SAR EVALUATION REPORT

Report No. : 24DE0026-HO-5

Applicant	:	**Sony Corp.**
Type of Equipment	:	**Notebook Personal Computer**
Model No.	:	**PCG-4A1L**
FCC ID	:	**AK8PCG4A1L**
Test standard	:	**FCC47CFR 2.1093** **FCC OET Bulletin 65, Supplement C**
Test Result	:	**Complied**
Max SAR Measured	:	**0.0491W/kg(Body, 2462MHz)**

1. This test report shall not be reproduced except full or partial, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with above regulation. We hereby certify that the data contain a true representation of the SAR profile.
4. The test results in this test report are traceable to the national or international standards.

Date of test : December 08 and 09, 2003

Tested by : M. Ikuta

Miyo Ikuta
Head Office EMC Lab.

Approved by : T. Maeno

Tetsuo Maeno
Site Manager of Head Office EMC Lab.

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SECTION 1 : Client information

Company Name	:	Sony Corp.
Brand Name	:	SONY
Address	:	6-7-35, Kita-Shinagawa, Shinagawa-ku, Tokyo 141-0001, Japan
Telephone Number	:	+81-3-5795-8033
Facsimile Number	:	+81-3-5795-8346
Contact Person	:	Kaoru Ichimura

SECTION 2 : Equipment under test (E.U.T.)

2.1 Identification of E.U.T.

Applicant	:	Sony Corp.
Type of Equipment	:	Notebook Personal Computer
Model No.	:	PCG-4A1L
Serial No.	:	1200009
Country of Manufacture	:	JAPAN
Receipt Date of Sample	:	November 18 ,2003
Condition of EUT	:	Engineering prototype
Battery option	:	Only one model with EUT
Category Identified	:	Portable device

2.2 Product Description

Tx Frequency	:	2412MHz~2462MHz
Modulation	:	OFDM , DSSS
Rating	:	DC 3.1V ~ 3.46 V
Max.Output Power Tested	:	17.3 dBm Peak Conducted
Antenna Type	:	lambda/4-Monopole Antenna
Position of Antenna	:	See photograph of following

SECTION 3 : Requirements for compliance testing defined by the FCC

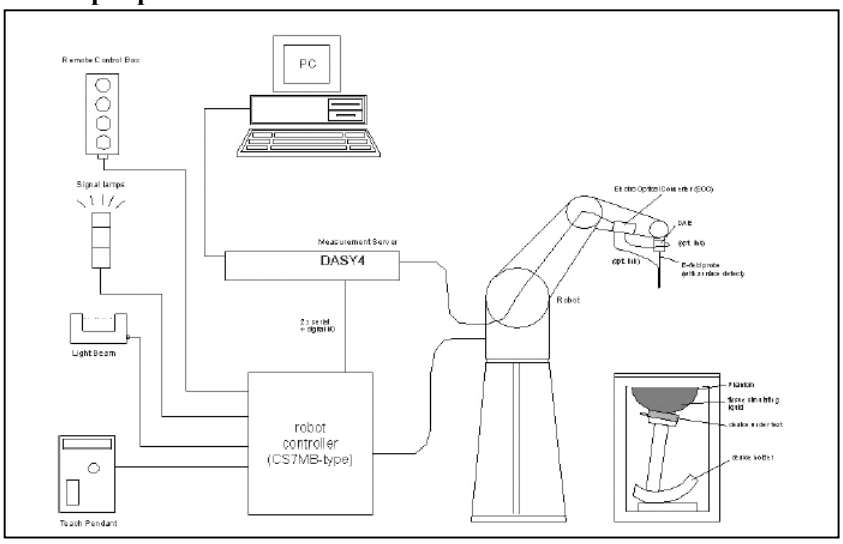
The US Federal Communications Commission has released the report and order “Guidelines for Evaluating the Environmental Effects of RF Radiation", ET Docket No. 93-62 in August 1996. The order requires routine SAR evaluation prior to equipment authorization of portable transmitter devices, including portable telephones. For consumer products, the applicable limit is 1.6 mW/g for an uncontrolled environment and 8.0 mW/g for an occupational/controlled environment as recommended by the ANSI/IEEE standard C95.1-1992. According to the Supplement C of OET Bulletin 65 “Evaluating Compliance with FCC Guide-lines for Human Exposure to Radio frequency Electromagnetic Fields", released on Jun 29, 2001 by the FCC, the device should be evaluated at maximum output power (radiated from the antenna) under “worst-case” conditions for normal or intended use, incorporating normal antenna operating positions, device peak performance frequencies and positions for maximum RF energy coupling.

1 Specific Absorption Rate (SAR) is a measure of the rate of energy absorption due to exposure to an RF transmitting source (wireless portable device).
2 IEEE/ANSI Std. C95.1-1992 limits are used to determine compliance with FCC ET Docket 93-62.

SECTION 4 : Dosimetry assessment setup

These measurements were performed with the automated near-field scanning system DASY4 from Schmid & Partner Engineering AG (SPEAG). The system is based on a high precision robot (working range greater than 0.9 m), which positions the probes with a positional repeatability of better than +/- 0.02 mm. Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines to the data acquisition unit. The SAR measurements were conducted with the dosimetry probe ET3DV6, SN: 1685 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe has been calibrated according to the procedure described in [2] with accuracy of better than +/-10%. The spherical isotropy was evaluated with the procedure described in [3] and found to be better than +/-0.25 dB. The phantom used was the SAM Twin Phantom as described in FCC supplement C, IEE P1528 and CENELEC EN50361.

4.1 Configuration and peripherals



The DASY4 system for performing compliance tests consist of the following items:

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

2. 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.

3. A data acquisition electronic (DAE), which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

4. 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.

5. 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.

6. A probe alignment unit which improves the (absolute) accuracy of the probe positioning.

7. A computer operating Windows 2000.

8. DASY4 software.

9. Remote control with teaches pendant and additional circuitry for robot safety such as warning lamps, etc.

10. The SAM twin phantom enabling testing left-hand and right-hand usage.

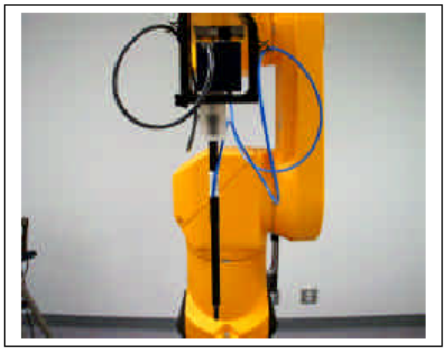
11. The device holder for handheld mobile phones.

12. Tissue simulating liquid mixed according to the given recipes.

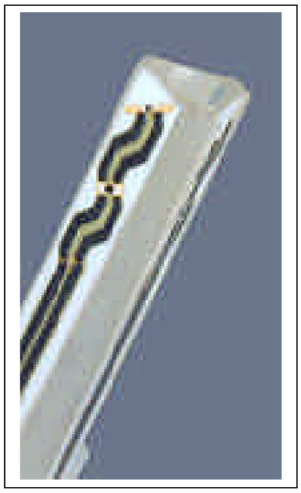
13. Validation dipole kits allowing to validate the proper functioning of the system.

4.2 System components

4.2.1 ET3DV6 Probe Specification



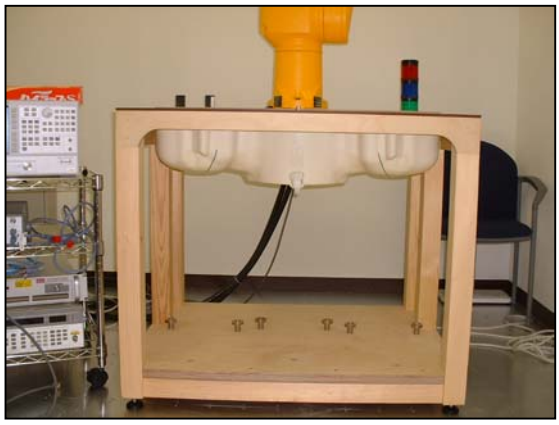
Construction:
Symmetrical design with triangular core
Built-in optical fiber for surface detection System
Built-in shielding against static charges
PEEK enclosure material (resistant to organic solvents, e.g., glycol ether)
Calibration:
Basic Broad Band calibration in air from 10 MHz to 2.5 GHz
In brain and muscle simulating tissue at
Frequencies of 450 MHz, 900 MHz, 1.8 GHz and 2.45GHz (accuracy +/-8%)
Frequency:
10 MHz to 3GHz; Linearity: +/-0.2 dB
(30 MHz to 3 GHz)
Directivity:
+/-0.2 dB in brain tissue (rotation around probe axis)
+/-0.4 dB in brain tissue (rotation normal probe axis)
Dynamic Range:
5 mW/g to > 100 mW/g;Linearity: +/-0.2 dB
Optical Surface Detection:
+/-0.2 mm repeatability in air and clear liquids over diffuse reflecting surfaces.
Dimensions:
Overall length: 330 mm (Tip: 16 mm)
Tip length: 16 mm
Body diameter: 12 mm (Body: 12 mm)
Tip diameter: 6.8 mm
Distance from probe tip to dipole centers: 2.7 mm
Application:
General dosimetric up to 3 GHz
Compliance tests of mobile phones
Fast automatic scanning in arbitrary phantoms



Inside view of ET3DV6 E-field Probe

4.2.2 SAM Phantom

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:
(H x L x W): 810 x 1000 x 500 mm



SAM Phantom

4.2.3 Device Holder for Transmitters

In combination with the SAM Twin Phantom V4.0, the Mounting Device enables the rotation of the mounted transmitter
in spherical coordinates whereby the rotation points is the ear opening. The devices can be easily, accurately, and repeatedly positioned according to the FCC and CENELEC specifications. The device holder can be locked at different phantom locations (left head, right head,flat phantom).
* Note: A simulating human hand is not used due to the complex anatomical and geometrical structure of the hand that may produced infinite number of configurations.
To produce the worst-case condition (the hand absorbs antenna output power), the hand is omitted during the tests.

Device holder couldn't be used at this SAR measurement.

Device Holder

SECTION 5 : Test system specifications

Robot RX60L

Number of Axes	:	6
Payload	:	1.6 kg
Reach	:	800mm
Repeatability	:	+/-0.025mm
Control Unit	:	CS7M
Programming Language	:	V+
Manuafacture	:	Stäubli Unimation Corp. Robot Model: RX60

DASY4 Measurement sever

Features	:	166MHz low power Pentium MMX 32MB chipdisk and 64MB RAM Serial link to DAE (with watchdog supervision) 16 Bit A/D converter for surface detection system Two serial links to robot (one for real-time communication which is supervised by watchdog) Ethernet link to PC (with watchdog supervision) Emergency stop relay for robot safety chainTwo expansion slots for future applications
Manufacture	:	Schimid & Partner Engineering AG

Data Acquisition Electronic (DAE)

Features	:	Signal amplifier, multiplexer, A/D converter and control logic Serial optical link for communication with DASY4 embedded system (fully remote controlled) 2 step probe touch detector for mechanical surface detection and emergency robot stop (not in -R version)
Measurement Range	:	1 µV to > 200 mV (16 bit resolution and two range settings: 4mV, 400mV)
Input Offset voltage	:	< 1 µV (with auto zero)
Input Resistance	:	200 MΩ
Battery Power	:	> 10 h of operation (with two 9 V accus)
Dimension	:	60 x 60 x 68 mm
Manufacture	:	Schimid & Partner Engineering AG

Software

Item	:	Dosimetric Assesment System DASY4
Type No.	:	SD 000 401A, SD 000 402A
Software version No.	:	4.1
Manufacture / Origin	:	Schimid & Partner Engineering AG

E-Field Probe

Model	:	ET3DV6
Serial No.	:	1685
Construction	:	Triangular core fiber optic detection system
Frequency	:	10 MHz to 6 GHz
Linearity	:	+/-0.2 dB (30 MHz to 3 GHz)
Manufacture	:	Schimid & Partner Engineering AG

Phantom

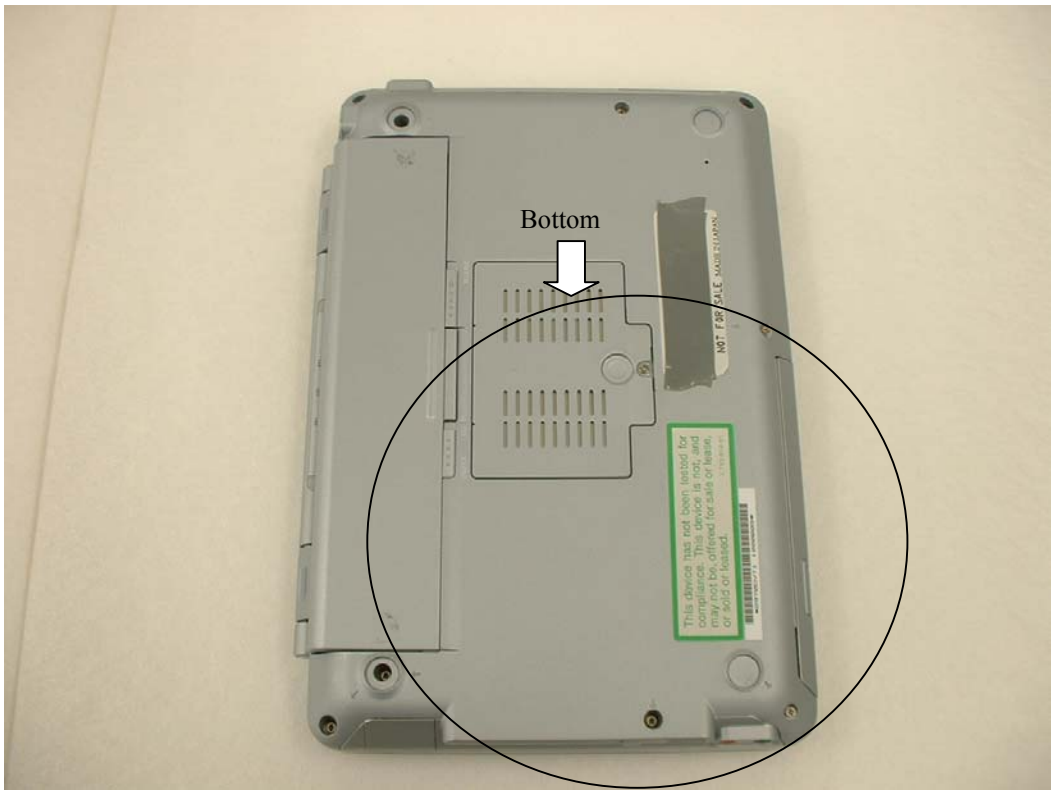
Type	:	SAM Twin Phantom V4.0
Shell Material	:	Fiberglass
Thickness	:	2.0 +/-0.2 mm
Volume	:	Approx. 20 liters
Manufacture	:	Schimid & Partner Engineering AG

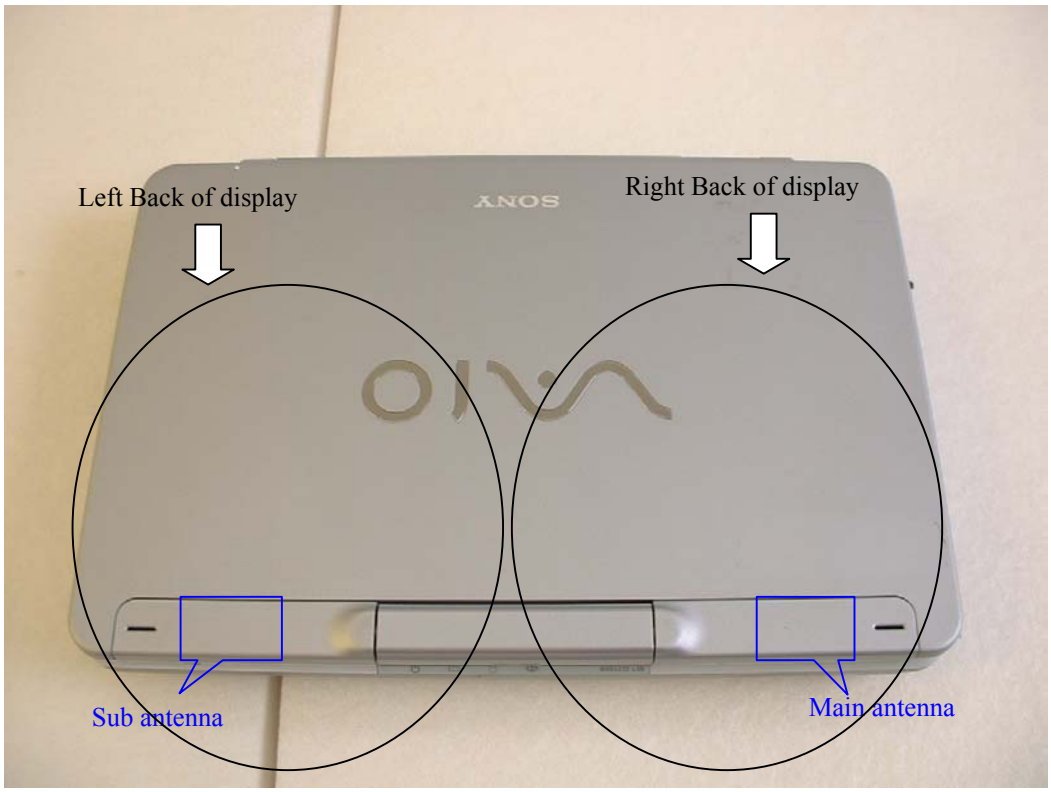
SECTION 6 : Test setup of EUT

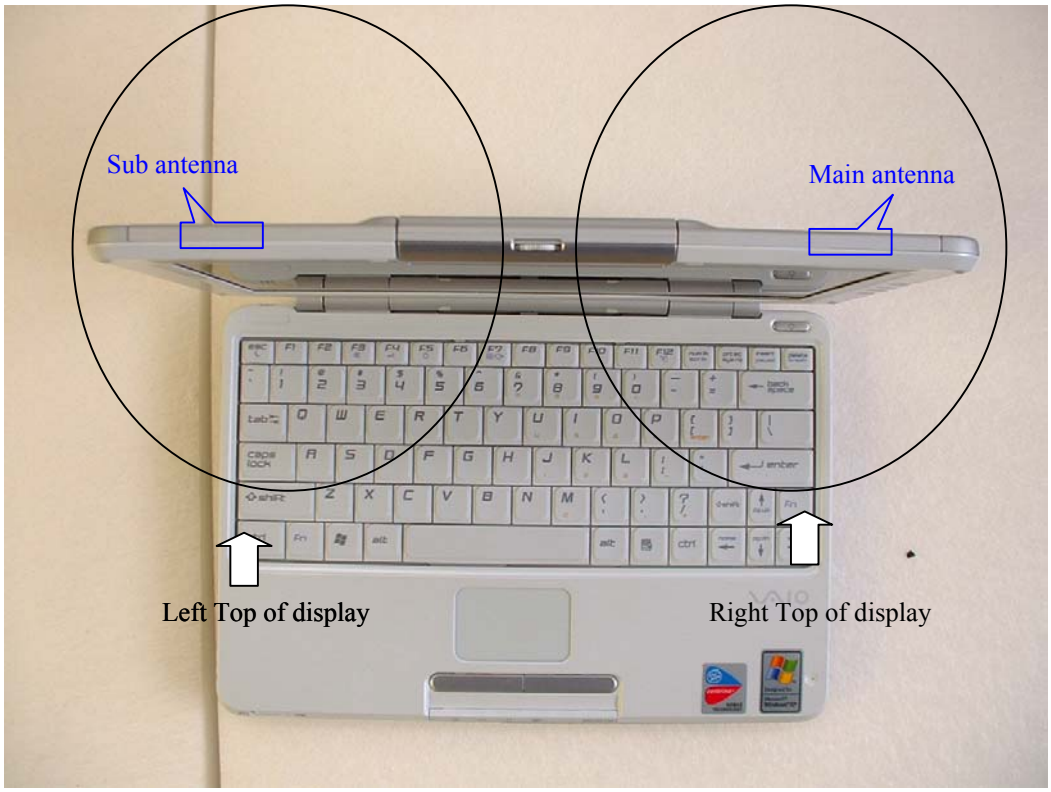
6.1 Photographs of test setup

When users operate or carry this EUT, it could be considered to touch or get close to their bodies. And even if thiis EUT is closed LCD, it can be transmitted . In order to assume this situation, we performed the test at the following positions. Please refer to "APPENDIX 1" for more details.

1. Bottom	: The test was performed in touch with bottom of EUT to the flat phantom.
2.Right Back of display	: The test was performed in distanced 15mm with right back of display to the flat phantom.
3.Left Back of display	: The test was performed in distanced 15mm with left back of display to the flat phantom.
4.Right Top of display	: The test was performed in distanced 15mm with right top of display to the flat phantom.
5.Left Top of display	: The test was performed in distanced 15mm with left top of display to the flat phantom.




Left Back of display
Right Back of display
Sub antenna
Main antenna


Sub antenna
Main antenna
Left Top of display
Right Top of display

6.2 EUT Tune-up procedure

We determined following conditions ;

When the modulation was DSSS and OFDM
Transmitter was continuous mode.
Crest Factor = 1
Frequency channel were low , middle and high (2412MHz ,2437MHz and 2462MHz)

SECTION 7 : Measurement uncertainty

The uncertainty budget has been determined for the DASY4 measurement system according to the NIS81 [13] and the NIST1297 [6] documents and is given in the following Table.

Error Description	Uncertainty value ± %	Probability distribution	divisor	(ci)1 1g	Standard Uncertainty (1g)	vi or veff
Measurement System						
Probe calibration	±4.8	Normal	1	1	±4.8	∞
Axial isotropy of the probe	±4.7	Rectangular	√3	$(1-c_p)^{1/2}$	±1.9	∞
Spherical isotropy of the probe	±9.6	Rectangular	√3	$(c_p)^{1/2}$	±3.9	∞
Boundary effects	±1.0	Rectangular	√3	1	±0.6	∞
Probe linearity	±4.7	Rectangular	√3	1	±2.7	∞
Detection limit	±1.0	Rectangular	√3	1	±0.6	∞
Readout electronics	±1.0	Normal	1	1	±1.0	∞
Response time	±0.8	Rectangular	√3	1	±0.5	∞
Integration time	±2.6	Rectangular	√3	1	±1.5	∞
RF ambient conditions	±3.0	Rectangular	√3	1	±1.7	∞
Mech. constraints of robot	±0.4	Rectangular	√3	1	±0.2	∞
Probe positioning	±2.9	Rectangular	√3	1	±1.7	∞
Extrap. and integration	±1.0	Rectangular	√3	1	±0.6	∞
Test Sample Related						
Device positioning	±2.9	Rectangular	√3	1	±2.9	29
Device holder uncertainty	±3.6	Rectangular	√3	1	±3.6	5
Power drift	±5.0	Rectangular	√3	1	±2.9	∞
Phantom and Setup						
Phantom uncertainty	±4.0	Rectangular	√3	1	±2.3	∞
Liquid conductivity (target)	±5.0	Rectangular	√3	0.64	±1.8	∞
Liquid conductivity (meas.)	±5.0	Rectangular	√3	0.64	±3.7	∞
Liquid permittivity (target)	±5.0	Rectangular	√3	0.6	±3.5	∞
Liquid permittivity (meas.)	±5.0	Rectangular	√3	0.6	±1.7	∞
Combined Standard Uncertainty					**±10.37**	
Expanded Uncertainty (k=2)					**±20.7**	

SECTION 8 : Simulated tissue liquid parameter

8.1 Simulated Tissue Liquid Parameter confirmation

The dielectric parameters were checked prior to assessment using the HP85070D dielectric probe kit.
The dielectric parameters measurement are reported in each correspondent section.

8.1.1 Head 2450MHz

8.1.1 Head 2450MHz

Type of liquid : **Head 2450 MHz**
Ambient temperature (deg.c.) : **24.0(December 08) / 24.0(December 09)**
Relative Humidity (%) : **33(December 08) / 35(December y 09)**
Lquid depth (cm) : **15.9**

Measured By : Miyo Ikuta

DIELECTRIC PARAMETERS MEASUREMENT RESULTS							
Date	Liquid Temp [deg.c]		Parameters	Target Value	Measured	Deviation [%]	Limit [%]
	Before	After					
December 08	23.7	23.7	Relative Permittivity εr	39.2	38.0	-3.1	+/-5
			Coductivity σ [mho/m]	1.80	1.87	3.9	+/-5
December 09	23.6	23.6	Relative Permittivity εr	39.2	38.2	-2.6	+/-5
			Coductivity σ [mho/m]	1.80	1.84	2.2	+/-5

8.1.2 Muscle 2450MHz

Type of liquid : **Muscle 2450 MHz**
Ambient temperature (deg.c.) : **24.0(December 08) / 24.0(December 09)**
Relative Humidity (%) : **32(December 08) / 35(December y 09)**
Liquid depth (cm) : **15.9**

Measured By : Miyo Ikuta

DIELECTRIC PARAMETERS MEASUREMENT RESULTS							
Date	Liquid Temp [deg.c]		Parameters	Target Value	Measured	Deviation [%]	Limit [%]
	Before	After					
December 08	23.5	23.5	Relative Permittivity εr	52.7	50.7	-3.8	+/-10
			Coductivity σ [mho/m]	1.95	1.96	0.5	+/-5
December 09	23.8	23.8	Relative Permittivity εr	52.7	50.2	-4.7	+/-10
			Coductivity σ [mho/m]	1.95	1.96	0.5	+/-5

8.2 Simulated Tissues

Ingredient	MiXTURE(%)	
	Head 2450MHz	Muscle 2450MHz
Water	45.0	69.83
DGMBE	55.0	30.17

Note:DGMBE(Diethylenglycol-monobuthyl ether)

SECTION 9 : System validation data

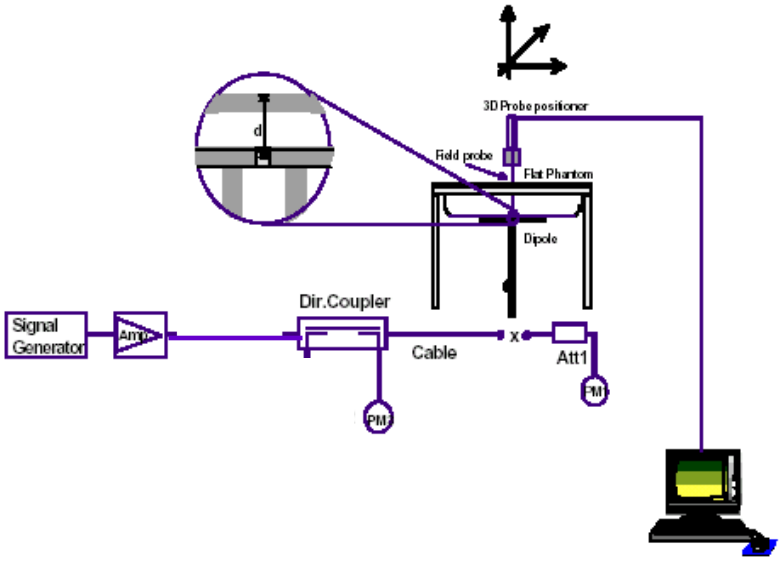
Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of +/-10%. The validation results are tabulated below. Please refer to APPENDIX 3.

Type of liquid	:	**HEAD 2450MHz**
Frequency	:	**2450MHz**
Dipole	:	**D2450V2 SN:713**
Liquid depth (cm)	:	**15.9**
Ambient temperature (deg.c.)	:	**24.0(December 08) / 24.0(December 09)**
Relative Humidity (%)	:	**32(December 08) / 35(December 09)**
Power	:	**250mW**

Measured By : Miyo Ikuta

SYSTEM PERFORMANCE CHECK										
Date	Liquid (HEAD 2450MHz)						System dipole validation target & measured			
	Liquid Temp [deg.c.]		Relative Permittivity εr		Conductivity σ [mho/m]		SAR 1g [W/kg]		Deviation [%]	Limit [%]
	Before	After	Target	Measured	Target	Measured	Target	Measured		
December 08	23.2	23.3	39.2	38.0	1.80	1.87	13.1	13.8	5.3	+/-10
December 09	23.3	23.2	39.2	38.2	1.80	1.84	13.1	13.2	0.8	+/-10

Note: Please refer to Attachment for the result representation in plot format



Test system for the system performance check setup diagram

2450MHz System performance check setup

SECTION 10 : Evaluation procedure

The evaluation was performed with the following procedure:

Step 1: Measurement of the SAR value at a fixed location above the ear point or central position of flat phantom was used as a reference value for assessing the power drop.

Step 2: The SAR distribution at the exposed side of head or body position was measured at a distance of each device from the inner surface of the shell. The area covered the entire dimension of the EUT(180 x 260) and the horizontal grid spacing was 20 mm x 20 mm. Based on these data, the area of the maximum absorption was determined by spline interpolation.

Step 3: Around this point found in the Step 2 (area scan) , a volume of 32 mm x 32 mm x 30 mm was assessed by measuring 5 x5 x 7 points. And for any secondary peaks found in the Step2 which are within 2dB of maximum peak and not with this Step3 (Zoom scan) is repeated. On the basis of this data set, the spatial peak SAR value was evaluated under the following procedure:

1. The data at the surface were extrapolated, since the center of the dipoles is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.3 mm. The extrapolation was based on a least square algorithm [4]. A polynomial of the fourth order was calculated through the points in z-axes.
This polynomial was then used to evaluate the points between the surface and the probe tip.

2. The maximum interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed by the 3D-Spline interpolation algorithm. The 3D-Spline is composed of three one-dimensional splines with the “Not a knot"-condition (in x, y and z-directions) [4], [5]. The volume was integrated with the trapezoidal-algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average.

3. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

Step 4: Re-measurement of the SAR value at the same location as in Step 1. It is measured SAR-drift(the difference between the SAR measured in Step 4 and Step 1)

SECTION 11 : Exposure limit

(A) Limits for Occupational/Controlled Exposure (W/kg)

Spatial Average (averaged over the whole body)	Spatial Peak (averaged over any 1g of tissue)	Spatial Peak (hands/wrists/feet/ankles averaged over 10g)
0.4	8.0	20.0

(B) Limits for General population/Uncontrolled Exposure (W/kg)

Spatial Average (averaged over the whole body	Spatial Peak (averaged over any 1g of tissue)	Spatial Peak (hands/wrists/feet/ankles averaged over 10g)
0.08	1.6	4.0

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

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

NOTE:GENERAL POPULATION/UNCONTROLLED EXPOSURE
SPATIAL PEAK(averaged over any 1g of tissue) LIMIT
1.6 W/kg

SECTION 12 : SAR Measurement results

12.1 Measurement results of main antenna (Right antenna)

12.1.1 Conducted power measurement results

Date : December 08 ,2003
Measured By : Hiroka Umeyama

CONDUCTED POWER MEASUREMENT RESULTS OF MAIN ANTENNA

Modulation	Frequency [MHz]	Before Reading [dBm]	Before Att. [dB]	Before Cable loss [dB]	Before Result [dBm]	Before Convert [mW]	After Reading [dBm]	After Att. [dB]	After Cable loss [dB]	After Result [dBm]	After Convert [mW]	Deviation [%]	Limit [%]
DSSS	2412	-4.5	20.5	1.3	17.3	53.7	-4.5	20.5	1.3	17.3	53.7	0.0	+/-5
	2437	-4.7	20.5	1.2	17.0	50.1	-4.7	20.5	1.2	17.0	50.1	0.0	+/-5
	2462	-5.2	20.5	1.3	16.6	45.7	-5.2	20.5	1.3	16.6	45.7	0.0	+/-5
OFDM (QPSK)	2412	-8.6	20.5	3.4	15.3	33.9	-8.7	20.5	3.4	15.2	33.1	-2.3	+/-5
	2437	-8.9	20.5	3.3	14.9	30.9	-9.0	20.5	3.3	14.8	30.2	-2.3	+/-5
	2462	-9.4	20.5	3.4	14.5	28.2	-9.5	20.5	3.4	14.4	27.5	-2.3	+/-5
OFDM (64QAM)	2412	-7.0	20.5	3.4	16.9	49.0	-7.2	20.5	3.4	16.7	46.8	-4.5	+/-5
	2437	-7.4	20.5	3.3	16.4	43.7	-7.5	20.5	3.3	16.3	42.7	-2.3	+/-5
	2462	-7.6	20.5	3.4	16.3	42.7	-7.6	20.5	3.4	16.3	42.7	0.0	+/-5

12.1.2 Body 2450MHz SAR of main antenna

Liquid Depth (cm)	:	**15.9**	Model	:	**PCG-4A1L**
Parameters	:	ε_r =**50.7**, σ =**1.96**	Serial No.	:	**1200009**
Ambient Temperature[deg.c.]	:	**24.8**	Modulation	:	**DSSS,OFDM**
Relative Humidity (%)	:	**32**	Crest factor	:	**1**

Date : December 08 ,2003
Measured By : Miyo Ikuta

BODY SAR MEASUREMENT RESULTSOF MAIN ANTENNA

Frequency Channel	Frequency [MHz]	Modulation	Phantom Section	EUT Set-up Conditions Antenna	Position	Separation [mm]	Liquid Temp.[deg.c] Before	Liquid Temp.[deg.c] After	SAR(1g) [W/kg] Maximum value of multi-peak)
Mid	2437	DSSS	Flat	Fixed	Bottom	0	23.0	23.0	**0.0207**
Mid	2437	DSSS	Flat	Fixed	Right Top of display	15	23.1	23.1	**0.0329**
Mid	2437	DSSS	Flat	Fixed	Right Back of display	15	23.1	23.0	**0.0469**
Low	2412	DSSS	Flat	Fixed	Right Back of display	15	22.7	22.7	**0.0442**
High	2462	DSSS	Flat	Fixed	Right Back of display	15	22.8	22.8	**0.0402**
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population							**Body SAR: 1.6 W/kg (averaged over 1 gram)**		

Date : December 08 ,2003
Measured By : Miyo Ikuta

BODY SAR MEASUREMENT RESULTS OF MAIN ANTENNA									
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Before	After	Maximum value of multi-peak)
Mid	2437	OFDM(QPSK)	Flat	Fixed	Bottom	0	23.2	23.2	**0.00945**
Mid	2437	OFDM(QPSK)	Flat	Fixed	RightTop of display	15	23.1	23.1	**0.0107**
Mid	2437	OFDM(QPSK)	Flat	Fixed	Right Back of display	15	23.0	23.0	**0.0187**
Low	2412	OFDM(QPSK)	Flat	Fixed	Right Back of display	15	22.8	22.8	**0.0218**
High	2462	OFDM(QPSK)	Flat	Fixed	Right Back of display	15	22.9	22.9	**0.0254**
Mid	2437	OFDM(64QAM)	Flat	Fixed	Bottom	0	23.1	23.1	**0.00251**
Mid	2437	OFDM(64QAM)	Flat	Fixed	Right Top of display	15	23.0	23.1	**0.00672**
Mid	2437	OFDM(64QAM)	Flat	Fixed	Right Back of display	15	23.0	23.0	**0.00852**
Low	2412	OFDM(64QAM)	Flat	Fixed	Right Back of display	15	22.9	23.0	**0.00924**
High	2462	OFDM(64QAM)	Flat	Fixed	Right Back of display	15	23.1	23.1	**0.0102**
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population							**Body SAR: 1.6 W/kg (averaged over 1 gram)**		

12.2 Measurement results of sub antenna (Left antenna)

12.2.1 Conducted power measurement results

Date : December 09 ,2003
Measured By : Hiroka Umeyama

CONDUCTED POWER MEASUREMENT RESULTS OF SUB ANTENNA														
		Before					After					Deviation	Limit
Modulation	Frequency [MHz]	Reading [dBm]	Att. [dB]	Cable loss [dB]	Result [dBm]	Convert [mW]	Reading [dBm]	Att. [dB]	Cable loss [dB]	Result [dBm]	Convert [mW]	[%]	[%]
DSSS	2412	-4.5	20.5	1.3	17.3	53.7	-4.6	20.5	1.3	17.2	52.5	-2.3	+/-5
	2437	-4.8	20.5	1.2	16.9	49.0	-4.8	20.5	1.2	16.9	49.0	0.0	+/-5
	2462	-5.2	20.5	1.3	16.6	45.7	-5.2	20.5	1.3	16.6	45.7	0.0	+/-5
OFDM (QPSK)	2412	-8.7	20.5	3.4	15.2	33.1	-8.8	20.5	3.4	15.1	32.4	-2.3	+/-5
	2437	-9.0	20.5	3.3	14.8	30.2	-9.0	20.5	3.3	14.8	30.2	0.0	+/-5
	2462	-9.5	20.5	3.4	14.4	27.5	-9.5	20.5	3.4	14.4	27.5	0.0	+/-5
OFDM (64QAM)	2412	-7.0	20.5	3.4	16.9	49.0	-7.2	20.5	3.4	16.7	46.8	-4.5	+/-5
	2437	-7.5	20.5	3.3	16.3	42.7	-7.7	20.5	3.3	16.1	40.7	-4.5	+/-5
	2462	-7.6	20.5	3.4	16.3	42.7	-7.6	20.5	3.4	16.3	42.7	0.0	+/-5

12.1.2 Body 2450MHz SAR of sub antenna

Liquid Depth (cm)	:	**15.9**	Model	:	**PCG-4A1L**
Parameters	:	ε_r =**50.2**, σ =**1.96**	Serial No.	:	**1200009**
Ambient Temperature[deg.c.]	:	**24.8**	Modulation	:	**DSSS,OFDM**
Relative Humidity (%)	:	**35**	Crest factor	:	**1**

Date : December 09 ,2003
Measured By : Miyo Ikuta

BODY SAR MEASUREMENT RESULTS OF SUB ANTENNA									
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Before	After	Maximum value of multi-peak)
Mid	2437	DSSS	Flat	Fixed	Bottom	0	23.5	23.5	**0.00102**
Mid	2437	DSSS	Flat	Fixed	Left Top of display	15	23.2	23.2	**0.0285**
Mid	2437	DSSS	Flat	Fixed	Left Back of display	15	23.6	23.6	**0.0414**
Low	2412	DSSS	Flat	Fixed	Left Back of display	15	23.6	23.6	**0.0483**
High	2462	DSSS	Flat	Fixed	Left Back of display	15	23.6	23.5	**0.0491**
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population							**Body SAR: 1.6 W/kg (averaged over 1 gram)**		

Date : December 09 ,2003
Measured By : Miyo Ikuta

BODY SAR MEASUREMENT RESULTS OF SUB ANTENNA

Frequency		Modulation	Phantom Section	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Before	After	Maximum value of multi-peak)
Mid	2437	OFDM(QPSK)	Flat	Fixed	Bottom	0	23.5	23.5	**0.000868**
Mid	2437	OFDM(QPSK)	Flat	Fixed	RightTop of display	15	23.2	23.2	**0.0147**
Mid	2437	OFDM(QPSK)	Flat	Fixed	Right Back of display	15	23.4	23.4	**0.0166**
Low	2412	OFDM(QPSK)	Flat	Fixed	Right Back of display	15	23.4	23.4	**0.0125**
High	2462	OFDM(QPSK)	Flat	Fixed	Right Back of display	15	23.7	23.7	**0.0166**
Mid	2437	OFDM(64QAM)	Flat	Fixed	Bottom	0	23.4	23.4	**0.00106**
Mid	2437	OFDM(64QAM)	Flat	Fixed	Right Top of display	15	23.3	23.4	**0.00927**
Mid	2437	OFDM(64QAM)	Flat	Fixed	Right Back of display	15	23.4	23,4	**0.0116**
Low	2412	OFDM(64QAM)	Flat	Fixed	Right Back of display	15	23.4	23.4	**0.0118**
High	2462	OFDM(64QAM)	Flat	Fixed	Right Back of display	15	23.4	23.5	**0.0143**
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population							**Body SAR: 1.6 W/kg (averaged over 1 gram)**		

SECTION 13 : Equipment & calibration information

Name of Equipment	Manufacture	Model number	Serial number	Calibration	
				Last Cal	due date
Power Meter	Agilent	E4417A	GB41290639	2003/11/12	2004/11/11
Power Sensor	Agilent	E9300B	US40010300	2003/11/17	2004/11/16
Power Sensor	Agilent	E9327A	US40440576	2003/11/13	2004/11/12
S-Parameter Network Analyzer	Agilent	E8358A	US41080381	2003/08/13	2004/08/12
Spectrum Analyzer	Advantest	R3273	121101460	2003/10/31	2004/10/30
Signal Generator	Rohde&Schwarz	SML03	100332	2003/08/26	2004/08/25
RF Amplifier	OPHIR	5056F	1005	2003/02/06	2004/02/05
Dosimetric E-Field Probe	Schmid&Partner Engineering AG	ET3DV6	1685	2003/10/10	2004/10/09
Data Acquisition Electronics	Schmid&Partner Engineering AG	DAE3 V1	509	2003/04/10	2004/04/09
Robot,SAM Phantom	Schmid&Partner Engineering AG	DASY4	I021834	N/A	N/A
Attenuator	Agilent	US40010300	08498-60012	2002/12/24	2003/12/23
Attenuator	HIROSE ELECTRIC CO.,LTD.	AT-120	901247	2003/02/03	2004/02/02
2450MHz System Validation Dipole	Schmid&Partner Engineering AG	D2450V2	713	2002/11/15	2004/11/14
Dual Directional Coupler	N/A	Narda	03702	N/A	N/A
Head 2450MHz	N/A	N/A	N/A	N/A	N/A
Body 2450MHz	N/A	N/A	N/A	N/A	N/A

SECTION 14 : References

[1]ANSI, ANSI/IEEE C95.1-1992: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz, The Institute of Electrical and Electronics Engineers, Inc., New York, NY 10017, 1992.

[2] Katja Pokovic, Thomas Schmid, and Niels Kuster, "Robust setup for precise calibration of E-field probes in tissue simulating liquids at mobile communications frequencies", in ICECOM '97, Dubrovnik, October 15-17, 1997, pp. 120-124.

[3] Katja Pokovic, Thomas Schmid, and Niels Kuster, "E-_field probe with improved isotropy in brain simulating liquids", in Proceedings of the ELMAR, Zadar, Croatia, 23-25 June, 1996, pp.172-175.

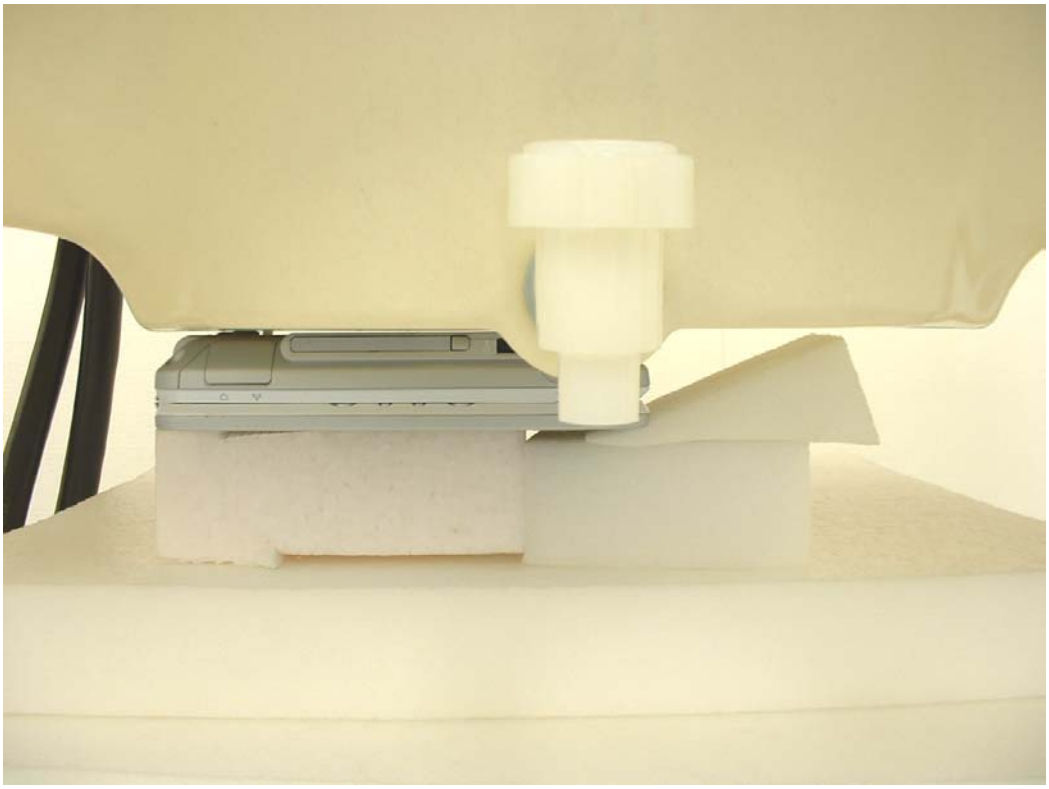
[4] W. Gander, Computermathematik, Birkhaeuser, Basel, 1992.

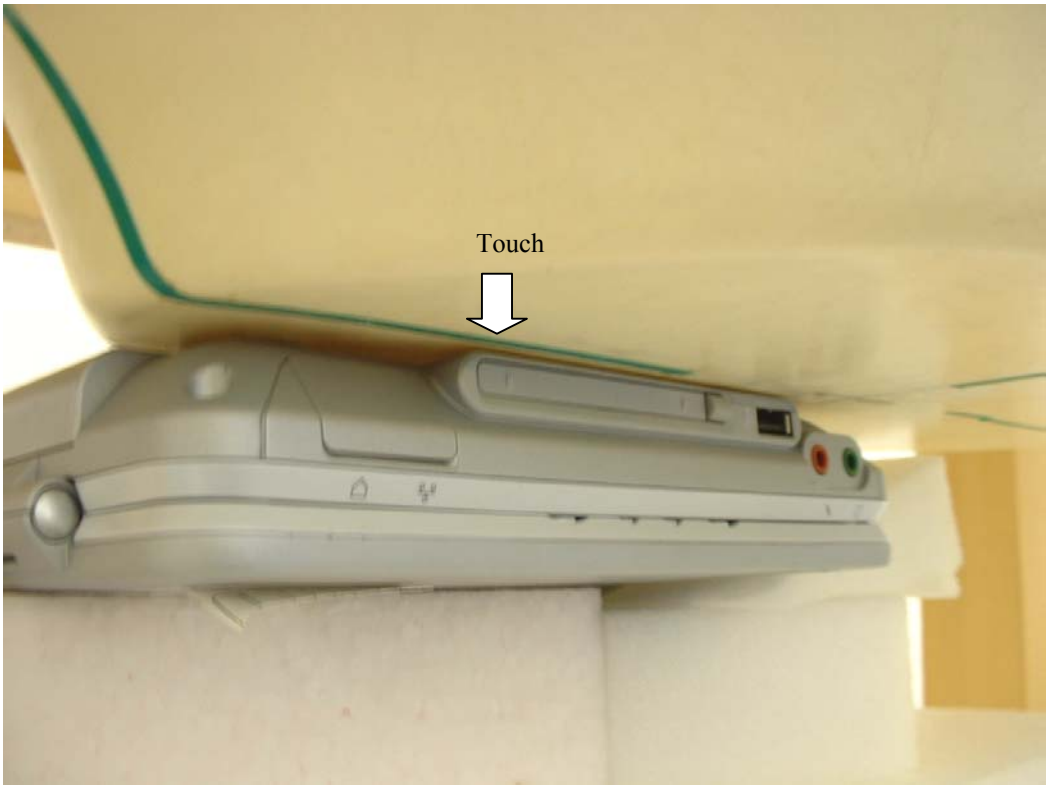
[5] W. H. Press, S. A. Teukolsky,W. T. Vetterling, and B. P. Flannery, Numerical Recepies in C, The Art of Scientific Computing, Second Edition, Cambridge University Press, 1992.

[6] Barry N. Taylor and Christ E. Kuyatt, "Guidelines for evaluating and expressing the uncertainty of NIST measurement results", Tech. Rep., National Institute of Standards and Technology,1994.

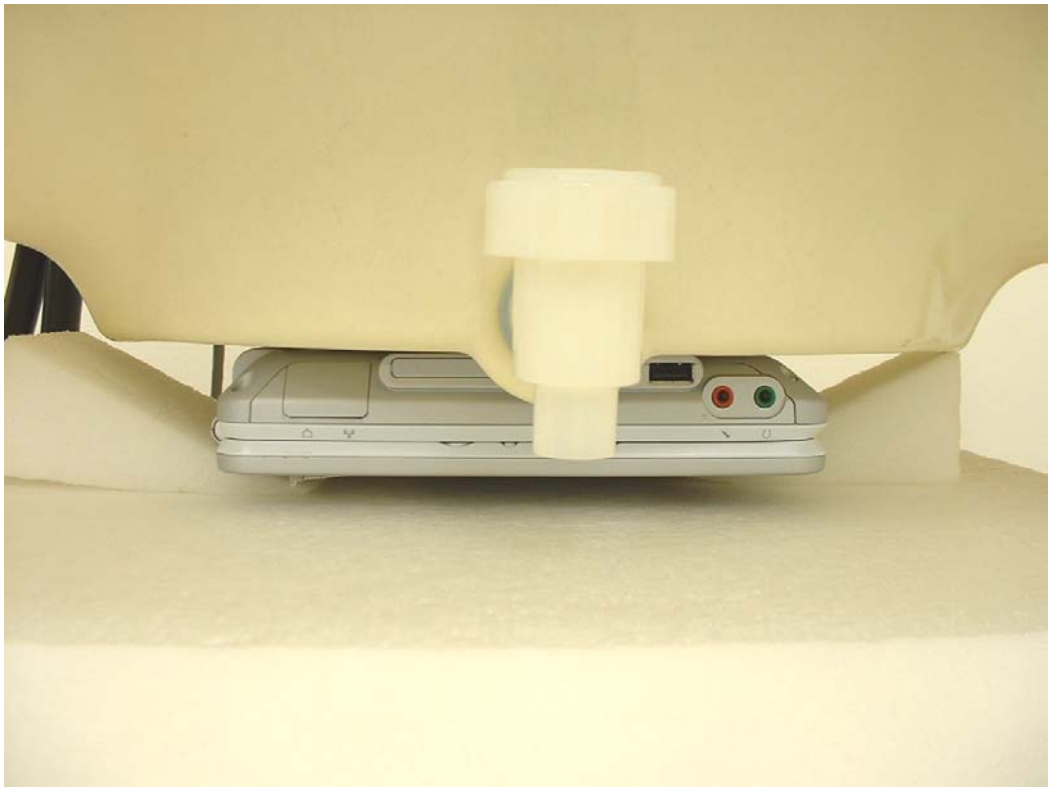
APPENDIX 1 : Photographs of test setup

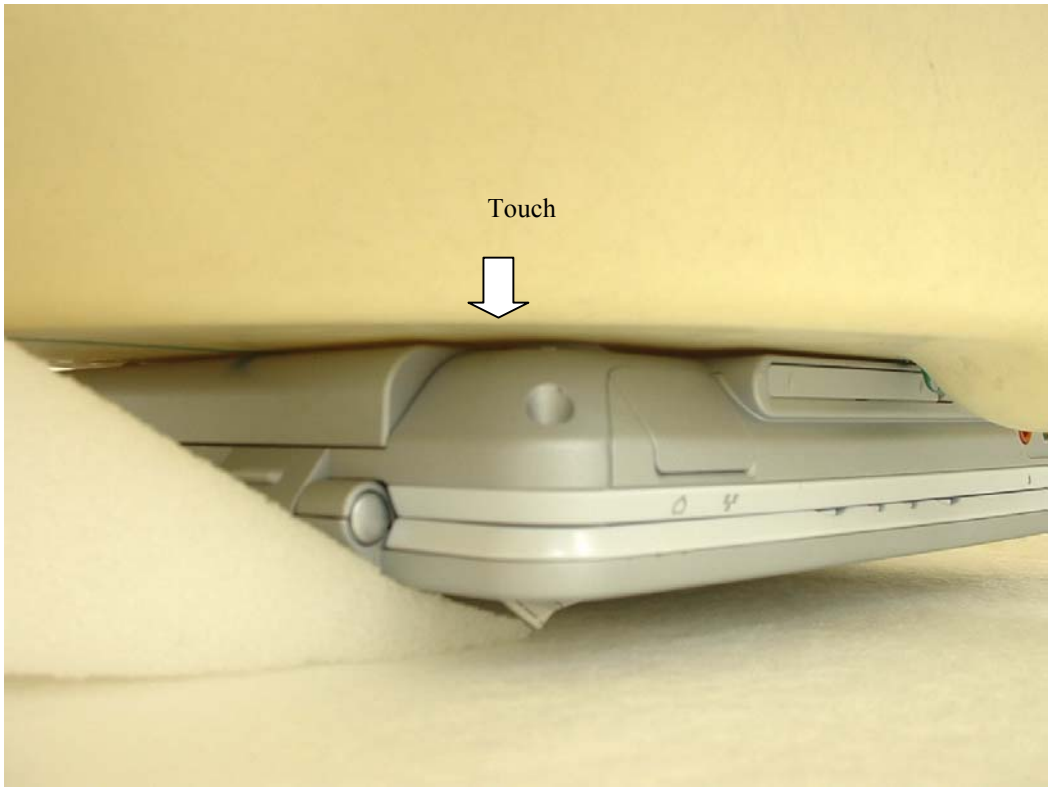
Bottom (Main antenna)



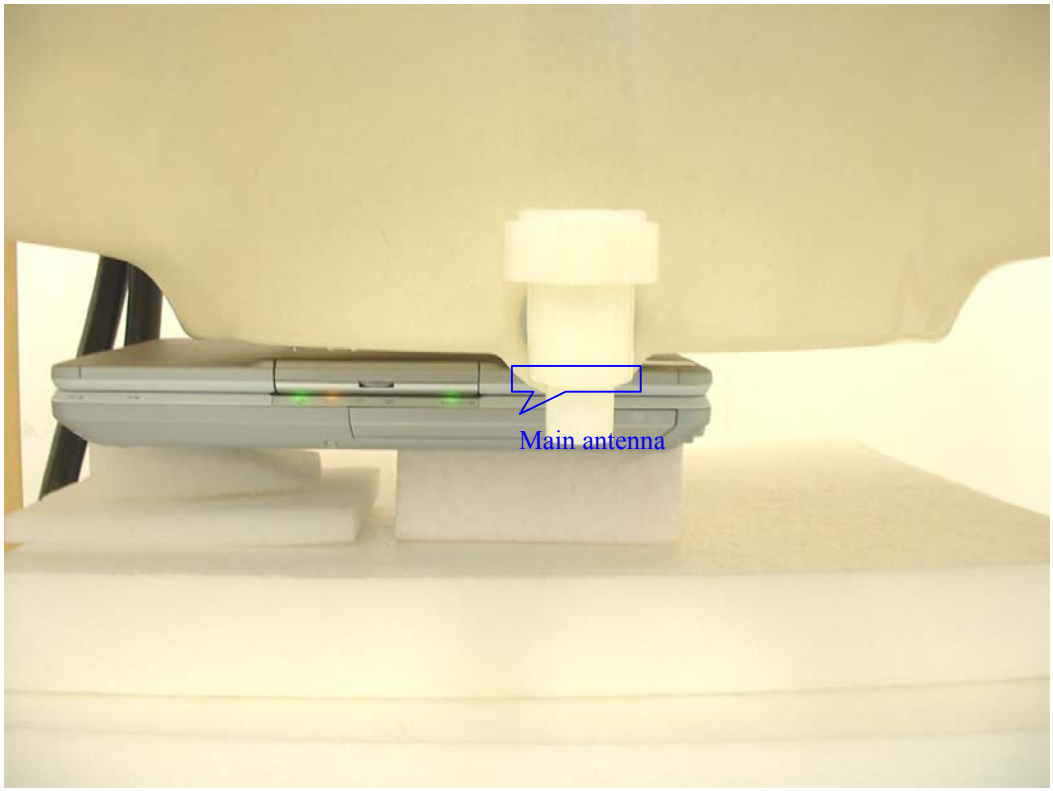


Bottom (Sub antenna)

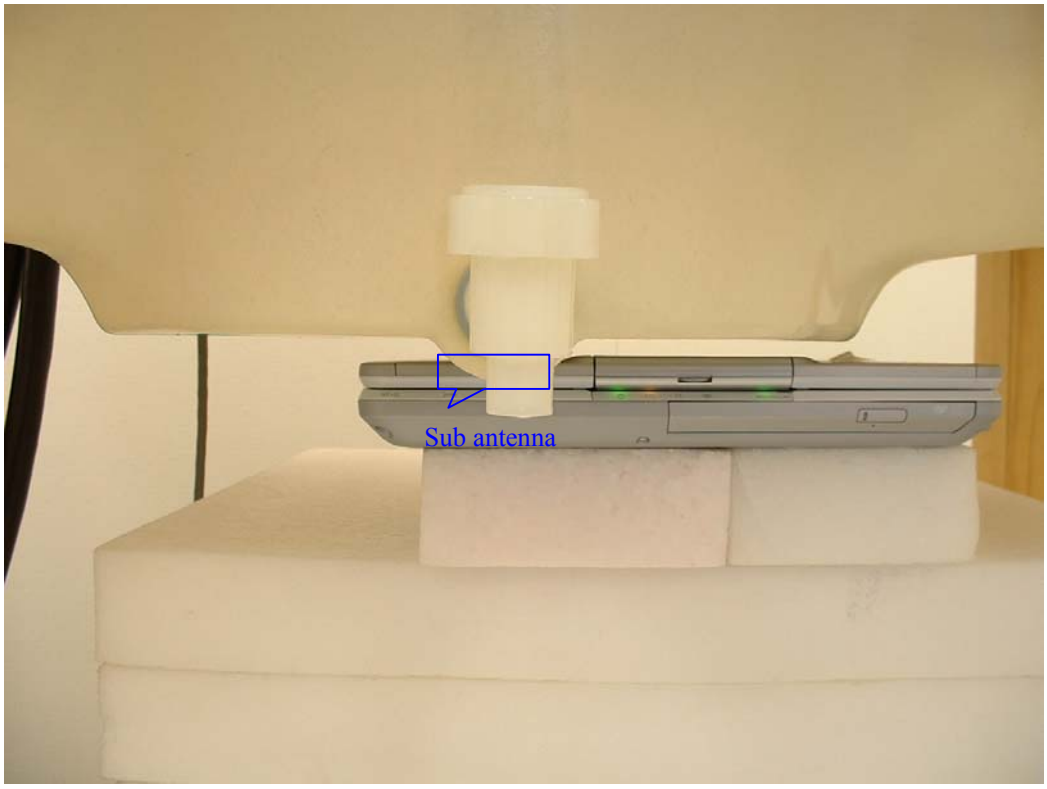


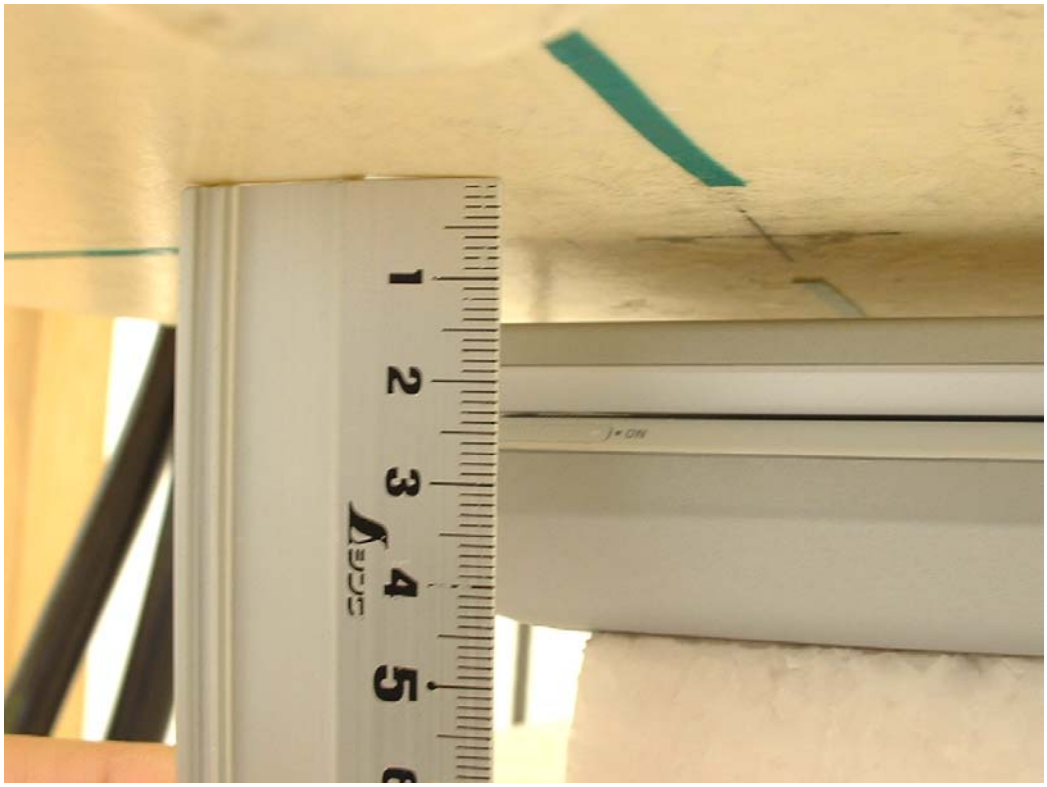


Right Back of display(Main antenna)

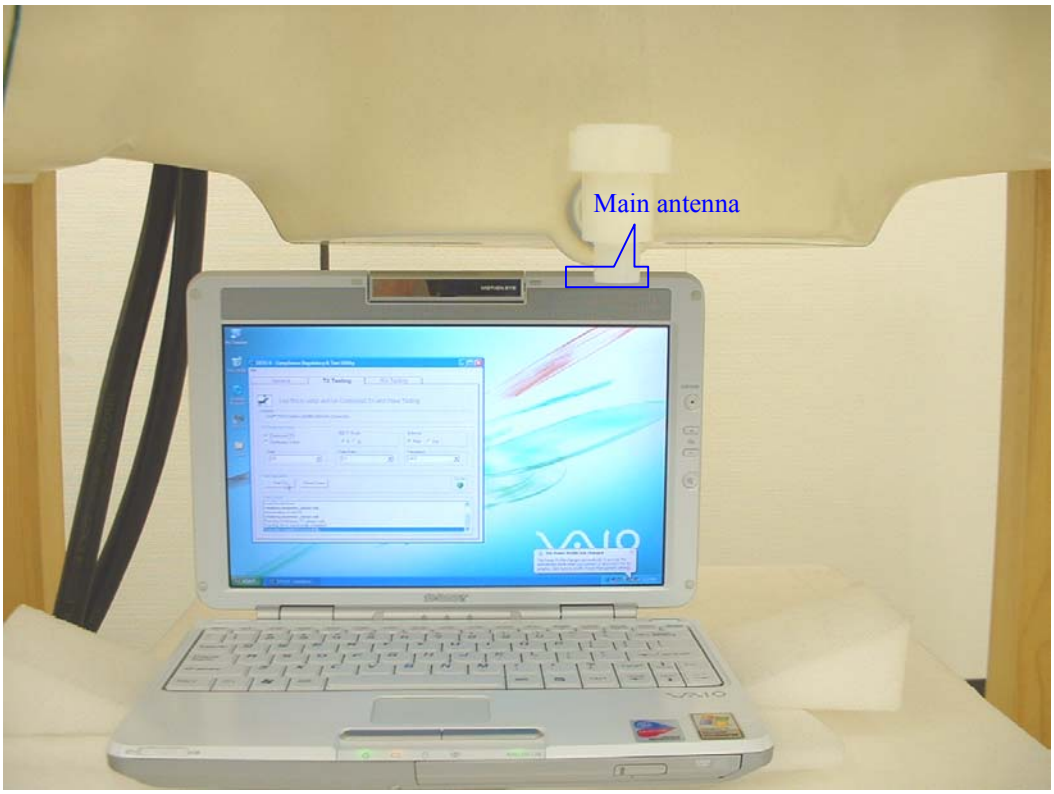


Left Back of display(Sub antenna)





Right Top of display(Main antenna)



Left Back of Antenna (Sub antenna)

APPENDIX 2 : SAR Measurement data

PCG-4A1L/ Body / Bottom (Main antenna) / DSSS / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.7, ρ = 1000 kg/m^3)
Phantom section: Flat Section

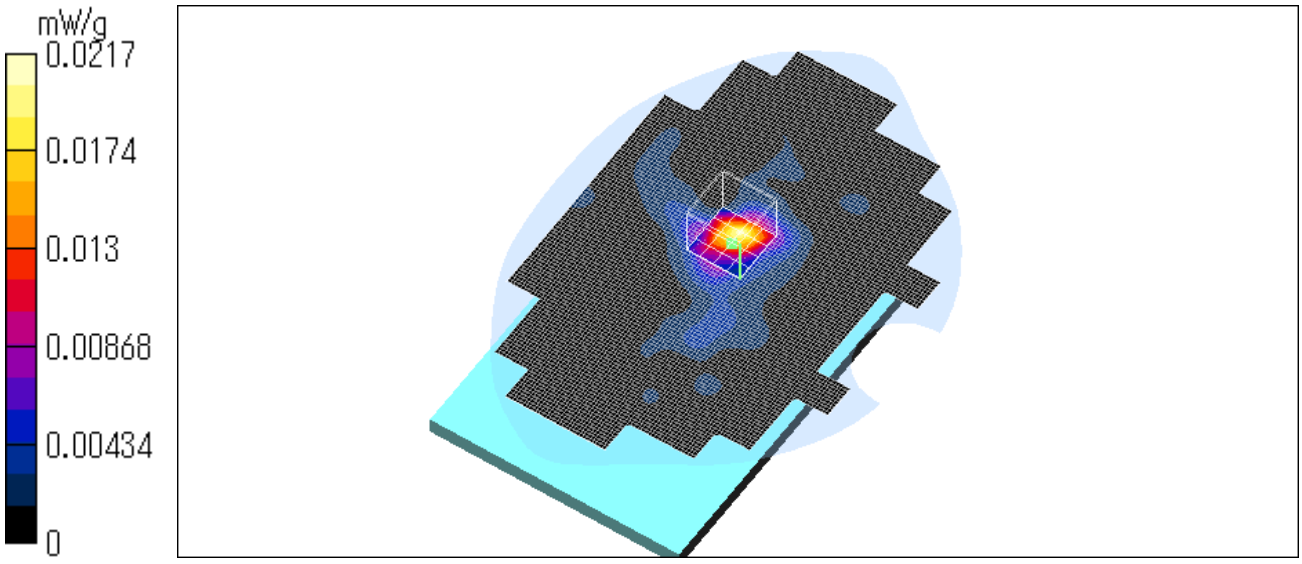
DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0175 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0563 W/kg
SAR(1 g) = 0.0207 mW/g; SAR(10 g) = 0.00883 mW/g
Maximum value of SAR = 0.0217 mW/g

Test date = 12 / 08 / 03
Reference Value = 1.18 V/m
Power Drift = -0.1dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.0 degree.C , After 23.0 degree.C



PCG-4A1L/ Body / Right Top of display (Main antenna) / DSSS / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.7, ρ = 1000 kg/m^3)
Phantom section: Flat Section

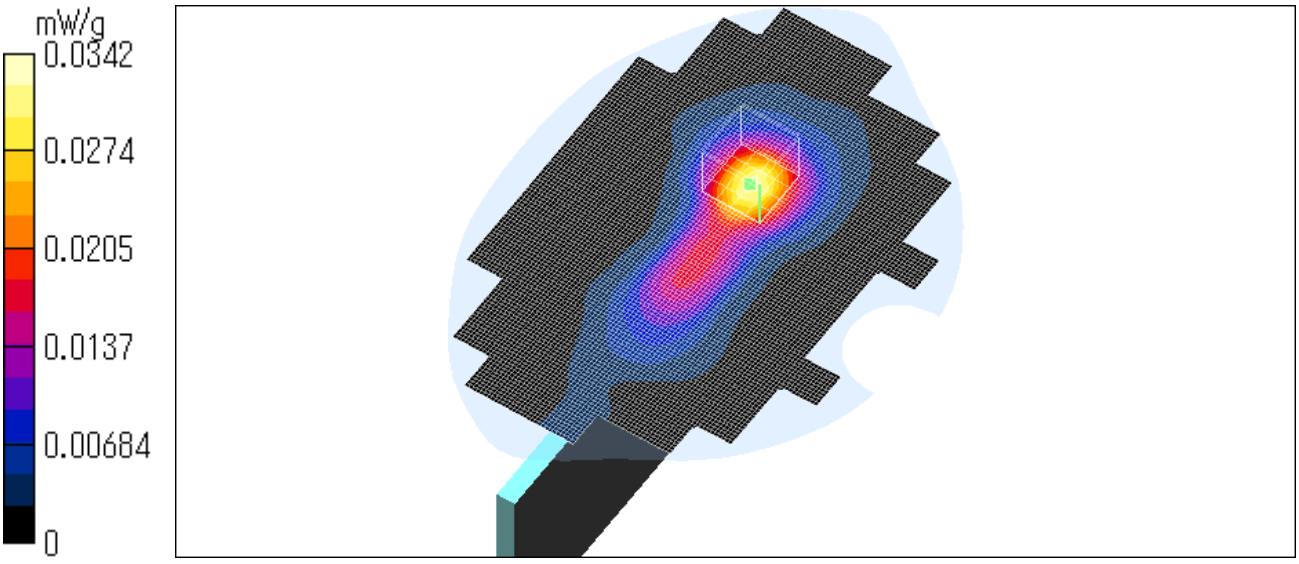
DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0335 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0664 W/kg
SAR(1 g) = 0.0329 mW/g; SAR(10 g) = 0.0179 mW/g
Maximum value of SAR = 0.0342 mW/g

Test date = 12 / 08 / 03
Reference Value = 3.47 V/m
Power Drift = -0.2 dB

Ambient Temperature = 24.8 degree.c
Liquid Temperature = Before 23.1 degree.C , After 23.1degree.C



PCG-4A1L/ Body / Right Back of display (Main antenna) / DSSS / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.7, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

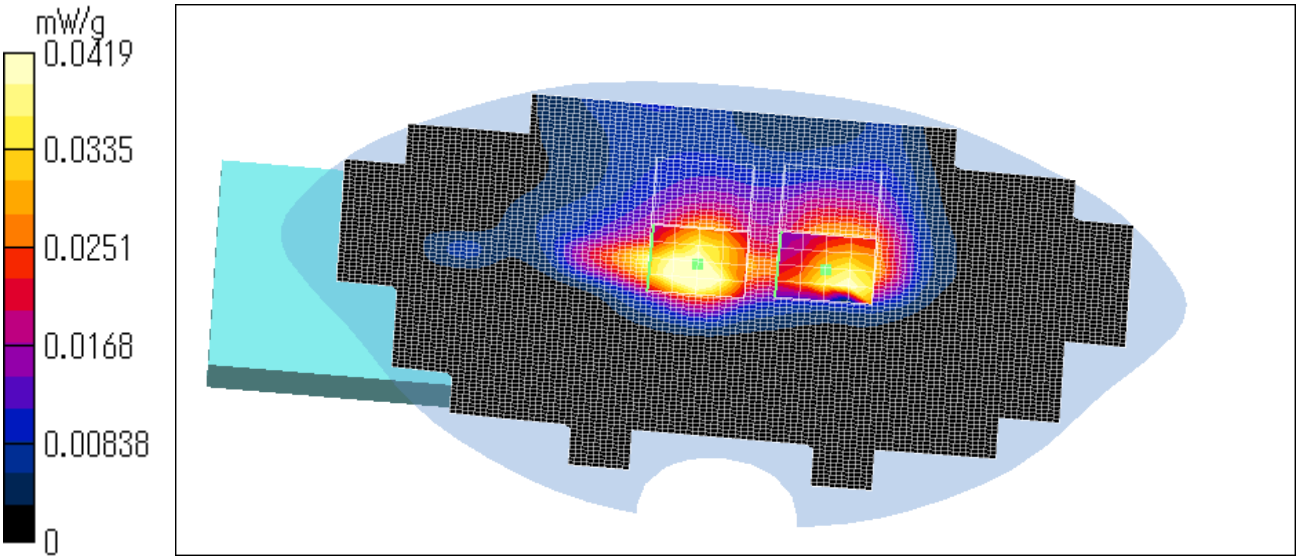
Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0538 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.104 W/kg
SAR(1 g) = 0.0469 mW/g; SAR(10 g) = 0.0231 mW/g
Maximum value of SAR = 0.0512 mW/g

Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.118 W/kg
SAR(1 g) = 0.0429 mW/g; SAR(10 g) = 0.0202 mW/g
Maximum value of SAR = 0.0419 mW/g

Test date = 12 / 08 / 03
Reference Value = 4.08 V/m
Power Drift = 0.2 dB

Ambient Temperature = 24.8 degree.c
Liquid Temperature = Before 23.1 degree.C , After 23.0degree.C



PCG-4A1L/ Body / Right Back of display (Main antenna) / DSSS / 2412MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.7, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

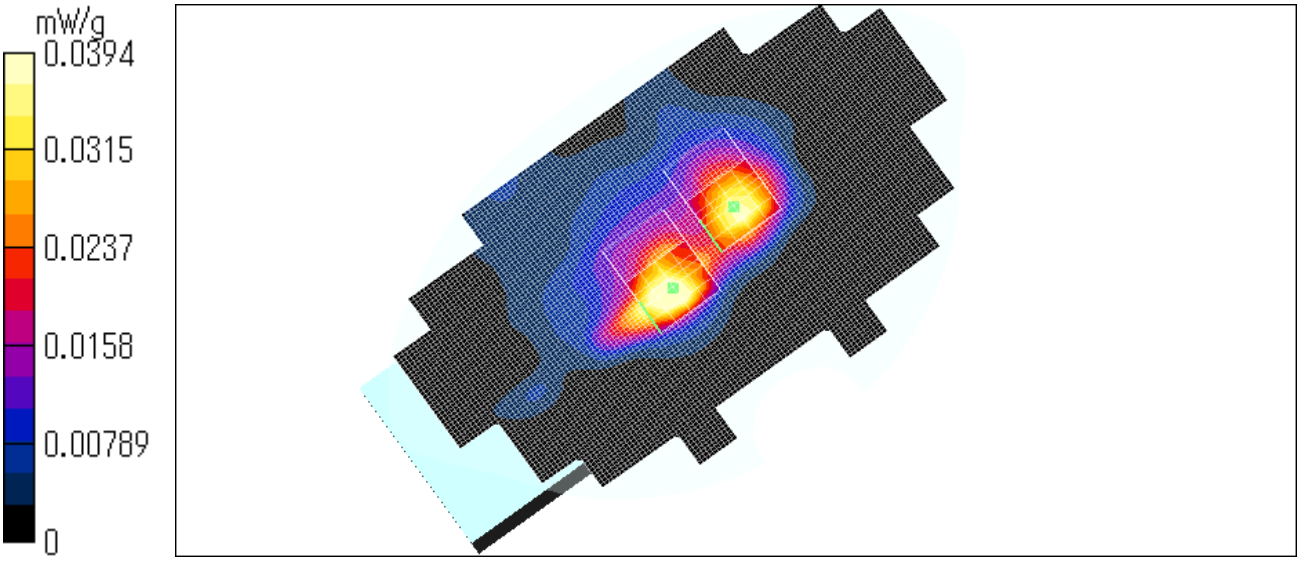
Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0497 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0947 W/kg
SAR(1 g) = 0.0442 mW/g; SAR(10 g) = 0.0215 mW/g
Maximum value of SAR = 0.0454 mW/g

Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0733 W/kg
SAR(1 g) = 0.0384 mW/g; SAR(10 g) = 0.0209 mW/g
Maximum value of SAR = 0.0394 mW/g

Test date = 12 / 08 / 03
Reference Value = 3.66 V/m
Power Drift = 0.05 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 22.7 degree.C , After 22.7 degree.C



PCG-4A1L/ Body / Right Back of display (Main antenna) / DSSS / 2462MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.7, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

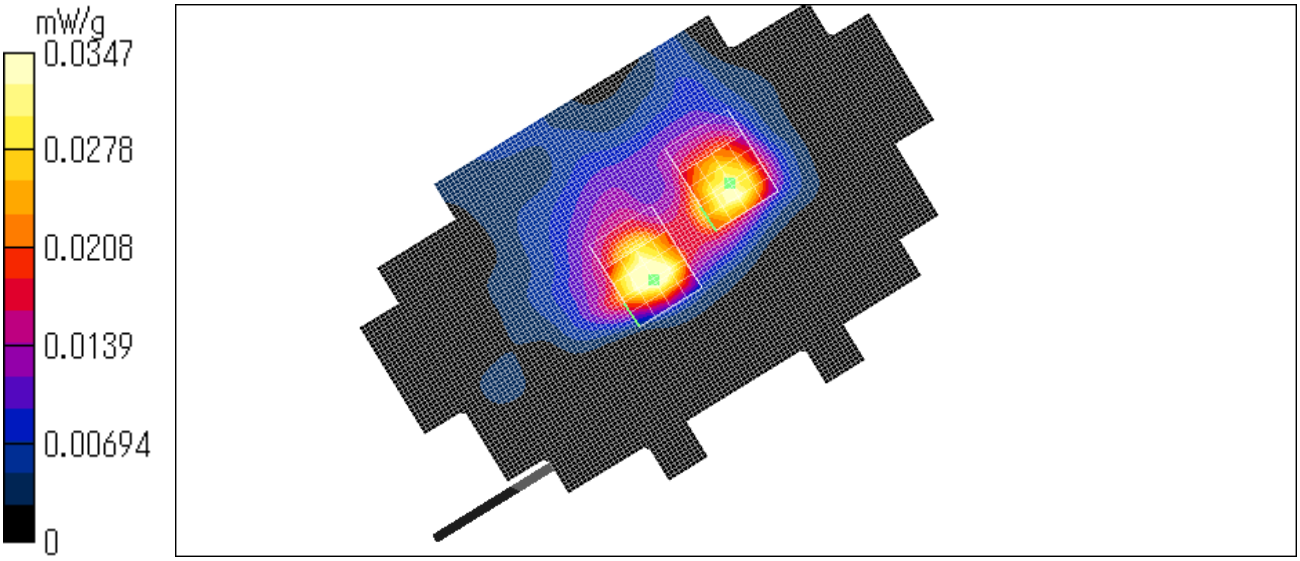
Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0446 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.103 W/kg
SAR(1 g) = 0.0402 mW/g; SAR(10 g) = 0.0191 mW/g
Maximum value of SAR = 0.0431 mW/g

Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0656 W/kg
SAR(1 g) = 0.0331 mW/g; SAR(10 g) = 0.0179 mW/g
Maximum value of SAR = 0.0347 mW/g

Test date = 12 / 08 / 03
Reference Value = 4.14 V/m
Power Drift = -0.02 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 22.8 degree.C , After 22.8 degree.C



PCG-4A1L/ Body / Bottom (Main antenna) / OFDM QPSK / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.7, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

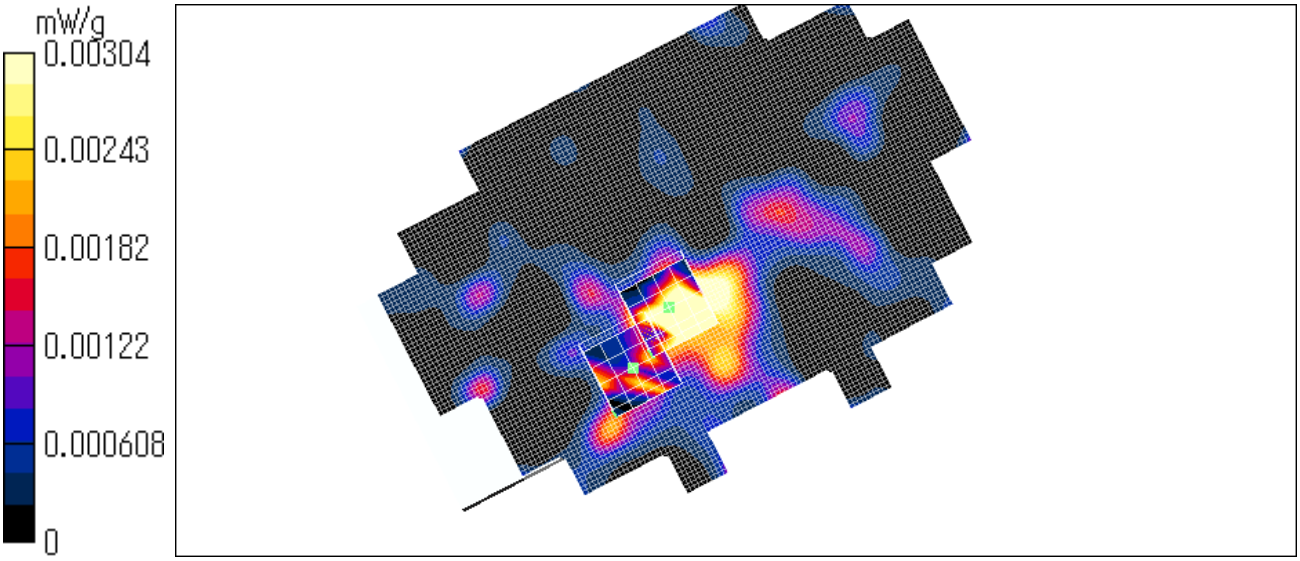
Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0048 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.663 W/kg
SAR(1 g) = 0.00945 mW/g; SAR(10 g) = 0.00254 mW/g
Maximum value of SAR = 0.00614 mW/g

Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.00304 W/kg
SAR(1 g) = 0.00129 mW/g; SAR(10 g) = 0.000459 mW/g
Maximum value of SAR = 0.00304 mW/g

Test date = 12 / 08 / 03
Reference Value = 0.557 V/m
Power Drift = 0.2 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.2 degree.C , After 23.2 degree.C



PCG-4A1L/ Body / Right Top of display (Main antenna) / OFDM QPSK / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.7, ρ = 1000 kg/m^3)
Phantom section: Flat Section

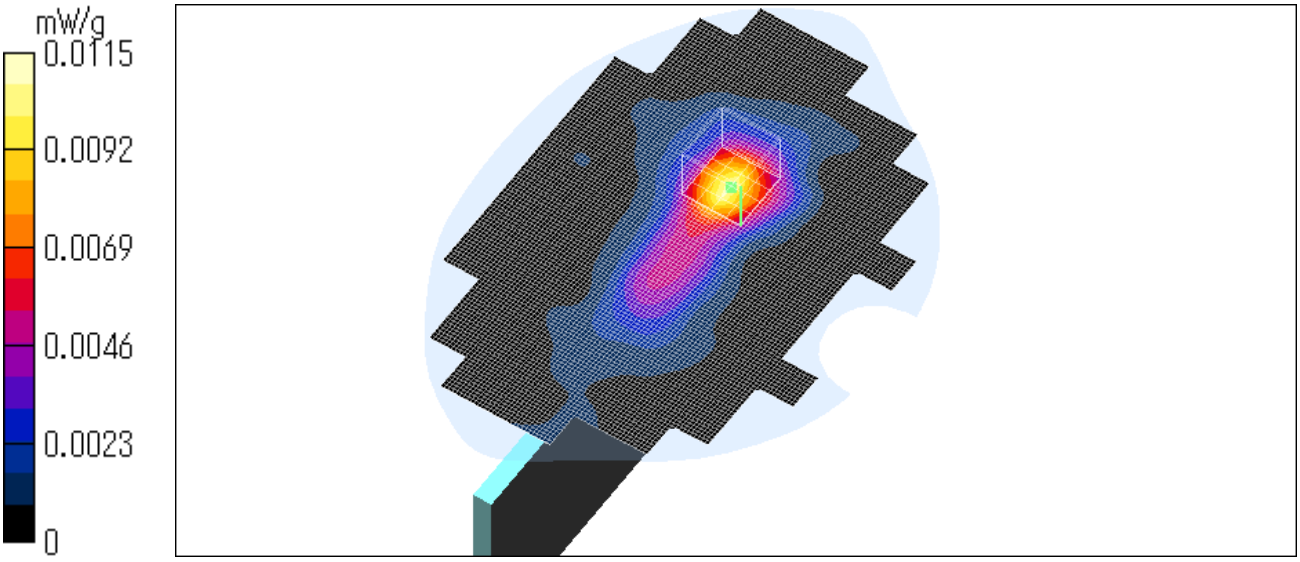
DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Reference Value = 1.86 V/m
Power Drift = 0.1 dB
Maximum value of SAR = 0.0105 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0237 W/kg
SAR(1 g) = 0.0107 mW/g; SAR(10 g) = 0.00554 mW/g
Maximum value of SAR = 0.0115 mW/g

Test date = 12 / 08 / 03
Reference Value = 1.86 V/m
Power Drift = 0.1 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.1 degree.C , After 23.1 degree.C



PCG-4A1L/ Body / Right Back of display (Main antenna) / OFDM QPSK / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.7, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

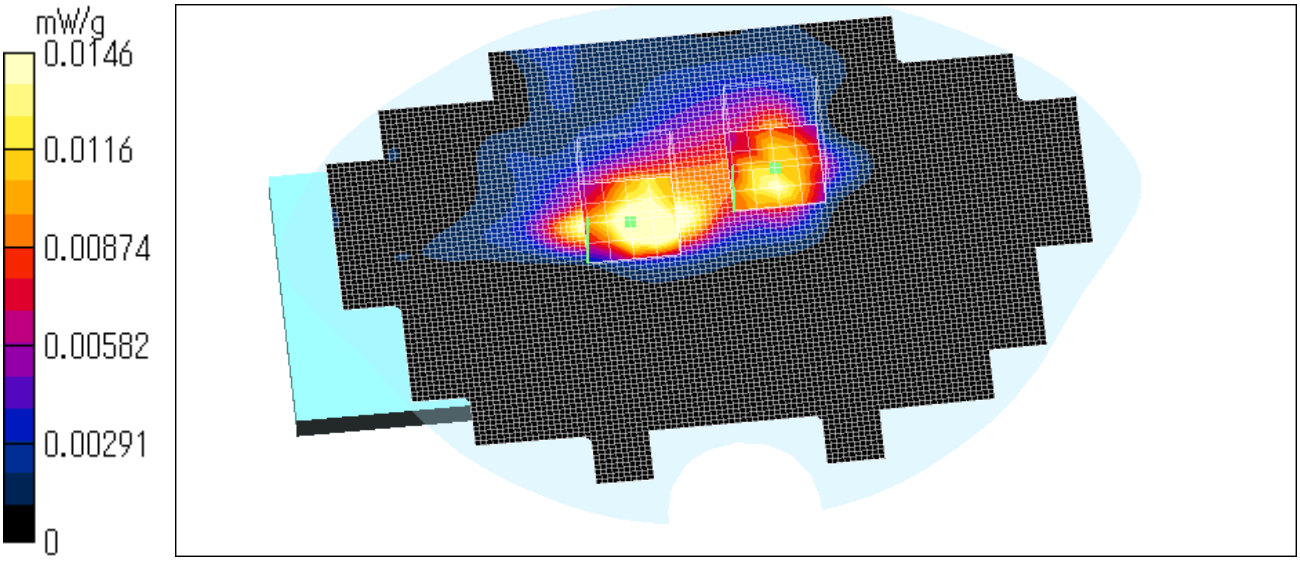
Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0229 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0468 W/kg
SAR(1 g) = 0.0187 mW/g; SAR(10 g) = 0.00836 mW/g
Maximum value of SAR = 0.0188 mW/g

Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0408 W/kg
SAR(1 g) = 0.0136 mW/g; SAR(10 g) = 0.0071 mW/g
Maximum value of SAR = 0.0146 mW/g

Test date = 12 / 08 / 03
Reference Value = 1.26 V/m
Power Drift = -0.2 dB

Ambient Temperature : 24.8degree.c
Liquid Temperature : Before 23.0 degree.C , After 23.0 degree.C



PCG-4A1L/ Body / Right Back of display (Main antenna) / OFDM QPSK / 2412MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.7, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

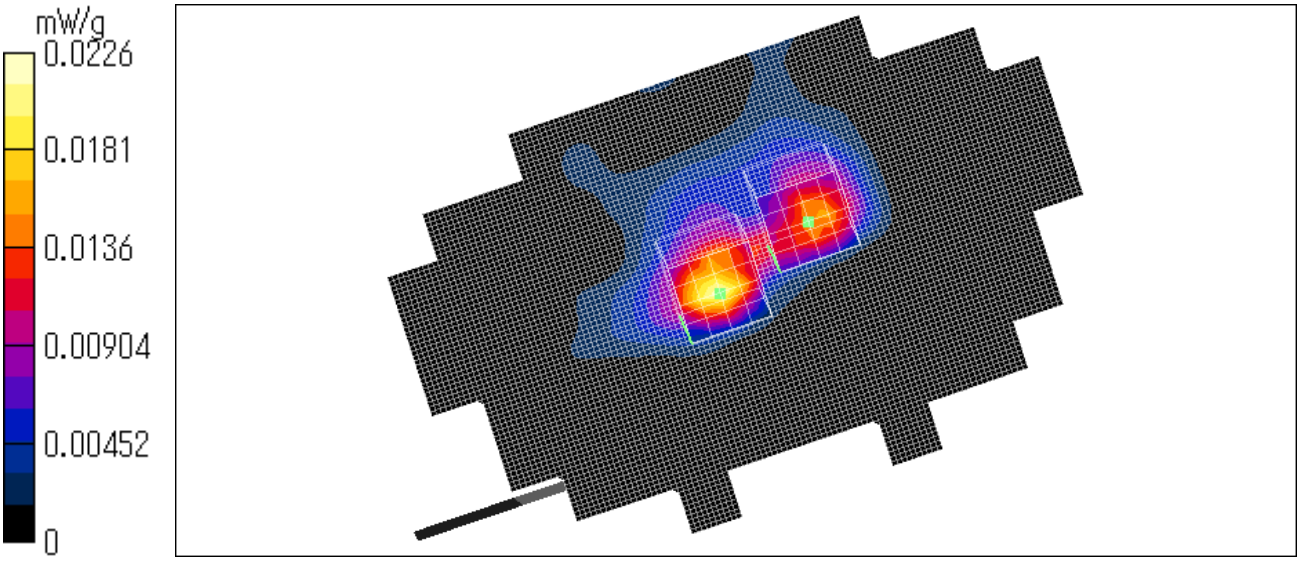
Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0188 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0437 W/kg
SAR(1 g) = 0.0163 mW/g; SAR(10 g) = 0.00809 mW/g
Maximum value of SAR = 0.0157 mW/g

Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0632 W/kg
SAR(1 g) = 0.0218 mW/g; SAR(10 g) = 0.00965 mW/g
Maximum value of SAR = 0.0226 mW/g

Test date = 12 / 08 / 03
Reference Value = 2.51 V/m
Power Drift = 0.2 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 22.8 degree.C , After 22.8 degree.C



PCG-4A1L/ Body / Right Back of display (Main antenna) / OFDM QPSK / 2462MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.7, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

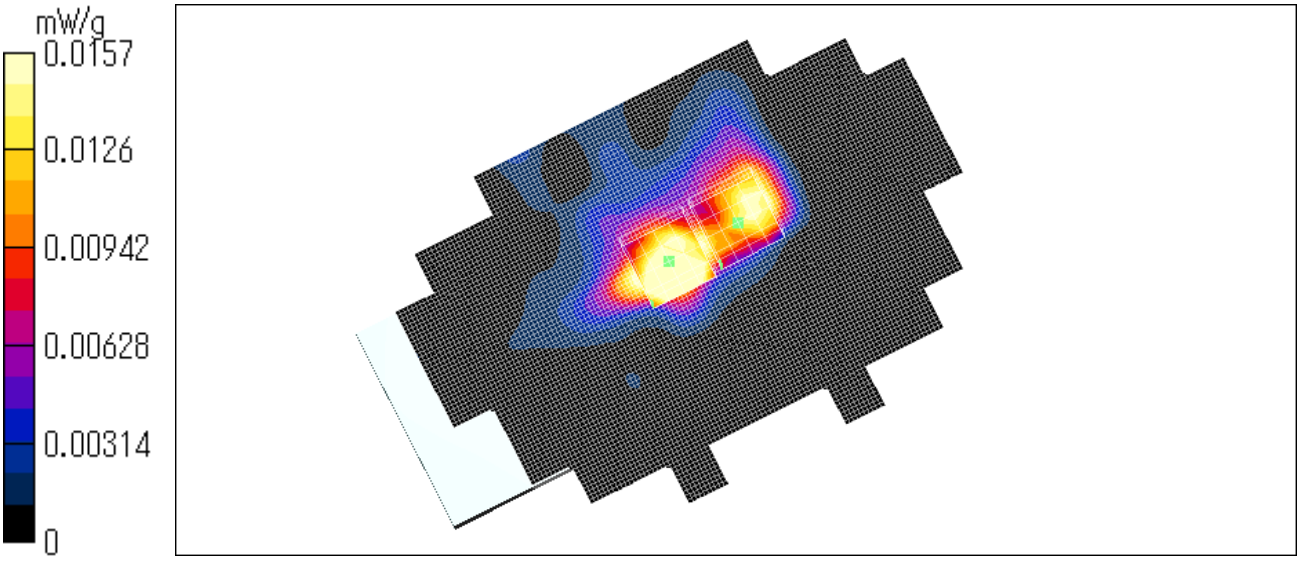
Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.025 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.066 W/kg
SAR(1 g) = 0.0254 mW/g; SAR(10 g) = 0.0112 mW/g
Maximum value of SAR = 0.0263 mW/g

Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0398 W/kg
SAR(1 g) = 0.0161 mW/g; SAR(10 g) = 0.00813 mW/g
Maximum value of SAR = 0.0157 mW/g

Test date = 12 / 08 / 03
Reference Value = 3.34 V/m
Power Drift = 0.1 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 22.9 degree.C , After 22.9 degree.C



PCG-4A1L/ Body / Bottom (Main antenna) / OFDM 64QAM / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.7, ρ = 1000 kg/m^3)
Phantom section: Flat Section

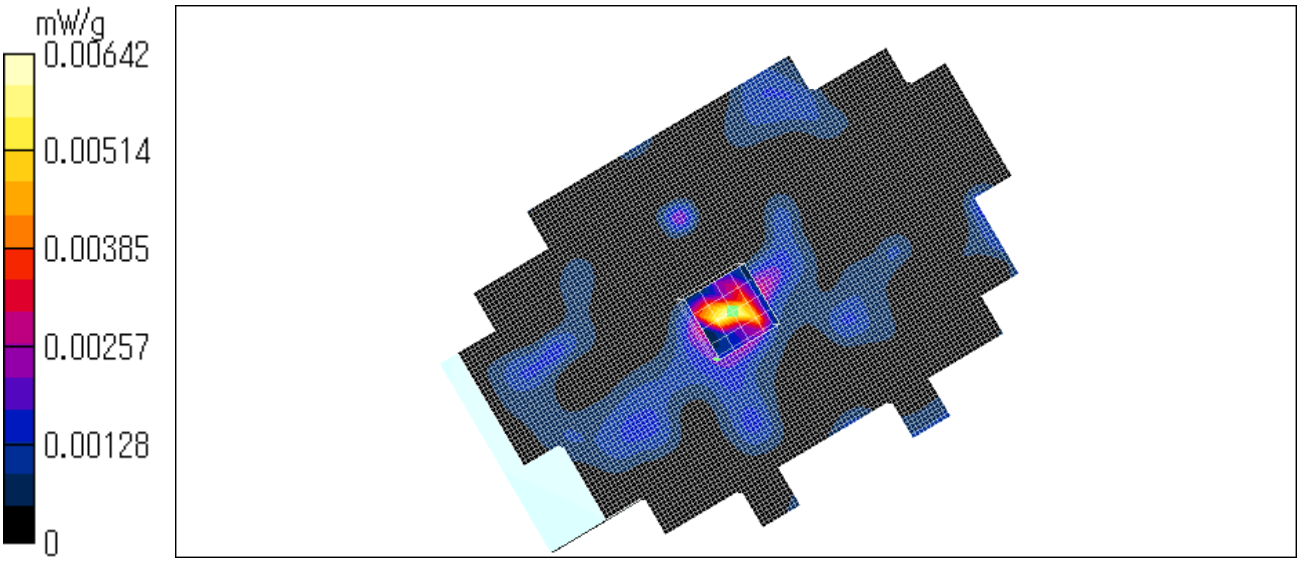
DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.00601 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.00729 W/kg
SAR(1 g) = 0.00251 mW/g; SAR(10 g) = 0.000947 mW/g
Maximum value of SAR = 0.00642 mW/g

Test date = 12 / 08 / 03
Reference Value = 0.897 V/m
Power Drift = 0.1 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.1 degree.C , After 23.1 degree.C



PCG-4A1L/ Body / Right Top of display (Main antenna) / OFDM 64QAM / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.7, ρ = 1000 kg/m^3)
Phantom section: Flat Section

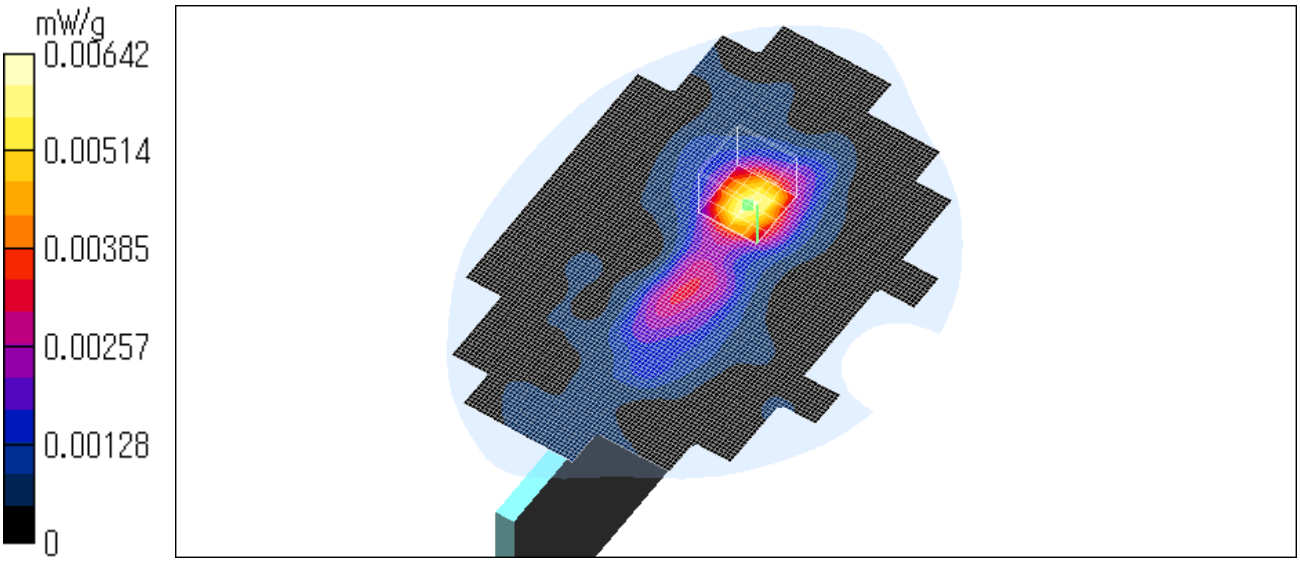
DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.00675 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.024 W/kg
SAR(1 g) = 0.00672 mW/g; SAR(10 g) = 0.00336 mW/g
Maximum value of SAR = 0.00642 mW/g

Test date = 12 / 08 / 03
Reference Value = 1.44 V/m
Power Drift = 0.08 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.0 degree.C , After 23.1 degree.C



PCG-4A1L/ Body / Right Back of display (Main antenna) / OFDM 64QAM / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.7, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

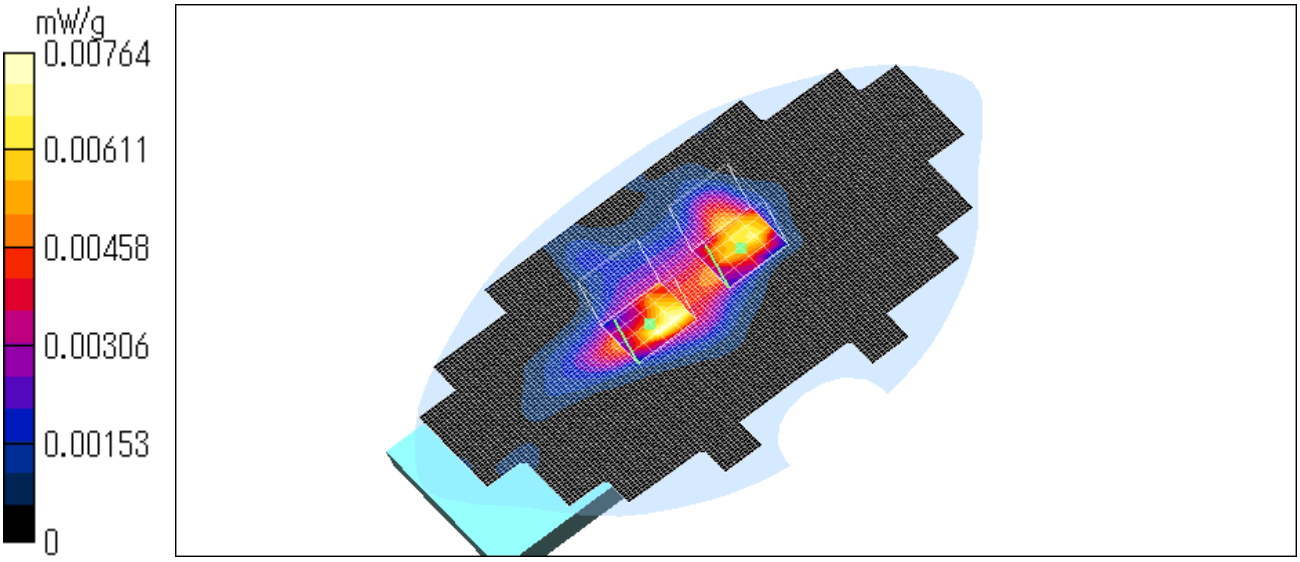
Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Reference Value = 1.27 V/m
Power Drift = 0.1 dB
Maximum value of SAR = 0.00858 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.125 W/kg
SAR(1 g) = 0.00852 mW/g; SAR(10 g) = 0.00376 mW/g
Maximum value of SAR = 0.00686 mW/g

Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.138 W/kg
SAR(1 g) = 0.00839 mW/g; SAR(10 g) = 0.00353 mW/g
Maximum value of SAR = 0.00764 mW/g

Test date = 12 / 08 / 03
Reference Value = 1.27 V/m
Power Drift = 0.1 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.0 degree.C , After 23.0 degree.C



PCG-4A1L/ Body / Right Back of display (Main antenna) / OFDM 64QAM / 2412MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.7, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

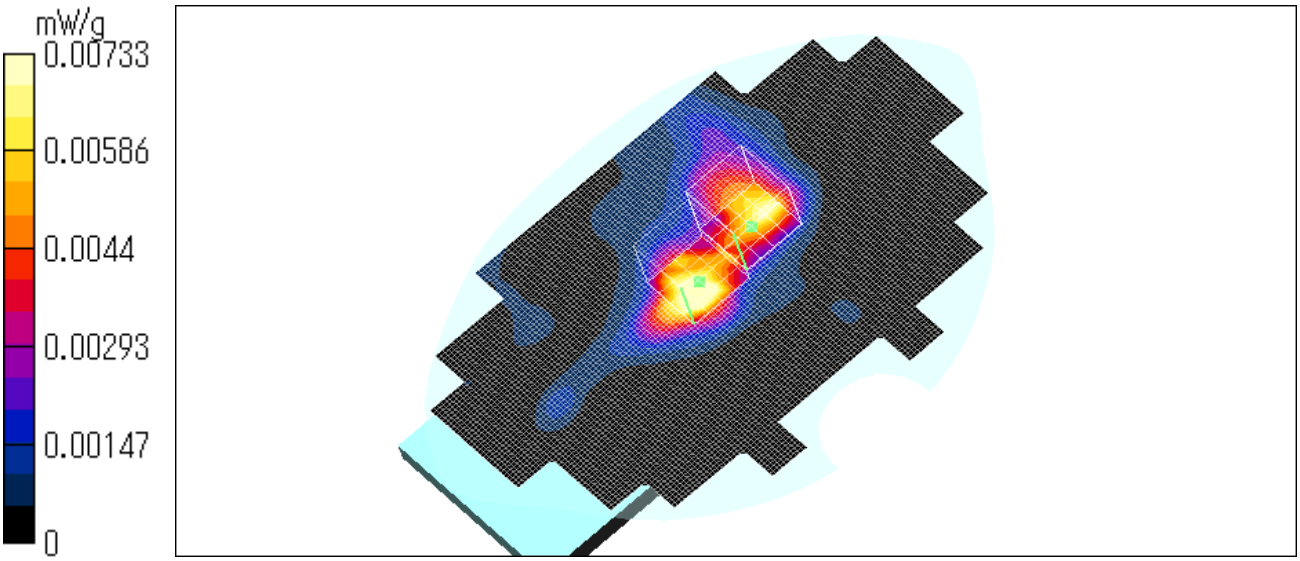
Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.00794 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0349 W/kg
SAR(1 g) = 0.00924 mW/g; SAR(10 g) = 0.00375 mW/g
Maximum value of SAR = 0.00942 mW/g

Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.00747 W/kg
SAR(1 g) = 0.00368 mW/g; SAR(10 g) = 0.00199 mW/g
Maximum value of SAR = 0.00733 mW/g

Test date = 12 / 08 / 03
Reference Value = 1.75 V/m
Power Drift = -0.2 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 22.9 degree.C , After 23.0 degree.C



PCG-4A1L/ Body / Right Back of display (Main antenna) / OFDM 64QAM / 2462MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.7, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

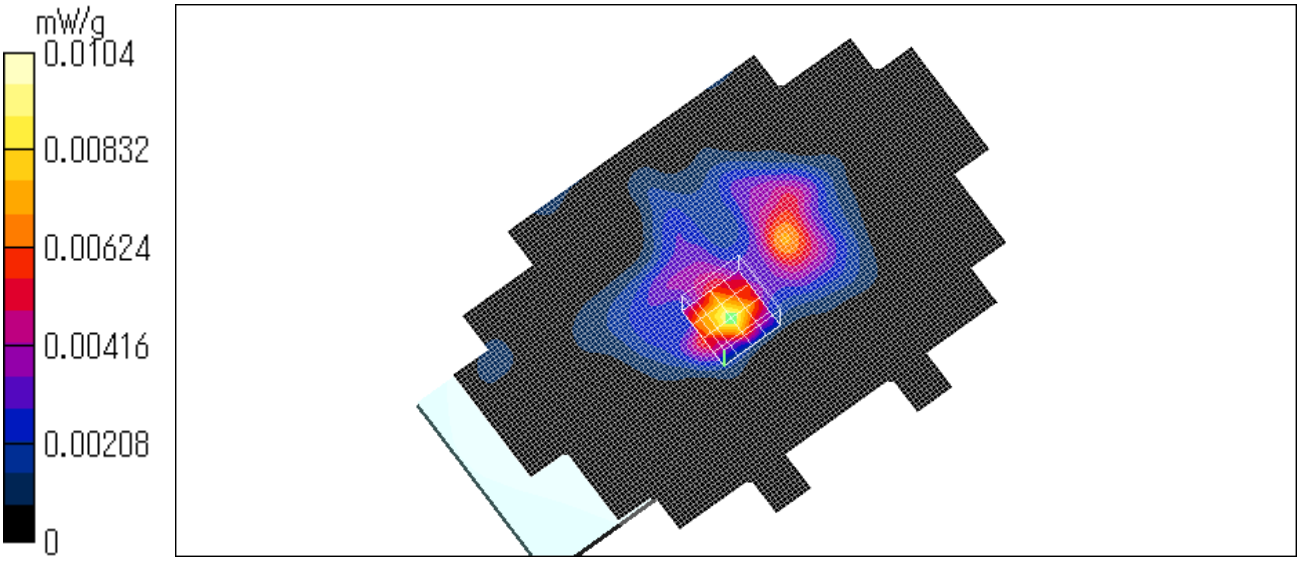
Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0113 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0104 W/kg
SAR(1 g) = 0.00463 mW/g; SAR(10 g) = 0.00208 mW/g
Maximum value of SAR = 0.0104 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0363 W/kg
SAR(1 g) = 0.0102 mW/g; SAR(10 g) = 0.00433 mW/g
Maximum value of SAR = 0.0104 mW/g

Test date = 12 / 08 / 03
Reference Value = 1.83 V/m
Power Drift = -0.2 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.1 degree.C , After 23.1 degree.C



PCG-4A1L/ Body / Bottom (Sub antenna) / DSSS / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.2, ρ = 1000 kg/m^3)
Phantom section: Flat Section

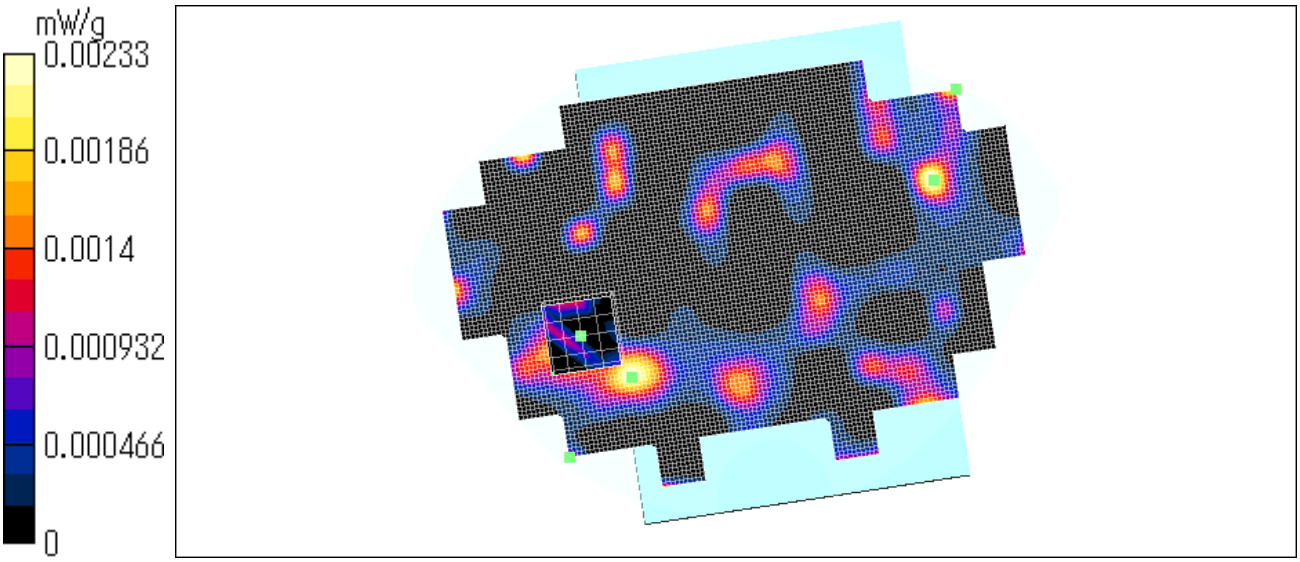
DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0034 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.00257 W/kg
SAR(1 g) = 0.00102 mW/g; SAR(10 g) = 0.000216 mW/g
Maximum value of SAR = 0.00233 mW/g

Test date = 12 / 09 / 03
Reference Value = 0 V/m
Power Drift = 0 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.5 degree.C , After 23.5 degree.C



PCG-4A1L/ Body / Left Top of display (Sub antenna) / DSSS / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.2, ρ = 1000 kg/m^3)
Phantom section: Flat Section

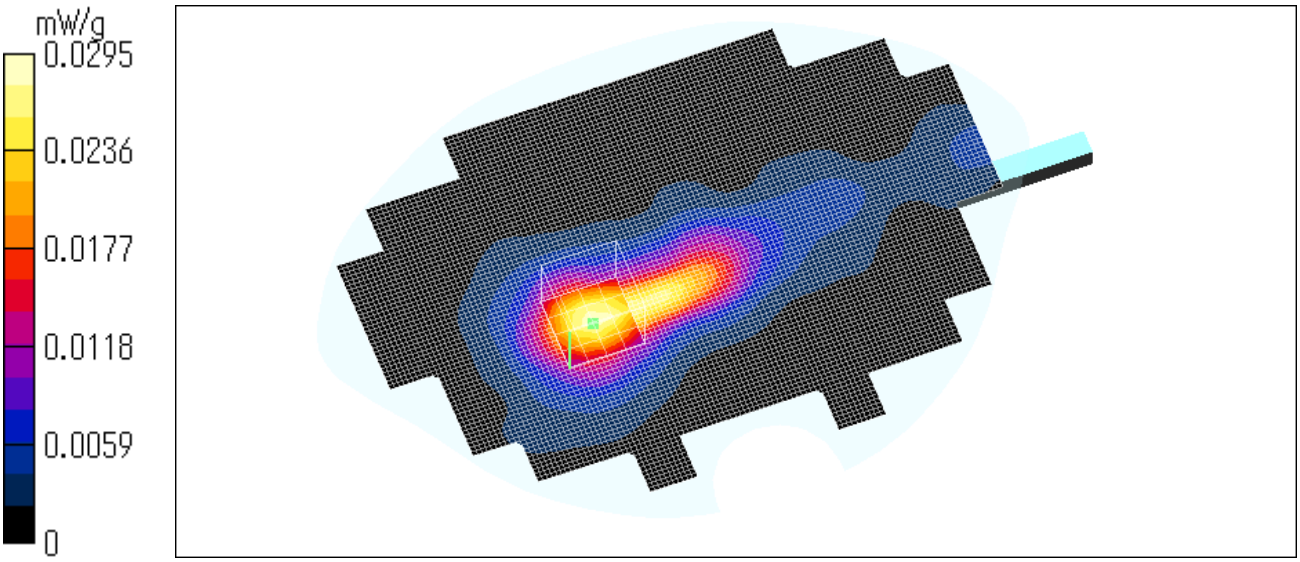
DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0323 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0582 W/kg
SAR(1 g) = 0.0285 mW/g; SAR(10 g) = 0.0153 mW/g
Maximum value of SAR = 0.0295 mW/g

Test date = 12 / 09 / 03
Reference Value = 3.89 V/m
Power Drift = 0.2 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.2 degree.C , After 23.2 degree.C



PCG-4A1L/ Body / Left Back of display (Sub antenna) / DSSS / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.2, ρ = 1000 kg/m^3)
Phantom section: Flat Section

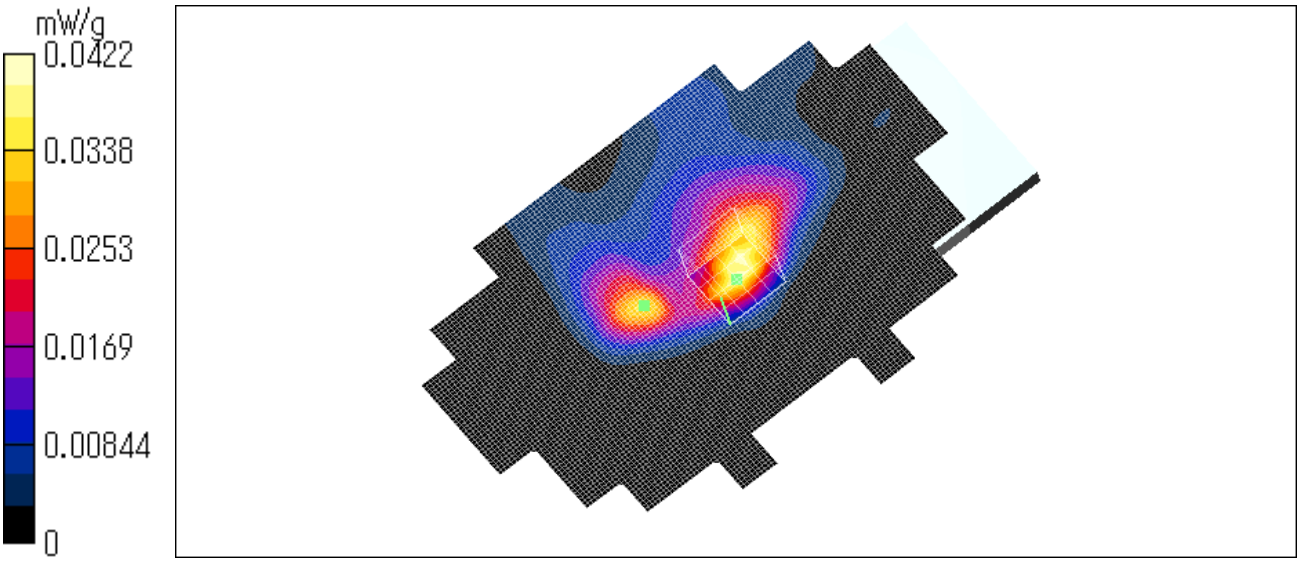
DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0461 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0919 W/kg
SAR(1 g) = 0.0414 mW/g; SAR(10 g) = 0.0205 mW/g
Maximum value of SAR = 0.0422 mW/g

Test date = 12 / 09 / 03
Reference Value = 4.04 V/m
Power Drift = -0.2 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.6 degree.C , After 23.6 degree.C



PCG-4A1L/ Body / Left Back of display (Sub antenna) / DSSS / 2412MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.2, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

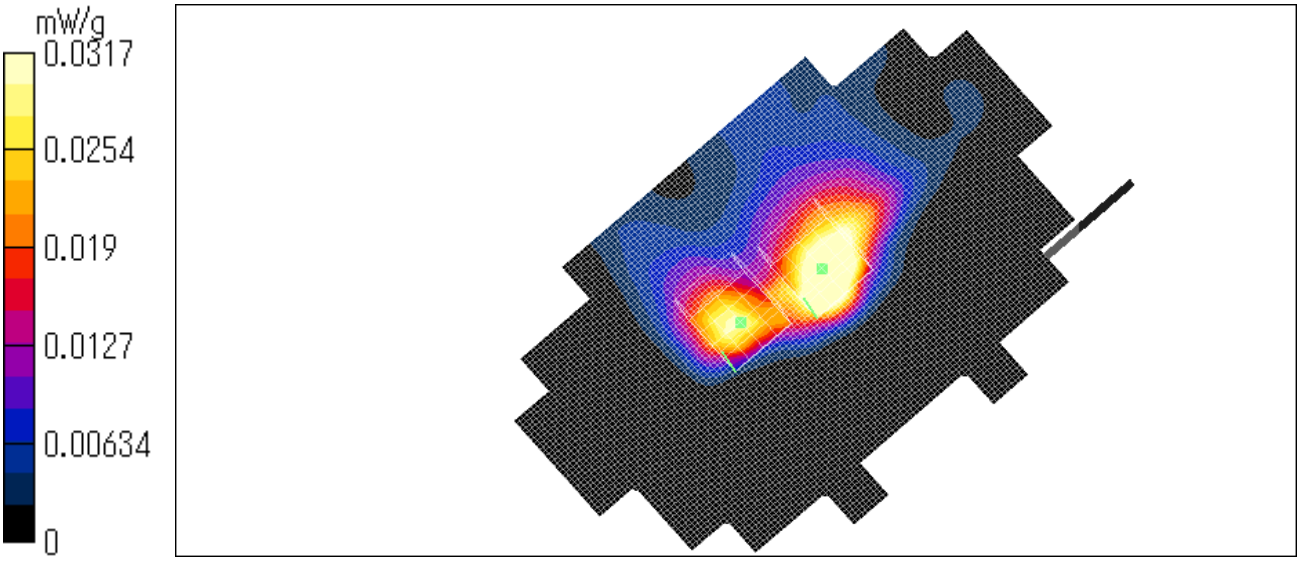
Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0429 mW/g

Unnamed procedure/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.111 W/kg
SAR(1 g) = 0.0483 mW/g; SAR(10 g) = 0.0235 mW/g
Maximum value of SAR = 0.0504 mW/g

Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0626 W/kg
SAR(1 g) = 0.0306 mW/g; SAR(10 g) = 0.0164 mW/g
Maximum value of SAR = 0.0317 mW/g

Test date = 12 / 09 / 03
Reference Value = 4.76 V/m
Power Drift = 0.2 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.6 degree.C , After 23.6 degree.C



PCG-4A1L/ Body / Left Back of display (Sub antenna) / DSSS / 2462MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.2, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

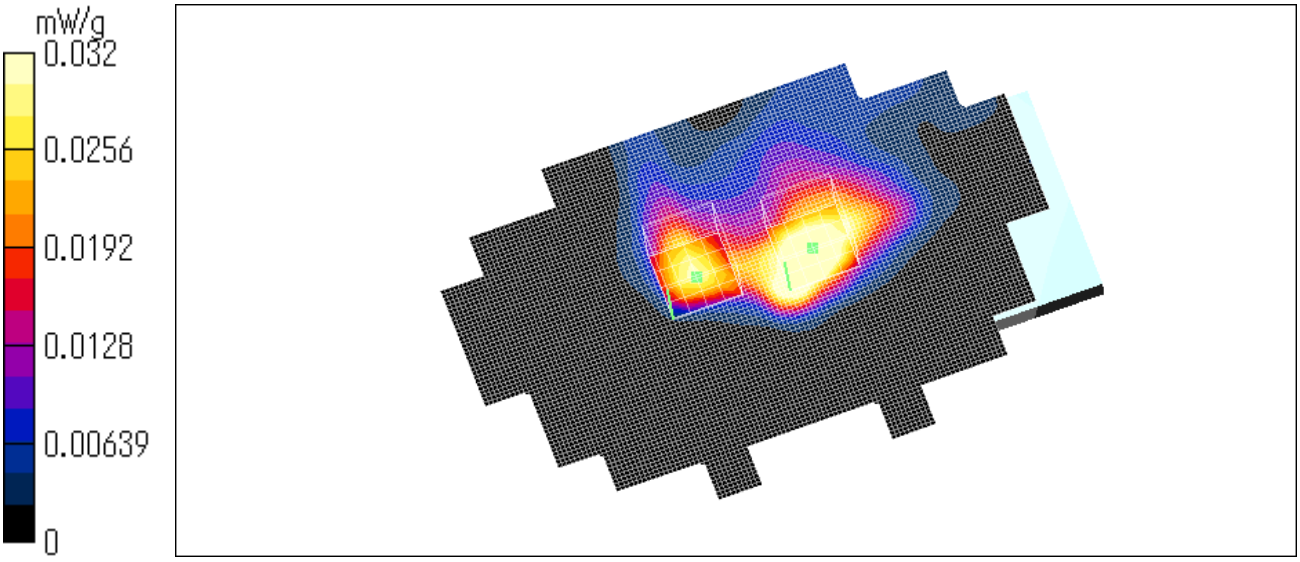
Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0431 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.109 W/kg
SAR(1 g) = 0.0491 mW/g; SAR(10 g) = 0.0244 mW/g
Maximum value of SAR = 0.0529 mW/g

Unnamed procedure/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.055 W/kg
SAR(1 g) = 0.0301 mW/g; SAR(10 g) = 0.0164 mW/g
Maximum value of SAR = 0.032 mW/g

Test date = 12 / 09 / 03
Reference Value = 4.05 V/m
Power Drift = -0.2 dB

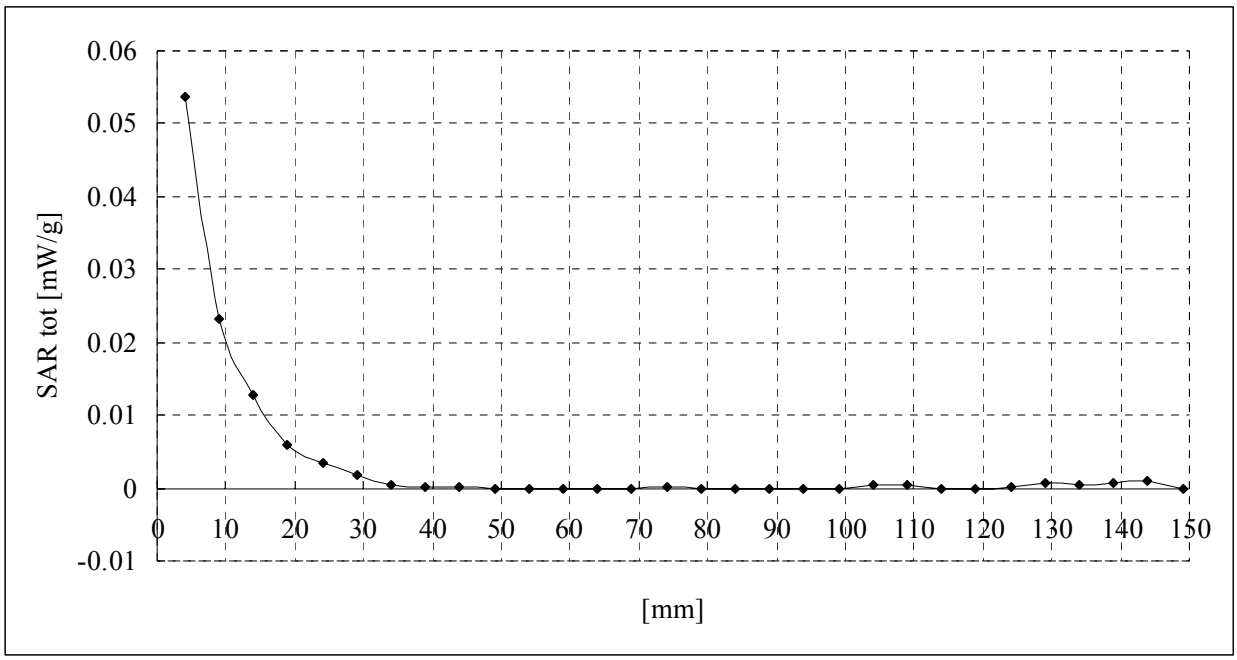
Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.6 degree.C , After 23.5 degree.C



Z-axis scan at max SAR location

PCG-4A1L/ Body / Left Back of display (Sub antenna) / DSSS / 2462MHz
Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.2, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115



PCG-4A1L/ Body / Bottom (Sub antenna) / OFDM QPSK / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.2, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

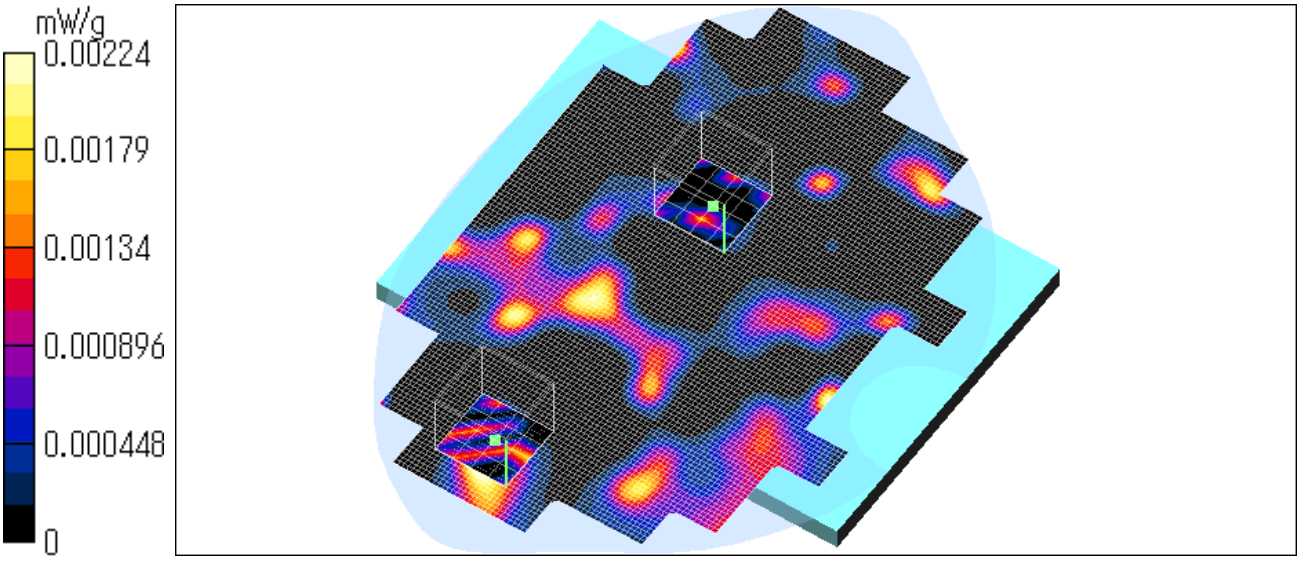
Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.00368 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.00325 W/kg
SAR(1 g) = 0.000868 mW/g; SAR(10 g) = 0.000411 mW/g
Maximum value of SAR = 0.00278 mW/g.

Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.00265 W/kg
SAR(1 g) = 0.000805 mW/g; SAR(10 g) = 0.000242 mW/g
Maximum value of SAR = 0.00224 mW/g

Test date = 12 / 09 / 03
Reference Value = 0.866 V/m
Power Drift = 0.2 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.5 degree.C , After 23.5 degree.C



PCG-4A1L/ Body / Left Top of display (Sub antenna) / OFDM QPSK / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.2, ρ = 1000 kg/m^3)
Phantom section: Flat Section

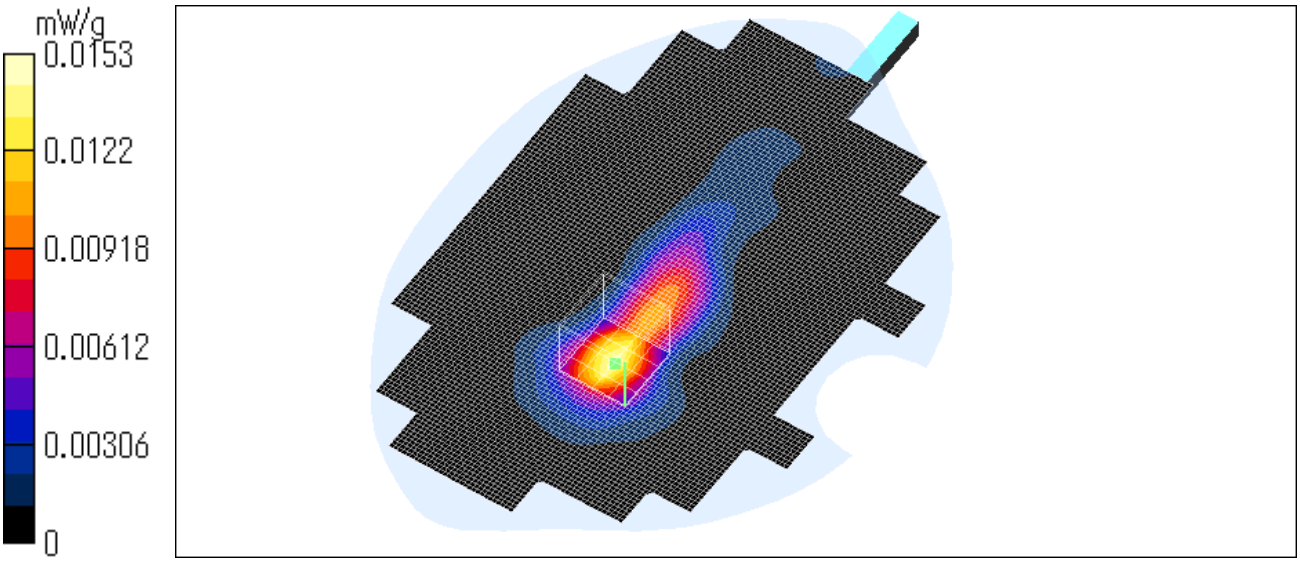
DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0138 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0323 W/kg
SAR(1 g) = 0.0147 mW/g; SAR(10 g) = 0.00753 mW/g
Maximum value of SAR = 0.0153 mW/g

Test date = 12 / 09 / 03
Reference Value = 2.76 V/m
Power Drift = 0.02 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.2 degree.C , After 23.2 degree.C



PCG-4A1L/ Body / Left Back of display (Sub antenna) / OFDM QPSK / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.2, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

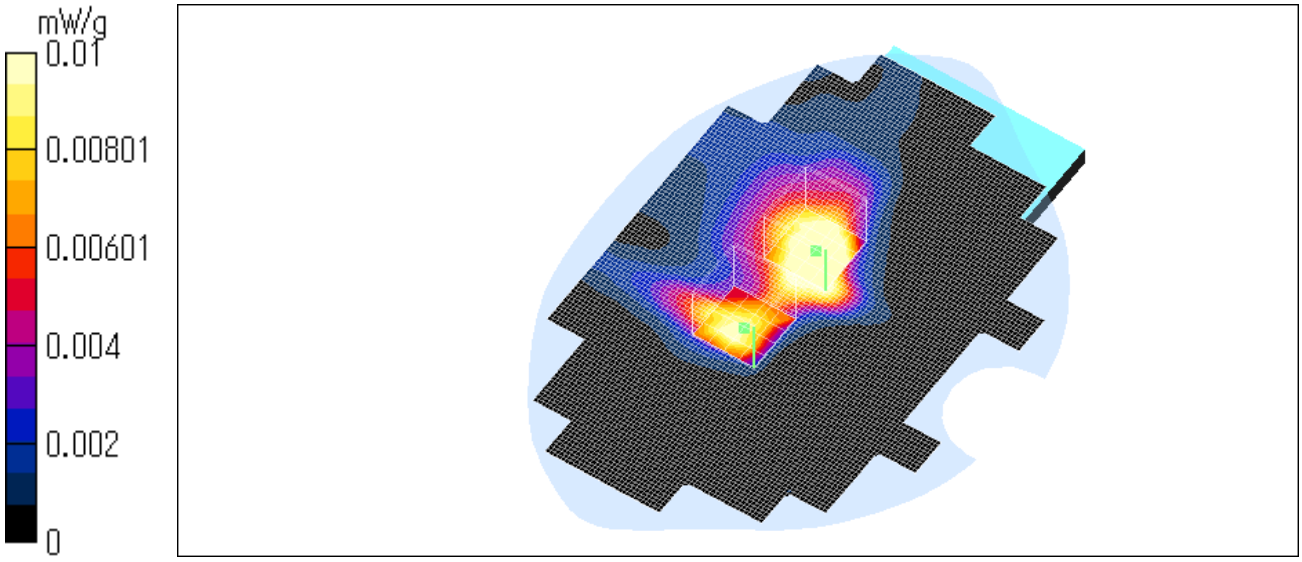
Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0164 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0509 W/kg
SAR(1 g) = 0.0166 mW/g; SAR(10 g) = 0.00807 mW/g
Maximum value of SAR = 0.0163 mW/g

Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0245 W/kg
SAR(1 g) = 0.00983 mW/g; SAR(10 g) = 0.00501 mW/g
Maximum value of SAR = 0.01 mW/g

Test date = 12 / 09 / 03
Reference Value = 2.43 V/m
Power Drift = -0.01 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.4 degree.C , After 23.4 degree.C



PCG-4A1L/ Body / Left Back of display (Sub antenna) / OFDM QPSK / 2412MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.2, ρ = 1000 kg/m^3)
Phantom section: Flat Section

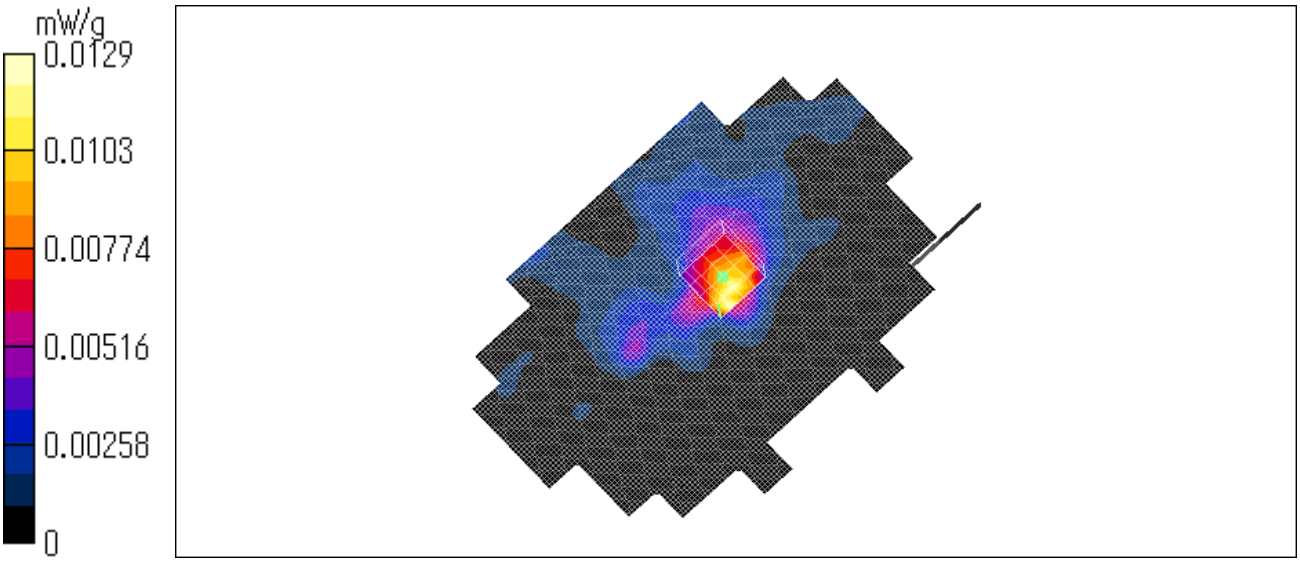
DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0114 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0362 W/kg
SAR(1 g) = 0.0125 mW/g; SAR(10 g) = 0.0059 mW/g
Maximum value of SAR = 0.0129 mW/g

Test date = 12 / 09 / 03
Reference Value = 2.62 V/m
Power Drift = -0.2 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.4 degree.C , After 23.4 degree.C



PCG-4A1L/ Body / Left Back of display (Sub antenna) / OFDM QPSK / 2462MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.2, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

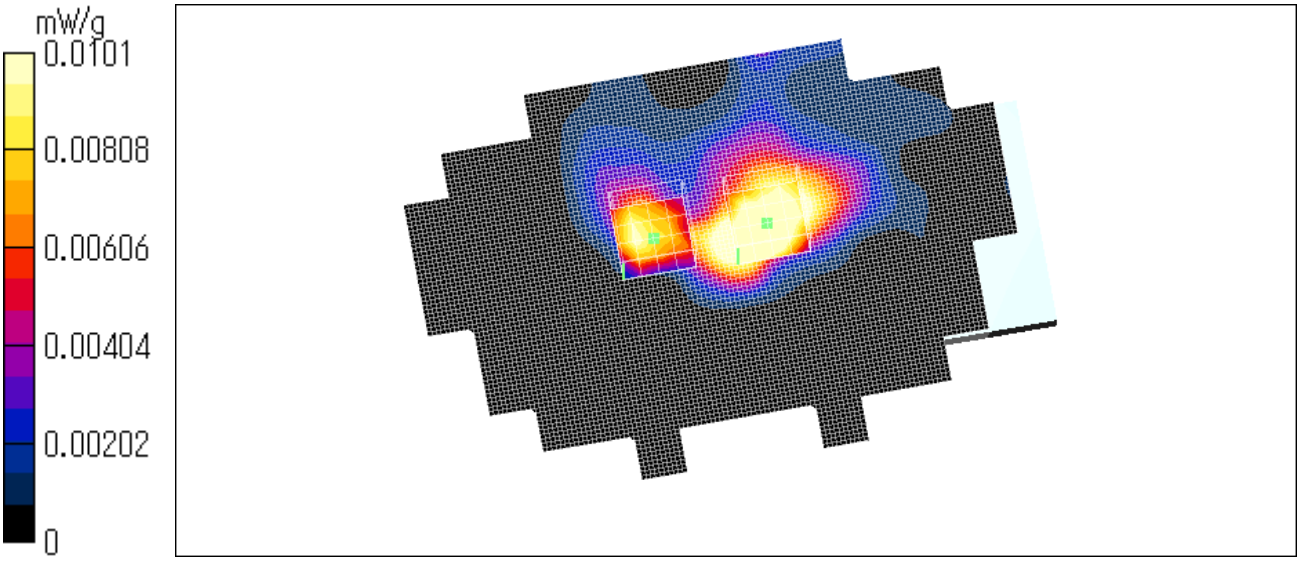
Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0157 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0538 W/kg
SAR(1 g) = 0.0166 mW/g; SAR(10 g) = 0.00767 mW/g
Maximum value of SAR = 0.0184 mW/g

Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0211 W/kg
SAR(1 g) = 0.00925 mW/g; SAR(10 g) = 0.00485 mW/g
Maximum value of SAR = 0.0101 mW/g

Test date = 12 / 09 / 03
Reference Value = 2.38 V/m
Power Drift = 0.03 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.7 degree.C , After 23.7 degree.C



PCG-4A1L/ Body / Bottom (Sub antenna) / OFDM 64QAM / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.2, ρ = 1000 kg/m^3)
Phantom section: Flat Section

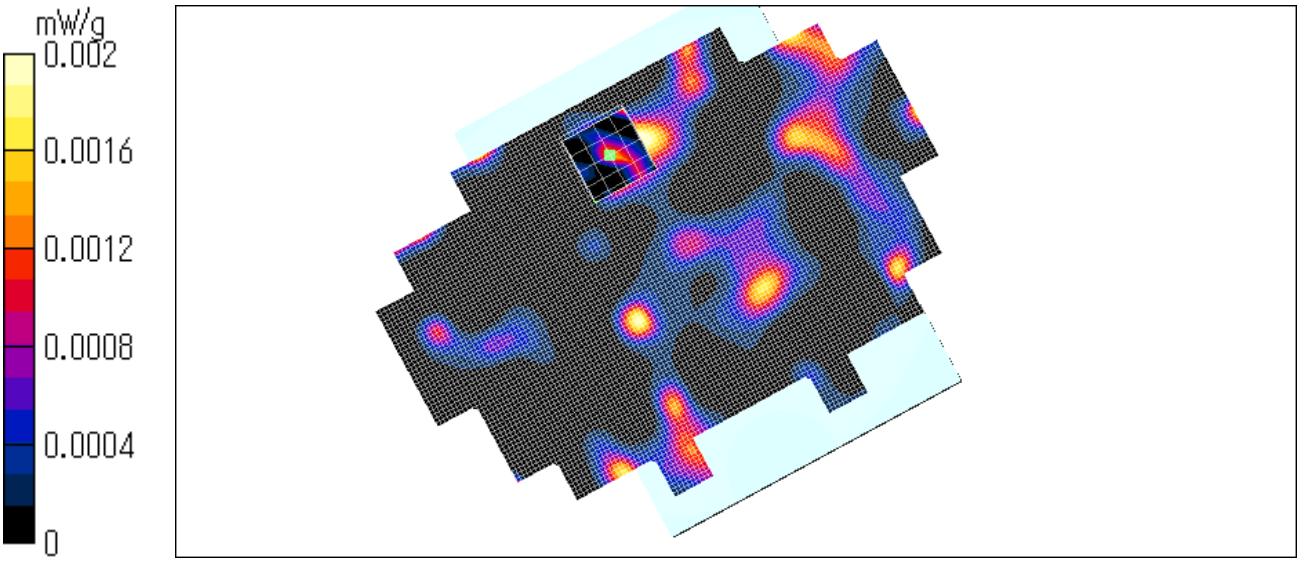
DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.00521 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.00234 W/kg
SAR(1 g) = 0.00106 mW/g; SAR(10 g) = 0.000329 mW/g
Maximum value of SAR = 0.002 mW/g

Test date = 12 / 09 / 03
Reference Value = 0 V/m
Power Drift = 0 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.4 degree.C , After 23.4 degree.C



PCG-4A1L/ Body / Left Top of display (Sub antenna) / OFDM 64QAM / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.2, ρ = 1000 kg/m^3)
Phantom section: Flat Section

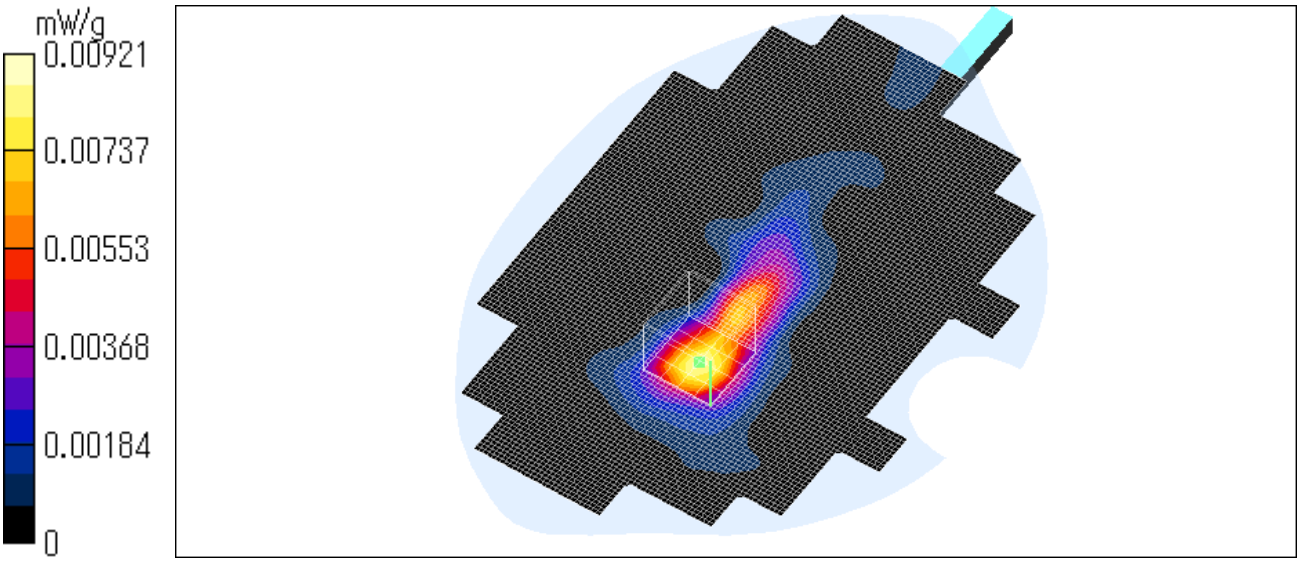
DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.008 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0249 W/kg
SAR(1 g) = 0.00927 mW/g; SAR(10 g) = 0.00467 mW/g
Maximum value of SAR = 0.00921 mW/g

Test date = 12 / 09 / 03
Reference Value = 2.17 V/m
Power Drift = -0.2 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.3 degree.C , After 23.4 degree.C



PCG-4A1L/ Body / Left Back of display (Sub antenna) / OFDM 64QAM / 2437MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.2, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

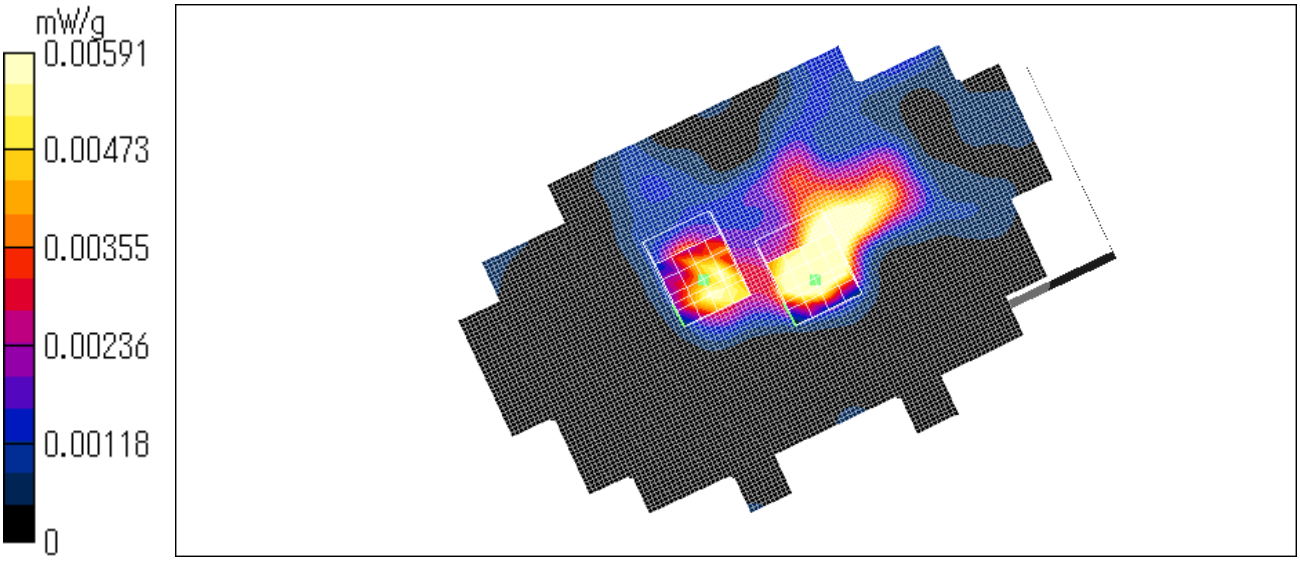
Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.00824 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0844 W/kg
SAR(1 g) = 0.0101 mW/g; SAR(10 g) = 0.00478 mW/g
Maximum value of SAR = 0.0107 mW/g

Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.214 W/kg
SAR(1 g) = 0.0116 mW/g; SAR(10 g) = 0.00345 mW/g
Maximum value of SAR = 0.00591 mW/g

Test date = 12 / 09 / 03
Reference Value = 1.68 V/m
Power Drift = 0.1 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.4 degree.C , After 23.4 degree.C



PCG-4A1L/ Body / Left Back of display (Sub antenna) / OFDM 64QAM / 2412MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.2, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

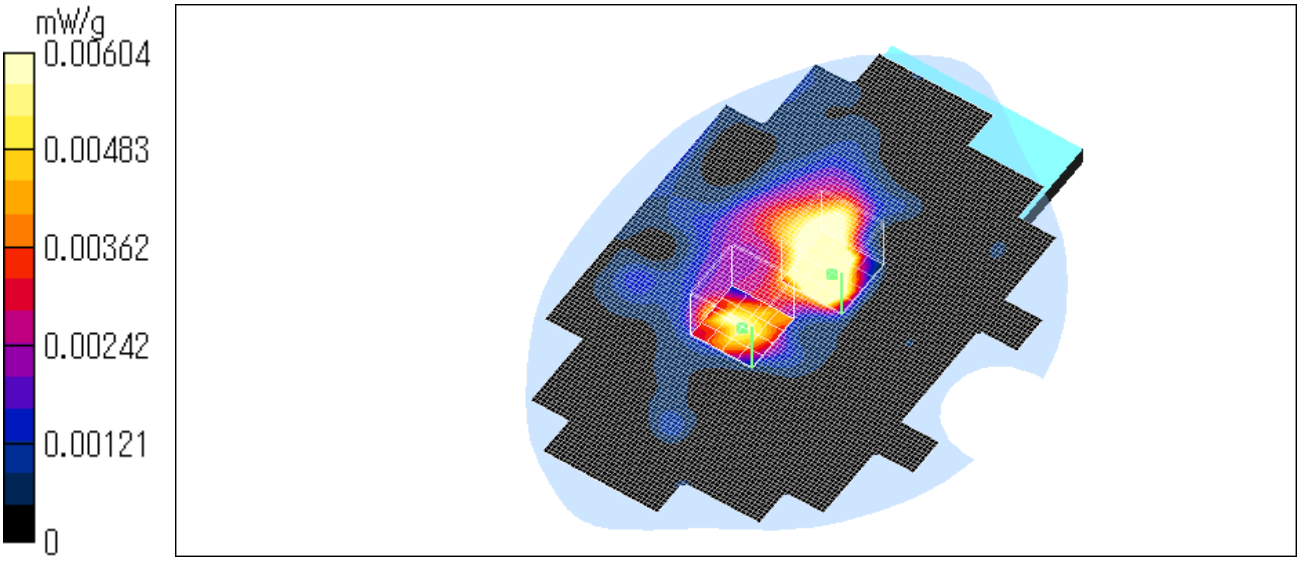
Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.00929 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0336 W/kg
SAR(1 g) = 0.0118 mW/g; SAR(10 g) = 0.00545 mW/g
Maximum value of SAR = 0.0112 mW/g

Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.00623 W/kg
SAR(1 g) = 0.0035 mW/g; SAR(10 g) = 0.00172 mW/g
Maximum value of SAR = 0.00604 mW/g

Test date = 12 / 09 / 03
Reference Value = 1.98 V/m
Power Drift = 0.08 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.4 degree.C , After 23.4 degree.C



PCG-4A1L/ Body / Left Back of display (Sub antenna) / OFDM 64QAM / 24362MHz

Crest factor: 1
Medium: M2450 (σ = 1.96 mho/m, ε_r = 50.2, ρ = 1000 kg/m^3)
Phantom section: Flat Section

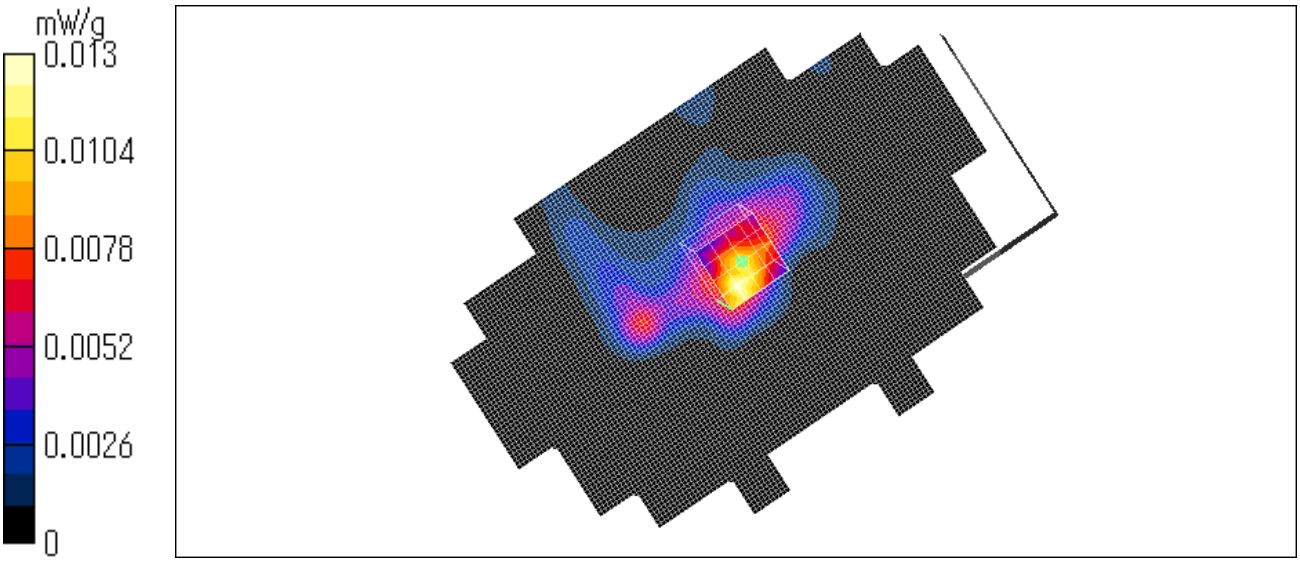
DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.3, 4.3, 4.3); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Area Scan (91x131x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 0.0129 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 0.0606 W/kg
SAR(1 g) = 0.0143 mW/g; SAR(10 g) = 0.0063 mW/g
Maximum value of SAR = 0.013 mW/g

Test date = 12 / 09 / 03
Reference Value = 2.8 V/m
Power Drift = -0.07 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.4 degree.C , After 23.5 degree.C



APPENDIX 3 : Validation Measurement data

System Validation / Dipole 2450 MHz / Forward Conducted Power : 250mW

Crest factor: 1
Medium: HSL2450 (σ = 1.87 mho/m, ε_r = 38, ρ = 1000 kg/m^3)
Phantom section: Flat Section

Dipole 2450 MHz;
- Type: D2450V2; SN:713

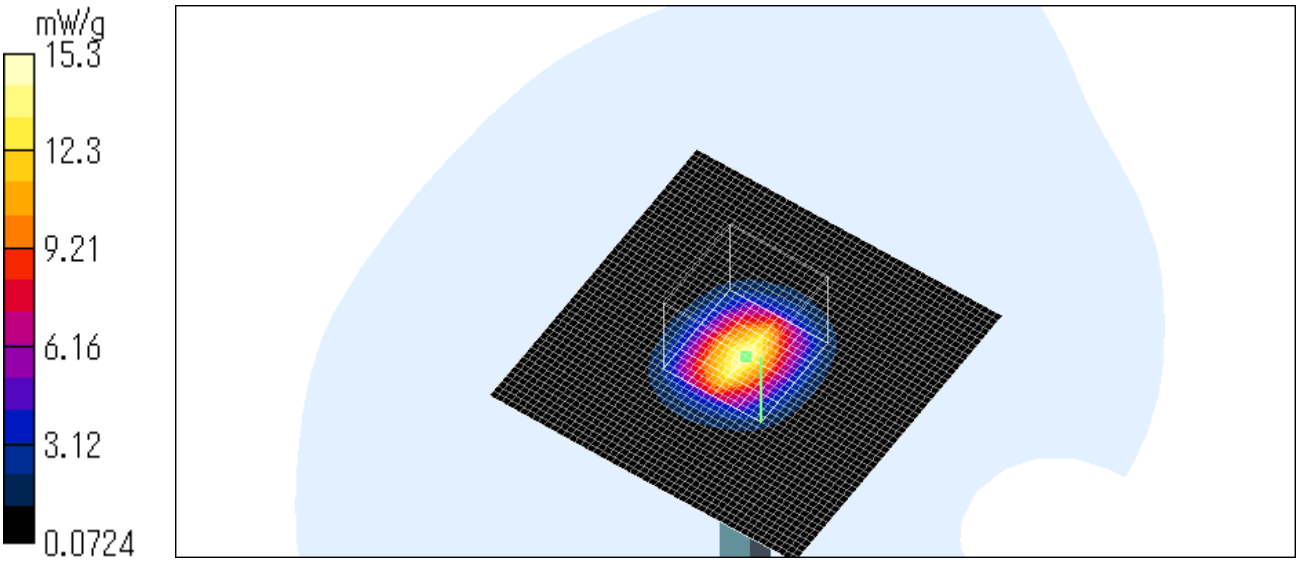
DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.7, 4.7, 4.7); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 16.9 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 29.3 W/kg
SAR(1 g) = 13.8 mW/g; SAR(10 g) = 6.2 mW/g
Maximum value of SAR = 15.3 mW/g

Test date = 12 / 08 / 03
Reference Value = 95.6 V/m
Power Drift = 0.04 dB

Ambient Temperature : 24.8 degree.c
Liquid Temperature : Before 23.2 degree.C , After 23.3 degree.C



System Validation / Dipole 2450 MHz / Forward Conducted Power : 250mW

Crest factor: 1
Medium: HSL2450 (σ = 1.84 mho/m, ε_r = 38.2, ρ = 1000 kg/m^3)
Phantom section: Flat Section

Dipole 2450 MHz;
- Type: D2450V2;SN:713

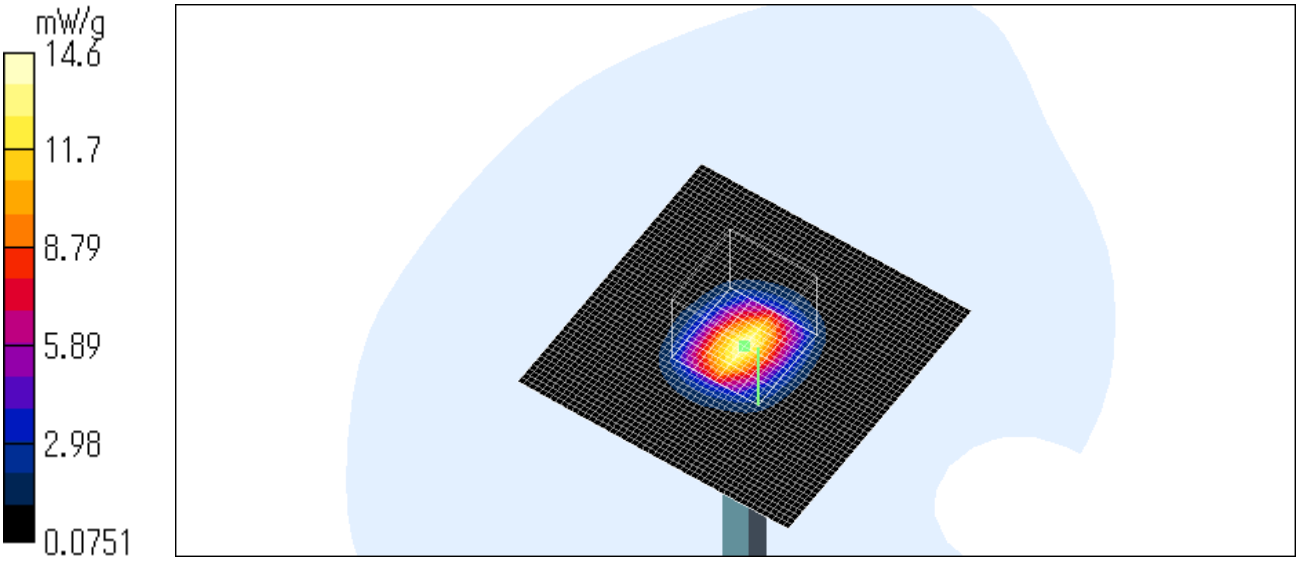
DASY4 Configuration:
- Probe: ET3DV6 - SN1685; ConvF(4.7, 4.7, 4.7); Calibrated: 2003/10/10
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Phantom: SAM 1196
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR = 15.8 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 27.8 W/kg
SAR(1 g) = 13.2 mW/g; SAR(10 g) = 5.97 mW/g
Maximum value of SAR = 14.6 mW/g

Test date = 12 / 09 / 03
Reference Value = 94.7 V/m
Power Drift = -0.03 dB

Ambient Temperature : 23.4 degree.c
Liquid Temperature : Before 23.2 degree.C , After 23.2 degree.C



APPENDIX 4 : System Validation Dipole (D2450V2,S/N: 713)

Schmid & Partner
Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

Calibration Certificate

2450 MHz System Validation Dipole

Type:	D2450V2
Serial Number:	713
Place of Calibration:	Zurich
Date of Calibration:	November 15, 2002
Calibration Interval:	24 months

Schmid & Partner Engineering AG hereby certifies, that this device has been calibrated on the date indicated above. The calibration was performed in accordance with specifications and procedures of Schmid & Partner Engineering AG.

Wherever applicable, the standards used in the calibration process are traceable to international standards. In all other cases the standards of the Laboratory for EMF and Microwave Electronics at the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland have been applied.

Calibrated by:	D. Vellen
Approved by:	

Schmid & Partner
Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

DASY

Dipole Validation Kit

Type: D2450V2

Serial: 713

Manufactured: July 5, 2002
Calibrated: November 15, 2002

1. Measurement Conditions

The measurements were performed in the flat section of the SAM twin phantom filled with head simulating solution of the following electrical parameters at 2450 MHz:

Relative permitivity	**38.0**	± 5%
Conductivity	**1.87 mho/m**	± 10%

The DASY4 System with a dosimetric E-field probe ET3DV6 (SN:1507, conversion factor 5.0 at 2450 MHz) was used for the measurements.

The dipole feedpoint was positioned below the center marking and oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10mm from dipole center to the solution surface. The included distance holder was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 15mm was aligned with the dipole. The 7x7x7 fine cube was chosen for cube integration.
The dipole input power (forward power) was 250mW ± 3 %. The results are normalized to 1W input power.

2. SAR Measurement with DASY4 System

Standard SAR-measurements were performed according to the measurement conditions described in section 1. The results (see figure supplied) have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values measured with the dosimetric probe ET3DV6 SN:1507 and applying the advanced extrapolation are:

averaged over 1 cm^3 (1 g) of tissue:	**54.4 mW/g**
averaged over 10 cm^3 (10 g) of tissue:	**24.2 mW/g**

3. Dipole impedance and return loss

The impedance was measured at the SMA-connector with a network analyzer and numerically transformed to the dipole feedpoint. The transformation parameters from the SMA-connector to the dipole feedpoint are:

Electrical delay:	**1.158 ns**	(one direction)
Transmission factor:	**0.997**	(voltage transmission, one direction)

The dipole was positioned at the flat phantom sections according to section 1 and the distance holder was in place during impedance measurements.

Feedpoint impedance at 2450 MHz:	Re{Z} = **51.3 Ω**
	Im {Z} = **2.4 Ω**
Return Loss at 2450 MHz	**- 31.4 dB**

4. Measurement Conditions

The measurements were performed in the flat section of the SAM twin phantom filled with body simulating solution of the following electrical parameters at 2450 MHz:

Relative permitivity	**51.2**	± 5%
Conductivity	**1.96 mho/m**	± 10%

The DASY4 System with a dosimetric E-field probe ET3DV6 (SN:1507, conversion factor 4.5 at 2450 MHz) was used for the measurements.

The dipole feedpoint was positioned below the center marking and oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10mm from dipole center to the solution surface. The included distance holder was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 15mm was aligned with the dipole. The 7x7x7 fine cube was chosen for cube integration.
The dipole input power (forward power) was 250mW ± 3 %. The results are normalized to 1W input power.

Date/Time: 11/13/02 21:52:22

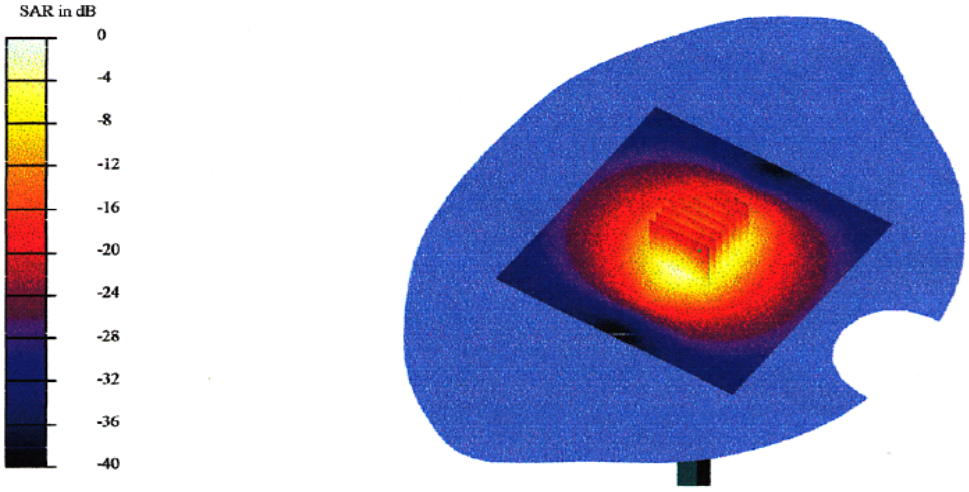
Test Laboratory: SPEAG, Zurich, Switzerland
File Name: SN713_SN1507_HSL2450_131102.da4

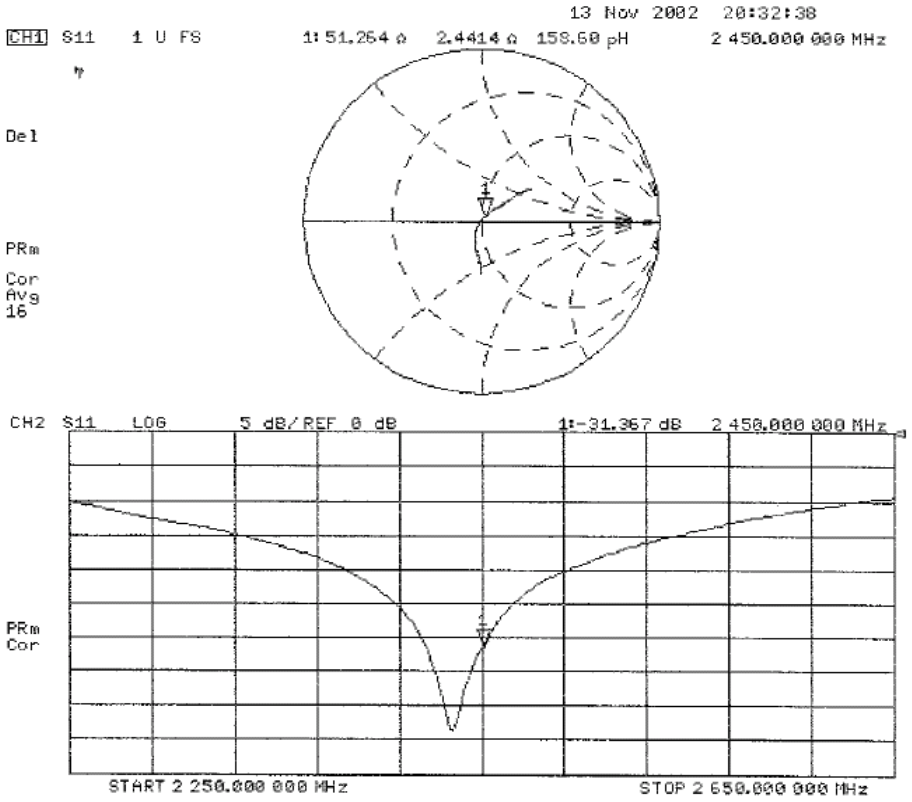
DUT: Dipole 2450 MHz Type & Serial Number: D2450V2 - SN713
Program: Dipole Calibration; Pin = 250 mW; d = 10 mm

Communication System: CW-2450; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: HSL 2450 MHz (σ = 1.87 mho/m, ε = 38.03, ρ = 1000 kg/m3)
Phantom section: FlatSection

DASY4 Configuration:
- Probe: ET3DV6 - SN1507; ConvF(5, 5, 5); Calibrated: 1/24/2002
- *Sensor-Surface: 4mm (Mechanical Surface Detection)*
- Electronics: DAE3 - SN410; Calibrated: 7/18/2002
- Phantom: SAM 4.0 - TP:1006
- Software: DASY4, V4.0 Build 35

Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm
Reference Value = 94.4 V/m
Peak SAR = 29.6 mW/g
SAR(1 g) = 13.6 mW/g; SAR(10 g) = 6.04 mW/g
Power Drift = 0.01 dB




13 Nov 2002 20:32:38
CH1 S11 1 U FS
1: 51.254 Ω 2.4414 Ω 158.60 pH
2 450.000 000 MHz
Del
PRm
Cor
Avg
16
CH2 S11 LOG 5 dB/ REF 0 dB
1: -31.367 dB 2 450.000 000 MHz
PRm
Cor
START 2 250.000 000 MHz
STOP 2 650.000 000 MHz

Date/Time: 11/15/02 14:25:17

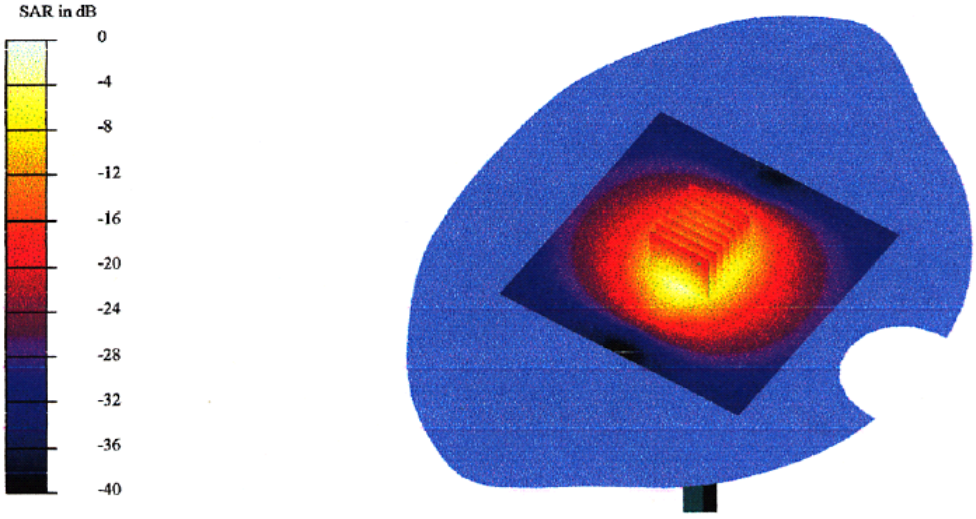
Test Laboratory: SPEAG, Zurich, Switzerland
File Name: SN713_SN1507_M2450_141102.da4

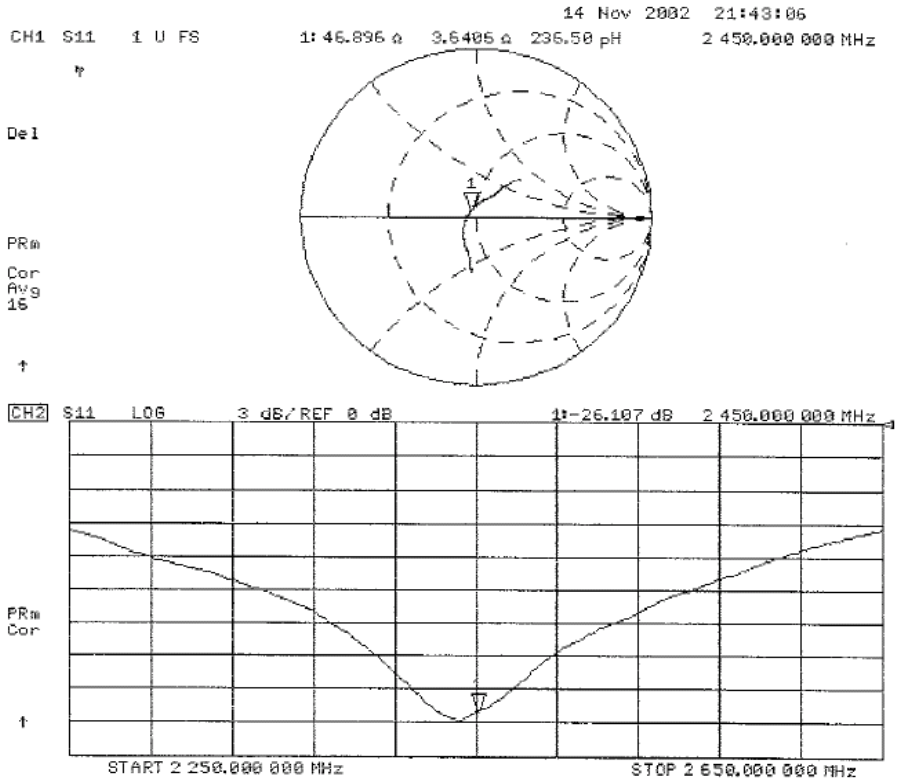
DUT: Dipole 2450 MHz Type & Serial Number: D2450V2 - SN713
Program: Dipole Calibration; Pin = 250 mW; d = 10 mm

Communication System: CW-2450; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: Muscle 2450 MHz (σ = 1.96 mho/m, ε = 51.15, ρ = 1000 kg/m3)
Phantom section: FlatSection

DASY4 Configuration:
- Probe: ET3DV6 - SN1507; ConvF(4.5, 4.5, 4.5); Calibrated: 1/24/2002
- *Sensor-Surface: 4mm (Mechanical Surface Detection)*
- Electronics: DAE3 - SN410; Calibrated: 7/18/2002
- Phantom: SAM 4.0 - TP:1006
- Software: DASY4, V4.0 Build 35

Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm
Reference Value = 95.2 V/m
Peak SAR = 25 mW/g
SAR(1 g) = 12.9 mW/g; SAR(10 g) = 5.99 mW/g
Power Drift = 0.02 dB




14 Nov 2002 21:43:06
CH1 S11 1 U FS
1: 46.896 Ω 3.6405 Ω 236.50 pH
2 450.000 000 MHz
Del
PRm
Cor
Avg
16
CH2 S11 LOG 3 dB/ REF 0 dB
1: -26.107 dB 2 450.000 000 MHz
PRm
Cor
START 2 250.000 000 MHz
STOP 2 650.000 000 MHz

APPENDIX 5 : Dosimetric E-Field Probe Calibration (ET3DV6,S/N: 1685)

Schmid & Partner Engineering AG
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Phone +41 1 245 9700, Fax +41 1 245 9779
info@speag.com, http://www.speag.com

IMPORTANT NOTICE

USAGE OF PROBES IN ORGANIC SOLVENTS

Diethylene Gycol Monobuthy Ether (the basis for liquids above 1 GHz), as many other organic solvents, is a very effective softener for synthetic materials. These solvents can cause irreparable damage to certain SPEAG products, except those which are explicitly declared as compliant with organic solvents.

Compatible Probes:
- ET3DV6
- ET3DV6R
- ES3DV2
- ER3DV6
- H3DV6

Important Note for ET3DV6 Probes:
The ET3DV6 probes shall not be exposed to solvents longer than necessary for the measurements and shall be cleaned daily after use with warm water and stored dry.

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Schmid & Partner Engineering AG

Technical Note 01.06.15-1 June 2002

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

Client UL Apex (MTT)

CALIBRATION CERTIFICATE

Object(s) ET3DV6 - SN:1685

Calibration procedure(s) QA CAL-01.v2
Calibration procedure for dosimetric E-field probes

Calibration date: October 10, 2003

Condition of the calibrated item In Tolerance (according to the specific calibration document)

This calibration statement documents traceability of M&TE used in the calibration procedures and conformity of the procedures with the ISO/IEC 17025 international standard.

All calibrations have been conducted in the closed laboratory facility: environment temperature 22 +/- 2 degrees Celsius and humidity < 75%.

Calibration Equipment used (M&TE critical for calibration)

Model Type	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM E4419B	GB41293874	2-Apr-03 (METAS, No 252-0250)	Apr-04
Power sensor E4412A	MY41495277	2-Apr-03 (METAS, No 252-0250)	Apr-04
Reference 20 dB Attenuator	SN: 5086 (20b)	3-Apr-03 (METAS No. 251-0340	Apr-04
Fluke Process Calibrator Type 702	SN: 6295803	8-Sep-03 (Sintrel SCS No. E-030020)	Sep-04
Power sensor HP 8481A	MY41092180	18-Sep-02 (Agilent, No. 20020918)	In house check: Oct 03
RF generator HP 8684C	US3642U01700	4-Aug-99 (SPEAG, in house check Aug-02)	In house check: Aug-05
Network Analyzer HP 8753E	US37390585	18-Oct-01 (Agilent, No. 24BR1033101)	In house check: Oct 03

	Name	Function	Signature
Calibrated by:	Nico Vetterli	Technician	
Approved by:	Katja Pokovic	Laboratory Director	

Date issued: October 23, 2003

This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed.

880-KP0301061-A

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Schmid & Partner Engineering AG

s p e a g

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Probe ET3DV6

SN:1685

Manufactured: April 3, 2002
Last calibration: May 10, 2002
Recalibrated: October 10, 2003

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

ET3DV6 SN:1685 **October 10, 2003**

DASY - Parameters of Probe: ET3DV6 SN:1685

Sensitivity in Free Space

Diode Compression

NormX	**1.60** $\mu V/(V/m)^2$	DCP X	**95**	mV
NormY	**1.65** $\mu V/(V/m)^2$	DCP Y	**95**	mV
NormZ	**1.56** $\mu V/(V/m)^2$	DCP Z	**95**	mV

Sensitivity in Tissue Simulating Liquid

Head **900 MHz** ε_r **= 41.5 ± 5%** σ **= 0.97 ± 5% mho/m**

Valid for f=800-1000 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

ConvF X	**6.6** ± 9.5% (k=2)	Boundary effect:	
ConvF Y	**6.6** ± 9.5% (k=2)	Alpha	**0.26**
ConvF Z	**6.6** ± 9.5% (k=2)	Depth	**3.07**

Head **1800 MHz** ε_r **= 40.0 ± 5%** σ **= 1.40 ± 5% mho/m**

Valid for f=1710-1910 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

ConvF X	**5.2** ± 9.5% (k=2)	Boundary effect:	
ConvF Y	**5.2** ± 9.5% (k=2)	Alpha	**0.41**
ConvF Z	**5.2** ± 9.5% (k=2)	Depth	**2.77**

Boundary Effect

Head **900 MHz** **Typical SAR gradient: 5 % per mm**

Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	8.9	5.4
SAR_{be} [%]	With Correction Algorithm	0.4	0.5

Head **1800 MHz** **Typical SAR gradient: 10 % per mm**

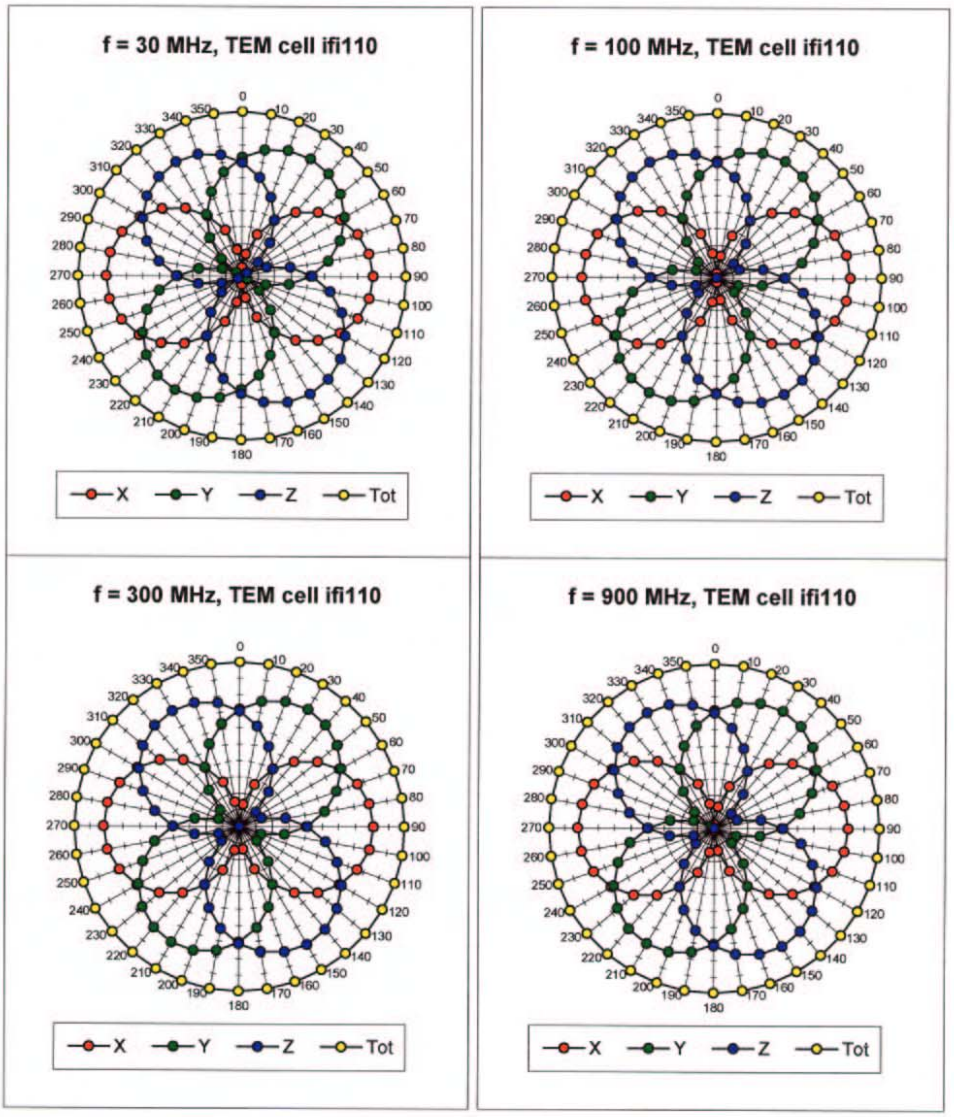
Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	11.8	8.4
SAR_{be} [%]	With Correction Algorithm	0.4	0.2

Sensor Offset

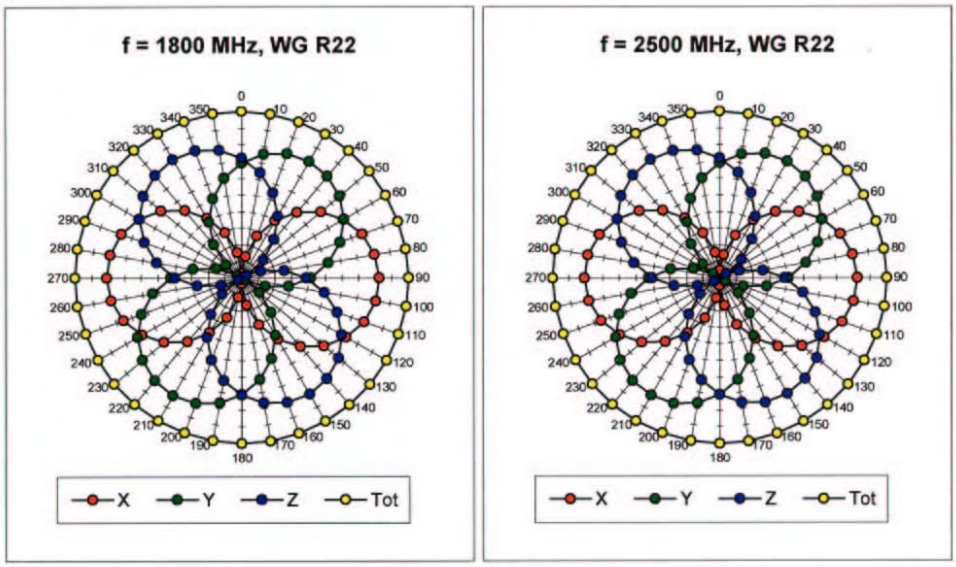
Probe Tip to Sensor Center	**2.7**	mm
Optical Surface Detection	**1.6 ± 0.2**	mm

ET3DV6 SN:1685 October 10, 2003

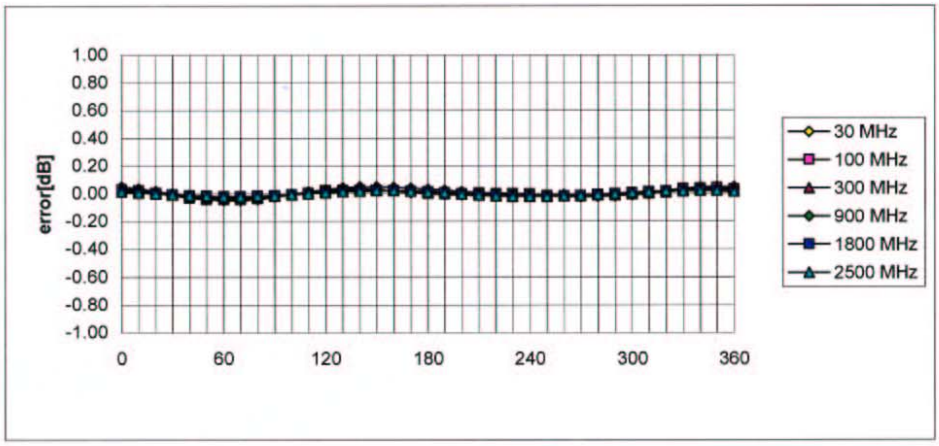
Receiving Pattern (ϕ , θ = 0°



ET3DV6 SN:1685 October 10, 2003



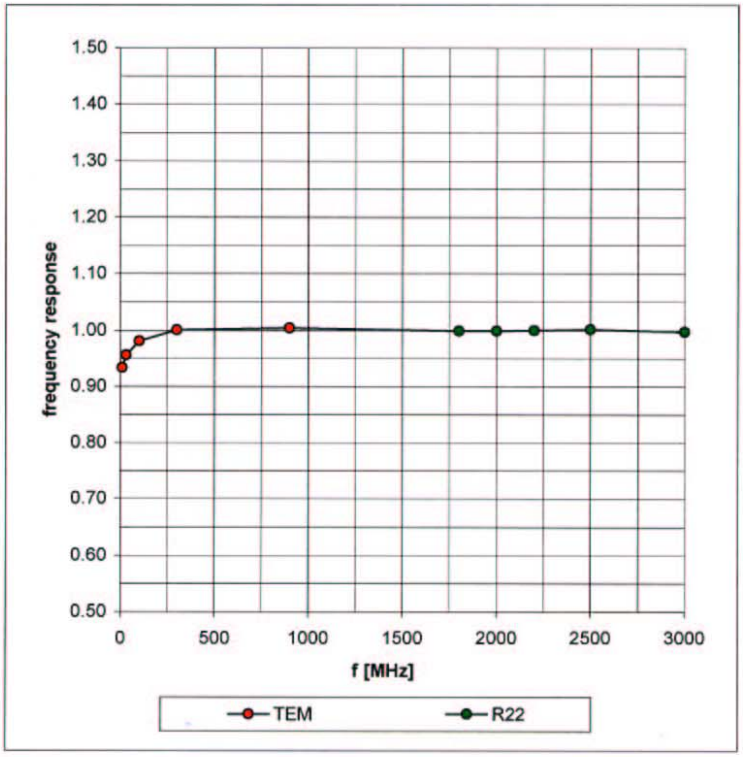
Isotropy Error (ϕ), θ = 0°



ET3DV6 SN:1685 October 10, 2003

Frequency Response of E-Field

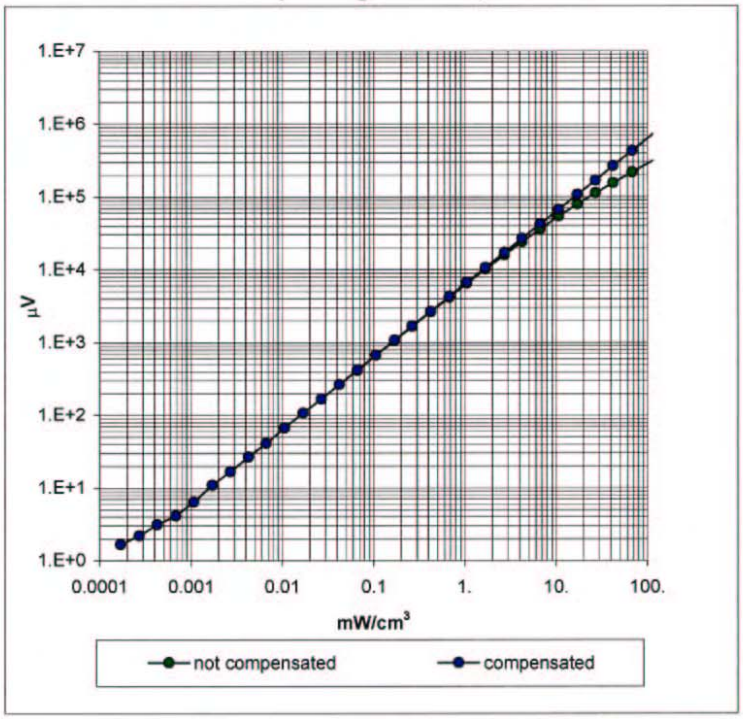
(TEM-Cell:ifi110, Waveguide R22)

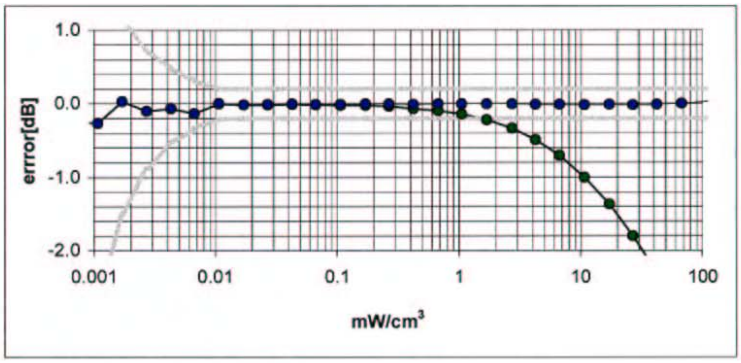


ET3DV6 SN:1685 October 10, 2003

Dynamic Range f(SAR_{brain})

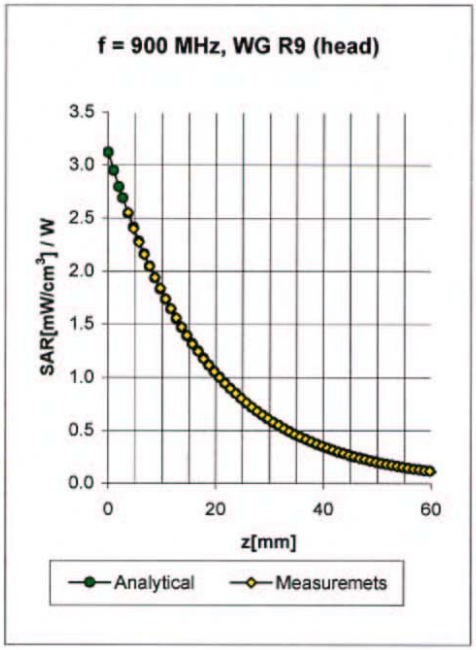
(Waveguide R22)

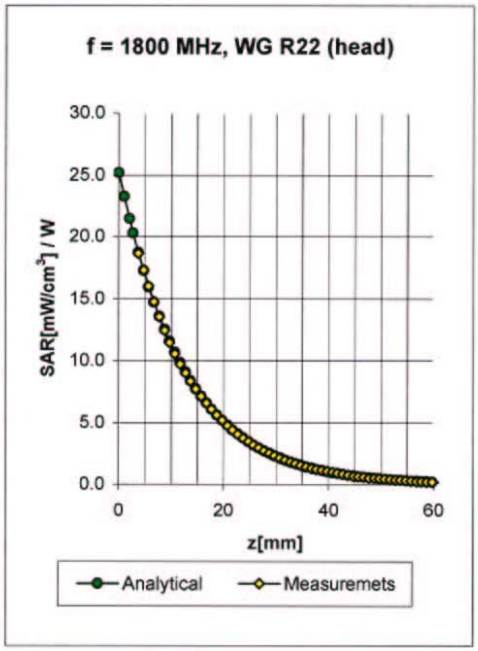




ET3DV6 SN:1685 October 10, 2003

Conversion Factor Assessment





Head **900 MHz** ε_r = 41.5 ± 5% σ = 0.97 ± 5% mho/m

Valid for f=800-1000 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

ConvF X	**6.6** ± 9.5% (k=2)	Boundary effect:	
ConvF Y	**6.6** ± 9.5% (k=2)	Alpha	**0.26**
ConvF Z	**6.6** ± 9.5% (k=2)	Depth	**3.07**

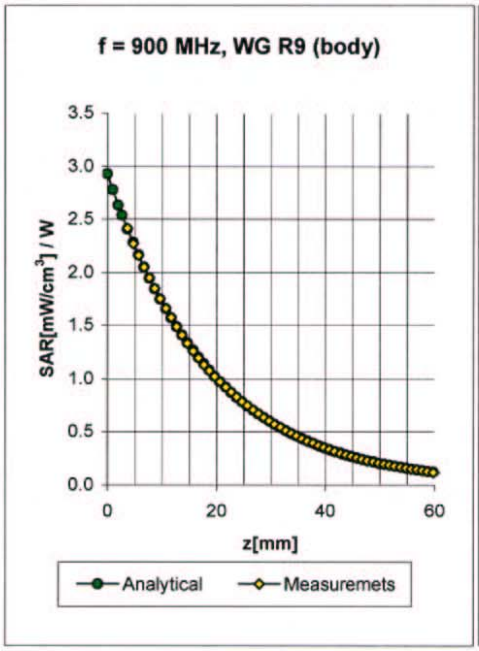
Head **1800 MHz** ε_r = 40.0 ± 5% σ = 1.40 ± 5% mho/m

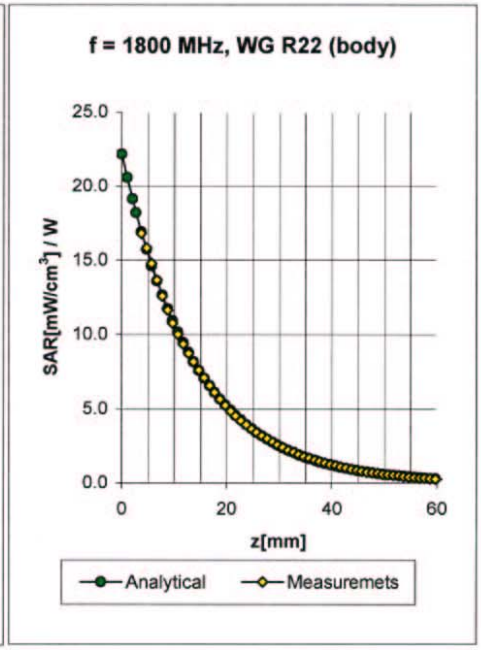
Valid for f=1710-1910 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

ConvF X	**5.2** ± 9.5% (k=2)	Boundary effect:	
ConvF Y	**5.2** ± 9.5% (k=2)	Alpha	**0.41**
ConvF Z	**5.2** ± 9.5% (k=2)	Depth	**2.77**

ET3DV6 SN:1685 October 10, 2003

Conversion Factor Assessment





Body 900 MHz ε_r = 55.0 ± 5% σ = 1.05 ± 5% mho/m

Valid for f=800-1000 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C

ConvF X	**6.4** ± 9.5% (k=2)	Boundary effect:	
ConvF Y	**6.4** ± 9.5% (k=2)	Alpha	**0.27**
ConvF Z	**6.4** ± 9.5% (k=2)	Depth	**3.22**

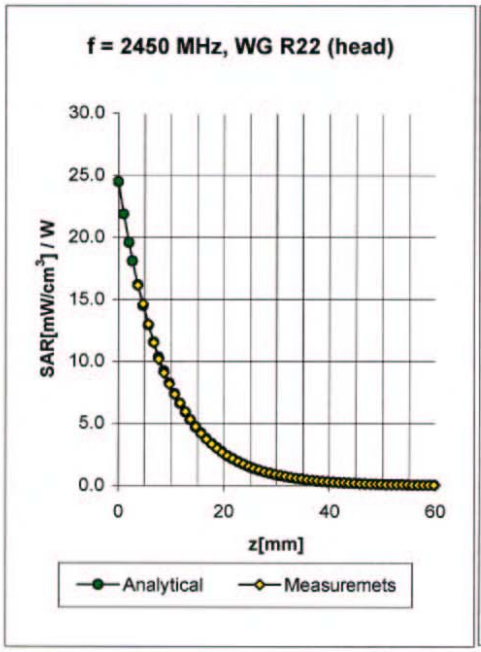
Body 1800 MHz ε_r = 53.3 ± 5% σ = 1.52 ± 5% mho/m

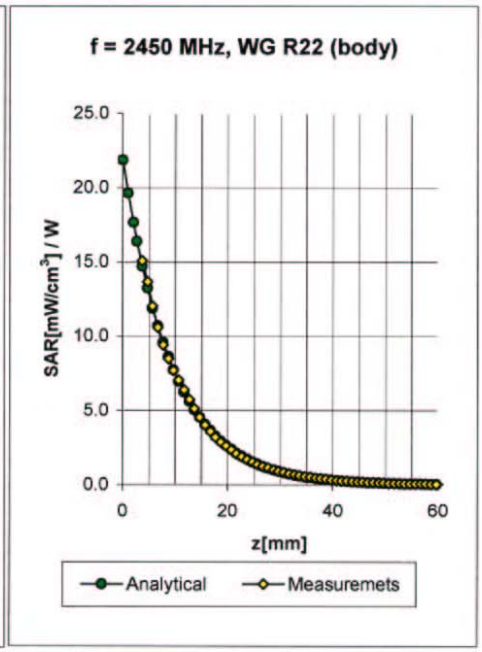
Valid for f=1710-1910 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C

ConvF X	**4.7** ± 9.5% (k=2)	Boundary effect:	
ConvF Y	**4.7** ± 9.5% (k=2)	Alpha	**0.48**
ConvF Z	**4.7** ± 9.5% (k=2)	Depth	**2.94**

ET3DV6 SN:1685 October 10, 2003

Conversion Factor Assessment





Head **2450 MHz** ε_r = 39.2 ± 5% σ = 1.80 ± 5% mho/m

Valid for f=2400-2500 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

ConvF X	**4.7** ± 9.5% (k=2)	Boundary effect:	
ConvF Y	**4.7** ± 9.5% (k=2)	Alpha	**0.78**
ConvF Z	**4.7** ± 9.5% (k=2)	Depth	**2.04**

Body **2450 MHz** ε_r = 52.7 ± 5% σ = 1.95 ± 5% mho/m

Valid for f=2400-2500 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C

ConvF X	**4.3** ± 9.5% (k=2)	Boundary effect:	
ConvF Y	**4.3** ± 9.5% (k=2)	Alpha	**0.80**
ConvF Z	**4.3** ± 9.5% (k=2)	Depth	**1.89**

ET3DV6 SN:1685 October 10, 2003

Deviation from Isotropy in HSL

Error (θϕ), f = 900 MHz