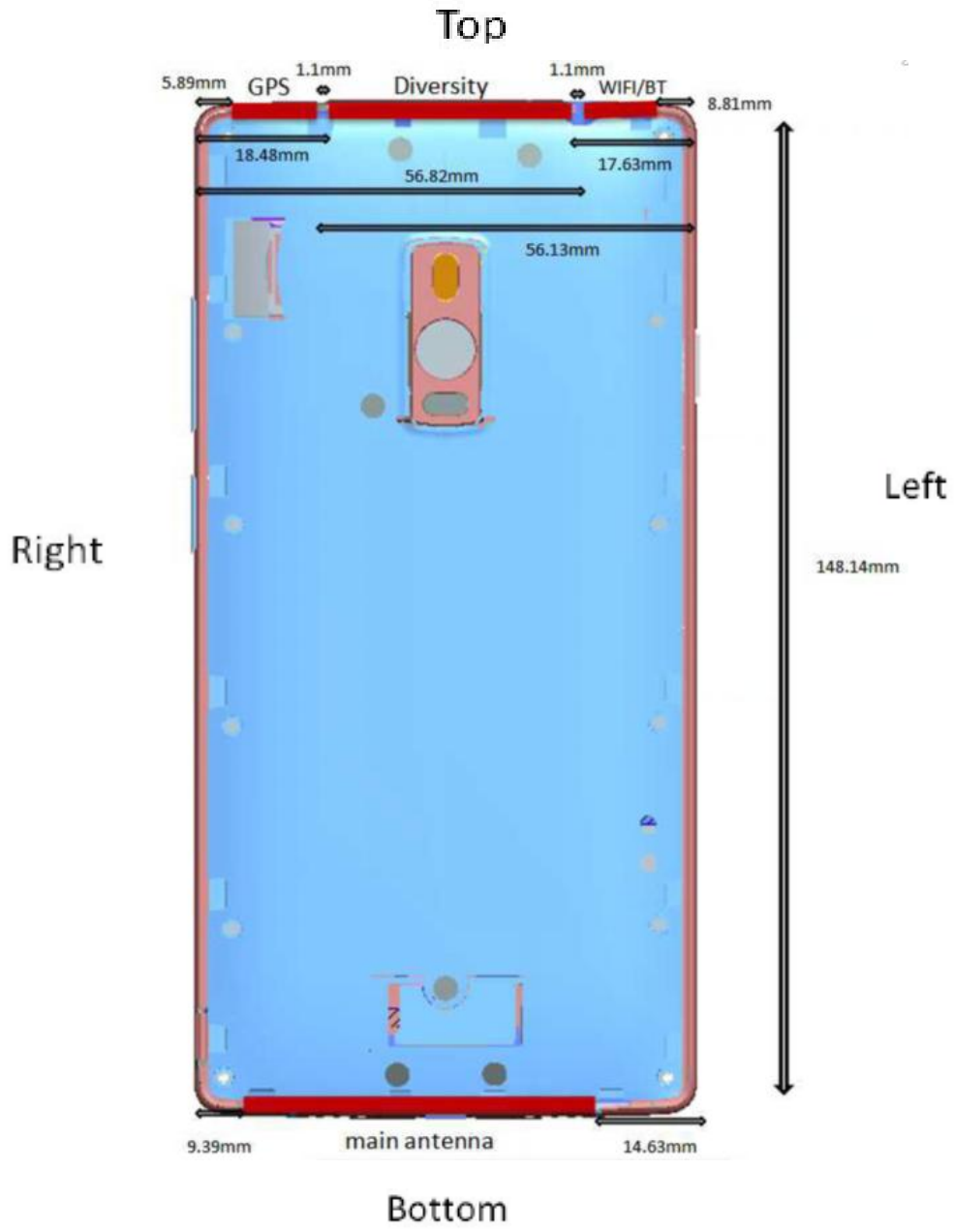
7.2 TEST POSITION

7.2.1 Head

Measurements were made in “cheek” and “tilt” positions on both the left hand and right hand sides of the phantom.

7.2.2 Body

The location of the antennas inside mobile phone is shown as below picture:



Note:

1) Diversity antenna is used to improve the acceptance of performance of the main antenna, it does not have a transmitter function.

Sides for SAR testing

Mode	Exposure Condition	Front Side	Back Side	Left Side	Right Side	Top Side	Bottom Side
GSM850	Hotspot	YES	YES	YES	YES	NO	YES
GSM1900	Hotspot	YES	YES	YES	YES	NO	YES
UMTS Band 2	Hotspot	YES	YES	YES	YES	NO	YES
UMTS Band 4	Hotspot	YES	YES	YES	YES	NO	YES
UMTS Band 5	Hotspot	YES	YES	YES	YES	NO	YES
LTE Band 2	Hotspot	YES	YES	YES	YES	NO	YES
LTE Band 4	Hotspot	YES	YES	YES	YES	NO	YES
LTE Band 5	Hotspot	YES	YES	YES	YES	NO	YES
LTE Band 7	Hotspot	YES	YES	YES	YES	NO	YES
LTE Band 12	Hotspot	YES	YES	YES	YES	NO	YES
LTE Band 17	Hotspot	YES	YES	YES	YES	NO	YES
WiFi	Hotspot	YES	YES	YES	NO	YES	NO

Note: Per KDB 941225 D06, particular DUT edges were not required to be evaluated for Hotspot SAR if the antenna-to-edge distance is greater than 2.5cm.

8.TEST RESULT

8.1CONDUCTED POWER RESULTS

8.1.1CONDUCTED POWER MEASUREMENTS OF GSM850

GSM850		Tune Up	Burst-Averaged output Power (dBm)			Division Factors	Frame-Averaged output Power (dBm)		
			128CH	190CH	251CH		128CH	190CH	251CH
GSM (CS)		**34.00**	32.88	32.86	32.76	-9.19	23.69	23.67	23.57
GPRS/ EDGE (GMSK)	1 Tx Slot	**34.00**	32.79	32.72	32.67	-9.19	23.60	23.53	23.48
	2 Tx Slots	**32.00**	**30.69**	**31.12**	**31.19**	-6.13	**24.56**	**24.99**	**25.06**
	3 Tx Slots	**30.50**	28.84	29.28	29.34	-4.42	24.42	24.86	24.92
	4 Tx Slots	**29.00**	27.81	27.73	27.63	-3.18	24.63	24.55	24.45
EDGE (8PSK)	1 Tx Slot	**28.00**	26.64	26.58	26.60	-9.19	17.45	17.39	17.41
	2 Tx Slots	**27.50**	25.65	25.55	25.61	-6.13	19.52	19.42	19.48
	3 Tx Slots	**26.00**	24.13	24.02	24.37	-4.42	19.71	19.60	19.95
	4 Tx Slots	**24.50**	22.73	22.84	22.77	-3.18	19.55	19.66	19.59

Note:
1) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 time slots.
2) SAR testing was performed on the maximum frame-averaged power mode.

8.1.2CONDUCTED POWER MEASUREMENTS OF GSM1900

GSM1900		Tune Up	Burst-Averaged output Power (dBm)			Division Factors	Frame-Averaged output Power (dBm)		
			512CH	661CH	810CH		512CH	661CH	810CH
GSM (CS)		**31.50**	30.77	30.74	30.67	-9.19	21.58	21.55	21.48
GPRS/ EDGE (GMSK)	1 Tx Slot	**31.00**	30.70	30.67	30.62	-9.19	21.51	21.48	21.43
	2 Tx Slots	**28.00**	27.70	27.54	27.62	-6.13	21.57	21.41	21.49
	3 Tx Slots	**27.50**	**27.15**	**27.31**	**27.13**	-4.42	**22.73**	**22.89**	**22.71**
	4 Tx Slots	**26.00**	25.37	25.27	25.34	-3.18	22.19	22.09	22.16
EDGE (8PSK)	1 Tx Slot	**27.00**	25.71	25.82	25.87	-9.19	16.52	16.63	16.68
	2 Tx Slots	**26.00**	24.15	24.20	24.72	-6.13	18.02	18.07	18.59
	3 Tx Slots	**26.00**	24.08	24.04	24.09	-4.42	19.66	19.62	19.67
	4 Tx Slots	**25.00**	23.97	23.91	23.81	-3.18	20.79	20.73	20.63

Note:
1) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 time slots.
2) SAR testing was performed on the maximum frame-averaged power mode.

8.1.3 CONDUCTED POWER MEASUREMENTS OF UMTS 850 Band 5

UMTS850 (Band 5)		Tune-up	SAR Conducted Power (dBm)		
			4132CH	4182CH	4233CH
WCDMA	12.2kbps RMC	**24.00**	23.18	23.17	23.26
	64kbps RMC	**24.00**	23.19	23.18	23.27
	144kbps RMC	**24.00**	23.18	23.18	23.28
	384kbps RMC	**24.00**	23.19	23.18	23.28
HSDPA	Subtest 1	**23.50**	22.15	22.16	22.19
	Subtest 2	**23.50**	22.17	22.17	22.20
	Subtest 3	**23.50**	21.65	21.66	21.69
	Subtest 4	**23.50**	21.65	21.66	21.68
HSUPA	Subtest 1	**23.50**	22.16	22.15	22.20
	Subtest 2	**23.50**	21.63	21.64	21.65
	Subtest 3	**23.50**	22.18	22.19	22.20
	Subtest 4	**23.50**	22.15	22.16	22.18
	Subtest 5	**23.50**	22.15	22.15	22.19
HSPA+	Subtest 1	**23.50**	22.13	22.14	22.15
	Subtest 2	**23.50**	22.12	22.13	22.14
	Subtest 3	**23.50**	21.61	21.65	21.63
	Subtest 4	**23.50**	21.65	21.64	21.65
DC-HSDPA	Subtest 1	**23.50**	22.15	22.16	22.19
	Subtest 2	**23.50**	22.17	22.17	22.20
	Subtest 3	**23.50**	21.65	21.66	21.69
	Subtest 4	**23.50**	21.65	21.66	21.68

Note: Per KDB941225 D01v03, 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.

8.1.4CONDUCTED POWER MEASUREMENTS OFUMTS1700 Band 4

UMTS1700 (Band 4)		Tune-up	SAR Conducted Power (dBm)		
			1312CH	1413CH	1513CH
WCDMA	12.2kbps RMC	**24.00**	22.95	22.89	22.86
	64kbps RMC	**24.00**	22.95	22.90	22.86
	144kbps RMC	**24.00**	22.95	22.89	22.86
	384kbps RMC	**24.00**	22.95	22.90	22.86
HSDPA	Subtest 1	**23.50**	22.13	21.98	22.02
	Subtest 2	**23.50**	22.10	22.10	22.02
	Subtest 3	**23.50**	21.60	21.51	21.59
	Subtest 4	**23.50**	21.63	21.52	21.55
HSUPA	Subtest 1	**23.50**	22.11	22.01	22.05
	Subtest 2	**23.50**	21.53	21.49	21.52
	Subtest 3	**23.50**	22.12	22.02	22.06
	Subtest 4	**23.50**	22.04	22.05	22.02
	Subtest 5	**23.50**	22.02	21.97	21.95
HSPA+	Subtest 1	**23.50**	22.03	22.01	21.96
	Subtest 2	**23.50**	21.92	21.92	21.96
	Subtest 3	**23.50**	21.54	21.57	21.6
	Subtest 4	**23.50**	21.55	21.54	21.6
DC-HSDPA	Subtest 1	**23.50**	22.13	21.98	22.02
	Subtest 2	**23.50**	22.10	22.10	22.02
	Subtest 3	**23.50**	21.60	21.51	21.59
	Subtest 4	**23.50**	21.63	21.52	21.55

Note: Per KDB941225 D01v03, 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.

8.1.5CONDUCTED POWER MEASUREMENTS OFUMTS1900 Band 2

UMTS1900 (Band 2)		Tune-up	SAR Conducted Power (dBm)		
			9262CH	9400CH	9538CH
WCDMA	12.2kbps RMC	**24.00**	22.83	23.15	23.29
	64kbps RMC	**24.00**	22.84	23.16	23.30
	144kbps RMC	**24.00**	22.83	23.15	23.29
	384kbps RMC	**24.00**	22.84	23.15	23.29
HSDPA	Subtest 1	**23.50**	21.80	22.16	22.07
	Subtest 2	**23.50**	21.81	22.17	22.22
	Subtest 3	**23.50**	21.56	21.66	21.58
	Subtest 4	**23.50**	21.6	21.65	21.72
HSUPA	Subtest 1	**23.50**	21.82	22.19	22.25
	Subtest 2	**23.50**	21.58	21.64	21.72
	Subtest 3	**23.50**	21.83	22.20	22.25
	Subtest 4	**23.50**	21.81	22.17	22.08
	Subtest 5	**23.50**	21.89	22.19	22.24
HSPA+	Subtest 1	**23.50**	21.88	22.14	22.07
	Subtest 2	**23.50**	21.87	22.17	22.08
	Subtest 3	**23.50**	21.64	21.66	21.72
	Subtest 4	**23.50**	21.59	21.65	21.56
DC-HSDPA	Subtest 1	**23.50**	21.80	22.16	22.07
	Subtest 2	**23.50**	21.81	22.17	22.22
	Subtest 3	**23.50**	21.61	21.66	21.58
	Subtest 4	**23.50**	21.59	21.65 s	21.72

Note: Per KDB941225 D01v03, 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.

8.1.6CONDUCTED POWER MEASUREMENTS OF LTE Band 2

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18607	18900	19193
1.4MHz	QPSK	1	0	**24.00**	23.52	23.21	23.21
		1	2	**24.00**	23.22	23.22	23.16
		1	5	**24.00**	23.60	23.20	23.12
		3	0	**23.00**	22.18	22.98	22.01
		3	1	**23.00**	22.26	22.05	22.03
		3	2	**23.00**	22.25	22.02	22.04
		6	0	**23.00**	22.11	21.93	22.00
	16QAM	1	0	**23.00**	22.61	22.14	22.21
		1	2	**23.00**	22.65	22.36	22.22
		1	5	**23.00**	22.58	22.16	22.28
		3	0	**22.00**	21.30	21.13	21.36
		3	1	**22.00**	21.36	21.16	21.10
		3	2	**22.00**	21.37	21.18	21.16
		6	0	**22.00**	21.02	21.16	21.07
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18615	18900	19185
3MHz	QPSK	1	0	**24.00**	23.29	23.22	23.07
		1	7	**24.00**	23.40	23.14	23.08
		1	14	**24.00**	23.26	23.16	23.02
		8	0	**23.00**	22.20	22.06	22.07
		8	4	**23.00**	22.20	22.03	22.03
		8	7	**23.00**	22.14	22.00	22.01
		15	0	**23.00**	22.14	22.01	22.02
	16QAM	1	0	**23.00**	22.80	22.30	22.11
		1	7	**23.00**	22.64	22.29	22.05
		1	14	**23.00**	22.68	22.06	22.05
		8	0	**22.00**	21.26	21.05	21.14
		8	4	**22.00**	21.22	21.05	21.10
		8	7	**22.00**	21.20	21.01	21.08
		15	0	**22.00**	21.16	20.98	21.06

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18625	18900	19175
5MHz	QPSK	1	0	**24.00**	23.31	23.20	23.30
		1	13	**24.00**	23.24	23.26	23.30
		1	24	**24.00**	23.22	23.16	23.15
		12	0	**23.00**	22.30	22.09	22.25
		12	6	**23.00**	22.21	22.05	22.09
		12	11	**23.00**	22.15	22.01	22.08
		25	0	**23.00**	22.18	22.02	22.08
	16QAM	1	0	**23.00**	22.44	22.23	22.50
		1	13	**23.00**	22.84	22.32	22.41
		1	24	**23.00**	22.73	22.20	22.23
		12	0	**22.00**	21.32	21.17	21.30
		12	6	**22.00**	21.30	21.09	21.15
		12	11	**22.00**	21.24	21.08	21.06
		25	0	**22.00**	21.25	21.02	21.06
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18650	18900	19150
10MHz	QPSK	1	0	**24.00**	23.77	23.30	23.45
		1	25	**24.00**	23.40	23.23	23.20
		1	49	**24.00**	23.30	23.06	23.08
		25	0	**23.00**	22.40	22.10	22.40
		25	13	**23.00**	22.15	22.06	22.17
		25	25	**23.00**	22.03	22.01	22.11
		50	0	**23.00**	22.09	22.02	22.15
	16QAM	1	0	**23.00**	22.86	22.62	22.55
		1	25	**23.00**	22.48	22.24	22.20
		1	49	**23.00**	22.48	22.39	22.17
		25	0	**22.00**	21.26	21.32	21.20
		25	13	**22.00**	21.15	21.14	21.16
		25	25	**22.00**	21.06	21.10	21.10
		50	0	**22.00**	21.11	21.07	21.08

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18675	18900	19125
15MHz	QPSK	1	0	**24.00**	23.83	23.74	23.88
		1	38	**24.00**	23.60	23.30	23.50
		1	74	**24.00**	23.40	23.31	23.29
		36	0	**23.00**	22.40	22.60	22.40
		36	18	**23.00**	22.29	22.27	22.24
		36	39	**23.00**	22.20	22.16	22.15
		75	0	**23.00**	22.16	22.16	22.21
	16QAM	1	0	**23.00**	22.54	22.99	22.65
		1	38	**23.00**	22.70	22.60	22.16
		1	74	**23.00**	22.56	22.63	22.03
		36	0	**22.00**	21.50	21.40	21.50
		36	18	**22.00**	21.27	21.20	21.30
		36	39	**22.00**	21.20	21.05	21.19
		75	0	**22.00**	21.20	21.08	21.14
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					18700	18900	19100
20MHz	QPSK	1	0	**24.00**	23.87	23.90	23.84
		1	50	**24.00**	23.30	23.06	23.11
		1	99	**24.00**	23.30	23.26	23.26
		50	0	**23.00**	22.80	22.80	22.44
		50	25	**23.00**	22.40	22.30	22.23
		50	50	**23.00**	22.20	22.20	22.16
		100	0	**23.00**	22.27	22.18	22.30
	16QAM	1	0	**23.00**	22.48	22.16	22.30
		1	50	**23.00**	22.60	22.50	22.80
		1	99	**23.00**	22.60	22.63	22.88
		50	0	**22.00**	21.80	21.42	21.60
		50	25	**22.00**	21.50	21.10	21.28
		50	50	**22.00**	21.23	21.07	21.20
		100	0	**22.00**	21.26	21.15	21.29

8.1.7CONDUCTED POWER MEASUREMENTS OF LTE Band 4

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					19957	20175	20393
1.4MHz	QPSK	1	0	**24.00**	23.36	23.38	23.20
		1	2	**24.00**	23.30	23.16	23.30
		1	5	**24.00**	23.40	23.31	23.15
		3	0	**23.00**	22.14	22.04	22.05
		3	1	**23.00**	22.20	22.06	22.10
		3	2	**23.00**	22.26	22.05	22.12
		6	0	**23.00**	22.11	22.08	22.16
	16QAM	1	0	**23.00**	22.68	22.20	22.40
		1	2	**23.00**	22.71	22.47	22.42
		1	5	**23.00**	22.59	22.31	22.40
		3	0	**22.00**	21.25	21.27	21.12
		3	1	**22.00**	21.30	21.34	21.16
		3	2	**22.00**	21.30	21.33	21.16
		6	0	**22.00**	21.05	21.32	21.19
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					19965	20175	20385
3MHz	QPSK	1	0	**24.00**	23.36	23.30	23.16
		1	7	**24.00**	23.49	23.20	23.19
		1	14	**24.00**	23.37	23.20	23.17
		8	0	**23.00**	22.20	22.15	22.05
		8	4	**23.00**	22.20	22.27	22.11
		8	7	**23.00**	22.17	22.22	22.12
		15	0	**23.00**	22.13	22.24	22.13
	16QAM	1	0	**23.00**	22.80	22.33	22.10
		1	7	**23.00**	22.65	22.49	22.15
		1	14	**23.00**	22.72	22.30	22.19
		8	0	**22.00**	21.21	21.30	21.13
		8	4	**22.00**	21.22	21.30	21.19
		8	7	**22.00**	21.17	21.29	21.18
		15	0	**22.00**	21.14	21.21	21.16

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					19975	20175	20375
5MHz	QPSK	1	0	**24.00**	23.36	23.45	23.30
		1	13	**24.00**	23.30	23.49	23.30
		1	24	**24.00**	23.20	23.40	23.27
		12	0	**23.00**	22.20	22.40	22.20
		12	6	**23.00**	22.18	22.28	22.06
		12	11	**23.00**	22.13	22.25	22.05
		25	0	**23.00**	22.10	22.24	22.02
	16QAM	1	0	**23.00**	22.81	22.50	22.33
		1	13	**23.00**	22.70	22.51	22.31
		1	24	**23.00**	22.71	22.43	22.30
		12	0	**22.00**	21.30	21.33	21.18
		12	6	**22.00**	21.28	21.29	21.19
		12	11	**22.00**	21.27	21.30	21.11
		25	0	**22.00**	21.20	21.20	21.15
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20000	20175	20350
10MHz	QPSK	1	0	**24.00**	23.61	23.56	23.34
		1	25	**24.00**	23.42	23.30	23.14
		1	49	**24.00**	23.33	23.20	23.16
		25	0	**23.00**	22.30	22.31	22.30
		25	13	**23.00**	22.20	22.30	22.09
		25	25	**23.00**	22.10	22.25	22.07
		50	0	**23.00**	22.06	22.26	22.04
	16QAM	1	0	**23.00**	22.77	22.88	22.55
		1	25	**23.00**	22.60	22.41	22.10
		1	49	**23.00**	22.44	22.39	22.20
		25	0	**22.00**	21.30	21.50	21.20
		25	13	**22.00**	21.20	21.36	21.20
		25	25	**22.00**	21.04	21.34	21.15
		50	0	**22.00**	21.09	21.30	21.13

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20025	20175	20325
15MHz	QPSK	1	0	**24.00**	23.86	23.77	23.80
		1	38	**24.00**	23.70	23.50	23.15
		1	74	**24.00**	23.47	23.25	23.50
		36	0	**23.00**	22.40	22.70	22.40
		36	18	**23.00**	22.30	22.40	22.26
		36	39	**23.00**	22.25	22.20	22.20
		75	0	**23.00**	22.17	22.17	22.20
	16QAM	1	0	**23.00**	22.98	22.17	22.62
		1	38	**23.00**	22.70	22.52	22.03
		1	74	**23.00**	22.59	22.51	22.10
		36	0	**22.00**	21.40	21.50	21.40
		36	18	**22.00**	21.30	21.30	21.30
		36	39	**22.00**	21.22	21.15	21.20
		75	0	**22.00**	21.22	21.22	21.18
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20050	20175	20300
20MHz	QPSK	1	0	**24.00**	23.91	23.95	23.83
		1	50	**24.00**	23.30	23.27	23.22
		1	99	**24.00**	23.32	23.32	23.30
		50	0	**23.00**	22.52	22.60	22.50
		50	25	**23.00**	22.30	22.40	22.12
		50	50	**23.00**	22.25	22.26	22.08
		100	0	**23.00**	22.34	22.25	22.30
	16QAM	1	0	**23.00**	22.18	22.30	22.27
		1	50	**23.00**	22.60	22.55	22.80
		1	99	**23.00**	22.73	22.60	22.79
		50	0	**22.00**	21.51	21.46	21.50
		50	25	**22.00**	21.30	21.38	21.30
		50	50	**22.00**	21.25	21.22	21.12
		100	0	**22.00**	21.29	21.23	21.31

8.1.8CONDUCTED POWER MEASUREMENTS OF LTE Band 5

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20407	20525	20643
1.4MHz	QPSK	1	0	**24.00**	22.98	23.33	23.44
		1	2	**24.00**	23.19	23.20	23.58
		1	5	**24.00**	23.32	23.23	23.38
		3	0	**23.00**	22.23	22.27	22.23
		3	1	**23.00**	22.17	22.10	22.26
		3	2	**23.00**	22.23	22.06	22.28
		6	0	**23.00**	22.20	22.05	22.23
	16QAM	1	0	**23.00**	22.32	22.30	22.48
		1	2	**23.00**	22.54	22.43	22.58
		1	5	**23.00**	22.56	22.23	22.59
		3	0	**22.00**	21.21	21.33	21.33
		3	1	**22.00**	21.35	21.35	21.42
		3	2	**22.00**	21.40	21.35	21.47
		6	0	**22.00**	21.10	21.28	21.40
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20415	20525	20635
3MHz	QPSK	1	0	**24.00**	23.12	23.30	23.26
		1	7	**24.00**	23.37	23.15	23.18
		1	14	**24.00**	23.50	23.29	23.29
		8	0	**23.00**	22.11	22.14	22.20
		8	4	**23.00**	22.14	22.15	22.30
		8	7	**23.00**	22.20	22.10	22.23
		15	0	**23.00**	22.10	22.14	22.25
	16QAM	1	0	**23.00**	22.46	22.30	22.30
		1	7	**23.00**	22.55	22.30	22.28
		1	14	**23.00**	22.84	22.29	22.40
		8	0	**22.00**	21.28	21.10	21.25
		8	4	**22.00**	21.26	21.15	21.43
		8	7	**22.00**	21.32	21.11	21.42
		15	0	**22.00**	21.22	21.09	21.30

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20425	20525	20625
5MHz	QPSK	1	0	**24.00**	23.06	23.38	23.39
		1	13	**24.00**	23.38	23.42	23.44
		1	24	**24.00**	23.31	23.41	23.42
		12	0	**23.00**	22.30	22.30	22.23
		12	6	**23.00**	22.22	22.20	22.24
		12	11	**23.00**	22.22	22.17	22.28
		25	0	**23.00**	22.21	22.20	22.24
	16QAM	1	0	**23.00**	22.63	22.42	22.50
		1	13	**23.00**	22.87	22.43	22.58
		1	24	**23.00**	22.88	22.38	22.60
		12	0	**22.00**	21.30	21.30	21.30
		12	6	**22.00**	21.34	21.25	21.28
		12	11	**22.00**	21.36	21.16	21.28
		25	0	**22.00**	21.29	21.13	21.21
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20450	20525	20600
10MHz	QPSK	1	0	**24.00**	23.17	23.30	23.23
		1	25	**24.00**	23.22	23.20	23.24
		1	49	**24.00**	23.20	23.10	23.28
		25	0	**23.00**	22.30	22.30	22.30
		25	13	**23.00**	22.11	22.26	22.29
		25	25	**23.00**	22.10	22.21	22.20
		50	0	**23.00**	22.09	22.17	22.21
	16QAM	1	0	**23.00**	22.54	22.66	22.69
		1	25	**23.00**	22.50	22.30	22.31
		1	49	**23.00**	22.40	22.40	22.33
		25	0	**22.00**	21.30	21.35	21.31
		25	13	**22.00**	21.20	21.33	21.31
		25	25	**22.00**	21.10	21.30	21.23
		50	0	**22.00**	21.11	21.20	21.22

8.1.9CONDUCTED POWER MEASUREMENTS OF LTE Band 7

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20775	21100	21425
5MHz	QPSK	1	0	**24.00**	22.96	23.07	23.45
		1	13	**24.00**	22.84	23.20	23.50
		1	24	**24.00**	22.72	22.90	23.38
		12	0	**23.00**	21.60	21.97	22.22
		12	6	**23.00**	21.57	21.97	22.24
		12	11	**23.00**	21.56	21.92	22.20
		25	0	**23.00**	21.63	21.95	22.20
	16QAM	1	0	**23.00**	22.49	22.17	22.44
		1	13	**23.00**	22.40	22.26	22.63
		1	24	**23.00**	22.38	22.05	22.42
		12	0	**22.00**	20.81	21.05	21.34
		12	6	**22.00**	20.80	21.04	21.33
		12	11	**22.00**	20.82	20.96	21.24
		25	0	**22.00**	20.79	20.90	21.18
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20800	21100	21400
10MHz	QPSK	1	0	**24.00**	23.20	22.89	23.33
		1	25	**24.00**	23.08	22.90	23.30
		1	49	**24.00**	22.76	22.66	23.14
		25	0	**23.00**	21.78	21.85	22.31
		25	13	**23.00**	21.76	21.86	22.20
		25	25	**23.00**	21.56	21.80	22.10
		50	0	**23.00**	21.68	21.83	22.18
	16QAM	1	0	**23.00**	22.08	21.88	22.80
		1	25	**23.00**	22.12	21.44	22.29
		1	49	**23.00**	21.90	21.75	22.23
		25	0	**22.00**	20.79	20.91	21.35
		25	13	**22.00**	20.77	20.94	21.22
		25	25	**22.00**	20.50	20.86	21.13
		50	0	**22.00**	20.66	20.88	21.20

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20825	21100	21375
15MHz	QPSK	1	0	**24.00**	23.33	23.30	23.38
		1	38	**24.00**	23.14	23.28	23.42
		1	74	**24.00**	22.77	22.91	23.30
		36	0	**23.00**	21.93	22.14	22.50
		36	18	**23.00**	21.94	22.22	22.50
		36	39	**23.00**	21.80	22.11	22.43
		75	0	**23.00**	21.89	22.05	22.37
	16QAM	1	0	**23.00**	22.40	22.20	22.23
		1	38	**23.00**	22.33	22.19	22.20
		1	74	**23.00**	22.03	22.20	22.07
		36	0	**22.00**	21.10	21.20	21.54
		36	18	**22.00**	21.08	21.19	21.55
		36	39	**22.00**	20.86	21.20	21.33
		75	0	**22.00**	21.02	21.05	21.39
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					20850	21100	21350
20MHz	QPSK	1	0	**24.00**	22.87	23.28	23.45
		1	50	**24.00**	22.86	23.19	23.44
		1	99	**24.00**	22.50	22.70	23.00
		50	0	**23.00**	21.97	22.25	22.42
		50	25	**23.00**	21.90	22.09	22.51
		50	50	**23.00**	21.70	22.05	22.40
		100	0	**23.00**	21.82	22.11	22.31
	16QAM	1	0	**23.00**	22.60	22.51	23.18
		1	50	**23.00**	22.58	22.58	23.61
		1	99	**23.00**	22.40	22.10	22.50
		50	0	**22.00**	21.11	21.29	21.53
		50	25	**22.00**	20.97	21.20	21.50
		50	50	**22.00**	20.80	20.93	21.30
		100	0	**22.00**	20.96	21.08	21.40

8.1.10CONDUCTED POWER MEASUREMENTS OFLTE Band 12

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					23017	23095	23173
1.4MHz	QPSK	1	0	**24.00**	23.50	23.26	23.45
		1	2	**24.00**	23.27	23.23	23.36
		1	5	**24.00**	23.60	23.30	23.40
		3	0	**23.00**	22.10	22.05	22.08
		3	1	**23.00**	22.21	22.11	22.19
		3	2	**23.00**	22.10	22.40	22.16
		6	0	**23.00**	22.01	22.02	22.02
	16QAM	1	0	**23.00**	22.58	22.33	22.55
		1	2	**23.00**	22.60	22.54	22.61
		1	5	**23.00**	22.54	22.56	22.60
		3	0	**22.00**	21.43	21.13	21.50
		3	1	**22.00**	21.49	21.20	21.49
		3	2	**22.00**	21.40	21.30	21.50
		6	0	**22.00**	21.05	21.15	21.01
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					23025	23095	23165
3MHz	QPSK	1	0	**24.00**	23.31	23.22	23.01
		1	7	**24.00**	23.33	23.22	23.18
		1	14	**24.00**	23.46	23.35	23.01
		8	0	**23.00**	22.25	22.09	22.13
		8	4	**23.00**	22.10	22.22	22.20
		8	7	**23.00**	22.04	22.14	21.95
		15	0	**23.00**	22.10	22.15	22.19
	16QAM	1	0	**23.00**	22.70	21.90	22.29
		1	7	**23.00**	22.60	22.00	22.29
		1	14	**23.00**	22.56	21.91	22.26
		8	0	**22.00**	21.22	21.20	21.35
		8	4	**22.00**	21.20	21.35	21.42
		8	7	**22.00**	21.12	21.27	21.31
		15	0	**22.00**	21.21	21.20	21.26

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					23035	23095	23155
5MHz	QPSK	1	0	**24.00**	23.30	23.23	23.50
		1	13	**24.00**	23.50	23.37	23.59
		1	24	**24.00**	23.30	23.25	23.51
		12	0	**23.00**	22.01	22.00	22.12
		12	6	**23.00**	22.10	22.02	22.22
		12	11	**23.00**	22.08	22.03	22.23
		25	0	**23.00**	22.03	22.04	22.16
	16QAM	1	0	**23.00**	22.24	22.23	22.65
		1	13	**23.00**	22.90	22.50	22.80
		1	24	**23.00**	22.91	22.30	22.80
		12	0	**22.00**	21.21	21.20	21.28
		12	6	**22.00**	21.30	21.24	21.39
		12	11	**22.00**	21.30	21.23	21.33
		25	0	**22.00**	21.19	21.20	21.20
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					23060	23095	23130
10MHz	QPSK	1	0	**24.00**	23.35	23.10	23.00
		1	25	**24.00**	23.46	23.06	23.04
		1	49	**24.00**	23.53	23.07	22.98
		25	0	**23.00**	22.22	22.09	22.23
		25	12	**23.00**	22.23	22.12	22.24
		25	25	**23.00**	22.20	22.10	22.13
		50	0	**23.00**	22.14	22.02	22.18
	16QAM	1	0	**23.00**	22.56	22.00	22.46
		1	25	**23.00**	22.69	21.68	22.18
		1	49	**23.00**	22.50	21.79	22.06
		25	0	**22.00**	21.15	21.14	21.23
		25	12	**22.00**	21.22	21.18	21.26
		25	25	**22.00**	21.20	21.09	21.20
		50	0	**22.00**	21.21	21.10	21.16

8.1.11CONDUCTED POWER MEASUREMENTS OFLTE Band 17

Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					23755	23790	23825
5MHz	QPSK	1	0	**24.00**	23.40	23.31	23.36
		1	13	**24.00**	23.45	23.50	23.60
		1	24	**24.00**	23.44	23.30	23.28
		12	0	**23.00**	22.18	22.05	22.09
		12	6	**23.00**	22.15	22.12	22.12
		12	11	**23.00**	22.10	22.16	22.22
		25	0	**23.00**	22.16	22.12	22.19
	16QAM	1	0	**23.00**	22.98	22.25	22.66
		1	13	**23.00**	22.90	22.52	22.80
		1	24	**23.00**	22.94	22.44	22.70
		12	0	**22.00**	21.44	21.23	21.26
		12	6	**22.00**	21.39	21.21	21.25
		12	11	**22.00**	21.32	21.24	21.35
		25	0	**22.00**	21.27	21.04	21.20
Bandwidth	Modulation	RB size	RB offset	Tune-up	Low	Mid	High
					23780	23790	23800
10MHz	QPSK	1	0	**24.00**	23.78	23.01	23.30
		1	25	**24.00**	23.50	23.09	22.98
		1	49	**24.00**	23.51	22.90	23.03
		25	0	**23.00**	22.25	22.20	22.16
		25	12	**23.00**	22.27	22.19	22.15
		25	25	**23.00**	22.26	22.20	22.15
		50	0	**23.00**	22.10	22.20	22.19
	16QAM	1	0	**23.00**	22.70	21.96	22.40
		1	25	**23.00**	22.75	21.80	22.18
		1	49	**23.00**	22.42	21.83	22.40
		25	0	**22.00**	21.23	21.26	21.20
		25	12	**22.00**	21.25	21.24	21.22
		25	25	**22.00**	21.12	21.24	21.22
		50	0	**22.00**	21.16	21.22	21.18

8.1.12 CONDUCTED POWER MEASUREMENTS OF WiFi 2.4G

WiFi 2.4G	Channel/ Frequency (MHz)	Tune-up	Average Power (dBm) for Data Rates (Mbps)			
			1	2	5.5	11
802.11b	CH1/2412	14.00	13.94	13.91	13.87	13.83
	CH6/2437	14.00	13.91	13.87	13.82	13.78
	CH11/2462	14.00	13.98	13.94	13.89	13.84

WiFi 2.4G	Channel/ Frequency (MHz)	Tune-up	Average Power (dBm) for Data Rates (Mbps)							
			6	9	12	18	24	36	48	54
802.11g	CH1/2412	12.00	11.65	11.58	11.51	11.37	11.23	11.04	10.82	10.63
	CH6/2437	12.00	11.71	11.64	11.56	11.28	11.17	10.89	10.56	10.42
	CH11/2462	12.00	11.86	11.81	11.75	11.58	11.45	11.29	10.92	10.73

WiFi 2.4G	Channel/ Frequency (MHz)	Tune-up	Average Power (dBm) for Data Rates (Mbps)							
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n HT20	CH1/2412	11.00	10.91	10.84	10.61	10.38	10.04	9.82	9.58	9.32
	CH6/2437	11.00	10.98	10.86	10.63	10.34	10.08	9.78	9.54	9.28
	CH11/2462	11.00	10.96	10.79	10.52	10.28	10.03	9.71	9.51	9.24

WiFi 2.4G	Channel/ Frequency (MHz)	Tune-up	Average Power (dBm) for Data Rates (Mbps)							
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n HT40	CH3/2422	11.00	10.93	10.78	10.53	10.34	10.12	9.89	9.72	9.51
	CH6/2437	11.00	10.65	10.42	10.26	10.11	9.97	9.82	9.64	9.37
	CH9/2452	11.00	10.91	10.74	10.51	10.25	10.04	9.85	9.58	9.24

Note:
Per KDB248227, for WiFi 2.4GHz, the highest measured maximum output power Channel for DSSS modes(802.11b)was selected for SAR measurement.SAR for OFDM modes(2.4GHz 802.11g/n) was not required When the highest reported SAR for DSSS is adjusted by the ratio of OFDM modes(802.11g/n)to DSSS modes(802.11b)specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

8.1.13 CONDUCTED POWER MEASUREMENTS OF WiFi 5G

WiFi 5G	Channel/ Frequency (MHz)	Tune-up	Average Power (dBm) for Data Rates (Mbps)							
			6	**9**	**12**	**18**	**24**	**36**	**48**	**54**
802.11a	CH36/5180	12.00	11.94	11.82	11.74	11.59	11.47	11.34	11.25	11.08
	CH40/5200	12.00	11.93	11.84	11.76	11.67	11.52	11.39	11.24	11.05
	CH48/5240	12.00	11.97	11.85	11.69	11.52	11.44	11.32	11.27	11.07
	CH52/5260	12.00	11.83	11.72	11.58	11.46	11.35	11.24	11.16	10.89
	CH60/5300	12.00	11.79	11.64	11.52	11.43	11.29	11.18	11.04	10.87
	CH64/5320	12.00	11.75	11.63	11.54	11.41	11.24	11.16	11.01	10.84
	CH100/5500	12.00	11.84	11.76	11.58	11.44	11.26	11.13	10.04	10.76
	CH116/5580	12.00	11.89	11.67	11.52	11.41	11.25	11.17	11.05	10.74
	CH140/5700	12.00	11.79	11.64	11.56	11.42	11.27	11.12	10.96	10.73
	CH149/5745	12.00	11.89	11.71	11.53	11.38	11.23	11.11	10.89	10.76
	CH157/5785	12.00	11.85	11.64	11.49	11.34	11.19	11.07	10.92	10.81
	CH165/5825	12.00	11.82	11.61	11.47	11.32	11.22	11.14	10.02	9.85

WiFi 5G	Channel/ Frequency (MHz)	Tune-up	Average Power (dBm) for Data Rates (Mbps)							
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11 N20	CH36/5180	11.00	10.71	10.43	10.27	10.14	10.05	9.94	9.87	9.78
	CH40/5200	11.00	10.67	10.45	10.26	10.11	10.02	9.93	9.84	9.75
	CH48/5240	11.00	10.79	10.48	10.29	10.14	10.05	9.97	9.88	9.76
	CH52/5260	11.00	10.65	10.43	10.22	10.11	9.98	9.84	9.72	9.68
	CH60/5300	11.00	10.56	10.41	10.2	10.04	9.97	9.82	9.76	9.63
	CH64/5320	11.00	10.51	10.37	10.19	10.02	9.95	9.78	9.69	9.57
	CH100/5500	11.00	10.73	10.61	10.27	10.12	10.03	9.91	9.78	9.69
	CH116/5580	11.00	10.78	10.62	10.51	10.38	10.23	10.03	9.87	9.75
	CH140/5700	11.00	10.64	10.43	10.28	10.07	9.98	9.85	9.74	9.62
	CH149/5745	11.00	10.94	10.76	10.54	10.32	10.27	10.11	9.97	9.78
	CH157/5785	11.00	10.74	10.58	10.42	10.31	10.14	10.02	9.94	9.82
	CH165/5825	11.00	10.91	10.84	10.63	10.41	10.28	10.04	9.95	9.84

WiFi 5G	Channel/ Frequency (MHz)	Tune-up	Average Power (dBm) for Data Rates (Mbps)							
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11 N40	CH38/5190	11.00	10.96	10.82	10.69	10.53	10.41	10.24	10.16	10.02
	CH46/5230	11.00	10.98	10.84	10.62	10.48	10.34	10.17	10.08	9.94
	CH54/5270	11.00	10.94	10.78	10.61	10.45	10.31	10.16	10.03	9.95
	CH62/5310	11.00	10.92	10.81	10.68	10.47	10.34	10.19	10.05	9.97
	CH102/5510	11.00	10.92	10.78	10.62	10.43	10.32	10.16	10.04	9.91
	CH110/5550	11.00	10.95	10.74	10.61	10.46	10.31	10.11	10.03	9.87
	CH134/5670	11.00	10.88	10.67	10.52	10.38	10.27	10.09	9.95	9.81
	CH151/5755	11.00	10.77	9.64	9.45	9.31	9.22	9.03	8.84	8.71
	CH159/5795	11.00	10.71	10.54	10.36	10.21	10.02	9.91	9.76	9.62

WiFi 5G	Channel/ Frequency (MHz)	Tune-up	Average Power (dBm) for Data Rates (Mbps)							
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11 AC20	CH36/5180	10.00	9.71	9.52	9.34	9.21	9.07	8.92	8.75	8.64
	CH40/5200	10.00	9.67	9.49	9.28	9.16	9.02	8.89	8.72	8.59
	CH48/5240	10.00	9.72	9.58	9.43	9.21	9.12	8.96	8.84	8.71
	CH52/5260	10.00	9.61	9.46	9.34	9.17	9.08	8.92	8.81	8.65
	CH60/5300	10.00	9.58	9.47	9.31	9.15	9.04	8.84	8.72	8.54
	CH64/5320	10.00	9.52	9.41	9.32	9.16	9.02	8.85	8.73	8.59
	CH100/5500	10.00	9.69	9.58	9.46	9.21	9.04	8.95	8.79	8.68
	CH116/5580	10.00	9.76	9.64	9.52	9.34	9.11	8.96	8.79	8.62
	CH140/5700	10.00	9.65	9.52	9.34	9.21	9.08	8.84	8.71	8.54
	CH149/5745	10.00	9.96	9.72	9.65	9.48	9.34	9.21	9.08	8.92
	CH157/5785	10.00	9.67	9.54	9.41	9.23	9.12	8.98	8.85	8.73
	CH165/5825	10.00	9.91	9.78	9.67	9.51	9.38	9.17	9.02	8.87

WiFi 5G	Channel/ Frequency (MHz)	Tune-up	Average Power (dBm) for Data Rates (Mbps)							
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11 AC40	CH38/5190	10.00	9.91	9.75	9.58	9.37	9.24	9.12	9.03	8.84
	CH46/5230	10.00	9.94	9.71	9.54	9.38	9.23	9.11	8.98	8.81
	CH54/5270	10.00	9.92	9.74	9.56	9.34	9.17	9.08	8.96	8.83
	CH62/5310	10.00	9.93	9.72	9.53	9.31	9.13	9.01	8.86	8.74
	CH102/5510	10.00	9.81	9.68	9.54	9.32	9.14	8.96	8.81	8.71
	CH110/5550	10.00	9.91	9.74	9.48	9.27	9.11	8.92	8.78	8.65
	CH134/5670	10.00	9.85	9.64	9.51	9.21	9.03	8.79	8.68	8.57
	CH151/5755	10.00	9.65	9.51	9.34	9.17	9.02	8.81	8.65	8.52
	CH159/5795	10.00	9.81	9.65	9.43	9.24	9.11	8.92	8.81	8.66

WiFi 5G	Channel/ Frequency (MHz)	Tune-up	Average Power (dBm) for Data Rates (Mbps)							
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11 AC80	CH42/5210	10.00	9.97	9.81	9.65	9.42	9.23	9.11	8.93	8.81
	CH58/5290	10.00	9.79	9.62	9.43	9.28	9.13	9.02	8.84	8.72
	CH106/5530	10.00	9.93	9.78	9.64	9.52	9.34	9.16	8.93	8.82
	CH122/5610	10.00	9.91	9.76	9.58	9.43	9.27	9.14	9.01	8.84
	CH155/5775	10.00	9.86	9.71	9.53	9.41	9.22	9.03	8.84	8.69

8.1.14 CONDUCTED POWER MEASUREMENTS OF BT

BT	Average Conducted Power (dBm)			Tune Up
	CH0	CH39	CH78	
DH5	8.51	9.25	8.01	9.5
3DH5	7.72	8.00	7.84	8.0

BT LE	Average Conducted Power (dBm)			Tune Up
	CH0	CH19	CH39	
BT (4.0)	5.39	6.23	6.03	7

8.2SAR TEST RESULTS

General Notes:

1) Per KDB447498 D01v05r02, all measurement SAR results are scaled to the maximum tune-up tolerance limit to demonstrate compliant.

2) Per KDB447498 D01v05r02, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:≤0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is≤100 MHz. 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.

3) Per KDB865664 D01v01r03,for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/Kg; if the deviation among the repeated measurement is ≤20%,and the measured SAR <1.45W/Kg, only one repeated measurement is required.

4) Per KDB941225 **D06**v02, the DUT Dimension is bigger than 9 cm x 5 cm, so 10mm is chosen as the test separation distance for Hotspot mode. When the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.

5) Per KDB648474 D04v01r02, SAR is evaluated without a headset connected to the device. When the standalone reported body-worn SAR is ≤1.2 W/kg, no additional SAR evaluations using a headset are required.

6) Per KDB865664 D02v01r01, SAR plot is only required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination; Plots are also required when the measured SAR is > 1.5 W/kg, or > 7.0 W/kg for occupational exposure. The published RF exposure KDB procedures may require additional plots; for example, to support SAR to peak location separation ratio test exclusion and/or volume scan post-processing.

GSM Notes:

1) Per KDB648474 D04v01r02, body-worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn SAR.

2) Per KDB941225 D01v03, SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

UMTS Notes:

Per KDB941225 D01v03, 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.

LTE notes:

1) The LTE test configurations are determined according to KDB941225 D05 SAR for LTE Devices v02r03.The general test procedures used for SAR testing can be found in Section 7.3.

2) A-MPR was disabled for all SAR test by setting NS_01 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames(maximum TTI)

WLAN Notes:

1. For exposure conditions with multiple test positions, such as handset operating next to the ear, devices with hotspot mode, procedures for initial test position can be applied. Using the transmission mode determined by the DSSS procedure or initial test configuration, area scans are measured for all positions in an exposure condition. The test position with the highest extrapolated(peak)SAR is used as the initial test position. 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. Otherwise, SAR is evaluated at the subsequent highest peak SAR position until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.

2.Justification for test configurations for WLAN per KDB Publication 248227 for 2.4GHZ WIFI single transmission chain operations, the highest measured maximum output power Channel for DSSS was selected for SAR measurement.SAR for OFDM modes(2.4GHz 802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 7.1.4 for more information.

3. Justification for test configurations for WLAN per KDB Publication 248227 for 5GHZ WIFI single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed power. Other transmission mode were not investigated since the highest reported SAR for initial test configuration adjusted by the ratio of maximum output powers is less than1.2W/kg. See Section 7.1.4 for more information.

8.2.1SAR MEASUREMENT RESULT OF GSM850

1. Head SAR test results of GSM850

Head SAR test results of GSM850									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
GSM	Right Cheek	128	824.2	-0.08	34	32.88	0.030	0.039	
GSM	Right Tilted	128	824.2	0.03	34	32.88	0.017	0.022	
GSM	Left Cheek	128	824.2	0.17	34	32.88	0.090	**0.117**	1
GSM	Left Cheek	190	836.6	0.16	34	32.86	0.046	0.060	
GSM	Left Cheek	251	848.6	-0.18	34	32.76	0.043	0.057	
GSM	Left Tilted	128	824.2	0.13	34	32.88	0.023	0.029	
GPRS10	Right Cheek	251	848.6	0.05	32	31.19	0.149	0.180	
GPRS10	Right Cheek	190	836.6	0.06	32	31.12	0.141	0.173	
GPRS10	Right Cheek	128	824.2	0.04	32	30.69	0.165	**0.223**	2
GPRS10	Right Tilted	251	848.6	0.03	32	31.19	0.058	0.070	
GPRS10	Left Cheek	251	848.6	-0.09	32	31.19	0.114	0.137	
GPRS10	Left Tilted	251	848.6	-0.05	32	31.19	0.067	0.081	

Note: Since GPRS/EDGE of this device supports VOIP capability through 3rd party apps software, we have evaluated data mode for head SAR.

2. Body-Worn SAR test results of GSM850

Body-Worn SAR test results of GSM850(distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
GSM	Front Face	128	824.2	0.09	34	32.88	0.581	**0.752**	3
GSM	Front Face	251	848.6	-0.09	34	32.76	0.493	0.656	
GSM	Front Face	190	836.6	0.04	34	32.86	0.551	0.716	
GSM	Rear Face	128	824.2	-0.2	34	32.88	0.48	0.621	

3. Hotspot SAR test results of GSM850

Hotspot SAR test results of GSM850 (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
GPRS10	Front Face	251	848.6	-0.03	32	31.19	0.654	0.788	
GPRS10	Front Face	190	836.6	-0.08	32	31.12	0.815	0.998	
GPRS10	Front Face	128	824.2	-0.04	32	30.69	0.864	**1.168**	4
GPRS10	Rear Face	251	848.6	0.05	32	31.19	0.578	0.697	
GPRS10	Left Side	251	848.6	0.06	32	31.19	0.172	0.207	
GPRS10	Right Side	251	848.6	0.04	32	31.19	0.113	0.136	
GPRS10	Bottom Side	251	848.6	-0.01	32	31.19	0.283	0.341	
1st Repeat SAR Test at worst position									
GPRS10	Front Face	128	824.2	-0.09	32	30.69	0.759	1.026	

Note:1) SAR is performed on the highest power channel. When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

2) 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).

3) 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.

8.2.2SAR MEASUREMENT RESULT OF GSM1900

1. Head SAR test results of GSM1900

Head SAR test results of GSM1900									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
GSM	Right Cheek	512	1850.2	0.12	31.5	30.77	0.020	0.024	
GSM	Right Tilted	512	1850.2	-0.2	31.5	30.77	0.025	0.029	
GSM	Left Cheek	512	1850.2	0.15	31.5	30.77	0.038	**0.045**	5
GSM	Left Tilted	512	1850.2	-0.08	31.5	30.77	0.034	0.040	
GSM	Left Cheek	661	1880	0.12	31.5	30.74	0.034	0.040	
GSM	Left Cheek	810	1909.8	0.06	31.5	30.67	0.035	0.043	
GPRS11	Right Cheek	661	1880	0.06	27.5	27.31	0.074	0.077	
GPRS11	Right Cheek	512	1850.2	0.06	27.5	27.15	0.089	**0.096**	6
GPRS11	Right Cheek	810	1909.8	-0.01	27.5	27.13	0.042	0.046	
GPRS11	Right Tilted	661	1880	0.09	27.5	27.31	0.029	0.030	
GPRS11	Left Cheek	661	1880	0.06	27.5	27.31	0.057	0.060	
GPRS11	Left Tilted	661	1880	0.01	27.5	27.31	0.036	0.038	

Note: Since GPRS/EDGE of this device supports VOIP capability through 3rd party apps software, we have evaluated data mode for head SAR.

2. Body-Worn SAR test results of GSM1900

Body-Worn SAR test results of GSM1900(distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
GSM	Front Face	512	1850.2	0.02	31.5	30.77	0.268	**0.317**	7
GSM	Front Face	661	1880	0.08	31.5	30.74	0.241	0.287	
GSM	Front Face	810	1909.8	-0.07	31.5	30.67	0.233	0.282	
GSM	Rear Face	512	1850.2	-0.11	31.5	30.77	0.207	0.245	

3. Hotspot SAR test results of GSM1900

Hotspot SAR test results of GSM1900 (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
GPRS11	Front Face	661	1880	-0.01	27.5	27.31	0.246	0.257	
GPRS11	Rear Face	661	1880	-0.06	27.5	27.31	0.282	0.295	
GPRS11	Left Side	661	1880	0.03	27.5	27.31	0.092	0.096	
GPRS11	Right Side	661	1880	0.07	27.5	27.31	0.067	0.070	
GPRS11	Bottom Side	661	1880	-0.01	27.5	27.31	0.567	0.592	
GPRS11	Bottom Side	810	1909.8	-0.08	27.5	27.13	0.538	0.586	
GPRS11	Bottom Side	512	1850.2	-0.06	27.5	27.15	0.619	**0.671**	8

8.2.3SAR MEASUREMENT RESULT OF UMTS Band 2

1. Head SAR test results of UMTS Band 2

Head SAR test results of UMTS Band 2									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
RMC12.2 Kbps	Right Cheek	9538	1907.6	0.06	24	23.29	0.117	**0.138**	9
RMC12.2 Kbps	Right Cheek	9262	1852.4	-0.08	24	22.83	0.104	0.136	
RMC12.2 Kbps	Right Cheek	9400	1880	-0.01	24	23.15	0.101	0.123	
RMC12.2 Kbps	Right Tilted	9538	1907.6	-0.05	24	23.29	0.078	0.092	
RMC12.2 Kbps	Left Cheek	9538	1907.6	0.01	24	23.29	0.072	0.085	
RMC12.2 Kbps	Left Tilted	9538	1907.6	0.03	24	23.29	0.051	0.060	

2. Body-Worn SAR test results of UMTS Band 2

Body-Worn SAR test results of UMTS Band 2 (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
RMC12.2 Kbps	Front Face	9538	1907.6	0.01	24	23.29	0.236	0.278	
RMC12.2 Kbps	Rear Face	9538	1907.6	0.05	24	23.29	0.251	**0.296**	10

3. Hotspot SAR test results of UMTS Band 2

Hotspot SAR test results of UMTS Band 2 (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
RMC12.2 Kbps	Front Face	9538	1907.6	0.01	24	23.29	0.236	0.278	
RMC12.2 Kbps	Rear Face	9538	1907.6	0.05	24	23.29	0.251	0.296	
RMC12.2 Kbps	Left Side	9538	1907.6	-0.03	24	23.29	0.110	0.130	
RMC12.2 Kbps	Right Side	9538	1907.6	-0.02	24	23.29	0.048	0.057	
RMC12.2 Kbps	Bottom Side	9538	1907.6	-0.06	24	23.29	1.010	1.189	
RMC12.2 Kbps	Bottom Side	9262	1852.4	-0.09	24	22.83	0.985	**1.290**	11
RMC12.2 Kbps	Bottom Side	9400	1880	-0.05	24	23.15	0.983	1.196	
1st Repeat SAR Test at worst position									
RMC12.2 Kbps	Bottom Side	9262	1852.4	-0.04	24	22.83	0.968	1.267	

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

2) 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).

3) 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.

8.2.4SAR MEASUREMENT RESULT OF UMTS Band 4

1. Head SAR test results of UMTS Band 4

Head SAR test results of UMTS Band 4									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
RMC12.2 Kbps	Right Cheek	1312	1712.4	-0.09	24	22.95	0.202	0.257	
RMC12.2 Kbps	Right Cheek	1413	1732.6	-0.06	24	22.89	0.205	**0.265**	12
RMC12.2 Kbps	Right Cheek	1513	1752.6	-0.02	24	22.86	0.187	0.243	
RMC12.2 Kbps	Right Tilted	1312	1712.4	-0.08	24	22.95	0.101	0.129	
RMC12.2 Kbps	Left Cheek	1312	1712.4	-0.04	24	22.95	0.137	0.174	
RMC12.2 Kbps	Left Tilted	1312	1712.4	-0.03	24	22.95	0.108	0.138	

2. Body-Worn SAR test results of UMTS Band 4

Body-Worn SAR test results of UMTS Band 4 (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
RMC12.2 Kbps	Front Face	1312	1712.4	0.02	24	22.95	0.361	0.460	
RMC12.2 Kbps	Rear Face	1312	1712.4	-0.05	24	22.95	0.533	**0.679**	13

3. Hotspot SAR test results of UMTS Band 4

Hotspot SAR test results of UMTS Band 4 (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
RMC12.2 Kbps	Front Face	1312	1712.4	0.02	24	22.95	0.361	0.460	
RMC12.2 Kbps	Rear Face	1312	1712.4	-0.05	24	22.95	0.533	0.679	
RMC12.2 Kbps	Left Side	1312	1712.4	-0.03	24	22.95	0.143	0.182	
RMC12.2 Kbps	Right Side	1312	1712.4	0.01	24	22.95	0.068	0.087	
RMC12.2 Kbps	Bottom Side	1312	1712.4	-0.03	24	22.95	1.000	**1.274**	14
RMC12.2 Kbps	Bottom Side	1413	1732.6	-0.02	24	22.89	0.929	1.200	
RMC12.2 Kbps	Bottom Side	1513	1752.6	-0.03	24	22.86	0.947	1.231	
1st Repeat SAR Test at worst position									
RMC12.2 Kbps	Bottom Side	1312	1712.4	-0.02	24	22.95	0.982	1.251	

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

2) 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).

3) 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.

8.2.5 SAR MEASUREMENT RESULT OF UMTS Band 5

1. Head SAR test results of UMTS Band 5

Head SAR test results of UMTS Band 5									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
RMC12.2 Kbps	Right Cheek	4233	846.6	0.03	24	23.26	0.078	0.092	
RMC12.2 Kbps	Right Tilted	4233	846.6	0.07	24	23.26	0.052	0.062	
RMC12.2 Kbps	Left Cheek	4233	846.6	0.02	24	23.26	0.106	0.126	
RMC12.2 Kbps	Left Tilted	4233	846.6	0.01	24	23.26	0.064	0.076	
RMC12.2 Kbps	Left Cheek	4182	836.6	0.05	24	23.17	0.119	0.144	
RMC12.2 Kbps	Left Cheek	4132	826.4	0.01	24	23.18	0.123	**0.149**	15

2. Body-Worn SAR test results of UMTS Band 5

Body-Worn SAR test results of UMTS Band 5 (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
RMC12.2 Kbps	Front Face	4233	846.6	-0.04	24	23.26	0.626	0.742	
RMC12.2 Kbps	Front Face	4182	836.6	0.04	24	23.17	0.623	0.754	
RMC12.2 Kbps	Front Face	4132	826.4	0.03	24	23.18	0.625	**0.755**	16
RMC12.2 Kbps	Rear Face	4233	846.6	0.06	24	23.26	0.42	0.498	

3. Hotspot SAR test results of UMTS Band 5

Hotspot SAR test results of UMTS Band 5 (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
RMC12.2 Kbps	Front Face	4233	846.6	-0.04	24	23.26	0.626	0.742	
RMC12.2 Kbps	Front Face	4182	836.6	0.04	24	23.17	0.623	0.754	
RMC12.2 Kbps	Front Face	4132	826.4	0.03	24	23.18	0.625	**0.755**	16
RMC12.2 Kbps	Rear Face	4233	846.6	0.06	24	23.26	0.42	0.498	
RMC12.2 Kbps	Left Side	4233	846.6	0.02	24	23.26	0.154	0.183	
RMC12.2 Kbps	Right Side	4233	846.6	0.05	24	23.26	0.112	0.133	
RMC12.2 Kbps	Bottom Side	4233	846.6	-0.03	24	23.26	0.231	0.274	

8.2.6SAR MEASUREMENT RESULT OF LTE Band 2

1. Head SAR test results of LTE Band 2

Head SAR test results of LTE Band 2									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
20M 1RB/0#	Right Cheek	18900	1880	-0.01	24	23.90	0.101	0.103	
	Right Cheek	18700	1860	-0.04	24	23.87	0.161	**0.166**	17
	Right Cheek	19100	1900	0.07	24	23.84	0.131	0.136	
	Right Tilted	18900	1880	-0.02	24	23.90	0.060	0.061	
	Left Cheek	18900	1880	0.05	24	23.90	0.075	0.077	
	Left Tilted	18900	1880	0.04	24	23.90	0.083	0.085	
20M 50%RB/0#	Right Cheek	18900	1880	-0.03	23	22.80	0.093	0.097	
	Right Tilted	18900	1880	-0.06	23	22.80	0.059	0.062	
	Left Cheek	18900	1880	0.04	23	22.80	0.090	0.094	
	Left Tilted	18900	1880	0.02	23	22.80	0.070	0.073	

2. Body-Worn SAR test results of LTE Band 2

Body-Worn SAR test results of LTE Band 2(distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
20M 1RB/0#	Front Face	18900	1880	-0.03	24	23.9	0.574	**0.587**	18
	Rear Face	18900	1880	-0.05	24	23.9	0.512	0.524	
20M 50%RB/0#	Front Face	18900	1880	0.02	23	22.8	0.49	0.513	
	Rear Face	18900	1880	0.03	23	22.8	0.431	0.451	

4. Hotspot SAR test results of LTE Band 2

Hotspot SAR test results of LTE Band 2 (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
20M 1RB/0#	Front Face	18900	1880	-0.03	24	23.9	0.574	0.587	
	Rear Face	18900	1880	-0.05	24	23.9	0.512	0.524	
	Left Side	18900	1880	0.02	24	23.9	0.039	0.040	
	Right Side	18900	1880	-0.05	24	23.9	0.107	0.109	
	Bottom Side	18900	1880	-0.04	24	23.9	0.841	0.861	
	Bottom Side	18700	1860	-0.09	24	23.87	0.917	**0.945**	19
	Bottom Side	19100	1900	0.01	24	23.84	0.876	0.909	
20M 50%RB /0#	Front Face	18900	1880	0.02	23	22.8	0.49	0.513	
	Rear Face	18900	1880	0.03	23	22.8	0.431	0.451	
	Left Side	18900	1880	-0.06	23	22.8	0.106	0.111	
	Right Side	18900	1880	-0.07	23	22.8	0.092	0.096	
	Bottom Side	18900	1880	-0.05	23	22.8	0.744	0.779	
20M 100%RB /0#	Bottom Side	19100	1900	-0.04	23	22.3	0.786	0.923	
1st Repeat SAR Test at worst position									
20M 1RB/0#	Bottom Side	18700	1860	-0.04	24	23.87	0.877	0.904	

Note:1) When the original highest measured SAR is ⩾ 0.80 W/kg, repeat that measurement once.

2) 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).

3) 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.

8.2.7SAR MEASUREMENT RESULT OF LTE Band 4

1. Head SAR test results of LTE Band 4

Head SAR test results of LTE Band 4									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
20M 1RB/0#	Right Cheek	20175	1732.5	-0.08	24	23.95	0.265	0.268	
	Right Cheek	20050	1720	0.02	24	23.91	0.274	**0.280**	20
	Right Cheek	20300	1745	-0.08	24	23.83	0.244	0.254	
	Right Tilted	20175	1732.5	-0.02	24	23.95	0.090	0.091	
	Left Cheek	20175	1732.5	0.05	24	23.95	0.145	0.147	
	Left Tilted	20175	1732.5	0.06	24	23.95	0.075	0.076	
20M 50%RB/ 0#	Right Cheek	20175	1732.5	-0.03	23	22.6	0.115	0.126	
	Right Tilted	20175	1732.5	-0.05	23	22.6	0.069	0.076	
	Left Cheek	20175	1732.5	0.02	23	22.6	0.015	0.016	
	Left Tilted	20175	1732.5	0.04	23	22.6	0.064	0.070	

2. Body-Worn SAR test results of LTE Band 4

Body-Worn SAR test results of LTE Band 4(distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
20M 1RB/0#	Front Face	20175	1732.5	0.02	24	23.95	0.609	0.616	
	Rear Face	20175	1732.5	-0.03	24	23.95	0.615	**0.622**	21
20M 50%RB/ 0#	Front Face	20175	1732.5	0.03	23	22.6	0.483	0.530	
	Rear Face	20175	1732.5	0.08	23	22.6	0.521	0.571	

3. Hotspot SAR test results of LTE Band 4

Hotspot SAR test results of LTE Band 4 (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
20M 1RB/0#	Front Face	20175	1732.5	0.02	24	23.95	0.609	0.616	
	Rear Face	20175	1732.5	-0.03	24	23.95	0.615	0.622	
	Left Side	20175	1732.5	0.05	24	23.95	0.121	0.122	
	Right Side	20175	1732.5	0.01	24	23.95	0.073	0.074	
	Bottom Side	20175	1732.5	-0.08	24	23.95	1.09	**1.103**	22
	Bottom Side	20300	1745	0.06	24	23.83	0.679	0.706	
	Bottom Side	20050	1720	-0.04	24	23.91	0.783	0.799	
20M 50%RB /0#	Front Face	20175	1732.5	0.03	23	22.6	0.483	0.530	
	Rear Face	20175	1732.5	0.08	23	22.6	0.521	0.571	
	Left Side	20175	1732.5	0.02	23	22.6	0.111	0.122	
	Right Side	20175	1732.5	0.04	23	22.6	0.071	0.078	
	Bottom Side	20175	1732.5	-0.08	23	22.6	0.723	0.793	
	Bottom Side	20300	1745	-0.08	23	22.5	0.707	0.793	
	Bottom Side	20050	1720	-0.04	23	22.52	0.744	0.831	
20M 100%RB /0#	Bottom Side	20050	1720	-0.03	23	22.34	0.865	1.007	
1st Repeat SAR Test at worst position									
20M 1RB/0#	Bottom Side	20175	1732.5	-0.06	24	23.95	1.07	1.082	

Note:1) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
2) 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).
3) 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.

8.2.8SAR MEASUREMENT RESULT OF LTE Band 5

1. Head SAR test results of LTE Band 5

Head SAR test results of LTE Band 5									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
10M 1RB/0#	Right Cheek	20525	836.5	0.03	24	23.3	0.073	0.086	
	Right Tilted	20525	836.5	0.01	24	23.3	0.041	0.048	
	Left Cheek	20525	836.5	-0.01	24	23.3	0.083	**0.098**	23
	Left Cheek(25#)	20450	829	0.08	24	23.22	0.073	0.087	
	Left Cheek(49#)	20600	844	0.03	24	23.28	0.079	0.093	
	Left Tilted	20525	836.5	-0.06	24	23.3	0.045	0.053	
10M 25%RB/ 0#	Right Cheek	20525	836.5	-0.04	23	22.3	0.056	0.066	
	Right Tilted	20525	836.5	0.08	23	22.3	0.034	0.040	
	Left Cheek	20525	836.5	0.03	23	22.3	0.071	0.083	
	Left Tilted	20525	836.5	0.07	23	22.3	0.038	0.045	

2. Body-Worn SAR test results of LTE Band 5

Body-Worn SAR test results of LTE Band 5(distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
20M 1RB/0#	Front Face	20525	836.5	-0.02	24	23.3	0.411	**0.483**	24
	Front Face(49#)	20600	844	-0.07	24	23.28	0.403	0.476	
	Front Face(25#)	20450	829	-0.09	24	23.22	0.389	0.466	
	Rear Face	20525	836.5	-0.05	24	23.3	0.237	0.278	
20M 50%RB/ 0#	Front Face	20525	836.5	-0.01	23	22.3	0.301	0.354	
	Rear Face	20525	836.5	0.03	23	22.3	0.245	0.288	

3. Hotspot SAR test results of LTE Band 5

Hotspot SAR test results of LTE Band 5 (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
20M 1RB/0#	Front Face	20525	836.5	-0.02	24	23.3	0.411	**0.483**	24
	Front Face(49#)	20600	844	-0.07	24	23.28	0.403	0.476	
	Front Face(25#)	20450	829	-0.09	24	23.22	0.389	0.466	
	Rear Face	20525	836.5	-0.05	24	23.3	0.237	0.278	
	Left Side	20525	836.5	0.06	24	23.3	0.083	0.098	
	Right Side	20525	836.5	0.02	24	23.3	0.070	0.082	
	Bottom Side	20525	836.5	-0.04	24	23.3	0.247	0.290	
20M 50%RB /0#	Front Face	20525	836.5	-0.01	23	22.3	0.301	0.354	
	Rear Face	20525	836.5	0.03	23	22.3	0.245	0.288	
	Left Side	20525	836.5	-0.04	23	22.3	0.085	0.100	
	Right Side	20525	836.5	0.07	23	22.3	0.054	0.063	
	Bottom Side	20525	836.5	-0.07	23	22.3	0.189	0.222	

8.2.9SAR MEASUREMENT RESULT OF LTE Band 7

1. Head SAR test results of LTE Band 7

Head SAR test results of LTE Band 7									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
20M 1RB/0#	Right Cheek	21350	2560	0.01	24	23.45	0.078	**0.089**	25
	Right Cheek	20850	2510	0.05	24	22.87	0.058	0.075	
	Right Cheek	21100	2535	0.01	24	23.28	0.064	0.076	
	Right Tilted	21350	2560	0.05	24	23.45	0.049	0.056	
	Left Cheek	21350	2560	-0.05	24	23.45	0.041	0.047	
	Left Tilted	21350	2560	-0.05	24	23.45	0.074	0.084	
20M 50%RB/ 25#	Right Cheek	21350	2560	-0.04	23	22.51	0.035	0.039	
	Right Tilted	21350	2560	0.03	23	22.51	0.041	0.046	
	Left Cheek	21350	2560	0.01	23	22.51	0.028	0.031	
	Left Tilted	21350	2560	-0.04	23	22.51	0.052	0.058	

2. Body-Worn SAR test results of LTE Band 7

Body-Worn SAR test results of LTE Band 7(distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
20M 1RB/0#	Front Face	21350	2560	0.05	24	23.45	0.581	**0.659**	26
	Rear Face	21350	2560	0.08	24	23.45	0.428	0.486	
20M 50%RB/ 25#	Front Face	21350	2560	0.03	23	22.51	0.391	0.438	
	Rear Face	21350	2560	0.04	23	22.51	0.344	0.385	

3. Hotspot SAR test results of LTE Band 7

Hotspot SAR test results of LTE Band 7 (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
20M 1RB/0#	Front Face	21350	2560	0.05	24	23.45	0.581	0.659	
	Rear Face	21350	2560	0.08	24	23.45	0.428	0.486	
	Left Side	21350	2560	-0.02	24	23.45	0.084	0.095	
	Right Side	21350	2560	-0.04	24	23.45	0.275	0.312	
	Bottom Side	21350	2560	-0.05	24	23.45	1.04	1.180	
	Bottom Side	20850	2510	-0.07	24	22.87	0.953	**1.236**	27
	Bottom Side	21100	2535	-0.03	24	23.28	0.988	1.166	
20M 50%RB/ 25#	Front Face	21350	2560	0.03	23	22.51	0.391	0.438	
	Rear Face	21350	2560	0.04	23	22.51	0.344	0.385	
	Left Side	21350	2560	-0.01	23	22.51	0.071	0.079	
	Right Side	21350	2560	0.03	23	22.51	0.222	0.249	
	Bottom Side	21350	2560	-0.05	23	22.51	0.947	1.060	
	Bottom Side	20850	2510	0.06	23	21.97	0.935	1.185	
	Bottom Side	21100	2535	0.01	23	22.25	0.967	1.149	
20M 100%RB /0#	Bottom Side	21350	2560	0.04	23	22.31	0.867	1.016	
1st Repeat SAR Test at worst position									
20M 1RB/0#	Bottom Side	21350	2560	-0.03	24	23.45	1.08	1.226	
20M 50%RB/ 25#	Bottom Side	21350	2560	0.04	23	22.51	0.964	1.079	

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

2) 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).

3) 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.

8.2.10SAR MEASUREMENT RESULT OF LTE Band 12

1. Head SAR test results of LTE Band 12

Head SAR test results of LTE Band 12									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
10M 1RB/49#	Right Cheek	23060	704	-0.04	24	23.53	0.074	0.082	
	Right Cheek(0#)	23095	707.5	0.01	24	23.1	0.075	0.092	
	Right Cheek(25#)	23130	711	0.06	24	23.04	0.081	**0.101**	28
	Right Tilted	23060	704	-0.05	24	23.53	0.025	0.028	
	Left Cheek	23060	704	0.06	24	23.53	0.054	0.060	
	Left Tilted	23060	704	0.03	24	23.53	0.045	0.050	
10M 25%RB/ 12#	Right Cheek	23130	711	-0.01	23	22.24	0.028	0.033	
	Right Tilted	23130	711	-0.03	23	22.24	0.021	0.025	
	Left Cheek	23130	711	0.05	23	22.24	0.035	0.042	
	Left Tilted	23130	711	0.02	23	22.24	0.028	0.033	

2. Body-Worn SAR test results of LTE Band 12

Body-Worn SAR test results of LTE Band 12(distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
10M 1RB/49#	Front Face	23060	704	-0.03	24	23.53	0.200	0.223	
	Front Face(0#)	23095	707.5	-0.01	24	23.1	0.188	0.231	
	Front Face(25#)	23130	711	-0.01	24	23.04	0.208	**0.259**	29
	Rear Face	23060	704	-0.02	24	23.53	0.148	0.165	
10M 25%RB/ 12#	Front Face	23130	711	-0.08	23	22.24	0.156	0.186	
	Rear Face	23130	711	0.04	23	22.24	0.176	0.210	

3. Hotspot SAR test results of LTE Band 12

Hotspot SAR test results of LTE Band 12 (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
10M 1RB/49#	Front Face	23060	704	-0.03	24	23.53	0.200	0.223	
	Front Face(0#)	23095	707.5	-0.01	24	23.1	0.188	0.231	
	Front Face(25#)	23130	711	-0.01	24	23.04	0.208	**0.259**	29
	Rear Face	23060	704	-0.02	24	23.53	0.148	0.165	
	Left Side	23060	704	-0.06	24	23.53	0.041	0.046	
	Right Side	23060	704	-0.07	24	23.53	0.069	0.077	
	Bottom Side	23060	704	-0.04	24	23.53	0.103	0.115	
10M 25%RB/ 12#	Front Face	23130	711	-0.08	23	22.24	0.156	0.186	
	Rear Face	23130	711	0.04	23	22.24	0.176	0.210	
	Left Side	23130	711	0.03	23	22.24	0.049	0.058	
	Right Side	23130	711	-0.02	23	22.24	0.077	0.092	
	Bottom Side	23130	711	-0.04	23	22.24	0.124	0.148	

8.2.11SAR MEASUREMENT RESULT OF LTE Band 17

1. Head SAR test results of LTE Band 17

Head SAR test results of LTE Band 17									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
10M 1RB/0#	Right Cheek	23780	709	0.06	24	23.78	0.071	0.075	
	Right Cheek(25#)	23790	710	0.07	24	23.09	0.080	**0.098**	30
	Right Cheek	23800	711	0.02	24	23.30	0.074	0.087	
	Right Tilted	23780	709	0.03	24	23.78	0.022	0.023	
	Left Cheek	23780	709	0.01	24	23.78	0.063	0.066	
	Left Tilted	23780	709	-0.05	24	23.78	0.023	0.024	
10M 25%RB/ 12#	Right Cheek	23780	709	0.01	23	22.27	0.031	0.037	
	Right Tilted	23780	709	-0.04	23	22.27	0.026	0.031	
	Left Cheek	23780	709	-0.02	23	22.27	0.034	0.040	
	Left Tilted	23780	709	0.05	23	22.27	0.027	0.032	

2. Body-Worn SAR test results of LTE Band 17

Body-Worn SAR test results of LTE Band 17(distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
10M 1RB/0#	Front Face	23780	709	-0.02	24	23.78	0.217	0.228	
	Front Face	23800	711	-0.04	24	23.30	0.212	0.249	
	Front Face(25#)	23790	710	-0.08	24	23.09	0.232	**0.286**	31
	Rear Face	23780	709	-0.03	24	23.78	0.138	0.145	
10M 25%RB/ 12#	Front Face	23780	709	-0.05	23	22.27	0.141	0.167	
	Rear Face	23780	709	-0.04	23	22.27	0.127	0.150	

3. Hotspot SAR test results of LTE Band 17

Hotspot SAR test results of LTE Band 17 (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
10M 1RB/0#	Front Face	23780	709	-0.02	24	23.78	0.217	0.228	
	Front Face	23800	711	-0.04	24	23.30	0.212	0.249	
	Front Face(25#)	23790	710	-0.08	24	23.09	0.232	**0.286**	31
	Rear Face	23780	709	-0.03	24	23.78	0.138	0.145	
	Left Side	23780	709	0.02	24	23.78	0.081	0.085	
	Right Side	23780	709	0.06	24	23.78	0.037	0.039	
	Bottom Side	23780	709	0.05	24	23.78	0.107	0.113	
10M 25%RB/ 12#	Front Face	23780	709	-0.05	23	22.27	0.141	0.167	
	Rear Face	23780	709	-0.04	23	22.27	0.127	0.150	
	Left Side	23780	709	-0.08	23	22.27	0.066	0.078	
	Right Side	23780	709	-0.06	23	22.27	0.034	0.040	
	Bottom Side	23780	709	-0.07	23	22.27	0.094	0.111	

8.2.12 SAR MEASUREMENT RESULT OF WiFi 2.4G

1. Head SAR test results of WiFi 2.4G

Head SAR test results of WiFi 2.4G									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
802.11b	Right Cheek	11	2462	-0.05	14	13.98	0.705	0.708	
	Right Tilted	11	2462	-0.06	14	13.98	0.791	0.795	
	Right Tilted	1	2412	-0.05	14	13.94	0.678	0.687	
	Right Tilted	6	2437	-0.05	14	13.91	0.815	**0.832**	32
	Left Cheek	11	2462	0.03	14	13.98	0.379	0.381	
	Left Tilted	11	2462	0.04	14	13.98	0.396	0.398	
1st Repeat SAR Test at worst position									
802.11b	Right Tilted	6	2437	-0.02	14	13.91	0.786	0.802	

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

2) A second measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurement was >1.20 or when the original or repeated measurement was ≥ 1.45 W/kg.

2. Body-Worn SAR test results of WiFi 2.4G

Body-Worn SAR test results of WiFi 2.4G (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
802.11b	Front Face	11	2462	0.08	14	13.98	0.11	0.111	
	Rear Face	11	2462	0.03	14	13.98	0.136	**0.137**	33

3. Hotspot SAR test results of WiFi 2.4G

Hotspot SAR test results of WiFi 2.4G (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
802.11b	Front Face	11	2462	0.08	14	13.98	0.11	0.111	
	Rear Face	11	2462	0.03	14	13.98	0.136	0.137	
	Left Side	11	2462	-0.03	14	13.98	0.076	0.076	
	Top Side	11	2462	-0.09	14	13.98	0.144	0.145	
	Top Side	1	2412	-0.06	14	13.94	0.124	0.126	
	Top Side	6	2437	-0.04	14	13.91	0.152	**0.155**	34

Note: Per KDB248227D01v02r01, the highest SAR measured for the initial test position or initial test configuration should be used to determine SAR test exclusion according to the sum of 1-g SAR and SAR peak to location ratio provisions in KDB 447498. In addition, a test lab may also choose to perform standalone SAR measurements for test positions and 802.11 configurations that are not required by the initial test position or initial test configuration procedures and apply the results to determine simultaneous transmission SAR test exclusion, according to sum of 1-g and SAR peak to location ratio requirements to reduce the number of simultaneous transmission SAR measurements.

8.2.13 SAR MEASUREMENT RESULT OF WiFi 5G

1. Head SAR test results of WiFi 5G

Head SAR test results of WiFi 5G									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
802.11a	Right Cheek	48	5240	-0.01	12	11.97	0.271	0.273	
	Right Tilted	48	5240	0.09	12	11.97	0.292	**0.294**	35
	Left Cheek	48	5240	0.02	12	11.97	0.243	0.245	
	Left Tilted	48	5240	0.01	12	11.97	0.236	0.238	
	Right Tilted	36	5180	-0.03	12	11.94	0.263	0.267	
	Right Tilted	64	5320	-0.09	12	11.75	0.275	0.291	
802.11ac80	Right Tilted	42	5210	-0.04	10	9.97	0.262	**0.264**	36
802.11a	Right Cheek	140	5700	-0.06	12	11.89	0.219	0.225	
	Right Tilted	140	5700	-0.01	12	11.89	0.235	**0.241**	37
	Left Cheek	140	5700	0.01	12	11.89	0.172	0.176	
	Left Tilted	140	5700	0.07	12	11.89	0.140	0.144	
	Right Tilted	100	5500	0.06	12	11.84	0.213	0.221	
	Right Tilted	116	5580	-0.01	12	11.79	0.208	0.218	
802.11ac80	Right Tilted	106	5530	-0.04	10	9.93	0.202	**0.205**	38
802.11a	Right Cheek	165	5825	0.09	12	11.92	0.151	0.154	
	Right Tilted	165	5825	-0.07	12	11.92	0.251	**0.256**	39
	Left Cheek	165	5825	0.03	12	11.92	0.126	0.128	
	Left Tilted	165	5825	0.03	12	11.92	0.137	0.140	
	Right Tilted	149	5745	0.08	12	11.89	0.216	0.222	
	Right Tilted	157	5785	0.05	12	11.85	0.241	0.249	
802.11ac80	Right Tilted	155	5775	-0.05	10	9.86	0.140	**0.145**	40

2. Body-Worn SAR test results of WiFi 5G

Body-Worn SAR test results of WiFi 5G (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
802.11a	Front Face	48	5240	-0.01	12	11.97	0.029	0.029	
	Rear Face	48	5240	0	12	11.97	0.037	**0.037**	41
802.11a	Front Face	140	5700	0.08	12	11.89	0.047	0.048	
	Front Face	100	5500	0	12	11.84	0.060	**0.062**	42
	Front Face	116	5580	-0.09	12	11.79	0.052	0.055	
	Rear Face	140	5700	-0.01	12	11.89	0.020	0.021	
802.11ac80	Front Face	106	5530	0.02	10	9.93	0.049	**0.050**	43
802.11a	Front Face	165	5825	0	12	11.92	0.036	**0.037**	44
	Rear Face	165	5825	0	12	11.92	0.028	0.029	

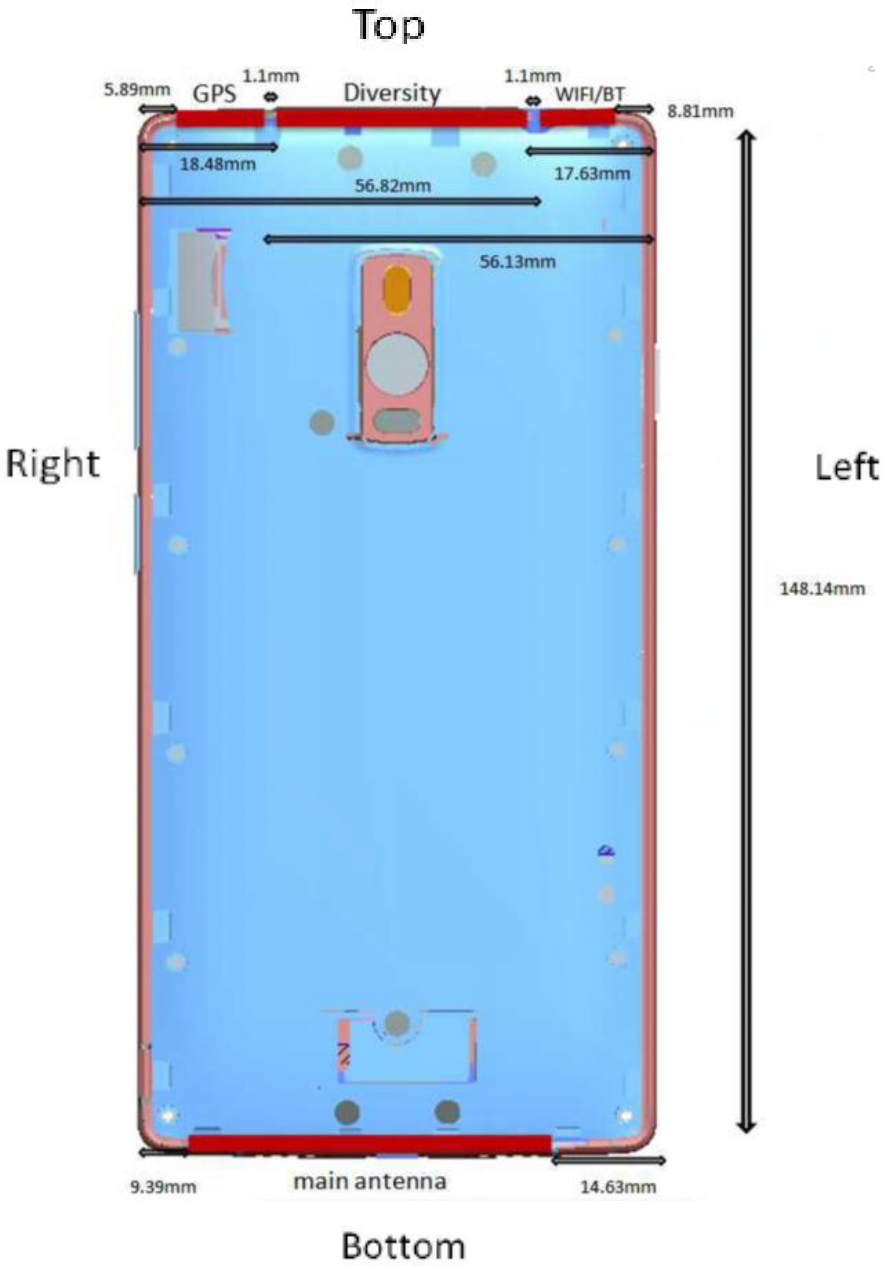
3. Hotspot SAR test results of WiFi 5G

Hotspot SAR test results of WiFi 5G (distance=10mm)									
Mode	Test Position	CH	Freq.	Drift (dB)	Power(dBm)		SAR Value (W/kg)1-g	Reported SAR	Graph Results
					Tune up	Conducted			
802.11a	Front Face	48	5240	-0.01	12	11.97	0.029	0.029	
	Rear Face	48	5240	0	12	11.97	0.037	0.037	
	Left Side	48	5240	0	12	11.97	0.004	0.004	
	Top Side	48	5240	-0.08	12	11.97	0.039	**0.039**	45
	Top Side	36	5180	-0.08	12	11.94	0.036	0.037	
802.11ac80	Top Side	42	5210	0.02	10	9.97	0.027	**0.027**	46
802.11a	Front Face	165	5825	0	12	11.92	0.036	0.037	
	Rear Face	165	5825	0	12	11.92	0.028	0.029	
	Left Side	165	5825	0	12	11.92	0.025	0.025	
	Top Side	165	5825	0.01	12	11.92	0.061	**0.062**	47
	Top Side	149	5745	-0.03	12	11.89	0.050	0.051	
	Top Side	157	5785	0.09	12	11.85	0.055	0.057	
802.11ac80	Top Side	155	5775	0.09	10	9.86	0.028	**0.029**	48

Note: Per KDB248227D01v02r01, the highest SAR measured for the initial test position or initial test configuration should be used to determine SAR test exclusion according to the sum of 1-g SAR and SAR peak to location ratio provisions in KDB 447498. In addition, a test lab may also choose to perform standalone SAR measurements for test positions and 802.11 configurations that are not required by the initial test position or initial test configuration procedures and apply the results to determine simultaneous transmission SAR test exclusion, according to sum of 1-g and SAR peak to location ratio requirements to reduce the number of simultaneous transmission SAR measurements.

8.3 MULTIPLE TRANSMITTER EVALUATION

The following tables list information which is relevant for the decision if a simultaneous transmit evaluation is necessary according to FCC KDB 447498D01 General RF Exposure Guidance v05r02.
The location of the antennas inside mobile phone is shown as below picture:



Note:
1) Diversity antenna is used to improve the acceptance of performance of the main antenna, it does not have a transmitter function.

8.3.1 STAND-ALONE SAR TEST EXCLUSION AND ESTIMATED SAR CALCULATION

Per FCC KDB 447498D01v05, the 1-g SAR 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

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

Standalone SAR test exclusion for BT

Mode	Position	P_{max} (dBm)*	P_{max} (mW)	Distance (mm)	f (GHz)	Calculation Result	SAR Exclusion threshold	SAR test exclusion
BT	Body-Worn	9.5	8.913	10	2.48	1.404	3	Yes

Note:

1)* - maximum possible output power declared by manufacturer

2) Held to ear configurations are not applicable to Bluetooth for this device.

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to 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

According to KDB 447498 D01,when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standslone SAR was estimated according to following formula to result in substantially conservative SAR values of≤0.4W/Kg to determine simultaneous transmission SAR test exclusion.

$$\text{Estimated SAR} = \frac{\text{Max. Tune up Power}_{(mW)}}{\text{Min. Test Separation Distance}_{(mm)}} \times \frac{\sqrt{f_{(GHz)}}}{7.5}$$

If the minimum test separation distance is <5 mm, a distance of 5 mm is used for estimated SAR calculation. When the separation distance is > 50 mm, the 0.4W/Kg is used for SAR_{1g}

Estimated SAR calculation

Mode	Position	P_{max} (dBm)*	P_{max} (mW)	Distance (mm)	f (GHz)	X	Estimated SAR (W/Kg)*
BT	Front	9.5	8.913	10	2.48	7.5	0.187
	Rear	9.5	8.913	10	2.48	7.5	0.187
GSM850/ 1900	Top Side			> 50			0.4
UMTS Band 2/4/5	Top Side			> 50			0.4
LTE Band 2/4/5/7/12/ 17	Top Side			> 50			0.4
WiFi	Right Side			> 50			0.4
	Bottom Side			> 50			0.4

Note: * - maximum possible output power declared by manufacturer

8.3.2 SIMULTANEOUS TRANSMISSION CONDITIONS

Per FCC KDB 447498D01v05 r02, SAR compliance for simultaneous transmission must be considered when the maximum duration of overlapping transmissions, including network hand-offs, is greater than 30 seconds. This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneous transmission analysis.

The Simultaneous Transmission Possibilities of this device are as below:

No.	Configuration	Head	Body-worn	Hotspot
1	GSM (Voice) + WiFi	Yes	Yes	N/A
2	GPRS/EDGE (DATA) + WiFi	Yes*	N/A	Yes
3	GSM(Voice) +BT	N/A	Yes	N/A
4	GPRS/EDGE(DATA)+BT	N/A	N/A	N/A
5	UMTS(Voice)+WiFi	Yes	Yes	N/A
6	UMTS(DATA)+WiFi	N/A	Yes	Yes
7	UMTS(Voice)+BT	N/A	Yes	N/A
8	UMTS(DATA)+BT	N/A	Yes	N/A
9	LTE(DATA)+WiFi	Yes*	Yes*	Yes
10	LTE(DATA)+BT	N/A	Yes*	N/A

Note:
i)* VOIP 3rd party applications may possibly be installed and used by the end user.
ii) Wi-Fi and Bluetooth share the same antenna and can"t transmit simultaneously.
iii) 2G&3G&4G share the same antenna and can"t transmit simultaneously.
iv) The device does not support DTM function.
v) Held to ear configurations are not applicable to Bluetooth and therefore were not considered for simultaneous transmission.

8.3.3 SAR SUMMATION SCENARIO

About 2.4G WiFi and GSM/UMTS/LTE antenna

Test Position / Reported SAR_{1g}	Head				Body-Worn		Hots-pot					
	Right Cheek	Right Tilted	Left Cheek	Left Tilted	Front	Rear	Front	Rear	Left	Right	Top	Bottom
GSM850	0.223	0.070	0.137	0.081	0.752	0.621	1.168	0.697	0.207	0.136	0.4	0.341
GSM1900	0.096	0.030	0.060	0.038	0.317	0.245	0.257	0.295	0.096	0.070	0.4	0.671
UMTS B2	0.138	0.092	0.085	0.06	0.278	0.296	0.278	0.296	0.130	0.057	0.4	1.290
UMTS B4	0.265	0.129	0.174	0.138	0.46	0.679	0.460	0.679	0.182	0.087	0.4	1.274
UMTS B5	0.092	0.062	0.149	0.076	0.755	0.498	0.755	0.498	0.183	0.133	0.4	0.274
LTE B2	0.166	0.062	0.094	0.085	0.587	0.524	0.587	0.524	0.111	0.109	0.4	0.945
LTE B4	0.280	0.091	0.147	0.076	0.616	0.622	0.616	0.622	0.122	0.078	0.4	1.103
LTE B5	0.086	0.048	0.098	0.053	0.483	0.288	0.483	0.288	0.100	0.082	0.4	0.290
LTE B7	0.089	0.056	0.047	0.084	0.659	0.486	0.659	0.486	0.095	0.312	0.4	1.236
LTE B12	0.101	0.028	0.060	0.050	0.259	0.210	0.259	0.210	0.058	0.092	0.4	0.148
LTE B17	0.098	0.031	0.066	0.032	0.286	0.150	0.286	0.150	0.085	0.040	0.4	0.113
2.4G WiFi	0.708	0.832	0.381	0.398	0.111	0.137	0.111	0.137	0.076	0.4	0.155	0.4
MAX∑SAR1g	0.988	0.961	0.555	0.536	0.866	0.816	1.279	0.834	0.283	0.712	0.555	**1.690**

MAX. $\sum SAR_{1g}$=1.690W/Kg > 1.6 W/Kg,so the SAR to peak location separation ratio should be considered.

Test Position / Reported SAR_{1g}	Bottom											
GSM850	0.341	/	/	/	/	/	/	/	/	/	/	/
GSM1900	/	0.671	/	/	/	/	/	/	/	/	/	/
UMTS B2	/	/	1.290	/	/	/	/	/	/	/	/	/
UMTS B4	/	/	/	1.274	/	/	/	/	/	/	/	/
UMTS B5	/	/	/	/	0.274	/	/	/	/	/	/	/
LTE B2	/	/	/	/	/	0.945	/	/	/	/	/	/
LTE B4	/	/	/	/	/	/	1.103	/	/	/	/	/
LTE B5	/	/	/	/	/	/	/	0.290	/	/	/	/
LTE B7	/	/	/	/	/	/	/	/	1.236	/	/	/
LTE B12	/	/	/	/	/	/	/	/	/	0.148	/	/
LTE B17	/	/	/	/	/	/	/	/	/	/	0.113	
2.4G WiFi	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
MAX∑SAR1g	0.741	1.071	**1.690**	**1.674**	0.674	1.345	1.503	0.690	**1.636**	0.548	0.513	0.741

About 5G WiFi and GSM/UMTS/LTE antenna

Test Position / Reported SAR_{1g}	Head				Body-Worn		Hots-pot					
	Right Cheek	Right Tilted	Left Cheek	Left Tilted	Front	Rear	Front	Rear	Left	Right	Top	Bottom
GSM850	0.223	0.070	0.137	0.081	0.752	0.621	1.168	0.697	0.207	0.136	0.4	0.341
GSM1900	0.096	0.030	0.060	0.038	0.317	0.245	0.257	0.295	0.096	0.070	0.4	0.671
UMTS B2	0.138	0.092	0.085	0.06	0.278	0.296	0.278	0.296	0.130	0.057	0.4	1.290
UMTS B4	0.265	0.129	0.174	0.138	0.46	0.679	0.460	0.679	0.182	0.087	0.4	1.274
UMTS B5	0.092	0.062	0.149	0.076	0.755	0.498	0.755	0.498	0.183	0.133	0.4	0.274
LTE B2	0.166	0.062	0.094	0.085	0.587	0.524	0.587	0.524	0.111	0.109	0.4	0.945
LTE B4	0.280	0.091	0.147	0.076	0.616	0.622	0.616	0.622	0.122	0.078	0.4	1.103
LTE B5	0.086	0.048	0.098	0.053	0.483	0.288	0.483	0.288	0.100	0.082	0.4	0.290
LTE B7	0.089	0.056	0.047	0.084	0.659	0.486	0.659	0.486	0.095	0.312	0.4	1.236
LTE B12	0.101	0.028	0.060	0.050	0.259	0.210	0.259	0.210	0.058	0.092	0.4	0.148
LTE B17	0.098	0.031	0.066	0.032	0.286	0.150	0.286	0.150	0.085	0.040	0.4	0.113
5G WiFi	0.273	0.294	0.245	0.238	0.062	0.037	0.037	0.037	0.025	0.4	0.062	0.4
MAX∑SAR1g	0.553	0.423	0.419	0.376	1.230	0.734	1.205	0.734	0.232	0.712	0.462	**1.690**

MAX. $\sum SAR_{1g}$=1.690W/Kg > 1.6 W/Kg,so the SAR to peak location separation ratio should be considered.

Test Position / Reported SAR1g	Bottom											
GSM850	0.341	/	/	/	/	/	/	/	/	/	/	/
GSM1900	/	0.671	/	/	/	/	/	/	/	/	/	/
UMTS B2	/	/	1.290	/	/	/	/	/	/	/	/	/
UMTS B4	/	/	/	1.274	/	/	/	/	/	/	/	/
UMTS B5	/	/	/	/	0.274	/	/	/	/	/	/	/
LTE B2	/	/	/	/	/	0.945	/	/	/	/	/	/
LTE B4	/	/	/	/	/	/	1.103	/	/	/	/	/
LTE B5	/	/	/	/	/	/	/	0.290	/	/	/	/
LTE B7	/	/	/	/	/	/	/	/	1.236	/	/	/
LTE B12	/	/	/	/	/	/	/	/	/	0.148	/	/
LTE B17	/	/	/	/	/	/	/	/	/	/	0.113	
5G WiFi	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
MAX∑SAR1g	0.741	1.071	**1.690**	**1.674**	0.674	1.345	1.503	0.690	**1.636**	0.548	0.513	0.741

About BT and GSM/UMTS/LTE antenna

Test Position / Reported SAR_{1g}	Body-Worn	
	Front	Rear
GSM850	0.752	0.621
GSM1900	0.317	0.245
UMTS B2	0.278	0.296
UMTS B4	0.46	0.679
UMTS B5	0.755	0.498
LTE B2	0.587	0.524
LTE B4	0.616	0.622
LTE B5	0.483	0.288
LTE B7	0.659	0.486
LTE B12	0.259	0.210
LTE B17	0.286	0.150
BT	0.187	0.187
MAX∑SAR1g	0.802	0.701

MAX. $\sum SAR_{1g}$=0.802W/Kg<1.6 W/Kg,so the SAR to peak location separation ratio should not be considered.

8.3.4 SIMULTANEOUS TRANSMISSION CONLCUSION

According to KDB447498 D01v05, When the sum of SAR is larger than limit, SAR test exclusion is determined by the SAR to peak location separation ratio(SPLSR).When the SAR to peak location ratio for each pair of antennas is ≤0.04， simultaneous SAR evaluation is not required.

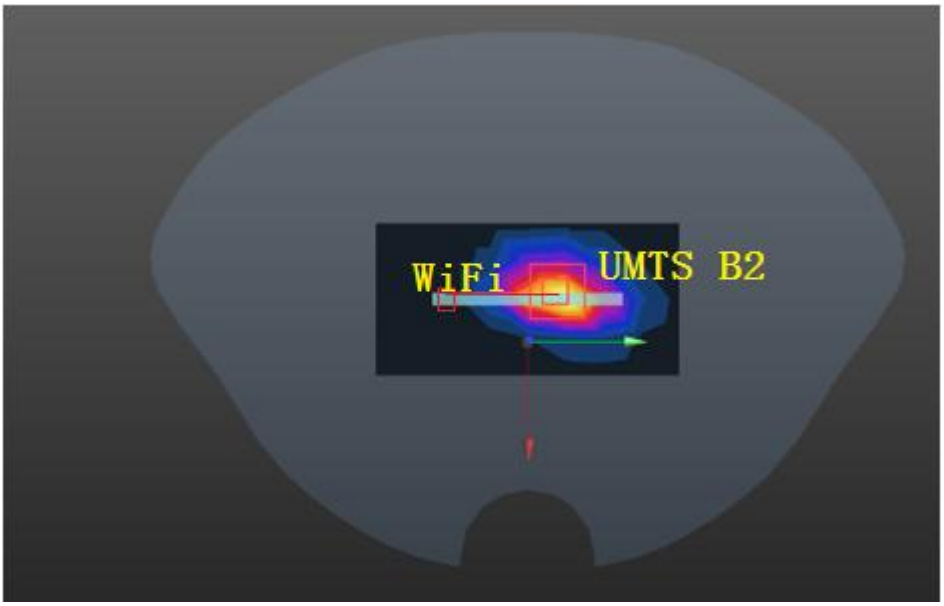
When SAR is measured for both antennas in the pair the peak location separation distance is computed by the following fomula:

$$\text{Distance}_{Tx1\text{-}Tx2} = R_i = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2}$$

$$\text{SPLS Ratio} = (SAR_1 + SAR_2)^{1.5}/R_i$$

When standalone test exclusion applies, SAR is estimated; the peak location is assumed to be at the feed-point or geometric center of the antenna. Due to curvatures on the SAM phantom, when SAR is estimated for one of the antennas in an antenna pair, the measured peak SAR location should be translated onto the test device to determine the peak location separation for the antenna pair. The ERP location on the phantom is aligned with the ERP location on the handset, with 6mm separation in the z coordinate due to the ear spacer. A measured peak location can be translated onto the handset, with respect to the ERP location, by ignoring the 6 mm offset in the z coordinate. The assumed peak location of the antenna with estimated SAR can also be determined with respect to the ERP location on the handset. The peak location separation distance is estimated by the x and y coordinated of the peaks, referenced to the ERP location. While flat phantoms are not expected to have these issues, the same peak translation approach should be applied to determine peak location separation.

1) The sum of aggregate 1g SAR was above 1.6 W/Kg for Right head touched cheek configuration with UMTS Band2 and WiFi 2.4G/5G.
The Peak SAR location is as below:

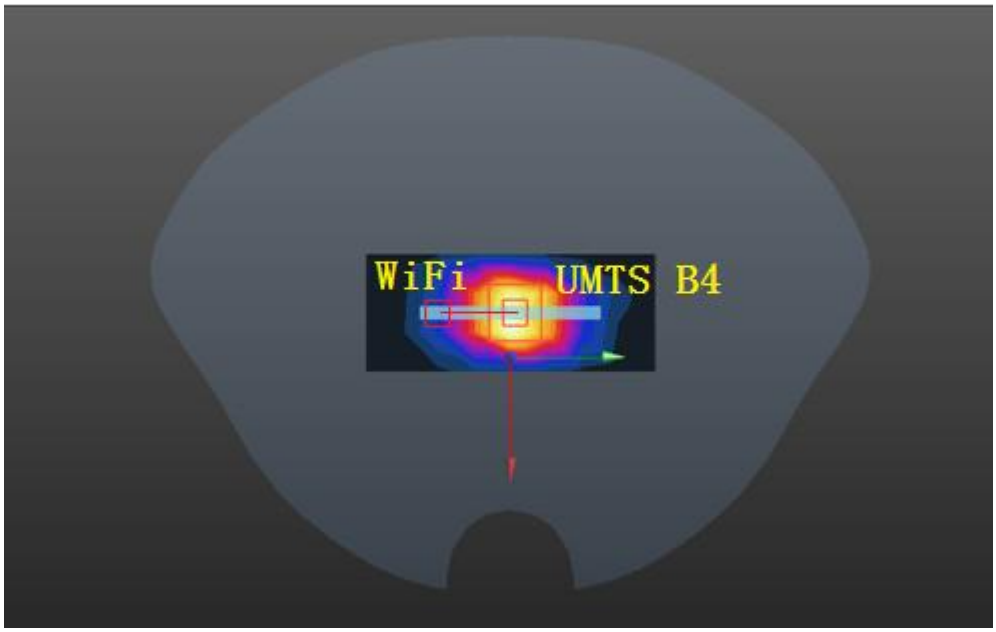


Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
UMTS Band2	1.11	-0.020	0.014	-0.202
WiFi	0.4	-0.024	0.014	-0.350

The SAR to peak location ratio calculation is as below:

Test Position	SAR1(W/Kg)	SAR2 (W/Kg)	Ri(mm)	SPLSR	Ratio Limit	Simultaneous SAR
Right Head touch cheek	0.4	1.290	148.05	0.023	0.04	Not Required

2) The sum of aggregate 1g SAR was above 1.6 W/Kg for Right head touched cheek configuration with UMTS Band4 and WiFi 2.4G/5G.
The Peak SAR location is as below:

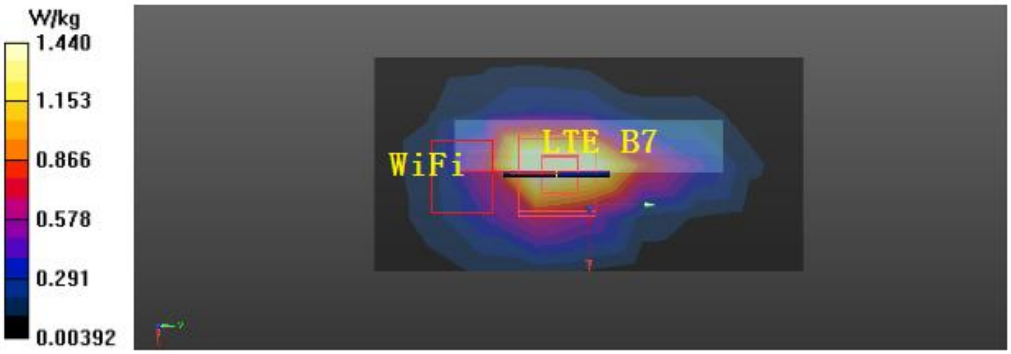


Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
UMTS Band4	1.13	-0.017	-0.002	-0.202
WiFi	0.4	-0.024	-0.002	-0.35

The SAR to peak location ratio calculation is as below:

Test Position	SAR1(W/Kg)	SAR2 (W/Kg)	Ri(mm)	SPLSR	Ratio Limit	Simultaneous SAR
Right Head touch cheek	0.4	1.274	148.17	0.014	0.04	Not Required

3) The sum of aggregate 1g SAR was above 1.6 W/Kg for Right head touched cheek configuration with LTE Band 7 and WiFi 2.4G/5G.
The Peak SAR location is as below:



Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
LTE Band7	1.21	0	-0.0075	-0.18
WiFi	0.4	-0.024	-0.0075	-0.328

The SAR to peak location ratio calculation is as below:

Test Position	SAR1(W/Kg)	SAR2 (W/Kg)	Ri(mm)	SPLSR	Ratio Limit	Simultaneous SAR
Right Head touch cheek	0.4	1.236	149.93	0.019	0.04	Not Required

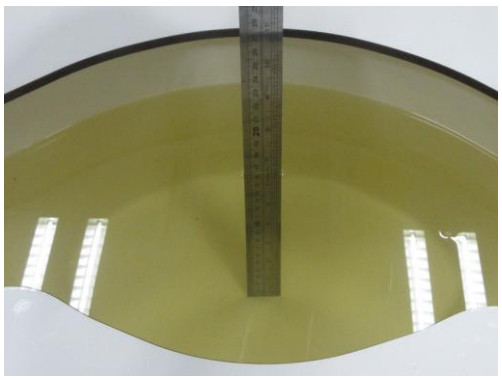
APPENDIX

1. Test Layout

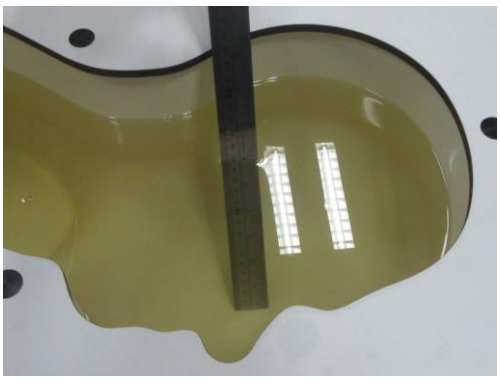
Specific Absorption Rate Test Layout

Liquid depth in the flat Phantom (≥15cm depth)

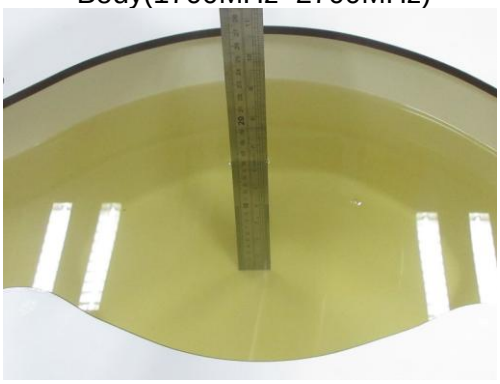
Body(700MHz~920MHz)



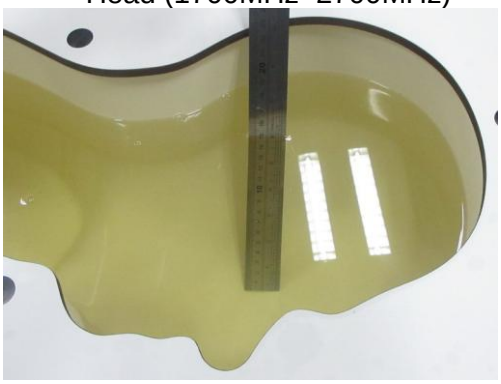
Head(700MHz~920MHz)



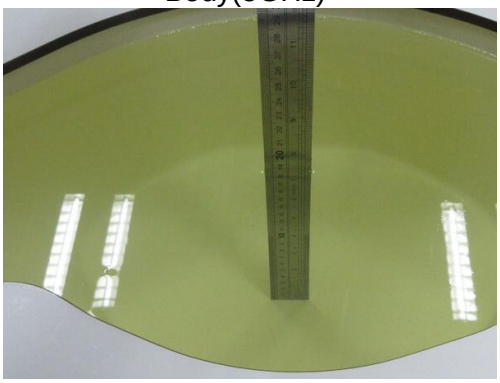
Body(1700MHz~2700MHz)



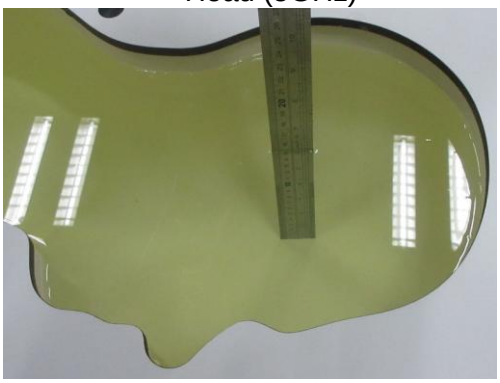
Head (1700MHz~2700MHz)



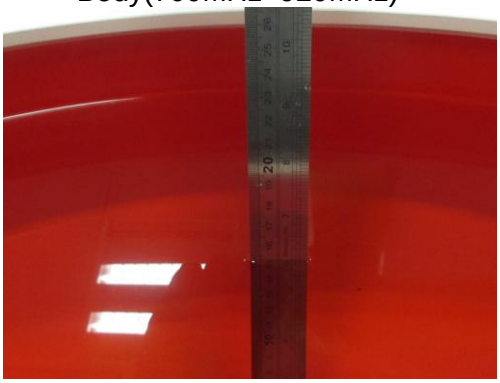
Body(5GHz)



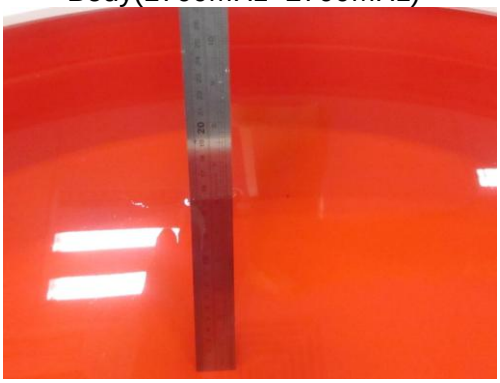
Head (5GHz)



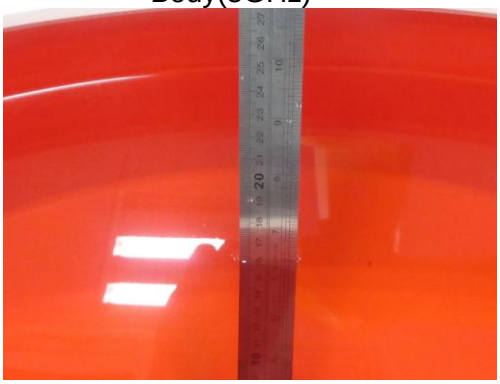
Body(700MHz~920MHz)



Body(1700MHz~2700MHz)



Body(5GHz)



2. System Check Plots

Date: 07/02/2015

Test Laboratory: BTL Inc.

System Performance Check Head 750 MHz

DUT: Dipole 750 MHz D750V3; Type: D750V3; Serial: D750V3 - SN1095

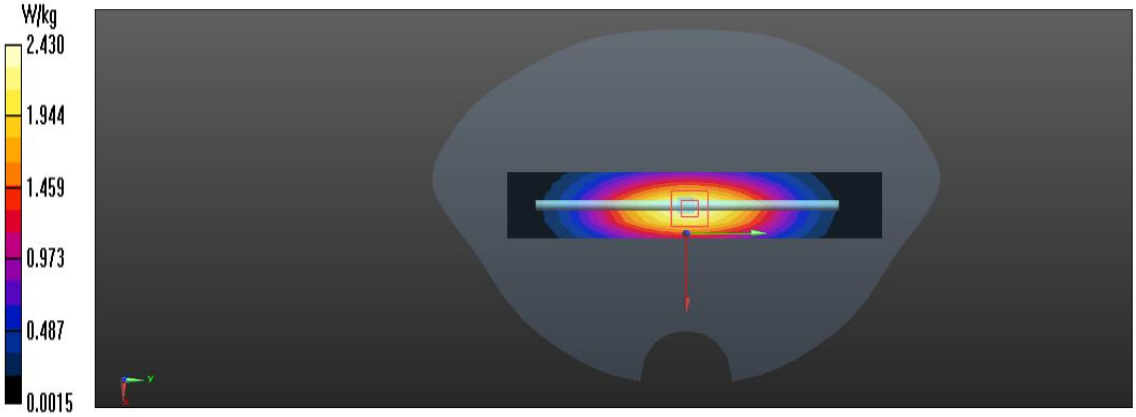
Communication System: UID 0, CW (0); Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.9 S/m; ε_r = 41.86; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(10.38, 10.38, 10.38); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Performance Check at 750MHz/Area Scan (5x23x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 2.43 W/kg

System Performance Check at 750MHz/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 53.338 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 2.88 W/kg
SAR(1 g) = 2.09 W/kg; SAR(10 g) = 1.32 W/kg
Maximum value of SAR (measured) = 2.49 W/kg



Date: 06/30/2015

Test Laboratory: BTL Inc.

System performance Check Body 750MHz

DUT: Dipole 750 MHz D750V2; Type: D750V2; Serial: D750V2 - SN:1095

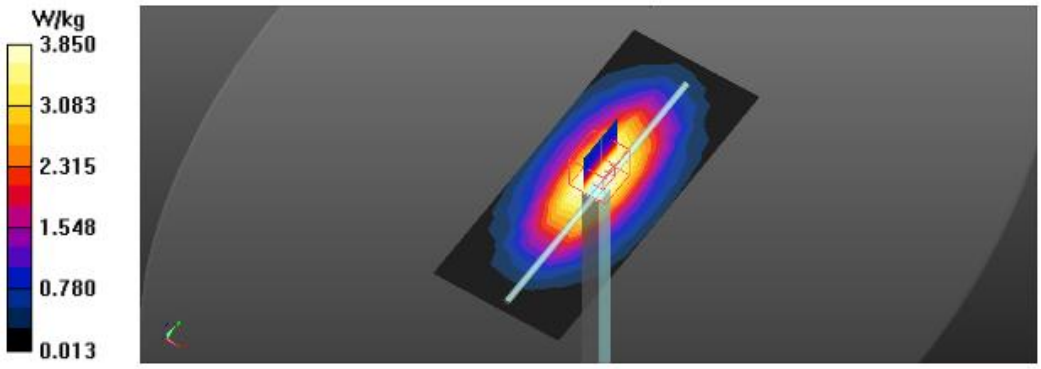
Communication System: UID 0, CW (0); Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.98 S/m; ε_r = 52.78; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(10.25, 10.25, 10.25); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Performance Check at 735 MHz/Area Scan (6x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.85 W/kg

System Performance Check at 835/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 67.166 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 4.41 W/kg
SAR(1 g) = 2.16 W/kg; SAR(10 g) = 1.35 W/kg
Maximum value of SAR (measured) = 4.34 W/kg



Date/Time: 06/30/2015

Test Laboratory: BTL Inc.

System Performance Check Head 835 MHz

DUT: Dipole 835 MHz D835V2; Type: D835V2; Serial: D835V2 - SN:4d160

Communication System: UID 0, CW (0); Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.89 S/m; ε_r = 41.5; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(9.75, 9.75, 9.75); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = -9.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Performance Check at 835MHz/Area Scan (6x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.98 W/kg

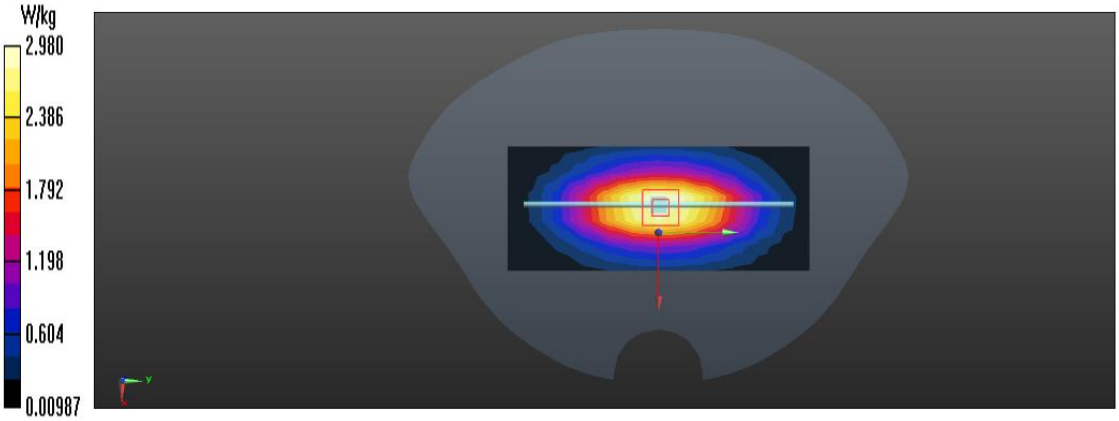
System Performance Check at 835MHz/Zoom Scan (7x7x7) : Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 59.666 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 4.04 W/kg

SAR(1 g) = 2.35 W/kg; SAR(10 g) = 1.58 W/kg

Maximum value of SAR (measured) = 3.45 W/kg



Date: 06/28/2015

Test Laboratory: BTL Inc.

System Performance Check Body 835MHZ

DUT: Dipole 835 MHz D835V2; Type: D835V2; Serial: D835V2 - SN:4d160

Communication System: UID 0, CW (0); Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.97 S/m; ε_r = 55.88; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(10.19, 10.19, 10.19); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = -9.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Performance Check at 835MHz/Area Scan (6x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.58 W/kg

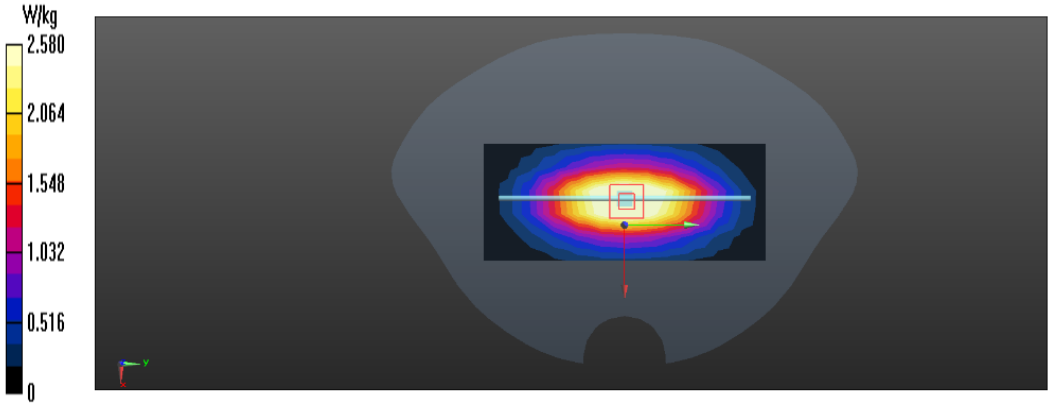
System Performance Check at 835MHz/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 58.66 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 3.04 W/kg

SAR(1 g) = 2.38 W/kg; SAR(10 g) = 1.58 W/kg

Maximum value of SAR (measured) = 3.15 W/kg



Date: 07/25/2015

Test Laboratory: BTL Inc.

System Performance Check Body 835MHZ

DUT: Dipole 835 MHz; Type: D835V2; SN: 4d160;

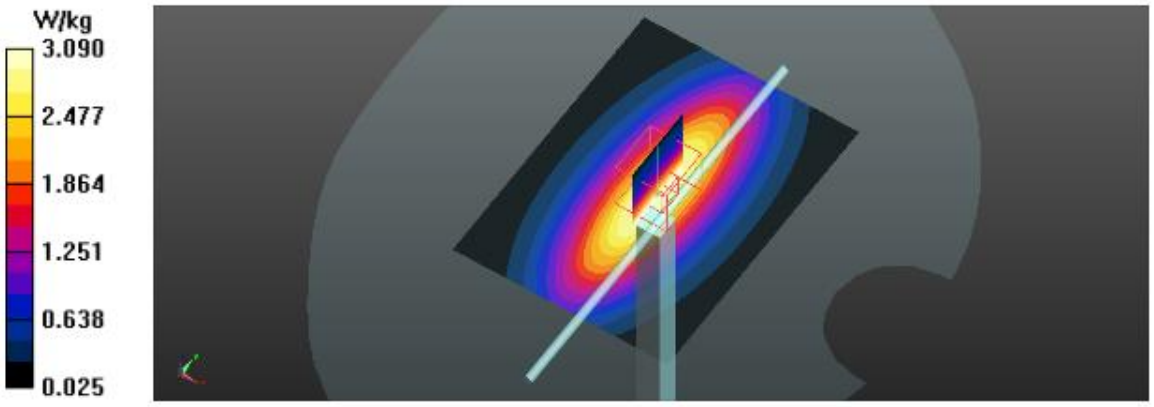
Communication System: UID 0, CW; Frequency: 835 MHz;
Medium parameters used: f = 835 MHz; σ = 0.976 S/m; ε_r = 54.657; ρ = 1000 kg/m^3

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(10.19, 10.19, 10.19); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.09 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 57.172 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 3.65 W/kg
SAR(1 g) = 2.44 W/kg; SAR(10 g) = 1.61 W/kg
Maximum value of SAR (measured) = 3.10 W/kg



Date: 07/02/2015

Test Laboratory: BTL Inc.

System Performance Check Head 1750MHz

DUT: Dipole 1750 MHz D1750V2; Type: D1750V2; Serial: D1750V2 - SN:1101

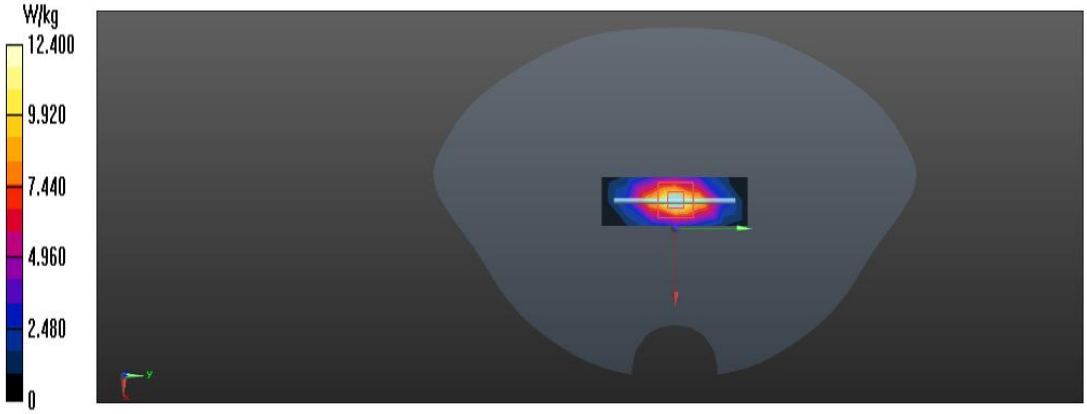
Communication System: UID 0, CW (0); Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.38 S/m; ε_r = 40.02; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(8.42, 8.42, 8.42); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Performance Check at 1750 MHz/Area Scan (3x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 12.4 W/kg

System Performance Check at 1750 MHz/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97.24 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 13.23 W/kg
SAR(1 g) = 9.01 W/kg; SAR(10 g) = 4.69 W/kg
Maximum value of SAR (measured) = 12.72 W/kg



Date: 06/27/2015

Test Laboratory: BTL Inc.

System Performance Check Body 1750MHz

DUT: Dipole 1750 MHz D1750V2; Type: D1750V2; Serial: D1750V2 - SN:1101

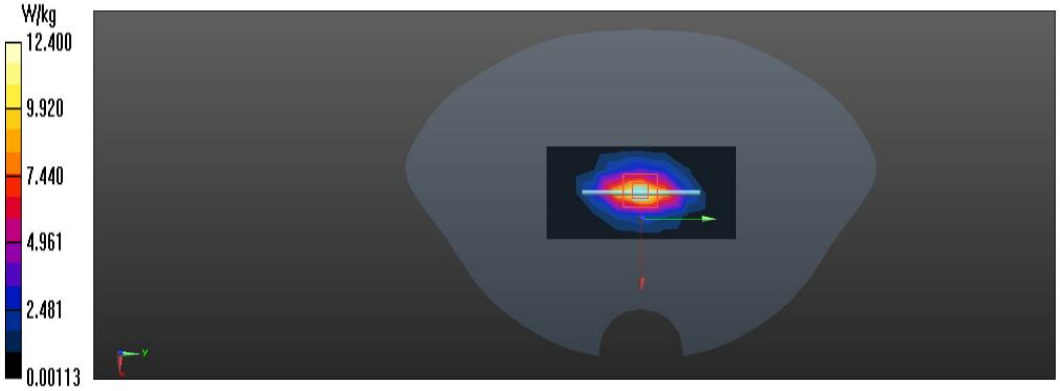
Communication System: UID 0, CW (0); Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.48 S/m; ε_r = 53.13; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(8.08, 8.08, 8.08); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Performance Check at 1750 MHz/Area Scan (5x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 12.4 W/kg

System Performance Check at 1750 MHz/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97.241 V/m; Power Drift = -0.2 dB
Peak SAR (extrapolated) = 15.6 W/kg
SAR(1 g) = 9.47 W/kg; SAR(10 g) = 4.98 W/kg
Maximum value of SAR (measured) = 12.5 W/kg



Date: 07/01/2015

Test Laboratory: BTL Inc.

System Performance Check Head 1900MHz

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2; Serial: D1900V2 - SN:5d179

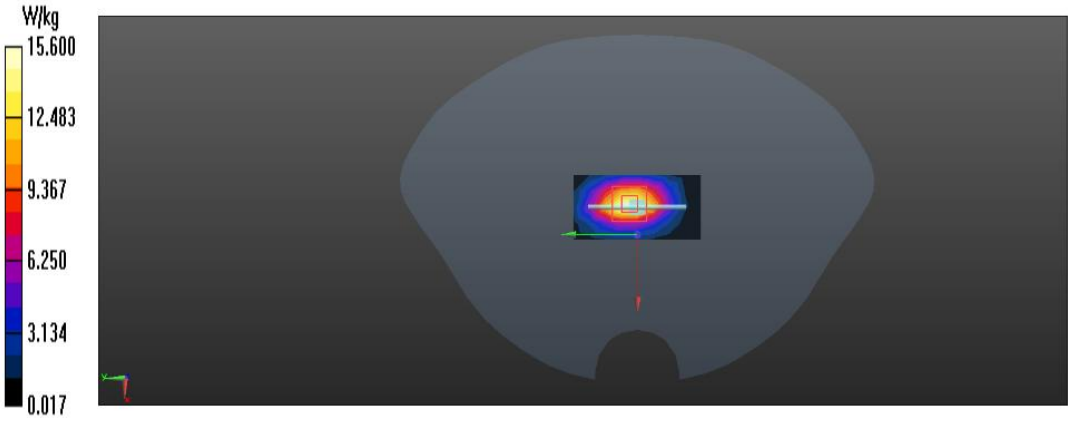
Communication System: UID 0, CW (0); Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.3 S/m; ε_r = 41.1; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(8.23, 8.23, 8.23); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Check Head 1900MHz/Area Scan (5x9x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 15.6 W/kg

System Check Head 1900MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 94.34 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 21.12 W/kg
SAR(1 g) = 9.93 W/kg; SAR(10 g) = 5.48 W/kg
Maximum value of SAR (measured) = 13.56 W/kg



Date: 06/29/2015

Test Laboratory: BTL Inc.

System Performance Check Body 1900 MHz

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2; Serial: D1900V2 - SN:5d175

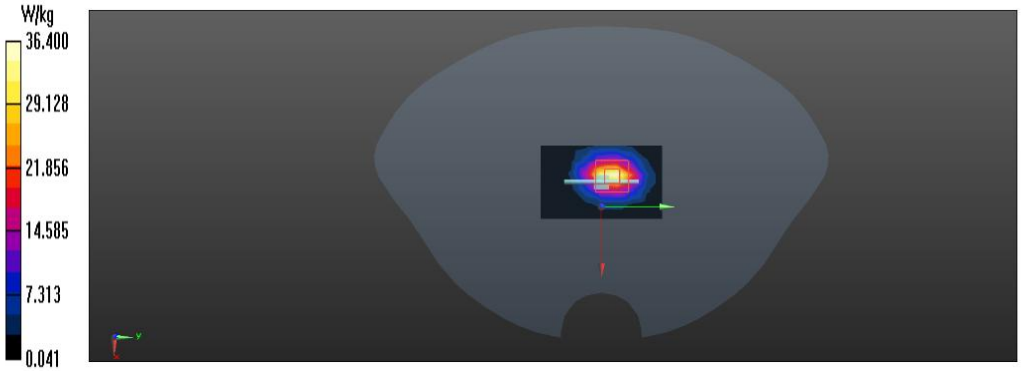
Communication System: UID 0, CW (0); Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.57 S/m; ε_r = 51.05; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.86, 7.86, 7.86); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Check at 1900MHz/Area Scan (6x9x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 36.4 W/kg

System Check at 1900MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 98.27 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 55.6 W/kg
SAR(1 g) = 9.87 W/kg; SAR(10 g) = 5.21 W/kg
Maximum value of SAR (measured) = 28.12 W/kg



Date: 07/25/2015

Test Laboratory: BTL Inc.

System Performance Check Body 1900 MHz

DUT: Dipole 1900 MHz; Type: D1900V2; SN: 5d175;

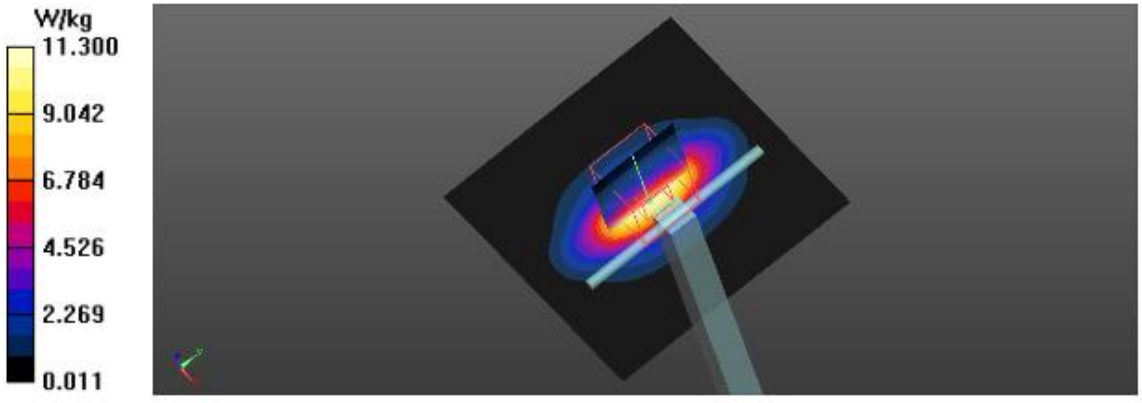
Communication System: UID 0, CW; Frequency: 1900 MHz;
Medium parameters used: f = 1900 MHz; σ = 1.39 S/m; ε_r = 40.1; ρ = 1000 kg/m^3

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.86,7.86,7.86); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 11.3 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 94.777 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 14.3 W/kg
SAR(1 g) = 9.42 W/kg; SAR(10 g) = 4.91 W/kg
Maximum value of SAR (measured) = 11.4 W/kg



Date: 07/02/2015

Test Laboratory: BTL Inc.

System Performance Check Head 2450MHz

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:919

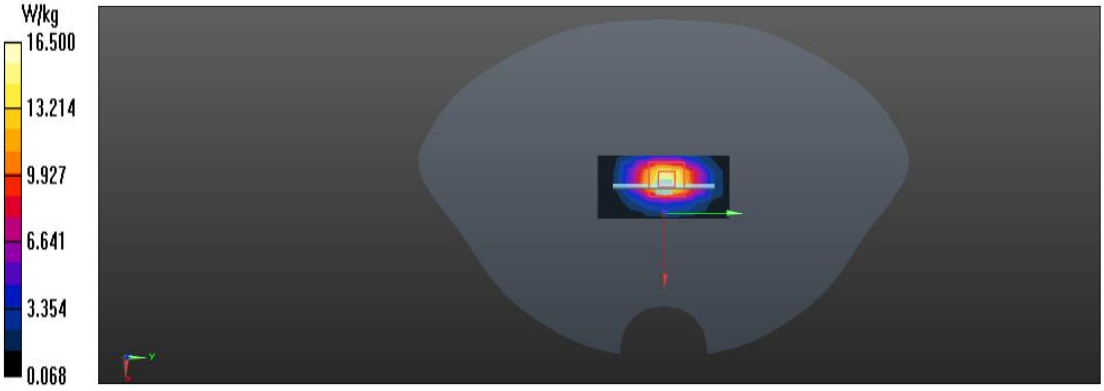
Communication System: UID 0, CW (0); Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.8 S/m; ε_r = 39.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.38, 7.38, 7.38); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Check at 2450MHz/Area Scan (5x9x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 16.5 W/kg

System Check at 2450MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 94.381 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 24.3 W/kg
SAR(1 g) = 12.86 W/kg; SAR(10 g) = 6.03 W/kg
Maximum value of SAR (measured) = 14.8 W/kg



Date: 06/30/2015

Test Laboratory: BTL Inc.

System Performance Check Body 2450 MHz

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:919

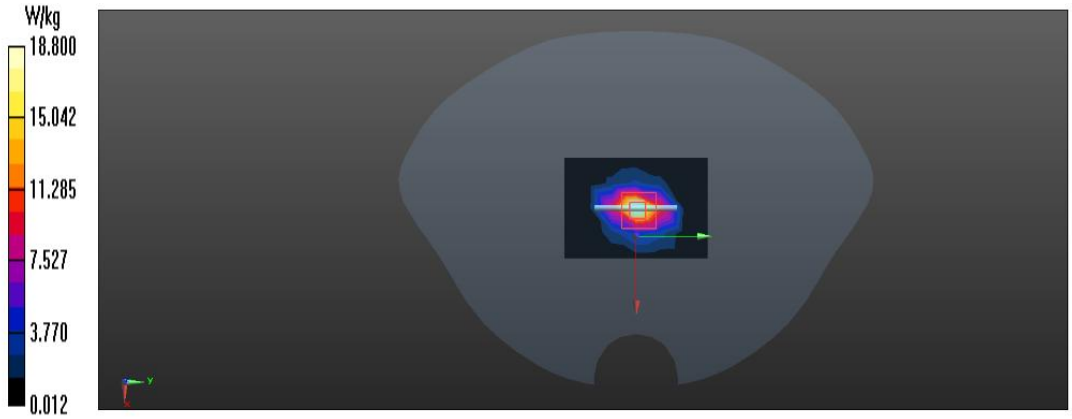
Communication System: UID 0, CW (0); Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 2.02 S/m; ε_r = 50.71; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.60, 7.60, 7.60); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Performance Check at 2450MHz/Area Scan (7x10x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 18.8 W/kg

System Performance Check at 2450MHz/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 98.175 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 25.24W/kg
SAR(1 g) = 12.66 W/kg; SAR(10 g) = 5.64 W/kg
Maximum value of SAR (measured) = 19.28 W/kg



Date: 07/01/2015

Test Laboratory: BTL Inc.

System Performance Check Head 2600MHz

DUT: Dipole 2600 MHz D2600V2; Type: D2600V2; Serial: D2600V2 - SN1067

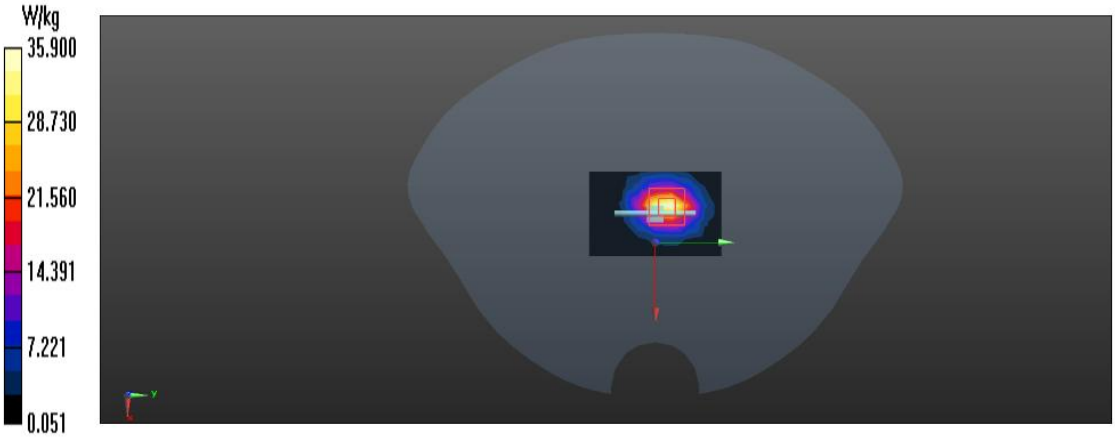
Communication System: UID 0, CW (0); Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 1.8 S/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.20, 7.20, 7.20); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Check at Head 2600MHz/Area Scan (6x9x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 35.9 W/kg

System Check at Head 2600MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97.897 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 51.26 W/kg
SAR(1 g) = 14.48 W/kg; SAR(10 g) = 6.21 W/kg
Maximum value of SAR (measured) = 28.1 W/kg



Date: 07/01/2015

Test Laboratory: BTL Inc.

System performance Check Body 2600MHz

DUT: Dipole 2600 MHz D2600V2; Type: D2600V2; Serial: D2600V2 - SN1067

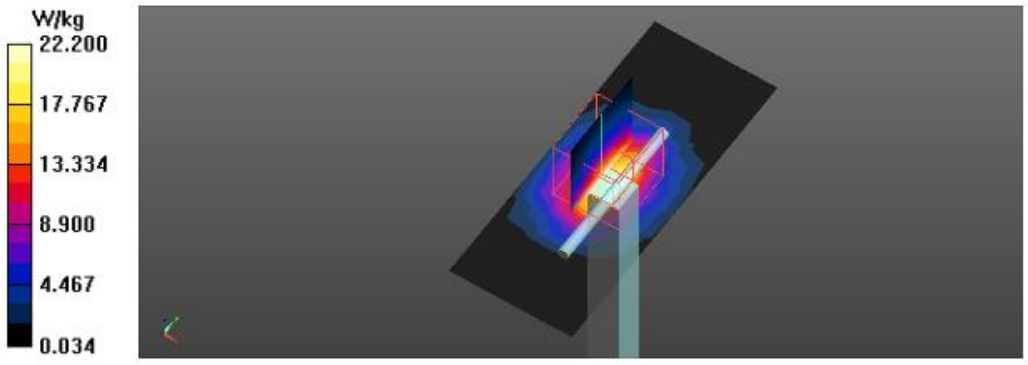
Communication System: UID 0, CW (0); Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 2.0 S/m; ε_r = 50.71; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.48, 7.48, 7.48); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Performance Check at 2600 MHz/Area Scan (5x11x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 22.2 W/kg

System Performance Check at 2600 MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.523 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 27.2 W/kg
SAR(1 g) = 14.34 W/kg; SAR(10 g) = 6.32 W/kg
Maximum value of SAR (measured) = 17.7 W/kg



Date: 07/04/2015

Test Laboratory: BTL Inc.

System Performance Check Head 5200MHz

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1160

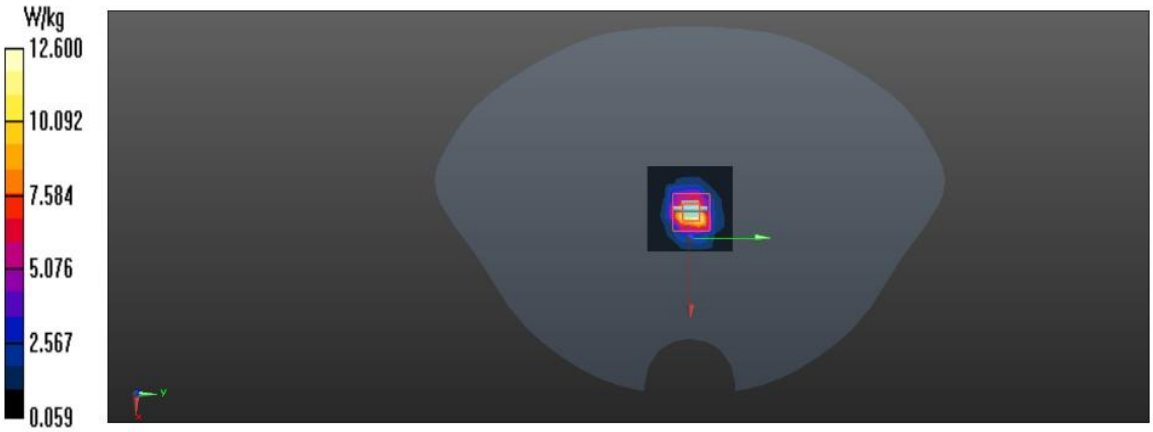
Communication System: UID 0, CW (0); Frequency: 5200 MHz
Medium parameters used: f = 5200 MHz; σ = 4.721 S/m; ε_r = 35.16; ρ = 996 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(5.62, 5.62, 5.62); Calibrated: 01/30/2015;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Check at 5200/Area Scan (6x6x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 12.6 W/kg

System Check at 5200/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 37.390 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 27.9 W/kg
SAR(1 g) = 7.94 W/kg; SAR(10 g) = 2.32 W/kg
Maximum value of SAR (measured) = 14.7 W/kg



Date: 07/04/2015

Test Laboratory: BTL Inc.

System Performance Check Body 5200MHz

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1160

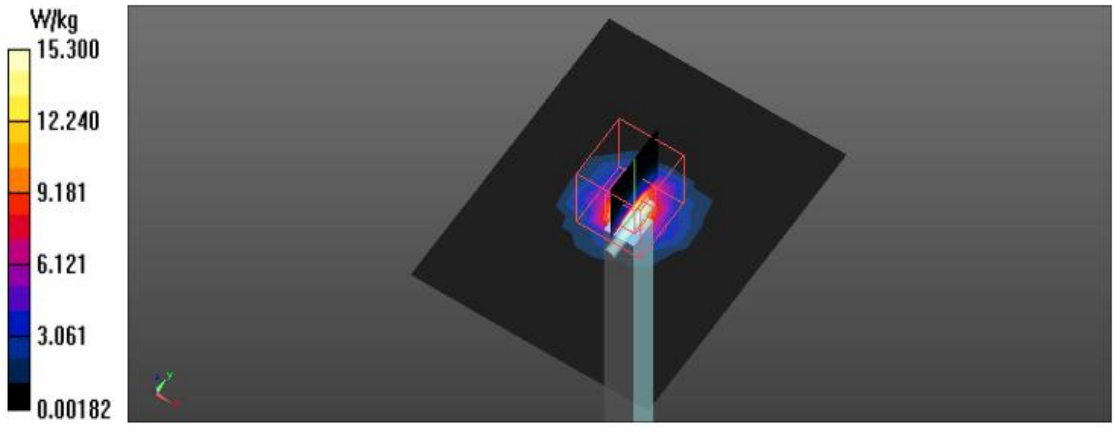
Communication System: UID 0, CW (0); Frequency: 5200 MHz
Medium parameters used: f = 5200 MHz; σ = 5.38 S/m; ε_r = 49.4; ρ = 996 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(5.17, 5.17, 5.17); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 23.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Check at 5200 MHz/Area Scan (9x11x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 15.3 W/kg

System Check at 5200 MHz/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 38.298 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 38.6 W/kg
SAR(1 g) = 7.45 W/kg; SAR(10 g) = 2.19 W/kg
Maximum value of SAR (measured) = 16.27 W/kg



Date: 07/04/2015

Test Laboratory: BTL Inc.

System Performance Check Head 5600MHz

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1160

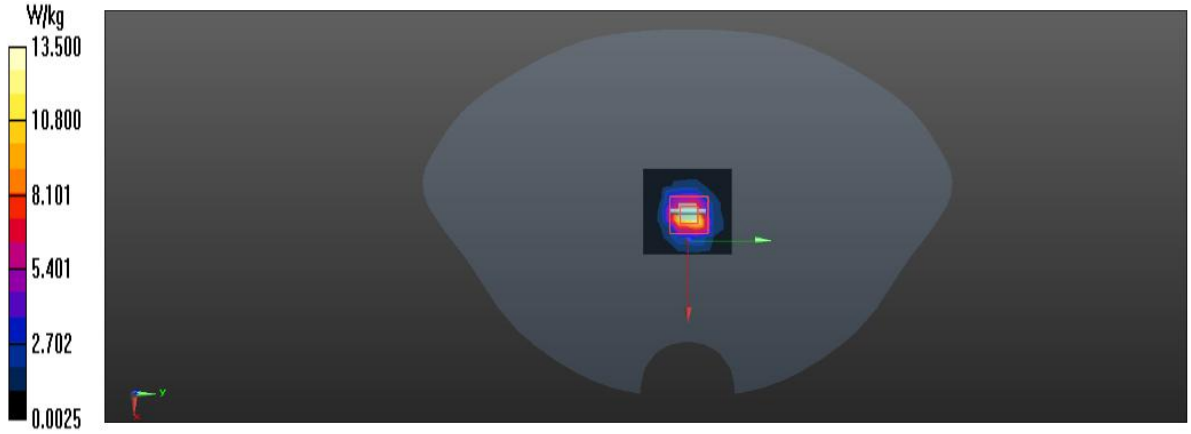
Communication System: UID 0, CW (0); Frequency: 5600 MHz
Medium parameters used: f = 5600 MHz; σ = 5.162 S/m; ε_r = 34.08; ρ = 996 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(5.03, 5.03, 5.03); Calibrated: 01/30/2015;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Check at 5600/Area Scan (6x6x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 13.5 W/kg

System Check at 5600/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 37.45 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 26.24 W/kg
SAR(1 g) = 8.32 W/kg; SAR(10 g) = 2.39 W/kg
Maximum value of SAR (measured) = 14.27 W/kg



Date: 07/05/2015

Test Laboratory: BTL Inc.

System Performance Check Body 5600MHz

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1160

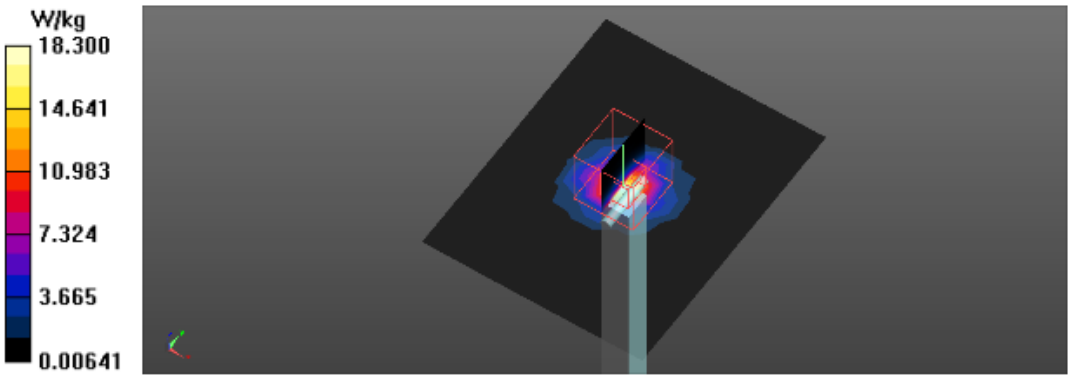
Communication System: UID 0, CW (0); Frequency: 5600 MHz
Medium parameters used: f = 5600 MHz; σ = 5.93 S/m; ε_r = 48.7; ρ = 996 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(4.47, 4.47, 4.47); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 23.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Check at 5600 MHz/Area Scan (9x11x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 18.3 W/kg

System Check at 5600 MHz/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 38.229 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 45.21 W/kg
SAR(1 g) = 8.29 W/kg; SAR(10 g) = 2.37 W/kg
Maximum value of SAR (measured) = 19.24 W/kg



Date: 07/04/2015

Test Laboratory: BTL Inc.

System Performance Check Head 5800MHz

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1160

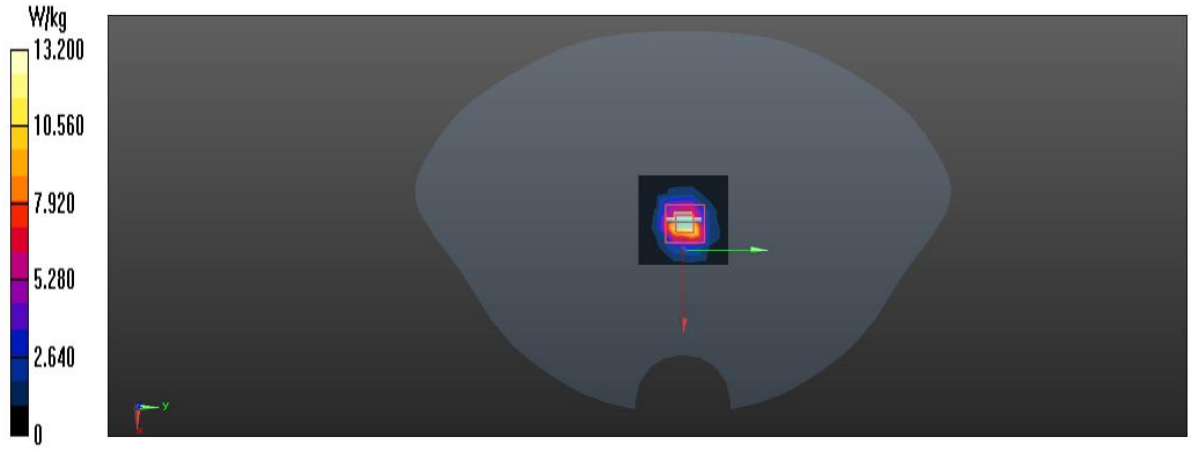
Communication System: UID 0, CW (0); Frequency: 5800 MHz
Medium parameters used: f = 5800 MHz; σ = 5.365 S/m; ε_r = 33.61; ρ = 996 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(4.89, 4.89, 4.89); Calibrated: 01/30/2015;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Check at 5800 MHz/Area Scan (6x6x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 13.2 W/kg

System Check at 5800/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 39.12 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 26.21 W/kg
SAR(1 g) = 8.14 W/kg; SAR(10 g) = 2.31 W/kg
Maximum value of SAR (measured) = 13.57 W/kg



Date: 07/05/2015

Test Laboratory: BTL Inc.

System Performance Check Body 5800 MHz

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1160

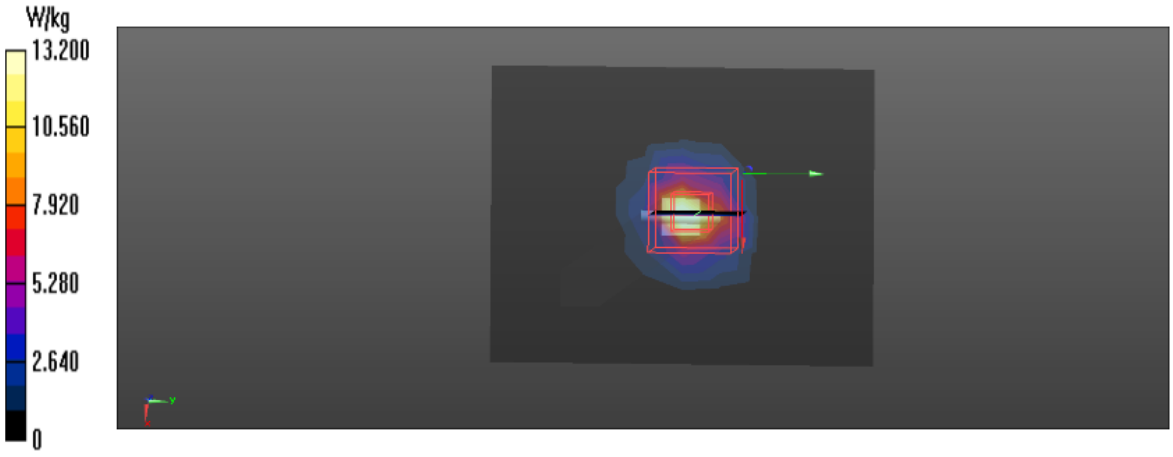
Communication System: UID 0, CW (0); Frequency: 5800 MHz
Medium parameters used: f = 5800 MHz; σ = 6.22 S/m; ε_r = 48.3; ρ = 996 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(4.50, 4.50, 4.50); Calibrated: 01/30/2015;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

System Check at 5800 MHz/Area Scan (6x6x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 13.2 W/kg

System Check at 5800 MHZ/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm Reference Value = 39.252 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 26.29 W/kg
SAR(1 g) = 7.50 W/kg; SAR(10 g) = 2.12 W/kg
Maximum value of SAR (measured) = 14.17 W/kg



3.SAR Measurement Plots

Date: 07/25/2015

Test Laboratory: BTL Inc.

1_GSM 850_GSM_ch128_Left Cheek _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

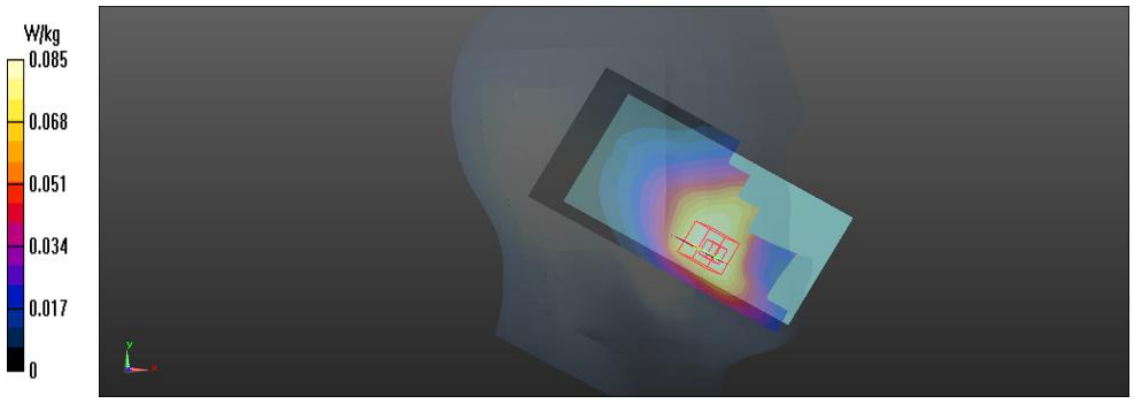
Communication System: UID 0, Generic GSM (0); Frequency: 824.2 MHz; Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.983 S/m; ε_r = 56.755; ρ = 1000 kg/m^3

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(10.19, 10.19, 10.19); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection),z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0846 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.955 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.104 W/kg
SAR(1 g) = 0.090 W/kg; SAR(10 g) = 0.073 W/kg
Maximum value of SAR (measured) = 0.0941 W/kg



Date: 06/30/2015

Test Laboratory: BTL Inc.

2_GSM 850_GPRS 10_ch128_Right Cheek _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

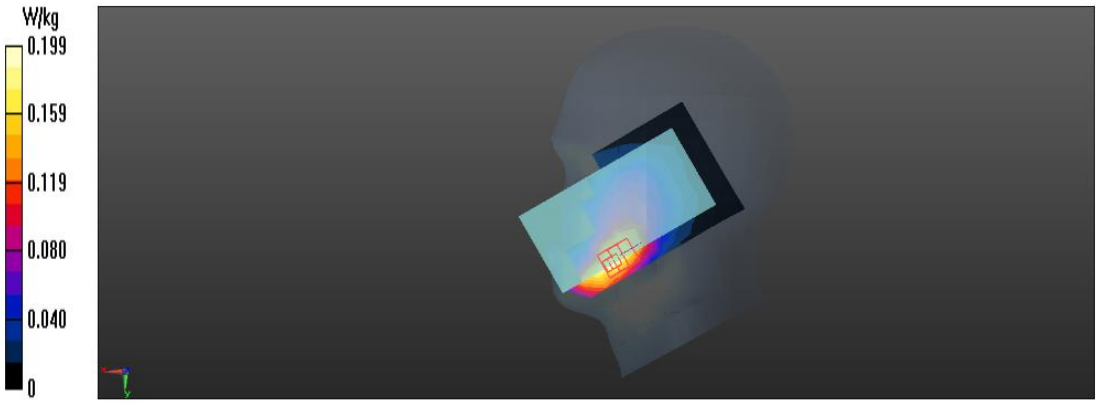
Communication System: UID 0, GPRS-FDD(TDMA,GMSK) (0); Frequency: 824.2 MHz
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.88 S/m; ε_r = 41.628; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(9.75, 9.75, 9.75); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.199 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.299 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.224 W/kg
SAR(1 g) = 0.165 W/kg; SAR(10 g) = 0.117 W/kg
Maximum value of SAR (measured) = 0.177 W/kg



Date: 07/25/2015

Test Laboratory: BTL Inc.

3_GSM 850_GSM_ch128_Front Face_1cm_ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

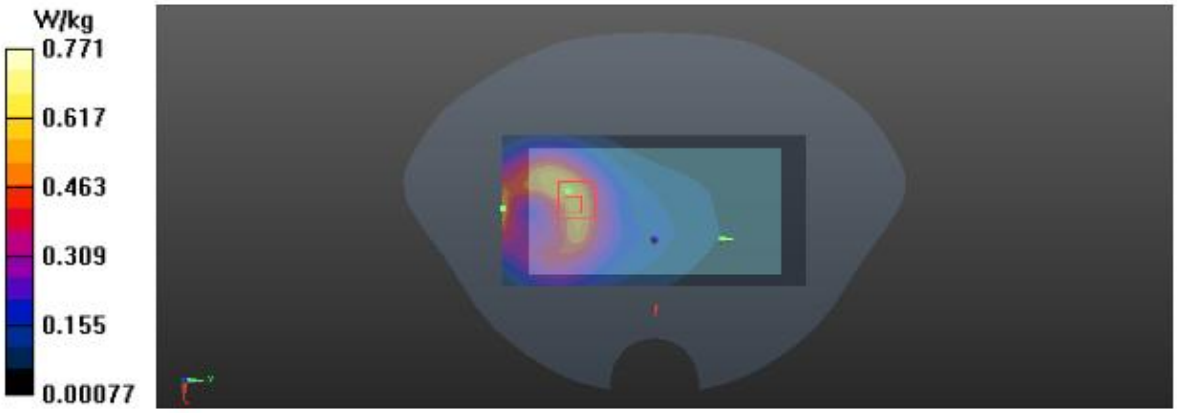
Communication System: UID 0, Generic GSM (0); Frequency: 824.2 MHz;
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.964 S/m; ε_r = 54.747; ρ = 1000 kg/m^3

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(10.19, 10.19, 10.19); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.771 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.980 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.983 W/kg
SAR(1 g) = 0.581 W/kg; SAR(10 g) = 0.338 W/kg
Maximum value of SAR (measured) = 0.636 W/kg



Date: 06/29/2015

Test Laboratory: BTL Inc.

4_GSM 850_GPRS 10_ch128_Front Face_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

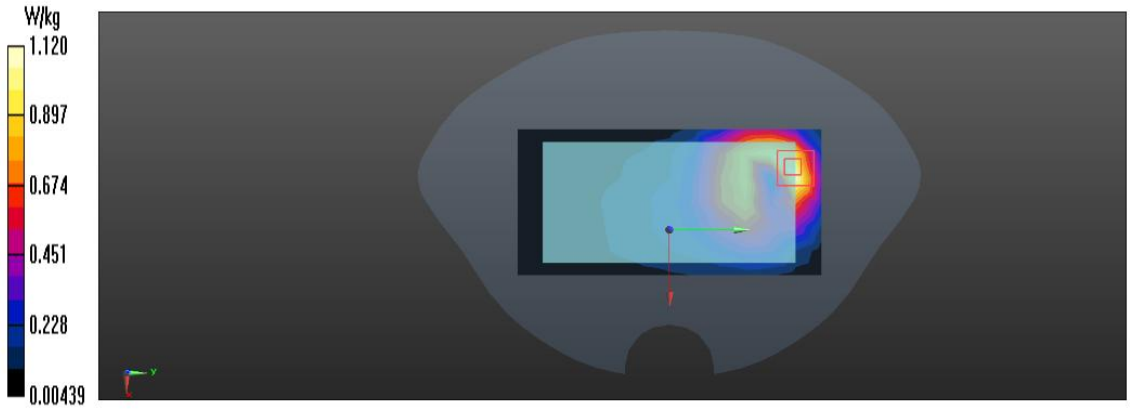
Communication System: UID 0, GPRS-FDD(TDMA,GMSK) (0); Frequency: 824.2 MHz
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.99 S/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(10.19, 10.19, 10.19); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.12 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.009 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.44 W/kg
SAR(1 g) = 0.864 W/kg; SAR(10 g) = 0.504 W/kg
Maximum value of SAR (measured) = 0.955 W/kg



Date: 07/25/2015

Test Laboratory: BTL Inc.

5_GSM 1900_GSM_ch512_Left Cheek_ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

Communication System: UID 0, Generic GSM (0); Frequency: 1850.2 MHz;
Medium parameters used (extrapolated): f = 1850.2 MHz; σ = 1.3 S/m; ε_r = 41.299; ρ = 1000 kg/m^3

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(8.23, 8.23, 8.23); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0457 W/kg

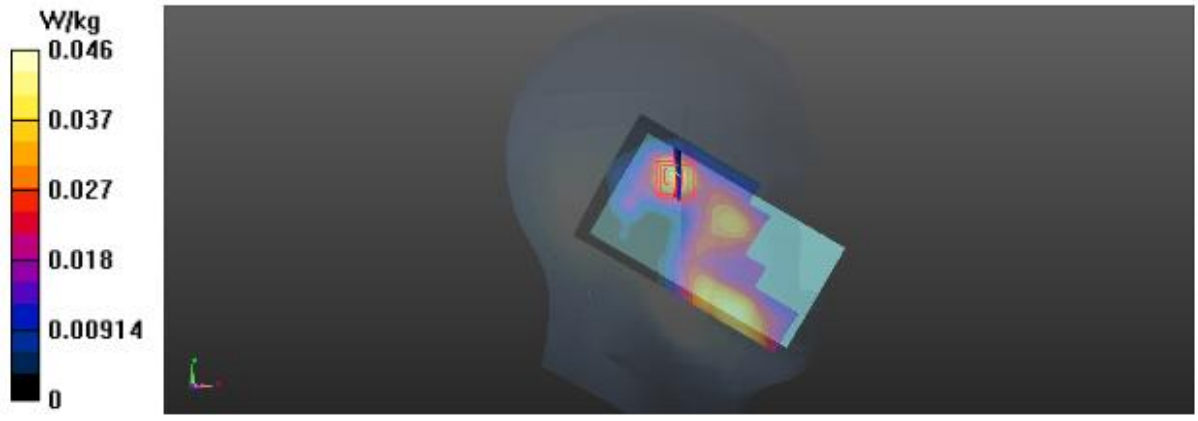
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.940 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.0530 W/kg

SAR(1 g) = 0.038 W/kg; SAR(10 g) = 0.023 W/kg

Maximum value of SAR (measured) = 0.0417 W/kg



Date: 07/01/2015

Test Laboratory: BTL Inc.

6_GSM 1900_GPRS 11_ch512_Right Cheek _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

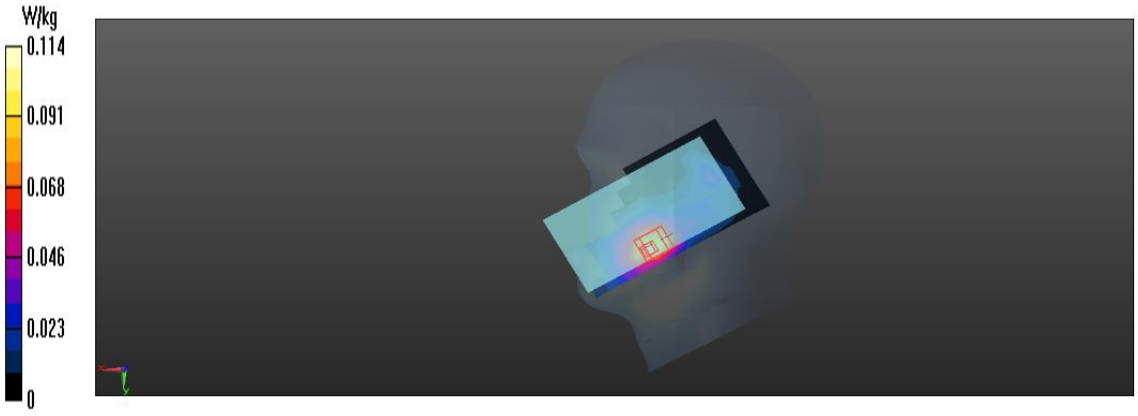
Communication System: UID 0, GPRS-FDD(TDMA,GMSK) (0); Frequency: 1850.2 MHz
Medium parameters used (extrapolated): f = 1850.2 MHz; σ = 1.3 S/m; ε_r = 41.299; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(8.23, 8.23, 8.23); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.114 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.262 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.138 W/kg
SAR(1 g) = 0.089 W/kg; SAR(10 g) = 0.056 W/kg
Maximum value of SAR (measured) = 0.100 W/kg



Date: 07/25/2015

Test Laboratory: BTL Inc.

7_GSM 1900_GSM_ch512_Front Face_1cm_ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

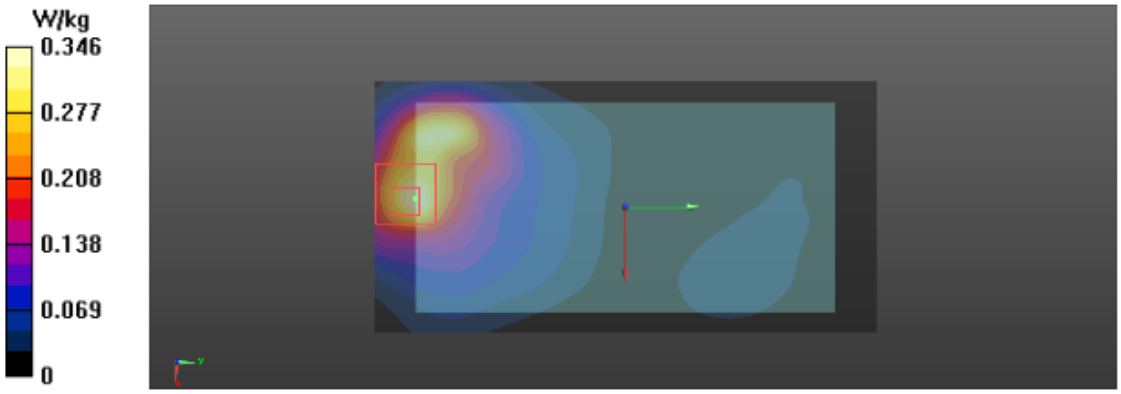
Communication System: UID 0, Generic GSM (0); Frequency: 1850.2 MHz;
Medium parameters used: f = 1850.2 MHz; σ = 1.53 S/m; ε_r = 51.24; ρ = 1000 kg/m^3

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.86, 7.86, 7.86); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection),z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.346 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.860 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.417 W/kg
SAR(1 g) = 0.268 W/kg; SAR(10 g) = 0.156 W/kg
Maximum value of SAR (measured) = 0.277 W/kg



Date: 06/29/2015

Test Laboratory: BTL Inc.

8_GSM 1900_GPRS 11_ch512_Bottom Side_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

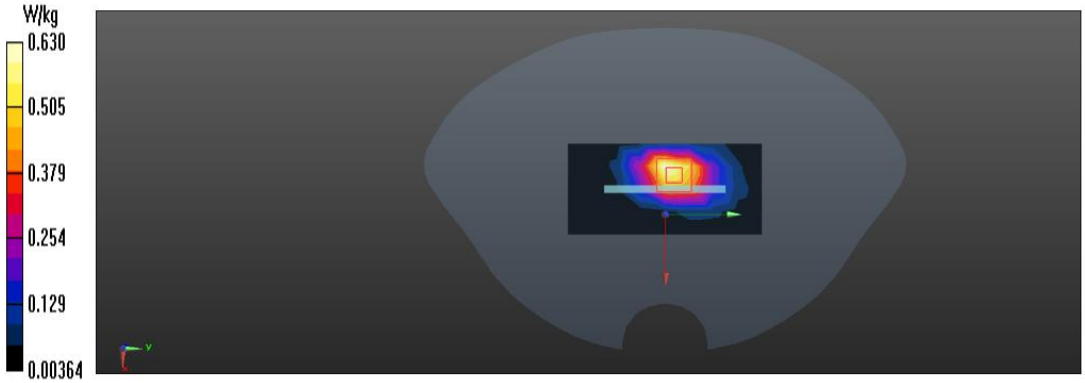
Communication System: UID 0, GPRS-FDD(TDMA,GMSK) (0); Frequency: 1850.2 MHz
Medium parameters used: f = 1850.2 MHz; σ = 1.53 S/m; ε_r = 51.24; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.86, 7.86, 7.86); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (5x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.630 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.003 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.04 W/kg
SAR(1 g) = 0.619 W/kg; SAR(10 g) = 0.327 W/kg
Maximum value of SAR (measured) = 0.696 W/kg



Date: 07/01/2015

Test Laboratory: BTL Inc.

9_WCDMA Band 2_ch9538_Right Cheek _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

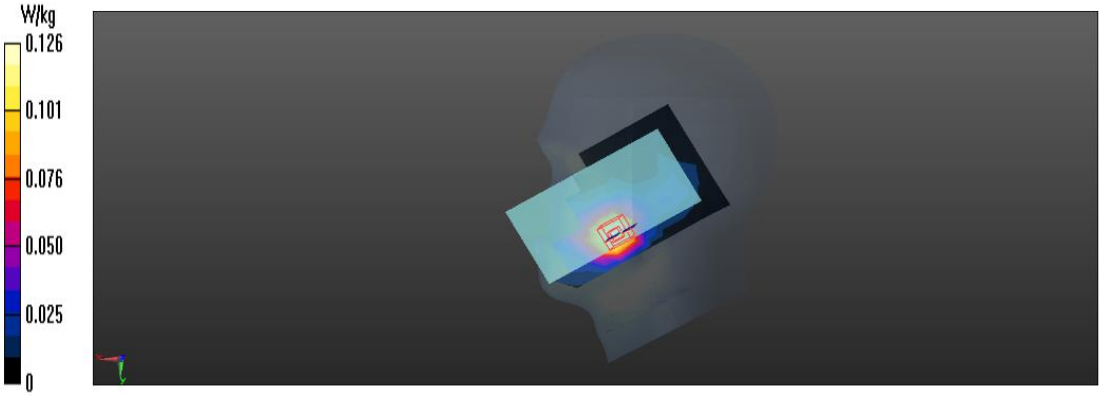
Communication System: UID 0, UMTS-FDD(WCDMA) (0); Frequency: 1907.6 MHz
Medium parameters used (interpolated): f = 1907.6 MHz; σ = 1.3 S/m; ε_r = 41.07; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(8.23, 8.23, 8.23); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection),z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.126 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.850 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.167 W/kg
SAR(1 g) = 0.117 W/kg; SAR(10 g) = 0.075 W/kg
Maximum value of SAR (measured) = 0.127 W/kg



Date: 06/29/2015

Test Laboratory: BTL Inc.

10_WCDMA Band 2_ch9538_Rear Face_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial:NA

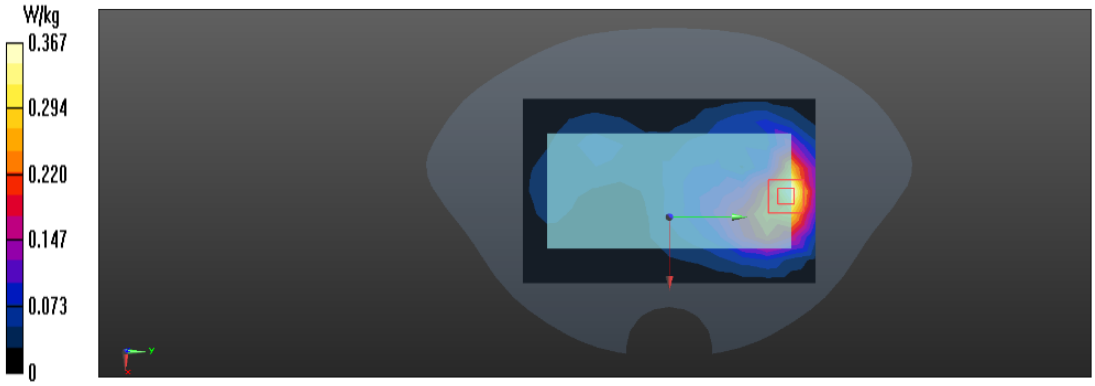
Communication System: UID 0, GPRS-FDD(TDMA,GMSK) (0); Frequency: 1907.6 MHz
Medium parameters used: f = 1907.6 MHz; σ = 1.57 S/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.86, 7.86, 7.86); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.367 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.419 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.458 W/kg
SAR(1 g) = 0.251 W/kg; SAR(10 g) = 0.095 W/kg
Maximum value of SAR (measured) = 0.344 W/kg



Date: 06/29/2015

Test Laboratory: BTL Inc.

11_WCDMA Band 2_ch9262_Bottom Side_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

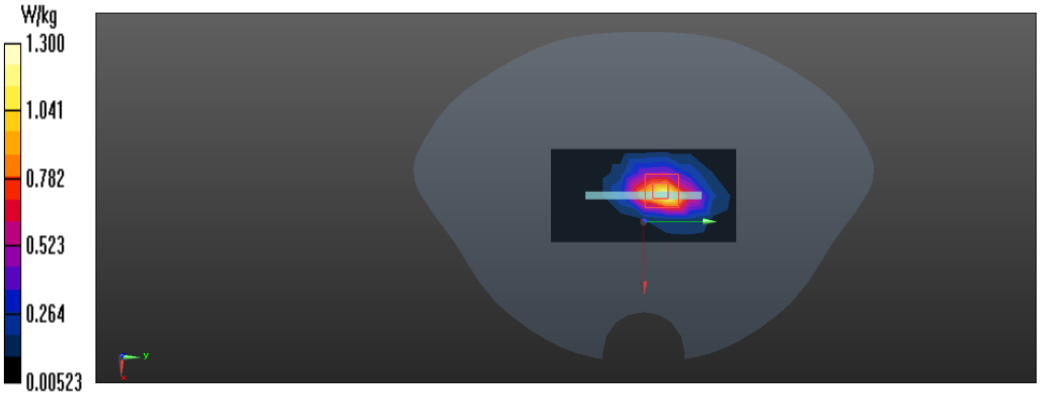
Communication System: UID 0, UMTS-FDD(WCDMA) (0); Frequency: 1852.4 MHz
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.533 S/m; ε_r = 51.233; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.86, 7.86, 7.86); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (5x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.30 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.431 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.65 W/kg
SAR(1 g) = 0.985 W/kg; SAR(10 g) = 0.516 W/kg
Maximum value of SAR (measured) = 1.12 W/kg



Date: 07/02/2015

Test Laboratory: BTL Inc.

12_WCDMA Band 4_ch1413_Right Cheek _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

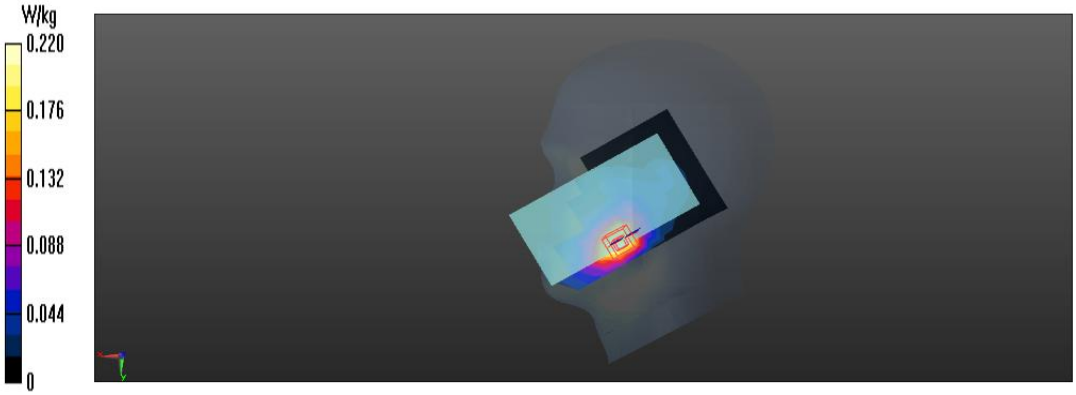
Communication System: UID 0, UMTS-FDD(WCDMA) (0); Frequency: 1732.6 MHz
Medium parameters used (interpolated): f = 1732.6 MHz; σ = 1.363 S/m; ε_r = 40.135; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(8.42, 8.42, 8.42); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.220 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.744 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.283 W/kg
SAR(1 g) = 0.205 W/kg; SAR(10 g) = 0.132 W/kg
Maximum value of SAR (measured) = 0.221 W/kg



Date: 06/27/2015

Test Laboratory: BTL Inc.

13_WCDMA Band 4_ch1312_Rear Face _1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

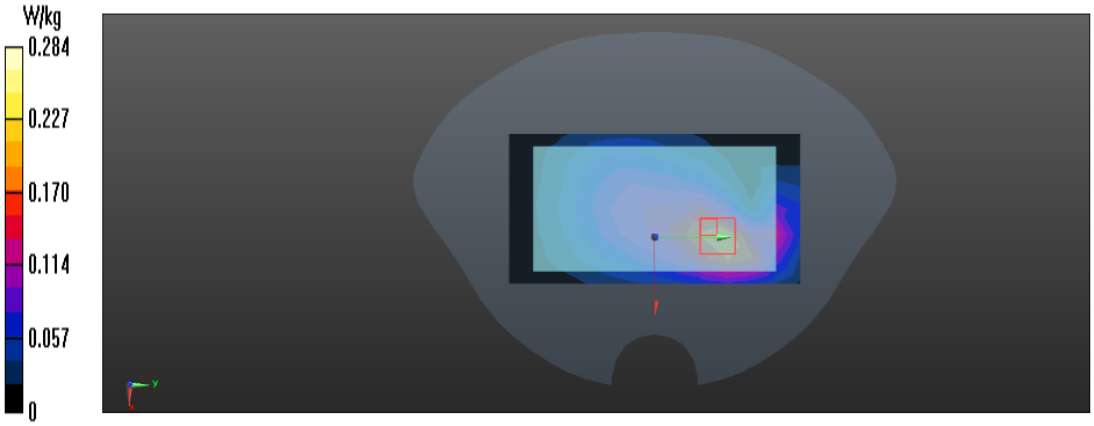
Communication System: UID 0, UMTS-FDD(WCDMA) (0); Frequency: 1712.4 MHz
Medium parameters used (interpolated): f = 1712.4 MHz; σ = 1.435 S/m; ε_r = 53.363; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(8.08, 8.08, 8.08); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.284 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.289 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.452 W/kg
SAR(1 g) = 0.533 W/kg; SAR(10 g) = 0.128 W/kg
Maximum value of SAR (measured) = 0.350 W/kg



Date: 06/27/2015

Test Laboratory: BTL Inc.

14_WCDMA Band 4_ch1312_Bottom Side_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial:NA

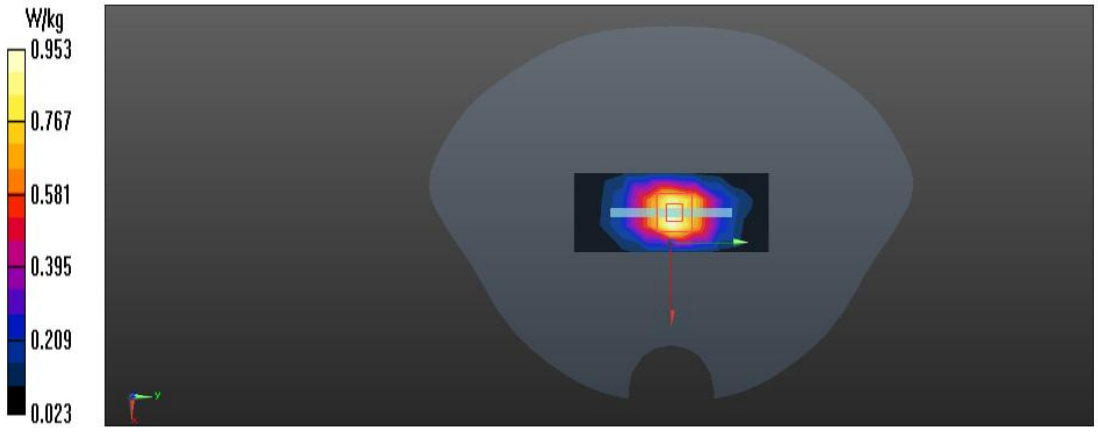
Communication System: UID 0, UMTS-FDD(WCDMA) (0); Frequency: 1712.4 MHz
Medium parameters used (interpolated): f = 1712.4 MHz; σ = 1.435 S/m; ε_r = 53.363; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(8.08, 8.08, 8.08); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection),z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (4x9x1): Measurement grid: dx=15mm, dy=15mm.
Maximum value of SAR (measured) = 0.953 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 27.696 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 1 W/kg; SAR(10 g) = 0.563 W/kg
Maximum value of SAR (measured) = 1.13 W/kg



Date: 06/30/2015

Test Laboratory: BTL Inc.

15_WCDMA Band 5_RMC12.2K_ch4132_Left Cheek _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

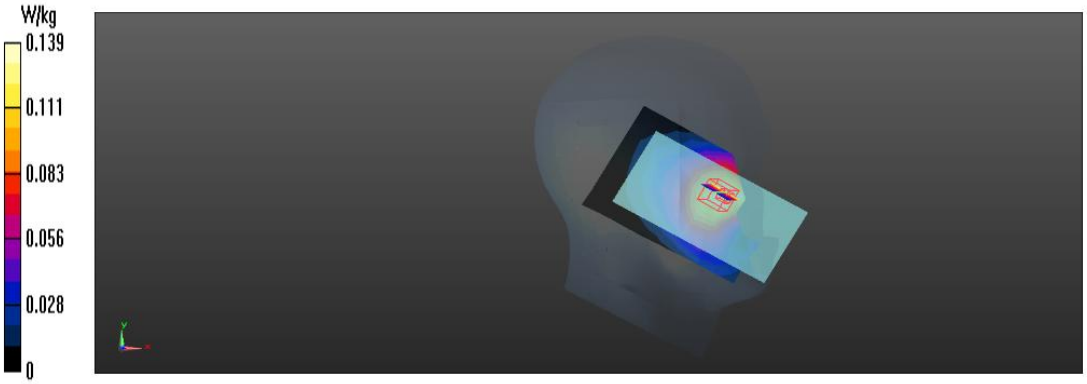
Communication System: UID 0, UMTS-FDD(WCDMA) (0); Frequency: 826.4 MHz
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.882 S/m; ε_r = 41.602; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(9.75, 9.75, 9.75); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.139 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.943 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.157 W/kg
SAR(1 g) = 0.123 W/kg; SAR(10 g) = 0.091 W/kg
Maximum value of SAR (measured) = 0.129 W/kg



Date: 06/28/2015

Test Laboratory: BTL Inc.

16_WCDMA Band 5_RMC12.2K_ch4132_Front Face_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

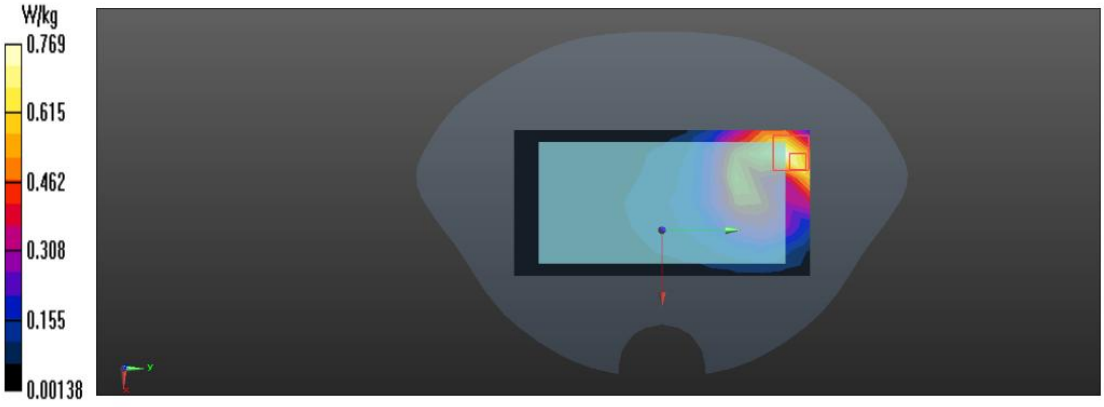
Communication System: UID 0, UMTS-FDD(WCDMA) (0); Frequency: 826.4 MHz
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.98 S/m; ε_r = 55.787; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(10.19, 10.19, 10.19); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.769 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.986 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.08 W/kg
SAR(1 g) = 0.625 W/kg; SAR(10 g) = 0.343 W/kg
Maximum value of SAR (measured) = 0.701 W/kg



Date: 07/01/2015

Test Laboratory: BTL Inc.

17_LTE Band 2_QPSK20M_ch18700_1RB_Right Cheek _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

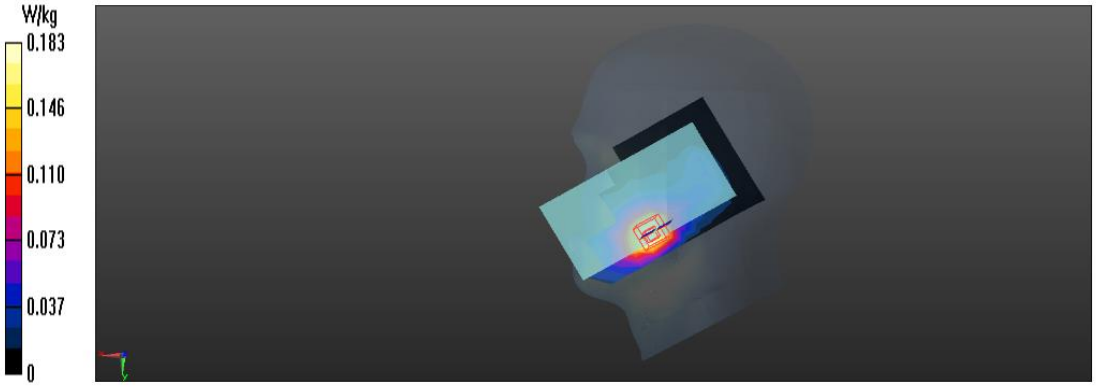
Communication System: UID 0, LTE-FDD(1RB,20MHz,QPSK) (0); Frequency: 1860 MHz
Medium parameters used (extrapolated): f = 1860 MHz; σ = 1.3 S/m; ε_r = 41.26; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(8.23, 8.23, 8.23); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.183 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.979 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.233 W/kg
SAR(1 g) = 0.161 W/kg; SAR(10 g) = 0.105 W/kg
Maximum value of SAR (measured) = 0.175 W/kg



Date: 06/30/2015

Test Laboratory: BTL Inc.

18_LTE Band 2_QPSK20M_ch18900_Front Face_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

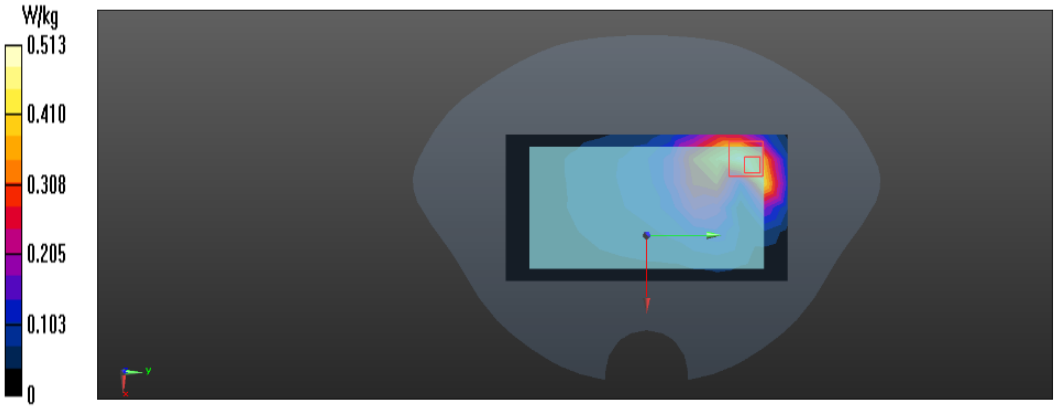
Communication System: UID 0, LTE-FDD(1RB,20MHz,QPSK) (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.57 S/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.86, 7.86, 7.86); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.513 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.562 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.671 W/kg
SAR(1 g) = 0.574 W/kg; SAR(10 g) = 0.241 W/kg
Maximum value of SAR (measured) = 0.482 W/kg



Date: 06/30/2015

Test Laboratory: BTL Inc.

19_LTE Band 2_QPSK20M_ch18700_1RB_Bottom Side_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

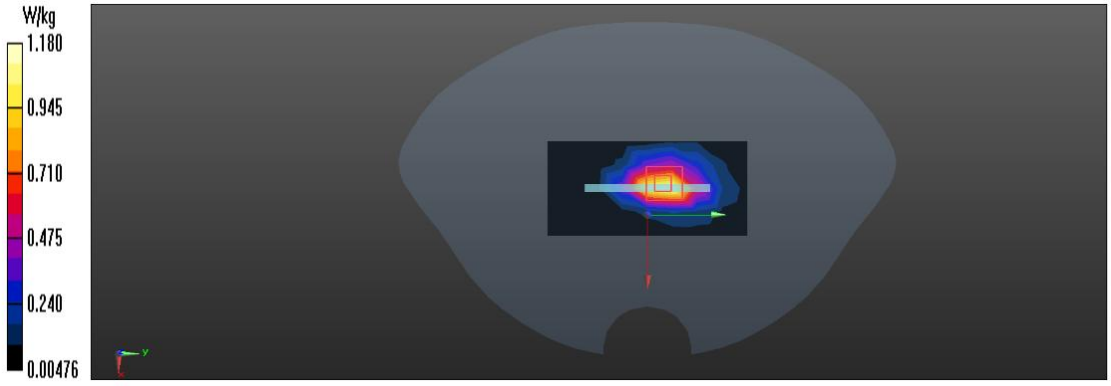
Communication System: UID 0, LTE-FDD(1RB,20MHz,QPSK) (0); Frequency: 1860 MHz
Medium parameters used (interpolated): f = 1860 MHz; σ = 1.543 S/m; ε_r = 51.207; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.86, 7.86, 7.86); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (5x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.18 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.956 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.55 W/kg
SAR(1 g) = 0.917 W/kg; SAR(10 g) = 0.483 W/kg
Maximum value of SAR (measured) = 1.04 W/kg



Date: 07/02/2015

Test Laboratory: BTL Inc.

20_LTE Band 4_QPSK20M_ch20050_1RB_Right Cheek _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

Communication System: UID 0, LTE-FDD(1RB,20MHz,QPSK) (0); Frequency: 1720 MHz
Medium parameters used (interpolated): f = 1720 MHz; σ = 1.35 S/m; ε_r = 40.218; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(8.42, 8.42, 8.42); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection),z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.316 W/kg

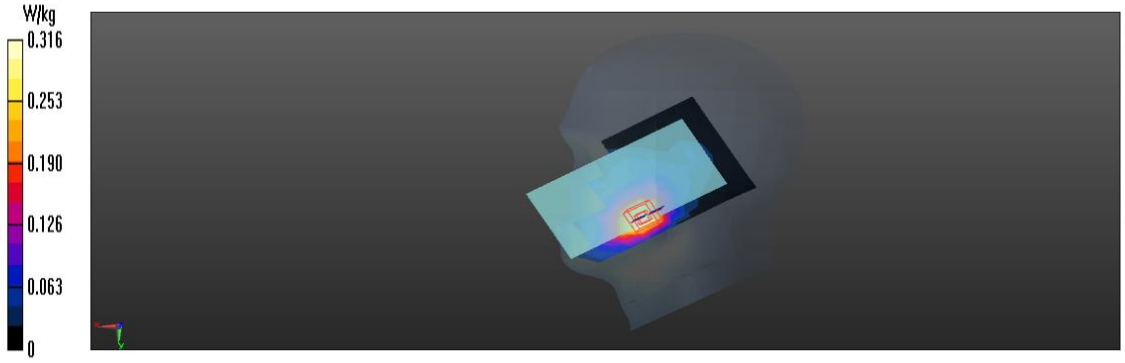
-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.667 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.387 W/kg

SAR(1 g) = 0.274 W/kg; SAR(10 g) = 0.177 W/kg

Maximum value of SAR (measured) = 0.294 W/kg



Date: 06/28/2015

Test Laboratory: BTL Inc.

21_LTE Band 4_QPSK20M_ch20175_Rear Face_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

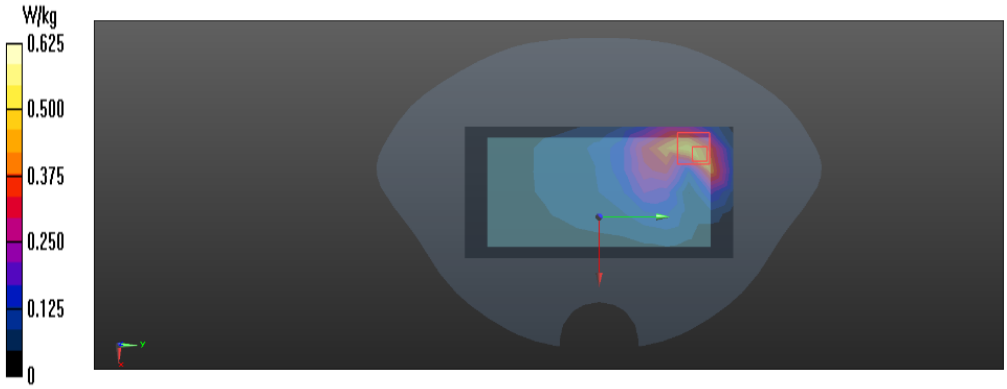
Communication System: UID 0, LTE-FDD(1RB,20MHz,QPSK) (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.459 S/m; ε_r = 53.239; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(8.08, 8.08, 8.08); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = -19.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.625 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.562 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.871 W/kg
SAR(1 g) = 0.615 W/kg; SAR(10 g) = 0.317 W/kg
Maximum value of SAR (measured) = 0.552 W/kg



Date: 06/28/2015

Test Laboratory: BTL Inc.

22_LTE Band 4_QPSK20M_ch20175_1RB_Bottom Side_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

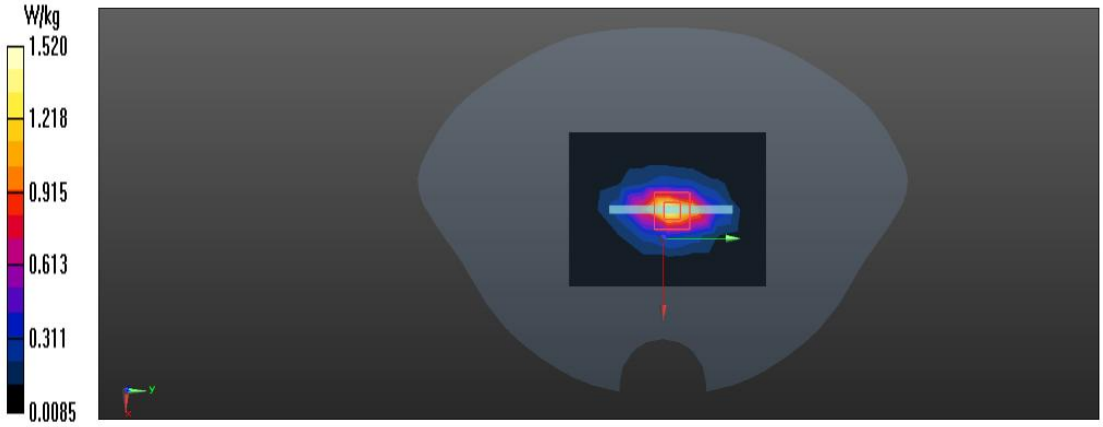
Communication System: UID 0, LTE-FDD(1RB,20MHz,QPSK) (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.459 S/m; ε_r = 53.239; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(8.08, 8.08, 8.08); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.52 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 28.538 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.78 W/kg
SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.597 W/kg
Maximum value of SAR (measured) = 1.23 W/kg



Date: 07/01/2015

Test Laboratory: BTL Inc.

23_LTE Band 5_QPSK10M_ch20525_Left Cheek _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

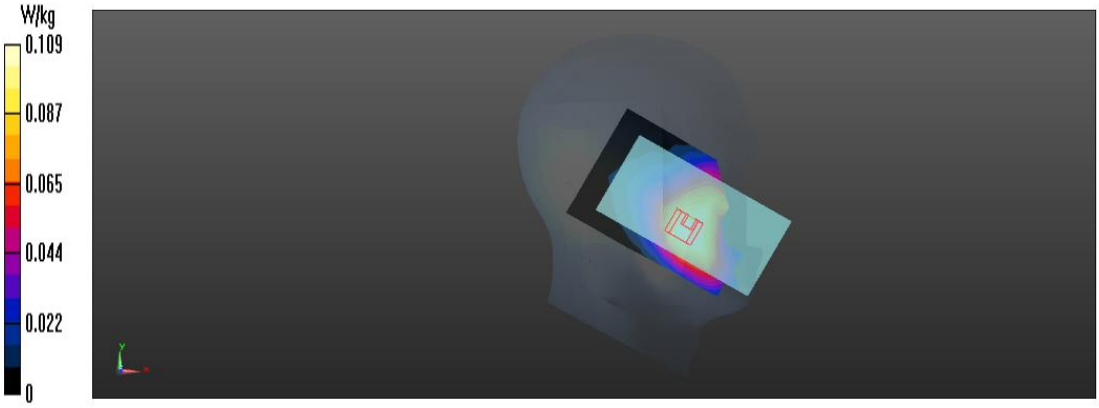
Communication System: UID 0, LTE-FDD(1RB,10MHz,QPSK) (0); Frequency: 836.5 MHz
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.89 S/m; ε_r = 41.479; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(9.75, 9.75, 9.75); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.109 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.306 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.0700 W/kg
SAR(1 g) = 0.083 W/kg; SAR(10 g) = 0.047 W/kg
Maximum value of SAR (measured) = 0.0635 W/kg



Date: 06/29/2015

Test Laboratory: BTL Inc.

24_LTE Band 5_QPSK10M_ch20525_Front Face_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

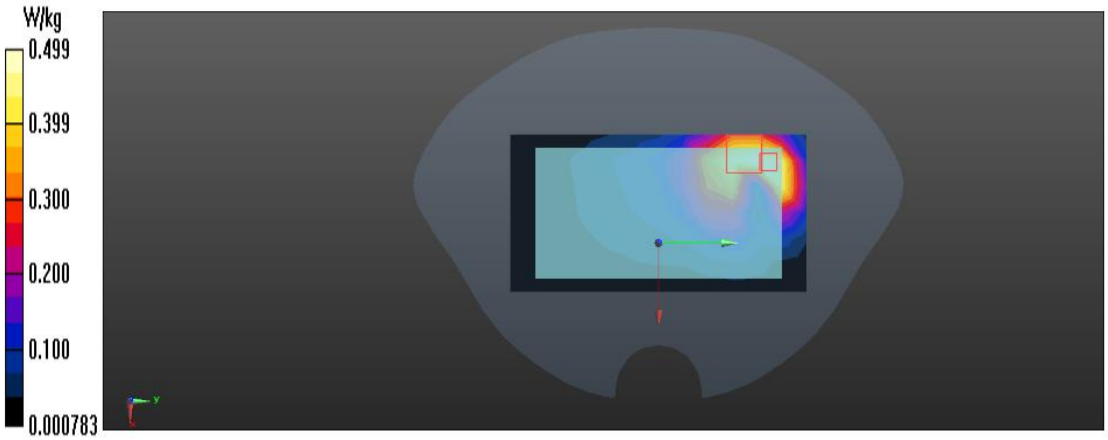
Communication System: UID 0, LTE-FDD(1RB,10MHz,QPSK) (0); Frequency: 836.5 MHz
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.98 S/m; ε_r = 55.869; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(10.19, 10.19, 10.19); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.499 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.670 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.682 W/kg
SAR(1 g) = 0.411 W/kg; SAR(10 g) = 0.255 W/kg
Maximum value of SAR (measured) = 0.459 W/kg



Date: 07/01/2015

Test Laboratory: BTL Inc.

25_LTE Band 7_QPSK20M_ch21350_1RB_Right Cheek _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

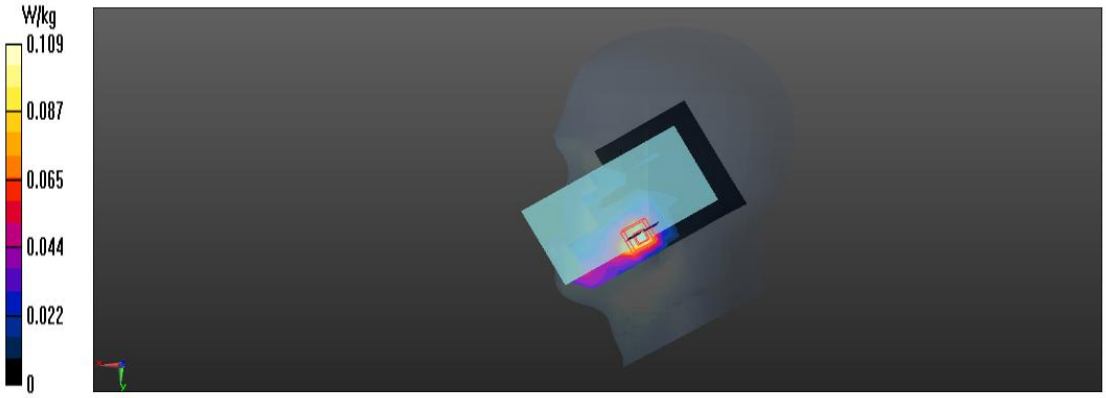
Communication System: UID 0, LTE-FDD(1RB,20MHz,QPSK) (0); Frequency: 2560 MHz
Medium parameters used (interpolated): f = 2560 MHz; σ = 1.92 S/m; ε_r = 38.86; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.2, 7.2, 7.2); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.109 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.136 W/kg
SAR(1 g) = 0.078 W/kg; SAR(10 g) = 0.042 W/kg
Maximum value of SAR (measured) = 0.0853 W/kg



Date: 07/01/2015

Test Laboratory: BTL Inc.

26_LTE Band 7_QPSK20M_ch23150_1RB_Front Face_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

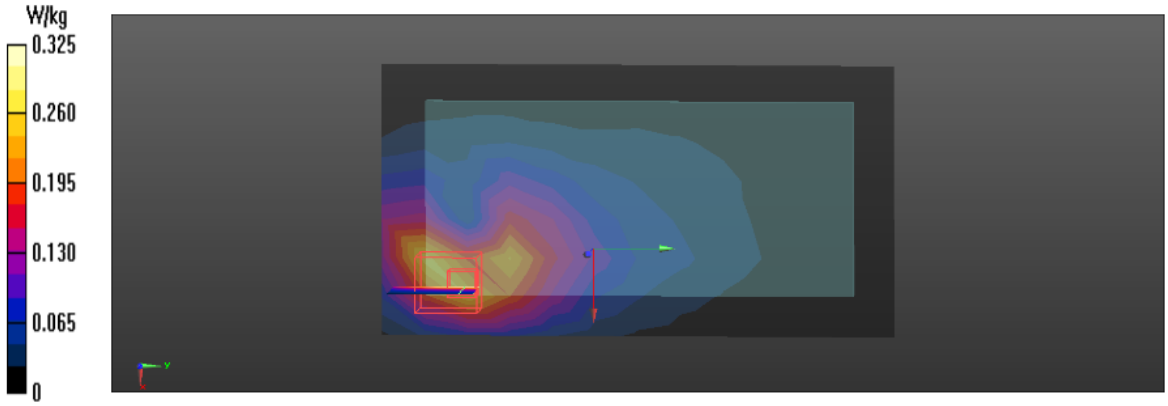
Communication System: UID 0, LTE-FDD(1RB,20MHz,QPSK) (0); Frequency: 2560 MHz
Medium parameters used (interpolated): f = 2560 MHz; σ = 2.126 S/m; ε_r = 52.338; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.48, 7.48, 7.48); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.325 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.047 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.416 W/kg
SAR(1 g) = 0.581 W/kg; SAR(10 g) = 0.235 W/kg
Maximum value of SAR (measured) = 0.452 W/kg



Date: 07/01/2015

Test Laboratory: BTL Inc.

27_LTE Band 7_QPSK20M_ch20850_1RB_Bottom Side_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

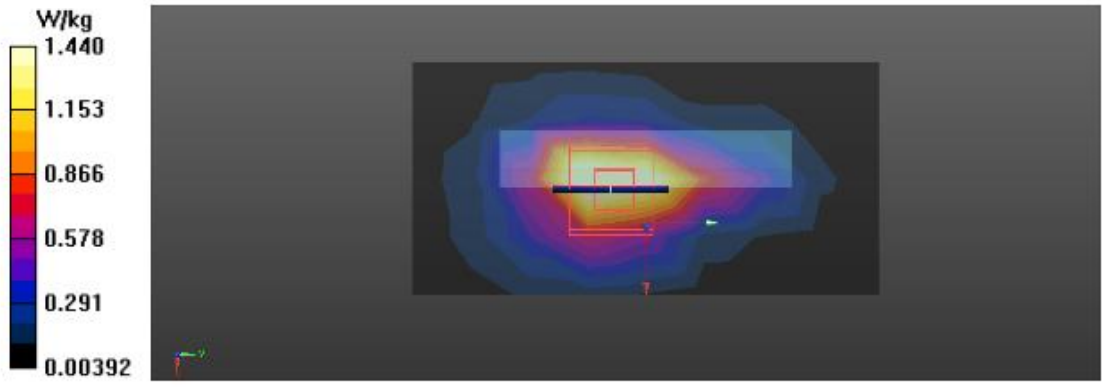
Communication System: UID 0, LTE-FDD(1RB,20MHz,QPSK) (0); Frequency: 2510 MHz
Medium parameters used (interpolated): f = 2510 MHz; σ = 2.126 S/m; ε_r = 52.338; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.48, 7.48, 7.48); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (7x13x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 1.44 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.949 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 2.23 W/kg
SAR(1 g) = 0.953 W/kg; SAR(10 g) = 0.488 W/kg
Maximum value of SAR (measured) = 1.21 W/kg



Date: 07/02/2015

Test Laboratory: BTL Inc.

28_LTE Band 12_QPSK10M_ch23130_1RB_Right Cheek _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

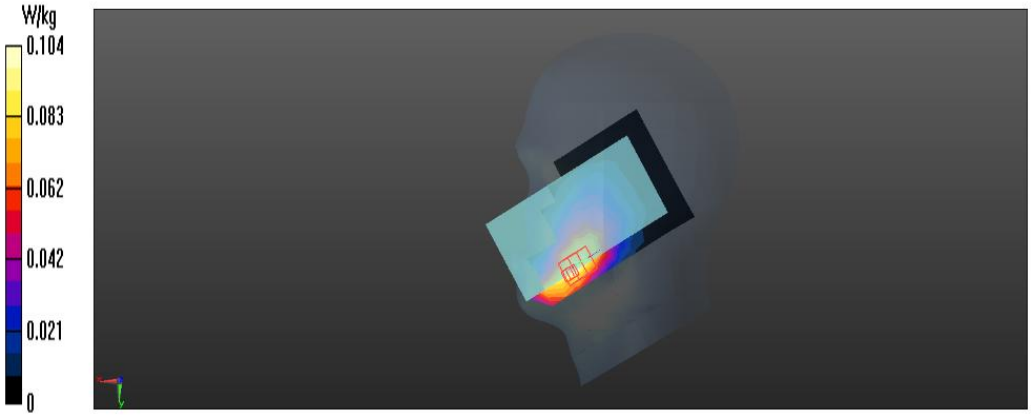
Communication System: UID 0, LTE-FDD(1RB,10MHz,QPSK) (0); Frequency: 711 MHz
Medium parameters used (interpolated): f = 711 MHz; σ = 0.861 S/m; ε_r = 42.398; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(10.38, 10.38, 10.38); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.104 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.930 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.109 W/kg
SAR(1 g) = 0.081 W/kg; SAR(10 g) = 0.059 W/kg
Maximum value of SAR (measured) = 0.0883 W/kg



Date: 06/30/2015

Test Laboratory: BTL Inc.

29_LTE Band 12_QPSK10M_ch23130_1RB_Front Face_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

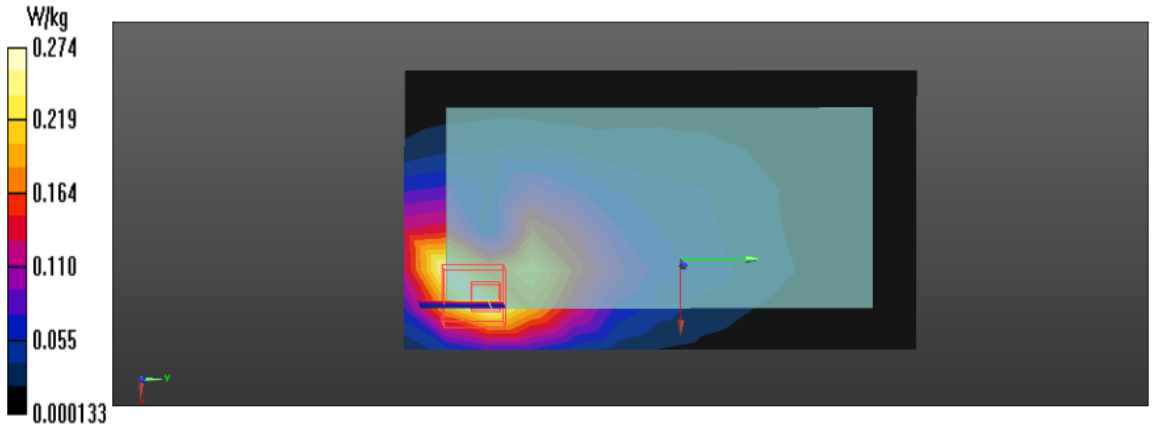
Communication System: UID 0, LTE-FDD(1RB,10MHz,QPSK) (0); Frequency: 711 MHz
Medium parameters used (interpolated): f = 711 MHz; σ = 0.961 S/m; ε_r = 52.88; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(10.25, 10.25, 10.25); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.274 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.010 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.333 W/kg
SAR(1 g) = 0.208 W/kg; SAR(10 g) = 0.129 W/kg
Maximum value of SAR (measured) = 0.227 W/kg



Date: 07/02/2015

Test Laboratory: BTL Inc.

30_LTE Band 17_QPSK10M_ch23790_1RB_Right Cheek _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

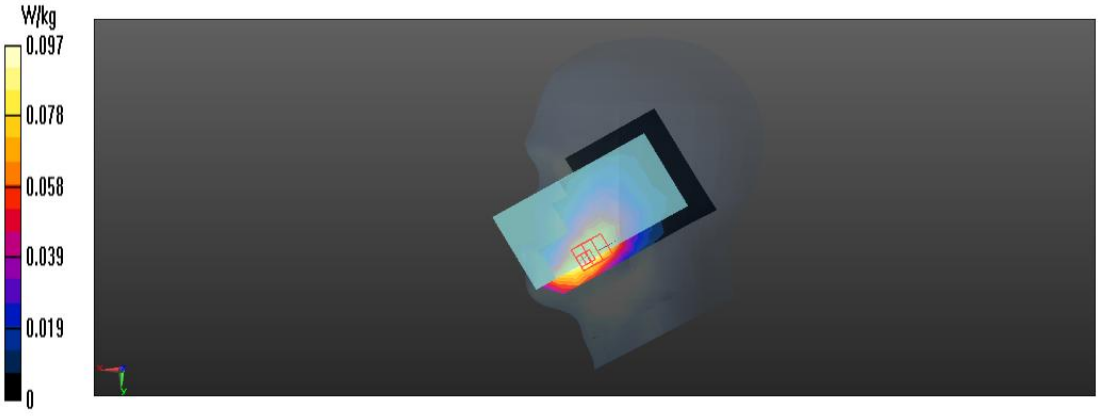
Communication System: UID 0, LTE-FDD(1RB,10MHz,QPSK) (0); Frequency: 710 MHz
Medium parameters used (interpolated): f = 710 MHz; σ = 0.86 S/m; ε_r = 42.412; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(10.38, 10.38, 10.38); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0975 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.767 V/m; Power Drift = 0.07B
Peak SAR (extrapolated) = 0.104 W/kg
SAR(1 g) = 0.080 W/kg; SAR(10 g) = 0.058 W/kg
Maximum value of SAR (measured) = 0.0853 W/kg



Date: 06/30/2015

Test Laboratory: BTL Inc.

31_LTE Band 17_QPSK10M_ch23790_1RB_Front Face_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

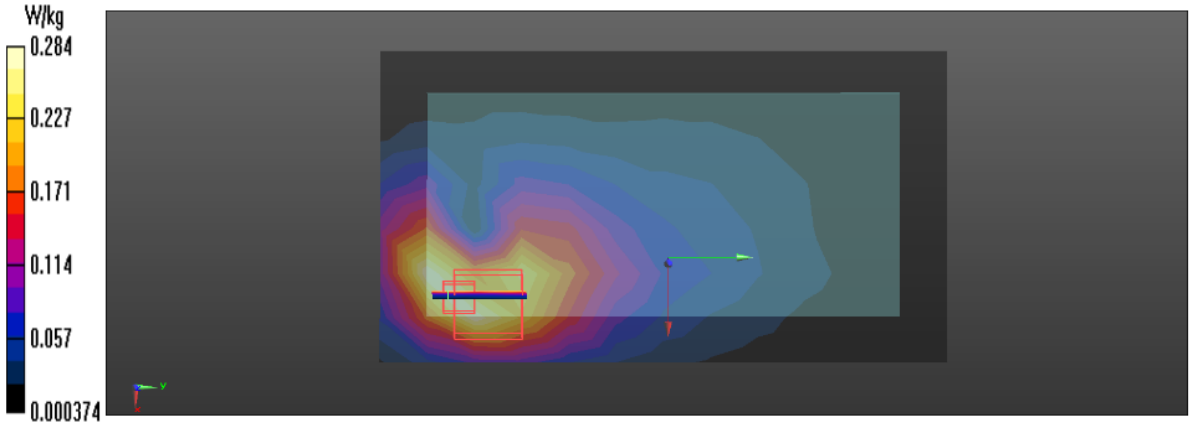
Communication System: UID 0, LTE-FDD(1RB,10MHz,QPSK) (0); Frequency: 710 MHz
Medium parameters used (interpolated): f = 710 MHz; σ = 0.961 S/m; ε_r = 52.88; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(10.25, 10.25, 10.25); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.284 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.415 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.378 W/kg
SAR(1 g) = 0.232 W/kg; SAR(10 g) = 0.147 W/kg
Maximum value of SAR (measured) = 0.254 W/kg



Date: 07/02/2015

Test Laboratory: BTL Inc.

32_2.4G WIFI_802.11b_2437MHz ch6_Right Tilted _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

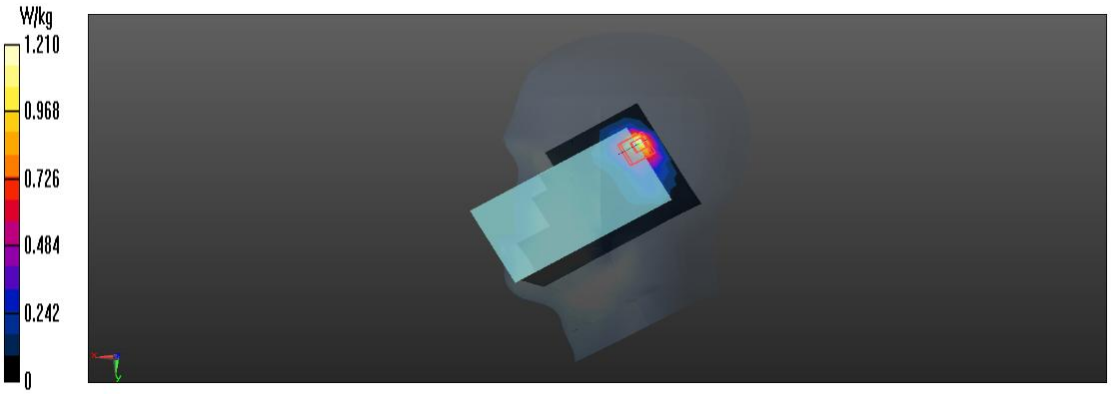
Communication System: UID 0, IEEE 802.11b WiFi 2.4GHz (DSSS,1Mbps) (0); Frequency: 2437 MHz
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.8 S/m; ε_r = 39.326; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.38, 7.38, 7.38); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 1.21 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.618 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.80 W/kg
SAR(1 g) = 0.815 W/kg; SAR(10 g) = 0.386 W/kg
Maximum value of SAR (measured) = 0.944 W/kg



Date: 06/30/2015

Test Laboratory: BTL Inc.

33_2.4G WIFI_802.11b_2462MHz ch11_Rear Face_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

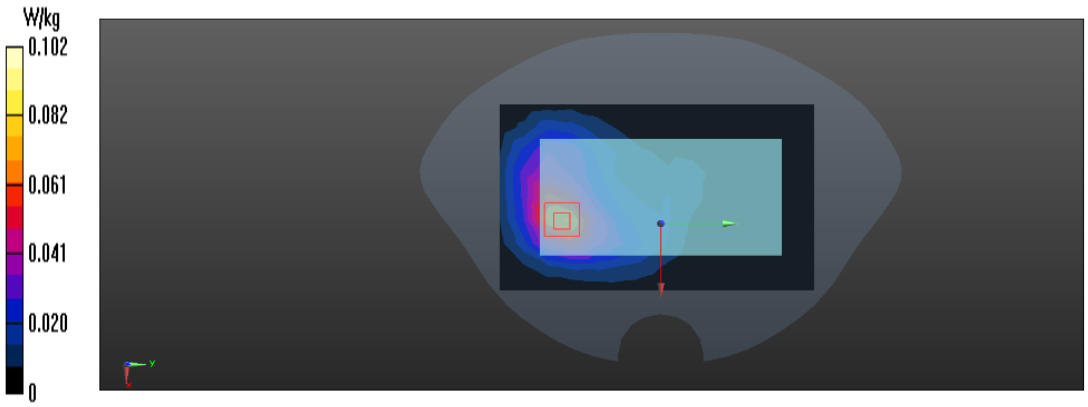
Communication System: UID 0, IEEE 802.11b WiFi 2.4GHz (DSSS,1Mbps) (0); Frequency: 2462 MHz
Medium parameters used (interpolated): f = 2462 MHz; σ = 2.013 S/m; ε_r = 50.739; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.6, 7.6, 7.6); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (13x20x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.102 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.327 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.219 W/kg
SAR(1 g) = 0.136 W/kg; SAR(10 g) = 0.068 W/kg
Maximum value of SAR (measured) = 0.156 W/kg



Date: 06/30/2015

Test Laboratory: BTL Inc.

34_2.4G WIFI_802.11b_2437MHz ch6_Top Side_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

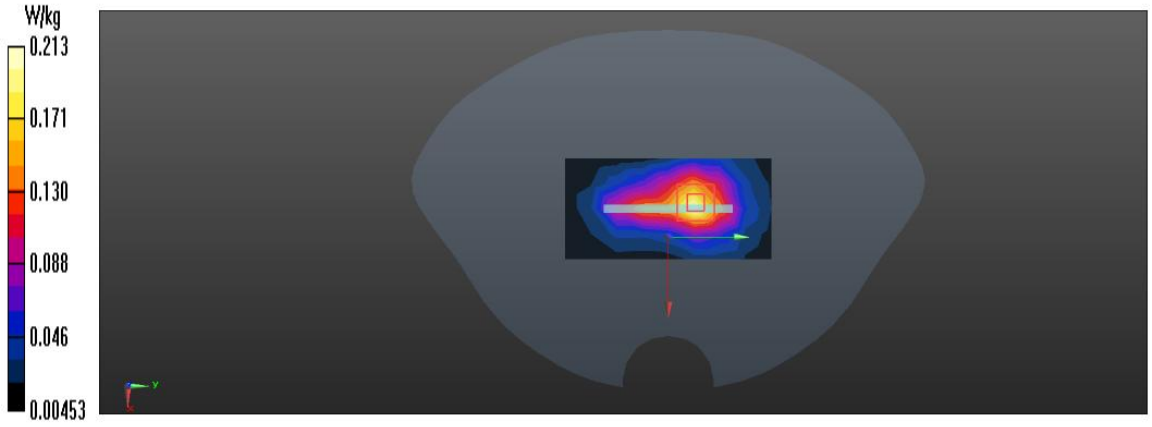
Communication System: UID 0, IEEE 802.11b WiFi 2.4GHz (DSSS,1Mbps) (0); Frequency: 2437 MHz
Medium parameters used (interpolated): f = 2437 MHz; σ = 2.013 S/m; ε_r = 50.739; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(7.6, 7.6, 7.6); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection),z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (7x13x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.213 W/kg

-/-/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.660 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.272 W/kg
SAR(1 g) = 0.152 W/kg; SAR(10 g) = 0.081 W/kg
Maximum value of SAR (measured) = 0.169 W/kg



Date: 07/04/2015

Test Laboratory: BTL Inc.

35_5GWIFI_802.11a_Ch48_Right Tilted _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

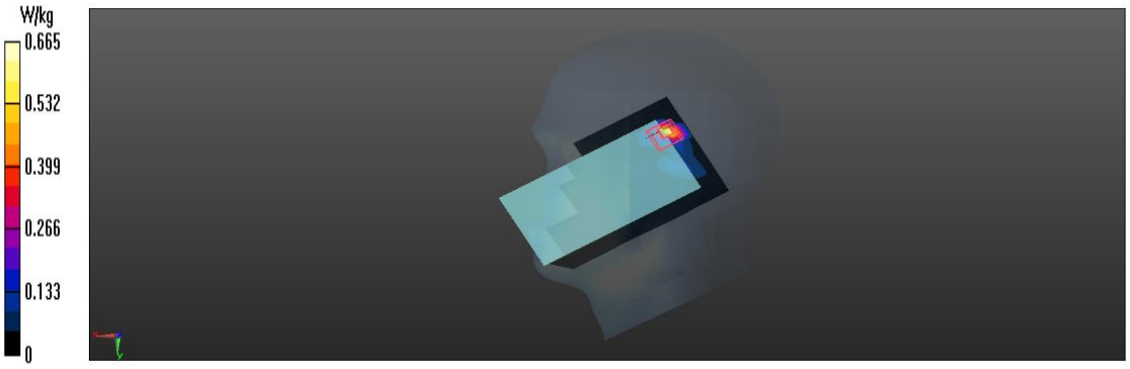
Communication System: UID 0, IEEE 802.11a WiFi 5G(OFDM, 6 Mbps,) (0); Frequency: 5240 MHz
Medium parameters used: f = 5240 MHz; σ = 4.771 S/m; ε_r = 35.042; ρ = 996 kg/m^3
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(5.62, 5.62, 5.62); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.665 W/kg

-/-/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.296 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.292 W/kg; SAR(10 g) = 0.071 W/kg
Maximum value of SAR (measured) = 0.354 W/kg



Date: 07/04/2015

Test Laboratory: BTL Inc.

36_5GWIFI_802.11ac80_Ch42_Right Tilted _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

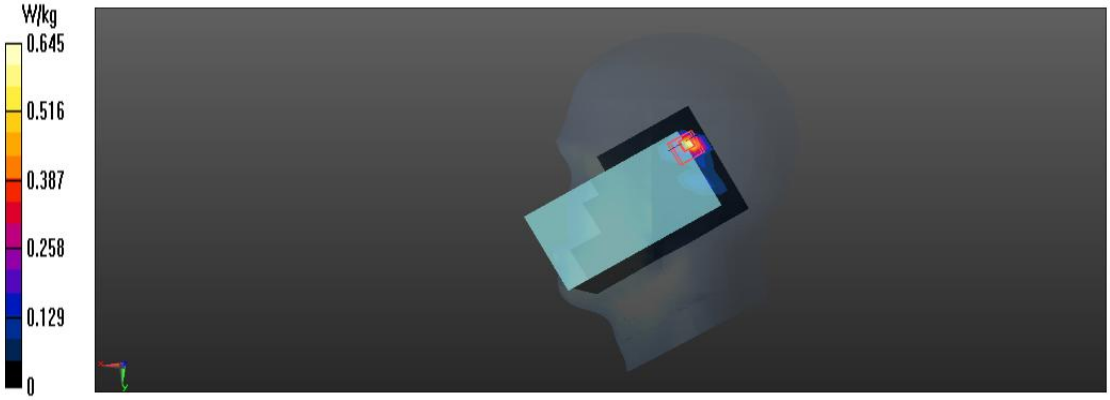
Communication System: UID 0, IEEE 802.11a WiFi 5G(OFDM, 6 Mbps,) (0); Frequency: 5210 MHz
Medium parameters used: f = 5210 MHz; σ = 4.761 S/m; ε_r = 35.032; ρ = 996 kg/m^3
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(5.62, 5.62, 5.62); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan(11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.645 W/kg

-/-/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.284 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.31 W/kg
SAR(1 g) = 0.262 W/kg; SAR(10 g) = 0.043 W/kg
Maximum value of SAR (measured) = 0.362 W/kg



Date: 07/04/2015

Test Laboratory: BTL Inc.

37_5GWIFI_802.11a_Ch140_Right Tilted _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

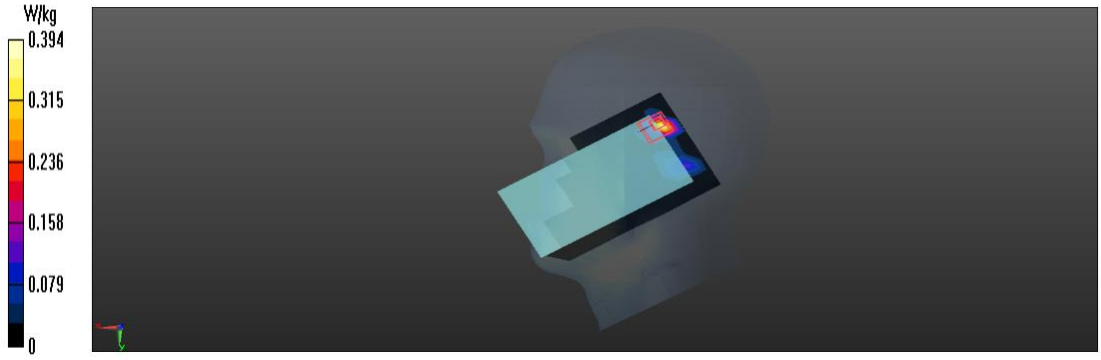
Communication System: UID 0, IEEE 802.11a WiFi 5G(OFDM, 6 Mbps,) (0); Frequency: 5700 MHz
Medium parameters used: f = 5700 MHz; σ = 5.263 S/m; ε_r = 33.842; ρ = 996 kg/m^3
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(5.03, 5.03, 5.03); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.394 W/kg

-/-/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.497 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.235 W/kg; SAR(10 g) = 0.049 W/kg
Maximum value of SAR (measured) = 0.321 W/kg



Date: 07/04/2015

Test Laboratory: BTL Inc.

38_5GWIFI_802.11ac80_Ch106_Right Tilted _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

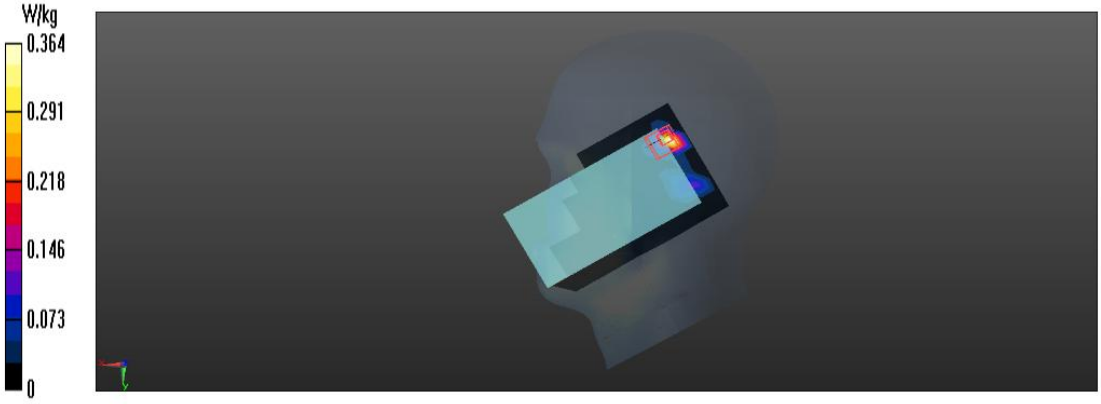
Communication System: UID 0, IEEE 802.11a WiFi 5G(OFDM, 6 Mbps,) (0); Frequency: 5530 MHz
Medium parameters used: f = 5530 MHz; σ = 5.241 S/m; ε_r = 33.822; ρ = 996 kg/m^3
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(5.10, 5.10, 5.10); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection),z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan(11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.364 W/kg

-/-/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.375 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.03 W/kg
SAR(1 g) = 0.202 W/kg; SAR(10 g) = 0.024 W/kg
Maximum value of SAR (measured) = 0.342 W/kg



Date: 07/04/2015

Test Laboratory: BTL Inc.

39_5GWIFI_802.11a_Ch165_Right Tilted _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

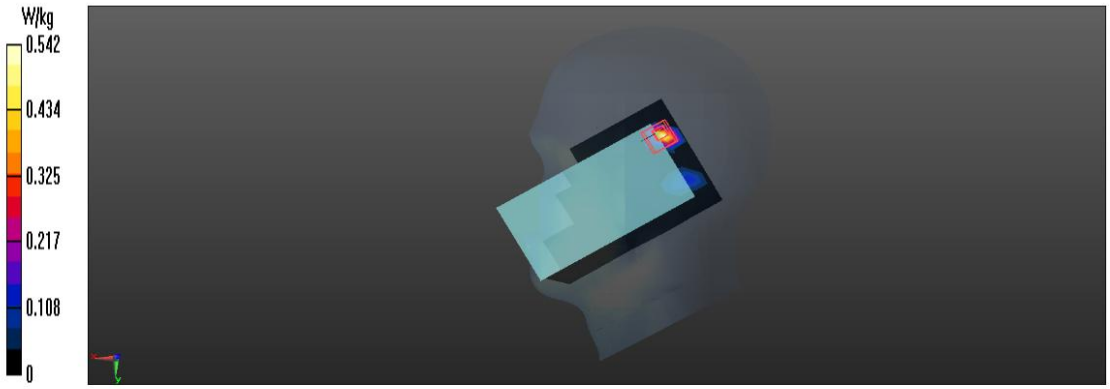
Communication System: UID 0, IEEE 802.11a WiFi 5G(OFDM, 6 Mbps,) (0); Frequency: 5825 MHz
Medium parameters used (interpolated): f = 5825 MHz; σ = 5.391 S/m; ε_r = 33.551; ρ = 996 kg/m^3
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(4.89, 4.89, 4.89); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.542 W/kg

-/-/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.118 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.251 W/kg; SAR(10 g) = 0.054 W/kg
Maximum value of SAR (measured) = 0.398 W/kg



Date: 07/04/2015

Test Laboratory: BTL Inc.

40_5GWIFI_802.11ac80_Ch155_Right Tilted _ Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

Communication System: UID 0, IEEE 802.11a WiFi 5G(OFDM, 6 Mbps,) (0); Frequency: 5775 MHz
Medium parameters used (interpolated): f = 5775 MHz; σ = 5.382 S/m; ε_r = 33.546; ρ = 996 kg/m^3
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(4.89, 4.89, 4.89); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: SAM 1; Type: SAM; Serial: 1784
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.498 W/kg

-/-/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.28 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.03 W/kg
SAR(1 g) = 0.14 W/kg; SAR(10 g) = 0.032 W/kg.
Maximum value of SAR (measured) = 0.364 W/kg

Date: 07/04/2015

Test Laboratory: BTL Inc.

41_5GWIFI_802.11a_Ch48_Rear Face_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

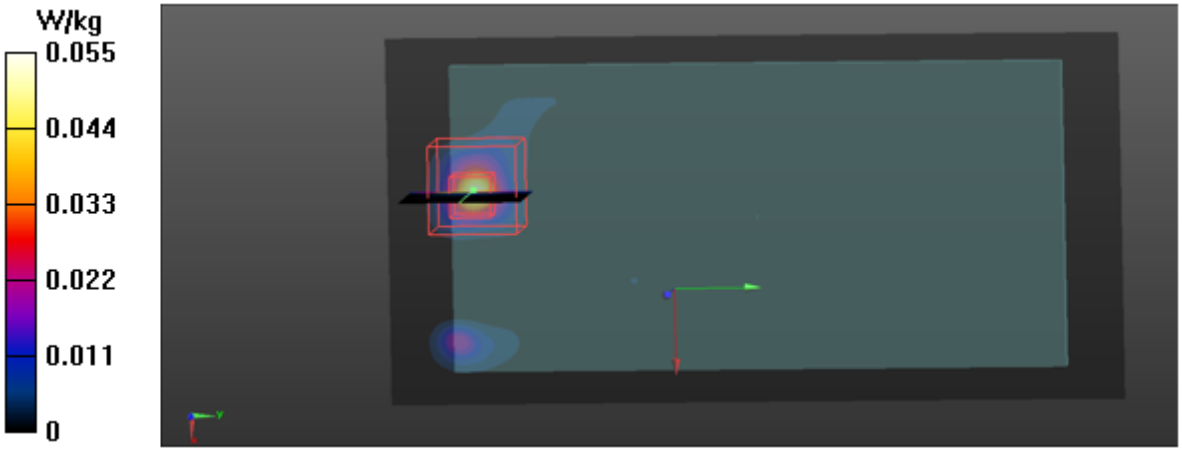
Communication System: UID 0, IEEE 802.11a WiFi 5G(OFDM, 6 Mbps,) (0); Frequency: 5240 MHz
Medium parameters used (interpolated): f = 5240 MHz; σ = 5.436 S/m; ε_r = 49.32; ρ = 996 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(5.17, 5.17, 5.17); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = -19.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (10x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.055 W/kg

-/-/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.434 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.429 W/kg
SAR(1 g) = 0.037 W/kg; SAR(10 g) = 0.012 W/kg
Maximum value of SAR (measured) = 0.0562 W/kg



Date: 07/05/2015

Test Laboratory: BTL Inc.

42_5GWIFI_802.11a_Ch100_Front Face_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

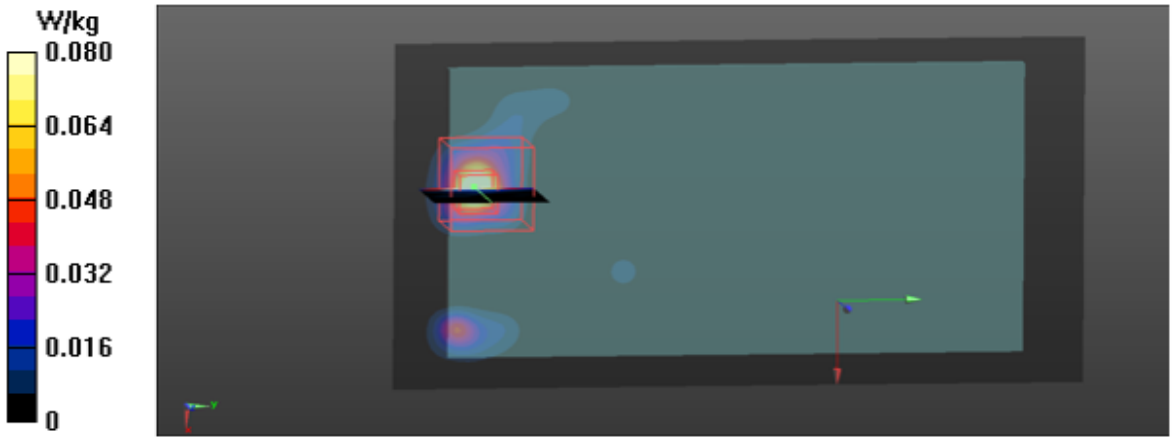
Communication System: UID 0, IEEE 802.11a WiFi 5G(OFDM, 6 Mbps,) (0); Frequency: 5500 MHz
Medium parameters used: f = 5500 MHz; σ = 6.08 S/m; ε_r = 48.5; ρ = 996 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(4.5, 4.5, 4.5); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection),z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (10x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.080 W/kg

-/-/Zoom Scan(7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.408 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.319 W/kg
SAR(1 g) = 0.060 W/kg; SAR(10 g) = 0.015 W/kg
Maximum value of SAR (measured) = 0.0522 W/kg



Date: 07/05/2015

Test Laboratory: BTL Inc.

43_5GWIFI_802.11ac80_Ch106_Front Face_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

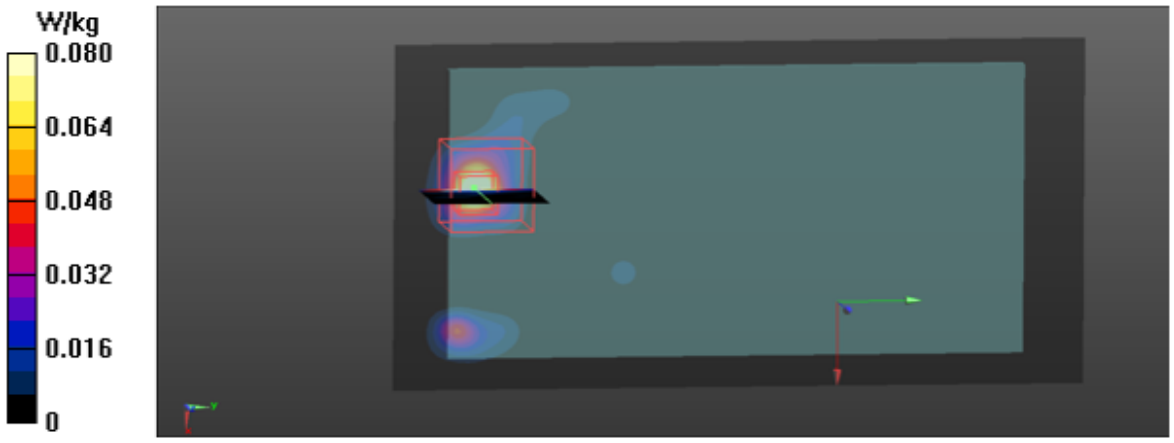
Communication System: UID 0, IEEE 802.11a WiFi 5G(OFDM, 6 Mbps,) (0); Frequency: 5530 MHz
Medium parameters used: f = 5530 MHz; σ = 6.04 S/m; ε_r = 48.4; ρ = 996 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(4.54, 4.54, 4.54); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (10x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.080 W/kg

-/-/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.408 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.319 W/kg
SAR(1 g) = 0.049 W/kg; SAR(10 g) = 0.015 W/kg
Maximum value of SAR (measured) = 0.0522 W/kg



Date: 07/05/2015

Test Laboratory: BTL Inc.

44_5GWIFI_802.11a_Ch165_Front Face_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

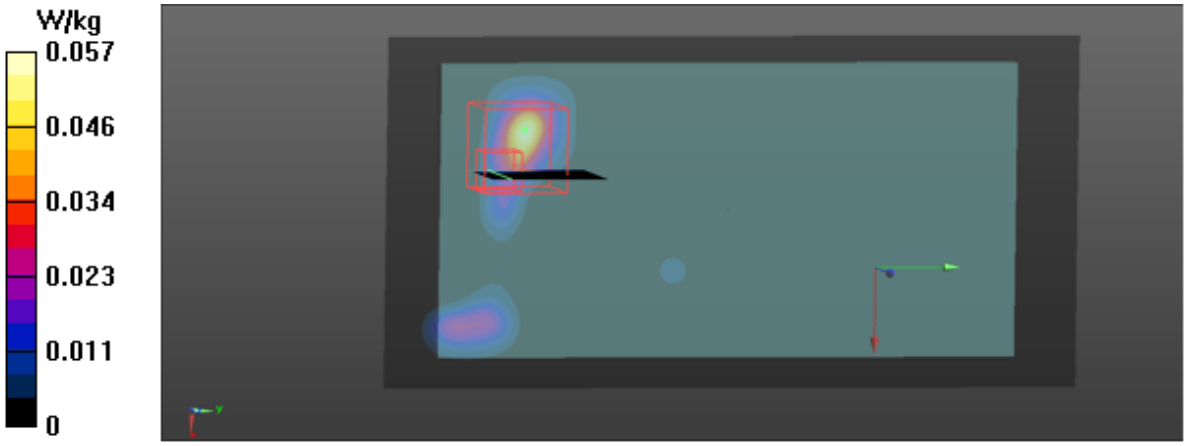
Communication System: UID 0, IEEE 802.11a WiFi 5G(OFDM, 6 Mbps,) (0); Frequency: 5825 MHz
Medium parameters used (interpolated): f = 5825 MHz; σ = 6.22 S/m; ε_r = 48.3; ρ = 996 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(4.5, 4.5, 4.5); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (10x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.057 W/kg

-/-/Zoom Scan(7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.638 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.324 W/kg
SAR(1 g) = 0.036 W/kg; SAR(10 g) = 0.013 W/kg
Maximum value of SAR (measured) = 0.068 W/kg



Date: 07/04/2015

Test Laboratory: BTL Inc.

45_5GWIFI_802.11a_Ch48_Top Side_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

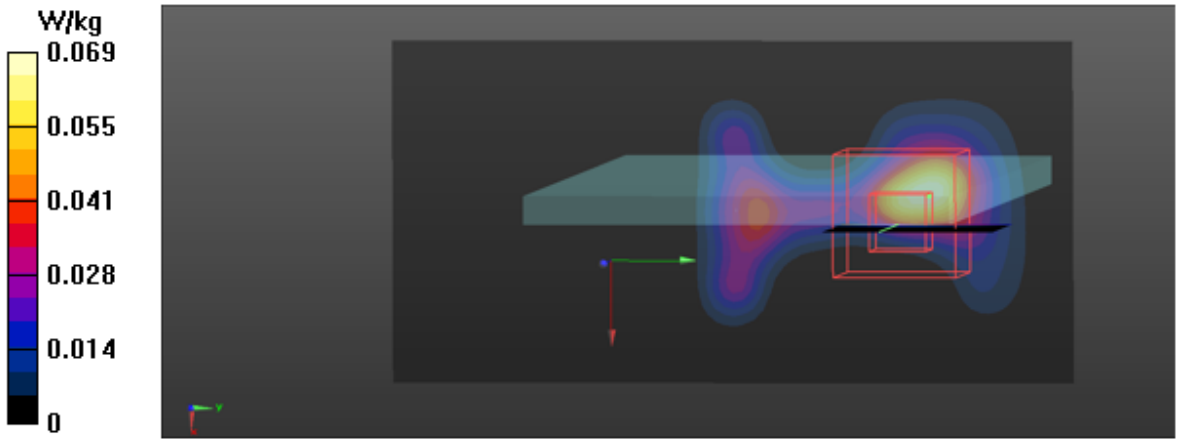
Communication System: UID 0, IEEE 802.11a WiFi 5G(OFDM, 6 Mbps,) (0); Frequency: 5240 MHz
Medium parameters used (interpolated): f = 5240 MHz; σ = 5.436 S/m; ε_r = 49.32; ρ = 996 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(5.17, 5.17, 5.17); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (7x13x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.069 W/kg

-/-/Zoom Scan(7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.893 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.161 W/kg
SAR(1 g) = 0.039 W/kg; SAR(10 g) = 0.013 W/kg
Maximum value of SAR (measured) = 0.0413 W/kg



Date: 07/04/2015

Test Laboratory: BTL Inc.

46_5GWIFI_802.11ac80_Ch42_Top Side_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

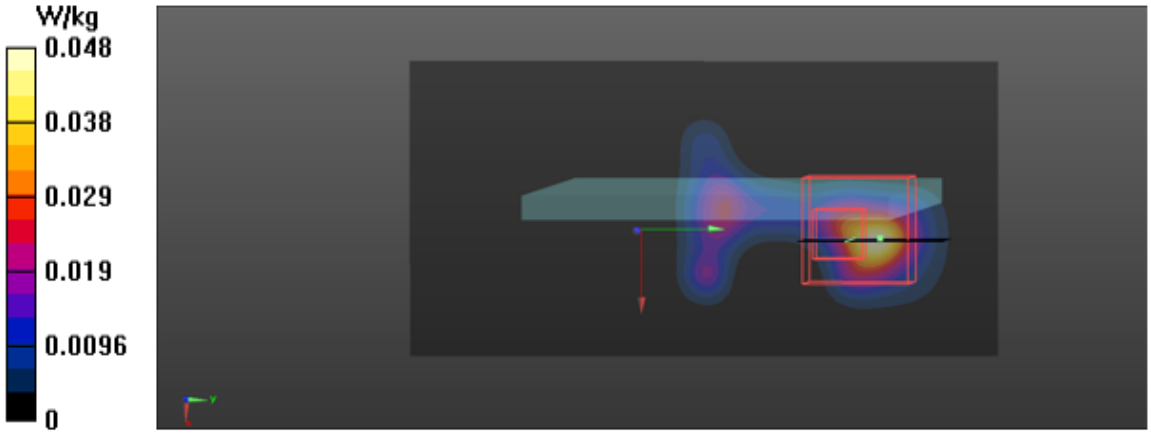
Communication System: UID 0, IEEE 802.11a WiFi 5G(OFDM, 6 Mbps,) (0); Frequency: 5210 MHz
Medium parameters used (interpolated): f = 5210 MHz; σ = 5.352 S/m; ε_r = 49.44; ρ = 996 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(5.17, 5.17, 5.17); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (7x13x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.048 W/kg

-/-/Zoom Scan(7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.913 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.146 W/kg
SAR(1 g) = 0.027 W/kg; SAR(10 g) = 0.010 W/kg
Maximum value of SAR (measured) = 0.0369 W/kg



Date: 07/05/2015

Test Laboratory: BTL Inc.

47_5GWIFI_802.11a_Ch165_Top Side_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

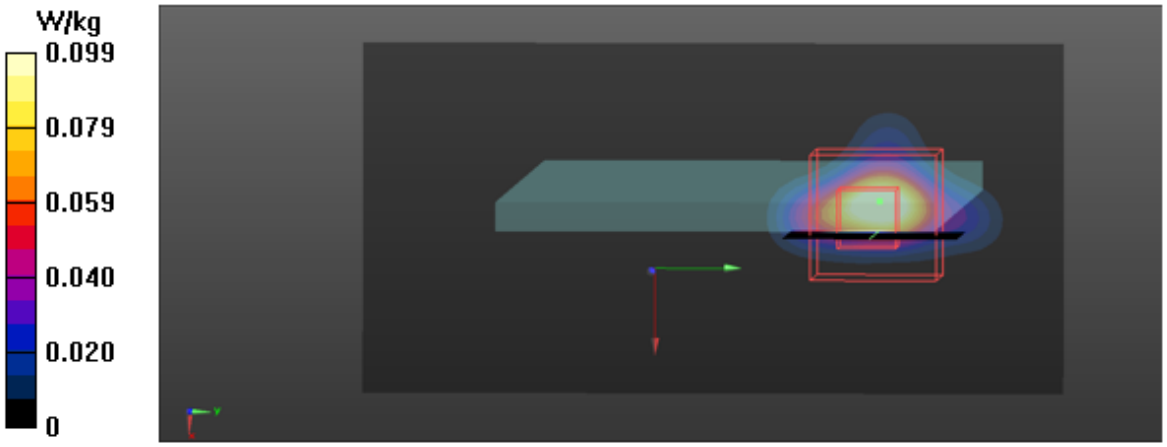
Communication System: UID 0, IEEE 802.11a WiFi 5G(OFDM, 6 Mbps,) (0); Frequency: 5825 MHz
Medium parameters used (interpolated): f = 5825 MHz; σ = 6.22 S/m; ε_r = 48.3; ρ = 996 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(4.5, 4.5, 4.5); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection),z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (7x13x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.0991 W/kg

-/-/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.652 V/m; Power Drift =0.01 dB
Peak SAR (extrapolated) = 0.316 W/kg
SAR(1 g) = 0.061 W/kg; SAR(10 g) = 0.017 W/kg
Maximum value of SAR (measured) = 0.0538 W/kg



Date: 07/05/2015

Test Laboratory: BTL Inc.

48_5GWIFI_802.11ac80_Ch155_Top Side_1cm_Mobile Phone

DUT: Mobile Phone; Type: ONE A2005; Serial: NA

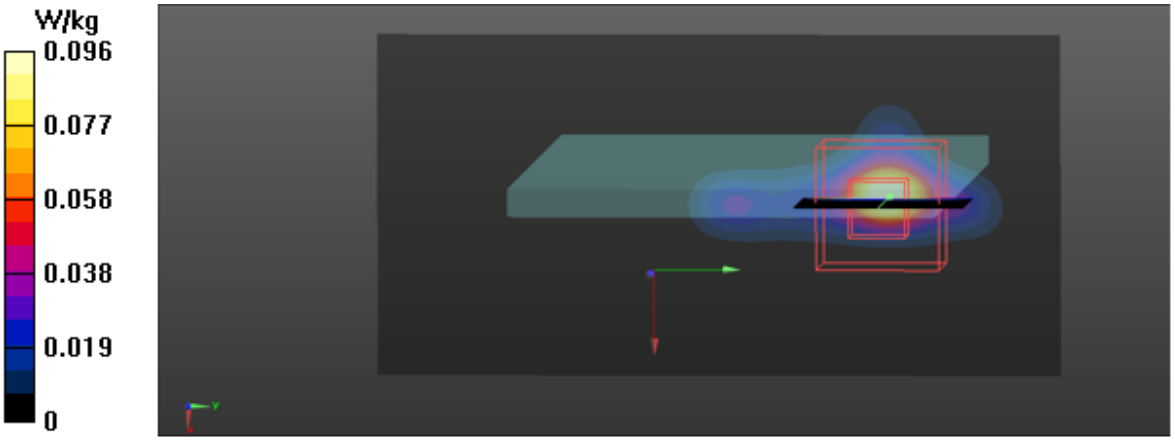
Communication System: UID 0, IEEE 802.11a WiFi 5G(OFDM, 6 Mbps,) (0); Frequency: 5775 MHz
Medium parameters used (interpolated): f = 5775 MHz; σ = 6.187 S/m; ε_r = 48.27; ρ = 996 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3932; ConvF(4.5, 4.5, 4.5); Calibrated: 01/30/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection),z = 1.0, 31.0
- Electronics: DAE4 Sn1390; Calibrated: 09/15/2014
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1222
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

-/-/Area Scan (7x13x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.096 W/kg

-/-/Zoom Scan(7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.974 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.286 W/kg
SAR(1 g) = 0.028 W/kg; SAR(10 g) = 0.005 W/kg
Maximum value of SAR (measured) = 0.0471 W/kg

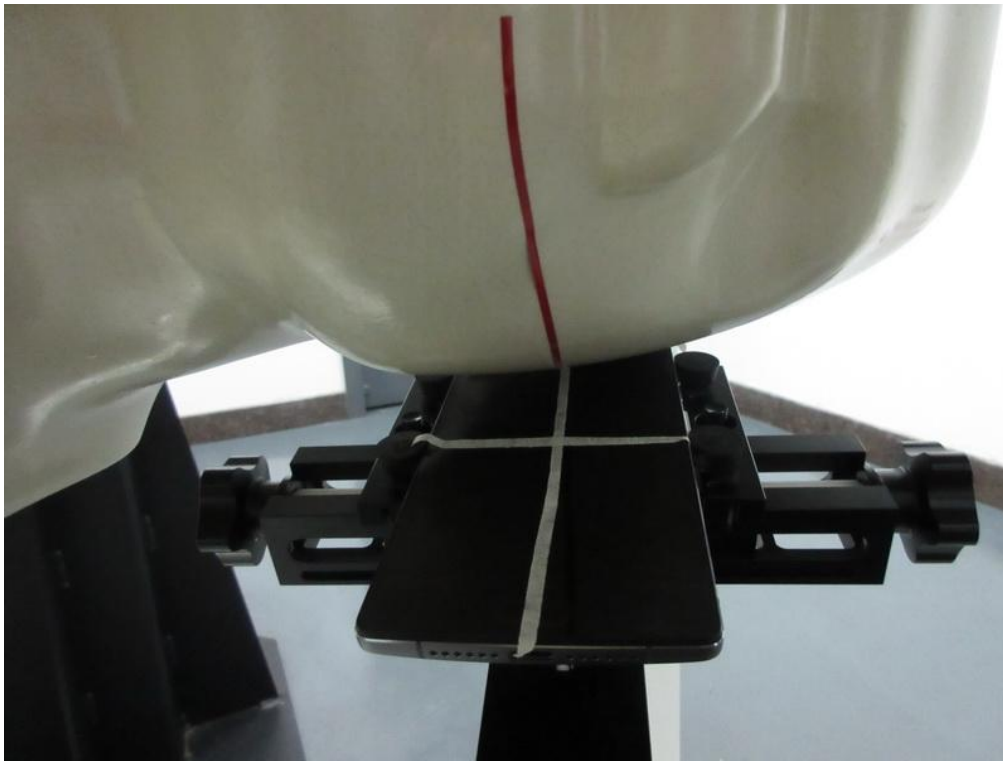


4. Calibration Certificate

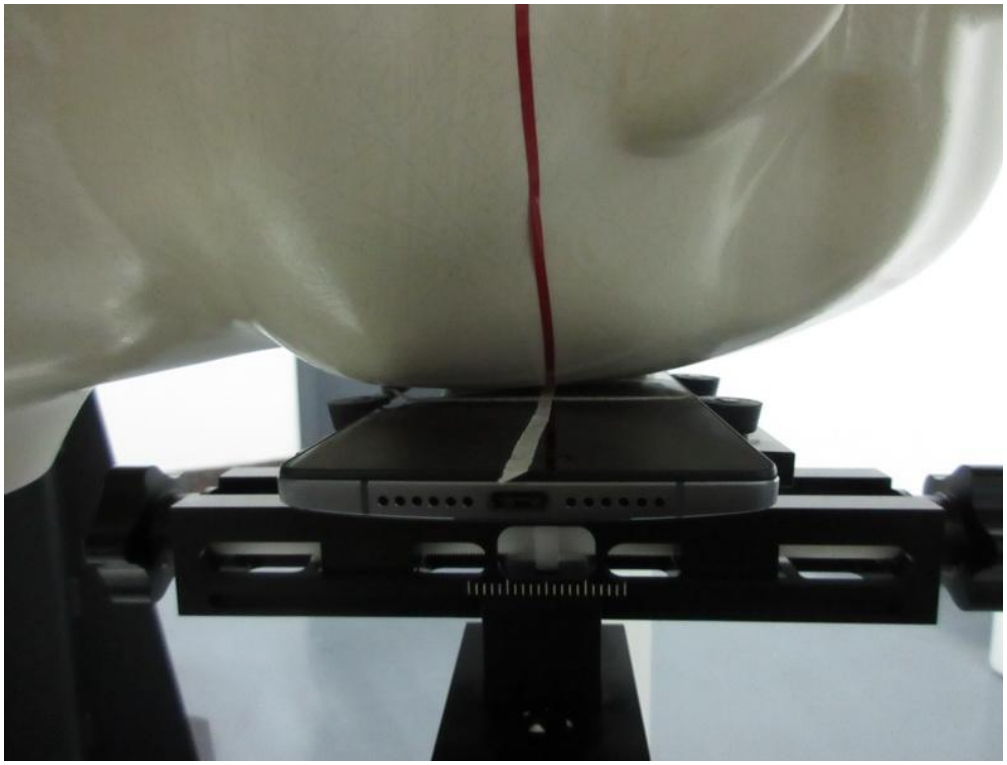
(Pls See Appendix A)

5. EUT Testing Position

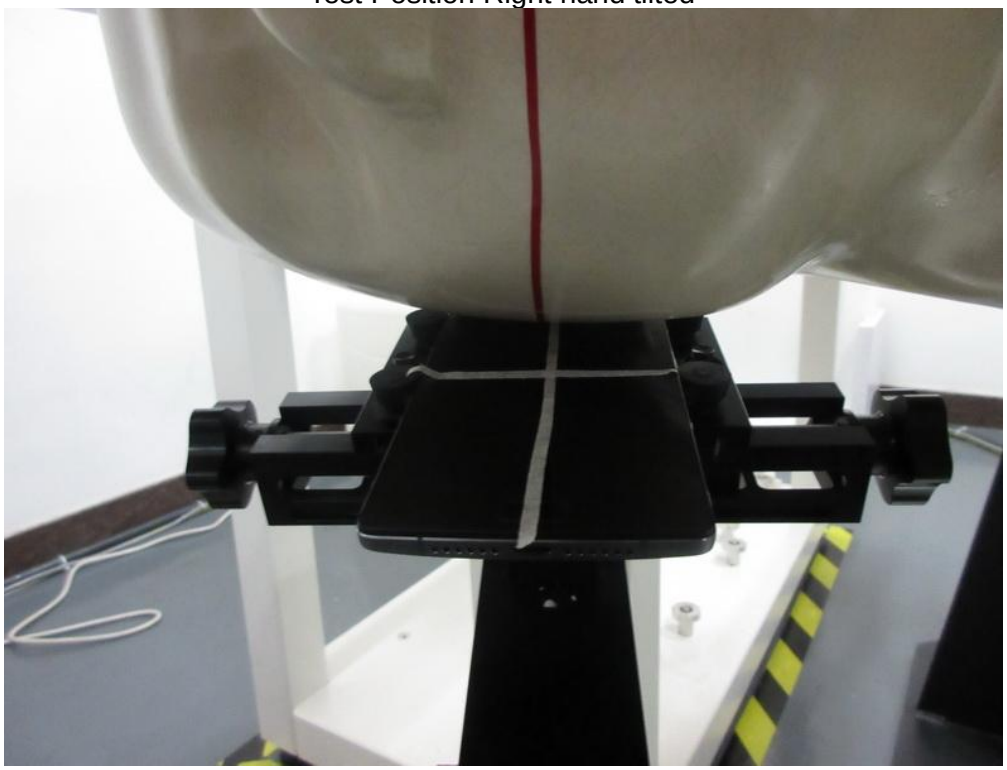
Test Position Left hand tilted



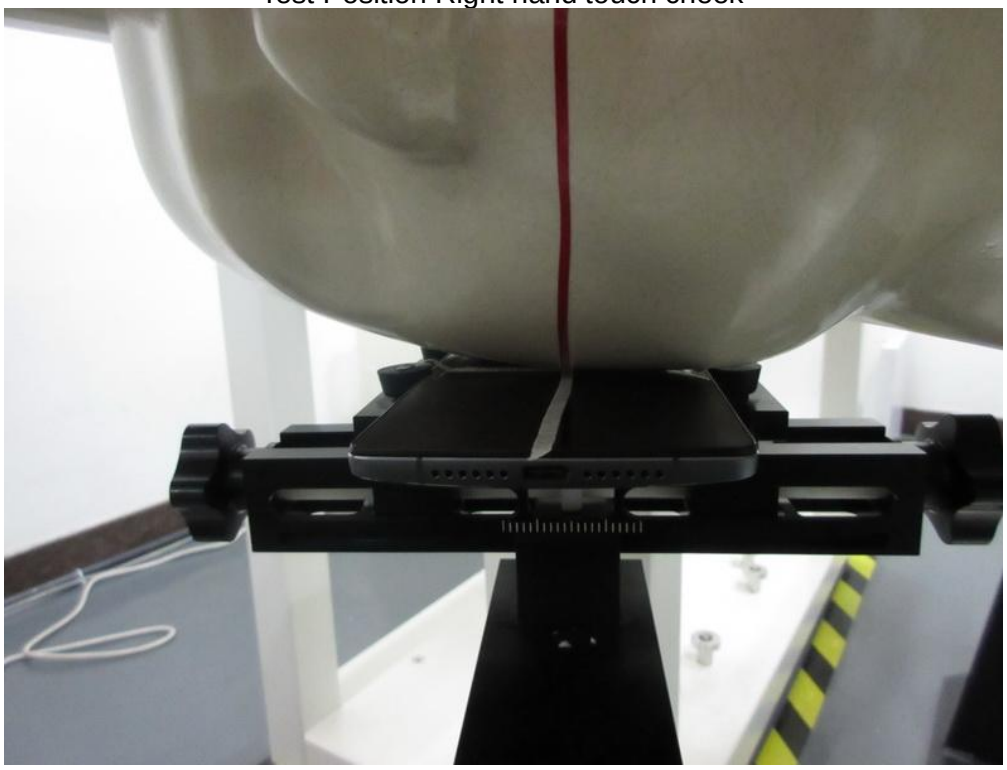
Test Position Left hand touch cheek



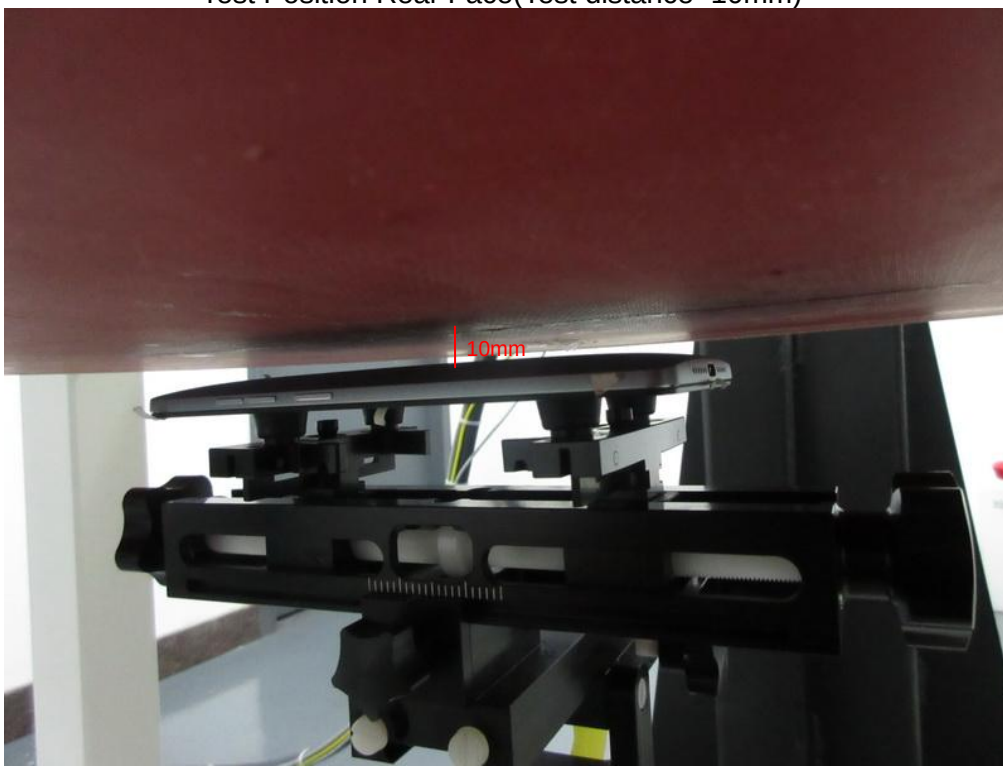
Test Position Right hand tilted



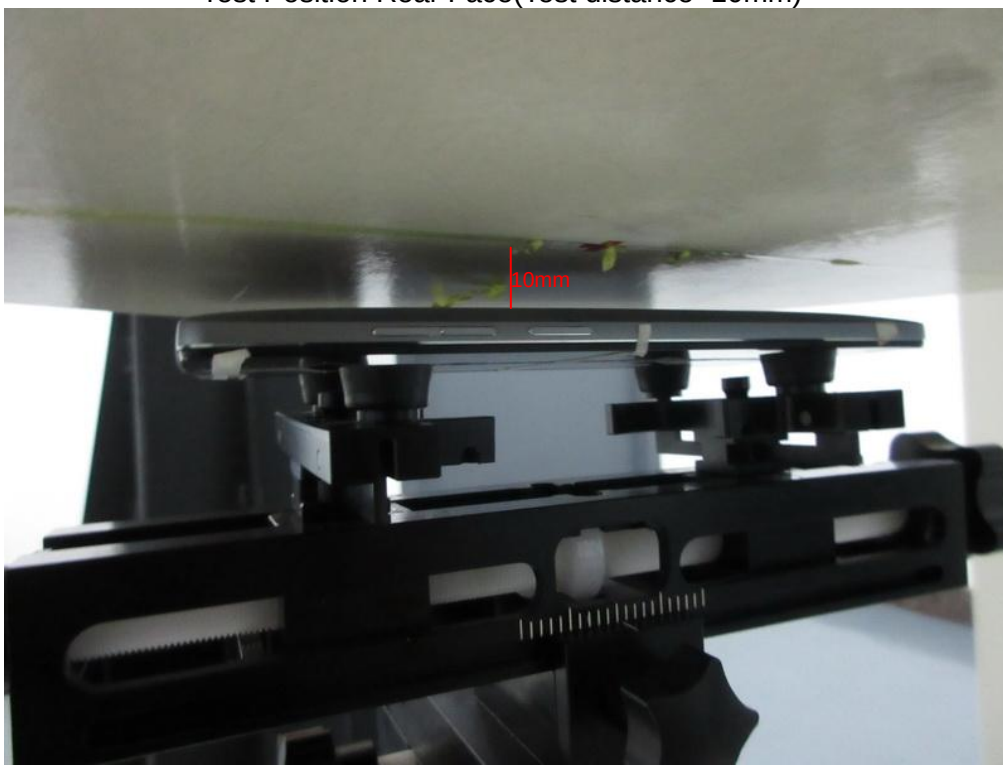
Test Position Right hand touch cheek



Test Position Rear Face(Test distance=10mm)



Test Position Rear Face(Test distance=10mm)

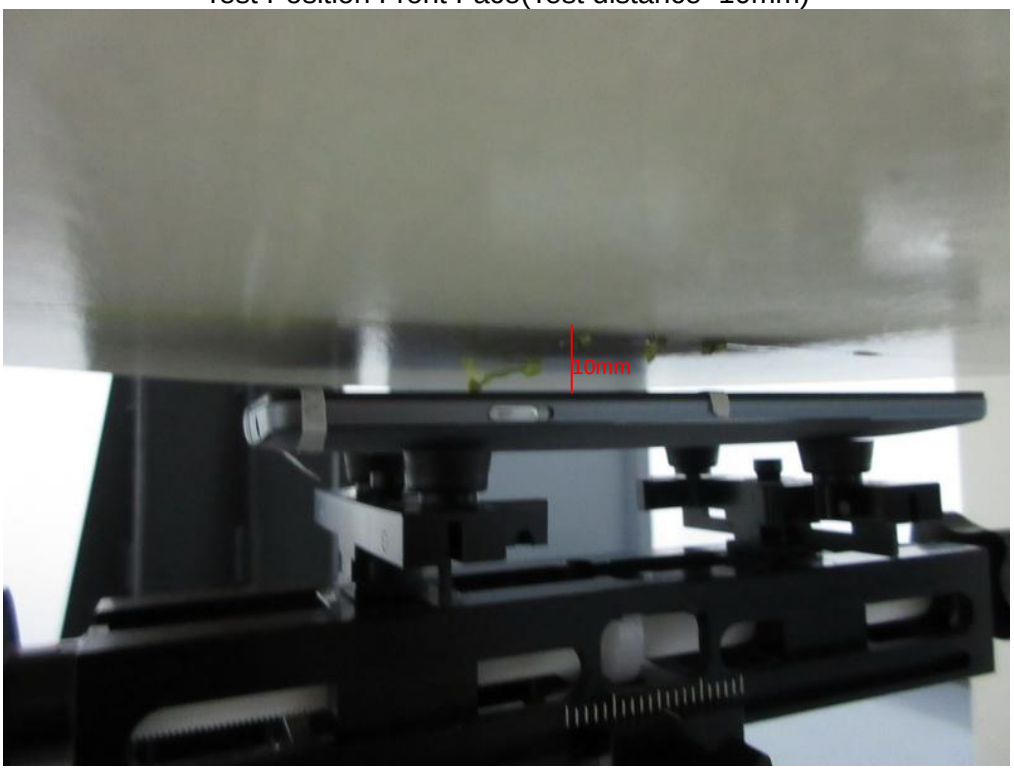


Test Position Bottom Side(Test distance=10mm)

Test Position Bottom Side(Test distance=10mm)

Test Position Front Face(Test distance=10mm)

Test Position Front Face(Test distance=10mm)



Test Position Left Side(Test distance=10mm)

Test Position Left Side(Test distance=10mm)

Test Position Right Side(Test distance=10mm)

Test Position Right Side(Test distance=10mm)

Test Position Top Side(Test distance=10mm)

Test Position Top Side(Test distance=10mm)