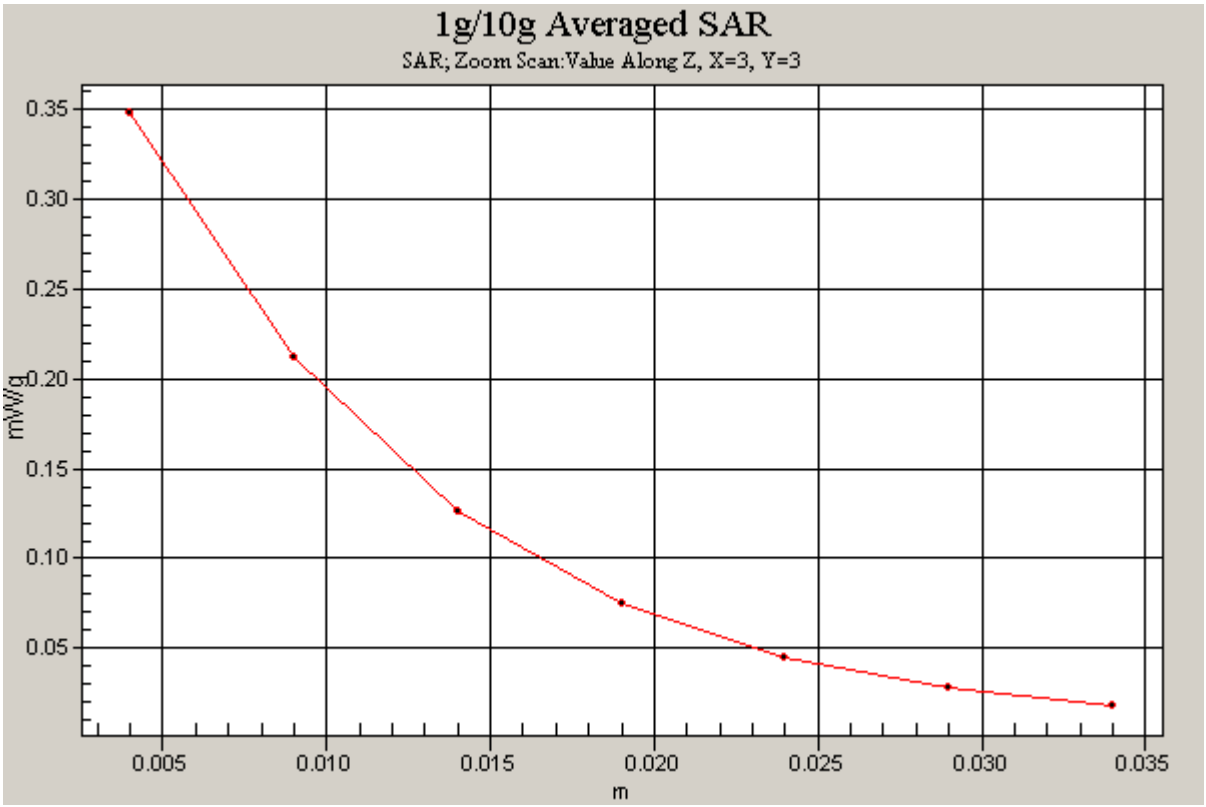


Figure 75 Z-Scan at power reference point (Right Hand Touch Cheek GSM 1900 Channel 512)

GSM 1900 Right Tilt High

Communication System: GSM 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; ε_r = 39.9; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);
Electronics: DAE4 Sn452;
Tilt High/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.528 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.4 V/m; Power Drift = 0.029 dB
Peak SAR (extrapolated) = 0.798 W/kg
SAR(1 g) = 0.467 mW/g; SAR(10 g) = 0.241 mW/g
Maximum value of SAR (measured) = 0.531 mW/g

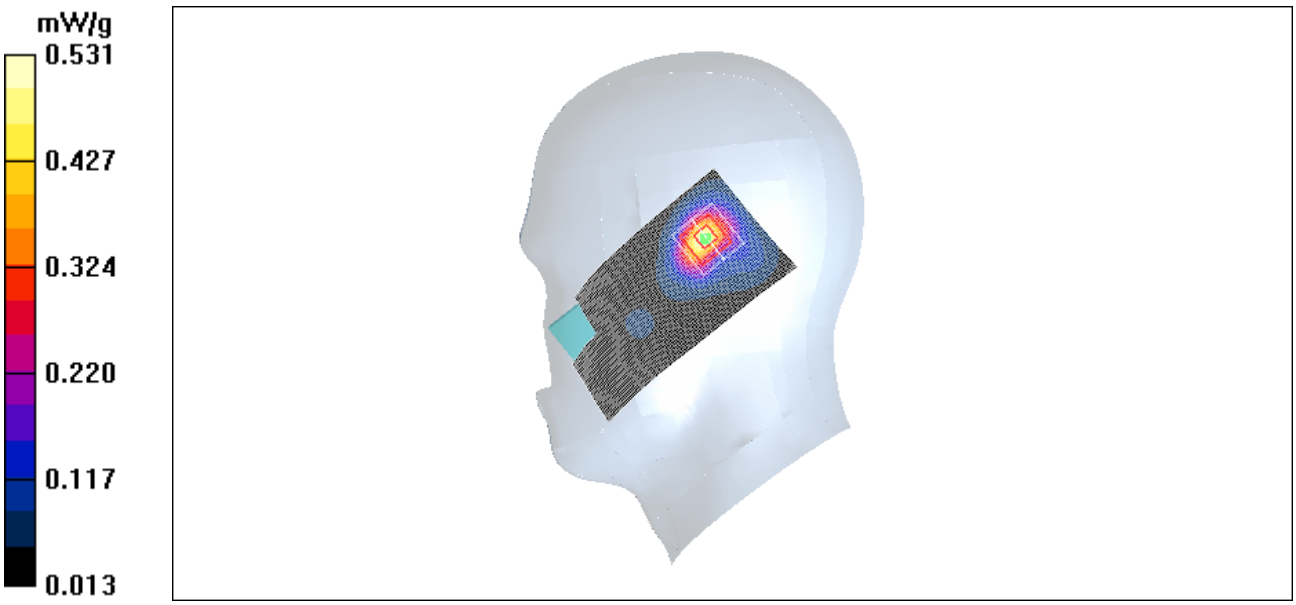


Figure 76 Right Hand Tilt 15° GSM 1900 Channel 810

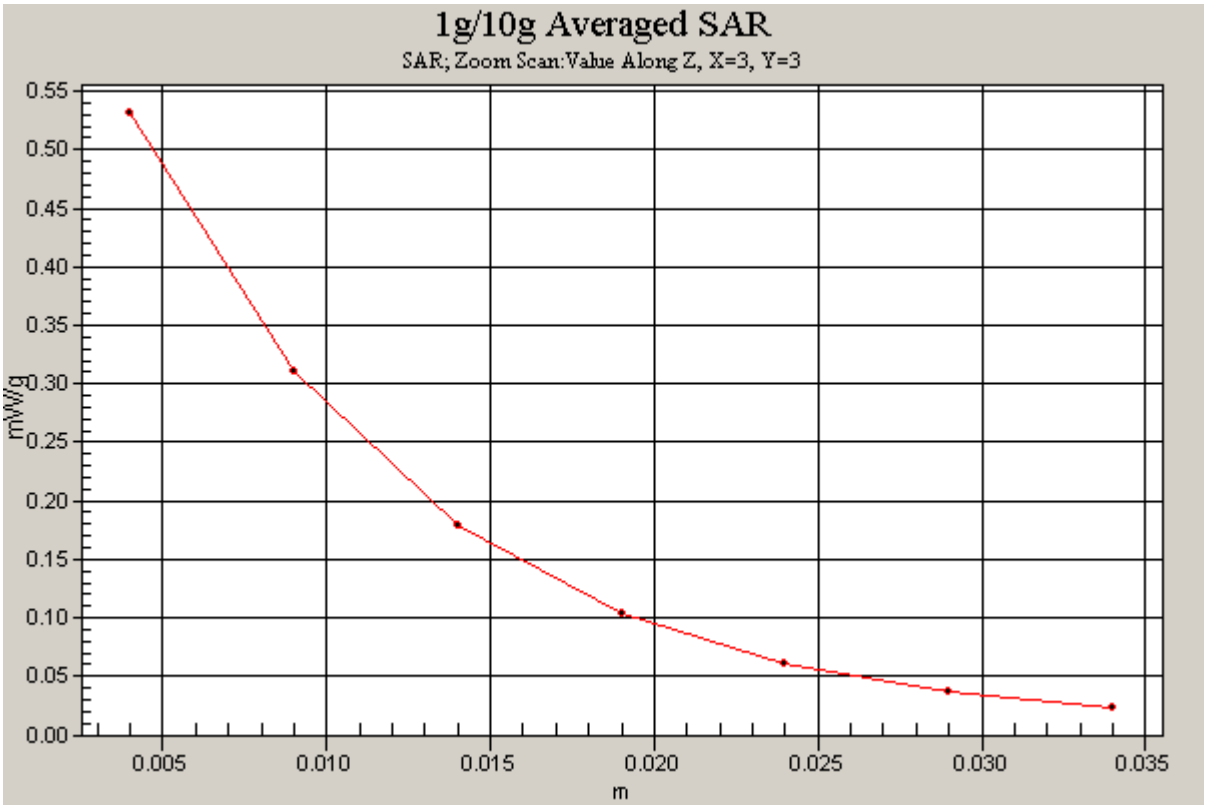


Figure 77 Z-Scan at power reference point (Right Hand Tilt 15° GSM 1900 Channel 810)

GSM 1900 Right Tilt Middle

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; ε_r = 40; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);
Electronics: DAE4 Sn452;
Tilt Middle/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.553 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.0 V/m; Power Drift = -0.013 dB
Peak SAR (extrapolated) = 0.799 W/kg
SAR(1 g) = 0.482 mW/g; SAR(10 g) = 0.251 mW/g
Maximum value of SAR (measured) = 0.549 mW/g

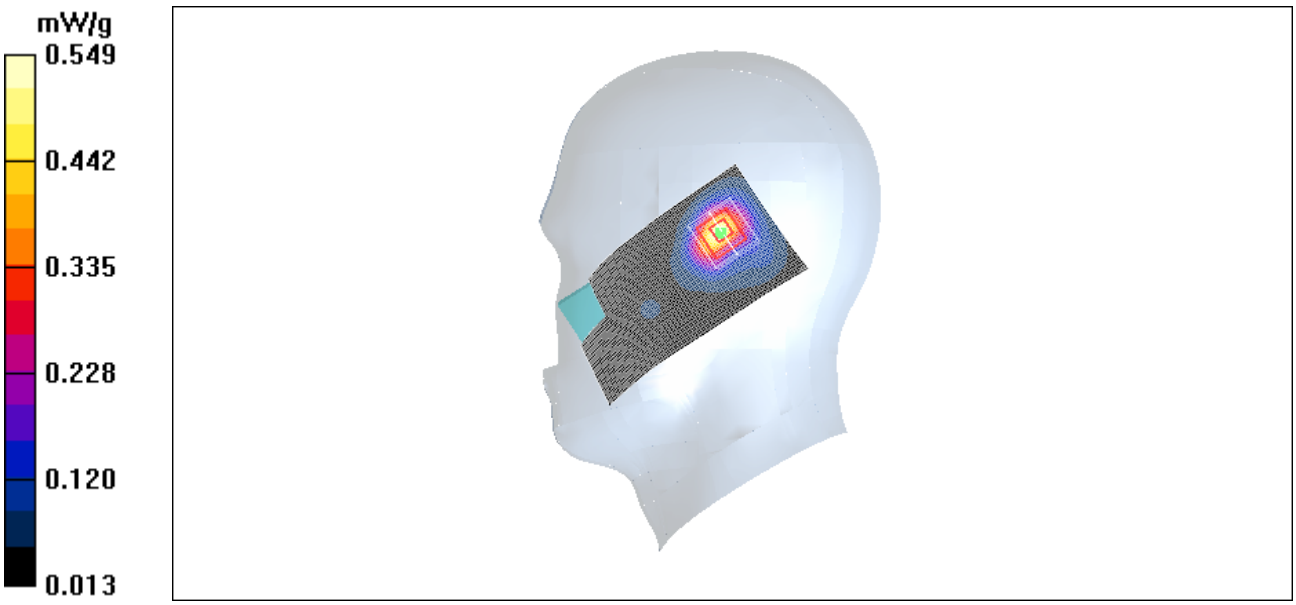


Figure 78 Right Hand Tilt 15° GSM 1900 Channel 661

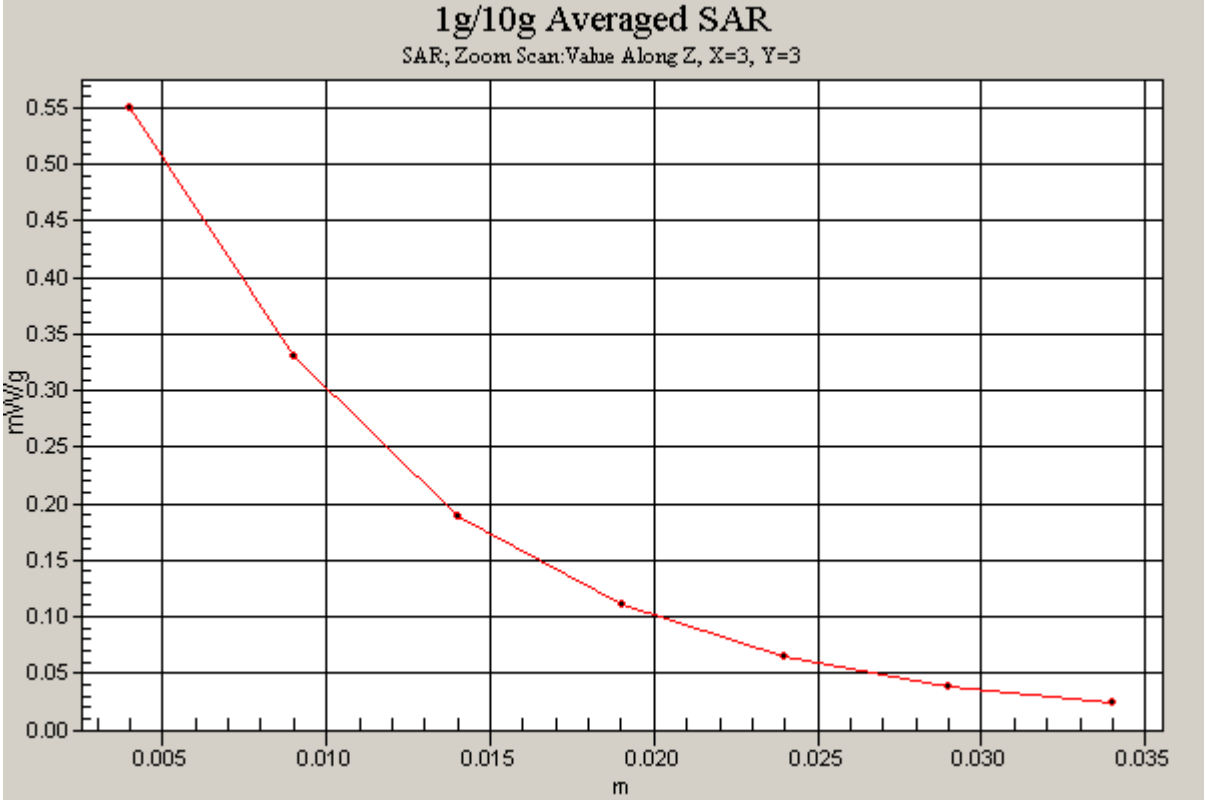


Figure 79 Z-Scan at power reference point (Right Hand Tilt 15° GSM 1900 Channel 661)

GSM 1900 Right Tilt Low

Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.39 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);
Electronics: DAE4 Sn452;
Tilt Low/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.371 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.8 V/m; Power Drift = 0.059 dB
Peak SAR (extrapolated) = 0.535 W/kg
SAR(1 g) = 0.324 mW/g; SAR(10 g) = 0.169 mW/g
Maximum value of SAR (measured) = 0.371 mW/g

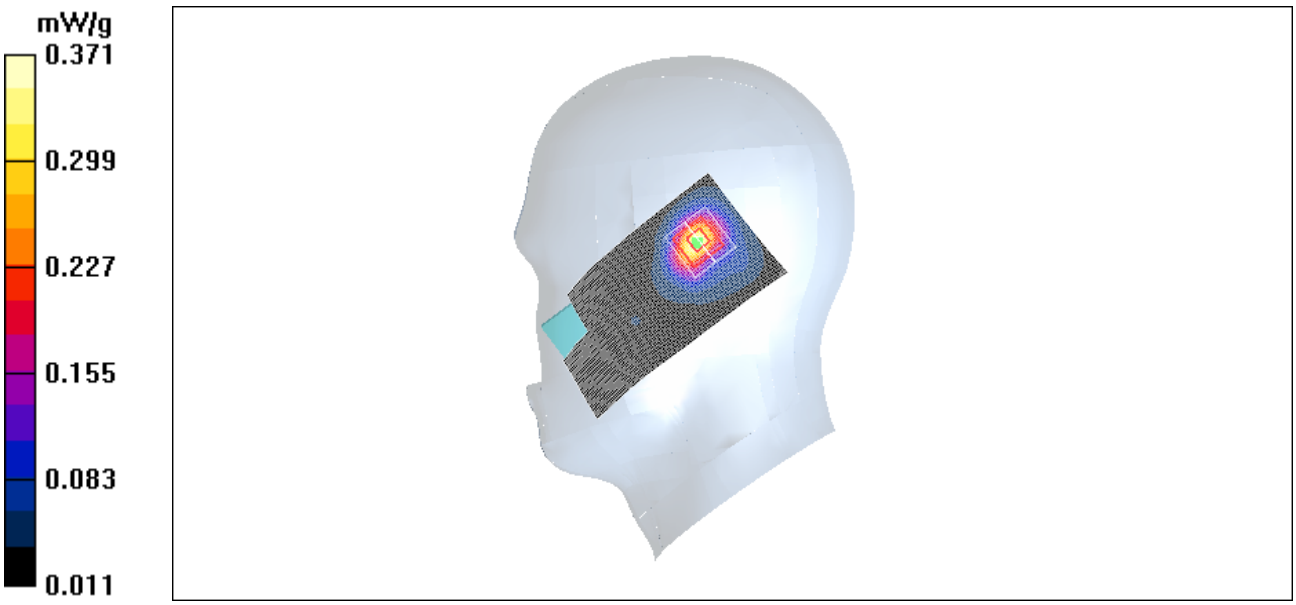


Figure 80 Right Hand Tilt 15° GSM 1900 Channel 512

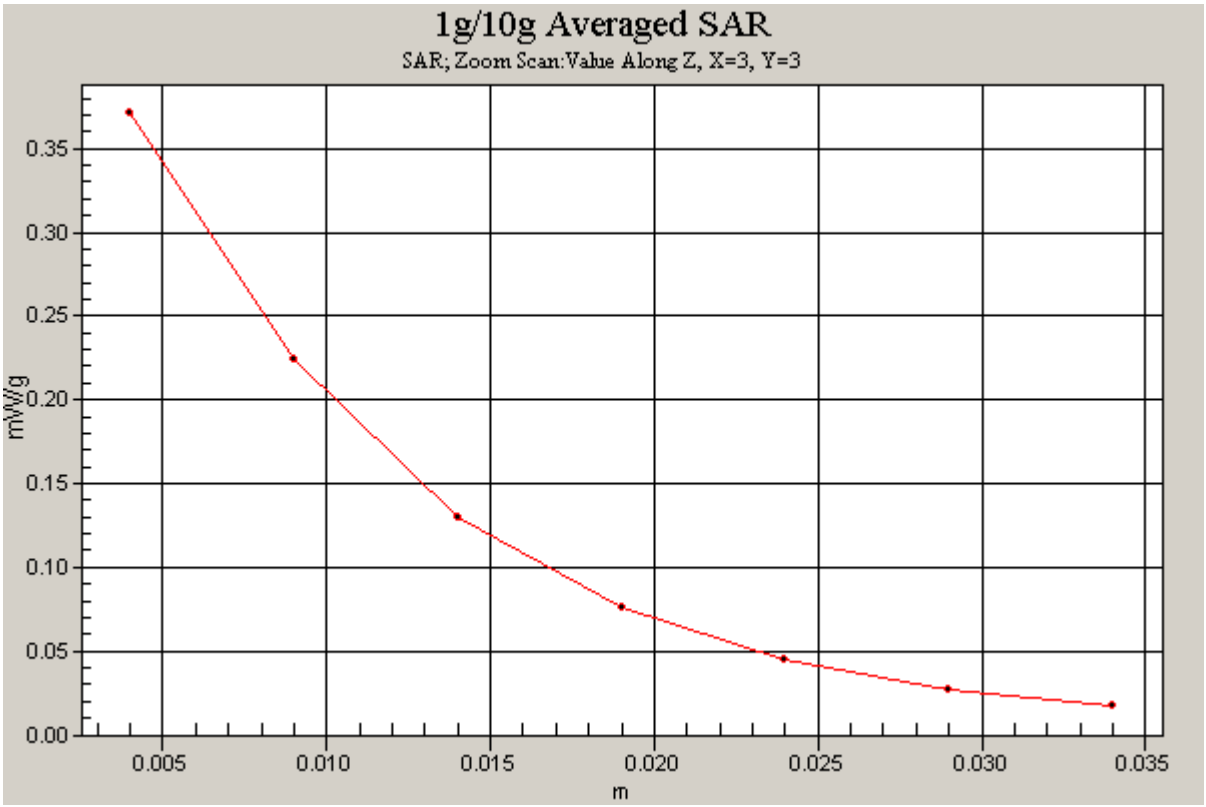


Figure 81 Z-Scan at power reference point (Right Hand Tilt 15° GSM 1900 Channel 512)

GSM 1900 Towards Ground High

Communication System: GSM 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Ground High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.180 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.78 V/m; Power Drift = -0.001 dB
Peak SAR (extrapolated) = 0.247 W/kg
SAR(1 g) = 0.166 mW/g; SAR(10 g) = 0.108 mW/g
Maximum value of SAR (measured) = 0.179 mW/g

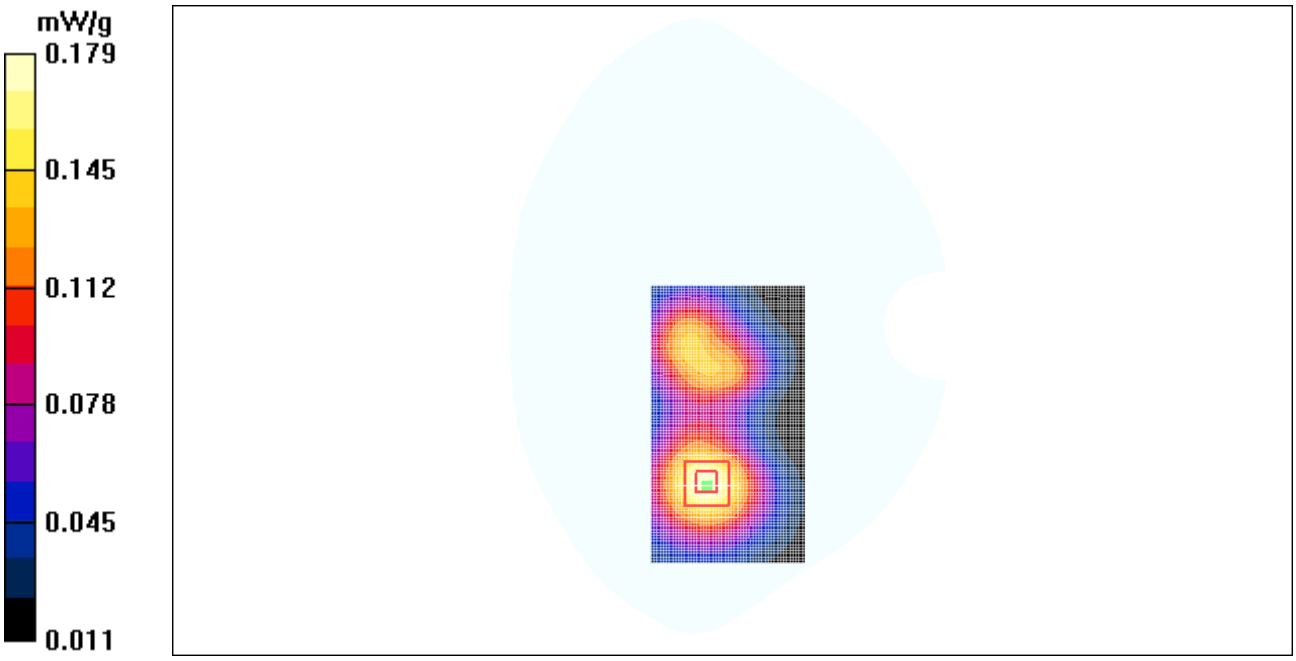


Figure 82 Body, Towards Ground, GSM 1900 Channel 810

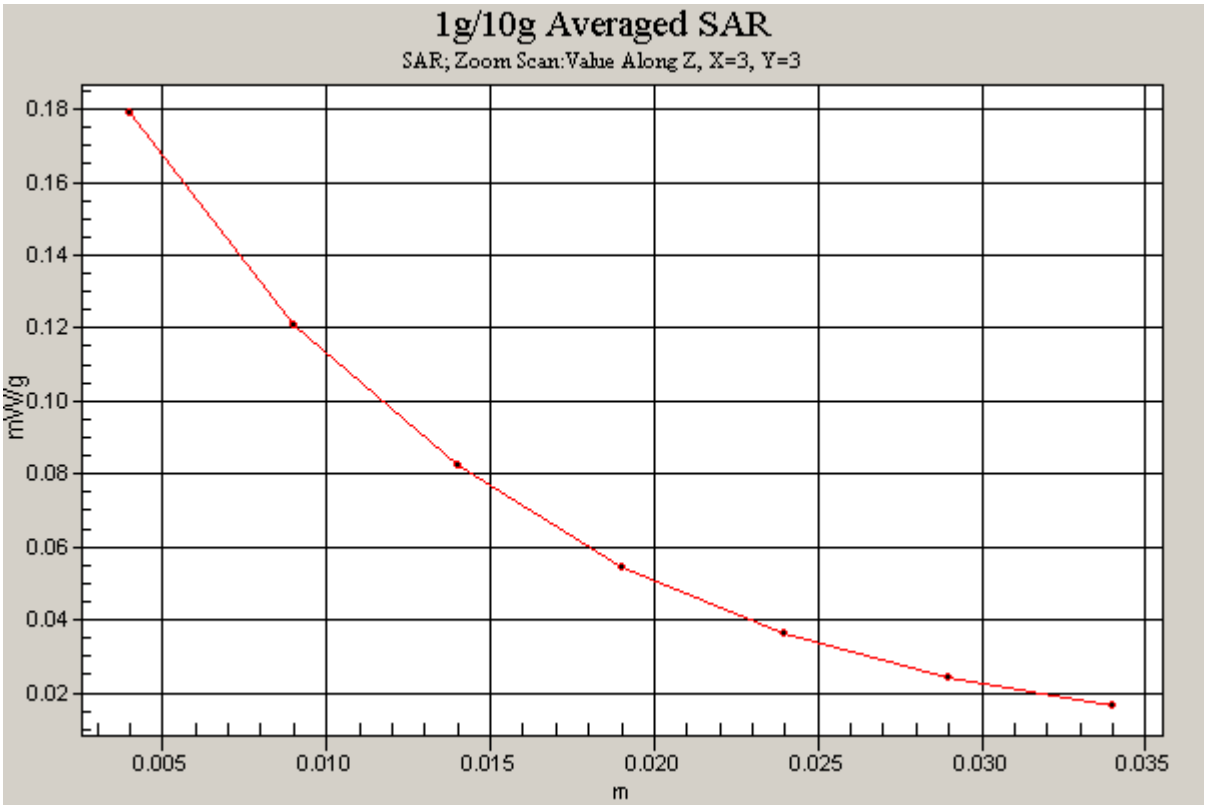


Figure 83 Z-Scan at power reference point (Body, Towards Ground, GSM 1900 Channel 810)

GSM 1900 Towards Ground Middle

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ε_r = 53.3; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Ground Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.173 mW/g

Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.33 V/m; Power Drift = -0.106 dB
Peak SAR (extrapolated) = 0.231 W/kg
SAR(1 g) = 0.159 mW/g; SAR(10 g) = 0.104 mW/g
Maximum value of SAR (measured) = 0.172 mW/g

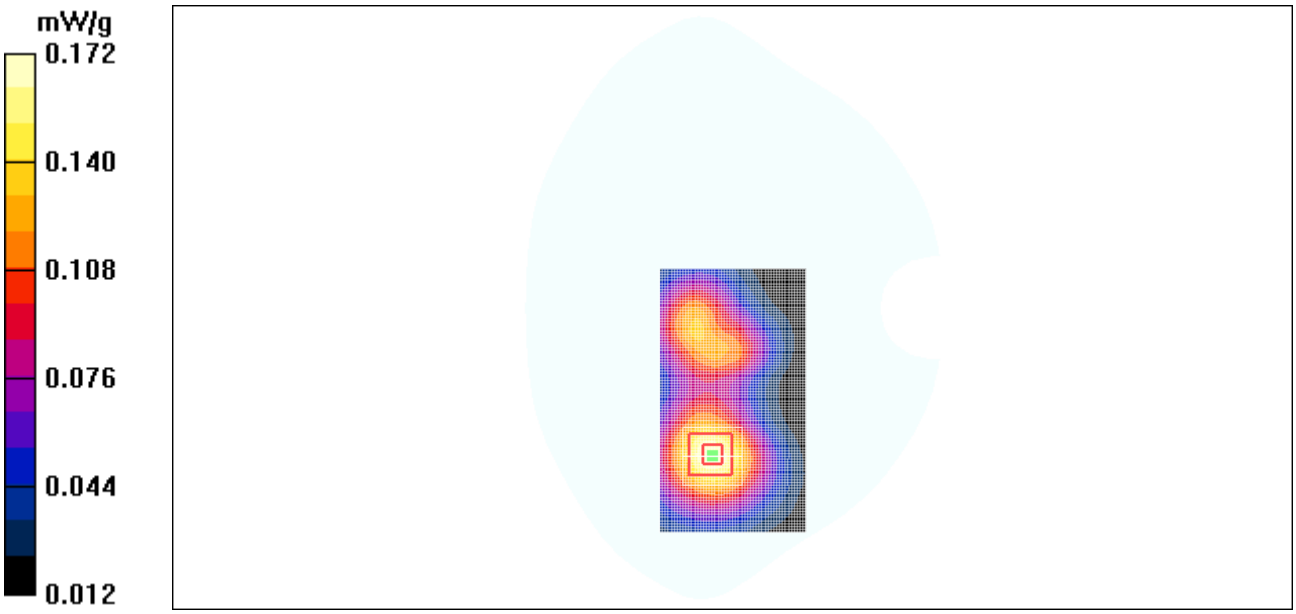


Figure 84 Body, Towards Ground, GSM 1900 Channel 661

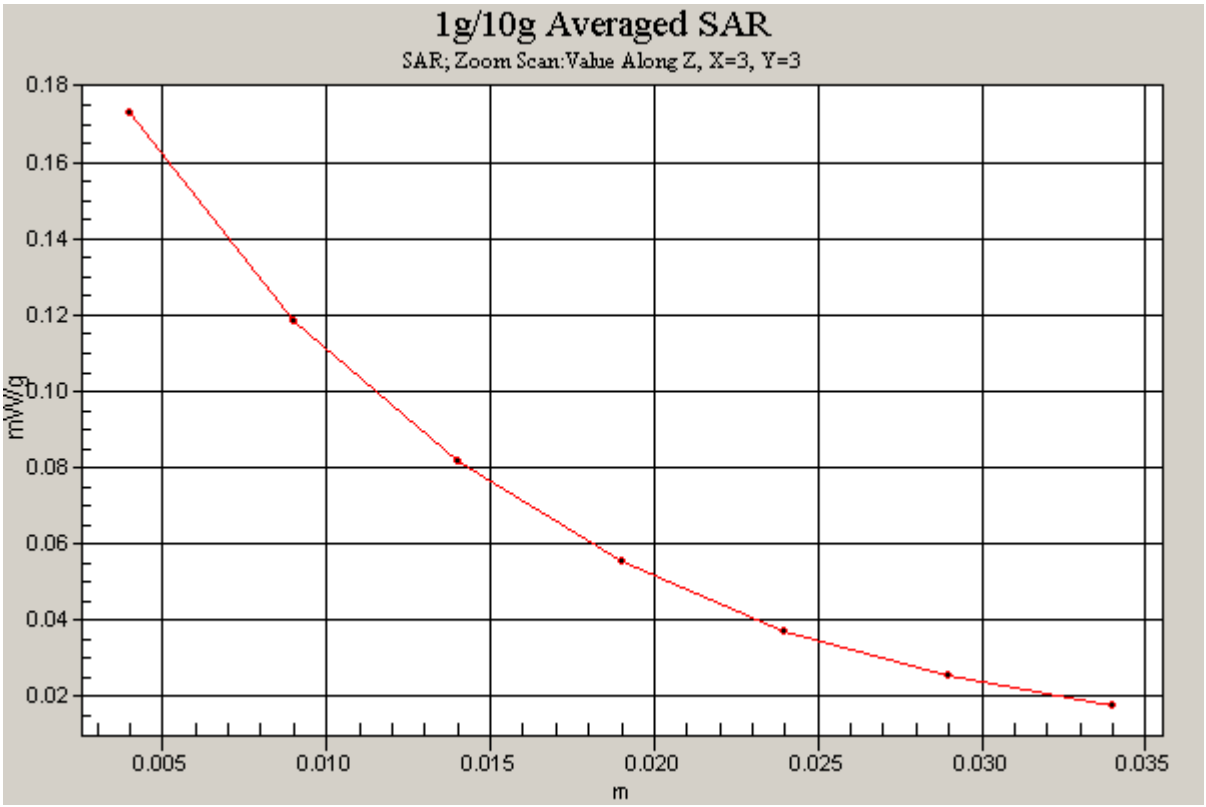


Figure 85 Z-Scan at power reference point (Body, Towards Ground, GSM 1900 Channel 661)

GSM 1900 Towards Ground Low

Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.49 mho/m; ε_r = 53.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Ground Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.112 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.60 V/m; Power Drift = 0.024 dB
Peak SAR (extrapolated) = 0.147 W/kg
SAR(1 g) = 0.104 mW/g; SAR(10 g) = 0.069 mW/g
Maximum value of SAR (measured) = 0.112 mW/g

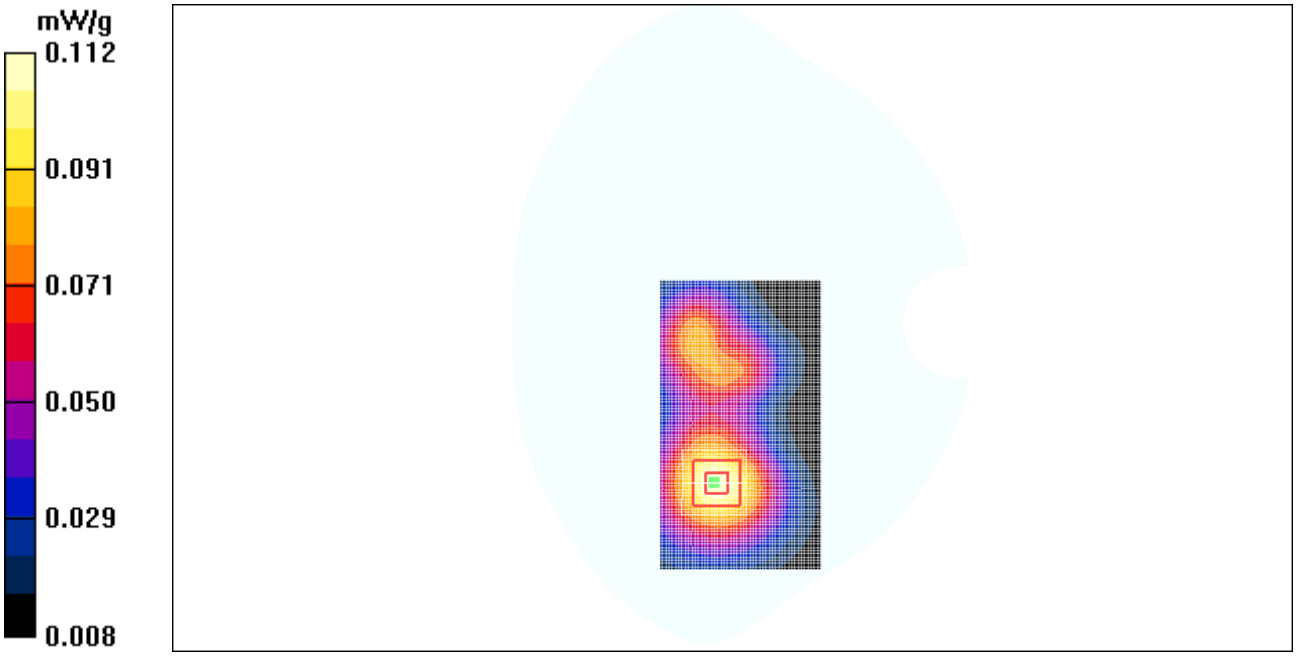


Figure 86 Body, Towards Ground, GSM 1900 Channel 512

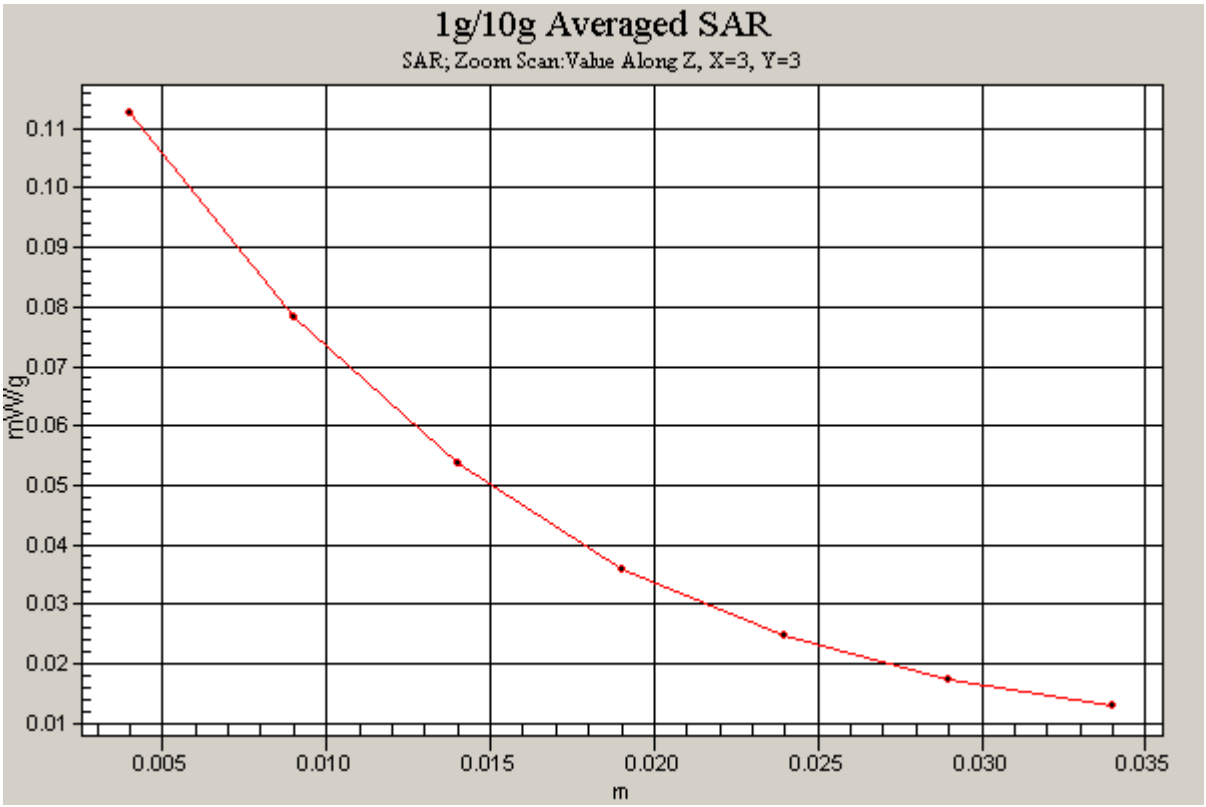


Figure 87 Z-Scan at power reference point (Body, Towards Ground, GSM 1900 Channel 512)

GSM 1900 Towards Phantom High

Communication System: GSM 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Phantom High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.090 mW/g

Towards Phantom High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.67 V/m; Power Drift = 0.023 dB
Peak SAR (extrapolated) = 0.125 W/kg
SAR(1 g) = 0.080 mW/g; SAR(10 g) = 0.051 mW/g
Maximum value of SAR (measured) = 0.086 mW/g

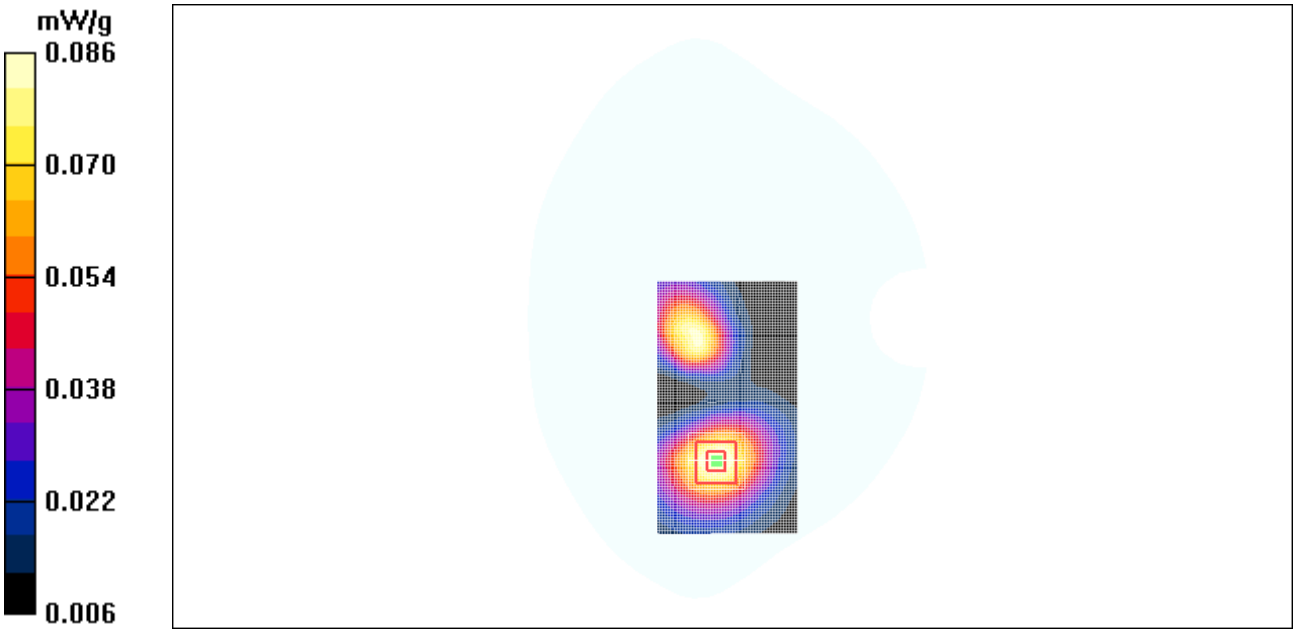


Figure 88 Body, Towards Phantom, GSM 1900 Channel 810

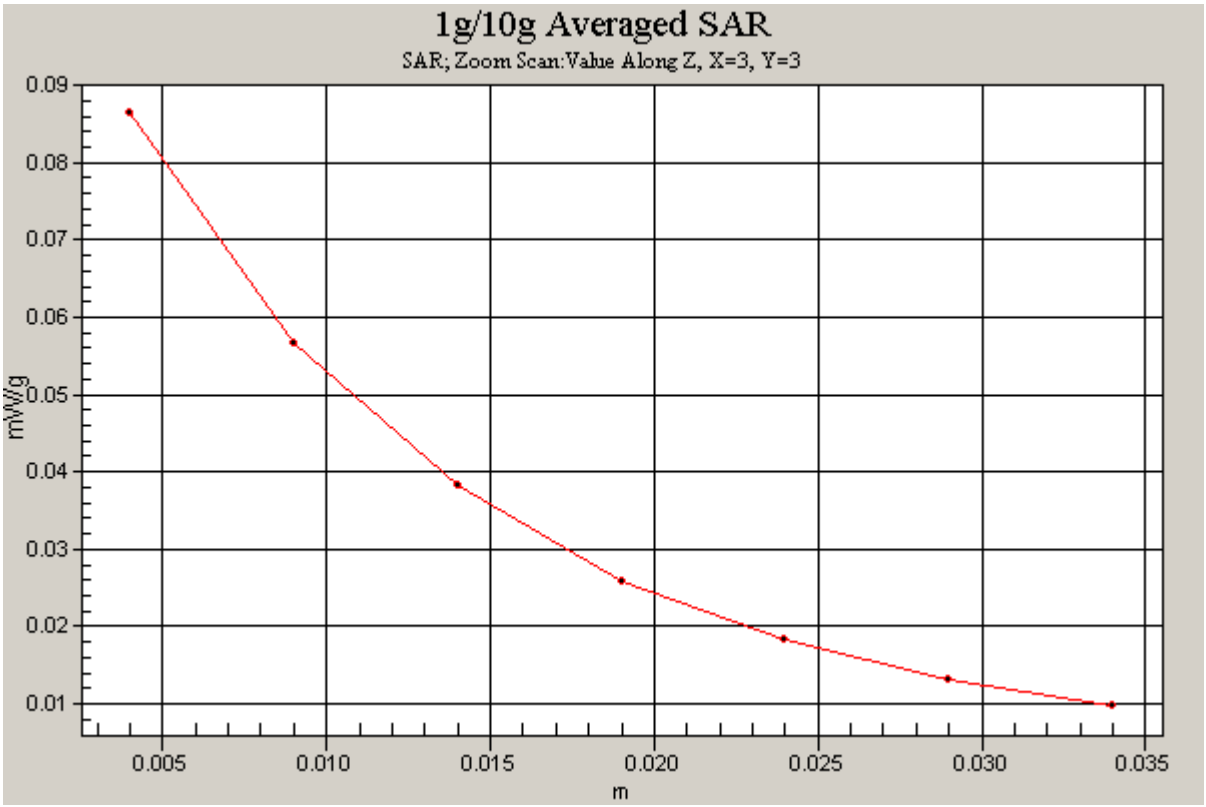


Figure 89 Z-Scan at power reference point (Body, Towards Phantom, GSM 1900 Channel 810)

GSM 1900 Towards Phantom Middle

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ε_r = 53.3; ρ = 1000 kg/m^3

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

Electronics: DAE4 Sn452;

Towards Phantom Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 4.52 V/m; Power Drift = -0.012 dB

Peak SAR (extrapolated) = 0.120 W/kg

SAR(1 g) = 0.079 mW/g; SAR(10 g) = 0.051 mW/g

Maximum value of SAR (measured) = 0.085 mW/g

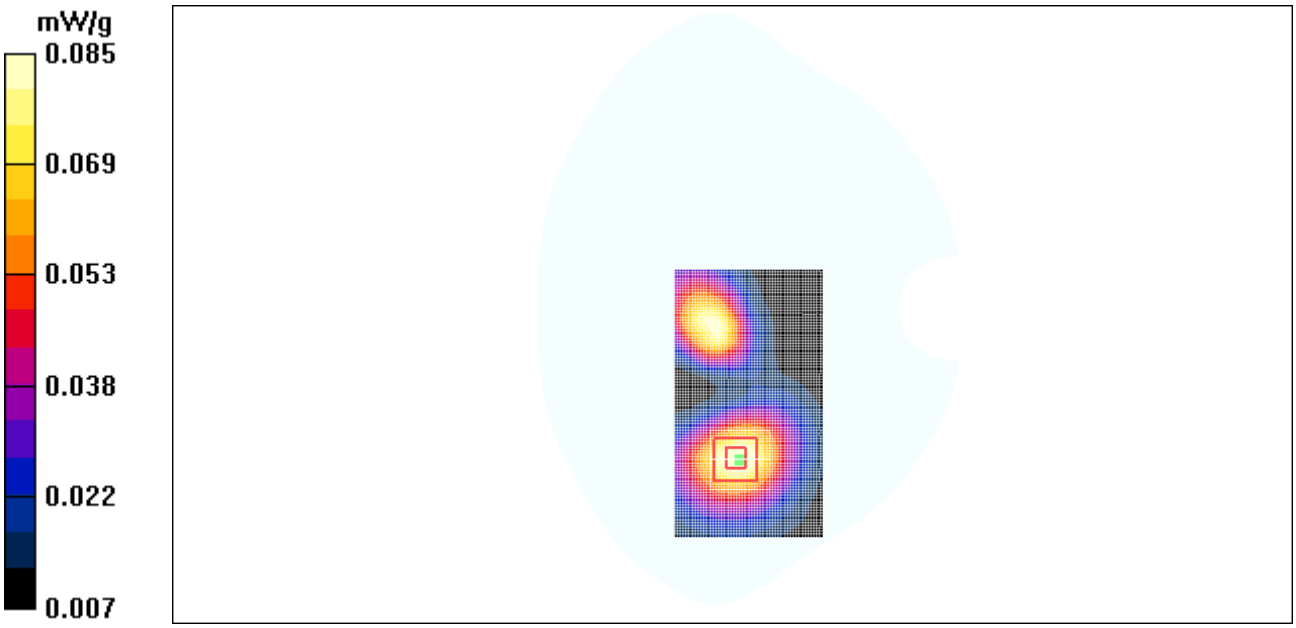


Figure 90 Body, Towards Phantom, GSM 1900 Channel 661

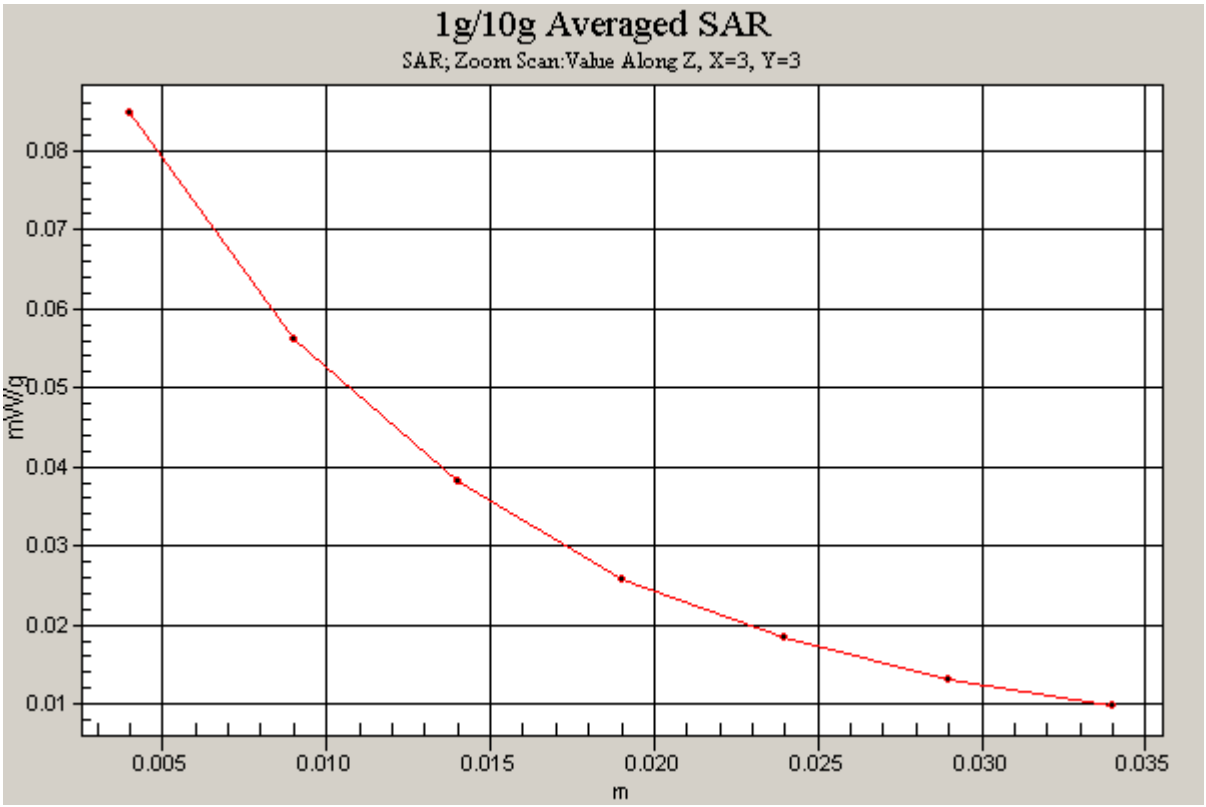


Figure 91 Z-Scan at power reference point (Body, Towards Phantom, GSM 1900 Channel 661)

GSM 1900 Towards Phantom Low

Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.49 mho/m; ε_r = 53.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Phantom Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.059 mW/g

Towards Phantom Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.72 V/m; Power Drift = 0.036 dB
Peak SAR (extrapolated) = 0.082 W/kg
SAR(1 g) = 0.054 mW/g; SAR(10 g) = 0.035 mW/g
Maximum value of SAR (measured) = 0.058 mW/g

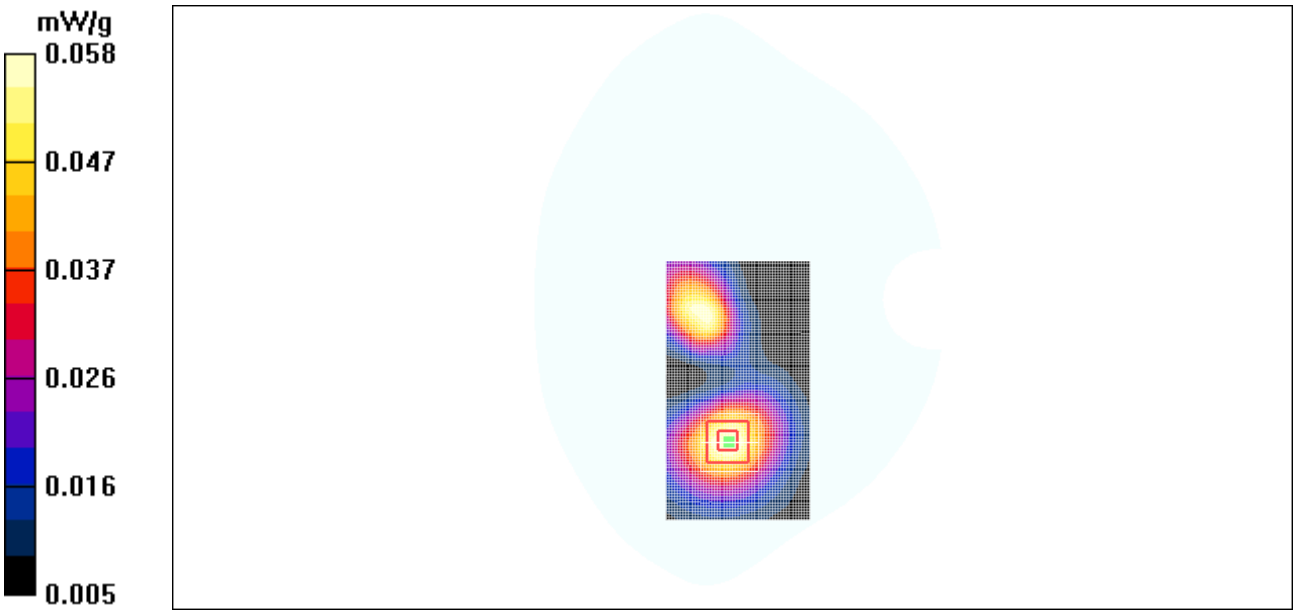


Figure 92 Body, Towards Phantom, GSM 1900 Channel 512

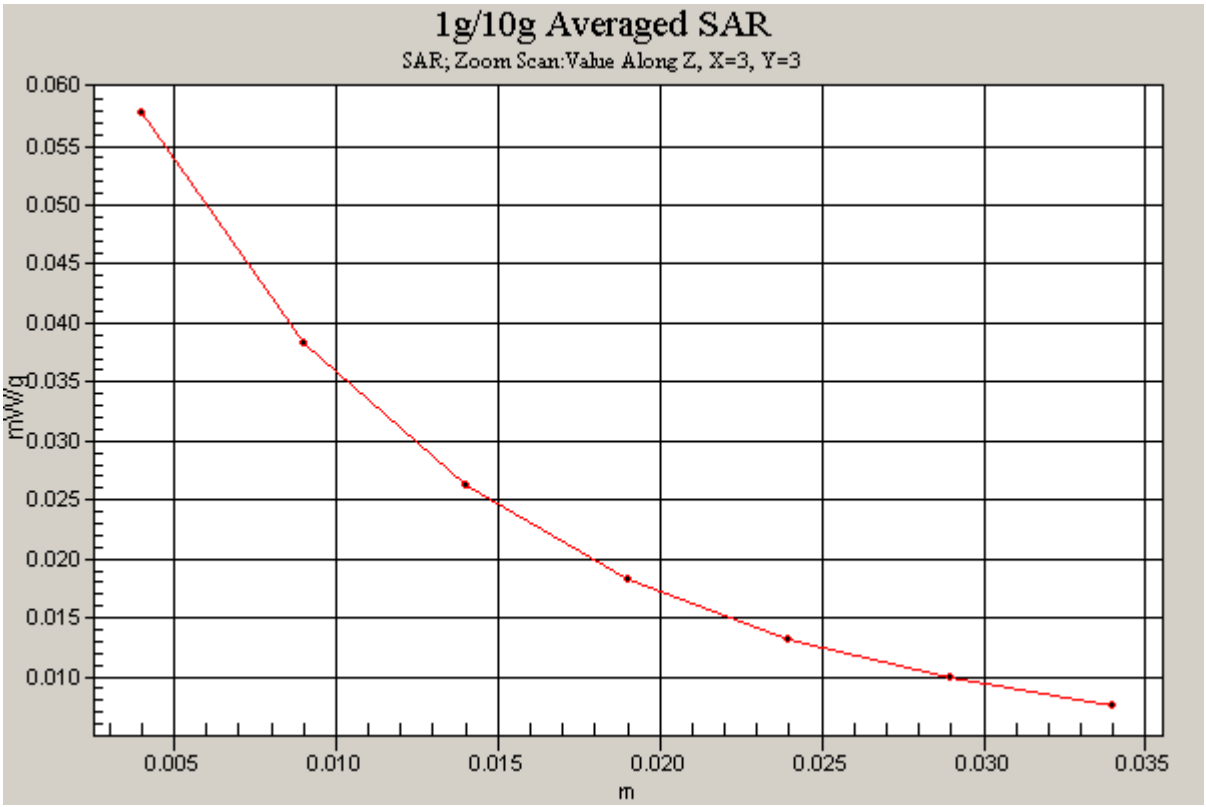


Figure 93 Z-Scan at power reference point (Body, Towards Ground, GSM 1900, Channel 512)

GSM 1900 Earphone Towards Ground High

Communication System: GSM 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Ground High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.149 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.96 V/m; Power Drift = -0.007 dB
Peak SAR (extrapolated) = 0.199 W/kg
SAR(1 g) = 0.134 mW/g; SAR(10 g) = 0.087 mW/g
Maximum value of SAR (measured) = 0.143 mW/g

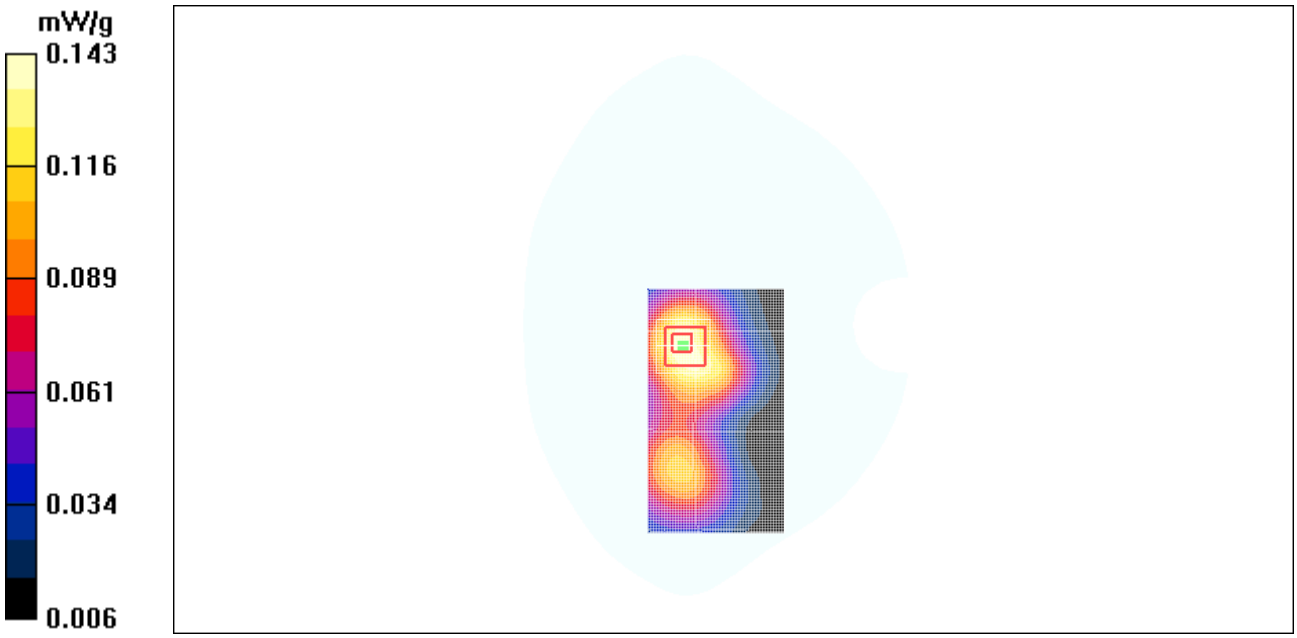


Figure 94 Body with Earphone, Towards Ground, GSM 1900, Channel 810

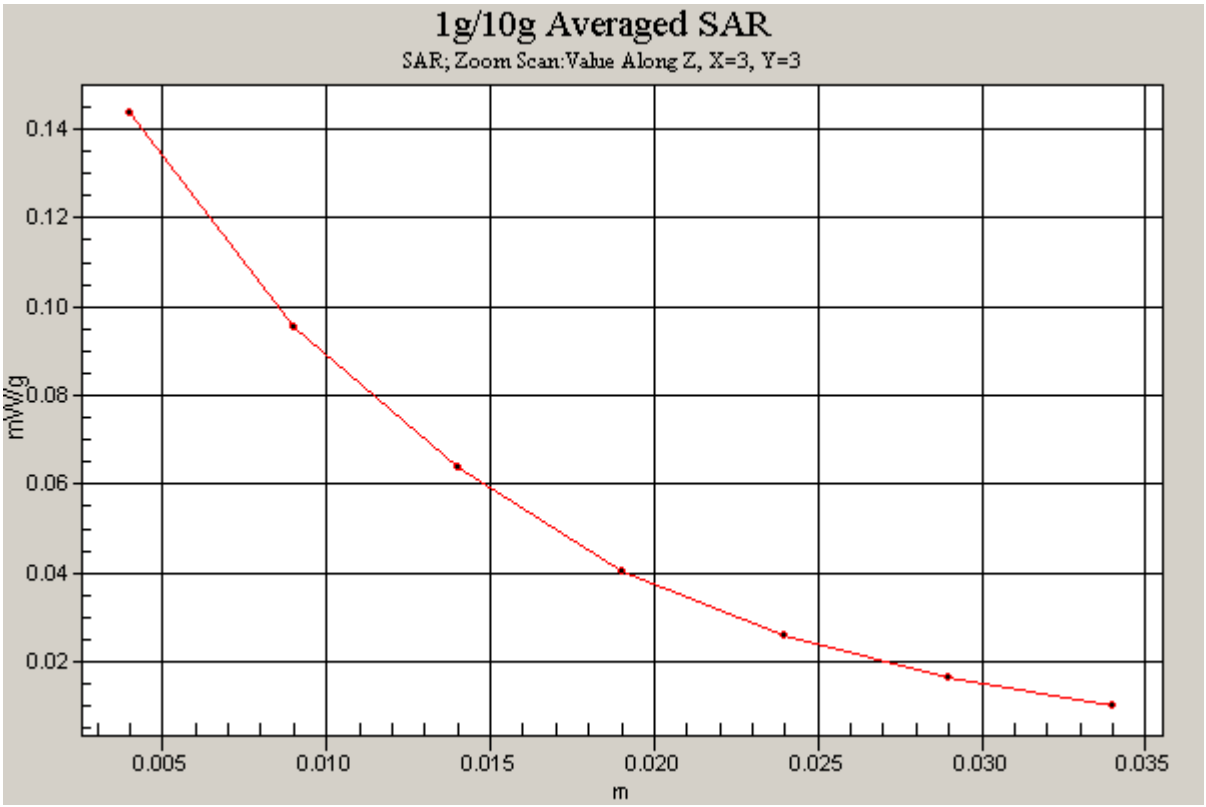


Figure 95 Z-Scan at power reference point (Body with Earphone, Towards Ground, GSM 1900, Channel 810)

GSM 1900 GPRS Towards Ground High

Communication System: GSM 1900+GPRS(2Up); Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Ground High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.348 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.6 V/m; Power Drift = -0.022 dB
Peak SAR (extrapolated) = 0.465 W/kg
SAR(1 g) = 0.318 mW/g; SAR(10 g) = 0.208 mW/g
Maximum value of SAR (measured) = 0.340 mW/g

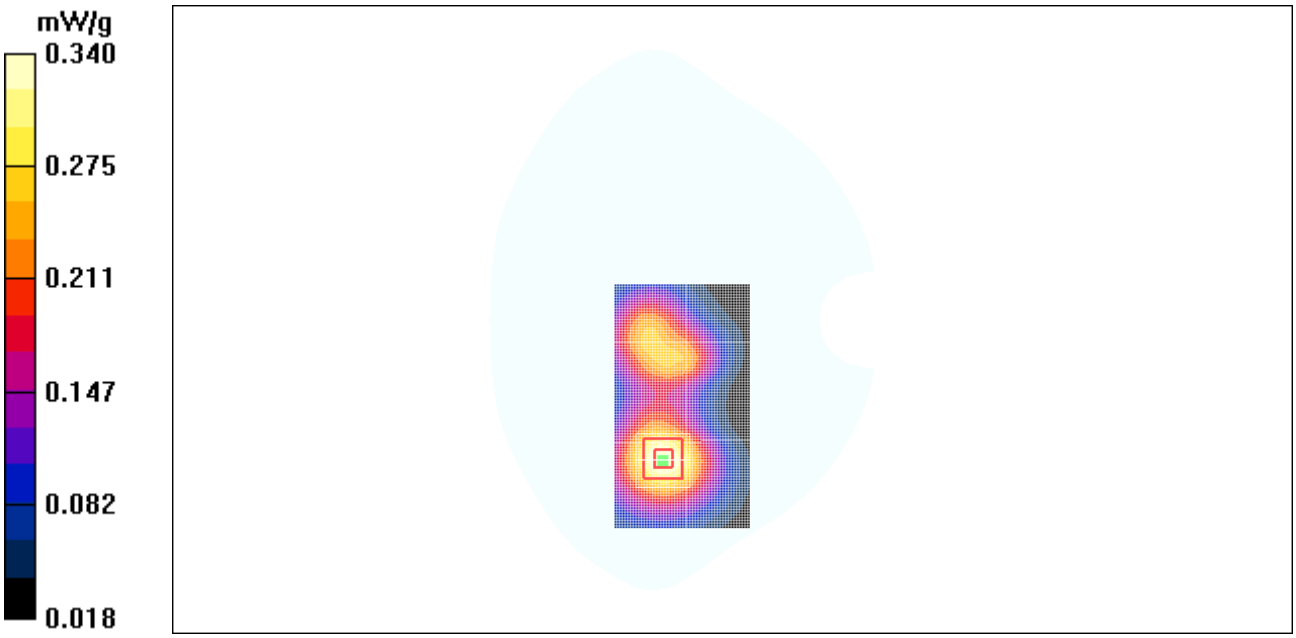


Figure 96 Body, Towards Ground, GSM 1900 GPRS, Channel 810

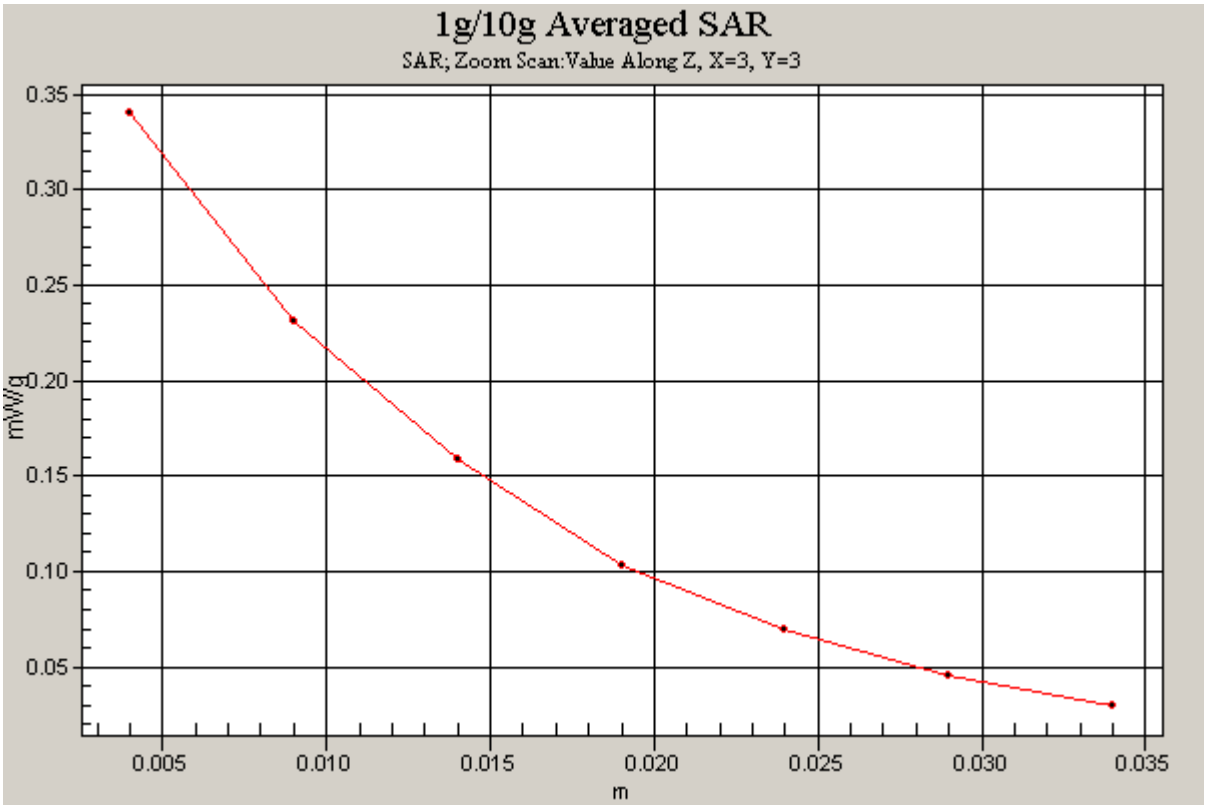


Figure 97 Z-Scan at power reference point (Body, Towards Ground, GSM 1900 GPRS, Channel 810)

GSM 1900 GPRS Towards Ground Middle

Communication System: GSM 1900+GPRS(2Up); Frequency: 1880 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ε_r = 53.3; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Ground Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.331 mW/g

Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.92 V/m; Power Drift = -0.059 dB
Peak SAR (extrapolated) = 0.449 W/kg
SAR(1 g) = 0.306 mW/g; SAR(10 g) = 0.200 mW/g
Maximum value of SAR (measured) = 0.329 mW/g

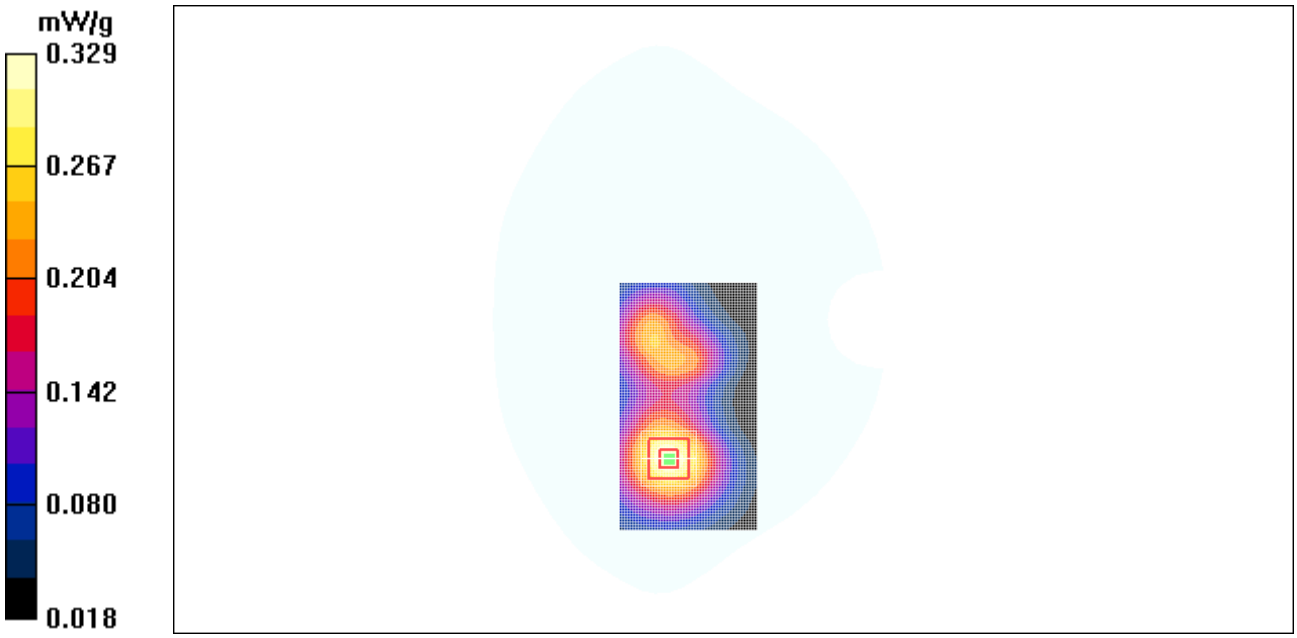


Figure 98 Body, Towards Ground, GSM 1900 GPRS Channel 661

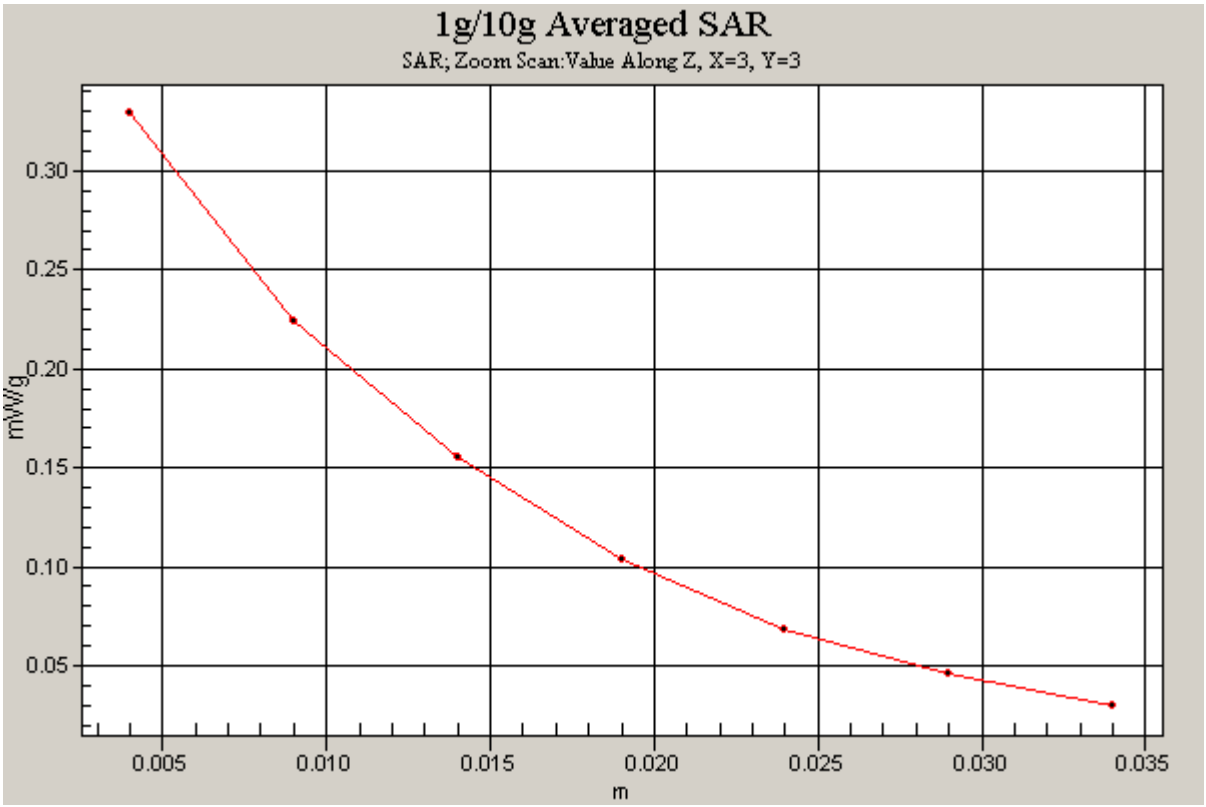


Figure 99 Z-Scan at power reference point (Body, Towards Ground, GSM 1900 GPRS Channel 661)

GSM 1900 GPRS Towards Ground Low

Communication System: GSM 1900+GPRS(2Up); Frequency: 1850.2 MHz;Duty Cycle: 1:4
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.49 mho/m; ε_r = 53.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Ground Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.223 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.73 V/m; Power Drift = 0.088 dB
Peak SAR (extrapolated) = 0.294 W/kg
SAR(1 g) = 0.206 mW/g; SAR(10 g) = 0.136 mW/g
Maximum value of SAR (measured) = 0.222 mW/g

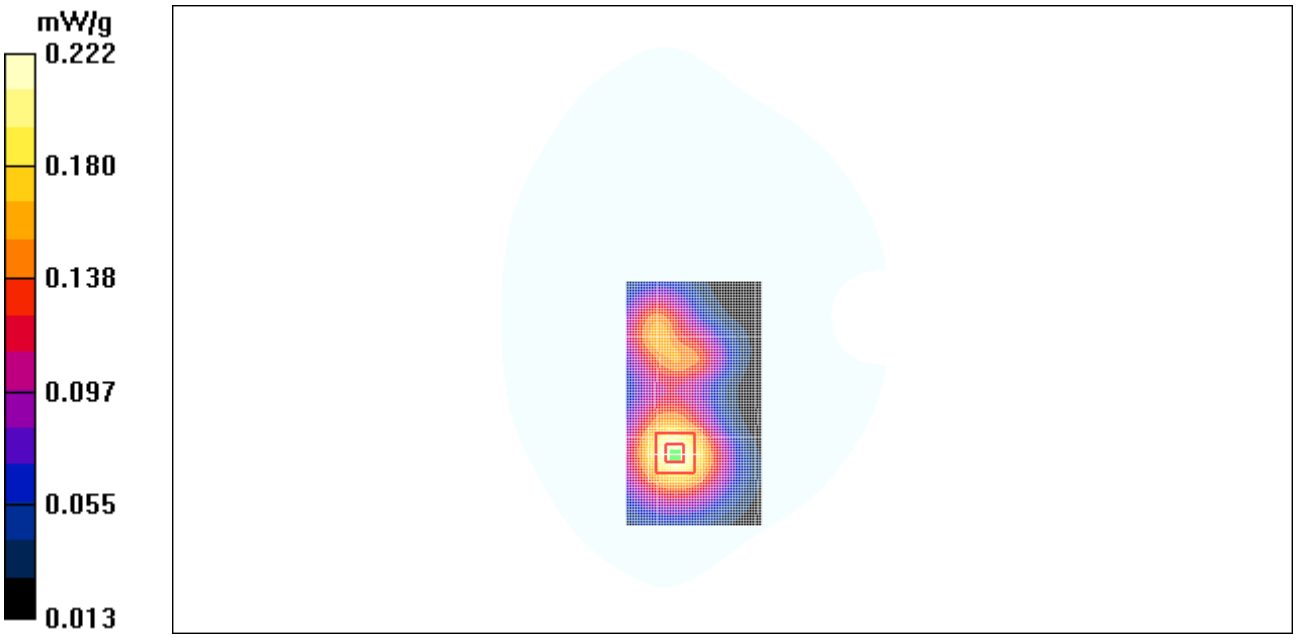


Figure 100 Body, Towards Ground, GSM 1900 GPRS Channel 512

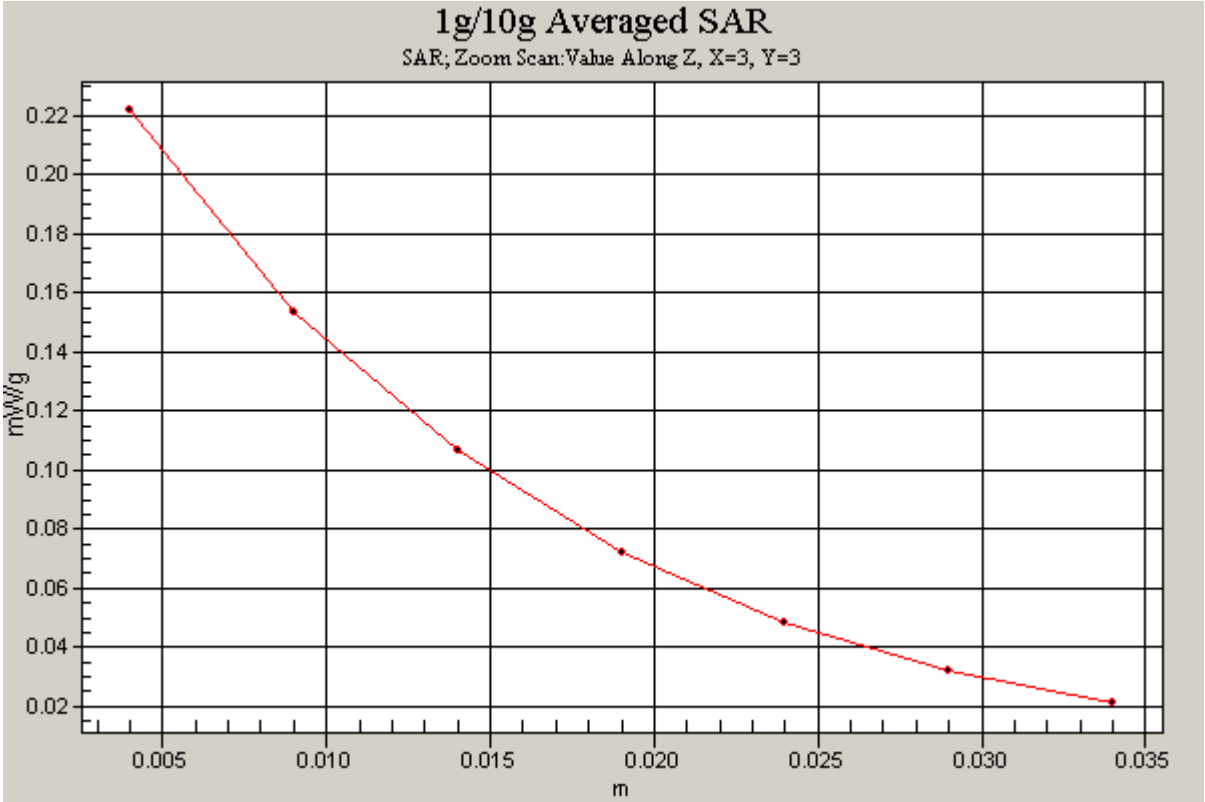


Figure 101 Z-Scan at power reference point (Body, Towards Ground, GSM 1900 GPRS Channel 512)

GSM 1900 GPRS Towards Phantom High

Communication System: GSM 1900+GPRS(2Up); Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Phantom High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.152 mW/g

Towards Phantom High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.69 V/m; Power Drift = 0.069 dB
Peak SAR (extrapolated) = 0.211 W/kg
SAR(1 g) = 0.138 mW/g; SAR(10 g) = 0.087 mW/g
Maximum value of SAR (measured) = 0.148 mW/g

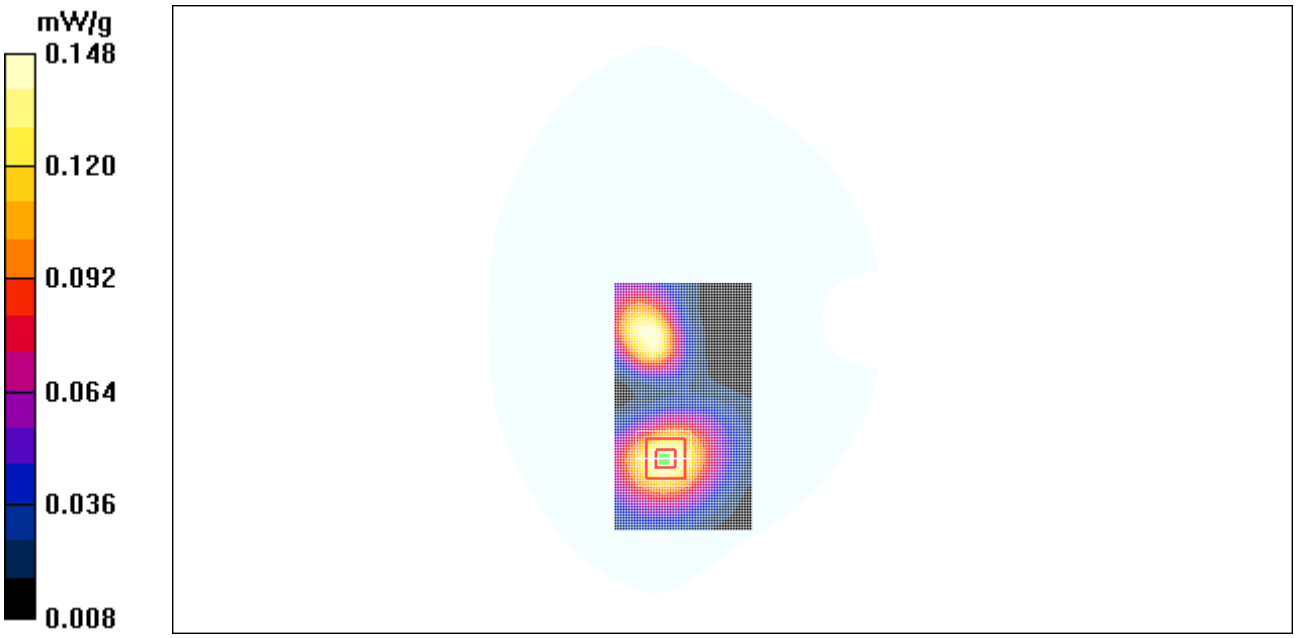


Figure 102 Body, Towards Phantom, GSM 1900 GPRS, Channel 810

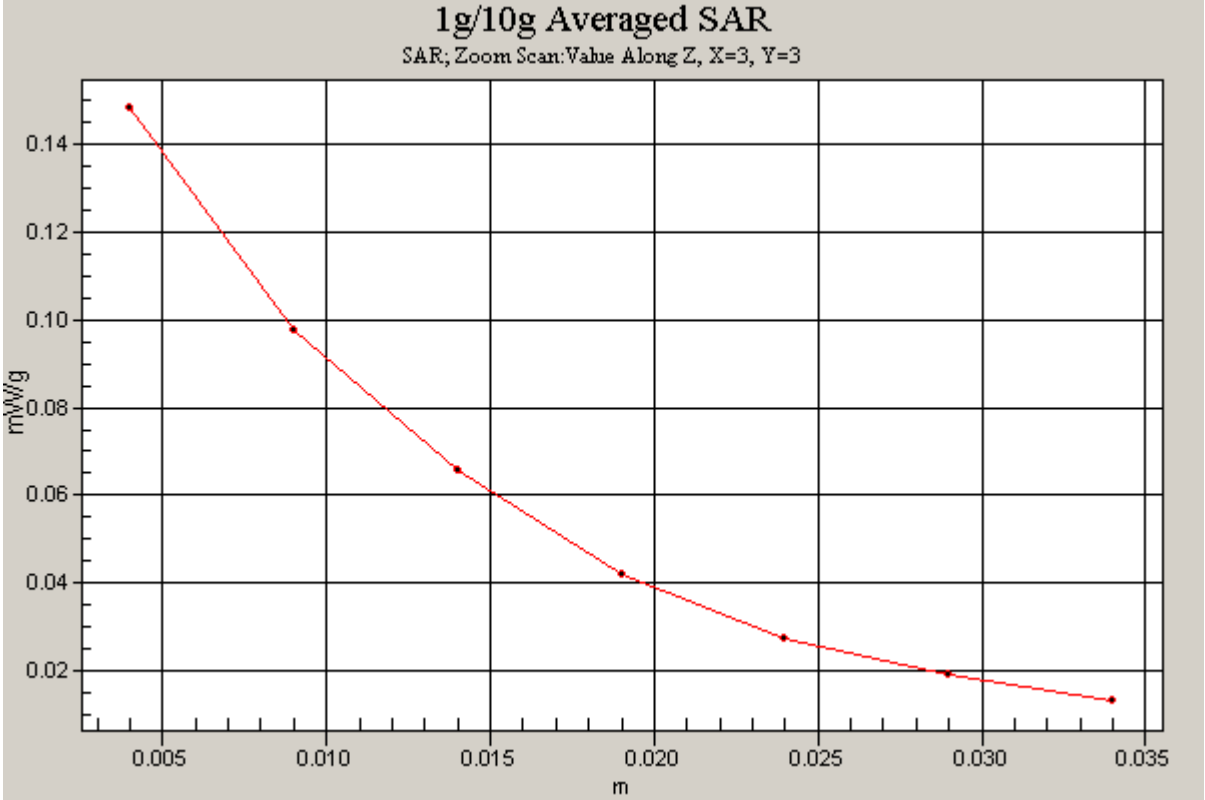


Figure 103 Z-Scan at power reference point (Body, Towards Phantom, GSM 1900 GPRS, Channel 810)

GSM 1900 GPRS Towards Phantom Middle

Communication System: GSM 1900+GPRS(2Up); Frequency: 1880 MHz;Duty Cycle: 1:4
Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ε_r = 53.3; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Phantom Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.168 mW/g

Towards Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.14 V/m; Power Drift = -0.022 dB
Peak SAR (extrapolated) = 0.223 W/kg
SAR(1 g) = 0.145 mW/g; SAR(10 g) = 0.088 mW/g
Maximum value of SAR (measured) = 0.158 mW/g

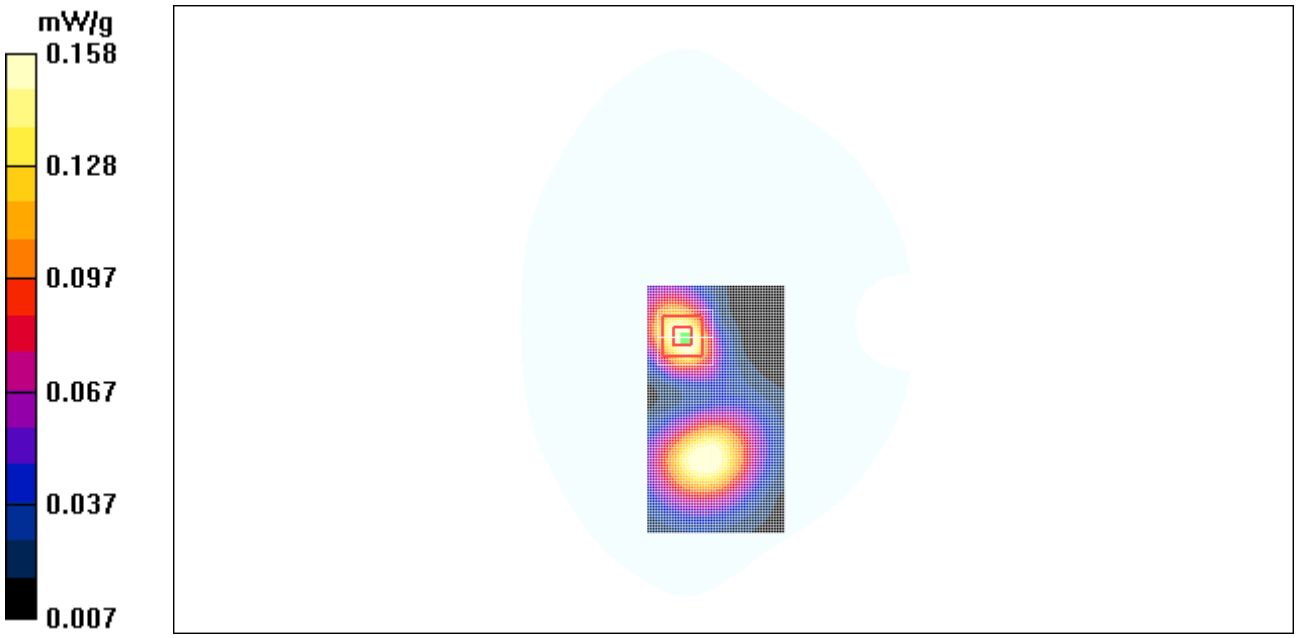


Figure 104 Body, Towards Phantom, GSM 1900 GPRS Channel 661

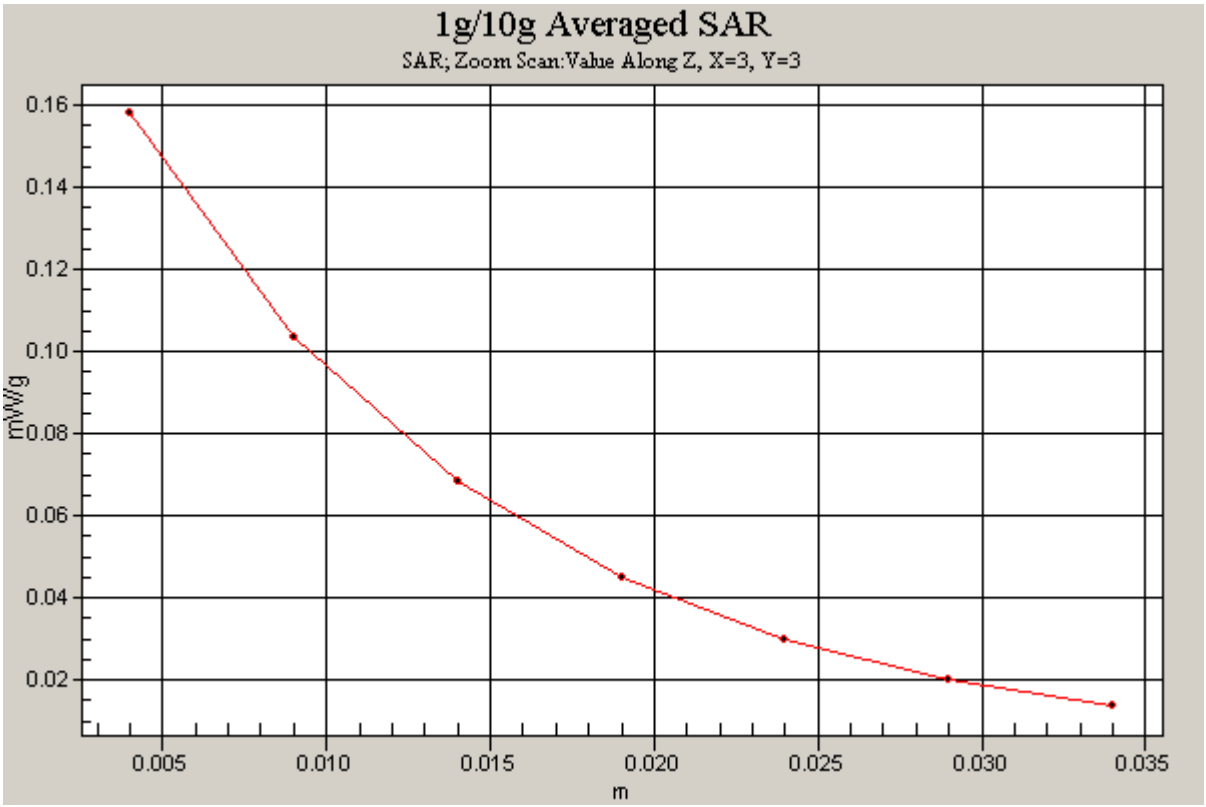


Figure 105 Z-Scan at power reference point (Body, Towards Phantom, GSM 1900 GPRS Channel 661)

GSM 1900 GPRS Towards Phantom Low

Communication System: GSM 1900+GPRS(2Up); Frequency: 1850.2 MHz;Duty Cycle: 1:4
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.49 mho/m; ε_r = 53.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Phantom Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.116 mW/g

Towards Phantom Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.71 V/m; Power Drift = 0.020 dB
Peak SAR (extrapolated) = 0.155 W/kg
SAR(1 g) = 0.104 mW/g; SAR(10 g) = 0.067 mW/g
Maximum value of SAR (measured) = 0.112 mW/g

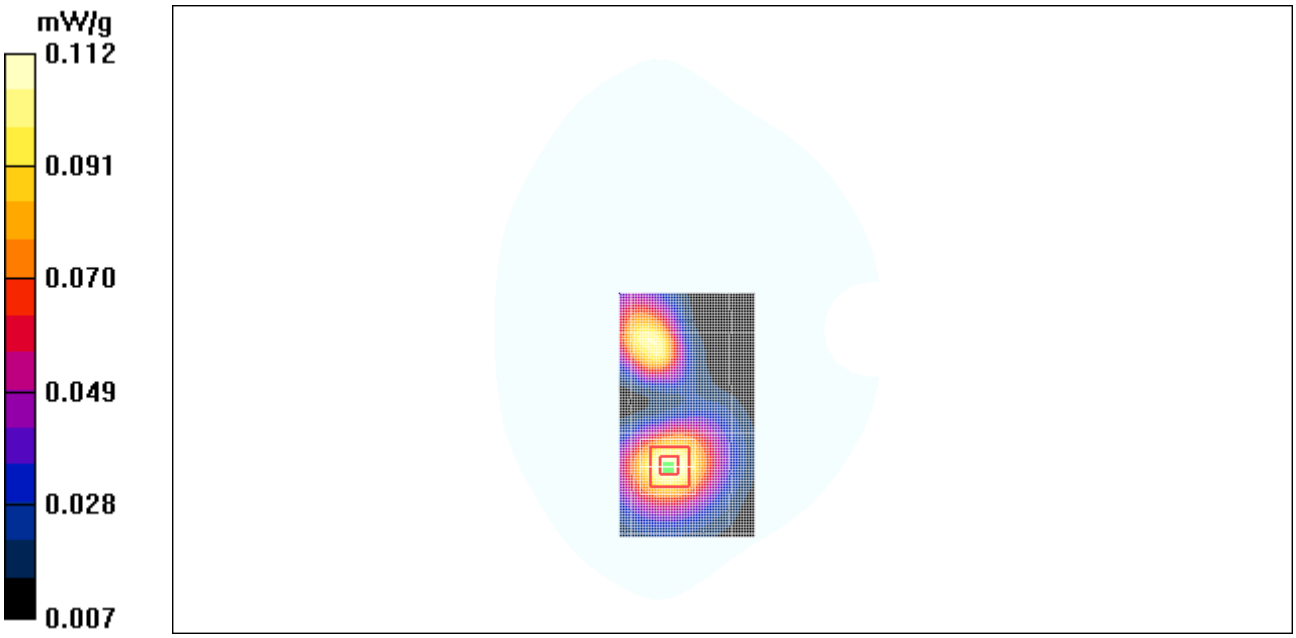


Figure 106 Body, Towards Phantom, GSM 1900 GPRS Channel 512

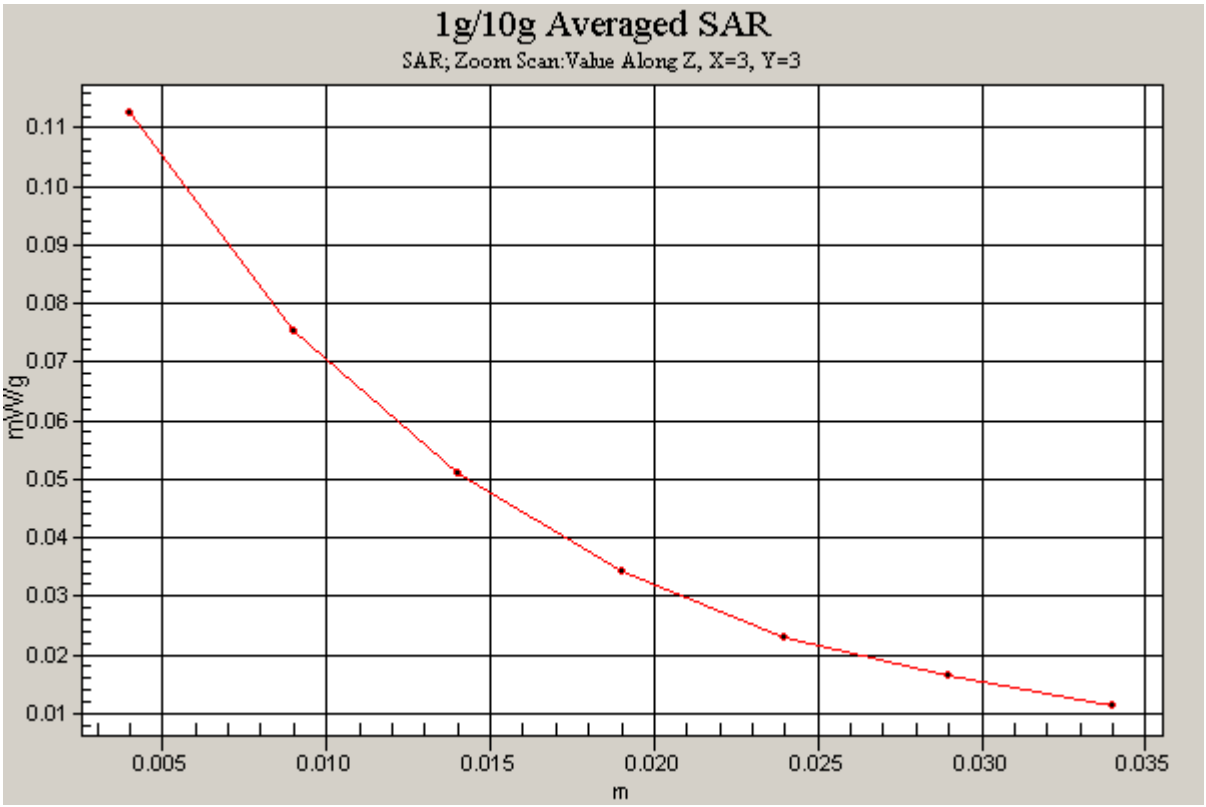


Figure 107 Z-Scan at power reference point (Body, Towards Phantom, GSM 1900 GPRS Channel 512)

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. 93 mho/m; ε_r = 41.38; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1531; ConvF(6.85, 6.85, 6.85);
- Electronics: DAE4 Sn452;

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

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

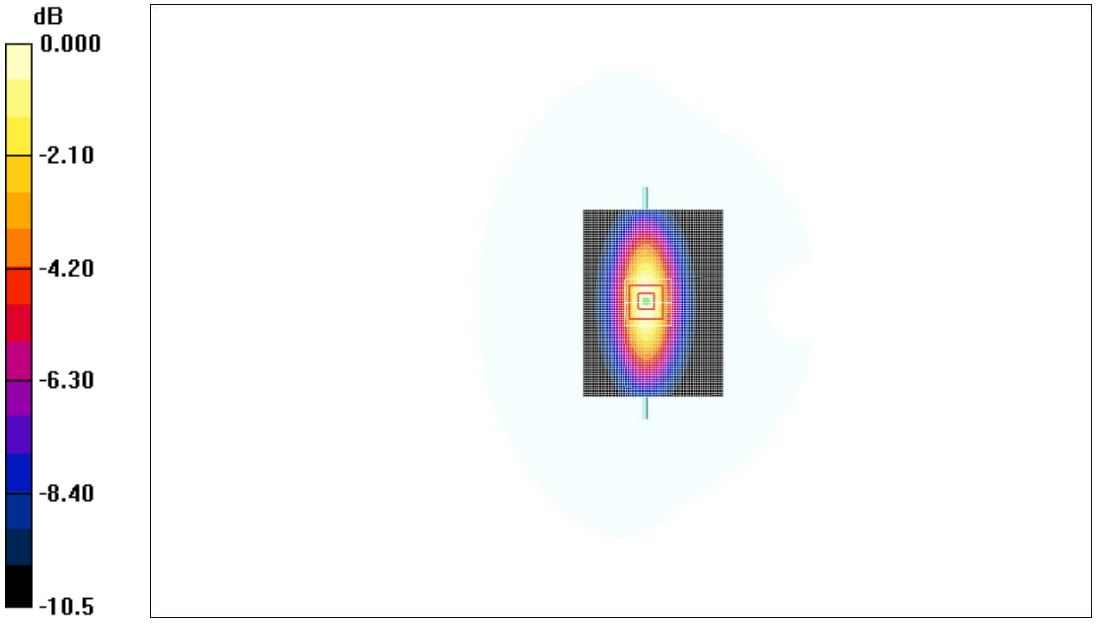
d=15mm, Pin=250mW/Zoom Scan (7x7x7) /Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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 108 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 = 39.92; ρ = 1000 kg/m^3

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

Electronics: DAE4 Sn452;

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

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

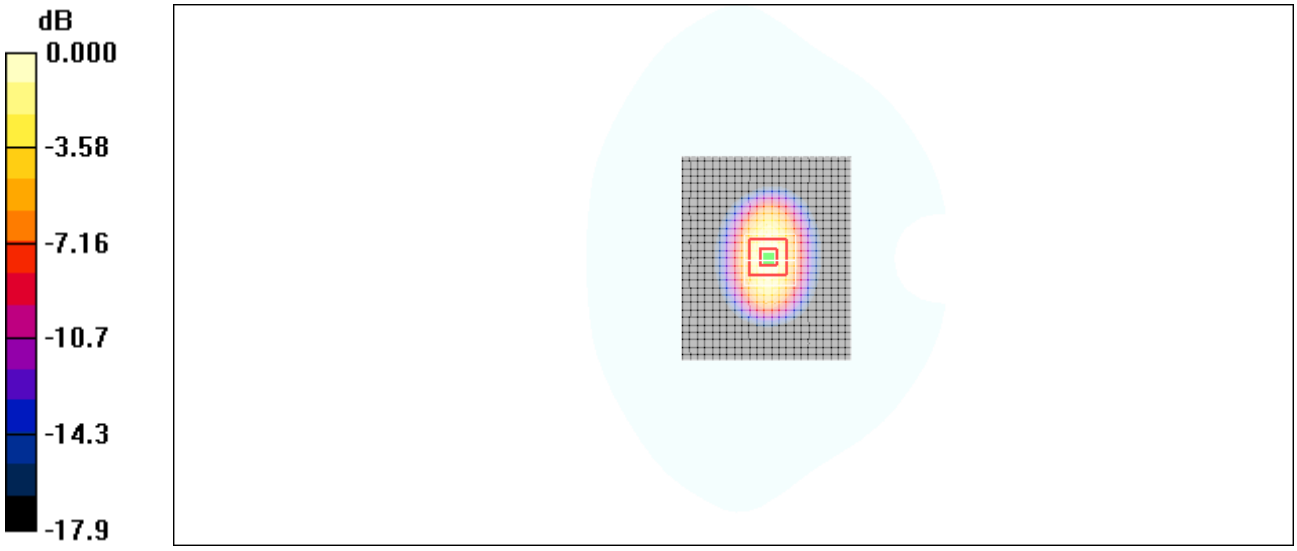
d=10mm, Pin=250mW /Zoom Scan (7x7x7) /Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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

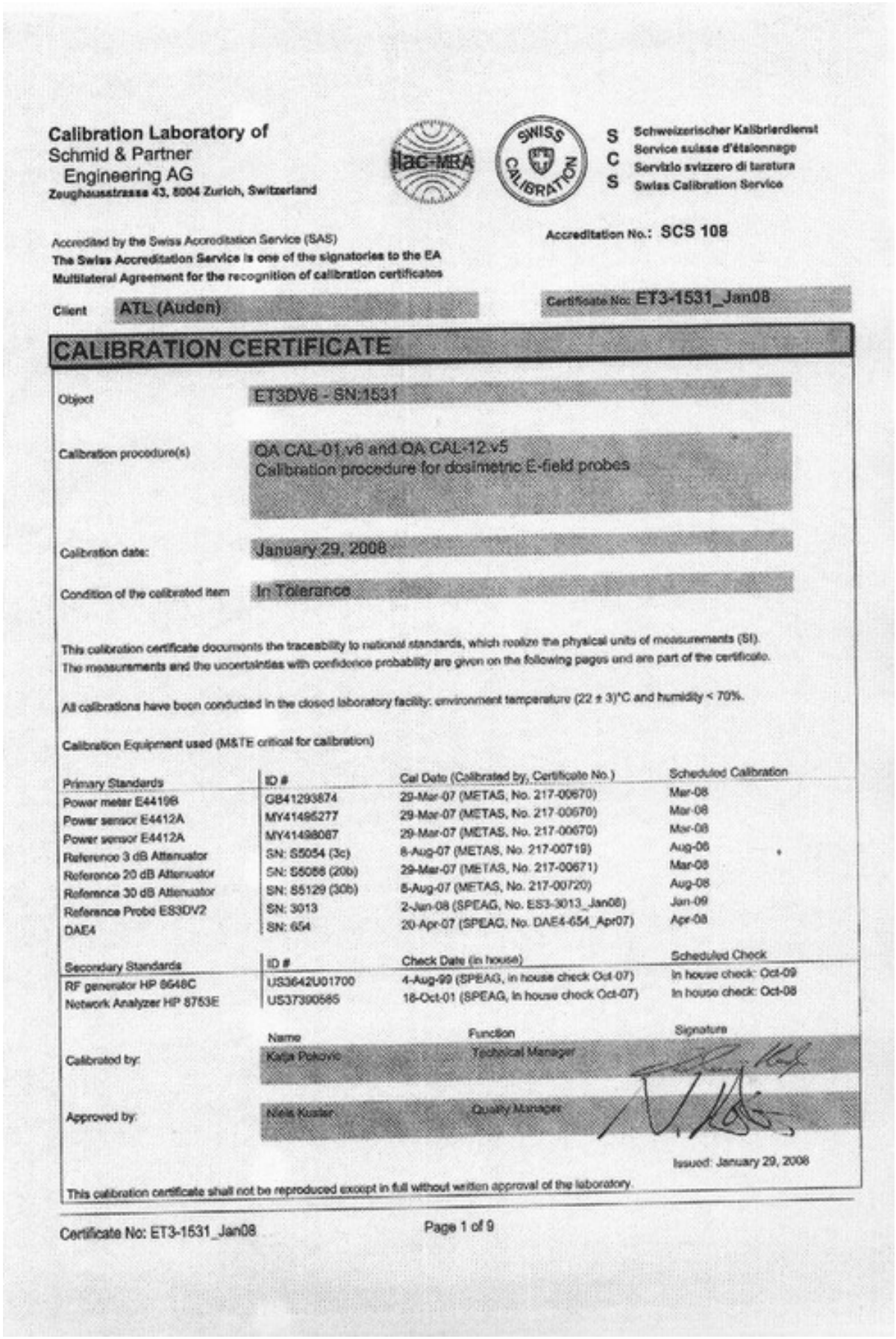
Maximum value of SAR (measured) = 10.7 mW/g



0 dB = 10.7mW/g

Figure 109 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
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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
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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.

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%.

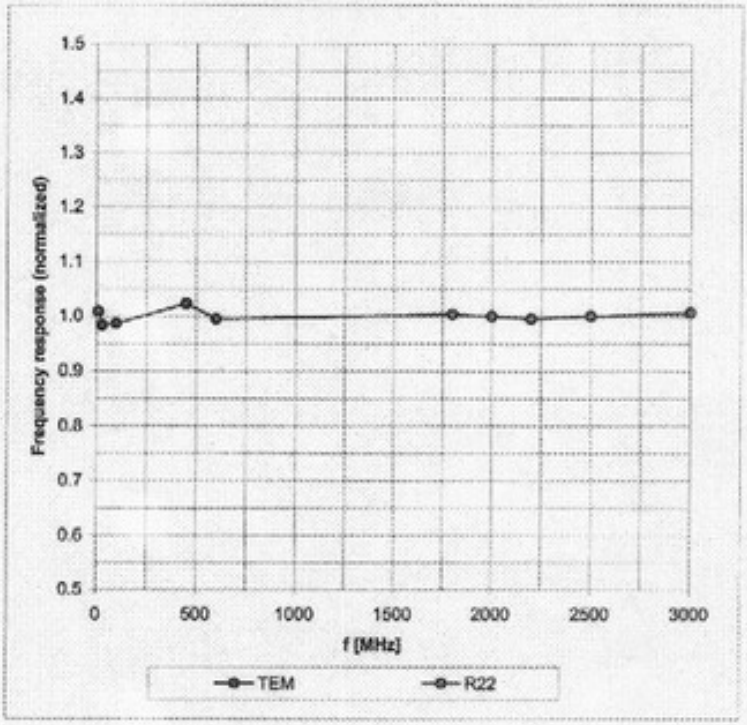
[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Page 8).

[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)