SAR TEST REPORT

Equipment Under Test	: Arima 2718
Model Number	: 2718
FCC ID	: PJO2718
Applicant	: ARIMA COMMUNICATIONS CORP.
Address of Applicant	: No. 16,Lane 658,Ying Tao Road,Yingko Taipei Hsien,Taiwan
Date of Receipt	: 2006.11.02
Date of Test(s)	: 2006.11.02-2006.11.03
Date of Issue	: 2006.11.13

Standards:

FCC OET Bulletin 65 supplement C,
ANSI / IEEE 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.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS Taiwan E&E Services or testing done by SGS Taiwan E&E Services in connection with distribution or use of the product described in this report must be approved by SGS Taiwan E&E Services in writing.

Tested by : **Leo Hsu** Leo Hsu **Date** : **2006.11.09**

Approved by : **Dikin Yang** Dikin Yang **Date** : **2006.11.13**

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1. General Information

1.1 Testing Laboratory

SGS Taiwan Ltd.
5F, No. 134, Wukung Road, Wuku industrial zone
Taipei county , Taiwan , R.O.C.
Telephone : +886-2-2299-3279
Fax : +886-2-2298-0488
Internet : http://www.tw.sgs.com

1.2 Details of Applicant

Name	ARIMA COMMUNICATIONS CORP.
Address	No. 16,Lane 658,Ying Tao Road,Yingko Taipei Hsien,Taiwan
Telephone	+886-2-82277755 ext,3358
Fax	+886-2-82275533
Contact Person	Gallon Lee
E-mail	gallonlee@arimacomm.com.tw
Website	http://www.arimacomm.com.tw

1.3 Description of EUT(s)

EUT Name	Arima 2718	
Model Number	2718	
Mode of Operation	Treble Band GSM/GPRS Mobile Phone	
FCC ID	PJO2718	
IMEI	440691915770956	
Modulation Mode	GMSK	
Duty Cycle	GSM	GPRS
	1 / 8.3	1/ 4
GPRS Multislot Class	10 (4 downlink & 2 uplink)	
TX Frequency range	1850.2-1909.8MHz	

Channel Number (ARFCN)	512-810
Battery Type	3.7V Lithium-Ion
Antenna Type	Internal
Antenna Gain	1.93 ~ 3.53dbi
HW Version	R1A
SW Version	NAP2J
Exposure environment	Uncontrolled exposure
Max. SAR Measured (1 g)	0.733 W/kg At Body position 512 Channel (testing in GPRS mode, repeated with BT active)

1.4 Test Environment

Ambient Temperature: 22.1° C

Tissue Simulating Liquid: 21.6° C

Relative Humidity: 58 %

1.5 Testing Procedure

1. The EUT is controlled by using a Universal Radio Communication Tester (R&S CMU 200), and the communication between the EUT and the tester is established by air link. 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.
2. Testing SAR with dominant transmitter ON and co-located Bluetooth transmitter OFF to find the highest head-position SAR measurement value.
3. Testing SAR with dominant transmitter and co-located Bluetooth transmitter both ON for head-position worst case configuration.
4. Testing body-worn SAR with Bluetooth transmitter OFF by separating 1.5cm between the back of the EUT and the flat phantom in GPRS mode.
5. Testing body-worn SAR with Bluetooth transmitter ON in GPRS mode at the body-worn worst case configuration.
6. During the SAR testing, the DASY4 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

1.6 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 4 professional system). A Model ET3DV6 1759 E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ ($|Ei|^2$)/ ρ where σ and ρ are the conductivity and mass density of the tissue-simulant.

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

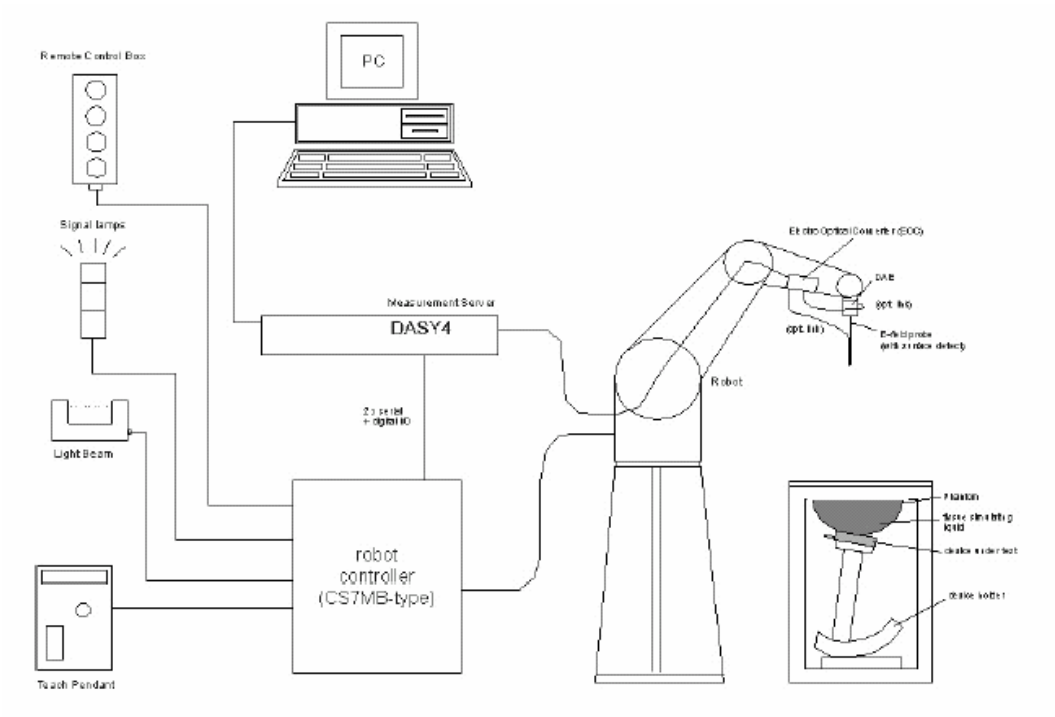


Fig. a The microwave circuit arrangement used for SAR system verification

- A standard high precision 6-axis robot (Stabile RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- A data acquisition 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

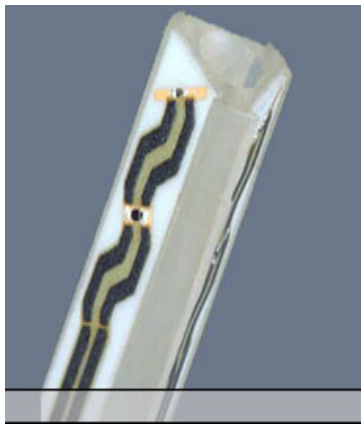
server.

- 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.
- DASY4 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.

1.7 System Components

EX3DV3 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: 10-3000 MHz Conversion Factors (CF) for HSL 900 and HSL 1800 Additional CF for other liquids and frequencies upon request



EX3DV3 E-Field Probe

Frequency:	10 MHz to > 6 GHz; Linearity: ± 0.2 dB (30 MHz to 3 GHz)
Directivity:	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range:	10 μW/g to > 100 mW/g; Linearity: ± 0.2 dB (noise: typically < 1 μW/g)
Dimensions:	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Application:	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.

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: 251 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

1.8 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 +/- 10% from the target SAR values. These tests were done at 1900 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 (SAR values are normalized to 1W forward power delivered to the dipole). During the tests, the ambient temperature of the laboratory was in the range 22.1°C, the relative humidity was in the range 58% 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.

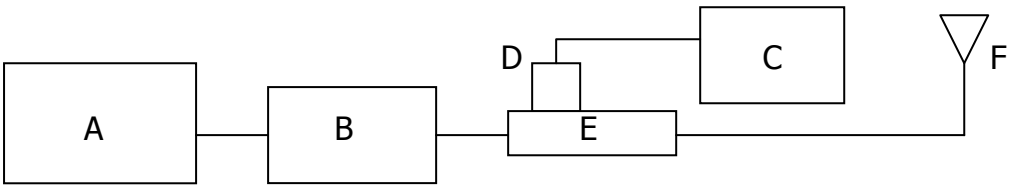
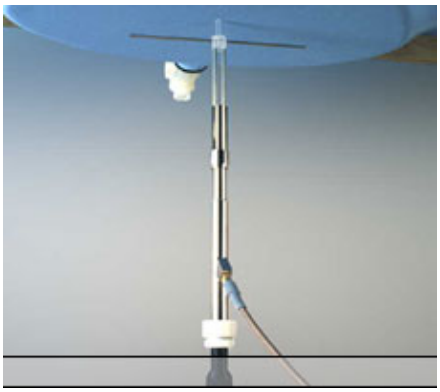


Fig.b The microwave circuit arrangement used for SAR system verification

A. Agilent Model 8648D Signal Generator
B. Mini circuits Model ZHL-42 Amplifier
C. Agilent Model E4416A Power Meter
D. Agilent Model 8481H Power Sensor
E. Agilent Model 778D
   Dual directional coupling
F. Reference dipole antenna



Photograph of the dipole Antenna

Validation Kit	Frequency (Position)	Target SAR 1g (250mW)	Target SAR 10g (250mW)	Measured SAR 1g	Measured SAR 10g	Measured date
D1900V2 S/N :5d027	1900 MHz (Head)	9.97 m W/g	5.25 m W/g	9.99 m W/g	5.14 m W/g	2006/11/02
	1900 MHz (Body)	10.3 m W/g	5.5 m W/g	9.97/ m W/g	5.18 m W/g	2006/11/02

Table 1. Results system validation

1.9 Tissue Simulant Fluid for the Frequency Band

F (Mhz)	Tissue type	Limits/ Measured	Dielectric Parameters		
			ρ	σ (S/m)	Simulated Tissue Temp(° C)

1900	Head	Measured, 2006.11.02	40.9	1.42	21.7
		Recommended Limits	38-42	1.305-1.595	20-24
	Body	Measured, 2006.11.02	53.2	1.56	21.7
		Recommended Limits	50.6-56	1.44-1.6	20-24

Table 2. Dielectric Parameters of Tissue Simulant Fluid

The dielectric properties for this body-simulant fluid were measured by using the HP Model 85070D Dielectric Probe (rates frequence band 200 MHz to 20 GHz) in conjuncation with Agilent E5071C Network Analyzer (30 KHz-8500 MHz) 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 in the ear reference point of the phantom was 15cm±5mm during all tests. (Appendix page2 Fig .2.1 & Fig.2.2)
The composition of the brain tissue simulating liquid for 1900 MHz is:

Ingredient	1900Mhz(Head)	1900Mhz(Body)
DGMBE	444.52 g	300.67
Water	552.42 g	716.56
Salt	3.06 g	4.0
Preventol D-7	X	X
Cellulose	X	X
Sugar	X	X
Total amount	1 L (1.0kg)	1 L (1.0kg)

Table 3. Recipes for tissue simulating liquid

1.10 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 Radiofrequency 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.

(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 .4)

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.

2.Summary of Results

GSM 1900 MHZ

Right Head (Cheek Position & testing in GSM mode)						
Frequency	Channel	MHz	Conducted Output Power(Average)	Measured(W/kg) 1g/10g	Amb. Temp[˚C]	Liquid Temp[˚C]
1900 MHz	512	1850.2	29.3dbm	0.463/0.253	22.1	21.6
	661	1880	29.3dbm	0.407/0.224	22.1	21.6
	810	1909.8	29.2dbm	0.341/0.187	22.1	21.6
Left Head (Cheek Position & testing in GSM mode)						
Frequency	Channel	MHz	Conducted Output Power(Average)	Measured(W/kg) 1g/10g	Amb. Temp[˚C]	Liquid Temp[˚C]
1900 MHz	512	1850.2	29.3dbm	0.284/0.157	22.1	21.6
	661	1880	29.3dbm	0.249/0.138	22.1	21.6
	810	1909.8	29.2dbm	0.208/0.116	22.1	21.6
Right Head (15° Tilt Position & testing in GSM mode)						
Frequency	Channel	MHz	Conducted Output Power(Average)	Measured(W/kg) 1g/10g	Amb. Temp[˚C]	Liquid Temp[˚C]
1900 MHz	512	1850.2	29.3dbm	0.516/0.273	22.1	21.6
	661	1880	29.3dbm	0.457/0.240	22.1	21.6
	810	1909.8	29.2dbm	0.359/0.188	22.1	21.6
Left Head (15° Tilt Position & testing in GSM mode)						
Frequency	Channel	MHz	Conducted Output Power(Average)	Measured(W/kg) 1g/10g	Amb. Temp[˚C]	Liquid Temp[˚C]
1900 MHz	512	1850.2	29.3dbm	0.347/0.187	22.1	21.6
	661	1880	29.3dbm	0.317/0.168	22.1	21.6
	810	1909.8	29.2dbm	0.269/0.143	22.1	21.6
Right Head (15° Tilt Position – repeated with BT active)						
Frequency	Channel	MHz	Conducted Output Power(Average)	Measured(W/kg) 1g/10g	Amb. Temp[˚C]	Liquid Temp[˚C]
1900 MHz	512	1850.2	29.3dbm	0.504/0.269	22.1	21.6
Body Position(testing in GPRS mode)						
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid

			Power(Average)	1g/10g	Temp[˚C]	Temp[˚C]
1900 MHz	512	1850.2	29.3dbm	0.683/0.391	22.1	21.6
	661	1880	29.3dbm	0.546/0.316	22.1	21.6
	810	1909.8	29.2dbm	0.469/0.267	22.1	21.6
Body Position(testing in GPRS mode - repeated with BT active)						
Frequency	Channel	MHz	Conducted Output Power(Average)	Measured(W/kg) 1g/10g	Amb. Temp[˚C]	Liquid Temp[˚C]
1900 MHz	512	1850.2	29.3dbm	0.733/0.418	22.1	21.6

Note:SAR measurement results for the Mobile Phone at maximum output power.

3. Instruments List

Manufacturer	Device	Type	Serial number	Date of last calibration
Schmid & Partner Engineering AG	Dosimetric E-Field Probe	EX3DV3	3526	Aug.25.2006
Schmid & Partner Engineering AG	1900 MHz System Validation Dipole	D1900V2	5d027	Mar.21.2006w
Schmid & Partner Engineering AG	Data acquisition Electronics	DAE4	679	Mar.21.2006
Schmid & Partner Engineering AG	Software	DASY 4 V4.7 Build 21	N/A	Calibration isn't necessary
Schmid & Partner Engineering AG	Phantom	SAM	N/A	Calibration isn't necessary
Agilent	Network Analyzer	E5071C	MY46100119	Sep.29.2006
Agilent	Dielectric Probe Kit	85070D	US01440168	Calibration isn't necessary
Agilent	Dual-directional coupler	773D	MY28390396	Aug.16.2006
Agilent	RF Signal Generator	8648D	3847M00432	May.04.2006
Agilent	Power Sensor	8481H	MY41091361	May.29.2006
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	109326	Nov.15.2005

4.Measurements

RE_Cheek_CH512

Date/Time: 2006/11/3 00:12:19

DUT: Arima-2718; Type: GSM1900; Serial: 440691915770956

Communication System: GSM1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: Head 1900MHz Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.35 mho/m; ε_r = 41.3; ρ = 1000 kg/m^3
Phantom section: Right Section

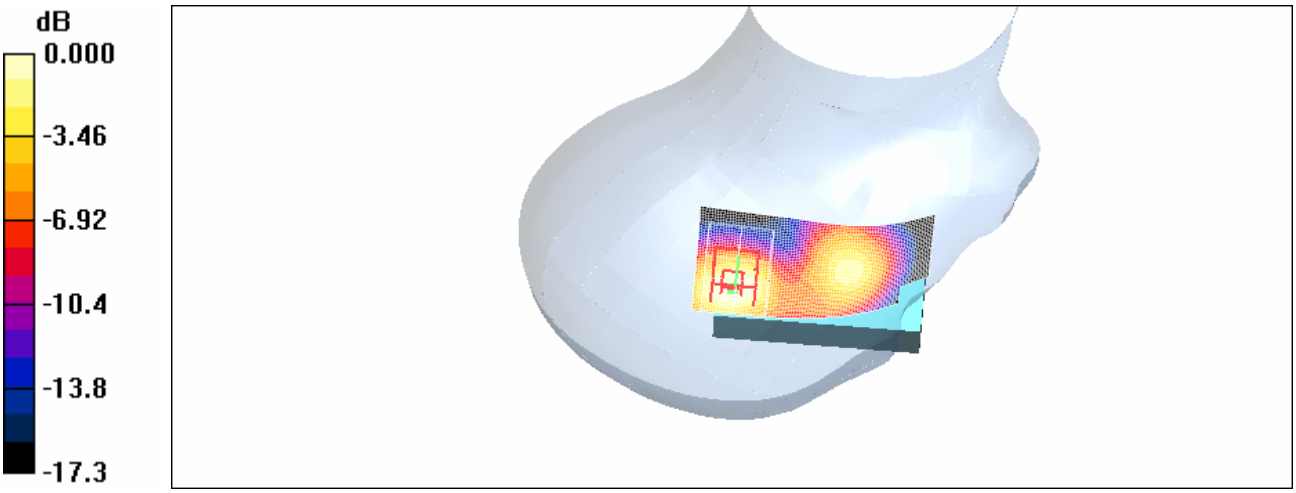
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(9.61, 9.61, 9.61); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

RE Cheek/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.536 mW/g

RE Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.4 V/m; Power Drift = 0.030 dB
Peak SAR (extrapolated) = 0.788 W/kg

SAR(1 g) = 0.463 mW/g; SAR(10 g) = 0.253 mW/g
Maximum value of SAR (measured) = 0.516 mW/g



0 dB = 0.516mW/g

RE_Cheek_CH661

DUT: Arima-2718; Type: GSM1900; Serial: 440691915770956

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: Head 1900MHz Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Right Section

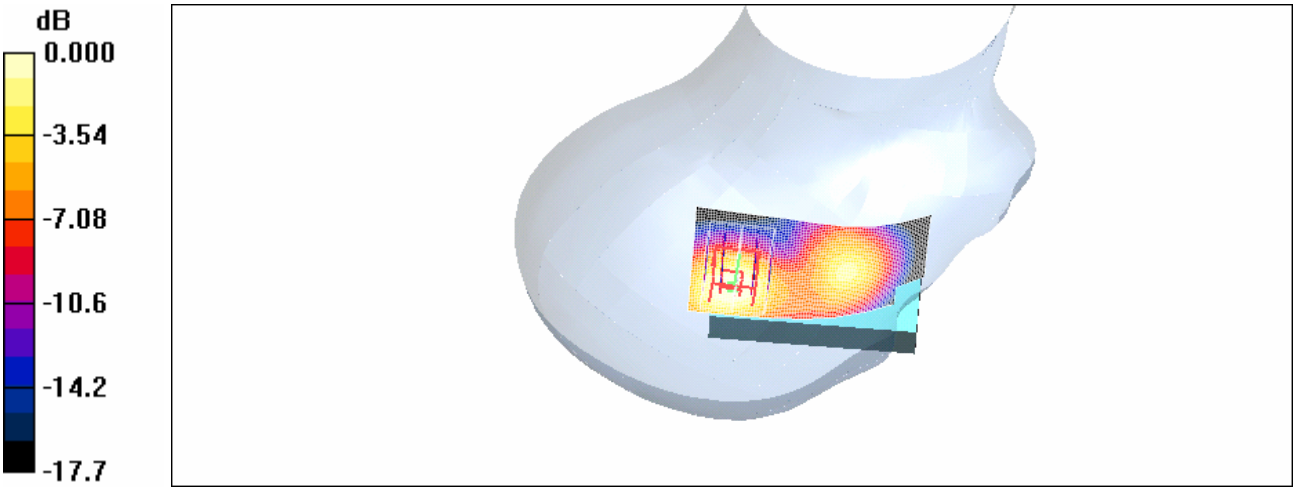
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(9.61, 9.61, 9.61); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

RE Cheek/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.474 mW/g

RE Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.7 V/m; Power Drift = -0.013 dB
Peak SAR (extrapolated) = 0.696 W/kg

SAR(1 g) = 0.407 mW/g; SAR(10 g) = 0.224 mW/g
Maximum value of SAR (measured) = 0.449 mW/g



0 dB = 0.449mW/g

RE_Cheek_CH810

DUT: Arima-2718; Type: GSM1900; Serial: 440691915770956

Communication System: GSM1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: Head 1900MHz Medium parameters used: f = 1910 MHz; σ = 1.46 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Right Section

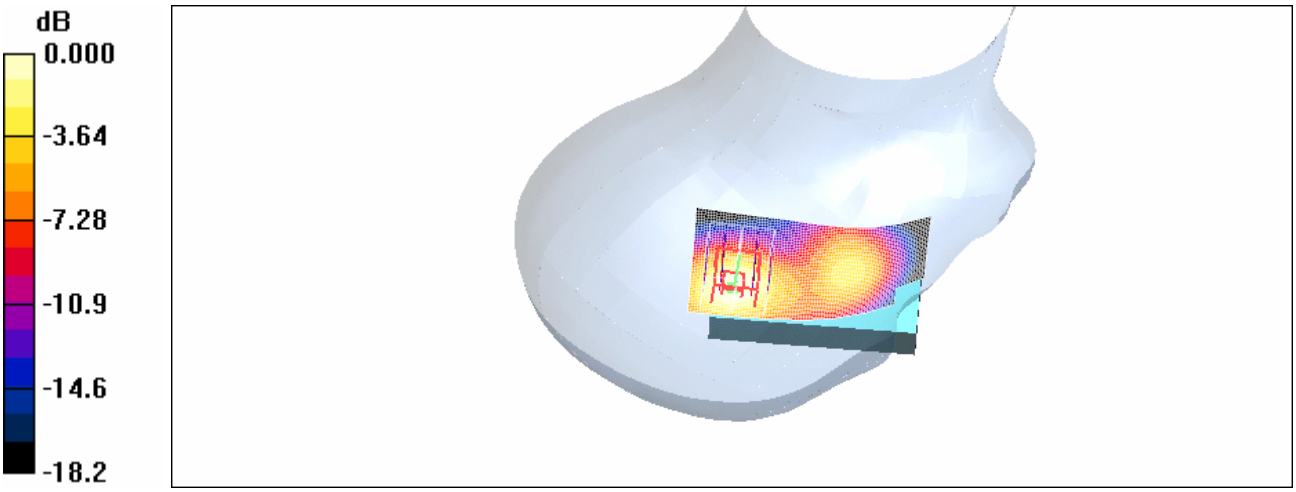
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(9.61, 9.61, 9.61); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

RE Cheek/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.395 mW/g

RE Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.4 V/m; Power Drift = -0.018 dB
Peak SAR (extrapolated) = 0.584 W/kg

SAR(1 g) = 0.341 mW/g; SAR(10 g) = 0.187 mW/g
Maximum value of SAR (measured) = 0.376 mW/g



0 dB = 0.376mW/g

LE_Cheek_CH512

DUT: Arima-2718; Type: GSM1900; Serial: 440691915770956

Communication System: GSM1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: Head 1900MHz Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.35 mho/m; ε_r = 41.3; ρ = 1000 kg/m^3
Phantom section: Left Section

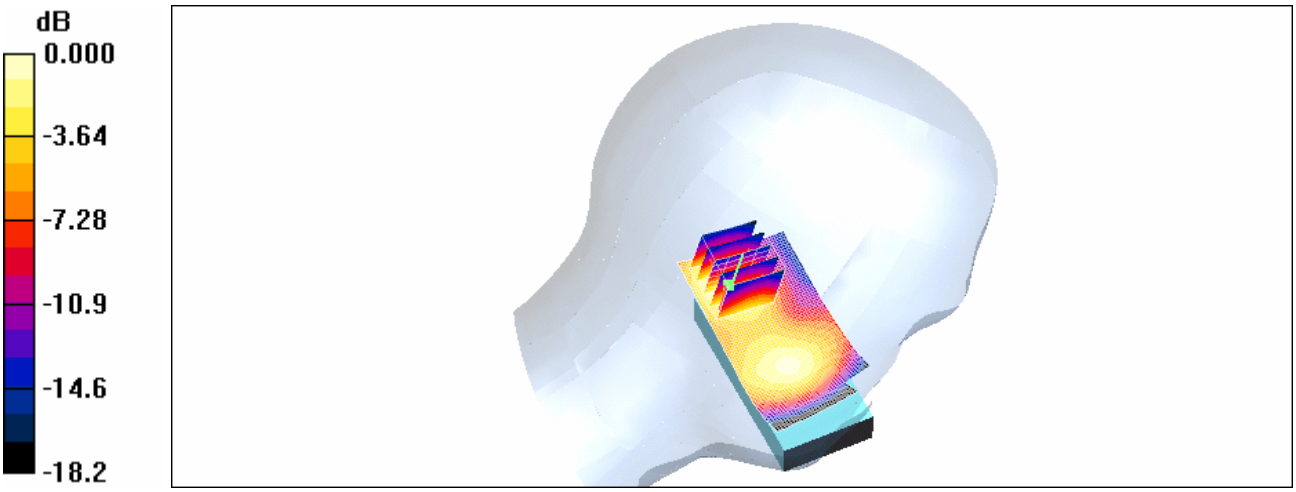
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(9.61, 9.61, 9.61); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

LE Cheek/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.321 mW/g

LE Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.7 V/m; Power Drift = -0.052 dB
Peak SAR (extrapolated) = 0.493 W/kg

SAR(1 g) = 0.284 mW/g; SAR(10 g) = 0.157 mW/g
Maximum value of SAR (measured) = 0.315 mW/g



0 dB = 0.315mW/g

LE_Cheek_CH661

DUT: Arima-2718; Type: GSM1900; Serial: 440691915770956

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: Head 1900MHz Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Left Section

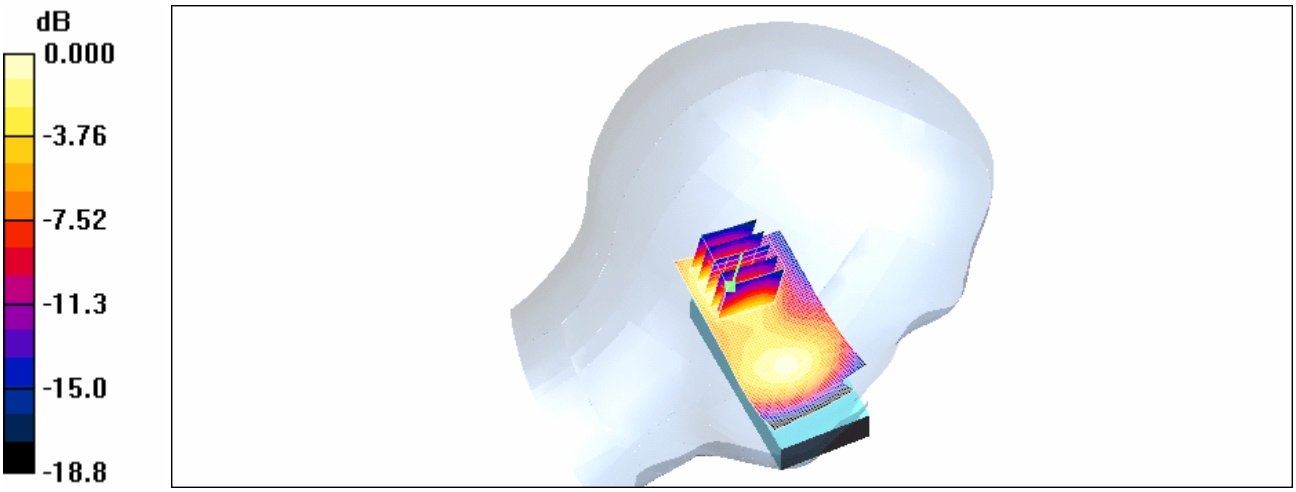
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(9.61, 9.61, 9.61); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

LE Cheek/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.281 mW/g

LE Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.8 V/m; Power Drift = 0.012 dB
Peak SAR (extrapolated) = 0.430 W/kg

SAR(1 g) = 0.249 mW/g; SAR(10 g) = 0.138 mW/g
Maximum value of SAR (measured) = 0.272 mW/g



0 dB = 0.272mW/g

LE_Cheek_CH810

DUT: Arima-2718; Type: GSM1900; Serial: 440691915770956

Communication System: GSM1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: Head 1900MHz Medium parameters used: f = 1910 MHz; σ = 1.46 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section

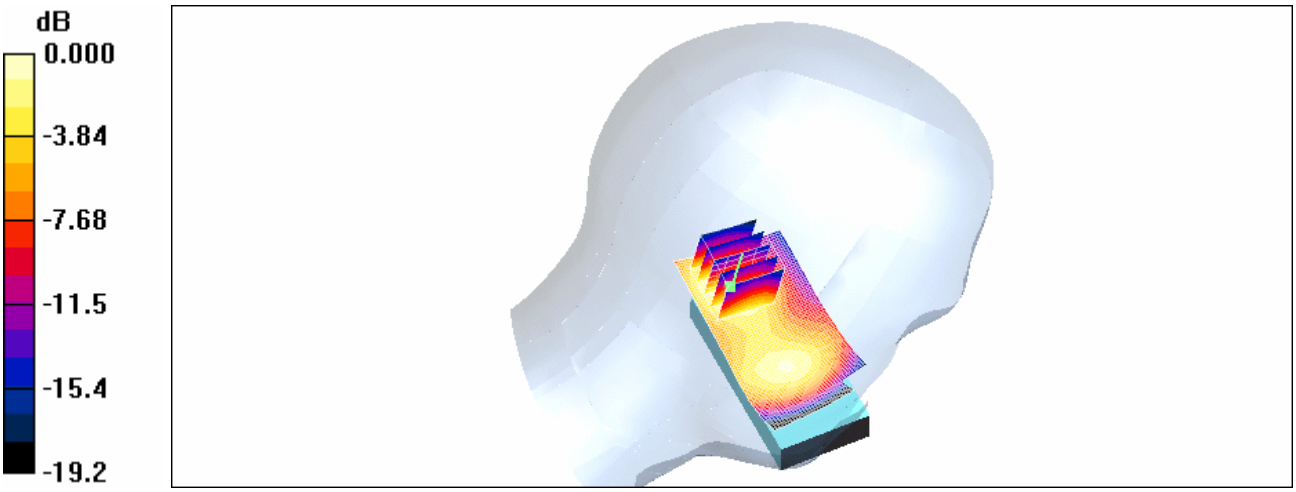
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(9.61, 9.61, 9.61); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

LE Cheek/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.236 mW/g

LE Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.7 V/m; Power Drift = 0.059 dB
Peak SAR (extrapolated) = 0.363 W/kg

SAR(1 g) = 0.208 mW/g; SAR(10 g) = 0.116 mW/g
Maximum value of SAR (measured) = 0.228 mW/g



0 dB = 0.228mW/g

RE_Tilt_CH512

DUT: Arima-2718; Type: GSM1900; Serial: 440691915770956

Communication System: GSM1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: Head 1900MHz Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.35 mho/m; ε_r = 41.3; ρ = 1000 kg/m^3
Phantom section: Right Section

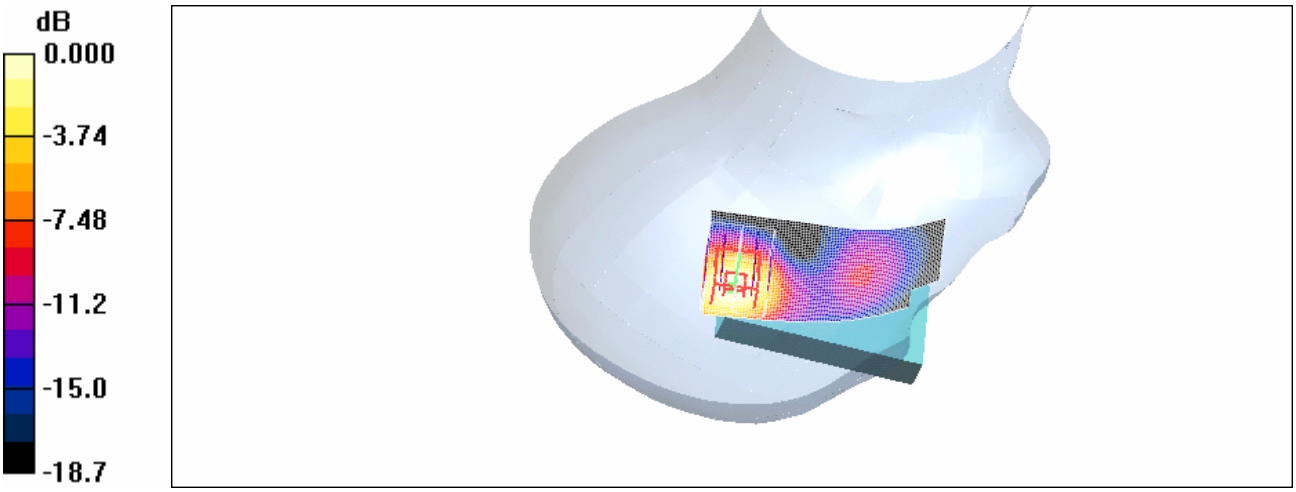
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(9.61, 9.61, 9.61); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

RE Tilt/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.590 mW/g

RE Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.7 V/m; Power Drift = -0.011 dB
Peak SAR (extrapolated) = 0.898 W/kg

SAR(1 g) = 0.516 mW/g; SAR(10 g) = 0.273 mW/g
Maximum value of SAR (measured) = 0.579 mW/g



0 dB = 0.579mW/g

RE_Tilt_CH661

DUT: Arima-2718; Type: GSM1900; Serial: 440691915770956

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: Head 1900MHz Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Right Section

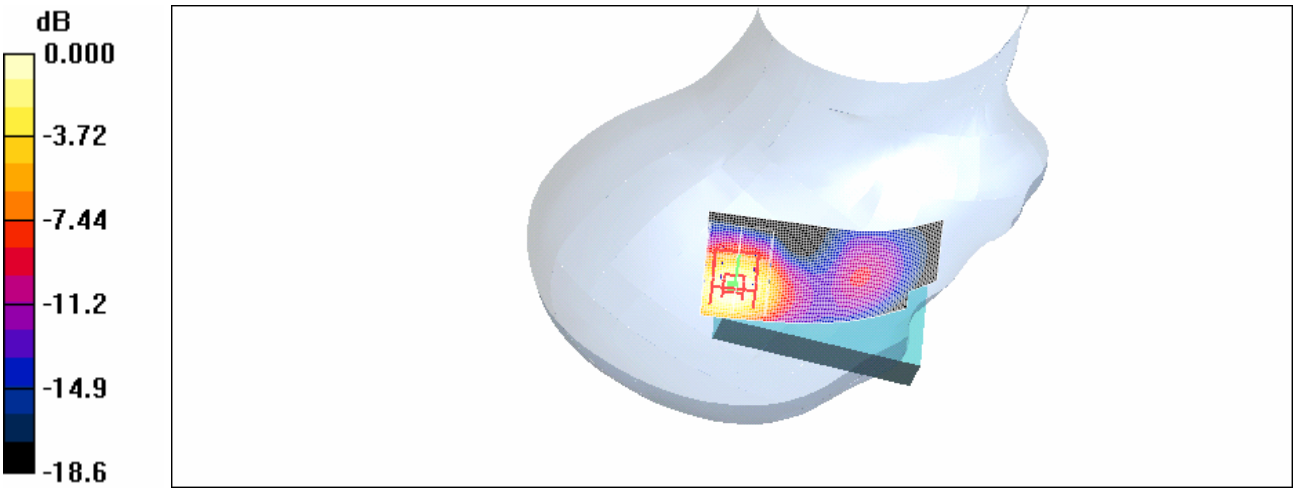
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(9.61, 9.61, 9.61); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

RE Tilt/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.523 mW/g

RE Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.8 V/m; Power Drift = 0.057 dB
Peak SAR (extrapolated) = 0.817 W/kg

SAR(1 g) = 0.457 mW/g; SAR(10 g) = 0.240 mW/g
Maximum value of SAR (measured) = 0.500 mW/g



0 dB = 0.500mW/g

RE_Tilt_CH810

DUT: Arima-2718; Type: GSM1900; Serial: 440691915770956

Communication System: GSM1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: Head 1900MHz Medium parameters used: f = 1910 MHz; σ = 1.46 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Right Section

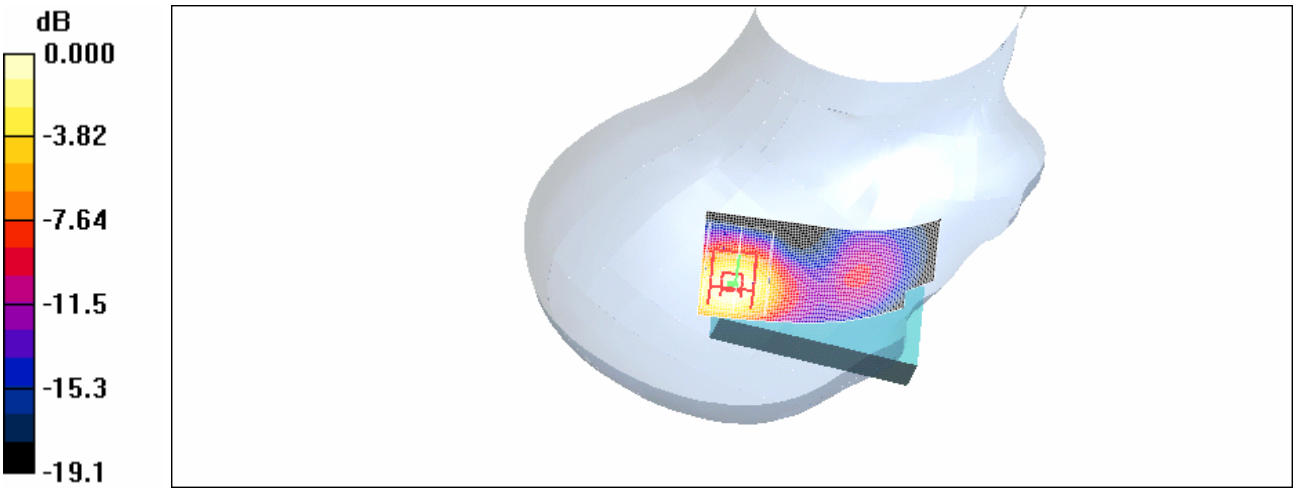
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(9.61, 9.61, 9.61); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

RE Tilt/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.411 mW/g

RE Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.0 V/m; Power Drift = 0.040 dB
Peak SAR (extrapolated) = 0.643 W/kg

SAR(1 g) = 0.359 mW/g; SAR(10 g) = 0.188 mW/g
Maximum value of SAR (measured) = 0.390 mW/g



0 dB = 0.390mW/g

LE_Tilt_CH512

DUT: Arima-2718; Type: GSM1900; Serial: 440691915770956

Communication System: GSM1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: Head 1900MHz Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.35 mho/m; ε_r = 41.3; ρ = 1000 kg/m^3
Phantom section: Left Section

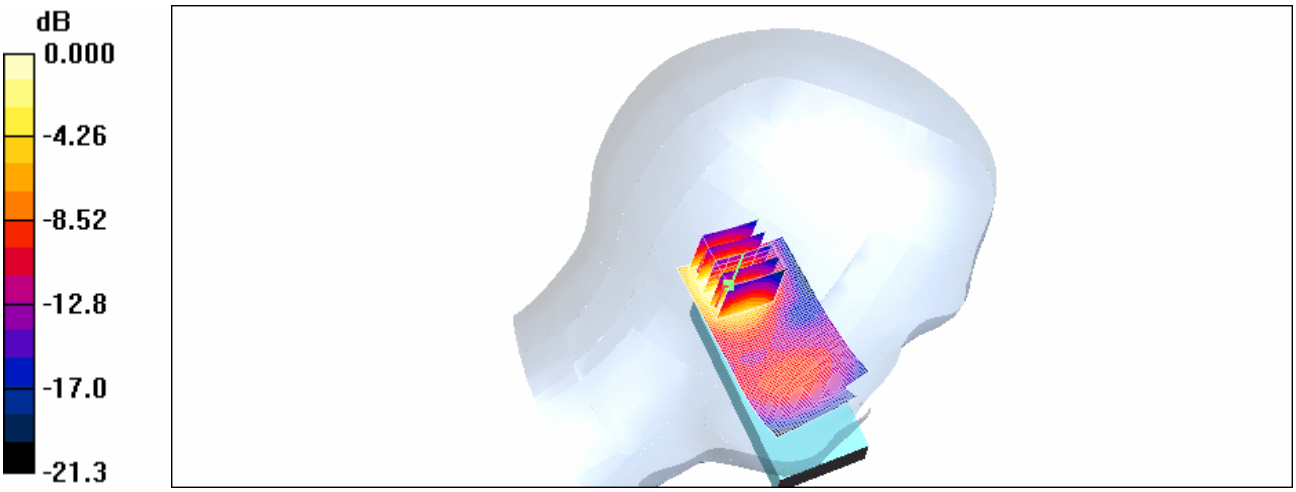
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(9.61, 9.61, 9.61); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

LE Tilt/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.400 mW/g

LE Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.2 V/m; Power Drift = -0.047 dB
Peak SAR (extrapolated) = 0.603 W/kg

SAR(1 g) = 0.347 mW/g; SAR(10 g) = 0.187 mW/g
Maximum value of SAR (measured) = 0.377 mW/g



0 dB = 0.377mW/g

LE_Tilt_CH661

DUT: Arima-2718; Type: GSM1900; Serial: 440691915770956

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: Head 1900MHz Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Left Section

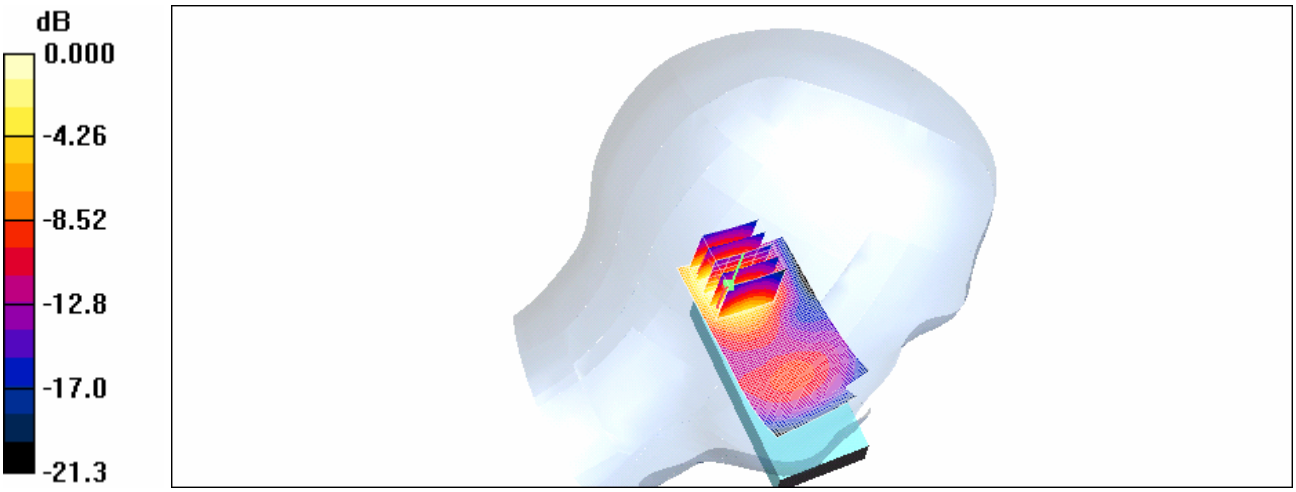
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(9.61, 9.61, 9.61); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

LE Tilt/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.364 mW/g

LE Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.6 V/m; Power Drift = 0.041 dB
Peak SAR (extrapolated) = 0.562 W/kg

SAR(1 g) = 0.317 mW/g; SAR(10 g) = 0.168 mW/g
Maximum value of SAR (measured) = 0.351 mW/g



0 dB = 0.351mW/g

LE_Tilt_CH810

DUT: Arima-2718; Type: GSM1900; Serial: 440691915770956

Communication System: GSM1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: Head 1900MHz Medium parameters used: f = 1910 MHz; σ = 1.46 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section

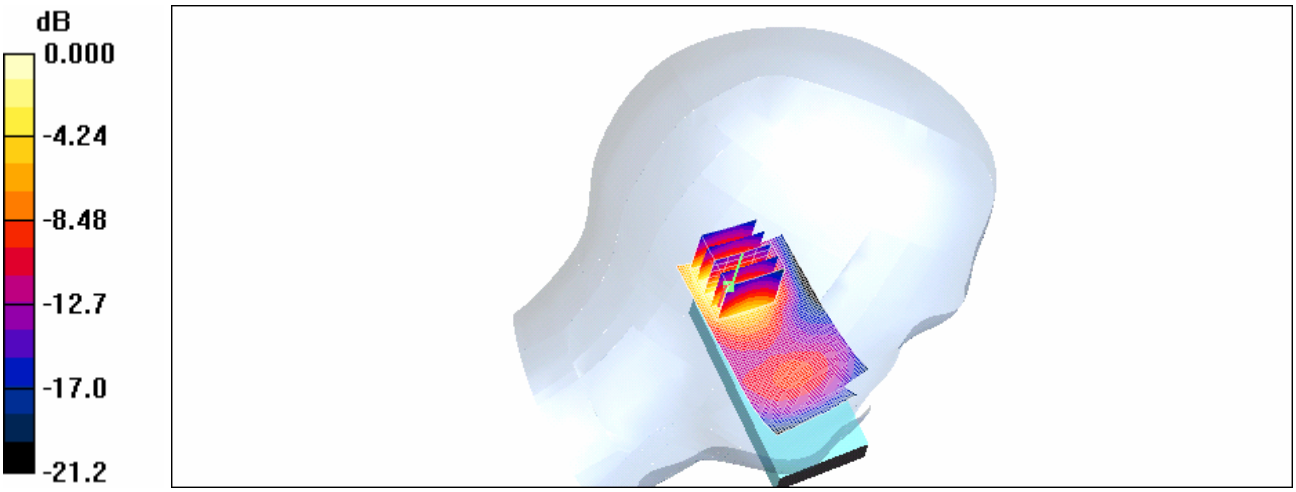
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(9.61, 9.61, 9.61); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

LE Tilt/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.307 mW/g

LE Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.4 V/m; Power Drift = 0.026 dB
Peak SAR (extrapolated) = 0.475 W/kg

SAR(1 g) = 0.269 mW/g; SAR(10 g) = 0.143 mW/g
Maximum value of SAR (measured) = 0.295 mW/g



0 dB = 0.295mW/g

RE_Tilt_CH512-repeated with BT active

DUT: Arima-2718; Type: GSM1900; Serial: 440691915770956

Communication System: GSM1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: Head 1900MHz Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.35 mho/m; ε_r = 41.3; ρ = 1000 kg/m^3
Phantom section: Right Section

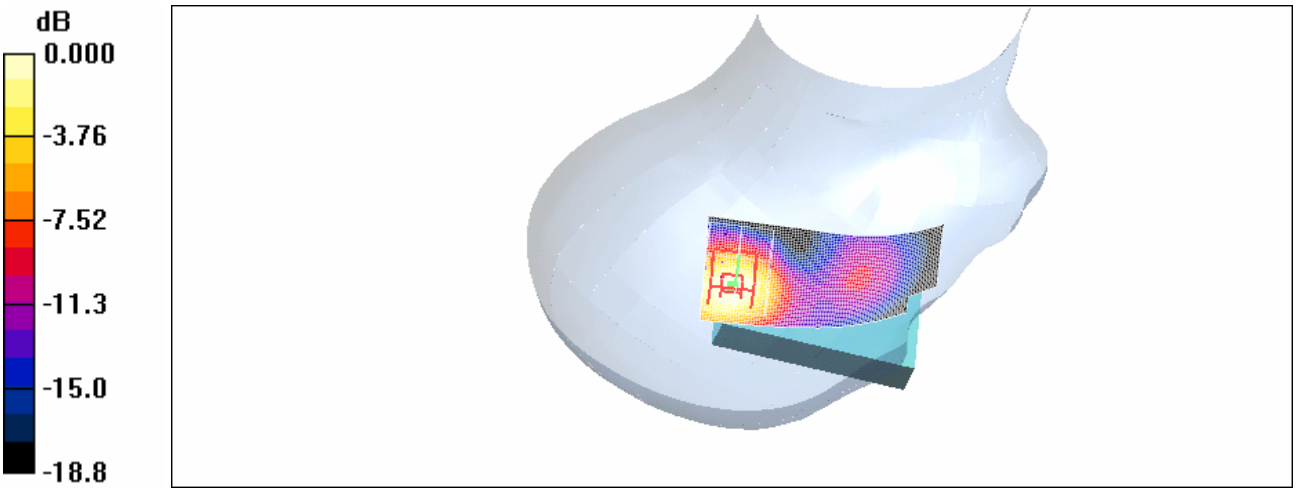
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(9.61, 9.61, 9.61); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

RE Tilt/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.573 mW/g

RE Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.4 V/m; Power Drift = -0.056 dB
Peak SAR (extrapolated) = 0.871 W/kg

SAR(1 g) = 0.504 mW/g; SAR(10 g) = 0.269 mW/g
Maximum value of SAR (measured) = 0.546 mW/g



0 dB = 0.546mW/g

GPRS-CH512

DUT: Arima-2718; Type: GSM1900; Serial: 440691915770956

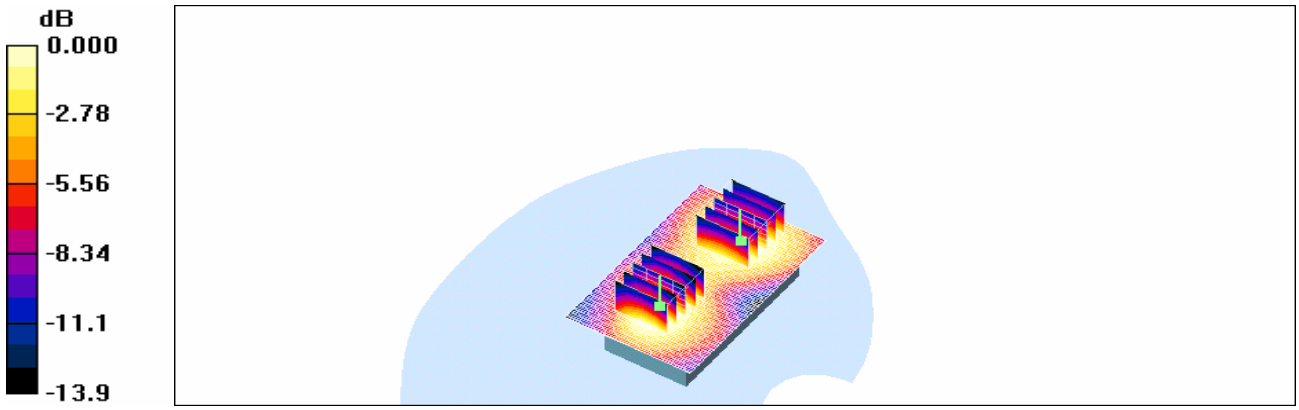
Communication System: GSM1900; Frequency: 1850.2 MHz;Duty Cycle: 1:4
Medium: M1800 & 1900 Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.52 mho/m; ε_r = 53.4; ρ = 1000 kg/m^3
Phantom section: Flat Section

- Probe: EX3DV3 - SN3526; ConvF(9.64, 9.64, 9.64); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

GPRS/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.773 mW/g

GPRS/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.6 V/m; Power Drift = -0.095 dB
Peak SAR (extrapolated) = 1.09 W/kg
SAR(1 g) = 0.683 mW/g; SAR(10 g) = 0.391 mW/g
Maximum value of SAR (measured) = 0.760 mW/g

GPRS/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.6 V/m; Power Drift = -0.095 dB
Peak SAR (extrapolated) = 0.787 W/kg
SAR(1 g) = 0.523 mW/g; SAR(10 g) = 0.332 mW/g
Maximum value of SAR (measured) = 0.555 mW/g



0 dB = 0.555mW/g

GPRS-CH661

DUT: Arima-2718; Type: GSM1900; Serial: 440691915770956

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:4
Medium: M1800 & 1900 Medium parameters used (interpolated): f = 1880 MHz; σ = 1.54 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section

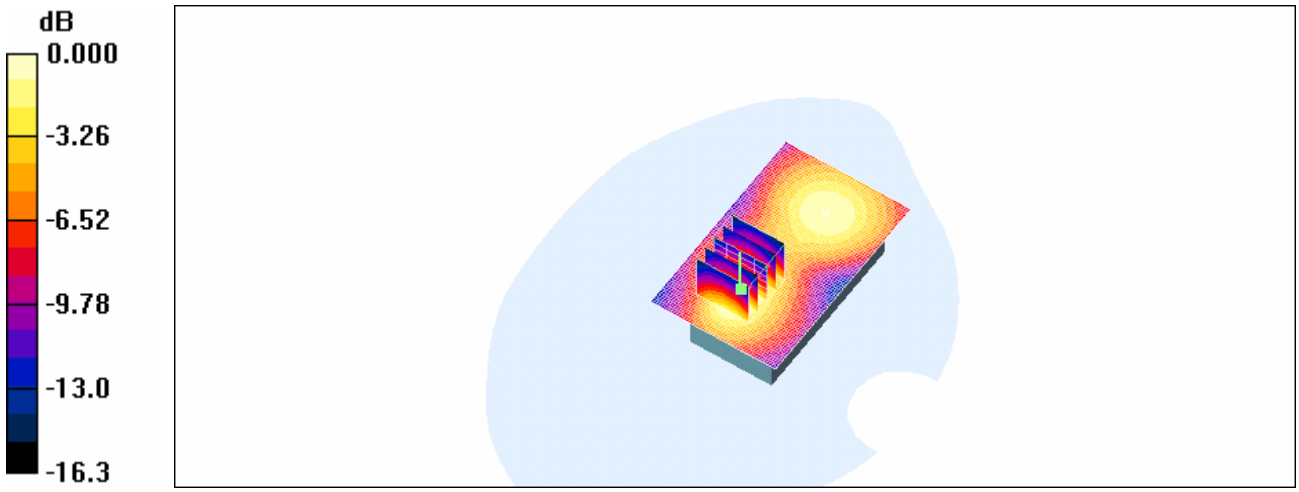
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(9.64, 9.64, 9.64); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

GPRS/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.623 mW/g

GPRS/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.4 V/m; Power Drift = -0.061 dB
Peak SAR (extrapolated) = 0.867 W/kg

SAR(1 g) = 0.546 mW/g; SAR(10 g) = 0.316 mW/g
Maximum value of SAR (measured) = 0.602 mW/g



0 dB = 0.602mW/g

GPRS-CH810

DUT: Arima-2718; Type: GSM1900; Serial: 440691915770956

Communication System: GSM1900; Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium: M1800 & 1900 Medium parameters used: f = 1910 MHz; σ = 1.57 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Phantom section: Flat Section

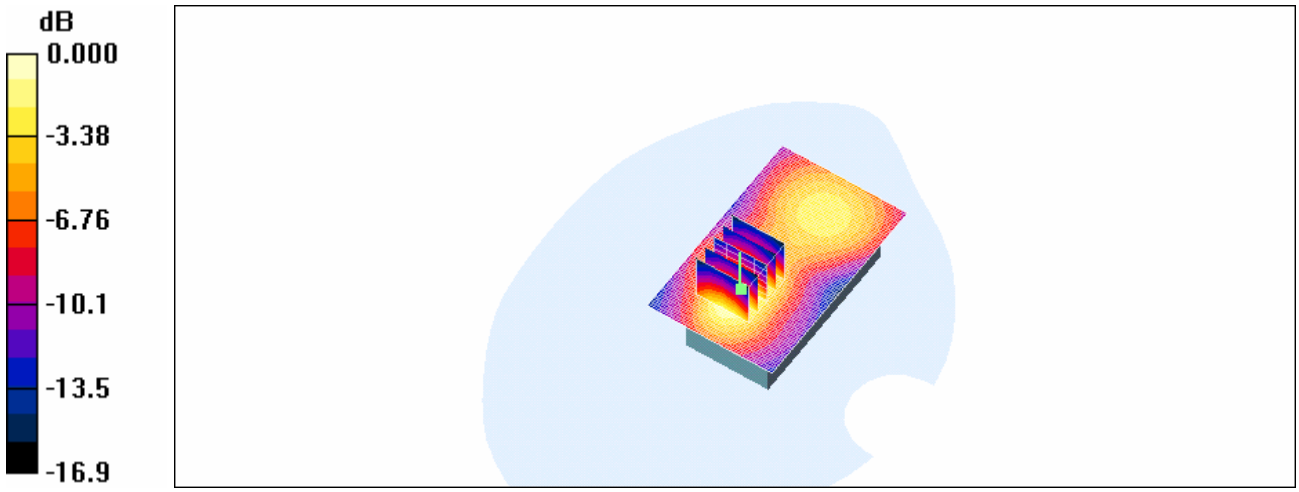
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(9.64, 9.64, 9.64); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

GPRS/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.528 mW/g

GPRS/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.8 V/m; Power Drift = 0.077 dB
Peak SAR (extrapolated) = 0.767 W/kg

SAR(1 g) = 0.469 mW/g; SAR(10 g) = 0.267 mW/g
Maximum value of SAR (measured) = 0.518 mW/g



0 dB = 0.518mW/g

GPRS-CH512- repeated with BT active

DUT: Arima-2718; Type: GSM1900; Serial: 440691915770956

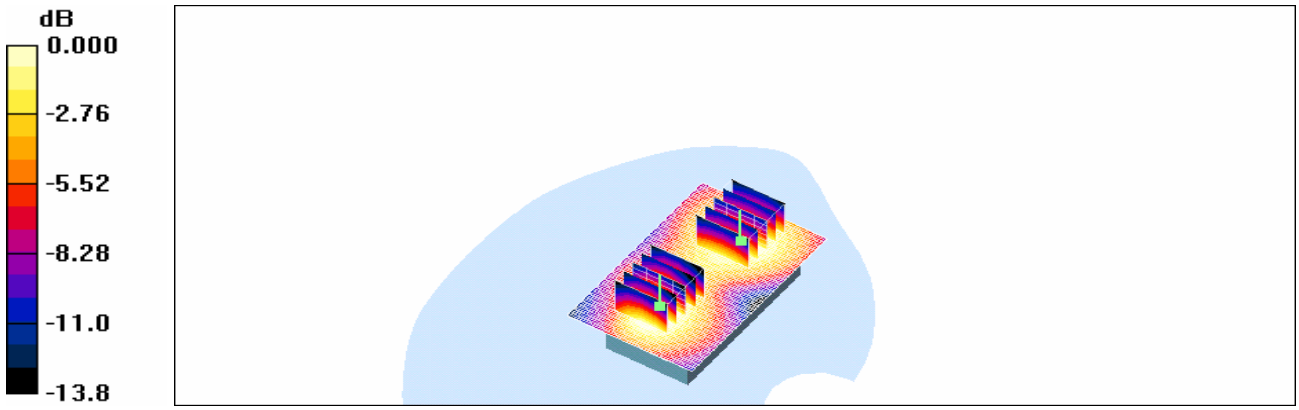
Communication System: GSM1900; Frequency: 1850.2 MHz;Duty Cycle: 1:4
Medium: M1800 & 1900 Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.52 mho/m; ε_r = 53.4; ρ = 1000 kg/m^3
Phantom section: Flat Section

- Probe: EX3DV3 - SN3526; ConvF(9.64, 9.64, 9.64); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

GPRS/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.840 mW/g

GPRS/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.7 V/m; Power Drift = -0.114 dB
Peak SAR (extrapolated) = 1.19 W/kg
SAR(1 g) = 0.733 mW/g; SAR(10 g) = 0.418 mW/g
Maximum value of SAR (measured) = 0.815 mW/g

GPRS/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.7 V/m; Power Drift = -0.114 dB
Peak SAR (extrapolated) = 0.821 W/kg
SAR(1 g) = 0.540 mW/g; SAR(10 g) = 0.342 mW/g
Maximum value of SAR (measured) = 0.580 mW/g



0 dB = 0.580mW/g

SAR System Performance Verification

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d027

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: Head 1900MHz Medium parameters used: f = 1900 MHz; σ = 1.42 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

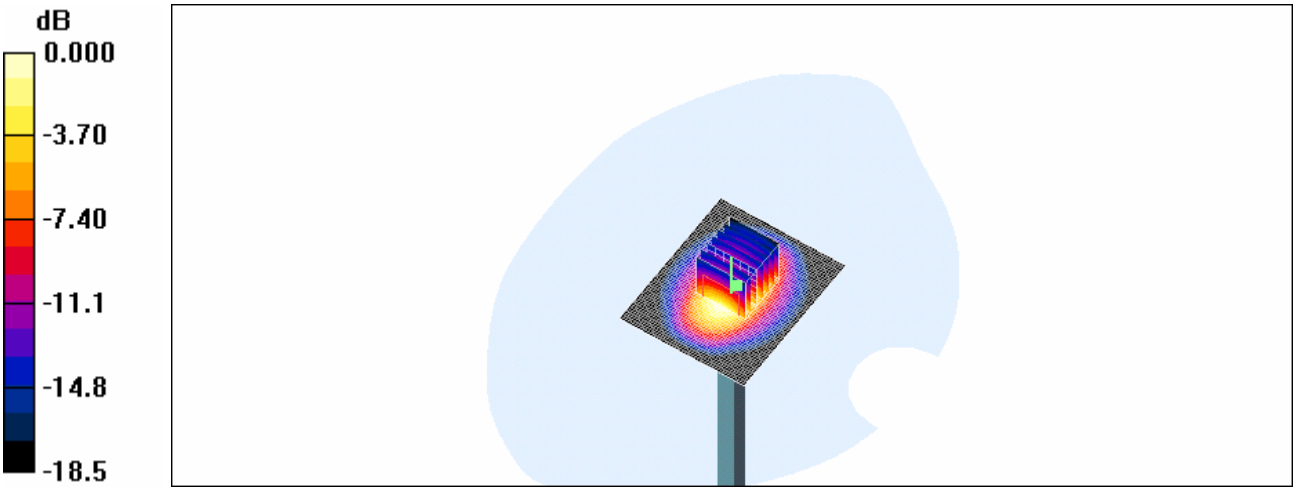
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(9.61, 9.61, 9.61); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

Pin=250mw/Area Scan (51x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 13.1 mW/g

Pin=250mw/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 90.2 V/m; Power Drift = -0.027 dB
Peak SAR (extrapolated) = 19.0 W/kg

SAR(1 g) = 9.99 mW/g; SAR(10 g) = 5.14 mW/g
Maximum value of SAR (measured) = 11.2 mW/g



0 dB = 11.2mW/g

SAR System Performance Verification

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d027

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: M1800 & 1900 Medium parameters used (interpolated): f = 1900 MHz; σ = 1.56 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section

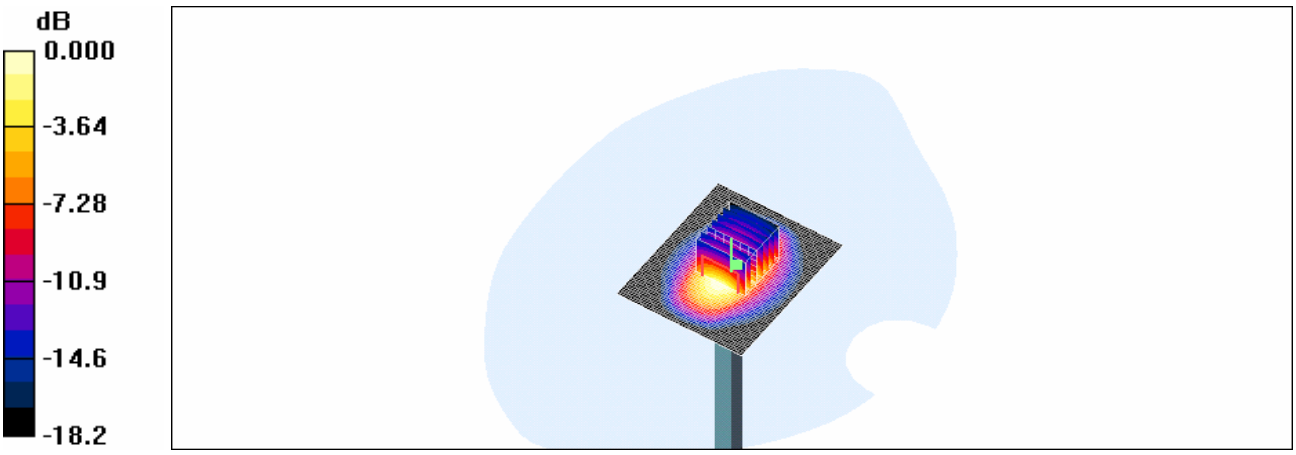
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(9.64, 9.64, 9.64); Calibrated: 2006/8/25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2006/4/28
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

Pin=250mW/Area Scan (51x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 13.6 mW/g

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 84.9 V/m; Power Drift = -0.171 dB
Peak SAR (extrapolated) = 18.2 W/kg

SAR(1 g) = 9.97 mW/g; SAR(10 g) = 5.18 mW/g
Maximum value of SAR (measured) = 11.2 mW/g



0 dB = 11.2mW/g