

**1900 Right Tilt High-slide down**

Date/Time: 2007-8-10 12:01:23

Electronics: DAE3 Sn536

Medium: 1900 Head

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.38$  mho/m;  $\epsilon_r = 39.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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 (51x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.416 mW/g

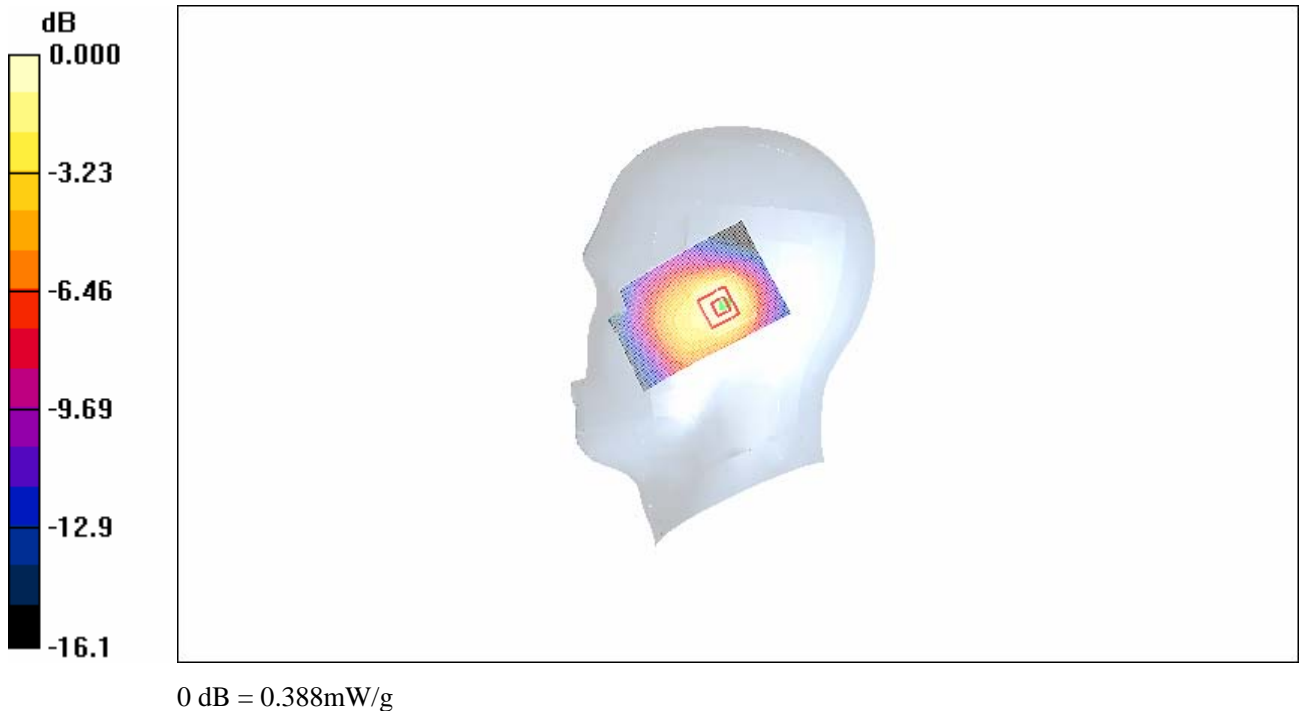
**Tilt High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.8 V/m; Power Drift = -0.061 dB

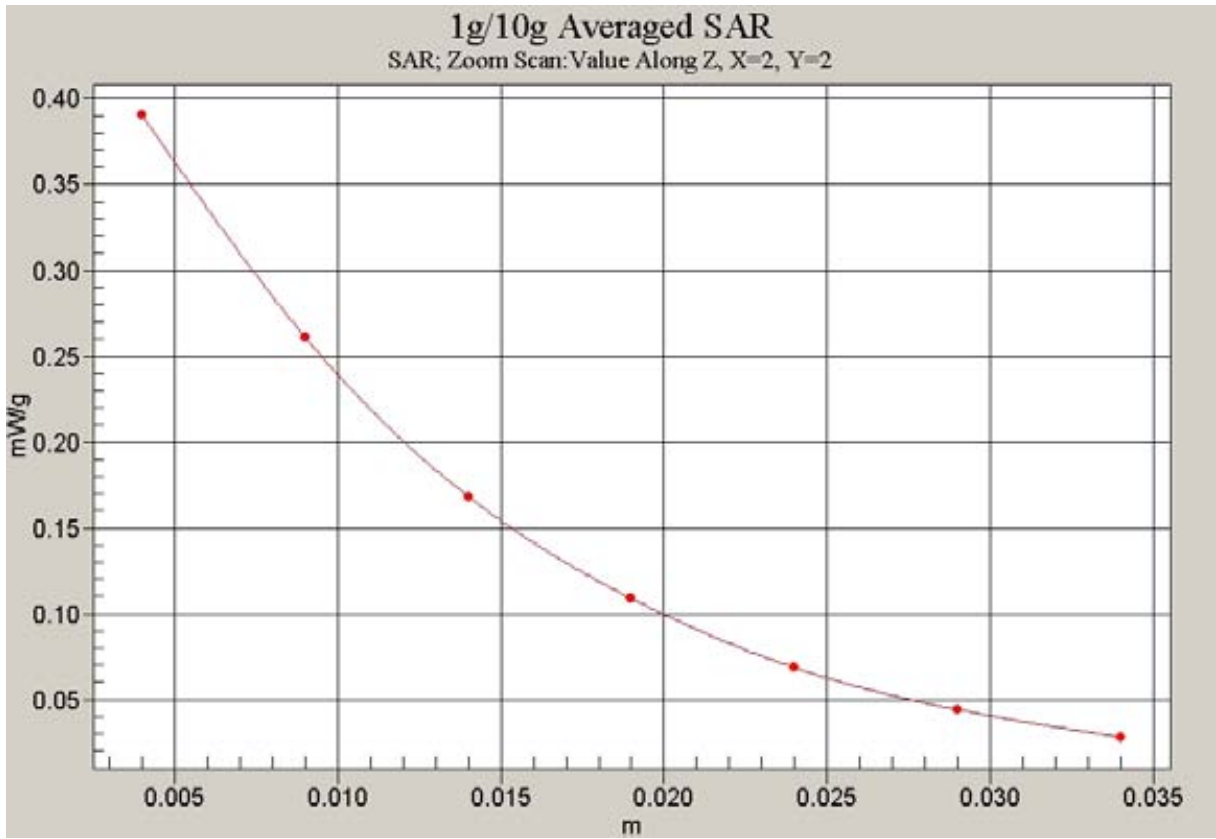
Peak SAR (extrapolated) = 0.536 W/kg

**SAR(1 g) = 0.362 mW/g; SAR(10 g) = 0.222 mW/g**

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



**Fig. 45 1900 MHz CH810**



**Fig. 46 Z-Scan at power reference point (1900 MHz CH810)**

**1900 Right Tilt Middle-slide down**

Date/Time: 2007-8-10 11:39:52

Electronics: DAE3 Sn536

Medium: 1900 Head

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.35 \text{ mho/m}$ ;  $\epsilon_r = 39.4$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $23.3^\circ\text{C}$       Liquid Temperature:  $22.5^\circ\text{C}$

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 (51x81x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

Maximum value of SAR (interpolated) =  $0.413 \text{ mW/g}$

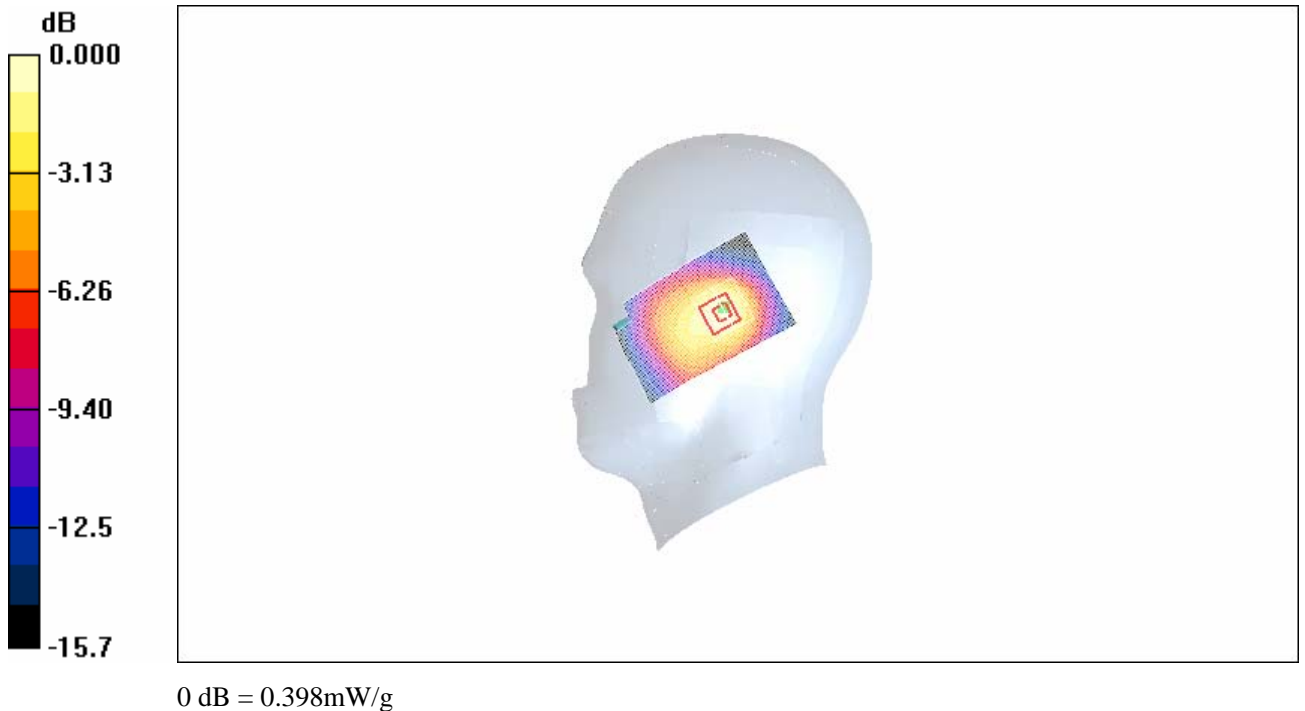
**Tilt Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $15.8 \text{ V/m}$ ; Power Drift =  $-0.035 \text{ dB}$

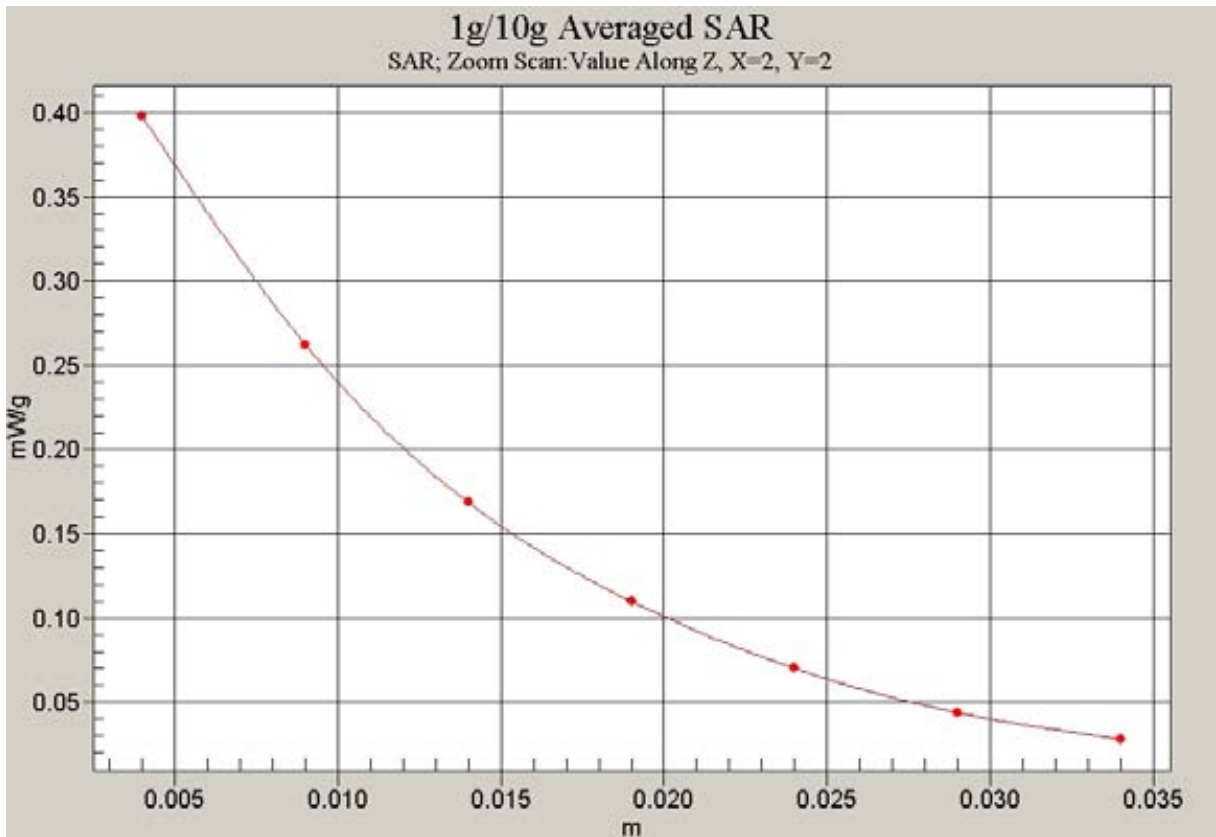
Peak SAR (extrapolated) =  $0.536 \text{ W/kg}$

**SAR(1 g) =  $0.366 \text{ mW/g}$ ; SAR(10 g) =  $0.227 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.398 \text{ mW/g}$



**Fig.47 1900 MHz CH661**



**Fig. 48 Z-Scan at power reference point (1900 MHz CH661)**

**1900 Right Tilt Low-slide down**

Date/Time: 2007-8-10 11:17:33

Electronics: DAE3 Sn536

Medium: 1900 Head

Medium parameters used (interpolated):  $f = 1850.2$  MHz;  $\sigma = 1.32$  mho/m;  $\epsilon_r = 39.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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 (51x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.383 mW/g

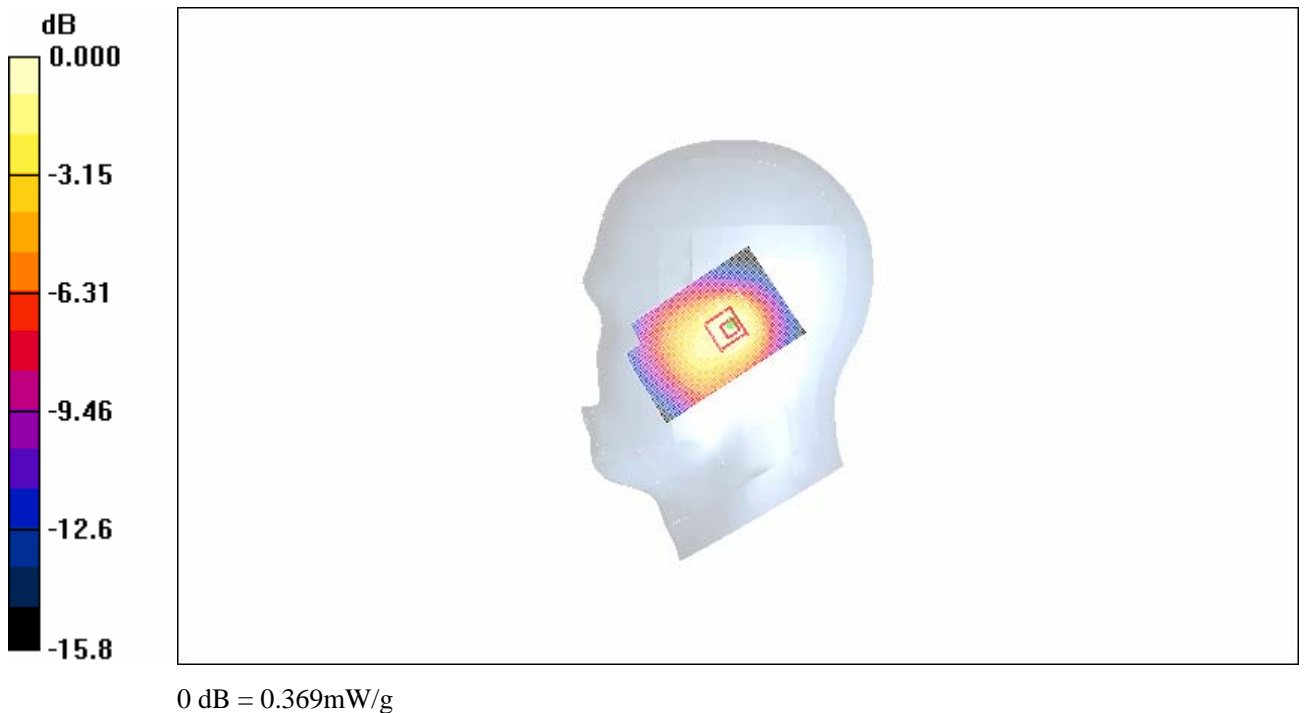
**Tilt Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.1 V/m; Power Drift = -0.043 dB

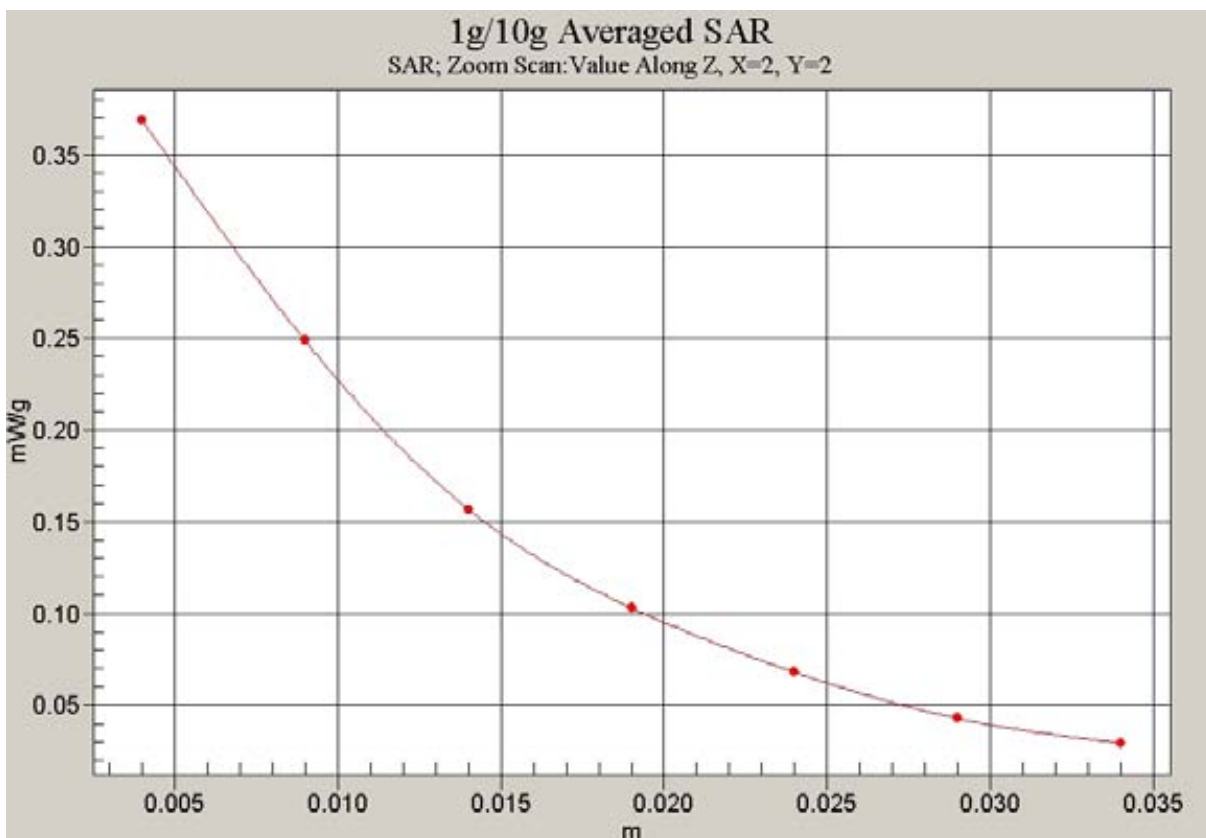
Peak SAR (extrapolated) = 0.489 W/kg

**SAR(1 g) = 0.342 mW/g; SAR(10 g) = 0.215 mW/g**

Maximum value of SAR (measured) = 0.369 mW/g



**Fig.49 1900 MHz CH512**



**Fig. 50 Z-Scan at power reference point (1900 MHz CH512)**

**1900 Left Cheek Low-slide up**

Date/Time: 2007-8-10 12:35:28

Electronics: DAE3 Sn536

Medium: 1900 Head

Medium parameters used (interpolated):  $f = 1850.2$  MHz;  $\sigma = 1.32$  mho/m;  $\epsilon_r = 39.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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) = 0.358 mW/g

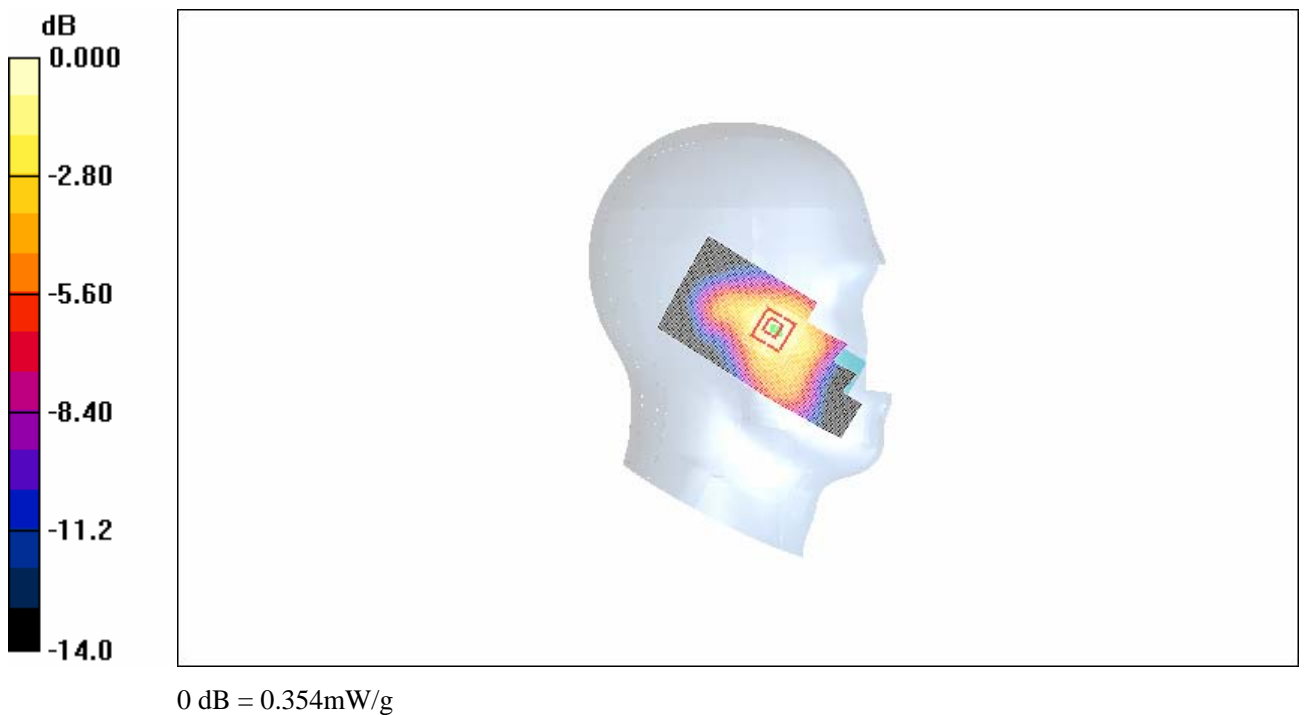
**Cheek Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.17 V/m; Power Drift = -0.068 dB

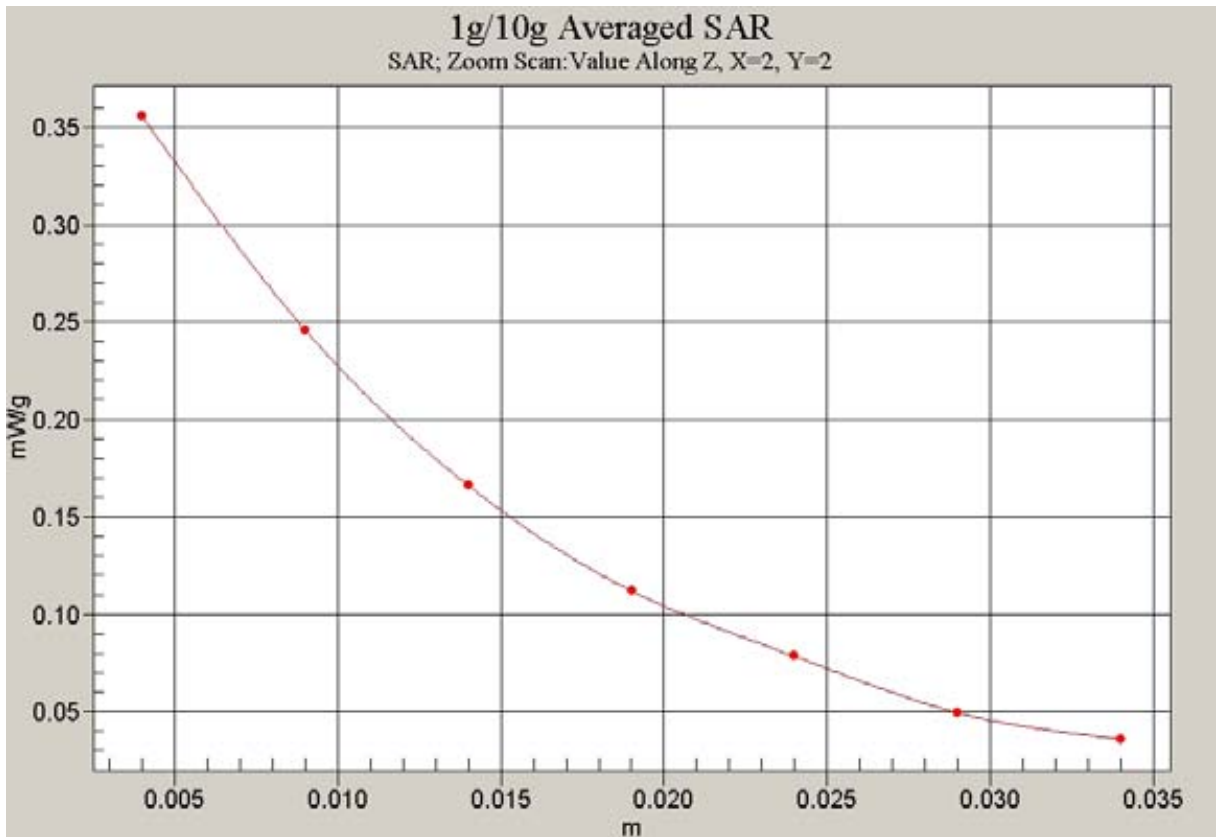
Peak SAR (extrapolated) = 0.477 W/kg

**SAR(1 g) = 0.323 mW/g; SAR(10 g) = 0.198 mW/g**

Maximum value of SAR (measured) = 0.354 mW/g



**Fig. 51 1900 MHz CH512**



**Fig. 52 Z-Scan at power reference point (1900 MHz CH512)**



### 850 Body GPRS Toward Phantom High-slide down

Date/Time: 2007-8-8 13:45:26

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 1.01$  mho/m;  $\epsilon_r = 53.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:4

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

**Toward Phantom High/Area Scan (51x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.234 mW/g

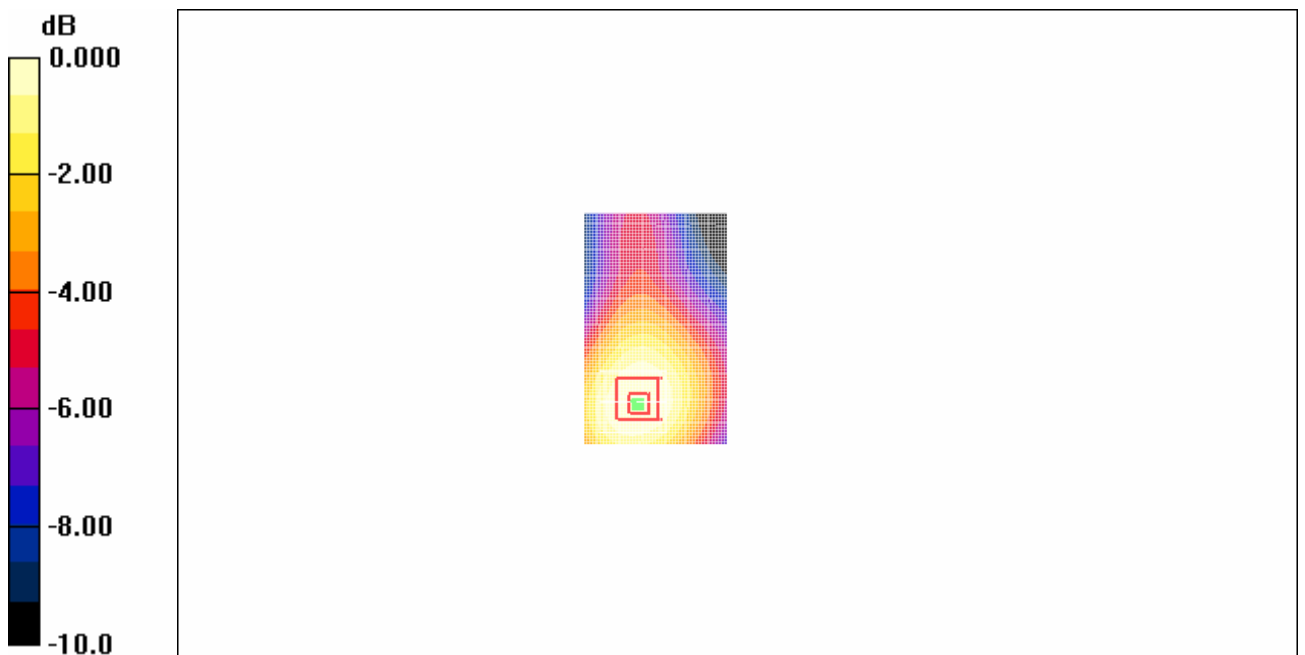
**Toward Phantom High/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.7 V/m; Power Drift = -0.114 dB

Peak SAR (extrapolated) = 0.278 W/kg

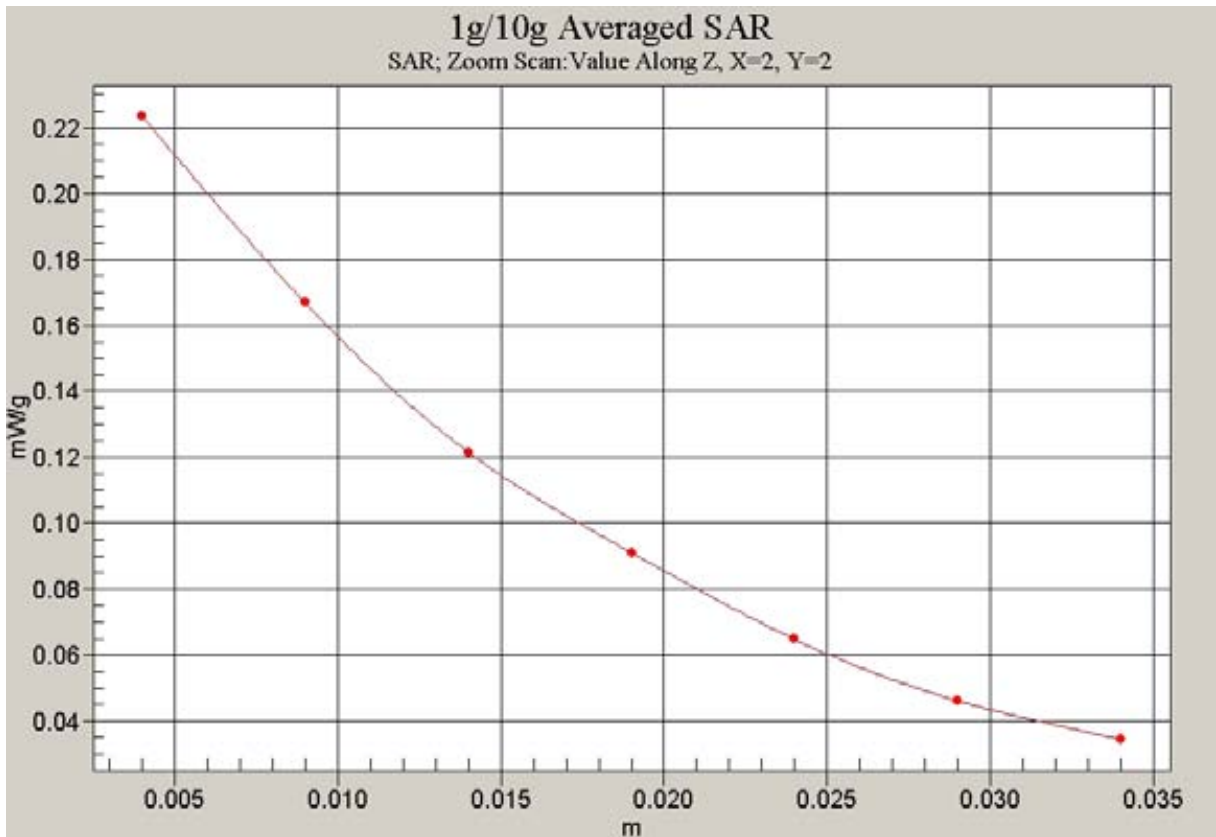
**SAR(1 g) = 0.213 mW/g; SAR(10 g) = 0.153 mW/g**

Maximum value of SAR (measured) = 0.223 mW/g



0 dB = 0.223mW/g

**Fig. 53 850 MHz CH251**



**Fig. 54 Z-Scan at power reference point (850 MHz CH251)**

**850 Body GPRS Toward Phantom Middle -slide down**

Date/Time: 2007-8-8 14:07:18

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 1$  mho/m;  $\epsilon_r = 53.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: GSM 850 GPRS Frequency: 836.6 MHz Duty Cycle: 1:4

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

**Toward Phantom Middle/Area Scan (51x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.251 mW/g

**Toward Phantom Middle/Zoom Scan (4x4x7)/Cube 0:** Measurement grid:

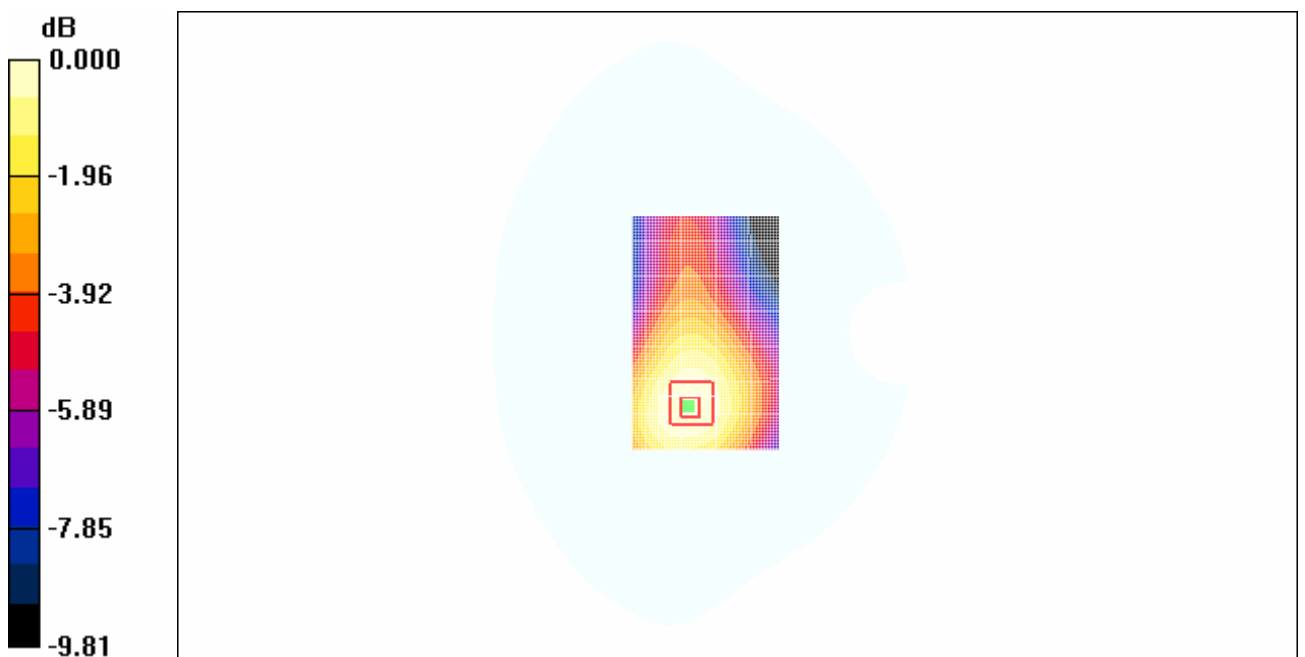
dx=10mm, dy=10mm, dz=5mm

Reference Value = 12.7 V/m; Power Drift = -0.109 dB

Peak SAR (extrapolated) = 0.314 W/kg

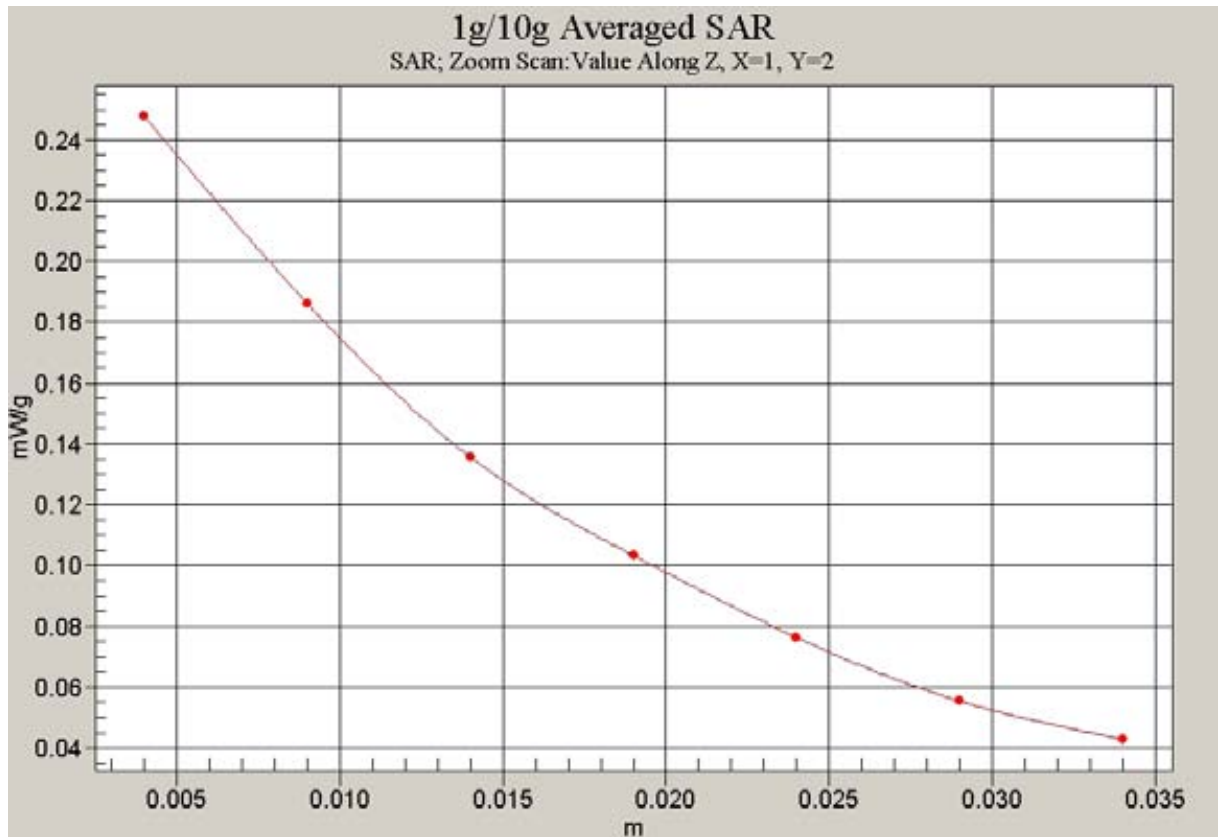
**SAR(1 g) = 0.239 mW/g; SAR(10 g) = 0.171 mW/g**

Maximum value of SAR (measured) = 0.248 mW/g



0 dB = 0.248mW/g

**Fig. 55 850 MHz CH190**



**Fig. 56 Z-Scan at power reference point (850 MHz CH190)**

### 850 Body GPRS Toward Phantom Low-slide down

Date/Time: 2007-8-8 14:29:21

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used:  $f = 825$  MHz;  $\sigma = 0.99$  mho/m;  $\epsilon_r = 53.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: GSM 850 GPRS Frequency: 824.2 MHz Duty Cycle: 1:4

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

**Toward Phantom Low/Area Scan (51x81x1):** Measurement grid: dx=15mm, dy=15mm

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

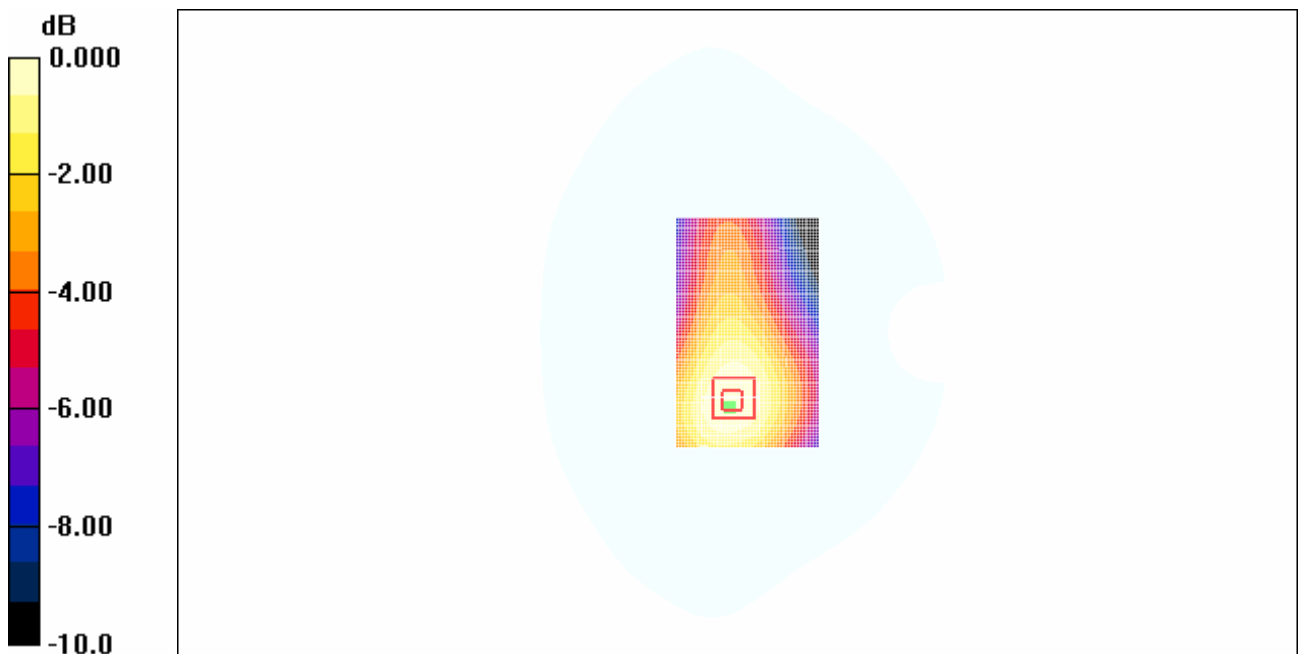
**Toward Phantom Low/Zoom Scan (4x4x7)/Cube 0:** Measurement grid: dx=10mm, dy=10mm, dz=5mm

Reference Value = 14.1 V/m; Power Drift = 0.015 dB

Peak SAR (extrapolated) = 0.348 W/kg

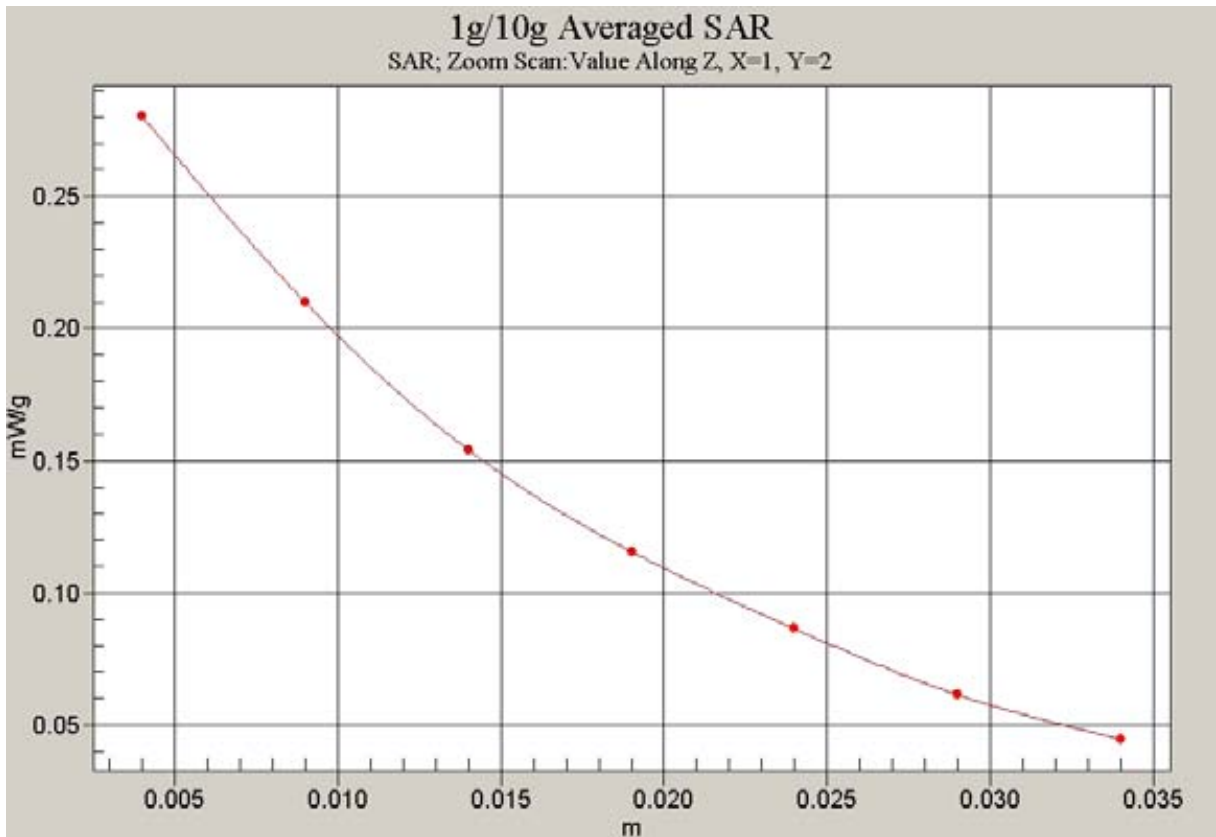
**SAR(1 g) = 0.267 mW/g; SAR(10 g) = 0.192 mW/g**

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



0 dB = 0.280mW/g

Fig. 57 850 MHz CH128



**Fig. 58 Z-Scan at power reference point (850 MHz CH128)**

### 850 Body GPRS Toward Ground High-slide down

Date/Time: 2007-8-8 15:33:35

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 1.01$  mho/m;  $\epsilon_r = 53.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:4

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

**Toward Ground High/Area Scan (51x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.689 mW/g

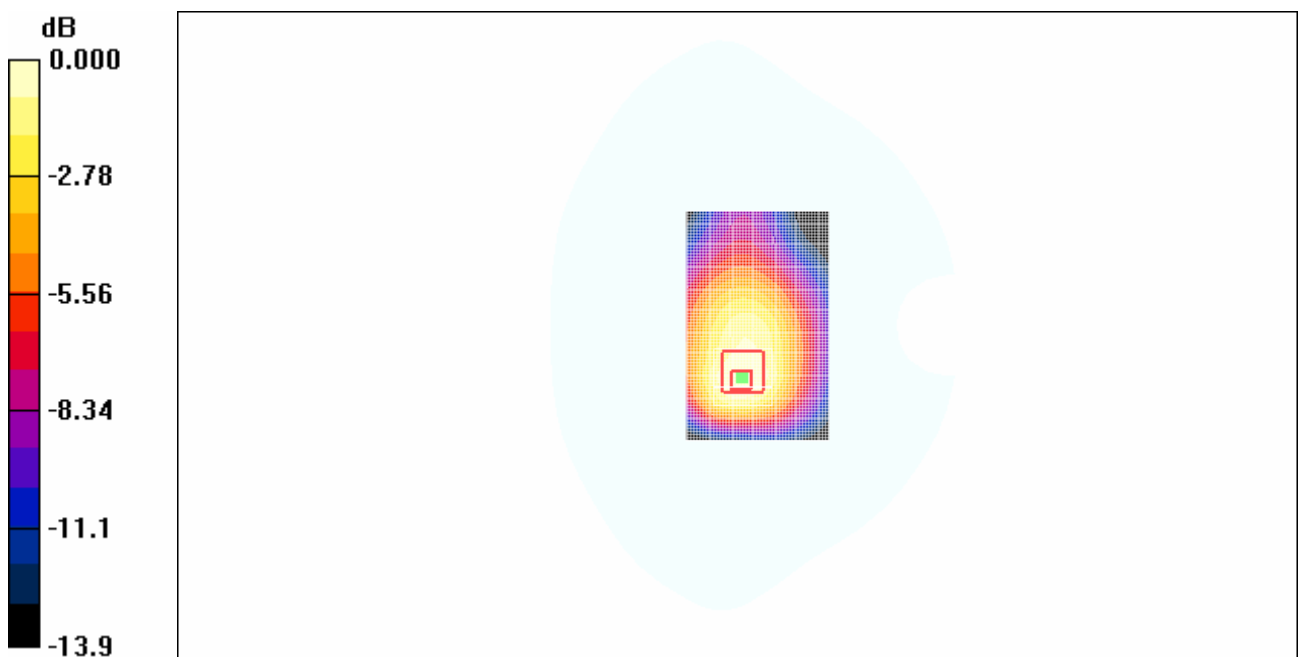
**Toward Ground High/Zoom Scan (4x4x7)/Cube 0:** Measurement grid: dx=10mm, dy=10mm, dz=5mm

Reference Value = 22.1 V/m; Power Drift = -0.083 dB

Peak SAR (extrapolated) = 0.929 W/kg

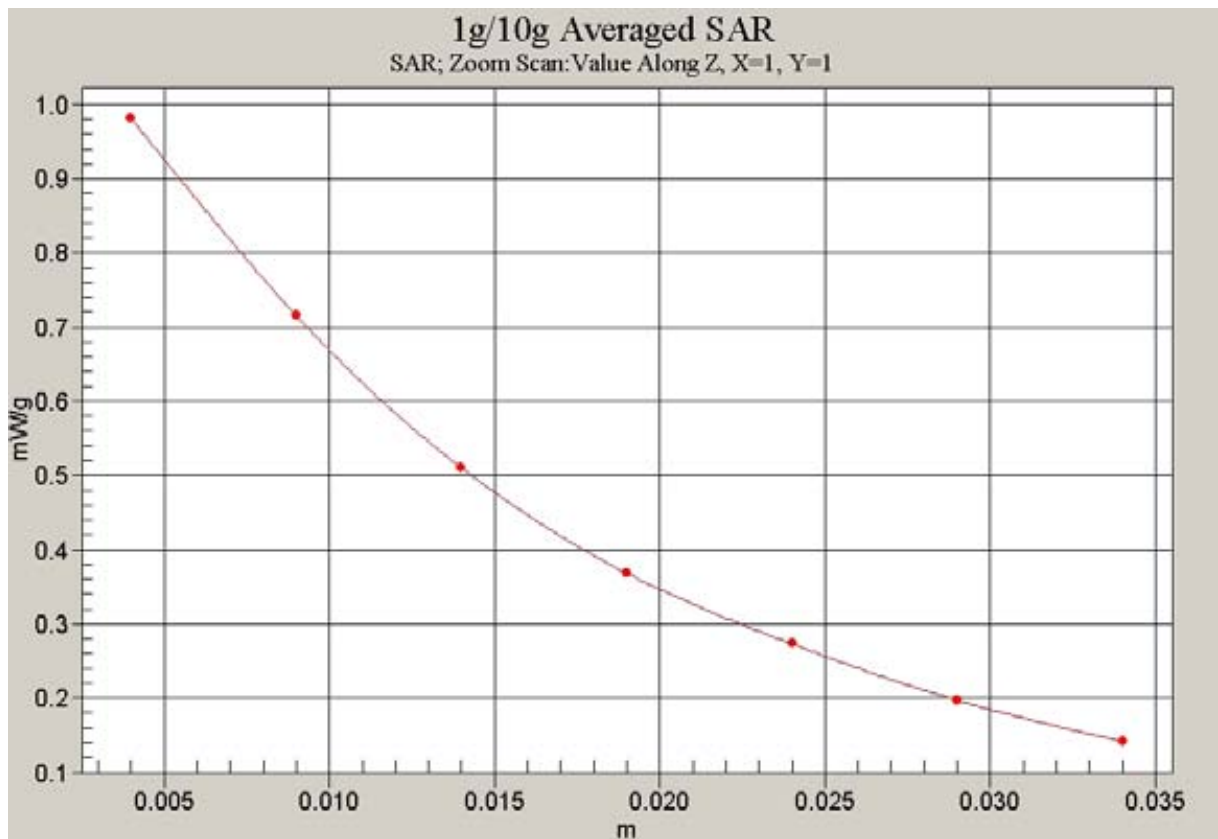
**SAR(1 g) = 0.602 mW/g; SAR(10 g) = 0.385 mW/g**

Maximum value of SAR (measured) = 0.632 mW/g



0 dB = 0.632mW/g

**Fig. 59 850 MHz CH251**



**Fig. 60 Z-Scan at power reference point (850 MHz CH251)**



**850 Body GPRS Toward Ground Middle-slide down**

Date/Time: 2007-8-8 15:10:02

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 1$  mho/m;  $\epsilon_r = 53.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: GSM 850 GPRS Frequency: 836.6 MHz Duty Cycle: 1:4

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

**Toward Ground Middle/Area Scan (51x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.796 mW/g

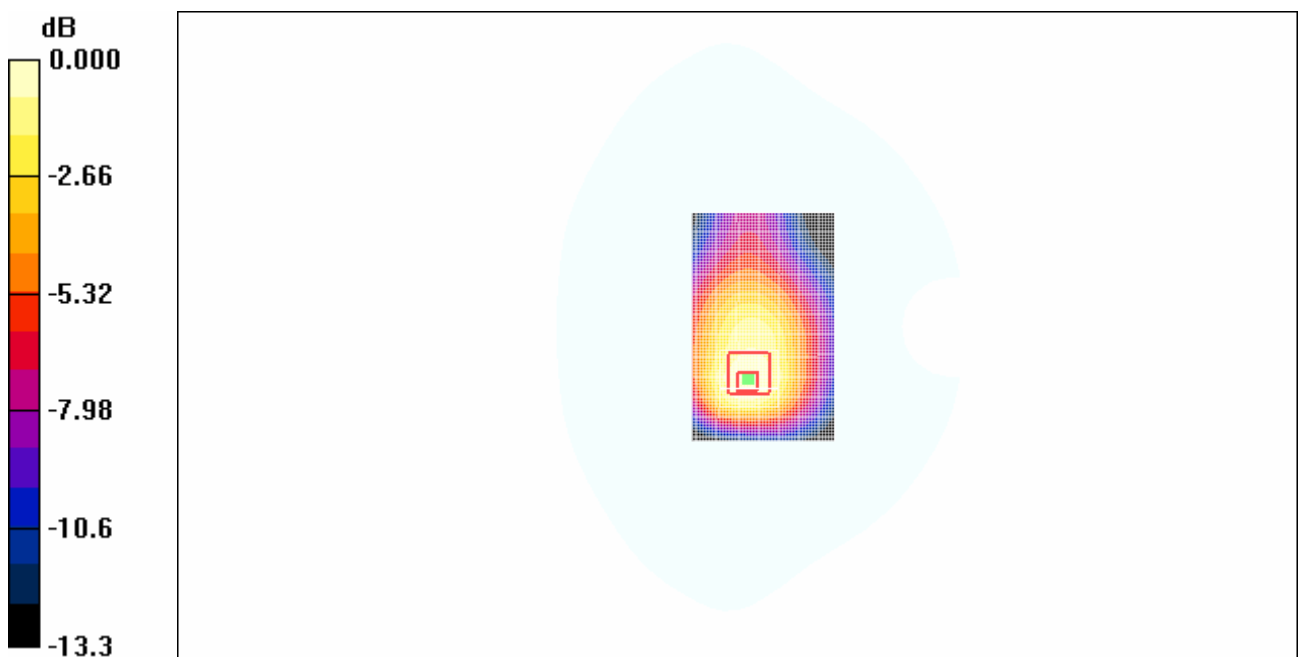
**Toward Ground Middle/Zoom Scan (4x4x7)/Cube 0:** Measurement grid: dx=10mm, dy=10mm, dz=5mm

Reference Value = 23.6 V/m; Power Drift = -0.017 dB

Peak SAR (extrapolated) = 1.11 W/kg

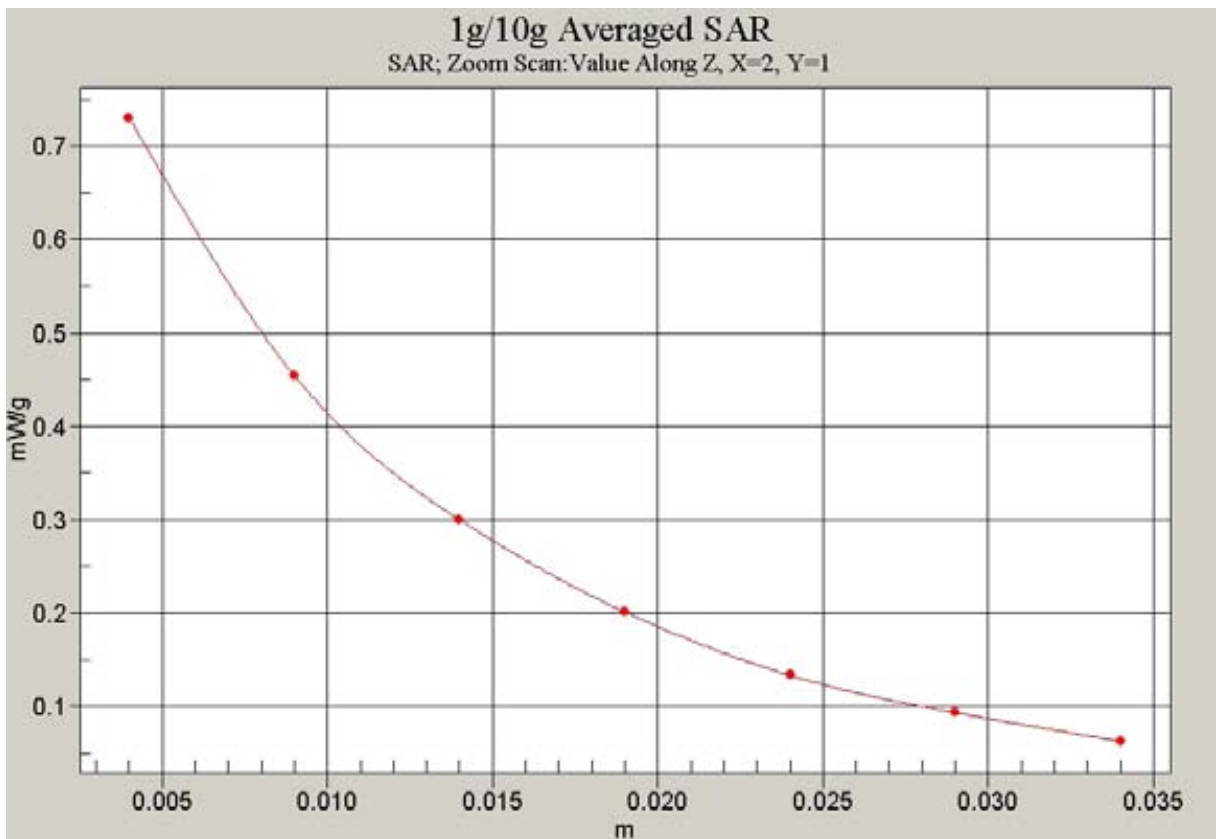
**SAR(1 g) = 0.697 mW/g; SAR(10 g) = 0.444 mW/g**

Maximum value of SAR (measured) = 0.730 mW/g



0 dB = 0.730mW/g

**Fig. 61 850 MHz CH190**



**Fig. 62 Z-Scan at power reference point (850 MHz CH190)**

### 850 Body GPRS Toward Ground Low-slide down

Date/Time: 2007-8-8 14:48:18

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used:  $f = 825 \text{ MHz}$ ;  $\sigma = 0.99 \text{ mho/m}$ ;  $\epsilon_r = 53.4$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $23.3^\circ\text{C}$       Liquid Temperature:  $22.5^\circ\text{C}$

Communication System: GSM 850 GPRS Frequency:  $824.2 \text{ MHz}$  Duty Cycle: 1:4

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

**Toward Ground Low/Area Scan (51x81x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.873 \text{ mW/g}$

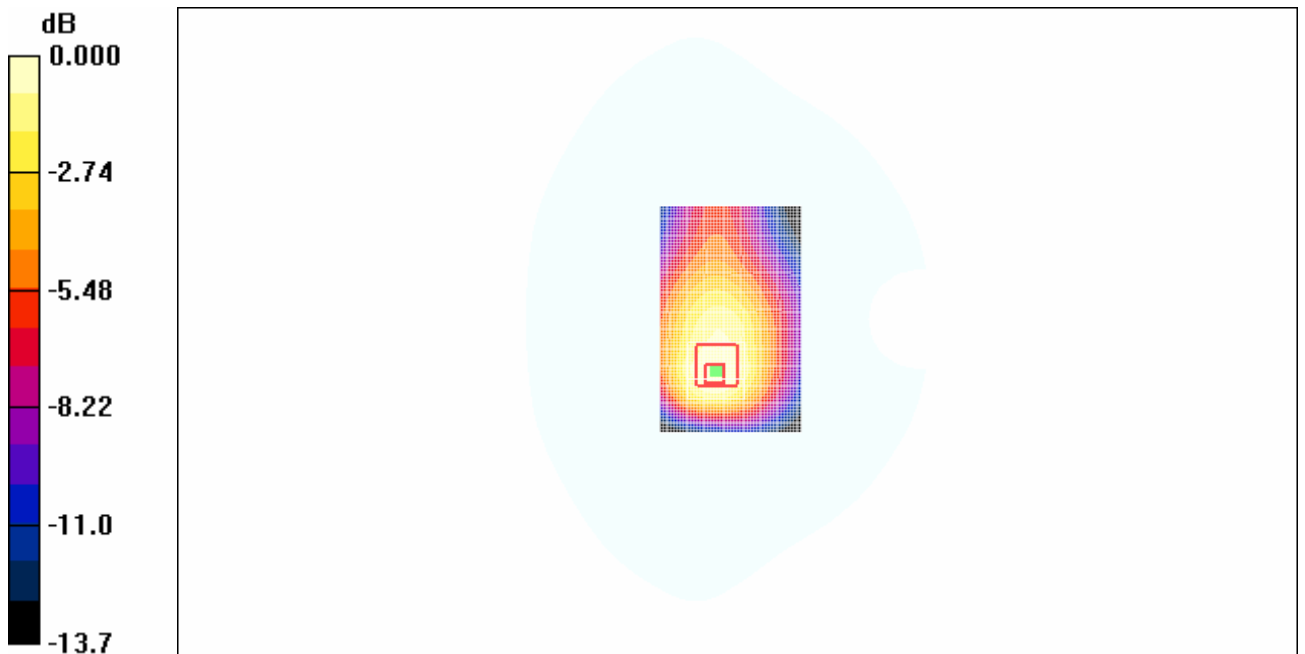
**Toward Ground Low/Zoom Scan (4x4x7)/Cube 0:** Measurement grid:  $dx=10\text{mm}$ ,  
 $dy=10\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $24.8 \text{ V/m}$ ; Power Drift =  $0.026 \text{ dB}$

Peak SAR (extrapolated) =  $1.17 \text{ W/kg}$

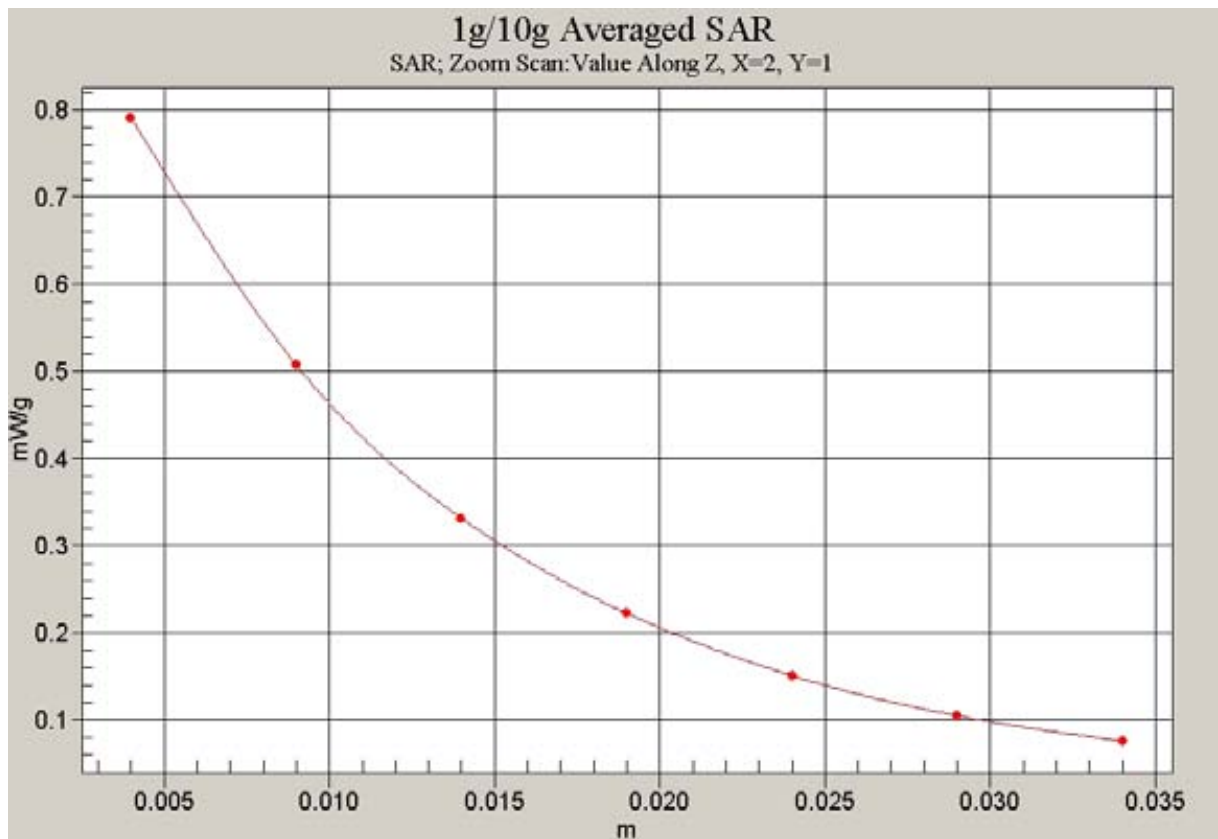
**SAR(1 g) =  $0.759 \text{ mW/g}$ ; SAR(10 g) =  $0.489 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.786 \text{ mW/g}$



0 dB =  $0.786\text{mW/g}$

**Fig. 63 850 MHz CH128**



**Fig. 64 Z-Scan at power reference point (850 MHz CH128)**

**850 Body GPRS Toward Phantom High-slide up**

Date/Time: 2007-8-8 16:07:32

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 1.01$  mho/m;  $\epsilon_r = 53.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:4

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

**Toward Phantom High/Area Scan (51x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.655 mW/g

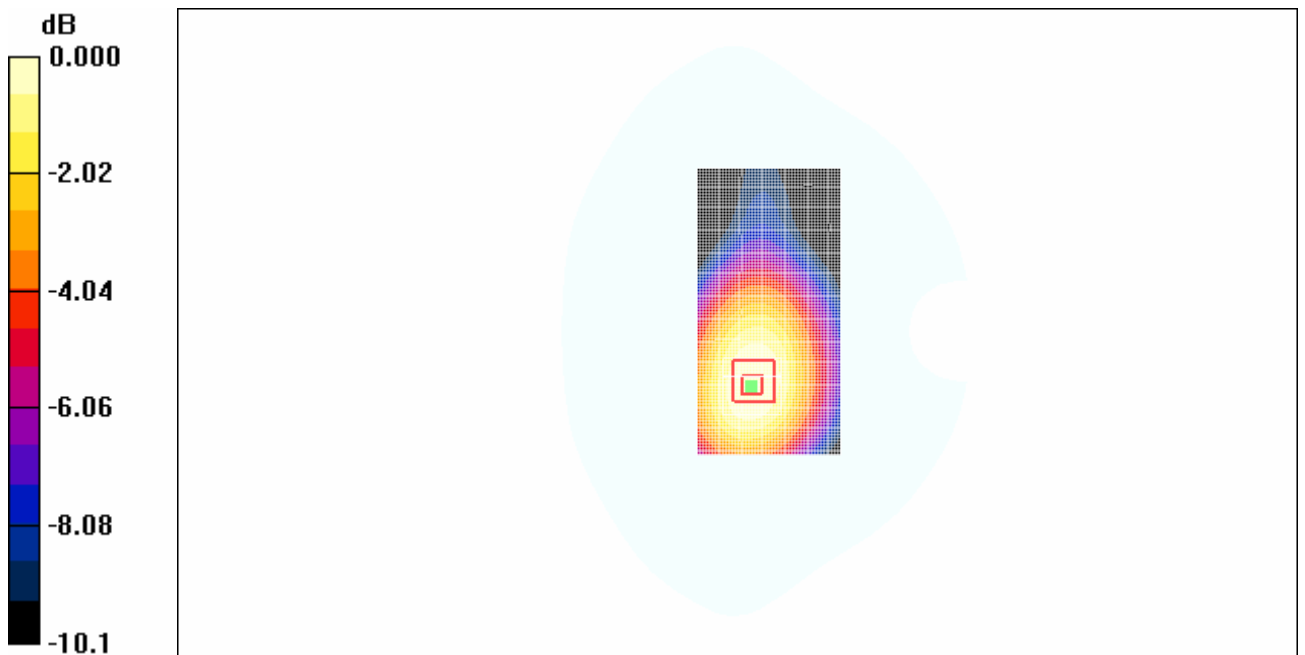
**Toward Phantom High/Zoom Scan (4x4x4)/Cube 0:** Measurement grid: dx=10mm, dy=10mm, dz=10mm

Reference Value = 22.0 V/m; Power Drift = 0.064 dB

Peak SAR (extrapolated) = 0.816 W/kg

**SAR(1 g) = 0.613 mW/g; SAR(10 g) = 0.433 mW/g**

Maximum value of SAR (measured) = 0.631 mW/g



0 dB = 0.631mW/g

**Fig. 65 850 MHz CH251**

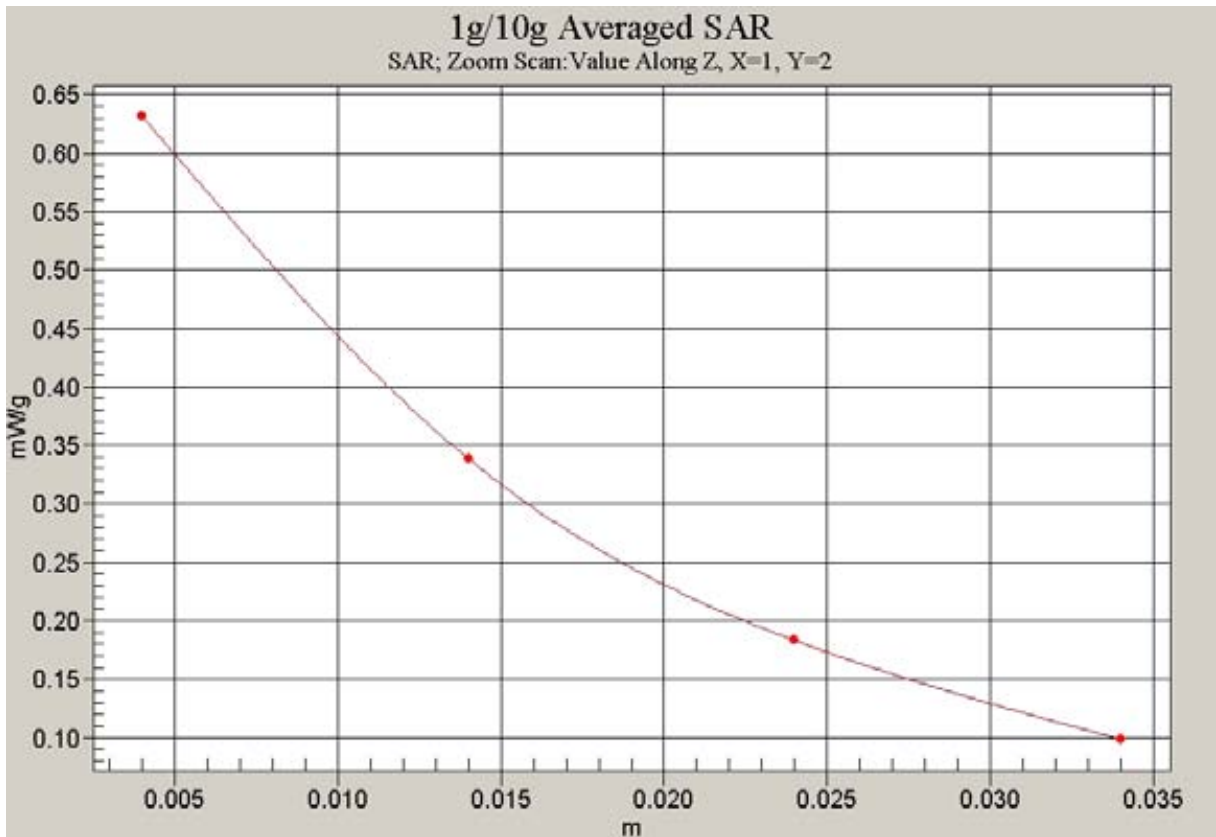


Fig. 66 Z-Scan at power reference point (850 MHz CH251)

**850 Body GPRS Toward Phantom Middle -slide up**

Date/Time: 2007-8-8 16:30:43

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 1$  mho/m;  $\epsilon_r = 53.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: GSM 850 GPRS Frequency: 836.6 MHz Duty Cycle: 1:4

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

**Toward Phantom Middle/Area Scan (51x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.586 mW/g

**Toward Phantom Middle/Zoom Scan (4x4x7)/Cube 0:** Measurement grid:

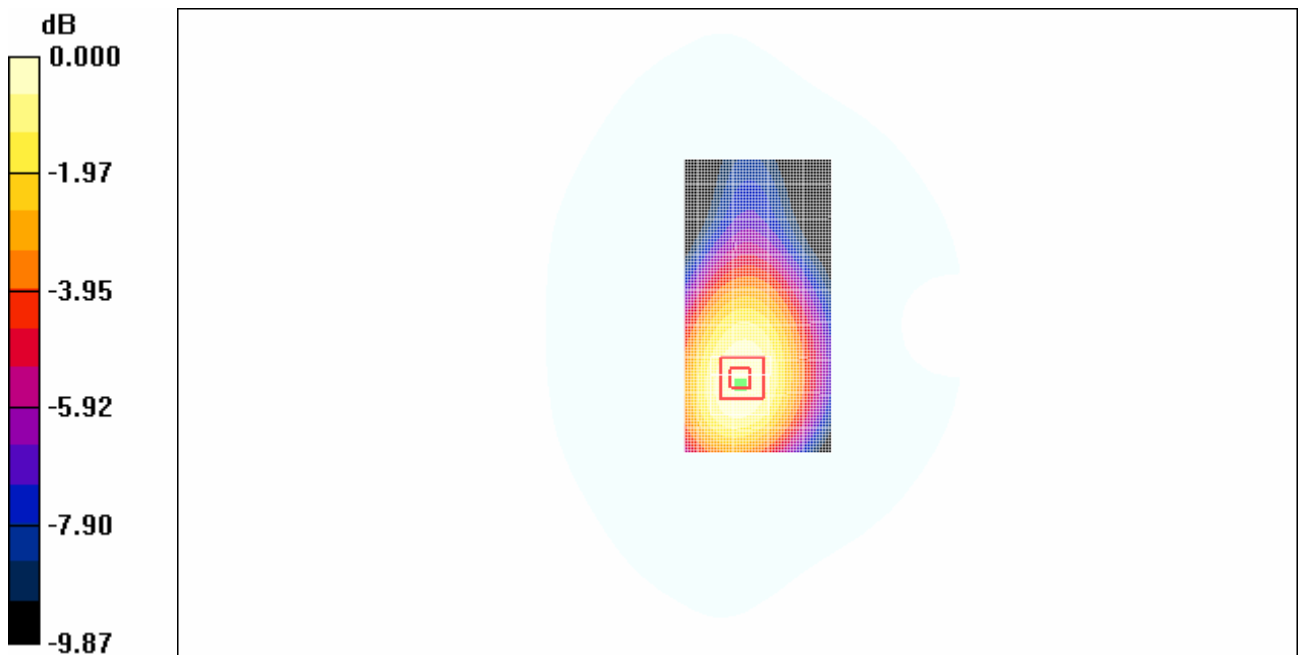
dx=10mm, dy=10mm, dz=5mm

Reference Value = 21.0 V/m; Power Drift = -0.069 dB

Peak SAR (extrapolated) = 0.709 W/kg

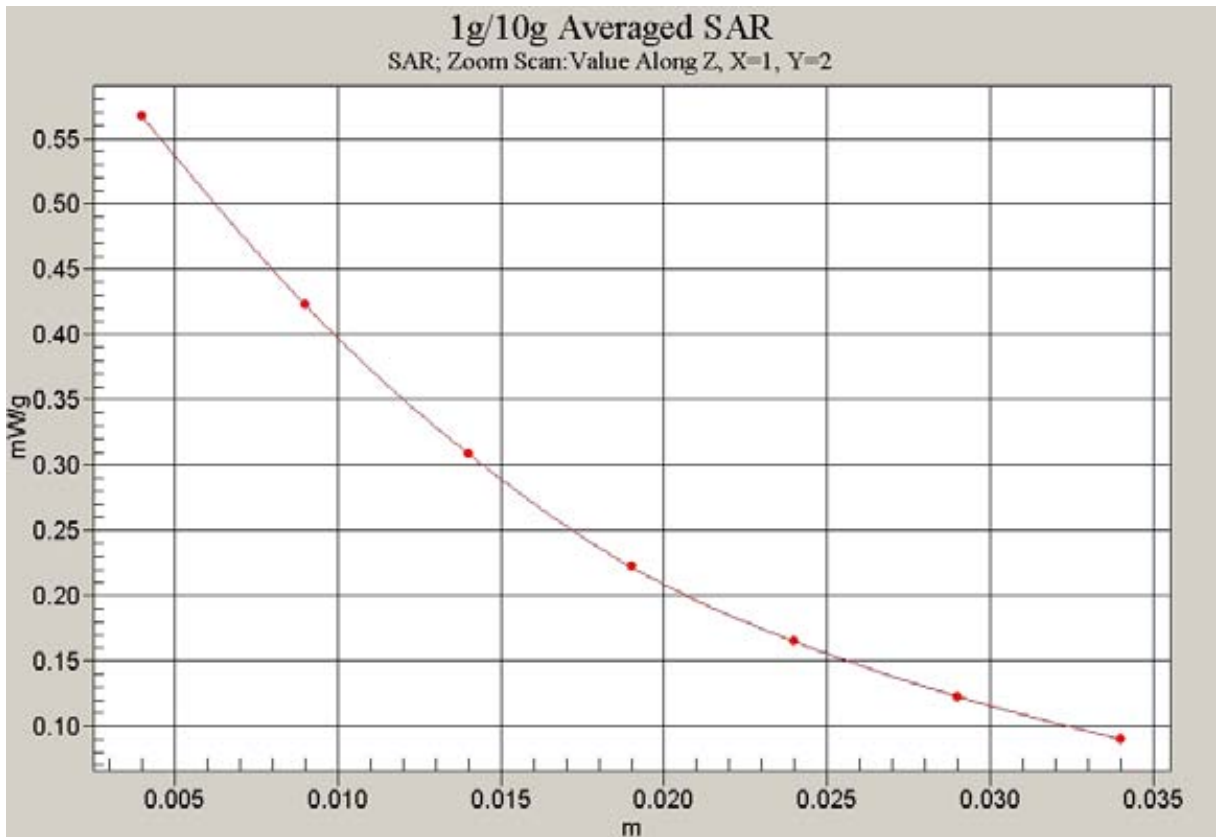
**SAR(1 g) = 0.544 mW/g; SAR(10 g) = 0.386 mW/g**

Maximum value of SAR (measured) = 0.567 mW/g



0 dB = 0.567mW/g

**Fig. 67 850 MHz CH190**



**Fig. 68 Z-Scan at power reference point (850 MHz CH190)**



### 850 Body GPRS Toward Phantom Low-slide up

Date/Time: 2007-8-8 16:51:53

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used:  $f = 825$  MHz;  $\sigma = 0.99$  mho/m;  $\epsilon_r = 53.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: GSM 850 GPRS Frequency: 824.2 MHz Duty Cycle: 1:4

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

**Toward Phantom Low/Area Scan (51x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.444 mW/g

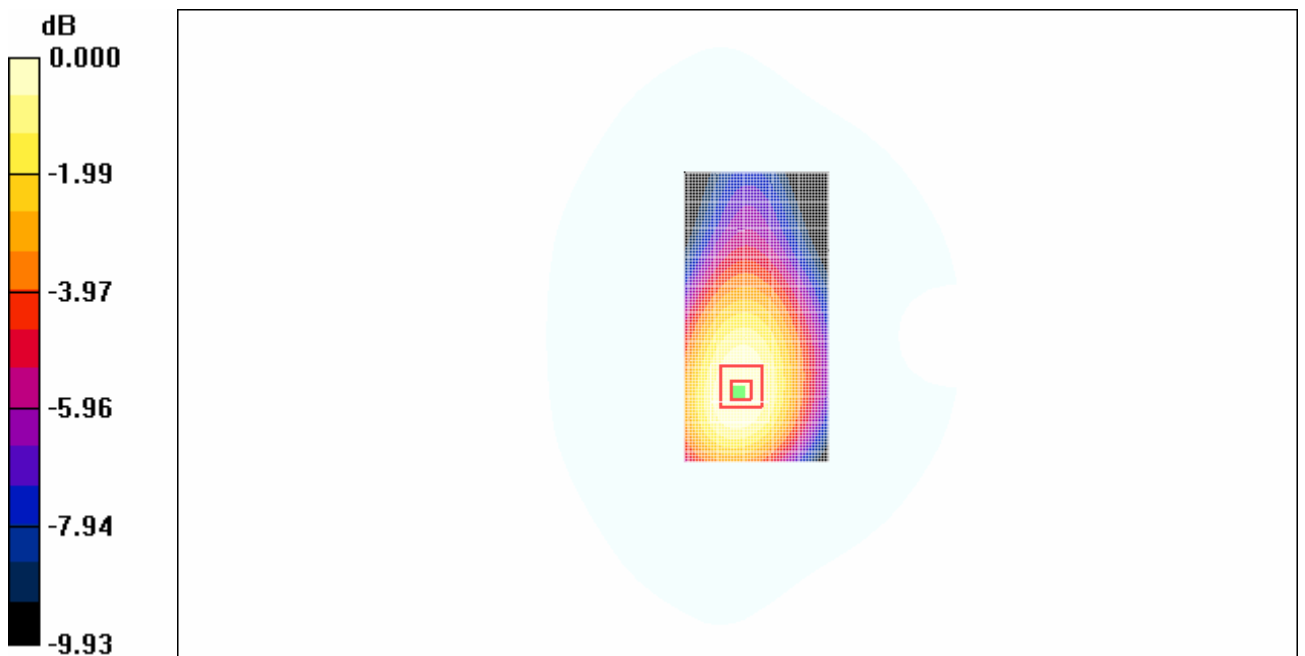
**Toward Phantom Low/Zoom Scan (4x4x7)/Cube 0:** Measurement grid: dx=10mm, dy=10mm, dz=5mm

Reference Value = 18.6 V/m; Power Drift = 0.107 dB

Peak SAR (extrapolated) = 0.545 W/kg

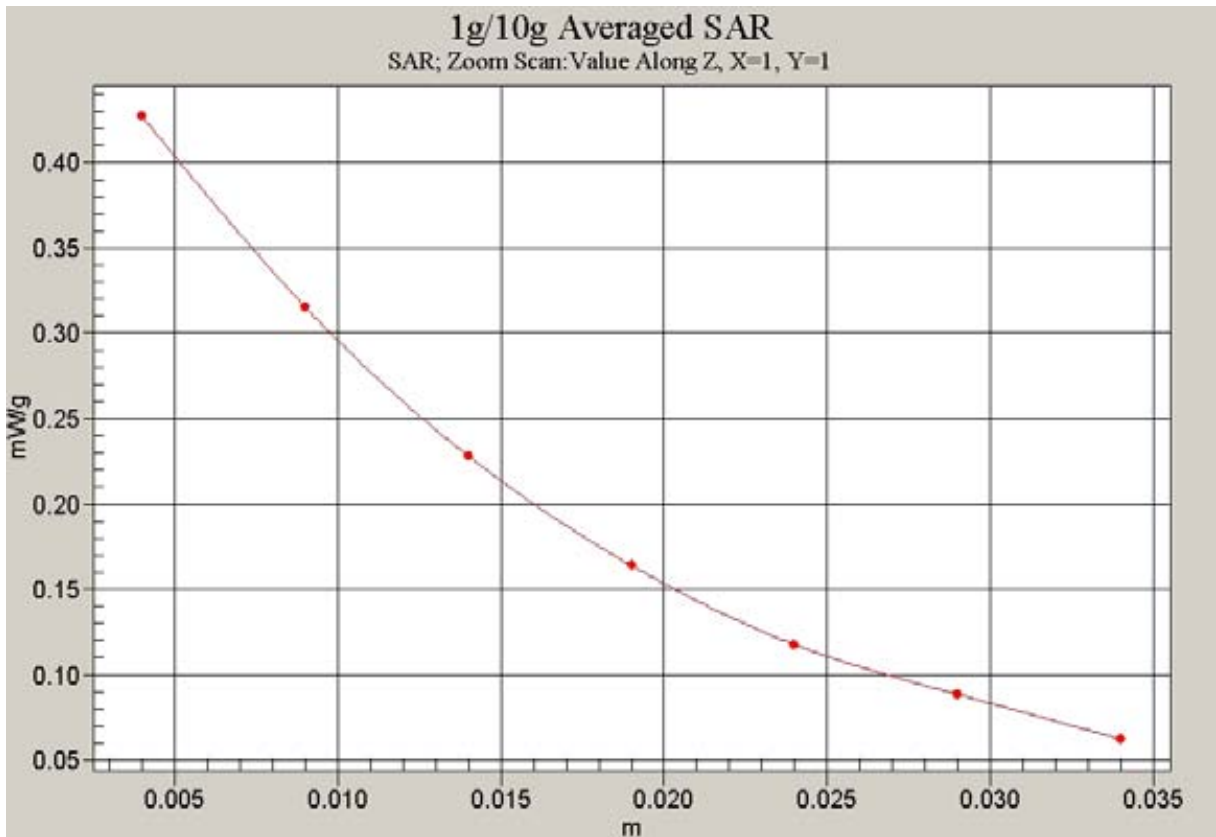
**SAR(1 g) = 0.414 mW/g; SAR(10 g) = 0.295 mW/g**

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



0 dB = 0.427mW/g

Fig. 69 850 MHz CH128



**Fig. 70 Z-Scan at power reference point (850 MHz CH128)**

### 850 Body GPRS Toward Ground High-slide up

Date/Time: 2007-8-8 17:58:33

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 1.01$  mho/m;  $\epsilon_r = 53.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:4

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

**Toward Ground High/Area Scan (51x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.01 mW/g

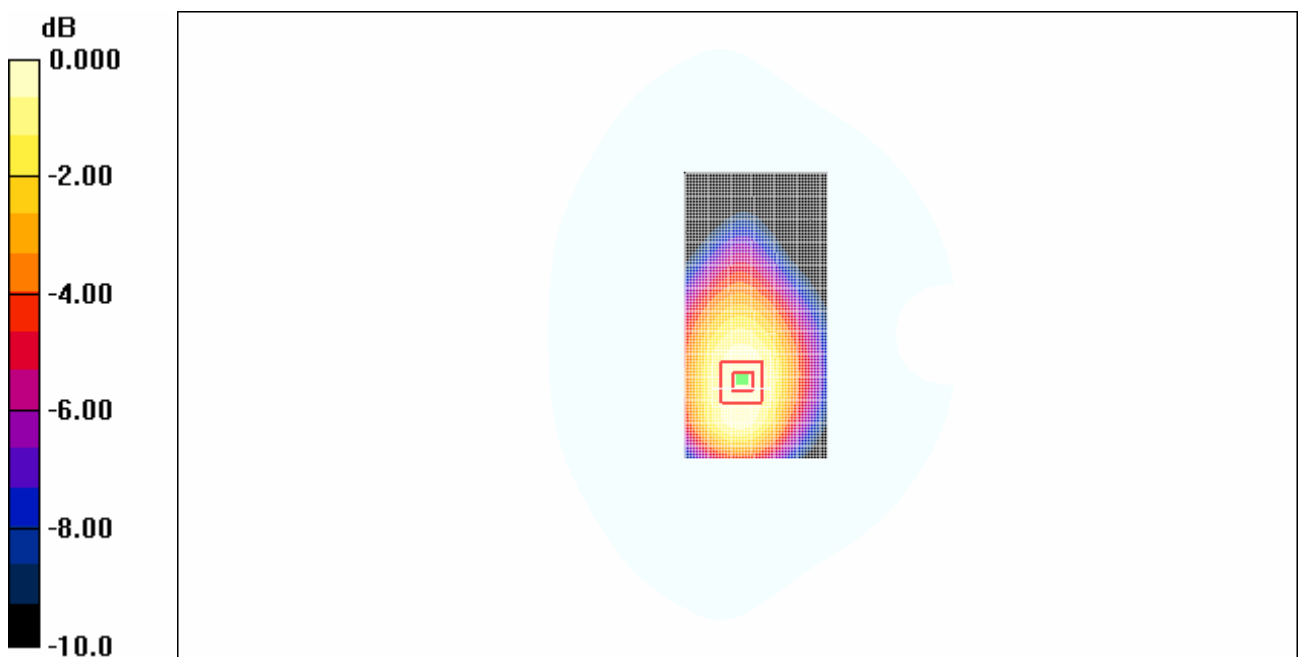
**Toward Ground High/Zoom Scan (4x4x7)/Cube 0:** Measurement grid: dx=10mm, dy=10mm, dz=5mm

Reference Value = 27.6 V/m; Power Drift = 0.015 dB

Peak SAR (extrapolated) = 1.25 W/kg

**SAR(1 g) = 0.943 mW/g; SAR(10 g) = 0.662 mW/g**

Maximum value of SAR (measured) = 0.975 mW/g



0 dB = 0.975mW/g

**Fig. 71 850 MHz CH251**

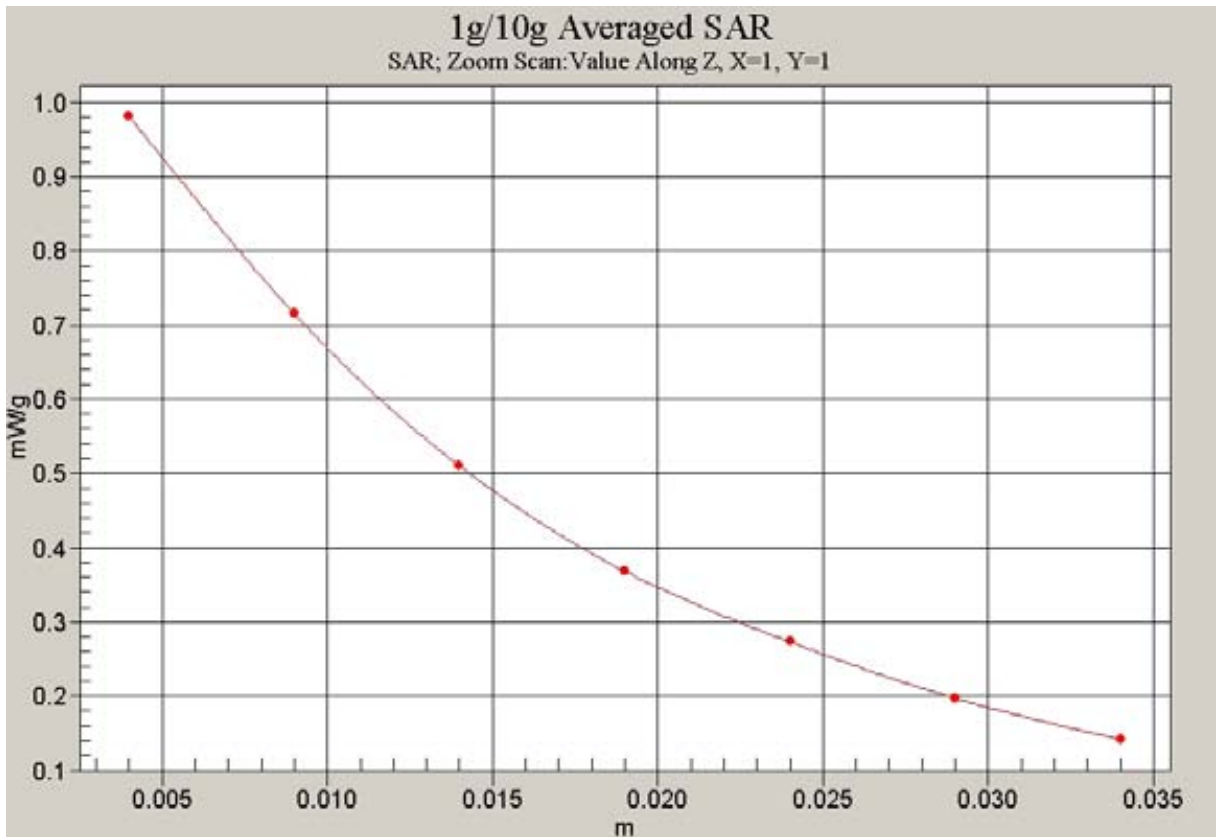


Fig. 72 Z-Scan at power reference point (850 MHz CH251)

**850 Body GPRS Toward Ground Middle-slide up**

Date/Time: 2007-8-8 17:34:36

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 1$  mho/m;  $\epsilon_r = 53.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: GSM 850 GPRS Frequency: 836.6 MHz Duty Cycle: 1:4

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

**Toward Ground Middle/Area Scan (51x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.968 mW/g

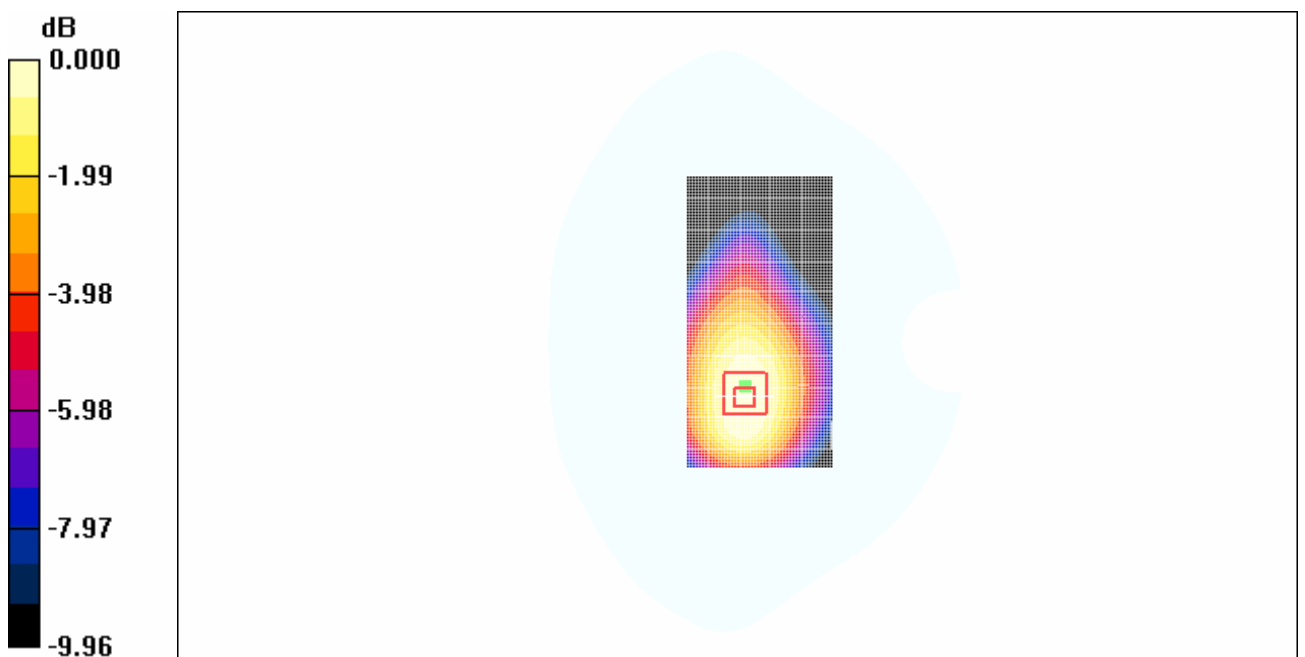
**Toward Ground Middle/Zoom Scan (4x4x7)/Cube 0:** Measurement grid: dx=10mm, dy=10mm, dz=5mm

Reference Value = 26.9 V/m; Power Drift = -0.001 dB

Peak SAR (extrapolated) = 1.21 W/kg

**SAR(1 g) = 0.915 mW/g; SAR(10 g) = 0.644 mW/g**

Maximum value of SAR (measured) = 0.949 mW/g



**Fig. 73 850 MHz CH190**



**Fig. 74 Z-Scan at power reference point (850 MHz CH190)**

### 850 Body GPRS Toward Ground Low-slide up

Date/Time: 2007-8-8 17:13:47

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used:  $f = 825$  MHz;  $\sigma = 0.99$  mho/m;  $\epsilon_r = 53.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: GSM 850 GPRS Frequency: 824.2 MHz Duty Cycle: 1:4

Probe: ET3DV6 - SN1736 ConvF(6.45, 6.45, 6.45)

**Toward Ground Low/Area Scan (51x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.802 mW/g

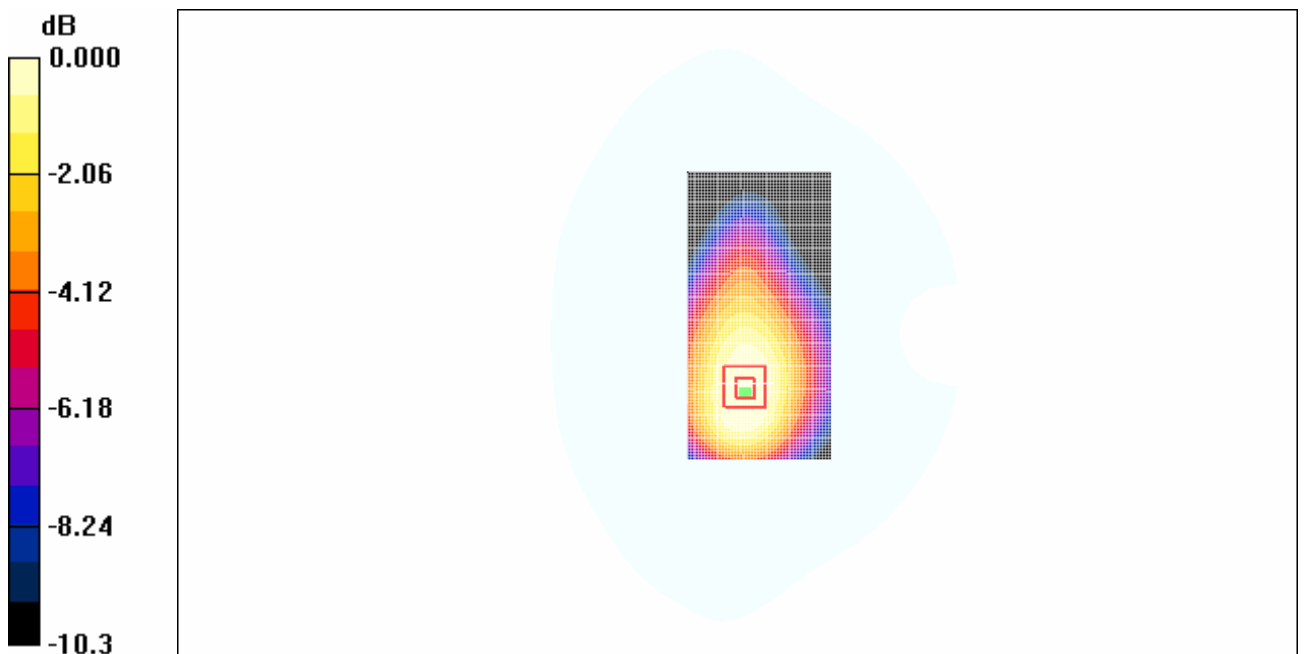
**Toward Ground Low/Zoom Scan (4x4x7)/Cube 0:** Measurement grid: dx=10mm, dy=10mm, dz=5mm

Reference Value = 25.0 V/m; Power Drift = -0.112 dB

Peak SAR (extrapolated) = 0.978 W/kg

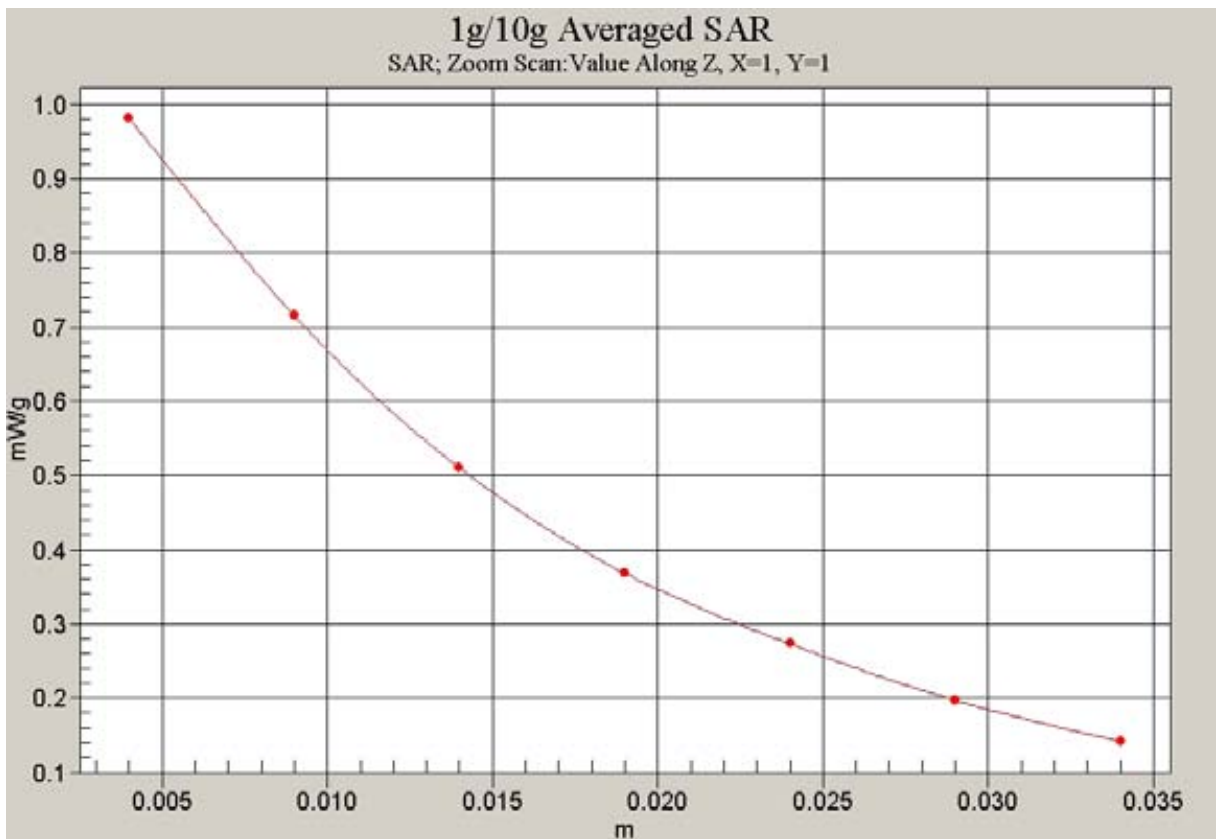
**SAR(1 g) = 0.741 mW/g; SAR(10 g) = 0.524 mW/g**

Maximum value of SAR (measured) = 0.766 mW/g



0 dB = 0.766mW/g

Fig. 75 850 MHz CH128



**Fig. 76 Z-Scan at power reference point (850 MHz CH128)**



**1900 Body GPRS Toward Phantom High-slide down**

Date/Time: 2007-8-10 13:11:22

Electronics: DAE3 Sn536

Medium: Body 1900 MHz

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.54$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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 (51x81x1):** Measurement grid: dx=10mm, dy=10mm

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

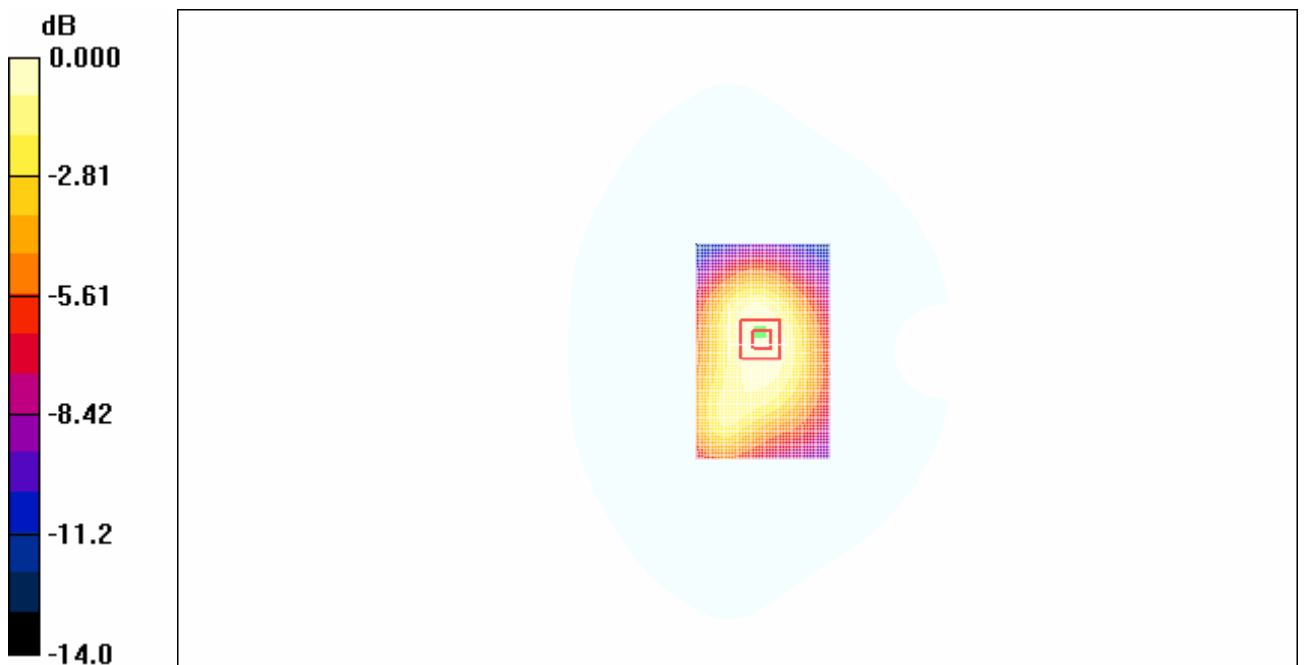
**Toward Phantom High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.4 V/m; Power Drift = -0.200 dB

Peak SAR (extrapolated) = 0.426 W/kg

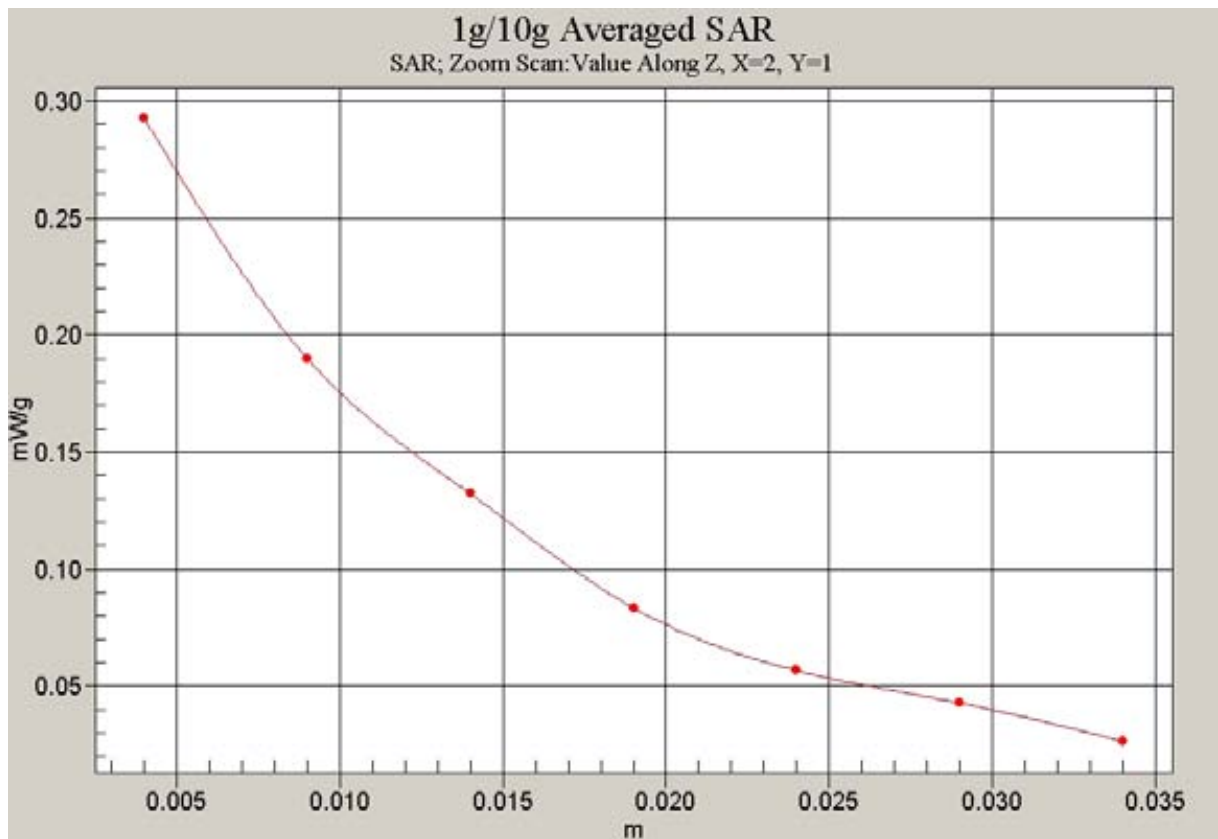
**SAR(1 g) = 0.275 mW/g; SAR(10 g) = 0.178 mW/g**

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



0 dB = 0.293mW/g

**Fig. 77 1900 MHz CH810**



**Fig. 78 Z-Scan at power reference point (1900 MHz CH810)**

**1900 Body GPRS Toward Phantom Middle-slide down**

Date/Time: 2007-8-10 13:32:45

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/m<sup>3</sup>

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 (51x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.309 mW/g

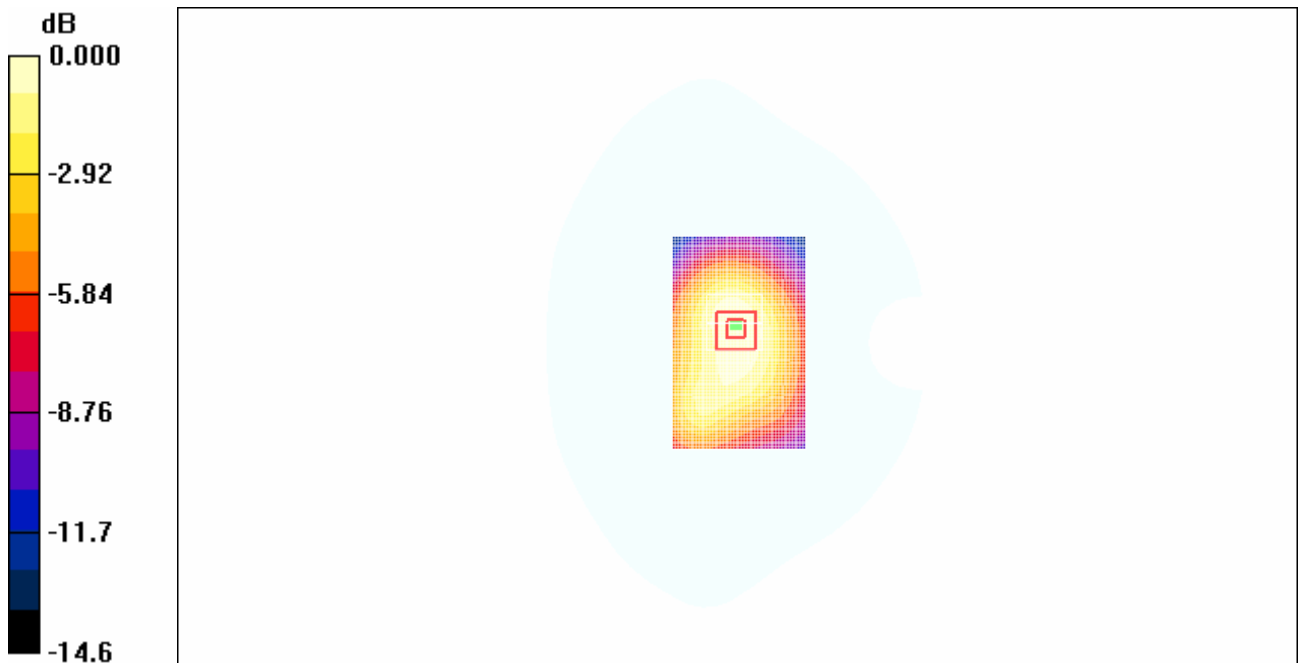
**Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.7 V/m; Power Drift = -0.160 dB

Peak SAR (extrapolated) = 0.440 W/kg

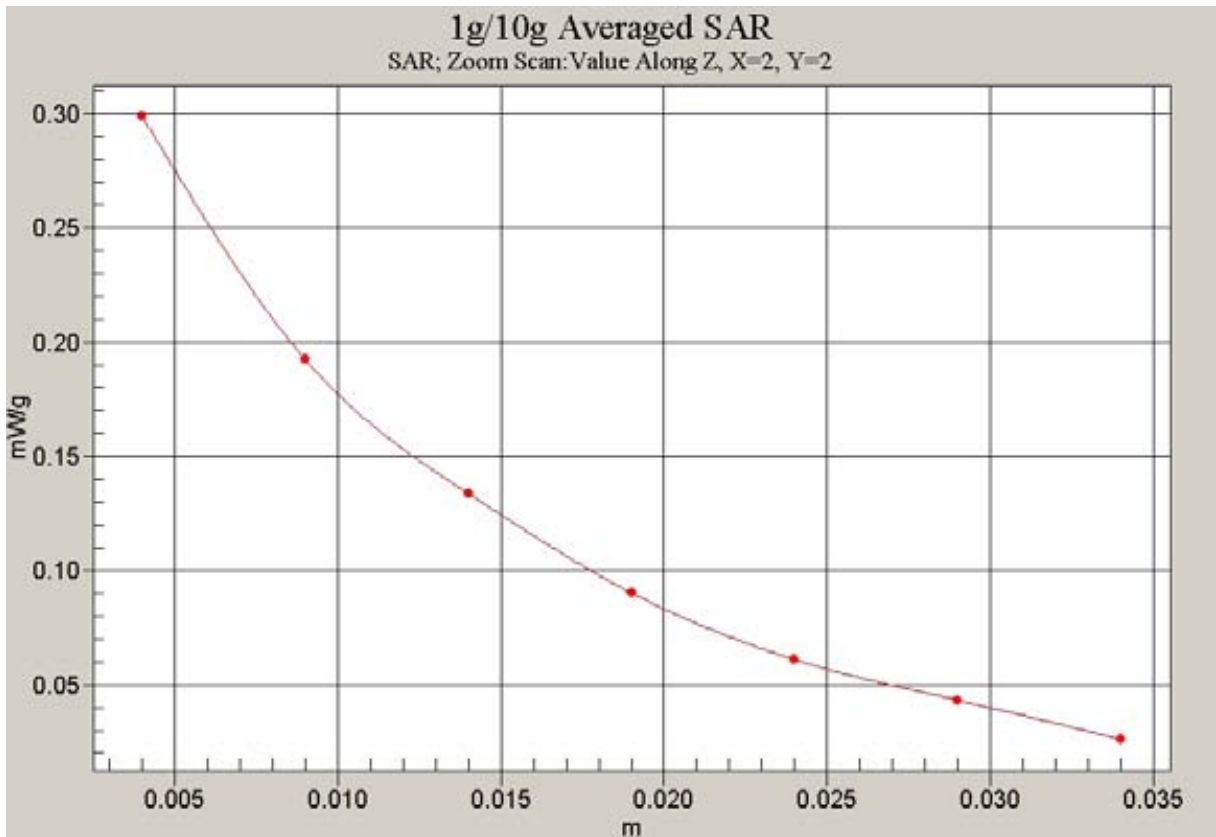
**SAR(1 g) = 0.282 mW/g; SAR(10 g) = 0.185 mW/g**

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



0 dB = 0.299mW/g

**Fig. 79 1900 MHz CH661**



**Fig. 80 Z-Scan at power reference point (1900 MHz CH661)**

**1900 Body GPRS Toward Phantom Low-slide down**

Date/Time: 2007-8-10 13:54:35

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/m<sup>3</sup>

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 (51x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.315 mW/g

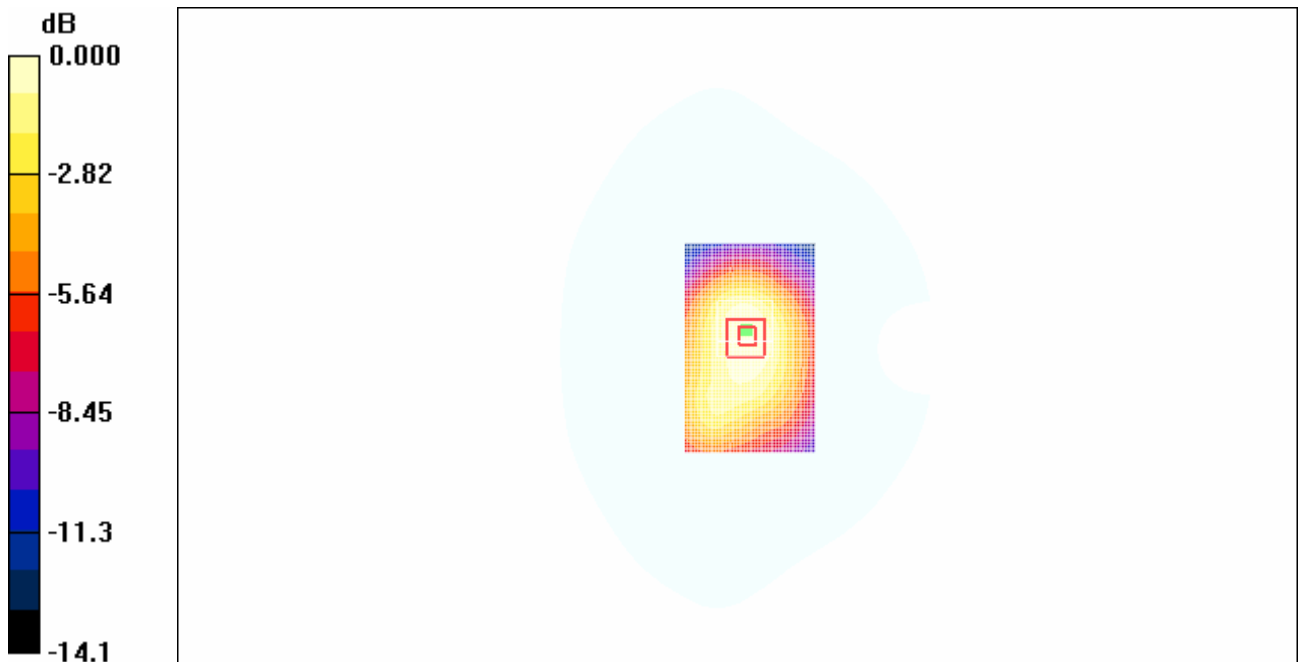
**Toward Phantom Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.0 V/m; Power Drift = -0.066 dB

Peak SAR (extrapolated) = 0.423 W/kg

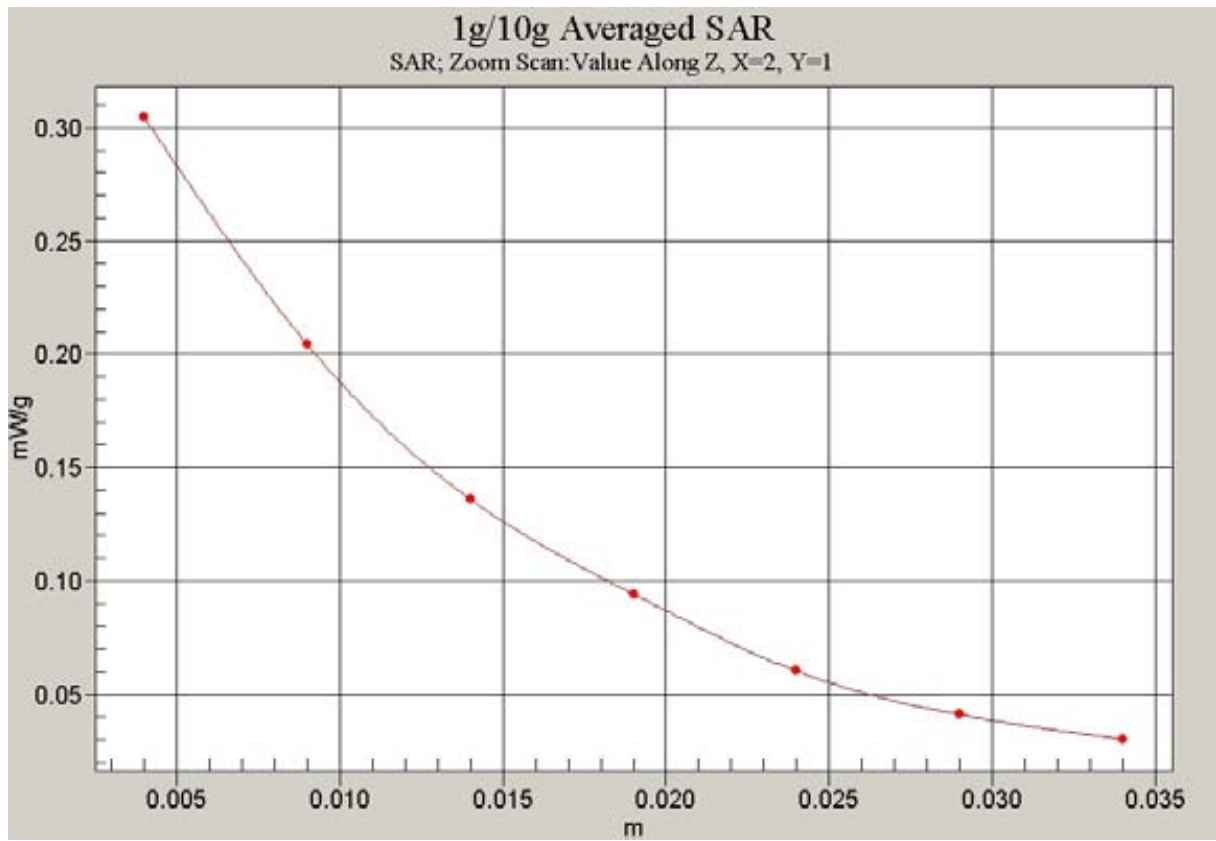
**SAR(1 g) = 0.286 mW/g; SAR(10 g) = 0.187 mW/g**

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



0 dB = 0.305mW/g

**Fig. 81 1900 MHz CH512**



**Fig. 82 Z-Scan at power reference point (1900 MHz CH512)**

**1900 Body GPRS Toward Ground High-slide down**

Date/Time: 2007-8-10 14:59:32

Electronics: DAE3 Sn536

Medium: Body 1900 MHz

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.54$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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 (51x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.382 mW/g

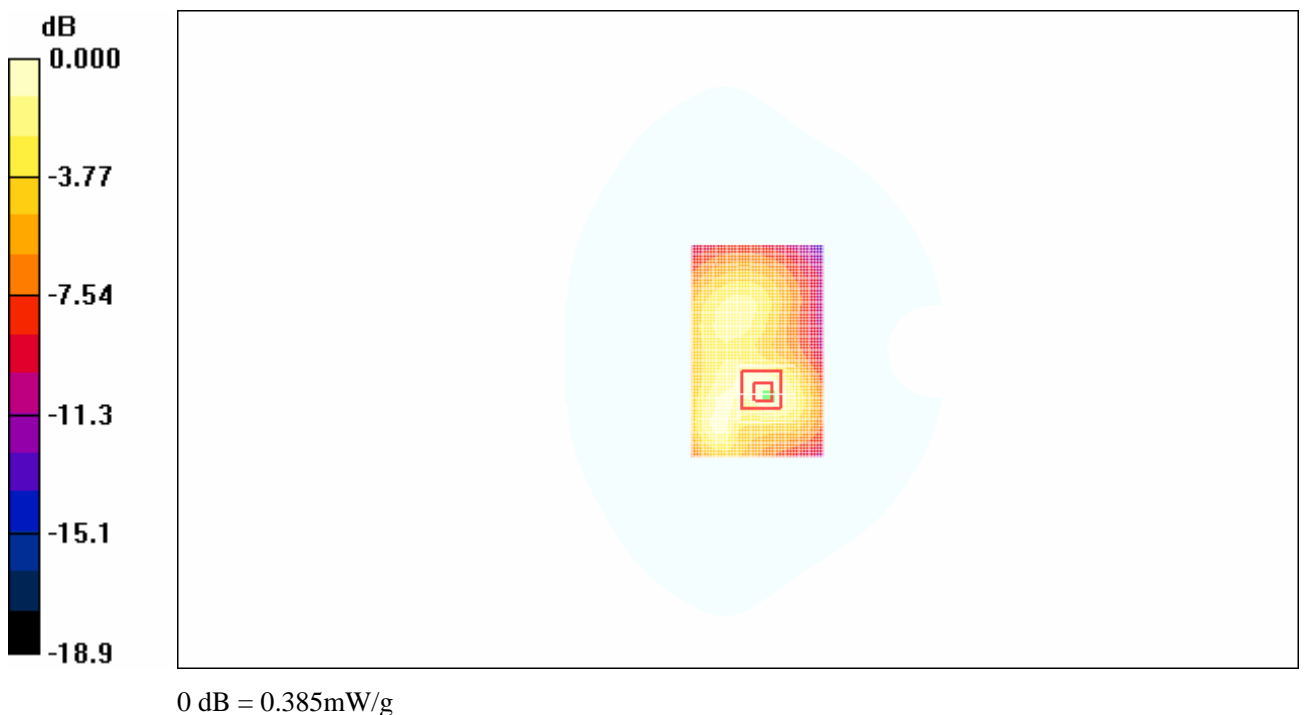
**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.9 V/m; Power Drift = -0.130 dB

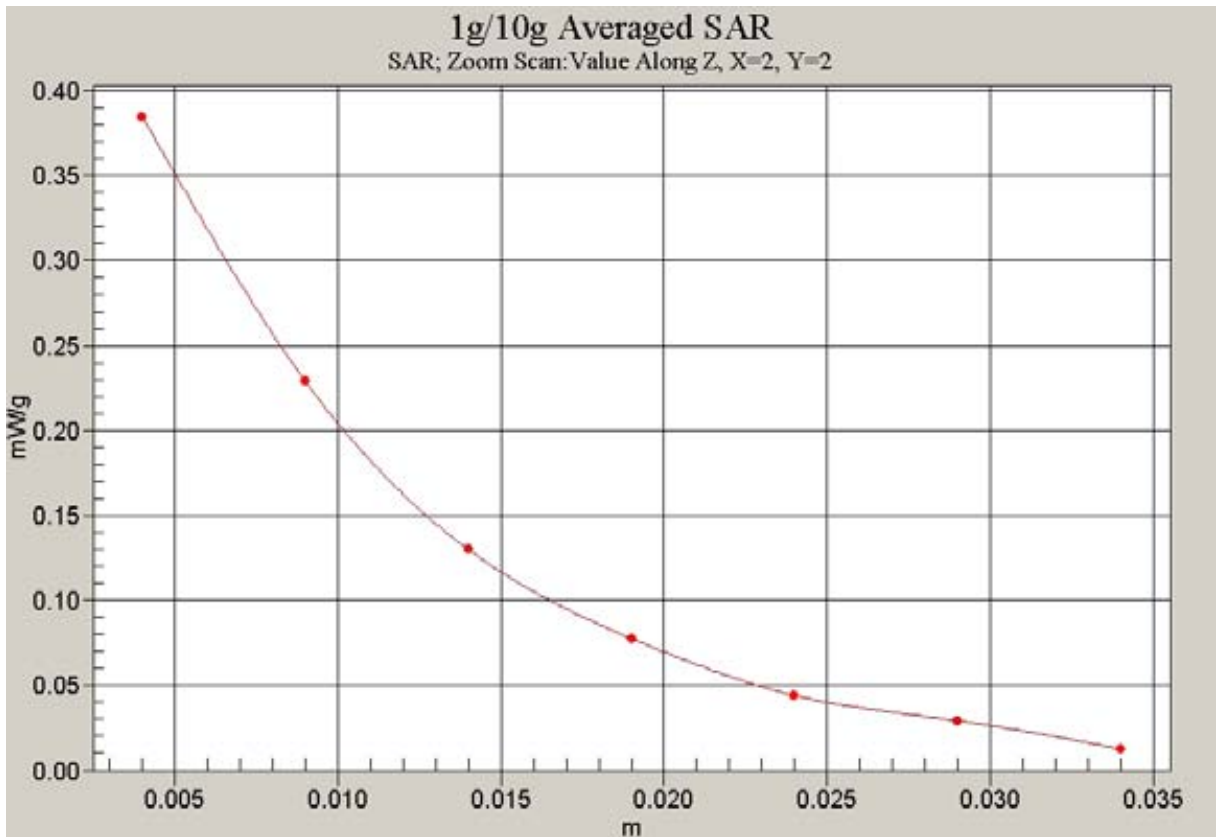
Peak SAR (extrapolated) = 0.663 W/kg

**SAR(1 g) = 0.355 mW/g; SAR(10 g) = 0.195 mW/g**

Maximum value of SAR (measured) = 0.385 mW/g



**Fig. 83 1900 MHz CH810**



**Fig. 84 Z-Scan at power reference point (1900 MHz CH810)**



**1900 Body GPRS Toward Ground Middle-slide down**

Date/Time: 2007-8-10 14:38:44

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/m<sup>3</sup>

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 (51x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.397 mW/g

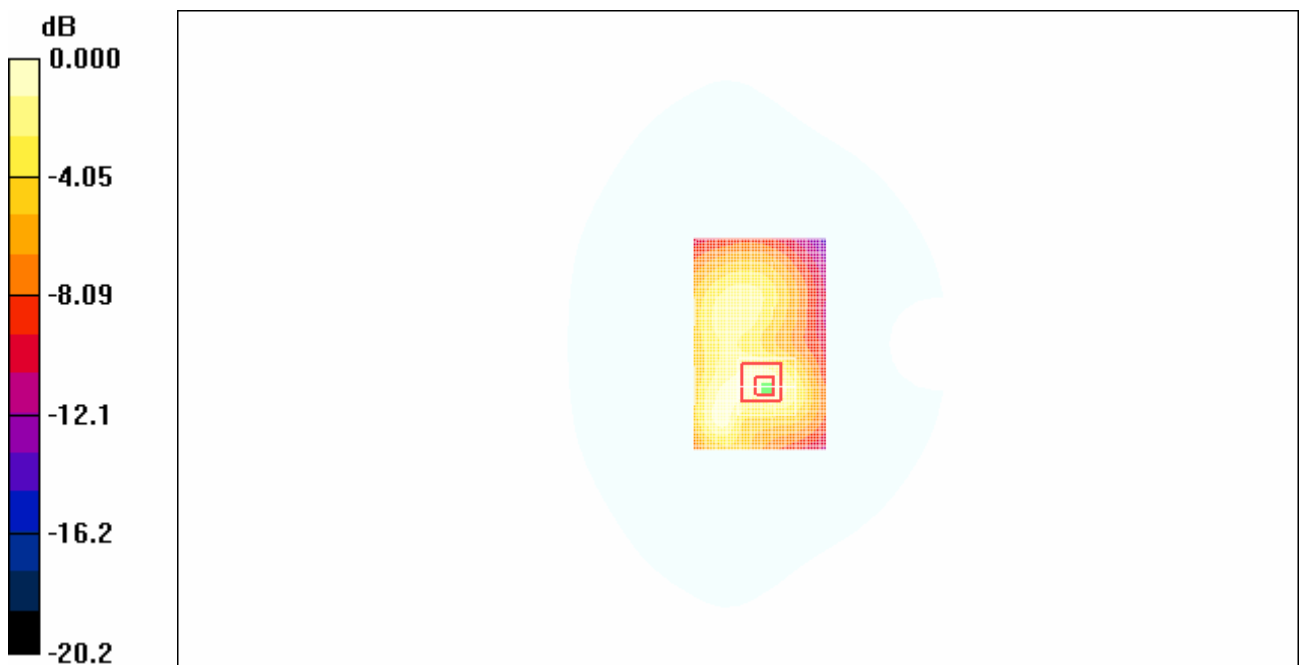
**Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.4 V/m; Power Drift = -0.069 dB

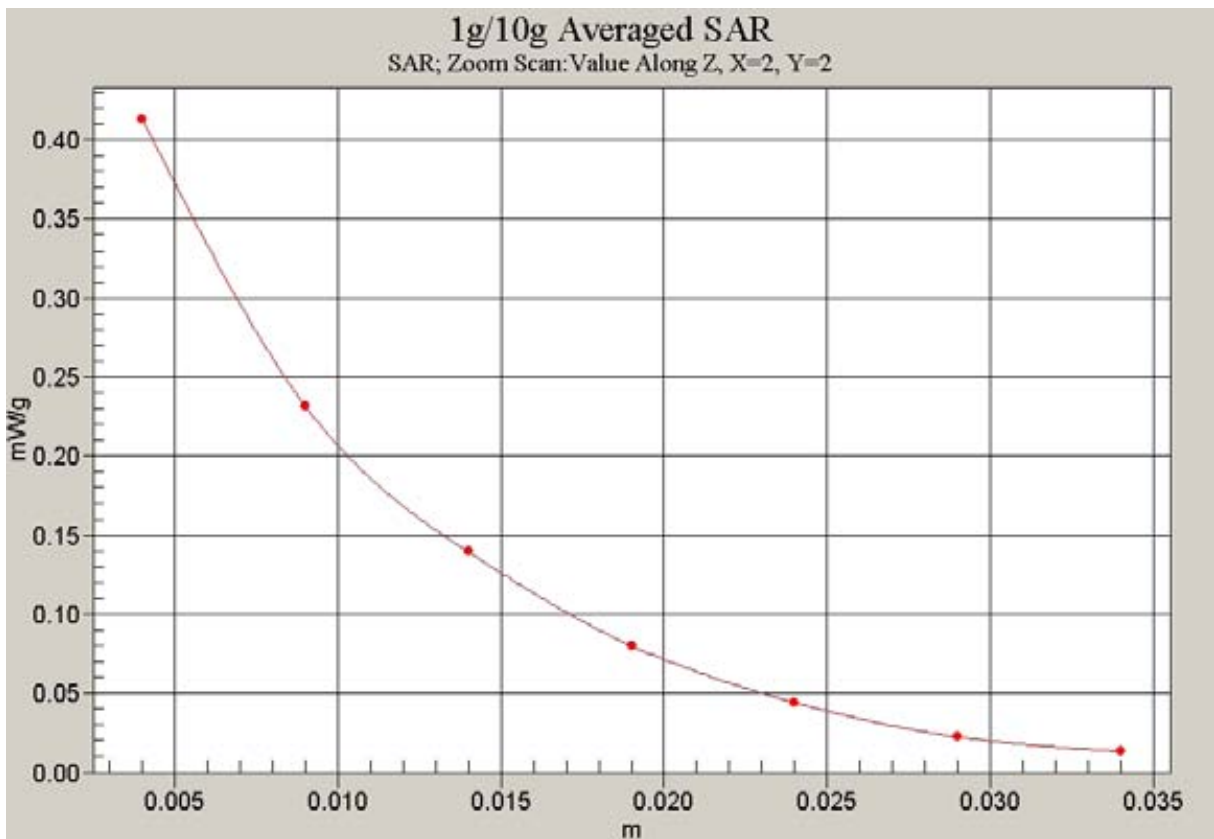
Peak SAR (extrapolated) = 0.702 W/kg

**SAR(1 g) = 0.374 mW/g; SAR(10 g) = 0.204 mW/g**

Maximum value of SAR (measured) = 0.413 mW/g



**Fig. 85 1900 MHz CH661**



**Fig. 86 Z-Scan at power reference point (1900 MHz CH661)**

**1900 Body GPRS Toward Ground Low-slide down**

Date/Time: 2007-8-10 14:16:36

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/m<sup>3</sup>

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 (51x81x1):** Measurement grid: dx=10mm, dy=10mm  
Maximum value of SAR (interpolated) = 0.392 mW/g

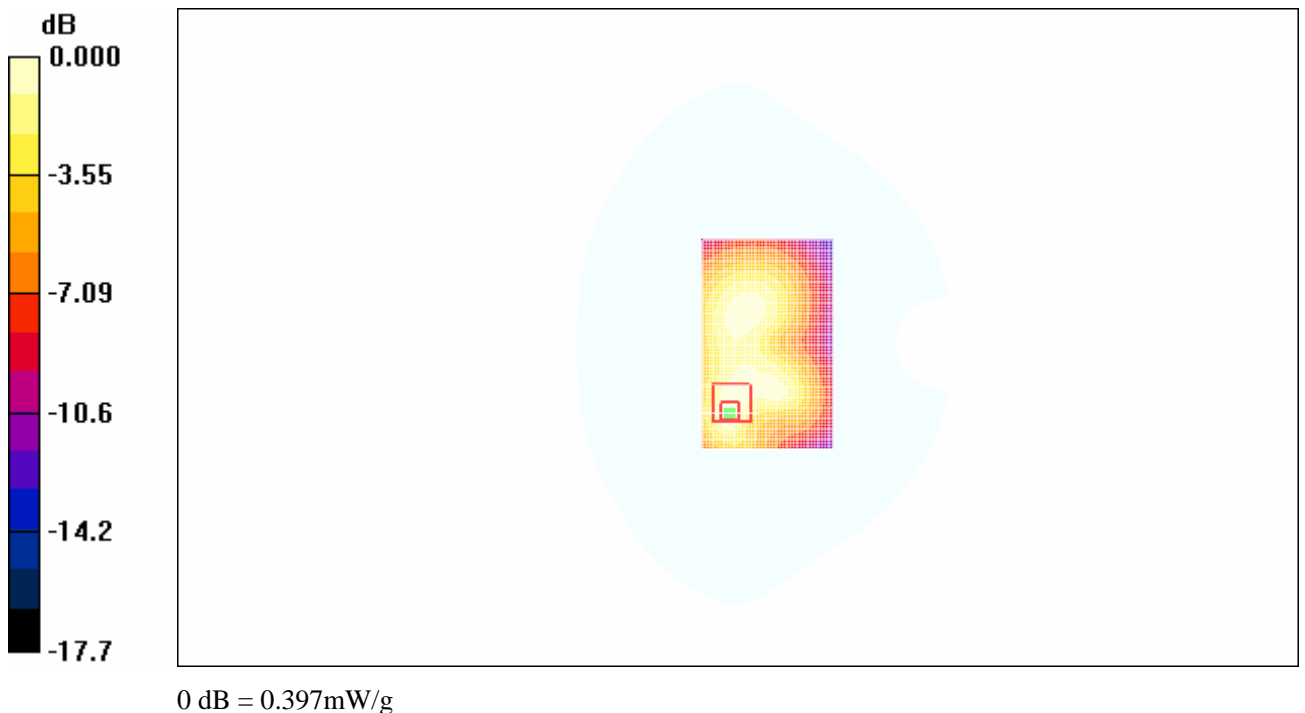
**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.7 V/m; Power Drift = -0.079 dB

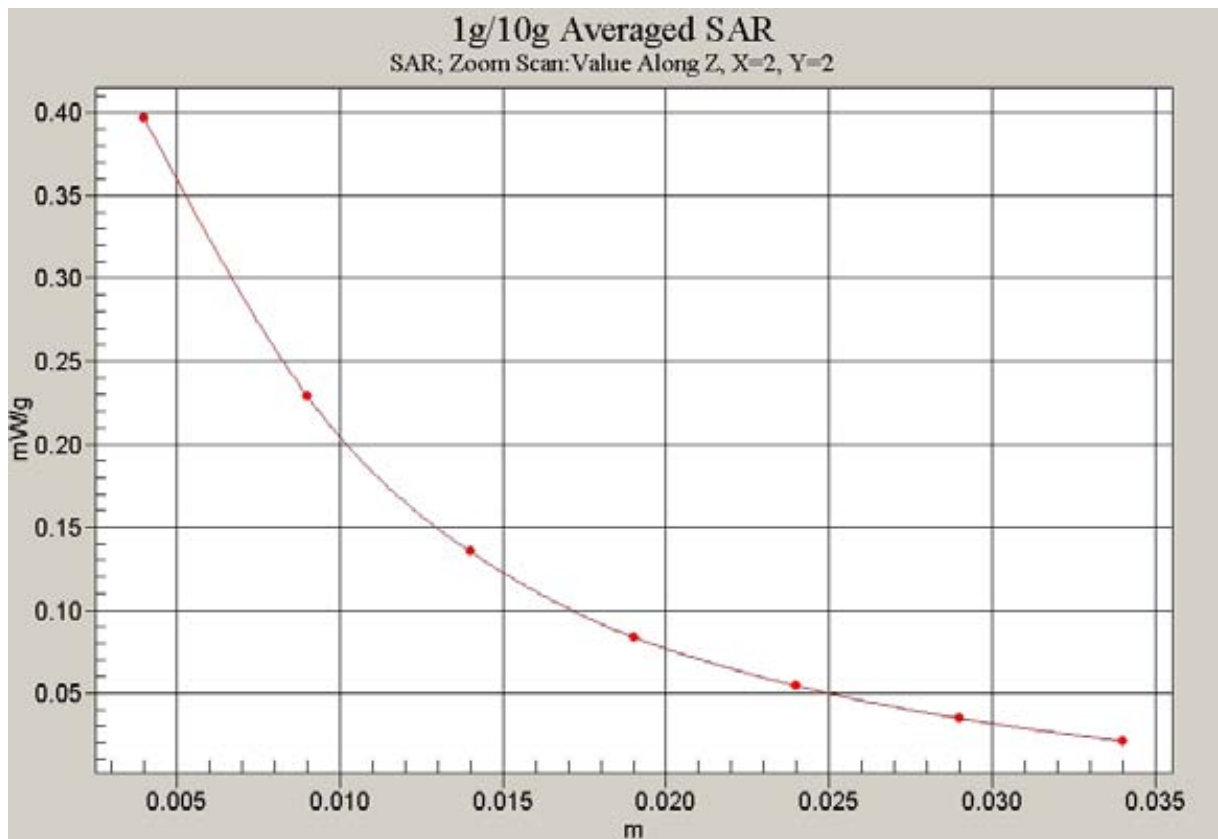
Peak SAR (extrapolated) = 0.653 W/kg

**SAR(1 g) = 0.355 mW/g; SAR(10 g) = 0.201 mW/g**

Maximum value of SAR (measured) = 0.397 mW/g



**Fig. 87 1900 MHz CH512**



**Fig. 88 Z-Scan at power reference point (1900 MHz CH512)**

**1900 Body GPRS Toward Phantom High-slide up**

Date/Time: 2007-8-10 15:32:20

Electronics: DAE3 Sn536

Medium: Body 1900 MHz

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.54$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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 (51x101x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.235 mW/g

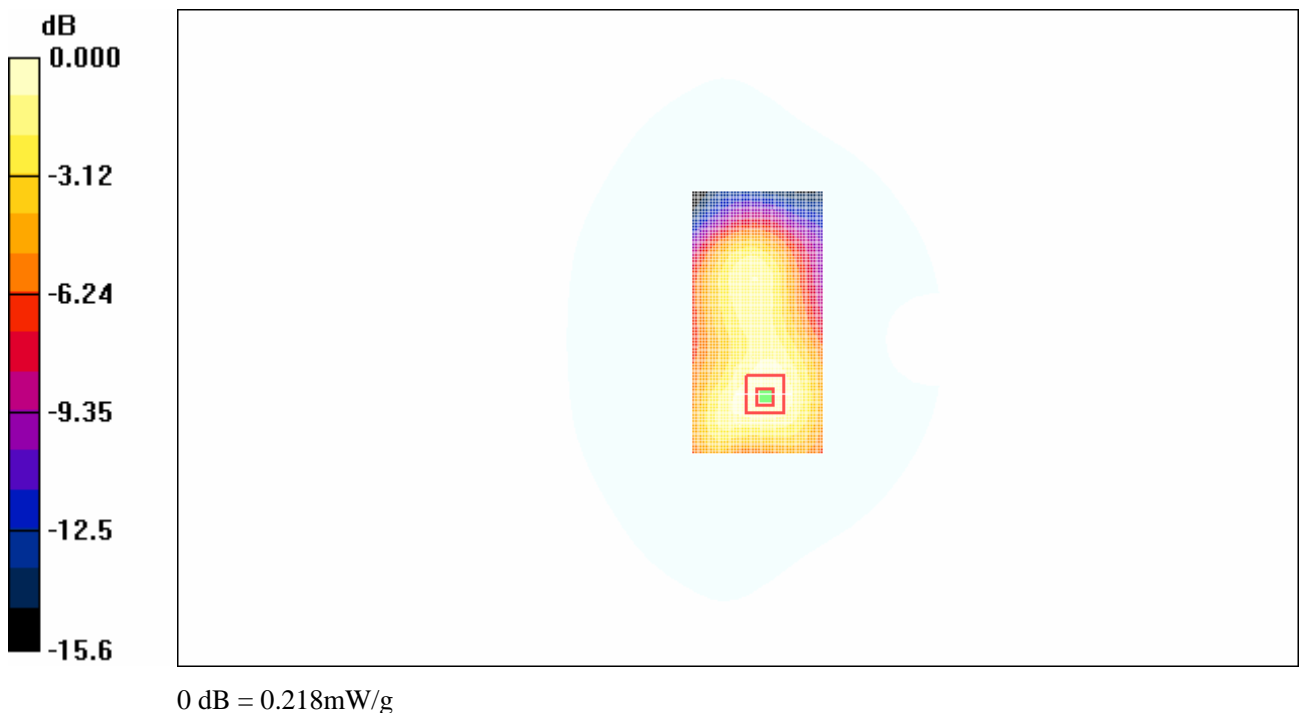
**Toward Phantom High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.4 V/m; Power Drift = -0.200 dB

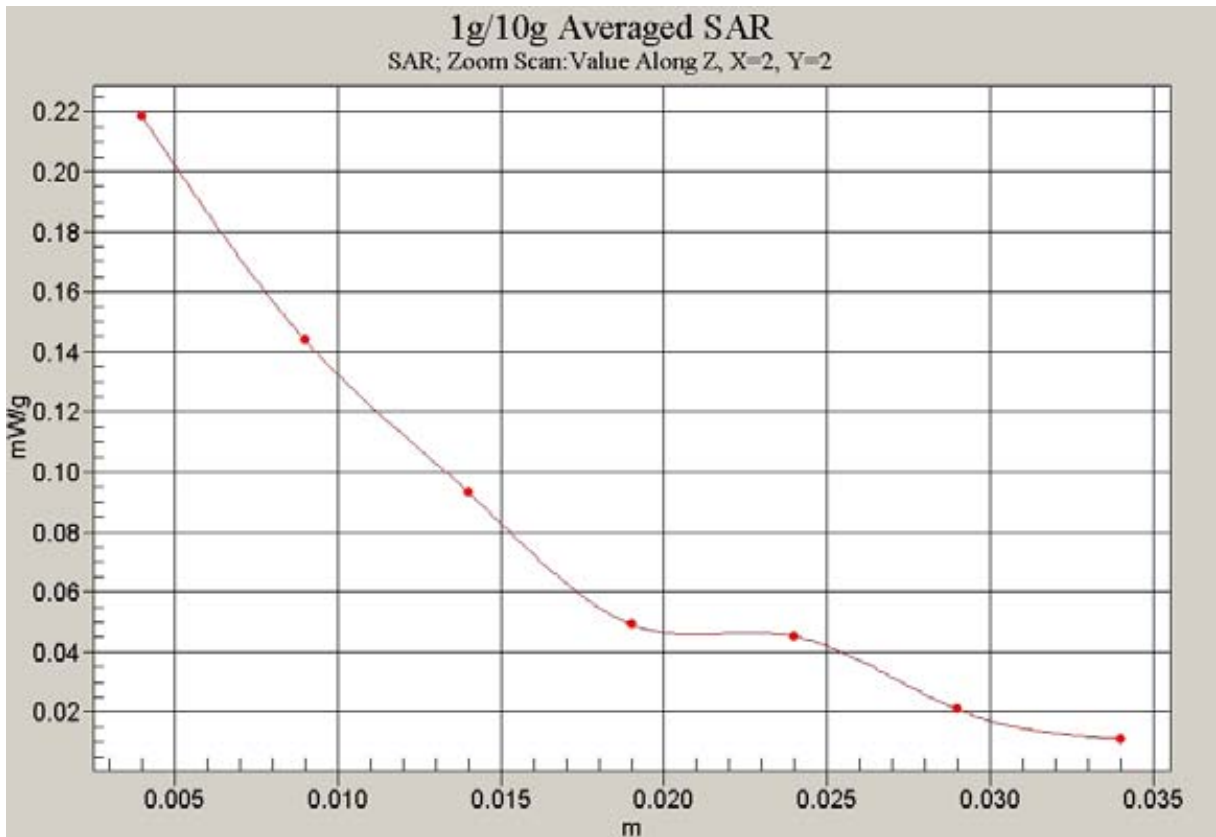
Peak SAR (extrapolated) = 0.338 W/kg

**SAR(1 g) = 0.207 mW/g; SAR(10 g) = 0.128 mW/g**

Maximum value of SAR (measured) = 0.218 mW/g



**Fig. 89 1900 MHz CH810**



**Fig. 90 Z-Scan at power reference point (1900 MHz CH810)**

**1900 Body GPRS Toward Phantom Middle-slide up**

Date/Time: 2007-8-10 15:53:39

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/m<sup>3</sup>

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 (51x101x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.234 mW/g

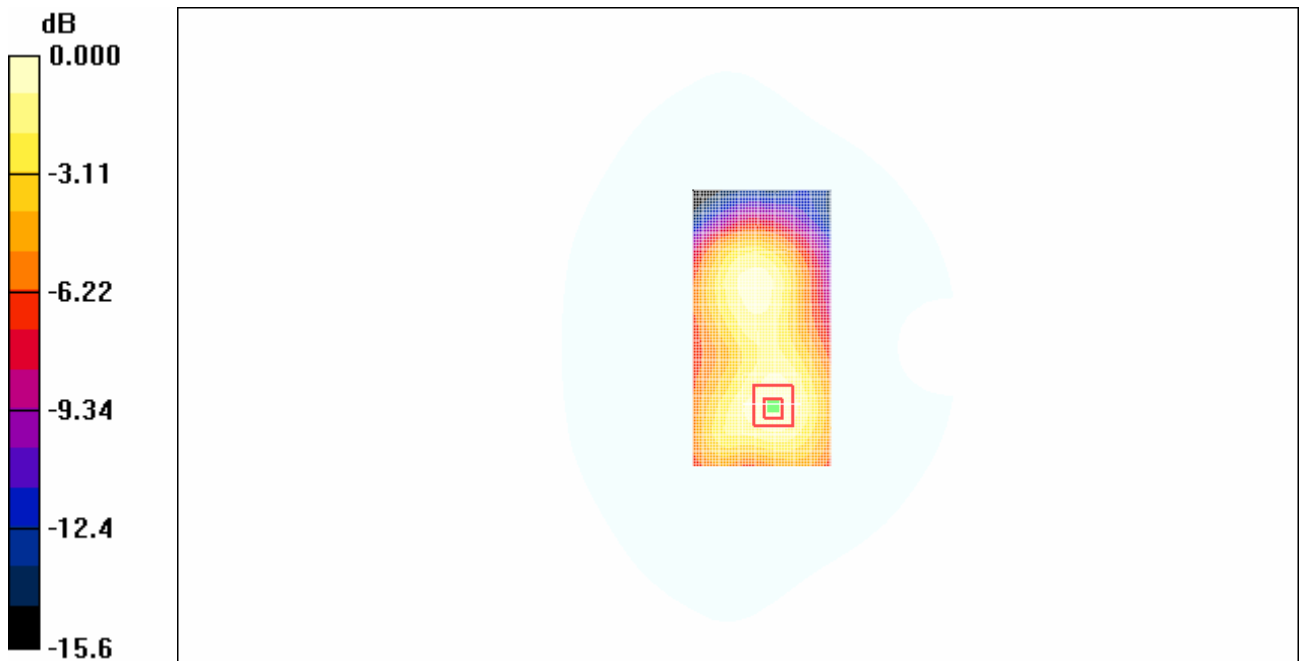
**Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.00 V/m; Power Drift = 0.017 dB

Peak SAR (extrapolated) = 0.342 W/kg

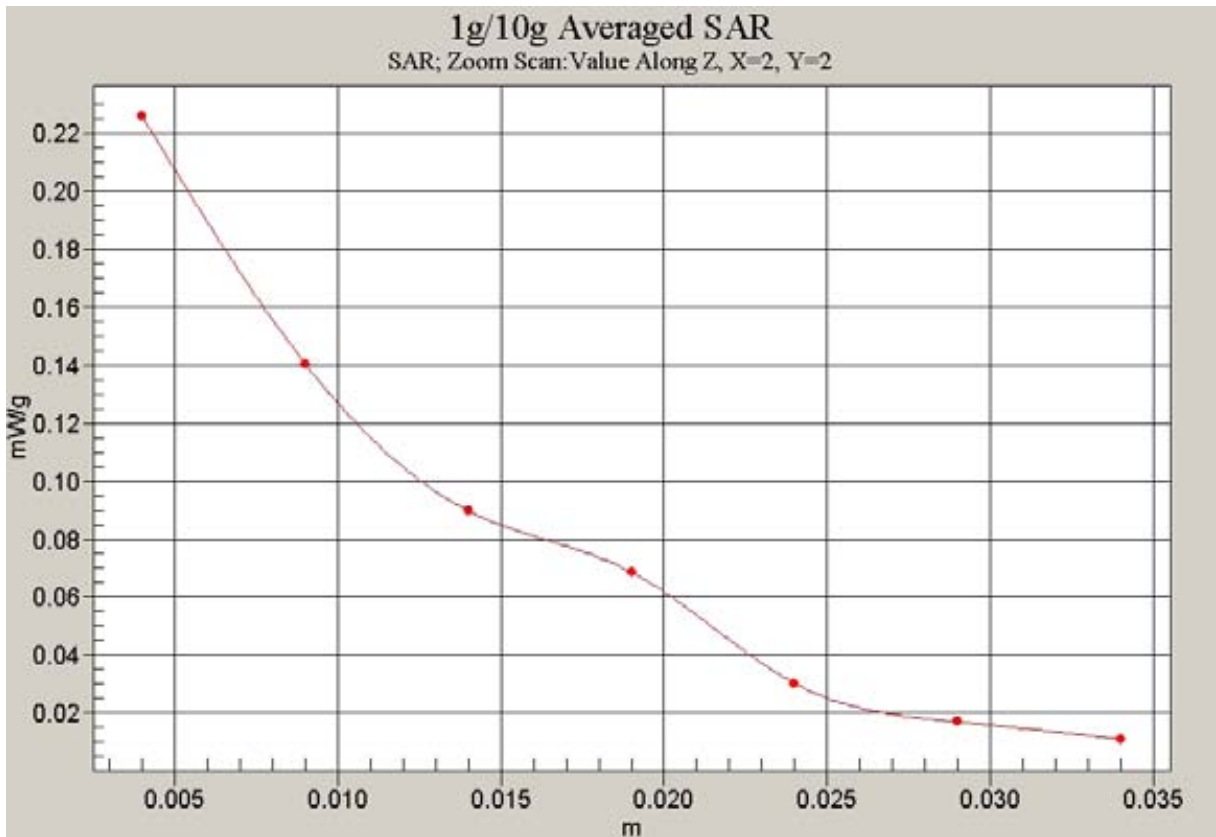
**SAR(1 g) = 0.213 mW/g; SAR(10 g) = 0.133 mW/g**

Maximum value of SAR (measured) = 0.226 mW/g



0 dB = 0.226mW/g

**Fig. 91 1900 MHz CH661**



**Fig. 92 Z-Scan at power reference point (1900 MHz CH661)**



**1900 Body GPRS Toward Phantom Low-slide up**

Date/Time: 2007-8-10 16:14:11

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/m<sup>3</sup>

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 (51x101x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.240 mW/g

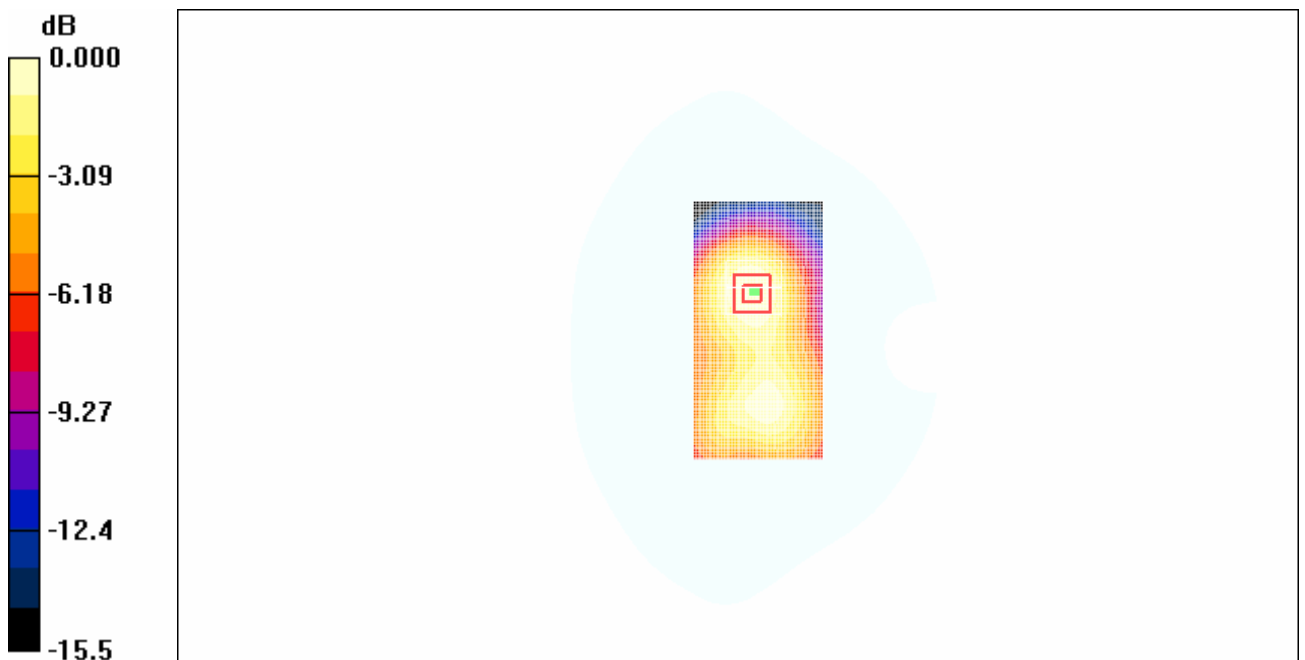
**Toward Phantom Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.4 V/m; Power Drift = -0.062 dB

Peak SAR (extrapolated) = 0.324 W/kg

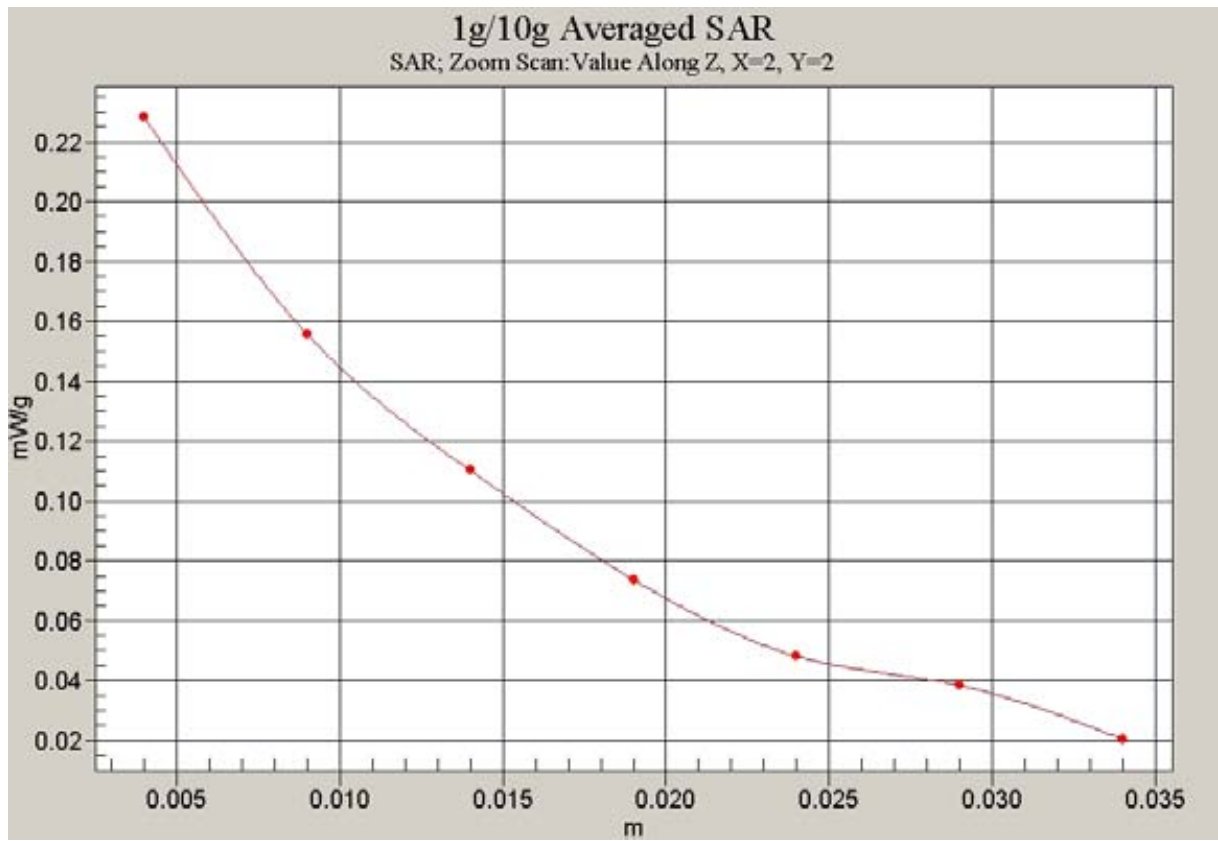
**SAR(1 g) = 0.216 mW/g; SAR(10 g) = 0.140 mW/g**

Maximum value of SAR (measured) = 0.227 mW/g



0 dB = 0.227mW/g

**Fig. 93 1900 MHz CH512**



**Fig. 94 Z-Scan at power reference point (1900 MHz CH512)**

**1900 Body GPRS Toward Ground High-slide up**

Date/Time: 2007-8-10 17:20:29

Electronics: DAE3 Sn536

Medium: Body 1900 MHz

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.54$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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 (51x101x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.469 mW/g

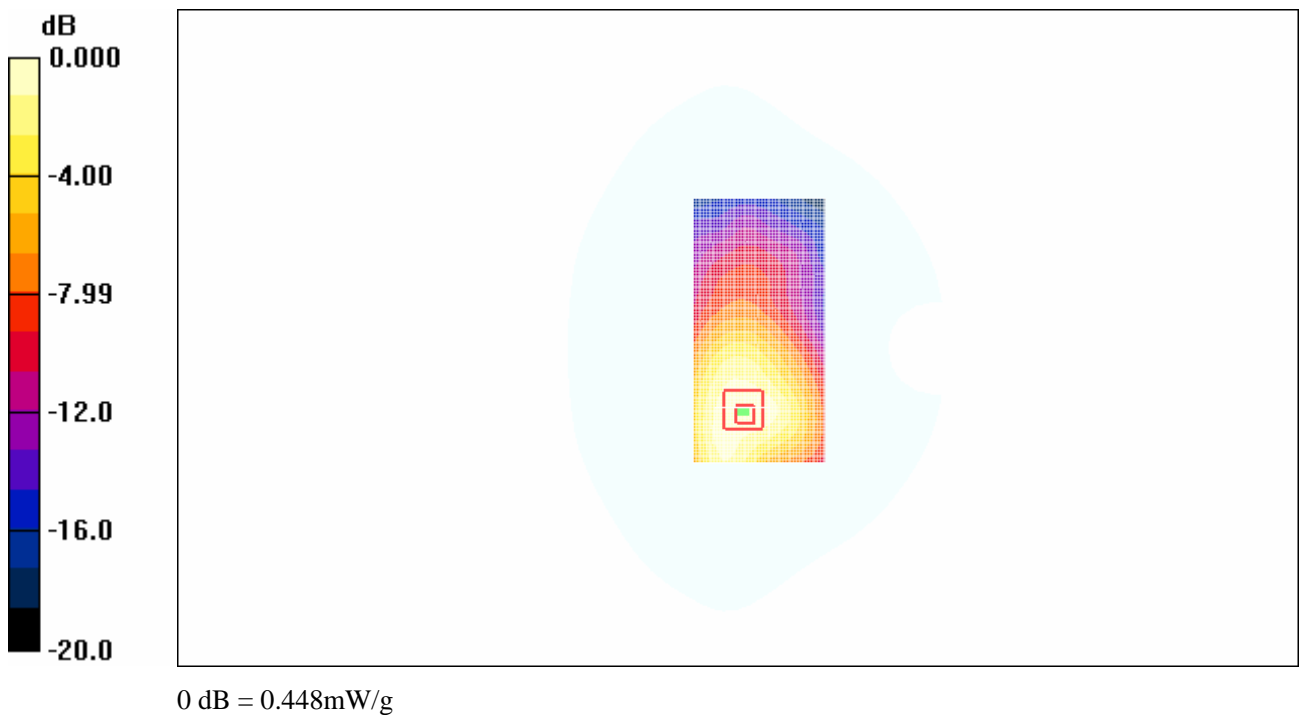
**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.8 V/m; Power Drift = -0.200 dB

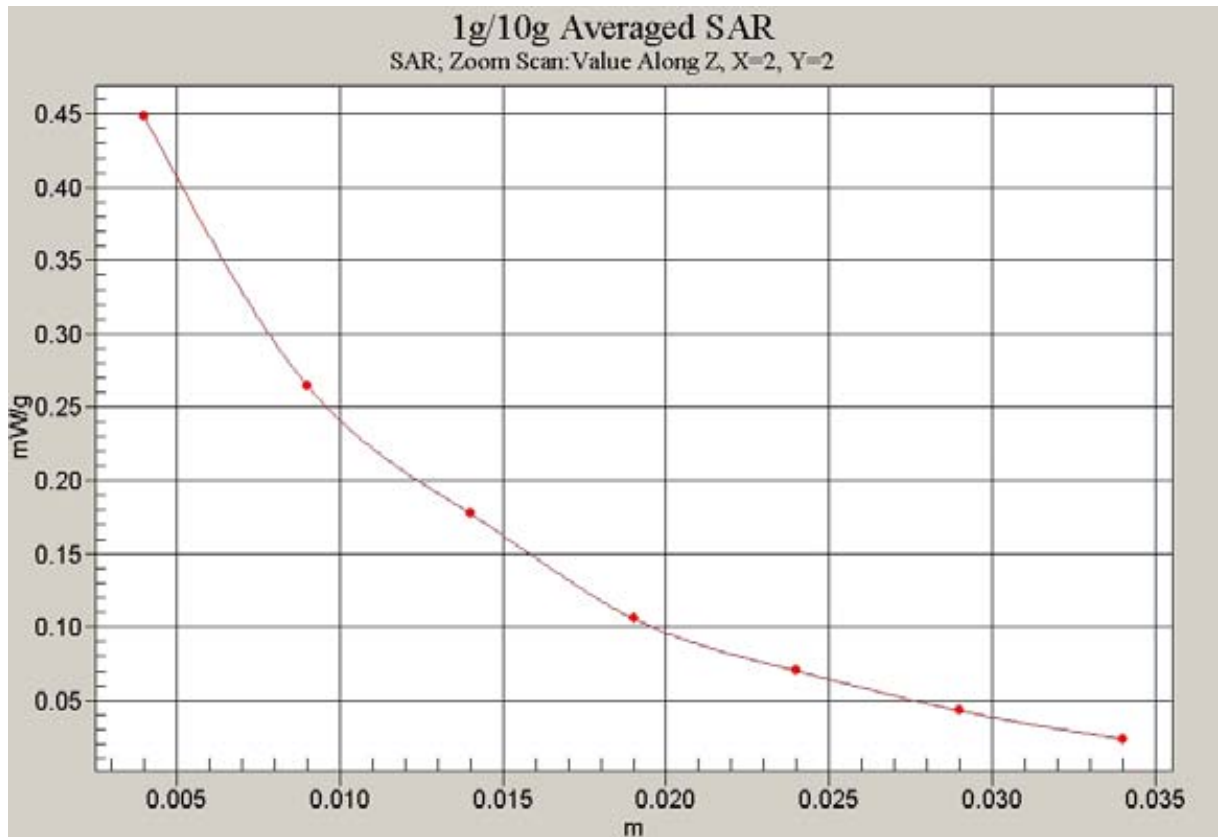
Peak SAR (extrapolated) = 0.744 W/kg

**SAR(1 g) = 0.426 mW/g; SAR(10 g) = 0.255 mW/g**

Maximum value of SAR (measured) = 0.448 mW/g



**Fig. 95 1900 MHz CH810**



**Fig. 96 Z-Scan at power reference point (1900 MHz CH810)**

**1900 Body GPRS Toward Ground Middle-slide up**

Date/Time: 2007-8-10 16:58:56

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/m<sup>3</sup>

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 (51x101x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.503 mW/g

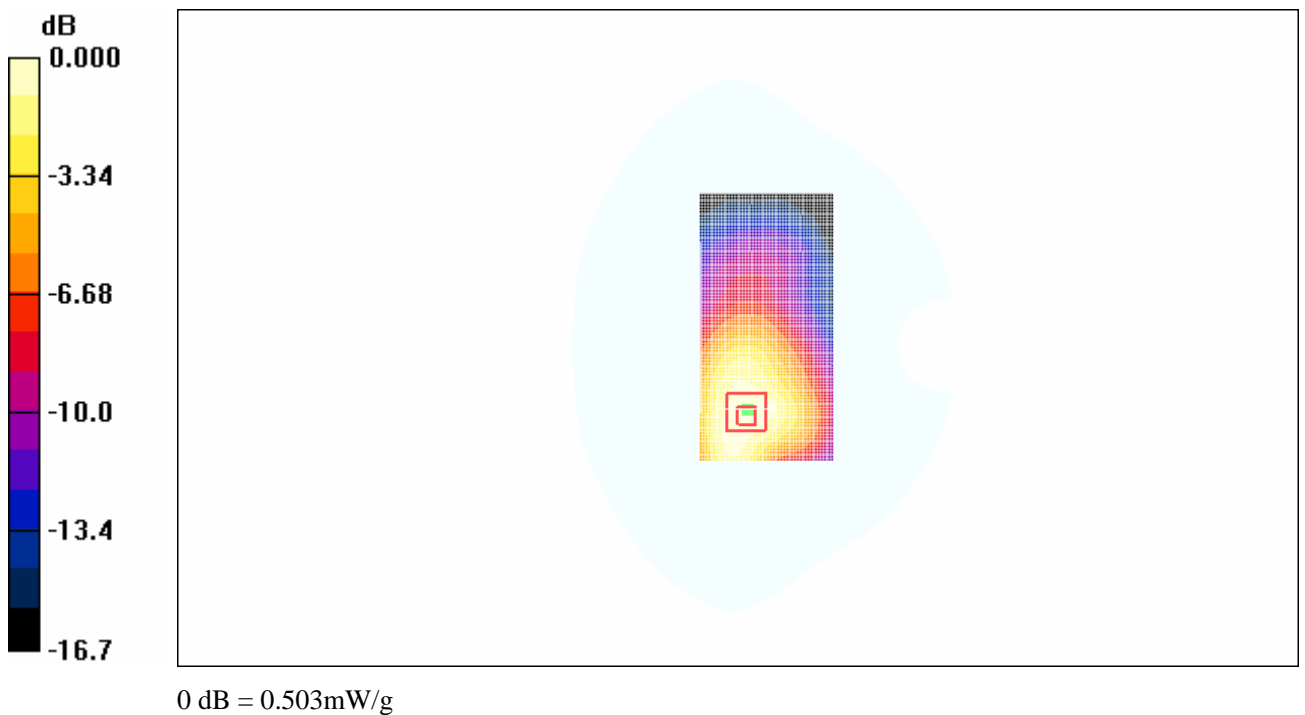
**Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.3 V/m; Power Drift = 0.076 dB

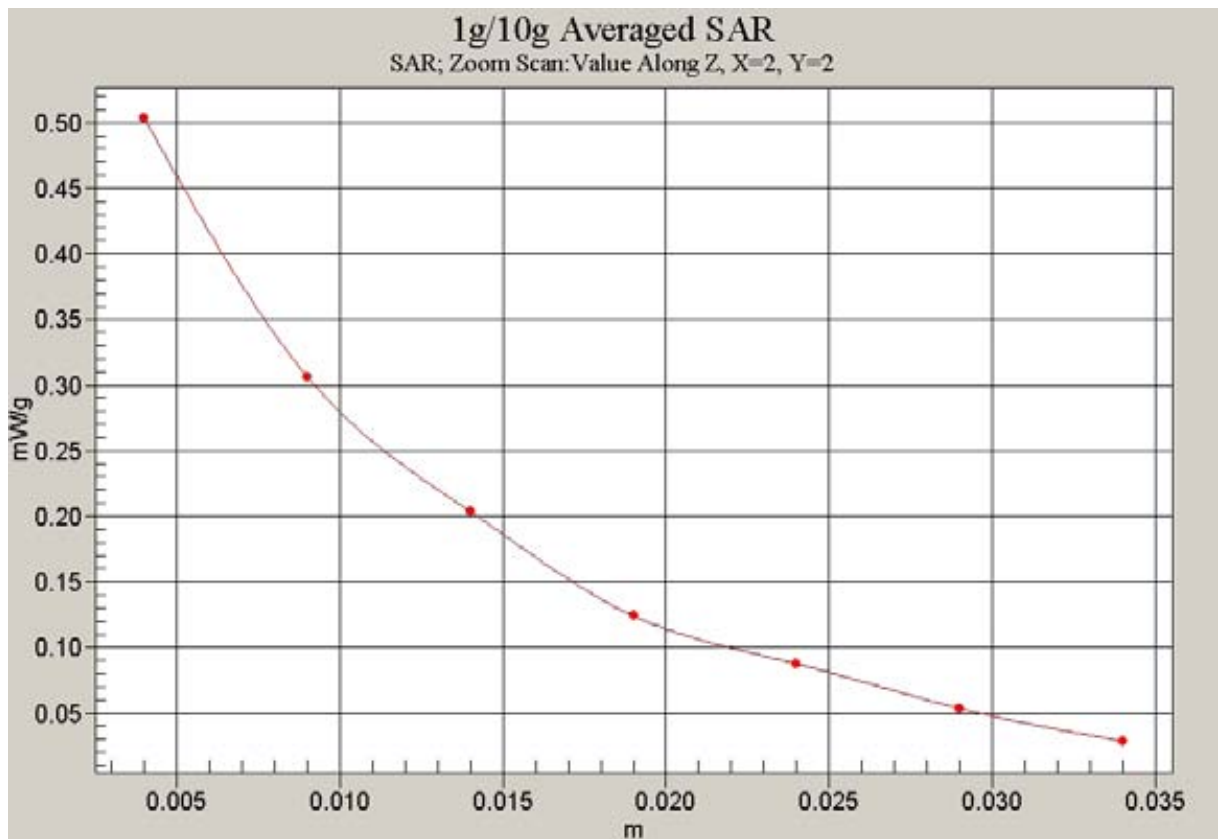
Peak SAR (extrapolated) = 0.828 W/kg

**SAR(1 g) = 0.477 mW/g; SAR(10 g) = 0.290 mW/g**

Maximum value of SAR (measured) = 0.503 mW/g



**Fig. 97 1900 MHz CH661**



**Fig. 98 Z-Scan at power reference point (1900 MHz CH661)**

**1900 Body GPRS Toward Ground Low-slide up**

Date/Time: 2007-8-10 16:36:39

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/m<sup>3</sup>

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 (51x101x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.549 mW/g

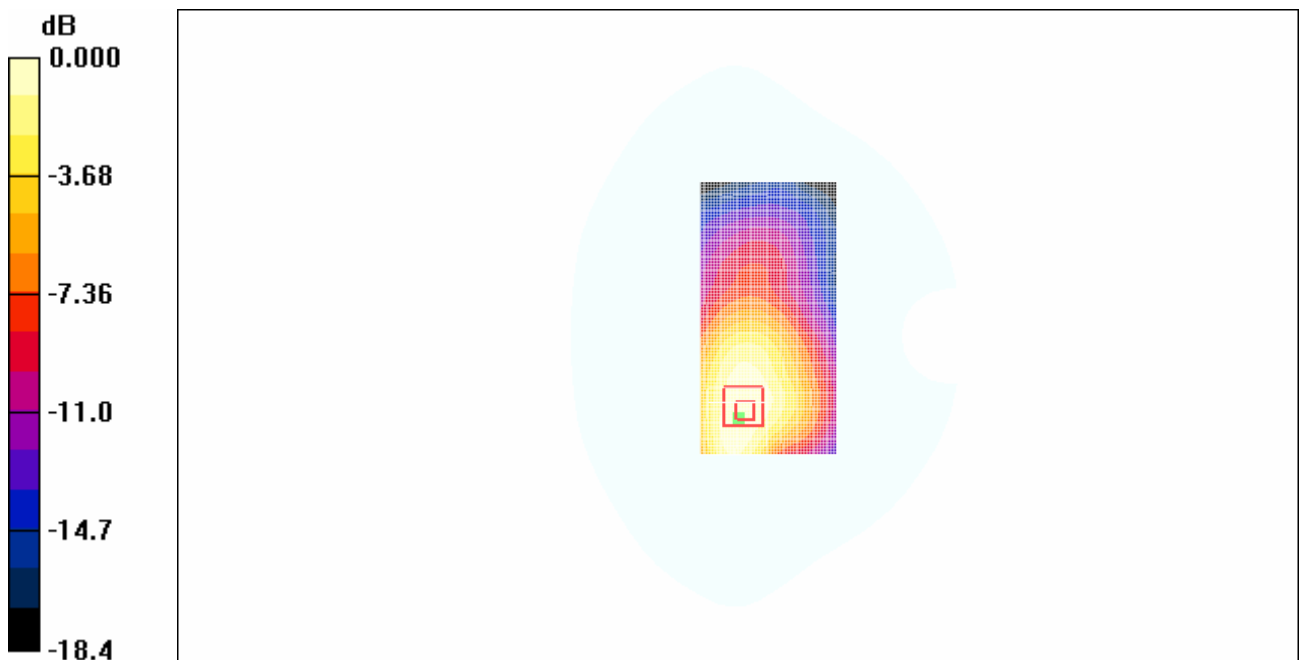
**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.9 V/m; Power Drift = -0.200 dB

Peak SAR (extrapolated) = 0.884 W/kg

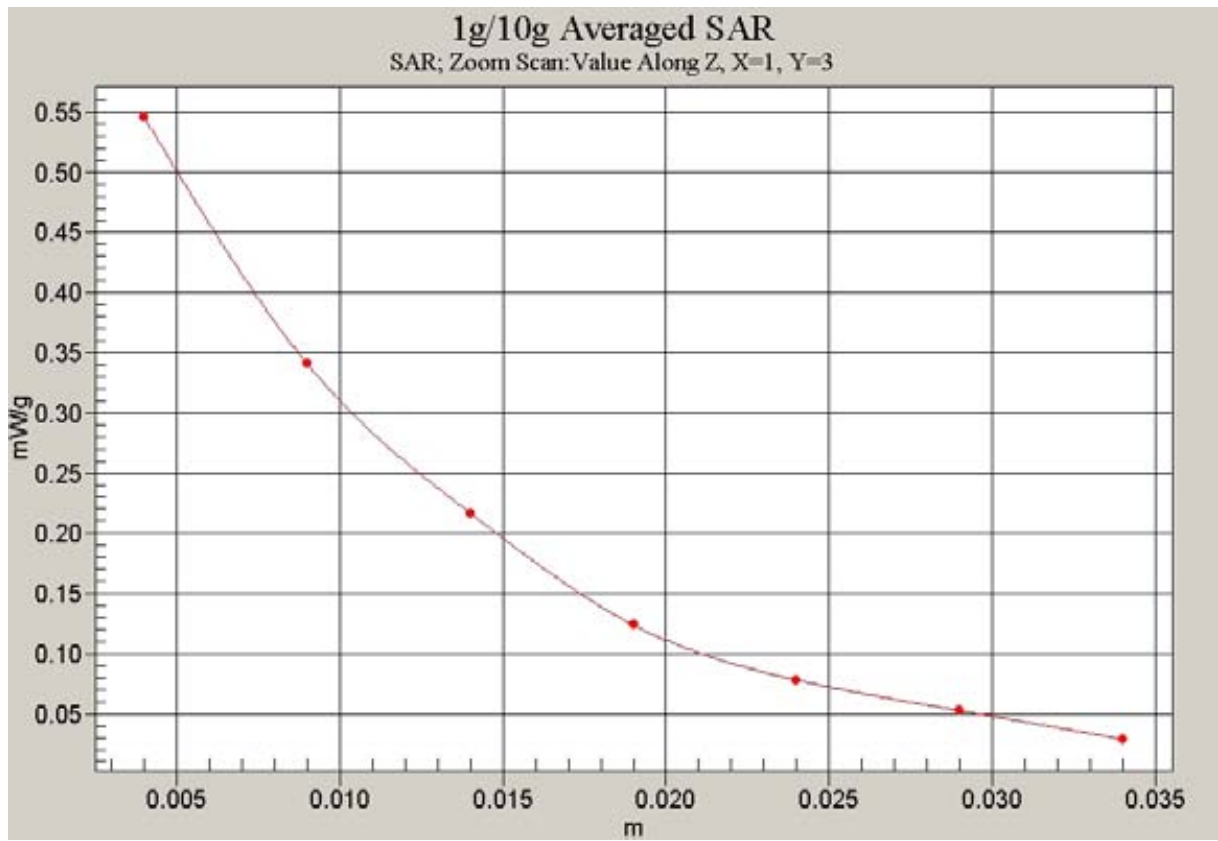
**SAR(1 g) = 0.521 mW/g; SAR(10 g) = 0.319 mW/g**

Maximum value of SAR (measured) = 0.546 mW/g



0 dB = 0.546mW/g

**Fig. 99 1900 MHz CH512**



**Fig. 100 Z-Scan at power reference point (1900 MHz CH512)**



**850 Body Toward Ground High with Bluetooth function-slide up**

Date/Time: 2007-8-8 18:35:21

Electronics: DAE3 Sn536

Medium: 850 Body

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 0.917$  mho/m;  $\epsilon_r = 43.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: GSM 850 Frequency: 848.8 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(6.51, 6.51, 6.51)

**Toward Ground High/Area Scan (51x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.942 mW/g

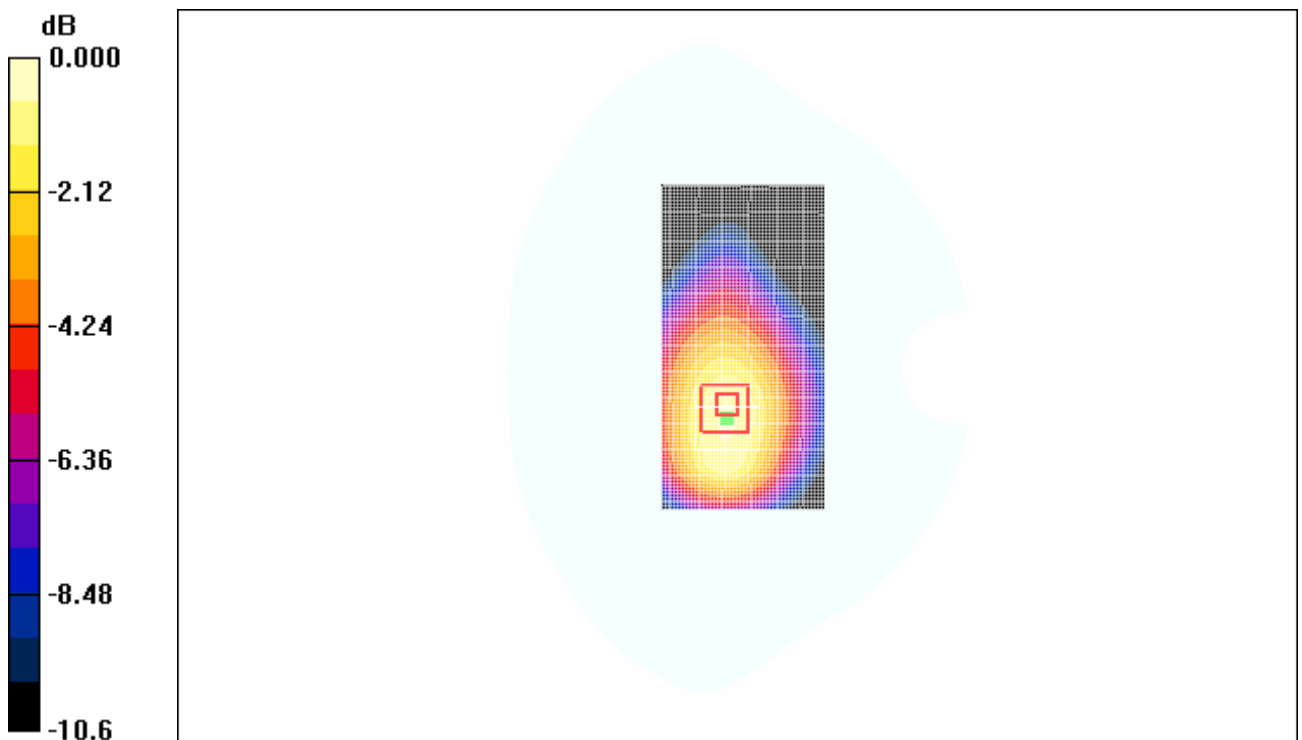
**Toward Ground High/Zoom Scan (4x4x7)/Cube 0:** Measurement grid: dx=10mm, dy=10mm, dz=5mm

Reference Value = 27.1 V/m; Power Drift = 0.200 dB

Peak SAR (extrapolated) = 1.37 W/kg

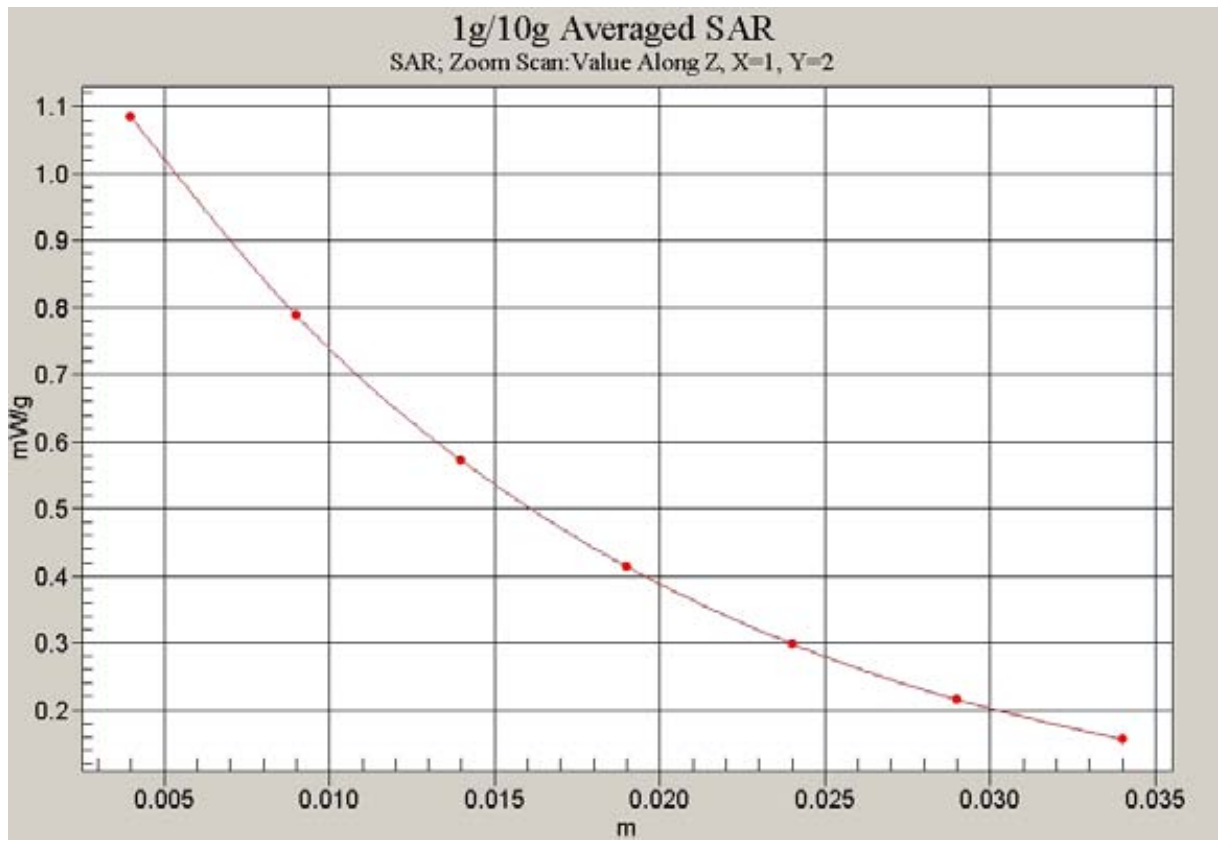
**SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.741 mW/g**

Maximum value of SAR (measured) = 1.08 mW/g



0 dB = 1.08mW/g

**Fig.101 850 MHz CH251**



**Fig. 102 Z-Scan at power reference point (850 MHz CH251)**

**1900 Body Toward Ground Low with Bluetooth function-slide up**

Date/Time: 2007-8-10 17:55:36

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/m<sup>3</sup>

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 (51x101x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.574 mW/g

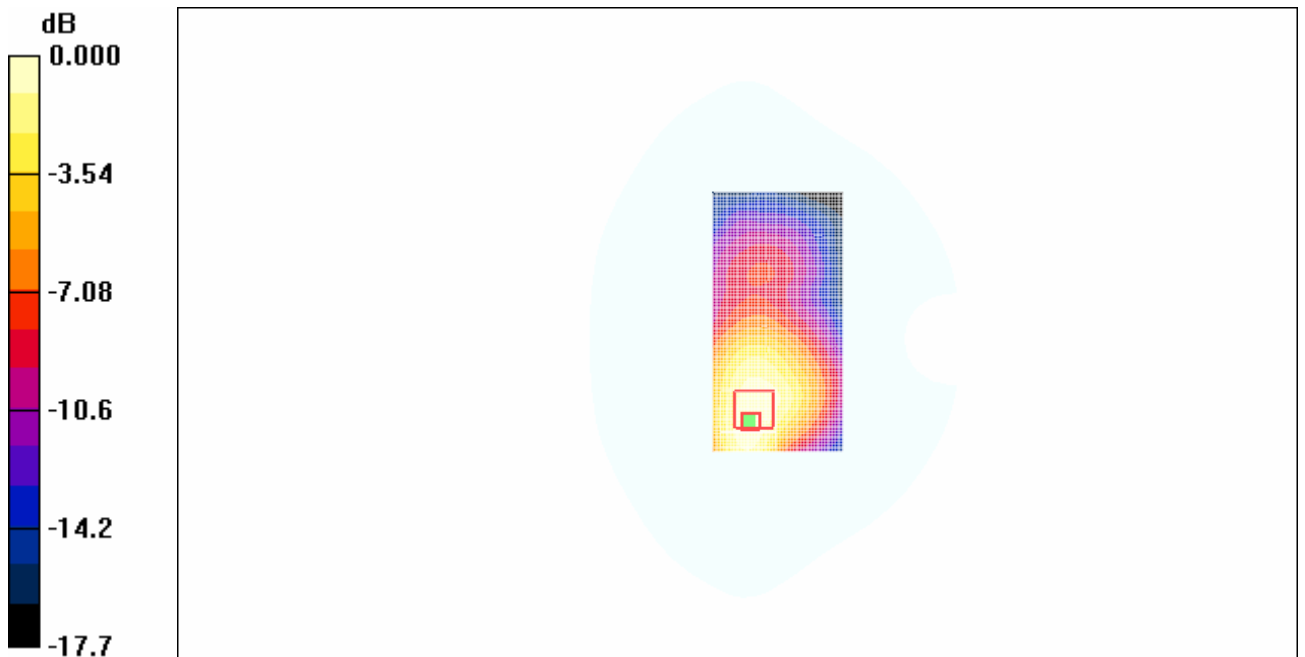
**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.3 V/m; Power Drift = -0.141 dB

Peak SAR (extrapolated) = 0.917 W/kg

**SAR(1 g) = 0.532 mW/g; SAR(10 g) = 0.322 mW/g**

Maximum value of SAR (measured) = 0.574 mW/g



0 dB = 0.574mW/g

**Fig. 103 1900 MHz CH512**

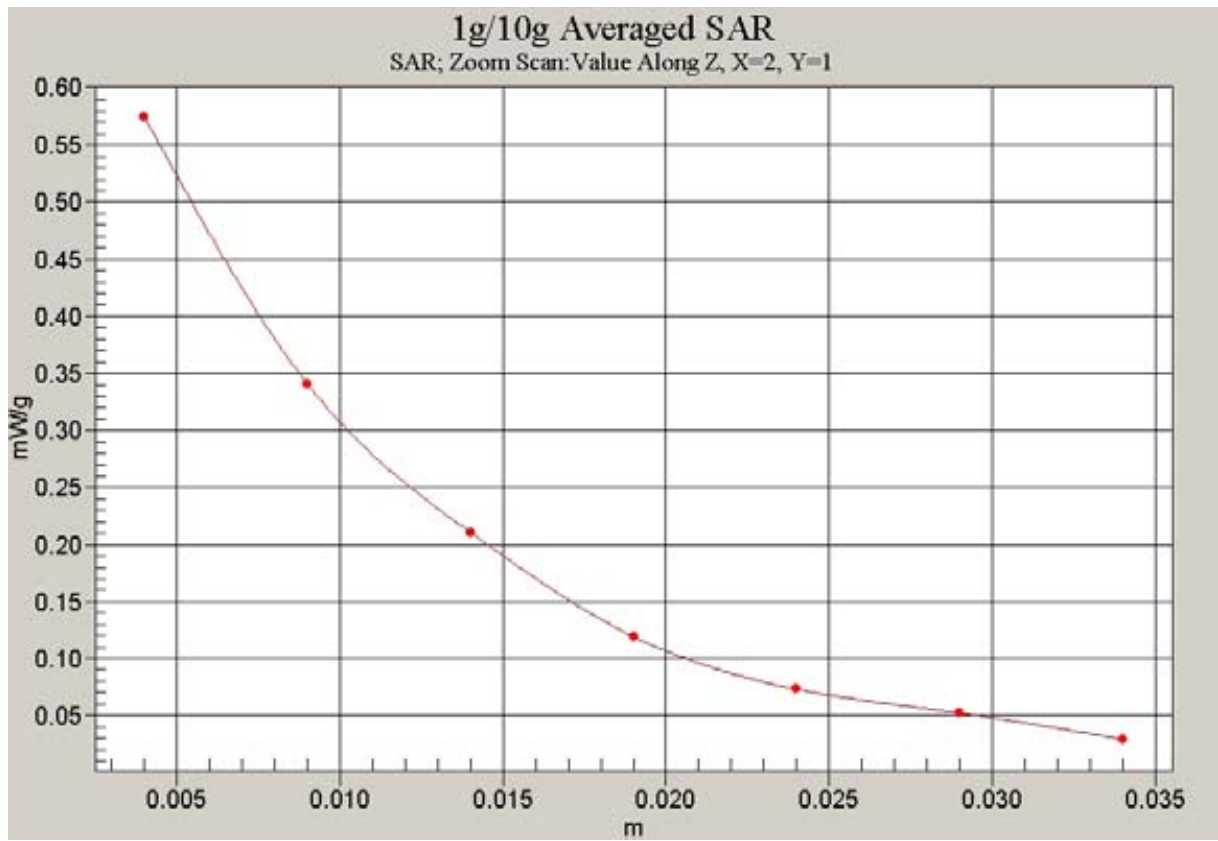


Fig. 104 Z-Scan at power reference point (1900 MHz CH512)

## ANNEX D: SYSTEM VALIDATION RESULTS

### 835MHzDAE589Probe1736

Date/Time: 2007-8-8 7:41:26

Electronics: DAE3 Sn536

Medium: 835 Head

Medium parameters used:  $f=835$  MHz;  $\sigma = 0.88$  mho/m;  $\epsilon_r = 41.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

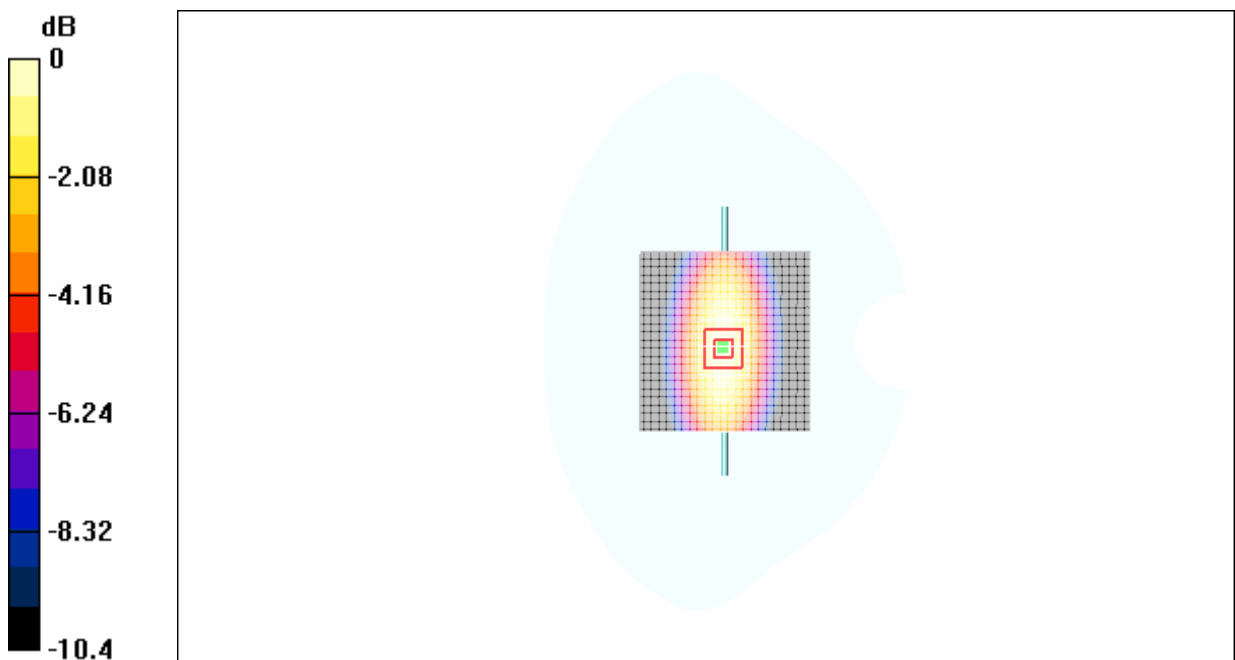
Ambient Temperature: 23.3°C      Liquid Temperature: 22.3°C

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

Probe: ET3DV6 - SN1736 ConvF(6.51, 6.51, 6.51)

**835MHz/Area Scan (101x101x1):** Measurement grid: dx=10mm, dy=10mm  
Maximum value of SAR (interpolated) = 2.68 mW/g

**835MHz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm  
Reference Value = 56.8 V/m; Power Drift = -0.0 dB  
Peak SAR (extrapolated) = 3.67 W/kg  
**SAR(1 g) = 2.48 mW/g; SAR(10 g) = 1.62 mW/g**  
Maximum value of SAR (measured) = 2.69 mW/g



0 dB = 2.69mW/g

Fig.105 validation 835MHz 250mW

**1900MHzDAE536Probe1736**

Date/Time: 2007-8-10 7:23:4

Electronics: DAE3 Sn536

Medium: 1900 Head

Medium parameters used:  $f=1900\text{MHz}$ ;  $\sigma = 1.38 \text{ mho/m}$ ;  $\epsilon_r = 39.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $23.3^\circ\text{C}$       Liquid Temperature:  $22.3^\circ\text{C}$

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:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$   
Maximum value of SAR (interpolated) = 11.2 mW/g

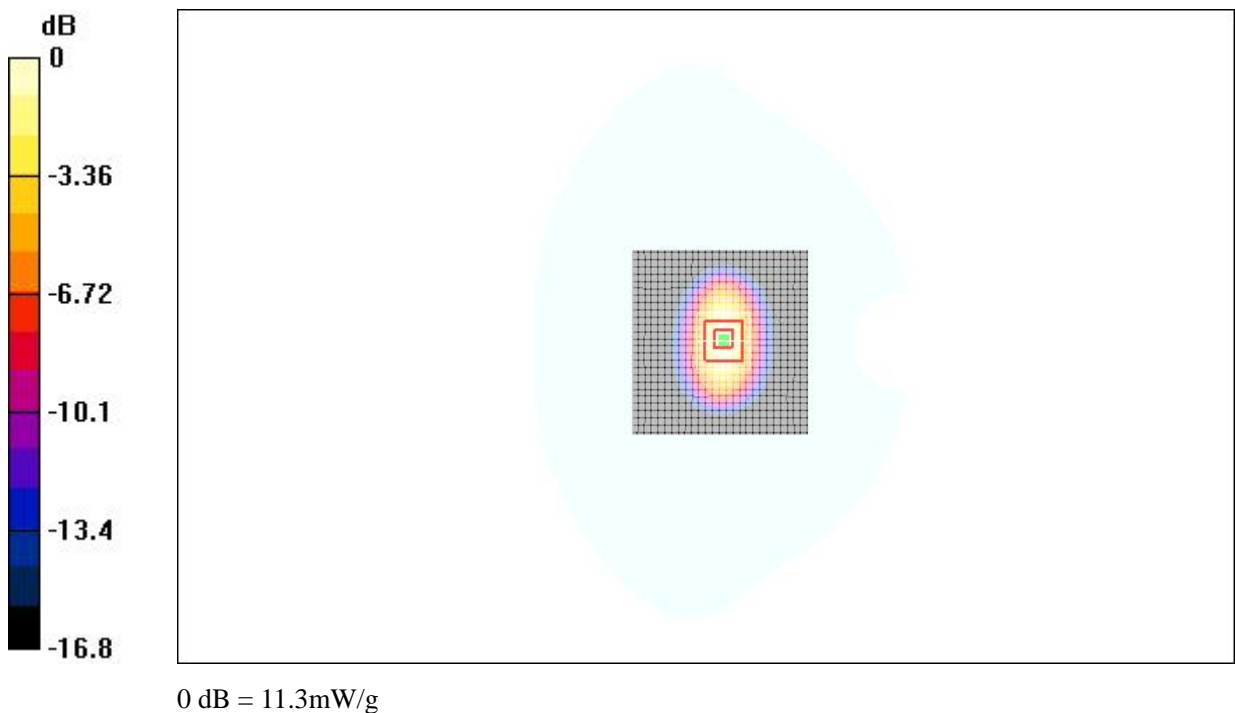
**System Validation/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  
 $dy=5\text{mm}$ ,  $dz=5\text{mm}$

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.106 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  
Client **TMC China**

Accreditation No.: **SCS 108**

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)°C and humidity &lt;70%</p> <p>Calibration Equipment used (M&amp;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> <table border="1"> <thead> <tr> <th></th> <th>Name</th> <th>Function</th> <th>Signature</th> </tr> </thead> <tbody> <tr> <td>Calibrated by:</td> <td>Nico Vetterli</td> <td>Laboratory Technician</td> <td></td> </tr> <tr> <td>Approved by:</td> <td>Katja Pokovic</td> <td>Technical Director</td> <td></td> </tr> </tbody> </table> <p style="text-align: right;"><b>Issued: December 1, 2006</b></p> <p>This calibration certificate shall not be reported except in full without written approval of the laboratory.</p>				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		Name	Function	Signature	Calibrated by:	Nico Vetterli	Laboratory Technician		Approved by:	Katja Pokovic	Technical Director	
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Calibration Laboratory of  
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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<sub>x,y,z</sub> sensitivity in free space  
ConF sensitivity in TSL / NORM<sub>x,y,z</sub>  
DCP diode compression point  
Polarization  $\varphi$   $\varphi$  rotation around probe axis  
Polarization  $\vartheta$   $\vartheta$  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:**

- 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) 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<sub>x,y,z</sub>:** Assessed for E-field polarization  $\vartheta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not effect the E<sup>2</sup>-field uncertainty inside TSL (see below ConvF).
- **NORM(f)<sub>x,y,z</sub> = NORM<sub>x,y,z</sub> \* 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<sub>x,y,z</sub>:** 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<sub>x,y,z</sub> \* 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  $\pm 50$  MHz to  $\pm 100$  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 DASY System

ET3DV6 SN: 1736

December 1, 2006

**DASY - Parameters of Probe: ET3DV6 SN:1736**

Sensitivity in Free Space<sup>A</sup>

Diode Compression<sup>B</sup>

NormX	1.97 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP X	93 mV
NormY	1.75 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP Y	93 mV
NormZ	1.97 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	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 <sub>be</sub> [%]	Without Correction Algorithm	9.6	5.0
SAR <sub>be</sub> [%]	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 <sub>be</sub> [%]	Without Correction Algorithm	13.2	8.8
SAR <sub>be</sub> [%]	With Correction Algorithm	0.6	0.1

Sensor Offset

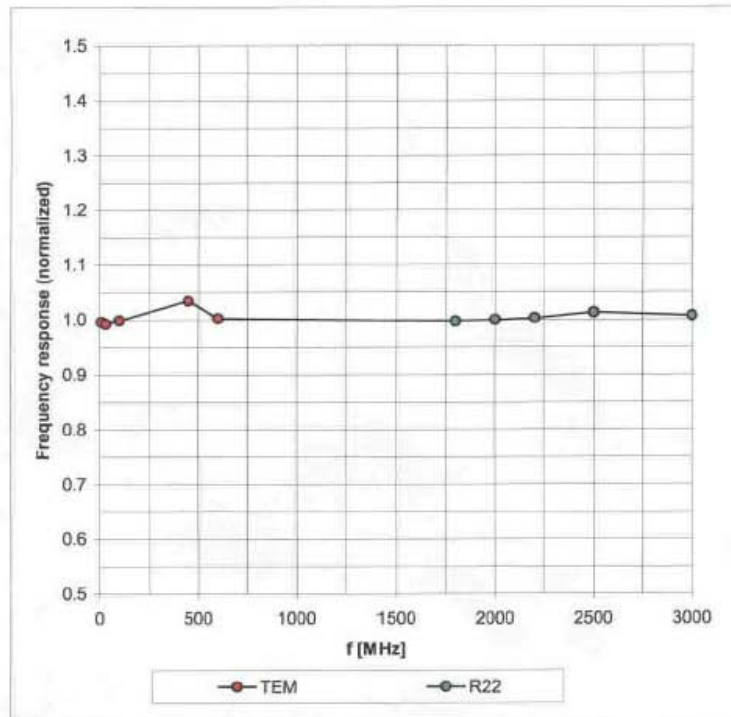
Probe Tip to Sensor Center                    2.7 mm

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December 1, 2006

### Frequency Response of E-Field

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

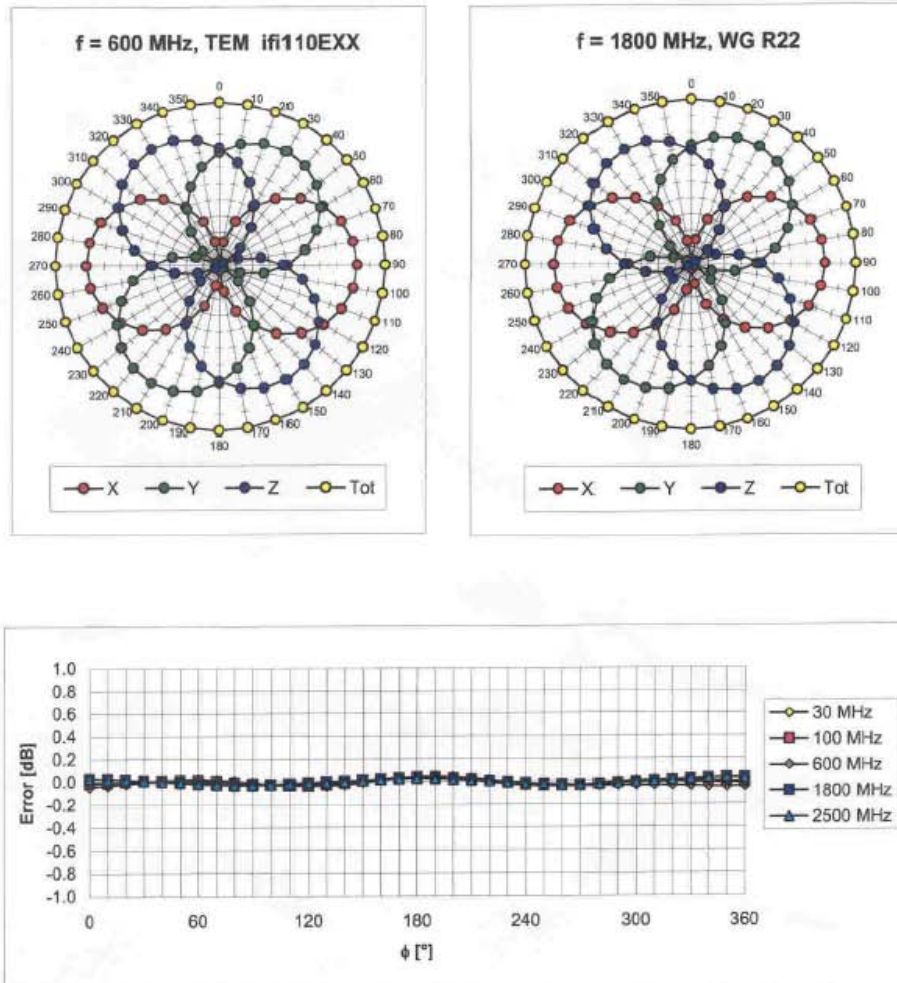


Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  (k=2)

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December 1, 2006

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

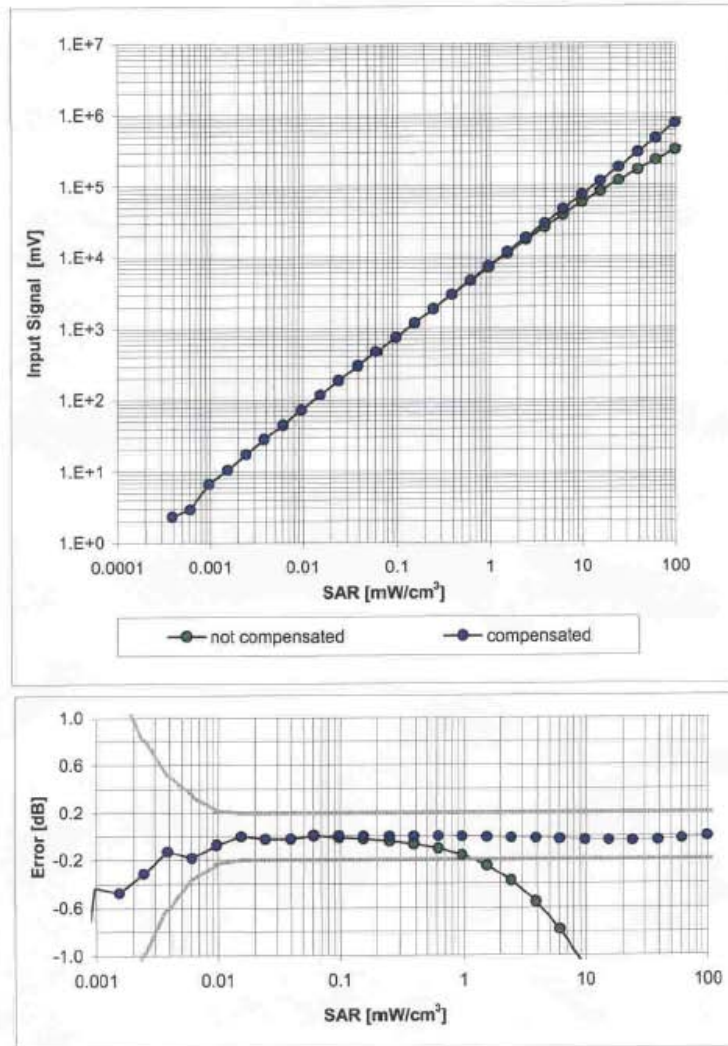


Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  ( $k=2$ )

ET3DV6 SN: 1736

December 1, 2006

### Dynamic Range $f(\text{SAR}_{\text{head}})$ (Waveguide R22, $f = 1800 \text{ MHz}$ )

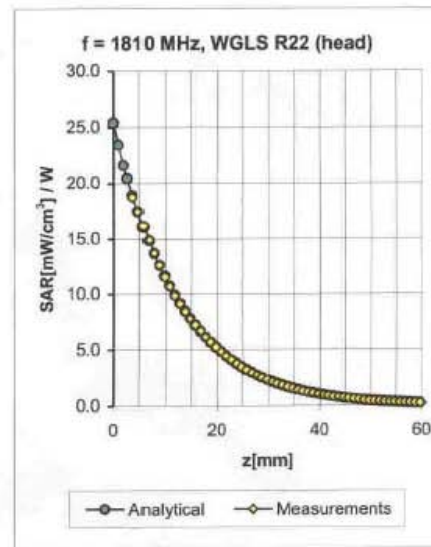
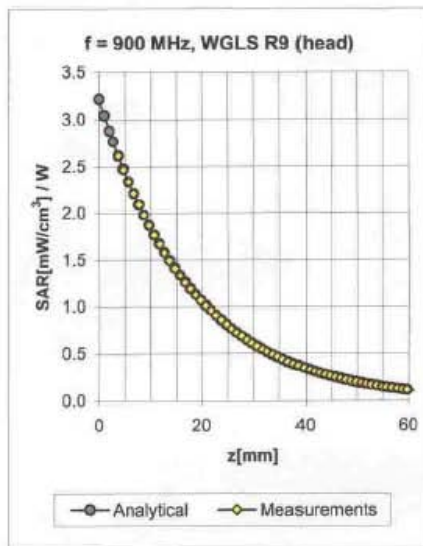


Uncertainty of Linearity Assessment:  $\pm 0.6\%$  ( $k=2$ )

ET3DV6 SN: 1736

December 1, 2006

### Conversion Factor Assessment



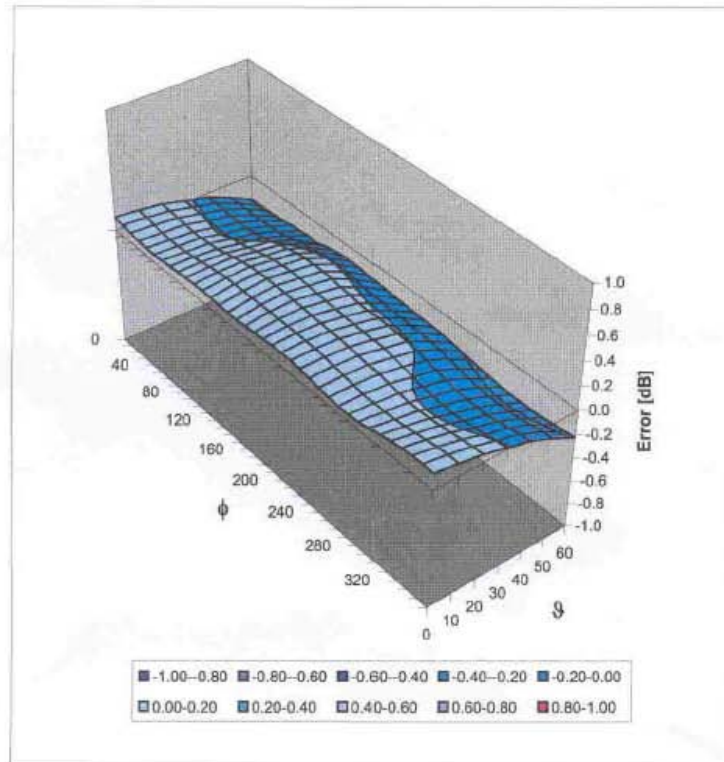
f [MHz]	Validity [MHz] <sup>C</sup>	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.56	1.85	6.51 ± 11.0% (k=2)
1810	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.57	2.47	5.40 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.62	2.29	4.67 ± 11.8% (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 ( $\phi$ ,  $\theta$ ),  $f = 900$  MHz



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