QuieTek

![TAF Testing Laboratory 1596 ilac-MRA] ![CNAS Testing CNAS L5313 ilac-MRA]

SAR Test Report

Product Name	:	Smart Phone
Model No.	:	MP436
FCC ID	:	ZDRMP436

Applicant : Matsunichi Digital Development (Shenzhen) Co., Ltd

Address : F/22, Matsunichi Building, No.9996, Shennan Boulevard, Nanshan District, Shenzhen, China

Date of Receipt	:	31/03/2012
Date of Test	:	15/04/2012~17/04/2012
Issued Date	:	20/04/2012
Report No.	:	123S104R-HP-US-P03V01
Report Version	:	V1.1

Test Report Certification

Product Name	:	Smart Phone
Applicant	:	Matsunichi Digital Development (Shenzhen) Co., Ltd
Address	:	F/22, Matsunichi Building, No.9996, Shennan Boulevard, Nanshan District, Shenzhen, China
Manufacturer 1	:	Matsunichi Digital Development (Shenzhen) Co., Ltd
Address	:	No.5, KeJi Road, PingShan Industrial Estate, PingShan New District, Shenzhen, China
Manufacturer 2	:	Guangzhou Singulargold Electronics Co.,Ltd
Address	:	No.6, Lianhua yan Road, Science City, Guangzhou Hi-Tech Industrial Development Zone,Guangzhou,China
Model No.	:	MP436
FCC ID	:	ZDRMP436
Brand Name	:	Matsunichi / Le Pan
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: 0.466 W/kg; Body: 1.18 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
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Approved By	:	*Marlinchen*
		(Engineering Manager: Marlin Chen)

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**
China	:	**CNAS**

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:

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No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C.
TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789   E-Mail : service@quietek.com

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TEL : +86-512-6251-5088 / FAX : 86-512-6251-5098   E-Mail : service@quietek.com

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1. General Information

1.1. EUT Description

Product Name	Smart Phone
Model No.	MP436
IMEI	866601000030500
Hardware Version	R004
Software Version	4833
Device Category	Portable
RF Exposure Environment	Uncontrolled
Antenna Type	Internal
GPS	
Operate Frequency	1575.42MHz
Type of modulation	BPSK
2G	
Support Band	GSM850/GSM900/DCS1800/PCS1900
GPRS Type	Class B
GPRS Class	Class 12
Uplink	GSM 850: 824~849MHz PCS 1900: 1850~1910MHz
Downlink	GSM 850: 869~894MHz PCS 1900: 1930~1990MHz
Release Version	GSM: R99
Type of modulation	GMSK for GSM/GPRS; 8PSK for EDGE
Antenna Gain	-4.1dBi for 824~849MHz -4.6dBi for 1850~1910MHz
Max. Output Power (Avg. Burst Power)	GSM850: 33.42 dBm PCS1900: 30.22 dBm
Max. Output Power (Radiated)	GSM850: 32.09 dBm- ERP PCS1900: 25.79 dBm- EIRP
3G	
Support Band	WCDMA Band II/WCDMA BAND V
Uplink	WCDMA Band V: 824~849MHz WCDMA Band II: 1850~1910MHz
Downlink	WCDMA Band V: 869~894MHz WCDMA Band II: 1930~1990MHz

UE Category	HSDPA: Category 10
	HSUPA: Category 6
Release Version	UMTS FDD: Rel-6
Type of modulation(Uplink)	QPSK
Antenna Gain	-4.1dBi for 824~849MHz
	-4.6dBi for 1850~1910MHz
Max. Output Power	WCDMA Band II: 23.62dBm
(Avg. Power)	WCDMA Band V: 23.45 dBm
Max. Output Power	WCDMA Band II: 21.55 dBm- EIRP
(Radiated)	WCDMA Band V: 19.26 dBm- ERP
Bluetooth	
Bluetooth Frequency	2402~2480MHz
Bluetooth Version	V2.1 + EDR
Type of modulation	FHSS
Data Rate	1Mbps(GFSK), 2Mbps(Pi/4 DQPSK), 3Mbps (8DPSK)
Antenna Gain	4.8dBi
Wi-Fi	
Wi-Fi Frequency	2412~2462MHz
Hotspots Function	YES
Type of modulation	802.11b: DSSS; 802.11g/n: OFDM
Data Rate	802.11b: 1/2/5.5/11 Mbps
	802.11g: 6/9/12/18/24/36/48/54 Mbps
	802.11n: up to 65 Mbps
Antenna Gain	4.8dBi
Max. Output Power	Wi-Fi: 13.73 dBm
(Avg. Power)	
Components	
Headset	Matsunichi
Battery	M/N: MLP454261
	Rated Voltage and Capacitance: 3.7V/1530mAh
Adapter	Brand Name: Ktec
	M/N: KSAS0060500120VUU
	Input: 100-240V~50/60Hz 0.18A
	Output: 5Vdc, 1.2A

1.2. Test Environment

Ambient conditions in the laboratory:

Items	Required	Actual
Temperature (°C)	18-25	21.5± 2
Humidity (%RH)	30-70	52

2. SAR Measurement System

2.1. DASY5 System Description
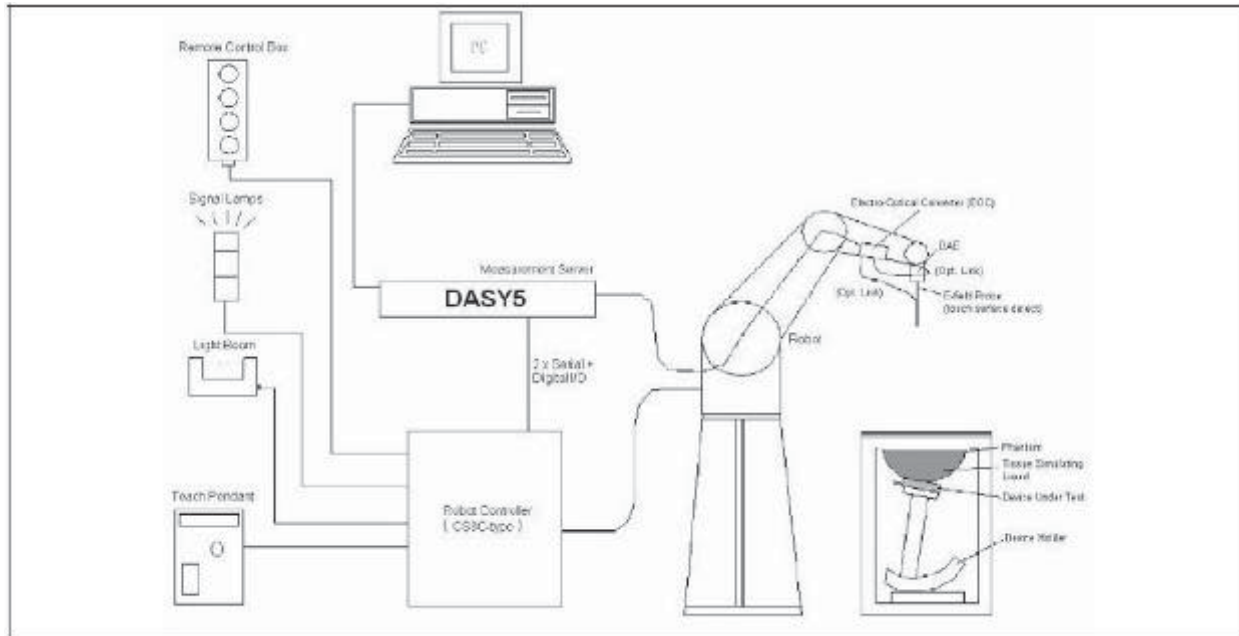
The DASY5 system for performing compliance tests consists of the following items:

➢ 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 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.
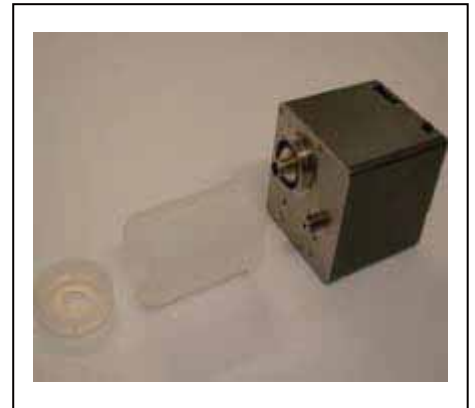
## 2.4. DATA Acquisition Electronics (DAE) and Measurement Server

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.
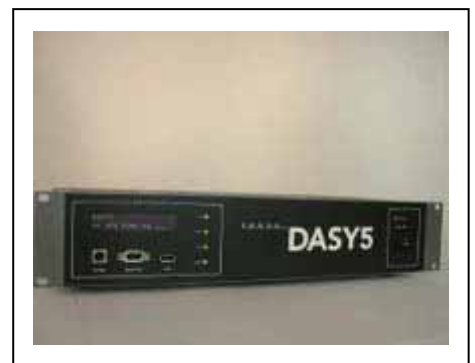
2.5. Robot

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	2450MHz Head	2450MHz Body
Water	40.45	52.4	54.90	40.5	46.7	73.2
Salt	1.45	1.40	0.18	0.50	0.00	0.04
Sugar	57.6	45.0	0.00	58.0	0.00	0.00
HEC	0.40	1.00	0.00	0.50	0.00	0.00
Preventol	0.10	0.20	0.00	0.50	0.00	0.00
DGBE	0.00	0.00	44.92	0.00	53.3	26.7

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	41.5 39.425 to 43.575	0.92 0.874 to 0.966	N/A
	15-04-2012	42.78	0.88	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	55.2 52.44 to 57.96	0.97 0.92 to 1.02	N/A
	15-04-2012	54.54	0.96	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 38 to 42	1.4 1.33 to 1.47	N/A
	16-04-2012	39.08	1.44	21.0

Body Tissue Simulant Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
1900 MHz	Reference result ± 5% window	53.3 50.64 to 55.97	1.52 1.44 to 1.60	N/A
	16-04-2012	53.5	1.56	21.0

Head Tissue Simulant Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
2450MHz	Reference result ± 5% window	39.2 37.24 to 41.16	1.80 1.71 to 1.89	N/A
	17-04-2012	39.67	1.81	21.0

Body Tissue Simulant Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
2450MHz	Reference result ± 5% window	52.7 50.07 to 55.34	1.95 1.85 to 2.05	N/A
	17-04-2012	52.06	1.99	21.0

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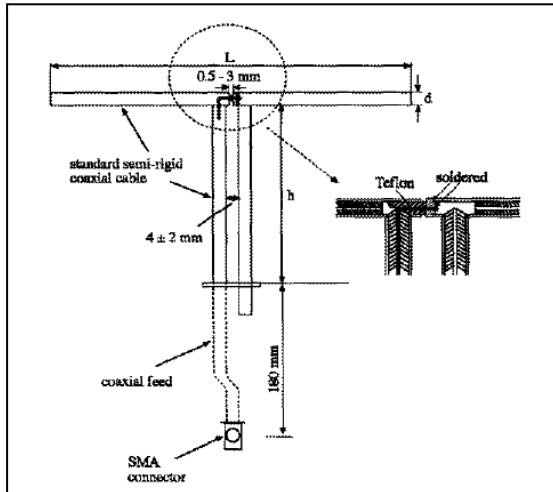
The dipoles used is based on the IEEE-1528 standard, and is complied with mechanical and electrical specifications in line with the requirements of both IEEE and FCC Supplement C. the table below provides details for the mechanical and electrical specifications for the dipoles.

Frequency	L (mm)	h (mm)	d (mm)
835MHz	161.0	89.9	3.6
1900MHz	68.0	39.5	3.6
2450MHz	51.5	30.4	3.6

4.1.2. Validation Result

System Performance Check at 835MHz &1900MHz for Head

Validation Kit: D835V2

Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp. [°C]
835 MHz	Reference result ± 10% window	9.41 8.469 to 10.351	6.15 5.535 to 6.765	N/A
	15-04-2012	9.04	5.88	21.0

Validation Kit: D1900V2

Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp. [°C]
1900 MHz	Reference result ± 10% window	39.4 35.46 to 43.34	20.8 18.72 to 22.88	N/A
	16-04-2012	37.96	19.36	21.0

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

System Performance Check at 835MHz &1900MHz for Body

Validation Kit: D835V2

Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp. [°C]
835 MHz	Reference result ± 10% window	9.57 8.613 to 10.527	6.33 5.697 to 6.963	N/A
	15-04-2012	9.52	6.16	21.0

Validation Kit: D1900V2

Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp. [°C]
1900 MHz	Reference result ± 10% window	38.7 34.83 to 42.57	20.4 18.36 to 22.44	N/A
	16-04-2012	39.84	20.44	21.0

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

System Performance Check at 2450MHz for Head

Validation Dipole: D2450V2

Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp. [°C]
2450 MHz	Reference result ± 10% window	51.9 46.71 to 57.09	24.1 21.69 to 26.51	N/A
	17-04-2012	51.2	22.84	21.0

System Performance Check at 2450MHz for Body

Validation Dipole: D2450V2

Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp. [°C]
2450 MHz	Reference result ± 10% window	48.7 43.83 to 53.57	22.8 20.52 to 25.08	N/A
	17-04-2012	49.2	22.48	21.0

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

4.2. SAR Measurement Procedure

The DASY5 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.	Cali. Due Date
Stäubli Robot TX60L	Stäubli	TX60L	F10/5C90A1/A/01	only once
Controller	Stäubli	SP1	S-0034	only once
Dipole Validation Kits	Speag	D835V2	4d094	2013.02.17
Dipole Validation Kits	Speag	D1900V2	5d121	2013.02.22
Dipole Validation Kits	Speag	D2450V2	839	2013.02.23
SAM Twin Phantom	Speag	SAM	TP-1561/1562	N/A
Device Holder	Speag	SD 000 H01 HA	N/A	N/A
Data Acquisition Electronic	Speag	DAE4	1220	2013.01.23
E-Field Probe	Speag	EX3DV4	3710	2013.03.12
SAR Software	Speag	DASY5	V5.2 Build 162	N/A
Power Amplifier	Mini-Circuit	ZVA-183-S+	N657400950	N/A
Directional Coupler	Agilent	778D	20160	N/A
Universal Radio Communication Tester	R&S	CMU 200	117088	2012.04.29
Vector Network	Agilent	E5071C	MY48367267	2013.04.10
Signal Generator	Agilent	E4438C	MY49070163	2012.04.23
Power Meter	Anritsu	ML2495A	0905006	2013.01.12
Wide Bandwidth Sensor	Anritsu	MA2411B	0846014	2013.01.12

7. Measurement Uncertainty

DASY5 Uncertainty

Measurement uncertainty for 300 MHz to 3 GHz averaged over 1 gram / 10 gram.

Error Description	Uncert. value	Prob. Dist.	Div.	(c_i) 1g	(c_i) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(v_i) Veff
Measurement System								
Probe Calibration	±6.0%	N	1	1	1	±6.0%	±6.0%	∞
Axial Isotropy	±4.7%	R	$\sqrt{3}$	0.7	0.7	±1.9%	±1.9%	∞
Hemispherical Isotropy	±9.6%	R	$\sqrt{3}$	0.7	0.7	±3.9%	±3.9%	∞
Boundary Effects	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%	∞
System Detection Limits	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Readout Electronics	±0.3%	N	1	1	1	±0.3%	±0.3%	∞
Response Time	±0.8%	R	$\sqrt{3}$	1	1	±0.5%	±0.5%	∞
Integration Time	±2.6%	R	$\sqrt{3}$	1	1	±1.5%	±1.5%	∞
RF Ambient Noise	±3.0%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
RF Ambient Reflections	±3.0%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
Probe Positioner	±0.4%	R	$\sqrt{3}$	1	1	±0.2%	±0.2%	∞
Probe Positioning	±2.9%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
Max. SAR Eval.	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Test Sample Related								
Device Positioning	±2.9%	N	1	1	1	±2.9%	±2.9%	145
Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%	5
Power Drift	±5.0%	R	$\sqrt{3}$	1	1	±2.9%	±2.9%	∞
Phantom and Setup								
Phantom Uncertainty	±4.0%	R	$\sqrt{3}$	1	1	±2.3%	±2.3%	∞
Liquid Conductivity (target)	±5.0%	R	$\sqrt{3}$	0.64	0.43	±1.8%	±1.2%	∞
Liquid Conductivity (meas.)	±2.5%	N	1	0.64	0.43	±1.6%	±1.1%	∞
Liquid Permittivity (target)	±5.0%	R	$\sqrt{3}$	0.6	0.49	±1.7%	±1.4%	∞
Liquid Permittivity (meas.)	±2.5%	N	1	0.6	0.49	±1.5%	±1.2%	∞
Combined Std. Uncertainty						±10.9%	±10.7%	387
Expanded STD Uncertainty						±21.9%	±21.4%	

8. Conducted Power Measurement

Mode	Frequency (MHz)	Avg. Burst Power (dBm)	Duty Cycle Factor (dB)	Frame Power (dBm)
Maximum Power				
GSM850	824.2	33.40	-9	24.40
	836.4	33.40	-9	24.40
	848.8	33.42	-9	24.42
GPRS850(1 Slot)	824.2	33.40	-9	24.40
	836.4	33.39	-9	24.39
	848.8	33.41	-9	24.41
GPRS850(2 Slot)	824.2	33.50	-6	27.50
	836.4	33.47	-6	27.47
	848.8	33.50	-6	27.50
GPRS850(3 Slot)	824.2	32.85	-4.25	28.60
	836.4	32.82	-4.25	28.57
	848.8	32.92	-4.25	28.67
GPRS850(4 Slot)	824.2	31.63	-3	28.63
	836.4	31.58	-3	28.58
	848.8	31.63	-3	28.63
EGPRS850(1 Slot)	824.2	27.95	-9	18.95
	836.4	27.88	-9	18.88
	848.8	27.90	-9	18.90
EDGE850 (2slot)	824.2	27.93	-6	21.93
	836.4	27.87	-6	21.87
	848.8	27.89	-6	21.89
EDGE 850 (3slot)	824.2	27.13	-4.25	22.88
	836.4	27.09	-4.25	22.84
	848.8	27.11	-4.25	22.86
EDGE 850 (4slot)	824.2	26.04	-3	23.04
	836.4	26.03	-3	23.03
	848.8	26.07	-3	23.07
PCS1900	1850.2	30.03	-9	21.03
	1880.0	30.14	-9	21.14
	1909.8	30.22	-9	21.22
GPRS1900(1 Slot)	1850.2	30.01	-9	21.01
	1880.0	30.13	-9	21.13
	1909.8	30.20	-9	21.20

	1850.2	28.62	-6	22.62
GPRS1900(2 Slot)	1880.0	28.76	-6	22.76
	1909.8	28.94	-6	22.94
	1850.2	26.71	-4.25	22.46
GPRS1900(3 Slot)	1880.0	26.89	-4.25	22.64
	1909.8	27.01	-4.25	22.76
	1850.2	26.72	-3	23.72
GPRS1900(4 Slot)	1880.0	26.88	-3	23.88
	1909.8	27.02	-3	24.02
	1850.2	26.39	-9	17.39
EDGE1900(1 Slot)	1880.0	26.53	-9	17.53
	1909.8	26.59	-9	17.59
	1850.2	26.40	-6	20.40
EDGE 1900 (2slot)	1880.0	26.56	-6	20.56
	1909.8	26.60	-6	20.60
	1850.2	26.15	-4.25	21.90
EDGE 1900 (3slot)	1880.0	26.28	-4.25	22.03
	1909.8	26.31	-4.25	22.06
	1850.2	24.96	-3	21.96
EDGE 1900 (4slot)	1880.0	25.21	-3	22.21
	1909.8	25.30	-3	22.30

Note : According to the output value listed above, the EDGE mode was not determined for SAR testing, refer to KDB 941225.

Mode	3GPP Subtest	Band II (1900MHz) Channel			MPR
		Conducted Power (dBm)			
		9262	9400	9538	
WCDMA R99	1	23.62	23.58	23.49	N/A
Rel5 HSDPA	1	23.61	23.51	23.41	0
	2	23.59	23.47	23.35	0
	3	22.97	22.98	22.85	0.5
	4	22.93	22.97	22.86	0.5
Rel6 HSUPA	1	23.43	23.30	23.20	0.0
	2	21.37	21.26	21.13	2.0
	3	22.32	22.27	22.19	1.0
	4	21.29	21.20	21.17	2.0
	5	23.41	23.28	23.15	0.0

Mode	3GPP Subtest	Band V (850MHz) Channel			MPR
		Conducted Power (dBm)			
		4132	4182	4233	
WCDMA R99	1	23.35	23.45	23.37	N/A
Rel5 HSDPA	1	23.37	23.46	23.33	0
	2	23.30	23.41	23.30	0
	3	22.76	22.87	22.83	0.5
	4	22.74	22.84	22.80	0.5
Rel6 HSUPA	1	23.19	23.30	23.22	0.0
	2	21.21	21.26	21.22	2.0
	3	22.14	22.19	22.13	1.0
	4	21.29	21.28	21.30	2.0
	5	23.10	23.18	23.16	0.0

Note : According to the output value listed above, the HSDPA/HSUPA mode were not determined for SAR testing, refer to KDB 941225.

WLAN output power

Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	Average Power (dBm)
802.11b	11	01	2412	13.61
		06	2437	13.46
		11	2462	**13.73**
802.11g	6	01	2412	10.88
		06	2437	11.56
		11	2462	11.84
802.11n (20MHz)	6.5	01	2412	11.13
		06	2437	11.31
		11	2462	11.62

Note : According to the KDB 248227. SAR is not required for 802.11g/n channels when the maximum average output power is less than 1/4 dB higher than that measured on the corresponding 802.11b channels

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 10mm from the phantom. Body SAR was also performed with the headset attached and without.

9.1.2. Body SAR with Headset

Testing with the headset was performed at the position and channels that resulted in the highest body SAR. This testing was performed with GPRS transmitting with 2/3/4 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 12 device capable of 4 uplink timeslots. During the head SAR test, the device was transmitting with 1 uplink timeslot; during the body SAR test, it was transmitting with 2/3/4 uplink timeslots. Additionally, this device doesn't support dual transfer mode (DTM).

9.1.4. Simultaneous Transmission Configure

Configure mode	Bluetooth	WWAN	WLAN
1	X	X	
2		X	X

Note : Bluetooth output power is 3.716dBm. Referring to KDB 648474

    1, The power is less than Pref.

    2, 9.6cm away from WWAN antenna.

    3, Bluetooth shares the same antenna with WLAN, they cannot transmit simultaneously.

Therefore, standalone SAR and simultaneous SAR for Bluetooth is not required.

9.1.5. Simultaneous Transmission SAR Analysis

Reference document: KDB 447498 and KDB 648474, KDB 248227.

Head Max SAR value and the sum of the 1-g SAR for WLAN & WWAN.

Max 1-g SAR (W/kg)		Σ 1-g SAR (W/kg)
WLAN	WWAN	
0.035	0.466	0.501

Body SAR value and the sum of the 1-g SAR for WLAN & WWAN.

Max 1-g SAR (W/kg)		Σ 1-g SAR (W/kg)
WLAN	WWAN	
0.100	1.180	1.280

Conclusion:

Simultaneous Transmission	Require for Simultaneous Transmission SAR with Volume Scans
WLAN & WWAN	No (The sum of the 1-g SAR is $<$ 1.6 W/kg)

9.1.6. Hot Spot test requirement

Referring to KDB 941225 D06 v01, the EUT size $>$ 9cm x 5cm, thus, test separation of 10 mm is required. GSM/WCDMA antenna is less than 25 mm away from mobile phone bottom and side, WLAN antenna is less than 25 mm away from mobile phone top and left side, so SAR should be measured these sides.

9.1.7. Test Result

SAR MEASUREMENT							
Ambient Temperature (°C): 21.5 ±2				Relative Humidity (%): 52			
Liquid Temperature (°C): 21.0 ±2				Depth of Liquid (cm):>15			
Product: Smart Phone							
Test Mode: GSM850							
Test Position Head	Antenna Position	Frequency		Frame Power (dBm)	Power Drift (<±0.2)	SAR 1g (W/kg)	Limit (W/kg)
		Channel	MHz				
Left-Cheek	Fixed	128	824.2	24.40	--	--	1.6
Left-Cheek	Fixed	189	836.4	24.40	0.01	0.466	1.6
Left-Cheek	Fixed	251	848.8	24.42	--	--	1.6
Left-Tilted	Fixed	189	836.4	24.40	-0.15	0.266	1.6
Right-Cheek	Fixed	128	824.2	24.40	--	--	1.6
Right-Cheek	Fixed	189	836.4	24.40	0.005	0.440	1.6
Right-Cheek	Fixed	251	848.8	24.42	--	--	1.6
Right-Tilted	Fixed	189	836.4	24.40	0.08	0.267	1.6
Note: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional, refer to KDB 9412225.							

SAR MEASUREMENT	
Ambient Temperature (°C): 21.5 ±2	Relative Humidity (%): 52
Liquid Temperature (°C): 21.0 ±2	Depth of Liquid (cm):>15
Product: Smart Phone	

Test Mode: GSM850

Test Position Body (1cm Gap)	Antenna Position	Frequency		Frame Power (dBm)	Power Drift (<±0.2)	SAR 1g (W/kg)	Limit (W/kg)
		Channel	MHz				
Body-worn	Fixed	128	824.2	24.40	--	--	1.6
Body-worn	Fixed	189	836.4	24.40	0.06	0.328	1.6
Body-worn	Fixed	251	848.8	24.42	--	--	1.6
Test Mode: GPRS850-2slot							
Body-worn	Fixed	189	836.4	27.47	-0.17	0.603	1.6
Test Mode: GPRS850-3slot							
Body-worn	Fixed	189	836.4	28.57	0.02	0.790	1.6
Test Mode: GPRS850-4slot							
Body-worn	Fixed	128	824.2	28.63	-0.006	0.682	1.6
Body-worn	Fixed	189	836.4	28.58	-0.04	0.803	1.6
Body-worn	Fixed	251	848.8	28.63	-0.002	**0.924**	1.6
Body-front	Fixed	189	836.4	28.58	0.13	0.735	1.6
Body-worn (With Headset)	Fixed	189	836.4	28.58	-0.10	0.803	1.6
Body-bottom	Fixed	189	836.4	28.58	0.04	0.127	1.6
Body-right side	Fixed	189	836.4	28.58	-0.11	0.660	1.6
Body-left side	Fixed	189	836.4	28.58	0.005	0.523	1.6

Note 1: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional, refer to KDB 9412225.

Note 2: GSM antenna is less than 25 mm away from mobile phone bottom and side, so that should be tested, refer to KDB 941225.

SAR MEASUREMENT							
Ambient Temperature (°C): 21.5 ±2				Relative Humidity (%): 52			
Liquid Temperature (°C): 21.0 ±2				Depth of Liquid (cm):>15			
Product: Smart Phone							
Test Mode: PCS1900							
Test Position Head	Antenna Position	Frequency		Frame Power (dBm)	Power Drift (<±0.2)	SAR 1g (W/kg)	Limit (W/kg)
		Channel	MHz				
Left-Cheek	Fixed	512	1850.2	21.03	--	--	1.6
Left-Cheek	Fixed	661	1880.0	21.14	0.14	0.238	1.6
Left-Cheek	Fixed	810	1909.8	21.22	--	--	1.6
Left-Tilted	Fixed	661	1880.0	21.14	-0.04	0.101	1.6
Right-Cheek	Fixed	512	1850.2	21.03	--	--	1.6
Right-Cheek	Fixed	661	1880.0	21.14	-0.05	0.112	1.6
Right-Cheek	Fixed	810	1909.8	21.22	--	--	1.6
Right-Tilted	Fixed	661	1880.0	21.14	-0.09	0.105	1.6
Note: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional, refer to KDB 9412225.							

SAR MEASUREMENT							
Ambient Temperature (°C): 21.5 ±2				Relative Humidity (%): 52			
Liquid Temperature (°C): 21.0 ±2				Depth of Liquid (cm):>15			
Product: Smart Phone							
Test Mode: PCS1900							
Test Position Body (1cm Gap)	Antenna Position	Frequency		Frame Power (dBm)	Power Drift (<±0.2)	SAR 1g (W/kg)	Limit (W/kg)
		Channel	MHz				
Body-worn	Fixed	512	1850.2	21.03	--	--	1.6
Body-worn	Fixed	661	1880.0	21.14	-0.02	0.489	1.6
Body-worn	Fixed	810	1909.8	21.22	--	--	1.6
Test Mode: GPRS1900-2slot							
Body-worn	Fixed	661	1880.0	22.76	-0.02	0.725	1.6
Test Mode: GPRS1900-3slot							
Body-worn	Fixed	661	1880.0	22.64	-0.03	0.708	1.6
Test Mode: GPRS1900-4slot							
Body-worn	Fixed	512	1850.2	23.72	0.02	0.863	1.6
Body-worn	Fixed	661	1880.0	23.88	0.06	0.923	1.6
Body-worn	Fixed	810	1909.8	24.02	0.06	**1.1**	1.6
Body-front	Fixed	661	1880.0	23.88	0.02	0.420	1.6
Body-worn (With Headset)	Fixed	661	1880.0	23.88	0.03	0.897	1.6
Body-bottom	Fixed	661	1880.0	23.88	-0.06	0.454	1.6
Body-right side	Fixed	661	1880.0	23.88	0.01	0.086	1.6
Body-left side	Fixed	661	1880.0	23.88	0.04	0.285	1.6
Note 1: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional, refer to KDB 9412225. Note 2: GSM antenna is less than 25 mm away from mobile phone bottom and side, so that should be tested, refer to KDB 941225.							

SAR MEASUREMENT							
Ambient Temperature (°C): 21.5 ±2				Relative Humidity (%): 52			
Liquid Temperature (°C): 21.0 ±2				Depth of Liquid (cm):>15			
Product: Smart Phone							
Test Mode: WCDMA Band II							
Test Position Head	Antenna Position	Frequency		Frame Power (dBm)	Power Drift (<±0.2)	SAR 1g (W/kg)	Limit (W/kg)
		Channel	MHz				
Left-Cheek	Fixed	9262	1852.4	23.62	--	--	1.6
Left-Cheek	Fixed	9400	1880.0	23.58	0.18	0.397	1.6
Left-Cheek	Fixed	9538	1907.6	23.49	--	--	1.6
Left-Tilt	Fixed	9400	1880.0	23.58	-0.13	0.149	1.6
Right-Cheek	Fixed	9262	1852.4	23.62	--	--	1.6
Right-Cheek	Fixed	9400	1880.0	23.58	0.11	0.176	1.6
Right-Cheek	Fixed	9538	1907.6	23.49	--	--	1.6
Right-Tilt	Fixed	9400	1880.0	23.58	0.10	0.155	1.6
Note: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional, refer to KDB 9412225.							

SAR MEASUREMENT							
Ambient Temperature (°C): 21.5 ±2				Relative Humidity (%): 52			
Liquid Temperature (°C): 21.0 ±2				Depth of Liquid (cm):>15			
Product: Smart Phone							
Test Mode: WCDMA Band II							
Test Position Body (1cm Gap)	Antenna Position	Frequency		Frame Power (dBm)	Power Drift (<±0.2)	SAR 1g (W/kg)	Limit (W/kg)
		Channel	MHz				
Body-worn	Fixed	9262	1852.4	23.62	0.04	0.913	1.6
Body-worn	Fixed	9400	1880.0	23.58	-0.06	1.01	1.6
Body-worn	Fixed	9538	1907.6	23.49	0.05	**1.18**	1.6
Body-front	Fixed	9400	1880.0	23.58	0.10	0.398	1.6
Body- worn (With Headset)	Fixed	9400	1880.0	23.58	0.04	0.971	1.6
Body-bottom	Fixed	9400	1880.0	23.58	0.02	0.516	1.6
Body-right side	Fixed	9400	1880.0	23.58	-0.10	0.070	1.6
Body-left side	Fixed	9400	1880.0	23.58	0.02	0.238	1.6
Note 1: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional, refer to KDB 9412225.							
Note 2: WCDMA antenna is less than 25 mm away from mobile phone bottom and side, so that should be tested, refer to KDB 941225.							

SAR MEASUREMENT							
Ambient Temperature (°C): 21.5 ±2				Relative Humidity (%): 52			
Liquid Temperature (°C): 21.0 ±2				Depth of Liquid (cm):>15			
Product: Smart Phone							
Test Mode: WCDMA Band V							
Test Position Head	Antenna Position	Frequency		Frame Power (dBm)	Power Drift (<±0.2)	SAR 1g (W/kg)	Limit (W/kg)
		Channel	MHz				
Left-Cheek	Fixed	4132	826.4	23.35	--	--	1.6
Left-Cheek	Fixed	4180	836.0	23.45	-0.15	0.17	1.6
Left-Cheek	Fixed	4233	846.6	23.37	--	--	1.6
Left-Tilt	Fixed	4180	836.0	23.45	0.03	0.140	1.6
Right-Cheek	Fixed	4132	826.4	23.35	--	--	1.6
Right-Cheek	Fixed	4180	836.0	23.45	-0.10	0.173	1.6
Right-Cheek	Fixed	4233	846.6	23.37	--	--	1.6
Right-Tilt	Fixed	4180	836.0	23.45	-0.04	0.131	1.6
Note: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional, refer to KDB 9412225.							

SAR MEASUREMENT							
Ambient Temperature (°C): 21.5 ±2				Relative Humidity (%): 52			
Liquid Temperature (°C): 21.0 ±2				Depth of Liquid (cm):>15			
Product: Smart Phone							
Test Mode: WCDMA Band V							
Test Position Body (1cm Gap)	Antenna Position	Frequency		Frame Power (dBm)	Power Drift (<±0.2)	SAR 1g (W/kg)	Limit (W/kg)
		Channel	MHz				
Body-worn	Fixed	4132	826.4	23.35	--	--	1.6
Body-worn	Fixed	4180	836.0	23.45	-0.11	**0.255**	1.6
Body-worn	Fixed	4233	846.6	23.37	--	--	1.6
Body-front	Fixed	4180	836.0	23.45	0.10	0.244	1.6
Body-worn (With Headset)	Fixed	4180	836.0	23.45	0.10	0.249	1.6
Body-bottom	Fixed	4180	836.0	23.45	-0.08	0.051	1.6
Body-right side	Fixed	4180	836.0	23.45	-0.04	0.209	1.6
Body-left side	Fixed	4180	836.0	23.45	0.04	0.173	1.6
Note 1: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional, refer to KDB 9412225.							
Note 2: WCDMA antenna is less than 25 mm away from mobile phone bottom and side, so that should be tested, refer to KDB 941225.							

SAR MEASUREMENT							
Ambient Temperature (°C): 21.5 ±2				Relative Humidity (%): 52			
Liquid Temperature (°C): 21.0 ±2				Depth of Liquid (cm):>15			
Product: Smart Phone							
Test Mode: 802.11b							
Test Position Head	Antenna Position	Frequency		Average Power (dBm)	Power Drift (<±0.2)	SAR 1g (W/kg)	Limit (W/kg)
		Channel	MHz				
Left-Cheek	Fixed	1	2412	13.61	--	--	1.6
Left-Cheek	Fixed	6	2437	13.46	--	--	1.6
Left-Cheek	Fixed	11	2462	13.73	-0.01	0.031	1.6
Left-Tilt	Fixed	11	2462	13.73	0.16	0.035	1.6
Right-Cheek	Fixed	1	2412	13.61	--	--	1.6
Right-Cheek	Fixed	6	2437	13.46	--	--	1.6
Right-Cheek	Fixed	11	2462	13.73	-0.19	0.020	1.6
Right-Tilt	Fixed	11	2462	13.73	0.10	0.029	1.6
Note: When the SAR procedures require multiple channels to be tested and the 1-g SAR for the highest output channel is less than 0.8 W/kg, where the transmission band corresponding to all channels is ≤ 100 MHz, testing for the other channels is not required, refer to KDB 447498.							

SAR MEASUREMENT							
Ambient Temperature (°C): 21.5 ±2				Relative Humidity (%): 52			
Liquid Temperature (°C): 21.0 ±2				Depth of Liquid (cm):>15			
Product: Smart Phone							
Test Mode: 802.11b							
Test Position Body (1cm Gap)	Antenna Position	Frequency		Average Power (dBm)	Power Drift (<±0.2)	SAR 1g (W/kg)	Limit (W/kg)
		Channel	MHz				
Body-worn	Fixed	1	2412	13.61	--	--	1.6
Body-worn	Fixed	6	2437	13.46	--	--	1.6
Body-worn	Fixed	11	2462	13.73	0.06	**0.100**	1.6
Body-front	Fixed	11	2462	13.73	0.13	0.010	1.6
Body-worn (With Headset)	Fixed	11	2462	13.73	0.007	0.096	1.6
Body-top	Fixed	11	2462	13.73	0.10	0.080	1.6
Body-left side	Fixed	11	2462	13.73	0.18	0.004	1.6

Note 1: When the SAR procedures require multiple channels to be tested and the 1-g SAR for the highest output channel is less than 0.8 W/kg, where the transmission band corresponding to all channels is ≤ 100 MHz, testing for the other channels is not required, refer to KDB 447498.

Note 2: WLAN antenna is less than 25 mm away from mobile phone top and left side, so that should be tested, refer to KDB 941225.

Appendix A. SAR System Validation Data

Date/Time: 15-04-2012

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 = 0.88 mho/m; εr = 42.78; ρ = 1000 kg/m³ ;

Phantom section: Flat Section ; Input Power=250mW

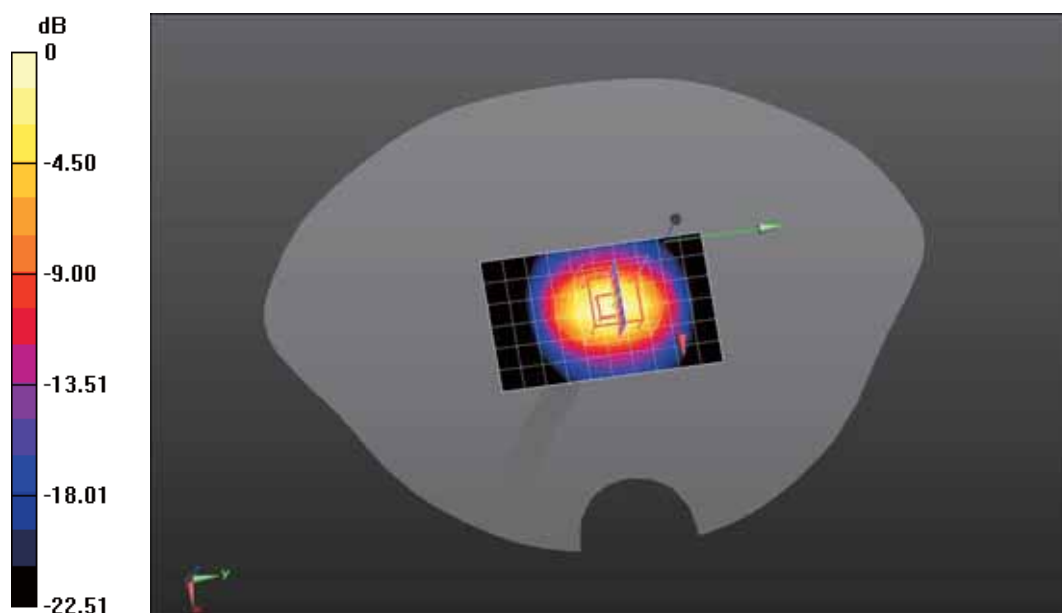Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.18, 9.18, 9.18); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/System Check Head 835MHz/Area Scan (6x19x1): Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 2.285 mW/g

Configuration/System Check Head 835MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm, Reference Value = 52.652 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 3.3760

SAR(1 g) = 2.26 mW/g; SAR(10 g) = 1.47 mW/g Maximum value of SAR (measured) = 2.434 mW/g
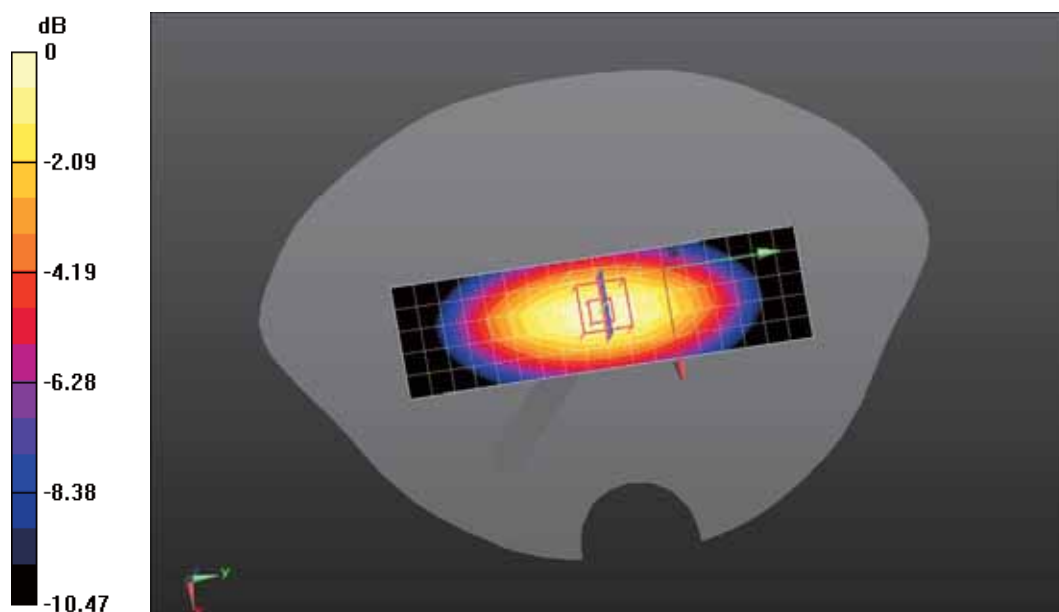
0 dB = 2.430mW/g = 7.71 dB mW/g

![QuieTek logo]

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 = 0.96 mho/m; εr = 54.54; ρ = 1000 kg/m³ ;

Phantom section: Flat Section ; Input Power=250mW

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012

- Phantom: SAM1; Type: SAM; Serial: TP1561

- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/System Check Body 835MHz/Area Scan (8x16x1): Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 2.492 mW/g

Configuration/System Check Body 835MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm, Reference Value = 51.465 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 3.6120

SAR(1 g) = 2.38 mW/g; SAR(10 g) = 1.54 mW/g Maximum value of SAR (measured) = 2.566 mW/g
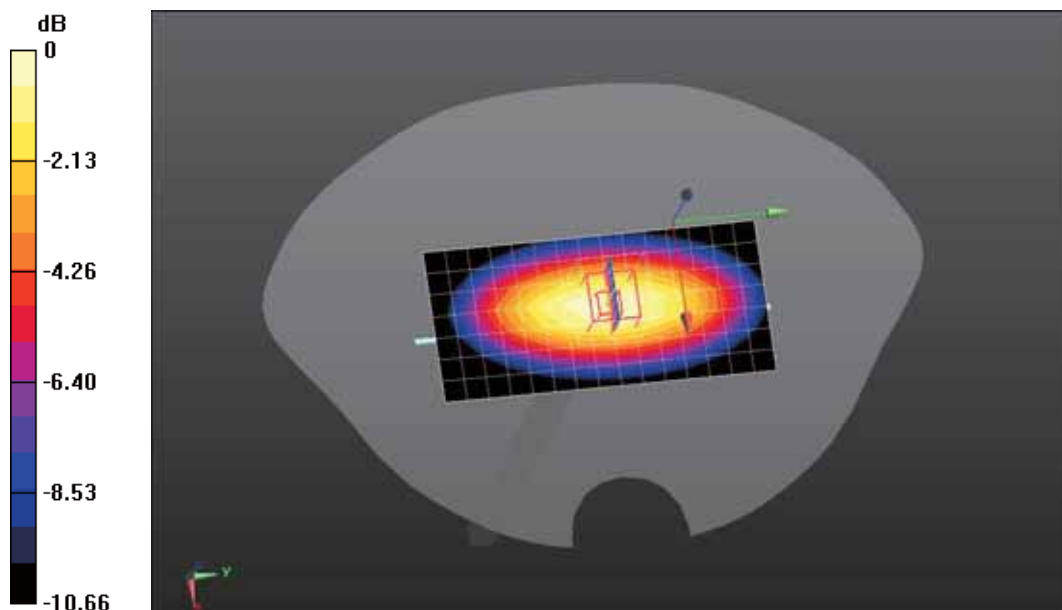
0 dB = 2.570mW/g = 8.20 dB mW/g

Date/Time: 16-04-2012

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 = 1.44 mho/m; εr = 39.08; ρ = 1000

kg/m³ ; Phantom section: Flat Section ; Input Power=250mW

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(8.16, 8.16, 8.16); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/System Check Head 1900MHz/Area Scan (6x11x1): Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 9.108 mW/g

Configuration/System Check Head 1900MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm, Reference Value = 85.563 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 18.1680

SAR(1 g) = 9.49 mW/g; SAR(10 g) = 4.84 mW/g Maximum value of SAR (measured) = 10.686 mW/g
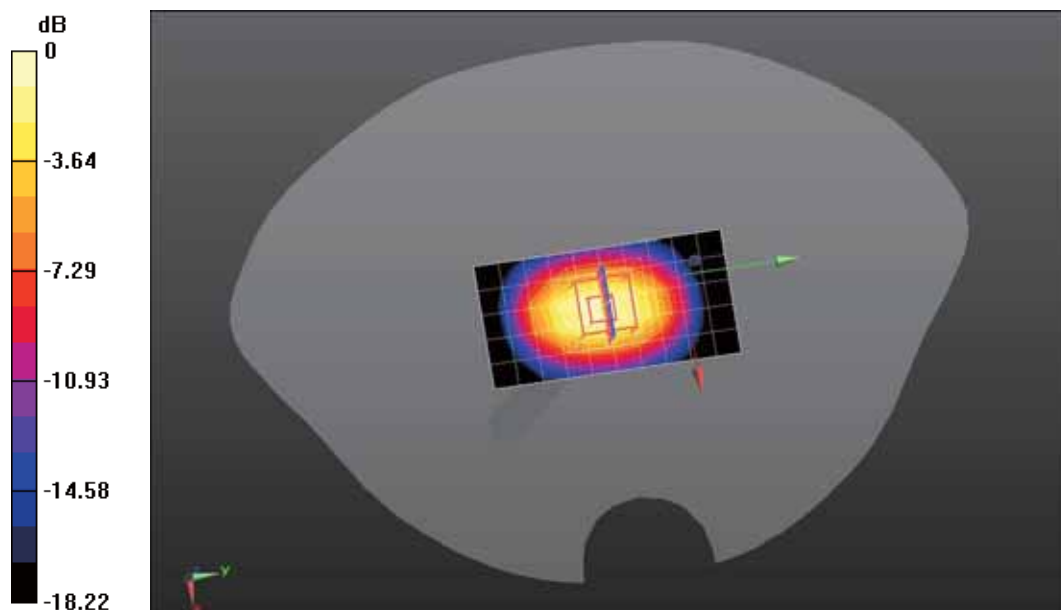
0 dB = 10.690mW/g = 20.58 dB mW/g

Date/Time: 16-04-2012

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 = 1.56 mho/m; εr = 53.5; ρ = 1000 kg/m³ ;

Phantom section: Flat Section ; Input Power=250mW

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012

- Phantom: SAM2; Type: SAM; Serial: TP1562

- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/System Check Body 1900MHz/Area Scan (7x11x1): Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 11.117 mW/g

Configuration/System Check Body 1900MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm, Reference Value = 84.651 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 18.6110

SAR(1 g) = 9.96 mW/g; SAR(10 g) = 5.11 mW/g Maximum value of SAR (measured) = 11.203 mW/g
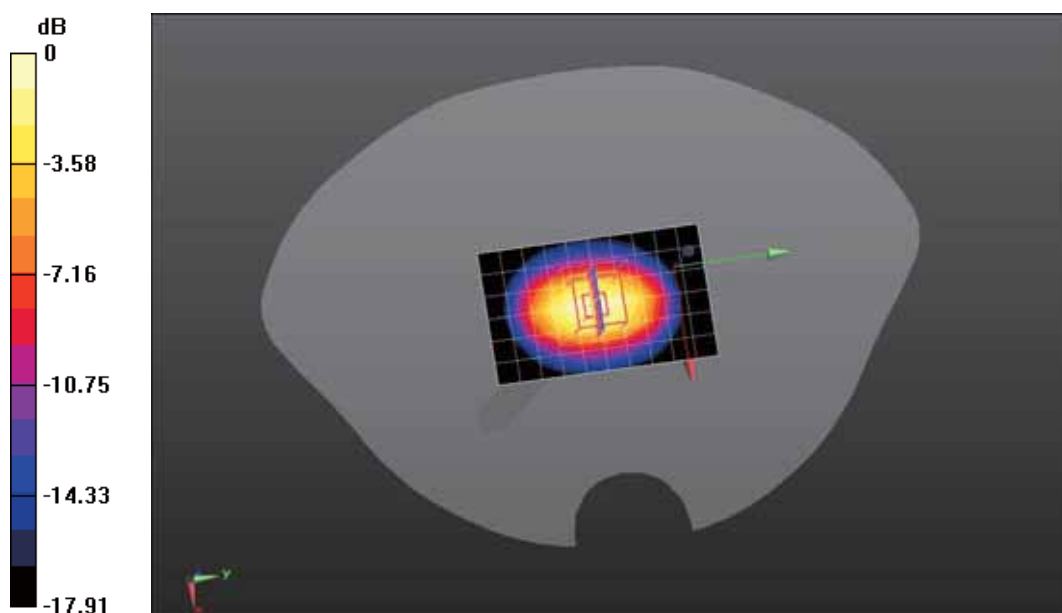
0 dB = 11.200mW/g = 20.98 dB mW/g

Date/Time: 17-04-2012

Test Laboratory: QuieTek Lab

System Check Head 2450MHz

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2

Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Duty Cycle: 1:1;

Frequency: 2450 MHz; Medium parameters used: f = 2450 MHz; σ = 1.81 mho/m; εr = 39.67; ρ = 1000

kg/m³ ; Phantom section: Flat Section ; Input Power=250mW

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.25, 7.25, 7.25); Calibrated: 12/03/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012

- Phantom: SAM2; Type: SAM; Serial: TP1562

- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/System Check Head 2450MHz/Area Scan (6x10x1): Measurement grid: dx=10mm,

dy=10mm, Maximum value of SAR (measured) = 12.146 mW/g

Configuration/System Check Head 2450MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm,

dy=5mm, dz=5mm, Reference Value = 89.373 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 28.1920

SAR(1 g) = 12.8 mW/g; SAR(10 g) = 5.71 mW/g Maximum value of SAR (measured) = 14.504 mW/g
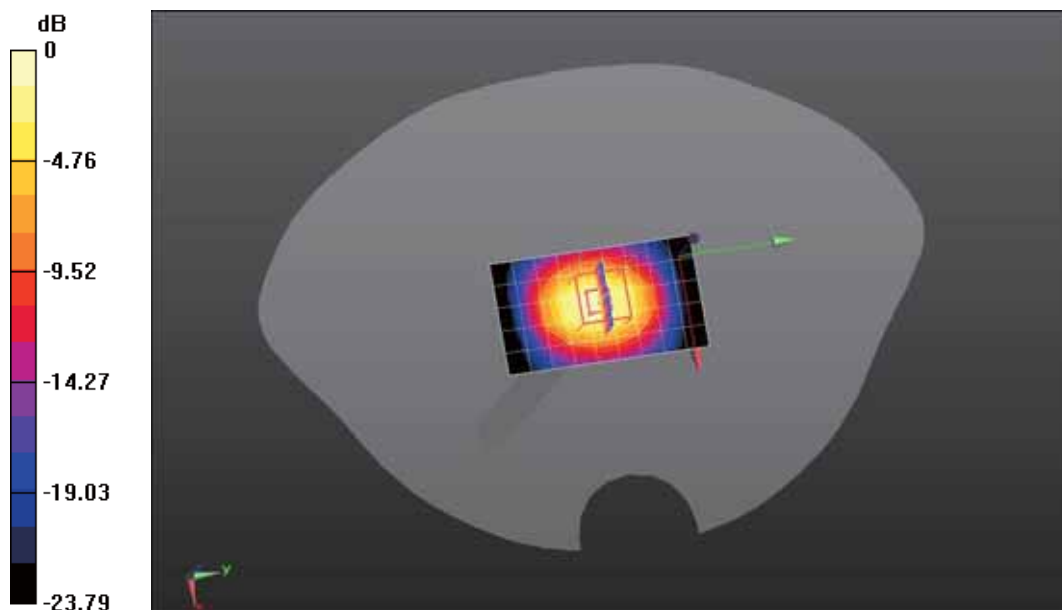
0 dB = 14.500mW/g = 23.23 dB mW/g

Date/Time: 17-04-2012

Test Laboratory: QuieTek Lab

System Check Body 2450MHz

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2

Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Duty Cycle: 1:1;

Frequency: 2450 MHz; Medium parameters used: f = 2450 MHz; σ = 1.99 mho/m; εr = 52.06; ρ = 1000

kg/m³ ; Phantom section: Flat Section ; Input Power=250mW

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(6.98, 6.98, 6.98); Calibrated: 12/03/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012

- Phantom: SAM1; Type: SAM; Serial: TP1561

- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/System Check Body 2450MHz/Area Scan (7x11x1): Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 13.408 mW/g

Configuration/System Check Body 2450MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm, Reference Value = 81.585 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 25.3510

SAR(1 g) = 12.3 mW/g; SAR(10 g) = 5.62 mW/g Maximum value of SAR (measured) = 14.054 mW/g

0 dB = 14.050mW/g = 22.95 dB mW/g

Appendix B. SAR measurement Data

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

GSM850 Mid Touch-Left

DUT: Smart Phone ; Type: MP436

Communication System: Generic GSM; Communication System Band: GSM850; Duty Cycle: 1:8.3;

Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; σ = 0.89 mho/m; εr = 42.77; ρ = 1000

kg/m³ ; Phantom section: Left Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.18, 9.18, 9.18); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GSM850 Mid Touch-Left/Area Scan (6x10x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.458 mW/g

Configuration/GSM850 Mid Touch-Left/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm, Reference Value = 7.092 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.6150

SAR(1 g) = 0.466 mW/g; SAR(10 g) = 0.348 mW/g Maximum value of SAR (measured) = 0.488 mW/g
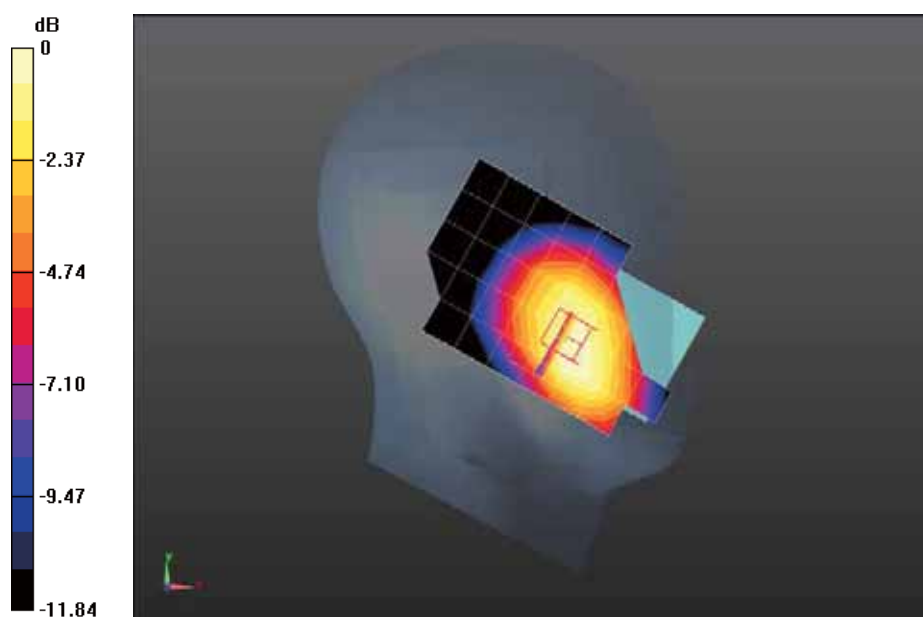
0 dB = 0.490mW/g = -6.20 dB mW/g

Test Laboratory: QuieTek Lab

GSM850 Mid Tilt-Left

DUT: Smart Phone ; Type: MP436

Communication System: Generic GSM; Communication System Band: GSM850; Duty Cycle: 1:8.3;

Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; σ = 0.89 mho/m; εr = 42.77; ρ = 1000

kg/m³ ; Phantom section: Left Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.18, 9.18, 9.18); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GSM850 Mid Tilt-Left/Area Scan (6x10x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.255 mW/g

Configuration/GSM850 Mid Tilt-Left/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

dz=5mm, Reference Value = 11.306 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.3220

SAR(1 g) = 0.266 mW/g; SAR(10 g) = 0.206 mW/g Maximum value of SAR (measured) = 0.275 mW/g
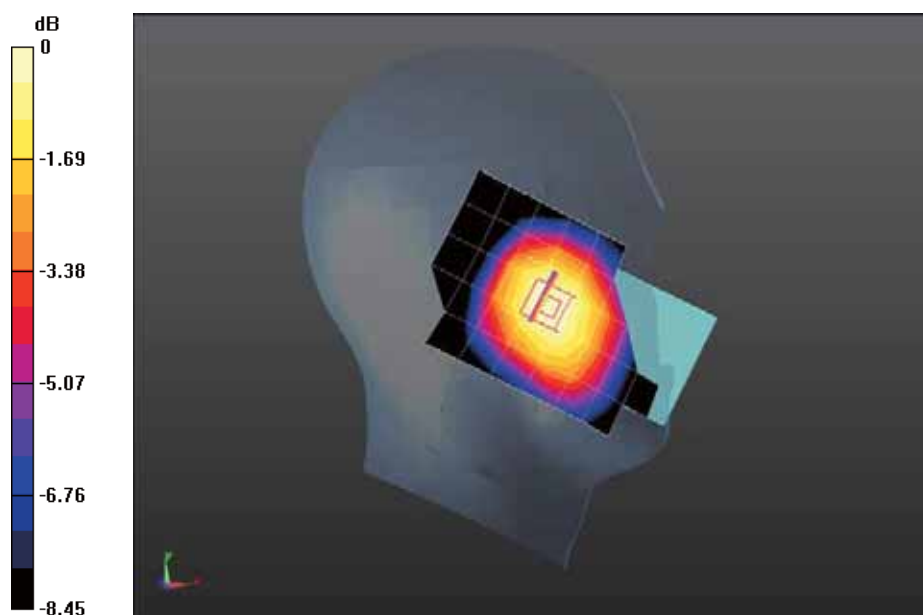
0 dB = 0.270mW/g = -11.37 dB mW/g

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

GSM850 Mid Touch-Right

DUT: Smart Phone ; Type: MP436

Communication System: Generic GSM; Communication System Band: GSM850; Duty Cycle: 1:8.3;

Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; σ = 0.89 mho/m; εr = 42.77; ρ = 1000

kg/m³ ; Phantom section: Right Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.18, 9.18, 9.18); Calibrated: 12/03/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012

- Phantom: SAM2; Type: SAM; Serial: TP1562

- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GSM850 Mid Touch-Right/Area Scan (6x10x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.436 mW/g

Configuration/GSM850 Mid Touch-Right/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm, Reference Value = 7.715 V/m; Power Drift = 0.005 dB
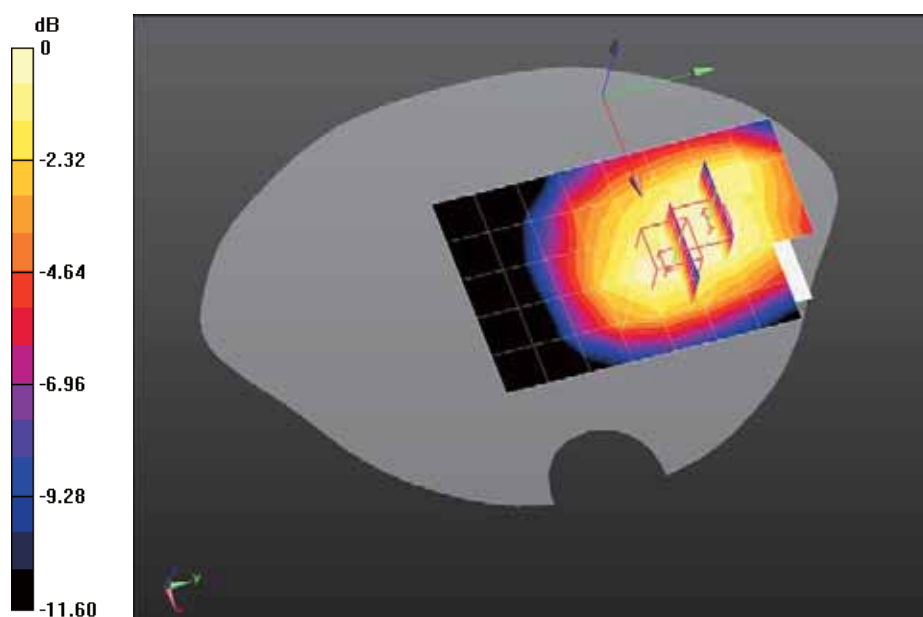
Peak SAR (extrapolated) = 0.5270

SAR(1 g) = 0.440 mW/g; SAR(10 g) = 0.342 mW/g Maximum value of SAR (measured) = 0.460 mW/g
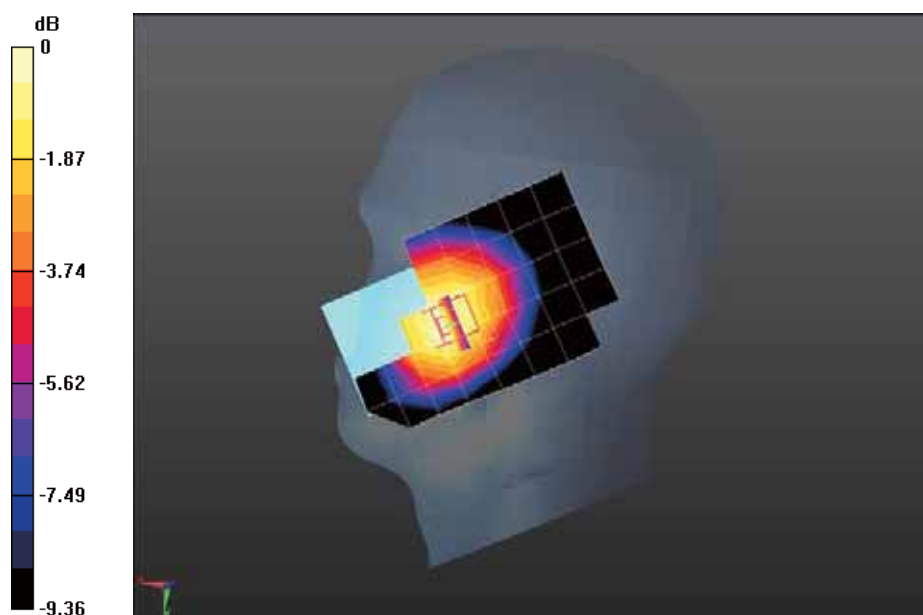
0 dB = 0.460mW/g = -6.74 dB mW/g

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

GSM850 Mid Tilt-Right

DUT: Smart Phone ; Type: MP436

Communication System: Generic GSM; Communication System Band: GSM850; Duty Cycle: 1:8.3;

Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; σ = 0.89 mho/m; εr = 42.77; ρ = 1000

kg/m³ ; Phantom section: Right Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.18, 9.18, 9.18); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GSM850 Mid Tilt-Right/Area Scan (6x10x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.260 mW/g

Configuration/GSM850 Mid Tilt-Right/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm, Reference Value = 12.315 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.3300

SAR(1 g) = 0.267 mW/g; SAR(10 g) = 0.206 mW/g Maximum value of SAR (measured) = 0.277 mW/g
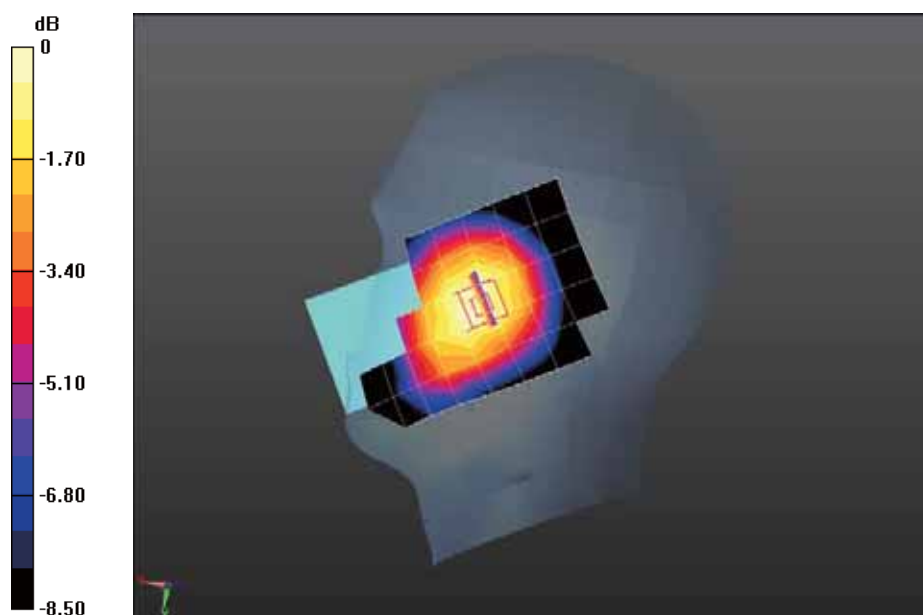
0 dB = 0.280mW/g = -11.06 dB mW/g

Test Laboratory: QuieTek Lab

GSM850 Mid Body-Back

DUT: Smart Phone ; Type: MP436

Communication System: Generic GSM; Communication System Band: GSM850; Duty Cycle: 1:8.3;

Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; σ = 0.96 mho/m; εr = 54.53; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/GSM850 Mid Body-Back/Area Scan (6x10x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.333 mW/g

Configuration/GSM850 Mid Body-Back/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm, Reference Value = 5.804 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.4350

SAR(1 g) = 0.328 mW/g; SAR(10 g) = 0.243 mW/g Maximum value of SAR (measured) = 0.344 mW/g
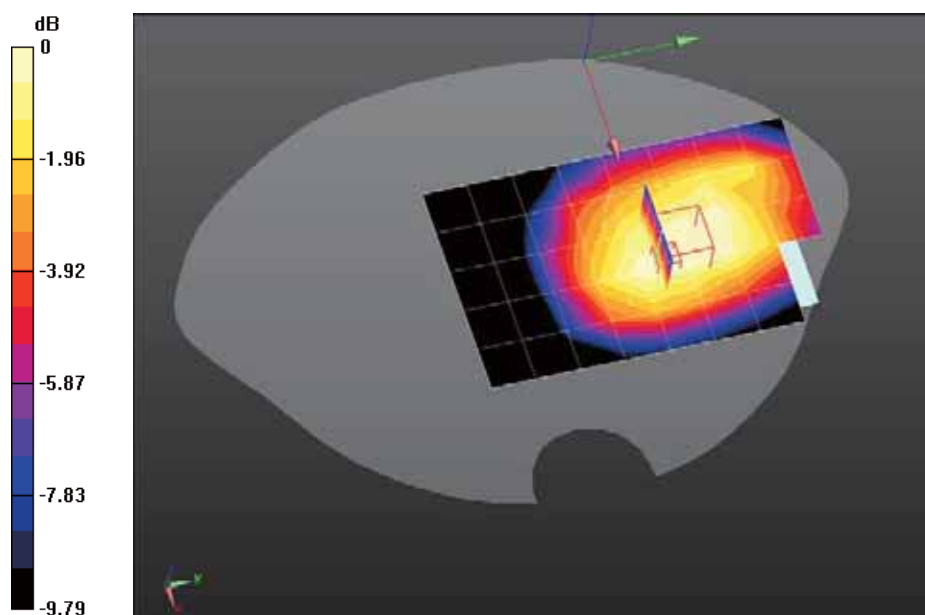
0 dB = 0.340mW/g = -9.37 dB mW/g

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

GPRS850 Mid Body-Back(2up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-2 Slot; Communication System Band: GSM850; Duty Cycle: 1:4.2 ;

Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; σ = 0.96 mho/m; εr = 54.53; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GPRS850 Mid Body-Back/Area Scan (6x10x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 0.631 mW/g
Configuration/GPRS850 Mid Body-Back/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm,
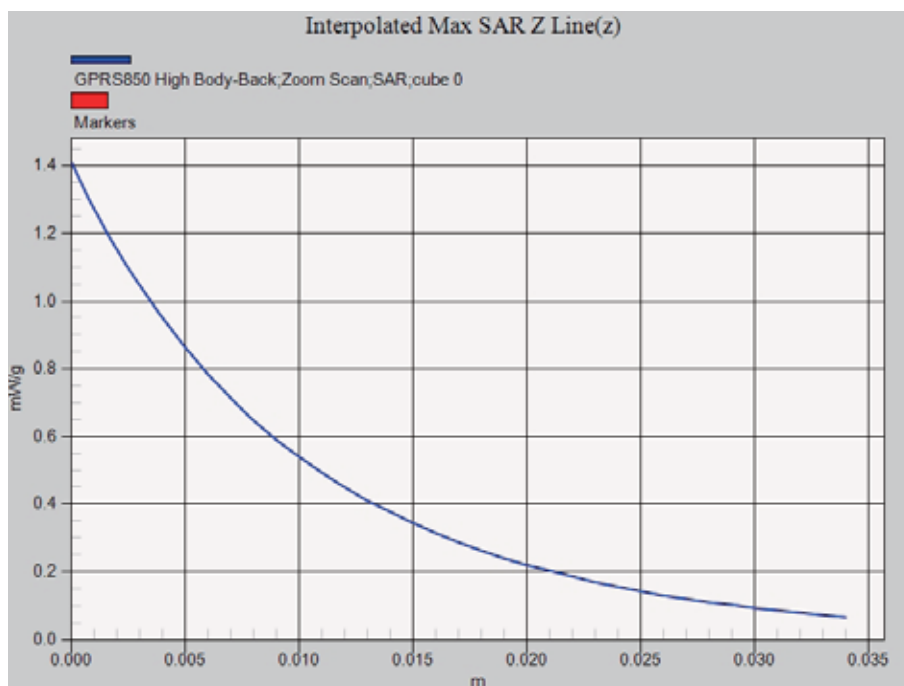dy=8mm, dz=5mm, Reference Value = 7.316 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 0.7100
SAR(1 g) = 0.546 mW/g; SAR(10 g) = 0.408 mW/g Maximum value of SAR (measured) = 0.574 mW/g
Configuration/GPRS850 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,
dy=8mm, dz=5mm, Reference Value = 7.316 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 0.9020
SAR(1 g) = 0.603 mW/g; SAR(10 g) = 0.430 mW/g Maximum value of SAR (measured) = 0.639 mW/g
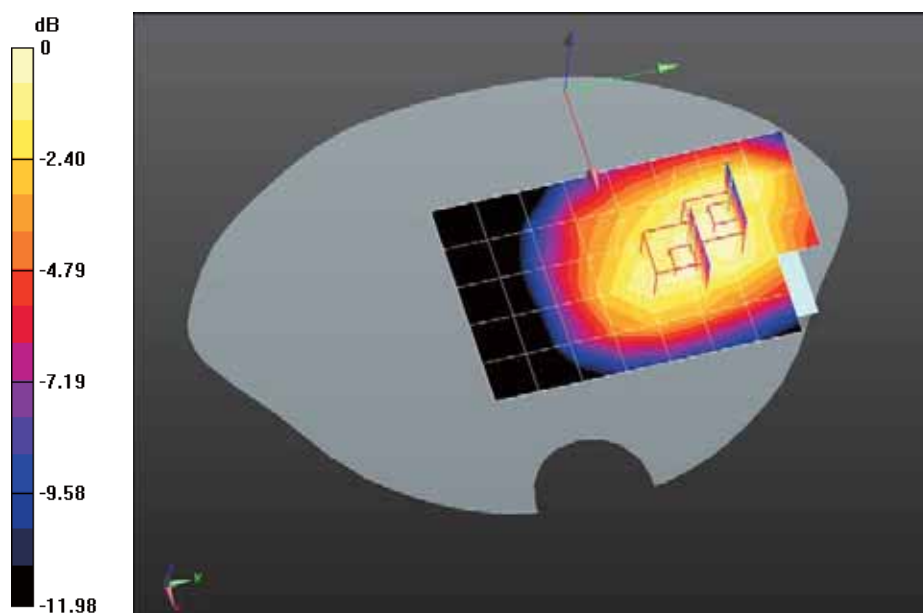
0 dB = 0.640mW/g = -3.88 dB mW/g

![QuieTek logo]

Test Laboratory: QuieTek Lab

GPRS850 Mid Body-Back(3up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-3 Slot; Communication System Band: GSM 850; Duty Cycle: 1:2.8 ;

Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; σ = 0.96 mho/m; εr = 54.53; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/GPRS850 Mid Body-Back/Area Scan (6x10x1):** Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 0.824 mW/g
Configuration/GPRS850 Mid Body-Back/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm,
dy=8mm, dz=5mm, Reference Value = 7.919 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.9190
SAR(1 g) = 0.703 mW/g; SAR(10 g) = 0.523 mW/g Maximum value of SAR (measured) = 0.738 mW/g
Configuration/GPRS850 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,
dy=8mm, dz=5mm, Reference Value = 7.919 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.1750
SAR(1 g) = 0.790 mW/g; SAR(10 g) = 0.563 mW/g Maximum value of SAR (measured) = 0.842 mW/g
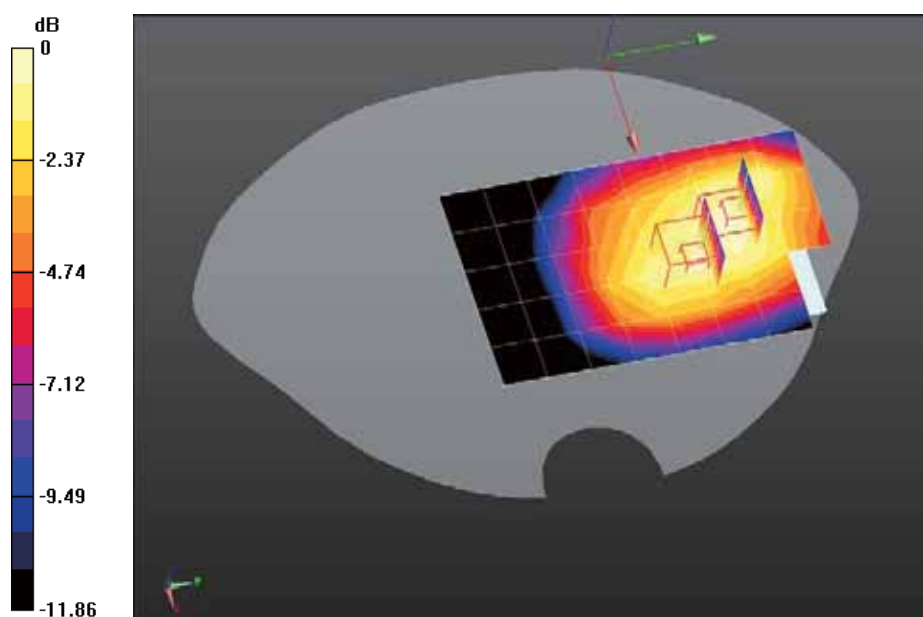
0 dB = 0.840mW/g = -1.51 dB mW/g

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

GPRS850 Low Body-Back(4up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: GSM 850; Duty Cycle: 1:2.1 ;

Frequency: 824.2 MHz; Medium parameters used: f = 824.2 MHz; σ = 0.94 mho/m; εr = 54.65; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

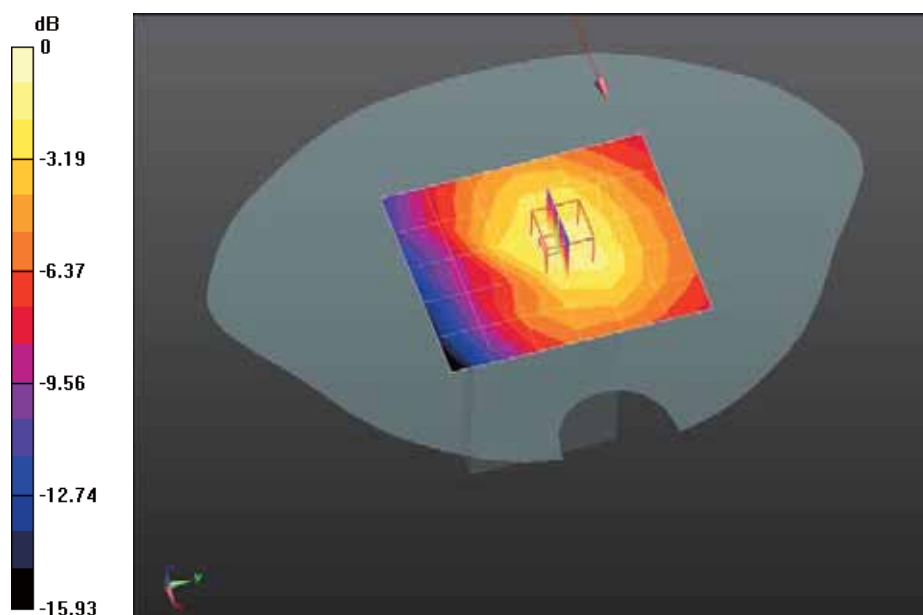**Configuration/GPRS850 Low Body-Back/Area Scan (6x10x1):** Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 0.722 mW/g
Configuration/GPRS850 Low Body-Back/Zoom Scan (6x6x7)/Cube 1: Measurement grid: dx=8mm,
dy=8mm, dz=5mm, Reference Value = 8.017 V/m; Power Drift = -0.006 dB
Peak SAR (extrapolated) = 0.8960
SAR(1 g) = 0.677 mW/g; SAR(10 g) = 0.501 mW/g Maximum value of SAR (measured) = 0.709 mW/g
Configuration/GPRS850 Low Body-Back/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm,
dy=8mm, dz=5mm, Reference Value = 8.017 V/m; Power Drift = -0.006 dB
Peak SAR (extrapolated) = 0.9670
SAR(1 g) = 0.682 mW/g; SAR(10 g) = 0.511 mW/g Maximum value of SAR (measured) = 0.715 mW/g

0 dB = 0.710mW/g = -2.97 dB mW/g

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

GPRS850 Mid Body-Back(4up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: GSM 850; Duty Cycle: 1:2.1 ;

Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; σ = 0.96 mho/m; εr = 54.53; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
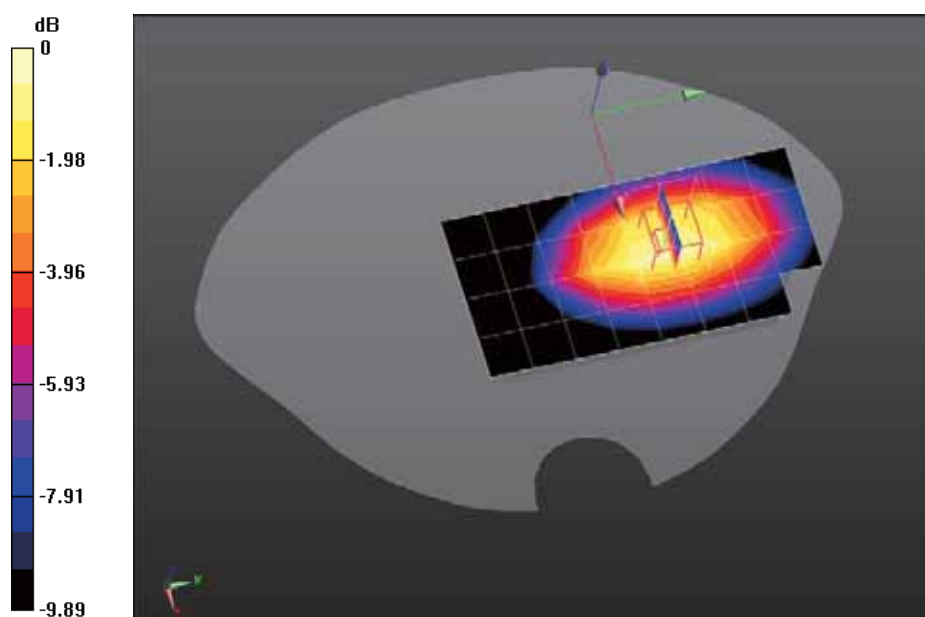- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GPRS850 Mid Body-Back/Area Scan (6x10x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 0.840 mW/g
Configuration/GPRS850 Mid Body-Back/Zoom Scan (7x6x7)/Cube 1: Measurement grid: dx=8mm,
dy=8mm, dz=5mm, Reference Value = 8.950 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.8880
SAR(1 g) = 0.680 mW/g; SAR(10 g) = 0.502 mW/g Maximum value of SAR (measured) = 0.723 mW/g
Configuration/GPRS850 Mid Body-Back/Zoom Scan (7x6x7)/Cube 0: Measurement grid: dx=8mm,
dy=8mm, dz=5mm, Reference Value = 8.950 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.2390
SAR(1 g) = 0.803 mW/g; SAR(10 g) = 0.562 mW/g Maximum value of SAR (measured) = 0.849 mW/g
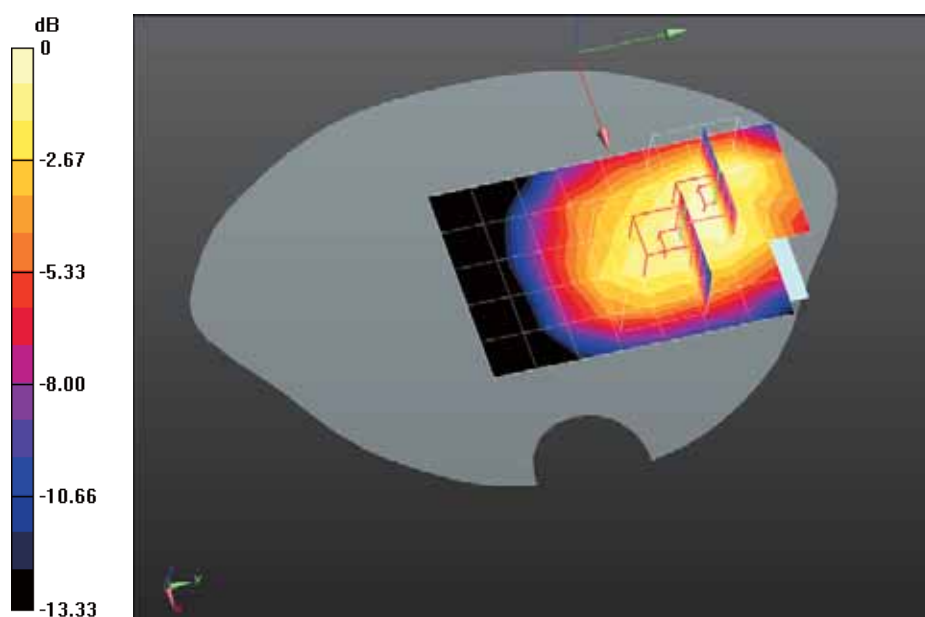
0 dB = 0.850mW/g = -1.41 dB mW/g

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

GPRS850 High Body-Back(4up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: GSM 850; Duty Cycle: 1:2.1 ;

Frequency: 848.8 MHz; Medium parameters used: f = 848.8 MHz; σ = 0.97 mho/m; εr = 54.41; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GPRS850 High Body-Back/Area Scan (6x10x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.950 mW/g

Configuration/GPRS850 High Body-Back/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm, Reference Value = 8.883 V/m; Power Drift = -0.002 dB

Peak SAR (extrapolated) = 1.4130

SAR(1 g) = 0.924 mW/g; SAR(10 g) = 0.639 mW/g Maximum value of SAR (measured) = 0.983 mW/g
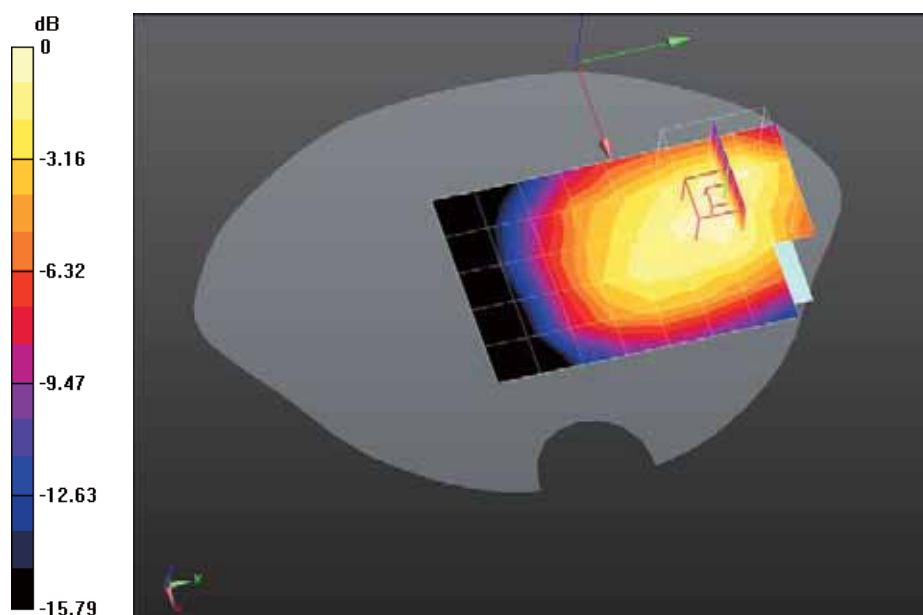
0 dB = 0.980mW/g = -0.18 dB mW/g

Z-Axis Plot

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

GPRS850 Mid Body-Front(4up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: GSM 850; Duty Cycle: 1:2.1 ;

Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; σ = 0.96 mho/m; εr = 54.53; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
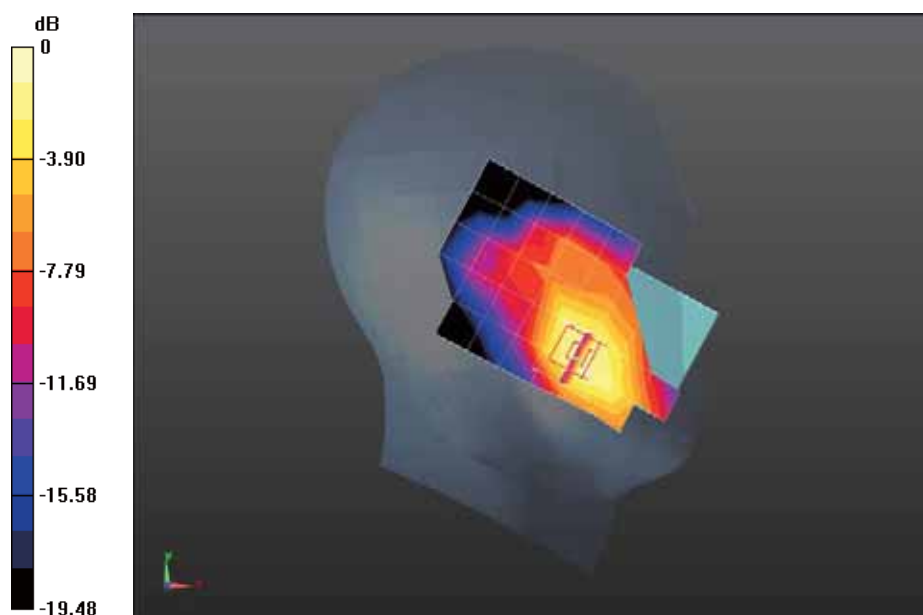- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GPRS850 Mid Body-Front/Area Scan (6x10x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.772 mW/g

Configuration/GPRS850 Mid Body-Front/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm, Reference Value = 8.381 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.9980

SAR(1 g) = 0.735 mW/g; SAR(10 g) = 0.528 mW/g Maximum value of SAR (measured) = 0.773 mW/g
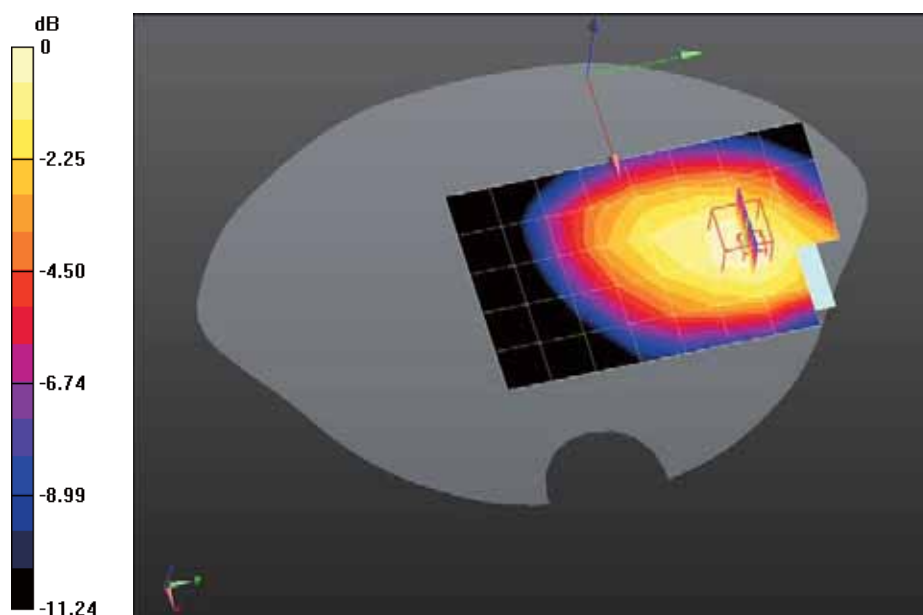
0 dB = 0.770mW/g = -2.27 dB mW/g

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

GPRS850 Mid Body-Back(4up)(with headset)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: GSM 850; Duty Cycle: 1:2.1 ;

Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; σ = 0.96 mho/m; εr = 54.53; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GPRS850 Mid Body-Back/Area Scan (6x10x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.817 mW/g

Configuration/GPRS850 Mid Body-Back/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm, Reference Value = 7.225 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 1.2460

SAR(1 g) = 0.803 mW/g; SAR(10 g) = 0.540 mW/g Maximum value of SAR (measured) = 0.860 mW/g
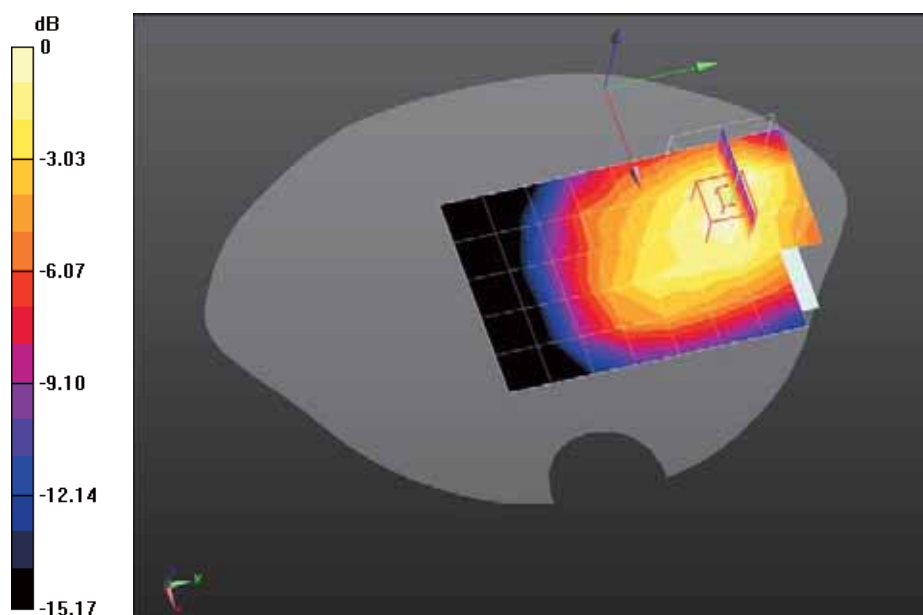
0 dB = 0.860mW/g = -1.31 dB mW/g

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

GPRS850 Mid Body-Bottom(4up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: GSM 850; Duty Cycle: 1:2.1 ;

Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; σ = 0.96 mho/m; εr = 54.53; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GPRS850 Mid Body-Bottom/Area Scan (6x7x1): Measurement grid: dx=20mm, dy=20mm
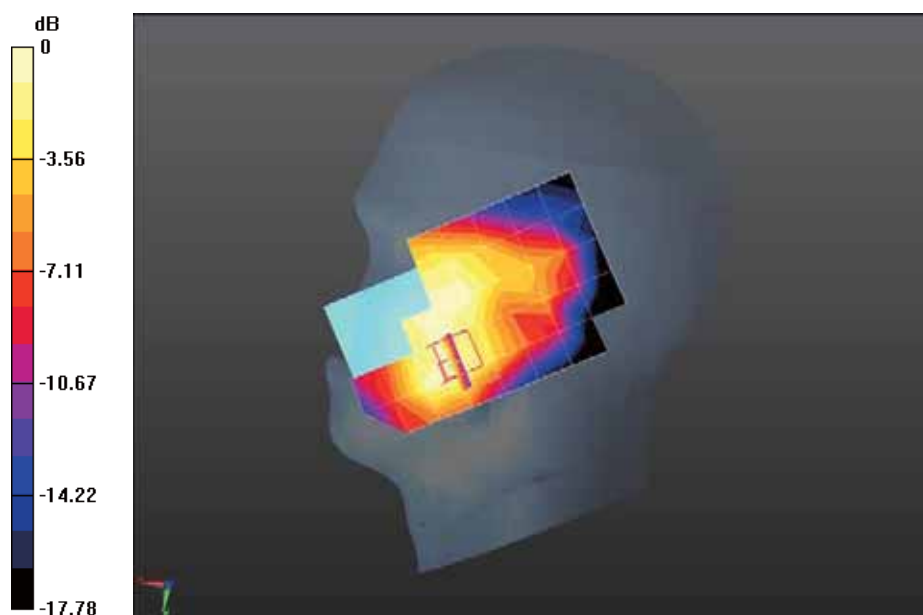
Maximum value of SAR (measured) = 0.100 mW/g

Configuration/GPRS850 Mid Body-Bottom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm, Reference Value = 12.210 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.2080

SAR(1 g) = 0.127 mW/g; SAR(10 g) = 0.077 mW/g Maximum value of SAR (measured) = 0.142 mW/g

0 dB = 0.140mW/g = -17.08 dB mW/g

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

GPRS850 Mid Body-Right Side(4up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: GSM 850; Duty Cycle: 1:2.1 ;

Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; σ = 0.96 mho/m; εr = 54.53; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GPRS850 Mid Body-Right Side/Area Scan (5x10x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.651 mW/g

Configuration/GPRS850 Mid Body-Right Side/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 9.327 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.9450

SAR(1 g) = 0.660 mW/g; SAR(10 g) = 0.451 mW/g Maximum value of SAR (measured) = 0.707 mW/g

0 dB = 0.710mW/g = -2.97 dB mW/g

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

GPRS850 Mid Body-Left Side(4up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: GSM 850; Duty Cycle: 1:2.1 ;

Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; σ = 0.96 mho/m; εr = 54.53; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GPRS850 Mid Body-Left Side/Area Scan (5x10x1): Measurement grid: dx=20mm,

dy=20mm

Maximum value of SAR (measured) = 0.534 mW/g

Configuration/GPRS850 Mid Body-Left Side/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm, Reference Value = 9.145 V/m; Power Drift = 0.005 dB

Peak SAR (extrapolated) = 0.7610

SAR(1 g) = 0.523 mW/g; SAR(10 g) = 0.348 mW/g Maximum value of SAR (measured) = 0.564 mW/g
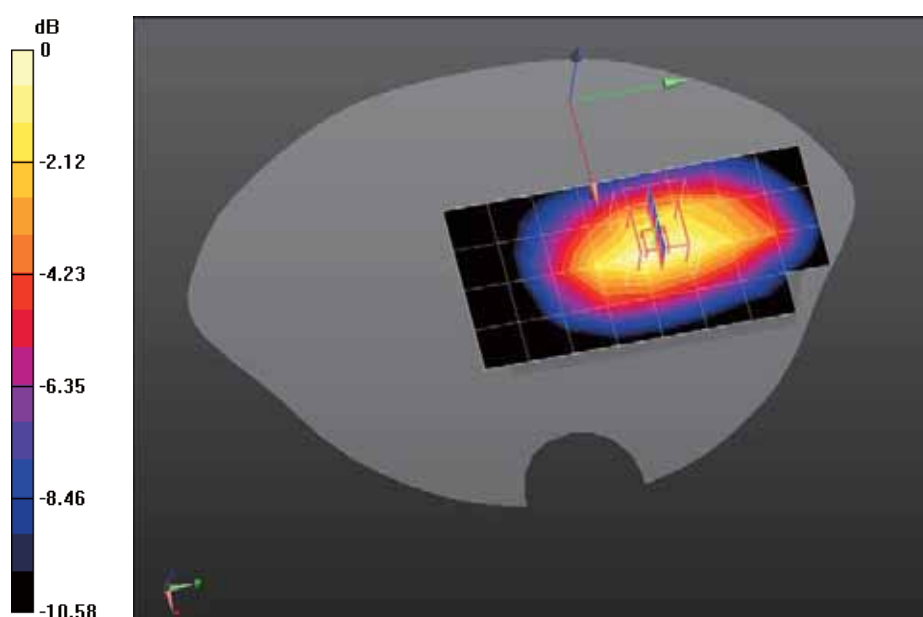
0 dB = 0.560mW/g = -5.04 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

PCS1900 Mid Touch-Left

DUT: Smart Phone ; Type: MP436

Communication System: Generic GSM; Communication System Band: PCS1900; Duty Cycle: 1:8.3;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; εr = 39.15; ρ = 1000

kg/m³ ; Phantom section: Left Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(8.16, 8.16, 8.16); Calibrated: 12/03/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012

- Phantom: SAM1; Type: SAM; Serial: TP1561

- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/PCS1900 Mid Touch-Left/Area Scan (6x10x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.216 mW/g

Configuration/PCS1900 Mid Touch-Left/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm, Reference Value = 5.034 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.3860

SAR(1 g) = 0.238 mW/g; SAR(10 g) = 0.141 mW/g Maximum value of SAR (measured) = 0.254 mW/g

0 dB = 0.250mW/g = -12.04 dB mW/g

Test Laboratory: QuieTek Lab

PCS1900 Mid Tilt-Left

DUT: Smart Phone ; Type: MP436

Communication System: Generic GSM; Communication System Band: PCS1900; Duty Cycle: 1:8.3;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; εr = 39.15; ρ = 1000 kg/m³ ; Phantom section: Left Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(8.16, 8.16, 8.16); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/PCS1900 Mid Tilt-Left/Area Scan (6x10x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.084 mW/g

Configuration/PCS1900 Mid Tilt-Left/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mmReference Value = 8.877 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.1680

SAR(1 g) = 0.101 mW/g; SAR(10 g) = 0.059 mW/g Maximum value of SAR (measured) = 0.111 mW/g
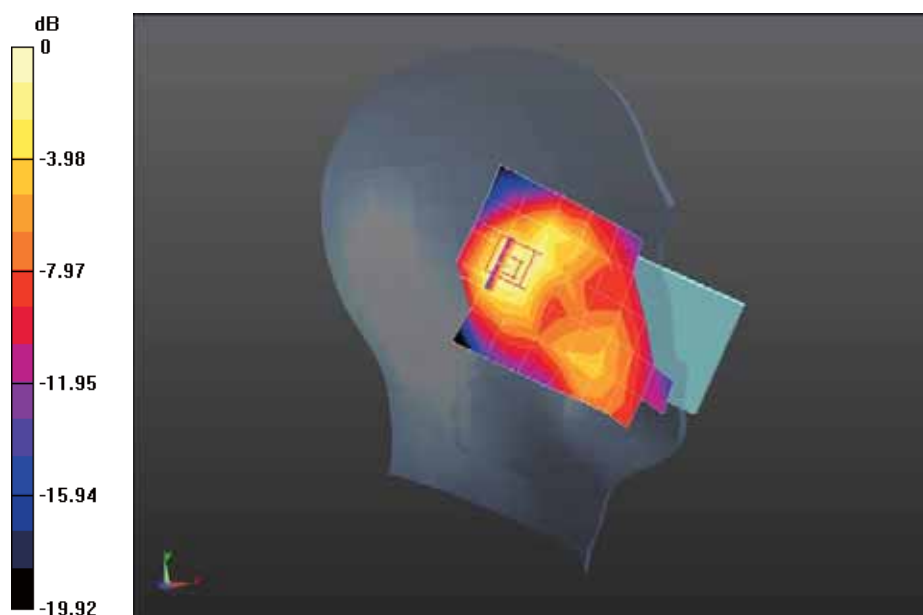
0 dB = 0.110mW/g = -19.17 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

PCS1900 Mid Touch-Right

DUT: Smart Phone ; Type: MP436

Communication System: Generic GSM; Communication System Band: PCS1900; Duty Cycle: 1:8.3;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; εr = 39.15; ρ = 1000

kg/m³ ; Phantom section: Right Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(8.16, 8.16, 8.16); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/PCS1900 Mid Touch-Right/Area Scan (6x10x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.123 mW/g

Configuration/PCS1900 Mid Touch-Right/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm, Reference Value = 5.759 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.1720

SAR(1 g) = 0.112 mW/g; SAR(10 g) = 0.072 mW/g Maximum value of SAR (measured) = 0.122 mW/g

0 dB = 0.120mW/g = -18.42 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

PCS1900 Mid Tilt-Right

DUT: Smart Phone ; Type: MP436

Communication System: Generic GSM; Communication System Band: PCS1900; Duty Cycle: 1:8.3;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; εr = 39.15; ρ = 1000

kg/m³ ; Phantom section: Right Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(8.16, 8.16, 8.16); Calibrated: 12/03/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012

- Phantom: SAM1; Type: SAM; Serial: TP1561

- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/PCS1900 Mid Tilt-Right/Area Scan (6x10x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.086 mW/g

Configuration/PCS1900 Mid Tilt-Right/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm, Reference Value = 9.179 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.1760

SAR(1 g) = 0.105 mW/g; SAR(10 g) = 0.059 mW/g Maximum value of SAR (measured) = 0.116 mW/g
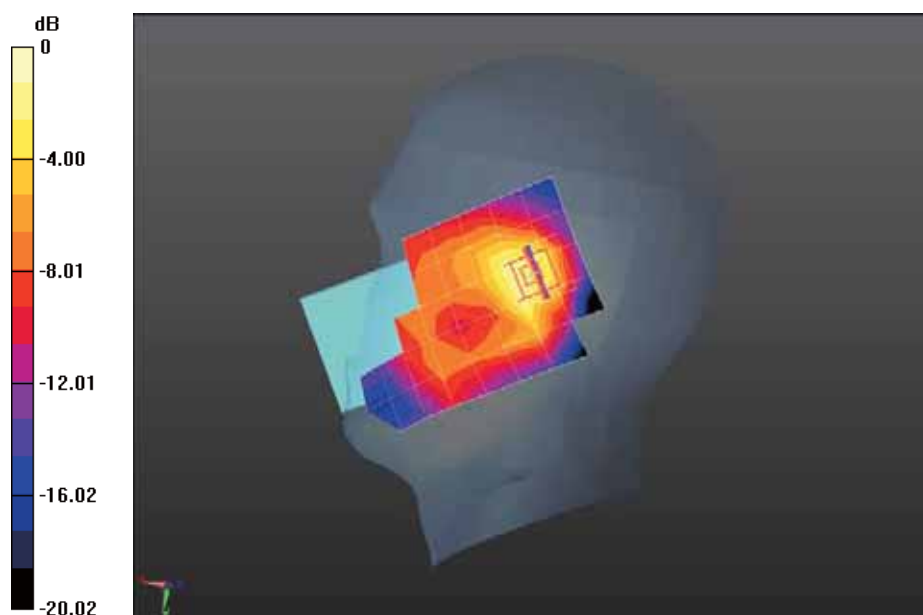
0 dB = 0.120mW/g = -18.42 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

PCS1900 Mid Body-Back

DUT: Smart Phone ; Type: MP436

Communication System: Generic GSM; Communication System Band: PCS1900; Duty Cycle: 1:8.3;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ε_r = 53.59; ρ = 1000 kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/PCS1900 Mid Body-Back/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.492 mW/g

Configuration/PCS1900 Mid Body-Back/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 9.054 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.9160

SAR(1 g) = 0.489 mW/g; SAR(10 g) = 0.257 mW/g Maximum value of SAR (measured) = 0.542 mW/g
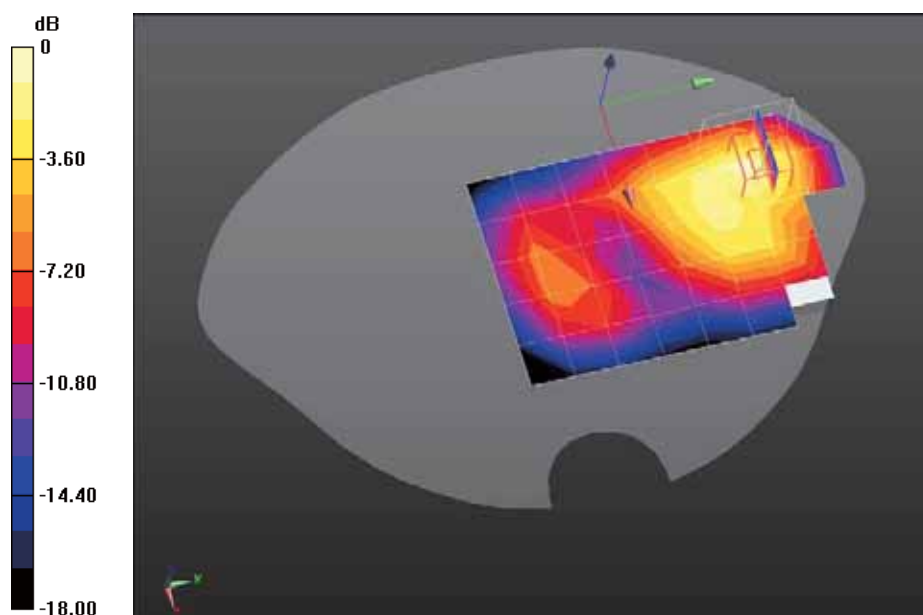
0 dB = 0.540mW/g = -5.35 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

GPRS1900 Mid Body-Back(2up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-2 Slot; Communication System Band: PCS1900; Duty Cycle: 1:4.2 ;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; εr = 53.59; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012

- Phantom: SAM2; Type: SAM; Serial: TP1562

- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GPRS1900 Mid Body-Back/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.815 mW/g

Configuration/GPRS1900 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm, Reference Value = 10.973 V/m; Power Drift = -0.02 dB
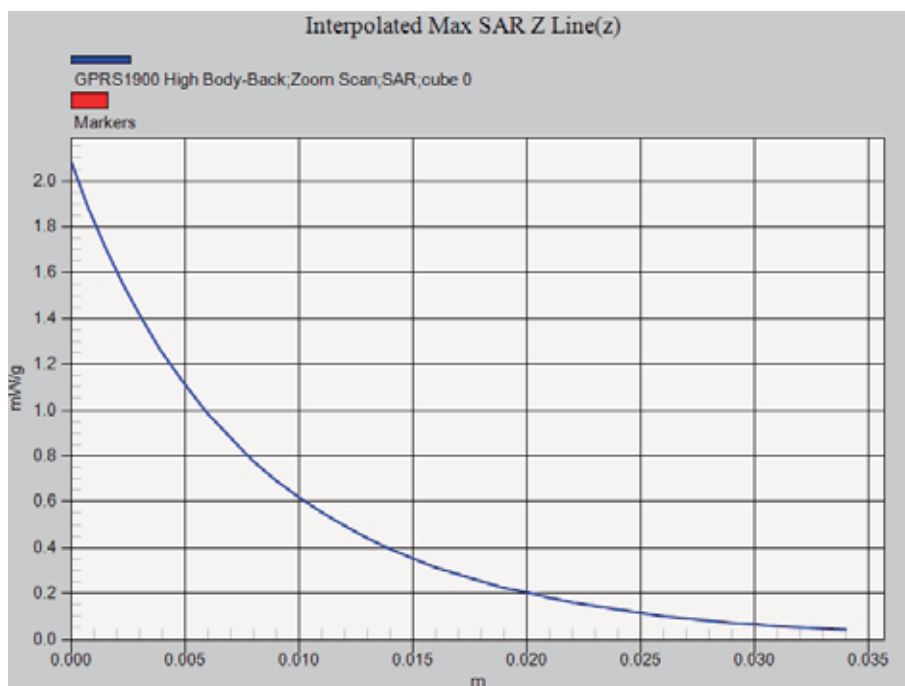
Peak SAR (extrapolated) = 1.3670

SAR(1 g) = 0.725 mW/g; SAR(10 g) = 0.378 mW/g Maximum value of SAR (measured) = 0.807 mW/g
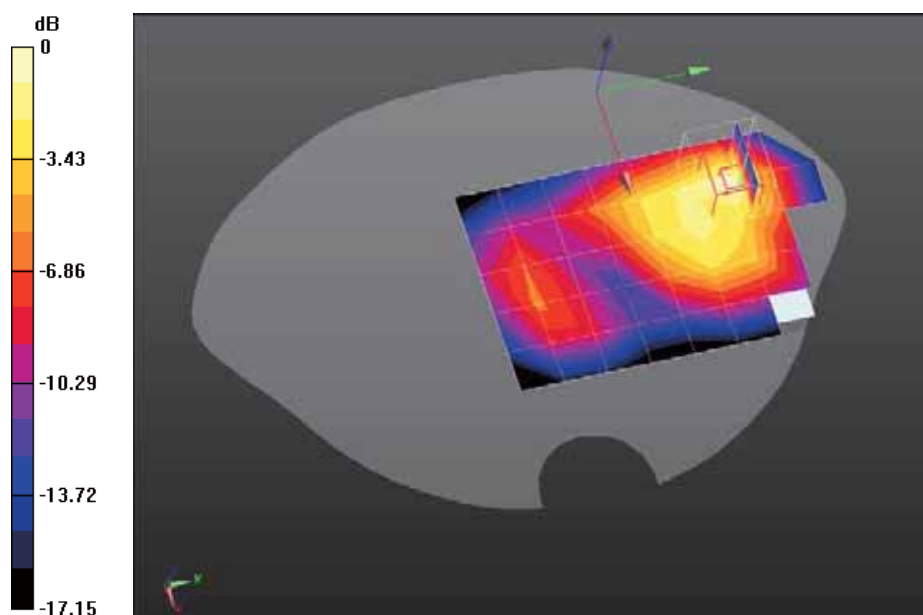
0 dB = 0.810mW/g = -1.83 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

GPRS1900 Mid Body-Back(3up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-3 Slot; Communication System Band: PCS 1900; Duty Cycle: 1:2.8 ; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; εr = 53.59; ρ = 1000 kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

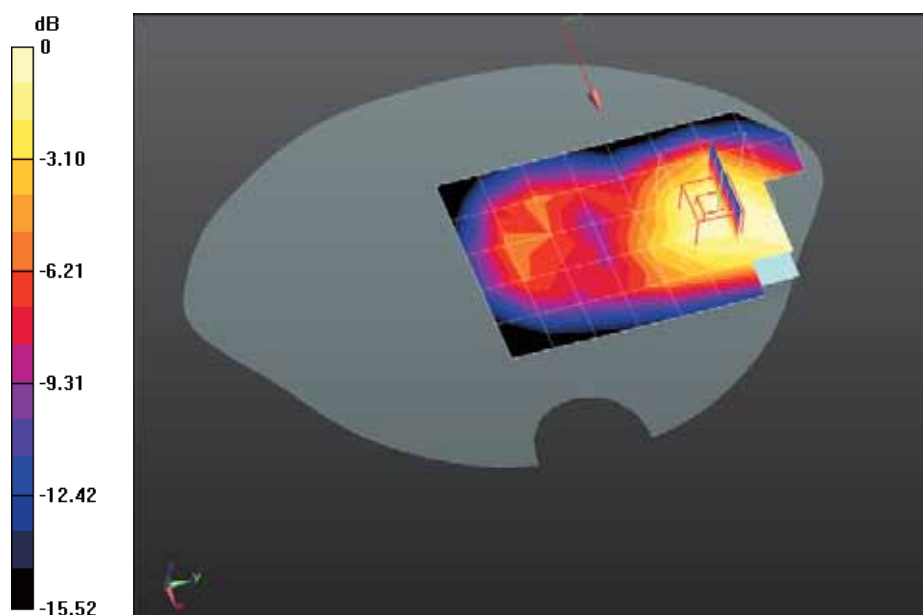**Configuration/GPRS1900 Mid Body-Back/Area Scan (6x9x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.793 mW/g

Configuration/GPRS1900 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 10.835 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.3510

SAR(1 g) = 0.708 mW/g; SAR(10 g) = 0.369 mW/g Maximum value of SAR (measured) = 0.792 mW/g
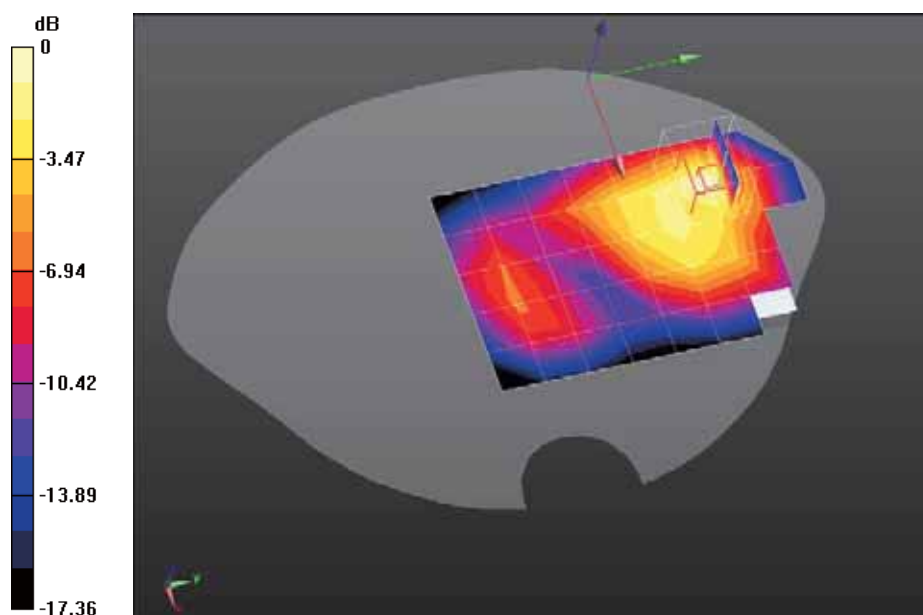
0 dB = 0.790mW/g = -2.05 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

GPRS1900 Low Body-Back(4up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: PCS 1900; Duty Cycle: 1:2.1 ; Frequency: 1850.2 MHz; Medium parameters used: f = 1850.2 MHz; σ = 1.5 mho/m; εr = 53.73; ρ = 1000 kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/GPRS1900 Low Body-Back/Area Scan (6x9x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.885 mW/g

Configuration/GPRS1900 Low Body-Back/Zoom Scan (6x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 14.593 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.4870

SAR(1 g) = 0.863 mW/g; SAR(10 g) = 0.542 mW/g Maximum value of SAR (measured) = 0.921 mW/g
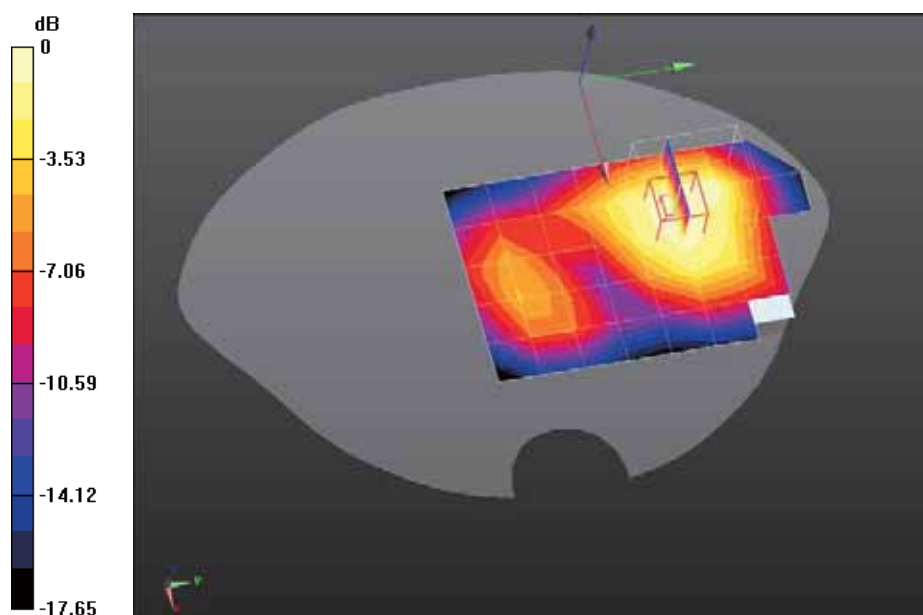
0 dB = 0.920mW/g = -0.72 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

GPRS1900 Mid Body-Back(4up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: PCS 1900; Duty Cycle: 1:2.1 ; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; εr = 53.59; ρ = 1000 kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GPRS1900 Mid Body-Back/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.977 mW/g

Configuration/GPRS1900 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 10.973 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.7450

SAR(1 g) = 0.923 mW/g; SAR(10 g) = 0.484 mW/g Maximum value of SAR (measured) = 1.018 mW/g
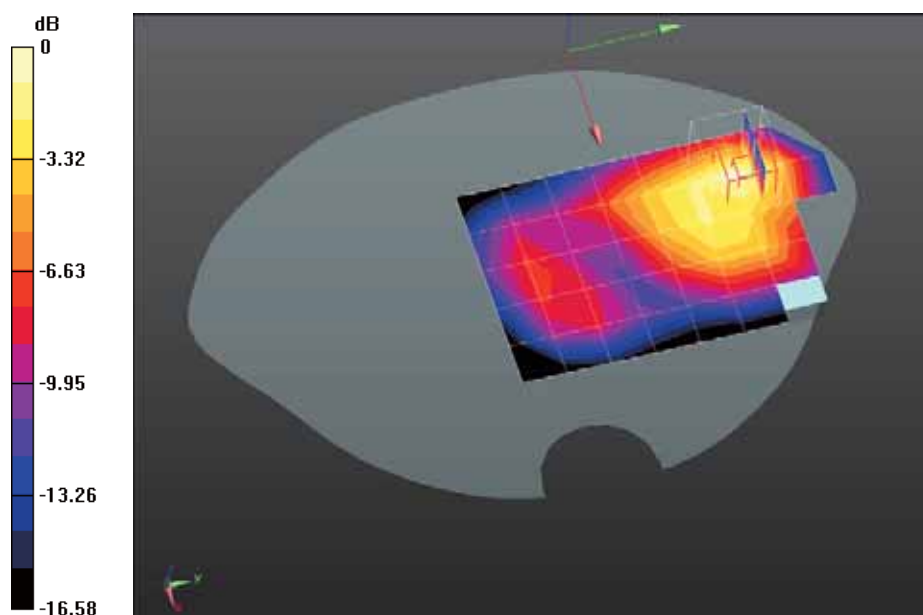
0 dB = 1.020mW/g = 0.17 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

GPRS1900 High Body-Back(4up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: PCS 1900; Duty Cycle:

1:2.1 ; Frequency: 1909.8 MHz; Medium parameters used: f = 1909.8 MHz; σ = 1.57 mho/m; εr = 53.44; ρ =

1000 kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

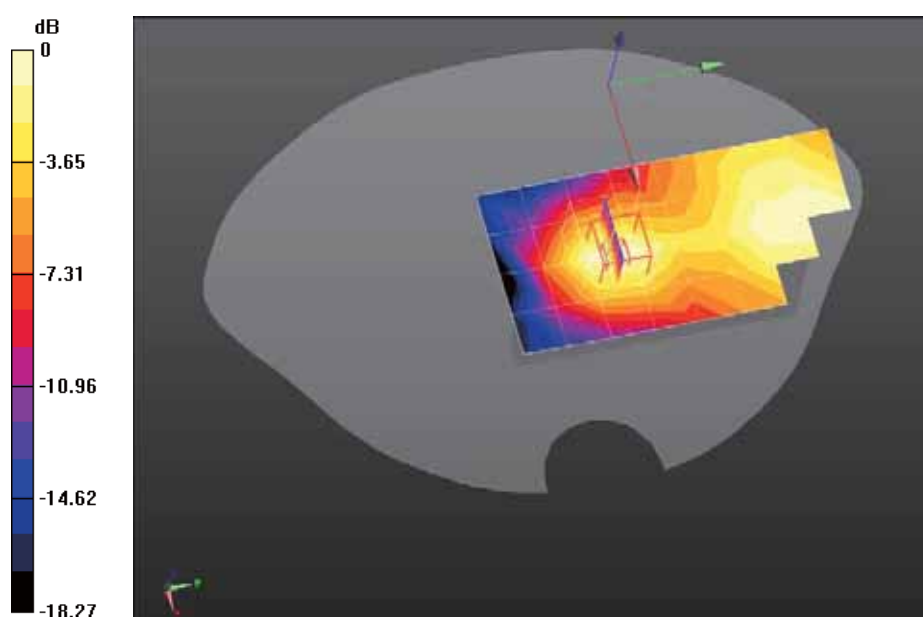**Configuration/GPRS1900 High Body-Back/Area Scan (6x9x1):** Measurement grid: dx=20mm, dy=20mm

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

Configuration/GPRS1900 High Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm, Reference Value = 9.412 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 2.0850

SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.548 mW/g Maximum value of SAR (measured) = 1.215 mW/g
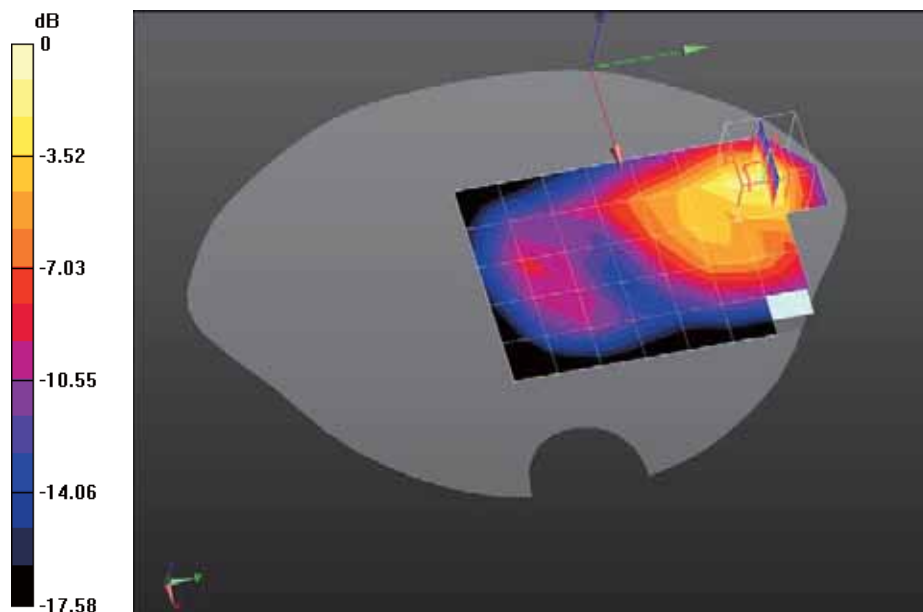
0 dB = 1.210mW/g = 1.66 dB mW/g

Z-Axis Plot

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

GPRS1900 Mid Body-Front(4up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: PCS 1900; Duty Cycle:

1:2.1 ; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; εr = 53.59; ρ =

1000 kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GPRS1900 Mid Body-Front/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.395 mW/g

Configuration/GPRS1900 Mid Body-Front/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm, Reference Value = 9.285 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.7220

SAR(1 g) = 0.420 mW/g; SAR(10 g) = 0.259 mW/g Maximum value of SAR (measured) = 0.448 mW/g

0 dB = 0.450mW/g = -6.94 dB mW/g

Test Laboratory: QuieTek Lab

GPRS1900 Mid Body-Back(4up)(with headset)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: PCS 1900; Duty Cycle:

1:2.1 ; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; εr = 53.59; ρ =

1000 kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GPRS1900 Mid Body-Back/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.821 mW/g

Configuration/GPRS1900 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm, Reference Value = 11.966 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.6690

SAR(1 g) = 0.897 mW/g; SAR(10 g) = 0.475 mW/g Maximum value of SAR (measured) = 0.970 mW/g
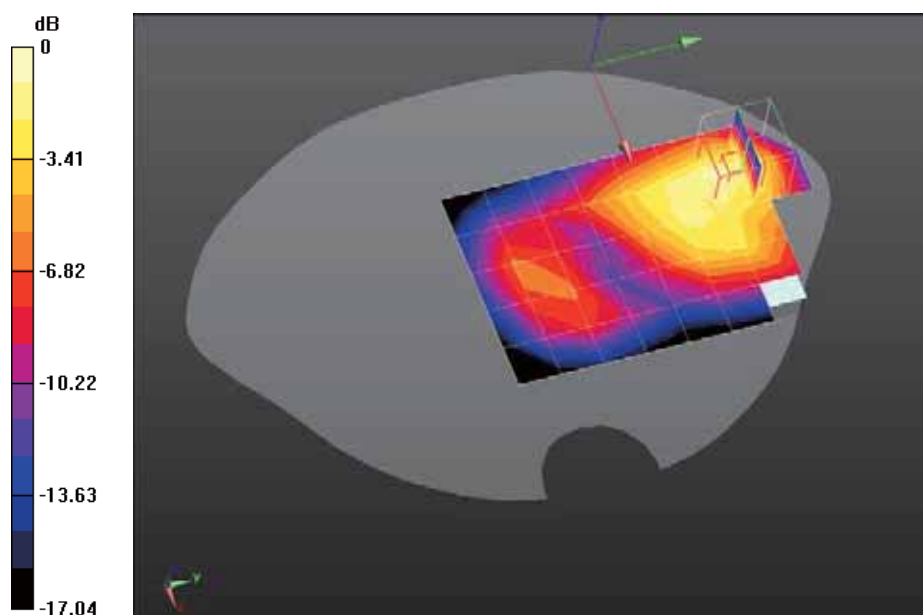
0 dB = 0.970mW/g = -0.26 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

GPRS1900 Mid Body-Bottom(4up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: PCS 1900; Duty Cycle: 1:2.1 ; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; εr = 53.59; ρ = 1000 kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/GPRS1900 Mid Body-Bottom/Area Scan (6x7x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.335 mW/g

Configuration/GPRS1900 Mid Body-Bottom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 17.067 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.8010

SAR(1 g) = 0.454 mW/g; SAR(10 g) = 0.247 mW/g Maximum value of SAR (measured) = 0.505 mW/g
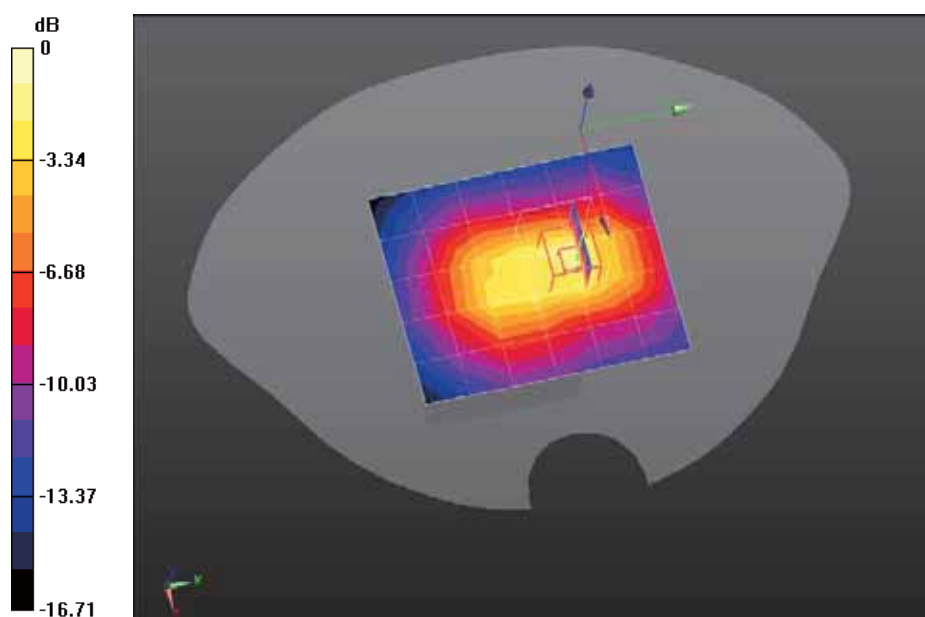
0 dB = 0.500mW/g = -6.02 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

GPRS1900 Mid Body-Right Side(4up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: PCS 1900; Duty Cycle:

1:2.1 ; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; εr = 53.59; ρ =

1000 kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GPRS1900 Mid Body-Right Side/Area Scan (5x9x1): Measurement grid: dx=20mm,

dy=20mm

Maximum value of SAR (measured) = 0.084 mW/g

Configuration/GPRS1900 Mid Body-Right Side/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm, Reference Value = 3.570 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.1450

SAR(1 g) = 0.086 mW/g; SAR(10 g) = 0.051 mW/g Maximum value of SAR (measured) = 0.093 mW/g

0 dB = 0.090mW/g = -20.92 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

GPRS1900 Mid Body-Left Side(4up)

DUT: Smart Phone ; Type: MP436

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: PCS 1900; Duty Cycle: 1:2.1 ; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; εr = 53.59; ρ = 1000 kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/GPRS1900 Mid Body-Left Side/Area Scan (5x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.278 mW/g

Configuration/GPRS1900 Mid Body-Left Side/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 7.438 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.4830

SAR(1 g) = 0.285 mW/g; SAR(10 g) = 0.163 mW/g Maximum value of SAR (measured) = 0.313 mW/g
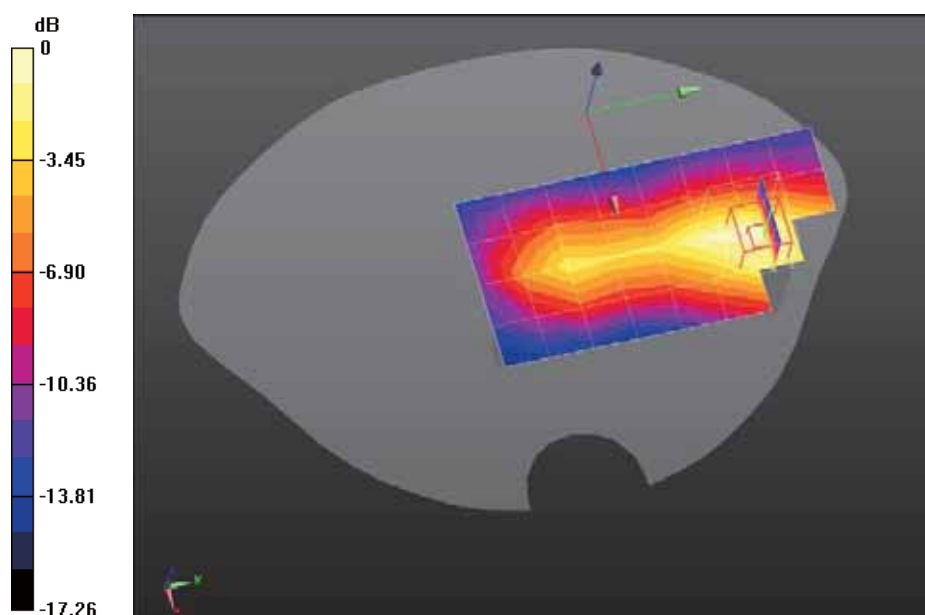
0 dB = 0.310mW/g = -10.17 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band II Mid Touch-Left

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band II UTRA/FDD; Duty Cycle: 1:1;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; εr = 39.15; ρ = 1000

kg/m³ ; Phantom section: Left Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(8.16, 8.16, 8.16); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/WCDMA Band II Mid Touch-Left/Area Scan (6x10x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.328 mW/g

Configuration/WCDMA Band II Mid Touch-Left/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 6.501 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.6490

SAR(1 g) = 0.397 mW/g; SAR(10 g) = 0.234 mW/g Maximum value of SAR (measured) = 0.415 mW/g
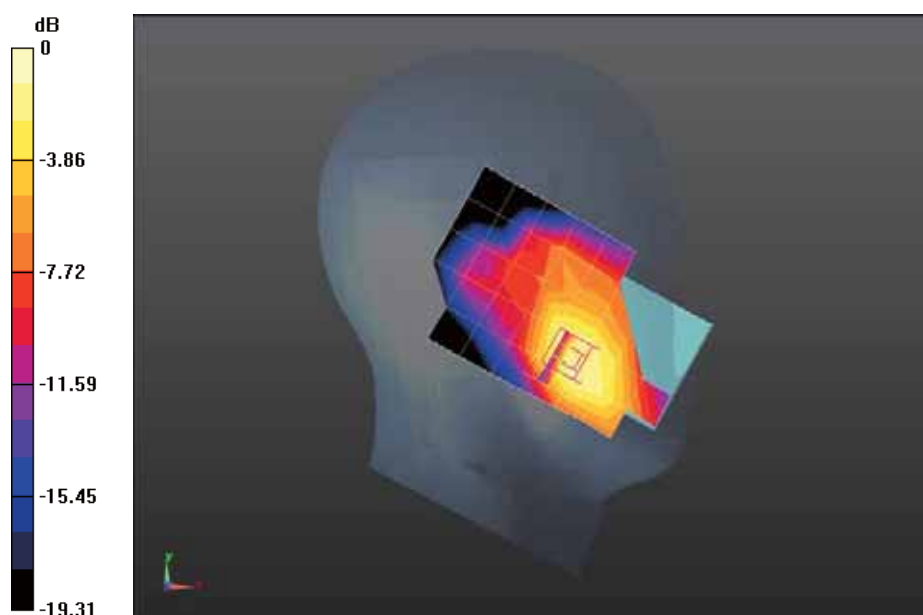
0 dB = 0.410mW/g = -7.74 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band II Mid Tilt-Left

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band II UTRA/FDD; Duty Cycle: 1:1;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; εr = 39.15; ρ = 1000

kg/m³ ; Phantom section: Left Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(8.16, 8.16, 8.16); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/WCDMA Band II Mid Tilt-Left/Area Scan (6x10x1):** Measurement grid: dx=20mm,

dy=20mm

Maximum value of SAR (measured) = 0.116 mW/g

Configuration/WCDMA Band II Mid Tilt-Left/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm, Reference Value = 10.874 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.2540

SAR(1 g) = 0.149 mW/g; SAR(10 g) = 0.084 mW/g Maximum value of SAR (measured) = 0.164 mW/g
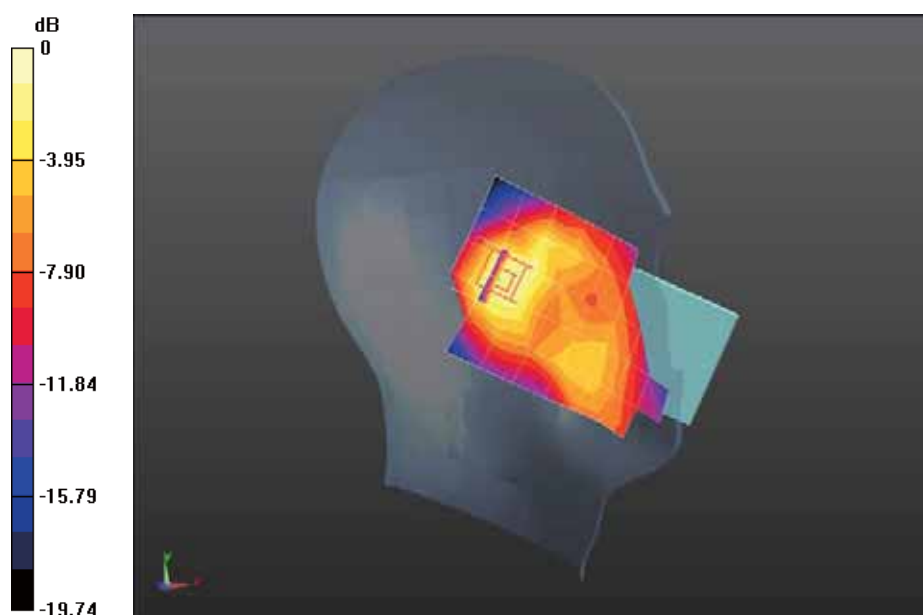
0 dB = 0.160mW/g = -15.92 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band II Mid Touch-Right

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band II UTRA/FDD; Duty Cycle: 1:1;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; εr = 39.15; ρ = 1000

kg/m³ ; Phantom section: Right Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(8.16, 8.16, 8.16); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/WCDMA Band II Mid Touch-Right/Area Scan (6x10x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.196 mW/g

Configuration/WCDMA Band II Mid Touch-Right/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 6.842 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.2720

SAR(1 g) = 0.176 mW/g; SAR(10 g) = 0.112 mW/g Maximum value of SAR (measured) = 0.189 mW/g

0 dB = 0.190mW/g = -14.42 dB mW/g

QuieTek

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band II Mid Tilt-Right

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band II UTRA/FDD; Duty Cycle: 1:1;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; εr = 39.15; ρ = 1000

kg/m³ ; Phantom section: Right Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(8.16, 8.16, 8.16); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/WCDMA Band II Mid Tilt-Right/Area Scan (6x10x1): Measurement grid: dx=20mm,

dy=20mm

Maximum value of SAR (measured) = 0.129 mW/g

Configuration/WCDMA Band II Mid Tilt-Right/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,

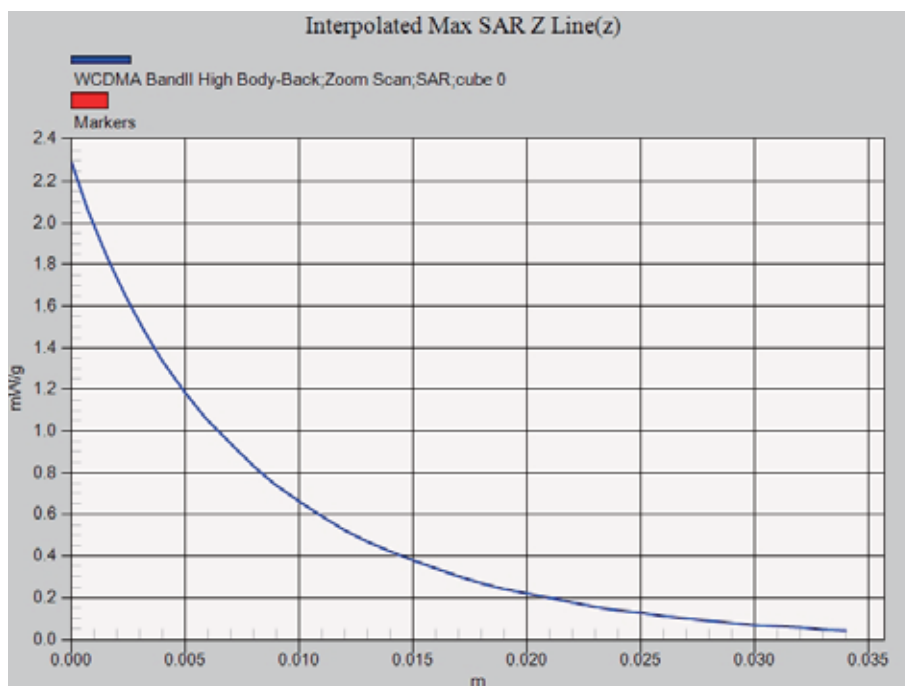dy=8mm, dz=5mm, Reference Value = 10.907 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.2650

SAR(1 g) = 0.155 mW/g; SAR(10 g) = 0.086 mW/g Maximum value of SAR (measured) = 0.173 mW/g
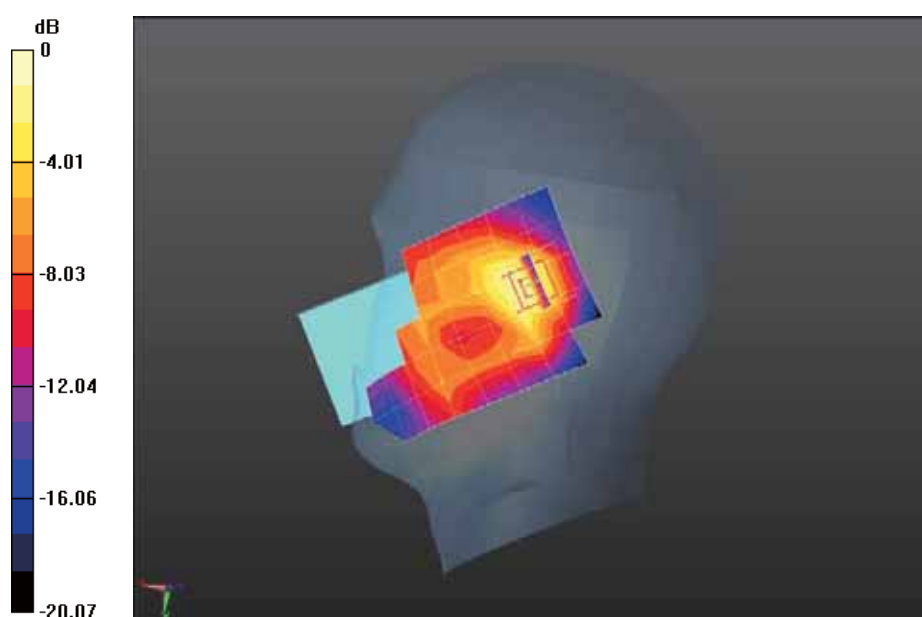
0 dB = 0.170mW/g = -15.39 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band II Low Body-Back

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band II UTRA/FDD; Duty Cycle: 1:1;

Frequency: 1852.4 MHz; Medium parameters used: f = 1852.4 MHz; σ = 1.5 mho/m; εr = 53.71; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012

- Phantom: SAM2; Type: SAM; Serial: TP1562

- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/WCDMA Band II Low Body-Back/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.911 mW/g

Configuration/WCDMA Band II Low Body-Back/Zoom Scan (6x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 12.929 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.6600

SAR(1 g) = 0.913 mW/g; SAR(10 g) = 0.568 mW/g Maximum value of SAR (measured) = 1.004 mW/g
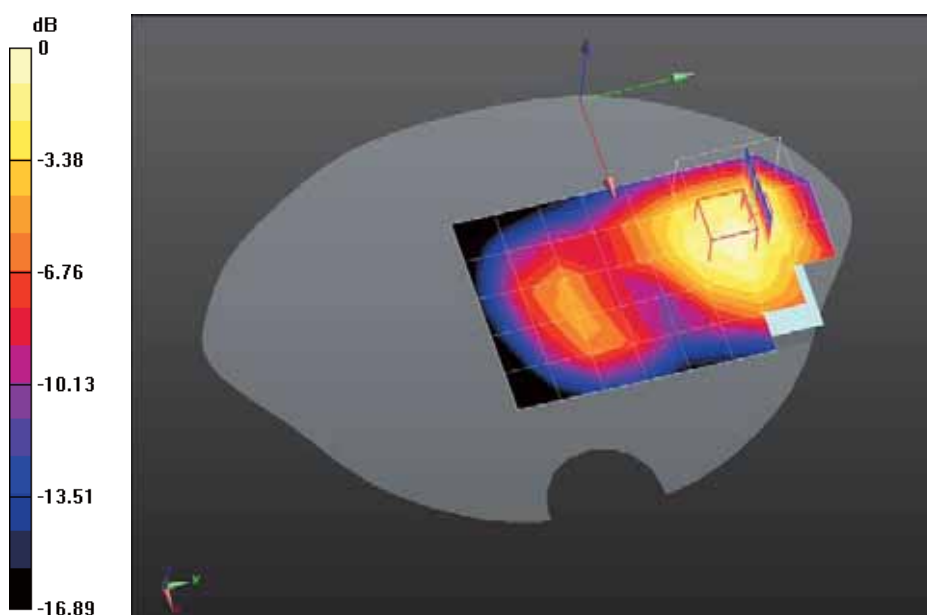
0 dB = 1.000mW/g = 0 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band II Mid Body-Back

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band II UTRA/FDD; Duty Cycle: 1:1;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; εr = 53.59; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/WCDMA Band II Mid Body-Back/Area Scan (6x9x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.756 mW/g

Configuration/WCDMA Band II Mid Body-Back/Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 11.585 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.8930

SAR(1 g) = 1.01 mW/g; SAR(10 g) = 0.521 mW/g Maximum value of SAR (measured) = 1.046 mW/g
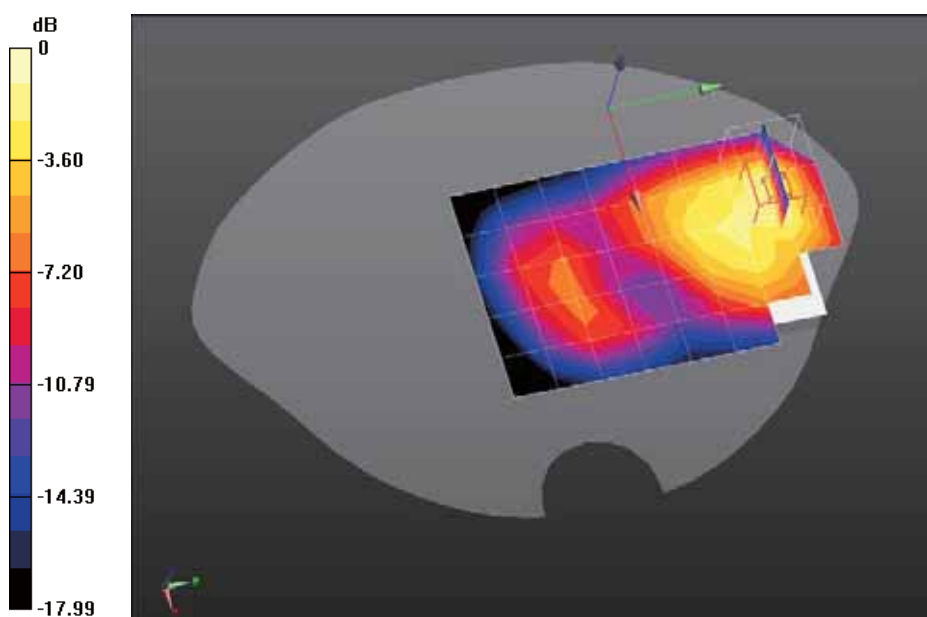
0 dB = 1.050mW/g = 0.42 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band II High Body-Back

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band II UTRA/FDD; Duty Cycle: 1:1;

Frequency: 1907.6 MHz; Medium parameters used: f = 1907.6 MHz; σ = 1.57 mho/m; εr = 53.47; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012

- Phantom: SAM2; Type: SAM; Serial: TP1562

- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/WCDMA Band II High Body-Back/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.836 mW/g

Configuration/WCDMA Band II High Body-Back/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 9.269 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 2.2960

SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.576 mW/g Maximum value of SAR (measured) = 1.195 mW/g
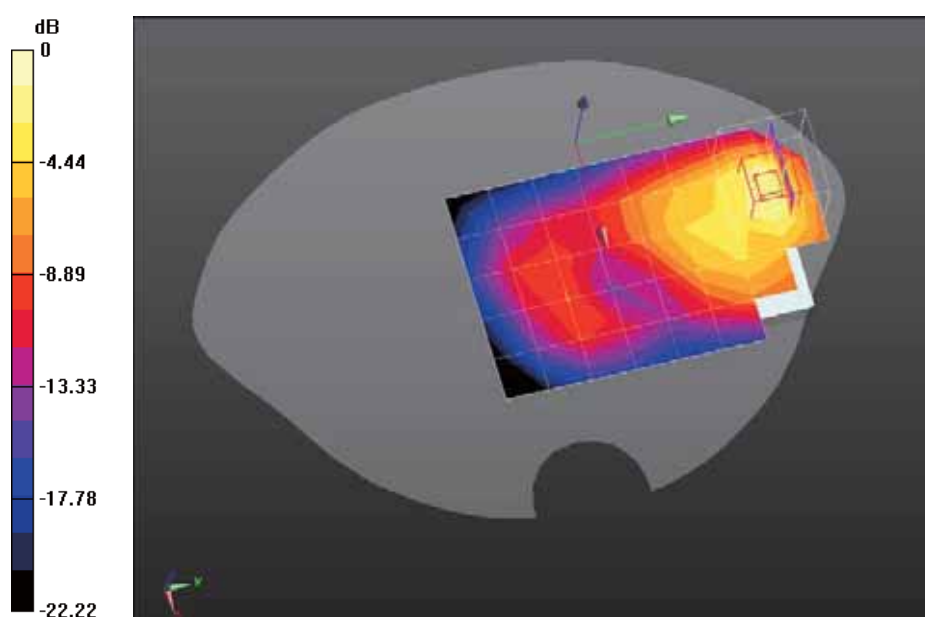
0 dB = 1.200mW/g = 1.58 dB mW/g

Z-Axis Plot

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band II Mid Body-Front

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band II UTRA/FDD; Duty Cycle: 1:1;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; εr = 53.59; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/WCDMA Band II Mid Body-Front/Area Scan (6x9x1): Measurement grid: dx=20mm,

dy=20mm

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

Configuration/WCDMA Band II Mid Body-Front/Zoom Scan (6x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm, Reference Value = 7.121 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.6930

SAR(1 g) = 0.398 mW/g; SAR(10 g) = 0.247 mW/g Maximum value of SAR (measured) = 0.433 mW/g
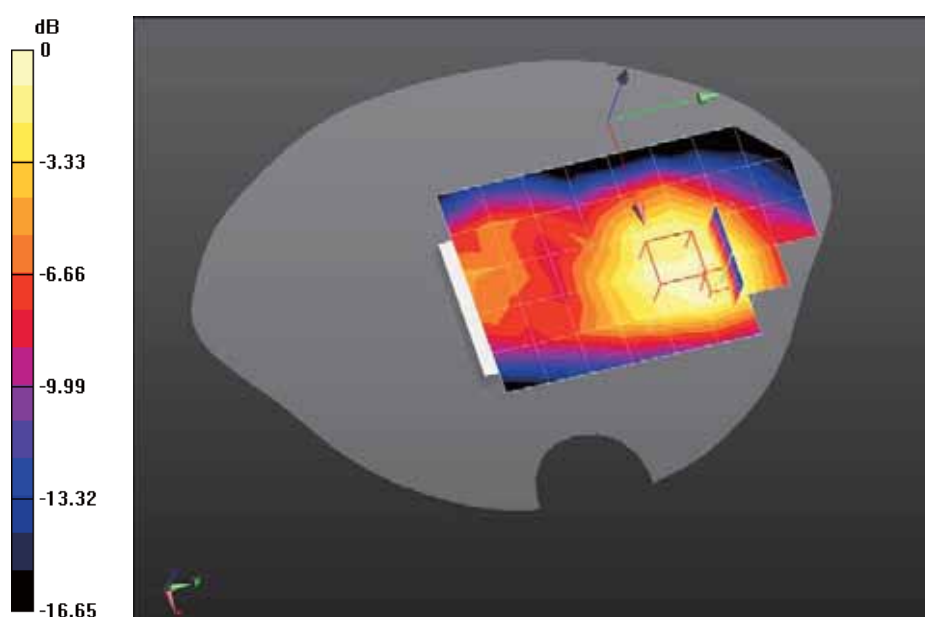
0 dB = 0.430mW/g = -7.33 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band II Mid Body-Back(with headset)

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band II UTRA/FDD; Duty Cycle: 1:1;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; εr = 53.59; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

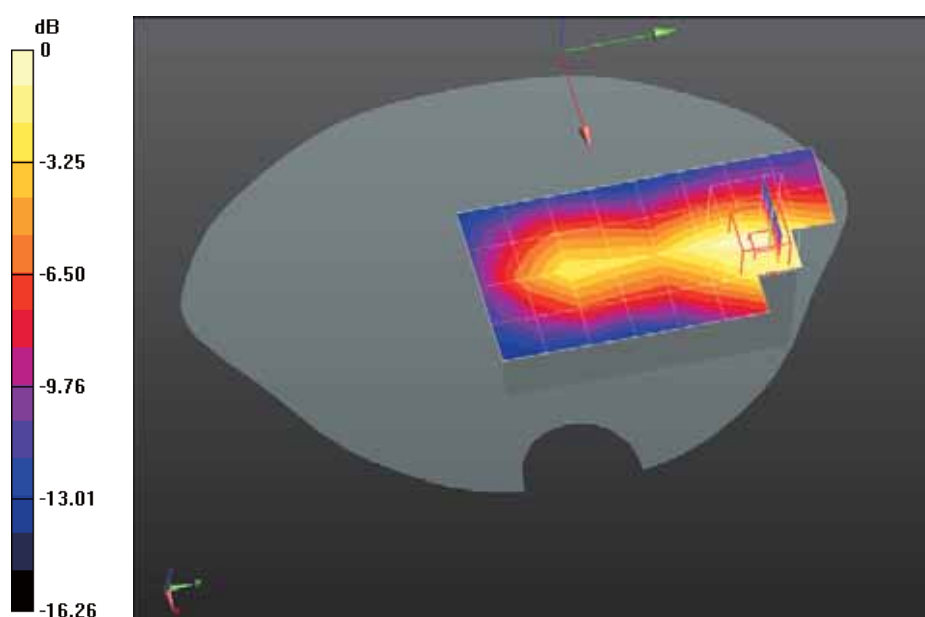**Configuration/WCDMA Band II Mid Body-Back/Area Scan (6x9x1):** Measurement grid: dx=20mm,

dy=20mm

Maximum value of SAR (measured) = 0.709 mW/g

Configuration/WCDMA Band II Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm, Reference Value = 7.635 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.8440

SAR(1 g) = 0.971 mW/g; SAR(10 g) = 0.503 mW/g Maximum value of SAR (measured) = 1.037 mW/g
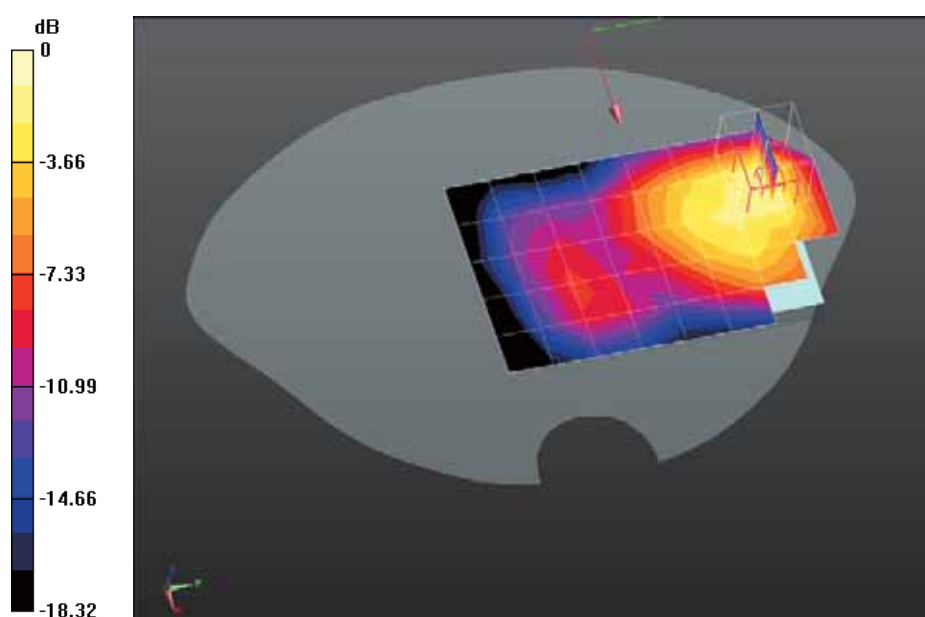
0 dB = 1.040mW/g = 0.34 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band II Mid Body-Bottom

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band II UTRA/FDD; Duty Cycle: 1:1;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; εr = 53.59; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/WCDMA Band II Mid Body-Bottom/Area Scan (6x7x1): Measurement grid: dx=20mm,
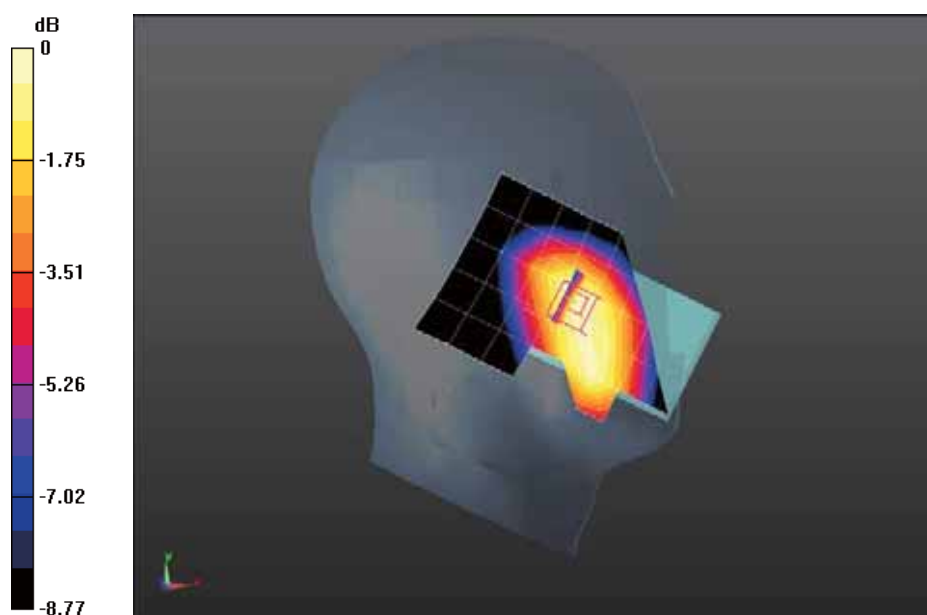
dy=20mm

Maximum value of SAR (measured) = 0.389 mW/g

Configuration/WCDMA Band II Mid Body-Bottom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm, Reference Value = 18.440 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.9200

SAR(1 g) = 0.516 mW/g; SAR(10 g) = 0.280 mW/g Maximum value of SAR (measured) = 0.566 mW/g
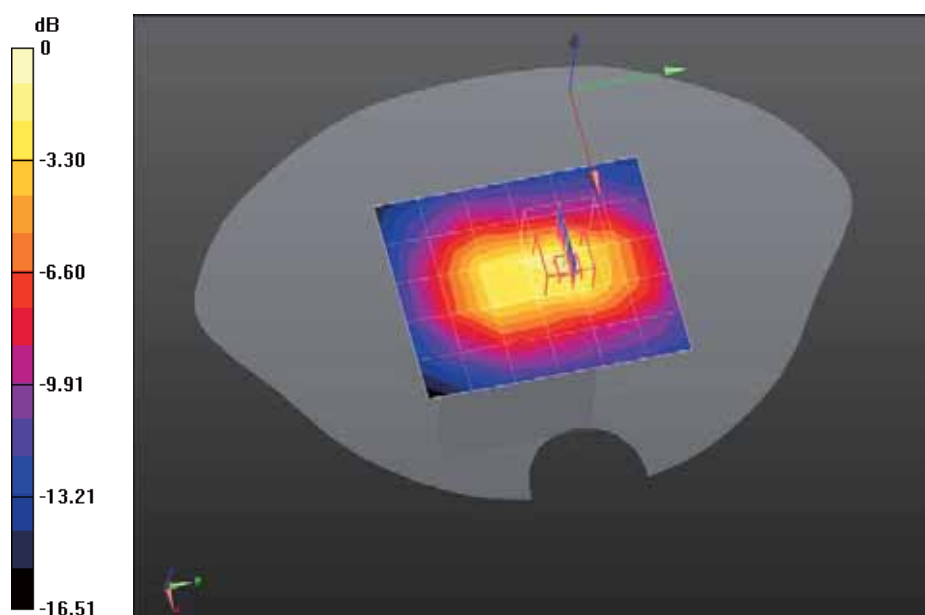
0 dB = 0.570mW/g = -4.88 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band II Mid Body-Right Side

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band II UTRA/FDD; Duty Cycle: 1:1;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; εr = 53.59; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/WCDMA Band II Mid Body-Right Side/Area Scan (5x9x1): Measurement grid: dx=20mm,

dy=20mm

Maximum value of SAR (measured) = 0.075 mW/g

Configuration/WCDMA Band II Mid Body-Right Side/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm, Reference Value = 5.675 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.1150

SAR(1 g) = 0.070 mW/g; SAR(10 g) = 0.044 mW/g Maximum value of SAR (measured) = 0.074 mW/g
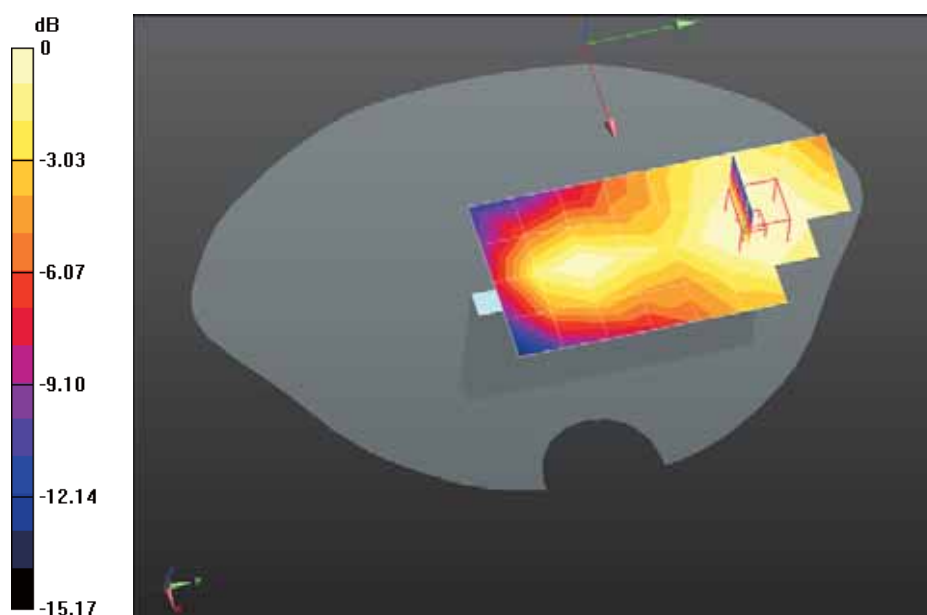
0 dB = 0.070mW/g = -23.10 dB mW/g

Date/Time: 16-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band II Mid Body-Left Side

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band II UTRA/FDD; Duty Cycle: 1:1;

Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; εr = 53.59; ρ = 1000

kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/WCDMA Band II Mid Body-Left Side/Area Scan (5x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.232 mW/g

Configuration/WCDMA Band II Mid Body-Left Side/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 6.828 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.3980

SAR(1 g) = 0.238 mW/g; SAR(10 g) = 0.138 mW/g Maximum value of SAR (measured) = 0.254 mW/g

0 dB = 0.250mW/g = -12.04 dB mW/g

![QuieTek logo]

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band V Mid Touch-Left

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band V, UTRA/FDD (824.0-849.0MHz);

Duty Cycle: 1:1; Frequency: 836 MHz; Medium parameters used: f = 836 MHz; σ = 0.89 mho/m; εr = 42.77;

ρ = 1000 kg/m³ ; Phantom section: Left Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.18, 9.18, 9.18); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/WCDMA Band V Mid Touch-Left/Area Scan (6x9x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.167 mW/g

Configuration/WCDMA Band V Mid Touch-Left/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 5.418 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.2070

SAR(1 g) = 0.170 mW/g; SAR(10 g) = 0.128 mW/g Maximum value of SAR (measured) = 0.179 mW/g

0 dB = 0.180mW/g = -14.89 dB mW/g

Test Laboratory: QuieTek Lab

WCDMA Band V Mid Tilt-Left

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band V, UTRA/FDD (824.0-849.0MHz);

Duty Cycle: 1:1; Frequency: 836 MHz; Medium parameters used: f = 836 MHz; σ = 0.89 mho/m; εr = 42.77;

ρ = 1000 kg/m³ ; Phantom section: Left Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.18, 9.18, 9.18); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)
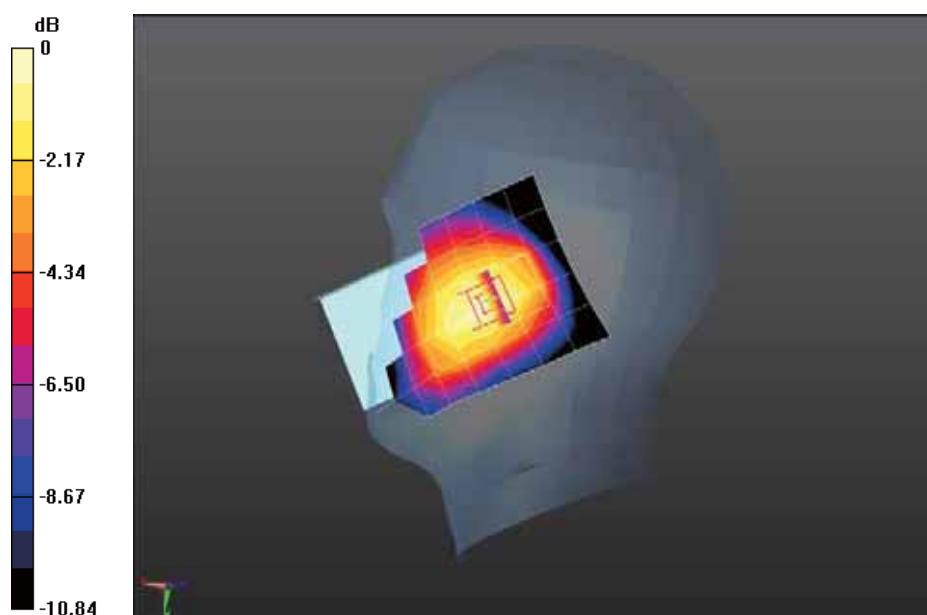
Configuration/WCDMA Band V Mid Tilt-Left/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.141 mW/g

Configuration/WCDMA Band V Mid Tilt-Left/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 8.200 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.1780

SAR(1 g) = 0.140 mW/g; SAR(10 g) = 0.105 mW/g Maximum value of SAR (measured) = 0.146 mW/g
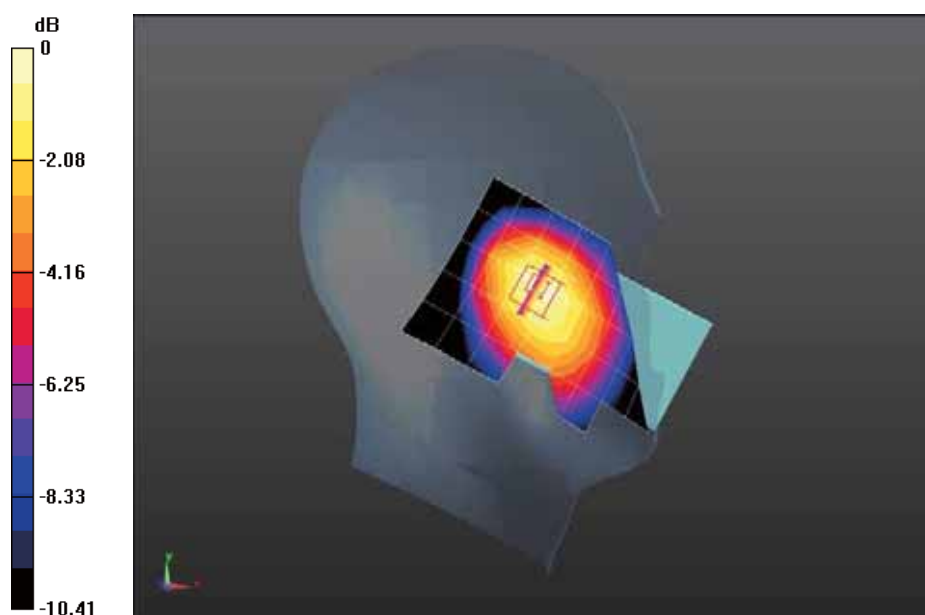
0 dB = 0.150mW/g = -16.48 dB mW/g

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band V Mid Touch-Right

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band V, UTRA/FDD (824.0-849.0MHz);

Duty Cycle: 1:1; Frequency: 836 MHz; Medium parameters used: f = 836 MHz; σ = 0.89 mho/m; εr = 42.77;

ρ = 1000 kg/m³ ; Phantom section: Right Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.18, 9.18, 9.18); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/WCDMA Band V Mid Touch-Right/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.169 mW/g

Configuration/WCDMA Band V Mid Touch-Right/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 5.657 V/m; Power Drift = -0.10 dB
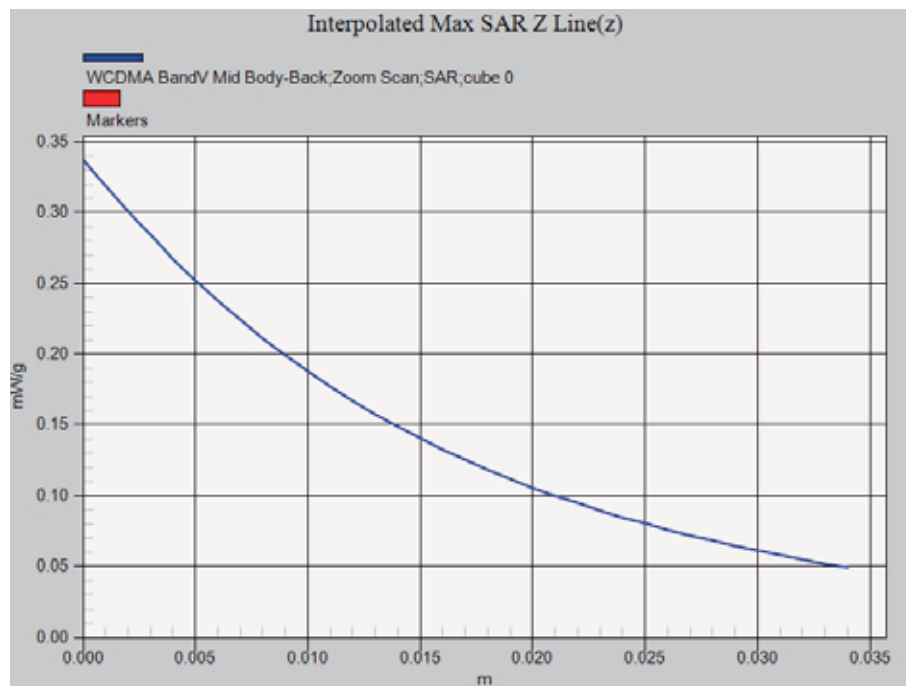
Peak SAR (extrapolated) = 0.2080

SAR(1 g) = 0.173 mW/g; SAR(10 g) = 0.134 mW/g Maximum value of SAR (measured) = 0.180 mW/g
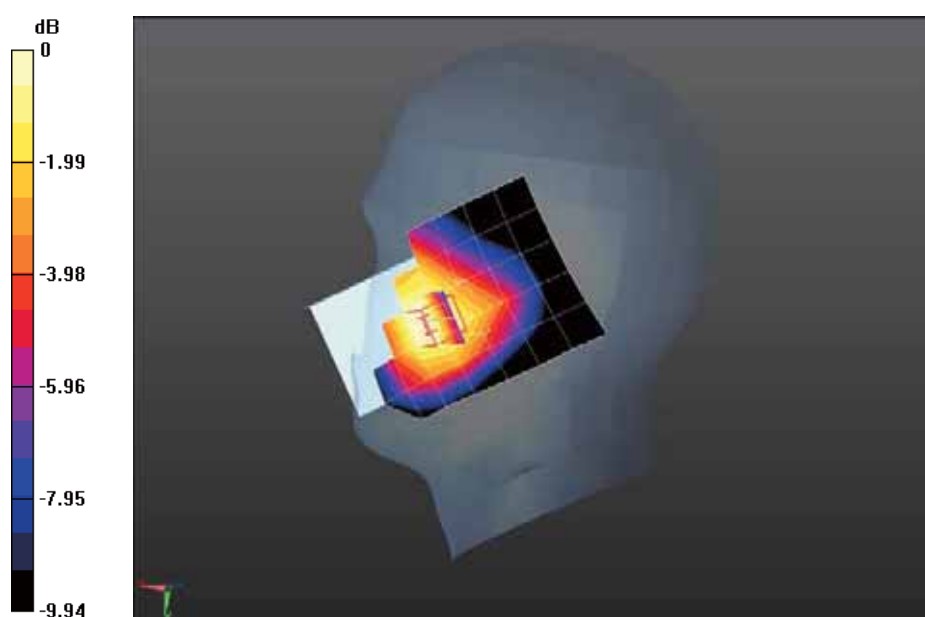
0 dB = 0.180mW/g = -14.89 dB mW/g

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band V Mid Tilt-Right

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band V, UTRA/FDD (824.0-849.0MHz);

Duty Cycle: 1:1; Frequency: 836 MHz; Medium parameters used: f = 836 MHz; σ = 0.89 mho/m; εr = 42.77;

ρ = 1000 kg/m³ ; Phantom section: Right Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.18, 9.18, 9.18); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/WCDMA Band V Mid Tilt-Right/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm
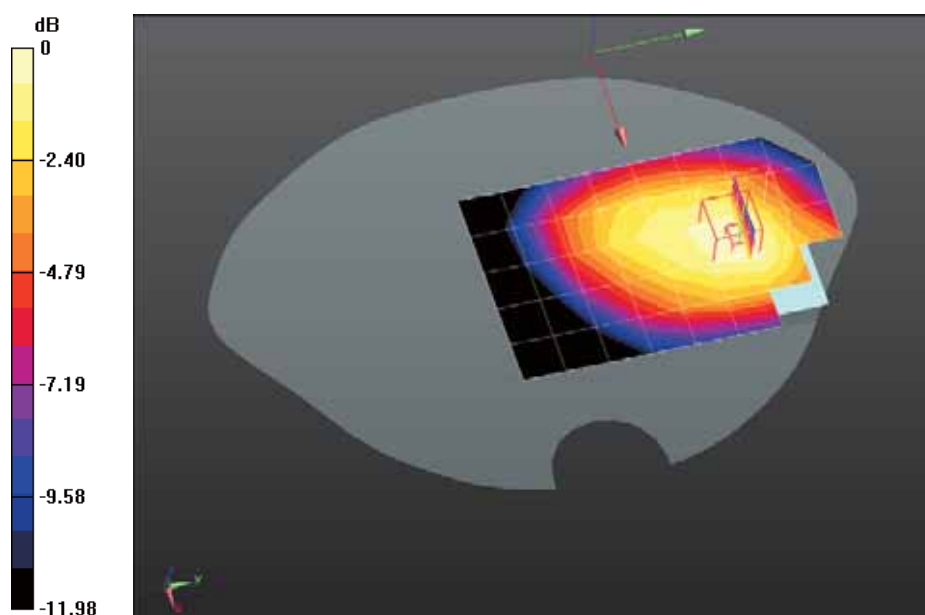
Maximum value of SAR (measured) = 0.133 mW/g

Configuration/WCDMA Band V Mid Tilt-Right/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 9.008 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.1690

SAR(1 g) = 0.131 mW/g; SAR(10 g) = 0.098 mW/g Maximum value of SAR (measured) = 0.139 mW/g

0 dB = 0.140mW/g = -17.08 dB mW/g

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band V Mid Body-Back

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band V UTRA/FDD; Duty Cycle: 1:1;

Frequency: 836 MHz; Medium parameters used: f = 836 MHz; σ = 0.96 mho/m; εr = 54.53; ρ = 1000 kg/m³ ;

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

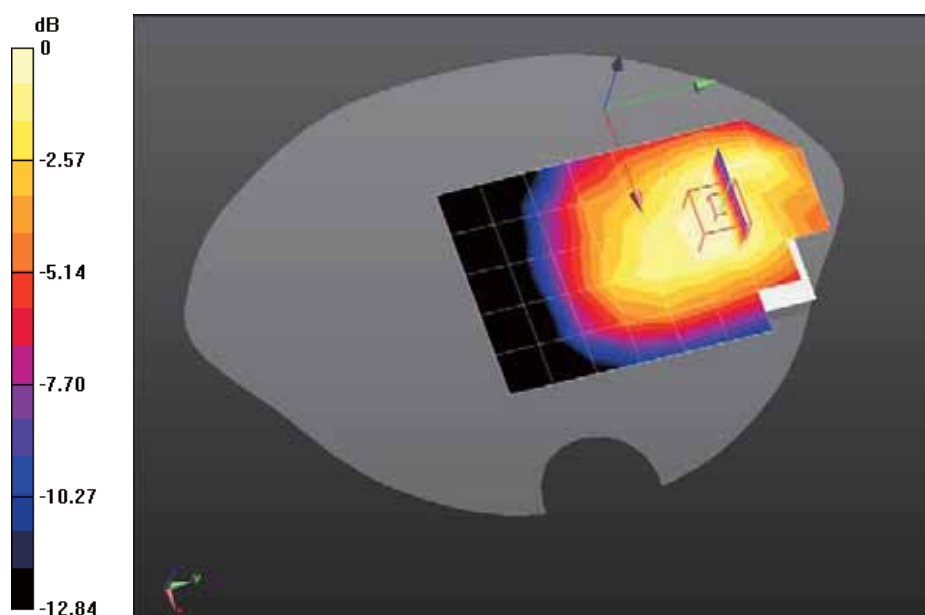**Configuration/WCDMA Band V Mid Body-Back/Area Scan (6x9x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.270 mW/g

Configuration/WCDMA Band V Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 5.617 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.3380

SAR(1 g) = 0.255 mW/g; SAR(10 g) = 0.188 mW/g Maximum value of SAR (measured) = 0.267 mW/g
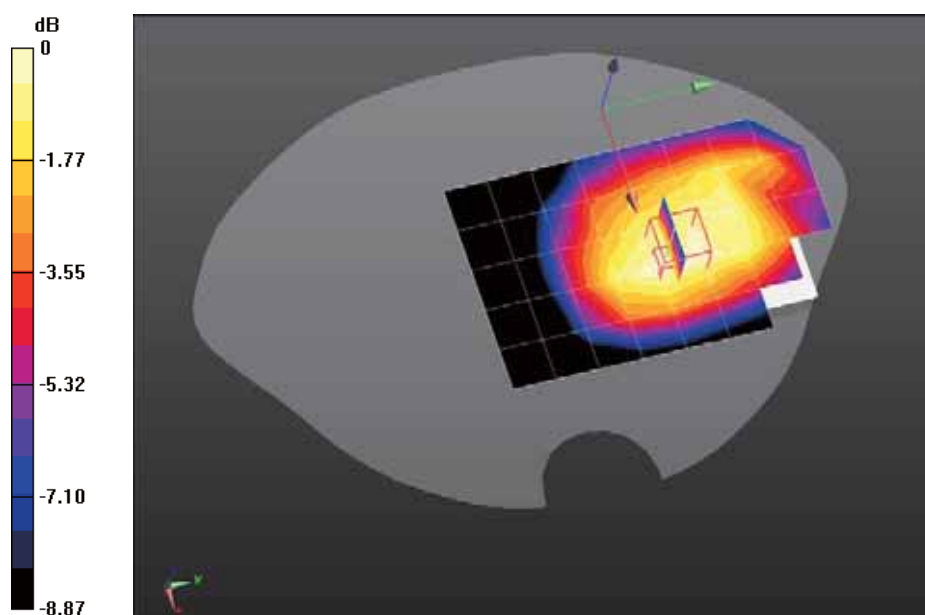
0 dB = 0.270mW/g = -11.37 dB mW/g

Z-Axis Plot

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band V Mid Body-Front

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band V UTRA/FDD; Duty Cycle: 1:1;

Frequency: 836 MHz; Medium parameters used: f = 836 MHz; σ = 0.96 mho/m; εr = 54.53; ρ = 1000 kg/m³ ;

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012

- Phantom: SAM1; Type: SAM; Serial: TP1561

- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

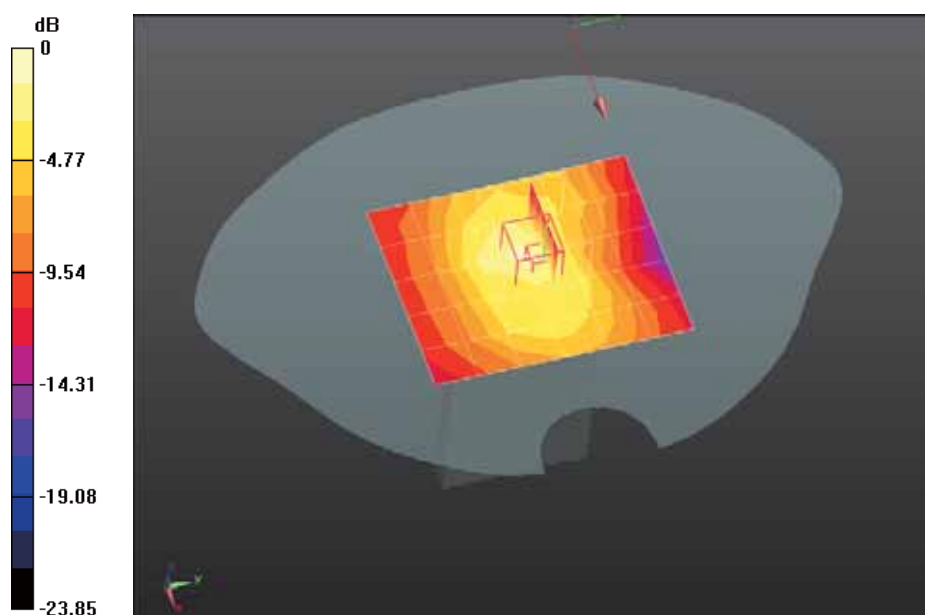**Configuration/WCDMA Band V Mid Body-Front/Area Scan (6x9x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.243 mW/g

Configuration/WCDMA Band V Mid Body-Front/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 5.200 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.3290

SAR(1 g) = 0.244 mW/g; SAR(10 g) = 0.177 mW/g Maximum value of SAR (measured) = 0.258 mW/g

0 dB = 0.260mW/g = -11.70 dB mW/g

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band V Mid Body-Back(with headset)

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band V UTRA/FDD; Duty Cycle: 1:1;

Frequency: 836 MHz; Medium parameters used: f = 836 MHz; σ = 0.96 mho/m; εr = 54.53; ρ = 1000 kg/m³ ;

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/WCDMA Band V Mid Body-Back/Area Scan (6x9x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.266 mW/g

Configuration/WCDMA Band V Mid Body-Back/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 3.537 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.3960

SAR(1 g) = 0.249 mW/g; SAR(10 g) = 0.176 mW/g Maximum value of SAR (measured) = 0.264 mW/g

0 dB = 0.260mW/g = -11.70 dB mW/g

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band V Mid Body-Bottom

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band V UTRA/FDD; Duty Cycle: 1:1;

Frequency: 836 MHz; Medium parameters used: f = 836 MHz; σ = 0.96 mho/m; εr = 54.53; ρ = 1000 kg/m³ ;

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/WCDMA Band V Mid Body-Bottom/Area Scan (6x7x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.050 mW/g

Configuration/WCDMA Band V Mid Body-Bottom/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 6.996 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.0880

SAR(1 g) = 0.051 mW/g; SAR(10 g) = 0.030 mW/g Maximum value of SAR (measured) = 0.058 mW/g

0 dB = 0.060mW/g = -24.44 dB mW/g

Test Laboratory: QuieTek Lab

WCDMA Band V Mid Body-Right Side

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band V UTRA/FDD; Duty Cycle: 1:1;

Frequency: 836 MHz; Medium parameters used: f = 836 MHz; σ = 0.96 mho/m; εr = 54.53; ρ = 1000 kg/m³ ;

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012

- Phantom: SAM1; Type: SAM; Serial: TP1561

- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/WCDMA Band V Mid Body-Right Side/Area Scan (5x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.223 mW/g

Configuration/WCDMA Band V Mid Body-Right Side/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 5.861 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.2960

SAR(1 g) = 0.209 mW/g; SAR(10 g) = 0.144 mW/g Maximum value of SAR (measured) = 0.222 mW/g
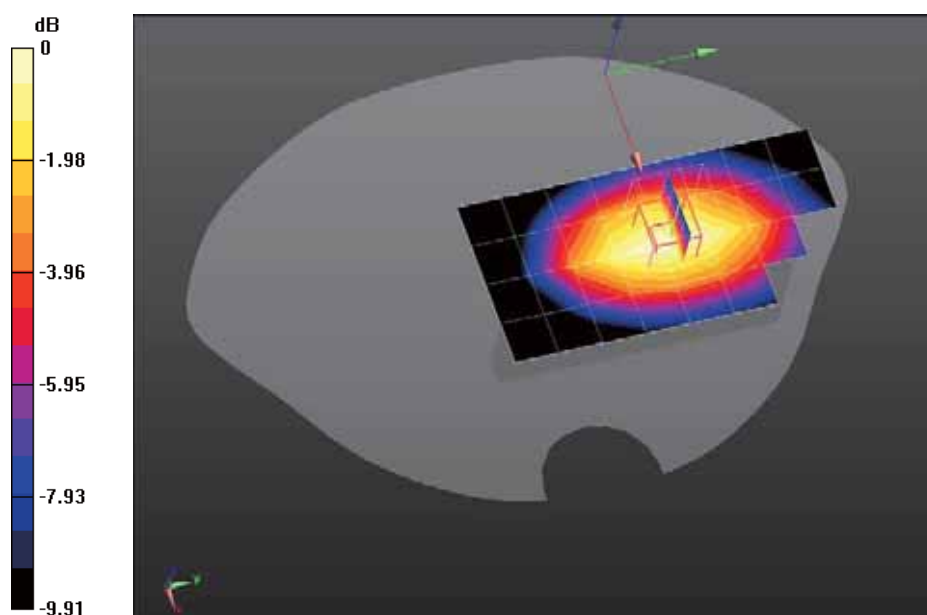
0 dB = 0.220mW/g = -13.15 dB mW/g

Date/Time: 15-04-2012

Test Laboratory: QuieTek Lab

WCDMA Band V Mid Body-Left Side

DUT: Smart Phone ; Type: MP436

Communication System: UMTS; Communication System Band: Band V UTRA/FDD; Duty Cycle: 1:1;

Frequency: 836 MHz; Medium parameters used: f = 836 MHz; σ = 0.96 mho/m; εr = 54.53; ρ = 1000 kg/m³ ;

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/WCDMA Band V Mid Body-Left Side/Area Scan (5x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.182 mW/g

Configuration/WCDMA Band V Mid Body-Left Side/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 5.480 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.2530

SAR(1 g) = 0.173 mW/g; SAR(10 g) = 0.115 mW/g Maximum value of SAR (measured) = 0.185 mW/g
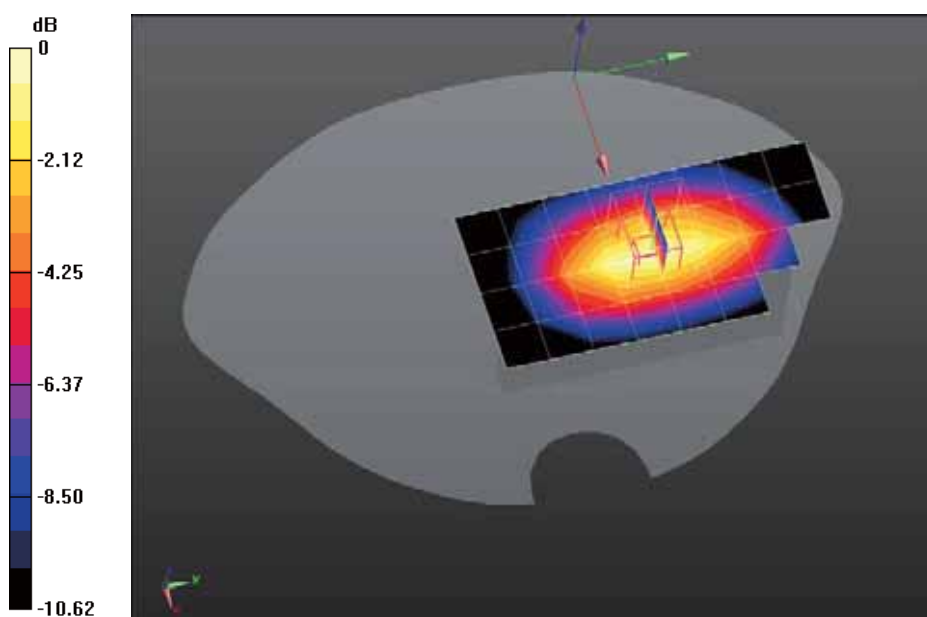
0 dB = 0.190mW/g = -14.42 dB mW/g

Date/Time: 17-04-2012

Test Laboratory: QuieTek Lab

802.11b 2462MHz Touch-Left

DUT: Smart Phone ; Type: MP436

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Frequency: 2462 MHz; Medium parameters used: f = 2462 MHz; σ = 1.83 mho/m; εr = 39.62; ρ = 1000 kg/m³ ; Phantom section: Left Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.25, 7.25, 7.25); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/802.11b High Touch-Left/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.027 mW/g

Configuration/802.11b High Touch-Left/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 3.243 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.0550

SAR(1 g) = 0.031 mW/g; SAR(10 g) = 0.014 mW/g Maximum value of SAR (measured) = 0.034 mW/g
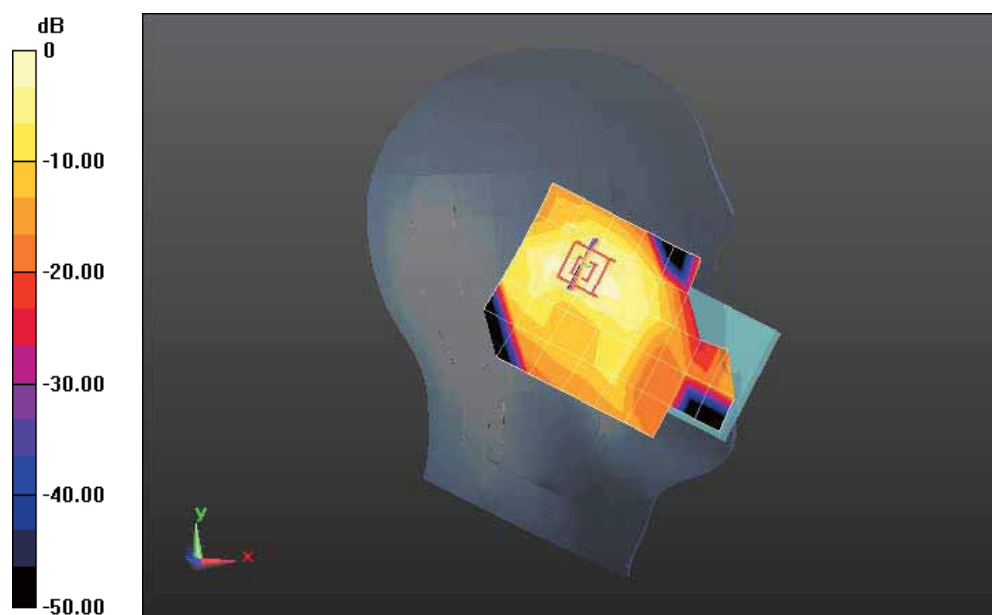
0 dB = 0.030mW/g = -30.46 dB mW/g

Date/Time: 17-04-2012

Test Laboratory: QuieTek Lab

802.11b 2462MHz Tilt-Left

DUT: Smart Phone ; Type: MP436

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Frequency: 2462 MHz; Medium parameters used: f = 2462 MHz; σ = 1.83 mho/m; εr = 39.62; ρ = 1000 kg/m³ ; Phantom section: Left Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.25, 7.25, 7.25); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/802.11b High Tilt-Left/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.036 mW/g

Configuration/802.11b High Tilt-Left/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 4.144 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.0720

SAR(1 g) = 0.035 mW/g; SAR(10 g) = 0.016 mW/g Maximum value of SAR (measured) = 0.038 mW/g
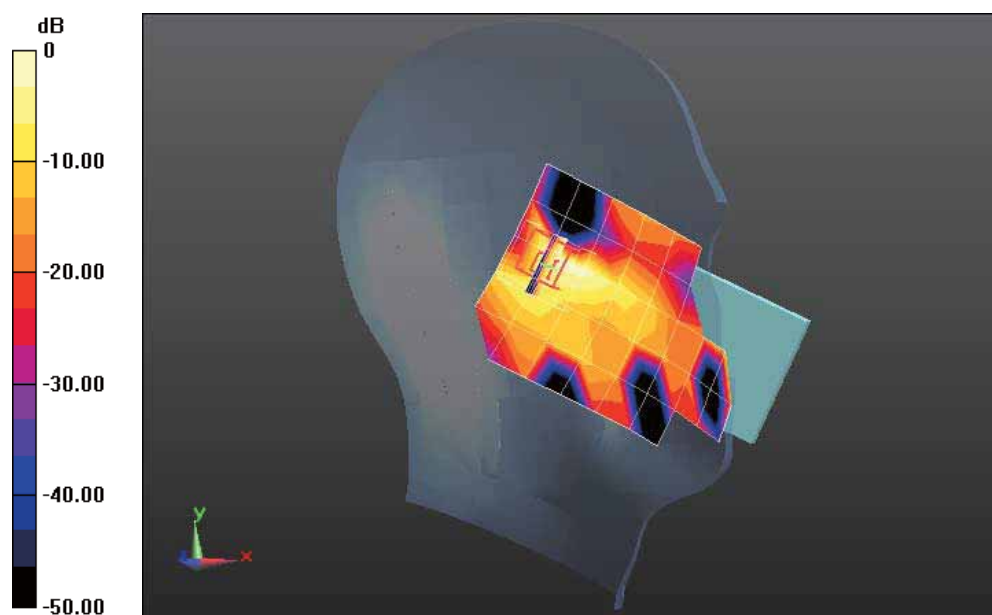
0 dB = 0.040mW/g = -27.96 dB mW/g

QuieTek

Test Laboratory: QuieTek Lab

802.11b 2462MHz Touch-Right

DUT: Smart Phone ; Type: MP436

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Frequency: 2462 MHz; Medium parameters used: f = 2462 MHz; σ = 1.83 mho/m; εr = 39.62; ρ = 1000 kg/m³ ; Phantom section: Right Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.25, 7.25, 7.25); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/802.11b High Touch-Right/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.015 mW/g

Configuration/802.11b High Touch-Right/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 3.484 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 0.0570

SAR(1 g) = 0.020 mW/g; SAR(10 g) = 0.00774 mW/g Maximum value of SAR (measured) = 0.024 mW/g
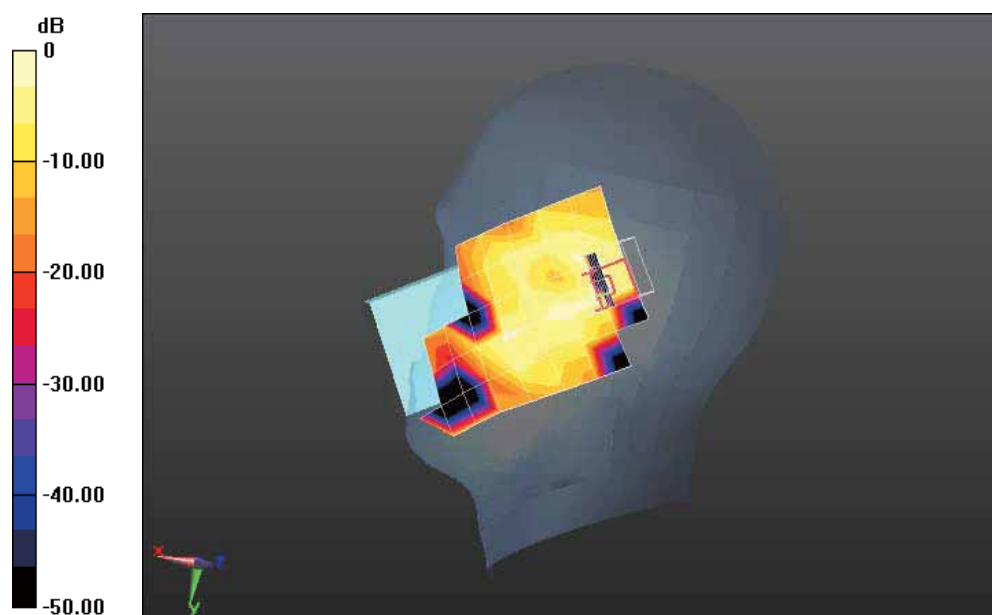
0 dB = 0.020mW/g = -33.98 dB mW/g

Date/Time: 17-04-2012

Test Laboratory: QuieTek Lab

802.11b 2462MHz Tilt-Right

DUT: Smart Phone ; Type: MP436

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Frequency: 2462 MHz; Medium parameters used: f = 2462 MHz; σ = 1.83 mho/m; εr = 39.62; ρ = 1000 kg/m³ ; Phantom section: Right Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.25, 7.25, 7.25); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/802.11b High Tilt-Right/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.026 mW/g

Configuration/802.11b High Tilt-Right/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 3.621 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.0620

SAR(1 g) = 0.029 mW/g; SAR(10 g) = 0.013 mW/g Maximum value of SAR (measured) = 0.031 mW/g
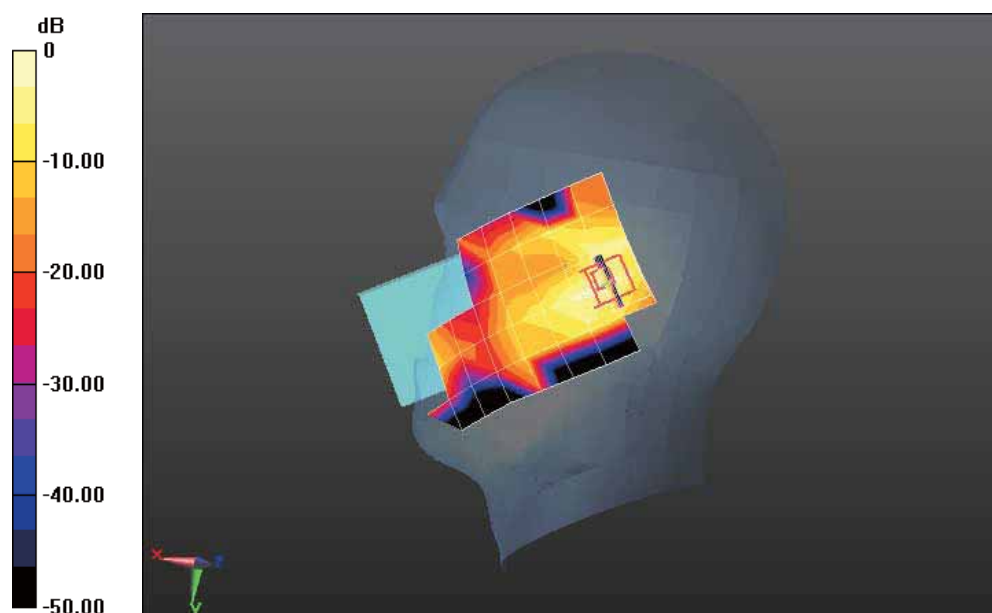
0 dB = 0.030mW/g = -30.46 dB mW/g

Date/Time: 17-04-2012

Test Laboratory: QuieTek Lab

802.11b 2462MHz Body-Back

DUT: Smart Phone ; Type: MP436

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Frequency: 2462 MHz; Medium parameters used: f = 2462 MHz; σ = 2.01 mho/m; εr = 51.98; ρ = 1000 kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(6.98, 6.98, 6.98); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/802.11b High Body-Back/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.071 mW/g

Configuration/802.11b High Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 7.076 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.1920

SAR(1 g) = 0.100 mW/g; SAR(10 g) = 0.050 mW/g Maximum value of SAR (measured) = 0.113 mW/g
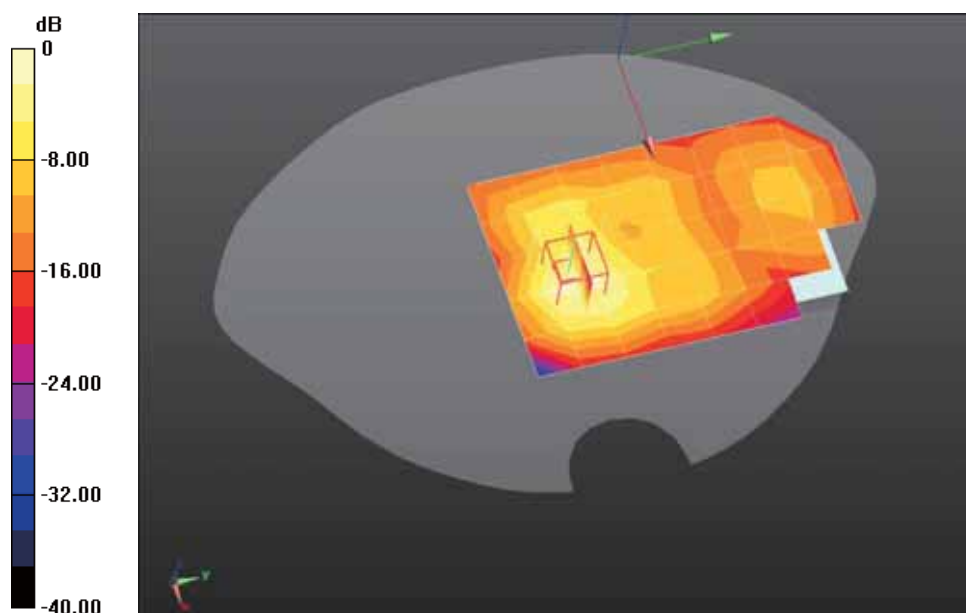
0 dB = 0.110mW/g = -19.17 dB mW/g

Z-Axis Plot
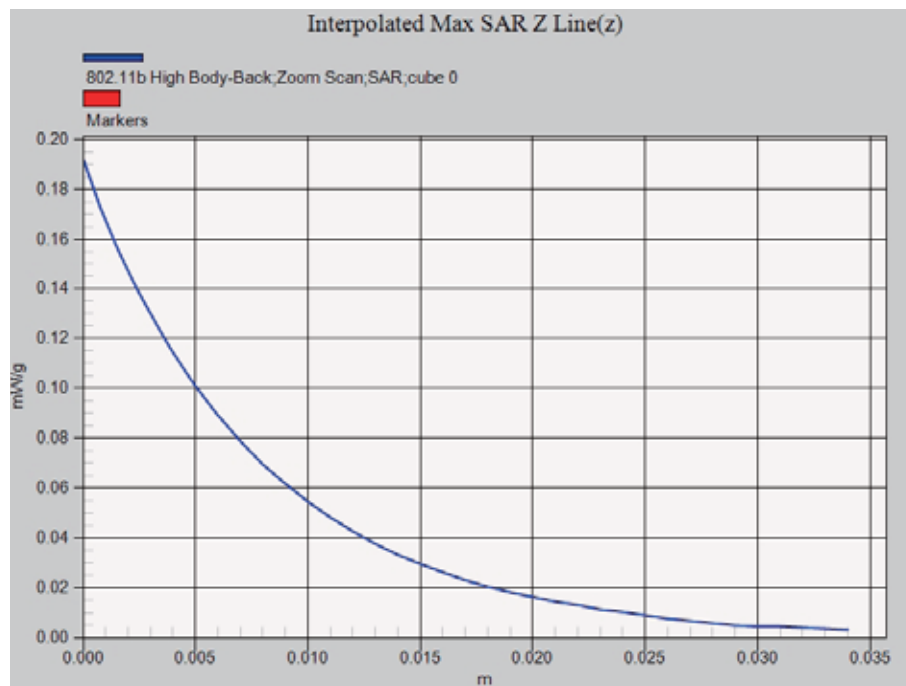
Date/Time: 17-04-2012

Test Laboratory: QuieTek Lab

802.11b 2462MHz Body-Front

DUT: Smart Phone ; Type: MP436

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Frequency: 2462 MHz; Medium parameters used: f = 2462 MHz; σ = 2.01 mho/m; εr = 51.98; ρ = 1000 kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(6.98, 6.98, 6.98); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/802.11b High Body-Front/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.011 mW/g

Configuration/802.11b High Body-Front/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 1.456 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.0200

SAR(1 g) = 0.010 mW/g; SAR(10 g) = 0.00401 mW/g Maximum value of SAR (measured) = 0.012 mW/g
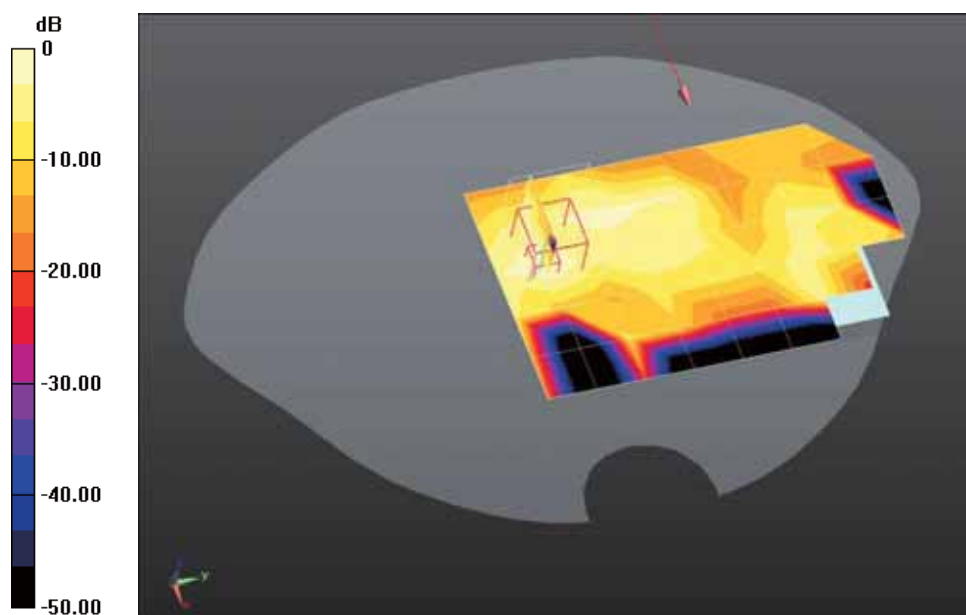
0 dB = 0.010mW/g = -40.00 dB mW/g

Date/Time: 17-04-2012

Test Laboratory: QuieTek Lab

802.11b 2462MHz Body-Back(With headset)

DUT: Smart Phone ; Type: MP436

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Frequency: 2462 MHz; Medium parameters used: f = 2462 MHz; σ = 2.01 mho/m; εr = 51.98; ρ = 1000 kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(6.98, 6.98, 6.98); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/802.11b High Body-Back/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.084 mW/g

Configuration/802.11b High Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 6.942 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 0.1860

SAR(1 g) = 0.096 mW/g; SAR(10 g) = 0.049 mW/g Maximum value of SAR (measured) = 0.103 mW/g
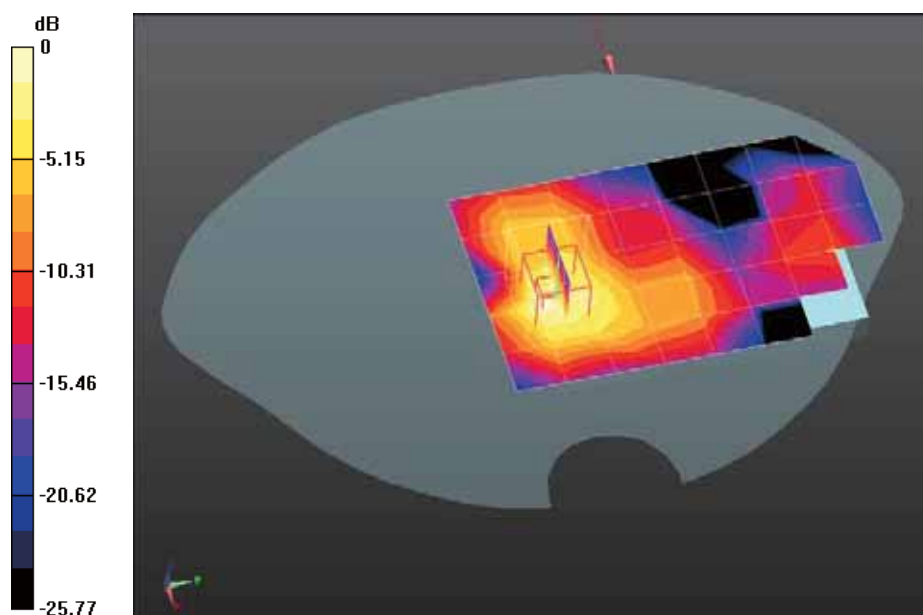
0 dB = 0.100mW/g = -20.00 dB mW/g

Date/Time: 17-04-2012

Test Laboratory: QuieTek Lab

802.11b 2462MHz Body-Top

DUT: Smart Phone ; Type: MP436

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Frequency: 2462 MHz; Medium parameters used: f = 2462 MHz; σ = 2.01 mho/m; εr = 51.98; ρ = 1000 kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(6.98, 6.98, 6.98); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/802.11b High Body-Top/Area Scan (7x7x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.060 mW/g

Configuration/802.11b High Body-Top/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 3.075 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.1640

SAR(1 g) = 0.080 mW/g; SAR(10 g) = 0.036 mW/g Maximum value of SAR (measured) = 0.092 mW/g
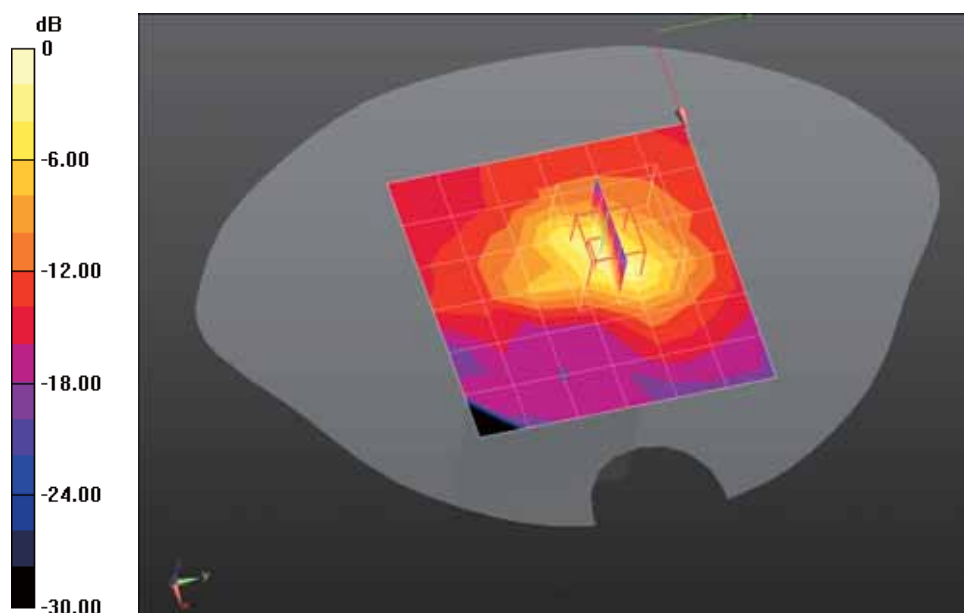
0 dB = 0.090mW/g = -20.92 dB mW/g

Date/Time: 17-04-2012

Test Laboratory: QuieTek Lab

802.11b 2462MHz Body-Left Side

DUT: Smart Phone ; Type: MP436

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Frequency: 2462 MHz; Medium parameters used: f = 2462 MHz; σ = 2.01 mho/m; εr = 51.98; ρ = 1000 kg/m³ ; Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(6.98, 6.98, 6.98); Calibrated: 12/03/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/802.11b High Body-Left Side/Area Scan (6x9x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.00468 mW/g

Configuration/802.11b High Body-Left Side/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 0.877 V/m; Power Drift =0.18 dB

Peak SAR (extrapolated) = 0.0180

SAR(1 g) = 0.004 mW/g; SAR(10 g) = 0.00155 mW/g Maximum value of SAR (measured) = 0.00382 mW/g
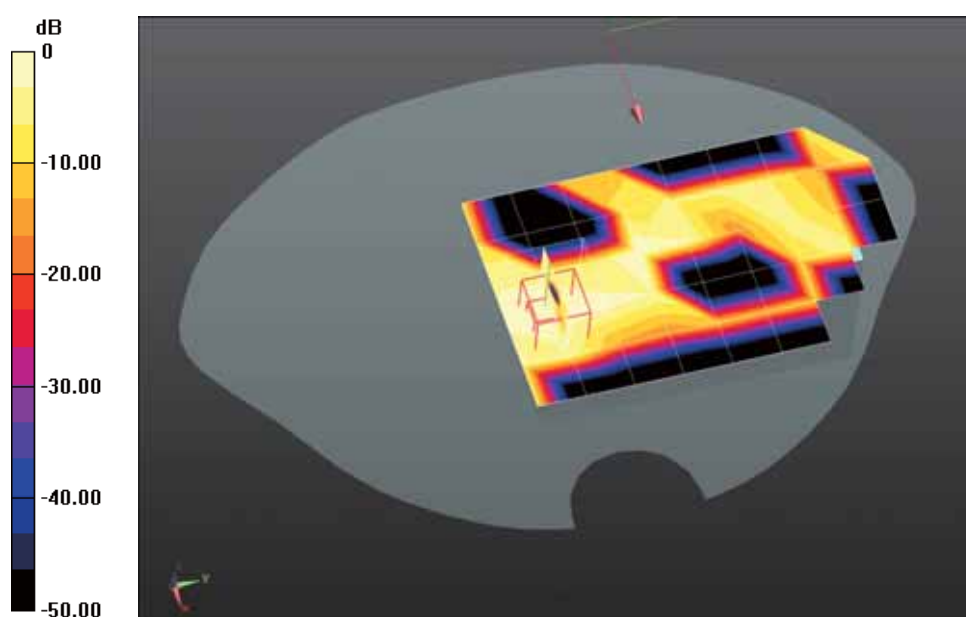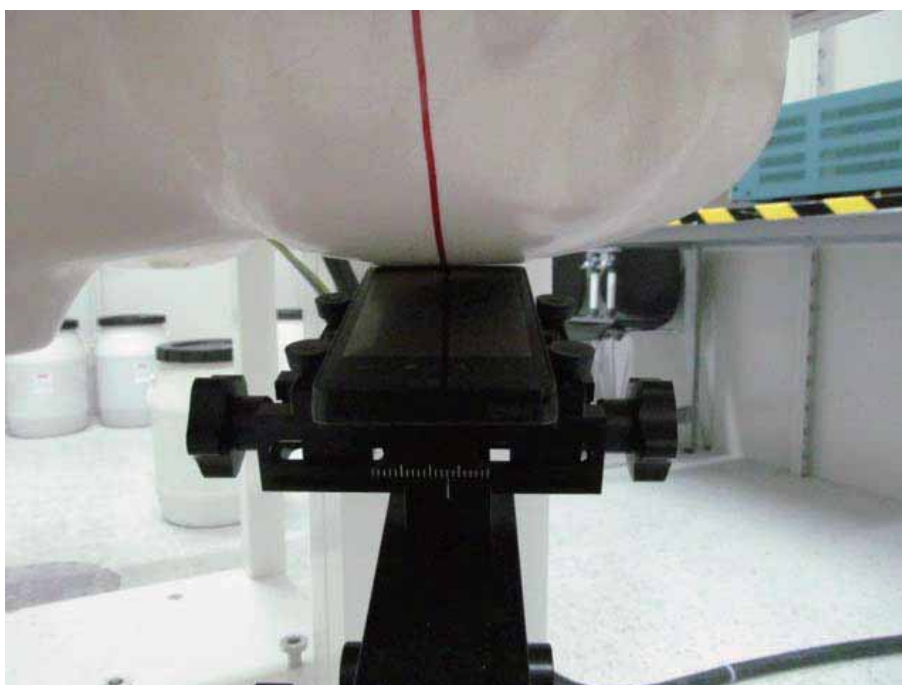

0 dB = 0.0038mW/g = -48.40 dB mW/g

Appendix C. Test Setup Photographs & EUT Photographs
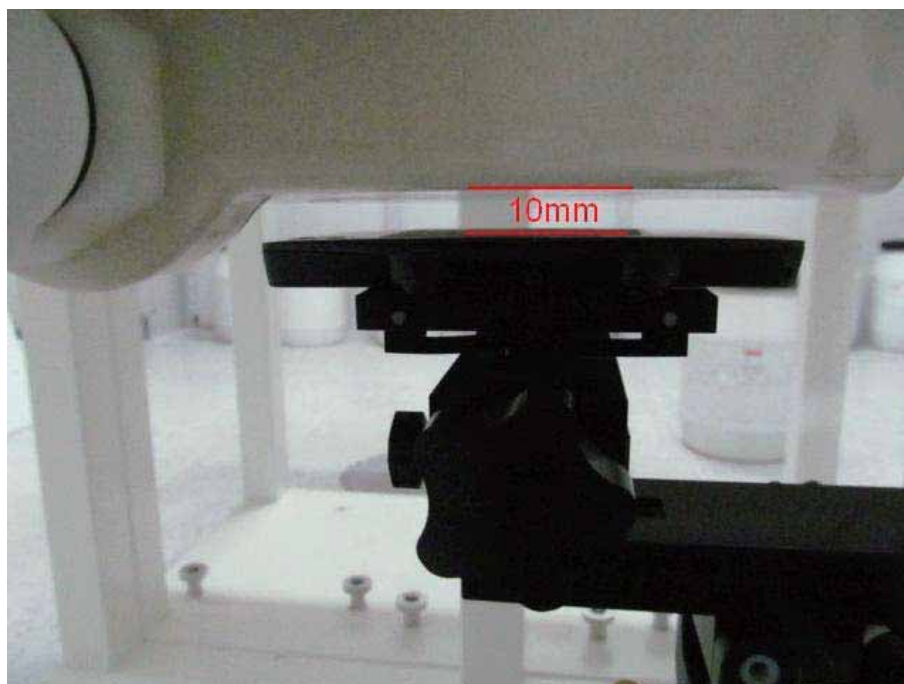
Test Setup Photographs
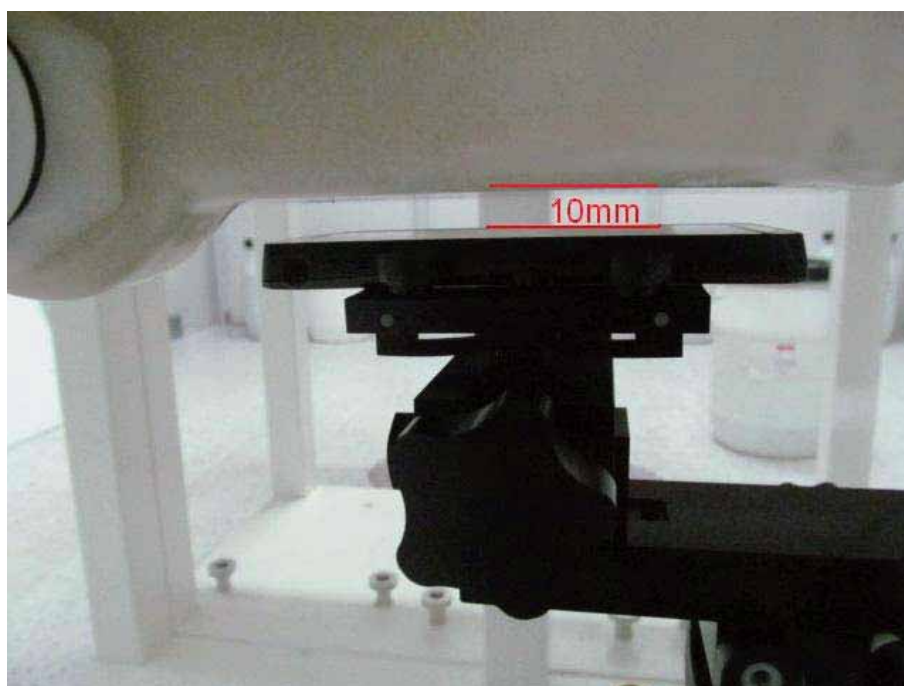

Left-Cheek Touch

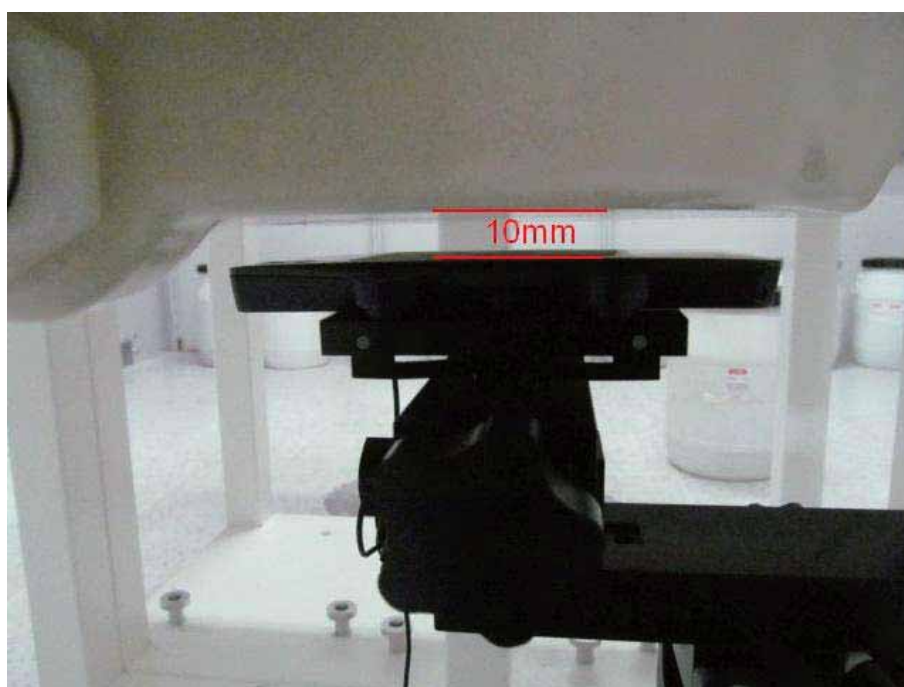

Left-Tilt 15°

Right-Cheek Touch

Right-Tilt 15°

QuieTek
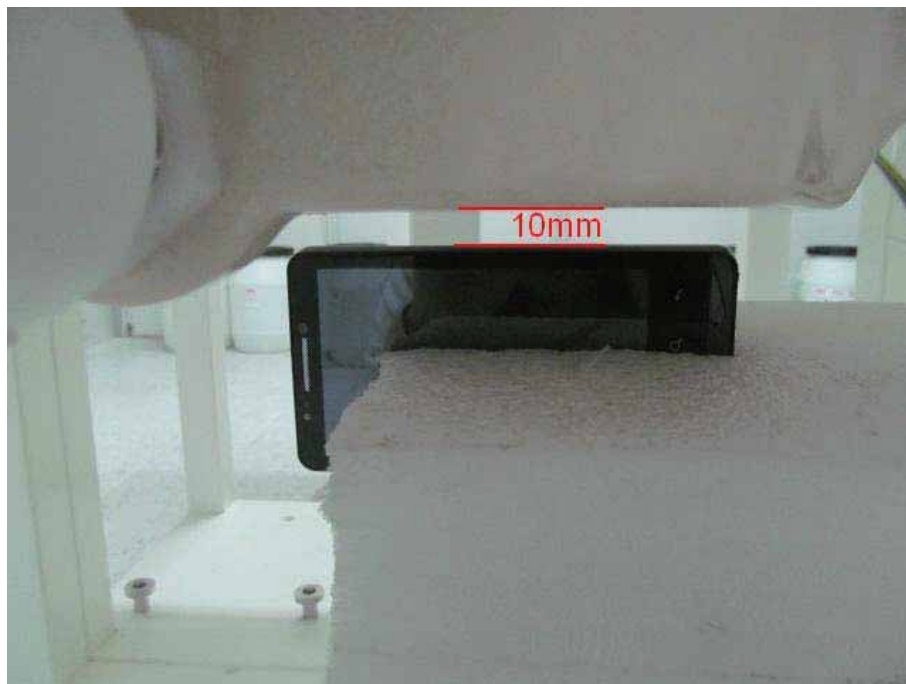

Body SAR Back 10mm

Body SAR Front 10mm

Body SAR Back 10mm with Headset

Body SAR Bottom 10mm for GSM

Body SAR Right Side 10mm for GSM
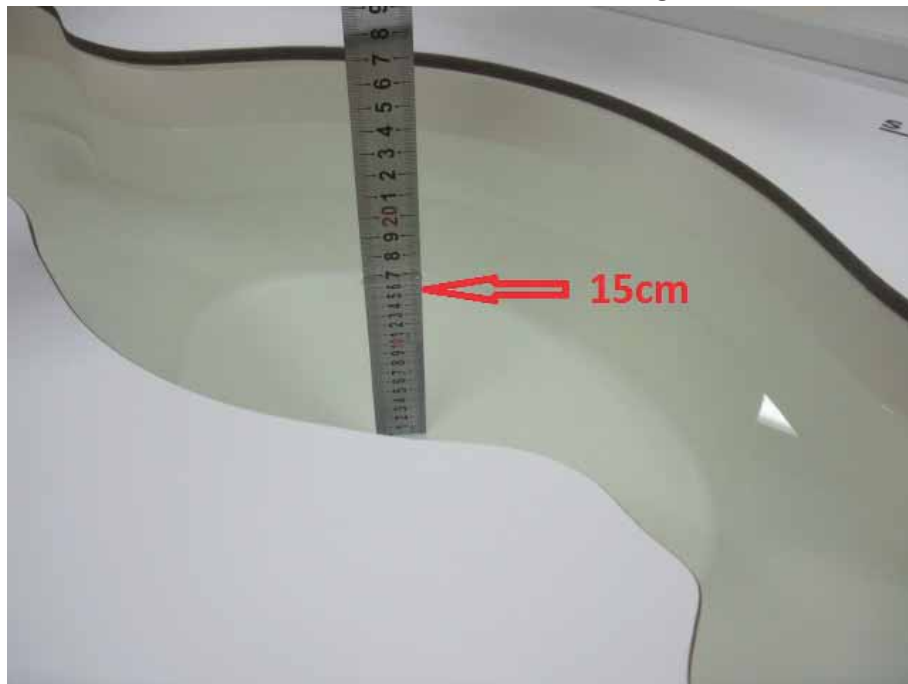

Body SAR Left Side 10mm for GSM

Body SAR Left Side 10mm for WLAN

Body SAR Top 10mm for WLAN

Depth of the liquid in the phantom – Zoom in

Note: The position used in the measurements were according to IEEE 1528 - 2003

EUT Photographs

(1) EUT Photo

(2) EUT Photo

(3) EUT Photo

(4) EUT Photo