SAR TEST REPORT

No. 2011EEB00787

For

Novero Canada Inc

Notebook Computer

NPPC-1

With

FCC ID: XWTNPPC-1; IC ID: 7847B-NPPC1

HSPA + Module

FCC ID: QISEM820W; IC ID: 6369A-EM820W

Bluetooth Transceiver Module

FCC ID: QDS-BRCM1043; IC ID: 4324A-BRCM1043

Issued Date: 2012-2-27

Deutscher Akkreditierungs Rat

DAR

***No.* DGA-PL-114/09-A0**

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of TMC Beijing.

Test Laboratory:

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TABLE OF CONTENT

1 Test Laboratory

1.1 Testing Location

Company Name:	TMC Shenzhen, Telecommunication Metrology Center of MIIT
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Postal Code:	518048
Telephone:	+86-755-33322000
Fax:	+86-755-33322001

1.2 Testing Environment

Temperature:	Min. = 18 °C, Max. = 25 °C
Relative humidity:	Min. = 30%, Max. = 70%
Ground system resistance:	< 0.5 Ω

Ambient noise is checked and found very low and in compliance with requirement of standards.
Reflection of surrounding objects is minimized and in compliance with requirement of standards.

1.3 Project Data

Project Leader:	Zhou Yi
Test Engineer:	Zhu Zhiqiang
Testing Start Date:	February 8, 2012
Testing End Date:	February 17, 2012

1.4 Signature

Zhu Zhiqiang
(Prepared this test report)

Zhou Yi
(Reviewed this test report)

Lu Minniu
Director of the laboratory
(Approved this test report)

2 Client Information

2.1 Applicant Information

Company Name:	Novero Canada Inc
Address /Post:	19 allstate parkway, suite 300, L3R 5A4
City:	Markham Ontario
Postal Code:	
Country:	Canada
Telephone:	1-416-556-5152
Fax:	1-905-943-4499

2.2 Manufacturer Information

Company Name:	Wanlida Group Co., Ltd.
Address /Post:	Wanlida Industry zone, Nanjing
City:	Nanjing
Postal Code:	363601
Country:	China
Telephone:	+86-0596-7653680
Fax:	+86-0596-7662886

3 Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1 About EUT

Description:	Notebook Computer
Model Name:	NPPC-1
Marketing Name:	NOVERO
Frequency Band:	GPRS&EGPRS 850MHz/1900 MHz ; WCDMA 850 MHz /1900 MHz; Wifi 2450 MHz
GPRS Multislot Class:	12
EGPRS Multislot Class:	12

Picture 1: Constituents of the sample (Solana)

3.2 Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	/	7790C V1.3	Windows7 Premium

*EUT ID: is used to identify the test sample in the lab internally.

3.3 Internal Identification of AE used during the test

AE ID*	Description	Model	SN	Manufacturer
AE1	Lithium batteries	P0108-LF(3891A6)	/	EVE Energy CO., LTD

*AE ID: is used to identify the test sample in the lab internally.

4 CHARACTERISTICS OF THE TEST

4.1 Applicable Limit Regulations

ANSI C95.1–1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
47 CFR §2.1093: Radiofrequency radiation exposure evaluation: portable devices.

They specify the maximum exposure limit of **1.6 W/kg** as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

4.2 Applicable Measurement Standards

EN 62209-2-2010: Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures – Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz).

IC RSS-102 ISSUE4: Radio Frequency (RF) Exposure Compliance of Radio communication Apparatus (All Frequency Bands).

IEEE 1528–2003: Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques.

OET Bulletin 65 (Edition 97-01) and Supplement C(Edition 01-01): Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits.

KDB 447498 D01: Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies v03r02

KDB 248227: SAR Measurement Procedures for 802.11 a/b/g transmitter

KDB 616217: SAR Evaluation Considerations for Laptop Computers with Antennas Built-in on Display Screens.

KDB 941225 D01: SAR Measurement Procedures for 3G devices v02.

They specify the measurement method for demonstration of compliance with the SAR limits for such equipments.

5 OPERATIONAL CONDITIONS DURING TEST

5.1 Schematic Test Configuration

5.1.1 Test positions

According to KDB 447498 D01 and KDB 616217, SAR is required for the 4 positions.

- Test Position 1: The base of the EUT is direct against the bottom of the flat phantom with the display open to the perpendicular position.（Picture 2-1）
- Test Position 2: The base of the EUT is direct against the bottom of the flat phantom with the display folded over on the keyboard section. （Picture 2-2）
- Test Position 3: The back of the screen is against the bottom of the flat phantom with the keyboard open to the perpendicular position. The distance between the EUT and the bottom of the flat phantom is 25mm（Picture 2-3）
- Test Position 4: The front of the screen is against the bottom of the flat phantom with the keyboard open to the perpendicular position. The distance between the EUT and the bottom of the flat phantom is 25mm（Picture 2-4）

Picture 2-1: Test position 1

Picture 2-2: Test position 2

Picture 2-3: Test position 3

Picture 2-4: Test position 4

Picture 3: Antenna of EUT

5.1.2 Test Method

GSM Frequency Band

Because the EUT has only data transfer function, the tests for GSM 850/1900 are performed in GPRS and EGPRS mode (The tests are performed for the case of the slots in uplink with the maximum averaged power). The tests are performed for GPRS at the highest output power channel frequency first for all the 4 test positions, and according to the KDB447498 D01,"when the SAR procedures require multiple channels to be tested and 1-g SAR for the highest output channel is less than 0.8W/Kg, testing for the other channels is not required.", then set to the other channels if necessary. And after found the worst case, the EGPRS will be tested for that position.

To decide which time slot should be chosen to test in, average power should be calculated.

The Averaged conducted power for GPRS/EGPRS 850/1900 is as follow:

GSM 850 GPRS	Measured Power (dBm)				Averaged Power (dBm)		
	Ch 128	Ch190	Ch 251		Ch 128	Ch190	Ch 251
1 Txslot	31.79	31.78	31.79	-9.03dB	22.76	22.75	22.76
2 Txslots	29.71	29.70	29.69	-6.02dB	23.69	23.68	23.67
3Txslots	**28.74**	**28.73**	**28.72**	**-4.26dB**	**24.48**	**24.47**	**24.46**
4 Txslots	26.73	26.75	26.75	-3.01dB	23.72	23.74	23.74
GSM 850 EGPRS	Measured Power (dBm)				Averaged Power (dBm)		
	Ch 128	Ch190	Ch 251		Ch 128	Ch190	Ch 251
1 Txslot	31.96	31.86	31.77	-9.03dB	22.93	22.83	22.74
2 Txslots	29.81	29.73	29.63	-6.02dB	23.79	23.71	23.61
3Txslots	**28.80**	**28.72**	**28.61**	**-4.26dB**	**24.54**	**24.46**	**24.35**
4 Txslots	26.79	26.69	26.59	-3.01dB	23.78	23.68	23.58

GSM1900 GPRS	Measured Power (dBm)				Averaged Power (dBm)		
	Ch 512	Ch 661	Ch 810		Ch 512	Ch 661	Ch 810
1 Txslot	29.84	30.12	29.84	-9.03dB	20.81	21.09	20.81
2 Txslots	28.28	28.58	28.30	-6.02dB	22.26	22.56	22.28
3Txslots	27.27	27.56	27.28	-4.26dB	23.01	23.30	23.02
4 Txslots	**26.29**	**26.58**	**26.30**	**-3.01dB**	**23.28**	**23.57**	**23.29**
GSM1900 EGPRS	Measured Power (dBm)				Averaged Power (dBm)		
	Ch 512	Ch 661	Ch 810		Ch 512	Ch 661	Ch 810
1 Txslot	30.01	29.88	30.13	-9.03dB	20.98	20.85	21.10
2 Txslots	28.43	28.32	28.60	-6.02dB	22.41	22.30	22.58
3Txslots	27.37	27.29	27.54	-4.26dB	23.11	23.01	23.28
4 Txslots	**26.35**	**26.37**	**26.53**	**-3.01dB**	**23.34**	**23.36**	**23.52**

NOTES:

1) Division Factors

To average the power, the division factor is as follows:

1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

WCDMA Band

For WCDMA 850/1900, the conducted power will be measured for WCDMA, and the results are as following:

Mode	band	FDDV result (dBm)			FDDII result (dBm)			MPR
	3GPP Subtest	4132	4182	4233	9262	9400	9538	
Rel99	\	23.71	23.40	23.31	26.13	25.94	26.14	N/A
Rel HSDPA	1	23.04	22.23	22.53	23.57	23.12	23.42	0
	2	23.12	22.79	22.80	23.84	23.68	24.06	0
	3	22.72	22.28	22.29	23.4	23.21	23.62	0.5
	4	22.70	22.38	22.28	23.38	23.3	23.58	0.5
Rel HSUPA	1	22.71	21.90	21.90	23.87	23.95	24.11	0
	2	20.16	20.17	20.30	21.92	21.84	22.41	2
	3	21.62	21.74	21.66	22.84	22.85	23.12	1
	4	20.17	20.83	20.54	21.65	21.58	21.67	2
	5	22.14	22.30	22.38	23.62	23.4	23.9	0

Note: All measurements are based on an average detector. Power number in dBm.

The tests are performed for WCDMA 850 and WCDMA 1900 at the highest output power channel frequency first for all the 4 test positions, then set to the other channels if necessary. HSDPA and HSUPA body SAR are not required, because maximum average output power of each RF channel with HSDPA and HSUPA active is not 1/4 dB higher than that measured without HSDPA and HSUPA and the maximum SAR for WCDMA 850 and WCDMA 1900 are not above 75% of the SAR limit (see Table 8&9 for the SAR measurement results).

BT&WiFi

The Highest output power of BT antenna is 0.48dBm (about 1.12mw). According to KDB 647484, SAR is not required for Bluetooth when the output power is less than 24mw (60/f).

The conducted power for Bluetooth is as following:

Bluetooth: (dBm)

Channel/Modulation	GFSK	8DPSK	π/4-DQPSK
CH1	-1.73	0.13	0.48
CH41	-2.11	-0.20	0.15
CH79	-2.89	-1.03	-0.08

The conducted power for WiFi is as following:

802.11b（dBm）

Channel\data rate	1Mbps	2Mbps	5.5Mbps	11Mbps
CH1	15.55	15.32	15.24	15.20
CH6	15.86	15.80	15.72	15.66
CH11	15.92	15.85	15.85	15.74

802.11g（dBm）

Channel\data rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
CH1	16.24	16.19	16.16	16.12	16.07	16.02	15.89	15.78
CH6	16.13	16.06	16.01	15.92	15.88	15.85	15.80	15.77
CH11	16.65	16.55	16.48	16.39	16.27	16.27	16.24	16.17

802.11nHT20

Channel/data rate	6.5 Mbps	13 Mbps	19.5 Mbps	26 Mbps	39 Mbps	52 Mbps	58.5 Mbps	65 Mbps
CH1	14.89	14.89	14.82	14.77	14.76	14.70	14.65	14.60
CH6	14.97	14.95	14.90	14.86	14.80	14.74	14.63	14.63
CH11	15.16	15.08	15.00	14.95	14.91	14.84	14.80	14.74

802.11nHT40

Channel/data rate	13.5 Mbps	27 Mbps	40.5 Mbps	54 Mbps	81 Mbps	108 Mbps	121.5 Mbps	135 Mbps
CH3	9.34	9.29	9.25	9.20	9.20	9.15	9.12	9.08
CH6	10.22	10.20	10.13	10.13	10.11	10.08	10.08	10.02
CH9	10.71	10.70	10.66	10.66	10.63	10.60	10.55	10.52

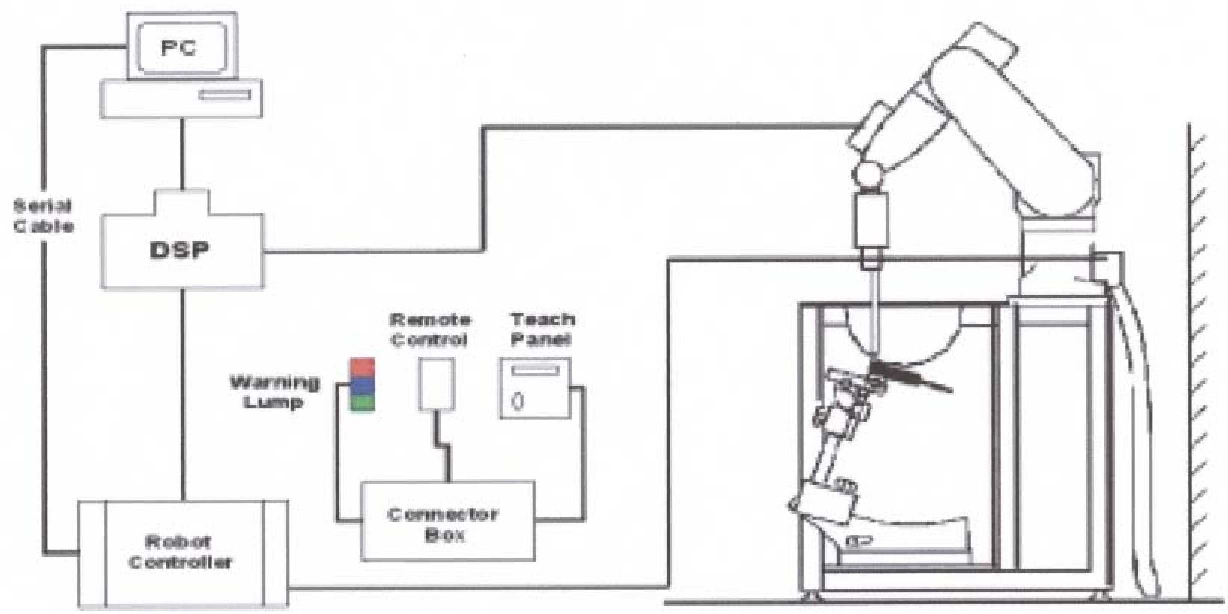
For each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of these configurations is less than 0.25dB higher than those measured at the lowest data rate. According to the conducted power, the EUT should be tested for “802.11b 1Mbps” first, next higher data rates configurations whose output power is more than 0.25dB higher than”802.11b 1Mbps”, then the necessary configurations in “802.11g”,”802.11nHT20” and ”802.11nHT40” if necessary.

A communication link is set up with the test mode software for WiFi mode test. The test mode software we used is DRTU for Solana with the version of Version 1.5.3-0335 supported by company Intel. For 802.11b, 802.11g and 802.11n HT20, the Absolute Radio Frequency Channel Number (ARFCN) is allocated to 1, 6 and 11 respectively in the case of 2450 MHz. During the test, at the each test frequency channel, the EUT is operated at the RF continuous emission mode. The tests are performed for WiFi at Highest output power channel first for all the necessary test positions, and according to the KDB447498 D01, "when the SAR procedures require multiple channels to be tested and 1-g SAR for the highest output channel is less than 0.8W/Kg, testing for the other channels is not required." So the test channels have been set first to the 802.11b channel 1 and then to other channels if necessary. This computer doesn't allow simultaneous transmission, so there is stand-alone SAR result only.

5.2 SAR Measurement Set-up

These measurements were performed with the automated near-field scanning system DASY5 NEO from Schmid & Partner Engineering AG (SPEAG). The system is based on a high precision robot (working range greater than 0.9m), which positions the probes with a positional repeatability of better than ± 0.02mm. Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines (length =300mm) to the data acquisition unit.

A cell controller system contains the power supply, robot controller, teaches pendant (Joystick), and remote control, is used to drive the robot motors. The PC consists of the Intel® Core™ CPU 6300 @1.86GHz computer with Windows XP system and SAR Measurement Software DASY5 NEO, A/D interface card, monitor, mouse, and keyboard. The Stäubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card.



Picture 2: SAR Lab Test Measurement Set-up

The 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 PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer.

5.3 Dasy5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe ES3DV3 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe has been calibrated according to the standard procedure with an accuracy of better than ± 10%. The spherical isotropy was evaluated and found to be better than ± 0.25dB.

Picture 4: ES3DV3 E-field Probe

ES3DV3 Probe Specification

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Basic Broad Band Calibration in air Conversion Factors (CF) for HSL 900 and HSL 1810 Additional CF for other liquids and frequencies upon request
Frequency	10 MHz to 4 GHz; Linearity: ± 0.2 dB (30 MHz to 4 GHz)
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.3 dB in tissue material (rotation normal to probe axis)
Dynamic Range	5 μW/g to > 100 mW/g; Linearity: ± 0.2 dB
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm
Application	General dosimetry up to 4 GHz Dosimetry in strong gradient fields Compliance tests of mobile phones

Picture5:ES3DV3 E-field probe

5.4 E-field Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure with accuracy better than ± 10%. The spherical isotropy was evaluated and found to be better than ± 0.25dB. The sensitivity parameters (NormX, NormY, NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies bellow 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlate to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$SAR = C\frac{\Delta T}{\Delta t}$$

Where: Δt = Exposure time (30 seconds),

C = Heat capacity of tissue (brain or muscle),

ΔT = Temperature increase due to RF exposure.

Or

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

Where:

σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m^3).

Picture 8: Device Holder

5.5 Other Test Equipment

5.5.1 Device Holder for Transmitters

In combination with the Generic Twin Phantom V3.0, the Mounting Device (POM) enables the rotation of the mounted transmitter in spherical coordinates whereby the rotation points is the ear opening. The devices can be easily, accurately, and repeatable positioned according to the FCC and CENELEC specifications. The device holder can be locked at different phantom locations (left head, right head, and flat phantom).

5.5.2 Phantom

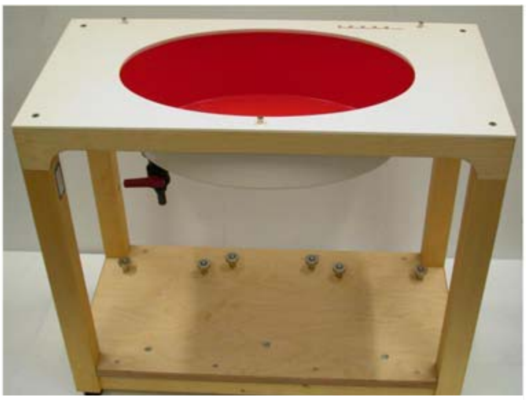
The ELI4 phantom is constructed of a fiberglass shell integrated in a wooden table. The shape of the shell is based on data from an anatomical study designed to determine the maximum exposure in at least 90% of all users. The ELI4 phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30MHz to 6GHz. ELI4 is fully compatible with the latest standard IEC 62209-2 and all known tissue simulating liquids. A cover prevents the evaporation of the liquid. Reference markings on the Phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot.

Shell Thickness 2±0. l mm

Filling Volume Approx. 20 liters

Dimensions 810 x l000 x 500 mm (H x L x W)

Available Special



Picture 9: ELI4 Phantom

5.6 Equivalent Tissues

The liquid used for the frequency range of 800-3000 MHz consisted of water, sugar, salt and Cellulose. The liquid has been previously proven to be suited for worst-case. The Table 1 shows the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the IEEE 1528.

Table 1. Composition of the Head Tissue Equivalent Matter

MIXTURE %	FREQUENCY 850MHz
Water	50.93
Sugar	45.61
Salt	1.09
Preventol	0.37
Cellulose	2.0
Dielectric Parameters Target Value	f=850MHz ε=55.2 σ=0.97
MIXTURE %	FREQUENCY 1900MHz
Water	70.52
Glycol monobutyl	29.09
Salt	0.39
Dielectric Parameters Target Value	f=1900MHz ε=53.3 σ=1.52
MIXTURE %	FREQUENCY 2450MHz
Water	72.60
Glycol monobutyl	27.22
Salt	0.18
Dielectric Parameters Target Value	f=2450MHz ε=52.7 σ=1.95

5.7 System Specifications

5.7.1 Robotic System Specifications

Specifications

Positioner: Stäubli Unimation Corp. Robot Model: TX90XL

Repeatability: ±0.02 mm

No. of Axis: 6

Data Acquisition Electronic (DAE) System

Cell Controller

Processor: Intel® Core™ CPU 6300

Clock Speed: 1.86GHz
Operating System: Windows XP
Data Converter
Features: Signal Amplifier, multiplexer, A/D converter, and control logic
Software: DASY5 software
Connecting Lines: Optical downlink for data and status info.
Optical uplink for commands and clock

6 TEST RESULTS

6.1 Dielectric Performance

Table 2: Dielectric Performance of Body Tissue Simulating Liquid

Measurement is made at temperature 22.0 °C and relative humidity 55%,Liquid temperature during the test: 22.5°C. Measurement Date : 850 MHz **February 17, 2012** 1900 MHz **February 9, 2012** 2450 MHz **February 8 , 2012**			
/	**Frequency**	**Permittivity ε**	**Conductivity σ (S/m)**
Target value	850 MHz	55.2	0.97
	1900 MHz	53.3	1.52
	2450MHz	52.7	1.95
Measurement value (Average of 10 tests)	850 MHz	54.17	1.00
	1900 MHz	51.23	1.55
	2450MHz	51.17	2.03

6.2 System Validation

Table 3: System Validation

Measurement is made at temperature 22.0 °C and relative humidity 55%,Liquid temperature during the test: 22.5°C. Measurement Date : 850 MHz **February 17, 2012** 1900 MHz **February 9, 2012** 2450 MHz **February 8 , 2012**							
Liquid parameters	Dipole calibration Target value	**Frequency**		**Permittivity ε**		**Conductivity σ (S/m)**	
		850 MHz		55.2		0.97	
		1900 MHz		53.3		1.52	
		2450MHz		52.7		1.95	
	Actual Measurement value	850 MHz		54.17		1.00	
		1900 MHz		51.23		1.55	
		2450MHz		51.17		2.03	
Verification results	**Frequency**	**Target value (W/kg)**		**Measured value (W/kg)**		**Deviation**	
		10 g Average	**1 g Average**	**10 g Average**	**1 g Average**	**10 g Average**	**1 g Average**
	835 MHz	1.60	2.46	1.55	2.48	-3.13%	0.81%
	1900 MHz	5.29	10.4	5.21	10.5	-1.51%	0.96%
	2450MHz	6.15	13.3	6.35	13.9	3.25%	4.51%

Note：Target values are the data in the dipole validation results.

6.3 Summary of Measurement Results

Table 4: SAR Values (EGSM 850 MHz)

Limit of SAR (W/kg)	**10 g Average**	**1 g Average**	**Power Drift (dB)**
	2.0	1.6	
Test Case	**Measurement Result (W/kg)**		
	10 g Average	**1 g Average**	
GPRS-3 slots, Test Position 1, Low frequency (See Fig.1)	0.047	0.071	0.15
GPRS-3 slots, Test Position 2 Low frequency (See Fig.2)	0.029	0.041	0.16
GPRS-3 slots, Test Position 3, Low frequency (See Fig.3)	0.044	0.057	0.09
GPRS-3 slots, Test Position 4, Low frequency (See Fig.4)	**0.069**	**0.099**	**0.04**
EGPRS-3 slots, Test Position 4, Low frequency (See Fig.5)	0.069	0.097	-0.08

Table 5: SAR Values (PCS 1900 MHz)

Limit of SAR (W/kg)	**10 g Average**	**1 g Average**	**Power Drift (dB)**
	2.0	1.6	
Test Case	**Measurement Result (W/kg)**		
	10 g Average	**1 g Average**	
GPRS-4 slots, Test Position 1, Mid frequency (See Fig.6)	**0.058**	**0.091**	**0.11**
GPRS-4 slots, Test Position 2 Mid frequency (See Fig.7)	0.035	0.051	0.17
GPRS-4 slots, Test Position 3, Mid frequency (See Fig.8)	0.043	0.063	0.16
GPRS-4 slots, Test Position 4, Mid frequency (See Fig.9)	0.035	0.055	0.08
EGPRS-4 slots, Test Position 1, High frequency (See Fig.10)	0.055	0.087	0.15

Table 6: SAR Values (WCDMA 850 MHz)

Limit of SAR (W/kg)	**10 g Average**	**1 g Average**	**Power Drift (dB)**
	2.0	1.6	
Test Case	**Measurement Result (W/kg)**		
	10 g Average	**1 g Average**	
Test Position 1, Low frequency (See Fig.11)	0.034	0.049	0.19
Test Position 2 Low frequency (See Fig.12)	0.031	0.044	0.16
Test Position 3, Low frequency (See Fig.13)	0.038	0.049	0.06
Test Position 4, Low frequency (See Fig.14)	**0.059**	**0.083**	**-0.11**

Table 7: SAR Values (WCDMA 1900MHz)

Limit of SAR (W/kg)	**10 g Average**	**1 g Average**	**Power Drift (dB)**
	2.0	1.6	
Test Case	**Measurement Result (W/kg)**		
	10 g Average	**1 g Average**	
Test Position 1, Low frequency (See Fig.15)	0.038	0.057	0.09
Test Position 2 Low frequency (See Fig.16)	0.031	0.044	0.18
Test Position 3, Low frequency (See Fig.17)	0.00765	0.00909	-0.06
Test Position 4, Low frequency (See Fig.18)	**0.049**	**0.075**	**0.1**

Table 8: SAR Values (Wi-Fi 2450MHz)

Limit of SAR (W/kg)	**10 g Average**	**1 g Average**	**Power Drift (dB)**
	2.0	1.6	
Test Case	**Measurement Result (W/kg)**		
	10 g Average	**1 g Average**	
802.11b,Test Position 1, High frequency (See Fig.19)	**0.039**	**0.047**	**-0.19**
802.11b,Test Position 2 High frequency (See Fig.20)	0.033	0.040	0.14
802.11g,Test Position 1, High frequency (See Fig.21)	0.033	0.040	0.04
802.11g,Test Position 2, High frequency (See Fig.22)	0.036	0.044	0.08

6.4 Conclusion

Localized Specific Absorption Rate (SAR) of this fixed terminal station has been measured in all cases requested by the relevant standards cited in Clause 4.2 of this report. Maximum localized SAR is below exposure limits specified in the relevant standards cited in Clause 4.1 of this test report.

The maximum stand-alone SAR values are obtained at the case of **GPRS 850 MHz Position 3, Middle frequency (Table 4)**, and the value is: **0.069W/Kg (10g) and 0.099 W/Kg (10g).**

7 Measurement Uncertainty

No.	Error source	Type	Uncertainty Value (%)	Probability Distribution	k	c_i	Standard Uncertainty (%) u_i' (%)	Degree of freedom V_{eff} or v_i

1	System repeatability	A	0.3	N	1	1	0.3	9
	Measurement system							
2	—probe calibration	B	7	N	2	1	3.5	∞
3	—axial isotropy of the probe	B	4.7	R	$\sqrt{3}$	0.5	4.3	∞
4	—hemisphere isotropy of the probe	B	9.4	R	$\sqrt{3}$			
5	—probe linearity	B	4.7	R	$\sqrt{3}$	1	2.7	∞
6	—detection limit	B	1.0	R	$\sqrt{3}$	1	0.6	∞
7	—boundary effect	B	0.4	R	$\sqrt{3}$	1	0.23	∞
8	—response time	B	0	R	$\sqrt{3}$	1	0	∞
9	—noise	B	0	R	1	1	0	∞
10	—integration time	B	5.0	R	$\sqrt{3}$	1	2.9	∞
	Mechanical constraints							
11	—scanning system	B	0.4	R	$\sqrt{3}$	1	0.2	∞
12	--phantom	B	2.9	R	$\sqrt{3}$	1	1.7	∞
13	—matching between probe and phantom references	B	2.9	R	$\sqrt{3}$	1	1.7	∞
14	—position of the DUT	A	4.9	N	1	1	4.9	5
	Physical parameter							
15	—density of the liquid	B	0	R	$\sqrt{3}$	1	0	∞
16	—liquid conductivity (deviation from target)	B	5.0	R	$\sqrt{3}$	0.5	2.9	∞
17	— liquid conductivity (measurement error)	A	0.23	N	1	1	0.23	9
18	-liquid permittivity (deviation from target)	B	5.0	R	$\sqrt{3}$	0.5	2.9	∞

19	— liquid permittivity (measurement error)	A	0.46	N	1	1	0.46	9
20	Drift in output power of the phone, probe, temperature	B	5.0	R	$\sqrt{3}$	1	2.9	∞
21	-- environment	B	3.0	R	$\sqrt{3}$	1	1.7	∞
	Post-processing							
22	--SAR extrapolation	B	3.9	R	$\sqrt{3}$	1	2.3	∞
Combined standard uncertainty		$u_c^{'} = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$		/			11.2	83.4
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$		N	k=2		22.4	/

8 MAIN TEST INSTRUMENTS

Table 9: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	Agilent E5071C	MY46103759	January 16,2012	One year
02	Power meter	NRVD	101253	March 9,2011	One year
03	Power sensor	NRV-Z5	100333		
04	Signal Generator	E4438C	MY45095825	January 16,2012	One year
05	Amplifier	VTL5400	0404	No Calibration Requested	
06	BTS	E5515C	GB47460133	September 21, 2011	One year
07	E-field Probe	SPEAG ES3DV3	3151	April 27, 2011	One year
08	DAE	SPEAG DAE4	786	November 21, 2011	One year
09	Dipole Validation Kit	SPEAG D835V2	443	October 25, 2009	three year
10	Dipole Validation Kit	SPEAG D1900V2	541	October 26, 2009	three year
11	Dipole Validation Kit	SPEAG D2450V2	873	September 27, 2011	three year

END OF REPORT BODY

ANNEX A MEASUREMENT PROCESS

The evaluation was performed with the following procedure:

Step 1: Measurement of the SAR value at a fixed location above the reference point was measured and was used as a reference value for assessing the power drop.

Step 2: The SAR distribution at the exposed side of the phantom was measured at a distance of 3.9 mm from the inner surface of the shell. The area covered the entire dimension of the flat phantom and the horizontal grid spacing was 10 mm x 10 mm. Based on this data, the area of the maximum absorption was determined by spline interpolation.

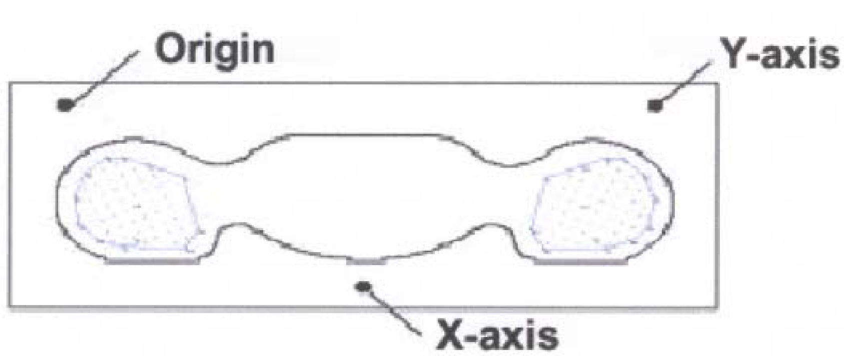
Step 3: Around this point, a volume of 30 mm x 30 mm x 30 mm was assessed by measuring 7 x 7x 7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

a. The data at the surface were extrapolated, since the center of the dipoles is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.

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

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

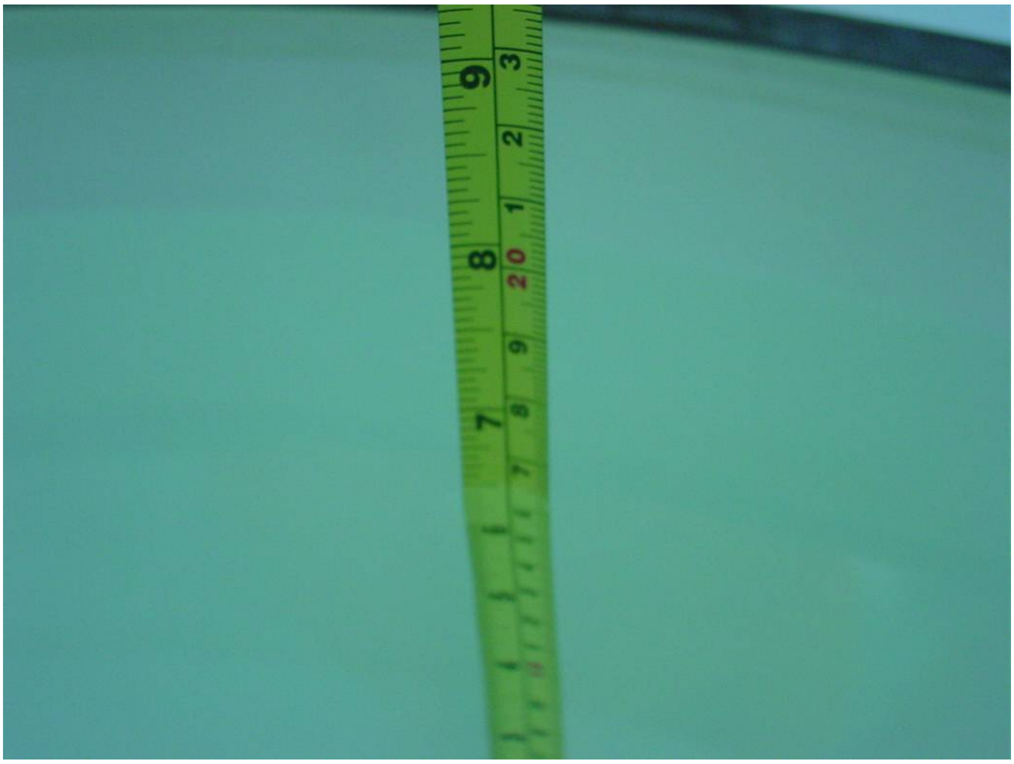
Step 4: Re-measurement the SAR value at the same location as in Step 1. If the value changed by more than 5%, the evaluation is repeated.



Picture A: SAR Measurement Points in Area Scan

ANNEX B TEST LAYOUT

Picture B1: Specific Absorption Rate Test Layout



Picture B2: Liquid depth in the Flat Phantom

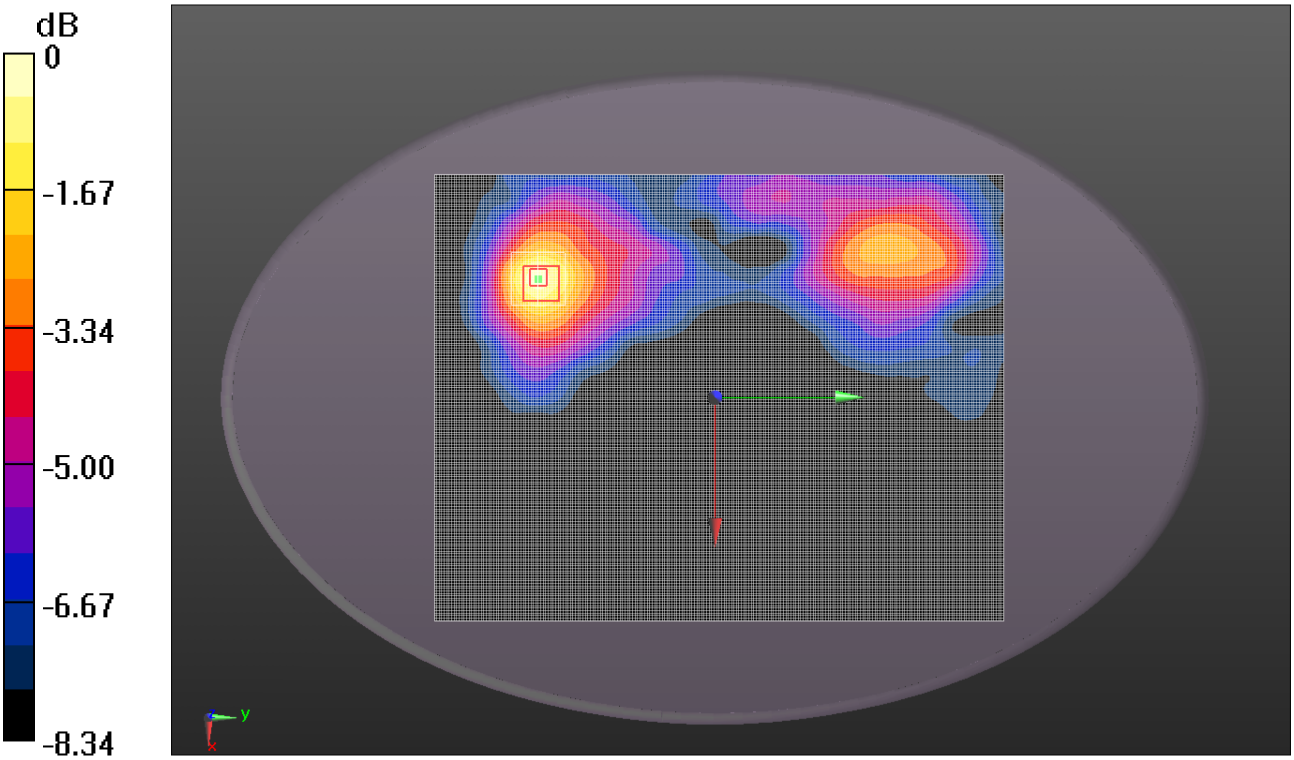
ANNEX C GRAPH RESULTS

GPRS 850 Test Position 1_Low

Date/Time: 2/17/2012 07:32:23 AM
Electronics: DAE4 Sn786
Medium: Body 850
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.971 mho/m; ε_r = 54.391; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 22.0°C
Communication System: 3 slot GPRS Frequency: 824.2 MHz Duty Cycle: 1:2.80027
Probe: ES3DV3 - SN3151 ConvF(6.02, 6.02, 6.02)

GSM850/Test position 1_Channel Low _unfold/Area Scan (181x231x1):
Measurement grid: dx=10mm, dy=10mm
Reference Value = 2.835 V/m; Power Drift = 0.15 dB
Maximum value of SAR (interpolated) = 0.078 mW/g

GSM850/Test position 1_Channel Low _unfold/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.835 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.1110
SAR(1 g) = 0.071 mW/g; SAR(10 g) = 0.047 mW/g
Maximum value of SAR (measured) = 0.077 mW/g



0 dB = 0.080mW/g = -21.94 dB mW/g

Fig. 1 GPRS 850 CH128 Test Position 1

GPRS 850 Test Position 2_Low

Date/Time: 2/17/2012 9:30:09 AM

Electronics: DAE4 Sn786

Medium: Body 850

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.971 mho/m; ε_r = 54.391; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 22.0°C

Communication System: 3 slot GPRS Frequency: 824.2 MHz Duty Cycle: 1:2.80027

Probe: ES3DV3 - SN3151 ConvF(6.02, 6.02, 6.02)

GSM850/Test position 2_Channel Low_fold/Area Scan (181x231x1):

Measurement grid: dx=10mm, dy=10mm

Reference Value = 2.734 V/m; Power Drift = 0.16 dB

Maximum value of SAR (interpolated) = 0.044 mW/g

GSM850/Test position 2_Channel Low_fold/Zoom Scan (7x7x7)/Cube 0:

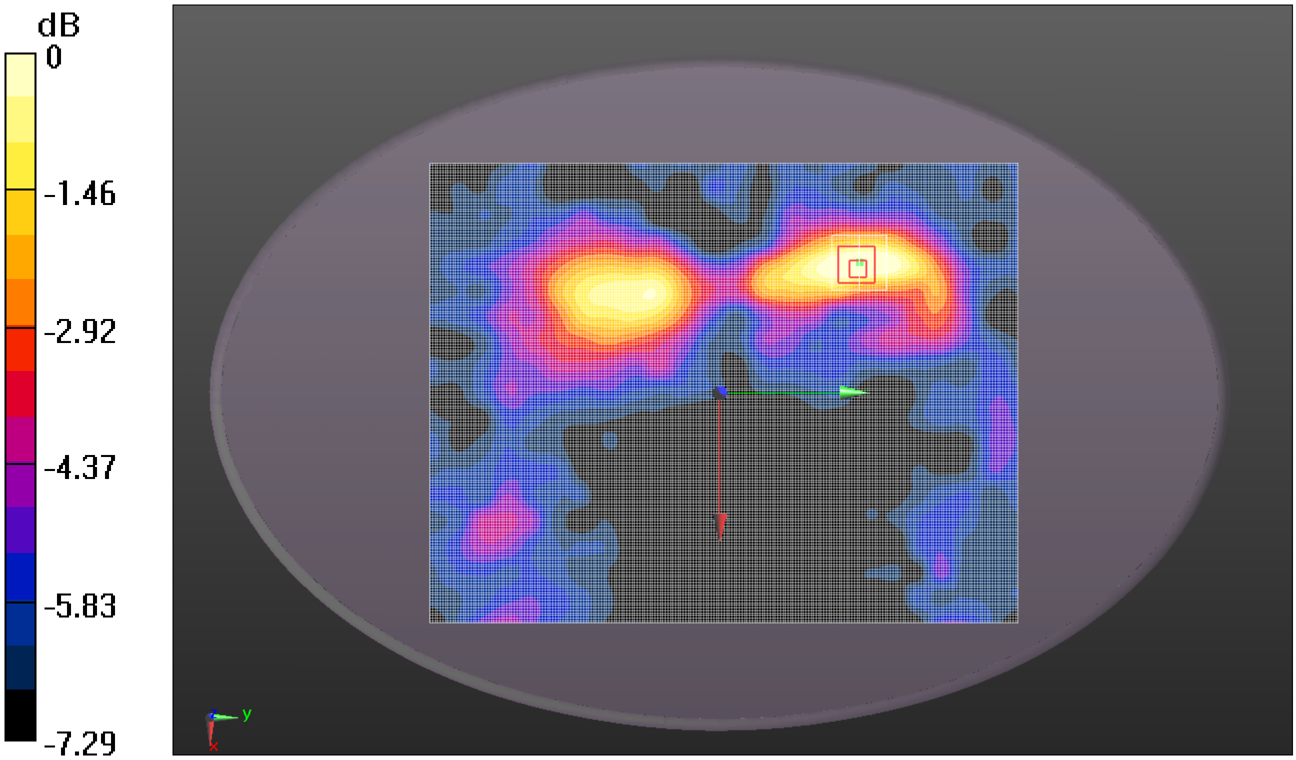
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.734 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.0560

SAR(1 g) = 0.041 mW/g; SAR(10 g) = 0.029 mW/g

Maximum value of SAR (measured) = 0.042 mW/g



0 dB = 0.040mW/g = -27.96 dB mW/g

Fig. 2 GPRS 850 CH128 Test Position 2

GPRS 850 Test Position 3_Low

Date/Time: 2/17/2012 12:34:24 PM

Electronics: DAE4 Sn786

Medium: Body 850

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.971 mho/m; ε_r = 54.391; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 22.0°C

Communication System: 3 slot GPRS Frequency: 824.2 MHz Duty Cycle: 1:2.80027

Probe: ES3DV3 - SN3151 ConvF(6.02, 6.02, 6.02)

GSM850/Test position 3_Channel Low_nomal/Area Scan (181x231x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 5.185 V/m; Power Drift = 0.09 dB

Maximum value of SAR (interpolated) = 0.068 mW/g

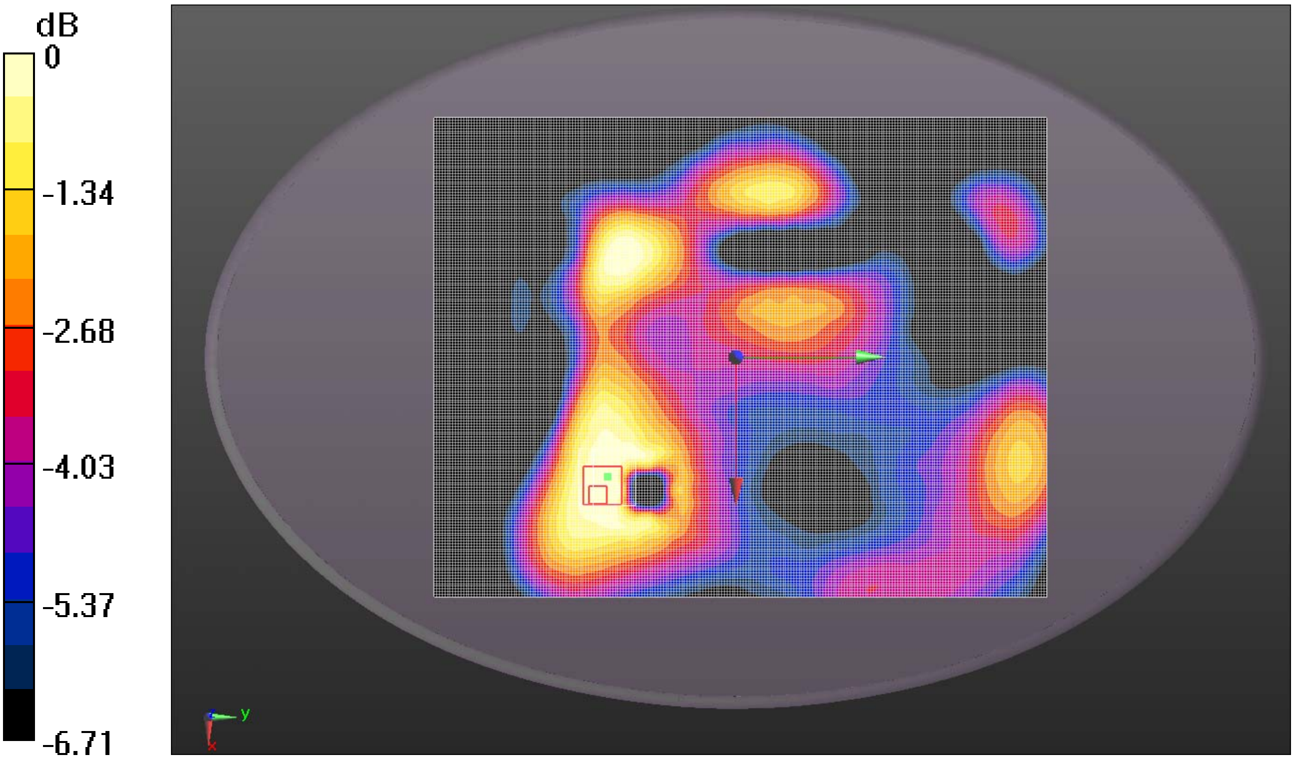
GSM850/Test position 3_Channel Low_nomal/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.185 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.0720

SAR(1 g) = 0.057 mW/g; SAR(10 g) = 0.044 mW/g

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



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

Fig. 3 GPRS 850 CH128 Test Position 3

GPRS 850 Test Position 4_Low

Date/Time: 2/17/2012 1:34:29 PM

Electronics: DAE4 Sn786

Medium: Body 850

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.971 mho/m; ε_r = 54.391; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 22.0°C

Communication System: 3 slot GPRS Frequency: 824.2 MHz Duty Cycle: 1:2.80027

Probe: ES3DV3 - SN3151 ConvF(6.02, 6.02, 6.02)

GSM850/Test position 4_Channel Low _rotate/Area Scan (181x231x1):

Measurement grid: dx=10mm, dy=10mm

Reference Value = 1.803 V/m; Power Drift = 0.04 dB

Maximum value of SAR (interpolated) = 0.106 mW/g

GSM850/Test position 4_Channel Low _rotate/Zoom Scan (7x7x7)/Cube 0:

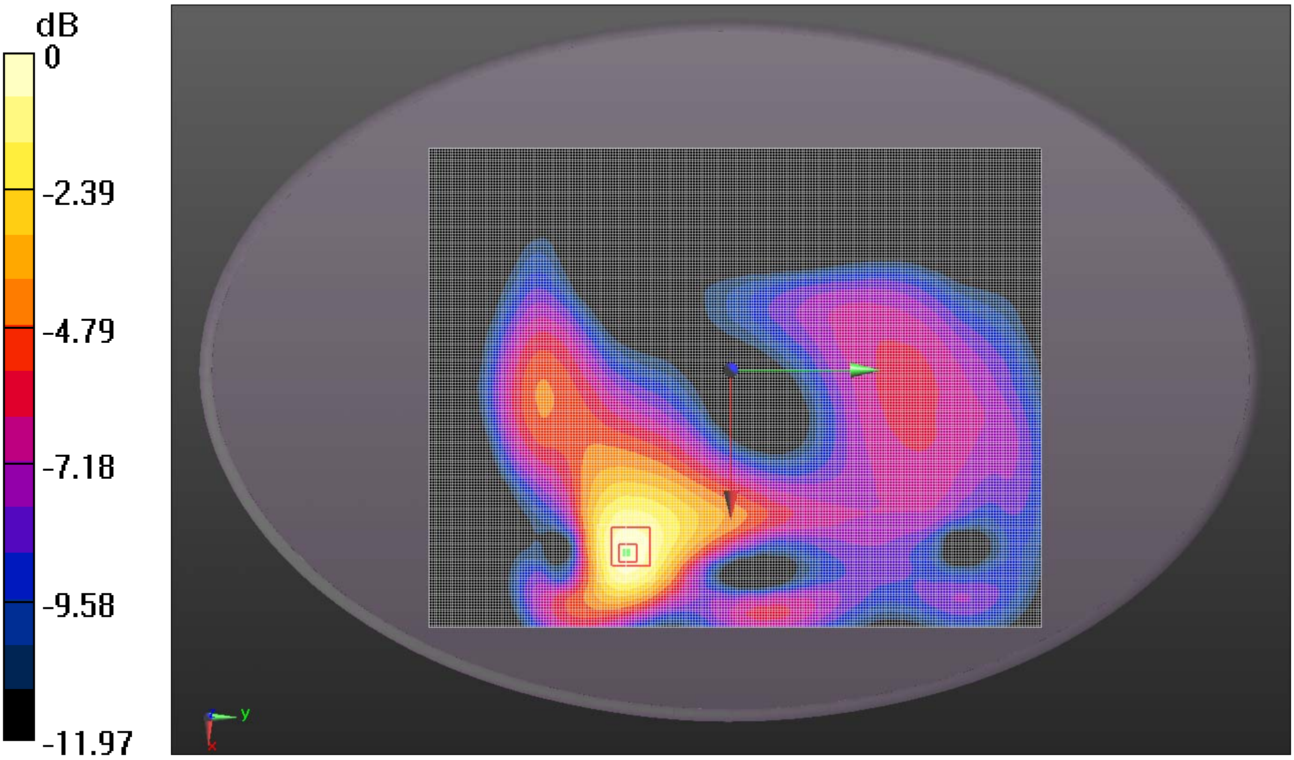
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.803 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.1350

SAR(1 g) = 0.099 mW/g; SAR(10 g) = 0.069 mW/g

Maximum value of SAR (measured) = 0.106 mW/g



0 dB = 0.110mW/g = -19.17 dB mW/g

Fig. 4 GPRS 850 CH128 Test Position 4

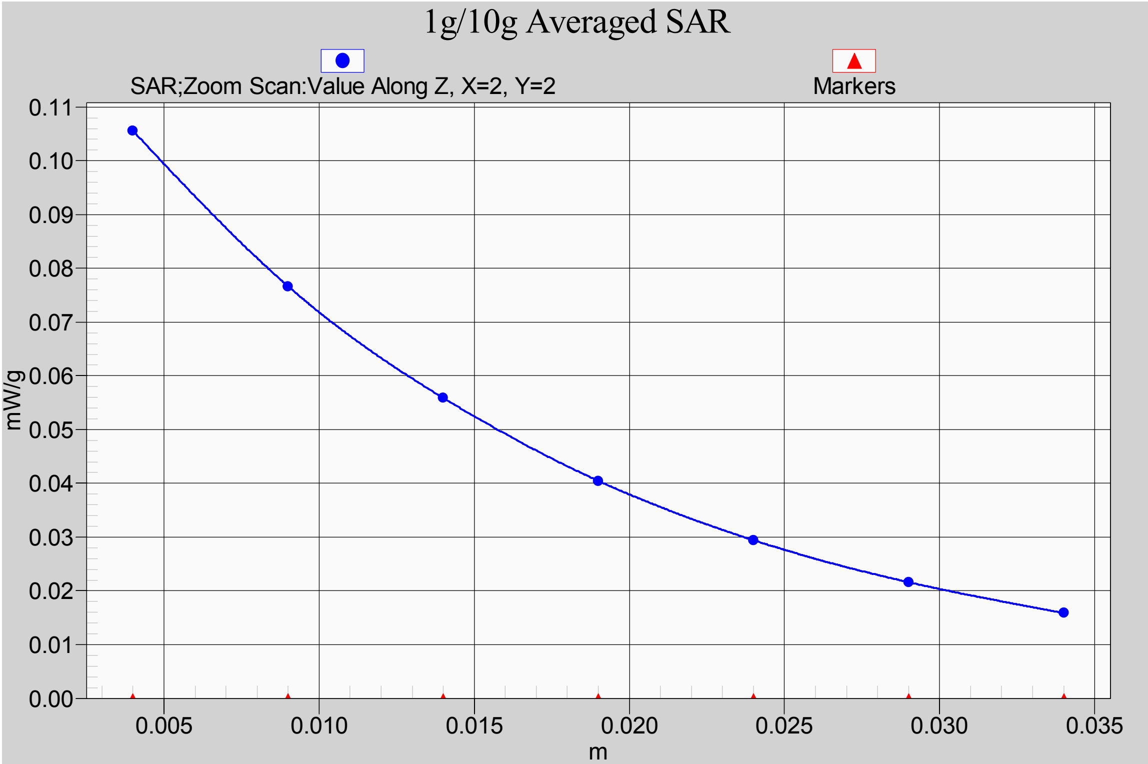


Fig. 4-1 Z-Scan at power reference point (850MHz CH128 Test Position 4)

EGPRS 850 Test Position 4_Low

Date/Time: 2/17/2012 10:29:11 AM

Electronics: DAE4 Sn786

Medium: Body 850

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.971 mho/m; ε_r = 54.391; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 22.0°C

Communication System: 3 slot GPRS Frequency: 824.2 MHz Duty Cycle: 1:2.80027

Probe: ES3DV3 - SN3151 ConvF(6.02, 6.02, 6.02)

GSM850/Test position 4_Channel Low _rotate _EGPRS/Area Scan (181x231x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 3.453 V/m; Power Drift = -0.08 dB

Maximum value of SAR (interpolated) = 0.104 mW/g

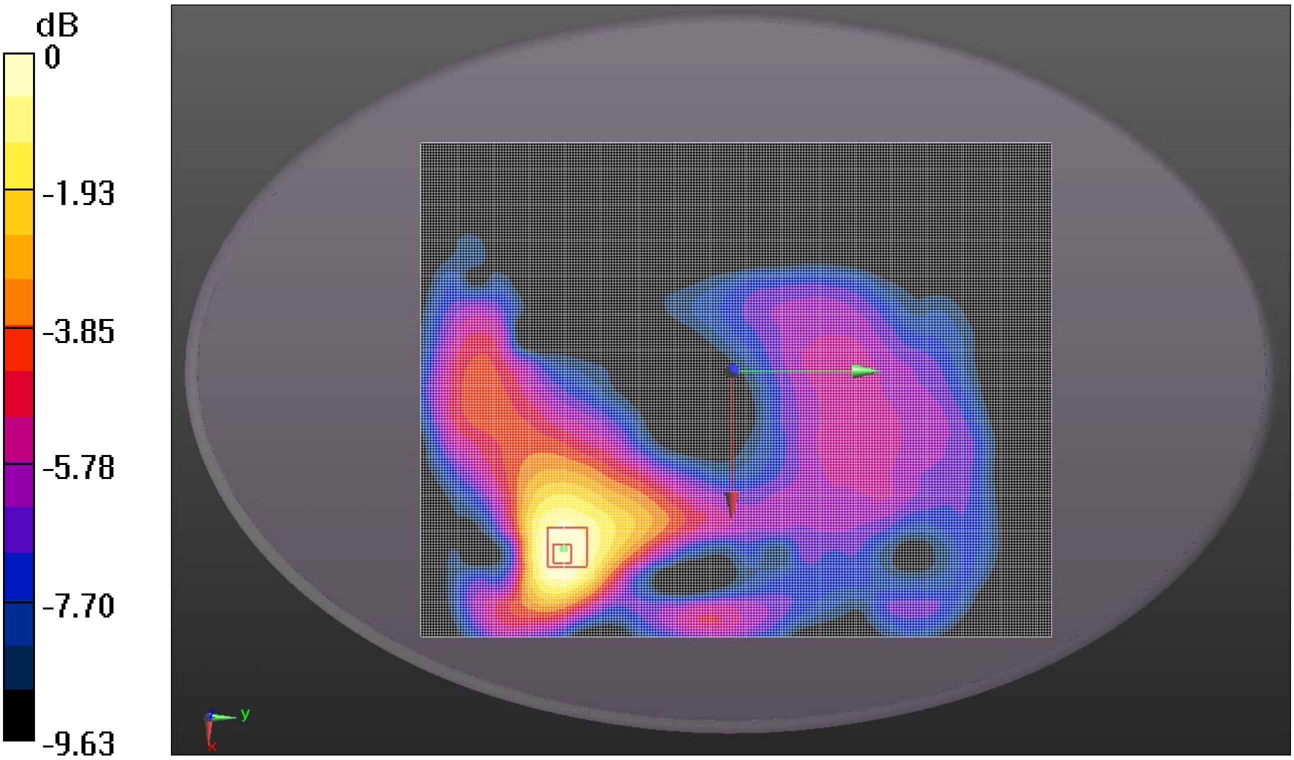
GSM850/Test position 4_Channel Low _rotate _EGPRS/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.453 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.1340

SAR(1 g) = 0.097 mW/g; SAR(10 g) = 0.069 mW/g

Maximum value of SAR (measured) = 0.102 mW/g



0 dB = 0.100mW/g = -20.00 dB mW/g

Fig. 5 EGPRS 850 CH128 Test Position 4

GPRS 1900 Test Position 1_Middle

Date/Time: 2/9/2012 2:38:34 PM

Electronics: DAE4 Sn786

Medium: Body 1900MHz

Medium parameters used: f = 1880 MHz; σ = 1.531 mho/m; ε_r = 51.278; ρ = 1000 kg/m^3

Ambient Temperature: 23.0°C Liquid Temperature: 23.0°C

Communication System: 4 slot GPRS Frequency: 1880 MHz Duty Cycle: 1:2.08018

Probe: ES3DV3 - SN3151 ConvF(4.87, 4.87, 4.87)

Test position 1_Channel Middle_unfold/Area Scan (181x231x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 1.847 V/m; Power Drift = 0.11 dB

Maximum value of SAR (interpolated) = 0.091 mW/g

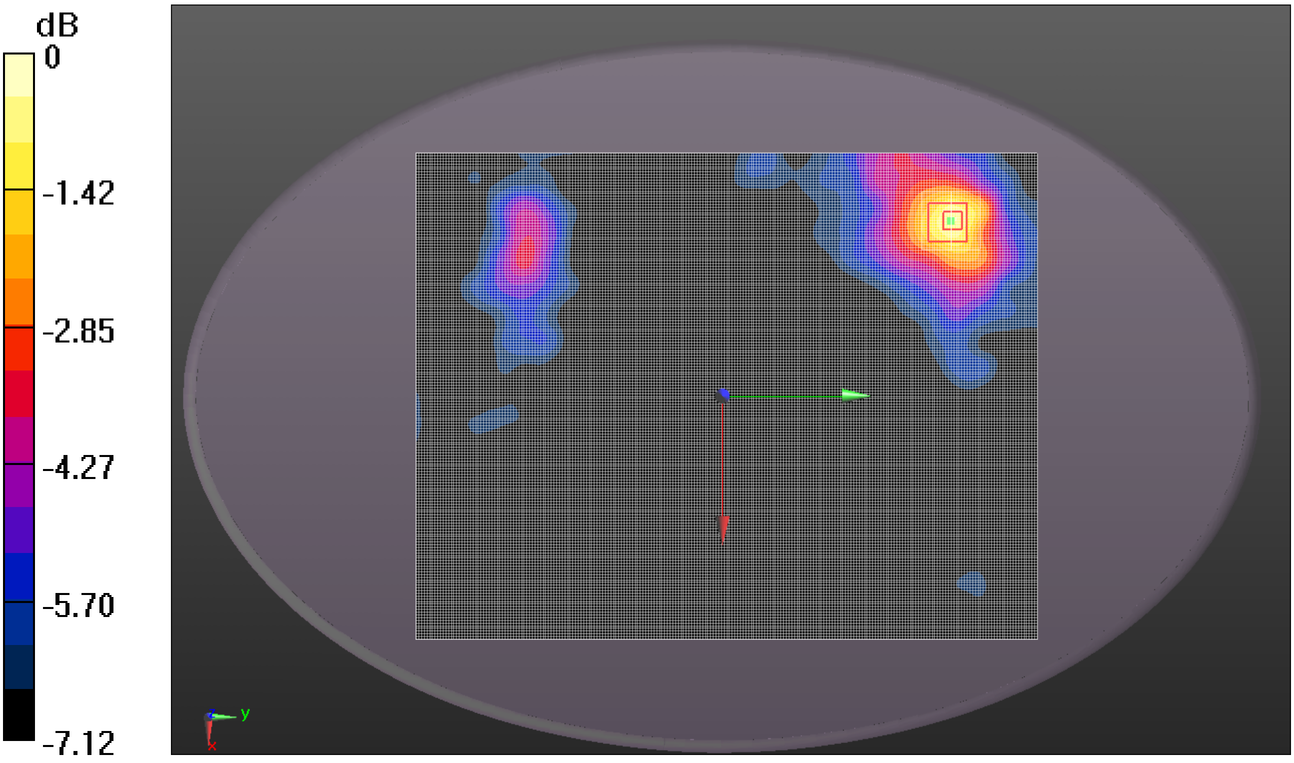
Test position 1_Channel Middle_unfold/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.847 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.1490

SAR(1 g) = 0.091 mW/g; SAR(10 g) = 0.058 mW/g

Maximum value of SAR (measured) = 0.130 mW/g



0 dB = 0.130mW/g = -20.00 dB mW/g

Fig. 6 GPRS 1900 CH661 Test Position 1

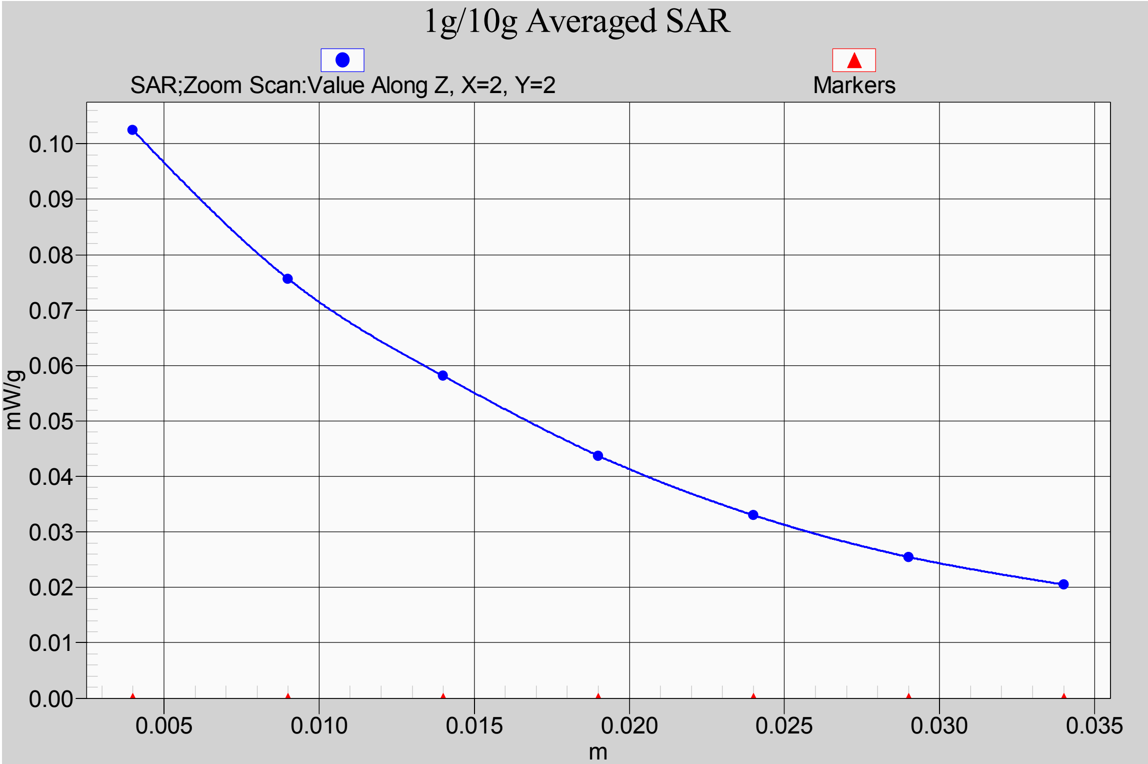


Fig. 6-1 Z-Scan at power reference point (1900MHz CH661 Test Position 1)

GPRS 1900 Test Position 2_Middle

Date/Time: 2/9/2012 3:34:01 PM

Electronics: DAE4 Sn786

Medium: Body 1900MHz

Medium parameters used: f = 1880 MHz; σ = 1.531 mho/m; ε_r = 51.278; ρ = 1000 kg/m^3

Ambient Temperature: 23.0°C Liquid Temperature: 23.0°C

Communication System: 4 slot GPRS Frequency: 1880 MHz Duty Cycle: 1:2.08018

Probe: ES3DV3 - SN3151 ConvF(4.87, 4.87, 4.87)

Test positon 2_Channel Middle_fold/Area Scan (181x231x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 2.516 V/m; Power Drift = 0.17 dB

Maximum value of SAR (interpolated) = 0.053 mW/g

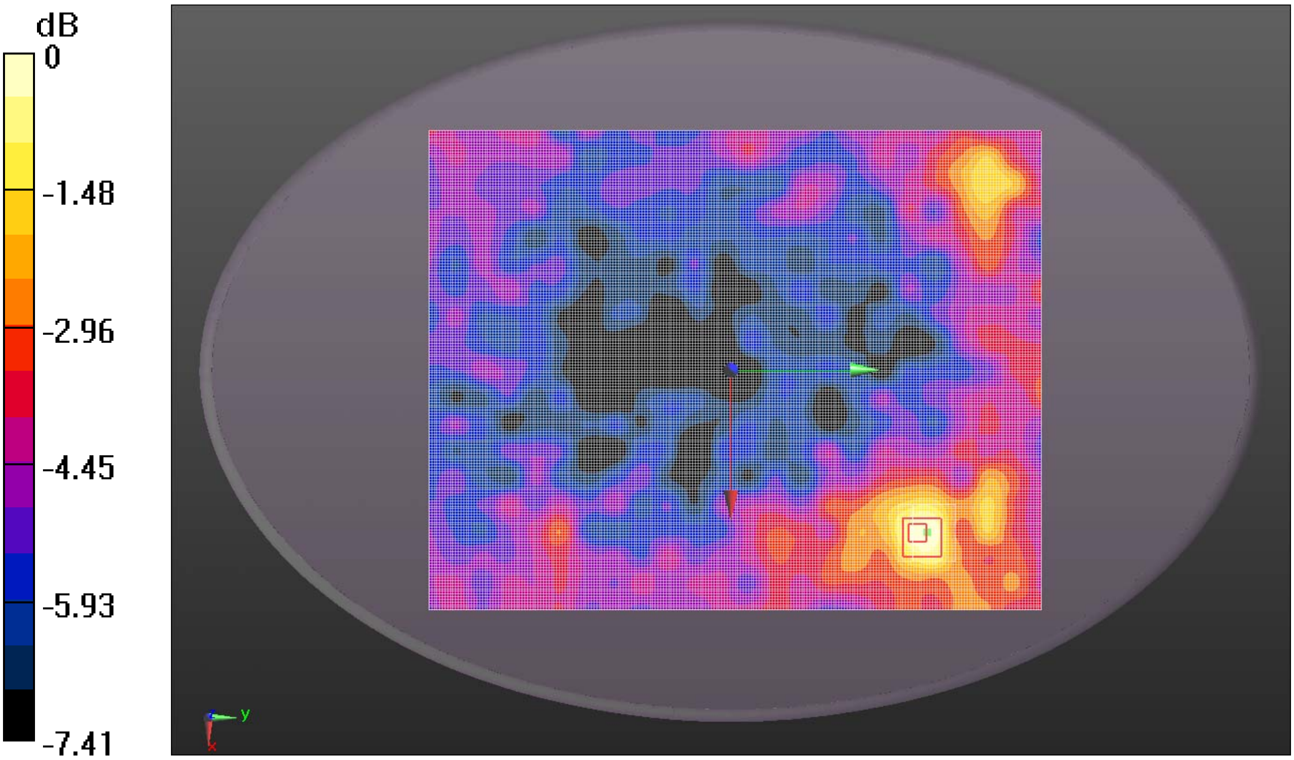
Test positon 2_Channel Middle_fold/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.516 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.0760

SAR(1 g) = 0.051 mW/g; SAR(10 g) = 0.035 mW/g

Maximum value of SAR (measured) = 0.055 mW/g



0 dB = 0.050mW/g = -26.02 dB mW/g

Fig. 7 GPRS 1900 CH661 Test Position 2

GPRS 1900 Test Position 3_Middle

Date/Time: 2/9/2012 1:39:46 PM

Electronics: DAE4 Sn786

Medium: Body 1900MHz

Medium parameters used: f = 1880 MHz; σ = 1.531 mho/m; ε_r = 51.278; ρ = 1000 kg/m^3

Ambient Temperature: 23.0°C Liquid Temperature: 23.0°C

Communication System: 4 slot GPRS Frequency: 1880 MHz Duty Cycle: 1:2.08018

Probe: ES3DV3 - SN3151 ConvF(4.87, 4.87, 4.87)

Test position 3_Channel Middle_nomal/Area Scan (181x231x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 2.128 V/m; Power Drift = 0.16 dB

Maximum value of SAR (interpolated) = 0.068 mW/g

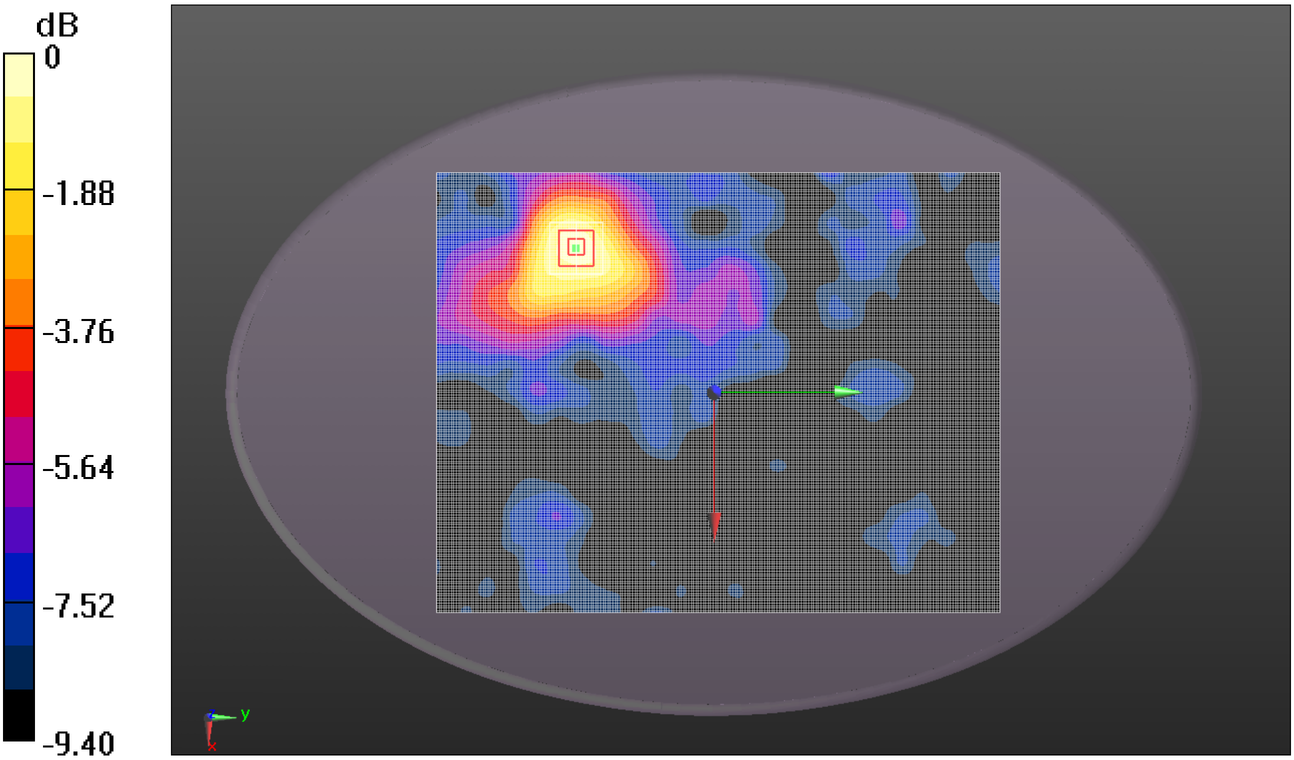
Test position 3_Channel Middle_nomal/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.128 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.0920

SAR(1 g) = 0.063 mW/g; SAR(10 g) = 0.043 mW/g

Maximum value of SAR (measured) = 0.066 mW/g



0 dB = 0.070mW/g = -23.10 dB mW/g

Fig. 8 GPRS 1900 CH661 Test Position 3

GPRS 1900 Test Position 4_Middle

Date/Time: 2/9/2012 12:40:45 PM

Electronics: DAE4 Sn786

Medium: Body 1900MHz

Medium parameters used: f = 1880 MHz; σ = 1.531 mho/m; ε_r = 51.278; ρ = 1000 kg/m^3

Ambient Temperature: 23.0°C Liquid Temperature: 23.0°C

Communication System: 4 slot GPRS Frequency: 1880 MHz Duty Cycle: 1:2.08018

Probe: ES3DV3 - SN3151 ConvF(4.87, 4.87, 4.87)

Test position 4_Channel Middle _rotate 2/Area Scan (181x231x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 2.147 V/m; Power Drift = 0.08 dB

Maximum value of SAR (interpolated) = 0.065 mW/g

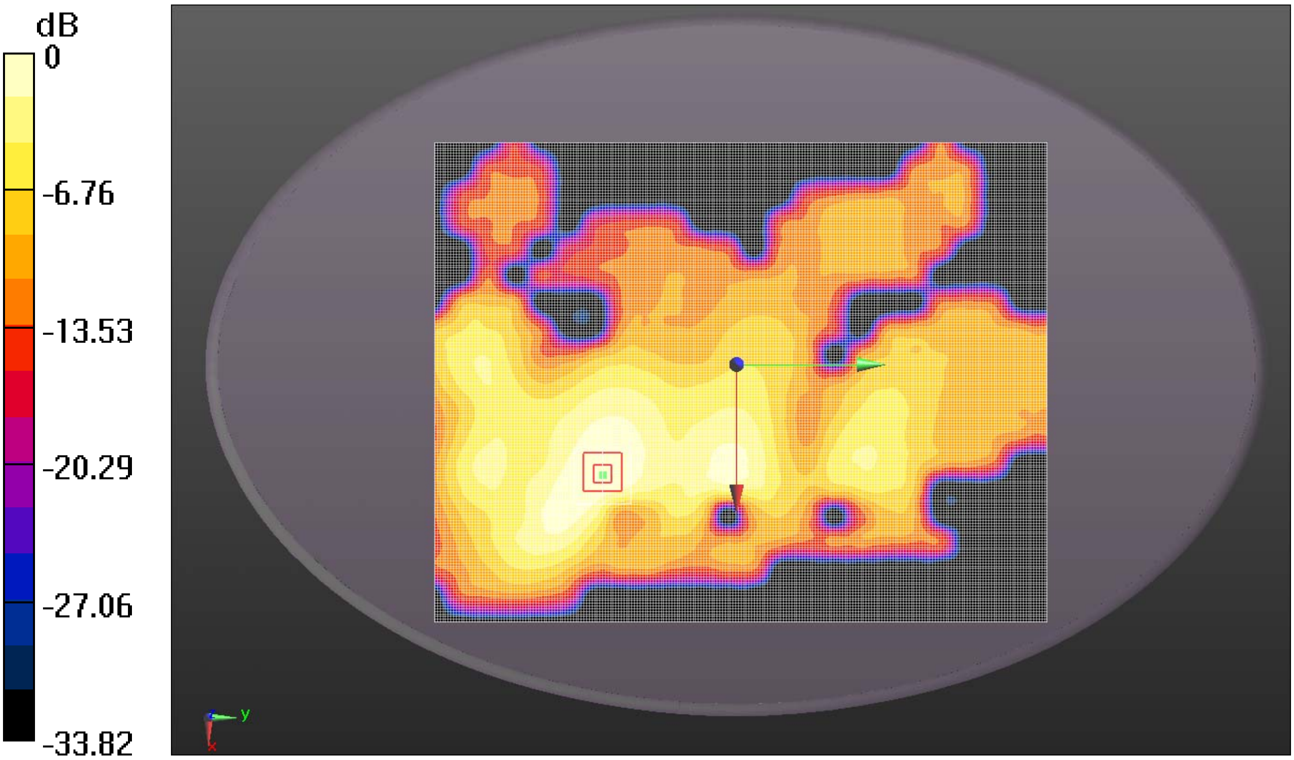
Test position 4_Channel Middle _rotate 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.147 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.0840

SAR(1 g) = 0.055 mW/g; SAR(10 g) = 0.035 mW/g

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



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

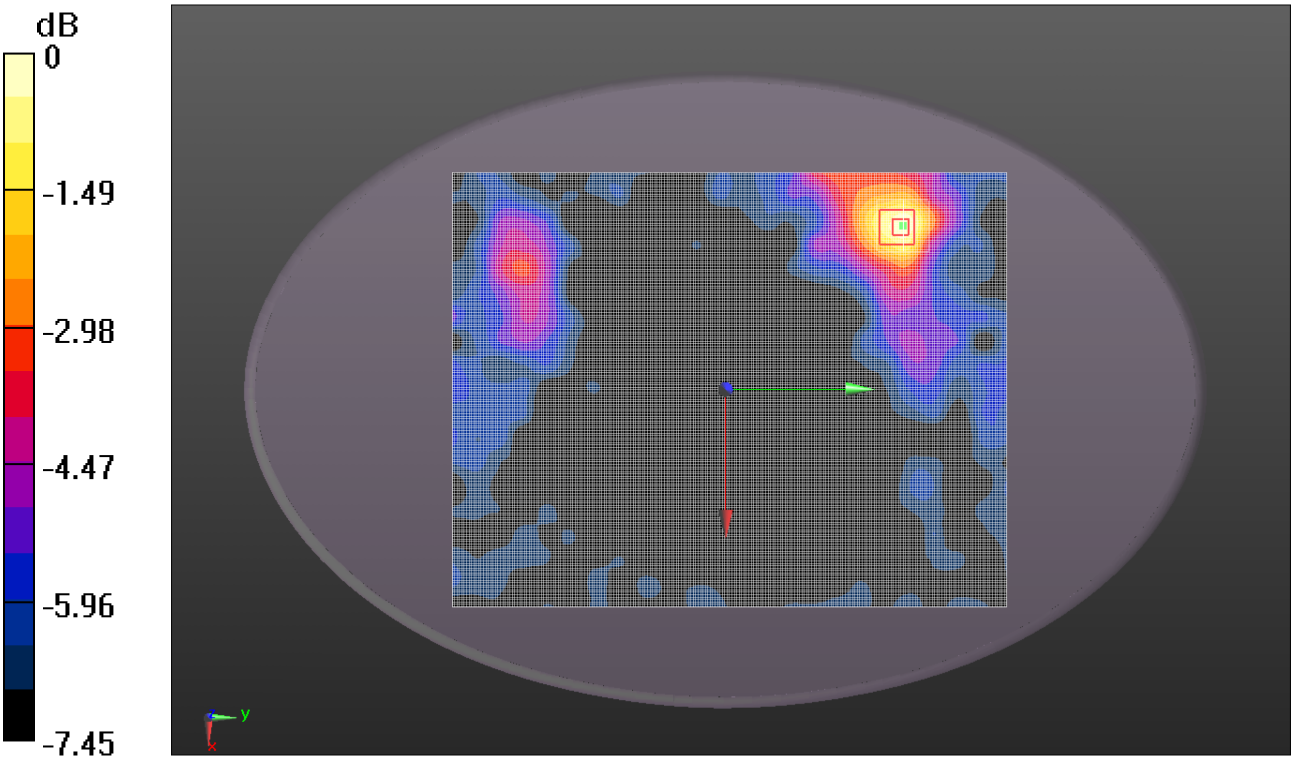
Fig. 9 GPRS 1900 CH661 Test Position 4

EGPRS 1900 Test Position 1_High

Date/Time: 2/9/2012 4:40:26 PM
Electronics: DAE4 Sn786
Medium: Body 1900MHz
Medium parameters used: f = 1910 MHz; σ = 1.561 mho/m; ε_r = 51.206; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 23.0°C
Communication System: 4 slot GPRS Frequency: 1909.8 MHz Duty Cycle: 1:2.08018
Probe: ES3DV3 - SN3151 ConvF(4.87, 4.87, 4.87)

Test position 1_Channel Middle_EGPRS/Area Scan (181x231x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 1.821 V/m; Power Drift = 0.15 dB
Maximum value of SAR (interpolated) = 0.091 mW/g

Test position 1_Channel Middle_EGPRS/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.821 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.1620
SAR(1 g) = 0.087 mW/g; SAR(10 g) = 0.055 mW/g
Maximum value of SAR (measured) = 0.093 mW/g



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

Fig. 10 GPRS 1900 CH810 Test Position 1

WCDMA 850 Test Position 1_Low

Date/Time: 2/17/2012 4:55:07 PM

Electronics: DAE4 Sn786

Medium: Body 850

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.973 mho/m; ε_r = 54.377; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 22.0°C

Communication System: WCDMA Frequency: 826.4 MHz Duty Cycle: 1:1

Probe: ES3DV3 - SN3151 ConvF(6.02, 6.02, 6.02)

Test position 1_Channe Low_unfold/Area Scan (181x231x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 1.953 V/m; Power Drift = 0.19 dB

Maximum value of SAR (interpolated) = 0.051 mW/g

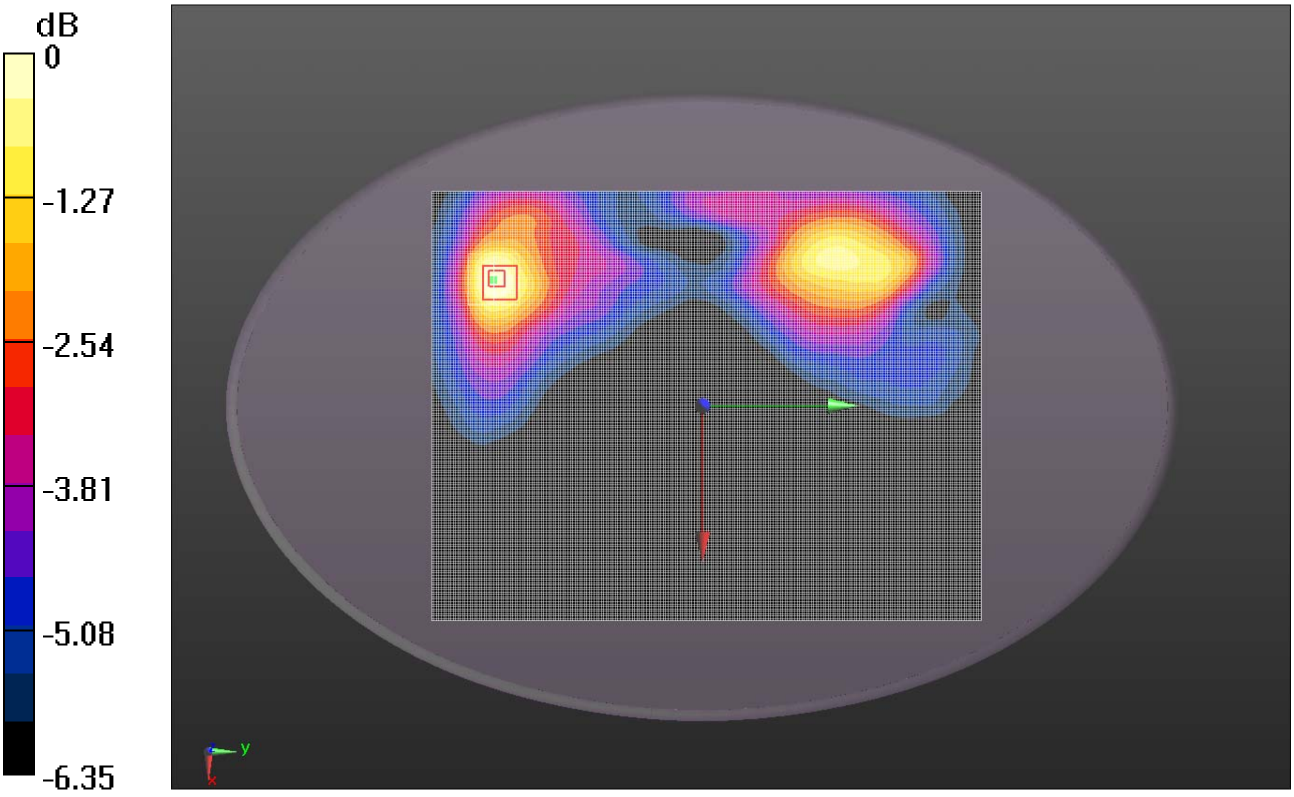
Test position 1_Channe Low_unfold/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.953 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 0.0770

SAR(1 g) = 0.049 mW/g; SAR(10 g) = 0.034 mW/g

Maximum value of SAR (measured) = 0.052 mW/g



0 dB = 0.050mW/g = -26.02 dB mW/g

Fig. 11 WCDMA 850 CH1312 Test Position 1

WCDMA 850 Test Position 2_Low

Date/Time: 2/20/2012 10:31:52 AM

Electronics: DAE4 Sn786

Medium: Body 850

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.973 mho/m; ε_r = 54.377; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 22.0°C

Communication System: WCDMA Frequency: 826.4 MHz Duty Cycle: 1:1

Probe: ES3DV3 - SN3151 ConvF(6.02, 6.02, 6.02)

Test position 2_Channel Low_fold 2/Area Scan (181x231x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 2.626 V/m; Power Drift = 0.16 dB

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

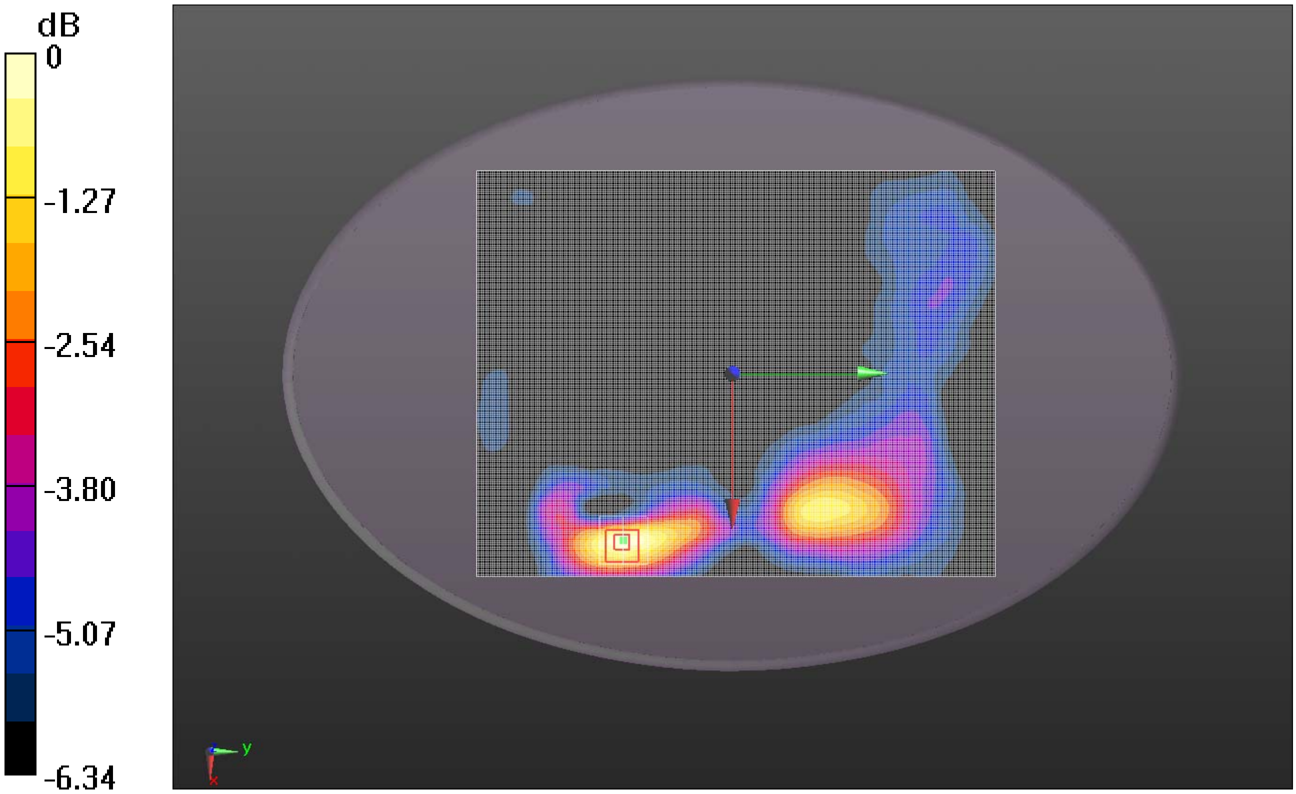
Test position 2_Channel Low_fold 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.626 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.0640

SAR(1 g) = 0.044 mW/g; SAR(10 g) = 0.031 mW/g

Maximum value of SAR (measured) = 0.046 mW/g



0 dB = 0.050mW/g = -26.02 dB mW/g

Fig. 12 WCDMA 850 CH1312 Test Position 2

WCDMA 850 Test Position 3_Low

Date/Time: 2/17/2012 2:57:58 PM

Electronics: DAE4 Sn786

Medium: Body 850

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.973 mho/m; ε_r = 54.377; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 22.0°C

Communication System: WCDMA Frequency: 826.4 MHz Duty Cycle: 1:1

Probe: ES3DV3 - SN3151 ConvF(6.02, 6.02, 6.02)

Test position 3_Channel Low_nomal/Area Scan (181x231x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 4.566 V/m; Power Drift = 0.06 dB

Maximum value of SAR (interpolated) = 0.051 mW/g

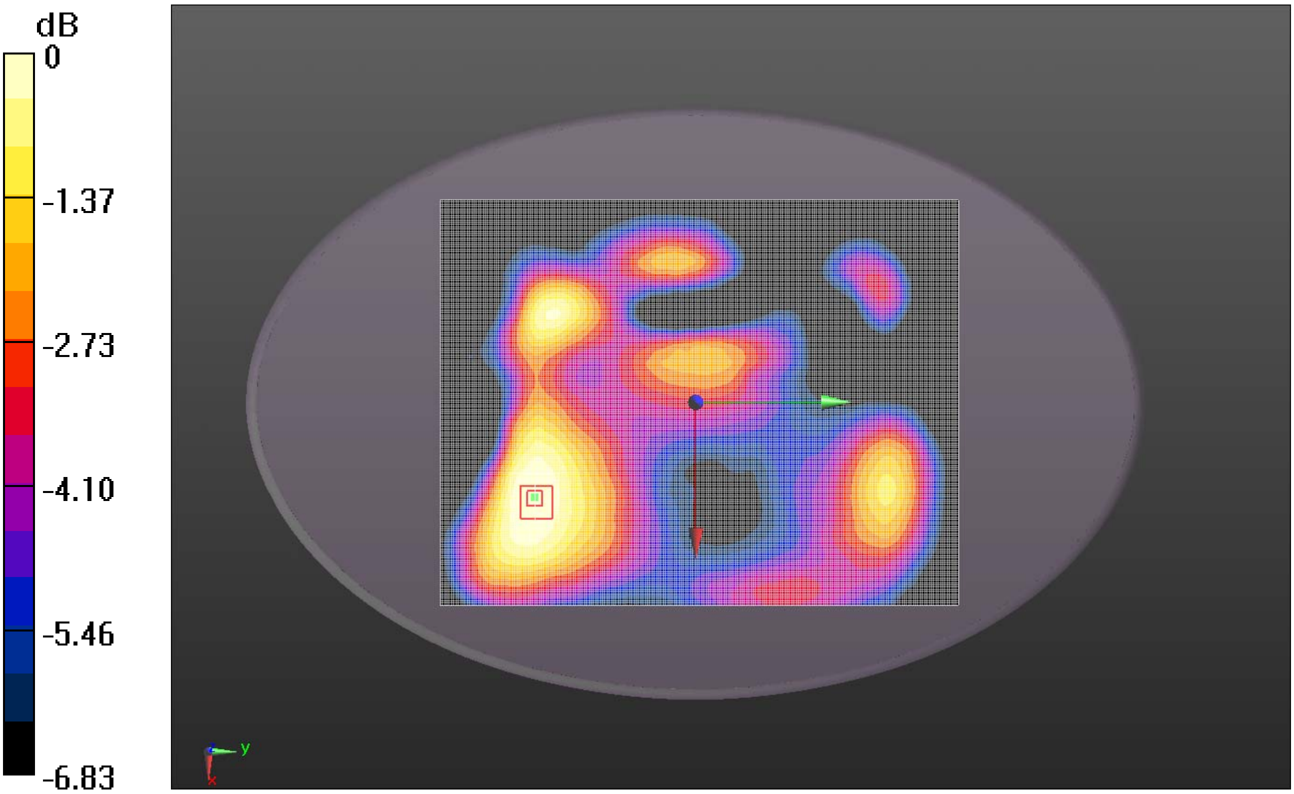
Test position 3_Channel Low_nomal/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.566 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.0630

SAR(1 g) = 0.049 mW/g; SAR(10 g) = 0.038 mW/g

Maximum value of SAR (measured) = 0.051 mW/g



0 dB = 0.050mW/g = -26.02 dB mW/g

Fig. 13 WCDMA 850 CH1312 Test Position 3

WCDMA 850 Test Position 4_Low

Date/Time: 2/17/2012 2:01:22 PM

Electronics: DAE4 Sn786

Medium: Body 850

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.973 mho/m; ε_r = 54.377; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 22.0°C

Communication System: WCDMA Frequency: 826.4 MHz Duty Cycle: 1:1

Probe: ES3DV3 - SN3151 ConvF(6.02, 6.02, 6.02)

Test position 4_Channel Low _rotate/Area Scan (181x231x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 3.923 V/m; Power Drift = -0.11 dB

Maximum value of SAR (interpolated) = 0.088 mW/g

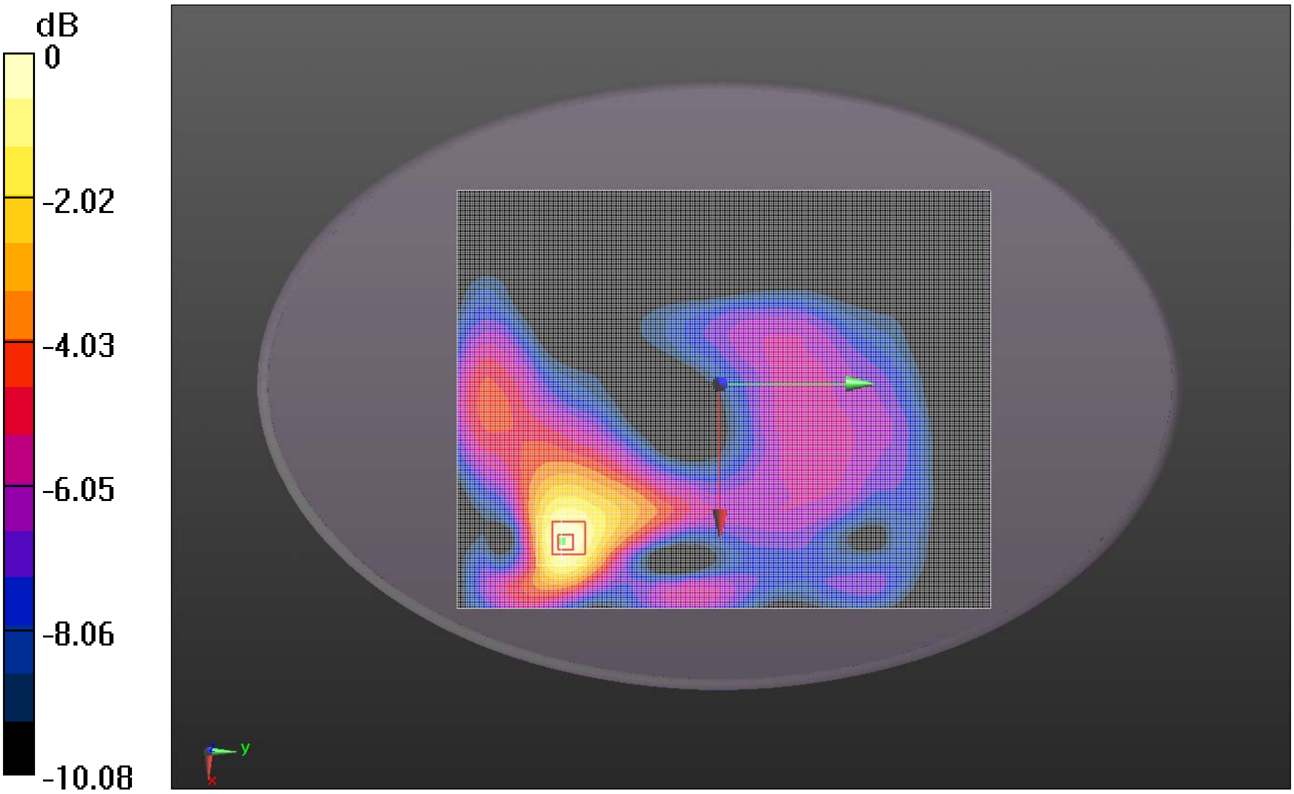
Test position 4_Channel Low _rotate/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.923 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.1170

SAR(1 g) = 0.083 mW/g; SAR(10 g) = 0.059 mW/g

Maximum value of SAR (measured) = 0.088 mW/g



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

Fig. 14 WCDMA 850 CH1312 Test Position 4

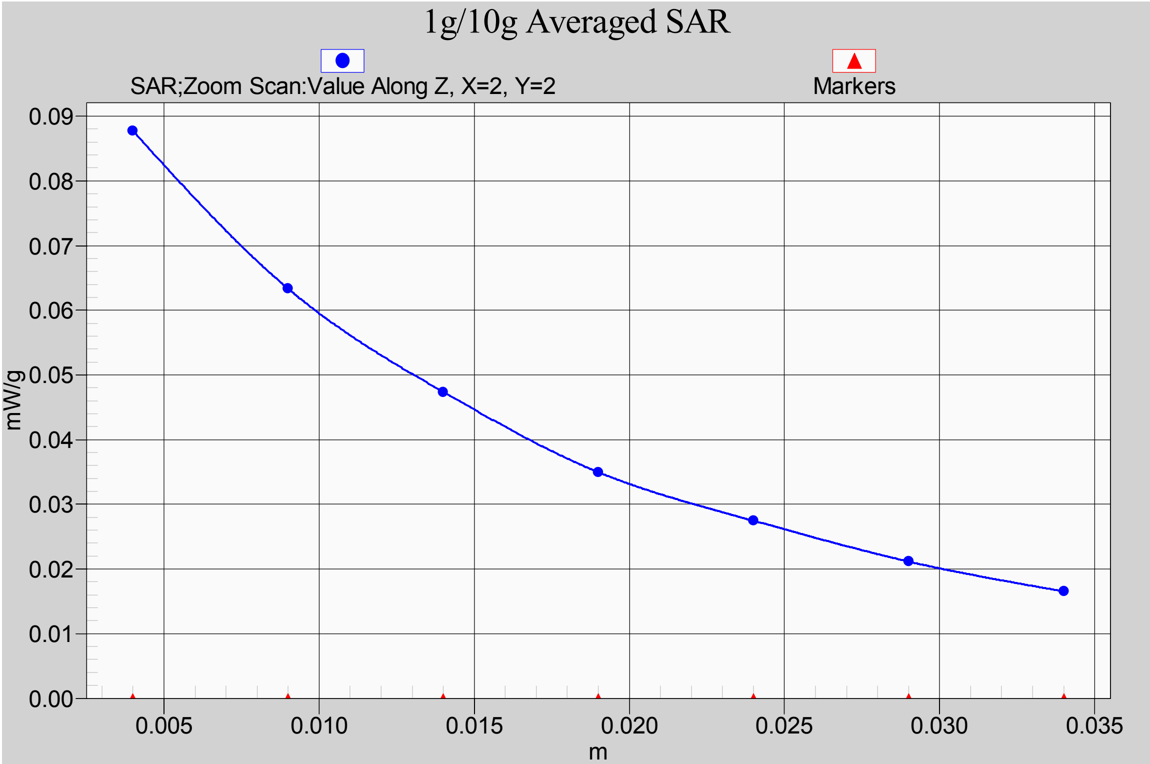


Fig. 14-1 Z-Scan at power reference point (850MHz CH1312 Test Position 4)