

**LTE Band2 Body Bottom High with QPSK\_20M\_1RB\_Low – AP OFF**

Date: 2015-1-18

Electronics: DAE4 Sn777

Medium: Body 1900 MHz

Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.492 \text{ mho/m}$ ;  $\epsilon_r = 55.556$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature: 22.5 °C      Liquid Temperature: 22.0 °C

Communication System: LTE Band4 Frequency: 1900 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(7.15, 7.15, 7.15)

**Bottom High/Area Scan (61x41x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.756 W/kg

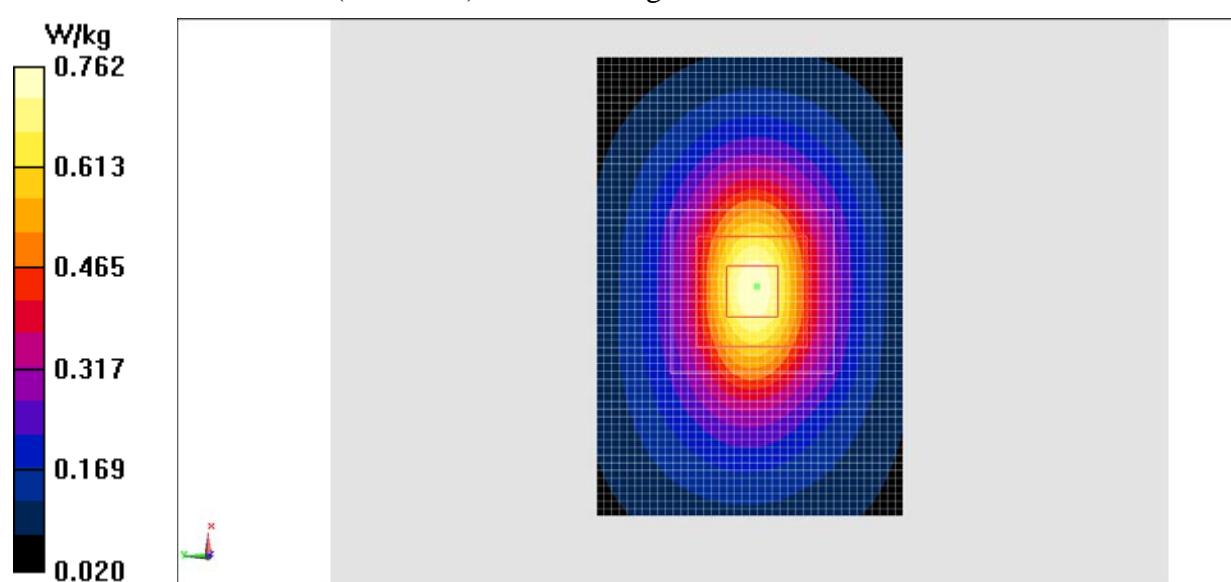
**Bottom High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 21.86 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.00 W/kg

**SAR(1 g) = 0.623 W/kg; SAR(10 g) = 0.359 W/kg**

Maximum value of SAR (measured) = 0.762 W/kg

**Fig.14 LTE Band2**

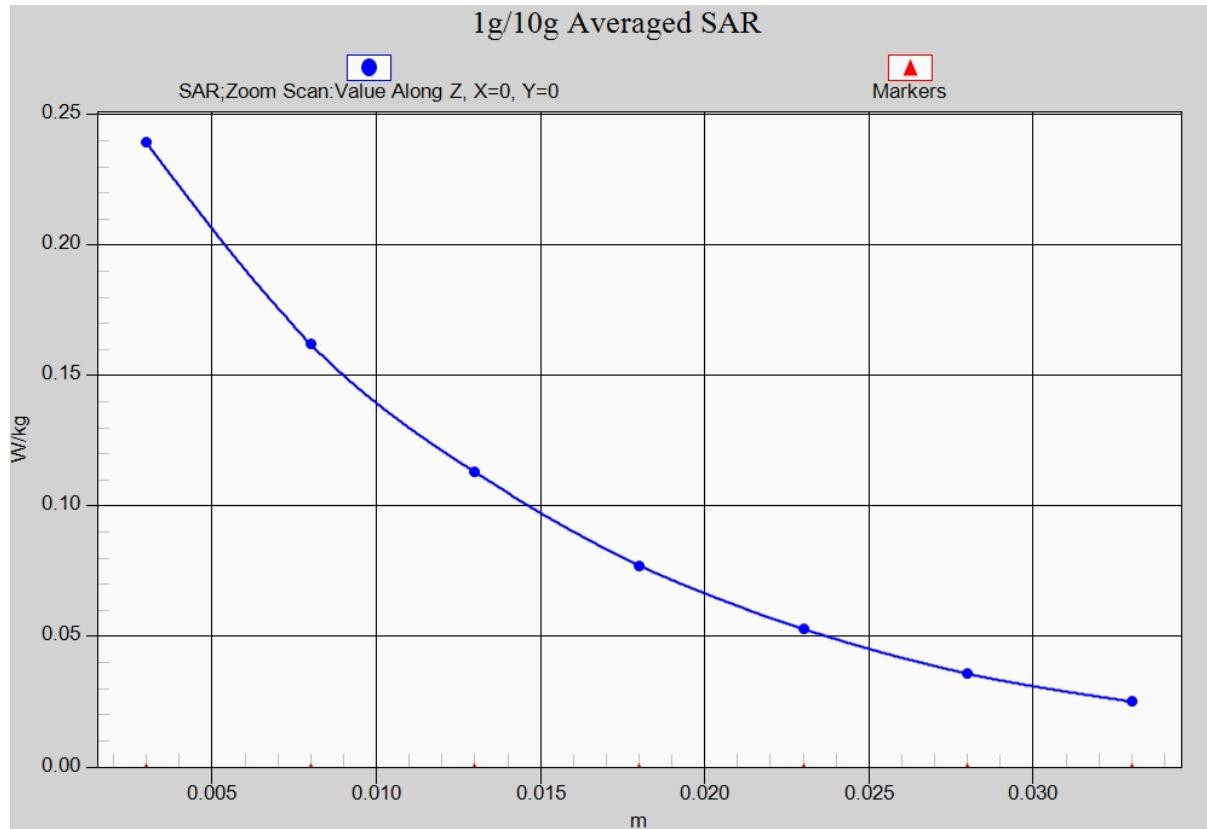


Fig. 14-1 Z-Scan at power reference point (LTE Band2)

**LTE Band2 Body Bottom Low with QPSK\_20M\_1RB\_High – AP ON**

Date: 2015-1-18

Electronics: DAE4 Sn777

Medium: Body 1900 MHz

Medium parameters used:  $f = 1860$  MHz;  $\sigma = 1.453$  mho/m;  $\epsilon_r = 55.676$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5 °C      Liquid Temperature: 22.0 °C

Communication System: LTE Band4 Frequency: 1860 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(7.15, 7.15, 7.15)

**Bottom Low/Area Scan (61x41x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.746 W/kg

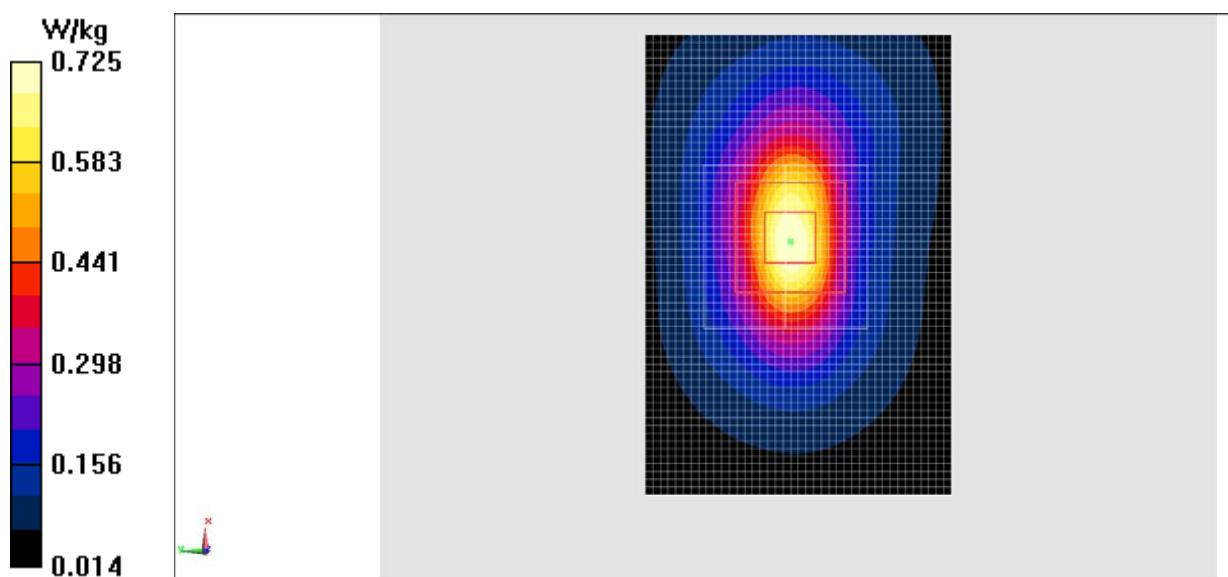
**Bottom Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 21.46 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 0.962 W/kg

**SAR(1 g) = 0.571 W/kg; SAR(10 g) = 0.305 W/kg**

Maximum value of SAR (measured) = 0.725 W/kg

**Fig.15 LTE Band2**

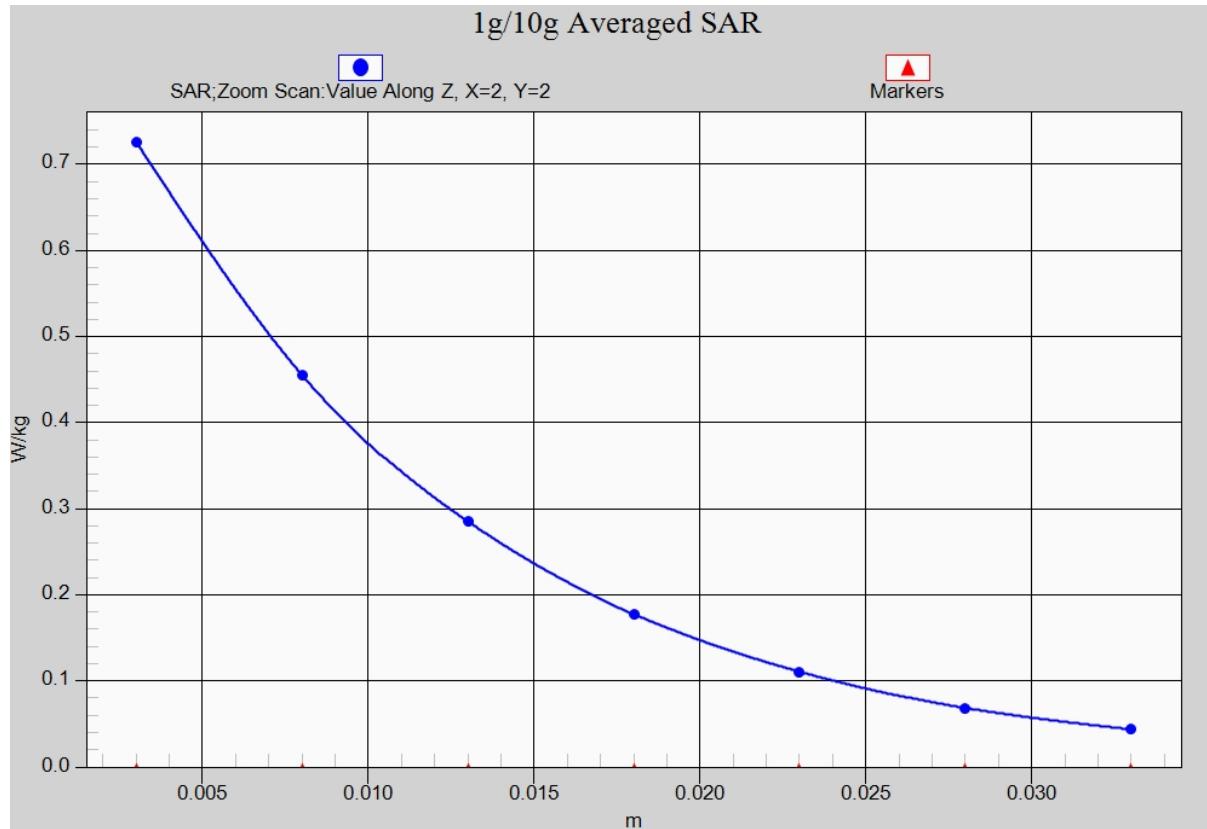


Fig. 15-1 Z-Scan at power reference point (LTE Band2)

**LTE Band4 Left Cheek High with QPSK\_20M\_1RB\_High – AP OFF**

Date: 2015-1-17

Electronics: DAE4 Sn777

Medium: Head 1750 MHz

Medium parameters used:  $f = 1745$  MHz;  $\sigma = 1.346$  S/m;  $\epsilon_r = 41.237$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5 °C      Liquid Temperature: 22.0 °C

Communication System: LTE Band4 Frequency: 1745 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(7.64, 7.64, 7.64)

**Cheek High/Area Scan (61x111x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.707 W/kg

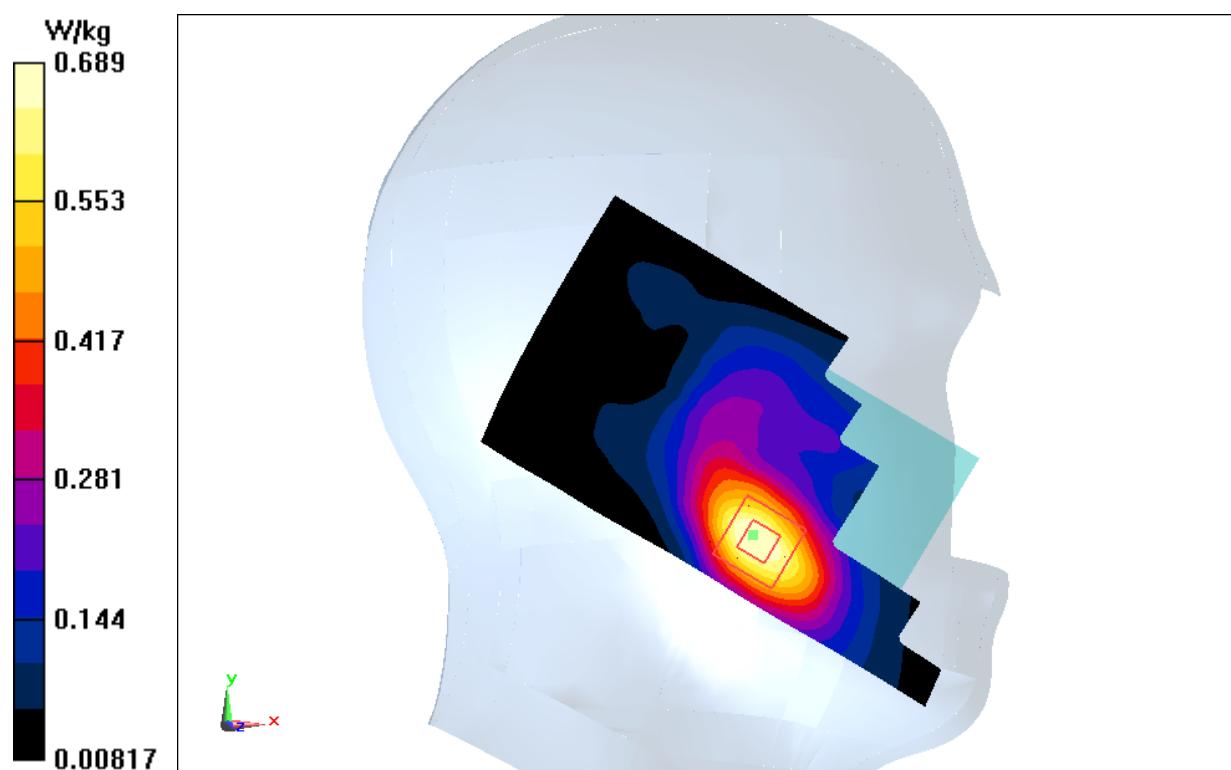
**Cheek High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.765 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.970 W/kg

**SAR(1 g) = 0.635 W/kg; SAR(10 g) = 0.391 W/kg**

Maximum value of SAR (measured) = 0.689 W/kg

**Fig.16 LTE Band4**

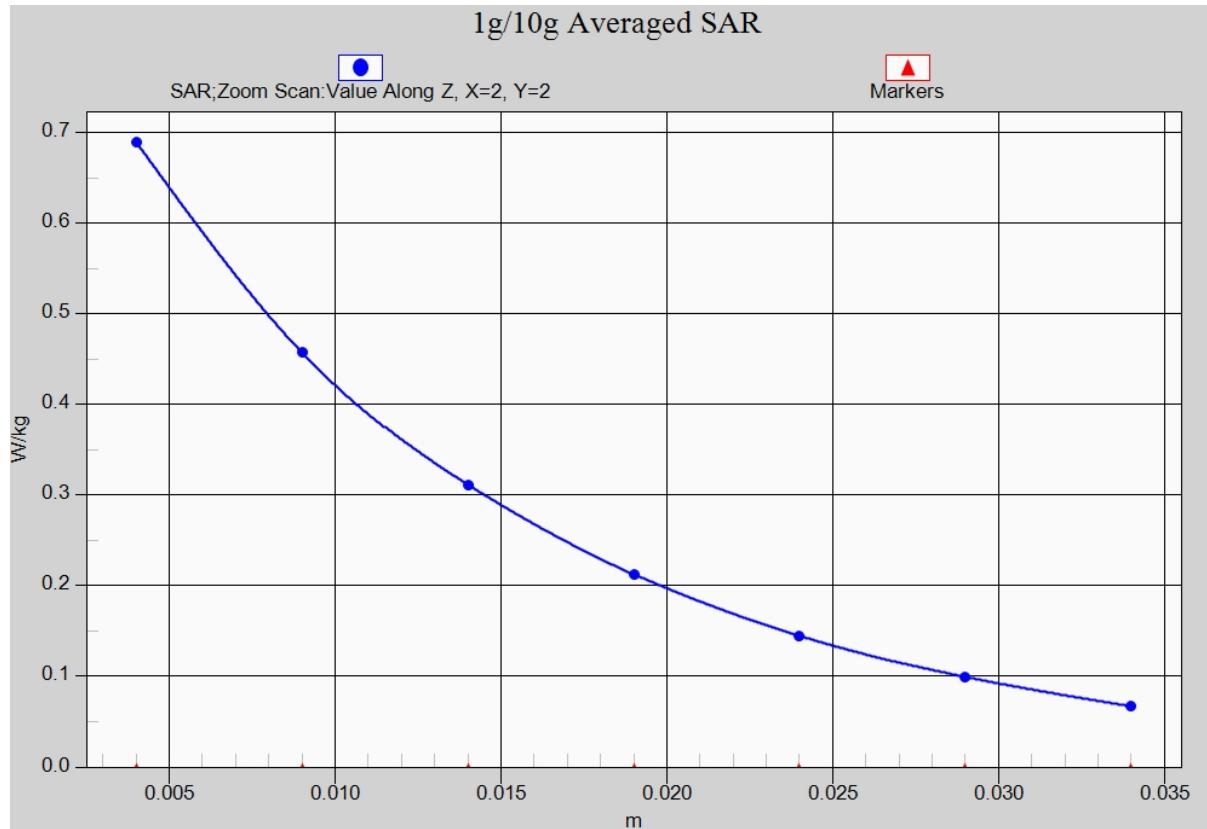


Fig. 16-1 Z-Scan at power reference point (LTE Band4)

**LTE Band4 Body Rear High with QPSK\_20M\_1RB\_High – AP OFF**

Date: 2015-1-17

Electronics: DAE4 Sn777

Medium: Body 1750 MHz

Medium parameters used:  $f = 1745 \text{ MHz}$ ;  $\sigma = 1.458 \text{ S/m}$ ;  $\epsilon_r = 52.012$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature: 22.5 °C      Liquid Temperature: 22.0 °C

Communication System: LTE Band4 Frequency: 1745 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(7.43, 7.43, 7.43)

**Rear High/Area Scan (111x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.666 W/kg

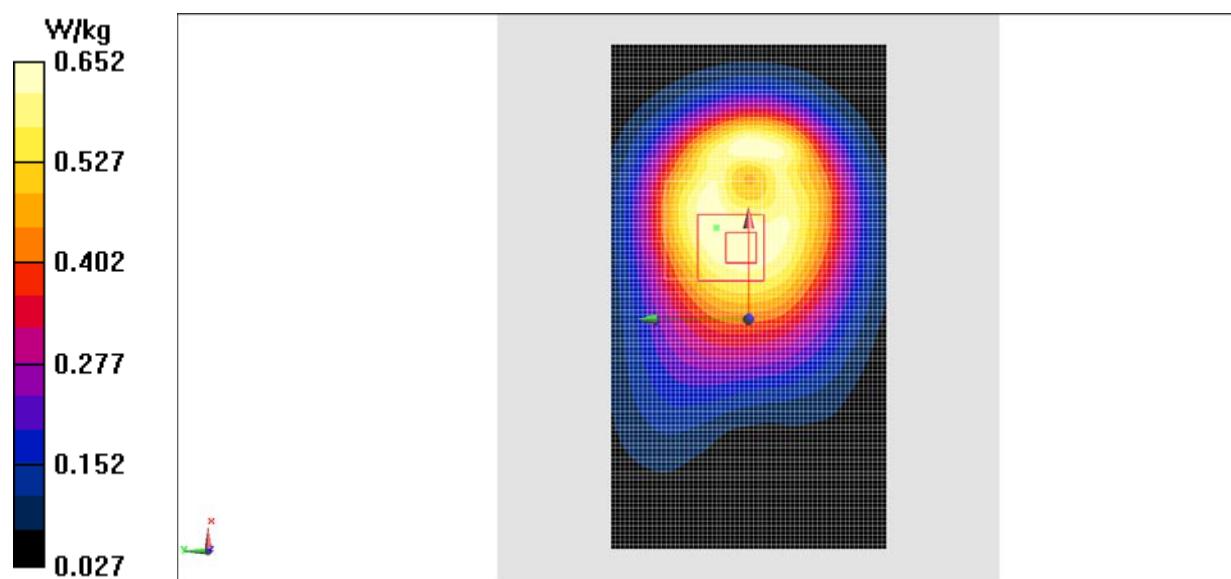
**Rear High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

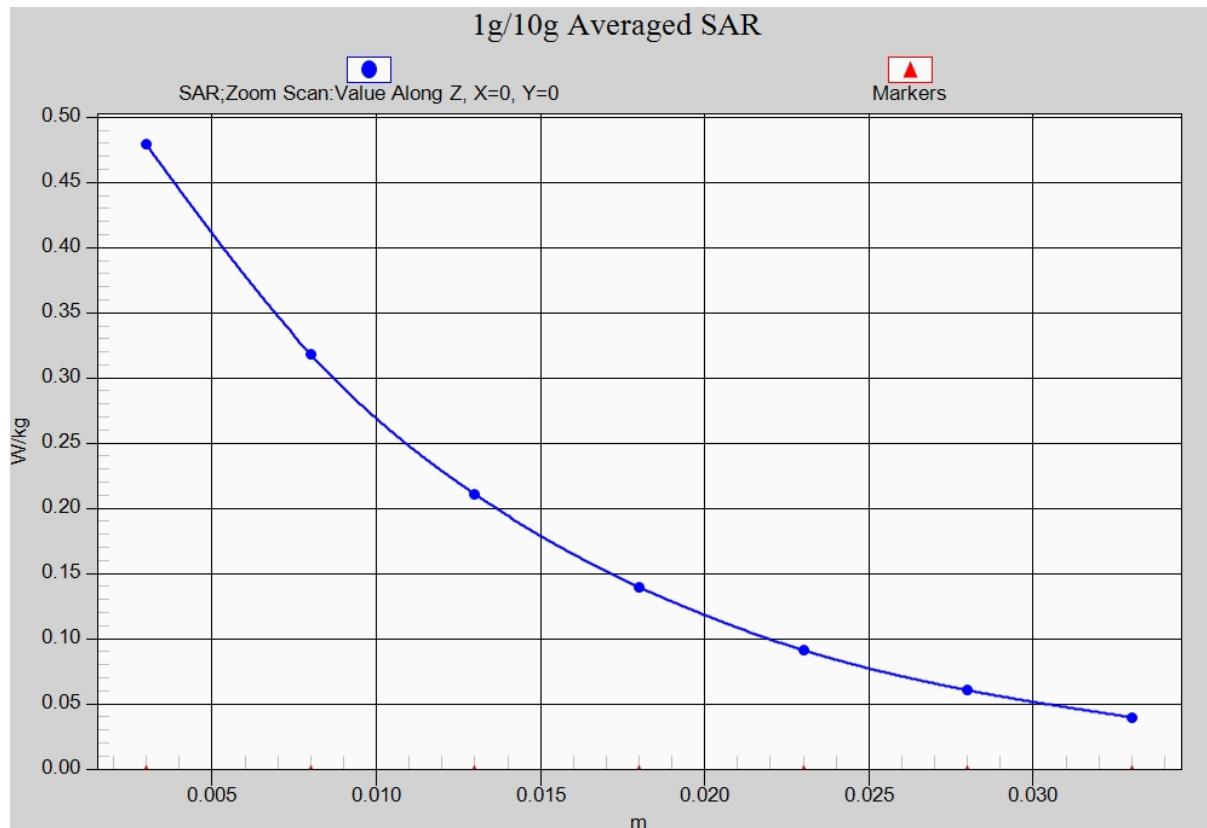
Reference Value = 16.72 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.861 W/kg

**SAR(1 g) = 0.564 W/kg; SAR(10 g) = 0.350 W/kg**

Maximum value of SAR (measured) = 0.652 W/kg

**Fig.17 LTE Band4**



**Fig. 17-1 Z-Scan at power reference point (LTE Band4)**

**LTE Band4 Body Rear Low with QPSK\_20M\_50RB\_Low – AP ON**

Date: 2015-1-17

Electronics: DAE4 Sn777

Medium: Body 1750 MHz

Medium parameters used:  $f = 1720 \text{ MHz}$ ;  $\sigma = 1.435 \text{ S/m}$ ;  $\epsilon_r = 52.112$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Ambient Temperature: 22.5 °C      Liquid Temperature: 22.0 °C

Communication System: LTE Band4 Frequency: 1720 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(7.43, 7.43, 7.43)

**Rear Low/Area Scan (111x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.569 W/kg

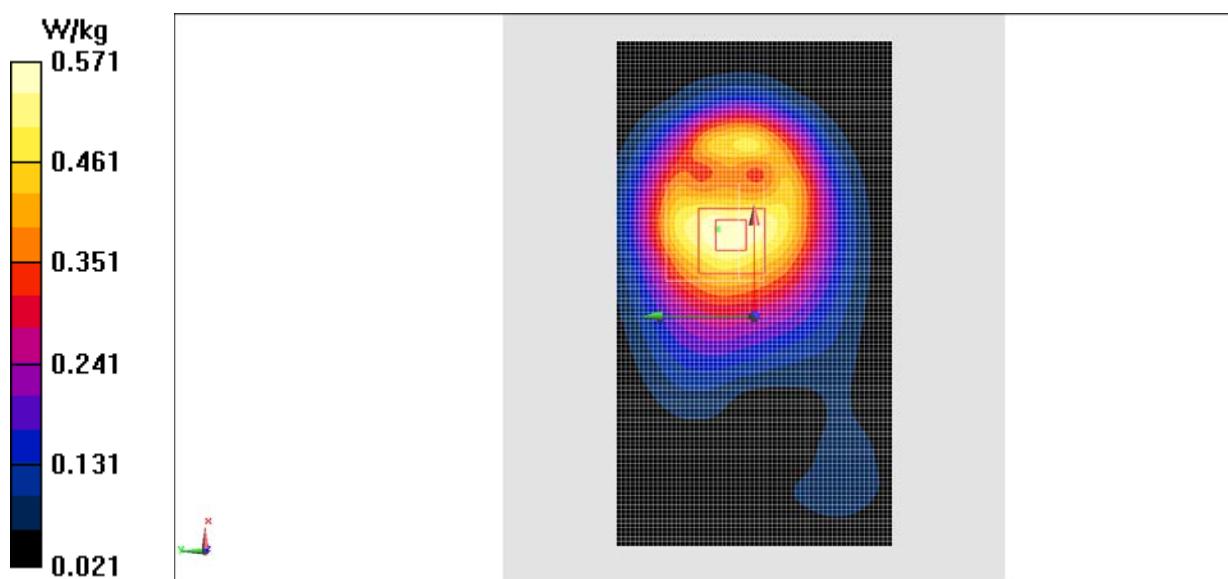
**Rear Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

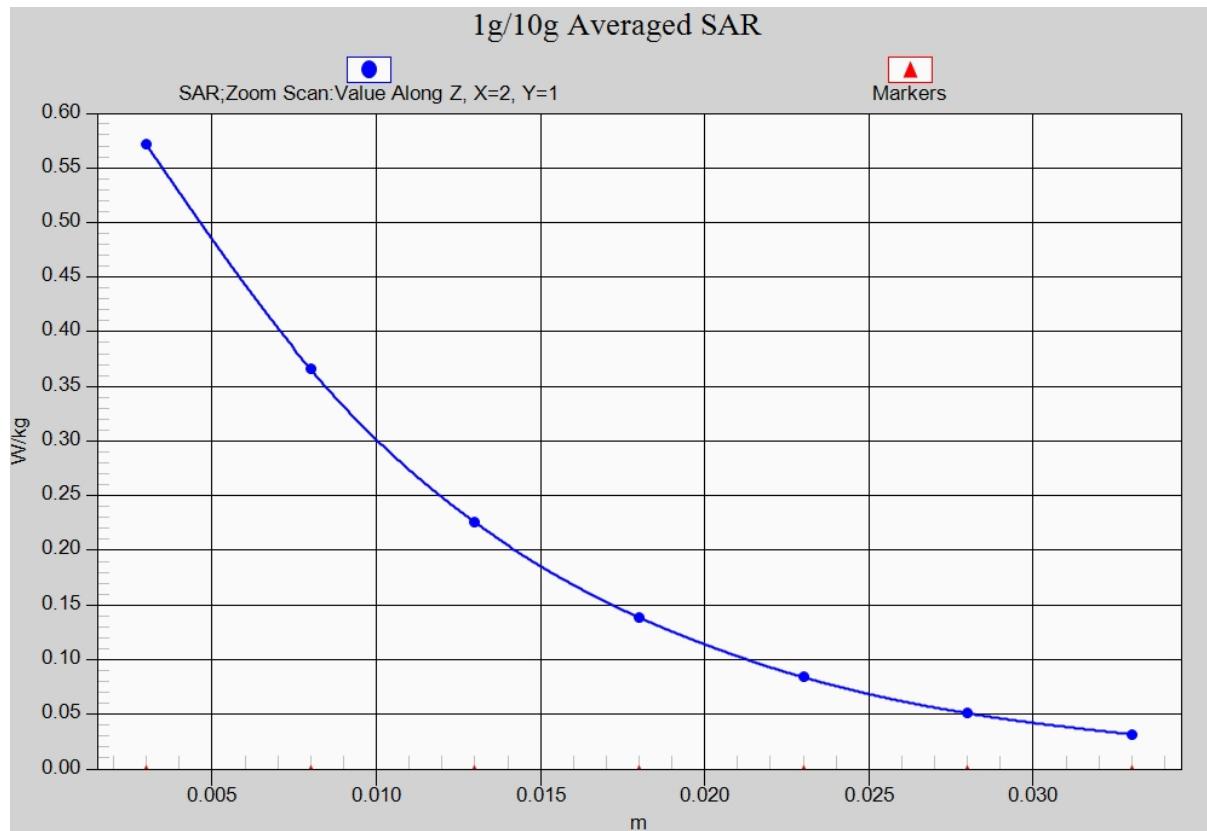
Reference Value = 13.20 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.748 W/kg

**SAR(1 g) = 0.483 W/kg; SAR(10 g) = 0.301 W/kg**

Maximum value of SAR (measured) = 0.571 W/kg

**Fig.18 LTE Band4**



**Fig. 18-1 Z-Scan at power reference point (LTE Band4)**

**LTE Band12 Left Cheek Middle with QPSK\_10M\_1RB\_High – AP OFF**

Date: 2015-1-16

Electronics: DAE4 Sn777

Medium: Head750 MHz

Medium parameters used (interpolated):  $f = 707.5$  MHz;  $\sigma = 0.895$  S/m;  $\epsilon_r = 41.311$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5 °C      Liquid Temperature: 22.0 °C

Communication System: LTE Band12 Frequency: 707.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(9.53, 9.53, 9.53)

**Cheek Middle/Area Scan (71x111x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.363 W/kg

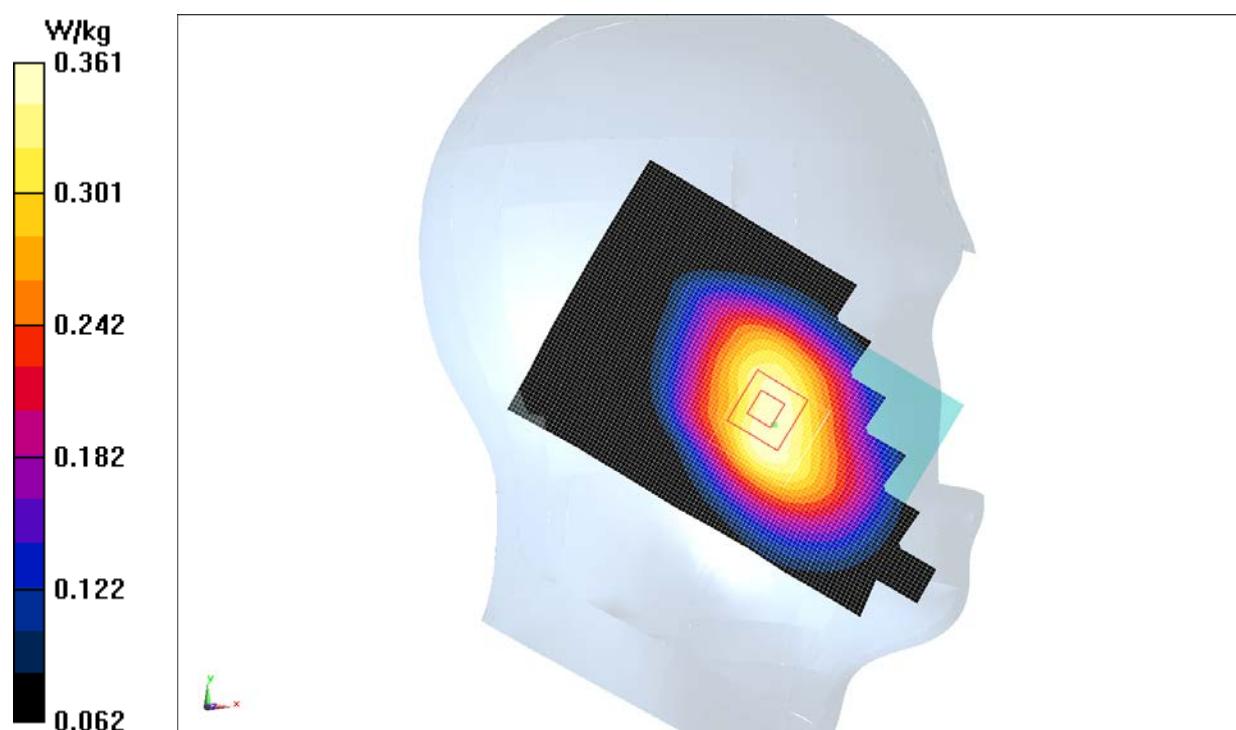
**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.883 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 0.390 W/kg

**SAR(1 g) = 0.326 W/kg; SAR(10 g) = 0.258 W/kg**

Maximum value of SAR (measured) = 0.361 W/kg

**Fig.19 LTE Band12**

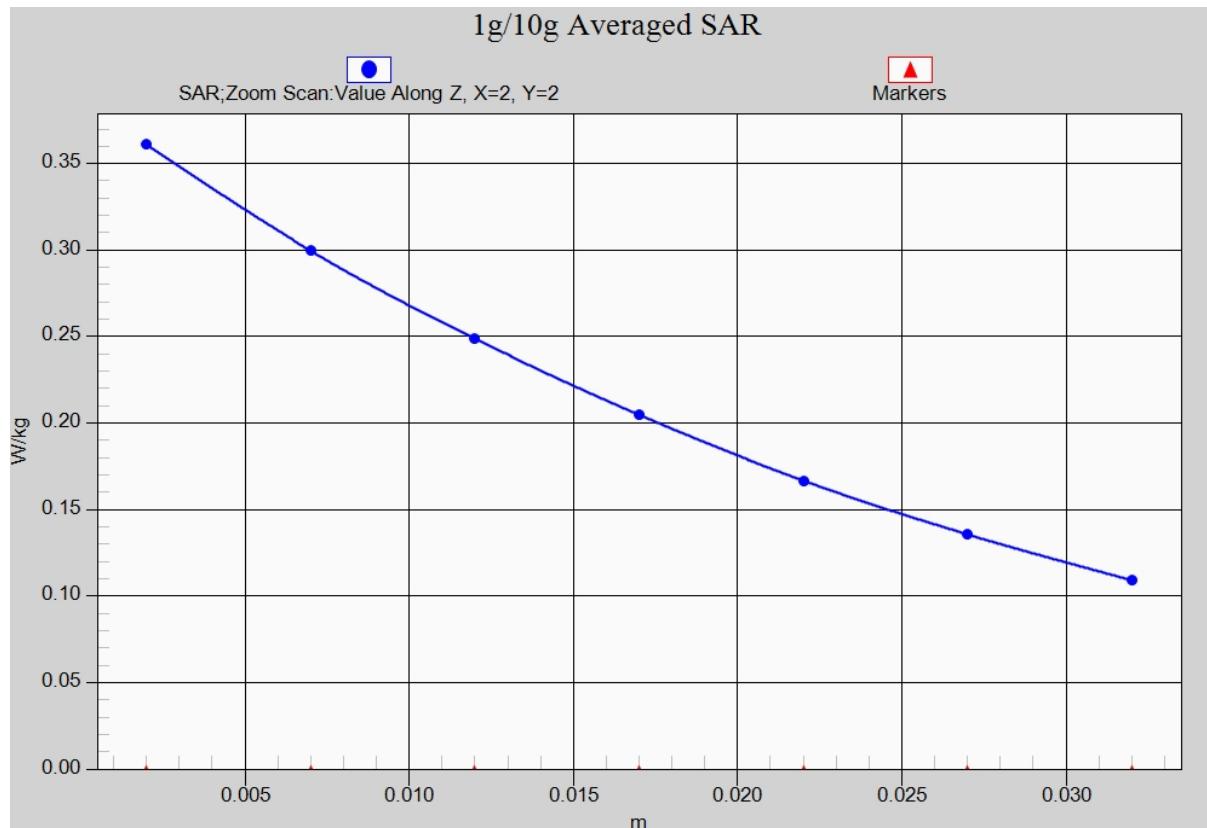


Fig. 19-1 Z-Scan at power reference point (LTE Band12)

**LTE Band12 Body Rear Middle with QPSK\_10M\_1RB\_High – AP OFF**

Date: 2015-1-16

Electronics: DAE4 Sn777

Medium: Body750 MHz

Medium parameters used (interpolated):  $f = 707.5$  MHz;  $\sigma = 0.875$  S/m;  $\epsilon_r = 54.689$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5 °C      Liquid Temperature: 22.0 °C

Communication System: LTE Band12 Frequency: 707.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(9.18, 9.18, 9.18)

**Rear Middle/Area Scan (111x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.461 W/kg

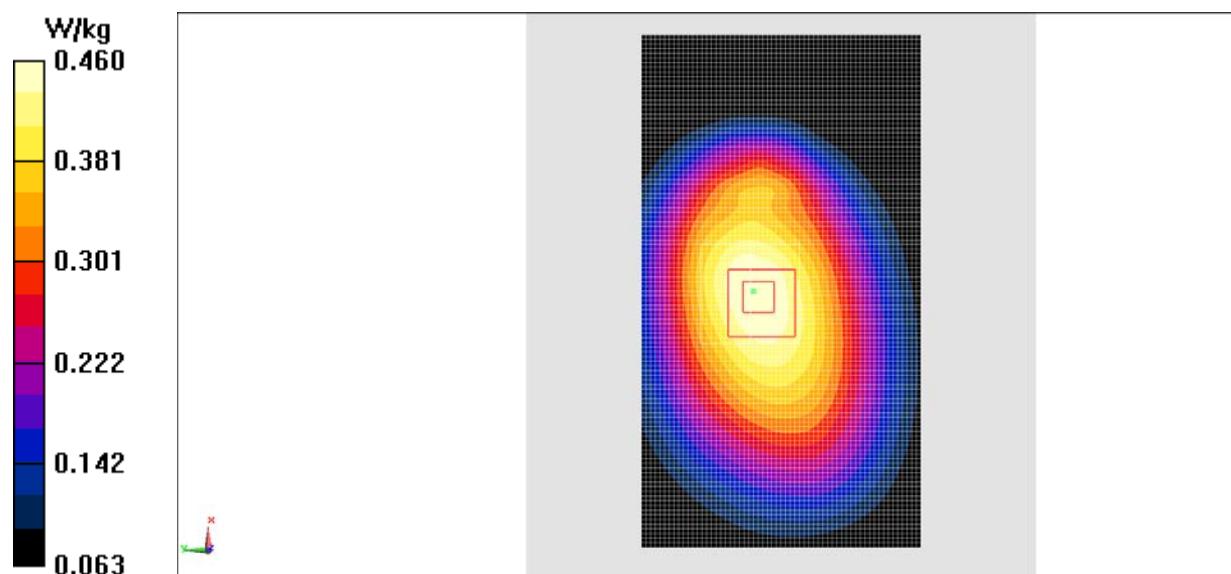
**Rear Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

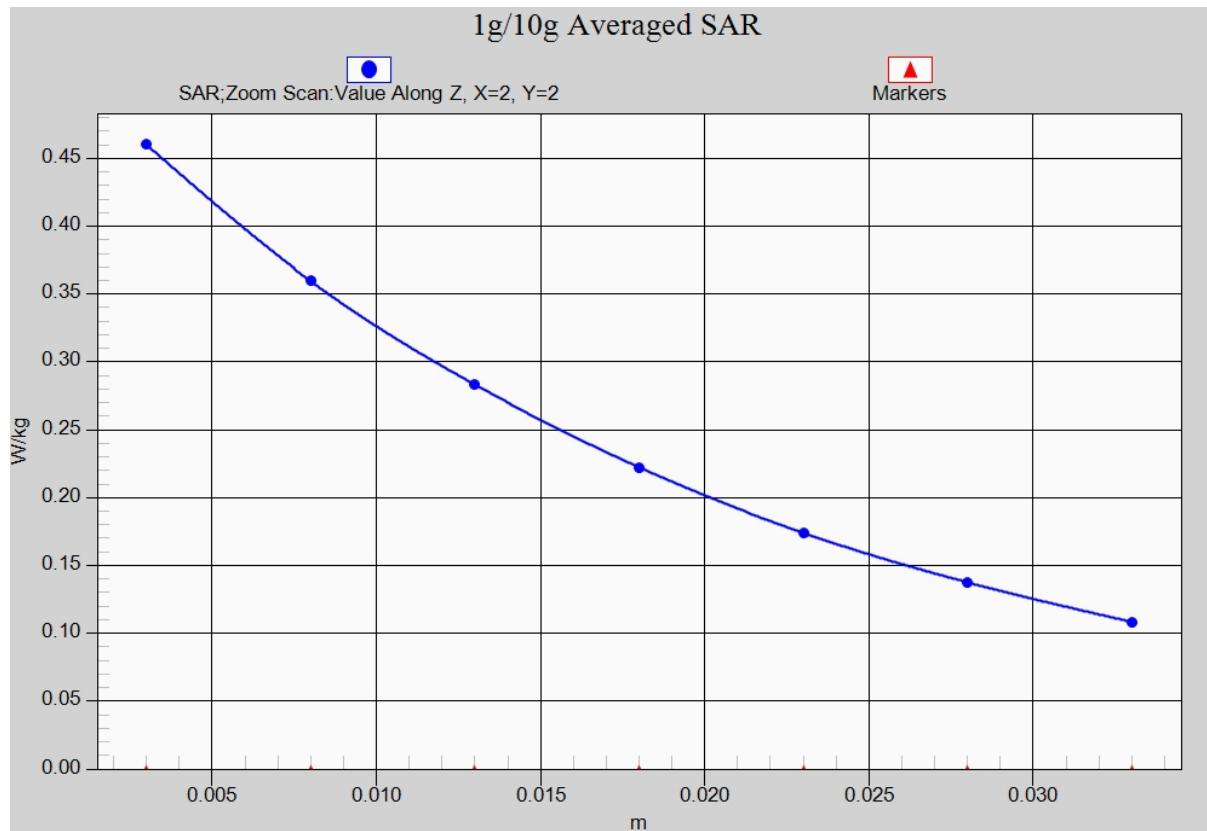
Reference Value = 22.00 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.535 W/kg

**SAR(1 g) = 0.420 W/kg; SAR(10 g) = 0.321 W/kg**

Maximum value of SAR (measured) = 0.460 W/kg

**Fig.20 LTE Band12**



**Fig. 20-1 Z-Scan at power reference point (LTE Band12)**

**LTE Band12 Body Rear Middle with QPSK\_10M\_25RB\_High – AP ON**

Date: 2015-1-16

Electronics: DAE4 Sn777

Medium: Body750 MHz

Medium parameters used (interpolated):  $f = 707.5$  MHz;  $\sigma = 0.875$  S/m;  $\epsilon_r = 54.689$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5 °C      Liquid Temperature: 22.0 °C

Communication System: LTE Band12 Frequency: 707.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(9.18, 9.18, 9.18)

**Rear Middle/Area Scan (111x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.263 W/kg

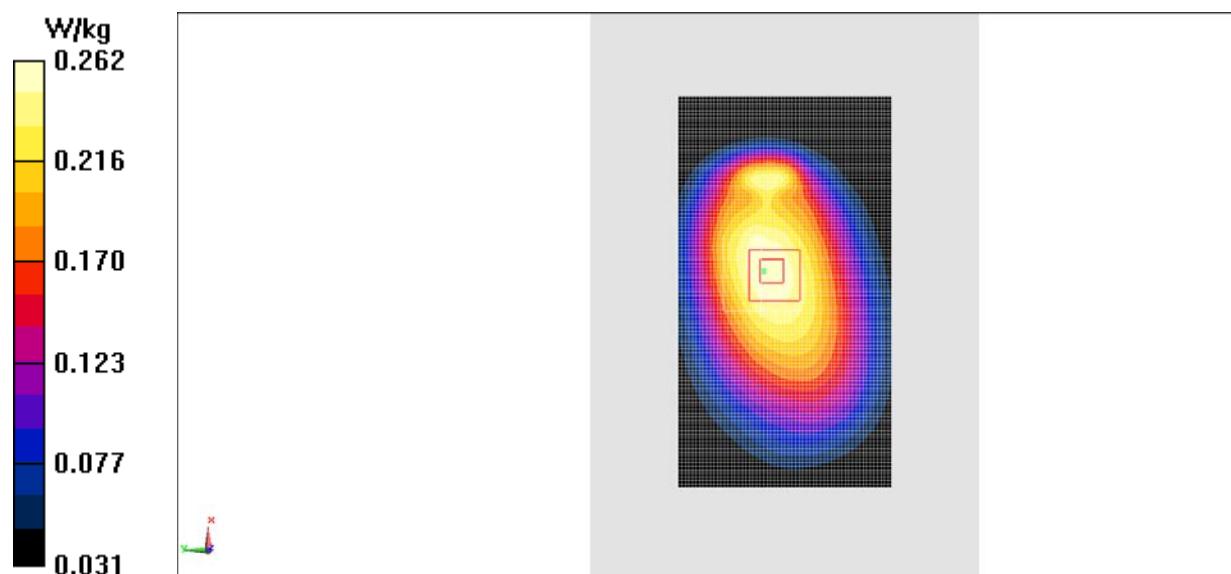
**Rear Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

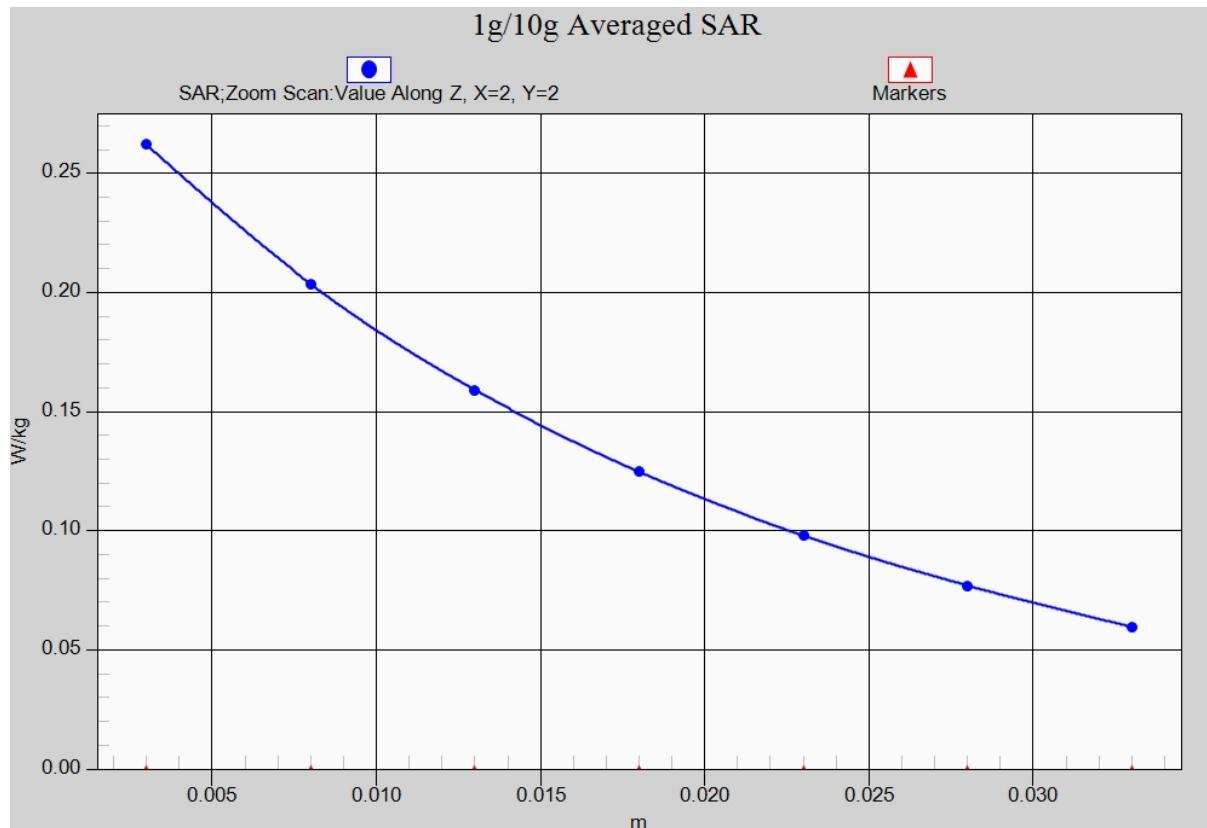
Reference Value = 16.39 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.309 W/kg

**SAR(1 g) = 0.241 W/kg; SAR(10 g) = 0.184 W/kg**

Maximum value of SAR (measured) = 0.262 W/kg

**Fig.21 LTE Band12**



**Fig. 21-1 Z-Scan at power reference point (LTE Band12)**

## Wifi 802.11b Right Cheek Channel 6 – AP OFF

Date: 2015-1-11

Electronics: DAE4 Sn777

Medium: Head 2450 MHz

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.822$  mho/m;  $\epsilon_r = 38.452$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C      Liquid Temperature: 22.0°C

Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(6.56, 6.56, 6.56)

**Cheek Middle/Area Scan (71x131x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.35 W/kg

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

Reference Value = 14.71 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 2.29 W/kg

**SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.502 W/kg**

Maximum value of SAR (measured) = 1.16 W/kg

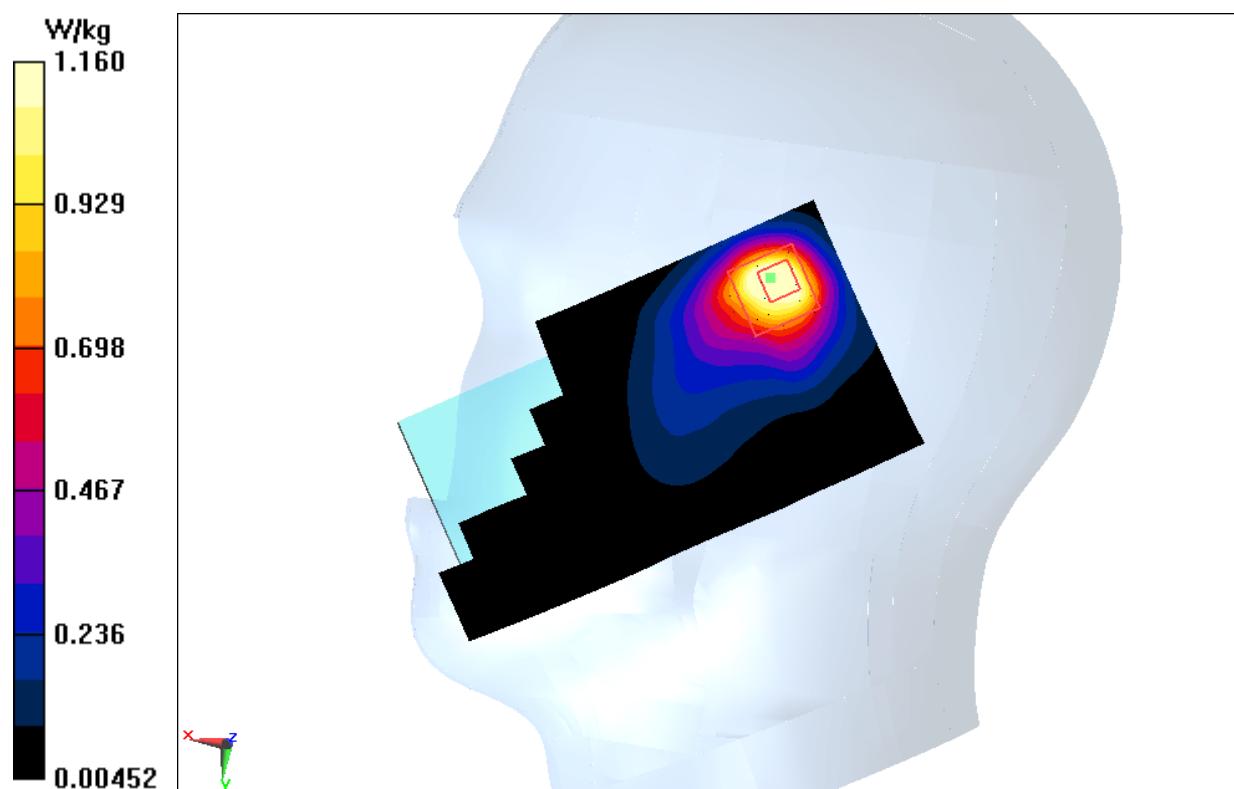


Fig.22 2450 MHz

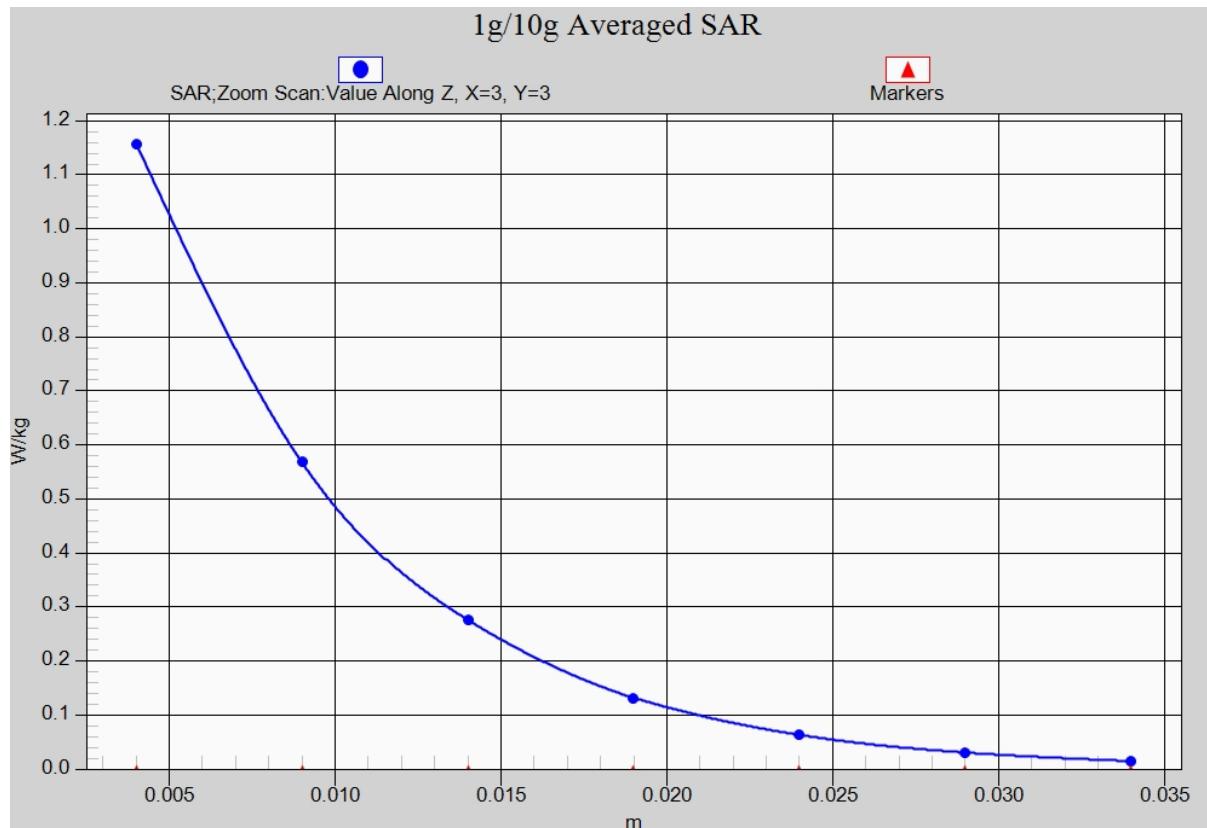


Fig. 22-1 Z-Scan at power reference point (2450 MHz)

## Wifi 802.11b Body Rear Channel 6 – AP OFF

Date: 2015-1-11

Electronics: DAE4 Sn777

Medium: Body 2450 MHz

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.996$  mho/m;  $\epsilon_r = 51.963$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C      Liquid Temperature: 22.0°C

Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(6.90, 6.90, 6.90)

**Rear Low/Area Scan (111x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.481 W/kg

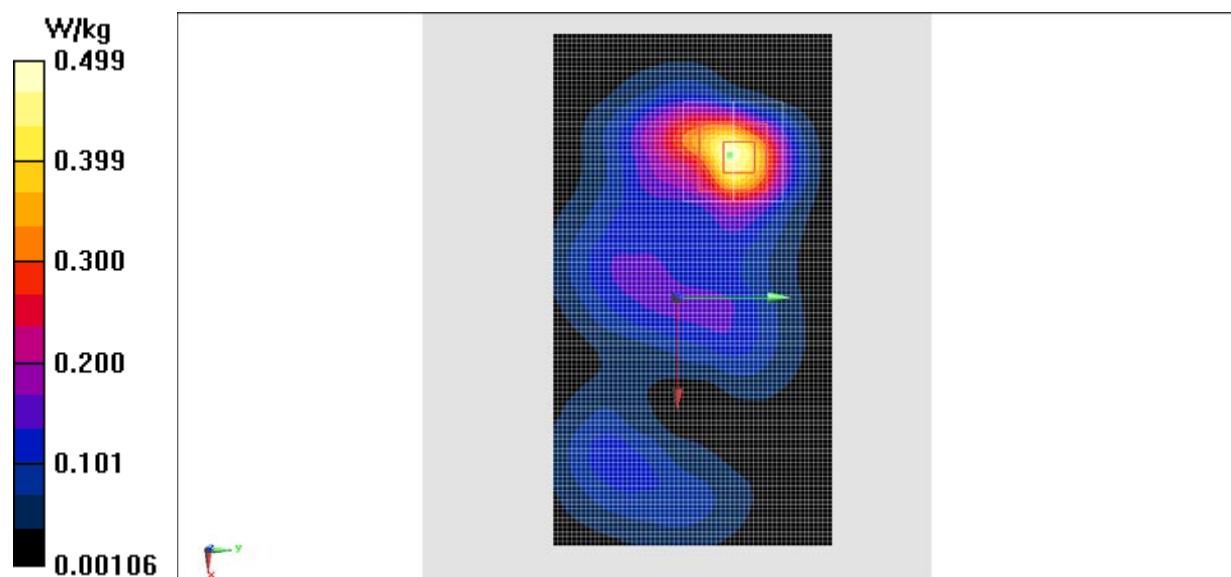
**Rear Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.288 V/m; Power Drift = 0.07 dB

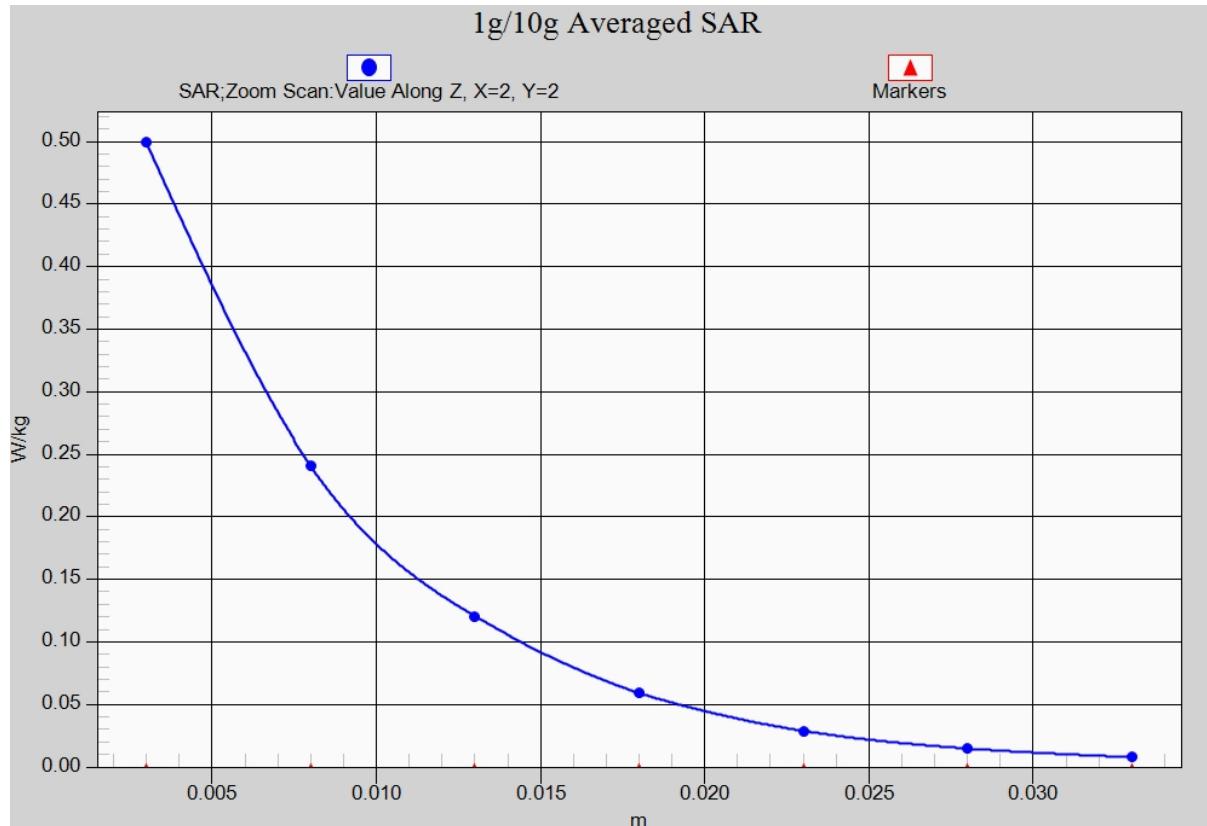
Peak SAR (extrapolated) = 0.827 W/kg

**SAR(1 g) = 0.385 W/kg; SAR(10 g) = 0.184 W/kg**

Maximum value of SAR (measured) = 0.499 W/kg



**Fig.23 2450 MHz**



**Fig. 23-1 Z-Scan at power reference point (2450 MHz)**

## ANNEX B System Verification Results

### 750MHz

Date: 2015-1-16

Electronics: DAE4 Sn777

Medium: Head 750 MHz

Medium parameters used:  $f = 750 \text{ MHz}$ ;  $\sigma = 0.916 \text{ mho/m}$ ;  $\epsilon_r = 40.63$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.5^\circ\text{C}$  Liquid Temperature:  $22.0^\circ\text{C}$

Communication System: CW Frequency: 750 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(9.53, 9.53, 9.53)

**System Validation /Area Scan (81x191x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Reference Value = 49.835 V/m; Power Drift = 0.02 dB

**Fast SAR:**  $\text{SAR}(1 \text{ g}) = 2.12 \text{ W/kg}$ ;  $\text{SAR}(10 \text{ g}) = 1.38 \text{ W/kg}$

Maximum value of SAR (interpolated) = 2.26 W/kg

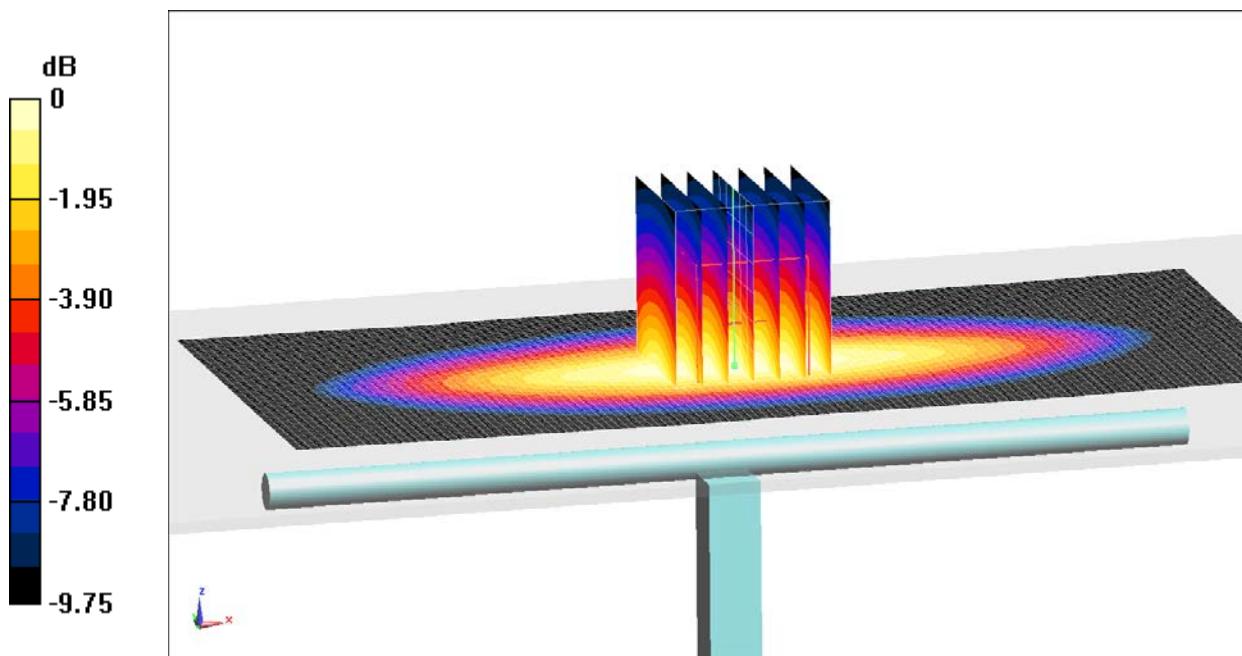
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 49.835 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 2.95 W/kg

**SAR(1 g) = 2.08 W/kg; SAR(10 g) = 1.36 W/kg**

Maximum value of SAR (measured) = 2.24 W/kg



$0 \text{ dB} = 2.24 \text{ W/kg} = 3.50 \text{ dB W/kg}$

**Fig.B.1 validation 750MHz 250mW**

## 750MHz

Date: 2015-1-16

Electronics: DAE4 Sn777

Medium: Body750 MHz

Medium parameters used:  $f = 750 \text{ MHz}$ ;  $\sigma = 0.925 \text{ mho/m}$ ;  $\epsilon_r = 54.21$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.5^\circ\text{C}$  Liquid Temperature:  $22.0^\circ\text{C}$

Communication System: CW Frequency: 750 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(9.18, 9.18, 9.18)

**System Validation/Area Scan (81x191x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Reference Value = 51.98 V/m; Power Drift = -0.06 dB

**Fast SAR:**  $\text{SAR}(1 \text{ g}) = 2.29 \text{ W/kg}$ ;  $\text{SAR}(10 \text{ g}) = 1.50 \text{ W/kg}$

Maximum value of SAR (interpolated) = 2.43 W/kg

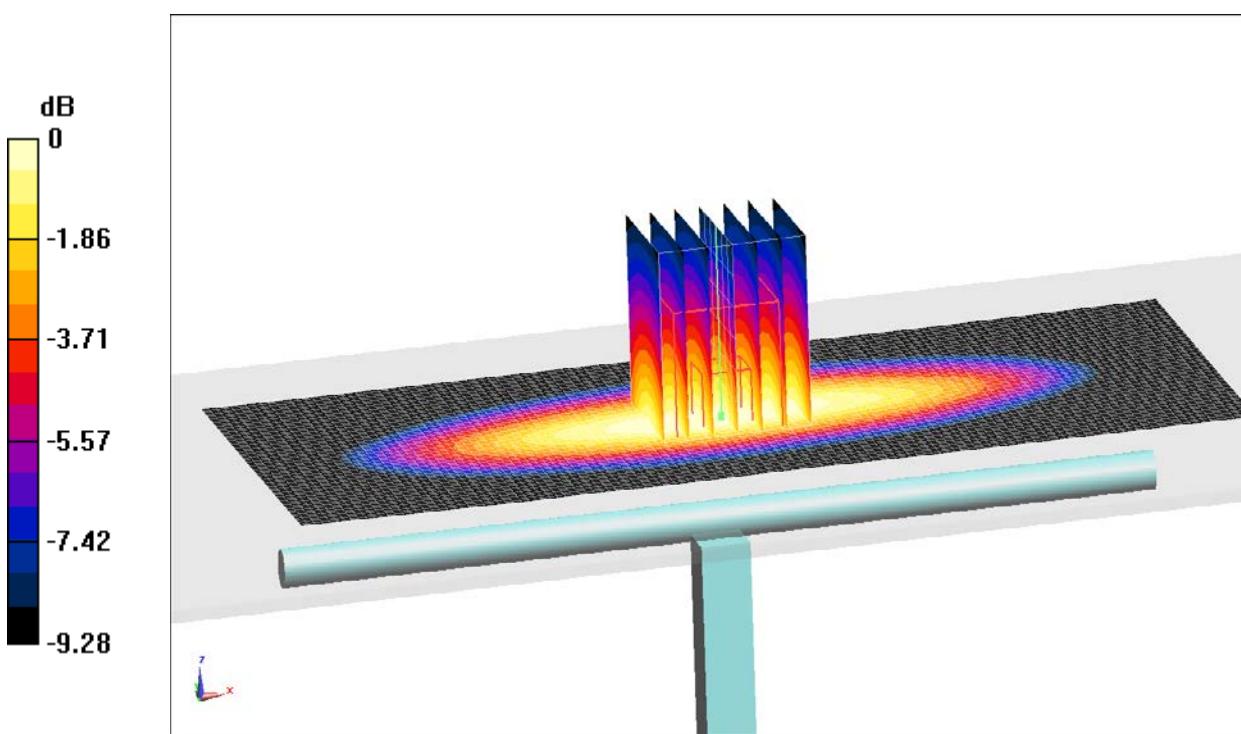
**System Validation/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 51.98 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 3.16 W/kg

**SAR(1 g) = 2.25 W/kg; SAR(10 g) = 1.47 W/kg**

Maximum value of SAR (measured) = 2.40 W/kg



$$0 \text{ dB} = 2.40 \text{ W/kg} = 3.80 \text{ dB W/kg}$$

**Fig.B.2 validation 750MHz 250mW**

## 835MHz

Date: 2015-1-15

Electronics: DAE4 Sn777

Medium: Head 850 MHz

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.923 \text{ S/m}$ ;  $\epsilon_r = 41.18$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.5^\circ\text{C}$  Liquid Temperature:  $22.0^\circ\text{C}$

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

Probe: EX3DV4 - SN3846 ConvF(9.18, 9.18, 9.18)

**System Validation/Area Scan (61x121x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Reference Value = 54.229 V/m; Power Drift = 0.02 dB

**Fast SAR:**  $\text{SAR}(1 \text{ g}) = 2.40 \text{ W/kg}$ ;  $\text{SAR}(10 \text{ g}) = 1.56 \text{ W/kg}$

Maximum value of SAR (interpolated) = 2.63 W/kg

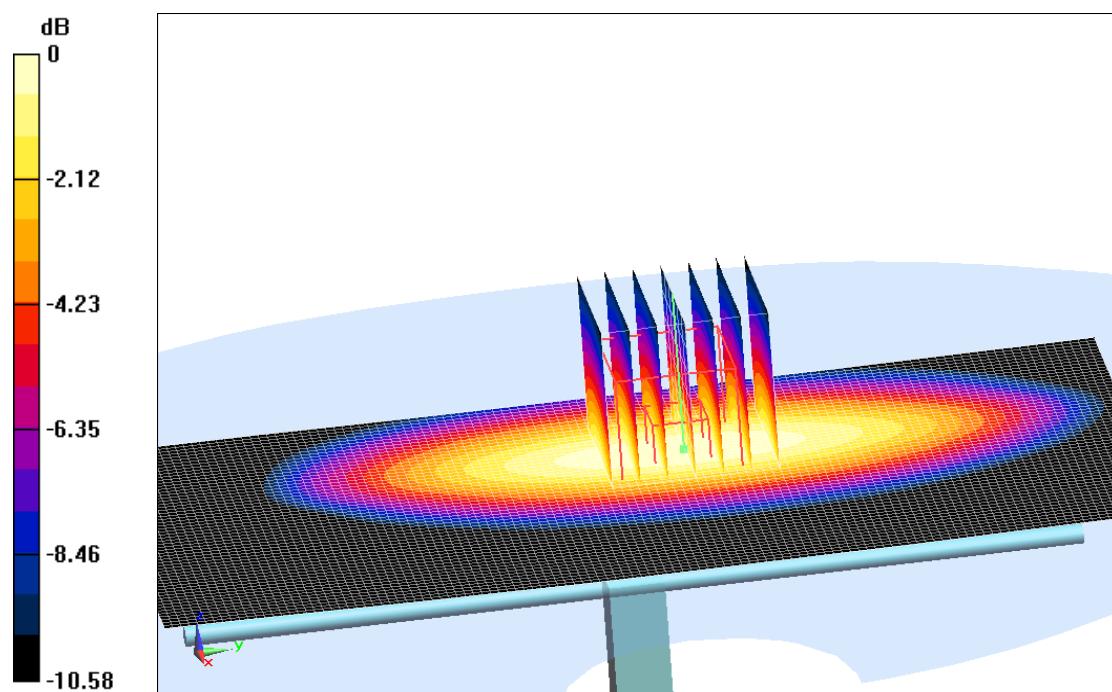
**System Validation/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 54.229 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 3.06 W/kg

**SAR(1 g) = 2.36 W/kg; SAR(10 g) = 1.53 W/kg**

Maximum value of SAR (measured) = 2.60 W/kg



$$0 \text{ dB} = 2.60 \text{ W/kg} = 4.15 \text{ dBW/kg}$$

**Fig.B.3 validation 835MHz 250mW**

## 835MHz

Date: 2015-1-15

Electronics: DAE4 Sn777

Medium: Body 850 MHz

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.988 \text{ S/m}$ ;  $\epsilon_r = 54.09$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.5^\circ\text{C}$  Liquid Temperature:  $22.0^\circ\text{C}$

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

Probe: EX3DV4 - SN3846 ConvF(9.09, 9.09, 9.09)

**System Validation /Area Scan (61x121x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Reference Value = 52.017 V/m; Power Drift = 0.03 dB

**Fast SAR:**  $\text{SAR}(1 \text{ g}) = 2.29 \text{ W/kg}$ ;  $\text{SAR}(10 \text{ g}) = 1.51 \text{ W/kg}$

Maximum value of SAR (interpolated) = 2.55 W/kg

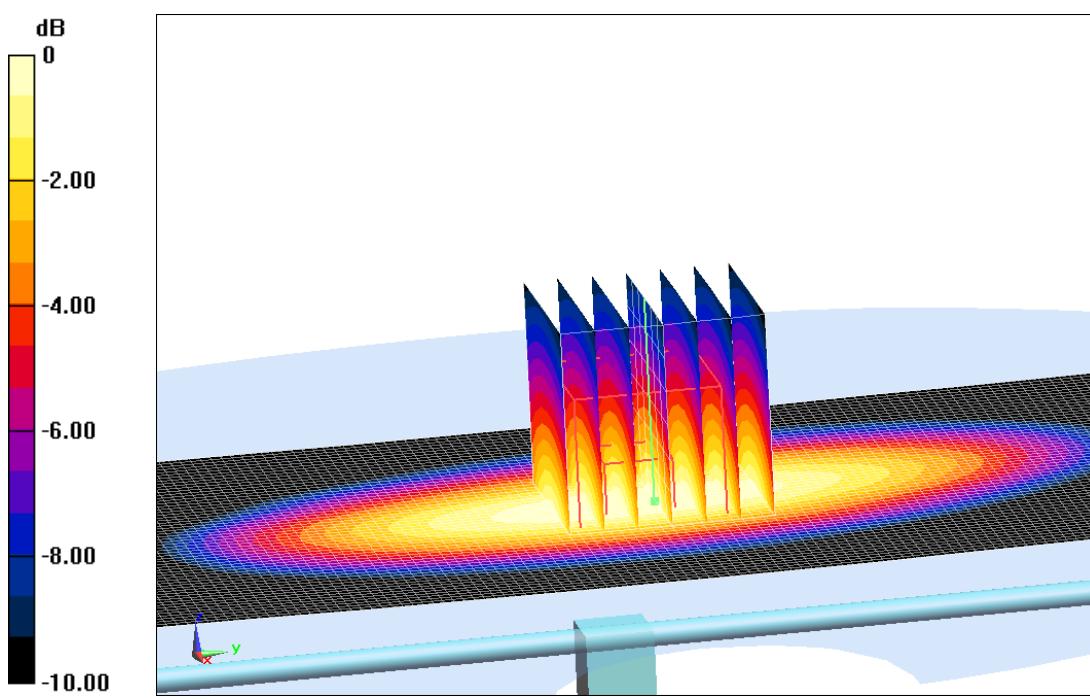
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 52.017 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 3.04 W/kg

**SAR(1 g) = 2.33 W/kg; SAR(10 g) = 1.54 W/kg**

Maximum value of SAR (measured) = 2.58 W/kg



$$0 \text{ dB} = 2.58 \text{ W/kg} = 4.12 \text{ dBW/kg}$$

**Fig.B.4 validation 835MHz 250mW**

## 1750MHz

Date: 2015-1-17

Electronics: DAE4 Sn777

Medium: Head 1750 MHz

Medium parameters used:  $f=1750$  MHz;  $\sigma = 1.352$  mho/m;  $\epsilon_r = 41.21$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C      Liquid Temperature: 22.0°C

Communication System: CW Frequency: 1750 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(7.64, 7.64, 7.64)

**System Validation/Area Scan (81x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 88.361 V/m; Power Drift = -0.05 dB

**Fast SAR:** SAR(1 g) = 9.01 W/kg; SAR(10 g) = 4.77 W/kg

Maximum value of SAR (interpolated) = 10.0 W/kg

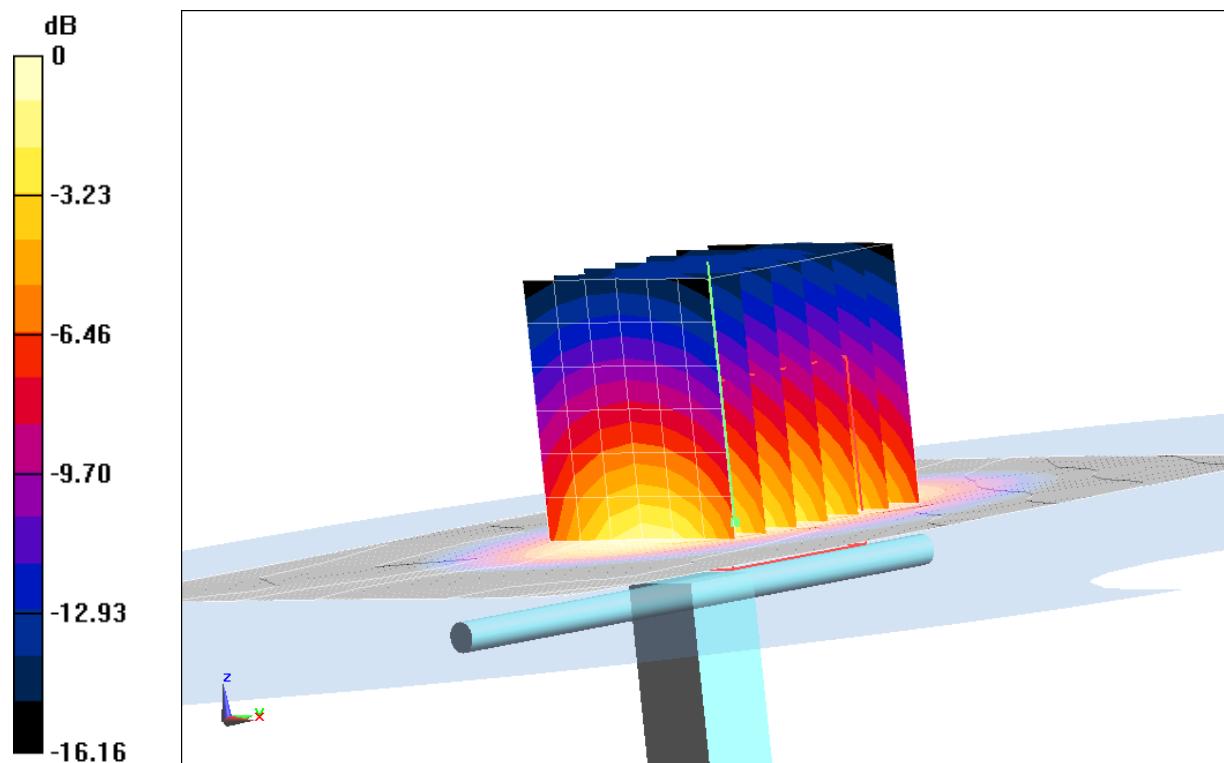
**System Validation/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 88.361 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 15.67 W/kg

**SAR(1 g) = 9.09 W/kg; SAR(10 g) = 4.85 W/kg**

Maximum value of SAR (measured) = 10.1 W/kg



$$0 \text{ dB} = 10.1 \text{ W/kg} = 10.04 \text{ dB W/kg}$$

**Fig.B.5 validation 1750MHz 250mW**