SAR Test Report

Product Name : GSM Mobile Phone

Model No. : NX188

FCC ID : YSENX188

Applicant : Nexus telecom inc

Address : 2 calle 21-12 zona 15 VH2 Guatemala, Guatemala

Date of Receipt : Sep. 26, 2010

Date of Test : Sep. 26, 2010 ~ Sep. 28, 2010

Issued Date : Sep. 29, 2010

Report No. : 109S032R-HPUS-P03V01

Report Version : V1.0

Test Report Certification

Issued Date: Sep. 29, 2010
Report No: 109S032R-HP-US-P03V01

Product Name	:	GSM Mobile Phone
Applicant	:	Nexus telecom inc
Address	:	2 calle 21-12 zona 15 VH2 Guatemala, Guatemala
Manufacturer	:	Nexus telecom inc
Address	:	2 calle 21-12 zona 15 VH2 Guatemala, Guatemala
FCC ID	:	YSENX188
Model No.	:	NX188
Trade Name	:	NEXUS
EUT Voltage	:	DC 3.7V
Applicable Standard	:	FCC OET65 Supplement C June 2001 IEEE Std. 1528-2003,47CFR § 2.1093
Test Result	:	Max. SAR Measurement (1g) Head: 1.150 W/kg Body: 0.738 W/kg
Performed Location	:	SuZhou EMC Laboratory No.99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., SuZhou, China TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098 FCC Registration Number: 800392
Documented By	:	Alice Ni (Engineering ADM: Alice Ni)
Tested By	:	Marlin chen (Engineering Supervisor: Marlin Chen)
Approved By	:	Dream Cao (Engineering Manager: Dream Cao)

Laboratory Information

We, **QuieTek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted(audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scope:

Taiwan R.O.C.	**:**	**BSMI, NCC, TAF**
Germany	**:**	**TUV Rheinland**
Norway	**:**	**Nemko, DNV**
USA	**:**	**FCC, NVLAP**
Japan	**:**	**VCCI**

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : http://www.quietek.com/tw/ctg/cts/accreditations.htm
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/
If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

HsinChu Testing Laboratory :
No.75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C.
TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : service@quietek.com

NVLAP Lab Code : 200347-0

Testing Laboratory 1313

LinKou Testing Laboratory :
No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen, Lin-Kou Shiang, Taipei, Taiwan, R.O.C.
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NVLAP Lab Code: 200533-0

Testing Laboratory 0914

Suzhou (China) Testing Laboratory :
No. 99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., Suzhou,China.
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NVLAP Lab Code : 200743-0

Testing Laboratory 1596

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1. General Information

1.1. EUT Description

Product Name	GSM Mobile Phone
FCC ID	YSENX188
Trade Name	NEXUS
Model No.	NX188
IMEI	980037001846621
SW Version	ZL75D_38A0_V1_0_1
HW Version	V4.0
Tx Frequency Range	GSM 850: 824~849MHz PCS 1900: 1850~1910MHz
Rx Frequency Range	GSM 850: 869~894MHz PCS 1900: 1930~1990MHz
Antenna Type	Internal
GPRS Class	Class 10
Type of Modulation	GMSK for GSM&GPRS
Device Category	Portable
Peak Antenna Gain	0.3dBi for 820~915MHz 0.8dBi for 1710~1910MHz
Max. Output Power (Conducted)	GSM850: 32.40 PCS1900: 29.13
Max. Output Power (Radiated)	GSM850: 31.19 - ERP PCS1900: 29.04 - EIRP
Headset Model Number	GS-2188M

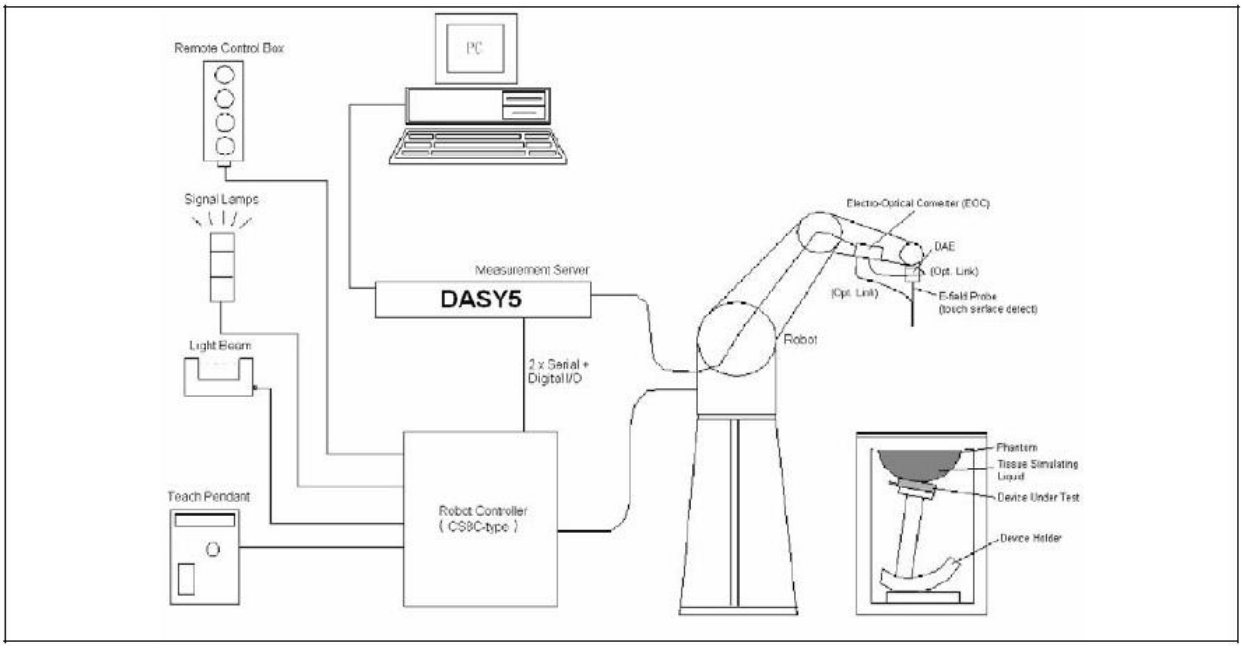
1.2. Test Environment

Ambient conditions in the laboratory:

Items	Required	Actual
Temperature (°C)	18-25	21.3± 2
Humidity (%RH)	30-70	52

2. SAR Measurement System

2.1. DASY5 System Description



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

- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- 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 from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

2.1.1. Applications

Predefined procedures and evaluations for automated compliance testing with all worldwide standards, e.g., IEEE 1528, OET 65, IEC 62209-1, IEC 62209-2, EN 50360, EN 50383 and others.

2.1.2. Area Scans

Area scans are defined prior to the measurement process being executed with a user defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for FCC applications utilize a $10mm^2$ step integral, with 1mm interpolation used to locate the peak SAR area used for zoom scan assessments.

When an Area Scan has measured all reachable points, it computes the field maxima found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE 1528-2003, EN 50361 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan).

2.1.3. Zoom Scan (Cube Scan Averaging)

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. A density of 1000 kg/m^3 is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1 g cube is 10mm, with the side length of the 10 g cube 21,5mm.

The zoom scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications utilize a physical step of 7x7x7 (5mmx5mmx5mm) providing a volume of 30mm in the X & Y axis, and 30mm in the Z axis.

2.1.4. Uncertainty of Inter-/Extrapolation and Averaging

In order to evaluate the uncertainty of the interpolation, extrapolation and averaged SAR calculation algorithms of the Postprocessor, DASY5 allows the generation of measurement grids which are artificially predefined by analytically based test functions. Therefore, the grids of area scans and zoom scans can be filled with uncertainty test data, according to the SAR benchmark functions of IEEE 1528.The three analytical functions shown in equations as below are used to describe the possible range of the expected SAR distributions for the tested handsets. The field gradients are covered by the spatially flat distribution f1, the spatially steep distribution f3 and f2 accounts for H-field cancellation on the phantom/tissue surface.

$$f_1(x,y,z) = Ae^{-\frac{z}{2a}}\cos^2\left(\frac{\pi}{2}\frac{\sqrt{x'^2+y'^2}}{5a}\right)$$

$$f_2(x,y,z) = Ae^{-\frac{z}{a}}\frac{a^2}{a^2+x'^2}\left(3-e^{-\frac{2z}{a}}\right)\cos^2\left(\frac{\pi}{2}\frac{y'}{3a}\right)$$

$$f_3(x,y,z) = A\frac{a^2}{\frac{a^2}{4}+x'^2+y'^2}\left(e^{-\frac{2z}{a}}+\frac{a^2}{2(a+2z)^2}\right)$$

2.2. DASY5 E-Field Probe

The SAR measurement is conducted with the dosimetric probe manufactured by SPEAG. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency.

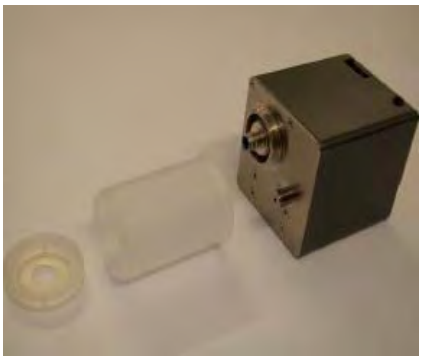
SPEAG conducts the probe calibration in compliance with international and national standards (e.g. IEEE 1528, EN 62209-1, IEC 62209, etc.) under ISO 17025. The calibration data are in Appendix D**.**

2.2.1. Isotropic E-Field Probe Specification

Model	EX3DV4	
Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz to 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	10 µW/g to 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)	
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.	

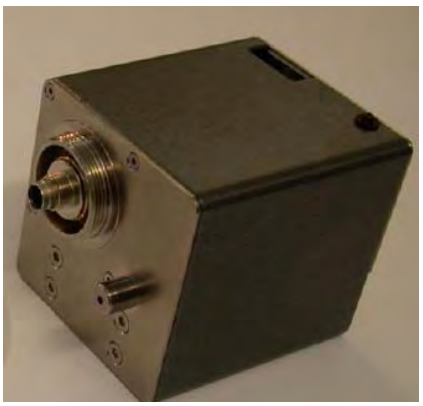
2.3. Boundary Detection Unit and Probe Mounting Device

The DASY probes use a precise connector and an additional holder for the probe, consisting of a plastic tube and a flexible silicon ring to center the probe. The connector at the DAE is flexibly mounted and held in the default position with magnets and springs. Two switching systems in the connector mount detect frontal and lateral probe collisions and trigger the necessary software response.



2.4. DATA Acquisition Electronics (DAE) and Measurement Server

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit.
Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.
The input impedance of the DAE4 is 200M Ohm; the inputs are symmetrical and floating. Common mode rejection is above 80dB.



The DASY5 measurement server is based on a PC/104 CPU board with a 400MHz intel ULV Celeron, 128MB chipdisk and 128MB RAM. The necessary circuits for communication with the DAE electronics box, as well as the 16 bit AD converter system for optical detection and digital I/O interface are contained on the DASY5 I/O board, which is directly connected to the PC/104 bus of the CPU board.

2.5. Robot

The DASY5 system uses the high precision robots TX90 XL type out of the newer series from Stäubli SA (France). For the 6-axis controller DASY5 system, the CS8C robot controller version from Stäubli is used.

The XL robot series have many features that are important for our application:

- High precision (repeatability 0.02 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)
- 6-axis controller

2.6. Light Beam Unit

The light beam switch allows automatic "tooling" of the probe. During the process, the actual position of the probe tip with respect to the robot arm is measured, as well as the probe length and the horizontal probe offset. The software then corrects all movements, such that the robot coordinates are valid for the probe tip.

The repeatability of this process is better than 0.1 mm. If a position has been taught with an aligned probe, the same position will be reached with another aligned probe within 0.1 mm, even if the other probe has different dimensions. During probe rotations, the probe tip will keep its actual position.

2.7. Device Holder

The DASY5 device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (EPR).
Thus the device needs no repositioning when changing the angles.
The DASY5 device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity εr =3 and loss tangent δ = 0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

2.8. SAM Twin Phantom

The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region where shell thickness increases to 6mm). It has three measurement areas:

- Left head
- Right head
- Flat phantom

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

3. Tissue Simulating Liquid

3.1. The composition of the tissue simulating liquid

INGREDIENT (% Weight)	835MHz Head	835MHz Body	1900MHz Head	1900MHz Body
Water	40.45	52.4	54.90	40.5
Salt	1.45	1.40	0.18	0.50
Sugar	57.6	45.0	0.00	58.0
HEC	0.40	1.00	0.00	0.50
Preventol	0.10	0.20	0.00	0.50
DGBE	0.00	0.00	44.92	0.00

3.2. Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using DASY5 Dielectric Probe Kit and Agilent Vector Network Analyzer E5071C

Head Tissue Simulant Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
835 MHz	Reference result ± 5% window	41.50 39.43 to 43.58	0.90 0.86 to 0.95	N/A
	27-Sep-2010	42.98	0.87	21.0

Body Tissue Simulant Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
835 MHz	Reference result ± 5% window	55.20 52.44 to 57.96	0.97 0.92 to 1.02	N/A
	27-Sep-2010	55.33	1.01	21.0

Head Tissue Simulant Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
1900 MHz	Reference result ± 5% window	40.0 38.00 to 42.00	1.40 1.33 to 1.47	N/A
	27-Sep-2010	39.41	1.41	21.2

Body Tissue Simulant Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
1900 MHz	Reference result ± 5% window	53.30 50.64 to 55.97	1.52 1.44 to 1.60	N/A
	27-Sep-2010	52.60	1.57	21.2

3.3. Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in P1528.

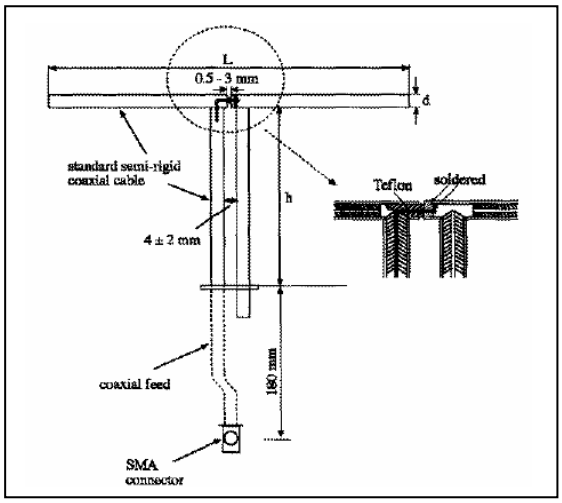
Target Frequency	**Head**		**Body**	
(MHz)	ε_r	σ (S/m)	ε_r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	**41.5**	**0.90**	**55.2**	**0.97**
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800 – 2000	**40.0**	**1.40**	**53.3**	**1.52**
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5800	35.3	5.27	48.2	6.00

(ε_r = relative permittivity, σ = conductivity and ρ = 1000 kg/m^3)

4. SAR Measurement Procedure

4.1. SAR System Validation

4.1.1. Validation Dipoles



The dipoles used is based on the IEEE-1528 standard, and is complied with mechanical and electrical specifications in line with the requirements of both IEEE and FCC Supplement C. the table below provides details for the mechanical and electrical specifications for the dipoles.

Frequency	L (mm)	h (mm)	d (mm)
835MHz	165.0	900	3.6
1900MHz	68.0	39.5	3.6

4.1.2. Validation Result

System Performance Check at 835MHz &1900MHz for Head

Validation Kit: D835V2-SN 4d094

Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp. [°C]
835 MHz	Reference result ± 10% window	9.70 8.73 to 10.67	6.30 5.67 to 6.93	N/A
	27-Sep-2010	10.16	6.64	21.0

Validation Kit: D1900V2-SN 5d121

Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp. [°C]
1900 MHz	Reference result ± 10% window	39.8 35.82 to 43.78	21.1 18.99 to 23.21	N/A
	27-Sep-2010	40.4	20.52	21.0

Note: All SAR values are normalized to 1W forward power.

System Performance Check at 835MHz &1900MHz for Body

Validation Kit: D835V2-SN 4d094

Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp. [°C]
835 MHz	Reference result ± 10% window	9.90 8.91 to 10.89	6.53 5.88 to 7.18	N/A
	27-Sep-2010	10.68	6.88	21.0

Validation Kit: D1900V2-SN 5d121

Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp. [°C]
1900 MHz	Reference result ± 10% window	41.4 37.26 to 45.54	22.3 20.07 to 24.53	N/A
	27-Sep-2010	39.84	20.36	21.0

Note: All SAR values are normalized to 1W forward power.

4.2. SAR Measurement Procedure

The ALSAS-10U calculates SAR using the following equation,

$$SAR = \frac{\sigma |E|^2}{\rho}$$

σ: represents the simulated tissue conductivity

ρ: represents the tissue density

The EUT is set to transmit at the required power in line with product specification, at each frequency relating to the LOW, MID, and HIGH channel settings.

Pre-scans are made on the device to establish the location for the transmitting antenna, using a large area scan in either air or tissue simulation fluid.

The EUT is placed against the Universal Phantom where the maximum area scan dimensions are larger than the physical size of the resonating antenna. When the scan size is not large enough to cover the peak SAR distribution, it is modified by either extending the area scan size in both the X and Y directions, or the device is shifted within the predefined area.

The area scan is then run to establish the peak SAR location (interpolated resolution set at $1mm^2$) which is then used to orient the center of the zoom scan. The zoom scan is then executed and the 1g and 10g averages are derived from the zoom scan volume (interpolated resolution set at $1mm^3$).

5. SAR Exposure Limits

SAR assessments have been made in line with the requirements of IEEE-1528, FCC Supplement C, and comply with ANSI/IEEE C95.1-1992 “Uncontrolled Environments” limits. These limits apply to a location which is deemed as “Uncontrolled Environment” which can be described as a situation where the general public may be exposed to an RF source with no prior knowledge or control over their exposure.

Limits for General Population/Uncontrolled Exposure (W/kg)

Type Exposure	Uncontrolled Environment Limit
Spatial Peak SAR (1g cube tissue for brain or body)	1.60 W/kg
Spatial Average SAR (whole body)	0.08 W/kg
Spatial Peak SAR (10g for hands, feet, ankles and wrist)	4.00 W/kg

6. Test Equipment List

Instrument	Manufacturer	Model No.	Serial No.	Last Calibration	Next Calibration
Stäubli Robot TX60L	Stäubli	TX60L	F10/5C90A1/A/01	Mar. 2010	only once
Controller	Stäubli	SP1	S-0034	Mar. 2010	only once
Dipole Validation Kits	SPEAG	D835V2	4d094	Apr. 2010	Apr. 2012
Dipole Validation Kits	SPEAG	D1900V2	5d121	Apr. 2010	Apr. 2012
SAM Twin Phantom	Speag	SAM	TP-1561/1562	N/A	N/A
Device Holder	Speag	SD 000 H01 HA	N/A	N/A	N/A
Data Acquisition Electronic	Speag	DAE4	1220	Mar. 2010	Mar. 2011
E-Field Probe	Speag	EX3DV4	3710	Mar. 2010	Mar. 2011
SAR Software	Speag	DASY5	V5.2 Build 162	N/A	N/A
Power Amplifier	Mini-Circuit	ZVA-183-S+	N657400950	N/A	N/A
Directional Coupler	Agilent	778D	20160	N/A	N/A
Universal Radio Communication Tester	R&S	CMU 200	117088	Jul. 2010	Jul. 2011
Vector Network	Agilent	E5071C	MY48367267	Mar. 2010	Mar. 2011
Signal Generator	Agilent	E4438C	MY49070163	Apr. 2010	Apr. 2011
Power Meter	Anritsu	ML2495A	0905006	Jan. 2010	Jan. 2011
Wide Bandwidth Sensor	Anritsu	MA2411B	0846014	Jan. 2010	Jan. 2011

7. Measurement Uncertainty

DASY5 Uncertainty								
Error Description	Uncert. value	Prob. Dist.	Div.	(ci) 1g	(ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(vi) veff
Measurement System								
Probe Calibration	±5.5%	N	1	1	1	±5.5%	±5.5%	∞
Axial Isotropy	±4.7%	R	√3	0.7	0.7	±1.9%	±1.9%	∞
Hemispherical Isotropy	±9.6%	R	√3	0.7	0.7	±3.9%	±3.9%	∞
Boundary Effects	±1.0%	R	√3	1	1	±0.6%	±0.6%	∞
Linearity	±4.7%	R	√3	1	1	±2.7%	±2.7%	∞
System Detection Limits	±1.0%	R	√3	1	1	±0.6%	±0.6%	∞
Readout Electronics	±0.3%	N	1	1	1	±0.3%	±0.3%	∞
Response Time	±0.8%	R	√3	1	1	±0.5%	±0.5%	∞
Integration Time	±2.6%	R	√3	1	1	±1.5%	±1.5%	∞
RF Ambient Noise	±3.0%	R	√3	1	1	±1.7%	±1.7%	∞
RF Ambient Reflections	±3.0%	R	√3	1	1	±1.7%	±1.7%	∞
Probe Positioner	±0.4%	R	√3	1	1	±0.2%	±0.2%	∞
Probe Positioning	±2.9%	R	√3	1	1	±1.7%	±1.7%	∞
Max. SAR Eval.	±1.0%	R	√3	1	1	±0.6%	±0.6%	∞
Test Sample Related								
Device Positioning	±2.9%	N	1	1	1	±2.9%	±2.9%	145
Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%	5
Power Drift	±5.0%	R	√3	1	1	±2.9%	±2.9%	∞
Phantom and Setup								
Phantom Uncertainty	±4.0%	R	√3	1	1	±2.3%	±2.3%	∞
Liquid Conductivity (target)	±5.0%	R	√3	0.64	0.43	±1.8%	±1.2%	∞
Liquid Conductivity (meas.)	±2.5%	N	1	0.64	0.43	±1.6%	±1.1%	∞
Liquid Permittivity (target)	±5.0%	R	√3	0.6	0.49	±1.7%	±1.4%	∞
Liquid Permittivity (meas.)	±2.5%	N	1	0.6	0.49	±1.5%	±1.2%	∞
Combined Std. Uncertainty						±10.7%	±10.5%	387
Expanded STD Uncertainty						±21.5%	±21.0%	

8. Conducted Power Measurement

Mode	Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)
Maximum Power				
GSM850	824.2	31.65	0.7	32.35
	836.6	31.7	0.7	**32.40**
	848.8	31.56	0.7	32.26
PCS1900	1850.2	28.13	1.0	29.13
	1880.0	28.13	1.0	**29.13**
	1909.8	28.1	1.0	29.10
GPRS850 1slot	824.2	31.63	0.7	32.33
	836.6	31.68	0.7	32.38
	848.8	31.54	0.7	32.24
GPRS850 2slot	824.2	29.14	0.7	29.84
	836.6	29.21	0.7	29.91
	848.8	29.09	0.7	29.79
GPRS1900 1slot	1850.2	28.09	1.0	29.09
	1880.0	28.1	1.0	29.10
	1909.8	28.08	1.0	29.08
GPRS1900 2slot	1850.2	25.76	1.0	26.76
	1880.0	25.8	1.0	26.80
	1909.8	25.81	1.0	26.81

9. Test Results

9.1. SAR Test Results Summary

9.1.1. Test position and configuration

Head SAR was performed with the device configured in the positions according to IEEE1528, and Body SAR was performed with the device 15mm from the phantom. Body SAR was also performed with the headset attached and without.

9.1.2. Body SAR without Headset

Testing without the headset was performed at the position and channels that resulted in the highest body SAR. This testing was performed with GPRS transmitting with 2 uplink timeslots. This operation mode represents the maximum SAR situation, when downloading data via GPRS and listening to music by headset. SAR without the headset attached was significantly higher than with the headset, and also was verified several times and confirmed, so the final test data shown were the worst case without headset.

In the Body SAR test result table, body-worn means display of device down, body-front means display of device up.

9.1.3. GPRS Operation Mode

This is a multislot class 10 device capable of 2 uplink timeslots. During the head SAR test, the device was transmitting with 1 uplink timeslot; during the body SAR test, it was transmitting with 2 uplink timeslots. Additionally, this device doesn’t support dual transfer mode (DTM).

9.1.4. Referenced Documents

FCC KDB 447498 D01 V04 and KDB 941225 D03 V01

9.1.5. Test Result

SAR MEASUREMENT							
Ambient Temperature (°C) : 21.5 ±2				Relative Humidity (%): 54			
Liquid Temperature (°C) : 21.0 ±2				Depth of Liquid (cm):>15			
Product: GSM Mobile Phone							
Test Mode: GSM850							
Test Position Head	Antenna Position	Frequency		Conducted Power (dBm)	Power Drift (<±0.2)	SAR 1g (W/kg)	Limit (W/kg)
		Channel	MHz				
Left-Cheek	Fixed	128	824.2	32.35	0.078	0.811	1.6
Left-Cheek	Fixed	189	836.6	32.40	-0.163	1.050	1.6
Left-Cheek	Fixed	251	848.8	32.26	0.042	**1.150**	1.6
Left-Tilted	Fixed	189	836.6	32.40	-0.035	0.561	1.6
Right-Cheek	Fixed	128	824.2	32.35	-0.058	0.761	1.6
Right-Cheek	Fixed	189	836.6	32.40	0.147	0.995	1.6
Right-Cheek	Fixed	251	848.8	32.26	-0.022	1.030	1.6
Right-Tilted	Fixed	189	836.6	32.40	0.095	0.501	1.6

SAR MEASUREMENT

Ambient Temperature (°C) : 21.5 ±2	Relative Humidity (%): 54
Liquid Temperature (°C) : 21.0 ±2	Depth of Liquid (cm):>15
Product: GSM Mobile Phone	
Test Mode: GSM850	

Test Position Body	Antenna Position	Frequency		Conducted Power (dBm)	Power Drift (<±0.2)	SAR 1g (W/kg)	Limit (W/kg)
		Channel	MHz				
Body-worn	Fixed	128	824.2	32.35	-0.084	0.297	1.6
Body-worn	Fixed	189	836.6	32.40	0.040	0.403	1.6
Body-worn	Fixed	251	848.8	32.26	0.062	0.480	1.6
Body-front	Fixed	189	836.6	32.40	-0.117	0.365	1.6
Test Mode: GPRS850 1slot							
Body-worn	Fixed	189	836.6	32.38	0.087	0.670	1.6
Test Mode: GPRS850 2slot							
Body-worn	Fixed	128	824.2	29.84	-0.045	0.545	1.6
Body-worn	Fixed	189	836.6	29.91	-0.042	**0.738**	1.6
Body-worn	Fixed	251	848.8	29.79	0.067	0.735	1.6
Body-front	Fixed	189	836.6	29.91	-0.058	0.685	1.6
Body-worn (with headset)	Fixed	189	836.6	29.91	0.047	0.456	1.6

SAR MEASUREMENT

Ambient Temperature (°C) : 21.5 ±2 Relative Humidity (%): 52

Liquid Temperature (°C) : 21.0 ±2 Depth of Liquid (cm):>15

Product: GSM Mobile Phone

Test Mode: PCS1900

Test Position Head	Antenna Position	Frequency		Conducted Power (dBm)	Power Drift (<±0.2)	SAR 1g (W/kg)	Limit (W/kg)
		Channel	MHz				
Left-Cheek	Fixed	512	1850.2	29.13	-0.074	0.499	1.6
Left-Cheek	Fixed	661	1880.0	29.13	-0.125	**0.662**	1.6
Left-Cheek	Fixed	810	1909.8	29.10	0.048	0.634	1.6
Left-Tilted	Fixed	661	1880.0	29.13	0.072	0.247	1.6
Right-Cheek	Fixed	512	1850.2	29.13	0.111	0.536	1.6
Right-Cheek	Fixed	661	1880.0	29.13	0.198	0.607	1.6
Right-Cheek	Fixed	810	1909.8	29.10	-0.098	0.551	1.6
Right-Tilted	Fixed	661	1880.0	29.13	0.123	0.335	1.6

SAR MEASUREMENT

Ambient Temperature (°C) : 21.5 ±2 Relative Humidity (%): 52

Liquid Temperature (°C) : 21.0 ±2 Depth of Liquid (cm):>15

Product: GSM Mobile Phone

Test Mode: PCS1900

Test Position Body	Antenna Position	Frequency		Conducted Power (dBm)	Power Drift (<±0.2)	SAR 1g (W/kg)	Limit (W/kg)
		Channel	MHz				
Body-worn	Fixed	512	1850.2	29.13	-0.165	0.264	1.6
Body-worn	Fixed	661	1880.0	29.13	-0.142	0.443	1.6
Body-worn	Fixed	810	1909.8	29.10	0.003	0.499	1.6
Body-front	Fixed	661	1880.0	29.13	-0.003	0.248	1.6
Test Mode: GPRS1900 1slot							
Body-worn	Fixed	661	1880.0	29.10	-0.150	0.372	1.6
Test Mode: GPRS1900 2slot							
Body-worn	Fixed	512	1850.2	26.76	0.023	0.269	1.6
Body-worn	Fixed	661	1880.0	26.80	-0.206	0.451	1.6
Body-worn	Fixed	810	1909.8	26.81	0.073	**0.507**	1.6
Body-front	Fixed	661	1880.0	26.80	-0.142	0.306	1.6
Body-worn (with headset)	Fixed	661	1880.0	26.80	-0.055	0.409	1.6

Appendix A. SAR System Validation Data

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

System Check Head 835MHz

DUT: Dipole 835 MHz D835V2; Type: D835V2

Communication System: CW; Communication System Band: D835 (835.0 MHz); Duty Cycle: 1:1;

Frequency: 835 MHz; Medium parameters used: f = 835 MHz; σ = 0.87 mho/m; εr = 43; ρ = 1000 kg/m^3;

Phantom section: Flat Section; Input Power=250mW

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

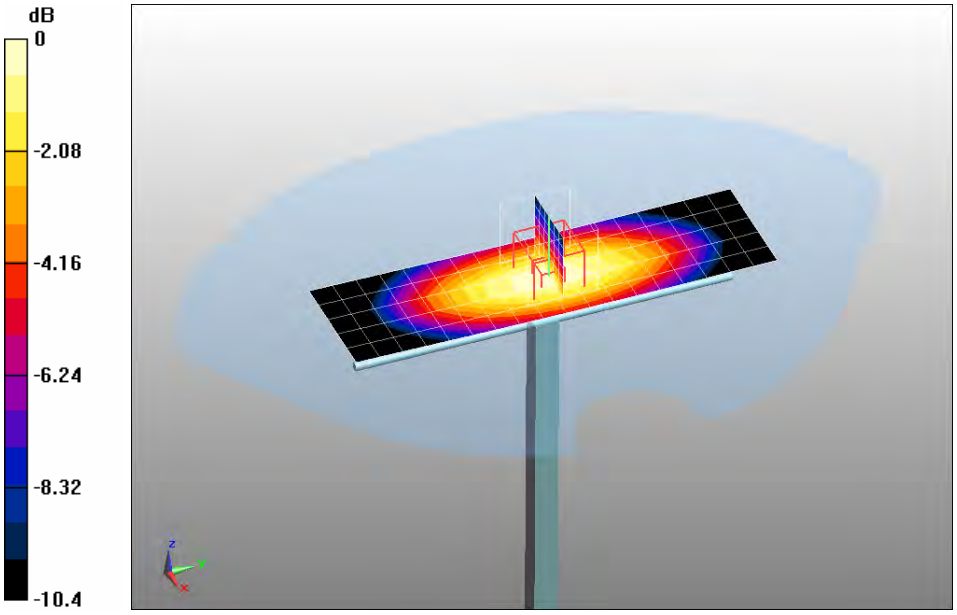
- Probe: EX3DV4 - SN3710; ConvF(8.83, 8.83, 8.83); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/System Check GSM850 Head/Area Scan (6x19x1): Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 2.6 mW/g

Configuration/System Check GSM850 Head/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm, Reference Value = 56 V/m; Power Drift = 0.034 dB

Peak SAR (extrapolated) = 3.82 W/kg

SAR(1 g) = 2.54 mW/g; SAR(10 g) = 1.66 mW/g Maximum value of SAR (measured) = 2.73 mW/g



0 dB = 2.73mW/g

Date/Time:27-Sep-2010

Test Laboratory: QuieTek Lab

System Check Body 835MHz

DUT: Dipole 835 MHz D835V2; Type: D835V2

Communication System: CW; Communication System Band: D835 (835.0 MHz); Duty Cycle: 1:1;

Frequency: 835 MHz; Medium parameters used: f = 835 MHz; σ = 1.02 mho/m; εr = 55.3; ρ = 1000 kg/m^3;

Phantom section: Flat Section; Input Power=250mW

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

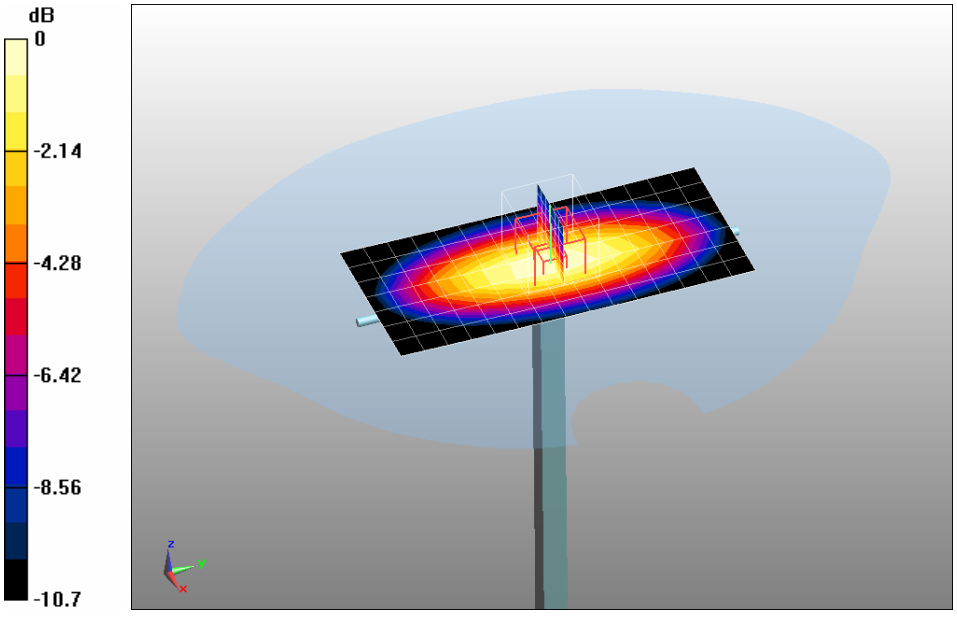
- Probe: EX3DV4 - SN3710; ConvF(8.95, 8.95, 8.95); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/System Check GSM835 Body/Area Scan (8x16x1): Measurement grid: dx=10mm, dy=10mm. Maximum value of SAR (measured) = 2.74 mW/g

Configuration/System Check GSM835 Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm, Reference Value = 53 V/m; Power Drift = 0.021 dB

Peak SAR (extrapolated) = 4.06 W/kg

SAR(1 g) = 2.67 mW/g; SAR(10 g) = 1.72 mW/g Maximum value of SAR (measured) = 2.88 mW/g



0 dB = 2.88mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

System Check Head 1900MHz

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2

Communication System: CW; Communication System Band: D1900 (1900.0 MHz); Duty Cycle: 1:1;

Frequency: 1900 MHz; Medium parameters used: f = 1900 MHz; σ = 1.41 mho/m; εr = 39.4; ρ = 1000 kg/m^3;

Phantom section: Flat Section; Input Power=250mW

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

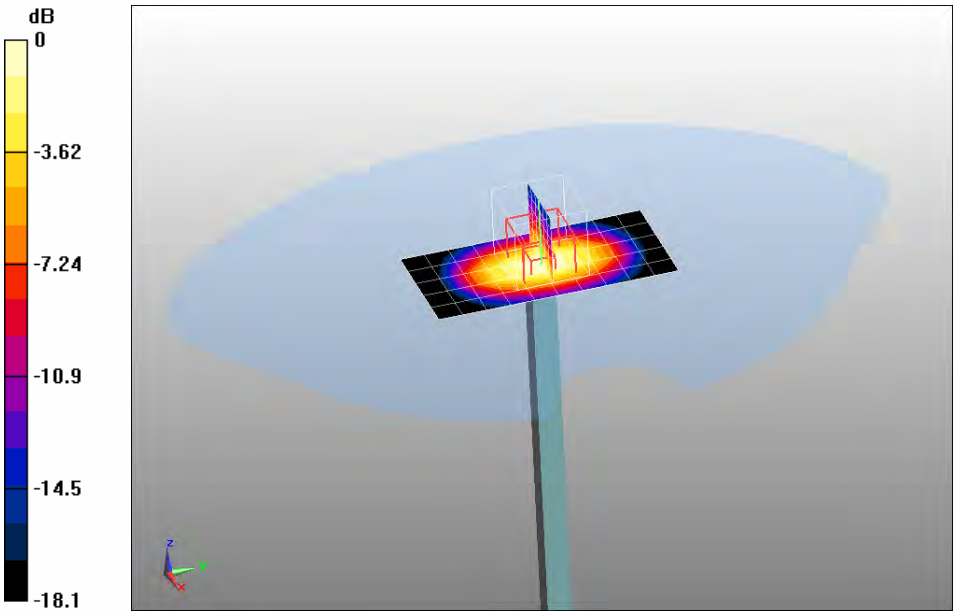
- Probe: EX3DV4 - SN3710; ConvF(7.69, 7.69, 7.69); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/System Check PCS1900 Head/Area Scan (6x11x1): Measurement grid: dx=10mm, dy=10mm. Maximum value of SAR (measured) = 10 mW/g

Configuration/System Check PCS1900 Head/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm, Reference Value = 90.8 V/m; Power Drift = -0.070 dB

Peak SAR (extrapolated) = 19.4 W/kg

SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.13 mW/g Maximum value of SAR (measured) = 11.4 mW/g



0 dB = 11.4mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

System Check Body 1900MHz

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2

Communication System: CW; Communication System Band: D1900 (1900.0 MHz); Duty Cycle: 1:1;

Frequency: 1900 MHz; Medium parameters used: f = 1900 MHz; σ = 1.57 mho/m; εr = 52.6; ρ = 1000 kg/m^3;

Phantom section: Flat Section; Input Power=250mW

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

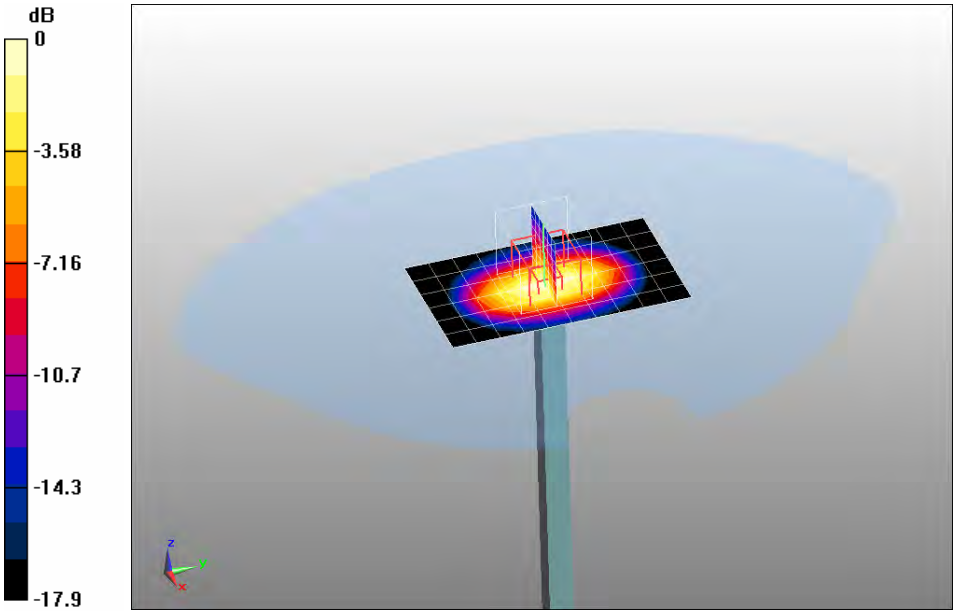
- Probe: EX3DV4 - SN3710; ConvF(7.71, 7.71, 7.71); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/System Check PCS1900 Body/Area Scan (7x11x1): Measurement grid: dx=10mm, dy=10mm. Maximum value of SAR (measured) = 11 mW/g

Configuration/System Check PCS1900 Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm, Reference Value = 83.8 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 18.7 W/kg

SAR(1 g) = 9.96 mW/g; SAR(10 g) = 5.09 mW/g Maximum value of SAR (measured) = 11.3 mW/g



0 dB = 11.3mW/g

Appendix B. SAR measurement Data

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GSM850 Low Left-Touch

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Duty Cycle: 1:8.3; Frequency: 824.2 MHz; Medium parameters used: f = 824.2 MHz; σ = 0.86 mho/m; εr = 43.1; ρ = 1000 kg/m^3; Phantom section: Left Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

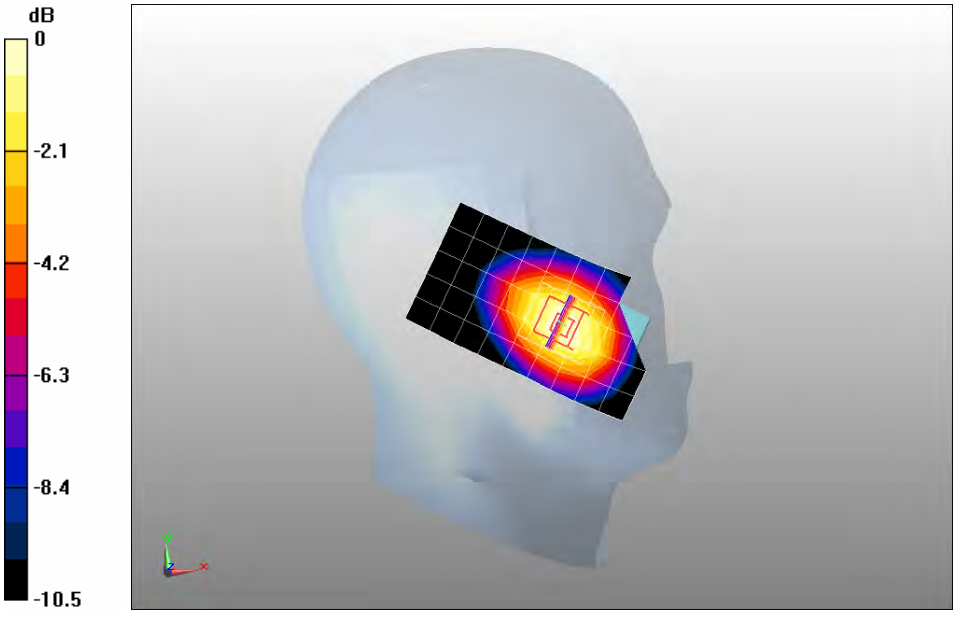
- Probe: EX3DV4 - SN3710; ConvF(8.83, 8.83, 8.83); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GSM850 Low Left-Touch/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.807 mW/g

Configuration/GSM850 Low Left-Touch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 8.98 V/m; Power Drift = 0.078 dB

Peak SAR (extrapolated) = 1.06 W/kg

SAR(1 g) = 0.811 mW/g; SAR(10 g) = 0.576 mW/g Maximum value of SAR (measured) = 0.859 mW/g



0 dB = 0.859mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GSM850 Mid Left-Touch

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Duty Cycle: 1:8.3; Frequency: 836.6 MHz; Medium parameters used: f = 836.6 MHz; σ = 0.88 mho/m; εr = 43; ρ = 1000 kg/m^3; Phantom section: Left Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(8.83, 8.83, 8.83); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

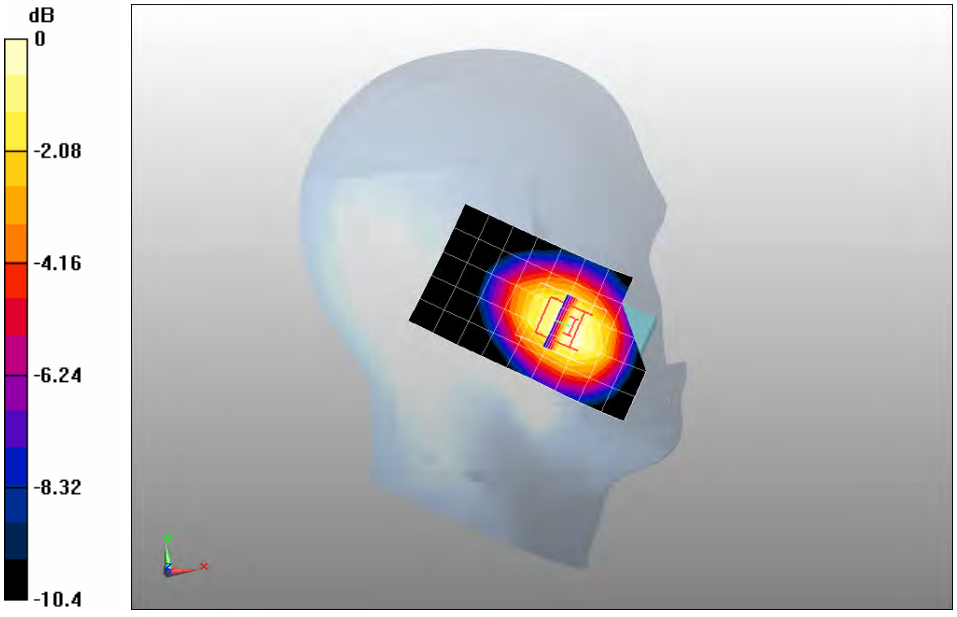
Configuration/GSM850 Mid Left-Touch/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 1.05 mW/g

Configuration/GSM850 Mid Left-Touch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 10.5 V/m; Power Drift = -0.163 dB

Peak SAR (extrapolated) = 1.37 W/kg

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.742 mW/g Maximum value of SAR (measured) = 1.11 mW/g



0 dB = 1.11mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GSM850 High Left-Touch

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Duty Cycle: 1:8.3; Frequency: 848.6 MHz; Medium parameters used: f = 848.6 MHz; σ = 0.89 mho/m; εr = 42.8; ρ = 1000 kg/m^3; Phantom section: Left Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(8.83, 8.83, 8.83); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

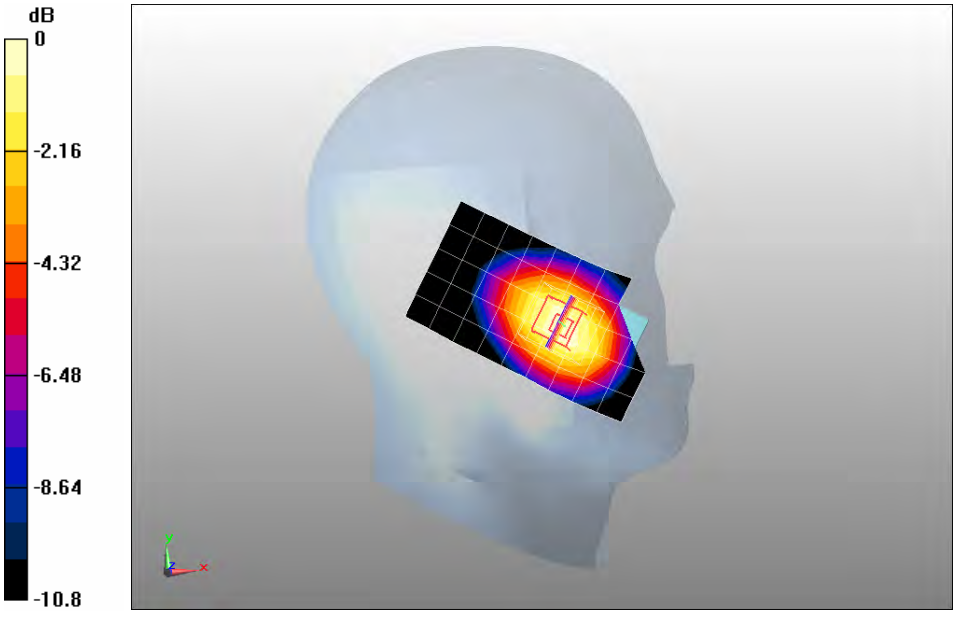
Configuration/GSM850 High Left-Touch/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

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

Configuration/GSM850 High Left-Touch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 10.5 V/m; Power Drift = 0.042 dB

Peak SAR (extrapolated) = 1.51 W/kg

SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.813 mW/g Maximum value of SAR (measured) = 1.22 mW/g



0 dB = 1.22mW/g

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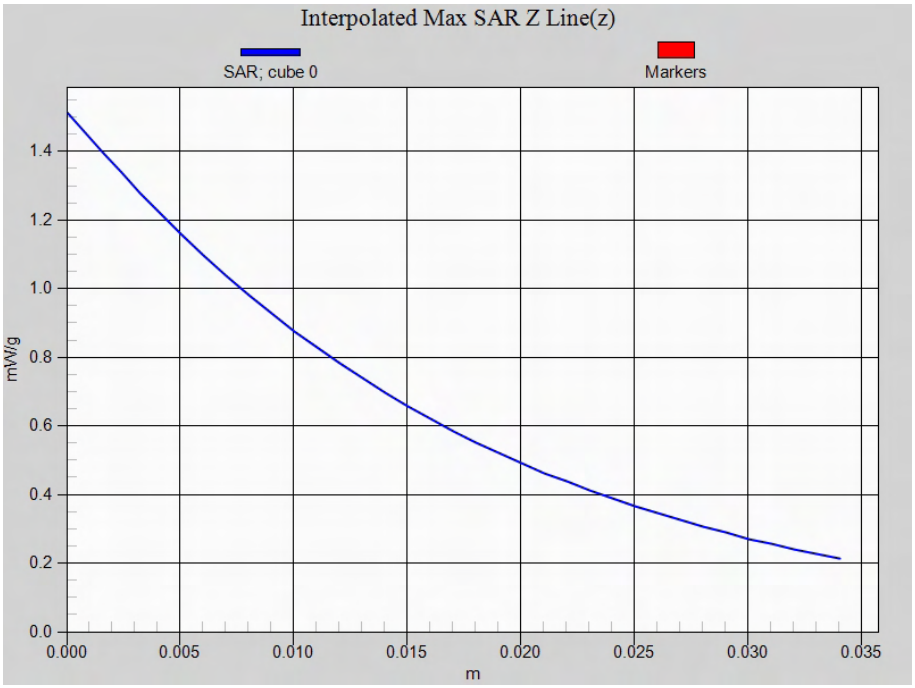
Z-Axis Plot


Interpolated Max SAR Z Line(z)
SAR; cube 0
Markers
mW/g
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GSM850 Mid Left-Tilt

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Duty Cycle: 1:8.3; Frequency: 836.6 MHz; Medium parameters used: f = 836.6 MHz; σ = 0.88 mho/m; εr = 43; ρ = 1000 kg/m^3; Phantom section: Left Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(8.83, 8.83, 8.83); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

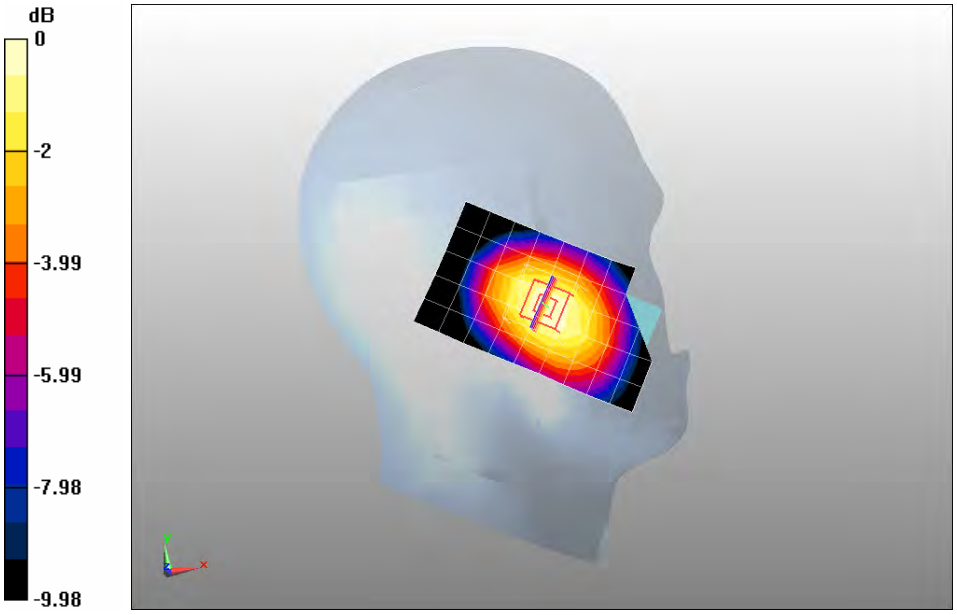
Configuration/GSM850 Mid Left-Tilt/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.550 mW/g

Configuration/GSM850 Mid Left-Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 14.7 V/m; Power Drift = -0.035 dB

Peak SAR (extrapolated) = 0.735 W/kg

SAR(1 g) = 0.561 mW/g; SAR(10 g) = 0.407 mW/g Maximum value of SAR (measured) = 0.591 mW/g



0 dB = 0.591mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GSM850 Low Right-Touch

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Duty Cycle: 1:8.3; Frequency: 824.2 MHz; Medium parameters used: f = 824.2 MHz; σ = 0.86 mho/m; εr = 43.1; ρ = 1000 kg/m^3; Phantom section: Right Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

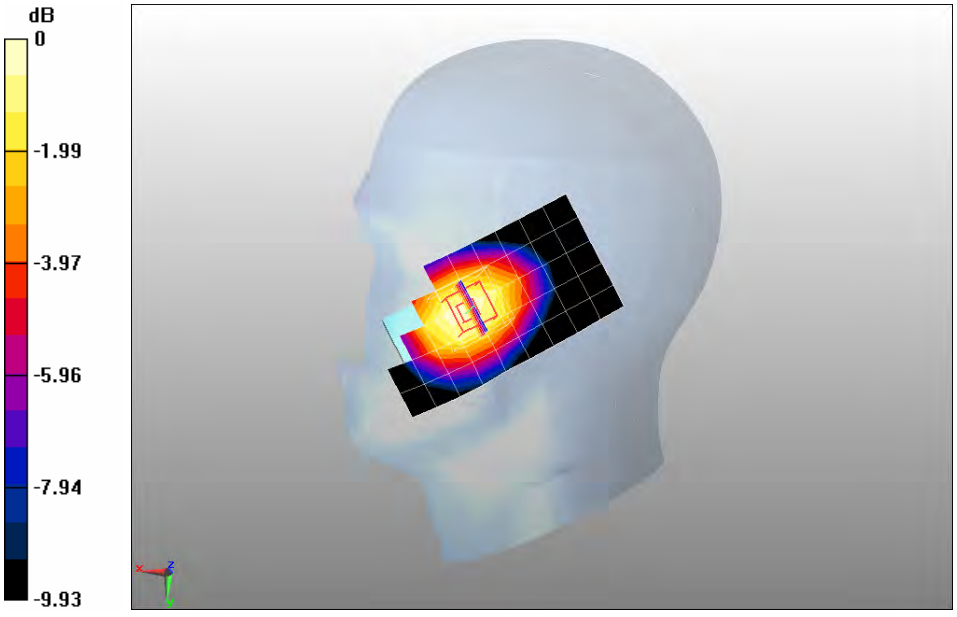
- Probe: EX3DV4 - SN3710; ConvF(8.83, 8.83, 8.83); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GSM850 Low Right-Touch/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.797 mW/g

Configuration/GSM850 Low Right-Touch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 9.28 V/m; Power Drift = -0.058 dB

Peak SAR (extrapolated) = 1 W/kg

SAR(1 g) = 0.761 mW/g; SAR(10 g) = 0.541 mW/g Maximum value of SAR (measured) = 0.802 mW/g



0 dB = 0.802mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GSM850 Mid Right-Touch

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Duty Cycle: 1:8.3; Frequency: 836.6 MHz; Medium parameters used: f = 836.6 MHz; σ = 0.88 mho/m; εr = 43; ρ = 1000 kg/m^3; Phantom section: Right Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

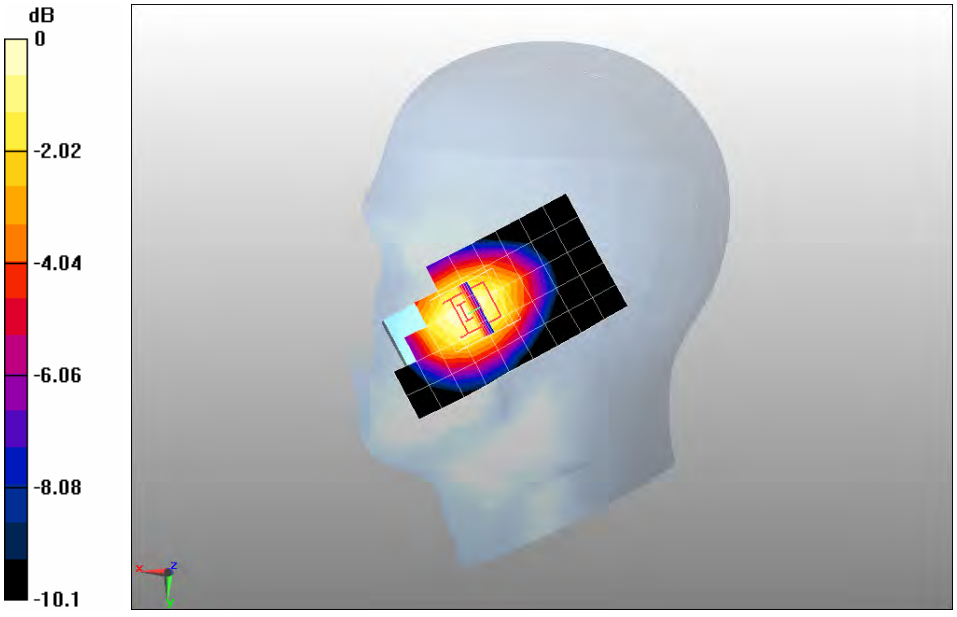
- Probe: EX3DV4 - SN3710; ConvF(8.83, 8.83, 8.83); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GSM850 Mid Right-Touch/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 1.05 mW/g

Configuration/GSM850 Mid Right-Touch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 10.3 V/m; Power Drift = 0.147 dB

Peak SAR (extrapolated) = 1.32 W/kg

SAR(1 g) = 0.995 mW/g; SAR(10 g) = 0.704 mW/g Maximum value of SAR (measured) = 1.05 mW/g



0 dB = 1.05mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GSM850 High Right-Touch

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Duty Cycle: 1:8.3; Frequency: 848.6 MHz; Medium parameters used: f = 848.6 MHz; σ = 0.89 mho/m; εr = 42.8; ρ = 1000 kg/m^3; Phantom section: Right Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

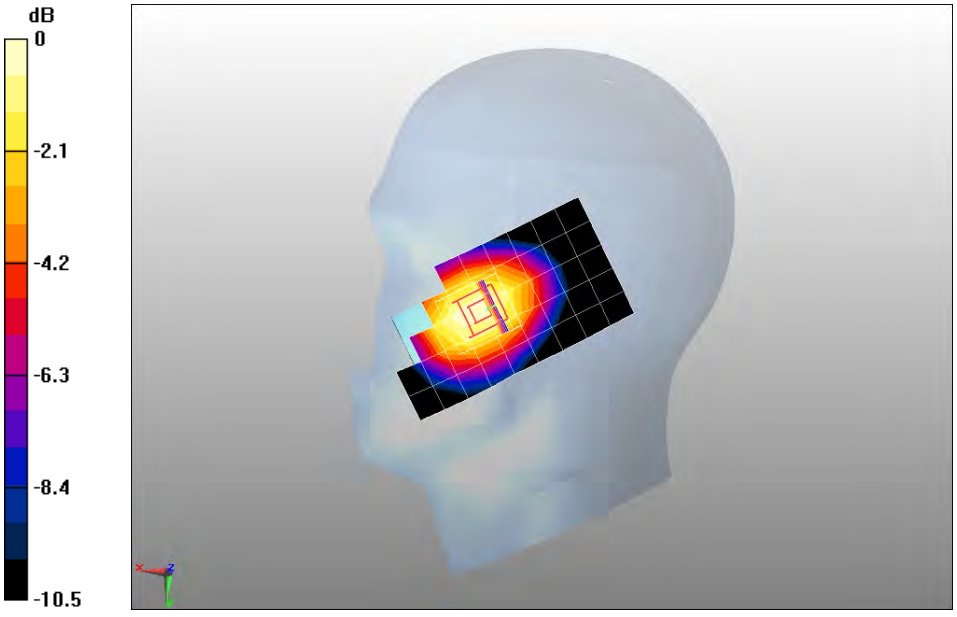
- Probe: EX3DV4 - SN3710; ConvF(8.83, 8.83, 8.83); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GSM850 High Right-Touch/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 1.08 mW/g

Configuration/GSM850 High Right-Touch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 10.6 V/m; Power Drift = -0.022 dB

Peak SAR (extrapolated) = 1.35 W/kg

SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.733 mW/g Maximum value of SAR (measured) = 1.08 mW/g



0 dB = 1.08mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GSM850 Mid Right-Tilt

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Duty Cycle: 1:8.3; Frequency: 836.6 MHz; Medium parameters used: f = 836.6 MHz; σ = 0.88 mho/m; εr = 43; ρ = 1000 kg/m^3; Phantom section: Right Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

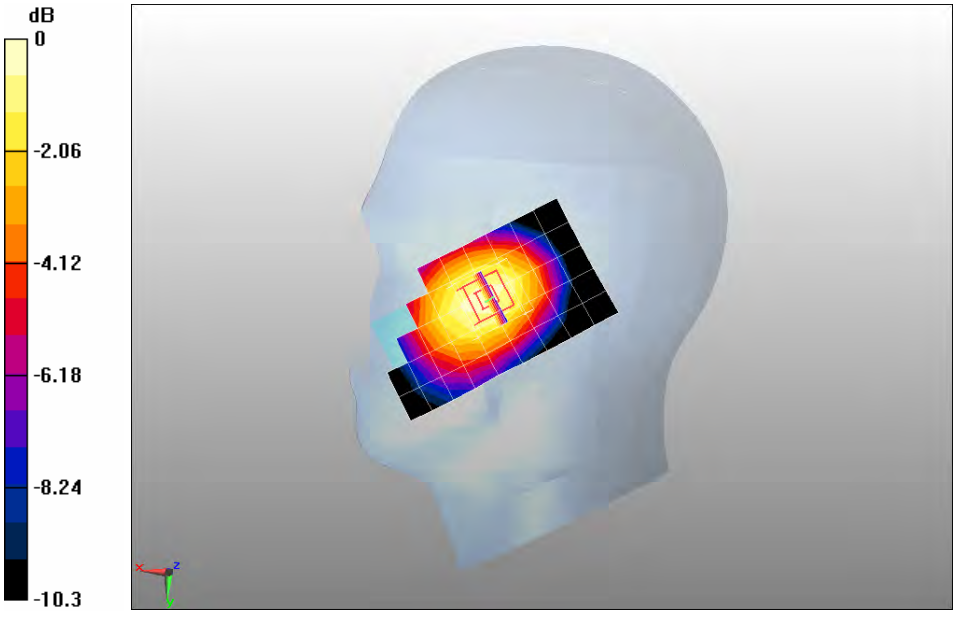
- Probe: EX3DV4 - SN3710; ConvF(8.83, 8.83, 8.83); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GSM850 Mid Right-Tilt/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.523 mW/g

Configuration/GSM850 Mid Right-Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 14.2 V/m; Power Drift = 0.095 dB

Peak SAR (extrapolated) = 0.661 W/kg

SAR(1 g) = 0.501 mW/g; SAR(10 g) = 0.364 mW/g Maximum value of SAR (measured) = 0.527 mW/g



0 dB = 0.527mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GSM850 Low Body-Back

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Duty Cycle: 1:8.3; Frequency: 824.2 MHz; Medium parameters used: f = 824.2 MHz; σ = 1 mho/m; εr = 55.5; ρ = 1000 kg/m^3; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

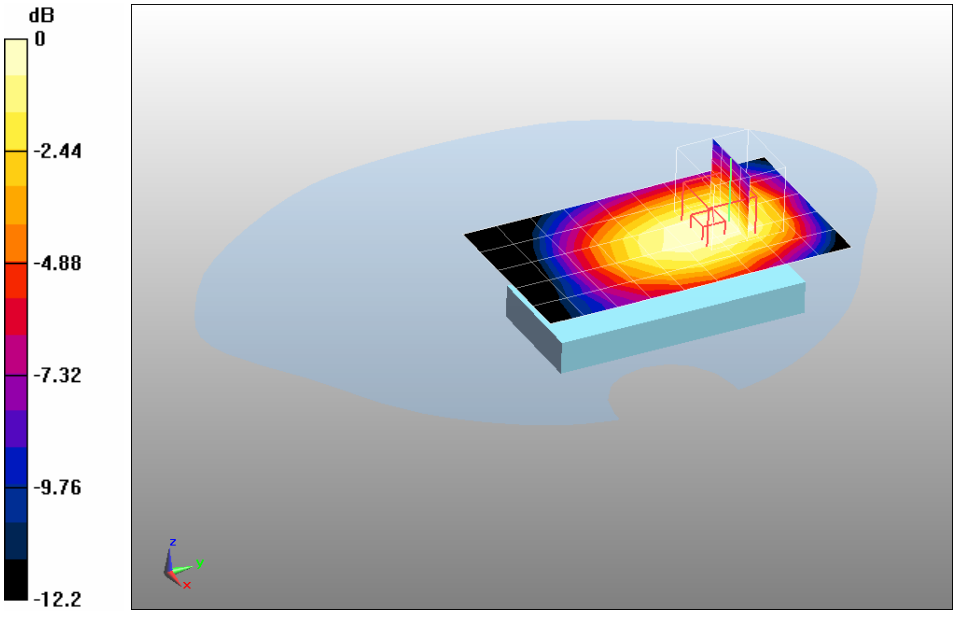
- Probe: EX3DV4 - SN3710; ConvF(8.95, 8.95, 8.95); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GSM 850 Low Body-Back/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.304 mW/g

Configuration/GSM 850 Low Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 5.93 V/m; Power Drift = -0.084 dB

Peak SAR (extrapolated) = 0.422 W/kg

SAR(1 g) = 0.297 mW/g; SAR(10 g) = 0.211 mW/g Maximum value of SAR (measured) = 0.314 mW/g



0 dB = 0.314mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GSM850 Mid Body-Back

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Duty Cycle: 1:8.3; Frequency: 836.6 MHz; Medium parameters used: f = 836.6 MHz; σ = 1.02 mho/m; εr = 55.3; ρ = 1000 kg/m^3; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

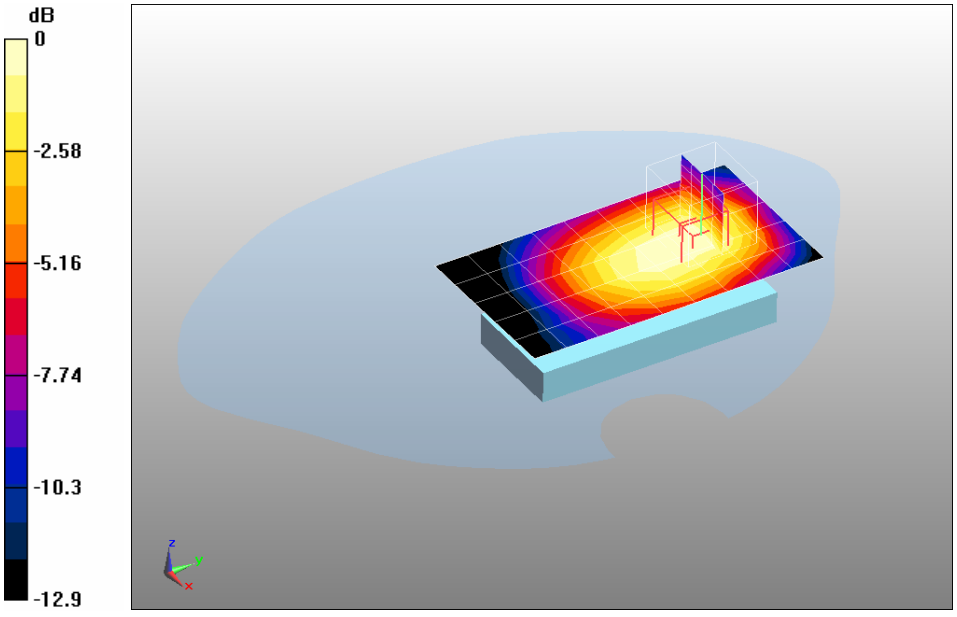
- Probe: EX3DV4 - SN3710; ConvF(8.95, 8.95, 8.95); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GSM 850 Mid Body-Back/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.401 mW/g

Configuration/GSM 850 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 6.68 V/m; Power Drift = 0.040 dB

Peak SAR (extrapolated) = 0.585 W/kg

SAR(1 g) = 0.403 mW/g; SAR(10 g) = 0.283 mW/g Maximum value of SAR (measured) = 0.428 mW/g



0 dB = 0.428mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GSM850 High Body-Back

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Duty Cycle: 1:8.3; Frequency: 848.6 MHz; Medium parameters used: f = 848.6 MHz; σ = 1.03 mho/m; εr = 55.2; ρ = 1000 kg/m^3; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

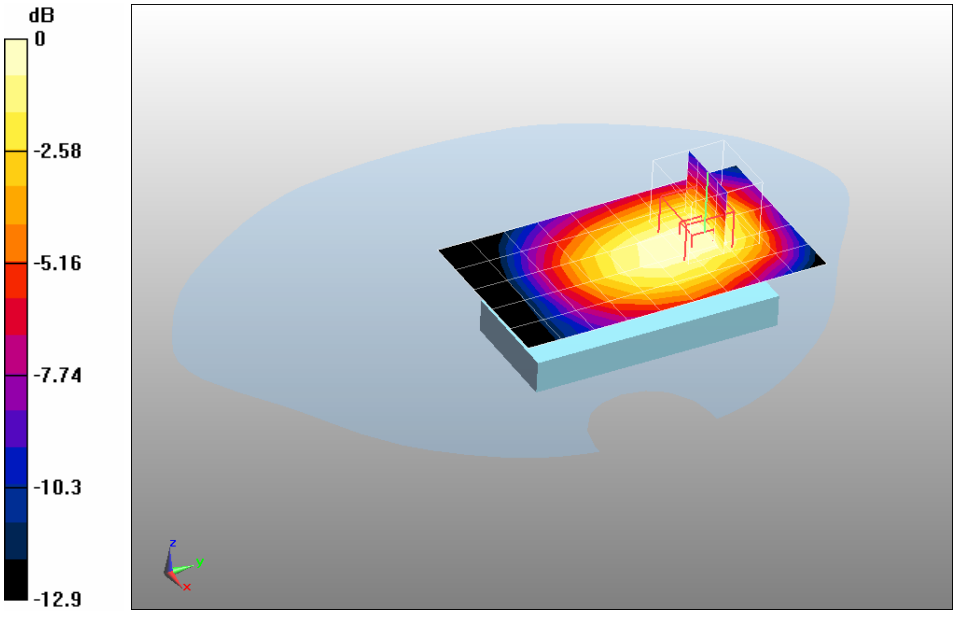
- Probe: EX3DV4 - SN3710; ConvF(8.95, 8.95, 8.95); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GSM 850 High Body-Back/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.477 mW/g

Configuration/GSM 850 High Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 7.46 V/m; Power Drift = 0.062 dB

Peak SAR (extrapolated) = 0.686 W/kg

SAR(1 g) = 0.480 mW/g; SAR(10 g) = 0.337 mW/g Maximum value of SAR (measured) = 0.507 mW/g



0 dB = 0.507mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GSM850 Mid Body-Front

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Duty Cycle: 1:8.3; Frequency: 836.6 MHz; Medium parameters used: f = 836.6 MHz; σ = 1.02 mho/m; εr = 55.3; ρ = 1000 kg/m^3; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

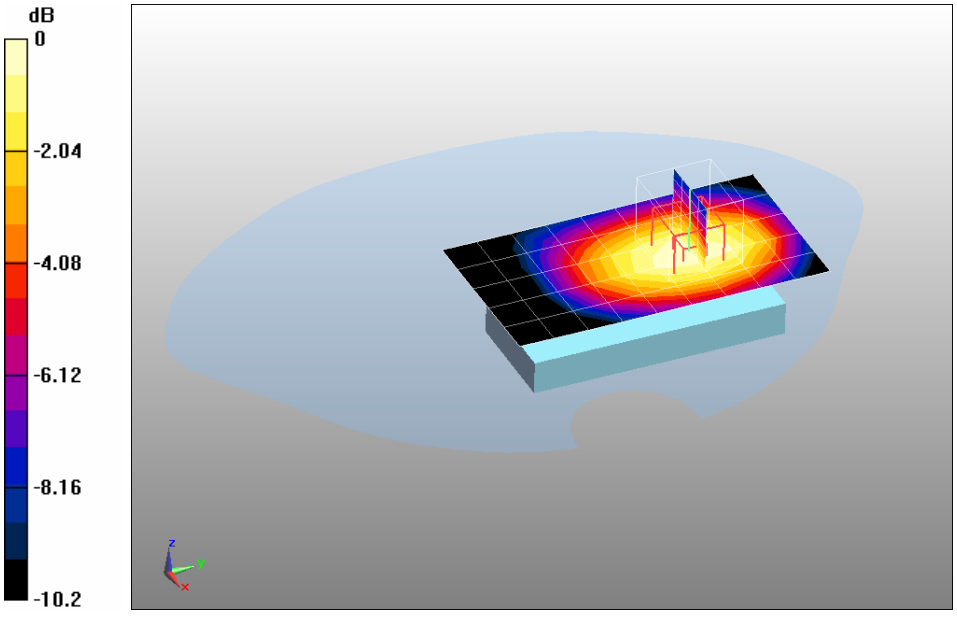
- Probe: EX3DV4 - SN3710; ConvF(8.95, 8.95, 8.95); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GSM 850 Mid Body-Front/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.377 mW/g

Configuration/GSM 850 Mid Body-Front/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 6.14 V/m; Power Drift = -0.117 dB

Peak SAR (extrapolated) = 0.501 W/kg

SAR(1 g) = 0.365 mW/g; SAR(10 g) = 0.258 mW/g Maximum value of SAR (measured) = 0.387 mW/g



0 dB = 0.387mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GPRS850 Mid Body-Back(1up)

DUT: GSM Mobile Phone; Type: NX188

Communication System: GPRS/EGPRS; Communication System Band: GSM 850; Duty Cycle: 1:8.3; Frequency: 836.6 MHz; Medium parameters used: f = 836.6 MHz; σ = 1.02 mho/m; εr = 55.3; ρ = 1000 kg/m3 ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

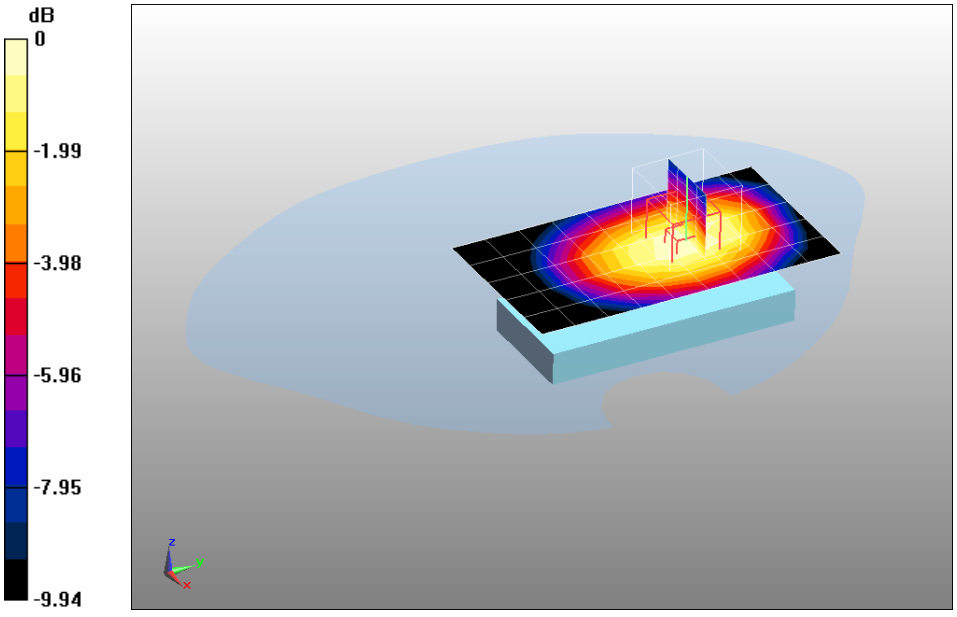
- Probe: EX3DV4 - SN3710; ConvF(8.95, 8.95, 8.95); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GPRS 850 Mid Body-Back/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.673 mW/g

Configuration/GPRS 850 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 10.1 V/m; Power Drift = 0.087 dB

Peak SAR (extrapolated) = 0.917 W/kg

SAR(1 g) = 0.670 mW/g; SAR(10 g) = 0.477 mW/g Maximum value of SAR (measured) = 0.709 mW/g



0 dB = 0.709mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GPRS850 Low Body-Back(2up)

DUT: GSM Mobile Phone; Type: NX188

Communication System: GPRS/EGPRS; Communication System Band: GSM 850; Duty Cycle: 1:8.3;

Frequency: 824.2 MHz; Medium parameters used: f = 824.2 MHz; σ = 1 mho/m; εr = 55.5; ρ = 1000 kg/m3 ;

Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(8.95, 8.95, 8.95); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

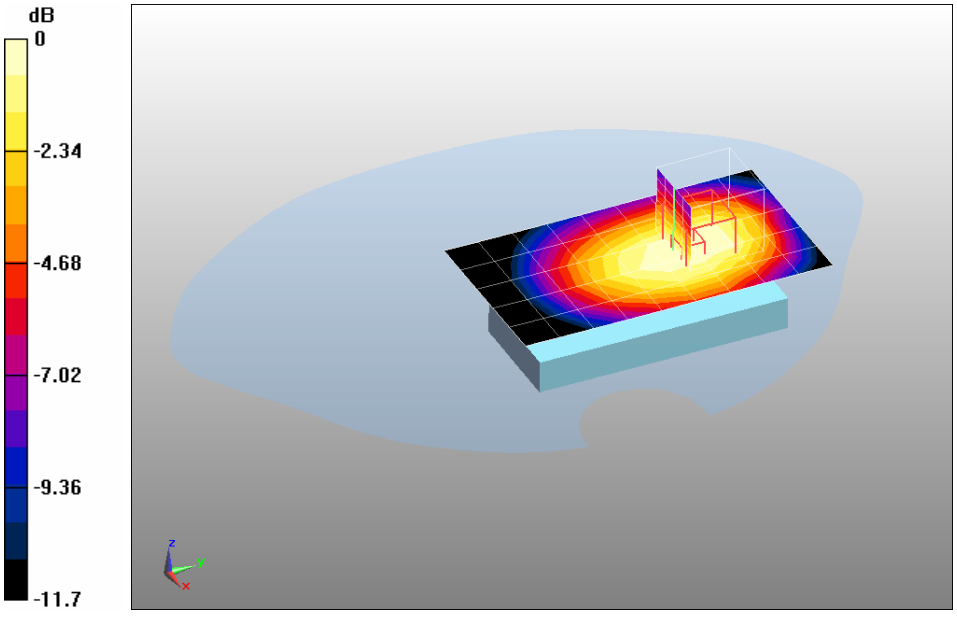
Configuration/GPRS 850 Low Body-Back/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.567 mW/g

Configuration/GPRS 850 Low Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 9.09 V/m; Power Drift = -0.045 dB

Peak SAR (extrapolated) = 0.729 W/kg

SAR(1 g) = 0.545 mW/g; SAR(10 g) = 0.388 mW/g Maximum value of SAR (measured) = 0.571 mW/g



0 dB = 0.571mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GPRS850 Mid Body-Back(2up)

DUT: GSM Mobile Phone; Type: NX188

Communication System: GPRS/EGPRS; Communication System Band: GSM850; Duty Cycle: 1:8.3; Frequency: 836.6 MHz; Medium parameters used: f = 836.6 MHz; σ = 1.02 mho/m; εr = 55.3; ρ = 1000 kg/m3 ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

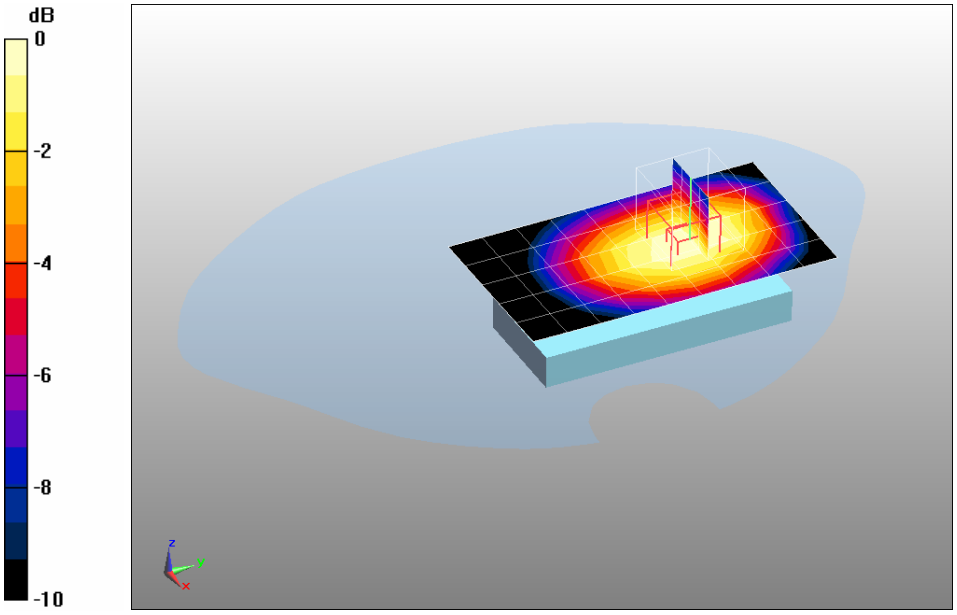
- Probe: EX3DV4 - SN3710; ConvF(8.95, 8.95, 8.95); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GPRS 850 Mid Body-Back/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.745 mW/g

Configuration/GPRS 850 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 10.3 V/m; Power Drift = -0.042 dB

Peak SAR (extrapolated) = 1 W/kg

SAR(1 g) = 0.738 mW/g; SAR(10 g) = 0.526 mW/g Maximum value of SAR (measured) = 0.777 mW/g



0 dB = 0.777mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GPRS850 High Body-Back(2up)

DUT: GSM Mobile Phone; Type: NX188

Communication System: GPRS/EGPRS; Communication System Band: GSM850; Duty Cycle: 1:8.3; Frequency: 848.6 MHz; Medium parameters used: f = 848.6 MHz; σ = 1.03 mho/m; εr = 55.2; ρ = 1000 kg/m3 ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

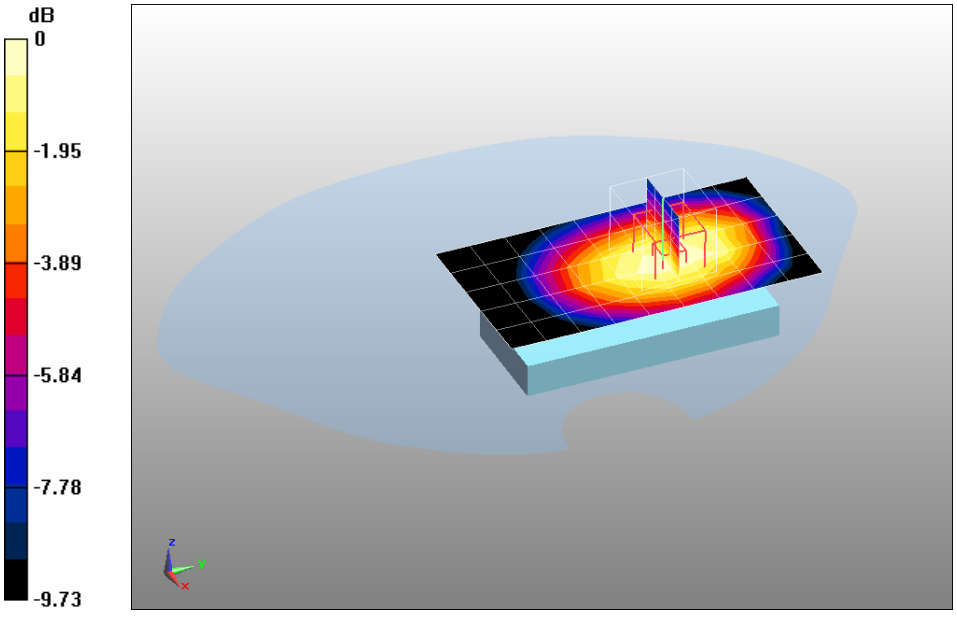
- Probe: EX3DV4 - SN3710; ConvF(8.95, 8.95, 8.95); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GPRS 850 High Body-Back/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.749 mW/g

Configuration/GPRS 850 High Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 10.4 V/m; Power Drift = 0.067 dB

Peak SAR (extrapolated) = 1.01 W/kg

SAR(1 g) = 0.735 mW/g; SAR(10 g) = 0.522 mW/g Maximum value of SAR (measured) = 0.779 mW/g



0 dB = 0.779mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GPRS850 Mid Body-Front(2up)

DUT: GSM Mobile Phone; Type: NX188

Communication System: GPRS/EGPRS; Communication System Band: GSM850; Duty Cycle: 1:8.3; Frequency: 836.6 MHz; Medium parameters used: f = 836.6 MHz; σ = 1.02 mho/m; εr = 55.3; ρ = 1000 kg/m3 ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

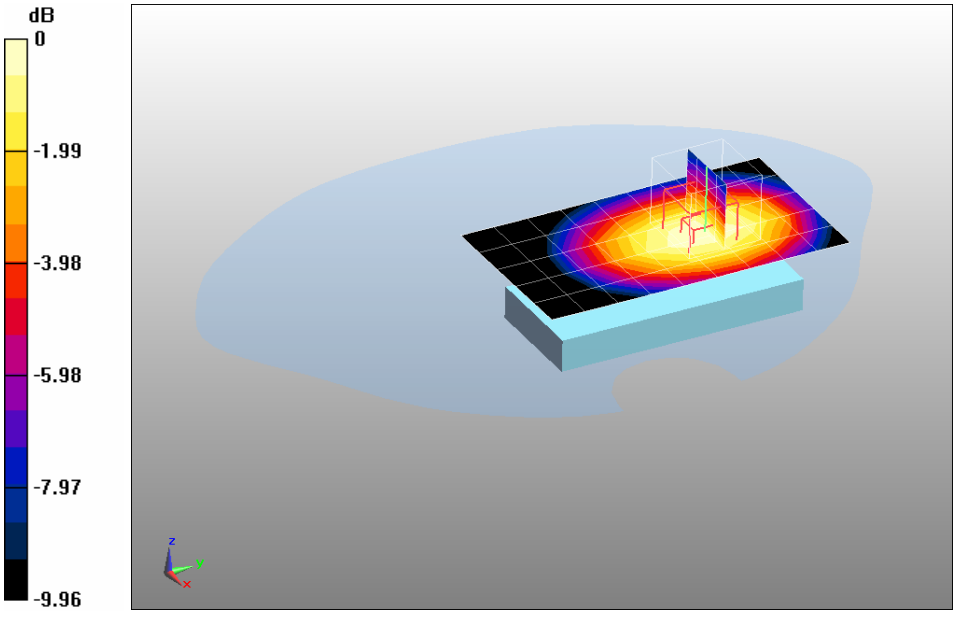
- Probe: EX3DV4 - SN3710; ConvF(8.95, 8.95, 8.95); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GPRS 850 Mid Body-front/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.726 mW/g

Configuration/GPRS 850 Mid Body-front/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 9.48 V/m; Power Drift = -0.058 dB

Peak SAR (extrapolated) = 0.919 W/kg

SAR(1 g) = 0.685 mW/g; SAR(10 g) = 0.488 mW/g Maximum value of SAR (measured) = 0.725 mW/g



0 dB = 0.725mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GPRS850 Mid Body-Back(2up) (With Headset)

DUT: GSM Mobile Phone; Type: NX188

Communication System: GPRS/EGPRS; Communication System Band: GSM850; Duty Cycle: 1:8.3; Frequency: 836.6 MHz; Medium parameters used: f = 836.6 MHz; σ = 1.02 mho/m; εr = 55.3; ρ = 1000 kg/m3 ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

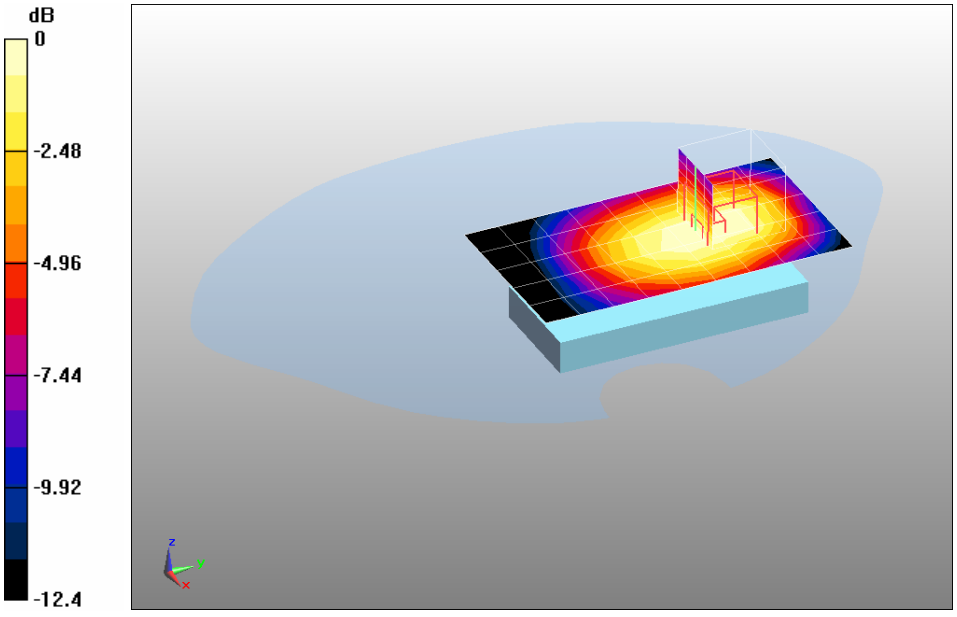
- Probe: EX3DV4 - SN3710; ConvF(8.95, 8.95, 8.95); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GPRS 850 Mid Body-Back/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.466 mW/g

Configuration/GPRS 850 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 7.38 V/m; Power Drift = 0.047 dB

Peak SAR (extrapolated) = 0.626 W/kg

SAR(1 g) = 0.456 mW/g; SAR(10 g) = 0.321 mW/g Maximum value of SAR (measured) = 0.482 mW/g



0 dB = 0.482mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

PCS1900 Low Left-Touch

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Duty Cycle: 1:8.3; Frequency: 1850.2 MHz; Medium parameters used: f = 1850.2 MHz; σ = 1.39 mho/m; εr = 39.6; ρ = 1000 kg/m3 ; Phantom section: Left Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

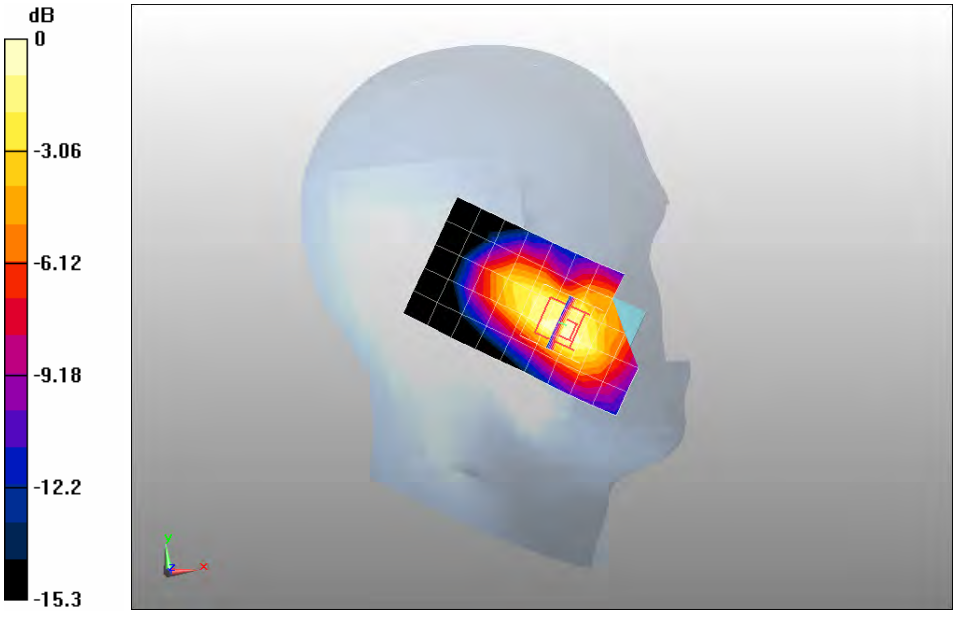
- Probe: EX3DV4 - SN3710; ConvF(7.69, 7.69, 7.69); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/PCS1900 Low Left-Touch/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.529 mW/g

Configuration/PCS1900 Low Left-Touch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 5.66 V/m; Power Drift = -0.074 dB

Peak SAR (extrapolated) = 0.763 W/kg

SAR(1 g) = 0.499 mW/g; SAR(10 g) = 0.297 mW/g Maximum value of SAR (measured) = 0.535 mW/g



0 dB = 0.535mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

PCS1900 Mid Left-Touch

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Duty Cycle: 1:8.3; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; εr = 39.5; ρ = 1000 kg/m3 ; Phantom section: Left Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.69, 7.69, 7.69); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

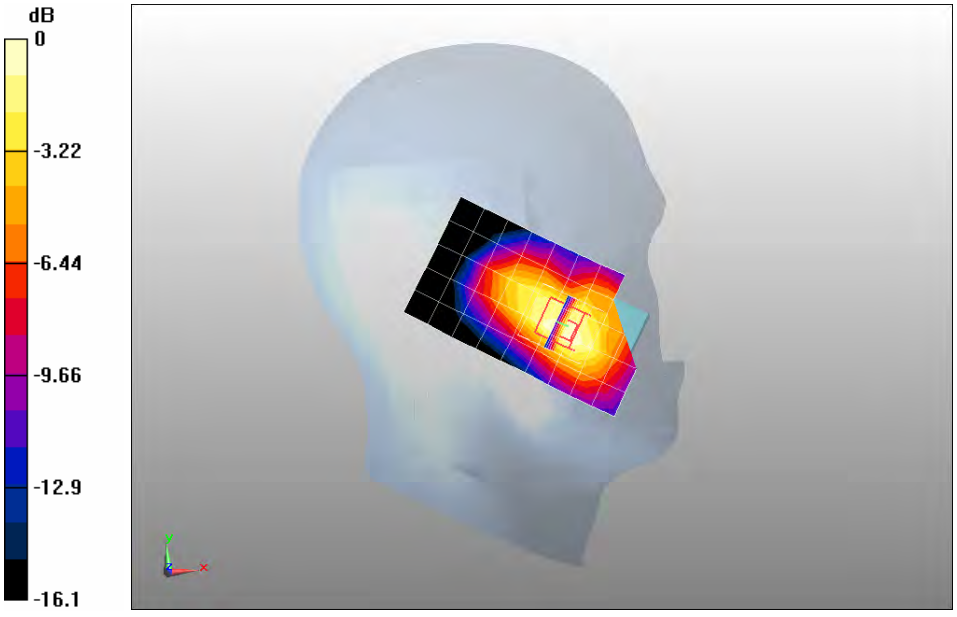
Configuration/PCS1900 Mid Left-Touch/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.717 mW/g

Configuration/PCS1900 Mid Left-Touch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 6.31 V/m; Power Drift = -0.125 dB

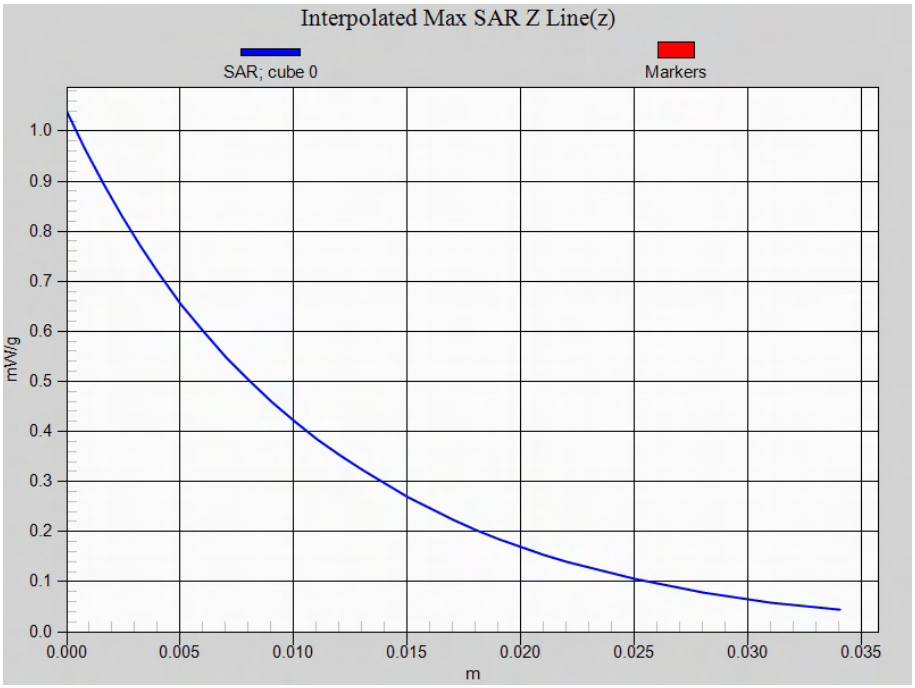
Peak SAR (extrapolated) = 1.04 W/kg

SAR(1 g) = 0.662 mW/g; SAR(10 g) = 0.389 mW/g Maximum value of SAR (measured) = 0.706 mW/g



0 dB = 0.706mW/g

Z-Axis Plot


Interpolated Max SAR Z Line(z)
SAR; cube 0
Markers
mW/g
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

PCS1900 High Left-Touch

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Duty Cycle: 1:8.3; Frequency: 1909.8 MHz; Medium parameters used: f = 1909.8 MHz; σ = 1.42 mho/m; εr = 39.4; ρ = 1000 kg/m3 ; Phantom section: Left Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

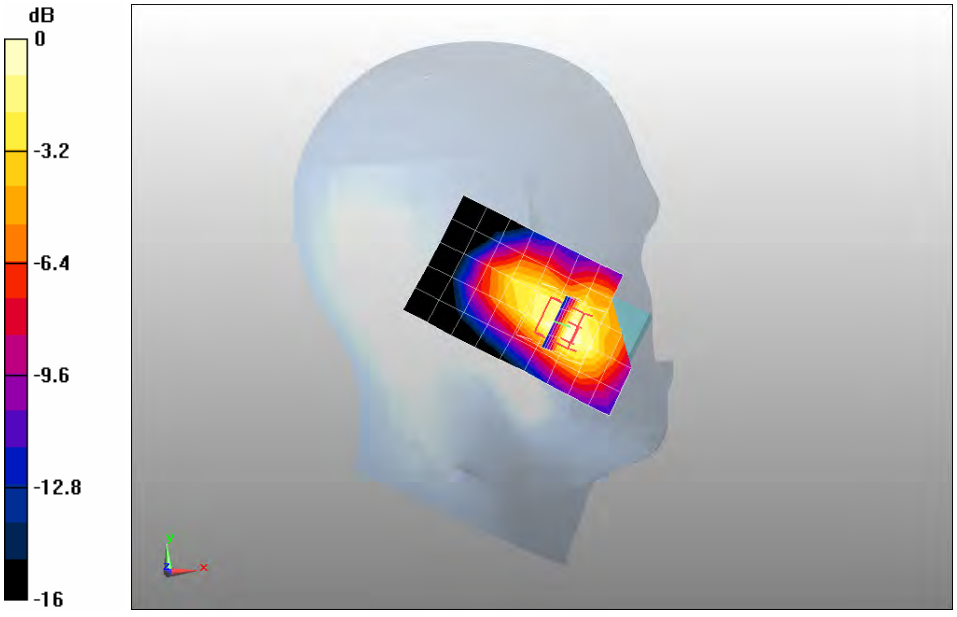
- Probe: EX3DV4 - SN3710; ConvF(7.69, 7.69, 7.69); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/PCS1900 High Left-Touch/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.685 mW/g

Configuration/PCS1900 High Left-Touch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 6.65 V/m; Power Drift = 0.048 dB

Peak SAR (extrapolated) = 1 W/kg

SAR(1 g) = 0.634 mW/g; SAR(10 g) = 0.371 mW/g Maximum value of SAR (measured) = 0.678 mW/g



0 dB = 0.678mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

PCS1900 Mid Left-Tilt

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Duty Cycle: 1:8.3; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; εr = 39.5; ρ = 1000 kg/m3 ; Phantom section: Left Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.69, 7.69, 7.69); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

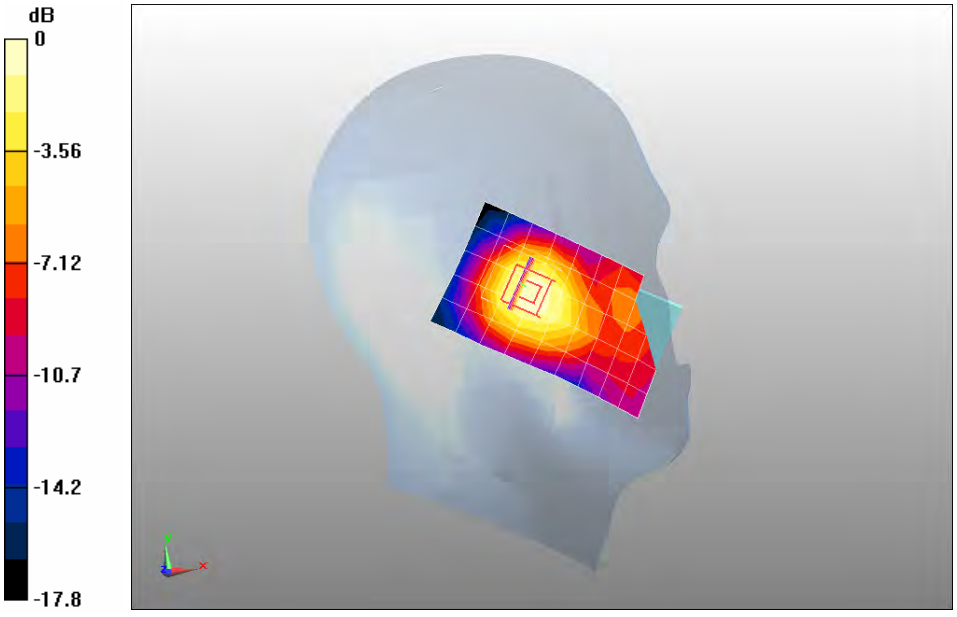
Configuration/PCS1900 Mid Left-Tilt/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.240 mW/g

Configuration/PCS1900 Mid Left-Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 9.2 V/m; Power Drift = 0.072 dB

Peak SAR (extrapolated) = 0.374 W/kg

SAR(1 g) = 0.247 mW/g; SAR(10 g) = 0.153 mW/g Maximum value of SAR (measured) = 0.261 mW/g



0 dB = 0.261mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

PCS1900 Low Right-Touch

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Duty Cycle: 1:8.3; Frequency: 1850.2 MHz; Medium parameters used: f = 1850.2 MHz; σ = 1.39 mho/m; εr = 39.6; ρ = 1000 kg/m3 ; Phantom section: Right Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

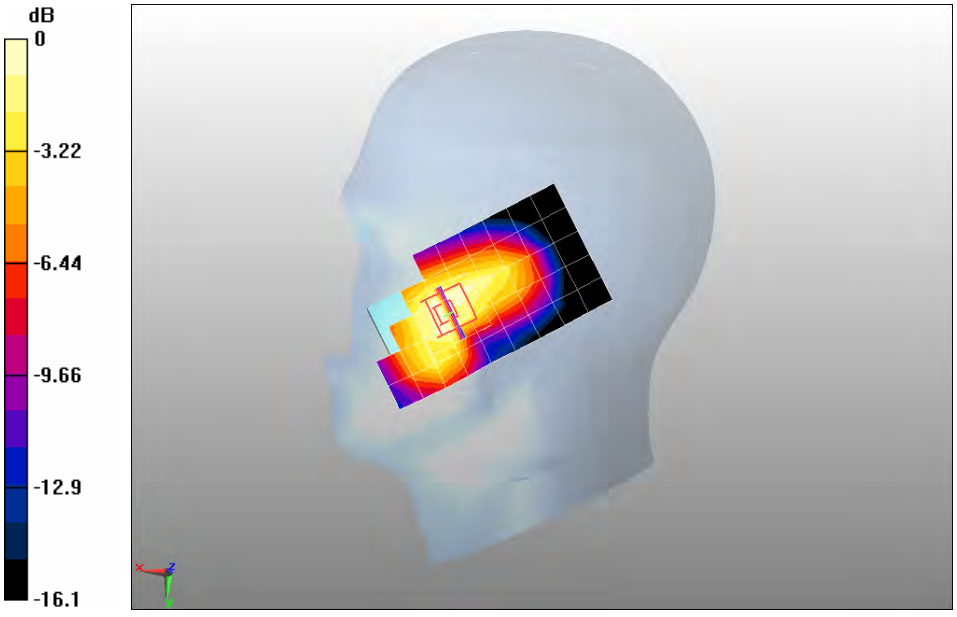
- Probe: EX3DV4 - SN3710; ConvF(7.69, 7.69, 7.69); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/PCS1900 Low Right-Touch/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.555 mW/g

Configuration/PCS1900 Low Right-Touch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 6.26 V/m; Power Drift = 0.111 dB

Peak SAR (extrapolated) = 0.788 W/kg

SAR(1 g) = 0.536 mW/g; SAR(10 g) = 0.341 mW/g Maximum value of SAR (measured) = 0.572 mW/g



0 dB = 0.572mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

PCS1900 Mid Right-Touch

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Duty Cycle: 1:8.3; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; εr = 39.5; ρ = 1000 kg/m3 ; Phantom section: Right Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

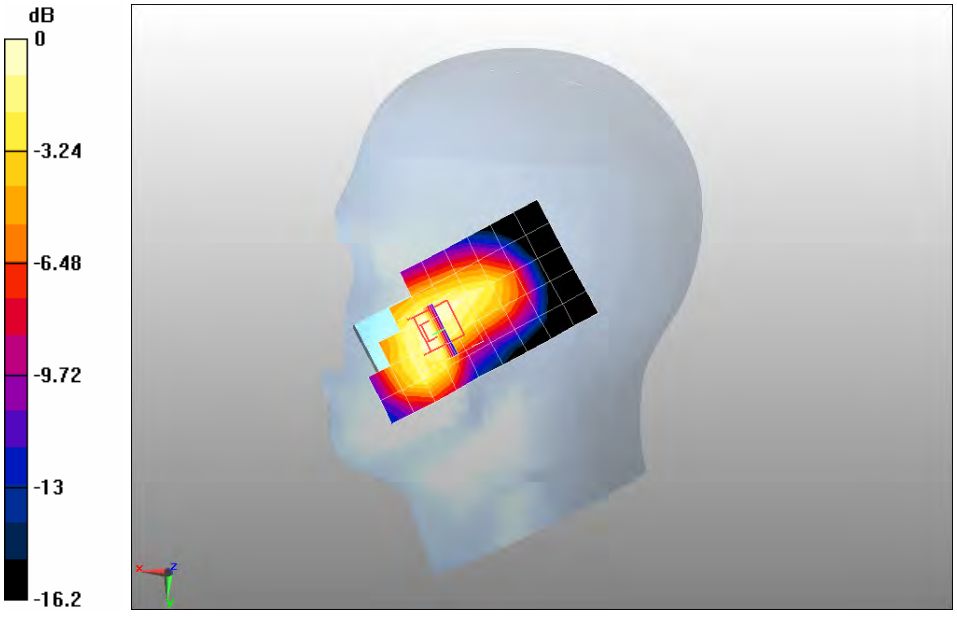
- Probe: EX3DV4 - SN3710; ConvF(7.69, 7.69, 7.69); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/PCS1900 Mid Right-Touch/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.613 mW/g

Configuration/PCS1900 Mid Right-Touch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 6.55 V/m; Power Drift = 0.198 dB

Peak SAR (extrapolated) = 0.934 W/kg

SAR(1 g) = 0.607 mW/g; SAR(10 g) = 0.387 mW/g Maximum value of SAR (measured) = 0.642 mW/g



0 dB = 0.642mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

PCS1900 High Right-Touch

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Duty Cycle: 1:8.3; Frequency: 1909.8 MHz; Medium parameters used: f = 1909.8 MHz; σ = 1.42 mho/m; εr = 39.4; ρ = 1000 kg/m3 ; Phantom section: Right Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.69, 7.69, 7.69); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

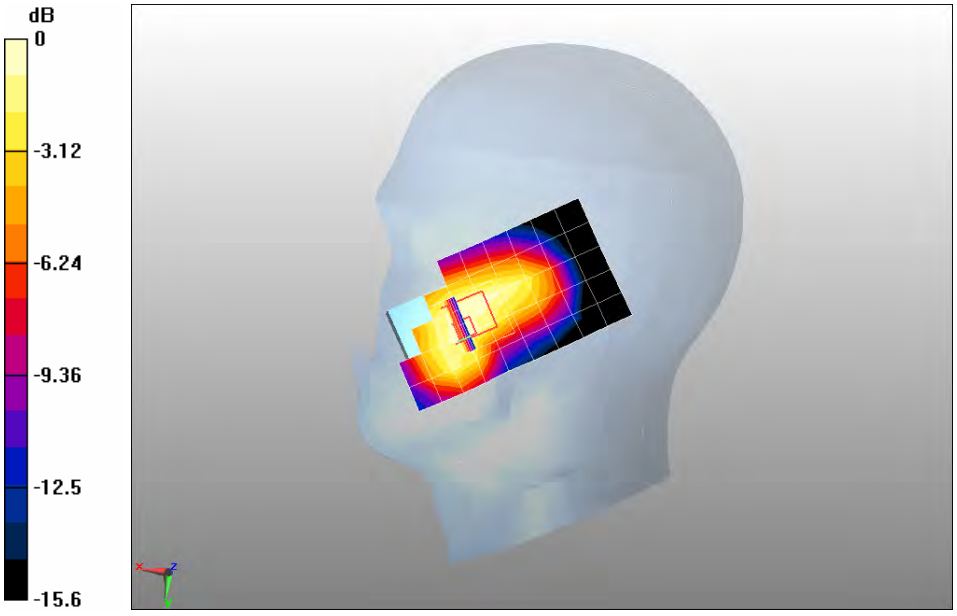
Configuration/PCS1900 High Right-Touch/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.587 mW/g

Configuration/PCS1900 High Right-Touch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 6.43 V/m; Power Drift = -0.098 dB

Peak SAR (extrapolated) = 0.852 W/kg

SAR(1 g) = 0.551 mW/g; SAR(10 g) = 0.349 mW/g Maximum value of SAR (measured) = 0.579 mW/g



0 dB = 0.579mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

PCS1900 Mid Right-Tilt

DUT: GSM Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Duty Cycle: 1:8.3; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; εr = 39.5; ρ = 1000 kg/m3 ; Phantom section: Right Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.69, 7.69, 7.69); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

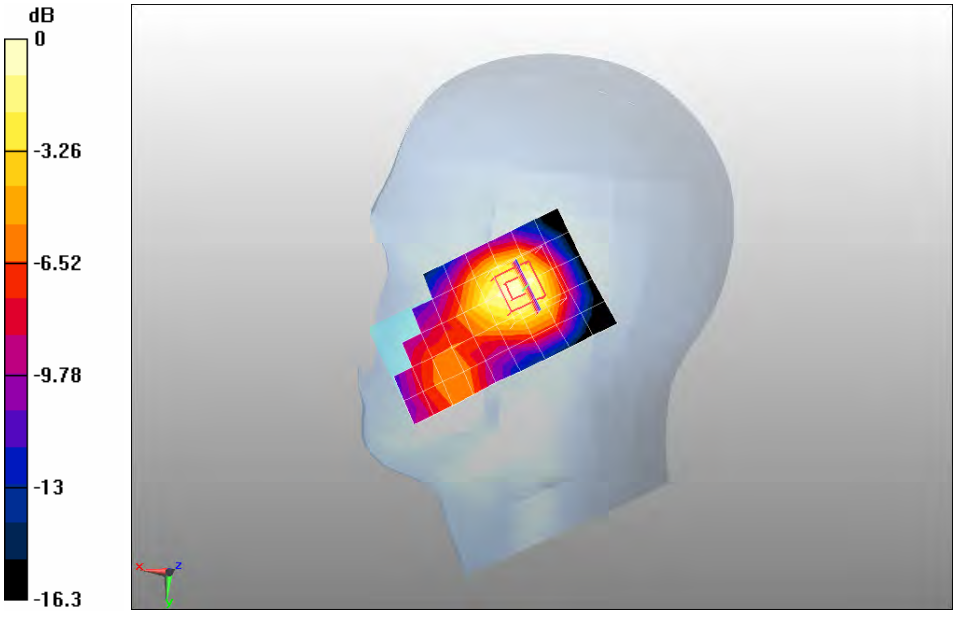
Configuration/PCS1900 Mid Right-Tilt/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

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

Configuration/PCS1900 Mid Right-Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 10.7 V/m; Power Drift = 0.123 dB

Peak SAR (extrapolated) = 0.522 W/kg

SAR(1 g) = 0.335 mW/g; SAR(10 g) = 0.201 mW/g Maximum value of SAR (measured) = 0.352 mW/g



0 dB = 0.352mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

PCS1900 Low Body-Back

DUT: Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Duty Cycle: 1:8.3; Frequency: 1850.2 MHz; Medium parameters used: f = 1850.2 MHz; σ = 1.52 mho/m; εr = 52.7; ρ = 1000 kg/m3 ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

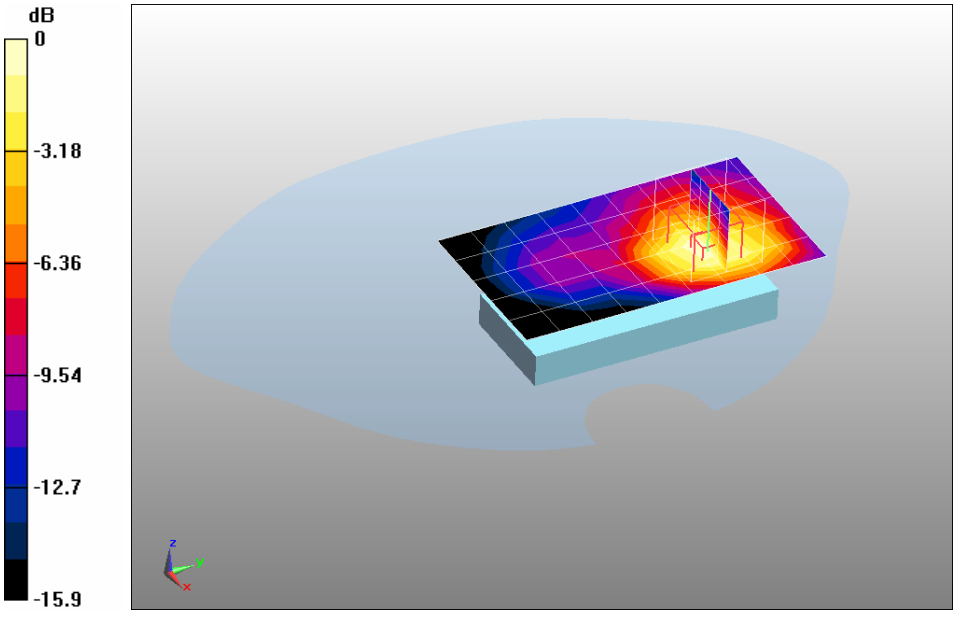
- Probe: EX3DV4 - SN3710; ConvF(7.71, 7.71, 7.71); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/PCS 1900 Low Body-Back/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.268 mW/g

Configuration/PCS 1900 Low Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 3.95 V/m; Power Drift = -0.165 dB

Peak SAR (extrapolated) = 0.426 W/kg

SAR(1 g) = 0.264 mW/g; SAR(10 g) = 0.154 mW/g Maximum value of SAR (measured) = 0.292 mW/g



0 dB = 0.292mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

PCS1900 Mid Body-Back

DUT: Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Duty Cycle: 1:8.3; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.55 mho/m; εr = 52.6; ρ = 1000 kg/m3 ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

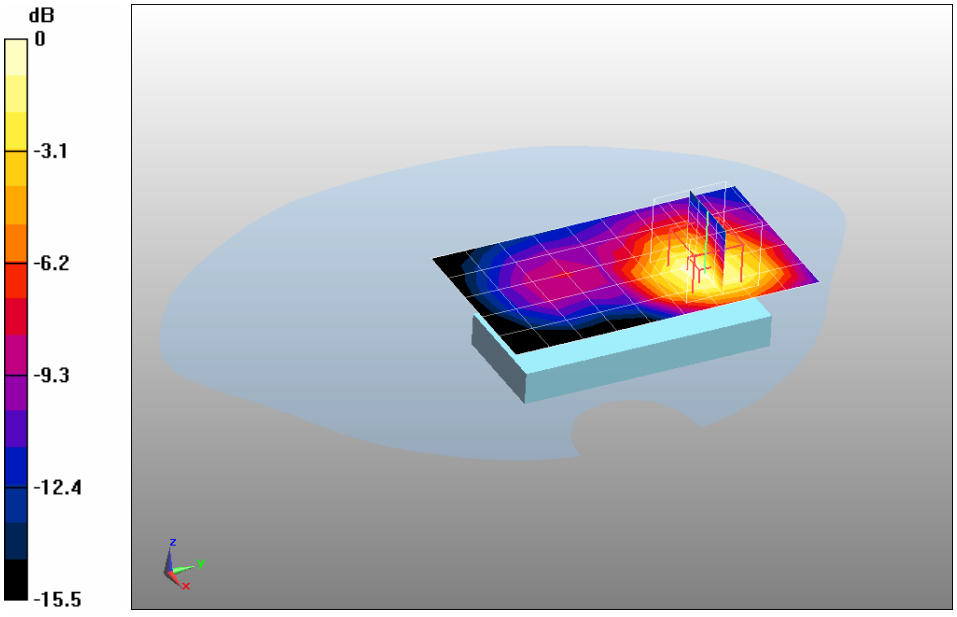
- Probe: EX3DV4 - SN3710; ConvF(7.71, 7.71, 7.71); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/PCS 1900 Mid Body-Back/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.435 mW/g

Configuration/PCS 1900 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 5.72 V/m; Power Drift = -0.142 dB

Peak SAR (extrapolated) = 0.726 W/kg

SAR(1 g) = 0.443 mW/g; SAR(10 g) = 0.255 mW/g Maximum value of SAR (measured) = 0.488 mW/g



0 dB = 0.488mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

PCS1900 High Body-Back

DUT: Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Duty Cycle: 1:8.3; Frequency: 1909.8 MHz; Medium parameters used: f = 1909.8 MHz; σ = 1.59 mho/m; εr = 52.6; ρ = 1000 kg/m3 ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

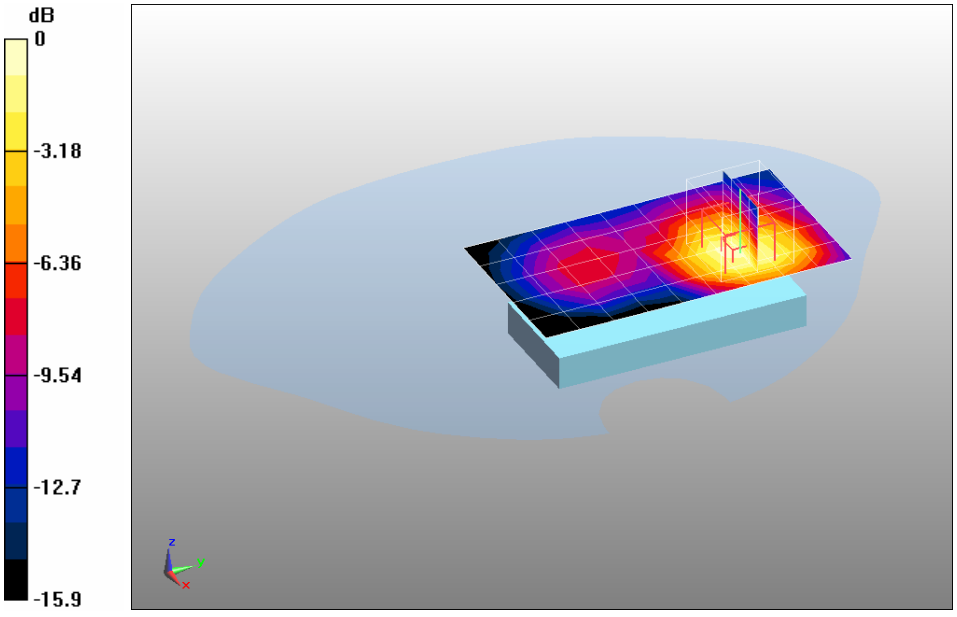
- Probe: EX3DV4 - SN3710; ConvF(7.71, 7.71, 7.71); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/PCS 1900 High Body-Back/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.464 mW/g

Configuration/PCS 1900 High Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 6.42 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 0.836 W/kg

SAR(1 g) = 0.499 mW/g; SAR(10 g) = 0.287 mW/g Maximum value of SAR (measured) = 0.550 mW/g



0 dB = 0.550mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

PCS1900 Mid Body-Front

DUT: Mobile Phone; Type: NX188

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Duty Cycle: 1:8.3; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.55 mho/m; εr = 52.6; ρ = 1000 kg/m3 ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

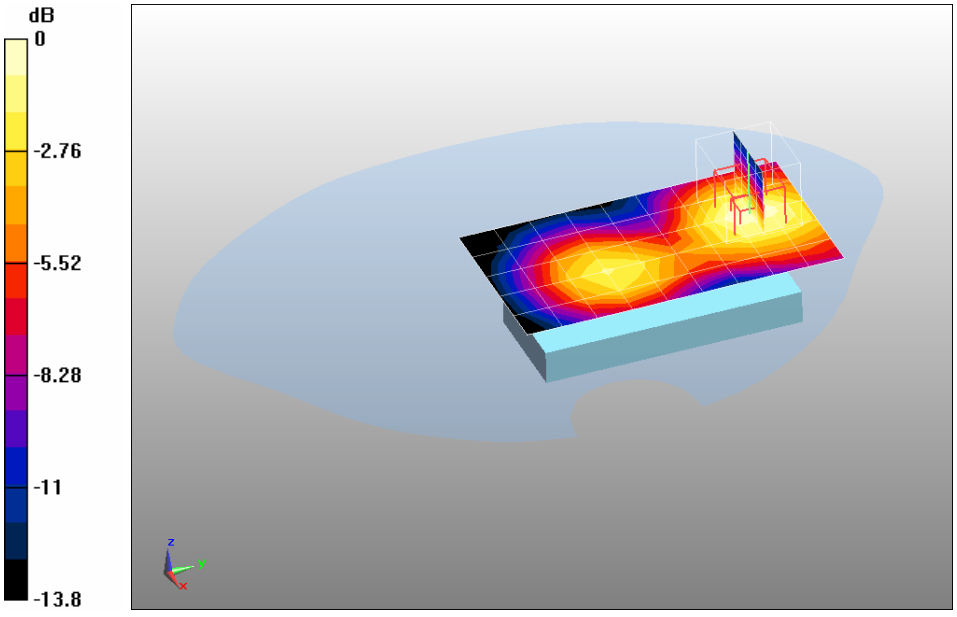
- Probe: EX3DV4 - SN3710; ConvF(7.71, 7.71, 7.71); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/PCS 1900 Mid Body-Front/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.256 mW/g

Configuration/PCS 1900 Mid Body-Front/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 6.65 V/m; Power Drift = -0.003 dB

Peak SAR (extrapolated) = 0.407 W/kg

SAR(1 g) = 0.248 mW/g; SAR(10 g) = 0.149 mW/g Maximum value of SAR (measured) = 0.270 mW/g



0 dB = 0.270mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GPRS1900 Mid Body-Back(1up)

DUT: Mobile Phone; Type: NX188

Communication System: GPRS/EGPRS; Communication System Band: PCS 1900; Duty Cycle: 1:8.3;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.55 mho/m; εr = 52.6; ρ = 1000 kg/m3 ;

Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

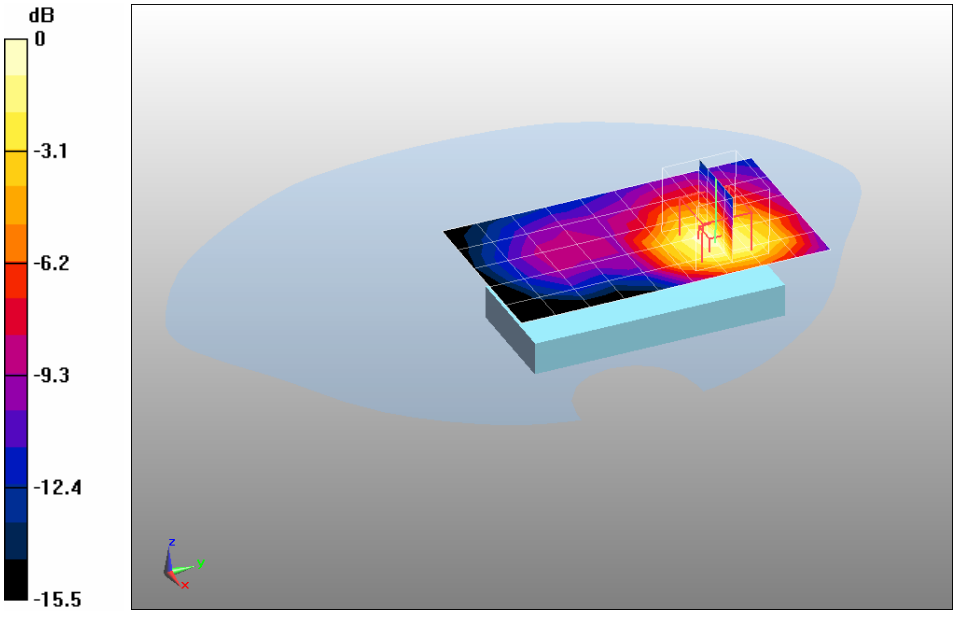
- Probe: EX3DV4 - SN3710; ConvF(7.71, 7.71, 7.71); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GPRS 1900 Mid Body-Back/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm, Maximum value of SAR (measured) = 0.355 mW/g

Configuration/GPRS 1900 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 5.11 V/m; Power Drift = -0.150 dB

Peak SAR (extrapolated) = 0.609 W/kg

SAR(1 g) = 0.372 mW/g; SAR(10 g) = 0.216 mW/g Maximum value of SAR (measured) = 0.409 mW/g



0 dB = 0.409mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GPRS1900 Low Body-Back(2up)

DUT: Mobile Phone; Type: NX188

Communication System: GPRS/EGPRS; Communication System Band: PCS1900; Duty Cycle: 1:8.3; Frequency: 1850.2 MHz; Medium parameters used: f = 1850.2 MHz; σ = 1.52 mho/m; εr = 52.7; ρ = 1000 kg/m3 ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

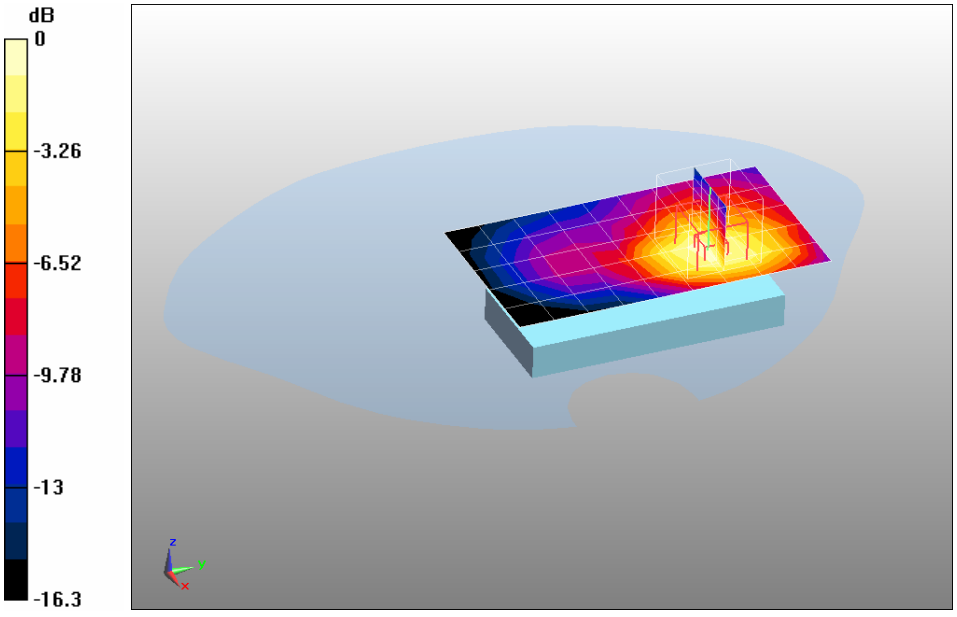
- Probe: EX3DV4 - SN3710; ConvF(7.71, 7.71, 7.71); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GPRS 1900 Mid Body-Back/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm, Maximum value of SAR (measured) = 0.267 mW/g

Configuration/GPRS 1900 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 3.93 V/m; Power Drift = 0.023 dB

Peak SAR (extrapolated) = 0.433 W/kg

SAR(1 g) = 0.269 mW/g; SAR(10 g) = 0.158 mW/g Maximum value of SAR (measured) = 0.293 mW/g



0 dB = 0.293mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GPRS1900 Mid Body-Back(2up)

DUT: Mobile Phone; Type: NX188

Communication System: GPRS/EGPRS; Communication System Band: PCS1900; Duty Cycle: 1:8.3;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.55 mho/m; εr = 52.6; ρ = 1000 kg/m3 ;

Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

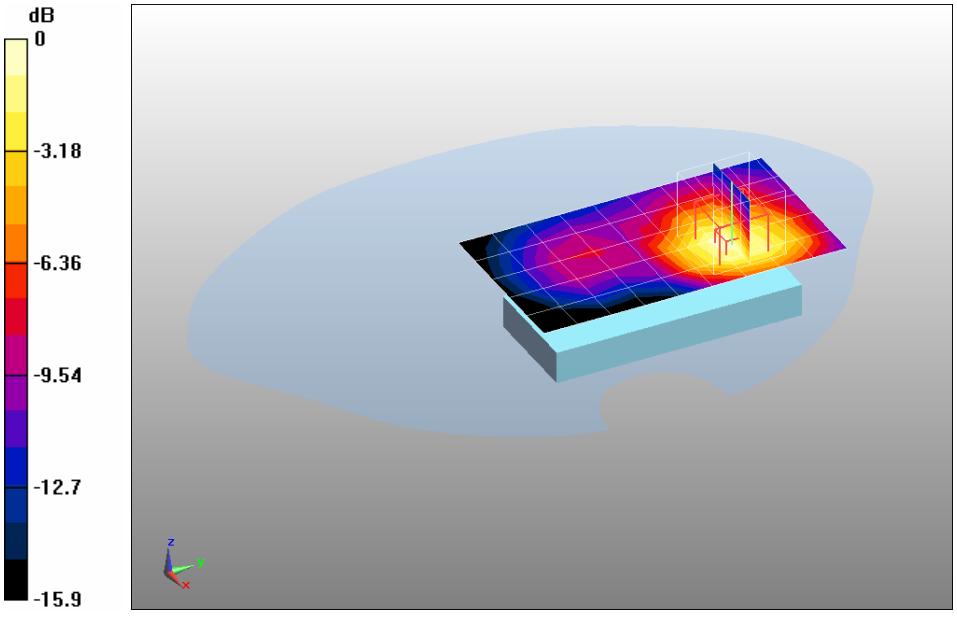
- Probe: EX3DV4 - SN3710; ConvF(7.71, 7.71, 7.71); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GPRS 1900 Mid Body-Back/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm, Maximum value of SAR (measured) = 0.431 mW/g

Configuration/GPRS 1900 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 5.77 V/m; Power Drift = -0.106 dB

Peak SAR (extrapolated) = 0.738 W/kg

SAR(1 g) = 0.451 mW/g; SAR(10 g) = 0.261 mW/g Maximum value of SAR (measured) = 0.500 mW/g



0 dB = 0.500mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GPRS1900 High Body-Back(2up)

DUT: Mobile Phone; Type: NX188

Communication System: GPRS/EGPRS; Communication System Band: PCS1900; Duty Cycle: 1:8.3; Frequency: 1909.8 MHz; Medium parameters used: f = 1909.8 MHz; σ = 1.59 mho/m; εr = 52.6; ρ = 1000 kg/m3 ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

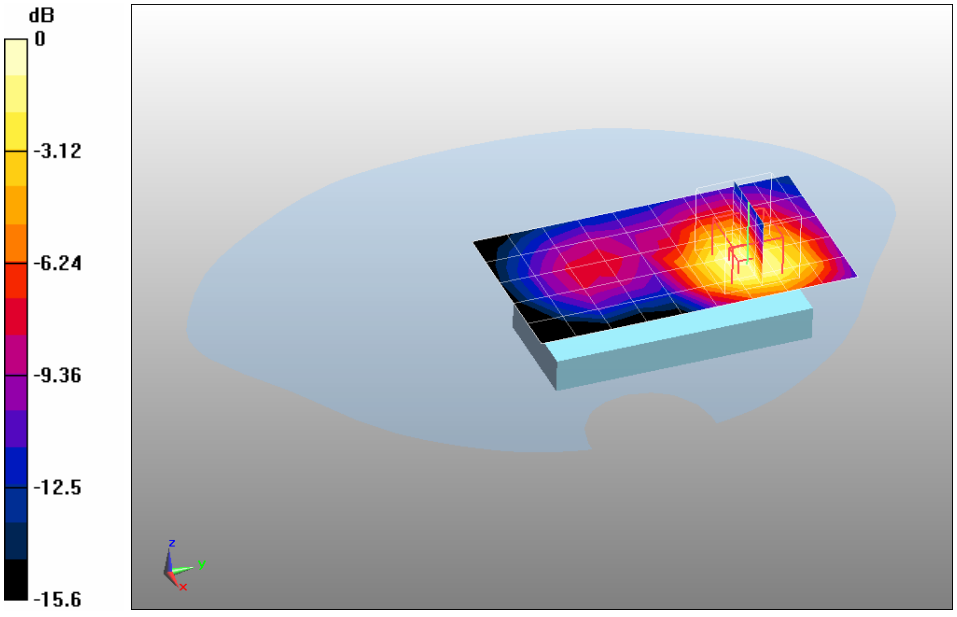
- Probe: EX3DV4 - SN3710; ConvF(7.71, 7.71, 7.71); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GPRS 1900 High Body-Back/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm, Maximum value of SAR (measured) = 0.459 mW/g

Configuration/GPRS 1900 High Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 6.47 V/m; Power Drift = 0.073 dB

Peak SAR (extrapolated) = 0.832 W/kg

SAR(1 g) = 0.507 mW/g; SAR(10 g) = 0.294 mW/g Maximum value of SAR (measured) = 0.558 mW/g



0 dB = 0.558mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GPRS1900 Mid Body-Front(2up)

DUT: Mobile Phone; Type: NX188

Communication System: GPRS/EGPRS; Communication System Band: PCS 1900; Duty Cycle: 1:8.3;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.55 mho/m; εr = 52.6; ρ = 1000 kg/m3 ;

Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

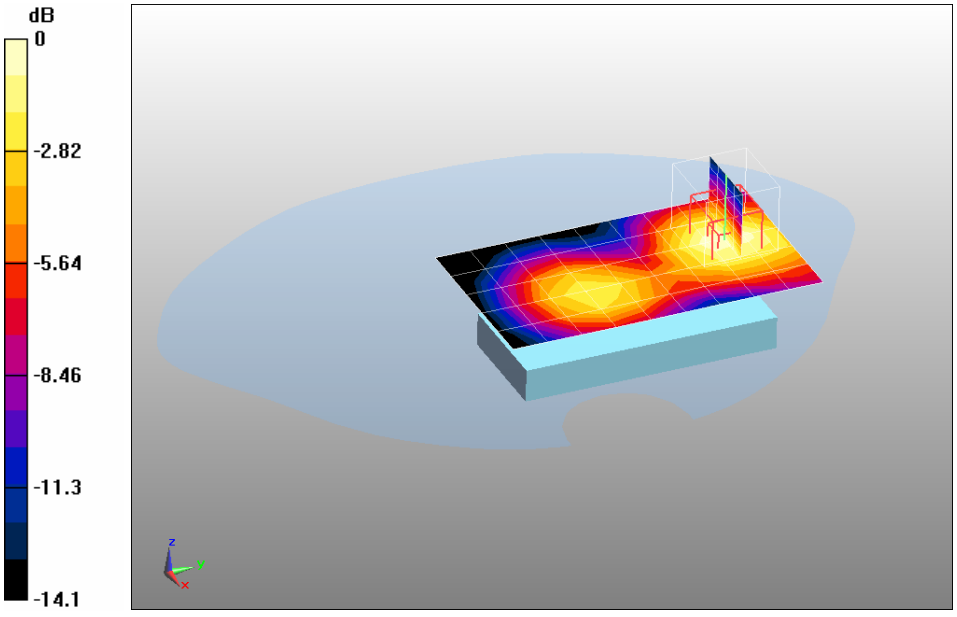
- Probe: EX3DV4 - SN3710; ConvF(7.71, 7.71, 7.71); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GPRS 1900 Mid Body-Front/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm, Maximum value of SAR (measured) = 0.321 mW/g

Configuration/GPRS 1900 Mid Body-Front/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 7.31 V/m; Power Drift = -0.142 dB

Peak SAR (extrapolated) = 0.497 W/kg

SAR(1 g) = 0.306 mW/g; SAR(10 g) = 0.183 mW/g Maximum value of SAR (measured) = 0.333 mW/g



0 dB = 0.333mW/g

Date/Time: 27-Sep-2010

Test Laboratory: QuieTek Lab

GPRS1900 Mid Body-Back(2up) (Witn Headset)

DUT: Mobile Phone; Type: NX188

Communication System: GPRS/EGPRS; Communication System Band: PCS1900; Duty Cycle: 1:8.3;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.55 mho/m; εr = 52.6; ρ = 1000 kg/m3 ;

Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

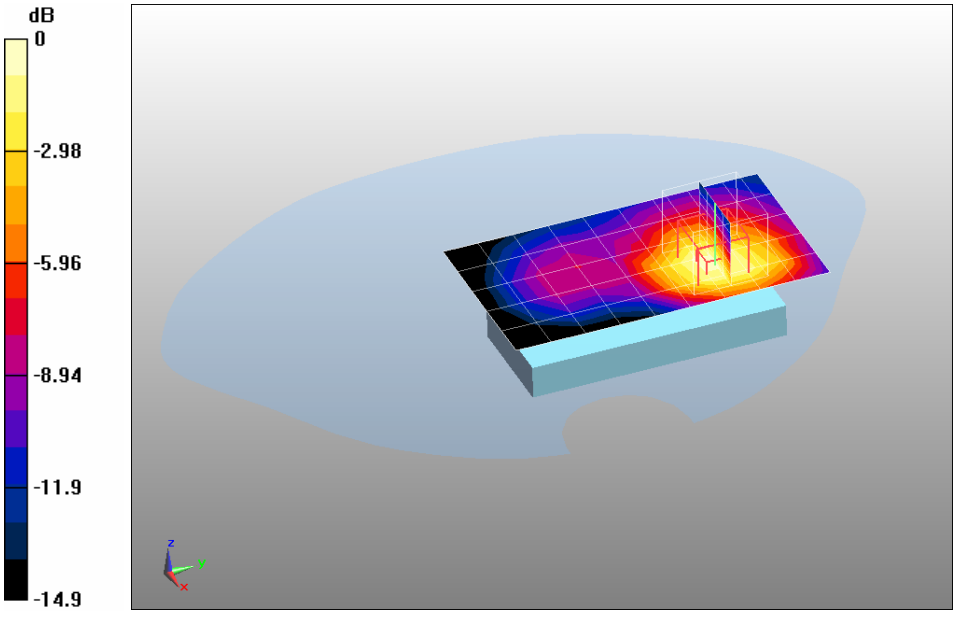
- Probe: EX3DV4 - SN3710; ConvF(7.71, 7.71, 7.71); Calibrated: 05/03/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 09/03/2010
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Configuration/GPRS 1900 Mid Body-Back/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm, Maximum value of SAR (measured) = 0.394 mW/g

Configuration/GPRS 1900 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 5.67 V/m; Power Drift = -0.055 dB

Peak SAR (extrapolated) = 0.660 W/kg

SAR(1 g) = 0.409 mW/g; SAR(10 g) = 0.239 mW/g Maximum value of SAR (measured) = 0.449 mW/g



0 dB = 0.449mW/g

Appendix D. Probe Calibration Data

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

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The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client Quietek (Auden) **Certificate No: EX3-3710_Mar10**

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:3710
Calibration procedure(s)	QA CAL-01.v6, QA CAL-14.v3, QA CAL-23.v3 and QA CAL-25.v2 Calibration procedure for dosimetric E-field probes
Calibration date:	March 5, 2010

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41495277	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41498087	1-Apr-09 (No. 217-01030)	Apr-10
Reference 3 dB Attenuator	SN: S5054 (3c)	31-Mar-09 (No. 217-01026)	Mar-10
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-09 (No. 217-01028)	Mar-10
Reference 30 dB Attenuator	SN: S5129 (30b)	31-Mar-09 (No. 217-01027)	Mar-10
Reference Probe ES3DV2	SN: 3013	30-Dec-09 (No. ES3-3013_Dec09)	Dec-10
DAE4	SN: 660	29-Sep-09 (No. DAE4-660_Sep09)	Sep-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-09)	In house check: Oct10

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Technical Manager	
Approved by:	Niels Kuster	Quality Manager	

Issued: March 5, 2010

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: EX3-3710_Mar10 Page 1 of 11

Calibration Laboratory of
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Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *Ax,y,z; Bx,y,z; Cx,y,z, VRx,y,z: A, B, C* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy):* in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset:* The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe EX3DV4

SN:3710

Manufactured: July 21, 2009
Calibrated: March 5, 2010

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

EX3DV4 SN:3710 March 5, 2010

DASY - Parameters of Probe: EX3DV4 SN:3710

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.48	0.58	0.60	± 10.1%
DCP (mV)[B]	90.8	94.4	91.8	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc[E] (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	300	± 1.5%
			Y	0.00	0.00	1.00	300	
			Z	0.00	0.00	1.00	300	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[*] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).

[A] Numerical linearization parameter: uncertainty not required.

[E] Uncertainty is determined using the maximum deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

EX3DV4 SN:3710 March 5, 2010

DASY - Parameters of Probe: EX3DV4 SN:3710

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz]	Validity [MHz][C]	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
835	± 50 / ± 100	41.5 ± 5%	0.90 ± 5%	8.83	8.83	8.83	0.68	0.64 ± 11.0%
900	± 50 / ± 100	41.5 ± 5%	0.97 ± 5%	8.73	8.73	8.73	0.83	0.58 ± 11.0%
1810	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	7.69	7.69	7.69	0.62	0.63 ± 11.0%
1950	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	7.35	7.35	7.35	0.70	0.60 ± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	6.96	6.96	6.96	0.46	0.75 ± 11.0%
2600	± 50 / ± 100	39.0 ± 5%	1.96 ± 5%	6.88	6.88	6.88	0.31	0.92 ± 11.0%
3500	± 50 / ± 100	37.9 ± 5%	2.91 ± 5%	6.64	6.64	6.64	0.33	1.18 ± 13.1%
5200	± 50 / ± 100	36.0 ± 5%	4.66 ± 5%	4.92	4.92	4.92	0.40	1.90 ± 13.1%
5300	± 50 / ± 100	35.9 ± 5%	4.76 ± 5%	4.60	4.60	4.60	0.40	1.90 ± 13.1%
5500	± 50 / ± 100	35.6 ± 5%	4.96 ± 5%	4.42	4.42	4.42	0.50	1.90 ± 13.1%
5600	± 50 / ± 100	35.5 ± 5%	5.07 ± 5%	4.42	4.42	4.42	0.40	1.90 ± 13.1%
5800	± 50 / ± 100	35.3 ± 5%	5.27 ± 5%	4.26	4.26	4.26	0.50	1.90 ± 13.1%

[C] The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

EX3DV4 SN:3710 March 5, 2010

DASY - Parameters of Probe: EX3DV4 SN:3710

Calibration Parameter Determined in Body Tissue Simulating Media

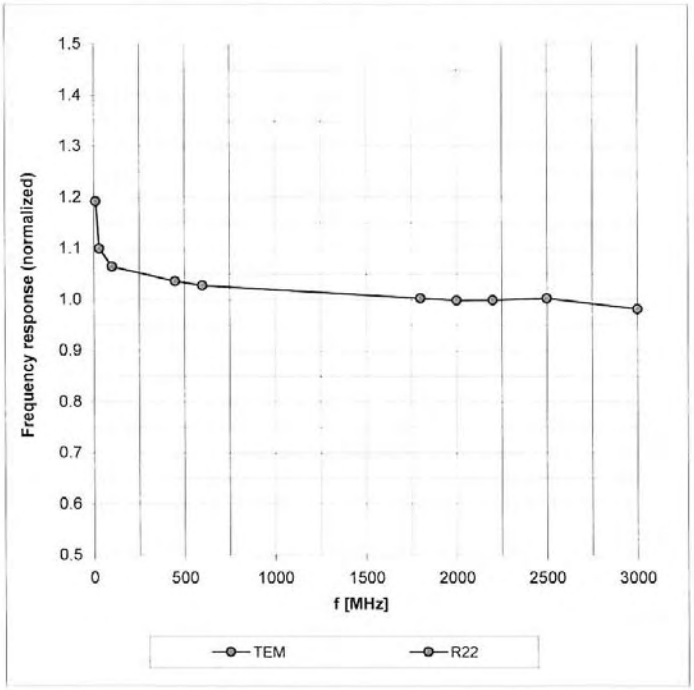
f [MHz]	Validity [MHz][C]	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth	Unc (k=2)
835	± 50 / ± 100	55.2 ± 5%	0.97 ± 5%	8.95	8.95	8.95	0.84	0.62	± 11.0%
900	± 50 / ± 100	55.0 ± 5%	1.05 ± 5%	8.80	8.80	8.80	0.65	0.69	± 11.0%
1810	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	7.71	7.71	7.71	0.57	0.72	± 11.0%
1950	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	7.45	7.45	7.45	0.38	0.87	± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	7.00	7.00	7.00	0.32	0.95	± 11.0%
2600	± 50 / ± 100	52.5 ± 5%	2.16 ± 5%	6.90	6.90	6.90	0.47	0.79	± 11.0%
3500	± 50 / ± 100	51.3 ± 5%	3.31 ± 5%	6.19	6.19	6.19	0.31	1.44	± 13.1%
5200	± 50 / ± 100	49.0 ± 5%	5.30 ± 5%	4.13	4.13	4.13	0.50	1.90	± 13.1%
5300	± 50 / ± 100	48.5 ± 5%	5.42 ± 5%	3.91	3.91	3.91	0.55	1.90	± 13.1%
5500	± 50 / ± 100	48.6 ± 5%	5.65 ± 5%	3.81	3.81	3.81	0.55	1.90	± 13.1%
5600	± 50 / ± 100	48.5 ± 5%	5.77 ± 5%	3.58	3.58	3.58	0.60	1.90	± 13.1%
5800	± 50 / ± 100	48.2 ± 5%	6.00 ± 5%	3.97	3.97	3.97	0.60	1.90	± 13.1%

[C] The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

EX3DV4 SN:3710 March 5, 2010

Frequency Response of E-Field

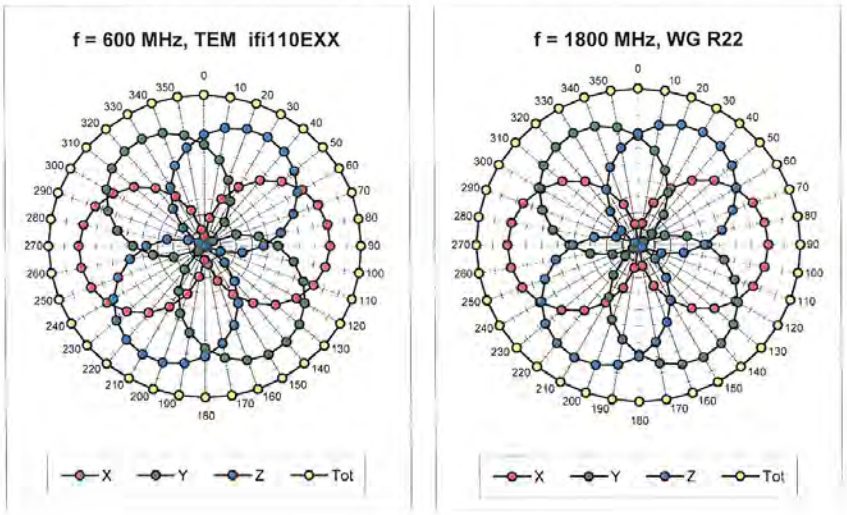
(TEM-Cell:ifi110 EXX, Waveguide: R22)

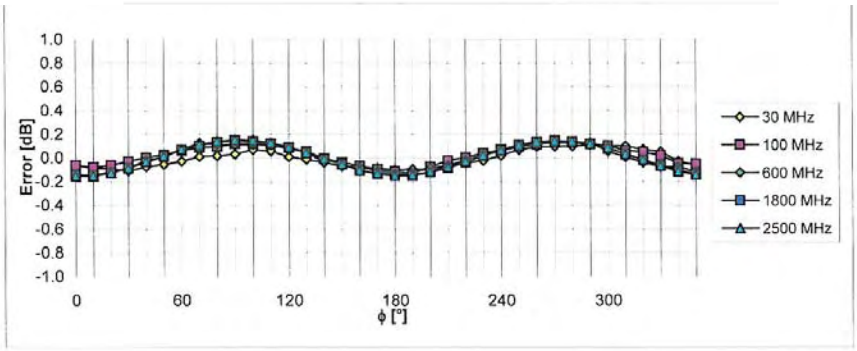


Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

EX3DV4 SN:3710 March 5, 2010

Receiving Pattern (ϕ), ϑ = 0°



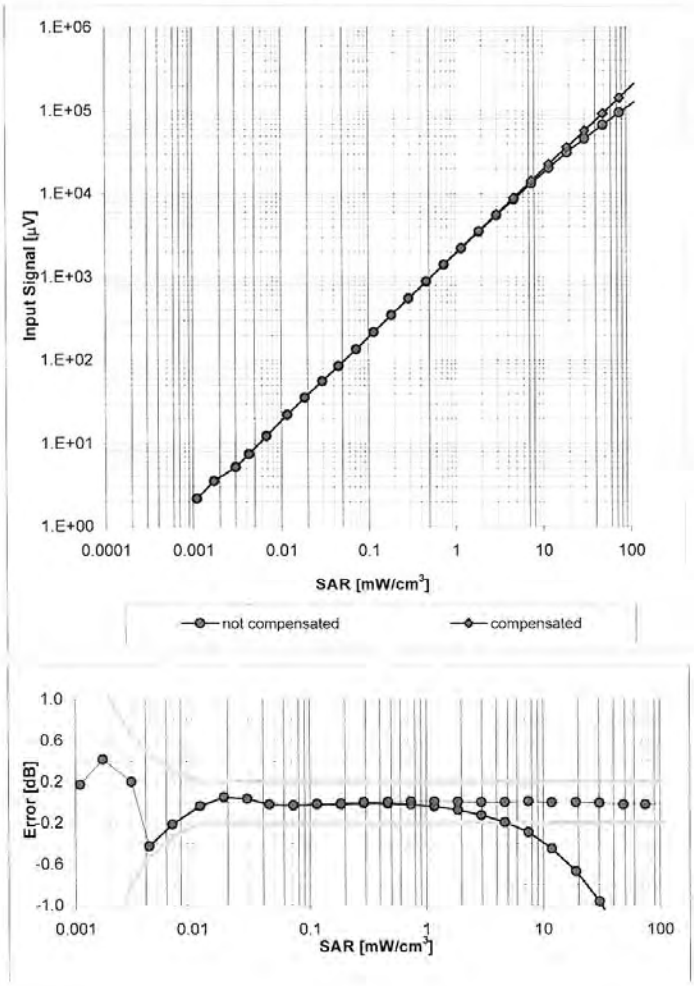


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

EX3DV4 SN:3710 March 5, 2010

Dynamic Range f(SAR_{head})

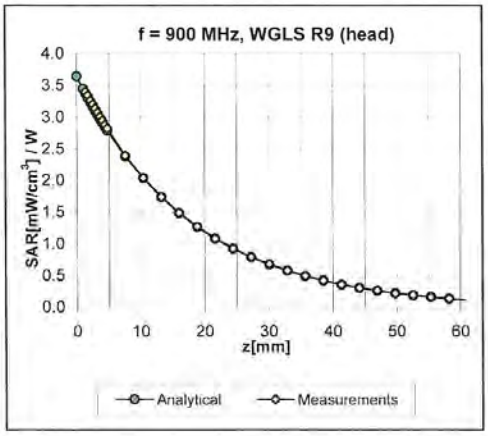
(Waveguide R22, f = 1800 MHz)

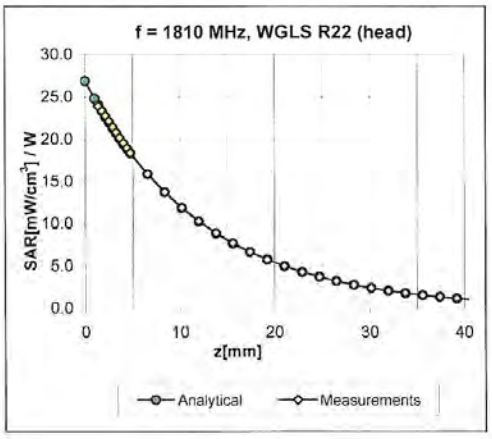


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

EX3DV4 SN:3710 March 5, 2010

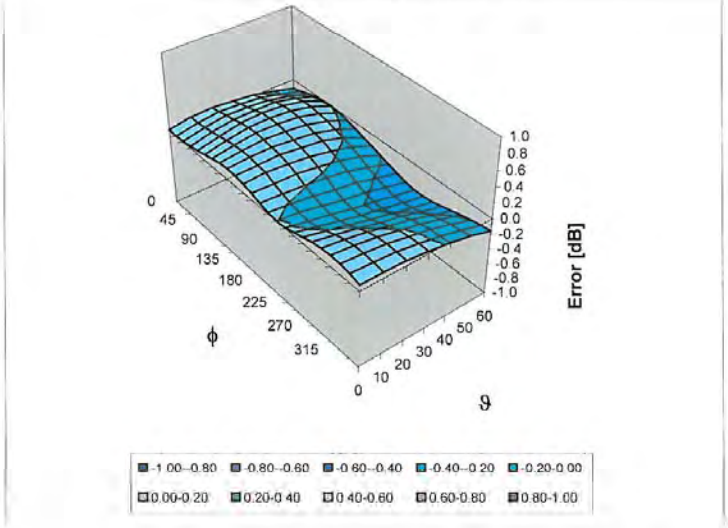
Conversion Factor Assessment





Deviation from Isotropy in HSL

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	Not applicable
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	2 mm

Appendix E. Dipole Calibration Data

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

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Accreditation No.: SCS 108

Client Quietek (Auden)

Certificate No: D835V2-4d094_Mar10

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 4d094
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	March 15, 2010

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	02-Mar-10 (No. DAE4-601_Mar10)	Mar-11

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

	Name	Function	Signature
Calibrated by:	Dimce Iliev	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: March 15, 2010

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Certificate No: D835V2-4d094_Mar10 Page 1 of 9

Calibration Laboratory of
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Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V5.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	42.9 ± 6 %	0.91 mho/m ± 6 %
Head TSL temperature during test	(21.5 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.43 mW / g
SAR normalized	normalized to 1W	9.72 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**9.70 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.58 mW / g
SAR normalized	normalized to 1W	6.32 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**6.30 mW /g ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	55.3 ± 6 %	1.01 mho/m ± 6 %
Body TSL temperature during test	(21.3 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.55 mW / g
SAR normalized	normalized to 1W	10.2 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**9.90 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.67 mW / g
SAR normalized	normalized to 1W	6.68 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**6.53 mW / g ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.2 Ω - 2.7 jΩ
Return Loss	- 29.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.0 Ω - 4.8 jΩ
Return Loss	- 25.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.388 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	September 15, 2009

DASY5 Validation Report for Head TSL

Date/Time: 08.03.2010 10:52:27

Test Laboratory: SPEAG, Zurich, Switzerland

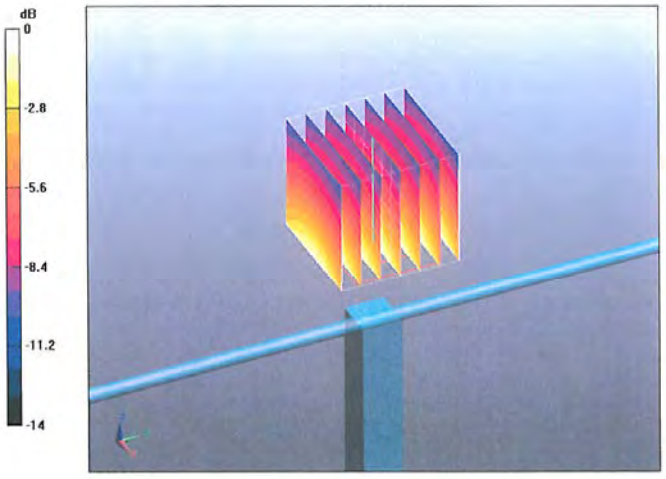
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d094

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL900
Medium parameters used: f = 835 MHz; σ = 0.91 mho/m; ε_r = 42.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

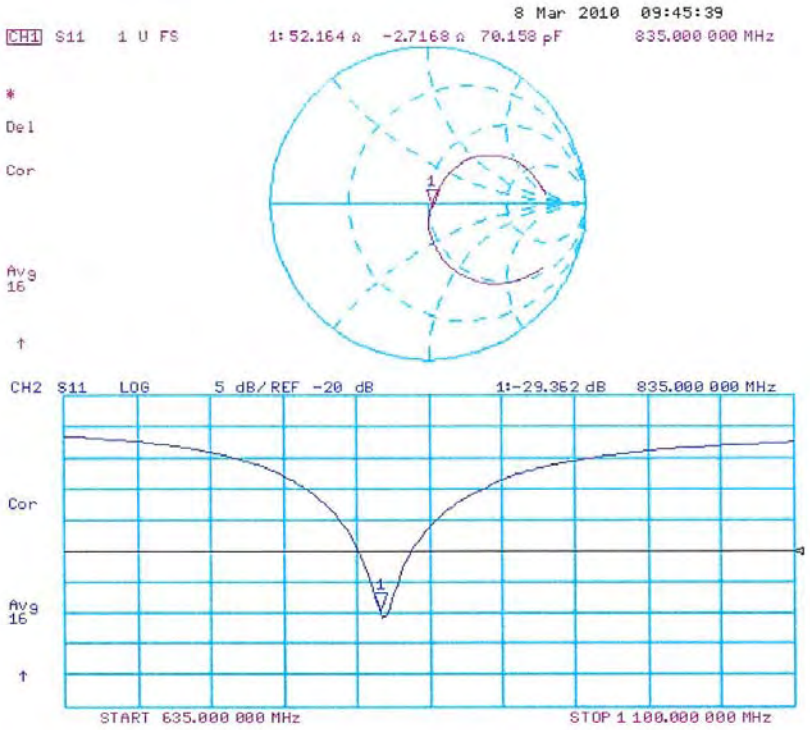
- Probe: ES3DV3 - SN3205; ConvF(6.04, 6.04, 6.04); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin=250 mW /d=15mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.3 V/m; Power Drift = 0.00297 dB
Peak SAR (extrapolated) = 3.65 W/kg
SAR(1 g) = 2.43 mW/g; SAR(10 g) = 1.58 mW/g
Maximum value of SAR (measured) = 2.84 mW/g



0 dB = 2.84mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body

Date/Time: 15.03.2010 11:52:53

Test Laboratory: SPEAG, Zurich, Switzerland

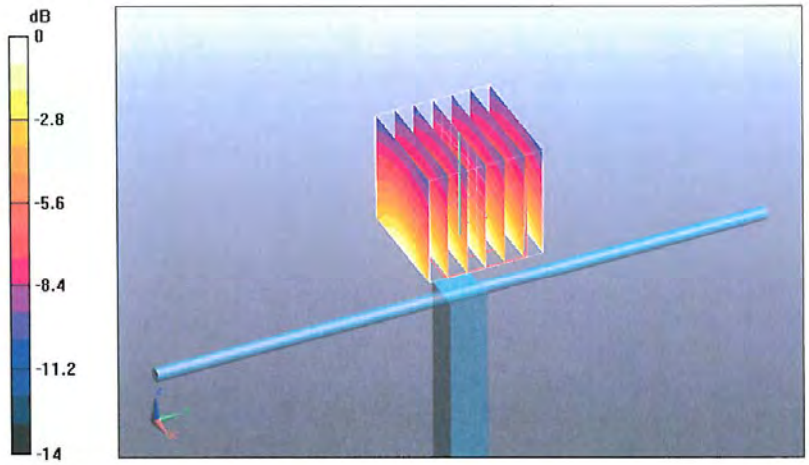
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d094

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: MSL900
Medium parameters used: f = 835 MHz; σ = 1.01 mho/m; ε_r = 55.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

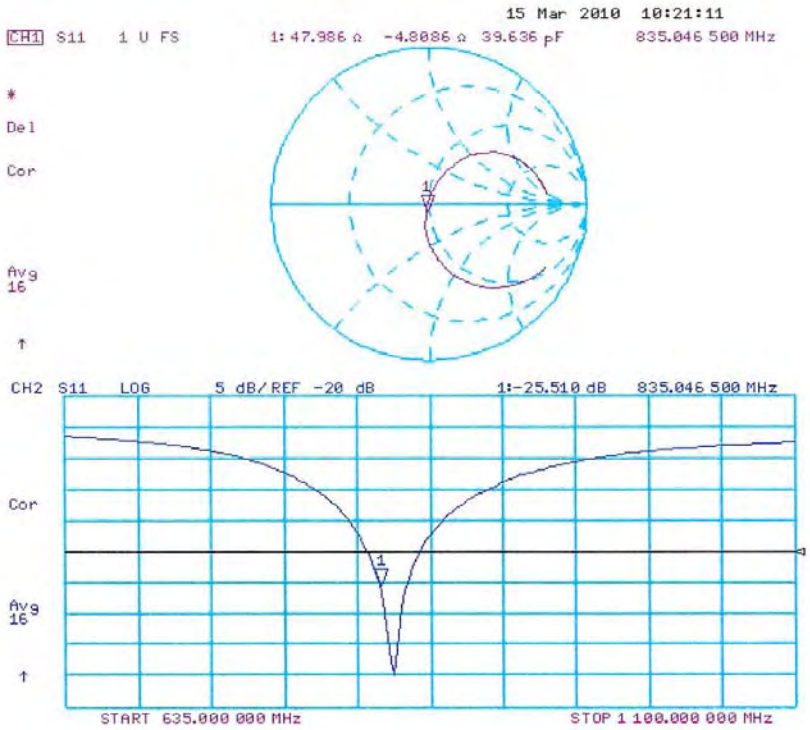
- Probe: ES3DV3 - SN3205; ConvF(5.97, 5.97, 5.97); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin250 mW /d=15mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.9 V/m; Power Drift = -0.00975 dB
Peak SAR (extrapolated) = 3.77 W/kg
SAR(1 g) = 2.55 mW/g; SAR(10 g) = 1.67 mW/g
Maximum value of SAR (measured) = 2.98 mW/g



0 dB = 2.98mW/g

Impedance Measurement Plot for Body TSL



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Accreditation No.: SCS 108

Client **Quietek (Auden)** **Certificate No: D1900V2-5d121_Mar10**

CALIBRATION CERTIFICATE

Object	D1900V2 - SN: 5d121
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	March 23, 2010

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	02-Mar-10 (No. DAE4-601_Mar10)	Mar-11

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

	Name	Function	Signature
Calibrated by:	Dimce Iliev	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: March 23, 2010

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

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The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V5.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.1 ± 6 %	1.45 mho/m ± 6 %
Head TSL temperature during test	(21.5 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	10.1 mW / g
SAR normalized	normalized to 1W	40.4 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**39.8 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.30 mW / g
SAR normalized	normalized to 1W	21.2 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**21.1 mW /g ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.9 ± 6 %	1.58 mho/m ± 6 %
Body TSL temperature during test	(21.5 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	10.5 mW / g
SAR normalized	normalized to 1W	42.0 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**41.4 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.60 mW / g
SAR normalized	normalized to 1W	22.4 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**22.3 mW / g ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.6 Ω + 7.4 jΩ
Return Loss	- 22.7 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.1 Ω + 7.1 jΩ
Return Loss	- 21.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.205 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	August 25, 2009

DASY5 Validation Report for Head TSL

Date/Time: 23.03.2010 12:23:06

Test Laboratory: SPEAG, Zurich, Switzerland

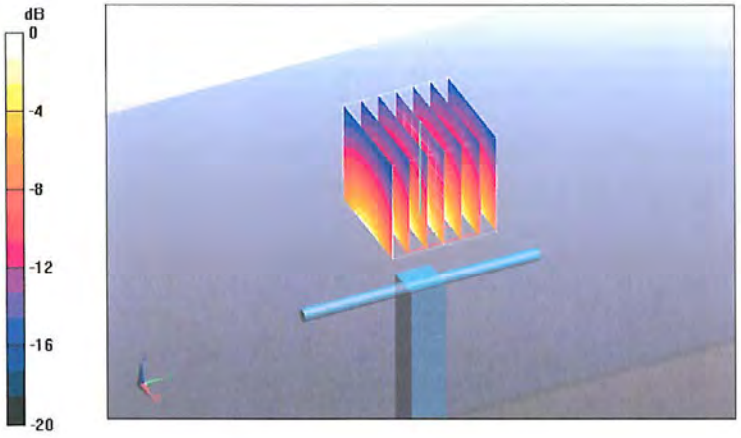
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d121

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: HSL U11 BB
Medium parameters used: f = 1900 MHz; σ = 1.45 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

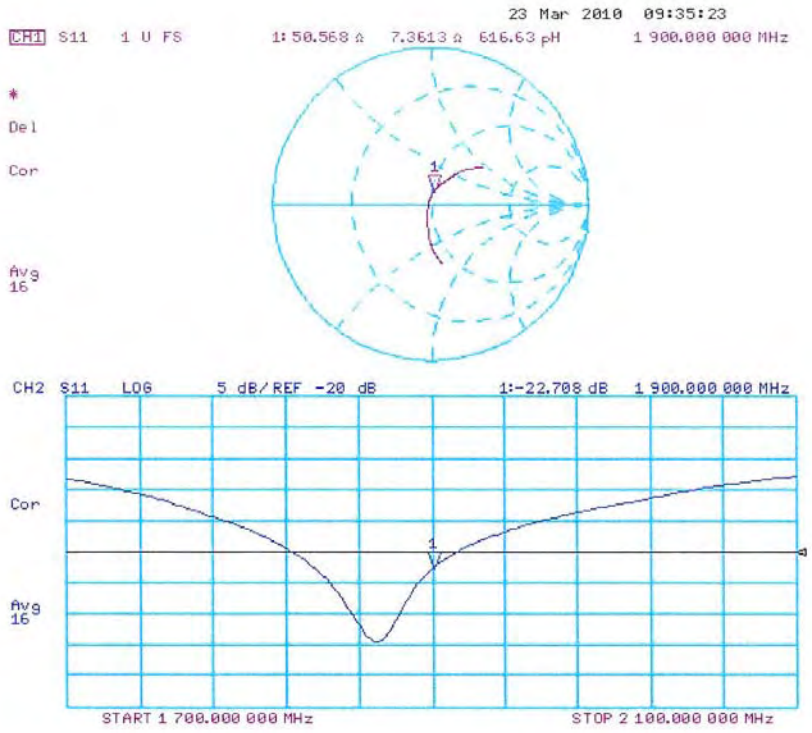
- Probe: ES3DV3 - SN3205; ConvF(5.09, 5.09, 5.09); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97.6 V/m; Power Drift = 0.00658 dB
Peak SAR (extrapolated) = 18.5 W/kg
SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.3 mW/g
Maximum value of SAR (measured) = 12.8 mW/g



0 dB = 12.8mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body

Date/Time: 17.03.2010 13:29:09

Test Laboratory: SPEAG, Zurich, Switzerland

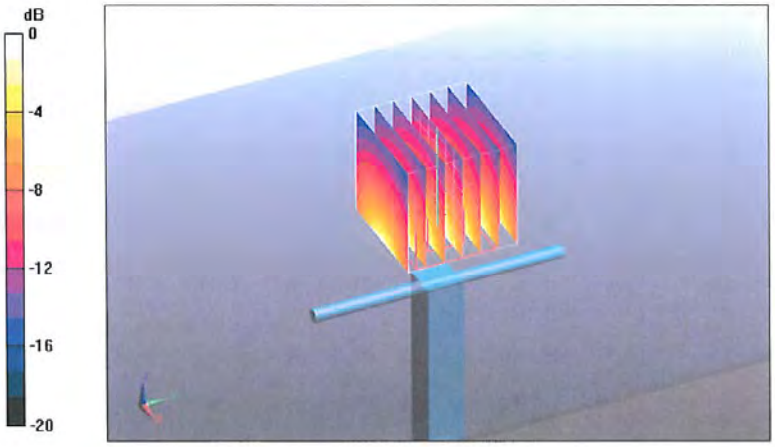
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d121

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: MSL U11 BB
Medium parameters used: f = 1900 MHz; σ = 1.58 mho/m; ε_r = 55; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.59, 4.59, 4.59); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97 V/m; Power Drift = 0.00345 dB
Peak SAR (extrapolated) = 17.6 W/kg
SAR(1 g) = 10.5 mW/g; SAR(10 g) = 5.6 mW/g
Maximum value of SAR (measured) = 13.3 mW/g



0 dB = 13.3mW/g

Impedance Measurement Plot for Body TSL