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TEST REPORT

Report Reference No. ..... :	**CTC20201578E10**
FCC ID ..... :	**2ATHM-CAW20A101**
Applicant's name ..... :	**AIR-U Co., Ltd**
Address.....:	Yamaki 2nd BLDG, 8F, 3-4-2, Nishishinbashi, Minato-ku, Tokyo, Japan
Manufacturer.....:	AIR-U Co., Ltd
Address.....:	Yamaki 2nd BLDG, 8F, 3-4-2, Nishishinbashi, Minato-ku, Tokyo, Japan
Test item description..... :	**4G Wireless Data Terminal**
Trade Mark .....:	Cloud AIR-WIFI
Model/Type reference.....:	CAW20A101
Listed Model(s) .....:	-
Standard ..... :	**FCC 47 CFR Part2.1093** **IEEE 1528: 2013** **ANSI/IEEE C95.1: 2005**
Date of receipt of test sample…….:	Oct. 16, 2020
Date of testing……...:	Oct. 19, 2020 ~ Nov. 20, 2020
Date of issue…….:	Nov. 26, 2020
Result..... ……...:	**PASS**

Compiled by (position+printedname+signature)...:	Charley Wu	Charley.Wu
Supervised by (position+printedname+signature)...:	Eric Zhang	Eric zhang
Approved by (position+printedname+signature)...:	Walter Chen	Walter chen

Testing Laboratory Name ..... :	**CTC Laboratories,Inc.**
Address.....:	1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

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Any objections must be raised to CTC within 15 days since the date when the report is received.It will not be taken into consideration beyond this limit. The test report merely correspond to the test sample.

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1 . Test Standards and Report version

1.1. Test Standards

The tests were performed according to following standards:

FCC 47 Part 2.1093 Radiofrequency Radiation Exposure Evaluation:Portable Devices
IEEE Std C95.1, 2005: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 KHz to 300 GHz.
IEEE Std 1528™-2013: IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.
KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04: SAR Measurement Requirements for 100 MHz to 6 GHz
KDB 865664 D02 RF Exposure Reporting v01r02: RF Exposure Compliance Reporting and Documentation Considerations
KDB 447498 D01 General RF Exposure Guidance v06: Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies
KDB 248227 D01 802 11 Wi-Fi SAR v02r02: SAR Measurement Proceduresfor802.11 a/b/g Transmitters
KDB 648474 D04 Handset SAR v01r03: SAR Evaluation Considerations for Wireless Handsets
KDB 941225 D01 3G SAR Procedures v03r01: SAR Measurement Procedures for 3G Devices
KDB 941225 D06 Hotspot Mode v02r01: SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities
KDB 941225 D07 UMPC Mini Tablet v01r02: SAR Evaluation Procedures for UMPC Mini-tablet Devices.
Report version
KDB 941225 D05 SAR for LTE Devices v02r05: SAR Evaluation Considerations for LTE Devices

1.2. Report version

Revision No.	Date of issue	Description
N/A	2020-11-26	Original

2. Summary

2.1. Client Information

Applicant:	AIR-U Co., Ltd
Address:	Yamaki 2nd BLDG, 8F, 3-4-2, Nishishinbashi, Minato-ku, Tokyo, Japan
Manufacturer:	AIR-U Co., Ltd
Address:	Yamaki 2nd BLDG, 8F, 3-4-2, Nishishinbashi, Minato-ku, Tokyo, Japan
Factory:	Shenzhen uCloudlink Network Technology Co., Ltd.
Address:	3rd Floor, A part of Building 1, Shenzhen Software Industry Base, Nanshan District Xuefu Road, 518057 Shenzhen City, Guangdong, China

2.2. Product Description

Name of EUT:	4G Wireless Data Terminal			
Trade Mark:	Cloud AIR-WIFI			
Model No.:	CAW20A101			
Listed Model(s):	-			
Power supply:	5Vdc/2A from USB Cable 3.8Vdc from 3000mAh Li-ion Battery			
Device Category:	Portable			
Product stage:	Production unit			
RF Exposure Environment:	General Population / Uncontrolled			
Hardware version:	U3X_GPS_MB_VB			
Software version:	K2_TSV0.0.000.000.200926_020601			
Maximum SAR Value				
Separation Distance:	Body: 10mm			
Max Report SAR Value (1g):	Test location:	PCE	DTS	Simultaneous TX
	Body:	1.230 W/Kg	0.153 W/Kg	1.383 W/Kg
GSM				
Support Network:	GPRS,EGPRS			
Support Band:	GSM850,PCS1900			
Modulation Type:	GPRS:GMSK EGRPS:8PSK			
Antenna type:	PIFA Antenna			
WCDMA				
Operation Band:	WCDMA Band II,WCDMA Band IV, WCDMA Band V			
Power Class:	Power Class 3			
Modulation Type:	QPSK/16QAM/64QAM/HSUPA/HSDPA			
Antenna type:	PIFA Antenna			

LTE	
Operation Band:	FDD Band 2, FDD Band 4, FDD Band 5, FDD Band 7 FDD Band 12,FDD Band 13,FDD Band 17,FDD Band 25 FDD Band 26, TDD Band 41,TDD Band 66
Modulation Type:	QPSK,16QAM
Antenna type:	PIFA Antenna
WIFI 2.4G	
Supported type:	802.11b/802.11g/802.11n(HT20)/802.11n(HT40)
Modulation Type:	DSSS for 802.11b OFDM for 802.11g/802.11n(HT20)/802.11n(HT40)
Operation frequency:	2412MHz~2462MHz
Channel number:	11
Channel separation:	5MHz
Antenna type:	PIFA Antenna
Remark: *1. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power*	

3. Test Environment

3.1. Test laboratory

CTC Laboratories, Inc.

Add: 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

3.2. Test Facility

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

CNAS-Lab Code: L5365
CTC Laboratories, Inc. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation.Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 4340.01
CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

Industry Canada (Registration No.: 9783A, CAB Identifier: CN0029)
CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

FCC (Registration No.: 951311, Designation Number CN1208)
CTC Laboratories, Inc. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained inour files. Registration 951311, Aug 26, 2017.

4. Equipments Used during the Test

Test Equipment	Manufacturer	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
Data Acquisition Electronics DAEx	SPEAG	DAE4	1423	2020/05/19	2021/05/18
E-field Probe	SPEAG	EX3DV4	3974	2020/05/14	2021/05/13
System Validation Dipole	SPEAG	D750V3	1105	2018/08/27	2021/08/26
System Validation Dipole	SPEAG	D900V2	1d163	2018/06/05	2021/06/04
System Validation Dipole	SPEAG	D1750V2	1110	2018/06/07	2021/06/06
System Validation Dipole	SPEAG	D1900V2	5d115	2018/08/26	2021/08/25
System Validation Dipole	SPEAG	D2450V2	928	2018/10/12	2021/10/11
System Validation Dipole	SPEAG	D2600V2	1126	2018/08/29	2021/08/28
Network analyzer	Agilent	E5071C	MY46520333	2020/08/11	2021/08/10
Universal Radio Communication Tester	ROHDE & SCHWARZ	CMU200	117824	2019/12/29	2020/12/28
Universal Radio Communication Tester	ROHDE & SCHWARZ	CMW500	102414	2019/12/29	2020/12/28
Signal Generator	Agilent	N5182A	MY47420864	2019/12/28	2020/12/27
Power sensor	Mini-Circuits	PWR-8GHS	11609010017	2020/08/11	2021/08/10
Power sensor	Mini-Circuits	PWR-8GHS	11607130056	2020/08/11	2021/08/10
Power Amplifier	Mini-Circuits	ZHL-42W+	051701624	2020/08/11	2021/08/10
BI-DIRECTIONAL COUPLER	Mini-Circuits	ZGBDC20-33HP+	996201615	2020/08/11	2021/08/10
Attenuator	MCL	BW-N20W5+	1552	2020/08/11	2021/08/10
Attenuator	MCL	BW-N3W5+	1608	2020/08/11	2021/08/10
Attenuator	MCL	/	/	2020/08/11	2021/08/10

Note:

1. *The Probe,Dipole and DAE calibration reference to the Appendix A*
2. *Referring to KDB865664 D01, the dipole calibration interval can be extended to 3 years with justifcatio. The dipole are also not physically damaged or repaired during the interval.*

5. Measurement Uncertainty

Measurement Uncertainty										
No.	Error Description	Type	Uncertainty Value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement System										
1	Probe calibration	B	6.0%	N	1	1	1	6.0%	6.0%	∞
2	Axial isotropy	B	4.70%	R	$\sqrt{3}$	0.7	0.7	1.90%	1.90%	∞
3	Hemispherical isotropy	B	9.60%	R	$\sqrt{3}$	0.7	0.7	3.90%	3.90%	∞
4	Boundary Effects	B	1.00%	R	$\sqrt{3}$	1	1	0.60%	0.60%	∞
5	Probe Linearity	B	4.70%	R	$\sqrt{3}$	1	1	2.70%	2.70%	∞
6	Detection limit	B	1.00%	R	$\sqrt{3}$	1	1	0.60%	0.60%	∞
7	RF ambient conditions-noise	B	0.00%	R	$\sqrt{3}$	1	1	0.00%	0.00%	∞
8	RF ambient conditions-reflection	B	0.00%	R	$\sqrt{3}$	1	1	0.00%	0.00%	∞
9	Response time	B	0.80%	R	$\sqrt{3}$	1	1	0.50%	0.50%	∞
10	Integration time	B	5.00%	R	$\sqrt{3}$	1	1	2.90%	2.90%	∞
11	RF ambient	B	3.00%	R	$\sqrt{3}$	1	1	1.70%	1.70%	∞
12	Probe positioned mech. restrictions	B	0.40%	R	$\sqrt{3}$	1	1	0.20%	0.20%	∞
13	Probe positioning with respect to phantom shell	B	2.90%	R	$\sqrt{3}$	1	1	1.70%	1.70%	∞
14	Max.SAR evalation	B	3.90%	R	$\sqrt{3}$	1	1	2.30%	2.30%	∞
Test Sample Related										
15	Test sample positioning	A	1.86%	N	1	1	1	1.86%	1.86%	∞
16	Device holder uncertainty	A	1.70%	N	1	1	1	1.70%	1.70%	∞
17	Drift of output power	B	5.00%	R	$\sqrt{3}$	1	1	2.90%	2.90%	∞
Phantom and Set-up										
18	Phantom uncertainty	B	4.00%	R	$\sqrt{3}$	1	1	2.30%	2.30%	∞
19	Liquid conductivity (target)	B	5.00%	R	$\sqrt{3}$	0.64	0.43	1.80%	1.20%	∞
20	Liquid conductivity (meas.)	A	0.50%	N	1	0.64	0.43	0.32%	0.26%	∞
21	Liquid permittivity (target)	B	5.00%	R	$\sqrt{3}$	0.64	0.43	1.80%	1.20%	∞
22	Liquid cpermittivity (meas.)	A	0.16%	N	1	0.64	0.43	0.10%	0.07%	∞
Combined standard uncertainty		$u_c = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$		/	/	/	/	9.79%	9.67%	∞
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$		R	K=2	/	/	19.57%	19.34%	∞

System Check Uncertainty										
No.	Error Description	Type	Uncertainty Value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement System										
1	Probe calibration	B	6.0%	N	1	1	1	6.0%	6.0%	∞
2	Axial isotropy	B	4.70%	R	$\sqrt{3}$	0.7	0.7	1.90%	1.90%	∞
3	Hemispherical isotropy	B	9.60%	R	$\sqrt{3}$	0.7	0.7	3.90%	3.90%	∞
4	Boundary Effects	B	1.00%	R	$\sqrt{3}$	1	1	0.60%	0.60%	∞
5	Probe Linearity	B	4.70%	R	$\sqrt{3}$	1	1	2.70%	2.70%	∞
6	Detection limit	B	1.00%	R	$\sqrt{3}$	1	1	0.60%	0.60%	∞
7	RF ambient conditions-noise	B	0.00%	R	$\sqrt{3}$	1	1	0.00%	0.00%	∞
8	RF ambient conditions-reflection	B	0.00%	R	$\sqrt{3}$	1	1	0.00%	0.00%	∞
9	Response time	B	0.80%	R	$\sqrt{3}$	1	1	0.50%	0.50%	∞
10	Integration time	B	5.00%	R	$\sqrt{3}$	1	1	2.90%	2.90%	∞
11	RF ambient	B	3.00%	R	$\sqrt{3}$	1	1	1.70%	1.70%	∞
12	Probe positioned mech. restrictions	B	0.40%	R	$\sqrt{3}$	1	1	0.20%	0.20%	∞
13	Probe positioning with respect to phantom shell	B	2.90%	R	$\sqrt{3}$	1	1	1.70%	1.70%	∞
14	Max.SAR evalation	B	3.90%	R	$\sqrt{3}$	1	1	2.30%	2.30%	∞
System validation source-dipole										
15	Deviation of experimental dipole from numerical dipole	A	1.58%	N	1	1	1	1.58%	1.58%	∞
16	Dipole axis to liquid distance	A	1.35%	N	1	1	1	1.35%	1.35%	∞
17	Input power and SAR drift	B	4.00%	R	$\sqrt{3}$	1	1	2.30%	2.30%	∞
Phantom and Set-up										
18	Phantom uncertainty	B	4.00%	R	$\sqrt{3}$	1	1	2.30%	2.30%	∞
20	Liquid conductivity (meas.)	A	0.50%	N	1	0.64	0.43	0.32%	0.26%	∞
22	Liquid cpermittivity (meas.)	A	0.16%	N	1	0.64	0.43	0.10%	0.07%	∞
Combined standard uncertainty		$u_c = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$		/	/	/	/	8.80%	8.79%	∞
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$		R	K=2	/	/	17.59%	17.58%	∞

6. SAR Measurements System Configuration

6.1. SAR Measurement Set-up

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

A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).

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

A data acquisition 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.

A unit to operate the optical surface detector which is connected to the EOC.

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.

The DASY5 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 2003.

DASY5 software and SEMCAD data evaluation software.

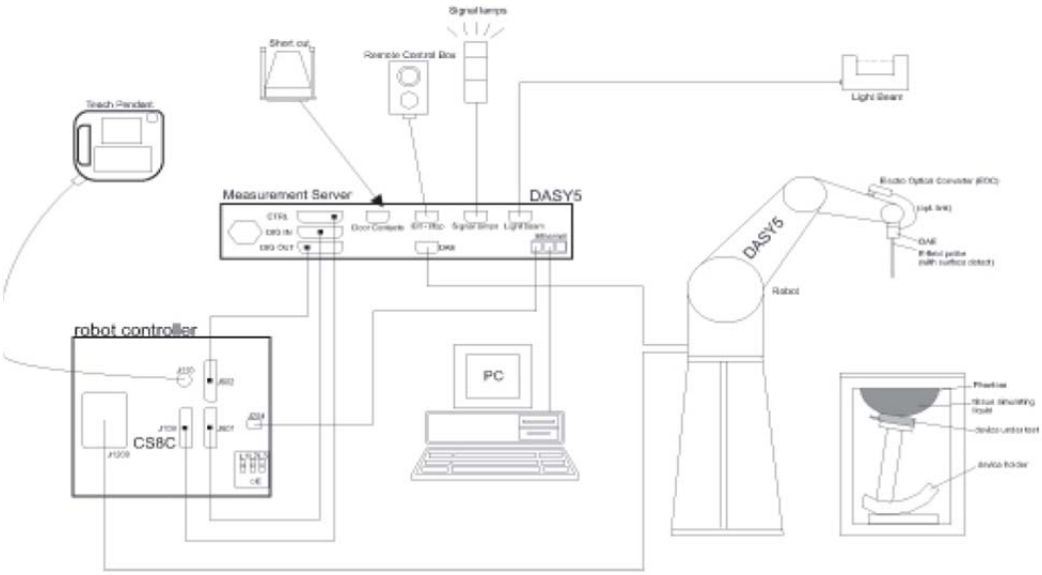
Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.

The generic twin phantom enabling the testing of left-hand and right-hand usage.

The device holder for handheld Mobile Phones.

Tissue simulating liquid mixed according to the given recipes.

System validation dipoles allowing to validate the proper functioning of the system.



6.2. DASY5 E-field Probe System

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

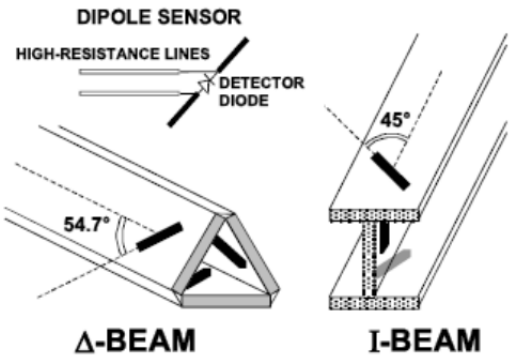
- **Probe Specification**

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	4 MHz to 10 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 W/kg; Linearity: ± 0.2 dB
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Distance from probe tip to dipole centers: 1.0 mm
Application	General dosimetry up to 6 GHz Dosimetry in strong gradient fields Compliance tests of Mobile Phones
Compatibility	DASY3, DASY4, DASY52 SAR and higher, EASY4/MRI

- **Isotropic E-Field Probe**

The isotropic E-Field probe has been fully calibrated and assessed for isotropicity, and boundary effect within a controlled environment. Depending on the frequency for which the probe is calibrated the method utilized for calibration will change.

The E-Field probe utilizes a triangular sensor arrangement as detailed in the diagram below:



6.3. Phantoms

The phantom used for all tests i.e. for both system checks and device testing, was the twin-headed "SAM Phantom", manufactured by SPEAG. The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region, where shell thickness increases to 6mm).
System checking was performed using the flat section, whilst Head SAR tests used the left and right head profile sections. Body SAR testing also used the flat section between the head profiles.

SAM Twin Phantom

6.4. Device Holder

The device was placed in the device holder (illustrated below) that is supplied by SPEAG as an integral part of the DASY system.
The DASY device holder is designed to cope with the different positions given in the standard. It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation centers for both scales is the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.

Device holder supplied by SPEAG

中国国家认证认可监督管理委员会
Certification and Accreditation Administration of the People's Republic of China
For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn

7. SAR Test Procedure

7.1. Scanning 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 is used as a fast scan in two dimensions to find the area of high field values before running a detailed measurement around the hot spot.Before starting the area scan a grid spacing of 15 mm x 15 mm is set. During the scan the distance of the probe to the phantom remains unchanged. After finishing area scan, the field maxima within a range of 2 dB will be ascertained.

Zoom Scan
After the maximum interpolated values were calculated between the points in the cube, the SAR was averaged over the spatial volume (1g or 10g) using a 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the “Not a knot” condition (in x, y, and z directions). The volume was then integrated with the trapezoidal algorithm.

Spatial Peak Detection
The procedure for spatial peak SAR evaluation has been implemented and can determine values of masses of 1g and 10g, as well as for user-specific masses.The DASY5 system allows evaluations that combine measured data and robot positions, such as:
• maximum search
• extrapolation
• boundary correction
• peak search for averaged SAR
During a maximum search, global and local maxima searches are automatically performed in 2-D after each Area Scan measurement with at least 6 measurement points. It is based on the evaluation of the local SAR gradient calculated by the Quadratic Shepard’s method. The algorithm will find the global maximum and all local maxima within -2 dB of the global maxima for all SAR distributions.
Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. Several measurements at different distances are necessary for the extrapolation. Extrapolation routines require at least 10 measurement points in 3-D space.
They are used in the Zoom Scan to obtain SAR values between the lowest measurement points and the inner phantom surface. The routine uses the modified Quadratic Shepard’s method for extrapolation.

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 5mm steps.

Table 1: Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v04

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

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

7.2. Data Storage and Evaluation

Data Storage

The DASY5 software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors),s 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 ".DA4". 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], [W/kg], [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.

Data Evaluation

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

Probe parameters:	Sensitivity:	Normi, ai0, ai1, ai2
	Conversion factor:	ConvFi
	Diode compression point:	Dcpi
Device parameters:	Frequency:	f
	Crest factor:	cf
Media parameters:	Conductivity:	σ
	Density:	ρ

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY5 components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

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

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

Vi: compensated signal of channel (i = x, y, z)
Ui: input signal of channel (i = x, y, z)
cf: crest factor of exciting field (DASY parameter)
dcpi: diode compression point (DASY parameter)

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

$$\text{E} - \text{fieldprobes}: \qquad E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}$$

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

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

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

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

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

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1'000}$$

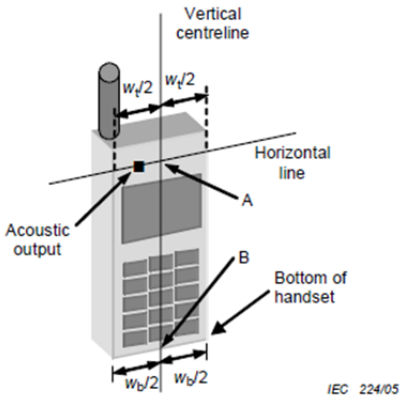
SAR: local specific absorption rate in W/kg
Etot: total field strength in V/m
σ: conductivity in [mho/m] or [Siemens/m]
ρ: equivalent tissue density in g/cm3

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid.

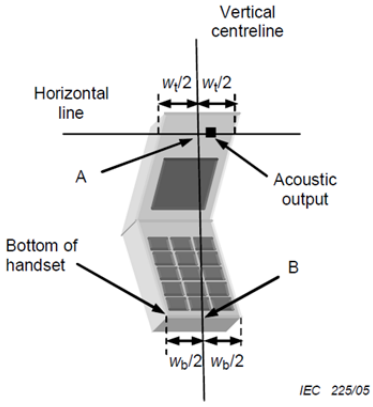
8. Position of the wireless device in relation to the phantom

8.1. Head Position

The wireless device define two imaginary lines on the handset, the vertical centreline and the horizontal line, for the handset in vertical orientation as shown in Figures 5a and 5b.
The vertical centreline passes through two points on the front side of the handset: the midpoint of the width W_t of the handset at the level of the acoustic output (point A in Figures 5a and 5b), and the midpoint of the width W_b of the bottom of the handset (point B).
The horizontal line is perpendicular to the vertical centreline and passes through the centre of the acoustic output (see Figures 5a and 5b). The two lines intersect at point A.
Note that for many handsets, point A coincides with the centre of the acoustic output. However, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centreline is not necessarily parallel to the front face of the handset (see Figure 5b), especially for clam-shell handsets, handsets with flip cover pieces, and other irregularly shaped handsets.



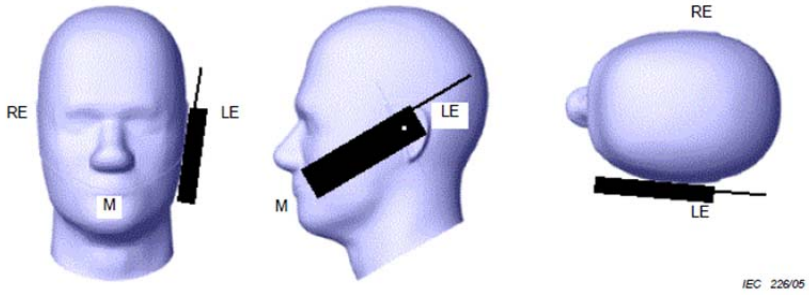
Figures 5a



Figures 5b

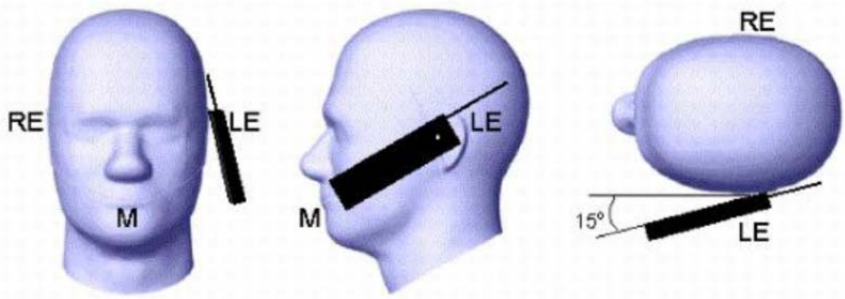
W_t	Width of the handset at the level of the acoustic
W_b	Width of the bottom of the handset
A	Midpoint of the widthwt of the handset at the level of the acoustic output
B	Midpoint of the width wb of the bottom of the handset

Cheek position



Picture 2 Cheek position of the wireless device on the left side of SAM

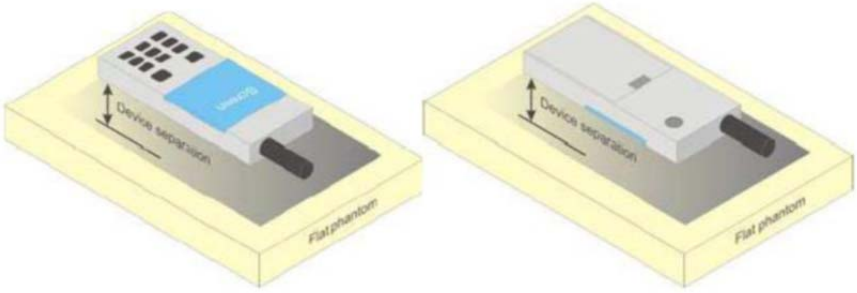
Tilt position



Picture 3 Tilt position of the wireless device on the left side of SAM

8.2. Body Position

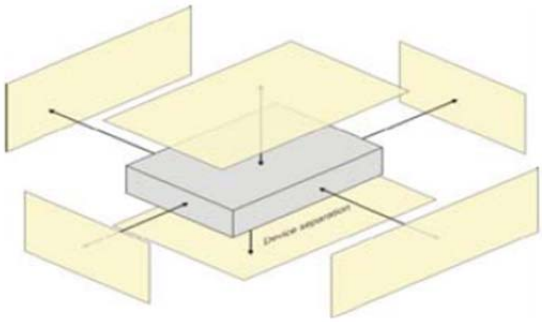
Devices that support transmission while used with body-worn accessories must be tested for body-worn accessory SAR compliance, typically according to the smallest test separation distance required for the group of body-worn accessories with similar operating and exposure characteristics.
Devices that are designed to operate on the body of users using lanyards and straps or without requiring additional body-worn accessories must be tested for SAR compliance using a conservative minimum test separation distance **≤ 10 mm** to support compliance.



Picture 4 Test positions for body-worn devices

8.3. Hotspot Mode Exposure conditions

The hotspot mode and body-worn accessory SAR test configurations may overlap for handsets. When the same wireless mode transmission configurations for voice and data are required for SAR measurements, the more conservative configuration with a smaller separation distance should be tested for the overlapping SAR configurations. This typically applies to the back and front surfaces of a handset when SAR is required for both hotspot mode and body-worn accessory exposure conditions. Depending on the form factor and dimensions of a device, the test separation distance used for hotspot mode SAR measurement is either 10 mm or that used in the body-worn accessory configuration, whichever is less for devices with dimension > 9 cm x 5 cm. For smaller devices with dimensions ≤ 9 cm x 5 cm because of a greater potential for next to body use a test separation of ≤ 5 mm must be used.



Picture 5 Test positions for Hotspot Mode

9. System Check

9.1. Tissue Dielectric Parameters

The liquid is consisted of water,salt,Glycol,Sugar,Preventol and Cellulose.The liquid has previously been proven to be suited for worst-case. It's satisfying the latest tissue dielectric parameters requirements proposed by the KDB865664.

Tissue dielectric parameters for body		
Target Frequency	Body	
(MHz)	εr	σ(s/m)
750	55.5	0.96
835	55.2	0.97
1750	53.4	1.49
1800-2000	53.3	1.52
2450	52.7	1.95
2600	52.5	2.16

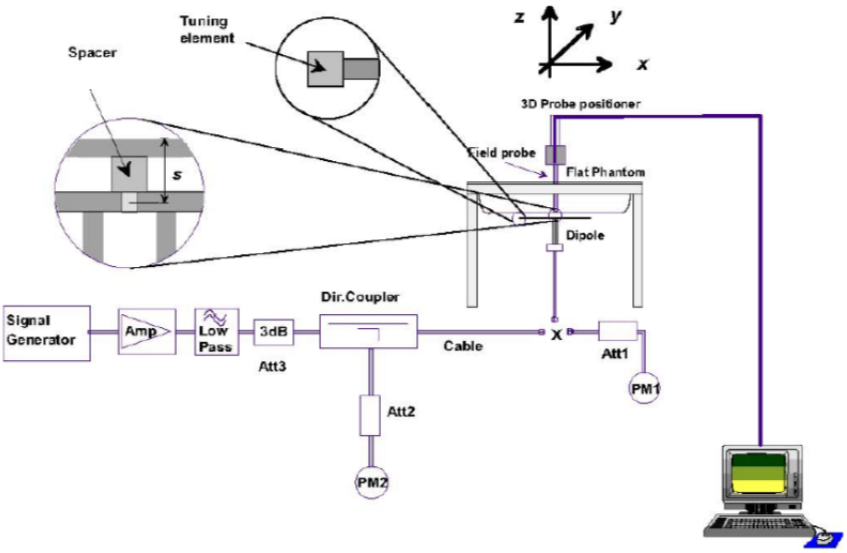
Check Result:

Dielectric performance of Body tissue simulating liquid									
Frequency (MHz)	εr		σ(s/m)		Delta (εr)	Delta (σ)	Limit	Temp (℃)	Date
	Target	Measured	Target	Measured					
750	55.50	55.65	0.96	0.93	0.27%	-3.12%	±5%	22	2020-11-13
835	55.20	55.40	0.97	0.97	0.36%	0.00%	±5%	22	2020-11-16
1750	53.40	53.91	1.49	1.44	0.96%	-3.36%	±5%	22	2020-11-17
1900	53.30	53.72	1.52	1.55	0.79%	1.97%	±5%	22	2020-11-18
2450	52.70	53.03	1.95	2.00	0.63%	2.56%	±5%	22	2020-11-19
2600	52.51	52.78	2.16	2.15	0.51%	-0.46%	±5%	22	2020-11-20

9.2. SAR System Check

The purpose of the system check is to verify that the system operates within its specifications at the decice test frequency.The system check is simple check of repeatability to make sure that the system works correctly at the time of the compliance test;

System check results have to be equal or near the values determined during dipole calibration with the relevant liquids and test system (±10%).
System check is performed regularly on all frequency bands where tests are performed with the DASY5 system.



System Performance Check Setup

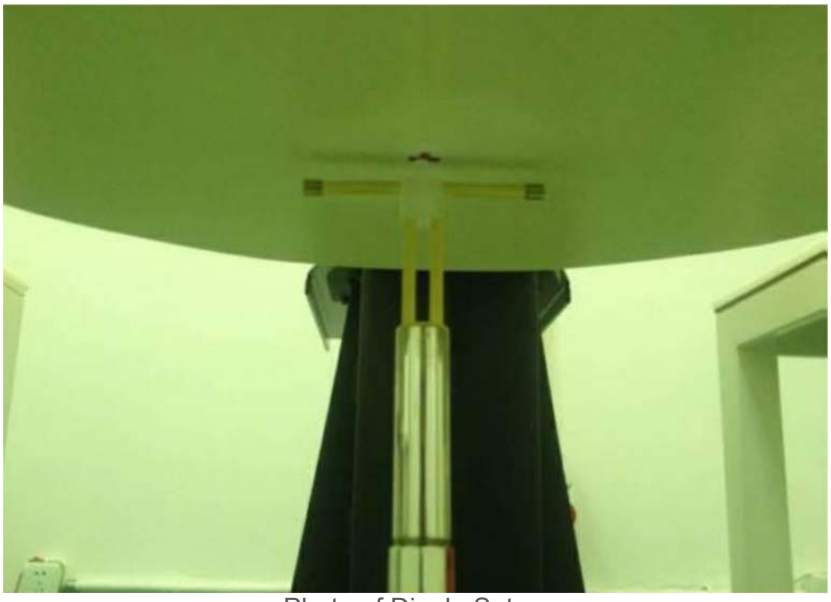


Photo of Dipole Setup

Check Result:

Body									
Frequency (MHz)	1g SAR		10g SAR		Delta (1g)	Delta (10g)	Limit	Temp (℃)	Date
	Target	Measured	Target	Measured					
750	2.16	2.10	1.45	1.40	-2.78%	-3.45%	±10%	22	2020-11-13
835	2.36	2.52	1.57	1.66	6.78%	5.73%	±10%	22	2020-11-16
1750	9.57	9.39	5.11	5.04	-1.88%	-1.37%	±10%	22	2020-11-17
1900	10.10	10.40	5.30	5.42	2.97%	2.26%	±10%	22	2020-11-18
2450	12.60	12.50	5.96	5.83	-0.79%	-2.18%	±10%	22	2020-11-19
2600	13.50	14.70	6.00	6.59	8.89%	9.83%	±10%	22	2020-11-20

Note:

1. the graph results see below.

System Performance Check at 750 MHz Body
DUT: D750V3; Type: D750V3; Serial: 1105
Date: 2020-11-13
Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.931 S/m; ε_r = 55.65; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

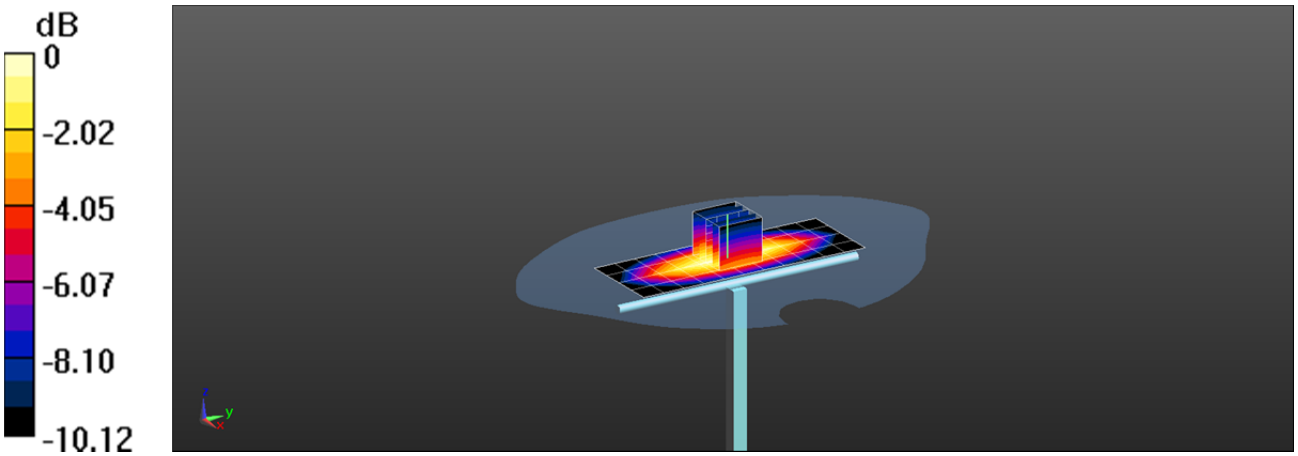
- Probe: EX3DV4 - SN3974; ConvF(10.62, 10.62, 10.62); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/d=10mm,Pin=250mW/Area Scan (5x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.78 W/kg

Body/d=10mm,Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 57.056 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.18 W/kg
SAR(1 g) = 2.1 W/kg; SAR(10 g) = 1.4 W/kg
Maximum value of SAR (measured) = 2.81 W/kg



0 dB = 2.81 W/kg = 4.49 dBW/kg

System Performance Check at 835 MHz Body
DUT: D835V2; Type: D835V2; Serial: 4d134
Date: 2020-11-16
Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.966 S/m; ε_r = 55.403; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

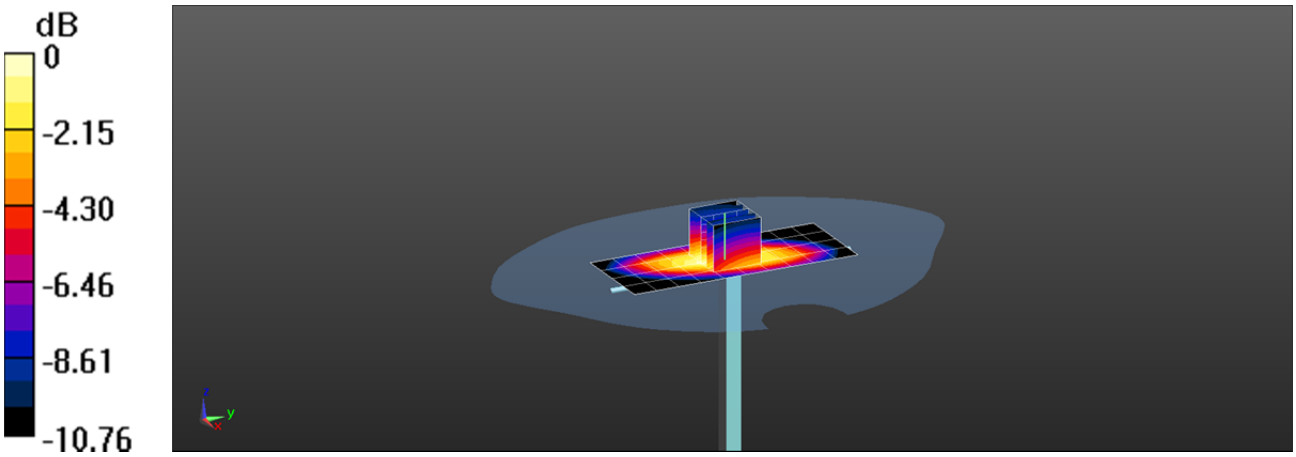
- Probe: EX3DV4 - SN3974; ConvF(10.33, 10.33, 10.33); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/d=15mm,Pin=250mW/Area Scan (5x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 3.39 W/kg

Body/d=15mm,Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 61.674 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 3.97 W/kg
SAR(1 g) = 2.52 W/kg; SAR(10 g) = 1.66 W/kg
Maximum value of SAR (measured) = 3.44 W/kg



0 dB = 3.44 W/kg = 5.37 dBW/kg

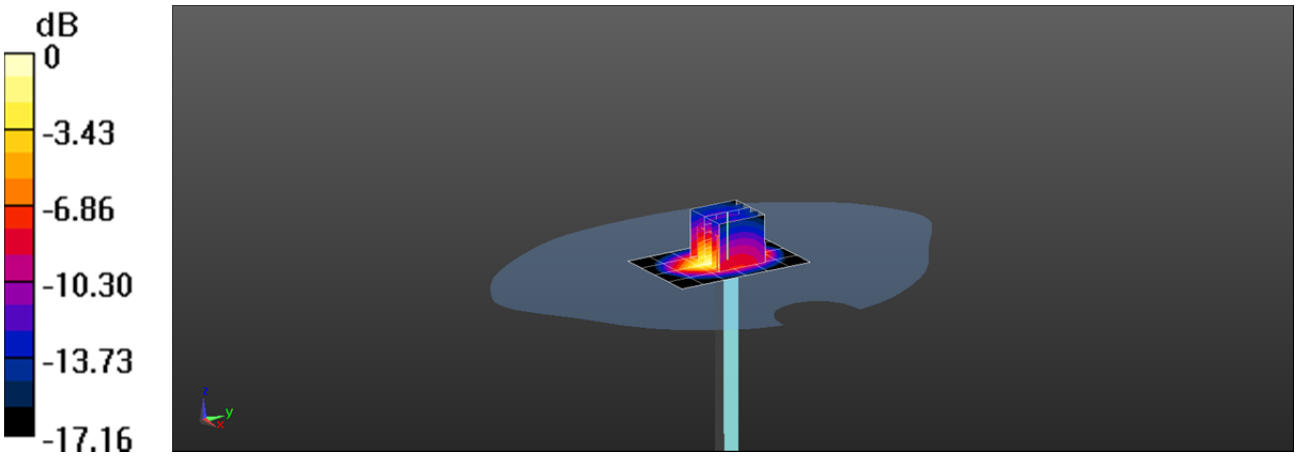
System Performance Check at 1750 MHz Body
DUT: D1750V2; Type: D1750V2; Serial: 1110
Date: 2020-11-17
Communication System: UID 0, CW (0); Frequency: 1750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.441 S/m; ε_r = 53.908; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(8.42, 8.42, 8.42); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/d=10mm,Pin=250mW/Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 14.1 W/kg

Body/d=10mm,Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 102.2 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 16.8 W/kg
SAR(1 g) = 9.39 W/kg; SAR(10 g) = 5.04 W/kg
Maximum value of SAR (measured) = 14.1 W/kg



0 dB = 14.1 W/kg = 11.49 dBW/kg

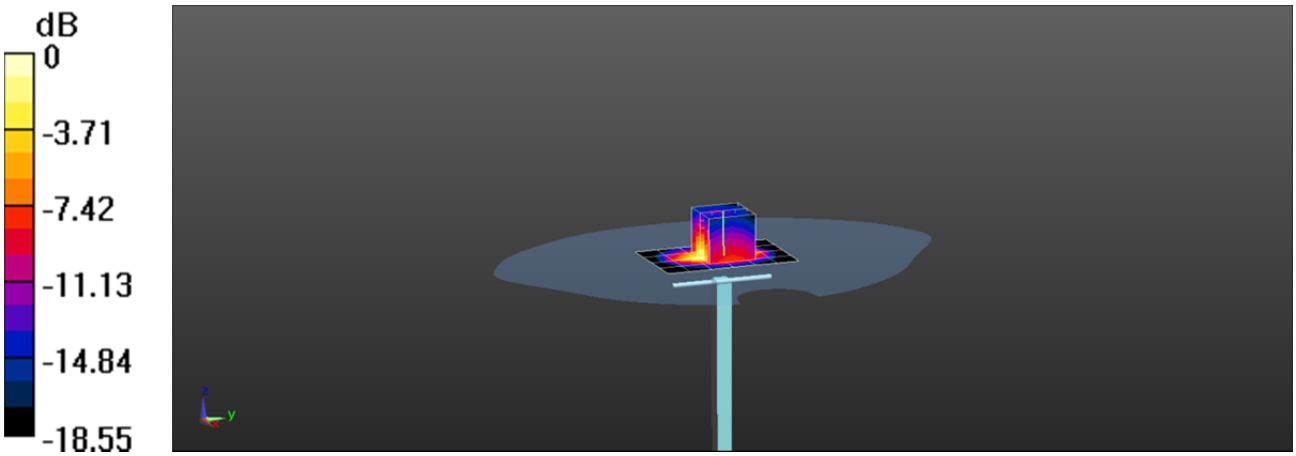
System Performance Check at 1900 MHz Body
DUT: D1900V2; Type: D1900V2; Serial: 5d115
Date: 2020-11-18
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.553 S/m; ε_r = 53.719; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(8.09, 8.09, 8.09); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/d=10mm,Pin=250mW/Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 16.3 W/kg

Body/d=10mm,Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 105.9 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 18.9 W/kg
SAR(1 g) = 10.4 W/kg; SAR(10 g) = 5.42 W/kg
Maximum value of SAR (measured) = 15.7 W/kg



0 dB = 15.7 W/kg = 11.96 dBW/kg

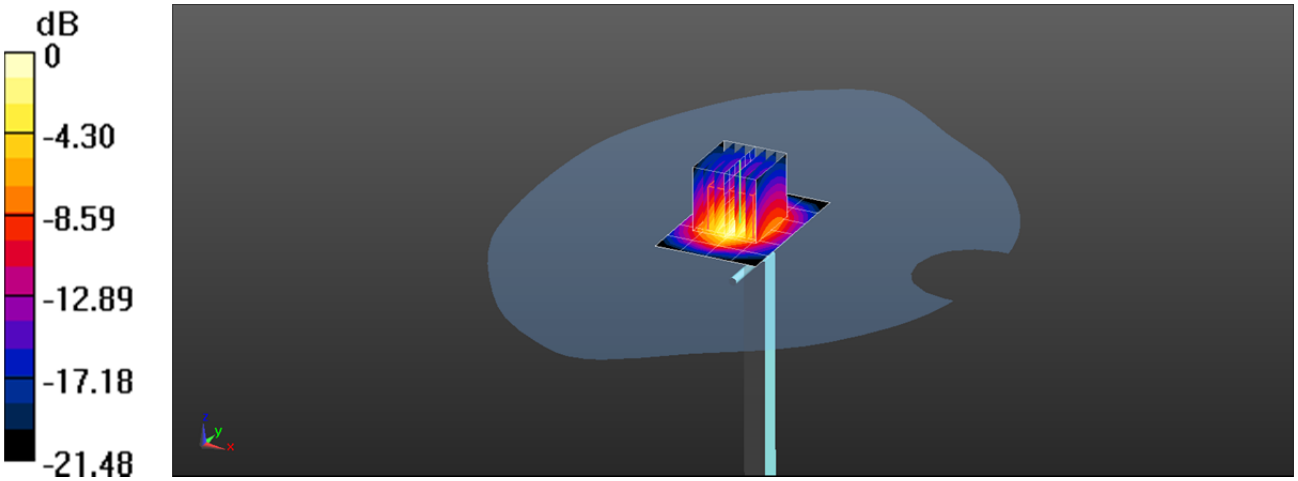
System Performance Check at 2450 MHz Body
DUT: D2450V2; Type: D2450V2; Serial: 928
Date: 2020-11-19
Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 2.001 S/m; εr = 53.03; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(8.00, 8.00, 8.00); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/d=10mm,Pin=250mW/Area Scan (5x7x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 21.1 W/kg

Body/d=10mm,Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 105.6 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 25.7 W/kg
SAR(1 g) = 12.5 W/kg; SAR(10 g) = 5.83 W/kg
Maximum value of SAR (measured) = 20.7 W/kg



0 dB = 20.7 W/kg = 13.16 dBW/kg

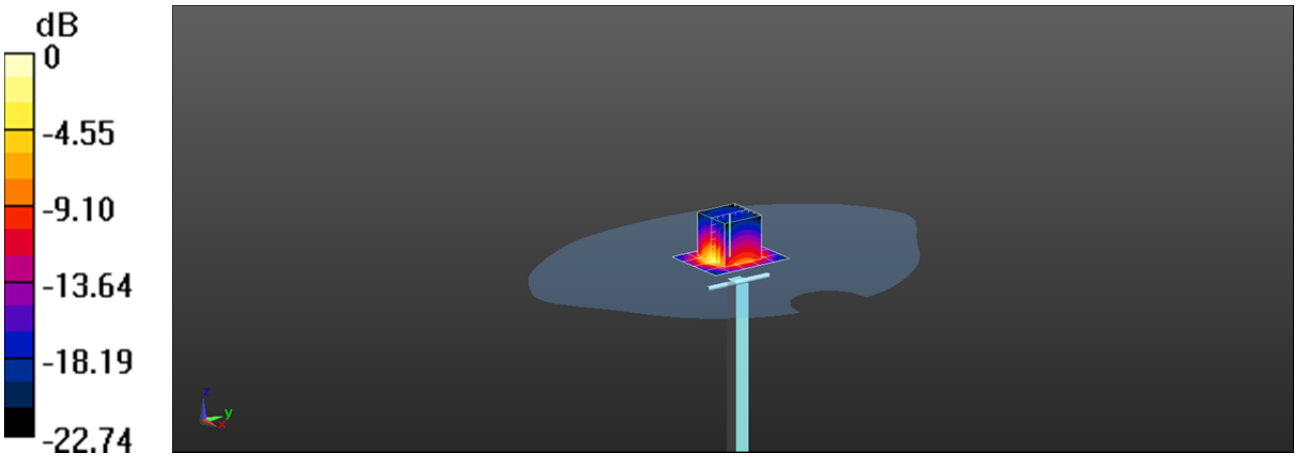
System Performance Check at 2600 MHz Body
DUT: D2600V2; Type: D2600V2; Serial: 1126
Date: 2020-11-20
Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 2.15 S/m; ε_r = 52.78; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(7.52, 7.52, 7.52); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/d=10mm,Pin=250mW/Area Scan (5x6x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 22.6 W/kg

Body/d=10mm,Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 110.2 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 31.6 W/kg
SAR(1 g) = 14.7 W/kg; SAR(10 g) = 6.59 W/kg
Maximum value of SAR (measured) = 25.1 W/kg



0 dB = 25.1 W/kg = 14.00 dBW/kg

10. SAR Exposure Limits

SAR assessments have been made in line with the requirements of ANSI/IEEE C95.1-1992

Type Exposure	Limit (W/kg)	
	General Population / Uncontrolled Exposure Environment	Occupational / Controlled Exposure Environment
Spatial Average SAR (whole body)	0.08	0.4
Spatial Peak SAR (1g cube tissue for head and trunk)	1.6	8.0
Spatial Peak SAR (10g for limb)	4.0	20.0

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

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

11. Conducted Power Measurement Results

GSM Conducted Power

1. *Per KDB 447498 D01, the maximum output power channel is used for SAR testing and further SAR test reduction*
2. *Per KDB 941225 D01, considering the possibility of e.g. 3rd party VoIP operation for Head and Body-worn SAR test reduction for GSM and GPRS modes is determined by the source-base time-averaged output power including tune-up tolerance. The 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. Therefore, the EUT was set in GPRS (2Tx slots) for GSM850 and GPRS (2Tx slots) for PCS1900.*
3. *Per KDB941225 D01, for hotspot SAR test reduction for GPRS modes is determined by the source-based time-averaged output power including tune-up tolerance, For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. Therefore, the EUT was set in GPRS (2Tx slots) for GSM850 and GPRS (2Tx slots) for PCS1900.*

Mode: GSM850		**Conducted Power (dBm)**			Division Factors	**Averager Power (dBm)**		
		CH128	CH190	CH251		CH128	CH190	CH251
		824.2MHz	836.6MHz	848.8MHz		824.2MHz	836.6MHz	848.8MHz
GPRS (GMSK)	1TXslot	32.54	32.50	32.20	-9.03	23.51	23.47	23.17
	2TXslots	30.79	**30.88**	30.81	-6.02	24.77	**24.86**	24.79
	3TXslots	28.81	28.80	28.59	-4.26	24.55	24.54	24.33
	4TXslots	26.57	26.65	26.41	-3.01	23.56	23.64	23.40
EGPRS (8PSK)	1TXslot	26.32	26.13	26.17	-9.03	17.29	17.10	17.14
	2TXslots	26.22	26.10	26.08	-6.02	20.20	20.08	20.06
	3TXslots	24.57	24.51	24.52	-4.26	20.31	20.25	20.26
	4TXslots	22.43	22.30	22.42	-3.01	19.42	19.29	19.41
Mode: PCS1900		**Conducted Power (dBm)**			Division Factors	**Averager Power (dBm)**		
		CH512	CH661	CH810		CH512	CH661	CH810
		1850.2MHz	1880.0MHz	1909.8MHz		1850.2MHz	1880.0MHz	1909.8MHz
GPRS (GMSK)	1TXslot	28.51	28.59	28.46	-9.03	19.48	19.56	19.43
	2TXslots	26.17	**26.83**	26.64	-6.02	20.15	**20.81**	20.62
	3TXslots	24.49	24.18	24.98	-4.26	20.23	19.92	20.72
	4TXslots	23.20	22.88	22.66	-3.01	20.19	19.87	19.65
EGPRS (8PSK)	1TXslot	24.97	24.58	24.36	-9.03	15.94	15.55	15.33
	2TXslots	23.41	23.11	22.84	-6.02	17.39	17.09	16.82
	3TXslots	21.33	21.08	20.81	-4.26	17.07	16.82	16.55
	4TXslots	19.24	18.96	18.71	-3.01	16.23	15.95	15.70

Note:

1) Division Factors

To average the power, the division factor is as follows:

1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

WCDMA Conducted Power

1. *The following tests were conducted according to the test requirements outlines in 3GPP TS34.121 specification.*
2. *The procedures in KDB 941225 D01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode to determine SAR test exclusion*

A summary of thest setting are illustrated belowe:

HSDPA Setup Configureation:

a) The EUT was connected to base station RS CMU200 referred to the setup configuration
b) The RF path losses were compensated into the measurements
c) A call was established between EUT and base station with following setting:
   i. Set Gain Factors (βc and βd) and parameters were set according to each specific sub-test in the following table, C10.1.4, Quoted from the TS 34.121
   ii. Set RMC 12.2Kbps + HSDPA mode
   iii. Set Cell Power=-86dBm
   iv. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
   v. Select HSDPA uplink parameters
   vi. Set Delta ACK, Delta NACK and Delta CQI=8
   vii. Set Ack-Nack repetition Factor to 3
   viii. Set CQI Feedback Cycle (K) to 4ms
   ix. Set CQI repetition factor to 2
   x. Power ctrl mode= all up bits
d) The transmitter maximum output power waw recorded.

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	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} = 30/15 with $\beta_{hs} = 30/15 * \beta_c$.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and Δ_{NACK} = 30/15 with $\beta_{hs} = 30/15 * \beta_c$, and Δ_{CQI} = 24/15 with $\beta_{hs} = 24/15 * \beta_c$.

Note 3: 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 4: 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.

Setup Configuration

HSUPA Setup Configureation:

a) The EUT was connected to base station RS CMU200 referred to the setup configuration
b) The RF path losses were compensated into the measurements
c) A call was established between EUT and base station with following setting:
   i. Call configs = 5.2b, 5.9b, 5.10b, and 5.13.2B with QPSK
   ii. Set Gain Factors (βc and βd) and parameters (AG index) were set according to each specific sub-test in the following table, C11.1.3, Quoted from the TS 34.121
   iii. Set Cell Power=-86dBm
   iv. Set channel type= 12.2Kbps + HSPA mode
   v. Set UE Target power
   vi. Set Ctrl mode=Alternating bits
   vii. Set and observe the E-TFCI
   viii. Confirm that E-TFCI is equal the target E-TFCI of 75 for Sub-test 1, and other subtest's E-TFCI
d) The transmitter maximum output power waw recorded.

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 5) (Note 6)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 6)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	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	$\beta_{ed}1$: 47/15 $\beta_{ed}2$: 47/15	4 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 (Note 4)	15/15 (Note 4)	64	15/15 (Note 4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with $\beta_{hs} = 30/15 * \beta_c$.

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

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

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

Note 5: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.

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

Setup Configuration

General Note:

1. Per KDB 941225 D01, SAR for Head / Hotsport / Body-worn Exposure is measured using a 12.2Kbps RMC with TPC bit ocnfigured to all 1s
2. Per KDB 941225 D01 RMC12.2Kbps setting is used to evaluate SAR. If the maximum output power and Tune-up tolerance specified for production units in HSDPA/HSUPA is ≦1/4dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio fo specified maximum output power and tune-up tolerance of HSDPA / HSUPA to RMC 12.2Kbps and the adjusted SAR is ≦1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA.

Mode		WCDMA Band II			WCDMA Band IV			WCDMA Band V		
		Conducted Power (dBm)			Conducted Power (dBm)			Conducted Power (dBm)		
		CH9262	CH9400	CH9538	CH1312	CH1413	CH1513	CH4132	CH4183	CH4233
		1852.4	1880.0	1907.6	1712.40	1732.40	1752.60	826.40	836.60	846.60
RMC 12.2K		21.38	**21.46**	21.43	21.64	**21.81**	21.77	22.43	**22.43**	22.38
HSDPA	Subtest-1	20.51	20.43	20.53	20.60	20.76	20.91	21.60	21.56	21.53
	Subtest-2	20.06	20.03	19.98	20.16	20.34	20.46	21.13	21.09	21.09
	Subtest-3	20.09	20.00	19.97	20.18	20.35	20.43	21.17	21.13	21.12
	Subtest-4	20.09	20.03	19.98	20.18	20.34	20.36	21.06	21.12	21.13
HSUPA	Subtest-1	20.64	20.47	20.73	20.78	20.81	20.79	21.00	20.99	21.10
	Subtest-2	19.53	19.36	19.38	19.00	19.28	19.16	20.95	20.96	21.04
	Subtest-3	18.63	19.56	19.42	19.02	19.22	19.13	20.88	20.97	21.07
	Subtest-4	20.60	20.54	20.59	18.98	19.25	19.19	20.93	21.12	21.11
	Subtest-5	20.56	20.53	20.58	20.52	20.68	20.70	21.38	21.61	21.78

LTE Conducted Power

General Note:

1. CMW500 base station simulator was used to setup the connection with EUT; the frequency band, channel,bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUTtransmitting at maximum power and at different configurations which are requested to be reported to FCC, forconducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r03, when a properly configured base station simulator is used for the SAR and powermeasurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r03, start with the largest channel bandwidth and measure SAR for QPSK with 1 RBallocation, using the RB offset and required test channel combination with the highest maximum output power for RBoffsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r03, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r03, for QPSK with 100% RB allocation, SAR is not required when the highest maximumoutput power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations andthe highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highestoutput power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also betested.
6. Per KDB 941225 D05v02r03, 16QAM output power for each RB allocation configuration is > not ½ dB higher than thesame configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225D05v02r03, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r03, smaller bandwidth output power for each RB allocation configuration is > not ½ dBhigher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supportedbandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r03, smaller bandwidth SAR testing is not required.

LTE-FDD Band 2				Actual output Power (dBm)		
Band-width	Modulation	RB allocation	RB offset	Low	Middle	High
1.4	QPSK	1	Low	21.92	22.16	22.16
			Middle	21.84	22.13	21.97
			High	21.88	22.08	22.05
		3	Low	20.59	20.74	20.56
			Middle	20.57	20.79	20.50
			High	20.54	20.67	20.46
		6	/	20.51	20.40	20.00
	16QAM	1	Low	21.66	21.82	21.78
			Middle	21.63	21.76	21.57
			High	21.57	21.75	21.70
		3	Low	19.97	20.11	20.05
			Middle	19.94	20.06	19.86
			High	19.89	20.05	19.97
		6	/	19.67	19.86	19.69
3	QPSK	1	Low	21.99	22.14	22.12
			Middle	21.90	22.11	21.94
			High	21.94	22.06	22.01
		8	Low	20.65	20.73	20.53
			Middle	20.63	20.78	20.46
			High	20.60	20.65	20.43
		15	/	20.57	20.39	19.97
	16QAM	1	Low	21.72	21.81	21.75
			Middle	21.70	21.74	21.54
			High	21.63	21.73	21.66
		8	Low	20.03	20.10	20.02
			Middle	20.00	20.04	19.82
			High	19.94	20.03	19.94
		15	/	19.73	19.84	19.66

5	QPSK	1	Low	21.94	22.19	22.09
			Middle	21.85	22.16	21.90
			High	21.89	22.11	21.98
		12	Low	20.60	20.77	20.50
			Middle	20.58	20.82	20.43
			High	20.56	20.69	20.40
		25	/	20.53	20.43	19.94
	16QAM	1	Low	21.68	21.85	21.71
			Middle	21.65	21.79	21.50
			High	21.59	21.78	21.63
		12	Low	19.98	20.14	19.98
			Middle	19.96	20.08	19.79
			High	19.90	20.07	19.91
		25	/	19.69	19.88	19.63
10	QPSK	1	Low	21.92	22.22	22.07
			Middle	21.83	22.18	21.89
			High	21.87	22.13	21.96
		25	Low	20.58	20.79	20.48
			Middle	20.56	20.84	20.42
			High	20.54	20.72	20.38
		50	/	20.51	20.45	19.93
	16QAM	1	Low	21.65	21.88	21.70
			Middle	21.63	21.81	21.49
			High	21.56	21.81	21.61
		25	Low	19.96	20.16	19.97
			Middle	19.94	20.10	19.78
			High	19.88	20.10	19.89
		50	/	19.67	19.90	19.61

15	QPSK	1	Low	21.96	22.15	22.10
			Middle	21.87	22.17	21.91
			High	21.91	22.11	21.99
		38	Low	20.62	20.72	20.51
			Middle	20.60	20.82	20.44
			High	20.58	20.69	20.41
		75	/	20.55	20.43	19.95
	16QAM	1	Low	21.70	21.85	21.72
			Middle	21.67	21.79	21.51
			High	21.61	21.78	21.64
		38	Low	20.00	20.14	19.99
			Middle	19.98	20.08	19.80
			High	19.92	20.07	19.91
		75	/	19.71	19.88	19.64
20	QPSK	1	Low	22.01	**22.26**	22.17
			Middle	21.92	22.23	21.98
			High	21.96	22.18	22.06
		50	Low	20.67	20.84	20.57
			Middle	20.65	20.89	20.51
			High	20.62	20.76	20.48
		100	/	20.59	20.49	20.02
	16QAM	1	Low	21.45	21.66	21.56
			Middle	21.42	21.60	21.36
			High	21.36	21.59	21.48
		50	Low	19.77	19.97	19.85
			Middle	19.75	19.91	19.66
			High	19.69	19.90	19.77
		100	/	19.48	19.71	19.49

LTE-FDD Band 4				Actual output Power (dBm)		
Band-width	Modulation	RB allocation	RB offset	Low	Middle	High
1.4	QPSK	1	Low	23.06	23.37	23.20
			Middle	22.97	23.33	23.00
			High	23.01	23.28	23.09
		3	Low	21.65	21.87	21.53
			Middle	21.63	21.92	21.46
			High	21.61	21.79	21.42
		6	/	21.57	21.51	20.94
	16QAM	1	Low	22.78	23.01	22.81
			Middle	22.75	22.94	22.59
			High	22.69	22.94	22.72
		3	Low	21.00	21.21	20.99
			Middle	20.98	21.15	20.79
			High	20.92	21.14	20.91
		6	/	20.69	20.94	20.61
3	QPSK	1	Low	23.13	23.35	23.16
			Middle	23.03	23.31	22.96
			High	23.08	23.26	23.05
		8	Low	21.72	21.85	21.49
			Middle	21.70	21.91	21.42
			High	21.67	21.77	21.39
		15	/	21.64	21.49	20.91
	16QAM	1	Low	22.85	22.99	22.77
			Middle	22.82	22.92	22.55
			High	22.75	22.92	22.68
		8	Low	21.06	21.19	20.96
			Middle	21.04	21.13	20.75
			High	20.98	21.12	20.87
		15	/	20.75	20.92	20.58

5	QPSK	1	Low	23.08	23.40	23.12
			Middle	22.99	23.36	22.93
			High	23.03	23.31	23.01
		12	Low	21.67	21.90	21.46
			Middle	21.65	21.95	21.39
			High	21.62	21.82	21.35
		25	/	21.59	21.54	20.87
	16QAM	1	Low	22.80	23.04	22.73
			Middle	22.77	22.97	22.51
			High	22.71	22.96	22.64
		12	Low	21.02	21.23	20.92
			Middle	20.99	21.17	20.72
			High	20.93	21.16	20.84
		25	/	20.71	20.96	20.55
10	QPSK	1	Low	23.05	23.42	23.11
			Middle	22.96	23.39	22.91
			High	23.00	23.34	22.99
		25	Low	21.65	21.92	21.44
			Middle	21.63	21.98	21.37
			High	21.60	21.84	21.34
		50	/	21.57	21.56	20.86
	16QAM	1	Low	22.77	23.07	22.72
			Middle	22.75	23.00	22.50
			High	22.68	22.99	22.63
		25	Low	21.00	21.26	20.91
			Middle	20.97	21.20	20.71
			High	20.91	21.19	20.83
		50	/	20.68	20.99	20.53

15	QPSK	1	Low	23.10	23.39	23.13
			Middle	23.01	23.36	22.94
			High	23.05	23.31	23.02
		38	Low	21.69	21.90	21.47
			Middle	21.67	21.95	21.40
			High	21.64	21.82	21.36
		75	/	21.61	21.54	20.88
	16QAM	1	Low	22.82	23.04	22.74
			Middle	22.79	22.97	22.52
			High	22.73	22.96	22.65
		38	Low	21.04	21.23	20.93
			Middle	21.01	21.17	20.73
			High	20.95	21.16	20.85
		75	/	20.73	20.96	20.56
20	QPSK	1	Low	23.15	**23.47**	23.21
			Middle	23.06	23.44	23.02
			High	23.10	23.38	23.10
		50	Low	21.74	21.97	21.54
			Middle	21.72	22.02	21.47
			High	21.69	21.89	21.44
		100	/	21.66	21.61	20.95
	16QAM	1	Low	22.56	22.84	22.58
			Middle	22.53	22.78	22.36
			High	22.46	22.77	22.49
		50	Low	20.79	21.05	20.78
			Middle	20.77	20.99	20.58
			High	20.71	20.98	20.70
		100	/	20.49	20.78	20.41

LTE-FDD Band 5				Actual output Power (dBm)		
Band-width	Modulation	RB allocation	RB offset	Low	Middle	High
1.4	QPSK	1	Low	23.02	22.79	23.16
			Middle	22.93	22.30	22.96
			High	22.98	22.32	23.05
		3	Low	21.62	22.24	21.49
			Middle	21.60	21.62	21.42
			High	21.57	21.78	21.39
		6	/	21.54	21.88	20.91
	16QAM	1	Low	22.75	22.44	22.77
			Middle	22.72	21.93	22.55
			High	22.65	21.94	22.68
		3	Low	20.97	21.96	20.95
			Middle	20.95	20.87	20.75
			High	20.88	21.32	20.87
		6	/	20.66	21.46	20.58
3	QPSK	1	Low	23.00	23.28	23.14
			Middle	22.91	23.25	22.95
			High	22.95	23.20	23.03
		8	Low	21.60	21.79	21.48
			Middle	21.58	21.85	21.41
			High	21.55	21.71	21.37
		15	/	21.52	21.44	20.89
	16QAM	1	Low	22.72	22.93	22.75
			Middle	22.70	22.86	22.53
			High	22.63	22.85	22.66
		8	Low	20.95	21.13	20.94
			Middle	20.92	21.07	20.74
			High	20.86	21.06	20.86
		15	/	20.64	20.86	20.56

5	QPSK	1	Low	23.02	23.25	23.17
			Middle	22.95	23.22	22.97
			High	23.00	23.17	23.06
		12	Low	21.64	21.77	21.50
			Middle	21.62	21.82	21.43
			High	21.59	21.69	21.40
		25	/	21.56	21.41	20.92
	16QAM	1	Low	22.77	22.90	22.78
			Middle	22.74	22.83	22.56
			High	22.67	22.82	22.69
		12	Low	20.99	21.10	20.96
			Middle	20.97	21.04	20.76
			High	20.90	21.04	20.88
		25	/	20.68	20.84	20.59
10	QPSK	1	Low	23.12	**23.33**	23.25
			Middle	23.03	23.30	23.05
			High	23.07	23.24	23.14
		25	Low	21.71	21.84	21.58
			Middle	21.69	21.89	21.51
			High	21.66	21.76	21.47
		50	/	21.63	21.48	20.99
	16QAM	1	Low	22.53	22.71	22.62
			Middle	22.50	22.64	22.40
			High	22.43	22.63	22.53
		25	Low	20.77	20.93	20.81
			Middle	20.74	20.86	20.61
			High	20.68	20.86	20.73
		50	/	20.46	20.66	20.44

LTE-FDD Band 7				Actual output Power (dBm)		
Band-width	Modulation	RB allocation	RB offset	Low	Middle	High
5	QPSK	1	Low	21.78	21.70	22.00
			Middle	21.69	21.23	21.82
			High	21.73	21.25	21.90
		12	Low	20.45	21.18	20.42
			Middle	20.43	20.59	20.35
			High	20.41	20.74	20.32
		25	/	20.38	20.83	19.86
	16QAM	1	Low	21.52	21.37	21.63
			Middle	21.49	20.88	21.42
			High	21.43	20.89	21.55
		12	Low	19.84	20.91	19.91
			Middle	19.81	19.87	19.72
			High	19.75	20.30	19.83
		25	/	19.54	20.43	19.55
10	QPSK	1	Low	21.76	22.16	21.99
			Middle	21.67	22.13	21.80
			High	21.71	22.08	21.88
		25	Low	20.43	20.75	20.41
			Middle	20.41	20.80	20.34
			High	20.38	20.67	20.31
		50	/	20.35	20.41	19.85
	16QAM	1	Low	21.49	21.83	21.62
			Middle	21.47	21.76	21.41
			High	21.40	21.76	21.53
		25	Low	19.81	20.12	19.90
			Middle	19.79	20.06	19.70
			High	19.73	20.05	19.82
		50	/	19.52	19.86	19.54

15	QPSK	1	Low	21.80	22.14	22.01
			Middle	21.71	22.11	21.83
			High	21.75	22.06	21.91
		38	Low	20.47	20.72	20.43
			Middle	20.45	20.77	20.36
			High	20.43	20.64	20.33
		75	/	20.40	20.38	19.87
	16QAM	1	Low	21.54	21.80	21.64
			Middle	21.51	21.74	21.43
			High	21.45	21.73	21.56
		38	Low	19.85	20.09	19.92
			Middle	19.83	20.03	19.73
			High	19.77	20.03	19.84
		75	/	19.56	19.83	19.56
20	QPSK	1	Low	21.87	**22.21**	22.09
			Middle	21.78	22.18	21.90
			High	21.82	22.13	21.98
		50	Low	20.54	20.79	20.50
			Middle	20.52	20.84	20.43
			High	20.49	20.71	20.40
		100	/	20.46	20.45	19.94
	16QAM	1	Low	21.31	21.62	21.49
			Middle	21.29	21.55	21.28
			High	21.22	21.54	21.40
		50	Low	19.65	19.92	19.78
			Middle	19.62	19.86	19.58
			High	19.56	19.85	19.70
		100	/	19.35	19.67	19.42

LTE-FDD Band 12				Actual output Power (dBm)		
Band-width	Modulation	RB allocation	RB offset	Low	Middle	High
1.4	QPSK	1	Low	23.03	22.87	22.96
			Middle	22.94	22.38	22.77
			High	22.99	22.39	22.85
		3	Low	21.63	22.32	21.31
			Middle	21.61	21.70	21.24
			High	21.58	21.86	21.20
		6	/	21.55	21.96	20.73
	16QAM	1	Low	22.76	22.52	22.57
			Middle	22.73	22.01	22.35
			High	22.66	22.02	22.48
		3	Low	20.98	22.04	20.77
			Middle	20.96	20.94	20.57
			High	20.89	21.39	20.69
		6	/	20.67	21.54	20.40
3	QPSK	1	Low	23.01	23.36	22.94
			Middle	22.92	23.33	22.75
			High	22.96	23.28	22.83
		8	Low	21.61	21.87	21.29
			Middle	21.59	21.92	21.22
			High	21.56	21.79	21.19
		15	/	21.53	21.51	20.71
	16QAM	1	Low	22.73	23.01	22.56
			Middle	22.71	22.94	22.34
			High	22.64	22.93	22.47
		8	Low	20.96	21.20	20.76
			Middle	20.93	21.14	20.56
			High	20.87	21.13	20.68
		15	/	20.65	20.93	20.39

5	QPSK	1	Low	23.06	23.33	22.97
			Middle	22.96	23.30	22.78
			High	23.01	23.25	22.86
		12	Low	21.65	21.84	21.32
			Middle	21.63	21.89	21.25
			High	21.60	21.76	21.21
		25	/	21.57	21.48	20.74
	16QAM	1	Low	22.78	22.98	22.58
			Middle	22.75	22.91	22.36
			High	22.68	22.90	22.49
		12	Low	21.00	21.18	20.78
			Middle	20.97	21.12	20.58
			High	20.91	21.11	20.70
		25	/	20.69	20.91	20.41
10	QPSK	1	Low	23.13	**23.41**	23.05
			Middle	23.04	23.38	22.86
			High	23.08	23.32	22.94
		25	Low	21.72	21.91	21.39
			Middle	21.70	21.97	21.32
			High	21.67	21.83	21.29
		50	/	21.64	21.55	20.81
	16QAM	1	Low	22.54	22.78	22.42
			Middle	22.51	22.72	22.20
			High	22.44	22.71	22.33
		25	Low	20.78	21.00	20.64
			Middle	20.75	20.94	20.44
			High	20.69	20.93	20.55
		50	/	20.47	20.73	20.27

LTE-FDD Band 13				Actual output Power (dBm)		
Band-width	Modulation	RB allocation	RB offset	Low	Middle	High
5	QPSK	1	Low	23.43	23.54	23.16
			Middle	23.34	23.51	22.96
			High	23.38	23.46	23.05
		12	Low	22.00	22.04	21.49
			Middle	21.98	22.09	21.42
			High	21.96	21.95	21.39
		25	/	21.93	21.68	20.91
	16QAM	1	Low	23.15	23.18	22.77
			Middle	23.13	23.12	22.55
			High	23.06	23.11	22.68
		12	Low	21.34	21.37	20.96
			Middle	21.32	21.31	20.75
			High	21.26	21.30	20.87
		25	/	21.03	21.09	20.58
10	QPSK	1	Low	/	**23.62**	/
			Middle	/	23.59	/
			High	/	23.53	/
		25	Low	/	22.11	/
			Middle	/	22.16	/
			High	/	22.03	/
		50	/	/	21.75	/
	16QAM	1	Low	/	22.99	/
			Middle	/	22.92	/
			High	/	22.91	/
		25	Low	/	21.19	/
			Middle	/	21.12	/
			High	/	21.12	/
		50	/	/	20.91	/

LTE-FDD Band 17				Actual output Power (dBm)		
Band-width	Modulation	RB allocation	RB offset	Low	Middle	High
5	QPSK	1	Low	23.15	23.41	23.11
			Middle	23.05	23.38	22.91
			High	23.10	23.33	23.00
		12	Low	21.73	21.92	21.45
			Middle	21.71	21.97	21.37
			High	21.69	21.83	21.34
		25	/	21.65	21.56	20.86
	16QAM	1	Low	22.87	23.06	22.72
			Middle	22.84	22.99	22.50
			High	22.77	22.98	22.63
		12	Low	21.08	21.25	20.91
			Middle	21.06	21.19	20.71
			High	20.99	21.18	20.83
		25	/	20.77	20.98	20.54
10	QPSK	1	Low	23.22	**23.49**	23.19
			Middle	23.13	23.46	23.00
			High	23.17	23.40	23.08
		25	Low	21.80	21.99	21.52
			Middle	21.78	22.04	21.45
			High	21.76	21.90	21.42
		50	/	21.72	21.63	20.94
	16QAM	1	Low	22.62	22.86	22.56
			Middle	22.60	22.79	22.34
			High	22.53	22.79	22.47
		25	Low	20.86	21.07	20.76
			Middle	20.83	21.01	20.56
			High	20.77	21.00	20.68
		50	/	20.55	20.80	20.39

LTE-FDD Band 25				Actual output Power (dBm)		
Band-width	Modulation	RB allocation	RB offset	Low	Middle	High
1.4	QPSK	1	Low	21.67	21.87	21.82
			Middle	21.59	21.84	21.63
			High	21.63	21.79	21.71
		3	Low	20.35	20.47	20.25
			Middle	20.33	20.52	20.18
			High	20.31	20.40	20.15
		6	/	20.28	20.14	19.70
	16QAM	1	Low	21.41	21.54	21.45
			Middle	21.39	21.48	21.24
			High	21.33	21.47	21.37
		3	Low	19.74	19.85	19.74
			Middle	19.72	19.79	19.55
			High	19.66	19.79	19.66
		6	/	19.45	19.60	19.39
3	QPSK	1	Low	21.74	21.85	21.78
			Middle	21.65	21.82	21.60
			High	21.69	21.77	21.68
		8	Low	20.41	20.46	20.21
			Middle	20.39	20.51	20.15
			High	20.37	20.38	20.12
		15	/	20.34	20.12	19.67
	16QAM	1	Low	21.48	21.52	21.42
			Middle	21.45	21.46	21.21
			High	21.39	21.45	21.33
		8	Low	19.80	19.83	19.71
			Middle	19.78	19.78	19.52
			High	19.72	19.77	19.63
		15	/	19.51	19.58	19.36

5	QPSK	1	Low	21.69	21.90	21.75
			Middle	21.61	21.87	21.56
			High	21.65	21.82	21.64
		12	Low	20.37	20.50	20.18
			Middle	20.35	20.55	20.11
			High	20.32	20.42	20.08
		25	/	20.29	20.16	19.63
	16QAM	1	Low	21.43	21.57	21.38
			Middle	21.41	21.51	21.17
			High	21.34	21.50	21.30
		12	Low	19.76	19.88	19.68
			Middle	19.73	19.82	19.49
			High	19.68	19.81	19.60
		25	/	19.46	19.62	19.32
10	QPSK	1	Low	21.67	21.93	21.73
			Middle	21.58	21.90	21.55
			High	21.62	21.84	21.63
		25	Low	20.35	20.52	20.17
			Middle	20.33	20.57	20.10
			High	20.30	20.45	20.07
		50	/	20.27	20.19	19.62
	16QAM	1	Low	21.41	21.59	21.37
			Middle	21.38	21.53	21.16
			High	21.32	21.52	21.28
		25	Low	19.73	19.90	19.67
			Middle	19.71	19.84	19.47
			High	19.65	19.83	19.59
		50	/	19.44	19.65	19.31

15	QPSK	1	Low	21.71	21.90	21.76
			Middle	21.63	21.87	21.57
			High	21.67	21.82	21.65
		38	Low	20.39	20.50	20.19
			Middle	20.37	20.55	20.12
			High	20.34	20.42	20.09
		75	/	20.31	20.16	19.64
	16QAM	1	Low	21.45	21.57	21.39
			Middle	21.43	21.50	21.18
			High	21.36	21.49	21.31
		38	Low	19.77	19.88	19.69
			Middle	19.75	19.82	19.50
			High	19.69	19.81	19.61
		75	/	19.48	19.62	19.33
20	QPSK	1	Low	21.76	21.97	21.83
			Middle	21.67	21.94	21.65
			High	21.71	21.89	21.72
		50	Low	20.43	20.56	20.26
			Middle	20.41	20.61	20.19
			High	20.39	20.49	20.16
		100	/	20.36	20.23	19.71
	16QAM	1	Low	21.20	21.38	21.23
			Middle	21.18	21.32	21.03
			High	21.12	21.31	21.15
		50	Low	19.55	19.71	19.54
			Middle	19.52	19.65	19.35
			High	19.47	19.64	19.47
		100	/	19.26	19.45	19.19

LTE-FDD Band 26				Actual output Power (dBm)					
				814~824MHz			824~849MHz		
Band-width	Modulation	RB allocation	RB offset	Low	Middle	High	Low	Middle	High
1.4	QPSK	1	Low	22.07	22.87	22.19	22.93	23.13	22.96
			Middle	21.98	22.84	22.00	22.84	23.10	22.76
			High	22.03	22.78	22.08	22.88	23.04	22.85
		3	Low	20.73	21.41	20.59	21.53	21.65	21.31
			Middle	20.71	21.46	20.52	21.51	21.70	21.23
			High	20.68	21.33	20.49	21.48	21.57	21.20
		6	/	20.65	21.05	20.03	21.45	21.29	20.73
	16QAM	1	Low	21.81	22.52	21.81	22.65	22.78	22.57
			Middle	21.78	22.46	21.60	22.63	22.71	22.35
			High	21.72	22.45	21.73	22.56	22.70	22.48
		3	Low	20.10	20.76	20.08	20.88	20.99	20.77
			Middle	20.08	20.69	19.88	20.86	20.93	20.57
			High	20.02	20.69	20.00	20.80	20.92	20.69
		6	/	19.81	20.49	19.72	20.58	20.72	20.40
3	QPSK	1	Low	22.14	22.85	22.15	23.00	23.11	22.92
			Middle	22.05	22.82	21.97	22.90	23.08	22.73
			High	22.09	22.76	22.04	22.95	23.02	22.81
		8	Low	20.79	21.39	20.56	21.59	21.63	21.27
			Middle	20.77	21.44	20.49	21.57	21.68	21.20
			High	20.74	21.31	20.46	21.55	21.55	21.17
		15	/	20.71	21.04	20.00	21.52	21.27	20.69
	16QAM	1	Low	21.87	22.50	21.78	22.72	22.76	22.53
			Middle	21.85	22.44	21.57	22.69	22.69	22.31
			High	21.78	22.43	21.69	22.63	22.68	22.44
		8	Low	20.16	20.74	20.04	20.94	20.97	20.74
			Middle	20.14	20.68	19.85	20.92	20.91	20.54
			High	20.08	20.67	19.96	20.86	20.90	20.66
		15	/	19.86	20.47	19.68	20.63	20.70	20.37

5	QPSK	1	Low	22.09	22.90	22.12	22.95	23.16	22.88
			Middle	22.00	22.87	21.93	22.86	23.12	22.69
			High	22.04	22.81	22.01	22.90	23.07	22.77
		12	Low	20.74	21.43	20.52	21.55	21.68	21.24
			Middle	20.72	21.48	20.46	21.53	21.73	21.17
			High	20.70	21.35	20.42	21.50	21.59	21.13
		25	/	20.67	21.08	19.97	21.47	21.32	20.66
	16QAM	1	Low	21.82	22.55	21.74	22.67	22.80	22.50
			Middle	21.80	22.48	21.53	22.65	22.74	22.28
			High	21.73	22.48	21.66	22.58	22.73	22.41
		12	Low	20.12	20.78	20.01	20.90	21.02	20.71
			Middle	20.10	20.72	19.82	20.88	20.96	20.50
			High	20.04	20.71	19.93	20.81	20.95	20.62
		25	/	19.82	20.52	19.65	20.59	20.75	20.33
10	QPSK	1	Low	/	22.92	/	22.92	23.18	22.87
			Middle	/	22.89	/	22.83	23.15	22.68
			High	/	22.84	/	22.87	23.10	22.76
		25	Low	/	21.46	/	21.52	21.70	21.22
			Middle	/	21.51	/	21.50	21.75	21.15
			High	/	21.38	/	21.48	21.62	21.12
		50	/	/	21.10	/	21.45	21.34	20.64
	16QAM	1	Low	/	22.58	/	22.65	22.83	22.48
			Middle	/	22.51	/	22.62	22.76	22.26
			High	/	22.50	/	22.55	22.76	22.39
		25	Low	/	20.81	/	20.88	21.04	20.69
			Middle	/	20.74	/	20.85	20.98	20.49
			High	/	20.74	/	20.79	20.97	20.61
		50	/	/	20.54	/	20.57	20.77	20.32

15	QPSK	1	Low	/	/	/	23.02	**23.23**	22.97
			Middle	/	/	/	22.93	23.20	22.78
			High	/	/	/	22.97	23.14	22.86
		38	Low	/	/	/	21.62	21.74	21.32
			Middle	/	/	/	21.60	21.80	21.25
			High	/	/	/	21.57	21.66	21.21
		75	/	/	/	/	21.54	21.39	20.74
	16QAM	1	Low	/	/	/	22.43	22.61	22.34
			Middle	/	/	/	22.40	22.54	22.13
			High	/	/	/	22.34	22.53	22.25
		38	Low	/	/	/	20.68	20.84	20.56
			Middle	/	/	/	20.65	20.77	20.36
			High	/	/	/	20.59	20.77	20.48
		75	/	/	/	/	20.37	20.57	20.19

LTE Band 41				Actual output Power (dBm)		
Band-width	Modulation	RB allocation	RB offset	Low	Middle	High
5	QPSK	1	Low	21.64	21.37	21.45
			Middle	21.55	20.92	21.27
			High	21.59	20.93	21.35
		12	Low	20.32	20.86	19.91
			Middle	20.30	20.28	19.84
			High	20.28	20.43	19.81
		25	/	20.25	20.52	19.37
	16QAM	1	Low	21.38	21.05	21.09
			Middle	21.35	20.57	20.89
			High	21.29	20.58	21.01
		12	Low	19.71	20.60	19.41
			Middle	19.69	19.57	19.22
			High	19.63	19.99	19.34
		25	/	19.42	20.13	19.06
10	QPSK	1	Low	21.62	21.84	21.44
			Middle	21.53	21.80	21.26
			High	21.57	21.75	21.34
		25	Low	20.30	20.44	19.90
			Middle	20.28	20.49	19.83
			High	20.25	20.36	19.80
		50	/	20.22	20.10	19.36
	16QAM	1	Low	21.36	21.50	21.08
			Middle	21.33	21.44	20.87
			High	21.27	21.43	21.00
		25	Low	19.69	19.82	19.40
			Middle	19.67	19.76	19.21
			High	19.61	19.75	19.32
		50	/	19.40	19.56	19.05

15	QPSK	1	Low	21.66	21.81	21.46
			Middle	21.57	21.78	21.28
			High	21.61	21.73	21.36
		38	Low	20.34	20.41	19.92
			Middle	20.32	20.46	19.85
			High	20.30	20.34	19.82
		75	/	20.27	20.08	19.38
	16QAM	1	Low	21.40	21.48	21.10
			Middle	21.37	21.41	20.90
			High	21.31	21.41	21.02
		38	Low	19.73	19.79	19.42
			Middle	19.71	19.74	19.23
			High	19.65	19.73	19.35
		75	/	19.44	19.54	19.07
20	QPSK	1	Low	21.73	**21.88**	21.54
			Middle	21.64	21.85	21.36
			High	21.68	21.80	21.44
		50	Low	20.40	20.48	19.99
			Middle	20.39	20.53	19.92
			High	20.36	20.40	19.89
		100	/	20.33	20.14	19.45
	16QAM	1	Low	21.17	21.29	20.95
			Middle	21.15	21.23	20.75
			High	21.09	21.22	20.87
		50	Low	19.52	19.62	19.28
			Middle	19.50	19.57	19.10
			High	19.44	19.56	19.21
		100	/	19.23	19.37	18.94

LTE Band 66				Actual output Power (dBm)		
Band-width	Modulation	RB allocation	RB offset	Low	Middle	High
1.4	QPSK	1	Low	22.32	22.45	22.42
			Middle	22.23	22.42	22.23
			High	22.27	22.37	22.31
		3	Low	20.96	21.01	20.80
			Middle	20.94	21.07	20.74
			High	20.92	20.94	20.70
		6	/	20.88	20.67	20.24
	16QAM	1	Low	22.05	22.11	22.04
			Middle	22.03	22.04	21.83
			High	21.96	22.04	21.95
		3	Low	20.33	20.38	20.29
			Middle	20.31	20.32	20.09
			High	20.25	20.31	20.20
		6	/	20.03	20.12	19.92
3	QPSK	1	Low	22.39	22.43	22.38
			Middle	22.30	22.40	22.19
			High	22.34	22.35	22.27
		8	Low	21.02	21.00	20.77
			Middle	21.00	21.05	20.70
			High	20.98	20.92	20.67
		15	/	20.95	20.65	20.21
	16QAM	1	Low	22.12	22.09	22.00
			Middle	22.09	22.03	21.79
			High	22.03	22.02	21.92
		8	Low	20.39	20.36	20.25
			Middle	20.37	20.30	20.06
			High	20.31	20.29	20.17
		15	/	20.09	20.10	19.89

5	QPSK	1	Low	22.34	22.48	22.34
			Middle	22.25	22.45	22.16
			High	22.29	22.40	22.24
		12	Low	20.98	21.04	20.74
			Middle	20.96	21.09	20.67
			High	20.93	20.96	20.64
		25	/	20.90	20.70	20.17
	16QAM	1	Low	22.07	22.14	21.97
			Middle	22.05	22.07	21.75
			High	21.98	22.06	21.88
		12	Low	20.35	20.40	20.22
			Middle	20.32	20.34	20.02
			High	20.26	20.33	20.14
		25	/	20.05	20.14	19.86
10	QPSK	1	Low	22.32	22.50	22.33
			Middle	22.23	22.47	22.14
			High	22.27	22.42	22.22
		25	Low	20.95	21.06	20.72
			Middle	20.93	21.12	20.65
			High	20.91	20.99	20.62
		50	/	20.88	20.72	20.16
	16QAM	1	Low	22.05	22.16	21.95
			Middle	22.02	22.10	21.74
			High	21.96	22.09	21.87
		25	Low	20.32	20.42	20.21
			Middle	20.30	20.37	20.01
			High	20.24	20.36	20.13
		50	/	20.02	20.16	19.84

15	QPSK	1	Low	22.36	22.48	22.36
			Middle	22.27	22.45	22.17
			High	22.31	22.39	22.25
		38	Low	21.00	21.04	20.75
			Middle	20.98	21.09	20.68
			High	20.95	20.96	20.65
		75	/	20.92	20.69	20.18
	16QAM	1	Low	22.09	22.14	21.98
			Middle	22.07	22.07	21.77
			High	22.00	22.06	21.89
		38	Low	20.37	20.40	20.23
			Middle	20.34	20.34	20.03
			High	20.28	20.33	20.15
		75	/	20.06	20.14	19.87
20	QPSK	1	Low	22.41	**22.55**	22.43
			Middle	22.32	22.52	22.24
			High	22.36	22.47	22.32
		50	Low	21.04	21.11	20.82
			Middle	21.02	21.16	20.75
			High	21.00	21.03	20.72
		100	/	20.97	20.76	20.25
	16QAM	1	Low	21.84	21.95	21.82
			Middle	21.81	21.88	21.61
			High	21.75	21.87	21.73
		50	Low	20.13	20.23	20.08
			Middle	20.11	20.17	19.89
			High	20.05	20.16	20.00
		100	/	19.83	19.97	19.72

WLAN Conducted Power

For 2.4GHz WLAN SAR testing, highest average RF output power channel for the lowest data rate for 802.11b were for SAR evaluation. 802.11g/n were not investigated since the average putput powers over all channels and data rates were not more than 0.25dB higher than the tested channel in the lowest data rate of 802.11b mode.

WIFI 2.4G			
Mode	Channel	Frequency (MHz)	Conducted Average Power (dBm)
802.11b	01	2412	13.26
	06	2437	**13.89**
	11	2462	13.52
802.11g	01	2412	13.13
	06	2437	13.16
	11	2462	12.98
802.11n(HT20)	01	2412	13.15
	06	2437	13.16
	11	2462	13.03
802.11n(HT40)	03	2422	12.85
	06	2437	12.95
	09	2452	13.02

*Note:*The output power was test all data rate and recorded worst case at recorded data rate.

12. Maximum Tune-up Limit

GSM		
Mode	Maximum Tune-up (dBm)	
	GSM850	PCS1900
GPRS (GMSK, 1Tx Slot)	33.00	29.00
GPRS (GMSK, 2Tx Slot)	31.00	27.00
GPRS (GMSK, 3Tx Slot)	29.00	25.00
GPRS (GMSK, 4Tx Slot)	27.00	23.00
EGPRS (8PSK, 1Tx Slot)	26.50	25.00
EGPRS (8PSK, 2Tx Slot)	26.50	23.50
EGPRS (8PSK, 3Tx Slot)	25.00	21.50
EGPRS (8PSK, 4Tx Slot)	22.50	19.50

WCDMA			
Mode	Maximum Tune-up (dBm)		
	WCDMA Band II	WCDMA Band IV	WCDMA Band V
RMC 12.2Kbps	21.50	22.00	22.50
HSDPA Subtest-1	21.00	21.00	22.00
HSDPA Subtest-2	20.50	20.50	21.50
HSDPA Subtest-3	20.50	20.50	21.50
HSDPA Subtest-4	20.50	20.50	21.50
HSUPA Subtest-1	21.00	21.00	21.50
HSUPA Subtest-2	20.00	19.50	21.50
HSUPA Subtest-3	20.00	19.50	21.50
HSUPA Subtest-4	21.00	19.50	21.50
HSUPA Subtest-5	21.00	21.00	22.00

LTE				
Fequency Band	Band-width(MHz)	Modulation	RB allocation	Maximum Tune-up (dBm)
LTE Band 2	1.4	QPSK	1	22.50
			3	21.00
			6	21.00
		16QAM	1	22.00
			3	20.50
			6	20.00
	3	QPSK	1	22.50
			8	21.00
			15	21.00
		16QAM	1	22.00
			8	20.50
			15	20.00
	5	QPSK	1	22.50
			12	21.00
			25	21.00
		16QAM	1	22.00
			12	20.50
			25	20.00
	10	QPSK	1	22.50
			25	21.00
			50	21.00
		16QAM	1	22.00
			25	20.50
			50	20.00
	15	QPSK	1	22.50
			38	21.00
			75	21.00
		16QAM	1	22.00
			38	20.50
			75	20.00
	20	QPSK	1	22.50
			50	21.00
			100	21.00
		16QAM	1	22.00
			50	20.00
			100	20.00

LTE				
Fequency Band	Band-width(MHz)	Modulation	RB allocation	Maximum Tune-up (dBm)
LTE Band 4	1.4	QPSK	1	23.50
			3	22.00
			6	22.00
		16QAM	1	23.50
			3	21.50
			6	21.00
	3	QPSK	1	23.50
			8	22.00
			15	22.00
		16QAM	1	23.00
			8	21.50
			15	21.00
	5	QPSK	1	23.50
			12	22.00
			25	22.00
		16QAM	1	23.50
			12	21.50
			25	21.00
	10	QPSK	1	23.50
			25	22.00
			50	22.00
		16QAM	1	23.50
			25	21.50
			50	21.00
	15	QPSK	1	23.50
			38	22.00
			75	22.00
		16QAM	1	23.50
			38	21.50
			75	21.00
	20	QPSK	1	23.50
			50	22.50
			100	22.00
		16QAM	1	23.00
			50	21.50
			100	21.00

LTE				
Fequency Band	Band-width(MHz)	Modulation	RB allocation	Maximum Tune-up (dBm)
LTE Band 5	1.4	QPSK	1	23.50
			3	22.50
			6	22.00
		16QAM	1	23.00
			3	22.00
			6	21.50
	3	QPSK	1	23.50
			8	22.00
			15	22.00
		16QAM	1	23.00
			8	21.50
			15	21.00
	5	QPSK	1	23.50
			12	22.00
			25	22.00
		16QAM	1	23.00
			12	21.50
			25	21.00
	10	QPSK	1	23.50
			25	22.00
			50	22.00
		16QAM	1	23.00
			25	21.00
			50	21.00

LTE				
Fequency Band	Band-width(MHz)	Modulation	RB allocation	Maximum Tune-up (dBm)
LTE Band 7	5	QPSK	1	22.00
			12	21.50
			25	21.00
		16QAM	1	22.00
			12	21.00
			25	20.50
	10	QPSK	1	22.50
			25	21.00
			50	20.50
		16QAM	1	22.00
			25	20.50
			50	20.00
	15	QPSK	1	22.50
			38	21.00
			75	20.50
		16QAM	1	22.00
			38	20.50
			75	20.00
	20	QPSK	1	22.50
			50	21.00
			100	20.50
		16QAM	1	22.00
			50	20.00
			100	20.00

LTE				
Fequency Band	Band-width(MHz)	Modulation	RB allocation	Maximum Tune-up (dBm)
LTE Band 12	1.4	QPSK	1	23.50
			3	22.50
			6	22.00
		16QAM	1	23.00
			3	22.50
			6	22.00
	3	QPSK	1	23.50
			8	22.00
			15	22.00
		16QAM	1	23.50
			8	21.50
			15	21.00
	5	QPSK	1	23.50
			12	22.00
			25	22.00
		16QAM	1	23.00
			12	21.50
			25	21.00
	10	QPSK	1	23.50
			25	22.00
			50	22.00
		16QAM	1	23.00
			25	21.00
			50	21.00

LTE				
Fequency Band	Band-width(MHz)	Modulation	RB allocation	Maximum Tune-up (dBm)
LTE Band 13	5	QPSK	1	24.00
			12	22.50
			25	22.00
		16QAM	1	23.50
			12	21.50
			25	21.50
	10	QPSK	1	24.00
			25	22.50
			50	22.00
		16QAM	1	23.00
			25	21.50
			50	21.00

LTE				
Fequency Band	Band-width(MHz)	Modulation	RB allocation	Maximum Tune-up (dBm)
LTE Band 17	5	QPSK	1	23.50
			12	22.00
			25	22.00
		16QAM	1	23.50
			12	21.50
			25	21.00
	10	QPSK	1	23.50
			25	22.50
			50	22.00
		16QAM	1	23.00
			25	21.50
			50	21.00

LTE				
Fequency Band	Band-width(MHz)	Modulation	RB allocation	Maximum Tune-up (dBm)
LTE Band 25	1.4	QPSK	1	22.00
			3	21.00
			6	20.50
		16QAM	1	22.00
			3	20.00
			6	20.00
	3	QPSK	1	22.00
			8	21.00
			15	20.50
		16QAM	1	22.00
			8	20.00
			15	20.00
	5	QPSK	1	22.00
			12	21.00
			25	20.50
		16QAM	1	22.00
			12	20.00
			25	20.00
	10	QPSK	1	22.00
			25	21.00
			50	20.50
		16QAM	1	22.00
			25	20.00
			50	20.00
	15	QPSK	1	22.00
			38	21.00
			75	20.50
		16QAM	1	22.00
			38	20.00
			75	20.00
	20	QPSK	1	22.00
			50	21.00
			100	20.50
		16QAM	1	21.50
			50	20.00
			100	19.50

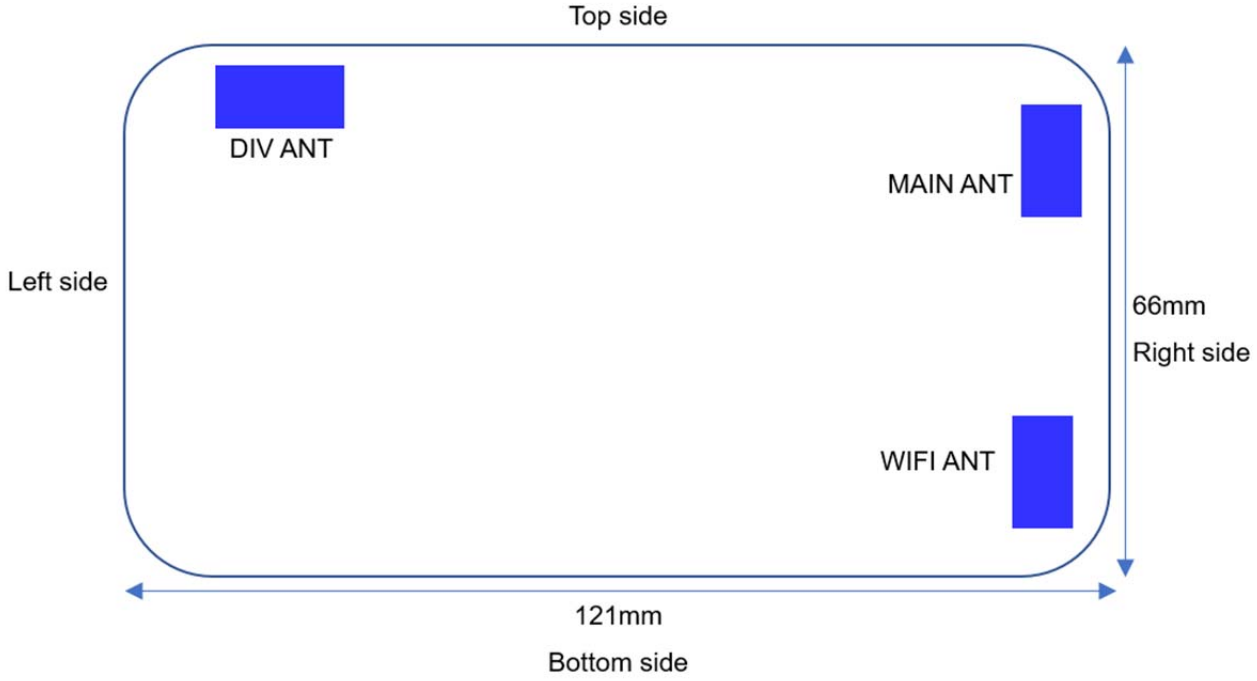
LTE					
Fequency Band	Band-width(MHz)	Modulation	RB allocation	Maximum Tune-up (dBm)	
				814~824MHz	824~849MHz
LTE Band 26	1.4	QPSK	1	23.00	23.50
			3	21.50	22.00
			6	21.50	21.50
		16QAM	1	23.00	23.00
			3	21.00	21.00
			6	20.50	21.00
	3	QPSK	1	23.00	23.50
			8	21.50	22.00
			15	21.50	22.00
		16QAM	1	22.50	23.00
			8	21.00	21.00
			15	20.50	21.00
	5	QPSK	1	23.00	23.50
			12	21.50	22.00
			25	21.50	21.50
		16QAM	1	23.00	23.00
			12	21.00	22.00
			25	21.00	21.00
	10	QPSK	1	23.00	23.50
			25	22.00	22.00
			50	21.50	21.50
		16QAM	1	23.00	23.00
			25	21.00	21.50
			50	21.00	21.00
	15	QPSK	1	/	23.50
			38	/	22.00
			75	/	22.00
		16QAM	1	/	23.00
			38	/	21.00
			75	/	21.00

LTE				
Fequency Band	Band-width(MHz)	Modulation	RB allocation	Maximum Tune-up (dBm)
LTE Band 41	5	QPSK	1	21.50
			12	21.00
			25	21.00
		16QAM	1	21.50
			12	21.00
			25	20.50
	10	QPSK	1	22.00
			25	20.50
			50	20.50
		16QAM	1	21.50
			25	20.00
			50	20.00
	15	QPSK	1	22.00
			38	20.50
			75	20.50
		16QAM	1	21.50
			38	20.00
			75	20.00
	20	QPSK	1	22.00
			50	21.00
			100	20.50
		16QAM	1	21.50
			50	20.00
			100	19.50

LTE				
Fequency Band	Band-width(MHz)	Modulation	RB allocation	Maximum Tune-up (dBm)
LTE Band 66	1.4	QPSK	1	22.50
			3	21.50
			6	21.00
		16QAM	1	22.50
			3	20.50
			6	20.50
	3	QPSK	1	22.50
			8	21.50
			15	21.00
		16QAM	1	22.50
			8	20.50
			15	20.50
	5	QPSK	1	22.50
			12	21.50
			25	21.00
		16QAM	1	22.50
			12	20.50
			25	20.50
	10	QPSK	1	22.50
			25	21.50
			50	21.00
		16QAM	1	22.50
			25	20.50
			50	20.50
	15	QPSK	1	22.50
			38	21.50
			75	21.00
		16QAM	1	22.50
			38	20.50
			75	20.50
	20	QPSK	1	23.00
			50	21.50
			100	21.00
		16QAM	1	22.00
			50	20.50
			100	20.00

WIFI 2.4G	
Mode	Maximum Tune-up (dBm) Burst Average Power
802.11b	14.00
802.11g	13.50
802.11n(HT20)	13.50
802.11n(HT40)	13.50

13. Antenna Location



LOGO VIEW

Distance of the Antenna to the EUT surface/edge(mm)						
Antenna	Front side	Back side	Top side	Bottom side	Left side	Right side
MAIN ANT	<25	<25	<25	>25	>25	<25
WIFI ANT	<25	<25	>25	<25	>25	<25
SAR Test for MAIN ANT	Yes	Yes	Yes	No	No	Yes
SAR Test for WIFI ANT	Yes	Yes	No	Yes	Yes	Yes

General note:
*Referring to KDB941225 D06 , when the overall device length and width are >9cm*5cm, a test separation distance of 10 mm is required for hotspot mode SAR measurements; Hotspot mode SAR is measured for all edges and surfaces of the device with a transmitting antenna located within 25 mm from that surface or edge*

14. SAR Measurement Results

Body SAR

GSM850										
Mode	Test Position (side)	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (W/kg)	Report SAR(1g) (W/kg)	Test Plot
		CH	MHz							
GPRS (4Tx slot)	Front	128	824.2	30.79	31.00	1.05	0.09	0.823	0.864	-
		190	836.6	30.88	31.00	1.03	-0.04	**0.877**	**0.903**	B1
		251	848.8	30.81	31.00	1.04	0.12	0.811	0.843	-
	Back	128	824.2	30.79	31.00	1.05	-	-	-	-
		190	836.6	30.88	31.00	1.03	0.14	0.640	0.659	-
		251	848.8	30.81	31.00	1.04	-	-	-	-
	Right	190	836.6	30.88	31.00	1.03	-0.02	0.476	0.490	-
	Top	190	836.6	30.88	31.00	1.03	-0.03	0.550	0.567	-

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

GSM1900										
Mode	Test Position (side)	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (W/kg)	Report SAR(1g) (W/kg)	Test Plot
		CH	MHz							
GPRS (4Tx slot)	Front	512	1850.2	26.17	27.00	1.21	0.11	0.874	1.058	-
		661	1880.0	26.83	27.00	1.04	0.00	**1.030**	**1.071**	B2
		810	1909.8	26.64	27.00	1.09	-0.08	0.966	1.053	-
	Back	512	1850.2	26.17	27.00	1.21	-	-	-	-
		661	1880.0	26.83	27.00	1.04	0.01	0.752	0.782	-
		810	1909.8	26.64	27.00	1.09	-	-	-	-
	Right	661	1880.0	26.83	27.00	1.04	0.05	0.559	0.581	-
	Top	661	1880.0	26.83	27.00	1.04	0.06	0.646	0.672	-

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

WCDMA Band II										
Mode	Test Position (side)	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (W/kg)	Report SAR(1g) (W/kg)	Test Plot
		CH	MHz							
RMC 12.2Kbps	Front	9262	1852.4	21.38	21.50	1.03	0.07	1.020	1.051	-
		9400	1880.0	21.46	21.50	1.01	-0.09	**1.110**	**1.121**	B3
		9538	1907.6	21.43	21.50	1.02	0.06	0.994	1.014	-
	Back	9262	1852.4	21.38	21.50	1.03	0.11	0.752	0.775	-
		9400	1880.0	21.46	21.50	1.01	-0.10	0.810	0.818	-
		9538	1907.6	21.43	21.50	1.02	0.04	0.771	0.786	-
	Right	9400	1880.0	21.46	21.50	1.01	-0.05	0.603	0.609	-
	Top	9400	1880.0	21.46	21.50	1.01	-0.08	0.696	0.703	-

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

WCDMA Band IV										
Mode	Test Position (side)	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (W/kg)	Report SAR(1g) (W/kg)	Test Plot
		CH	MHz							
RMC 12.2Kbps	Front	1312	1712.4	21.64	22.00	1.09	-0.02	0.983	1.071	-
		1413	1732.4	21.81	22.00	1.04	0.06	**1.170**	**1.217**	B4
		1513	1752.6	21.77	22.00	1.05	0.13	1.010	1.061	-
	Back	1312	1712.4	21.64	22.00	1.09	0.05	0.816	0.889	-
		1413	1732.4	21.81	22.00	1.04	0.07	0.854	0.888	-
		1513	1752.6	21.77	22.00	1.05	0.11	0.833	0.875	-
	Right	1413	1732.4	21.81	22.00	1.04	0.03	0.635	0.660	-
	Top	1413	1732.4	21.81	22.00	1.04	0.05	0.734	0.763	-

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

WCDMA Band V										
Mode	Test Position (side)	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (W/kg)	Report SAR(1g) (W/kg)	Test Plot
		CH	MHz							
RMC 12.2Kbps	Front	4132	826.4	22.43	22.50	1.02	0.06	0.921	0.939	-
		4183	836.6	22.43	22.50	1.02	-0.08	**0.932**	**0.951**	B5
		4233	846.6	22.38	22.50	1.03	0.03	0.915	0.942	-
	Back	4132	826.4	22.43	22.50	1.02	-	-	-	-
		4183	836.6	22.43	22.50	1.02	-0.09	0.680	0.694	-
		4233	846.6	22.38	22.50	1.03	-	-	-	-
	Right	4183	836.6	22.43	22.50	1.02	-0.04	0.506	0.516	-
	Top	4183	836.6	22.43	22.50	1.02	-0.07	0.584	0.596	-

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

LTE Band 2										
Mode	Test Position (side)	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (W/kg)	Report SAR(1g) (W/kg)	Test Plot
		CH	MHz							
20M_1RB	Front	18700	1860.0	22.01	22.50	1.12	-	-	-	-
		18900	1880.0	22.26	22.50	1.06	0.10	**0.773**	**0.819**	B6
		19100	1900.0	22.17	22.50	1.08	-	-	-	-
	Back	18700	1860.0	22.01	22.50	1.12	-	-	-	-
		18900	1880.0	22.26	22.50	1.06	0.11	0.564	0.598	-
		19100	1900.0	22.17	22.50	1.08	-	-	-	-
	Right	18900	1880.0	22.26	22.50	1.06	0.05	0.420	0.445	-
	Top	18900	1880.0	22.26	22.50	1.06	0.09	0.485	0.514	-
20M_50RB	Front	18700	1860.0	20.65	21.00	1.08	-	-	-	-
		18900	1880.0	20.89	21.00	1.03	0.07	0.608	0.626	-
		19100	1900.0	20.51	21.00	1.12	-	-	-	-
	Back	18700	1860.0	20.65	21.00	1.08	-	-	-	-
		18900	1880.0	20.89	21.00	1.03	0.08	0.444	0.457	-
		19100	1900.0	20.51	21.00	1.12	-	-	-	-
	Right	18900	1880.0	20.89	21.00	1.03	0.04	0.330	0.340	-
	Top	18900	1880.0	20.89	21.00	1.03	0.06	0.381	0.392	-

Note:

1. *If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).*
2. *Per KDB 941225 D05v02r03, for QPSK with 100% RB allocation, SAR is not required when the highest maximumoutput power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations andthe highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highestoutput power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also betested.*

LTE Band 4										
Mode	Test Position (side)	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (W/kg)	Report SAR(1g) (W/kg)	Test Plot
		CH	MHz							
20M_1RB	Front	20050	1720.0	23.15	23.50	1.08	-0.09	0.892	0.963	-
		20175	1732.5	23.47	23.50	1.01	0.18	**0.980**	**0.990**	B7
		20300	1745.0	23.21	23.50	1.07	-0.06	0.902	0.965	-
	Back	20050	1720.0	23.15	23.50	1.08	-	-	-	-
		20175	1732.5	23.47	23.50	1.01	0.20	0.715	0.722	
		20300	1745.0	23.21	23.50	1.07	-	-	-	-
	Right	20175	1732.5	23.47	23.50	1.01	0.10	0.532	0.537	-
	Top	20175	1732.5	23.47	23.50	1.01	0.16	0.614	0.620	-
20M_50RB	Front	20050	1720.0	21.72	22.50	1.20	0.11	0.685	0.822	-
		20175	1732.5	22.02	22.50	1.12	0.12	0.771	0.864	-
		20300	1745.0	21.47	22.50	1.27	0.09	0.663	0.842	-
	Back	20050	1720.0	21.72	22.50	1.20	-	-	-	-
		20175	1732.5	22.02	22.50	1.12	0.14	0.563	0.631	-
		20300	1745.0	21.47	22.50	1.27	-	-	-	-
	Right	20300	1745.0	23.47	23.50	1.01	0.07	0.419	0.423	-
	Top	20300	1745.0	23.47	23.50	1.01	0.11	0.483	0.488	-

Note:

1. *If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).*
2. *Per KDB 941225 D05v02r03, for QPSK with 100% RB allocation, SAR is not required when the highest maximumoutput power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations andthe highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highestoutput power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also betested.*

LTE Band 5										
Mode	Test Position (side)	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (W/kg)	Report SAR(1g) (W/kg)	Test Plot
		CH	MHz							
10M_1RB	Front	20450	829.0	23.12	23.50	1.09	-	-	-	-
		20525	836.5	23.33	23.50	1.04	-0.05	**0.691**	**0.719**	B8
		20600	844.0	23.25	23.50	1.06	-	-	-	-
	Back	20450	829.0	23.12	23.50	1.09	-	-	-	-
		20525	836.5	23.33	23.50	1.04	-0.06	0.504	0.524	-
		20600	844.0	23.25	23.50	1.06	-	-	-	-
	Right	20525	836.5	23.33	23.50	1.04	-0.03	0.375	0.390	-
	Top	20525	836.5	23.33	23.50	1.04	-0.04	0.433	0.450	-
10M_25RB	Front	20450	829.0	21.69	22.00	1.07	-	-	-	-
		20525	836.5	21.89	22.00	1.03	-0.03	0.543	0.559	-
		20600	844.0	21.51	22.00	1.12	-	-	-	-
	Back	20450	829.0	21.69	22.00	1.07	-	-	-	-
		20525	836.5	21.89	22.00	1.03	0.04	0.397	0.409	-
		20600	844.0	21.51	22.00	1.12	-	-	-	-
	Right	20525	836.5	21.89	22.00	1.03	-0.02	0.295	0.304	-
	Top	20525	836.5	21.89	22.00	1.03	-0.03	0.341	0.351	-

Note:

1. *If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).*
2. *Per KDB 941225 D05v02r03, for QPSK with 100% RB allocation, SAR is not required when the highest maximumoutput power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations andthe highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highestoutput power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also betested.*

LTE Band 7										
Mode	Test Position (side)	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (W/kg)	Report SAR(1g) (W/kg)	Test Plot
		CH	MHz							
20M_1RB	Front	20850	2510	21.87	22.50	1.16	-	-	-	-
		21100	2535	22.21	22.50	1.07	0.19	**0.742**	**0.794**	B9
		21350	2560	22.09	22.50	1.10	-	-	-	-
	Back	20850	2510	21.87	22.50	1.16	-	-	-	-
		21100	2535	22.21	22.50	1.07	0.21	0.542	0.580	-
		21350	2560	22.09	22.50	1.10	-	-	-	-
	Right	21100	2535	22.21	22.50	1.07	0.10	0.403	0.431	-
	Top	21100	2535	22.21	22.50	1.07	0.17	0.465	0.498	-
20M_50RB	Front	20850	2510	20.52	21.00	1.12	-	-	-	-
		21100	2535	20.84	21.00	1.04	0.13	0.584	0.607	-
		21350	2560	20.43	21.00	1.14	-	-	-	-
	Back	20850	2510	20.52	21.00	1.12	-	-	-	-
		21100	2535	20.84	21.00	1.04	0.15	0.426	0.443	-
		21350	2560	20.43	21.00	1.14	-	-	-	-
	Right	21100	2535	20.84	21.00	1.04	0.07	0.317	0.330	-
	Top	21100	2535	20.84	21.00	1.04	0.11	0.366	0.381	-

Note:

1. *If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ⩽ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).*
2. *Per KDB 941225 D05v02r03, for QPSK with 100% RB allocation, SAR is not required when the highest maximumoutput power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations andthe highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highestoutput power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also betested.*

LTE Band 12										
Mode	Test Position (side)	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (W/kg)	Report SAR(1g) (W/kg)	Test Plot
		CH	MHz							
10M_1RB	Front	20360	704.0	23.13	23.50	1.09	-	-	-	-
		23095	707.5	23.41	23.50	1.02	0.07	**0.527**	**0.538**	B10
		23130	711.0	23.05	23.50	1.11	-	-	-	-
	Back	20360	704.0	23.13	23.50	1.09	-	-	-	-
		23095	707.5	23.41	23.50	1.02	0.08	0.385	0.393	-
		23130	711.0	23.05	23.50	1.11	-	-	-	-
	Right	23095	707.5	23.41	23.50	1.02	0.04	0.286	0.292	-
	Top	23095	707.5	23.41	23.50	1.02	0.06	0.330	0.337	-
10M_25RB	Front	20360	704.0	21.70	22.00	1.07	-	-	-	-
		23095	707.5	21.97	22.00	1.01	0.05	0.414	0.418	-
		23130	711.0	21.32	22.00	1.17	-	-	-	-
	Back	20360	704.0	21.70	22.00	1.07	-	-	-	-
		23095	707.5	21.97	22.00	1.01	-0.05	0.303	0.306	-
		23130	711.0	21.32	22.00	1.17	-	-	-	-
	Right	23130	711.0	21.97	22.00	1.01	0.03	0.225	0.227	-
	Top	23130	711.0	21.97	22.00	1.01	0.04	0.260	0.263	-

Note:

1. *If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).*
2. *Per KDB 941225 D05v02r03, for QPSK with 100% RB allocation, SAR is not required when the highest maximumoutput power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations andthe highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highestoutput power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also betested.*

LTE Band 13										
Mode	Test Position (side)	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (W/kg)	Report SAR(1g) (W/kg)	Test Plot
		CH	MHz							
10M_1RB	Front	-	-	-	-	-	-	-	-	-
		23230	782	23.62	24.00	1.09	0.02	**0.753**	**0.821**	B11
		-	-	-	-	-	-	-	-	-
	Back	-	-	-	-	-	-	-	-	-
		23230	782	23.62	24.00	1.09	0.05	0.550	0.600	-
		-	-	-	-	-	-	-	-	-
	Right	23230	782	23.62	24.00	1.09	-0.01	0.409	0.446	-
	Top	23230	782	23.62	24.00	1.09	0.07	0.472	0.514	-
10M_25RB	Front	-	-	-	-	-	-	-	-	-
		23230	782	22.16	22.50	1.08	0.01	0.592	0.639	-
		-	-	-	-	-	-	-	-	-
	Back	-	-	-	-	-	-	-	-	-
		23230	782	22.16	22.50	1.08	-0.02	0.432	0.467	-
		-	-	-	-	-	-	-	-	-
	Right	23230	782	22.16	22.50	1.08	0.11	0.322	0.348	-
	Top	23230	782	22.16	22.50	1.08	0.20	0.371	0.401	-

Note:

1. *Per KDB 941225 D05v02r03, for QPSK with 100% RB allocation, SAR is not required when the highest maximumoutput power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations andthe highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highestoutput power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also betested.*

LTE Band 17										
Mode	Test Position (side)	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (W/kg)	Report SAR(1g) (W/kg)	Test Plot
		CH	MHz							
10M_1RB	Front	23780	709.0	23.22	23.50	1.07	-	-	-	-
		23790	710.0	23.49	23.50	1.00	0.12	**0.507**	**0.507**	B12
		23800	711.0	23.19	23.50	1.07	-	-	-	-
	Back	23780	709.0	23.22	23.50	1.07	-	-	-	-
		23790	710.0	23.49	23.50	1.00	0.13	0.370	0.370	-
		23800	711.0	23.19	23.50	1.07	-	-	-	-
	Right	23790	710.0	23.49	23.50	1.00	0.07	0.275	0.275	-
	Top	23790	710.0	23.49	23.50	1.00	0.10	0.318	0.318	-
10M_25RB	Front	23780	709.0	21.78	22.50	1.18	-	-	-	-
		23790	710.0	22.04	22.50	1.11	0.08	0.399	0.443	-
		23800	711.0	21.45	22.50	1.27	-	-	-	-
	Back	23780	709.0	21.78	22.50	1.18	-	-	-	-
		23790	710.0	22.04	22.50	1.11	0.09	0.291	0.323	-
		23800	711.0	21.45	22.50	1.27	-	-	-	-
	Right	23780	709.0	22.04	22.50	1.11	0.04	0.217	0.241	-
	Top	23780	709.0	22.04	22.50	1.11	0.07	0.250	0.278	-

Note:

1. *If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).*
2. *Per KDB 941225 D05v02r03, for QPSK with 100% RB allocation, SAR is not required when the highest maximumoutput power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations andthe highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highestoutput power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also betested.*

LTE Band 25										
Mode	Test Position (side)	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (W/kg)	Report SAR(1g) (W/kg)	Test Plot
		CH	MHz							
20M_1RB	Front	26140	1860.0	21.76	22.00	1.06	0.09	0.812	0.861	-
		26365	1882.5	21.97	22.00	1.01	-0.06	**0.886**	**0.895**	B13
		26590	1905.0	21.83	22.00	1.04	0.10	0.827	0.860	-
	Back	26140	1860.0	21.76	22.00	1.06	-	-	-	-
		26365	1882.5	21.97	22.00	1.01	-0.07	0.647	0.653	-
		26590	1905.0	21.83	22.00	1.04	-	-	-	-
	Right	26365	1882.5	21.97	22.00	1.01	0.03	0.481	0.486	-
	Top	26365	1882.5	21.97	22.00	1.01	-0.05	0.556	0.562	-
20M_50RB	Front	26140	1860.0	20.41	21.00	1.15	-	-	-	-
		26365	1882.5	20.61	21.00	1.09	0.01	0.697	0.760	-
		26590	1905.0	20.19	21.00	1.21	-	-	-	-
	Back	26140	1860.0	20.41	21.00	1.15	-	-	-	-
		26365	1882.5	20.61	21.00	1.09	-0.05	0.509	0.555	-
		26590	1905.0	20.19	21.00	1.21	-	-	-	-
	Right	26140	1860.0	20.61	21.00	1.09	0.02	0.378	0.412	-
	Top	26140	1860.0	20.61	21.00	1.09	-0.04	0.437	0.476	-

Note:

1. *If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).*
2. *Per KDB 941225 D05v02r03, for QPSK with 100% RB allocation, SAR is not required when the highest maximumoutput power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations andthe highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highestoutput power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also betested.*

LTE Band 26										
Mode	Test Position (side)	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (W/kg)	Report SAR(1g) (W/kg)	Test Plot
		CH	MHz							
15M_1RB	Front	18700	1860.0	23.02	23.50	1.12	-0.11	0.997	1.117	-
		18900	1880.0	23.23	23.50	1.06	0.06	**1.160**	**1.230**	B14
		19100	1900.0	22.97	23.50	1.13	0.07	0.848	0.958	-
	Back	18700	1860.0	23.02	23.50	1.12	-0.05	0.803	0.899	-
		18900	1880.0	23.23	23.50	1.06	0.07	0.847	0.898	-
		19100	1900.0	22.97	23.50	1.13	0.04	0.611	0.690	-
	Right	18900	1880.0	23.23	23.50	1.06	0.03	0.630	0.668	-
	Top	18900	1880.0	23.23	23.50	1.06	0.05	0.727	0.771	-
15M_38RB	Front	18700	1860.0	21.60	22.00	1.10	-0.02	0.815	0.897	-
		18900	1880.0	21.80	22.00	1.05	0.04	0.912	0.958	-
		19100	1900.0	21.25	22.00	1.19	0.17	0.791	0.941	-
	Back	18700	1860.0	21.60	22.00	1.10	-	-	-	-
		18900	1880.0	21.80	22.00	1.05	0.05	0.666	0.699	-
		19100	1900.0	21.25	22.00	1.19	-	-	-	-
	Right	18900	1880.0	21.80	22.00	1.05	0.02	0.495	0.520	-
	Top	18900	1880.0	21.80	22.00	1.05	0.04	0.572	0.601	-

Note:

1. *If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).*
2. *Per KDB 941225 D05v02r03, for QPSK with 100% RB allocation, SAR is not required when the highest maximumoutput power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations andthe highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highestoutput power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also betested.*

LTE Band 41										
Mode	Test Position (side)	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (W/kg)	Report SAR(1g) (W/kg)	Test Plot
		CH	MHz							
20M_1RB	Front	39750	2506.0	21.73	22.00	1.06	-	-	-	-
		40620	2593.0	21.88	22.00	1.03	0.12	**0.405**	**0.417**	B15
		41490	2680.0	21.54	22.00	1.11	-	-	-	-
	Back	39750	2506.0	21.73	22.00	1.06	-	-	-	-
		40620	2593.0	21.88	22.00	1.03	0.13	0.296	0.305	-
		41490	2680.0	21.54	22.00	1.11	-	-	-	-
	Right	40620	2593.0	21.88	22.00	1.03	0.07	0.220	0.227	-
	Top	40620	2593.0	21.88	22.00	1.03	0.10	0.254	0.262	-
20M_50RB	Front	39750	2506.0	20.39	21.00	1.15	-	-	-	-
		40620	2593.0	20.53	21.00	1.11	0.08	0.319	0.354	-
		41490	2680.0	19.92	21.00	1.28	-	-	-	-
	Back	39750	2506.0	20.39	21.00	1.15	-	-	-	-
		40620	2593.0	20.53	21.00	1.11	0.09	0.233	0.259	-
		41490	2680.0	19.92	21.00	1.28	-	-	-	-
	Right	40620	2593.0	20.53	21.00	1.11	0.04	0.173	0.192	-
	Top	40620	2593.0	20.53	21.00	1.11	0.07	0.200	0.222	-

Note:

1. *If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).*
2. *Per KDB 941225 D05v02r03, for QPSK with 100% RB allocation, SAR is not required when the highest maximumoutput power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations andthe highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highestoutput power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also betested.*

LTE Band 66										
Mode	Test Position (side)	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (W/kg)	Report SAR(1g) (W/kg)	Test Plot
		CH	MHz							
20M_1RB	Front	132072	1720.0	22.41	23.00	1.15	-0.06	0.841	0.967	-
		132322	1745.0	22.55	23.00	1.11	0.17	**0.991**	**1.100**	B16
		132572	1770.0	22.43	23.00	1.14	0.04	0.916	1.044	-
	Back	132072	1720.0	22.41	23.00	1.15	-0.07	0.680	0.782	-
		132322	1745.0	22.55	23.00	1.11	0.19	0.723	0.803	-
		132572	1770.0	22.43	23.00	1.14	0.14	0.701	0.799	-
	Right	132322	1745.0	22.55	23.00	1.11	0.09	0.538	0.597	-
	Top	132322	1745.0	22.55	23.00	1.11	-0.15	0.621	0.689	-
20M_50RB	Front	132072	1720.0	21.02	21.50	1.12	-0.09	0.725	0.812	-
		132322	1745.0	21.16	21.50	1.08	0.12	0.779	0.841	-
		132572	1770.0	20.75	21.50	1.19	0.15	0.709	0.844	-
	Back	132072	1720.0	21.02	21.50	1.12	-	-	-	-
		132322	1745.0	21.16	21.50	1.08	0.13	0.569	0.615	-
		132572	1770.0	20.75	21.50	1.19	-	-	-	-
	Right	132322	1745.0	21.16	21.50	1.08	-0.06	0.423	0.457	-
	Top	132322	1745.0	21.16	21.50	1.08	0.10	0.489	0.528	-

Note:

1. *If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).*
2. *Per KDB 941225 D05v02r03, for QPSK with 100% RB allocation, SAR is not required when the highest maximumoutput power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations andthe highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highestoutput power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also betested.*

WIFI 2.4G										
Mode	Test Position (side)	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (W/kg)	Report SAR(1g) (W/kg)	Test Plot
		CH	MHz							
802.11b 1Mbps	Front	1	2412	13.26	14.00	1.19	-	-	-	-
		6	2437	13.89	14.00	1.03	-0.16	**0.149**	**0.153**	B17
		11	2462	13.52	14.00	1.12	-	-	-	-
	Back	1	2412	13.26	14.00	1.19	-	-	-	-
		6	2437	13.89	14.00	1.03	-0.18	0.109	0.112	-
		11	2462	13.52	14.00	1.12	-	-	-	-
	Right	6	2437	13.89	14.00	1.03	-0.09	0.081	0.083	-
	Bottom	6	2437	13.89	14.00	1.03	-0.14	0.093	0.096	-

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

SAR Test Data Plots

Test band:	GSM850	Test Position:	Front side	Test Plot:	B1

Date:2020-11-16
Communication System: UID 0, Generic GPRS 4TS (0); Frequency: 836.6 MHz;Duty Cycle: 1:4
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.967 S/m; ε_r = 55.399; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(10.33, 10.33, 10.33); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

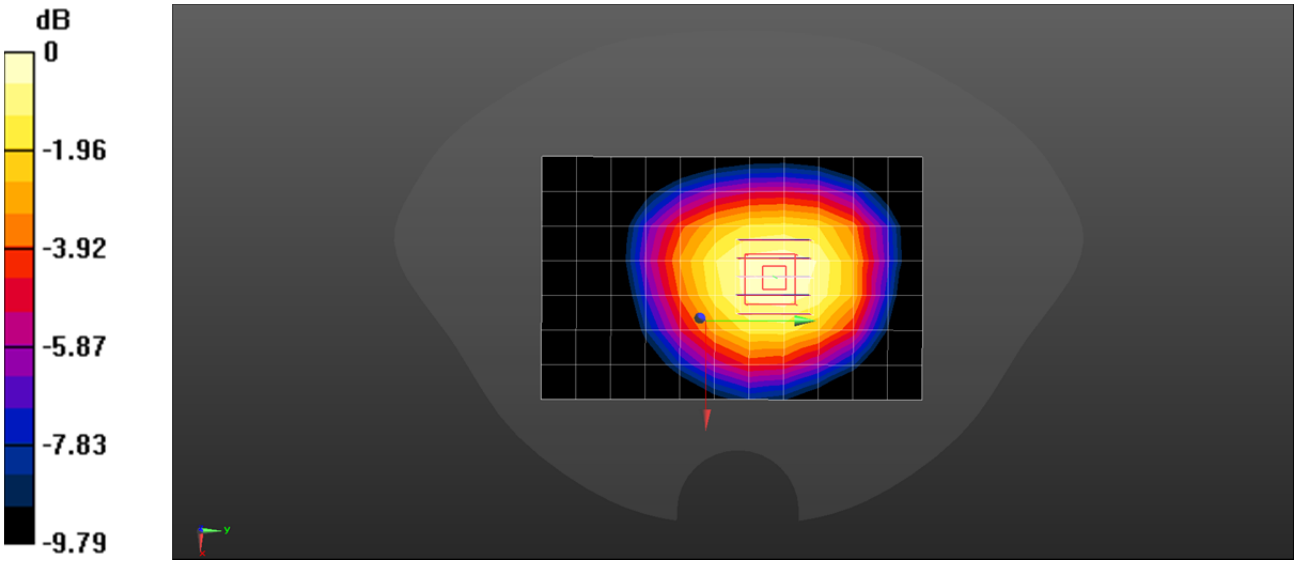
Body/Front side/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.889 W/kg

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

Reference Value = 29.47 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.877 W/kg; SAR(10 g) = 0.655 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.924 W/kg



Test band:	GSM1900	Test Position:	Front side	Test Plot:	B2

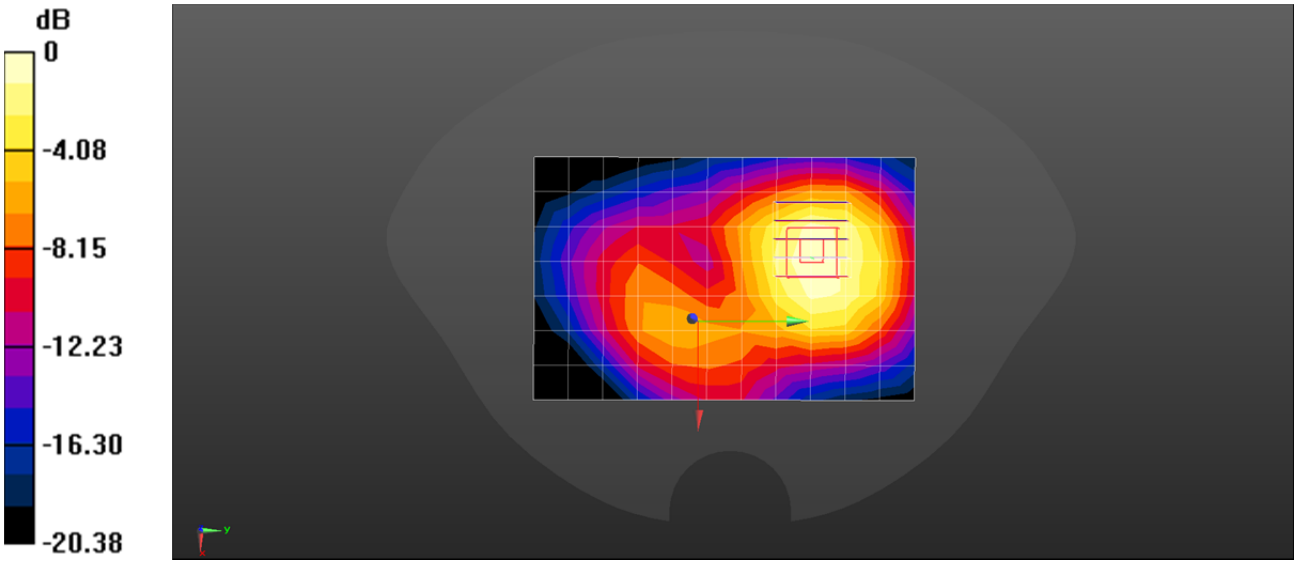
Date:2020-11-18
Communication System: UID 0, Generic GPRS 4TS (0); Frequency: 1880 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1880 MHz; σ = 1.539 S/m; ε_r = 53.741; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(8.09, 8.09, 8.09); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/Front side/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.11 W/kg

Body/Front side/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.378 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.92 W/kg
SAR(1 g) = 1.03 W/kg; SAR(10 g) = 0.571 W/kg



Test band:	WCDMA Band II	Test Position:	Front side	Test Plot:	B3

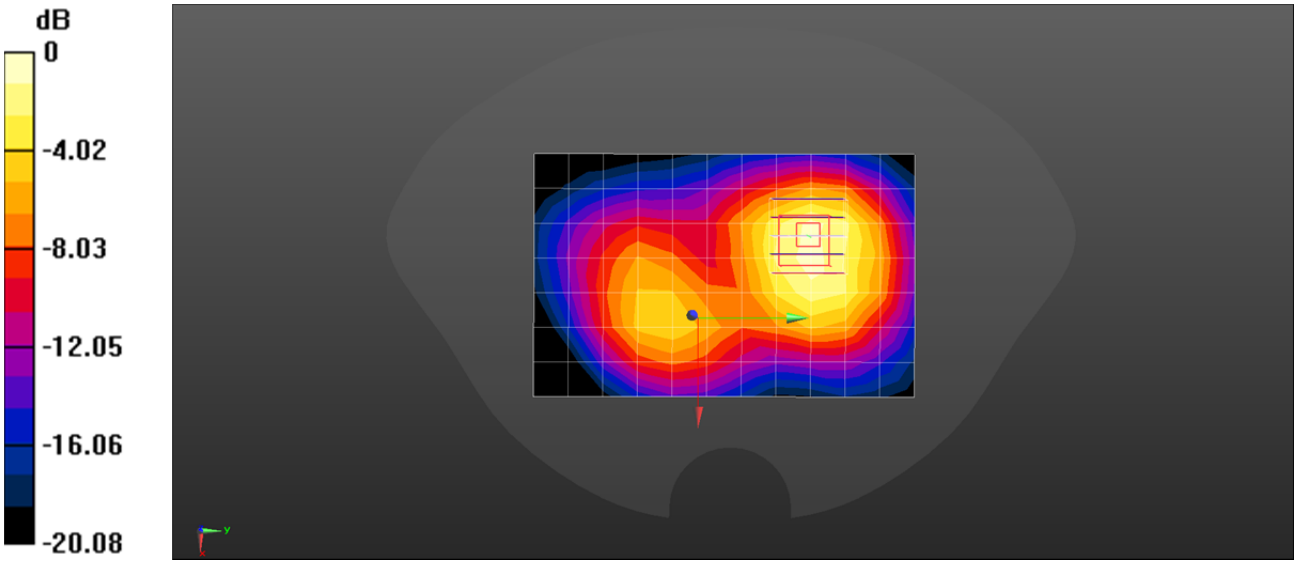
Date:2020-11-18
Communication System: UID 0, Generic UMTS (WCDMA) (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.539 S/m; ε_r = 53.741; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(8.09, 8.09, 8.09); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/Front side/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.18 W/kg

Body/Front side/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.43 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 2.36 W/kg
SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.642 W/kg
Maximum value of SAR (measured) = 1.33 W/kg



Test band:	WCDMA Band IV	Test Position:	Front side	Test Plot:	B4

Date:2020-11-17
Communication System: UID 0, Generic UMTS (WCDMA) (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.6 MHz; σ = 1.43 S/m; ε_r = 53.891; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(8.42, 8.42, 8.42); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

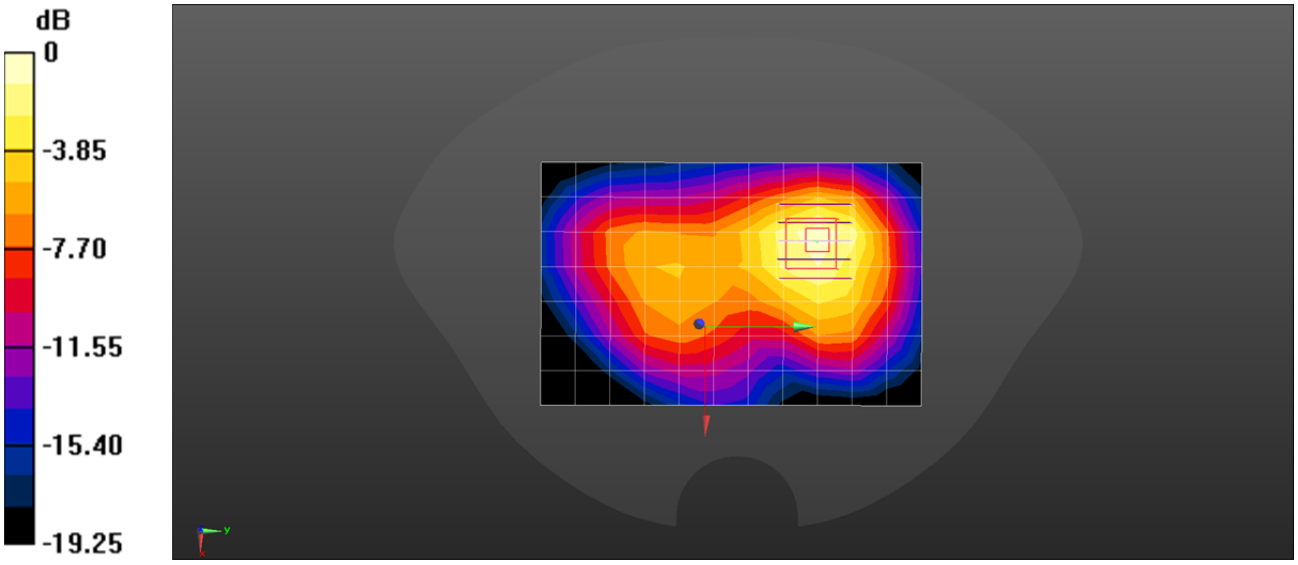
Body/Front side/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.25 W/kg

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

Reference Value = 14.68 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 2.19 W/kg
SAR(1 g) = 1.17 W/kg; SAR(10 g) = 0.631 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.29 W/kg



Test band:	WCDMA Band V	Test Position:	Front side	Test Plot:	B5

Date:2020-11-16
Communication System: UID 0, Generic UMTS (WCDMA) (0); Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.967 S/m; ε_r = 55.399; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(10.33, 10.33, 10.33); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

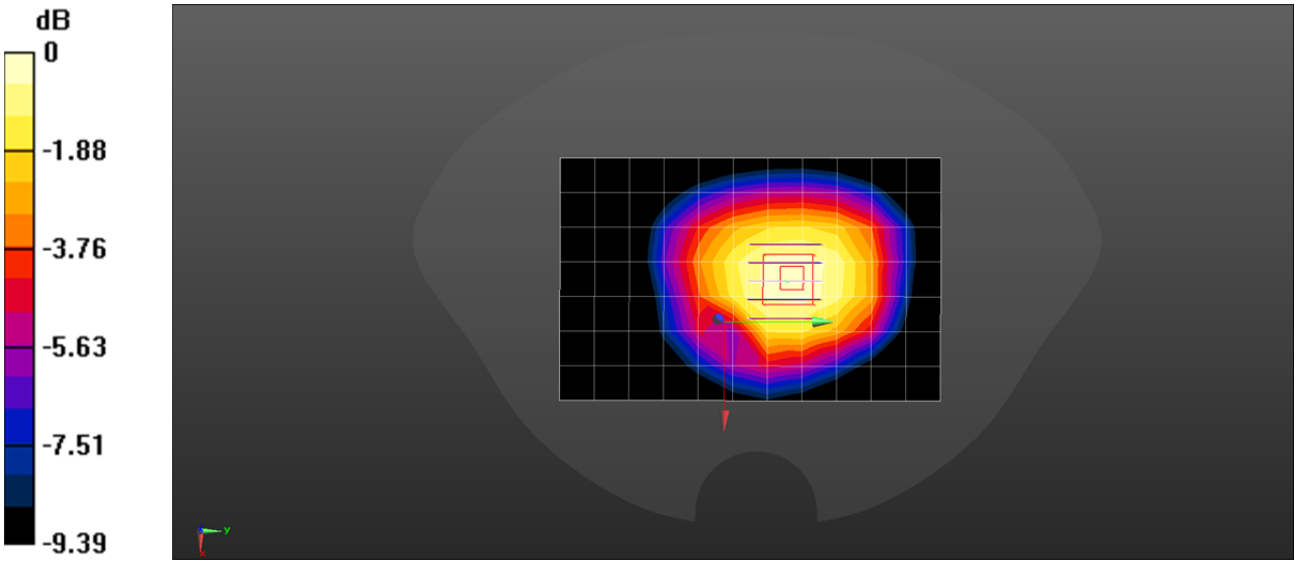
Body/Front side/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.930 W/kg

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

Reference Value = 30.51 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.19 W/kg
SAR(1 g) = 0.932 W/kg; SAR(10 g) = 0.689 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.980 W/kg



Test band:	LTE Band 2	Test Position:	Front side	Test Plot:	B6

Date:2020-11-18
Communication System: UID 0, Generic LTE (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.539 S/m; ε_r = 53.741; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(8.09, 8.09, 8.09); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

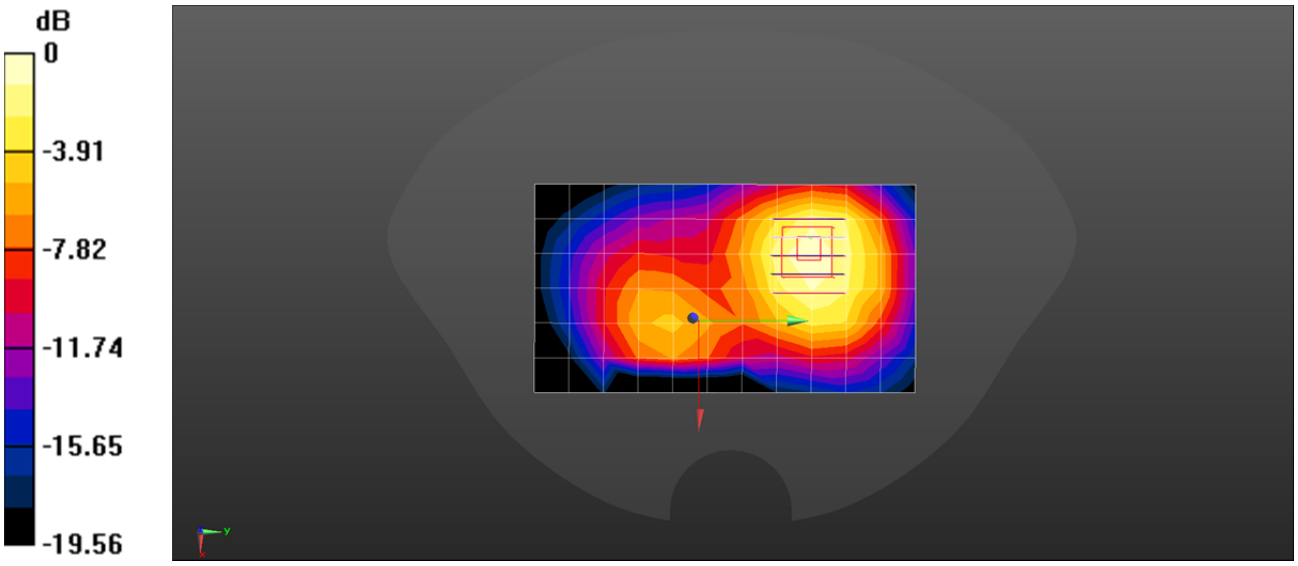
Body/Front side/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Info: Extrapolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.841 W/kg

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

Reference Value = 9.305 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 0.773 W/kg; SAR(10 g) = 0.420 W/kg

Info: Extrapolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.829 W/kg



Test band:	LTE Band 4	Test Position:	Front side	Test Plot:	B7

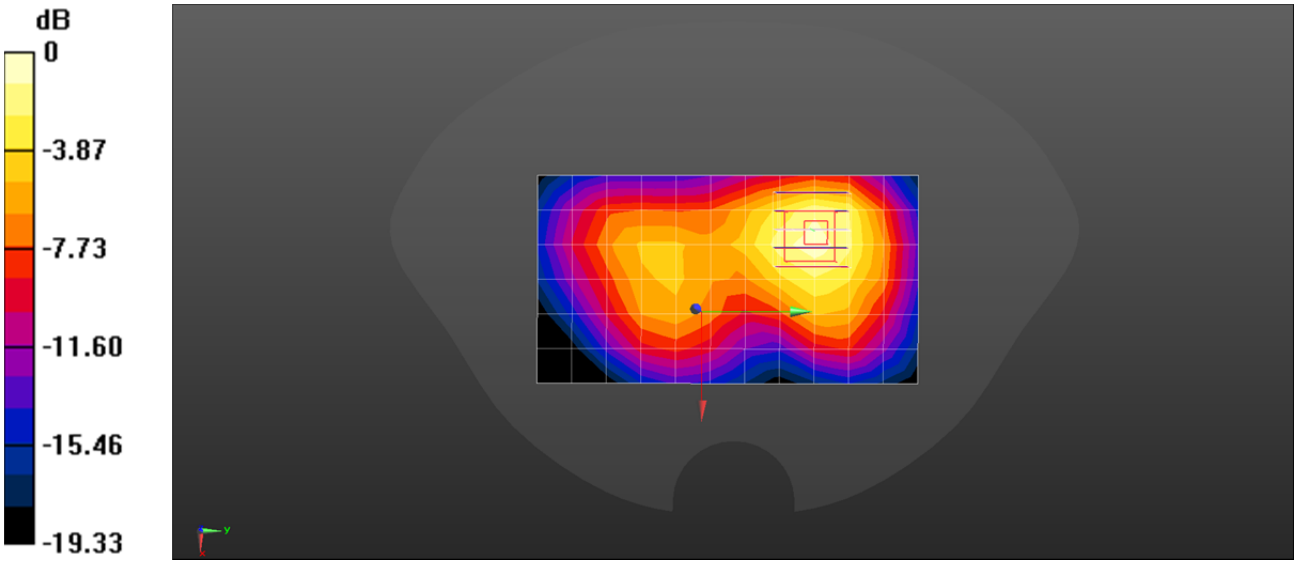
Date:2020-11-17
Communication System: UID 0, Generic LTE (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.43 S/m; ε_r = 53.892; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(8.42, 8.42, 8.42); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/Front side/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.994 W/kg

Body/Front side/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.03 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 1.78 W/kg
SAR(1 g) = 0.980 W/kg; SAR(10 g) = 0.537 W/kg
Maximum value of SAR (measured) = 1.08 W/kg



Test band:	LTE Band 5	Test Position:	Front side	Test Plot:	B8

Date:2020-11-16
Communication System: UID 0, Generic LTE (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.967 S/m; ε_r = 55.399; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(10.33, 10.33, 10.33); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

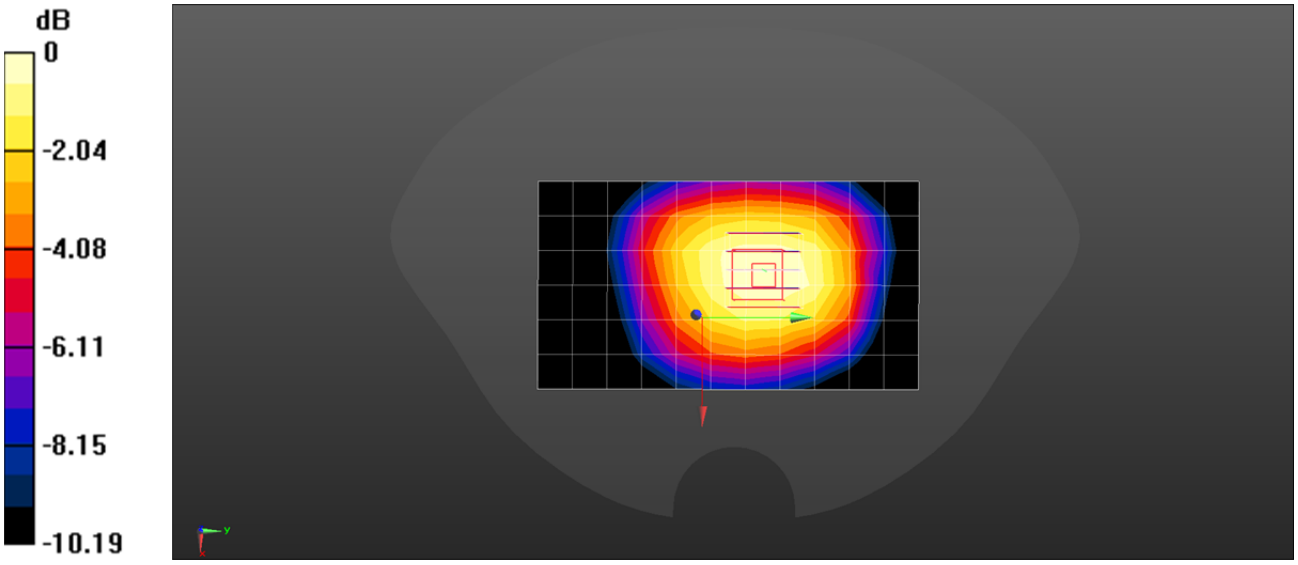
Body/Front side/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.705 W/kg

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

Reference Value = 27.01 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.873 W/kg
SAR(1 g) = 0.691 W/kg; SAR(10 g) = 0.519 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.725 W/kg



Test band:	LTE Band 7	Test Position:	Front side	Test Plot:	B9

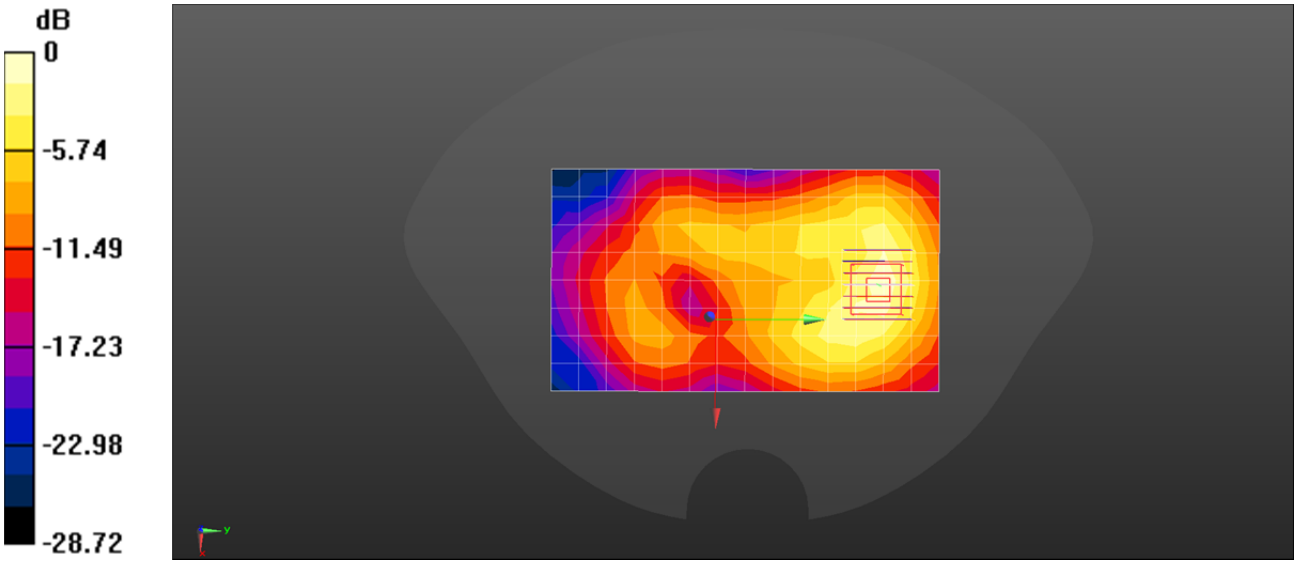
Date:2020-11-20
Communication System: UID 0, Generic LTE (0); Frequency: 2535 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2535 MHz; σ = 2.082 S/m; ε_r = 52.884; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(8, 8, 8); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/Front side/Area Scan (9x15x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.791 W/kg

Body/Front side/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.673 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 1.67 W/kg
SAR(1 g) = 0.742 W/kg; SAR(10 g) = 0.340 W/kg
Maximum value of SAR (measured) = 0.827 W/kg



Test band:	LTE Band 12	Test Position:	Back side	Test Plot:	B10

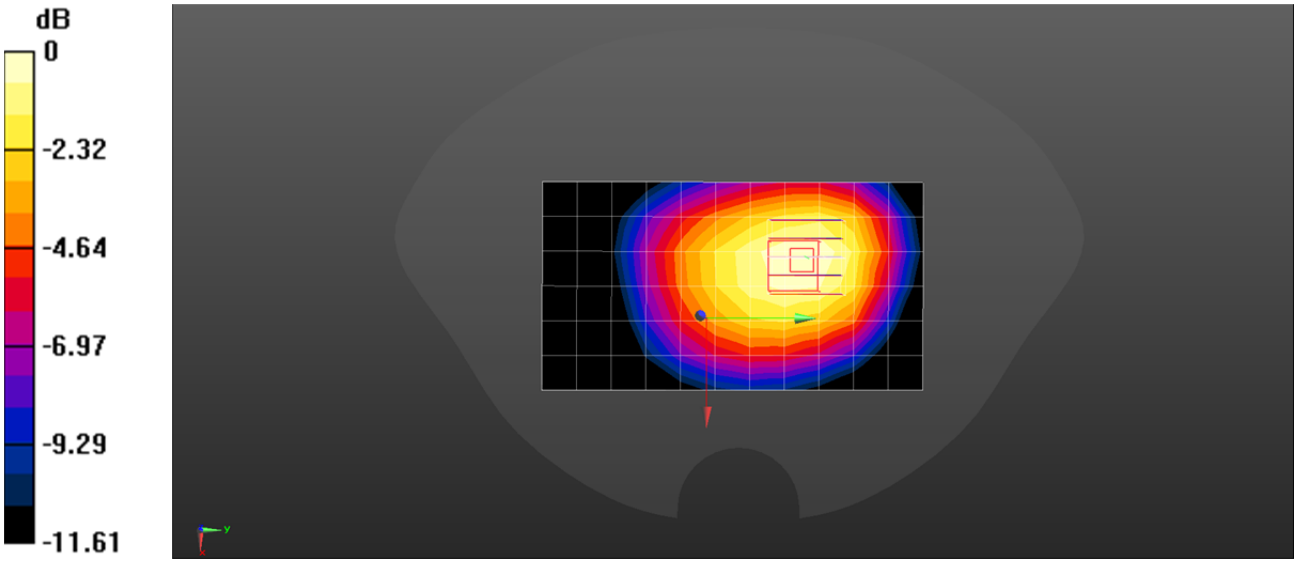
Date:2020-11-13
Communication System: UID 0, Generic LTE (0); Frequency: 707 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 707 MHz; σ = 0.918 S/m; ε_r = 55.741; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(10.62, 10.62, 10.62); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/Front side/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.545 W/kg

Body/Front side/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.96 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.721 W/kg
SAR(1 g) = 0.527 W/kg; SAR(10 g) = 0.381 W/kg
Maximum value of SAR (measured) = 0.557 W/kg



Test band:	LTE Band 13	Test Position:	Front side	Test Plot:	B11

Date:2020-11-13
Communication System: UID 0, Generic LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 782 MHz; σ = 0.946 S/m; ε_r = 55.542; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(10.62, 10.62, 10.62); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

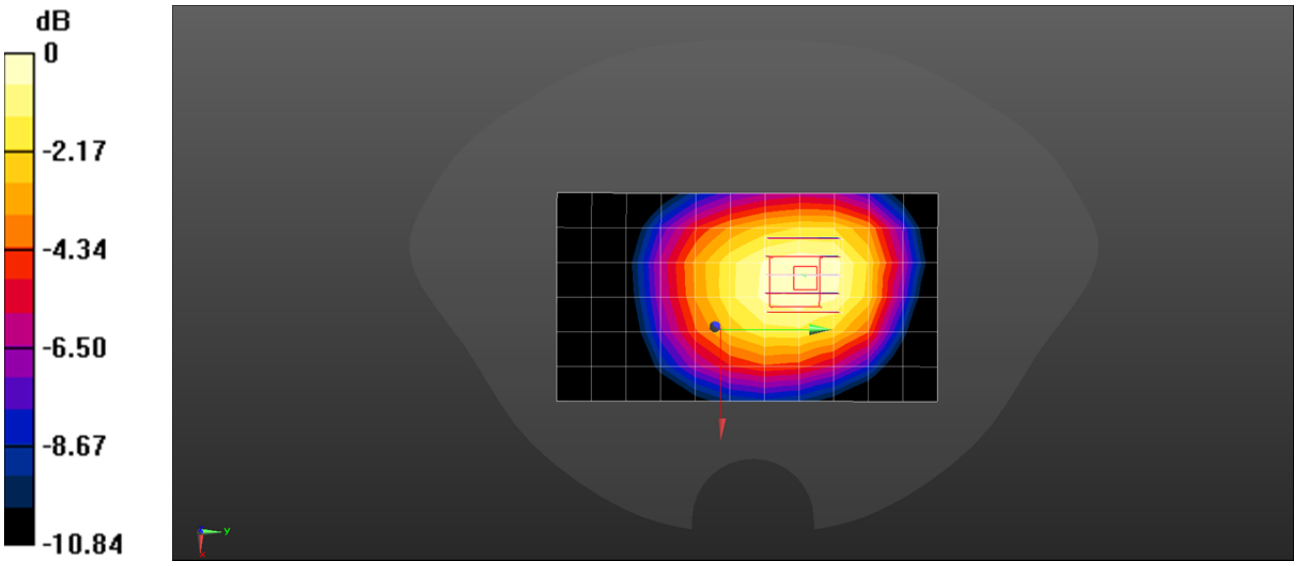
Body/Front side/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Info: Extrapolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.769 W/kg

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

Reference Value = 26.90 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.996 W/kg
SAR(1 g) = 0.753 W/kg; SAR(10 g) = 0.555 W/kg

Info: Extrapolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.794 W/kg



Test band:	LTE Band 17	Test Position:	Front side	Test Plot:	B12

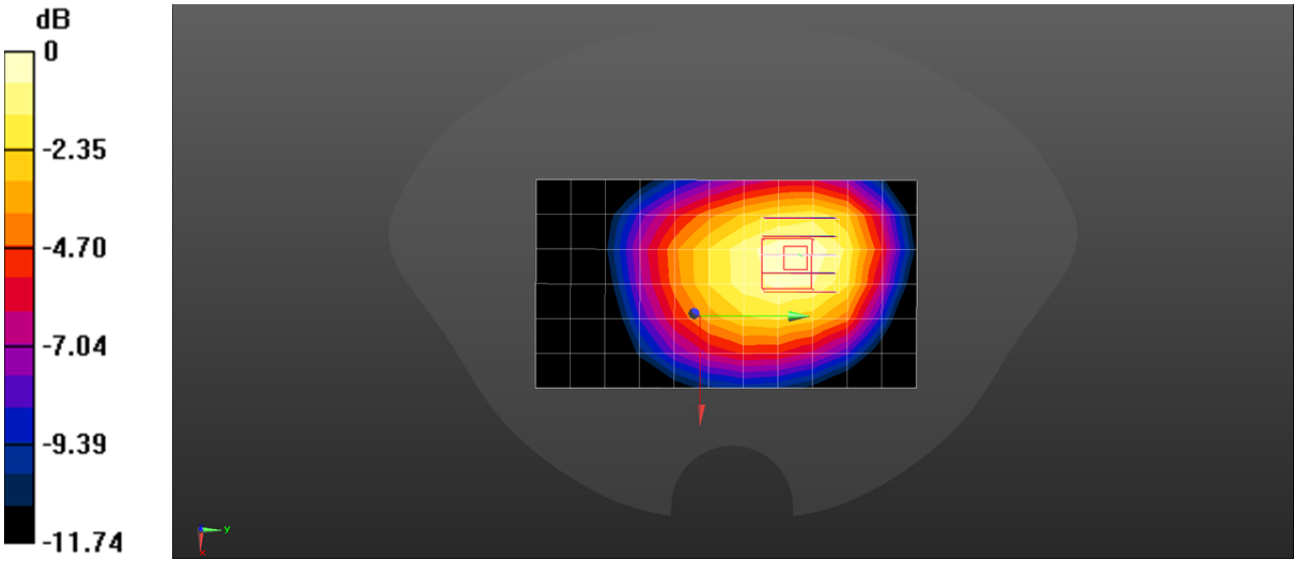
Date:2020-11-13
Communication System: UID 0, Generic LTE (0); Frequency: 710 MHz;Duty Cycle: 1:1
Medium parameters used: f = 710 MHz; σ = 0.919 S/m; ε_r = 55.736; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(10.62, 10.62, 10.62); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/Front side/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.517 W/kg

Body/Front side/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.48 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.694 W/kg
SAR(1 g) = 0.507 W/kg; SAR(10 g) = 0.367 W/kg
Maximum value of SAR (measured) = 0.537 W/kg



Test band:	LTE Band 25	Test Position:	Front side	Test Plot:	B13

Date:2020-11-18
Communication System: UID 0, Generic LTE (0); Frequency: 1882.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1882.5 MHz; σ = 1.541 S/m; ε_r = 53.736; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(8.09, 8.09, 8.09); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

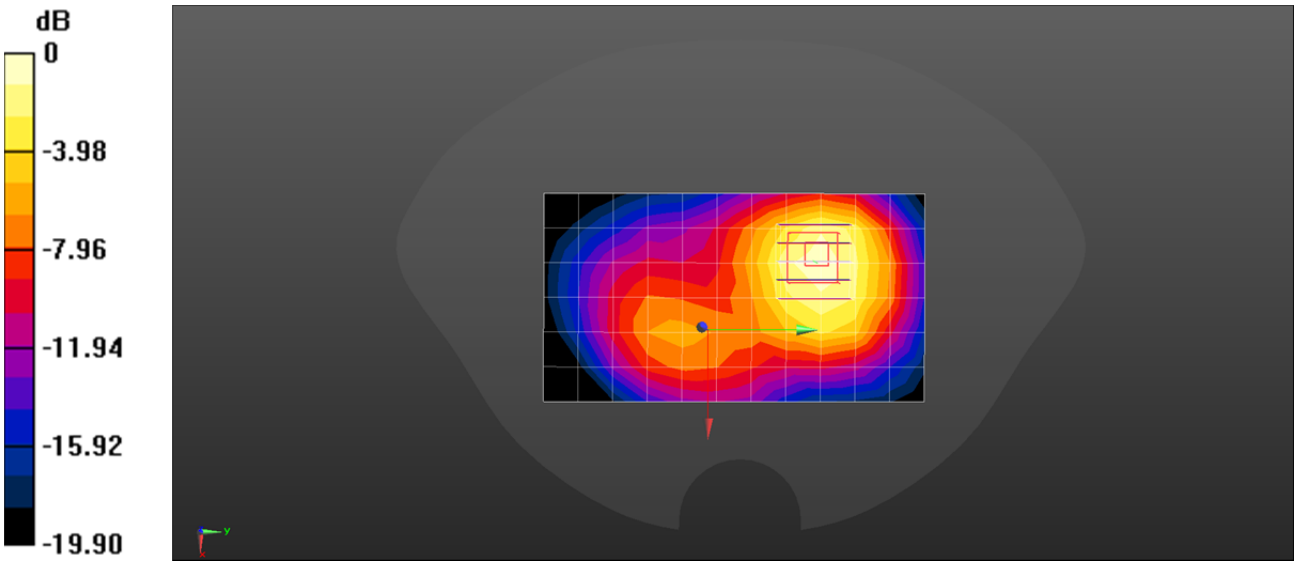
Body/Front side/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Info: Extrapolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.923 W/kg

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

Reference Value = 10.42 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.70 W/kg
SAR(1 g) = 0.886 W/kg; SAR(10 g) = 0.472 W/kg

Info: Extrapolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.947 W/kg



Test band:	LTE Band 26	Test Position:	Back side	Test Plot:	B14

Date:2020-11-16
Communication System: UID 0, Generic LTE (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.964 S/m; ε_r = 55.411; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(10.33, 10.33, 10.33); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

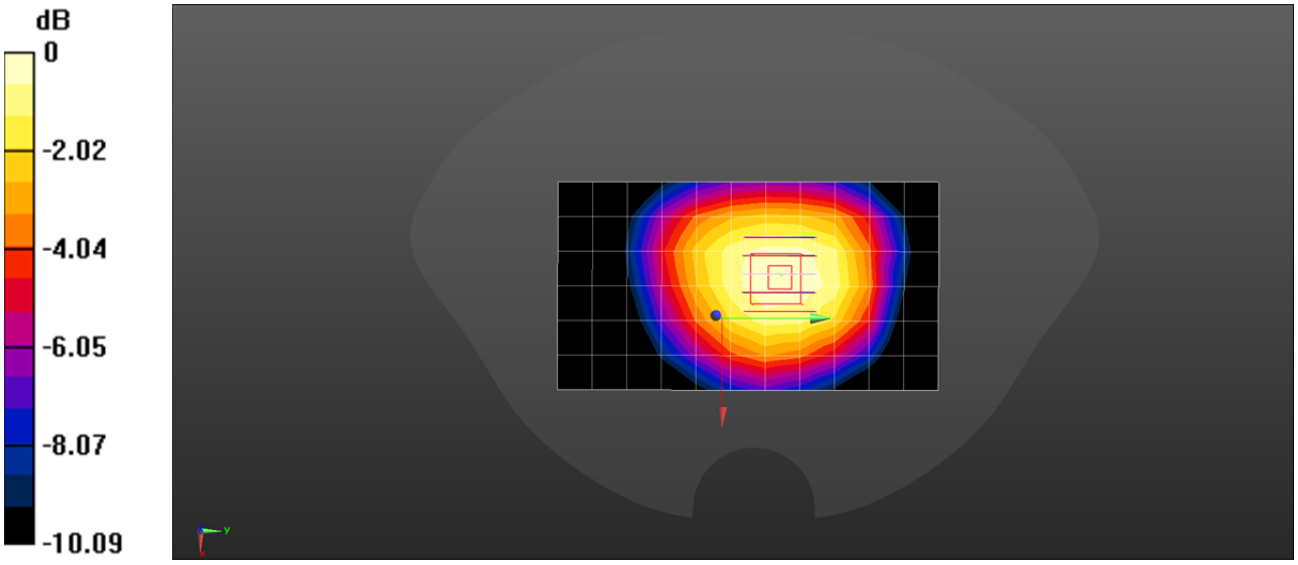
Body/Front side/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Info: Extrapolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.39 W/kg

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

Reference Value = 29.99 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.73 W/kg
SAR(1 g) = 1.16 W/kg; SAR(10 g) = 1.02 W/kg

Info: Extrapolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.43 W/kg



Test band:	LTE Band 41	Test Position:	Front side	Test Plot:	B15

Date:2020-11-20
Communication System: UID 0, Generic LTE (0); Frequency: 2593 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2593 MHz; σ = 2.143 S/m; ε_r = 52.791; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(7.52, 7.52, 7.52); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

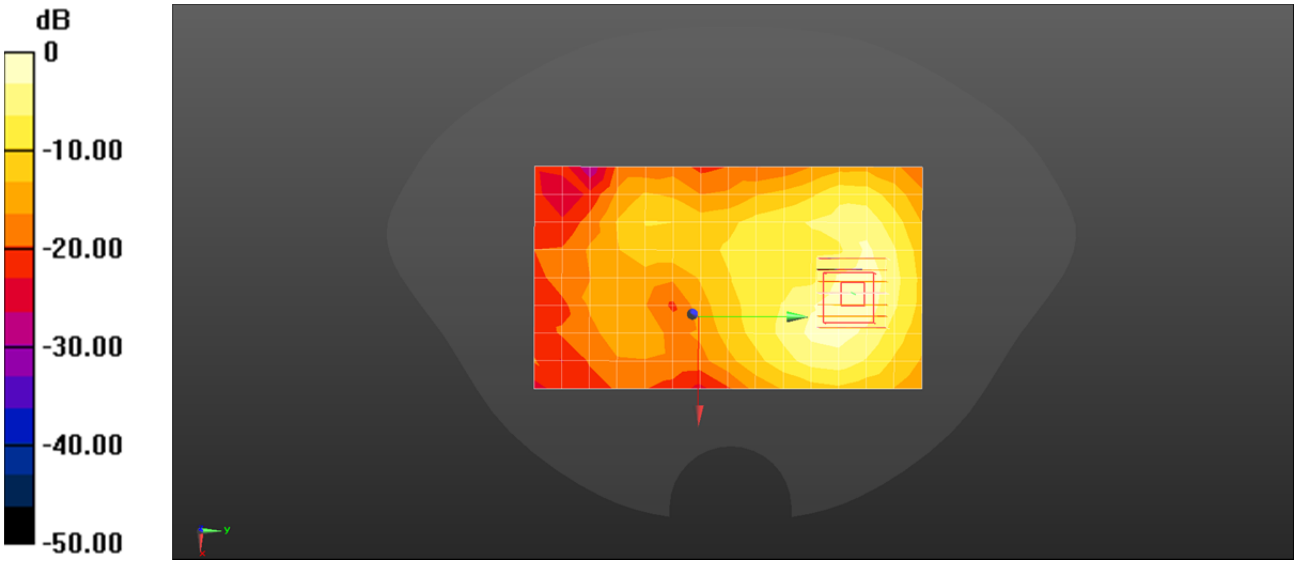
Body/Front side/Area Scan (9x15x1): Measurement grid: dx=12mm, dy=12mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.429 W/kg

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

Reference Value = 4.707 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.450 W/kg; SAR(10 g) = 0.204 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.502 W/kg



Test band:	LTE Band 66	Test Position:	Front side	Test Plot:	B16

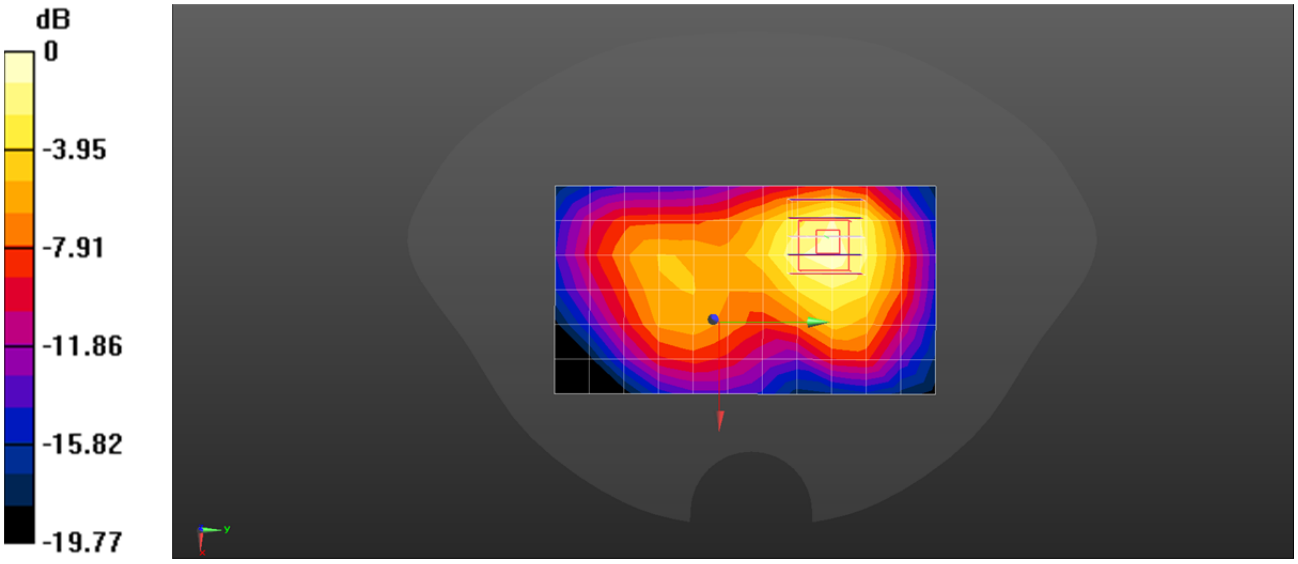
Date:2020-11-17
Communication System: UID 0, Generic LTE (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1745 MHz; σ = 1.434 S/m; ε_r = 53.883; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(8.42, 8.42, 8.42); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/Front side/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.999 W/kg

Body/Front side/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.99 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 1.83 W/kg
SAR(1 g) = 0.991 W/kg; SAR(10 g) = 0.537 W/kg
Maximum value of SAR (measured) = 1.08 W/kg



Test band:	WIFI 2.4G	Test Position:	Front side	Test Plot:	B17

Date:2020-11-19
Communication System: UID 0, WI-FI(2412-2462) (0); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.991 S/m; ε_r = 53.023; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(8, 8, 8); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

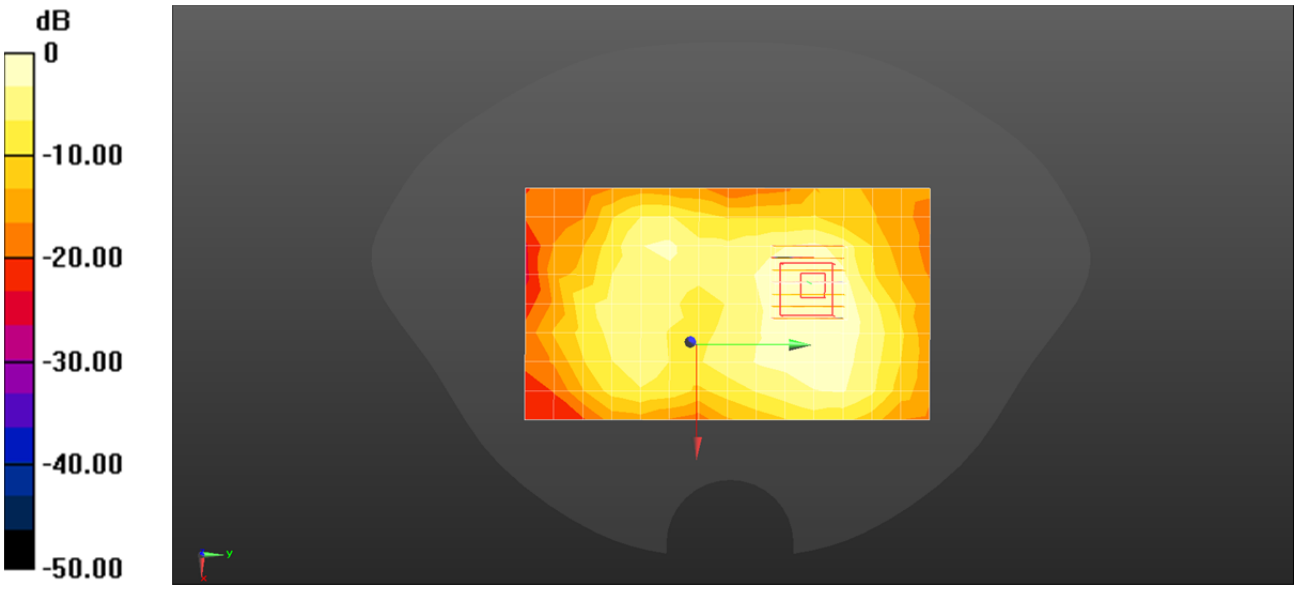
Body/Front side/Area Scan (9x15x1): Measurement grid: dx=12mm, dy=12mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.148 W/kg

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

Reference Value = 4.994 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.309 W/kg
SAR(1 g) = 0.149 W/kg; SAR(10 g) = 0.077 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.167 W/kg



15. Simultaneous Transmission analysis

No.	Simultaneous Transmission Configurations	Body-worn	Hotspot	Note
1	GPRS (data) + WIFI (data)	Yes	Yes	-
2	WCDMA (data) + WIFI (data)	Yes	Yes	-
3	LTE + WIFI (data)	Yes	Yes	-

General note:

1. EUT will choose either GPRS or WCDMA LTE according to the network signal condition; therefore, they will not operate simultaneously at any moment.
2. The reported SAR summation is calculated based on the same configuration and test position.

Maximum reported SAR value for Body

WWAN Band		Exposure Position	Max SAR (W/kg)		Summed SAR
			① WWAN	② 2.4G WIFI	①+②
GSM	GSM850	Front side	0.903	0.153	1.056
		Back side	0.659	0.112	0.771
		Left side	/	/	/
		Right side	0.490	0.083	0.573
		Top side	0.567	/	0.567
		Bottom side	/	0.096	0.096
	PCS1900	Front side	1.071	0.153	1.224
		Back side	0.782	0.112	0.894
		Left side	/	/	/
		Right side	0.581	0.083	0.664
		Top side	0.672	/	0.672
		Bottom side	/	0.096	0.096
WCDMA	Band II	Front side	1.121	0.153	1.274
		Back side	0.818	0.112	0.930
		Left side	/	/	/
		Right side	0.609	0.083	0.692
		Top side	0.703	/	0.703
		Bottom side	/	0.096	0.096
	Band IV	Front side	1.217	0.153	1.370
		Back side	0.889	0.112	1.001
		Left side	/	/	/
		Right side	0.660	0.083	0.743
		Top side	0.763	/	0.763
		Bottom side	/	0.096	0.096
	Band V	Front side	0.951	0.153	1.104
		Back side	0.694	0.112	0.806
		Left side	/	/	/
		Right side	0.516	0.083	0.599
		Top side	0.596	/	0.596
		Bottom side	/	0.096	0.096

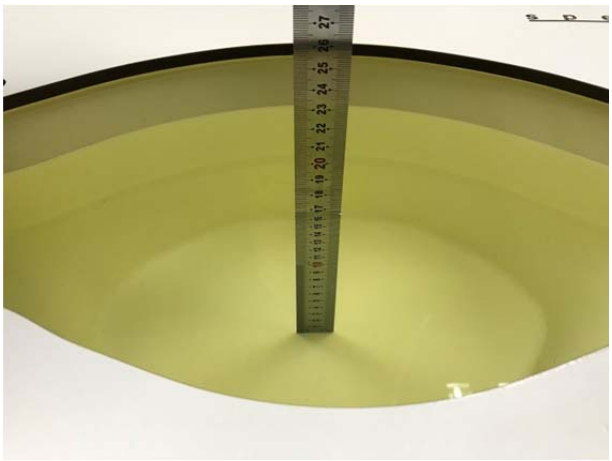
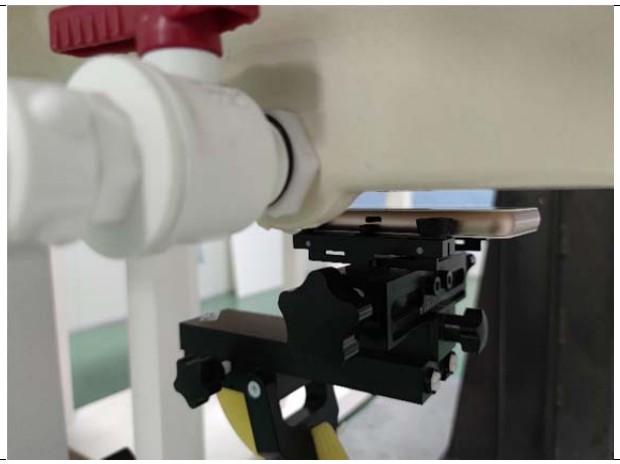
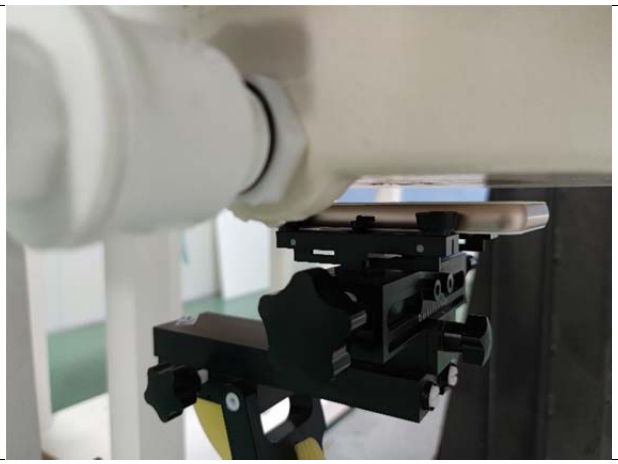
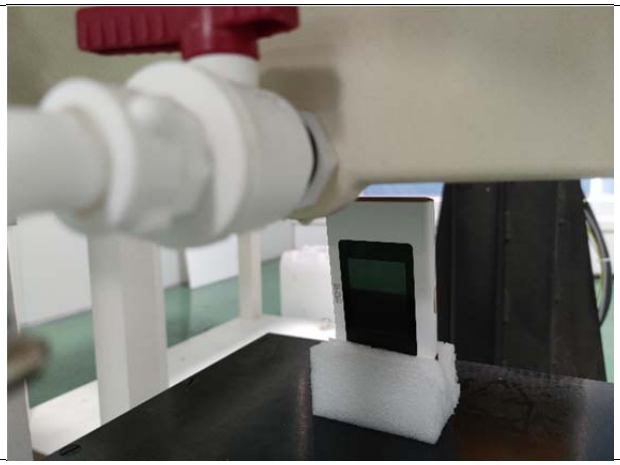
LTE	B2 1RB	Front side	0.819	0.153	0.972
		Back side	0.598	0.112	0.710
		Left side	/	/	/
		Right side	0.445	0.083	0.528
		Top side	0.514	/	0.514
		Bottom side	/	0.096	0.096
	B2 50RB	Front side	0.626	0.153	0.779
		Back side	0.457	0.112	0.569
		Left side	/	/	/
		Right side	0.340	0.083	0.423
		Top side	0.392	/	0.392
		Bottom side	/	0.096	0.096
	B4 1RB	Front side	0.990	0.153	1.143
		Back side	0.722	0.112	0.834
		Left side	/	/	/
		Right side	0.537	0.083	0.620
		Top side	0.620	/	0.620
		Bottom side	/	0.096	0.096
	B4 50RB	Front side	0.864	0.153	1.017
		Back side	0.631	0.112	0.743
		Left side	/	/	/
		Right side	0.423	0.083	0.506
		Top side	0.488	/	0.488
		Bottom side	/	0.096	0.096
	B5 1RB	Front side	0.719	0.153	0.872
		Back side	0.524	0.112	0.636
		Left side	/	/	/
		Right side	0.390	0.083	0.473
		Top side	0.450	/	0.450
		Bottom side	/	0.096	0.096
	B5 25RB	Front side	0.559	0.153	0.712
		Back side	0.409	0.112	0.521
		Left side	/	/	/
		Right side	0.304	0.083	0.387
		Top side	0.351	/	0.351
		Bottom side	/	0.096	0.096

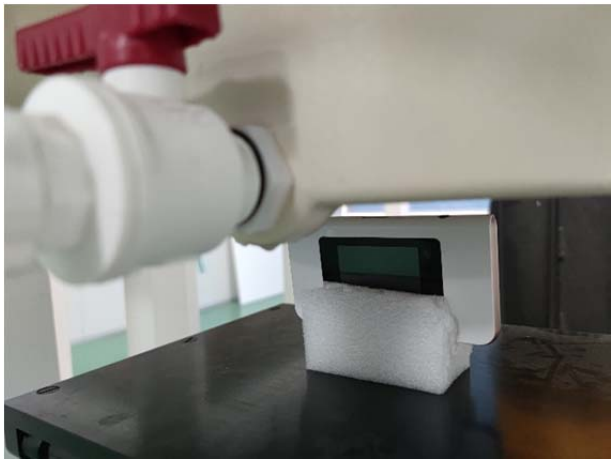
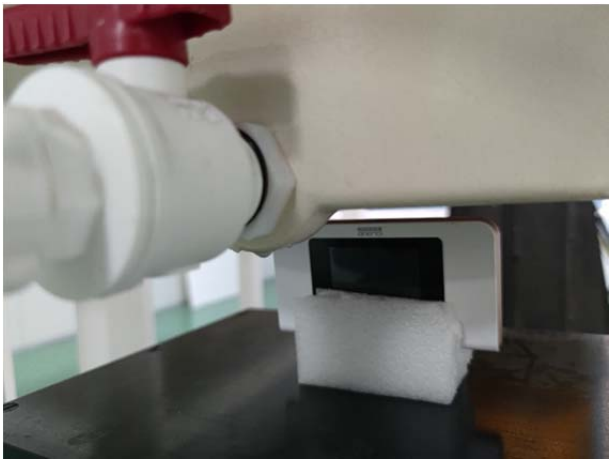
LTE	B7 1RB	Front side	0.794	0.153	0.947
		Back side	0.580	0.112	0.692
		Left side	/	/	/
		Right side	0.431	0.083	0.514
		Top side	0.498	/	0.498
		Bottom side	/	0.096	0.096
	B7 50RB	Front side	0.607	0.153	0.760
		Back side	0.443	0.112	0.555
		Left side	/	/	/
		Right side	0.330	0.083	0.413
		Top side	0.381	/	0.381
		Bottom side	/	0.096	0.096
	B12 1RB	Front side	0.538	0.153	0.691
		Back side	0.393	0.112	0.505
		Left side	/	/	/
		Right side	0.292	0.083	0.375
		Top side	0.337	/	0.337
		Bottom side	/	0.096	0.096
	B12 25RB	Front side	0.418	0.153	0.571
		Back side	0.306	0.112	0.418
		Left side	/	/	/
		Right side	0.227	0.083	0.310
		Top side	0.263	/	0.263
		Bottom side	/	0.096	0.096
	B13 1RB	Front side	0.821	0.153	0.974
		Back side	0.600	0.112	0.712
		Left side	/	/	/
		Right side	0.446	0.083	0.529
		Top side	0.514	/	0.514
		Bottom side	/	0.096	0.096
	B13 25RB	Front side	0.639	0.153	0.792
		Back side	0.467	0.112	0.579
		Left side	/	/	/
		Right side	0.348	0.083	0.431
		Top side	0.401	/	0.401
		Bottom side	/	0.096	/

LTE	B17 1RB	Front side	0.507	0.153	0.660
		Back side	0.370	0.112	0.482
		Left side	/	/	/
		Right side	0.275	0.083	0.358
		Top side	0.318	/	0.318
		Bottom side	/	0.096	0.096
	B17 25RB	Front side	0.443	0.153	0.596
		Back side	0.323	0.112	0.435
		Left side	/	/	/
		Right side	0.241	0.083	0.324
		Top side	0.278	/	0.278
		Bottom side	/	0.096	0.096
	B25 1RB	Front side	0.895	0.153	1.048
		Back side	0.653	0.112	0.765
		Left side	/	/	/
		Right side	0.486	0.083	0.569
		Top side	0.562	/	0.562
		Bottom side	/	0.096	0.096
	B25 50RB	Front side	0.760	0.153	0.913
		Back side	0.555	0.112	0.667
		Left side	/	/	/
		Right side	0.412	0.083	0.495
		Top side	0.476	/	0.476
		Bottom side	/	0.096	0.096
	B26 1RB	Front side	**1.230**	**0.153**	**1.383**
		Back side	0.899	0.112	1.011
		Left side	/	/	/
		Right side	0.668	0.083	0.751
		Top side	0.771	/	0.771
		Bottom side	/	0.096	0.096
	B26 38RB	Front side	0.958	0.153	1.111
		Back side	0.699	0.112	0.811
		Left side	/	/	/
		Right side	0.520	0.083	0.603
		Top side	0.601	/	0.601
		Bottom side	/	0.096	0.096

LTE	B41 1RB	Front side	0.417	0.153	0.570
		Back side	0.305	0.112	0.417
		Left side	/	/	/
		Right side	0.227	0.083	0.310
		Top side	0.262	/	0.262
		Bottom side	/	0.096	0.096
	B41 50RB	Front side	0.354	0.153	0.507
		Back side	0.259	0.112	0.371
		Left side	/	/	/
		Right side	0.192	0.083	0.275
		Top side	0.222	/	0.222
		Bottom side	/	0.096	0.096
	B66 1RB	Front side	1.100	0.153	1.253
		Back side	0.803	0.112	0.915
		Left side	/	/	/
		Right side	0.597	0.083	0.680
		Top side	0.689	/	0.689
		Bottom side	/	0.096	0.096
	B66 50RB	Front side	0.844	0.153	0.997
		Back side	0.615	0.112	0.727
		Left side	/	/	/
		Right side	0.457	0.083	0.540
		Top side	0.528	/	0.528
		Bottom side	/	0.096	0.096

16. TestSetup Photos

	
Liquid depth in the Head phantom	Liquid depth in the Body phantom
	
Front side (10mm)	Back side (10mm)
	
Left side (10mm)	Right side (10mm)

	
Top side (10mm)	Bottom side (10mm)

17. External and Internal Photos of the EUT

Please reference to the report of Internal Photographs and External Photographs

---------End of Report----------