TEST REPORT

Report Reference No.................... :	**TRE17020112**	R/C……….:	22786
FCC ID... :	**2ALAVU800**		
Applicant's name.......................... :	**Haier International Business Corporation Limited**		
Address...:	Room 1602, 16th Floor, Tower A, No. 1 Ke Yuan Wei Yi Road, Lao Shan District, Qingdao, Shandong, China		
Manufacturer.......................................:	Haier International Business Corporation Limited		
Address...:	Room 1602, 16th Floor, Tower A, No. 1 Ke Yuan Wei Yi Road, Lao Shan District, Qingdao, Shandong, China		
Test item description .... :	**Tablet PC**		
Trade Mark ....:	Ceibal,Ibirapita		
Model/Type reference.......................:	U800		
Listed Model(s) ....:	-		
Standard .... :	**FCC 47 CFR Part2.1093** **ANSI/IEEE C95.1: 1999** **IEEE 1528: 2013**		
Date of receipt of test sample………..:	Feb. 23, 2017		
Date of testing…………………………:	Feb. 23, 2017-Mar. 13, 2017		
Date of issue…………………………...:	Mar. 16, 2017		
Result................. ……………………..:	**PASS**		

Compiled by (position+printedname+signature)...:	File administrators:Becky Liang	Becky Liang
Supervised by (position+printedname+signature)...:	Test Engineer: SiyuanRao	Siyuan Rao
Approved by (position+printedname+signature)...:	Manager: Hans Hu	Hans Hu

Testing Laboratory Name .... :	**Shenzhen Huatongwei International Inspection Co., Ltd.**
Address...:	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

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, 1999: 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
KDB248227 D01 802 11 Wi-Fi SAR v02r02: SAR Measurement Proceduresfor802.11 a/b/g Transmitters
KDB 616217 D04 SAR for laptop and tablets v01r02: SAR Evaluation ConsiderationsforLaptop, Notebook, Netbook and Tablet Computers

1.2. Report version

Version No.	Date of issue	Description
00	Mar. 16, 2017	Original

2. Summary

2.1. Client Information

Applicant:	Haier International Business Corporation Limited
Address:	Room 1602, 16th Floor, Tower A, No. 1 Ke Yuan Wei Yi Road, Lao Shan District, Qingdao, Shandong, China
Manufacturer:	Haier International Business Corporation Limited
Address:	Room 1602, 16th Floor, Tower A, No. 1 Ke Yuan Wei Yi Road, Lao Shan District, Qingdao, Shandong, China

2.2. Product Description

Name of EUT	Tablet PC	
Trade Mark:	Ceibal,Ibirapita	
Model No.:	U800	
Listed Model(s):	-	
Power supply:	DC 3.8V From internal battery	
Device Category:	Portable	
Product stage:	Production unit	
RF ExposureEnvironment:	General Population / Uncontrolled	
Hardware version:	EM_T8880A_V6.0/U800_8160_V1.1	
Software version:	Ceibal.PadU800.GM20170305.SV1.041/Ibirapita.PadU800.GM20170303.SV1.04	
Maximum SAR Value		
Separation Distance:	Body:	0mm
Max Report SAR Value (1g):	Body:	**0.82 W/Kg**
2.4G WIFI		
Supported type:	802.11b/802.11g/802.11n(H20)/802.11n(H40)	
Modulation:	802.11b: DSSS (DBPSK / DQPSK / CCK) 802.11g/n(H20)/ n(H40): OFDM (BPSK / QPSK / 16QAM / 64QAM)	
Operation frequency:	802.11b/g/n(H20): 2412MHz~2462MHz 802.11n(H40): 2422MHz~2452MHz	
Channel number:	802.11b/g/n(H20): 11 802.11n(H40):7	
Channel separation:	5MHz	
Antenna type:	Internal Antenna	
5G WIFI		
Supported type:	802.11a/802.11n	
Modulation:	BPSK /QPSK /16QAM /64QAM	
Operation frequency:	Band 1:5150MHz-5250MHz Band 2A:5250MHz-5350MHz(Client device) Band 2C: 5470MHz-5725MHz(Client device) Band 3:5725MHz-5850MHz	
Channel Bandwidth	802.11a/n(H20):20MHz 802.11ac/n(H40):40MHz	
Channel separation:	5MHz	

Bluetooth	
Version:	Supported BT4.0+EDR
Modulation:	GFSK, π/4DQPSK, 8DPSK
Operation frequency:	2402MHz~2480MHz
Channel number:	79
Channel separation:	1MHz
Antenna type:	Integral Antenna
Bluetooth-BLE	
Version:	Supported BT4.0+BLE
Modulation:	GFSK
Operation frequency:	2402MHz~2480MHz
Channel number:	40
Channel separation:	2MHz
Antenna type:	Integral Antenna
Remark: The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power	

3. Test Environment

3.1. Address of the test laboratory

Laboratory:Shenzhen Huatongwei International Inspection Co., Ltd.
Address: 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China
Phone: 86-755-26748019 Fax: 86-755-26748089

3.2. Test Facility

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

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd. 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,Date of Registration: February 28, 2015. Valid time is until February 27, 2018.

A2LA-Lab Cert. No.: 3902.01

Shenzhen Huatongwei International Inspection Co., Ltd. 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: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is until February 27, 2018.

FCC-Registration No.: 317478

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 317478, Renewal date Jul. 18, 2014, valid time is until Jul. 18, 2017.

IC-Registration No.:5377B

Two 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No.: 5377B on Dec.03, 2014, valid time is until Dec.03, 2017.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

4. Equipments Used during the Test

Test Equipment	Manufacturer	Type/Model	Serial Number	Calibration	
				Last Calibration	Calibration Interval
Data Acquisition Electronics DAEx	SPEAG	DAE4	1315	2016/07/26	1
E-field Probe	SPEAG	ES3DV3	3292	2016/09/02	1
E-field Probe	SPEAG	EX3DV4	7357	2016/04/19	1
System Validation Dipole D2450V2	SPEAG	D2450V2	884	2015/09/01	3
System Validation Dipole D5GHzV2	SPEAG	D5GHzV2	1019	2015/08/025	3
Dielectric Probe Kit	Agilent	85070E	US44020288	/	/
Power meter	Agilent	E4417A	GB41292254	2016/10/25	1
Power sensor	Agilent	8481H	MY41095360	2016/10/25	1
Power sensor	Agilent	E9327A	US40441621	2016/10/25	1
Network analyzer	Agilent	8753E	US37390562	2016/10/24	1
Signal Generator	ROHDE & SCHWARZ	SMBV100A	258525	2016/10/22	1
Power Divider	ARRA	A3200-2	N/A	N/A	N/A
Dual Directional Coupler	Agilent	778D	50783	Note	
Attenuator 1	PE	PE7005-10	N/A	Note	
Attenuator 2	PE	PE7005-10	N/A	Note	
Attenuator 3	PE	PE7005-3	N/A	Note	
Power Amplifier	AR	5S1G4M2	0328798	Note	

Note:

1. The Probe,Dipole and DAE calibration reference to the Appendix A.

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.

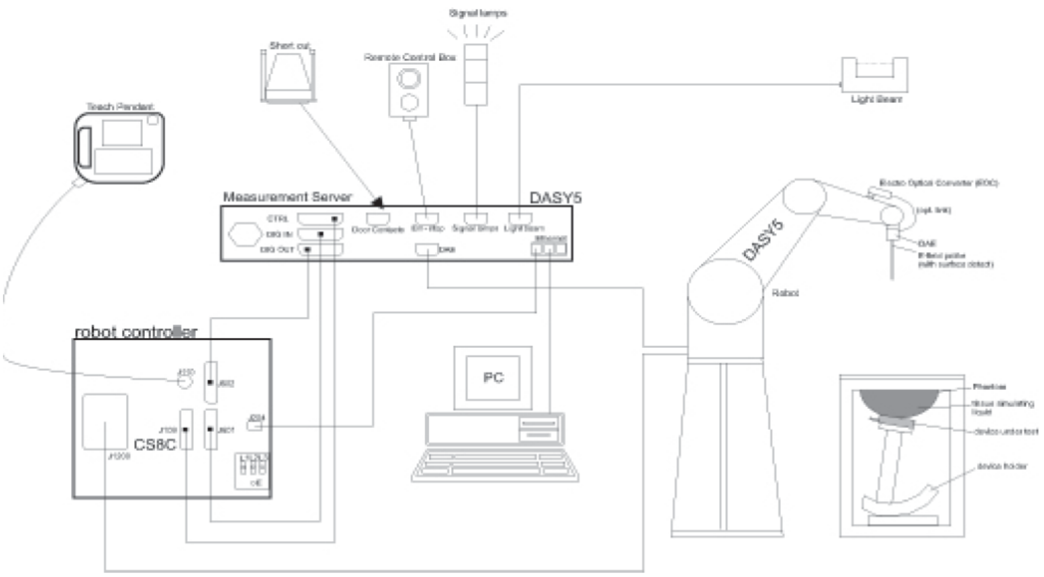
Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.

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 ES3DV3 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

- **Probe Specification**

ConstructionSymmetrical design with triangular core
Interleaved sensors
Built-in shielding against static charges
PEEK enclosure material (resistant to organic solvents, e.g., DGBE)

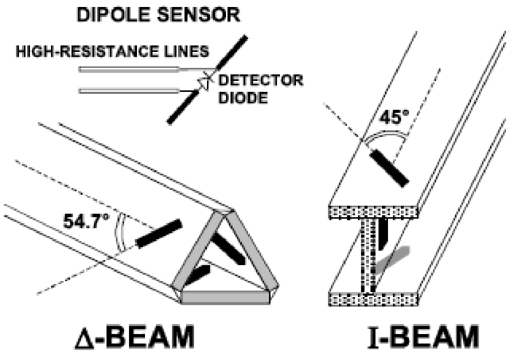
CalibrationISO/IEC 17025 calibration service available.

Frequency	10 MHz to 4 GHz; Linearity: ± 0.2 dB (30 MHz to 4 GHz)
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.3 dB in tissue material (rotation normal to probe axis)
Dynamic Range	5 µW/g to > 100 mW/g; Linearity: ± 0.2 dB
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm
Application	General dosimetry up to 4 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

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

Zoom Scans are used to estimate the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The default Zoom Scan is done by 7x7x5 points within a cube whose base is centered around the maxima found in the preceding area scan.

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. For a grid using 7x7x5 measurement points with 5mm resolution amounting to 343 measurement points, the uncertainty of the extrapolation routines is less than 1% for 1g and 10g cubes.

A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube 7x7x5 scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 5mm steps.

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], [mW/g], [mW/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

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:

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

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

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.

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

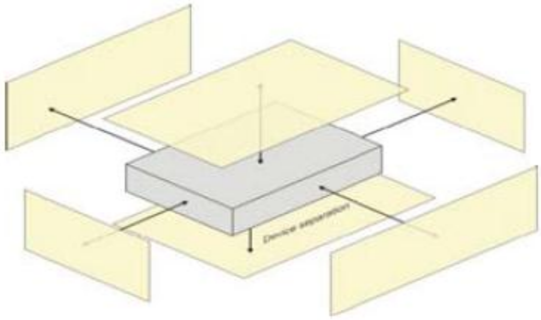
SAR: local specific absorption rate in mW/g
Etot: total field strength in V/m
σ: conductivity in [mho/m] or [Siemens/m]
ρ: equivalent tissue density in g/cm3

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. 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.The table 3 and table 4 show the detail solition.It's satisfying the latest tissue dielectric parameters requirements proposed by the KDB865664.

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Triton X-100	Diethylenglycol monohexylether	Conductivity (σ)	Permittivity (εr)
For Head										
835	40.3	57.9	0.2	1.4	0.2	0	0	0	0.9	41.5
1800,1900,2000	55.2	0	0	0.3	0	44.5	0	0	1.4	40
2450	55	0	0	0	0	45	0	0	1.8	39.2
5800	65.50	0	0	0	0	0	17.20	17.20	4.66	35.99
For Body										
835	50.8	48.2	0	0.9	0.1	0	0	0	0.97	55.2
1800.1900.2000	70.2	0	0	0.4	0	29.4	0	0	1.52	53.3
2450	68.6	0	0	0	0	31.4	0	0	1.95	52.7
5800	65.50	0	0	0	0	0	17.21	17.21	5.30	49.0

Note: There are a little adjustment respectively for 5200, 5300 and 5600based on the recipe of closest frequency in above table.

Tissue dielectric parameters for head and body phantoms				
Target Frequency	Head		Body	
(MHz)	εr	σ(s/m)	εr	σ(s/m)
835	41.5	0.90	55.2	0.97
1800-2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
5200	35.99	4.66	49.0	5.30
5300	35.87	4.76	48.9	5.42
5800	35.3	5.27	48.2	6.00

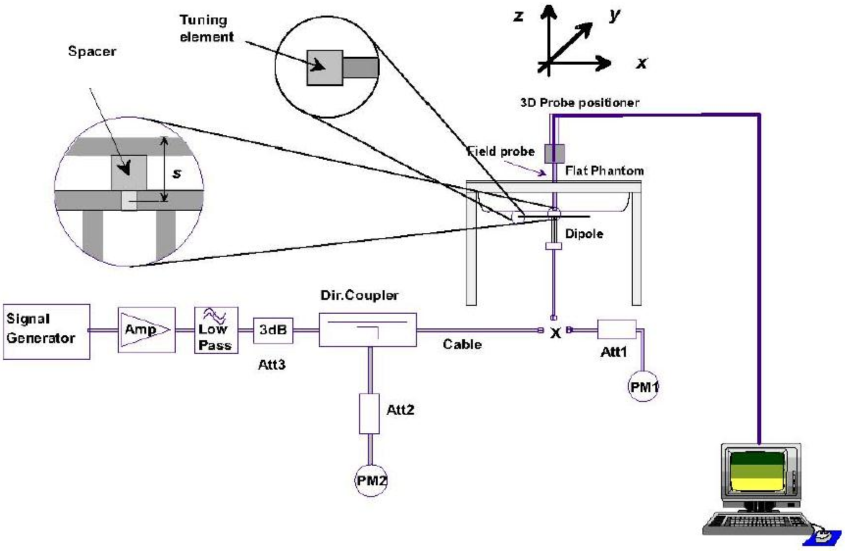
Check Result:

Dielectric performance of Body tissue simulating liquid				
Frequency (MHz)	Description	DielectricParameters		Temp
		εr	σ(s/m)	℃
2450	Recommended result ±5% window	52.7 50.07 to 55.34	1.95 1.85 to 2.05	/
	Measurement value 2017-02-25	52.55	1.94	21
5200	Recommended result ±5% window	49.0 46.6～51.4	5.30 5.04～5.56	/
	Measurement value 2017-02-26	50.47	5.11	21
5300	Recommended result ±5% window	48.9 46.46～51.34	5.42 5.15～5.69	/
	Measurement value 2017-02-26	50.17	5.27	21
5600	Recommended result ±5% window	48.5 46.08～50.93	5.77 5.48～6.06	/
	Measurement value 2017-02-26	48.02	5.94	21
5800	Recommended result ±5% window	48.2 45.8～50.6	6.00 5.70～6.30	/
	Measurement value 2017-02-26	48.99	6.06	21

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.



The output power on dipole port must be calibrated to 24 dBm (250mW) before dipole is connected.

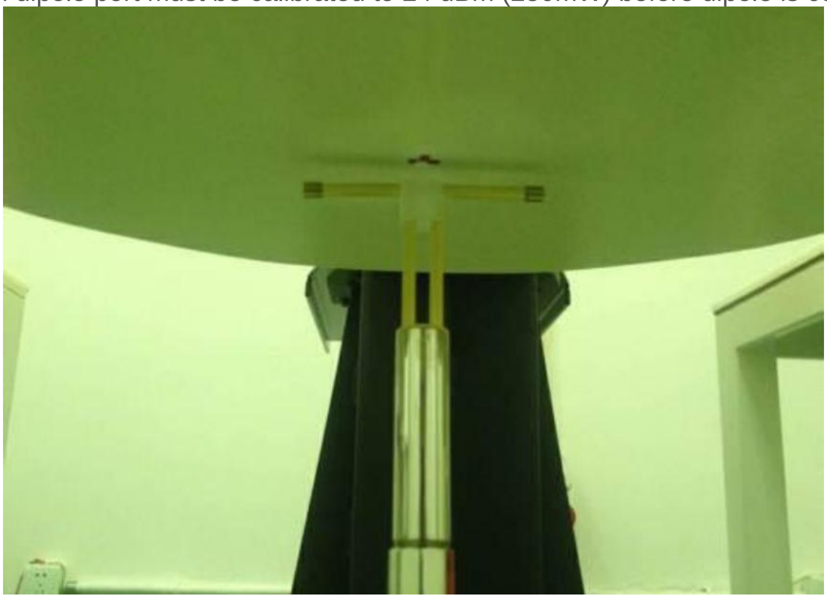


Photo of Dipole Setup

Check Result:

Body				
Frequency (MHz)	Description	SAR(W/kg)		Temp
		1g	10g	℃
2450	Recommended result ±5% window	13.1 11.79 -14.41	6.11 5.50 -6.72	/
	Measurement value 2017-02-25	13.2	6.13	21
5200	Recommended result ±5% window	7.53 7.15～7.91	2.11 2.00～2.22	/
	Measurement value 2017-02-26	7.48	2.12	21
5300	Recommended result ±5% window	7.78 7.39～8.17	2.16 2.05～2.27	/
	Measurement value 2017-02-26	7.60	2.16	21
5600	Recommended result ±5% window	8.15 7.74～8.56	2.26 2.15～2.37	/
	Measurement value 2017-02-26	7.86	2.19	21
5800	Recommended result ±5% window	7.45 7.08～7.82	2.08 1.98～2.18	/
	Measurement value 2017-02-26	7.61	2.14	21

Note:

1. *the graph results see follow.*
2. *Recommended Values used derive from the calibration certificate and 250 mW is used asfeeding power to the calibrated dipole.*

System Performance Check at 2450 MHz Body

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 884
Date:2017-02-25
Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2450 MHz; σ = 1.94S/m; εr = 52.55; ρ = 1000 kg/m3
Phantom section: Flat Section

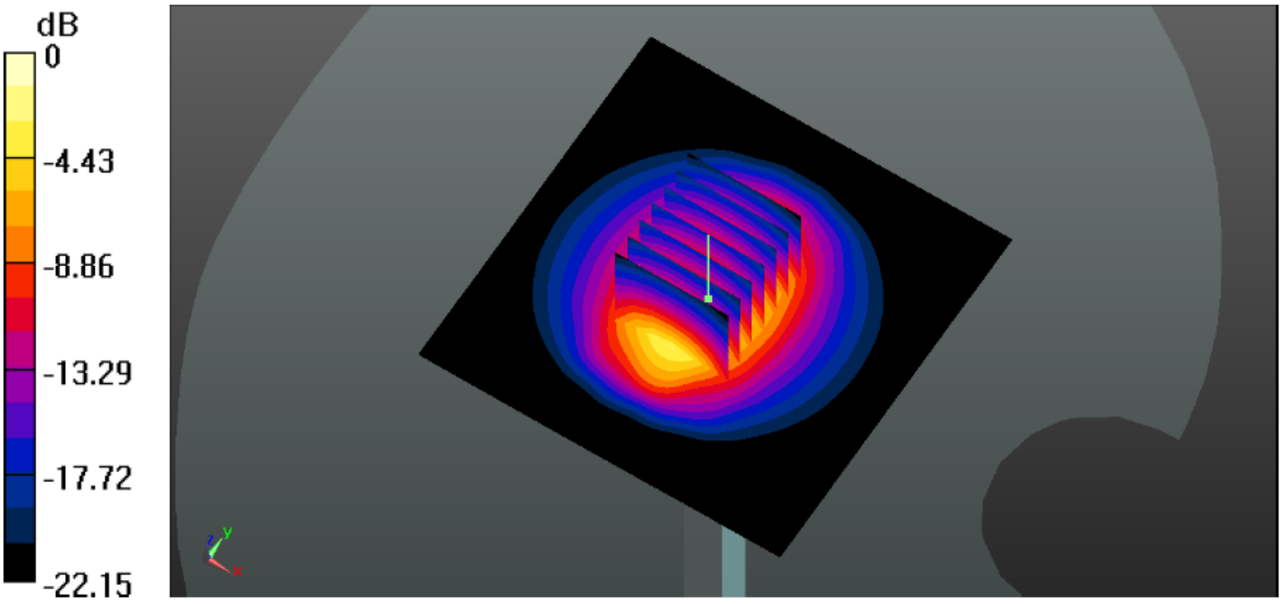
DASY5 Configuration:
Probe: ES3DV3 - SN3292; ConvF(4.70,4.70,4.70); Calibrated: 02/09/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1315; Calibrated: 26/07/2016
Phantom: SAM 1; Type: SAM;
Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.5 (6469)

Area Scan (61x91x1): Measurement grid: dx=10.00 mm, dy=10.00 mm
Maximum value of SAR (interpolated) = 15.4 mW/g

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 83.63 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 26.4 W/kg

SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.13 mW/g

Maximum value of SAR (measured) = 18.5 mW/g



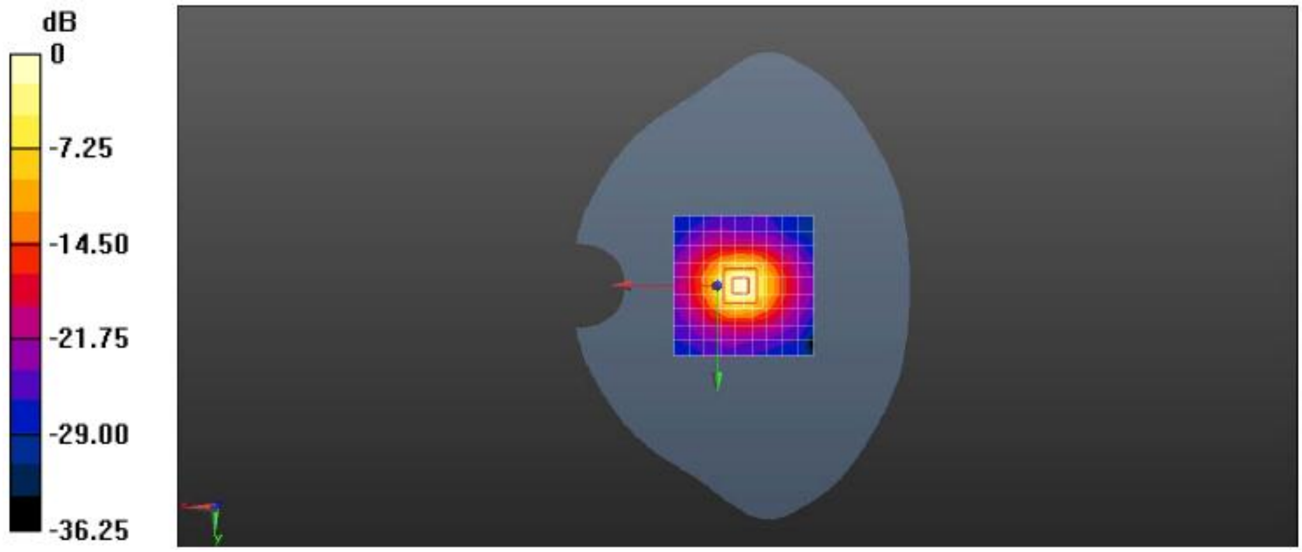
System Performance Check 2450MHz Body250mW

System Performance Check at 5200 MHz Body

Date:2017-02-26
Communication System: CW; Frequency: 5200 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5200 MHz; σ = 5.107 mho/m; εr = 50.47; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY5 Configuration:
Probe: EX3DV4 - SN7357; ConvF(4.28, 4.28, 4.28);
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1315; Calibrated: 26/07/2016;
Phantom: SAM 1; Type: SAM;
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.5 (6469)

Area Scan (61x91x1): Measurement grid: dx=15.00 mm, dy=15.00 mm
Maximum value of SAR (interpolated) = 9.05 W/kg
Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 60.064 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 33.36 W/kg
SAR(1 g) = 7.48 W/kg; SAR(10 g) = 2.12 W/kg
Maximum value of SAR (measured) = 9.13 W/kg



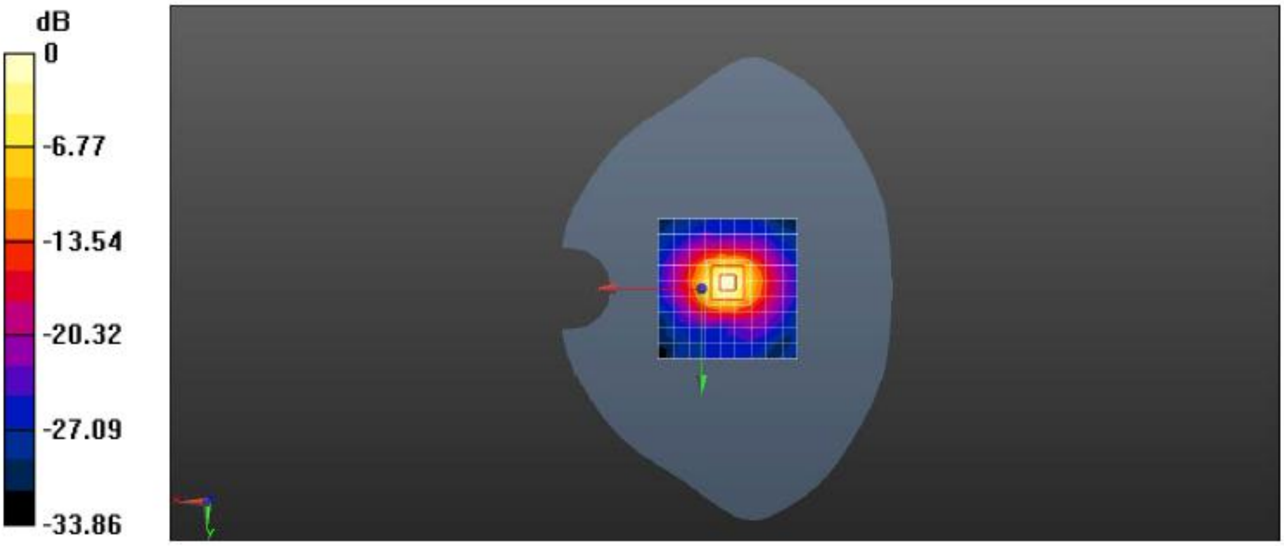
System Performance Check 5200MHz 100mW

System Performance Check at 5300 MHz Body

Date:2017-02-26
Communication System: CW; Frequency: 5300 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5300 MHz; σ = 5.274 mho/m; εr = 50.17; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY5 Configuration:
Probe: EX3DV4 - SN7357; ConvF(4.28, 4.28, 4.28);;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1315; Calibrated: 26/07/2016;
Phantom: SAM 1; Type: SAM;
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.5 (6469)

Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 9.21 W/kg
Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 63.278 V/m; Power Drift = -0.07 dB Peak SAR (extrapolated) = 33.48 W/kg
SAR(1 g) = 7.60 W/kg; SAR(10 g) = 2.16 W/kg
Maximum value of SAR (measured) = 9.28 W/kg



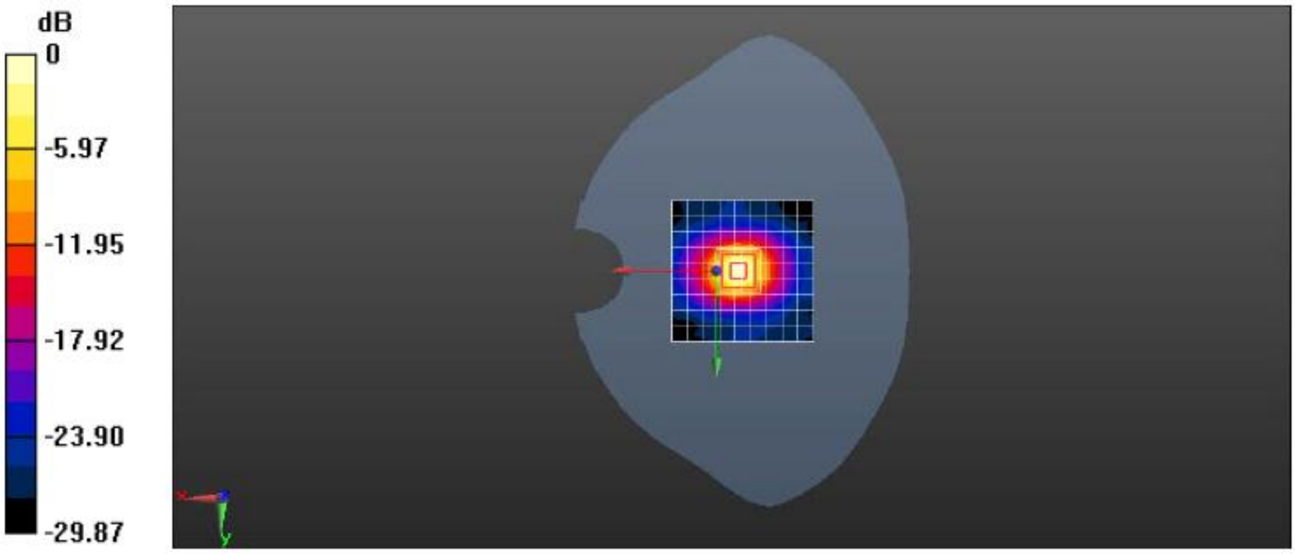
System Performance Check 5300 MHz 100mW

System Performance Check at 5600 MHz Body

Date:2017-02-26
Communication System: CW; Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5600 MHz; σ = 5.944 S/m; εr = 48.023; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY5 Configuration:
Probe: EX3DV4 - SN7357; ConvF(3.63, 3.63, 3.63);
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1315; Calibrated: 26/07/2016;
Phantom: SAM 1; Type: SAM;
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.5 (6469)

Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 13.9 W/kg
Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 65.24 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 31.4 W/kg
SAR(1 g) = 7.86 W/kg; SAR(10 g) = 2.19 W/kg
Maximum value of SAR (measured) = 18.9 W/kg



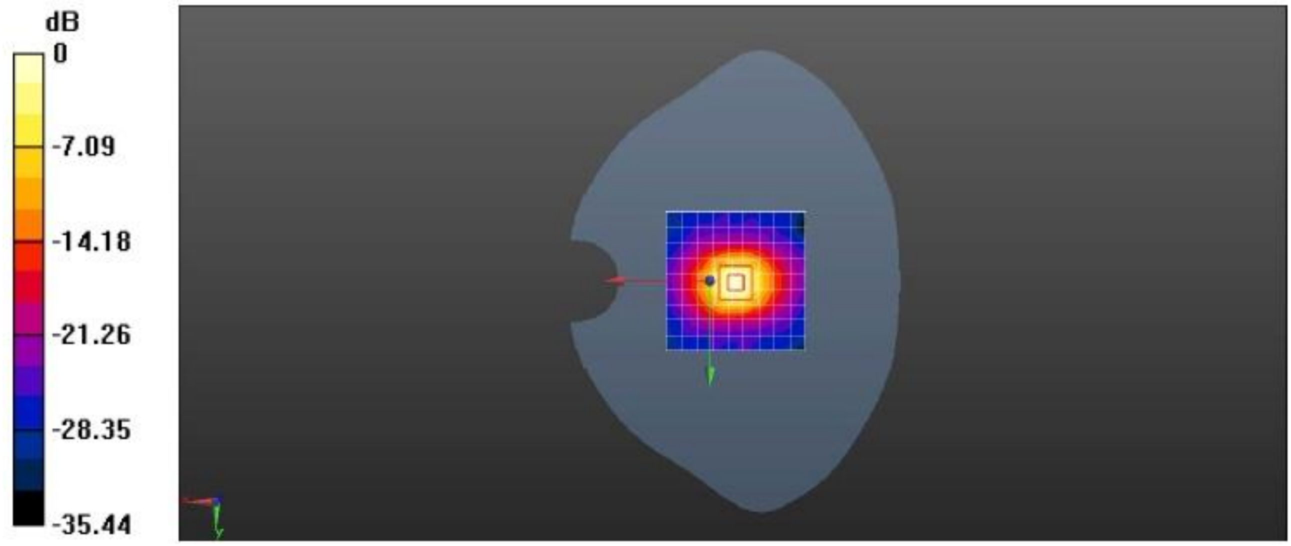
System Performance Check 5600 MHz 100mW

System Performance Check at 5800 MHz Body

Date:2017-02-26
Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5800 MHz; σ = 6.055 mho/m; εr = 48.99; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY5 Configuration:
Probe: EX3DV4 - SN7357; ConvF(3.77,3.77,3.77);
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1315; Calibrated: 26/07/2016;
Phantom: SAM 1; Type: SAM;
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.5 (6469)

Area Scan(61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 9.16 W/kg
Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 61.983 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 33.85 W/kg
SAR(1 g) = 7.61 W/kg; SAR(10 g) = 2.14 W/kg
Maximum value of SAR (measured) = 9.21 W/kg



System Performance Check 5800MHz 100mW

10. SAR Exposure Limits

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

Type Exposure	Limit (mW/g)	
	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)	1.60	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

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					
Mode	Channel	Frequency (MHz)	Conducted Peak Power (dBm)	Conducted Average Power (dBm)	Data rate
802.11b	1	2412	17.01	14.51	1 Mbps
	6	2437	17.25	14.72	1 Mbps
	11	2462	17.35	14.79	1 Mbps
802.11g	1	2412	16.55	12.97	6 Mbps
	6	2437	16.50	12.89	6 Mbps
	11	2462	16.42	12.84	6 Mbps
802.11n(H20)	1	2412	15.41	11.75	6.5 Mbps
	6	2437	15.51	11.81	6.5 Mbps
	11	2462	15.65	11.91	6.5 Mbps
802.11n(H40)	3	2422	15.46	11.79	13.5 Mbps
	6	2437	15.67	11.93	13.5 Mbps
	9	2452	15.52	11.81	13.5 Mbps

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

WIFI-5G 802.11a				
Mode	Channel	Frequency (MHz)	Conducted power (dBm)	Data rate
U-NII-1	36	5180	14.48	6Mbps
	40	5200	14.26	6Mbps
	44	5220	14.15	6Mbps
	48	5240	14.25	6Mbps
U-NII-2A	52	5260	13.90	6Mbps
	56	5280	13.81	6Mbps
	60	5300	13.70	6Mbps
	64	5320	13.46	6Mbps
U-NII-2C	100	5500	15.66	6Mbps
	112	5560	15.71	6Mbps
	116	5580	16.20	6Mbps
	128	5640	14.99	6Mbps
U-NII-3	132	5660	12.23	6Mbps
	149	5745	12.22	6Mbps
	165	5825	10.33	6Mbps

WIFI-5G 802.11n(HT20)				
Mode	Channel	Frequency (MHz)	Conducted power (dBm)	Data rate
U-NII-1	36	5180	14.45	MSC0
	40	5200	14.22	MSC0
	44	5220	14.04	MSC0
	48	5240	14.06	MSC0
U-NII-2A	52	5260	13.80	MSC0
	56	5280	13.82	MSC0
	60	5300	13.88	MSC0
	64	5320	14.01	MSC0
U-NII-2C	100	5500	14.91	MSC0
	112	5560	14.92	MSC0
	116	5580	15.24	MSC0
	128	5640	14.37	MSC0
U-NII-3	132	5660	12.41	MSC0
	149	5745	12.50	MSC0
	165	5825	10.90	MSC0

WIFI-5G 802.11n(HT40)				
Mode	Channel	Frequency (MHz)	Conducted power (dBm)	Data rate
U-NII-1	38	5190	14.19	MSC0
	46	5230	13.69	MSC0
U-NII-2A	54	5270	13.51	MSC0
	62	5310	13.31	MSC0
U-NII-2C	102	5510	15.96	MSC0
	110	5550	15.92	MSC0
	118	5590	15.23	MSC0
	126	5630	15.21	MSC0
U-NII-3	134	5670	13.65	MSC0
	142	5710	13.61	MSC0
	151	5755	13.53	MSC0
	159	5795	12.63	MSC0

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

Bluetooth Conducted Power

Bluetooth			
Mode	Channel	Frequency (MHz)	Conducted power (dBm)
GFSK	00	2402	4.33
	39	2441	4.54
	78	2480	4.92
π/4QPSK	00	2402	4.38
	39	2441	4.40
	78	2480	4.85
8DPSK	00	2402	4.53
	39	2441	4.55
	78	2480	4.99
BLE	0	2402	-3.43
	19	2440	-2.85
	39	2480	-2.14

Per KDB 447498 D01, the 1-g and 10-g SAR test exclusion thresholds for 100MHz to 6GHz at test separation distances ≦50mm are determined by:

[(max. Power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] * [√f(GHz)] ≦3.0 for 1-g SAR

Band/Mode	F(GHz)	Position	SAR test exclusion threshold (mW)	RF output power		SAR test exclusion
				dBm	mW	
Bluetooth	2.45	Body	9.6	5	3.16	Yes
2.4G WiFi	2.45	Body	9.6	15.00	31.62	No
5.8G WiFi	5.80	Body	6	16.50	44.67	No

Per KDB 447498 D01, when the minimum test separation distance is <5mm, a distance of 5mm is applied to determine SAR test exclusion.

The test exclusion thereshold is ≦3, SAR testing is not required.

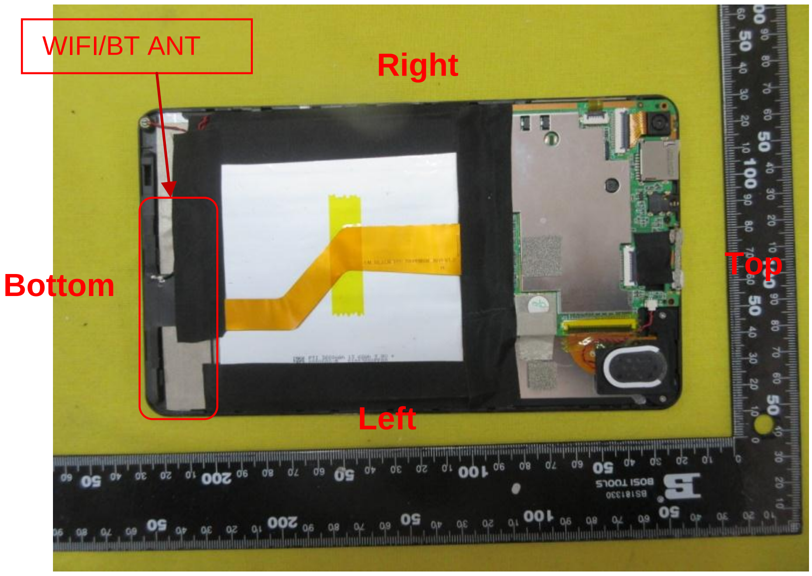
12. Maximum Tune-up Limit

2.4G WLAN		
Mode	Peak Power (dBm)	Burst Average Power (dBm)
802.11b	18.00	15.00
802.11g	17.00	14.00
802.11n(H20)	16.00	12.50
802.11n(H40)	16.00	12.50

5G WLAN		
Band	Mode	Burst Average Power (dBm)
U-NII-1	802.11a	15.00
	802.11n(H20)	15.00
	802.11n(H40)	15.00
U-NII-2A	802.11a	15.00
	802.11n(H20)	15.00
	802.11n(H40)	15.00
U-NII-2C	802.11a	16.50
	802.11n(H20)	15.50
	802.11n(H40)	16.50
U-NII-3	802.11a	12.30
	802.11n(H20)	12.50
	802.11n(H40)	14.00

BT	
Mode	Conducted Peak Power (dBm)
GFSK	5.00
π /4QPSK	5.00
8DPSK	5.00
BLE	-2.00

13. Antenna Location



Positions for SAR tests;						
Antenna	Back	Front	Top side	Bottom side	Right side	Left side
WIFI / BT	Yes	Yes	No	Yes	Yes	Yes

General note:
Referring to KDB 616217 D04, when the overall device l diagonal dimensionis > 20 cm, the test distance is 0mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.

14. SAR Measurement Results

Positions for SAR tests;						
Antenna	Back	Front	Top side	Bottom side	Right side	Left side
WIFI / BT	Yes	Yes	No	Yes	Yes	Yes

General note:
Referring to KDB 616217 D04, when the overall device l diagonal dimensionis > 20 cm, the test distance is 0mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.

WLAN										
Mode	Test Position	Frequency		Conducted Power (dBm)	Tune up limit (dBm)	Tune up scaling factor	Power Drift(dB)	Measured SAR(1g) (mW/g)	Report SAR(1g) (mW/g)	Test Plot
		CH	MHz							
802.11b 1Mbps	Front	1	2412	14.51	15.00	1.12	-	-	-	-
		6	2437	14.72	15.00	1.07	-	-	-	-
		11	2462	14.79	15.00	1.05	-0.12	0.461	0.48	-
	Back	1	2412	14.51	15.00	1.12	-0.07	0.693	0.78	-
		6	2437	14.72	15.00	1.07	-0.10	0.716	0.77	-
		11	2462	14.79	15.00	1.05	-0.19	0.750	0.79	B1
	Left	11	2462	14.72	15.00	1.07	0.12	0.356	0.37	-
	Right	11	2462	14.72	15.00	1.07	-0.13	0.069	0.07	-
	Top	11	2462	14.72	15.00	1.07	-	-	-	-
	Bottom	11	2462	14.72	15.00	1.07	0.11	0.588	0.62	-

Note:
1. The value with blue color is the maximum SAR Value of each test band.
2. According to the above table, the initial test position for body is “Back”, and its reported SAR is≤ 0.4W/kg. Thus further SAR measurement is not required for the other (remaining) test positions. Because the reported SAR of the highest measured maximum output power channel for the exposureconfiguration is ≤ 0.8W/kg, no further SAR testing is required for 802.11b DSSS in that exposureconfiguration.

WLAN- Scaled Reported SAR							
Mode	Test Position	Frequency		Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
		CH	MHz				
802.11b 1Mbps	Front	11	2462	96.76%	100%	0.48	0.50
	Back	11	2462	96.76%	100%	0.79	**0.82**
	Left	11	2462	96.76%	100%	0.37	0.38
	Right	11	2462	96.76%	100%	0.07	0.07
	Bottom	11	2462	96.76%	100%	0.62	0.64

Note:
1. According to the KDB248227 D01, The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. A maximum transmission duty factor of 96.76%is achievable for WLAN in this project.

WLAN-5G										
mode	Test Position	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							
U-NII-1	Front	44	5220	14.15	15.00	1.22	-0.16	0.260	0.32	-
	Rear	44	5220	14.15	15.00	1.22	0.11	0.423	0.51	-
	Left	44	5220	14.15	15.00	1.22	0.02	0.161	0.20	-
	Right	44	5220	13.70	15.00	1.22	0.06	0.019	0.02	-
	Top	44	5220	13.70	15.00	1.22	-	-	-	-
	Bottom	44	5220	13.70	15.00	1.22	0.14	0.230	0.28	-
U-NII-2C	Front	116	5580	16.20	16.50	1.07	-0.14	0.425	0.46	-
	Rear	116	5580	16.20	16.50	1.07	0.10	0.692	0.74	B2
	Left	116	5580	16.20	16.50	1.07	0.12	0.328	0.35	-
	Right	116	5580	16.20	16.50	1.07	-0.13	0.051	0.05	-
	Top	116	5580	16.20	16.50	1.07	-	-	-	-
	Bottom	116	5580	16.20	16.50	1.07	0.11	0.545	0.58	-
U-NII-3	Front	151	5755	13.53	14.00	1.11	-0.15	0.189	0.21	-
	Rear	151	5755	13.53	14.00	1.11	0.10	0.307	0.34	-
	Left	151	5755	13.53	14.00	1.11	0.05	0.146	0.16	-
	Right	151	5755	13.53	14.00	1.11	0.13	0.010	0.01	-
	Top	151	5755	13.53	14.00	1.11	-	-	-	-
	Bottom	151	5755	13.53	14.00	1.11	0.07	0.212	0.24	-

Note:

1. The value with blue color is the maximum SAR Value of each test band.
2. U-NII-1 and U-NII-2A bands have the same specified maximum output and tolerance; SAR is measured for U-NII-2A band first. Adjusted SAR of U-NII-2A band is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band.
   Maximum SAR value for U-NII-1: 0.51mW/g,
   Report SAR value for U-NII-2A:
   0.51 * Power (U-NII-1)/Power (U-NII-2A)=0.51*31.623mw/31.623mw=0.51mw/g<1.2mw/g
   SAR is not required for U-NII-2A conditions
3. When there are multiple 802.11 a/g/n/ac mode configurations in a standalone or aggregate frequency band with the same specified maximum output power for the same channel bandwidth, modulation and data rate, according to largest channel bandwidth, lowest order modulation and lowest data rate selection criteria in 5.3.2, the lower order/sequence 802.11 mode (i.e. a, g, n then ac) is selected for the initial test configuration.
4. When multiple test channels have the same measured maximum output power, choose the channel closest to mid-band frequency for the initial test configuration. When two test channels have the same measured maximum output power and also with equal separation from mid-band frequency; for example, high and low channels or multiple mid-band channels, the higher frequency channel is selected.

WLAN- Scaled Reported SAR							
Mode	Test Position	Frequency		Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
		CH	MHz				
U-NII-2C	Front	116	5580	98.83%	100%	0.46	0.47
	Rear	116	5580	98.83%	100%	0.74	**0.75**
	Left	116	5580	98.83%	100%	0.35	0.35
	Right	116	5580	98.83%	100%	0.05	0.05
	Bottom	116	5580	98.83%	100%	0.58	0.59

Note:

1. According to the KDB248227 D01, The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. A maximum transmission duty factor of 98.83%is achievable for WLAN in this project.

SAR Test Data Plots

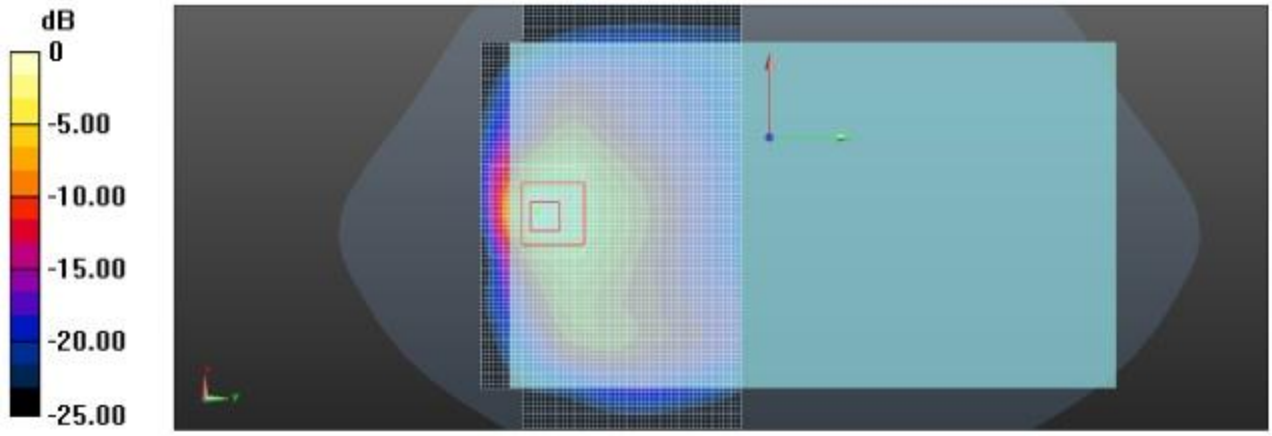
Test mode:	WLAN 802.11b	Test Position:	Rear Side	Test Plot:	B1

Date:2017-02-25
Communication System: Customer System; Frequency: 2462.0 MHz;Duty Cycle:1:1
Medium parameters used (interpolated): f= 2462.0 MHz; σ=1.94S/m; εr=52.53; ρ=1000 kg/m3
Phantom section : Flat Section

DASY5 Configuration:
• Probe: ES3DV3 - SN3292; ConvF(4.70,4.70,4.70); Calibrated: 02/09/2016;
•Sensor-Surface: 4mm (Mechanical Surface Detection)
•Electronics: DAE4 Sn1315; Calibrated: 26/07/2016
•Phantom: SAM 1; Type: SAM;
•Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Area Scan (51x101x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) =1.11mW/g

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.764 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 3.220 mW/g
SAR(1 g) = 0.750 mW/g; SAR(10 g) = 0.353 mW/g
Maximum value of SAR (measured) = 1.16 W/kg



Rear side (WLAN 802.11b)

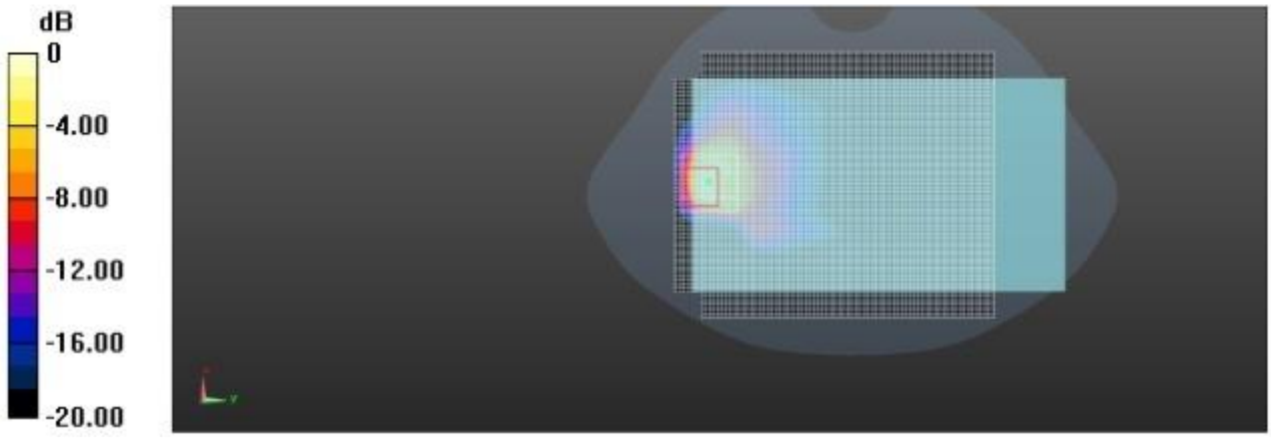
Test mode:	Wifi 802.11a	Test Position:	Rear Side	Test Plot:	B2

Date:2017-02-26
Communication System: Customer System; Frequency: 5580 MHz;Duty Cycle:1:1
Medium parameters used: f = 5580 MHz; σ =5.941 mho/m; εr = 48.037; ρ = 1000 kg/m3
Phantom section : Flat Section

DASY5 Configuration:
•Probe: EX3DV4 - SN7357; ConvF(3.63, 3.63, 3.63);
•Sensor-Surface: 4mm (Mechanical Surface Detection)
•Electronics: DAE4 Sn1315; Calibrated: 26/07/2016
•Phantom: SAM 1; Type: SAM;
•Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

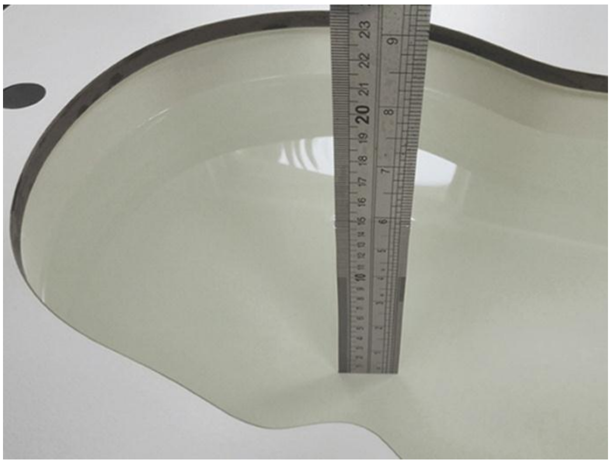
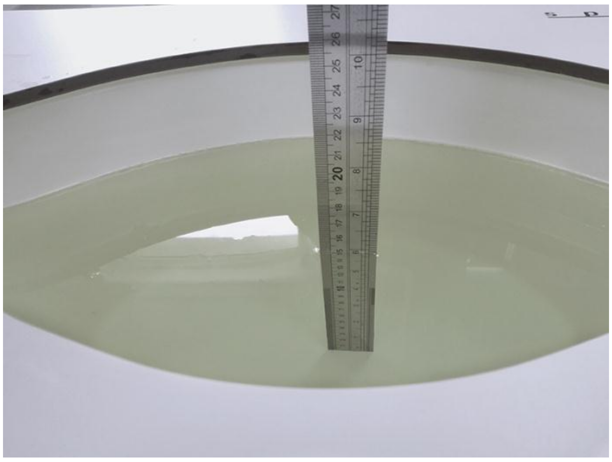
Area Scan (51x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.03 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 4.257 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 2.116 W/kg
SAR(1 g) = 0.692 W/kg; SAR(10 g) = 0.226 W/kg
Maximum value of SAR (measured) = 1.04 W/kg



Body- worn Rear side

15. TestSetup Photos

	
Liquid depth in the head phantom (2450MHz)	Liquid depth in the body phantom (2450MHz)
	
Liquid depth in the head phantom (5GHz)	Liquid depth in the body phantom (5GHz)

Front Side (0mm)


Rear Side (0mm)


Left Side (0mm)


Right Side (0mm)


Top Side (0mm)


Bottom Side (0mm)

16. External and Internal Photos of the EUT

Please reference to the report No.: TRE1702011101.

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