



## **Appendix A. SAR Plots of System Verification**

The plots for system verification with largest deviation for each SAR system combination are shown as follows.

## System Check\_H750\_150427

**DUT: Dipole 750 MHz; Type: D750V3; SN: 1013**

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

Medium: H07T08N1\_0427 Medium parameters used:  $f = 750$  MHz;  $\sigma = 0.912$  S/m;  $\epsilon_r = 40.638$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.1 °C; Liquid Temperature : 21.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(10.09, 10.09, 10.09); Calibrated: 2015/03/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2015/03/20
- Phantom: Twin SAM Phantom\_1823; Type: QD000P40CD;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Pin=250mW/Area Scan (61x121x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.75 W/kg

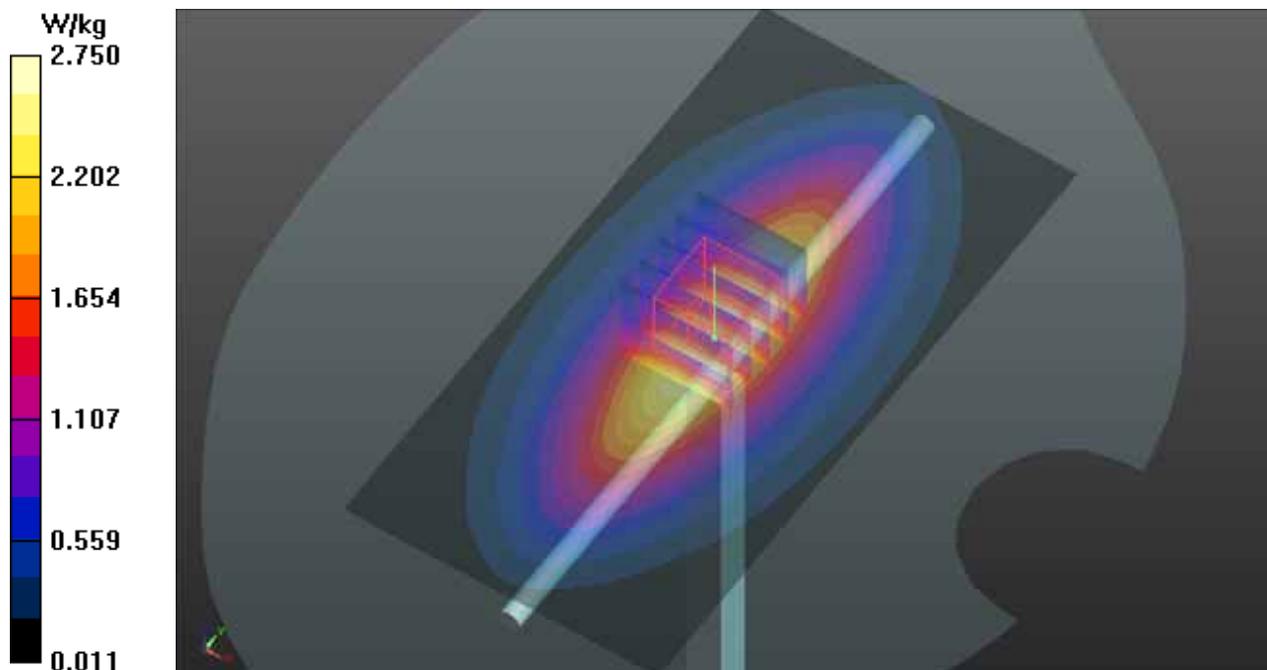
**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 53.35 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 3.19 W/kg

**SAR(1 g) = 2.2 W/kg; SAR(10 g) = 1.48 W/kg**

Maximum value of SAR (measured) = 2.75 W/kg



## System Check\_H835\_150427

**DUT: Dipole 835 MHz; Type: D835V2; SN: 4d121**

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

Medium: H08T09N1\_0427 Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.913 \text{ S/m}$ ;  $\epsilon_r = 42.824$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature : 22.1 °C; Liquid Temperature : 21.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(9.88, 9.88, 9.88); Calibrated: 2015/03/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2015/03/20
- Phantom: Twin SAM Phantom\_1823; Type: QD000P40CD;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Pin=250mW/Area Scan (61x61x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 3.00 W/kg

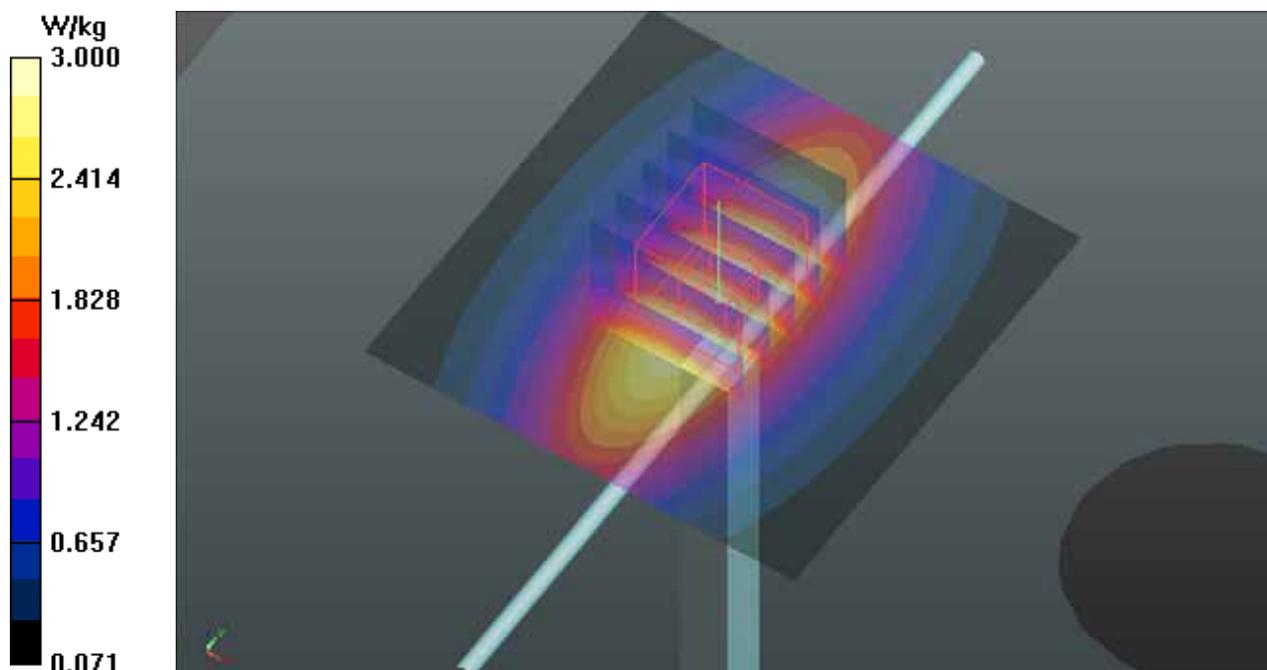
**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 55.25 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 3.54 W/kg

**SAR(1 g) = 2.32 W/kg; SAR(10 g) = 1.55 W/kg**

Maximum value of SAR (measured) = 3.01 W/kg



### System Check\_H1750\_150423

**DUT: Dipole 1750 MHz; Type: D1750V2; SN: 1055**

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

Medium: H17T18N1\_0423 Medium parameters used:  $f = 1750$  MHz;  $\sigma = 1.385$  S/m;  $\epsilon_r = 41.359$ ;  $\rho = 1000$  kg/m<sup>3</sup>

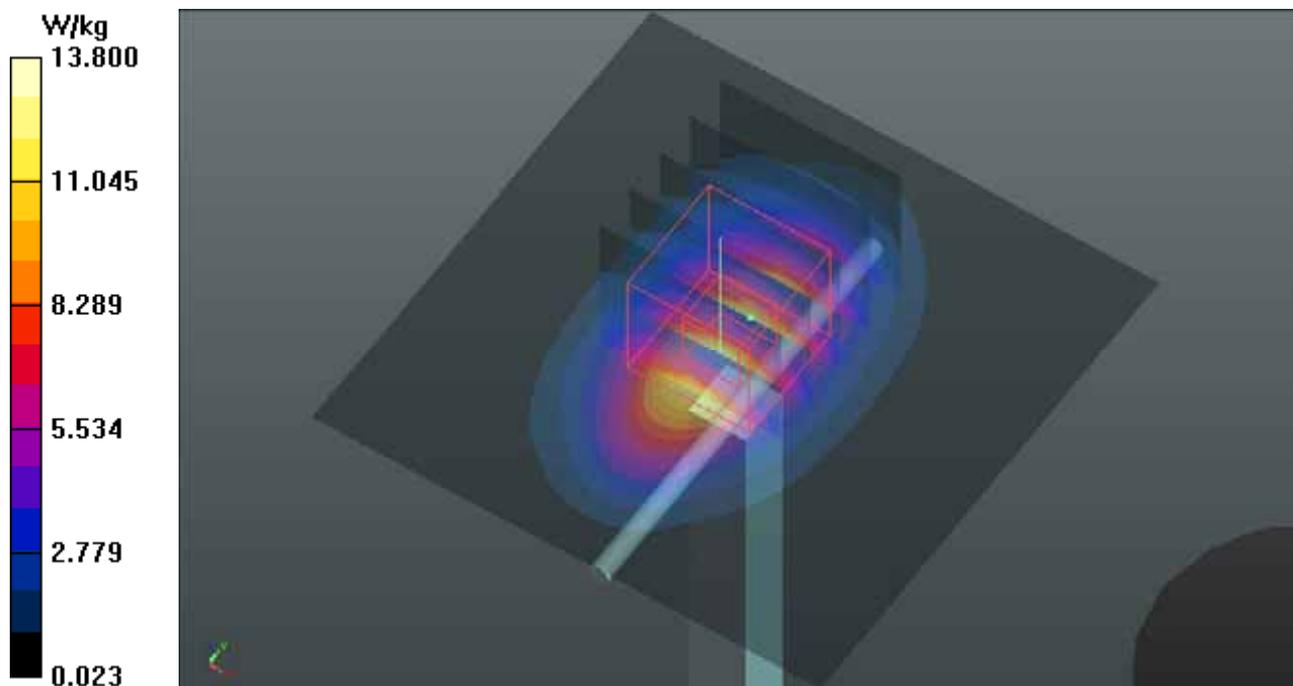
Ambient Temperature : 21.8 °C ; Liquid Temperature : 21.6 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3864; ConvF(8.39, 8.39, 8.39); Calibrated: 2014/07/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2014/08/26
- Phantom: Twin SAM Phantom\_1653; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Pin=250mW/Area Scan (61x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm  
Maximum value of SAR (interpolated) = 13.8 W/kg

**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm  
Reference Value = 98.80 V/m; Power Drift = 0.02 dB  
Peak SAR (extrapolated) = 16.7 W/kg  
**SAR(1 g) = 9.42 W/kg; SAR(10 g) = 5.08 W/kg**  
Maximum value of SAR (measured) = 13.2 W/kg



### System Check\_H1900\_150423

**DUT: Dipole 1900 MHz; Type: D1900V2; SN: 5d036**

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

Medium: H18T19N1\_0423 Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.44$  S/m;  $\epsilon_r = 39.284$ ;  $\rho = 1000$  kg/m<sup>3</sup>

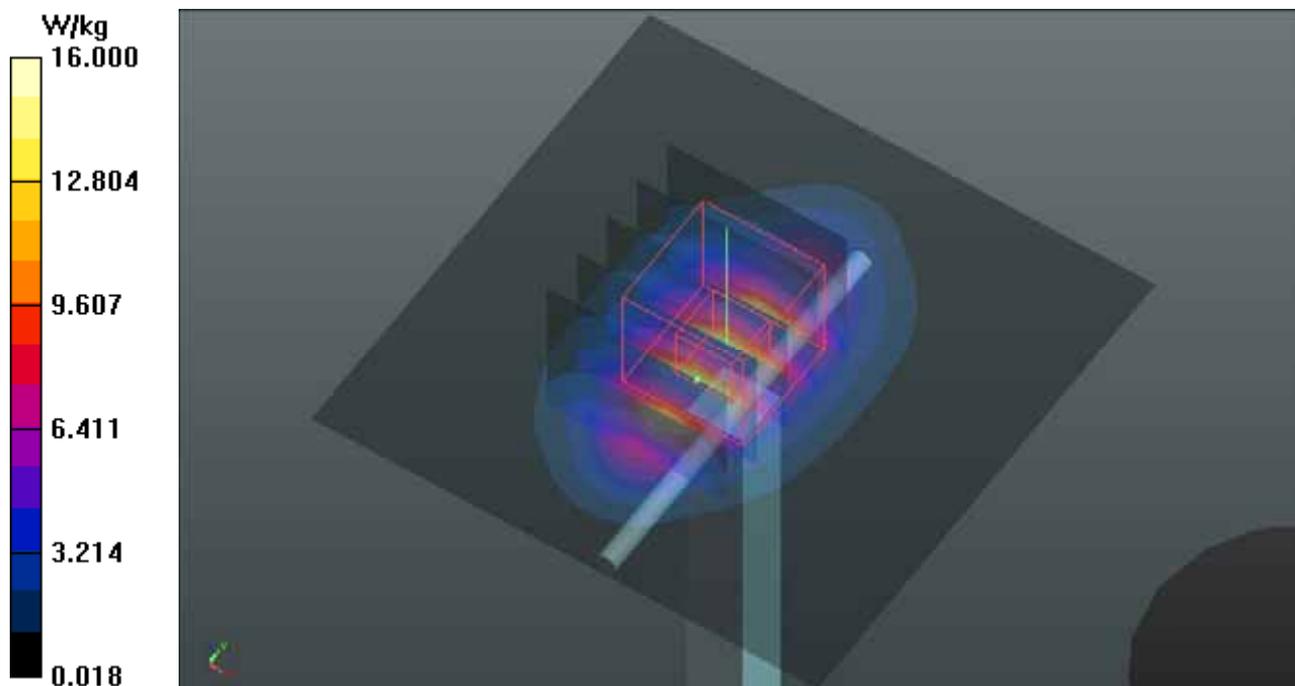
Ambient Temperature : 21.8 °C ; Liquid Temperature : 21.6 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3864; ConvF(8.1, 8.1, 8.1); Calibrated: 2014/07/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2014/08/26
- Phantom: Twin SAM Phantom\_1653; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Pin=250mW/Area Scan (61x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm  
Maximum value of SAR (interpolated) = 16.0 W/kg

**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm  
Reference Value = 103.0 V/m; Power Drift = 0.02 dB  
Peak SAR (extrapolated) = 19.0 W/kg  
**SAR(1 g) = 10.4 W/kg; SAR(10 g) = 5.41 W/kg**  
Maximum value of SAR (measured) = 14.7 W/kg



### System Check\_H2450\_150507

**DUT: Dipole 2450 MHz; Type: D2450V2; SN: 737**

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

Medium: H24T25N1\_0507 Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.885$  S/m;  $\epsilon_r = 40.52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

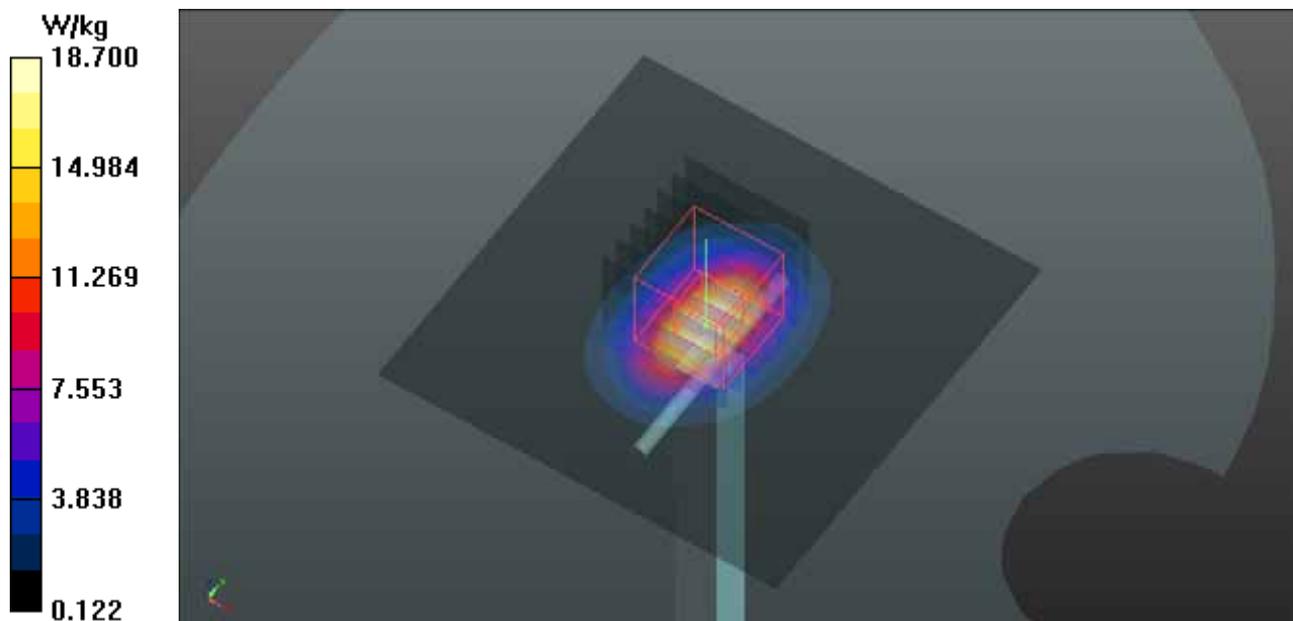
Ambient Temperature : 22.4 °C ; Liquid Temperature : 21.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3590; ConvF(7.89, 7.89, 7.89); Calibrated: 2015/02/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2014/12/29
- Phantom: Twin SAM Phantom\_1202; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Pin=250mW/Area Scan (81x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm  
Maximum value of SAR (interpolated) = 19.1 W/kg

**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm  
Reference Value = 101.9 V/m; Power Drift = -0.03 dB  
Peak SAR (extrapolated) = 25.2 W/kg  
**SAR(1 g) = 12.4 W/kg; SAR(10 g) = 5.75 W/kg**  
Maximum value of SAR (measured) = 18.7 W/kg



## System Check\_H2600\_150427

**DUT: Dipole 2600 MHz; Type: D2600V2; SN: 1020**

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

Medium: H25T27N2\_0427 Medium parameters used:  $f = 2600$  MHz;  $\sigma = 2.053$  S/m;  $\epsilon_r = 37.984$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 21.9 °C; Liquid Temperature : 21.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(7.24, 7.24, 7.24); Calibrated: 2015/03/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2015/03/20
- Phantom: Twin SAM Phantom\_1823; Type: QD000P40CD;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Pin=250mW/Area Scan (81x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 21.8 W/kg

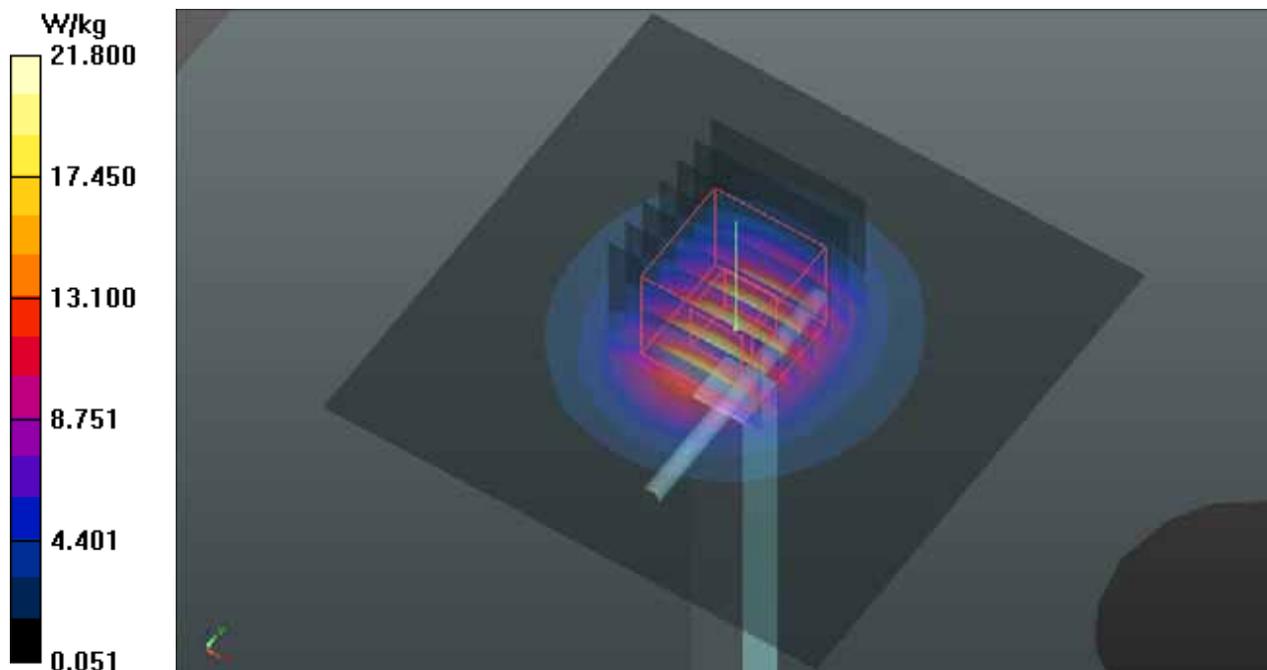
**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 104.4 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 29.7 W/kg

**SAR(1 g) = 14.5 W/kg; SAR(10 g) = 6.95 W/kg**

Maximum value of SAR (measured) = 22.0 W/kg



## System Check\_B750\_150507

**DUT: Dipole 750 MHz; Type: D750V3; SN: 1013**

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

Medium: B07T08N3\_0507 Medium parameters used:  $f = 750 \text{ MHz}$ ;  $\sigma = 0.965 \text{ S/m}$ ;  $\epsilon_r = 55.172$ ;  $\rho = 1000 \text{ kg/m}^3$

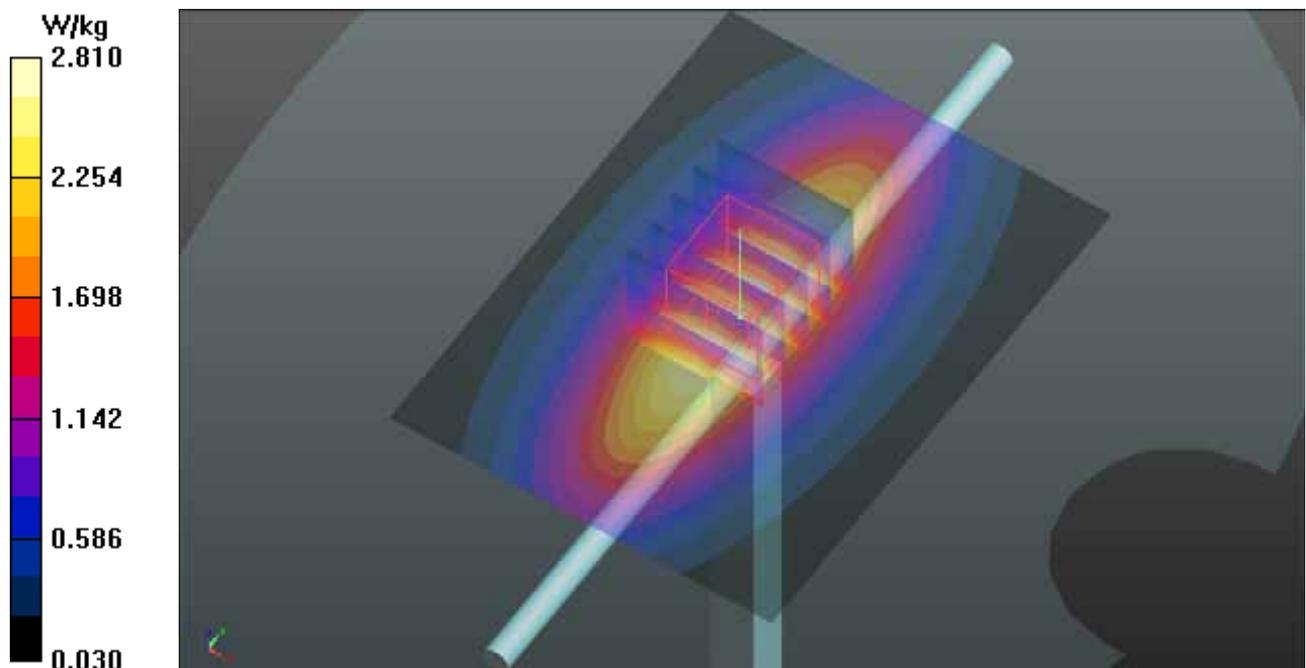
Ambient Temperature : 22 °C; Liquid Temperature : 21.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3590; ConvF(10.34, 10.34, 10.34); Calibrated: 2015/02/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2014/12/29
- Phantom: Twin SAM Phantom\_1202; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Pin=250mW/Area Scan (61x81x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$   
Maximum value of SAR (interpolated) = 2.81 W/kg

**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$   
Reference Value = 54.95 V/m; Power Drift = 0.09 dB  
Peak SAR (extrapolated) = 3.31 W/kg  
**SAR(1 g) = 2.29 W/kg; SAR(10 g) = 1.55 W/kg**  
Maximum value of SAR (measured) = 2.86 W/kg



## System Check\_B835\_150501

**DUT: Dipole 835 MHz; Type: D835V2; SN: 4d121**

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

Medium: B08T09N1\_0501 Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.991 \text{ S/m}$ ;  $\epsilon_r = 55.285$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature :  $22.0 \text{ }^\circ\text{C}$ ; Liquid Temperature :  $21.5 \text{ }^\circ\text{C}$

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(9.73, 9.73, 9.73); Calibrated: 2015/03/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2015/03/20
- Phantom: Twin SAM Phantom\_1823; Type: QD000P40CD;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Pin=250mW/Area Scan (61x61x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) =  $3.15 \text{ W/kg}$

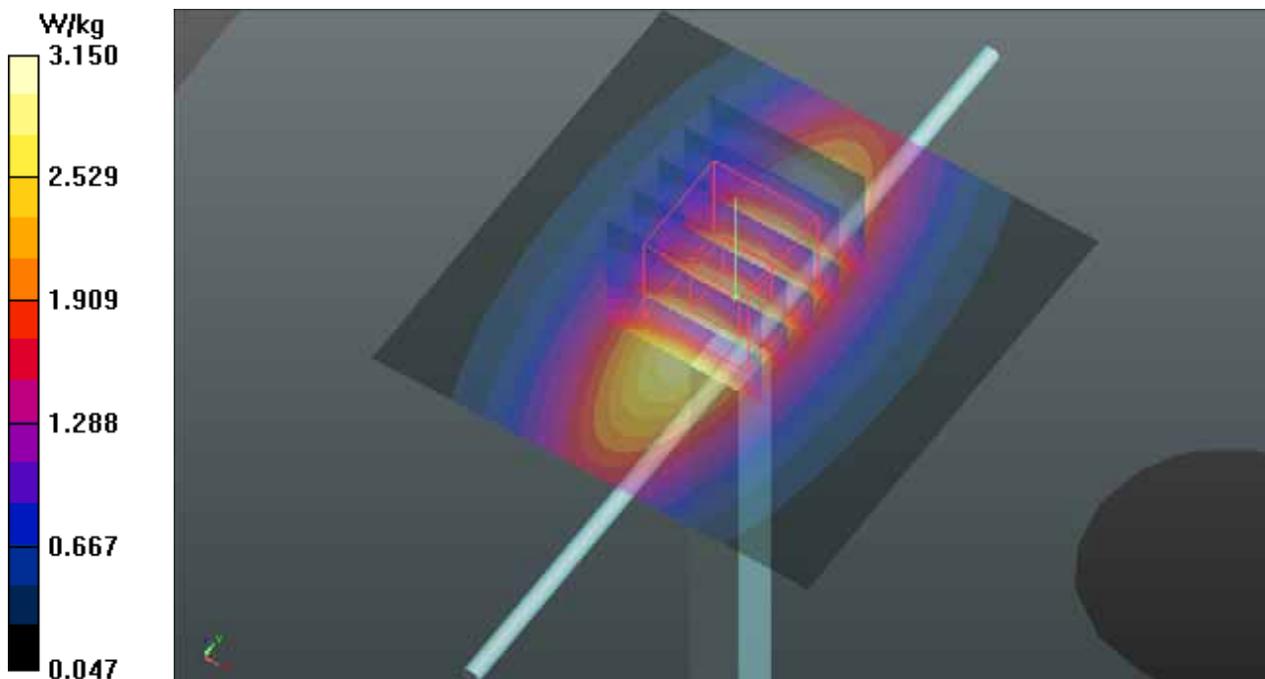
**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $53.83 \text{ V/m}$ ; Power Drift =  $-0.02 \text{ dB}$

Peak SAR (extrapolated) =  $3.69 \text{ W/kg}$

**SAR(1 g) =  $2.44 \text{ W/kg}$ ; SAR(10 g) =  $1.6 \text{ W/kg}$**

Maximum value of SAR (measured) =  $3.09 \text{ W/kg}$



## System Check\_B1750\_150430

**DUT: Dipole 1750 MHz; Type: D1750V2; SN: 1055**

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

Medium: B17T18N1\_0430 Medium parameters used:  $f = 1750$  MHz;  $\sigma = 1.498$  S/m;  $\epsilon_r = 52.524$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.2 °C ; Liquid Temperature : 21.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3650; ConvF(7.78, 7.78, 7.78); Calibrated: 2014/07/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2014/07/22
- Phantom: Twin SAM Phantom\_1485; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Pin=250mW/Area Scan (61x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 14.3 W/kg

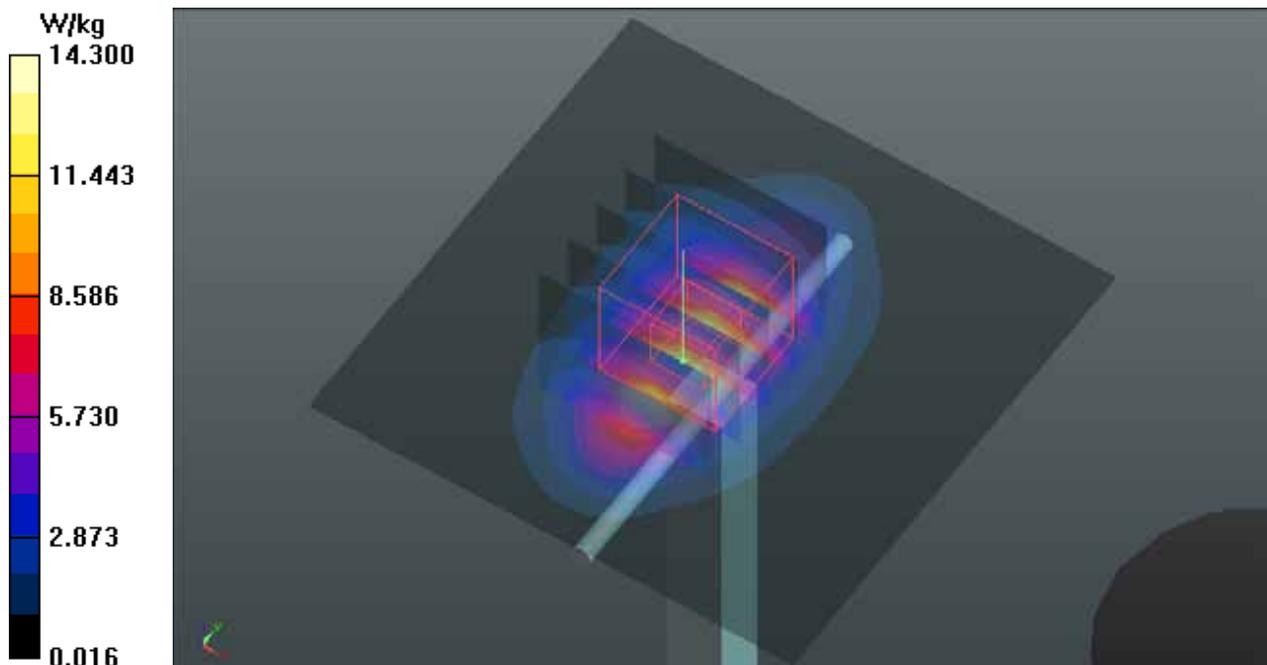
**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 95.94 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 16.8 W/kg

**SAR(1 g) = 9.64 W/kg; SAR(10 g) = 5.19 W/kg**

Maximum value of SAR (measured) = 13.3 W/kg



## System Check\_B1900\_150507

**DUT: Dipole 1900 MHz; Type: D1900V2; SN: 5d036**

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

Medium: B18T19N1\_0507 Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.547$  S/m;  $\epsilon_r = 53.089$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.2 °C ; Liquid Temperature : 21.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3590; ConvF(8.08, 8.08, 8.08); Calibrated: 2015/02/26;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2014/12/29
- Phantom: Twin SAM Phantom\_1654; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Pin=250mW/Area Scan (61x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 15.3 W/kg

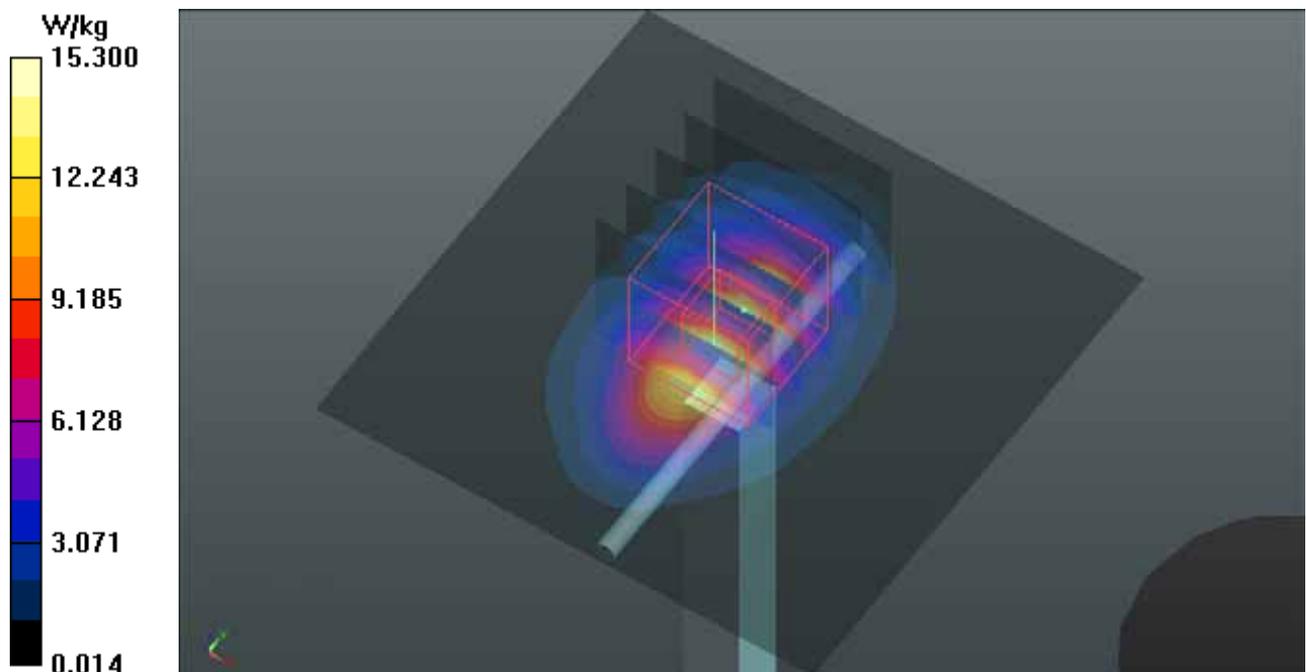
**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 99.86 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 19.1 W/kg

**SAR(1 g) = 10.5 W/kg; SAR(10 g) = 5.42 W/kg.**

Maximum value of SAR (measured) = 15.0 W/kg



## System Check\_B2450\_150424

**DUT: Dipole 2450 MHz; Type: D2450V2; SN: 737**

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

Medium: B24T25N1\_0424 Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.99$  S/m;  $\epsilon_r = 51.538$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 21.8 °C ; Liquid Temperature : 21.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3864; ConvF(7.14, 7.14, 7.14); Calibrated: 2014/07/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2014/08/26
- Phantom: Twin SAM Phantom\_1485; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Pin=250mW/Area Scan (81x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 19.1 W/kg

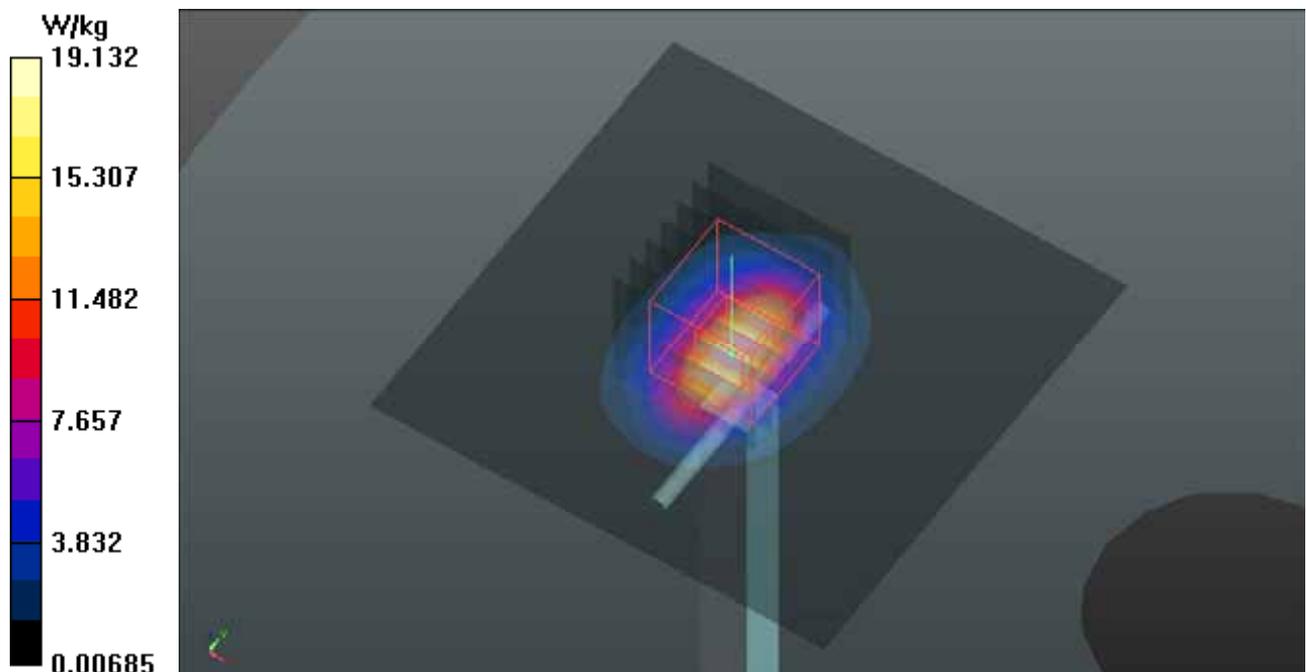
**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 97.09 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 25.7 W/kg

**SAR(1 g) = 12.3 W/kg; SAR(10 g) = 5.69 W/kg**

Maximum value of SAR (measured) = 18.9 W/kg



## System Check\_B2600\_150429

**DUT: Dipole 2600 MHz; Type: D2600V2; SN: 1020**

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

Medium: B25T27N2\_0429 Medium parameters used:  $f = 2600$  MHz;  $\sigma = 2.174$  S/m;  $\epsilon_r = 52.103$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.3 °C; Liquid Temperature : 21.6 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3650; ConvF(6.69, 6.69, 6.69); Calibrated: 2014/07/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2014/07/22
- Phantom: Twin SAM Phantom\_1822; Type: QD000P40;
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Pin=250mW/Area Scan (81x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 21.7 W/kg

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

Reference Value = 98.56 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 29.7 W/kg

**SAR(1 g) = 13.6 W/kg; SAR(10 g) = 6.05 W/kg**

Maximum value of SAR (measured) = 21.3 W/kg

