SAR TEST REPORT

(CO-LOCATED)

REPORT NO.: SA981022L04-4

MODEL NO.: MC75A8

RECEIVED: Oct. 22, 2009

TESTED: May 03 ~ May 04, 2010

ISSUED: Jun. 17, 2010

APPLICANT: Symbol Technologies, Inc.

ADDRESS: One Motorola Plaza, Holtsville, NY-11742-1300, U.S.A.

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

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou Hsiang, Taipei Hsien 244, Taiwan, R.O.C.

TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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1. CERTIFICATION

PRODUCT:	EDA (Enterprise Digital Assistant)
MODEL:	MC75A8
BRAND:	Symbol
APPLICANT:	Symbol Technologies, Inc.
TESTED:	May 03 ~ May 04, 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: MC75A8) have 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 :** Jun. 17, 2010
Joanna Wang / Senior Specialist

TECHNICAL ACCEPTANCE : _____ , **DATE :** Jun. 17, 2010
Responsible for RF
Mason Chang / Engineer

APPROVED BY : _____ , **DATE :** Jun. 17, 2010
Gary Chang / Assistant Manager

REVISED VERSION	REVISED DATE	DESCRIPTION
Ver. 1	May 13, 2010	1. Reduce output power of WLAN. 2. TX diversity function is disabled by software. Only main antenna can transmit.
Ver. 2	Jun. 14, 2010	Modified the general information.
Ver. 3	Jun. 17, 2010	Modified typing error.

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	EDA (Enterprise Digital Assistant)	
MODEL NO.	MC75A8	
FCC ID	H9PMC75A8	
POWER SUPPLY	3.7Vdc (Li-Lon battery) 5.4Vdc (Adapter)	
CLASSIFICATION	Portable device, production unit	
MODULATION TYPE	**WLAN 802.11b :** CCK, DQPSK, DBPSK **WLAN 802.11g :** 64QAM, 16QAM, QPSK, BPSK **WLAN 802.11a:** 64QAM, 16QAM, QPSK, BPSK **Mobile:** OQPSK, HPSK	
OPERATING FREQUENCY	**WLAN** **802.11b/g:** 2412 ~ 2472MHz **802.11a:** 5180 ~ 5320MHz, 5500 ~ 5700MHz **Mobile:** 824.7MHz ~ 848.3MHz, 1851.25MHz ~ 1908.75MHz	
MAXIMUM SAR (1g)	1.3W/kg	
ANTENNA TYPE	**WLAN 802.11a:** inverted F antenna (Main) Planar inverted antenna (Aux.) **Mobile:** Monopole antenna	
MAX. ANTENNA GAIN	**WLAN**	
	2.4GHz: -4.39dBi (Main)	2.4GHz: 2.31dBi (Aux.)
	5.0GHz: 2.05dBi (Main)	5.0GHz: 3.29dBi (Aux.)
	Mobile:	
	850MHz: -0.67dBi	1900MHz: 1.5dBi
DATA CABLE	NA	
I/O PORTS	Refer to user's manual	
ACCESSORY DEVICES	Battery	

NOTE:

1. The EUT is an EDA (Enterprise Digital Assistant). The test data are separated into following test reports:

	REFERENCE REPORT
SAR test report-247 2.4G WLAN	SA981022L04
SAR test report-247 5G WLAN	
SAR test report-407 5G WLAN	SA981022L04-1
SAR test report-247 BLUETOOTH	SA981022L04-2
SAR test report-CDMA850	SA981022L04-3
SAR test report-CDMA1900	
SAR collocated report-WLAN 802.11a + MOBILE	SA981022L04-4
SAR supplement report-preliminary and worst case finding supplement data	SA981022L04-5

2. The communicated functions of EUT listed as below:

		850MHz	1900MHz	
3G	CDMA 1X RTT EV-OD Rev 0 EV-OD Rev A (Power class 3)	√	√	With WLAN 802.11a/b/g + BT 2.0 with EDR + GPS

3. The models identified as below are identical to each other except of the following options:
   - Keypad: Numeric / QWERTY
   - Barcode reader: 1D laser scanner / BB Imager

BRAND	MODEL	DESCRIPTION
Symbol	MC75A8	EVDO 1D Numeric
Symbol	MC75A8	EVDO 1D QWERTY
Symbol	MC75A8	EVDO BB Numeric
Symbol	MC75A8	EVDO BB QWERTY

4. The EUT uses the following Li-ion batteries:

BATTERY 1 (1.5X)	
BRAND:	MOTOROLA
PART NUMBER:	82-71364-05 Rev D
RATING:	3.7Vdc, 3600mAh, 13.3Wh

BATTERY 2 (2.5X)	
BRAND:	MOTOROLA
PART NUMBER:	82-71364-06 Rev C
RATING:	3.7Vdc, 4800mAh, 17.7Wh

*The applicant defined the normal working voltage of the battery is from 3.7Vdc to 4.2Vdc.
*The EUT have been pre-tested and found “BB / QWERTY + 1.5X battery” was the worst case configuration for final test.

5. The following accessories are optional to the DUT.

PRODUCT	BRAND	MODEL	DESCRIPTION
RS232 charging cable	Motorola	25-102776-01R	1.2m non-shielded cable with one core
USB charging cable	Motorola	25-102775-01R	1.5m shielded cable with one core
Headset	Motorola	50-11300-050R	VR10 headset 0.8m non-shielded cable with one core
Power Supply Adaptor	Motorola	EADP-16BB A	I/P: 100-240Vac, 50-60Hz, 0.4A O/P: 5.4Vdc, 3A 1.8m non-shielded cable without core
Fabric holster	Motorola	SG-MC7521215-01R	Contain metal
Ridged holster	Motorola	SG-MC7011110-02R	Contain metal

6. Hardware version: EVT1A.
7. Software version: BSP_21.03.
8. 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 47 CFR 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.

TWIN SAM V4.0

CONSTRUCTION	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528-2003, EN 62209-1 and IEC 62209. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points with the robot.
SHELL THICKNESS	2 ± 0.2mm
FILLING VOLUME	Approx. 25liters
DIMENSIONS	Height: 810mm; Length: 1000mm; Width: 500mm

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	850MHz, 1900MHz, 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 TEST EQUIPMENT

FOR SAR MEASURENENT

ITEM	NAME	BRAND	TYPE	SERIES NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
1	SAM Phantom	S & P	QD000 P40 CA	TP-1485	NA	NA
2	Signal Generator	Anritsu	68247B	984703	May 21, 2009	May 20, 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	D5GHzV2	1018	Jan. 22, 2010	Jan. 21, 2011
7			D1900V2	5d036	Feb. 23, 2010	Feb. 22, 2011

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

FOR TISSUE PROPERTY

ITEM	NAME	BRAND	TYPE	SERIES NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
1	Network Analyzer	Agilent	E8358A	US41480538	Dec. 03, 2009	Dec. 02, 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.

2.5 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 1 g and 10 g 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 1 g and 10 g.

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.

In the Area Scan, the gradient of the interpolation function is evaluated to find all the extreme of the SAR distribution. The uncertainty on the locations of the extreme is less than 1/20 of the grid size. Only local maximum within -2 dB of the global maximum are searched and passed for the Cube Scan measurement. In the Cube Scan, the interpolation function is used to extrapolate the Peak SAR from the lowest measurement points to the inner phantom surface (the extrapolation distance). The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1 g and 10 g cubes, the extrapolation distance should not be larger than 5mm.

3. DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.
1	Universal Radio Communication Tester	R&S	CMU200	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA

NOTE:
1. All power cords of the above support units are non shielded (1.8m).
2. Item 1 was provided by the client.

4. DESCRIPTION OF TEST POSITION

4.1 DESCRIPTION OF TEST POSITION

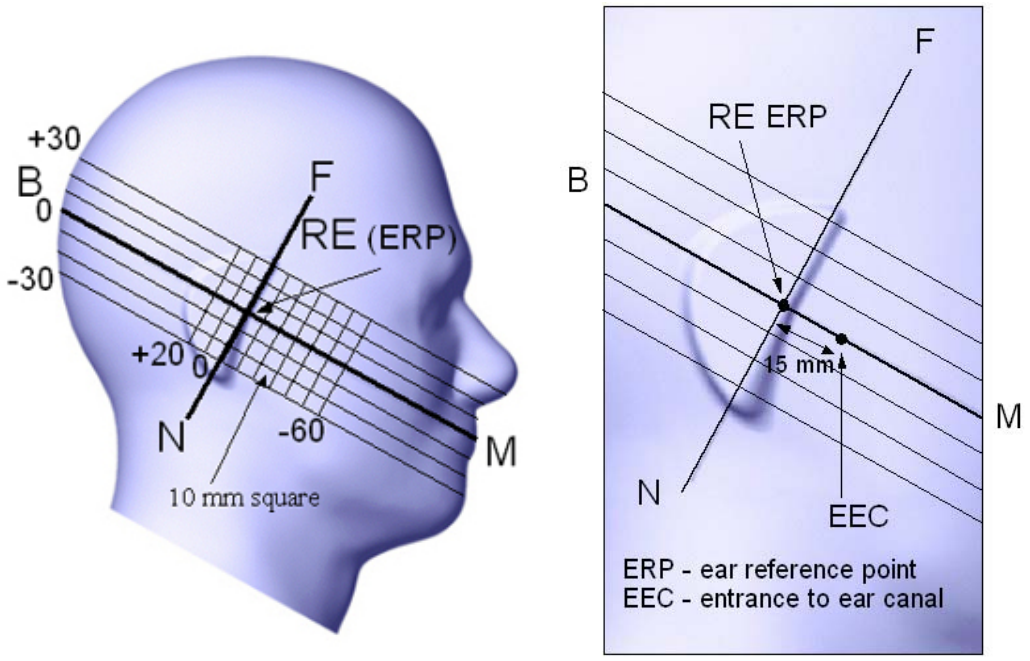


FIGURE 3.1

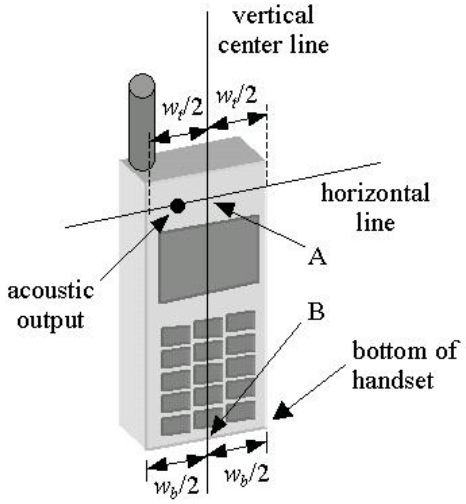


FIGURE 3.1a

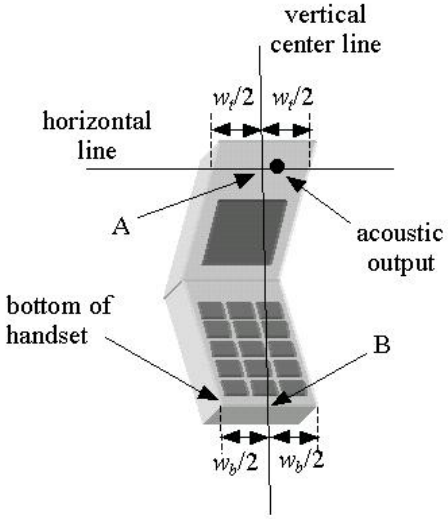
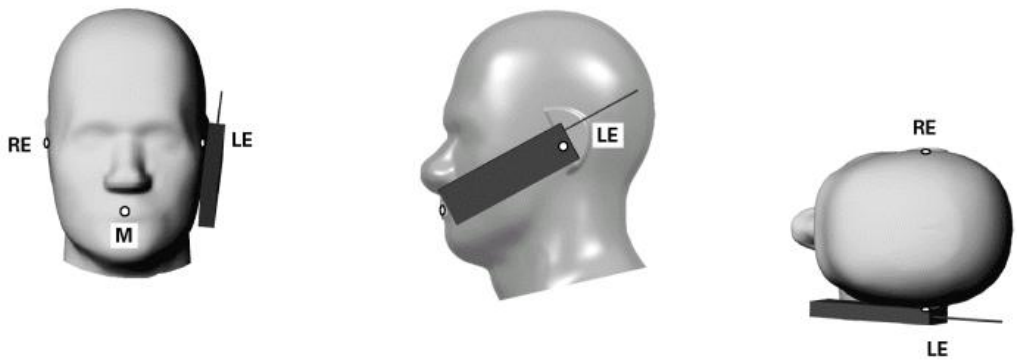


FIGURE 3.1b

4.1.1 TOUCH/CHEEK TEST POSITION

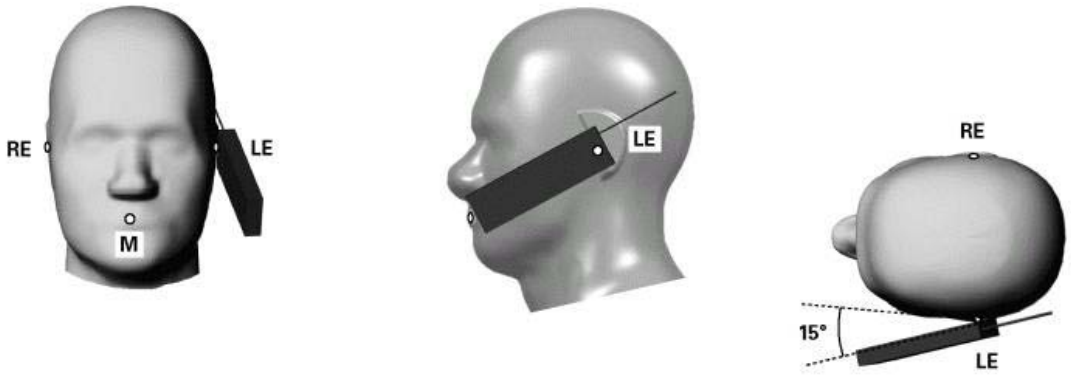
The head position in Figure 3.1, the ear reference points ERP are 15mm above entrance to ear canal along the B-M line. The line N-F (Neck-Front) is perpendicular to the B-M (Back Mouth) line. The handset device in Figure 3.1a and 3.1b,The vertical centerline pass through two points on the front side of handset: the midpoint of the width wt of the handset at the level of the acoustic output (point A) and the midpoint of the width Wb of the bottom of the handset (point B). The vertical centerline is perpendicular to the horizontal line and pass through the center of the acoustic output. The point A touches the ERP and the vertical centerline of the handset is parallel to the B-M line. While maintaining the point A contact with the ear(ERP), rotate the handset about the line NF until any point on handset is in contact with the cheek of the phantom



TOUCH/CHEEK POSITION FIGURE

4.1.2 TILT TEST POSITION

Adjust the device in the cheek position. While maintaining a point of the handset contact in the ear, move the bottom of the handset away from the mouth by an angle of 15 degrees.



TILT POSITION FIGURE

4.1.3 BODY-WORN CONFIGURATION

The handset device attached the belt clip or the holster. The keypad face of the handset is against with the bottom of the flat phantom face and the bottom of the keypad face contact to the bottom of the flat phantom.

When multiple accessories that do not contain metallic components are supplied with the device, the device may be tested with only the accessory that dictates the closest spacing to the body. When multiple accessories that contain metallic components are supplied with the device, the device must be tested with each accessory that contains a unique metallic component. If multiple accessories share an identical metallic component (e.g., the same metallic belt-clip used with different holsters with no other metallic components), only accessory that dictates the closest spacing to the body must be tested.

5. SIMULTANEOUS TRANSMISSION EVALUATION

5.1 BODY POSITION

Value of below table is the max value of each TX band.

TX band	Max SAR value (W/kg)
2.4GHz	0.019
5GHz	0.048
850 MHz	0.244
1900 MHz	0.147

Combined SAR value of simultaneous transmission

Combined SAR value is sum of the max SAR value of each single TX band
4 combined modes and SAR value are as below

1) 2.4GHz+850MHz= 0.263
2) 2.4GHz+1900MHz=0.166
3) 5GHz+850MHz=0.292
4) 5GHz+1900MHz=0.195

Values of all modes are less than 1.6 W/kg, SAR test for simultaneous transmission at body position is not necessary.

5.2 HEAD POSITION

SAR values of each mode are shown on below table.

MODE	CHANNEL	RIGHT HEAD		LEFT HEAD	
		CHEEK	TILT	CHEEK	TILT
CDMA 850	1013	Test reduced			0.936
	384	0.730	0.687	0.731	0.842
	777	Test reduced			1.010
CDMA 1900	25	Test reduced		1.120	0.939
	600	0.632	0.664	1.240	1.140
	1175	Test reduced		1.170	0.935
802.11b	6	0.210	0.205	0.257	0.237
802.11g	6	0.247	0.242	0.290	0.264
802.11a	40	0.340	0.339	0.382	0.389
	64	0.415	0.475	0.496	0.527
	100	0.421	0.382	0.361	0.360
	104	0.397	0.364	0.339	0.343
	116	0.362	0.330	0.298	0.294
	120	0.422	0.404	0.366	0.377
	124	0.423	0.396	0.358	0.374
	136	0.398	0.427	0.407	0.408
	140	0.327	0.315	0.327	0.302
	149	0.377	0.406	0.391	0.398

Combined SAR value of simultaneous transmission

The EUT supports mobile phone and WLAN function.

Mobile phone function supports CDMA 850/CDMA1900, but only one mode can active at a time.

WLAN function supports 802.11b / 802.11g / 802.11a, but only one mode can active at time.

Therefore, there will be 6 modes of simultaneous transmission.

Combined SAR value is sum of the max SAR value of each single TX mode which showed on table of P19.

For example:

CDMA 850 + 802.11b = 0.730 + 0.210 = 0.940

SIMULTANEOUS TRANSMISSION MODE		RIGHT HEAD		LEFT HEAD	
		CHEEK	TILT	CHEEK	TILT
CDMA 850	802.11b	0.940	0.892	0.988	1.247
CDMA 850	802.11g	0.977	0.929	1.021	1.274
CDMA 850	802.11a	1.153	1.162	1.227	1.537
CDMA 1900	802.11b	0.842	0.869	1.497	1.377
CDMA 1900	802.11g	0.879	0.906	1.530	1.404
CDMA 1900	802.11a	1.055	1.139	1.736	1.667

Per above table, values of most modes are less than 1.6W/kg.
Values of 2 combined modes are higher than 1.6. W/kg

1) CDMA1900+802.11a at LEFT CHEEK POSITION
2) CDMA1900+802.11a at LEFT TILT POSITION

2 combined modes need to check detail for finding the test channel of simultaneous transmission.

Test channel for simultaneous transmission

1) CDMA1900+802.11a at LEFT CHEEK POSITION

Below table shows the combined SAR value of CDMA 1900 + 802.11a mode

802.11a	CDMA 1900 CH 25	CDMA 1900 CH 600	CDMA 1900 CH 1175
40	1.502	1.622	1.552
64	1.616	1.736	1.666
100	1.481	1.601	1.531
104	1.459	1.579	1.509
116	1.418	1.538	1.468
120	1.486	1.606	1.536
124	1.478	1.598	1.528
136	1.527	1.647	1.577
140	1.447	1.567	1.497
149	1.511	1.631	1.561

Combined SAR values of following 8 modes are higher than 1.6 W/kg,

11a CH64 + CDMA 1900 CH25
11a CH40/64/100/120/136/149 + CDMA 1900 CH600
11a CH64 + CDMA 1900 CH1175

Therefore, 8 configurations are needed for multiband SAR and volume SAR need to be performed on following channels before multiband SAR can be processed.

11a channel 40/64/100/120/136/149
CDMA 1900 channel 25/600/1175

2) CDMA1900+802.11a at LEFT TILT POSITION

Below table shows the combined SAR value of CDMA 1900 + 802.11a mode

802.11a	CDMA 1900 CH 25	CDMA 1900 CH 600	CDMA 1900 CH 1175
40	1.328	1.529	1.324
64	1.466	1.667	1.462
100	1.299	1.5	1.295
104	1.282	1.483	1.278
116	1.233	1.434	1.229
120	1.316	1.517	1.312
124	1.313	1.514	1.309
136	1.347	1.548	1.343
140	1.241	1.442	1.237
149	1.337	1.538	1.333

Combined SAR values of 11a CH64 + CDMA 1900 CH600 is higher than 1.6 W/kg

Therefore, only this configuration need to do volume scan test

Test channels are

11a CH64
CDMA 1900 CH600

6. TEST RESULTS

6.1 TEST PROCEDURES

The EUT makes a phone call to the communication simulator station. Establish the simulation communication configuration rather the actual communication. Then the EUT could continuous the transmission mode. Adjust the PCL of the base station could controlled the EUT to transmitted the maximum output power. The base station also could control the transmission channel. 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 / EN 62209-1, 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

• Volume scan

• Power reference measurement

Volume Scans are used to assess peak SAR and averaged SAR measurement in largely extended 3-dimensional volumes within any phantom. This measurement does not need any previous area scan

In the volume scan, the distance between the measurement point at the probe sensor location (geometric center behind the probe tip) and the phantom surface is 2.5mm.The scan size is 18 x 16 x 9 points and the grid space is 4mm.

The measurement time is 0.5s at each point of the volume 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

Multiband Data Extractions

In order to extract and process measurements within different frequency bands, the SEMCAD X Postprocessor allows the user to combine and subsequently superpose these measurement data using the Tools menu. Using combined Multi Band Averaged SAR of tools menu to get the multiband SAR value.

6.2 MEASURED SAR RESULTS

Configuration:
Keypad: QWERTY, Barcode reader: BB Imager, 1.5x Battery

Volume Scan SAR

HEAD POSITION	LEFT	
CHANNEL	CHEEK	TILT
CDMA 1900		
25	1.12	X
600	1.28	1.07
1175	1.21	X
802.11a		
40	0.391	X
64	0.473	0.524
100	0.345	X
120	0.312	X
136	0.372	X
149	0.391	X

NOTE:

1. In this testing, the limit for General Population Spatial Peak averaged over **1g, 1.6W/kg**, is applied.
2. Please see the Appendix A for the data.
3. The variation of the EUT conducted power measured before and after SAR testing should not over 5%.
4. Temperature of Liquid is 22±1°C
5. X means volume SAR test is not necessary.

Multiband SAR

1) CDMA1900+802.11a at LEFT CHEEK POSITION

Volume SAR of CDMA 1900 channel 25	Volume SAR of 802.11a channel 64	Multi band SAR
1.12	0.473	1.14

Volume SAR of CDMA 1900 channel 600	Volume SAR of 802.11a		Multi band SAR
1.28	CH40	0.391	1.28
	CH64	0.473	1.28
	CH100	0.345	1.28
	CH120	0.312	1.28
	CH136	0.372	1.28
	CH149	0.391	1.28

Volume SAR of CDMA 1900 channel 1175	Volume SAR of 802.11a channel 64	Multi band SAR
1.21	0.473	1.21

2) CDMA1900+802.11a at LEFT TILT POSITION

Volume SAR of CDMA 1900 channel 600	Volume SAR of 802.11a channel 64	Multi band SAR
1.07	0.524	1.25

6.3 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 are some common ingredients：

- **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 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%

THE RECIPES FOR 1900MHz SIMULATING LIQUID TABLE

INGREDIENT	HEAD SIMULATING LIQUID 1900MHz (HSL-1900)	MUSCLE SIMULATING LIQUID 1900MHz (MSL-1900)
Water	55.24%	70.16%
DGMBE	44.45%	29.44%
Salt	0.306%	00.39%
Dielectric Parameters at 22℃	f= 1900MHz ε= 40.0 ± 5% σ= 1.40 ± 5% S/m	f= 1900MHz ε= 53.3 ± 5% σ= 1.52 ± 5% S/m

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 CDMA1900 BAND SIMULATING LIQUID

LIQUID TYPE		HSL-1900			
SIMULATING LIQUID TEMP.		22.3			
TEST DATE		May 03, 2010			
TESTED BY		Sam Onn			
FREQ. (MHz)	**LIQUID PARAMETER**	**STANDARD VALUE**	**MEASUREMENT VALUE**	**ERROR PERCENTAGE (%)**	**LIMIT(%)**
1851.25	Permitivity (ε)	40.00	40.90	2.25	±5
1880.00		40.00	40.90	2.25	
1900.00		40.00	40.90	2.25	
1908.75		40.00	41.00	2.50	
1851.25	Conductivity (σ) S/m	1.40	1.38	-1.43	
1880.00		1.40	1.42	1.43	
1900.00		1.40	1.44	2.86	
1908.75		1.40	1.45	3.57	

FOR 5GHz BAND SIMULATING LIQUID

LIQUID TYPE		HSL-5800			
SIMULATING LIQUID TEMP.		22.1			
TEST DATE		May 04, 2010			
TESTED BY		Sam Onn			
FREQ. (MHz)	**LIQUID PARAMETER**	**STANDARD VALUE**	**MEASUREMENT VALUE**	**ERROR PERCENTAGE (%)**	**LIMIT(%)**
5200	Permitivity (ε)	35.99	36.70	1.97	±5
5320		35.85	36.50	1.82	
5500		35.64	36.20	1.56	
5600		35.53	36.00	1.33	
5680		35.44	35.90	1.31	
5745		35.36	35.80	1.24	
5800		35.30	35.70	1.13	
5200	Conductivity (σ) S/m	4.66	4.65	-0.21	
5320		4.78	4.79	0.25	
5500		4.96	5.00	0.76	
5600		5.07	5.13	1.28	
5680		5.15	5.22	1.42	
5745		5.21	5.31	1.92	
5800		5.27	5.38	2.09	

6.4 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.

6.4.1 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%.

6.4.2 VALIDATION RESULTS

SYSTEM VALIDATION TEST OF SIMULATING LIQUID					
FREQUENCY (MHz)	**REQUIRED SAR (mW/g)**	**MEASURED SAR (mW/g)**	**DEVIATION (%)**	**SEPARATION DISTANCE**	**TESTED DATE**
HSL 1900	10.00	10.35	3.50	10	May 03, 2010
HSL 5200	7.95	8.10	1.89	10	May 04, 2010
HSL 5500	8.46	8.51	0.59	10	May 04, 2010
HSL 5800	7.78	8.27	6.30	10	May 04, 2010
TESTED BY	Sam Onn				

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

6.5 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	0.50	Rectangular	√3	0.7	0.7	0.20	0.20	∞
Hemispherical Isotropy	2.60	Rectangular	√3	0.7	0.7	1.05	1.05	∞
Boundary effects	2.00	Rectangular	√3	1	1	1.15	1.15	∞
Linearity	0.60	Rectangular	√3	1	1	0.35	0.35	∞
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)	3.57	Normal	1	0.64	0.43	2.28	1.54	∞
Liquid Permittivity (target)	5.00	Rectangular	√3	0.6	0.49	1.73	1.41	∞
Liquid Permittivity (measurement)	2.25	Normal	1	0.6	0.49	1.35	1.10	∞
Combined Standard Uncertainty						**11.00**	**10.71**	
Coverage Factor for 95%						Kp=2		
Expanded Uncertainty (K=2)						**22.01**	**21.42**	

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.

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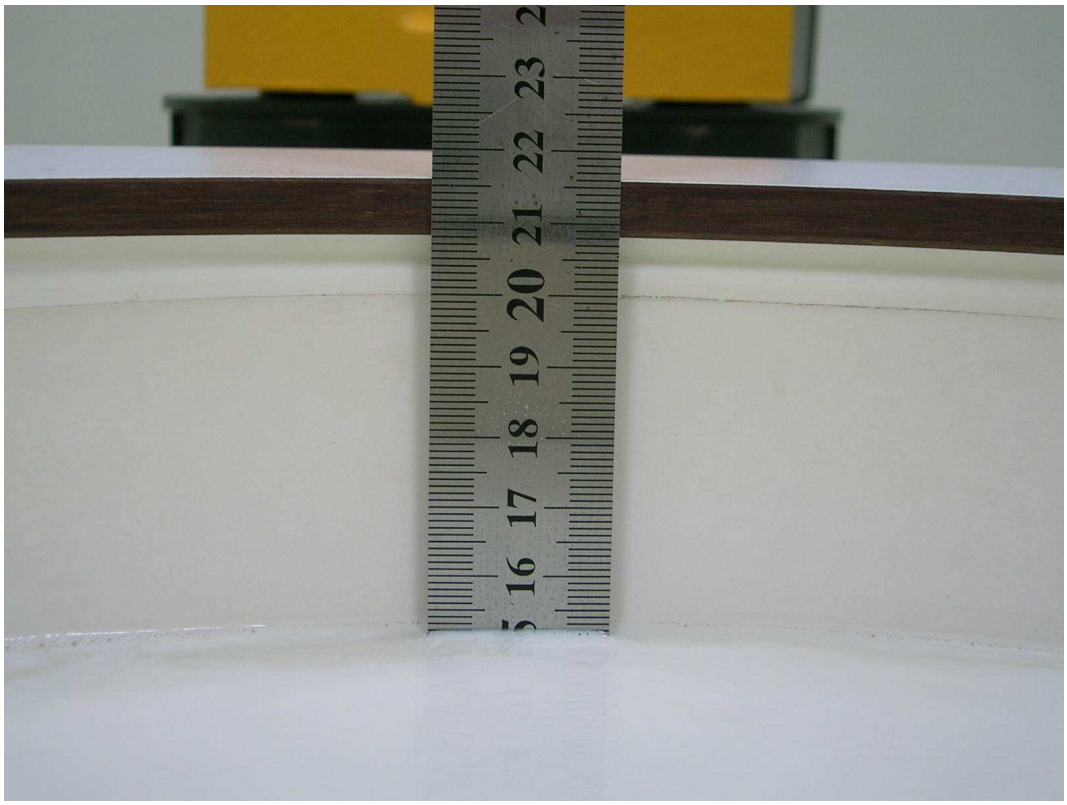
APPENDIX A: TEST DATA

Liquid Level Photo

Tissue HSL1900MHz D=151mm

Tissue HSL5800MHz D=152mm



Date/Time: 2010/5/3 01:22:08

Test Laboratory: Bureau Veritas ADT

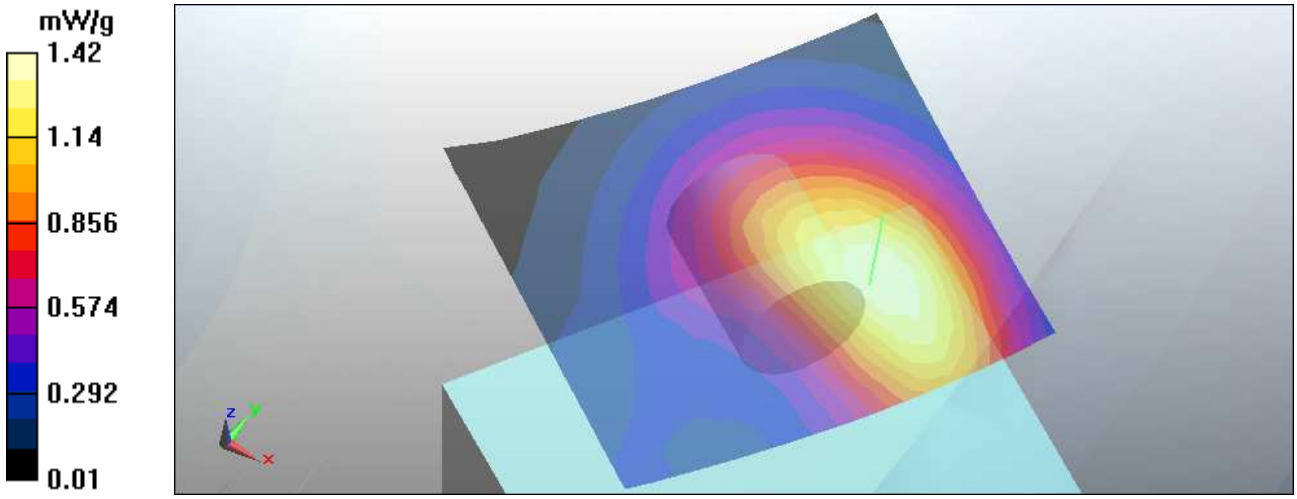
M01 A8 2D Left Head Cheek CDMA1900 Ch25 Volume

DUT: EDA ; Type: MC75A8
Communication System: CDMA ; Frequency: 1851.25 MHz ; Duty Cycle: 1:1
Medium: HSL1900 Medium parameters used (interpolated): f = 1851.25 MHz; σ = 1.38 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section ; DUT test position : Cheek ; Modulation type: OQPSK

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(8.2, 8.2, 8.2); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/CDMA1900 Ch25 Volume/Volume Scan (18x16x9): Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 18.3 V/m; Power Drift = 0.045 dB
Peak SAR (extrapolated) = 1.86 W/kg
SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.639 mW/g
Maximum value of SAR (measured) = 1.42 mW/g



Date/Time: 2010/5/3 03:45:01

Test Laboratory: Bureau Veritas ADT

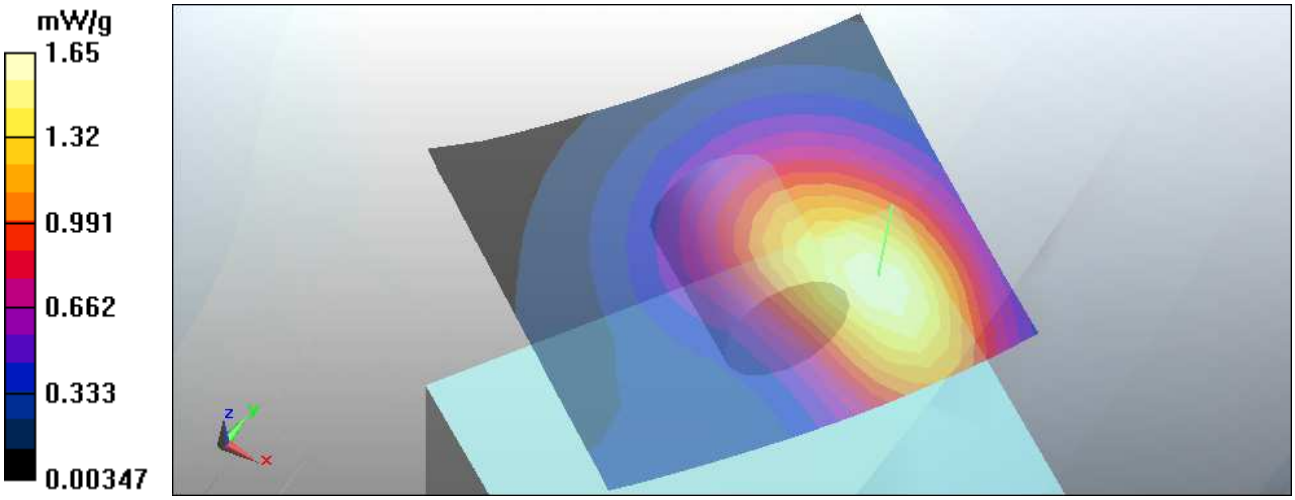
M02 A8 2D Left Head Cheek CDMA1900 Ch600 Volume

DUT: EDA ; Type: MC75A8
Communication System: CDMA 1x ; Frequency: 1880 MHz ; Duty Cycle: 1:1
Medium: HSL1900 Medium parameters used: f = 1880 MHz; σ = 1.42 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section ; DUT test position : Cheek ; Modulation type: OQPSK

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(8.2, 8.2, 8.2); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/CDMA1900 Ch600 zoom 5 (0290)/Volume Scan (18x16x9): Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 18.3 V/m; Power Drift = -0.176 dB
Peak SAR (extrapolated) = 2.13 W/kg
SAR(1 g) = 1.28 mW/g; SAR(10 g) = 0.716 mW/g
Maximum value of SAR (measured) = 1.65 mW/g



Date/Time: 2010/5/3 09:05:09

Test Laboratory: Bureau Veritas ADT

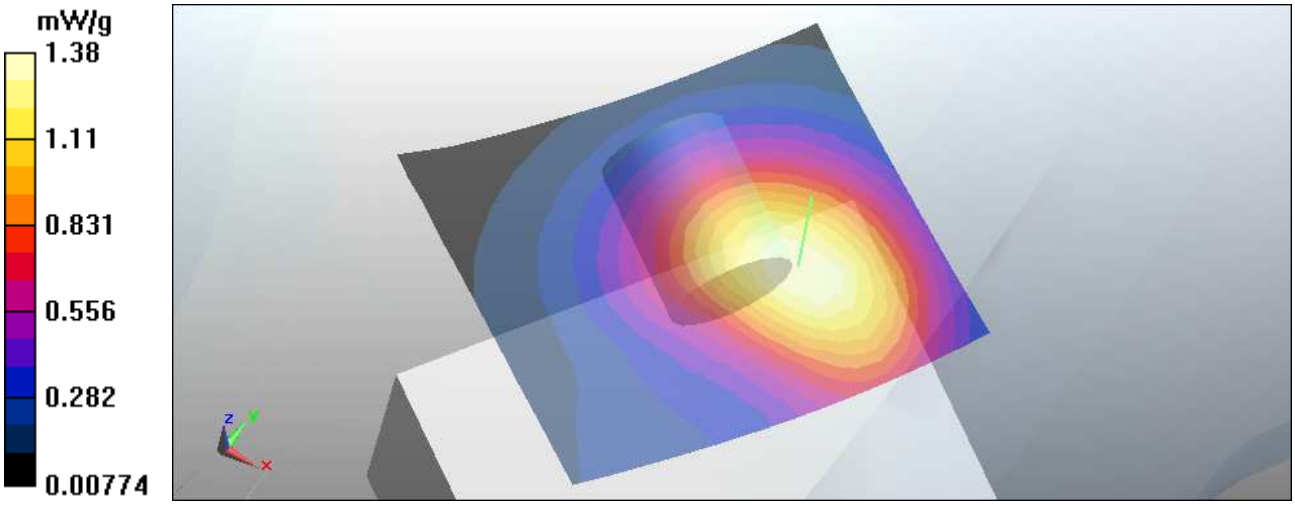
M03 A8 2D Left Head Tilt CDMA1900 Ch600 Volume

DUT: EDA ; Type: MC75A8
Communication System: CDMA 1x ; Frequency: 1880 MHz ; Duty Cycle: 1:1
Medium: HSL1900 Medium parameters used: f = 1880 MHz; σ = 1.42 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section ; DUT test position : Tilt ; Modulation type: OQPSK

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(8.2, 8.2, 8.2); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/CDMA1900 Ch600 volume/Volume Scan (18x16x9): Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 19.1 V/m; Power Drift = -0.029 dB
Peak SAR (extrapolated) = 1.86 W/kg
SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.607 mW/g
Maximum value of SAR (measured) = 1.38 mW/g



Date/Time: 2010/5/3 05:39:05

Test Laboratory: Bureau Veritas ADT

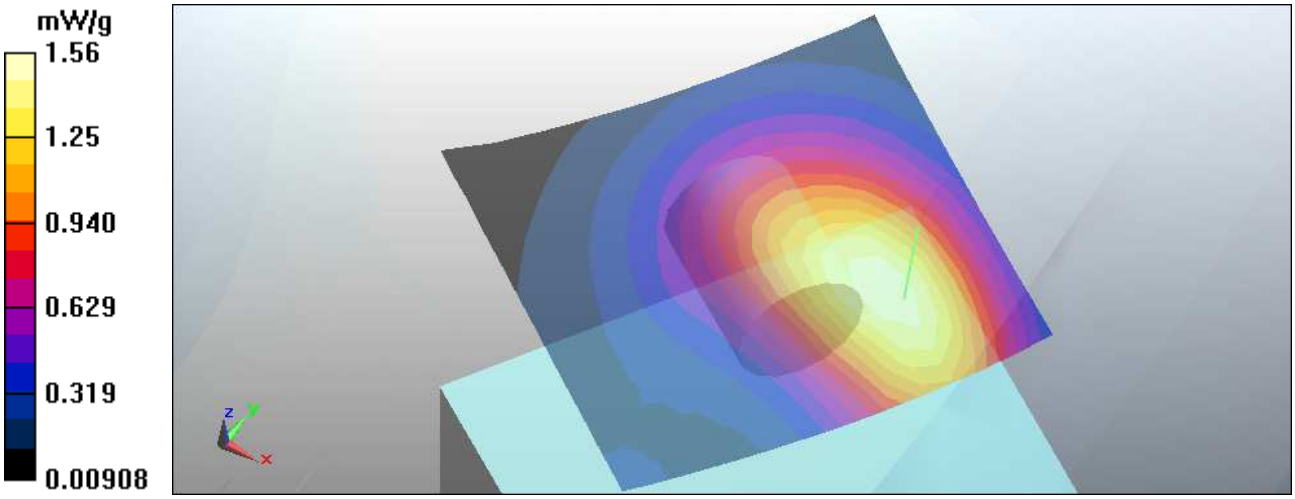
M04 A8 2D Left Head Cheek CDMA1900 Ch1175 Volume

DUT: EDA ; Type: MC75A8
Communication System: CDMA ; Frequency: 1908.75 MHz ; Duty Cycle: 1:1
Medium: HSL1900 Medium parameters used (interpolated): f = 1908.75 MHz; σ = 1.45 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Left Section ; DUT test position : Cheek ; Modulation type: OQPSK

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(8.2, 8.2, 8.2); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/CDMA1900 Ch1175 Volume/Volume Scan (18x16x9): Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 18 V/m; Power Drift = -0.053 dB
Peak SAR (extrapolated) = 2 W/kg
SAR(1 g) = 1.21 mW/g; SAR(10 g) = 0.689 mW/g
Maximum value of SAR (measured) = 1.56 mW/g



Date/Time: 2010/5/4 02:47:01

Test Laboratory: Bureau Veritas ADT

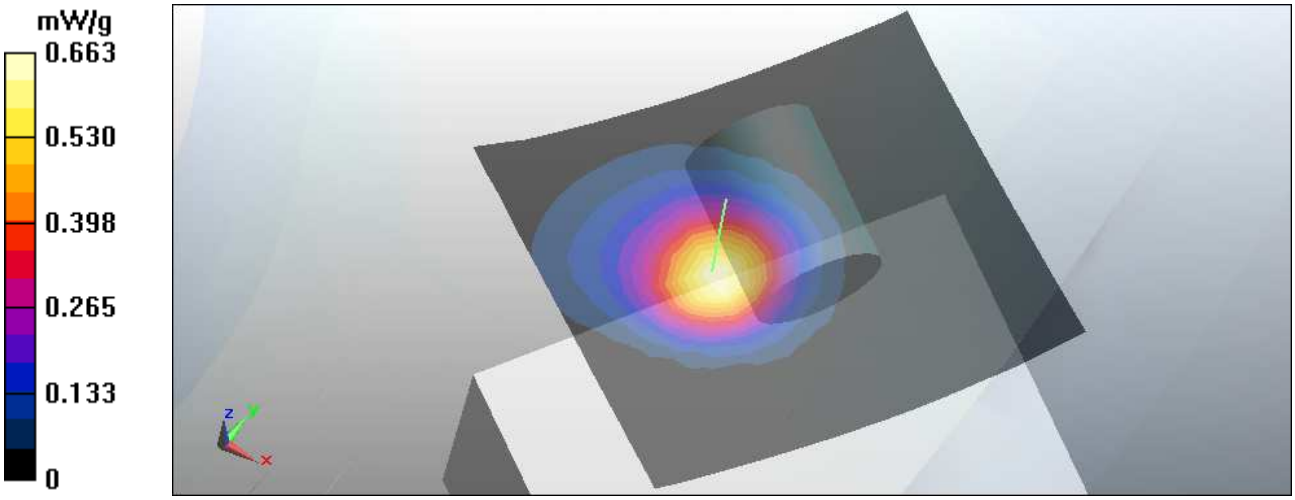
M05 A8 2D Left Head Cheek 11A Ch40 Volume

DUT: EDA ; Type: MC75A8
Communication System: WiFi ; Frequency: 5200 MHz ; Duty Cycle: 1:1
Medium: HSL5800 Medium parameters used: f = 5200 MHz; σ = 4.65 mho/m; ε_r = 36.7; ρ = 1000 kg/m^3
Phantom section: Left Section ; DUT test position : Cheek ; Modulation type: BPSK

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.87, 4.87, 4.87); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/11a Ch40 Volume/Volume Scan (18x16x9): Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 10.5 V/m; Power Drift = -0.026 dB
Peak SAR (extrapolated) = 1.33 W/kg
SAR(1 g) = 0.391 mW/g; SAR(10 g) = 0.127 mW/g
Maximum value of SAR (measured) = 0.663 mW/g



Date/Time: 2010/5/4 04:32:23

Test Laboratory: Bureau Veritas ADT

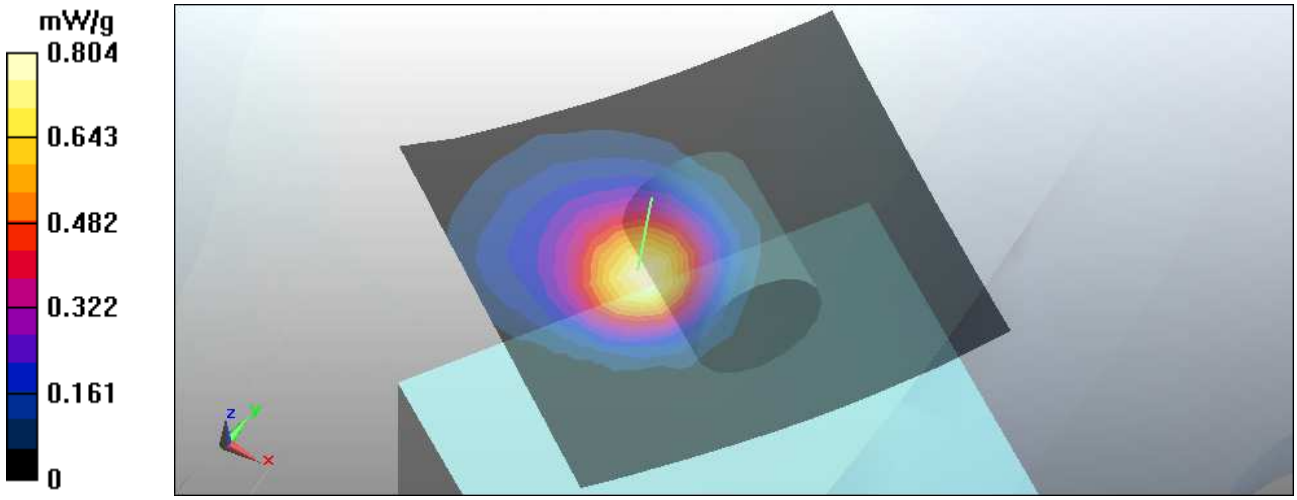
M06 A8 2D Left Head Cheek 11A-Ch64 Volume

DUT: EDA ; Type: MC75A8
Communication System: WiFi ; Frequency: 5320 MHz ; Duty Cycle: 1:1
Medium: HSL5800 Medium parameters used: f = 5320 MHz; σ = 4.79 mho/m; ε_r = 36.5; ρ = 1000 kg/m^3
Phantom section: Left Section ; DUT test position : Cheek ; Modulation type: BPSK

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.62, 4.62, 4.62); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/11a ch64 Volume/Volume Scan (18x16x9): Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 11.4 V/m; Power Drift = 0.049 dB
Peak SAR (extrapolated) = 1.73 W/kg
SAR(1 g) = 0.473 mW/g; SAR(10 g) = 0.154 mW/g
Maximum value of SAR (measured) = 0.804 mW/g



Date/Time: 2010/5/4 06:24:20

Test Laboratory: Bureau Veritas ADT

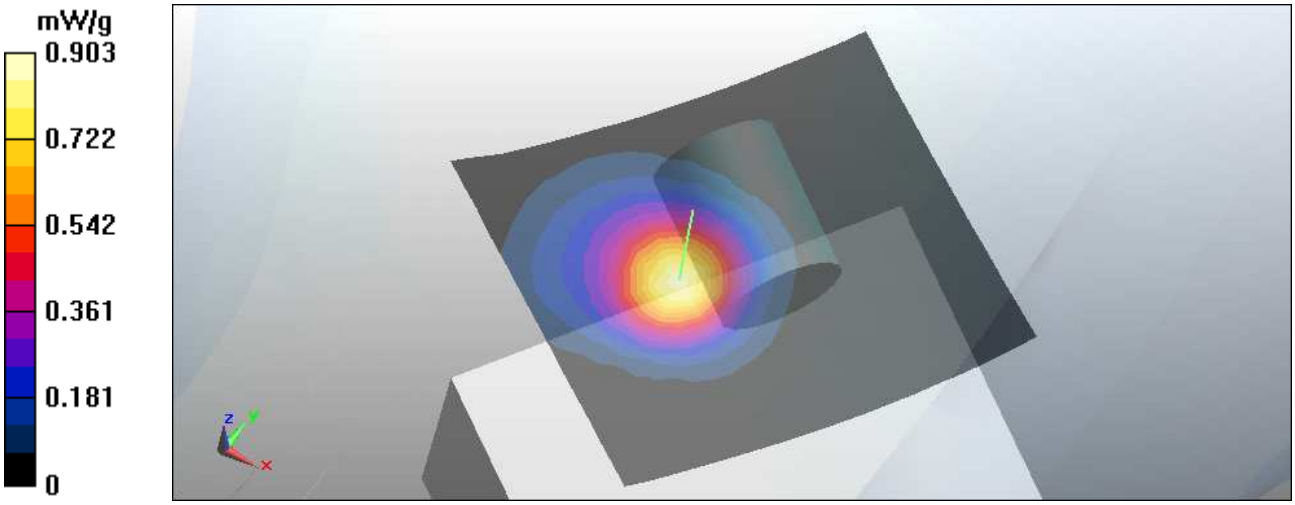
M07 A8 2D Left Head Tilt 11A-Ch64 Volume

DUT: EDA ; Type: MC75A8
Communication System: WiFi ; Frequency: 5320 MHz ; Duty Cycle: 1:1
Medium: HSL5800 Medium parameters used: f = 5320 MHz; σ = 4.79 mho/m; ε_r = 36.5; ρ = 1000 kg/m^3
Phantom section: Left Section ; DUT test position : Tilt ; Modulation type: BPSK

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.62, 4.62, 4.62); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/11a ch64 Volume/Volume Scan (18x16x9): Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 11.2 V/m; Power Drift = 0.097 dB
Peak SAR (extrapolated) = 1.81 W/kg
SAR(1 g) = 0.524 mW/g; SAR(10 g) = 0.167 mW/g
Maximum value of SAR (measured) = 0.903 mW/g



Date/Time: 2010/5/4 08:19:40

Test Laboratory: Bureau Veritas ADT

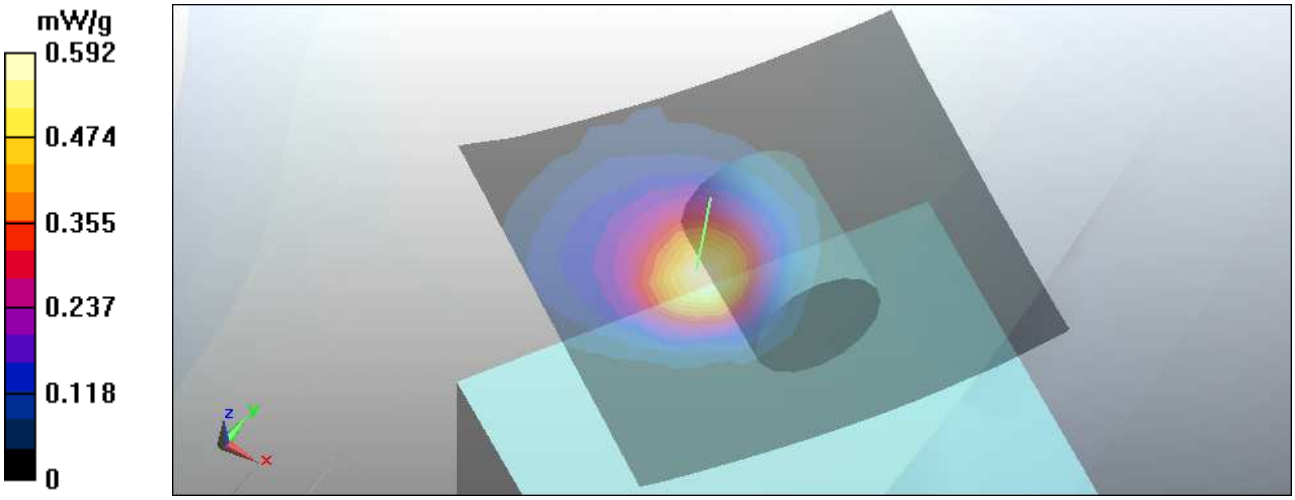
M08 A8 2D Left Head Cheek 11A-Ch100 Volume

DUT: EDA ; Type: MC75A8
Communication System: WiFi ; Frequency: 5500 MHz ; Duty Cycle: 1:1
Medium: HSL5800 Medium parameters used: f = 5500 MHz; σ = 5 mho/m; ε_r = 36.2; ρ = 1000 kg/m^3
Phantom section: Left Section ; DUT test position : Cheek ; Modulation type: BPSK

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.51, 4.51, 4.51); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/11a ch100 Volume/Volume Scan (18x16x9): Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 9.65 V/m; Power Drift = 0.098 dB
Peak SAR (extrapolated) = 1.95 W/kg
SAR(1 g) = 0.345 mW/g; SAR(10 g) = 0.107 mW/g
Maximum value of SAR (measured) = 0.592 mW/g



Date/Time: 2010/5/4 10:25:47

Test Laboratory: Bureau Veritas ADT

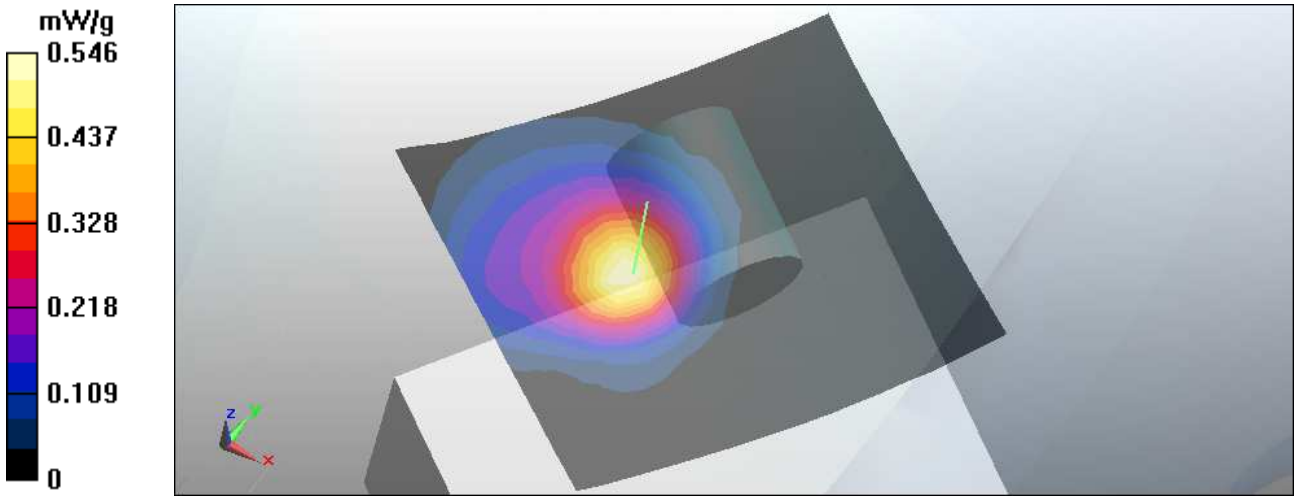
M09 A8 2D Left Head Cheek 11A-Ch120 Volume

DUT: EDA ; Type: MC75A8
Communication System: WiFi ; Frequency: 5600 MHz ; Duty Cycle: 1:1
Medium: HSL5800 Medium parameters used: f = 5600 MHz; σ = 5.13 mho/m; ε_r = 36; ρ = 1000 kg/m^3
Phantom section: Left Section ; DUT test position : Cheek ; Modulation type: BPSK

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.25, 4.25, 4.25); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/11a Ch120 Volume/Volume Scan (18x16x9): Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 8.03 V/m; Power Drift = -0.117 dB
Peak SAR (extrapolated) = 1.04 W/kg
SAR(1 g) = 0.312 mW/g; SAR(10 g) = 0.109 mW/g
Maximum value of SAR (measured) = 0.546 mW/g



Date/Time: 2010/5/4 12:15:38

Test Laboratory: Bureau Veritas ADT

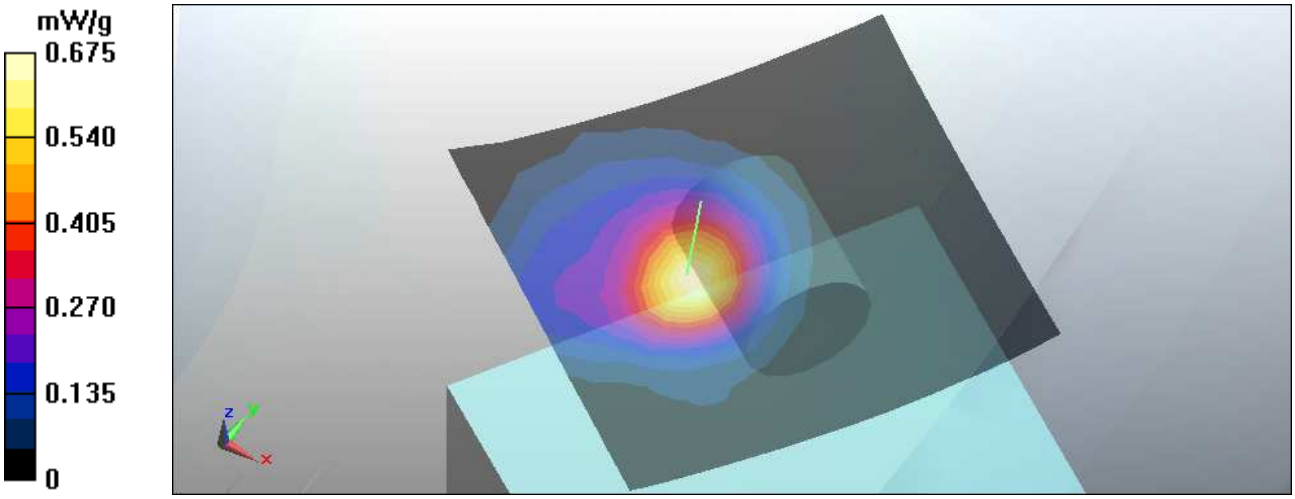
M10 A8 2D Left Head Cheek 11A-Ch136 Volume

DUT: EDA ; Type: MC75A8
Communication System: WiFi ; Frequency: 5680 MHz ; Duty Cycle: 1:1
Medium: HSL5800 Medium parameters used: f = 5680 MHz; σ = 5.22 mho/m; ε_r = 35.9; ρ = 1000 kg/m^3
Phantom section: Left Section ; DUT test position : Cheek ; Modulation type: BPSK

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.25, 4.25, 4.25); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/11a Ch136 Volume/Volume Scan (18x16x9): Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 10.7 V/m; Power Drift = -0.179 dB
Peak SAR (extrapolated) = 1.29 W/kg
SAR(1 g) = 0.372 mW/g; SAR(10 g) = 0.121 mW/g
Total Absorbed Power = 0.00279905 W
Maximum value of SAR (measured) = 0.675 mW/g



Date/Time: 2010/5/4 14:14:07

Test Laboratory: Bureau Veritas ADT

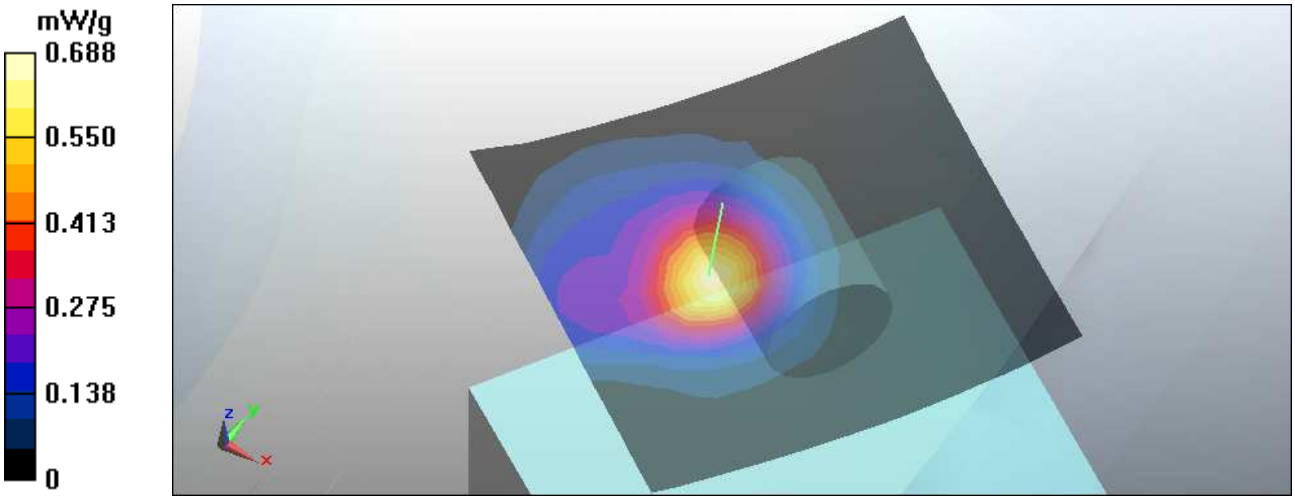
M11 A8 2D Left Head Cheek 11A-Ch149 Volume

DUT: EDA ; Type: MC75A8
Communication System: WiFi ; Frequency: 5745 MHz ; Duty Cycle: 1:1
Medium: HSL5800 Medium parameters used: f = 5745 MHz; σ = 5.31 mho/m; ε_r = 35.8; ρ = 1000 kg/m^3
Phantom section: Left Section ; DUT test position : Cheek ; Modulation type: BPSK

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.53, 4.53, 4.53); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/11a Ch149 Volume/Volume Scan (18x16x9): Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 9.72 V/m; Power Drift = 0.035 dB
Peak SAR (extrapolated) = 3.46 W/kg
SAR(1 g) = 0.391 mW/g; SAR(10 g) = 0.124 mW/g
Maximum value of SAR (measured) = 0.688 mW/g



Date/Time: 2010/5/3 00:35:30

Test Laboratory: Bureau Veritas ADT

SystemPerformanceCheck HSL1900

DUT: Dipole 1900 MHz ; Type: D1900V2 ; Serial: 5d036 ; Test Frequency: 1900 MHz

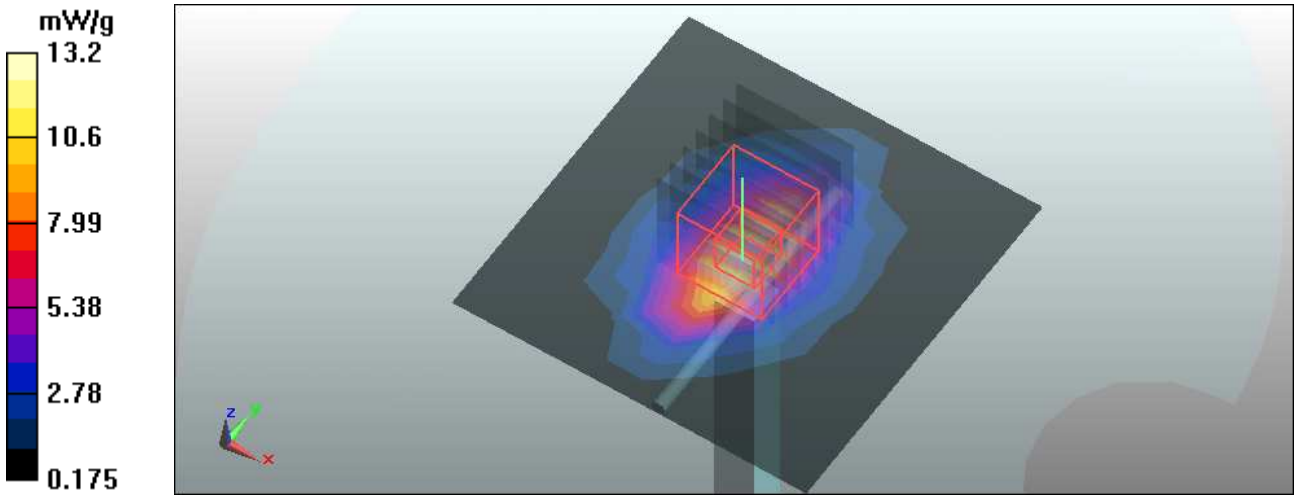
Communication System: CW ; Frequency: 1900 MHz; Duty Cycle: 1:1; Modulation type: CW
Medium: HSL1900;Medium parameters used: f = 1900 MHz; σ = 1.44 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3 ;
Liquid level : 151 mm
Phantom section: Flat Section ; Separation distance : 10 mm (The feetpoint of the dipole to the Phantom)Air temp. : 22.8 degrees ; Liquid temp. : 22.3 degrees

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(8.2, 8.2, 8.2); Calibrated: 2010/1/26
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

d=10mm, Pin=250 mW, dist=3.0mm /Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 13.2 mW/g

d=10mm, Pin=250 mW, dist=3.0mm /Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.2 V/m; Power Drift = -0.041 dB
Peak SAR (extrapolated) = 19.8 W/kg
SAR(1 g) = 10.35 mW/g; SAR(10 g) = 5.27 mW/g



Date/Time: 2010/5/4 00:28:40

Test Laboratory: Bureau Veritas ADT

SystemPerformanceCheck HSL 5200

DUT: Dipole D5GHzV2 ; Type: D5GHzV2 ; Serial: 1018 ; Test Frequency: 5200 MHz

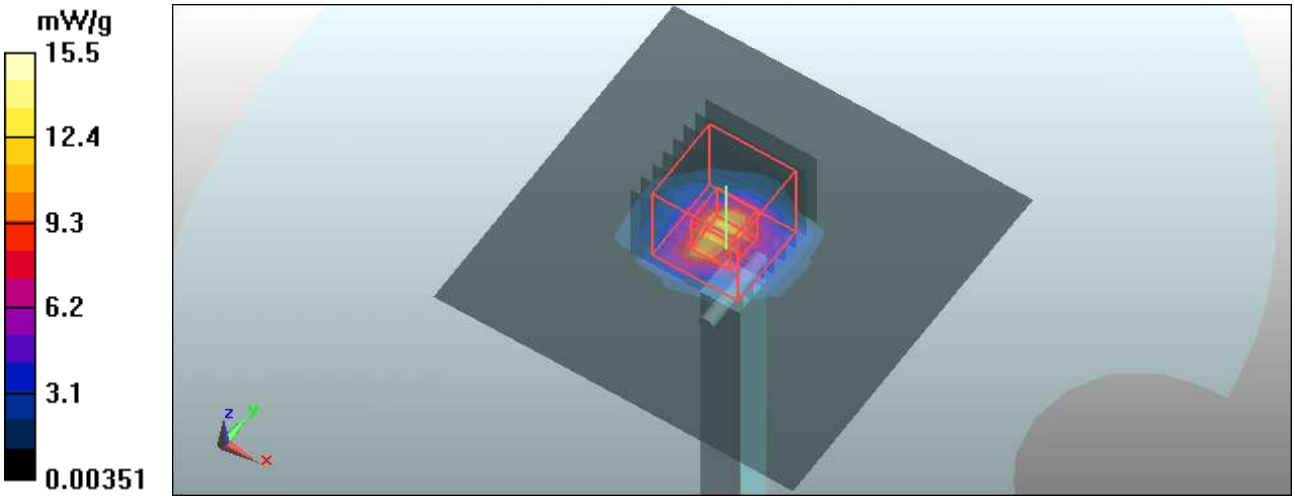
Communication System: CW-5GHz ; Frequency: 5200 MHz; Duty Cycle: 1:1; Modulation type: CW
Medium: HSL5800;Medium parameters used: f = 5200 MHz; σ = 4.65 mho/m; ε_r = 36.7; ρ = 1000 kg/m^3 ;
Liquid level : 152 mm
Phantom section: Flat Section ; Separation distance : 10 mm (The feetpoint of the dipole to the Phantom)Air temp. : 22.9 degrees ; Liquid temp. : 22.1 degrees

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.87, 4.87, 4.87); Calibrated: 2010/1/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

d=10mm, Pin=100mW, f=5200 MHz/Area Scan (10x10x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 12.5 mW/g

d=10mm, Pin=100mW, f=5200 MHz/Zoom Scan (4x4x2.5mm), dist=2mm (8x8x10)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 60.8 V/m; Power Drift = 0.171 dB
Peak SAR (extrapolated) = 30.2 W/kg
SAR(1 g) = 8.1 mW/g; SAR(10 g) = 2.34 mW/g
Maximum value of SAR (measured) = 15.5 mW/g



Date/Time: 2010/5/ 4 01:13:05

Test Laboratory: Bureau Veritas ADT

SystemPerformanceCheck HSL 5500

DUT: Dipole D5GHzV2 ; Type: D5GHzV2 ; Serial: 1018 ; Test Frequency: 5500 MHz

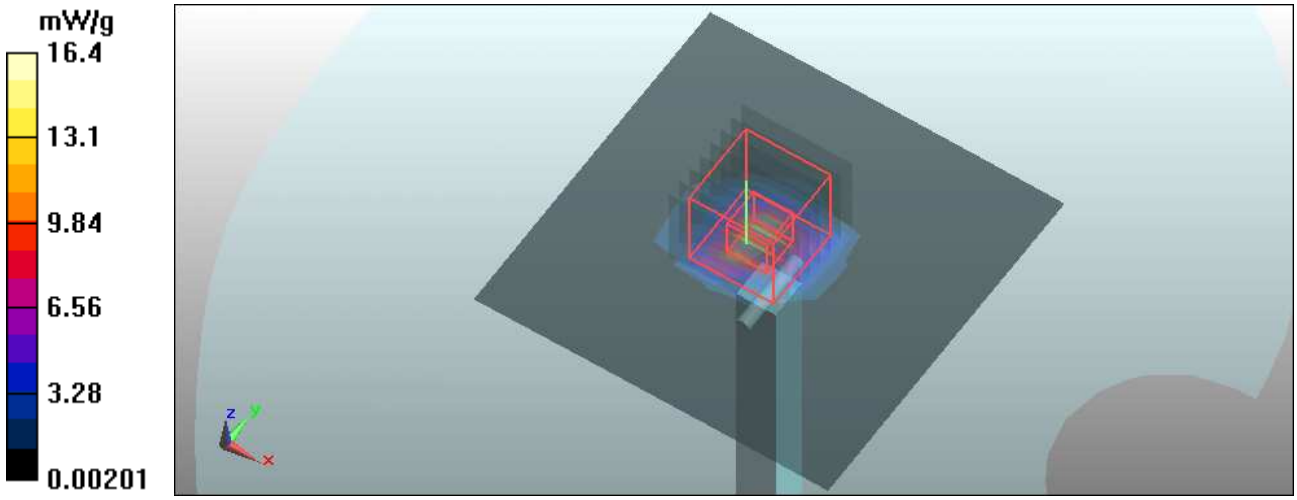
Communication System: CW-5GHz ; Frequency: 5500 MHz; Duty Cycle: 1:1; Modulation type: CW
Medium: HSL5800;Medium parameters used: f = 5500 MHz; σ = 5 mho/m; ε_r = 36.2; ρ = 1000 kg/m^3 ;
Liquid level : 152 mm
Phantom section: Flat Section ; Separation distance : 10 mm (The feetpoint of the dipole to the Phantom)Air temp. : 22.9 degrees ; Liquid temp. : 22.1 degrees

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.51, 4.51, 4.51); Calibrated: 2010/1/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

d=10mm, Pin=100mW, f=5500 MHz/Area Scan (10x10x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 13.4 mW/g

d=10mm, Pin=100mW, f=5500 MHz/Zoom Scan (4x4x2.5mm), dist=2mm (8x8x10)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 61.1 V/m; Power Drift = 0.163 dB
Peak SAR (extrapolated) = 31.6 W/kg
SAR(1 g) = 8.51 mW/g; SAR(10 g) = 2.42 mW/g
Maximum value of SAR (measured) = 16.4 mW/g



Date/Time: 2010/5/4 02:07:37

Test Laboratory: Bureau Veritas ADT

SystemPerformanceCheck HSL 5800

DUT: Dipole D5GHzV2 ; Type: D5GHzV2 ; Serial: 1018 ; Test Frequency: 5800 MHz

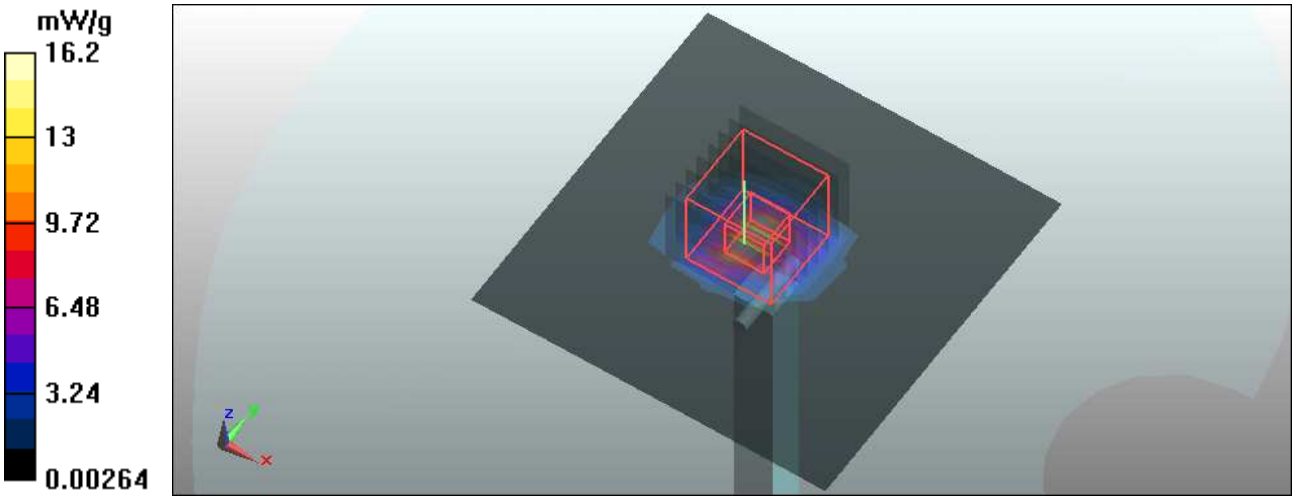
Communication System: CW-5GHz ; Frequency: 5800 MHz; Duty Cycle: 1:1; Modulation type: CW
Medium: HSL5800;Medium parameters used: f = 5800 MHz; σ = 5.38 mho/m; ε_r = 35.7; ρ = 1000 kg/m^3 ;
Liquid level : 152 mm
Phantom section: Flat Section ; Separation distance : 10 mm (The feetpoint of the dipole to the Phantom)Air temp. : 22.9 degrees ; Liquid temp. : 22.1 degrees

DASY5 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.53, 4.53, 4.53); Calibrated: 2010/1/26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

d=10mm, Pin=100mW, f=5800 MHz/Area Scan (10x10x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 13.3 mW/g

d=10mm, Pin=100mW, f=5800 MHz/Zoom Scan (4x4x2.5mm), dist=2mm (8x8x10)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 58.5 V/m; Power Drift = 0.162 dB
Peak SAR (extrapolated) = 33.5 W/kg
SAR(1 g) = 8.27 mW/g; SAR(10 g) = 2.36 mW/g
Maximum value of SAR (measured) = 16.2 mW/g



APPENDIX A : Test DATA FOR MULTIBAND

M01 A8 2D Left Head Cheek CDMA1900 Ch25 + 11A Ch64

DASY Configuration for Program/CDMA1900 Ch25 /Volume Scan:

Date/Time: 2010/5/3
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: CDMA; Frequency: 1851.25 MHz; Duty Cycle: 1:1
Medium: HSL1900 Medium parameters used (interpolated): f = 1851.25 MHz; σ = 1.38 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

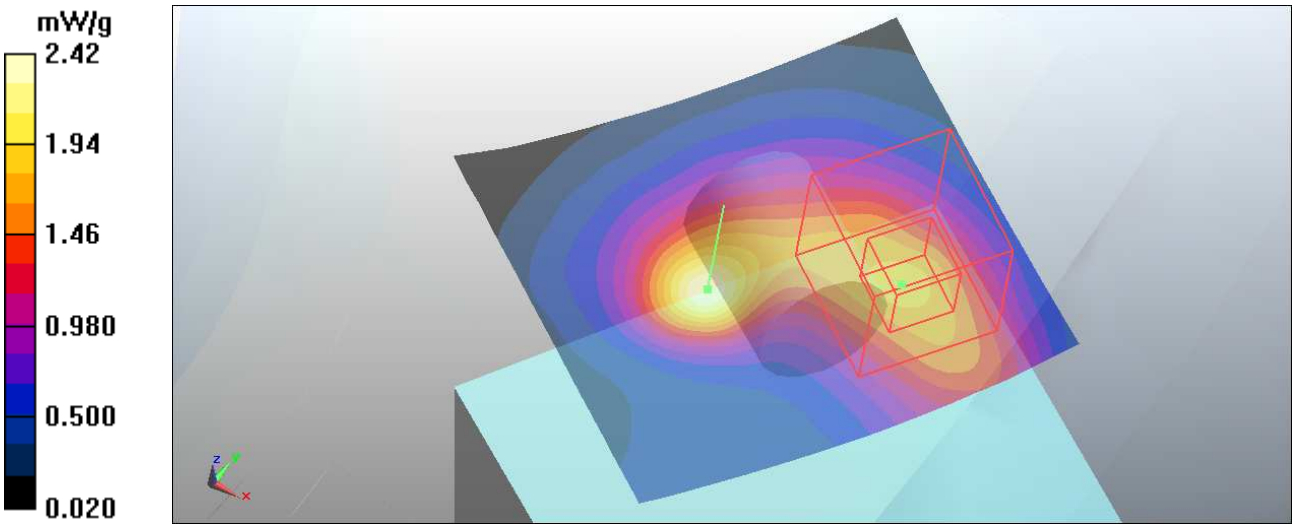
- Probe: EX3DV3 - SN3504; ConvF(8.2, 8.2, 8.2); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

DASY Configuration for Program/11a ch64 /Volume Scan:

Date/Time: 2010/5/4
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: WiFi; Frequency: 5320 MHz; Duty Cycle: 1:1
Medium: HSL5800 Medium parameters used: f = 5320 MHz; σ = 4.79 mho/m; ε_r = 36.5; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

- Probe: EX3DV3 - SN3504; ConvF(4.62, 4.62, 4.62); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

Multi Band Result:
SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.647 mW/g
Maximum value of SAR (measured) = 2.42 mW/g


mW/g
2.42
1.94
1.46
0.980
0.500
0.020

M02 A8 2D Left Head Cheek CDMA1900 Ch600 + 11A Ch40

DASY Configuration for Program/CDMA1900 Ch600 /Volume Scan:

Date/Time: 2010/5/3
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: CDMA 1x; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL1900 Medium parameters used: f = 1880 MHz; σ = 1.4 2mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

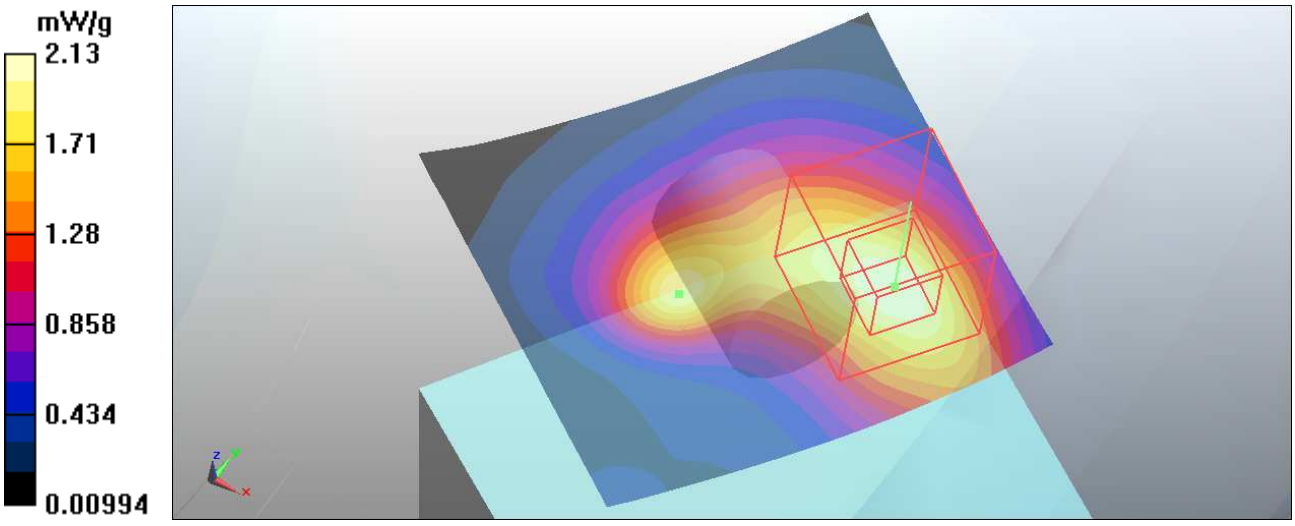
- Probe: EX3DV3 - SN3504; ConvF(8.2, 8.2, 8.2); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

DASY Configuration for Program/11a Ch40 /Volume Scan:

Date/Time: 2010/5/4
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: 802.11a; Frequency: 5200 MHz; Duty Cycle: 1:1
Medium: HSL5800 Medium parameters used: f = 5200 MHz; σ = 4.65 mho/m; ε_r = 36.7; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

- Probe: EX3DV3 - SN3504; ConvF(4.87, 4.87, 4.87); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

Multi Band Result:
SAR(1 g) = 1.28 mW/g; SAR(10 g) = 0.724 mW/g
Maximum value of SAR (measured) = 2.13 mW/g


mW/g
2.13
1.71
1.28
0.858
0.434
0.00994

M03 A8 2D Left Head Cheek CDMA1900 Ch600 + 11A Ch64

DASY Configuration for Program/CDMA1900 Ch600/Volume Scan:

Date/Time: 2010/5/3
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: CDMA 1x; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL1900 Medium parameters used: f = 1880 MHz; σ = 1.42 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

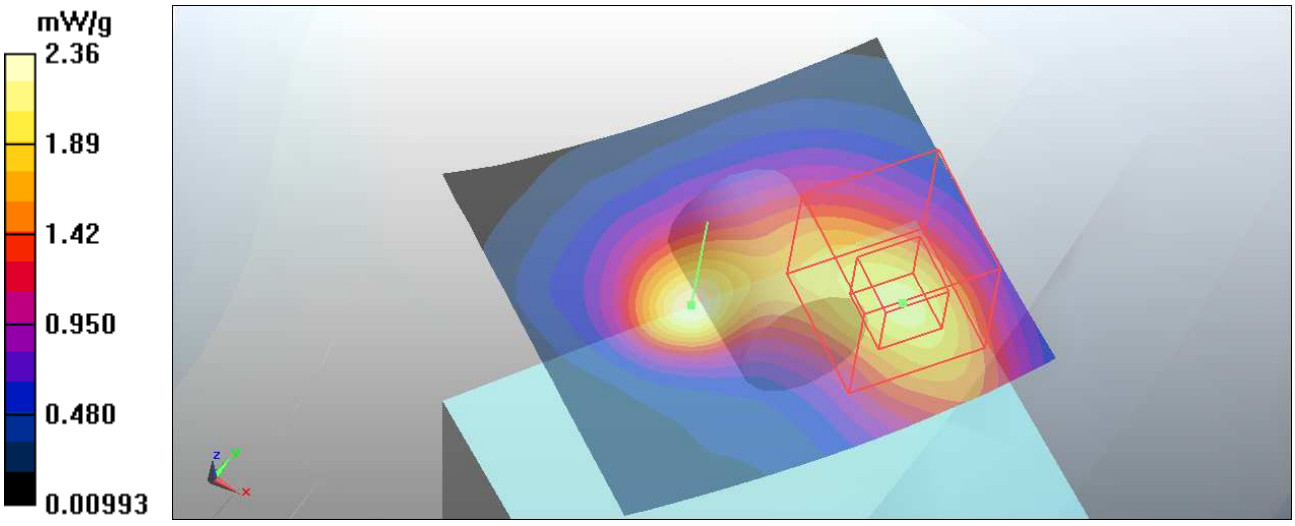
- Probe: EX3DV3 - SN3504; ConvF(8.2, 8.2, 8.2); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

DASY Configuration for Program/11a ch64/Volume Scan:

Date/Time: 2010/5/4
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: WiFi; Frequency: 5320 MHz; Duty Cycle: 1:1
Medium: HSL5800 Medium parameters used: f = 5320 MHz; σ = 4.79 mho/m; ε_r = 36.5; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

- Probe: EX3DV3 - SN3504; ConvF(4.62, 4.62, 4.62); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

Multi Band Result:
SAR(1 g) = 1.28 mW/g; SAR(10 g) = 0.723 mW/g
Maximum value of SAR (measured) = 2.36 mW/g


mW/g
2.36
1.89
1.42
0.950
0.480
0.00993

M04 A8 2D Left Head Tilt CDMA1900 Ch600 + 11A Ch64

DASY Configuration for Program/CDMA1900 Ch600 volume/Volume Scan:

Date/Time: 2010/5/3
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: CDMA 1x; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL1900 Medium parameters used: f = 1880 MHz; σ = 1.42 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

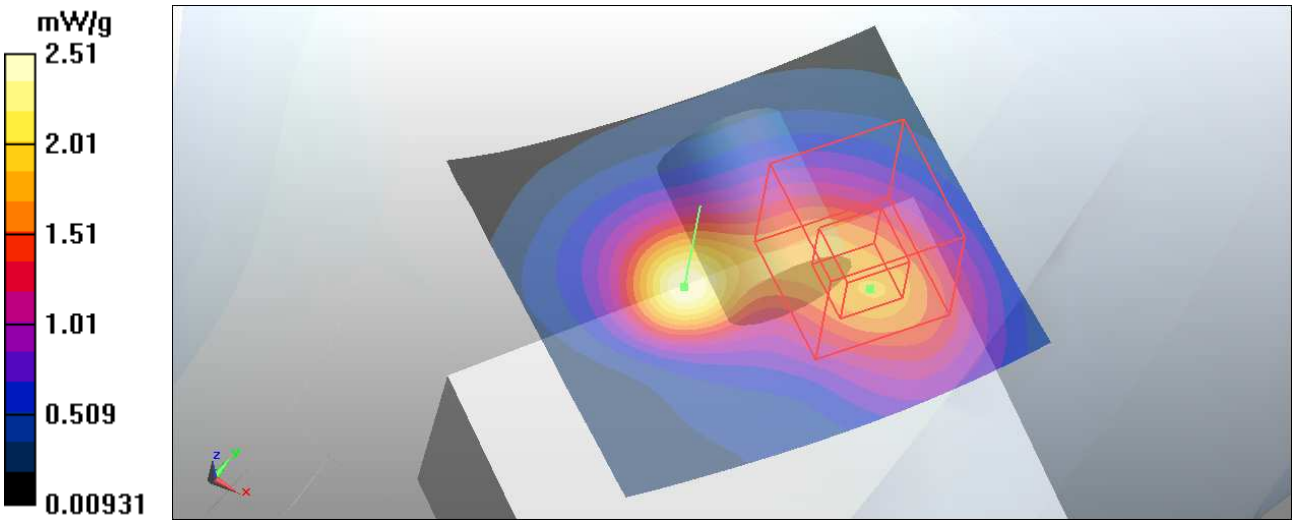
- Probe: EX3DV3 - SN3504; ConvF(8.2, 8.2, 8.2); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

DASY Configuration for Program/11a ch64 Volume/Volume Scan:

Date/Time: 2010/5/4
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: WiFi; Frequency: 5320 MHz; Duty Cycle: 1:1
Medium: HSL5800 Medium parameters used: f = 5320 MHz; σ = 4.79 mho/m; ε_r = 36.5; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

- Probe: EX3DV3 - SN3504; ConvF(4.62, 4.62, 4.62); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

Multi Band Result:
SAR(1 g) = 1.25 mW/g; SAR(10 g) = 0.619 mW/g
Maximum value of SAR (measured) = 2.51 mW/g


mW/g
2.51
2.01
1.51
1.01
0.509
0.00931

M05 A8 2D Left Head Cheek CDMA1900 Ch600 + 11A Ch100

DASY Configuration for Program/CDMA1900 Ch600 /Volume Scan:

Date/Time: 2010/5/3
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: CDMA 1x; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL1900 Medium parameters used: f = 1880 MHz; σ = 1.42 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

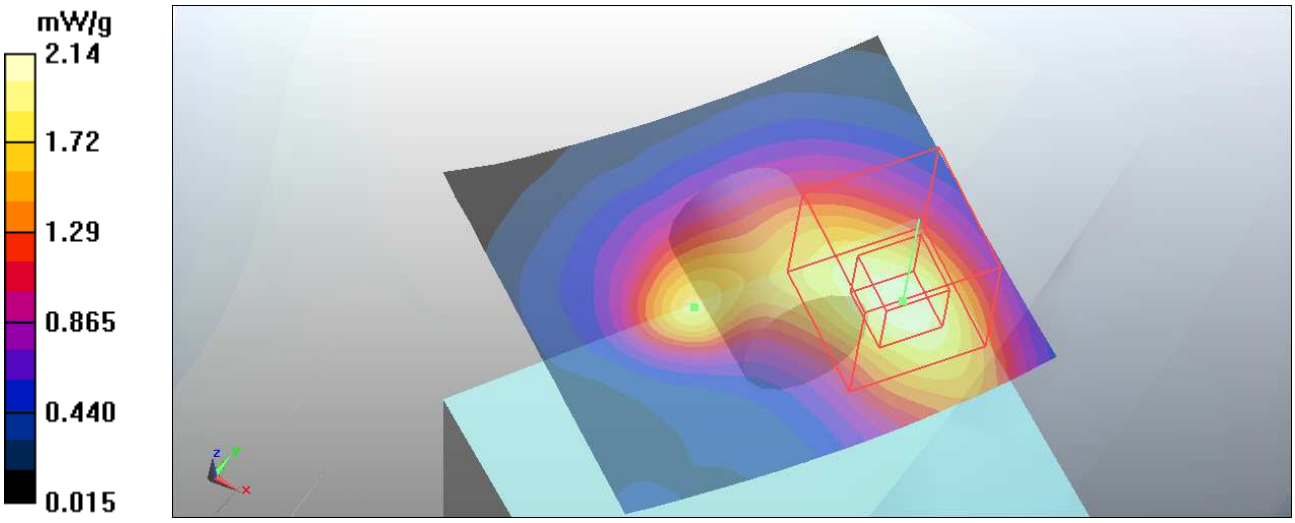
- Probe: EX3DV3 - SN3504; ConvF(8.2, 8.2, 8.2); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

DASY Configuration for Program/11a ch100 /Volume Scan:

Date/Time: 2010/5/4
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: WiFi; Frequency: 5500 MHz; Duty Cycle: 1:1
Medium: HSL5800 Medium parameters used: f = 5500 MHz; σ = 5 mho/m; ε_r = 36.2; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

- Probe: EX3DV3 - SN3504; ConvF(4.51, 4.51, 4.51); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

Multi Band Result:
SAR(1 g) = 1.28 mW/g; SAR(10 g) = 0.723 mW/g
Maximum value of SAR (measured) = 2.14 mW/g


mW/g
2.14
1.72
1.29
0.865
0.440
0.015

M06 A8 2D Left Head Cheek CDMA1900 Ch600 + 11A Ch120

DASY Configuration for Program/CDMA1900 Ch600 /Volume Scan:

Date/Time: 2010/5/3
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: CDMA 1x; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL1900 Medium parameters used: f = 1880 MHz; σ = 1.42 mho/m; εr = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

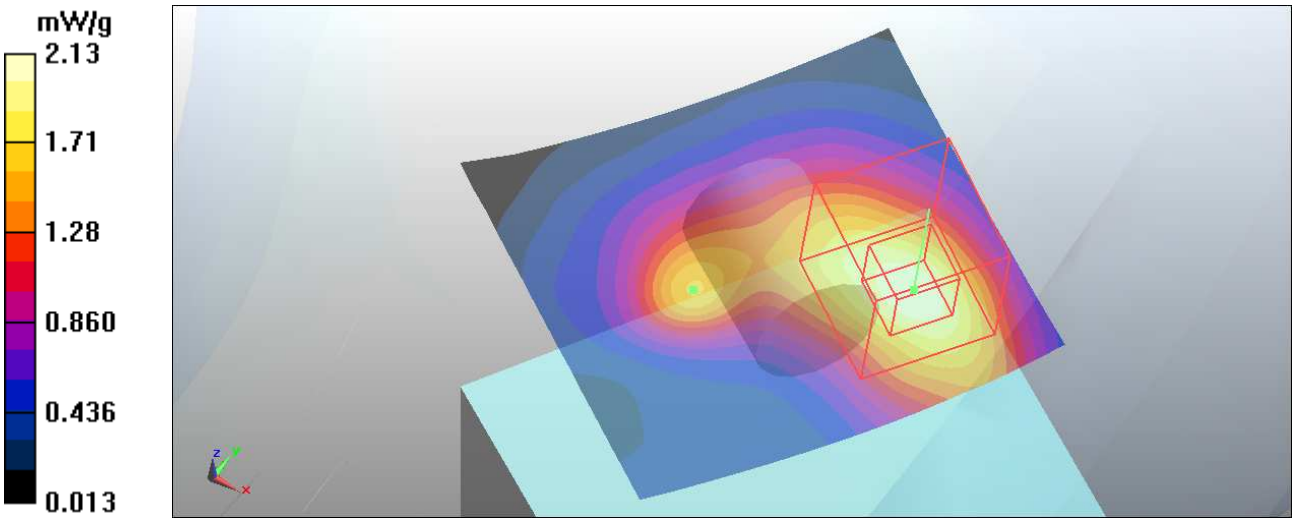
- Probe: EX3DV3 - SN3504; ConvF(8.2, 8.2, 8.2); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

DASY Configuration for Program/11a Ch120 /Volume Scan:

Date/Time: 2010/5/4
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: WiFi; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: HSL5800 Medium parameters used: f = 5600 MHz; σ = 5.13 mho/m; ε_r = 36; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

- Probe: EX3DV3 - SN3504; ConvF(4.25, 4.25, 4.25); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

Multi Band Result:
SAR(1 g) = 1.28 mW/g; SAR(10 g) = 0.723 mW/g
Maximum value of SAR (measured) = 2.13 mW/g


mW/g
2.13
1.71
1.28
0.860
0.436
0.013

M07 A8 2D Left Head Cheek CDMA1900 Ch600 + 11A Ch136

DASY Configuration for Program/CDMA1900 Ch600 zoom 5 (0290)/Volume Scan:

Date/Time: 2010/5/3
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: CDMA 1x; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL1900 Medium parameters used: f = 1880 MHz; σ = 1.42 mho/m; εr = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

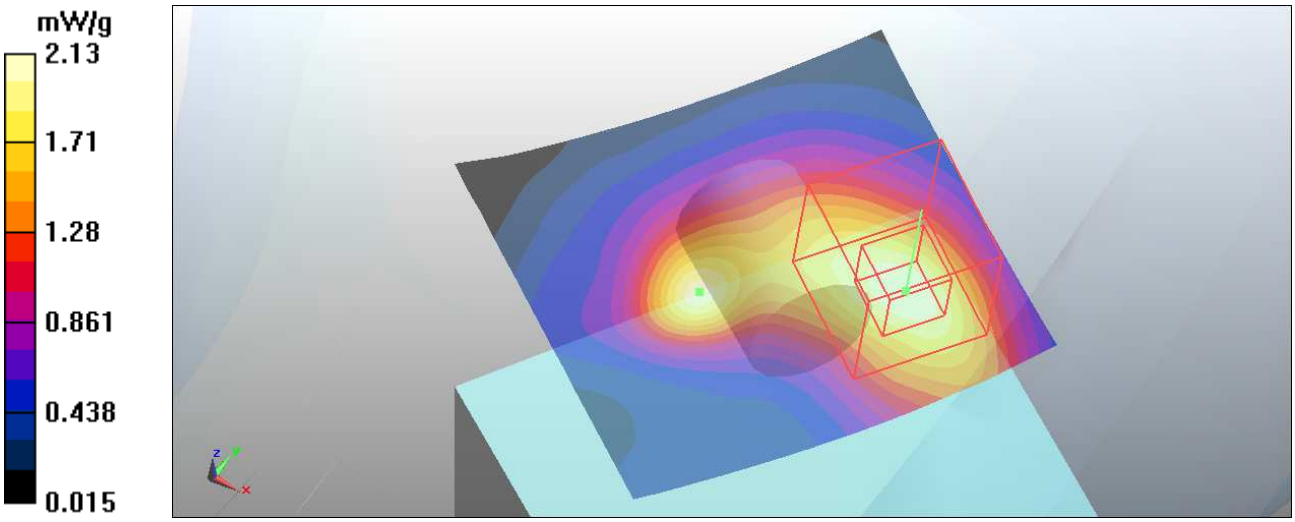
- Probe: EX3DV3 - SN3504; ConvF(8.2, 8.2, 8.2); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

DASY Configuration for Program/11a Ch136 Volume/Volume Scan:

Date/Time: 2010/5/4
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: WiFi; Frequency: 5680 MHz; Duty Cycle: 1:1
Medium: HSL5800 Medium parameters used: f = 5680 MHz; σ = 5.22 mho/m; ε_r = 35.9; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

- Probe: EX3DV3 - SN3504; ConvF(4.25, 4.25, 4.25); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

Multi Band Result:
SAR(1 g) = 1.28 mW/g; SAR(10 g) = 0.728 mW/g
Maximum value of SAR (measured) = 2.13 mW/g


mW/g
2.13
1.71
1.28
0.861
0.438
0.015

M08 A8 2D Left Head Cheek CDMA1900 Ch600 + 11A Ch149

DASY Configuration for Program/CDMA1900 Ch600 zoom 5 (0290)/Volume Scan:

Date/Time: 2010/5/3
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: CDMA 1x; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL1900 Medium parameters used: f = 1880 MHz; σ = 1.42 mho/m; εr = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

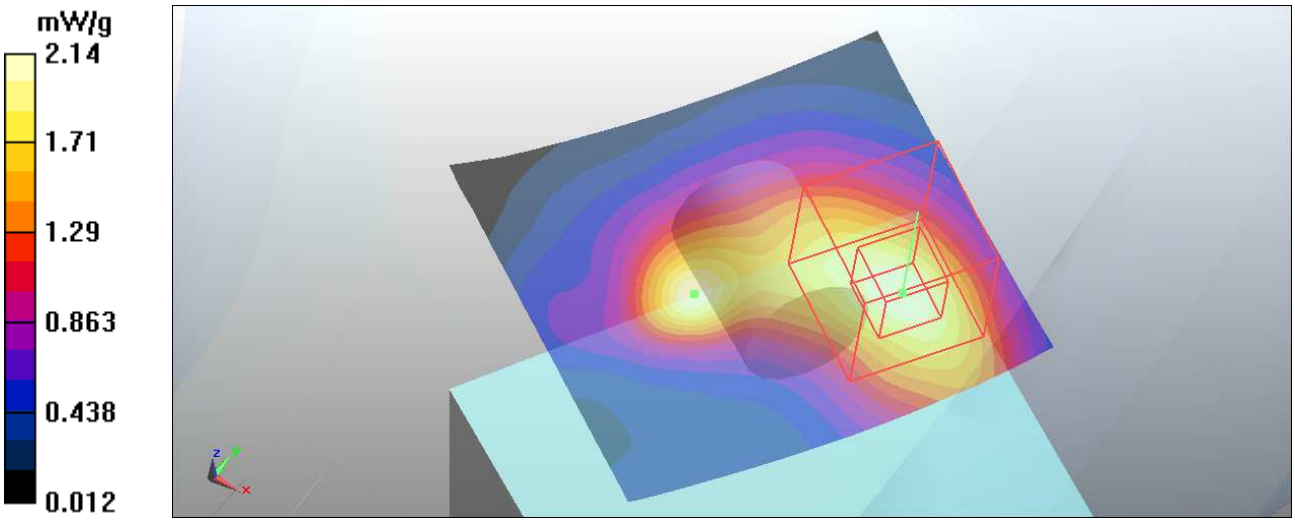
- Probe: EX3DV3 - SN3504; ConvF(8.2, 8.2, 8.2); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

DASY Configuration for Program/11a Ch149 Volume/Volume Scan:

Date/Time: 2010/5/4
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: 802.11a; Frequency: 5745 MHz; Duty Cycle: 1:1
Medium: HSL5800 Medium parameters used: f = 5745 MHz; σ = 5.31 mho/m; ε_r = 35.8; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

- Probe: EX3DV3 - SN3504; ConvF(4.53, 4.53, 4.53); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

Multi Band Result:
SAR(1 g) = 1.28 mW/g; SAR(10 g) = 0.723 mW/g
Maximum value of SAR (measured) = 2.14 mW/g


mW/g
2.14
1.71
1.29
0.863
0.438
0.012

M09 A8 2D Left Head Cheek CDMA1900 Ch1175 + 11A Ch64

DASY Configuration for Program/CDMA1900 Ch1175 Volume/Volume Scan:

Date/Time: 2010/5/3
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: HSL1900 Medium parameters used (interpolated): f = 1908.75 MHz; σ = 1.45 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

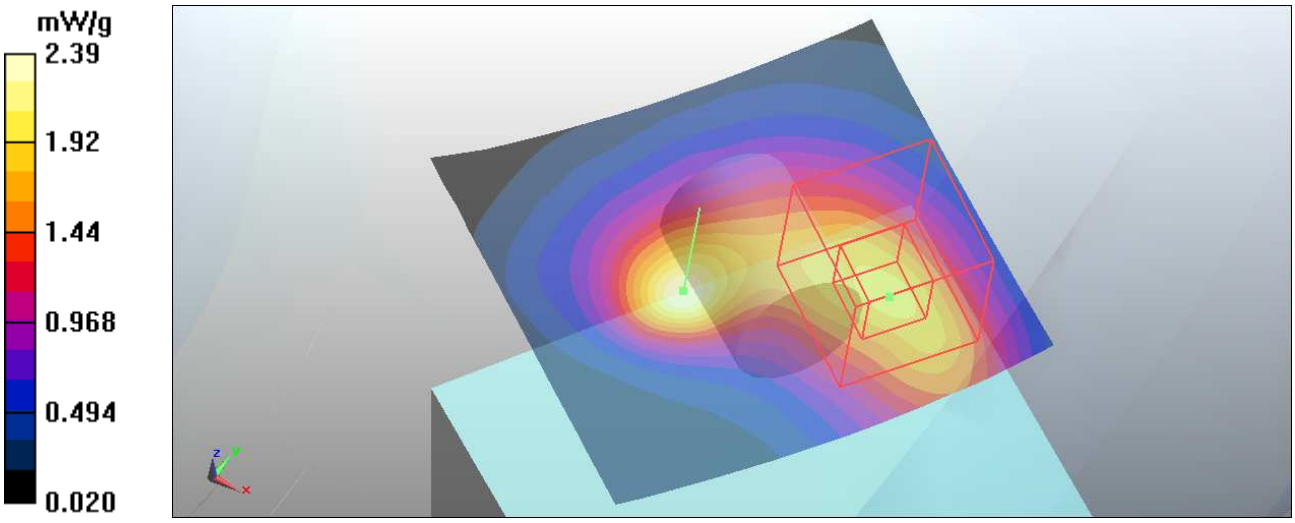
- Probe: EX3DV3 - SN3504; ConvF(8.2, 8.2, 8.2); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

DASY Configuration for Program/11a ch64 Volume/Volume Scan:

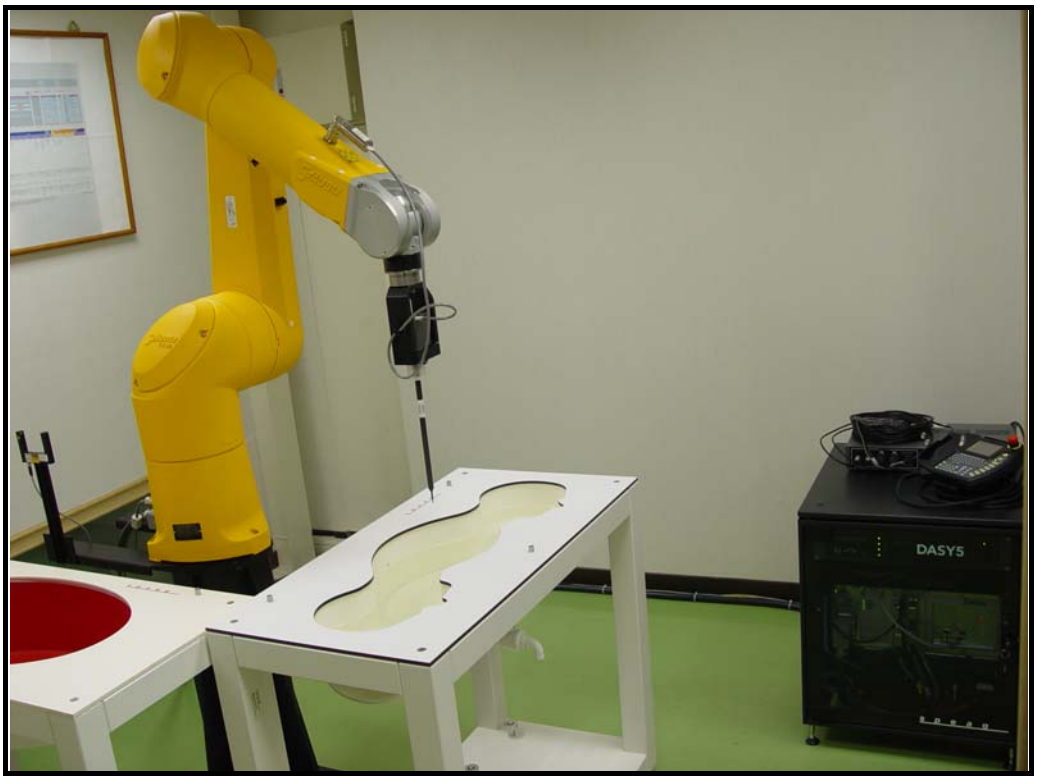
Date/Time: 2010/5/4
Test Laboratory: Bureau Veritas ADT
DUT: EDA; Type: MC75A8
Communication System: WiFi; Frequency: 5320 MHz; Duty Cycle: 1:1
Medium: HSL5800 Medium parameters used: f = 5320 MHz; σ = 4.79 mho/m; ε_r = 36.5; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

- Probe: EX3DV3 - SN3504; ConvF(4.62, 4.62, 4.62); Calibrated: 2010/1/26
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2009/12/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1485
- Measurement SW: DASY5, V5.2 Build 157

Multi Band Result:
SAR(1 g) = 1.21 mW/g; SAR(10 g) = 0.696 mW/g
Maximum value of SAR (measured) = 2.39 mW/g


mW/g
2.39
1.92
1.44
0.968
0.494
0.020

APPENDIX B: BV ADT SAR MEASUREMENT SYSTEM



APPENDIX C: PHOTOGRAPHS OF SYSTEM VALIDATION