

Fig. 34 Z-Scan at power reference point (PCS 1900MHz CH661)

1900 Left Tilt Low-slide up

Electronics: DAE3 Sn536

Medium: Head 1900 MHz

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.32$ mho/m; $\epsilon_r = 39.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz new Frequency: 1850.2 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(5.4, 5.4, 5.4)

Tilt Low/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.139 mW/g

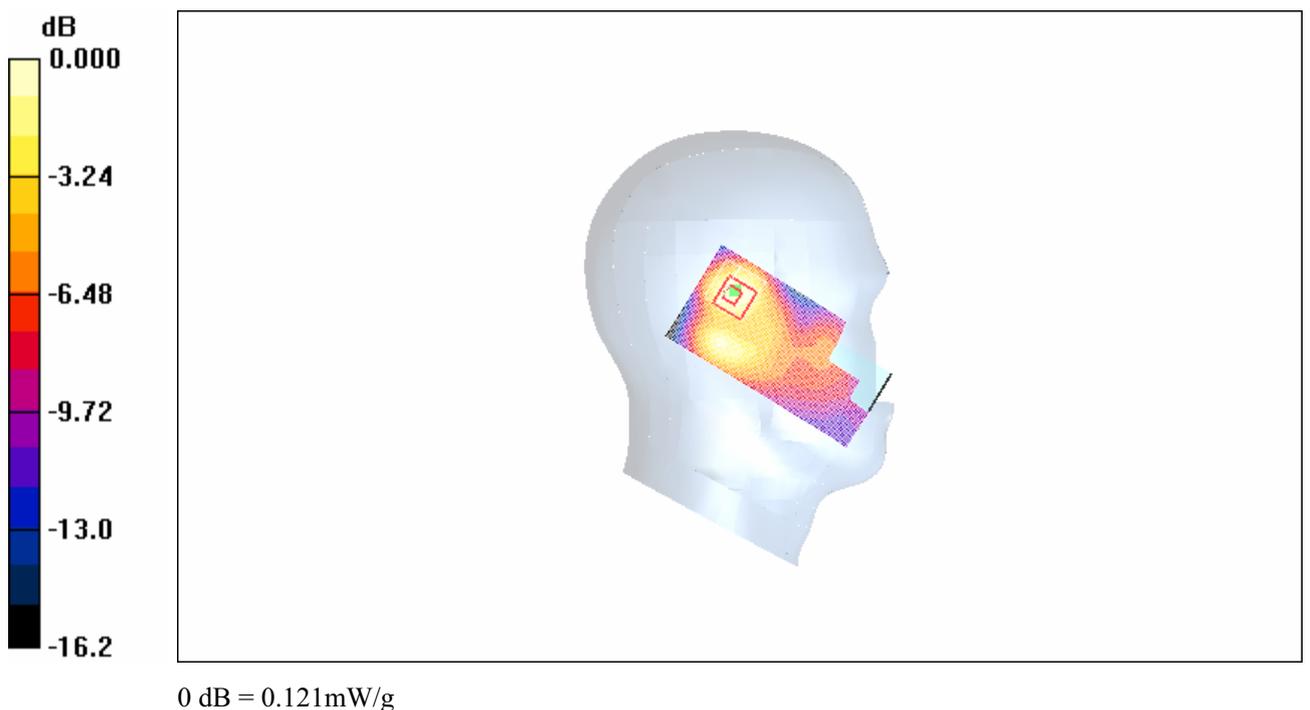
Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.91 V/m; Power Drift = 0.195 dB

Peak SAR (extrapolated) = 0.203 W/kg

SAR(1 g) = 0.115 mW/g; SAR(10 g) = 0.066 mW/g

Maximum value of SAR (measured) = 0.121 mW/g

**Fig. 35**Left Hand Tilt 15°PCS 1900MHz CH512

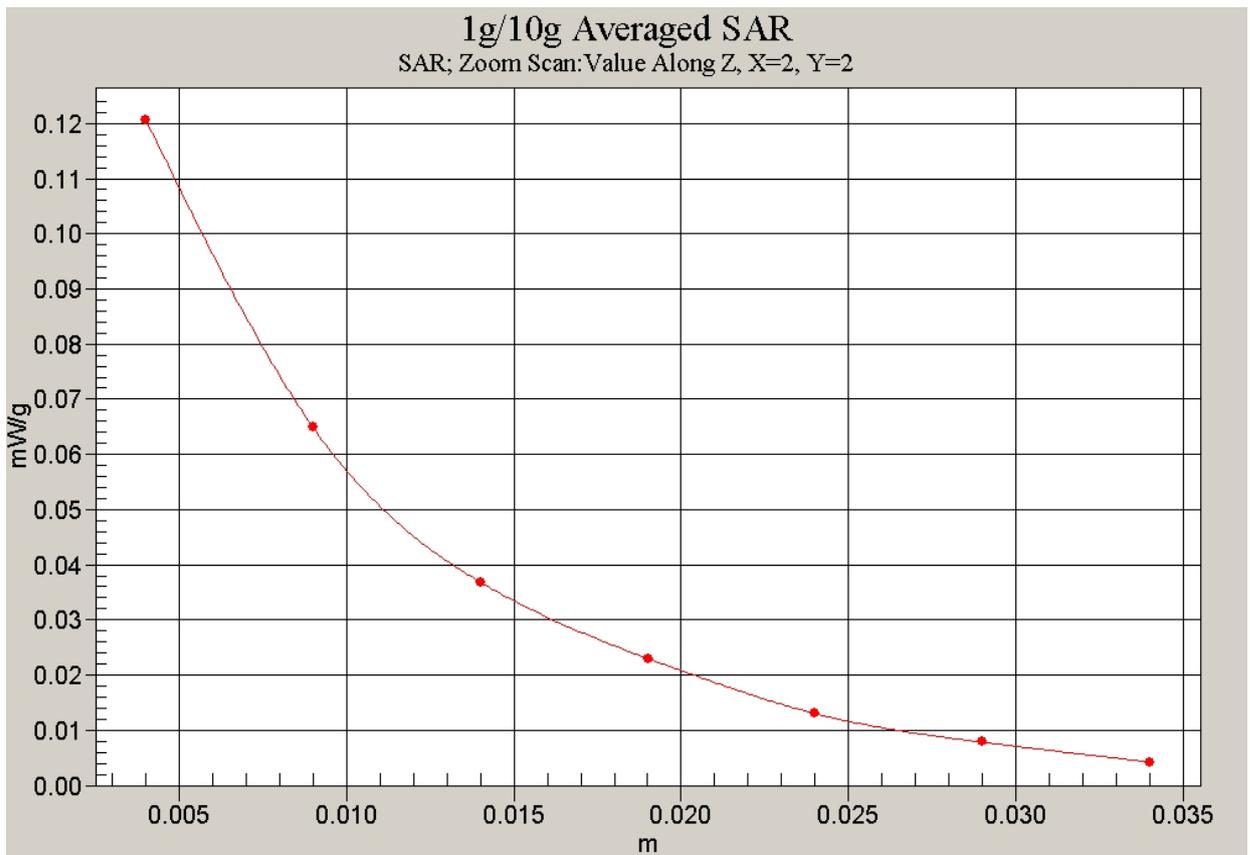


Fig. 36 Z-Scan at power reference point (PCS 1900MHz CH512)

1900 Right Cheek High-slide up

Date/Time: 2007-8-16 9:53:26

Electronics: DAE3 Sn536

Medium: Head 1900 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz new Frequency: 1909.8 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(5.4, 5.4, 5.4)

Cheek High/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.211 mW/g

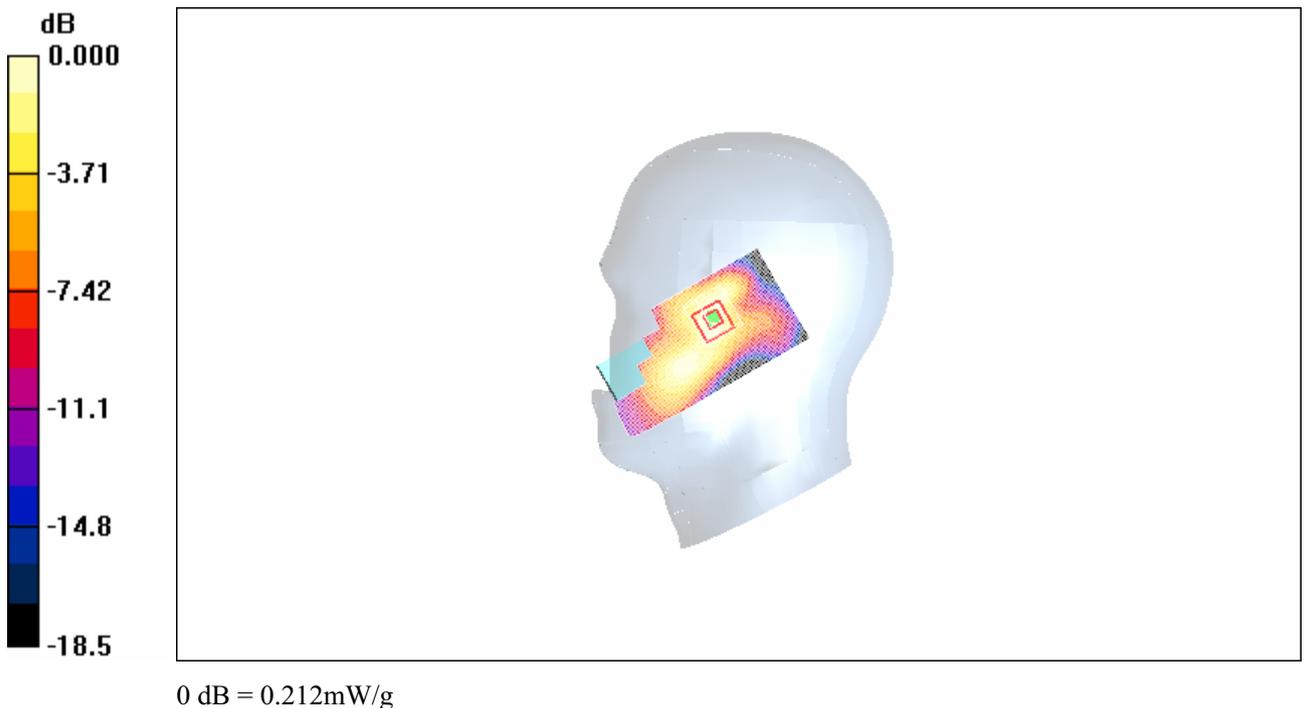
Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.04 V/m; Power Drift = -0.200 dB

Peak SAR (extrapolated) = 0.326 W/kg

SAR(1 g) = 0.198 mW/g; SAR(10 g) = 0.117 mW/g

Maximum value of SAR (measured) = 0.212 mW/g

**Fig. 37 Right Hand Touch Cheek PCS 1900MHz CH810**

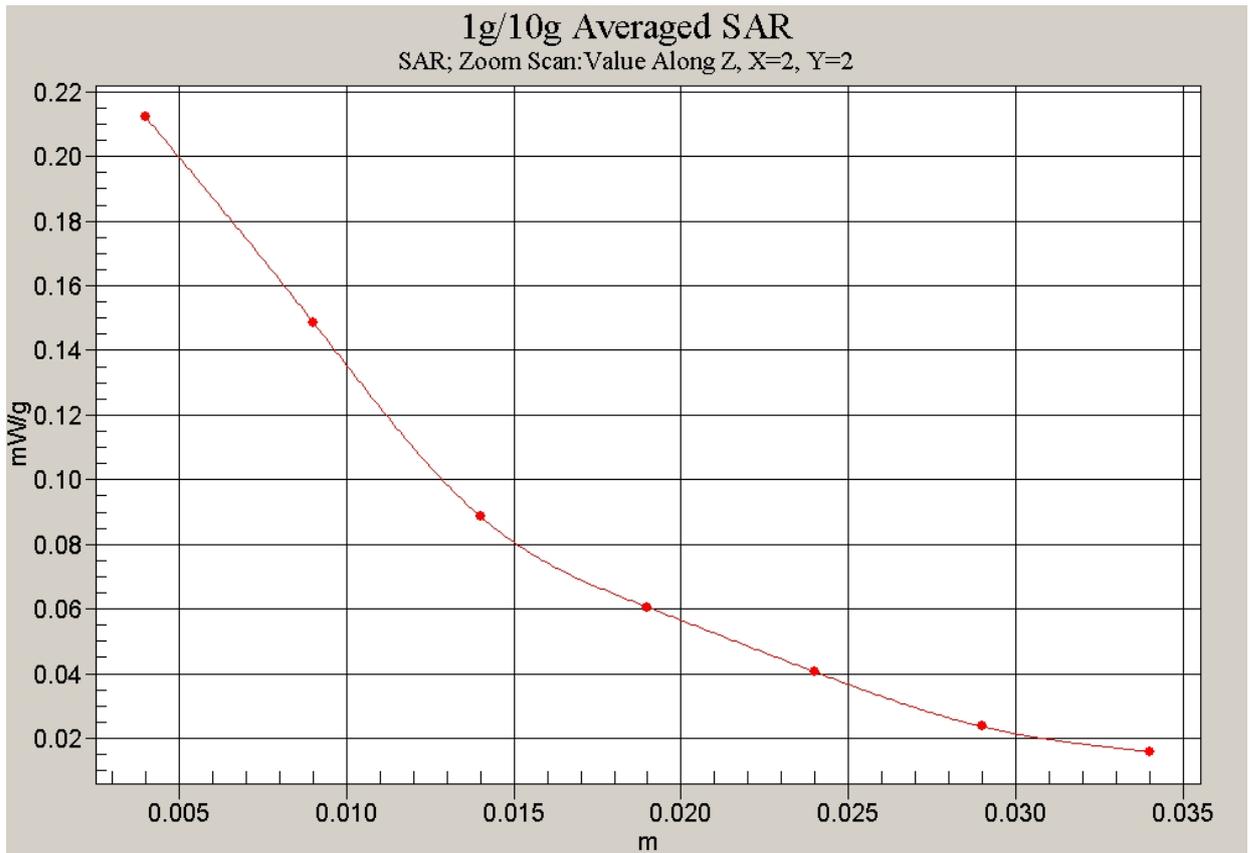


Fig. 38 Z-Scan at power reference point (PCS 1900MHz CH810)

1900 Right Cheek Middle-slide up

Electronics: DAE3 Sn536

Medium: Head 1900 MHz

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.35$ mho/m; $\epsilon_r = 39.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

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

Probe: ET3DV6 - SN1736 ConvF(5.4, 5.4, 5.4)

Cheek Middle/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm

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

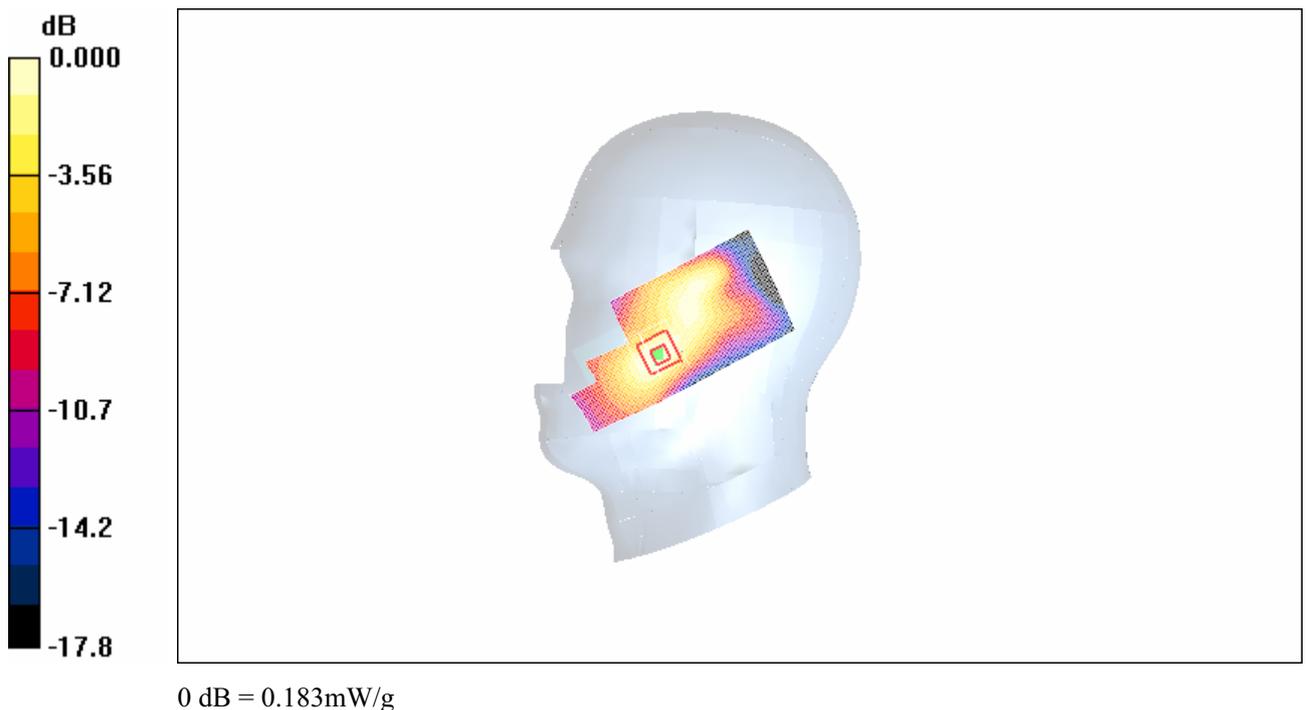
Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.47 V/m; Power Drift = 0.123 dB

Peak SAR (extrapolated) = 0.264 W/kg

SAR(1 g) = 0.174 mW/g; SAR(10 g) = 0.104 mW/g

Maximum value of SAR (measured) = 0.183 mW/g

**Fig.39 Right Hand Touch Cheek PCS 1900MHz CH661**

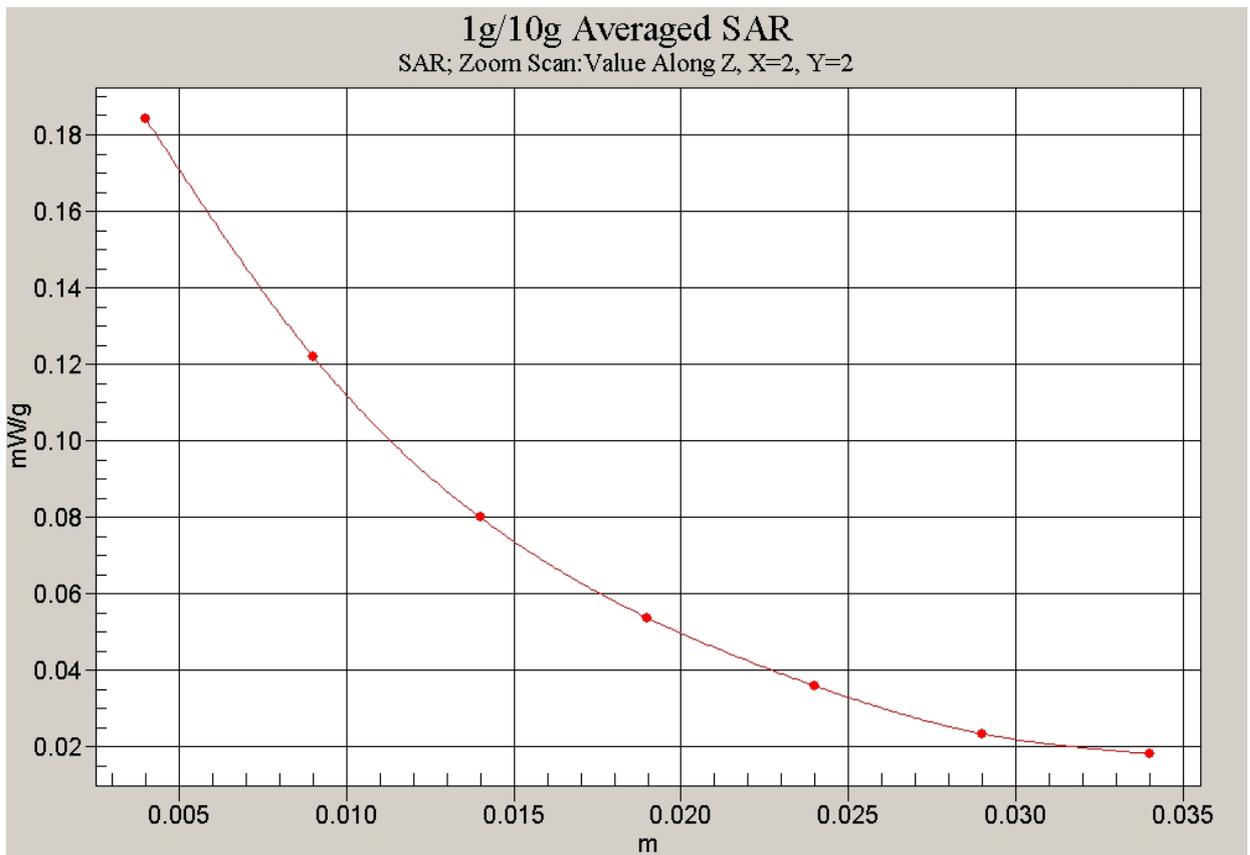


Fig. 40 Z-Scan at power reference point (PCS 1900MHz CH661)

1900 Right Cheek Low-slide up

Electronics: DAE3 Sn536

Medium: Head 1900 MHz

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.32$ mho/m; $\epsilon_r = 39.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz new Frequency: 1850.2 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(5.4, 5.4, 5.4)

Cheek Low/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.208 mW/g

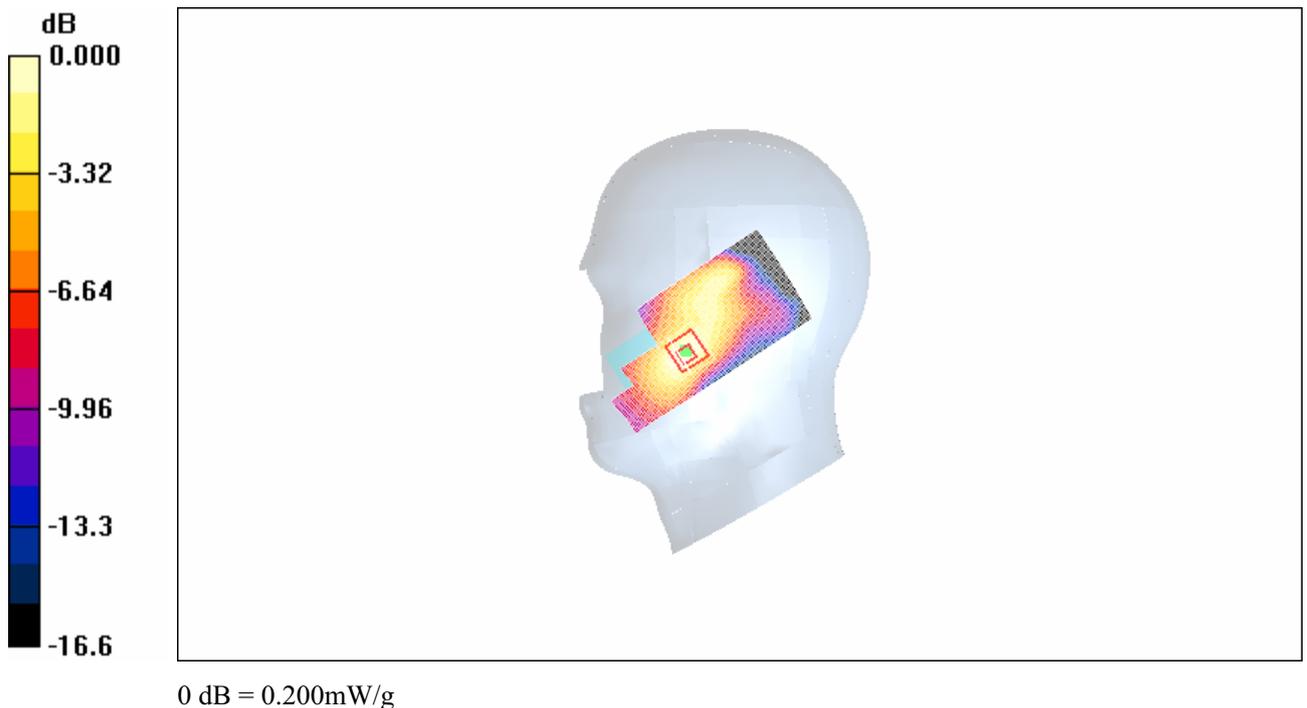
Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.46 V/m; Power Drift = -0.029 dB

Peak SAR (extrapolated) = 0.279 W/kg

SAR(1 g) = 0.189 mW/g; SAR(10 g) = 0.113 mW/g

Maximum value of SAR (measured) = 0.200 mW/g

**Fig. 41 Right Hand Touch Cheek PCS 1900MHz CH512**

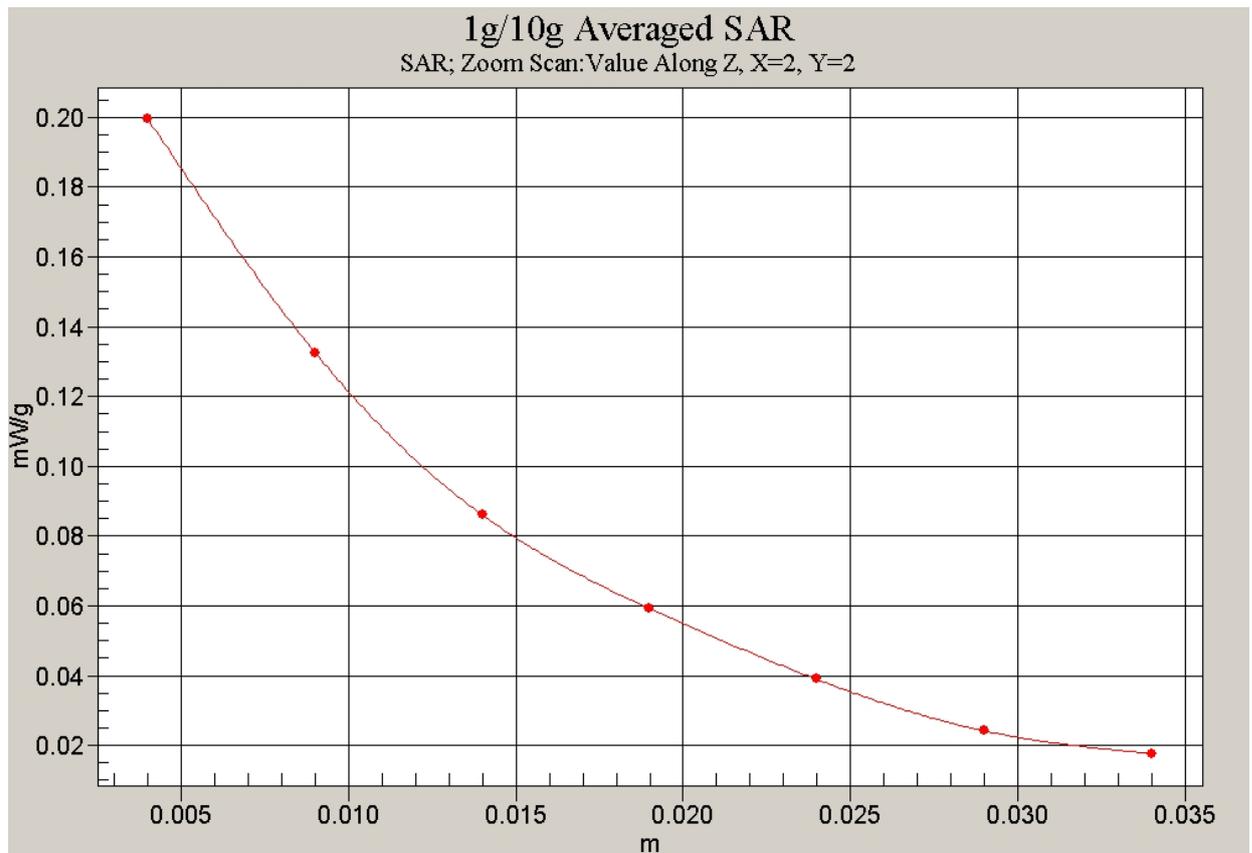


Fig. 42 Z-Scan at power reference point (PCS 1900MHz CH512)

1900 Right Tilt High-slide up

Electronics: DAE3 Sn536

Medium: Head 1900 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz new Frequency: 1909.8 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(5.4, 5.4, 5.4)

Tilt High/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.200 mW/g

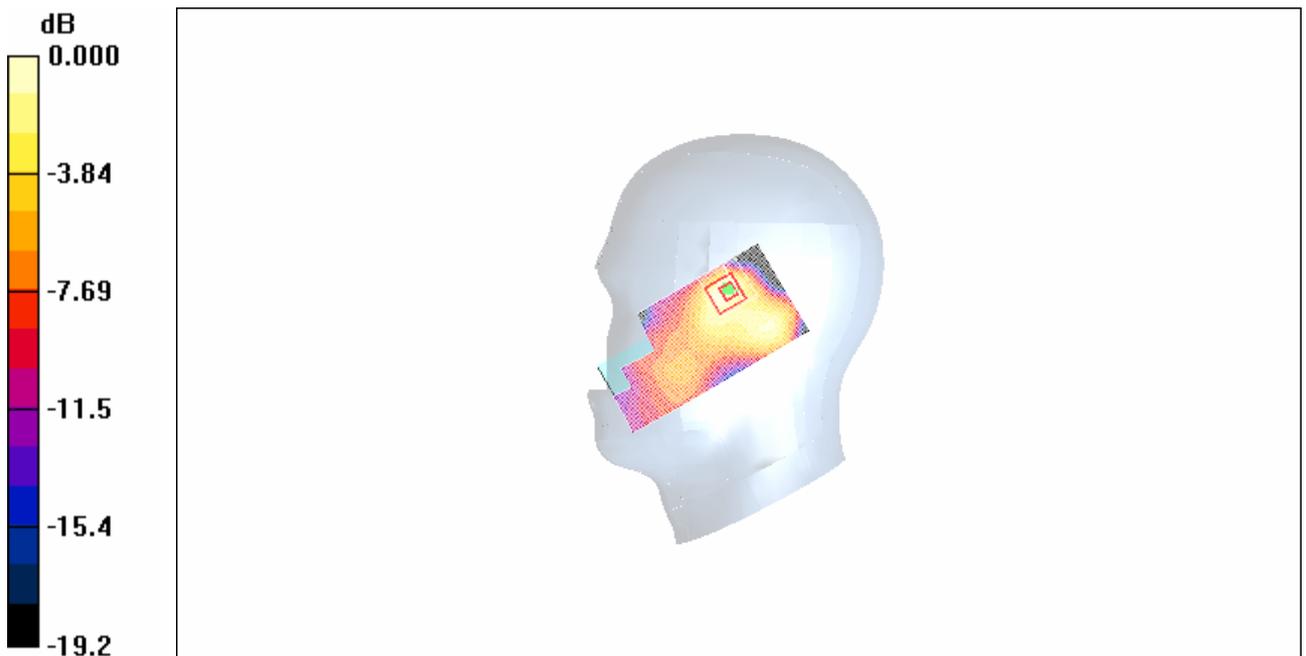
Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.01 V/m; Power Drift = -0.023 dB

Peak SAR (extrapolated) = 0.285 W/kg

SAR(1 g) = 0.152 mW/g; SAR(10 g) = 0.080 mW/g

Maximum value of SAR (measured) = 0.153 mW/g



0 dB = 0.153mW/g

Fig. 43 Right Hand Tilt 15°PCS 1900MHz CH810

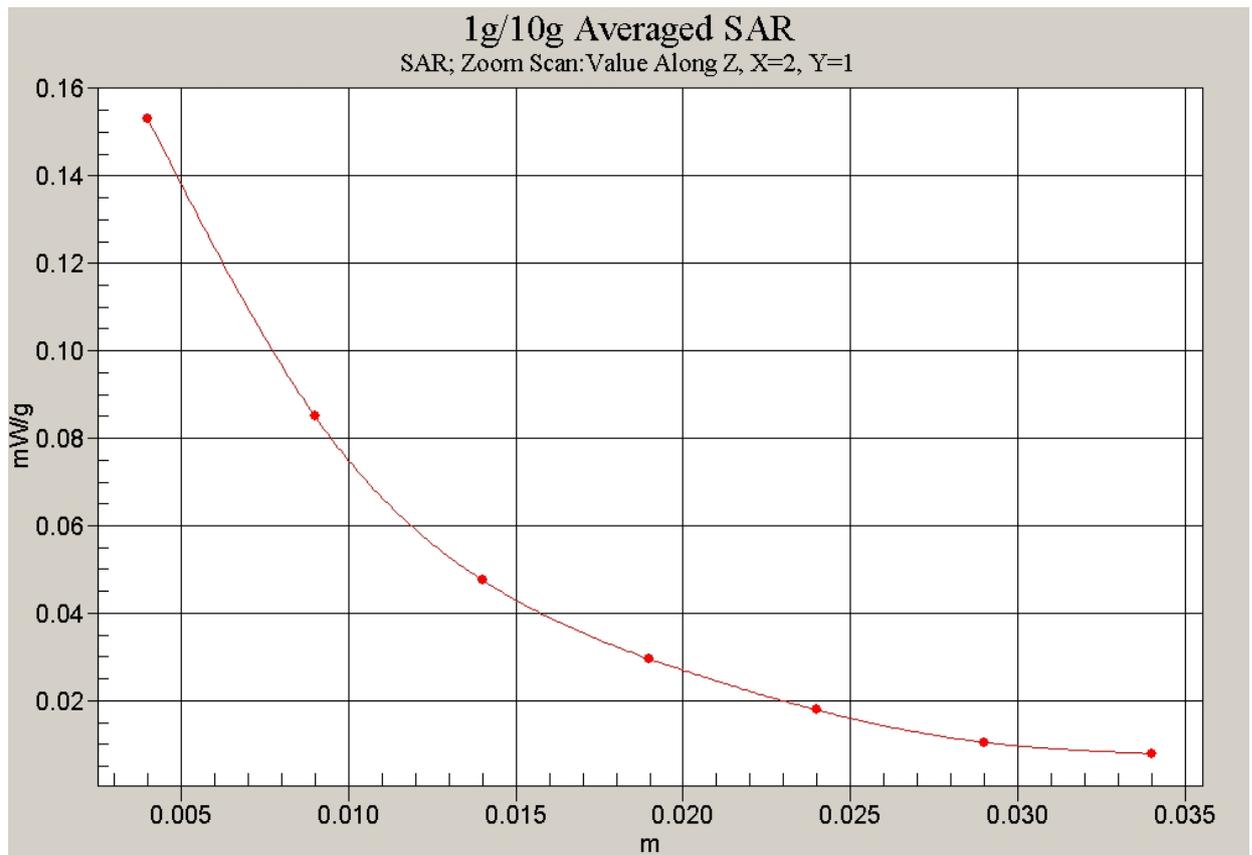


Fig. 44 Z-Scan at power reference point (PCS 1900MHz CH810)

1900 Right Tilt Middle-slide up

Electronics: DAE3 Sn536

Medium: Head 1900 MHz

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.35$ mho/m; $\epsilon_r = 39.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

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

Probe: ET3DV6 - SN1736 ConvF(5.4, 5.4, 5.4)

Tilt Middle/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.178 mW/g

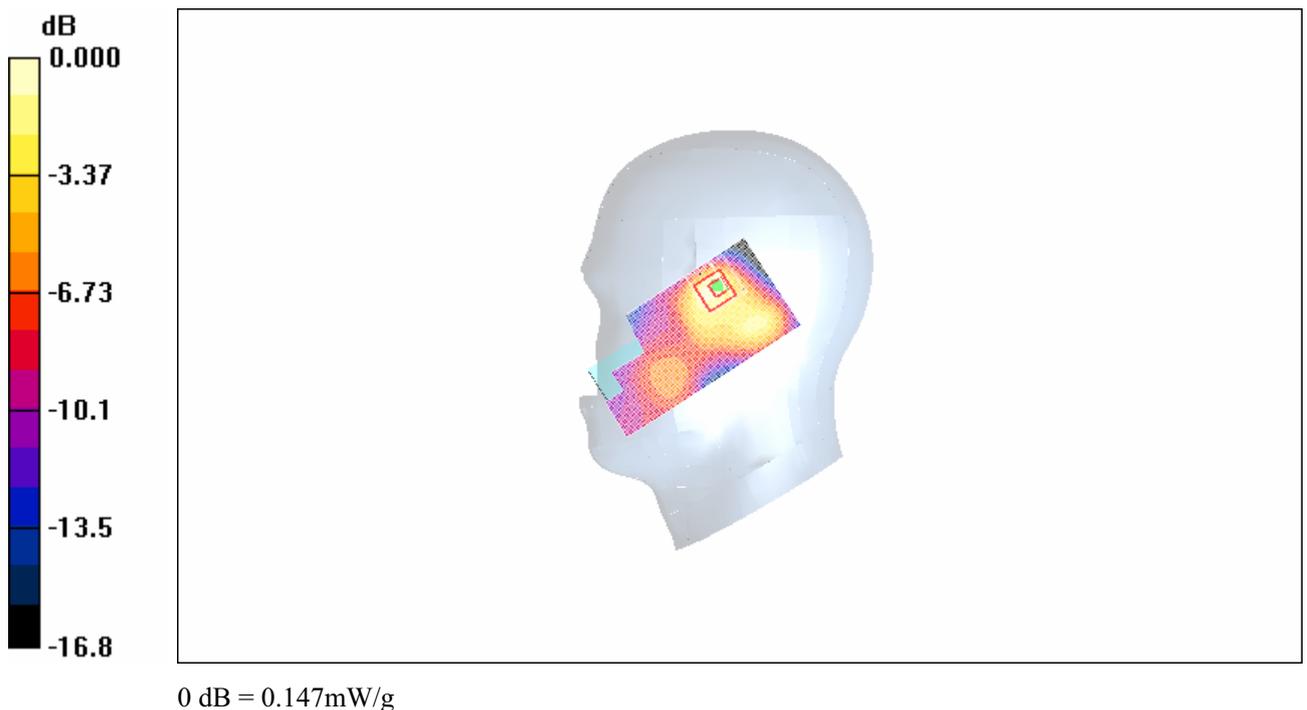
Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.21 V/m; Power Drift = 0.056 dB

Peak SAR (extrapolated) = 0.245 W/kg

SAR(1 g) = 0.141 mW/g; SAR(10 g) = 0.074 mW/g

Maximum value of SAR (measured) = 0.147 mW/g

**Fig. 45 Right Hand Tilt 15°PCS 1900MHz CH661**

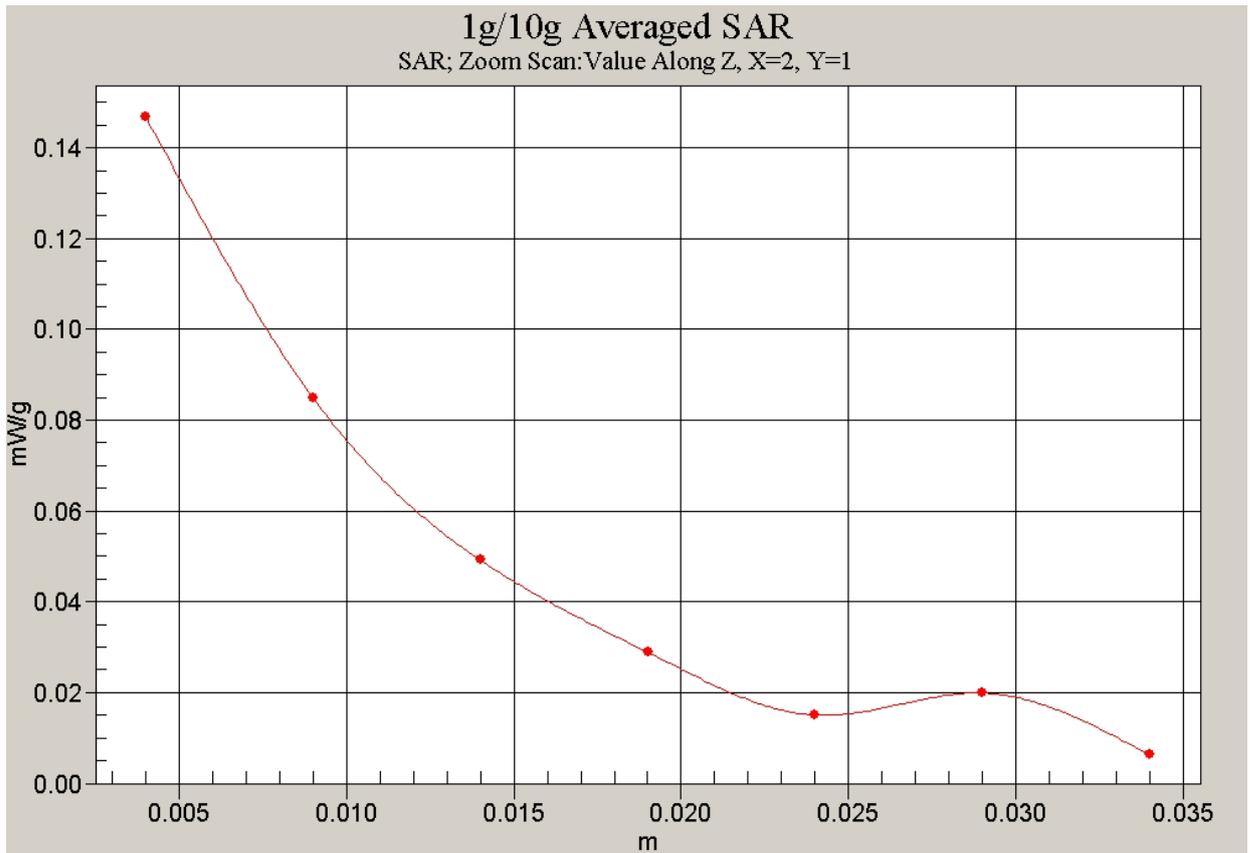


Fig. 46 Z-Scan at power reference point (PCS 1900MHz CH661)

1900 Right Tilt Low-slide up

Electronics: DAE3 Sn536

Medium: Head 1900 MHz

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.32$ mho/m; $\epsilon_r = 39.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz new Frequency: 1850.2 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(5.4, 5.4, 5.4)

Tilt Low/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.169 mW/g

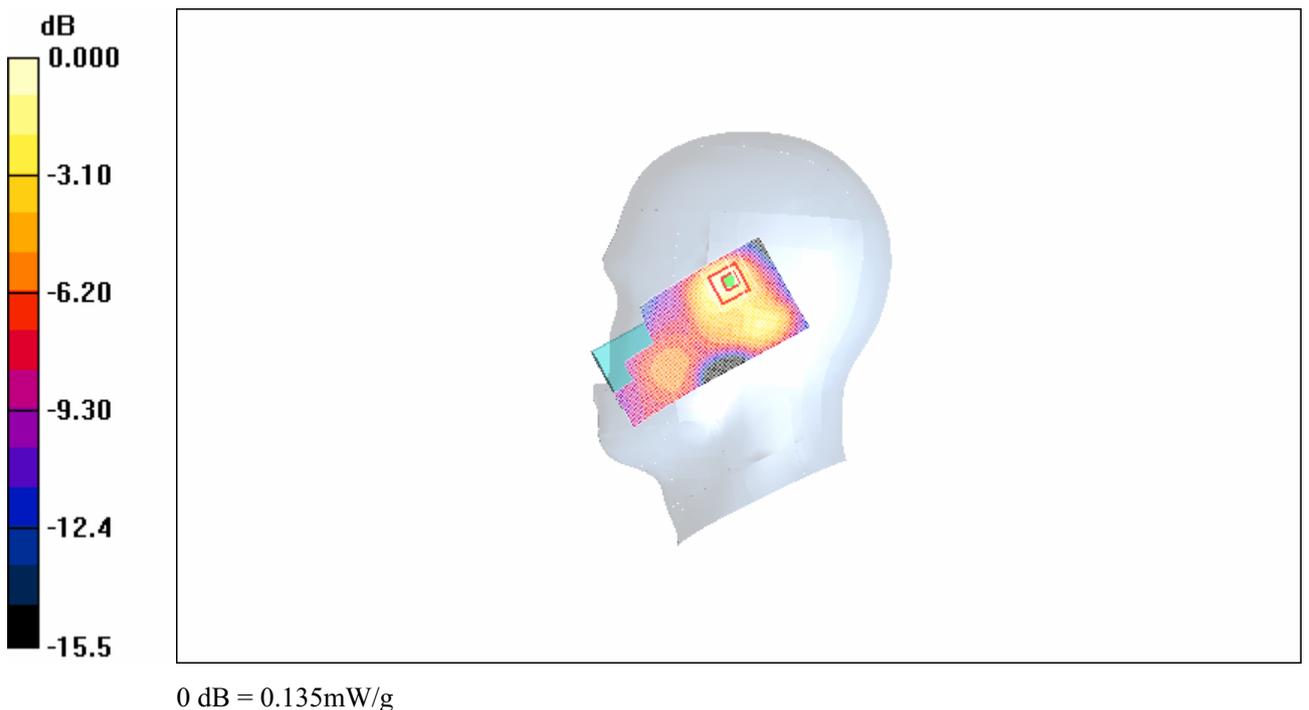
Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.95 V/m; Power Drift = 0.073 dB

Peak SAR (extrapolated) = 0.237 W/kg

SAR(1 g) = 0.138 mW/g; SAR(10 g) = 0.075 mW/g

Maximum value of SAR (measured) = 0.135 mW/g

**Fig. 47 Right Hand Tilt 15°PCS 1900MHz CH512**

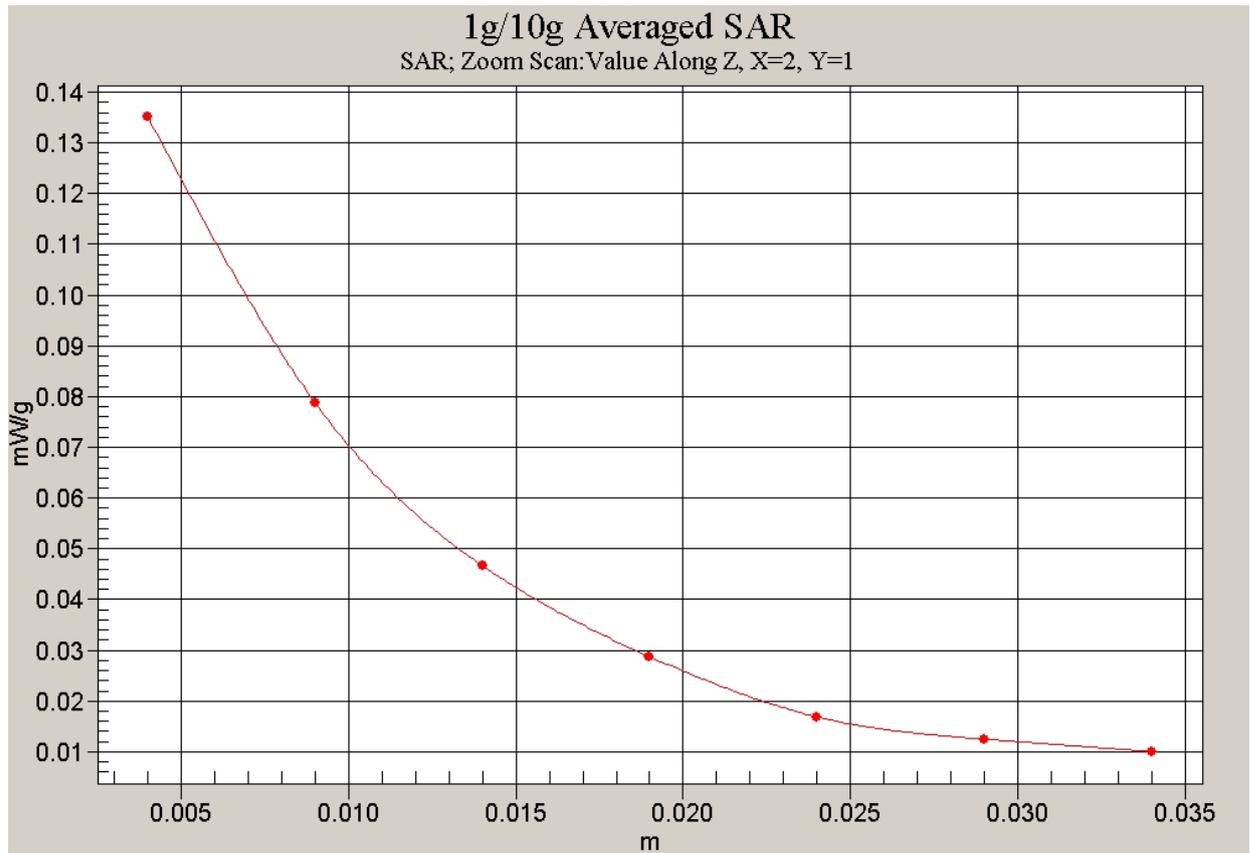


Fig. 48 Z-Scan at power reference point (PCS 1900MHz CH512)

1900 Body Toward Ground High with GPRS -slide down

Electronics: DAE3 Sn536

Medium: Body 1900 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:4

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

Toward Ground High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.588 mW/g

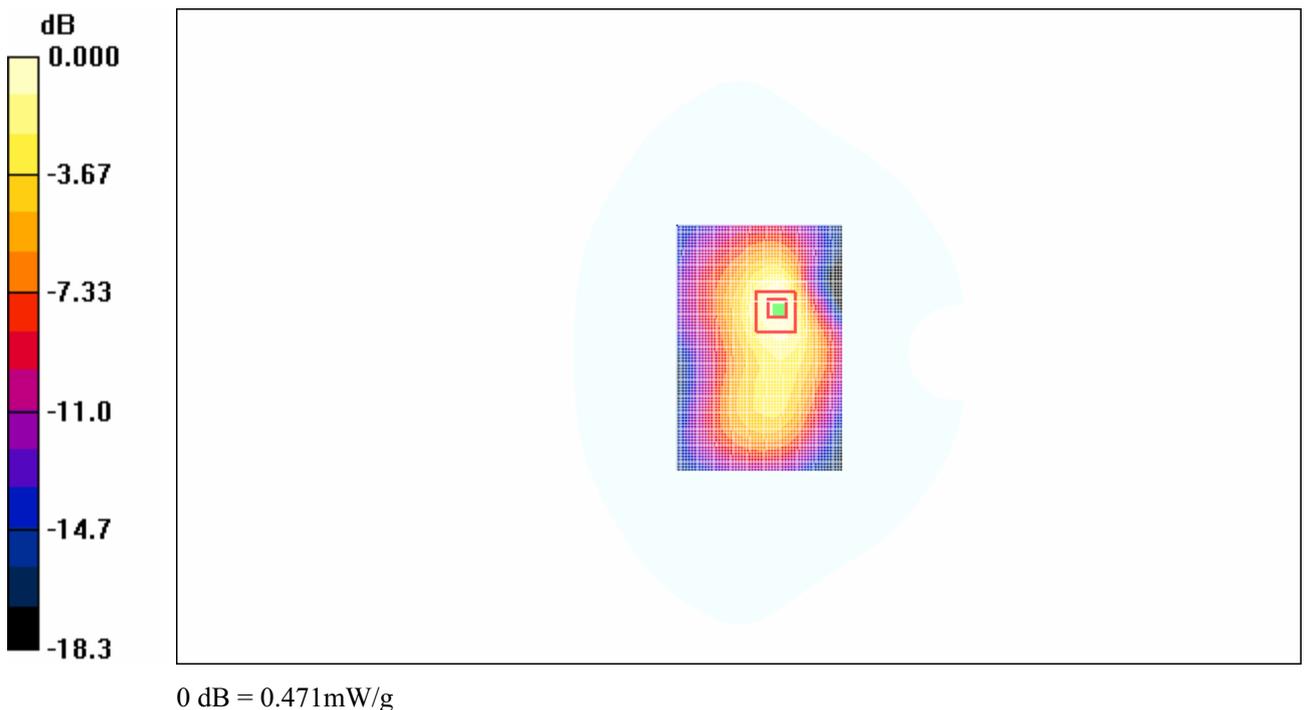
Toward Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.7 V/m; Power Drift = -0.104 dB

Peak SAR (extrapolated) = 0.882 W/kg

SAR(1 g) = 0.485 mW/g; SAR(10 g) = 0.267 mW/g

Maximum value of SAR (measured) = 0.471 mW/g

**Fig. 49 PCS 1900MHz, Body, Towards Ground with GPRS, CH810**

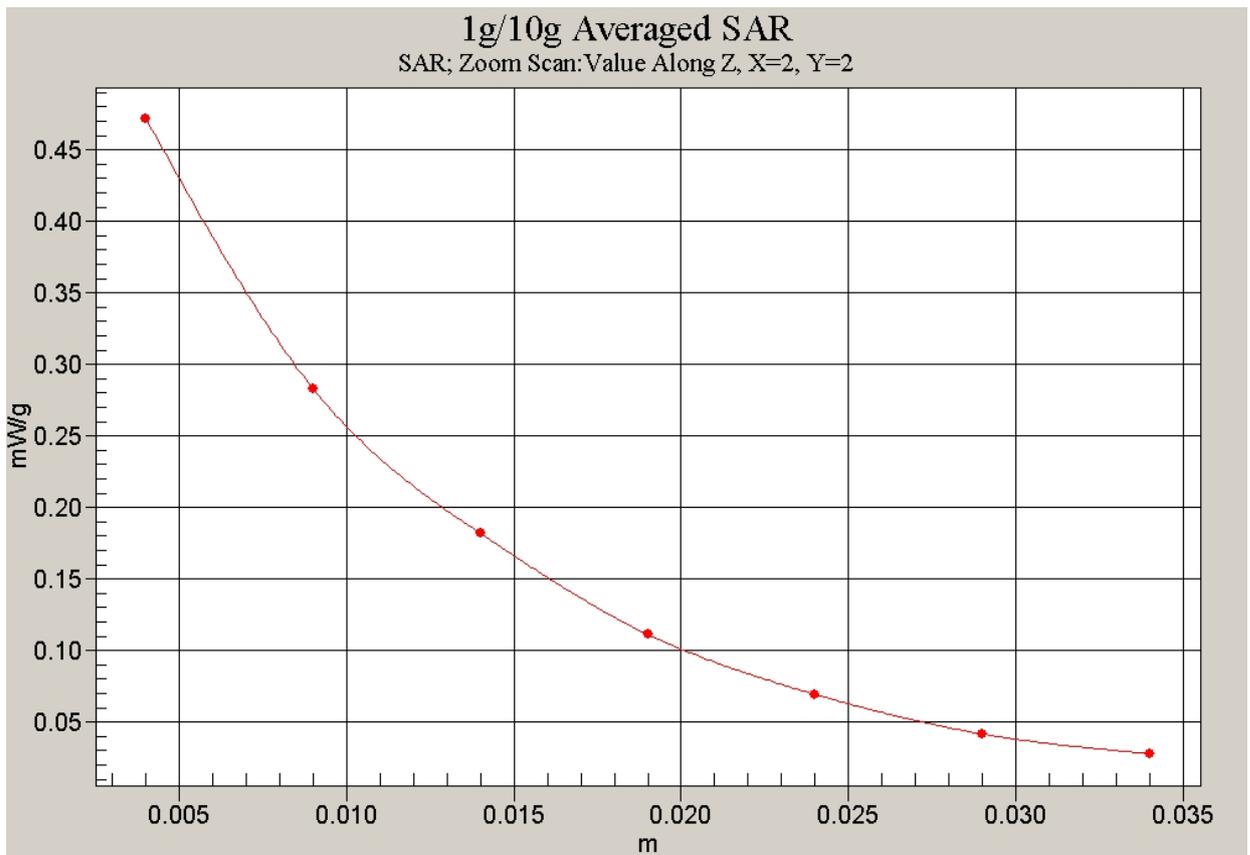


Fig. 50 Z-Scan at power reference point (PCS 1900MHz, Body Towards Ground with GPRS, CH810)

1900 Body Toward Ground Middle with GPRS -slide down

Electronics: DAE3 Sn536

Medium: Body 1900 MHz

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:4

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

Toward Ground Middle/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.396 mW/g

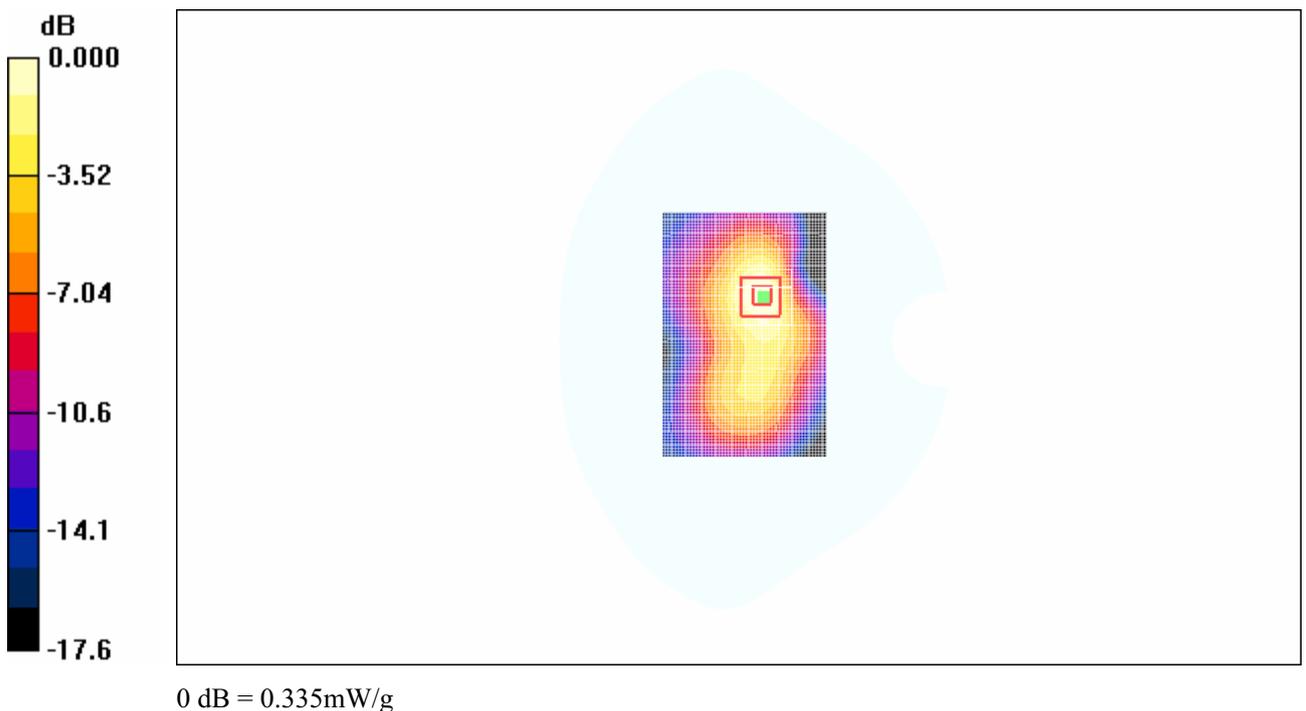
Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.5 V/m; Power Drift = -0.052 dB

Peak SAR (extrapolated) = 0.614 W/kg

SAR(1 g) = 0.338 mW/g; SAR(10 g) = 0.186 mW/g

Maximum value of SAR (measured) = 0.335 mW/g

**Fig. 51 PCS 1900MHz, Body, Towards Ground with GPRS, CH661**

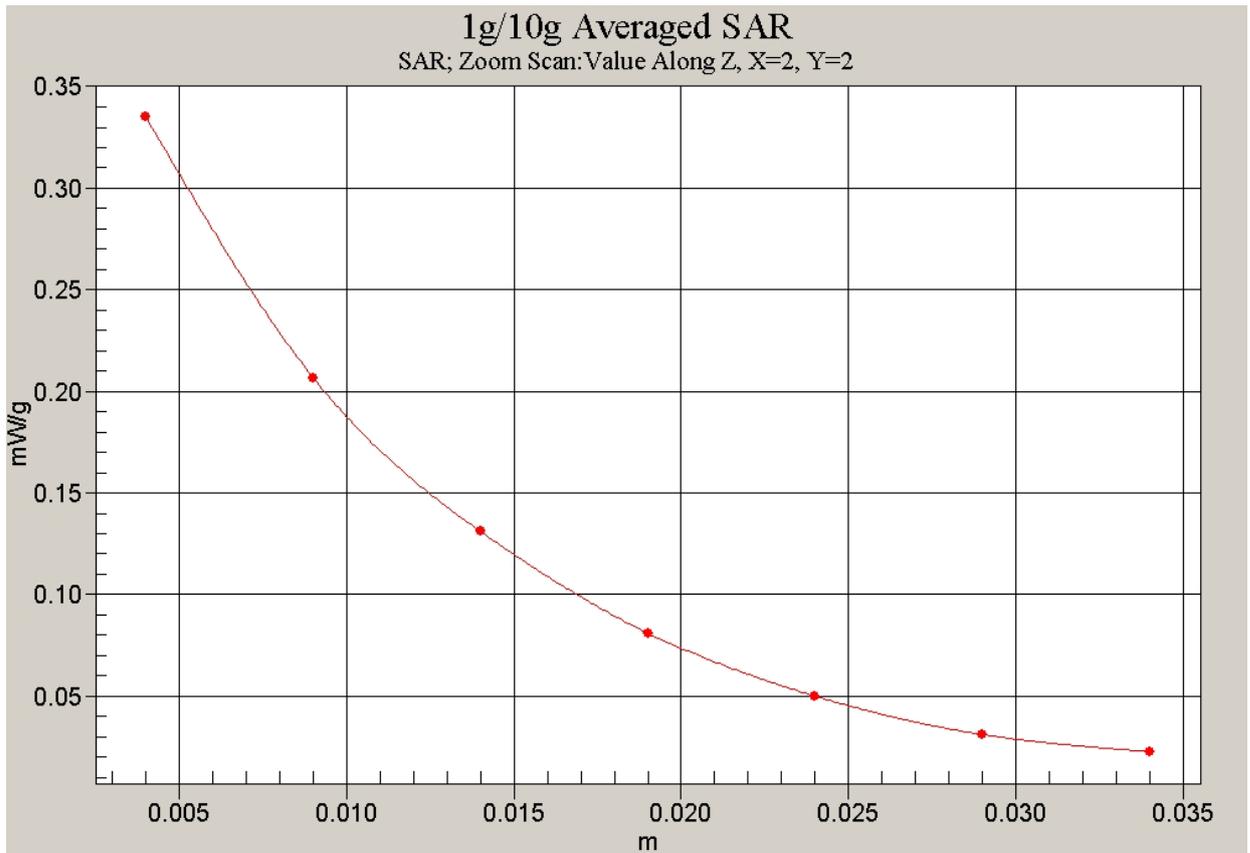


Fig. 52 Z-Scan at power reference point (PCS 1900MHz, Body Towards Ground with GPRS, CH661)

1900 Body Toward Ground Low with GPRS -slide down

Electronics: DAE3 Sn536

Medium: Body 1900 MHz

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:4

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

Toward Ground Low/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.287 mW/g**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.0 V/m; Power Drift = 0.038 dB

Peak SAR (extrapolated) = 0.430 W/kg

SAR(1 g) = 0.248 mW/g; SAR(10 g) = 0.138 mW/g

Maximum value of SAR (measured) = 0.246 mW/g

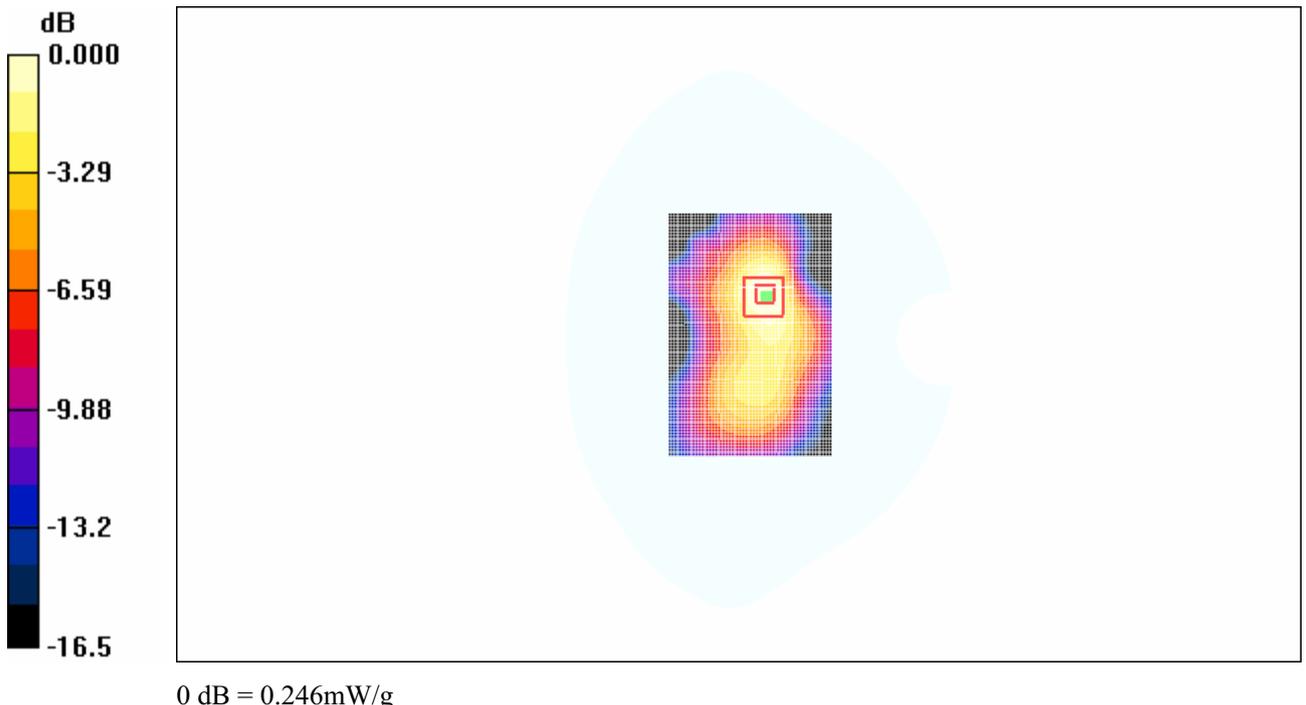


Fig. 53 PCS 1900MHz, Body, Towards Ground with GPRS, CH512

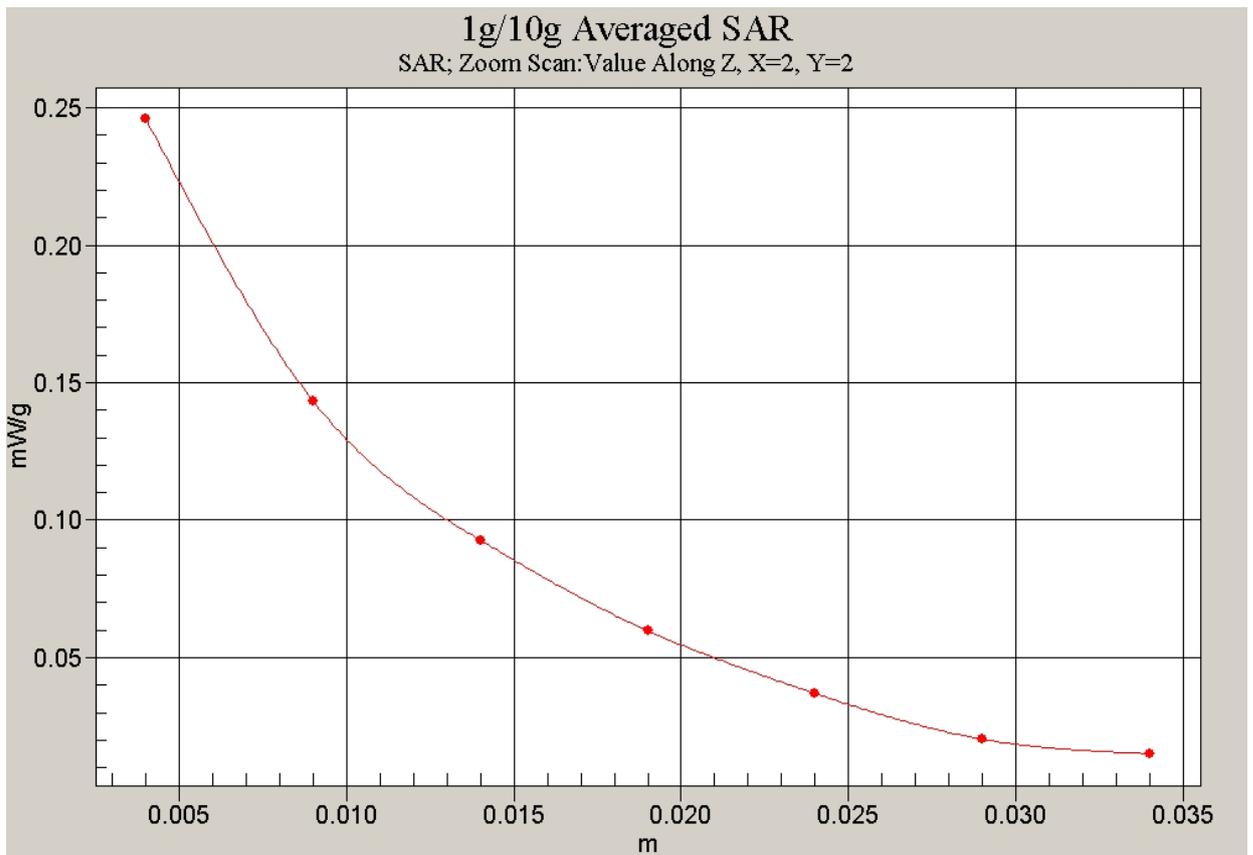


Fig. 54 Z-Scan at power reference point (PCS 1900MHz, Body Towards Ground with GPRS, CH512)

1900 Body Toward Phantom High with GPRS -slide down

Electronics: DAE3 Sn536

Medium: Body 1900 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:4

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

Toward Phantom High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
 Maximum value of SAR (interpolated) = 0.158 mW/g

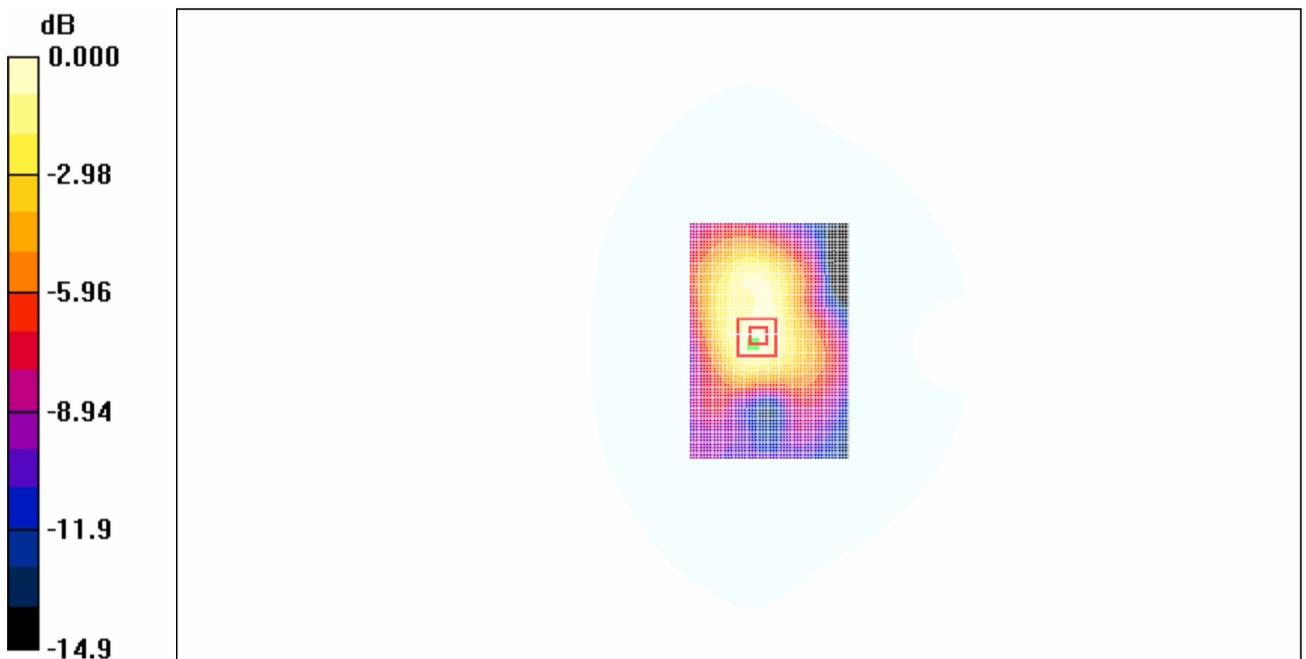
Toward Phantom High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.37 V/m; Power Drift = -0.200 dB

Peak SAR (extrapolated) = 0.227 W/kg

SAR(1 g) = 0.149 mW/g; SAR(10 g) = 0.094 mW/g

Maximum value of SAR (measured) = 0.160 mW/g



0 dB = 0.160mW/g

Fig. 55 PCS 1900MHz, Body, Towards Phantom with GPRS, CH810

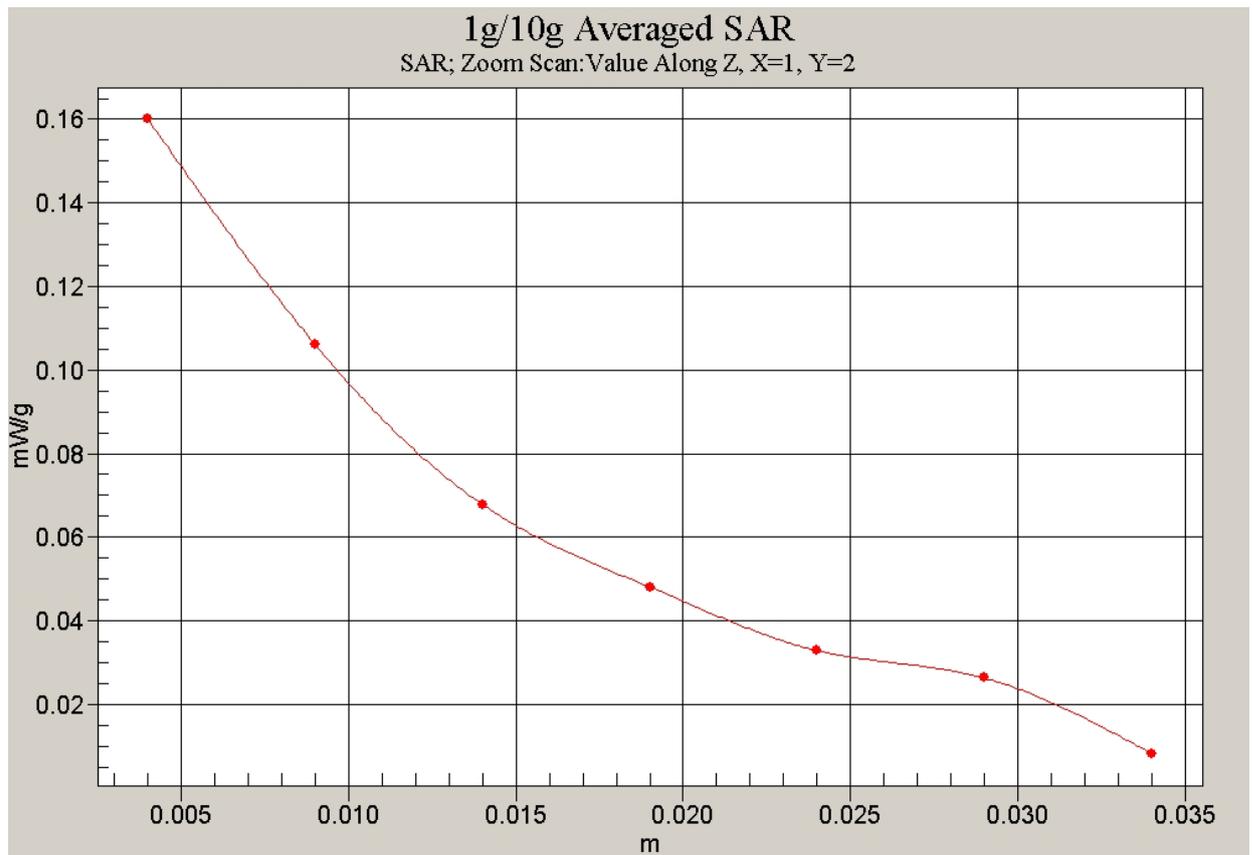


Fig. 56 Z-Scan at power reference point (PCS 1900MHz, Body Towards Phantom with GPRS, CH810)

1900 Body Toward Phantom Middle with GPRS -slide down

Electronics: DAE3 Sn536

Medium: Body 1900 MHz

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:4

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

Toward Phantom Middle/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.113 mW/g

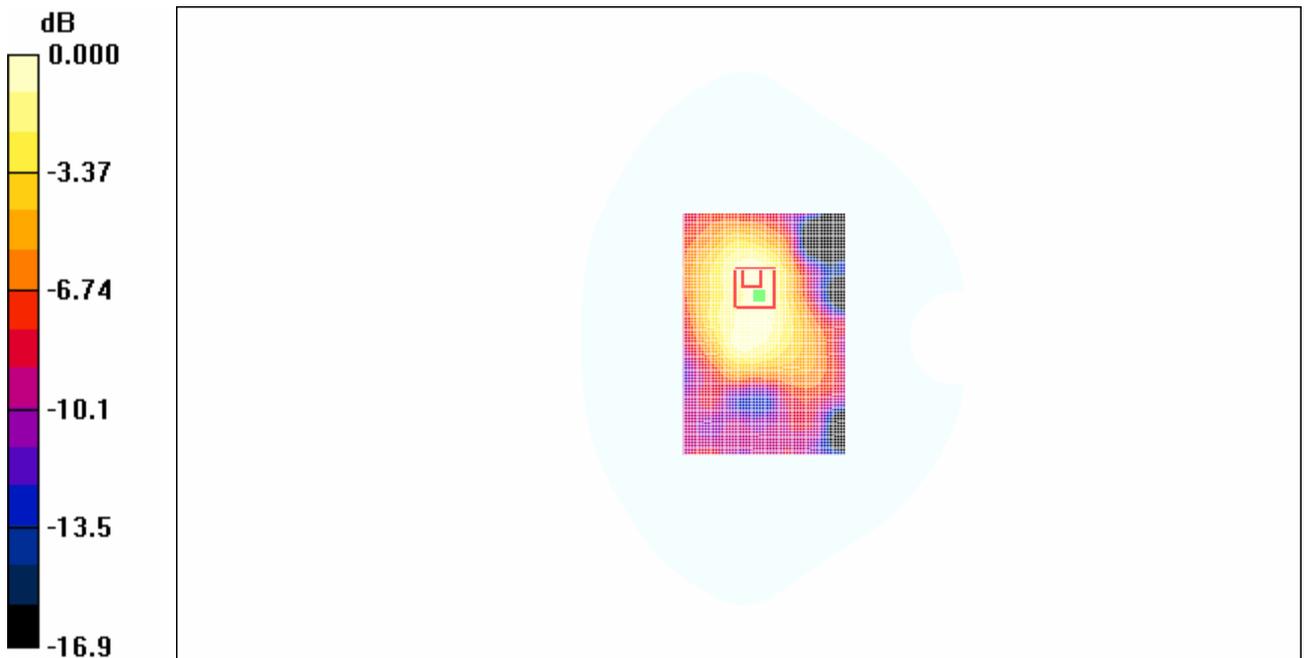
Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.55 V/m; Power Drift = -0.062 dB

Peak SAR (extrapolated) = 0.188 W/kg

SAR(1 g) = 0.103 mW/g; SAR(10 g) = 0.062 mW/g

Maximum value of SAR (measured) = 0.111 mW/g



0 dB = 0.111mW/g

Fig. 57 PCS 1900MHz, Body, Towards Phantom with GPRS, CH661

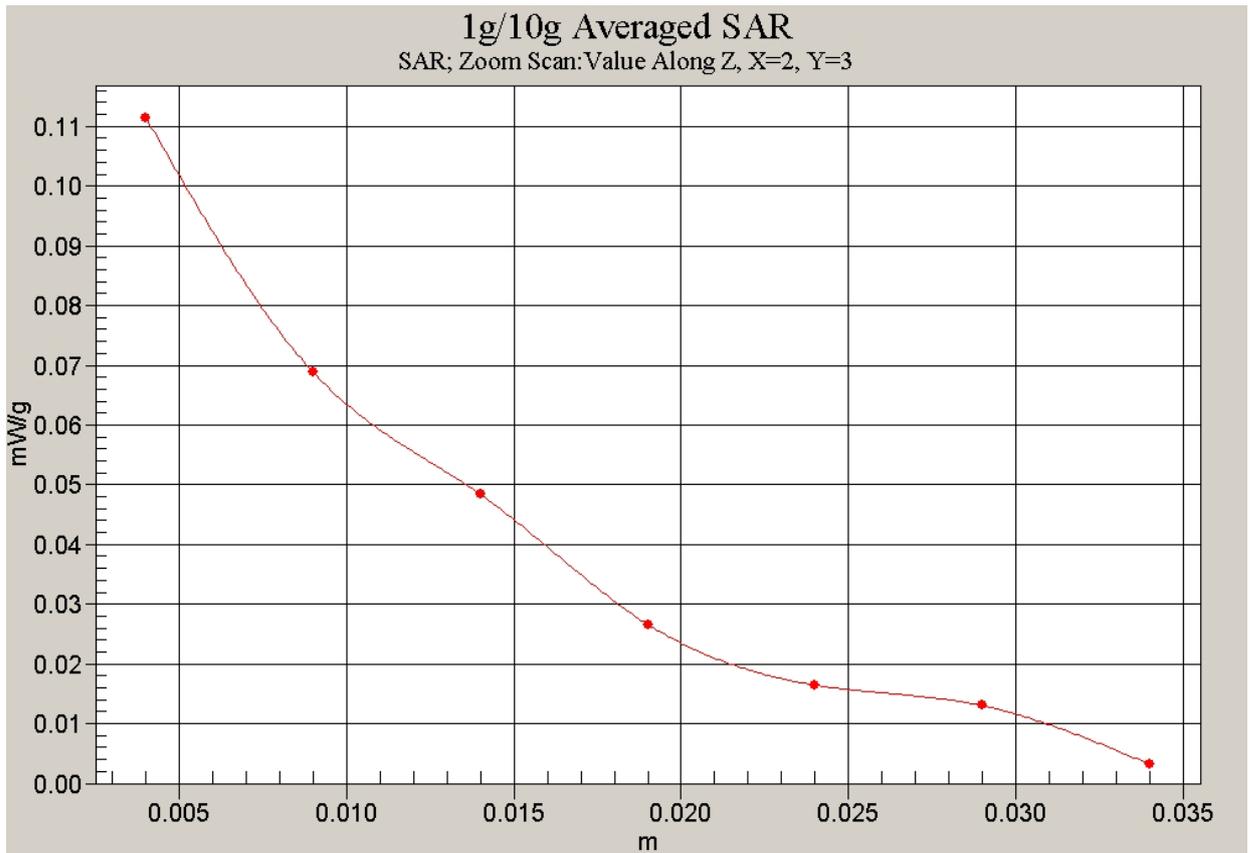


Fig. 58 Z-Scan at power reference point (PCS 1900MHz, Body Towards Phantom with GPRS, CH661)

1900 Body Toward Phantom Low with GPRS -slide down

Electronics: DAE3 Sn536

Medium: Body 1900 MHz

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:4

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

Toward Phantom Low/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.097 mW/g**Toward Phantom Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.36 V/m; Power Drift = -0.200 dB

Peak SAR (extrapolated) = 0.134 W/kg

SAR(1 g) = 0.086 mW/g; SAR(10 g) = 0.051 mW/g

Maximum value of SAR (measured) = 0.094 mW/g

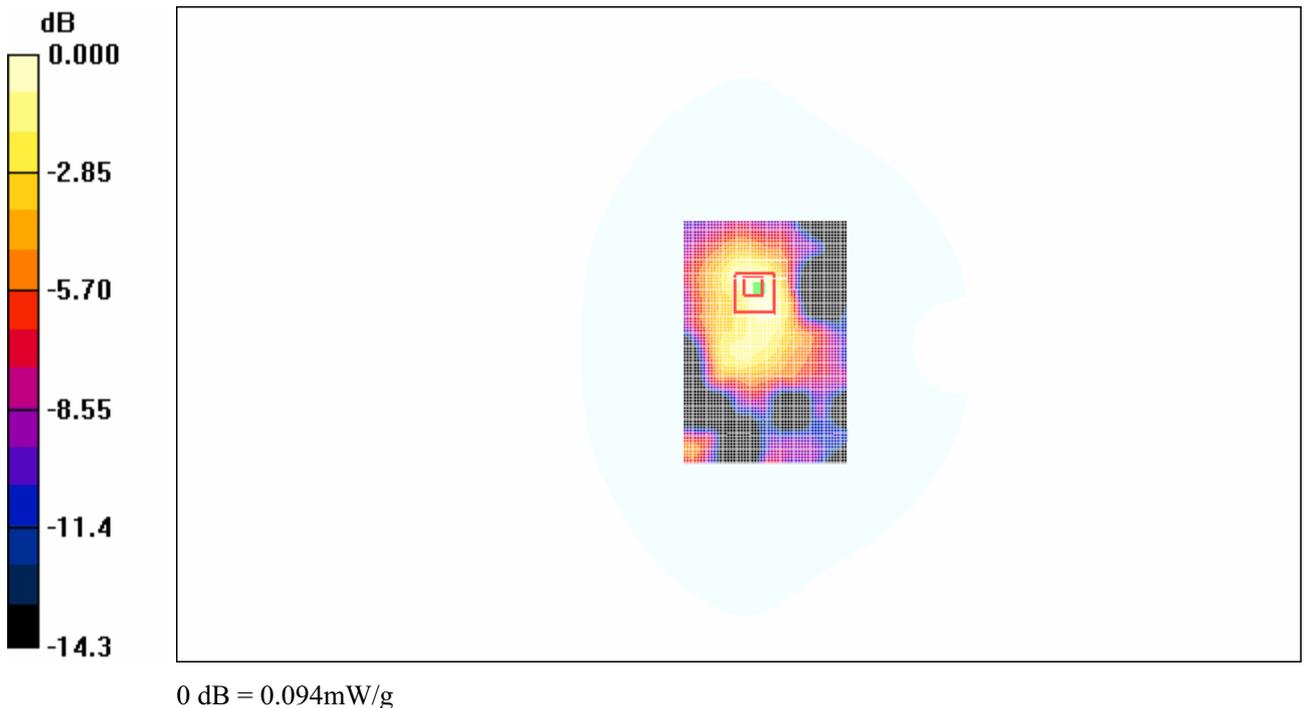


Fig. 59 PCS 1900MHz, Body, Towards Phantom with GPRS, CH512

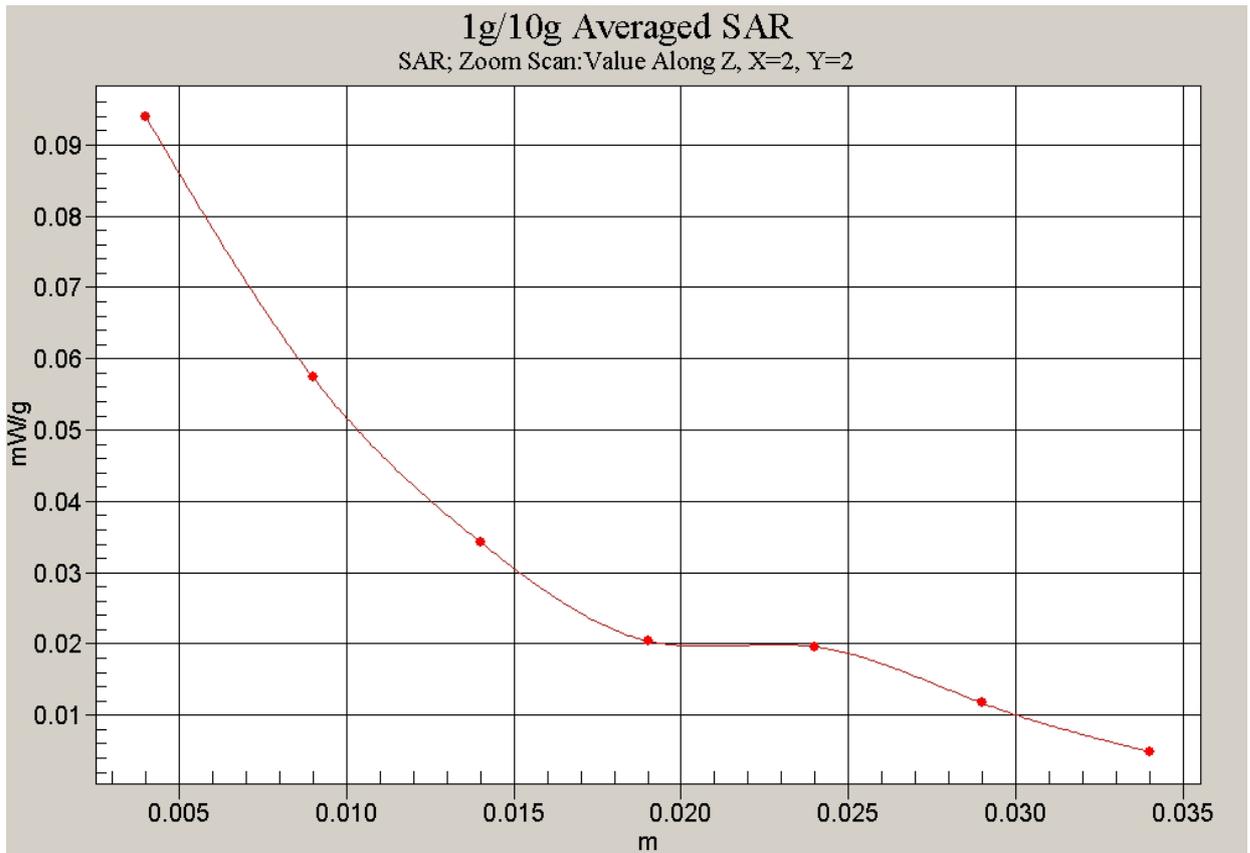


Fig. 60 Z-Scan at power reference point (PCS 1900MHz, Body Towards Phantom with GPRS, CH512)

1900 Body Toward Ground High with GPRS-slide up

Electronics: DAE3 Sn536

Medium: Body 1900 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:4

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

Toward Ground High/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm
 Maximum value of SAR (interpolated) = 0.391 mW/g

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

Reference Value = 11.7 V/m; Power Drift = -0.069 dB

Peak SAR (extrapolated) = 0.633 W/kg

SAR(1 g) = 0.335 mW/g; SAR(10 g) = 0.179 mW/g

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

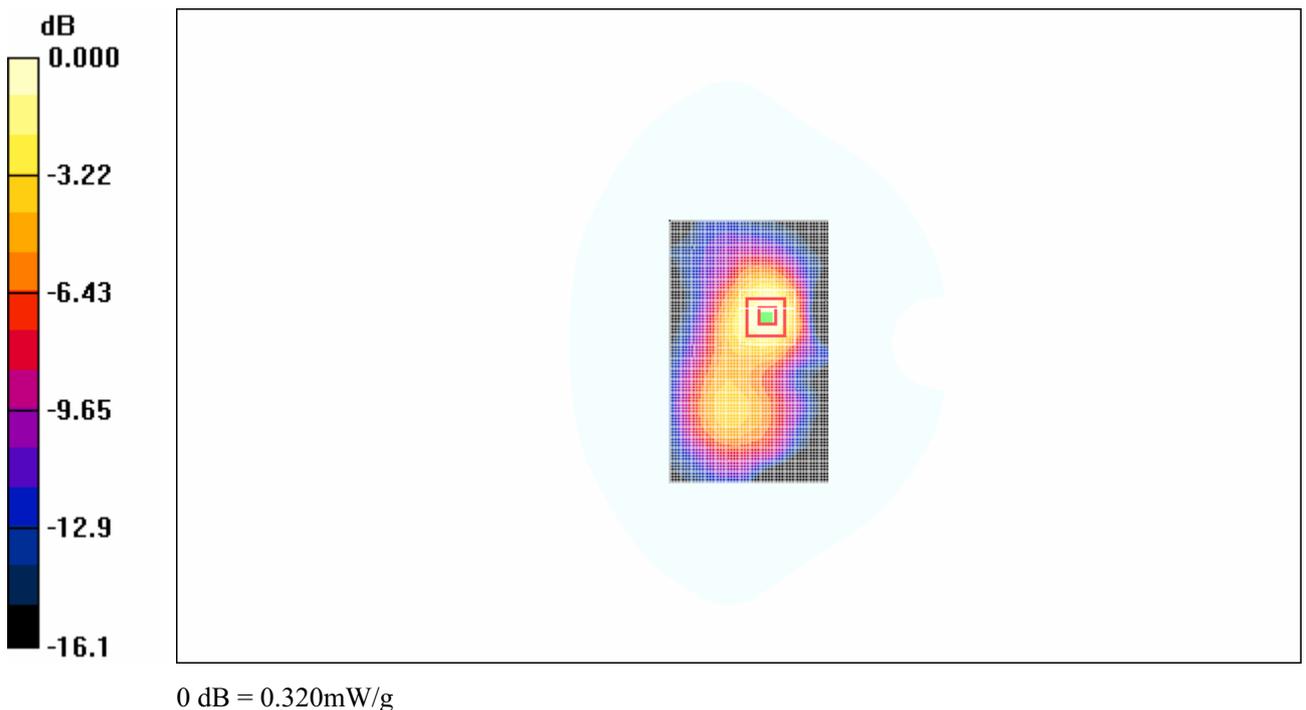
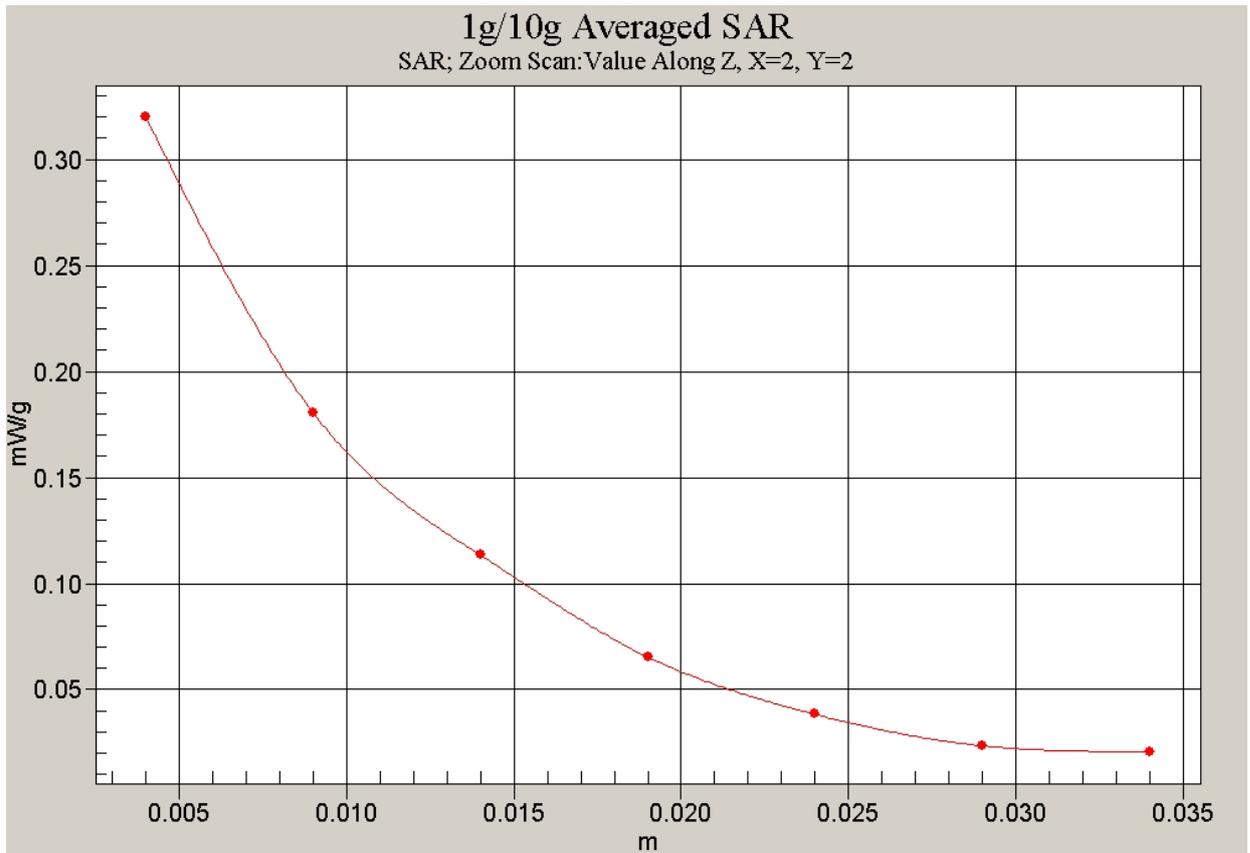


Fig. 61 PCS 1900MHz, Body, Towards Ground with GPRS, CH810



**Fig. 62 Z-Scan at power reference point
(PCS 1900MHz, Body Towards Ground with GPRS, CH810)**

1900 Body Toward Ground Middle with GPRS-slide up

Electronics: DAE3 Sn536

Medium: Body 1900 MHz

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:4

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

Toward Ground Middle/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.333 mW/g

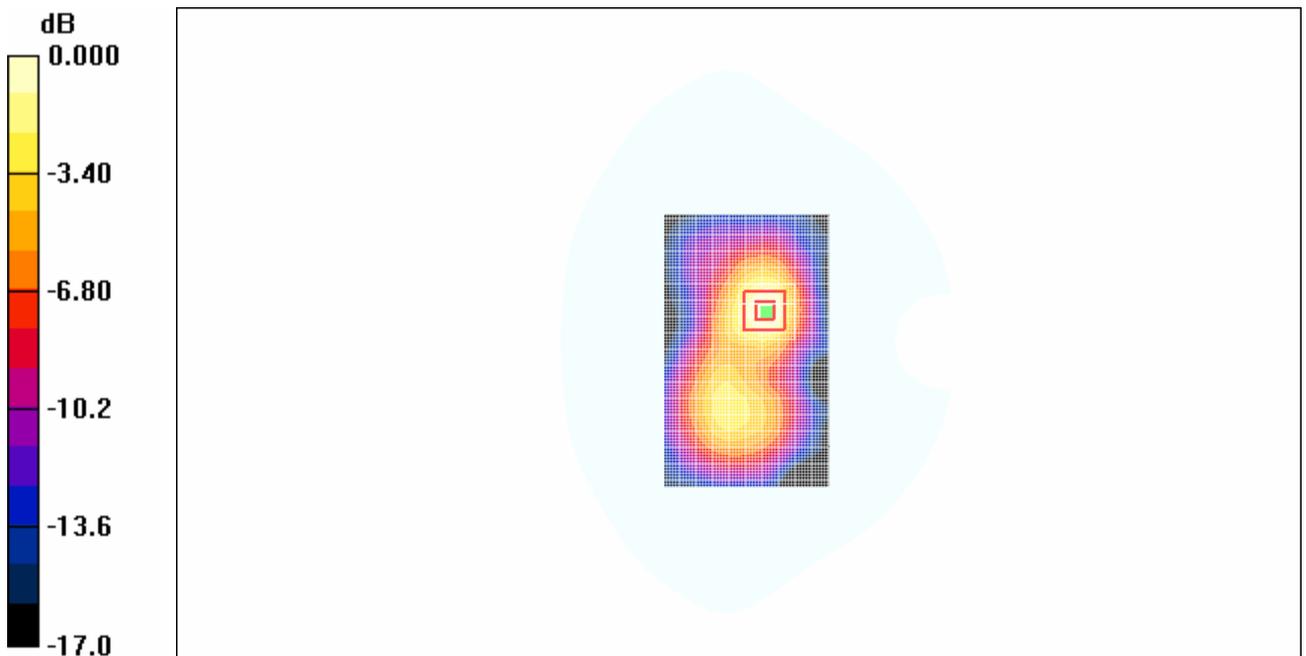
Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.91 V/m; Power Drift = 0.029 dB

Peak SAR (extrapolated) = 0.535 W/kg

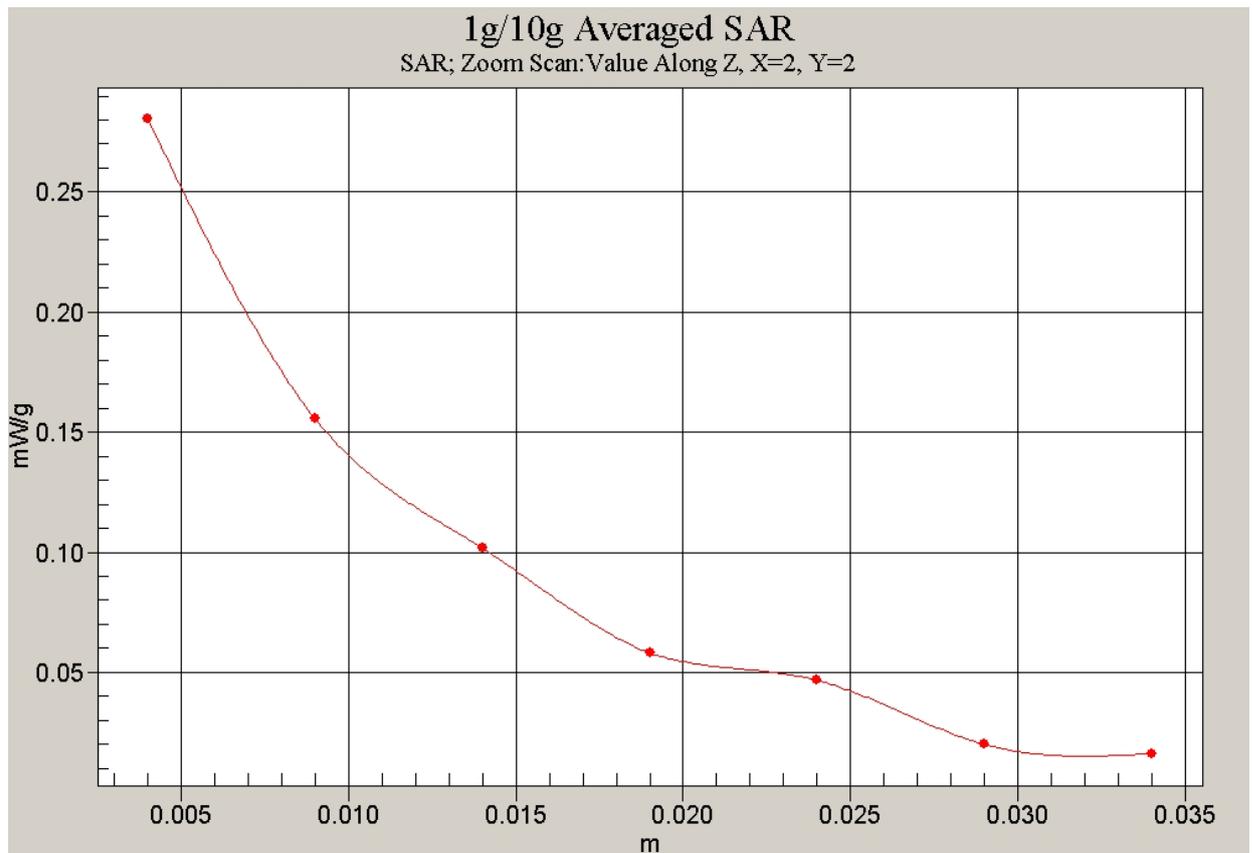
SAR(1 g) = 0.288 mW/g; SAR(10 g) = 0.154 mW/g

Maximum value of SAR (measured) = 0.280 mW/g



0 dB = 0.280mW/g

Fig. 63 PCS 1900MHz, Body, Towards Ground with GPRS, CH661



**Fig. 64 Z-Scan at power reference point
(PCS 1900MHz, Body Towards Ground with GPRS, CH661)**

1900 Body Toward Ground Low with GPRS-slide up

Electronics: DAE3 Sn536

Medium: Body 1900 MHz

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:4

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

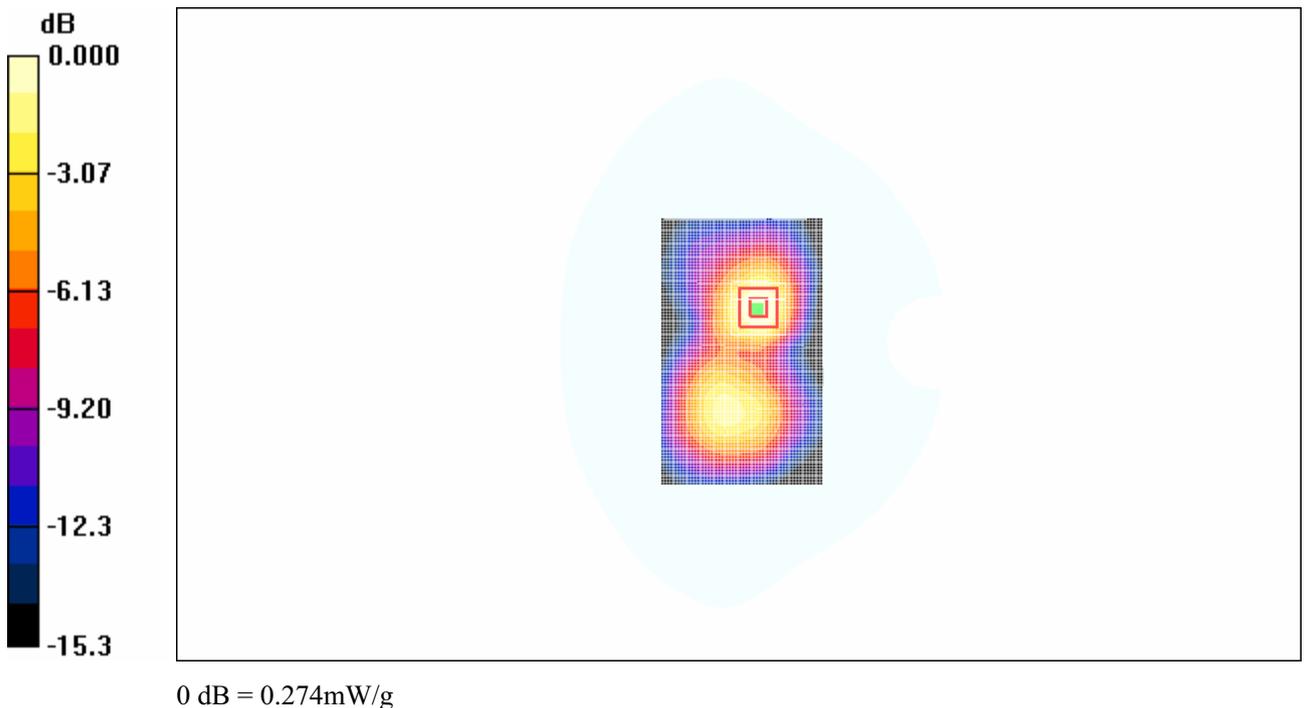
Toward Ground Low/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.342 mW/g**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

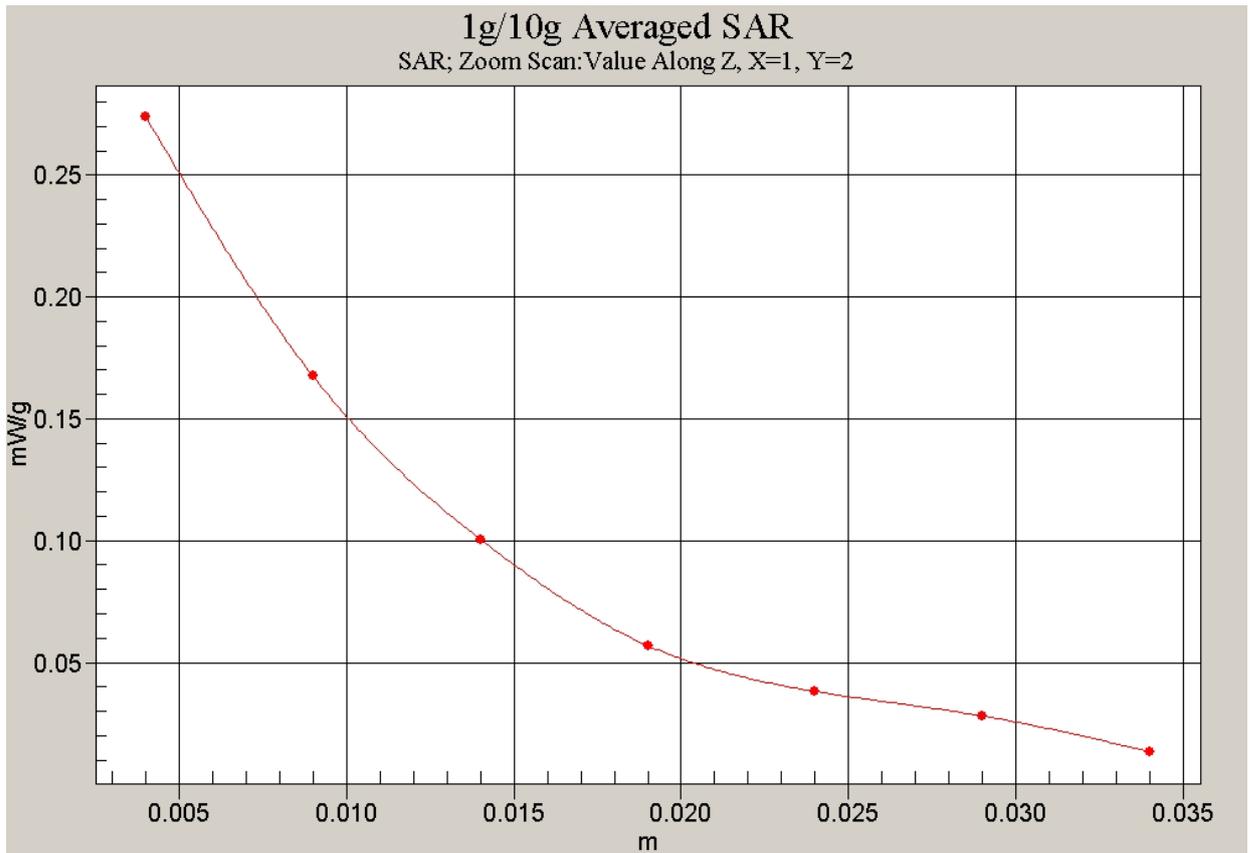
Reference Value = 8.56 V/m; Power Drift = 0.051 dB

Peak SAR (extrapolated) = 0.538 W/kg

SAR(1 g) = 0.291 mW/g; SAR(10 g) = 0.155 mW/g

Maximum value of SAR (measured) = 0.274 mW/g

**Fig. 65 PCS 1900MHz, Body, Towards Ground with GPRS, CH512**



**Fig. 66 Z-Scan at power reference point
(PCS 1900MHz, Body Towards Ground with GPRS, CH512)**

1900 Body Toward Phantom High with GPRS-slide up

Electronics: DAE3 Sn536

Medium: Body 1900 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:4

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

Toward Phantom High/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.148 mW/g

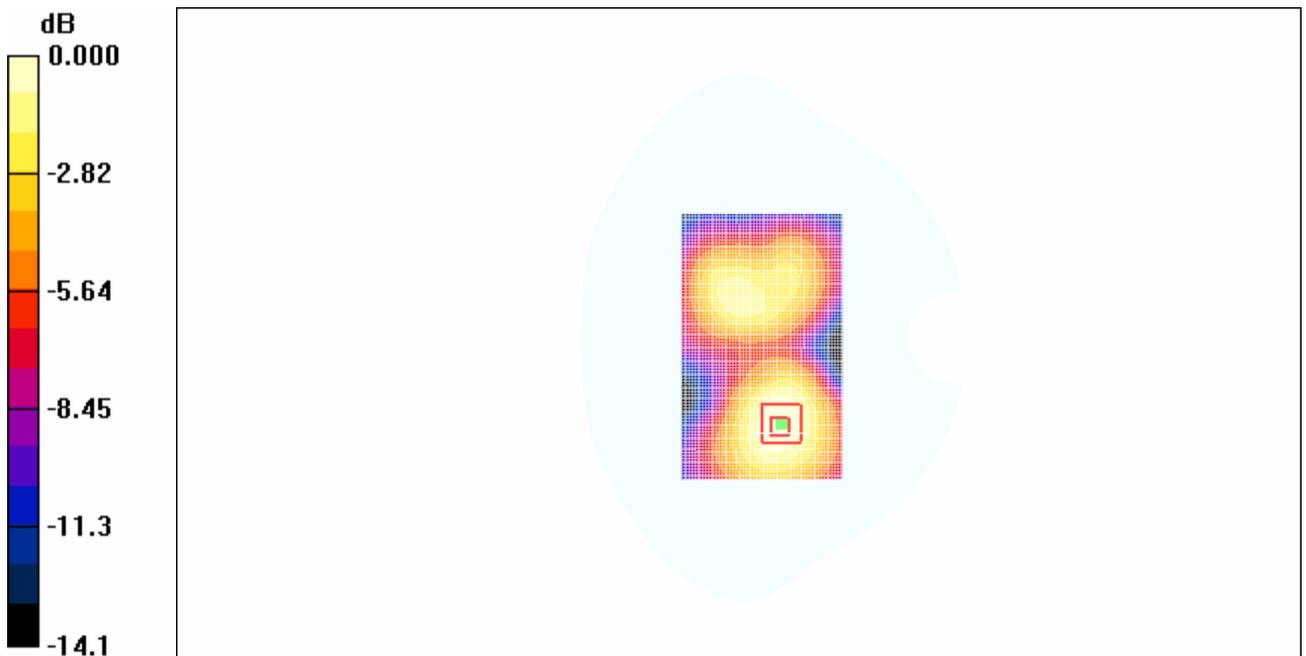
Toward Phantom High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.74 V/m; Power Drift = -0.016 dB

Peak SAR (extrapolated) = 0.220 W/kg

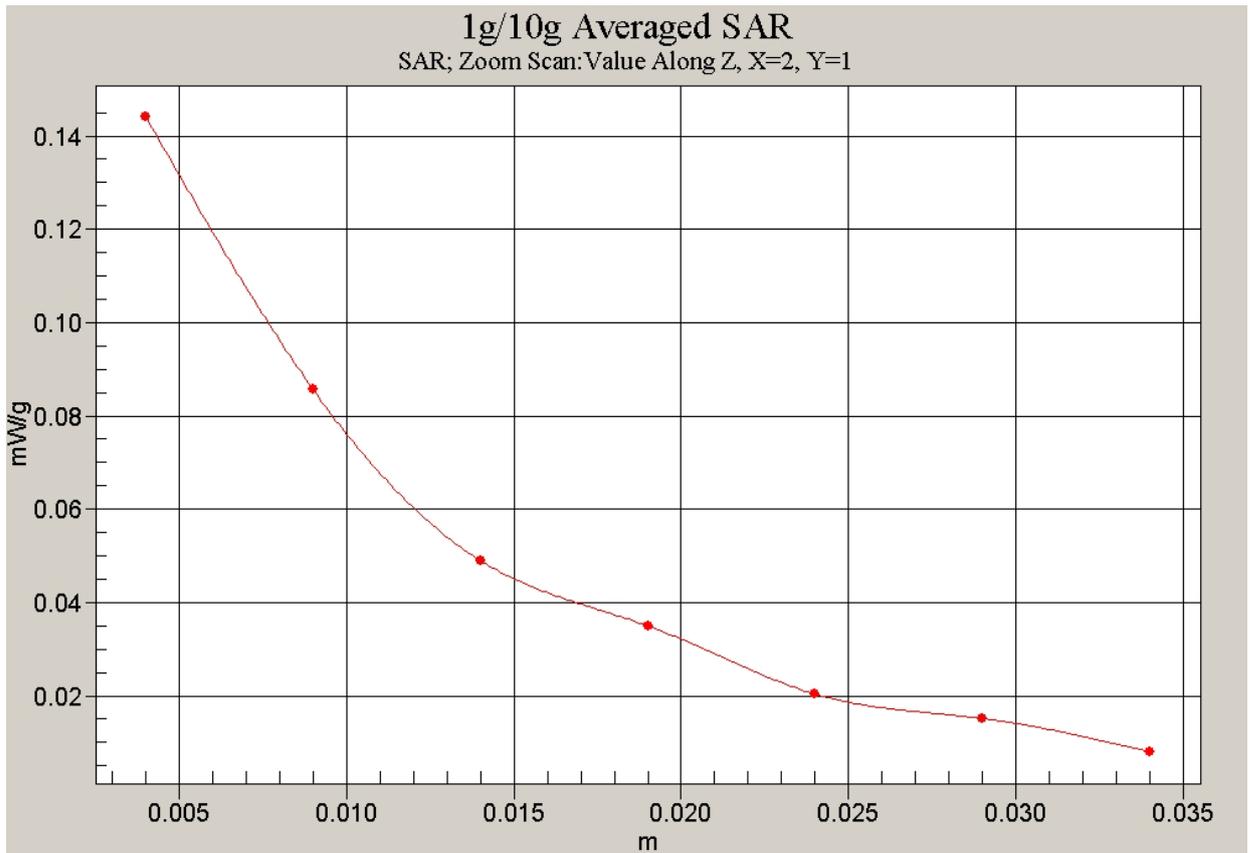
SAR(1 g) = 0.136 mW/g; SAR(10 g) = 0.084 mW/g

Maximum value of SAR (measured) = 0.144 mW/g



0 dB = 0.144mW/g

Fig. 67 PCS 1900MHz, Body, Towards Phantom with GPRS, CH810



**Fig. 68 Z-Scan at power reference point
(PCS 1900MHz, Body Towards Phantom with GPRS, CH810)**

1900 Body Toward Phantom Middle with GPRS-slide up

Electronics: DAE3 Sn536

Medium: Body 1900 MHz

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:4

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

Toward Phantom Middle/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.171 mW/g

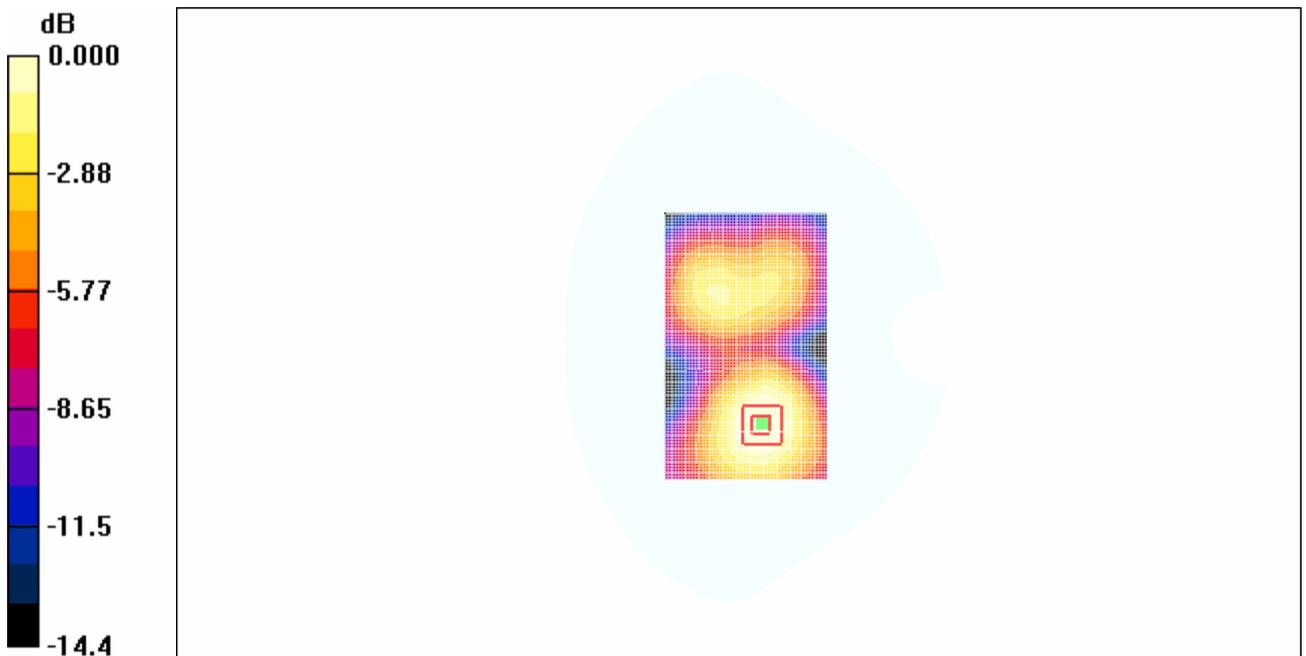
Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.56 V/m; Power Drift = -0.016 dB

Peak SAR (extrapolated) = 0.231 W/kg

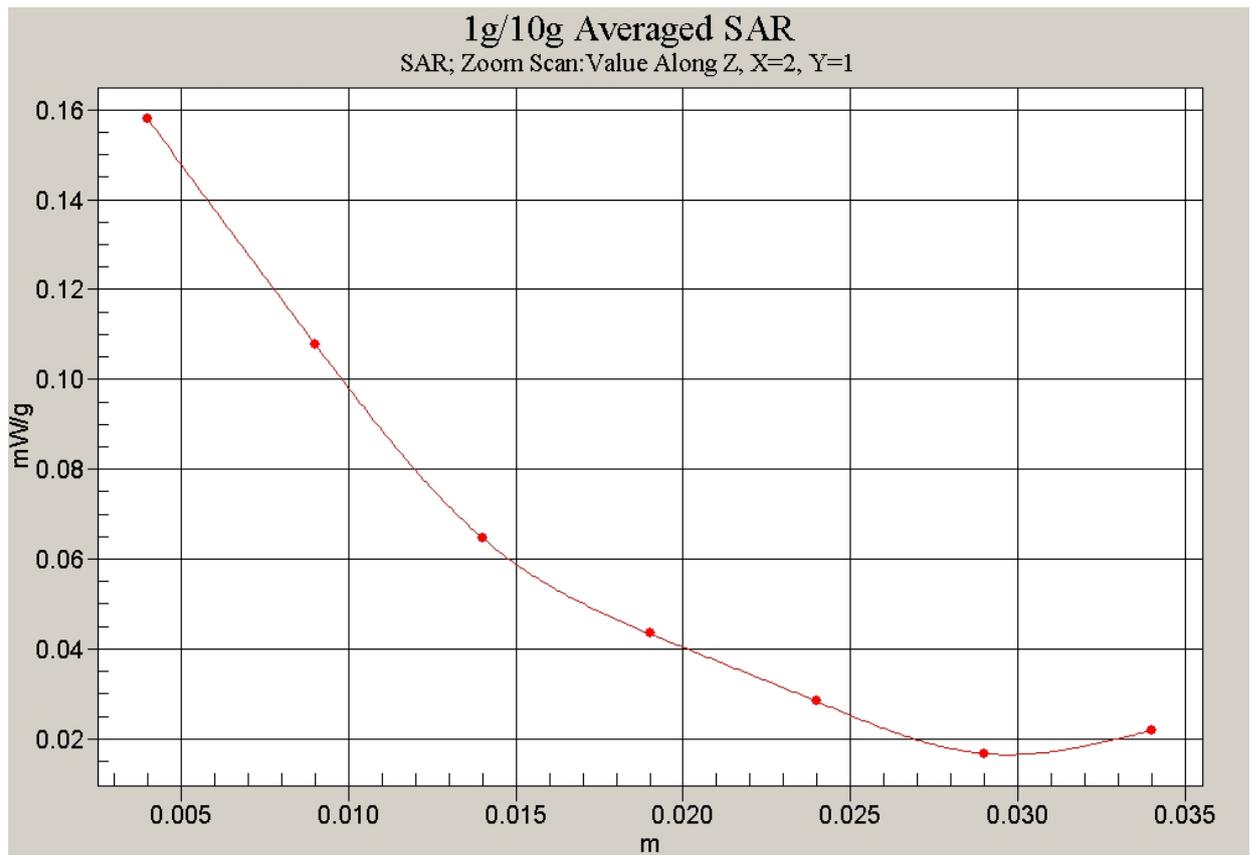
SAR(1 g) = 0.152 mW/g; SAR(10 g) = 0.096 mW/g

Maximum value of SAR (measured) = 0.158 mW/g



0 dB = 0.158mW/g

Fig. 69 PCS 1900MHz, Body, Towards Phantom with GPRS, CH661



**Fig. 70 Z-Scan at power reference point
(PCS 1900MHz, Body Towards Phantom with GPRS, CH661)**

1900 Body Toward Phantom Low with GPRS-slide up

Electronics: DAE3 Sn536

Medium: Body 1900 MHz

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:4

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

Toward Phantom Low/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.194 mW/g

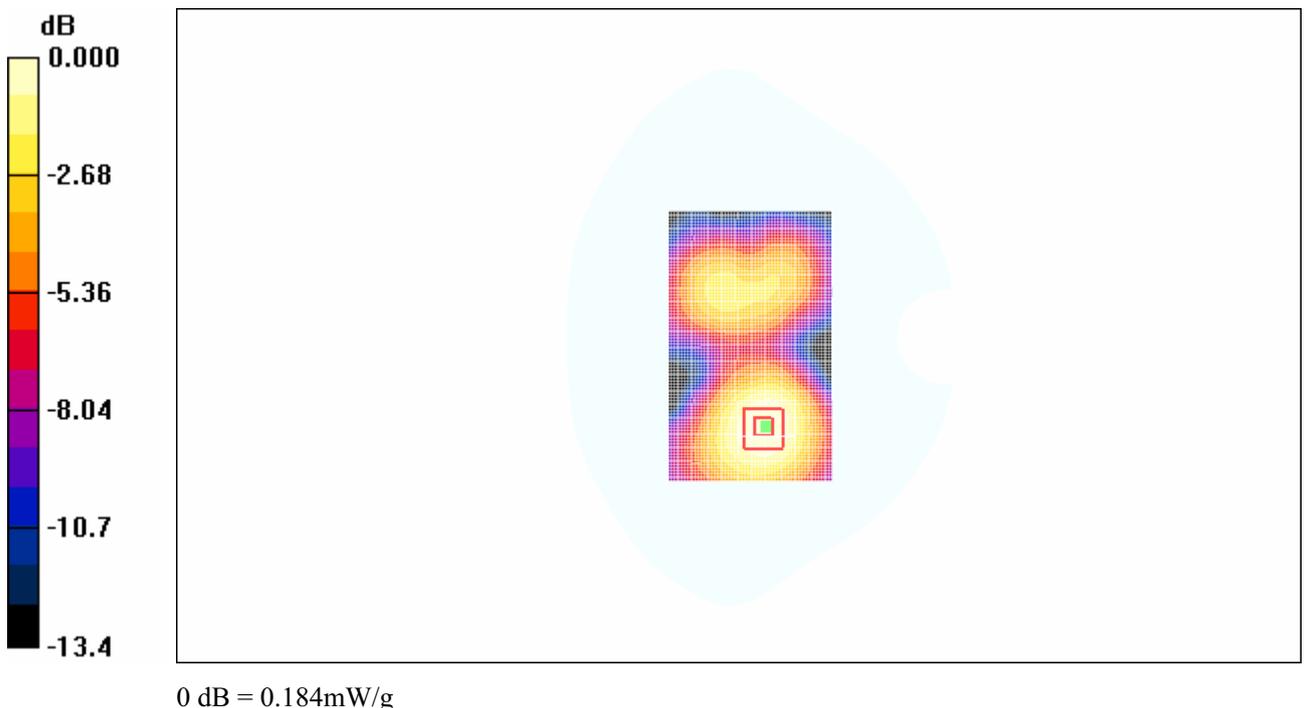
Toward Phantom Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

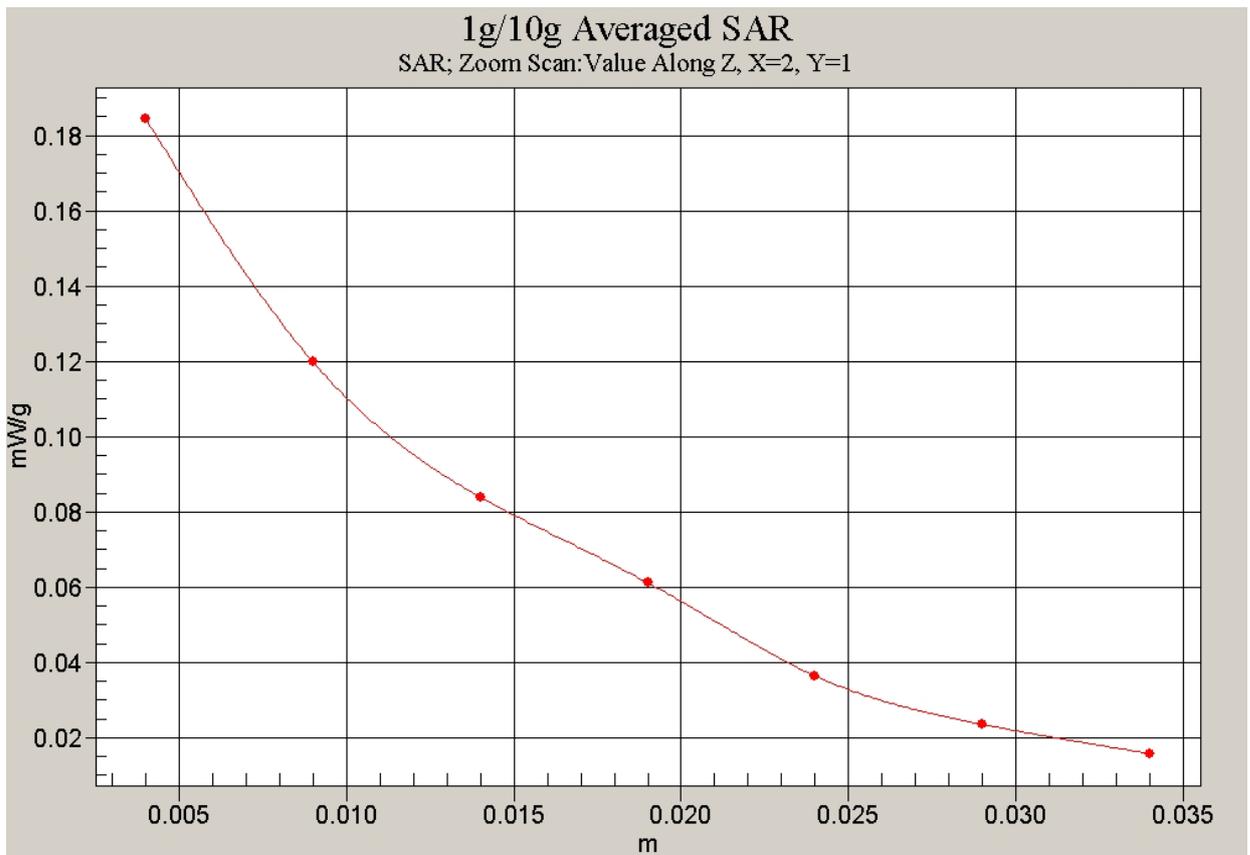
Reference Value = 6.04 V/m; Power Drift = -0.200 dB

Peak SAR (extrapolated) = 0.292 W/kg

SAR(1 g) = 0.179 mW/g; SAR(10 g) = 0.113 mW/g

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

**Fig. 71 PCS 1900MHz, Body, Towards Phantom with GPRS, CH512**



**Fig. 72 Z-Scan at power reference point
(PCS 1900MHz, Body Towards Phantom with GPRS, CH512)**

1900 Body Toward Ground High with EGPRS-slide down

Electronics: DAE3 Sn536

Medium: Body 1900 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:4

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

Toward Ground High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.276 mW/g

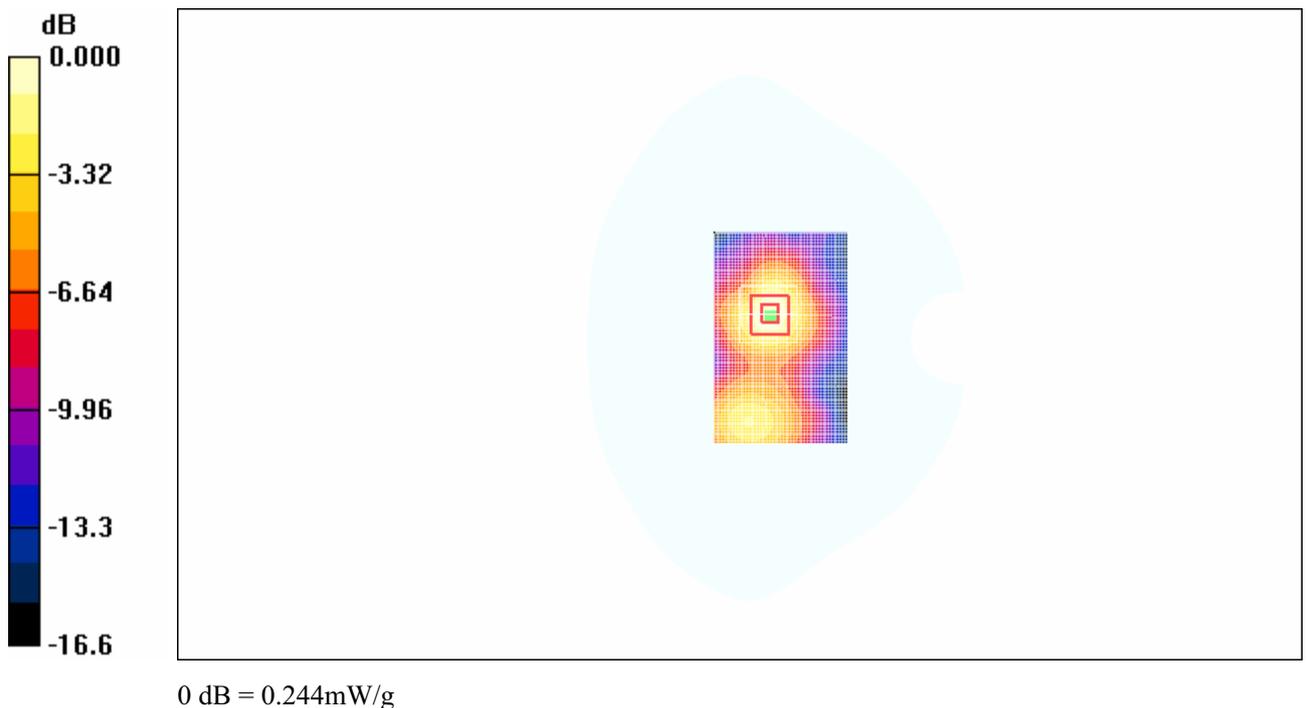
Toward Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

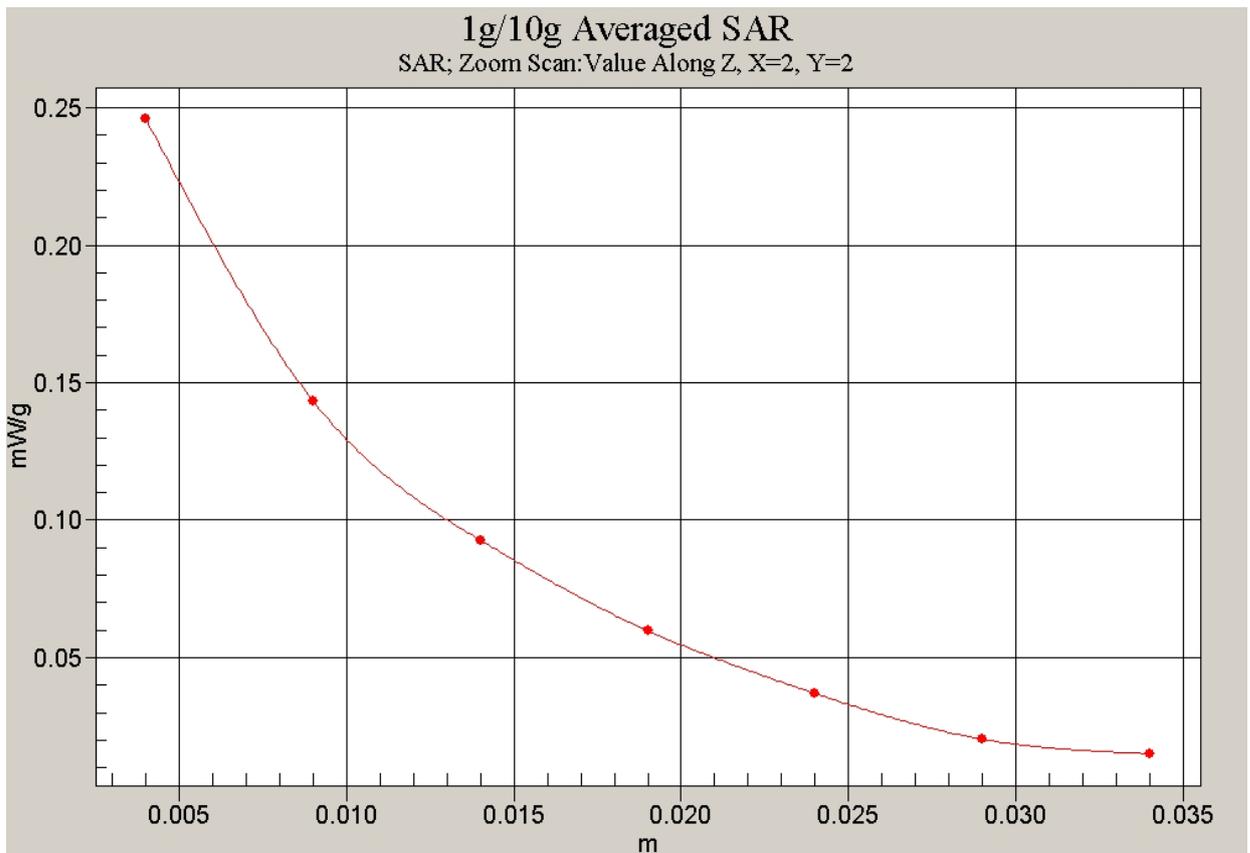
Reference Value = 9.8 V/m; Power Drift = -0.118 dB

Peak SAR (extrapolated) = 0.423 W/kg

SAR(1 g) = 0.239 mW/g; SAR(10 g) = 0.125 mW/g

Maximum value of SAR (measured) = 0.244 mW/g

**Fig. 73 PCS 1900MHz, Body, Towards Ground with EGPRS, CH810**



**Fig. 74 Z-Scan at power reference point
(PCS 1900MHz, Body, Towards Ground with EGPRS, CH810)
1900 Body Toward Ground High with Bluetooth Function-slide down
Electronics: DAE3 Sn536**

Medium: Body 1900 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3

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

Toward Ground High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
 Maximum value of SAR (interpolated) = 0.293 mW/g

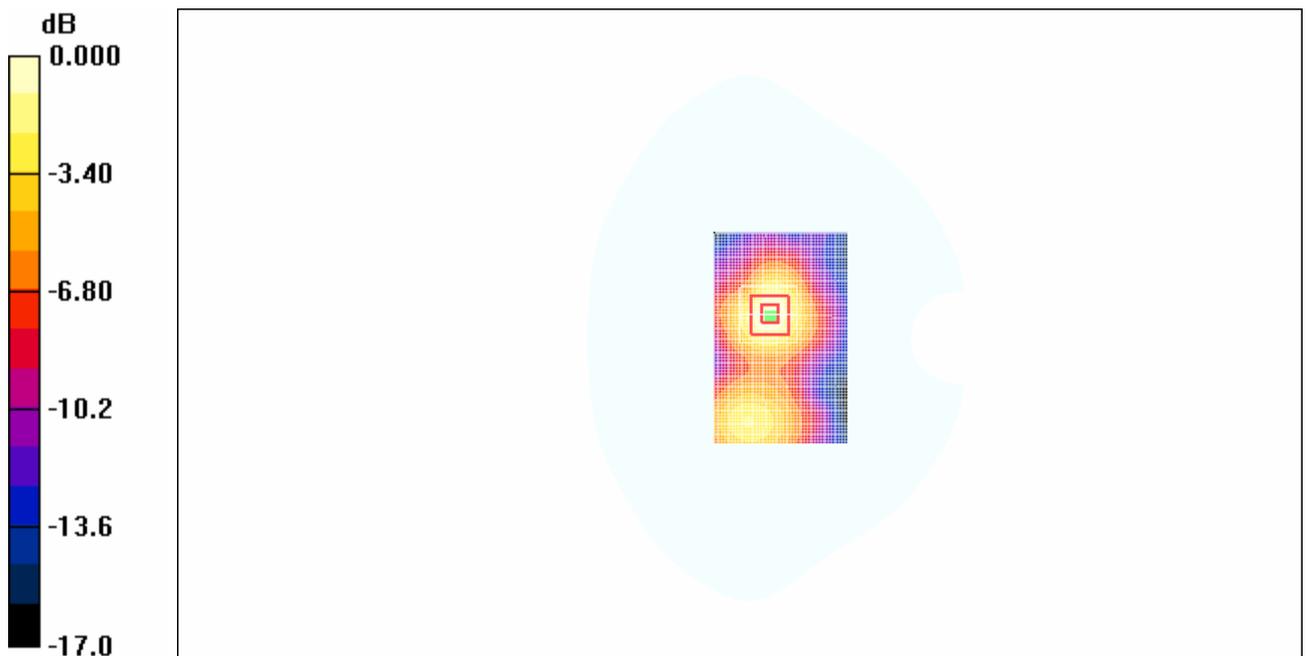
Toward Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.4 V/m; Power Drift = -0.162 dB

Peak SAR (extrapolated) = 0.441 W/kg

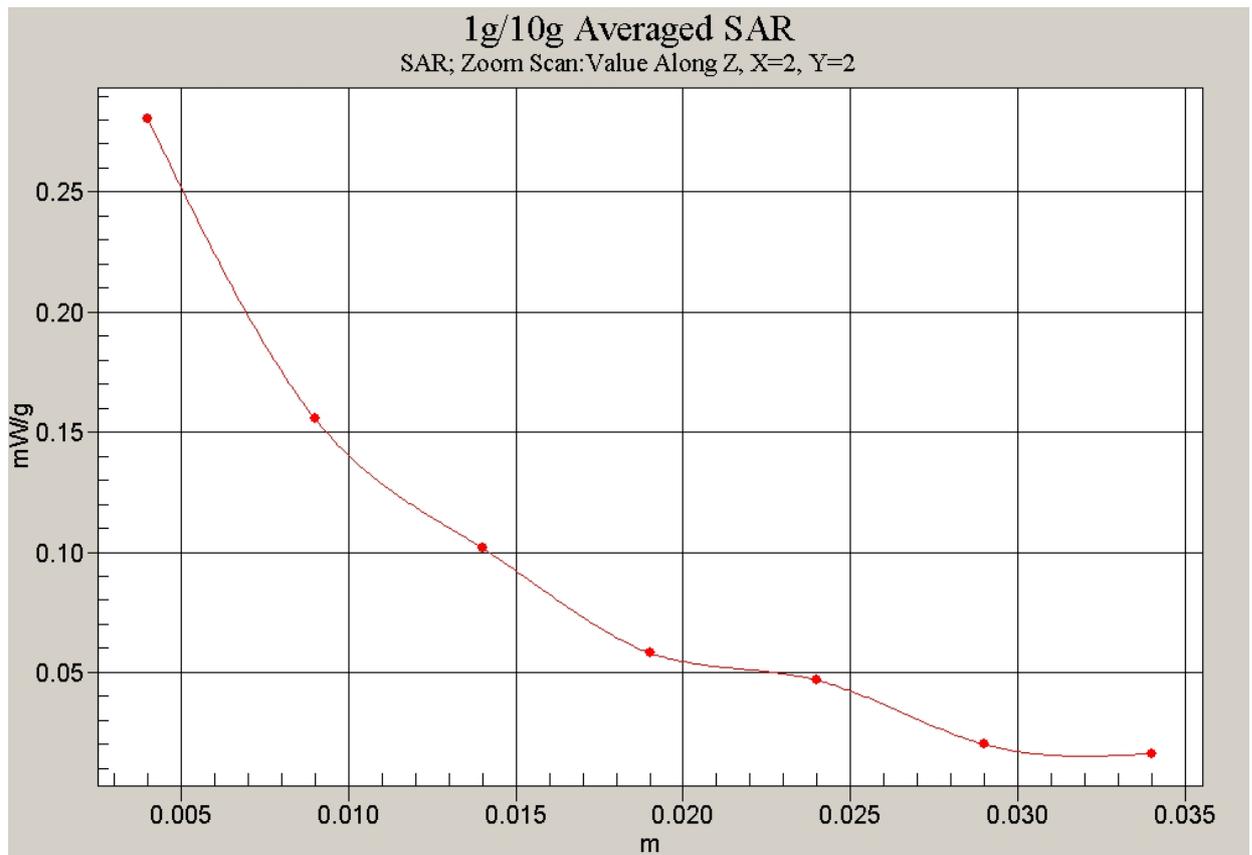
SAR(1 g) = 0.249 mW/g; SAR(10 g) = 0.138 mW/g

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



0 dB = 0.281mW/g

Fig. 75 PCS 1900MHz, Body, Towards Ground with Bluetooth, CH810



**Fig. 76 Z-Scan at power reference point
(PCS 1900MHz, Body, Towards Ground with Bluetooth, CH810)**

ANNEX D SYSTEM VALIDATION RESULTS

1900MHzDAE536Probe1736

Electronics: DAE3 Sn536

Medium: 1900 Head

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

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

Probe: ET3DV6 - SN1736 ConvF(5.4, 5.4, 5.4)

System Validation/Area Scan (101x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 11.2 mW/g

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 92.1 V/m; Power Drift = 0.1 dB

Peak SAR (extrapolated) = 16.9 W/kg

SAR(1 g) = 9.91 mW/g; SAR(10 g) = 5.27 mW/g

Maximum value of SAR (measured) = 11.3 mW/g

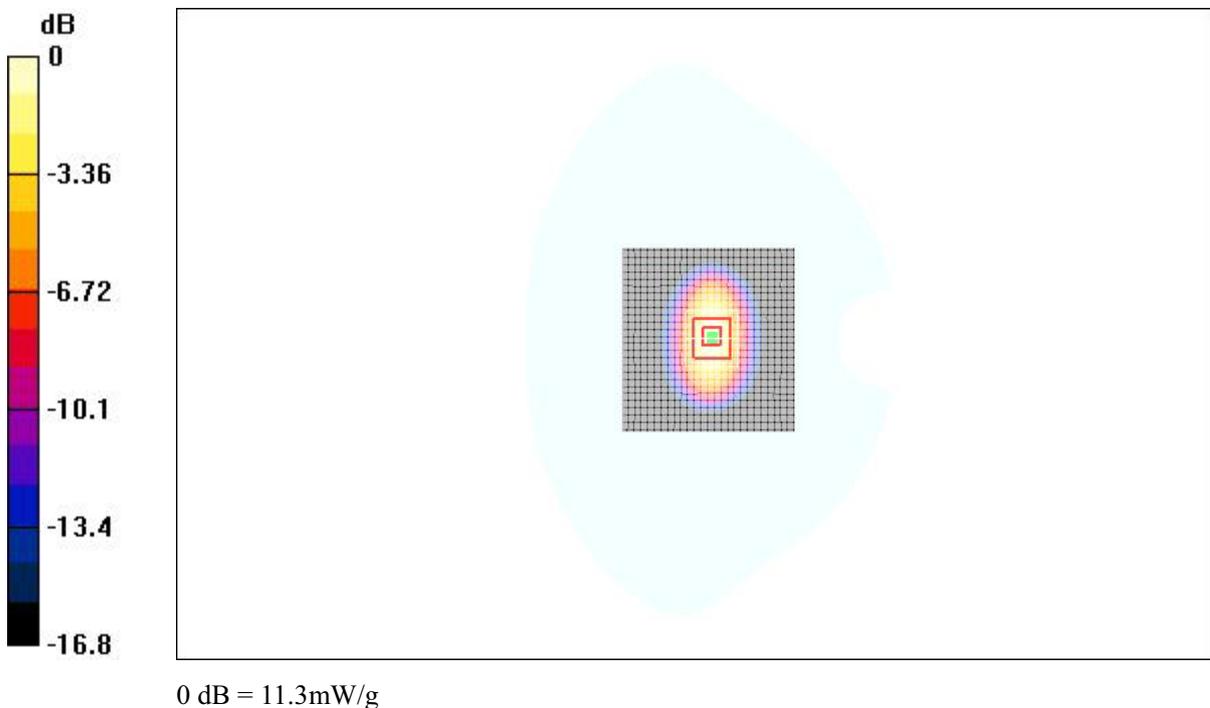


Fig.77 validation 1900MHz 250mW

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 Federal Office of metrology and Accreditation
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 **TMC China**

Certificate No.: **ET3DV6-1736_Dec06**

CALIBRATION CERTIFICATE																																															
Object	ET3DV6-SN: 1736																																														
Calibration procedure(s)	QA CAL-01.v5 Calibration procedure for dosimetric E-field probes																																														
Calibration date:	December 1, 2006																																														
Condition of the calibrated item	In Tolerance																																														
<p>This calibration certify documents the traceability to national standards, which realize the physical units of measurements(SI). All calibrations have been conducted at an environment temperature (22±3)⁰C and humidity<70%</p> <p>Calibration Equipment used (M&TE critical for calibration)</p> <table border="1"> <thead> <tr> <th>Primary Standards</th> <th>ID#</th> <th>Cal Data (Calibrated by, Certification NO.)</th> <th>Scheduled Calibration</th> </tr> </thead> <tbody> <tr> <td>Power meter E4419B</td> <td>GB341293874</td> <td>22-May-06 (METAS, NO. 251-00466)</td> <td>May-07</td> </tr> <tr> <td>Power sensor E4412A</td> <td>MY41495277</td> <td>22-May-06 (METAS, NO. 251-00466)</td> <td>May-07</td> </tr> <tr> <td>Power sensor E4412A</td> <td>MY41498087</td> <td>22-May-06 (METAS, NO. 251-00466)</td> <td>May-07</td> </tr> <tr> <td>Reference 20 dB Attenuator</td> <td>SN:S5086 (20b)</td> <td>22-May-06 (METAS, NO. 251-00467)</td> <td>May-07</td> </tr> <tr> <td>Reference Probe ES3DV2</td> <td>SN:S5086 (20b)</td> <td>22-May-06 (METAS, NO. 251-00467)</td> <td>May-07</td> </tr> <tr> <td>DAE4</td> <td>SN:3013</td> <td>13-Jan-06 (SPEAG, NO. ES3-3013_Jan06)</td> <td>Jan-07</td> </tr> <tr> <td>Reference Probe ES3DV2</td> <td>SN: 907</td> <td>11-Jun-06 (SPEAG, NO.DAE4-907_Jun06)</td> <td>Jun-07</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Secondary Standards</th> <th>ID#</th> <th>Check Data (in house)</th> <th>Scheduled Calibration</th> </tr> </thead> <tbody> <tr> <td>RF generator HP8648C</td> <td>US3642U01700</td> <td>4-Dec-05(SPEAG, in house check Dec-03)</td> <td>In house check: Dec-09</td> </tr> <tr> <td>Network Analyzer HP 8753E</td> <td>US37390585</td> <td>10-Nov-05(SPEAG, NO. DAE4-901_Nov-04)</td> <td>In house check: Nov-09</td> </tr> </tbody> </table>				Primary Standards	ID#	Cal Data (Calibrated by, Certification NO.)	Scheduled Calibration	Power meter E4419B	GB341293874	22-May-06 (METAS, NO. 251-00466)	May-07	Power sensor E4412A	MY41495277	22-May-06 (METAS, NO. 251-00466)	May-07	Power sensor E4412A	MY41498087	22-May-06 (METAS, NO. 251-00466)	May-07	Reference 20 dB Attenuator	SN:S5086 (20b)	22-May-06 (METAS, NO. 251-00467)	May-07	Reference Probe ES3DV2	SN:S5086 (20b)	22-May-06 (METAS, NO. 251-00467)	May-07	DAE4	SN:3013	13-Jan-06 (SPEAG, NO. ES3-3013_Jan06)	Jan-07	Reference Probe ES3DV2	SN: 907	11-Jun-06 (SPEAG, NO.DAE4-907_Jun06)	Jun-07	Secondary Standards	ID#	Check Data (in house)	Scheduled Calibration	RF generator HP8648C	US3642U01700	4-Dec-05(SPEAG, in house check Dec-03)	In house check: Dec-09	Network Analyzer HP 8753E	US37390585	10-Nov-05(SPEAG, NO. DAE4-901_Nov-04)	In house check: Nov-09
Primary Standards	ID#	Cal Data (Calibrated by, Certification NO.)	Scheduled Calibration																																												
Power meter E4419B	GB341293874	22-May-06 (METAS, NO. 251-00466)	May-07																																												
Power sensor E4412A	MY41495277	22-May-06 (METAS, NO. 251-00466)	May-07																																												
Power sensor E4412A	MY41498087	22-May-06 (METAS, NO. 251-00466)	May-07																																												
Reference 20 dB Attenuator	SN:S5086 (20b)	22-May-06 (METAS, NO. 251-00467)	May-07																																												
Reference Probe ES3DV2	SN:S5086 (20b)	22-May-06 (METAS, NO. 251-00467)	May-07																																												
DAE4	SN:3013	13-Jan-06 (SPEAG, NO. ES3-3013_Jan06)	Jan-07																																												
Reference Probe ES3DV2	SN: 907	11-Jun-06 (SPEAG, NO.DAE4-907_Jun06)	Jun-07																																												
Secondary Standards	ID#	Check Data (in house)	Scheduled Calibration																																												
RF generator HP8648C	US3642U01700	4-Dec-05(SPEAG, in house check Dec-03)	In house check: Dec-09																																												
Network Analyzer HP 8753E	US37390585	10-Nov-05(SPEAG, NO. DAE4-901_Nov-04)	In house check: Nov-09																																												
Calibrated by:	Name Nico Vetterli	Function Laboratory Technician	Signature 																																												
Approved by:	Name Katja Pokovic	Function Technical Director	Signature 																																												
Issued: December 1, 2006																																															
This calibration certificate shall not be reported except in full without written approval of the laboratory.																																															

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 Federal Office of Metrology and Accreditation
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
NORM _{x,y,z}	sensitivity in free space
ConF	sensitivity in TSL / NORM _{x,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., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- 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
- CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}:** Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not effect the E²-field uncertainty inside TSL (see below *ConvF*).
- NORM(f)_{x,y,z} = NORM_{x,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*.
- DCP_{x,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 $f \leq 800$ 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 NORM_{x,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: 1736

December 1, 2006

Probe ET3DV6

SN: 1736

Manufactured: September 27, 2002

Last calibrated: November 25, 2005

Recalibrated: December 1, 2006

Calibrated for DASYS System

ET3DV6 SN: 1736

December 1, 2006

DASY - Parameters of Probe: ET3DV6 SN:1736**Sensitivity in Free Space^A**

NormX	1.97 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$
NormY	1.75 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$
NormZ	1.97 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$

Diode Compression^B

DCP X	93 mV
DCP Y	93 mV
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	9.6	5.0
SAR _{be} [%]	With Correction Algorithm	0.1	0.3

TSL 1810 MHz Typical SAR gradient: 10 % per mm

Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm
SAR _{be} [%]	Without Correction Algorithm	13.2	8.8
SAR _{be} [%]	With Correction Algorithm	0.6	0.1

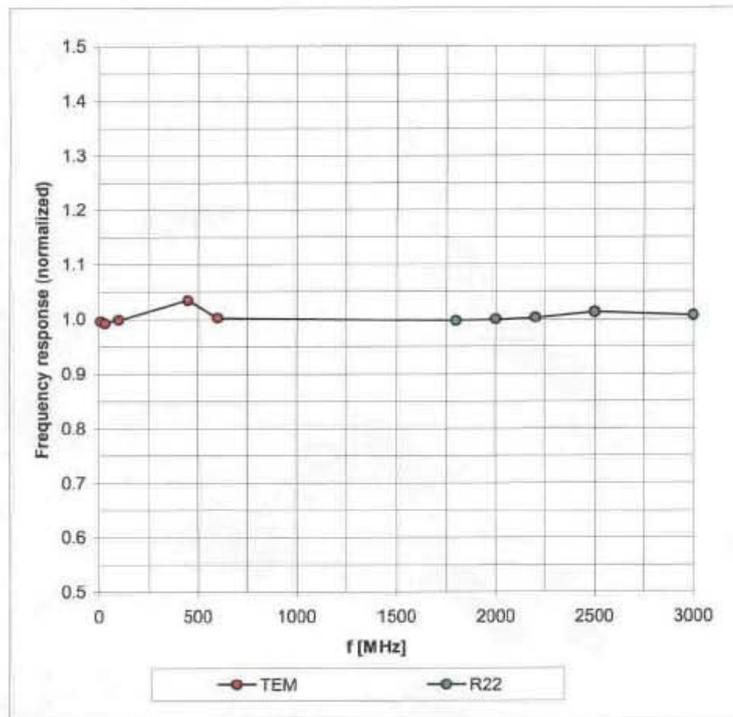
Sensor OffsetProbe Tip to Sensor Center **2.7 mm**

ET3DV6 SN: 1736

December 1, 2006

Frequency Response of E-Field

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

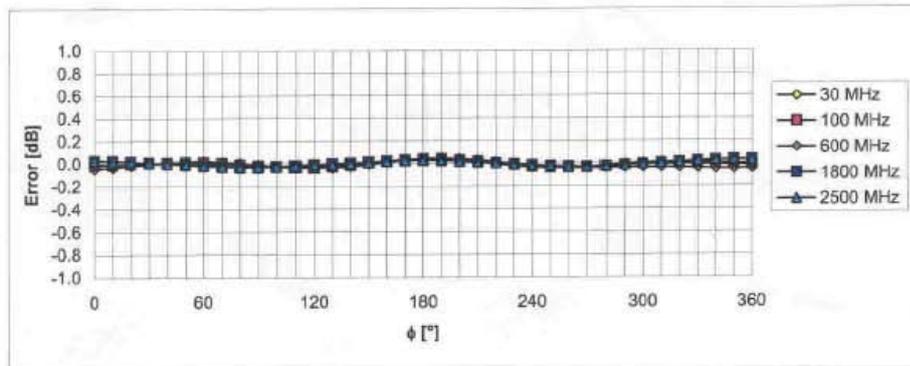
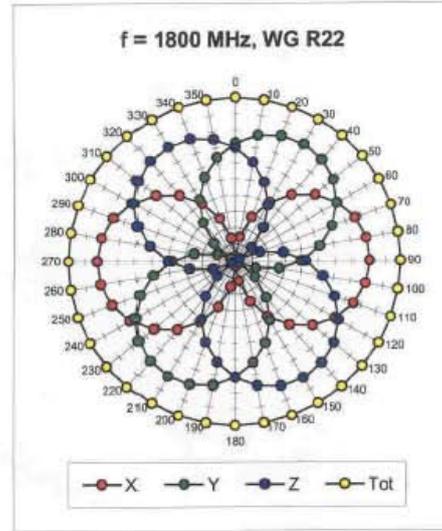
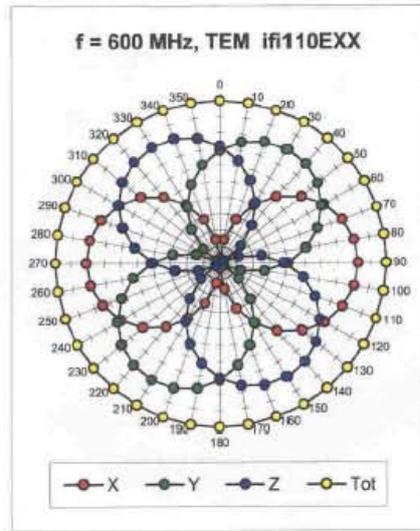


Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

ET3DV6 SN: 1736

December 1, 2006

Receiving Pattern (ϕ), $\vartheta = 0^\circ$

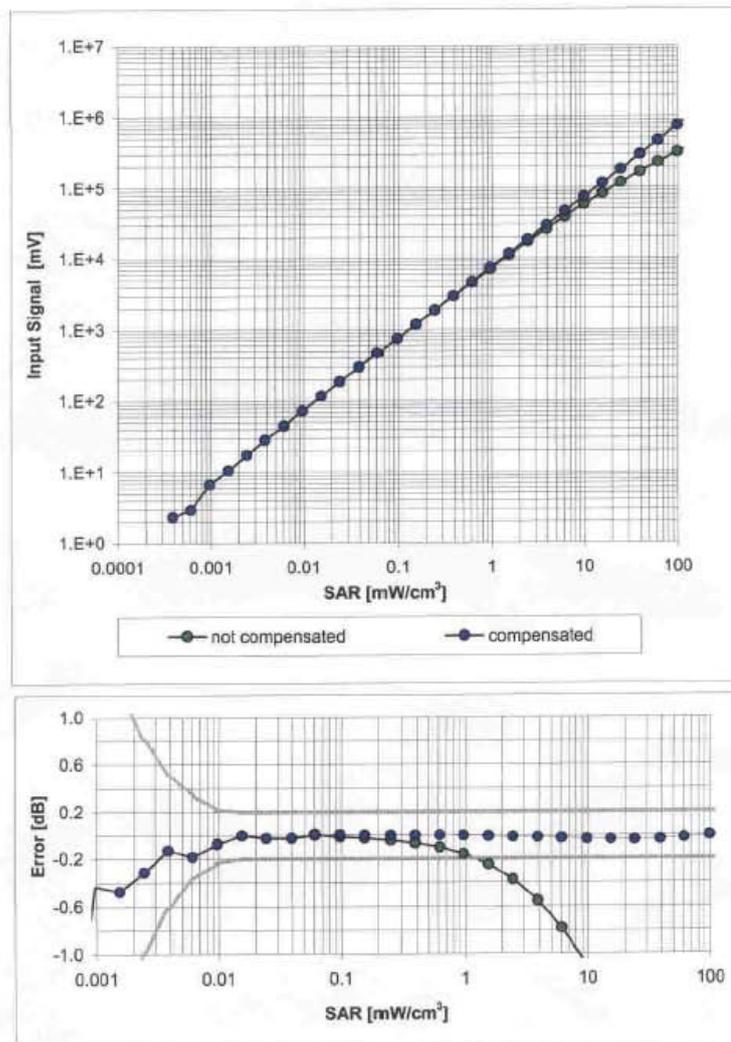


Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

ET3DV6 SN: 1736

December 1, 2006

Dynamic Range $f(SAR_{head})$ (Waveguide R22, $f = 1800$ MHz)

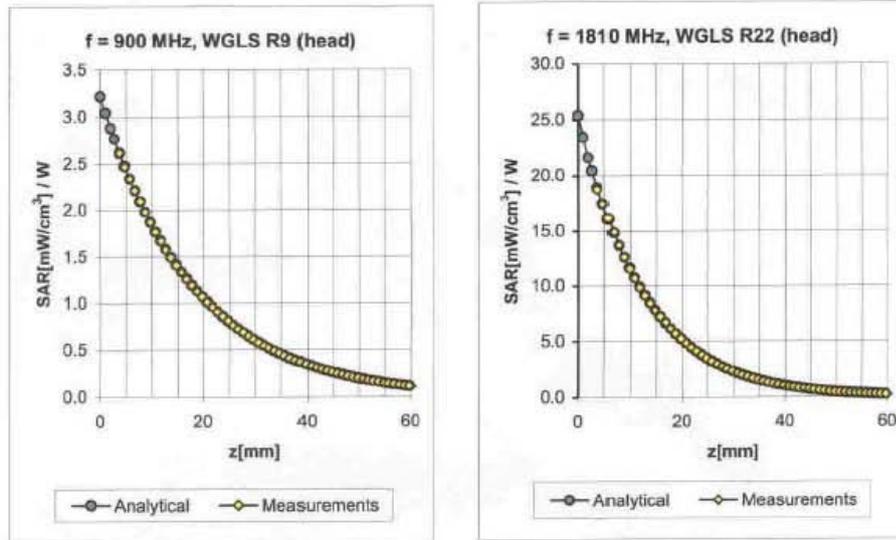


Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

ET3DV6 SN: 1736

December 1, 2006

Conversion Factor Assessment



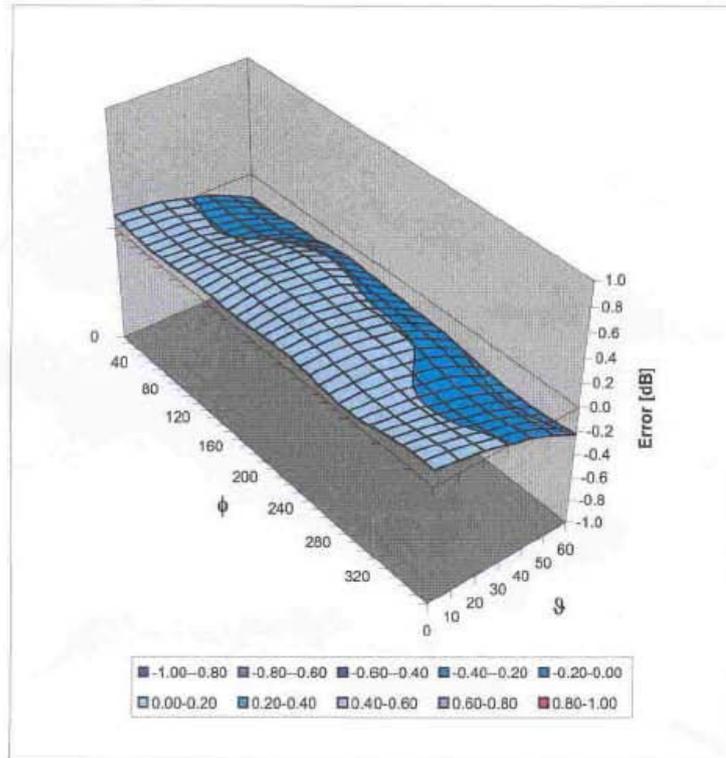
f [MHz]	Validity [MHz] ^C	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.56	1.85	6.51 ± 11.0% (k=2)
1810	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.57	2.47	5.40 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.62	2.29	4.67 ± 11.8% (k=2)
450	± 50 / ± 100	Body	56.7 ± 5%	0.94 ± 5%	0.12	1.61	7.74 ± 13.3% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.47	2.15	6.45 ± 11.0% (k=2)
1810	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.53	2.78	4.88 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.65	2.11	4.35 ± 11.8% (k=2)

ET3DV6 SN: 1736

December 1, 2006

Deviation from Isotropy in HSL

Error (ϕ , θ), $f = 900$ MHz



Uncertainty of Spherical Isotropy Assessment: $\pm 2.6\%$ ($k=2$)

ANNEX F DIPOLE 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 Federal Office of metrology and accreditation
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates
Client: TMC China

Accreditation No.: SCS 108

Certificate No.: D1900V2-541_Feb07

CALIBRATION CERTIFICATE																																															
Object	D1900V2-SN: 541																																														
Calibration procedure(s)	QA CAL-05.v6 Calibration procedure for dipole validation kits																																														
Calibration date:	February 20, 2007																																														
Condition of the calibrated item	In Tolerance																																														
<p>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.</p> <p>All calibrations have been conducted at an environment temperature (22±3)°C and humidity<70%</p> <p>Calibration Equipment used (M&TE critical for calibration)</p> <table border="1"> <thead> <tr> <th>Primary Standards</th> <th>ID#</th> <th>Cal Data (Calibrated by, Certification NO.)</th> <th>Scheduled Calibration</th> </tr> </thead> <tbody> <tr> <td>Power meter EPM-442A</td> <td>GB37480704</td> <td>03-Oct-06 (METAS, NO. 217-00608)</td> <td>Oct-07</td> </tr> <tr> <td>Power sensor 8481A</td> <td>US37292783</td> <td>03-Oct-06 (METAS, NO. 217-00608)</td> <td>Oct-07</td> </tr> <tr> <td>Reference 20 dB Attenuator</td> <td>SN:5086 (20g)</td> <td>10-Aug-05 (METAS, NO. 217-00591)</td> <td>Aug-07</td> </tr> <tr> <td>Reference 10 dB Attenuator</td> <td>SN:5047_2 (10r)</td> <td>10-Aug-06 (METAS, NO. 217-00591)</td> <td>Aug-07</td> </tr> <tr> <td>DAE4</td> <td>SN:901</td> <td>30-Jan-07 (SPEAG, NO DAE4-601_Jan07)</td> <td>Jan-08</td> </tr> <tr> <td>Reference Probe ET3DV6 (HF)</td> <td>SN: 1507</td> <td>19-Oct-06 (SPEAG, NO. ET3-1507_Oct06)</td> <td>Oct-07</td> </tr> <tr> <th>Secondary Standards</th> <th>ID#</th> <th>Check Data (in house)</th> <th>Scheduled Calibration</th> </tr> <tr> <td>Power sensor HP 8481A</td> <td>MY41092317</td> <td>18-Oct-02(SPEAG, in house check Oct-05)</td> <td>In house check: Oct-07</td> </tr> <tr> <td>RF generator Agilent E4421B</td> <td>MY41000676</td> <td>11-May-05(SPEAG, in house check Nov-05)</td> <td>In house check: Nov -07</td> </tr> <tr> <td>Network Analyzer HP 8753E</td> <td>US37390585S4206</td> <td>18-Oct-01(SPEAG, in house check Oct-06)</td> <td>In house check: Oct -07</td> </tr> </tbody> </table>				Primary Standards	ID#	Cal Data (Calibrated by, Certification NO.)	Scheduled Calibration	Power meter EPM-442A	GB37480704	03-Oct-06 (METAS, NO. 217-00608)	Oct-07	Power sensor 8481A	US37292783	03-Oct-06 (METAS, NO. 217-00608)	Oct-07	Reference 20 dB Attenuator	SN:5086 (20g)	10-Aug-05 (METAS, NO. 217-00591)	Aug-07	Reference 10 dB Attenuator	SN:5047_2 (10r)	10-Aug-06 (METAS, NO. 217-00591)	Aug-07	DAE4	SN:901	30-Jan-07 (SPEAG, NO DAE4-601_Jan07)	Jan-08	Reference Probe ET3DV6 (HF)	SN: 1507	19-Oct-06 (SPEAG, NO. ET3-1507_Oct06)	Oct-07	Secondary Standards	ID#	Check Data (in house)	Scheduled Calibration	Power sensor HP 8481A	MY41092317	18-Oct-02(SPEAG, in house check Oct-05)	In house check: Oct-07	RF generator Agilent E4421B	MY41000676	11-May-05(SPEAG, in house check Nov-05)	In house check: Nov -07	Network Analyzer HP 8753E	US37390585S4206	18-Oct-01(SPEAG, in house check Oct-06)	In house check: Oct -07
Primary Standards	ID#	Cal Data (Calibrated by, Certification NO.)	Scheduled Calibration																																												
Power meter EPM-442A	GB37480704	03-Oct-06 (METAS, NO. 217-00608)	Oct-07																																												
Power sensor 8481A	US37292783	03-Oct-06 (METAS, NO. 217-00608)	Oct-07																																												
Reference 20 dB Attenuator	SN:5086 (20g)	10-Aug-05 (METAS, NO. 217-00591)	Aug-07																																												
Reference 10 dB Attenuator	SN:5047_2 (10r)	10-Aug-06 (METAS, NO. 217-00591)	Aug-07																																												
DAE4	SN:901	30-Jan-07 (SPEAG, NO DAE4-601_Jan07)	Jan-08																																												
Reference Probe ET3DV6 (HF)	SN: 1507	19-Oct-06 (SPEAG, NO. ET3-1507_Oct06)	Oct-07																																												
Secondary Standards	ID#	Check Data (in house)	Scheduled Calibration																																												
Power sensor HP 8481A	MY41092317	18-Oct-02(SPEAG, in house check Oct-05)	In house check: Oct-07																																												
RF generator Agilent E4421B	MY41000676	11-May-05(SPEAG, in house check Nov-05)	In house check: Nov -07																																												
Network Analyzer HP 8753E	US37390585S4206	18-Oct-01(SPEAG, in house check Oct-06)	In house check: Oct -07																																												
Calibrated by:	Name Marcel Fehr	Function Laboratory Technician	Signature 																																												
Approved by:	Name Katja Pokovic	Function Technical Director	Signature 																																												
Issued: February 21, 2007																																															
This calibration certificate shall not be reported except in full without written approval of the laboratory.																																															

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 Federal Office of Metrology and Accreditation
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
ConvF sensitivity in TSL / NORM x,y,z
N/A not applicable or not measured

Calibration is Performed According to the Following Standards:

- 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
- CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001
- Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- DASY4 System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:* SAR measured at the stated antenna input power.
- SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY4	V4.7
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz \pm 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 \pm 0.2) °C	38.9 \pm 6 %	1.38 mho/m \pm 6 %
Head TSL temperature during test	(22.1 \pm 0.2) °C	—	—

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	condition	
SAR measured	250 mW input power	9.73 mW /g
SAR normalized	normalized to 1W	38.9 mW /g
SAR for nominal Head TSL parameters ¹	normalized to 1W	38.6 mW / g \pm 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.08 mW /g
SAR normalized	normalized to 1W	20.4 mW /g
SAR for nominal Head TSL parameters ¹	normalized to 1W	20.2 mW / g \pm 16.5 % (k=2)

¹ Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix**Antenna Parameters with Head TSL**

Impedance, transformed to feed point	48.4 Ω - 8.9 j Ω
Return Loss	-26.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.214 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	October 4 , 2001

DASY4 Validation Report for Head TSL

Date/Time: 20.02.2007 09:25:37

Test laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; serial: D1900V2-SN: 541

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

Medium: HSL 1900 MHz;

Medium parameters used: $f=1900$ MHz; $\sigma=1.38$ mho/m; $\epsilon_r=38.9$; $\rho=1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6-SN1507(HF); ConvF(5.03, 5.03, 5.03); Calibrated: 19.10.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.1_2007
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA;
- Measurement SW: DASY, V4.7 Build 53; Post processing SW: SEMCAD, V1.8 Build 172

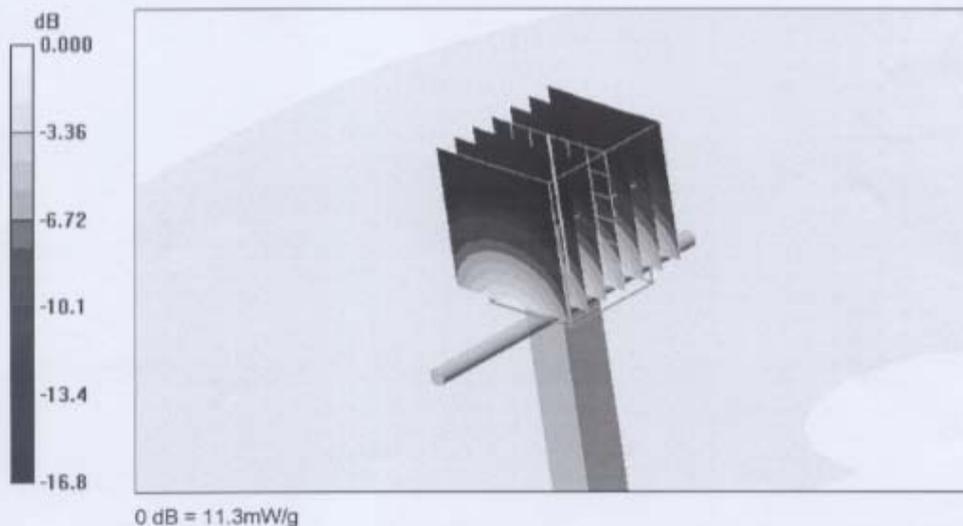
Pin = 250 mW; d = 15 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 92.1 V/m; Power Drift = 0.059 dB

Peak SAR (extrapolated) = 16.9 W/kg

SAR(1 g) = 9.73 mW/g; SAR(10 g) = 5.09 mW/g

Maximum value of SAR (measured) = 11.3 mW/g



Impedance measurement Plot for Head TSL

