

SAR TEST REPORT

Equipment Under Test	Smart Phone
Model Name	V03B
Company Name	DELL Inc.
Company Address	One Dell Way Round Rock Texas 78682 United States
Date of Receipt	2010.07.26
Date of Test(s)	2010.09.25-2010.09.26
Date of Issue	2010.10.07

Standards:

**FCC OET Bulletin 65 supplement C,
IEEE/ANSI C95.1, C95.3, IEEE 1528**

In the configuration tested, the EUT complied with the standards specified above.

Remarks:

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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Tested by : Antony Wu Date : 2010.10.07
Engineer

Approved by : Robert Chang Date : 2010.10.07
Tech Manager

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Version

Version No.	Date	Description
1.0	Oct. 07, 2010	Initial issue of report

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1. General Information

1.1 Testing Laboratory

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Fax	+886-2-2298-0488
Internet	http://www.tw.sgs.com/

1.2 Details of Applicant

Company Name	DELL Inc.
Company Address	One Dell Way Round Rock Texas 78682 United States
Contact Person	Matthew Samonek
TEL	815-382-4275
E-mail	matthew_samonek@dell.com
Website	www.dell.com

1.3 Description of EUT

EUT Name	Smart Phone
Model Name	V03B
Market Name	Venue
Brand Name	DELL
IMEI Code	012213000018140
FCC ID	E2KV03B001

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Mode of Operation	GSM/GPRS/EGPRS/WCDMA/HSDPA/HSUPA/WLAN802.11 b/g/n band				
Definition	Production unit				
Duty Cycle	GSM	GPRS	WCDMA B2	WCDMA B5	WLAN 802.11 b/g/n
	1/8	1/2	1		
TX Frequency Range (MHz)	GSM 850	GSM1900	WCDMA B2	WCDMA B5	WLAN 802.11 b/g/n
	824.2-848.8 MHZ	1850.2-1909.8 MHZ	1852.4-1907.6 MHZ	826.4-846.6 MHZ	2412-2462 MHZ
Channel Number (ARFCN)	GSM 850	GSM1900	WCDMA B2	WCDMA B5	WLAN 802.11 b/g/n
	128-251	512- 810	9262-9538	4132-4233	1-11
VOIP Function	No				
Battery Type	3.7 V Lithium-Ion				
Antenna Type	Internal Antenna				
Max. SAR Measured (1 g)	GSM850				
	Head		Body		
	0.636 mW/g (At GSM 850 Left Head (Cheek Position)_ 251 Channel		1.19 mW/g (At GSM 850 Body _ 251 channel _repeated with Memory card)		
	GSM1900				
	Head		Body		
	0.756 mW/g (At GSM 1900 Right Head (Cheek Position)_ 661 channel)		0.929 mW/g (At GSM 1900 Body _ 661 channel)		

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Max. SAR Measured (1 g)	WCDMA B2	
	Head	Body
	1.39 mW/g (At WCDMA B2 Right Head (Cheek Position)_ 9262 channel)	1.08 mW/g (At WCDMA B2 Body _ 9262 channel)
	WCDMA B5	
	Head	Body
	0.678 mW/g (At WCDMA B5 Right Head (Cheek Position)_ 4132 channel)	0.882 mW/g (At WCDMA B5 Body _ 4132 channel)
	WLAN 802.11b	
	Body	
	0.418 mW/g (At WLAN802.11b Body_ 11 channel)	
	WLAN802.11g	
	Body	
	0.233 mW/g (At WLAN802.11g Body_11 channel)	
	WLAN802.11n	
	Body	
	0.253 mW/g (At WLAN802.11n Body_ 11 channel)	

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#. Conducted power table:

	GSM 850 (Average)			GSM 1900 (Average)		
Mode\ARFCN	128	190	251	512	661	810
GSM	32.8	32.7	32.6	30.0	30.0	30.0
EGPRS 12	25.9	25.8	25.7	24.6	24.6	24.7
GPRS 12	29.6	29.6	29.5	27.2	27.2	27.3

		WCDMA Band V Channel			WCDMA Band II Channel		
Mode	Subtest	4132	4182	4233	9262	9400	9538
Rel99	R99	22.68	23.16	22.73	23.44	23.48	23.41
Rel6 HSDPA	1	22.9	23.41	22.92	23.73	23.74	23.68
	2	22.61	23.05	22.6	23.32	23.34	23.26
	3	22.44	22.93	22.43	23.25	23.29	23.15
	4	22.49	22.97	22.49	23.32	23.3	23.27
Rel6 HSUPA	1	22.64	23.09	22.65	23.36	23.46	23.35
	2	20.7	21.17	20.69	21.41	21.53	21.39
	3	21.68	22.15	21.73	22.42	22.48	22.43
	4	20.75	21.23	20.77	21.54	21.58	21.43
	5	22.5	22.92	22.54	23.25	23.32	23.26

EUT Mode	Frequency (MHz)	CH	Average Power (dBm)	EUT Mode	Frequency (MHz)	CH	Average Power (dBm)
WLAN802.11b	2412	1	15.52	WLAN802.11n	2412	1	13.09
	2437	6	15.57		2437	6	13.34
	2462	11	15.59		2462	11	13.32
EUT Mode	Frequency (MHz)	CH	Average Power (dBm)				
WLAN802.11g	2412	1	15.47				
	2437	6	15.55				
	2462	11	15.48				

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1.4 Test Environment

Ambient Temperature : $22 \pm 2^\circ \text{C}$

Tissue Simulating Liquid: $22 \pm 2^\circ \text{C}$

1.5 Operation description

General:

1. The EUT is controlled by using a Radio Communication Tester (Agilent 8960), and the communication between the EUT and the tester is established by air link.
2. Measurements are performed respectively on the lowest, middle and highest channels of the operating band(s). The EUT is set to maximum power level during all tests, and at the beginning of each test the battery is fully charged.
3. The WLAN transmitter is controlled by chip-specific software installed in this PDA phone , to make the EUT transmit at max power.
4. During the SAR testing, the DASY5 system checks power drift by comparing the e-field strength of one specific location measured at the beginning with that measured at the end of the SAR testing.
5. Testing Head SAR at lowest, middle and highest channel for all bands with LET/LEC/RET/REC conditions.
6. Testing body-worn SAR by separating **1.5cm** between the back of the EUT and the flat phantom in GPRS mode.

SAR evaluation considerations for handsets with multiple transmitters:

7. Since the WLAN function of this device does NOT support VoIP function. Users will not use it close to head. SAR evaluation of head adjacent is unnecessary, only Body condition will be considered for WLAN stand-alone situation.
8. The maximum SAR value for licensed transmitter happens on WCDMA B2 band, Head Right side(Cheek Position) , channel 9262. the value is **1.39W/kg(1g)**. And the max SAR value for un-licensed transmitter WLAN 802.11b happens on Body worn, channel 11 The SAR value is **0.418W/kg (1g)** . The summation of the 1g SAR is **$1.39 + 0.418 = 1.808 \text{ W/kg}$, which higher than the limit 1.6 W/kg .**

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9. By the way , the peak distance(hotspot to hotspot) for WWAN and WLAN is **6.8 cm** , we calculate the peak location separation ratio of simultaneous transmitting antenna pair , the value is **0.265** with less than 0.3. **NO simultaneous transmission SAR evaluation is necessary.**

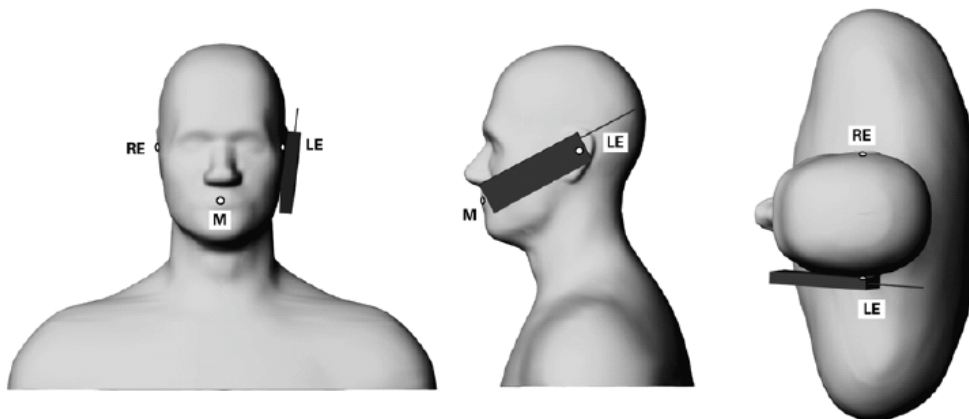
Additional configuration(Head):

10. For highest SAR configuration in this band repeated with external Memory card inside.

Additional configuration(Body):

11. Testing body-worn SAR with Handset and with Bluetooth transmitter OFF by separating **1.5cm** between the front of the EUT and the flat phantom in GPRS mode.
12. For highest SAR configuration in this band repeated with external Memory card inside.
13. For highest SAR configuration in this band repeated with external Headset (PCH).
14. For highest SAR configuration in this band repeated with external Headset (Foster).
15. For highest SAR configuration in this band repeated with EGPRS mode.

1.6 Positioning Procedure



Phone position 1, "cheek" or "touch" position. The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning

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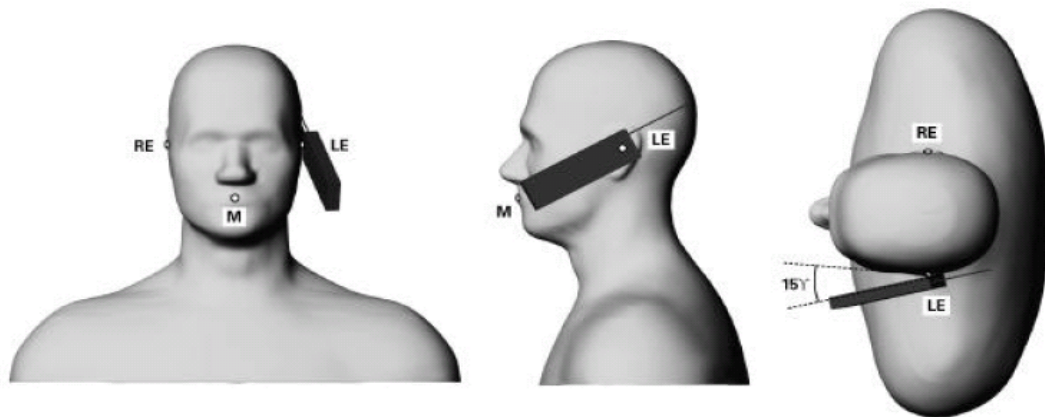
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Phone position 2, "tilted position." The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning

Cheek/Touch Position:

the handset was brought toward the mouth of the head phantom by pivoting against the ear reference point until any point of the mouthpiece or keypad touched the phantom.

Ear/Tilt Position:

With the phone aligned in the Cheek/Touch position, the handset was tilted away from the mouth with respect to the test device reference point by 15 degrees.

1.7 Evaluation Procedures

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

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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.

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.

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 7x7x7 scans.

The routines are verified and optimized for the grid dimensions used in these cube measurements. The measured volume of 30x30x30mm 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 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.

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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.

1.8 The SAR Measurement System

A photograph of the SAR measurement System is given in Fig. a. This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY 5 professional system). A Model ES3DV3 field probe is used to determine the internal electric fields. The SAR can be obtained from the equation $SAR = \sigma (|E|^2) / \rho$ where σ and ρ are the conductivity and mass density of the tissue-simulant.

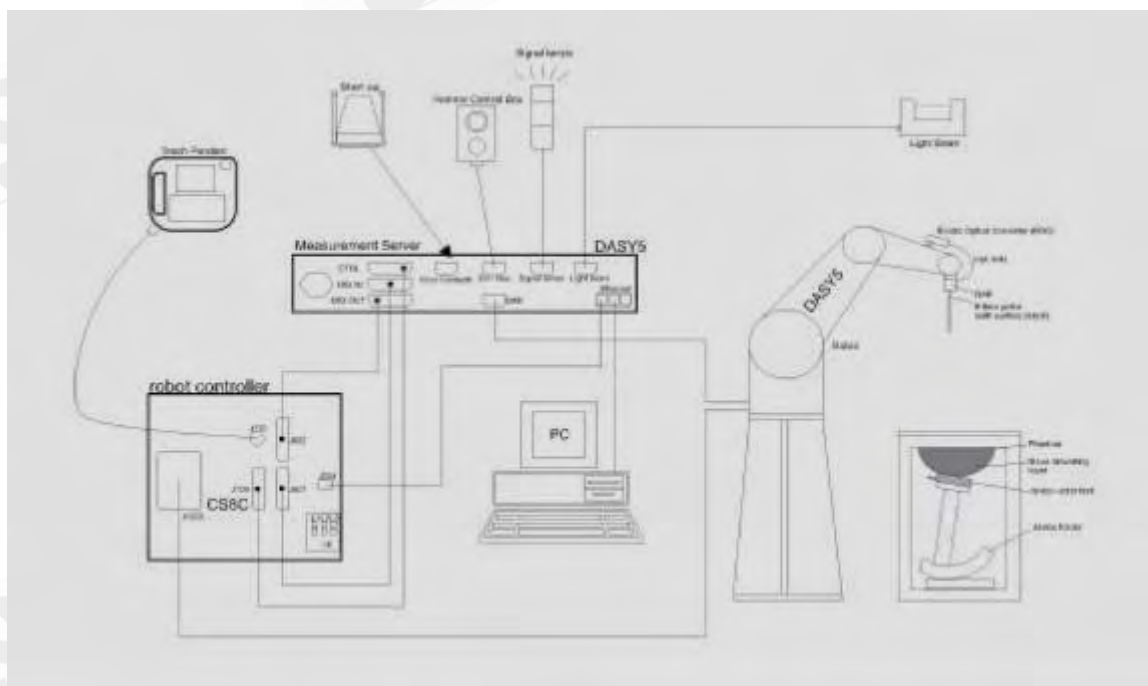


Fig.a The block diagram of SAR system

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

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

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- A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to the DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
 - A computer operating Windows 2000 or Windows XP.
 - DASY5 software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
 - The SAM twin phantom enabling testing left-hand and right-hand usage.
 - The device holder for handheld mobile phones.
 - Tissue simulating liquid mixed according to the given recipes.
 - Validation dipole kits allowing to validate the proper functioning of the system.

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1.9 System Components

ES3DV3 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)	
Calibration:	Basic Broad Band Calibration in air Conversion Factors (CF) for HSL850/1900/2450MHz Additional CF for other liquids and frequencies upon request	
Frequency:	10 MHz to > 4 GHz; Linearity: ± 0.6 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 μ W/g to > 100 mW/g; Linearity: ± 0.6 dB (noise: typically < 1 μ W/g)	
Dimensions:	Overall length: 337 mm (Tip: 10 mm) Tip diameter: 4 mm (Body: 10 mm) Typical distance from probe tip to dipole centers: 2 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%.	

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SAM PHANTOM V4.0C

Construction:	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528-200X, CENELEC 50361 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 ± 0.2 mm	
Filling Volume:	Approx. 25 liters	
Dimensions:	Height: 850 mm; Length: 1000 mm; Width: 500 mm	

DEVICE HOLDER

Construction	In combination with the Twin SAM Phantom V4.0/V4.0C or Twin SAM, the Mounting Device (made from POM) enables the rotation of the mounted transmitter in spherical coordinates, whereby the rotation point is the ear opening. The devices can be easily and accurately positioned according to IEC, IEEE, CENELEC, FCC or other specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).	 Device Holder
--------------	--	--

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1.10 SAR System Verification

The microwave circuit arrangement for system verification is sketched in Fig. b. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within $\pm 5\%$ from the target SAR values.

These tests were done at 850/1900/2450 MHz. The tests were conducted on the same days as the measurement of the DUT. The obtained results from the system accuracy verification are displayed in the table 1. During the tests, the ambient temperature of the laboratory was in the range 22.1°C , the relative humidity was in the range 62% and the liquid depth above the ear reference points was above 15 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.

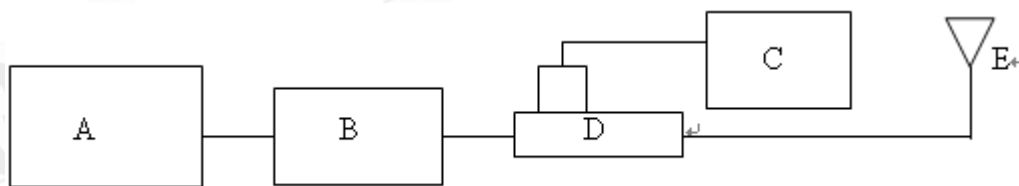


Fig.b The block diagram of system verification

- A. Agilent Model 8648D Signal Generator
- B. Mini circuits Model ZHL-42 Amplifier
- C. Agilent Model U2001B Power Sensor
- D. Agilent Model 778D/777D Dual directional coupling
- E. Reference dipole antenna



Photograph of the dipole Antenna

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Validation Kit	Frequency (MHz)	Target SAR (1g) (Pin=250mW)	Measured SAR (1g)	Measured Date
D835V2 S/N: 4d063	835 MHz (Head)	2.42 mW/g	2.43 mW/g	2010/09/25
D835V2 S/N: 4d063	835 MHz (Body)	2.53 mW/g	2.51 mW/g	2010/09/25
D1900V2 S/N: 5d027	1900 MHz (Head)	9.91 mW/g	10 mW/g	2010/09/26
D1900V2 S/N: 5d027	1900 MHz (Body)	10.1 mW/g	10.4 mW/g	2010/09/25
D2450V2 S/N: 727	2450 MHz (Body)	13.4 mW/g	13.6 mW/g	2010/09/26

Table 1. System validation (follow manufacture target value)

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1.11 Tissue Simulant Fluid for the Frequency Band

The dielectric properties for this Head-simulant fluid were measured by using the HP Model 85070D Dielectric Probe (rates frequency band 200 MHz to 20 GHz) in conjunction with HP 8753D Network Analyzer (30 KHz-6000MHz) by using a procedure detailed in Section V.

All dielectric parameters of tissue simulates were measured within 24 hours of SAR measurements. The depth of the tissue simulant iin the flat section of the phantom was $15\text{cm} \pm 5\text{mm}$ during all tests. (Appendix Fig .2)

Frequency (MHz)	Tissue type	Measurement date/ Limits	Dielectric Parameters		
			ρ	σ (S/m)	Simulated Tissue Temperature($^{\circ}$ C)
850	Head	Measured, 2010-09-25	42.5	0.897	21.7
		Recommended Limits	39.62-43.79	0.87-0.95	20-24
850	Body	Measured, 2010-09-25	53.3	1	21.7
		Recommended Limits	51.49-56.91	0.93-1.03	20-24
1900	Head	Measured, 2010-09-26	39.6	1.42	21.7
		Recommended Limits	38.48-42.53	1.34-1.48	20-24
1900	Body	Measured, 2010-09-25	52.9	1.55	21.7
		Recommended Limits	52.06-57.54	1.45-1.61	20-24
2450	Body	Measured, 2010-09-26	52.5	1.96	21.7
		Recommended Limits	51.49-56.91	1.91-2.11	20-24

Table 2. Dielectric Parameters of Tissue Simulant Fluid

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The composition of the brain tissue simulating liquid:

Ingredient	850MHz (Head)	850MHz (Body)	1900MHz (Head)	1900MHz (Body)	2450MHz (Body)
DGMBE	X	X	444.52 g	300.67g	301.7ml
Water	532.98 g	631.68 g	552.42 g	716.56 g	698.3ml
Salt	18.3 g	11.72 g	3.06 g	4.0 g	X
Preventol D-7	2.4 g	1.2 g	X	X	X
Cellulose	3.2 g	X	X	X	X
Sugar	766.0 g	600 g	X	X	X
Total amount	1 L (1.0kg)	1 L (1.0kg)	1 L (1.0kg)	1 L (1.0kg)	1 L (1.0kg)

Table 3. Recipes for tissue simulating liquid

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1.12 Test Standards and Limits

According to FCC 47CFR §2.1093(d) The limits to be used for evaluation are based generally on criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate ("SAR") in Section 4.2 of "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," ANSI/IEEE C95.1-1992, Copyright 1992 by the Institute of Electrical and Electronics Engineers, Inc., New York, New York 10017. These criteria for SAR evaluation are similar to those recommended by the National Council on Radiation Protection and Measurements (NCRP) in "Biological Effects and Exposure Criteria for Radio frequency Electromagnetic Fields," NCRP Report No. 86, Section 17.4.5. Copyright NCRP, 1986, Bethesda, Maryland 20814. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards. The criteria to be used are specified in paragraphs (d)(1) and (d)(2) of this section and shall apply for portable devices transmitting in the frequency range from 100 kHz to 6 GHz. Portable devices that transmit at frequencies above 6 GHz are to be evaluated in terms of the MPE limits specified in § 1.1310 of this chapter.

Measurements and calculations to demonstrate compliance with MPE field strength or power density limits for devices operating above 6 GHz should be made at a minimum distance of 5 cm from the radiating source.

(1) Limits for Occupational/Controlled exposure: 0.4 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 8 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 20 W/kg, as averaged over an 10 grams of tissue (defined as a tissue volume in the shape of a cube). Occupational/Controlled limits apply when persons are exposed as a consequence of their employment provided these persons are fully aware of and exercise control over their exposure. Awareness of exposure can be accomplished by use of warning labels or by specific training or education through appropriate means, such as an RF safety program in a work environment.

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(2) Limits for General Population/Uncontrolled exposure: 0.08 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 1.6 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 4 W/kg, as averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube).

General Population/Uncontrolled limits apply when the general public may be exposed, or when persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or do not exercise control over their exposure.

Warning labels placed on consumer devices such as cellular telephones will not be sufficient reason to allow these devices to be evaluated subject to limits for occupational/controlled exposure in paragraph (d)(1) of this section.(Table .6)

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Spatial Peak SAR (Brain)	1.60 m W/g	8.00 m W/g
Spatial Average SAR (Whole Body)	0.08 m W/g	0.40 m W/g
Spatial Peak SAR (Hands/Feet/Ankle/Wrist)	4.00 m W/g	20.00 m W/g

Table 4. RF exposure limits

Notes:

1. Uncontrolled environments are defined as locations where there is potential exposure of individuals who have no knowledge or control of their potential exposure.
2. Controlled environments are defined as locations where there is potential exposure of individuals who have knowledge of their potential exposure and can exercise control over their exposure.

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2. Summary of Results

GSM 850 MHZ

Right Head (Cheek Position)

Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	128	824.2	32.80 dBm	0.421	22.1	21.7
	190	836.6	32.70 dBm	0.508	22.1	21.7
	251	848.8	32.60 dBm	0.613	22.1	21.7

Left Head (Cheek Position)

Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	128	824.2	32.80 dBm	0.418	22.1	21.7
	190	836.6	32.70 dBm	0.528	22.1	21.7
	251	848.8	32.60 dBm	0.636	22.1	21.7

Right Head (15° Tilt Position)

Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	128	824.2	32.80 dBm	0.385	22.1	21.7
	190	836.6	32.70 dBm	0.455	22.1	21.7
	251	848.8	32.60 dBm	0.538	22.1	21.7

Left Head (15° Tilt Position)

Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	128	824.2	32.80 dBm	0.269	22.1	21.7
	190	836.6	32.70 dBm	0.323	22.1	21.7
	251	848.8	32.60 dBm	0.388	22.1	21.7

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Body worn (testing in GPRS mode)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	128	824.2	29.60 dBm	1.04	22.1	21.7
	190	836.6	29.60 dBm	1.12	22.1	21.7
	251	848.8	29.50 dBm	1.14	22.1	21.7
Body worn (testing in GPRS mode)_repeated for EUT front to phantom						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	251	848.8	29.50 dBm	1.01	22.1	21.7
Body worn (testing in GPRS mode)_repeated with Memory card						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	251	848.8	29.50 dBm	1.19	22.1	21.7
Body worn (testing in GPRS mode)_repeated with PCH Headset						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	251	848.8	29.50 dBm	1.06	22.1	21.7
Body worn (testing in GPRS mode)_repeated with Foster Headset						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	251	848.8	29.50 dBm	0.815	22.1	21.7
Body worn (testing in EGPRS mode)_repeated with EGPRS mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	251	848.8	25.70 dBm	0.585	22.1	21.7

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PCS 1900 MHZ

Right Head (Cheek Position)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
1900 MHz	512	1850.2	30.0 dBm	0.666	22.1	21.7
	661	1880	30.0 dBm	0.756	22.1	21.7
	810	1909.8	30.0 dBm	0.667	22.1	21.7
Left Head (Cheek Position)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
1900 MHz	512	1850.2	30.0 dBm	0.367	22.1	21.7
	661	1880	30.0 dBm	0.454	22.1	21.7
	810	1909.8	30.0 dBm	0.394	22.1	21.7
Right Head (15° Tilt Position)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
1900 MHz	512	1850.2	30.0 dBm	0.277	22.1	21.7
	661	1880	30.0 dBm	0.367	22.1	21.7
	810	1909.8	30.0 dBm	0.316	22.1	21.7
Left Head (15° Tilt Position)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
1900 MHz	512	1850.2	30.0 dBm	0.318	22.1	21.7
	661	1880	30.0 dBm	0.411	22.1	21.7
	810	1909.8	30.0 dBm	0.343	22.1	21.7

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Body worn (testing in GPRS mode)

Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
1900 MHz	512	1850.2	27.20 dBm	0.927	22.1	21.7
	661	1880	27.20 dBm	0.929	22.1	21.7
	810	1909.8	27.30 dBm	0.75	22.1	21.7

WCDMA B2**Right Head (Cheek Position)**

Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
WCDMA B2	9262	1852.4	23.44 dBm	1.39	22.1	21.7
	9400	1880	23.48 dBm	1.11	22.1	21.7
	9538	1907.6	23.41 dBm	1.09	22.1	21.7

Right Head (Cheek Position) _repeated with Memory card

Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
WCDMA B2	9262	1852.4	23.44 dBm	1.38	22.1	21.7

Left Head (Cheek Position)

Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
WCDMA B2	9262	1852.4	23.44 dBm	0.792	22.1	21.7
	9400	1880	23.48 dBm	0.629	22.1	21.7
	9538	1907.6	23.41 dBm	0.583	22.1	21.7

Right Head (15° Tilt Position)

Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
WCDMA B2	9262	1852.4	23.44 dBm	0.572	22.1	21.7
	9400	1880	23.48 dBm	0.469	22.1	21.7
	9538	1907.6	23.41 dBm	0.485	22.1	21.7

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Left Head (15° Tilt Position)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
WCDMA B2	9262	1852.4	23.44 dBm	0.681	22.1	21.7
	9400	1880	23.48 dBm	0.548	22.1	21.7
	9538	1907.6	23.41 dBm	0.531	22.1	21.7
Body worn (testing in R99 mode)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
WCDMA B2	9262	1852.4	23.44 dBm	1.08	22.1	21.7
	9400	1880	23.48 dBm	0.705	22.1	21.7
	9538	1907.6	23.41 dBm	0.599	22.1	21.7

WCDMA B5

Right Head (Cheek Position)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
WCDMA B5	4132	826.4	22.68 dBm	0.664	22.1	21.7
	4357	836.6	23.16 dBm	0.374	22.1	21.7
	4233	846.6	22.73 dBm	0.627	22.1	21.7
Left Head (Cheek Position)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
WCDMA B5	4132	826.4	22.68 dBm	0.678	22.1	21.7
	4357	836.6	23.16 dBm	0.408	22.1	21.7
	4233	846.6	22.73 dBm	0.669	22.1	21.7

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Right Head (15° Tilt Position)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
WCDMA B5	4132	826.4	22.68 dBm	0.473	22.1	21.7
	4357	836.6	23.16 dBm	0.295	22.1	21.7
	4233	846.6	22.73 dBm	0.447	22.1	21.7
Left Head (15° Tilt Position)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
WCDMA B5	4132	826.4	22.68 dBm	0.418	22.1	21.7
	4357	836.6	23.16 dBm	0.259	22.1	21.7
	4233	846.6	22.73 dBm	0.405	22.1	21.7
Body worn (testing in R99 mode)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
WCDMA B5	4132	826.4	22.68 dBm	0.882	22.1	21.7
	4357	836.6	23.16 dBm	0.802	22.1	21.7
	4233	846.6	22.73 dBm	0.804	22.1	21.7

WLAN802.11 b

Body worn						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
2450 MHz	1	2412	15.52 dBm	0.307	22.1	21.7
	6	2437	15.57 dBm	0.363	22.1	21.7
	11	2462	15.59 dBm	0.418	22.1	21.7
Body worn-repeated for EUT front to phantom						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
2450 MHz	11	2462	15.59 dBm	0.181	22.1	21.7

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Body worn-repeated with Memory card						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
2450 MHz	11	2462	15.59 dBm	0.336	22.1	21.7
Body worn-repeated with PCH Headset						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
2450 MHz	11	2462	15.59 dBm	0.323	22.1	21.7
Body worn-repeated with Headset(Foster)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
2450 MHz	11	2462	15.59 dBm	0.397	22.1	21.7

WLAN 802.11 g

Body worn						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
2450 MHz	1	2412	15.47 dBm	0.171	22.1	21.7
	6	2437	15.55 dBm	0.197	22.1	21.7
	11	2462	15.48 dBm	0.233	22.1	21.7

WLAN 802.11 n

Body worn						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
2450 MHz	1	2412	13.09 dBm	0.222	22.1	21.7
	6	2437	13.34 dBm	0.218	22.1	21.7
	11	2462	13.32 dBm	0.253	22.1	21.7

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3. Instruments List

Manufacturer	Device	Type	Serial number	Date of last calibration
Schmid & Partner Engineering AG	Dosimetric E-Field Probe	ES3DV3	3712	May.21.2010
Schmid & Partner Engineering AG	835/1900/2450 MHz System Validation Dipole	D835V2	4d063	May.21.2010
		D1900V2	5d027	Apr.28.2010
		D2450V2	727	Apr.29.2010
Schmid & Partner Engineering AG	Data acquisition Electronics	DAE4	856	May.20.2010
Schmid & Partner Engineering AG	Software	DASY 5 V5.0 Build 125	N/A	Calibration not required
Schmid & Partner Engineering AG	Phantom	SAM	N/A	Calibration not required
HP	Network Analyzer	8753D	3410A05662	Mar.30.2010
HP	Dielectric Probe Kit	85070D	US01440168	Calibration not required
Agilent	Dual-directional coupler	778D	50313	Aug.25.2010
		777D	50114	Aug.25.2010
Agilent	RF Signal Generator	8648D	3847M00432	Jun.04.2010
Agilent	Power Sensor	U2001B	MY48100169	Apr.30.2010
Agilent	Radio Communication Test	E5515c	GB44051912	Jul.27 .2010

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4. Measurements

Date: 2010/9/25

RE Cheek_CH128

DUT: V03B

Communication System: Generic GSM; Frequency: 824.2 MHz;

Medium parameters used: $f = 824.2$ MHz; $\sigma = 0.886$ mho/m; $\epsilon_r = 42.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Cheek/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.446 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

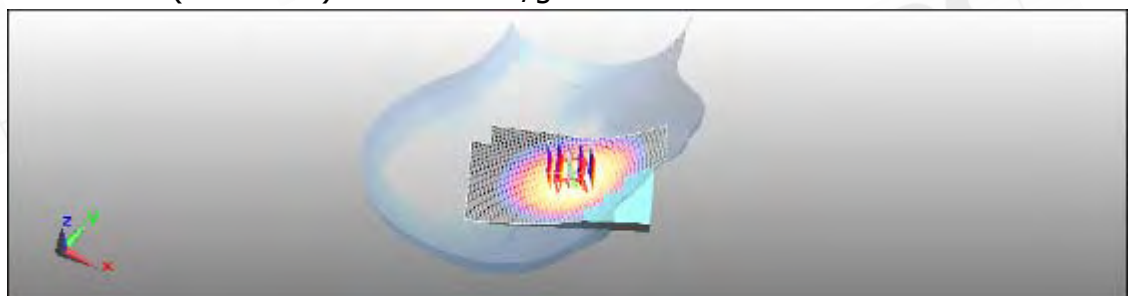
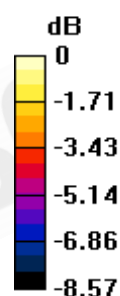
dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.4 V/m; Power Drift = -0.024 dB

Peak SAR (extrapolated) = 0.511 W/kg

SAR(1 g) = 0.421 mW/g; SAR(10 g) = 0.320 mW/g

Maximum value of SAR (measured) = 0.443 mW/g



0 dB = 0.443mW/g

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RE Cheek_CH190

DUT: V03B

Communication System: Generic GSM; Frequency: 836.6 MHz;

Medium parameters used: $f = 837$ MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 42.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Cheek/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.535 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

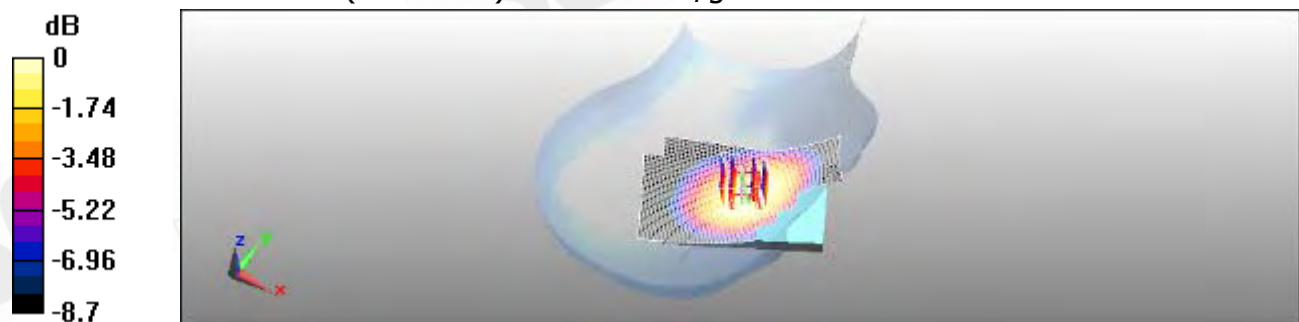
dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.4 V/m; Power Drift = -0.115 dB

Peak SAR (extrapolated) = 0.617 W/kg

SAR(1 g) = 0.508 mW/g; SAR(10 g) = 0.386 mW/g

Maximum value of SAR (measured) = 0.531 mW/g



0 dB = 0.531mW/g

Date: 2010/9/25

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RE Cheek_CH251**DUT: V03B**

Communication System: Generic GSM; Frequency: 848.6 MHz;

Medium parameters used: $f = 849$ MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 42.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Cheek/Area Scan (61x101x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.643 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

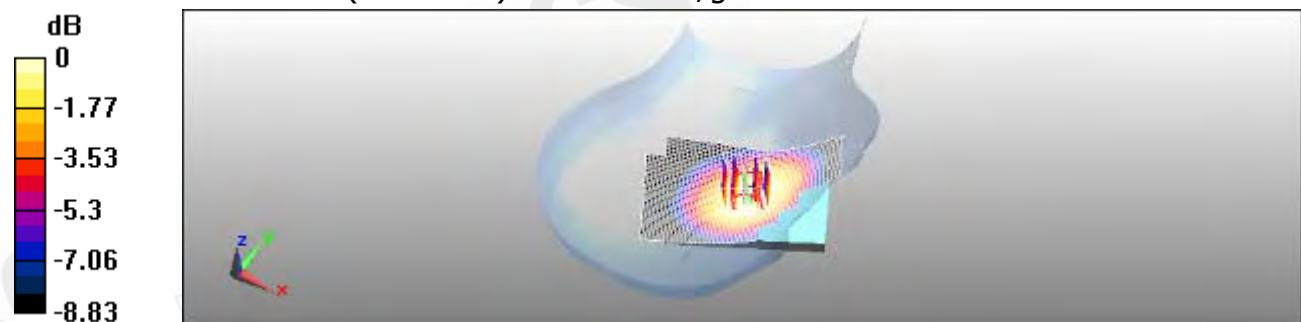
$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 12 V/m; Power Drift = -0.109 dB

Peak SAR (extrapolated) = 0.748 W/kg

SAR(1 g) = 0.613 mW/g; SAR(10 g) = 0.466 mW/g

Maximum value of SAR (measured) = 0.638 mW/g



0 dB = 0.638mW/g

Date: 2010/9/25

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LE Cheek_CH128**DUT: V03B**

Communication System: Generic GSM; Frequency: 824.2 MHz;

Medium parameters used: $f = 824.2$ MHz; $\sigma = 0.886$ mho/m; $\epsilon_r = 42.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Cheek/Area Scan (61x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.438 mW/g

Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

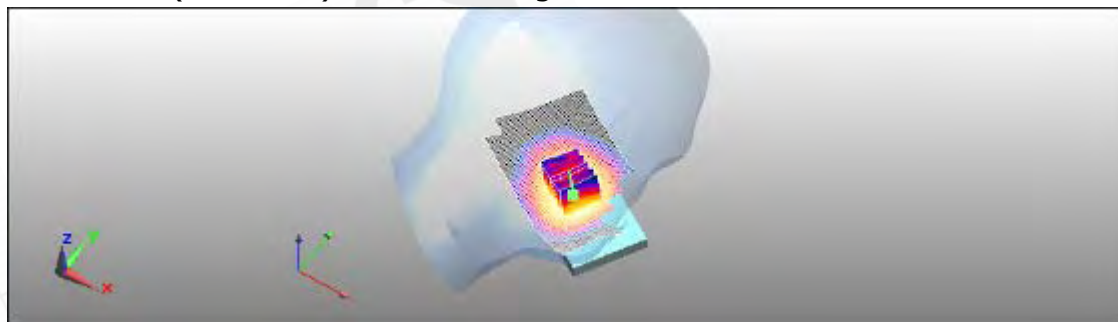
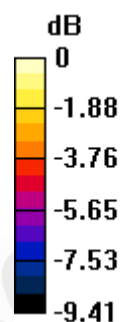
$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 10 V/m; Power Drift = -0.087 dB

Peak SAR (extrapolated) = 0.511 W/kg

SAR(1 g) = 0.418 mW/g; SAR(10 g) = 0.321 mW/g

Maximum value of SAR (measured) = 0.438 mW/g



0 dB = 0.438mW/g

Date: 2010/9/25

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LE Cheek_CH190**DUT: V03B**

Communication System: Generic GSM; Frequency: 836.6 MHz;

Medium parameters used: $f = 837$ MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 42.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Cheek/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.552 mW/g

Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

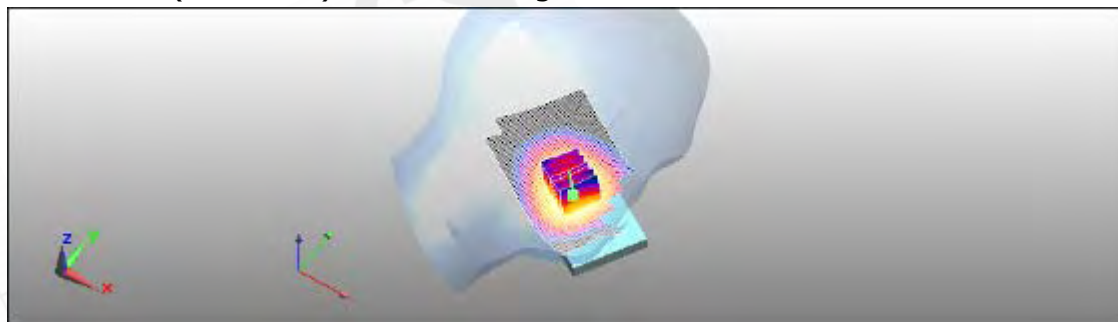
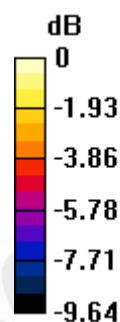
dx=8mm, dy=8mm, dz=5mm

Reference Value = 11 V/m; Power Drift = 0.082 dB

Peak SAR (extrapolated) = 0.644 W/kg

SAR(1 g) = 0.528 mW/g; SAR(10 g) = 0.401 mW/g

Maximum value of SAR (measured) = 0.558 mW/g



0 dB = 0.558mW/g

Date: 2010/9/25

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LE Cheek_CH251**DUT: V03B**

Communication System: Generic GSM; Frequency: 848.6 MHz;

Medium parameters used: $f = 849$ MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 42.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Cheek/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.663 mW/g

Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

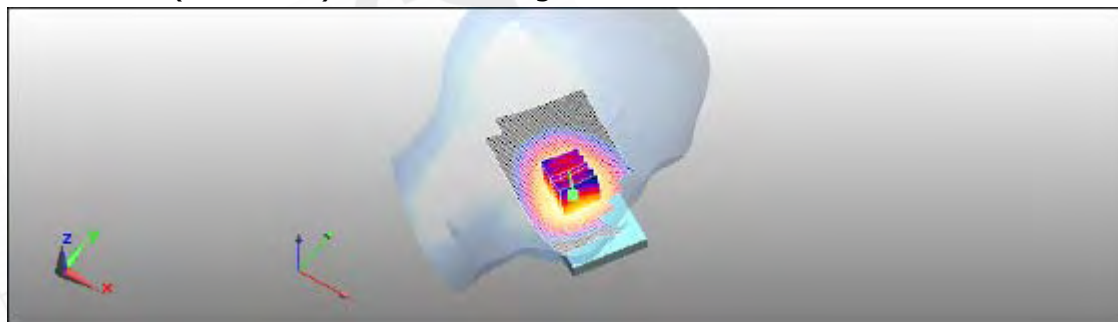
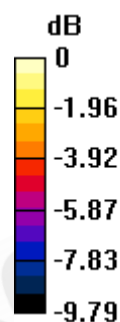
dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.1 V/m; Power Drift = 0.015 dB

Peak SAR (extrapolated) = 0.771 W/kg

SAR(1 g) = 0.636 mW/g; SAR(10 g) = 0.483 mW/g

Maximum value of SAR (measured) = 0.669 mW/g



0 dB = 0.669mW/g

Date: 2010/9/25

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RE Tilt_CH128**DUT: V03B**

Communication System: Generic GSM; Frequency: 824.2 MHz;

Medium parameters used: $f = 824.2$ MHz; $\sigma = 0.886$ mho/m; $\epsilon_r = 42.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.406 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

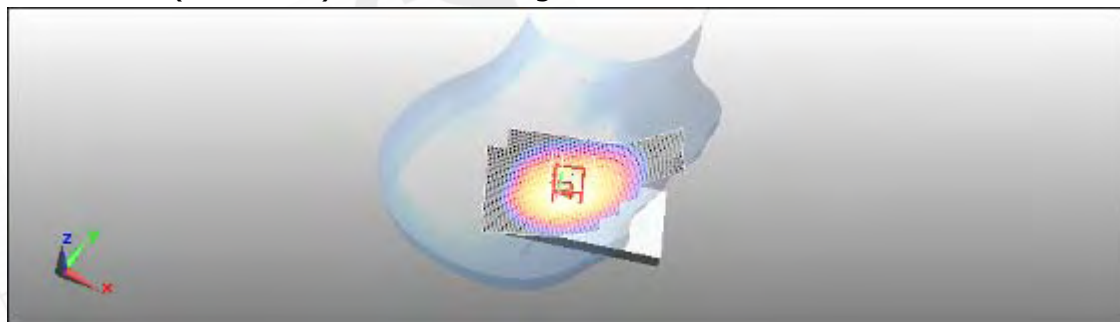
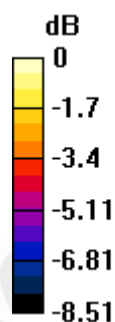
dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.8 V/m; Power Drift = -0.180 dB

Peak SAR (extrapolated) = 0.466 W/kg

SAR(1 g) = 0.385 mW/g; SAR(10 g) = 0.295 mW/g

Maximum value of SAR (measured) = 0.402 mW/g



0 dB = 0.402mW/g

Date: 2010/9/25

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RE Tilt_CH190**DUT: V03B**

Communication System: Generic GSM; Frequency: 836.6 MHz;

Medium parameters used: $f = 837$ MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 42.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.479 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

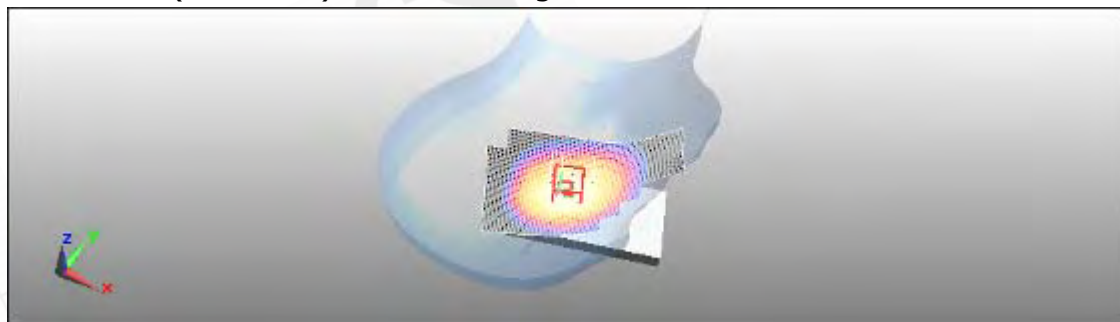
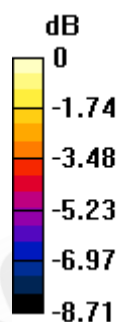
dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.8 V/m; Power Drift = -0.114 dB

Peak SAR (extrapolated) = 0.556 W/kg

SAR(1 g) = 0.455 mW/g; SAR(10 g) = 0.347 mW/g

Maximum value of SAR (measured) = 0.474 mW/g



0 dB = 0.474mW/g

Date: 2010/9/25

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RE Tilt_CH251**DUT: V03B**

Communication System: Generic GSM; Frequency: 848.6 MHz;

Medium parameters used: $f = 849$ MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 42.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.565 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

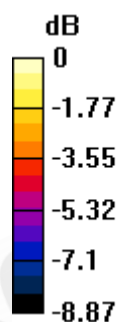
dx=8mm, dy=8mm, dz=5mm

Reference Value = 17 V/m; Power Drift = -0.107 dB

Peak SAR (extrapolated) = 0.660 W/kg

SAR(1 g) = 0.538 mW/g; SAR(10 g) = 0.409 mW/g

Maximum value of SAR (measured) = 0.560 mW/g



0 dB = 0.560mW/g

Date: 2010/9/25

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LE Tilt_CH128**DUT: V03B**

Communication System: Generic GSM; Frequency: 824.2 MHz;

Medium parameters used: $f = 824.2$ MHz; $\sigma = 0.886$ mho/m; $\epsilon_r = 42.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Tilt/Area Scan (61x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.285 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

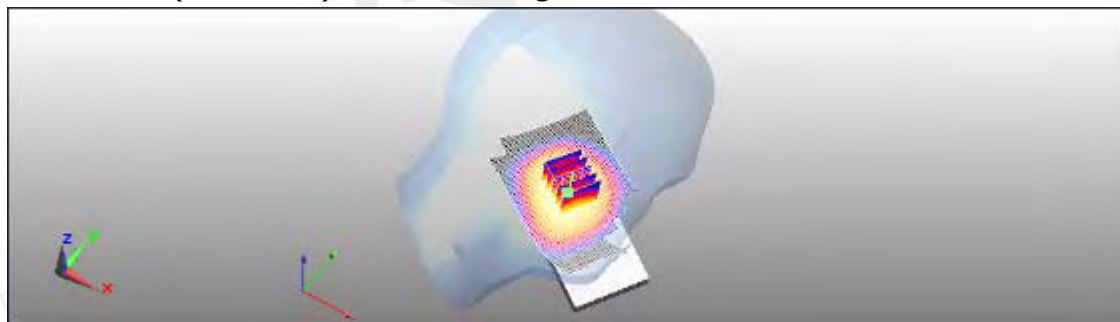
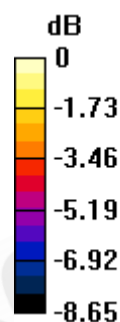
$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 13.1 V/m; Power Drift = -0.0094 dB

Peak SAR (extrapolated) = 0.334 W/kg

SAR(1 g) = 0.269 mW/g; SAR(10 g) = 0.205 mW/g

Maximum value of SAR (measured) = 0.281 mW/g



0 dB = 0.281mW/g

Date: 2010/9/25

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LE Tilt_CH190**DUT: V03B**

Communication System: Generic GSM; Frequency: 836.6 MHz;

Medium parameters used: $f = 837$ MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 42.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.345 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

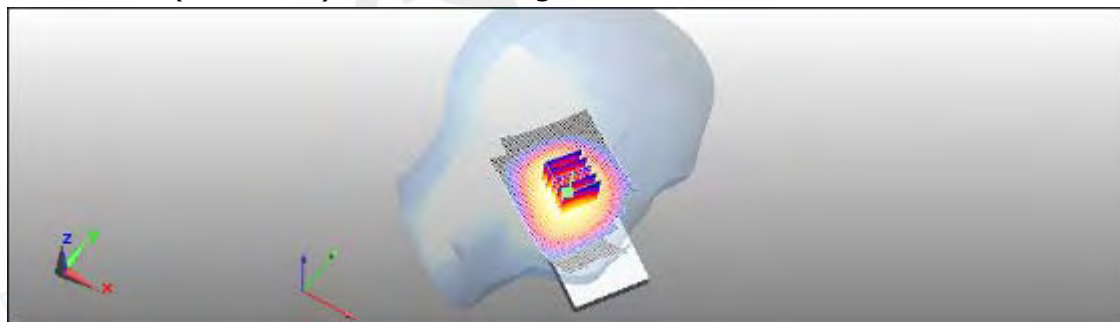
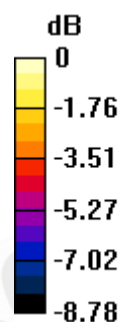
dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.4 V/m; Power Drift = -0.110 dB

Peak SAR (extrapolated) = 0.402 W/kg

SAR(1 g) = 0.323 mW/g; SAR(10 g) = 0.245 mW/g

Maximum value of SAR (measured) = 0.338 mW/g



0 dB = 0.338mW/g

Date: 2010/9/25

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LE Tilt_CH251**DUT: V03B**

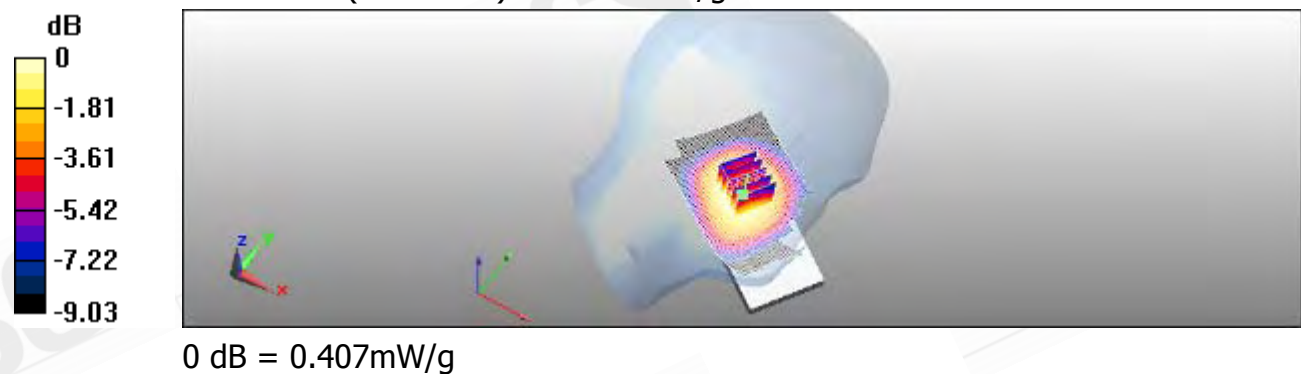
Communication System: Generic GSM; Frequency: 848.6 MHz;
Medium parameters used: $f = 849$ MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 42.3$; $\rho = 1000$ kg/m³
Phantom section: Left Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.413 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.6 V/m; Power Drift = -0.133 dB
Peak SAR (extrapolated) = 0.484 W/kg

SAR(1 g) = 0.388 mW/g; SAR(10 g) = 0.293 mW/g
Maximum value of SAR (measured) = 0.407 mW/g



Date: 2010/9/25

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BODY_CH128**DUT: V03B**

Communication System: GPRS(Class 12); Frequency: 824.2 MHz;

Medium parameters used: $f = 824.2$ MHz; $\sigma = 0.992$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x111x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 1.1 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

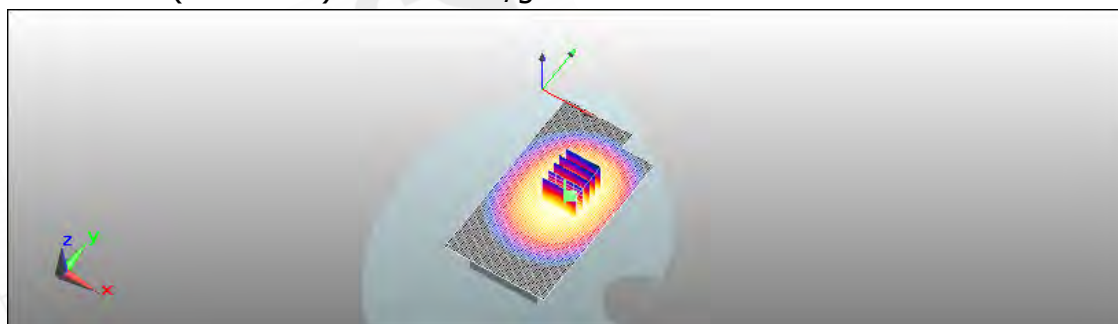
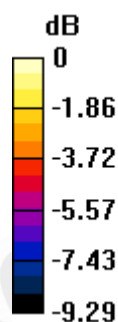
$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 20.2 V/m; Power Drift = -0.110 dB

Peak SAR (extrapolated) = 1.31 W/kg

SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.777 mW/g

Maximum value of SAR (measured) = 1.09 mW/g



0 dB = 1.09mW/g

Date: 2010/9/25

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BODY_CH190**DUT: V03B**

Communication System: GPRS(Class 12); Frequency: 836.6 MHz;

Medium parameters used: $f = 837$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.2 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

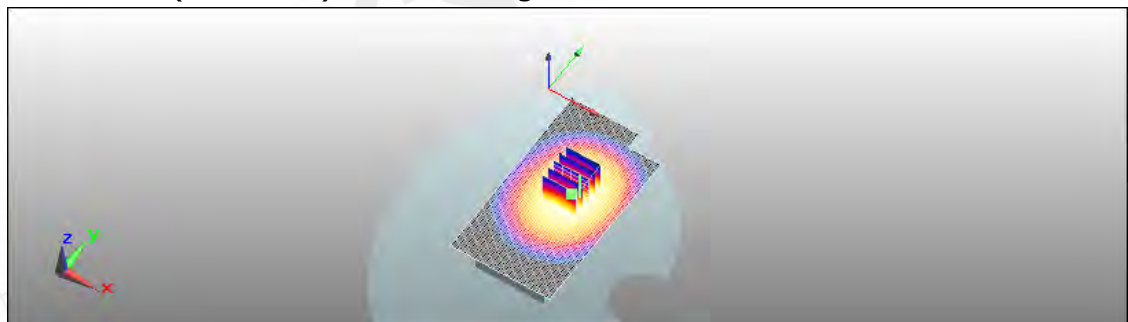
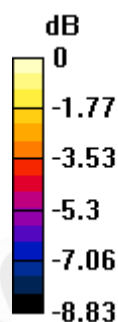
dx=8mm, dy=8mm, dz=5mm

Reference Value = 21 V/m; Power Drift = -0.084 dB

Peak SAR (extrapolated) = 1.4 W/kg

SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.844 mW/g

Maximum value of SAR (measured) = 1.18 mW/g



0 dB = 1.18mW/g

Date: 2010/9/25

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BODY_CH251**DUT: V03B**

Communication System: GPRS(Class 12); Frequency: 848.8 MHz;

Medium parameters used: $f = 849$ MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x111x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

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

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

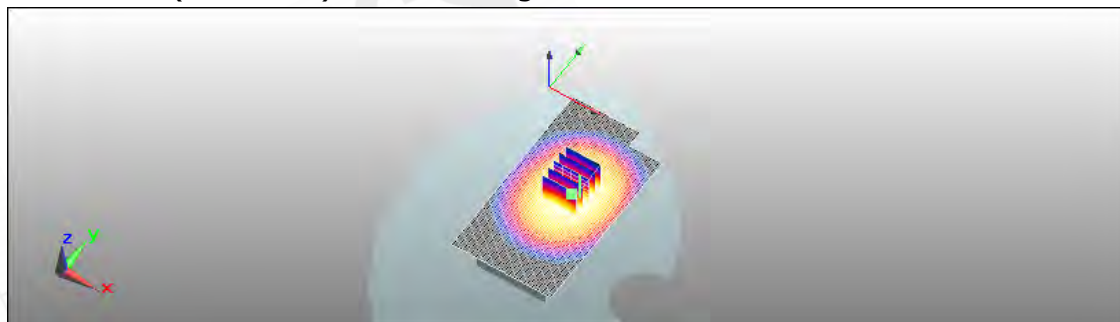
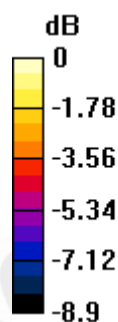
$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 21.1 V/m; Power Drift = -0.050 dB

Peak SAR (extrapolated) = 1.43 W/kg

SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.854 mW/g

Maximum value of SAR (measured) = 1.19 mW/g



0 dB = 1.19mW/g

Date: 2010/9/25

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BODY_CH251_repeated for EUT front to phantom**DUT: V03B**

Communication System: GPRS(Class 12); Frequency: 848.8 MHz;

Medium parameters used: $f = 849$ MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.08 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

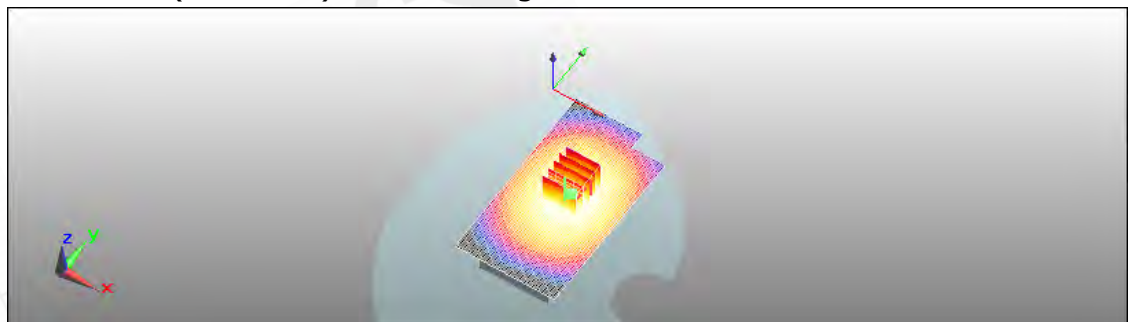
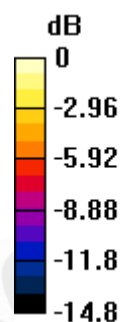
dx=8mm, dy=8mm, dz=5mm

Reference Value = 21.4 V/m; Power Drift = -0.120 dB

Peak SAR (extrapolated) = 1.26 W/kg

SAR(1 g) = 1.01 mW/g; SAR(10 g) = 0.760 mW/g

Maximum value of SAR (measured) = 1.06 mW/g



0 dB = 1.06mW/g

Date: 2010/9/25

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BODY_CH251_repeated with Memory card**DUT: V03B**

Communication System: GPRS(Class 12); Frequency: 848.8 MHz;

Medium parameters used: $f = 849$ MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.24 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

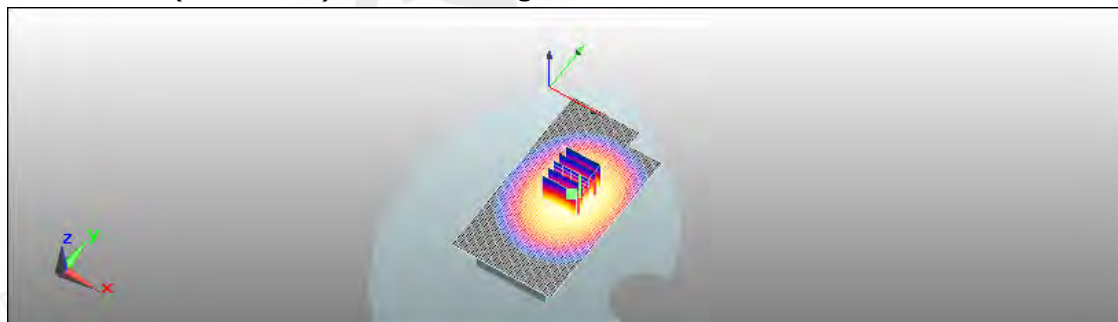
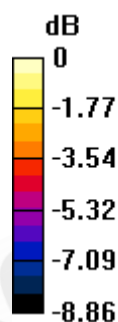
dx=8mm, dy=8mm, dz=5mm

Reference Value = 22.1 V/m; Power Drift = -0.153 dB

Peak SAR (extrapolated) = 1.51 W/kg

SAR(1 g) = 1.19 mW/g; SAR(10 g) = 0.889 mW/g

Maximum value of SAR (measured) = 1.27 mW/g



0 dB = 1.27mW/g

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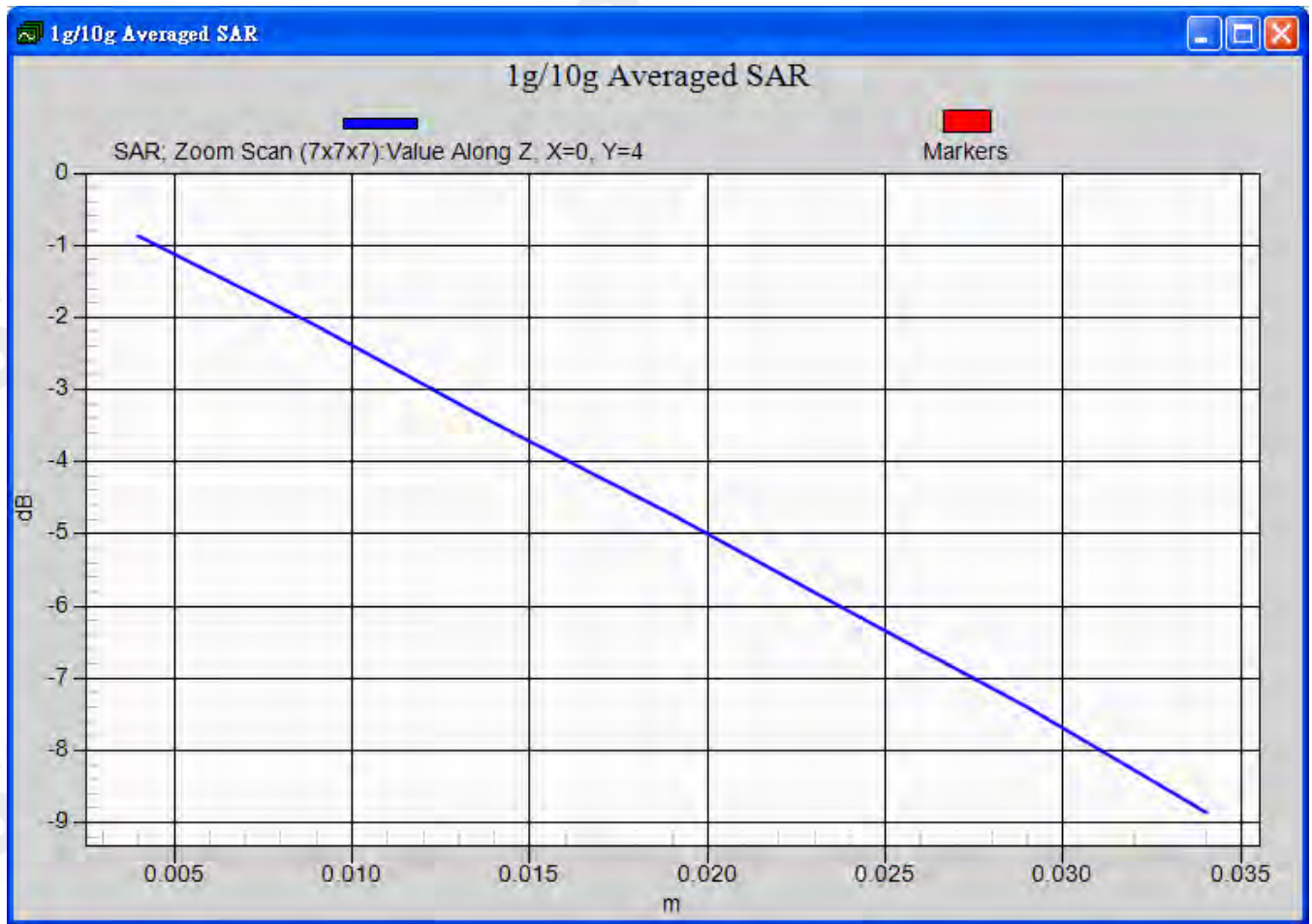
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Date: 2010/9/25

BODY_CH251_repeated with PCH headset**DUT: V03B**

Communication System: GPRS(Class 12); Frequency: 848.8 MHz;

Medium parameters used: $f = 849$ MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.14 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

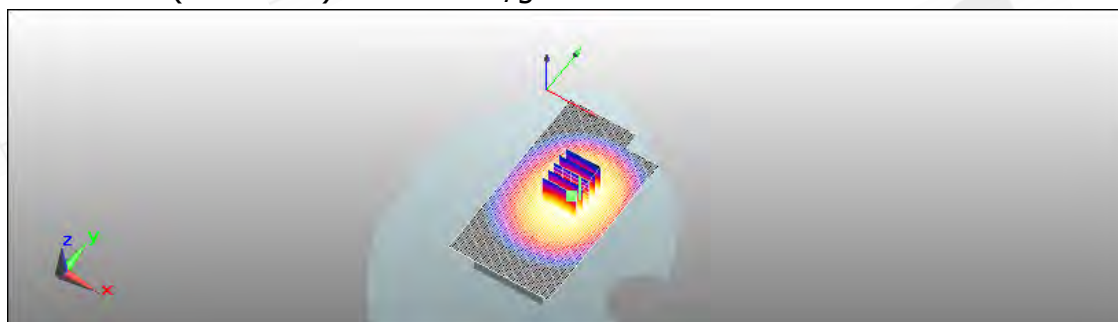
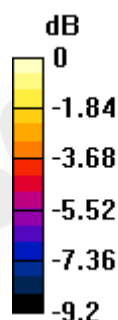
dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.5 V/m; Power Drift = -0.190 dB

Peak SAR (extrapolated) = 1.34 W/kg

SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.792 mW/g

Maximum value of SAR (measured) = 1.11 mW/g



0 dB = 1.11mW/g

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BODY_CH251_repeated with Foster headset**DUT: V03B**

Communication System: GPRS(Class 12); Frequency: 848.8 MHz;

Medium parameters used: $f = 849$ MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.857 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

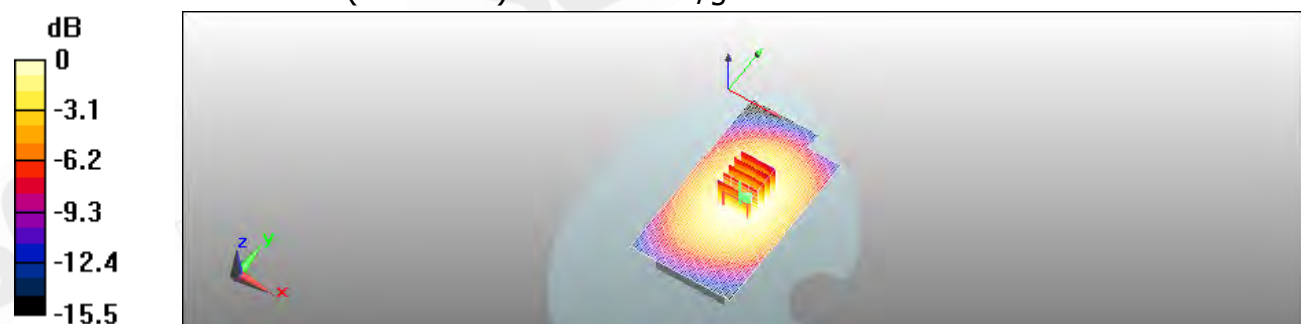
dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.7 V/m; Power Drift = 0.114 dB

Peak SAR (extrapolated) = 1.01 W/kg

SAR(1 g) = 0.815 mW/g; SAR(10 g) = 0.611 mW/g

Maximum value of SAR (measured) = 0.859 mW/g



0 dB = 0.859mW/g

Date: 2010/9/25

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BODY_CH251_repeated with EGPRS mode**DUT: V03B**

Communication System: GPRS(Class 12); Frequency: 848.8 MHz;

Medium parameters used: $f = 849$ MHz; $\sigma = 1.02$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.637 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

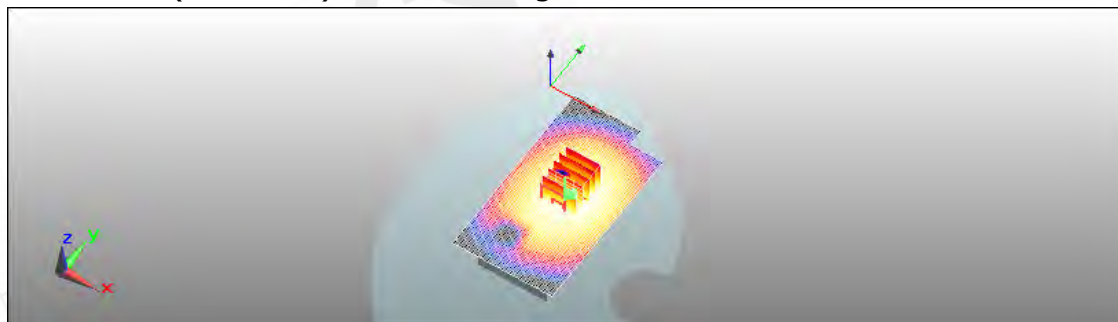
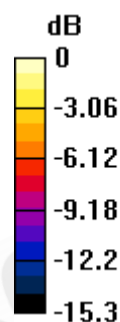
dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.4 V/m; Power Drift = -0.140 dB

Peak SAR (extrapolated) = 0.763 W/kg

SAR(1 g) = 0.585 mW/g; SAR(10 g) = 0.413 mW/g

Maximum value of SAR (measured) = 0.623 mW/g



0 dB = 0.623mW/g

Date: 2010/9/26

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RE Cheek_CH512**DUT: V03B**

Communication System: Generic GSM; Frequency: 1850.2 MHz;

Medium parameters used: $f = 1850.2$ MHz; $\sigma = 1.36$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Cheek/Area Scan (61x101x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.729 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

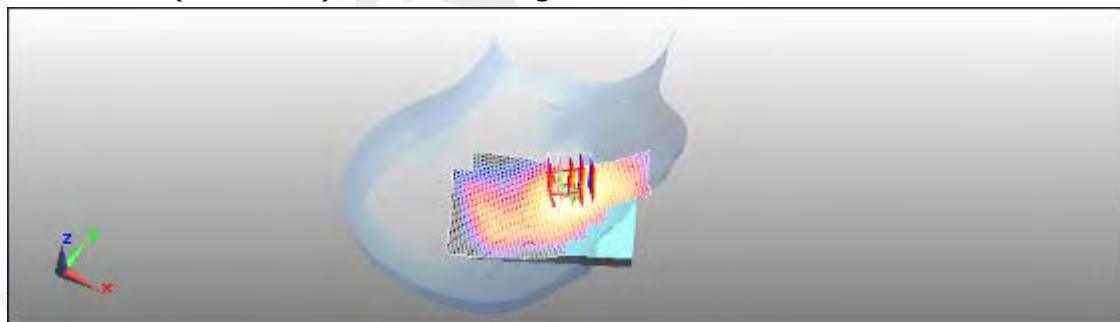
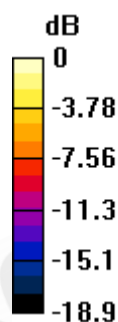
$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 10.2 V/m; Power Drift = -0.112 dB

Peak SAR (extrapolated) = 0.977 W/kg

SAR(1 g) = 0.666 mW/g; SAR(10 g) = 0.418 mW/g

Maximum value of SAR (measured) = 0.727 mW/g



0 dB = 0.727mW/g

Date: 2010/9/26

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RE Cheek_CH661**DUT: V03B**

Communication System: Generic GSM; Frequency: 1880 MHz;

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Cheek/Area Scan (61x101x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.820 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

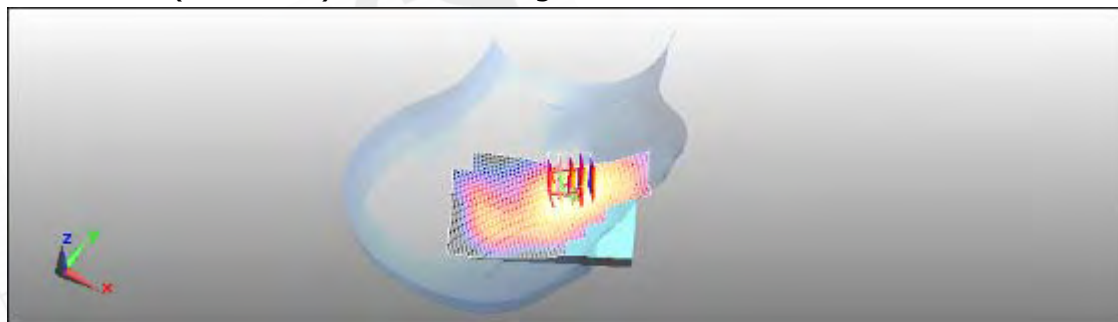
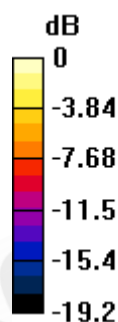
$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 10.5 V/m; Power Drift = -0.015 dB

Peak SAR (extrapolated) = 1.13 W/kg

SAR(1 g) = 0.756 mW/g; SAR(10 g) = 0.471 mW/g

Maximum value of SAR (measured) = 0.824 mW/g



0 dB = 0.824mW/g

Date: 2010/9/26

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RE Cheek_CH810**DUT: V03B**

Communication System: Generic GSM; Frequency: 1909.8 MHz;

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Cheek/Area Scan (61x101x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.721 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

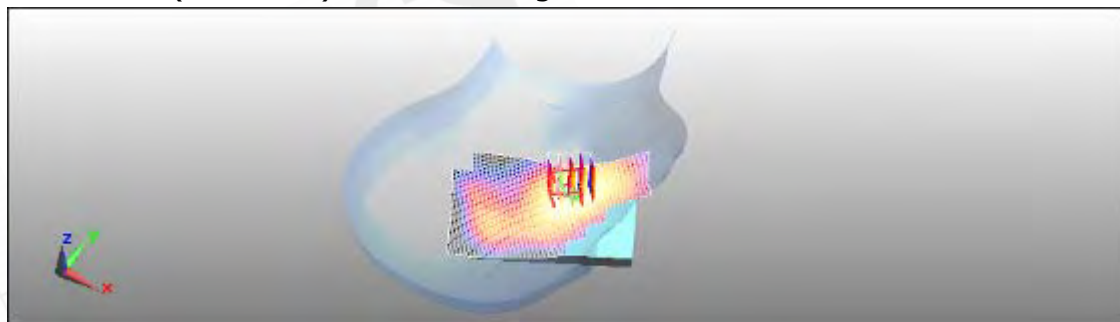
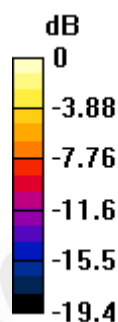
$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 9.54 V/m; Power Drift = -0.089 dB

Peak SAR (extrapolated) = 0.994 W/kg

SAR(1 g) = 0.667 mW/g; SAR(10 g) = 0.414 mW/g

Maximum value of SAR (measured) = 0.730 mW/g



0 dB = 0.730mW/g

Date: 2010/9/26

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LE Cheek_CH512**DUT: V03B**

Communication System: Generic GSM; Frequency: 1850.2 MHz;

Medium parameters used: $f = 1850.2$ MHz; $\sigma = 1.36$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Cheek/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.406 mW/g

Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

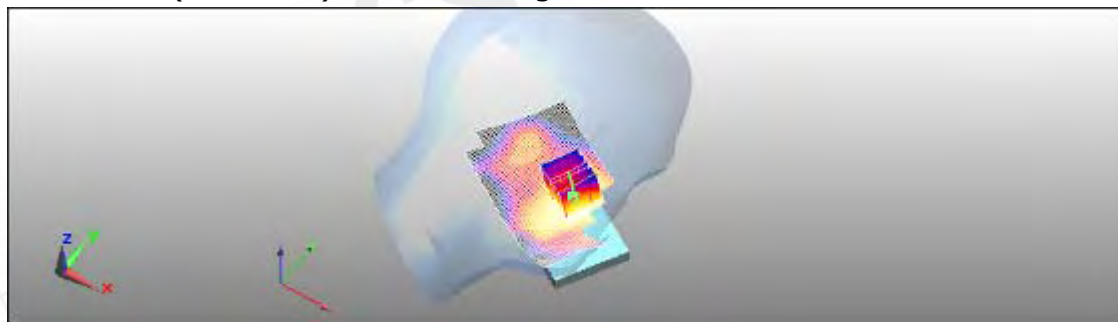
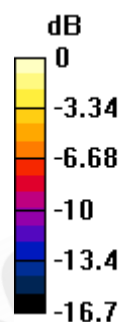
dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.49 V/m; Power Drift = -0.154 dB

Peak SAR (extrapolated) = 0.534 W/kg

SAR(1 g) = 0.367 mW/g; SAR(10 g) = 0.240 mW/g

Maximum value of SAR (measured) = 0.393 mW/g



0 dB = 0.393mW/g

Date: 2010/9/26

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LE Cheek_CH661**DUT: V03B**

Communication System: Generic GSM; Frequency: 1880 MHz;

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Cheek/Area Scan (61x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.501 mW/g

Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

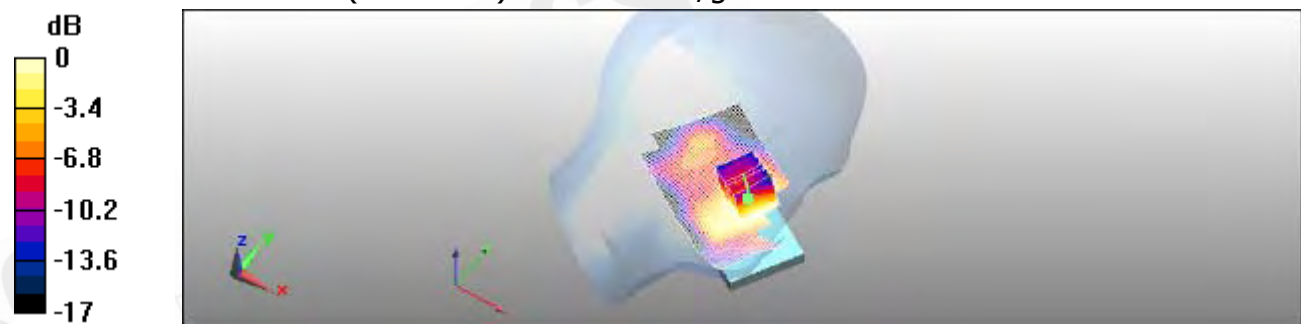
$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 10.5 V/m; Power Drift = -0.178 dB

Peak SAR (extrapolated) = 0.672 W/kg

SAR(1 g) = 0.454 mW/g; SAR(10 g) = 0.295 mW/g

Maximum value of SAR (measured) = 0.487 mW/g



0 dB = 0.487mW/g

Date: 2010/9/26

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LE Cheek_CH810**DUT: V03B**

Communication System: Generic GSM; Frequency: 1909.8 MHz;

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Cheek/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.439 mW/g

Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

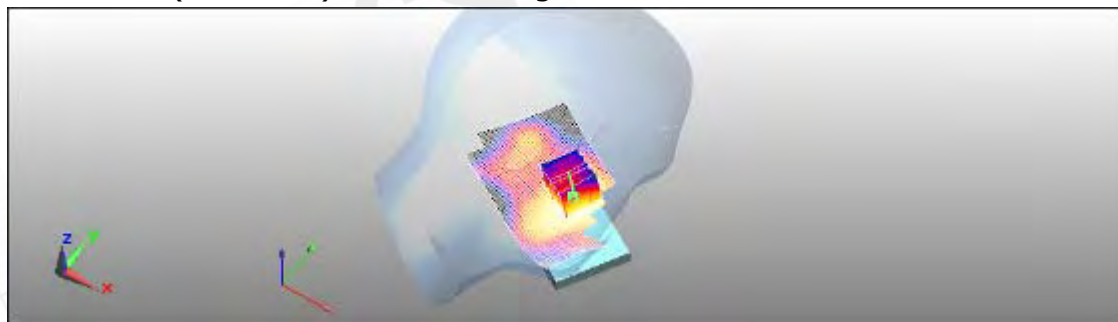
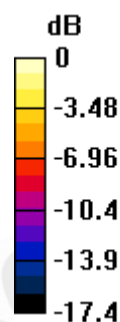
dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.9 V/m; Power Drift = 0.151 dB

Peak SAR (extrapolated) = 0.585 W/kg

SAR(1 g) = 0.394 mW/g; SAR(10 g) = 0.254 mW/g

Maximum value of SAR (measured) = 0.422 mW/g



0 dB = 0.422mW/g

Date: 2010/9/26

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RE Tilt_CH512**DUT: V03B**

Communication System: Generic GSM; Frequency: 1850.2 MHz;

Medium parameters used: $f = 1850.2$ MHz; $\sigma = 1.36$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.331 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

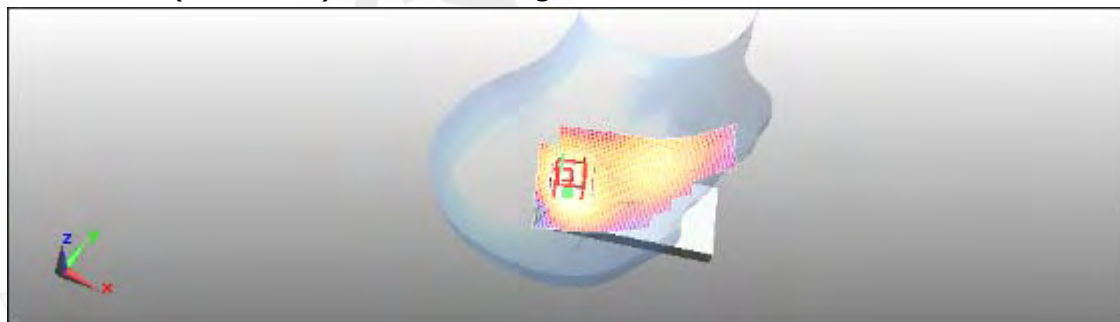
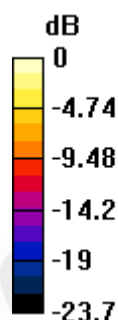
dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.1 V/m; Power Drift = -0.067 dB

Peak SAR (extrapolated) = 0.464 W/kg

SAR(1 g) = 0.277 mW/g; SAR(10 g) = 0.165 mW/g

Maximum value of SAR (measured) = 0.321 mW/g



0 dB = 0.321mW/g

Date: 2010/9/26

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RE Tilt_CH661**DUT: V03B**

Communication System: Generic GSM; Frequency: 1880 MHz;

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.404 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

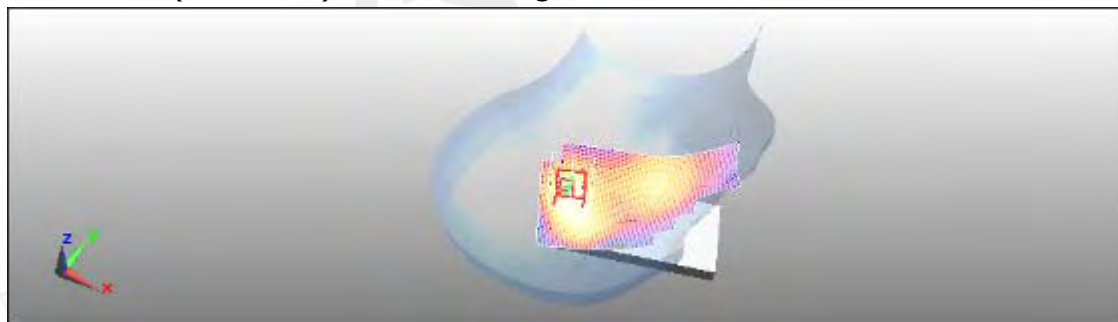
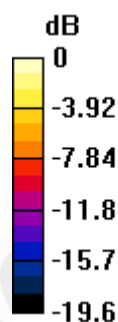
dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.5 V/m; Power Drift = -0.188 dB

Peak SAR (extrapolated) = 0.604 W/kg

SAR(1 g) = 0.367 mW/g; SAR(10 g) = 0.210 mW/g

Maximum value of SAR (measured) = 0.397 mW/g



0 dB = 0.397mW/g

Date: 2010/9/26

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RE Tilt_CH810**DUT: V03B**

Communication System: Generic GSM; Frequency: 1909.8 MHz;

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.346 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

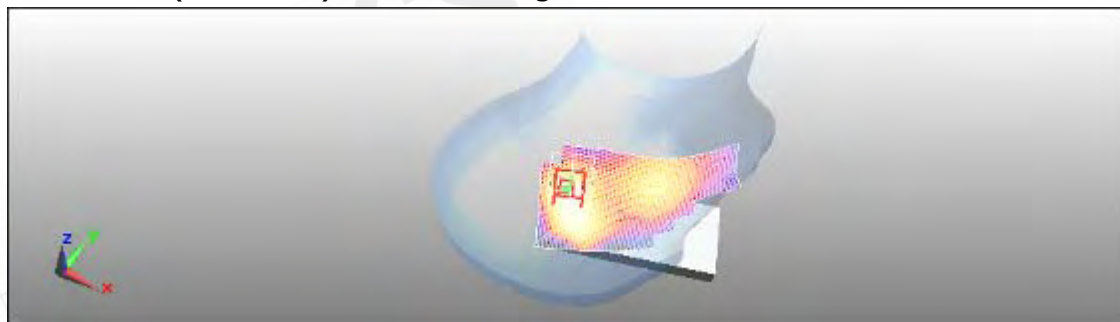
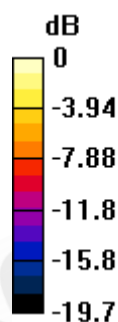
dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.7 V/m; Power Drift = -0.091 dB

Peak SAR (extrapolated) = 0.534 W/kg

SAR(1 g) = 0.316 mW/g; SAR(10 g) = 0.176 mW/g

Maximum value of SAR (measured) = 0.338 mW/g



0 dB = 0.338mW/g

Date: 2010/9/26

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LE Tilt_CH512**DUT: V03B**

Communication System: Generic GSM; Frequency: 1850.2 MHz;

Medium parameters used: $f = 1850.2$ MHz; $\sigma = 1.36$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.357 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

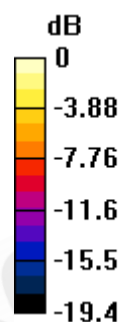
dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.4 V/m; Power Drift = -0.178 dB

Peak SAR (extrapolated) = 0.536 W/kg

SAR(1 g) = 0.318 mW/g; SAR(10 g) = 0.176 mW/g

Maximum value of SAR (measured) = 0.350 mW/g



0 dB = 0.350mW/g

Date: 2010/9/26

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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LE Tilt_CH661**DUT: V03B**

Communication System: Generic GSM; Frequency: 1880 MHz;

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Tilt/Area Scan (61x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.456 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

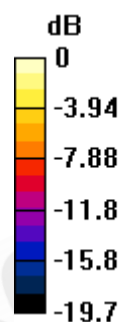
$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 17.1 V/m; Power Drift = -0.114 dB

Peak SAR (extrapolated) = 0.708 W/kg

SAR(1 g) = 0.411 mW/g; SAR(10 g) = 0.224 mW/g

Maximum value of SAR (measured) = 0.452 mW/g



0 dB = 0.452mW/g

Date: 2010/9/26

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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LE Tilt_CH810**DUT: V03B**

Communication System: Generic GSM; Frequency: 1909.8 MHz;

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.375 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

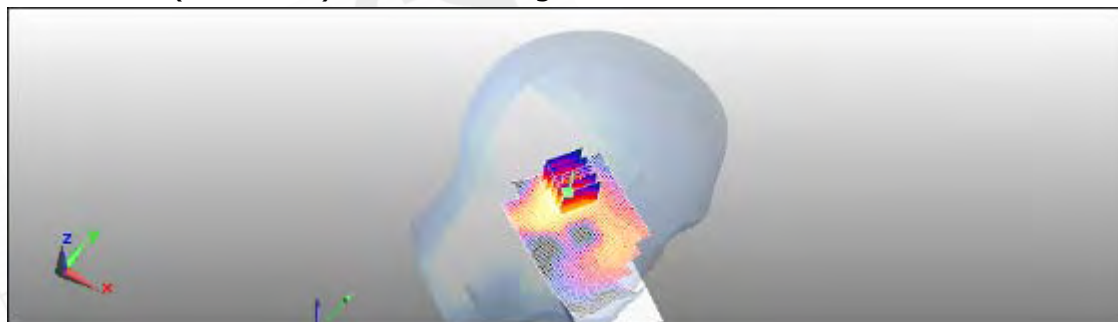
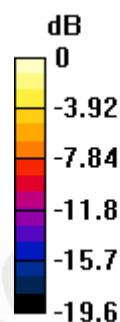
dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.2 V/m; Power Drift = -0.202 dB

Peak SAR (extrapolated) = 0.597 W/kg

SAR(1 g) = 0.343 mW/g; SAR(10 g) = 0.182 mW/g

Maximum value of SAR (measured) = 0.386 mW/g



0 dB = 0.386mW/g

Date: 2010/9/25

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BODY_CH512**DUT: V03B**

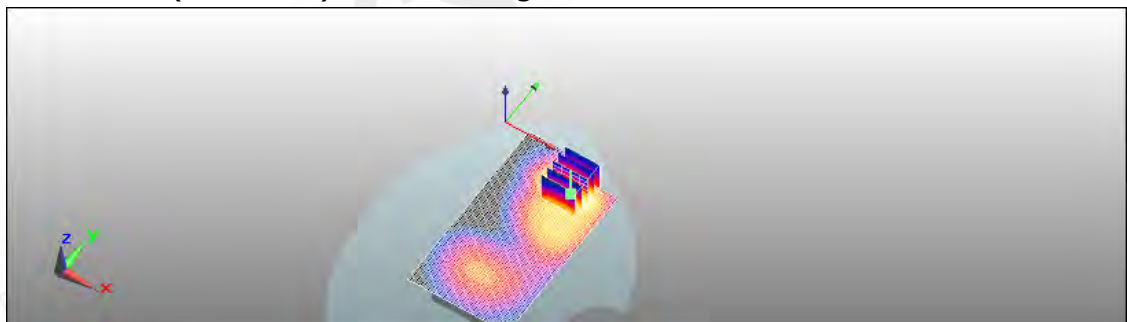
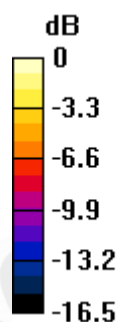
Communication System: GPRS(Class 12); Frequency: 1850.2 MHz;
Medium parameters used: $f = 1850.2 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 52.9$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.45, 4.45, 4.45); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x111x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 1.05 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:
 $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 12.6 V/m; Power Drift = -0.066 dB
Peak SAR (extrapolated) = 1.54 W/kg

SAR(1 g) = 0.927 mW/g; SAR(10 g) = 0.518 mW/g
Maximum value of SAR (measured) = 1.04 mW/g



0 dB = 1.04mW/g

Date: 2010/9/25

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BODY_CH661**DUT: V03B**

Communication System: GPRS(Class 12); Frequency: 1880 MHz;

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.45, 4.45, 4.45); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.06 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

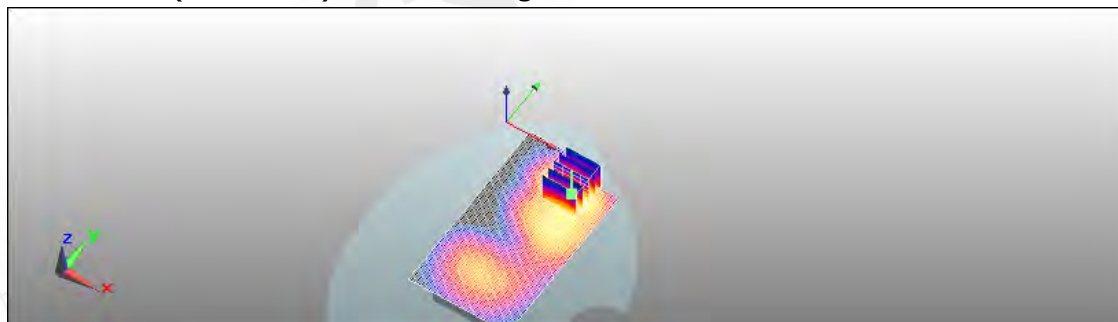
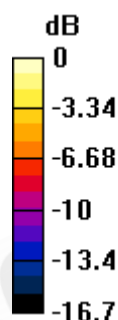
dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.6 V/m; Power Drift = -0.083 dB

Peak SAR (extrapolated) = 1.56 W/kg

SAR(1 g) = 0.929 mW/g; SAR(10 g) = 0.516 mW/g

Maximum value of SAR (measured) = 1.04 mW/g



0 dB = 1.04mW/g

Date: 2010/9/25

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BODY_CH810**DUT: V03B**

Communication System: GPRS(Class 12); Frequency: 1909.8 MHz;

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.55$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.45, 4.45, 4.45); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.842 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

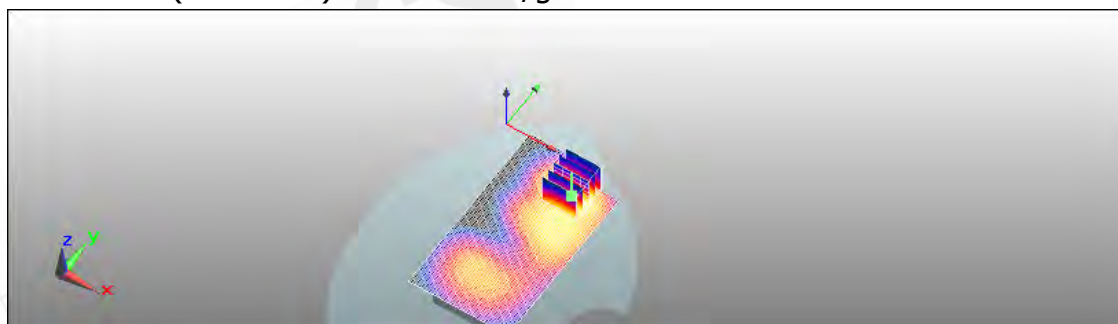
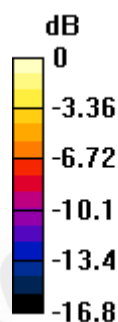
dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.6 V/m; Power Drift = -0.118 dB

Peak SAR (extrapolated) = 1.3 W/kg

SAR(1 g) = 0.750 mW/g; SAR(10 g) = 0.413 mW/g

Maximum value of SAR (measured) = 0.837 mW/g



0 dB = 0.837mW/g

Date: 2010/9/26

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RE Cheek_CH9262**DUT: V03B**

Communication System: WCDMA; Frequency: 1852.4 MHz;

Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.36$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Cheek/Area Scan (61x101x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 1.49 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

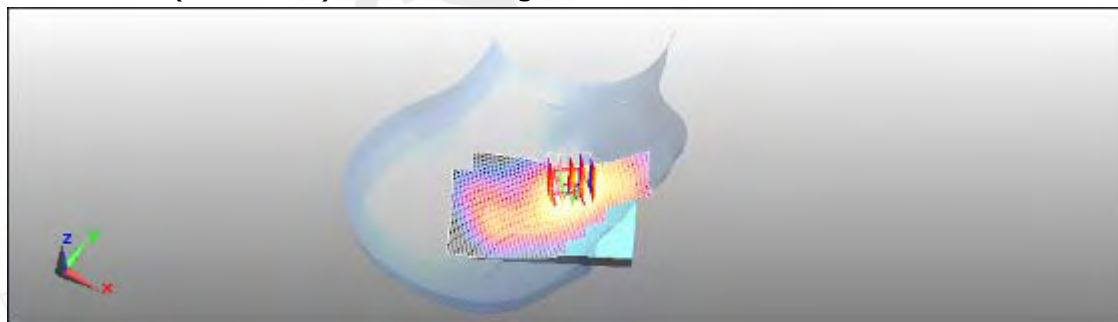
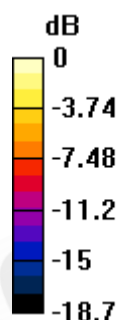
$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 14.7 V/m; Power Drift = 0.135 dB

Peak SAR (extrapolated) = 2.02 W/kg

SAR(1 g) = 1.39 mW/g; SAR(10 g) = 0.874 mW/g

Maximum value of SAR (measured) = 1.51 mW/g



0 dB = 1.51mW/g

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Date: 2010/9/26

RE Cheek_CH9262_repeated with Memory card**DUT: V03B**

Communication System: WCDMA; Frequency: 1852.4 MHz;

Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.36$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Cheek/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.54 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

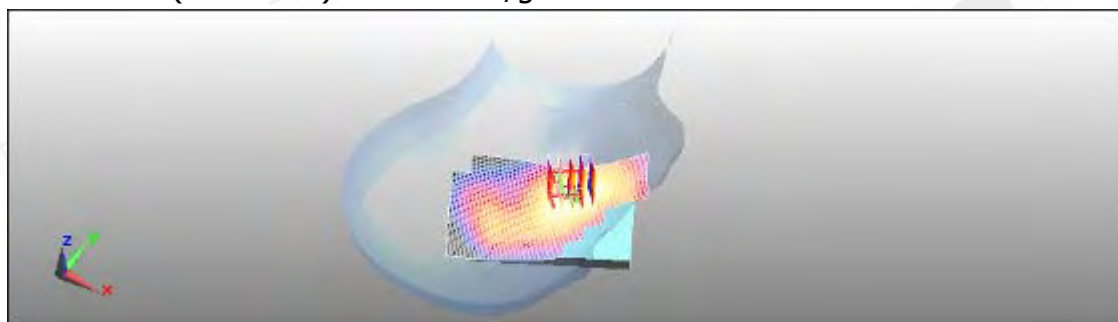
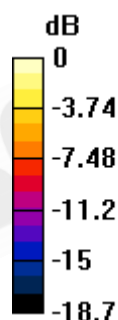
dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.7 V/m; Power Drift = 0.151 dB

Peak SAR (extrapolated) = 1.96 W/kg

SAR(1 g) = 1.38 mW/g; SAR(10 g) = 0.874 mW/g

Maximum value of SAR (measured) = 1.52 mW/g



0 dB = 1.52mW/g

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RE Cheek_CH9400**DUT: V03B**

Communication System: WCDMA; Frequency: 1880 MHz;

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Cheek/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.21 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

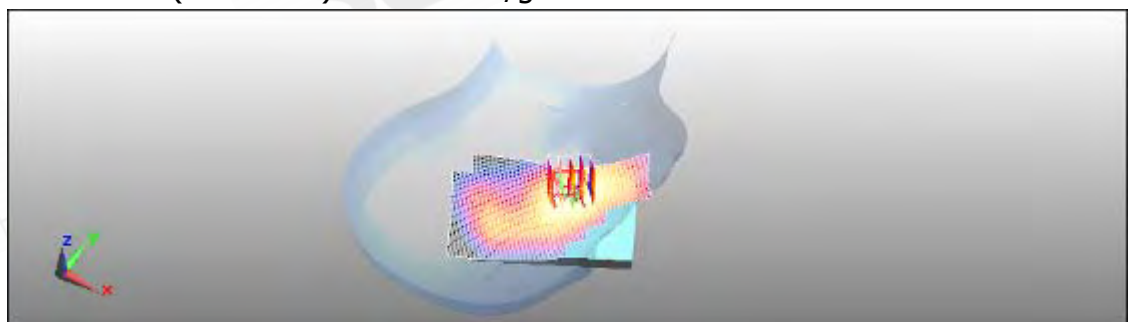
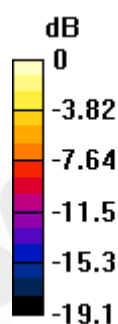
dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.1 V/m; Power Drift = -0.063 dB

Peak SAR (extrapolated) = 1.65 W/kg

SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.693 mW/g

Maximum value of SAR (measured) = 1.21 mW/g



0 dB = 1.21mW/g

Date: 2010/9/26

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RE Cheek_CH9538**DUT: V03B**

Communication System: WCDMA; Frequency: 1907.6 MHz;

Medium parameters used: $f = 1908$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Cheek/Area Scan (61x101x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 1.2 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

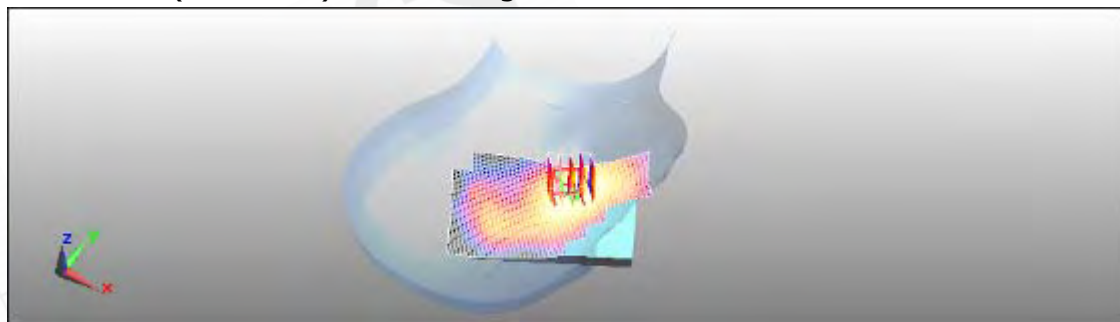
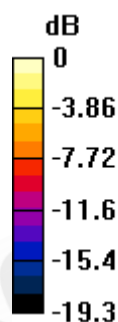
$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 12.7 V/m; Power Drift = -0.107 dB

Peak SAR (extrapolated) = 1.59 W/kg

SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.679 mW/g

Maximum value of SAR (measured) = 1.2 mW/g



0 dB = 1.2mW/g

Date: 2010/9/26

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LE Cheek_CH9262**DUT: V03B**

Communication System: WCDMA; Frequency: 1852.4 MHz;

Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.36$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Cheek/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.863 mW/g

Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

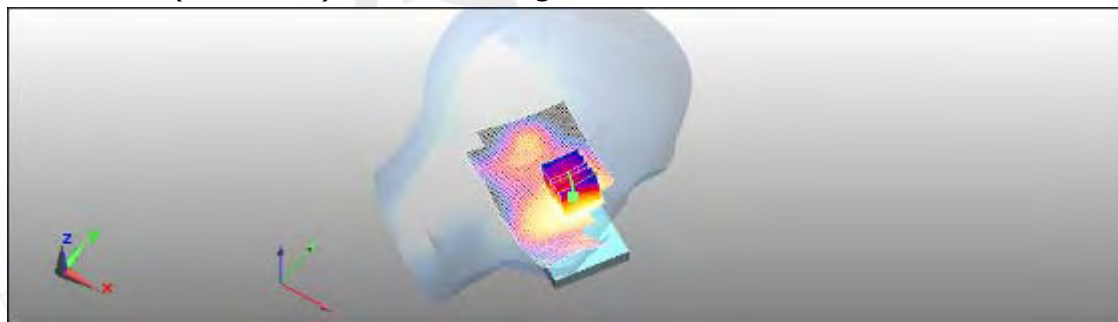
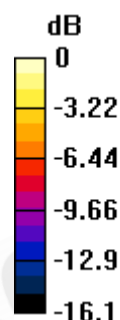
dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.5 V/m; Power Drift = 0.138 dB

Peak SAR (extrapolated) = 1.17 W/kg

SAR(1 g) = 0.792 mW/g; SAR(10 g) = 0.519 mW/g

Maximum value of SAR (measured) = 0.845 mW/g



0 dB = 0.845mW/g

Date: 2010/9/26

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LE Cheek_CH9400**DUT: V03B**

Communication System: WCDMA; Frequency: 1880 MHz;
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³
Phantom section: Left Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Cheek/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.698 mW/g

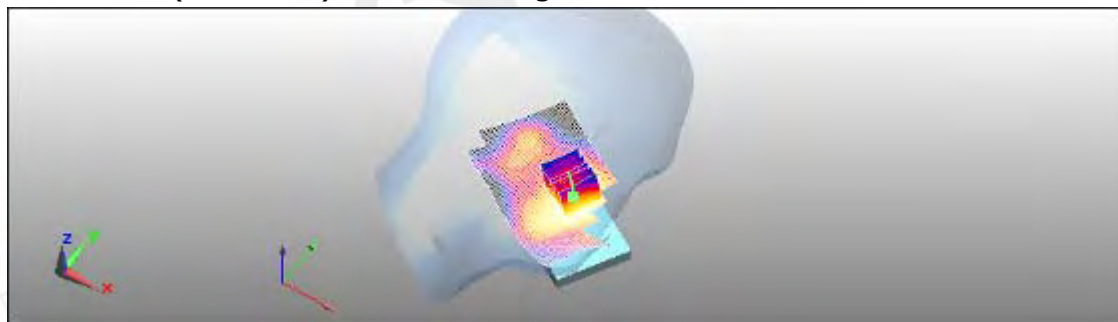
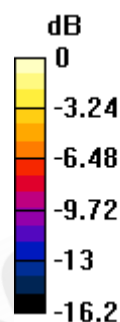
Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13 V/m; Power Drift = -0.124 dB

Peak SAR (extrapolated) = 0.932 W/kg

SAR(1 g) = 0.629 mW/g; SAR(10 g) = 0.409 mW/g

Maximum value of SAR (measured) = 0.675 mW/g



0 dB = 0.675mW/g

Date: 2010/9/26

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LE Cheek_CH9538**DUT: V03B**

Communication System: WCDMA; Frequency: 1907.6 MHz;

Medium parameters used: $f = 1908$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Cheek/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.642 mW/g

Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

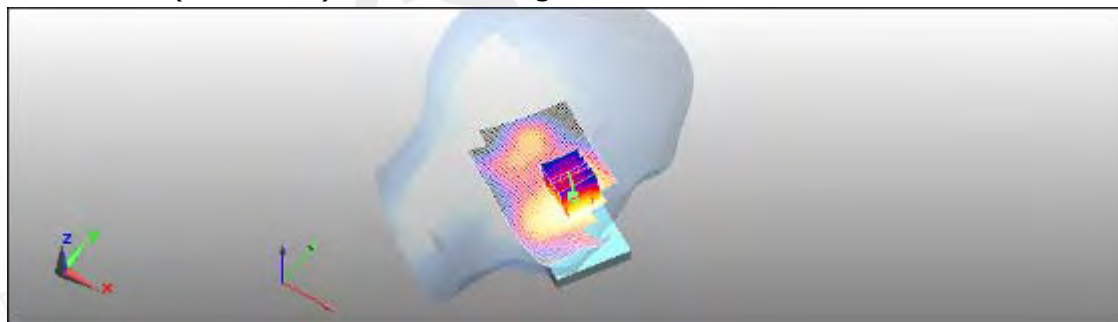
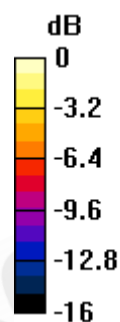
dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.2 V/m; Power Drift = 0.079 dB

Peak SAR (extrapolated) = 0.876 W/kg

SAR(1 g) = 0.583 mW/g; SAR(10 g) = 0.380 mW/g

Maximum value of SAR (measured) = 0.623 mW/g



0 dB = 0.623mW/g

Date: 2010/9/26

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RE Tilt_CH9262**DUT: V03B**

Communication System: WCDMA; Frequency: 1852.4 MHz;

Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.36$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.719 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

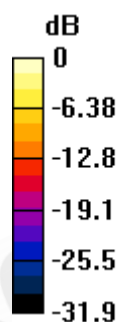
dx=8mm, dy=8mm, dz=5mm

Reference Value = 21.5 V/m; Power Drift = -0.161 dB

Peak SAR (extrapolated) = 0.943 W/kg

SAR(1 g) = 0.572 mW/g; SAR(10 g) = 0.358 mW/g

Maximum value of SAR (measured) = 0.679 mW/g



0 dB = 0.679mW/g

Date: 2010/9/26

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RE Tilt_CH9400**DUT: V03B**

Communication System: WCDMA; Frequency: 1880 MHz;
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³
Phantom section: Right Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.562 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

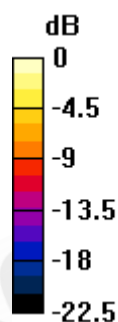
dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.4 V/m; Power Drift = -0.053 dB

Peak SAR (extrapolated) = 0.816 W/kg

SAR(1 g) = 0.469 mW/g; SAR(10 g) = 0.282 mW/g

Maximum value of SAR (measured) = 0.566 mW/g



0 dB = 0.566mW/g

Date: 2010/9/26

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RE Tilt_CH9538**DUT: V03B**

Communication System: WCDMA; Frequency: 1907.6 MHz;

Medium parameters used: $f = 1908$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.530 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

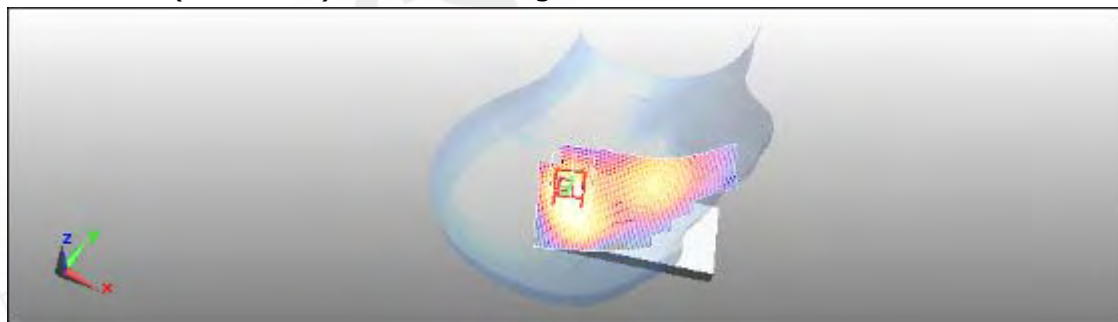
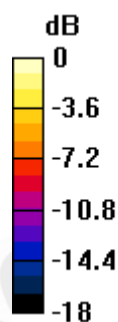
dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.5 V/m; Power Drift = -0.196 dB

Peak SAR (extrapolated) = 0.813 W/kg

SAR(1 g) = 0.485 mW/g; SAR(10 g) = 0.272 mW/g

Maximum value of SAR (measured) = 0.515 mW/g



0 dB = 0.515mW/g

Date: 2010/9/26

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LE Tilt_CH9262**DUT: V03B**

Communication System: WCDMA; Frequency: 1852.4 MHz;

Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.36$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.758 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

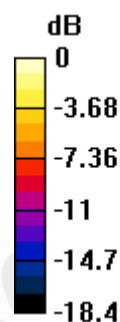
dx=8mm, dy=8mm, dz=5mm

Reference Value = 22.6 V/m; Power Drift = -0.115 dB

Peak SAR (extrapolated) = 1.14 W/kg

SAR(1 g) = 0.681 mW/g; SAR(10 g) = 0.380 mW/g

Maximum value of SAR (measured) = 0.741 mW/g



0 dB = 0.741mW/g

Date: 2010/9/26

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LE Tilt_CH9400**DUT: V03B**

Communication System: WCDMA; Frequency: 1880 MHz;
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³
Phantom section: Left Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.606 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

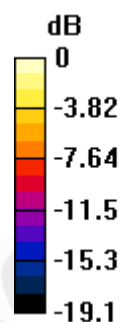
dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.9 V/m; Power Drift = -0.023 dB

Peak SAR (extrapolated) = 0.943 W/kg

SAR(1 g) = 0.548 mW/g; SAR(10 g) = 0.300 mW/g

Maximum value of SAR (measured) = 0.608 mW/g



0 dB = 0.608mW/g

Date: 2010/9/26

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LE Tilt_CH9538**DUT: V03B**

Communication System: WCDMA; Frequency: 1907.6 MHz;

Medium parameters used: $f = 1908$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.584 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

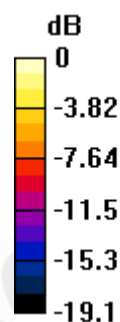
dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.7 V/m; Power Drift = -0.043 dB

Peak SAR (extrapolated) = 0.931 W/kg

SAR(1 g) = 0.531 mW/g; SAR(10 g) = 0.285 mW/g

Maximum value of SAR (measured) = 0.594 mW/g



0 dB = 0.594mW/g

Date: 2010/9/25

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BODY_CH9262**DUT: V03B**

Communication System: WCDMA; Frequency: 1852.4 MHz;

Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 52.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.45, 4.45, 4.45); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.2 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

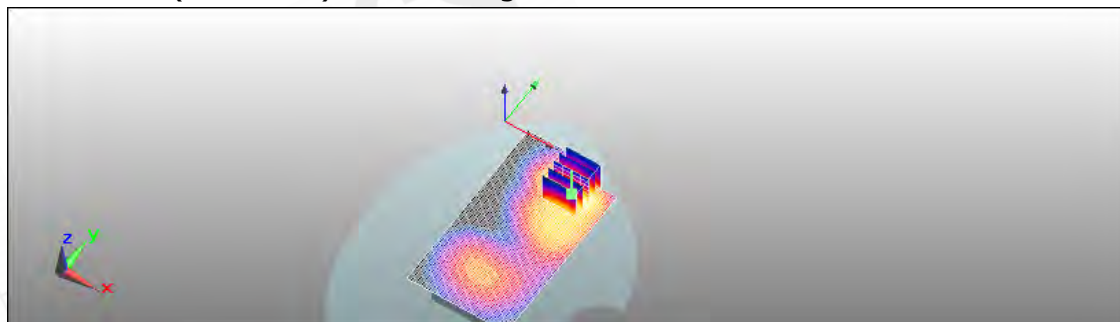
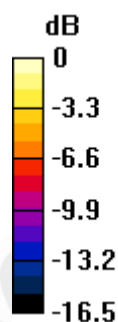
dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.6 V/m; Power Drift = 0.0064 dB

Peak SAR (extrapolated) = 1.83 W/kg

SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.600 mW/g

Maximum value of SAR (measured) = 1.2 mW/g



0 dB = 1.2mW/g

Date: 2010/9/25

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BODY_CH9400**DUT: V03B**

Communication System: WCDMA; Frequency: 1880 MHz;
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.45, 4.45, 4.45); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.802 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

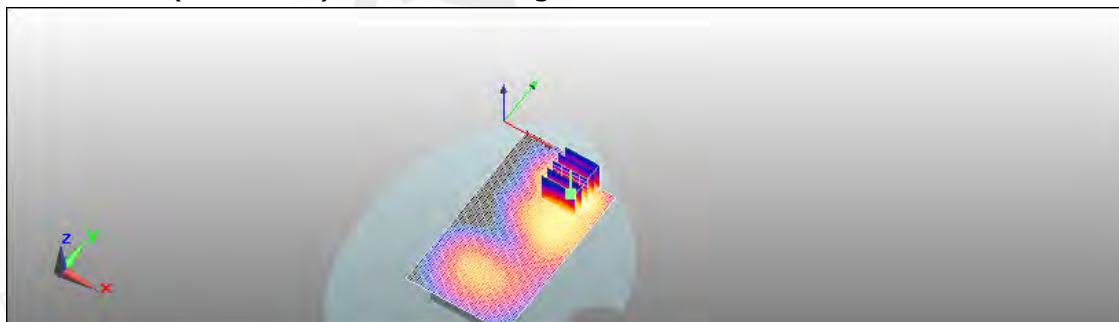
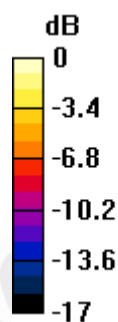
dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.8 V/m; Power Drift = 0.015 dB

Peak SAR (extrapolated) = 1.2 W/kg

SAR(1 g) = 0.705 mW/g; SAR(10 g) = 0.390 mW/g

Maximum value of SAR (measured) = 0.787 mW/g



0 dB = 0.787mW/g

Date: 2010/9/25

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BODY_CH9538**DUT: V03B**

Communication System: WCDMA; Frequency: 1907.6 MHz;

Medium parameters used: $f = 1908$ MHz; $\sigma = 1.55$ mho/m; $\epsilon_r = 52.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.45, 4.45, 4.45); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.684 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

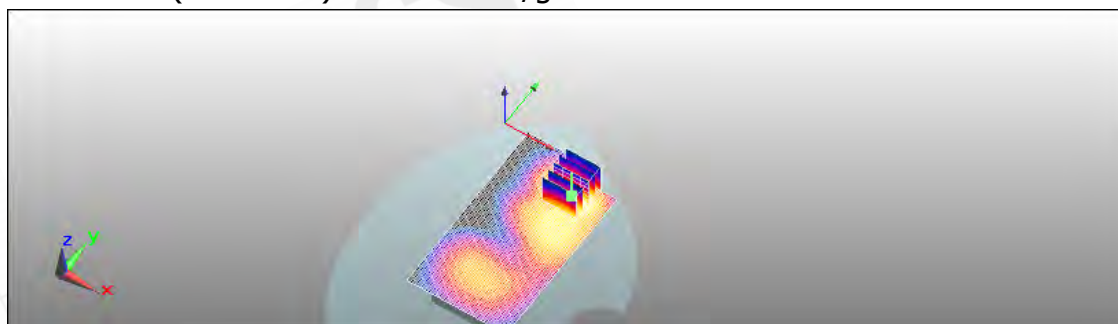
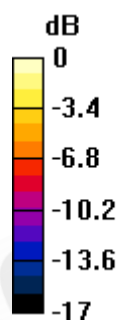
dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.5 V/m; Power Drift = -0.202 dB

Peak SAR (extrapolated) = 1.03 W/kg

SAR(1 g) = 0.599 mW/g; SAR(10 g) = 0.330 mW/g

Maximum value of SAR (measured) = 0.670 mW/g



0 dB = 0.670mW/g

Date: 2010/9/25

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RE Cheek_CH4132**DUT: V03B**

Communication System: WCDMA; Frequency: 826.4 MHz;

Medium parameters used: $f = 826.4$ MHz; $\sigma = 0.889$ mho/m; $\epsilon_r = 42.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Cheek/Area Scan (61x101x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.711 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

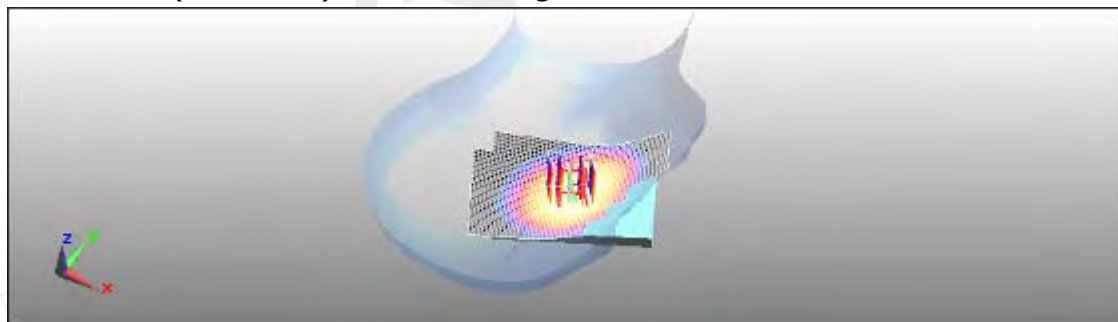
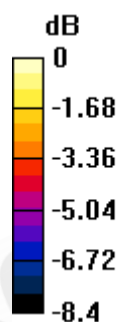
$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 12.9 V/m; Power Drift = -0.128 dB

Peak SAR (extrapolated) = 0.809 W/kg

SAR(1 g) = 0.664 mW/g; SAR(10 g) = 0.503 mW/g

Maximum value of SAR (measured) = 0.697 mW/g



0 dB = 0.697mW/g

Date: 2010/9/25

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RE Cheek_CH4183**DUT: V03B**

Communication System: WCDMA; Frequency: 836.6 MHz;
Medium parameters used: $f = 837$ MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 42.5$; $\rho = 1000$ kg/m³
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Cheek/Area Scan (61x101x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.397 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

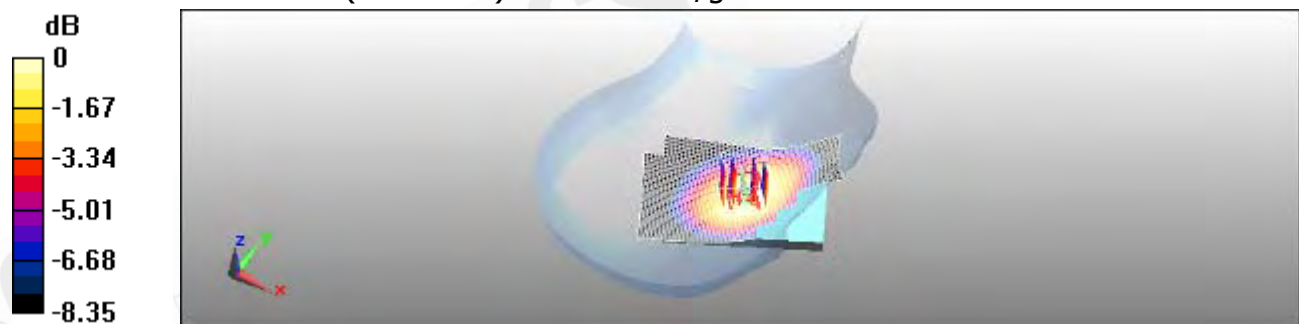
$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 9.65 V/m; Power Drift = -0.205 dB

Peak SAR (extrapolated) = 0.450 W/kg

SAR(1 g) = 0.374 mW/g; SAR(10 g) = 0.284 mW/g

Maximum value of SAR (measured) = 0.398 mW/g



0 dB = 0.398mW/g

Date: 2010/9/25

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RE Cheek_CH4233**DUT: V03B**

Communication System: WCDMA; Frequency: 846.6 MHz;

Medium parameters used: $f = 847$ MHz; $\sigma = 0.909$ mho/m; $\epsilon_r = 42.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Cheek/Area Scan (61x101x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.665 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

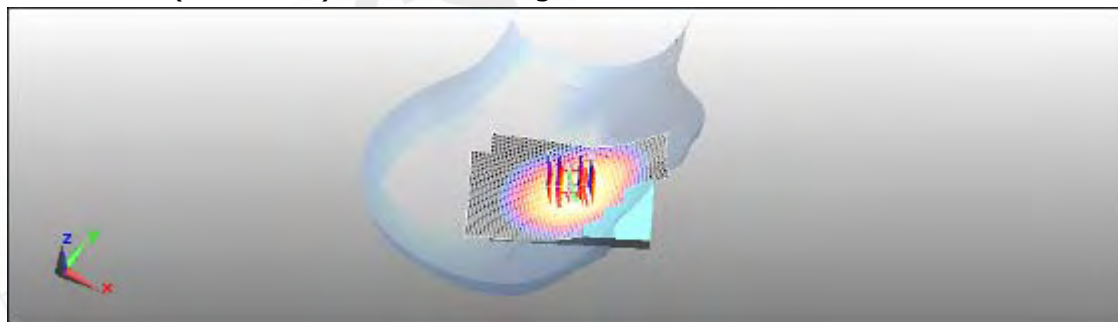
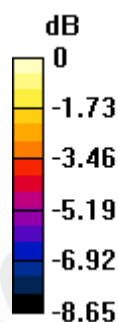
$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 11.9 V/m; Power Drift = -0.146 dB

Peak SAR (extrapolated) = 0.758 W/kg

SAR(1 g) = 0.627 mW/g; SAR(10 g) = 0.475 mW/g

Maximum value of SAR (measured) = 0.656 mW/g



0 dB = 0.656mW/g

Date: 2010/9/25

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LE Cheek_CH4132**DUT: V03B**

Communication System: WCDMA; Frequency: 826.4 MHz;

Medium parameters used: $f = 826.4$ MHz; $\sigma = 0.889$ mho/m; $\epsilon_r = 42.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Cheek/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.707 mW/g

Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

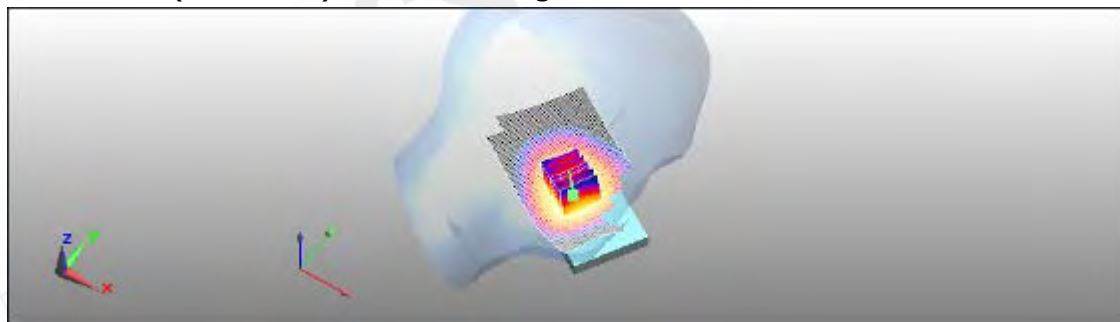
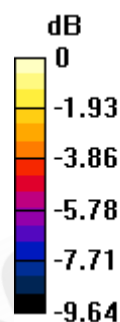
dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.9 V/m; Power Drift = 0.00826 dB

Peak SAR (extrapolated) = 0.832 W/kg

SAR(1 g) = 0.678 mW/g; SAR(10 g) = 0.514 mW/g

Maximum value of SAR (measured) = 0.713 mW/g



0 dB = 0.713mW/g

Date: 2010/9/25

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LE Cheek_CH4183**DUT: V03B**

Communication System: WCDMA; Frequency: 836.6 MHz;

Medium parameters used: $f = 837$ MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 42.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Cheek/Area Scan (61x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.427 mW/g

Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

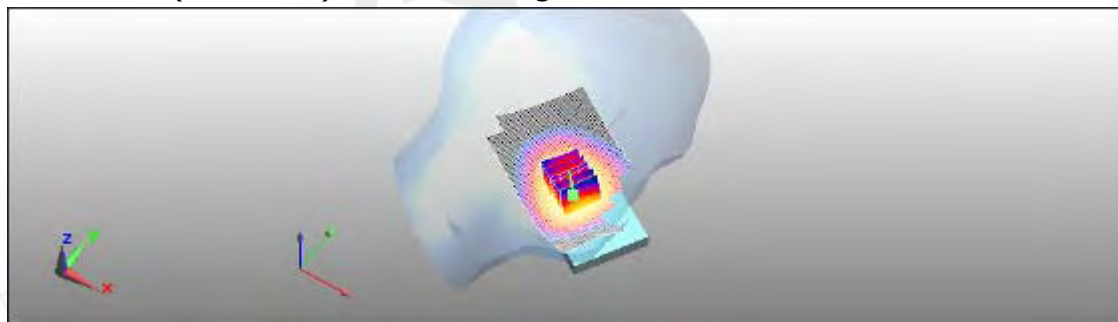
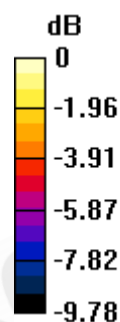
$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 9.14 V/m; Power Drift = 0.018 dB

Peak SAR (extrapolated) = 0.501 W/kg

SAR(1 g) = 0.408 mW/g; SAR(10 g) = 0.309 mW/g

Maximum value of SAR (measured) = 0.430 mW/g



0 dB = 0.430mW/g

Date: 2010/9/25

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LE Cheek_CH4233**DUT: V03B**

Communication System: WCDMA; Frequency: 846.6 MHz;

Medium parameters used: $f = 847$ MHz; $\sigma = 0.909$ mho/m; $\epsilon_r = 42.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Cheek/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.692 mW/g

Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

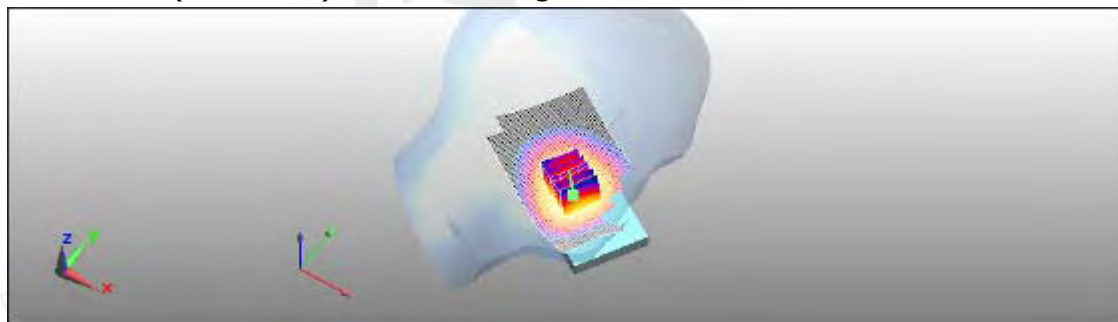
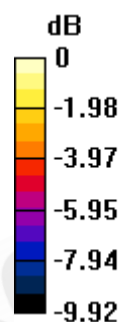
dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.6 V/m; Power Drift = 0.037 dB

Peak SAR (extrapolated) = 0.825 W/kg

SAR(1 g) = 0.669 mW/g; SAR(10 g) = 0.504 mW/g

Maximum value of SAR (measured) = 0.702 mW/g



0 dB = 0.702mW/g

Date: 2010/9/25

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RE Tilt_CH4132**DUT: V03B**

Communication System: WCDMA; Frequency: 826.4 MHz;

Medium parameters used: $f = 826.4$ MHz; $\sigma = 0.889$ mho/m; $\epsilon_r = 42.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.495 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

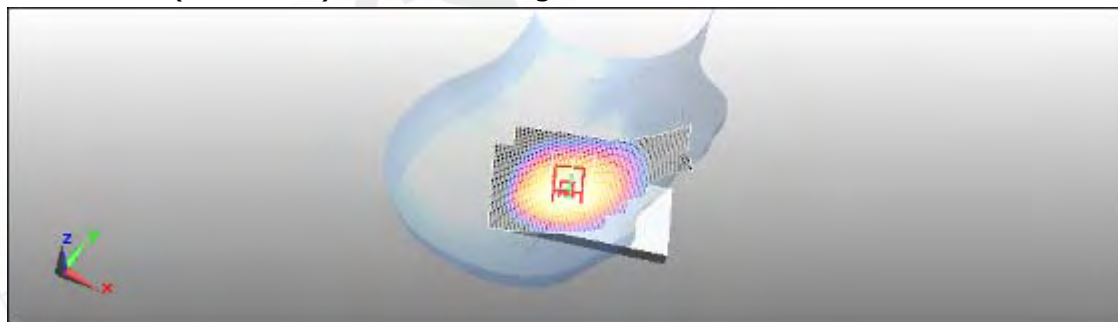
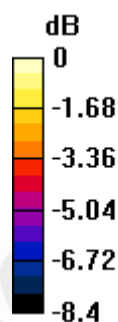
dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.6 V/m; Power Drift = -0.135 dB

Peak SAR (extrapolated) = 0.590 W/kg

SAR(1 g) = 0.473 mW/g; SAR(10 g) = 0.358 mW/g

Maximum value of SAR (measured) = 0.494 mW/g



0 dB = 0.494mW/g

Date: 2010/9/25

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RE Tilt_CH4183**DUT: V03B**

Communication System: WCDMA; Frequency: 836.6 MHz;

Medium parameters used: $f = 837$ MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 42.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.307 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

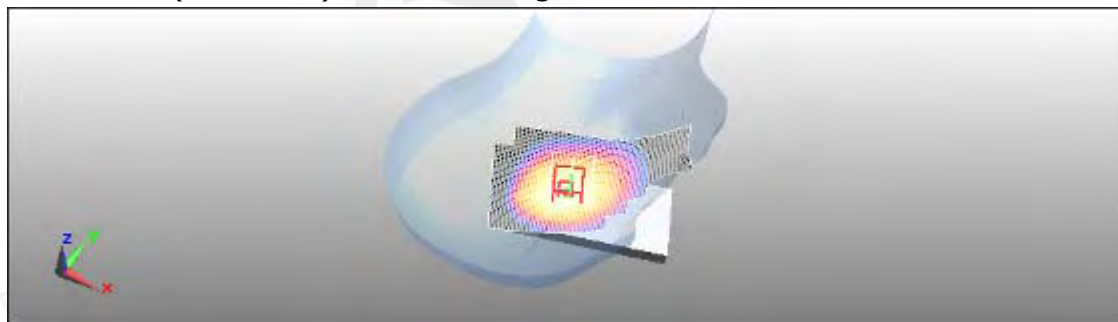
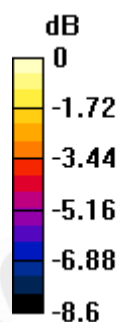
dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.8 V/m; Power Drift = -0.123 dB

Peak SAR (extrapolated) = 0.366 W/kg

SAR(1 g) = 0.295 mW/g; SAR(10 g) = 0.223 mW/g

Maximum value of SAR (measured) = 0.308 mW/g



0 dB = 0.308mW/g

Date: 2010/9/25

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RE Tilt_CH4233**DUT: V03B**

Communication System: WCDMA; Frequency: 846.6 MHz;

Medium parameters used: $f = 847$ MHz; $\sigma = 0.909$ mho/m; $\epsilon_r = 42.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.461 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

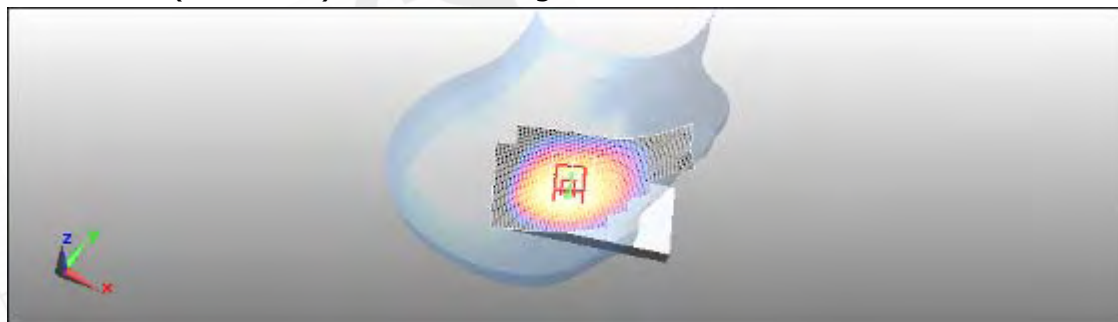
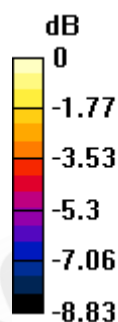
dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.7 V/m; Power Drift = -0.048 dB

Peak SAR (extrapolated) = 0.556 W/kg

SAR(1 g) = 0.447 mW/g; SAR(10 g) = 0.336 mW/g

Maximum value of SAR (measured) = 0.468 mW/g



0 dB = 0.468mW/g

Date: 2010/9/25

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LE Tilt_CH4132**DUT: V03B**

Communication System: WCDMA; Frequency: 826.4 MHz;

Medium parameters used: $f = 826.4$ MHz; $\sigma = 0.889$ mho/m; $\epsilon_r = 42.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.442 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

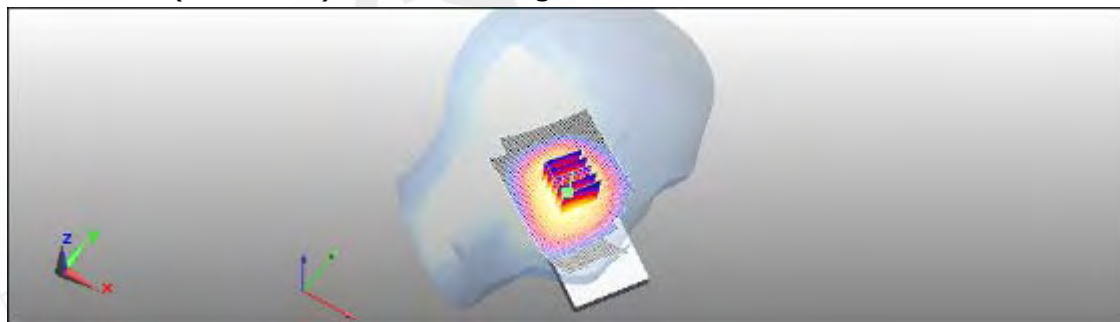
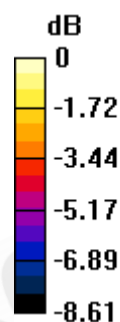
dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.6 V/m; Power Drift = 0.026 dB

Peak SAR (extrapolated) = 0.520 W/kg

SAR(1 g) = 0.418 mW/g; SAR(10 g) = 0.316 mW/g

Maximum value of SAR (measured) = 0.437 mW/g



0 dB = 0.437mW/g

Date: 2010/9/25

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LE Tilt_CH4183**DUT: V03B**

Communication System: WCDMA; Frequency: 836.6 MHz;

Medium parameters used: $f = 837$ MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 42.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.274 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

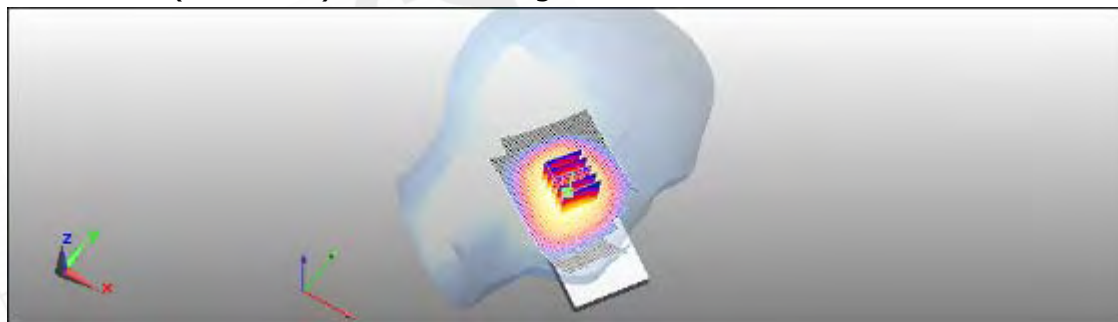
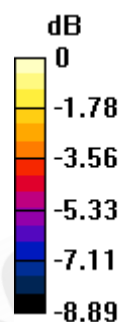
dx=8mm, dy=8mm, dz=5mm

Reference Value = 13 V/m; Power Drift = -0.045 dB

Peak SAR (extrapolated) = 0.326 W/kg

SAR(1 g) = 0.259 mW/g; SAR(10 g) = 0.196 mW/g

Maximum value of SAR (measured) = 0.271 mW/g



0 dB = 0.271mW/g

Date: 2010/9/25

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LE Tilt_CH4233**DUT: V03B**

Communication System: WCDMA; Frequency: 846.6 MHz;

Medium parameters used: $f = 847$ MHz; $\sigma = 0.909$ mho/m; $\epsilon_r = 42.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Tilt/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.430 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

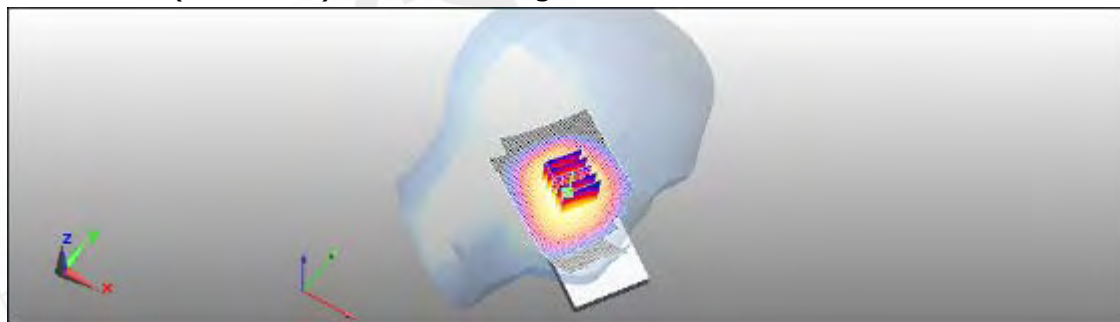
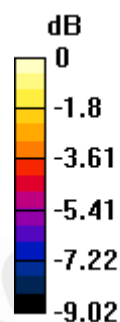
dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.1 V/m; Power Drift = -0.020 dB

Peak SAR (extrapolated) = 0.509 W/kg

SAR(1 g) = 0.405 mW/g; SAR(10 g) = 0.305 mW/g

Maximum value of SAR (measured) = 0.423 mW/g



0 dB = 0.423mW/g

Date: 2010/9/25

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BODY_CH4132**DUT: V03B**

Communication System: WCDMA; Frequency: 826.4 MHz;

Medium parameters used: $f = 826.4$ MHz; $\sigma = 0.995$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.962 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

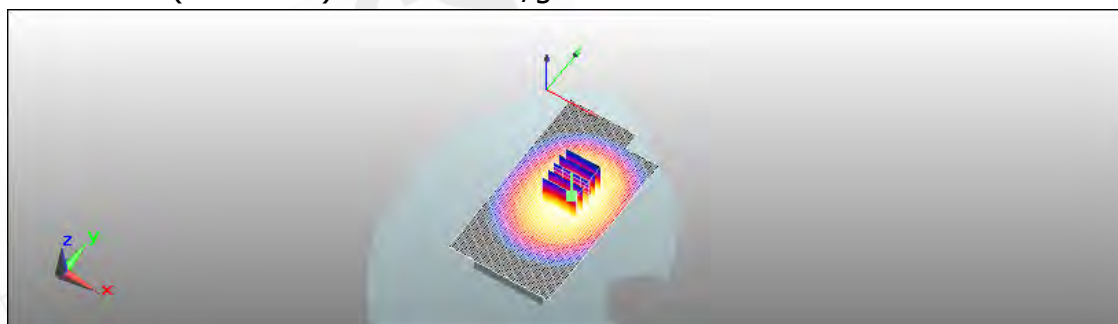
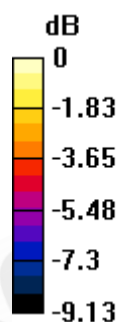
dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.6 V/m; Power Drift = -0.149 dB

Peak SAR (extrapolated) = 1.14 W/kg

SAR(1 g) = 0.882 mW/g; SAR(10 g) = 0.655 mW/g

Maximum value of SAR (measured) = 0.936 mW/g



0 dB = 0.936mW/g

Date: 2010/9/25

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BODY_CH4183**DUT: V03B**

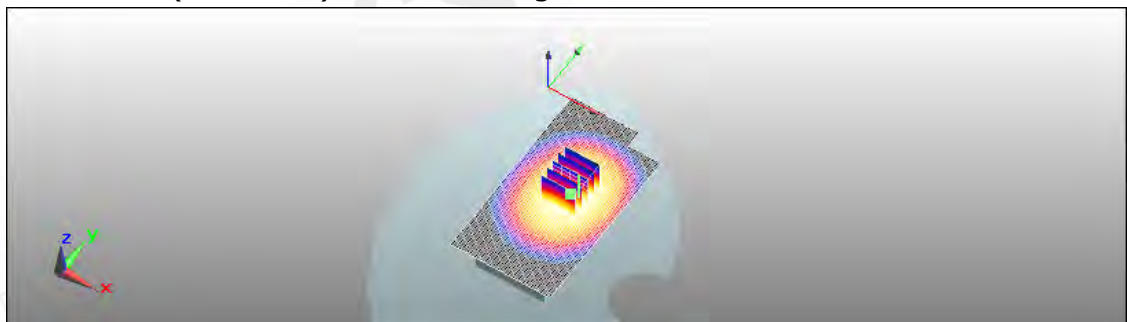
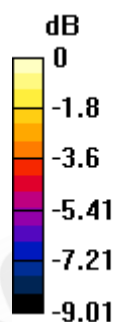
Communication System: WCDMA; Frequency: 836.6 MHz;
Medium parameters used: $f = 837$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.3$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.846 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.8 V/m; Power Drift = -0.029 dB
Peak SAR (extrapolated) = 1.02 W/kg

SAR(1 g) = 0.802 mW/g; SAR(10 g) = 0.596 mW/g
Maximum value of SAR (measured) = 0.838 mW/g



0 dB = 0.838mW/g

Date: 2010/9/25

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BODY_CH4233**DUT: V03B**

Communication System: WCDMA; Frequency: 846.6 MHz;

Medium parameters used: $f = 847$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.853 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

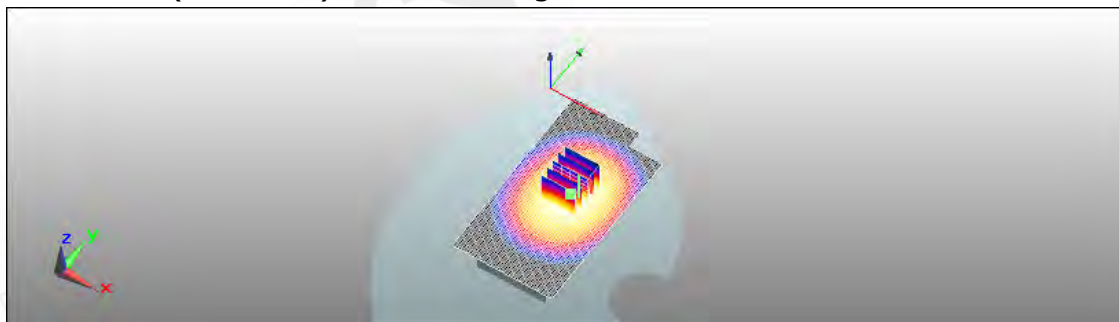
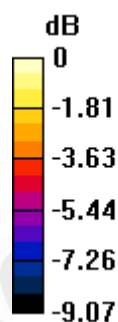
dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.2 V/m; Power Drift = -0.180 dB

Peak SAR (extrapolated) = 1.01 W/kg

SAR(1 g) = 0.804 mW/g; SAR(10 g) = 0.597 mW/g

Maximum value of SAR (measured) = 0.846 mW/g



0 dB = 0.846mW/g

Date: 2010/9/26

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BODY_WLAN802.11b_CH1**DUT: V03B**

Communication System: WLAN802.11 b & g & n(20M); Frequency: 2412 MHz;
Medium parameters used: $f = 2412$ MHz; $\sigma = 1.92$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.11, 4.11, 4.11); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.338 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

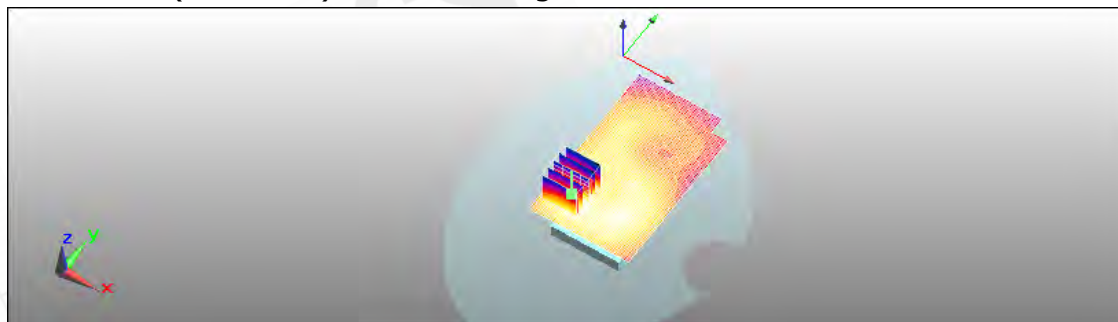
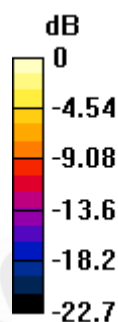
dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.78 V/m; Power Drift = -0.110 dB

Peak SAR (extrapolated) = 0.578 W/kg

SAR(1 g) = 0.307 mW/g; SAR(10 g) = 0.162 mW/g

Maximum value of SAR (measured) = 0.337 mW/g



0 dB = 0.337mW/g

Date: 2010/9/26

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BODY_WLAN802.11b_CH6**DUT: V03B**

Communication System: WLAN802.11 b & g & n(20M); Frequency: 2437 MHz;
Medium parameters used: $f = 2437$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.11, 4.11, 4.11); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.399 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

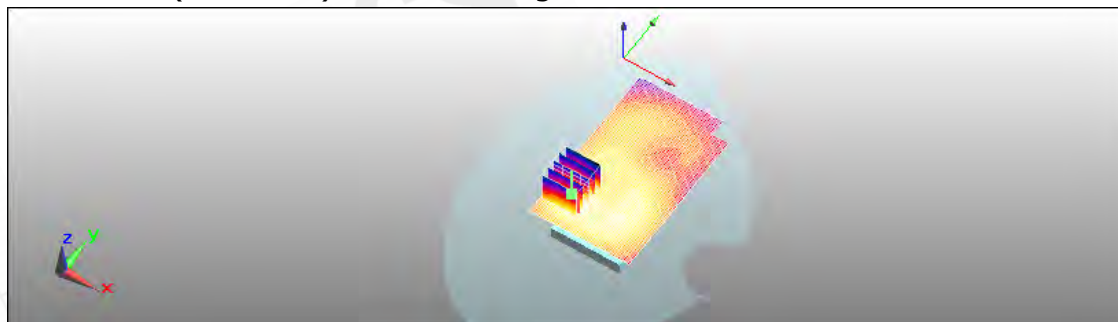
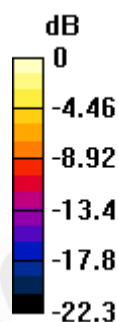
dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.3 V/m; Power Drift = -0.033 dB

Peak SAR (extrapolated) = 0.686 W/kg

SAR(1 g) = 0.363 mW/g; SAR(10 g) = 0.190 mW/g

Maximum value of SAR (measured) = 0.396 mW/g



0 dB = 0.396mW/g

Date: 2010/9/26

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BODY_WLAN802.11b_CH11**DUT: V03B**

Communication System: WLAN802.11 b & g & n(20M); Frequency: 2462 MHz;
Medium parameters used: $f = 2462$ MHz; $\sigma = 1.98$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.11, 4.11, 4.11); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.452 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

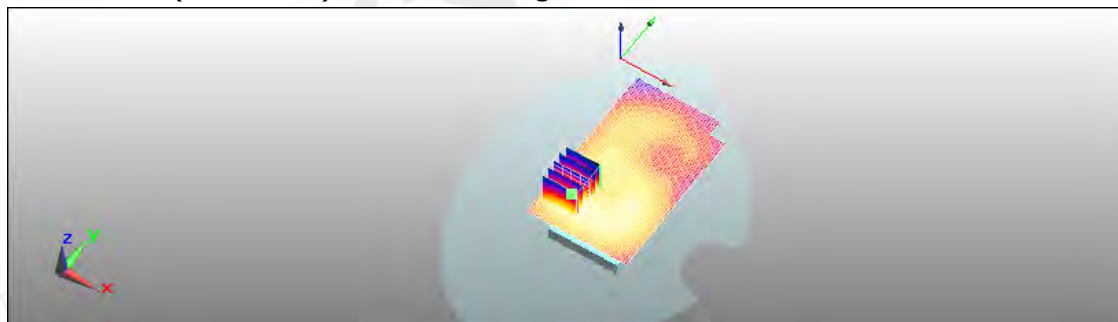
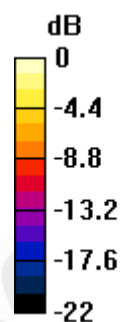
dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.6 V/m; Power Drift = -0.047 dB

Peak SAR (extrapolated) = 0.798 W/kg

SAR(1 g) = 0.418 mW/g; SAR(10 g) = 0.216 mW/g

Maximum value of SAR (measured) = 0.464 mW/g



0 dB = 0.464mW/g

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Date: 2010/9/26

BODY_CH11_WLAN802.11b_repeated for EUT front to phantom**DUT: V03B**

Communication System: WLAN802.11 b & g & n(20M); Frequency: 2462 MHz;
Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 1.98 \text{ mho/m}$; $\epsilon_r = 52.2$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.11, 4.11, 4.11); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.197 mW/g

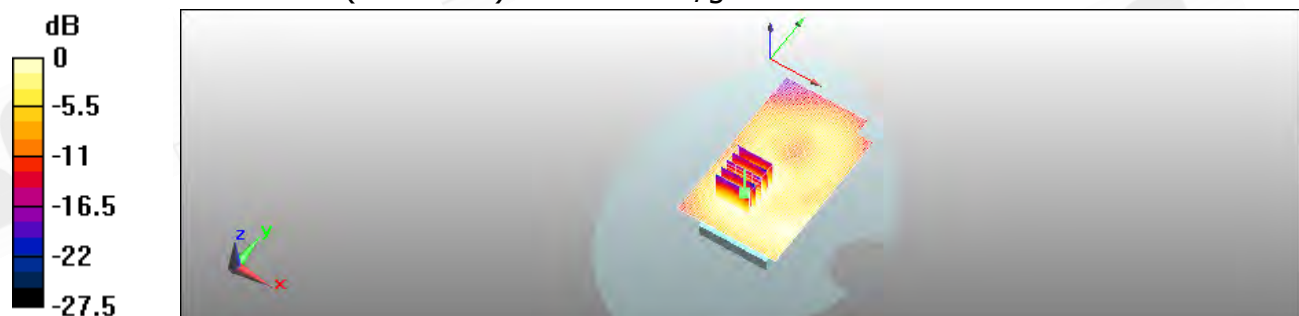
Configuration/BODY/Zoom Scan (7x7x7) (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 8.7 V/m; Power Drift = 0.088 dB

Peak SAR (extrapolated) = 0.325 W/kg

SAR(1 g) = 0.181 mW/g; SAR(10 g) = 0.104 mW/g

Maximum value of SAR (measured) = 0.195 mW/g



0 dB = 0.195mW/g

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Date: 2010/9/26

BODY_WLAN802.11b_CH11_repeated with Memory card**DUT: V03B**

Communication System: WLAN802.11 b & g & n(20M); Frequency: 2462 MHz;
Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 1.98 \text{ mho/m}$; $\epsilon_r = 52.2$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.11, 4.11, 4.11); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.370 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

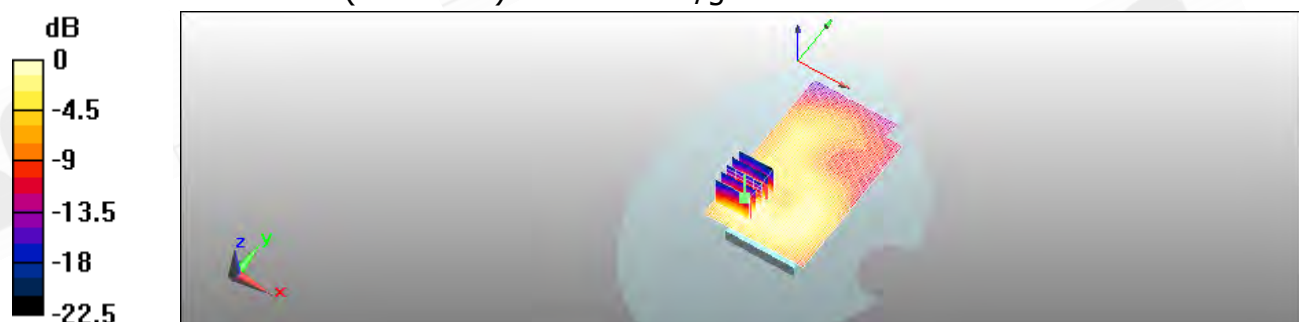
$dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 8.22 V/m; Power Drift = 0.024 dB

Peak SAR (extrapolated) = 0.644 W/kg

SAR(1 g) = 0.336 mW/g; SAR(10 g) = 0.173 mW/g

Maximum value of SAR (measured) = 0.367 mW/g



0 dB = 0.367mW/g

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Date: 2010/9/26

BODY_WLAN802.11b_CH11_repeated with PCH headset**DUT: V03B**

Communication System: WLAN802.11 b & g & n(20M); Frequency: 2462 MHz;
Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 1.98 \text{ mho/m}$; $\epsilon_r = 52.2$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.11, 4.11, 4.11); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.361 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

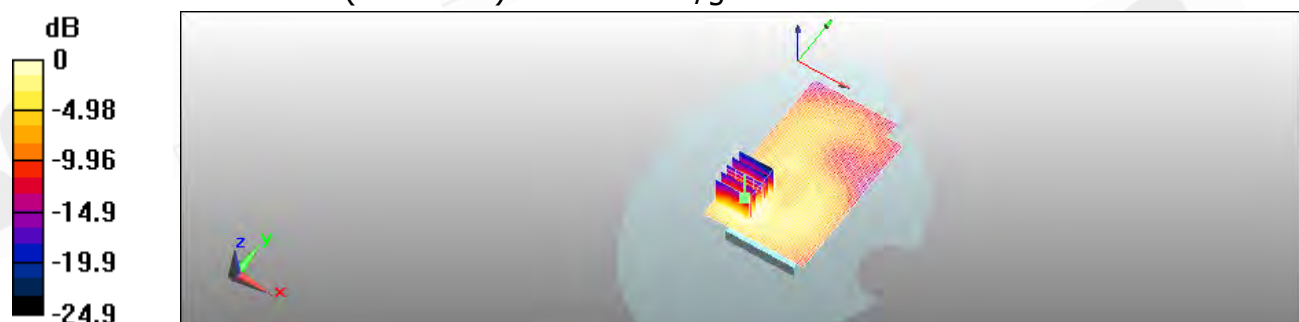
$dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 7.93 V/m; Power Drift = -0.106 dB

Peak SAR (extrapolated) = 0.600 W/kg

SAR(1 g) = 0.323 mW/g; SAR(10 g) = 0.171 mW/g

Maximum value of SAR (measured) = 0.352 mW/g



0 dB = 0.352mW/g

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BODY_WLAN802.11b_CH11_Foster headset**DUT: V03B**

Communication System: WLAN802.11 b & g & n(20M); Frequency: 2462 MHz;
Medium parameters used: $f = 2462$ MHz; $\sigma = 1.98$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.11, 4.11, 4.11); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.447 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

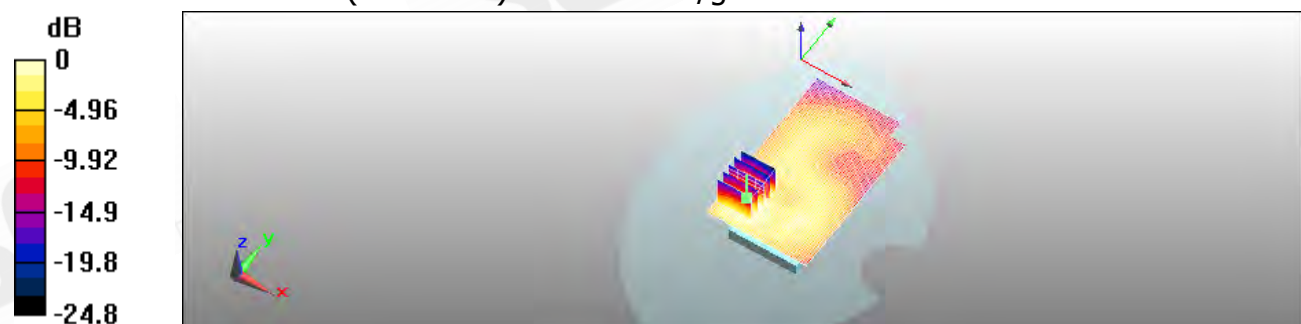
dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.26 V/m; Power Drift = -0.155 dB

Peak SAR (extrapolated) = 0.756 W/kg

SAR(1 g) = 0.397 mW/g; SAR(10 g) = 0.206 mW/g

Maximum value of SAR (measured) = 0.432 mW/g



0 dB = 0.432mW/g

Date: 2010/9/26

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BODY_WLAN802.11g_CH1**DUT: V03B**

Communication System: WLAN802.11 b & g & n(20M); Frequency: 2412 MHz;
Medium parameters used: $f = 2412$ MHz; $\sigma = 1.92$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.11, 4.11, 4.11); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.189 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

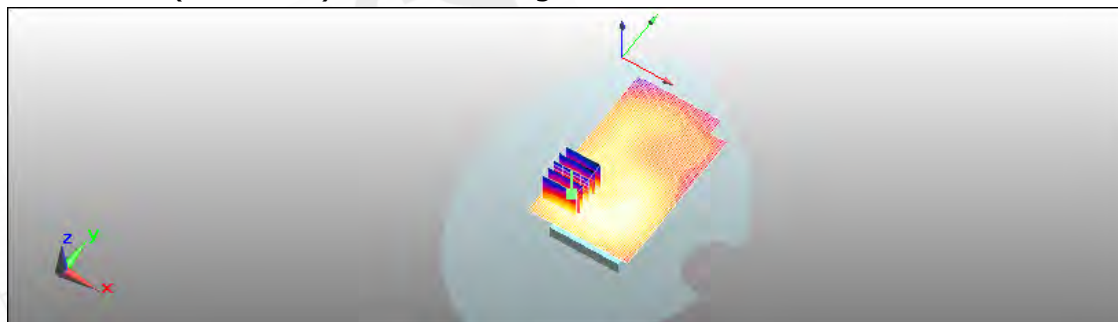
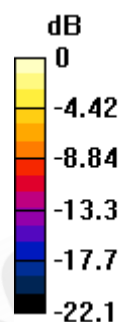
dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.11 V/m; Power Drift = -0.145 dB

Peak SAR (extrapolated) = 0.319 W/kg

SAR(1 g) = 0.171 mW/g; SAR(10 g) = 0.092 mW/g

Maximum value of SAR (measured) = 0.189 mW/g



0 dB = 0.189mW/g

Date: 2010/9/26

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BODY_WLAN802.11g _CH6**DUT: V03B**

Communication System: WLAN802.11 b & g & n(20M); Frequency: 2437 MHz;
Medium parameters used: $f = 2437$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.11, 4.11, 4.11); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.214 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

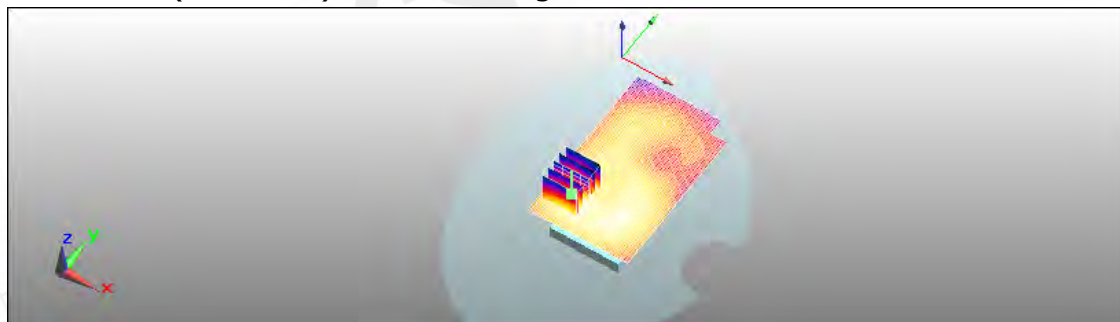
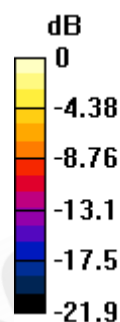
dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.73 V/m; Power Drift = -0.159 dB

Peak SAR (extrapolated) = 0.360 W/kg

SAR(1 g) = 0.197 mW/g; SAR(10 g) = 0.104 mW/g

Maximum value of SAR (measured) = 0.216 mW/g



0 dB = 0.216mW/g

Date: 2010/9/26

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BODY_WLAN802.11g _CH11**DUT: V03B**

Communication System: WLAN802.11 b & g & n(20M); Frequency: 2462 MHz;
Medium parameters used: $f = 2462$ MHz; $\sigma = 1.98$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.11, 4.11, 4.11); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.250 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

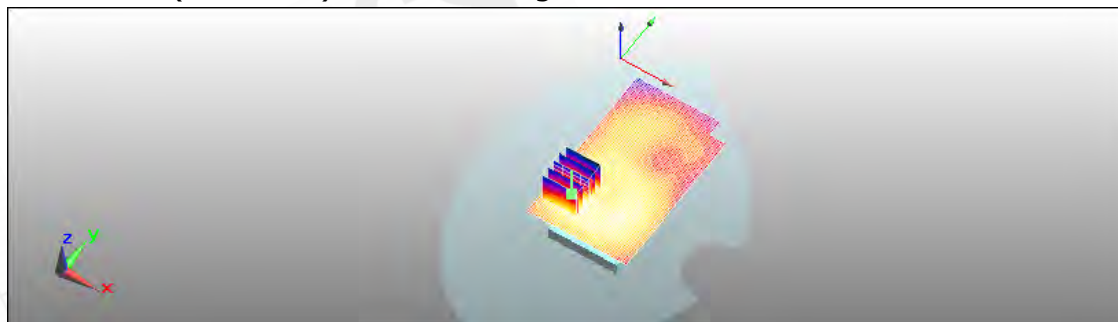
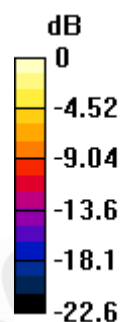
dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.27 V/m; Power Drift = -0.083 dB

Peak SAR (extrapolated) = 0.447 W/kg

SAR(1 g) = 0.233 mW/g; SAR(10 g) = 0.122 mW/g

Maximum value of SAR (measured) = 0.260 mW/g



0 dB = 0.260mW/g

Date: 2010/9/26

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BODY_WLAN802.11n_CH1**DUT: V03B**

Communication System: WLAN802.11 b & g & n(20M); Frequency: 2412 MHz;
Medium parameters used: $f = 2412$ MHz; $\sigma = 1.92$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.11, 4.11, 4.11); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.235 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

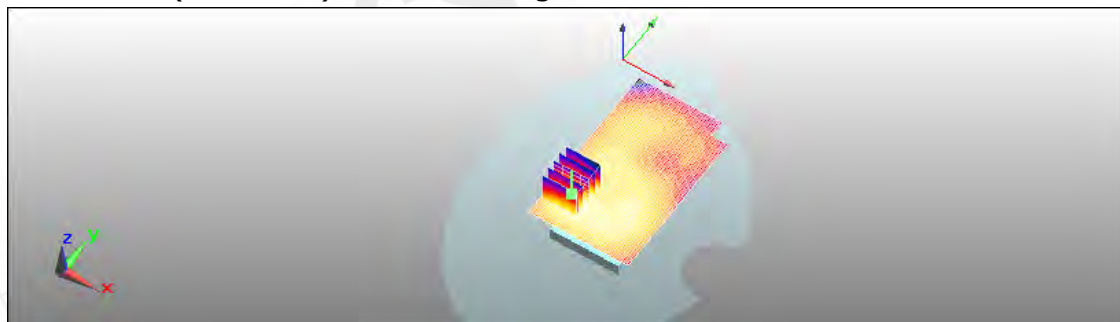
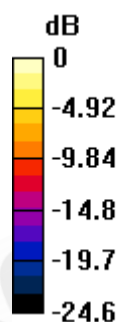
dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.69 V/m; Power Drift = 0.00941 dB

Peak SAR (extrapolated) = 0.424 W/kg

SAR(1 g) = 0.222 mW/g; SAR(10 g) = 0.114 mW/g

Maximum value of SAR (measured) = 0.243 mW/g



0 dB = 0.243mW/g

Date: 2010/9/26

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BODY_WLAN802.11n_CH6**DUT: V03B**

Communication System: WLAN802.11 b & g & n(20M); Frequency: 2437 MHz;
Medium parameters used: $f = 2437$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.11, 4.11, 4.11); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.240 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

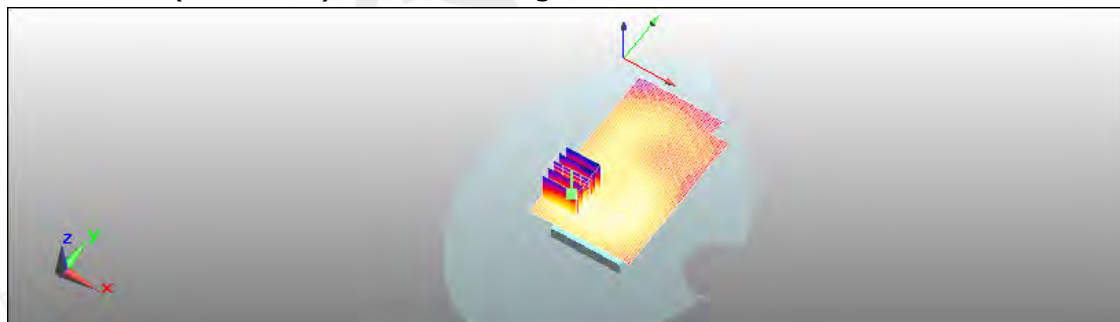
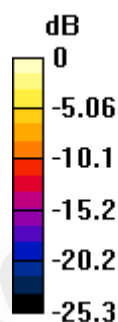
dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.71 V/m; Power Drift = -0.103 dB

Peak SAR (extrapolated) = 0.417 W/kg

SAR(1 g) = 0.218 mW/g; SAR(10 g) = 0.113 mW/g

Maximum value of SAR (measured) = 0.240 mW/g



0 dB = 0.240mW/g

Date: 2010/9/26

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BODY_WLAN802.11n_CH11**DUT: V03B**

Communication System: WLAN802.11 b & g & n(20M); Frequency: 2462 MHz;
Medium parameters used: $f = 2462$ MHz; $\sigma = 1.98$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.11, 4.11, 4.11); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/BODY/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.275 mW/g

Configuration/BODY/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

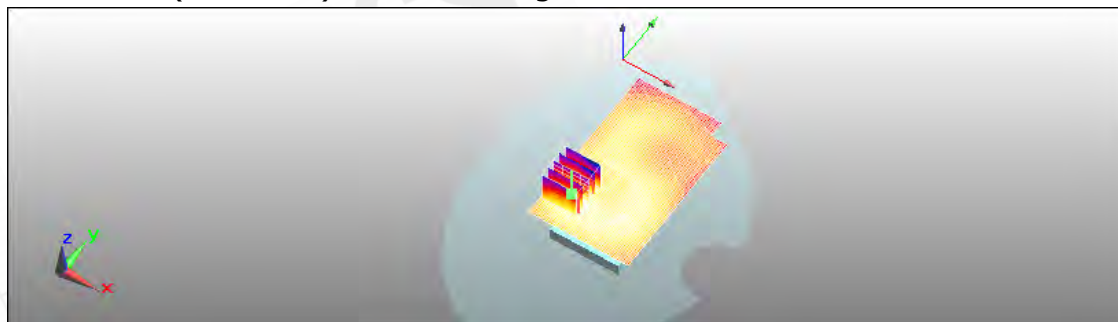
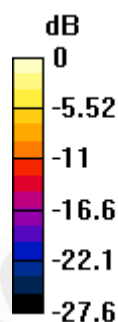
dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.17 V/m; Power Drift = -0.146 dB

Peak SAR (extrapolated) = 0.478 W/kg

SAR(1 g) = 0.253 mW/g; SAR(10 g) = 0.130 mW/g

Maximum value of SAR (measured) = 0.277 mW/g



0 dB = 0.277mW/g

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5. System Verification

Date: 2010/9/25

DUT: Dipole 835 MHz

Communication System: CW; Frequency: 835 MHz;

Medium parameters used: $f = 835$ MHz; $\sigma = 0.897$ mho/m; $\epsilon_r = 42.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration / d=15mm, Pin=250mW, dist=4mm: Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.85 mW/g

Configuration / d=15mm, Pin=250mW, dist=4mm: Measurement grid:

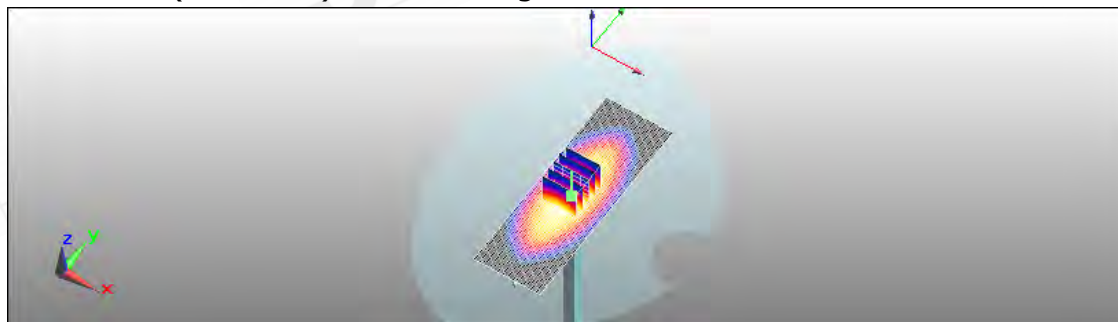
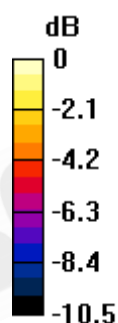
dx=8mm, dy=8mm, dz=5mm

Reference Value = 58.1 V/m; Power Drift = 0.014 dB

Peak SAR (extrapolated) = 3.57 W/kg

SAR(1 g) = 2.43 mW/g; SAR(10 g) = 1.6 mW/g

Maximum value of SAR (measured) = 2.84 mW/g



0 dB = 2.84mW/g

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DUT: Dipole 835 MHz

Communication System: CW; Frequency: 835 MHz;

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 1 \text{ mho/m}$; $\epsilon_r = 53.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration /d=15mm, Pin=250mW, dist=4mm: Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 2.97 mW/g

Configuration /d=15mm, Pin=250mW, dist=4mm: Measurement grid:

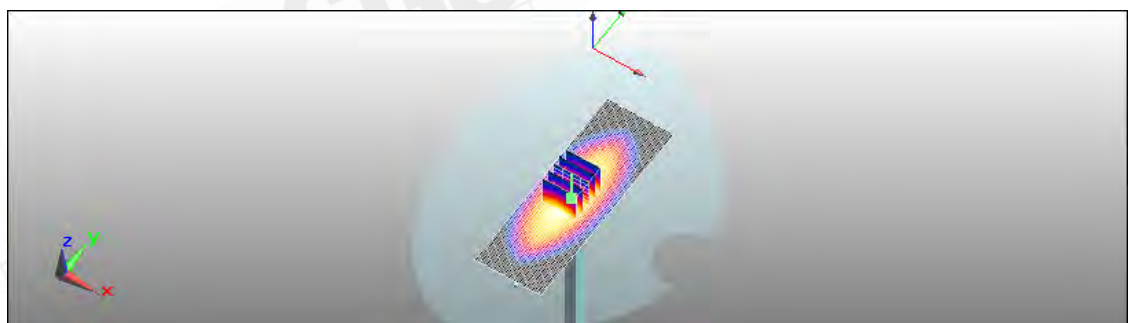
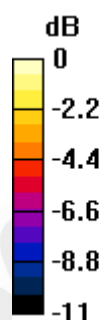
$dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 56 V/m; Power Drift = -0.000211 dB

Peak SAR (extrapolated) = 3.86 W/kg

SAR(1 g) = 2.51 mW/g; SAR(10 g) = 1.61 mW/g

Maximum value of SAR (measured) = 2.99 mW/g



0 dB = 2.99mW/g

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Date: 2010/9/26

DUT: Dipole 1900 MHz

Communication System: CW; Frequency: 1900 MHz;

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.42 \text{ mho/m}$; $\epsilon_r = 39.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration / d=10mm, Pin=250mW, dist=4mm: Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 11.9 mW/g

Configuration / d=10mm, Pin=250mW, dist=4mm: Measurement grid:

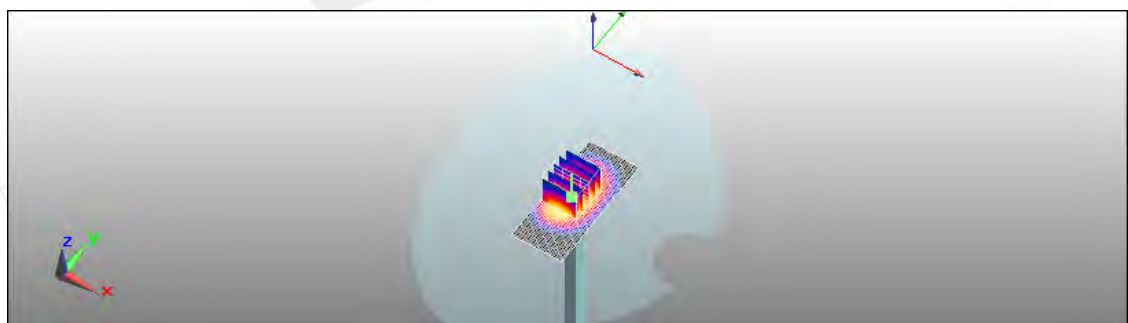
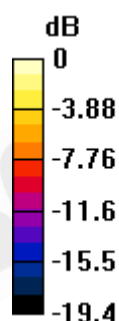
dx=8mm, dy=8mm, dz=5mm

Reference Value = 95.1 V/m; Power Drift = 0.023 dB

Peak SAR (extrapolated) = 19.4 W/kg

SAR(1 g) = 10 mW/g; SAR(10 g) = 4.94 mW/g

Maximum value of SAR (measured) = 12.2 mW/g



0 dB = 12.2mW/g

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Date: 2010/9/25

DUT: Dipole 1900 MHz

Communication System: CW; Frequency: 1900 MHz;

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.55 \text{ mho/m}$; $\epsilon_r = 52.9$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.45, 4.45, 4.45); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration / d=10mm, Pin=250mW, dist=4mm: Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 13 mW/g

Configuration / d=10mm, Pin=250mW, dist=4mm: Measurement grid:

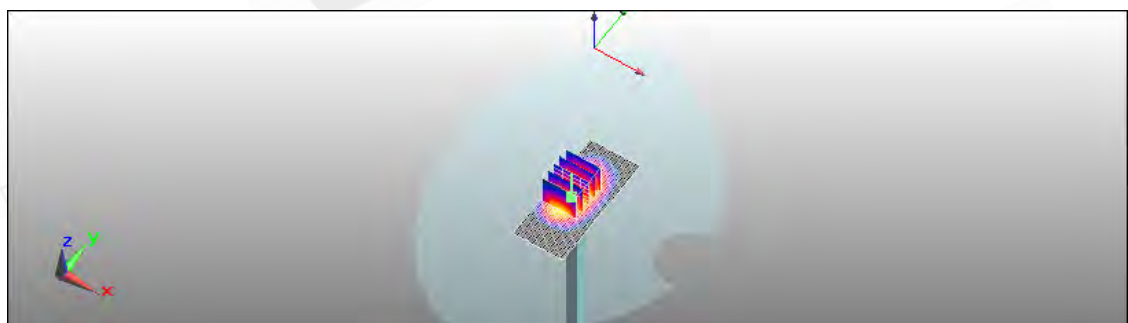
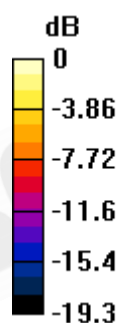
dx=8mm, dy=8mm, dz=5mm

Reference Value = 94.2 V/m; Power Drift = 0.012 dB

Peak SAR (extrapolated) = 20.4 W/kg

SAR(1 g) = 10.4 mW/g; SAR(10 g) = 5.02 mW/g

Maximum value of SAR (measured) = 12.7 mW/g



0 dB = 12.7mW/g

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Date: 2010/9/26

DUT: Dipole 2450 MHz

Communication System: CW; Frequency: 2450 MHz;

Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.96 \text{ mho/m}$; $\epsilon_r = 52.5$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3172; ConvF(4.11, 4.11, 4.11); Calibrated: 2010/05/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASYS, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration / d=10mm, Pin=250mW, dist=4mm: Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 16.2 mW/g

Configuration / d=10mm, Pin=250mW, dist=4mm: Measurement grid:

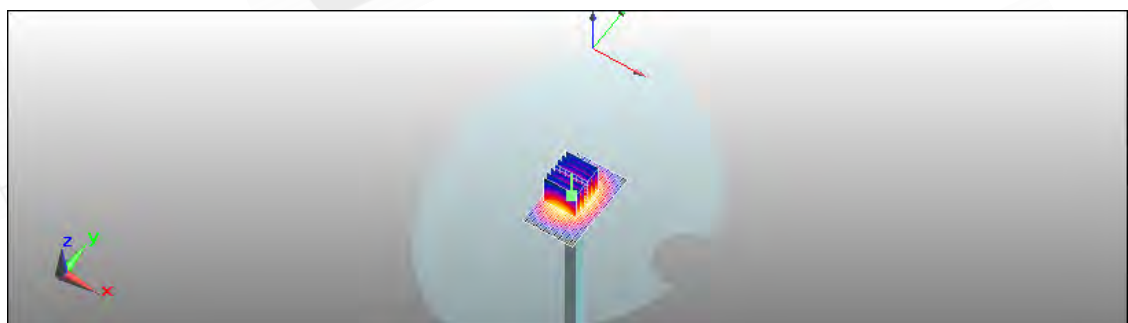
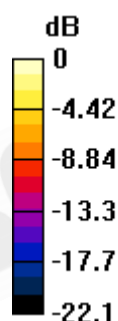
dx=5mm, dy=5mm, dz=5mm

Reference Value = 93.8 V/m; Power Drift = 0.066 dB

Peak SAR (extrapolated) = 29 W/kg

SAR(1 g) = 13.6 mW/g; SAR(10 g) = 6.28 mW/g

Maximum value of SAR (measured) = 15.2 mW/g



0 dB = 15.2mW/g

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6. DAE & Probe Calibration certificate

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client **SGS-TW (Auden)**

Certificate No: **DAE4-856_May10**

CALIBRATION CERTIFICATE

Object **DAE4 - SD 000 D04 BJ - SN: 856**

Calibration procedure(s) **QA CAL-06.v21
Calibration procedure for the data acquisition electronics (DAE)**

Calibration date: **May 20, 2010**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0610278	1-Oct-09 (No: 9055)	Oct-10
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Calibrator Box V1.1	SE UMS 006 AB 1004	06-Jun-09 (in house check)	In house check: Jun-10

Calibrated by:	Name Dominique Stetten	Function Technician	Signature
Approved by:	Name Frits Bornholt	Function R&D Director	Signature

Issued: May 20, 2010

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: DAE4-856_May10

Page 1 of 5

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Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not effect the E^2 -field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z}** = NORM_{x,y,z} * frequency_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; VR_{x,y,z}**: A, B, C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

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ES3DV3 SN:3172

May 21, 2010

Probe ES3DV3

SN:3172

Manufactured: January 23, 2008
Last calibrated: May 27, 2009
Recalibrated: May 21, 2010

Calibrated for DASY/EASY Systems

(Note: non-compatible with DASY2 system!)

Certificate No: ES3-3172_May10

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ES3DV3 SN:3172

May 21, 2010

DASY/EASY - Parameters of Probe: ES3DV3 SN:3172**Basic Calibration Parameters**

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	1.37	1.19	0.97	± 10.1%
DCP (mV) ^B	93.9	92.5	93.2	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc ^E (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	300.0	± 1.5%
			Y	0.00	0.00	1.00	300.0	
			Z	0.00	0.00	1.00	300.0	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter; uncertainty not required.

^E Uncertainty is determined using the maximum deviation from linear response applying recatangular distribution and is expressed for the square of the field value.

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DASY/EASY - Parameters of Probe: ES3DV3 SN:3172**Calibration Parameter Determined in Head Tissue Simulating Media**

f [MHz]	Validity [MHz] ^C	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
835	± 50 / ± 100	41.5 ± 5%	0.90 ± 5%	5.85	5.85	5.85	0.76	1.14 ± 11.0%
900	± 50 / ± 100	41.5 ± 5%	0.97 ± 5%	5.75	5.75	5.75	0.87	1.08 ± 11.0%
1750	± 50 / ± 100	40.1 ± 5%	1.37 ± 5%	5.04	5.04	5.04	0.31	1.82 ± 11.0%
1900	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.89	4.89	4.89	0.50	1.46 ± 11.0%
2000	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.73	4.73	4.73	0.49	1.44 ± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	4.32	4.32	4.32	0.42	1.70 ± 11.0%

^C The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

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DASY/EASY - Parameters of Probe: ES3DV3 SN:3172**Calibration Parameter Determined in Body Tissue Simulating Media**

f [MHz]	Validity [MHz] ^C	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
835	± 50 / ± 100	55.2 ± 5%	0.97 ± 5%	5.84	5.84	5.84	0.81	1.19 ± 11.0%
900	± 50 / ± 100	55.0 ± 5%	1.05 ± 5%	5.75	5.75	5.75	0.73	1.24 ± 11.0%
1750	± 50 / ± 100	53.4 ± 5%	1.49 ± 5%	4.63	4.63	4.63	0.39	1.75 ± 11.0%
1900	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.45	4.45	4.45	0.32	2.36 ± 11.0%
2000	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.47	4.47	4.47	0.32	2.44 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	4.11	4.11	4.11	0.82	1.17 ± 11.0%
2600	± 50 / ± 100	52.5 ± 5%	2.16 ± 5%	3.99	3.99	3.99	0.95	1.09 ± 11.0%
3500	± 50 / ± 100	51.3 ± 5%	3.31 ± 5%	3.28	3.28	3.28	1.00	1.28 ± 13.1%

^C The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

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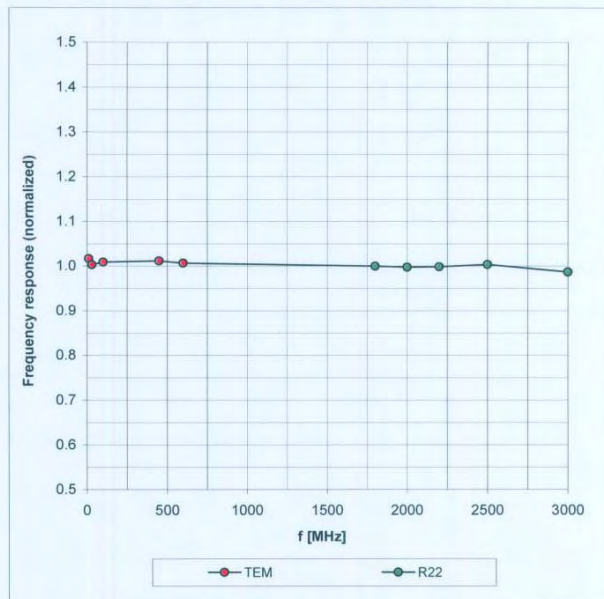
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Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)

Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

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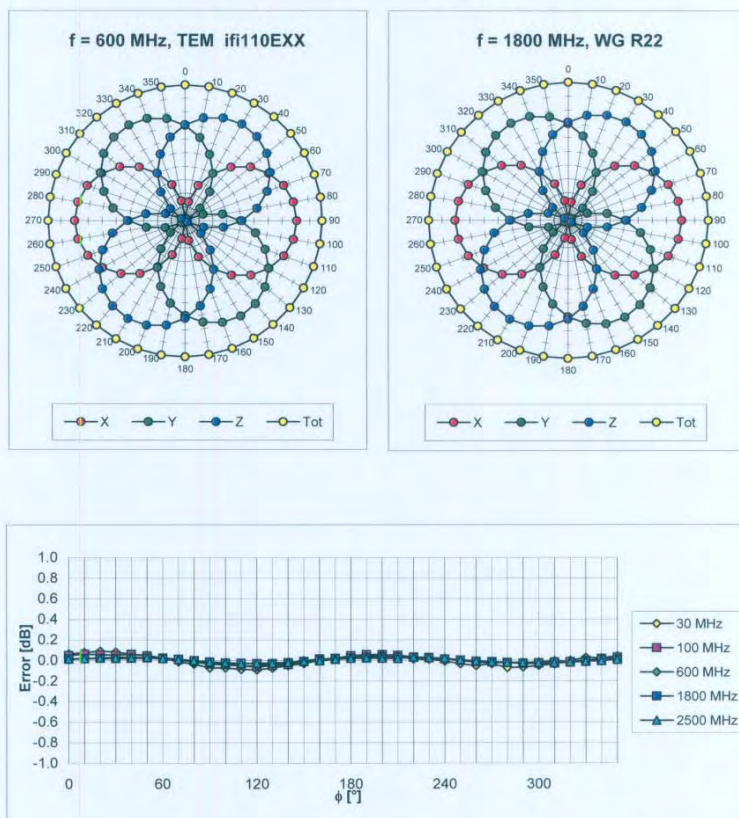
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Receiving Pattern (ϕ), $\vartheta = 0^\circ$



Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

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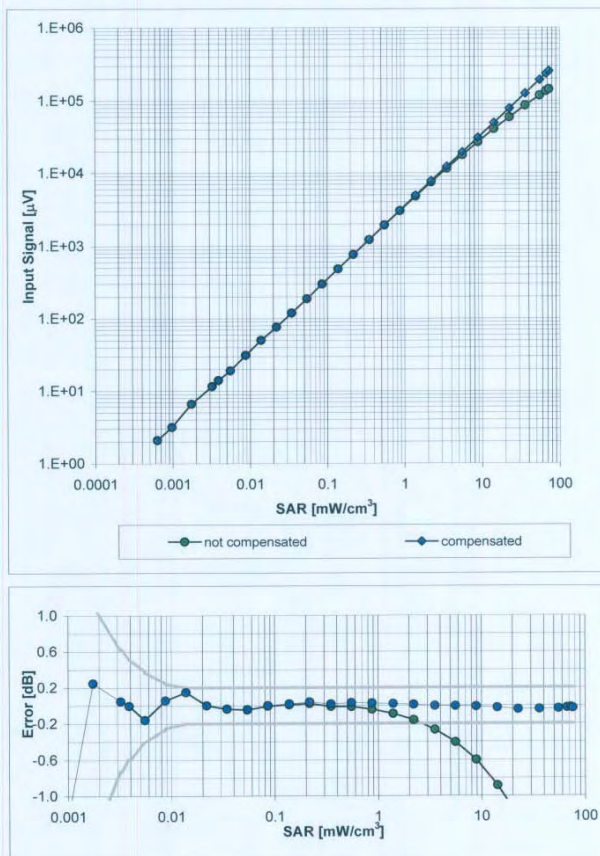
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Dynamic Range $f(\text{SAR}_{\text{head}})$
(Waveguide R22, $f = 1800 \text{ MHz}$)Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

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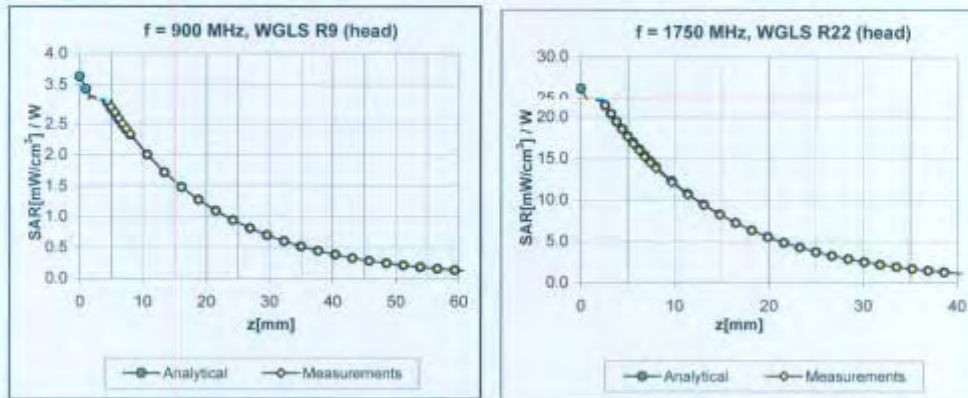
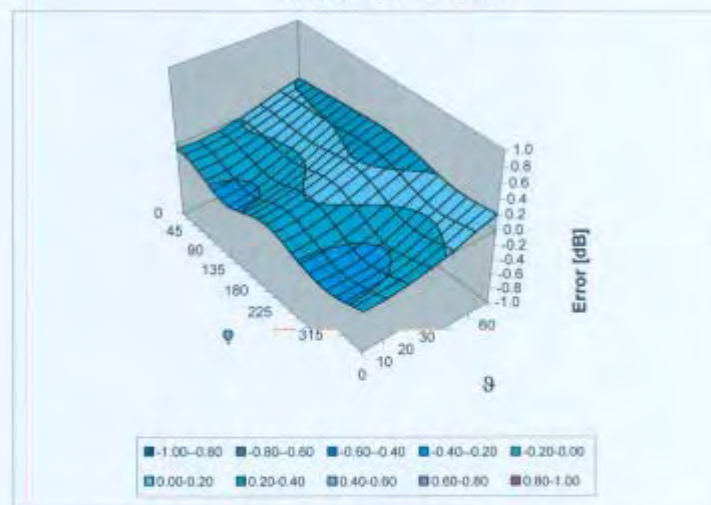
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Conversion Factor Assessment

Error (ϕ , θ), $f = 900 \text{ MHz}$ Uncertainty of Spherical Isotropy Assessment: $\pm 2.6\%$ ($k=2$)

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Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	Not applicable
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4.0 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

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7. Uncertainty Analysis

DASY5 Uncertainty Budget
According to IEEE 1528 [1]

Error Description	Uncertainty value	Prob. Dist.	Div.	(c_1) 1g	(c_1) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(v_1) v_{eff}
Measurement System								
Probe Calibration	±5.9 %	N	1	1	1	±5.9 %	±5.9 %	∞
Axial Isotropy	±4.7 %	R	$\sqrt{3}$	0.7	0.7	±1.9 %	±1.9 %	∞
Hemispherical Isotropy	±9.6 %	R	$\sqrt{3}$	0.7	0.7	±3.9 %	±3.9 %	∞
Boundary Effects	±1.0 %	R	$\sqrt{3}$	1	1	±0.6 %	±0.6 %	∞
Linearity	±4.7 %	R	$\sqrt{3}$	1	1	±2.7 %	±2.7 %	∞
System Detection Limits	±1.0 %	R	$\sqrt{3}$	1	1	±0.6 %	±0.6 %	∞
Readout Electronics	±0.3 %	N	1	1	1	±0.3 %	±0.3 %	∞
Response Time	±0.8 %	R	$\sqrt{3}$	1	1	±0.5 %	±0.5 %	∞
Integration Time	±2.6 %	R	$\sqrt{3}$	1	1	±1.5 %	±1.5 %	∞
RF Ambient Noise	±3.0 %	R	$\sqrt{3}$	1	1	±1.7 %	±1.7 %	∞
RF Ambient Reflections	±3.0 %	R	$\sqrt{3}$	1	1	±1.7 %	±1.7 %	∞
Probe Positioner	±0.4 %	R	$\sqrt{3}$	1	1	±0.2 %	±0.2 %	∞
Probe Positioning	±2.9 %	R	$\sqrt{3}$	1	1	±1.7 %	±1.7 %	∞
Max. SAR Eval.	±1.0 %	R	$\sqrt{3}$	1	1	±0.6 %	±0.6 %	∞
Test Sample Related								
Device Positioning	±2.9 %	N	1	1	1	±2.9 %	±2.9 %	145
Device Holder	±3.6 %	N	1	1	1	±3.6 %	±3.6 %	5
Power Drift	±5.0 %	R	$\sqrt{3}$	1	1	±2.9 %	±2.9 %	∞
Phantom and Setup								
Phantom Uncertainty	±4.0 %	R	$\sqrt{3}$	1	1	±2.3 %	±2.3 %	∞
Liquid Conductivity (target)	±5.0 %	R	$\sqrt{3}$	0.64	0.43	±1.8 %	±1.2 %	∞
Liquid Conductivity (meas.)	±2.5 %	N	1	0.64	0.43	±1.6 %	±1.1 %	∞
Liquid Permittivity (target)	±5.0 %	R	$\sqrt{3}$	0.6	0.49	±1.7 %	±1.4 %	∞
Liquid Permittivity (meas.)	±2.5 %	N	1	0.6	0.49	±1.5 %	±1.2 %	∞
Combined Std. Uncertainty						±10.9 %	±10.7 %	387
Expanded STD Uncertainty						±21.9 %	±21.4 %	

Table 19.6: Worst-Case uncertainty budget for DASY5 assessed according to IEEE 1528 [1]. The budget is valid for the frequency range 300 MHz - 3 GHz and represents a worst-case analysis. For specific tests and configurations, the uncertainty could be considerable smaller.

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8. Phantom description

Schmid & Partner Engineering AG

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Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 1 245 9700, Fax +41 1 245 9779
info@speag.com, http://www.speag.com

Certificate of Conformity / First Article Inspection

Item	SAM Twin Phantom V4.0
Type No	QD 000 P40 C
Series No	TP-1150 and higher
Manufacturer	SPEAG Zeughausstrasse 43 CH-8004 Zurich Switzerland

Tests

The series production process used allows the limitation to test of first articles. Complete tests were made on the pre-series Type No. QD 000 P40 AA, Serial No. TP-1001 and on the series first article Type No. QD 000 P40 BA, Serial No. TP-1006. Certain parameters have been retested using further series items (called samples) or are tested at each item.

Test	Requirement	Details	Units tested
Dimensions	Compliant with the geometry according to the CAD model.	IT'IS CAD File (*)	First article, Samples
Material thickness of shell	Compliant with the requirements according to the standards	2mm +/- 0.2mm in flat and specific areas of head section	First article, Samples, TP-1314 ff.
Material thickness at ERP	Compliant with the requirements according to the standards	6mm +/- 0.2mm at ERP	First article, All items
Material parameters	Dielectric parameters for required frequencies	300 MHz – 6 GHz: Relative permittivity < 5, Loss tangent < 0.05	Material samples
Material resistivity	The material has been tested to be compatible with the liquids defined in the standards if handled and cleaned according to the instructions. Observe technical Note for material compatibility.	DEGMBE based simulating liquids	Pre-series, First article, Material samples
Sagging	Compliant with the requirements according to the standards. Sagging of the flat section when filled with tissue simulating liquid.	< 1% typical < 0.8% if filled with 155mm of HSL900 and without DUT below	Prototypes, Sample testing

Standards

- [1] CENELEC EN 50361
- [2] IEEE Std 1528-2003
- [3] IEC 62209 Part I
- [4] FCC OET Bulletin 65, Supplement C, Edition 01-01

(*) The IT'IS CAD file is derived from [2] and is also within the tolerance requirements of the shapes of the other documents.

Conformity

Based on the sample tests above, we certify that this item is in compliance with the uncertainty requirements of SAR measurements specified in standards [1] to [4].

Date

07.07.2005

Signature / Stamp

s p e a g

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Doc No: 881 – QD 000 P40 C – F

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9. System Validation from Original equipment supplier

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



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C Service suisse d'étalonnage
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S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **SGS-TW (Auden)**

Certificate No: **D835V2-4d063_May10**

CALIBRATION CERTIFICATE

Object **D835V2 - SN: 4d063**

Calibration procedure(s) **QA CAL-05.v7
Calibration procedure for dipole validation kits**

Calibration date: **May 21, 2010**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	30-Mar-10 (No. 217-01158)	Mar-11
Type-N mismatch combination	SN: 5047.2 / 06327	30-Mar-10 (No. 217-01162)	Mar-11
Reference Probe ES3DV3	SN: 3205	30-Apr-10 (No. ES3-3205_Apr10)	Apr-11
DAE4	SN: 601	02-Mar-10 (No. DAE4-601_Mar10)	Mar-11
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

Calibrated by: **Name: Jeton Kastrati, Function: Laboratory Technician, Signature: [Signature]**

Approved by: **Name: Katja Pokovic, Function: Technical Manager, Signature: [Signature]**

Issued: May 26, 2010

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: D835V2-4d063_May10

Page 1 of 9

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

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Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V5.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	41.7 $\pm$ 6 %	0.91 mho/m $\pm$ 6 %
Head TSL temperature during test	(22.5 $\pm$ 0.2) °C		

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.42 mW / g
SAR normalized	normalized to 1W	9.68 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	9.62 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.58 mW / g
SAR normalized	normalized to 1W	6.32 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	6.29 mW / g $\pm$ 16.5 % (k=2)

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Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.2 ± 6 %	0.98 mho/m ± 6 %
Body TSL temperature during test	(22.0 ± 0.2) °C	---	---

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.53 mW / g
SAR normalized	normalized to 1W	10.1 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	10.0 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.68 mW / g
SAR normalized	normalized to 1W	6.64 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	6.59 mW / g ± 16.5 % (k=2)

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Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.6 Ω - 0.6 $\mu\Omega$
Return Loss	- 31.7 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.9 Ω - 2.8 $\mu\Omega$
Return Loss	- 28.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.392 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 27, 2006

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DASY5 Validation Report for Head TSL

Date/Time: 21.05.2010 11:22:13

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d063

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL900

Medium parameters used: $f = 835$ MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 41.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.03, 6.03, 6.03); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

Pin=250 mW /d=15mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement

grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.5 V/m; Power Drift = 0.00219 dB

Peak SAR (extrapolated) = 3.61 W/kg

SAR(1 g) = 2.42 mW/g; SAR(10 g) = 1.58 mW/g

Maximum value of SAR (measured) = 2.83 mW/g



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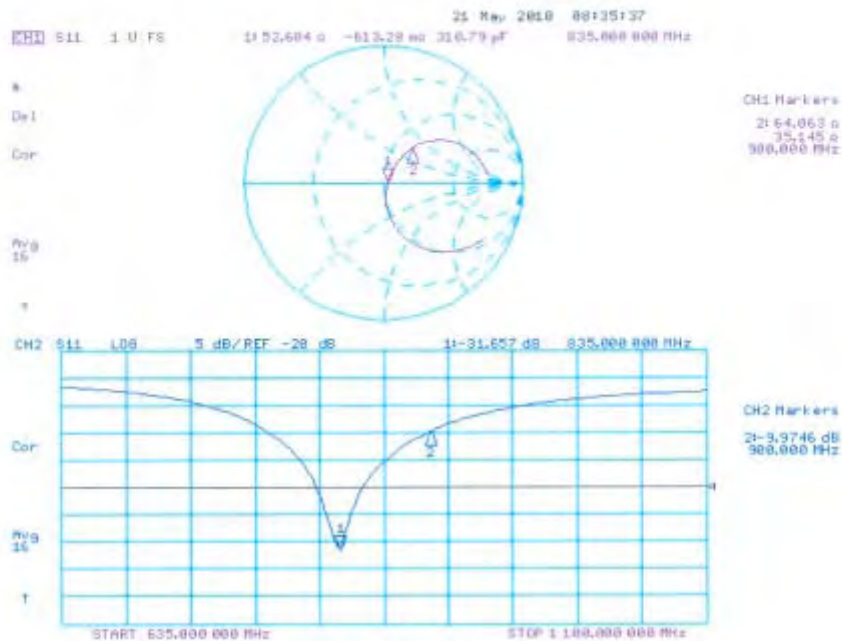
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Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body

Date/Time: 20.05.2010 10:45:06

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d063

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: MSL900

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.98 \text{ mho/m}$; $\epsilon_r = 54.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.86, 5.86, 5.86); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

Pin250 mW/d=15mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement

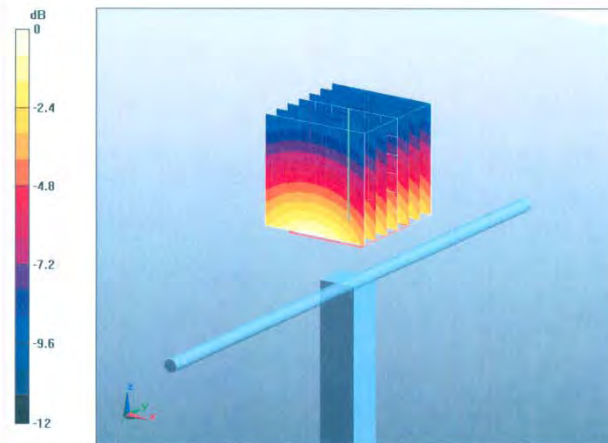
grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 56.5 V/m; Power Drift = 0.013 dB

Peak SAR (extrapolated) = 3.71 W/kg

SAR(1 g) = 2.53 mW/g; SAR(10 g) = 1.66 mW/g

Maximum value of SAR (measured) = 2.94 mW/g



0 dB = 2.94mW/g

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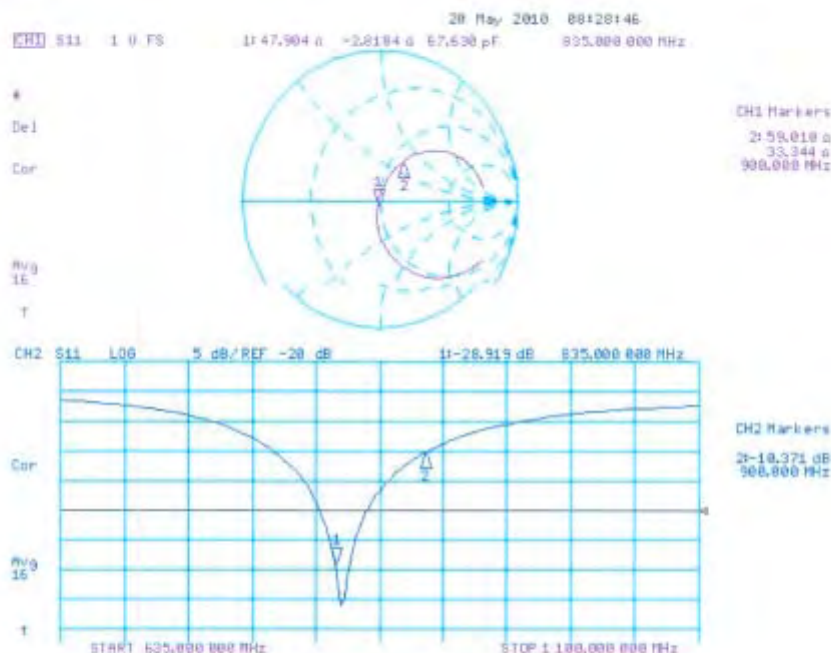
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Impedance Measurement Plot for Pad: T01



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 The Swiss Accreditation Service is one of the signatories to the EA
 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **SGS-TW (Auden)**

Certificate No: **D1900V2-5d027_Apr10**

CALIBRATION CERTIFICATE

Object **D1900V2 - SN: 5d027**

Calibration procedure(s) **QA CAL-05.v7**
 Calibration procedure for dipole validation kits

Calibration date: **April 28, 2010**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	30-Mar-10 (No. 217-01158)	Mar-11
Type-N mismatch combination	SN: 5047.2 / 06327	30-Mar-10 (No. 217-01162)	Mar-11
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	02-Mar-10 (No. DAE4-601_Mar10)	Mar-11
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

Calibrated by: **Dimce Iliev** Laboratory Technician

Approved by: **Katja Pokovic** Technical Manager

Issued: April 29, 2010

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: D1900V2-5d027_Apr10

Page 1 of 9

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Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

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Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V5.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	40.5 $\pm$ 6 %	1.41 mho/m $\pm$ 6 %
Head TSL temperature during test	(21.5 $\pm$ 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.91 mW / g
SAR normalized	normalized to 1W	39.6 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	39.6 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.17 mW / g
SAR normalized	normalized to 1W	20.7 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	20.7 mW / g $\pm$ 16.5 % (k=2)

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Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.8 ± 6 %	1.53 mho/m ± 6 %
Body TSL temperature during test	(21.5 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	10.1 mW / g
SAR normalized	normalized to 1W	40.4 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	40.5 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.36 mW / g
SAR normalized	normalized to 1W	21.4 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	21.5 mW / g ± 16.5 % (k=2)

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Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	$50.5 \Omega + 5.0 j\Omega$
Return Loss	- 26.0 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	$46.8 \Omega + 6.7 j\Omega$
Return Loss	- 22.3 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.196 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	December 17, 2002

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DASY5 Validation Report for Head TSL

Date/Time: 22.04.2010 15:17:55

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d027

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL U11 BB

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.41 \text{ mho/m}$; $\epsilon_r = 40.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.09, 5.09, 5.09); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 57

Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement

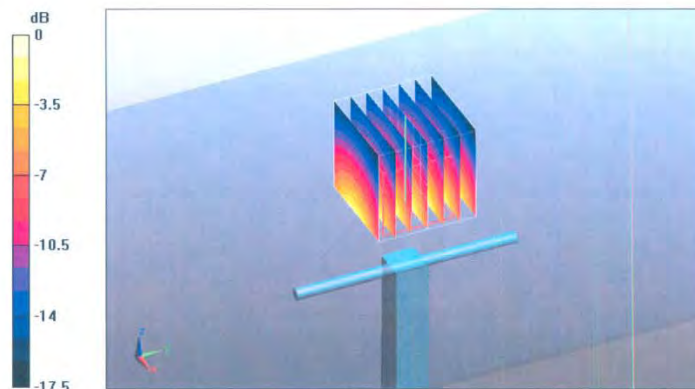
grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.9 V/m; Power Drift = 0.047 dB

Peak SAR (extrapolated) = 18.1 W/kg

SAR(1 g) = 9.91 mW/g; SAR(10 g) = 5.17 mW/g

Maximum value of SAR (measured) = 12.4 mW/g



0 dB = 12.4mW/g

Certificate No: D1900V2-5d027_Apr10

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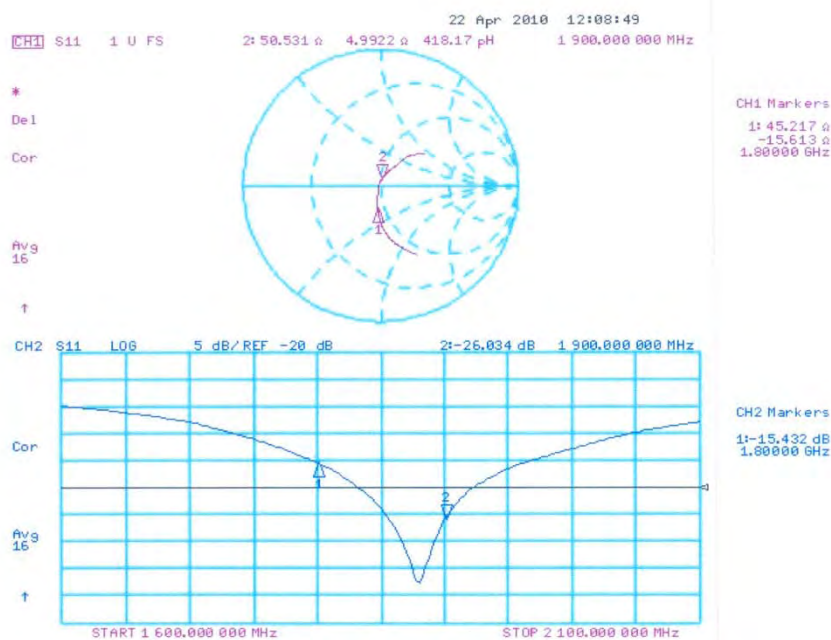
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Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body

Date/Time: 28.04.2010 15:11:22

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d027

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: MSL U11 BB

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.53 \text{ mho/m}$; $\epsilon_r = 54.9$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.59, 4.59, 4.59); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 57

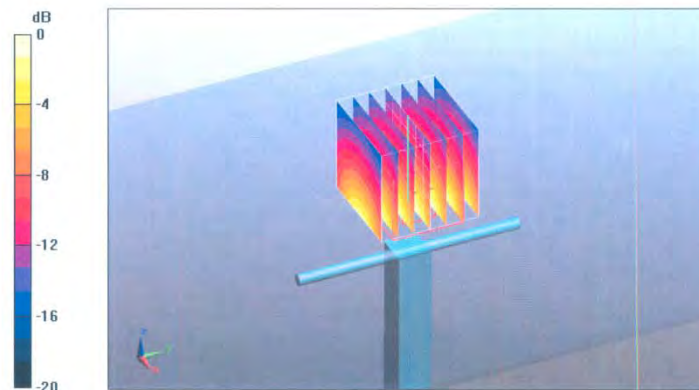
Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement
grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.2 V/m; Power Drift = -0.014 dB

Peak SAR (extrapolated) = 17.1 W/kg

SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.36 mW/g

Maximum value of SAR (measured) = 12.7 mW/g



0 dB = 12.7mW/g

Certificate No: D1900V2-5d027_Apr10

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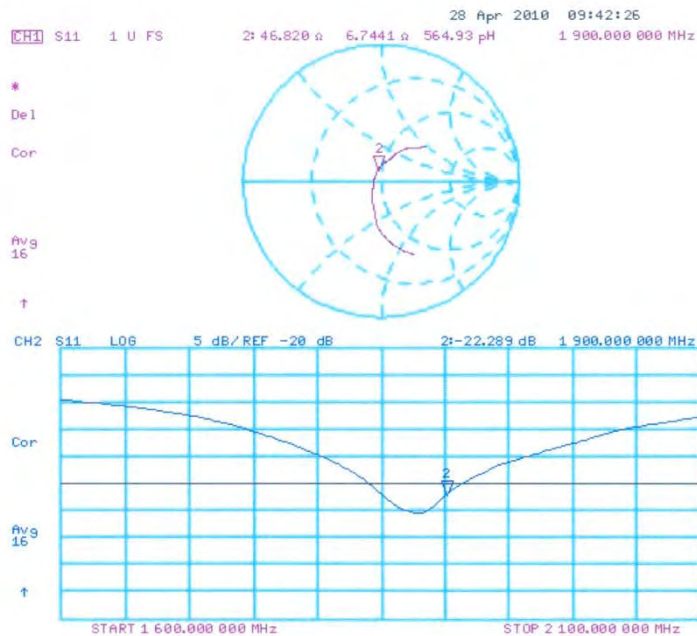
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Impedance Measurement Plot for Body TSL



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Accreditation No.: **SCS 108**

Client **SGS-TW (Auden)**

Certificate No: **D2450V2-727_Apr10**

CALIBRATION CERTIFICATE

Object **D2450V2 - SN: 727**

Calibration procedure(s) **QA CAL-05.v7**
Calibration procedure for dipole validation kits

Calibration date: **April 29, 2010**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	30-Mar-10 (No. 217-01158)	Mar-11
Type-N mismatch combination	SN: 5047.2 / 06327	30-Mar-10 (No. 217-01162)	Mar-11
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	02-Mar-10 (No. DAE4-601_Mar10)	Mar-11
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

Calibrated by:	Name Jeton Kastrati	Function Laboratory Technician	Signature
Approved by:	Name Katja Pokovic	Technical Manager	

Issued: April 29, 2010

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: D2450V2-727_Apr10

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Glossary:

TSL tissue simulating liquid
ConvF sensitivity in TSL / NORM x,y,z
N/A not applicable or not measured

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

Certificate No: D2450V2-727_Apr10

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Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V5.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	39.8 $\pm$ 6 %	1.78 mho/m $\pm$ 6 %
Head TSL temperature during test	(21.5 $\pm$ 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.2 mW / g
SAR normalized	normalized to 1W	52.8 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	53.2 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.22 mW / g
SAR normalized	normalized to 1W	24.9 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	25.0 mW / g $\pm$ 16.5 % (k=2)

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Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.2 ± 6 %	2.01 mho/m ± 6 %
Body TSL temperature during test	(22.5 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.4 mW / g
SAR normalized	normalized to 1W	53.6 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	53.2 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.23 mW / g
SAR normalized	normalized to 1W	24.9 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	24.9 mW / g ± 16.5 % (k=2)

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Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	$53.3 \Omega + 1.7 j\Omega$
Return Loss	- 28.9 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	$50.3 \Omega + 3.6 j\Omega$
Return Loss	- 29.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.150 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	January 09, 2003

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DASY5 Validation Report for Head TSL

Date/Time: 22.04.2010 16:30:51

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:727

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL U11 BB

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.78$ mho/m; $\epsilon_r = 39.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.53, 4.53, 4.53); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 57

Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement

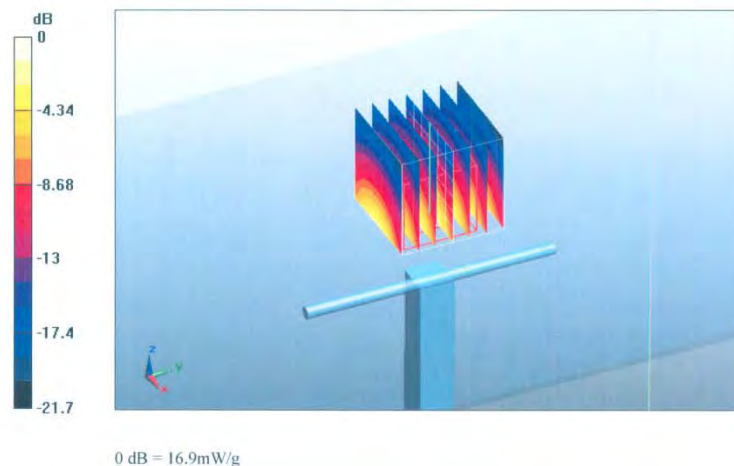
grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 101.0 V/m; Power Drift = 0.064 dB

Peak SAR (extrapolated) = 26.8 W/kg

SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.22 mW/g

Maximum value of SAR (measured) = 16.9 mW/g



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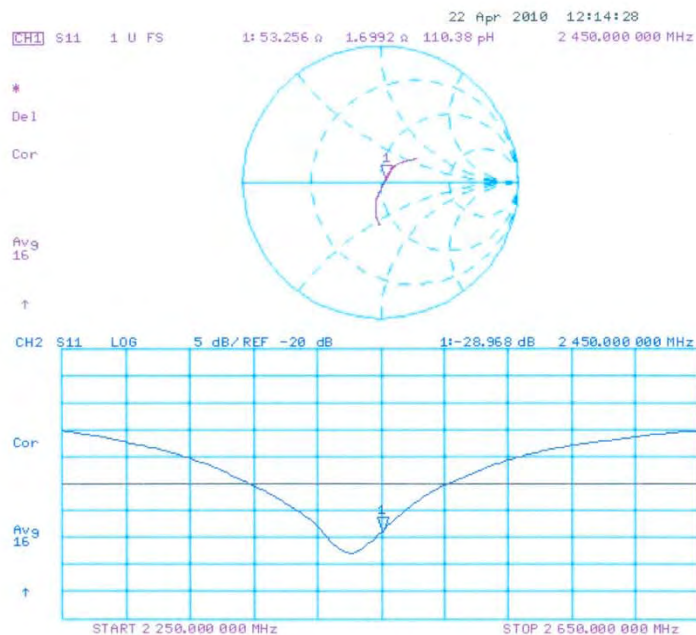
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DASY5 Validation Report for Body

Date/Time: 29.04.2010 14:57:43

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:727

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: MSL U11 BB

Medium parameters used: $f = 2450$ MHz; $\sigma = 2$ mho/m; $\epsilon_r = 54.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.31, 4.31, 4.31); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 57

Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement

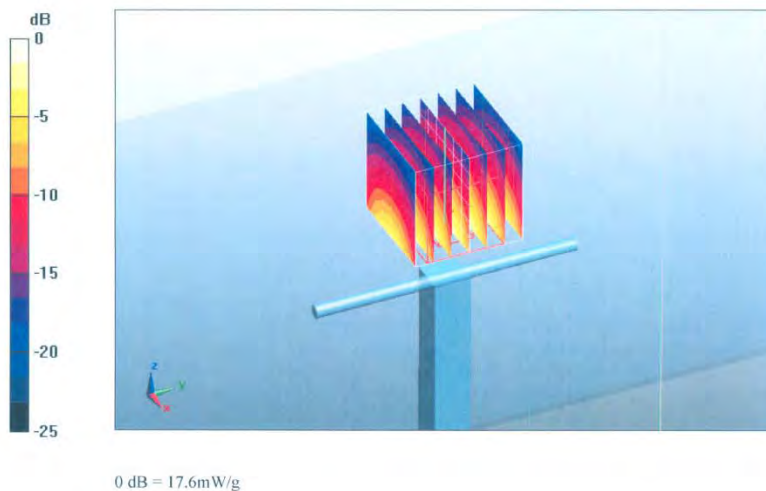
grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.1 V/m; Power Drift = 0.00929 dB

Peak SAR (extrapolated) = 27.7 W/kg

SAR(1 g) = 13.4 mW/g; SAR(10 g) = 6.23 mW/g

Maximum value of SAR (measured) = 17.6 mW/g



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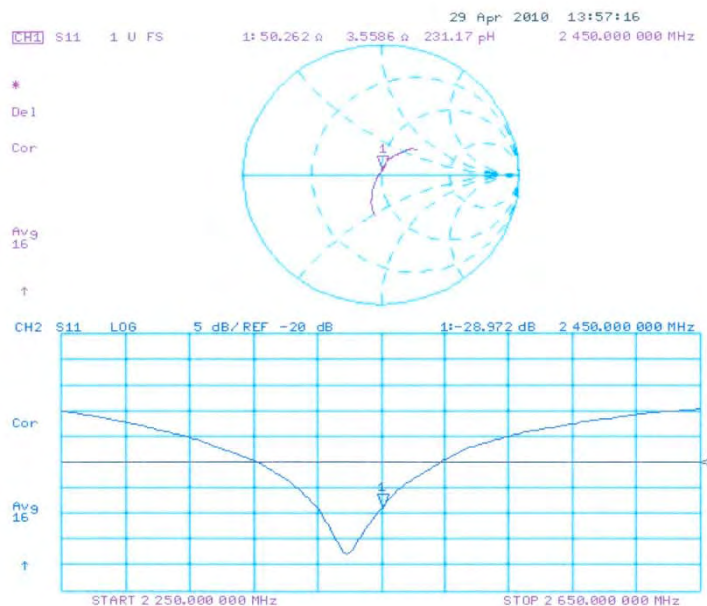
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Impedance Measurement Plot for Body TSL

End of 1st part of report

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