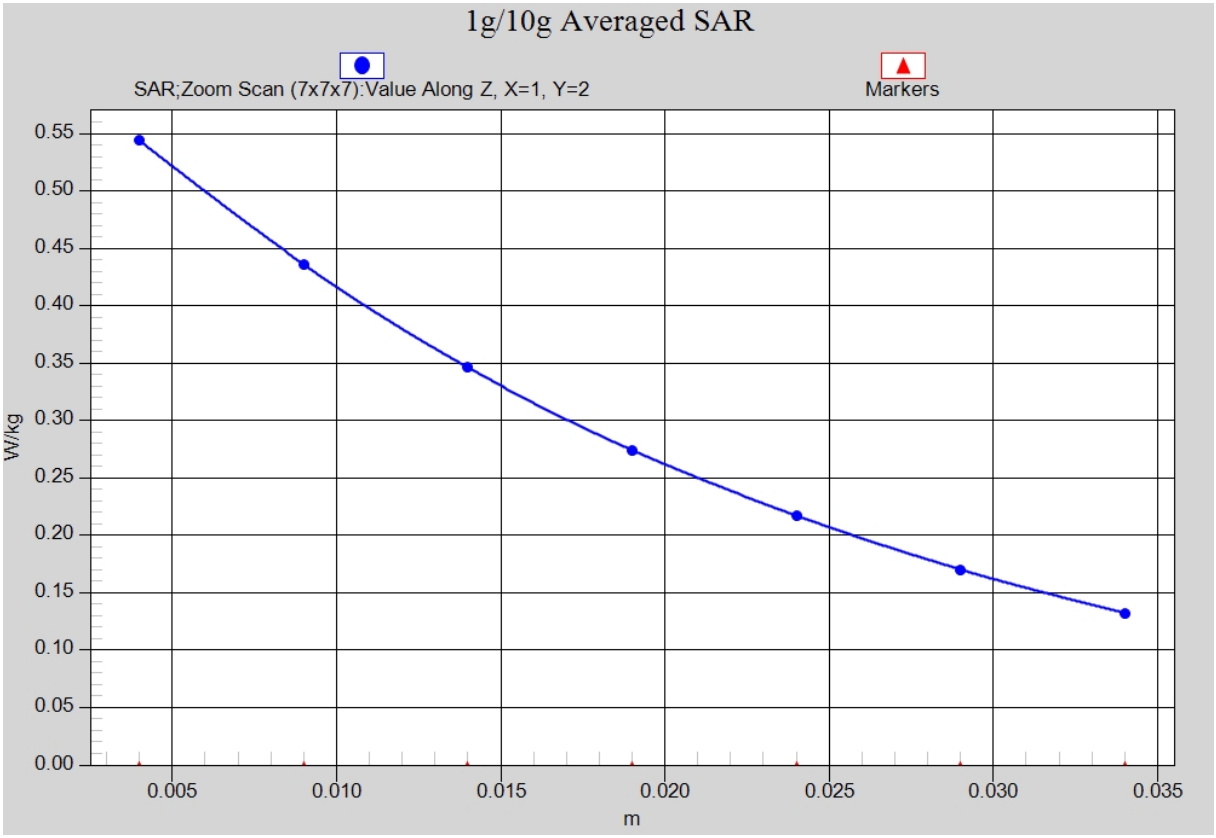


Fig. 6-1 Z-Scan at power reference point (WCDMA850 CH4233)

WCDMA 1900 Left Cheek Middle
Date: 2014-05-13
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.395 S/m; ε_r = 39.764; ρ = 1000 kg/m^3
Ambient Temperature: 22.3°C Liquid Temperature: 21.8°C
Communication System: WCDMA 1900 Frequency: 1880 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(7.57, 7.57, 7.57)

Cheek Middle/Area Scan (51x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.382 W/kg

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.761 V/m; Power Drift = 0.17dB
Peak SAR (extrapolated) = 0.582 W/kg
SAR(1 g) = 0.370 W/kg; SAR(10 g) = 0.223 W/kg
Maximum value of SAR (measured) = 0.411 W/kg

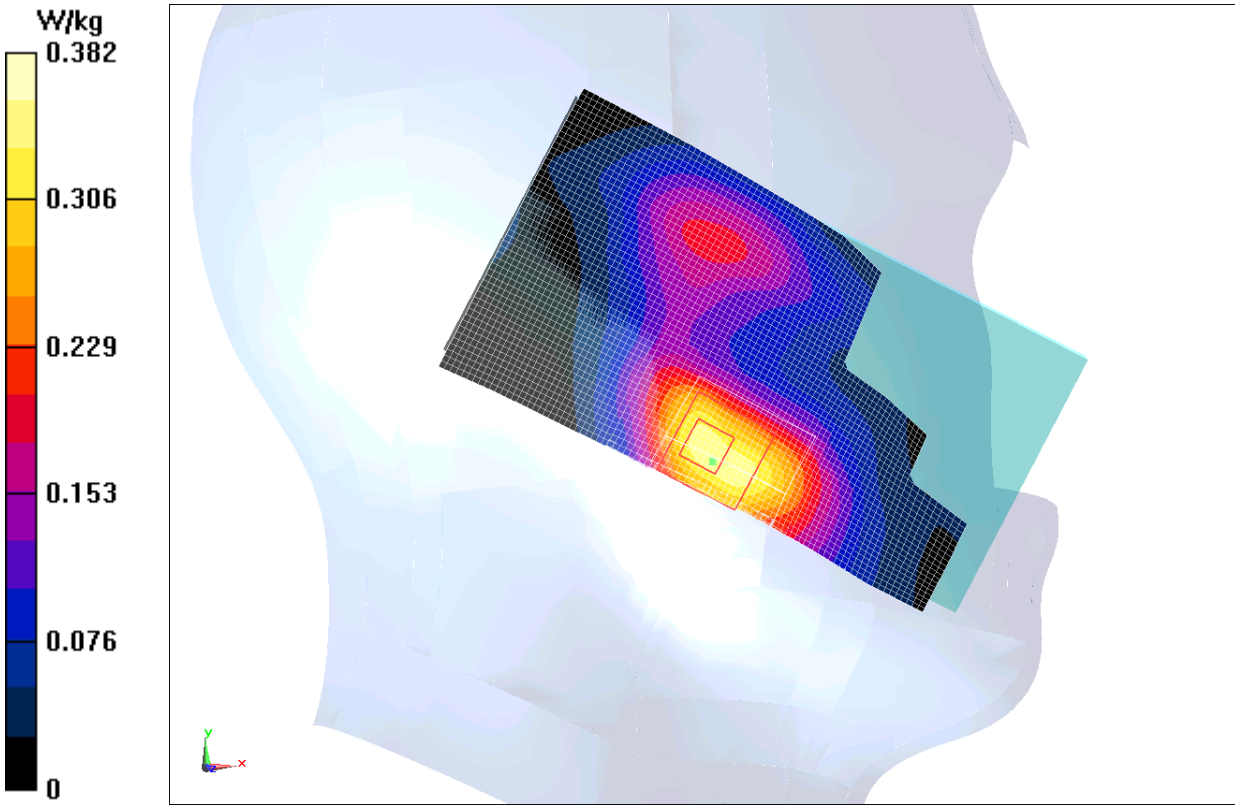


Fig.7 WCDMA1900 CH9400

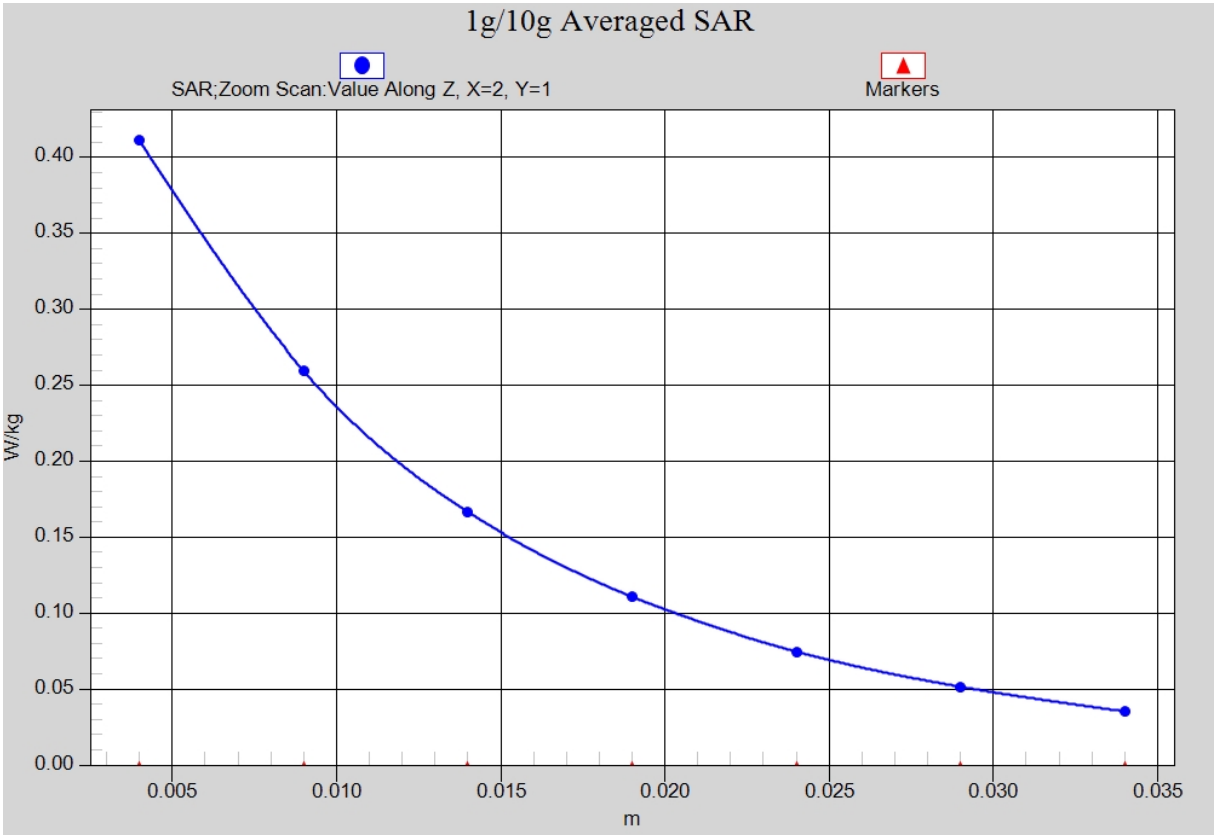


Fig. 7-1 Z-Scan at power reference point (WCDMA1900 CH9400)

WCDMA 1900 Body Bottom Side High

Date: 2014-05-13
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.514 S/m; ε_r = 52.812; ρ = 1000 kg/m^3
Ambient Temperature: 22.3°C Liquid Temperature: 21.8°C
Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(7.03, 7.03, 7.03)

Bottom Side High/Area Scan (41x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.14 W/kg

Bottom Side High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.258 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.80 W/kg
SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.535 W/kg
Maximum value of SAR (measured) = 1.18 W/kg

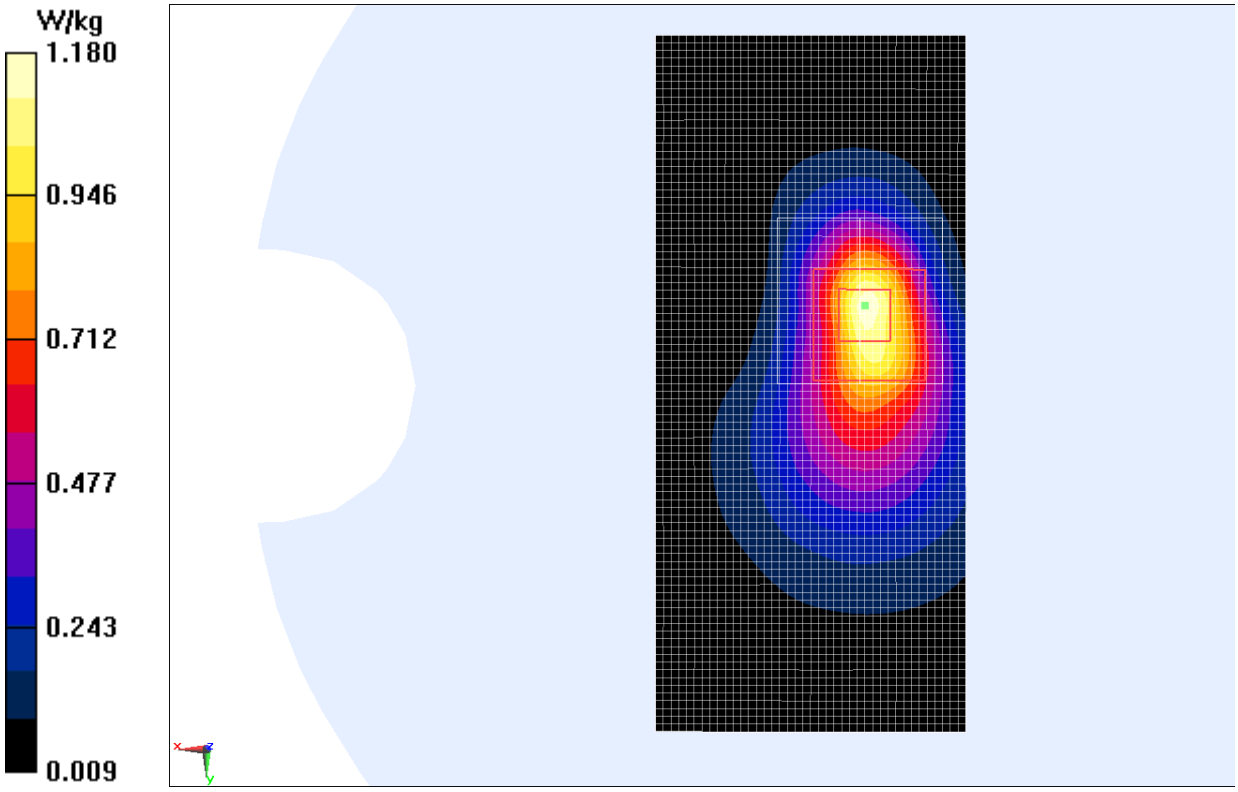


Fig.8 WCDMA1900 CH9538

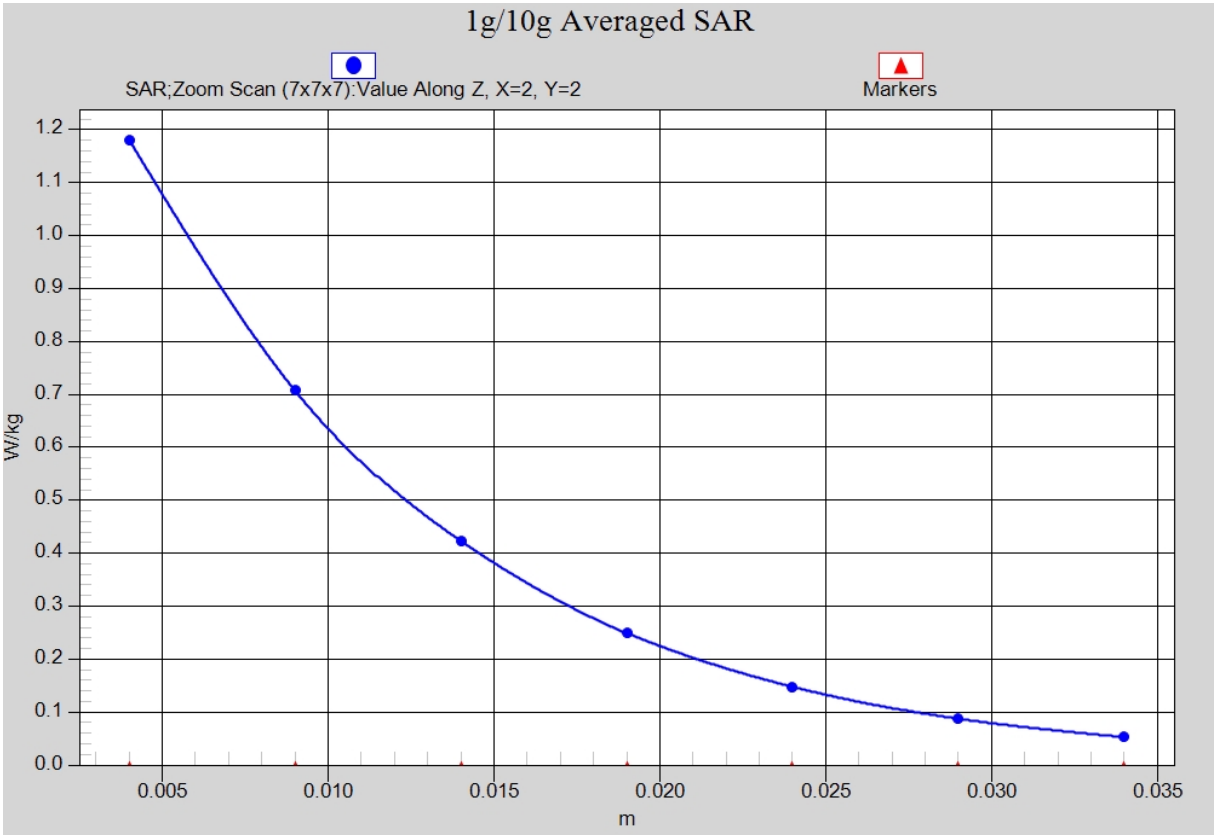


Fig. 8-1 Z-Scan at power reference point (WCDMA1900 CH9538)

Wifi 802.11b Right Cheek Channel 11
Date: 2014-05-24
Electronics: DAE4 Sn771
Medium: Head 2450 MHz
Medium parameters used: f = 2462 MHz; σ = 1.845 S/m; ε_r = 38.641; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 21.7°C
Communication System: WLan 2450 Frequency: 2462 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(6.78, 6.78, 6.78)

Cheek High/Area Scan (61x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.14 W/kg

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.793 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.62 W/kg
SAR(1 g) = 0.680 W/kg; SAR(10 g) = 0.324 W/kg
Maximum value of SAR (measured) = 0.836 W/kg

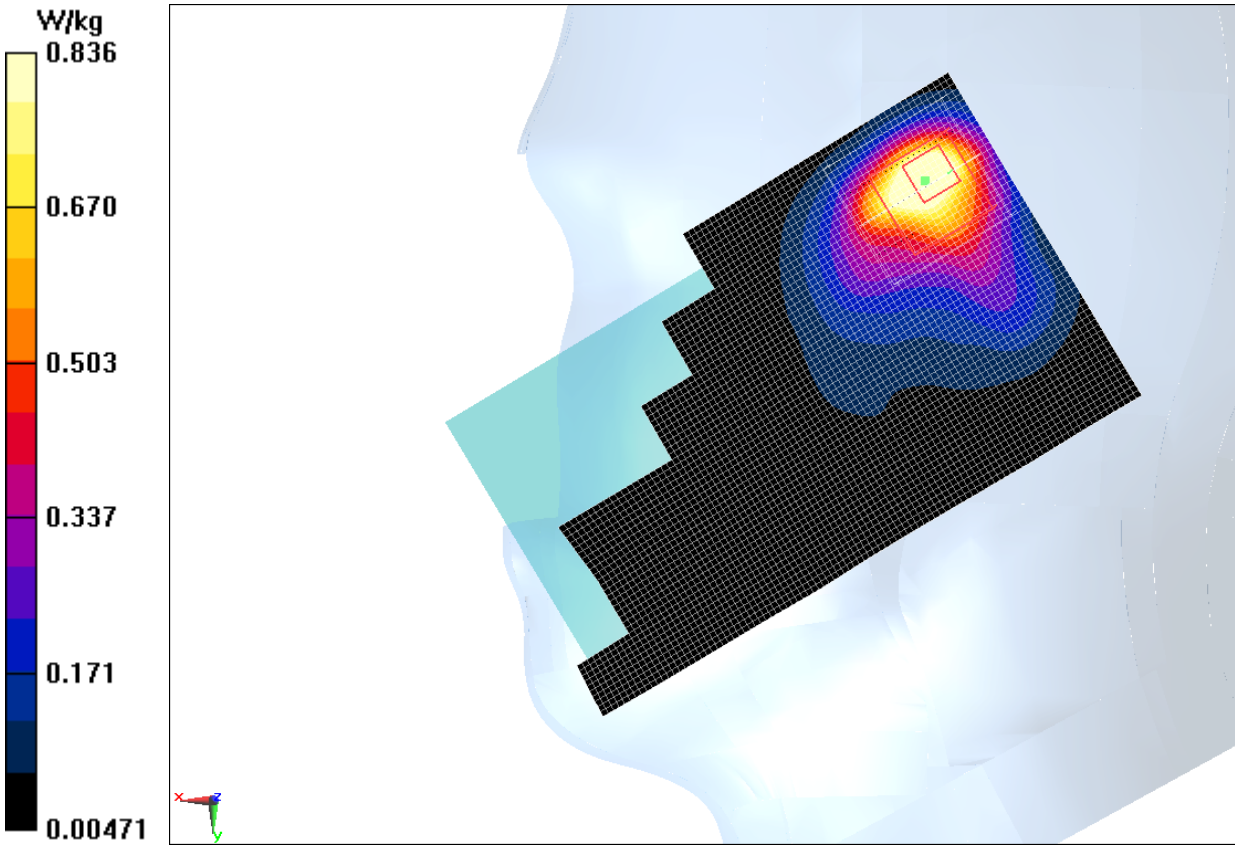


Fig.9 2450 MHz CH11

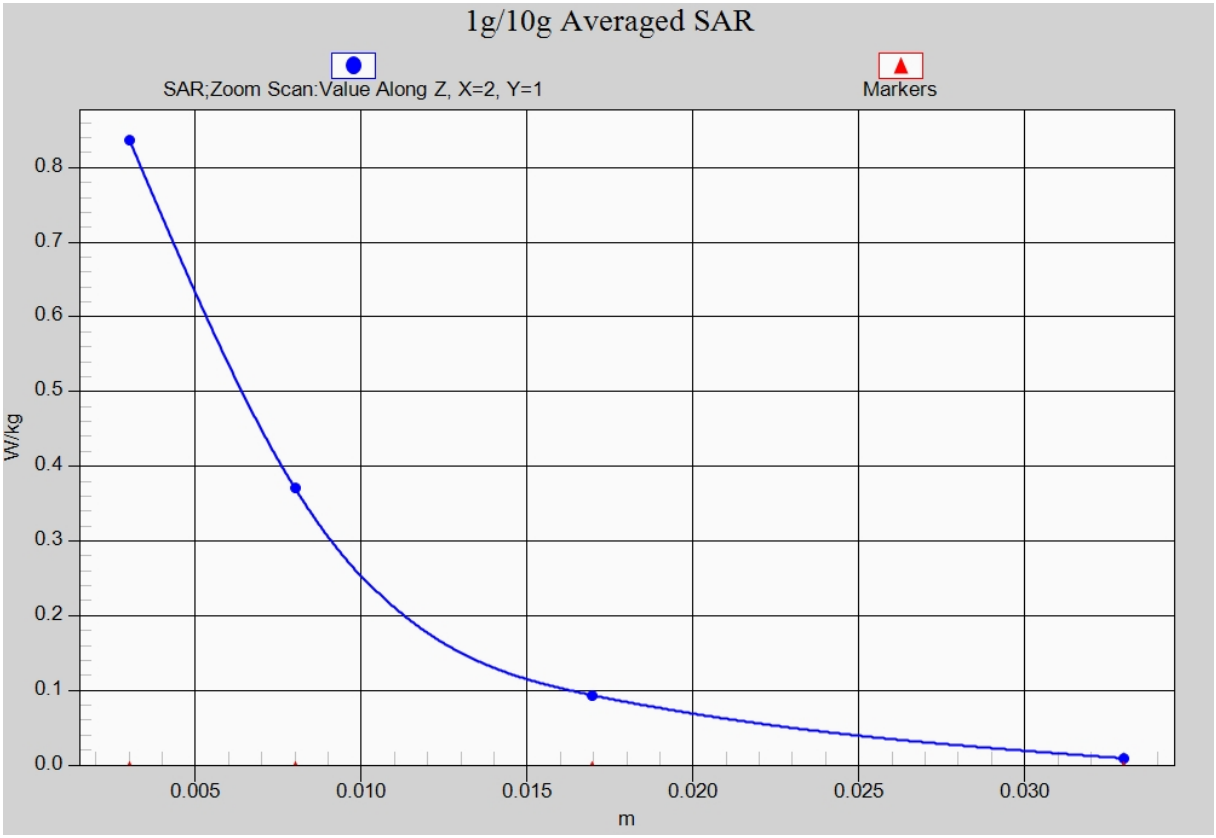


Fig. 9-1 Z-Scan at power reference point (2450 MHz CH11)

Wifi 802.11b Body Rear Channel 11
Date: 2014-05-24
Electronics: DAE4 Sn771
Medium: Body 2450 MHz
Medium parameters used: f = 2462 MHz; σ = 1.942 S/m; ε_r = 52.036; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 21.7°C
Communication System: WLan 2450 Frequency: 2462 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(6.73, 6.73, 6.73)

Rear High/Area Scan (61x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.136 W/kg

Rear High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.635 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.248 W/kg
SAR(1 g) = 0.118 W/kg; SAR(10 g) = 0.055 W/kg
Maximum value of SAR (measured) = 0.126 W/kg

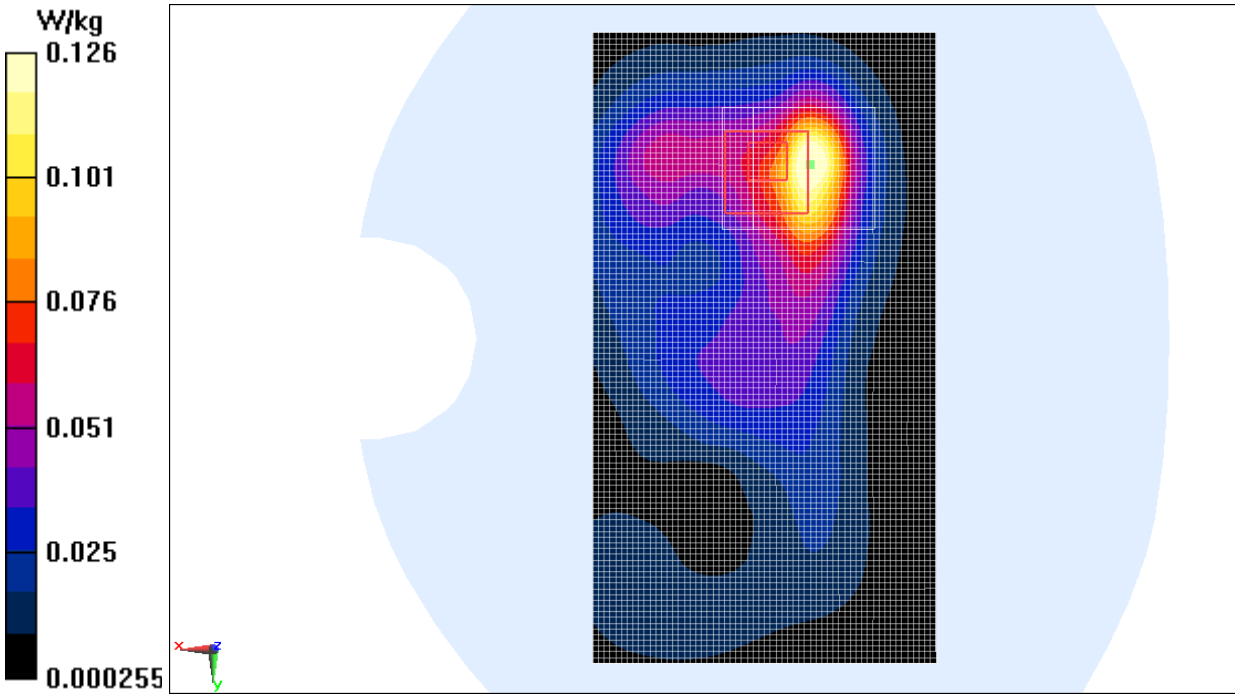


Fig.10 2450 MHz CH11

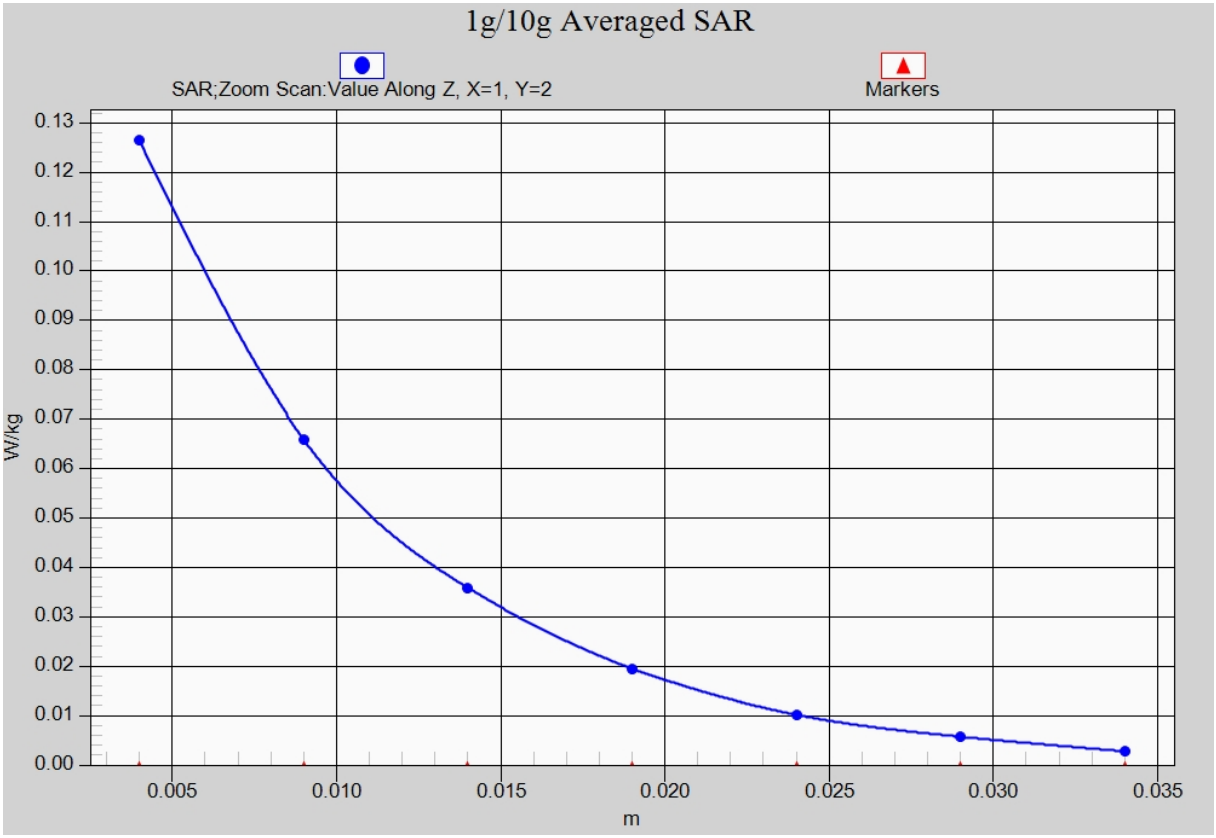


Fig. 10-1 Z-Scan at power reference point (2450 MHz CH11)

Wifi 802.11a Right Cheek Channel 56
Date: 2014-05-27
Electronics: DAE4 Sn771
Medium: Head 5GHz
Medium parameters used: f = 5280 MHz; σ = 4.647 S/m; ε_r = 36.409; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 21.7°C
Communication System: WLan 5G Frequency: 5280 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(5.04, 5.04, 5.04)

Cheek/Area Scan (91x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.444 W/kg

Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.435 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.212 W/kg; SAR(10 g) = 0.048 W/kg
Maximum value of SAR (measured) = 0.214 W/kg

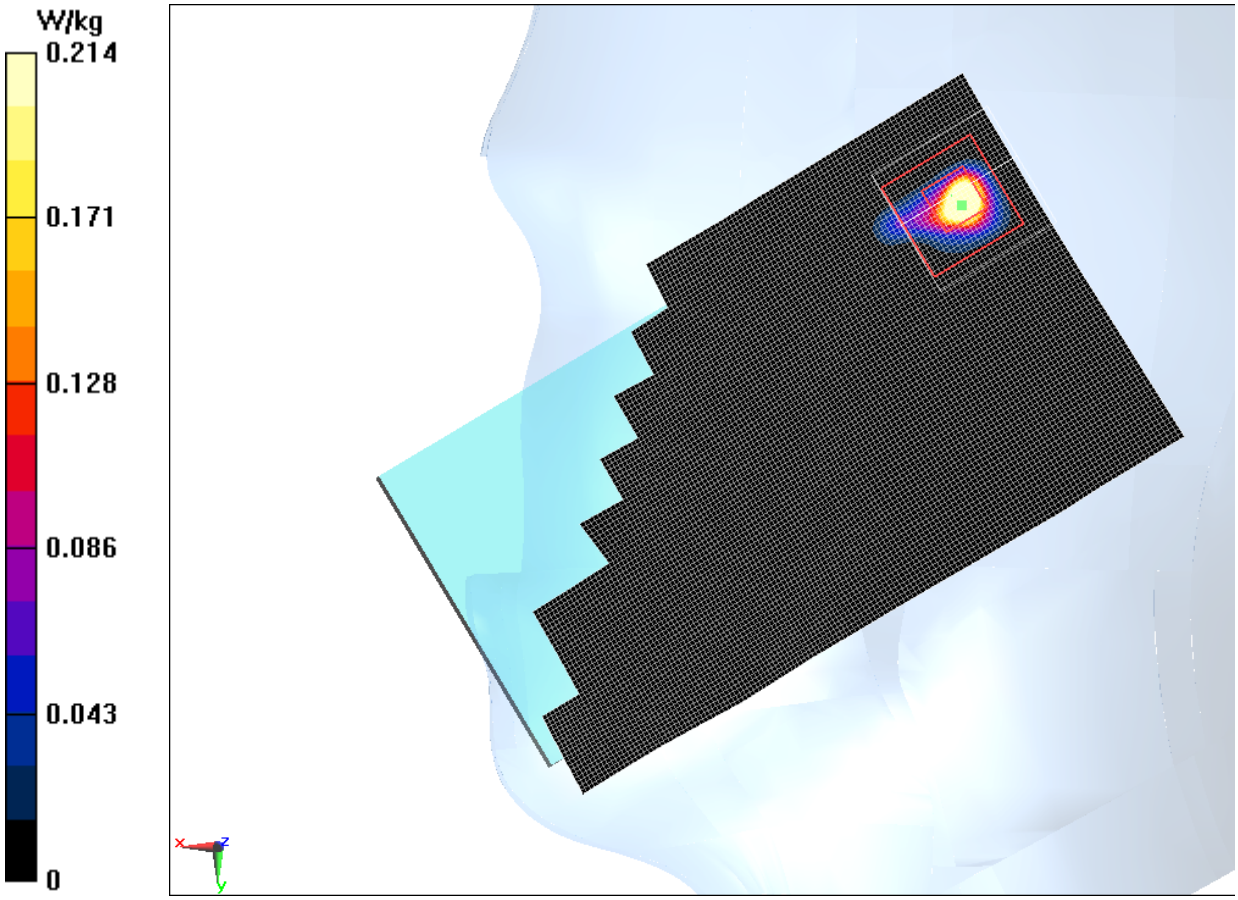


Fig.11 5GHz CH56

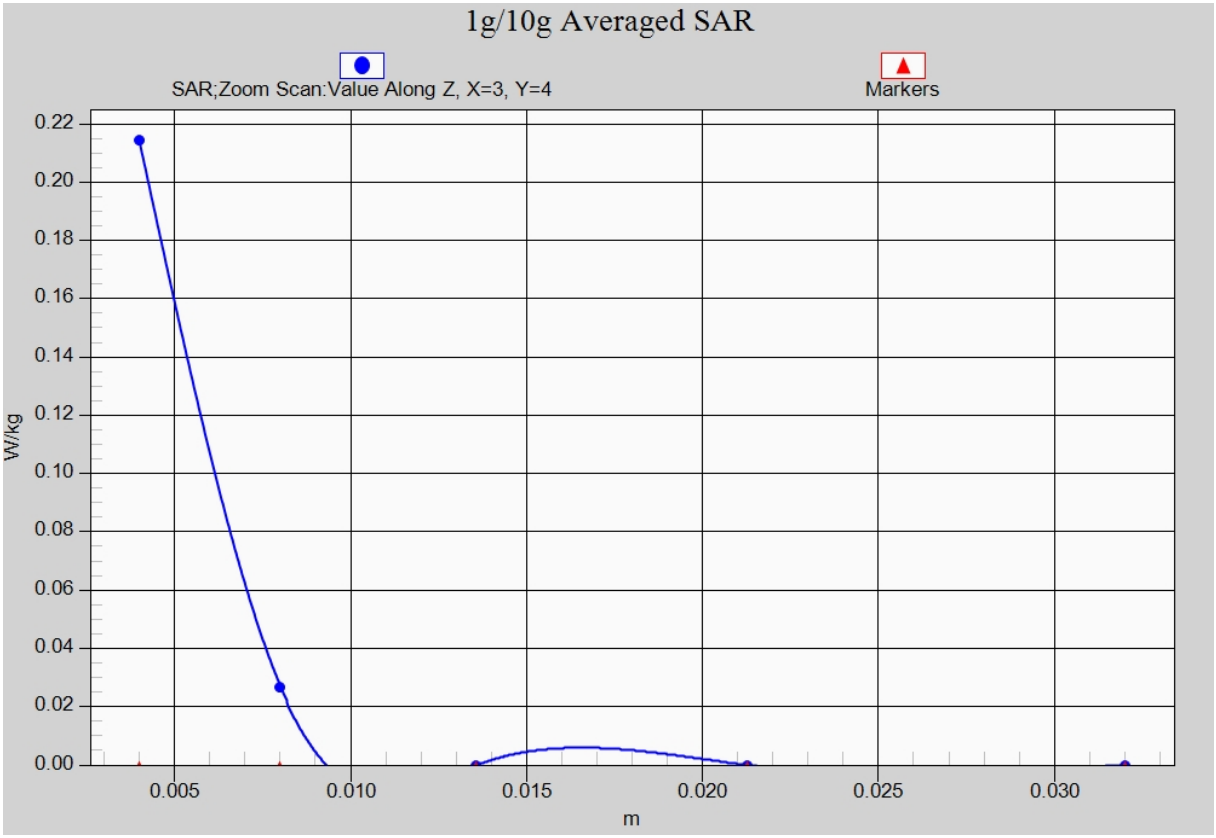


Fig. 11-1 Z-Scan at power reference point (5GHz CH56)

Wifi 802.11a Top Side Channel 112
Date: 2014-5-28
Electronics: DAE4 Sn771
Medium: Body 5GHz
Medium parameters used: f = 5560 MHz; σ = 5.815 mho/m; ε_r = 47.615; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 21.7°C
Communication System: WLan 5G Frequency: 5560 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(3.77, 3.77, 3.77)

Top Side/Area Scan (61x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0418 W/kg

Top Side/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.984 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.177 W/kg
SAR(1 g) = 0.045 W/kg; SAR(10 g) = 0.012 W/kg
Maximum value of SAR (measured) = 0.0583 W/kg

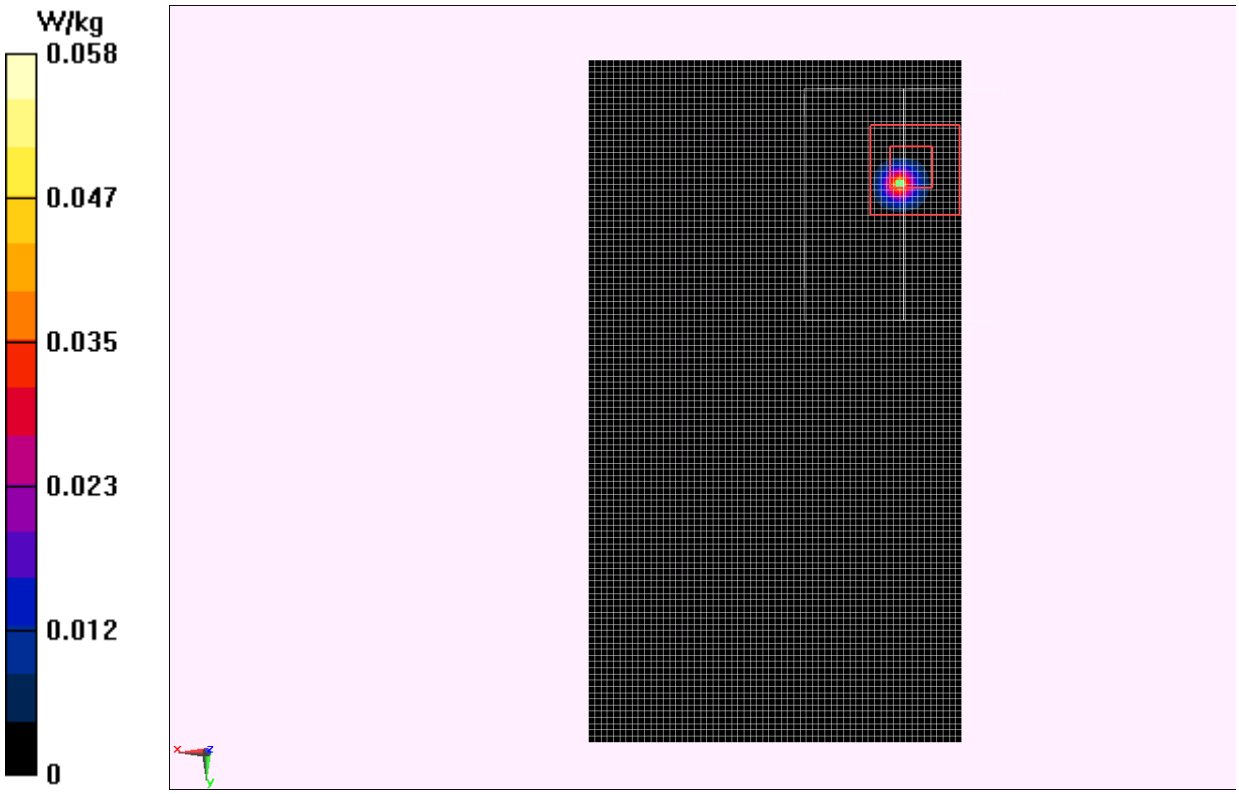


Fig.12 5GHz CH112

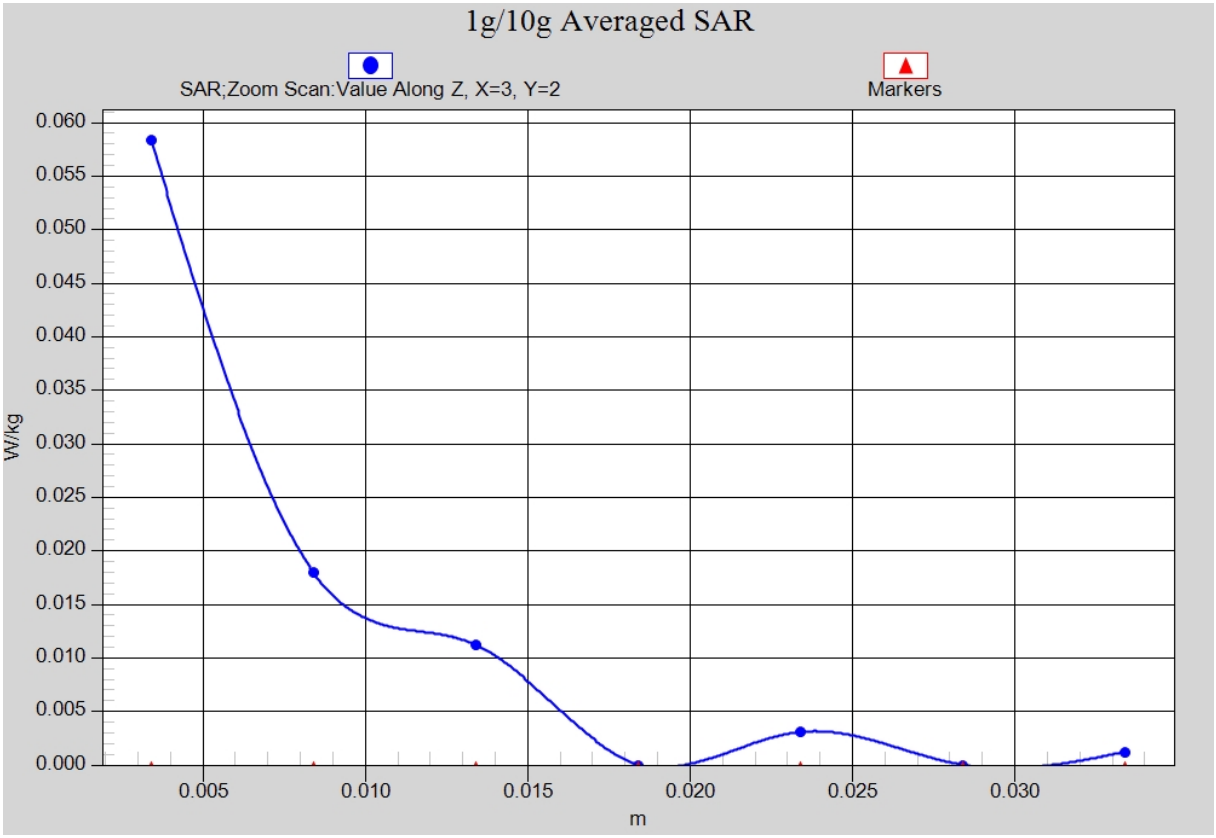


Fig. 12-1 Z-Scan at power reference point (5GHz CH112)

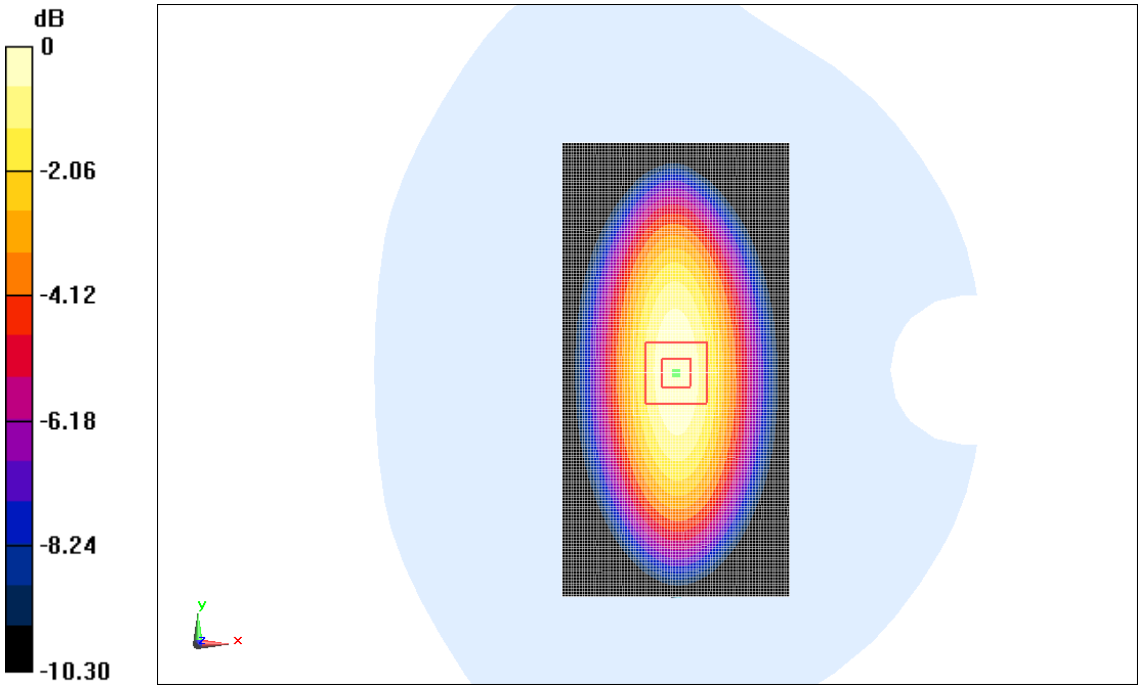
ANNEX B System Verification Results

835MHz

Date: 2014-05-12
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 835 MHz; σ = 0.893 mho/m; ε_r = 41.16; ρ = 1000 kg/m^3
Ambient Temperature: 22.4°C Liquid Temperature: 21.9°C
Communication System: CW Frequency: 835 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(8.92, 8.92, 8.92)

System Validation/Area Scan (81x161x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 53.657 V/m; Power Drift = 0.15 dB
Fast SAR: SAR(1 g) = 2.34 W/kg; SAR(10 g) = 1.52 W/kg
Maximum value of SAR (interpolated) = 2.64 W/kg

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 54.273 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 3.60 W/kg
SAR(1 g) = 2.38 W/kg; SAR(10 g) = 1.53 W/kg
Maximum value of SAR (measured) = 2.62 W/kg



0 dB = 2.64 W/kg = 8.43 dBW/kg

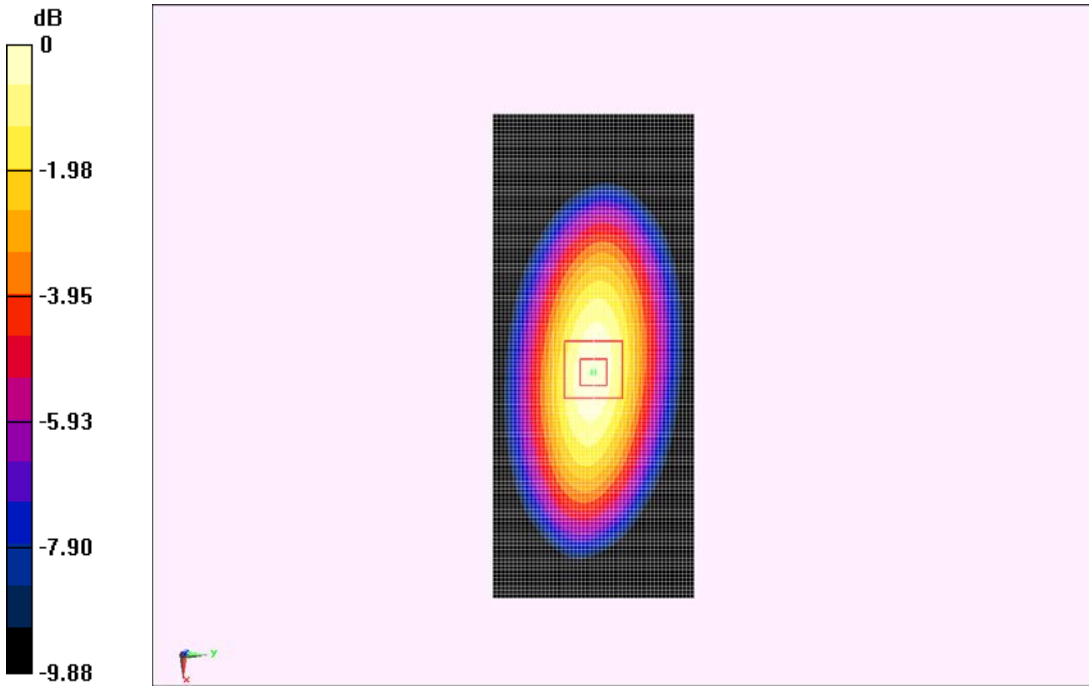
Fig.B.1 validation 835MHz 250mW

835MHz

Date: 2014-05-12
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 835 MHz; σ = 0.982 mho/m; ε_r = 54.87; ρ = 1000 kg/m^3
Ambient Temperature: 22.4°C Liquid Temperature: 21.9°C
Communication System: CW Frequency: 835 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(8.73, 8.73, 8.73)

System Validation /Area Scan (81x171x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 52.017 V/m; Power Drift = 0.10 dB
Fast SAR: SAR(1 g) = 2.37 W/kg; SAR(10 g) = 1.58 W/kg
Maximum value of SAR (interpolated) = 2.63 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.017 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 3.45 W/kg
SAR(1 g) = 2.41 W/kg; SAR(10 g) = 1.60 W/kg
Maximum value of SAR (measured) = 2.65 W/kg



0 dB = 2.63 W/kg = 8.40 dBW/kg

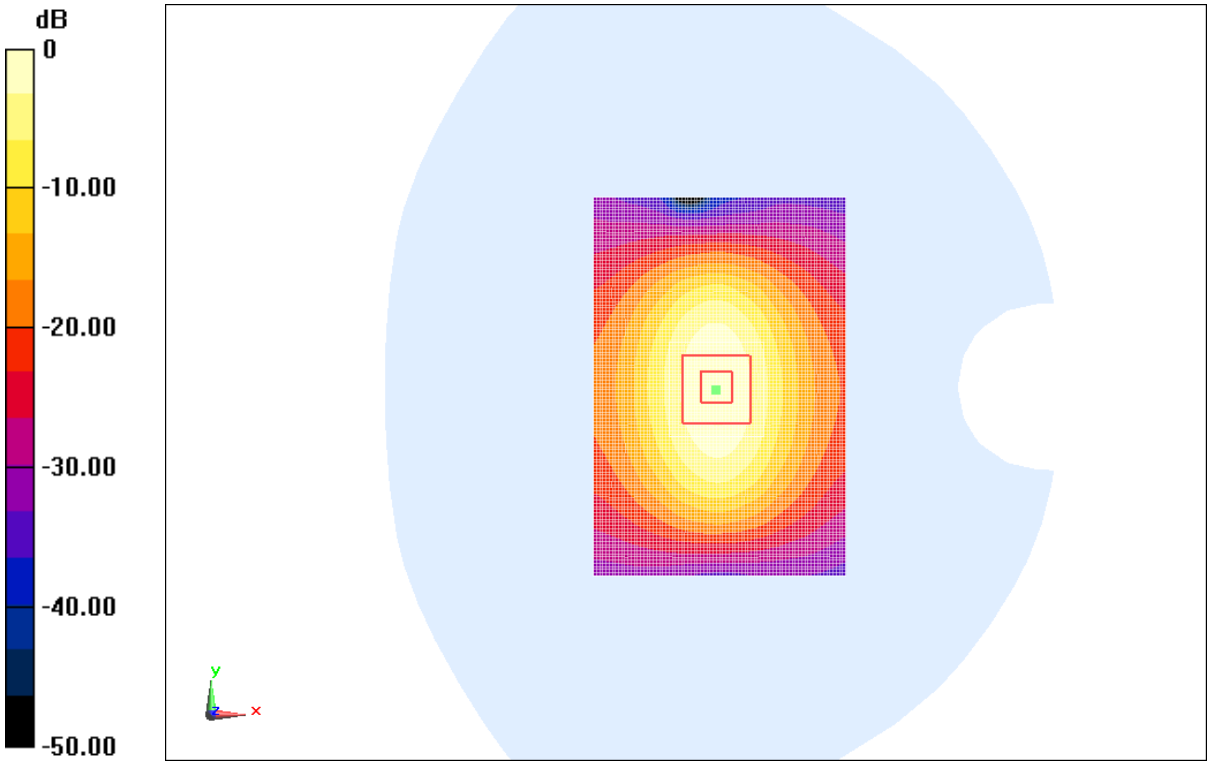
Fig.B.2 validation 835MHz 250mW

1900MHz

Date: 2014-05-13
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.413 mho/m; ε_r = 39.68; ρ = 1000 kg/m^3
Ambient Temperature: 22.3°C Liquid Temperature: 21.8°C
Communication System: CW Frequency: 1900 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(7.57, 7.57, 7.57)

System Validation/Area Scan (81x121x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 100.81 V/m; Power Drift = -0.07 dB
Fast SAR: SAR(1 g) = 10.0 W/kg; SAR(10 g) = 5.34 W/kg
Maximum value of SAR (interpolated) = 11.5 W/kg

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 100.81 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 18.27 W/kg
SAR(1 g) = 9.91 W/kg; SAR(10 g) = 5.25 W/kg
Maximum value of SAR (measured) = 11.4 W/kg



0 dB = 11.5 W/kg = 21.21 dB W/kg

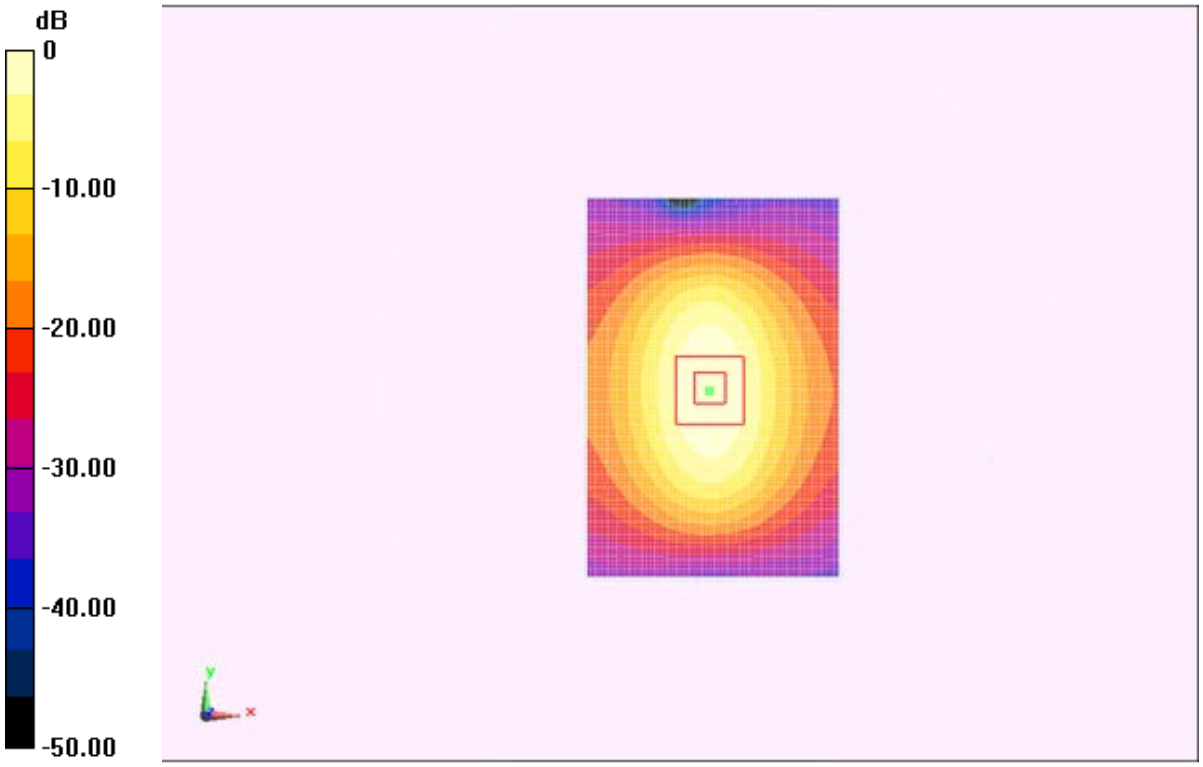
Fig.B.3 validation 1900MHz 250mW

1900MHz

Date: 2014-05-13
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.507 mho/m; ε_r = 52.85; ρ = 1000 kg/m^3
Ambient Temperature: 22.3°C Liquid Temperature: 21.8°C
Communication System: CW Frequency: 1900 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(7.03, 7.03, 7.03)

System Validation/Area Scan (81x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 84.052 V/m; Power Drift = 0.11 dB
Fast SAR: SAR(1 g) = 10.0 W/kg; SAR(10 g) = 5.25 W/kg
Maximum value of SAR (interpolated) = 11.4 W/kg

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 84.052 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 17.33 W/kg
SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.35 W/kg
Maximum value of SAR (measured) = 11.5 W/kg



0 dB = 11.4 W/kg = 21.14 dBW/kg

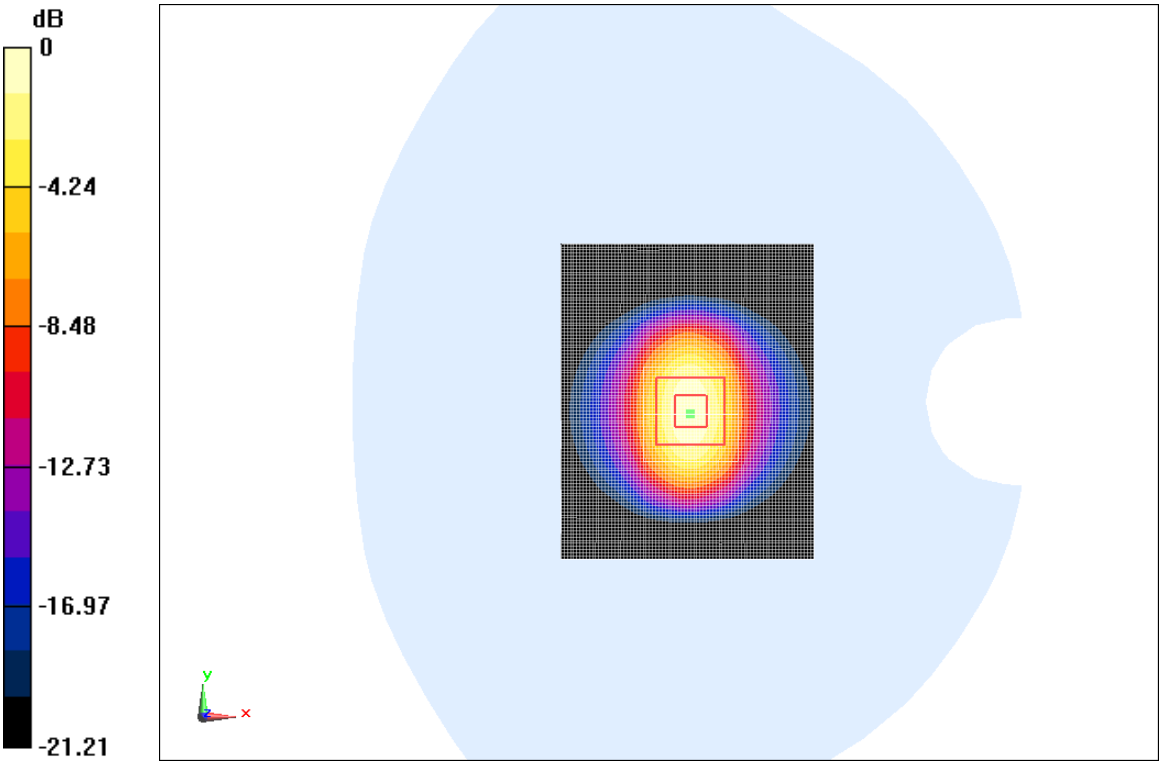
Fig.B.4 validation 1900MHz 250mW

2450MHz

Date: 2014-5-24
Electronics: DAE4 Sn771
Medium: Head 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.833 S/m; ε_r = 38.72; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 21.7°C
Communication System: CW Frequency: 2450 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(6.78, 6.78, 6.78)

System Validation /Area Scan (81x101x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 91.891 V/m; Power Drift = -0.06 dB
Fast SAR: SAR(1 g) = 13.2 W/kg; SAR(10 g) = 6.19 W/kg
Maximum value of SAR (interpolated) = 16.7 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 91.891 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 27.80 W/kg
SAR(1 g) = 13.2 W/kg; SAR(10 g) = 6.17 W/kg
Maximum value of SAR (measured) = 16.7 W/kg



0 dB = 16.7 W/kg = 24.45 dB W/kg

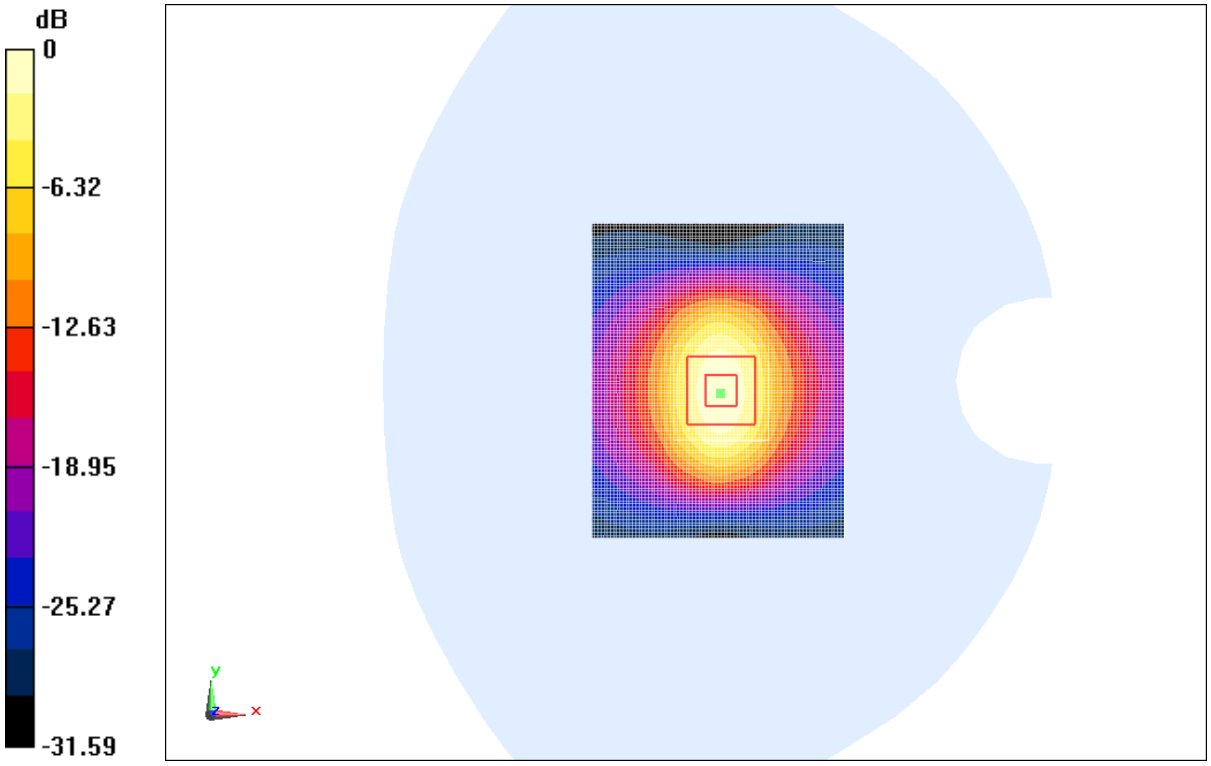
Fig.B.5 validation 2450MHz 250mW

2450MHz

Date: 2014-5-24
Electronics: DAE4 Sn771
Medium: Body 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.928 S/m; ε_r = 52.12; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 21.7°C
Communication System: CW Frequency: 2450 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(6.73, 6.73, 6.73)

System Validation/Area Scan (81x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 90.505 V/m; Power Drift = 0.06 dB
Fast SAR: SAR(1 g) = 12.6 W/kg; SAR(10 g) = 5.72 W/kg
Maximum value of SAR (interpolated) = 14.4 W/kg

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 90.505 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 25.69 W/kg
SAR(1 g) = 12.8 W/kg; SAR(10 g) = 5.91 W/kg
Maximum value of SAR (measured) = 14.6 W/kg



0 dB = 14.4 W/kg = 23.17 dB W/kg

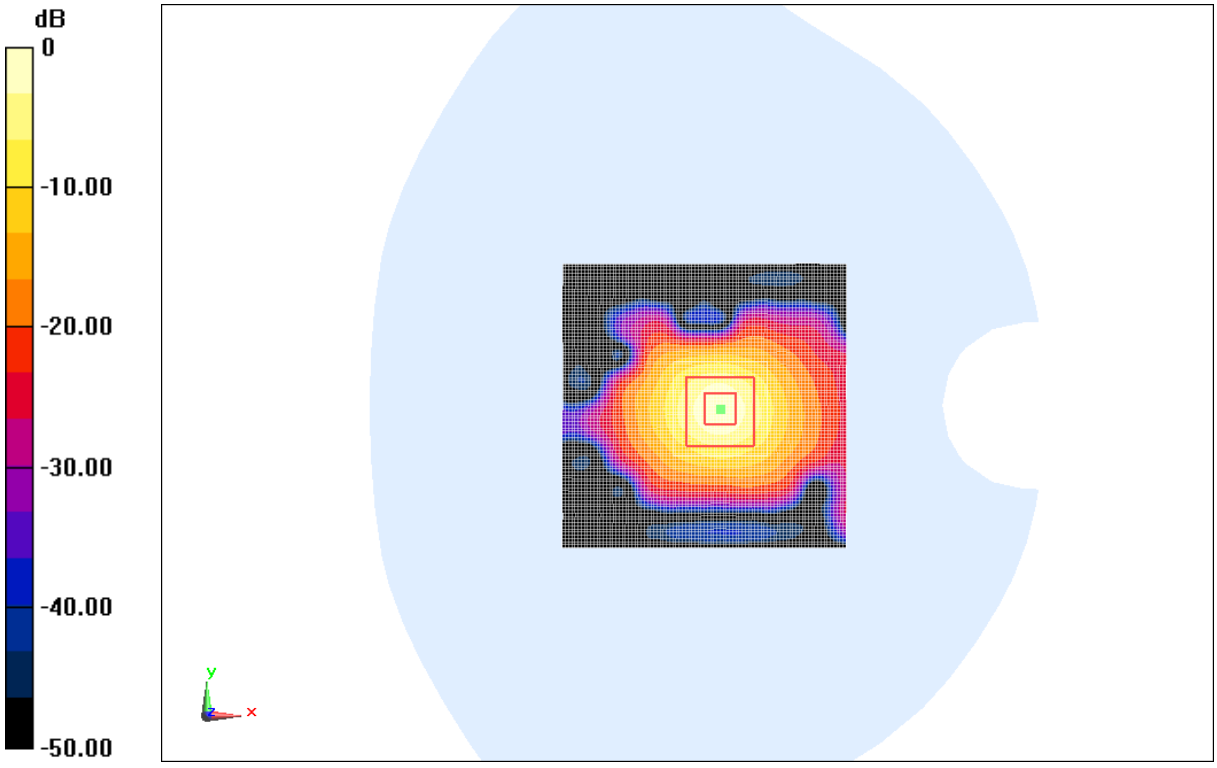
Fig.B.6 validation 2450MHz 250mW

5200MHz

Date: 2014-05-27
Electronics: DAE4 Sn771
Medium: Head 5GHz
Medium parameters used: f = 5200 MHz; σ = 4.577 mho/m; ε_r = 36.54; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 21.7°C
Communication System: CW Frequency: 5200 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(5.25, 5.25, 5.25)

System Validation /Area Scan (91x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 9.84 W/kg

System Validation /Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 61.961 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 35.04 W/kg
SAR(1 g) = 8.17 W/kg; SAR(10 g) = 2.35 W/kg
Maximum value of SAR (measured) = 9.86 W/kg



0 dB = 9.84 W/kg = 19.86 dB W/kg

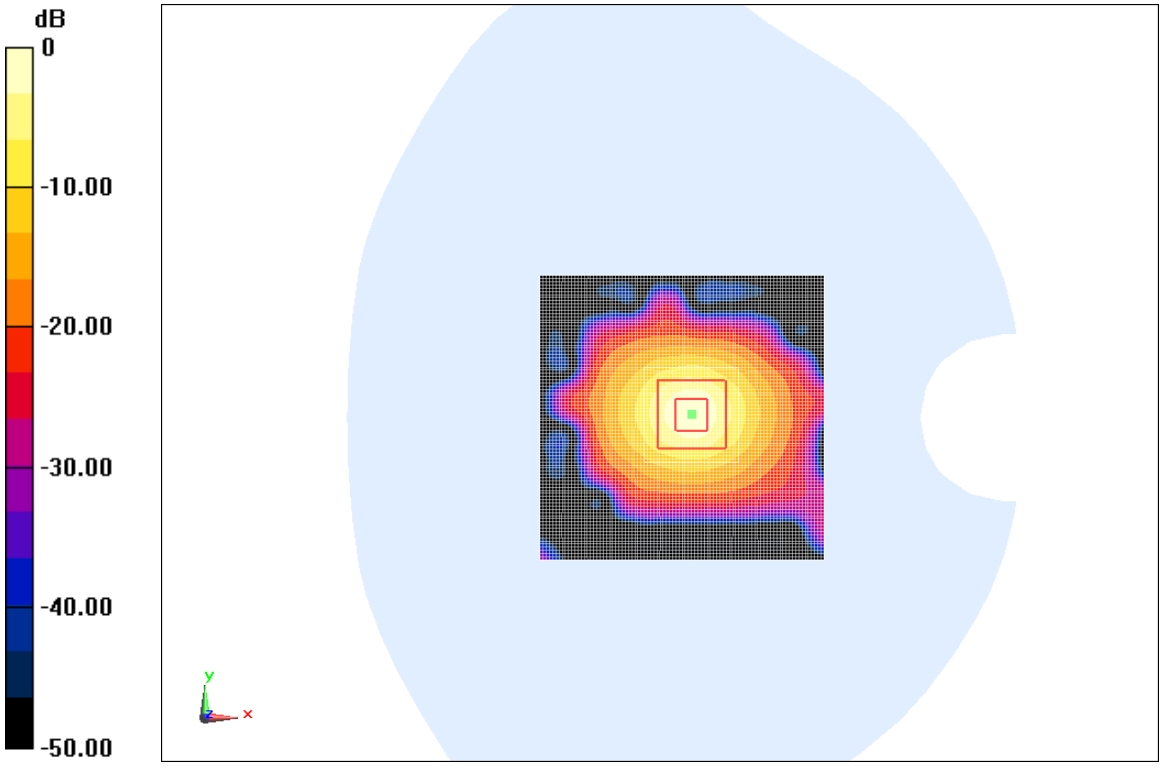
Fig.B.7 validation 5200MHz 100mW

5200MHz

Date: 2014-05-27
Electronics: DAE4 Sn771
Medium: Body 5GHz
Medium parameters used: f = 5200 MHz; σ = 5.246 mho/m; ε_r = 48.45; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 21.7°C
Communication System: CW Frequency: 5200 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(4.36, 4.36, 4.36)

System Validation /Area Scan (91x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 8.99 W/kg

System Validation /Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 59.225 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 33.28 W/kg
SAR(1 g) = 7.38 W/kg; SAR(10 g) = 2.07 W/kg
Maximum value of SAR (measured) = 9.05 W/kg



0 dB = 8.99 W/kg = 19.08 dB W/kg

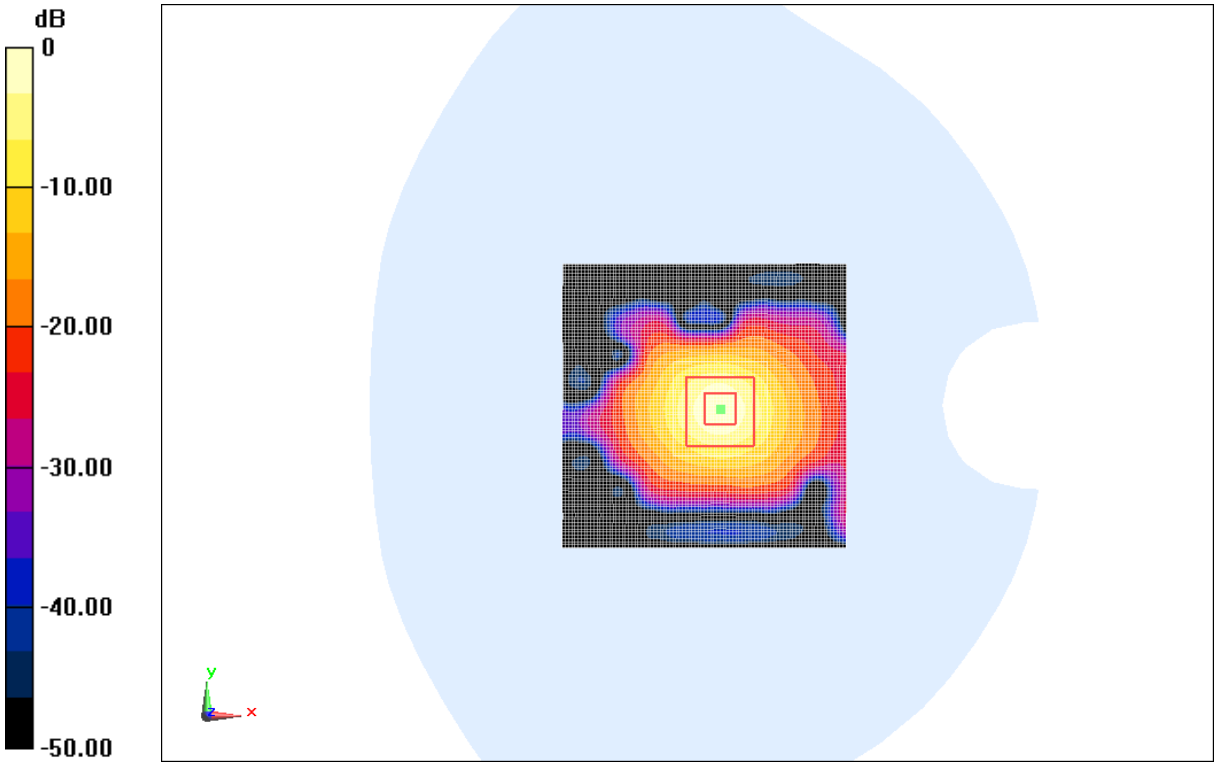
Fig.B.8 validation 5200MHz 100mW

5300MHz

Date: 2014-05-27
Electronics: DAE4 Sn771
Medium: Head 5GHz
Medium parameters used: f = 5300 MHz; σ = 4.659 mho/m; ε_r = 36.36; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 21.7°C
Communication System: CW Frequency: 5300 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(5.04, 5.04, 5.04)

System Validation /Area Scan (91x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 9.89 W/kg

System Validation /Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 62.438 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 35.07 W/kg
SAR(1 g) = 8.22 W/kg; SAR(10 g) = 2.37 W/kg
Maximum value of SAR (measured) = 9.91 W/kg



0 dB = 9.89 W/kg = 19.90 dB W/kg

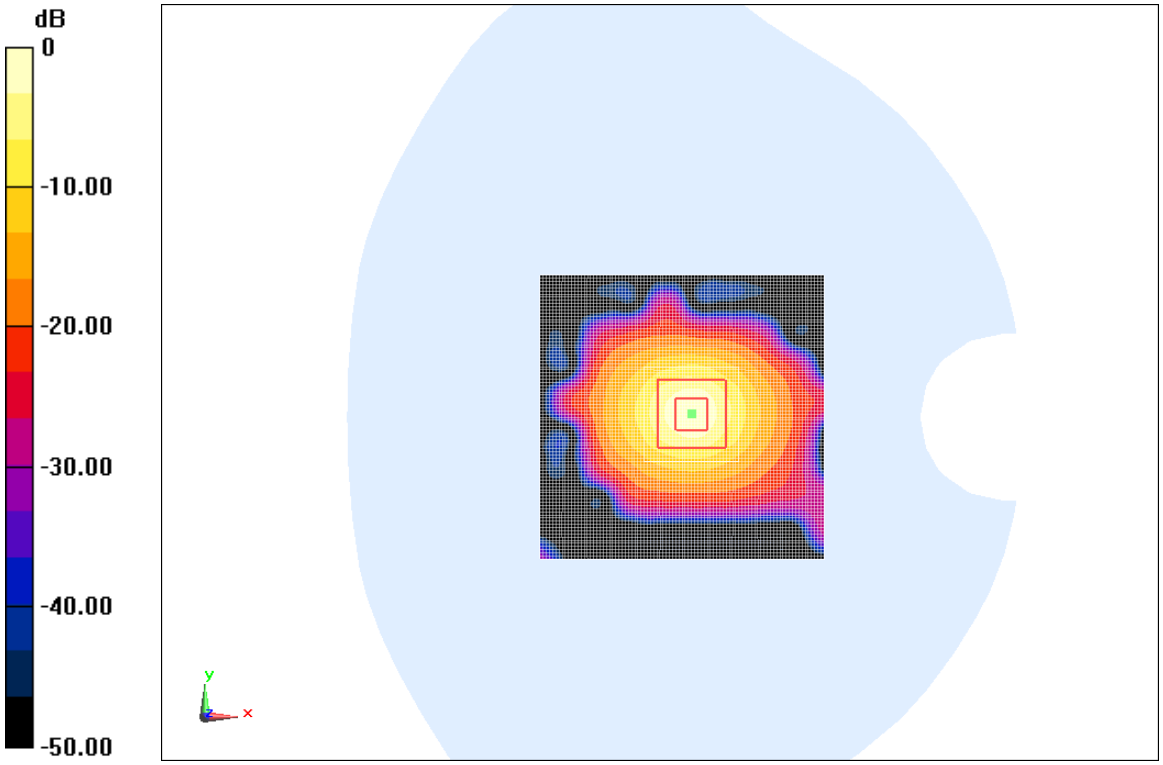
Fig.B.9 validation 5300MHz 100mW

5300MHz

Date: 2014-05-27
Electronics: DAE4 Sn771
Medium: Body 5GHz
Medium parameters used: f = 5300 MHz; σ = 5.401 mho/m; ε_r = 48.23; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 21.7°C
Communication System: CW Frequency: 5300 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(4.17, 4.17, 4.17)

System Validation /Area Scan (91x91x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 61.299 V/m; Power Drift = -0.15 dB
Fast SAR: SAR(1 g) = 7.37 W/kg; SAR(10 g) = 2.03 W/kg
Maximum value of SAR (interpolated) = 9.06 W/kg

System Validation /Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 61.589 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 33.35 W/kg
SAR(1 g) = 7.45 W/kg; SAR(10 g) = 2.09 W/kg
Maximum value of SAR (measured) = 9.12 W/kg



0 dB = 9.06 W/kg = 19.14 dB W/kg

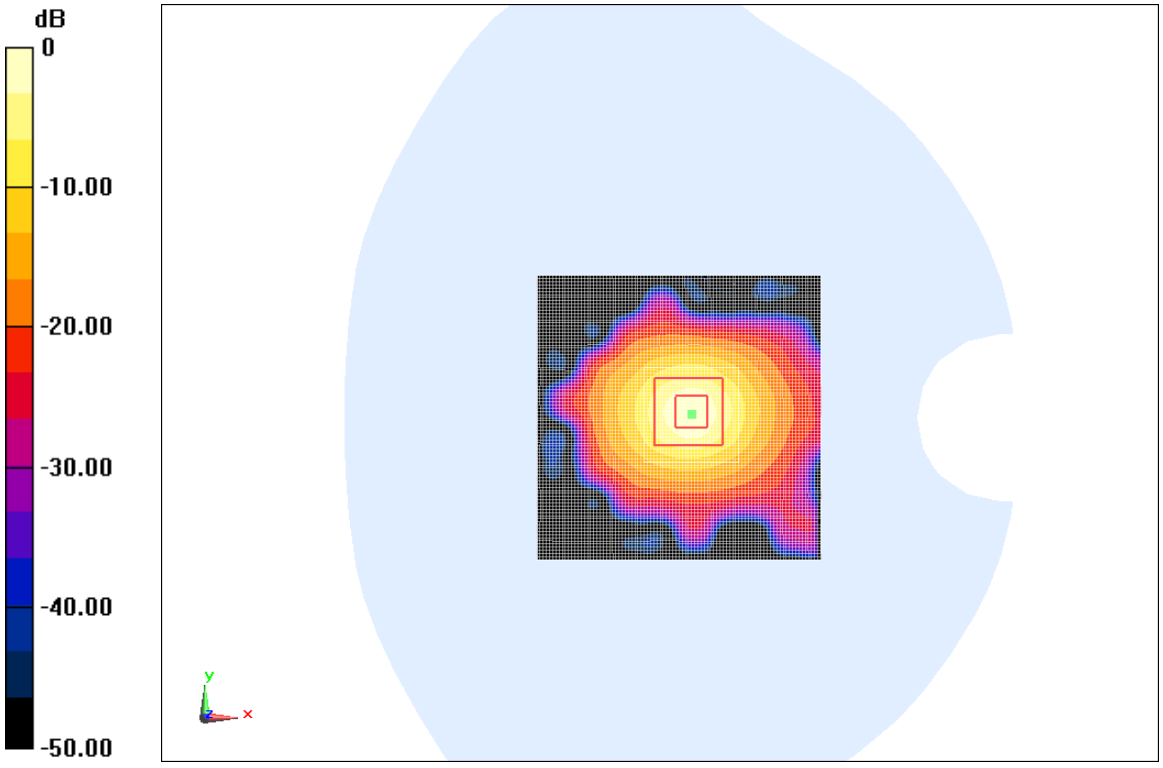
Fig.B.10 validation 5300MHz 100mW

5600MHz

Date: 2014-05-28
Electronics: DAE4 Sn771
Medium: Head 5GHz
Medium parameters used: f = 5600 MHz; σ = 4.984 mho/m; ε_r = 35.86; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 21.7°C
Communication System: CW Frequency: 5600 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(4.52, 4.52, 4.52)

System Validation /Area Scan (91x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 10.3 W/kg

System Validation /Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 62.299 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 35.37 W/kg
SAR(1 g) = 8.50 W/kg; SAR(10 g) = 2.42 W/kg
Maximum value of SAR (measured) = 10.3 W/kg



0 dB = 10.3 W/kg = 20.26 dB W/kg

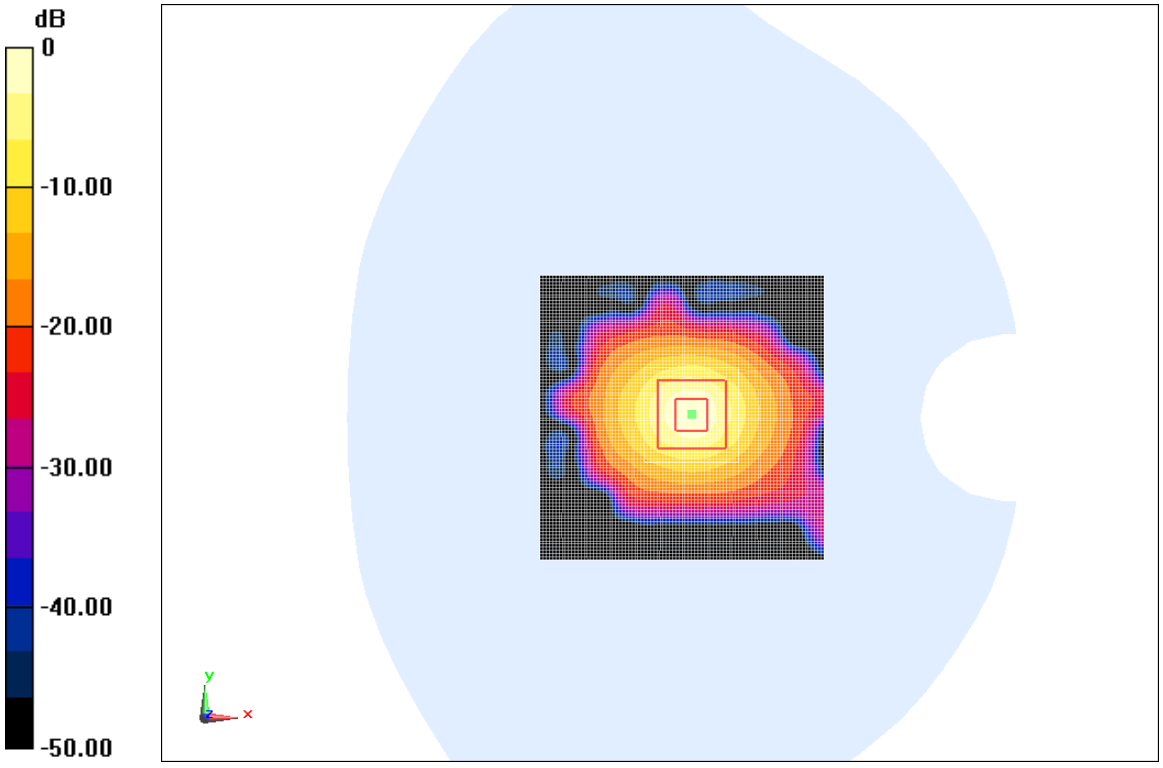
Fig.B.11 validation 5600MHz 100mW

5600MHz

Date: 2014-05-28
Electronics: DAE4 Sn771
Medium: Body 5GHz
Medium parameters used: f = 5600 MHz; σ = 5.875 mho/m; ε_r = 47.52; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 21.7°C
Communication System: CW Frequency: 5600 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(3.77, 3.77, 3.77)

System Validation /Area Scan (91x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 9.56 W/kg

System Validation /Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 60.083 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 33.85 W/kg
SAR(1 g) = 7.83 W/kg; SAR(10 g) = 2.18 W/kg
Maximum value of SAR (measured) = 9.59 W/kg



0 dB = 9.56 W/kg = 19.61 dB W/kg

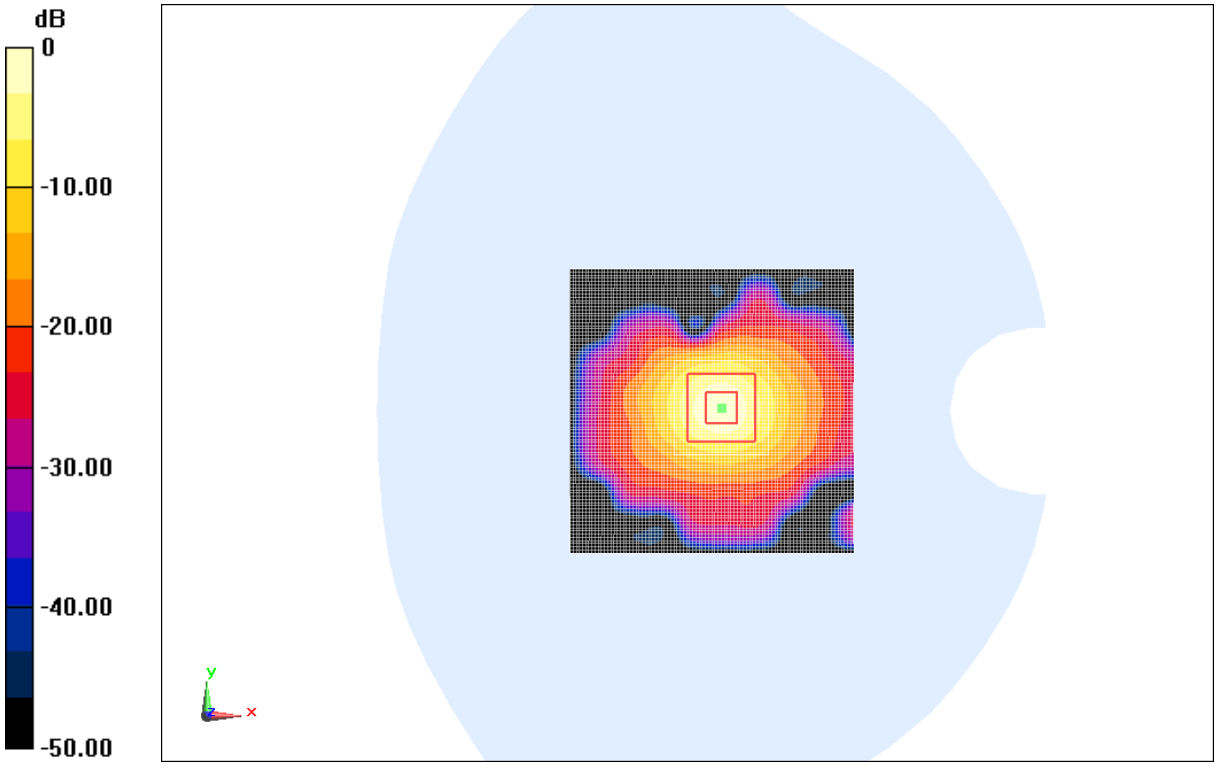
Fig.B.12 validation 5600MHz 100mW

5800MHz

Date: 2014-05-28
Electronics: DAE4 Sn771
Medium: Head 5GHz
Medium parameters used: f = 5800 MHz; σ = 5.193 mho/m; ε_r = 35.52; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 21.7°C
Communication System: CW Frequency: 5800 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(4.51, 4.51, 4.51)

System Validation /Area Scan (91x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 9.38 W/kg

System Validation /Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 50.646 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 33.48 W/kg
SAR(1 g) = 7.60 W/kg; SAR(10 g) = 2.17 W/kg
Maximum value of SAR (measured) = 9.43 W/kg



0 dB = 9.38 W/kg = 19.44 dB W/kg

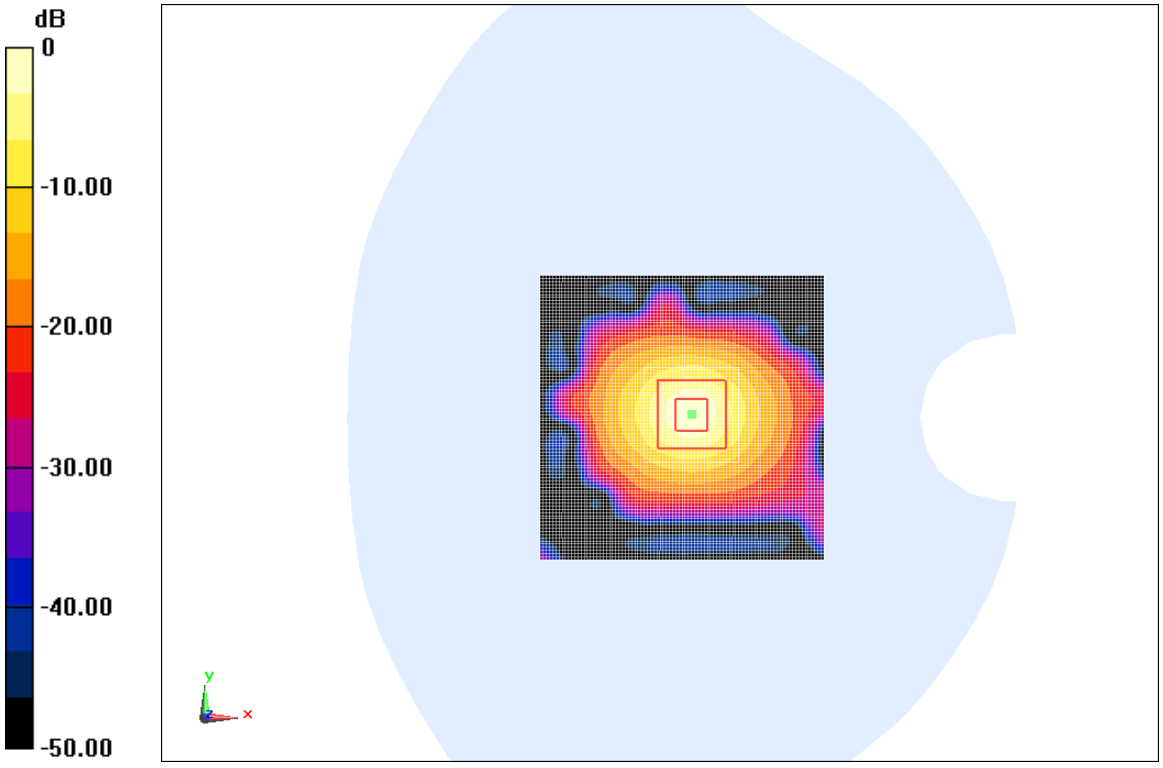
Fig.B.13 validation 5800MHz 100mW

5800MHz

Date: 2014-05-28
Electronics: DAE4 Sn771
Medium: Body 5GHz
Medium parameters used: f = 5800 MHz; σ = 6.187 mho/m; ε_r = 46.97; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 21.7°C
Communication System: CW Frequency: 5800 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(3.94, 3.94, 3.94)

System Validation /Area Scan (91x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 9.10 W/kg

System Validation /Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 61.309 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 33.79 W/kg
SAR(1 g) = 7.55 W/kg; SAR(10 g) = 2.11 W/kg
Maximum value of SAR (measured) = 9.15 W/kg



0 dB = 9.10 W/kg = 19.18 dB W/kg

Fig.B.14 validation 5800MHz 100mW

The SAR system verification must be required that the area scan estimated 1-g SAR is within 3% of the zoom scan 1-g SAR.

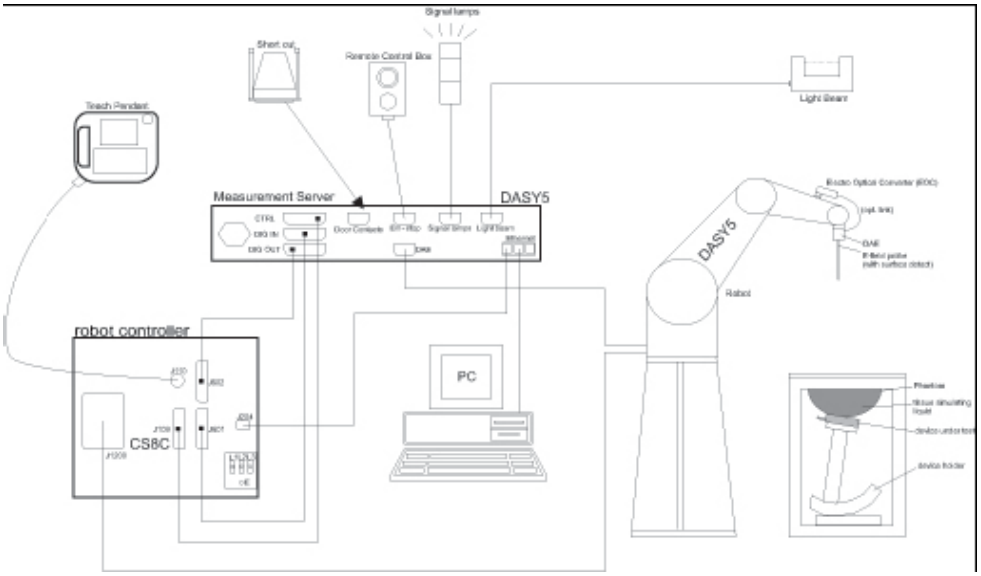
Table B.1 Comparison between area scan and zoom scan for system verification

Band	Position	Area scan (1g)	Zoom scan (1g)	Drift (%)
835	Head	2.34	2.38	-1.68
835	Body	2.37	2.41	-1.66
1900	Head	10.0	9.91	0.91
1900	Body	10.0	10.1	-0.99
2450	Head	13.2	13.2	0.00
2450	Body	12.6	12.8	-1.56

ANNEX C SAR Measurement Setup

C.1 Measurement Set-up

The Dasy4 or DASY5 system for performing compliance tests is illustrated above graphically. This system consists of the following items:



Picture C.1 SAR Lab Test Measurement Set-up

- A standard high precision 6-axis robot (Stäubli TX=RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP and the DASY4 or DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as
- warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

C.2 Dasy4 or DASY5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multifiber line ending at the front of the probe tip. It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASY4 or DASY5 software reads the reflection durning a software approach and looks for the maximum using 2nd ord curve fitting. The approach is stopped at reaching the maximum.

Probe Specifications:

Model: ES3DV3, EX3DV4
Frequency 10MHz — 6.0GHz(EX3DV4)
Range: 10MHz — 4GHz(ES3DV3)
Calibration: In head and body simulating tissue at Frequencies from 835 up to 5800MHz
Linearity: ± 0.2 dB(30 MHz to 6 GHz) for EX3DV4
± 0.2 dB(30 MHz to 4 GHz) for ES3DV3
Dynamic Range: 10 mW/kg — 100W/kg
Probe Length: 330 mm
Probe Tip
Length: 20 mm
Body Diameter: 12 mm
Tip Diameter: 2.5 mm (3.9 mm for ES3DV3)
Tip-Center: 1 mm (2.0mm for ES3DV3)
Application: SAR Dosimetry Testing
Compliance tests of mobile phones
Dosimetry in strong gradient fields

Picture C.2 Near-field Probe

Picture C.3 E-field Probe

C.3 E-field Probe Calibration

Each E-Probe/Probe Amplifier combination has unique calibration parameters. A TEM cell calibration procedure is conducted to determine the proper amplifier settings to enter in the probe parameters. The amplifier settings are determined for a given frequency by subjecting the probe to a known E-field density (1 mW/cm^2) using an RF Signal generator, TEM cell, and RF Power Meter.

The free space E-field from amplified probe outputs is determined in a test chamber. This calibration can be performed in a TEM cell if the frequency is below 1 GHz and inn a waveguide or other methodologies above 1 GHz for free space. For the free space calibration, the probe is placed