NO.: RZA2008-0074FCC

OET 65

TEST REPORT

Test name	Electromagnetic Field (Specific Absorption Rate)
Product	HSDPA USB STICK
Model	E169,E169G
FCC ID	QISE169
Client	HUAWEI Technologies Co., Ltd.

TA Technology (Shanghai) Co., Ltd.

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GENERAL SUMMARY

Product	HSDPA USB STICK	**Model**	E169,E169G
Client	HUAWEI Technologies Co., Ltd.	**Type of test**	Entrusted
Manufacturer	HUAWEI Technologies Co., Ltd.	**Arrival Date of sample**	Jan.21st, 2008
Place of sampling	(Blank)	**Carrier of the samples**	Ting Zhang
Quantity of the samples	One	**Date of product**	(Blank)
Base of the samples	(Blank)	**Items of test**	SAR
Series number	D42AB108111800063 (E169), D62AA10812300012 (E169G)		
Standard(s)	**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 **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.		
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 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. General Judgment: **Pass** (Stamp) **Date of issue: Feb.2nd ,2008**		
Comment	TX Freq. Band: GSM850 GSM1900 Max. Power: 2Watt 1Watt The test result only responds to the measured sample.		

Approved by (Zhengchenguang) **Revised by** (Yangweizhong) **Performed by** (Lingminbao)

TABLE OF CONTENT

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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2. GENERAL CONDITIONS

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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	E169	D42AB108111800063	HUAWEI Technologies Co., Ltd.
HSDPA USB STICK	E169G	D62AA10812300012	HUAWEI Technologies Co., Ltd.

E169G is the USB stick which change some component from E169.
The PCB and antenna are the same. The differences between E169 and E169G are:
1. E169 support WCDMA band 8. E169G do not support and clear the WCDMA 900M component on the PCB.
2. E169 supports TF card and external antenna. E169G do not supports the external interface and the TF interface.
There are 3 kind of external color for both of them. They are silver, white and black.

Note:
The EUT appearances see ANNEX H.

3.3. General Description

Equipment Under Test (EUT) is a HSDPA USB STICK with internal antenna. SAR is tested for the EUT respectively for GSM 850 and GSM1900.The EUT have GPRS (class 12) and EGPRS (class 12) function.

Since the EUT only has the data transfer function, but does not have the voice transfer function, the tests in the band of GSM 850 and GSM 1900 are performed in the mode of GPRS and EGPRS. The measurements were performed in combination with three different host products [BenQ Joy book S72, Acer ZH1and BenQ Joybook R55V (118)]. BenQ Joy book S72 and Acer ZH1 laptop have horizontal USB slots, BenQ Joybook R55V (118) 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. Schematic Test Configuration

For the SAR body tests for GSM 850 and GSM1900, a communication link is set up with a SystemSimulator (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 voice transfer function. The tests in the band of GSM 850 and GSM1900 are performed in the mode of GPRS and EGPRS. 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 GSM850 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 GSM850 GPRS and GSM1900 GPRS.

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 190 and 661 respectively in the case of GSM 850 and GSM 1900 then to low and high if necessary.

4.2. Position of module in Portable devices

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 is 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 is 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 is 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 front side of the EUT is 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 is 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 is 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 is 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.

4.3. Picture of host product

During the test, The BENQ Joy book S72 laptop, BenQ R55V(118) laptop and Acer ZH1 laptop are used as an assistant to help to setup communication. (See Picture 1)

Picture 1-a: BenQ Joy book S72 Close

Picture 1-b: BenQ Joy book S72 Open

Picture 1-c: Acer ZH1 Close

Picture 1-d: Acer ZH1 Open

Picture 1-e: BenQ R55V Close

Picture 1-f: BenQ R55V Open

Picture 1-g: BenQ Joybook S72 with horizontal USB slot

Picture 1-h: Acer ZH1 with horizontal USB slot

Picture 1-i: BenQ Joybook R55V(118) 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 ± 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, 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.

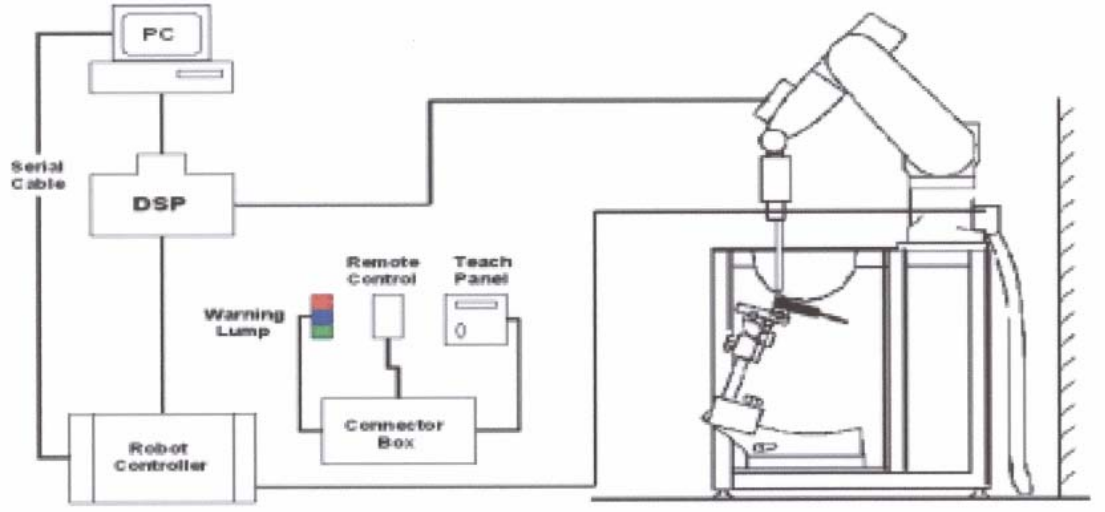


Figure 1.SAR Lab Test Measurement Set-up

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 ± 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, 1.8GHz, 2.0GHz and 2.4GHz (accuracy±8%) Calibration for other liquids and frequencies upon request
Frequency	I 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 around 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 diarneter: 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

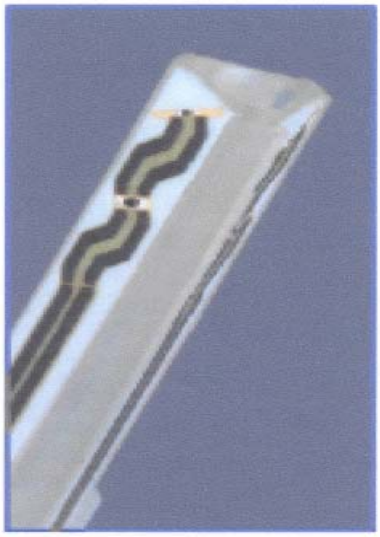


Figure 2.ET3DV6 E-field Probe

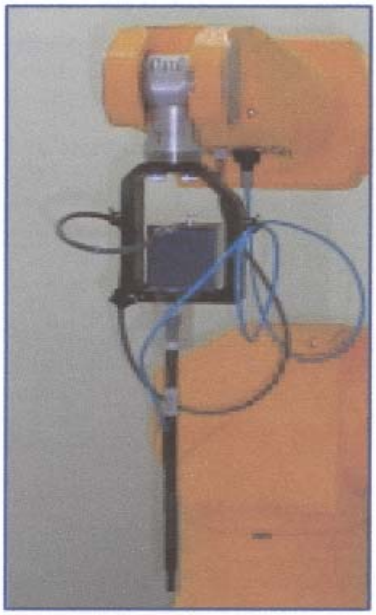


Figure3. ET3DV6 E-field probe

5.3. 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.

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

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

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

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 l000 x 500 mm (H x L x W)
Aailable	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, Preventol, 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 835MHz
Water	52.5
Sugar	45
Salt	1.4
Preventol	0.1
Cellulose	1.0
Dielectric Parameters Target Value	f=835MHz ε=55.2 σ=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 ε=53.3 σ=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 with in 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 with in 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.

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 62209-1: 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. = 20°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

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 with in 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 19 labeled as: (Power Drift [dB]). This ensures that the power drift during one measurement is with in 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 both before and after SAR tests for each test band.

8.3.2. Measurement result

Table 7: Conducted Power Measurement Results

GSM 850+GPRS	**Conducted Power**		
	Channel 128 (824.2MHz)	Channel 190 (836.6MHz)	Channel 251 (848.8MHz)
Before Test (dBm)	26.68	26.66	26.47
After Test (dBm)	26.69	26.64	26.43
GSM 1900+GPRS	**Conducted Power**		
	Channel 512 (1850.2MHz)	Channel 661 (1880MHz)	Channel 810 (1909.8MHz)
Before Test (dBm)	22.81	22.92	22.53
After Test (dBm)	22.77	22.89	22.56

9. TEST RESULTS

9.1. Dielectric Performance

Table 8: Dielectric Performance of Body Tissue Simulating Liquid

Measurement is made at temperature 22.5 ℃ and relative humidity 51%. Liquid temperature during the test: 22.3℃					
Frequency (MHz)		**Target value**	**Measurement value**	**Difference percentage**	
850 (Body)	Permittivity ε_r	55.20	55.42	0.40	%
	Conductivity σ	0.97	0.99	2.06	%
1900 (Body)	Permittivity ε_r	53.30	52.87	1.07	%
	Conductivity σ	1.52	1.53	0.66	%

9.2. System Validation

Table 9: System Validation

Measurement is made at temperature 23.2 ℃, relative humidity 50%, and input power 250 mW. Liquid temperature during the test: 22.3℃							
Liquid parameters	**Frequency**	**Permittivity ε**		**Conductivity σ (S/m)**			
	835MHz	42.8		0.89			
	1900MHz	39.4		1.42			
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**	**1g Average**
	835MHz	1.60	2.48	1.53	2.34	4.38%	5.65%
	1900MHz	5.09	9.73	5.12	9.69	0.59%	0.41%

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

Table 10: SAR Values [GSM 850 GPRS (4 timeslots in uplink) at Test Position 1]

Liquid Temperature: 22.4℃				
Limit of SAR (W/kg)		**1g Average**	**Power Drift (dB)**	**Graph Results**
		1.6	**± 0.2**	
Test Case Of Body		**Measurement Result (W/kg)**	**Power Drift (dB)**	
Different Model Computer	**Channel**	**1g Average**		
BenQ Joy book S72	Middle	0.354	-0.117	Figure 7
Acer ZH1	Middle	0.292	0.112	Figure 9

Table 11: SAR Values (GSM 850 GPRS at Test Position 1 with BenQ Joy book S72)

Liquid Temperature: 22.4℃				
Limit of SAR (W/kg)		**1g Average**	**Power Drift (dB)**	**Graph Results**
		1.6	**± 0.2**	
Test Case Of Body		**Measurement Result (W/kg)**	**Power Drift (dB)**	
Different Timeslots	**Channel**	**1g Average**		
1 timeslot in uplink	Middle	0.516	0.190	Figure 11
2 timeslots in uplink	Middle	0.534	0.086	Figure 13
3 timeslots in uplink	Middle	0.445	0.072	Figure 15
4 timeslots in uplink	Middle	0.354	-0.117	Figure 7

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

Table 12: SAR Values [GSM 850 GPRS(2 timeslots in uplink) with BenQ Joy book S72]

Liquid Temperature: 22.4℃				
Limit of SAR (W/kg)		**1g Average**	**Power Drift (dB)**	**Graph Results**
		1.6	**± 0.2**	
Test Case Of Body		**Measurement Result (W/kg)**	**Power Drift (dB)**	
Different Test Position	**Channel**	**1g Average**		
Test Position 1	Middle	0.534	0.086	Figure 13
Test Position 2	Middle	0.319	-0.004	Figure 17
Test Position 3	Middle	0.076	-0.072	Figure 19

Table 13: SAR Values [GSM 850 GPRS (2 timeslots in uplink) with BenQ R55V]

Liquid Temperature: 22.4℃				
Limit of SAR (W/kg)		**1g Average**	**Power Drift (dB)**	**Graph Results**
		1.6	**± 0.2**	
Test Case Of Body		**Measurement Result (W/kg)**	**Power Drift (dB)**	
Different Test Position	**Channel**	**1g Average**		
Test Position 4	Middle	0.221	-0.060	Figure 21
Test Position 5	Middle	0.179	-0.148	Figure 23
Test Position 6	Middle	0.314	0.006	Figure 25
Test Position 7	Middle	0.201	-0.075	Figure 27

Table 14: SAR Values (GSM 850 EGPRS (2 timeslots in uplink) with BenQ Joy book S72)

Liquid Temperature: 22.4℃				
Limit of SAR (W/kg)		**1g Average**	**Power Drift (dB)**	**Graph Results**
		1.6	**± 0.2**	
Test Case Of Body		**Measurement Result (W/kg)**	**Power Drift (dB)**	
Different Test Position	**Channel**	**1g Average**		
Test Position 1	Middle	0.104	-0.154	Figure 29

Table 15: SAR Values [GSM1900 GPRS (4 timeslots in uplink) at Test Position 1]

Liquid Temperature: 22.4℃				
Limit of SAR (W/kg)		**1g Average**	**Power Drift (dB)**	**Graph Results**
		1.6	**± 0.2**	
Test Case Of Body		**Measurement Result (W/kg)**	**Power Drift (dB)**	
Different Model Computer	**Channel**	**1g Average**		
BenQ Joy book S72	Middle	0.629	-0.137	Figure 31
Acer ZH1	Middle	0.545	-0.050	Figure 33

Table 16: SAR Values [GSM1900 GPRS at Test Position 1 with BenQ Joy book S72]

Liquid Temperature: 22.4℃				
Limit of SAR (W/kg)		**1g Average**	**Power Drift (dB)**	**Graph Results**
		1.6	**± 0.2**	
Test Case Of Body		**Measurement Result (W/kg)**	**Power Drift (dB)**	
Different Timeslots	**Channel**	**1g Average**		
1 timeslot in uplink	Middle	0.625	0.027	Figure 35
2 timeslots in uplink	Middle	0.889	-0.071	Figure 37
3 timeslots in uplink	Middle	0.747	-0.136	Figure 39
4 timeslots in uplink	Middle	0.629	-0.137	Figure 31

Table 17: SAR Values [GSM1900 GPRS (3 timeslots in uplink) with BenQ Joy book S72]

Liquid Temperature: 22.4℃				
Limit of SAR (W/kg)		**1g Average**	**Power Drift (dB)**	**Graph Results**
		1.6	**± 0.2**	
Test Case Of Body		**Measurement Result (W/kg)**	**Power Drift (dB)**	
Different Test Position	**Channel**	**1 g Average**		
Test Position 1	Middle	0.889	-0.071	Figure 37
Test Position 2	Middle	0.195	-0.142	Figure 41
Test Position 3	Middle	0.200	0.015	Figure 43

Table 18: SAR Values [GSM 1900 GPRS (2 timeslots in uplink) at different Position with BenQ R55V]

Liquid Temperature: 22.4℃				
Limit of SAR (W/kg)		**1g Average**	**Power Drift (dB)**	**Graph Results**
		1.6	**± 0.2**	
Test Case Of Body		**Measurement Result (W/kg)**	**Power Drift (dB)**	
Different Test Position	**Channel**	**1 g Average**		
Test Position 4	Middle	0.247	0.099	Figure 45
Test Position 5	Middle	0.255	-0.015	Figure 47
Test Position 6	High	1.260	-0.196	Figure 49
	Middle	1.290	-0.102	Figure 51
	Low	1.080	-0.100	Figure 53
Test Position 7	Middle	0.295	-0.152	Figure 55

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

Table 19: SAR Values [GSM1900 EGPRS (2 timeslots in uplink) with BenQ R55V]

Liquid Temperature: 22.4℃				
Limit of SAR (W/kg)		**1g Average**	**Power Drift (dB)**	**Graph Results**
		1.6	**± 0.2**	
Test Case Of Body		**Measurement Result (W/kg)**	**Power Drift (dB)**	
Different Test Position	**Channel**	**1 g Average**		
Test Position 6	Middle	0.573	-0.100	Figure 57

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.

10. MEASUREMENT UNCERTAINTY

No.	a	Type	c	d	e=f(d、k)	f	h=c×f / 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				RSS			11.25	
Expanded Uncertainty (95 % CONFIDENCE INTERVAL)				K=2			22.5	

11. MAIN TEST INSTRUMENTS

Table 20: 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 16, 2007	One year
04	Power sensor	Agilent 8481H	MY41091316	March 16, 2007	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	February 19, 2007	One year
08	Validation Kit 1900MHz	SPEAG D1900V2	541	February 20, 2007	One year
09	BTS	E5515C	GB46490218	September 15, 2007	One year
10	E-field Probe	ET3DV6	1737	February 20, 2007	One year
11	DAE	DAE3	452	September 6, 2007	One year

12. TEST PERIOD

The test is performed from Jan. 23rd, 2008 to Jan. 30th, 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 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.

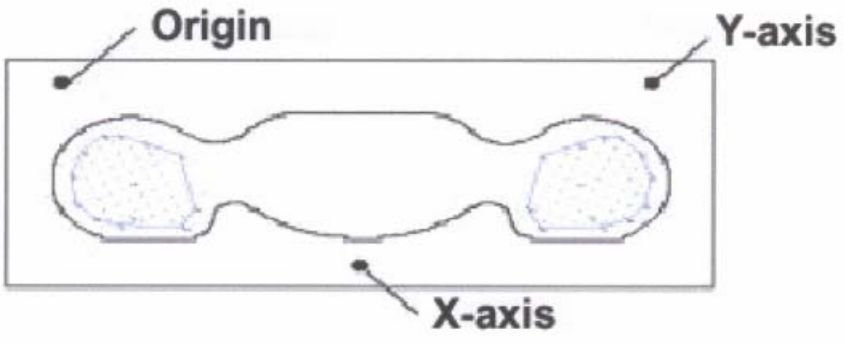
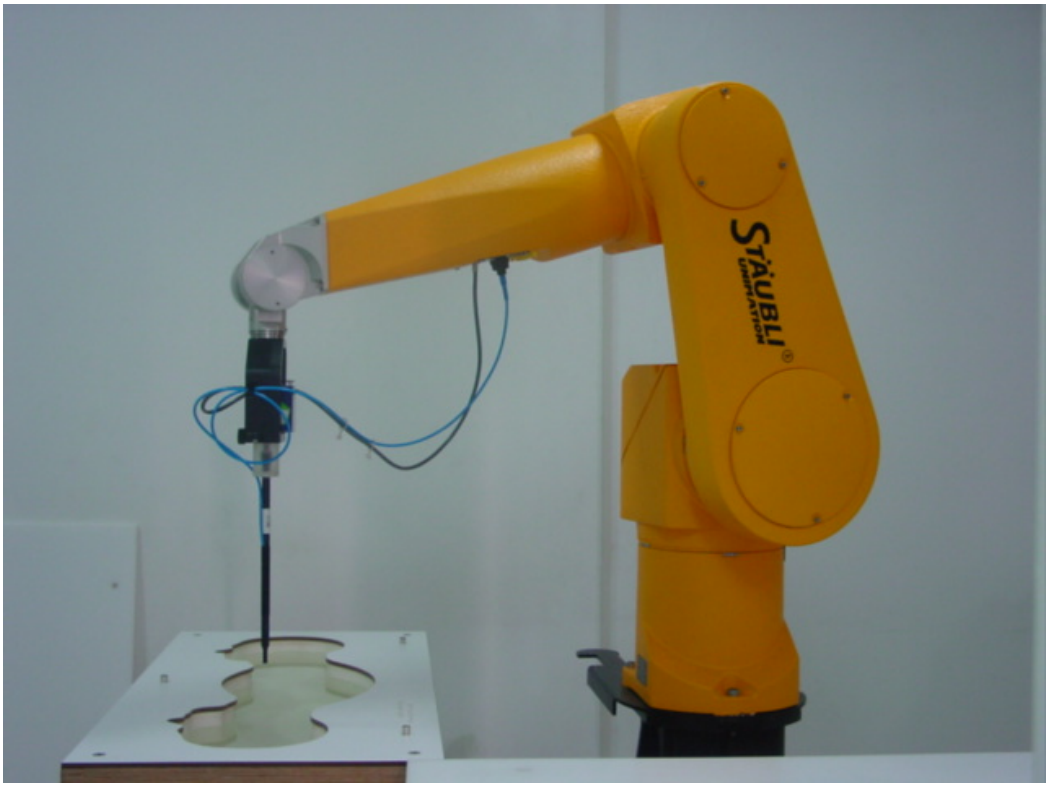
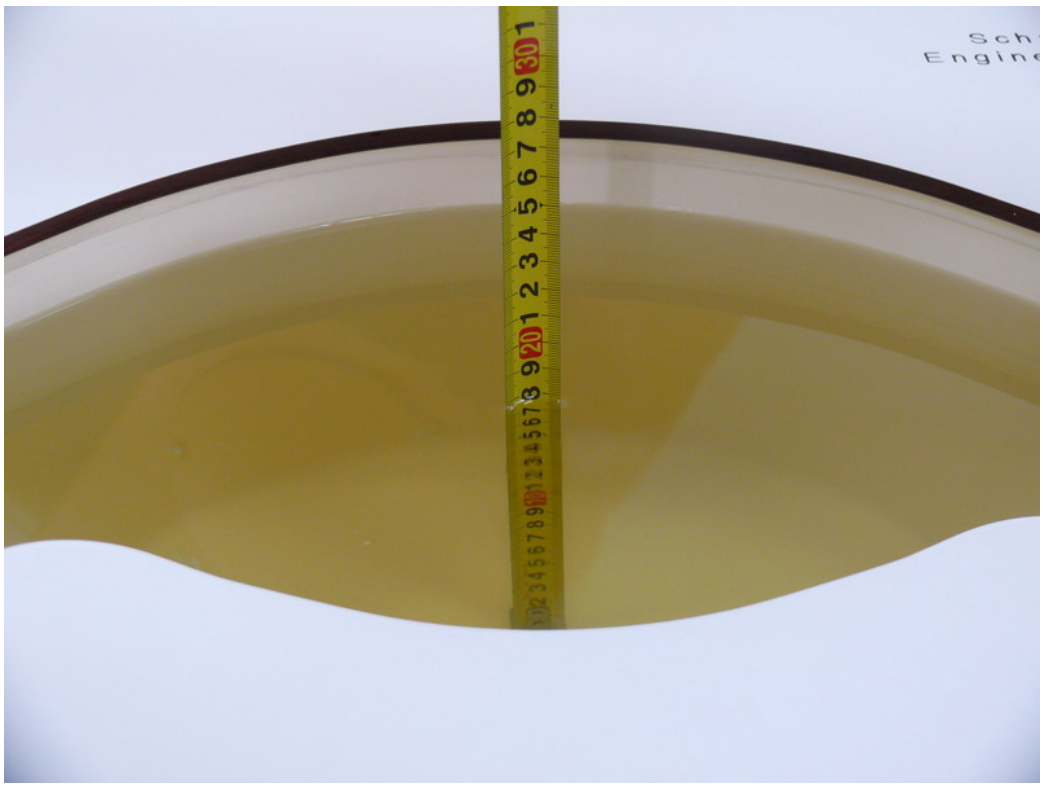


Figure 6.SAR Measurement Points in Area Scan

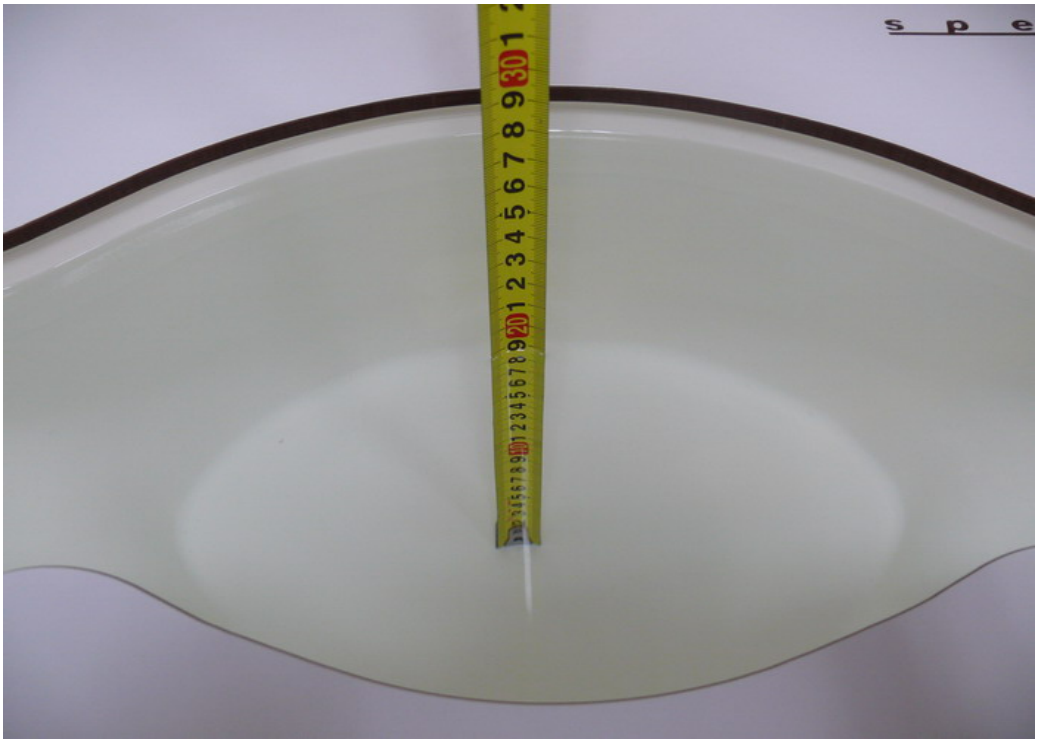
ANNEX B： TEST LAYOUT



Picture 2 Specific Absorption Rate Test Layout



Picture 3 Liquid depth in the Flat Phantom (GSM850)



Picture 4 Liquid depth in the Flat Phantom (GSM1900)

ANNEX C： GRAPH RESULTS

GSM 850 GPRS (4 timeslots in uplink) with BenQ Joy book S72 Test Position 1 Middle

Communication System: GSM 850+GPRS(4Up); Frequency: 836.6 MHz; Duty Cycle: 1:2
Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; ConvF(6.52, 6.52, 6.52);
Electronics: DAE3 Sn452;
Test Position 1 Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.421 mW/g

Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.9 V/m; Power Drift = -0.117 dB
Peak SAR (extrapolated) = 0.474 W/kg
SAR(1 g) = 0.354 mW/g; SAR(10 g) = 0.234 mW/g
Maximum value of SAR (measured) = 0.399 mW/g

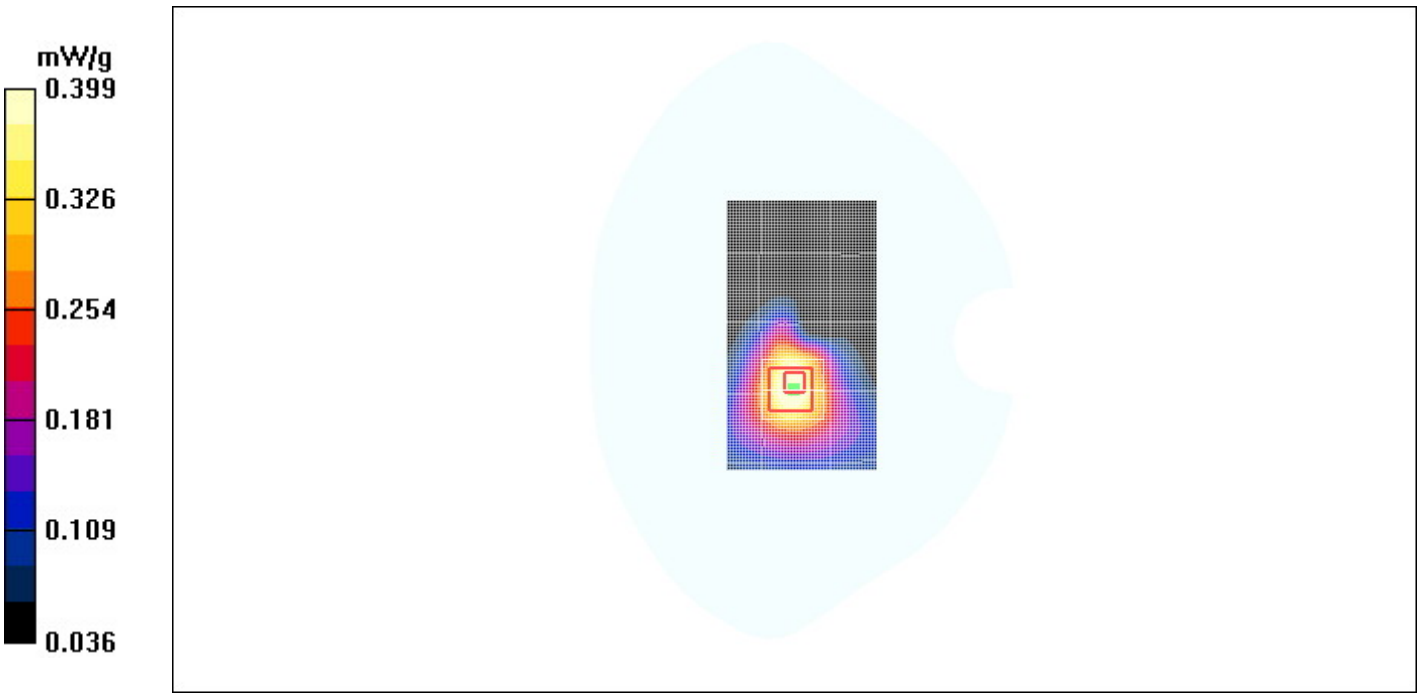


Figure 7 GSM 850 GPRS(4 timeslots in uplink) with BenQ Joy book S72 Test Position 1 Channel190

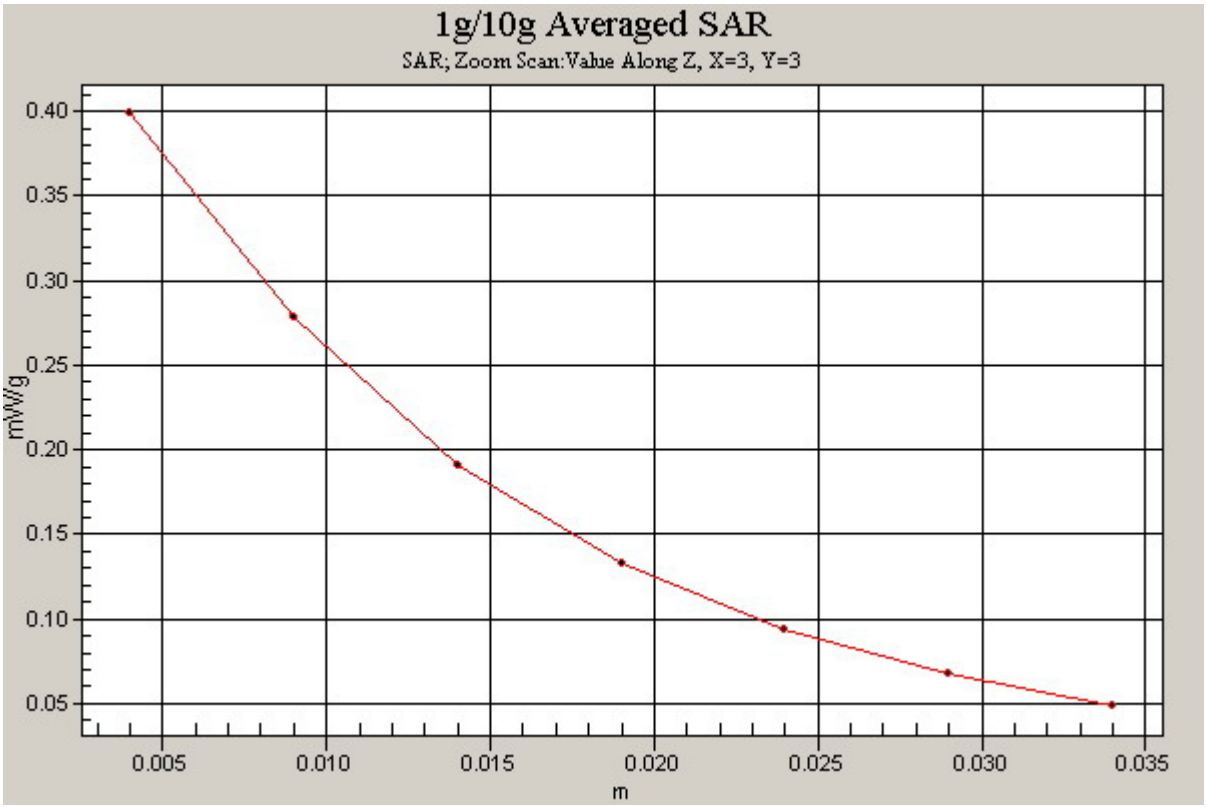


Figure 8 Z-Scan at power reference point [GSM 850 GPRS(4 timeslots in uplink) with BenQ Joy book S72 Test Position 1 Channel190]

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

Communication System: GSM 850+GPRS(4Up); Frequency: 836.6 MHz; Duty Cycle: 1:2
Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; ConvF(6.52, 6.52, 6.52);
Electronics: DAE3 Sn452;
Test Position 1 Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.310 mW/g

Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.1 V/m; Power Drift = 0.112 dB
Peak SAR (extrapolated) = 0.594 W/kg
SAR(1 g) = 0.292 mW/g; SAR(10 g) = 0.192 mW/g
Maximum value of SAR (measured) = 0.316 mW/g

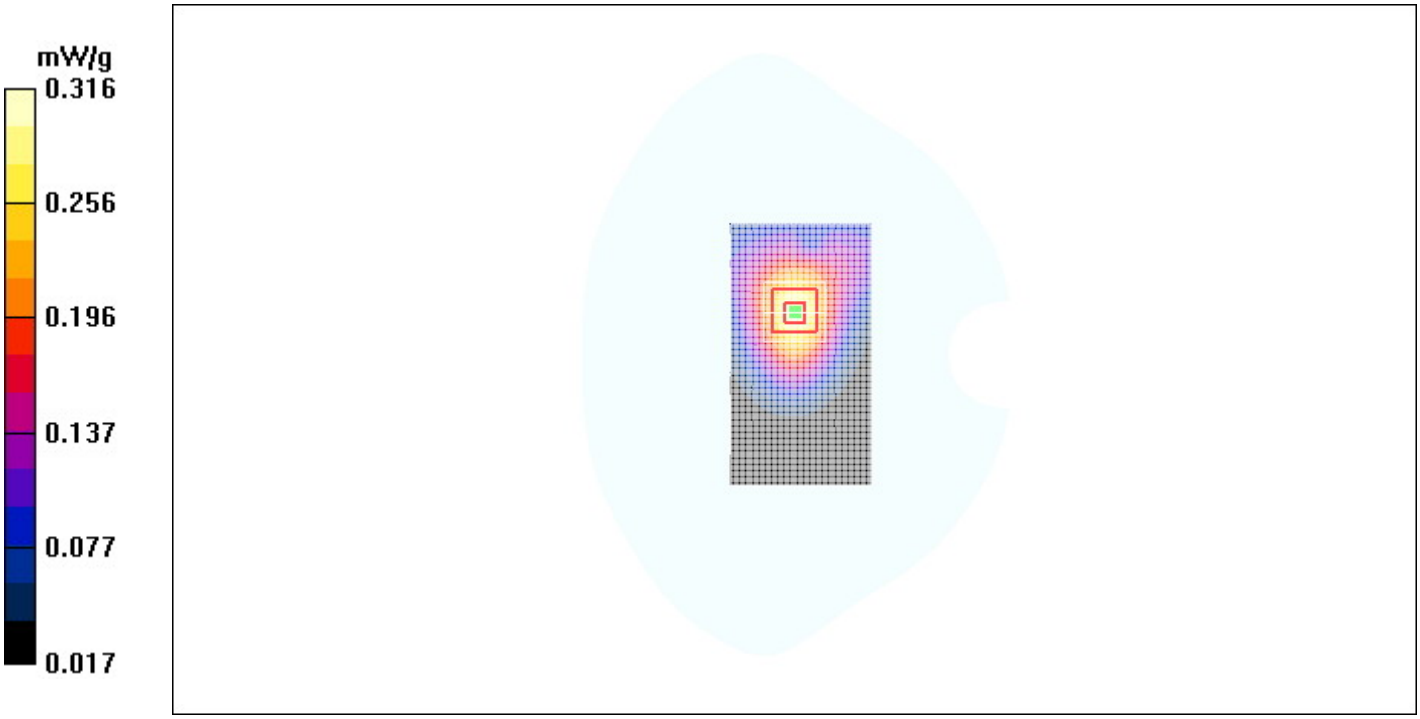


Figure 9 GSM 850 GPRS(4 timeslots in uplink) with Acer ZH1 Test Position 1 Channel 190

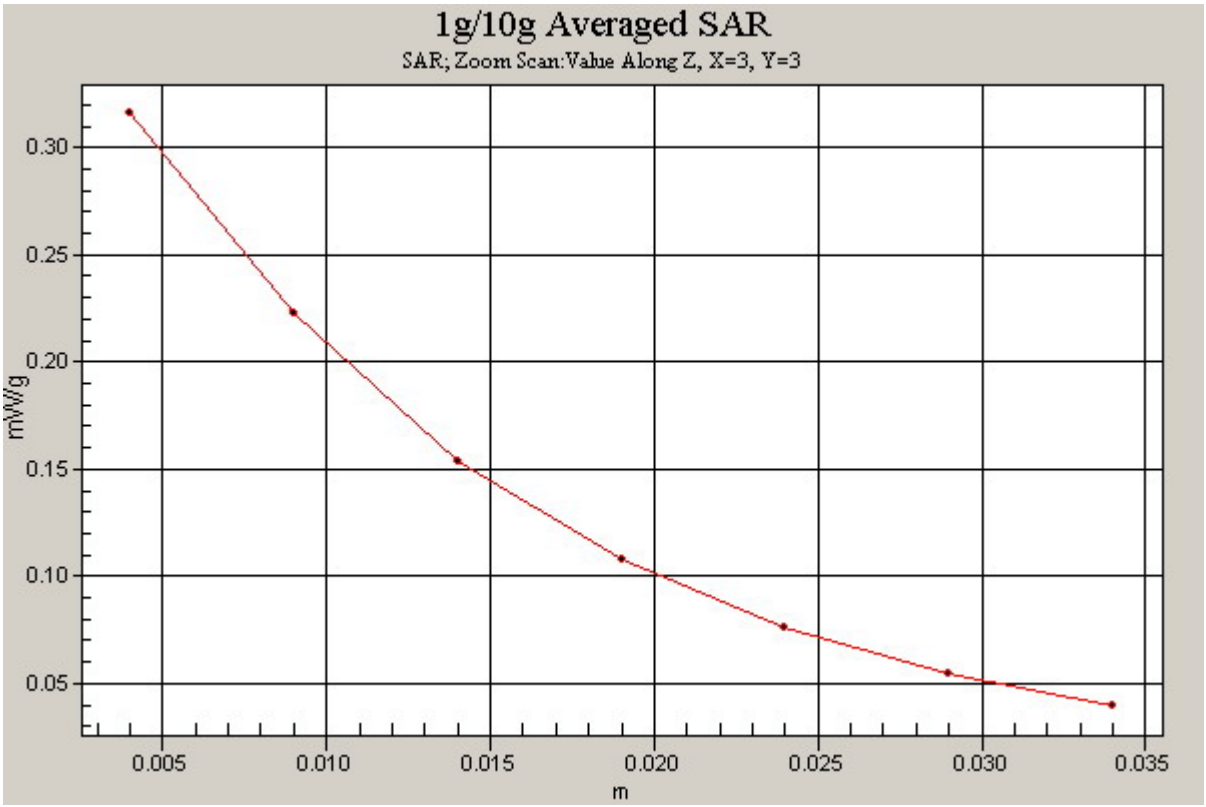


Figure 10 Z-Scan at power reference point [GSM 850 GPRS(4 timeslots in uplink) with Acer ZH1 Test Position 1 Channel 190]

GSM 850 GPRS (1 timeslot in uplink) with BenQ Joy book S72 Test Position 1 Middle

Communication System: GSM850 + GPRS(1Up); Frequency: 836.6 MHz; Duty Cycle: 1:8
Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; ConvF(6.52, 6.52, 6.52);
Electronics: DAE3 Sn452;
Test Position 1 Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.549 mW/g

Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.1 V/m; Power Drift = 0.190 dB
Peak SAR (extrapolated) = 0.746 W/kg
SAR(1 g) = 0.516 mW/g; SAR(10 g) = 0.328 mW/g
Maximum value of SAR (measured) = 0.565 mW/g

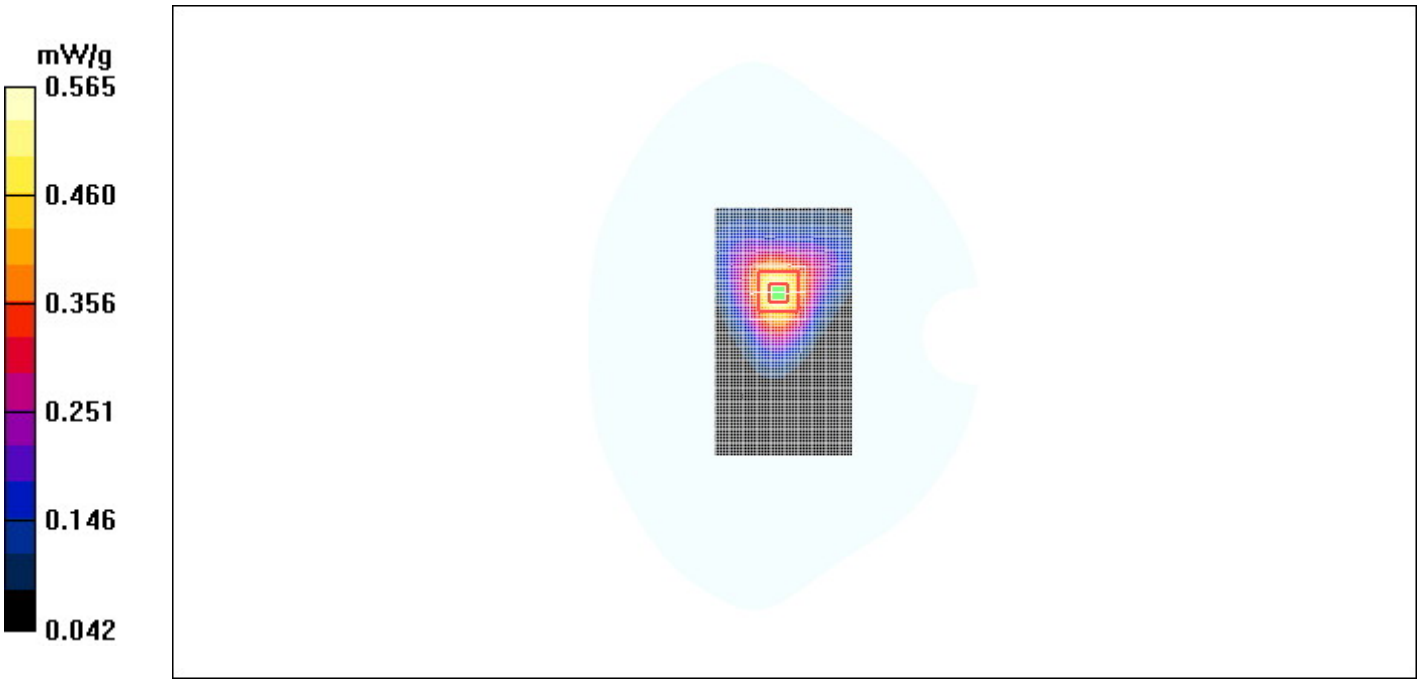


Figure 11 GSM 850 GPRS (1 timeslot in uplink) with BenQ Joy book S72 Test Position 1 Channel 190

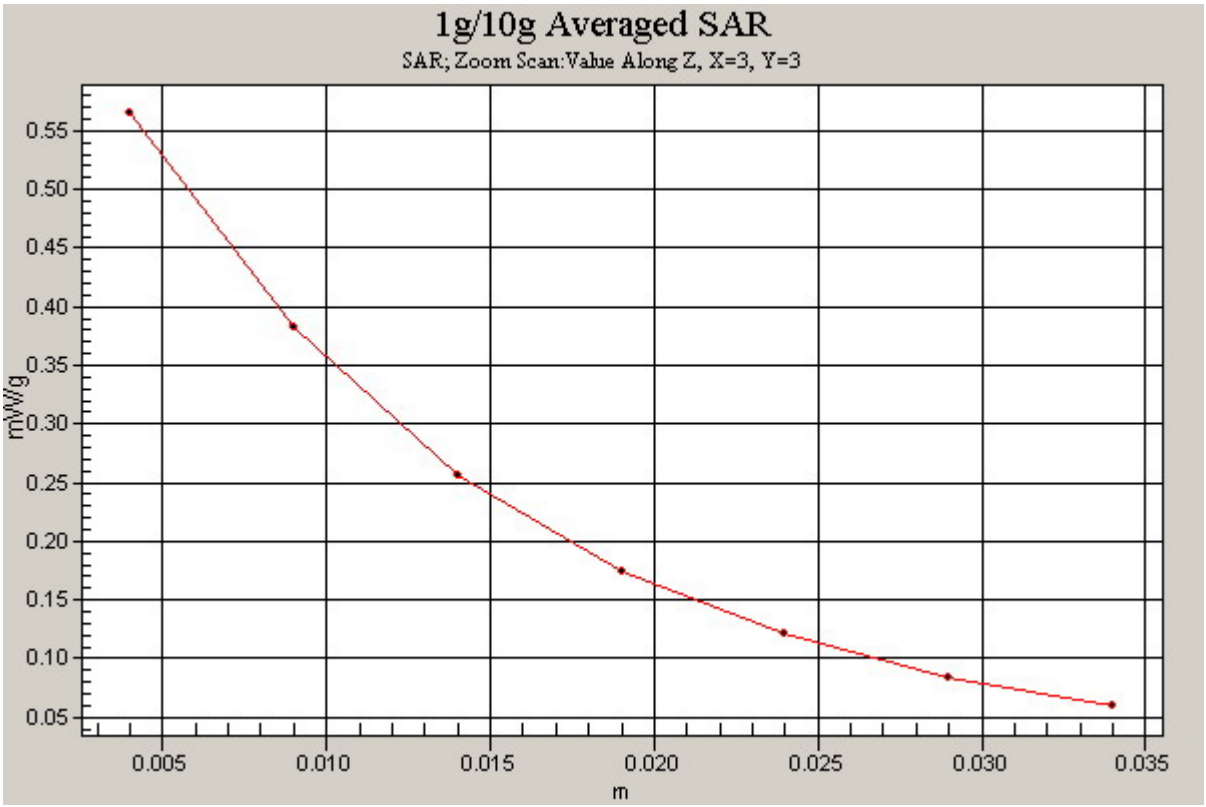


Figure 12 Z-Scan at power reference point [GSM 850 GPRS (1 timeslot in uplink) with BenQ Joy book S72 Test Position 1 Channel 190]

GSM 850 GPRS (2 timeslots in uplink) with BenQ Joy book S72 Test Position 1 Middle

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz; Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; ConvF(6.52, 6.52, 6.52);
Electronics: DAE3 Sn452;
Test Position 1 Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.557 mW/g

Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.7 V/m; Power Drift = 0.086 dB
Peak SAR (extrapolated) = 1.40 W/kg
SAR(1 g) = 0.534 mW/g; SAR(10 g) = 0.344 mW/g
Maximum value of SAR (measured) = 0.561 mW/g

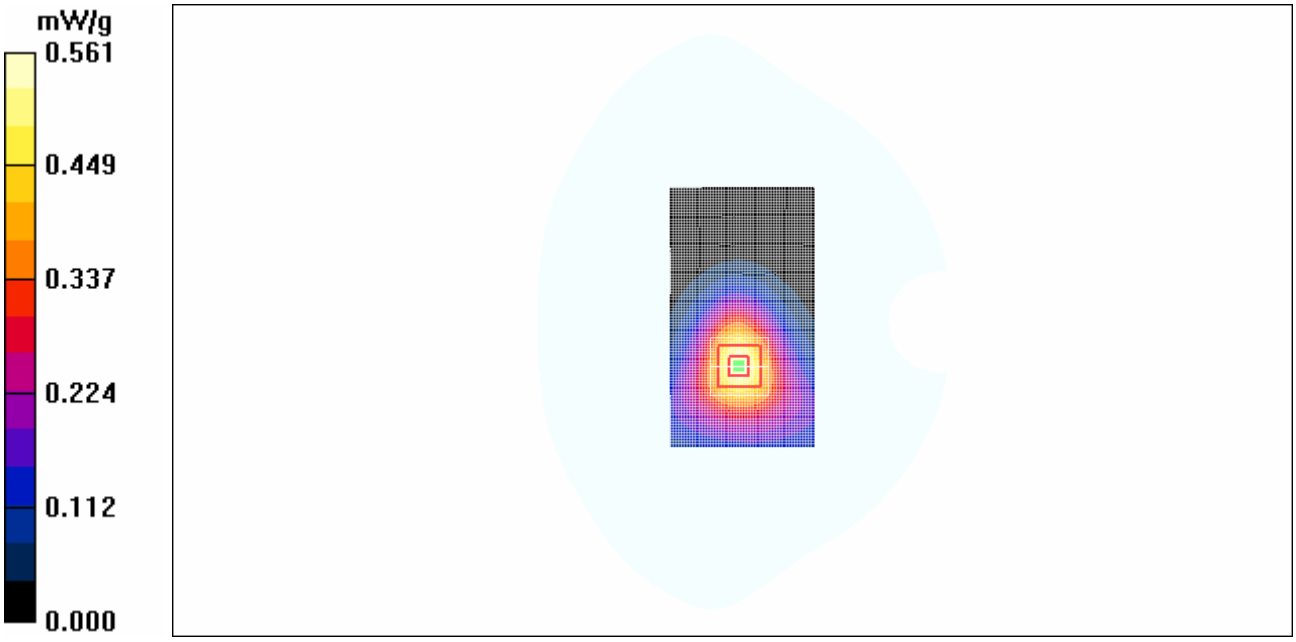


Figure 13 GSM 850 GPRS (2 timeslots in uplink) with BenQ Joy book S72 Test Position 1 channel 190

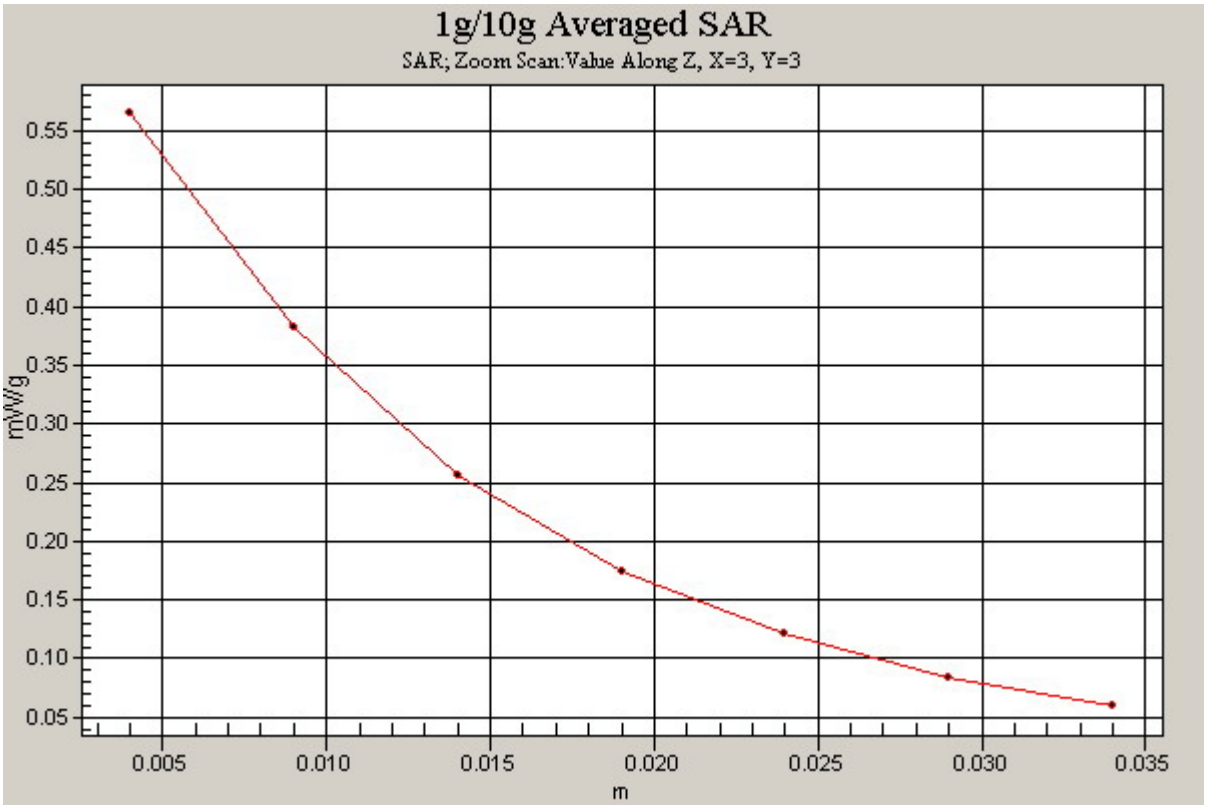


Figure 14 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with BenQ Joy book S72 Test Position 1 channel 190]

GSM 850 GPRS (3 timeslots in uplink) with BenQ Joy book S72 Test Position 1 Middle

Communication System: GSM850 + GPRS(3Up); Frequency: 836.6 MHz; Duty Cycle: 1:2.67
Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; ConvF(6.52, 6.52, 6.52);
Electronics: DAE3 Sn452;
Test Position 1 Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.476 mW/g

Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.3 V/m; Power Drift = 0.072 dB
Peak SAR (extrapolated) = 0.941 W/kg
SAR(1 g) = 0.445 mW/g; SAR(10 g) = 0.291 mW/g
Maximum value of SAR (measured) = 0.478 mW/g

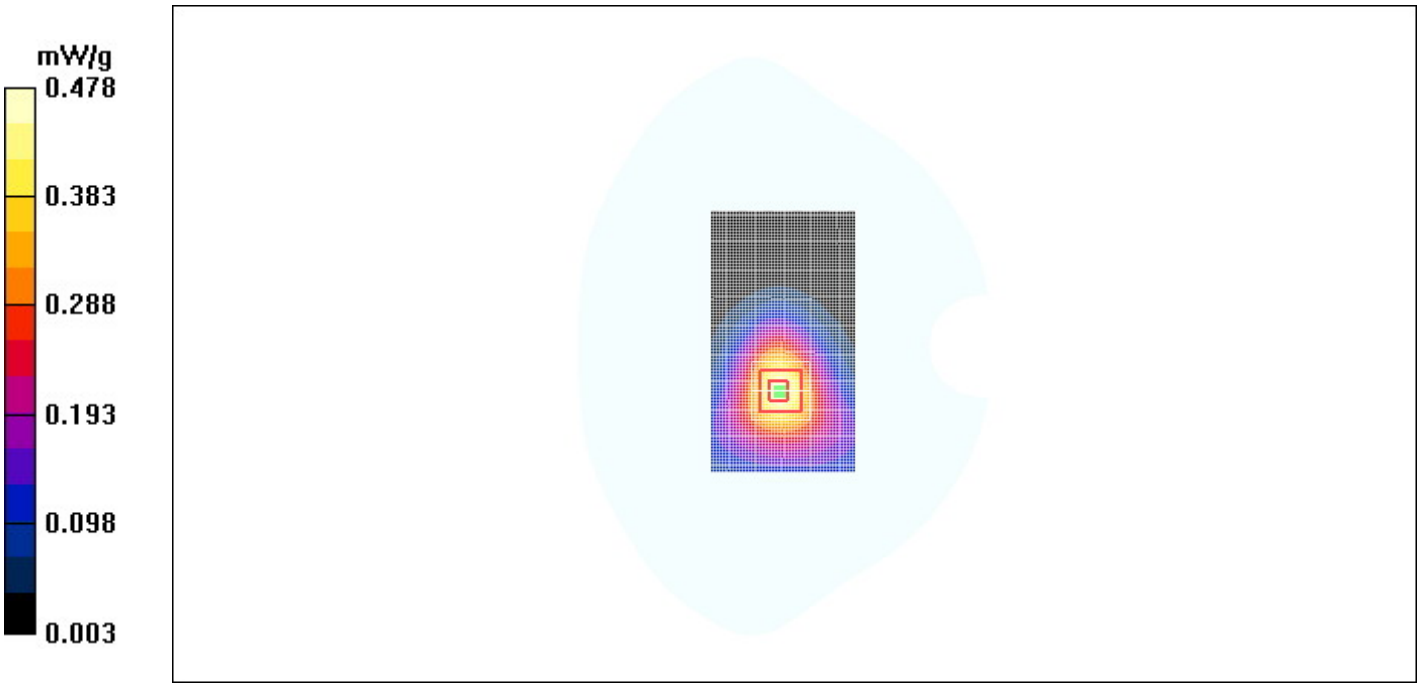


Figure 15 GSM 850 GPRS (3 timeslots in uplink) with BenQ Joy book S72 Test Position 1 channel 190

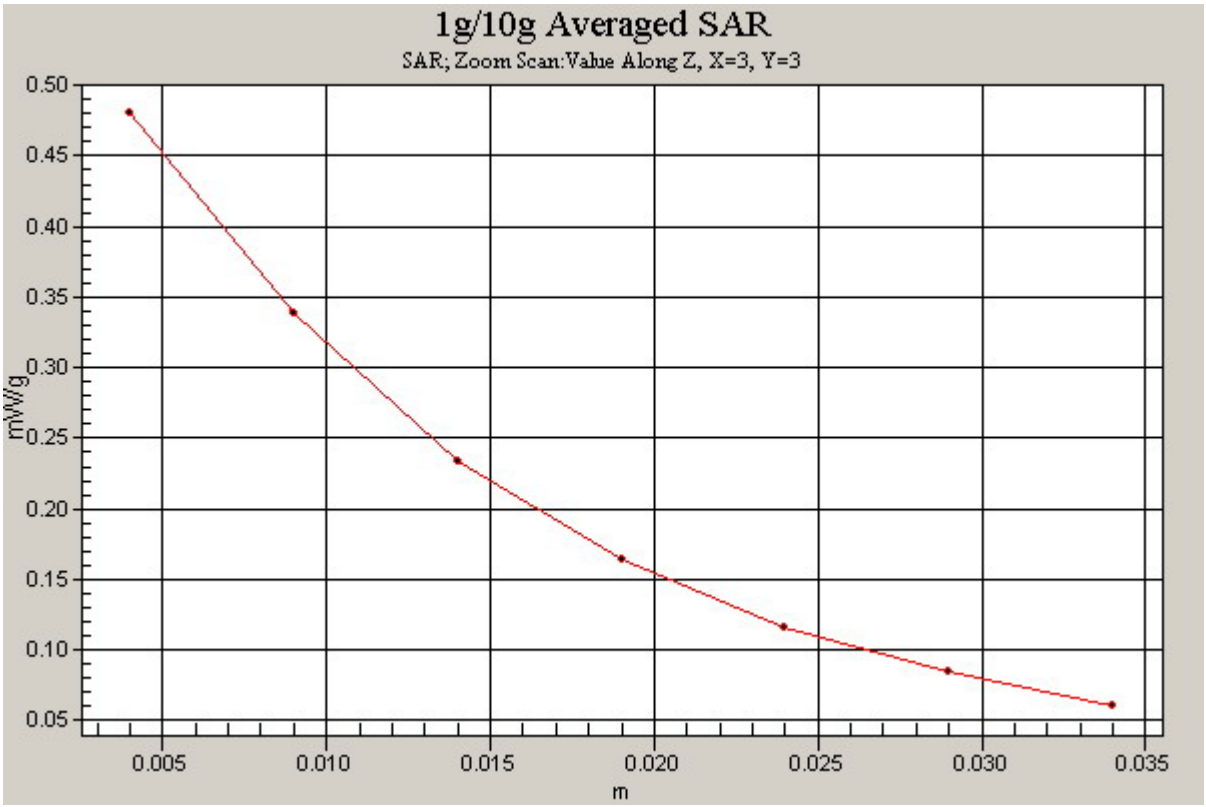


Figure 16 Z-Scan at power reference point [GSM 850 GPRS (3 timeslots in uplink) with BenQ Joy book S72 Test Position 1 channel 190]

GSM 850 GPRS (2 timeslots in uplink) with BenQ Joy book S72 Test Position 2 Middle

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz;Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; ConvF(6.52, 6.52, 6.52);
Electronics: DAE3 Sn452;
Test Position 2 Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.344 mW/g

Test Position 2 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.3 V/m; Power Drift = -0.004 dB
Peak SAR (extrapolated) = 0.427 W/kg
SAR(1 g) = 0.319 mW/g; SAR(10 g) = 0.217 mW/g
Maximum value of SAR (measured) = 0.344 mW/g

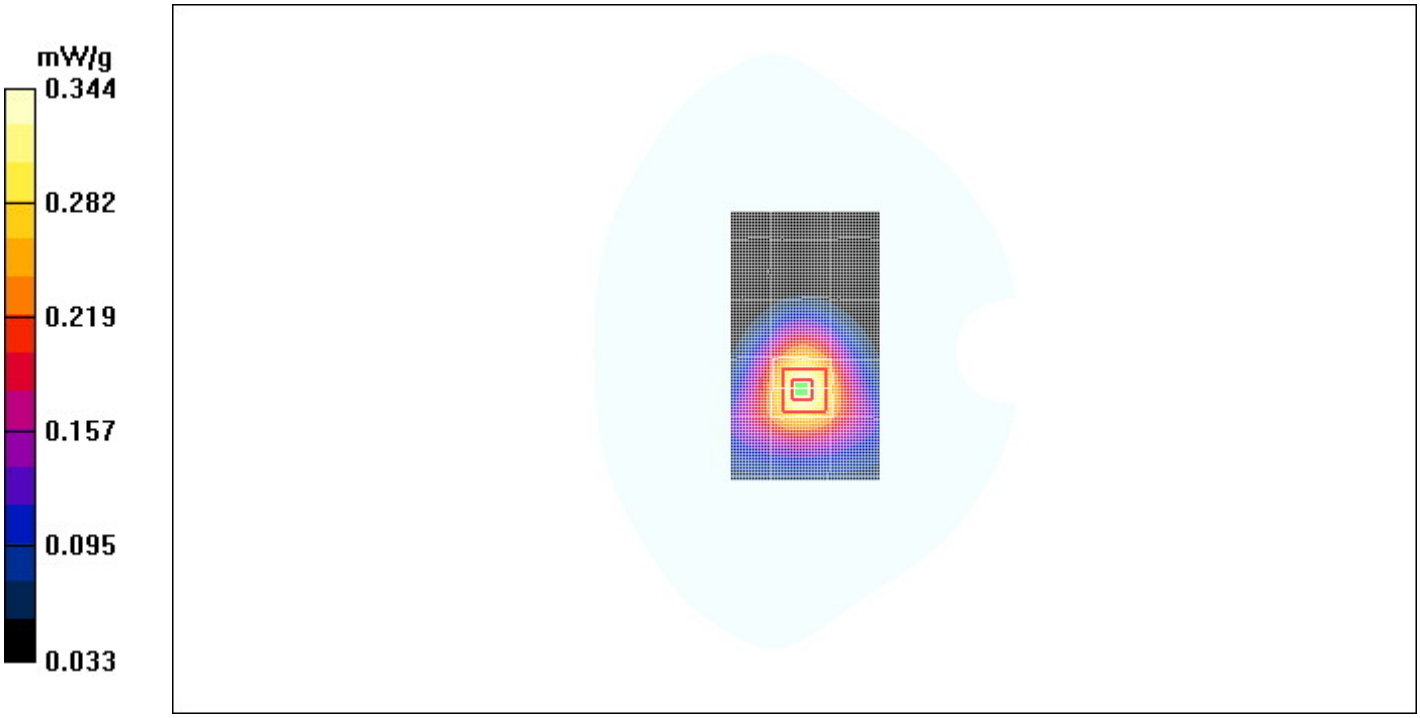


Figure 17 GSM 850 GPRS (2 timeslots in uplink) with BenQ Joy book S72 Test Position 2 channel 190

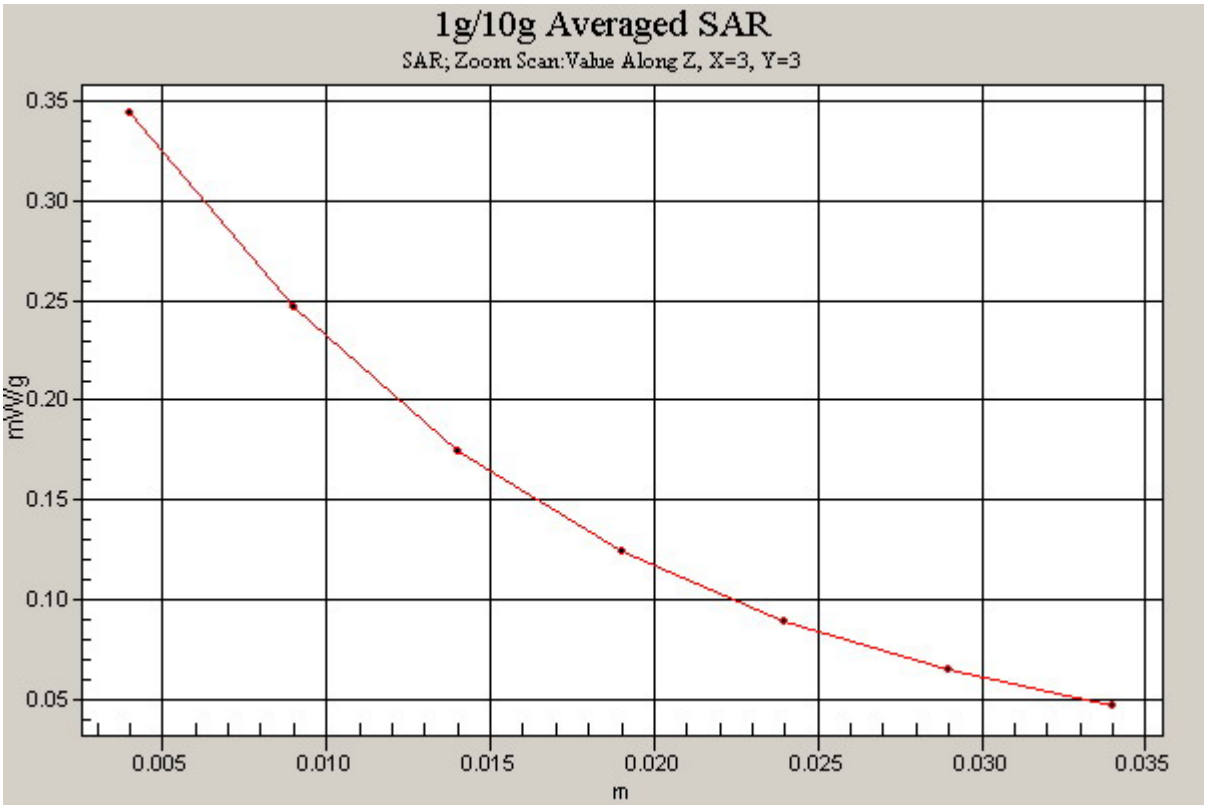


Figure 18 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with BenQ Joy book S72 Test Position 2 channel 190]

GSM 850 GPRS (2 timeslots in uplink) with BenQ Joy book S72 Test Position 3 Middle

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz; Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; 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) = 0.054 mW/g

Test Position 3 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.36 V/m; Power Drift = -0.072 dB
Peak SAR (extrapolated) = 0.373 W/kg
SAR(1 g) = 0.076 mW/g; SAR(10 g) = 0.026 mW/g
Maximum value of SAR (measured) = 0.081 mW/g

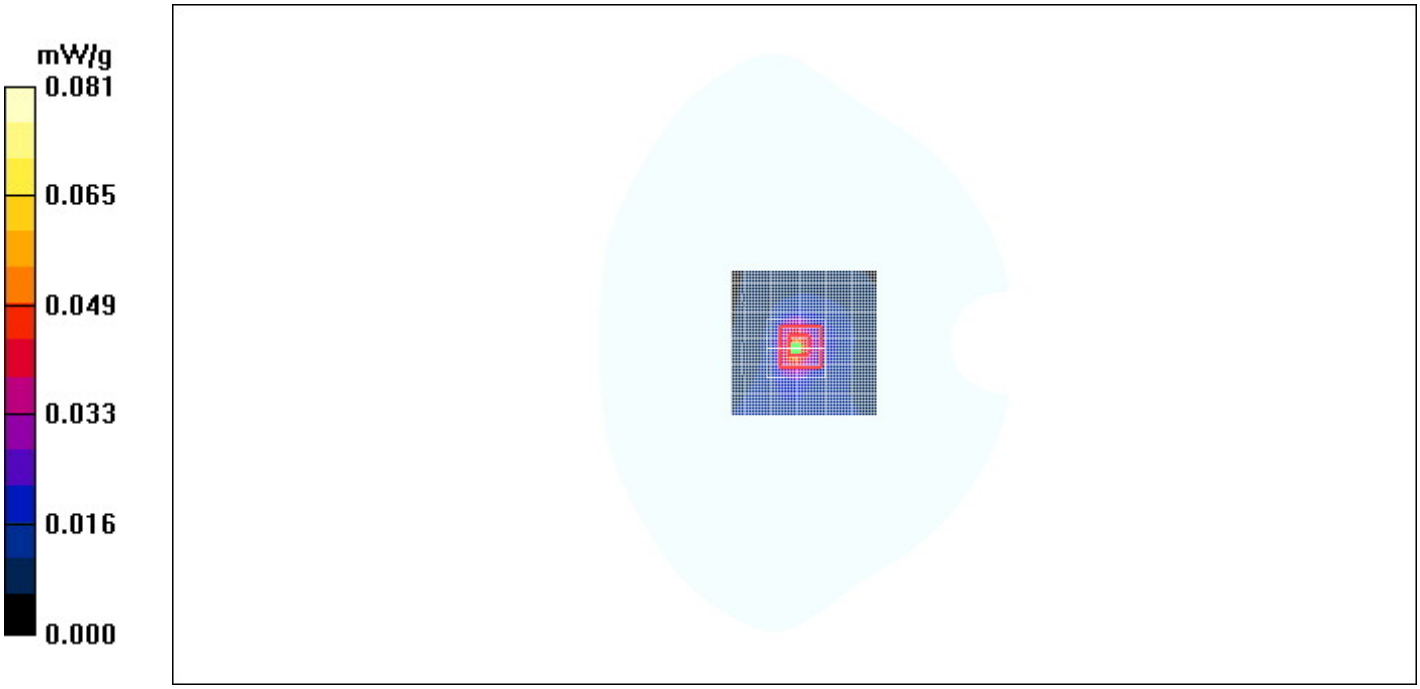


Figure 19 GSM 850 GPRS (2 timeslots in uplink) with BenQ Joy book S72 Test Position 3 channel 190

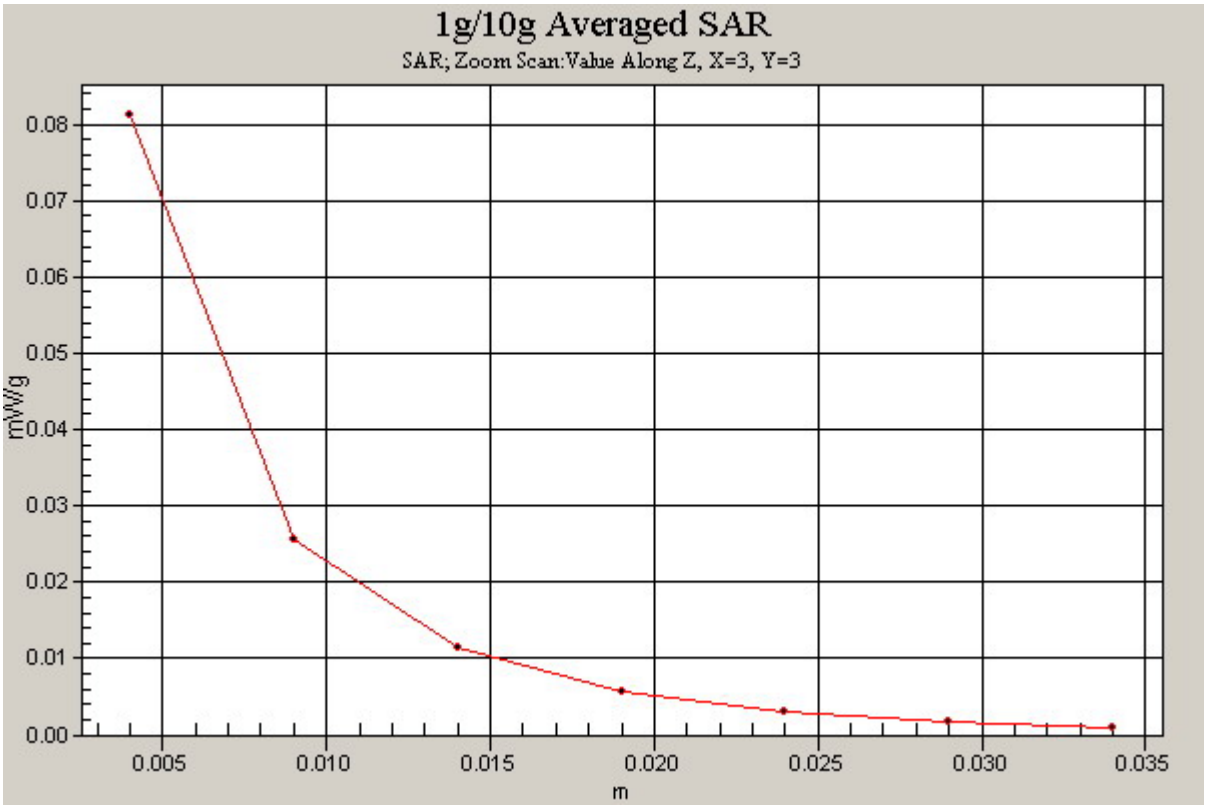


Figure 20 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with BenQ Joy book S72 Test Position 3 channel 190]

GSM 850 GPRS (2 timeslots in uplink) with BenQ R55V Test Position 4 Middle

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz; Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; ConvF(6.52, 6.52, 6.52);
Electronics: DAE3 Sn452;
Test Position 4 Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.239 mW/g

Test Position 4 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.9 V/m; Power Drift = -0.060 dB
Peak SAR (extrapolated) = 0.360 W/kg
SAR(1 g) = 0.221 mW/g; SAR(10 g) = 0.142 mW/g
Maximum value of SAR (measured) = 0.245 mW/g

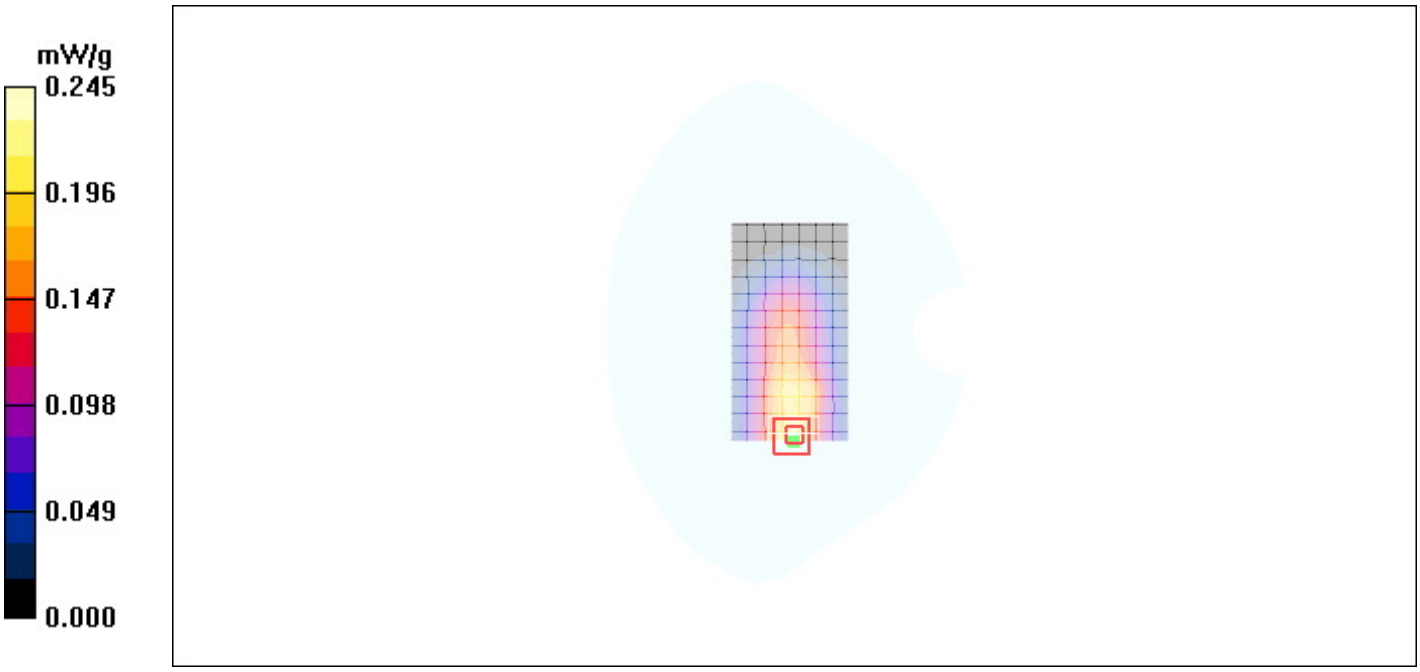


Figure 21 GSM 850 GPRS (2 timeslots in uplink) with BenQ R55V Test Position 4 channel 190

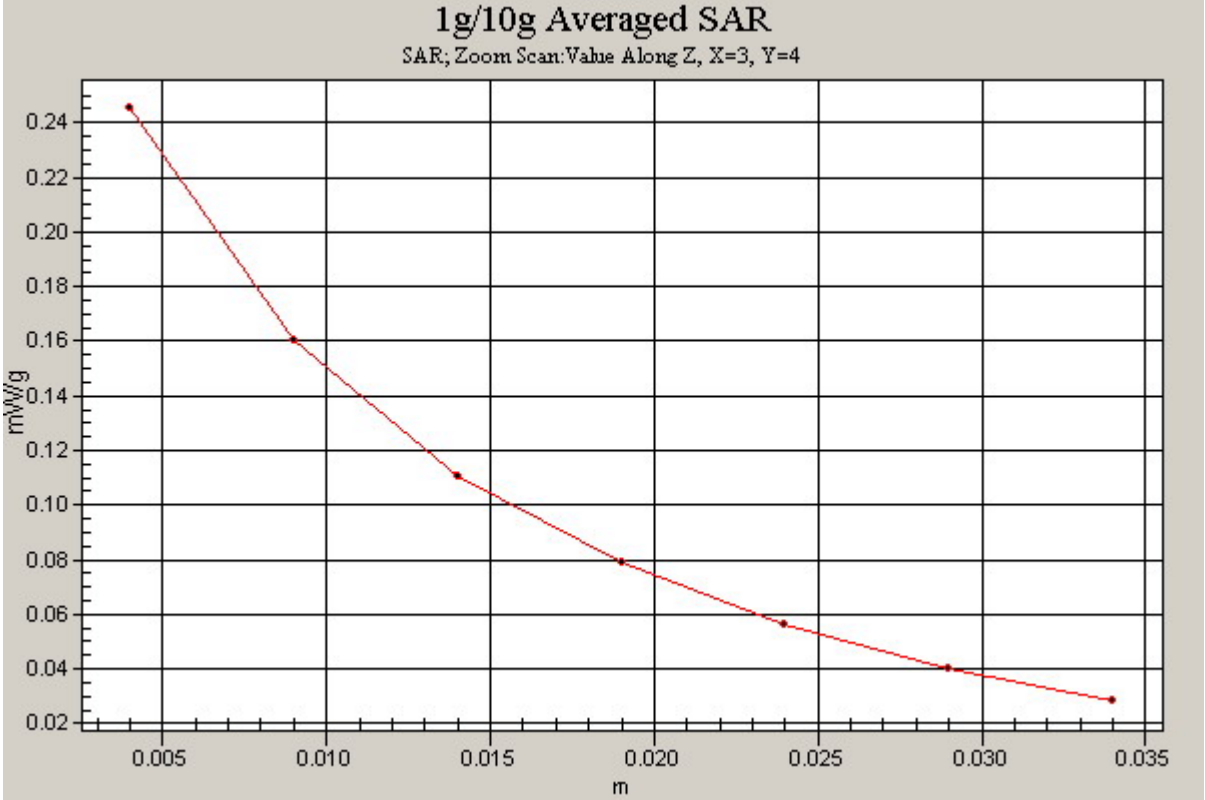


Figure 22 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with BenQ R55V Test Position 4 channel 190]

GSM 850 GPRS (2 timeslots in uplink) with BenQ R55V Test Position 5 Middle

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz; Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; ConvF(6.52, 6.52, 6.52);
Electronics: DAE3 Sn452;
Test Position 5 Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.190 mW/g

Test Position 5 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.69 V/m; Power Drift = -0.148 dB
Peak SAR (extrapolated) = 0.250 W/kg
SAR(1 g) = 0.179 mW/g; SAR(10 g) = 0.121 mW/g
Maximum value of SAR (measured) = 0.192 mW/g

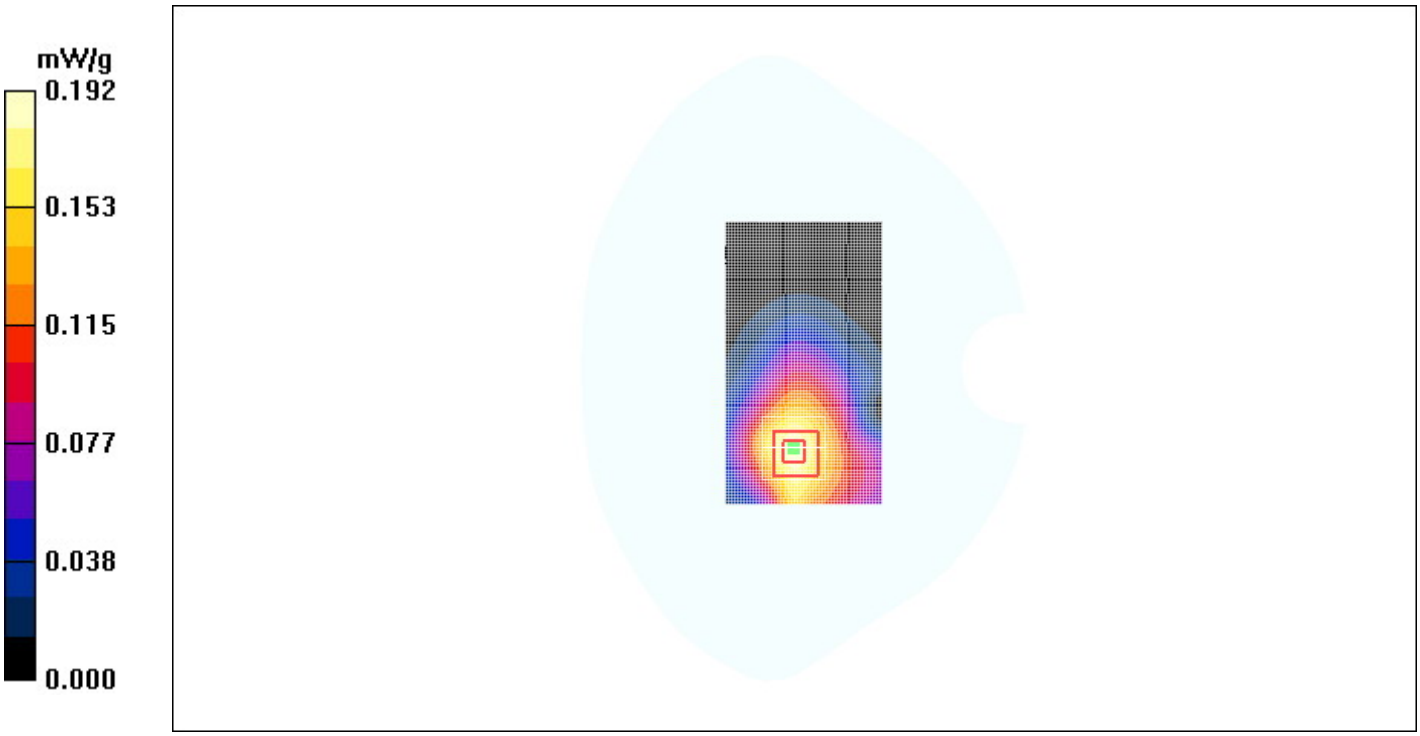


Figure 23 GSM 850 GPRS (2 timeslots in uplink) with BenQ R55V Test Position 5 channel 190

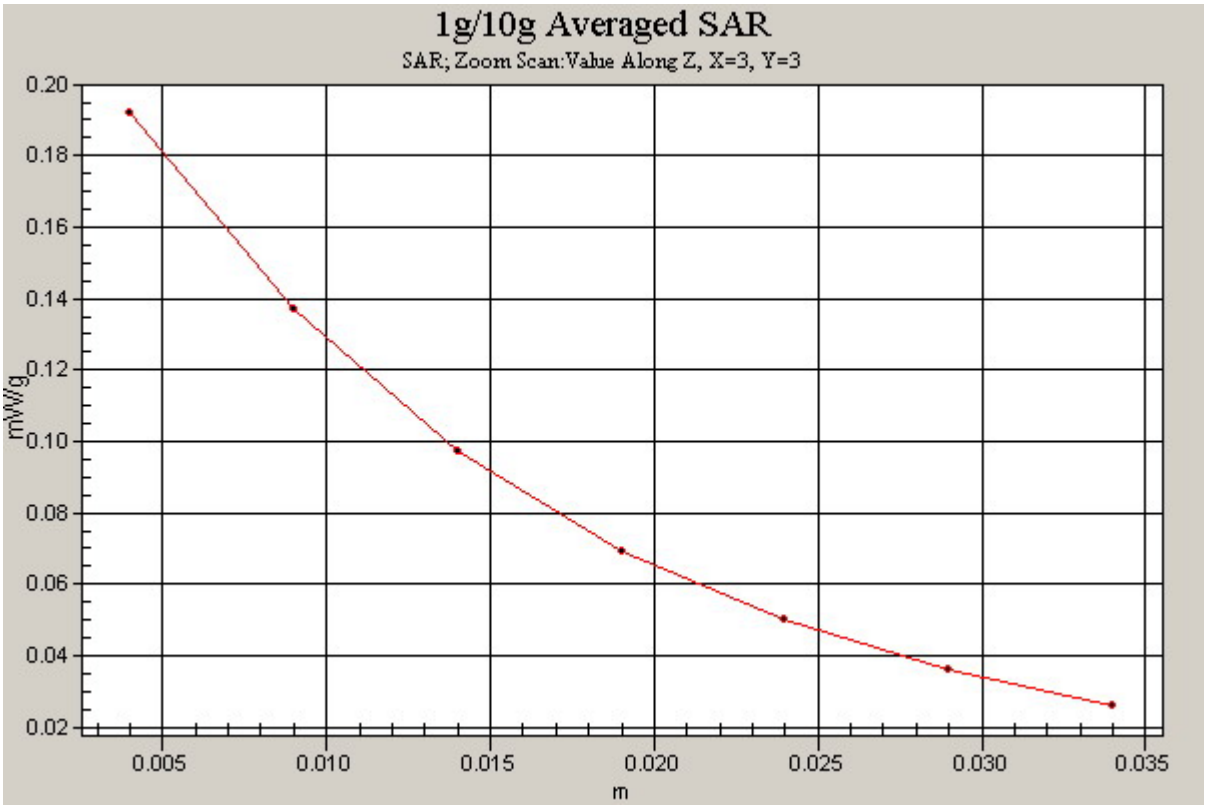


Figure 24 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with BenQ R55V Test Position 5 channel 190]

GSM 850 GPRS (2 timeslots in uplink) with BenQ R55V Test Position 6 Middle

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz;Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; ConvF(6.52, 6.52, 6.52);
Electronics: DAE3 Sn452;
Test Position 6 Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.348 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 = 0.006 dB
Peak SAR (extrapolated) = 0.542 W/kg
SAR(1 g) = 0.314 mW/g; SAR(10 g) = 0.219 mW/g
Maximum value of SAR (measured) = 0.336 mW/g

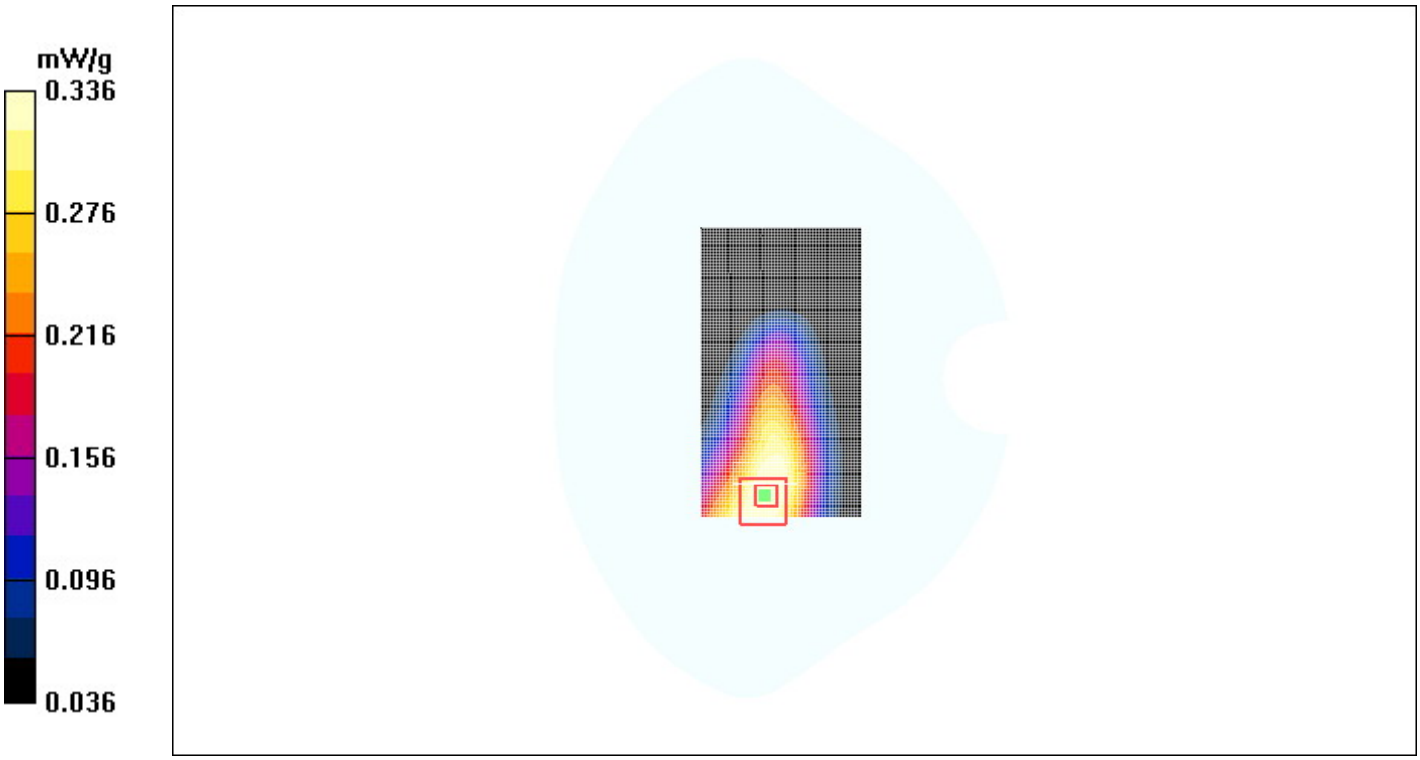


Figure 25 GSM 850 GPRS (2 timeslots in uplink) with BenQ R55V Test Position 6 channel 190

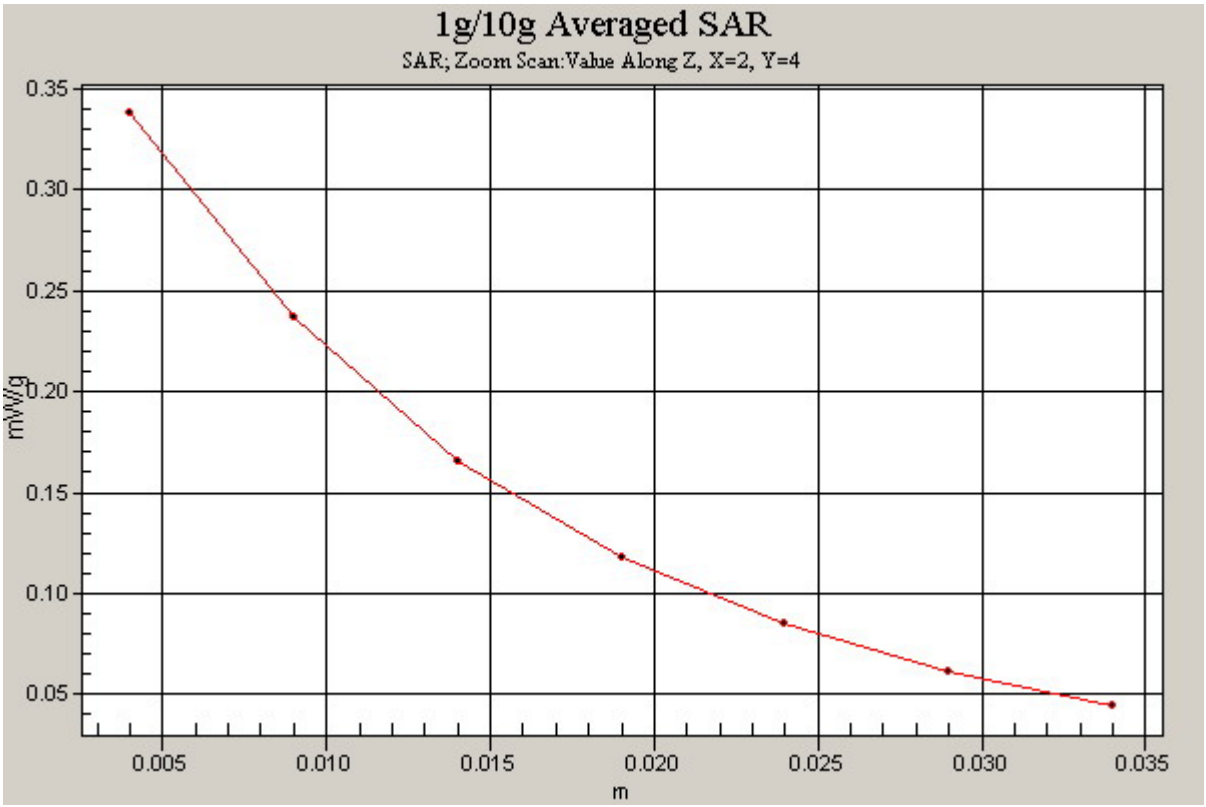


Figure 26 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with BenQ R55V Test Position 6 channel 190]

GSM 850 GPRS (2 timeslots in uplink) with BenQ R55V Test Position 7 Middle

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz; Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; 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) = 0.121 mW/g

Test Position 7 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.1 V/m; Power Drift = -0.075 dB
Peak SAR (extrapolated) = 1.08 W/kg
SAR(1 g) = 0.201 mW/g; SAR(10 g) = 0.064 mW/g
Maximum value of SAR (measured) = 0.204 mW/g

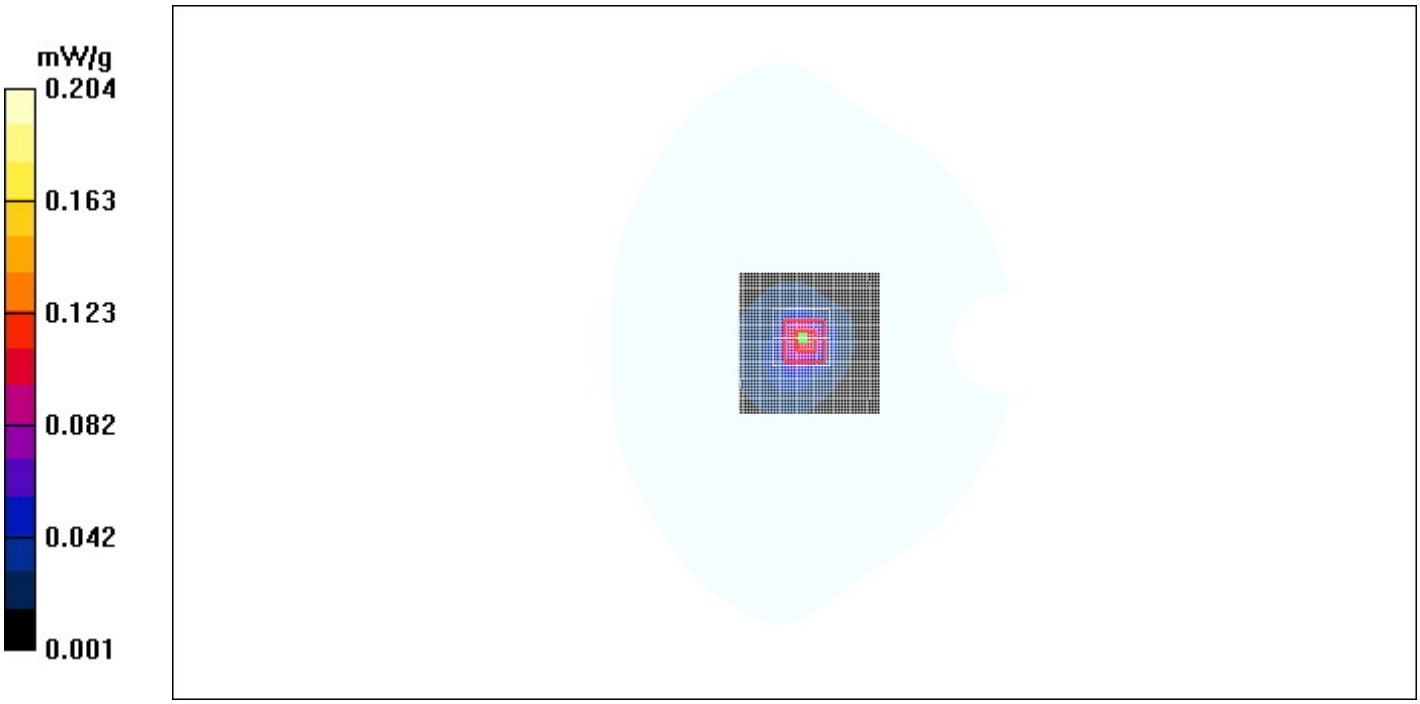


Figure 27 GSM 850 GPRS (2 timeslots in uplink) with BenQ R55V Test Position 7 channel 190

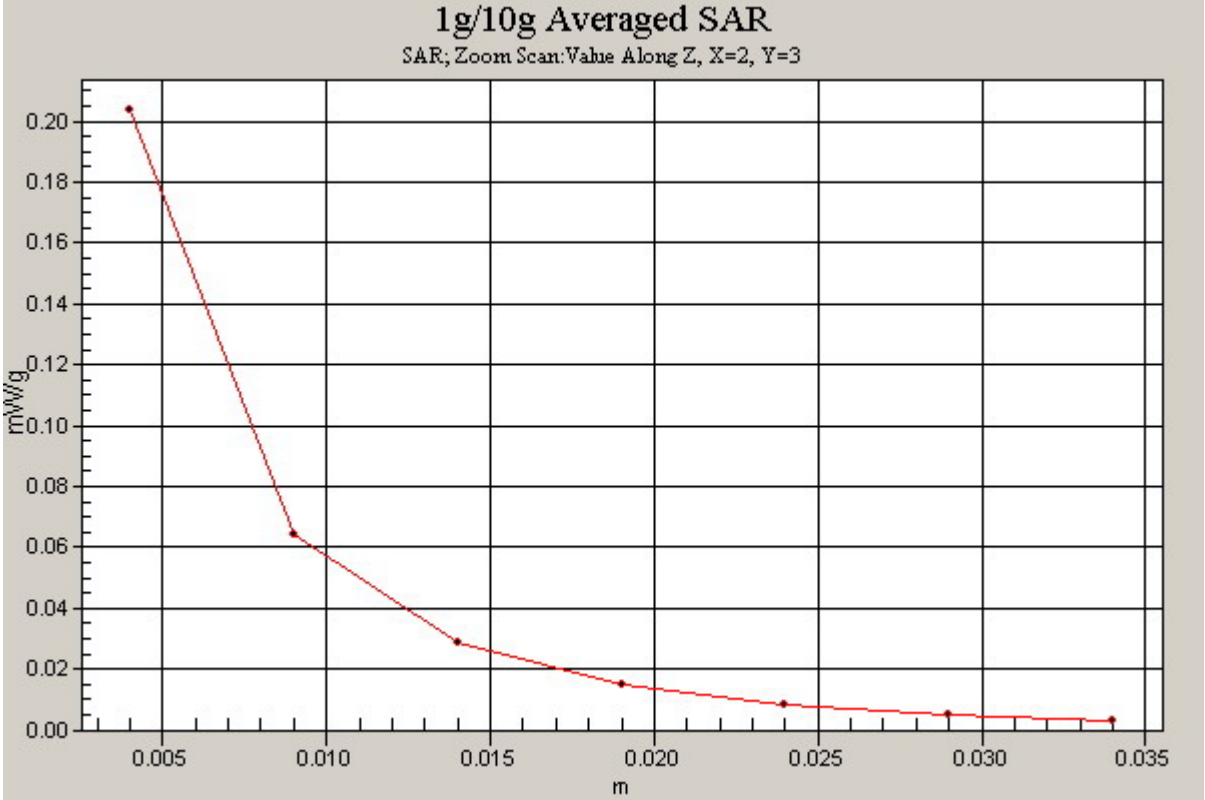


Figure 28 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with BenQ R55V Test Position 7 channel 190]

GSM 850 EGPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Middle

Communication System: GSM850 + EGPRS(2Up); Frequency: 836.6 MHz; Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 55.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; ConvF(6.52, 6.52, 6.52);
Electronics: DAE3 Sn452;
Test Position 1 Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.114 mW/g

Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.85 V/m; Power Drift = -0.154 dB
Peak SAR (extrapolated) = 0.148 W/kg
SAR(1 g) = 0.104 mW/g; SAR(10 g) = 0.067 mW/g
Maximum value of SAR (measured) = 0.113 mW/g

Figure 29 GSM 850 EGPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 1 channel 190

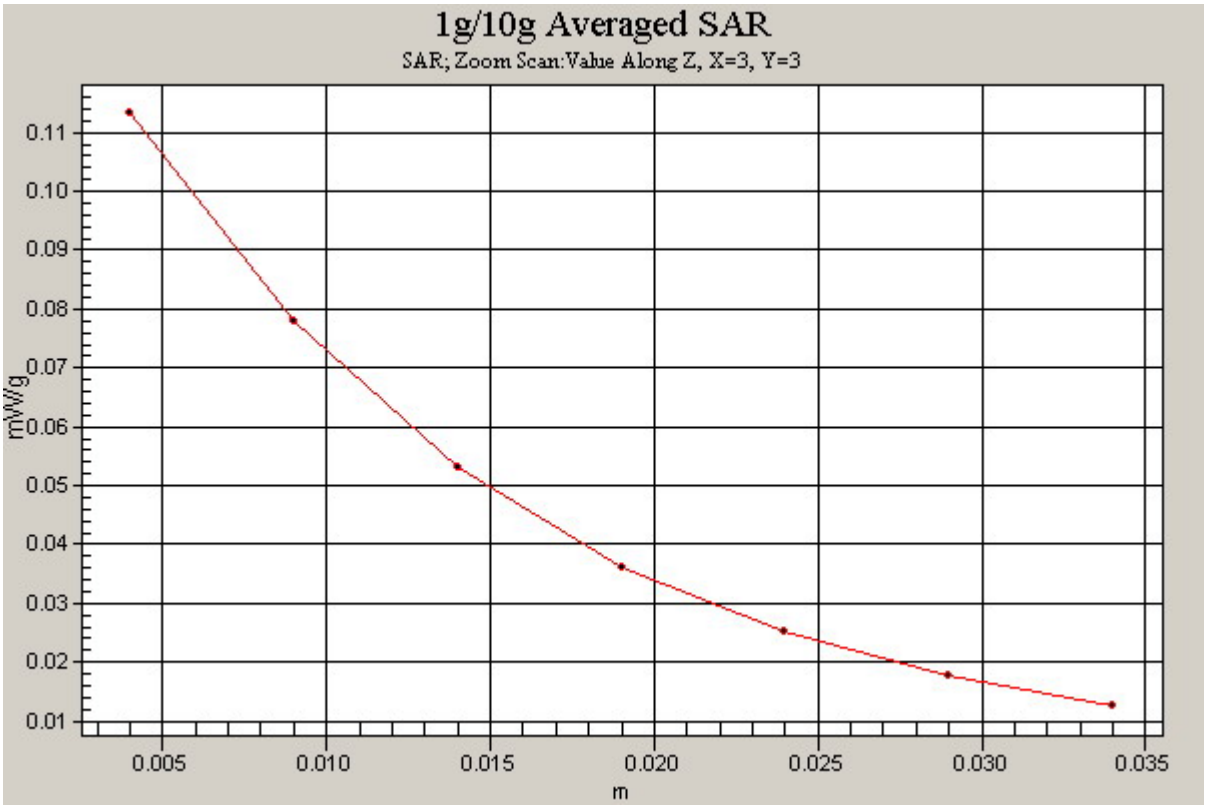


Figure 30 Z-Scan at power reference point [GSM 850 EGPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 1 channel 190]

GSM 1900 GPRS (4 timeslots in uplink) with BenQ Joy book S72 Test Position 1 Middle

Communication System: GSM 1900+GPRS(4Up); Frequency: 1880 MHz; Duty Cycle: 1:2
Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; ConvF(4.64, 4.64, 4.64);
Electronics: DAE3 Sn452;
Test Position 1 Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.669 mW/g

Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.5 V/m; Power Drift = -0.137 dB
Peak SAR (extrapolated) = 1.08 W/kg
SAR(1 g) = 0.629 mW/g; SAR(10 g) = 0.364 mW/g
Maximum value of SAR (measured) = 0.698 mW/g

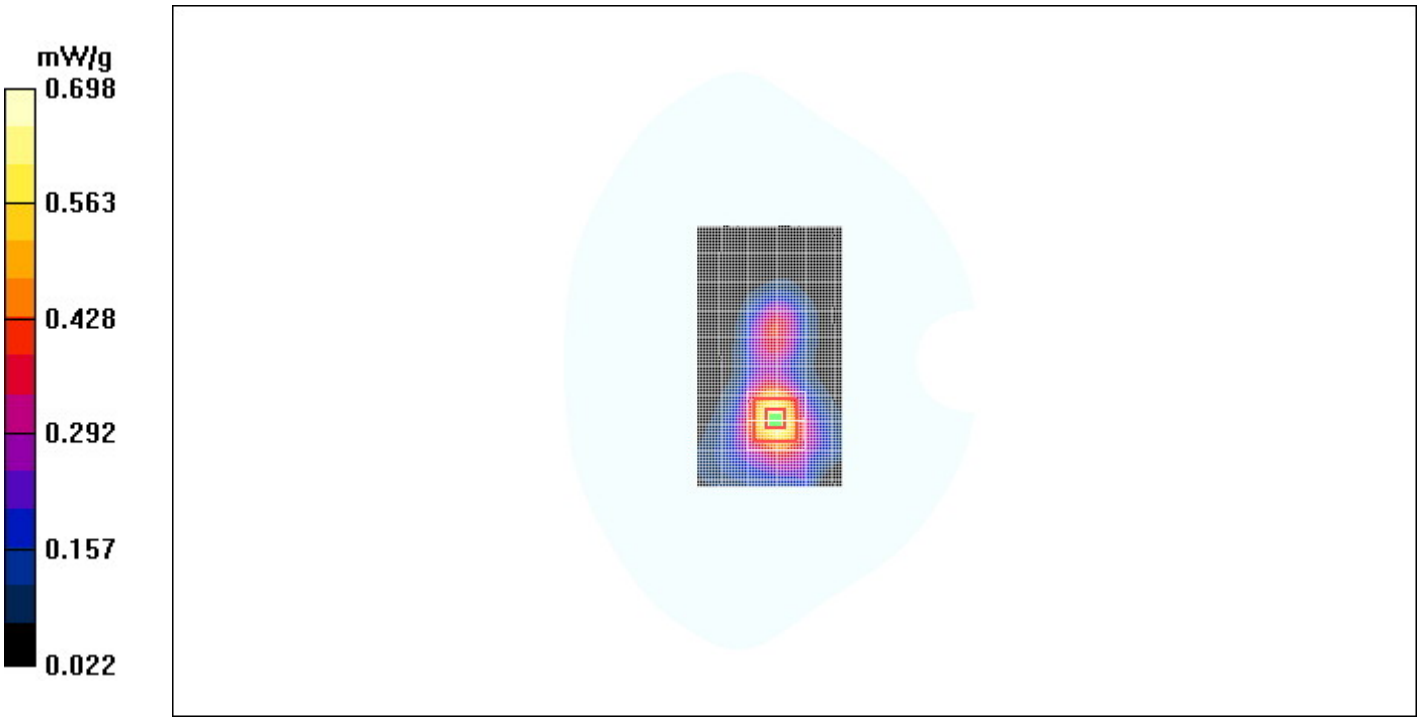


Figure 31 GSM 1900 GPRS (4 timeslots in uplink) with BenQ Joy book S72 Test Position 1 Channel 661

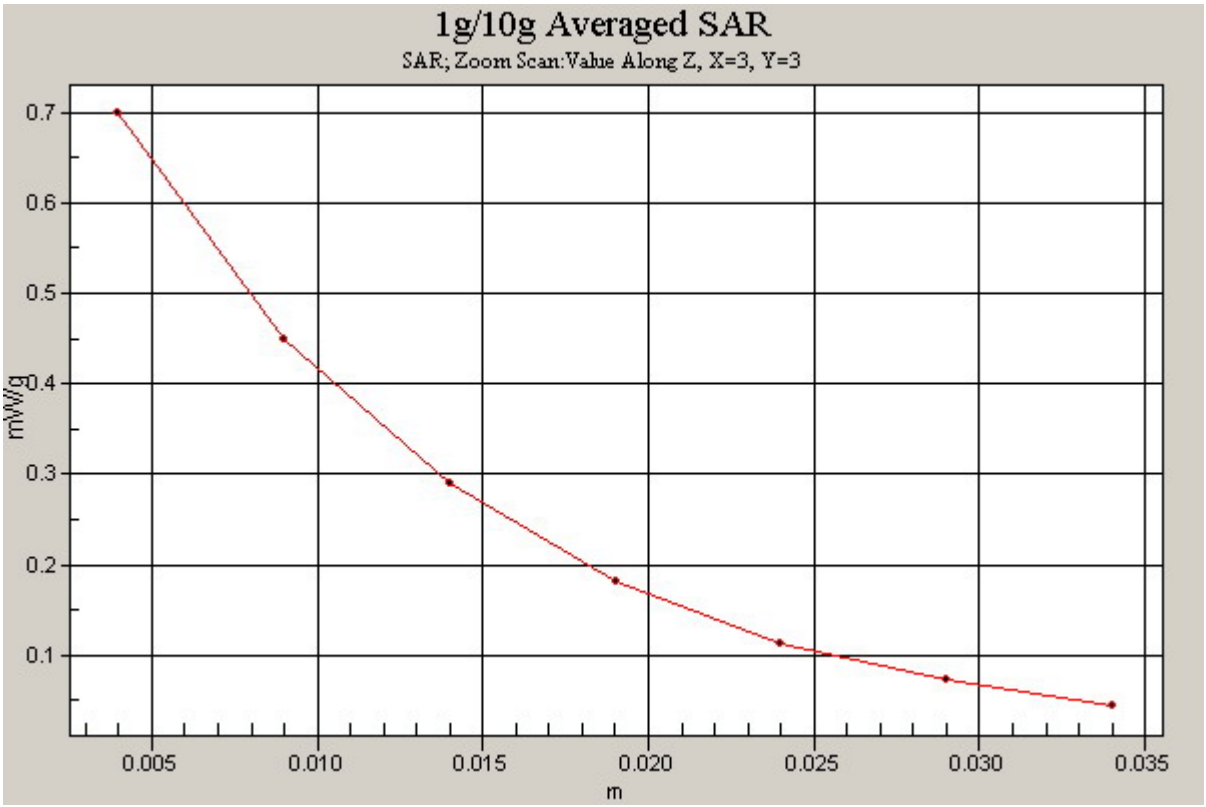


Figure 32 Z-Scan at power reference point [GSM 1900 GPRS(4 timeslots in uplink) with BenQ Joy book S72 Test Position 1 Channel 661]

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

Communication System: GSM 1900+GPRS(4Up); Frequency: 1880 MHz; Duty Cycle: 1:2
Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; ConvF(4.64, 4.64, 4.64);
Electronics: DAE3 Sn452;
Test Position 1 Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.673 mW/g

Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.8 V/m; Power Drift = -0.050 dB
Peak SAR (extrapolated) = 0.879 W/kg
SAR(1 g) = 0.545 mW/g; SAR(10 g) = 0.307 mW/g
Maximum value of SAR (measured) = 0.605 mW/g

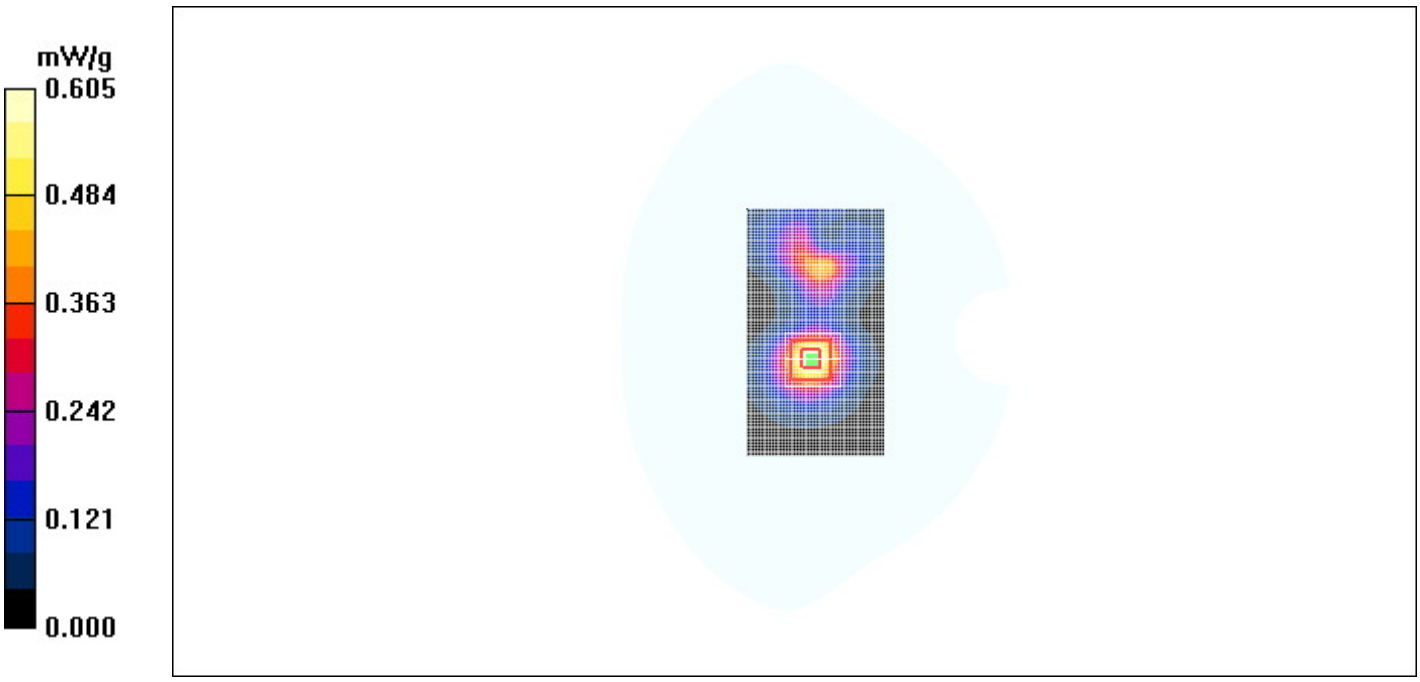


Figure 33 GSM 1900 GPRS(4 timeslots in uplink) with Acer ZH1 Test Position 1 Channel 661

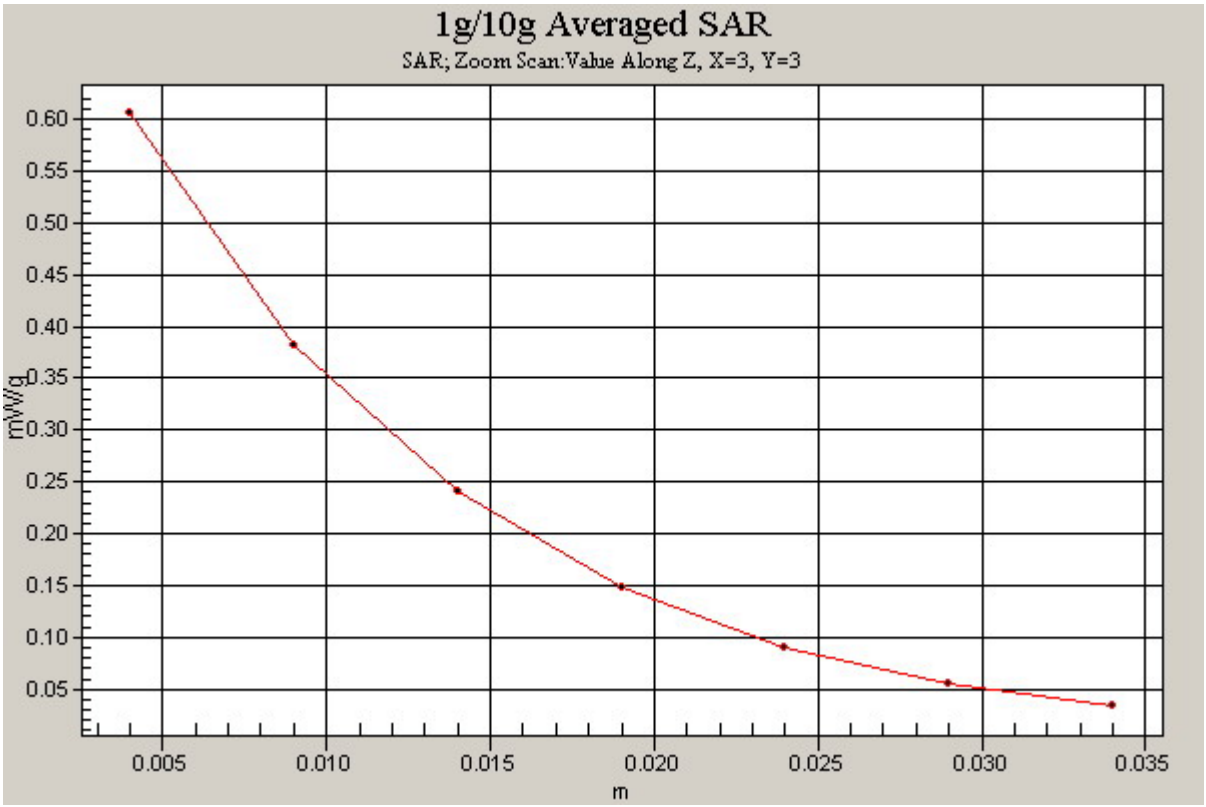


Figure 34 Z-Scan at power reference point [GSM 1900 GPRS(4 timeslots in uplink) with Acer ZH1 Test Position 1 Channel 661]

GSM 1900 GPRS (1 timeslot in uplink) with BenQ Joy book S72 Test Position 1 Middle

Communication System: GSM 1900+GPRS(1Up); Frequency: 1880 MHz;Duty Cycle: 1:8
Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; ConvF(4.64, 4.64, 4.64);
Electronics: DAE3 Sn452;
Test Position 1 Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.683 mW/g

Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.3 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 0.991 W/kg
SAR(1 g) = 0.625 mW/g; SAR(10 g) = 0.363 mW/g
Maximum value of SAR (measured) = 0.694 mW/g

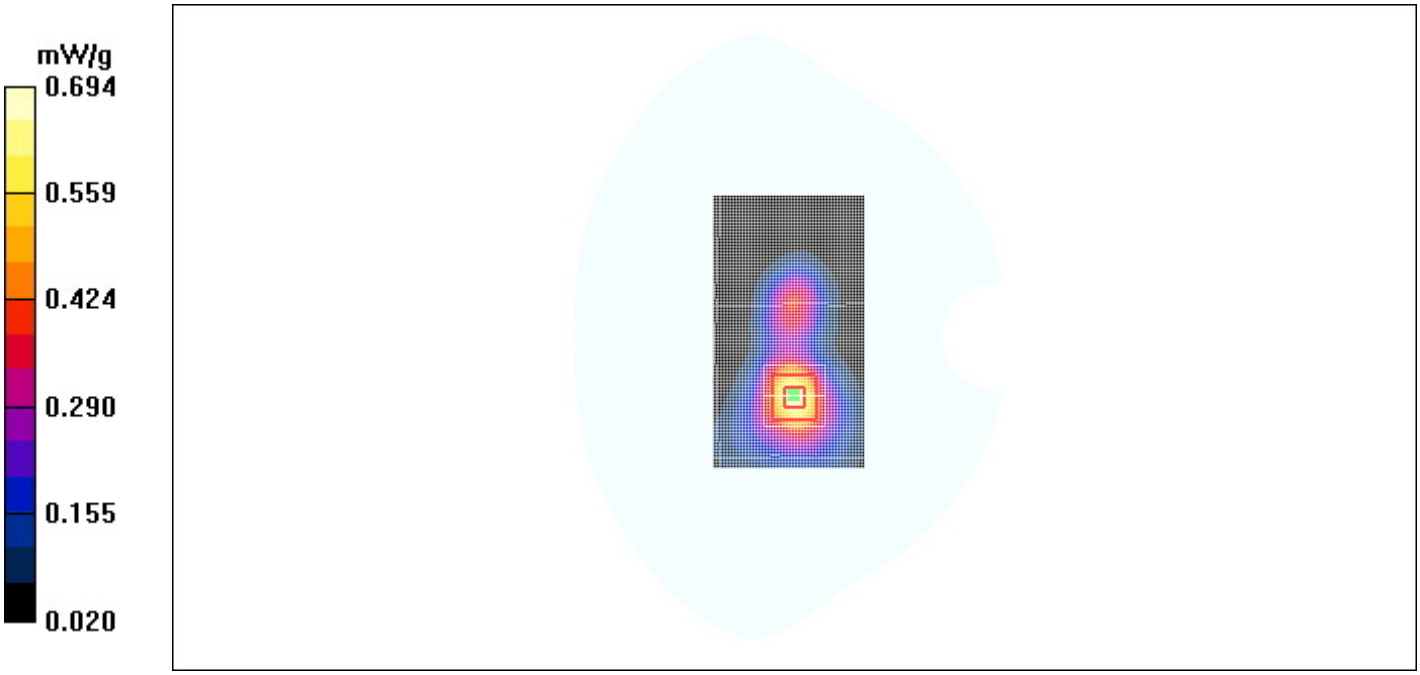


Figure 35 GSM 1900 GPRS (1 timeslot in uplink) with BenQ Joy book S72 Test Position 1 Channel 661

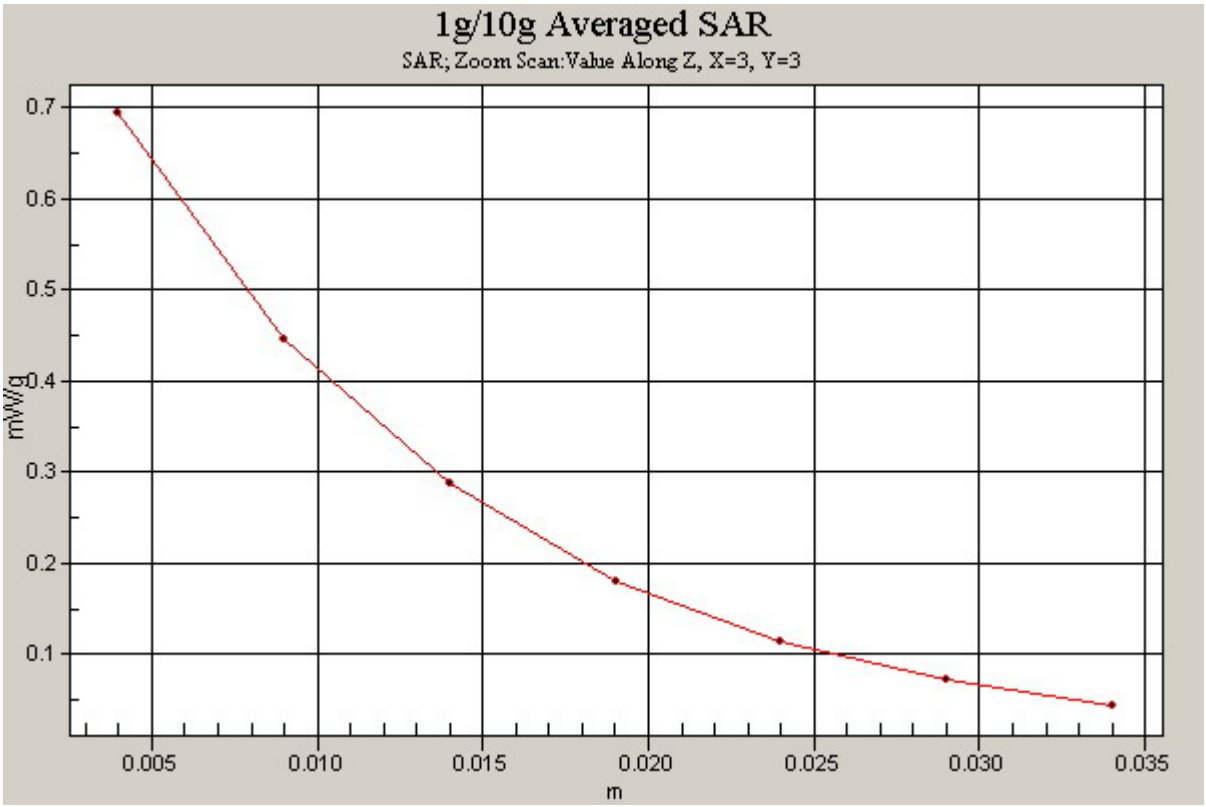


Figure 36 Z-Scan at power reference point [GSM 1900 GPRS (1 timeslot in uplink) with BenQ Joy book S72 Test Position 1 Channel 661]

GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joy book S72 Test Position 1 Middle

Communication System: GSM 1900+GPRS(2Up); Frequency: 1880 MHz; Duty Cycle: 1:4
Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; ConvF(4.64, 4.64, 4.64);
Electronics: DAE3 Sn452;
Test Position 1 Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.887 mW/g

Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.1 V/m; Power Drift = -0.071 dB
Peak SAR (extrapolated) = 2.53 W/kg
SAR(1 g) = 0.889 mW/g; SAR(10 g) = 0.355 mW/g
Maximum value of SAR (measured) = 0.866 mW/g

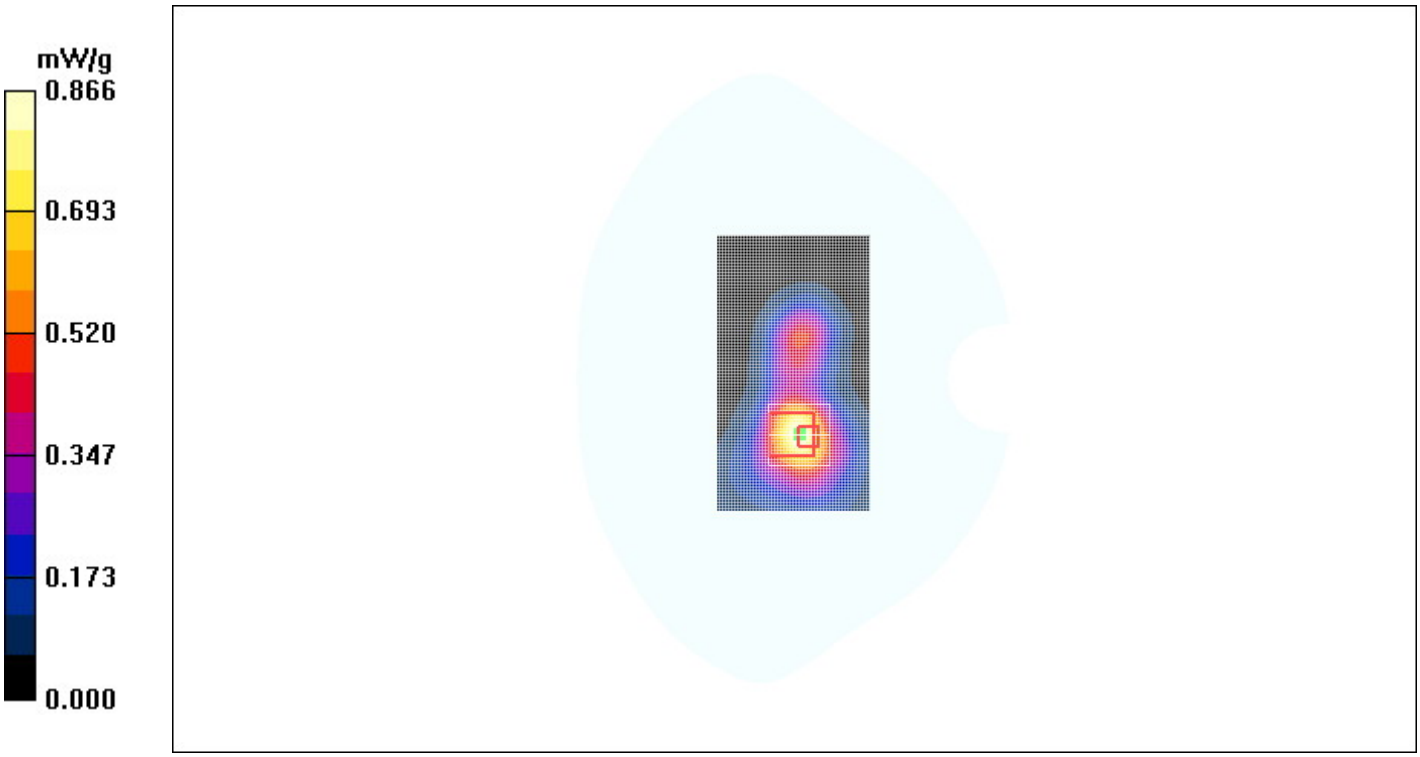


Figure 37 GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joy book S72 Test Position 1 channel 661

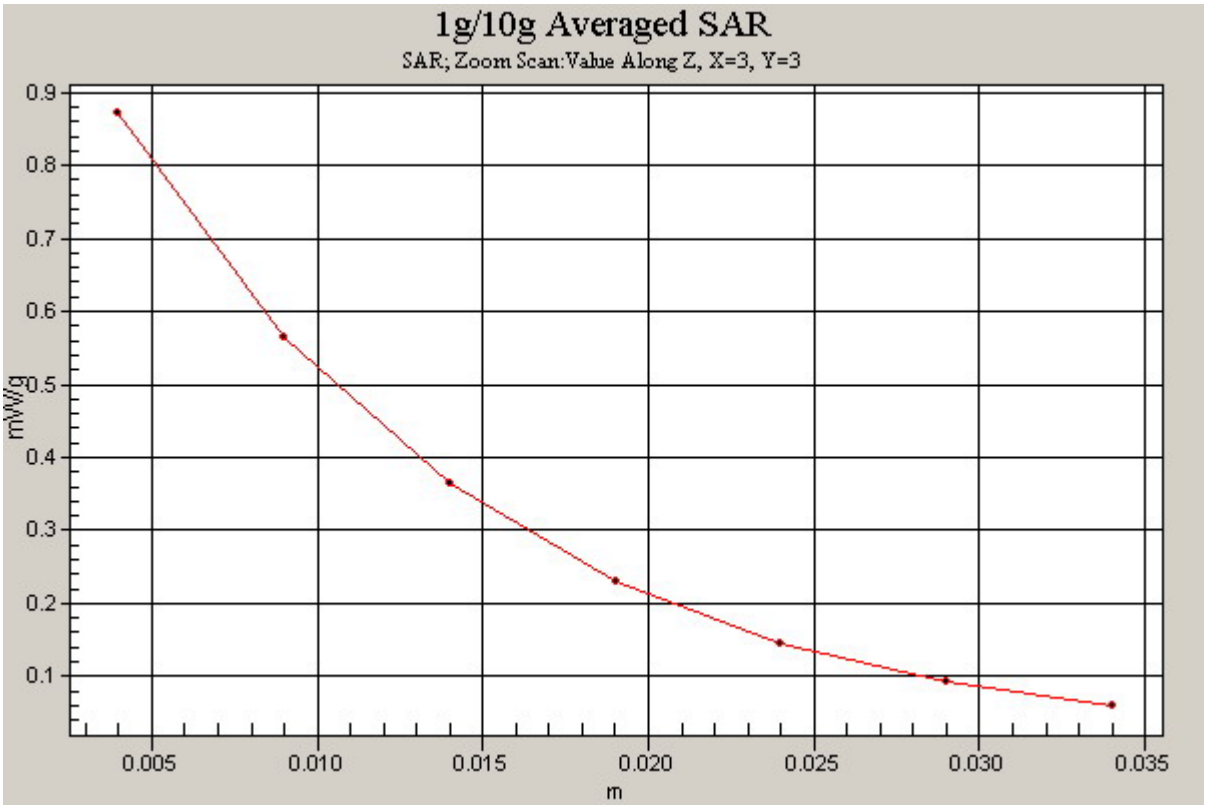


Figure 38 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joy book S72 Test Position 1 channel 661]

GSM 1900 GPRS (3 timeslots in uplink) with BenQ Joy book S72 Test Position 1 Middle

Communication System: GSM 1900+GPRS(3Up); Frequency: 1880 MHz;Duty Cycle: 1:2.67
Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; ConvF(4.64, 4.64, 4.64);
Electronics: DAE3 Sn452;
Test Position 1 Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.739 mW/g

Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.9 V/m; Power Drift = -0.136 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.747 mW/g; SAR(10 g) = 0.404 mW/g
Maximum value of SAR (measured) = 0.815 mW/g

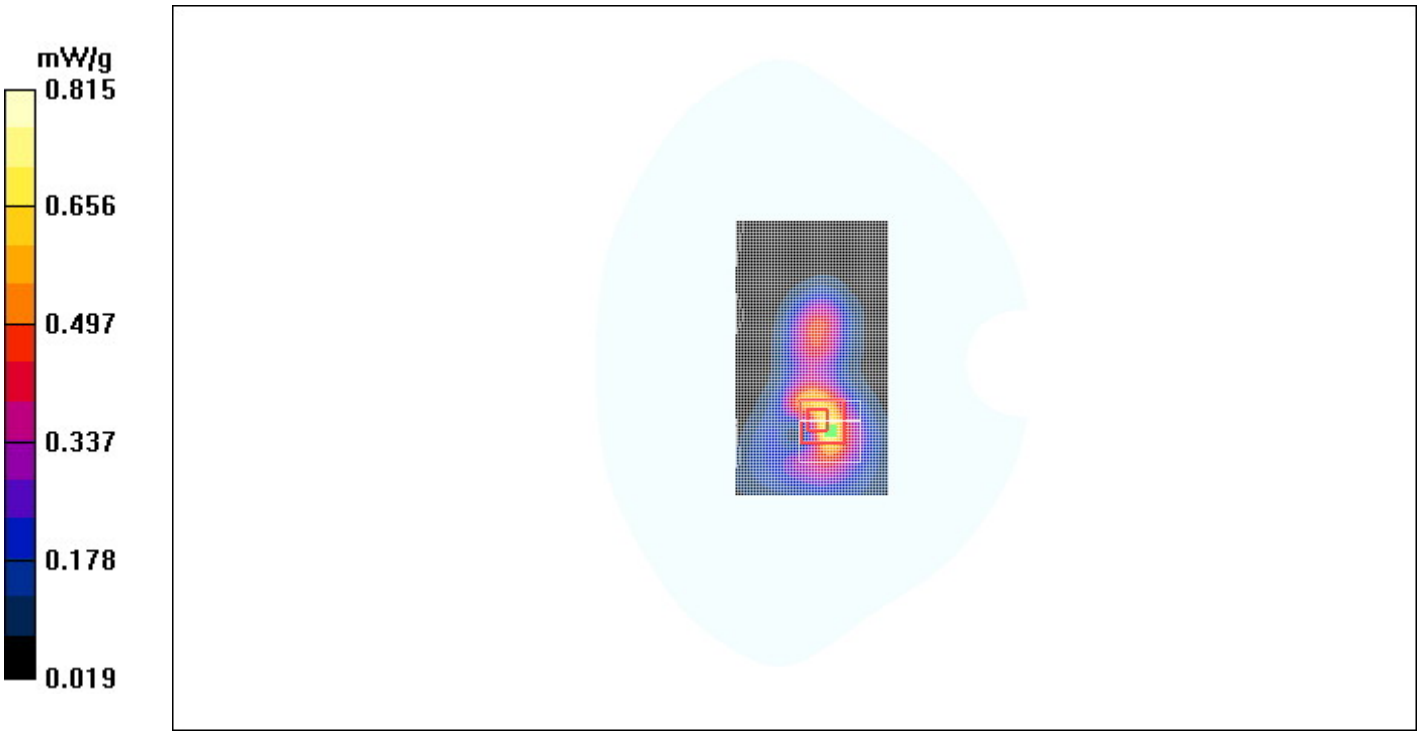


Figure 39 GSM 1900 GPRS (3 timeslots in uplink) with BenQ Joy book S72 Test Position 1 channel 661

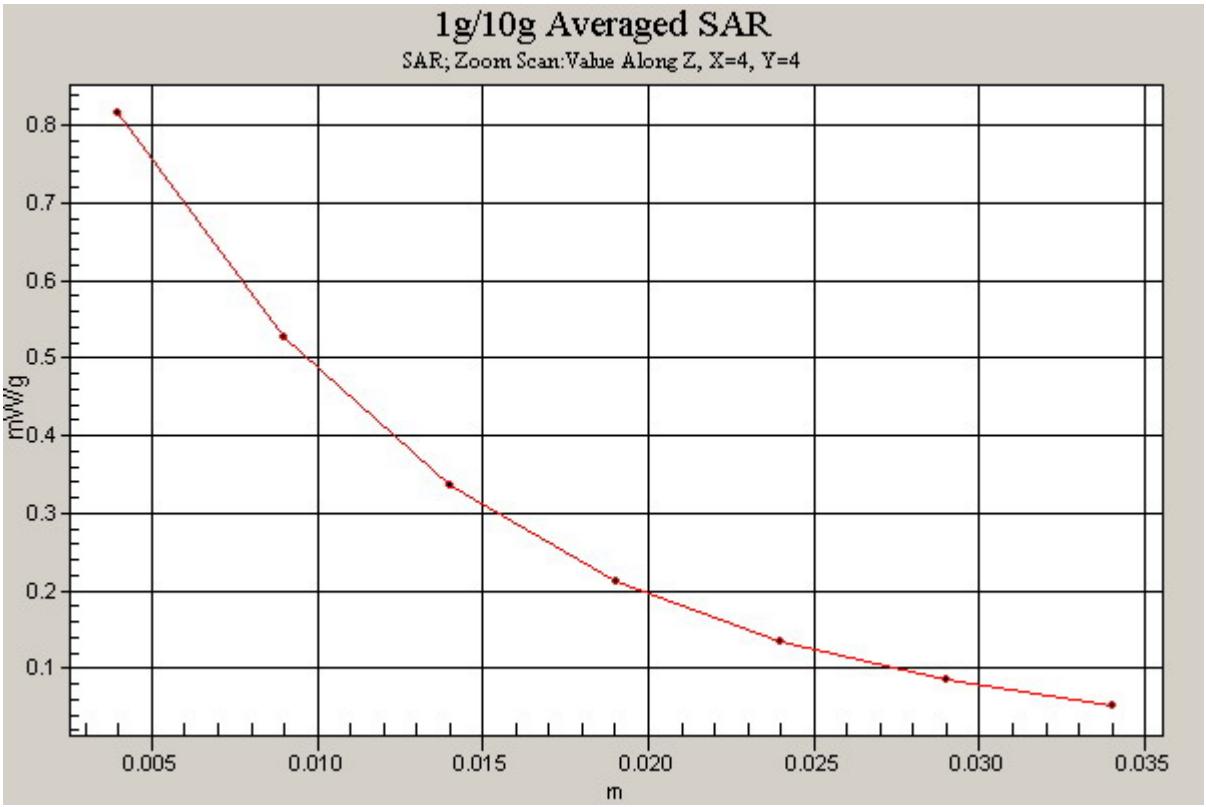


Figure 40 Z-Scan at power reference point [GSM 1900 GPRS (3 timeslots in uplink) with BenQ Joy book S72 Test Position 1 channel 661]

GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joy book S72 Test Position 2 Middle
Communication System: GSM 1900+GPRS(2Up); Frequency: 1880 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; ConvF(4.64, 4.64, 4.64);
Electronics: DAE3 Sn452;
Test Position 2 Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.218 mW/g

Test Position 2 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.4 V/m; Power Drift = -0.142 dB
Peak SAR (extrapolated) = 0.328 W/kg
SAR(1 g) = 0.195 mW/g; SAR(10 g) = 0.112 mW/g
Maximum value of SAR (measured) = 0.214 mW/g

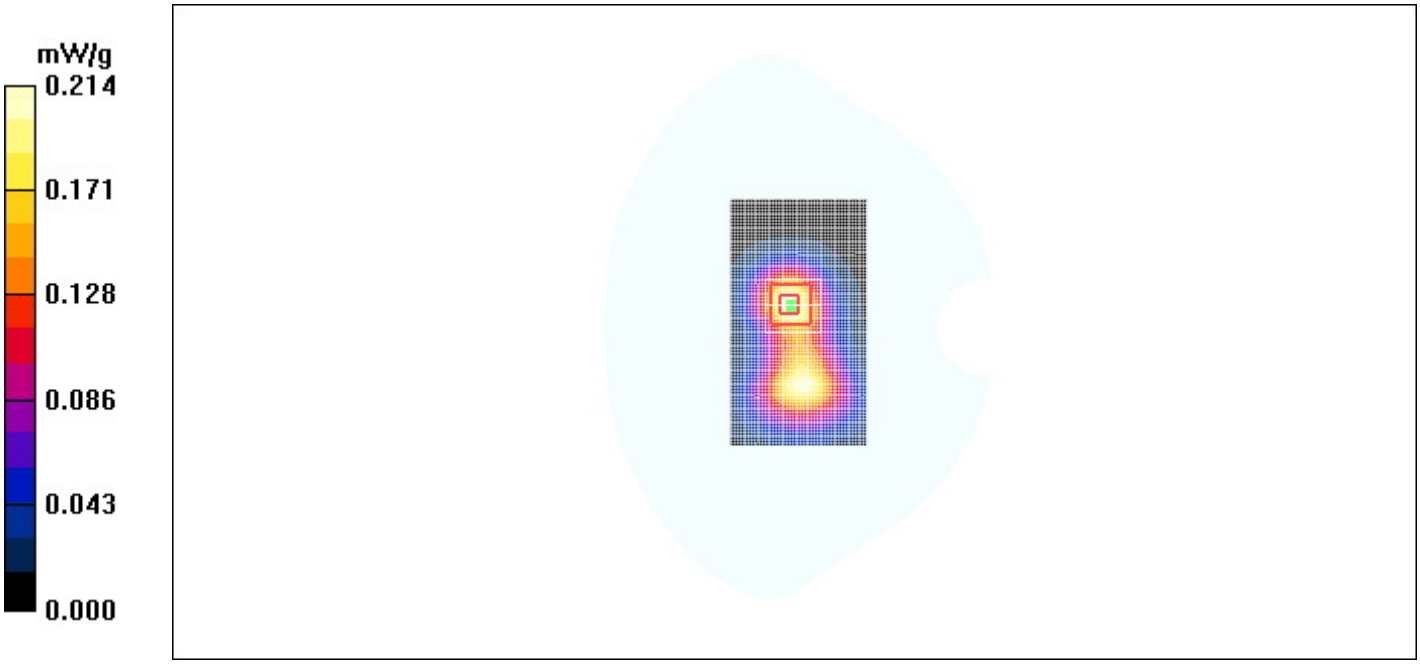


Figure 41 GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joy book S72 Test Position 2 channel 661

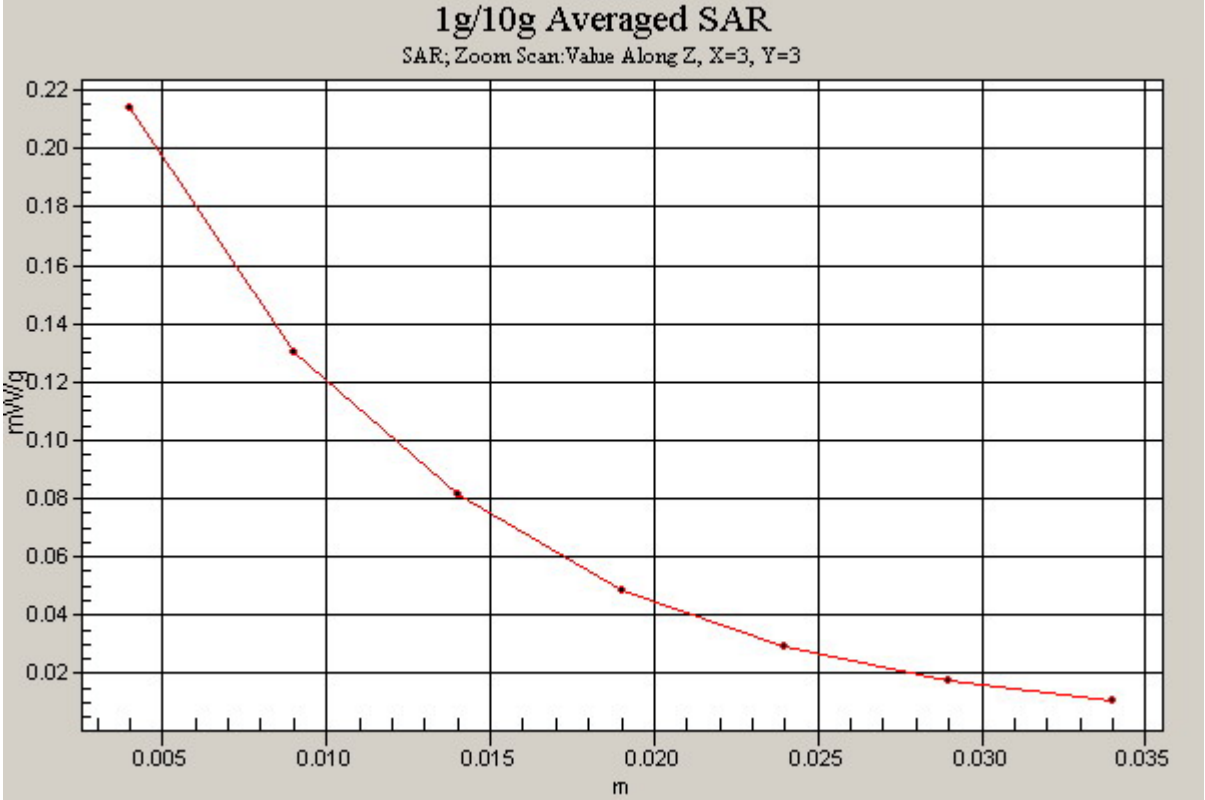


Figure 42 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joy book S72 Test Position 2 channel 661]

GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joy book S72 Test Position 3 Middle

Communication System: GSM 1900+GPRS(2Up); Frequency: 1880 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1737; ConvF(4.64, 4.64, 4.64);
Electronics: DAE3 Sn452;
Test Position 3 Middle/Area Scan (51x51x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.173 mW/g

Test Position 3 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.8 V/m; Power Drift = 0.015 dB
Peak SAR (extrapolated) = 0.516 W/kg
SAR(1 g) = 0.200 mW/g; SAR(10 g) = 0.098 mW/g
Maximum value of SAR (measured) = 0.232 mW/g

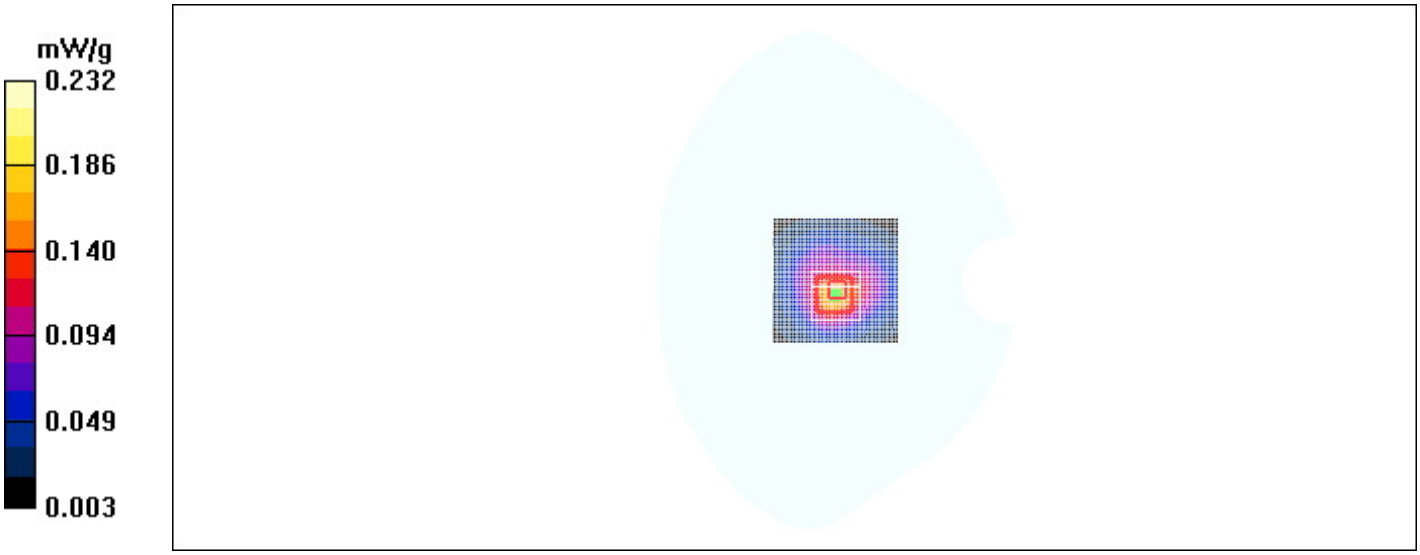


Figure 43 GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joy book S72 Test Position 3 channel 661