



NO.: RZA2008-0539FCC



(No. CNAS L2264)

OET 65

TEST REPORT

Test name	Electromagnetic Field (Specific Absorption Rate)
Product	HSDPA USB Stick
Model	E160/ E160G
FCC ID	QISE160
Client	HUAWEI Technologies Co., Ltd.

TA Technology (Shanghai) Co., Ltd.



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GENERAL SUMMARY

Product	HSDPA USB Stick	Model	E160/E160G
Client	HUAWEI Technologies Co., Ltd.	Type of test	Entrusted
Manufacturer	HUAWEI Technologies Co., Ltd.	Arrival Date of sample	April.25 th , 2008
Place of sampling	(Blank)	Carrier of the samples	Liyu Mou
Quantity of the samples	One	Date of product	(Blank)
Base of the samples	(Blank)	Items of test	SAR
Series number	LV7NAA17A2841189/LV7NAA17A2841178		
Standard(s)	<p>EN 50360–2001: Product standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones.</p> <p>EN 50361–2001: Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones.</p> <p>ANSI C95.1–1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz</p> <p>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.</p> <p>OET65C revision2002 DA 09-1948, June 19.2002: Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits.</p> <p>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.</p> <p>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.</p>		
Conclusion	<p>Localized Specific Absorption Rate (SAR) of this portable wireless equipment has been measured in all cases requested by the relevant standards cited in Clause 6.2 of this test report. Maximum localized SAR is below exposure limits specified in the relevant standards cited in Clause 6.1 of this test report.</p> <p>General Judgment: Pass</p> <p style="text-align: right;">(Stamp) Date of issue: May 4th, 2008</p>		
Comment	The test result only responds to the measured sample.		

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1. COMPETENCE AND WARRANTIES

TA Technology (Shanghai) Co., Ltd. is a test laboratory competent to carry out the tests described in this test report.

TA Technology (Shanghai) Co., Ltd. guarantees the reliability of the data presented in this test report, which is the results of measurements and tests performed for the items under test on the date and under the conditions stated in this test report and is based on the knowledge and technical facilities available at TA Technology (Shanghai) Co., Ltd. at the time of execution of the test.

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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
City	Shenzhen
Postal Code	518129
Country	P.R. China
Telephone	0755-28780808
Fax	0755-28780808

Table 2: Manufacturer

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

3.2. Constituents of EUT

Table 3: Constituents of Samples

Description	Model	Serial Number	Manufacturer
HSDPA USB Stick	E160	LV7NAA17A2841189	HUAWEI Technologies Co., Ltd.
	E160G	LV7NAA17A2841178	

E160 is a GSM/GPRS/EDGE/WCDMA/HSDPA USB Stick. The GSM supports four bands. The WCDMA supports WCDMA Band I, WCDMA Band II, and WCDMA Band V.

E160G is the USB stick which changes some component from E160.

The PCB and antenna are the same. The differences between E160 and E160G are:

E160G supports WCDMA Band I only and clear WCDMA Band II and WCDMA Band V component on the PCB.

Note:

The EUT appearances see ANNEX H.

3.3. General Description

Equipment Under Test (EUT) is a HSDPA USB Stick. SAR is tested for the EUT respectively for WCDMA Band V, WCDMA Band II, GSM 850 and GSM 1900. Also SAR is tested for HSDPA in the worst cases of WCDMA Band V and WCDMA Band II, The EUT has GPRS (class 12), EGPRS (class 12) and HSDPA functions.

Since the EUT only has the data transfer function, but does not have the speech transfer function, the tests in the band of GSM 850 and GSM1900 are performed in the mode of GPRS and EGPRS. The measurements were performed in combination with three different host products (Acer ZR1, Acer ZH1 and COMPAQ Presario 2500). Acer ZR1 and Acer ZH1 laptop have horizontal USB slots, COMPAQ Presario 2500 laptop has vertical USB slot

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. WCDMA Test Configuration

As the SAR body tests for WCDMA Band V and WCDMA Band II, 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:

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

For the output power, the configurations for the DPCCH and DPDCH₁ are as followed (EUT do not support the DPDCH_{2-n})

	Channel Bit Rate(kbps)	Channel Symbol Rate(kcps)	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 12.2kps 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.

4.2. 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:

- 1) 12.2kbps FRC and 12.2kbps RMC with TPC set to "all 1's"
- 2) H-set is configured in FRC according to UE category
- 3) Using QPSK in H-set
- 4) Using CQI feedback cycle = 2ms in HS-DPCCH
- 5) Using $\beta_c=9$; $\beta_d=15$ for DPCCH and DPDCH gain factors
- 6) Using .ACK=.NACK= 5 and .CQI = 2

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.

4.3. GSM Test Configuration

For the SAR body tests for GSM 850 and GSM 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 GSM 850 and GSM 1900 are only performed in the mode of GPRS. And since 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 at one same test position:

- 1) Using 1 timeslot in uplink with the power of 33 dBm for GSM 850 and 30 dBm for GSM1900
- 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 GSM 850 GPRS and GSM 1900 GPRS.

And according to the "3 dB rule" specified in the OET65C revision2002 DA 09-1948, June 19.2002 " **If the SAR measured at the middle channel for each test configuration (left, right, Cheek/Touch, Tile/Ear, extended and retracted) is at least 3.0 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 4183, 9400, 190 and 661 respectively in the case of WCDMA Band V (HSDPA), WCDMA Band II (HSDPA), GSM 850 and GSM 1900.

4.4. Position of module in Portable devices

For each channel, the EUT is tested at the following 7 test positions:

- Test Position 1: The EUT is connected to the portable computer with horizontal USB slot. The back side of the EUT towards the bottom of the flat phantom. (ANNEX H Picture 6-a)
- Test Position 2: The EUT is connected to the portable computer with horizontal USB slot. The front side of the EUT towards the bottom of the flat phantom. (ANNEX H Picture 6-b)
- Test Position 3: The EUT is connected to the portable computer with horizontal USB slot. The top side of the EUT towards the bottom of the flat phantom. (ANNEX H Picture 6-c)
- Test Position 4: The EUT is connected to the portable computer with vertical USB slot. The back side of the EUT towards the bottom of the flat phantom. (ANNEX H Picture 6-d)
- Test Position 5: The EUT is connected to the portable computer with vertical USB slot. The left side of the EUT towards the bottom of the flat phantom. (ANNEX H Picture 6-e)
- Test Position 6: The EUT is connected to the portable computer with vertical USB slot. The right side of the EUT towards the bottom of the flat phantom. (ANNEX H Picture 6-f)
- Test Position 7: The EUT is connected to the portable computer with horizontal USB slot. The top side of the EUT towards the bottom of the flat phantom. (ANNEX H Picture 6-g)

Show the distance that the back side of the EUT with different computer is towards the bottom of the Phantom. Please see ANNEX H Picture 7.

4.5. Picture of host product

During the test, The Acer ZH1 laptop, Acer ZR1 laptop, COMPAQ Presario 2500 laptop are used as an assistant to help to setup communication. (See Picture 1)



Picture 1-a: Acer ZR1 Close



Picture 1-b: Acer ZR1 Open



Picture 1-c: Acer ZH1 Close



Picture 1-d: Acer ZH1 Open



Picture 1-e: COMPAQ Presario 2500 Close



Picture 1-f: COMPAQ Presario 2500 Open

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Picture 1-g: Acer ZR1 with horizontal USB slot



Picture 1-h: Acer ZH1 with horizontal USB slot



Picture 1-i: COMPAQ Presario 2500 with Vertical USB slot

Picture 1: Computer as a test assistant

5. SAR MEASUREMENTS SYSTEM CONFIGURATION

5.1. SAR Measurement Set-up

These measurements were performed with the automated near-field scanning system DASY4 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 $\pm 0.02\text{mm}$. 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, 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.

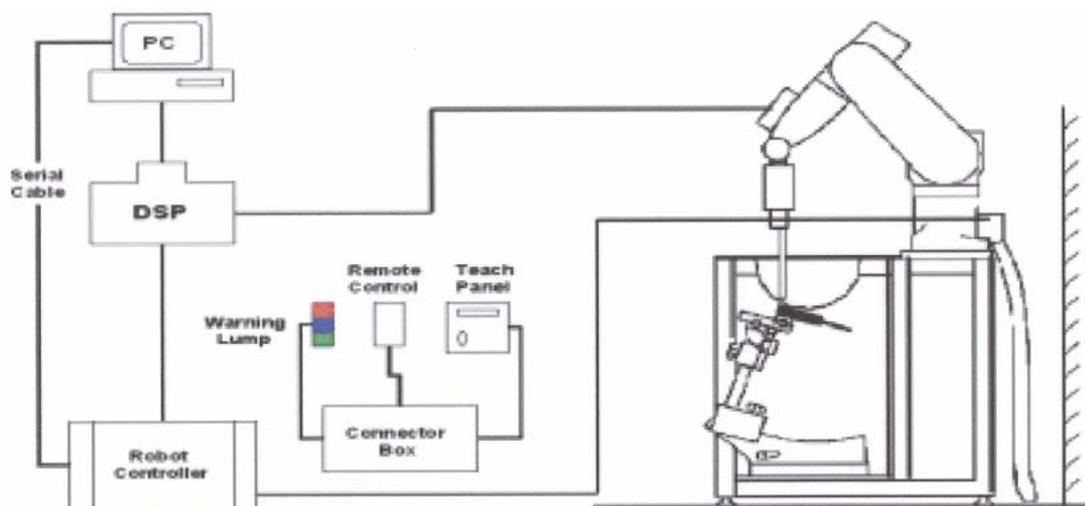


Figure1. SAR Lab Test Measurement Set-up

The DAE3 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.

5.2. 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 $\pm 10\%$. The spherical isotropy was evaluated and found to be better than $\pm 0.25\text{dB}$.

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.g., glycol)
Calibration	In air from 10 MHz to 2.5 GHz In brain and muscle simulating tissue at frequencies of 900MHz, 1750 MHz, 1950MHz and 2450 MHz. (accuracy $\pm 8\%$) Calibration for other liquids and frequencies upon request
Frequency	10 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 around probe axis)
Dynamic Range	5 μ W/g to > 100mW/g; Linearity: ± 0.2 dB
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

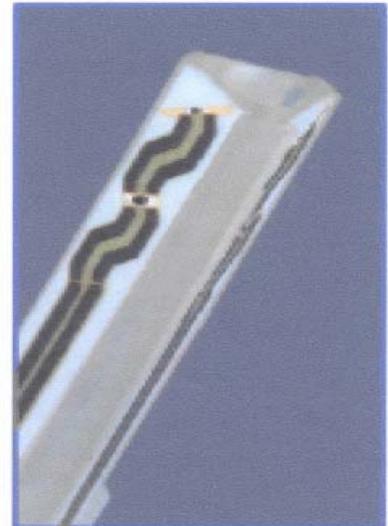


Figure 2. ET3DV6 E-field Probe

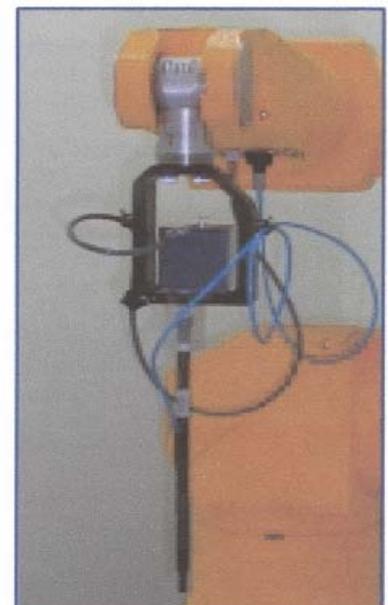


Figure 3. ET3DV6 E-field probe

5.3. E-field Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure with accuracy better than $\pm 10\%$. The spherical isotropy was evaluated and found to be better than $\pm 0.25\text{dB}$. 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 below 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.

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

Where: Δt = Exposure time (30 seconds),
C = Heat capacity of tissue (brain or muscle),
 ΔT = Temperature increase due to RF exposure.
Or

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

Where:
 σ = Simulated tissue conductivity,
 ρ = Tissue density (kg/m³).

5.4. Other Test Equipment

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



Figure 4. Device Holder

5.4.2 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±0.1 mm
Filling Volume	Approx. 20 liters
Dimensions	810 x 1000 x 500 mm (H x L x W)
Available	Special



Figure5.Generic Twin Phantom

5.5. Equivalent Tissues

The liquid used for the frequency range of 800-2000 MHz consisted of water, sugar, salt, Glycol and Cellulose. The liquid has previously been proven to be suited for worst-case. The Table 4 and Table 5 show 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 GSM 835
Water	52.5
Sugar	45
Salt	1.4
Preventol	0.1
Cellulose	1.0
Dielectric Parameters Target Value	f=GSM 835 $\epsilon=55.2$ $\sigma=0.97$

Table 5: Composition of the Body Tissue Equivalent Matter

MIXTURE%	FREQUENCY 1900MHz
Water	69.91
Glycol	29.96
Salt	0.13
Dielectric Parameters Target Value	f=1900MHz $\epsilon=53.3$ $\sigma=1.52$

5.6. System Specifications

5.6.1 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.

6. CHARACTERISTICS OF THE TEST

6.1. 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.

6.2. 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.

It specifies the measurement method for demonstration of compliance with the SAR limits for such equipments.

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.

OET65C revision2002 DA 09-1948, June 19.2002: Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits.

IEC 62209-1: Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures –Part 1: Procedure to determine the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)

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.

7. LABORATORY ENVIRONMENT

Table 6: The Ambient Conditions during Test

Temperature	Min. = 20C, 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.	

8. CONDUCTED OUTPUT POWER MEASUREMENT

8.1. Summary

During the process of testing, the EUT was controlled via Digital Radio Communication tester 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.

8.2. 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 10 to Table 27 labeled as: (Power Drift [dB]). This ensures that the power drift during one measurement is within 5%.

8.3. Conducted Power

8.3.1 Measurement Methods

The EUT was set up for the maximum output power. The channel power was measured. The measurements were done at 3 channels both before and after SAR tests for each test band.

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8.3.2 Measurement result

Table 7: Conducted Power Measurement Results

		Conducted Power		
		Channel Low	Channel Middle	Channel High
WCDMA Band V (12.2kbps RMC)	Before Test (dBm)	23.48	23.58	23.37
	After Test (dBm)	23.45	23.55	23.38
WCDMA Band II (12.2kbps RMC)	Before Test (dBm)	22.99	23.51	23.95
	After Test (dBm)	22.96	23.53	23.92
WCDMA Band V (64kbps RMC)	Before Test (dBm)	23.42	23.57	23.31
	After Test (dBm)	23.41	23.52	23.34
WCDMA Band II (64kbps RMC)	Before Test (dBm)	22.98	23.49	23.92
	After Test (dBm)	22.93	23.52	23.94
WCDMA Band V (144kbps RMC)	Before Test (dBm)	23.45	23.51	23.35
	After Test (dBm)	23.47	23.56	23.33
WCDMA Band II (144kbps RMC)	Before Test (dBm)	22.95	23.51	23.95
	After Test (dBm)	22.96	23.47	23.91
WCDMA Band V (384kbps RMC)	Before Test (dBm)	23.41	23.54	23.37
	After Test (dBm)	23.46	23.51	23.37
WCDMA Band II (384kbps RMC)	Before Test (dBm)	22.91	23.53	23.92
	After Test (dBm)	22.97	23.55	23.96
WCDMA Band V + HSDPA	Before Test (dBm)	23.43	23.57	23.38
	After Test (dBm)	23.47	23.53	23.34
WCDMA Band II + HSDPA	Before Test (dBm)	22.94	23.54	23.91
	After Test (dBm)	22.93	23.50	23.95
GSM 850	Before Test (dBm)	32.61	32.58	32.43
	After Test (dBm)	32.58	32.59	32.45
GSM 850+GPRS	Before Test (dBm)	29.18	29.21	29.13
	After Test (dBm)	29.16	29.18	29.16
GSM 1900	Before Test (dBm)	32.57	32.55	32.42
	After Test (dBm)	32.59	32.56	32.39
GSM 1900+GPRS	Before Test (dBm)	29.15	29.19	29.18
	After Test (dBm)	29.17	29.20	29.15

9. TEST RESULTS

9.1. Dielectric Performance

Table 8: Dielectric Performance of Body Tissue Simulating Liquid

Measurement is made at temperature 22.5 °C and relative humidity 51%.					
Frequency		Target value	Measurement	Difference	
835 (Body)	Permittivity ϵ_r	55.20	55.10	-0.18	%
	Conductivity σ	0.97	0.99	2.06	%
1900 (Body)	Permittivity ϵ_r	53.30	53.19	-0.21	%
	Conductivity σ	1.52	1.55	1.97	%

9.2. System Validation

Table 9: System Validation

Measurement is made at temperature 23.2 °C, relative humidity 50%, and input power 250 mW. Liquid temperature during the test: 22.3°C							
Liquid parameters	Frequency	Permittivity ϵ		Conductivity σ (S/m)			
	835MHz	41.94		0.92			
	1900MHz	40.09		1.43			
Verification results	Frequency	Target value (W/kg)		Measurement value (W/kg)		Difference percentage	
		10 g Average	1 g Average	10 g Average	1 g Average	10 g Average	1 g Average
	835MHz	1.56	2.43	1.53	2.34	-1.92%	-3.70%
	1900MHz	4.98	9.45	4.93	9.36	-1.00%	-1.06%

Note:

- a. Target Values used derive from the SPEAG calibration certificate and 250 mW is used as feeding power to the validation dipole (SPEAG using).
- b. The graph results see ANNEX D.

9.3. Summary of Measurement Results

Table10: SAR Values [GSM 850 GPRS (4 timeslots in uplink) at Test Position 1]

Liquid Temperature: 22.4°C					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Model Computer	Channel	10g Average	1g Average		
Acer ZR1	Middle	0.356	0.526	0.154	Figure 7
Acer ZH1	Middle	0.311	0.476	0.017	Figure 9

Table 11: SAR Values (GSM 850 GPRS at Test Position 1 with Acer ZR1)

Liquid Temperature: 22.4°C					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Timeslots	Channel	10g Average	1g Average		
4 timeslots in uplink	Middle	0.356	0.526	0.154	Figure 7
3 timeslots in uplink	Middle	0.458	0.684	-0.024	Figure 11
2 timeslots in uplink	High	0.590	0.871	-0.155	Figure 13
	Middle	0.579	0.852	0.001	Figure 15
	Low	0.563	0.827	-0.028	Figure 17
1 timeslot in uplink	Middle	0.480	0.711	0.193	Figure 19

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Table 12: SAR Values [GSM 850 GPRS (2 timeslots in uplink) with Acer ZR1]

Liquid Temperature: 22.4°C					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Test Position	Channel	10g Average	1g Average		
Test Position 1	High	0.590	0.871	-0.155	Figure 13
	Middle	0.579	0.852	0.001	Figure 15
	Low	0.563	0.827	-0.028	Figure 17
Test Position 2	Middle	0.442	0.640	0.027	Figure 21
Test Position 3	Middle	0.060	0.163	0.064	Figure 23

Table 13: SAR Values [GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500]

Liquid Temperature: 22.4°C					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Test Position	Channel	10g Average	1g Average		
Test Position 4	Middle	0.338	0.497	0.039	Figure 25
Test Position 5	Middle	0.367	0.462	0.199	Figure 27
Test Position 6	High	0.699	0.966	0.001	Figure 29
	Middle	0.666	0.929	0.003	Figure 31
	Low	0.569	0.804	0.005	Figure 33
Test Position 7	Middle	0.114	0.287	0.18	Figure 35

Remark: The value with blue color is the maximum SAR Value of each test band.

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Table 14: SAR Values [GSM 850 EGPRS (2 timeslots in uplink) with COMPAQ Presario 2500]

Liquid Temperature: 22.4°C					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Test Position	Channel	10g Average	1g Average		
Test Position 6	Middle	0.212	0.286	0.045	Figure 37

Table15: SAR Values [GSM 1900 GPRS (4 timeslots in uplink) at Test Position 1]

Liquid Temperature: 22.4°C					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Model Computer	Channel	10g Average	1g Average		
Acer ZR1	Middle	0.175	0.294	-0.083	Figure 39
Acer ZH1	Middle	0.161	0.269	-0.063	Figure 41

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Table 16: SAR Values (GSM 1900 GPRS at Test Position 1 with Acer ZR1)

Liquid Temperature: 22.4°C					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Timeslots	Channel	10g Average	1g Average		
4 timeslots in uplink	Middle	0.175	0.294	-0.083	Figure 39
3 timeslots in uplink	Middle	0.233	0.393	-0.055	Figure 43
2 timeslots in uplink	Middle	0.252	0.426	0.091	Figure 45
1 timeslot in uplink	Middle	0.203	0.342	0.045	Figure 47

Table 17: SAR Values [GSM 1900 GPRS (2 timeslots in uplink) with Acer ZR1]

Liquid Temperature: 22.4°C					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Test Position	Channel	10g Average	1g Average		
Test Position 1	Middle	0.252	0.426	0.091	Figure 45
Test Position 2	Middle	0.180	0.299	-0.183	Figure 49
Test Position 3	Middle	0.267	0.641	-0.018	Figure 51

Remark: The value with blue color is the maximum SAR Value of each test band.

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Table 18: SAR Values [GSM1900 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500]

Liquid Temperature: 22.4°C					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Test Position	Channel	10g Average	1g Average		
Test Position 4	Middle	0.155	0.289	0.007	Figure 53
Test Position 5	Middle	0.251	0.277	-0.090	Figure 55
Test Position 6	Middle	0.380	0.544	-0.189	Figure 57
Test Position 7	Middle	0.265	0.566	-0.147	Figure 59

Table 19: SAR Values [GSM 1900 EGPRS (2 timeslots in uplink) with Acer ZR1]

Liquid Temperature: 22.4°C					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Test Position	Channel	10g Average	1g Average		
Test Position 3	Middle	0.140	0.341	-0.146	Figure 61

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Table20: SAR Values (WCDMA Band II at Test Position 1)

Liquid Temperature: 22.4°C					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Model Computer	Channel	10g Average	1g Average		
Acer ZR1	High	0.463	0.787	-0.149	Figure 63
	Middle	0.535	0.904	0.180	Figure 65
	Low	0.466	0.786	-0.024	Figure 67
Acer ZH1	High	0.480	0.783	-0.047	Figure 69
	Middle	0.534	0.856	0.157	Figure 71
	Low	0.460	0.747	-0.028	Figure 73

Table 21: SAR Values (WCDMA Band II with Acer ZR1)

Liquid Temperature: 22.4°C					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Test Position	Channel	10g Average	1g Average		
Test Position 1	High	0.463	0.787	-0.149	Figure 63
	Middle	0.535	0.904	0.180	Figure 65
	Low	0.466	0.786	-0.024	Figure 67
Test Position 2	Middle	0.290	0.459	-0.125	Figure 75
Test Position 3	High	0.421	1.030	-0.037	Figure 77
	Middle	0.442	1.080	0.131	Figure 79
	Low	0.428	1.030	-0.051	Figure 81

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Table 22: SAR Values (WCDMA Band II with COMPAQ Presario 2500)

Liquid Temperature: 22.4°C					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Test Position	Channel	10g Average	1g Average		
Test Position 4	Middle	0.286	0.462	0.104	Figure 83
Test Position 5	Middle	0.176	0.282	-0.098	Figure 85
Test Position 6	Middle	0.458	0.779	0.076	Figure 87
Test Position 7	High	0.435	0.990	0.099	Figure 89
	Middle	0.489	1.130	-0.094	Figure 91
	Low	0.502	1.140	-0.109	Figure 93

Remark: The value with blue color is the maximum SAR Value of each test band.

Table 23: SAR Values (WCDMA Band II HSDPA with COMPAQ Presario 2500)

Liquid Temperature: 22.4°C					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Test Position	Channel	10g Average	1g Average		
Test Position 7	High	0.377	0.870	0.158	Figure 95
	Middle	0.466	1.070	0.184	Figure 97
	Low	0.474	1.090	-0.104	Figure 99

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Table24: SAR Values (WCDMA Band V at Test Position 1)

Liquid Temperature: 22.4℃					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Model Computer	Channel	10g Average	1g Average		
Acer ZR1	Middle	0.299	0.440	0.039	Figure 101
Acer ZH1	Middle	0.134	0.201	-0.189	Figure 103

Remark: The value with blue color is the maximum SAR Value of each test band.

Table 25: SAR Values (WCDMA Band V with Acer ZR1)

Liquid Temperature: 22.4℃					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Test Position	Channel	10g Average	1g Average		
Test Position 1	Middle	0.299	0.440	0.039	Figure 101
Test Position 2	Middle	0.151	0.219	-0.014	Figure 105
Test Position 3	Middle	0.025	0.076	0.125	Figure 107

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Table 26: SAR Values (WCDMA Band V with COMPAQ Presario 2500)

Liquid Temperature: 22.4°C					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Test Position	Channel	10g Average	1g Average		
Test Position 4	Middle	0.186	0.283	0.032	Figure 109
Test Position 5	Middle	0.058	0.082	0.034	Figure 111
Test Position 6	Middle	0.251	0.376	0.180	Figure 113
Test Position 7	Middle	0.041	0.124	-0.109	Figure 115

Table 27: SAR Values (WCDMA Band V HSDPA with Acer ZR1)

Liquid Temperature: 22.4°C					
Limit of SAR (W/kg)		10g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.2	
Test Case Of Body		Measurement Result (W/kg)		Power Drift(dB)	
Different Test Position	Channel	10g Average	1g Average		
Test Position 1	Middle	0.273	0.400	-0.063	Figure 117

9.4. 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 6.2 of this report. Maximum localized SAR is below exposure limits specified in the relevant standards cited in Clause 6.1 of this test report.

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10. MEASUREMENT UNCERTAINTY

No.	a	Type	c	d	e=f(d, k)	f	h=cxf / e	k
	Uncertainty Component		Tol. (±%)	Prob. Dist	Div.	c ₁ (1g)	1g u (± %)	v ₁
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	$\sqrt{3}$	$(1-cp)^{1/2}$	4.3	∞
4	Hemisphere Isotropy	B	9.4	R	$\sqrt{3}$	$\sqrt{C_P}$		∞
5	Boundary Effect	B	0.4	R	$\sqrt{3}$	1	0.23	∞
6	Linearity	B	4.7	R	$\sqrt{3}$	1	2.7	∞
7	System Detection Limits	B	1.0	R	$\sqrt{3}$	1	0.6	∞
8	Readout Electronics	B	1.0	N	1	1	1.0	∞
9	RF Ambient Conditions	B	3.0	R	$\sqrt{3}$	1	1.73	∞
10	Probe Positioner Mechanical Tolerance	B	0.4	R	$\sqrt{3}$	1	0.2	∞
11	Probe Positioning with respect to Phantom Shell	B	2.9	R	$\sqrt{3}$	1	1.7	∞
12	Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	B	3.9	R	$\sqrt{3}$	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	$\sqrt{3}$	1	2.9	∞
Phantom and Tissue Parameters								
16	Phantom Uncertainty(shape and thickness tolerances)	B	1.0	R	$\sqrt{3}$	1	0.6	∞
17	Liquid Conductivity-deviation from target values	B	5.0	R	$\sqrt{3}$	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	$\sqrt{3}$	0.6	1.7	∞
20	Liquid Permittivity- measurement uncertainty	B	5.0	N	1	0.6	1.7	M
Combined Standard Uncertainty							11.25	
Expanded Uncertainty (95 % CONFIDENCE INTERVAL)							22.5	

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11. MAIN TEST INSTRUMENTS

Table 28: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	Agilent 8753E	US37390326	September 15, 2007	One year
02	Dielectric Probe Kit	Agilent 85070E	US44020115	No Calibration Requested	
03	Power meter	Agilent E4417A	GB41291714	March 14, 2008	One year
04	Power sensor	Agilent 8481H	MY41091316	March 14, 2008	One year
05	Signal Generator	HP 8341B	2730A00804	September 15, 2007	One year
06	Amplifier	IXA-020	0401	No Calibration Requested	
07	Validation Kit 835MHz	SPEAG D835V2	443	December 9, 2007	One year
08	Validation Kit 1900MHz	SPEAG D1900V2	5d018	March 21, 2008	One year
09	BTS	E5515C	GB46490218	September 15, 2007	One year
10	E-field Probe	ET3DV6	1531	January 29, 2008	One year
11	DAE	DAE3	452	September 6, 2007	One year

12. TEST PERIOD

The test is performed from April 26 2008 to. May 2, 2008.

13. TEST LOCATION

The test is performed at TA Technology (Shanghai) Co., Ltd.

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 ear 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 head was measured at a distance of 3.9 mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 20 mm x 20 mm. Based on this data, the area of the maximum absorption was determined by spline interpolation.

Step 3: Around this point, a volume of 32 mm x 32 mm x 34 mm was assessed by measuring 7 x 7 x 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.

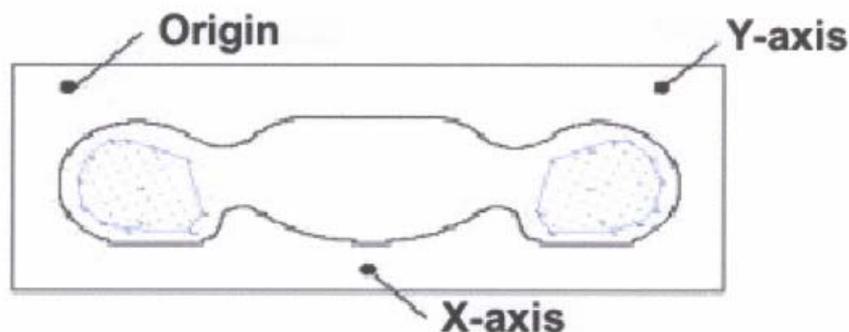
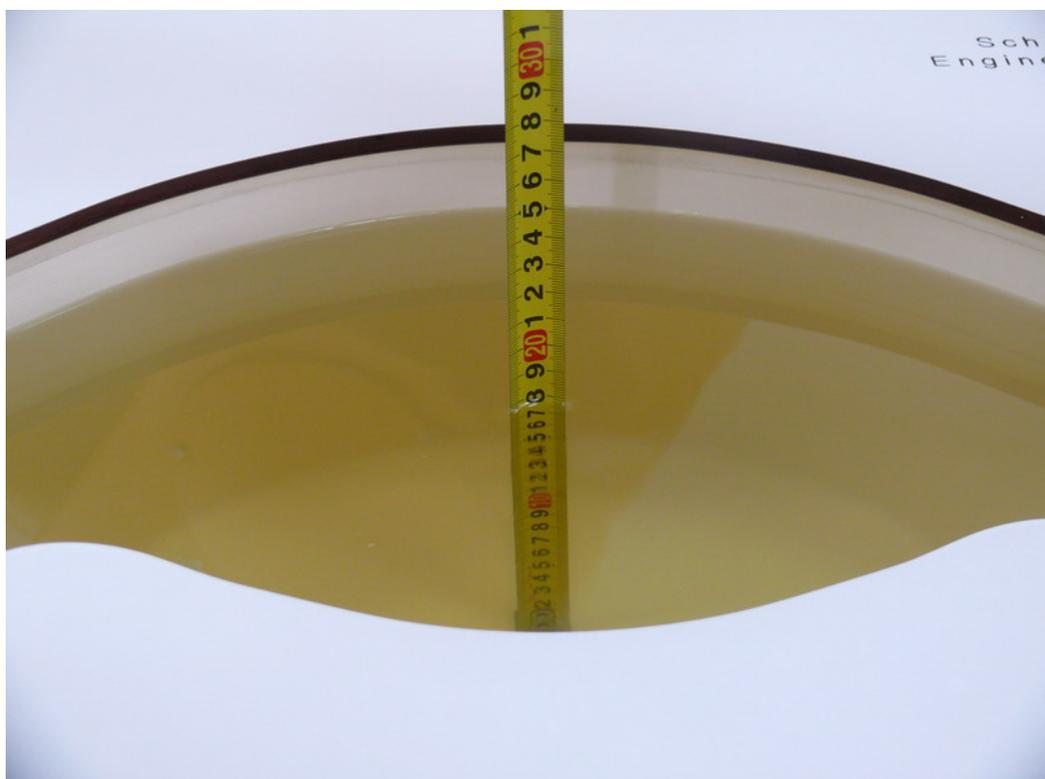


Figure 6 SAR Measurement Points in Area Scan

ANNEX B: TEST LAYOUT



Picture 2 Specific Absorption Rate Test Layout



Picture 3 Liquid depth in the Flat Phantom (835 MHz)



Picture 4 Liquid depth in the Flat Phantom (1900 MHz)

ANNEX C: GRAPH RESULTS

GSM 850 GPRS (4 timeslots in uplink) with Acer ZR1 Test Position 1 Middle Frequency

Communication System: GSM 850+GPRS(4Up); Frequency: 836.6 MHz; Duty Cycle: 1:2

Medium parameters used: $f = 837$ MHz; $\sigma = 0.993$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);

Electronics: DAE3 Sn452;

Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.613 mW/g

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

Reference Value = 20.8 V/m; Power Drift = 0.154 dB

Peak SAR (extrapolated) = 0.710 W/kg

SAR(1 g) = 0.526 mW/g; SAR(10 g) = 0.356 mW/g

Maximum value of SAR (measured) = 0.566 mW/g

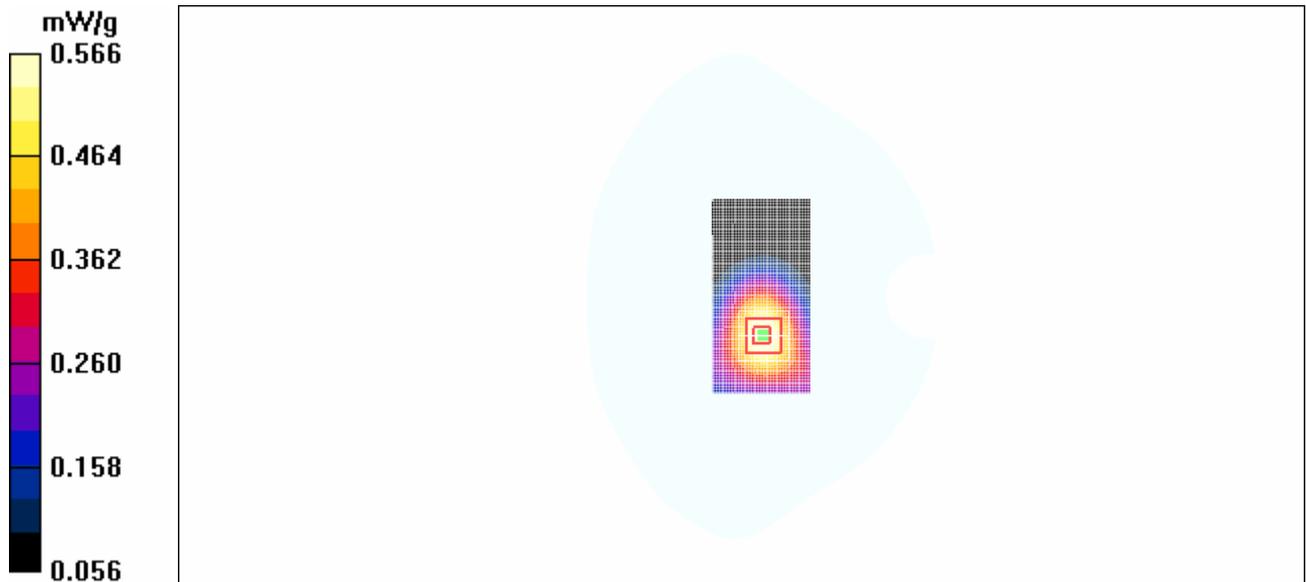


Figure 7 GSM 850 GPRS (4 timeslots in uplink) with Acer ZR1 Test Position 1 Channel 190

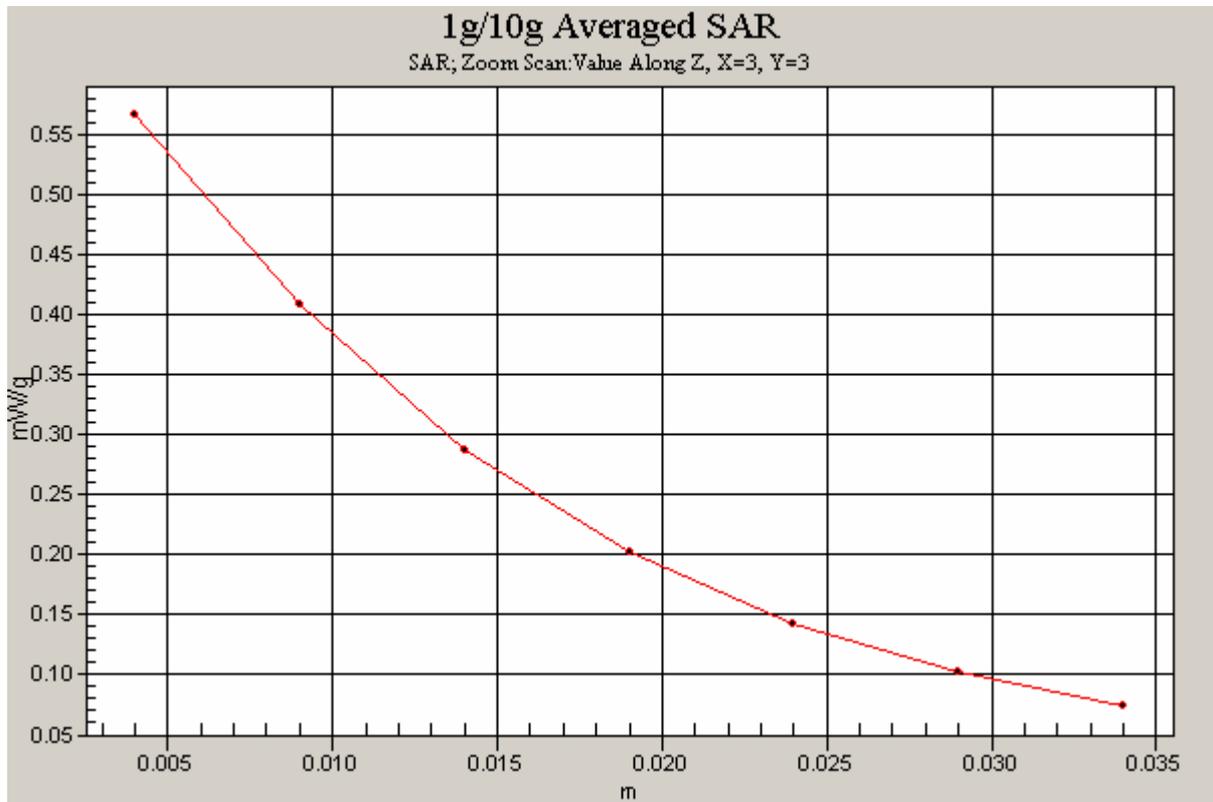


Figure 8 Z-Scan at power reference point [GSM 850 GPRS (4 timeslots in uplink) with Acer ZR1
Test Position 1 Channel 190]

GSM 850 GPRS (4 timeslots in uplink) with Acer ZH1 Test Position 1 Middle Frequency

Communication System: GSM 850+GPRS(4Up); Frequency: 836.6 MHz; Duty Cycle: 1:2

Medium parameters used: $f = 837$ MHz; $\sigma = 0.993$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);

Electronics: DAE3 Sn452;

Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.532 mW/g

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

Reference Value = 21.1 V/m; Power Drift = 0.017 dB

Peak SAR (extrapolated) = 0.690 W/kg

SAR(1 g) = 0.476 mW/g; SAR(10 g) = 0.311 mW/g

Maximum value of SAR (measured) = 0.500 mW/g

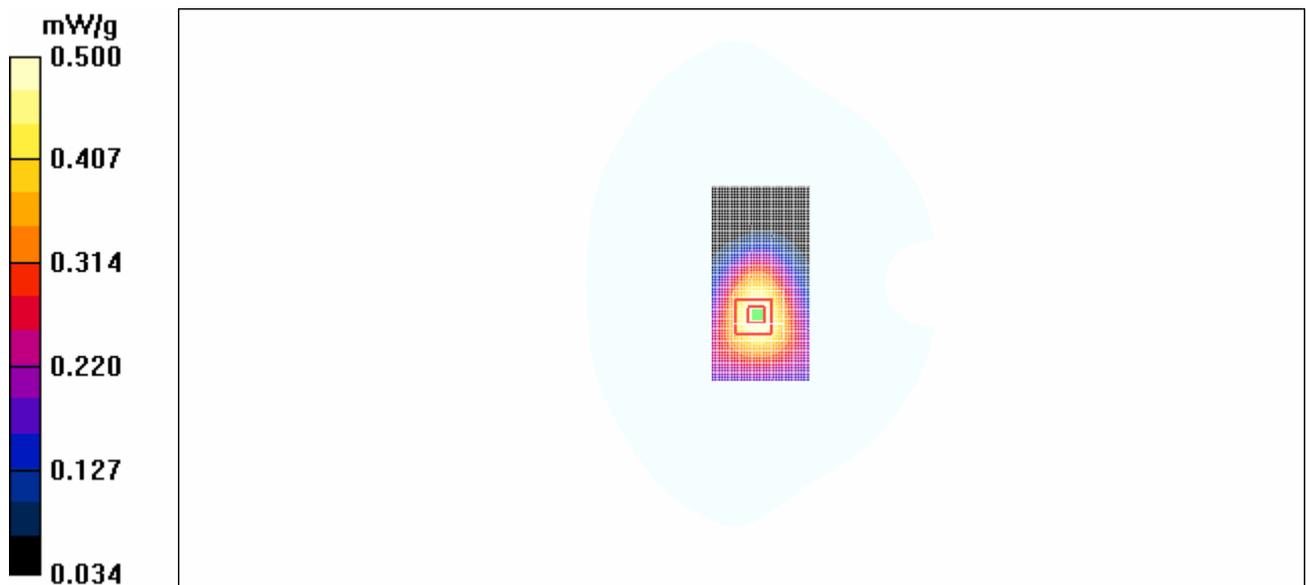


Figure 9 GSM 850 GPRS (4 timeslots in uplink) with Acer ZH1 Test Position 1 Channel 190

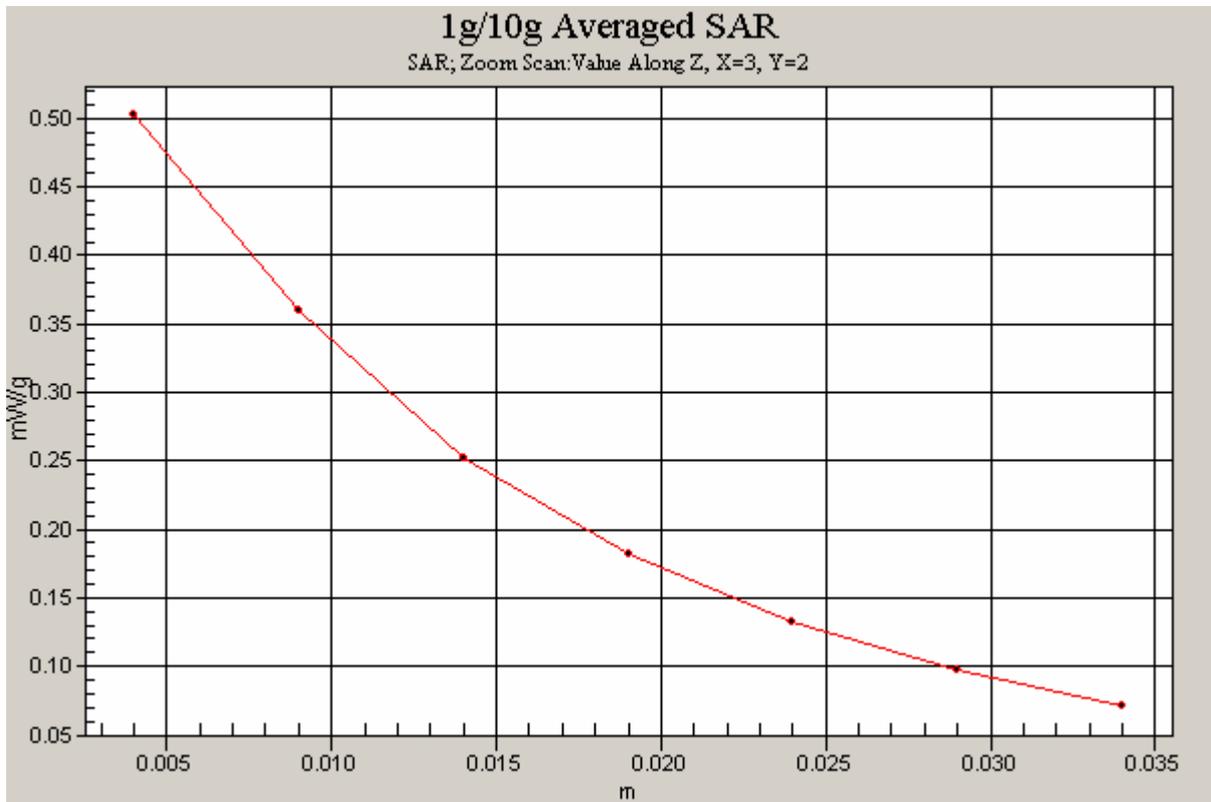


Figure 10 Z-Scan at power reference point [GSM 850 GPRS (4 timeslots in uplink) with Acer ZH1 Test Position 1 Channel 190]

GSM 850 GPRS (3 timeslots in uplink) with Acer ZR1 Test Position 1 Middle Frequency

Communication System: GSM850 + GPRS(3Up); Frequency: 836.6 MHz; Duty Cycle: 1:2.67

Medium parameters used: $f = 837$ MHz; $\sigma = 0.993$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);

Electronics: DAE3 Sn452;

Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.723 mW/g

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

Reference Value = 22.2 V/m; Power Drift = -0.024 dB

Peak SAR (extrapolated) = 1.41 W/kg

SAR(1 g) = 0.684 mW/g; SAR(10 g) = 0.458 mW/g

Maximum value of SAR (measured) = 0.726 mW/g

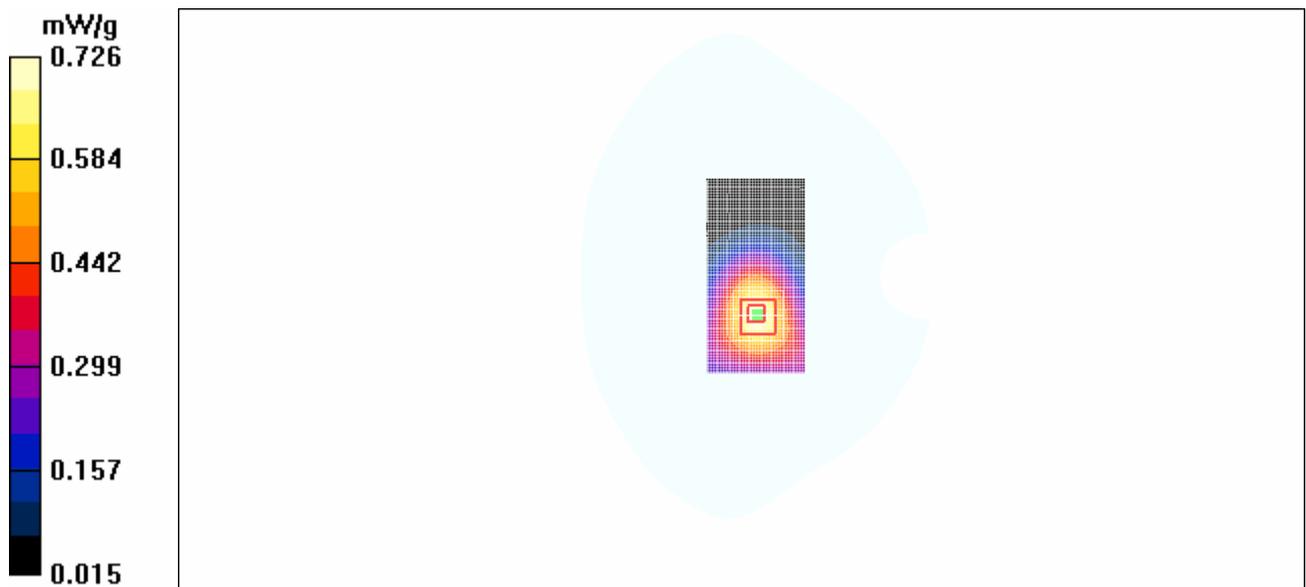


Figure 11 GSM 850 GPRS (3 timeslots in uplink) with Acer ZR1 Test Position 1 Channel 190

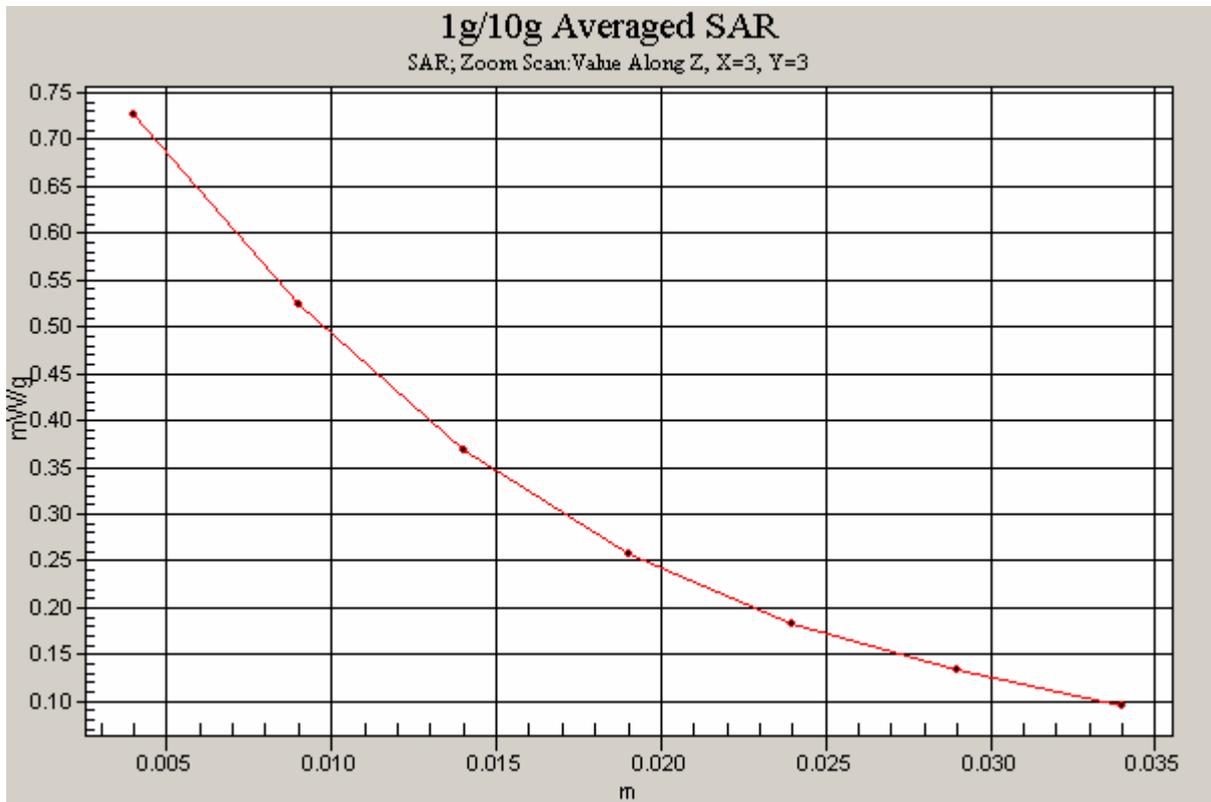


Figure 12 Z-Scan at power reference point [GSM 850 GPRS (3 timeslots in uplink) with Acer ZR1 Test Position 1 Channel 190]

GSM 850 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 1 High Frequency

Communication System: GSM850 + GPRS(2Up); Frequency: 848.8 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 849$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 55$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);

Electronics: DAE3 Sn452;

Test Position 1 High/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.962 mW/g

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

Reference Value = 28.5 V/m; Power Drift = -0.155 dB

Peak SAR (extrapolated) = 1.20 W/kg

SAR(1 g) = 0.871 mW/g; SAR(10 g) = 0.590 mW/g

Maximum value of SAR (measured) = 0.928 mW/g

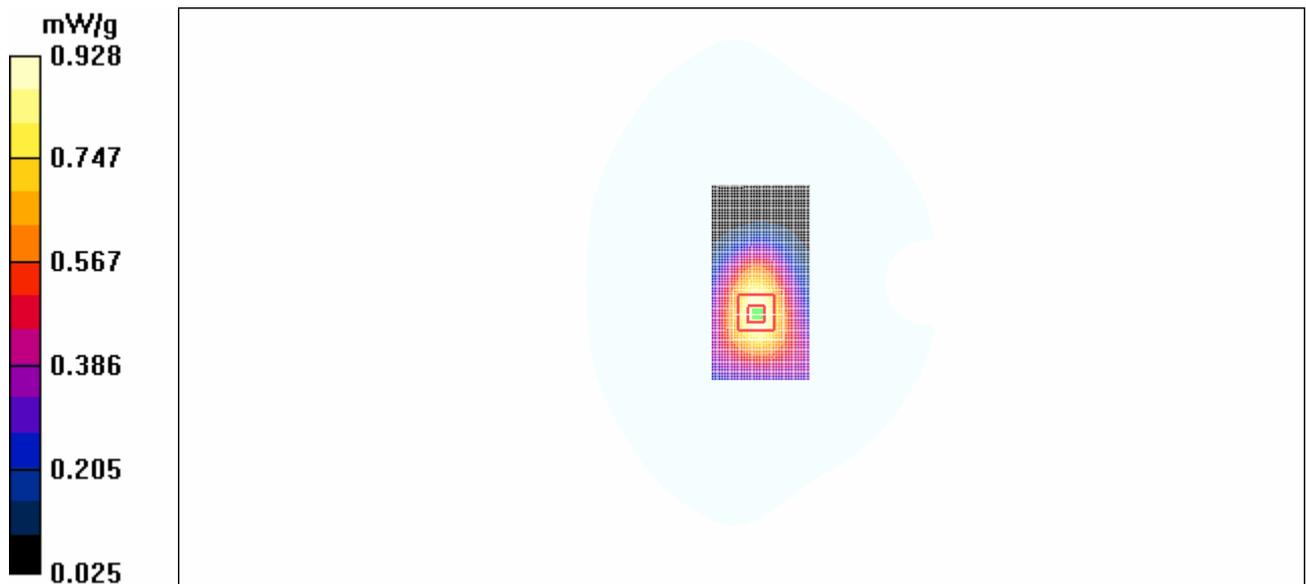


Figure 13 GSM 850 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 1 Channel 251

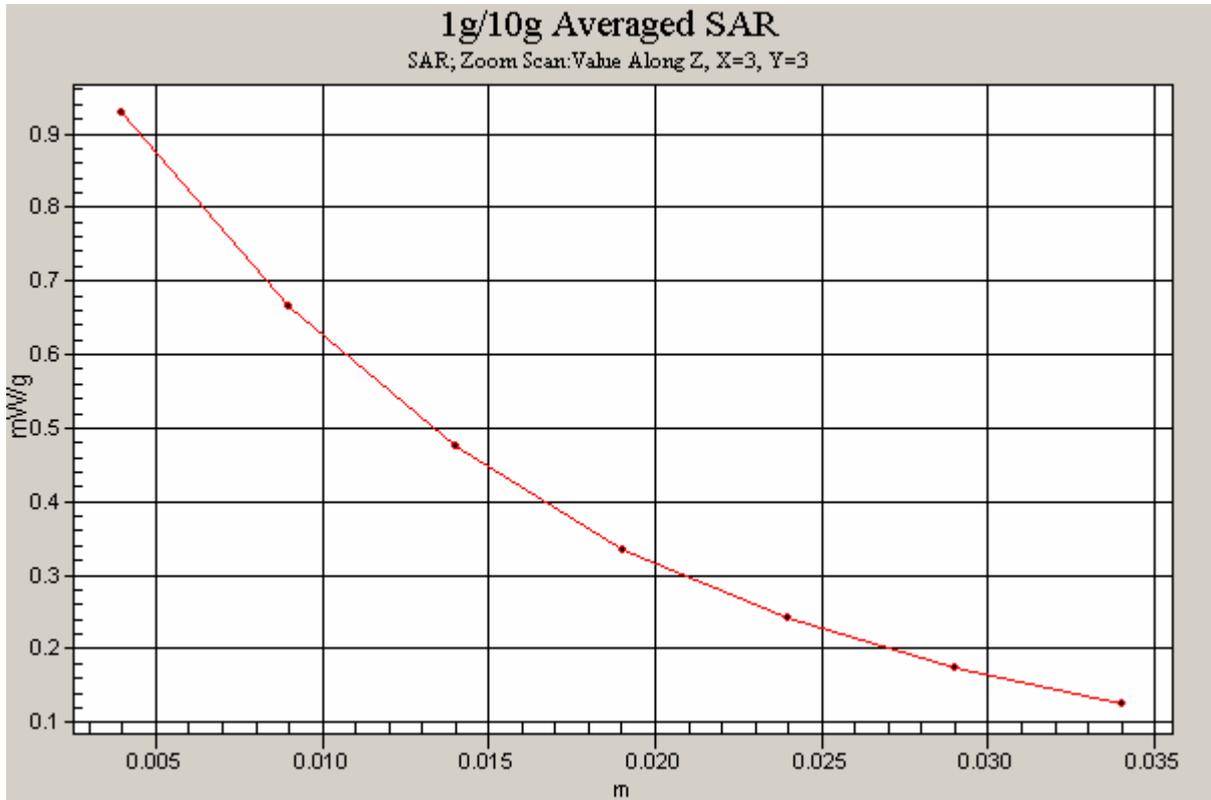


Figure 14 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 1 Channel 251]

GSM 850 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 1 Middle Frequency

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837$ MHz; $\sigma = 0.993$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);

Electronics: DAE3 Sn452;

Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.915 mW/g

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

Reference Value = 27.9 V/m; Power Drift = 0.001 dB

Peak SAR (extrapolated) = 1.14 W/kg

SAR(1 g) = 0.852 mW/g; SAR(10 g) = 0.579 mW/g

Maximum value of SAR (measured) = 0.920 mW/g

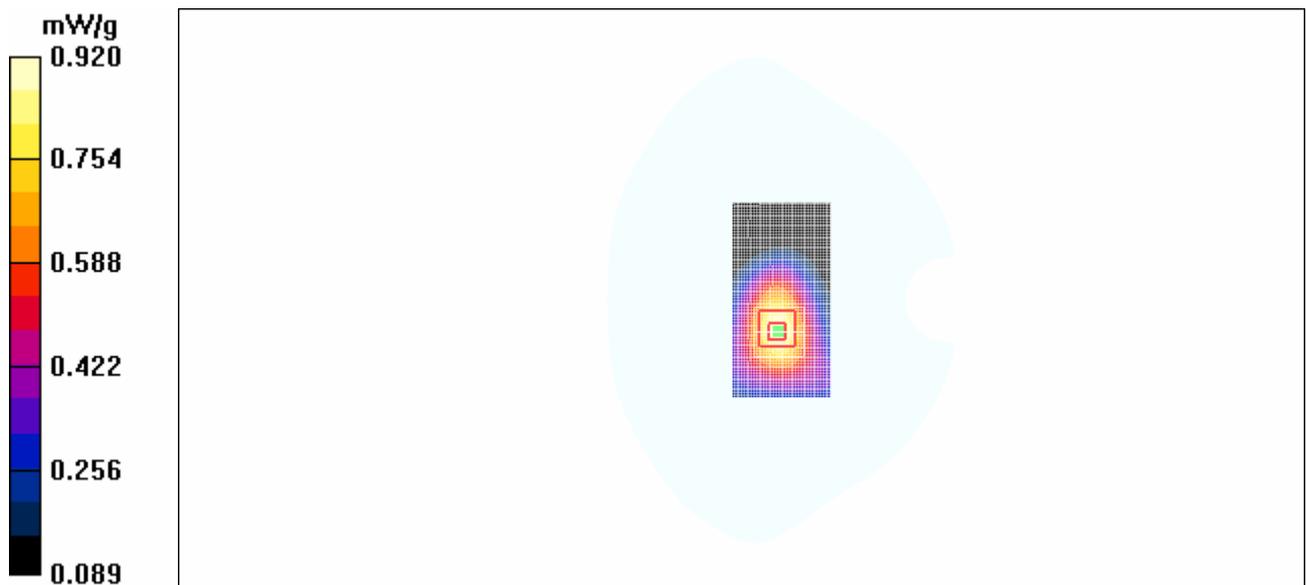


Figure 15 GSM 850 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 1 Channel 190

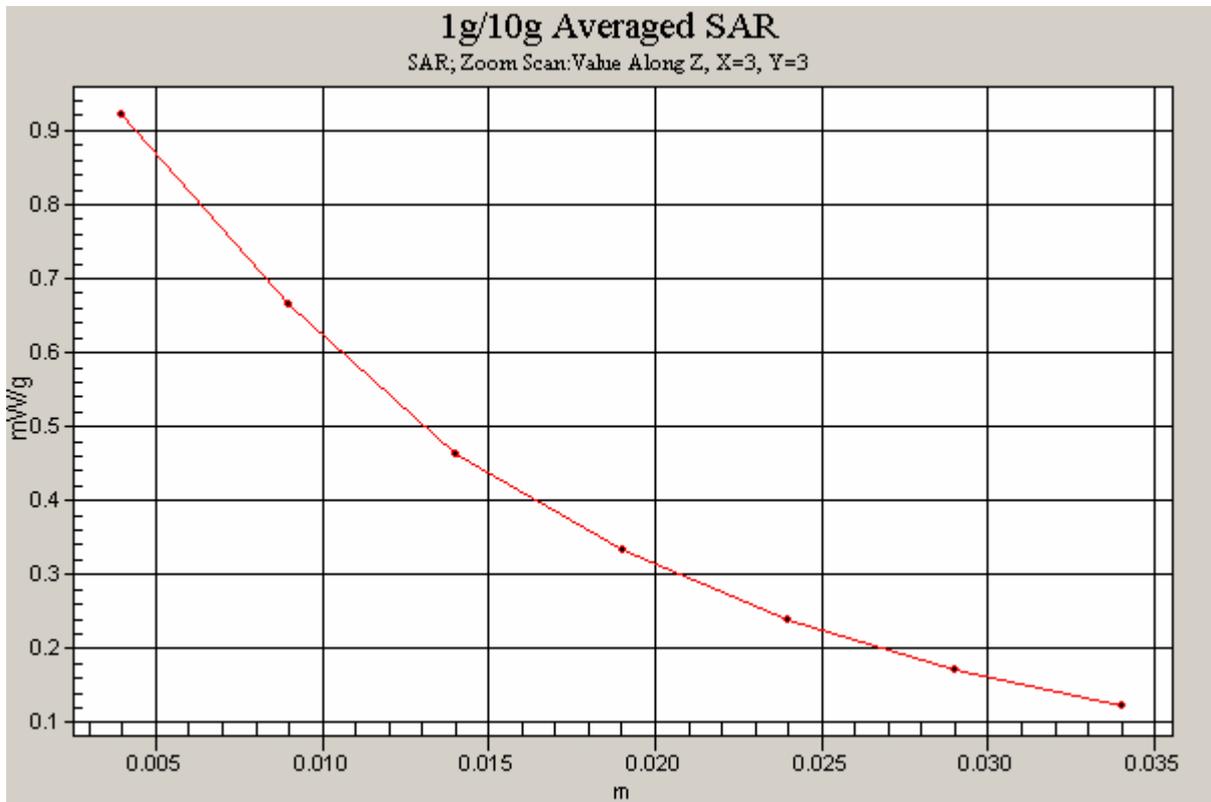


Figure 16 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 1 Channel 190]

GSM 850 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 1 Low Frequency

Communication System: GSM850 + GPRS(2Up); Frequency: 824.2 MHz; Duty Cycle: 1:4

Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 0.983$ mho/m; $\epsilon_r = 55.2$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);

Electronics: DAE3 Sn452;

Test Position 1 Low/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.881 mW/g

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

Reference Value = 28.1 V/m; Power Drift = -0.028 dB

Peak SAR (extrapolated) = 1.13 W/kg

SAR(1 g) = 0.827 mW/g; SAR(10 g) = 0.563 mW/g

Maximum value of SAR (measured) = 0.890 mW/g

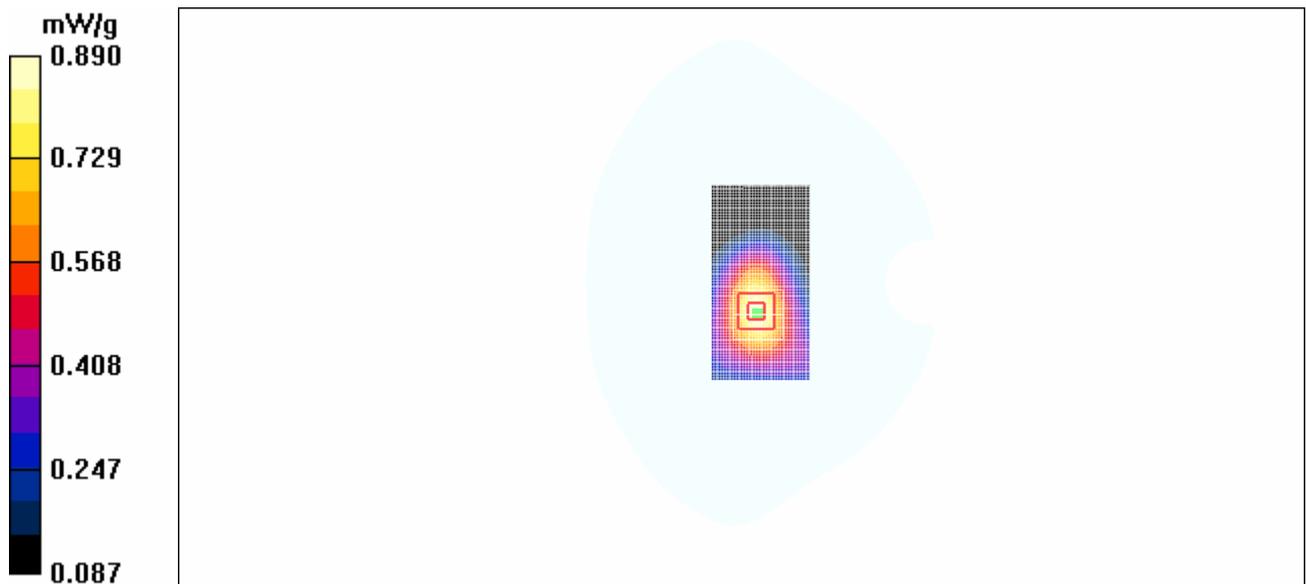


Figure 17 GSM 850 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 1 Channel 128

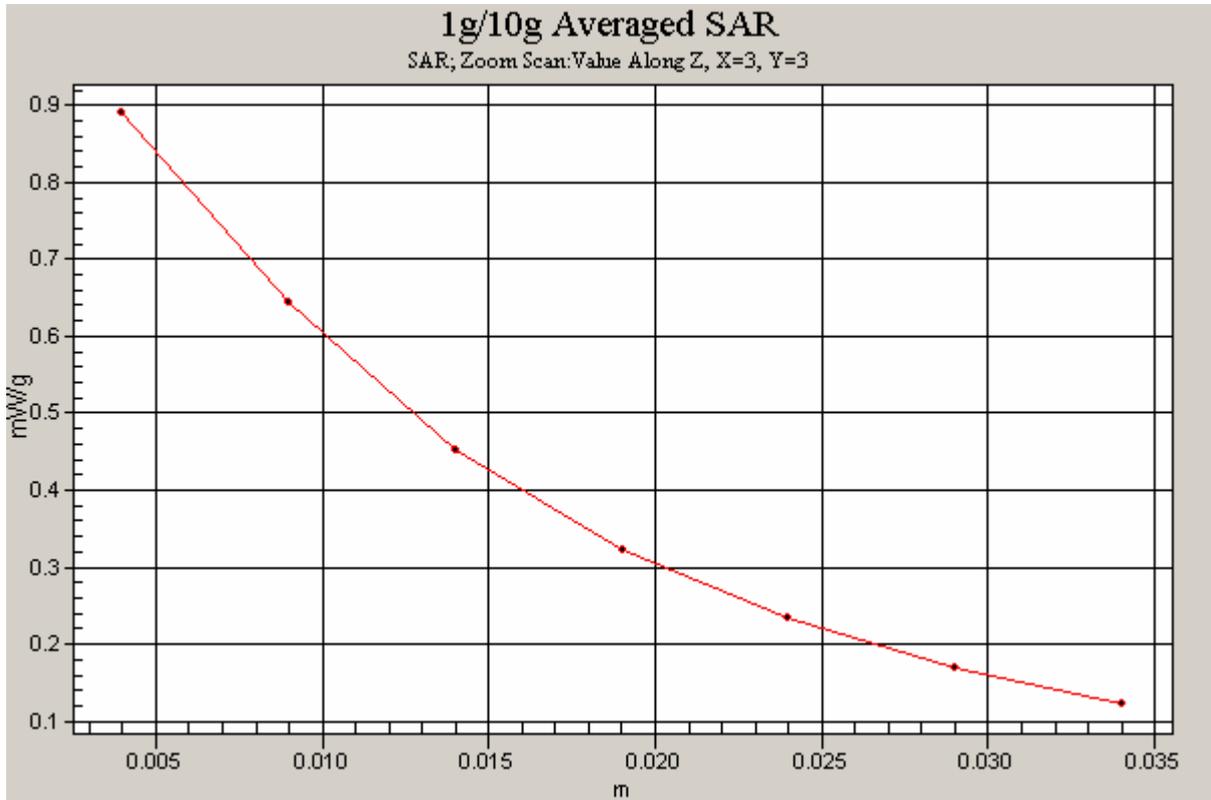


Figure 18 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 1 Channel 128]

GSM 850 GPRS (1 timeslot in uplink) with Acer ZR1 Test Position 1 Middle Frequency

Communication System: GSM850 + GPRS(1Up); Frequency: 836.6 MHz; Duty Cycle: 1:8

Medium parameters used: $f = 837$ MHz; $\sigma = 0.993$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);

Electronics: DAE3 Sn452;

Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.734 mW/g

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

Reference Value = 21.9 V/m; Power Drift = 0.193 dB

Peak SAR (extrapolated) = 0.971 W/kg

SAR(1 g) = 0.711 mW/g; SAR(10 g) = 0.480 mW/g

Maximum value of SAR (measured) = 0.764 mW/g

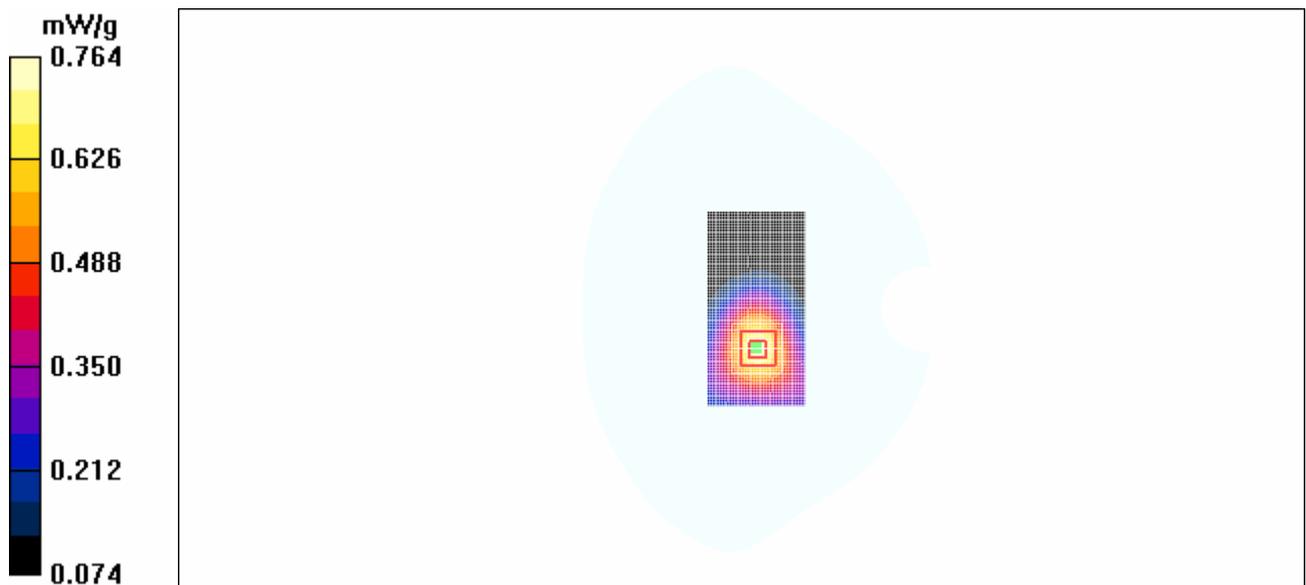


Figure 19 GSM 850 GPRS (1 timeslot in uplink) with Acer ZR1 Test Position 1 Channel 190

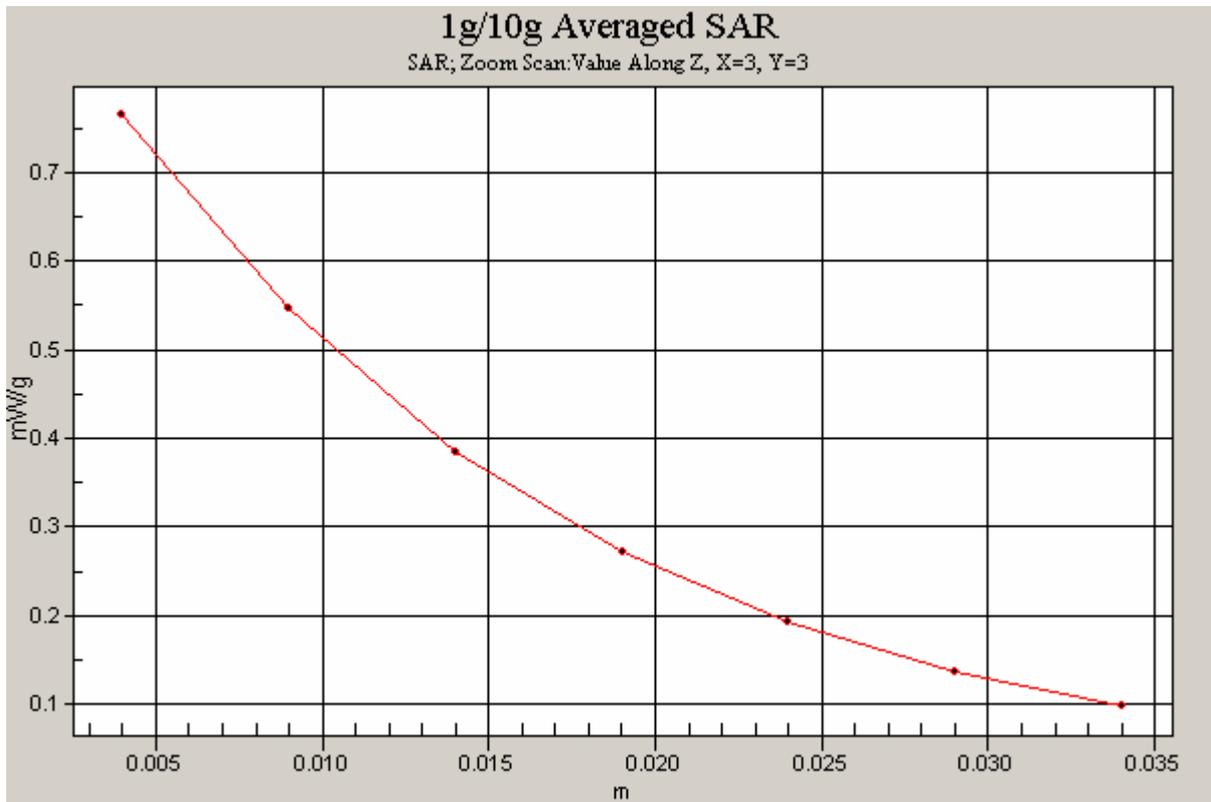


Figure 20 Z-Scan at power reference point [GSM 850 GPRS (1 timeslot in uplink) with Acer ZR1
Test Position 1 Channel 190]

GSM 850 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 2 Middle Frequency

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837$ MHz; $\sigma = 0.993$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);

Electronics: DAE3 Sn452;

Test Position 2 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.684 mW/g

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

Reference Value = 25.7 V/m; Power Drift = 0.027 dB

Peak SAR (extrapolated) = 0.850 W/kg

SAR(1 g) = 0.640 mW/g; SAR(10 g) = 0.442 mW/g

Maximum value of SAR (measured) = 0.687 mW/g

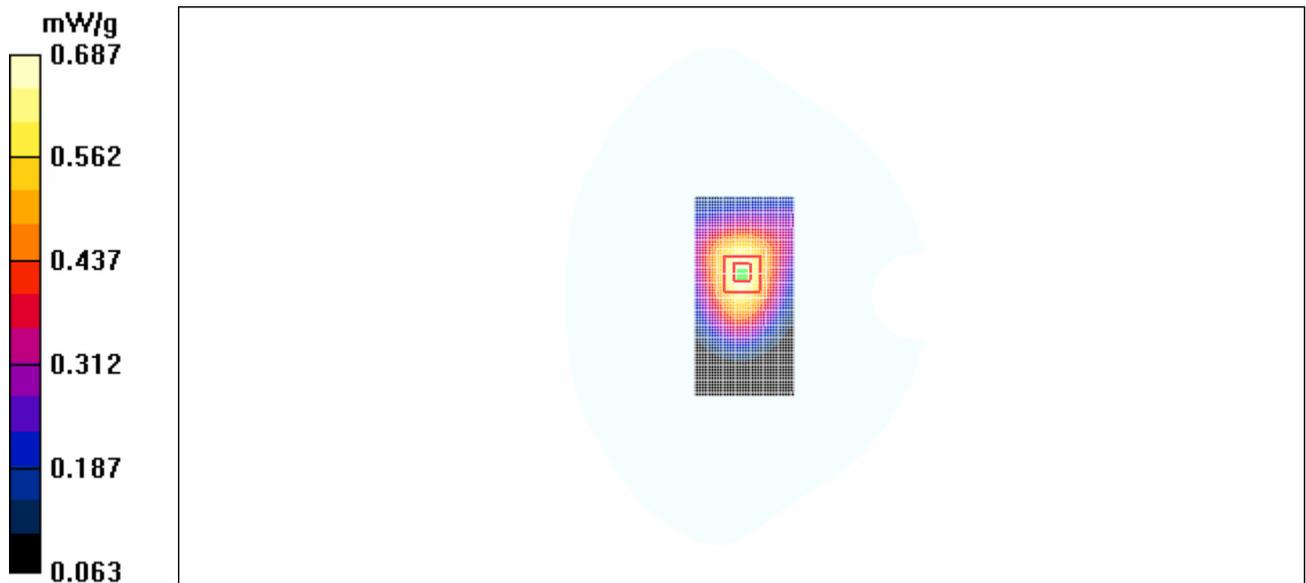


Figure 21 GSM 850 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 2 Channel 190

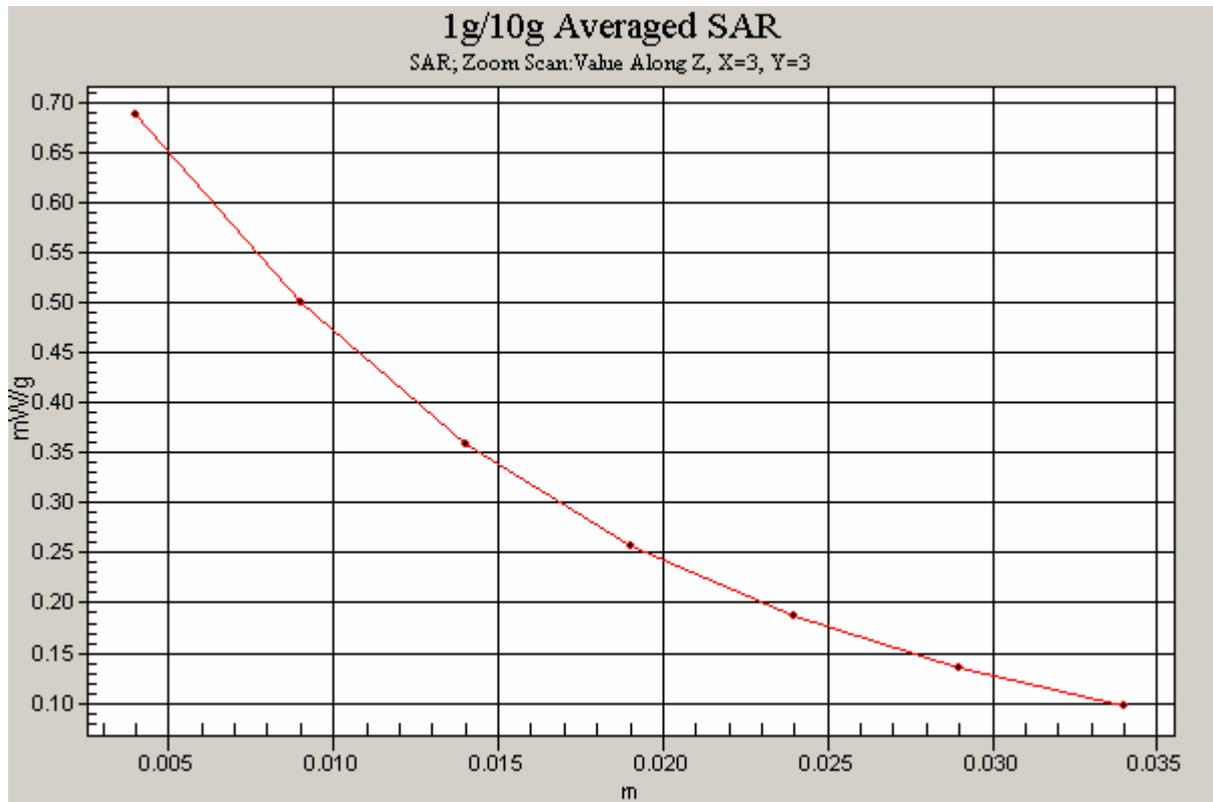


Figure 22 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 2 Channel 190]

GSM 850 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 3 Middle Frequency

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837$ MHz; $\sigma = 0.993$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);

Electronics: DAE3 Sn452;

Test Position 3 Middle/Area Scan (51x51x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 15.0 V/m; Power Drift = 0.064 dB

Peak SAR (extrapolated) = 0.442 W/kg

SAR(1 g) = 0.163 mW/g; SAR(10 g) = 0.060 mW/g

Maximum value of SAR (measured) = 0.199 mW/g

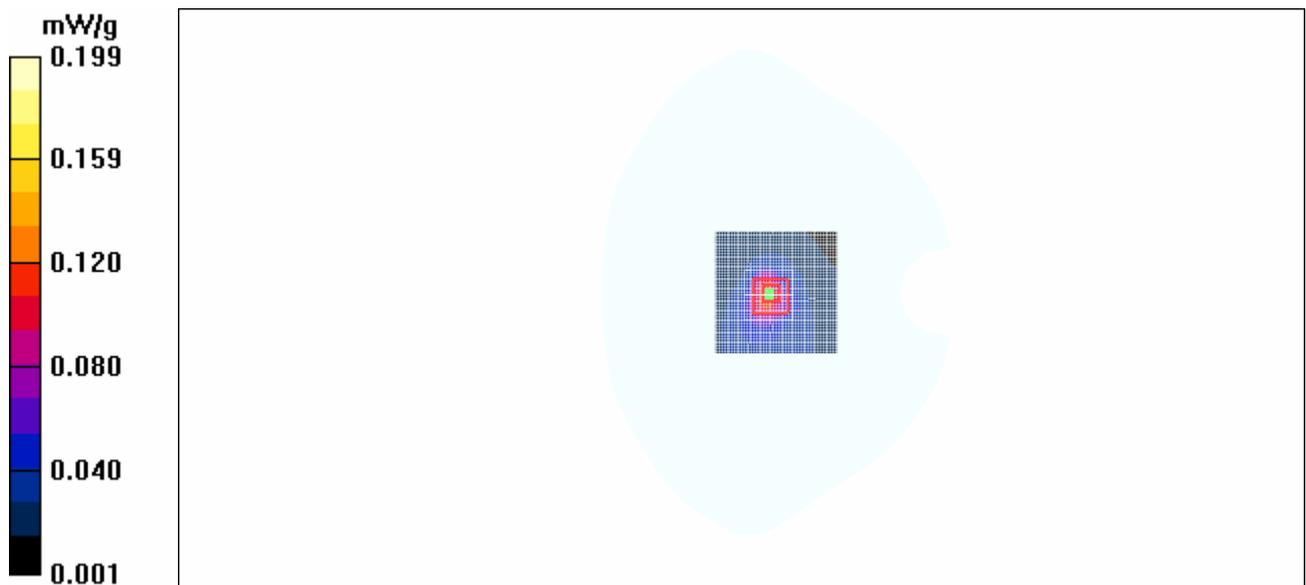


Figure 23 GSM 850 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 3 Channel 190

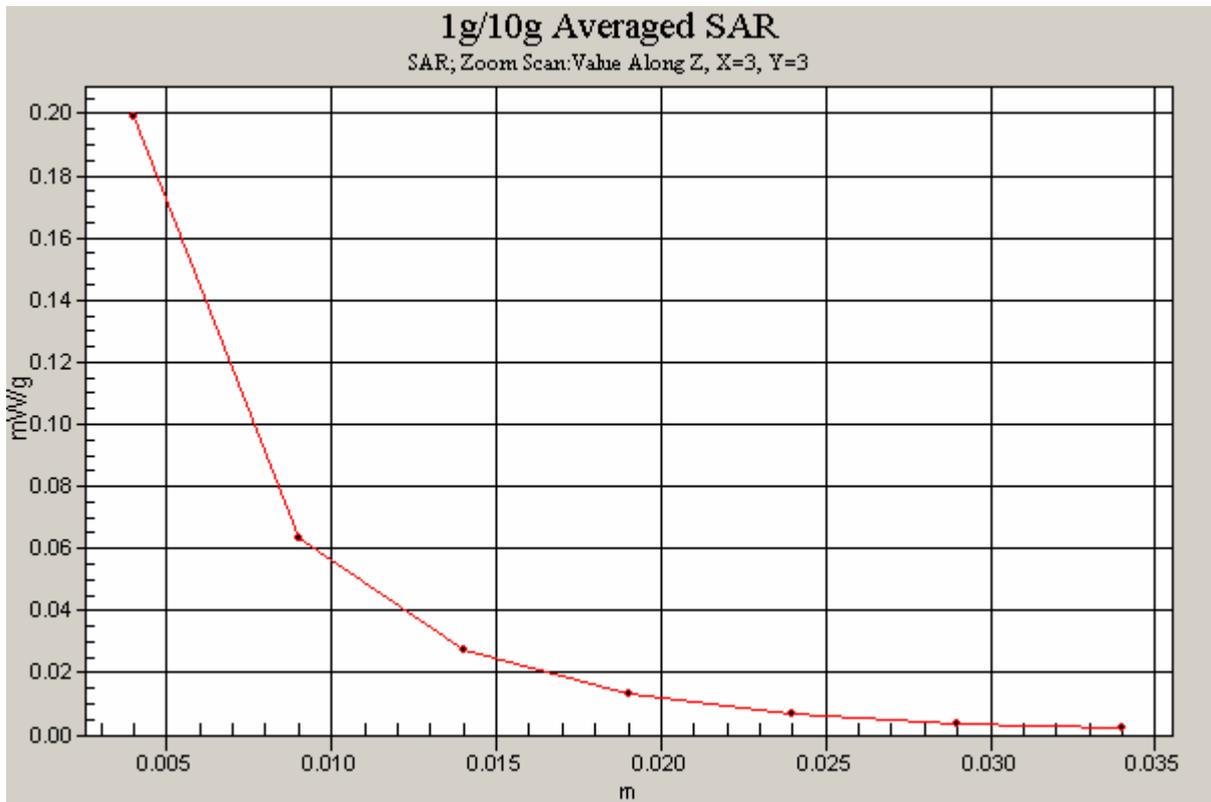


Figure 24 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 3 Channel 190]

GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 4 Middle Frequency

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837$ MHz; $\sigma = 0.993$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);

Electronics: DAE3 Sn452;

Test Position 4 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 16.0 V/m; Power Drift = 0.039 dB

Peak SAR (extrapolated) = 0.714 W/kg

SAR(1 g) = 0.497 mW/g; SAR(10 g) = 0.338 mW/g

Maximum value of SAR (measured) = 0.535 mW/g

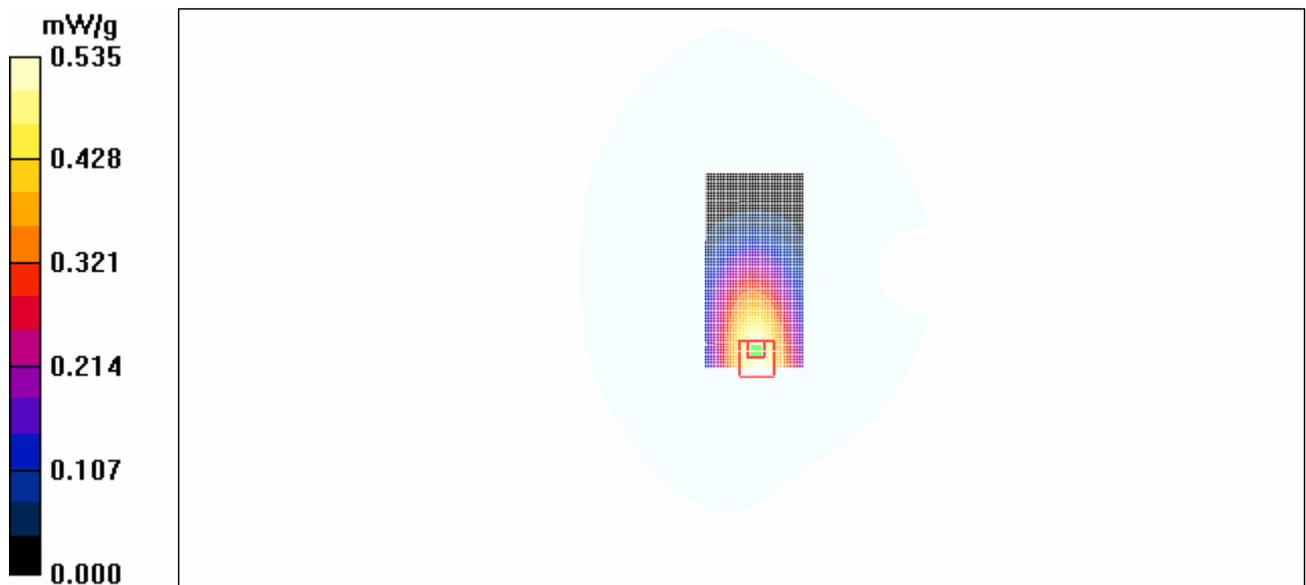


Figure 25 GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 4 Channel 190

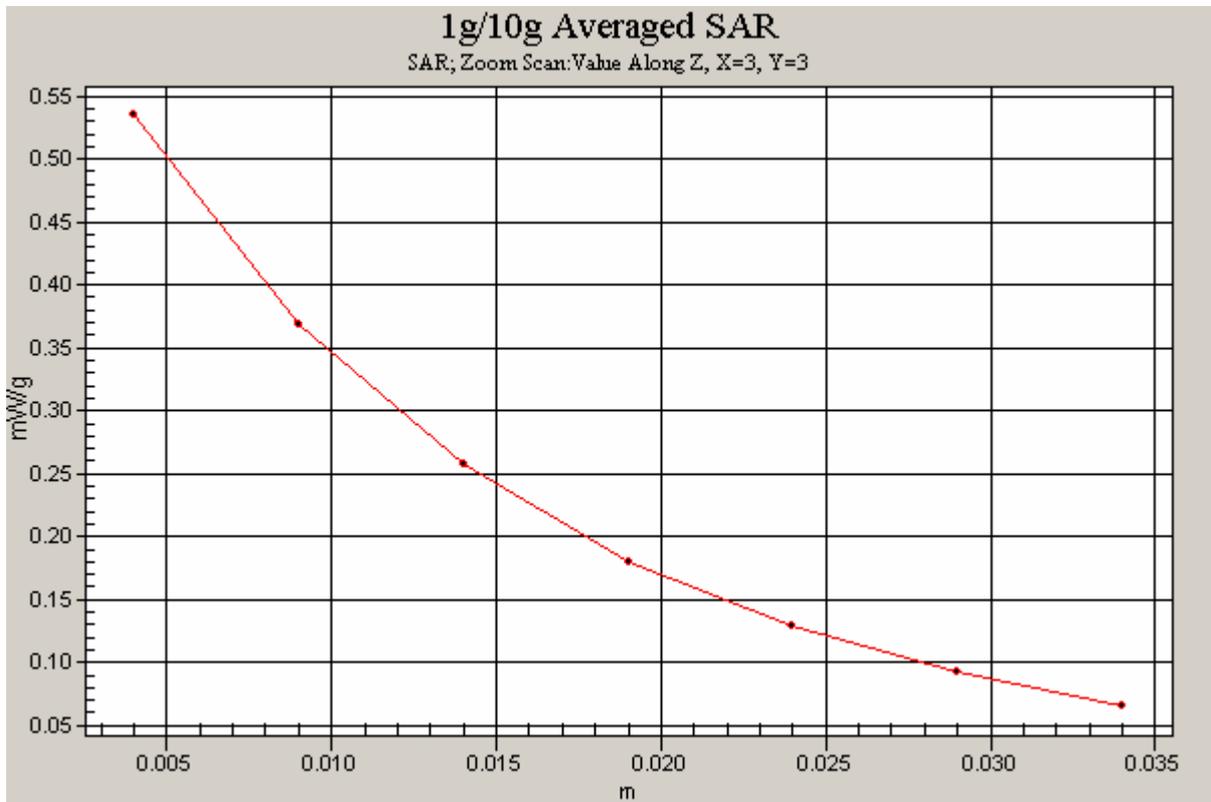


Figure 26 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 4 Channel 190]

GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 5 Middle Frequency

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837$ MHz; $\sigma = 0.993$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);

Electronics: DAE3 Sn452;

Test Position 5 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.488 mW/g

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

Reference Value = 17.5 V/m; Power Drift = 0.199 dB

Peak SAR (extrapolated) = 0.573 W/kg

SAR(1 g) = 0.462 mW/g; SAR(10 g) = 0.367 mW/g

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

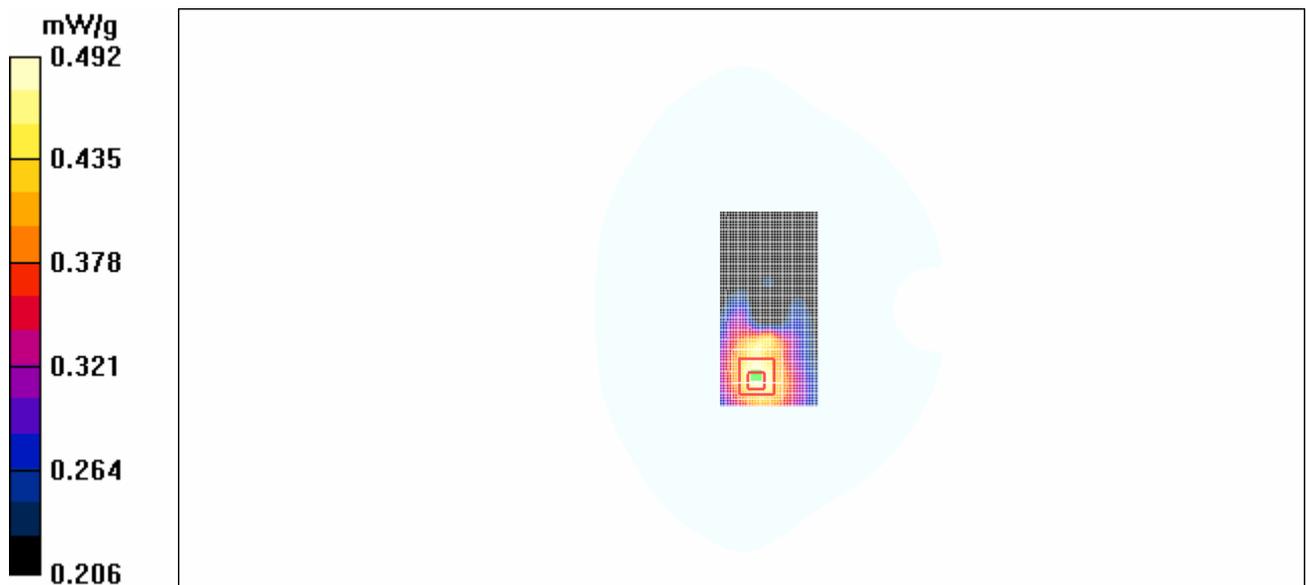


Figure 27 GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 5 Channel 190

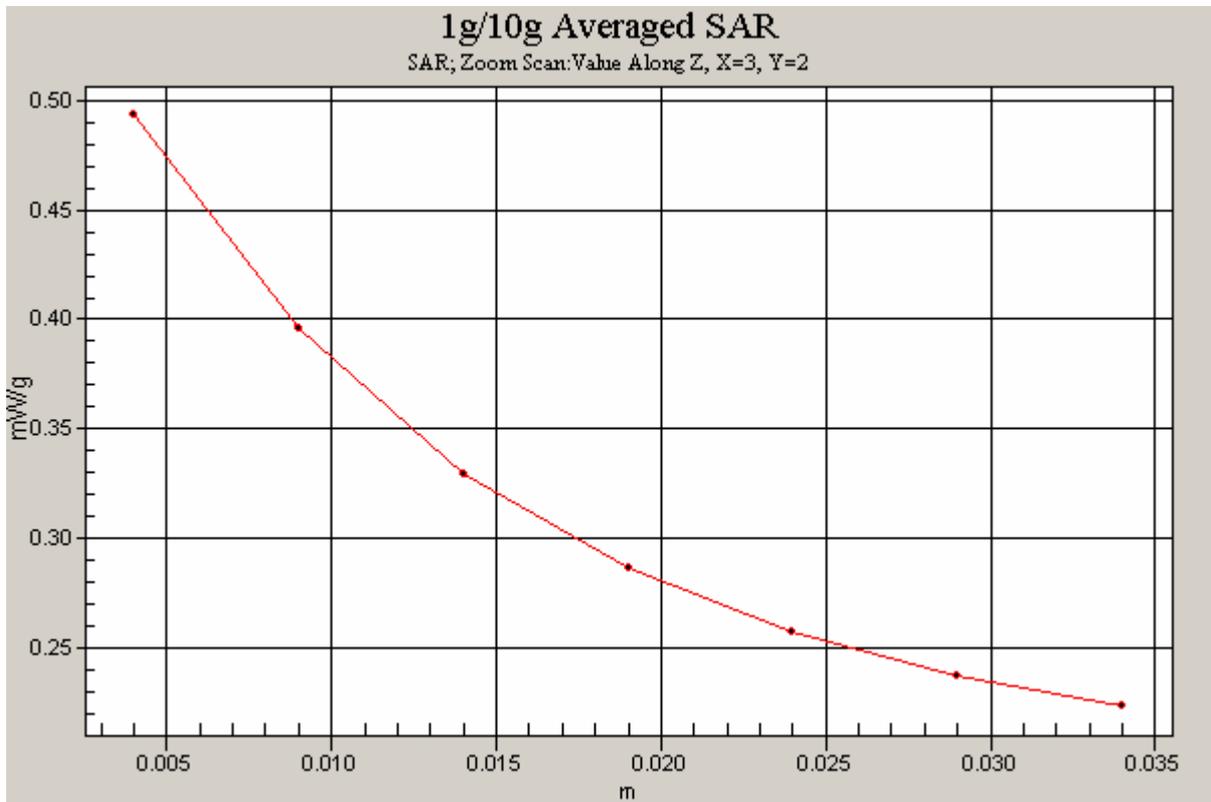


Figure 28 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 5 Channel 190]

GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 6 High Frequency

Communication System: GSM850 + GPRS(2Up); Frequency: 848.8 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 849$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 55$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);

Electronics: DAE3 Sn452;

Test Position 6 High/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.04 mW/g

Test Position 6 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 31.8 V/m; Power Drift = 0.001 dB

Peak SAR (extrapolated) = 1.27 W/kg

SAR(1 g) = 0.966 mW/g; SAR(10 g) = 0.699 mW/g

Maximum value of SAR (measured) = 1.03 mW/g

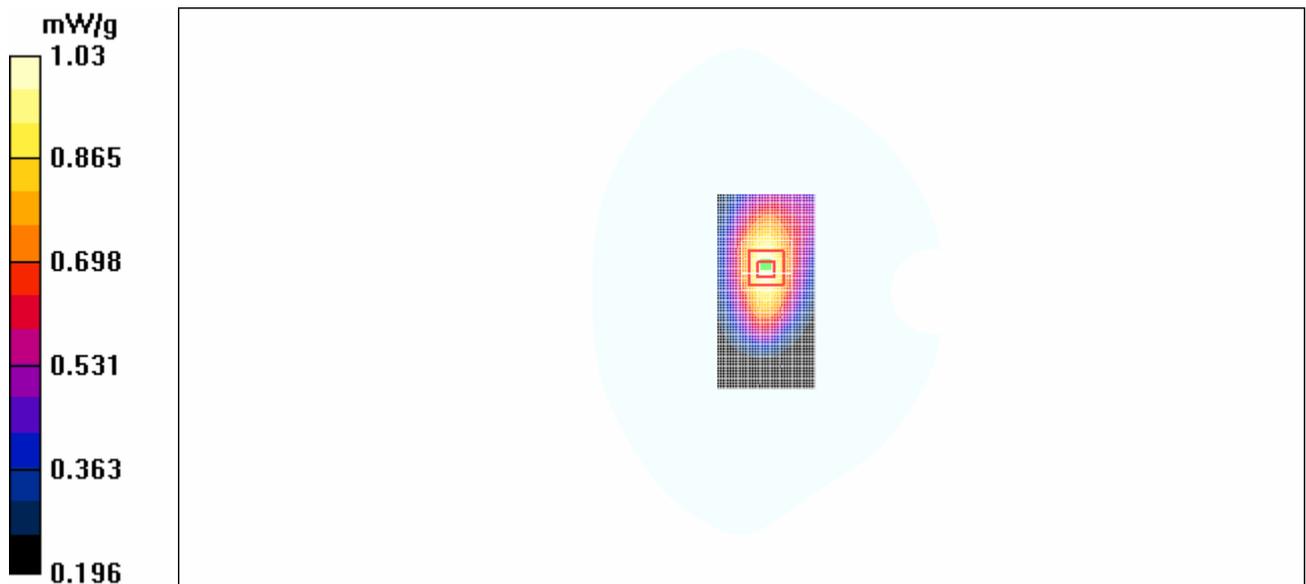


Figure 29 GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 6 Channel 251

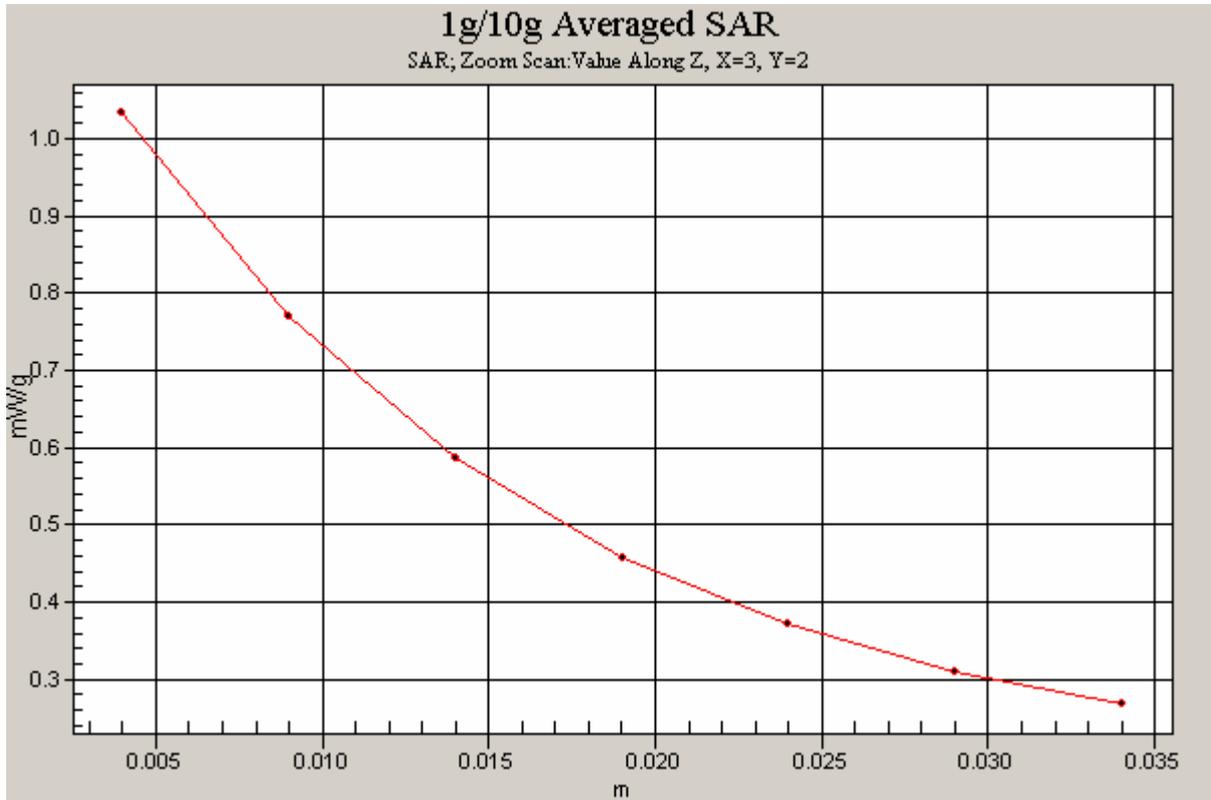


Figure 30 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 6 Channel 251]

GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 6 Middle Frequency

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837$ MHz; $\sigma = 0.993$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);

Electronics: DAE3 Sn452;

Test Position 6 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.908 mW/g

Test Position 6 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 28.5 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 1.22 W/kg

SAR(1 g) = 0.929 mW/g; SAR(10 g) = 0.666 mW/g

Maximum value of SAR (measured) = 0.992 mW/g

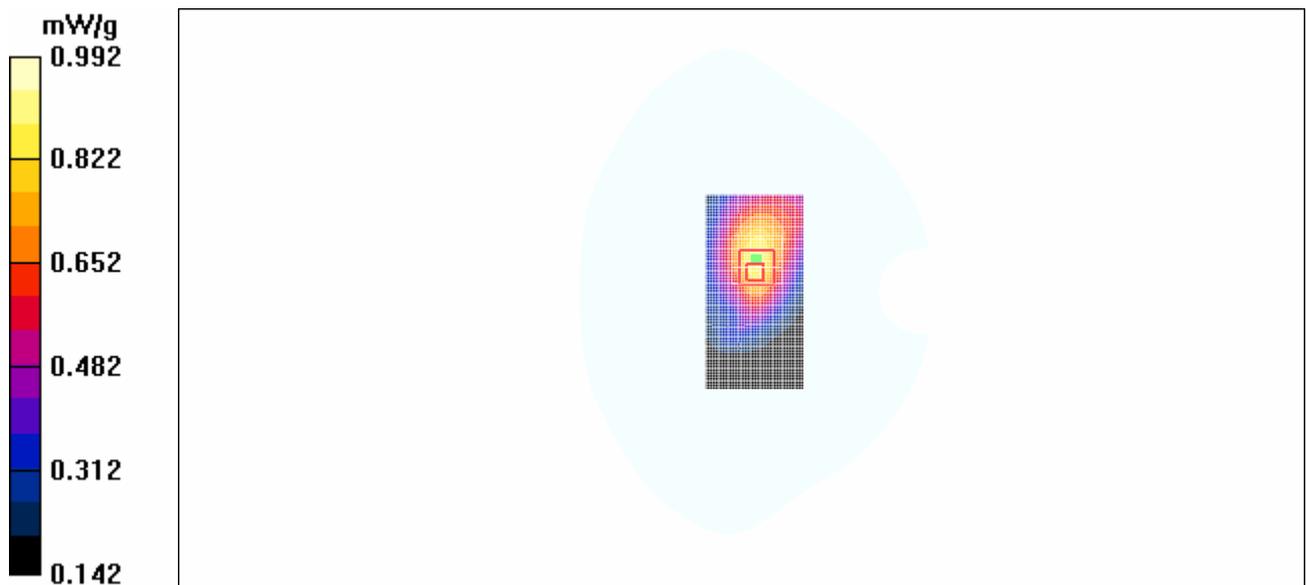


Figure 31 GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 6 Channel 190

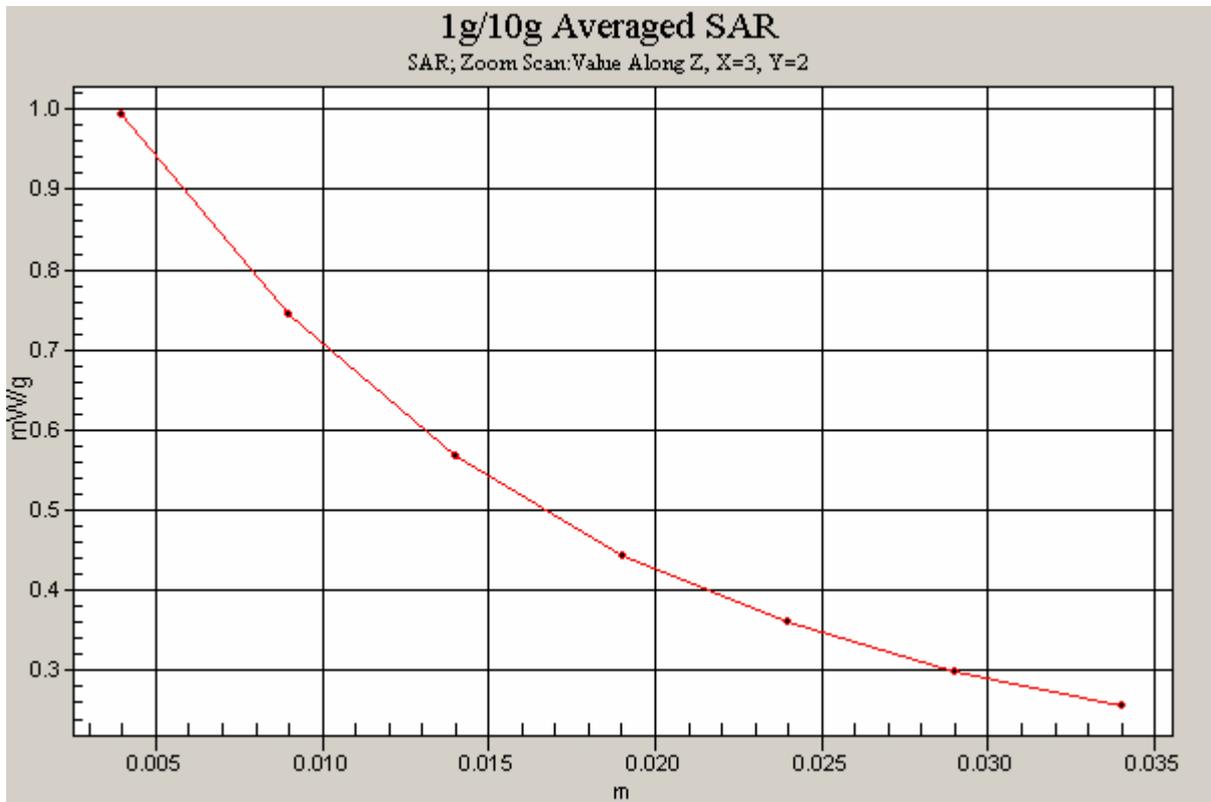


Figure 32 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 6 Channel 190]

GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 6 Low Frequency

Communication System: GSM850 + GPRS(2Up); Frequency: 824.2 MHz; Duty Cycle: 1:4
Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 0.983$ mho/m; $\epsilon_r = 55.2$; $\rho = 1000$ kg/m³
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE3 Sn452;

Test Position 6 Low/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.856 mW/g

Test Position 6 Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 25.4 V/m; Power Drift = 0.005 dB

Peak SAR (extrapolated) = 1.29 W/kg

SAR(1 g) = 0.804 mW/g; SAR(10 g) = 0.569 mW/g

Maximum value of SAR (measured) = 0.855 mW/g

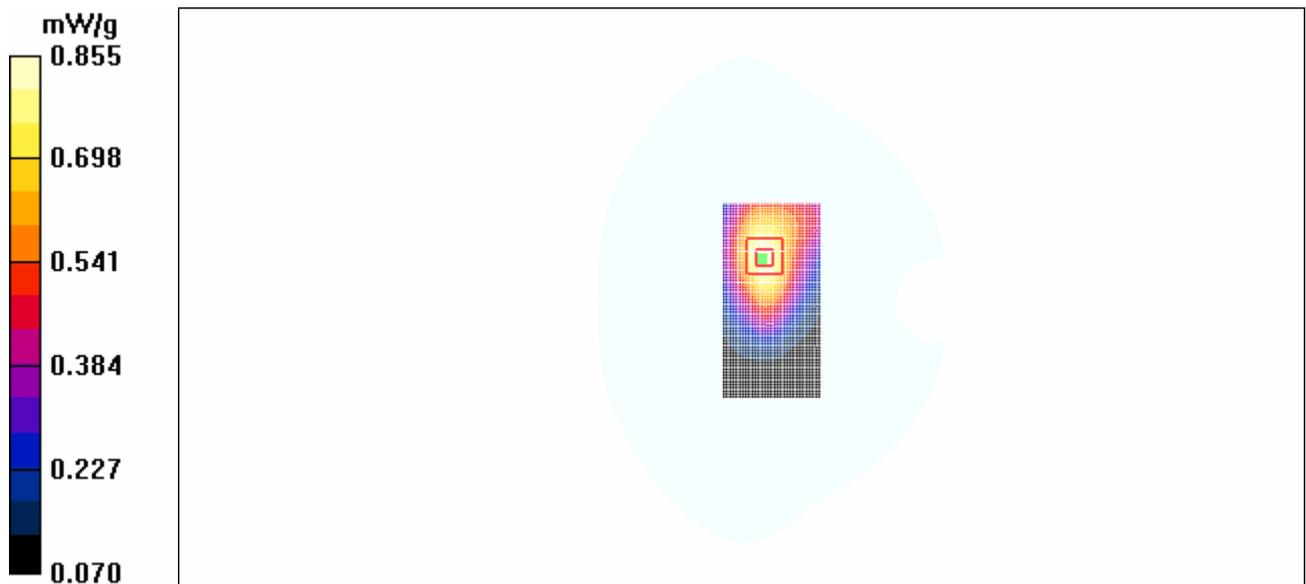


Figure 33 GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 6 Channel 128

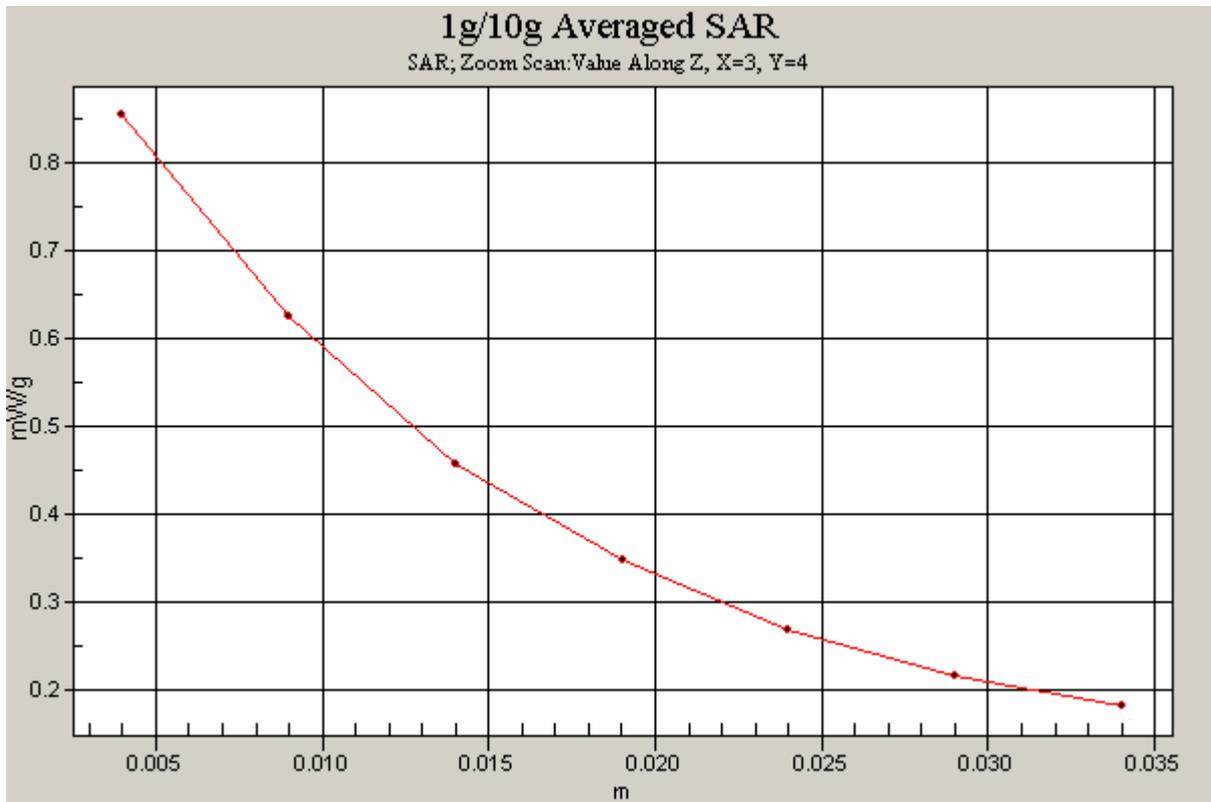


Figure 34 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 6 Channel 128]

GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 7 Middle Frequency

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837$ MHz; $\sigma = 0.993$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);

Electronics: DAE3 Sn452;

Test Position 7 Middle/Area Scan (51x51x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.281 mW/g

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

Reference Value = 14.1 V/m; Power Drift = 0.180 dB

Peak SAR (extrapolated) = 0.754 W/kg

SAR(1 g) = 0.287 mW/g; SAR(10 g) = 0.114 mW/g

Maximum value of SAR (measured) = 0.358 mW/g

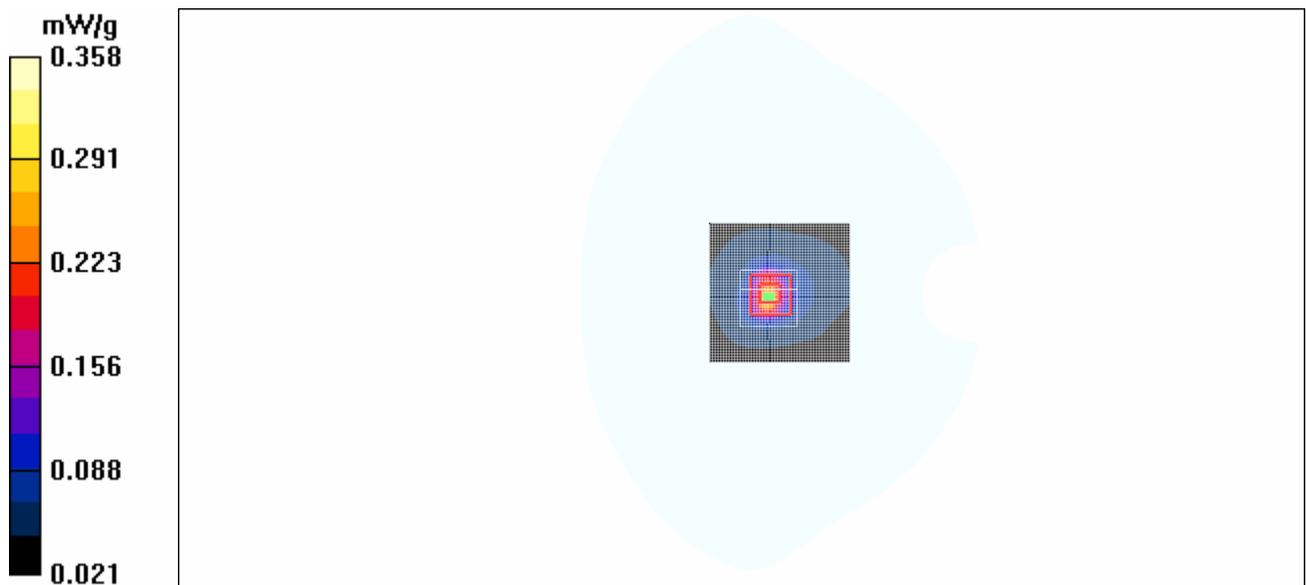


Figure 35 GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 7 Channel 190

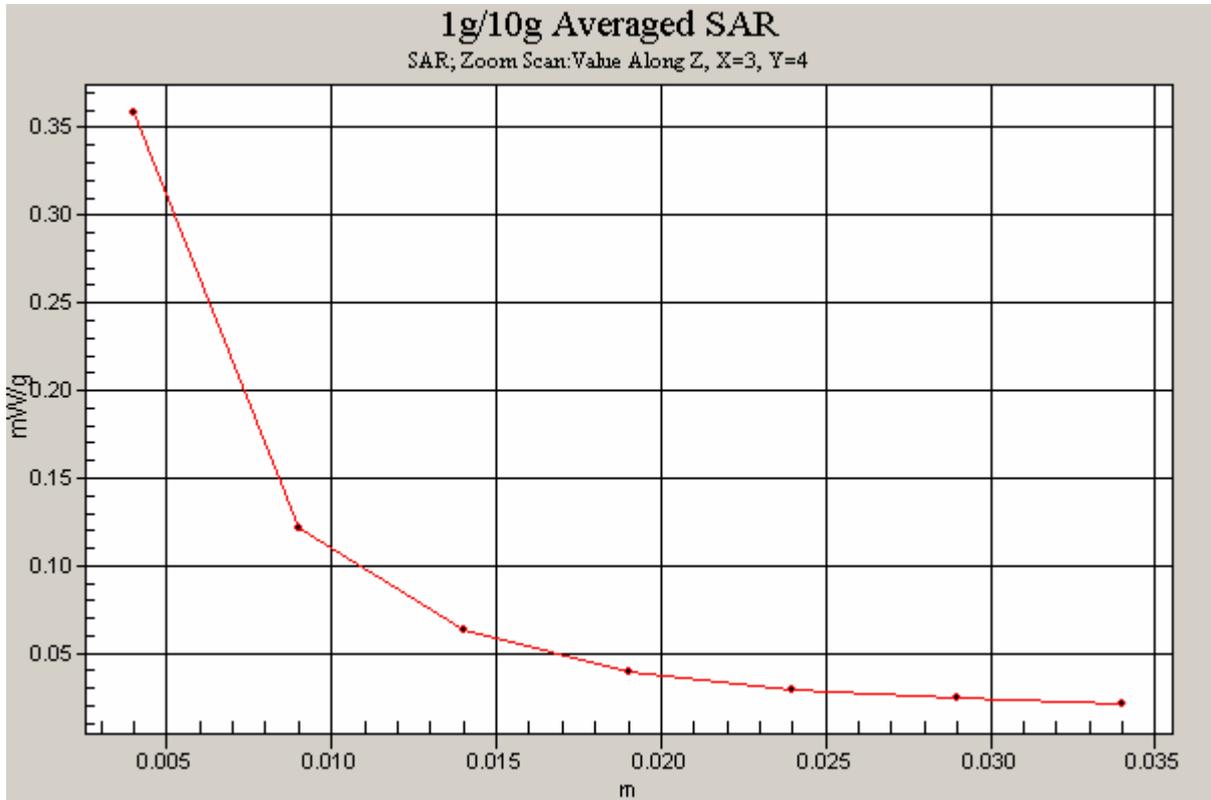


Figure 36 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 7 Channel 190]

GSM 850 EGPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 6 Middle Frequency

Communication System: GSM850 + EGPRS(2Up); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837$ MHz; $\sigma = 0.993$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);

Electronics: DAE3 Sn452;

Test Position 6 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.299 mW/g

Test Position 6 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.4 V/m; Power Drift = 0.045 dB

Peak SAR (extrapolated) = 0.372 W/kg

SAR(1 g) = 0.286 mW/g; SAR(10 g) = 0.212 mW/g

Maximum value of SAR (measured) = 0.302 mW/g

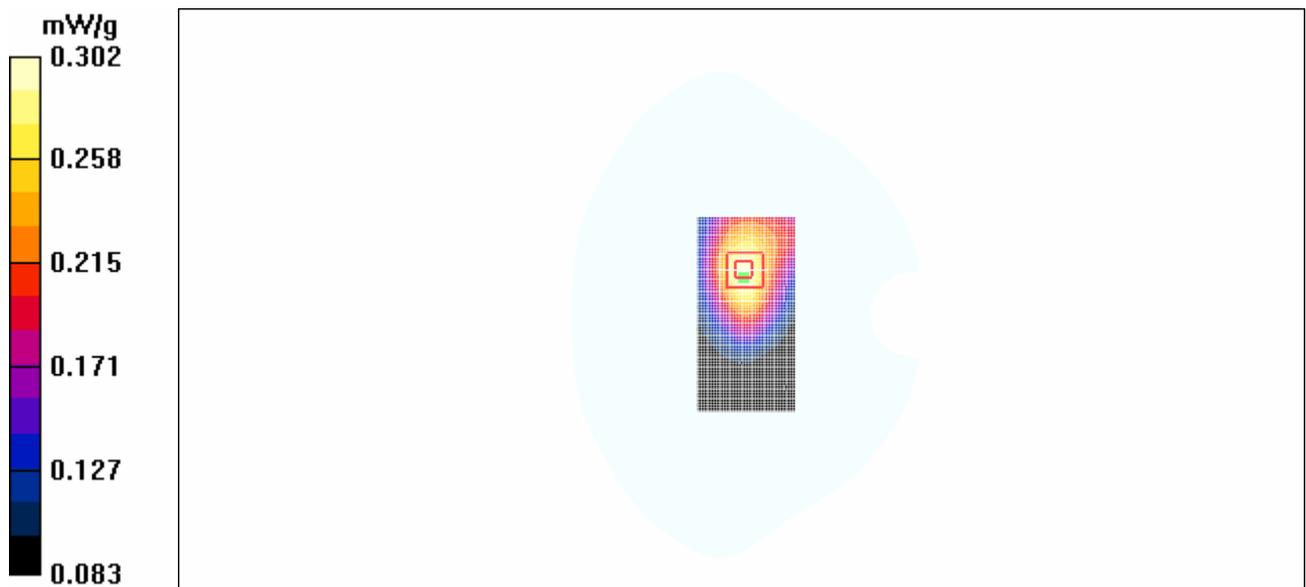


Figure 37 GSM 850 EGPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 6 Channel 190

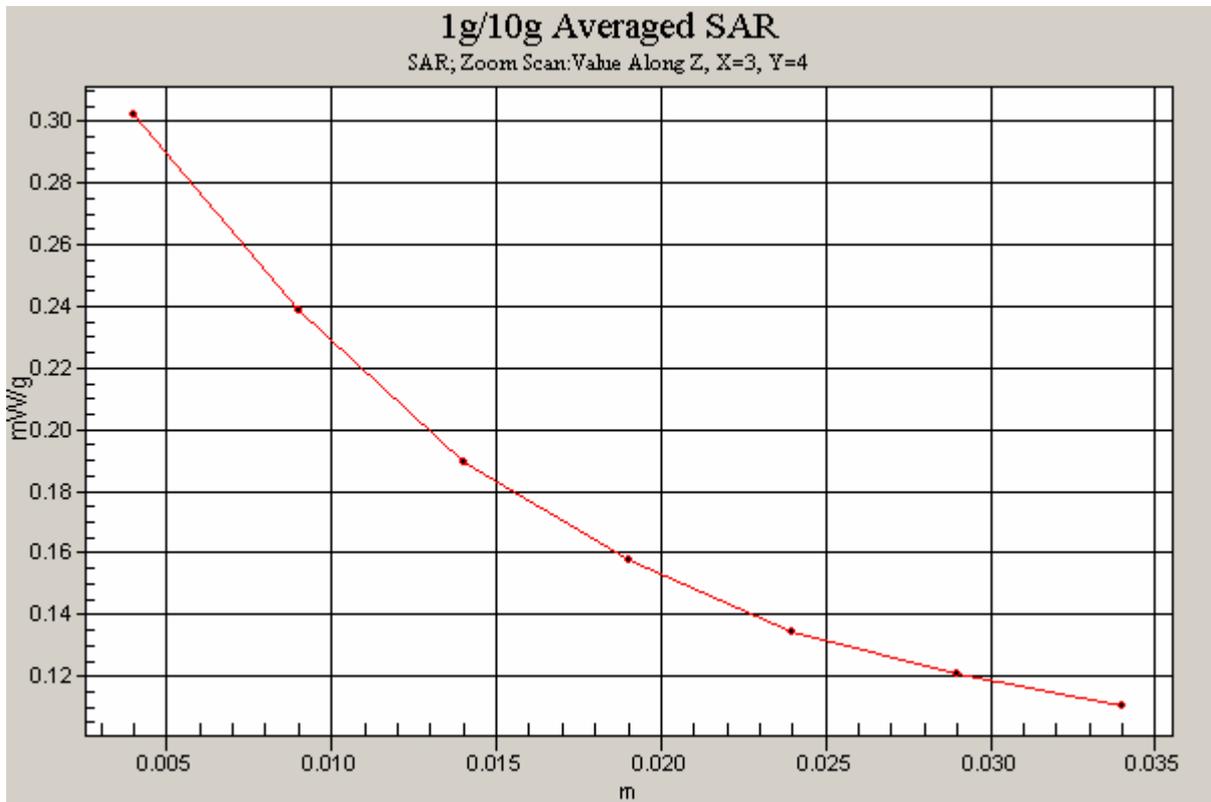


Figure 38 Z-Scan at power reference point [GSM 850 EGPRS (2 timeslots in uplink) with Acer ZR1 Test Position 6 Channel 190]

GSM 1900 GPRS (4 timeslots in uplink) with Acer ZR1 Test Position 1 Middle Frequency

Communication System: GSM 1900+GPRS(4Up); Frequency: 1880 MHz; Duty Cycle: 1:2

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);

Electronics: DAE3 Sn452;

Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.432 mW/g

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

Reference Value = 11.5 V/m; Power Drift = -0.083 dB

Peak SAR (extrapolated) = 0.504 W/kg

SAR(1 g) = 0.294 mW/g; SAR(10 g) = 0.175 mW/g

Maximum value of SAR (measured) = 0.358 mW/g

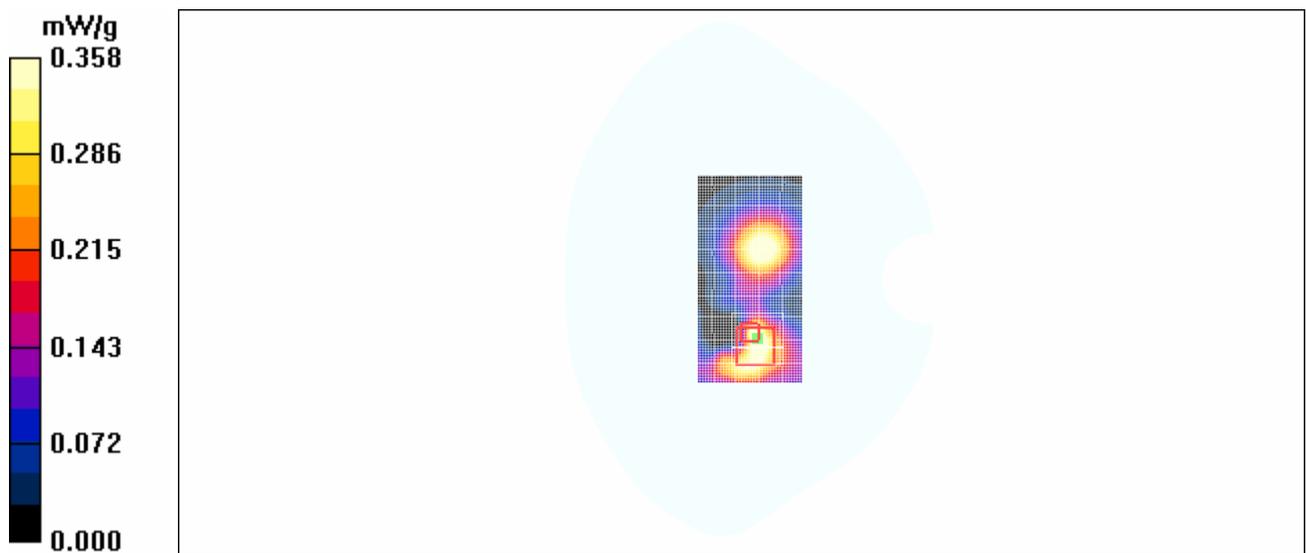


Figure 39 GSM 1900 GPRS (4 timeslots in uplink) with Acer ZR1 Test Position 1 Channel 661

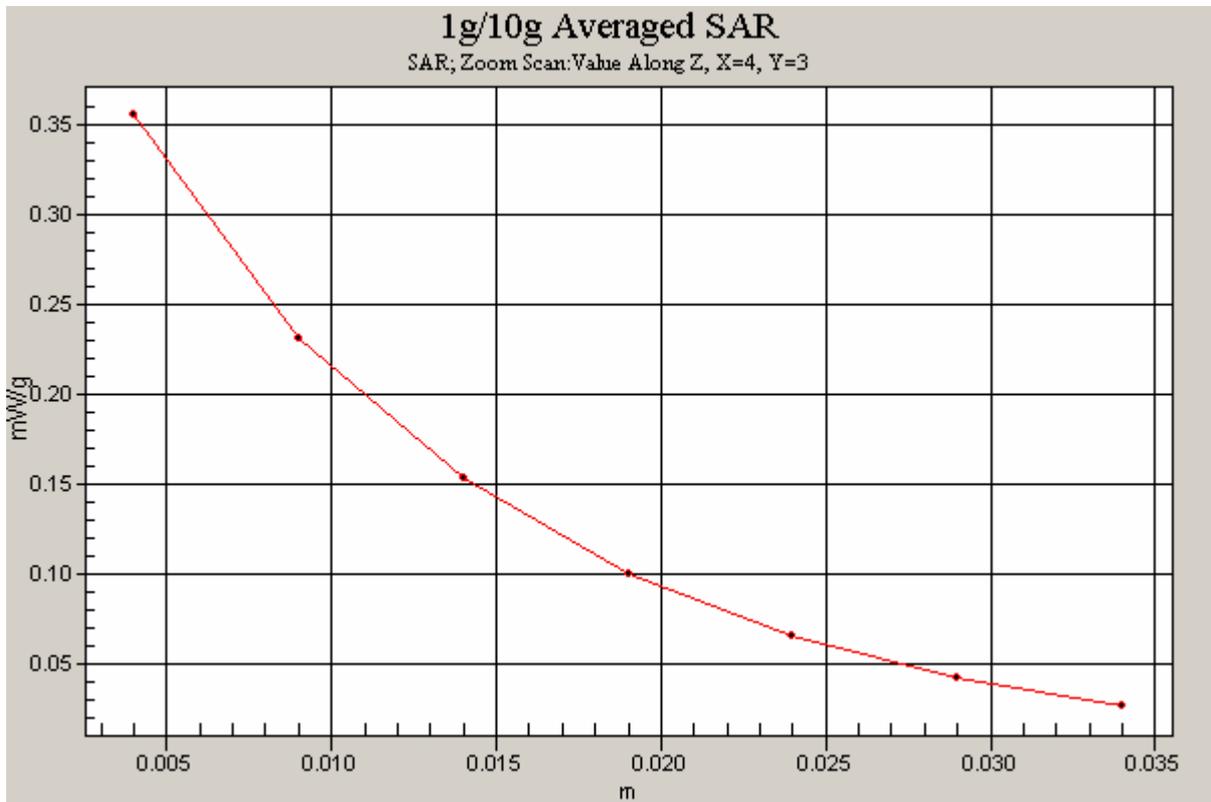


Figure 40 Z-Scan at power reference point [GSM 1900 GPRS(4 timeslots in uplink) with Acer ZR1 Test Position 1 Channel 661]

GSM 1900 GPRS (4 timeslots in uplink) with Acer ZH1 Test Position 1 Middle Frequency

Communication System: GSM 1900+GPRS(4Up); Frequency: 1880 MHz; Duty Cycle: 1:2

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);

Electronics: DAE3 Sn452;

Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.305 mW/g

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

Reference Value = 10.8 V/m; Power Drift = -0.063 dB

Peak SAR (extrapolated) = 0.422 W/kg

SAR(1 g) = 0.269 mW/g; SAR(10 g) = 0.161 mW/g

Maximum value of SAR (measured) = 0.293 mW/g

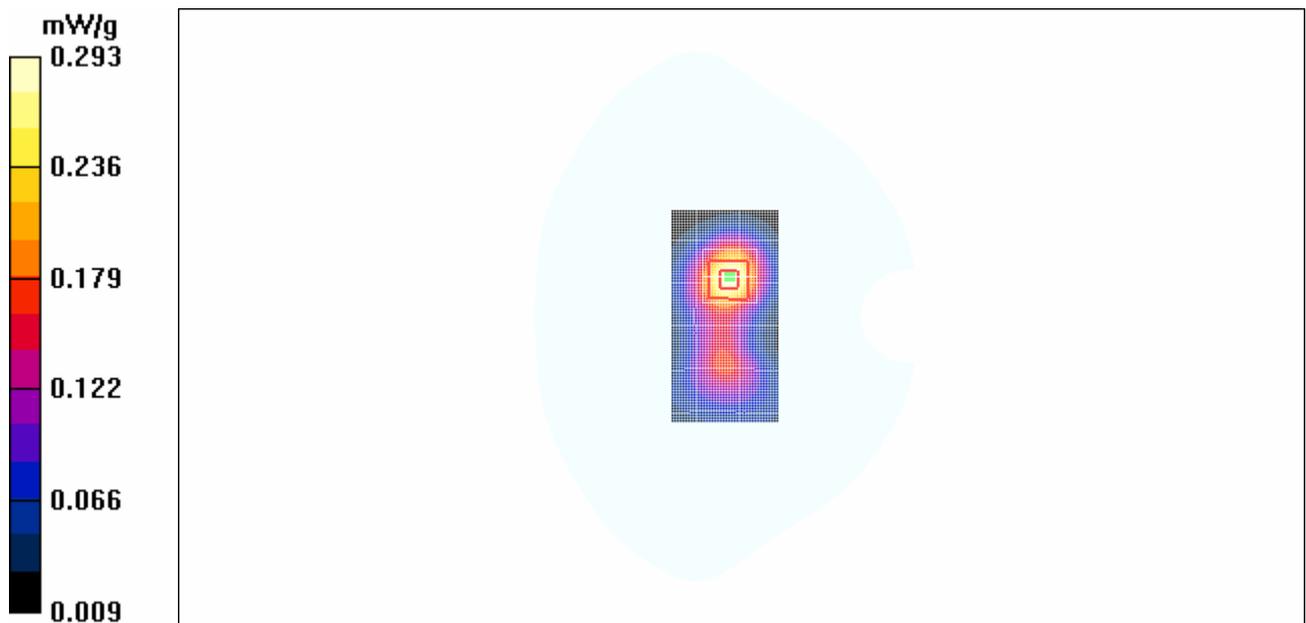


Figure 41 GSM 1900 GPRS (4 timeslots in uplink) with Acer ZH1 Test Position 1 Channel 661

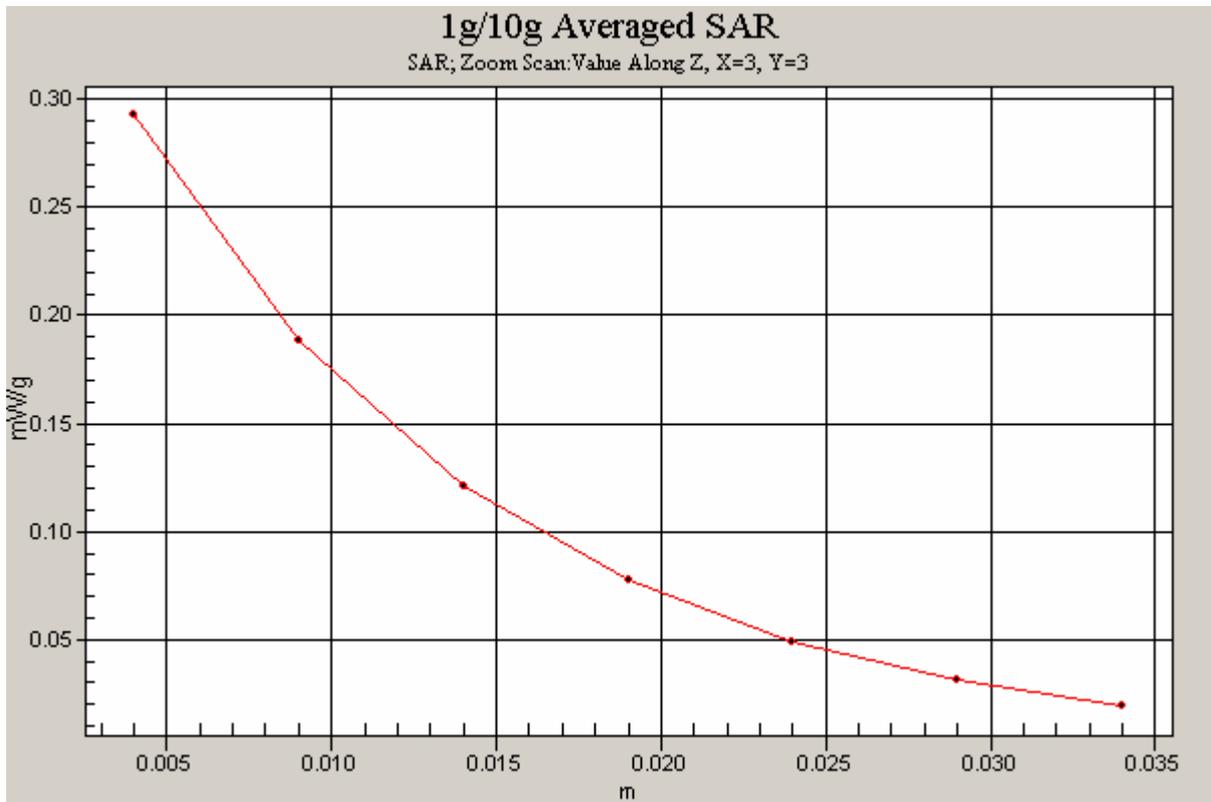


Figure 42 Z-Scan at power reference point [GSM 1900 GPRS (4 timeslots in uplink) with Acer ZH1 Test Position 1 Channel 661]

GSM 1900 GPRS (3 timeslots in uplink) with Acer ZR1 Test Position 1 Middle Frequency

Communication System: GSM 1900+GPRS(3Up); Frequency: 1880 MHz; Duty Cycle: 1:2.67

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);

Electronics: DAE3 Sn452;

Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.456 mW/g

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

Reference Value = 13.9 V/m; Power Drift = -0.055 dB

Peak SAR (extrapolated) = 0.626 W/kg

SAR(1 g) = 0.393 mW/g; SAR(10 g) = 0.233 mW/g

Maximum value of SAR (measured) = 0.427 mW/g

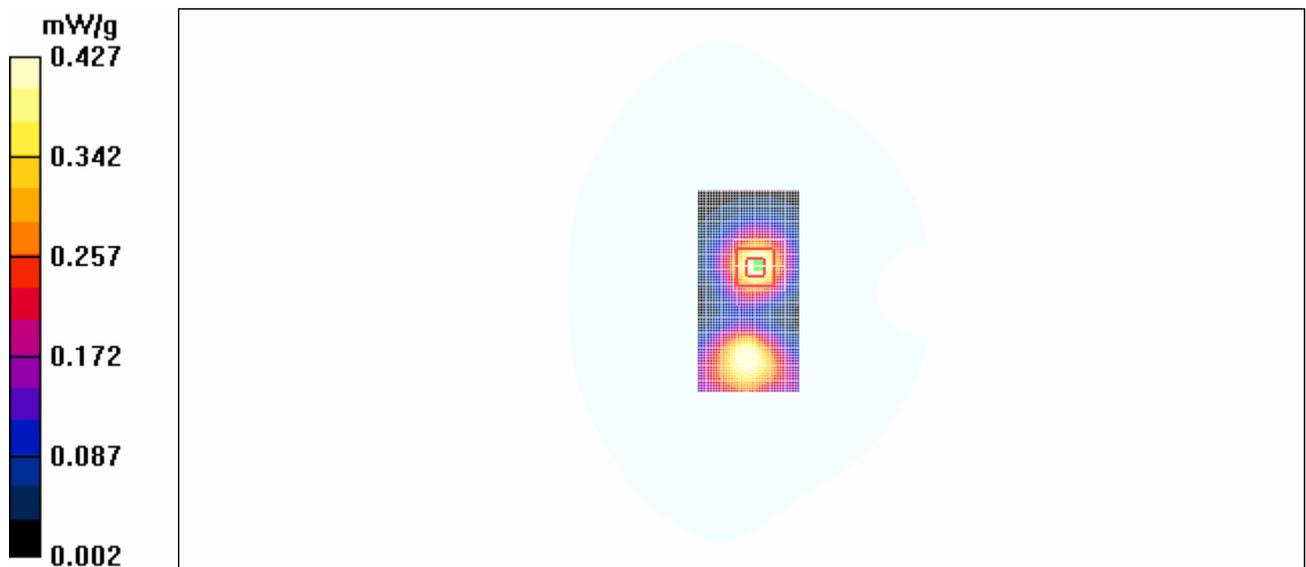


Figure 43 GSM 1900 GPRS (3 timeslots in uplink) with Acer ZR1 Test Position 1 Channel 661

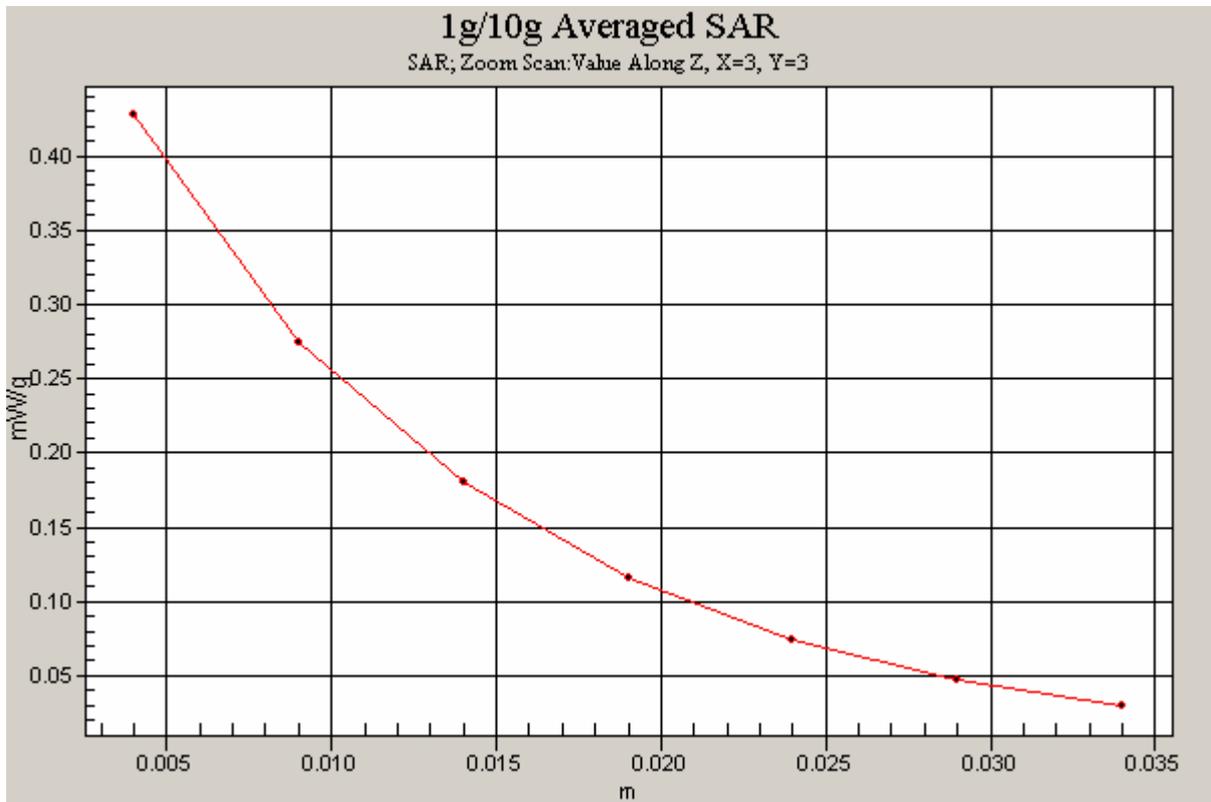


Figure 44 Z-Scan at power reference point [GSM 1900 GPRS (3 timeslots in uplink) with Acer ZR1 Test Position 1 Channel 661]

GSM 1900 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 1 Middle Frequency

Communication System: GSM 1900+GPRS(2Up); Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);

Electronics: DAE3 Sn452;

Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.484 mW/g

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

Reference Value = 14.2 V/m; Power Drift = 0.091 dB

Peak SAR (extrapolated) = 0.678 W/kg

SAR(1 g) = 0.426 mW/g; SAR(10 g) = 0.252 mW/g

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

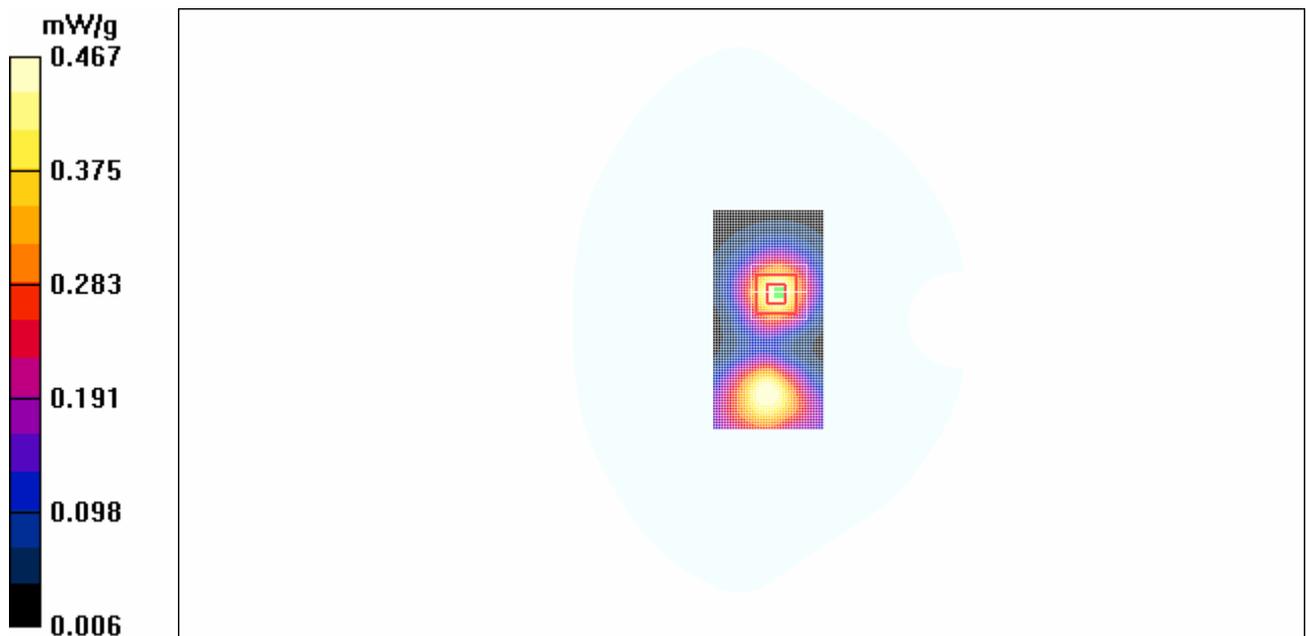


Figure 45 GSM 1900 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 1 Channel 661

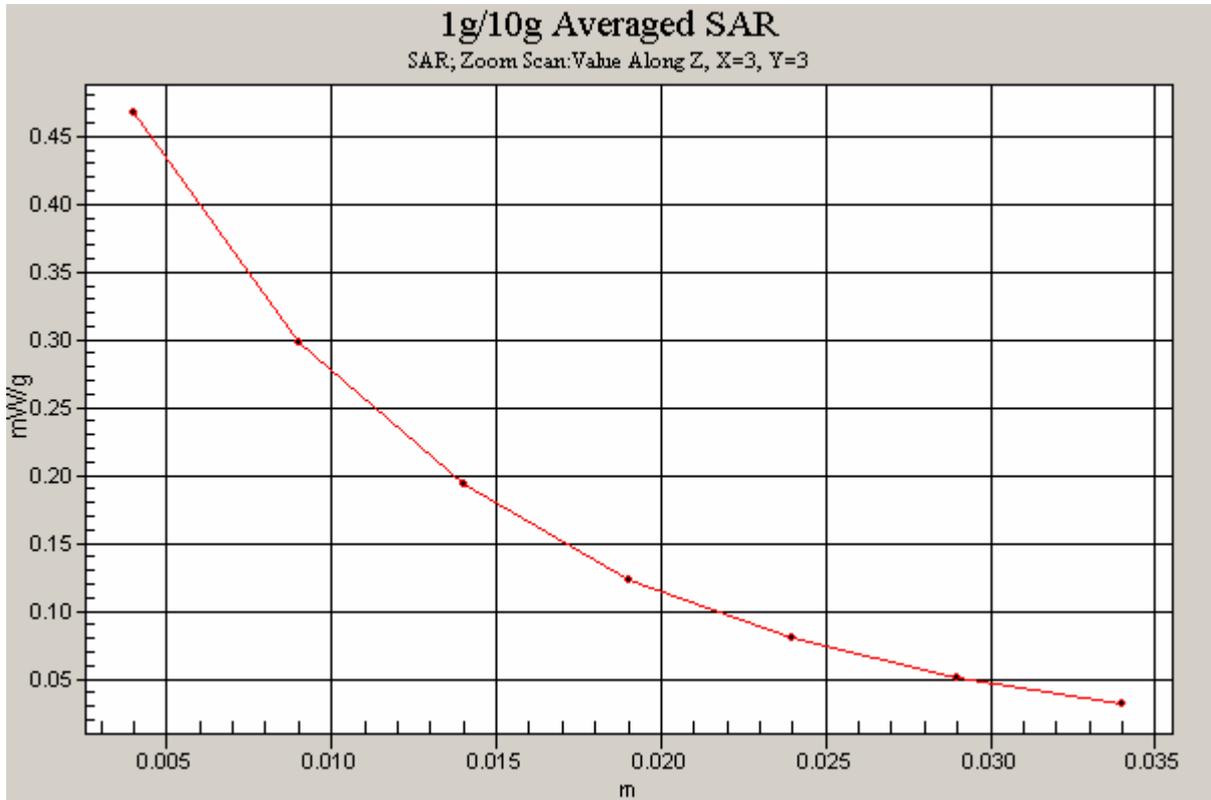


Figure 46 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 1 Channel 661]

GSM 1900 GPRS (1 timeslot in uplink) with Acer ZR1 Test Position 1 Middle Frequency

Communication System: GSM 1900+GPRS(1Up); Frequency: 1880 MHz; Duty Cycle: 1:8

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);

Electronics: DAE3 Sn452;

Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.388 mW/g

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

Reference Value = 12.8 V/m; Power Drift = 0.045 dB

Peak SAR (extrapolated) = 0.539 W/kg

SAR(1 g) = 0.342 mW/g; SAR(10 g) = 0.203 mW/g

Maximum value of SAR (measured) = 0.372 mW/g

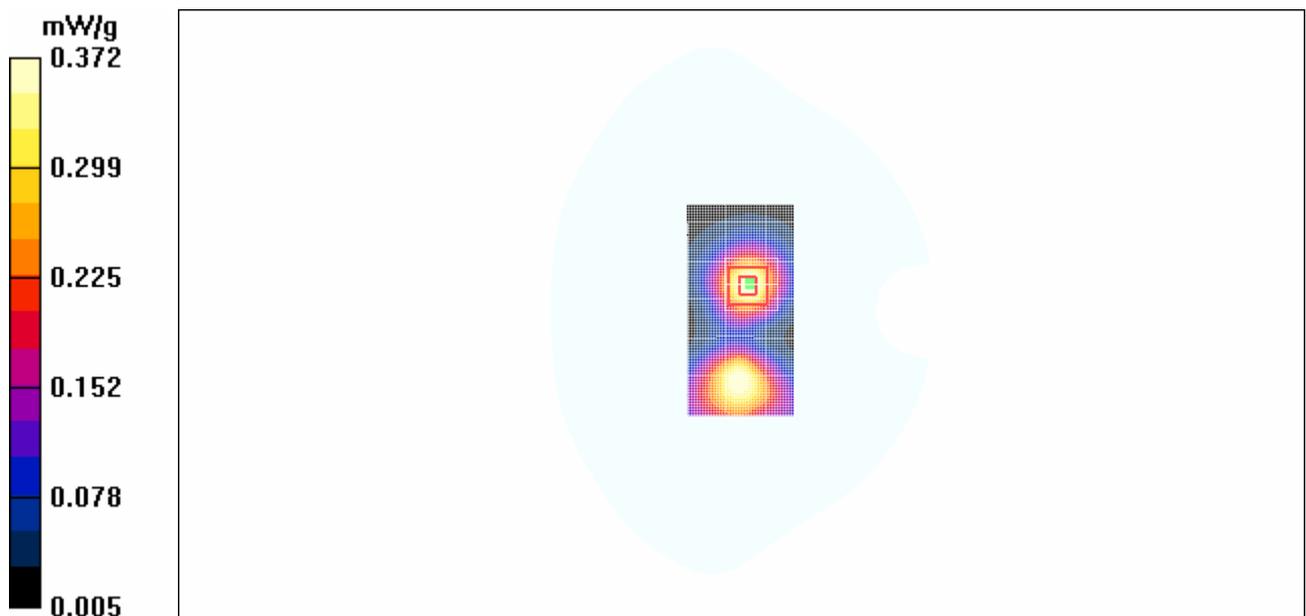


Figure 47 GSM 1900 GPRS (1 timeslot in uplink) with Acer ZR1 Test Position 1 Channel 661

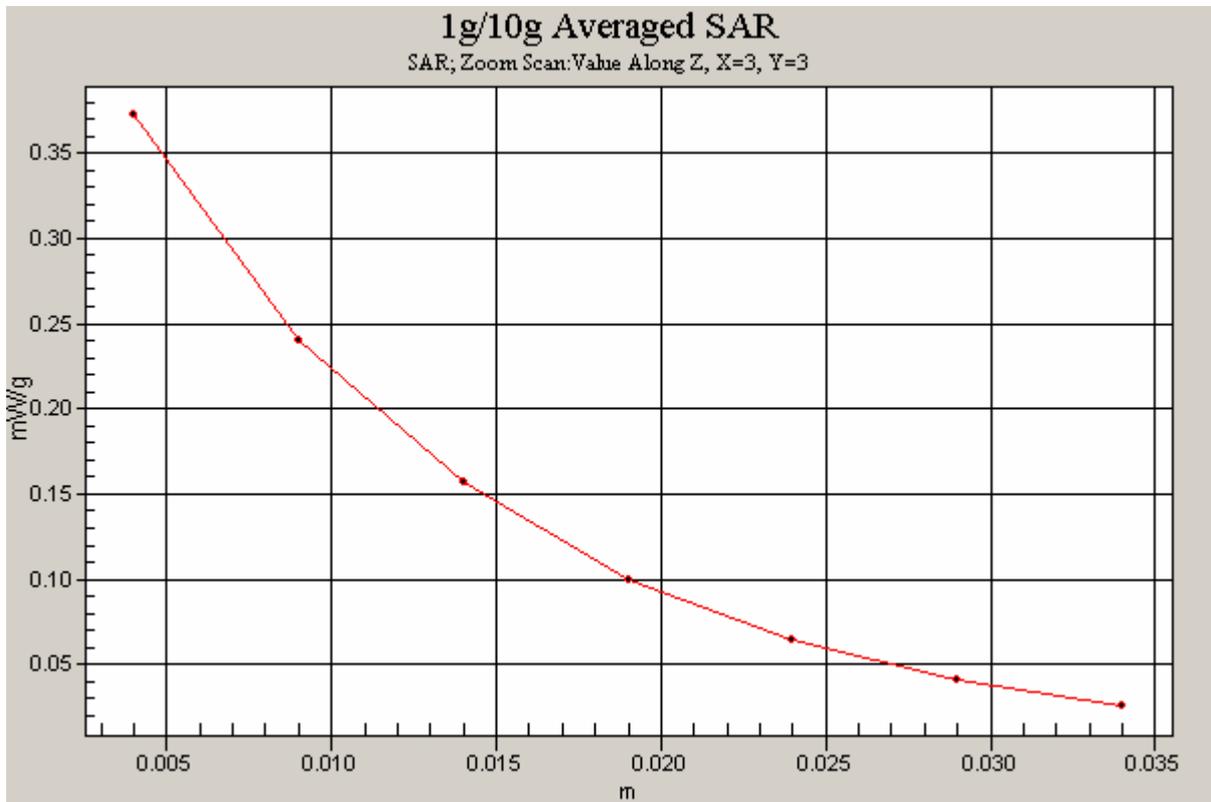


Figure 48 Z-Scan at power reference point [GSM 1900 GPRS (1 timeslot in uplink) with Acer ZR1 Test Position 1 Channel 661]

GSM 1900 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 2 Middle Frequency

Communication System: GSM 1900+GPRS(2Up); Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);

Electronics: DAE3 Sn452;

Test Position 2 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.346 mW/g

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

Reference Value = 14.4 V/m; Power Drift = -0.183 dB

Peak SAR (extrapolated) = 0.501 W/kg

SAR(1 g) = 0.299 mW/g; SAR(10 g) = 0.180 mW/g

Maximum value of SAR (measured) = 0.343 mW/g

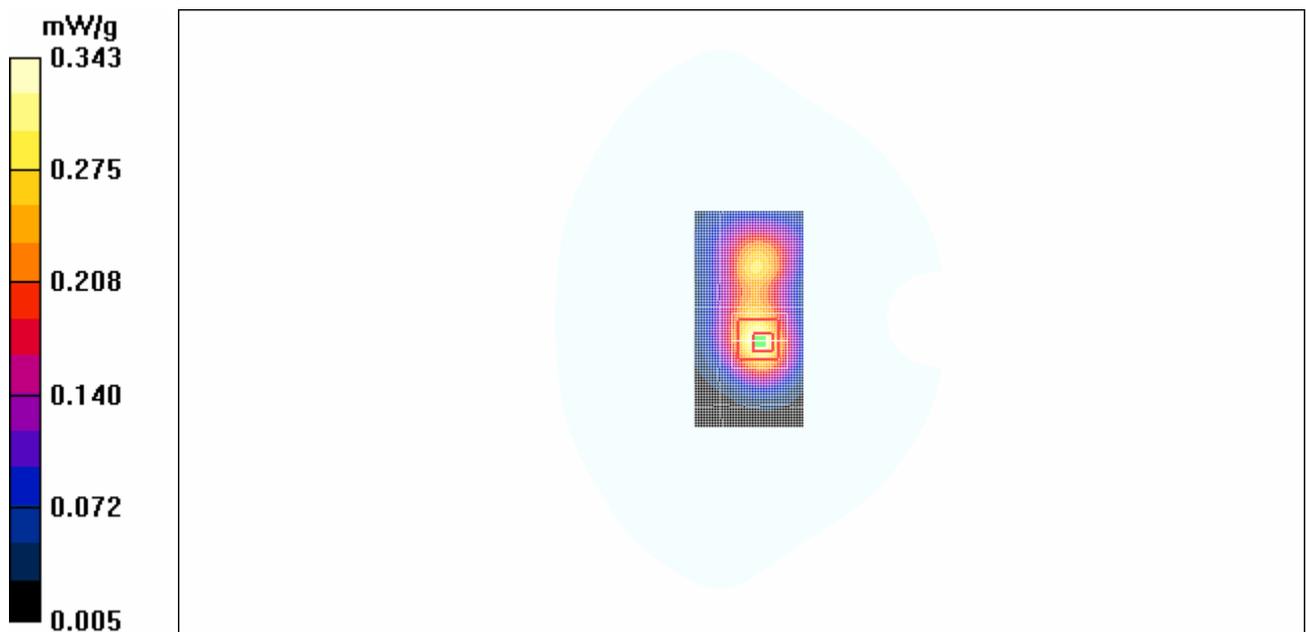


Figure 49 GSM 1900 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 2 Channel 661

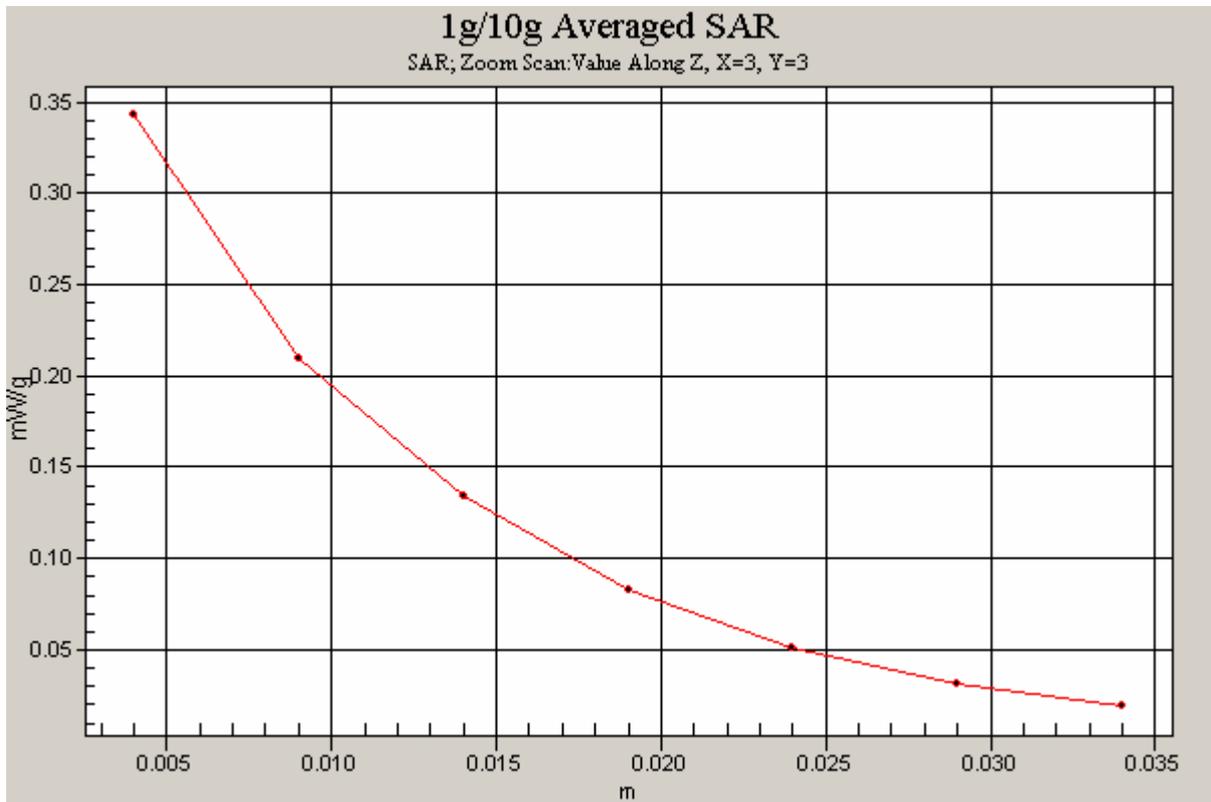


Figure 50 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 2 Channel 661]

GSM 1900 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 3 Middle Frequency

Communication System: GSM 1900+GPRS(2Up); Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);

Electronics: DAE3 Sn452;

Test Position 3 Middle/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.449 mW/g

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

Reference Value = 24.5 V/m; Power Drift = -0.018 dB

Peak SAR (extrapolated) = 2.09 W/kg

SAR(1 g) = 0.641 mW/g; SAR(10 g) = 0.267 mW/g

Maximum value of SAR (measured) = 0.722 mW/g

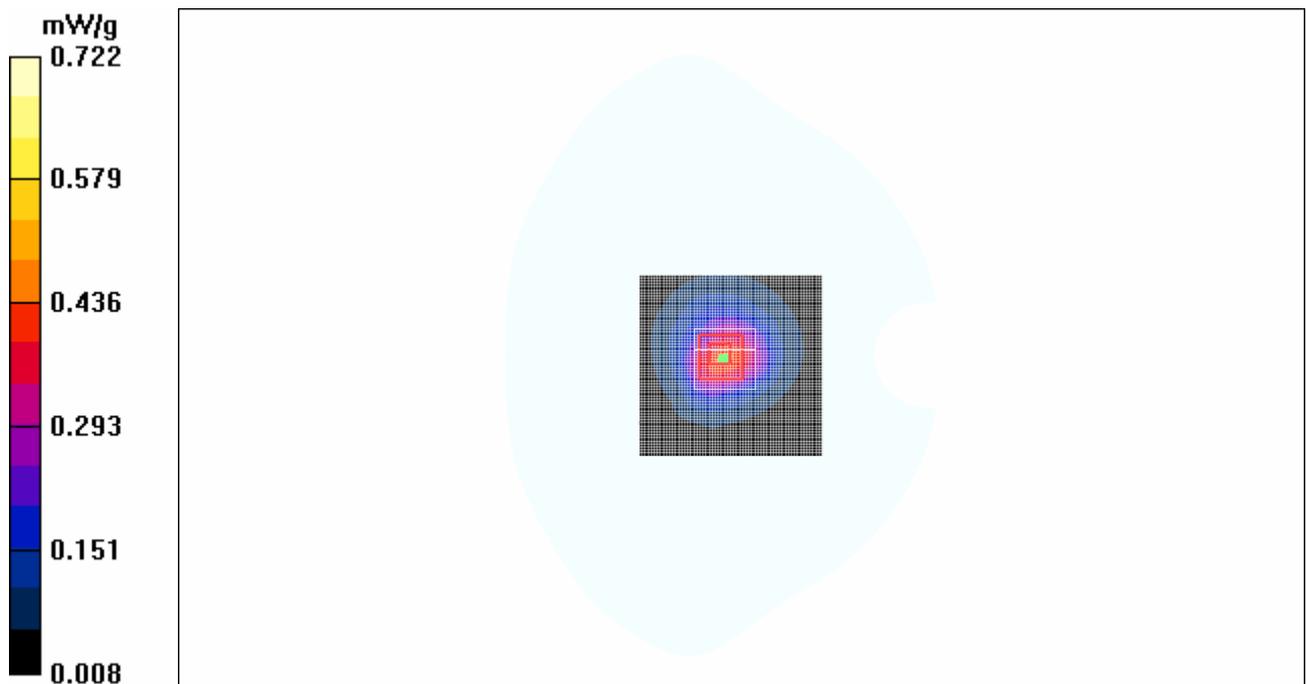


Figure 51 GSM 1900 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 3 Channel 661

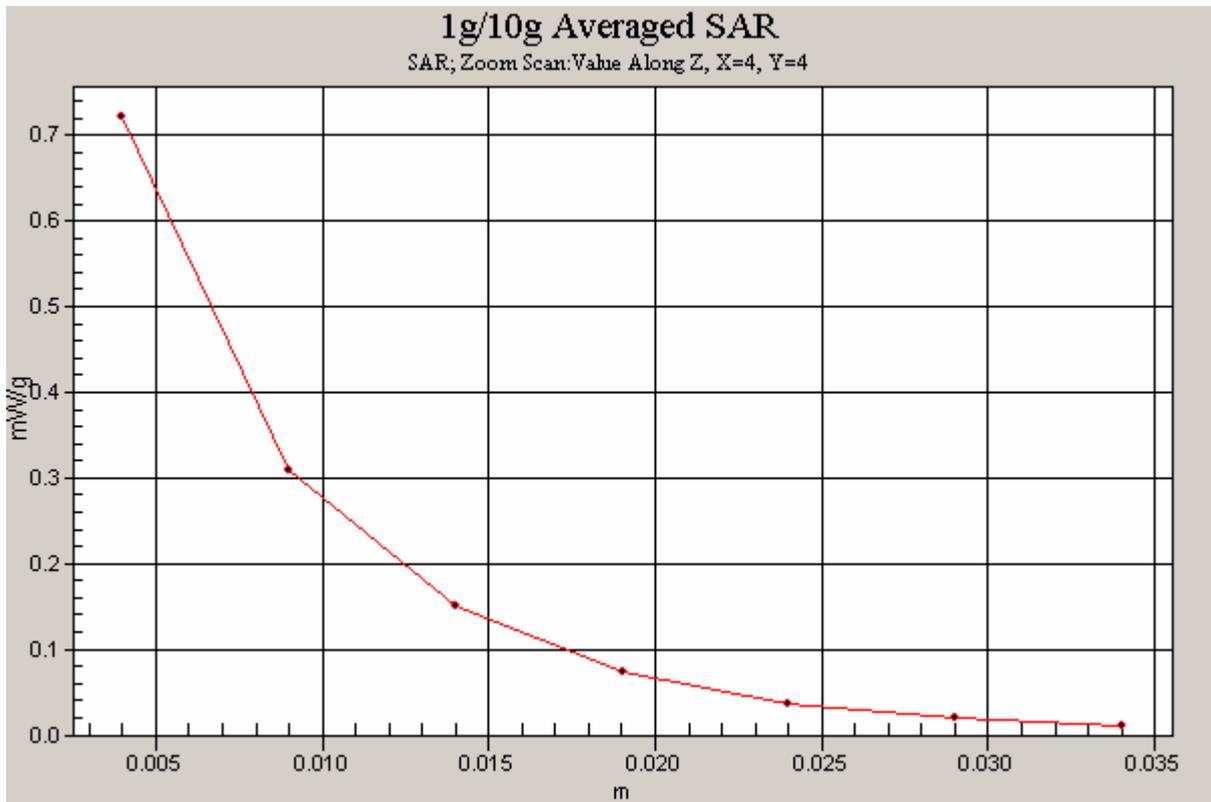


Figure 52 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with Acer ZR1 Test Position 3 Channel 661]

GSM 1900 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 4 Middle Frequency

Communication System: GSM 1900+GPRS(2Up); Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);

Electronics: DAE3 Sn452;

Test Position 4 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.352 mW/g

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

Reference Value = 10.3 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 0.491 W/kg

SAR(1 g) = 0.289 mW/g; SAR(10 g) = 0.155 mW/g

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

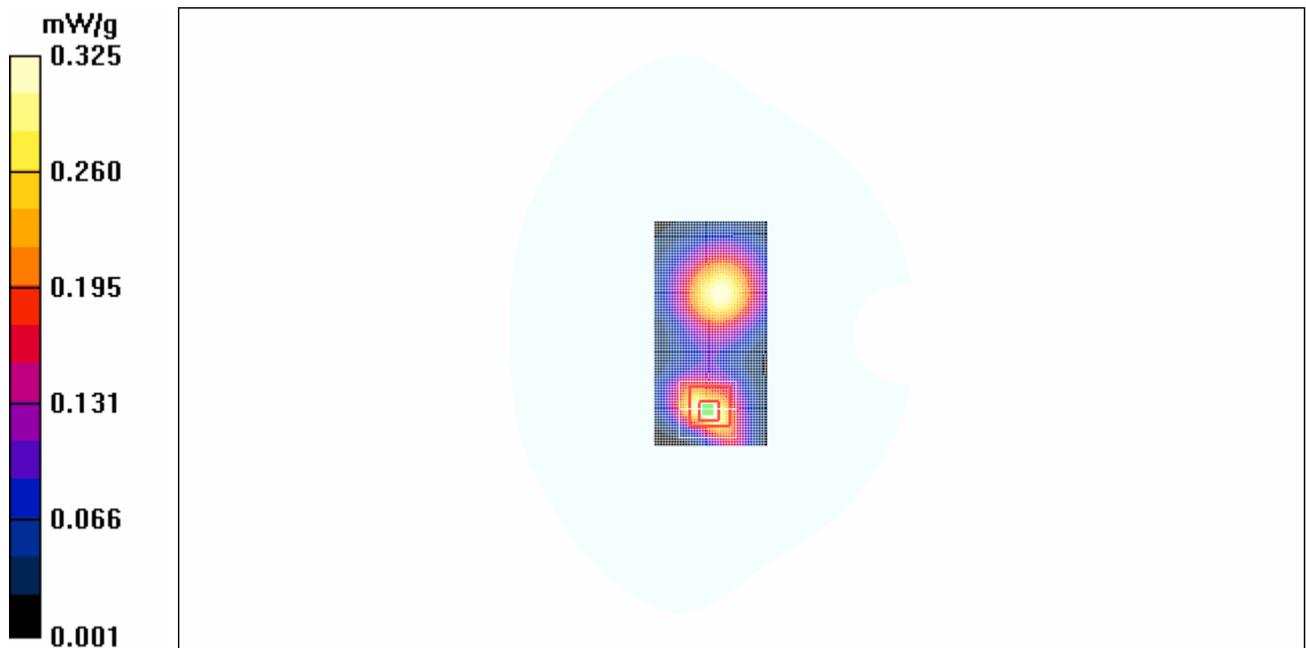


Figure 53 GSM 1900 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 4 Channel 661

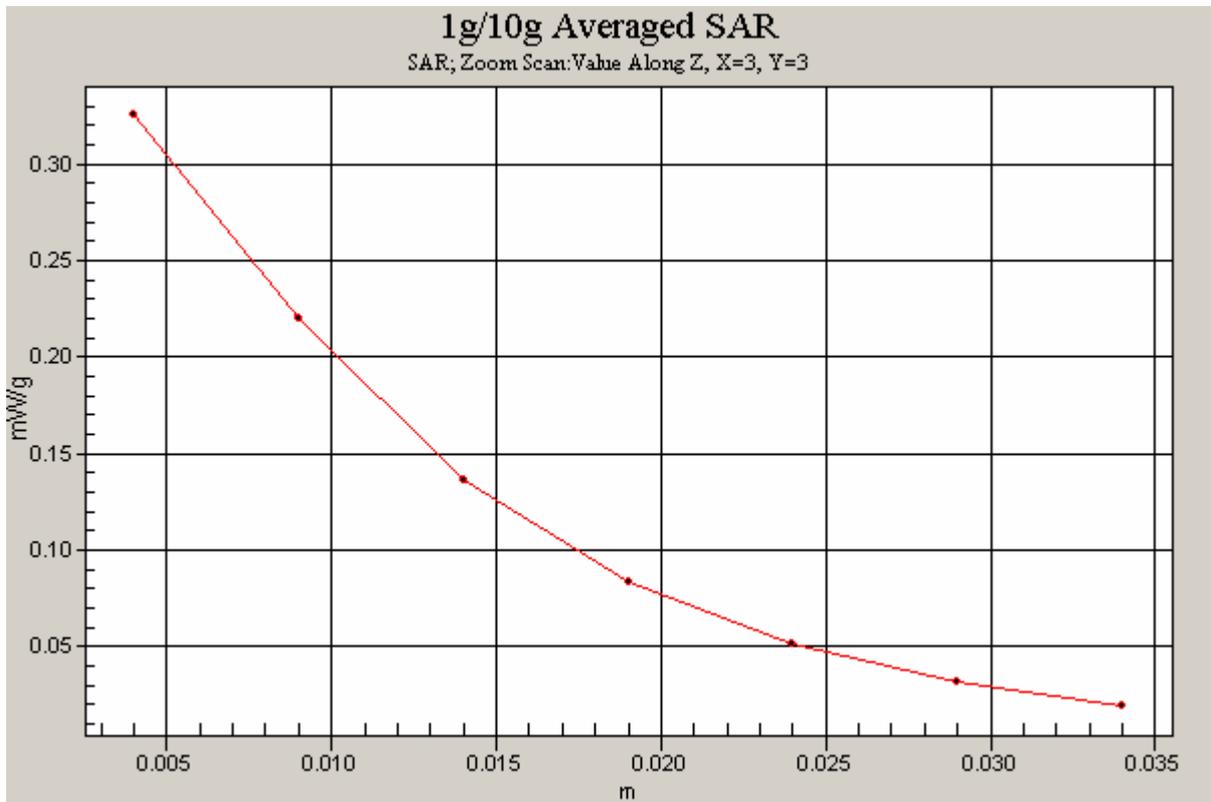


Figure 54 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 4 Channel 661]

GSM 1900 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 5 Middle Frequency

Communication System: GSM 1900+GPRS(2Up); Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);

Electronics: DAE3 Sn452;

Test Position 5 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 12.0 V/m; Power Drift = -0.090 dB

Peak SAR (extrapolated) = 0.287 W/kg

SAR(1 g) = 0.277 mW/g; SAR(10 g) = 0.251 mW/g

Maximum value of SAR (measured) = 0.287 mW/g

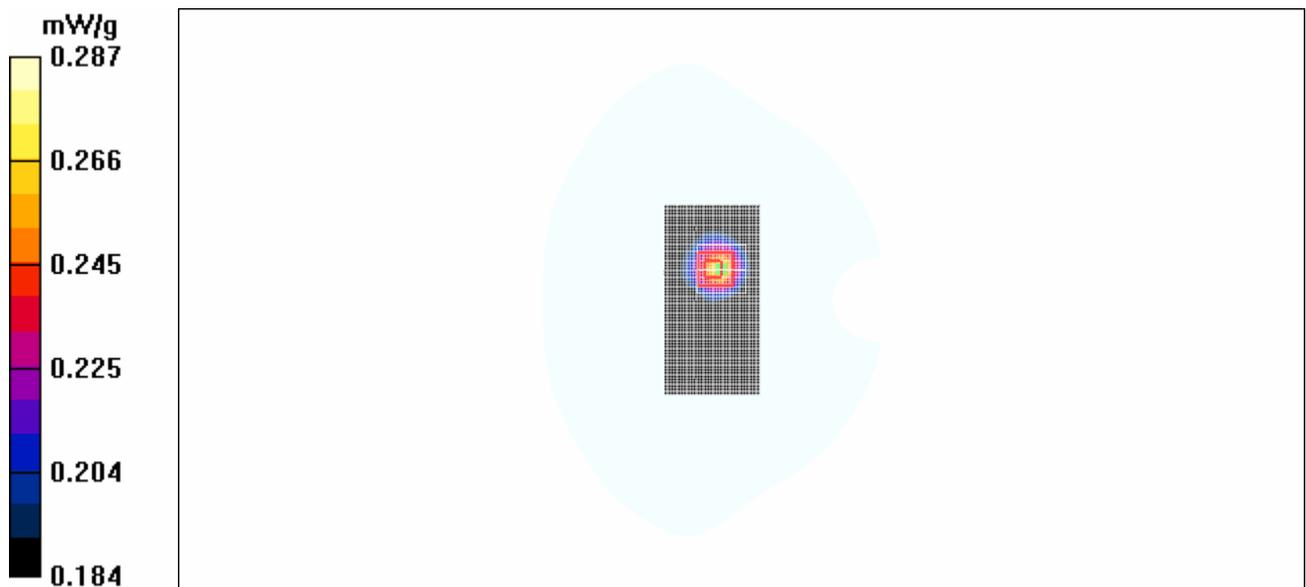


Figure 55 GSM 1900 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 5 Channel 661

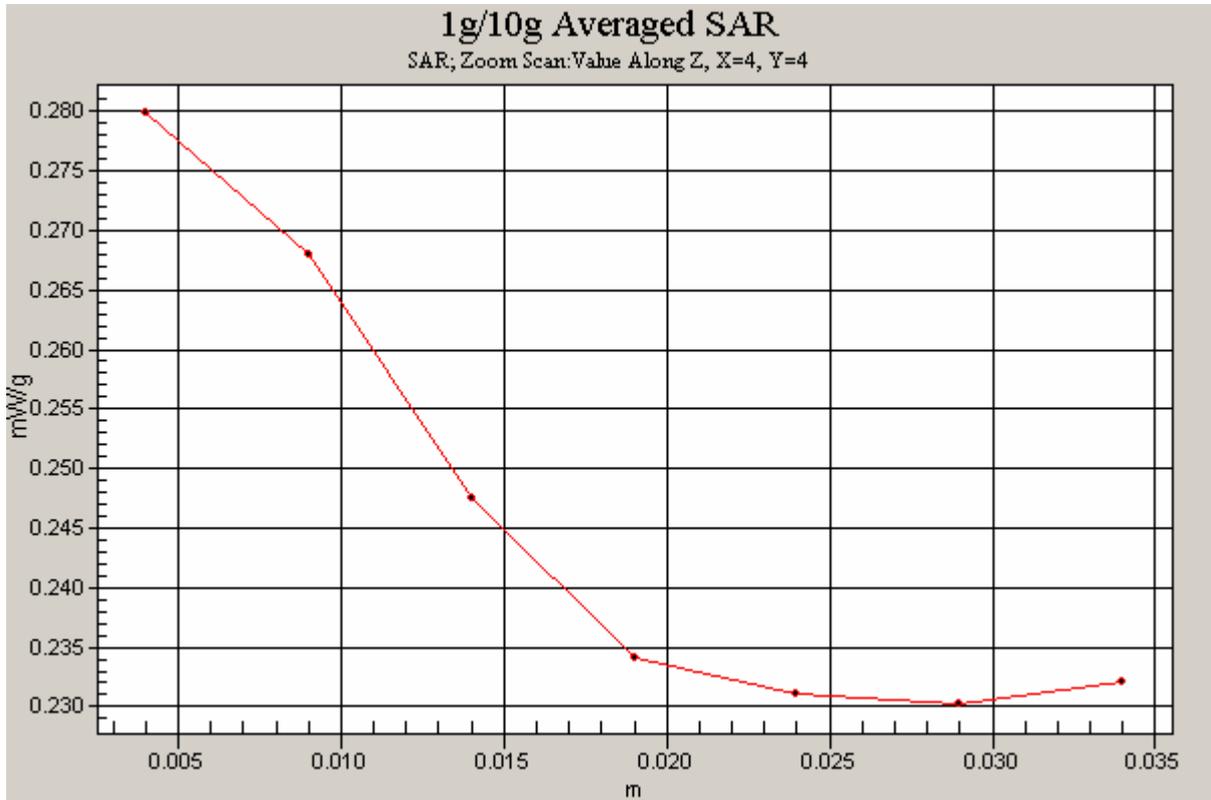


Figure 56 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 5 Channel 661]

GSM 1900 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 6 Middle Frequency

Communication System: GSM 1900+GPRS(2Up); Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);

Electronics: DAE3 Sn452;

Test Position 6 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.639 mW/g

Test Position 6 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 19.6 V/m; Power Drift = -0.189 dB

Peak SAR (extrapolated) = 0.787 W/kg

SAR(1 g) = 0.544 mW/g; SAR(10 g) = 0.380 mW/g

Maximum value of SAR (measured) = 0.598 mW/g

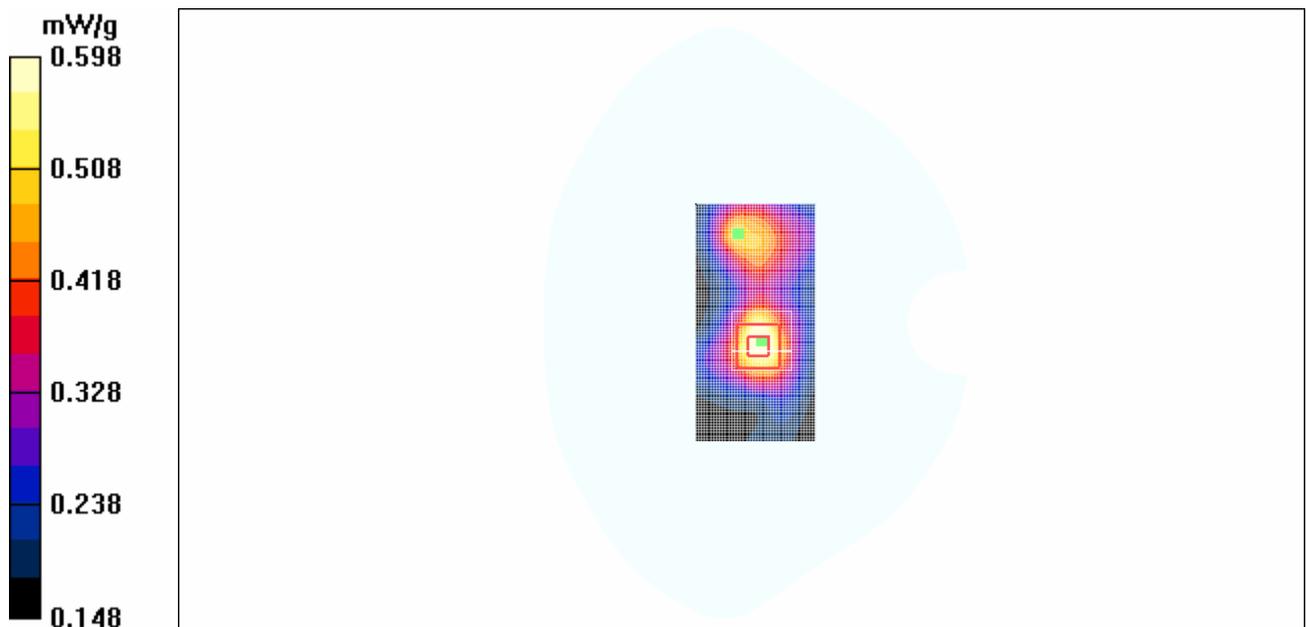


Figure 57 GSM 1900 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 6 Channel 661

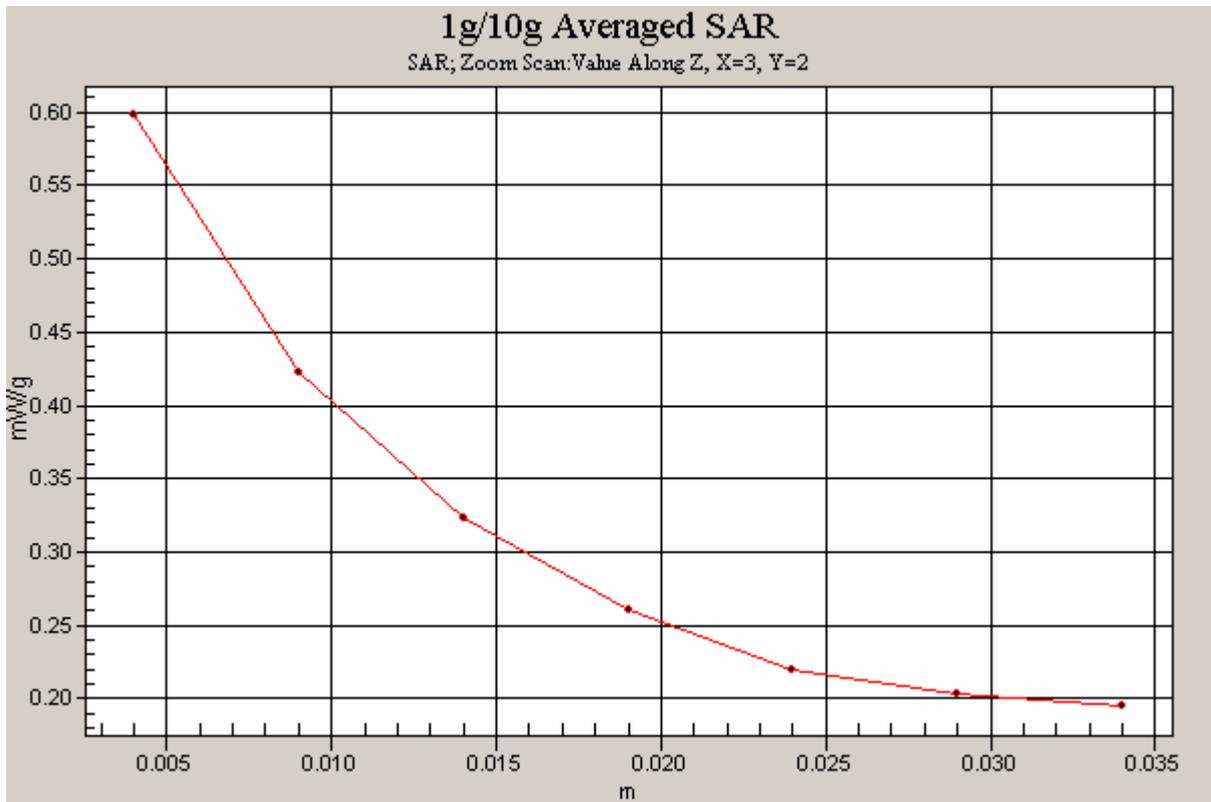


Figure 58 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 6 Channel 661]

GSM 1900 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 7 Middle Frequency

Communication System: GSM 1900+GPRS(2Up); Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);

Electronics: DAE3 Sn452;

Test Position 7 Middle/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.428 mW/g

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

Reference Value = 23.8 V/m; Power Drift = -0.147 dB

Peak SAR (extrapolated) = 1.96 W/kg

SAR(1 g) = 0.566 mW/g; SAR(10 g) = 0.265 mW/g

Maximum value of SAR (measured) = 0.667 mW/g

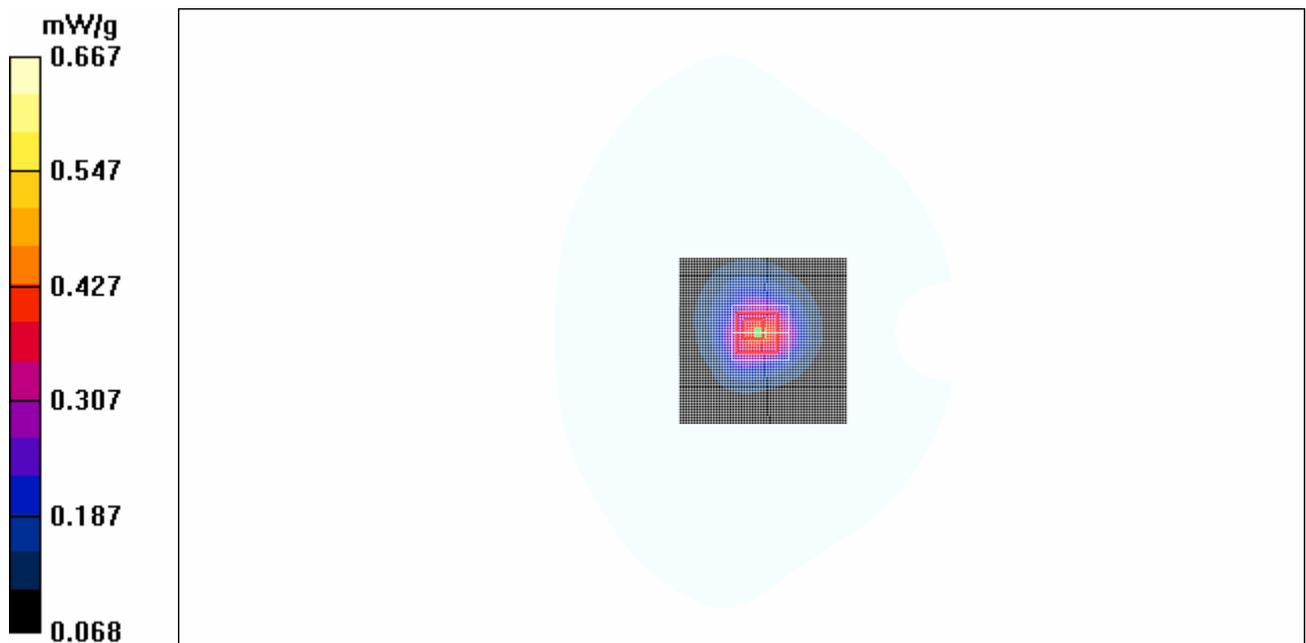


Figure 59 GSM 1900 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 7 Channel 661

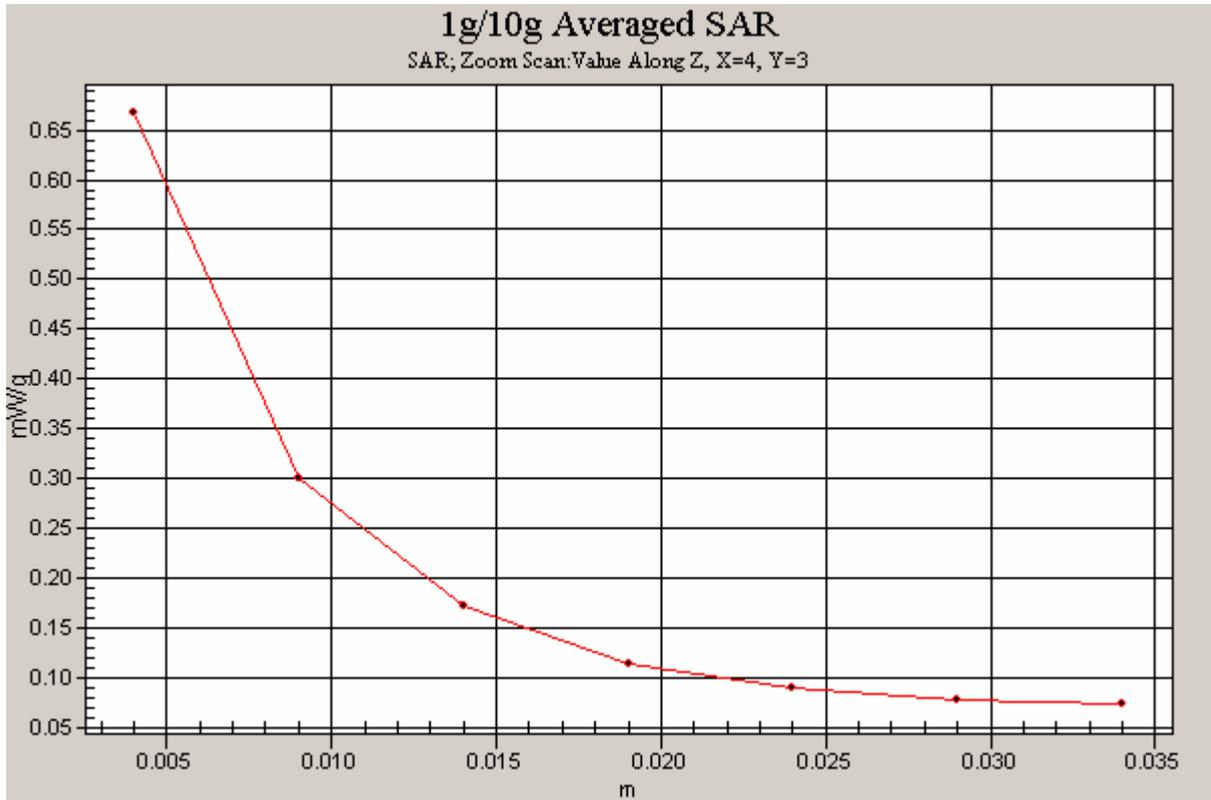


Figure 60 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with COMPAQ Presario 2500 Test Position 7 Channel 661]

GSM 1900 EGPRS (2 timeslots in uplink) with Acer ZR1 Test Position 3 Middle Frequency

Communication System: GSM 1900+EGPRS(2Up); Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);

Electronics: DAE3 Sn452;

Test Position 3 Middle/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 18.4 V/m; Power Drift = -0.146 dB

Peak SAR (extrapolated) = 1.12 W/kg

SAR(1 g) = 0.341 mW/g; SAR(10 g) = 0.140 mW/g

Maximum value of SAR (measured) = 0.384 mW/g

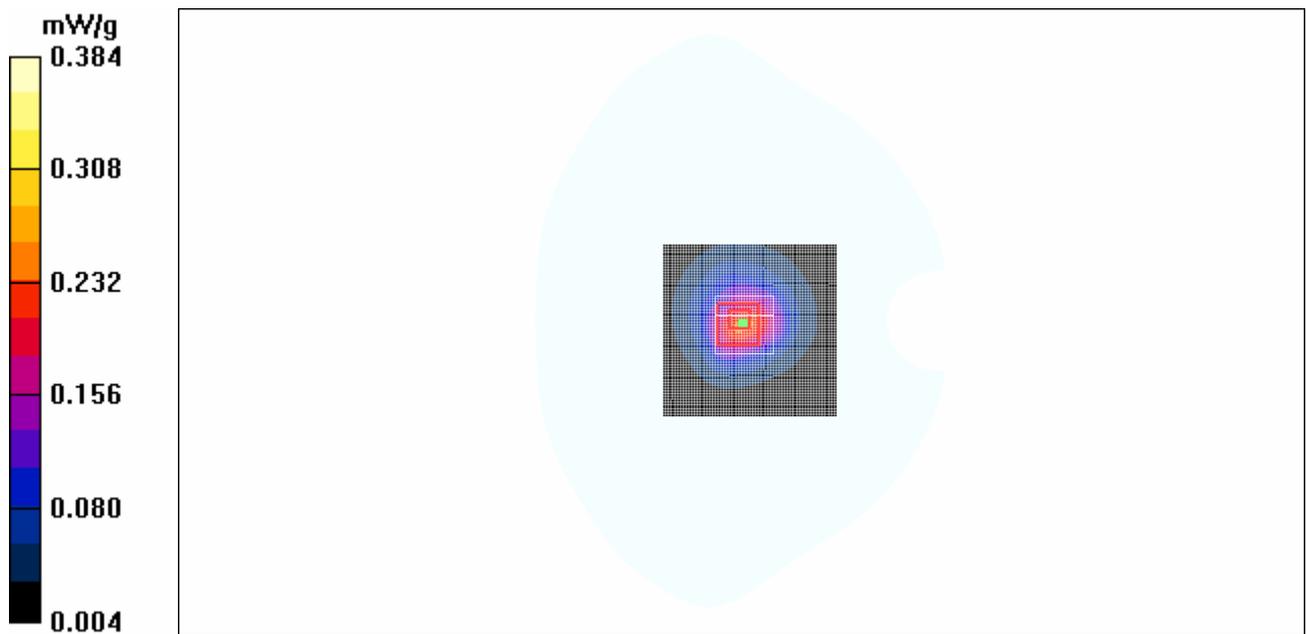


Figure 61 GSM 1900 EGPRS (2 timeslots in uplink) with Acer ZR1 Test Position 3 Channel 661

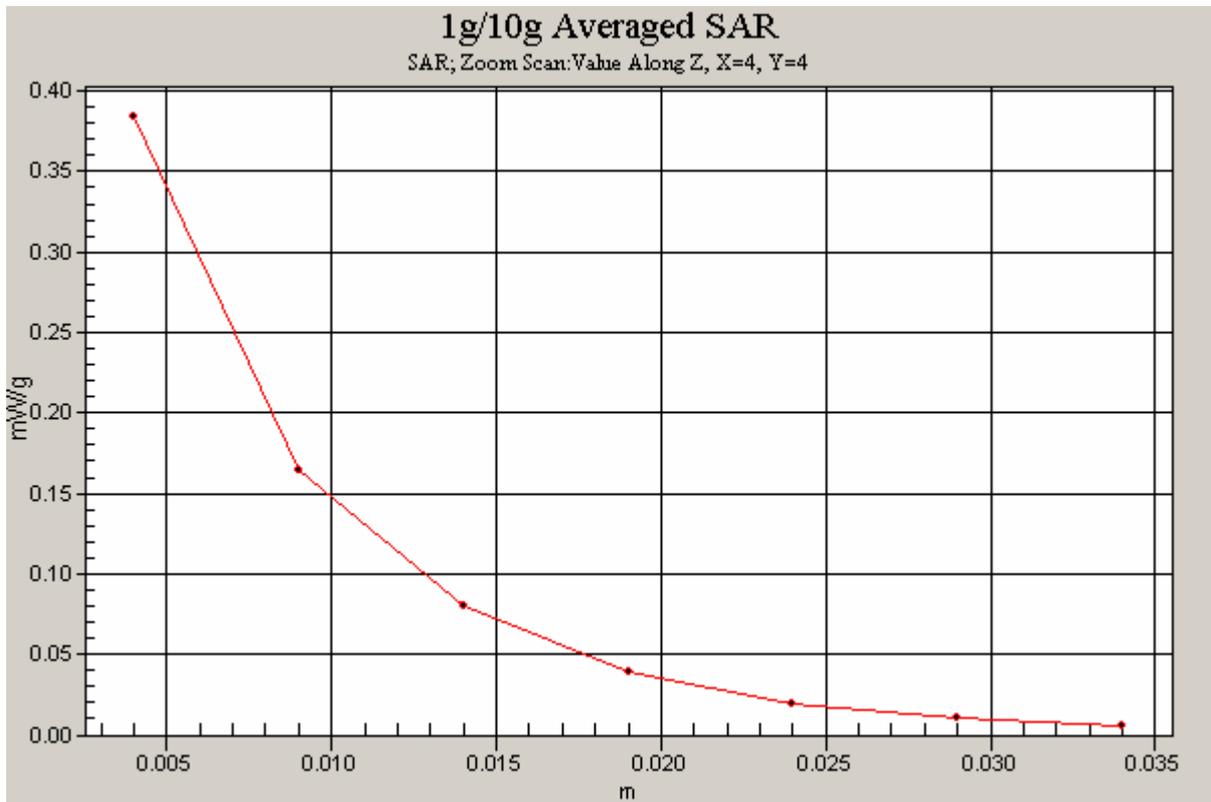


Figure 62 Z-Scan at power reference point [GSM 1900 EGPRS (2 timeslots in uplink) with Acer ZR1 Test Position 3 Channel 661]

WCDMA Band II with Acer ZR1 Test Position 1 High Frequency

Communication System: WCDMA Band II; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1908$ MHz; $\sigma = 1.55$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE3 Sn452;

Test Position 1 High/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.963 mW/g

Test Position 1 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.4 V/m; Power Drift = -0.149 dB
Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.787 mW/g; SAR(10 g) = 0.463 mW/g
Maximum value of SAR (measured) = 0.854 mW/g

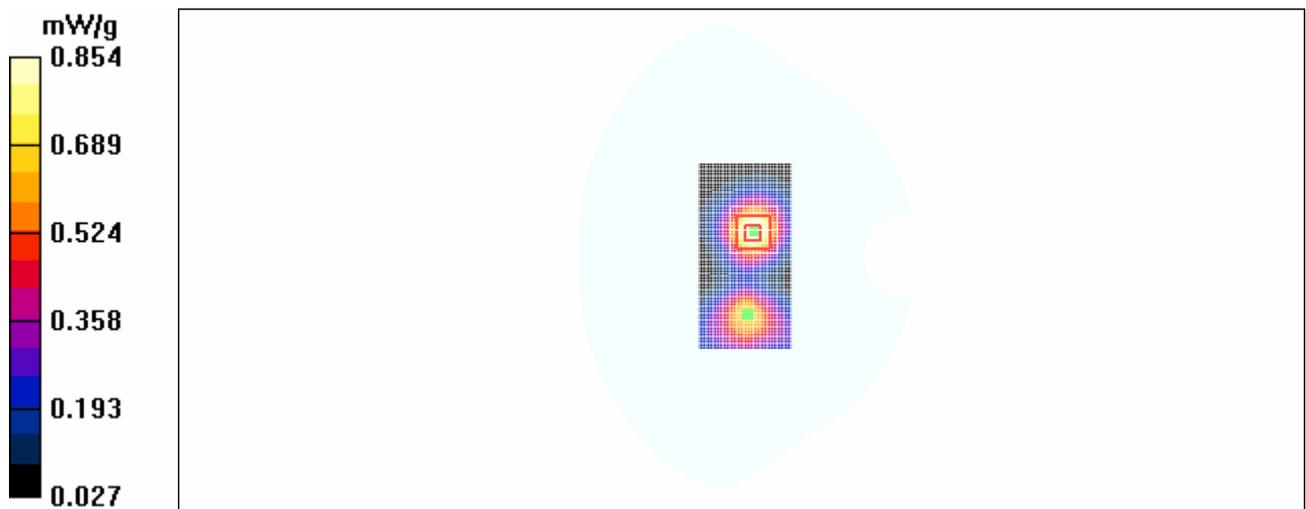


Figure 63 WCDMA Band II with Acer ZR1 Test Position 1 Channel 9538

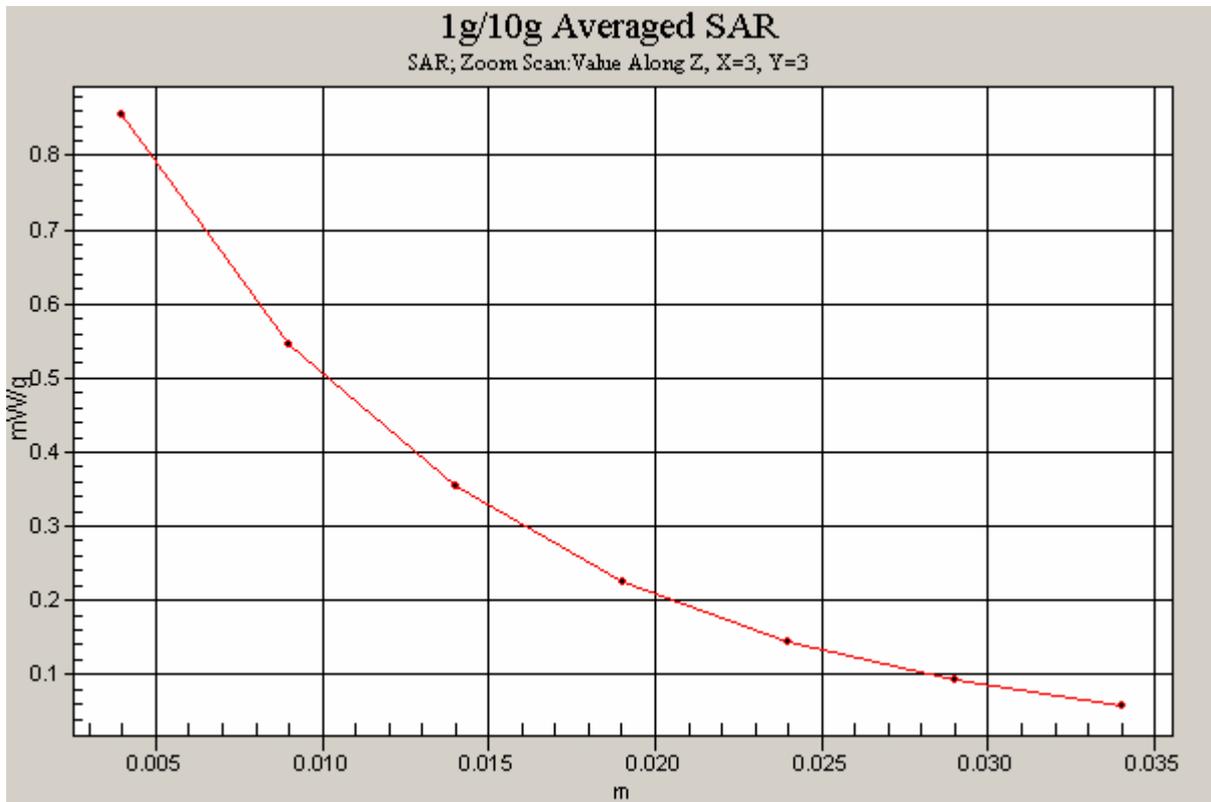


Figure 64 Z-Scan at power reference point (WCDMA Band II with Acer ZR1 Test Position 1 Channel 9538)

WCDMA Band II with Acer ZR1 Test Position 1 Middle Frequency

Communication System: WCDMA Band II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);

Electronics: DAE3 Sn452;

Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.02 mW/g

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

Reference Value = 19.5 V/m; Power Drift = 0.180 dB

Peak SAR (extrapolated) = 1.41 W/kg

SAR(1 g) = 0.904 mW/g; SAR(10 g) = 0.535 mW/g

Maximum value of SAR (measured) = 0.985 mW/g

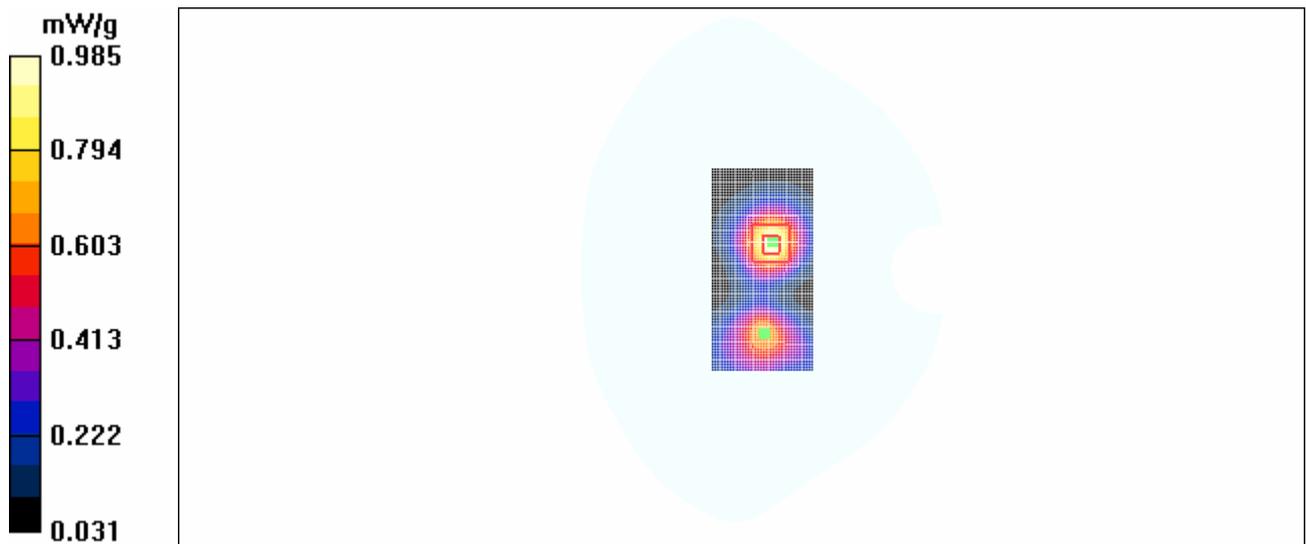


Figure 65 WCDMA Band II with Acer ZR1 Test Position 1 Channel 9400

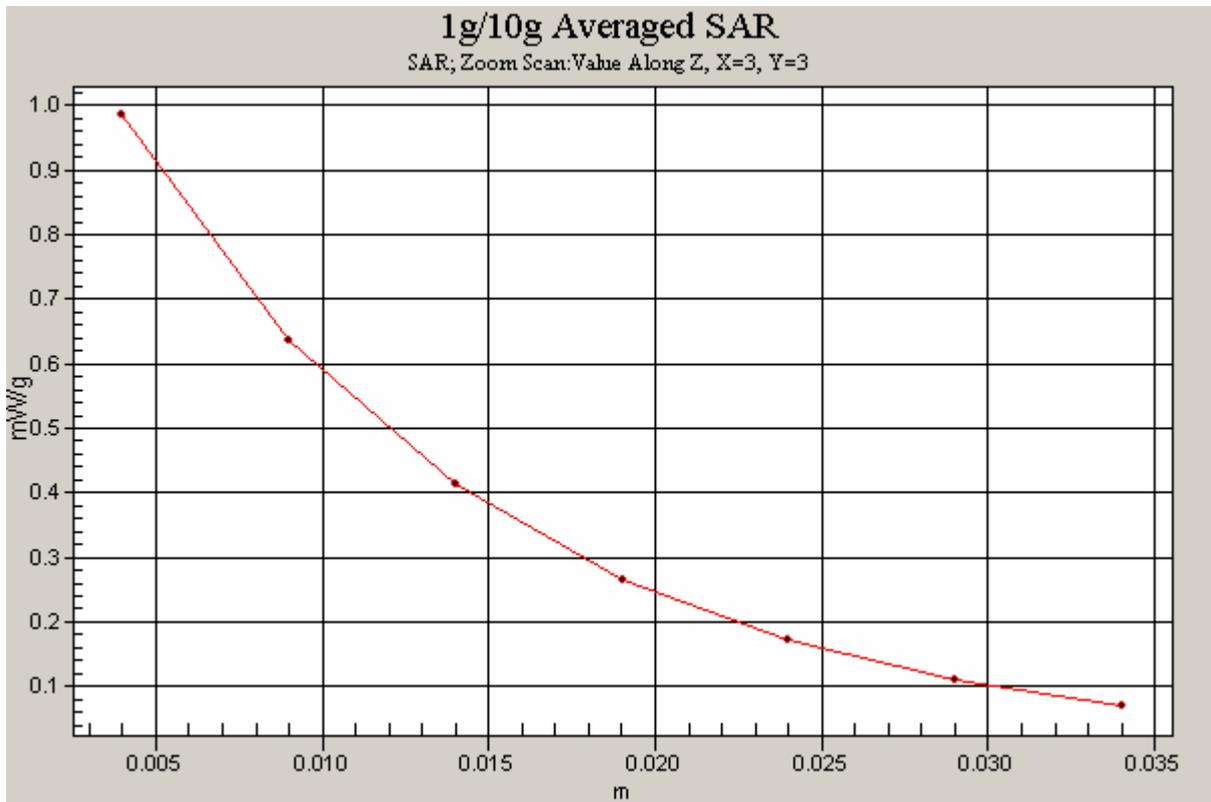


Figure 66 Z-Scan at power reference point (WCDMA Band II with Acer ZR1 Test Position 1 Channel 9400)

WCDMA Band II with Acer ZR1 Test Position 1 Low Frequency

Communication System: WCDMA Band II; Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.49$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);

Electronics: DAE3 Sn452;

Test Position 1 Low/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.928 mW/g

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

Reference Value = 18.5 V/m; Power Drift = -0.024 dB

Peak SAR (extrapolated) = 1.22 W/kg

SAR(1 g) = 0.786 mW/g; SAR(10 g) = 0.466 mW/g

Maximum value of SAR (measured) = 0.861 mW/g

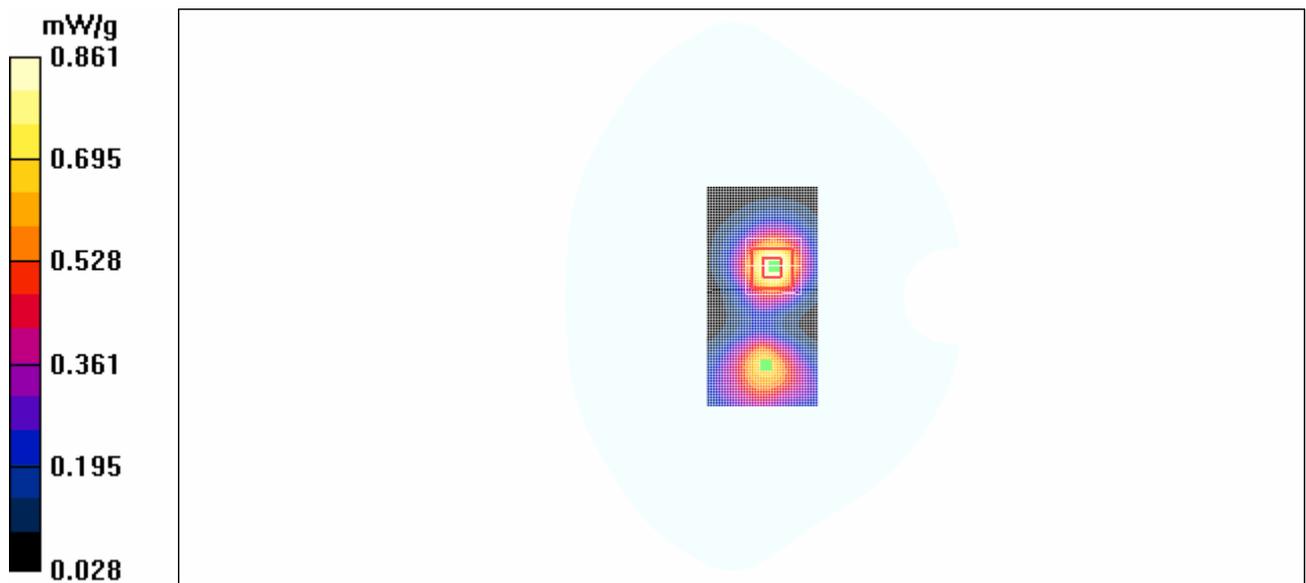


Figure 67 WCDMA Band II with Acer ZR1 Test Position 1 Channel 9262

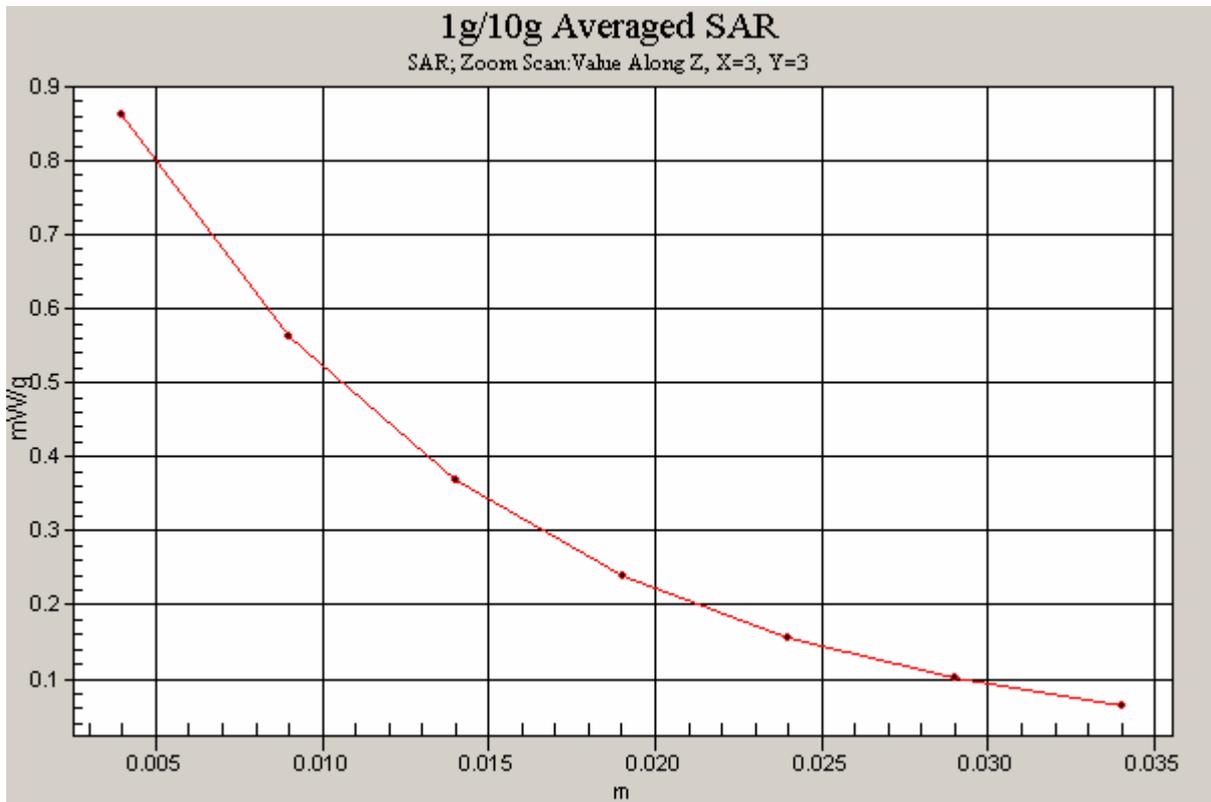


Figure 68 Z-Scan at power reference point (WCDMA Band II with Acer ZR1 Test Position 1 Channel 9262)

WCDMA Band II with Acer ZH1 Test Position 1 High Frequency

Communication System: WCDMA Band II; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1908$ MHz; $\sigma = 1.55$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE3 Sn452;

Test Position 1 High/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.864 mW/g

Test Position 1 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.1 V/m; Power Drift = -0.047 dB
Peak SAR (extrapolated) = 1.21 W/kg
SAR(1 g) = 0.783 mW/g; SAR(10 g) = 0.480 mW/g
Maximum value of SAR (measured) = 0.854 mW/g

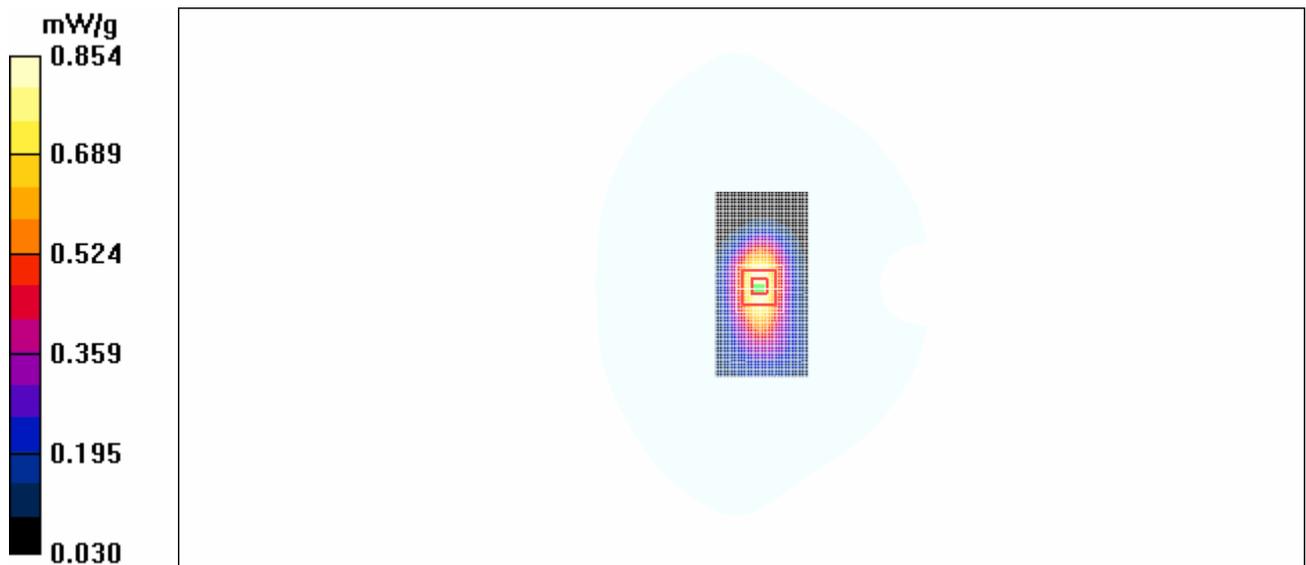


Figure 69 WCDMA Band II with Acer ZH1 Test Position 1 Channel 9538

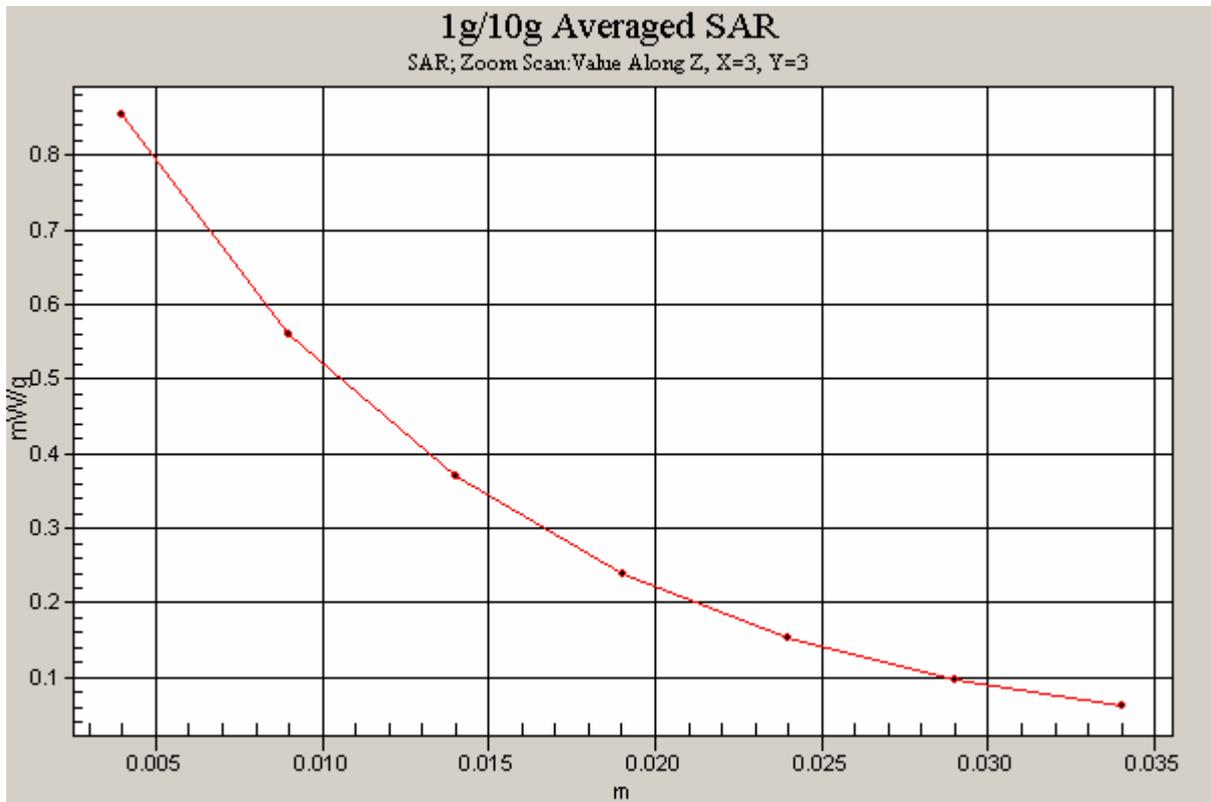


Figure 70 Z-Scan at power reference point (WCDMA Band II with Acer ZH1 Test Position 1 Channel 9538)

WCDMA Band II with Acer ZH1 Test Position 1 Middle Frequency

Communication System: WCDMA Band II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);

Electronics: DAE3 Sn452;

Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.915 mW/g

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

Reference Value = 25.5 V/m; Power Drift = 0.157 dB

Peak SAR (extrapolated) = 1.31 W/kg

SAR(1 g) = 0.856 mW/g; SAR(10 g) = 0.534 mW/g

Maximum value of SAR (measured) = 0.936 mW/g

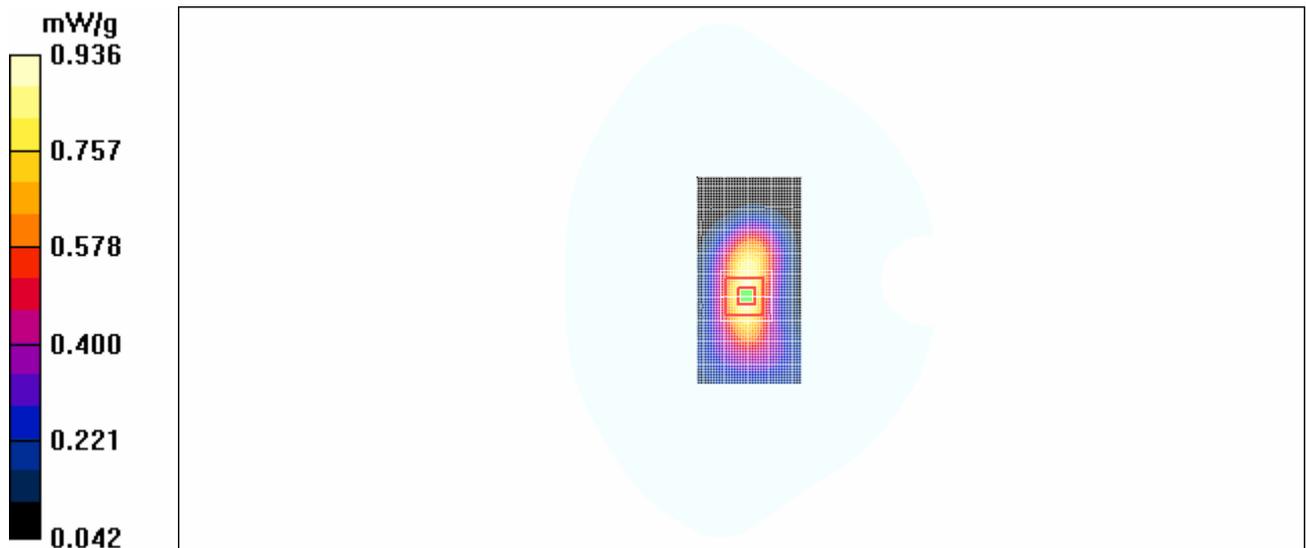


Figure 71 WCDMA Band II with Acer ZH1 Test Position 1 Channel 9400