NO.: RZA2008-0850FCC

OET 65

TEST REPORT

Test name	Electromagnetic Field (Specific Absorption Rate)
Product	HSDPA USB Stick
Model	E160E
FCC ID	QISE160E
Client	HUAWEI Technologies Co., Ltd.

TA Technology (Shanghai) Co., Ltd.

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GENERAL SUMMARY

Product	HSDPA USB Stick	**Model**	E160E
Client	HUAWEI Technologies Co., Ltd.	**Type of test**	Entrusted
Manufacturer	HUAWEI Technologies Co., Ltd.	**Arrival Date of sample**	June. 26th, 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	DY2AA10861200115		
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 C95.1–2005:** 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 supplement C, published June 2001 including DA 02-1438, published June 2002:** Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits. Transition Period for the Phantom Requirements of Supplement C to OET Bulletin 65. **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.		
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:** July 7th, 2008		
Comment	The test result only responds to the measured sample.		

Approved by Chenguang Zheng **Revised by** Dabao Wang **Performed by** Minbao Ling

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.

TA Technology (Shanghai) Co., Ltd. is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the items under test and the results of the test.

2. GENERAL CONDITIONS

This report only refers to the item that has undergone the test.

This report standalone dose not constitute or imply by its own an approval of the product by the certification Bodies or competent Authorities. This document is only valid if complete; no partial reproduction can be made without written approval of **TA Technology (Shanghai) Co., Ltd.**

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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	E160E	DY2AA10861200115	HUAWEI Technologies Co., Ltd.

Note:
The EUT appearances see ANNEX I.

3.3. Operating conditions

Mode	GSM850	GSM1900
TX frequency range	824.2~848.8MHz	1850.2 ~1909.8 MHz
RX frequency range	869.2 ~893.8 MHz	1930.2 ~1989.8 MHz
Standard output power	33dBm (2W)	30dBm (1W)
Power level	Tested with power level 5	Tested with power level 0
Modulation	GPRS:GMSK	

3.4. General Description

We got the CE mark for E160/E160G in one certification report and the FCC ID for E160 and E169G respectively. The FCC ID for E160 is QISE160. The FCC ID for E160G is QISE160G.

Now Huawei derive 1 product form E160/E160G. It is E160E.The PCB and antenna is the same. The differences between the 3 sticks are:

	E160	E160G	E160E
GSM four band	support	support	support
WCDMA 2100M	support	support	support
WCDMA 1900M	support	No，and clear the WCDMA 1900M component on the PCB	No，and clear the WCDMA 1900M component on the PCB
WCDMA 900M	No	No	Support，and replace the WCDMA 850M component on the PCB of E160
WCDMA 850M	support	No	No
FLASH	128M	64M	128M
PCB	the same	the same	the same
antenna	the same	the same	the same
ID	supports the external interface and the TF interface	supports the external interface and the TF interface	supports the external interface and the TF interface

The measurements were performed in combination with three different host products (BenQ Joy book S72, IBM T61 and BenQ Joy book R55V). BenQ Joy book S72 laptop has horizontal USB slot, IBM T61 and BenQ Joy book R55V laptop have 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. 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 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 "3 dB rule" specified in OET Bulletin 65 supplement C, published June 2001 including DA 02-1438, published June 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 to192 and 661 respectively in the case of GSM 850 and GSM 1900.

4.2. Position of module in Portable devices

For each channel, the EUT is tested at the following 6 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 I 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 I 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 I Picture 6-c）
- Test Position 4: 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 I Picture 6-d）
- Test Position 5: 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 I Picture 6-e）
- Test Position 6: The EUT is connected to the portable computer with vertical USB slot. The top side of the EUT towards the bottom of the flat phantom.（ANNEX I Picture 6-f）

4.3. Picture of host product

During the test, The BENQ Joy book S72 laptop, IBM T61 laptop and and BENQ Joy book R55V laptop are used as an assistant to help to setup communication. (See Picture 1)

Picture 1-a: BenQ Joybook S72 Close

Picture 1-b: BenQ Joybook S72 Open

Picture 1-c: BenQ Joybook R55V(118) Close

Picture 1-d: BenQ Joybook R55V(118) Open

Picture 1-e: IBM T61 Close

Picture 1-f: IBM T61 Open

Picture 1-g: BenQ Joy book S72 with horizontal USB slot

Picture 1-h: BenQ Joybook R55V(118) with Vertical USB slot

Picture 1-e: IBM T61 with horizontal 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.

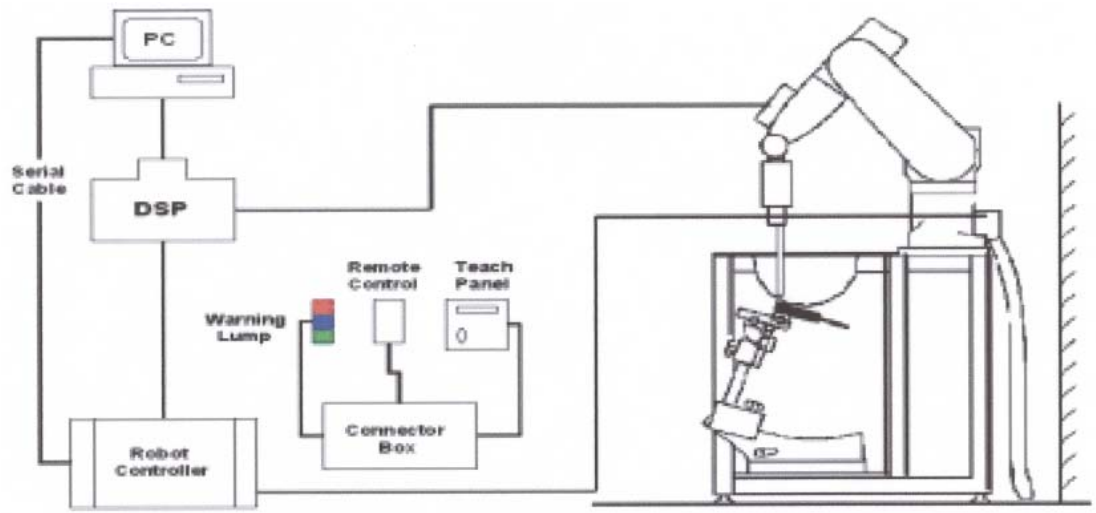


Figure 1. SAR Lab Test Measurement Set-up

The DAE4 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 900MHz, 1750 MHz, 1950MHz and 2450 MHz. (accuracy±8%) Calibration for other liquids and frequencies upon request
Frequency	I 0 MHz to3GHz; 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

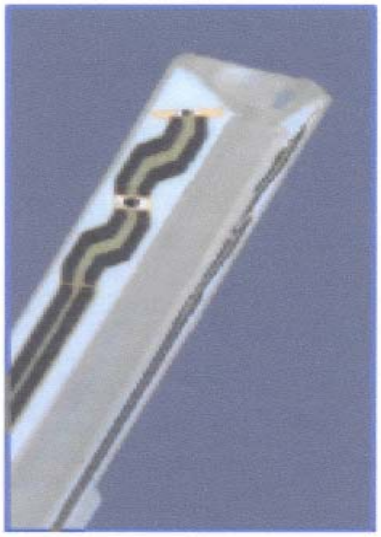


Figure 2.ET3DV6 E-field Probe

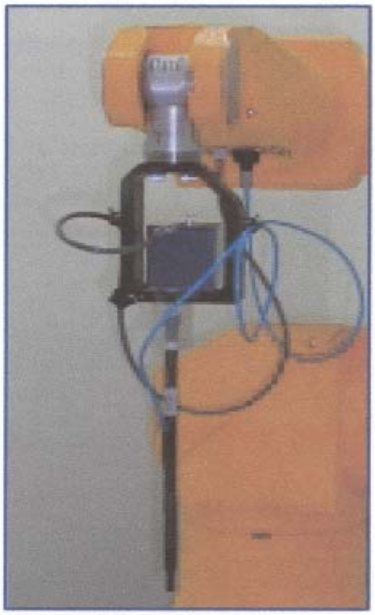


Figure3. ET3DV6 E-field probe

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

Figure 5.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 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

5.6.1Robotic 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 C95.1–2005: 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

BS EN 62209-1:2006: Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - 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)

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 supplement C, published June 2001 including DA 02-1438, published June 2002: Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits. Transition Period for the Phantom Requirements of Supplement C to OET Bulletin 65.

IEC 62209-2: 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.

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 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 13 labeled as: (Power Drift [dB]). This ensures that the power drift during one measurement is within 0.21dB

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.

8.3.2 Measurement result

Table 7: Conducted Power Measurement Results

GSM 850	**Conducted Power**		
	Channel 128	**Channel 192**	**Channel 251**
Before Test (dBm)	32.55	32.57	32.39
After Test (dBm)	32.52	32.60	32.41
GSM 850+GPRS	**Conducted Power**		
	Channel 128	**Channel 192**	**Channel 251**
Before Test (dBm)	32.59	32.61	32.45
After Test (dBm)	32.57	32.62	32.47
GSM 1900	**Conducted Power**		
	Channel 512	**Channel 661**	**Channel 810**
Before Test (dBm)	29.18	29.21	29.15
After Test (dBm)	29.22	29.20	29.17
GSM 1900+GPRS	**Conducted Power**		
	Channel 512	**Channel 661**	**Channel 810**
Before Test (dBm)	29.19	29.12	29.17
After Test (dBm)	29.15	29.18	29.13

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	54.60	-1.09	%
	Conductivity σ	0.97	1.00	3.09	%
1900 (Body)	Permittivity ε_r	53.30	53.04	-0.49	%
	Conductivity σ	1.52	1.51	-0.66	%

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	41.86		0.92			
	1900MHz	39.85		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	1.56	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

Table 10: SAR Values (GSM 850 GPRS)

Liquid Temperature: 22.4℃						
Limit of SAR (W/kg)			**10g Average**	**1g Average**	**Power Drift (dB)**	**Graph Results**
			2.0	**1.6**	**± 0.21**	
Test Case Of Body			**Measurement Result (W/kg)**		**Power Drift(dB)**	
Different Test Position	**Different Timeslots**	**Channel**	**10g Average**	**1g Average**		
BenQ Joybook S72						
Test Position 1	4 timeslots	Middle	0.223	0.354	-0.046	Figure 7
	3 timeslots	Middle	0.286	0.456	-0.006	Figure 9
	2 timeslots	Middle	**0.325**	**0.522**	0.078	Figure 11
	1 timeslot	Middle	0.302	0.481	0.177	Figure 13
Test Position 2	2 timeslots	Middle	0.318	0.548	-0.029	Figure 15
Test Position 3	2 timeslots	Middle	0.038	0.114	-0.045	Figure 17
IBM T61						
Test Position 4	2 timeslots	Middle	0.355	0.567	-0.135	Figure 19
BenQ Joybook R55V						
Test Position 5	2 timeslots	Middle	0.170	0.268	-0.139	Figure 21
Test Position 6	2 timeslots	Middle	0.052	0.152	0.030	Figure 23
Worst case position of Test Position with EGPRS						
Test Position 4	2 timeslots	Middle	0.183	0.293	-0.066	Figure 25

Note: 1.The value with blue color is the maximum SAR Value of each test band.

2. The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 0.8 W/kg), testing at the high and low channels is optional.

Table 11: SAR Values (enhanced energy coupling at increased separation distances)

Different Test Position	Distance of EUT to Phantom	Channel	Measurement Result (W/kg)	50% of initial position SAR (W/kg)	125% of initial position SAR (W/kg)
BenQ Joybook S72					
Test Position 2	initial position	Middle	0.634	0.317	0.792
	5mm	Middle	0.341		
	10mm	Middle	0.221		
IBM T61					
Test Position 4	initial position	Middle	0.616	0.308	0.770
	5mm	Middle	0.318		
	10mm	Middle	0.198		
BenQ Joybook R55V					
Test Position 5	initial position	Middle	0.301	0.151	0.376
	5mm	Middle	0.073		

Note: 1. when the device position with the highest point SAR is > 25% of that measured at the initial position, a complete 1-g SAR evaluation is required for this configuration.

2. A single point SAR is measured for each of these device positions until the SAR is less than 50% of that measured at the initial position.

Table12: SAR Values (GSM 1900 GPRS)

Liquid Temperature: 22.4℃						
Limit of SAR (W/kg)			**10g Average**	**1g Average**	**Power Drift (dB)**	**Graph Results**
			2.0	**1.6**	**± 0.21**	
Test Case Of Body			**Measurement Result (W/kg)**		**Power Drift(dB)**	
Different Test Position	**Different Timeslots**	**Channel**	**10g Average**	**1g Average**		
BenQ Joybook S72						
Test Position 1	4 timeslots	High	0.533	0.982	0.049	Figure 27
		Middle	0.526	0.987	-0.143	Figure 29
		Low	0.513	0.929	-0.081	Figure 31
	3 timeslots	High	0.597	1.080	0.022	Figure 33
		Middle	0.586	1.060	-0.090	Figure 35
		Low	0.590	1.050	0.002	Figure 37
	2 timeslots	High	0.628	1.140	-0.066	Figure 39
		Middle	0.619	1.130	-0.056	Figure 41
		Low	0.614	1.070	-0.030	Figure 43
	1 timeslot	High	0.521	0.957	0.053	Figure 45
		Middle	0.510	0.927	0.034	Figure 47
		Low	0.517	0.922	0.027	Figure 49
Test Position 2	2 timeslots	High	0.558	1.050	-0.051	Figure 51
		Middle	0.583	1.090	-0.086	Figure 53
		Low	0.564	1.040	0.030	Figure 55
Test Position 3	2 timeslots	Middle	0.267	0.653	-0.048	Figure 57
IBM T61						
Test Position 4	2 timeslots	High	0.415	0.738	-0.001	Figure 59
		Middle	0.487	0.875	-0.063	Figure 61
		Low	0.382	0.674	-0.190	Figure 63
BenQ Joybook R55V						
Test Position 5	2 timeslots	High	0.611	1.130	0.090	Figure 65
		Middle	0.620	1.170	-0.022	Figure 67
		Low	0.606	1.140	0.042	Figure 69
Test Position 6	2 timeslots	Middle	0.222	0.513	-0.149	Figure 71
Worst case position of Test Position with EGPRS						
Test Position 5	2 timeslots	Middle	0.153	0.254	-0.055	Figure 73

Note: 1.The value with blue color is the maximum SAR Value of each test band.

2. The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 0.8 W/kg), testing at the high and low channels is optional.

Table 13: SAR Values (enhanced energy coupling at increased separation distances)

Different Test Position	Distance of EUT to Phantom	Channel	Measurement Result (W/kg)	50% of initial position SAR (W/kg)	125% of initial position SAR (W/kg)
BenQ Joybook S72					
Test Position 1	initial position	High	1.260	0.630	1.575
	5mm	High	0.452		
IBM T61					
Test Position 4	initial position	Middle	0.974	0.487	1.217
	5mm	Middle	0.311		
BenQ Joybook R55V					
Test Position 5	initial position	Middle	1.280	0.640	1.600
	5mm	Middle	0.536		

Note: 1. when the device position with the highest point SAR is > 25% of that measured at the initial position, a complete 1-g SAR evaluation is required for this configuration.

2. A single point SAR is measured for each of these device positions until the SAR is less than 50% of that measured at the initial position.

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	$\sqrt{3}$	$(1\text{-cp})^{1/2}$	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 14: 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	DAE4	679	May 21, 2008	One year

12. TEST PERIOD

The test is performed from June 28, 2008 to July 4, 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.

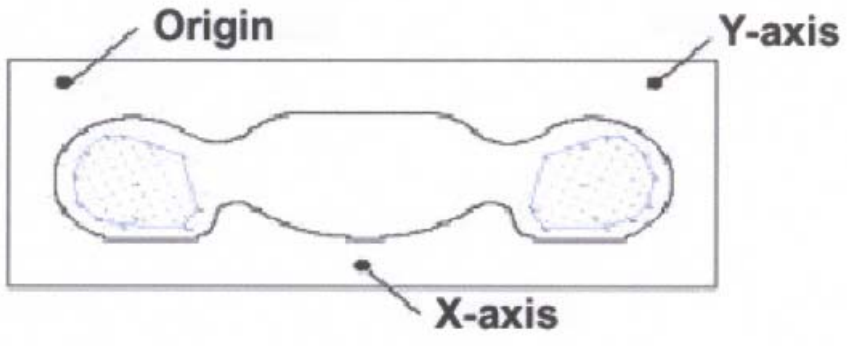
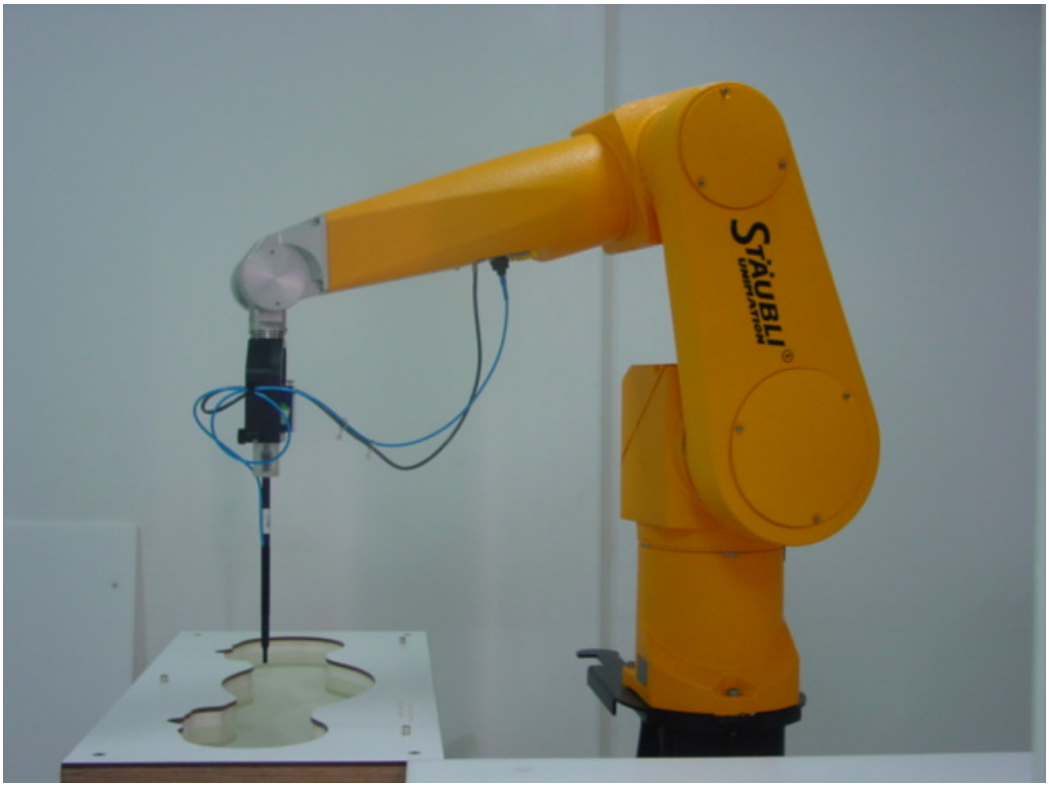
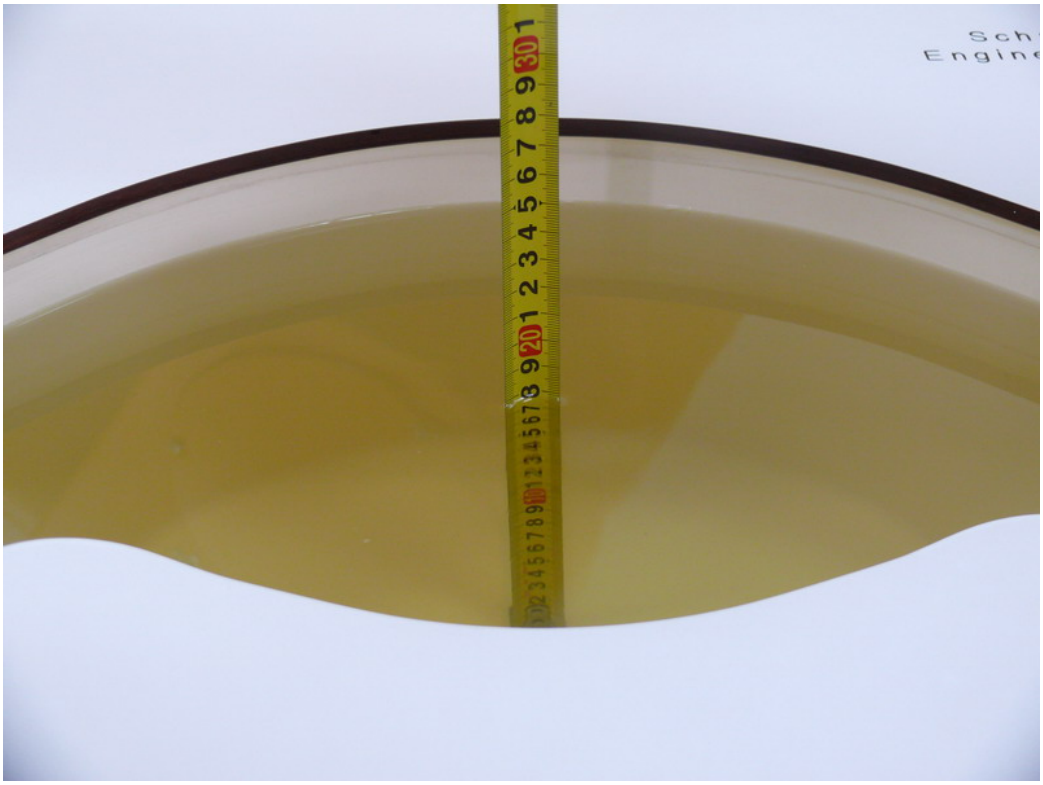


Figure 6 SAR Measurement Points in Area Scan

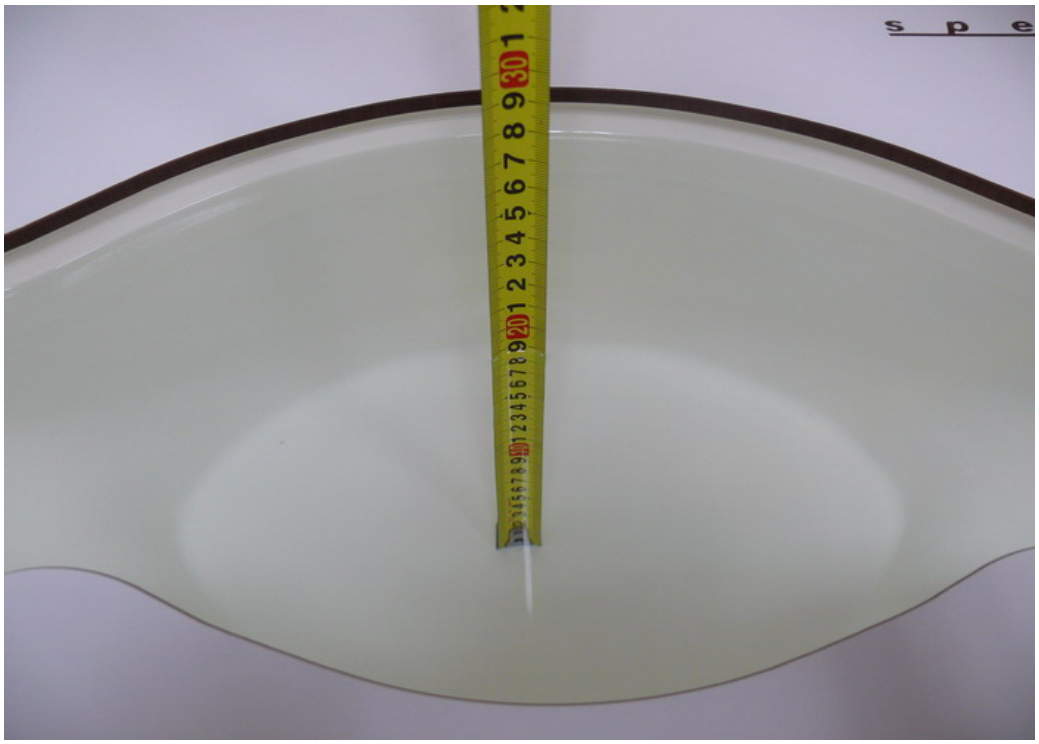
ANNEX B： TEST LAYOUT



Picture 2 Specific Absorption Rate Test Layout



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



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

ANNEX C： GRAPH RESULTS

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

Communication System: GSM 850+GPRS(4Up); Frequency: 837 MHz;Duty Cycle: 1:2
Medium parameters used: f = 837 MHz; σ = 1 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn679;
Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.405 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 = -0.046 dB
Peak SAR (extrapolated) = 0.531 W/kg
SAR(1 g) = 0.354 mW/g; SAR(10 g) = 0.223 mW/g
Maximum value of SAR (measured) = 0.390 mW/g

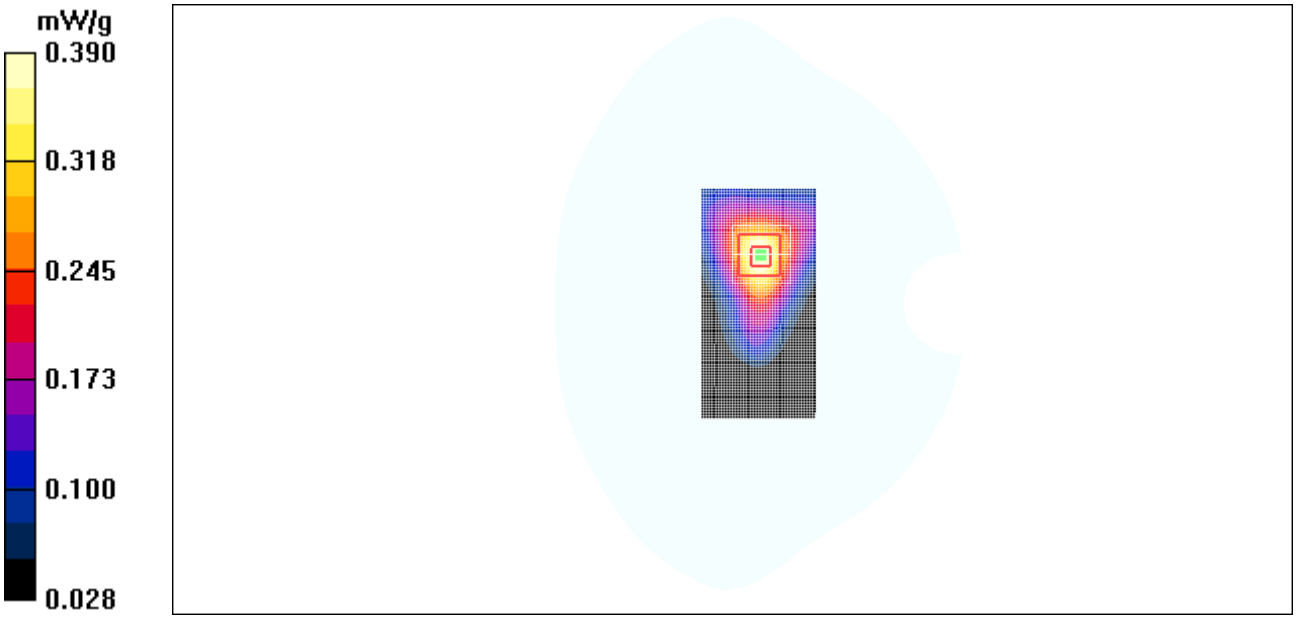


Figure 7 GSM 850 GPRS (4 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 192

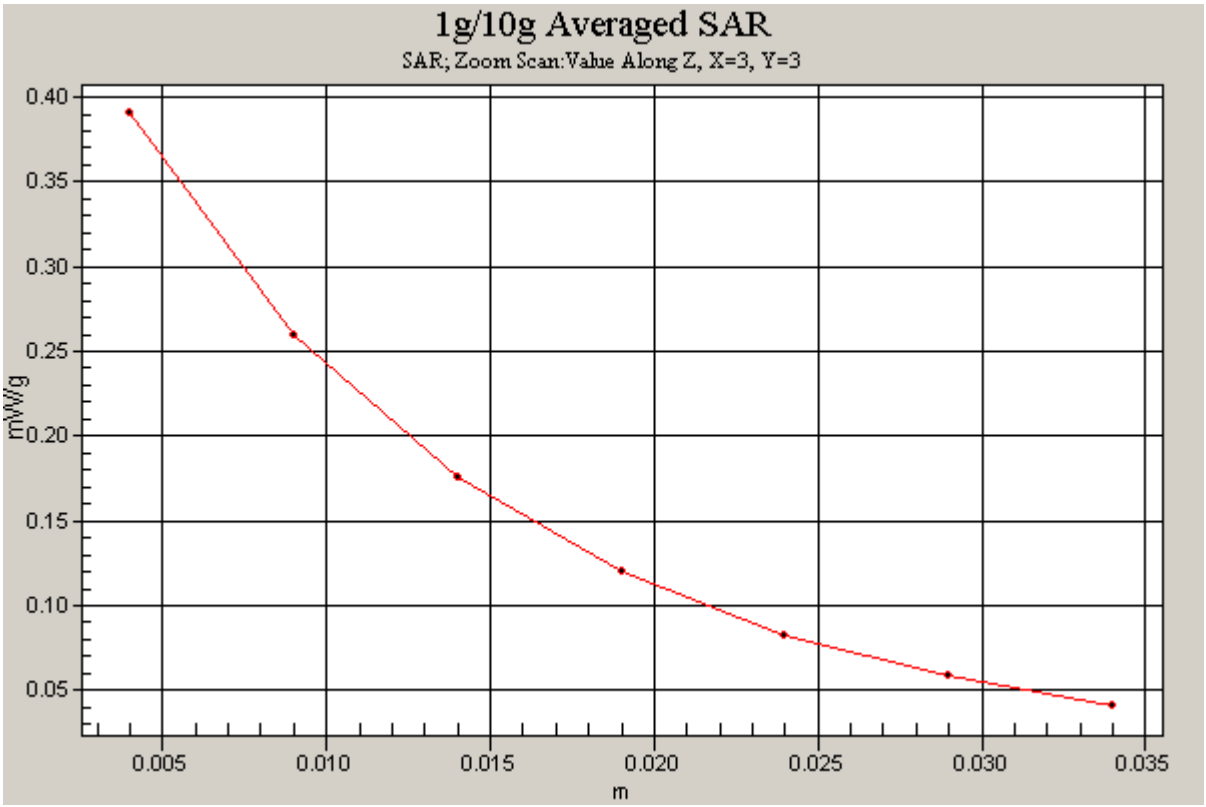


Figure 8 Z-Scan at power reference point [GSM 850 GPRS (4 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 192]

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

Communication System: GSM850 + GPRS(3Up); Frequency: 837 MHz;Duty Cycle: 1:2.67
Medium parameters used: f = 837 MHz; σ = 1 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn679;
Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.488 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 = -0.006 dB
Peak SAR (extrapolated) = 0.694 W/kg
SAR(1 g) = 0.456 mW/g; SAR(10 g) = 0.286 mW/g
Maximum value of SAR (measured) = 0.497 mW/g

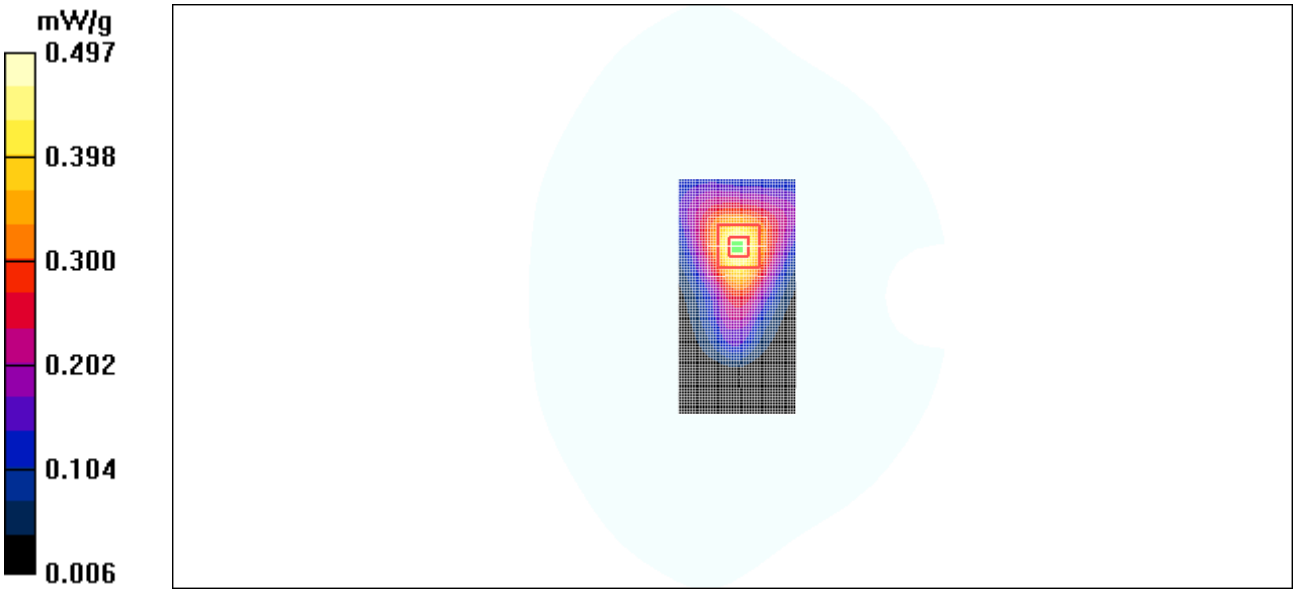


Figure 9 GSM 850 GPRS (3 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 192

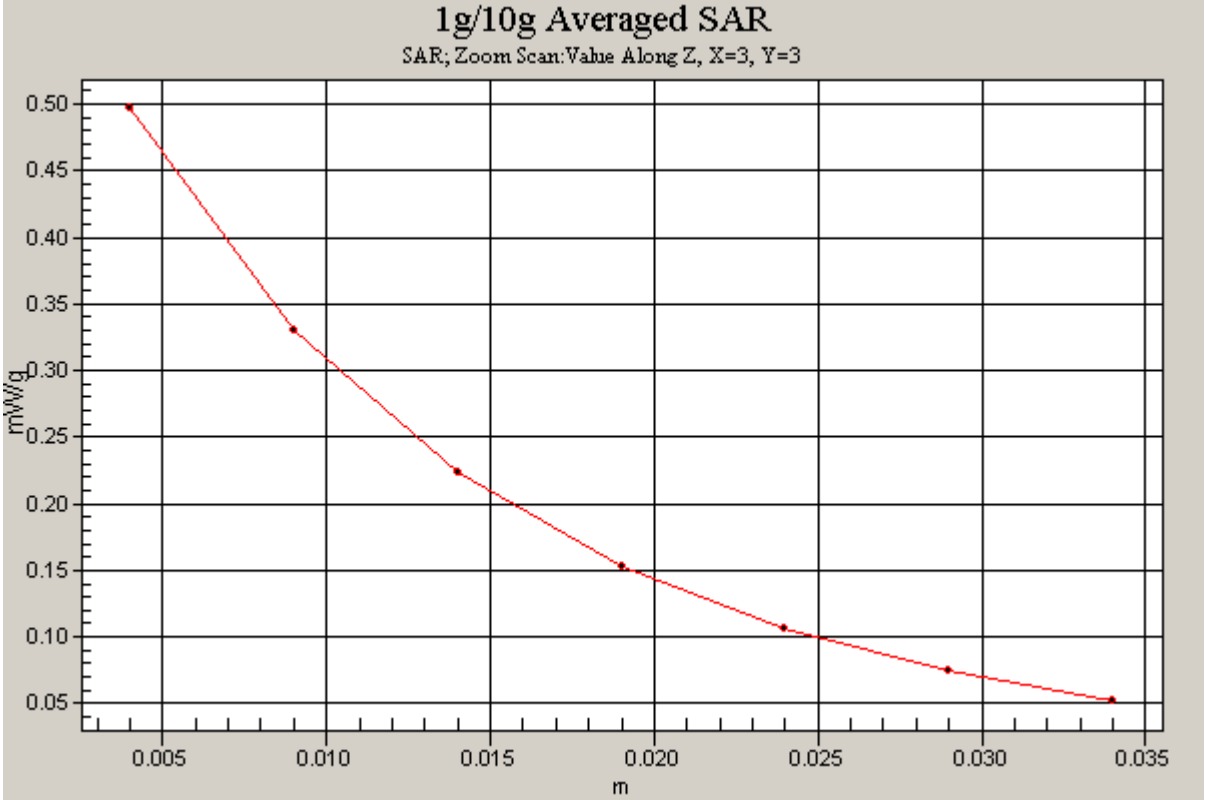


Figure 10 Z-Scan at power reference point [GSM 850 GPRS (3 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 192]

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

Communication System: GSM850 + GPRS(2Up); Frequency: 837 MHz;Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 1 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn679;
Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.675 mW/g

Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.4 V/m; Power Drift = 0.078 dB
Peak SAR (extrapolated) = 0.751 W/kg
SAR(1 g) = 0.522 mW/g; SAR(10 g) = 0.325 mW/g
Maximum value of SAR (measured) = 0.574 mW/g

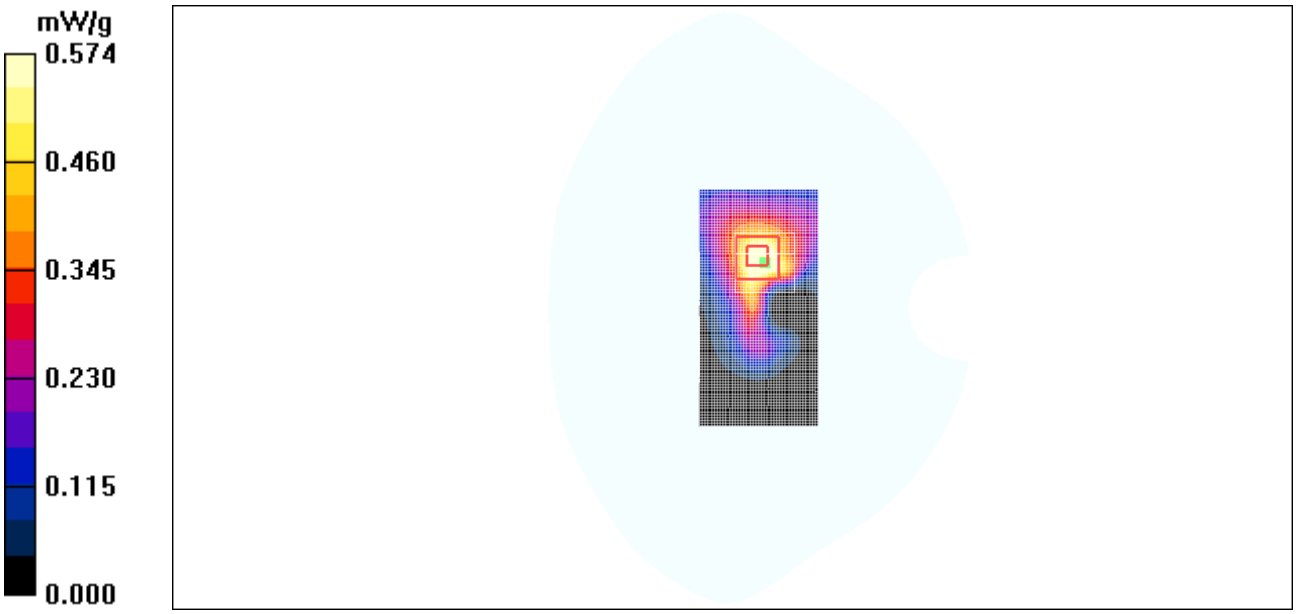


Figure 11 GSM 850 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 192

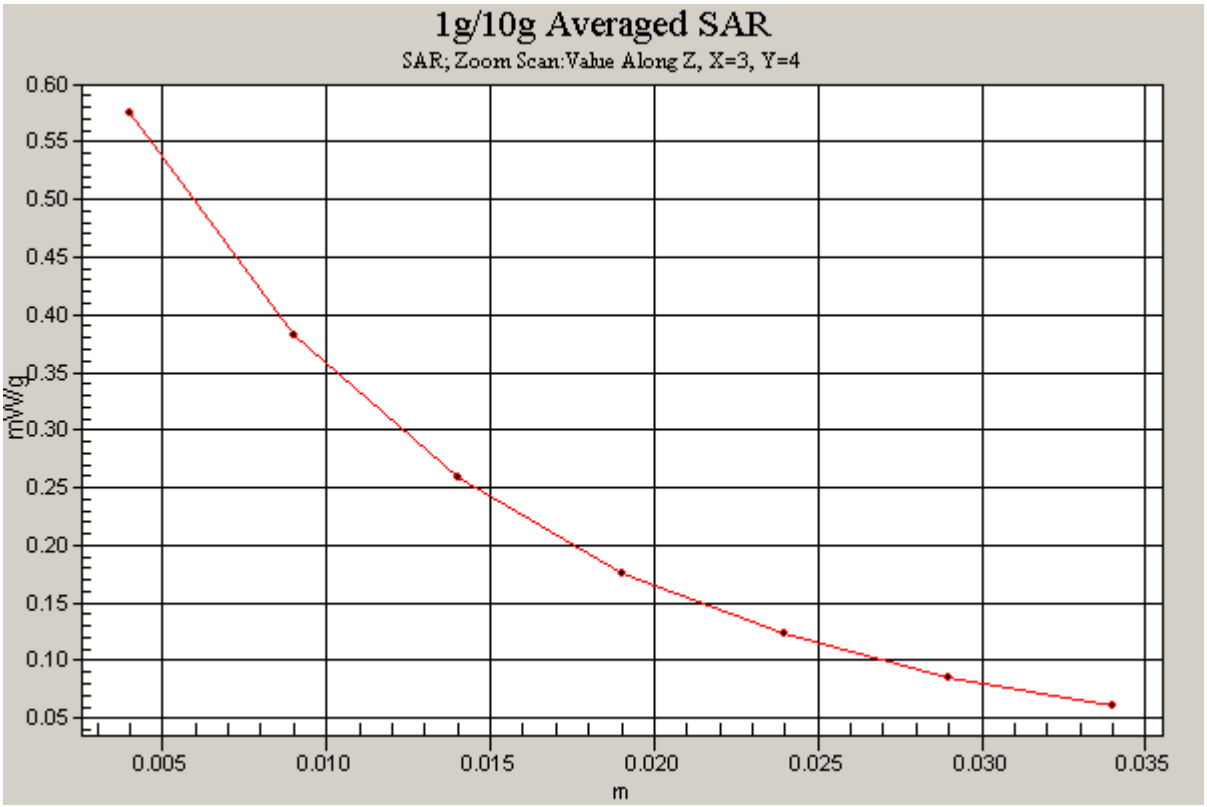


Figure 12 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 192]

GSM 850 GPRS (1 timeslot in uplink) with BenQ Joybook S72 Test Position 1 Middle Frequency

Communication System: GSM850 + GPRS(1Up); Frequency: 837 MHz;Duty Cycle: 1:8
Medium parameters used: f = 837 MHz; σ = 1 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn679;
Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.502 mW/g

Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.2 V/m; Power Drift = 0.177 dB
Peak SAR (extrapolated) = 0.724 W/kg
SAR(1 g) = 0.481 mW/g; SAR(10 g) = 0.302 mW/g
Maximum value of SAR (measured) = 0.522 mW/g

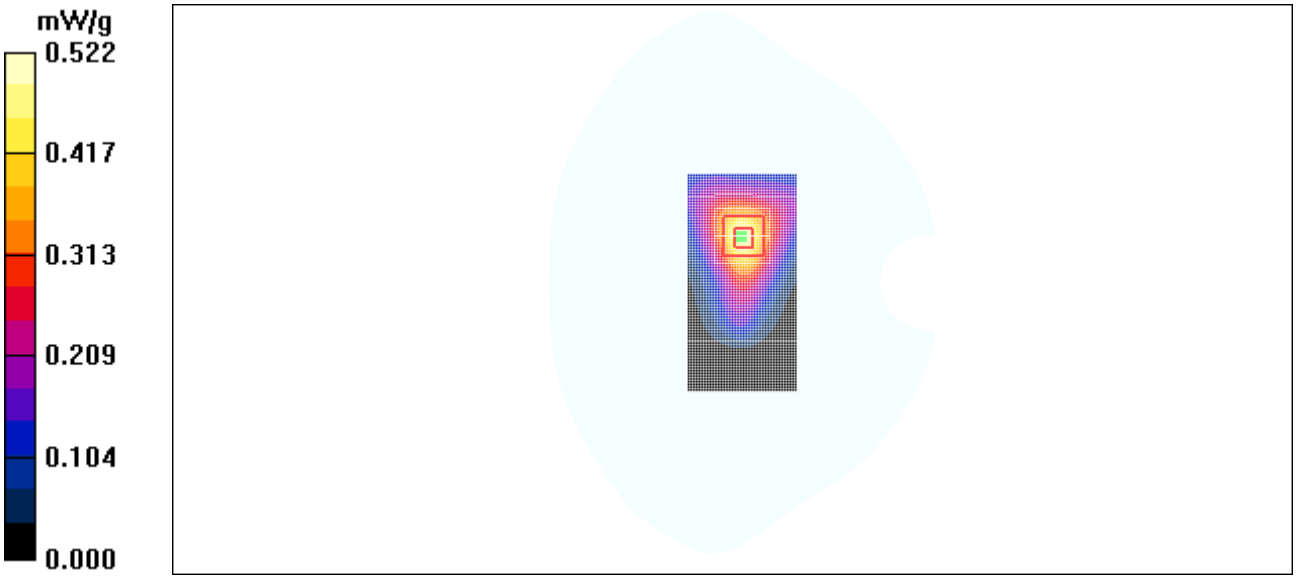


Figure 13 GSM 850 GPRS (1 timeslot in uplink) with BenQ Joybook S72 Test Position 1 Channel 192

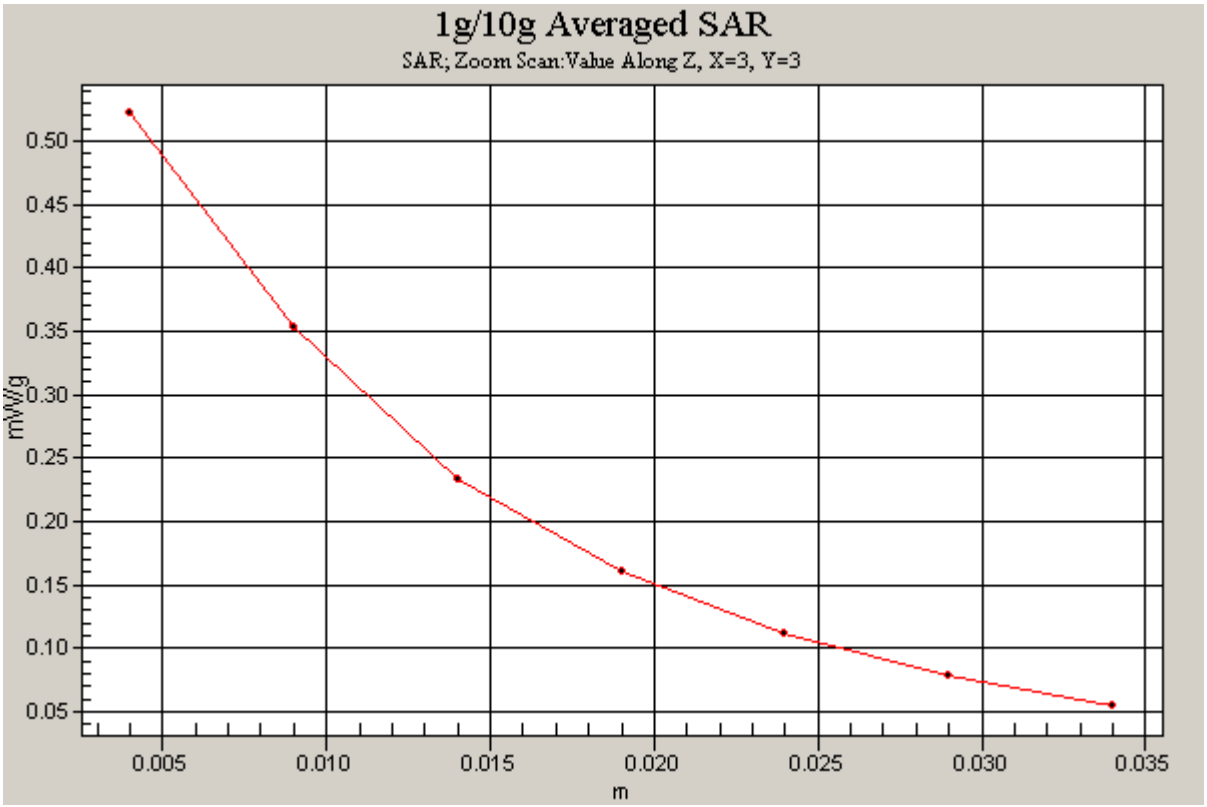


Figure 14 Z-Scan at power reference point [GSM 850 GPRS (1 timeslot in uplink) with BenQ Joybook S72 Test Position 1 Channel 192]

GSM 850 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 2 Middle Frequency

Communication System: GSM850 + GPRS(2Up); Frequency: 837 MHz;Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 1.01 mho/m; ε_r = 55.5; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn679;
Test Position 2 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.546 mW/g

Test Position 2 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.5 V/m; Power Drift = -0.029 dB
Peak SAR (extrapolated) = 1.06 W/kg
SAR(1 g) = 0.548 mW/g; SAR(10 g) = 0.318 mW/g
Maximum value of SAR (measured) = 0.583 mW/g

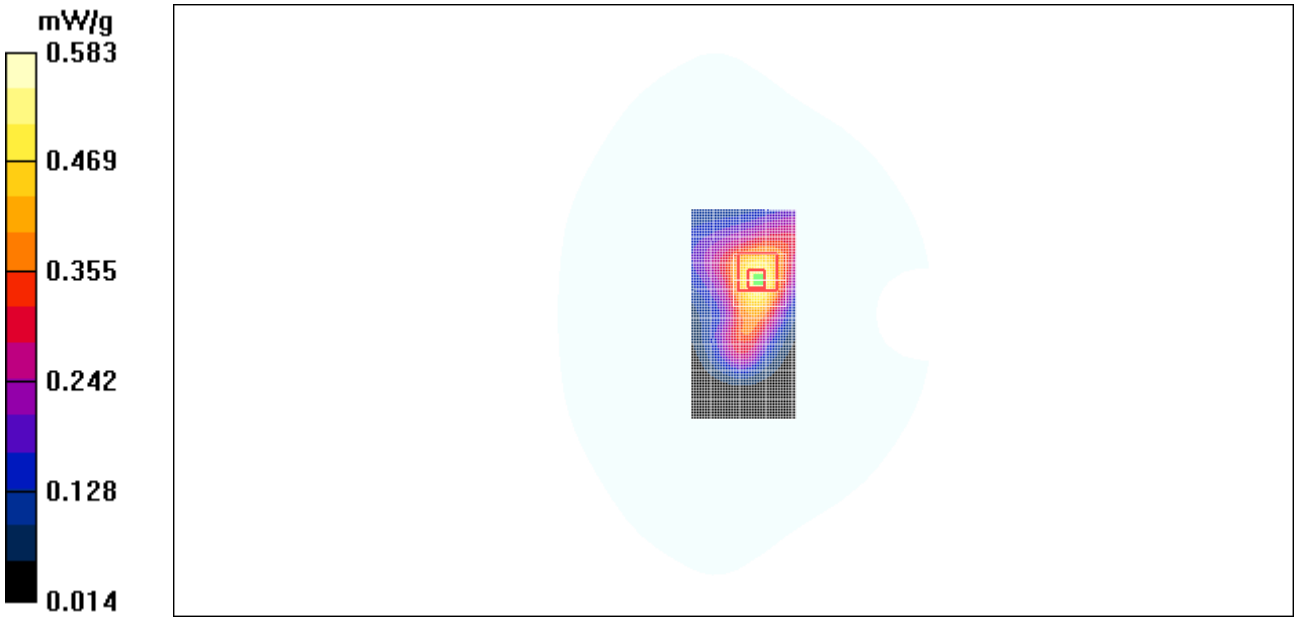


Figure 15 GSM 850 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 2 Channel 192

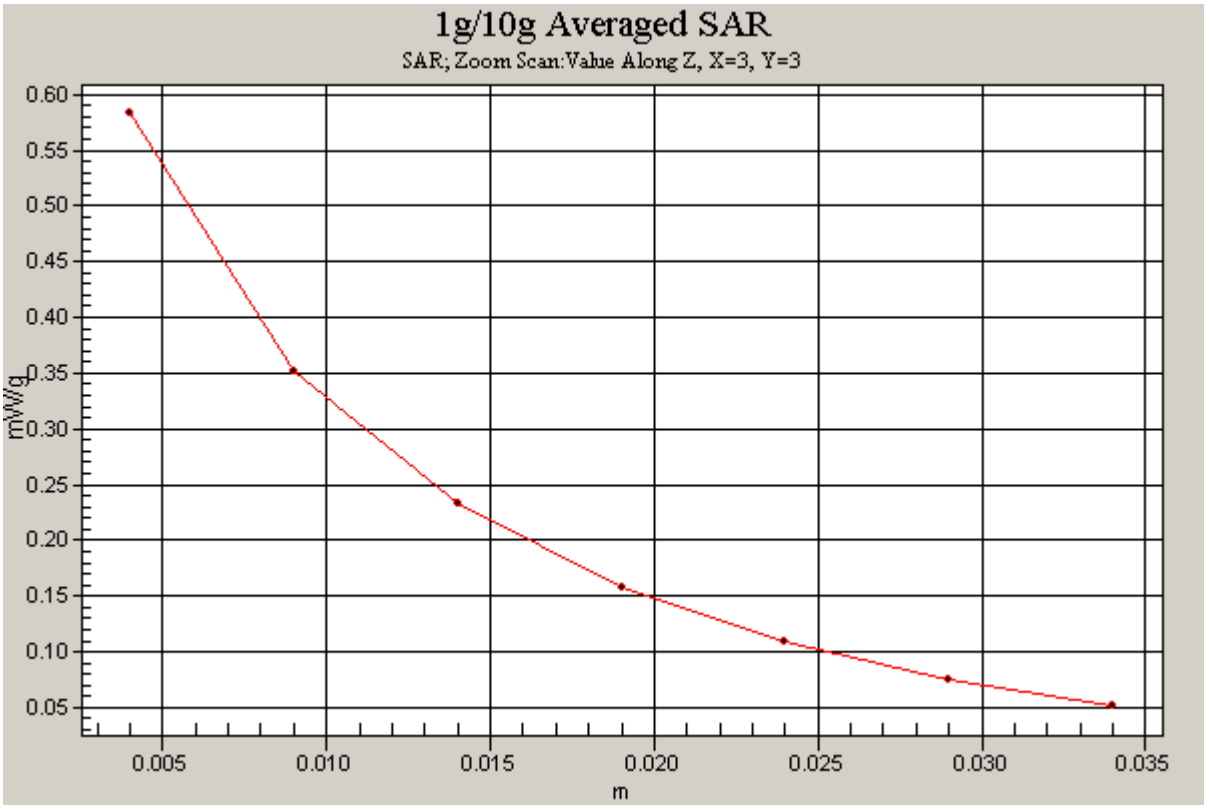


Figure 16 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 2 Channel 192]

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

Communication System: GSM850 + GPRS(2Up); Frequency: 837 MHz;Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 1 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn679;
Test Position 3 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.107 mW/g

Test Position 3 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.09 V/m; Power Drift = -0.045 dB
Peak SAR (extrapolated) = 0.551 W/kg
SAR(1 g) = 0.114 mW/g; SAR(10 g) = 0.038 mW/g
Maximum value of SAR (measured) = 0.120 mW/g

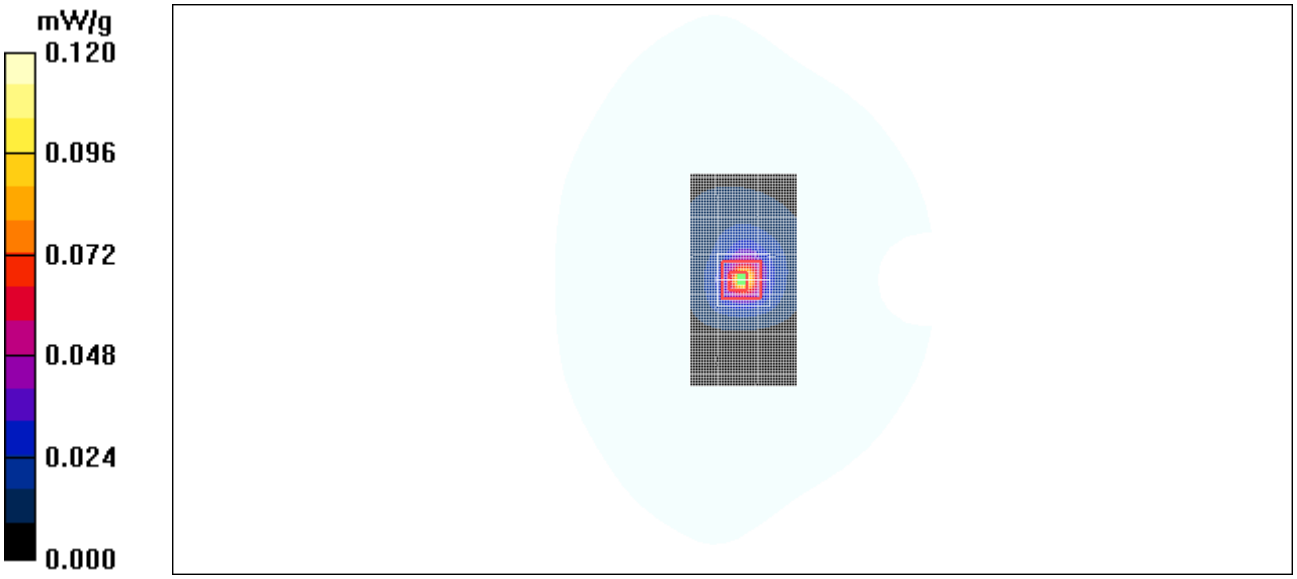


Figure 17 GSM 850 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 3 Channel 192

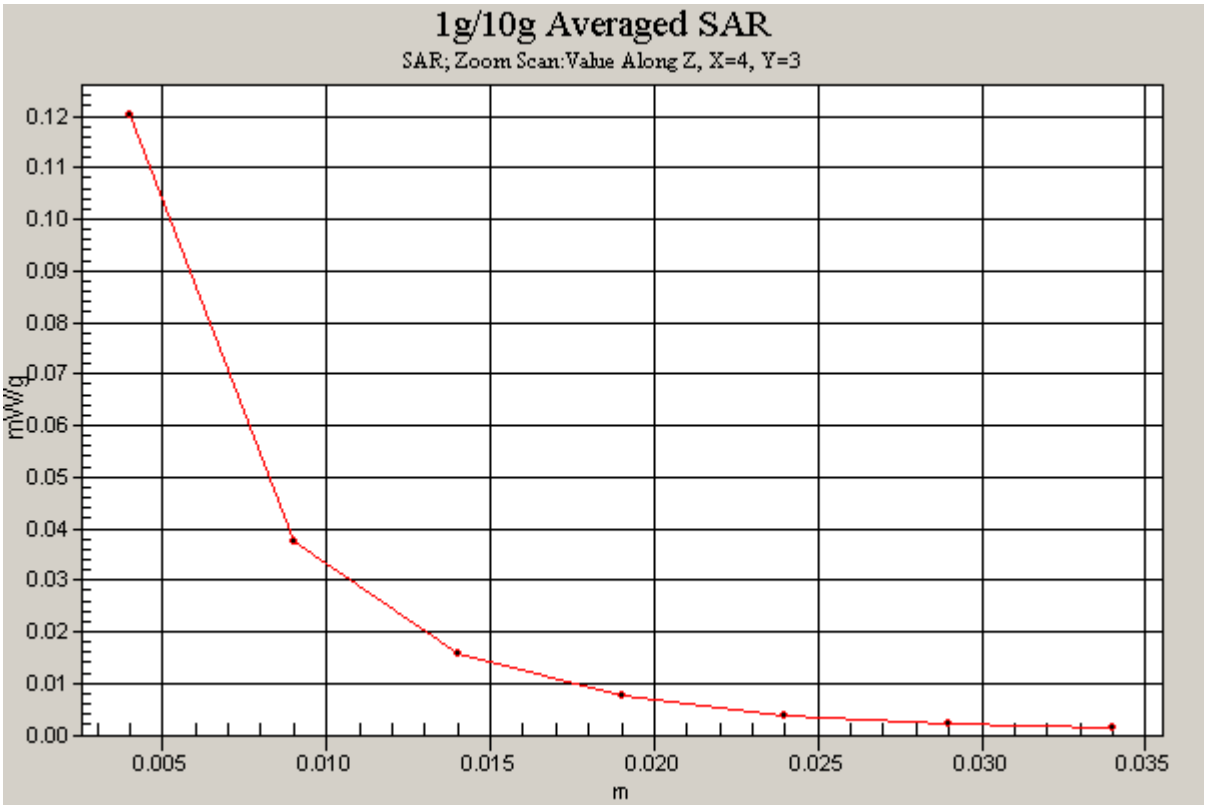


Figure 18 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 3 Channel 192]

GSM 850 GPRS (2 timeslots in uplink) with IBM T61 Test Position 4 Middle Frequency

Communication System: GSM850 + GPRS(2Up); Frequency: 837 MHz;Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 1.01 mho/m; ε_r = 55.5; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn679;
Test Position 4 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.651 mW/g

Test Position 4 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.5 V/m; Power Drift = -0.135 dB
Peak SAR (extrapolated) = 0.891 W/kg
SAR(1 g) = 0.567 mW/g; SAR(10 g) = 0.355 mW/g
Maximum value of SAR (measured) = 0.616 mW/g

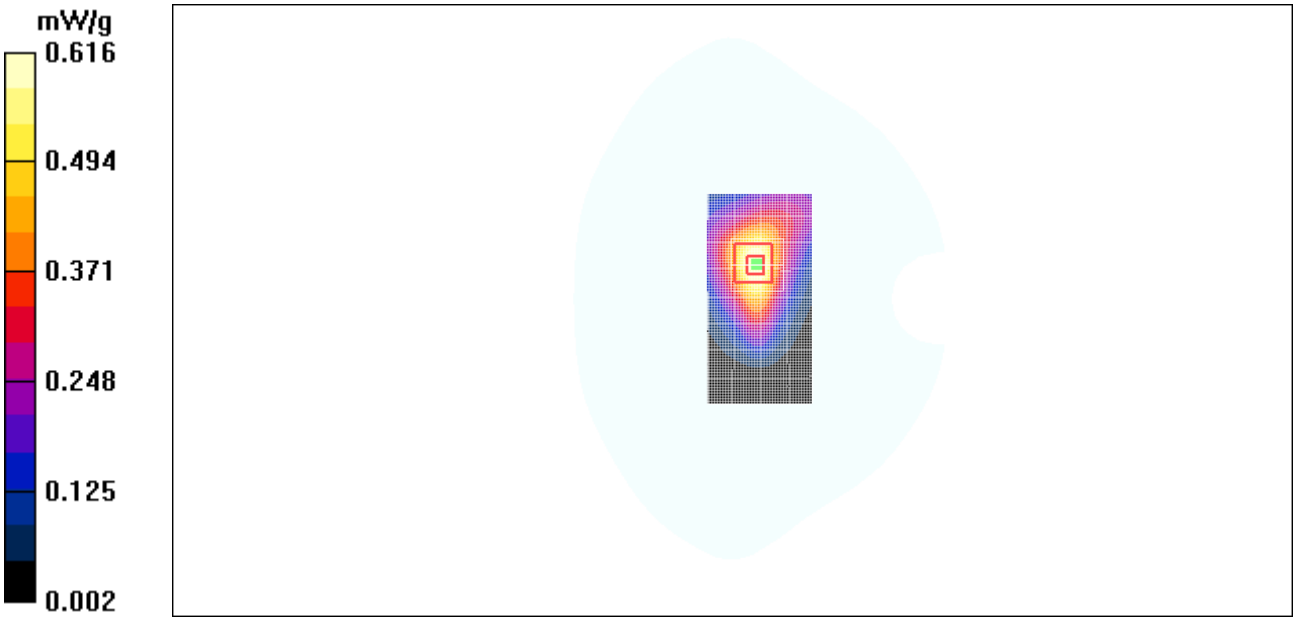


Figure 19 GSM 850 GPRS (2 timeslots in uplink) with IBM T61 Test Position 4 Channel 192

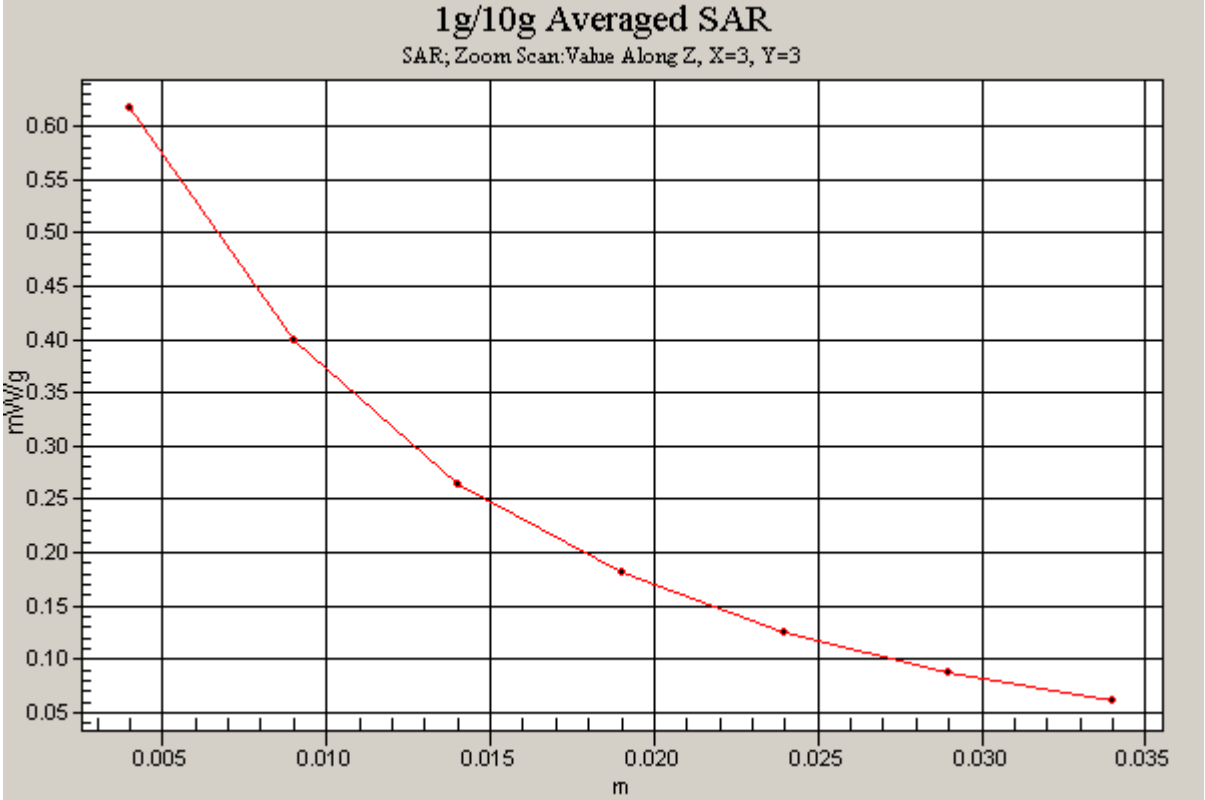


Figure 20 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with IBM T61 Test Position 4 Channel 192]

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

Communication System: GSM850 + GPRS(2Up); Frequency: 837 MHz;Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 1 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn679;
Test Position 5 Middle/Area Scan (41x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.301 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 = -0.139 dB
Peak SAR (extrapolated) = 0.428 W/kg
SAR(1 g) = 0.268 mW/g; SAR(10 g) = 0.170 mW/g
Maximum value of SAR (measured) = 0.293 mW/g

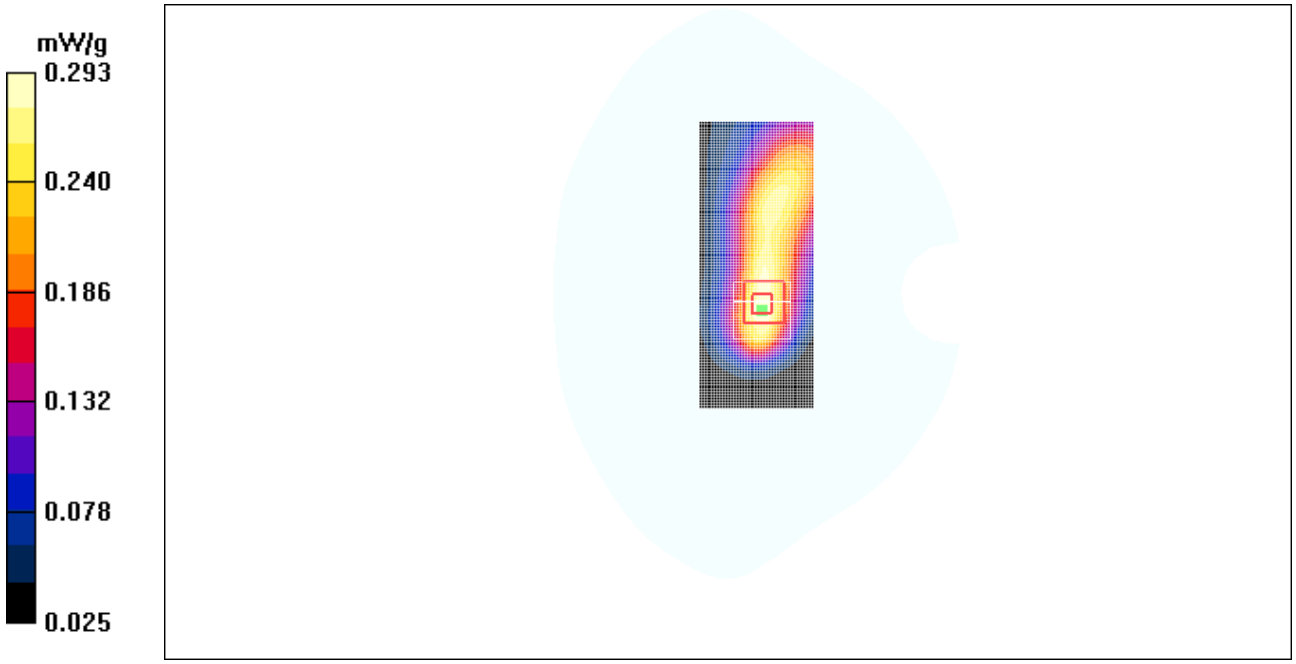


Figure 21 GSM 850 GPRS (2 timeslots in uplink) with BenQ Joybook R55V Test Position 5 Channel 192

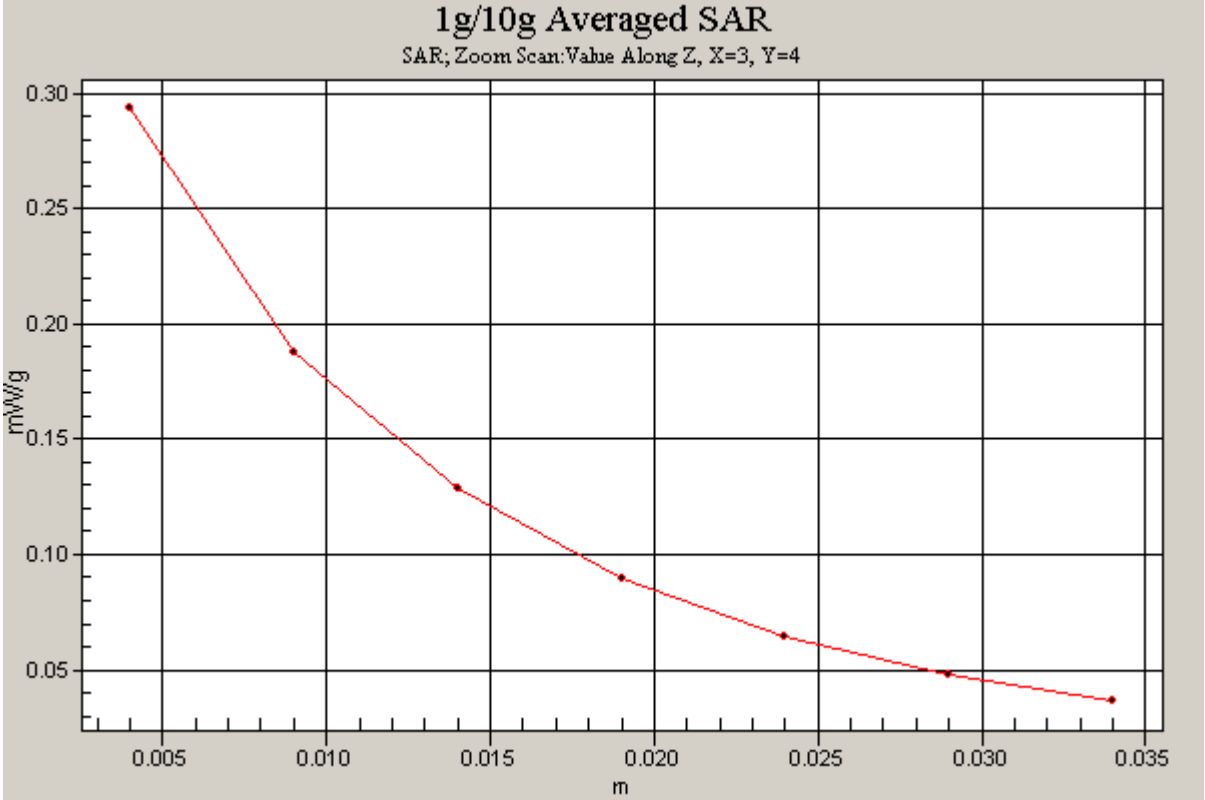


Figure 22 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with BenQ Joybook R55V Test Position 5 Channel 192]

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

Communication System: GSM850 + GPRS(2Up); Frequency: 837 MHz;Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 1 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn679;
Test Position 6 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.174 mW/g

Test Position 6 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.2 V/m; Power Drift = 0.030 dB
Peak SAR (extrapolated) = 0.650 W/kg
SAR(1 g) = 0.152 mW/g; SAR(10 g) = 0.051 mW/g
Maximum value of SAR (measured) = 0.171 mW/g

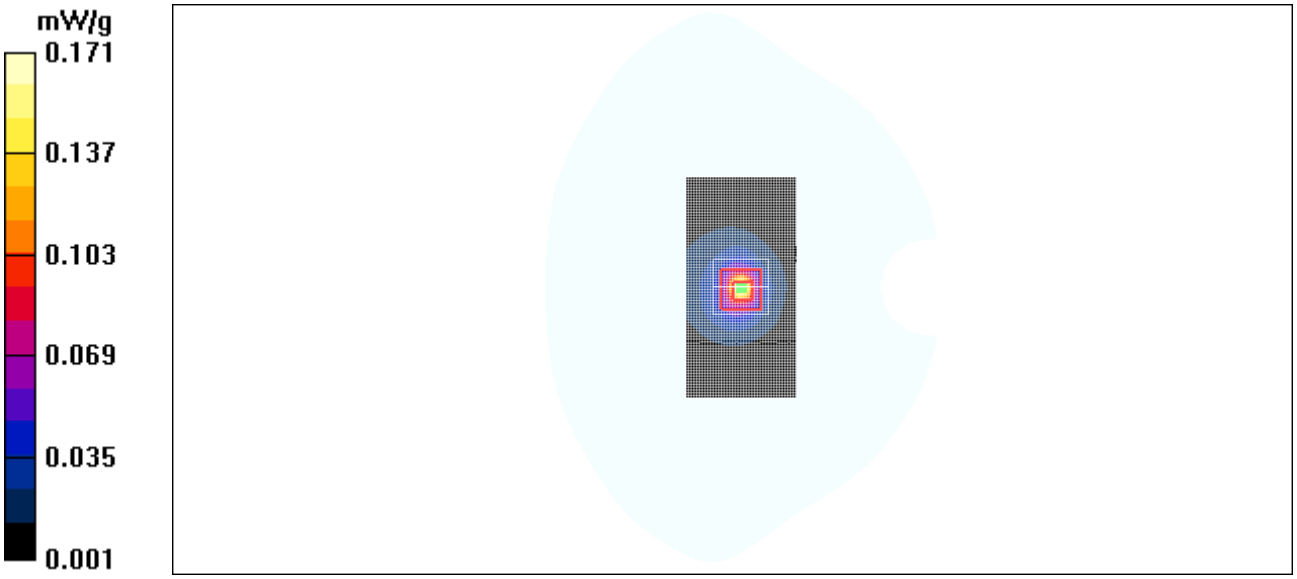


Figure 23 GSM 850 GPRS (2 timeslots in uplink) with BenQ Joybook R55V Test Position 6 Channel 192

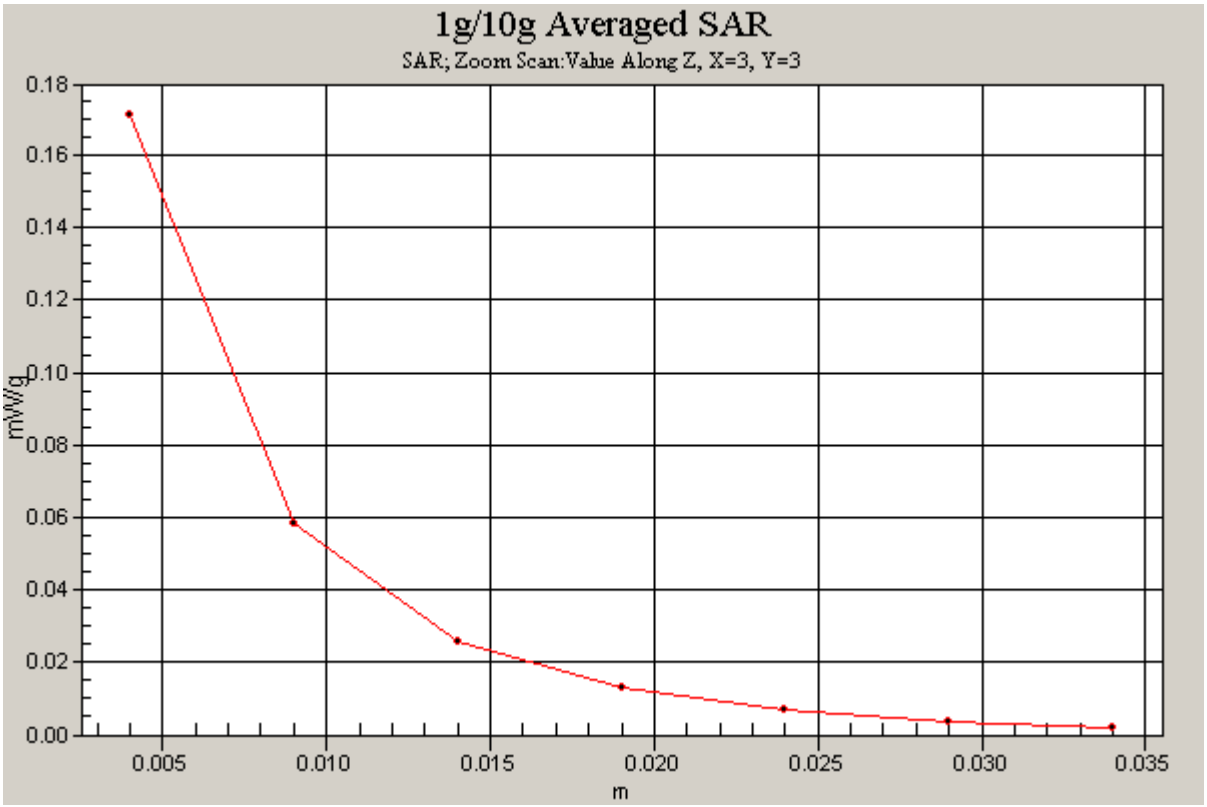


Figure 24 Z-Scan at power reference point [GSM 850 GPRS (2 timeslots in uplink) with BenQ Joybook R55V Test Position 6 Channel 192]

GSM 850 EGPRS (2 timeslots in uplink) with IBM T61 Test Position 4 Middle Frequency

Communication System: GSM850 + EGPRS(2Up); Frequency: 837 MHz;Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 1.01 mho/m; ε_r = 55.5; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn679;
Test Position 4 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.323 mW/g

Test Position 4 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.4 V/m; Power Drift = -0.066 dB
Peak SAR (extrapolated) = 0.461 W/kg
SAR(1 g) = 0.293 mW/g; SAR(10 g) = 0.183 mW/g
Maximum value of SAR (measured) = 0.323 mW/g

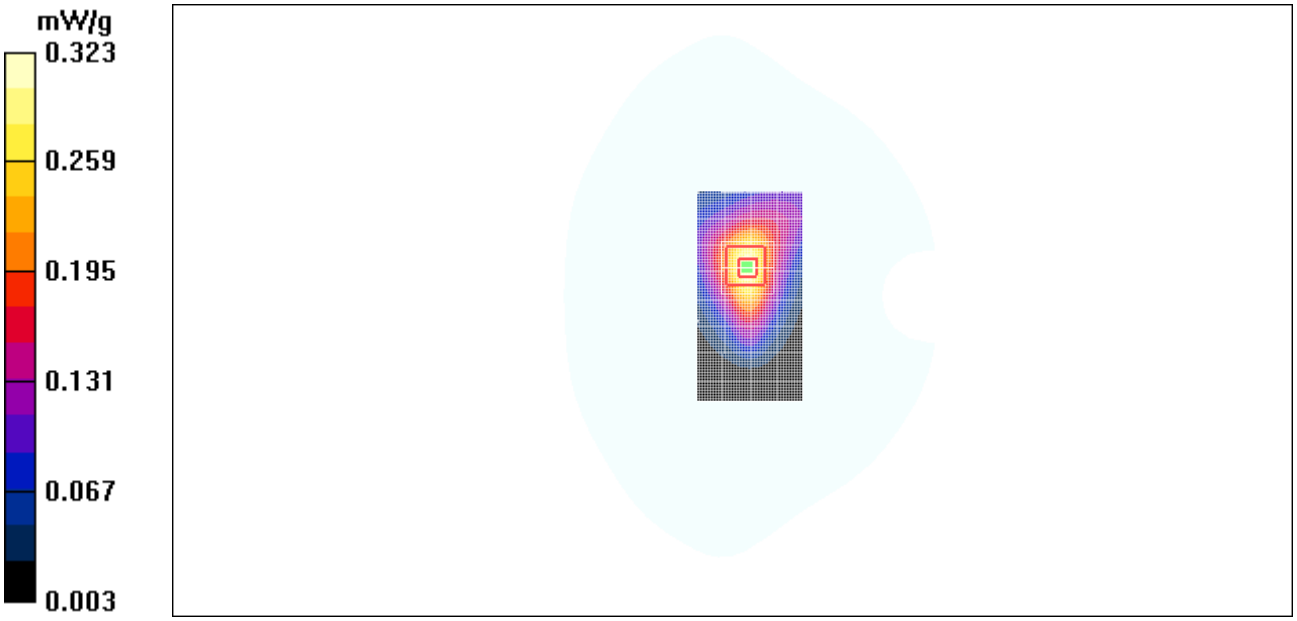


Figure 25 GSM 850 EGPRS (2 timeslots in uplink) with IBM T61 Test Position 4 Channel 192

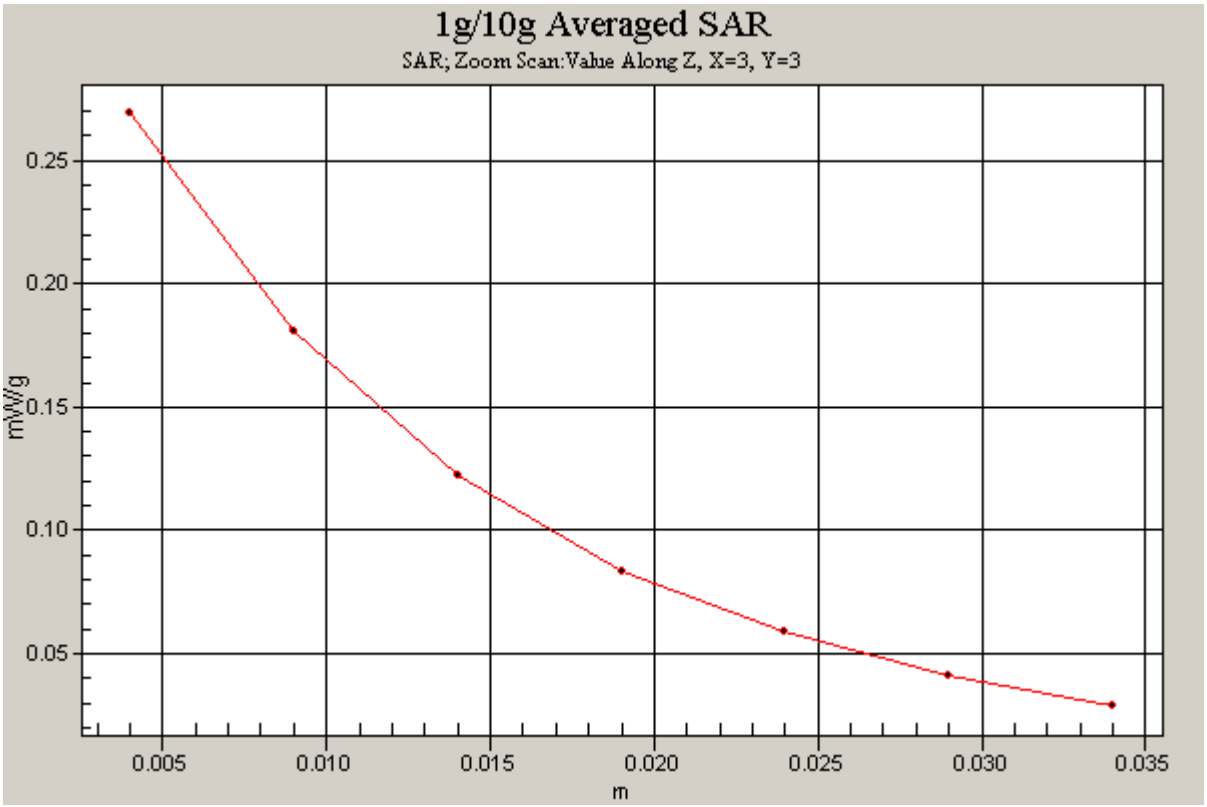


Figure 26 Z-Scan at power reference point [GSM 850 EGPRS (2 timeslots in uplink) with IBM T61 Test Position 4 Channel 192]

GSM 1900 GPRS (4 timeslots in uplink) with BenQ Joybook S72 Test Position 1 High Frequency

Communication System: GSM 1900+GPRS(4Up); Frequency: 1909.8 MHz;Duty Cycle: 1:2
Medium parameters used: f = 1910 MHz; σ = 1.52 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 1 High/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.22 mW/g

Test Position 1 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.4 V/m; Power Drift = 0.049 dB
Peak SAR (extrapolated) = 1.69 W/kg
SAR(1 g) = 0.982 mW/g; SAR(10 g) = 0.533 mW/g
Maximum value of SAR (measured) = 1.08 mW/g

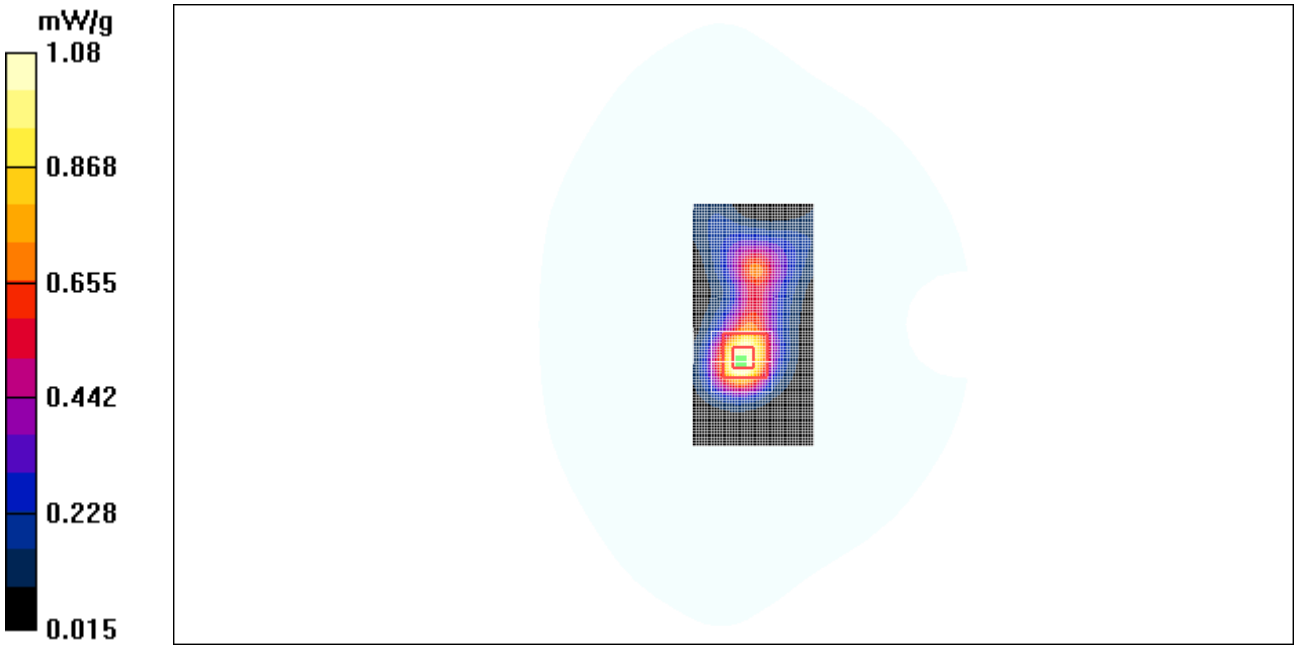


Figure 27 GSM 1900 GPRS (4 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 810

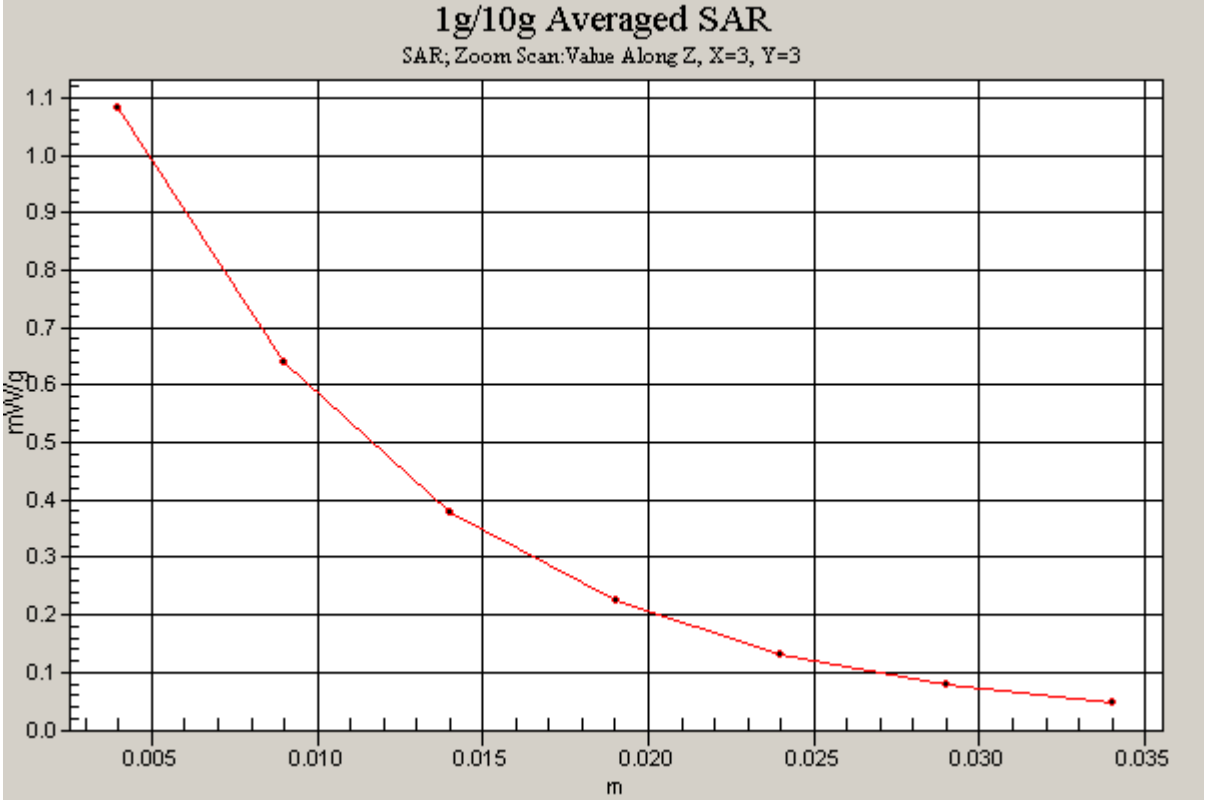


Figure 28 Z-Scan at power reference point [GSM 1900 GPRS(4 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 810]

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

Communication System: GSM 1900+GPRS(4Up); Frequency: 1880 MHz;Duty Cycle: 1:2
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.23 mW/g

Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.2 V/m; Power Drift = -0.143 dB
Peak SAR (extrapolated) = 2.46 W/kg
SAR(1 g) = 0.987 mW/g; SAR(10 g) = 0.526 mW/g
Maximum value of SAR (measured) = 1.08 mW/g

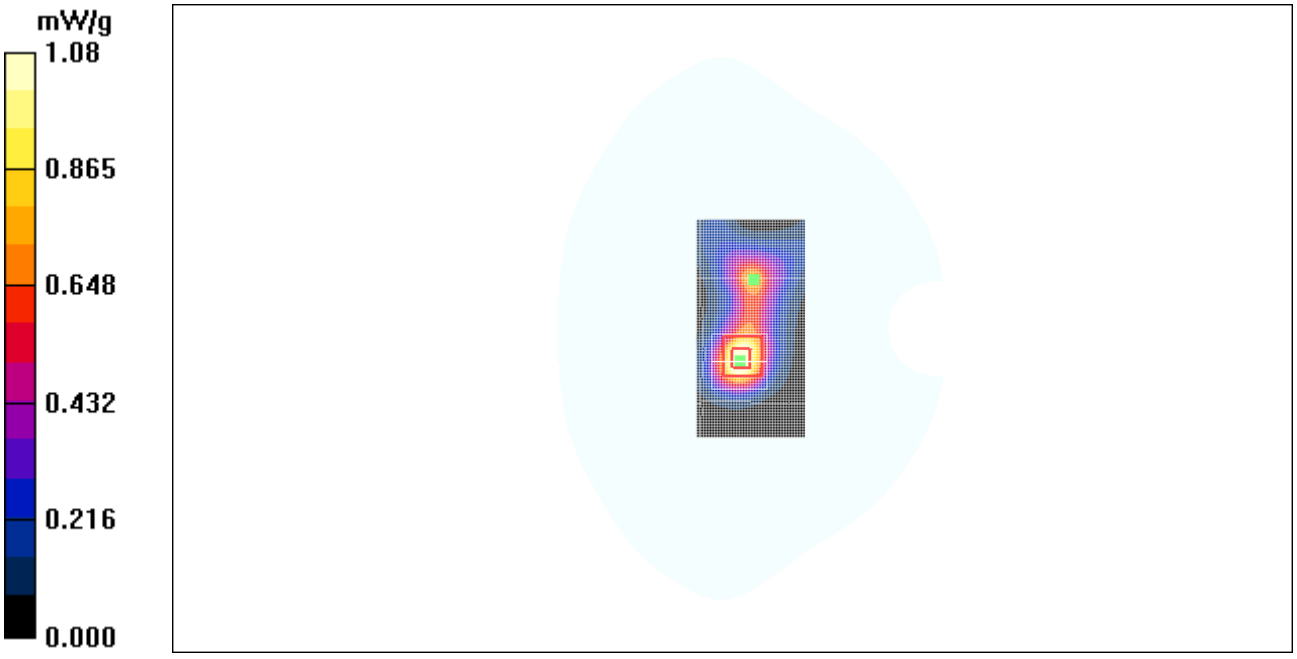


Figure 29 GSM 1900 GPRS (4 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 661

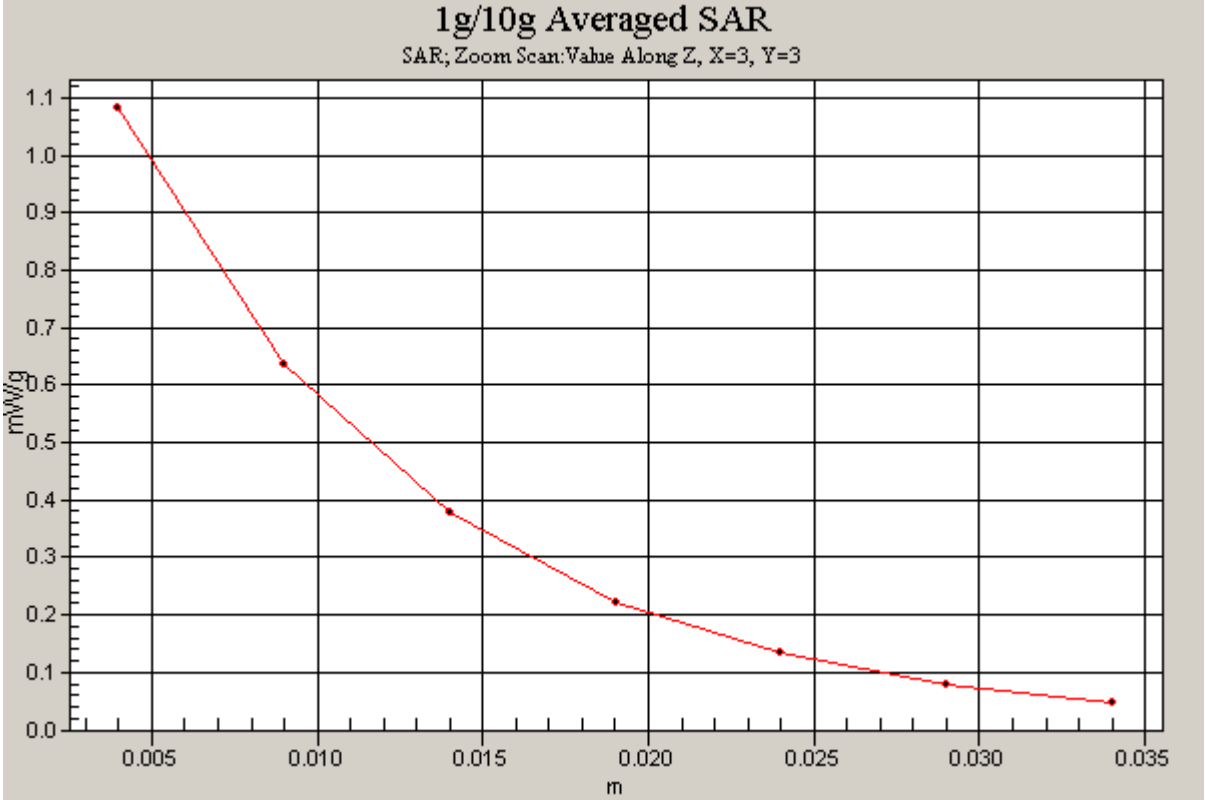


Figure 30 Z-Scan at power reference point [GSM 1900 GPRS(4 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 661]

GSM 1900 GPRS (4 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Low Frequency

Communication System: GSM 1900+GPRS(4Up); Frequency: 1850.2 MHz;Duty Cycle: 1:2
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.46 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 1 Low/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.15 mW/g

Test Position 1 Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.1 V/m; Power Drift = -0.081 dB
Peak SAR (extrapolated) = 1.59 W/kg
SAR(1 g) = 0.929 mW/g; SAR(10 g) = 0.513 mW/g
Maximum value of SAR (measured) = 1.04 mW/g

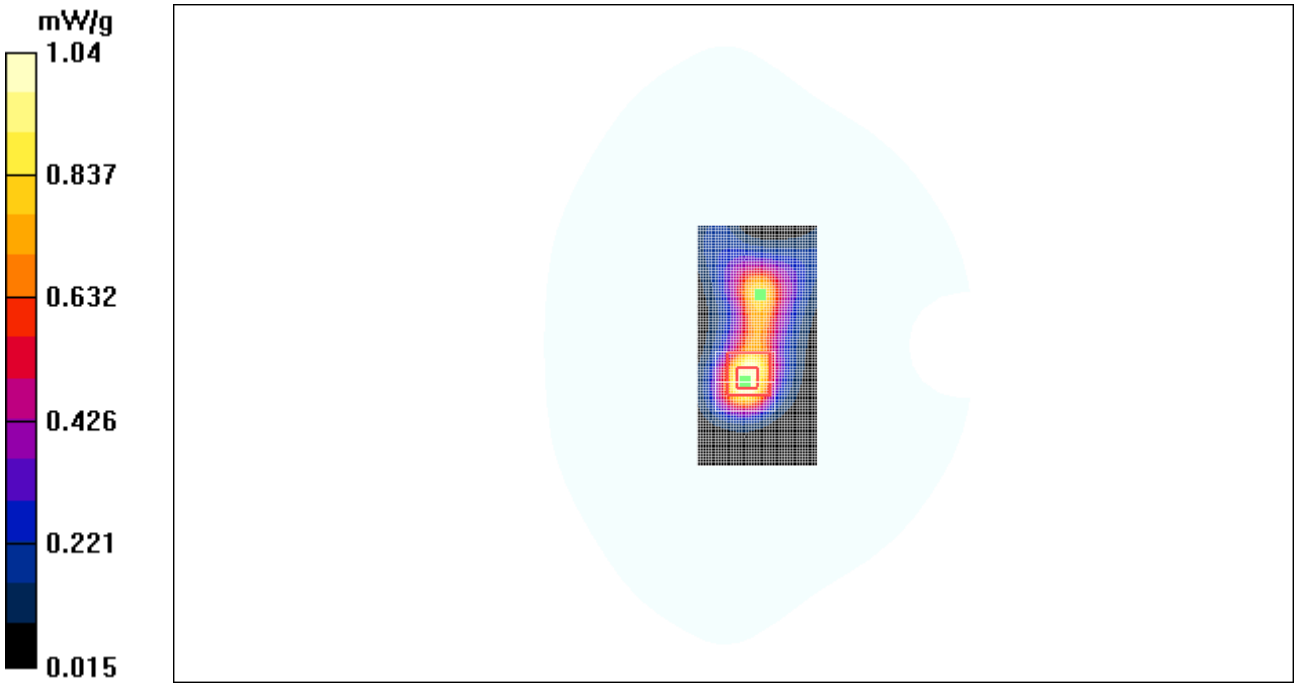


Figure 31 GSM 1900 GPRS (4 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 512

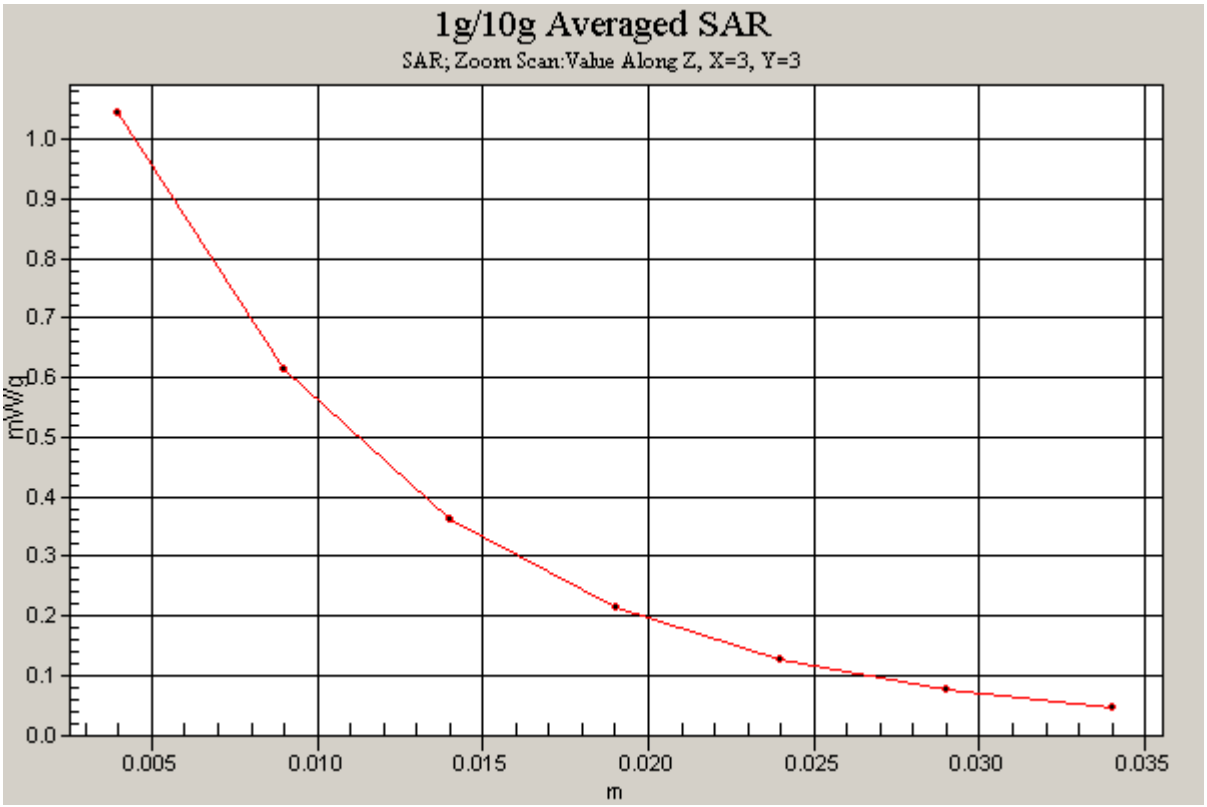


Figure 32 Z-Scan at power reference point [GSM 1900 GPRS(4 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 512]

GSM 1900 GPRS (3 timeslots in uplink) with BenQ Joybook S72 Test Position 1 High Frequency

Communication System: GSM 1900+GPRS(3Up); Frequency: 1909.8 MHz;Duty Cycle: 1:2.67
Medium parameters used: f = 1910 MHz; σ = 1.52 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 1 High/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.38 mW/g

Test Position 1 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.5 V/m; Power Drift = 0.022 dB
Peak SAR (extrapolated) = 1.85 W/kg
SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.597 mW/g
Maximum value of SAR (measured) = 1.20 mW/g

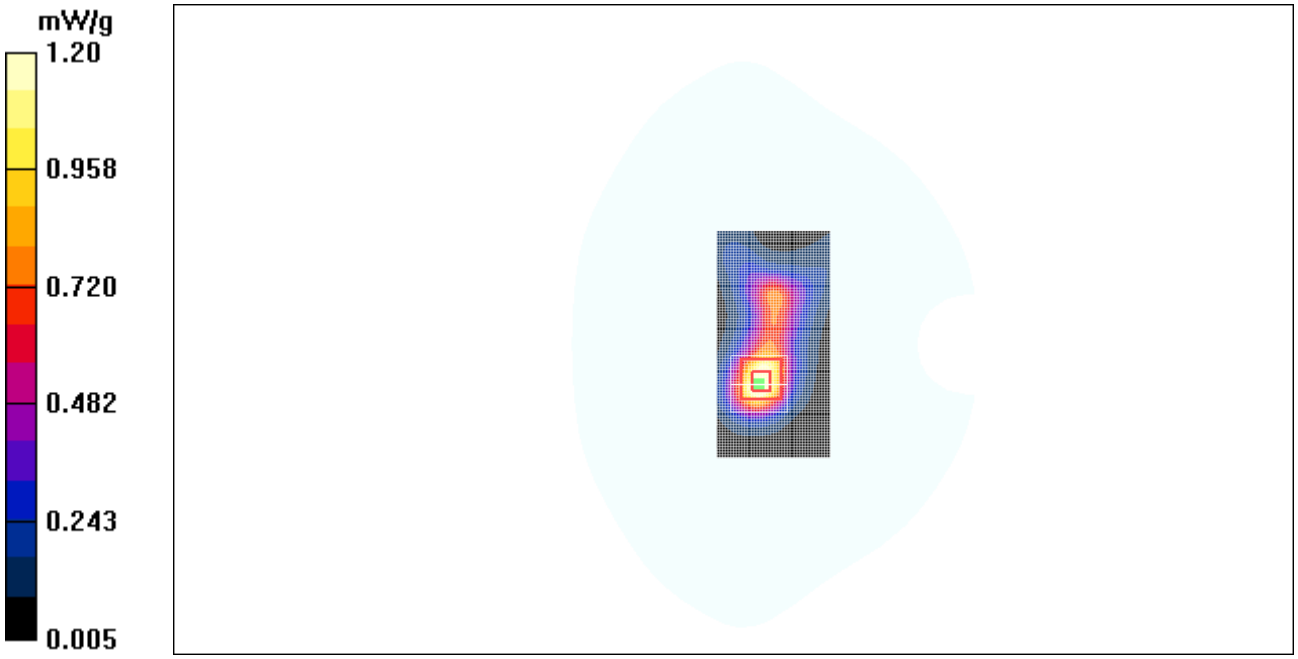


Figure 33 GSM 1900 GPRS (3 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 810

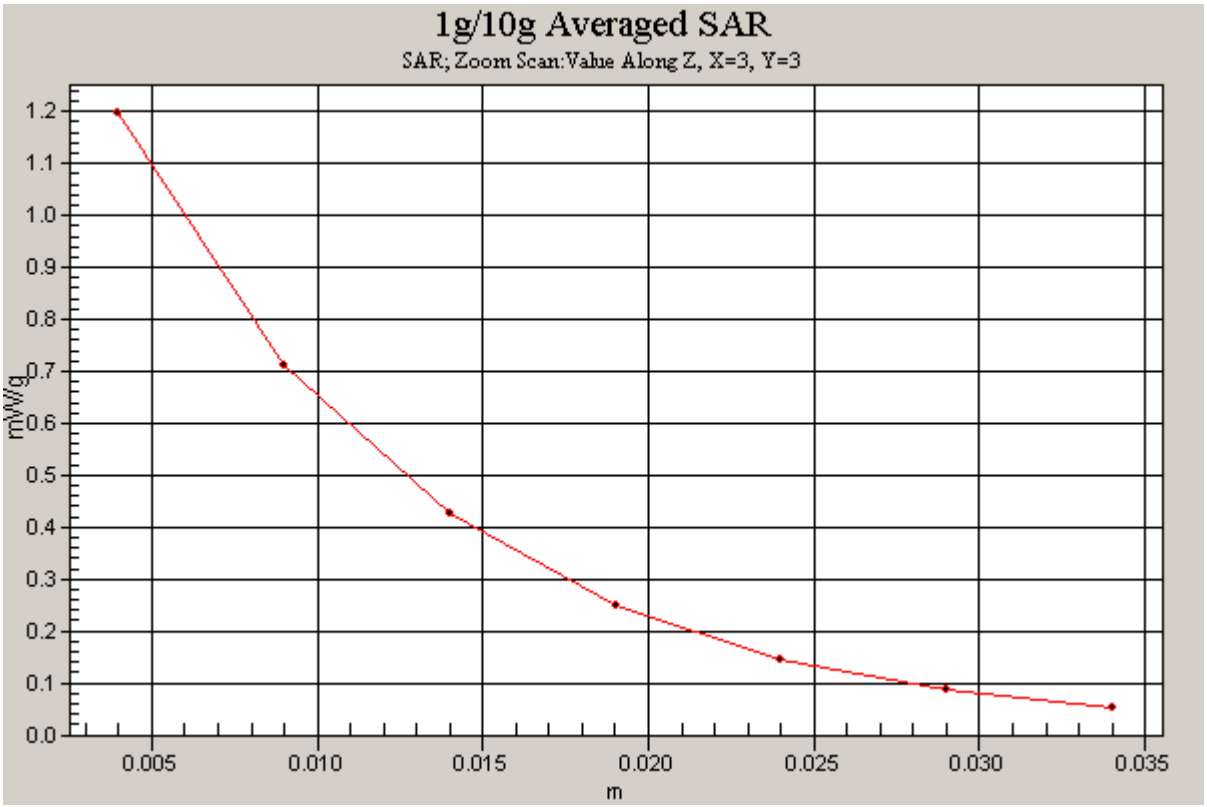


Figure 34 Z-Scan at power reference point [GSM 1900 GPRS (3 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 810]

GSM 1900 GPRS (3 timeslots in uplink) with BenQ Joybook S72 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; σ = 1.49 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.37 mW/g

Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.3 V/m; Power Drift = -0.090 dB
Peak SAR (extrapolated) = 1.78 W/kg
SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.586 mW/g
Maximum value of SAR (measured) = 1.16 mW/g

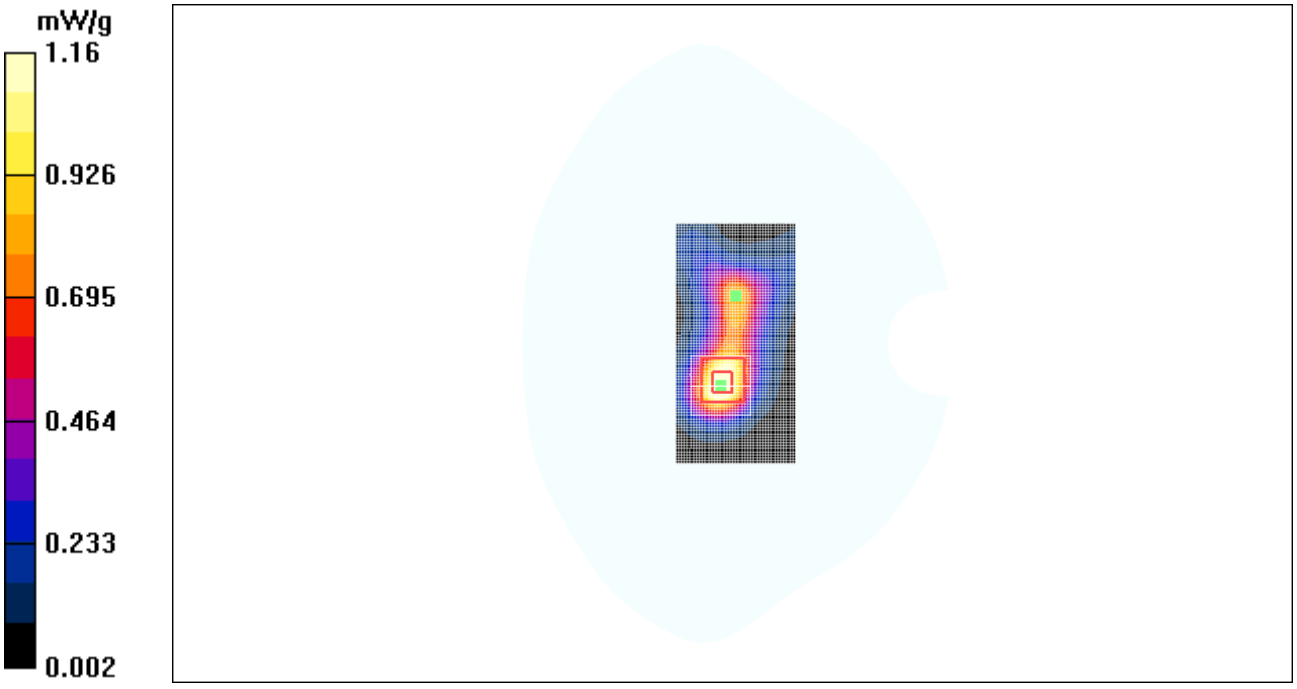


Figure 35 GSM 1900 GPRS (3 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 661

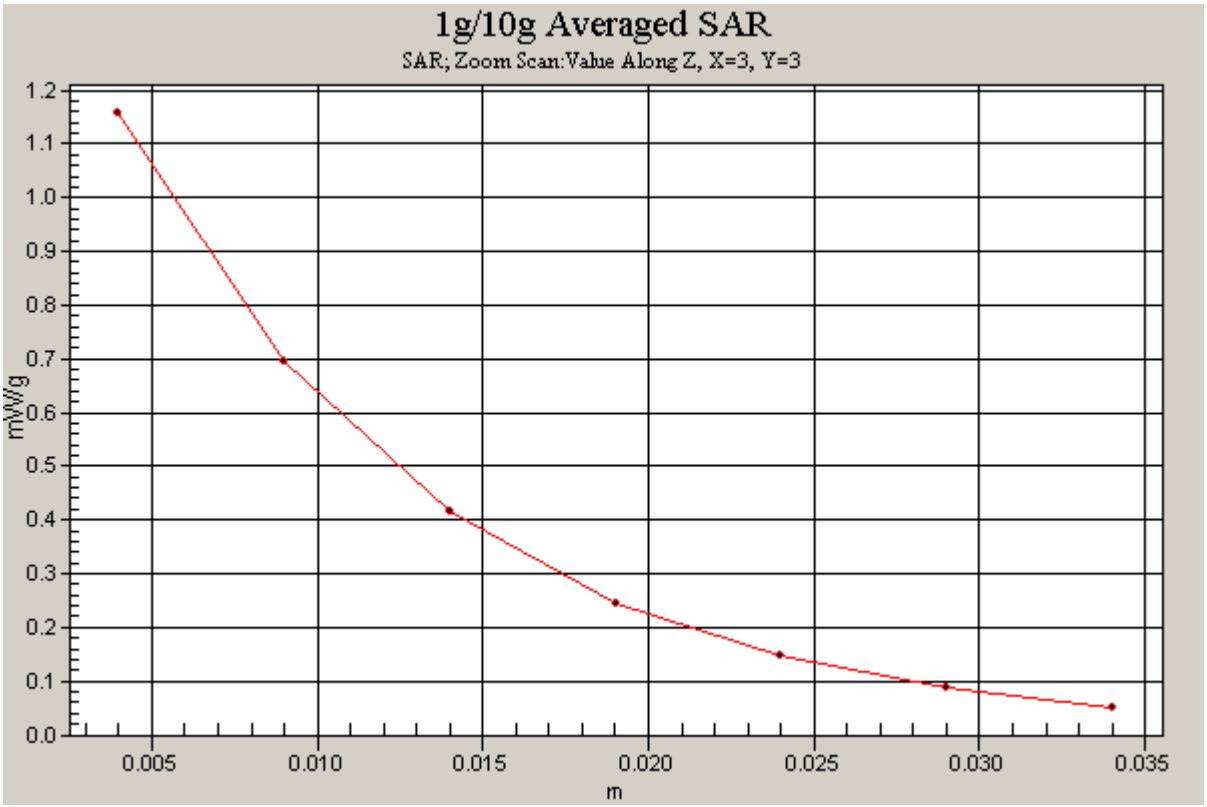


Figure 36 Z-Scan at power reference point [GSM 1900 GPRS (3 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 661]

GSM 1900 GPRS (3 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Low Frequency

Communication System: GSM 1900+GPRS(3Up); Frequency: 1850.2 MHz;Duty Cycle: 1:2.67
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.46 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 1 Low/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.31 mW/g

Test Position 1 Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.2 V/m; Power Drift = 0.002 dB
Peak SAR (extrapolated) = 1.76 W/kg
SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.590 mW/g
Maximum value of SAR (measured) = 1.14 mW/g

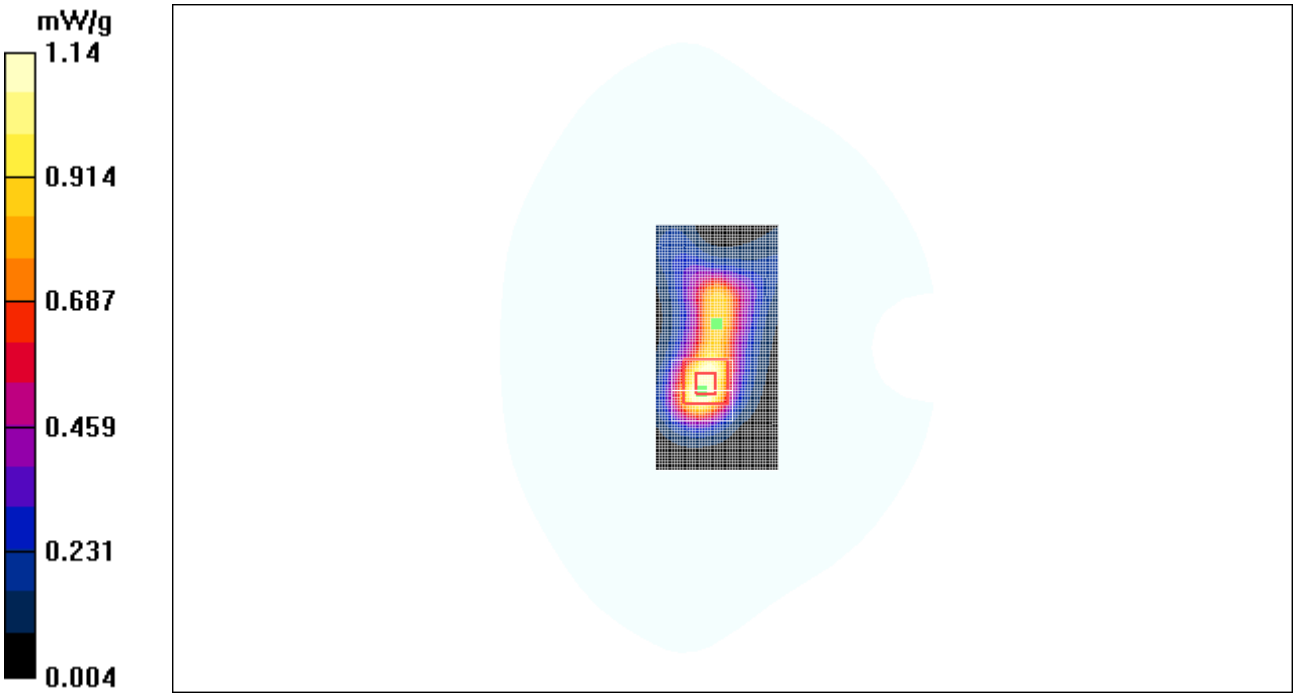


Figure 37 GSM 1900 GPRS (3 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 512

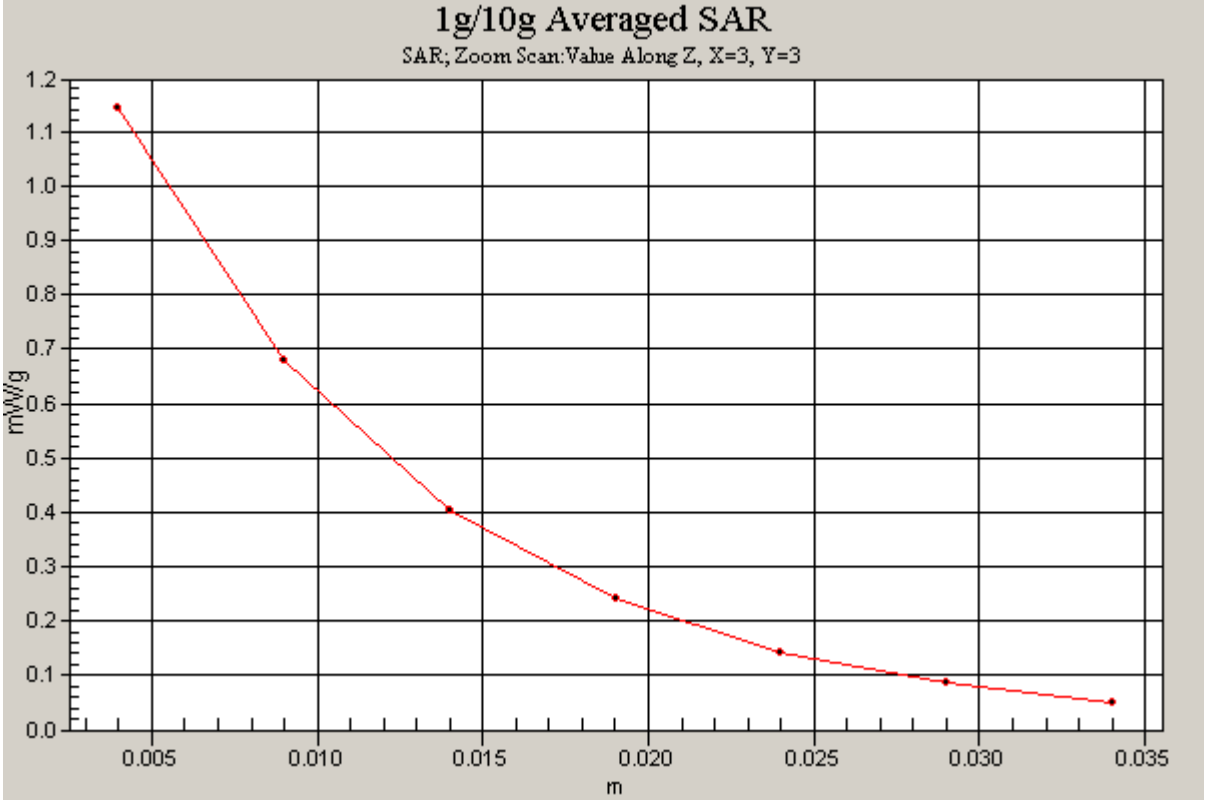


Figure 38 Z-Scan at power reference point [GSM 1900 GPRS (3 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 512]

GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 1 High Frequency

Communication System: GSM 1900+GPRS(2Up); Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1910 MHz; σ = 1.52 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 1 High/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.46 mW/g

Test Position 1 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.6 V/m; Power Drift = -0.066 dB
Peak SAR (extrapolated) = 1.94 W/kg
SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.628 mW/g
Maximum value of SAR (measured) = 1.26 mW/g

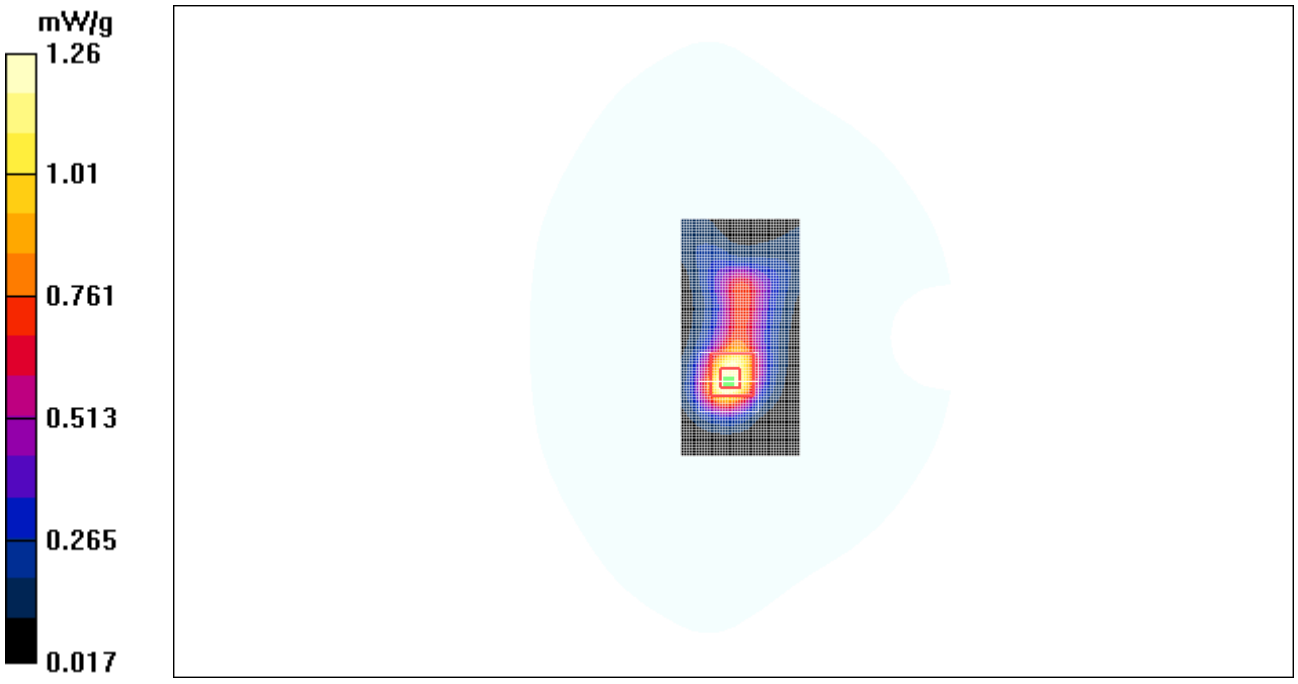


Figure 39 GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 810

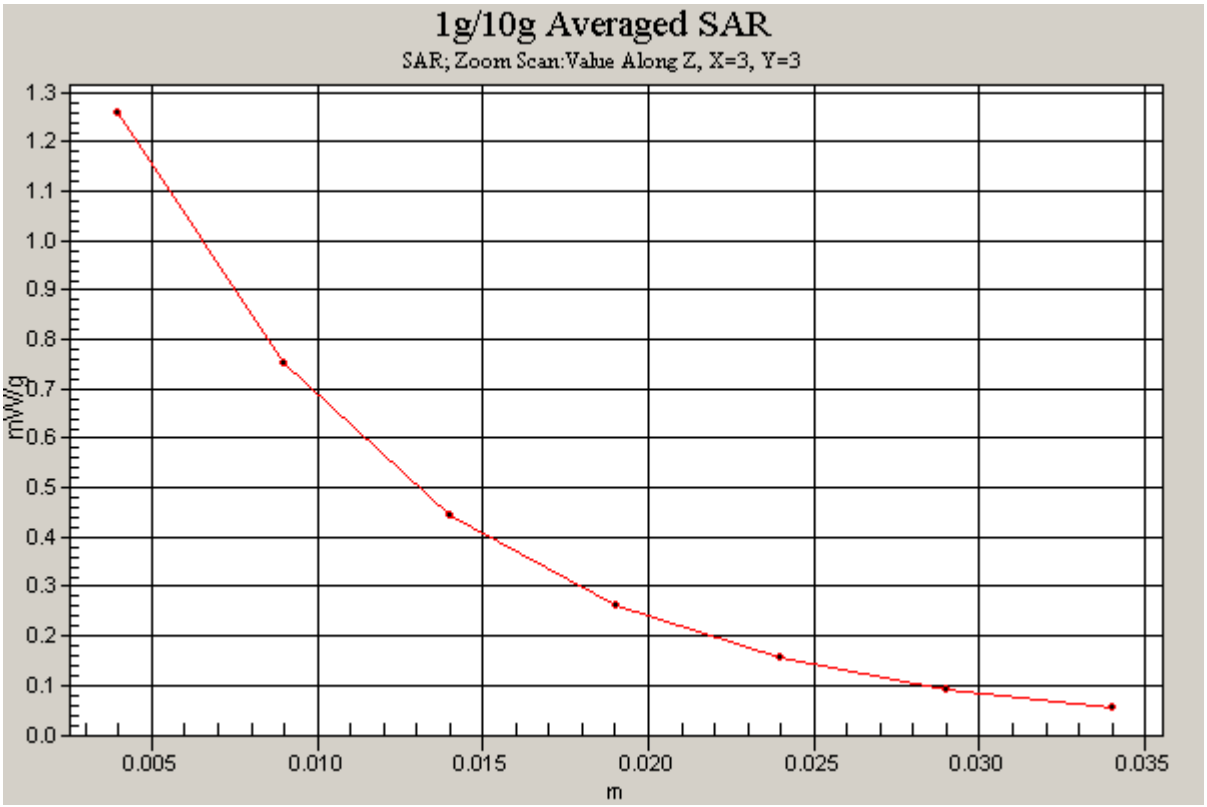


Figure 40 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 810]

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

Communication System: GSM 1900+GPRS(2Up); Frequency: 1880 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.43 mW/g

Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.5 V/m; Power Drift = -0.056 dB
Peak SAR (extrapolated) = 2.16 W/kg
SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.619 mW/g
Maximum value of SAR (measured) = 1.25 mW/g

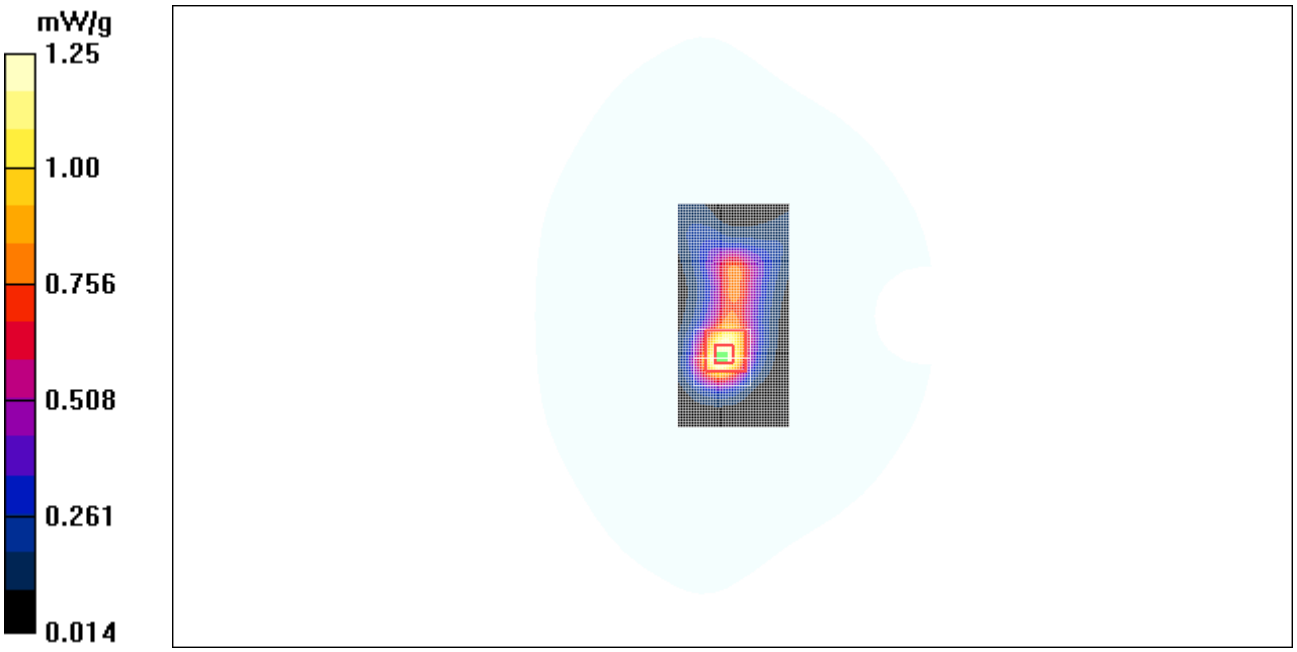


Figure 41 GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 661

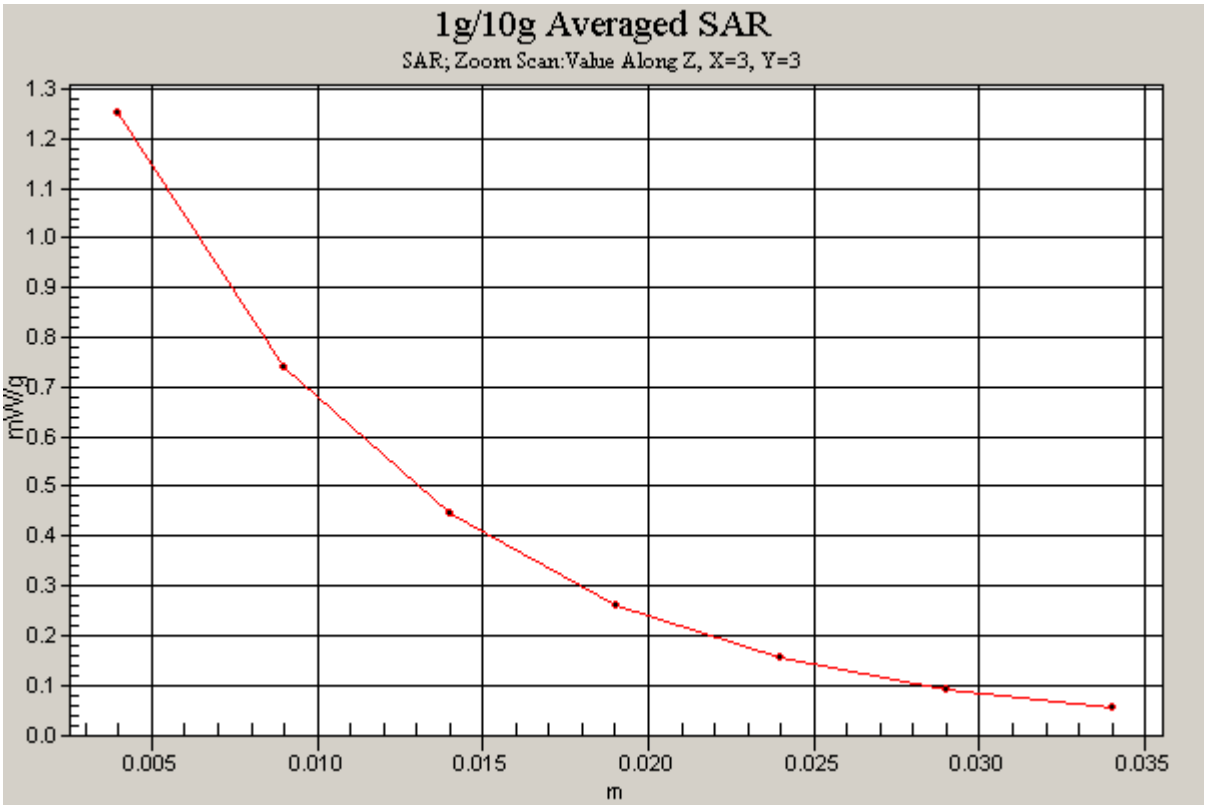


Figure 42 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 661]

GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Low Frequency

Communication System: GSM 1900+GPRS(2Up); Frequency: 1850.2 MHz;Duty Cycle: 1:4
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.46 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 1 Low/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.39 mW/g

Test Position 1 Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.6 V/m; Power Drift = -0.030 dB
Peak SAR (extrapolated) = 1.65 W/kg
SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.614 mW/g
Maximum value of SAR (measured) = 1.22 mW/g

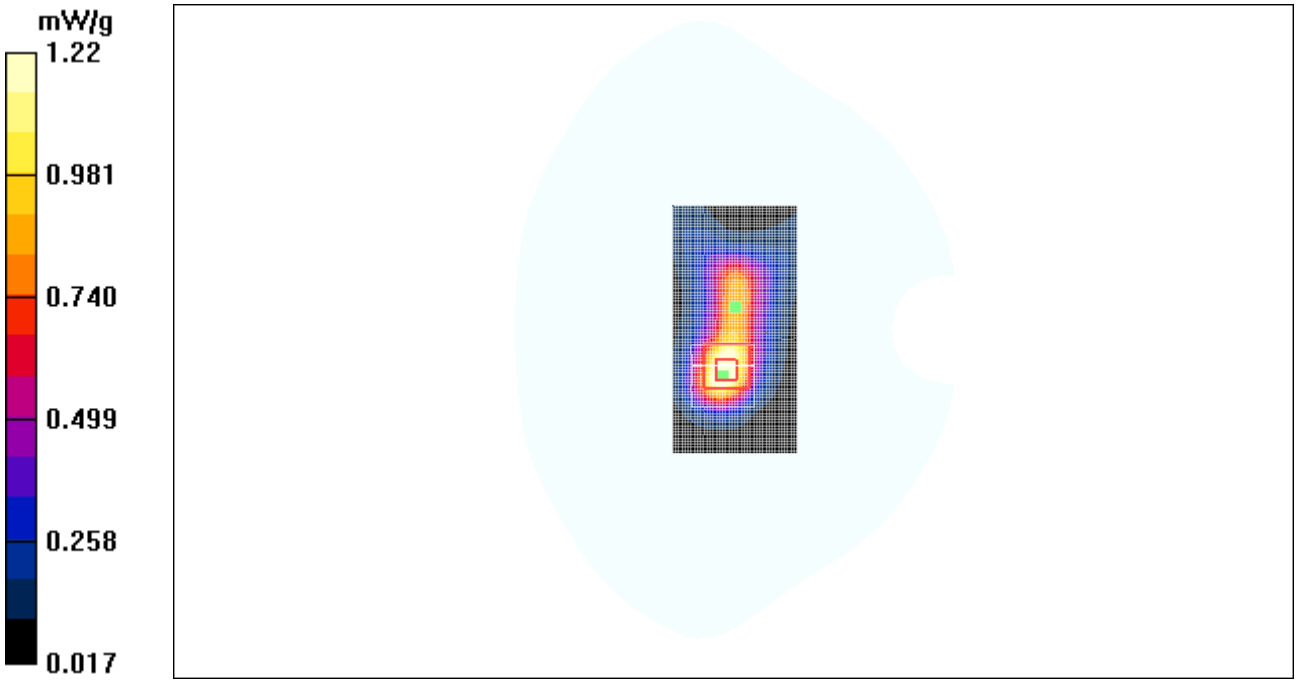


Figure 43 GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 512

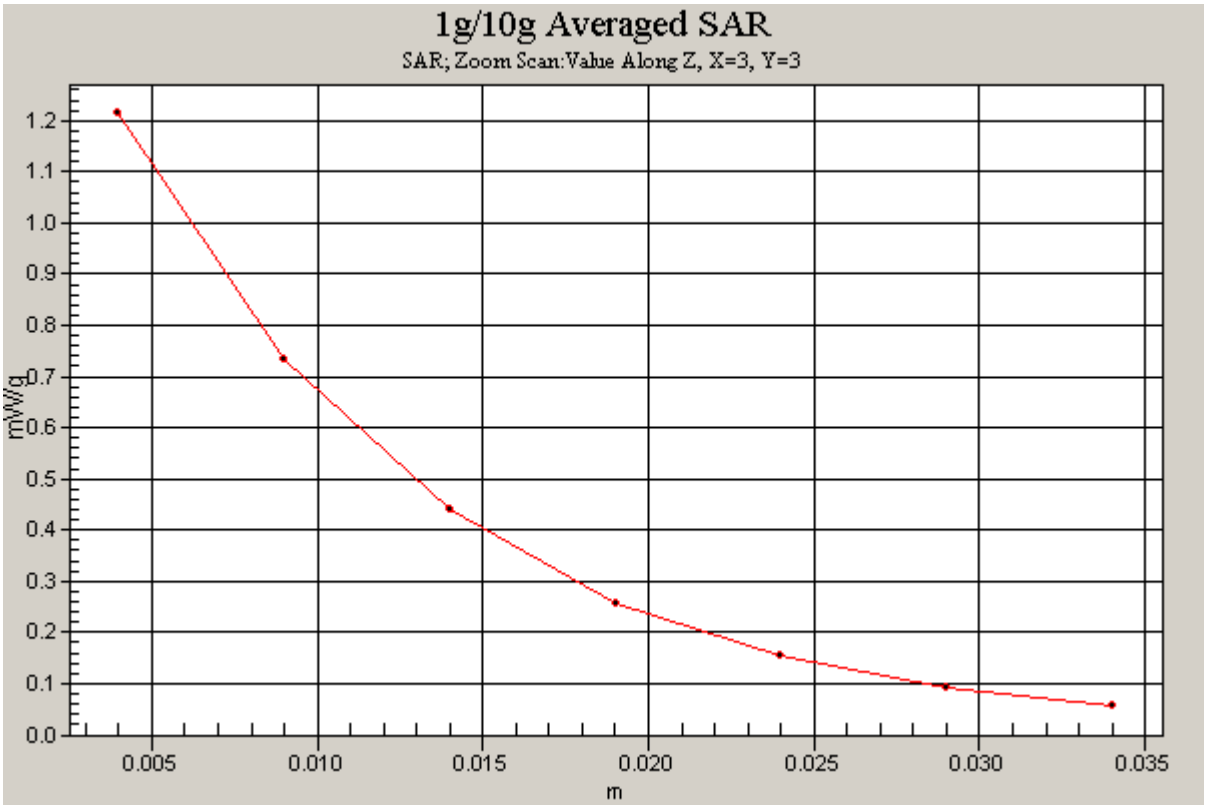


Figure 44 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 1 Channel 512]

GSM 1900 GPRS (1 timeslot in uplink) with BenQ Joybook S72 Test Position 1 High Frequency

Communication System: GSM 1900+GPRS(1Up); Frequency: 1909.8 MHz;Duty Cycle: 1:8
Medium parameters used: f = 1910 MHz; σ = 1.52 mho/m; ε_r = 53; ρ = 1000 kg/m^3 \
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 1 High/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.22 mW/g

Test Position 1 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.8 V/m; Power Drift = 0.053 dB
Peak SAR (extrapolated) = 1.67 W/kg
SAR(1 g) = 0.957 mW/g; SAR(10 g) = 0.521 mW/g
Maximum value of SAR (measured) = 1.07 mW/g

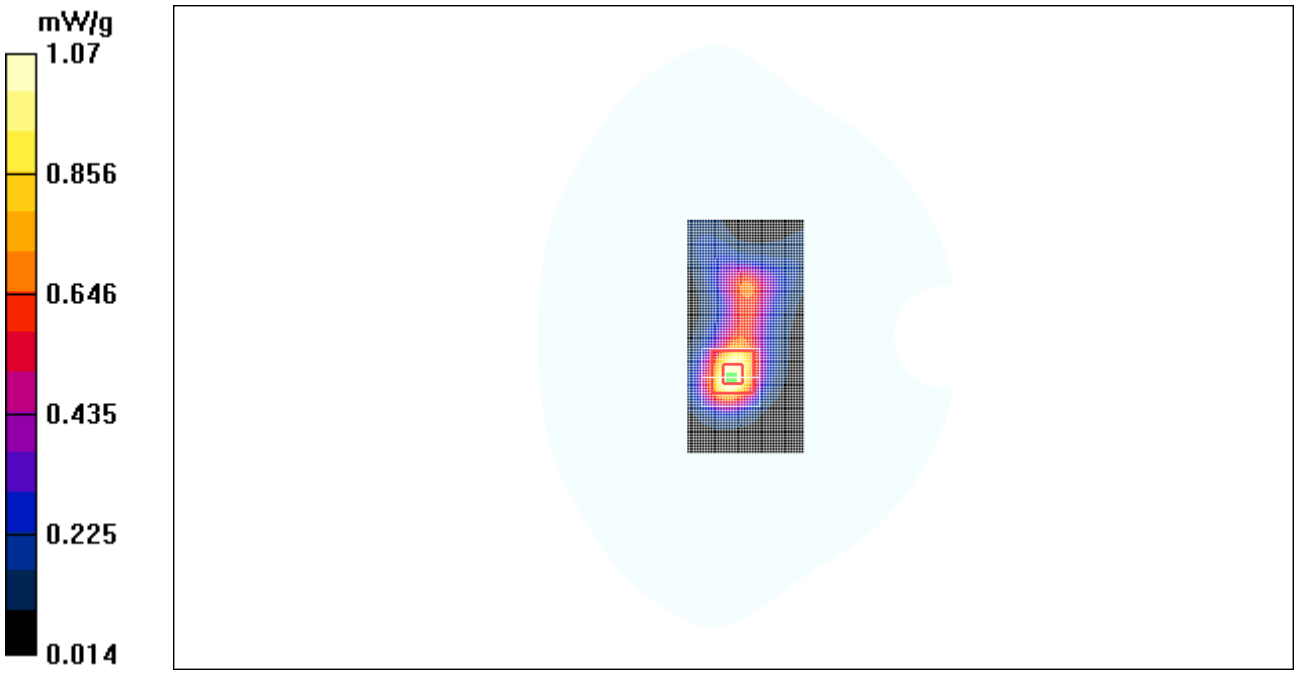


Figure 45 GSM 1900 GPRS (1 timeslot in uplink) with BenQ Joybook S72 Test Position 1 Channel 810

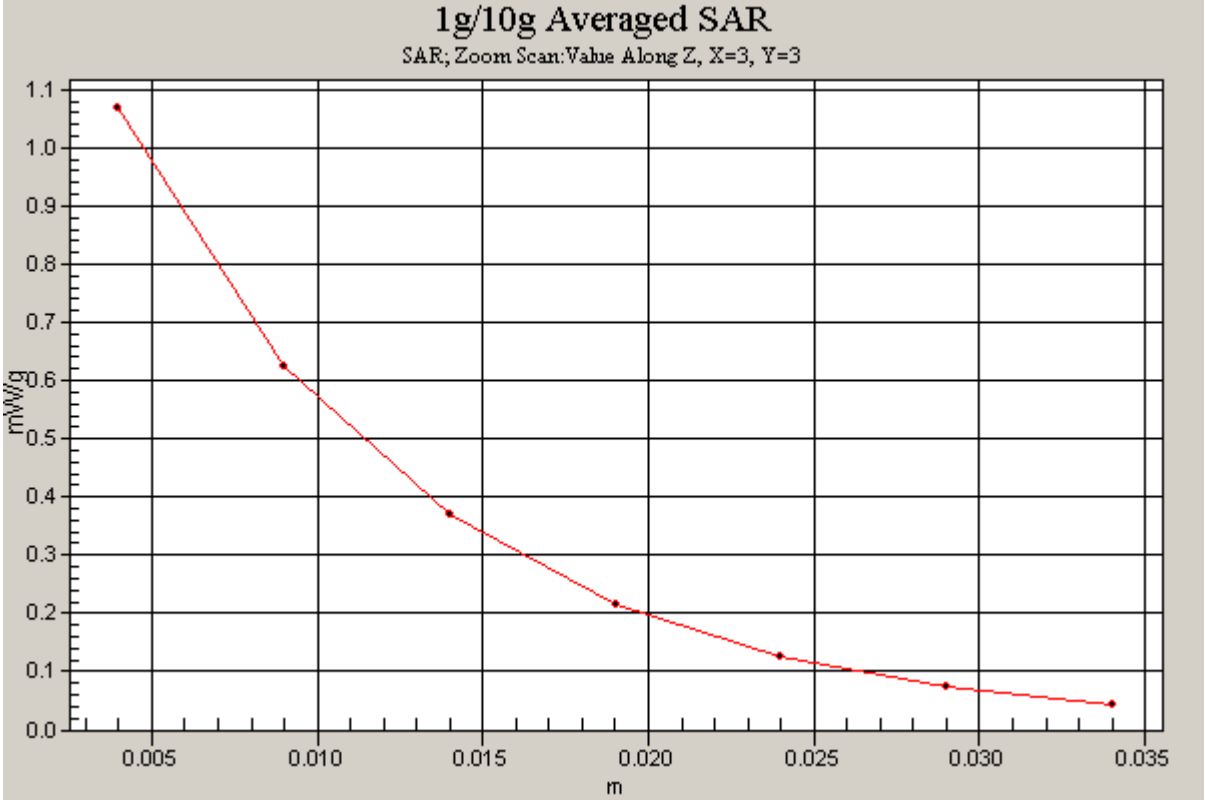


Figure 46 Z-Scan at power reference point [GSM 1900 GPRS (1 timeslot in uplink) with BenQ Joybook S72 Test Position 1 Channel 810]

GSM 1900 GPRS (1 timeslot in uplink) with BenQ Joybook S72 Test Position 1 Middle Frequency

Communication System: GSM 1900+GPRS(1Up); Frequency: 1880 MHz;Duty Cycle: 1:8
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 1 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.19 mW/g

Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.4 V/m; Power Drift = 0.034 dB
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 0.927 mW/g; SAR(10 g) = 0.510 mW/g
Maximum value of SAR (measured) = 1.02 mW/g

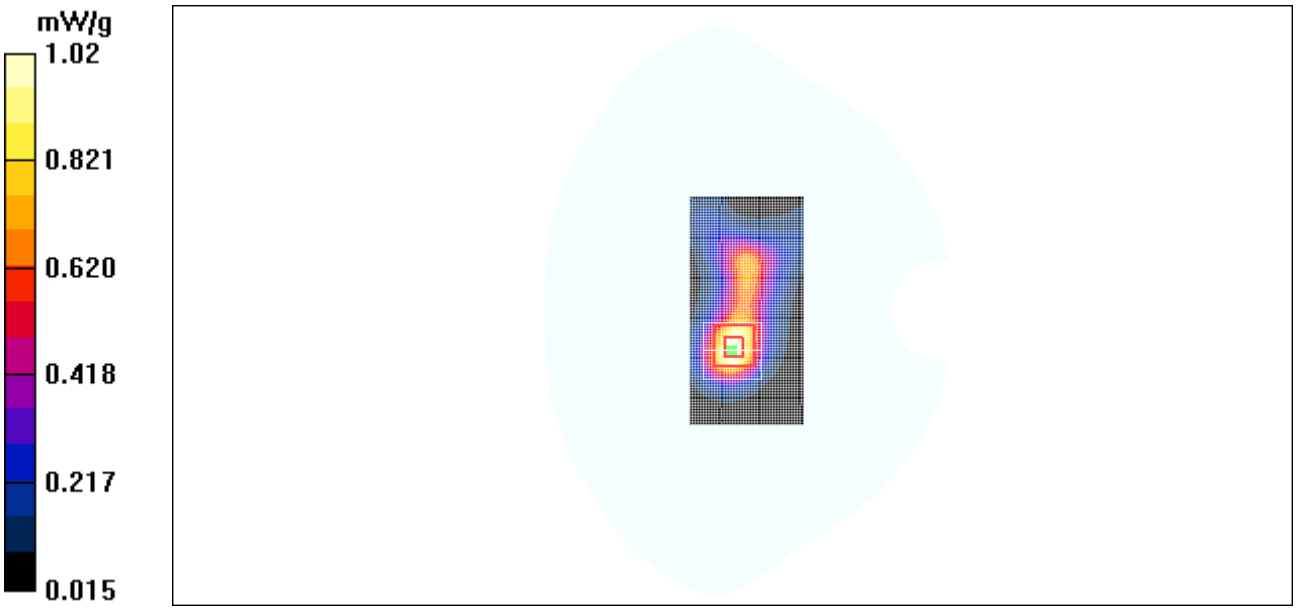


Figure 47 GSM 1900 GPRS (1 timeslot in uplink) with BenQ Joybook S72 Test Position 1 Channel 661

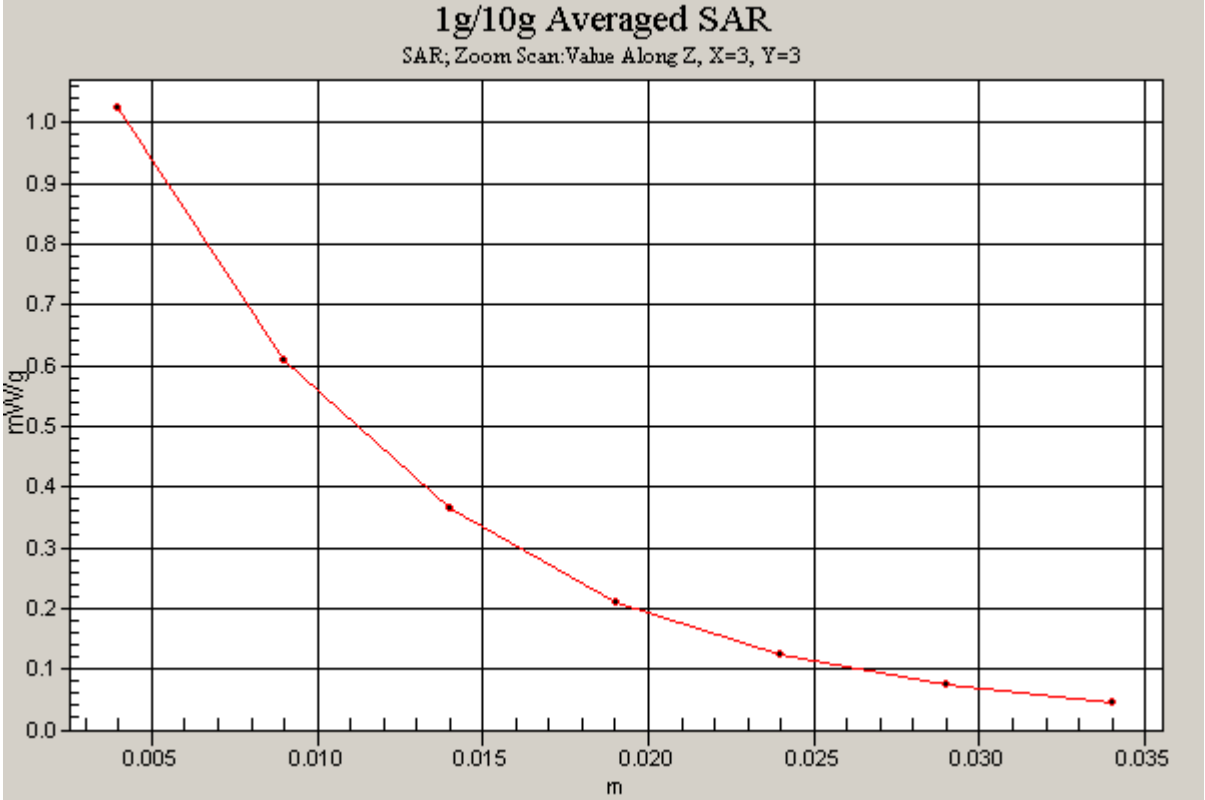


Figure 48 Z-Scan at power reference point [GSM 1900 GPRS (1 timeslot in uplink) with BenQ Joybook S72 Test Position 1 Channel 661]

GSM 1900 GPRS (1 timeslot in uplink) with BenQ Joybook S72 Test Position 1 Low Frequency

Communication System: GSM 1900+GPRS(1Up); Frequency: 1850.2 MHz;Duty Cycle: 1:8
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.46 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 1 Low/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.16 mW/g

Test Position 1 Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.5 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 1.56 W/kg
SAR(1 g) = 0.922 mW/g; SAR(10 g) = 0.517 mW/g
Maximum value of SAR (measured) = 1.02 mW/g

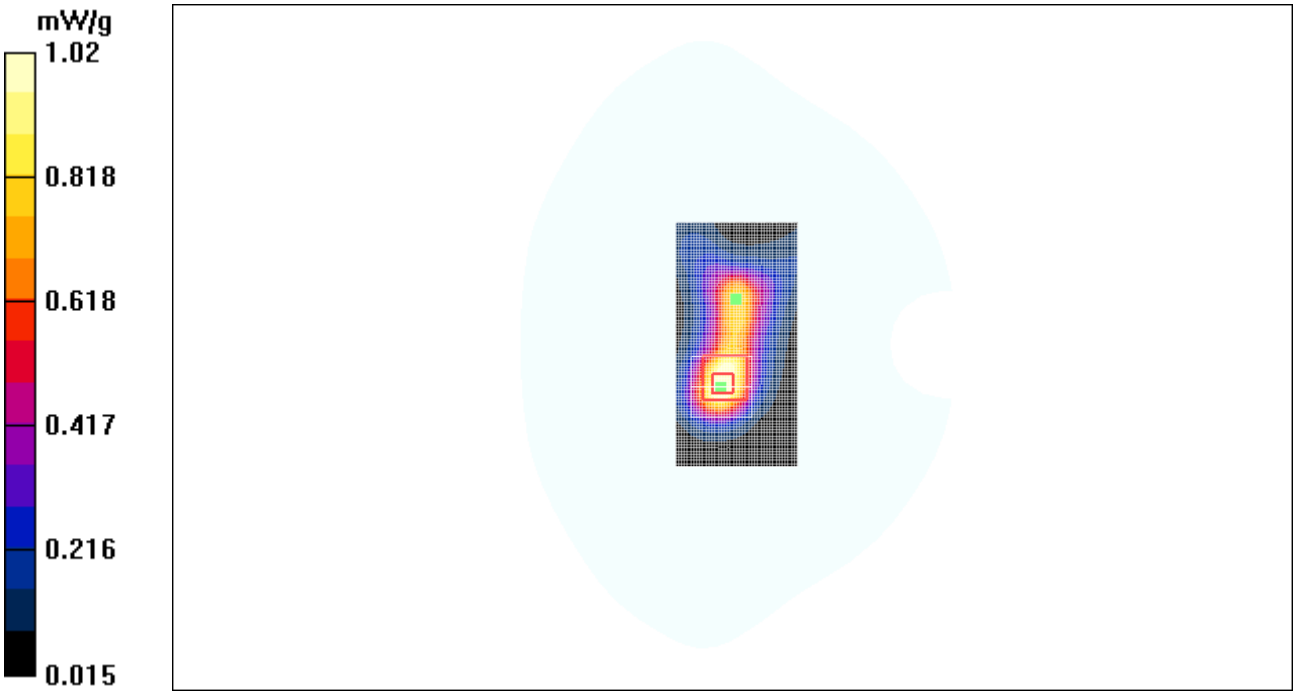


Figure 49 GSM 1900 GPRS (1 timeslot in uplink) with BenQ Joybook S72 Test Position 1 Channel 512

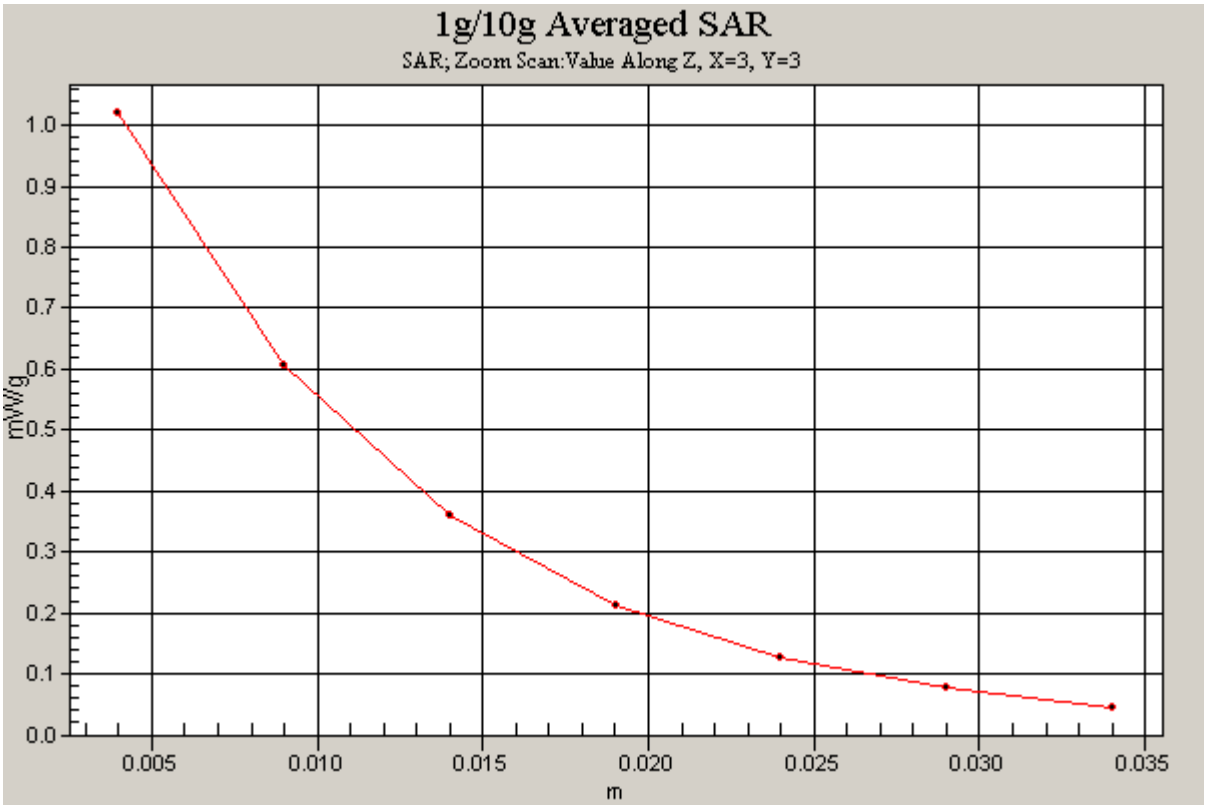


Figure 50 Z-Scan at power reference point [GSM 1900 GPRS (1 timeslot in uplink) with BenQ Joybook S72 Test Position 1 Channel 512]

GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 2 High Frequency

Communication System: GSM 1900+GPRS(2Up); Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1910 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 2 High/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.19 mW/g

Test Position 2 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.5 V/m; Power Drift = -0.051 dB
Peak SAR (extrapolated) = 1.89 W/kg
SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.558 mW/g
Maximum value of SAR (measured) = 1.16 mW/g

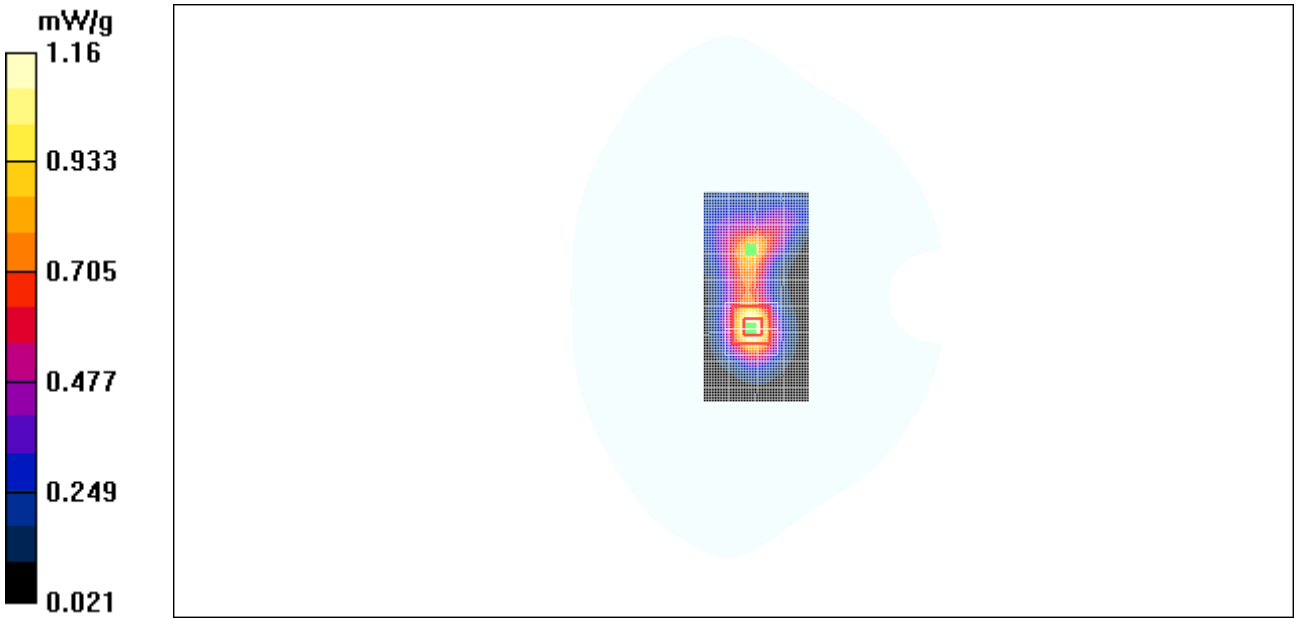


Figure 51 GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 2 Channel 810

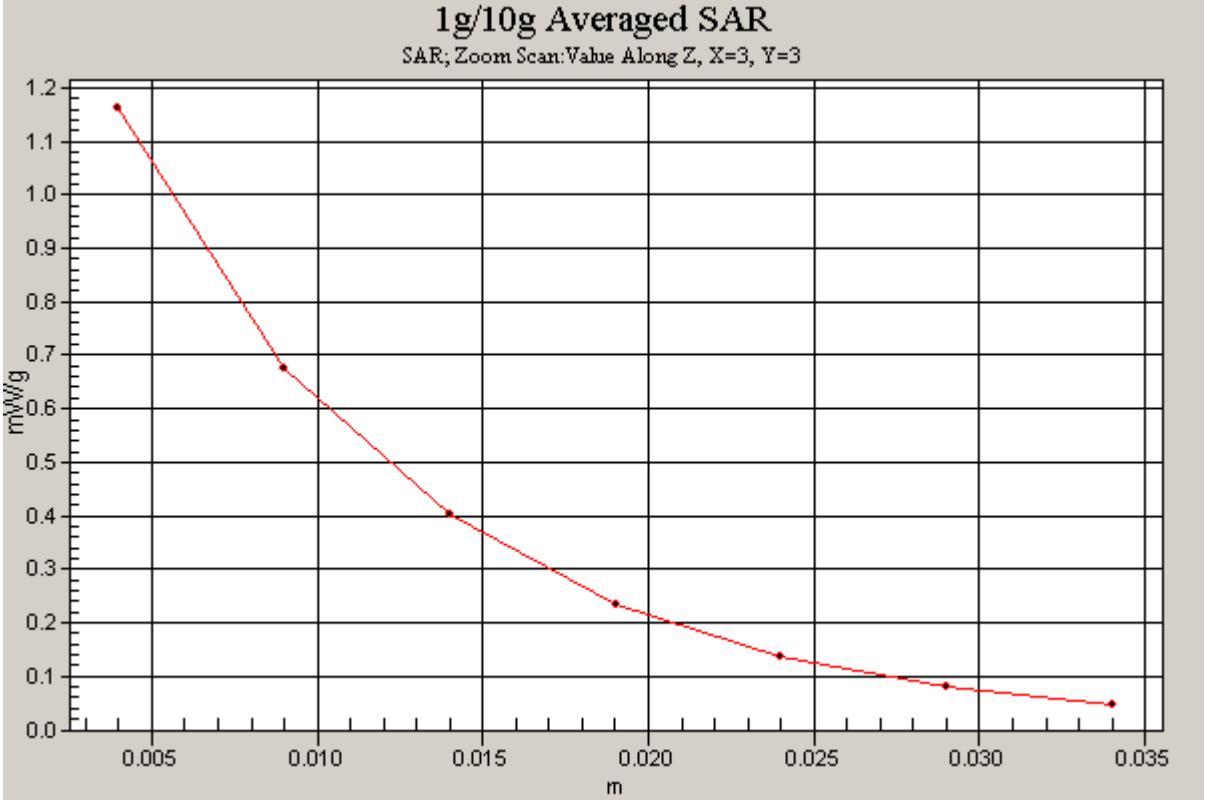


Figure 52 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 2 Channel 810]

GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 2 Middle Frequency

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; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 2 Middle /Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.24 mW/g

Test Position 2 Middle /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.4 V/m; Power Drift = -0.086 dB
Peak SAR (extrapolated) = 1.97 W/kg
SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.583 mW/g
Maximum value of SAR (measured) = 1.22 mW/g

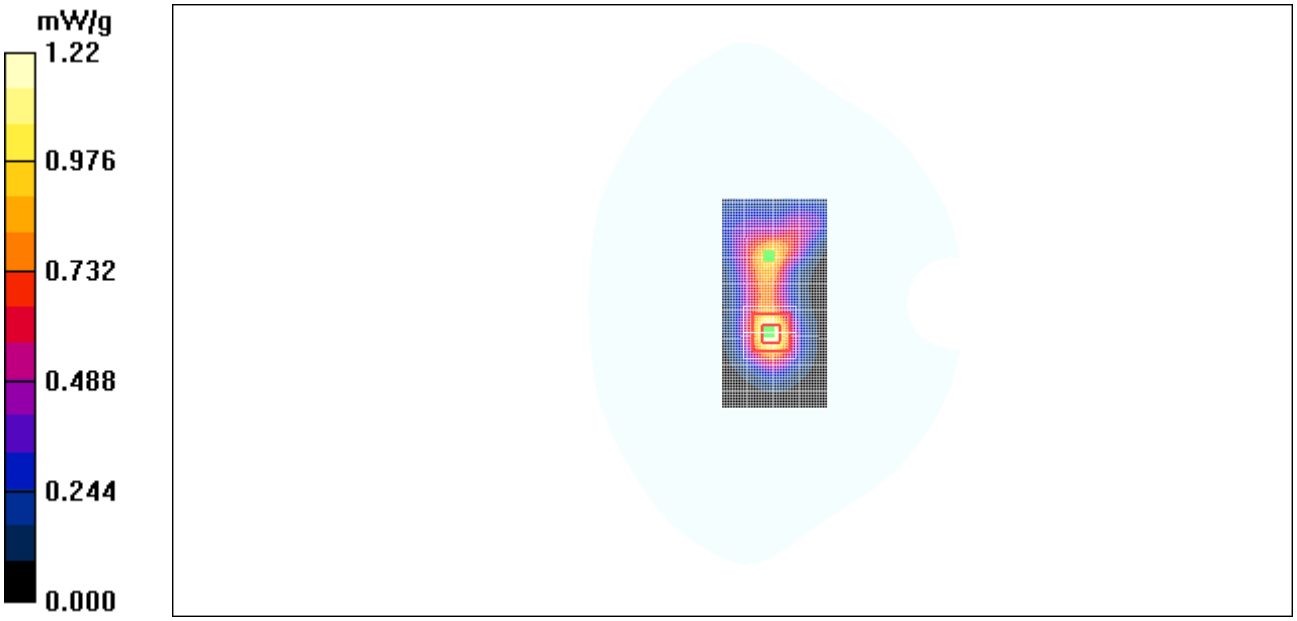


Figure 53 GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 2 Channel 661

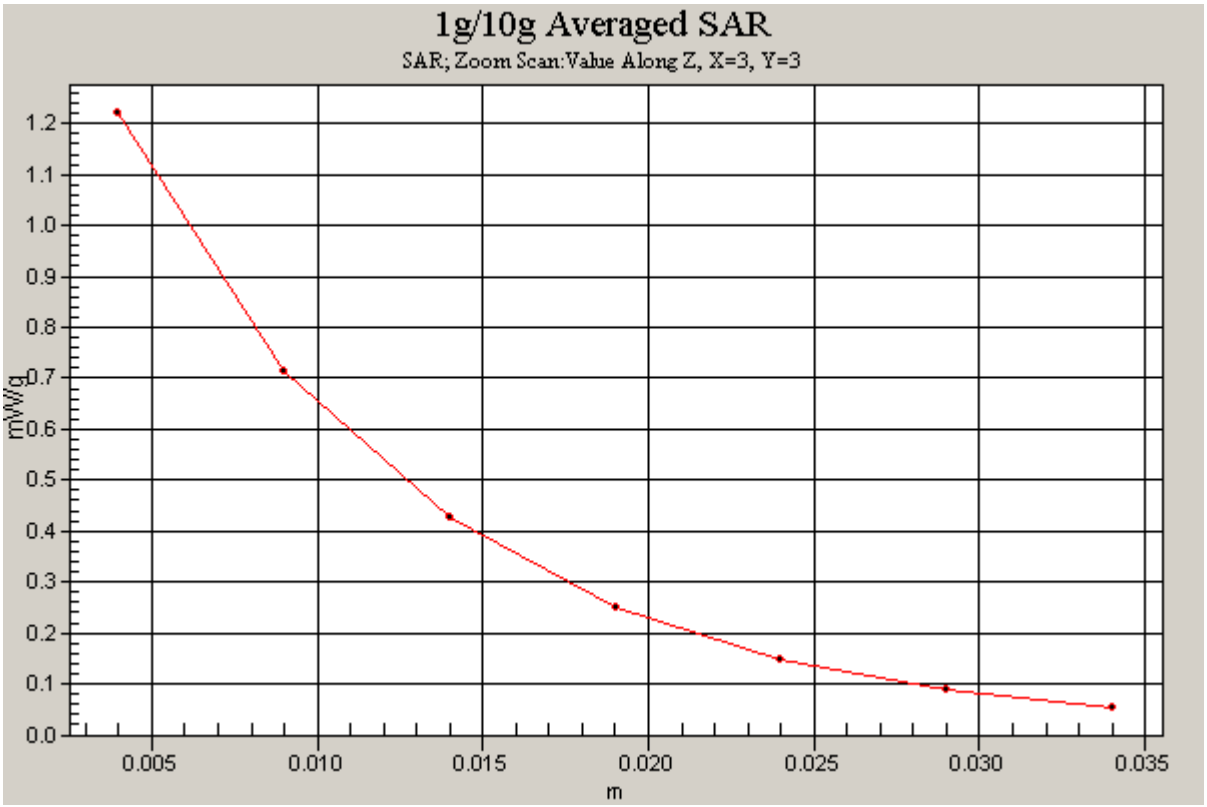


Figure 54 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 2 Channel 661]

GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 2 Low Frequency

Communication System: GSM 1900+GPRS(2Up); Frequency: 1850.2 MHz;Duty Cycle: 1:4
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.41 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 2 Low/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.18 mW/g

Test Position 2 Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.0 V/m; Power Drift = 0.030 dB
Peak SAR (extrapolated) = 1.77 W/kg
SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.564 mW/g
Maximum value of SAR (measured) = 1.18 mW/g

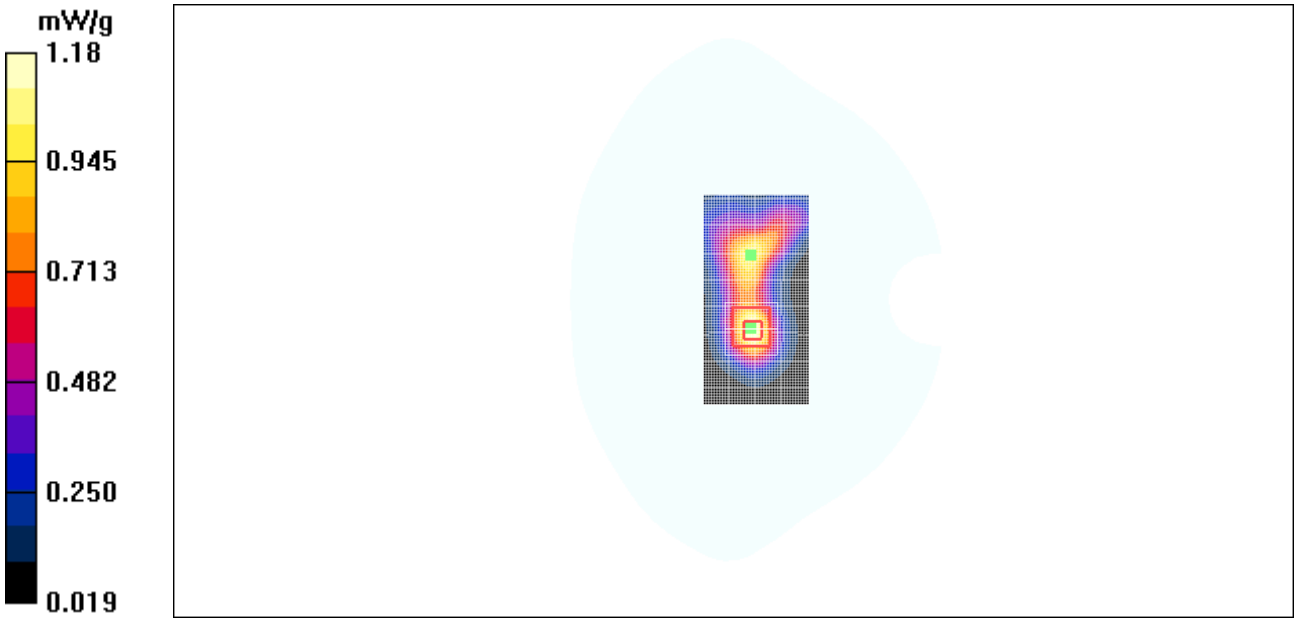


Figure 55 GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 2 Channel 512

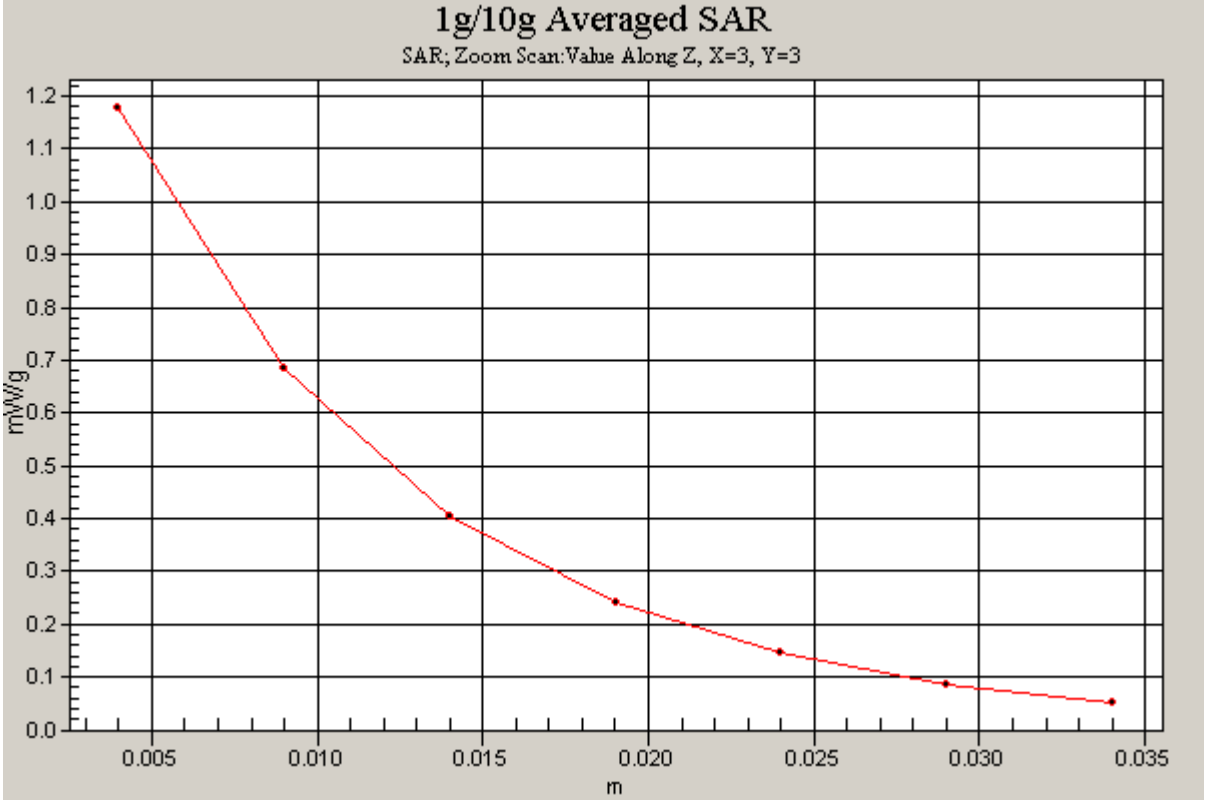


Figure 56 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 2 Channel 512]

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

Communication System: GSM 1900+GPRS(2Up); Frequency: 1880 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 3 Middle/Area Scan (51x51x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.707 mW/g

Test Position 3 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.2 V/m; Power Drift = -0.048 dB
Peak SAR (extrapolated) = 2.26 W/kg
SAR(1 g) = 0.653 mW/g; SAR(10 g) = 0.267 mW/g
Maximum value of SAR (measured) = 0.808 mW/g

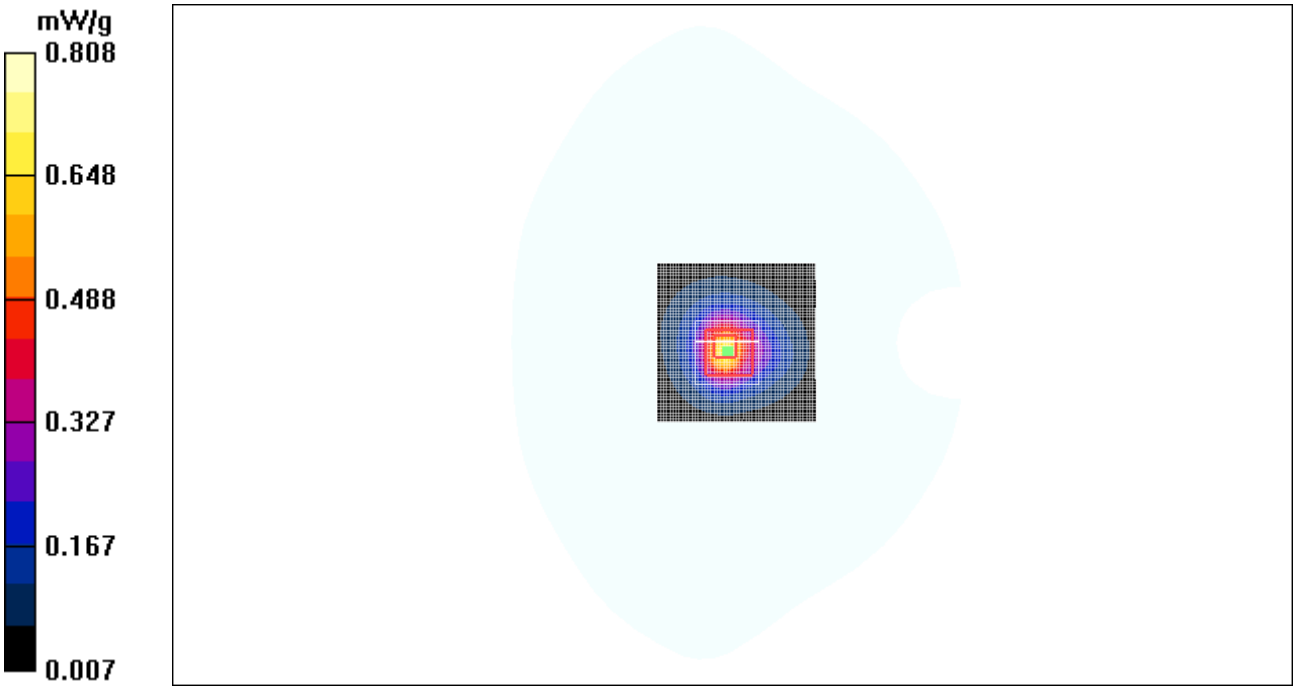


Figure 57 GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 3 Channel 661

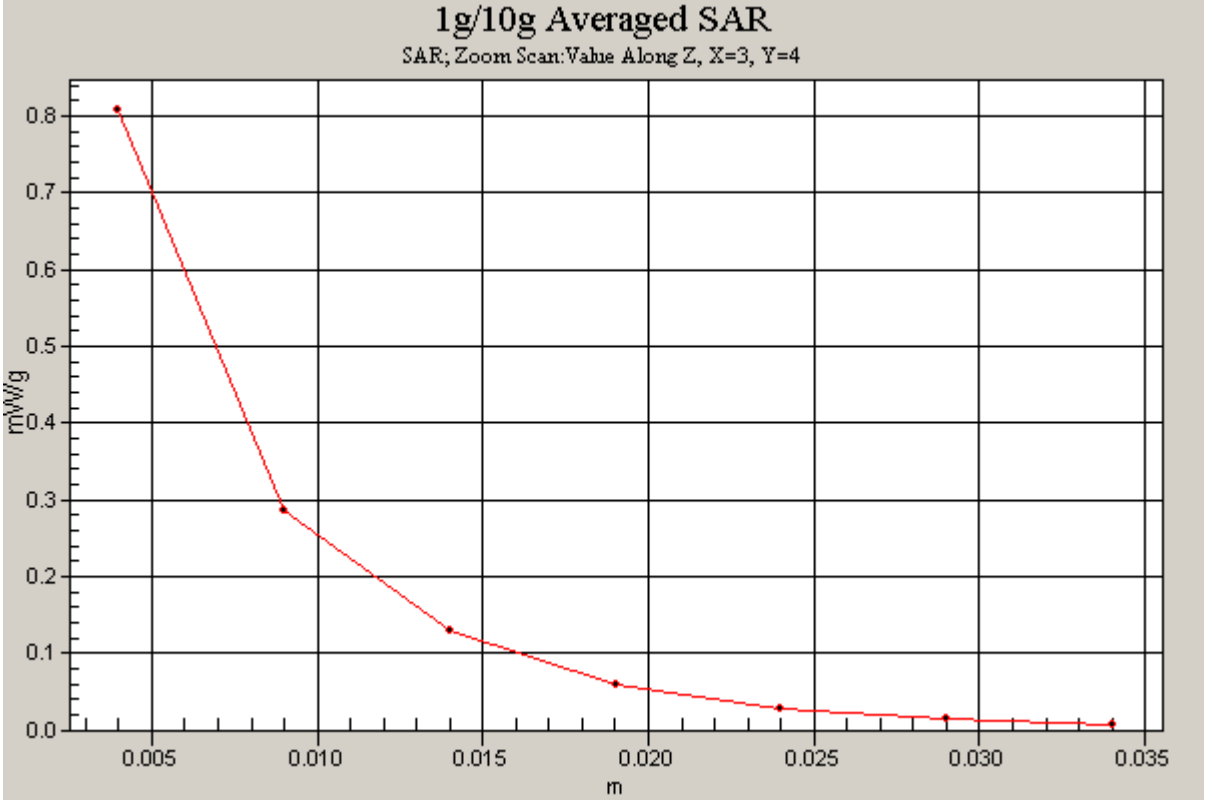


Figure 58 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 3 Channel 661]

GSM 1900 GPRS (2 timeslots in uplink) with IBM T61 Test Position 4 High Frequency

Communication System: GSM 1900+GPRS(2Up); Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1910 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 4 High/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.873 mW/g

Test Position 4 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.1 V/m; Power Drift = 0.001dB
Peak SAR (extrapolated) = 1.21 W/kg
SAR(1 g) = 0.738 mW/g; SAR(10 g) = 0.415 mW/g
Maximum value of SAR (measured) = 0.819 mW/g

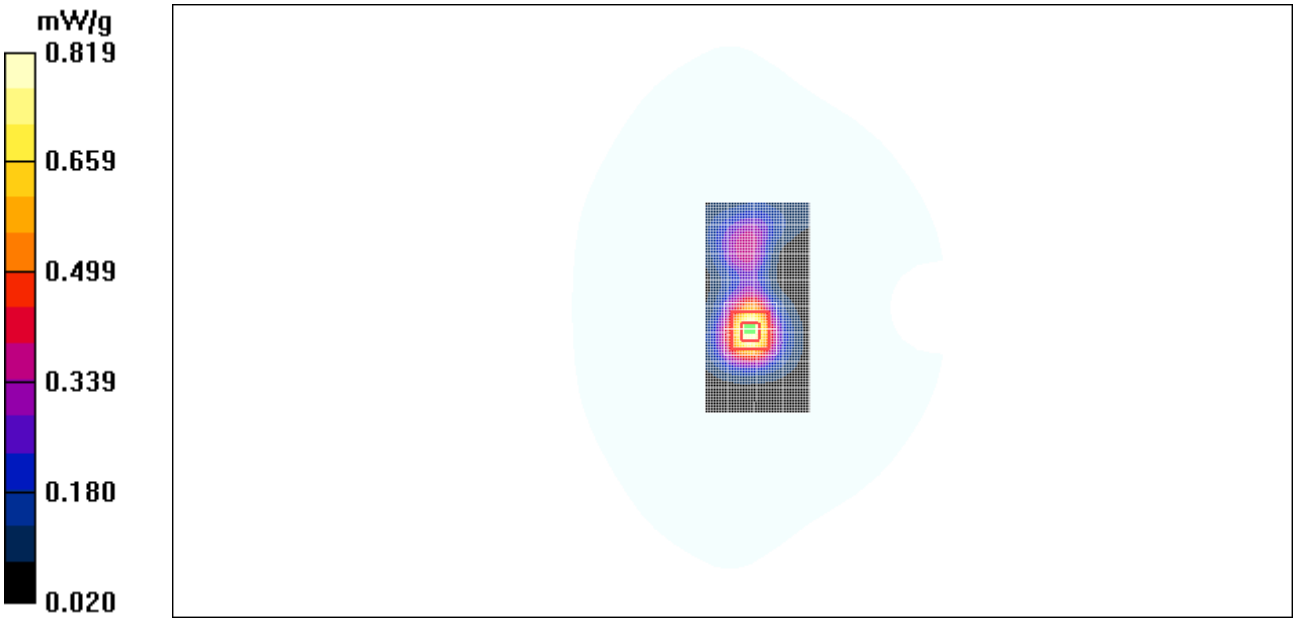


Figure 59 GSM 1900 GPRS (2 timeslots in uplink) with IBM T61 Test Position 4 Channel 810

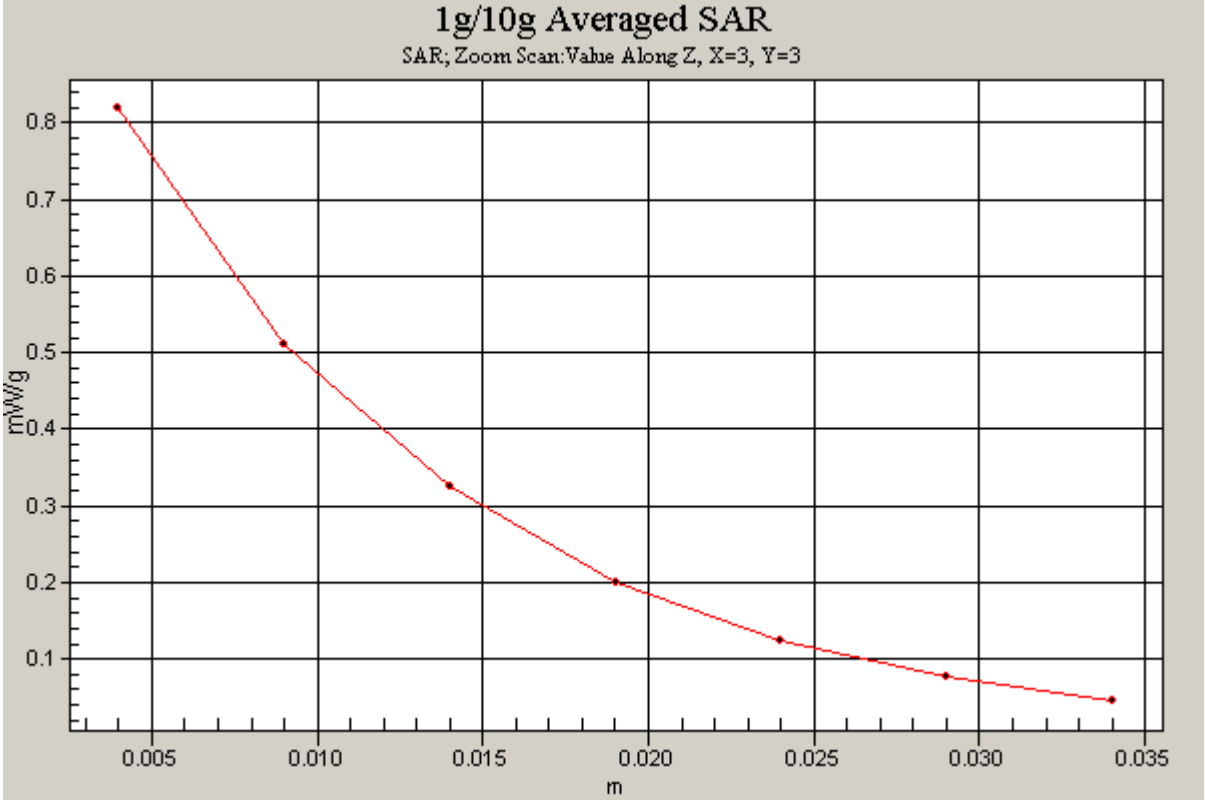


Figure 60 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with IBM T61 Test Position 4 Channel 810]

GSM 1900 GPRS (2 timeslots in uplink) with IBM T61 Test Position 4 Middle Frequency

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; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 4 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.02 mW/g

Test Position 4 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.1 V/m; Power Drift = -0.063 dB
Peak SAR (extrapolated) = 1.46 W/kg
SAR(1 g) = 0.875 mW/g; SAR(10 g) = 0.487 mW/g
Maximum value of SAR (measured) = 0.974 mW/g

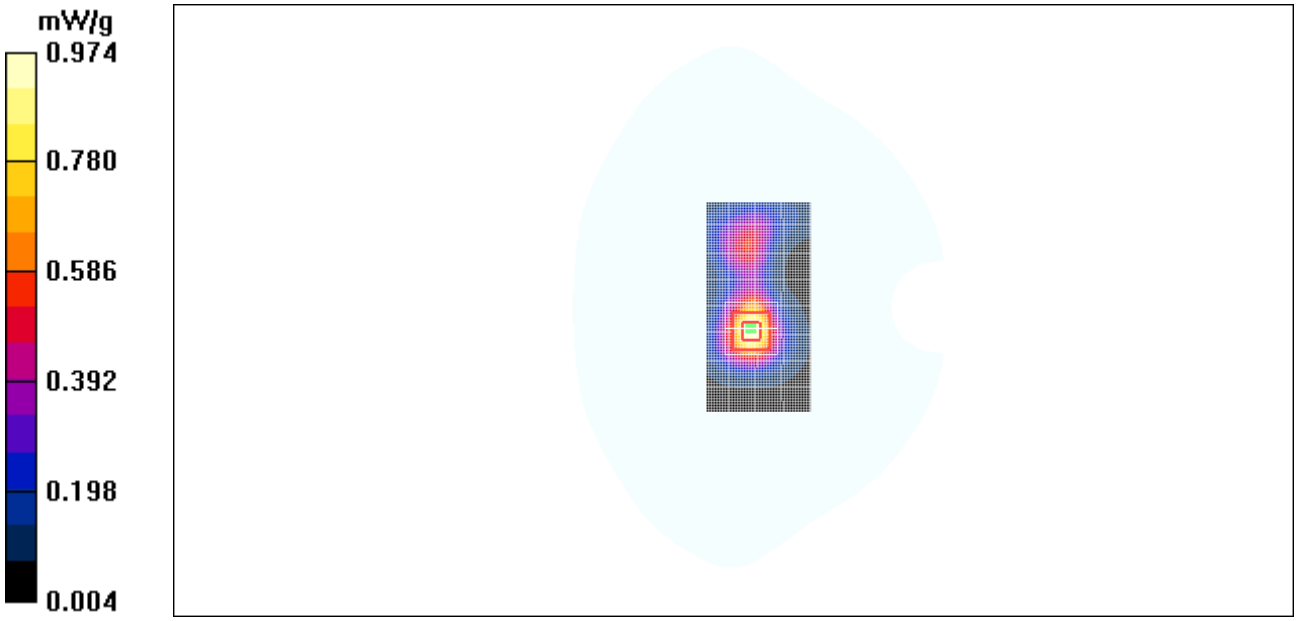


Figure 61 GSM 1900 GPRS (2 timeslots in uplink) with IBM T61 Test Position 4 Channel 661

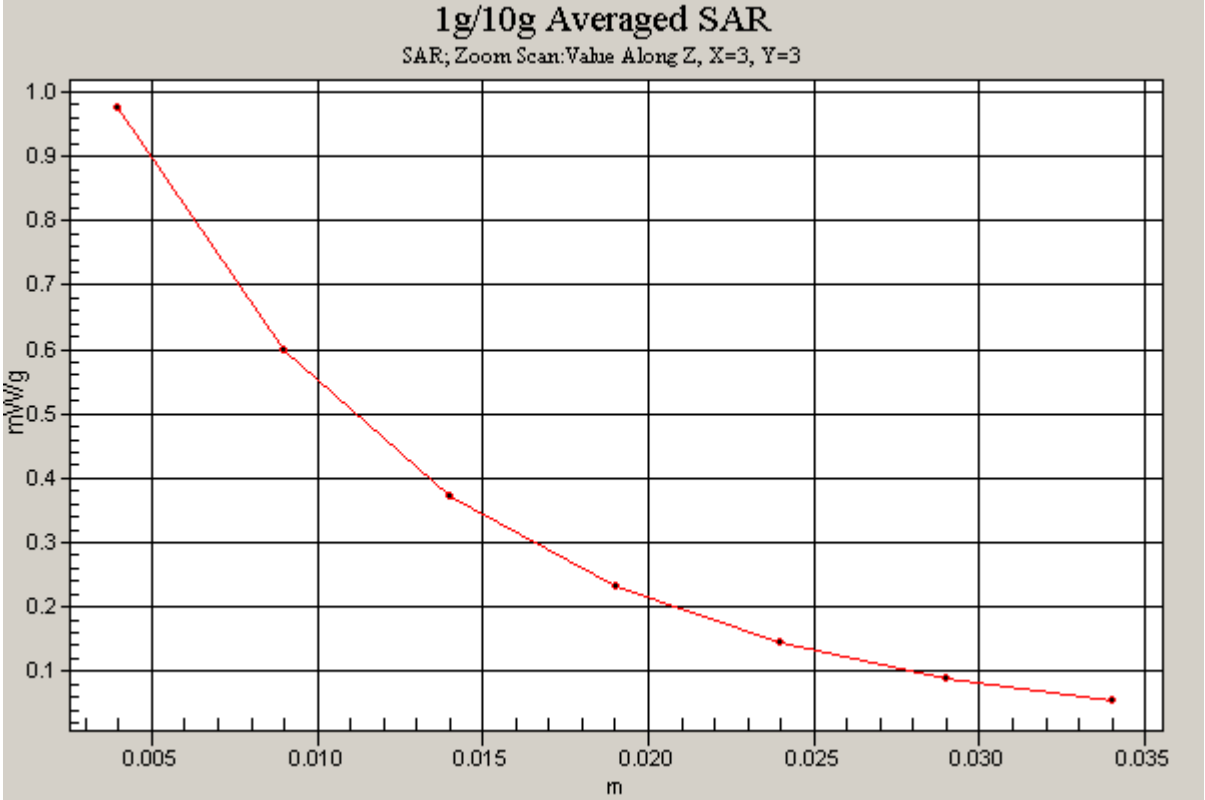


Figure 62 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with IBM T61 Test Position 4 Channel 661]

GSM 1900 GPRS (2 timeslots in uplink) with IBM T61 Test Position 4 Low Frequency

Communication System: GSM 1900+GPRS(2Up); Frequency: 1850.2 MHz;Duty Cycle: 1:4
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.41 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 4 Low/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.792 mW/g

Test Position 4 Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.9 V/m; Power Drift = -0.190 dB
Peak SAR (extrapolated) = 1.08 W/kg
SAR(1 g) = 0.674 mW/g; SAR(10 g) = 0.382 mW/g
Maximum value of SAR (measured) = 0.752 mW/g

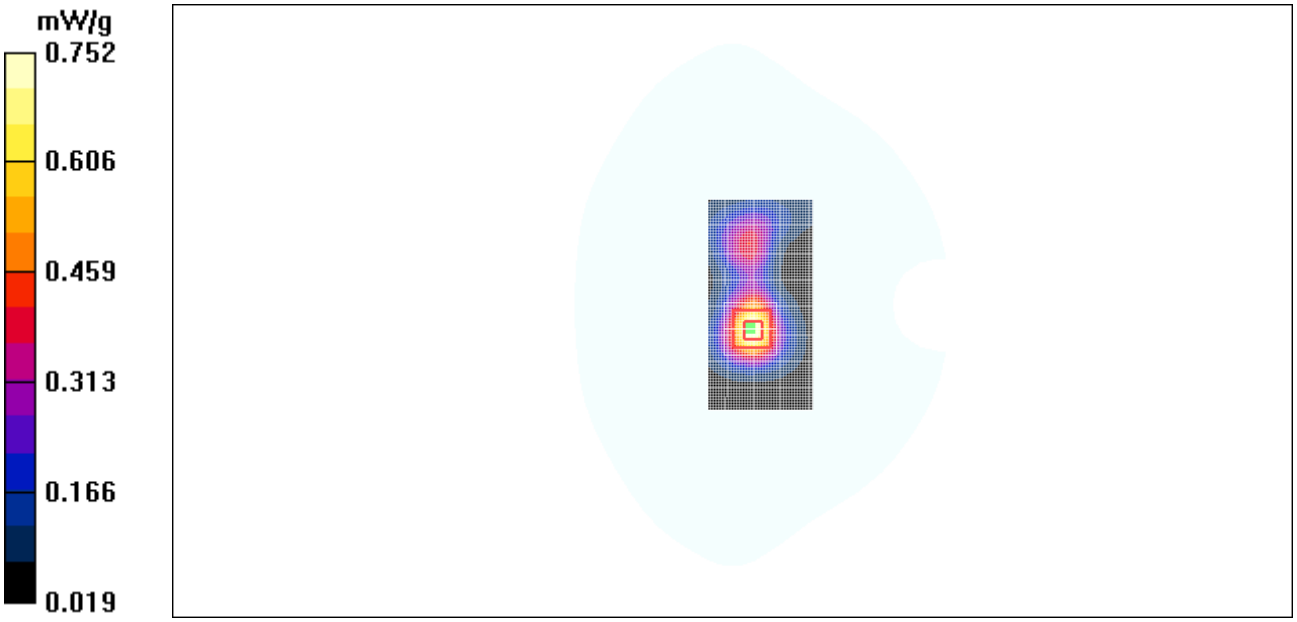


Figure 63 GSM 1900 GPRS (2 timeslots in uplink) with IBM T61 Test Position 4 Channel 512

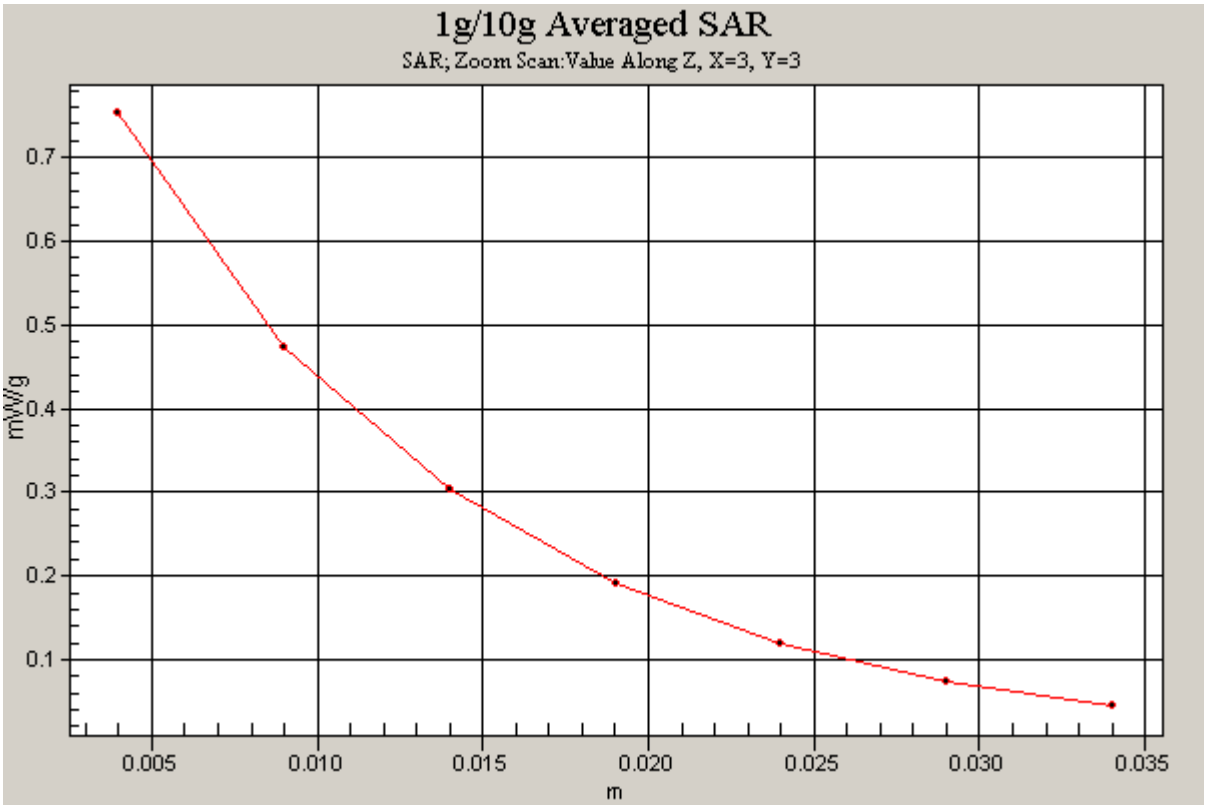


Figure 64 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with IBM T61 Test Position 4 Channel 512]

GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook R55V Test Position 5 High Frequency

Communication System: GSM 1900+GPRS(2Up); Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1910 MHz; σ = 1.52 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 5 High/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.30 mW/g

Test Position 5 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.3 V/m; Power Drift = 0.090 dB
Peak SAR (extrapolated) = 1.87 W/kg
SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.611 mW/g
Maximum value of SAR (measured) = 1.24 mW/g

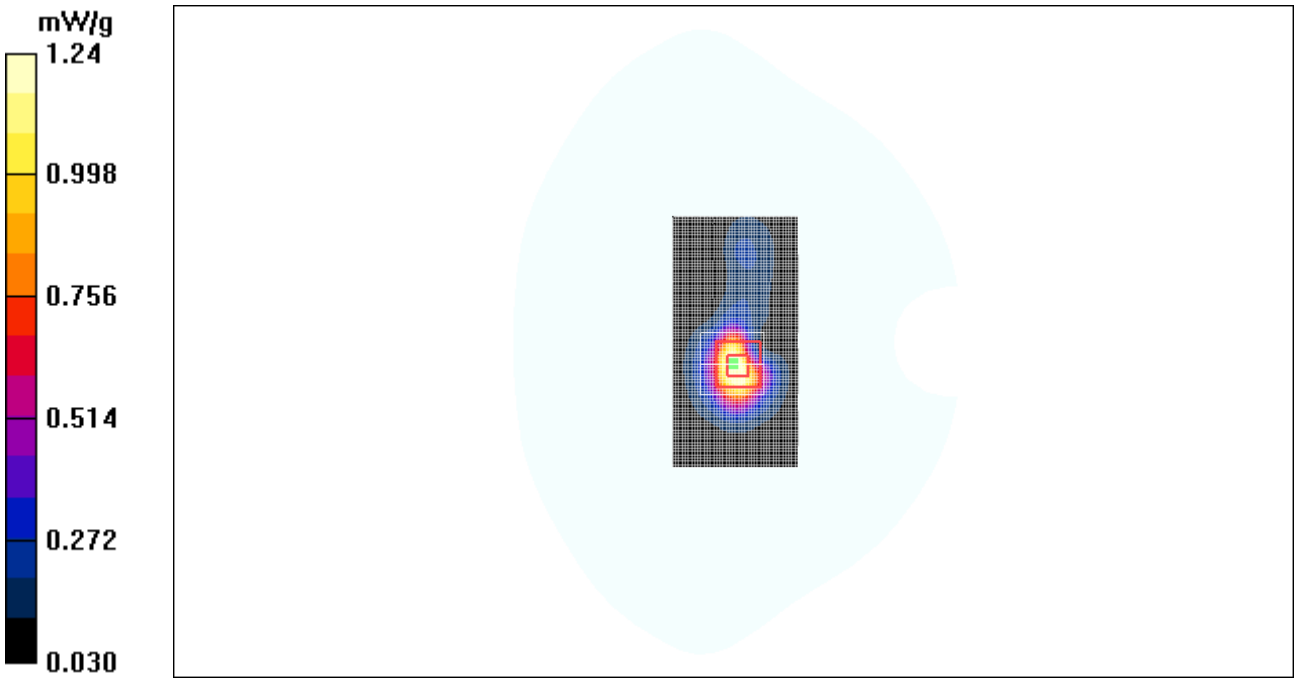


Figure 65 GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 5 Channel 810

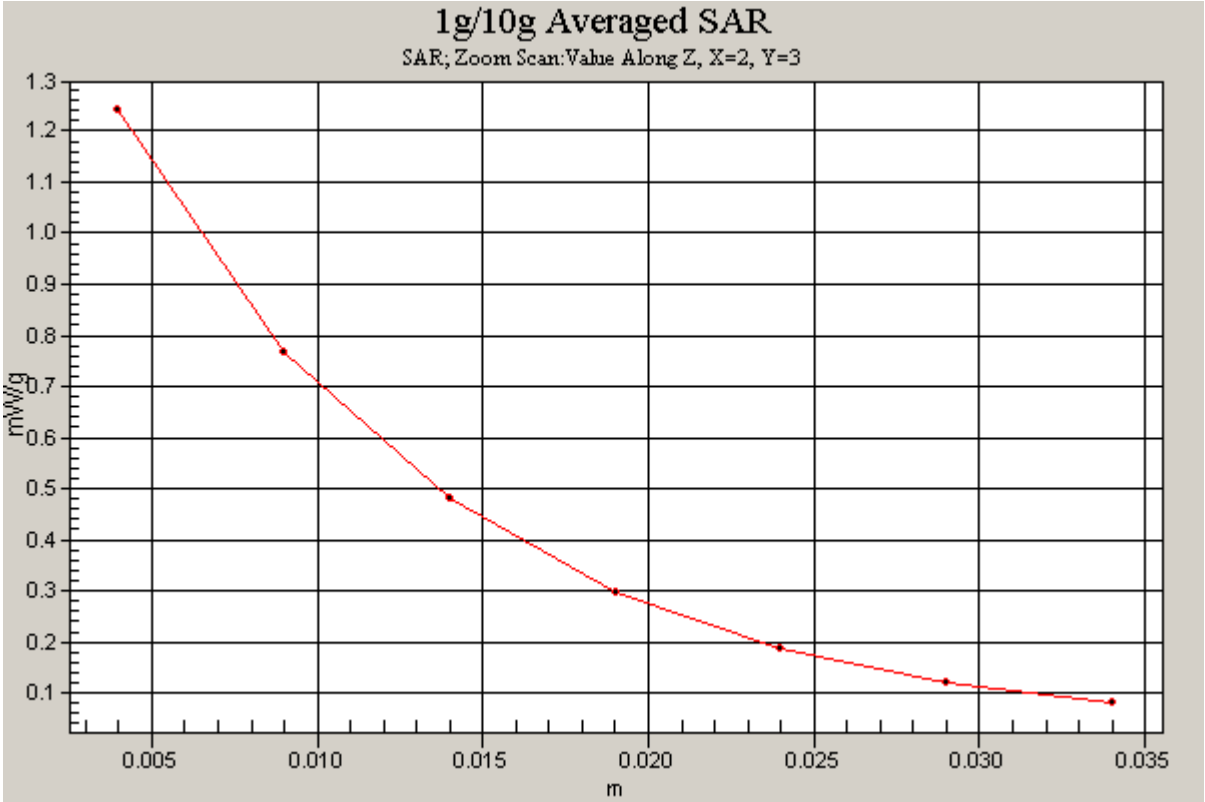


Figure 66 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 5 Channel 810]

GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook R55V Test Position 5 Middle Frequency

Communication System: GSM 1900+GPRS(2Up); Frequency: 1880 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 5 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.33 mW/g

Test Position 5 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.2 V/m; Power Drift = 0.022 dB
Peak SAR (extrapolated) = 2.23 W/kg
SAR(1 g) = 1.17 mW/g; SAR(10 g) = 0.620 mW/g
Maximum value of SAR (measured) = 1.28 mW/g

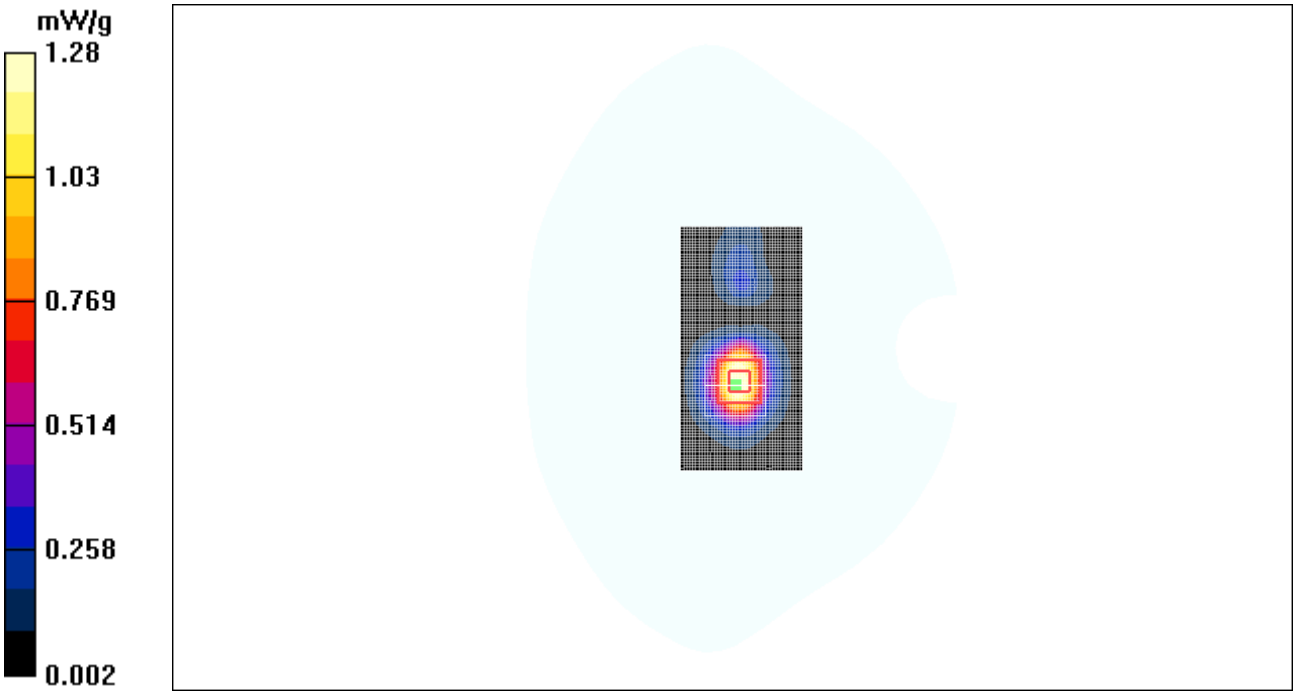


Figure 67 GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 5 Channel 661

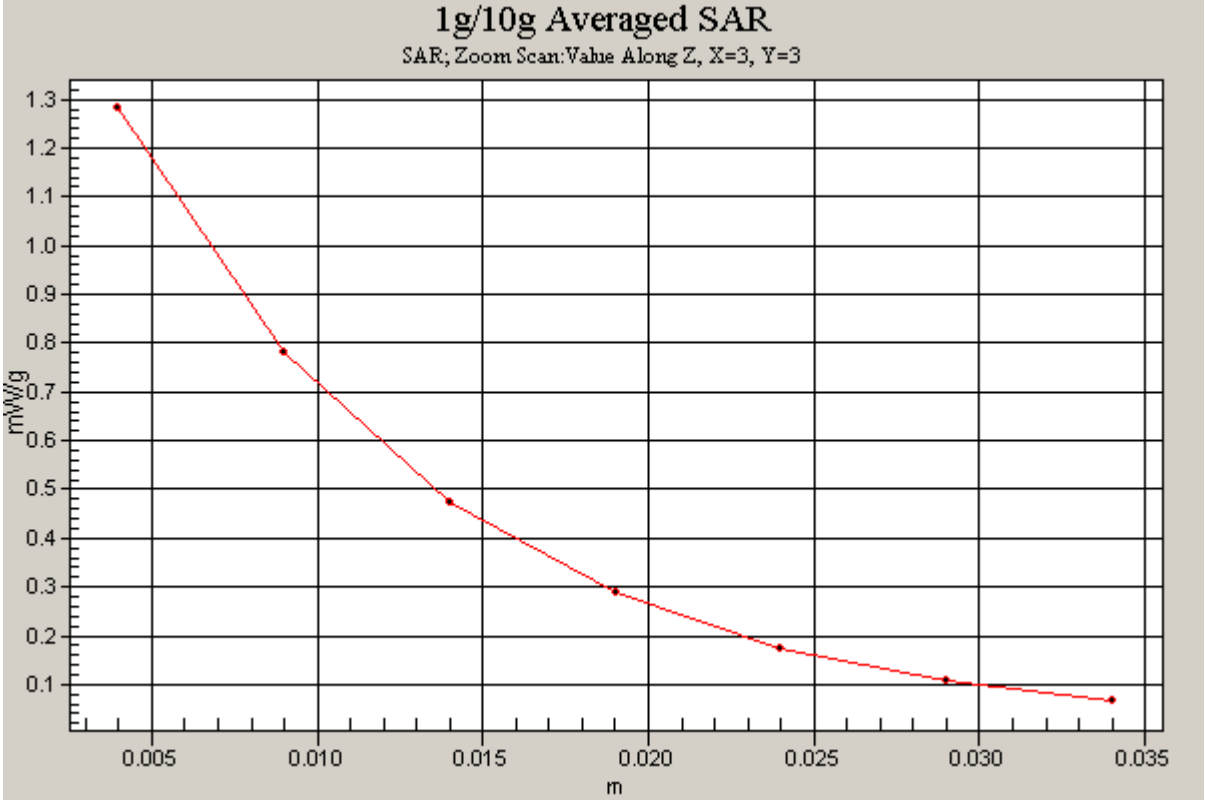


Figure 68 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 5 Channel 661]

GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook R55V Test Position 5 Low Frequency

Communication System: GSM 1900+GPRS(2Up); Frequency: 1850.2 MHz;Duty Cycle: 1:4
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.46 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 5 Low/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.35 mW/g

Test Position 5 Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.2 V/m; Power Drift = 0.042 dB
Peak SAR (extrapolated) = 1.83 W/kg
SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.606 mW/g
Maximum value of SAR (measured) = 1.30 mW/g

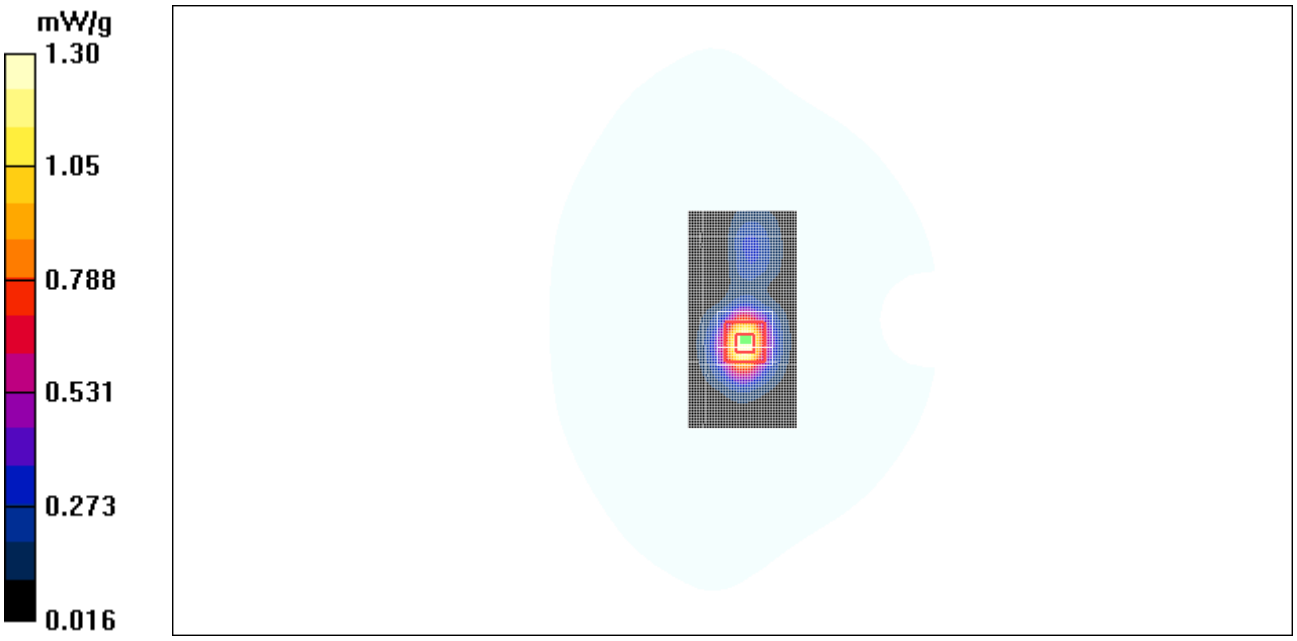


Figure 69 GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 5 Channel 512

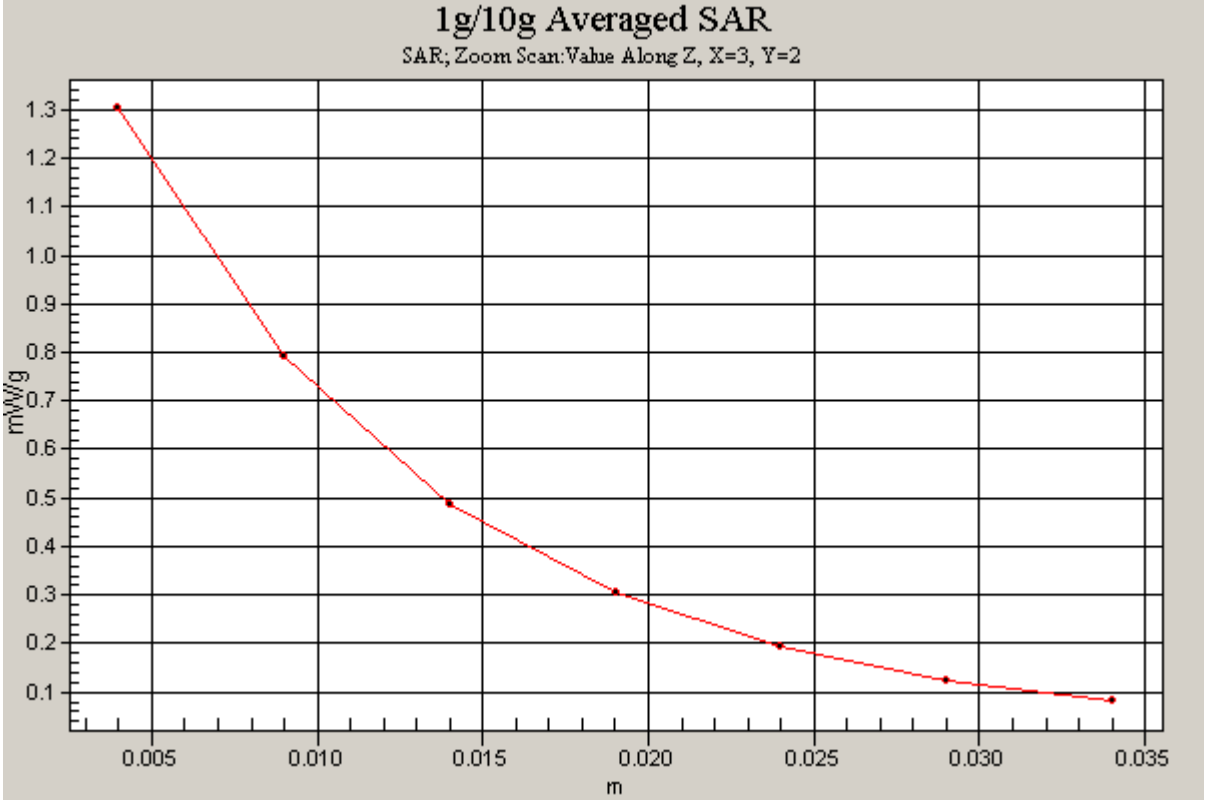


Figure 70 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook S72 Test Position 5 Channel 512]

GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook R55V Test Position 6 Middle Frequency

Communication System: GSM 1900+GPRS(2Up); Frequency: 1880 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 6 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.661 mW/g

Test Position 6 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.3 V/m; Power Drift = -0.149 dB
Peak SAR (extrapolated) = 1.59 W/kg
SAR(1 g) = 0.513 mW/g; SAR(10 g) = 0.222 mW/g
Maximum value of SAR (measured) = 0.613 mW/g

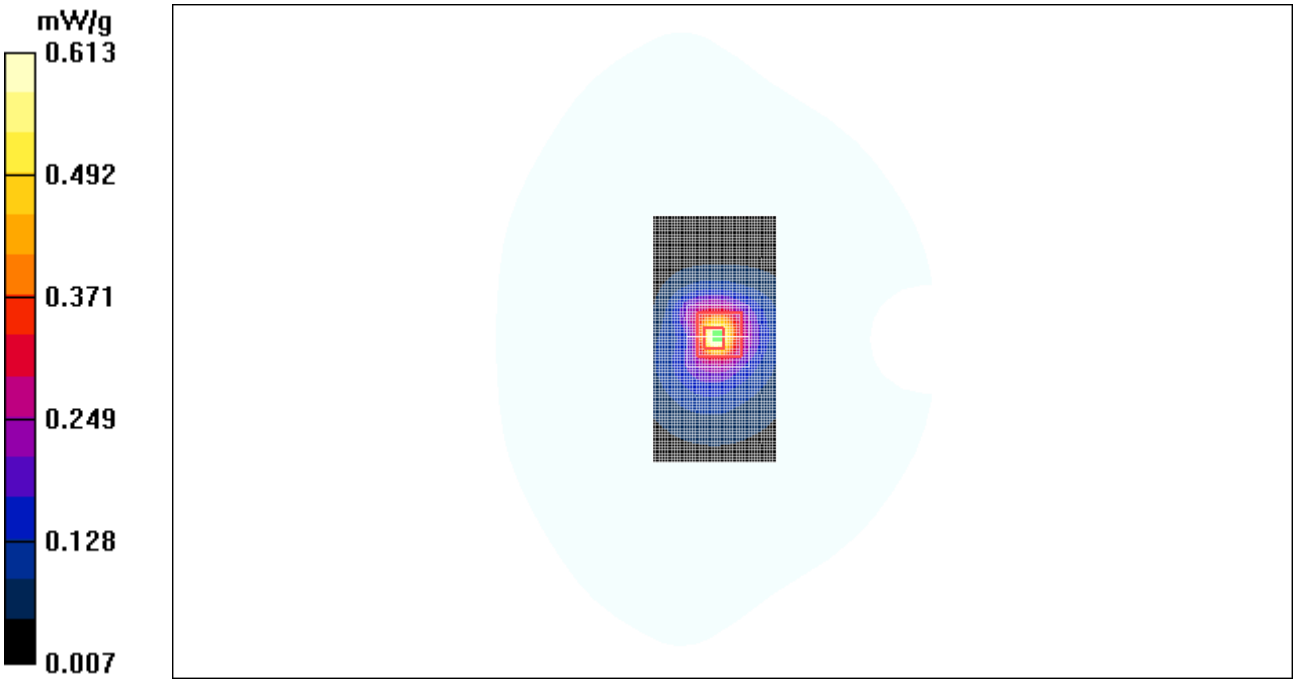


Figure 71 GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook R55V Test Position 6 Channel 661

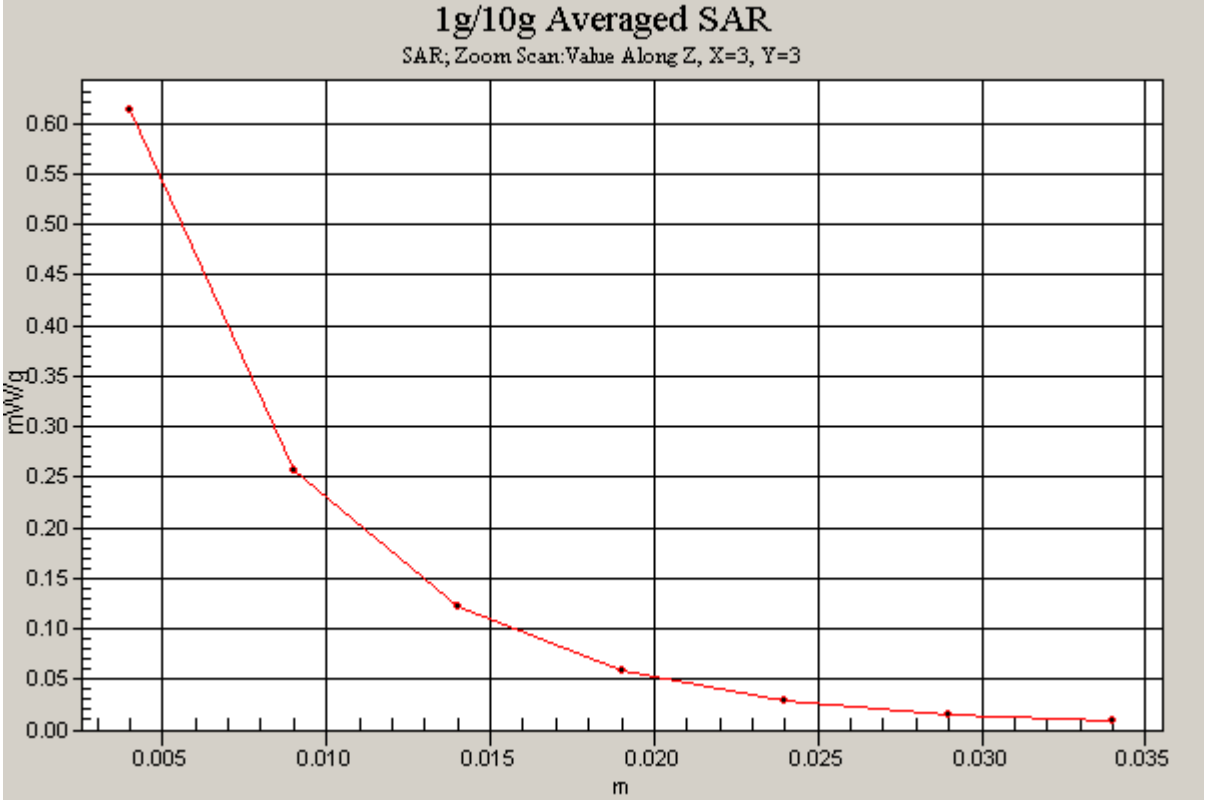


Figure 72 Z-Scan at power reference point [GSM 1900 GPRS (2 timeslots in uplink) with BenQ Joybook R55V Test Position 6 Channel 661]

GSM 1900 EGPRS (2 timeslots in uplink) with BenQ Joybook R55V Test Position 5 Middle Frequency

Communication System: GSM 1900+EGPRS(2Up); Frequency: 1880 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn679;
Test Position 5 Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.300 mW/g

Test Position 5 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.8 V/m; Power Drift = -0.055 dB
Peak SAR (extrapolated) = 0.943 W/kg
SAR(1 g) = 0.254 mW/g; SAR(10 g) = 0.153 mW/g
Maximum value of SAR (measured) = 0.281 mW/g

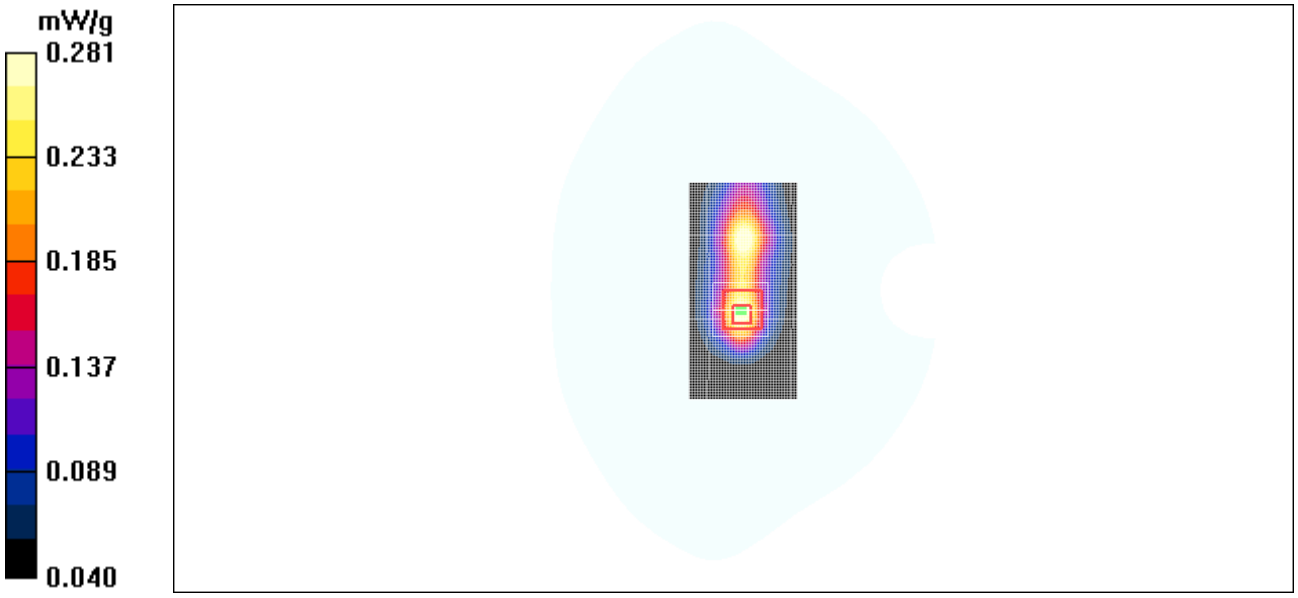


Figure 73 GSM 1900 EGPRS (2 timeslots in uplink) with BenQ Joybook R55V Test Position 5 Channel 661

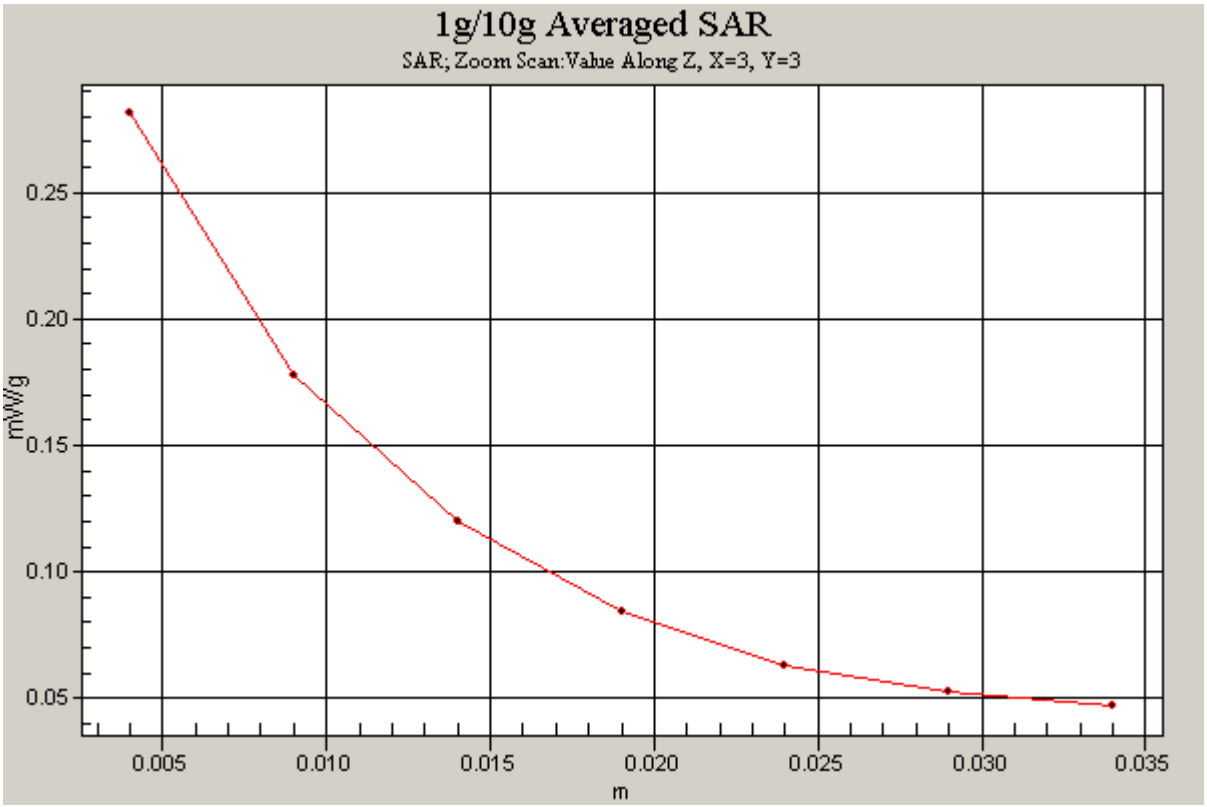


Figure 74 Z-Scan at power reference point [GSM 1900 EGPRS (2 timeslots in uplink) with BenQ Joybook R55V Test Position 5 Channel 661]

ANNEX D： SYSTEM VALIDATION RESULTS

System Performance Check at 835 MHz

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 443

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 835MHz

Medium parameters used: f = 835 MHz; σ = 0. 92 mho/m; ε_r = 41.86; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1531; ConvF(6.85, 6.85, 6.85);
- Electronics: DAE4 Sn679;

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.54 mW/g

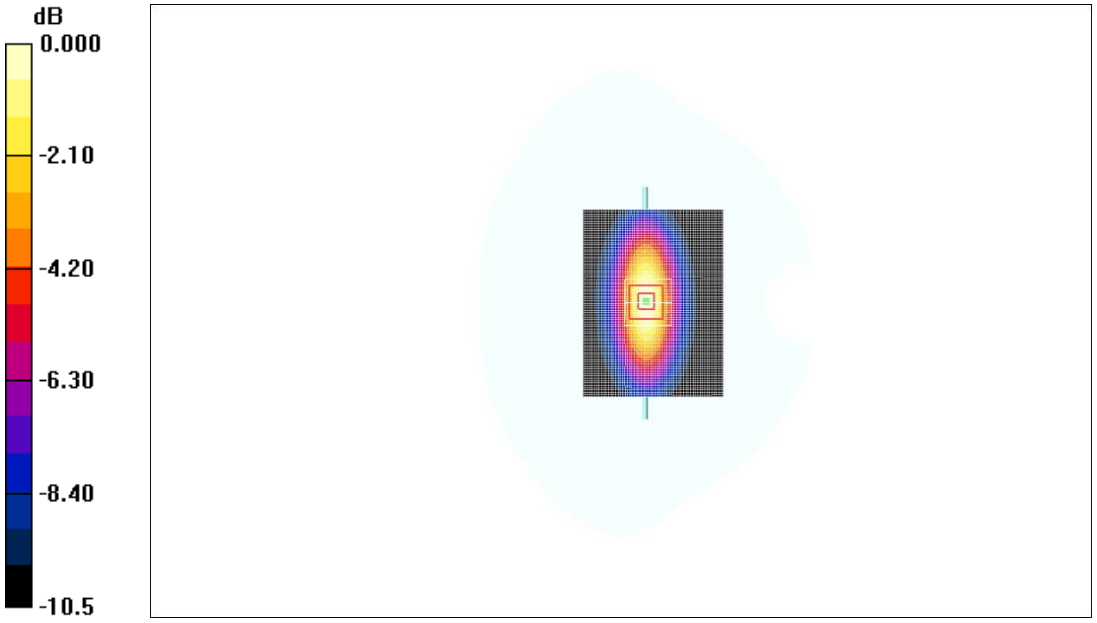
d=15mm, Pin=250mW/Zoom Scan (7x7x7) /Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.0 V/m; Power Drift = -0.061 dB

Peak SAR (extrapolated) = 3.44 W/kg

SAR(1 g) = 2.34 mW/g; SAR(10 g) = 1.53 mW/g

Maximum value of SAR (measured) = 2.52 mW/g



0 dB = 2.52mW/g

Figure 75 System Performance Check 835MHz 250mW

System Performance Check at 1900 MHz

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d018

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1900 MHz; σ = 1.42 mho/m; ε_r = 39.85; ρ = 1000 kg/m^3

Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);

Electronics: DAE4 Sn679;

d=10mm, Pin=250mW /Area Scan (101x121x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 10.8 mW/g

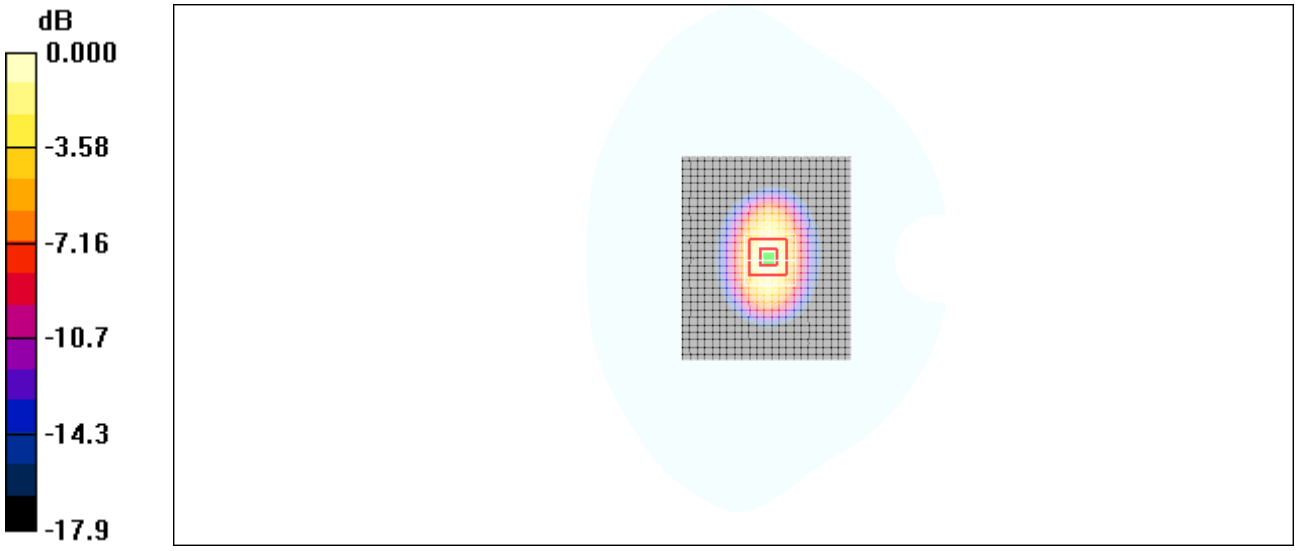
d=10mm, Pin=250mW /Zoom Scan (7x7x7) /Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 92.8 V/m; Power Drift = -0.018 dB

Peak SAR (extrapolated) = 16.0 W/kg

SAR(1 g) = 9.36 mW/g; SAR(10 g) = 4.93 mW/g

Maximum value of SAR (measured) = 10.7 mW/g



0 dB = 10.7mW/g

Figure 76 System Performance Check 1900MHz 250mW

ANNEX E： PROBE CALIBRATION CERTIFICATE

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client ATL (Auden)

Certificate No: ET3-1531_Jan08

CALIBRATION CERTIFICATE

Object ET3DV6 - SN:1531

Calibration procedure(s) QA CAL-01.v6 and QA CAL-12.v5
Calibration procedure for dosimetric E-field probes

Calibration date: January 29, 2008

Condition of the calibrated item In Tolerance

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Power sensor E4412A	MY41495277	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Power sensor E4412A	MY41498087	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Reference 3 dB Attenuator	SN: S5054 (3c)	8-Aug-07 (METAS, No. 217-00719)	Aug-08
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-07 (METAS, No. 217-00671)	Mar-08
Reference 30 dB Attenuator	SN: S5129 (30b)	8-Aug-07 (METAS, No. 217-00720)	Aug-08
Reference Probe ES3DV2	SN: 3013	2-Jan-08 (SPEAG, No. ES3-3013_Jan08)	Jan-09
DAE4	SN: 654	20-Apr-07 (SPEAG, No. DAE4-654_Apr07)	Apr-08

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (SPEAG, in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, In house check Oct-07)	In house check: Oct-08

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Technical Manager	
Approved by:	Niels Kuster	Quality Manager	

Issued: January 29, 2008

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: ET3-1531_Jan08 Page 1 of 9

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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C Service suisse d'étalonnage
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S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy):* in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset:* The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

ET3DV6 SN:1531 January 29, 2008

Probe ET3DV6

SN:1531

Manufactured:	July 15, 2000
Last calibrated:	January 22, 2007
Recalibrated:	January 29, 2008

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

ET3DV6 SN:1531 January 29,2008

DASY - Parameters of Probe: ET3DV6 SN:1531

Sensitivity in Free Space[A]

			Diode Compression[B]	
NormX	1.52 ± 10.1%	$\mu V/(V/m)^2$	DCP X	95 mV
NormY	1.66 ± 10.1%	$\mu V/(V/m)^2$	DCP Y	94 mV
NormZ	1.71 ± 10.1%	$\mu V/(V/m)^2$	DCP Z	93 mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL **900 MHz** **Typical SAR gradient: 5 % per mm**

Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm
SAR_{be} [%]	Without Correction Algorithm	8.3	4.5
SAR_{be} [%]	With Correction Algorithm	0.7	0.0

TSL **1750 MHz** **Typical SAR gradient: 10 % per mm**

Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm
SAR_{be} [%]	Without Correction Algorithm	11.9	8.0
SAR_{be} [%]	With Correction Algorithm	0.5	0.1

Sensor Offset

Probe Tip to Sensor Center	2.7 mm

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

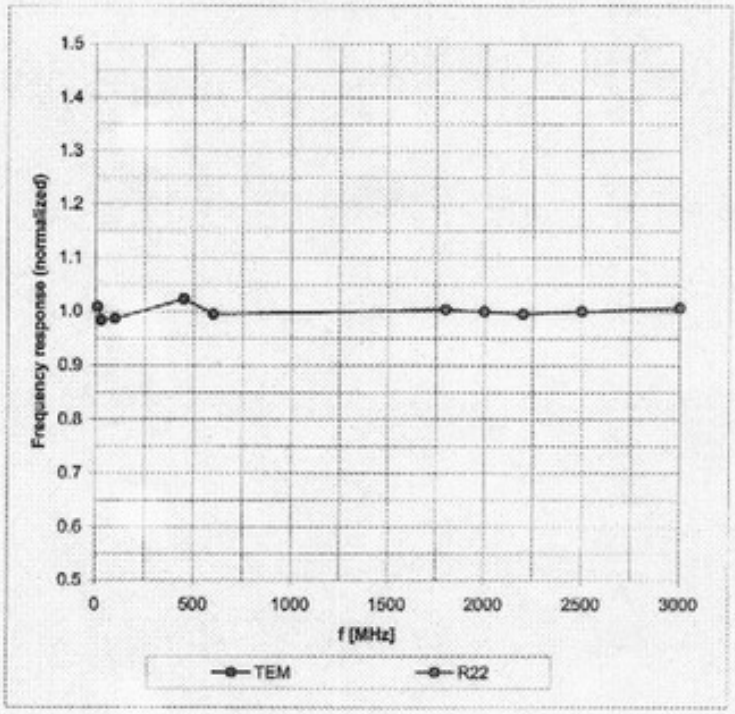
[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Page 8).

[B] Numerical linearization parameter: uncertainty not required.

ET3DV6 SN:1531 January 29, 2008

Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)