SAR TEST REPORT (15.247)

REPORT NO.: SA981005A05

MODEL NO.: T7MD1(refer to item 2.2 for more details)

RECEIVED: Oct. 05, 2009

TESTED: Feb. 08 ~ Feb. 12, 2010

ISSUED: Mar. 31, 2010

APPLICANT: TWINHEAD INTERNATIONAL CORP.

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ISSUED BY: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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1. CERTIFICATION

PRODUCT:	Tablet PC
MODEL:	T7MD1 (refer to item 2.2 for more details)
BRAND NAME:	DURABOOK (refer to item 2.2 for more details)
APPLICANT:	TWINHEAD INTERNATIONAL CORP.
TESTED:	Feb. 08 ~ Feb. 12, 2010
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	**FCC Part 2 (Section 2.1093)**
	FCC OET Bulletin 65, Supplement C (01-01)
	RSS-102

The above equipment (model: T7MD1, T7MK1, T7ML1) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : _____ , **DATE :** Mar. 31, 2010
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TECHNICAL ACCEPTANCE : _____ , **DATE :** Mar. 31, 2010
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Mason Chang / Engineer

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2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Tablet PC
MODEL NO.	T7Mxxxxxx – multiple listing see below
FCC ID	FKGT7M
POWER SUPPLY	19Vdc from AC adapter or 7.4Vdc from Battery
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b:11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 300.0Mbps
OPERATING FREQUENCY	2.4GHz: 2412 ~ 2462MHz 5.0GHz: 5745 ~ 5825MHz
NUMBER OF CHANNEL	2.4GHz: 11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz) 5.0GHz: 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
CHANNEL FREQUENCIES UNDER TEST AND ITS CONDUCTED OUTPUT POWER	Refer to Item 5.2
MAXIMUM SAR (1g)	2.4GHz: 0.418W/kg 5.0GHz: 0.809W/kg
ANTENNA TYPE	**2.4GHz:** PIFA antenna with 1.01dBi gain **5.0GHz:** PIFA antenna with 2.87dBi gain
ANTENNA CONNECTOR	Antenna connector is U.FL not a standard connector.
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	Refer to note below

NOTE:

1. The EUT is an EDA (Enterprise Digital Assistant). The functions of EUT listed as below:

	REFERENCE REPORT
WLAN 802.11b/g	SA981005A05
WLAN 802.11a (5745~5825 MHz)	
WLAN 802.11a (5180~5320MHz, 5500~5700MHz)	SA981005A05-1
BLUETOOTH	SA981005A05-2

2. The EUT has several models, which are identical to each other except for their brand name differences only, as the following:

BRAND	MODEL NO.	DESCRIPTION
DURABOOK	T7Mxxxxxx (“x” = 0~9, A~Z or blank)	For marketing different
TabletKiosk	a72xxxx (“x” = 0~9, A~Z or blank)	
MobileDemand™	xTablet® T7000XXXX (“x” = 0~9, A~Z or blank)	
PaceBlade	Pacebook RD7 series	
LOGIC INSTRUMENT	FIELDBOOK	

3. The Model: T7Mxxxxxx has three samples, which are identical to each other except for their interface differences only, as the below:

MODEL NO.	T7MD1	T7MK1	T7ML1
INTERFACE DESCRIPTION	USB x2 DB9 Card Reader (Express card & SD Card)	Audio x2 (Microphone & headphone) USB x2 RJ-45 Card Reader (Express card & SD Card)	Audio x2 (Microphone & headphone) USB x2 RJ-45 Card Reader (PCMCIA & SD Card)

4. The EUT consumes power from an AC adapter or battery, as follows:

BRAND	MODEL NO.	SPEC.
FSP	FSP065-RAB	AC I/P: 100-240V, 1.5A, 50-60Hz DC O/P: 19V, 3.42A Non-shielded AC 3-pin (1.8m) Non-shielded DC (1.8m) with one ferrite core
FSP	T7M	7.4Vdc 2580mAh

5. The frequency bands used in this EUT are listed as follows:

Frequency Band (MHz)	2412~2462	5180~5320	5500~5700	5745~5825
802.11b	√			
802.11g	√			
802.11a		√	√	√
802.11n (20MHz)	√	√	√	√
802.11n (40MHz)	√	√	√	√

6. The EUT incorporates a SIMO function. Physically, the EUT provides one completed transmitter and two receivers.

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11a	1TX
802.11n (20MHz)	1TX
802.11n (40MHz)	1TX

7. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

2.2 GENERAL DESCRIPTION OF APPLIED STANDARDS

According to the specifications of the manufacturer, this product must comply with the requirements of the following standards:

FCC Part 2 (2.1093)

FCC OET Bulletin 65, Supplement C (01- 01)

RSS-102

IEEE 1528-2003

All test items have been performed and recorded as per the above standards.

2.3 GENERAL INOFRMATION OF THE SAR SYSTEM

DASY5 **(Software 5.2 Build 157)** consists of high precision robot, probe alignment sensor, phantom, robot controller, controlled measurement server and near-field probe. The robot includes six axes that can move to the precision position of the DASY5 software defined. The DASY5 software can define the area that is detected by the probe. The robot is connected to controlled box. Controlled measurement server is connected to the controlled robot box. The DAE includes amplifier, signal multiplexing, AD converter, offset measurement and surface detection. It is connected to the Electro-optical coupler (ECO). The ECO performs the conversion form the optical into digital electric signal of the DAE and transfers data to the PC.

EX3DV3 ISOTROPIC E-FIELD PROBE

CONSTRUCTION	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
FREQUENCY	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
DIRECTIVITY	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
DYNAMIC RANGE	10 μW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 μW/g)
DIMENSIONS	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
APPLICATION	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.

NOTE

1. The Probe parameters have been calibrated by the SPEAG. Please reference “APPENDIX D” for the Calibration Certification Report.
2. For frequencies above 800MHz, calibration in a rectangular wave-guide is used, because wave-guide size is manageable.
3. For frequencies below 800MHz, temperature transfer calibration is used because the wave-guide size becomes relatively large.

OVAL FLAT PHANTOM ELI 4.0

CONSTRUCTION	Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with the latest draft of the standard IEC 62209 Part II and all known tissue simulating liquids. ELI4 has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is supported by software version DASY4.5 and higher and is compatible with all SPEAG dosimetric probes and dipoles.
SHELL THICKNESS	2.0 ± 0.2 mm (sagging: <1%)
FILLING VOLUME	approx. 30 liters
DIMENSIONS	Major ellipse axis: 600 mm Minor axis: 400 mm

SYSTEM VALIDATION KITS:

CONSTRUCTION	Symmetrical dipole with l/4 balun enables measurement of feedpoint impedance with NWA matched for use near flat phantoms filled with brain simulating solutions. Includes distance holder and tripod adaptor
CALIBRATION	Calibrated SAR value for specified position and input power at the flat phantom in brain simulating solutions
FREQUENCY	2450MHz, 5800MHz
RETURN LOSS	> 20dB at specified validation position
POWER CAPABILITY	> 100W (f < 1GHz); > 40W (f > 1GHz)
OPTIONS	Dipoles for other frequencies or solutions and other calibration conditions upon request

DEVICE HOLDER FOR SAM TWIN PHANTOM

CONSTRUCTION	The device holder for the mobile phone device is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation centers for both scales is the ear reference point (ERP). Thus the device needs no repositioning when changing the angles. The holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity ε =3 and loss tangent δ =0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered. The device holder for the portable device makes up of the polyethylene foam. The dielectric parameters of material close to the dielectric parameters of the air.

DATA ACQUISITION ELECTRONICS

CONSTRUCTION

The data acquisition electronics (DAE3) consists of a highly sensitive electrometer grade preamplifier with auto-zeroing, a channel and gain-switching multiplex, a fast 16 bit AD converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock. The mechanical probe is mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection. The input impedance of the DAE3 box is 200MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

2.4 GENERAL DESCRIPTION OF THE SPATIAL PEAK SAR EVALUATION

The DASY5 post-processing software (SEMCAD) automatically executes the following procedures to calculate the field units from the micro-volt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters:	- Sensitivity	$Norm_i$, a_{i0}, a_{i1}, a_{i2}
	- Conversion factor	$ConvF_i$
	- Diode compression point	dcp_i
Device parameters:	- Frequency	F
	- Crest factor	Cf
Media parameters:	- Conductivity	σ
	- Density	ρ

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:

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

V_i	=compensated signal of channel i	(i = x, y, z)
U_i	=input signal of channel I	(i = x, y, z)
Cf	=crest factor of exciting field	(DASY parameter)
dcp_i	=diode compression point	(DASY parameter)

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

$$\text{E-fieldprobes: } E_i = \sqrt{\frac{V_1}{Norm_i \cdot ConvF}}$$

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

V_i	=compensated signal of channel I	(i = x, y, z)
$Norm_i$	=sensor sensitivity of channel i μV/(V/m)2 for E-field Probes	(i = x, y, z)
ConvF	= sensitivity enhancement in solution	
a_{ij}	= sensor sensitivity factors for H-field probes	
F	= carrier frequency [GHz]	
E_i	= electric field strength of channel i in V/m	
H_i	= magnetic field strength of channel i in A/m	

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

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

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
E_{tot}	= 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 set to 1, to account for actual head tissue density rather than the density of the tissue simulating liquid. The entire evaluation of the spatial peak values is performed within the Post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

1. The extraction of the measured data (grid and values) from the Zoom Scan
2. The calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
3. The generation of a high-resolution mesh within the measured volume
4. The interpolation of all measured values from the measurement grid to the high-resolution grid
5. The extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
6. The calculation of the averaged SAR within masses of 1g and 10g.

The probe is calibrated at the center of the dipole sensors that is located 1 to 2.7mm away from the probe tip. During measurements, the probe stops shortly above the phantom surface, depending on the probe and the surface detecting system. Both distances are included as parameters in the probe configuration file. The software always knows exactly how far away the measured point is from the surface. As the probe cannot directly measure at the surface, the values between the deepest measured point and the surface must be extrapolated. The angle between the probe axis and the surface normal line is less than 30 degree.

The maximum search is automatically performed after each area scan measurement. It is based on splines in two or three dimensions. The procedure can find the maximum for most SAR distributions even with relatively large grid spacing. After the area scanning measurement, the probe is automatically moved to a position at the interpolated maximum. The following scan can directly use this position for reference, e.g., for a finer resolution grid or the cube evaluations. The 1g and 10g peak evaluations are only available for the predefined cube 7 x 7 x 7 scans. The routines are verified and optimized for the grid dimensions used in these cube measurements. The measured volume of 30 x 30 x 30mm contains about 30g of tissue. The first procedure is an extrapolation (incl. boundary correction) to get the points between the lowest measured plane and the surface. The next step uses 3D interpolation to get all points within the measured volume in a 1mm grid (42875 points). In the last step, a 1g cube is placed numerically into the volume and its averaged SAR is calculated. This cube is the moved around until the highest averaged SAR is found. If the highest SAR is found at the edge of the measured volume, the system will issue a warning: higher SAR values might be found outside of the measured volume. In that case the cube measurement can be repeated, using the new interpolated maximum as the center.

3. DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit.

4. DESCRIPTION OF TEST MODES AND CONFIGURATIONS

4.1. ENHANCED ENERGY COUPLING AT INCREASED SEPARATION DISTANCES

INITIAL POSITION:

The probe tip is positioned at the peak SAR location of test mode 27 & 36 at a distance of one half the probe tip diameter from the phantom surface. Under this condition to get a single sar value.

5mm INCREMENTS FROM INITIAL POSITION:

With the probe fixed at this location, the device is moved away from the phantom in 5mm increments from the initial touching or minimum separation position. A single point SAR is measured for each of these device positions until the SAR is less than 50% of that measured at the initial position.

CHAN.	FREQ. (MHz)	DEVICE TEST POSITION MODE	INITIAL POSITION MEASURED 1g SAR (W/kg)	5mm INCREMENTS FROM INITIAL POSITION MEASURED 1g SAR (W/kg)
159	5795	802.11n (40MHz)	1.950	0.875
159	5795	802.11n (40MHz)	0.282	0.111

RESULT: No Enhancement Energy Coupling observed.

5. TEST RESULTS

5.1 TEST PROCEDURES

Use the software to control the EUT channel and transmission power. Then record the conducted power before the testing. Place the EUT to the specific test location. After the testing, must writing down the conducted power of the EUT into the report. The SAR value was calculated via the 3D spline interpolation algorithm that has been implemented in the software of DASY5 SAR measurement system manufactured and calibrated by SPEAG. According to the IEEE 1528 standards, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

- Power reference measurement
- Verification of the power reference measurement
- Area scan
- Zoom scan
- Power reference measurement

The area scan was performed for the highest spatial SAR location. The zoom scan with 30mm x 30mm x 30mm volume was performed for SAR value averaged over 1g and 10g spatial volumes.

In the zoom scan, the distance between the measurement point at the probe sensor location (geometric center behind the probe tip) and the phantom surface is 3mm and maintained at a constant distance of ±0.5mm during a zoom scan to determine peak SAR locations. The distance is 3mm between the first measurement point and the bottom surface of the phantom. The secondary measurement point to the bottom surface of the phantom is with 8mm separation distance. The cube size is 7 x 7 x 7 points consists of 343 points and the grid space is 5mm.

The measurement time is 0.5s at each point of the zoom scan. The probe boundary effect compensation shall be applied during the SAR test. Because of the tip of the probe to the Phantom surface separated distances are longer than half a tip probe diameter.

In the area scan, the separation distance is 3mm between the each measurement point and the phantom surface. The scan size shall be included the transmission portion of the EUT. The measurement time is the same as the zoom scan. At last the reference power drift shall be less than ±5%.

5.2 CHANNEL FREQUENCIES UNDER TEST AND ITS CONDUCTED OUTPUT POWER

FOR MODEL: T7ML1							
2.4GHz				5.0GHz			
CHANNEL	FREQ(MHz)	AV (dBm)	PK (dBm)	CHANNEL	FREQ(MHz)	AV (dBm)	PK (dBm)
802.11b				802.11a			
1	2412	14.7	18.25	149	5745	10.0	20.15
6	2437	14.6	18.16	157	5785	10.0	19.88
11	2462	14.4	18.08	165	5825	11.2	21.02
802.11g				802.11n (20MHz)			
1	2412	14.3	23.65	149	5745	10.3	19.98
6	2437	14.2	23.58	157	5785	10.1	20.43
11	2462	13.5	23.28	165	5825	10.4	21.91
802.11n (20MHz)				802.11n (40MHz)			
1	2412	14.3	23.69	151	5755	12.4	21.71
6	2437	14.2	23.42	159	5795	13.8	22.82
11	2462	13.5	23.27				
802.11n (40MHz)							
1	2422	12.0	23.93				
4	2437	11.2	24.22				
7	2452	9.4	22.66				

FOR MODEL: T7MK1							
2.4GHz				5.0GHz			
CHANNEL	FREQ(MHz)	AV (dBm)	PK (dBm)	CHANNEL	FREQ(MHz)	AV (dBm)	PK (dBm)
802.11b				802.11a			
1	2412	14.5	18.17	149	5745	10.1	20.11
6	2437	14.3	18.09	157	5785	10.0	19.76
11	2462	14.2	18.06	165	5825	11.1	20.9
802.11g				802.11n (20MHz)			
1	2412	14.1	23.56	149	5745	10.3	19.9
6	2437	14.0	23.49	157	5785	10.2	20.32
11	2462	13.5	23.17	165	5825	10.8	21.79
802.11n (20MHz)				802.11n (40MHz)			
1	2412	14.2	23.59	151	5755	12.3	21.6
6	2437	14.1	23.33	159	5795	13.7	22.69
11	2462	13.5	23.2				
802.11n (40MHz)							
1	2422	12.0	23.84				
4	2437	11.0	24.13				
7	2452	9.5	22.56				

FOR MODEL: T7MD1							
2.4GHz				5.0GHz			
CHANNEL	FREQ(MHz)	AV (dBm)	PK (dBm)	CHANNEL	FREQ(MHz)	AV (dBm)	PK (dBm)
802.11b				802.11a			
1	2412	14.8	18.46	149	5745	10.4	20.40
6	2437	14.7	18.21	157	5785	10.3	19.95
11	2462	14.6	18.11	165	5825	11.5	21.14
802.11g				802.11n (20MHz)			
1	2412	14.4	23.7	149	5745	10.4	20.08
6	2437	14.3	23.67	157	5785	10.3	20.56
11	2462	13.7	23.36	165	5825	11.0	22.04
802.11n (20MHz)				802.11n (40MHz)			
1	2412	14.4	23.8	151	5755	12.4	21.80
6	2437	14.2	23.52	159	5795	13.8	22.92
11	2462	13.7	23.31				
802.11n (40MHz)							
1	2422	12.0	24.04				
4	2437	11.2	24.35				
7	2452	9.6	22.76				

5.3 MEASURED SAR RESULTS

TEST CONDITION

TEST DATE	TISSUE TYPE / FREQ.	TEST MODE	TEMPERATURE (°C)		HUMIDITY (%RH)	TESTED BY
			AIMBENT	LIQUID		
Feb. 08, 2010	MSL 2450	1 ~ 24	23.1	21.7	60	Sam Onn
Feb. 09, 2010	MSL 5800	25 ~ 26	23.2	21.6	61	Sam Onn
Feb. 10, 2010	MSL 5800	27 ~ 32	22.6	21.5	61	Sam Onn
Feb. 11, 2010	MSL 5800	33 ~ 37	23.1	21.7	62	Sam Onn
Feb. 12, 2010	MSL 5800	38 ~ 42	22.8	21.6	61	Sam Onn

FOR 2.4GHz

TEST POSITION	TX MODE	CHAN.	FREQ. (MHz)	MEASURED 1g SAR (W/kg)		
				MODEL: T7MD1	MODEL: T7MK1	MODEL: T7ML1
Tip	802.11b	1	2412	**0.418**	0.366	0.260
Tip	802.11g	1	2412	0.399	0.395	0.260
Tip	802.11n (20MHz)	1	2412	0.388	0.328	0.222
Tip	802.11n (40MHz)	4	2437	0.387	0.345	0.266
Back	802.11b	1	2412	0.016	0.027	0.012
Back	802.11g	1	2412	0.015	0.023	0.011
Back	802.11n (20MHz)	1	2412	0.00868	0.025	0.011
Back	802.11n (40MHz)	4	2437	0.013	0.021	0.017

NOTE

1. Per KDB 447498, when 1-g SAR for the highest output channel is less than 0.8 W/kg, where the transmission band corresponding to all channels is ≤ 100 MHz, testing for the other channels is not required
2. In this testing, the limit for General Population Spatial Peak averaged over 1g, **1.6 W/kg**, is applied
3. Please see the Appendix A for the data.
4. The variation of the EUT conducted power measured before and after SAR testing should not over 5%.

FOR 5.0GHz

TEST POSITION	TX MODE	CHAN.	FREQ. (MHz)	MEASURED 1g SAR (W/kg)		
				MODEL: T7MD1	MODEL: T7MK1	MODEL: T7ML1
Tip	802.11a	165	5825	0.594	0.397	0.355
Tip	802.11n (20MHz)	165	5825	0.620	0.426	0.484
Tip	802.11n (40MHz)	151	5755	0.554	NOTE 1	NOTE: 1
Tip	802.11n (40MHz)	159	5795	**0.809**	0.610	0.690
Back	802.11a	165	5825	0.032	0.033	0.030
Back	802.11n (20MHz)	165	5825	0.032	0.061	0.028
Back	802.11n (40MHz)	159	5795	0.031	0.093	0.032

NOTE

1. Per KDB 447498, when 1-g SAR for the highest output channel is less than 0.8 W/kg, where the transmission band corresponding to all channels is ≤ 100 MHz, testing for the other channels is not required
2. In this testing, the limit for General Population Spatial Peak averaged over 1g, **1.6 W/kg**, is applied
3. Please see the Appendix A for the data.
4. The variation of the EUT conducted power measured before and after SAR testing should not over 5%.

5.4 SAR LIMITS

HUMAN EXPOSURE	SAR (W/kg)	
	(GENERAL POPULATION / UNCONTROLLED EXPOSURE ENVIRONMENT)	(OCCUPATIONAL / CONTROLLED EXPOSURE ENVIRONMENT)
Spatial Average (whole body)	0.08	0.4
Spatial Peak (averaged over 1 g)	**1.6**	8.0
Spatial Peak (hands / wrists / feet / ankles averaged over 10 g)	4.0	20.0

NOTE:

1. This limits accord to 47 CFR 2.1093 – Safety Limit.
2. The EUT property been complied with the partial body exposure limit under the general population environment.

5.5 RECIPES FOR TISSUE SIMULATING LIQUIDS

For the measurement of the field distribution inside the SAM phantom, the phantom must be filled with 25 litters of tissue simulation liquid.

The following is a short description of some typical ingredients used in the Simulating Liquids :

- **WATER-** Deionized water (pure H20), resistivity _16 M - as basis for the liquid
- **SUGAR-** Refined sugar in crystals, as available in food shops - to reduce relative permittivity
- **SALT-** Pure NaCl - to increase conductivity
- **CELLULOSE-** Hydroxyethyl-cellulose, medium viscosity (75-125mPa.s, 2% in water, 20_C),

  CAS # 54290 - to increase viscosity and to keep sugar in solution
- **PRESERVATIVE-** Preventol D-7 Bayer AG, D-51368 Leverkusen, CAS # 55965-84-9 - to prevent the spread of bacteria and molds
- **DGMBE-** Diethylenglycol-monobuthyl ether (DGMBE), Fluka Chemie GmbH, CAS # 112-34-5 - to reduce relative permittivity

THE RECIPES FOR 2450MHz SIMULATING LIQUID TABLE

INGREDIENT	HEAD SIMULATING LIQUID 2450MHz (HSL-2450)	MUSCLE SIMULATING LIQUID 2450MHz (MSL-2450)
Water	45%	69.83%
DGMBE	55%	30.17%
Salt	NA	NA
Dielectric Parameters at 22℃	f= 2450MHz ε= 39.2 ± 5% σ= 1.80 ± 5% S/m	f= 2450MHz ε= 52.7 ± 5% σ= 1.95 ± 5% S/m

THE INFORMATION FOR 5GHz SIMULATING LIQUID

The 5GHz liquids was purchased from SPEAG.

Body liquid model: HSL 5800, P/N: SL AAH 5800 AA

Head liquid model: M 5800, P/N: SL AAM 580 AD

5GHz liquids contain the following ingredients:

Water 64 - 78%

Mineral Oil 11 - 18%

Emulsifiers 9 - 15%

Additives and Salt 2 - 3%

Testing the liquids using the Agilent Network Analyzer E8358A and Agilent Dielectric Probe Kit 85070D.The testing procedure is following as

1. Turn Network Analyzer on and allow at least 30min. warm up.
2. Mount dielectric probe kit so that interconnecting cable to Network Analyzer will not be moved during measurements or calibration.
3. Pour de-ionized water and measure water temperature (±1°).
4. Set water temperature in Agilent-Software (Calibration Setup).
5. Perform calibration.
6. Validate calibration with dielectric material of known properties (e.g. polished ceramic slab with >8mm thickness ε'=10.0, ε"=0.0). If measured parameters do not fit within tolerance, repeat calibration (±0.2 for ε': ±0.1 for ε").
7. Conductivity can be calculated from ε" by $\sigma = \omega \varepsilon_0 \varepsilon'' = \varepsilon''$ f [GHz] / 18.
8. Measure liquid shortly after calibration. Repeat calibration every hour.
9. Stir the liquid to be measured. Take a sample (~ 50ml) with a syringe from the center of the liquid container.
10. Pour the liquid into a small glass flask. Hold the syringe at the bottom of the flask to avoid air bubbles.
11. Put the dielectric probe in the glass flask. Check that there are no air bubbles in front of the opening in the dielectric probe kit.
12. Perform measurements.
13. Adjust medium parameters in DASY5 for the frequencies necessary for the measurements (‘Setup Config’, select medium (e.g. Brain 900MHz) and press ‘Option’-button.
14. Select the current medium for the frequency of the validation (e.g. Setup Medium Brain 900MHz).

FOR 2.4GHz BAND SIMULATING LIQUID

LIQUID TYPE		MSL-2450		
SIMULATING LIQUID TEMP.		21.7		
TEST DATE		Feb. 08, 2010		
TESTED BY		Sam Onn		
FREQ. (MHz)	LIQUID PARAMETER	STANDARD VALUE	MEASUREMENT VALUE	ERROR PERCENTAGE (%)
2412	Permitivity (ε)	52.80	53.90	2.08
2422		52.70	53.80	2.09
2437		52.70	53.70	1.90
2450		52.70	53.50	1.52
2452		52.70	53.40	1.33
2462		52.70	53.30	1.14
2412	Conductivity (σ) S/m	1.91	1.95	2.09
2422		1.92	1.96	2.08
2437		1.94	1.97	1.55
2450		1.95	1.99	2.05
2452		1.95	2.00	2.56
2462		1.97	2.01	2.03
Dielectric Parameters Required at 22℃		**f= 2450MHz ε= 52.7 ± 5% σ= 1.95 ± 5% S/m**		

FOR WLAN 5GHz BAND SIMULATING LIQUID

LIQUID TYPE		MSL-5800		
SIMULATING LIQUID TEMP.		21.6		
TEST DATE		Feb. 09, 2010		
TESTED BY		Sam Onn		
FREQ. (MHz)	**LIQUID PARAMETER**	**STANDARD VALUE**	**MEASUREMENT VALUE**	**ERROR PERCENTAGE (%)**
5745	Permitivity (ε)	48.30	48.80	1.04
5755		48.30	48.80	1.04
5785		48.20	48.70	1.04
5795		48.20	48.70	1.04
5800		48.20	48.70	1.04
5825		48.20	48.70	1.04
5745	Conductivity (σ) S/m	5.94	6.01	1.18
5755		5.95	6.04	1.51
5785		5.98	6.07	1.51
5795		5.99	6.09	1.67
5800		6.00	6.09	1.50
5825		6.03	6.13	1.66
Dielectric Parameters Required at 22℃				

LIQUID TYPE		MSL-5800		
SIMULATING LIQUID TEMP.		21.5		
TEST DATE		Feb. 10, 2010		
TESTED BY		Sam Onn		
FREQ. (MHz)	**LIQUID PARAMETER**	**STANDARD VALUE**	**MEASUREMENT VALUE**	**ERROR PERCENTAGE (%)**
5745	Permitivity (ε)	48.30	49.40	2.28
5755		48.30	49.40	2.28
5785		48.20	49.30	2.28
5795		48.20	49.30	2.28
5800		48.20	49.30	2.28
5825		48.20	49.30	2.28
5745	Conductivity (σ) S/m	5.94	5.98	0.67
5755		5.95	6.01	1.01
5785		5.98	6.04	1.00
5795		5.99	6.06	1.17
5800		6.00	6.06	1.00
5825		6.03	6.10	1.16
Dielectric Parameters Required at 22℃				

LIQUID TYPE		MSL-5800		
SIMULATING LIQUID TEMP.		21.7		
TEST DATE		Feb. 11, 2010		
TESTED BY		Sam Onn		
FREQ. (MHz)	**LIQUID PARAMETER**	**STANDARD VALUE**	**MEASUREMENT VALUE**	**ERROR PERCENTAGE (%)**
5745	Permitivity (ε)	48.30	49.60	2.69
5755		48.30	49.60	2.69
5785		48.20	49.50	2.70
5795		48.20	49.50	2.70
5800		48.20	49.50	2.70
5825		48.20	49.50	2.70
5745	Conductivity (σ) S/m	5.94	6.03	1.52
5755		5.95	6.06	1.85
5785		5.98	6.09	1.84
5795		5.99	6.11	2.00
5800		6.00	6.11	1.83
5825		6.03	6.15	1.99
Dielectric Parameters Required at 22℃				

LIQUID TYPE		MSL-5800		
SIMULATING LIQUID TEMP.		21.6		
TEST DATE		Feb. 12, 2010		
TESTED BY		Sam Onn		
FREQ. (MHz)	**LIQUID PARAMETER**	**STANDARD VALUE**	**MEASUREMENT VALUE**	**ERROR PERCENTAGE (%)**
5745	Permitivity (ε)	48.30	49.10	1.66
5755		48.30	49.10	1.66
5785		48.20	49.00	1.66
5795		48.20	49.00	1.66
5800		48.20	49.00	1.66
5825		48.20	49.00	1.66
5745	Conductivity (σ) S/m	5.94	6.02	1.35
5755		5.95	6.05	1.68
5785		5.98	6.08	1.67
5795		5.99	6.10	1.84
5800		6.00	6.10	1.67
5825		6.03	6.14	1.82
Dielectric Parameters Required at 22℃				

5.6 TEST EQUIPMENT FOR TISSUE PROPERTY

ITEM	NAME	BRAND	TYPE	SERIES NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
1	Network Analyzer	Agilent	E8358A	US41480538	Nov. 26, 2009	Nov. 25, 2010
2	Dielectric Probe	Agilent	85070D	US01440176	NA	NA

NOTE:

1. Before starting, all test equipment shall be warmed up for 30min.
2. The tolerance (k=1) specified by Agilent for general dielectric measurements, deriving from inaccuracies in the calibration data, analyzer drift, and random errors, are usually ±2.5% and ±5% for measured permittivity and conductivity, respectively. However, the tolerances for the conductivity is smaller for material with large loss tangents, i.e., less than ±2.5% (k=1). It can be substantially smaller if more accurate methods are applied.

6. SYSTEM VALIDATION

The system validation was performed in the flat phantom with equipment listed in the following table. Since the SAR value is calculated from the measured electric field, dielectric constant and conductivity of the body tissue and the SAR is proportional to the square of the electric field. So, the SAR value will be also proportional to the RF power input to the system validation dipole under the same test environment. In our system validation test, 250mW RF input power was used.

6.1 TEST EQUIPMENT

ITEM	NAME	BRAND	TYPE	SERIES NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
1	SAM Phantom	S & P	QD000 P40 CA	TP-1150	NA	NA
2	Signal Generator	Angilent	E4438C	MY45092849	Nov. 19, 2009	Nov. 18, 2010
3	E-Field Probe	S & P	EX3DV3	3504	Jan. 26, 2010	Jan, 25, 2011
4	DAE	S & P	DAE	510	Dec. 16, 2009	Dec. 15, 2010
5	Robot Positioner	Staubli Unimation	NA	NA	NA	NA
6	Validation Dipole	S & P	D2450V2	716	Mar. 17, 2009	Mar. 16, 2010
7			D5GHzV2	1019	Feb. 20, 2009	Feb. 19, 2010

NOTE: Before starting the measurement, all test equipment shall be warmed up for 30min.

6.2 TEST PROCEDURE

Before the system performance check, we need only to tell the system which components (probe, medium, and device) are used for the system performance check; the system will take care of all parameters. The dipole must be placed beneath the flat section of the SAM Twin Phantom with the correct distance holder in place. The distance holder should touch the phantom surface with a light pressure at the reference marking (little cross) and be oriented parallel to the long side of the phantom. Accurate positioning is not necessary, since the system will search for the peak SAR location, except that the dipole arms should be parallel to the surface. The device holder for mobile phones can be left in place but should be rotated away from the dipole.

1. The ”Power Reference Measurement” and ”Power Drift Measurement” jobs 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 amplifier output power. If it is too high (above ±0.1 dB), the system performance check should be repeated; some amplifiers have very high drift during warm-up. A stable amplifier gives drift results in the DASY system below ±0.02dB.

2. The ”Surface Check” job tests the optical surface detection system of the DASY 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). In that case it is better to abort the system performance check and stir the liquid.

3. The ”Area Scan” job measures the SAR above the dipole on a plane parallel to the surface. It is used to locate the approximate location of the peak SAR. The proposed scan uses large grid spacing for faster measurement; due to the symmetric field, the peak detection is reliable. If a finer graphic is desired, the grid spacing can be reduced. Grid spacing and orientation have no influence on the SAR result.

4. The ”Zoom Scan” job measures the field in a volume around the peak SAR value assessed in the previous ”Area Scan” job (for more information see the application note on SAR evaluation).

About the validation dipole positioning uncertainty, the constant and low loss dielectric spacer is used to establish the correct distance between the top surface of the dipole and the bottom surface of the phantom, the error component introduced by the uncertainty of the distance between the liquid (i.e., phantom shell) and the validation dipole in the DASY5 system is less than ±0.1mm.

$$SAR_{tolerance}[\%] = 100 \times (\frac{(a+d)^2}{a^2} - 1)$$

As the closest distance is 10mm, the resulting tolerance $SAR_{tolerance}$[%] is <2%.

6.3 VALIDATION RESULTS

SYSTEM VALIDATION TEST OF SIMULATING LIQUID					
FREQUENCY (MHz)	**REQUIRED SAR (mW/g)**	**MEASURED SAR (mW/g)**	**DEVIATION (%)**	**SEPARATION DISTANCE**	**TESTED DATE**
MSL2450	13.30 (1g)	13.00	-2.26	10mm	Feb. 08, 2010
MSL5800	7.31 (1g)	6.88	-5.88	10mm	Feb. 09, 2010
MSL5800	7.31 (1g)	6.81	-6.84	10mm	Feb. 10, 2010
MSL5800	7.31 (1g)	6.86	-6.16	10mm	Feb. 11, 2010
MSL5800	7.31 (1g)	6.87	-6.02	10mm	Feb. 12, 2010
TESTED BY	Sam Onn				

NOTE: Please see Appendix for the photo of system validation test.

6.4 SYSTEM VALIDATION UNCERTAINTIES

In the table below, the system validation uncertainty with respect to the analytically assessed SAR value of a dipole source as given in the IEEE 1528 standard is given. This uncertainty is smaller than the expected uncertainty for mobile phone measurements due to the simplified setup and the symmetric field distribution.

Error Description	Tolerance (±%)	Probability Distribution	Divisor	(C_i)		Standard Uncertainty (±%)		(v_i)
				(1g)	(10g)	(1g)	(10g)	
Measurement System								
Probe Calibration	6.55	Normal	1	1	1	6.55	6.55	∞
Axial Isotropy	4.70	Rectangular	√3	0.7	0.7	1.90	1.90	∞
Hemispherical Isotropy	9.60	Rectangular	√3	0.7	0.7	3.88	3.88	∞
Boundary effects	2.00	Rectangular	√3	1	1	1.15	1.15	∞
Linearity	4.70	Rectangular	√3	1	1	2.71	2.71	∞
System Detection Limits	1.00	Rectangular	√3	1	1	0.58	0.58	∞
Readout Electronics	0.30	Normal	1	1	1	0.30	0.30	∞
Response Time	0.80	Rectangular	√3	1	1	0.46	0.46	∞
Integration Time	2.60	Rectangular	√3	1	1	1.50	1.50	∞
RF Ambient Noise	3.00	Rectangular	√3	1	1	1.73	1.73	∞
RF Ambient Reflections	3.00	Rectangular	√3	1	1	1.73	1.73	∞
Probe Positioner	0.80	Rectangular	√3	1	1	0.46	0.46	∞
Probe Positioning	9.90	Rectangular	√3	1	1	5.72	5.72	∞
Max. SAR Eval.	4.00	Rectangular	√3	1	1	2.31	2.31	∞
Dipole Related								
Dipole Axis to Liquid Distance	2.00	Rectangular	√3	1	1	1.15	1.15	145
Input Power Drift	5.00	Rectangular	√3	1	1	2.89	2.89	∞
Phantom and Tissue parameters								
Phantom Uncertainty	4.00	Rectangular	√3	1	1	2.31	2.31	∞
Liquid Conductivity (target)	5.00	Rectangular	√3	0.64	0.43	1.85	1.24	∞
Liquid Conductivity (measurement)	2.84	Normal	1	0.64	0.43	1.82	1.22	∞
Liquid Permittivity (target)	5.00	Rectangular	√3	0.6	0.49	1.73	1.41	∞
Liquid Permittivity (measurement)	3.37	Normal	1	0.6	0.49	2.02	1.65	∞
Combined Standard Uncertainty						**12.09**	**11.84**	
Coverage Factor for 95%						**Kp=2**		
Expanded Uncertainty (K=2)						**24.18**	**23.68**	

7. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3185050

Web Site: www.adt.com.tw

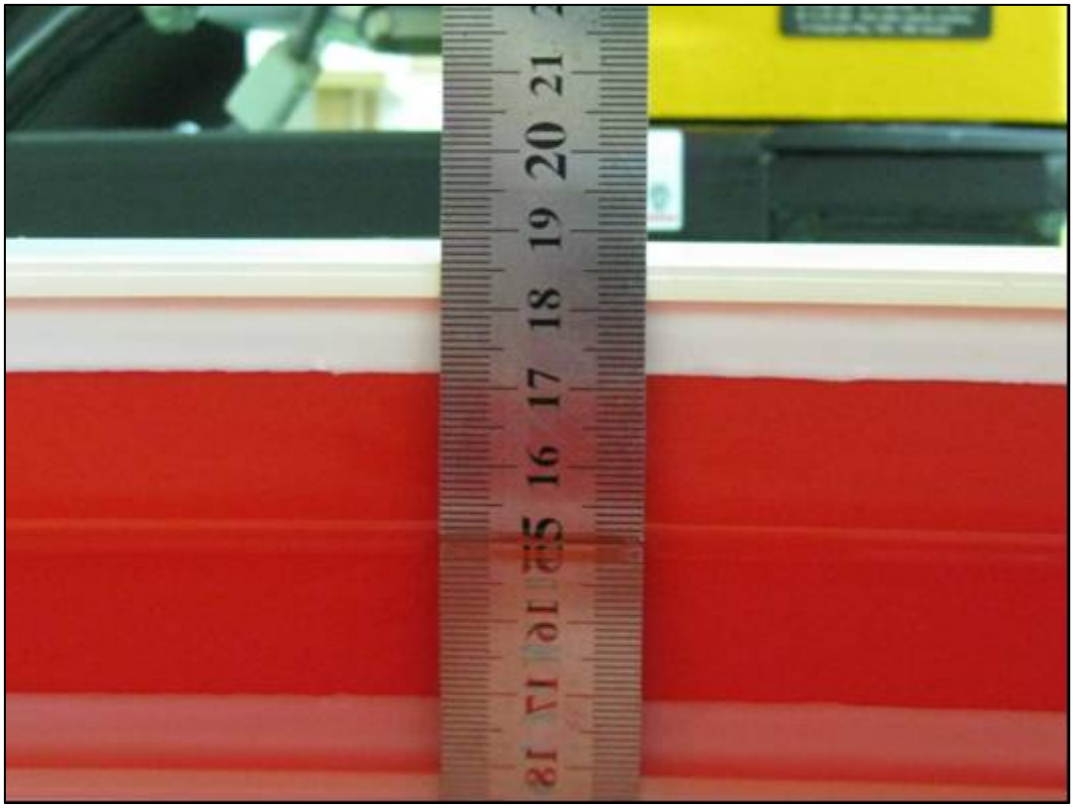
The address and road map of all our labs can be found in our web site also.

---END---

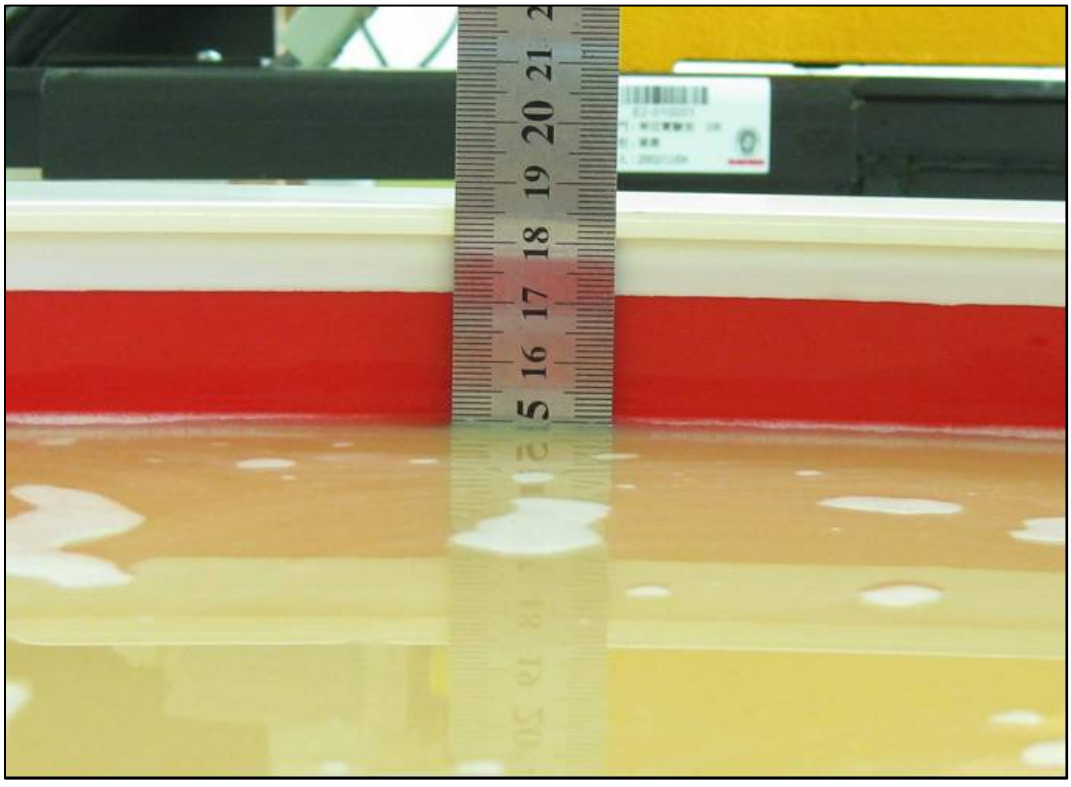
APPENDIX A: TEST DATA

Liquid Level Photo

MSL 2450MHz D=151mm



MSL 5800MHz D=150mm



Date/Time: 2010/2/8 01:35:28

Test Laboratory: Bureau Veritas ADT

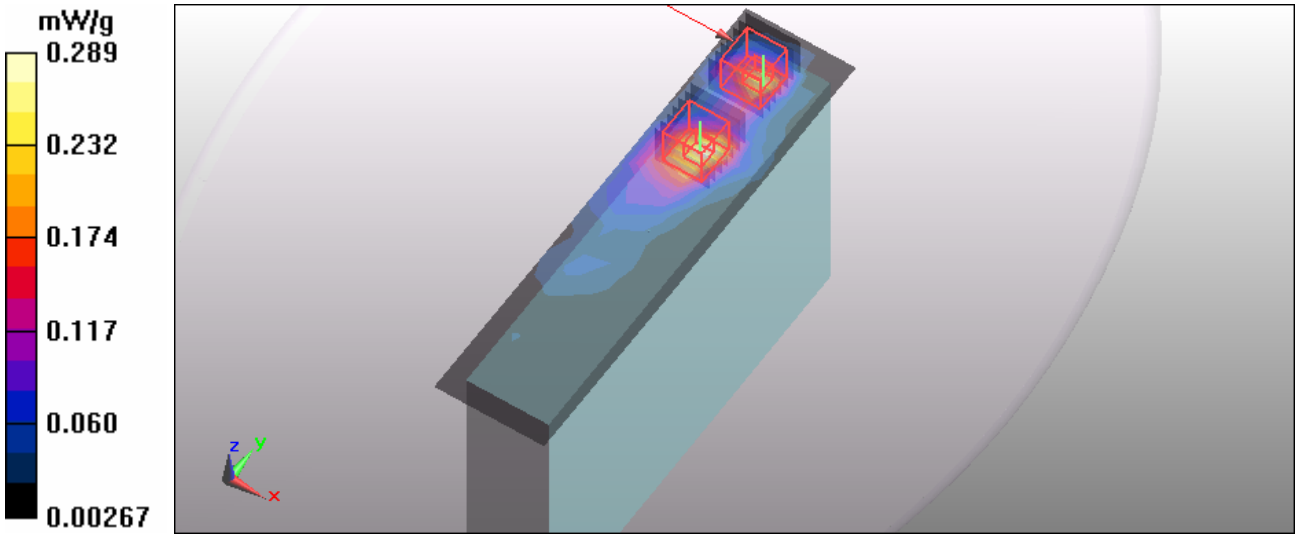
M01-11b-Ch1 / L1

DUT: Tablet PC ; Type: T7M
Communication System: 802.11b ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: DBPSK
Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The Tip side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1/Area Scan (5x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.330 mW/g
Low Channel 1/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 5.67 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.516 W/kg
SAR(1 g) = 0.260 mW/g; SAR(10 g) = 0.127 mW/g
Maximum value of SAR (measured) = 0.336 mW/g
Low Channel 1/Zoom Scan (7x7x9)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 5.67 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.461 W/kg
SAR(1 g) = 0.222 mW/g; SAR(10 g) = 0.103 mW/g
Maximum value of SAR (measured) = 0.289 mW/g



Date/Time: 2010/2/8 02:26:33

Test Laboratory: Bureau Veritas ADT

M02-11g-Ch1 / L1

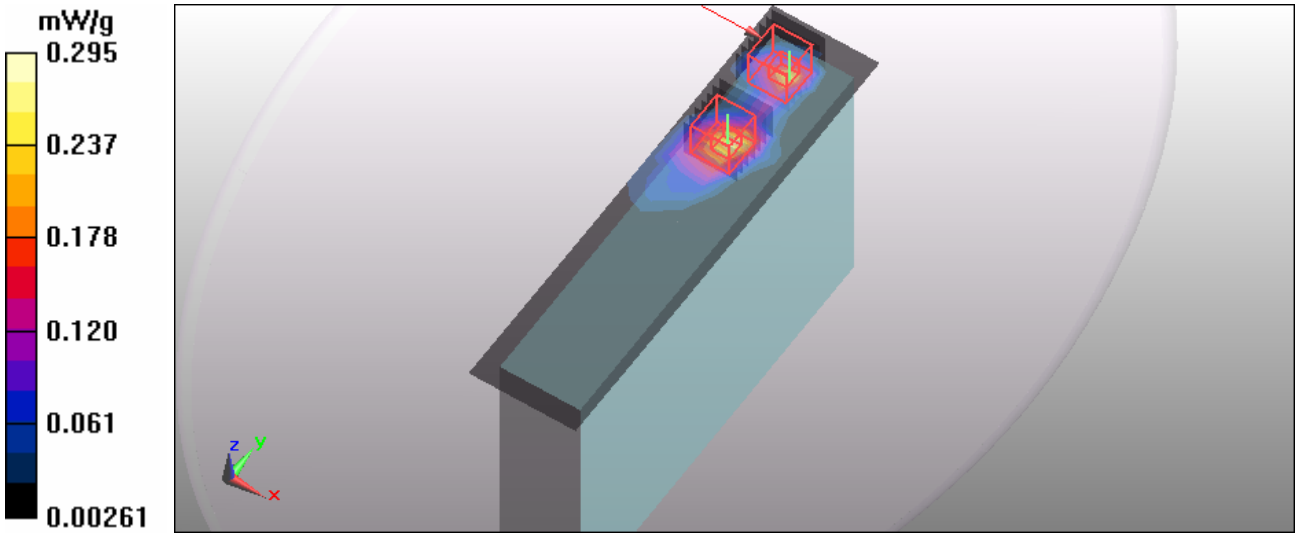
DUT: Tablet PC ; Type: T7M
Communication System: 802.11g ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK
Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The Tip side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1/Area Scan (5x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.316 mW/g
Low Channel 1/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 5.16 V/m; Power Drift = -0.157 dB
Peak SAR (extrapolated) = 0.519 W/kg
SAR(1 g) = 0.260 mW/g; SAR(10 g) = 0.128 mW/g
Maximum value of SAR (measured) = 0.338 mW/g

Low Channel 1/Zoom Scan (7x7x9)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 5.16 V/m; Power Drift = -0.157 dB
Peak SAR (extrapolated) = 0.462 W/kg
SAR(1 g) = 0.226 mW/g; SAR(10 g) = 0.105 mW/g
Maximum value of SAR (measured) = 0.295 mW/g



Date/Time: 2010/2/8 03:17:26

Test Laboratory: Bureau Veritas ADT

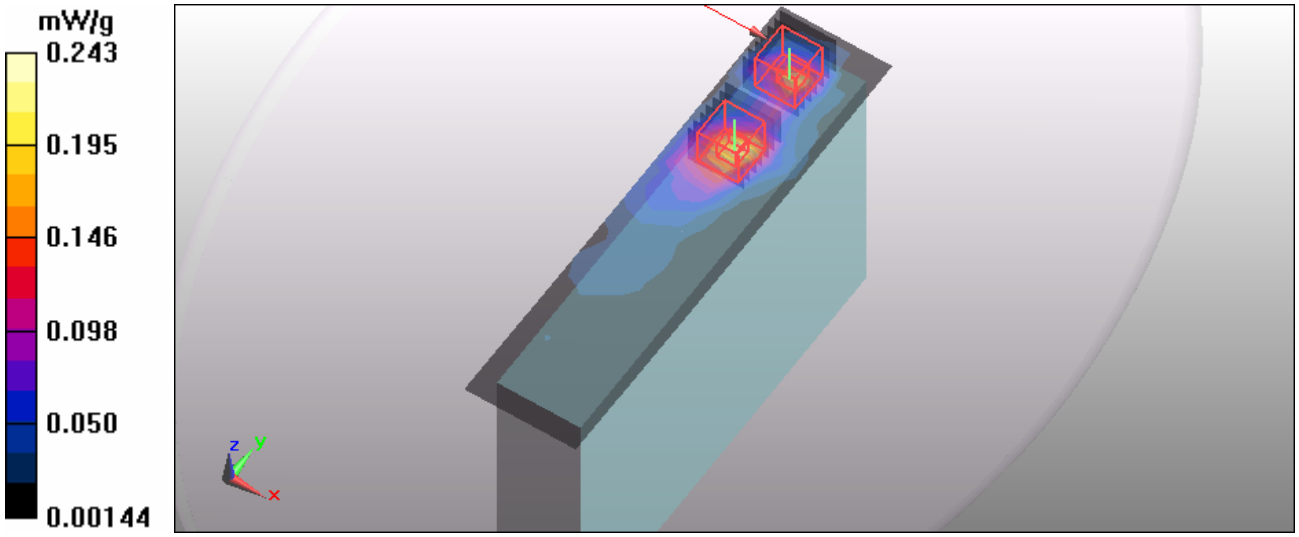
M03-11n 20M-Ch1 / L1

DUT: Tablet PC ; Type: T7M
Communication System: 802.11n 20M ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK
Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The Tip side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1/Area Scan (5x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.291 mW/g
Low Channel 1/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 4.86 V/m; Power Drift = -0.160 dB
Peak SAR (extrapolated) = 0.436 W/kg
SAR(1 g) = 0.222 mW/g; SAR(10 g) = 0.109 mW/g
Maximum value of SAR (measured) = 0.288 mW/g
Low Channel 1/Zoom Scan (7x7x9)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 4.86 V/m; Power Drift = -0.160 dB
Peak SAR (extrapolated) = 0.380 W/kg
SAR(1 g) = 0.183 mW/g; SAR(10 g) = 0.085 mW/g
Maximum value of SAR (measured) = 0.243 mW/g



Date/Time: 2010/2/8 04:07:17

Test Laboratory: Bureau Veritas ADT

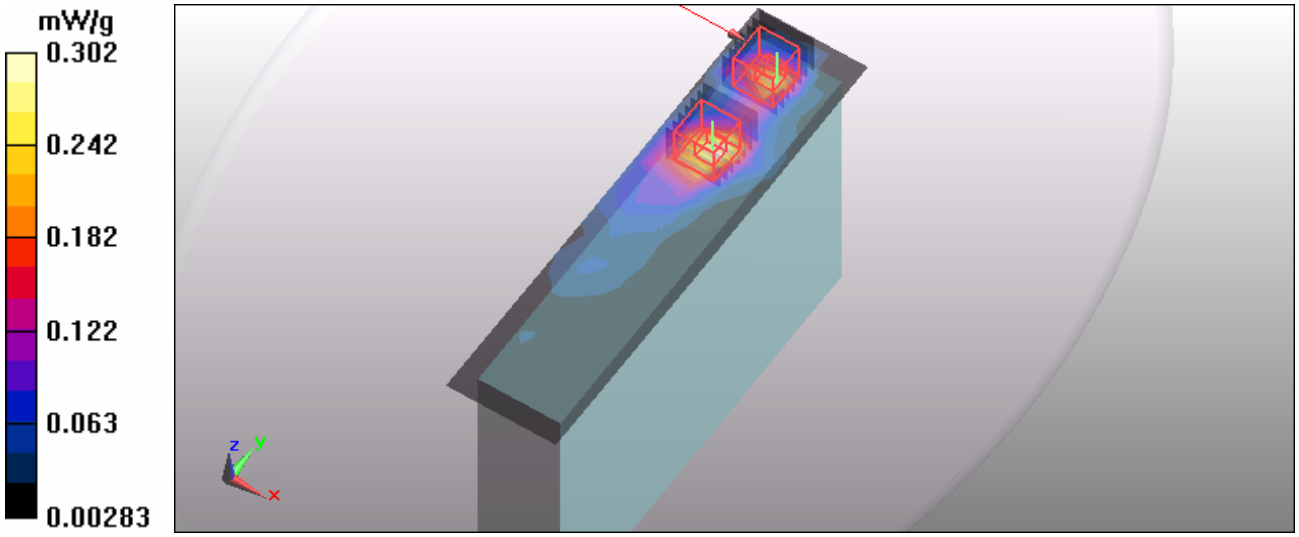
M04-11n 40M-Ch4 / L1

DUT: Tablet PC ; Type: T7M
Communication System: 802.11n 40MHz ; Frequency: 2437 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK
Medium: MSL2450 Medium parameters used: f = 2437 MHz; σ = 1.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The Tip side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Mid. Channel 4/Area Scan (5x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.325 mW/g
Mid. Channel 4/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 5.21 V/m; Power Drift = -0.027 dB
Peak SAR (extrapolated) = 0.527 W/kg
SAR(1 g) = 0.266 mW/g; SAR(10 g) = 0.131 mW/g
Maximum value of SAR (measured) = 0.346 mW/g
Mid. Channel 4/Zoom Scan (7x7x9)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 5.21 V/m; Power Drift = -0.027 dB
Peak SAR (extrapolated) = 0.468 W/kg
SAR(1 g) = 0.232 mW/g; SAR(10 g) = 0.108 mW/g
Maximum value of SAR (measured) = 0.302 mW/g



Date/Time: 2010/2/8 05:04:37

Test Laboratory: Bureau Veritas ADT

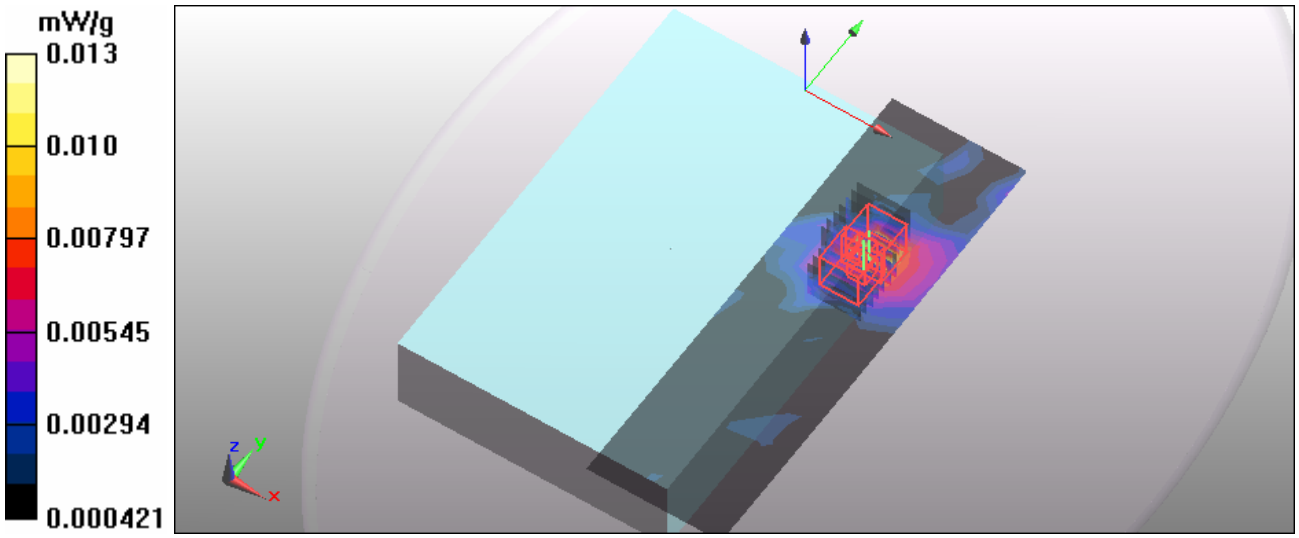
M05-11b-Ch1 / L1

DUT: Tablet PC ; Type: T7M
Communication System: 802.11b ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: DBPSK
Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The back side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1/Area Scan (6x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.012 mW/g
Low Channel 1/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 1.41 V/m; Power Drift = -0.104 dB
Peak SAR (extrapolated) = 0.028 W/kg
SAR(1 g) = 0.012 mW/g; SAR(10 g) = 0.00667 mW/g
Maximum value of SAR (measured) = 0.015 mW/g
Low Channel 1/Zoom Scan (7x7x9)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 1.41 V/m; Power Drift = -0.104 dB
Peak SAR (extrapolated) = 0.024 W/kg
SAR(1 g) = 0.00879 mW/g; SAR(10 g) = 0.0049 mW/g
Maximum value of SAR (measured) = 0.013 mW/g



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Test Laboratory: Bureau Veritas ADT

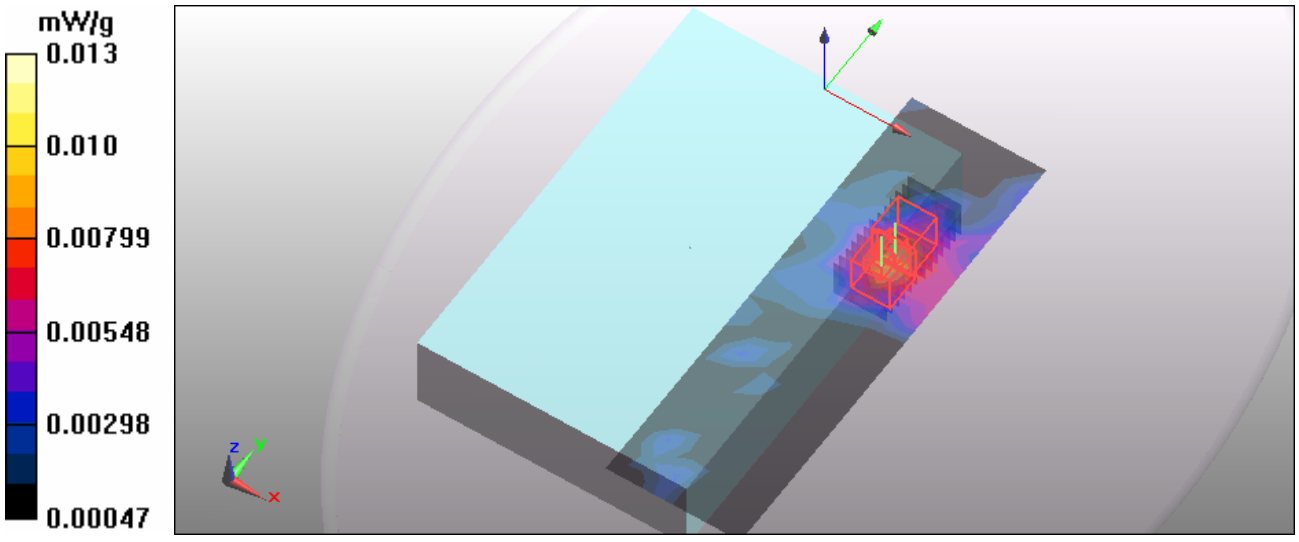
M06-11g-Ch1 / L1

DUT: Tablet PC ; Type: T7M
Communication System: 802.11g ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK
Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The back side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1/Area Scan (6x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.013 mW/g
Low Channel 1/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 1.07 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.022 W/kg
SAR(1 g) = 0.011 mW/g; SAR(10 g) = 0.00608 mW/g
Maximum value of SAR (measured) = 0.016 mW/g
Low Channel 1/Zoom Scan (7x7x9)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 1.07 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.019 W/kg
SAR(1 g) = 0.011 mW/g; SAR(10 g) = 0.00601 mW/g



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Test Laboratory: Bureau Veritas ADT

M07-11N-20M-Ch 1 / L1

DUT: Tablet PC ; Type: T7M

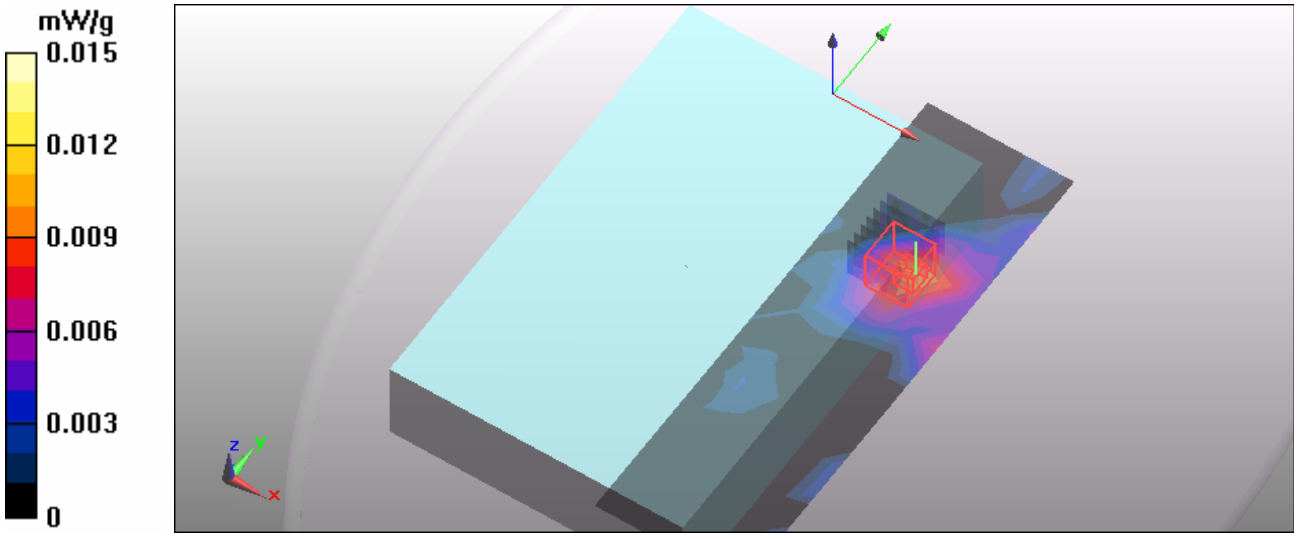
Communication System: 802.11n 20M ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK
Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The back side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1/Area Scan (6x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.011 mW/g

Low Channel 1/Zoom Scan(7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 0.932 V/m; Power Drift = 0.135 dB
Peak SAR (extrapolated) = 0.022 W/kg
SAR(1 g) = 0.011 mW/g; SAR(10 g) = 0.00627 mW/g
Maximum value of SAR (measured) = 0.015 mW/g



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Test Laboratory: Bureau Veritas ADT

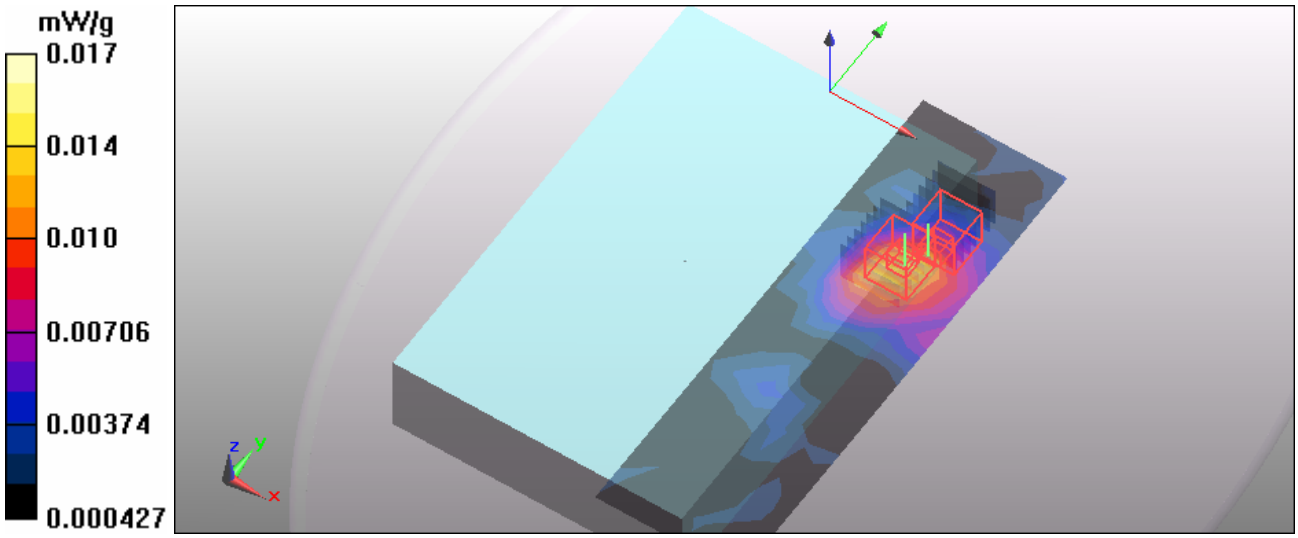
M08-11N-40M-Ch4 / L1

DUT: Tablet PC ; Type: T7M
Communication System: 802.11n 40MHz ; Frequency: 2437 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK
Medium: MSL2450 Medium parameters used: f = 2437 MHz; σ = 1.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The back side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Mid. Channel 4/Area Scan (6x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.019 mW/g
Mid. Channel 4/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 1.15 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.031 W/kg
SAR(1 g) = 0.017 mW/g; SAR(10 g) = 0.00976 mW/g
Maximum value of SAR (measured) = 0.022 mW/g
Mid. Channel 4/Zoom Scan(7x7x9)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 1.15 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.023 W/kg
SAR(1 g) = 0.011 mW/g; SAR(10 g) = 0.00603 mW/g
Maximum value of SAR (measured) = 0.017 mW/g



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Test Laboratory: Bureau Veritas ADT

M09-11b-Ch1 / K1

DUT: Tablet PC ; Type: T7M

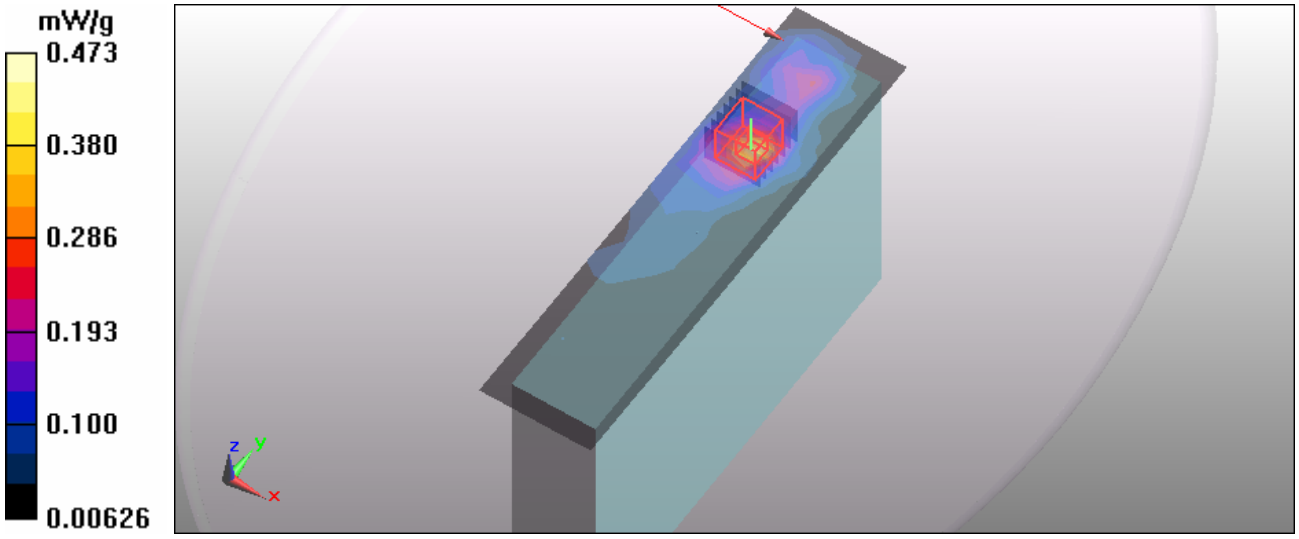
Communication System: 802.11b ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: DBPSK
Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The Tip side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1/Area Scan (5x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.476 mW/g

Low Channel 1/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 5.71 V/m; Power Drift = -0.130 dB
Peak SAR (extrapolated) = 0.727 W/kg
SAR(1 g) = 0.366 mW/g; SAR(10 g) = 0.178 mW/g
Maximum value of SAR (measured) = 0.473 mW/g



Date/Time: 2010/2/8 08:35:37

Test Laboratory: Bureau Veritas ADT

M10-11g-Ch1 / K1

DUT: Tablet PC ; Type: T7M

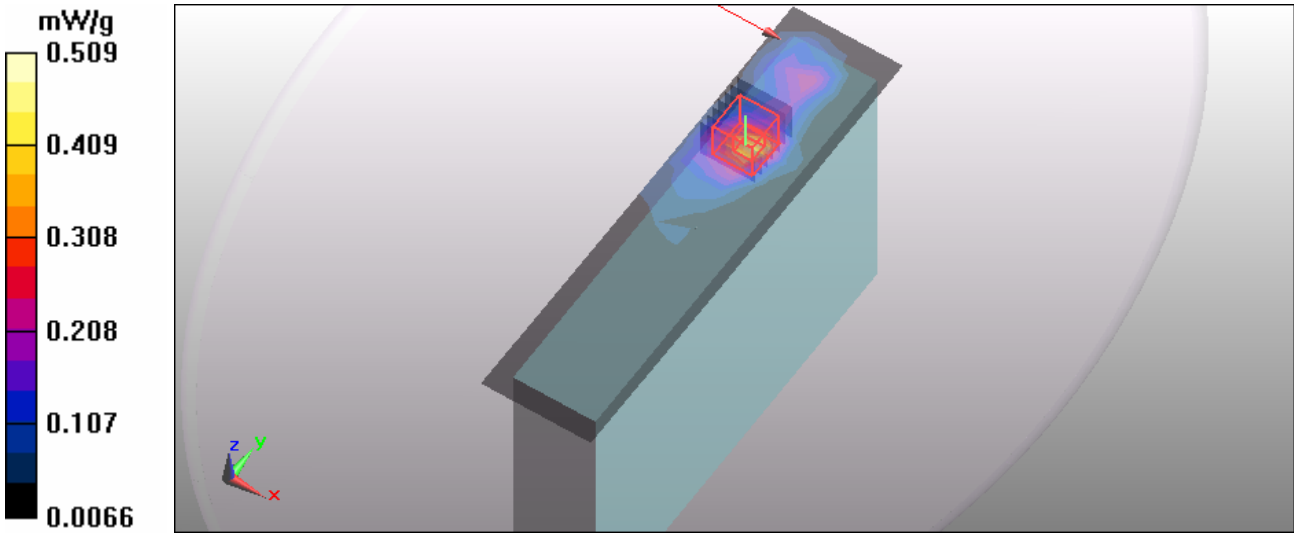
Communication System: 802.11g ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK
Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The Tip side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1/Area Scan (5x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.469 mW/g

Low Channel 1/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 5.69 V/m; Power Drift = 0.138 dB
Peak SAR (extrapolated) = 0.785 W/kg
SAR(1 g) = 0.395 mW/g; SAR(10 g) = 0.193 mW/g
Maximum value of SAR (measured) = 0.509 mW/g



Date/Time: 2010/2/8 09:07:19

Test Laboratory: Bureau Veritas ADT

M11-11n 20M-Ch1 / K1

DUT: Tablet PC ; Type: T7M

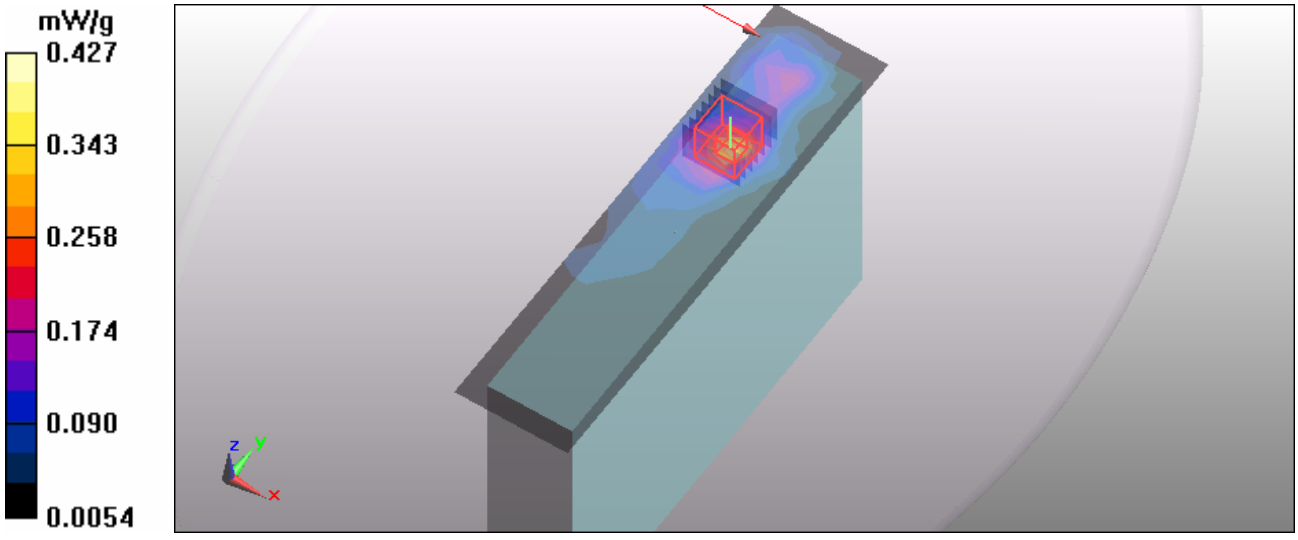
Communication System: 802.11n 20M ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK
Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The Tip side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1/Area Scan (5x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.425 mW/g

Low Channel 1/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 5.59 V/m; Power Drift = -0.156 dB
Peak SAR (extrapolated) = 0.647 W/kg
SAR(1 g) = 0.328 mW/g; SAR(10 g) = 0.161 mW/g
Maximum value of SAR (measured) = 0.427 mW/g



Date/Time: 2010/2/8 09:39:00

Test Laboratory: Bureau Veritas ADT

M12-11N-40M-Ch4 / K1

DUT: Tablet PC ; Type: T7M

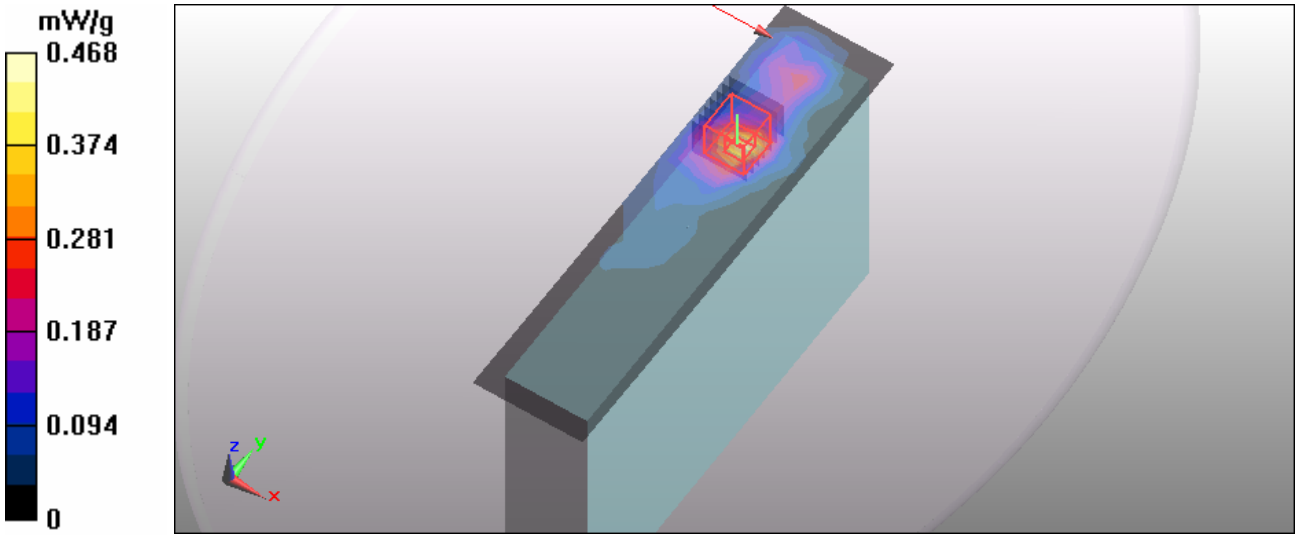
Communication System: 802.11n 40MHz ; Frequency: 2437 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK
Medium: MSL2450 Medium parameters used: f = 2437 MHz; σ = 1.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The Tip side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Mid. Channel 4/Area Scan (5x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.468 mW/g

Mid. Channel 4/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 5.82 V/m; Power Drift = -0.173 dB
Peak SAR (extrapolated) = 0.696 W/kg
SAR(1 g) = 0.345 mW/g; SAR(10 g) = 0.168 mW/g
Maximum value of SAR (measured) = 0.445 mW/g



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Test Laboratory: Bureau Veritas ADT

M13-11b-Ch1 / K1

DUT: Tablet PC ; Type: T7M

Communication System: 802.11b ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: DBPSK
Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The back side of the EUT to the Phantom)

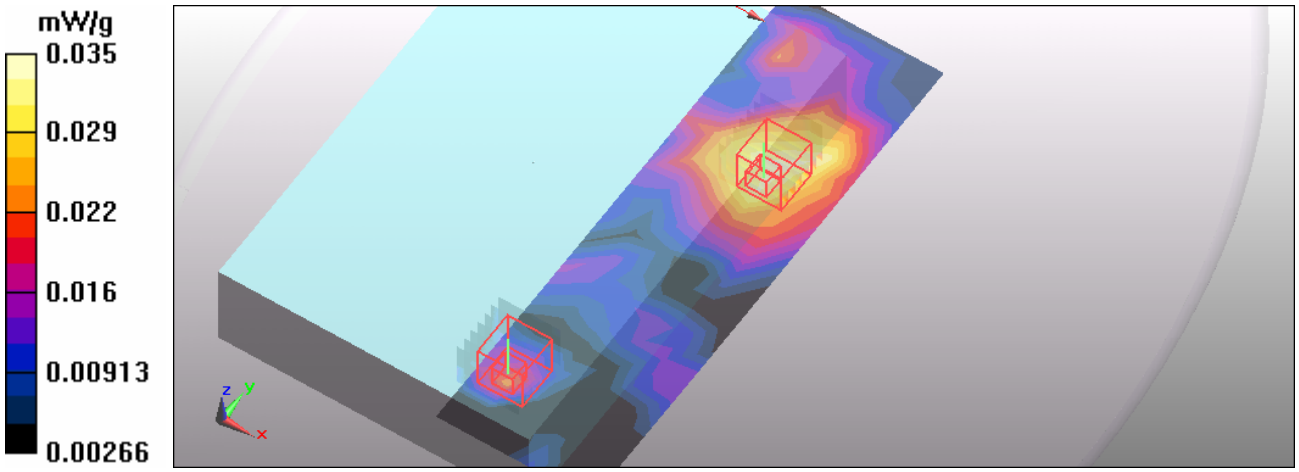
DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1 /Area Scan (6x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.035 mW/g

Low Channel 1 /Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 4.43 V/m; Power Drift = -0.131 dB
Peak SAR (extrapolated) = 0.052 W/kg
SAR(1 g) = 0.027 mW/g; SAR(10 g) = 0.017 mW/g

Low Channel 1 /Zoom Scan (7x7x9)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 4.43 V/m; Power Drift = -0.131 dB
Peak SAR (extrapolated) = 0.034 W/kg
SAR(1 g) = 0.019 mW/g; SAR(10 g) = 0.00983 mW/g
Maximum value of SAR (measured) = 0.024 mW/g



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Test Laboratory: Bureau Veritas ADT

M14-11g-Ch1 / K1

DUT: Tablet PC ; Type: T7M

Communication System: 802.11g ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK
Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The back side of the EUT to the Phantom)

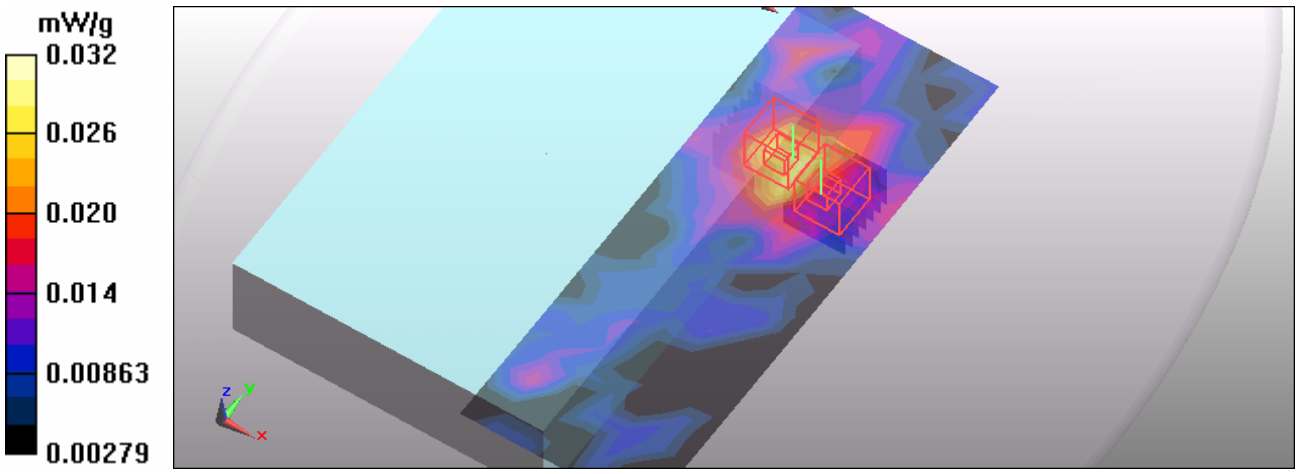
DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1 /Area Scan (7x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.029 mW/g

Low Channel 1 /Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 3.79 V/m; Power Drift = -0.171 dB
Peak SAR (extrapolated) = 0.052 W/kg
SAR(1 g) = 0.023 mW/g; SAR(10 g) = 0.015 mW/g
Maximum value of SAR (measured) = 0.032 mW/g

Low Channel 1 /Zoom Scan (7x7x9)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 3.79 V/m; Power Drift = -0.171 dB
Peak SAR (extrapolated) = 0.031 W/kg
SAR(1 g) = 0.017 mW/g; SAR(10 g) = 0.010 mW/g
Maximum value of SAR (measured) = 0.024 mW/g



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Test Laboratory: Bureau Veritas ADT

M15-11n 20M-Ch1 / K1

DUT: Tablet PC ; Type: T7M

Communication System: 802.11n 20M ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK

Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3

Phantom section: Flat Section ; Separation distance : 0 mm (The back side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1/Area Scan (7x18x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.029 mW/g

Low Channel 1/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm

Reference Value = 1.1 V/m; Power Drift = -0.133 dB

Peak SAR (extrapolated) = 0.047 W/kg

SAR(1 g) = 0.024 mW/g; SAR(10 g) = 0.015 mW/g

Maximum value of SAR (measured) = 0.031 mW/g

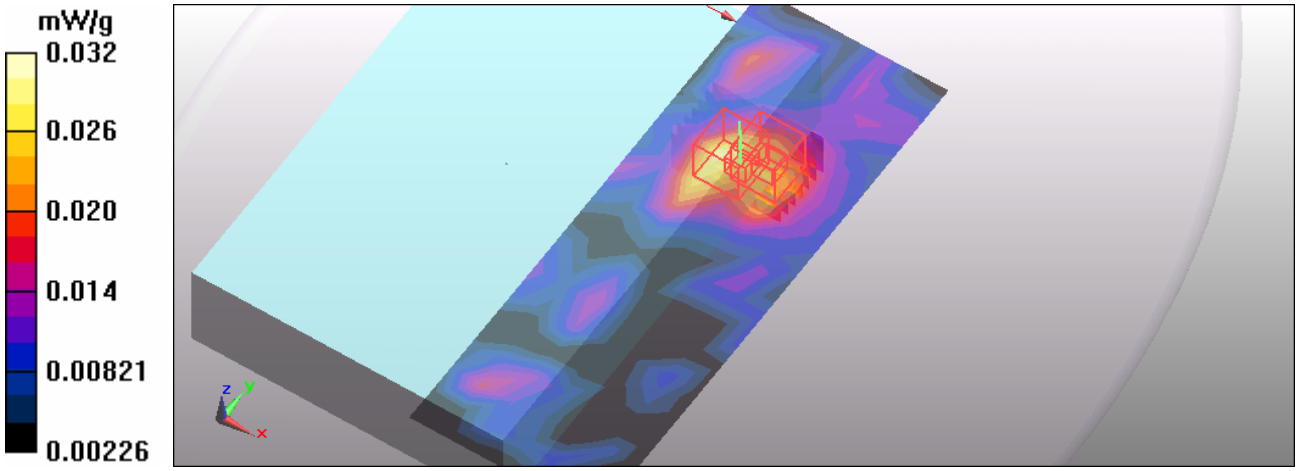
Low Channel 1/Zoom Scan (7x7x9)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=3mm

Reference Value = 1.1 V/m; Power Drift = -0.133 dB

Peak SAR (extrapolated) = 0.059 W/kg

SAR(1 g) = 0.025 mW/g; SAR(10 g) = 0.015 mW/g

Maximum value of SAR (measured) = 0.032 mW/g



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Test Laboratory: Bureau Veritas ADT

M16-11n 40M-Ch4 / K1

DUT: Tablet PC ; Type: T7M

Communication System: 802.11n 40MHz ; Frequency: 2437 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK

Medium: MSL2450 Medium parameters used: f = 2437 MHz; σ = 1.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3

Phantom section: Flat Section ; Separation distance : 0 mm (The back side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Mid. Channel 4 /Area Scan (7x18x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.020 mW/g

Mid. Channel 4 /Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm

Reference Value = 1.02 V/m; Power Drift = 0.116 dB

Peak SAR (extrapolated) = 0.031 W/kg

SAR(1 g) = 0.016 mW/g; SAR(10 g) = 0.0089 mW/g

Maximum value of SAR (measured) = 0.021 mW/g

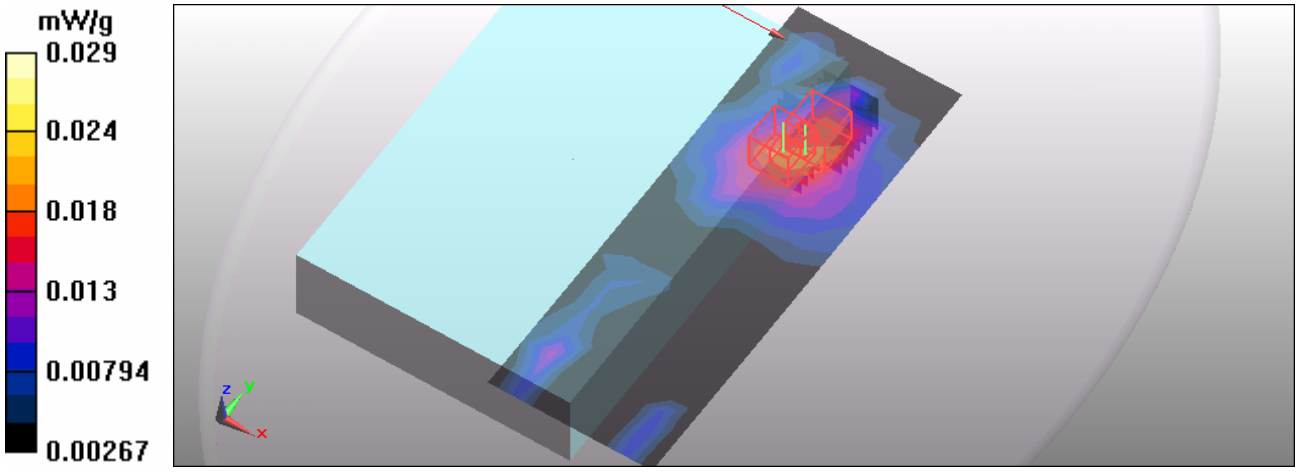
Mid. Channel 4 /Zoom Scan (7x7x9)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=3mm

Reference Value = 1.02 V/m; Power Drift = 0.116 dB

Peak SAR (extrapolated) = 0.054 W/kg

SAR(1 g) = 0.021 mW/g; SAR(10 g) = 0.013 mW/g

Maximum value of SAR (measured) = 0.029 mW/g



Date/Time: 2010/2/8 14:36:08

Test Laboratory: Bureau Veritas ADT

M17-11b-Ch1 / D1

DUT: Tablet PC ; Type: T7M

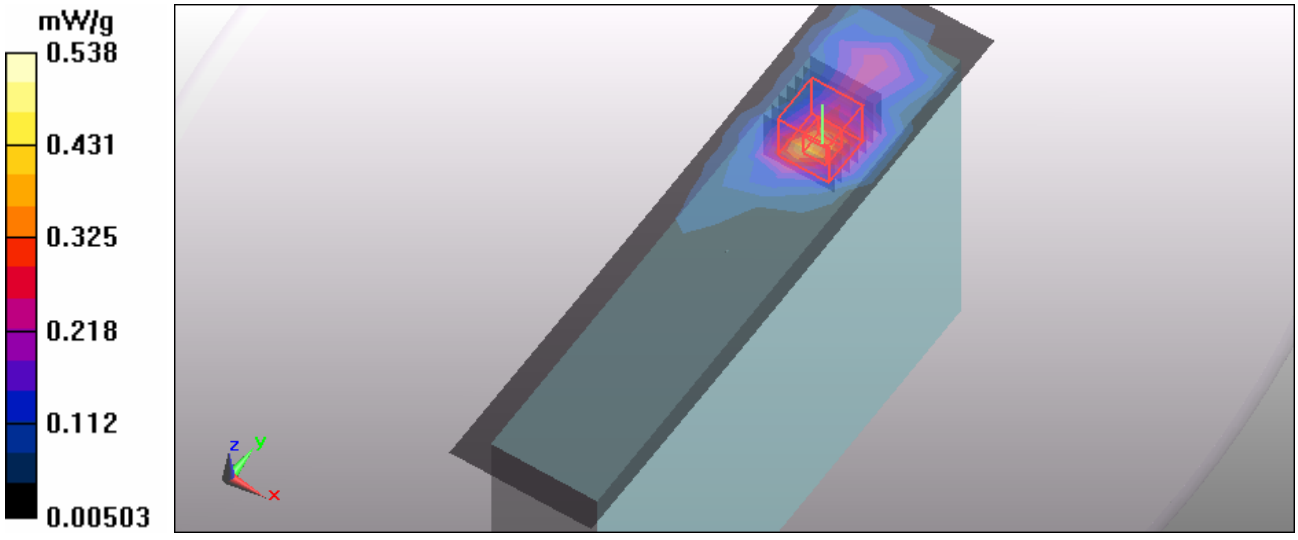
Communication System: 802.11b ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: DBPSK
Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The Tip side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1/Area Scan (5x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.517 mW/g

Low Channel 1/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 1.15 V/m; Power Drift = 0.124 dB
Peak SAR (extrapolated) = 0.836 W/kg
SAR(1 g) = 0.418 mW/g; SAR(10 g) = 0.200 mW/g
Maximum value of SAR (measured) = 0.538 mW/g



Date/Time: 2010/2/8 15:07:19

Test Laboratory: Bureau Veritas ADT

M18-11g-Ch1 / D1

DUT: Tablet PC ; Type: T7M

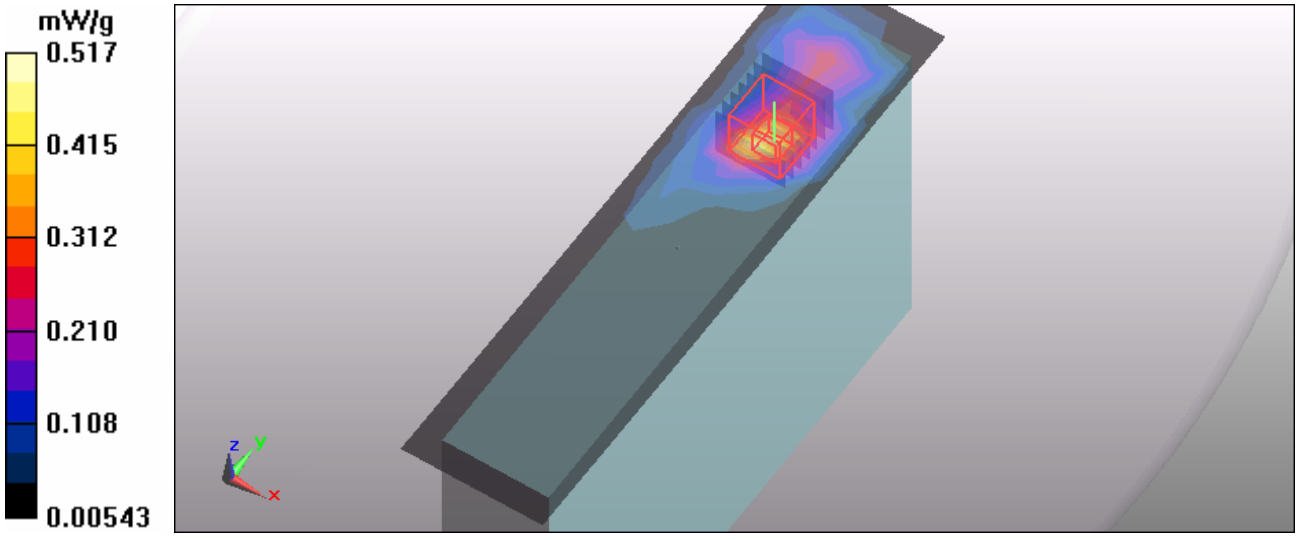
Communication System: 802.11g ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK
Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The Tip side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1/Area Scan (5x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.471 mW/g

Low Channel 1/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 16 V/m; Power Drift = -0.110 dB
Peak SAR (extrapolated) = 0.796 W/kg
SAR(1 g) = 0.399 mW/g; SAR(10 g) = 0.191 mW/g
Maximum value of SAR (measured) = 0.517 mW/g



Date/Time: 2010/2/8 15:39:09

Test Laboratory: Bureau Veritas ADT

M19-11n 20M-Ch1 / D1

DUT: Tablet PC ; Type: T7M

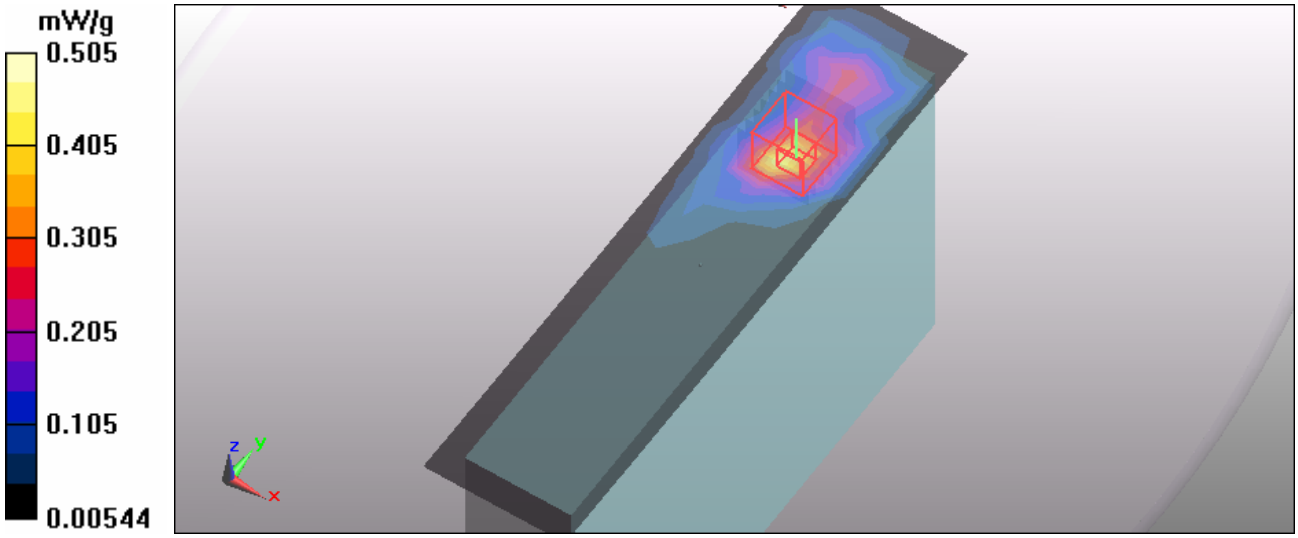
Communication System: 802.11n 20M ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK
Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The Tip side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1/Area Scan (5x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.453 mW/g

Low Channel 1/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 15.6 V/m; Power Drift = -0.100 dB
Peak SAR (extrapolated) = 0.773 W/kg
SAR(1 g) = 0.388 mW/g; SAR(10 g) = 0.186 mW/g
Maximum value of SAR (measured) = 0.505 mW/g



Date/Time: 2010/2/8 16:11:38

Test Laboratory: Bureau Veritas ADT

M20-11n 40M-Ch4 / D1

DUT: Tablet PC ; Type: T7M

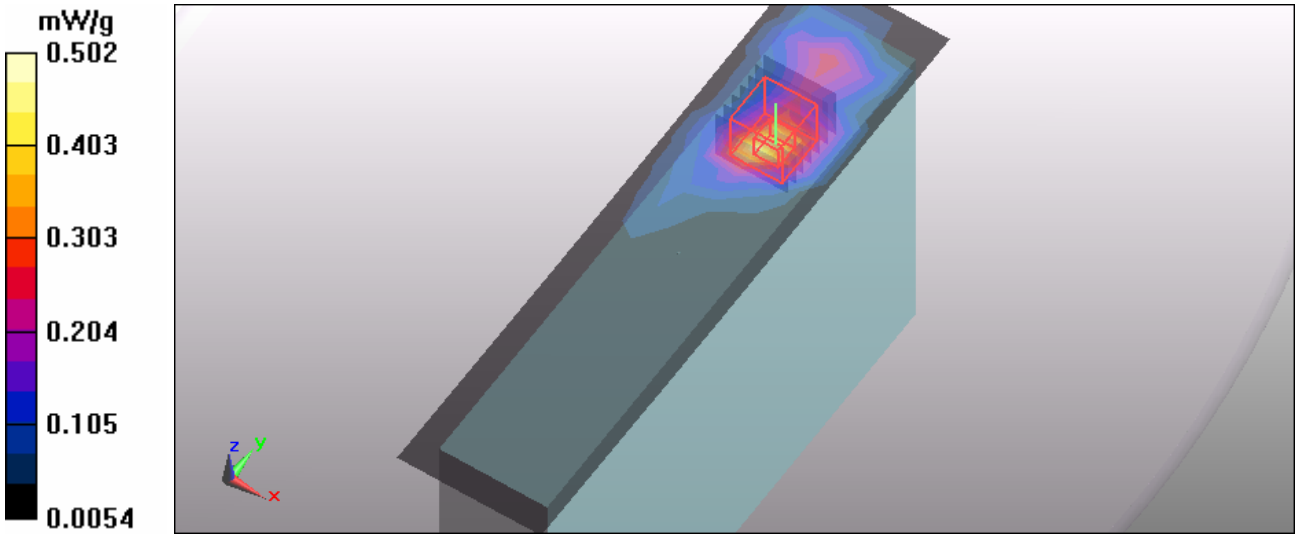
Communication System: 802.11n 40MHz ; Frequency: 2437 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK
Medium: MSL2450 Medium parameters used: f = 2437 MHz; σ = 1.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The Tip side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Mid. Channel 4/Area Scan (5x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.458 mW/g

Mid. Channel 4/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 15.5 V/m; Power Drift = -0.143 dB
Peak SAR (extrapolated) = 0.783 W/kg
SAR(1 g) = 0.387 mW/g; SAR(10 g) = 0.185 mW/g
Maximum value of SAR (measured) = 0.502 mW/g



Date/Time: 2010/2/8 17:23:28

Test Laboratory: Bureau Veritas ADT

M21-11b-Ch1 / D1

DUT: Tablet PC ; Type: T7M

Communication System: 802.11b ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: DBPSK
Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The back side of the EUT to the Phantom)

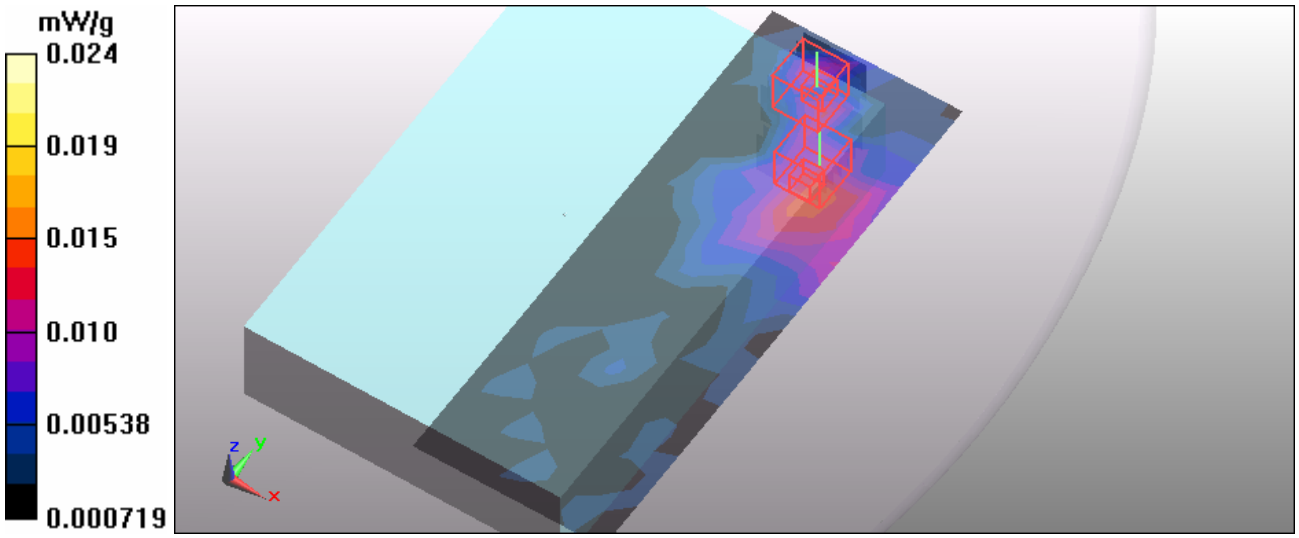
DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1/Area Scan (7x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.014 mW/g

Low Channel 1/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 2.68 V/m; Power Drift = 0.083 dB
Peak SAR (extrapolated) = 0.021 W/kg
SAR(1 g) = 0.012 mW/g; SAR(10 g) = 0.00667 mW/g
Maximum value of SAR (measured) = 0.016 mW/g

Low Channel 1/Zoom Scan (7x7x9)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 2.68 V/m; Power Drift = 0.083 dB
Peak SAR (extrapolated) = 0.038 W/kg
SAR(1 g) = 0.016 mW/g; SAR(10 g) = 0.00694 mW/g
Maximum value of SAR (measured) = 0.024 mW/g



Date/Time: 2010/2/8 18:26:51

Test Laboratory: Bureau Veritas ADT

M22-11g-Ch1 / D1

DUT: Tablet PC ; Type: T7M

Communication System: 802.11g ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK
Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The back side of the EUT to the Phantom)

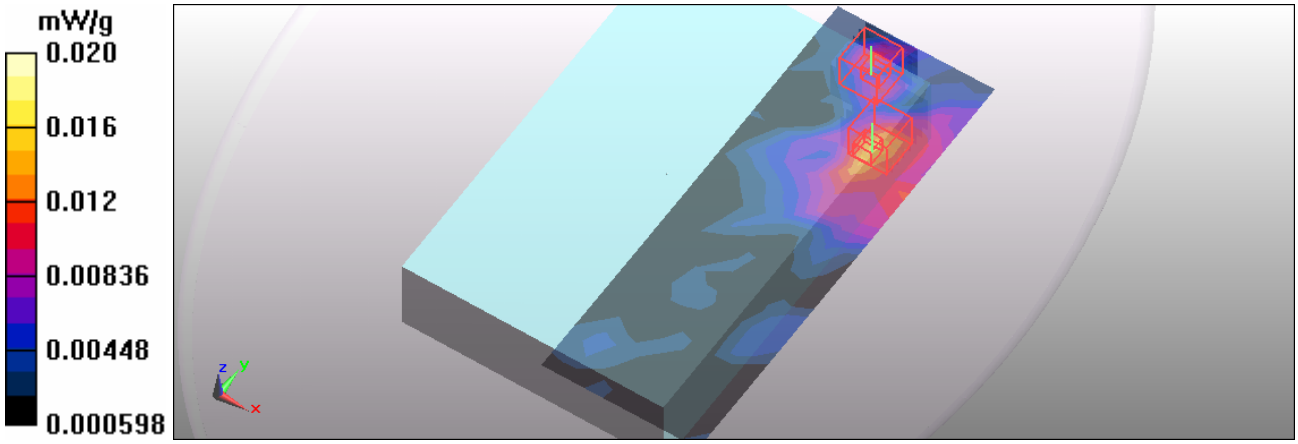
DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1/Area Scan (7x18x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.016 mW/g

Low Channel 1/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 2.58 V/m; Power Drift = 0.013 dB
Peak SAR (extrapolated) = 0.036 W/kg
SAR(1 g) = 0.011 mW/g; SAR(10 g) = 0.00635 mW/g
Maximum value of SAR (measured) = 0.015 mW/g

Low Channel 1/Zoom Scan (7x7x9)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 2.58 V/m; Power Drift = 0.013 dB
Peak SAR (extrapolated) = 0.046 W/kg
SAR(1 g) = 0.015 mW/g; SAR(10 g) = 0.00711 mW/g
Maximum value of SAR (measured) = 0.020 mW/g



Date/Time: 2010/2/8 19:28:44

Test Laboratory: Bureau Veritas ADT

M23-11n 20M-Ch1 / D1

DUT: Tablet PC ; Type: T7M

Communication System: 802.11n 20M ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK

Medium: MSL2450 Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3

Phantom section: Flat Section ; Separation distance : 0 mm (The back side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Low Channel 1/Area Scan (7x18x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.012 mW/g

Low Channel 1/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm

Reference Value = 0.835 V/m; Power Drift = -0.134 dB

Peak SAR (extrapolated) = 0.038 W/kg

SAR(1 g) = 0.00868 mW/g; SAR(10 g) = 0.00471 mW/g

Maximum value of SAR (measured) = 0.013 mW/g

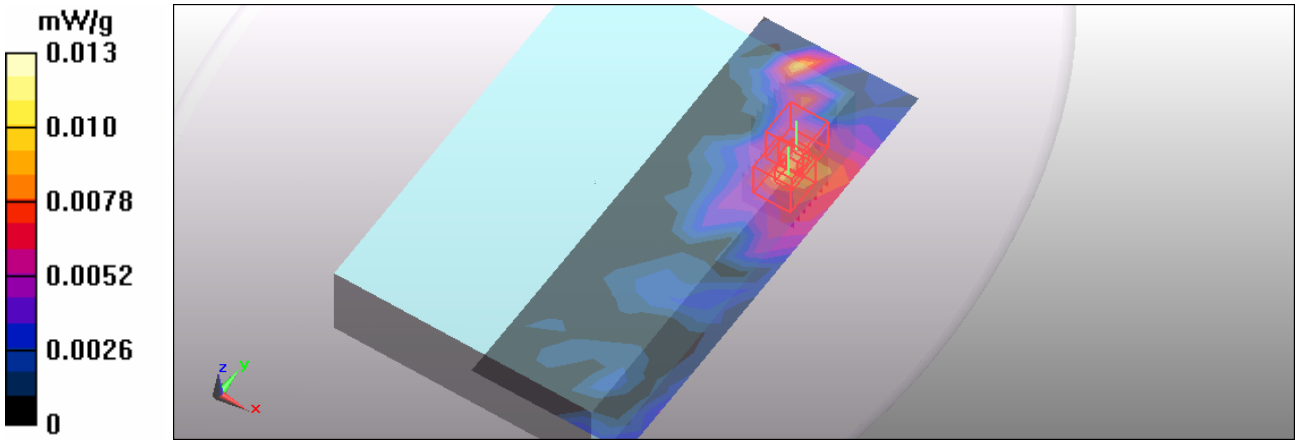
Low Channel 1/Zoom Scan (7x7x9)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=3mm

Reference Value = 0.835 V/m; Power Drift = -0.134 dB

Peak SAR (extrapolated) = 0.034 W/kg

SAR(1 g) = 0.00818 mW/g; SAR(10 g) = 0.00389 mW/g

Maximum value of SAR (measured) = 0.011 mW/g



Date/Time: 2010/2/8 20:30:44

Test Laboratory: Bureau Veritas ADT

M24-11n 40M-Ch4 / D1

DUT: Tablet PC ; Type: T7M

Communication System: 802.11n 40MHz; Frequency: 2437 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK

Medium: MSL2450 Medium parameters used: f = 2437 MHz; σ = 1.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3

Phantom section: Flat Section ; Separation distance : 0 mm (The back side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(7.91, 7.91, 7.91); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Mid. Channel 4/Area Scan (7x18x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.016 mW/g

Mid. Channel 4/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm

Reference Value = 1.36 V/m; Power Drift = -0.164 dB

Peak SAR (extrapolated) = 0.030 W/kg

SAR(1 g) = 0.013 mW/g; SAR(10 g) = 0.0074 mW/g

Maximum value of SAR (measured) = 0.017 mW/g

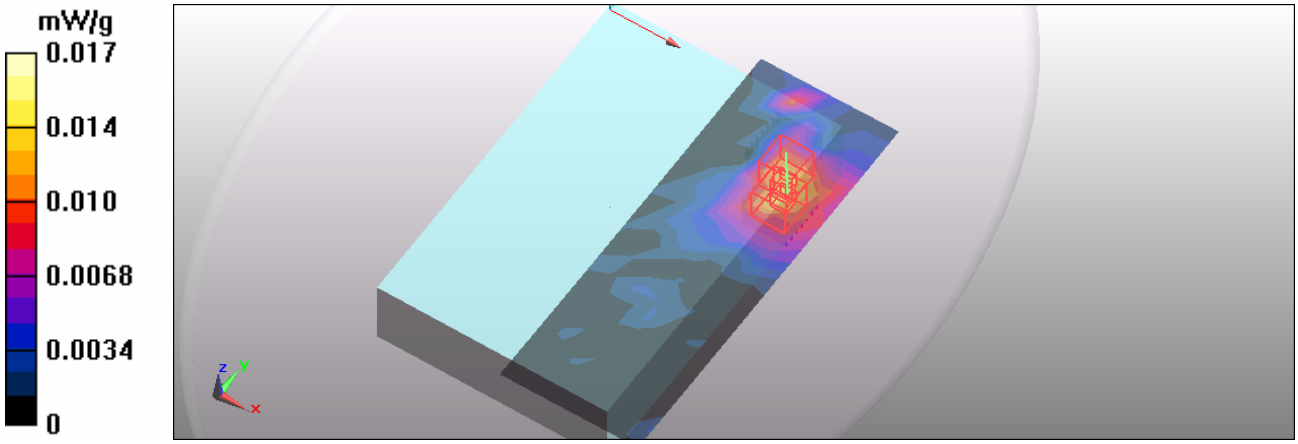
Mid. Channel 4/Zoom Scan (7x7x9)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=3mm

Reference Value = 1.36 V/m; Power Drift = -0.164 dB

Peak SAR (extrapolated) = 0.026 W/kg

SAR(1 g) = 0.011 mW/g; SAR(10 g) = 0.0067 mW/g

Maximum value of SAR (measured) = 0.011 mW/g



Date/Time: 2010/2/9 11:38:49

Test Laboratory: Bureau Veritas ADT

M25-11a Band4-Ch165 / D1

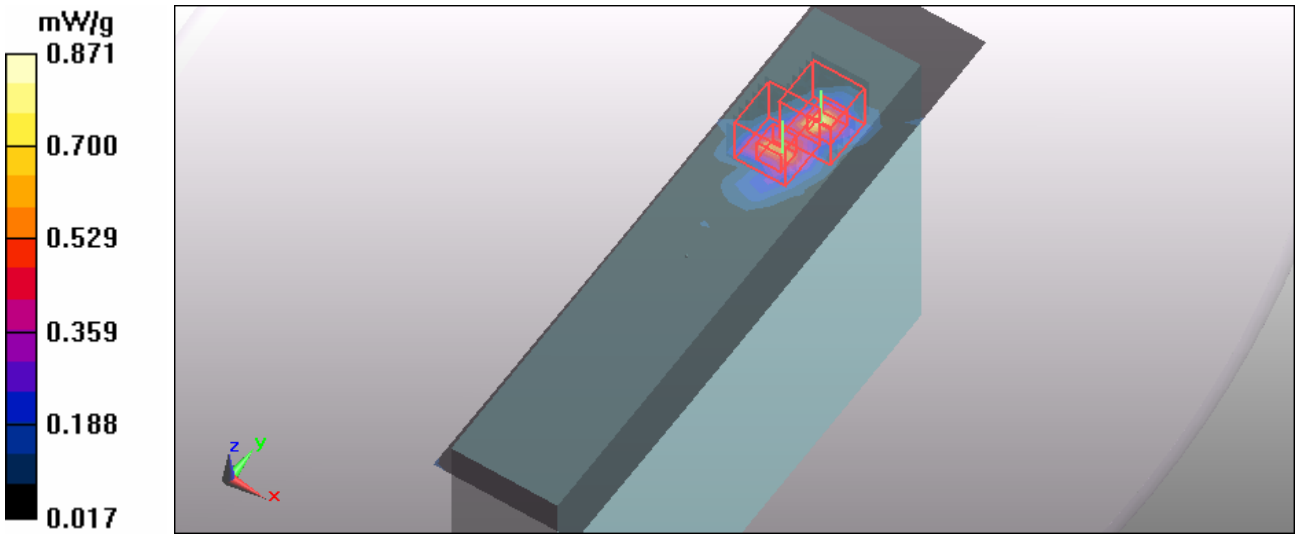
DUT: Tablet PC ; Type: T7M

Communication System: 802.11a ; Frequency: 5825 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK
Medium: MSL5800 Medium parameters used : f = 5825 MHz; σ = 6.13 mho/m; ε_r = 48.7; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The Tip side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(3.95, 3.95, 3.95); Calibrated: 2010/1/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Channel 165/Area Scan (7x27x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.829 mW/g
Channel 165/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 11.3 V/m; Power Drift = 0.004 dB
Peak SAR (extrapolated) = 1.76 W/kg
SAR(1 g) = 0.594 mW/g; SAR(10 g) = 0.357 mW/g
Maximum value of SAR (measured) = 0.871 mW/g
Channel 165/Zoom Scan (7x7x9)/Cube 1: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 11.3 V/m; Power Drift = 0.004 dB
Peak SAR (extrapolated) = 1.68 W/kg
SAR(1 g) = 0.587 mW/g; SAR(10 g) = 0.356 mW/g
Maximum value of SAR (measured) = 0.757 mW/g



Date/Time: 2010/2/9 19:47:54

Test Laboratory: Bureau Veritas ADT

M26-11aN 20M Band4-Ch165 / D1

DUT: Tablet PC ; Type: T7M

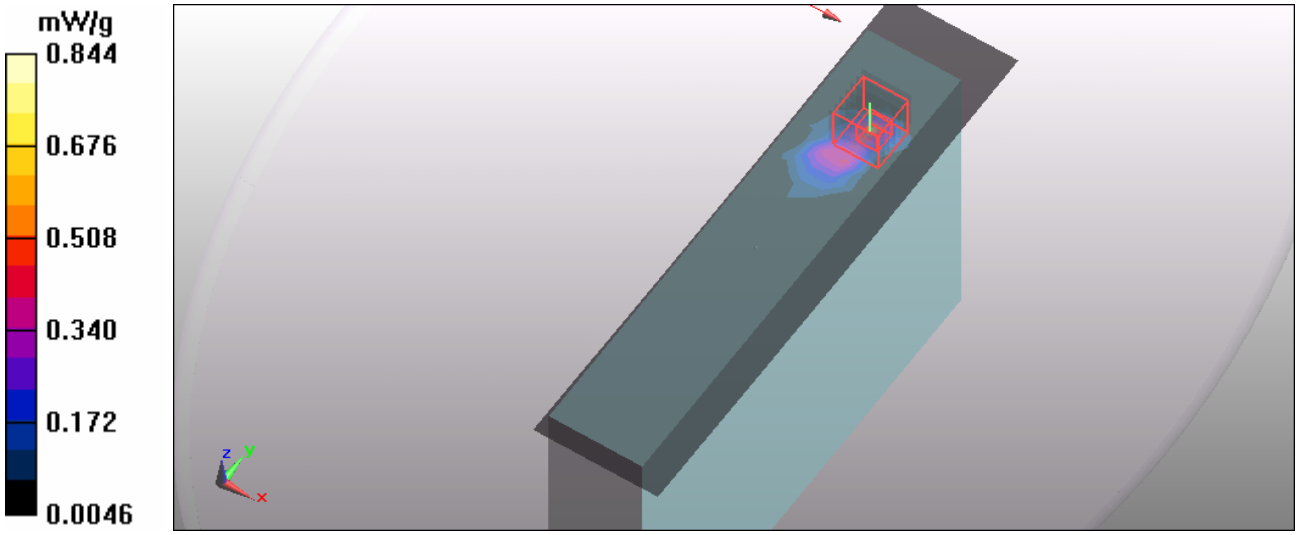
Communication System: 11aN 20MHz ; Frequency: 5825 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK
Medium: MSL5800 Medium parameters used : f = 5825 MHz; σ = 6.13 mho/m; ε_r = 48.7; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Separation distance : 0 mm (The Tip side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(3.95, 3.95, 3.95); Calibrated: 2010/1/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Channel 165/Area Scan (7x27x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.844 mW/g

Channel 165/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 13 V/m; Power Drift = -0.149 dB
Peak SAR (extrapolated) = 2.8 W/kg
SAR(1 g) = 0.620 mW/g; SAR(10 g) = 0.358 mW/g
Maximum value of SAR (measured) = 0.841 mW/g



Date/Time: 2010/2/10 02:24:17

Test Laboratory: Bureau Veritas ADT

M27-11aN 40M Band4-Ch151 / D1

DUT: Tablet PC ; Type: T7M

Communication System: 11aN 40MHz ; Frequency: 5755 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK

Medium: MSL5800 Medium parameters used: f = 5755 MHz; σ = 6.01 mho/m; ε_r = 49.4; ρ = 1000 kg/m^3

Phantom section: Flat Section ; Separation distance : 0 mm (The Tip side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(3.95, 3.95, 3.95); Calibrated: 2010/1/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Channel 151/Area Scan (7x27x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.746 mW/g

Channel 151/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm

Reference Value = 12.4 V/m; Power Drift = -0.121 dB

Peak SAR (extrapolated) = 1.65 W/kg

SAR(1 g) = 0.554 mW/g; SAR(10 g) = 0.342 mW/g

Maximum value of SAR (measured) = 0.808 mW/g

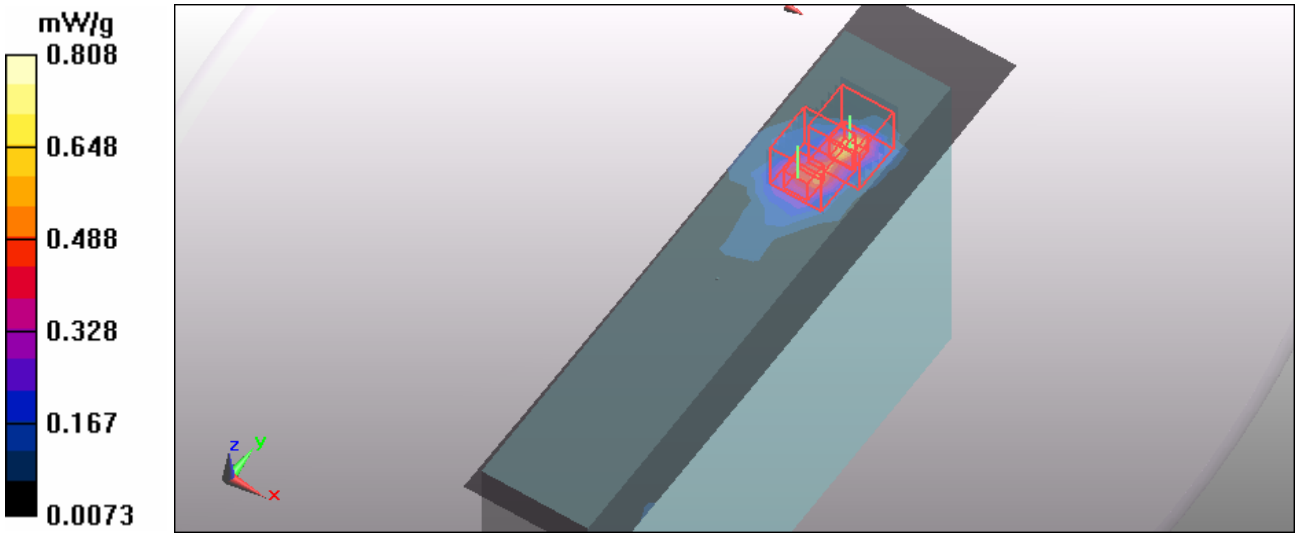
Channel 151/Zoom Scan (7x7x9)/Cube 1: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm

Reference Value = 12.4 V/m; Power Drift = -0.121 dB

Peak SAR (extrapolated) = 2.6 W/kg

SAR(1 g) = 0.529 mW/g; SAR(10 g) = 0.341 mW/g

Maximum value of SAR (measured) = 0.720 mW/g



Date/Time: 2010/2/10 03:14:29

Test Laboratory: Bureau Veritas ADT

M27-11aN 40M Band4-Ch159 / D1

DUT: Tablet PC ; Type: T7M

Communication System: 11aN 40MHz ; Frequency: 5795 MHz ; Duty Cycle: 1:1 ; Modulation type: BPSK

Medium: MSL5800 Medium parameters used: f = 5795 MHz; σ = 6.06 mho/m; ε_r = 49.3; ρ = 1000 kg/m^3

Phantom section: Flat Section ; Separation distance : 0 mm (The Tip side of the EUT to the Phantom)

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(3.95, 3.95, 3.95); Calibrated: 2010/1/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: ELI 4.0; Type: QDOVA001BA; Serial: 1043
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Channel 159/Area Scan (7x27x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 1.15 mW/g

Channel 159/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm

Reference Value = 15.3 V/m; Power Drift = -0.147 dB

Peak SAR (extrapolated) = 3.33 W/kg

SAR(1 g) = 0.809 mW/g; SAR(10 g) = 0.413 mW/g

Maximum value of SAR (measured) = 1.22 mW/g

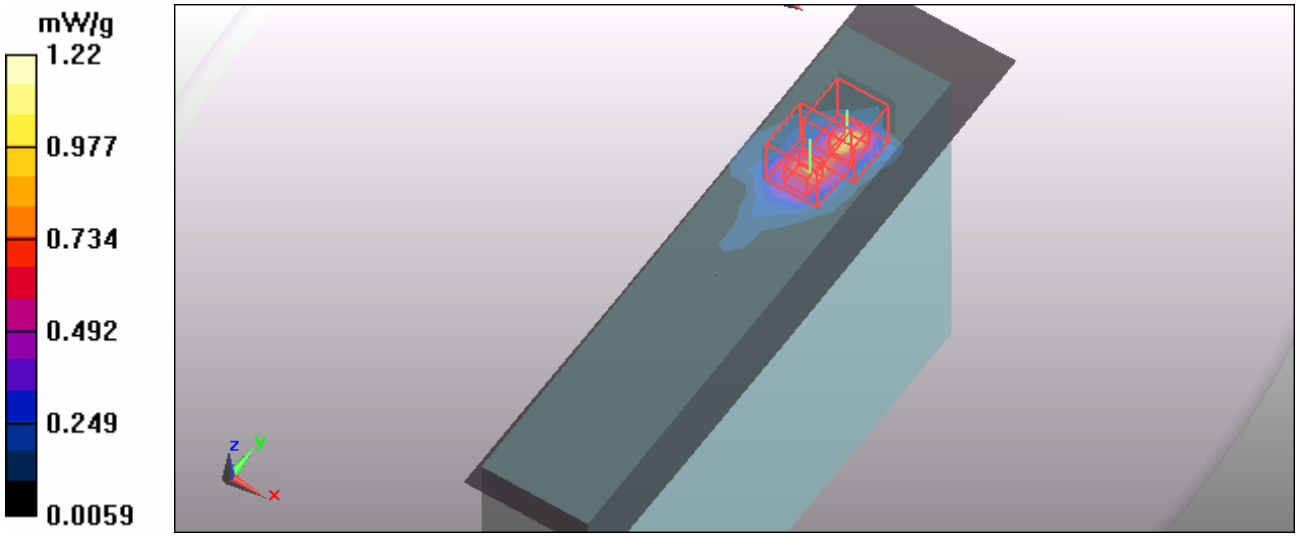
Channel 159/Zoom Scan (7x7x9)/Cube 1: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm

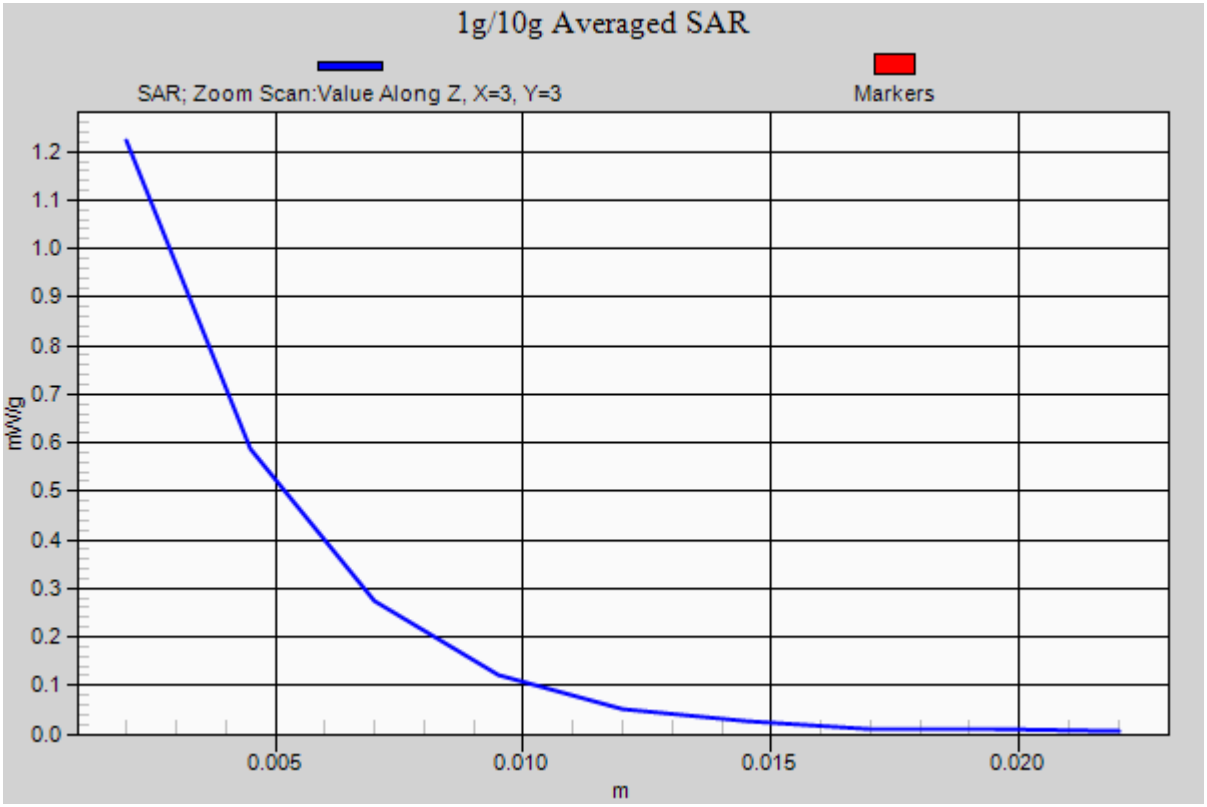
Reference Value = 15.3 V/m; Power Drift = -0.147 dB

Peak SAR (extrapolated) = 3.08 W/kg

SAR(1 g) = 0.747 mW/g; SAR(10 g) = 0.402 mW/g

Maximum value of SAR (measured) = 1.07 mW/g




1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=3, Y=3
Markers
mW/g
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0.005
0.010
0.015
0.020
m