

**LTE2500-FDD7\_CH21100 Bottom edge**

Date: 4/6/2018

Electronics: DAE4 Sn1525

Medium: Head 2600 MHz

Medium parameters used:  $f = 2535$  MHz;  $\sigma = 2.115$  mho/m;  $\epsilon_r = 52.38$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE2500-FDD7 2535 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(7.84,7.84,7.84)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.08 W/kg

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

Reference Value = 24.79 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.44 W/kg

**SAR(1 g) = 0.486 W/kg; SAR(10 g) = 0.219 W/kg**

Maximum value of SAR (measured) = 1.03 W/kg

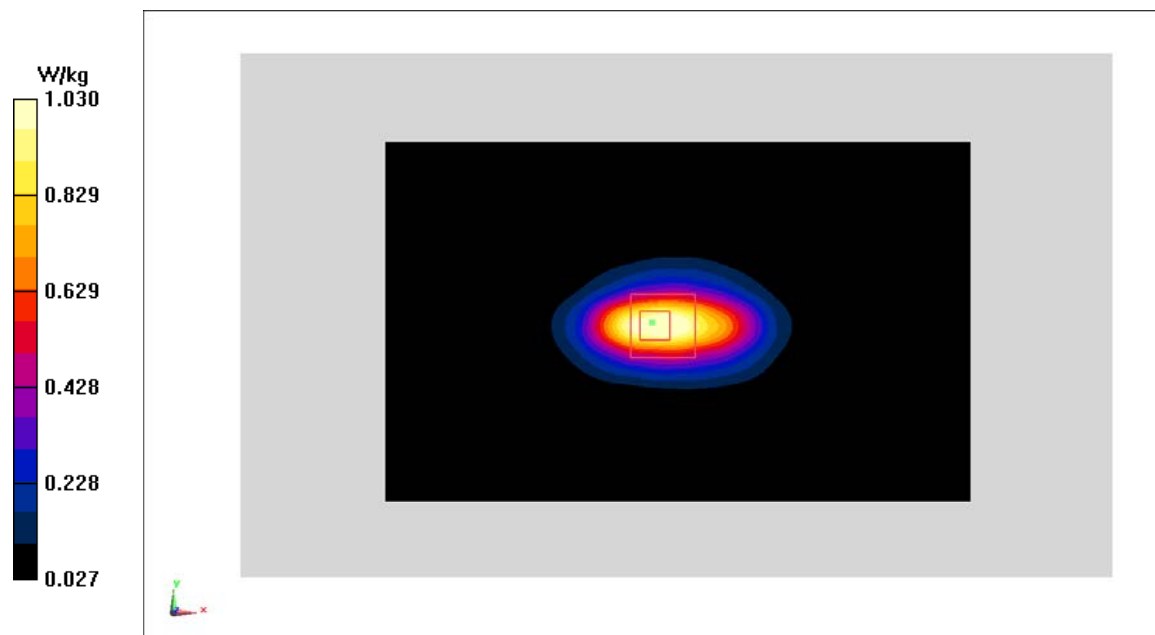


Fig A.20

### LTE700-FDD12\_CH23130 Right Cheek

Date: 4/1/2018

Electronics: DAE4 Sn1525

Medium: Head 750 MHz

Medium parameters used:  $f = 711$  MHz;  $\sigma = 0.853$  mho/m;  $\epsilon_r = 42.55$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE700-FDD12 711 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(10.57,10.57,10.57)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.608 W/kg

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

Reference Value = 22.79 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.797 W/kg

**SAR(1 g) = 0.468 W/kg; SAR(10 g) = 0.334 W/kg**

Maximum value of SAR (measured) = 0.537 W/kg

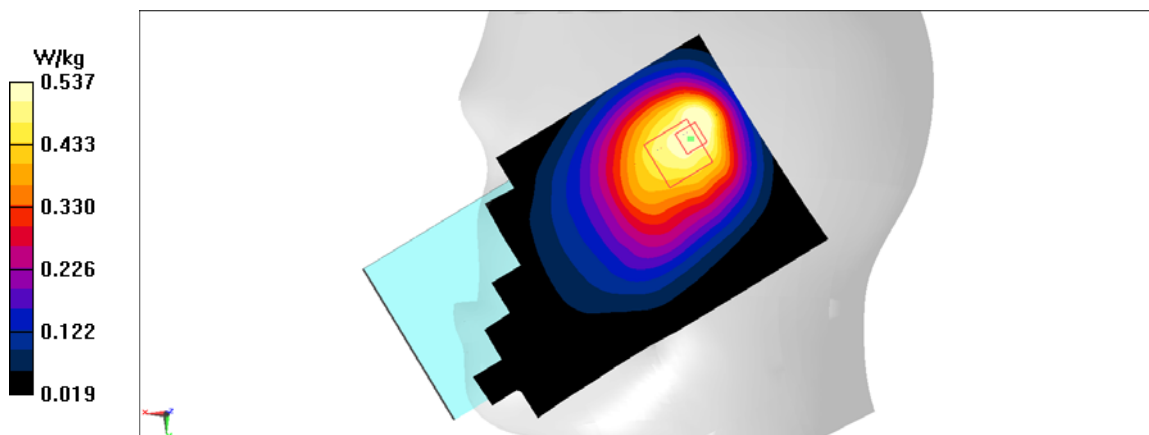


Fig A.21

**LTE700-FDD12\_CH23130 Rear**

Date: 4/1/2018

Electronics: DAE4 Sn1525

Medium: Head 750 MHz

Medium parameters used:  $f = 711$  MHz;  $\sigma = 0.933$  mho/m;  $\epsilon_r = 55.29$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE700-FDD12 711 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(10.63,10.63,10.63)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.244 W/kg

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

Reference Value = 15.92 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.273 W/kg

**SAR(1 g) = 0.226 W/kg; SAR(10 g) = 0.181 W/kg**

Maximum value of SAR (measured) = 0.244 W/kg

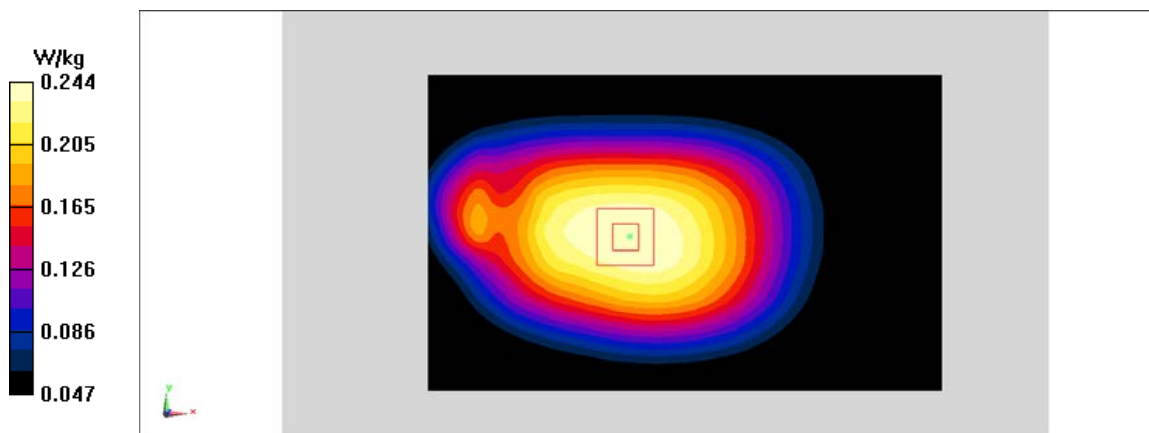


Fig A.22

### LTE750-FDD13\_CH23230 Right Cheek

Date: 4/1/2018

Electronics: DAE4 Sn1525

Medium: Head 750 MHz

Medium parameters used:  $f = 782$  MHz;  $\sigma = 0.92$  mho/m;  $\epsilon_r = 42.46$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE750-FDD13 782 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(10.57,10.57,10.57)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.123 W/kg

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

Reference Value = 3.002 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.138 W/kg

**SAR(1 g) = 0.115 W/kg; SAR(10 g) = 0.093 W/kg**

Maximum value of SAR (measured) = 0.123 W/kg

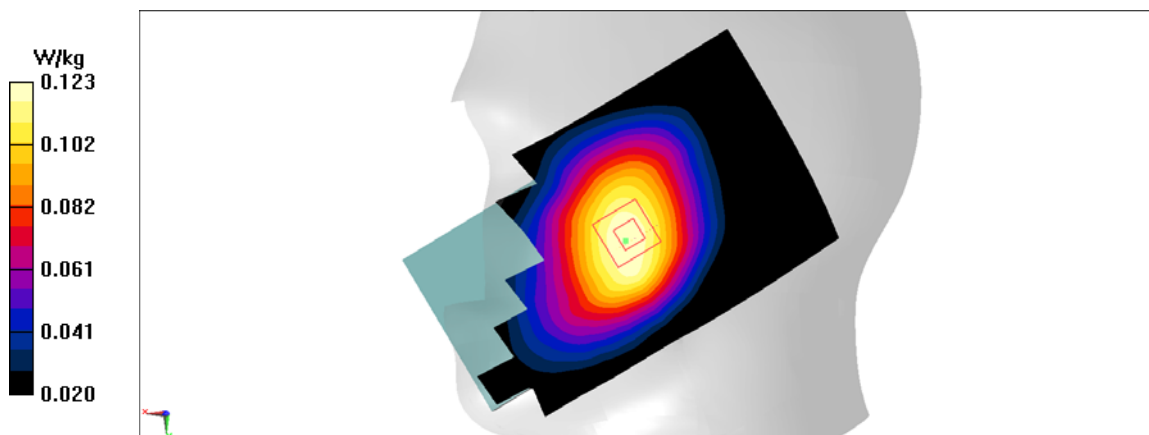


Fig A.23

**LTE750-FDD13\_CH23230 Rear**

Date: 4/1/2018

Electronics: DAE4 Sn1525

Medium: Head 750 MHz

Medium parameters used:  $f = 782$  MHz;  $\sigma = 1$  mho/m;  $\epsilon_r = 55.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE750-FDD13 782 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(10.63,10.63,10.63)

**Area Scan (71x121x1):** Interpolated grid:  $dx=1.000$  mm,  $dy=1.000$  mm

Maximum value of SAR (interpolated) = 0.208 W/kg

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

Reference Value = 14.05 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.237 W/kg

**SAR(1 g) = 0.191 W/kg; SAR(10 g) = 0.149 W/kg**

Maximum value of SAR (measured) = 0.208 W/kg

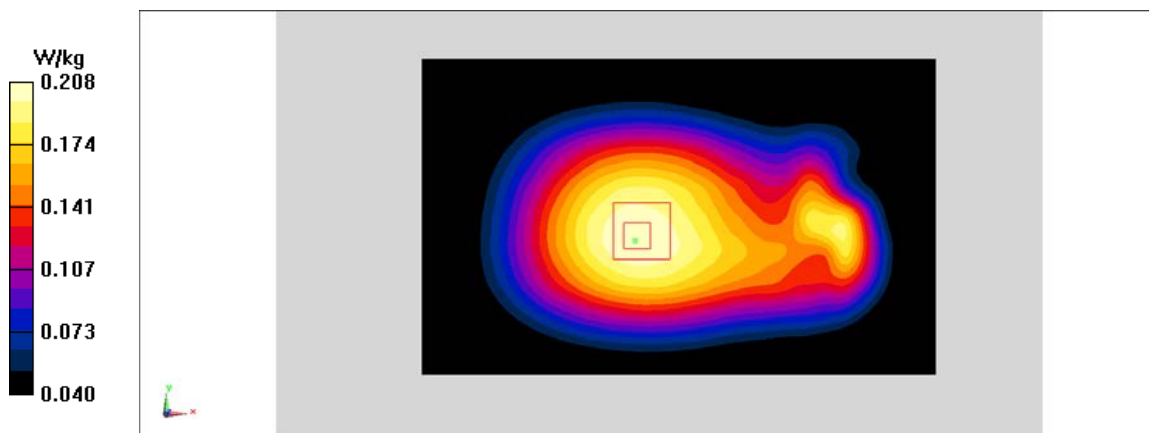


Fig A.24

**LTE1700-FDD66\_CH132072 Right Cheek**

Date: 4/3/2018

Electronics: DAE4 Sn1525

Medium: Head 1750 MHz

Medium parameters used:  $f = 782$  MHz;  $\sigma = 0.434$  mho/m;  $\epsilon_r = 41.36$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE1700-FDD66 782 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(8.70,8.70,8.70)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.147 W/kg

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

Reference Value = 1.3 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.175 W/kg

**SAR(1 g) = 0.121 W/kg; SAR(10 g) = 0.078 W/kg**

Maximum value of SAR (measured) = 0.141 W/kg

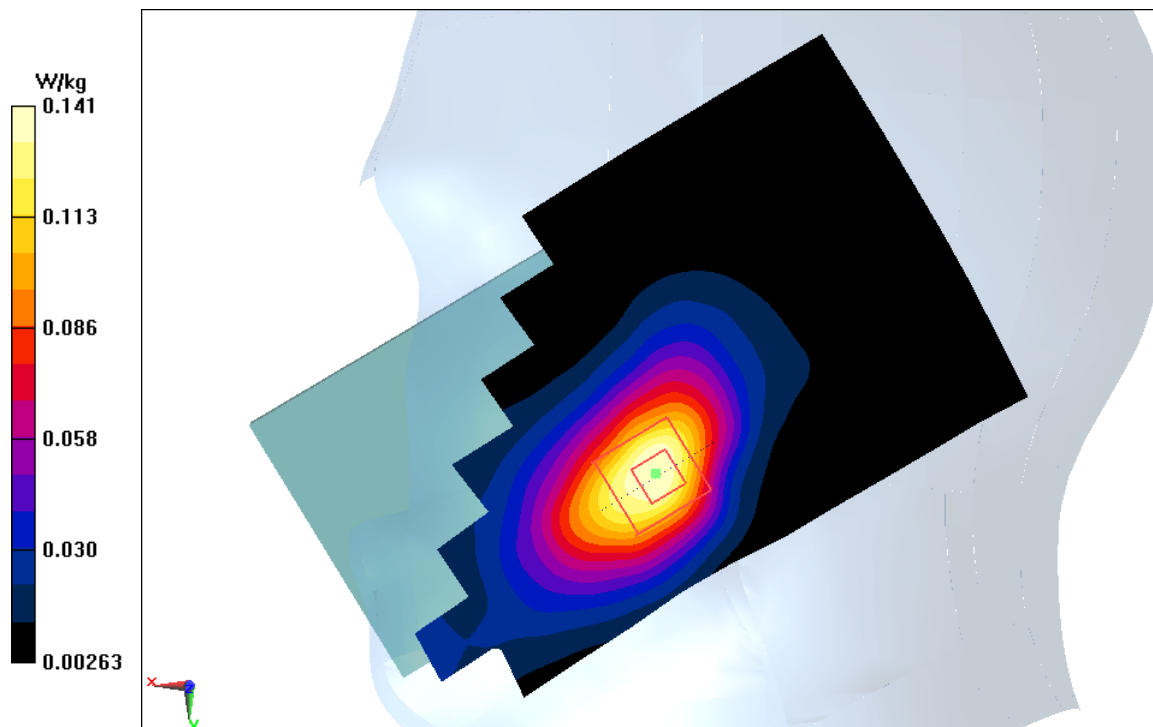


Fig A.25

**LTE1700-FDD66\_CH132072 Rear**

Date: 4/3/2018

Electronics: DAE4 Sn1525

Medium: Head 1750 MHz

Medium parameters used:  $f = 782$  MHz;  $\sigma = 0.562$  mho/m;  $\epsilon_r = 54.23$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE1700-FDD66 782 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(8.60,8.60,8.60)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.14 W/kg

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

Reference Value = 4.708 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.44 W/kg

**SAR(1 g) = 0.908 W/kg; SAR(10 g) = 0.54 W/kg**

Maximum value of SAR (measured) = 1.08 W/kg

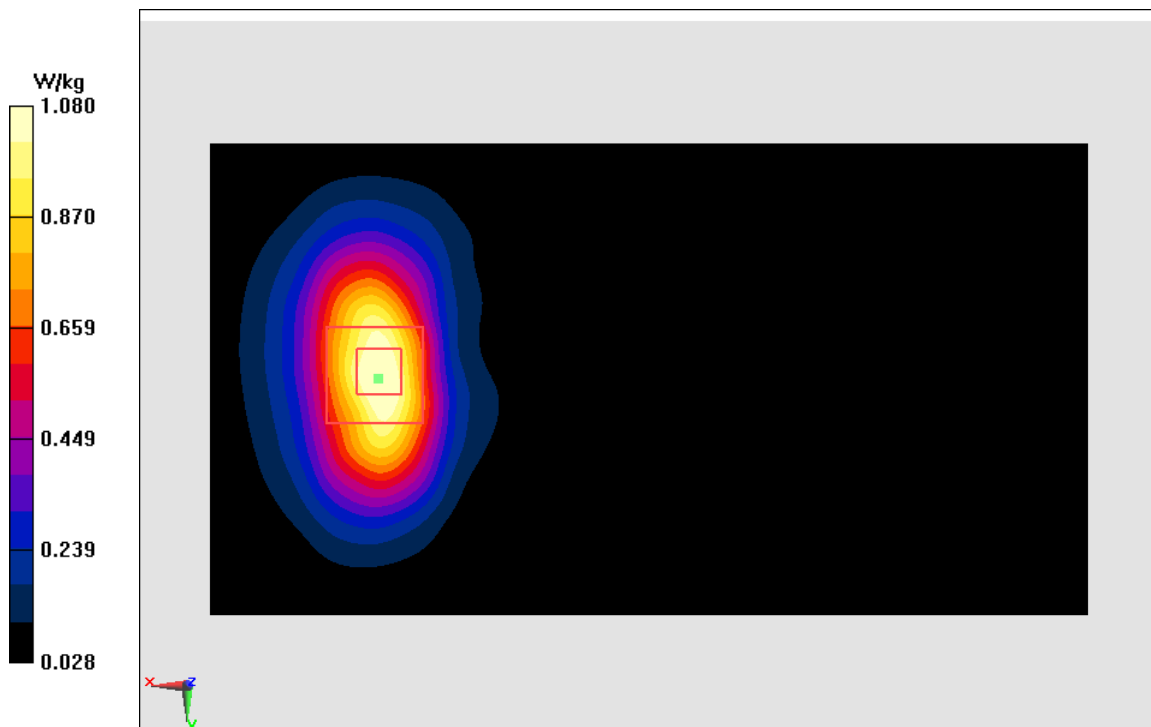


Fig A.26

**LTE1700-FDD66\_CH132572 Bottom edge**

Date: 4/3/2018

Electronics: DAE4 Sn1525

Medium: Head 1750 MHz

Medium parameters used:  $f = 782$  MHz;  $\sigma = 0.562$  mho/m;  $\epsilon_r = 54.23$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE1700-FDD66 782 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(8.60,8.60,8.60)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.08 W/kg

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

Reference Value = 24.79 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 1.44 W/kg

**SAR(1 g) = 0.864 W/kg; SAR(10 g) = 0.481 W/kg**

Maximum value of SAR (measured) = 1.03 W/kg

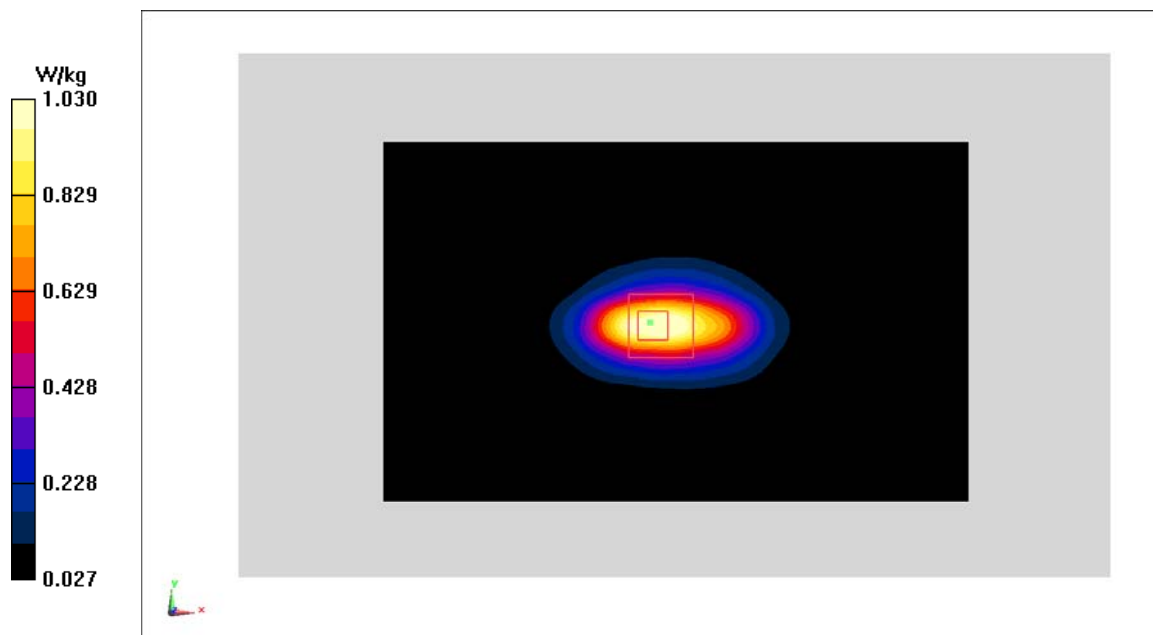


Fig A.27



**LTE700-FDD71\_CH133372 Left Cheek**

Date: 4/1/2018

Electronics: DAE4 Sn1525

Medium: Head 750 MHz

Medium parameters used:  $f = 782$  MHz;  $\sigma = 0.92$  mho/m;  $\epsilon_r = 42.46$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE700-FDD71 782 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(10.57,10.57,10.57)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.434 W/kg

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

Reference Value = 22.59 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.572 W/kg

**SAR(1 g) = 0.382 W/kg; SAR(10 g) = 0.276 W/kg**

Maximum value of SAR (measured) = 0.426 W/kg

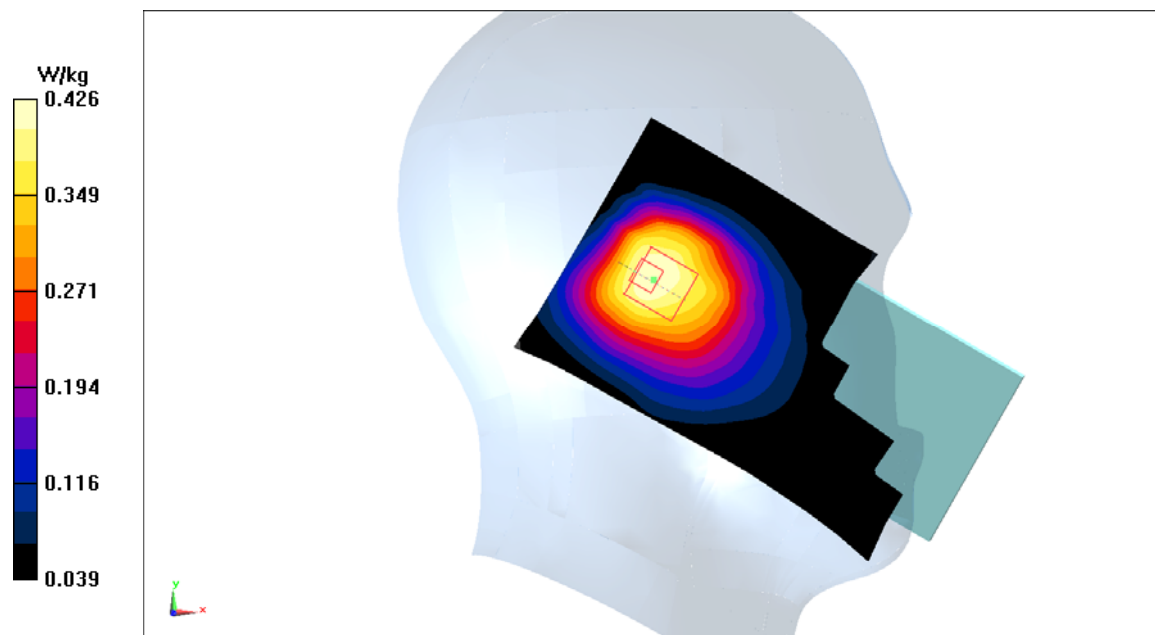


Fig A.28

**LTE700-FDD71\_CH133372 Rear**

Date: 4/1/2018

Electronics: DAE4 Sn1525

Medium: Head 750 MHz

Medium parameters used:  $f = 782$  MHz;  $\sigma = 1$  mho/m;  $\epsilon_r = 55.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE700-FDD71 782 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(10.63,10.63,10.63)

**Area Scan (71x121x1):** Interpolated grid:  $dx=1.000$  mm,  $dy=1.000$  mm

Maximum value of SAR (interpolated) = 0.241 W/kg

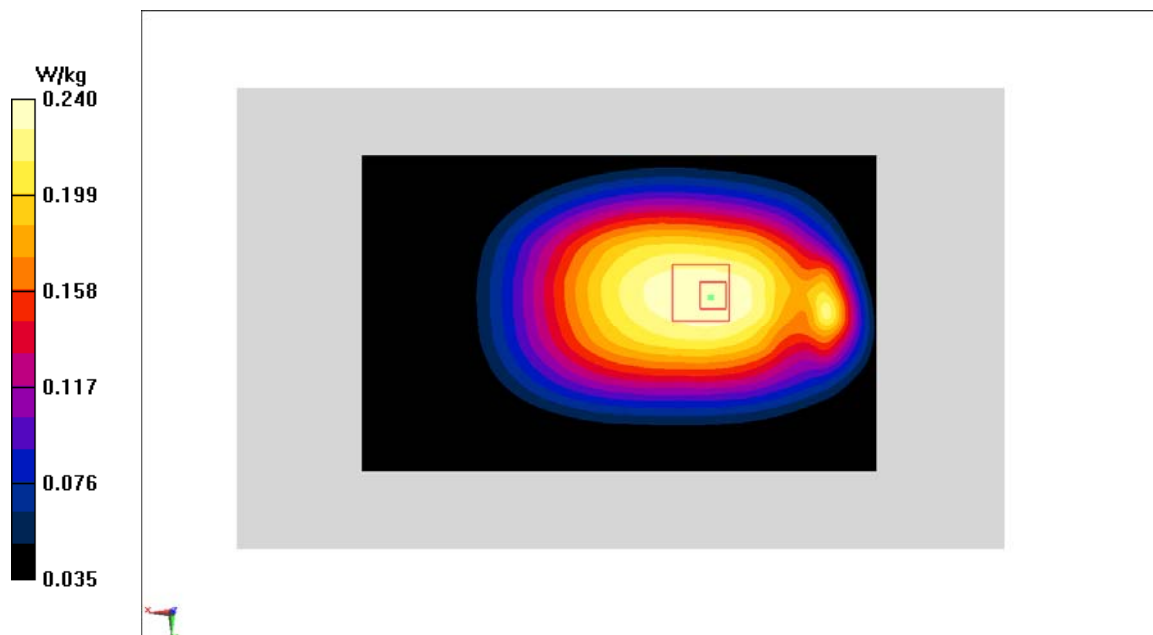
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

Reference Value = 15.61 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.268 W/kg

**SAR(1 g) = 0.222 W/kg; SAR(10 g) = 0.178 W/kg**

Maximum value of SAR (measured) = 0.24 W/kg



**Fig A.29**

### WLAN2450\_CH11 Left Cheek

Date: 4/5/2018

Electronics: DAE4 Sn1525

Medium: Head 2450 MHz

Medium parameters used:  $f = 2462$ ;  $\sigma = 1.829$  mho/m;  $\epsilon_r = 39.82$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WLAN2450 2462 Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(7.89,7.89,7.89)

**Area Scan (71x121x1):** Interpolated grid:  $dx=1.000$  mm,  $dy=1.000$  mm

Maximum value of SAR (interpolated) = 0.539 W/kg

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

Reference Value = 14.57 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.782 W/kg

**SAR(1 g) = 0.403 W/kg; SAR(10 g) = 0.213 W/kg**

Maximum value of SAR (measured) = 0.517 W/kg

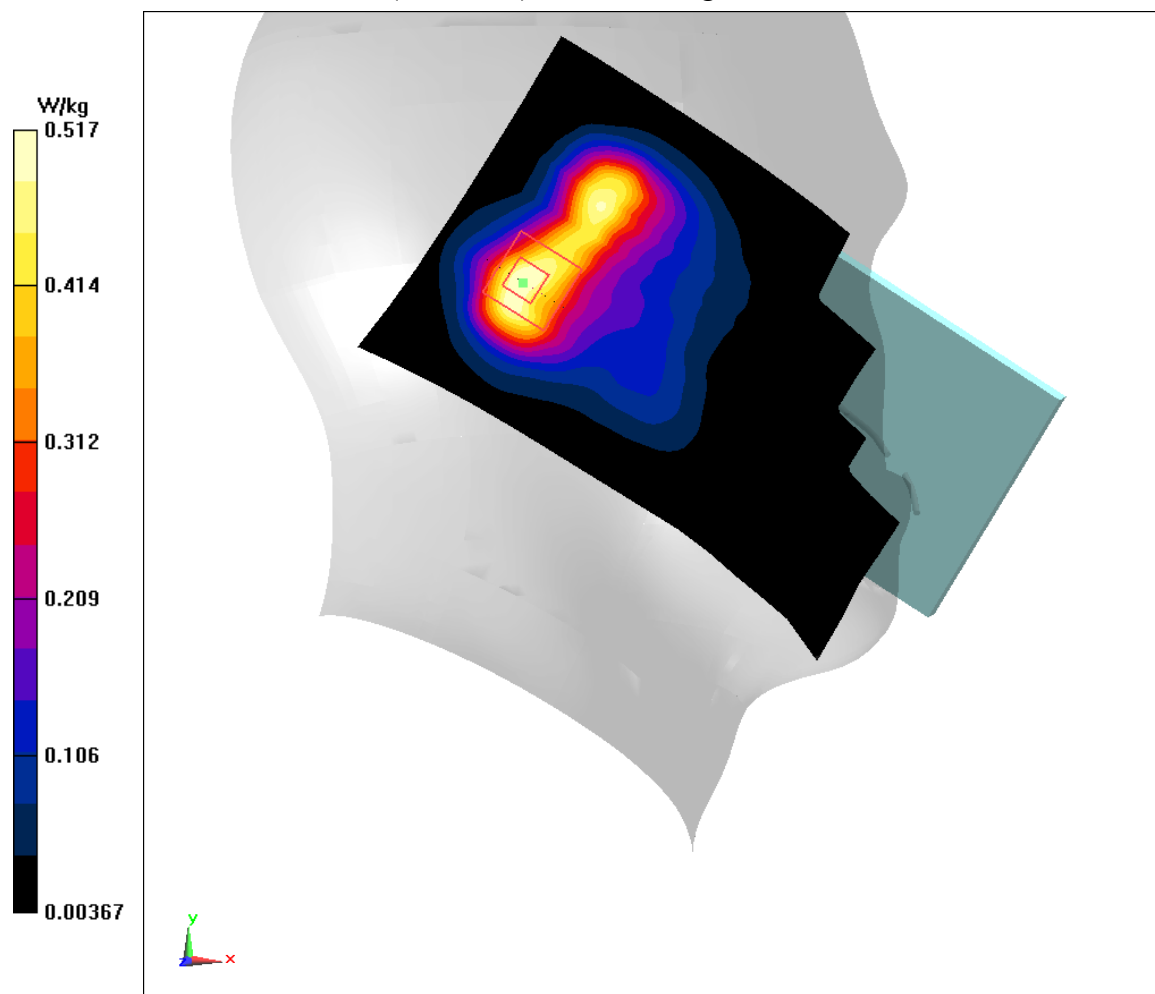


Fig A.30

**WLAN2450\_CH11 Rear**

Date: 4/5/2018

Electronics: DAE4 Sn1525

Medium: Head 2450 MHz

Medium parameters used:  $f = 2462$ ;  $\sigma = 1.958$  mho/m;  $\epsilon_r = 52.23$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WLAN2450 2462 Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(8.09,8.09,8.09)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.584 W/kg

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

Reference Value = 6.787 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.956 W/kg

**SAR(1 g) = 0.27 W/kg; SAR(10 g) = 0.241 W/kg**

Maximum value of SAR (measured) = 0.606 W/kg

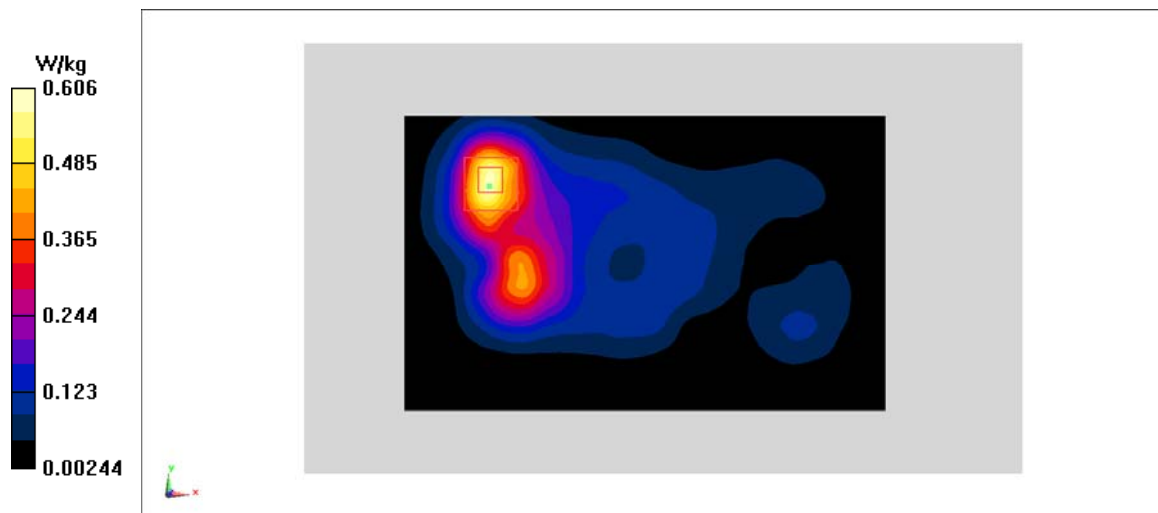


Fig A.31

### WLAN 5G\_CH149 Right Cheek

Date: 4/5/2018

Electronics: DAE4 Sn1525

Medium: Head 2450 MHz

Medium parameters used:  $f = 5745$ ;  $\sigma = 5.101$  mho/m;  $\epsilon_r = 35.78$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WLAN5G 5745 Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(5.04,5.04,5.04)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.03 W/kg

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

Reference Value = 4.366 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 4.34 W/kg

**SAR(1 g) = 0.953 W/kg; SAR(10 g) = 0.328 W/kg**

Maximum value of SAR (measured) = 2.49 W/kg

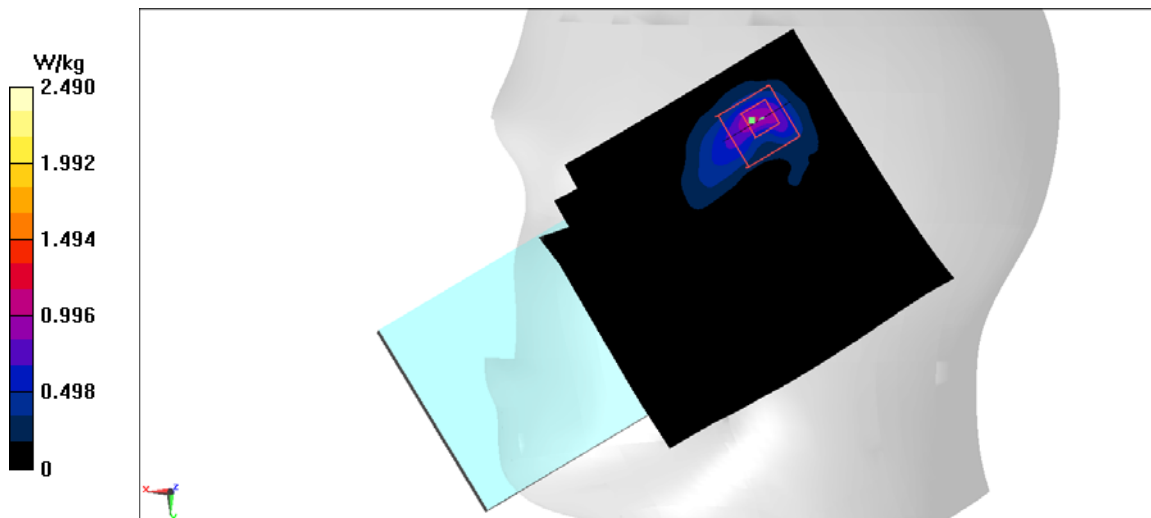


Fig A.32

**WLAN 5G\_CH149 Left**

Date: 4/5/2018

Electronics: DAE4 Sn1525

Medium: Head 2450 MHz

Medium parameters used:  $f = 5745$ ;  $\sigma = 5.405$  mho/m;  $\epsilon_r = 48.75$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WLAN5G 5745 Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(4.59,4.59,4.59)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.08 W/kg

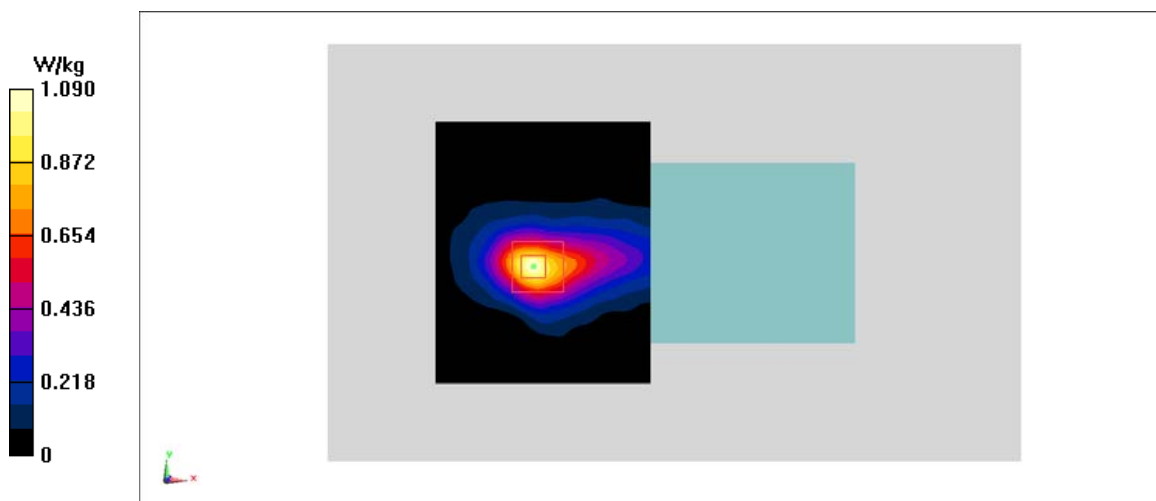
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.064 V/m; Power Drift = -0.05 dB

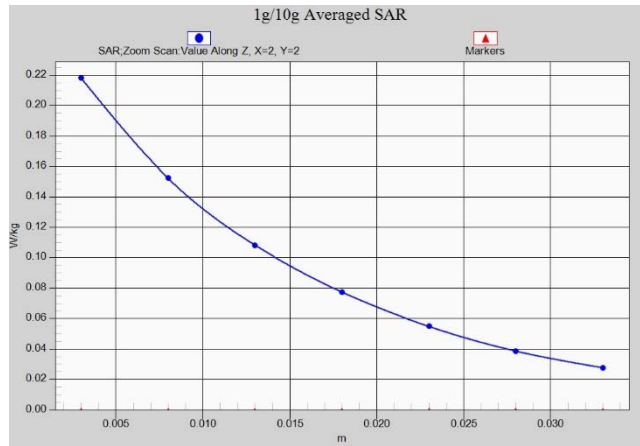
Peak SAR (extrapolated) = 2.12 W/kg

**SAR(1 g) = 0.45 W/kg; SAR(10 g) = 0.166 W/kg**

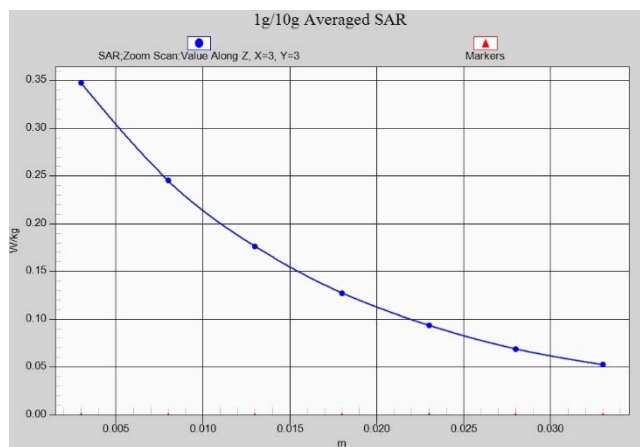
Maximum value of SAR (measured) = 1.09 W/kg



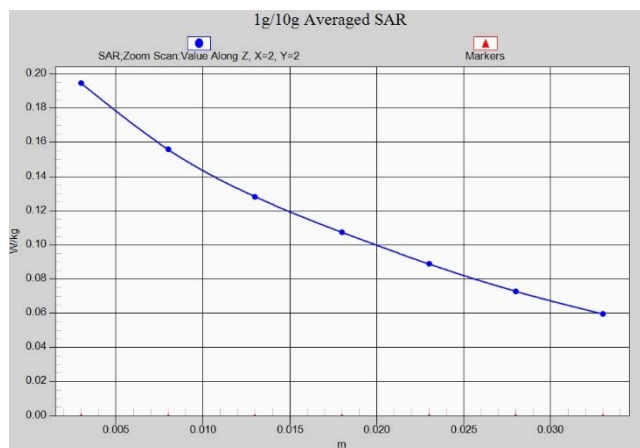
**Fig A.33**



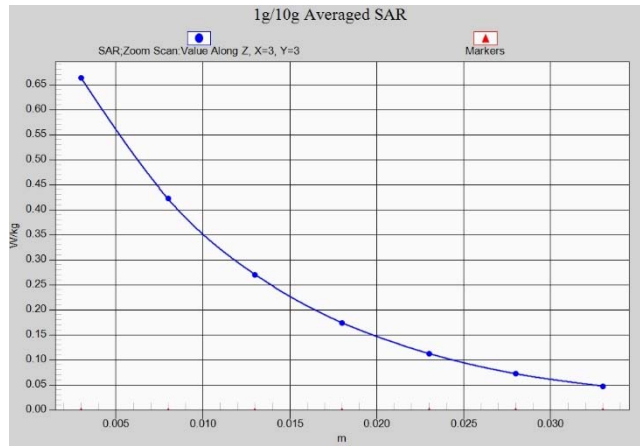
**Fig.A.1- 1 Z-Scan at power reference point (GSM850)**



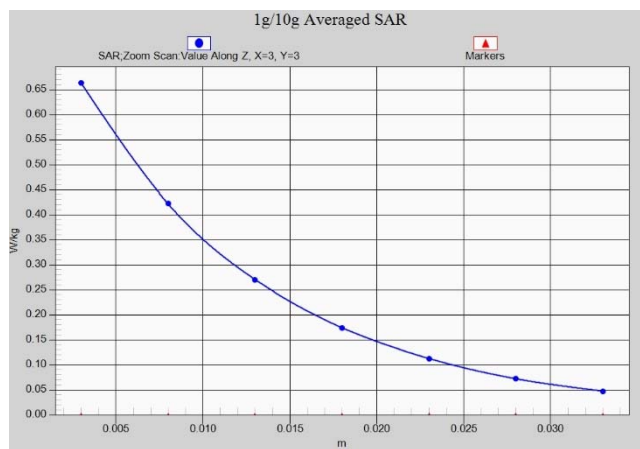
**Fig.A.1- 2 Z-Scan at power reference point (GSM850)**



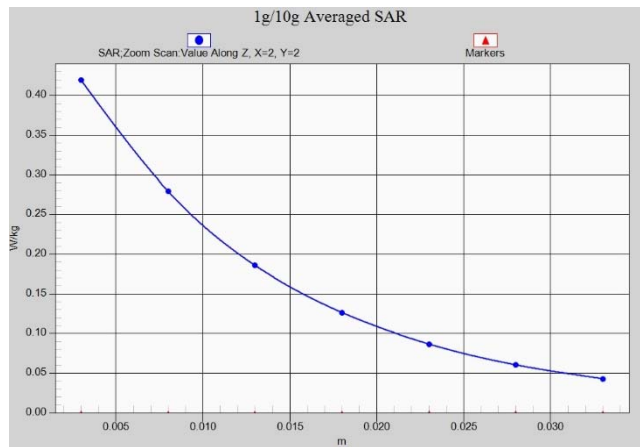
**Fig.A.1- 3 Z-Scan at power reference point (PCS1900)**



**Fig.A.1- 4 Z-Scan at power reference point (PCS1900) AP OFF**

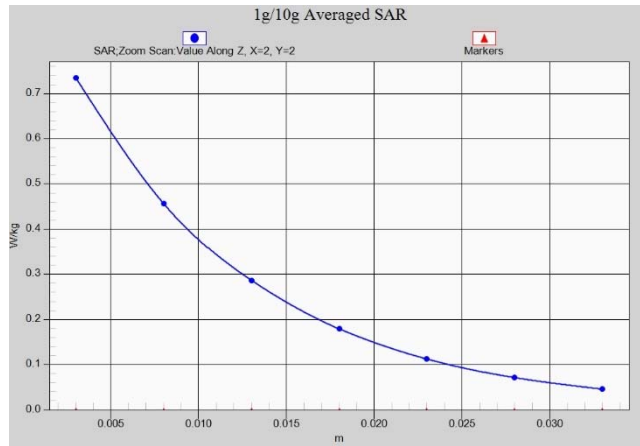


**Fig.A.1- 5 Z-Scan at power reference point (PCS1900) AP ON**

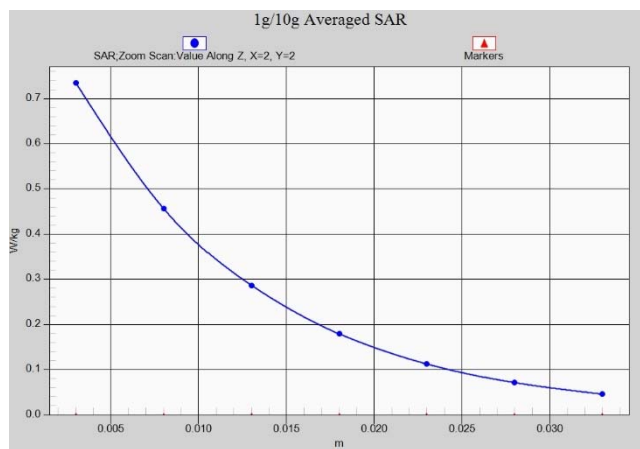


**Fig.A.1- 6 Z-Scan at power reference point (W1900)**

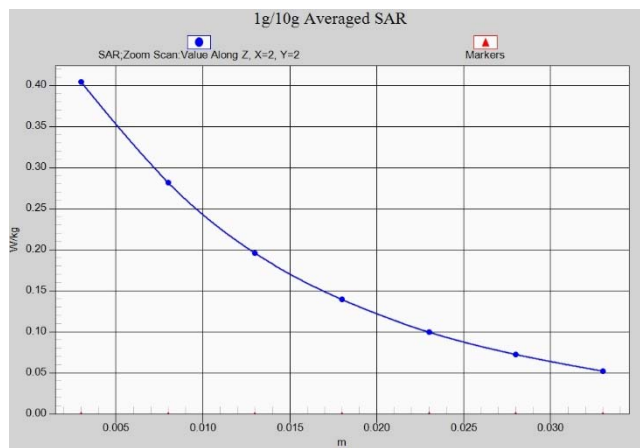




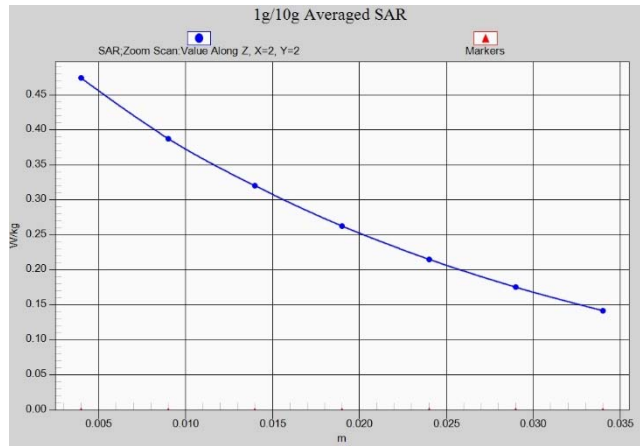
**Fig.A.1- 7 Z-Scan at power reference point (W1900) AP OFF**



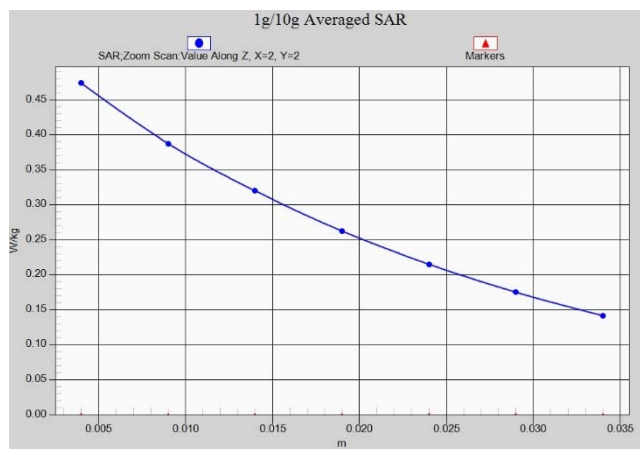
**Fig.A.1- 8 Z-Scan at power reference point (W1900) AP ON**



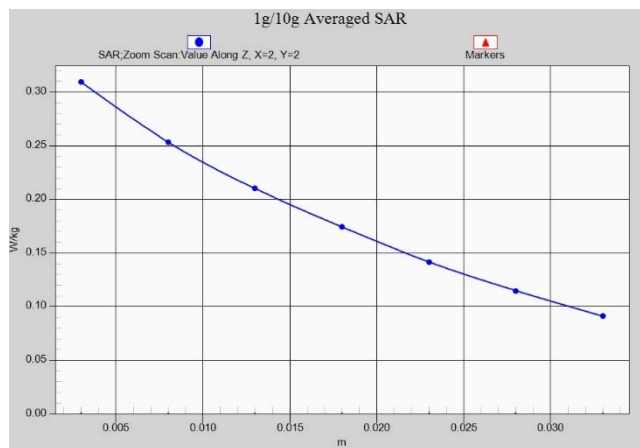
**Fig.A.1- 9 Z-Scan at power reference point (W1700)**



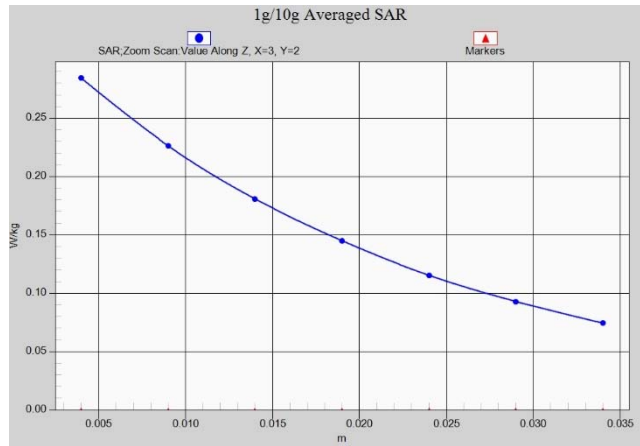
**Fig.A.1- 10 Z-Scan at power reference point (W1700) AP OFF**



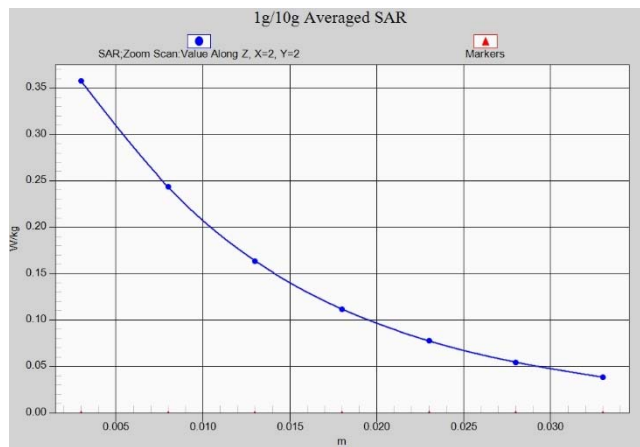
**Fig.A.1- 11 Z-Scan at power reference point (W1700) AP ON**



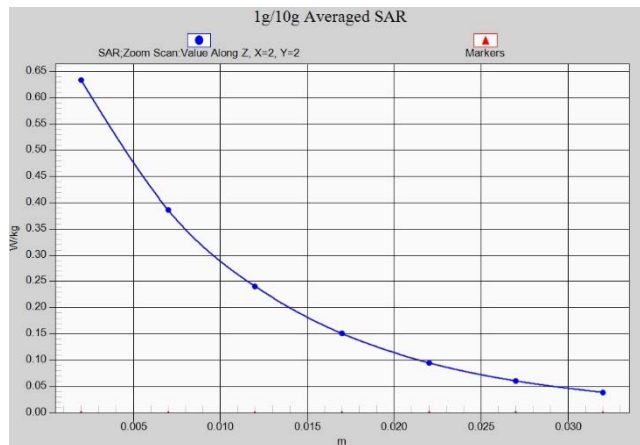
**Fig.A.1- 12 Z-Scan at power reference point (W850)**



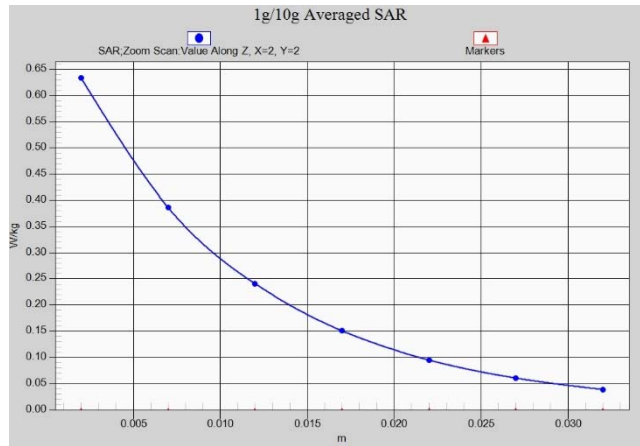
**Fig.A.1- 13 Z-Scan at power reference point (W850)**



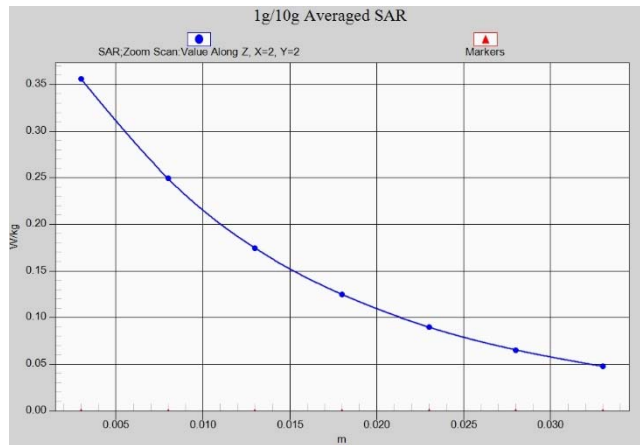
**Fig.A.1- 14 Z-Scan at power reference point (LTE band2)**



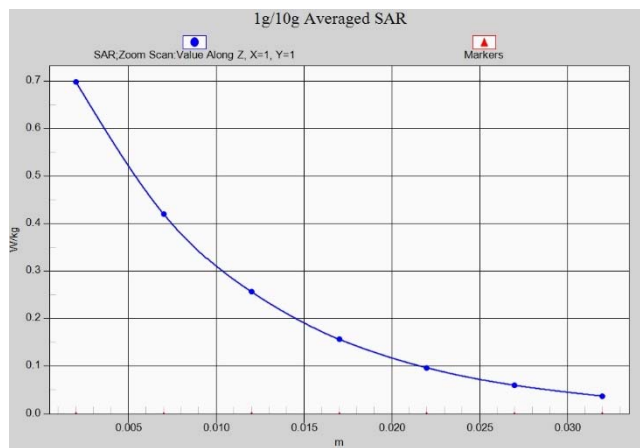
**Fig.A.1- 15 Z-Scan at power reference point (LTE band2) AP OFF**



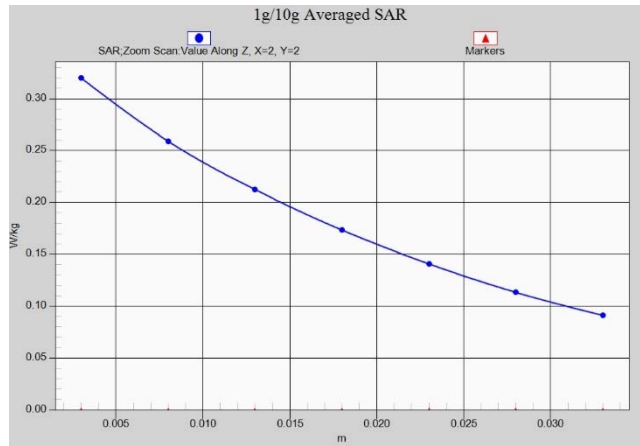
**Fig.A.1- 16 Z-Scan at power reference point (LTE band2) AP ON**



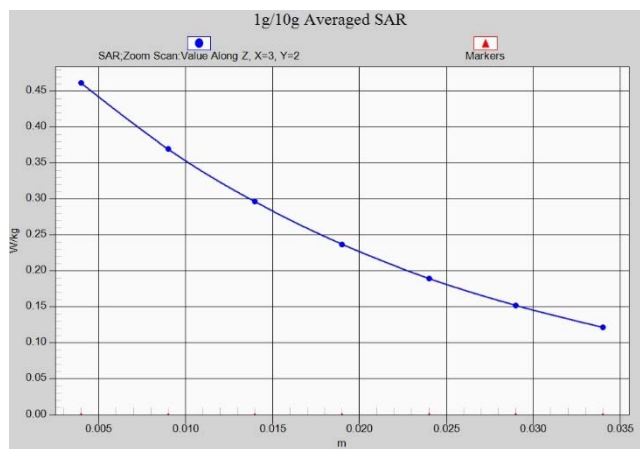
**Fig.A.1- 17 Z-Scan at power reference point (LTE band5)**



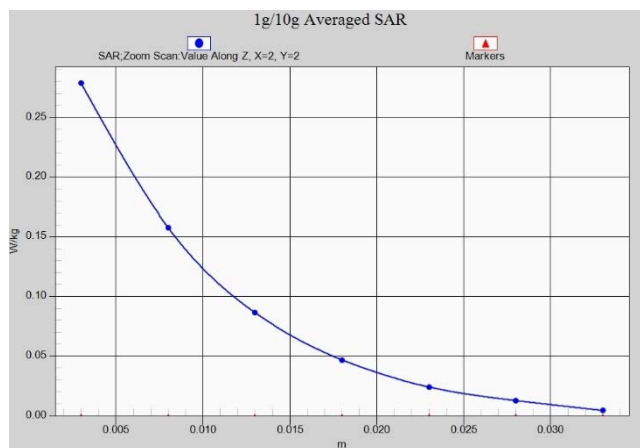
**Fig.A.1- 18 Z-Scan at power reference point (LTE band5)**



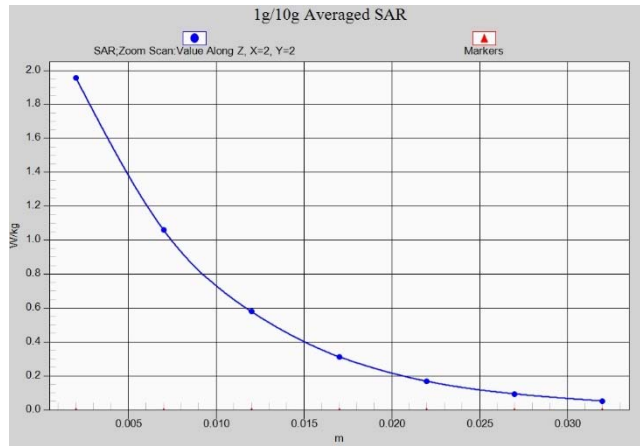
**Fig.A.1- 19 Z-Scan at power reference point (LTE band7)**



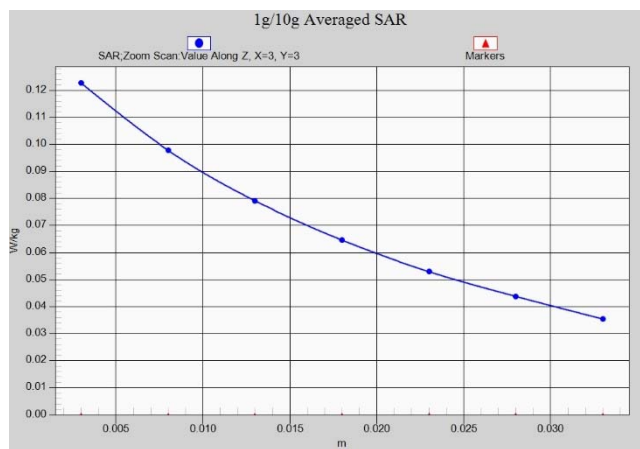
**Fig.A.1- 20 Z-Scan at power reference point (LTE band7)**



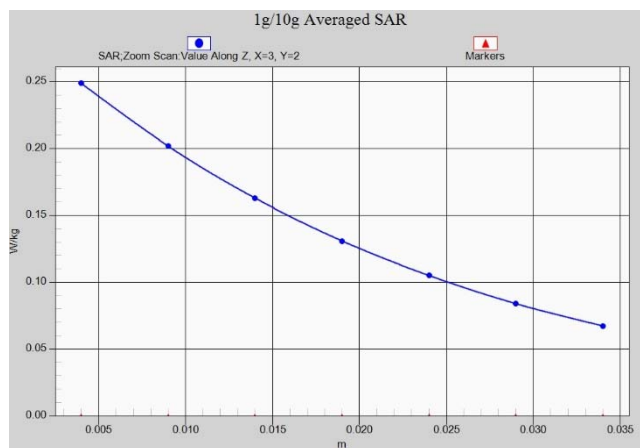
**Fig.A.1- 21 Z-Scan at power reference point (LTE band12)**



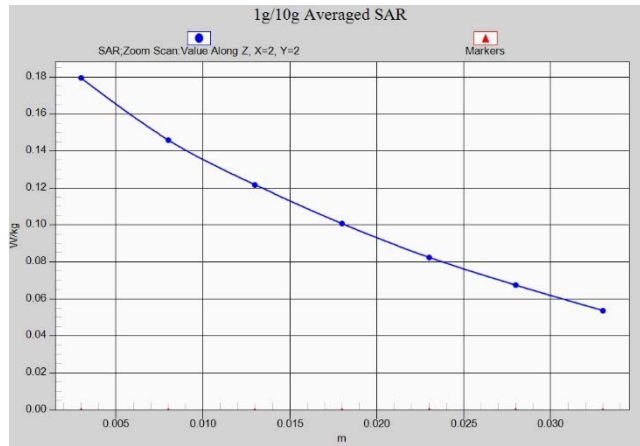
**Fig.A.1- 22 Z-Scan at power reference point (LTE band12)**



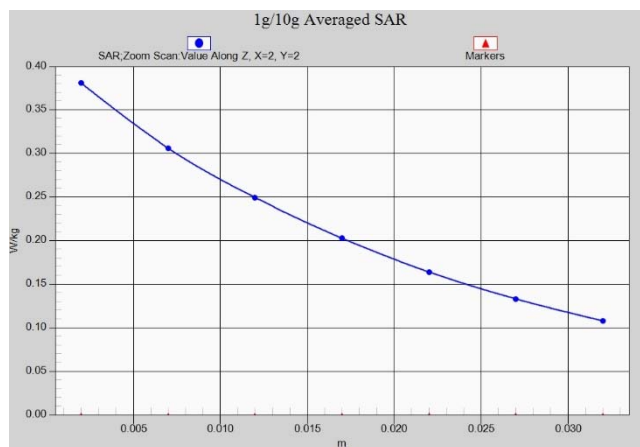
**Fig.A.1- 23 Z-Scan at power reference point (LTE band13)**



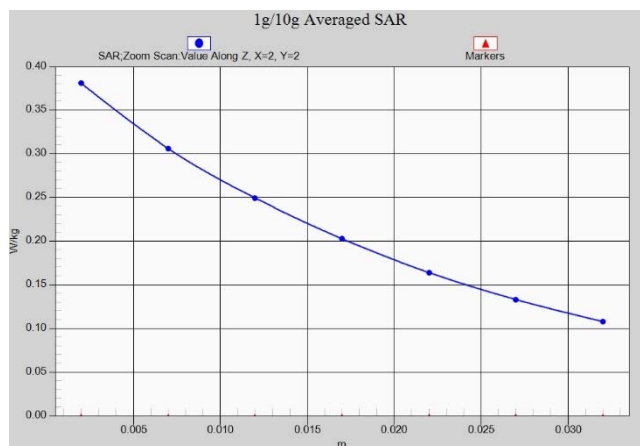
**Fig.A.1- 24 Z-Scan at power reference point (LTE band13)**



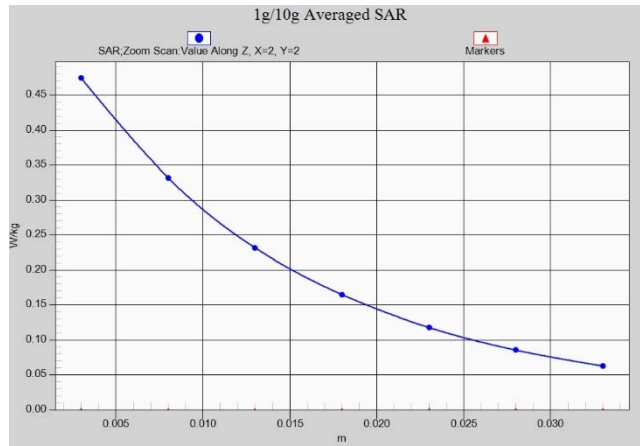
**Fig.A.1- 25 Z-Scan at power reference point (LTE band66)**



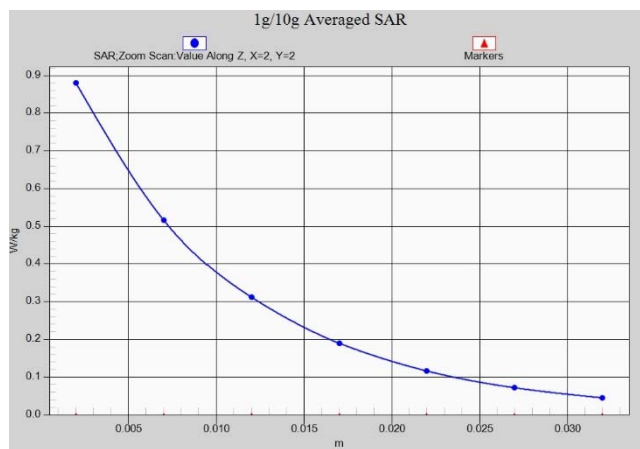
**Fig.A.1- 26 Z-Scan at power reference point (LTE band66) AP OFF**



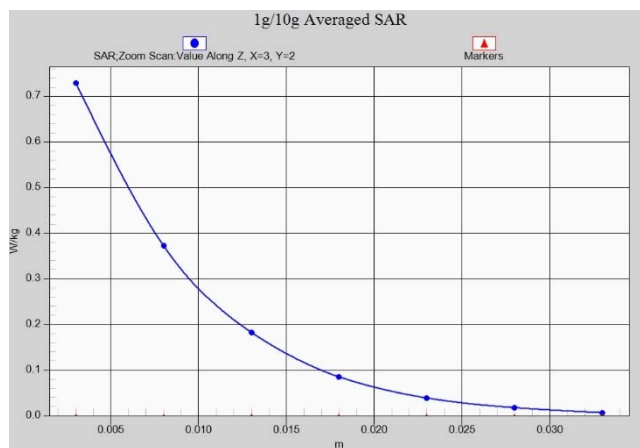
**Fig.A.1- 27 Z-Scan at power reference point (LTE band66) AP ON**



**Fig.A.1- 28 Z-Scan at power reference point (LTE band71)**

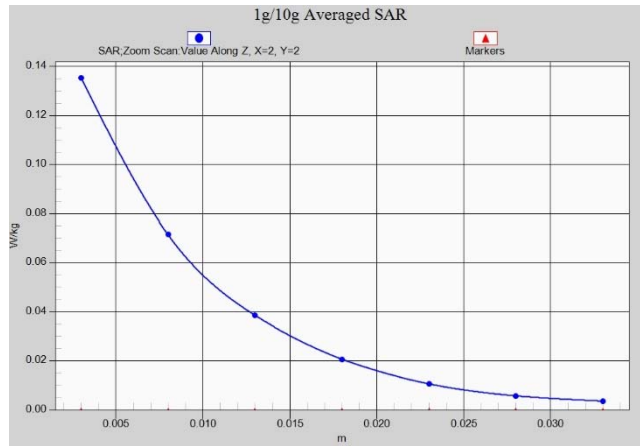


**Fig.A.1- 29 Z-Scan at power reference point (LTE band71)**

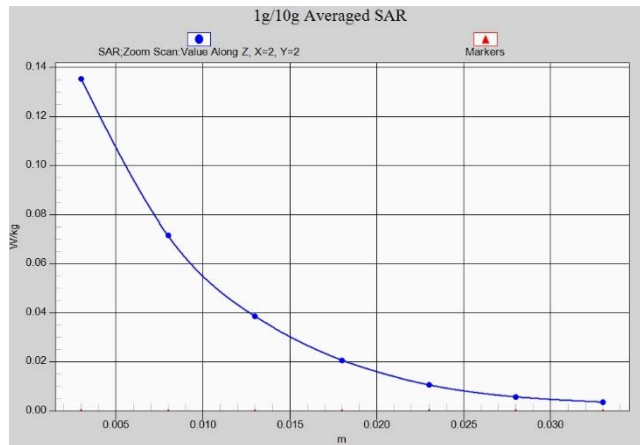


**Fig.A.1- 30 Z-Scan at power reference point (WiFi 2450)**

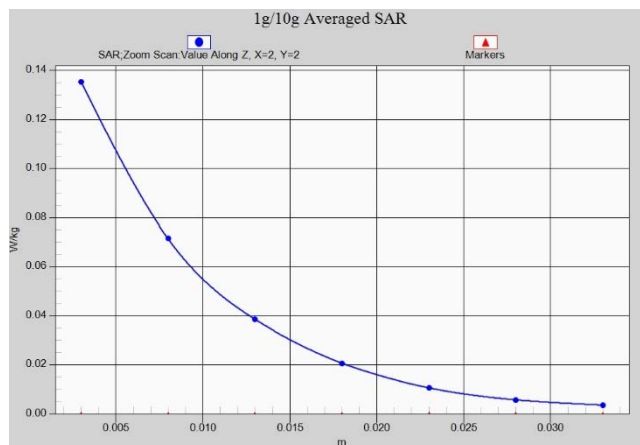




**Fig.A.1- 31 Z-Scan at power reference point (WiFi 2450)**



**Fig.A.1- 32 Z-Scan at power reference point (WiFi 5G)**



**Fig.A.1- 33 Z-Scan at power reference point (WiFi 5G)**

## ANNEX B System Verification Results

### 750 MHz

Date: 4/1/2018

Electronics: DAE4 Sn1525

Medium: Head 750 MHz

Medium parameters used:  $f = 750$  MHz;  $\sigma = 0.89$  mho/m;  $\epsilon_r = 42.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C

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

Probe: EX3DV4 – SN7464 ConvF(10.57,10.57,10.57)

**System Validation /Area Scan (81x191x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 58.13 V/m; Power Drift = -0.02

**Fast SAR: SAR(1 g) = 2.06 W/kg; SAR(10 g) = 1.36 W/kg**

Maximum value of SAR (interpolated) = 2.79 W/kg

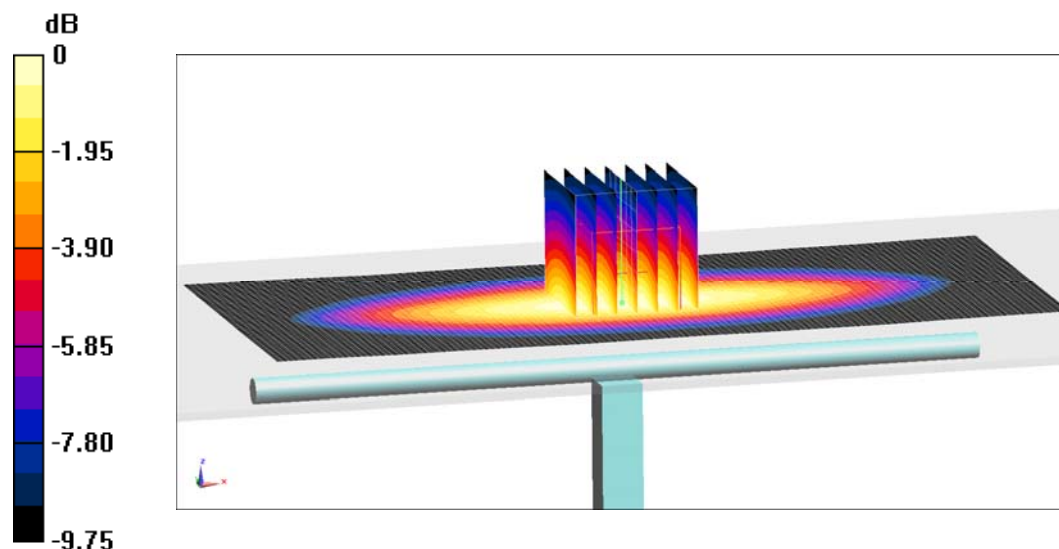
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 58.13 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 3.24 W/kg

**SAR(1 g) = 2.12 W/kg; SAR(10 g) = 1.33 W/kg**

Maximum value of SAR (measured) = 2.81 W/kg



0 dB = 2.81 W/kg = 4.49 dB W/kg

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

## 750 MHz

Date: 4/1/2018

Electronics: DAE4 Sn1525

Medium: Body 750 MHz

Medium parameters used:  $f = 750 \text{ MHz}$ ;  $\sigma = 0.97 \text{ mho/m}$ ;  $\epsilon_r = 55.24$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.5^\circ\text{C}$  Liquid Temperature:  $22.3^\circ\text{C}$

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

Probe: EX3DV4 – SN7464 ConvF(10.63,10.63,10.63)

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

Reference Value =  $57.27 \text{ V/m}$ ; Power Drift =  $-0.07$

**Fast SAR: SAR(1 g) =  $2.18 \text{ W/kg}$ ; SAR(10 g) =  $1.4 \text{ W/kg}$**

Maximum value of SAR (interpolated) =  $3.32 \text{ W/kg}$

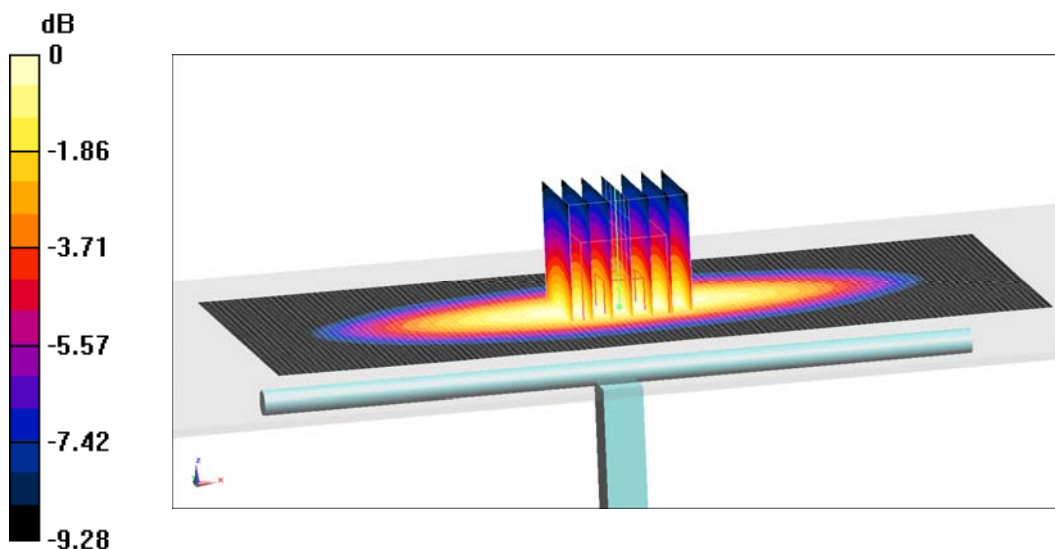
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $57.27 \text{ V/m}$ ; Power Drift =  $-0.07 \text{ dB}$

Peak SAR (extrapolated) =  $3.29 \text{ W/kg}$

**SAR(1 g) =  $2.16 \text{ W/kg}$ ; SAR(10 g) =  $1.42 \text{ W/kg}$**

Maximum value of SAR (measured) =  $2.96 \text{ W/kg}$



$0 \text{ dB} = 2.96 \text{ W/kg} = 4.71 \text{ dB W/kg}$

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

## 835 MHz

Date: 4/2/2018

Electronics: DAE4 Sn1525

Medium: Head 835 MHz

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.888 \text{ mho/m}$ ;  $\epsilon_r = 40.69$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.5^\circ\text{C}$  Liquid Temperature:  $22.3^\circ\text{C}$

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

Probe: EX3DV4 – SN7464 ConvF(10.28,10.28,10.28)

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

Reference Value =  $64.08 \text{ V/m}$ ; Power Drift = 0.1

**Fast SAR: SAR(1 g) =  $2.31 \text{ W/kg}$ ; SAR(10 g) =  $1.49 \text{ W/kg}$**

Maximum value of SAR (interpolated) =  $3.74 \text{ W/kg}$

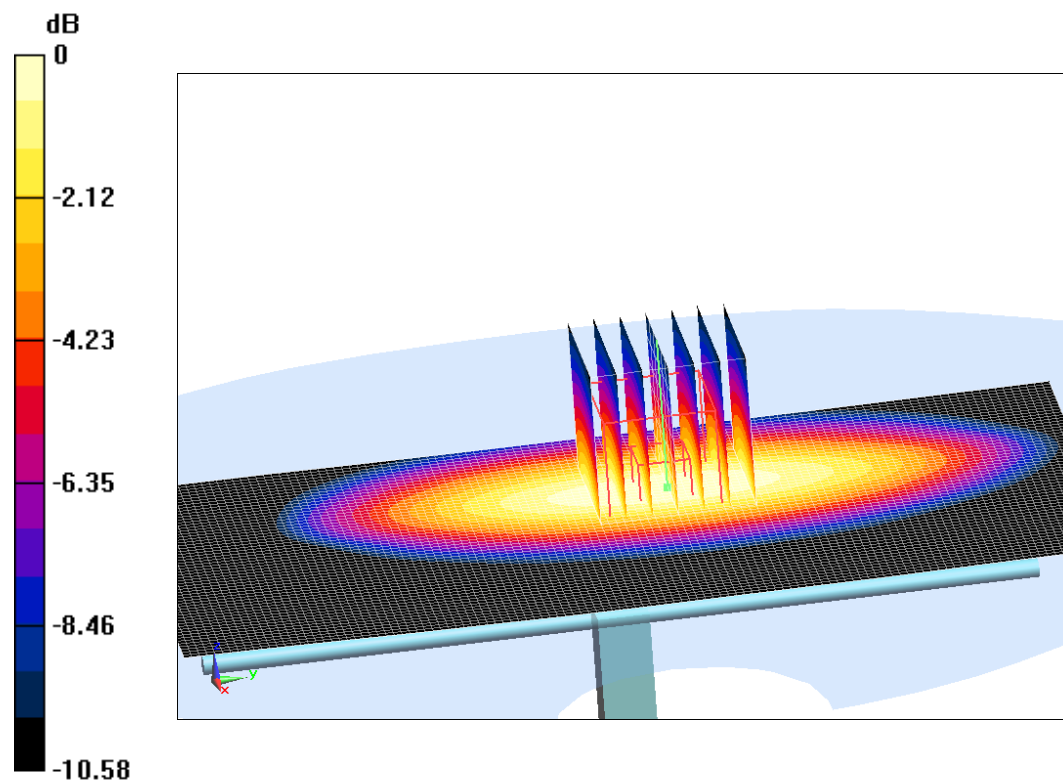
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $64.08 \text{ V/m}$ ; Power Drift = 0.1 dB

Peak SAR (extrapolated) =  $4.09 \text{ W/kg}$

**SAR(1 g) =  $2.37 \text{ W/kg}$ ; SAR(10 g) =  $1.5 \text{ W/kg}$**

Maximum value of SAR (measured) =  $3.6 \text{ W/kg}$



0 dB =  $3.6 \text{ W/kg} = 5.56 \text{ dB W/kg}$

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

## 835 MHz

Date: 4/2/2018

Electronics: DAE4 Sn1525

Medium: Body 835 MHz

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.955 \text{ mho/m}$ ;  $\epsilon_r = 54.43$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.5^\circ\text{C}$  Liquid Temperature:  $22.3^\circ\text{C}$

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

Probe: EX3DV4 – SN7464 ConvF(10.21,10.21,10.21)

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

Reference Value =  $58.61 \text{ V/m}$ ; Power Drift =  $0.07$

**Fast SAR: SAR(1 g) =  $2.33 \text{ W/kg}$ ; SAR(10 g) =  $1.55 \text{ W/kg}$**

Maximum value of SAR (interpolated) =  $3.5 \text{ W/kg}$

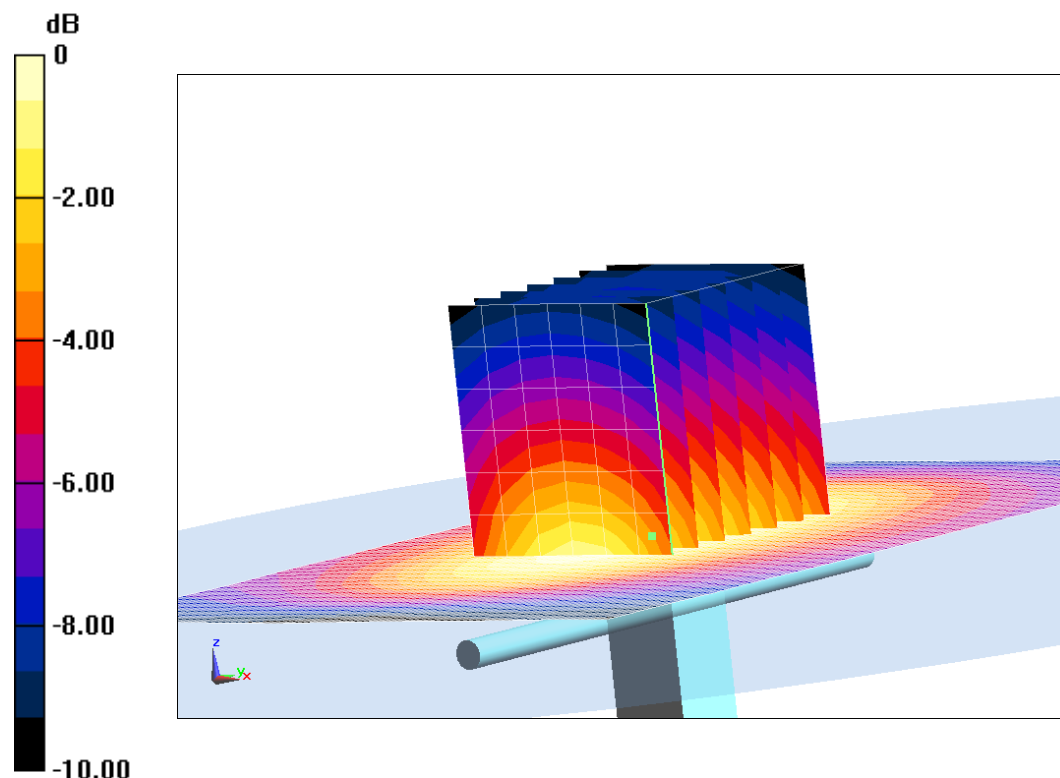
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $58.61 \text{ V/m}$ ; Power Drift =  $0.07 \text{ dB}$

Peak SAR (extrapolated) =  $3.7 \text{ W/kg}$

**SAR(1 g) =  $2.38 \text{ W/kg}$ ; SAR(10 g) =  $1.53 \text{ W/kg}$**

Maximum value of SAR (measured) =  $3.26 \text{ W/kg}$



$0 \text{ dB} = 3.26 \text{ W/kg} = 5.13 \text{ dB W/kg}$

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

## 1750 MHz

Date: 4/3/2018

Electronics: DAE4 Sn1525

Medium: Head 1750 MHz

Medium parameters used:  $f = 1750$  MHz;  $\sigma = 1.354$  mho/m;  $\epsilon_r = 40.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C

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

Probe: EX3DV4 – SN7464 ConvF(8.70,8.70,8.70)

**System Validation /Area Scan (81x191x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 106.22 V/m; Power Drift = 0.01

**Fast SAR: SAR(1 g) = 9.34 W/kg; SAR(10 g) = 4.95 W/kg**

Maximum value of SAR (interpolated) = 14.39 W/kg

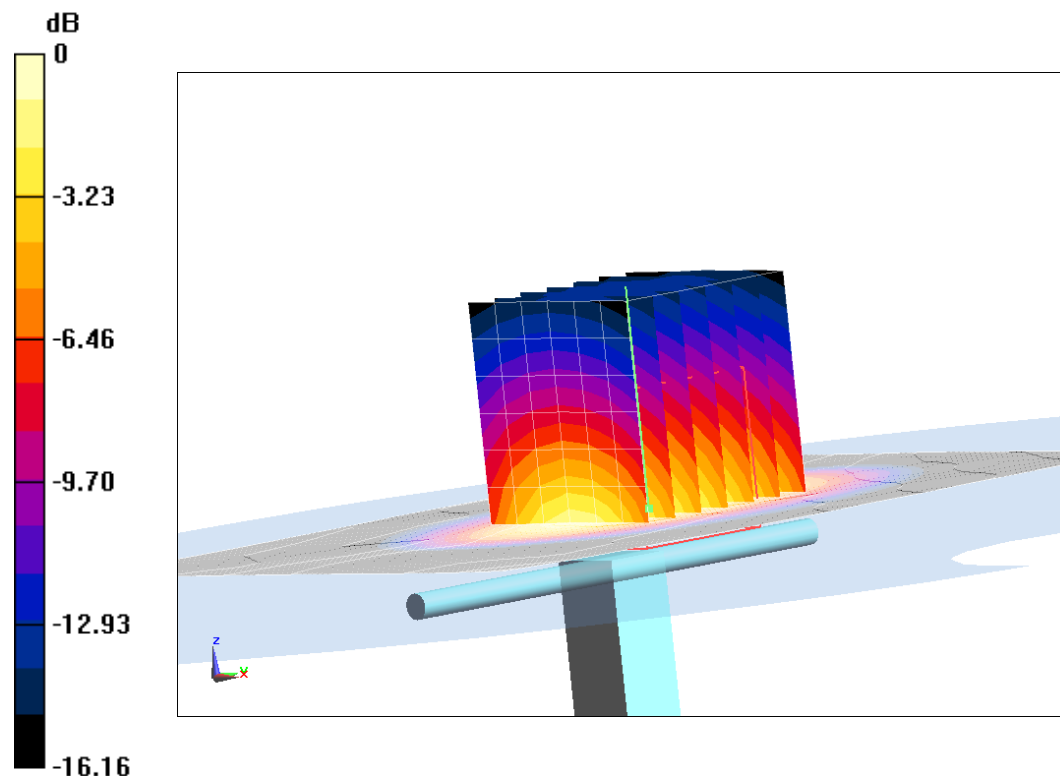
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value =106.22 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 18.03 W/kg

**SAR(1 g) = 9.14 W/kg; SAR(10 g) = 4.94 W/kg**

Maximum value of SAR (measured) = 14.31 W/kg



0 dB = 14.31 W/kg = 11.56 dB W/kg

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

## 1750 MHz

Date: 4/3/2018

Electronics: DAE4 Sn1525

Medium: Body 1750 MHz

Medium parameters used:  $f = 1750$  MHz;  $\sigma = 1.482$  mho/m;  $\epsilon_r = 53.07$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C

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

Probe: EX3DV4 – SN7464 ConvF(8.60,8.60,8.60)

**System Validation /Area Scan (81x191x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 99.04 V/m; Power Drift = -0.09

**Fast SAR: SAR(1 g) = 9.44 W/kg; SAR(10 g) = 5.02 W/kg**

Maximum value of SAR (interpolated) = 16.21 W/kg

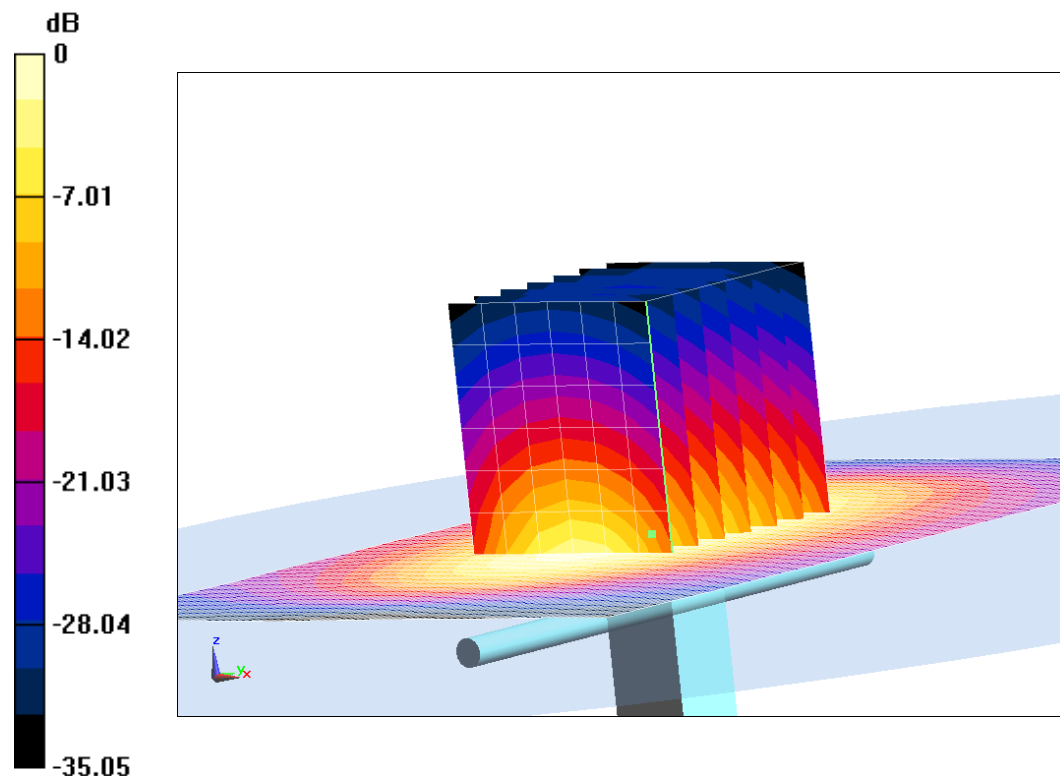
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value =99.04 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 16.21 W/kg

**SAR(1 g) = 9.39 W/kg; SAR(10 g) = 4.9 W/kg**

Maximum value of SAR (measured) = 13.5 W/kg



0 dB = 13.5 W/kg = 11.3 dB W/kg

**Fig.B.6 validation 1750 MHz 250mW**

## 1900 MHz

Date: 4/4/2018

Electronics: DAE4 Sn1525

Medium: Head 1900 MHz

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.411$  mho/m;  $\epsilon_r = 39.38$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C

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

Probe: EX3DV4 – SN7464 ConvF(9.39,9.39,9.39)

**System Validation /Area Scan (81x191x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 105.87 V/m; Power Drift = -0.04

**Fast SAR: SAR(1 g) = 9.95 W/kg; SAR(10 g) = 5.32 W/kg**

Maximum value of SAR (interpolated) = 14.65 W/kg

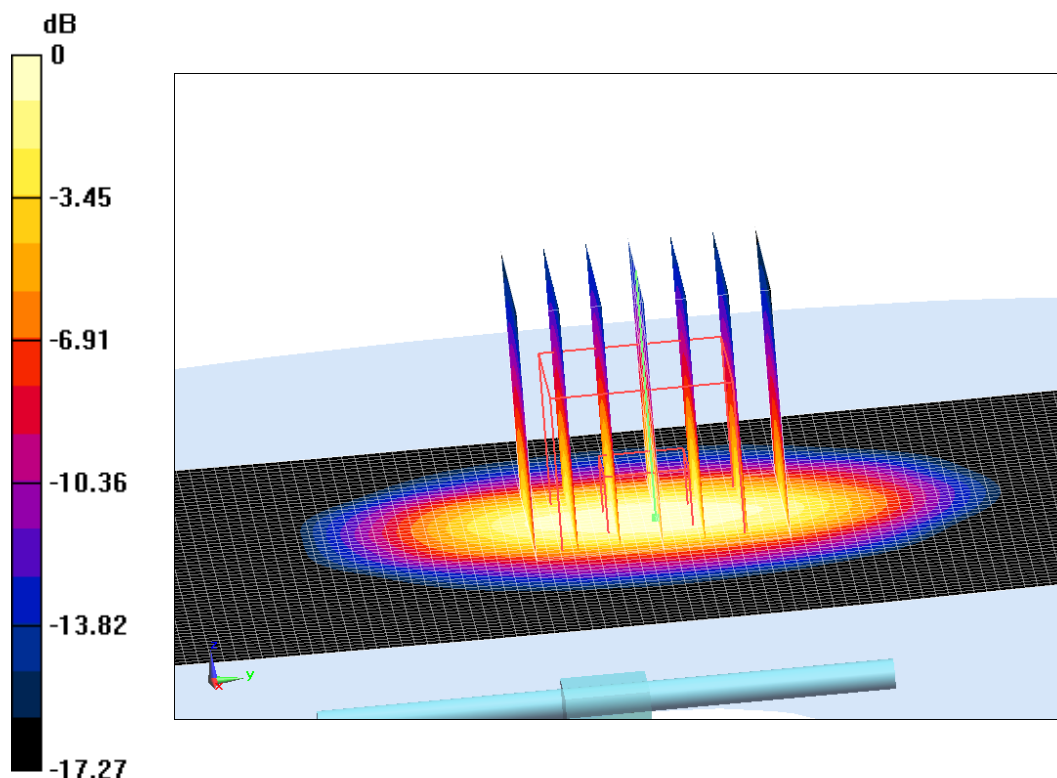
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 105.87 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 18.63 W/kg

**SAR(1 g) = 10.09 W/kg; SAR(10 g) = 5.23 W/kg**

Maximum value of SAR (measured) = 14.99 W/kg



0 dB = 14.99 W/kg = 11.76 dB W/kg

**Fig.B.7 validation 1900 MHz 250mW**



## 1900 MHz

Date: 4/4/2018

Electronics: DAE4 Sn1525

Medium: Body 1900 MHz

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.496$  mho/m;  $\epsilon_r = 52.85$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C

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

Probe: EX3DV4 – SN7464 ConvF(8.32,8.32,8.32)

**System Validation /Area Scan (81x191x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 102.04 V/m; Power Drift = -0.04

**Fast SAR: SAR(1 g) = 10.08 W/kg; SAR(10 g) = 5.36 W/kg**

Maximum value of SAR (interpolated) = 17.6 W/kg

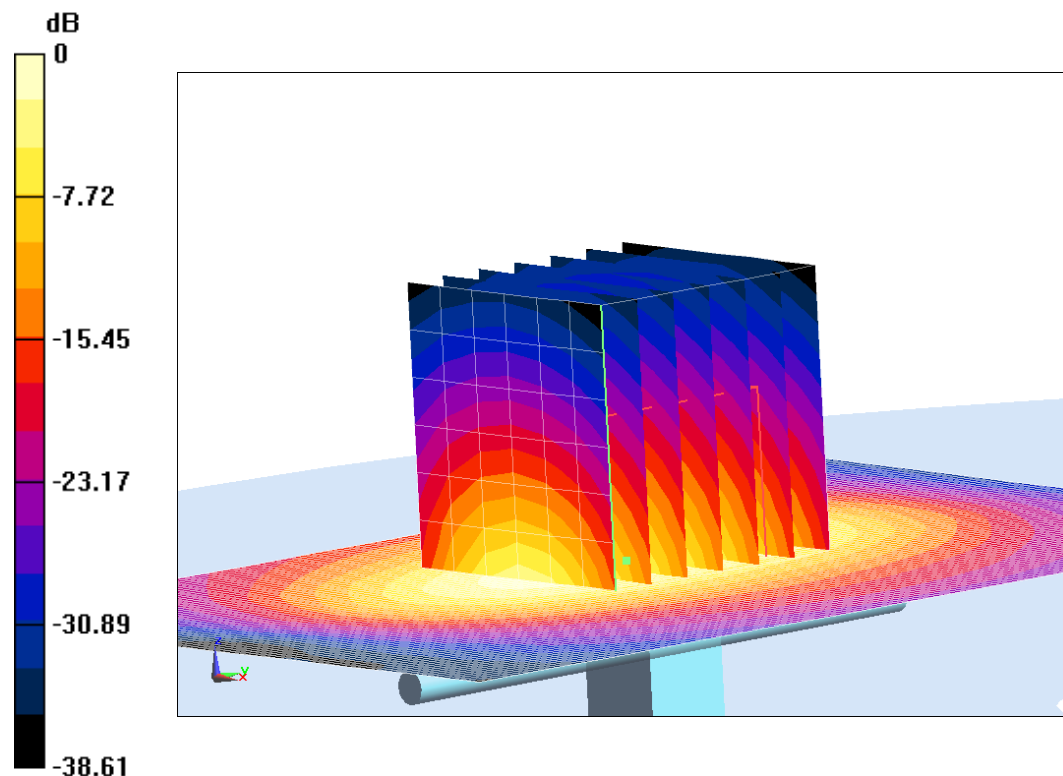
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 102.04 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 17.47 W/kg

**SAR(1 g) = 10.19 W/kg; SAR(10 g) = 5.47 W/kg**

Maximum value of SAR (measured) = 14.41 W/kg



0 dB = 14.41 W/kg = 11.59 dB W/kg

**Fig.B.8 validation 1900 MHz 250mW**

## 2450 MHz

Date: 4/5/2018

Electronics: DAE4 Sn1525

Medium: Head 2450 MHz

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.818$  mho/m;  $\epsilon_r = 39.83$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C

Communication System: CW Frequency: 2450 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(7.89,7.89,7.89)

**System Validation /Area Scan (81x191x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 113.46 V/m; Power Drift = -0.04

**Fast SAR: SAR(1 g) = 13.3 W/kg; SAR(10 g) = 6.19 W/kg**

Maximum value of SAR (interpolated) = 21.25 W/kg

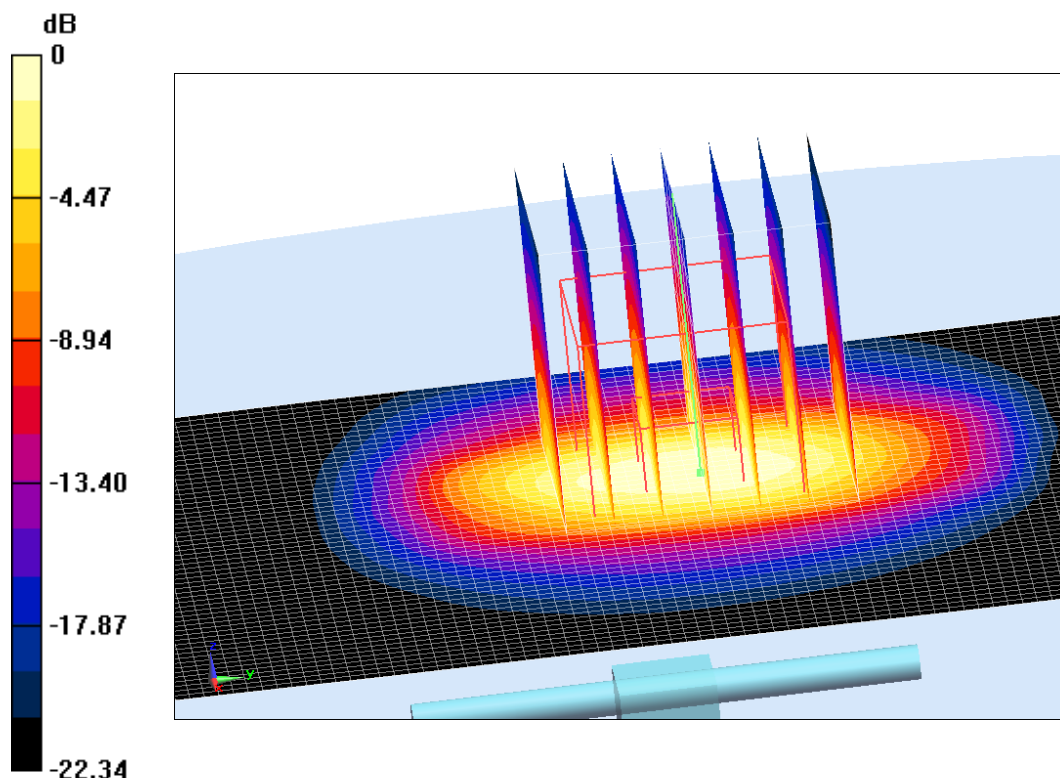
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 113.46 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 26.48 W/kg

**SAR(1 g) = 12.93 W/kg; SAR(10 g) = 6.25 W/kg**

Maximum value of SAR (measured) = 21.15 W/kg



0 dB = 21.15 W/kg = 13.25 dB W/kg

**Fig.B.9 validation 2450 MHz 250mW**

## 2450 MHz

Date: 4/5/2018

Electronics: DAE4 Sn1525

Medium: Body 2450 MHz

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.947$  mho/m;  $\epsilon_r = 52.24$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C

Communication System: CW Frequency: 2450 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(8.09,8.09,8.09)

**System Validation /Area Scan (81x191x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 105.72 V/m; Power Drift = -0.03

**Fast SAR: SAR(1 g) = 12.73 W/kg; SAR(10 g) = 5.98 W/kg**

Maximum value of SAR (interpolated) = 25.04 W/kg

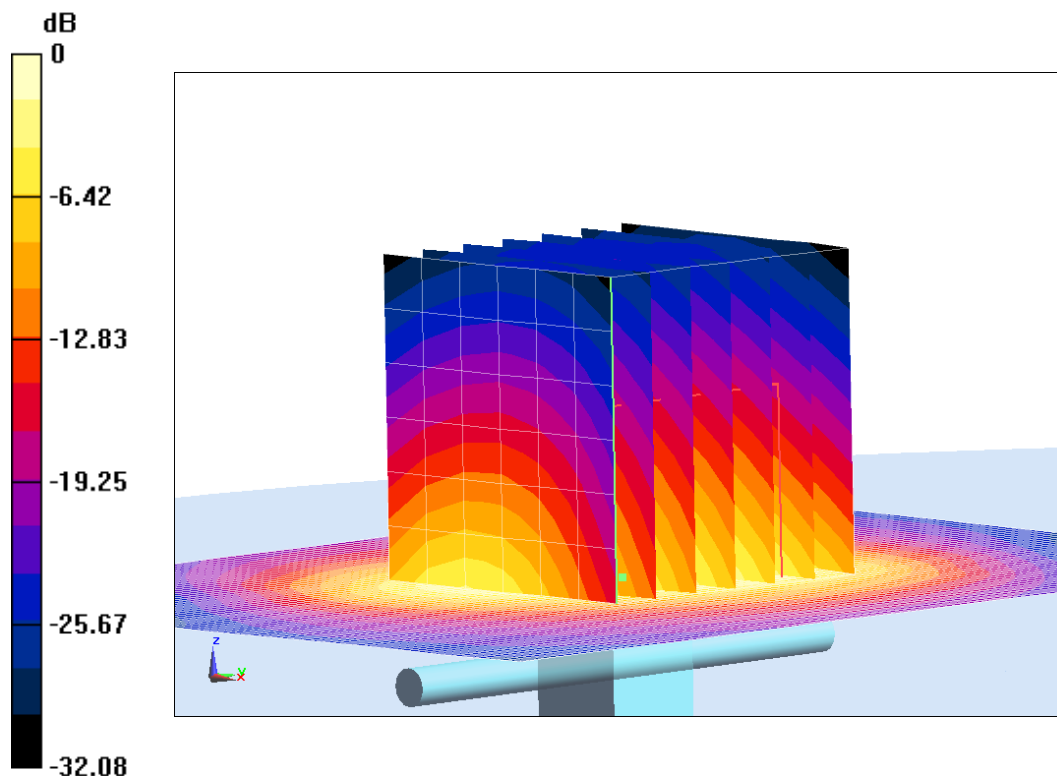
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value =105.72 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 25.29 W/kg

**SAR(1 g) = 12.6 W/kg; SAR(10 g) = 6.04 W/kg**

Maximum value of SAR (measured) = 20.03 W/kg



0 dB = 20.03 W/kg = 13.02 dB W/kg

**Fig.B.10 validation 2450 MHz 250mW**

## 2600 MHz

Date: 4/6/2018

Electronics: DAE4 Sn1525

Medium: Head 2600 MHz

Medium parameters used:  $f = 2600$  MHz;  $\sigma = 1.956$  mho/m;  $\epsilon_r = 39.01$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C

Communication System: CW Frequency: 2600 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(7.76,7.76,7.76)

**System Validation /Area Scan (81x191x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 115.62 V/m; Power Drift = 0.02

**Fast SAR: SAR(1 g) = 14.29 W/kg; SAR(10 g) = 6.33 W/kg**

Maximum value of SAR (interpolated) = 24.36 W/kg

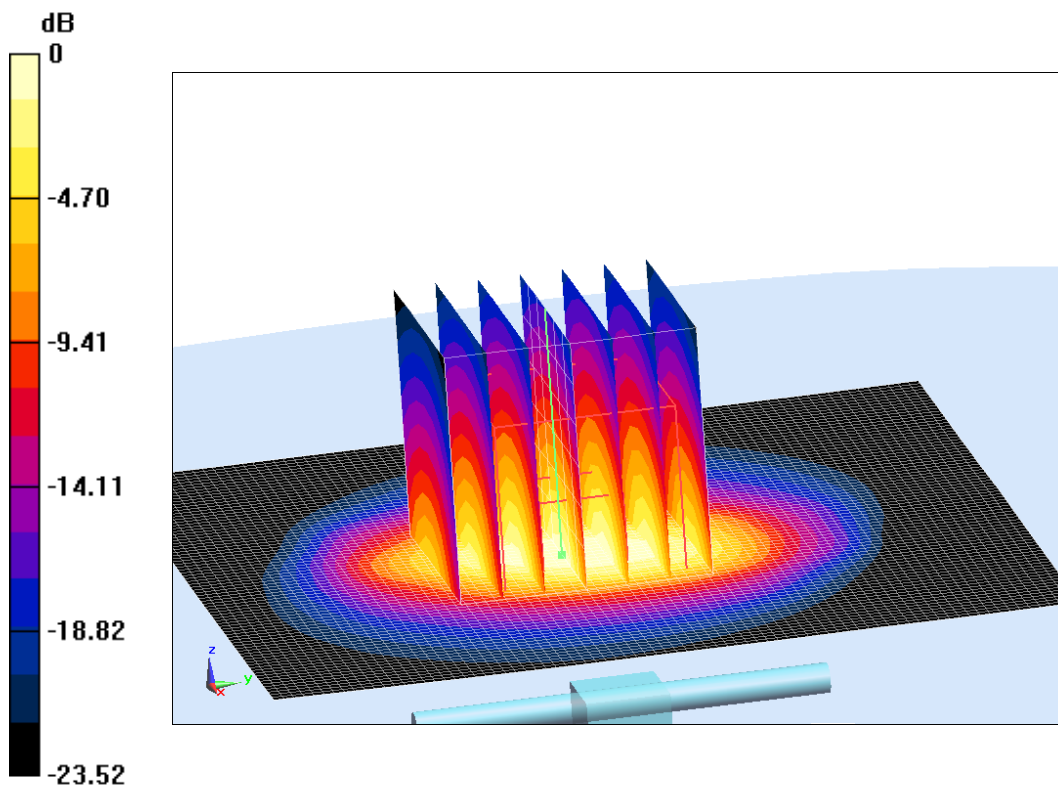
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 115.62 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 32.45 W/kg

**SAR(1 g) = 14.43 W/kg; SAR(10 g) = 6.47 W/kg**

Maximum value of SAR (measured) = 24.54 W/kg



0 dB = 24.54 W/kg = 13.9 dB W/kg

**Fig.B.11 validation 2600 MHz 250mW**

## 2600 MHz

Date: 4/6/2018

Electronics: DAE4 Sn1525

Medium: Body 2600 MHz

Medium parameters used:  $f = 2600$  MHz;  $\sigma = 2.177$  mho/m;  $\epsilon_r = 52.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C

Communication System: CW Frequency: 2600 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(7.84,7.84,7.84)

**System Validation /Area Scan (81x191x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 108.67 V/m; Power Drift = 0.01

**Fast SAR: SAR(1 g) = 13.75 W/kg; SAR(10 g) = 6.11 W/kg**

Maximum value of SAR (interpolated) = 29.69 W/kg

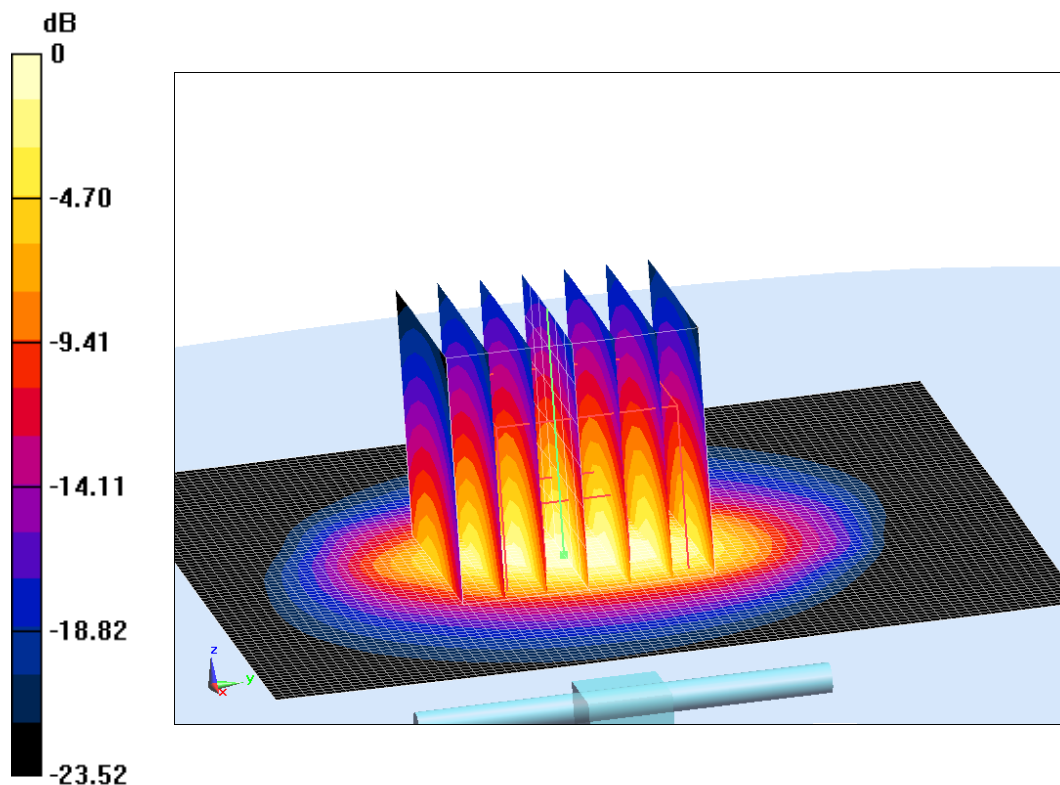
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value =108.67 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 29.61 W/kg

**SAR(1 g) = 13.9 W/kg; SAR(10 g) = 6.27 W/kg**

Maximum value of SAR (measured) = 23.31 W/kg



0 dB = 23.31 W/kg = 13.68 dB W/kg

**Fig.B.12 validation 2600 MHz 250mW**

## 5250 MHz

Date: 4/7/2018

Electronics: DAE4 Sn1525

Medium: Head 5250 MHz

Medium parameters used:  $f = 5250$  MHz;  $\sigma = 4.729$  mho/m;  $\epsilon_r = 36.07$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C

Communication System: CW Frequency: 5250 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(5.68,5.68,5.68)

**System Validation /Area Scan (81x191x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 74.79 V/m; Power Drift = 0.02

**Fast SAR: SAR(1 g) = 20.31 W/kg; SAR(10 g) = 5.99 W/kg**

Maximum value of SAR (interpolated) = 18.7 W/kg

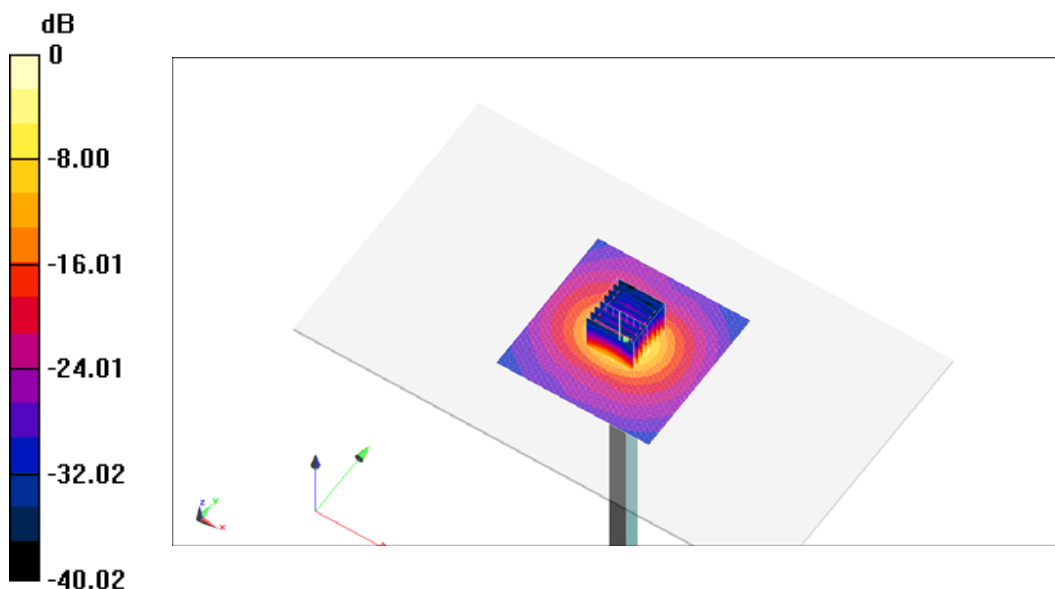
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value =74.79 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 31.09 W/kg

**SAR(1 g) = 20.55 W/kg; SAR(10 g) = 5.99 W/kg**

Maximum value of SAR (measured) = 19.22 W/kg



0 dB = 19.22 W/kg = 12.84 dB W/kg

**Fig.B.13 validation 5250 MHz 250mW**

## 5250 MHz

Date: 4/7/2018

Electronics: DAE4 Sn1525

Medium: Body 5250 MHz

Medium parameters used:  $f = 5250$  MHz;  $\sigma = 5.364$  mho/m;  $\epsilon_r = 48.57$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C

Communication System: CW Frequency: 5250 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(5.29,5.29,5.29)

**System Validation /Area Scan (81x191x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 65.51 V/m; Power Drift = -0.01

**Fast SAR: SAR(1 g) = 18.95 W/kg; SAR(10 g) = 5.42 W/kg**

Maximum value of SAR (interpolated) = 18.49 W/kg

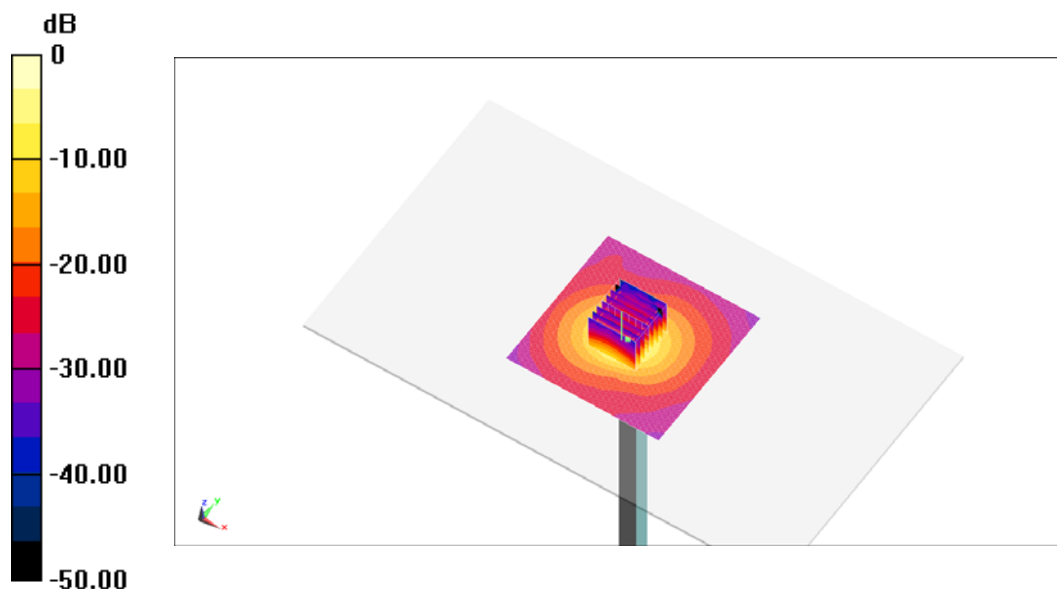
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value =65.51 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 29.4 W/kg

**SAR(1 g) = 19.29 W/kg; SAR(10 g) = 5.23 W/kg**

Maximum value of SAR (measured) = 18.49 W/kg



0 dB = 18.49 W/kg = 12.67 dB W/kg

**Fig.B.14 validation 5250 MHz 250mW**

## 5600 MHz

Date: 4/8/2018

Electronics: DAE4 Sn1525

Medium: Head 5600 MHz

Medium parameters used:  $f = 5600$  MHz;  $\sigma = 5.153$  mho/m;  $\epsilon_r = 35.75$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C

Communication System: CW Frequency: 5600 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(4.98,4.98,4.98)

**System Validation /Area Scan (81x191x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 72.75 V/m; Power Drift = -0.1

**Fast SAR: SAR(1 g) = 21.19 W/kg; SAR(10 g) = 5.89 W/kg**

Maximum value of SAR (interpolated) = 19.61 W/kg

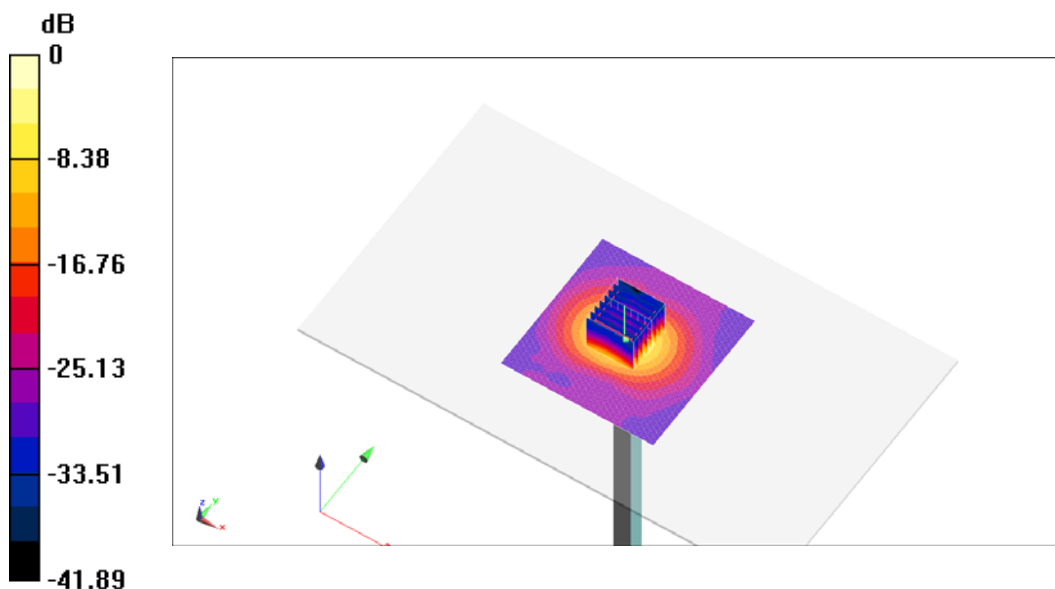
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value =72.75 V/m; Power Drift = -0.1 dB

Peak SAR (extrapolated) = 32.44 W/kg

**SAR(1 g) = 21.18 W/kg; SAR(10 g) = 5.98 W/kg**

Maximum value of SAR (measured) = 19.98 W/kg



0 dB = 19.98 W/kg = 13.01 dB W/kg

**Fig.B.15 validation 5600 MHz 250mW**