信息产业部通信计量中心
Telecommunication Metrology Center of MII

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No. DAT-P-114/01-01

No. L0442

TEST REPORT

No. 2007EEE01154-1

FCCID	QISE870
Test name	Electromagnetic Field (Specific Absorption Rate)
Product	HUAWEI E870 Mobile Connect Express
Model	HUAWEI E870
Client	HUAWEI Technologies Co., Ltd.
Type of test	Non Type approval

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Product name	HUAWEI E870 Mobile Connect Express	Sample Model	HUAWEI E870
Client	HUAWEI Technologies Co., Ltd.	Type of test	Non Type Approval
Factory	HUAWEI Technologies Co., Ltd.	Sampling arrival date	April 18th, 2007
Manufacturer	HUAWEI Technologies Co., Ltd.		
Sampling/ Sending sample	Sending sample	Sample sent by	Xie Yan
Sampling location	/	Sampling person	/
Sample quantity	1	Sample matrix	/
Series number of the Sample	/		
Manufacture date	/	Manufacture location	China, Shenzhen
Test basis	**EN 50360–2001:** Product standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones. **EN 50361–2001**: Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones. **ANSI C95.1–1999**: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz. **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. **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. **IEC 62209-2 (Draft):** 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)in the head and body for 30MHz to 6GHz Handheld and Body-Mounted Devices used in close proximity to the Body. **Vodafone SAR_Data_cards_V1.1:** Global Test Specification for Terminals for Performance Measurements –Performance TST- Specific Absorption Rate (SAR) for Data Cards and External Antennas.		
Test conclusion	Localized Specific Absorption Rate (SAR) of this portable wireless equipment has been measured in all cases requested by the relevant standards cited in Clause 5.2 of this test report. Maximum localized SAR is below exposure limits specified in the relevant standards cited in Clause 5.1 of this test report. General Judgment: Pass (Stamp) **Date of issue: May 21st, 2007**		
Note	The test results relate only to the items tested of the sample(s).		

Approved by (Lu Bingsong) **Deputy Director of the laboratory** **Reviewed by** (Qi Dianyuan) **Tested by** (Sun Qian)

1 COMPETENCE AND WARRANTIES

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3 DESCRIPTION OF EUT

3.1 Addressing Information Related to EUT

Table 1: Applicant (The Client)

Name or Company	HUAWEI Technologies Co., Ltd.
Address/Post	Bantian, Longgang District, Shenzhen, Guangdong
City	Shenzhen
Postal Code	518129
Country	China
Telephone	0755-28780808
Fax	0755-28780808

Table 2: Manufacturer

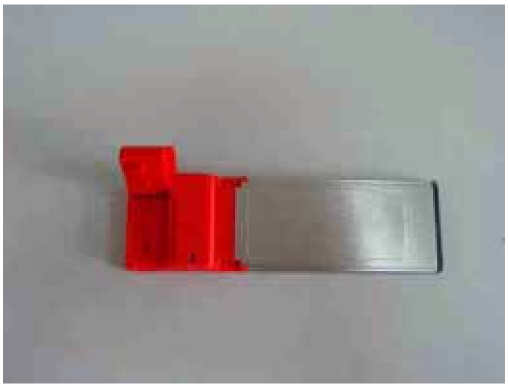
Name or Company	HUAWEI Technologies Co., Ltd.
Address/Post	Bantian, Longgang District, Shenzhen, Guangdong
City	Shenzhen
Postal Code	518129
Country	China
Telephone	0755-28780808
Fax	0755-28780808

3.2 Constituents of EUT

Table 3: Constituents of Samples

Description	Model	Serial Number	Manufacturer
Mobile Connect Express	HUAWEI E870	\	HUAWEI Technologies Co., Ltd.
ExpressCard/34 to PCMCIA Adapter	HUAWEI D08	\	HUAWEI Technologies Co., Ltd.

Picture 1-a: EUT with antenna folded



Picture 1-b: EUT with antenna unfolded

Picture 1-c: ExpressCard/34 to PCMCIA Adapter

Picture 1-d: EUT inserted into ExpressCard/34 to PCMCIA Adapter

Picture 1: Constituents of the sample

3.3 General Description

Equipment Under Test (EUT) is an EXPRESS PCI DataCard, which has a foldable antenna. SAR is tested respectively for WCDMA 850MHz, WCDMA 1900MHz, GSM 850MHz and 1900MHz with

3 different Laptops. Also SAR is tested for HSDPA 850 and HSDPA 1900 in the worst cases of WCDMA 850MHz, WCDMA 1900MHz of 3 different laptops. The EUT has GPRS function of class 12. The EUT can be used with the ExpressCard/34 to PCMCIA Adapter and without it. We did the pre-scan, and found that the result with the ExpressCard/34 to PCMCIA is worse than that without it.

The sample under test was selected by the Client.
Components list please refer to documents of the manufacturer.

4 OPERATIONAL CONDITIONS DURING TEST

4.1 Schematic Test Configuration

4.1.1 WCDMA Test Configuration

For the SAR body tests at WCDMA 850MHz and WCDMA 1900MHz, we established the radio link through call processing. The maximum output power were verified on high, middle and low channels for each test band according to 3GPP TS 34.121 with the following configuration (Please see 7.2.2 Table 6 for the above detailed power measurement results):

1) 12.2kbps RMC ,64,144,384 kbps RMC with TPC set to all "1's"
2) Test loop Mode 1

For the output power, the configurations for the DPCCH and $DPDCH_1$ are as followed (E870 do not support the $DPDCH_{2-n}$):

	Channel Bit Rate (kbps)	Channel Symbol Rate (ksps)	Spreading Factor	Spreading Code Number	Bits/Slot
DPCCH	15	15	256	0	10
$DPDCH_1$	15	15	256	64	10
	30	30	128	32	20
	60	60	64	16	40
	120	120	32	8	80
	240	240	16	4	160
	480	480	8	2	320
	960	960	4	1	640

SAR is tested with 12.2 kps RMC and not required for other spreading codes (64,144, and 384 kbps RMC) and multiple $DPDCH_n$, because the maximum output power for each of these other configurations<0.25dB higher than 12.2kbps RMC and the multiple $DPDCH_n$ is not applicable for the EUT.

The configurations of RMC 12.2 kbps are as followed:

UL reference measurement channel physical parameters (12.2 kbps)

Parameter	Level	Unit
Information bit rate	12,2	kbps
DPDCH	60	kbps
DPCCH	15	kbps
DPCCH Slot Format	0	-
DPCCH/DPDCH power ratio	−5,46	dB
TFCI	On	-
Repetition	23	%

4.1.2 HSDPA Test Configuration

The HSDPA output power was verified on high, middle and low channels for each test band according to 2GPP TS 34.121 with the following configuration (Please see 7.2.2 Table 6 for the above detailed power measurement results):

The HSDPA output power was verified on 12.2kbps FRC and 12.2kbps RMC with TPC set to all "1s".

1) H-set is configured in FRC according to UE category
2) Using QPSK in H-set 1
3) Using CQI feedback cycle =2ms in HS-DPCCH
4) Using βc=9; βd=15 for DPCCH and DPDCH gain factors
5) Using ΔACK=ΔNACK= 5 and ΔCQI = 2

Fixed Reference Channel H-Set 1

Parameter	Unit	Value	
Nominal Avg. Inf. Bit Rate	kbps	534	777
Inter-TTI Distance	TTI's	3	3
Number of HARQ Processes	Processes	2	2
Information Bit Payload (N_{INF})	Bits	3202	4664
Number Code Blocks	Blocks	1	1
Binary Channel Bits Per TTI	Bits	4800	7680
Total Available SML's in UE	SML's	19200	19200
Number of SML's per HARQ Proc.	SML's	9600	9600
Coding Rate		0.67	0.61
Number of Physical Channel Codes	Codes	5	4
Modulation		QPSK	16QAM
Note: The HS-DSCH shall be transmitted continuously with constant power but only every third TTI shall be allocated to the UE under test			

For the HSDPA SAR tests, we use the highest body SAR configuration in 12.2kbps RMC without HSDPA, and use FRC with a 12.2kbps RMC in Test Loop Mode 1.

4.1.3 Power reduction

For the SAR body tests for GSM 850 and 1900, a communication link is set up with a System Simulator (SS) by air link. The EUT is commanded to operate at maximum transmitting power. Since the EUT only has the data transfer function, but does not have the speech transfer function. The tests in the band of 850MHz and 1900MHz are only performed in the mode of GPRS. And ince the GPRS class is 12 for this EUT, it has at most 4 timeslots in uplink. According to specification 3GPP TS 51.010, the maximum power of the GSM can do the power reduction for the multi-slot. The allowed power reduction in the multi-slot configuration is as following:

Number of timeslots in uplink assignment	Permissible nominal reduction of maximum output power, (dB)
1	0
2	0 to 3,0
3	1,8 to 4,8
4	3,0 to 6,0

For this EUT, the tests for GSM 850 GPRS and GSM 1900 GPRS band will be performed under the following 4 setups with one assistant laptop first at one test position:

1) using 1 timeslot in uplink with the power is 33 dBm for 850MHz and 30 dBm for 1900MHz
2) using 2 timeslots in uplink with the power reduced 2dB
3) using 3 timeslots in uplink with the power reduced 4dB
4) using 4 timeslots in uplink with the power reduced 6dB

After drawn the worst case, the tests will be continued to perform with the same EUT setup for the whole tests for 850 GPRS and 1900 GPRS with three laptops.

4.1.4 Test positions

And according to the "2 dB rule" specified in the OET Bulletin 65 (Edition 97-01) and Supplement C(Edition 01-01), **" If the SAR measured at the middle channel for each test configuration (left, right, Cheek/Touch, Tile/Ear, extended and retracted) is at least 2.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s)"**.

Then The Absolute Radio Frequency Channel Number (ARFCN) is firstly allocated to 4182, 9400, 190 and 661 respectively in the case of WCDMA(HSDPA) 850MHz, WCDMA (HSDPA)1900MHz, GSM 850MHz and GSM 1900MHz.

For each channel, the EUT is tested at the following 2 test positions:

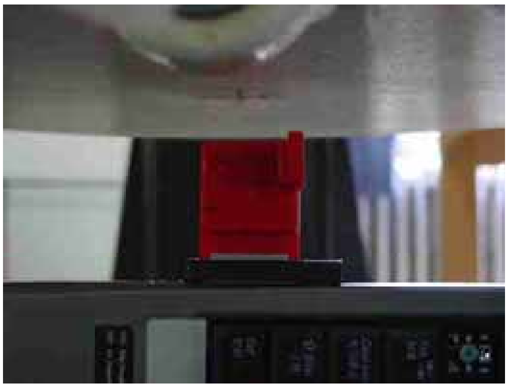
- Test Position 1: The EUT that is inserted into the ExpressCard/34 to PCMCIA Adapter is plugged in the PCMCIA slot of the portable computer. The back side of the computer is in direct contact against the bottom of the flat phantom.（Picture 2-a1 is for antenna folded and Picture 2-a2 is for antenna unfolded）
- Test Position 2: The EUT that is inserted into the ExpressCard/34 to PCMCIA Adapter is plugged in the PCMCIA slot of the portable computer. The top of the EUT is directed to the bottom of the flat phantom. The separation distance is 1.5cm between the top of the EUT and

the bottom of the flat phantom.（Picture 2-b1 is for antenna folded and Picture 2-b2 is for antenna unfolded）

Picture 2-a1: Test position 1 with antenna folded

Picture 2-a2: Test position 1 with antenna unfolded

Picture 2-b1: Test position 2 with antenna folded



Picture 2-b2: Test position 2 with antenna unfolded

Picture 2: Test positions of EUTs

During the test of the datacard, three Laptops are used as the test assistant to help to setup communication, whose type are IBM T41 (See Picture 3-a and 3-b), Dell LATIDUE D600 (See Picture 3-c and 3-d), and HP compaq nc6130 ((See Picture 3-e and 3-f).

Picture 3-a: Close

Picture 3-b: Open

Picture 3-c: Close

Picture 3-d: Open

Picture 3-e: Close

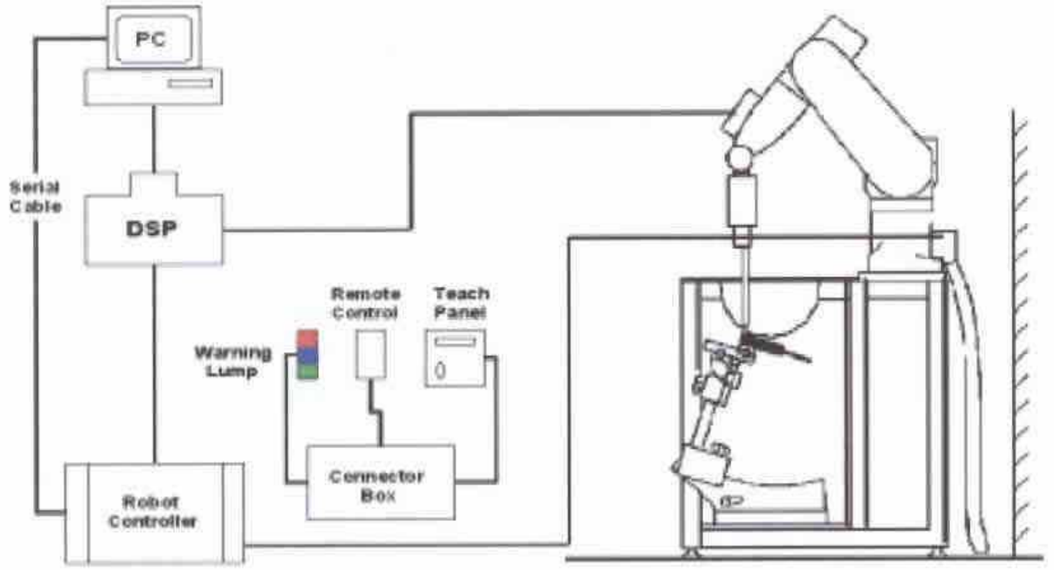
Picture 3-f: Open

Picture 3: Three laptops as test assistants

4.2 SAR Measurement Set-up

These measurements were performed with the automated near-field scanning system DASY4 Professional 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 Micron Pentium III 800 MHz computer with Windows 2000 system and SAR Measurement Software DASY4 Professional, 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 4: SAR Lab Test Measurement Set-up

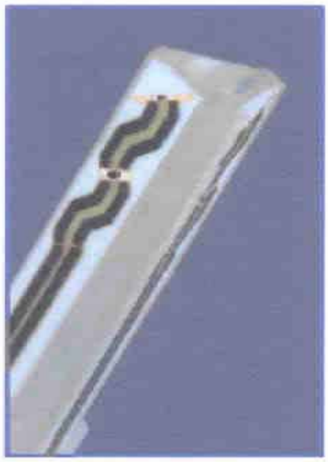
The DAE consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information 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.

4.3 Dasy4 E-field Probe System

The SAR measurements were conducted with the dosimetric probe ET3DV6 (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.

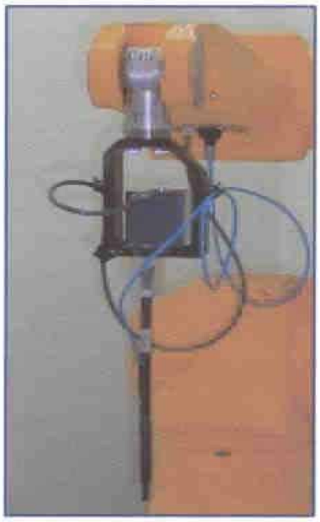
ET3DV6 Probe Specification

Construction	Symmetrical design with triangular core Built-in optical fiber *for* surface detection System(ET3DV6 only) Built-in shielding against static charges PEEK enclosure material(resistant to organic solvents, e.q., glycol)
Calibration	In air from 10 MHz to 2.5 GHz In brain and muscle simulating tissue at frequencies of 450MHz, 900MHz and 1.8GHz (accuracy±8%) Calibration for other liquids and frequencies upon request



Picture 5: ET3DV6

Frequency	l 0 MHz to > 6 GHz; Linearity: ±0.2 dB (30 MHz to 3 GHz)
Directivity	±0.2 dB in brain tissue (rotation around probe axis) ±0.4 dB in brain tissue (rotation normal probe axis)
Dynamic Range	5u W/g to > 100mW/g; Linearity: ±0.2dB
Surface Detection	±0.2 mm repeatability in air and clear liquids over diffuse reflecting surface(ET3DV6 only)
Dimensions	Overall length: 330mm Tip length: 16mm Body diameter: 12mm Tip diameter: 6.8mm Distance from probe tip to dipole centers: 2.7mm
Application	General dosimetry up to 3GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms



Picvure 6: ET3DV6 E-field

4.4 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 correlates 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,

Picture 7: Device Holder

ρ = Tissue density (kg/m^3).

Note: Please see Annex E to check the probe calibrate

4.5 Other Test Equipment

4.5.1 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 repeatably positioned according to the FCC and CENELEC specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).

4.5.2 Phantom

The Generic Twin 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. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents 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 8: Generic Twin Phantom

4.6 Equivalent Tissues

The liquid used for the frequency range of 800-2000 MHz consisted of water, sugar, salt and Cellulose. The liquid has been previously proven to be suited for worst-case. The Table 4 shows the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the IEEE 1528.

Table 4. Composition of the Body Tissue Equivalent Matter

MIXTURE %	FREQUENCY 850MHz
Water	52.5
Sugar	45.0
Salt	1.4
Preventol	0.1
Cellulose	1.0
Dielectric Parameters Target Value	f=850MHz ε=55.2 σ=0.97

MIXTURE %	FREQUENCY 1900MHz
Water	69.91
Glycol monobutyl	29.96
Salt	0.13
Dielectric Parameters Target Value	f=1900MHz ε=53.3 σ=1.52

4.7 System Specifications

4.7.1 Robotic System Specifications

Specifications

Positioner: Stäubli Unimation Corp. Robot Model: RX90L
Repeatability: ±0.02 mm
No. of Axis: 6

Data Acquisition Electronic (DAE) System

Cell Controller
Processor: Pentium III
Clock Speed: 800 MHz
Operating System: Windows 2000

Data Converter
Features: Signal Amplifier, multiplexer, A/D converter, and control logic
Software: DASY4 software
Connecting Lines: Optical downlink for data and status info.
Optical uplink for commands and clock

5 CHARACTERISTICS OF THE TEST

5.1 Applicable Limit Regulations

EN 50360–2001: Product standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones.

It specifies the maximum exposure limit of **2.0 W/kg** as averaged over any 10 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

ANSI C95.1–1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

It specifies 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.

5.2 Applicable Measurement Standards

EN 50361–2001: Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones.

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.

IEC 62209-2 (Draft): 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)in the head and body for 30MHz to 6GHz Handheld and Body-Mounted Devices used in close proximity to the body.

Vodafone SAR_Data_cards_V1.1: Global Test Specification for Terminals for Performance Measurements –Performance TST- Specific Absorption Rate (SAR) for Data Cards and External Antennas.

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

6 LABORATORY ENVIRONMENT

Table 5: The Ambient Conditions during EMF Test

Temperature	Min. = 15 °C, Max. = 30 °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.	

7 CONDUCTED OUTPUT POWER MEASUREMENT

7.1 Summary

During the process of testing, the EUT was controlled via Rhode & Schwarz Digital Radio Communication tester (CMU-200) to ensure the maximum power transmission and proper modulation. This result contains conducted output power and ERP for the EUT. In all cases, the measured peak output power should be greater and within 5% than EMI measurement.

7.2 Conducted Power

7.2.1 Measurement Methods

The EUT was set up for the maximum output power. The channel power was measured with Agilent Spectrum Analyzer E4440A. These measurements were done at 3 channels both before SAR test and after SAR test for each test band.

7.2.2 Measurement result

Table 6: Conducted Power Measurement Results

WCDMA 850 (12.2kbps RMC)	Conducted Power		
	Channel 4132 (826.4MHz)	Channel 4182 (836.4MHz)	Channel 4233 (846.6MHz)
Before test	23.17	23.26	23.20
After test	23.19	23.25	23.22
WCDMA 1900 (12.2kbps RMC)	Conducted Power		
	Channel 9262 (1852.4MHz)	Channel 9400 (1880MHz)	Channel 9538 (1907.6MHz)
Before test	23.10	23.18	23.12
After test	23.15	23.21	23.15
WCDMA 850 (64kbps RMC)	Conducted Power		
	Channel 4132 (826.4MHz)	Channel 4182 (836.4MHz)	Channel 4233 (846.6MHz)
Before test	23.15	23.23	23.20
After test	23.13	23.22	23.19
WCDMA 1900 (64kbps RMC)	Conducted Power		
	Channel 9262 (1852.4MHz)	Channel 9400 (1880MHz)	Channel 9538 (1907.6MHz)
Before test	23.08	23.17	23.10
After test	23.07	23.20	23.14
WCDMA 850 (144kbps RMC)	Conducted Power		
	Channel 4132 (826.4MHz)	Channel 4182 (836.4MHz)	Channel 4233 (846.6MHz)
Before test	23.17	23.24	23.20
After test	23.19	23.24	23.20
WCDMA 1900 (144kbps RMC)	Conducted Power		
	Channel 9262 (1852.4MHz)	Channel 9400 (1880MHz)	Channel 9538 (1907.6MHz)
Before test	23.09	23.15	23.10
After test	23.08	23.17	23.12
WCDMA 850 (384kbps RMC)	Conducted Power		
	Channel 4132 (826.4MHz)	Channel 4182 (836.4MHz)	Channel 4233 (846.6MHz)
Before test	23.15	23.22	23.18
After test	23.14	23.21	23.16
WCDMA 1900 (384kbps RMC)	Conducted Power		
	Channel 9262 (1852.4MHz)	Channel 9400 (1880MHz)	Channel 9538 (1907.6MHz)
Before test	23.06	23.15	23.09

After test	23.12	23.17	23.09
HSDPA 850	**Conducted Power**		
	Channel 4132 (826.4MHz)	**Channel 4182 (836.4MHz)**	**Channel 4233 (846.6MHz)**
Before test	23.10	23.14	23.24
After test	23.13	23.13	23.23
HSDPA 1900	**Conducted Power**		
	Channel 9262 (1852.4MHz)	**Channel 9400 (1880MHz)**	**Channel 9538 (1907.6MHz)**
Before test	23.14	23.20	23.08
After test	23.17	23.22	23.15
850MHz	**Conducted Power**		
	Channel 128 (824.2MHz)	**Channel 192 (837MHz)**	**Channel 251 (848.8MHz)**
Before test	33.04	33.18	33.07
After test	33.15	33.20	33.13
1900MHZ	**Conducted Power**		
	Channel 512 (1850.2MHz)	**Channel 661 (1880MHz)**	**Channel 810 (1909.8MHz)**
Before test	29.87	29.98	29.85
After test	29.88	29.98	29.85

7.2.3 Power Drift

To control the output power stability during the SAR test, DASY4 system calculates the power drift by measuring the E-field at the same location at the beginning and at the end of the measurement for each test position. These drift values can be found in Table 9 to Table 36 labeled as: (Power Drift [dB]). This ensures that the power drift during one measurement is within 5%.

8 TEST RESULTS

8.1 Dielectric Performance

Table 7: Dielectric Performance of Body Tissue Simulating Liquid

Measurement is made at temperature 23.3 °C and relative humidity 49%. Liquid temperature during the test: 22.5°C			
/	**Frequency**	**Permittivity ε**	**Conductivity σ (S/m)**
Target value	850 MHz	55.2	0.97
	1900 MHz	53.3	1.52
Measurement value (Average of 10 tests)	850 MHz	55.9	0.99
	1900 MHz	52.1	1.54

8.2 System Validation

Table 8: System Validation

Measurement is made at temperature 23.3 °C, relative humidity 49%, input power 250 mW. Liquid temperature during the test: 22.5°C							
Liquid parameters		**Frequency**		**Permittivity ε**		**Conductivity σ (S/m)**	
		835 MHz		41.7		0.88	
		1900 MHz		39.2		1.45	
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	2.48	1.62	2.50	1.25%	0.81%
	1900 MHz	5.09	9.73	5.27	9.91	3.3%	1.9%

Note：Target values are the data of the dipole validation results, please check Annex F for the Dipole Calibration Certificate.

8.3 Summary of Measurement Results (WCDMA 850)

Table 9: SAR Values (Datacard WCDMA 850 with DELL Laptop-antenna folded)

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**	
Flat Phantom, Test Position 1, Mid frequency (See Figure 1)	0.205	0.288	-0.192
Flat Phantom, Test Position 2, Mid frequency (See Figure 3)	0.011	0.019	-0.187

Table 10: SAR Values (Datacard WCDMA 850 with DELL Laptop-antenna unfolded)

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**	
Flat Phantom, Test Position 1, Mid frequency (See Figure 5)	0.224	0.323	0.117
Flat Phantom, Test Position 2, Mid frequency (See Figure 7)	0.013	0.019	0.199

Table 11: SAR Values (Datacard WCDMA 850 with HP Laptop-antenna folded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 9)	0.151	0.222	-0.183
Flat Phantom, Test Position 2, Mid frequency (See Figure 11)	0.012	0.021	-0.189

Table 12: SAR Values (Datacard WCDMA 850 with HP Laptop-antenna unfolded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 13)	0.247	0.369	0.053
Flat Phantom, Test Position 2, Mid frequency (See Figure 15)	0.048	0.067	0.017

Table 13: SAR Values (Datacard WCDMA 850 with IBM Laptop-antenna folded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 17)	0.199	0.292	-0.152
Flat Phantom, Test Position 2, Mid frequency (See Figure 19)	0.010	0.018	-0.193

Table 14: SAR Values (Datacard WCDMA 850 with IBM Laptop-antenna unfolded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 21)	0.287	0.435	0.036
Flat Phantom, Test Position 2, Mid frequency (See Figure 23)	0.029	0.044	-0.109

Table 15: SAR Values (HSDPA 850)

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	
Flat Phantom, Test Position 1, Mid frequency with DELL Laptop –antenna unfolded (See Figure 25)	0.240	0.349	-0.111
Flat Phantom, Test Position 1, Mid frequency with HP Laptop -antenna unfolded(See Figure 27)	0.240	0.364	-0.193
Flat Phantom, Test Position 1, Mid frequency IBM Laptop -antenna unfolded (See Figure 29)	0.273	0.418	-0.114

8.4 Summary of Measurement Results (WCDMA 1900)

Table 16: SAR Values (Datacard WCDMA 1900 with DELL Laptop-antenna folded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 31)	0.056	0.085	-0.193
Flat Phantom, Test Position 2, Mid frequency (See Figure 33)	0.050	0.066	-0.166

Table 17: SAR Values (Datacard WCDMA 1900 with DELL Laptop-antenna unfolded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 35)	0.115	0.172	-0.189
Flat Phantom, Test Position 2, Mid frequency (See Figure 37)	0.232	0.363	0.021

Table 18: SAR Values (Datacard WCDMA 1900 with HP Laptop-antenna folded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 39)	0.109	0.201	0.072
Flat Phantom, Test Position 2, Mid frequency (See Figure 41)	0.016	0.038	-0.160

Table 19: SAR Values (Datacard WCDMA 1900 with HP Laptop-antenna unfolded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 43)	0.178	0.295	0.035
Flat Phantom, Test Position 2, Mid frequency (See Figure 45)	0.221	0.348	0.030

Table 20: SAR Values (Datacard WCDMA 1900 with IBM Laptop-antenna folded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 47)	0.054	0.083	-0.200
Flat Phantom, Test Position 2, Mid frequency (See Figure 49)	0.037	0.056	-0.015

Table 21: SAR Values (Datacard WCDMA 1900 with IBM Laptop-antenna unfolded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 51)	0.099	0.152	-0.198
Flat Phantom, Test Position 2, Mid frequency (See Figure 53)	0.190	0.300	0.094

Table 22: SAR Values (HSDPA 1900)

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	
Flat Phantom, Test Position 2, Mid frequency with DELL Laptop -antenna unfolded (See Figure 55)	0.202	0.312	0.200
Flat Phantom, Test Position 2, Mid frequency with HP Laptop -antenna unfolded (See Figure 57)	0.224	0.352	0.050
Flat Phantom, Test Position 2, Mid frequency IBM Laptop -antenna unfolded (See Figure 59)	0.186	0.289	0.051

8.5 Summary of Measurement Results (850MHz GPRS)

Table 23: SAR Values (Datacard 850 MHz GPRS for different timeslots in uplink at Test Position 1-antenna unfolded with DELL Laptop)

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	
Flat Phantom, Mid frequency, **4** timeslots in uplink (See Figure 61)	0.402	0.582	-0.044
Flat Phantom, Mid frequency, **3** timeslots in uplink (See Figure 63)	0.594	0.862	-0.091
Flat Phantom, Mid frequency, **2** timeslots in uplink (See Figure 65)	0.623	0.901	-0.190
Flat Phantom, Mid frequency, **1** timeslots in uplink (See Figure 67)	0.551	0.805	0.149

Table 24: SAR Values (Datacard 850 MHz GPRS with DELL Laptop-antenna folded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 69)	0.387	0.550	-0.067
Flat Phantom, Test Position 2, Mid frequency (See Figure 71)	0.025	0.033	-0.196

Table 25: SAR Values (Datacard 850 MHz GPRS with DELL Laptop-antenna unfolded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 73)	0.623	0.901	-0.190
Flat Phantom, Test Position 2, Mid frequency (See Figure 75)	0.036	0.052	0.023

Table 26: SAR Values (Datacard 850 MHz GPRS with HP Laptop-antenna folded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 77)	0.330	0.485	-0.135
Flat Phantom, Test Position 2, Mid frequency (See Figure 79)	0.019	0.029	0.006

Table 27: SAR Values (Datacard 850 MHz GPRS with HP Laptop-antenna unfolded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 81)	0.560	0.846	-0.165
Flat Phantom, Test Position 2, Mid frequency (See Figure 83)	0.106	0.148	0.002

Table 28: SAR Values (Datacard 850 MHz GPRS with IBM Laptop-antenna folded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 85)	0.379	0.562	-0.068
Flat Phantom, Test Position 2, Mid frequency (See Figure 87)	0.017	0.025	-0.190

Table 29: SAR Values (Datacard 850 MHz GPRS with IBM Laptop-antenna unfolded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 89)	0.740	1.13	0.081
Flat Phantom, Test Position 1, Top frequency (See Figure 91)	0.714	1.05	-0.162
Flat Phantom, Test Position 1, Bottom frequency (See Figure 93)	0.759	1.12	-0.136
Flat Phantom, Test Position 2, Mid frequency (See Figure 95)	0.081	0.114	-0.082

8.6 Summary of Measurement Results (1900 MHz GPRS)

Table 30: SAR Values (Datacard 1900 MHz GPRS for different timeslots in uplink at Test Position 2- antenna unfolded with DELL Laptop)

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	
Flat Phantom,Mid frequency, **4** timeslots in uplink(See Figure 97)	0.159	0.258	-0.200
Flat Phantom,Mid frequency, **3** timeslots in uplink(See Figure 99)	0.193	0.303	-0.025
Flat Phantom,Mid frequency, **2** timeslots in uplink(See Figure 101)	0.213	0.341	-0.102
Flat Phantom,Mid frequency, **1** timeslots in uplink(See Figure 103)	0.170	0.273	-0.023

Table 31: SAR Values (Datacard 1900 MHz GPRS with DELL Laptop-antenna folded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 105)	0.052	0.080	-0.191
Flat Phantom, Test Position 2, Mid frequency (See Figure 107)	0.048	0.068	0.022

Table 32: SAR Values (Datacard 1900 MHz GPRS with DELL Laptop-antenna unfolded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 109)	0.118	0.175	-0.169
Flat Phantom, Test Position 2, Mid frequency (See Figure 111)	0.213	0.341	-0.102

Table 33: SAR Values (Datacard 1900 MHz GPRS with HP Laptop-antenna folded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 113)	0.098	0.166	0.173
Flat Phantom, Test Position 2, Mid frequency (See Figure 115)	0.022	0.065	0.200

Table 34: SAR Values (Datacard 1900 MHz GPRS with HP Laptop-antenna unfolded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 117)	0.158	0.255	-0.193
Flat Phantom, Test Position 2, Mid frequency (See Figure 119)	0.194	0.300	-0.071

Table 35: SAR Values (Datacard 1900 MHz GPRS with IBM Laptop-antenna folded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 121)	0.067	0.097	-0.192
Flat Phantom, Test Position 2, Mid frequency (See Figure 123)	0.038	0.054	-0.185

Table 36: SAR Values (Datacard 1900 MHz GPRS with IBM Laptop-antenna unfolded)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure 125)	0.091	0.142	-0.110
Flat Phantom, Test Position 2, Mid frequency (See Figure 127)	0.207	0.324	-0.097

8.7 Conclusion

Localized Specific Absorption Rate (SAR) of this portable wireless device has been measured in all cases requested by the relevant standards cited in Clause 5.2 of this report. Maximum localized SAR is below exposure limits specified in the relevant standards cited in Clause 5.1 of this test report.

The 1g maximum SAR values are obtained at the case of **850 MHz GPRS with IBM Laptop-antenna unfolded, test position 1, Middle pfequency (Table 29),** and the value is: **1.13(1g).**

The 10g maximum SAR values are obtained at the case of **850 MHz GPRS with IBM Laptop-antenna unfolded, test position 1, Low fequency (Table 29),** and the value is: **0.759(10g).**

9 Measurement Uncertainty

SN	a	Type	c	d	e = f(d,k)	f	h = c x f / e	k
	Uncertainty Component		Tol. (± %)	Prob. Dist.	Div.	c_i (1 g)	1 g u_i (±%)	v_i
1	System repetivity	A	0.5	N	1	1	0.5	9
	Measurement System							
2	Probe Calibration	B	5	N	2	1	2.5	∞
3	Axial Isotropy	B	4.7	R	√3	$(1-cp)^{1/2}$	4.3	∞
4	Hemispherical Isotropy	B	9.4	R	√3	$\sqrt{c_p}$		∞
5	Boundary Effect	B	0.4	R	√3	1	0.23	∞
6	Linearity	B	4.7	R	√3	1	2.7	∞
7	System Detection Limits	B	1.0	R	√3	1	0.6	∞
8	Readout Electronics	B	1.0	N	1	1	1.0	∞
9	RF Ambient Conditions	B	3.0	R	√3	1	1.73	∞
10	Probe Positioner Mechanical Tolerance	B	0.4	R	√3	1	0.2	∞
11	Probe Positioning with respect to Phantom Shell	B	2.9	R	√3	1	1.7	∞
12	Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	B	3.9	R	√3	1	2.3	∞
	Test sample Related							
13	Test Sample Positioning	A	4.9	N	1	1	4.9	N-1
14	Device Holder Uncertainty	A	6.1	N	1	1	6.1	N-1
15	Output Power Variation - SAR drift measurement	B	5.0	R	√3	1	2.9	∞
	Phantom and Tissue Parameters							
16	Phantom Uncertainty (shape and thickness tolerances)	B	1.0	R	√3	1	0.6	∞
17	Liquid Conductivity - deviation from target values	B	5.0	R	√3	0.64	1.7	∞
18	Liquid Conductivity - measurement uncertainty	B	5.0	N	1	0.64	1.7	M

19	Liquid Permittivity - deviation from target values	B	5.0	R	√3	0.6	1.7	∞
20	Liquid Permittivity - measurement uncertainty	B	5.0	N	1	0.6	1.7	M
	Combined Standard Uncertainty			RSS			11.25	
	Expanded Uncertainty (95% CONFIDENCE INTERVAL)			K=2			22.5	

10 MAIN TEST INSTRUMENTS

Table 37: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	HP 8753E	US38433212	August 30,2006	One year
02	Power meter	NRVD	101253	June 20, 2006	One year
03	Power sensor	NRV-Z5	100333		
04	Power sensor	NRV-Z6	100011	September 2, 2006	One year
05	Signal Generator	E4433B	US37230472	September 4, 2006	One Year
06	Amplifier	VTL5400	0505	No Calibration Requested	
07	BTS	CMU 200	105948	August 15, 2006	One year
08	E-field Probe	SPEAG ET3DV6	1736	December 1, 2006	One year
09	DAE	SPEAG DAE3	536	July 11, 2006	One year
10	Dipole Validation Kit	SPEAG D835V2	443	February 19, 2007	Two years
11	Dipole Validation Kit	SPEAG D1900V2	541	February 20, 2007	Two years

10 TEST PERIOD

The test is performed from May 14th, 2007 to May 18th, 2007.

11 TEST LOCATION

The test is performed at Radio Communication & Electromagnetic Compatibility Laboratory of Telecommunication Metrology Center of Ministry of Information Industry of The People's Republic of China

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.

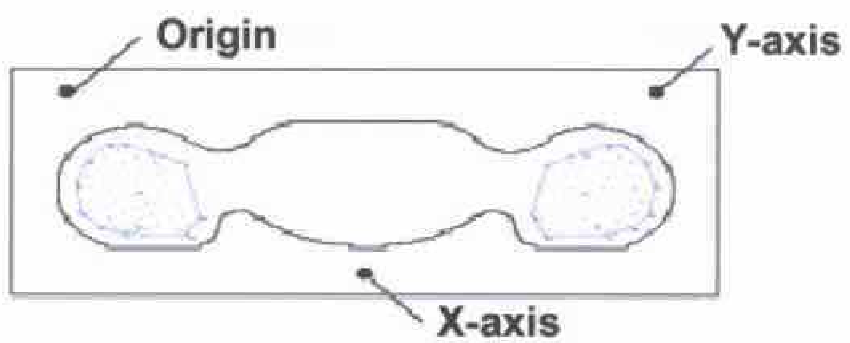
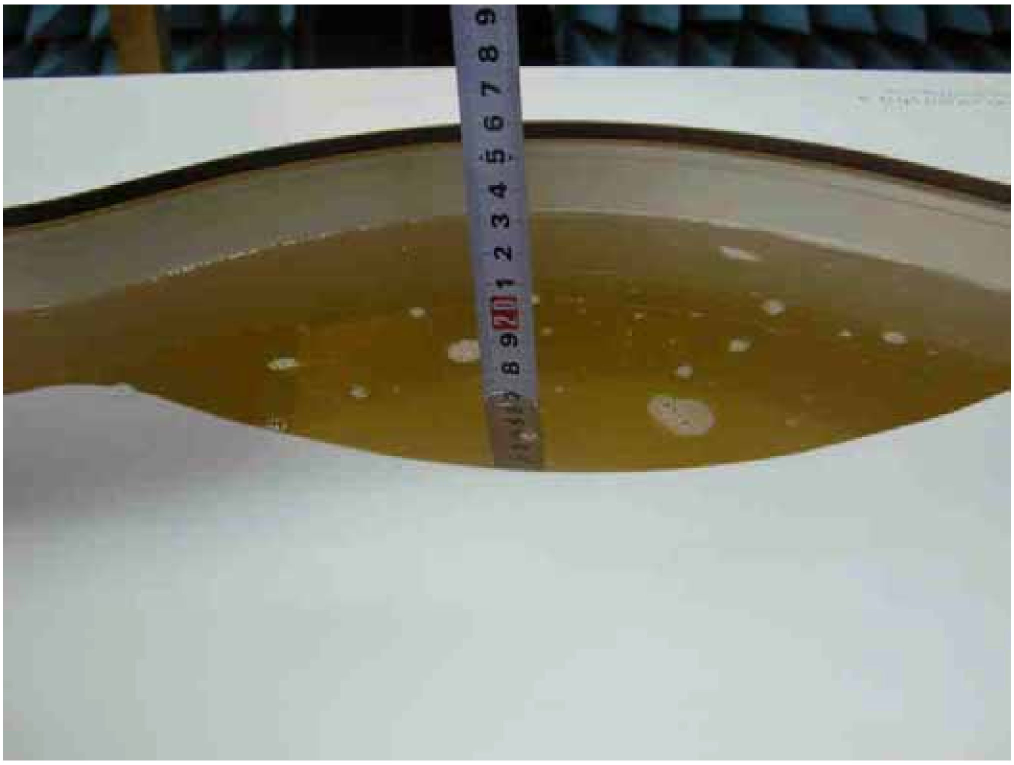


Figure A: SAR Measurement Points in Area Scan

ANNEX B： TEST LAYOUT

Picture B1: Specific Absorption Rate Test Layout



Picture B2: Liquid depth in the Flat Phantom (850 MHz)

Picture B3 Liquid depth in the Flat Phantom (1900MHz)

ANNEX C: GRAPH RESULTS

WCDMA 850 Test Position 1 with DELL Laptop-antenna folded

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.977 mho/m; ε_r = 56; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

Test Position 1/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.313 mW/g

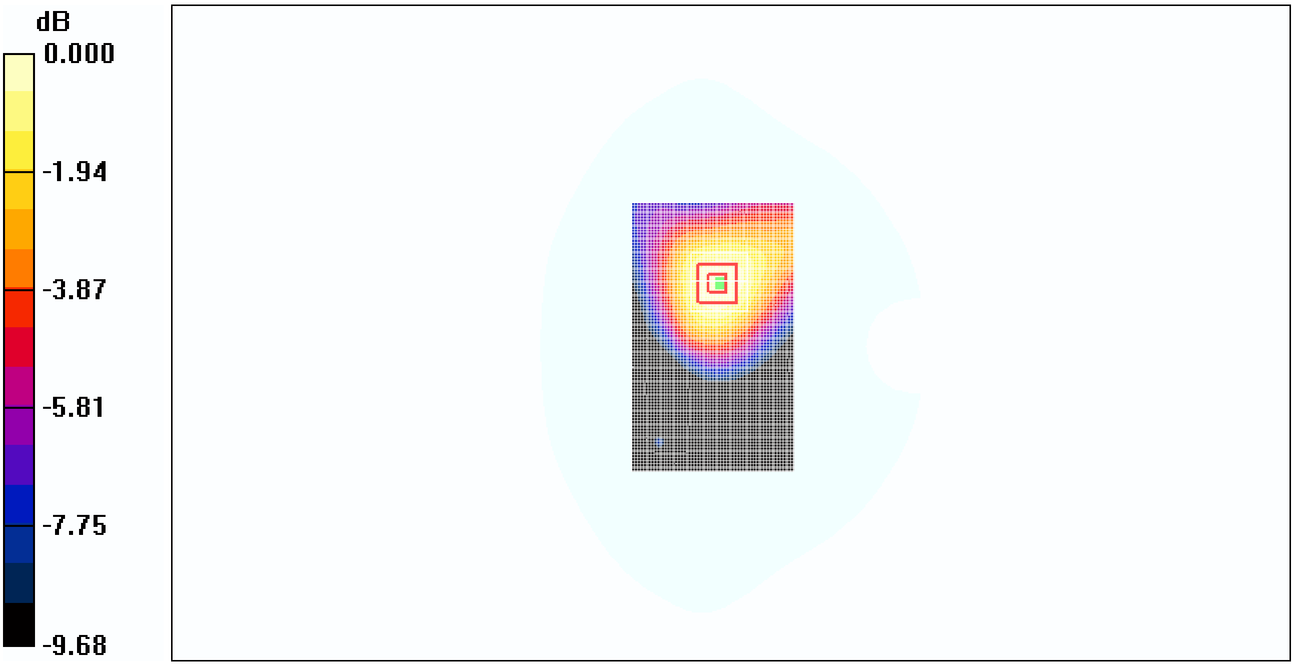
Test Position 1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.2 V/m; Power Drift = -0.192 dB

Peak SAR (extrapolated) = 0.365 W/kg

SAR(1 g) = 0.288 mW/g; SAR(10 g) = 0.205 mW/g

Maximum value of SAR (measured) = 0.306 mW/g



0 dB = 0.306mW/g

Fig. 1 WCDMA 850 CH4182 Test Position 1

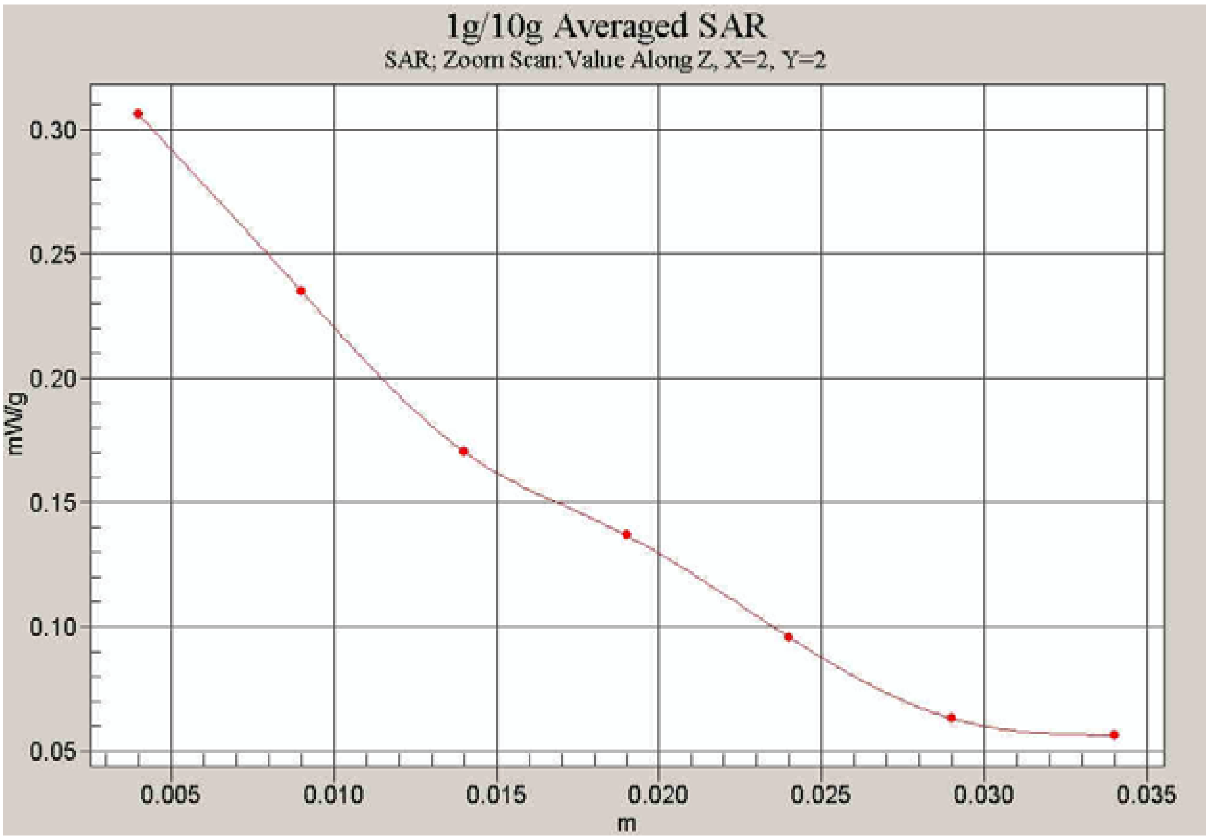


Fig.2 Z-Scan at power reference point (WCDMA 850 CH4182 Test Position 1)

WCDMA 850 Test Position 2 with DELL Laptop-antenna folded

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.977 mho/m; ε_r = 56; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

Test Position 2/Area Scan (61x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.024 mW/g

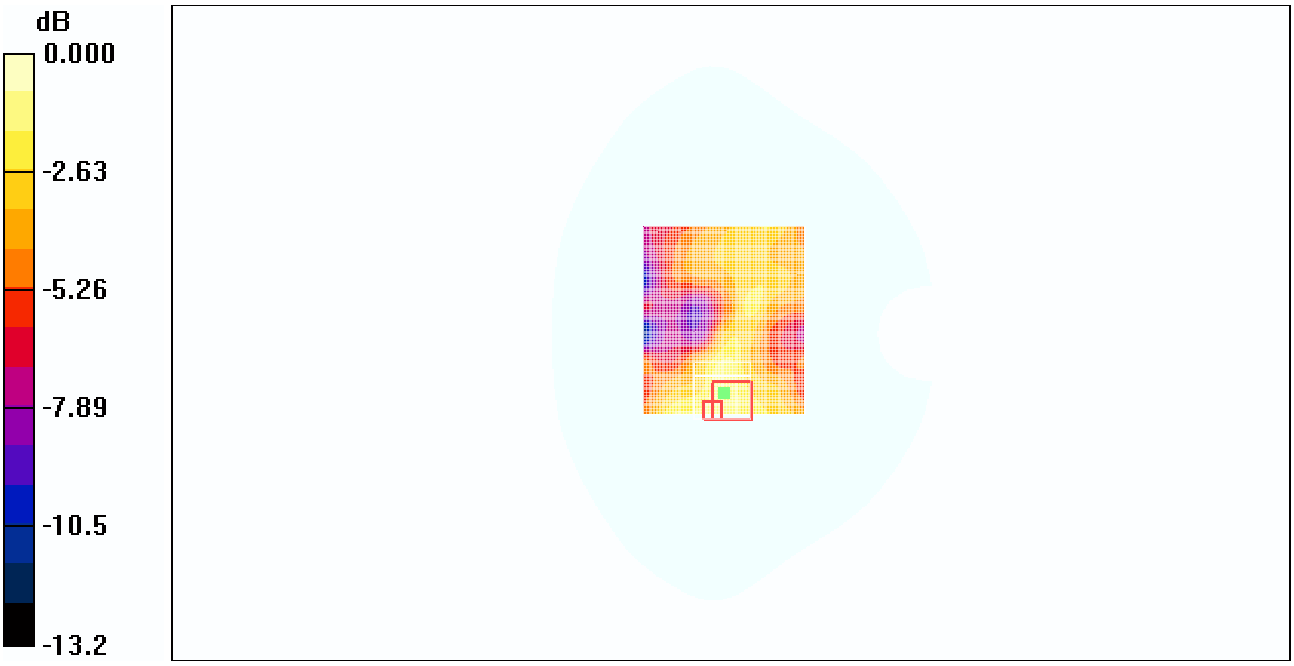
Test Position 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.88 V/m; Power Drift = -0.187 dB

Peak SAR (extrapolated) = 0.038 W/kg

SAR(1 g) = 0.019 mW/g; SAR(10 g) = 0.011 mW/g

Maximum value of SAR (measured) = 0.029 mW/g



0 dB = 0.029mW/g

Fig.3 WCDMA 850 CH4182 Test Position 2

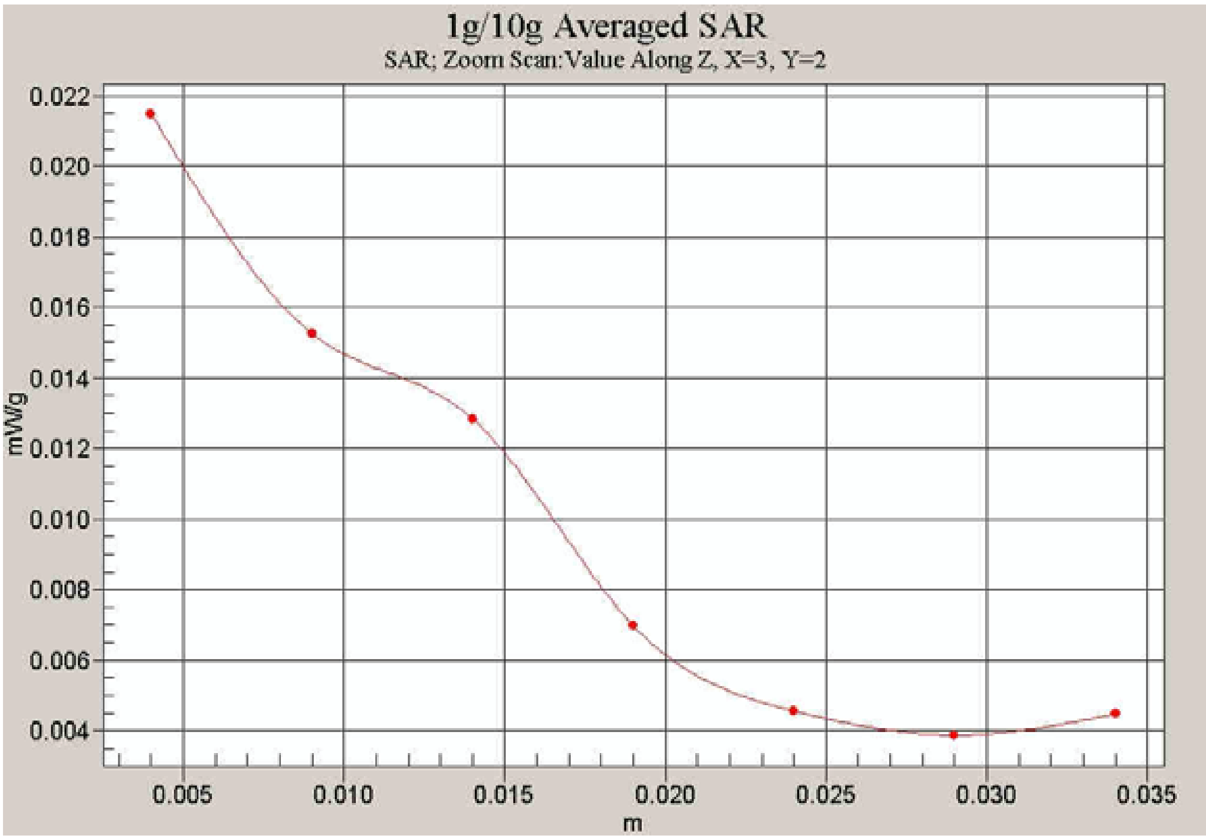


Fig.4 Z-Scan at power reference point (WCDMA 850 CH4182 Test Position 2)

WCDMA 850 Test Position 1 with DELL Laptop-antenna unfolded

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.977 mho/m; ε_r = 56; ρ = 1000 kg/m^3

Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C

Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

Test Position 1/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.349 mW/g

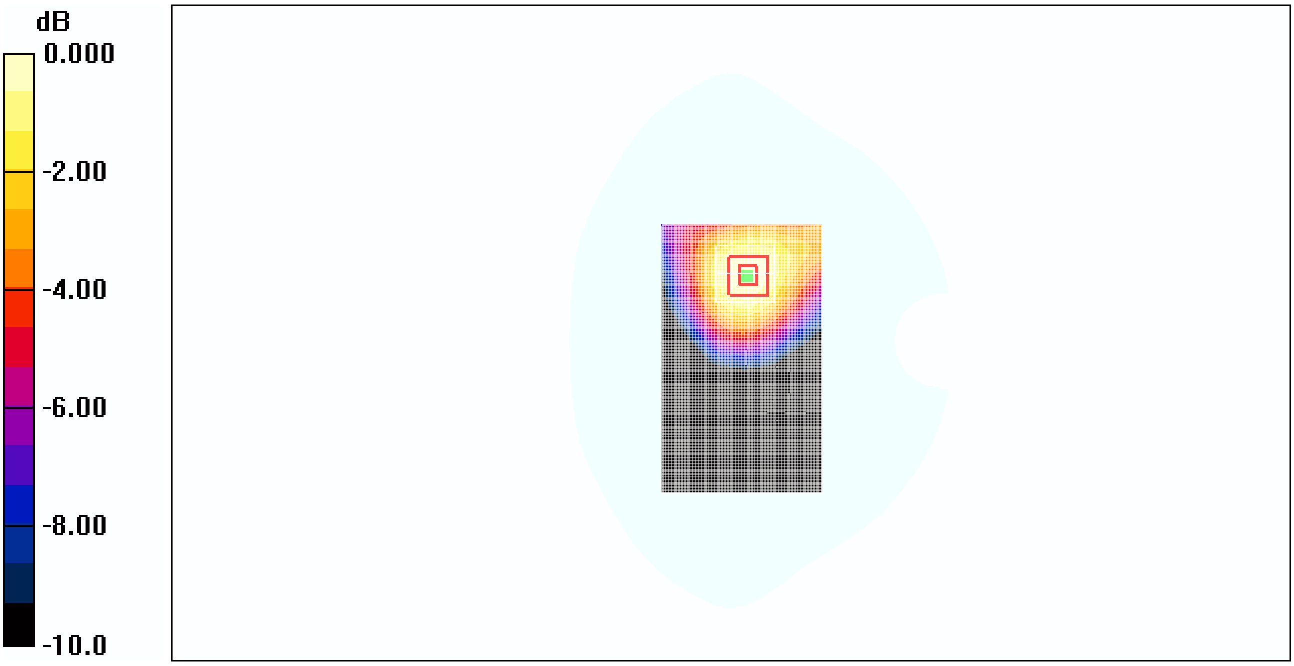
Test Position 1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.3 V/m; Power Drift = 0.117 dB

Peak SAR (extrapolated) = 0.424 W/kg

SAR(1 g) = 0.323 mW/g; SAR(10 g) = 0.224 mW/g

Maximum value of SAR (measured) = 0.344 mW/g



0 dB = 0.344mW/g

Fig. 5 WCDMA 850 CH4182 Test Position 1

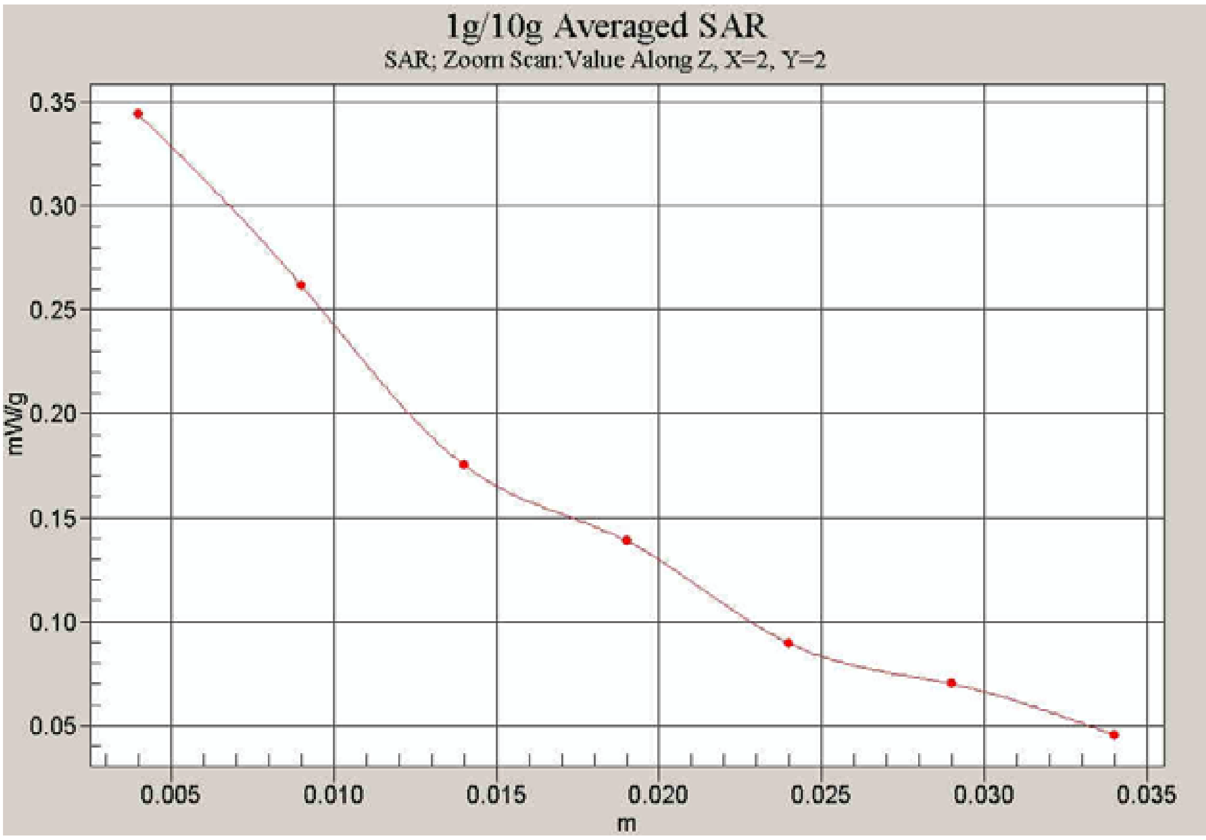


Fig.6 Z-Scan at power reference point (WCDMA 850 CH4182 Test Position 1)

WCDMA 850 Test Position 2 with DELL Laptop-antenna unfolded

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.977 mho/m; ε_r = 56; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

Test Position 2/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.021 mW/g

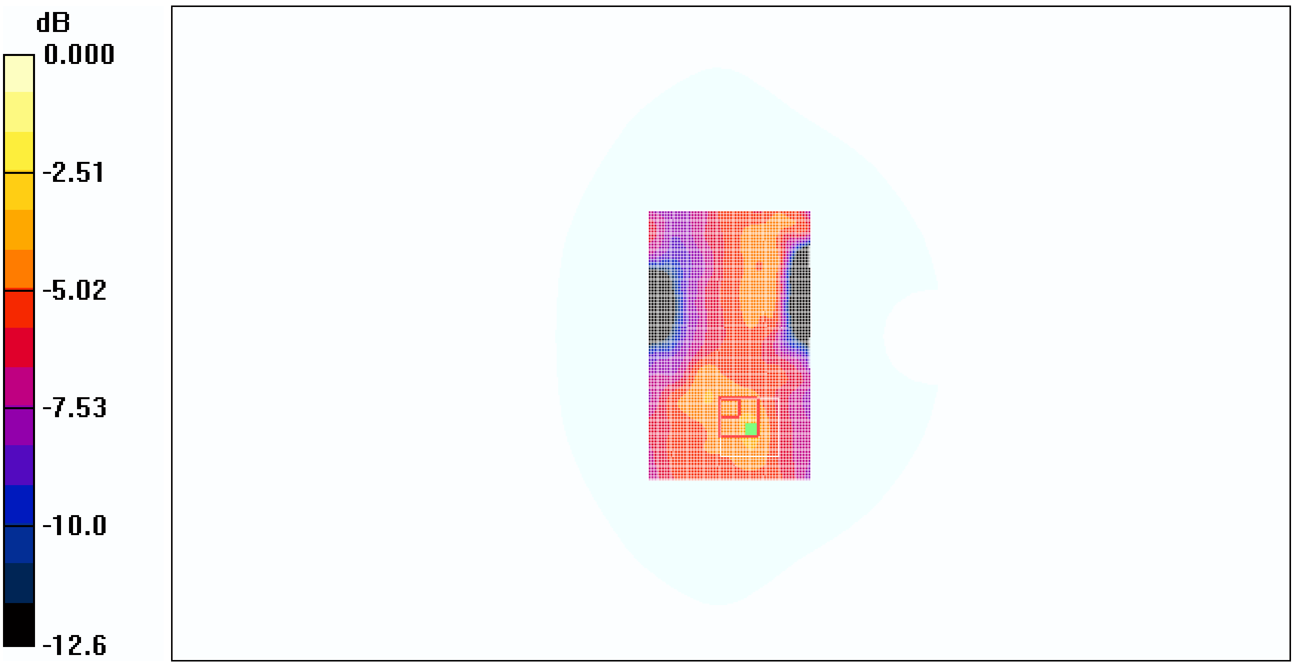
Test Position 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.91 V/m; Power Drift = 0.199 dB

Peak SAR (extrapolated) = 0.051 W/kg

SAR(1 g) = 0.019 mW/g; SAR(10 g) = 0.013 mW/g

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



0 dB = 0.051mW/g

Fig.7 WCDMA 850 CH4182 Test Position 2

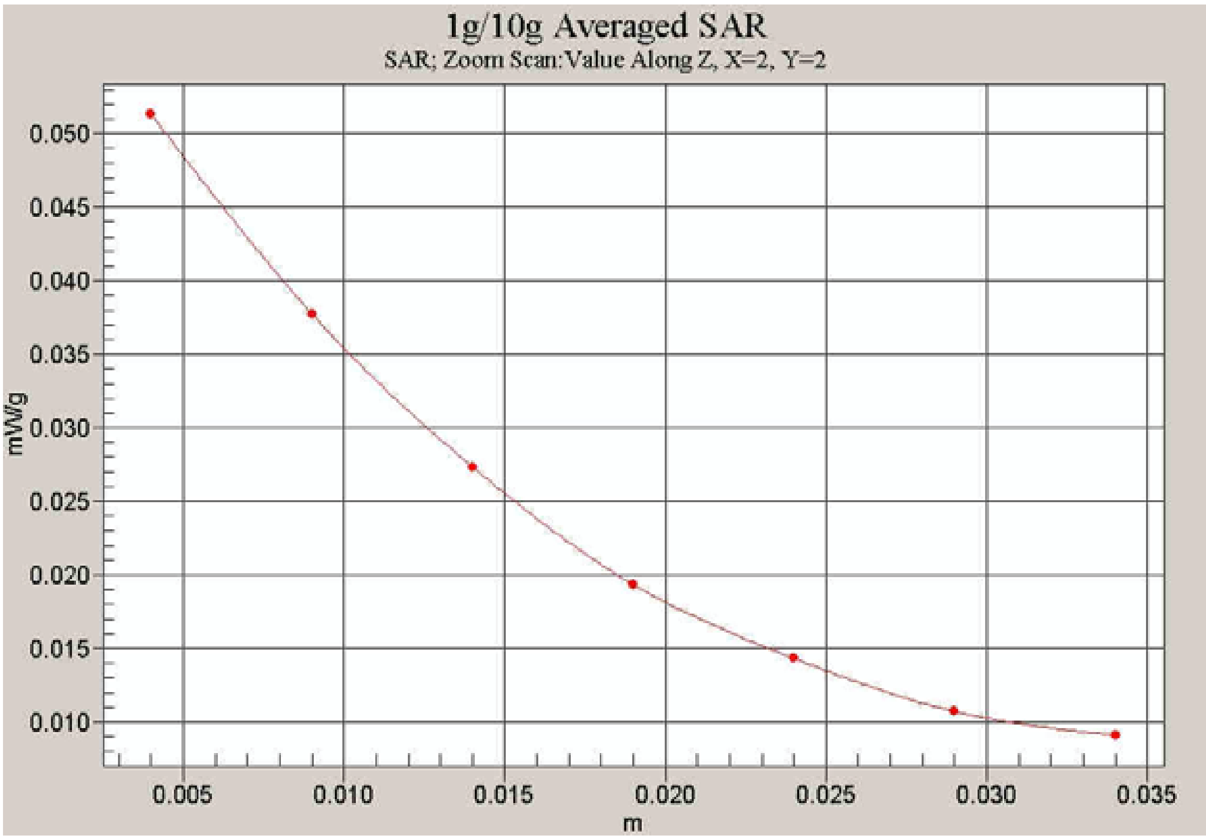


Fig.8 Z-Scan at power reference point (WCDMA 850 CH4182 Test Position 2)

WCDMA 850 Test Position 1 with HP Laptop-antenna folded

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.977 mho/m; ε_r = 56; ρ = 1000 kg/m^3

Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C

Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

Test Position 1/Area Scan (61x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.235 mW/g

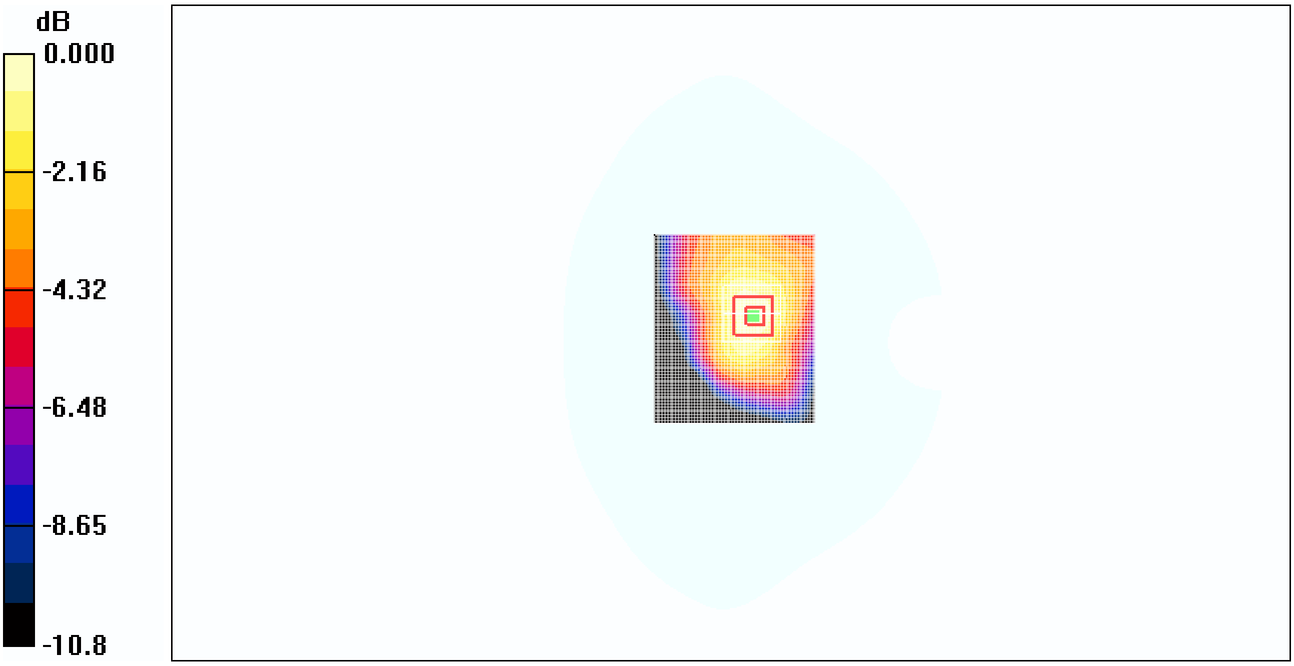
Test Position 1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.4 V/m; Power Drift = -0.183 dB

Peak SAR (extrapolated) = 0.334 W/kg

SAR(1 g) = 0.222 mW/g; SAR(10 g) = 0.151 mW/g

Maximum value of SAR (measured) = 0.236 mW/g



0 dB = 0.236mW/g

Fig. 9 WCDMA 850 CH4182 Test Position 1

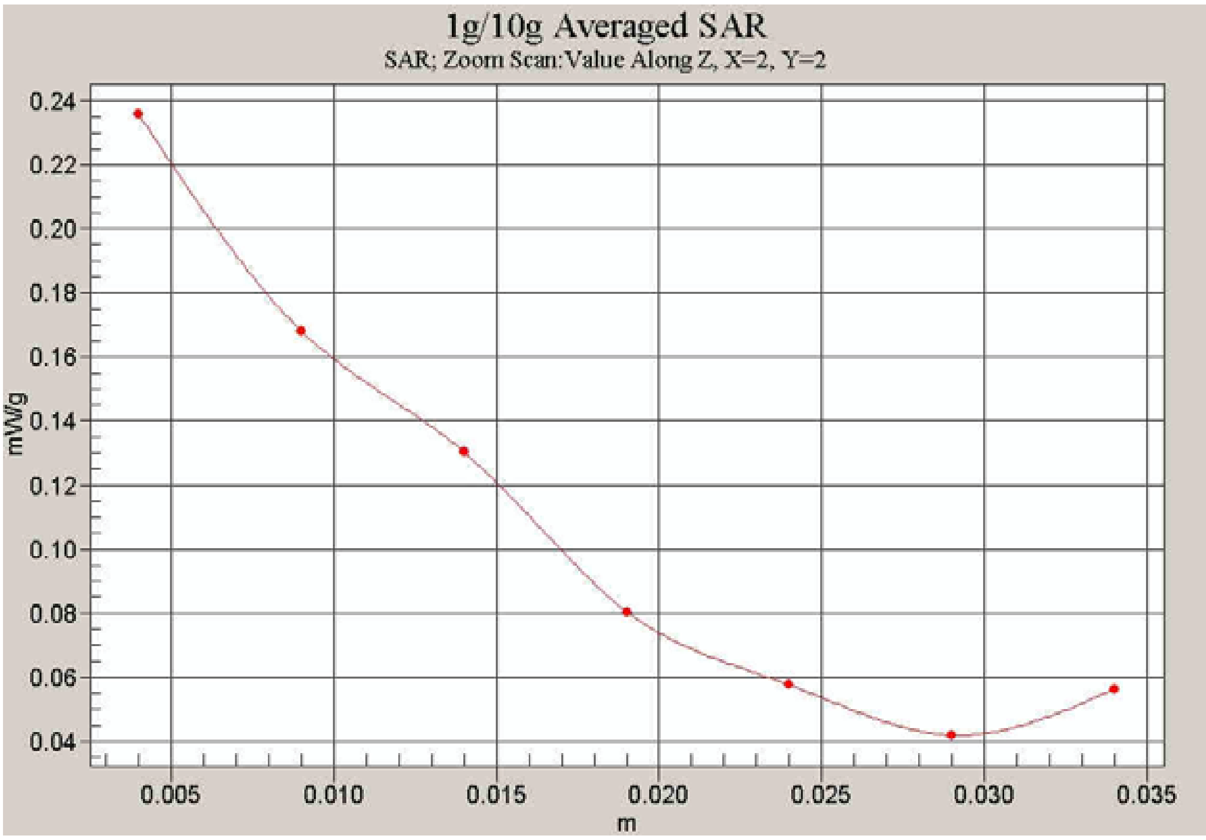


Fig.10 Z-Scan at power reference point (WCDMA 850 CH4182 Test Position 1)

WCDMA 850 Test Position 2 with HP Laptop-antenna folded

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.977 mho/m; ε_r = 56; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

Test Position 2/Area Scan (61x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.035 mW/g

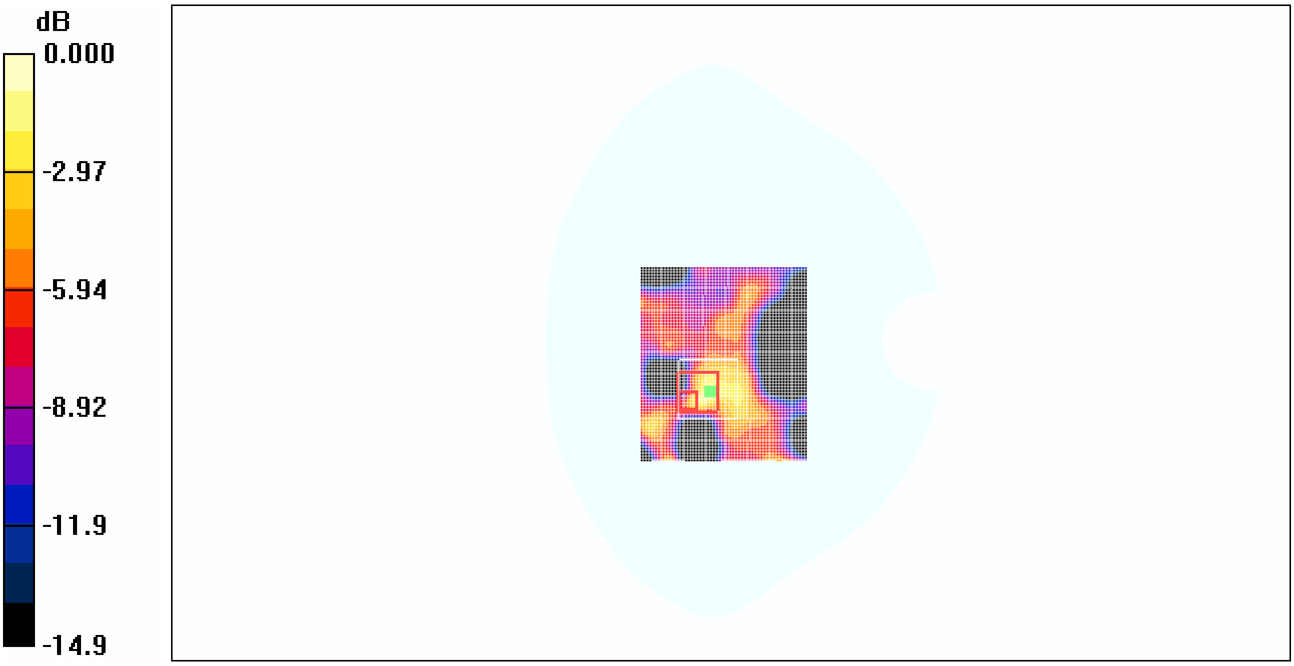
Test Position 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.00 V/m; Power Drift = -0.189 dB

Peak SAR (extrapolated) = 0.045 W/kg

SAR(1 g) = 0.021 mW/g; SAR(10 g) = 0.012 mW/g

Maximum value of SAR (measured) = 0.045 mW/g



0 dB = 0.045mW/g

Fig.11 WCDMA 850 CH4182 Test Position 2

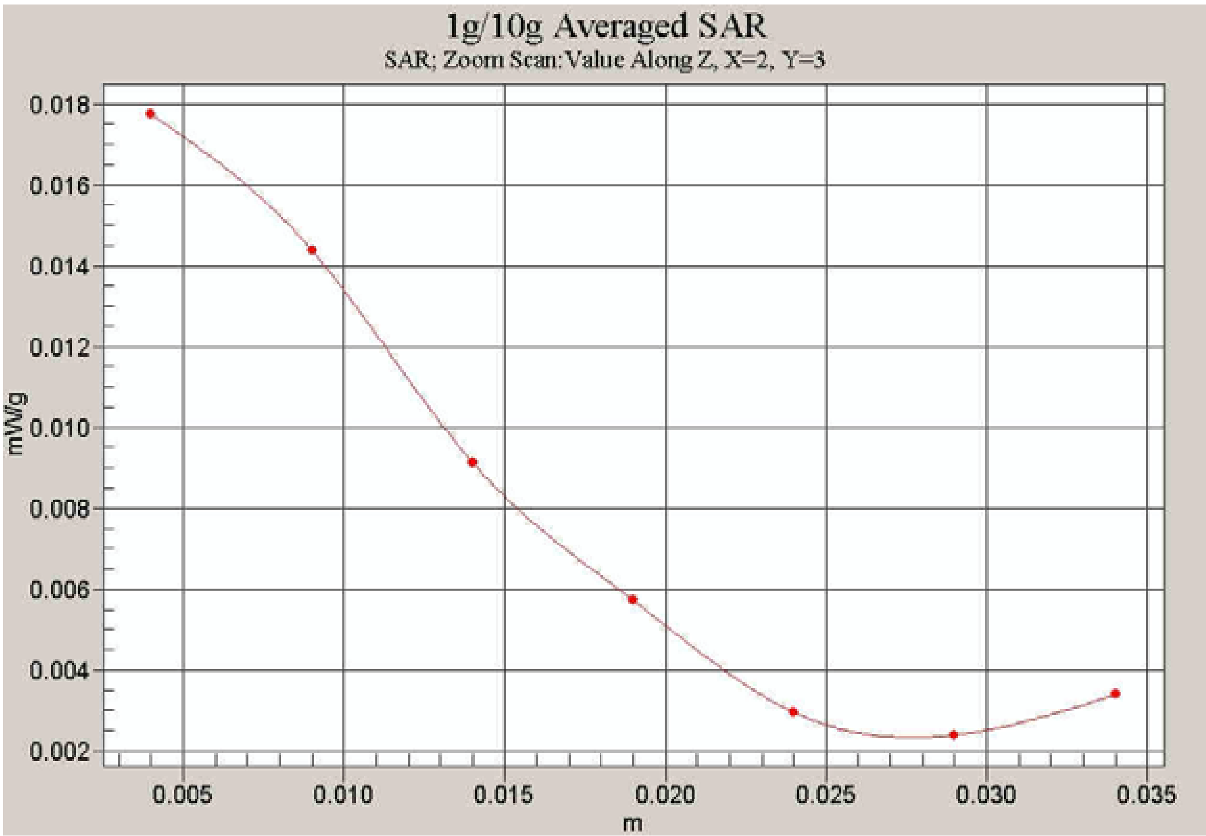


Fig.12 Z-Scan at power reference point (WCDMA 850 CH4182 Test Position 2)

WCDMA 850 Test Position 1 with HP Laptop-antenna unfolded

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.977 mho/m; ε_r = 56; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

Test Position 1/Area Scan (61x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.406 mW/g

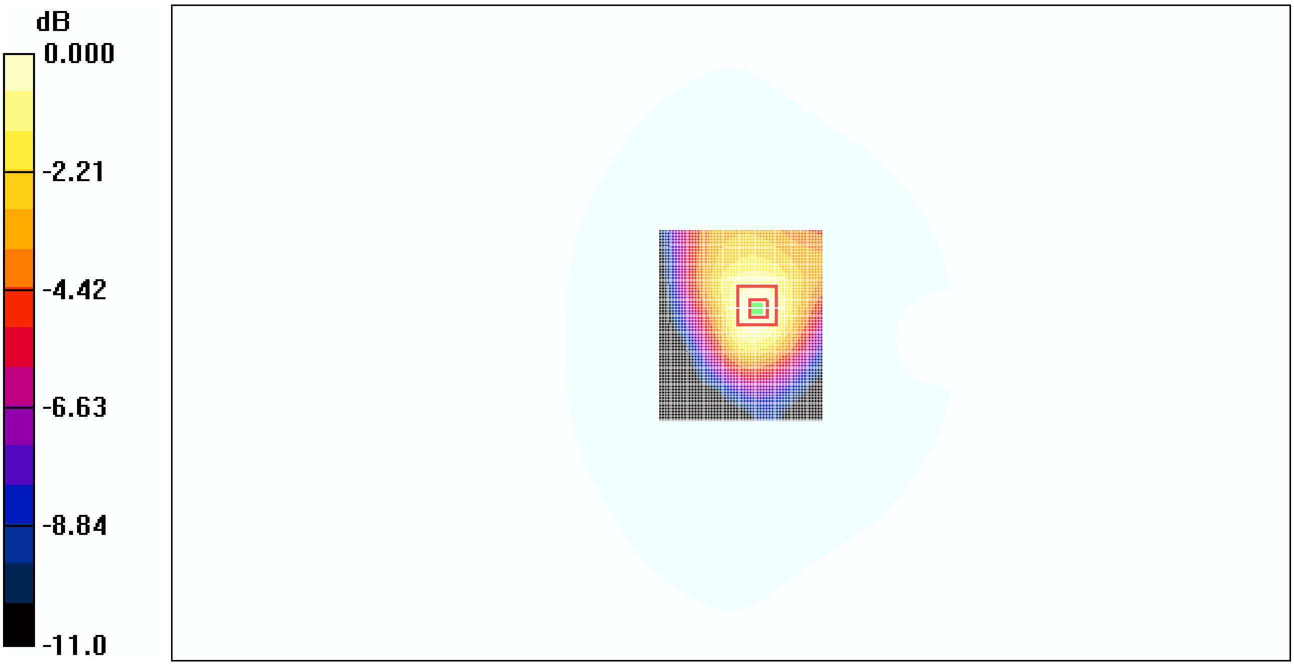
Test Position 1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.0 V/m; Power Drift = 0.053 dB

Peak SAR (extrapolated) = 0.520 W/kg

SAR(1 g) = 0.369 mW/g; SAR(10 g) = 0.247 mW/g

Maximum value of SAR (measured) = 0.403 mW/g



0 dB = 0.403mW/g

Fig. 13 WCDMA 850 CH4182 Test Position 1

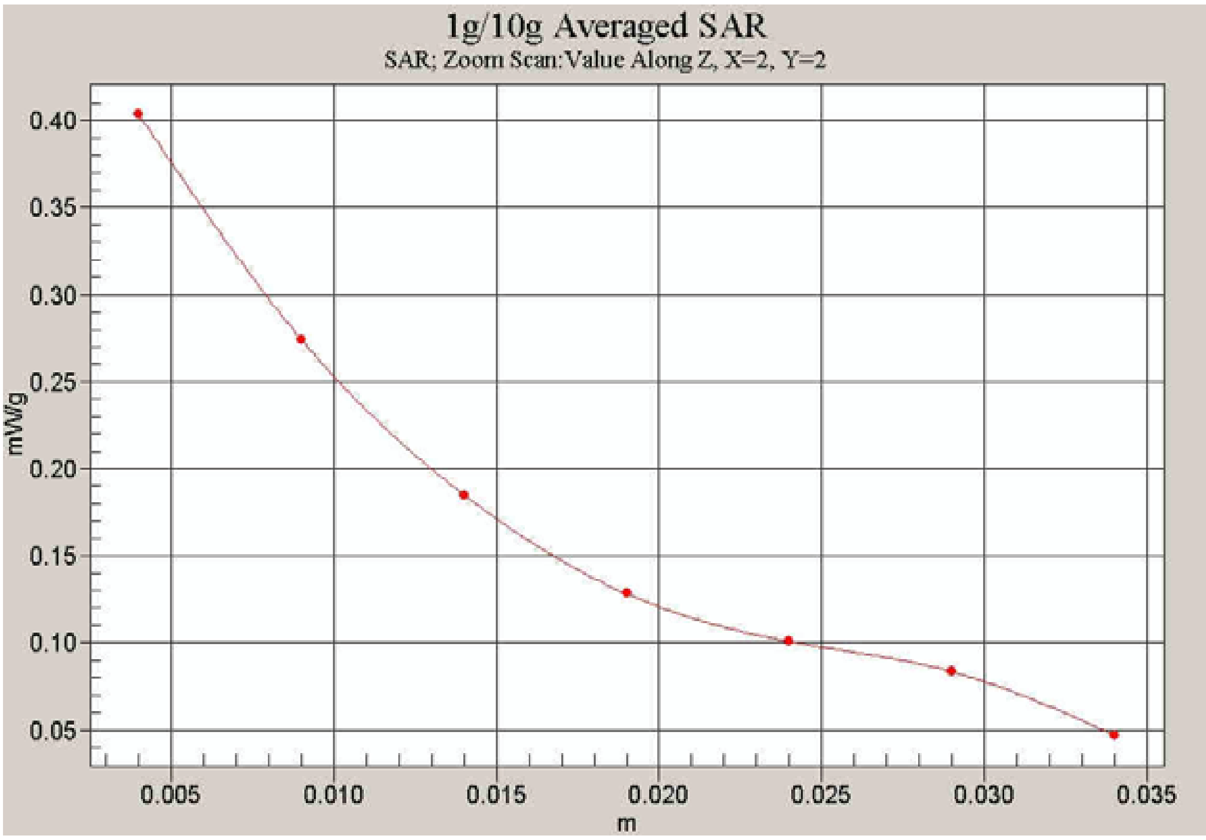


Fig.14 Z-Scan at power reference point (WCDMA 850 CH4182 Test Position 1)

WCDMA 850 Test Position 2 with HP Laptop-antenna unfolded

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.977 mho/m; ε_r = 56; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

Test Position 2/Area Scan (61x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.072 mW/g

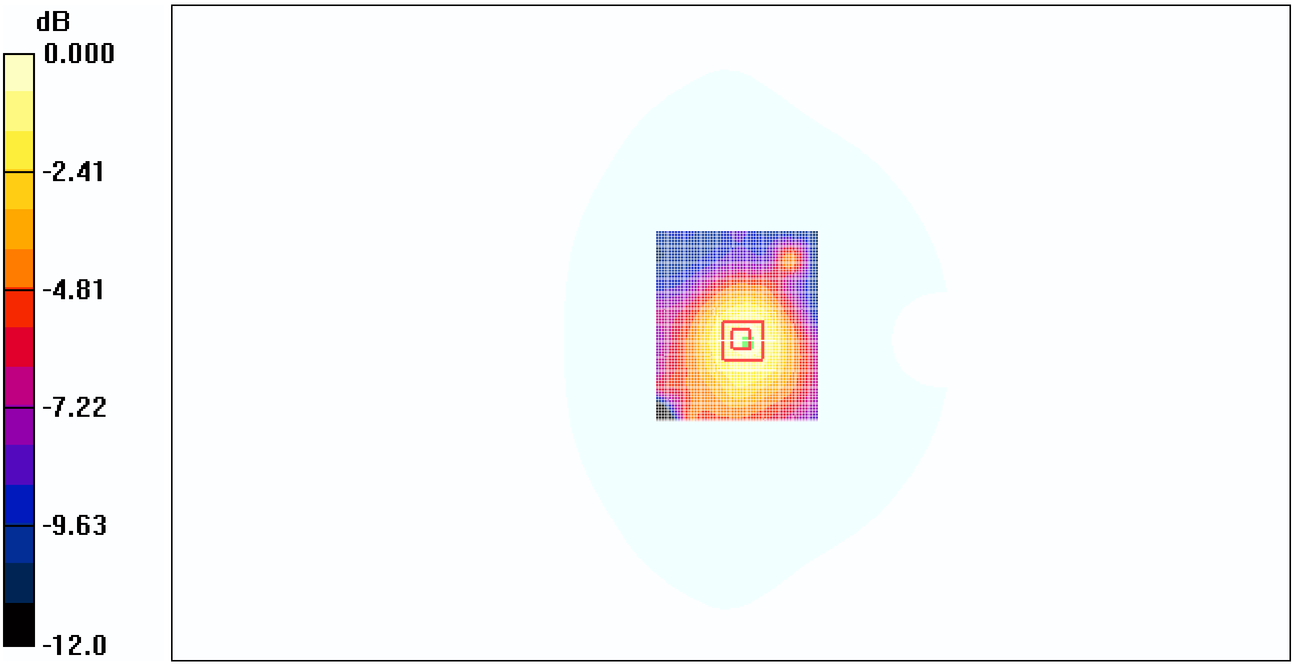
Test Position 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.58 V/m; Power Drift = 0.017 dB

Peak SAR (extrapolated) = 0.080 W/kg

SAR(1 g) = 0.067 mW/g; SAR(10 g) = 0.048 mW/g

Maximum value of SAR (measured) = 0.080 mW/g



0 dB = 0.080mW/g

Fig.15 WCDMA 850 CH4182 Test Position 2

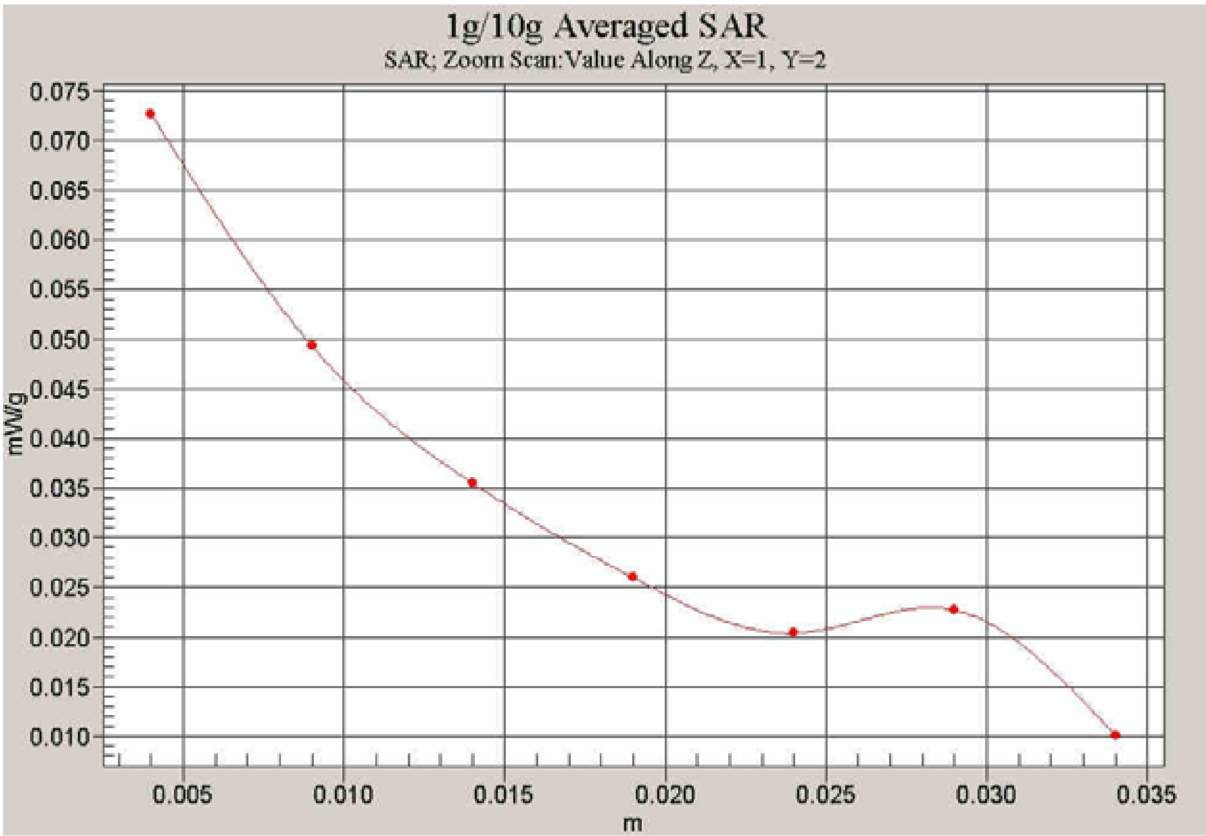


Fig.16 Z-Scan at power reference point (WCDMA 850 CH4182 Test Position 2)

WCDMA 850 Test Position 1 with IBM Laptop-antenna folded

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.977 mho/m; ε_r = 56; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

Test Position 1/Area Scan (61x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.316 mW/g

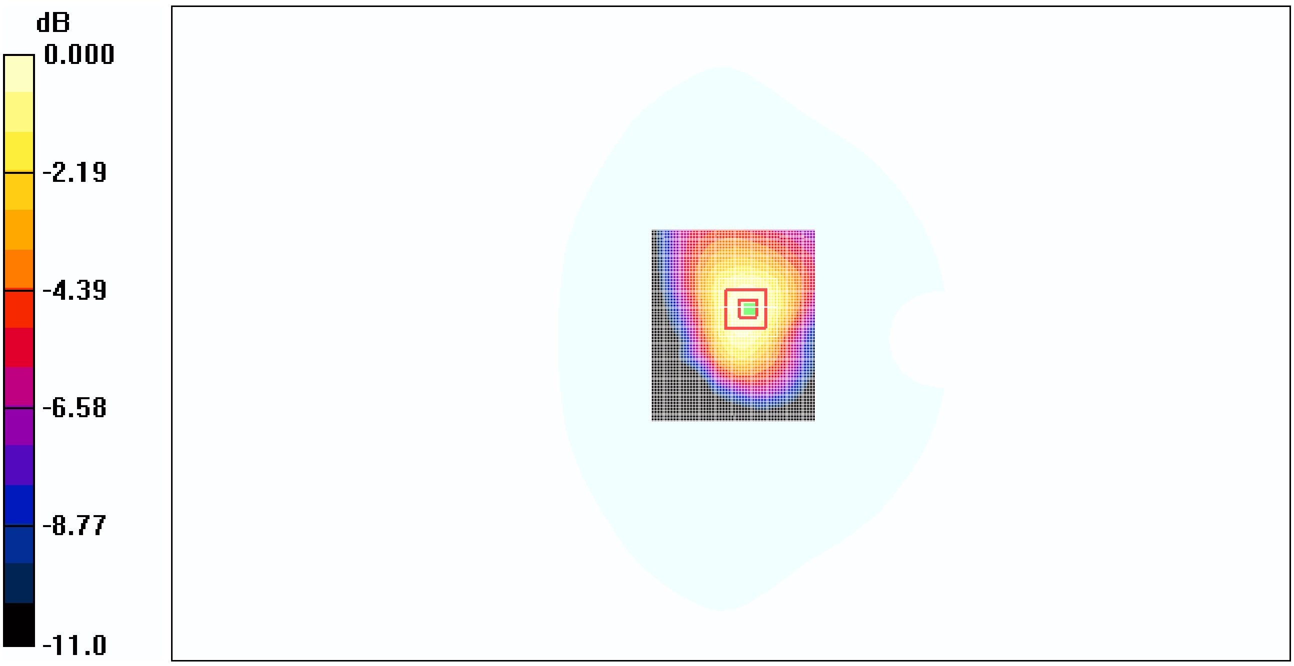
Test Position 1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.7 V/m; Power Drift = -0.152 dB

Peak SAR (extrapolated) = 0.406 W/kg

SAR(1 g) = 0.292 mW/g; SAR(10 g) = 0.199 mW/g

Maximum value of SAR (measured) = 0.314 mW/g



0 dB = 0.314mW/g

Fig. 17 WCDMA 850 CH4182 Test Position 1

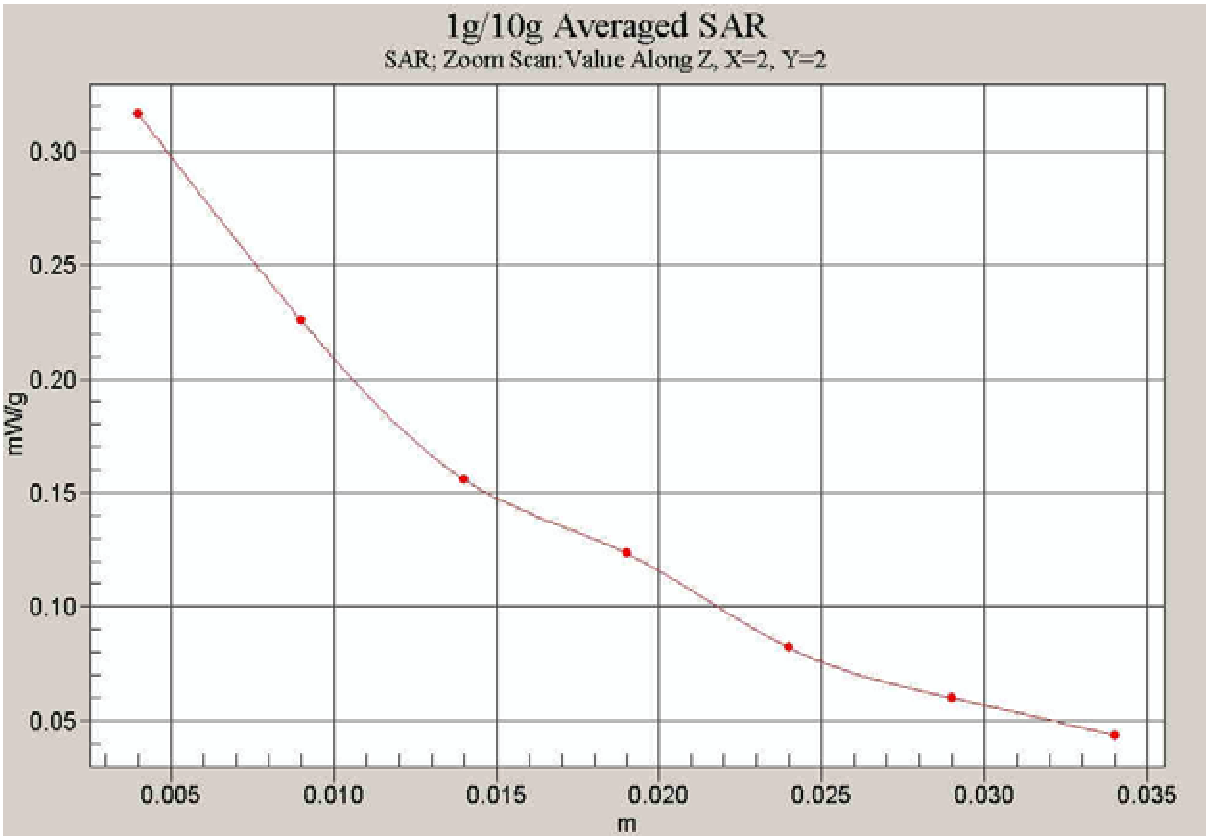


Fig.18 Z-Scan at power reference point (WCDMA 850 CH4182 Test Position 1)

WCDMA 850 Test Position 2 with IBM Laptop-antenna folded

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.977 mho/m; ε_r = 56; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

Test Position 2/Area Scan (61x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.030 mW/g

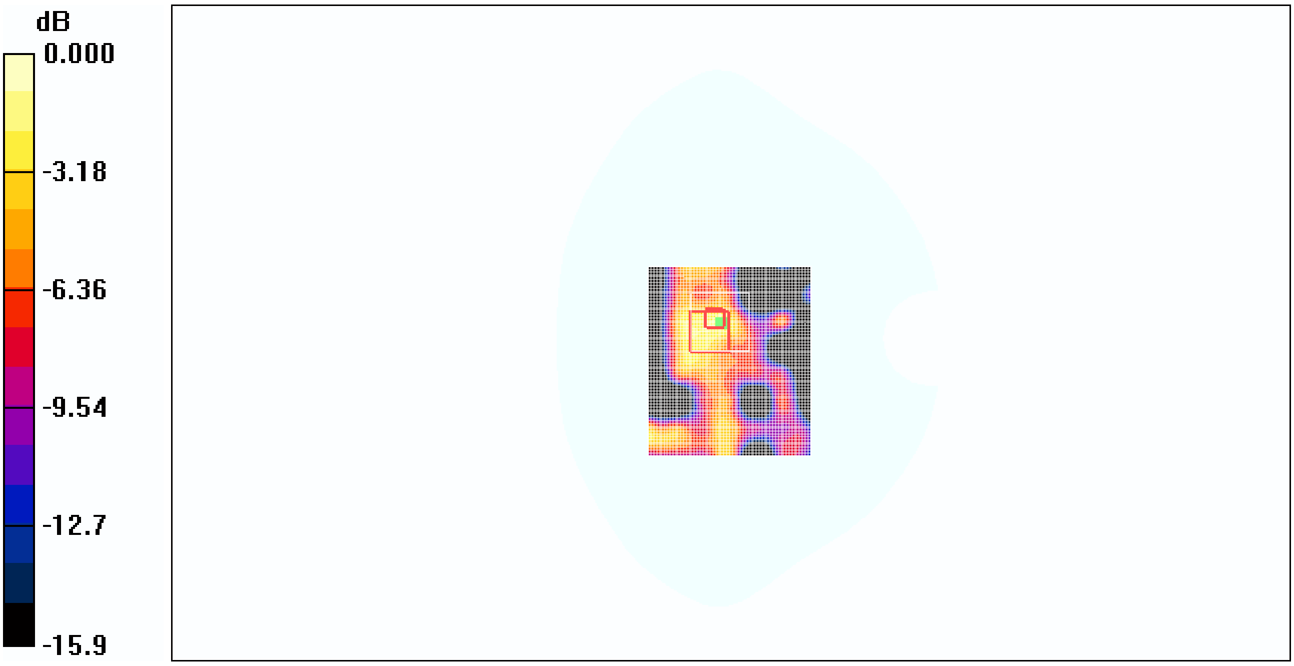
Test Position 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.36 V/m; Power Drift = -0.193 dB

Peak SAR (extrapolated) = 0.045 W/kg

SAR(1 g) = 0.018 mW/g; SAR(10 g) = 0.010 mW/g

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



0 dB = 0.044mW/g

Fig.19 WCDMA 850 CH4182 Test Position 2

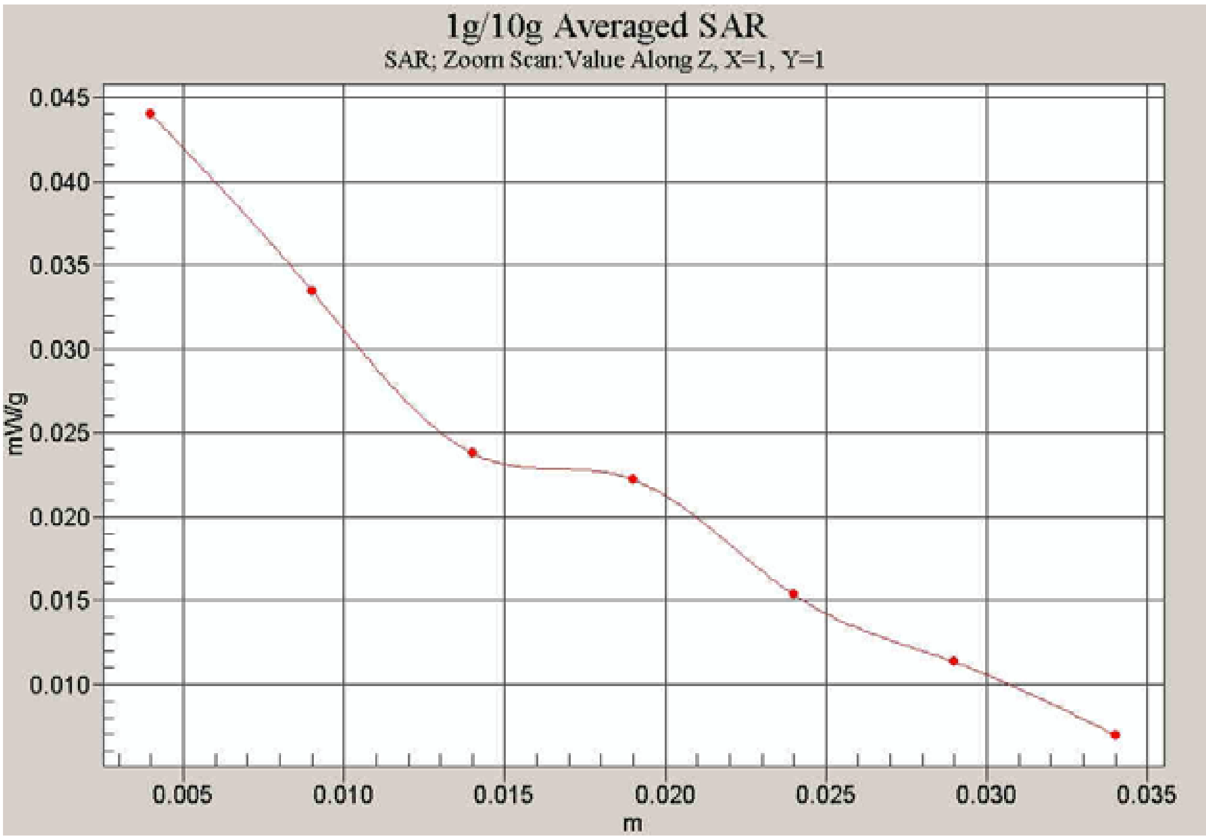


Fig.20 Z-Scan at power reference point (WCDMA 850 CH4182 Test Position 2)

WCDMA 850 Test Position 1 with IBM Laptop-antenna unfolded

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.977 mho/m; ε_r = 56; ρ = 1000 kg/m^3

Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C

Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

Test Position 1/Area Scan (61x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.467 mW/g

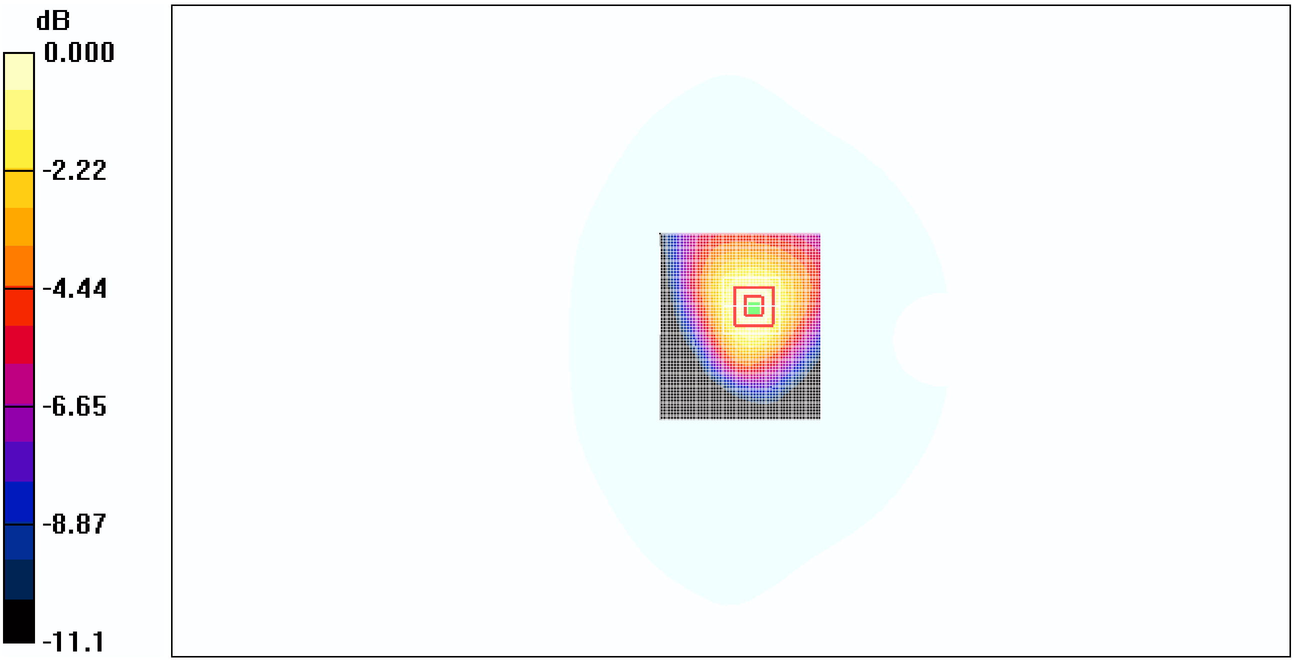
Test Position 1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.6 V/m; Power Drift = 0.036 dB

Peak SAR (extrapolated) = 0.639 W/kg

SAR(1 g) = 0.435 mW/g; SAR(10 g) = 0.287 mW/g

Maximum value of SAR (measured) = 0.465 mW/g



0 dB = 0.465mW/g

Fig. 21 WCDMA 850 CH4182 Test Position 1

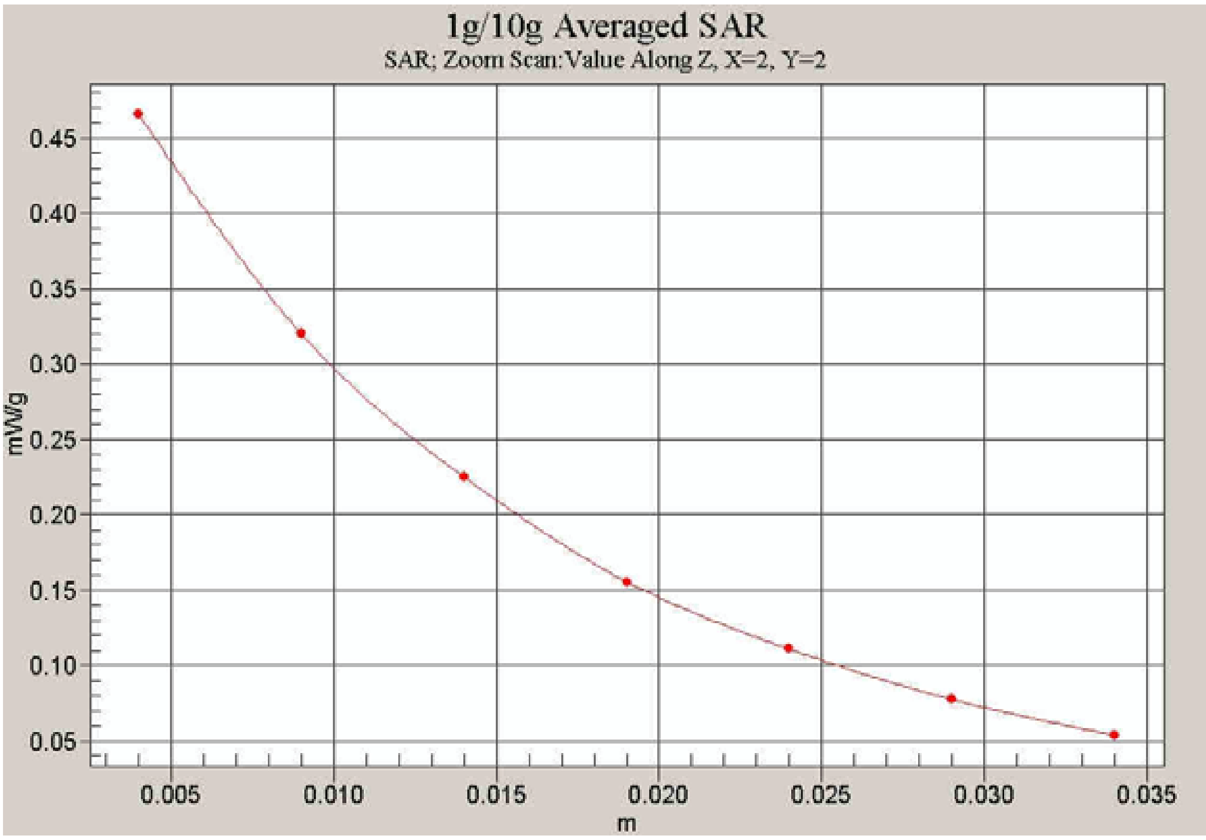


Fig.22 Z-Scan at power reference point (WCDMA 850 CH4182 Test Position 1)

WCDMA 850 Test Position 2 with IBM Laptop-antenna unfolded

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.977 mho/m; ε_r = 56; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

Test Position 2/Area Scan (61x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.056 mW/g

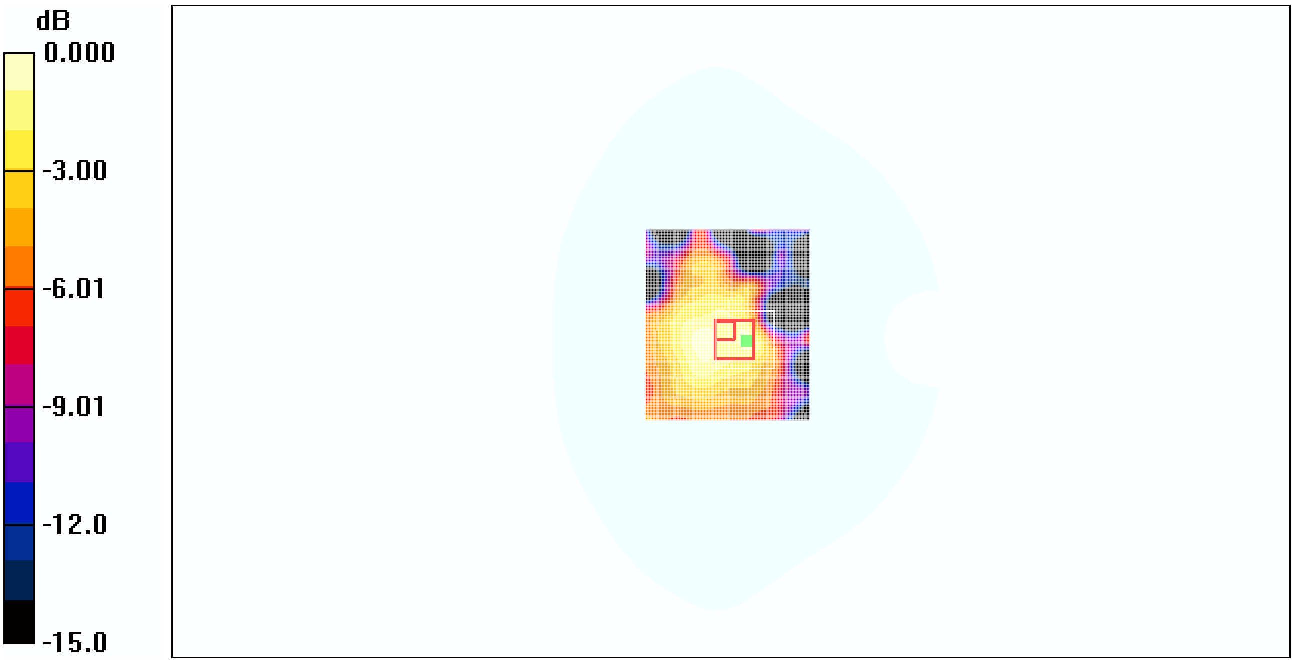
Test Position 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.68 V/m; Power Drift = -0.109 dB

Peak SAR (extrapolated) = 0.061 W/kg

SAR(1 g) = 0.044 mW/g; SAR(10 g) = 0.029 mW/g

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



0 dB = 0.060mW/g

Fig.23 WCDMA 850 CH4182 Test Position 2

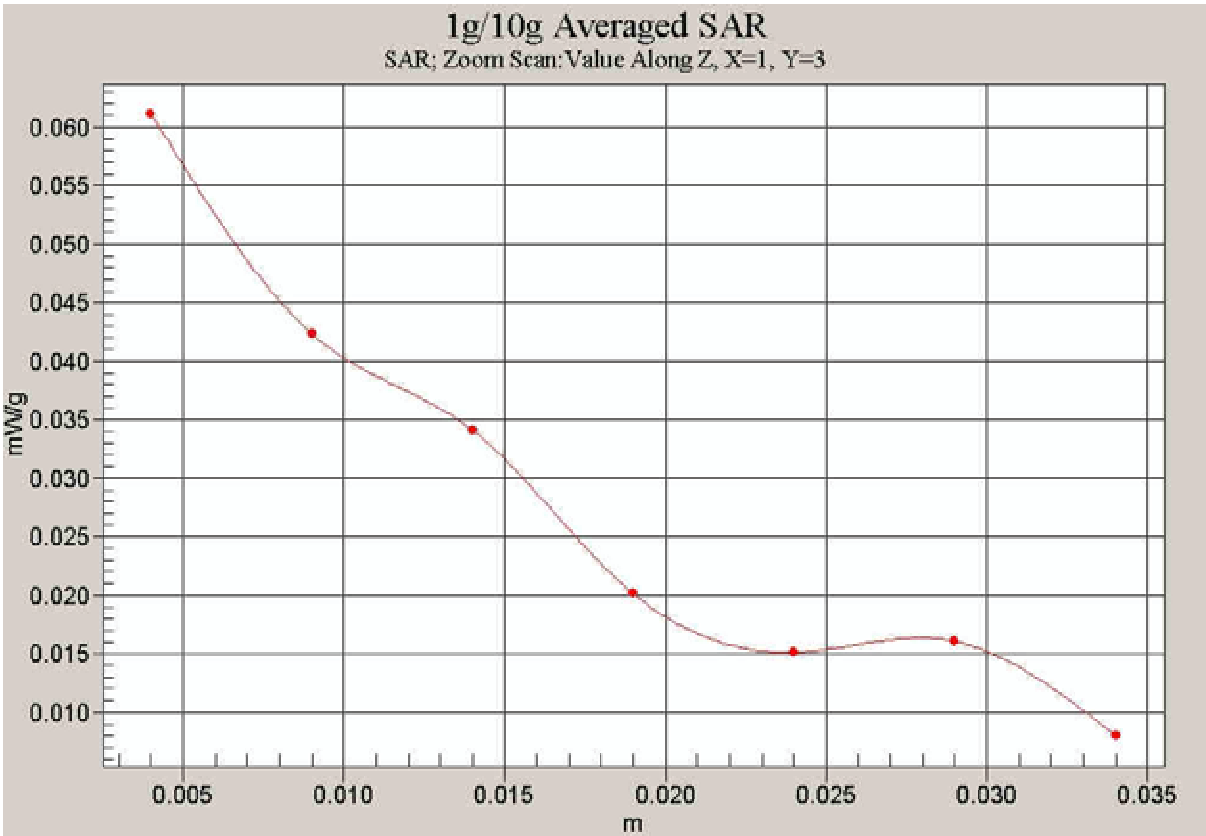


Fig.24 Z-Scan at power reference point (WCDMA 850 CH4182 Test Position 2)

HSDPA 850 Test Position 1 with DELL Laptop-antenna unfolded

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.977 mho/m; ε_r = 56; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:2

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

Test Position 1/Area Scan (61x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.380 mW/g

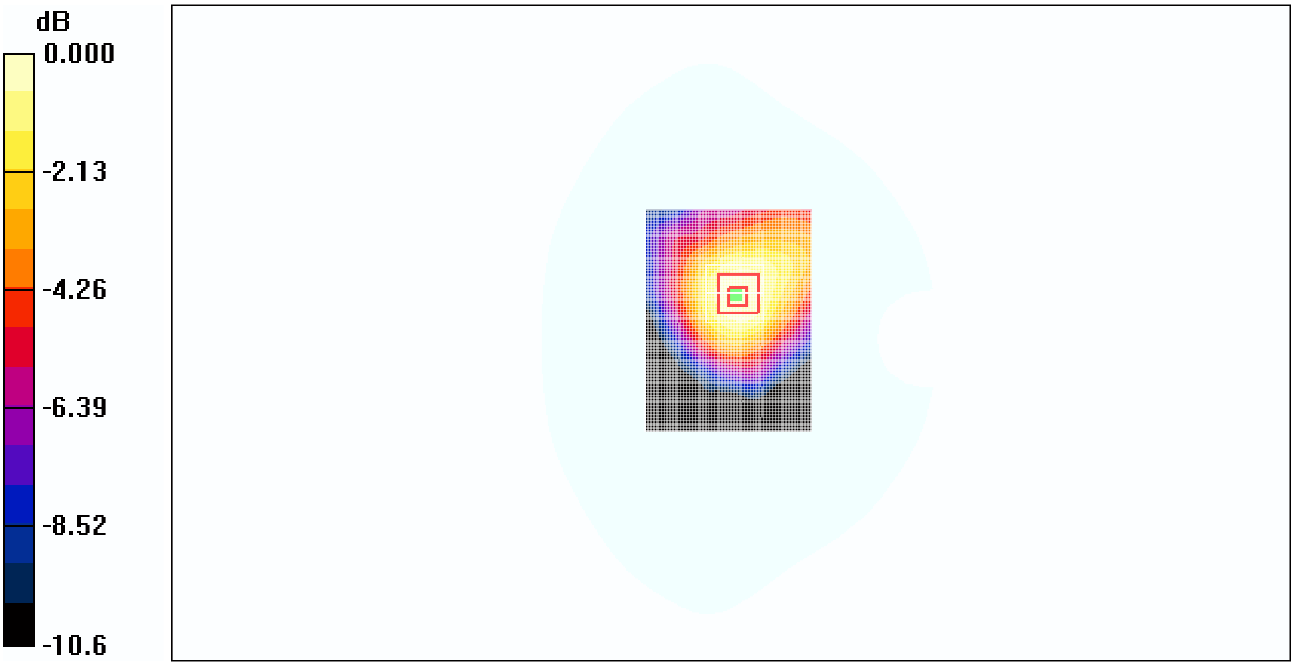
Test Position 1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.8 V/m; Power Drift = -0.111 dB

Peak SAR (extrapolated) = 0.497 W/kg

SAR(1 g) = 0.349 mW/g; SAR(10 g) = 0.240 mW/g

Maximum value of SAR (measured) = 0.369 mW/g



0 dB = 0.369mW/g

Fig.25 HSDPA 850 CH4182 Test Position 1

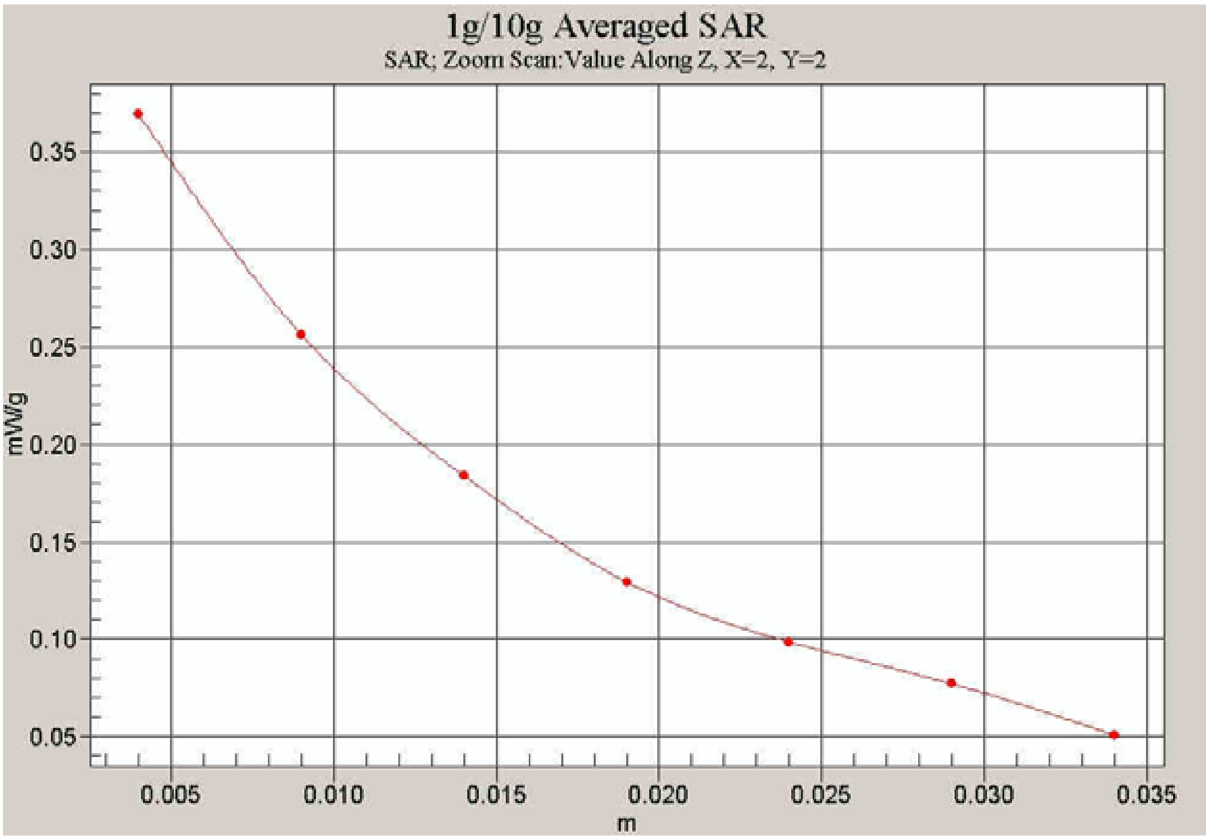


Fig.26 Z-Scan at power reference point (HSDPA 850 CH4182 Test Position 1)

HSDPA 850 Test Position 1 with HP Laptop-antenna unfolded

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.977 mho/m; ε_r = 56; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:2

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

Test Position 1/Area Scan (61x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.406 mW/g

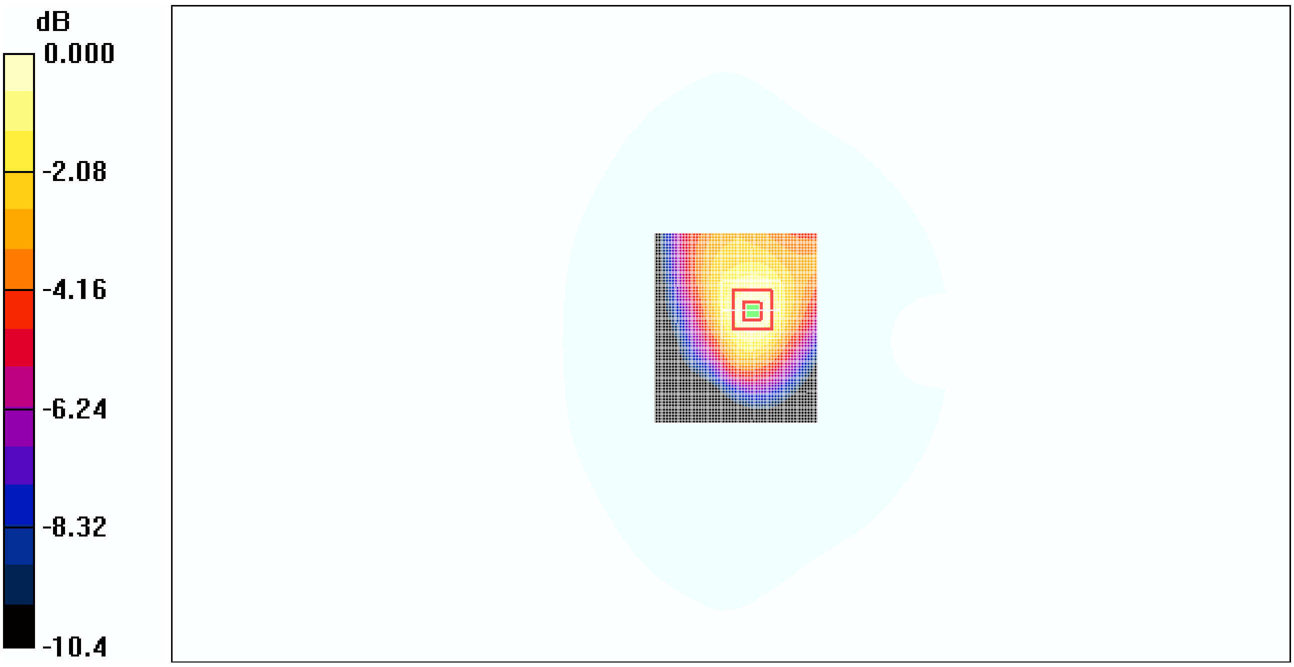
Test Position 1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.5 V/m; Power Drift = -0.193 dB

Peak SAR (extrapolated) = 0.531 W/kg

SAR(1 g) = 0.364 mW/g; SAR(10 g) = 0.240 mW/g

Maximum value of SAR (measured) = 0.392 mW/g



0 dB = 0.392mW/g

Fig.27 HSDPA 850 CH4182 Test Position 1

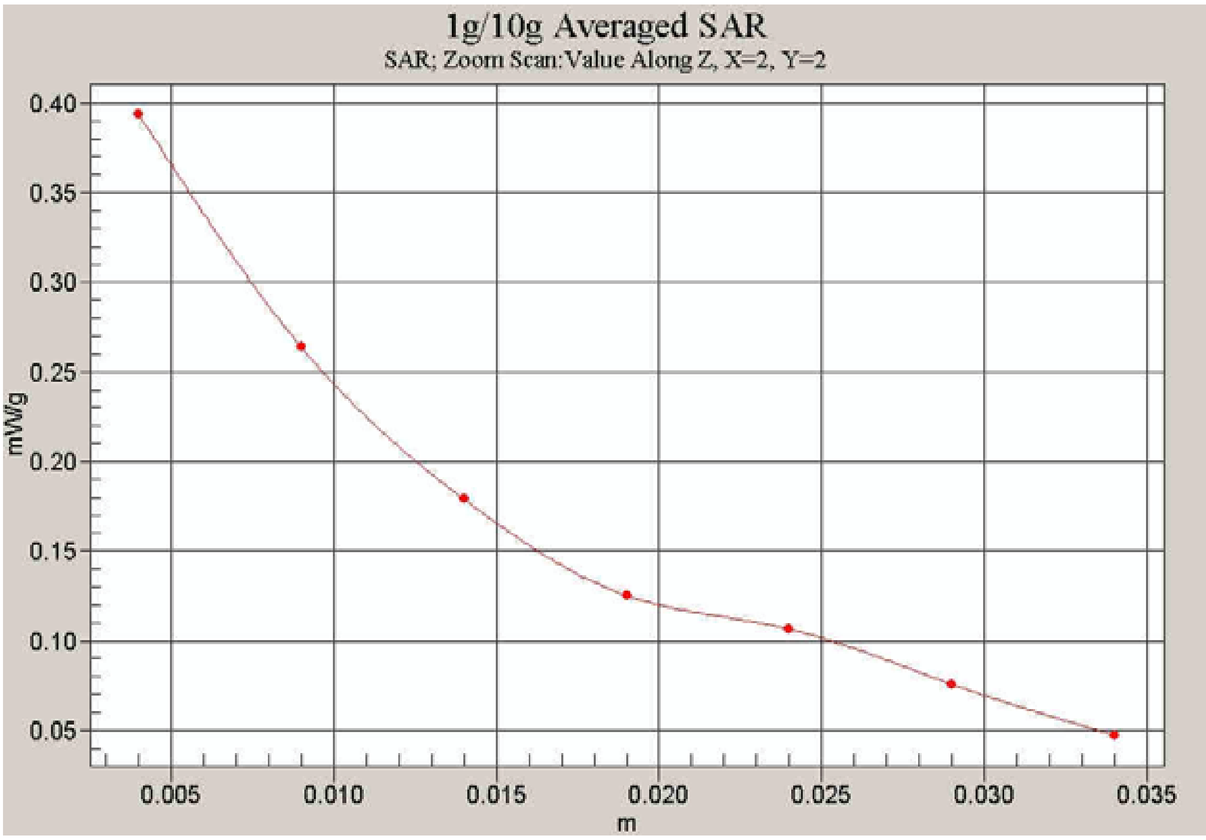


Fig.28 Z-Scan at power reference point (HSDPA 850 CH4182 Test Position 1)

HSDPA 850 Test Position 1 with IBM Laptop-antenna unfolded

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.977 mho/m; ε_r = 56; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: GSM 850 Frequency: 836.4 MHz Duty Cycle: 1:2

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

Test Position 1/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.429 mW/g

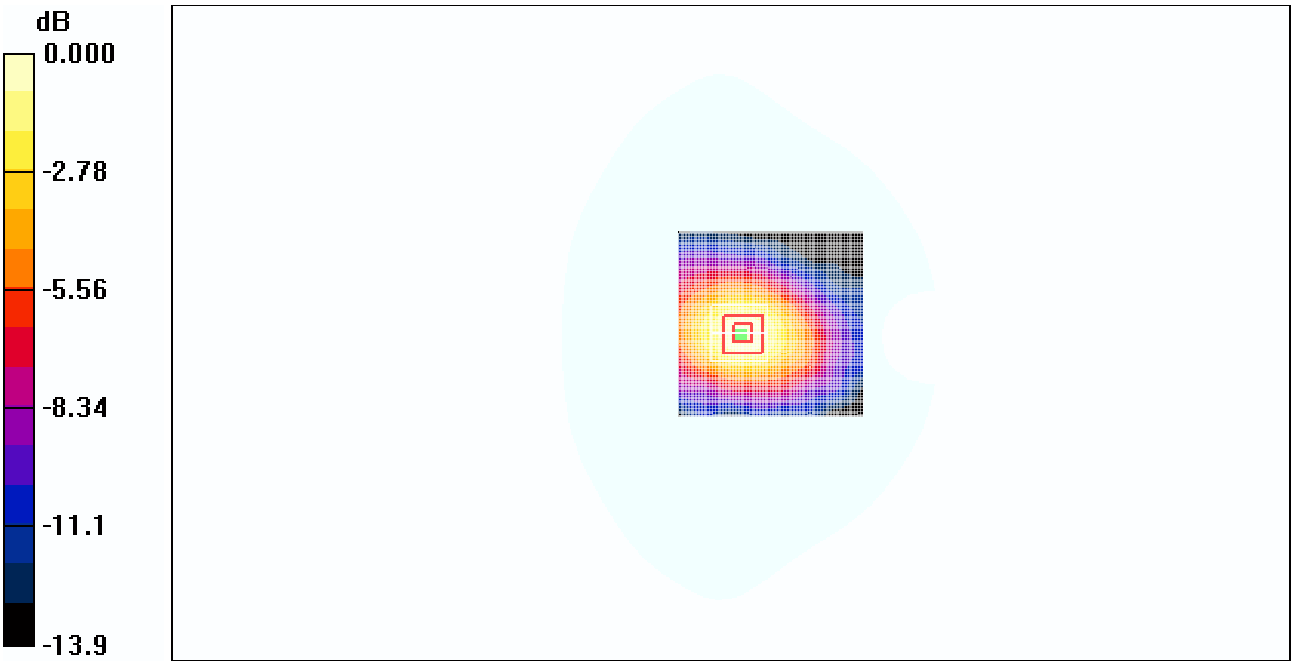
Test Position 1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.7 V/m; Power Drift = 0.114 dB

Peak SAR (extrapolated) = 0.708 W/kg

SAR(1 g) = 0.418 mW/g; SAR(10 g) = 0.273 mW/g

Maximum value of SAR (measured) = 0.423 mW/g



0 dB = 0.423mW/g

Fig.29 HSDPA 850 CH4182 Test Position 1

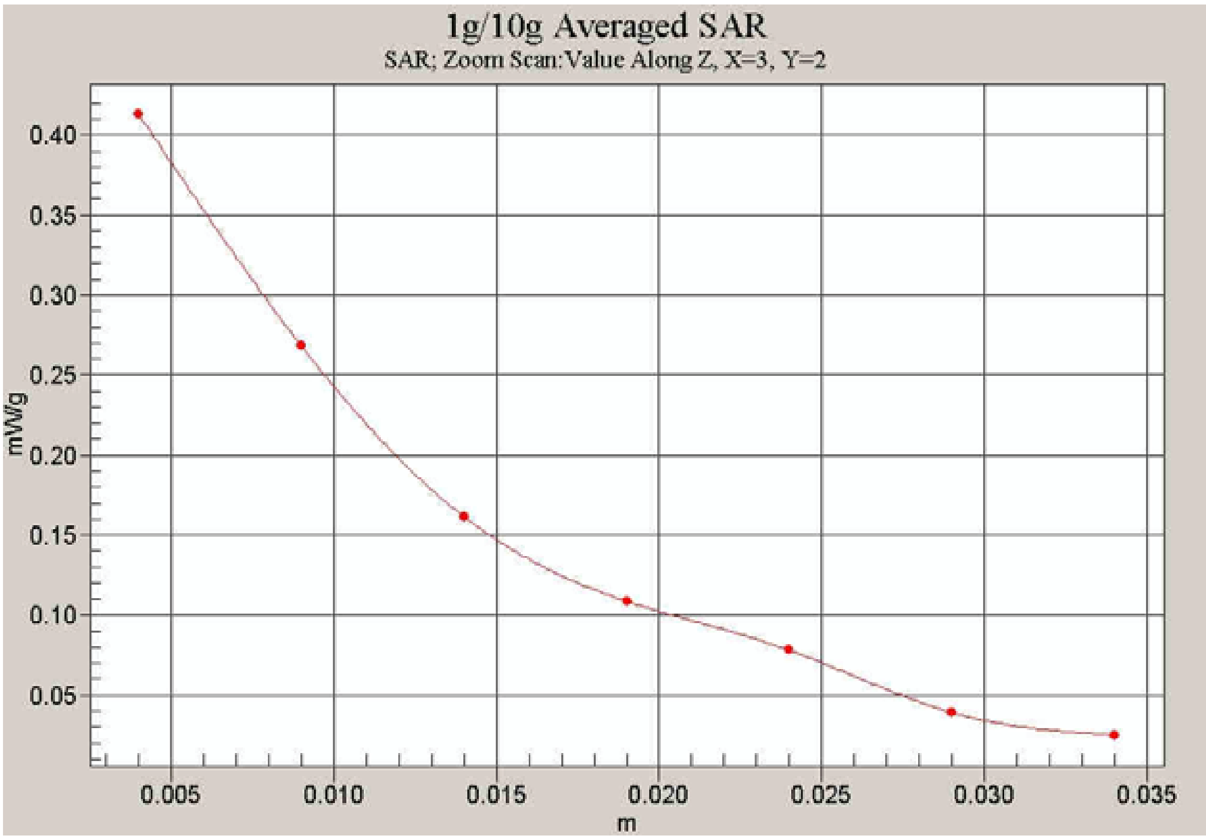


Fig.30 Z-Scan at power reference point (HSDPA 850 CH4182 Test Position 1)

WCDMA 1900 Test Position 1 with DELL Laptop-antenna folded

Electronics: DAE3 Sn536

Medium: Body 1900

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: 1900MHz Frequency: 1880 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(4.88, 4.88, 4.88)

Test Position 1/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.092 mW/g

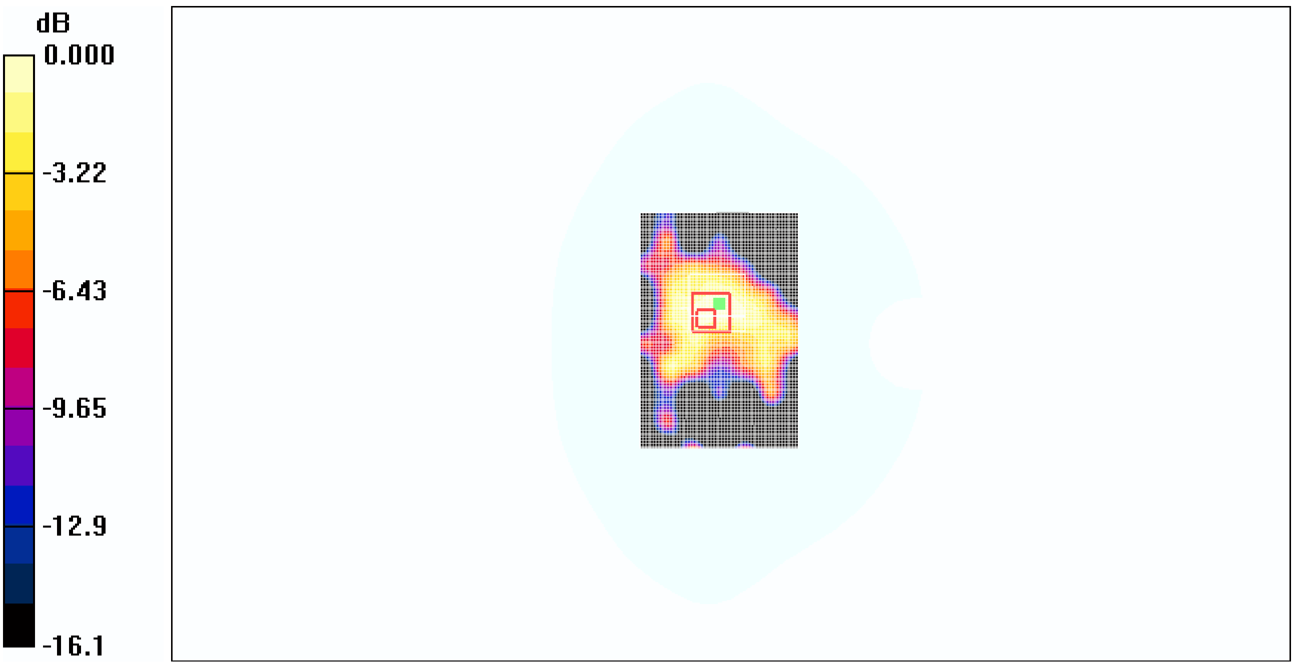
Test Position 1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.26 V/m; Power Drift = -0.193 dB

Peak SAR (extrapolated) = 0.115 W/kg

SAR(1 g) = 0.085 mW/g; SAR(10 g) = 0.056 mW/g

Maximum value of SAR (measured) = 0.100 mW/g



0 dB = 0.100mW/g

Fig. 31 WCDMA 1900 CH9400 Test Position 1

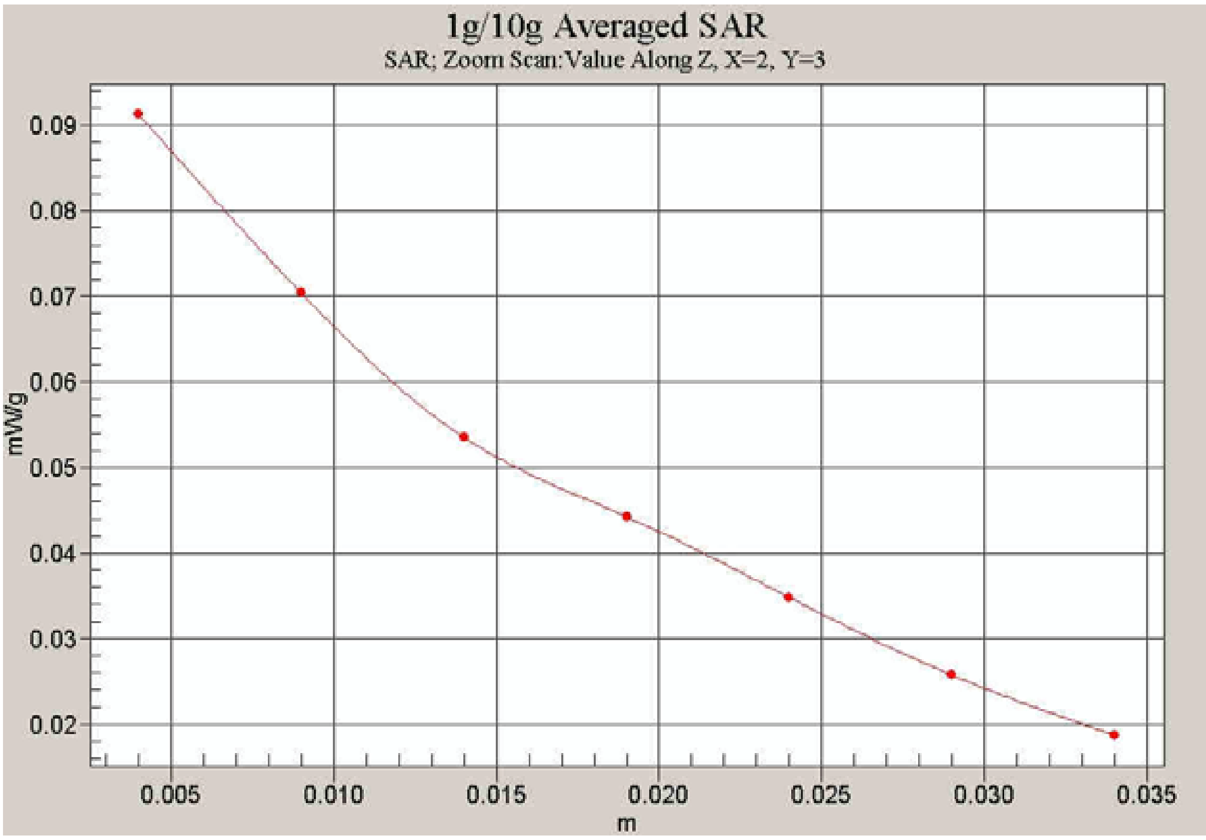


Fig.32 Z-Scan at power reference point (WCDMA 1900 CH9400 Test Position 1)

WCDMA 1900 Test Position 2 with DELL Laptop-antenna folded

Electronics: DAE3 Sn536

Medium: Body 1900

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: 1900MHz Frequency: 1880 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(4.88, 4.88, 4.88)

Test Position 2/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.089 mW/g

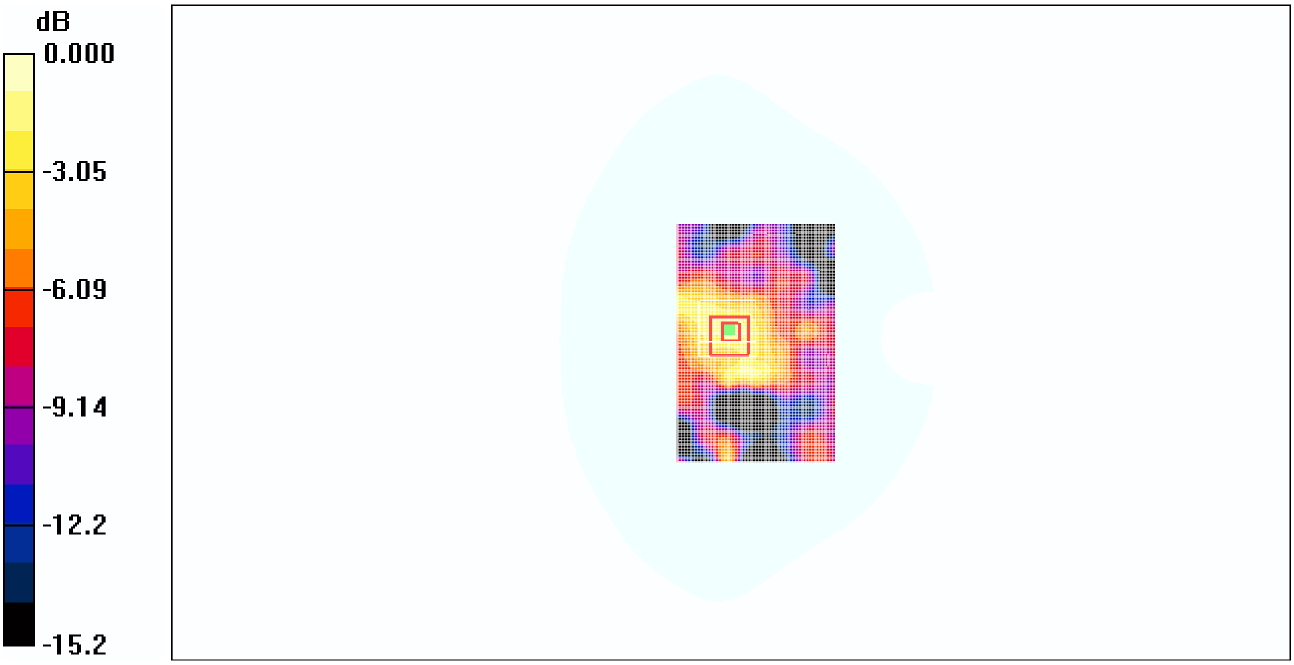
Test Position 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.77 V/m; Power Drift = -0.166 dB

Peak SAR (extrapolated) = 0.135 W/kg

SAR(1 g) = 0.066 mW/g; SAR(10 g) = 0.050 mW/g

Maximum value of SAR (measured) = 0.120 mW/g



0 dB = 0.120mW/g

Fig.33 WCDMA 1900 CH9400 Test Position 2

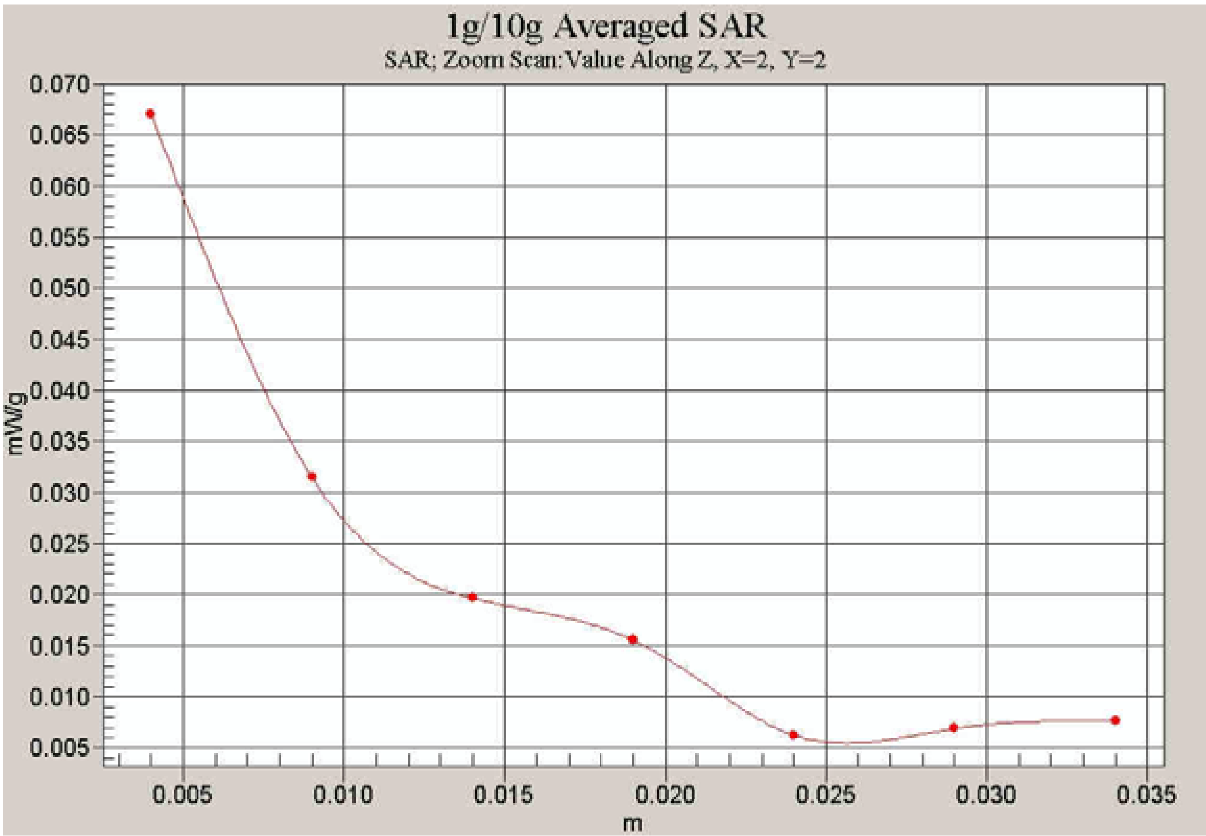


Fig.34 Z-Scan at power reference point (WCDMA 1900 CH9400 Test Position 2)

WCDMA 1900 Test Position 1 with DELL Laptop-antenna unfolded

Electronics: DAE3 Sn536

Medium: Body 1900

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: 1900MHz Frequency: 1880 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(4.88, 4.88, 4.88)

Test Position 1/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.184 mW/g

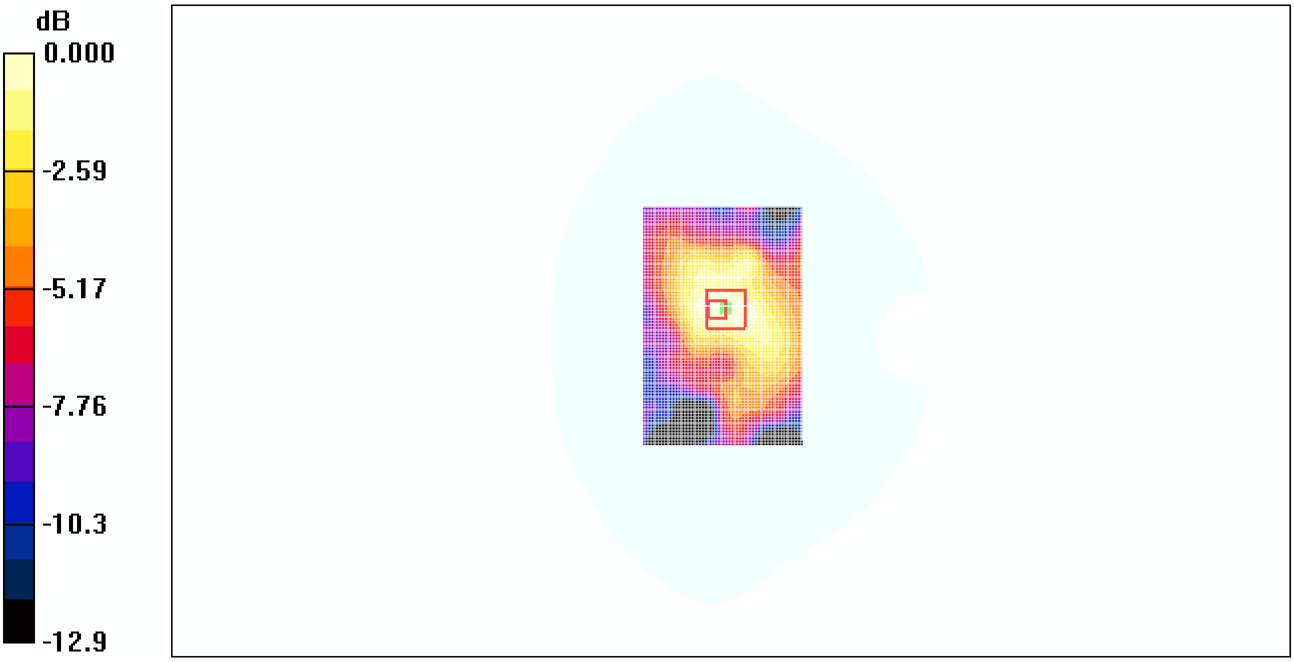
Test Position 1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.78 V/m; Power Drift = -0.189 dB

Peak SAR (extrapolated) = 0.260 W/kg

SAR(1 g) = 0.172 mW/g; SAR(10 g) = 0.115 mW/g

Maximum value of SAR (measured) = 0.181 mW/g



0 dB = 0.181mW/g

Fig. 35 WCDMA 1900 CH9400 Test Position 1

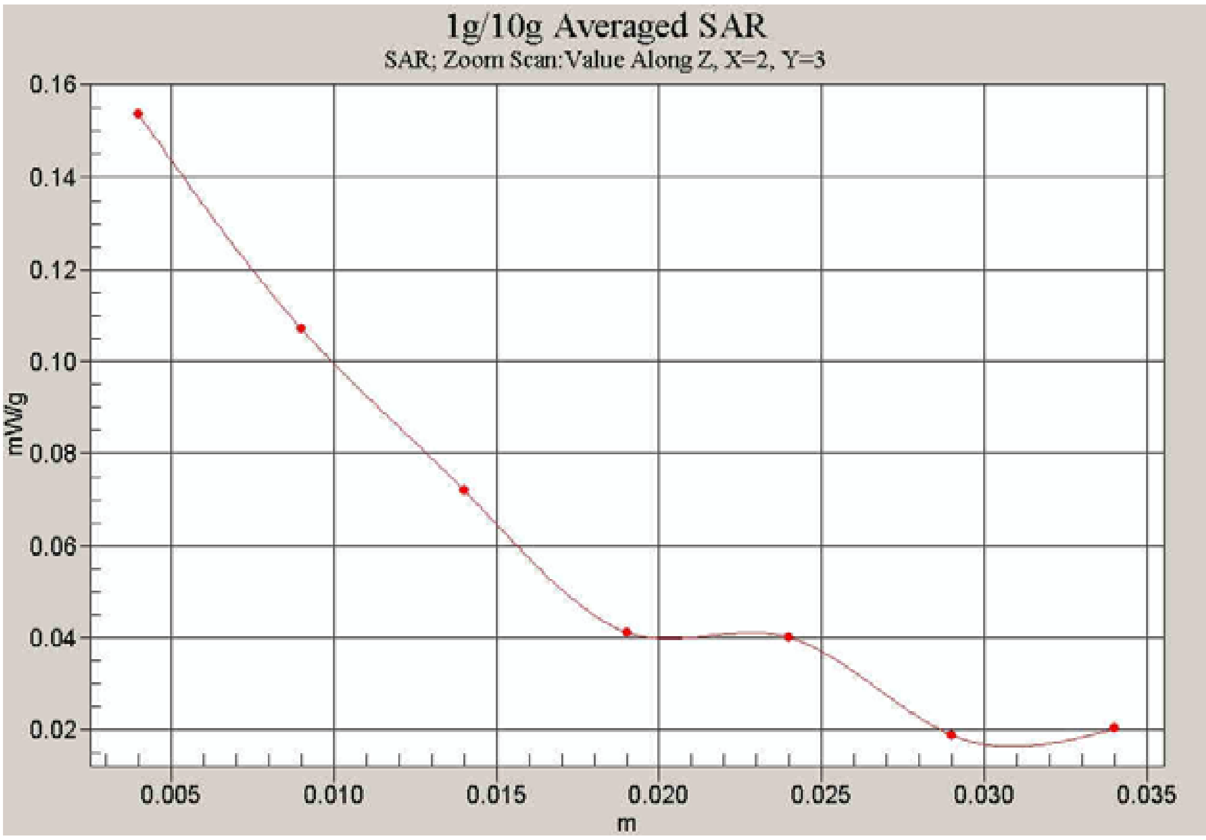
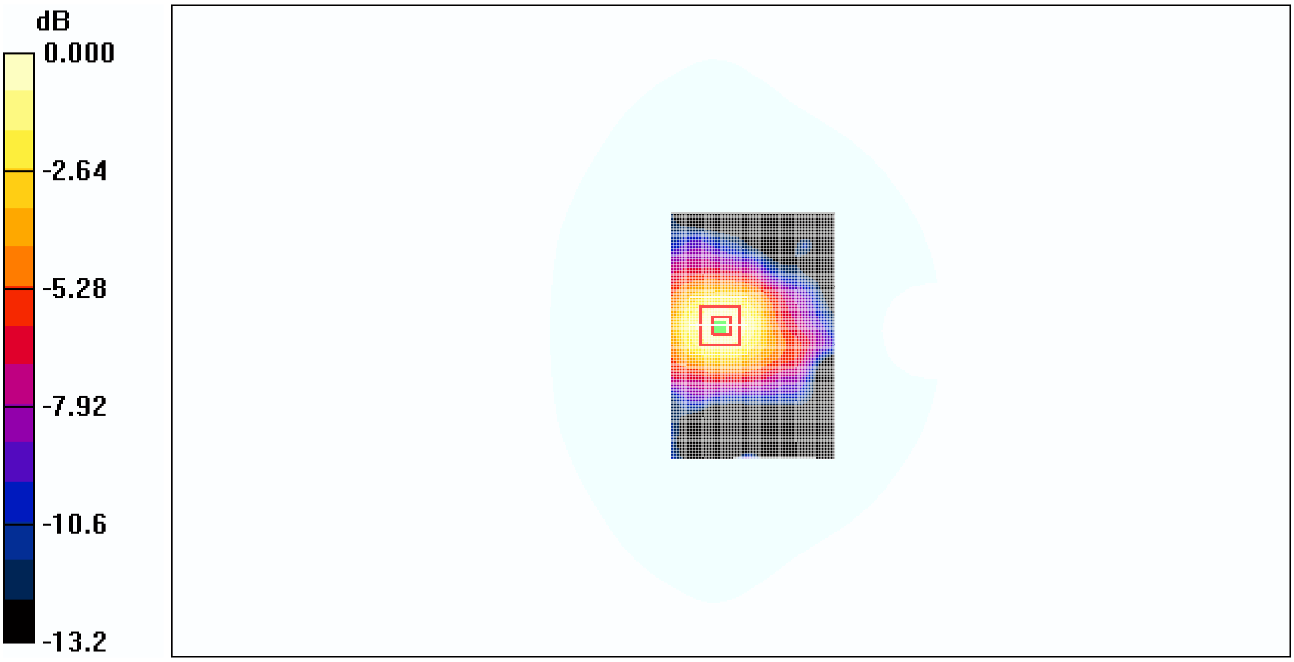


Fig.36 Z-Scan at power reference point (WCDMA 1900 CH9400 Test Position 1)

WCDMA 1900 Test Position 2 with DELL Laptop-antenna unfolded
Electronics: DAE3 Sn536
Medium: Body 1900
Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C
Communication System: 1900MHz Frequency: 1880 MHz Duty Cycle: 1:1
Probe: ET3DV6 - SN1736 ConvF(4.88, 4.88, 4.88)

Test Position 2/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.410 mW/g

Test Position 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.9 V/m; Power Drift = 0.021 dB
Peak SAR (extrapolated) = 0.585 W/kg
SAR(1 g) = 0.363 mW/g; SAR(10 g) = 0.232 mW/g
Maximum value of SAR (measured) = 0.392 mW/g



0 dB = 0.392mW/g

Fig.37 WCDMA 1900 CH9400 Test Position 2

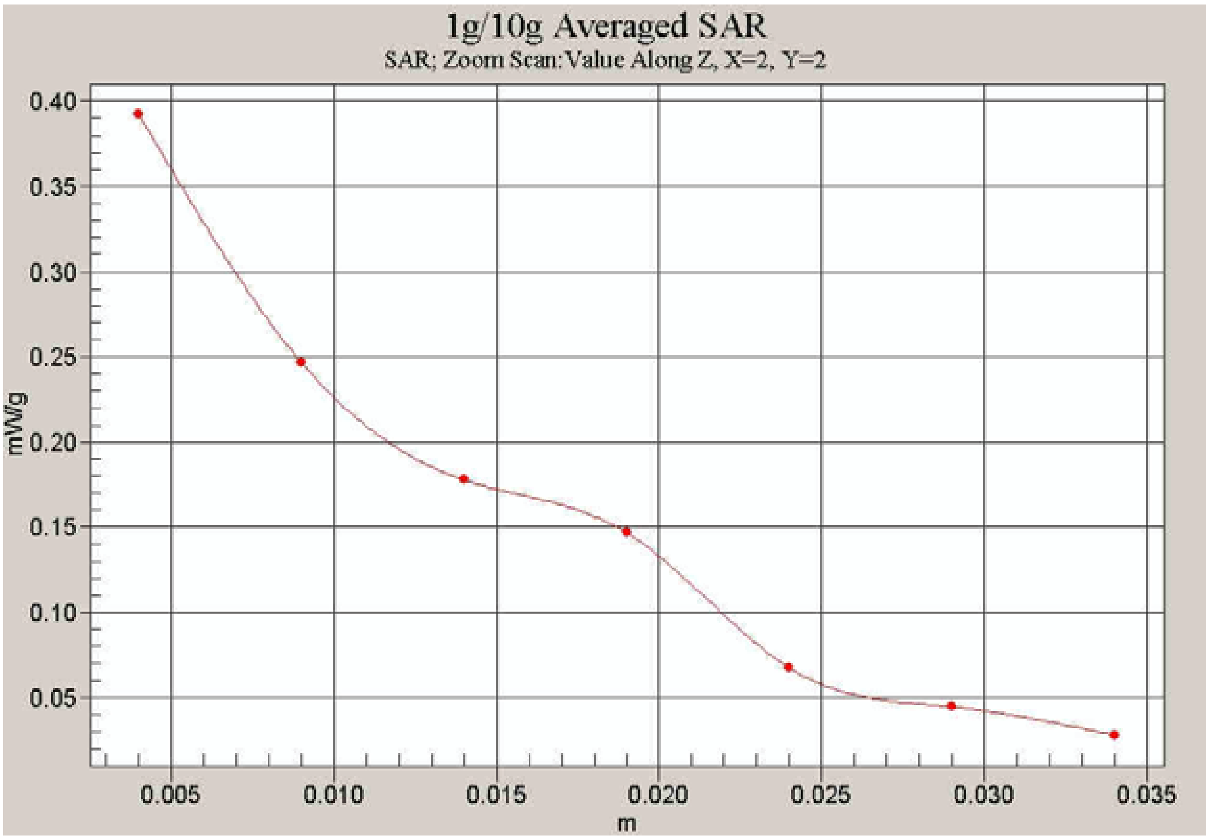


Fig.38 Z-Scan at power reference point (WCDMA 1900 CH9400 Test Position 2)

WCDMA 1900 Test Position 1 with HP Laptop-antenna folded

Electronics: DAE3 Sn536

Medium: Body 1900

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C

Communication System: 1900MHz Frequency: 1880 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(4.88, 4.88, 4.88)

Test Position 1/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.206 mW/g

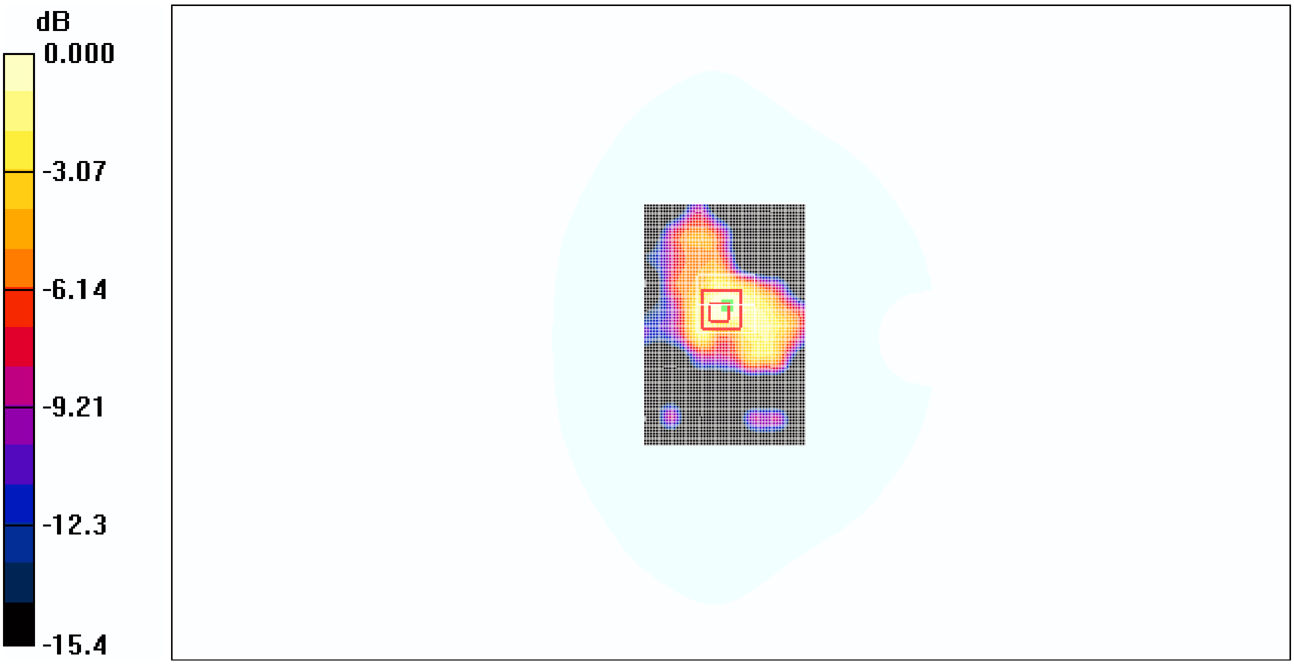
Test Position 1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.52 V/m; Power Drift = 0.072 dB

Peak SAR (extrapolated) = 0.431 W/kg

SAR(1 g) = 0.201 mW/g; SAR(10 g) = 0.109 mW/g

Maximum value of SAR (measured) = 0.201 mW/g



0 dB = 0.201mW/g

Fig. 39 WCDMA 1900 CH9400 Test Position 1

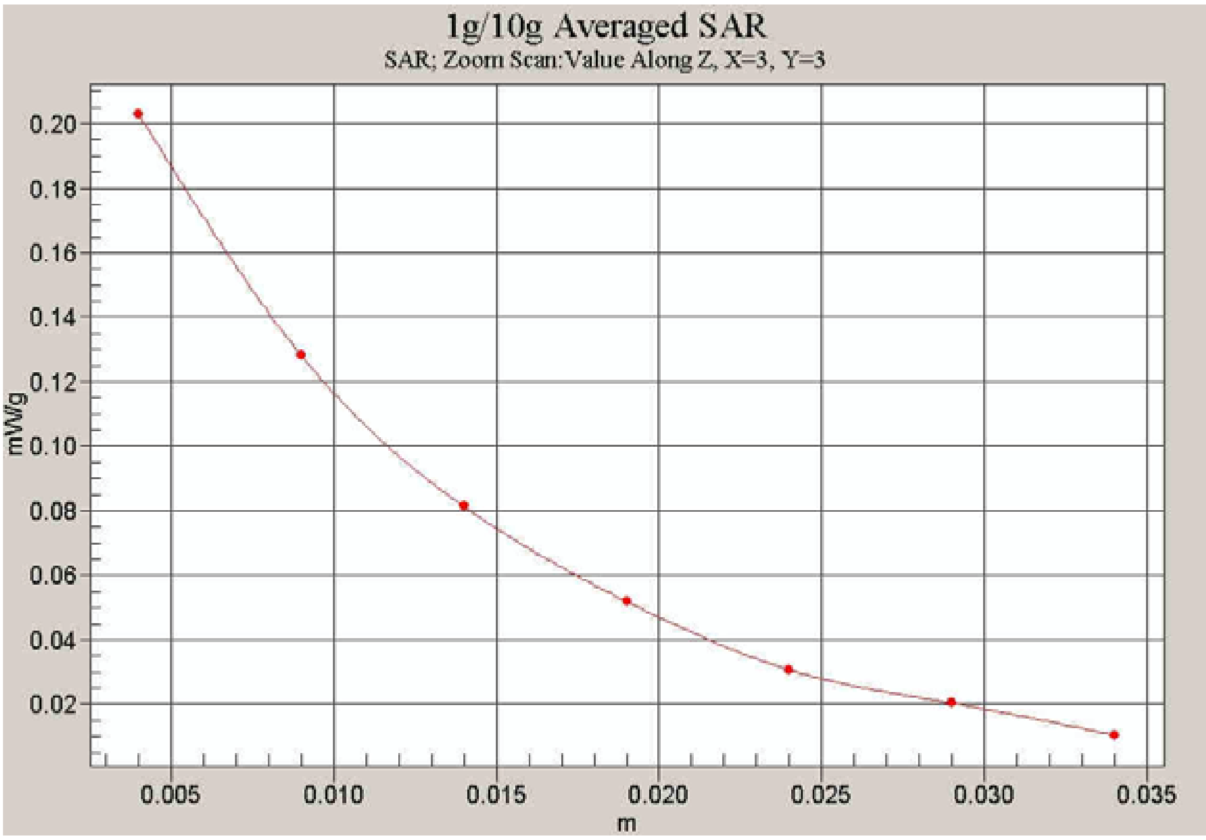


Fig.40 Z-Scan at power reference point (WCDMA 1900 CH9400 Test Position 1)

WCDMA 1900 Test Position 2 with HP Laptop-antenna folded

Electronics: DAE3 Sn536

Medium: Body 1900

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C   Liqiud Temperature: 22.5°C

Communication System: 1900MHz Frequency: 1880 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(4.88, 4.88, 4.88)

Test Position 2/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

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

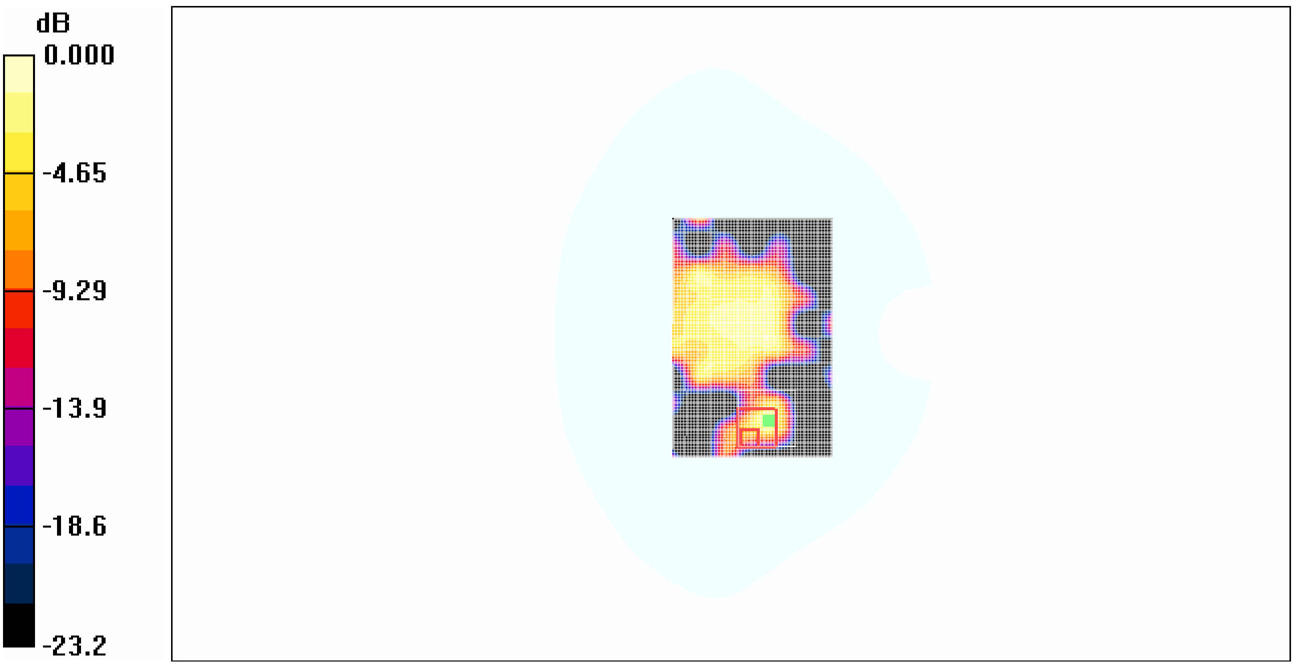
Test Position 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.40 V/m; Power Drift = -0.160 dB

Peak SAR (extrapolated) = 0.138 W/kg

SAR(1 g) = 0.038 mW/g; SAR(10 g) = 0.016 mW/g

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



0 dB = 0.104mW/g

Fig.41 WCDMA 1900 CH9400 Test Position 2

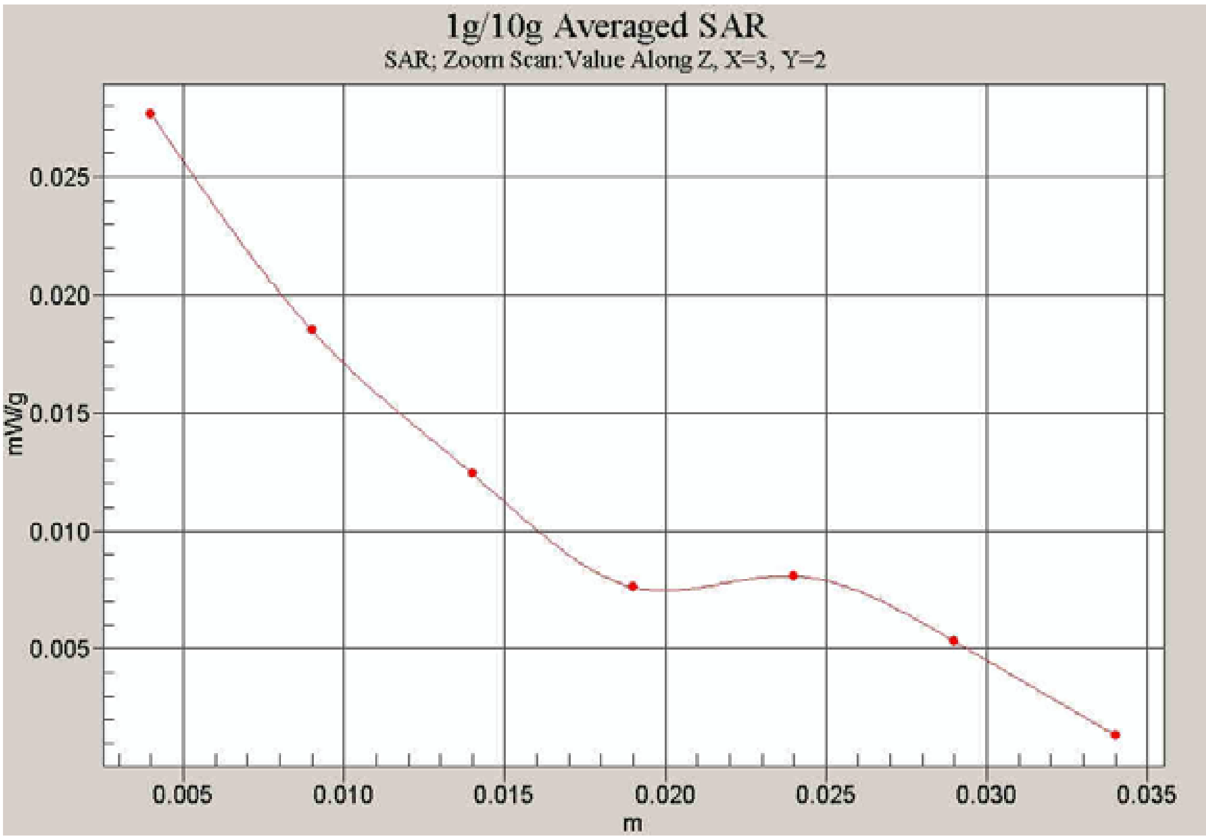


Fig.42 Z-Scan at power reference point (WCDMA 1900 CH9400 Test Position 2)

WCDMA 1900 Test Position 1 with HP Laptop-antenna unfolded

Electronics: DAE3 Sn536

Medium: Body 1900

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: 1900MHz Frequency: 1880 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(4.88, 4.88, 4.88)

Test Position 1/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.331 mW/g

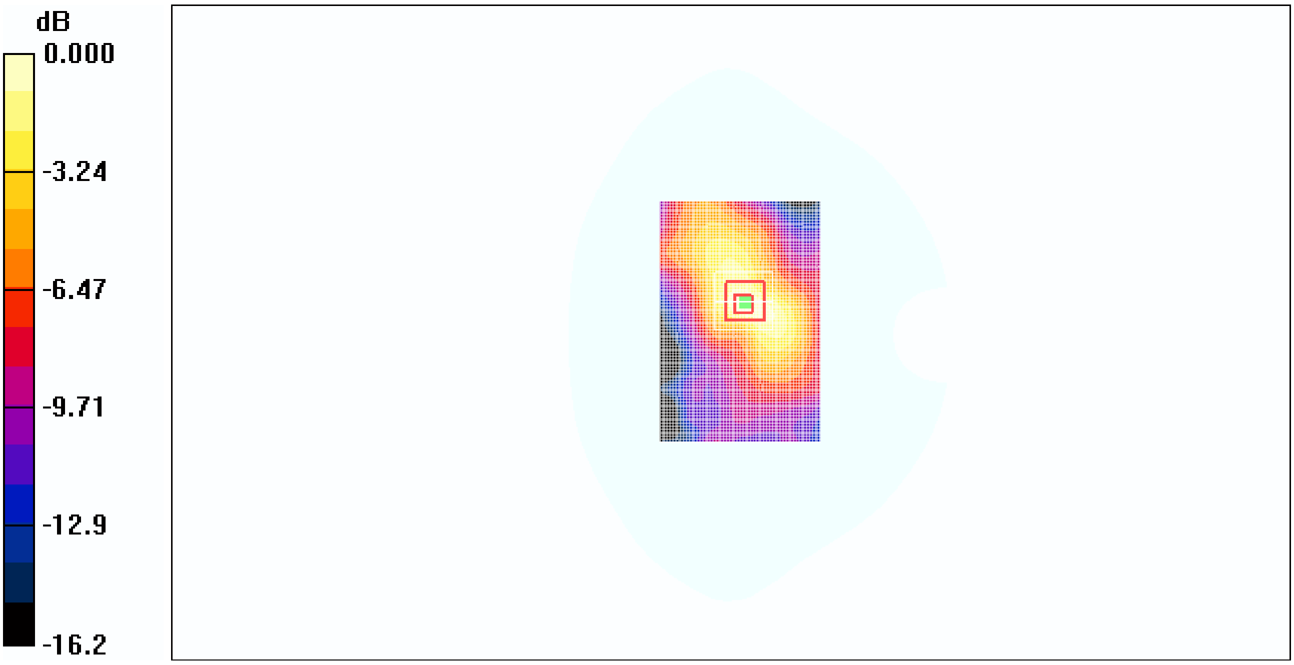
Test Position 1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.92 V/m; Power Drift = 0.035 dB

Peak SAR (extrapolated) = 0.551 W/kg

SAR(1 g) = 0.295 mW/g; SAR(10 g) = 0.178 mW/g

Maximum value of SAR (measured) = 0.325 mW/g



0 dB = 0.325mW/g

Fig. 43 WCDMA 1900 CH9400 Test Position 1

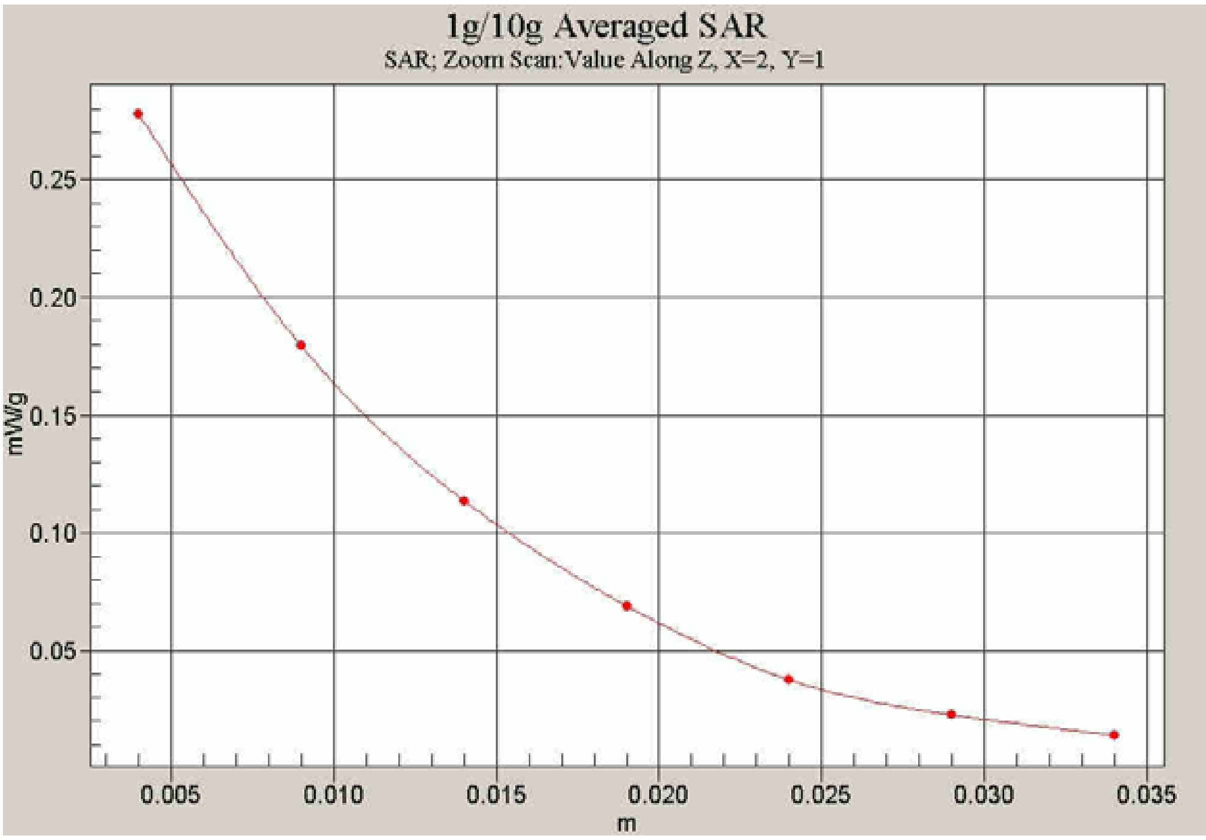


Fig.44 Z-Scan at power reference point (WCDMA 1900 CH9400 Test Position 1)

WCDMA 1900 Test Position 2 with HP Laptop-antenna unfolded

Electronics: DAE3 Sn536

Medium: Body 1900

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: 1900MHz Frequency: 1880 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(4.88, 4.88, 4.88)

Test Position 2/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.392 mW/g

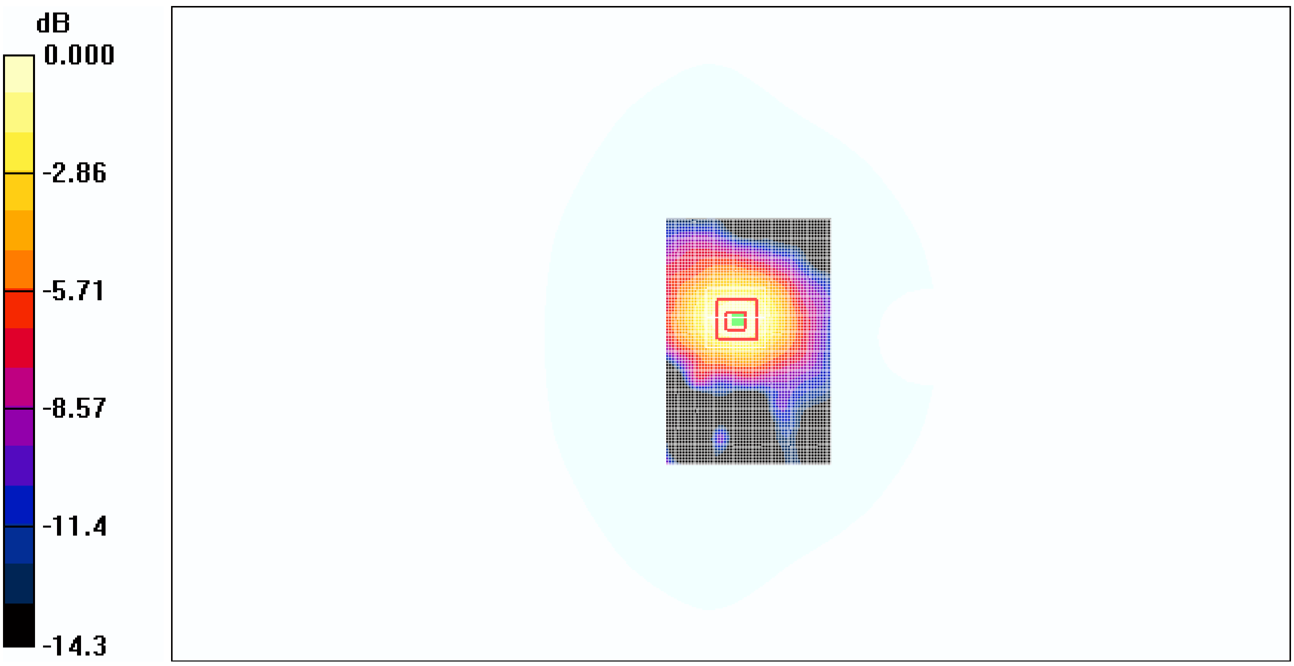
Test Position 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.2 V/m; Power Drift = 0.030 dB

Peak SAR (extrapolated) = 0.554 W/kg

SAR(1 g) = 0.348 mW/g; SAR(10 g) = 0.221 mW/g

Maximum value of SAR (measured) = 0.374 mW/g



0 dB = 0.374mW/g

Fig.45 WCDMA 1900 CH9400 Test Position 2

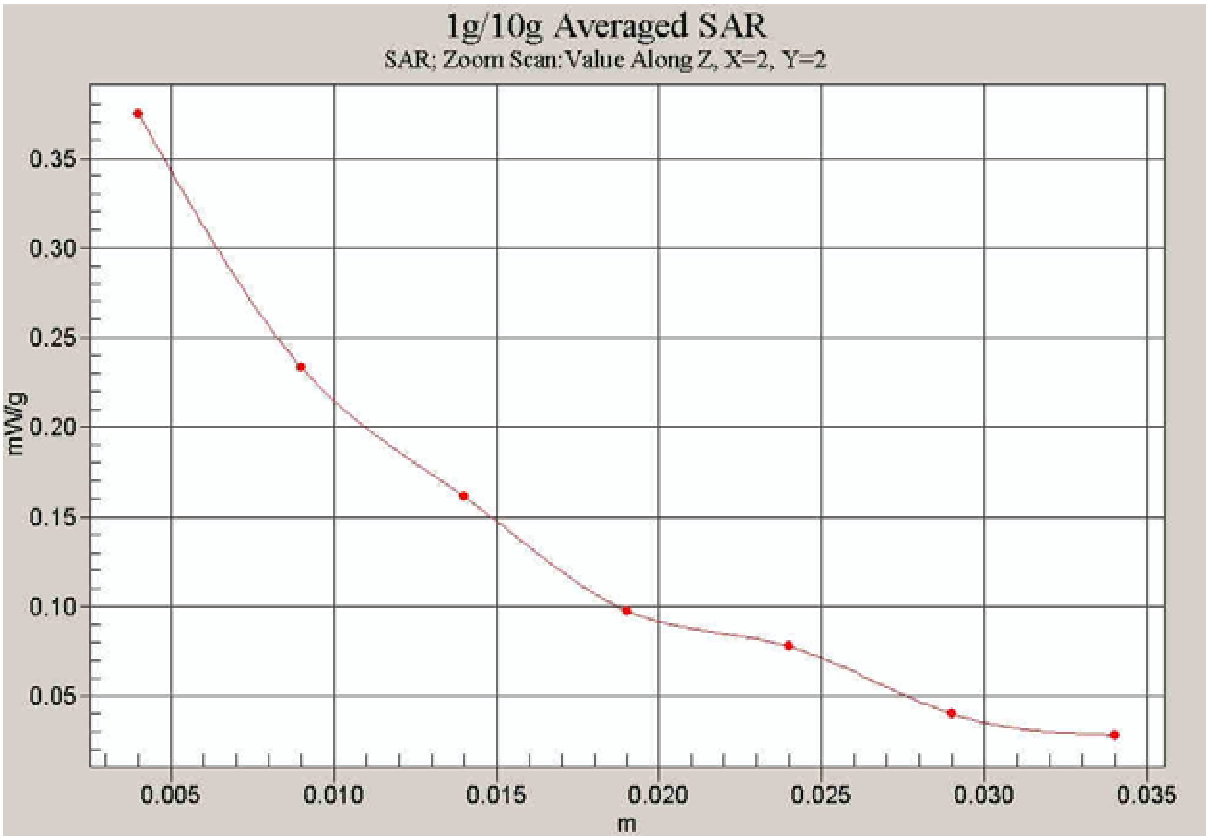


Fig.46 Z-Scan at power reference point (WCDMA 1900 CH9400 Test Position 2)

WCDMA 1900 Test Position 1 with IBM laptop-antenna folded

Electronics: DAE3 Sn536

Medium: Body 1900

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: 1900MHz Frequency: 1880 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(4.88, 4.88, 4.88)

Test Position 1/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

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

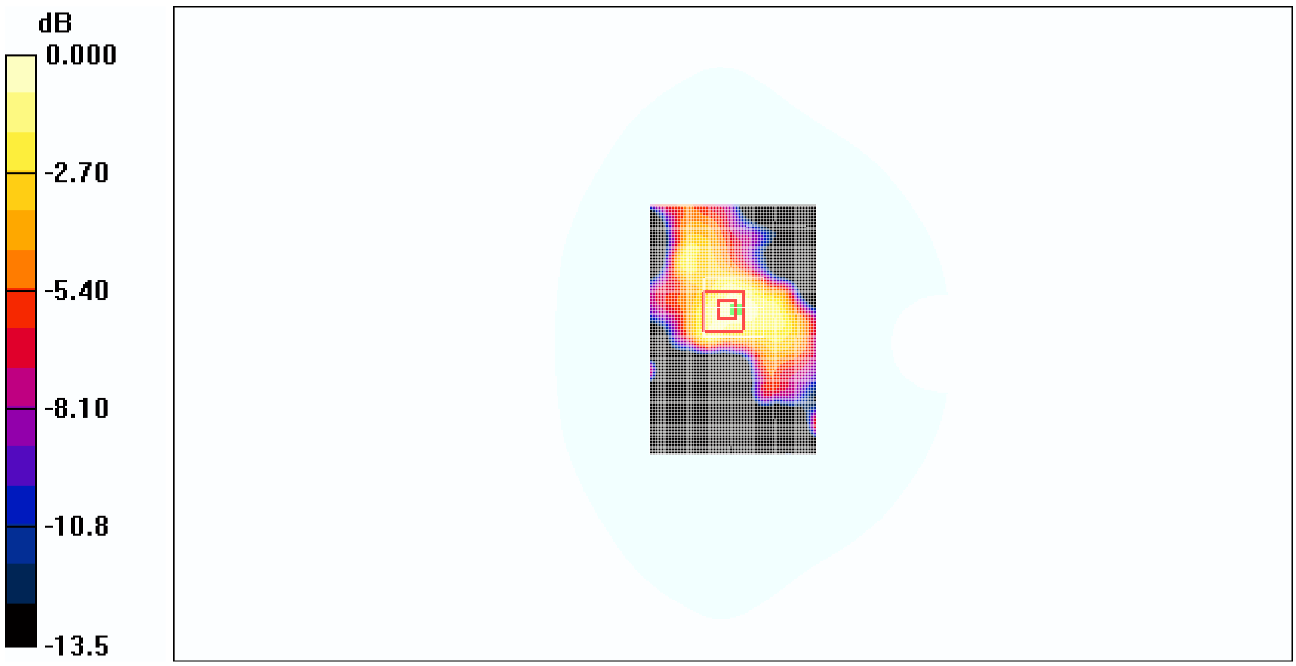
Test Position 1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.18 V/m; Power Drift = -0.200 dB

Peak SAR (extrapolated) = 0.123 W/kg

SAR(1 g) = 0.083 mW/g; SAR(10 g) = 0.054 mW/g

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



0 dB = 0.091mW/g

Fig. 47 WCDMA 1900 CH9400 Test Position 1

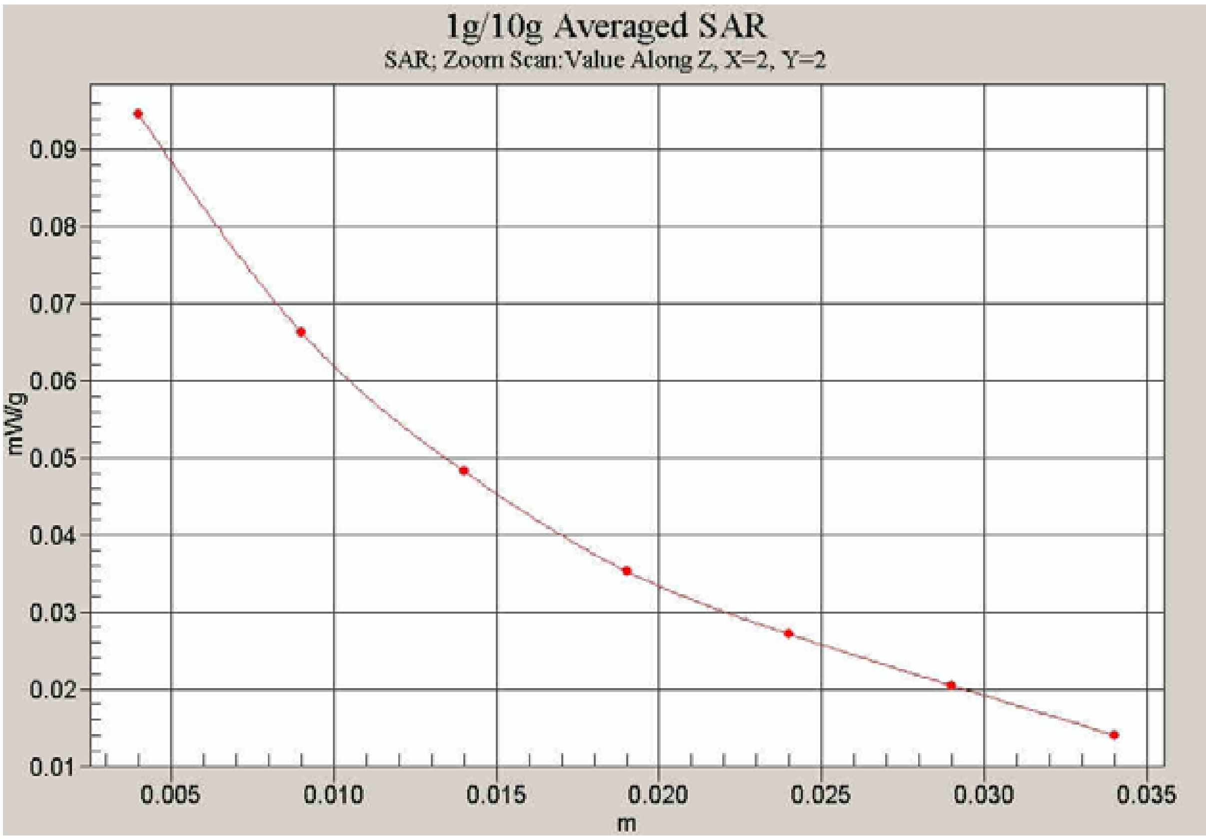


Fig 48. Z-Scan at power reference point (WCDMA 1900 CH9400 Test Position 1)

WCDMA 1900 Test Position 2 with IBM laptop-antenna folded

Electronics: DAE3 Sn536

Medium: Body 1900

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: 1900MHz Frequency: 1880 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(4.88, 4.88, 4.88)

Test Position 2/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.063 mW/g

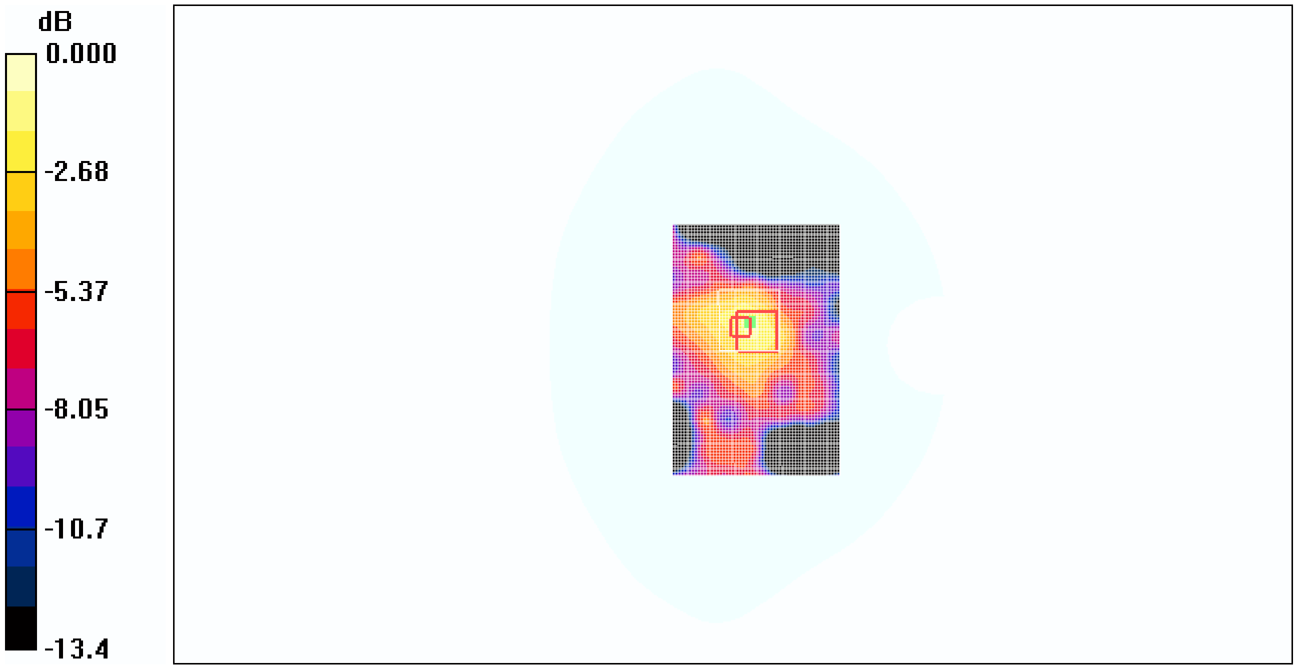
Test Position 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.14 V/m; Power Drift = -0.015 dB

Peak SAR (extrapolated) = 0.093 W/kg

SAR(1 g) = 0.056 mW/g; SAR(10 g) = 0.037 mW/g

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



0 dB = 0.091mW/g

Fig.49 WCDMA 1900 CH9400 Test Position 2

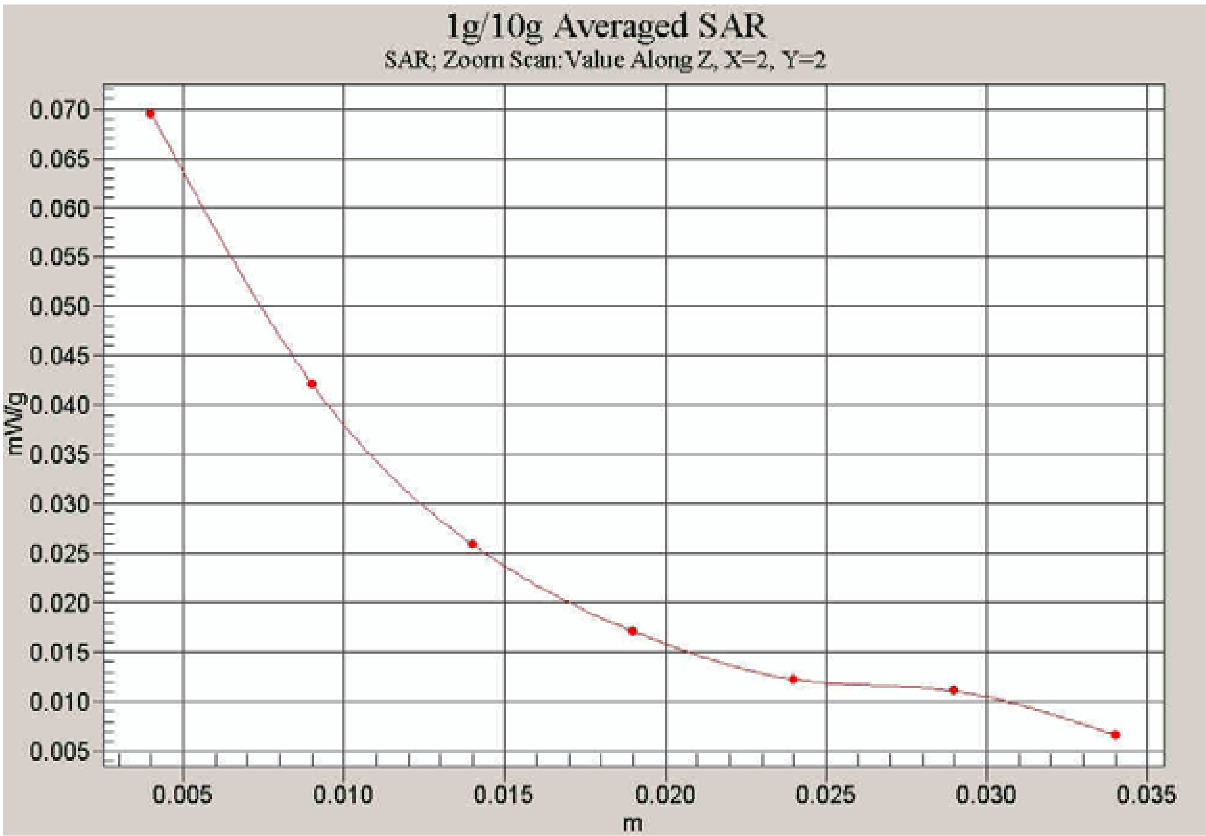


Fig.50 Z-Scan at power reference point (WCDMA 1900 CH9400 Test Position 2)

WCDMA 1900 Test Position 1 with IBM Laptop-antenna unfolded

Electronics: DAE3 Sn536

Medium: Body 1900

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: 1900MHz Frequency: 1880 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(4.88, 4.88, 4.88)

Test Position 1/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.168 mW/g

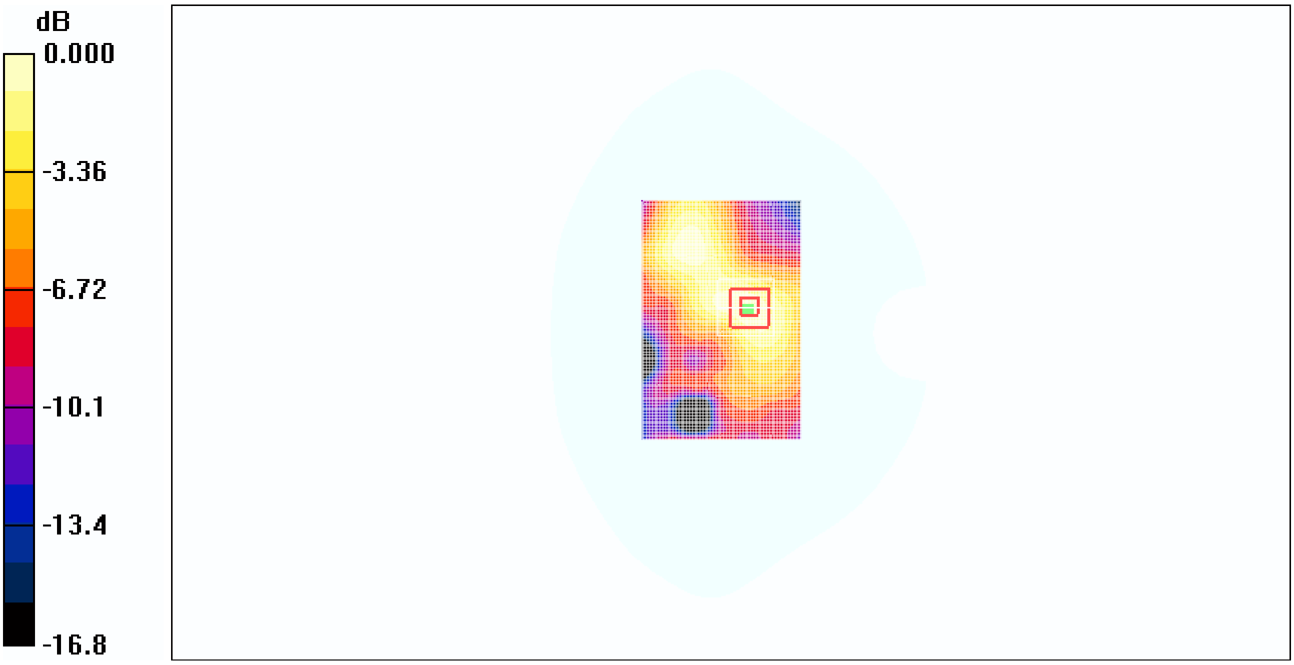
Test Position 1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.81 V/m; Power Drift = -0.198 dB

Peak SAR (extrapolated) = 0.249 W/kg

SAR(1 g) = 0.152 mW/g; SAR(10 g) = 0.099 mW/g

Maximum value of SAR (measured) = 0.164 mW/g



0 dB = 0.164mW/g

Fig. 51 WCDMA 1900 CH9400 Test Position 1

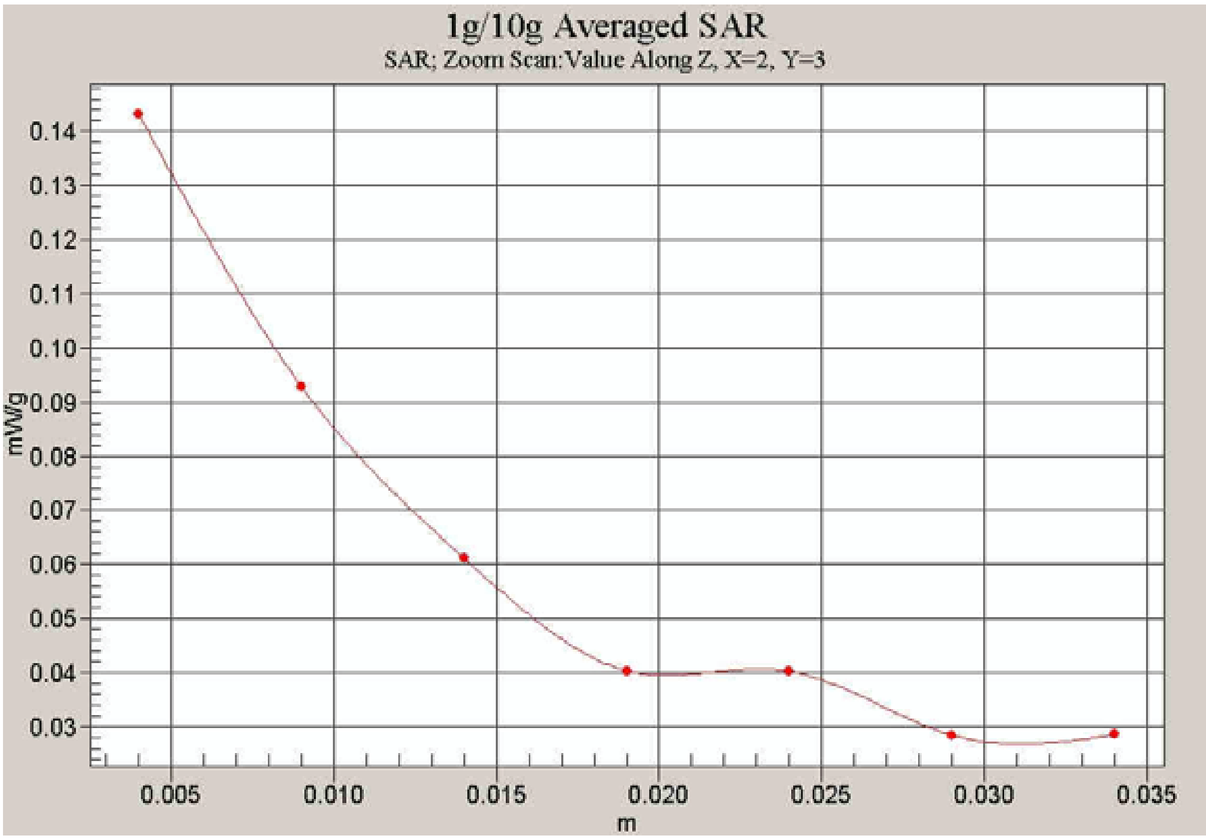


Fig.52 Z-Scan at power reference point (WCDMA 1900 CH9400 Test Position 1)

WCDMA 1900 Test Position 2 with IBM Laptop-antenna unfolded

Electronics: DAE3 Sn536

Medium: Body 1900

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: 1900MHz Frequency: 1880 MHz Duty Cycle: 1:1

Probe: ET3DV6 - SN1736 ConvF(4.88, 4.88, 4.88)

Test Position 2/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.325 mW/g

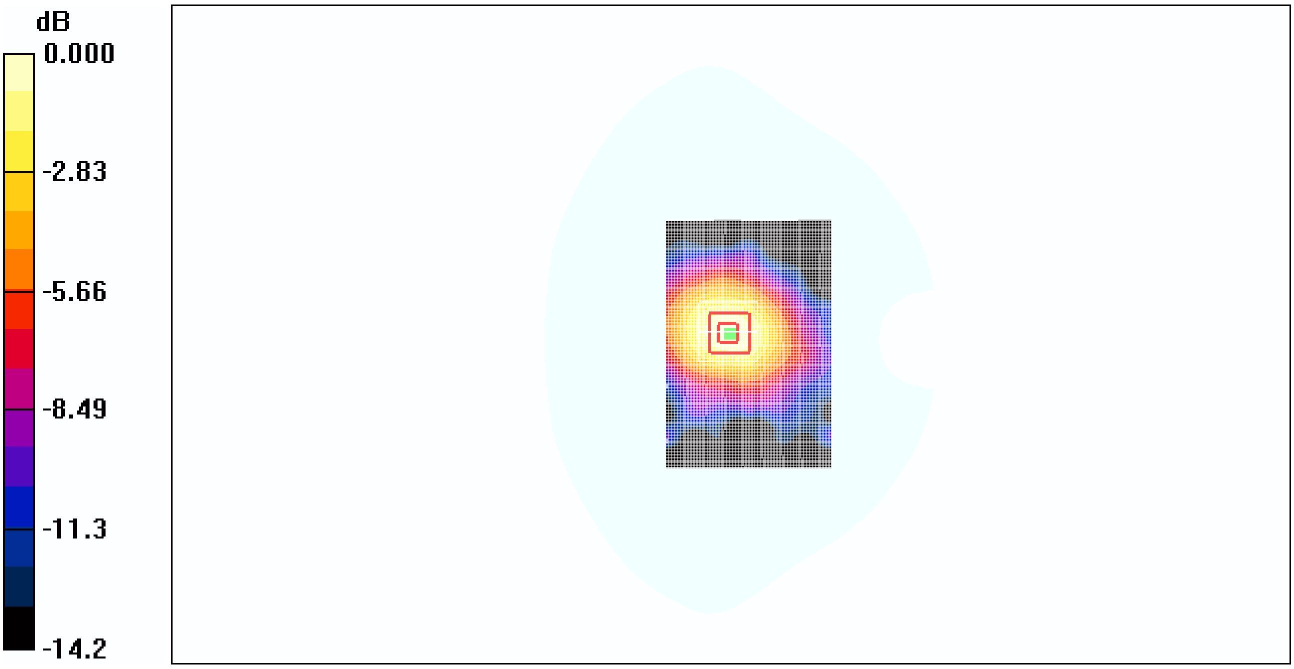
Test Position 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.5 V/m; Power Drift = 0.094 dB

Peak SAR (extrapolated) = 0.500 W/kg

SAR(1 g) = 0.300 mW/g; SAR(10 g) = 0.190 mW/g

Maximum value of SAR (measured) = 0.320 mW/g



0 dB = 0.320mW/g

Fig.53 WCDMA 1900 CH9400 Test Position 2

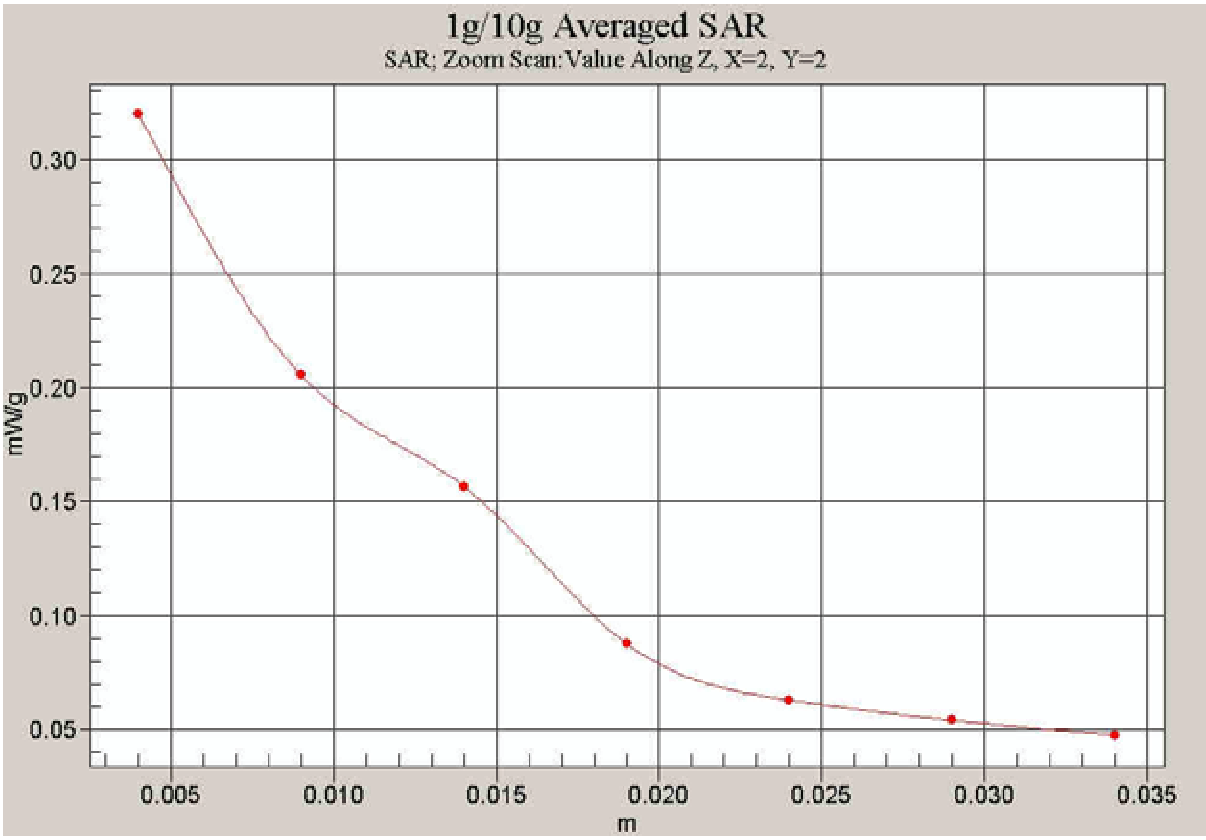


Fig.54 Z-Scan at power reference point (WCDMA 1900 CH9400 Test Position 2)

HSDPA 1900 Test Position 1 with DELL Laptop-antenna unfolded

Electronics: DAE3 Sn536

Medium: Body 1900

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: 1900MHz Frequency: 1880 MHz Duty Cycle: 1:2

Probe: ET3DV6 - SN1736 ConvF(4.88, 4.88, 4.88)

Test Position 2/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.344 mW/g

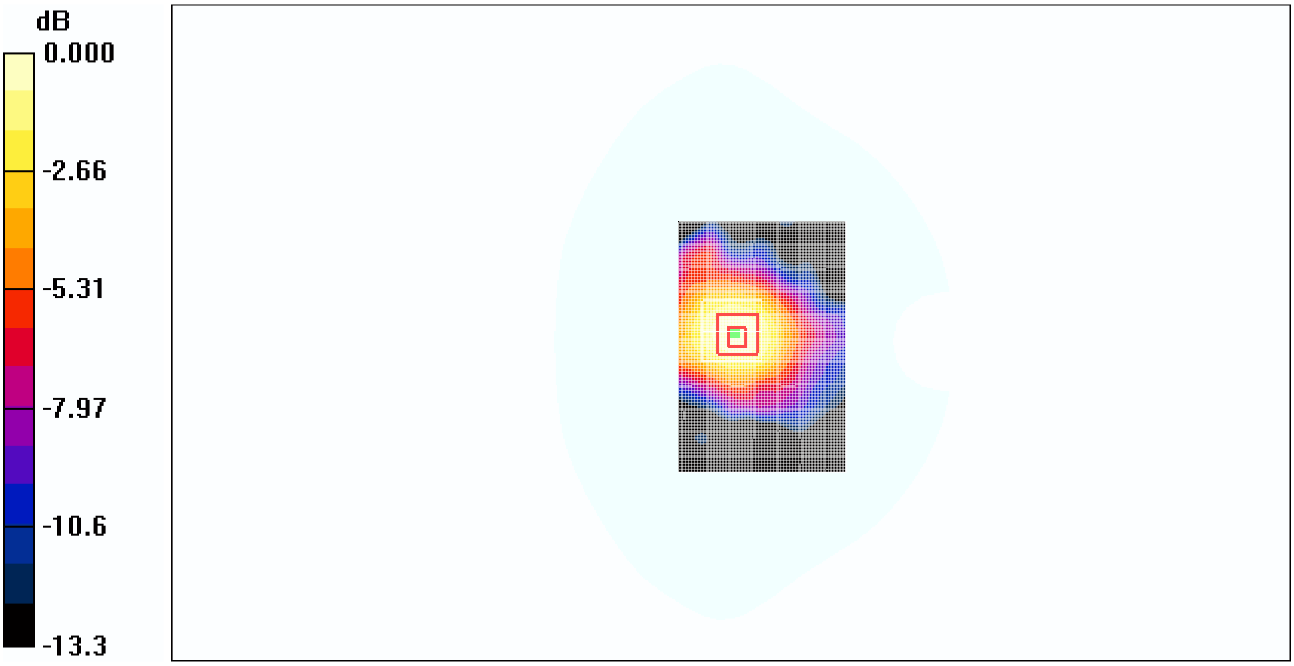
Test Position 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.3 V/m; Power Drift = 0.200 dB

Peak SAR (extrapolated) = 0.471 W/kg

SAR(1 g) = 0.312 mW/g; SAR(10 g) = 0.202 mW/g

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



0 dB = 0.328mW/g

Fig.55 HSDPA 1900 CH9400 Test Position 1

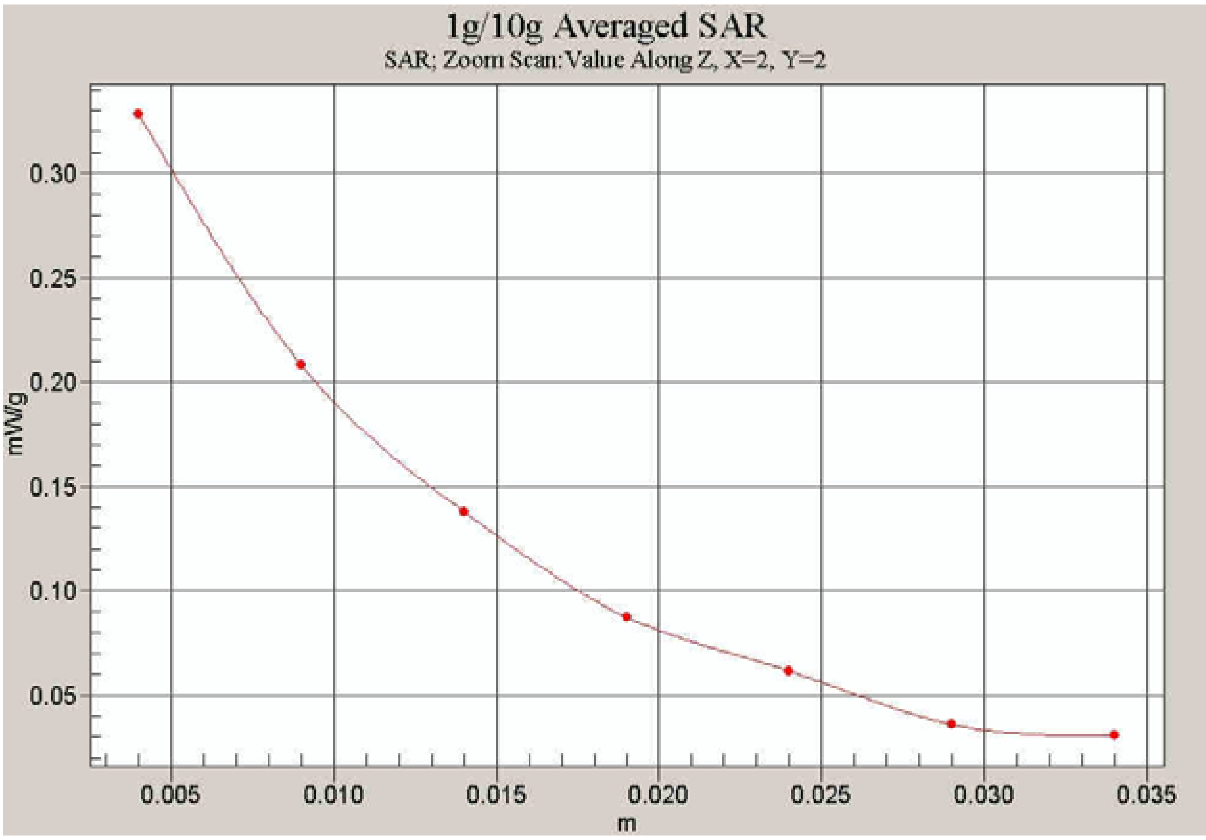


Fig.56 Z-Scan at power reference point (HSDPA 1900 CH9400 Test Position 1)

HSDPA 1900 Test Position 1 with HP Laptop-antenna unfolded

Electronics: DAE3 Sn536

Medium: Body 1900

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: 1900MHz Frequency: 1880 MHz Duty Cycle: 1:2

Probe: ET3DV6 - SN1736 ConvF(4.88, 4.88, 4.88)

Test Position 2/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.391 mW/g

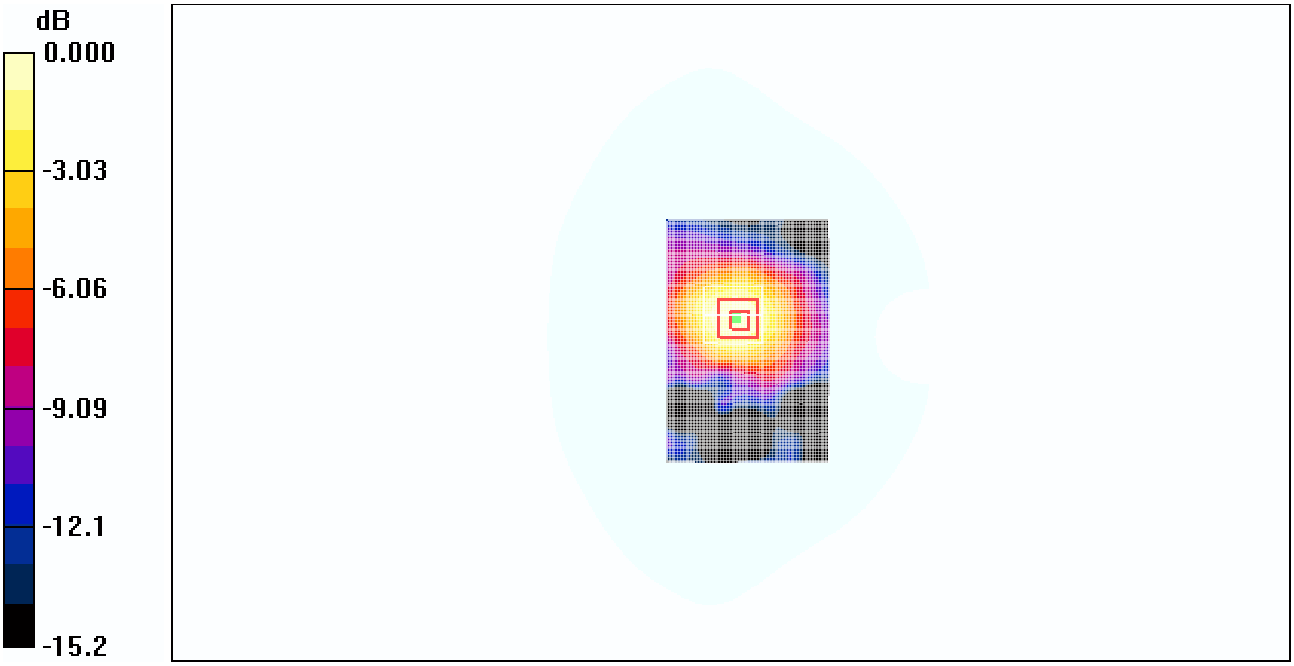
Test Position 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.6 V/m; Power Drift = 0.050 dB

Peak SAR (extrapolated) = 0.634 W/kg

SAR(1 g) = 0.352 mW/g; SAR(10 g) = 0.224 mW/g

Maximum value of SAR (measured) = 0.363 mW/g



0 dB = 0.363mW/g

Fig.57 HSDPA 1900 CH9400 Test Position 1

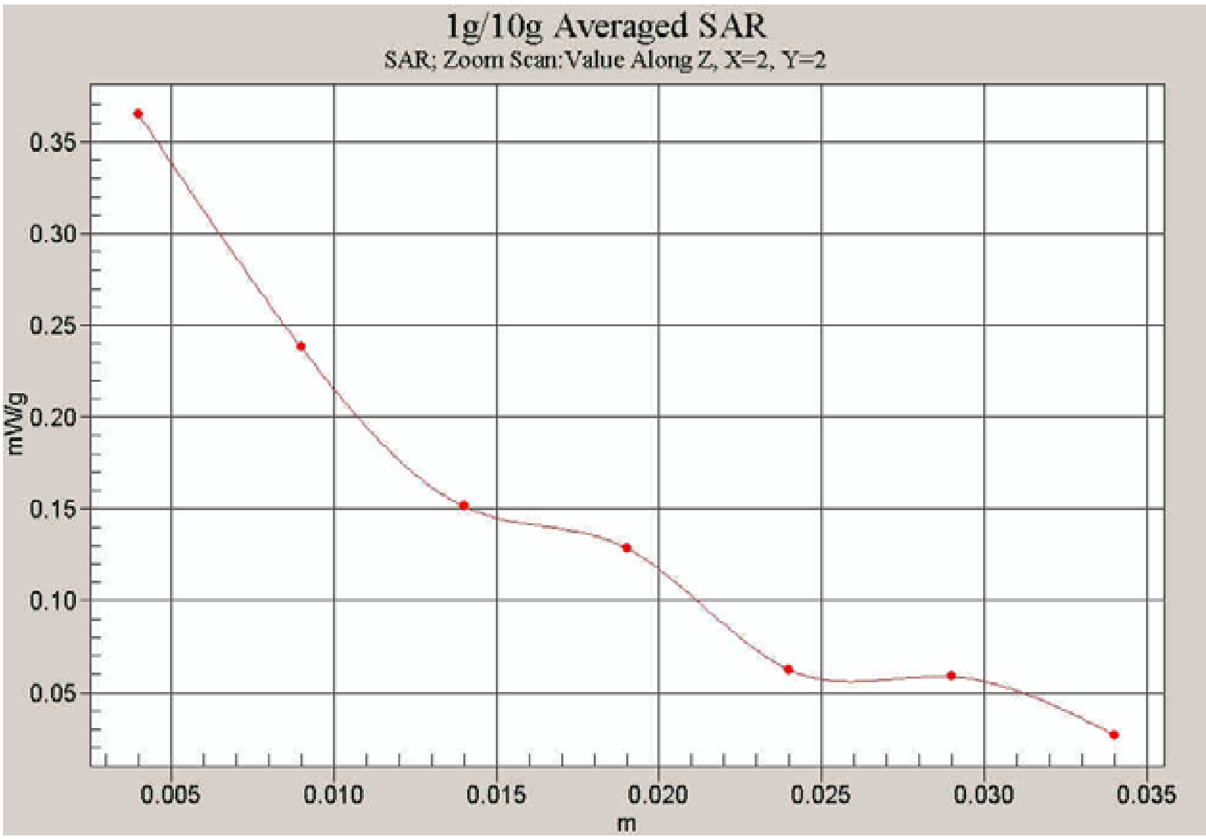


Fig.58 Z-Scan at power reference point (HSDPA 1900 CH9400 Test Position 1)

HSDPA 1900 Test Position 1 with IBM Laptop-antenna unfolded

Electronics: DAE3 Sn536

Medium: Body 1900

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: 1900MHz Frequency: 1880 MHz Duty Cycle: 1:2

Probe: ET3DV6 - SN1736 ConvF(4.88, 4.88, 4.88)

Test Position 2/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.314 mW/g

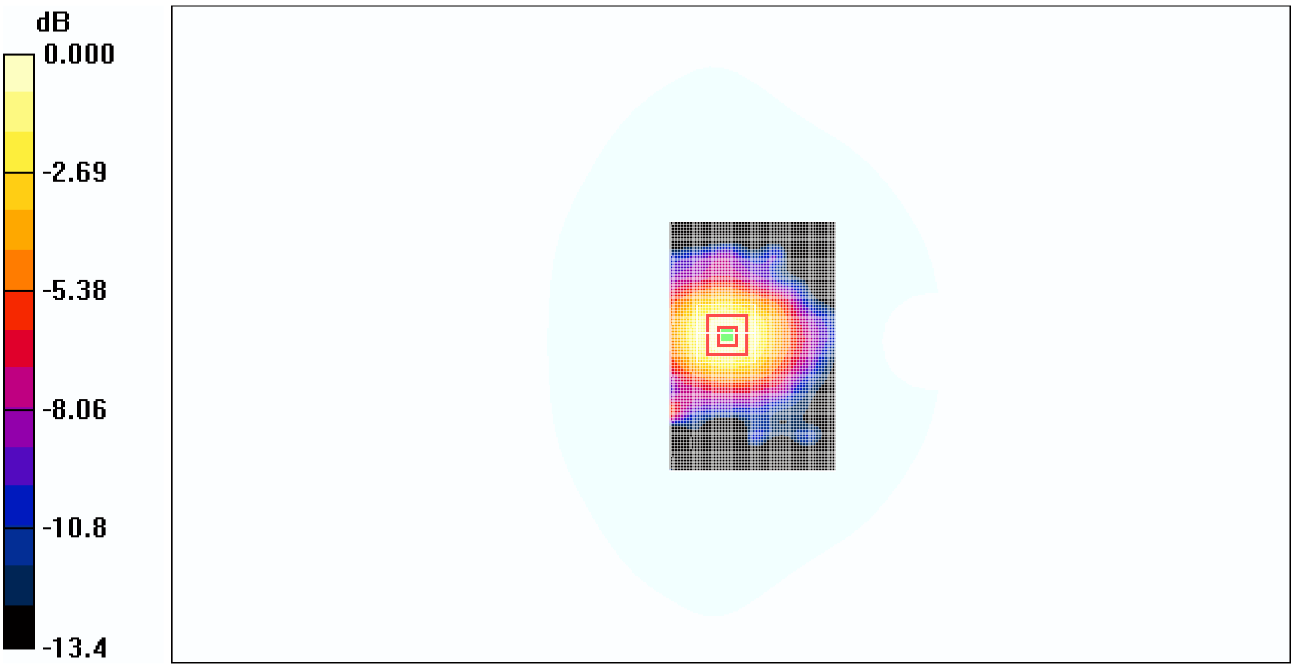
Test Position 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.0 V/m; Power Drift = 0.051 dB

Peak SAR (extrapolated) = 0.403 W/kg

SAR(1 g) = 0.289 mW/g; SAR(10 g) = 0.186 mW/g

Maximum value of SAR (measured) = 0.317 mW/g



0 dB = 0.317mW/g

Fig.59 HSDPA 1900 CH9400 Test Position 1

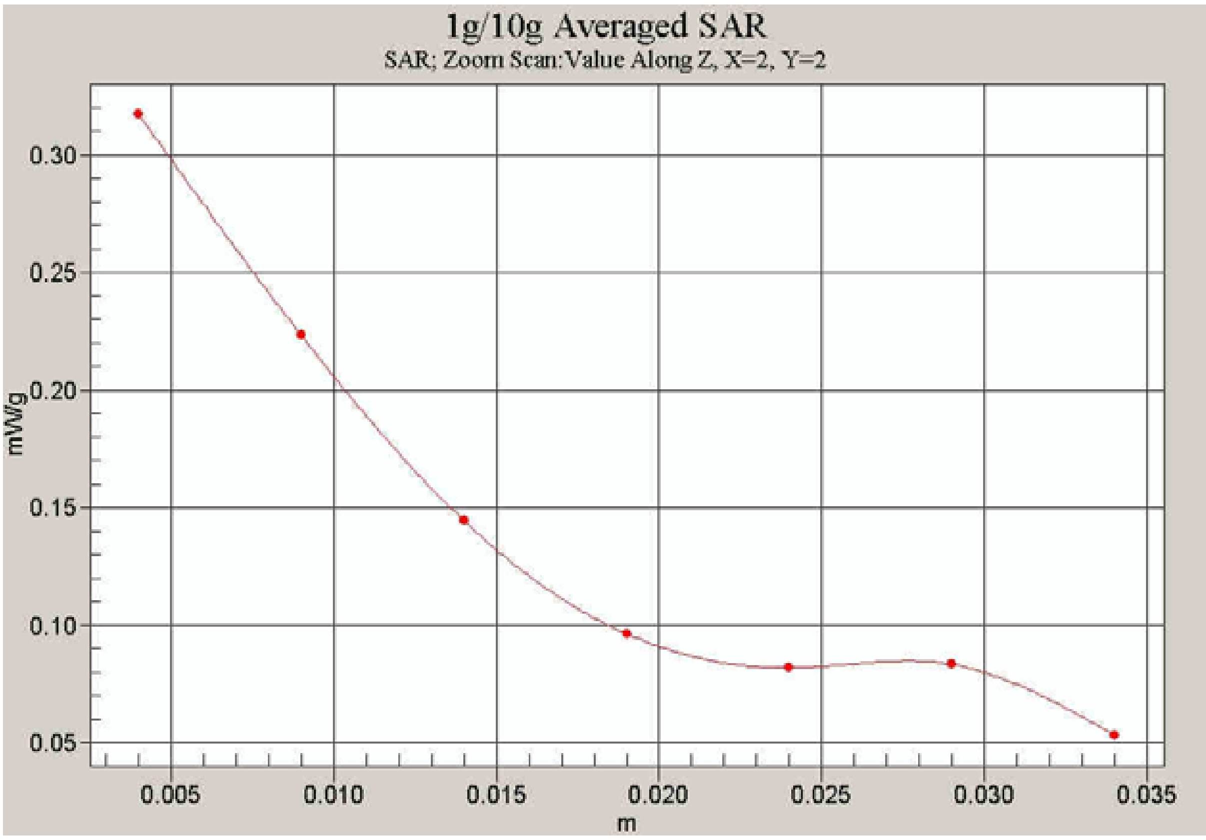


Fig.60 Z-Scan at power reference point (HSDPA 1900 CH9400 Test Position 1)