

1900 Body Towards Ground Low with GPRS

Date/Time: 2011-2-20 14:18:35

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.49$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:4

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Ground Low/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.419 mW/g

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

Reference Value = 11.7 V/m; Power Drift = -0.019 dB

Peak SAR (extrapolated) = 0.633 W/kg

SAR(1 g) = 0.379 mW/g; SAR(10 g) = 0.224 mW/g

Maximum value of SAR (measured) = 0.411 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.7 V/m; Power Drift = -0.019 dB

Peak SAR (extrapolated) = 0.420 W/kg

SAR(1 g) = 0.277 mW/g; SAR(10 g) = 0.178 mW/g

Maximum value of SAR (measured) = 0.296 mW/g

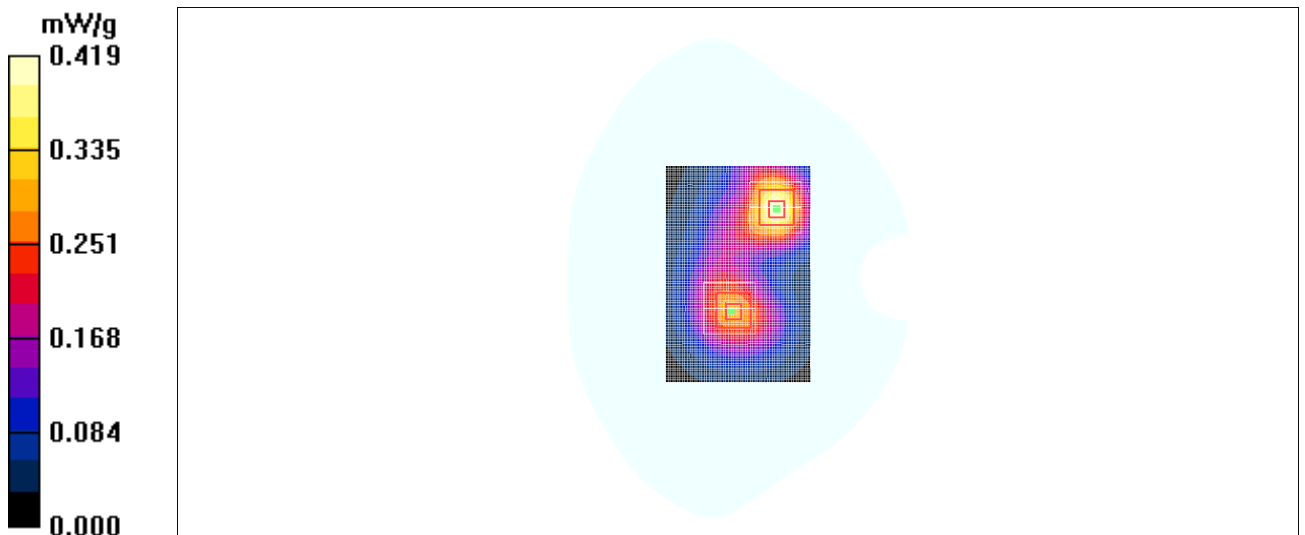


Fig. 38 1900 MHz CH512

1900 Body Towards Phantom High with GPRS

Date/Time: 2011-2-20 14:34:07

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:4

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Phantom High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.474 mW/g

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

Reference Value = 6.97 V/m; Power Drift = 0.013 dB

Peak SAR (extrapolated) = 0.713 W/kg

SAR(1 g) = 0.427 mW/g; SAR(10 g) = 0.253 mW/g

Maximum value of SAR (measured) = 0.438 mW/g

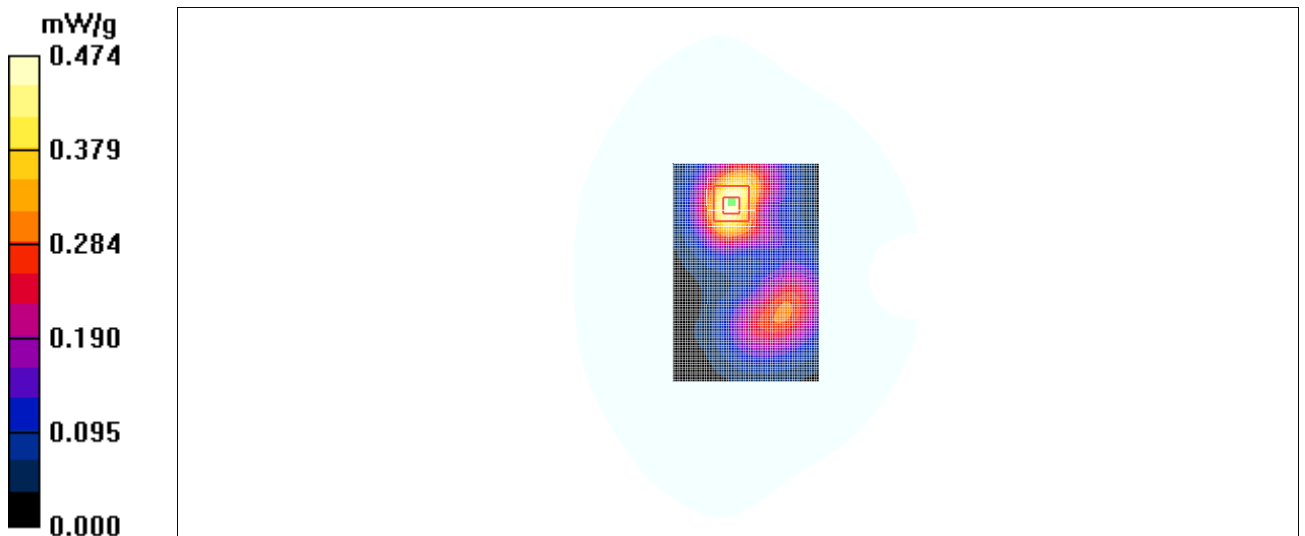


Fig. 39 1900 MHz CH810

1900 Body Towards Phantom Middle with GPRS

Date/Time: 2011-2-20 14:49:38

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:4

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Phantom Middle/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.428 mW/g

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

Reference Value = 7.31 V/m; Power Drift = -0.043 dB

Peak SAR (extrapolated) = 0.652 W/kg

SAR(1 g) = 0.384 mW/g; SAR(10 g) = 0.227 mW/g

Maximum value of SAR (measured) = 0.394 mW/g

Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.31 V/m; Power Drift = -0.043 dB

Peak SAR (extrapolated) = 0.374 W/kg

SAR(1 g) = 0.250 mW/g; SAR(10 g) = 0.161 mW/g

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

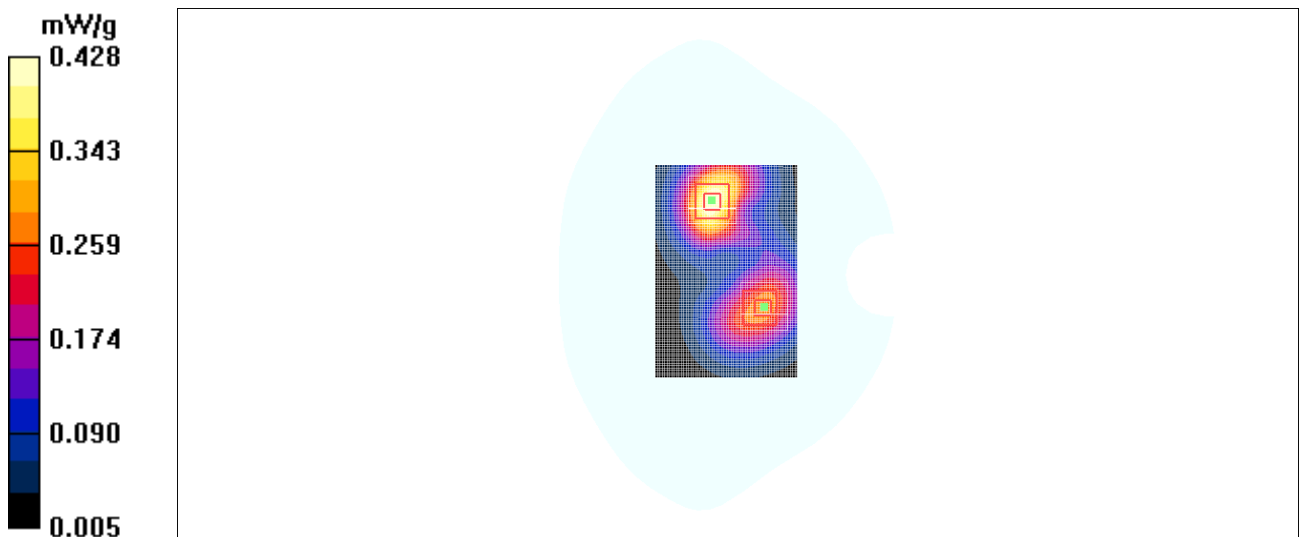


Fig. 40 1900 MHz CH661

1900 Body Towards Phantom Low with GPRS

Date/Time: 2011-2-20 15:05:04

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.49$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:4

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Phantom Low/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.407 mW/g

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

Reference Value = 7.94 V/m; Power Drift = 0.064 dB

Peak SAR (extrapolated) = 0.603 W/kg

SAR(1 g) = 0.365 mW/g; SAR(10 g) = 0.217 mW/g

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

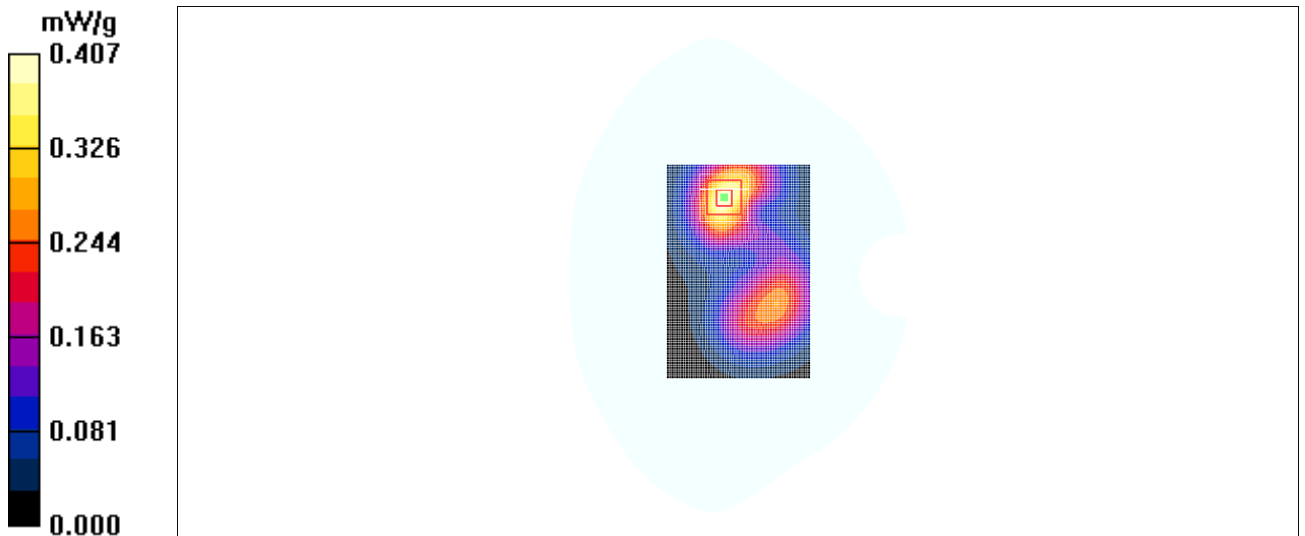


Fig. 41 1900 MHz CH512

1900 Body Towards Ground High with EGPRS

Date/Time: 2011-2-20 15:21:55

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:4

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Ground High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.458 mW/g

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

Reference Value = 9.93 V/m; Power Drift = -0.010 dB

Peak SAR (extrapolated) = 0.687 W/kg

SAR(1 g) = 0.411 mW/g; SAR(10 g) = 0.245 mW/g

Maximum value of SAR (measured) = 0.424 mW/g



Fig. 42 1900 MHz CH810

1900 Body Towards Ground High with Headset__CCB3160A10C2

Date/Time: 2011-2-20 15:38:34

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Ground High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.303 mW/g

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

Reference Value = 9.35 V/m; Power Drift = -0.008 dB

Peak SAR (extrapolated) = 0.470 W/kg

SAR(1 g) = 0.275 mW/g; SAR(10 g) = 0.164 mW/g

Maximum value of SAR (measured) = 0.279 mW/g

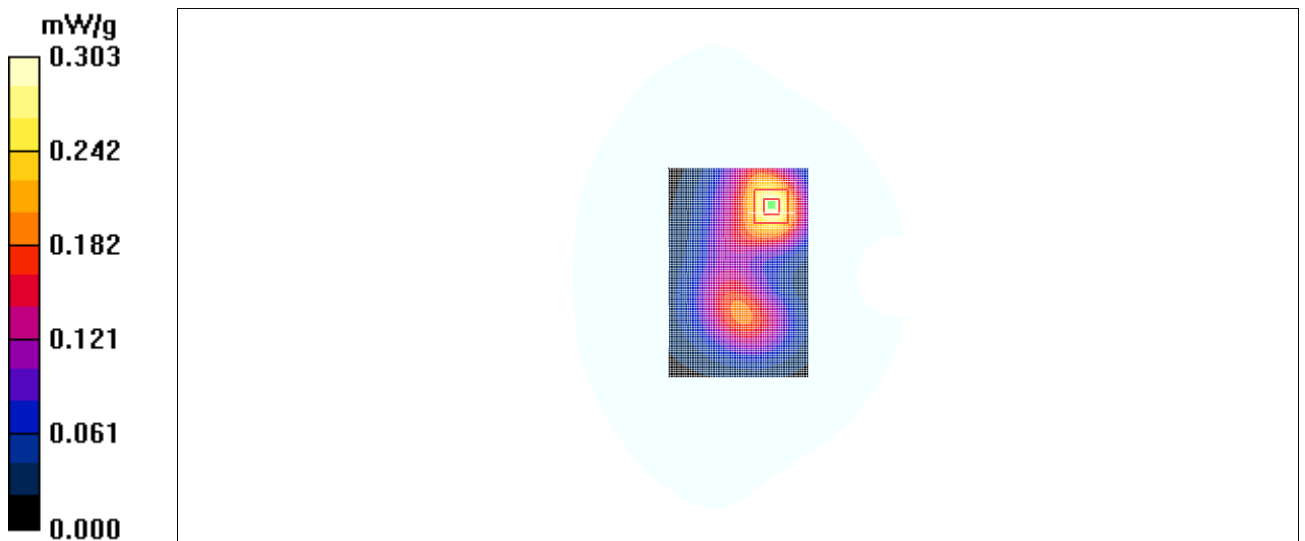


Fig. 43 1900 MHz CH810

1900 Body Towards Ground High with Headset__CCB3160A10C3

Date/Time: 2011-2-20 15:55:56

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Ground High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.304 mW/g

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

Reference Value = 9.68 V/m; Power Drift = -0.028 dB

Peak SAR (extrapolated) = 0.474 W/kg

SAR(1 g) = 0.279 mW/g; SAR(10 g) = 0.165 mW/g

Maximum value of SAR (measured) = 0.282 mW/g



Fig. 44 1900 MHz CH810

1900 Body Towards Ground High with Headset__CCB3125A10C2

Date/Time: 2011-2-20 16:12:48

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Ground High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.243 mW/g

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

Reference Value = 9.94 V/m; Power Drift = 0.129 dB

Peak SAR (extrapolated) = 0.375 W/kg

SAR(1 g) = 0.223 mW/g; SAR(10 g) = 0.132 mW/g

Maximum value of SAR (measured) = 0.231 mW/g

Toward Ground High/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.94 V/m; Power Drift = 0.129 dB

Peak SAR (extrapolated) = 0.239 W/kg

SAR(1 g) = 0.155 mW/g; SAR(10 g) = 0.100 mW/g

Maximum value of SAR (measured) = 0.163 mW/g

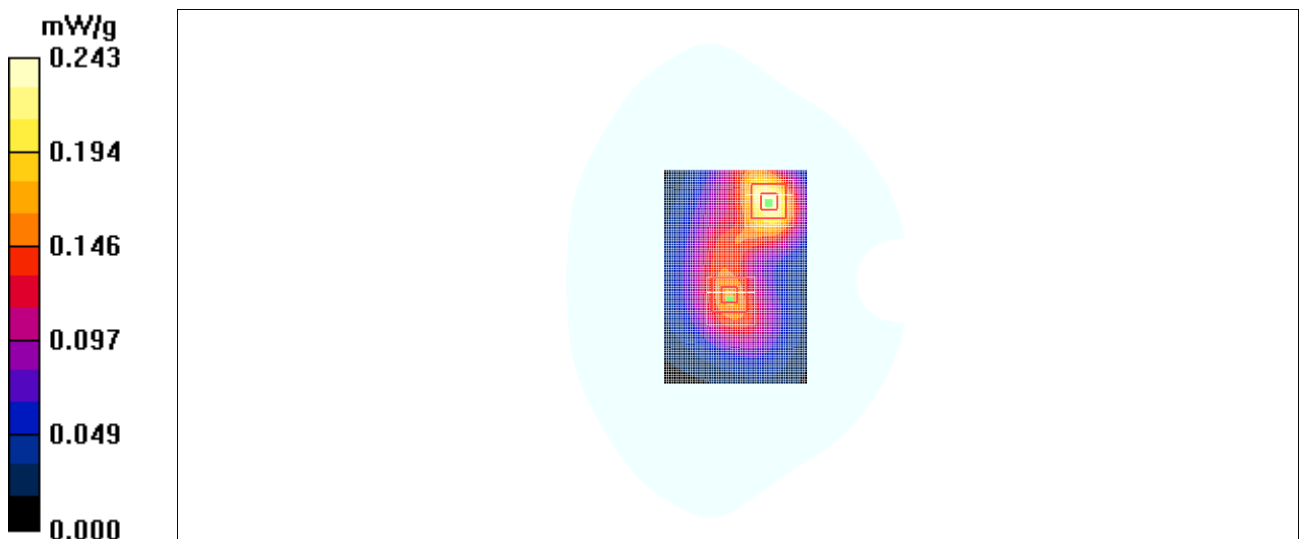


Fig. 45 1900 MHz CH810

850 Body Towards Ground Middle with GPRS with battery CAB31L0000C2

Date/Time: 2011-2-19 16:23:04

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.95$ mho/m; $\epsilon_r = 54.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

Toward Ground Middle/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.31 mW/g

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

dy=5mm, dz=5mm

Reference Value = 34.3 V/m; Power Drift = -0.160 dB

Peak SAR (extrapolated) = 1.60 W/kg

SAR(1 g) = 1.22 mW/g; SAR(10 g) = 0.877 mW/g

Maximum value of SAR (measured) = 1.25 mW/g

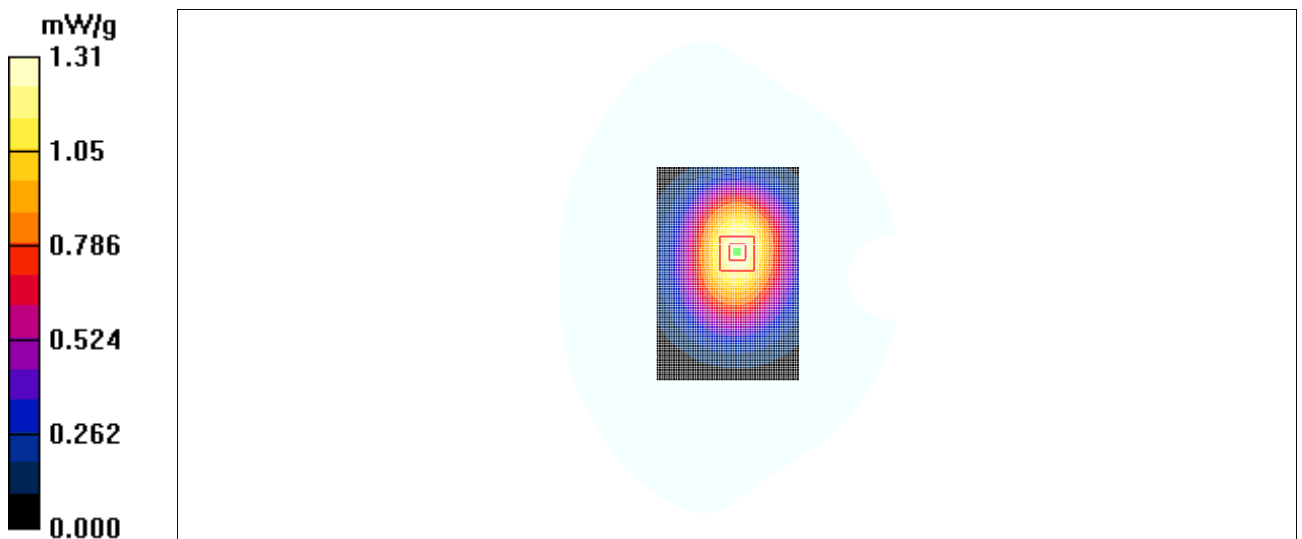


Fig. 46 850 MHz CH190

WiFi 802.11b 1Mbps Left Cheek Channel 11

Date/Time: 2011-2-16 14:33:02

Electronics: DAE4 Sn771

Medium: Head 2450 MHz

Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5 °C

Communication System: WLAN 2450 Frequency: 2462 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(7.19, 7.19, 7.19)

Cheek High/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.109 mW/g

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

Reference Value = 4.04 V/m; Power Drift = 0.129 dB

Peak SAR (extrapolated) = 0.135 W/kg

SAR(1 g) = 0.067 mW/g; SAR(10 g) = 0.028 mW/g

Maximum value of SAR (measured) = 0.078 mW/g

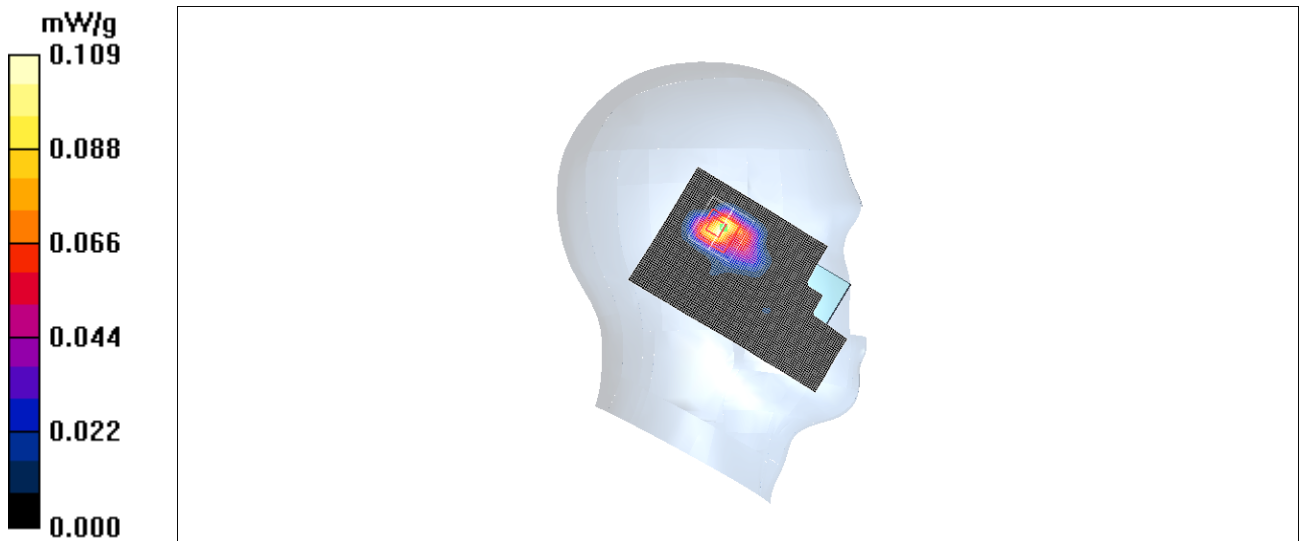


Fig.47 802.11b 1Mbps CH11

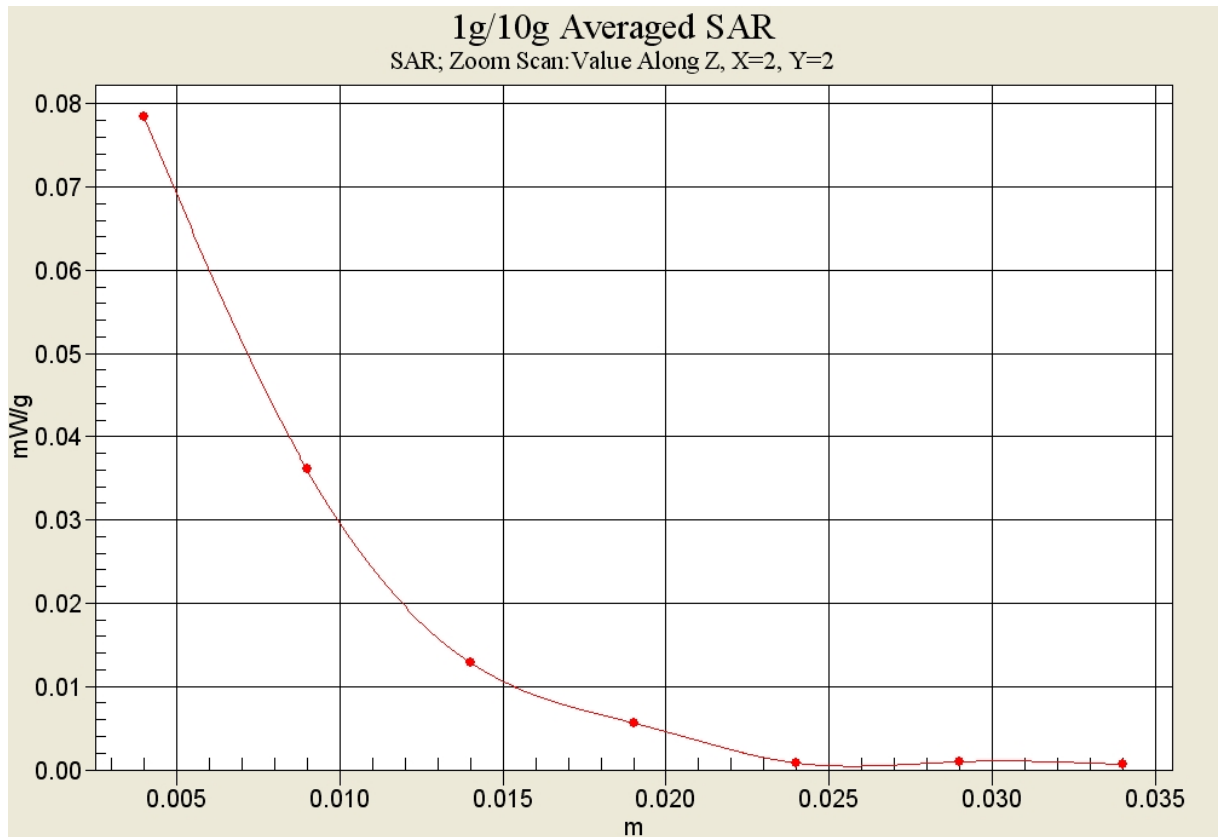


Fig. 47-1 Z-Scan at power reference point (2462 MHz CH11)

WiFi 802.11b 1Mbps Left Tilt Channel 11

Date/Time: 2011-2-16 14:47:30

Electronics: DAE4 Sn771

Medium: Head 2450 MHz

Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5 °C

Communication System: WLAN 2450 Frequency: 2462 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(7.19, 7.19, 7.19)

Tilt High/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.065 mW/g

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

Reference Value = 3.09 V/m; Power Drift = 0.191 dB

Peak SAR (extrapolated) = 0.093 W/kg

SAR(1 g) = 0.032 mW/g; SAR(10 g) = 0.011 mW/g

Maximum value of SAR (measured) = 0.035 mW/g

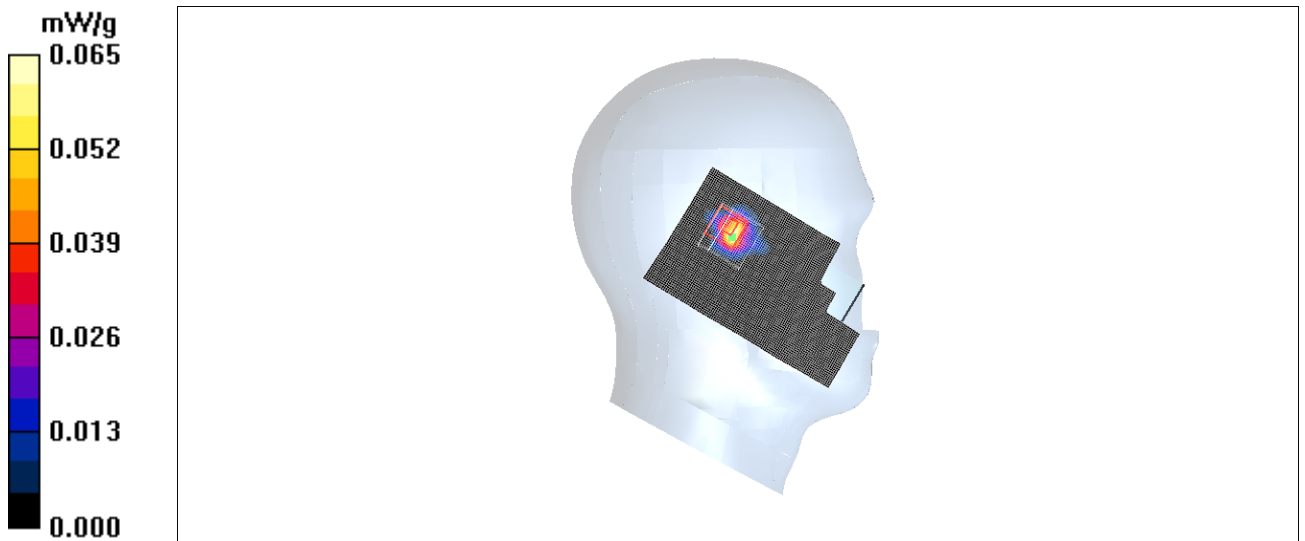


Fig.48 802.11b 1Mbps CH11

WiFi 802.11b 1Mbps Right Cheek Channel 11

Date/Time: 2011-2-16 15:02:13

Electronics: DAE4 Sn771

Medium: Head 2450 MHz

Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5 °C

Communication System: WLAN 2450 Frequency: 2462 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(7.19, 7.19, 7.19)

Cheek High/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.085 mW/g

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

Reference Value = 3.95 V/m; Power Drift = 0.164 dB

Peak SAR (extrapolated) = 0.071 W/kg

SAR(1 g) = 0.037 mW/g; SAR(10 g) = 0.016 mW/g

Maximum value of SAR (measured) = 0.042 mW/g

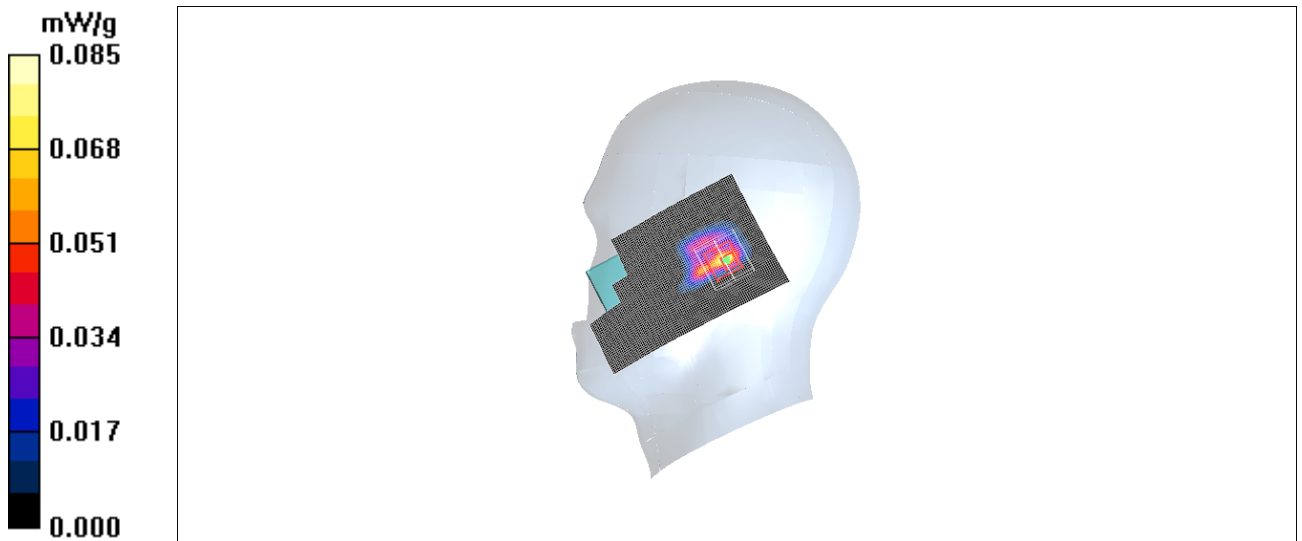


Fig.49 802.11b 1Mbps CH11

WiFi 802.11b 1Mbps Right Tilt Channel 11

Date/Time: 2011-2-16 15:16:35

Electronics: DAE4 Sn771

Medium: Head 2450 MHz

Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5 °C

Communication System: WLAN 2450 Frequency: 2462 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(7.19, 7.19, 7.19)

Tilt High/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.081 mW/g

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

Reference Value = 3.12 V/m; Power Drift = 0.163 dB

Peak SAR (extrapolated) = 0.097 W/kg

SAR(1 g) = 0.025 mW/g; SAR(10 g) = 0.00939 mW/g

Maximum value of SAR (measured) = 0.025 mW/g

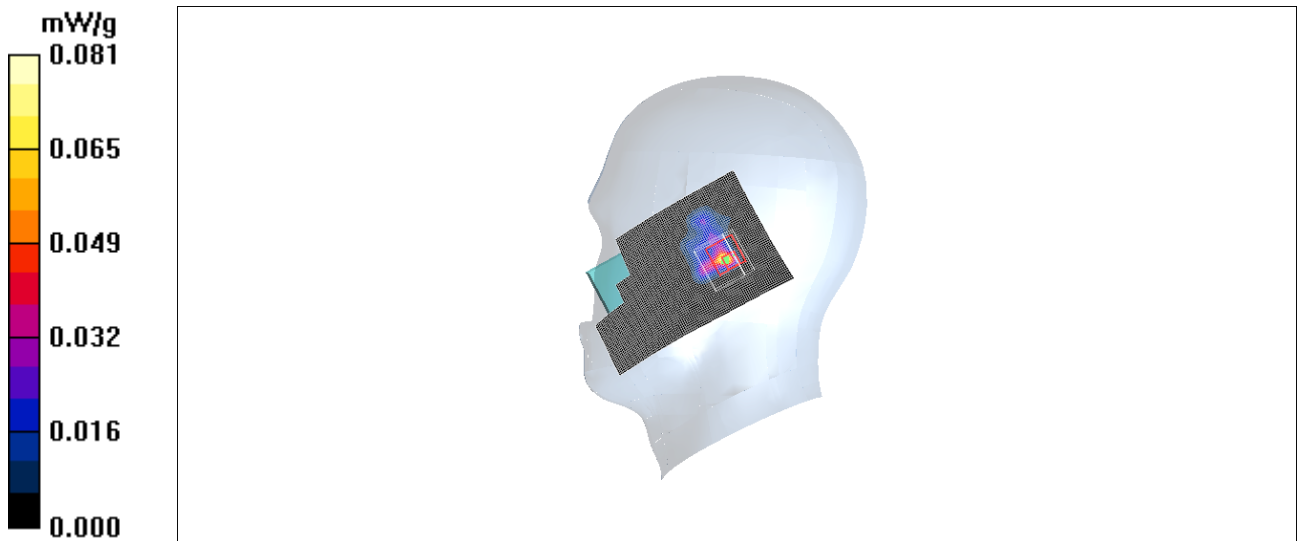


Fig.50 802.11b 1Mbps CH11

WiFi 802.11b 1Mbps Toward Ground Channel 11

Date/Time: 2011-2-16 16:26:31

Electronics: DAE4 Sn771

Medium: Body 2450 MHz

Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.98$ mho/m; $\epsilon_r = 52.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5 °C

Communication System: WLAN 2450 Frequency: 2462 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(6.88, 6.88, 6.88)

Toward Ground High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.010 mW/g

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

Reference Value = 1.00 V/m; Power Drift = 0.116 dB

Peak SAR (extrapolated) = 0.041 W/kg

SAR(1 g) = 0.00909 mW/g; SAR(10 g) = 0.00343 mW/g

Maximum value of SAR (measured) = 0.007 mW/g

Toward Ground High/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.00 V/m; Power Drift = 0.116 dB

Peak SAR (extrapolated) = 0.029 W/kg

SAR(1 g) = 0.00377 mW/g; SAR(10 g) = 0.000824 mW/g

Maximum value of SAR (measured) = 0.008 mW/g

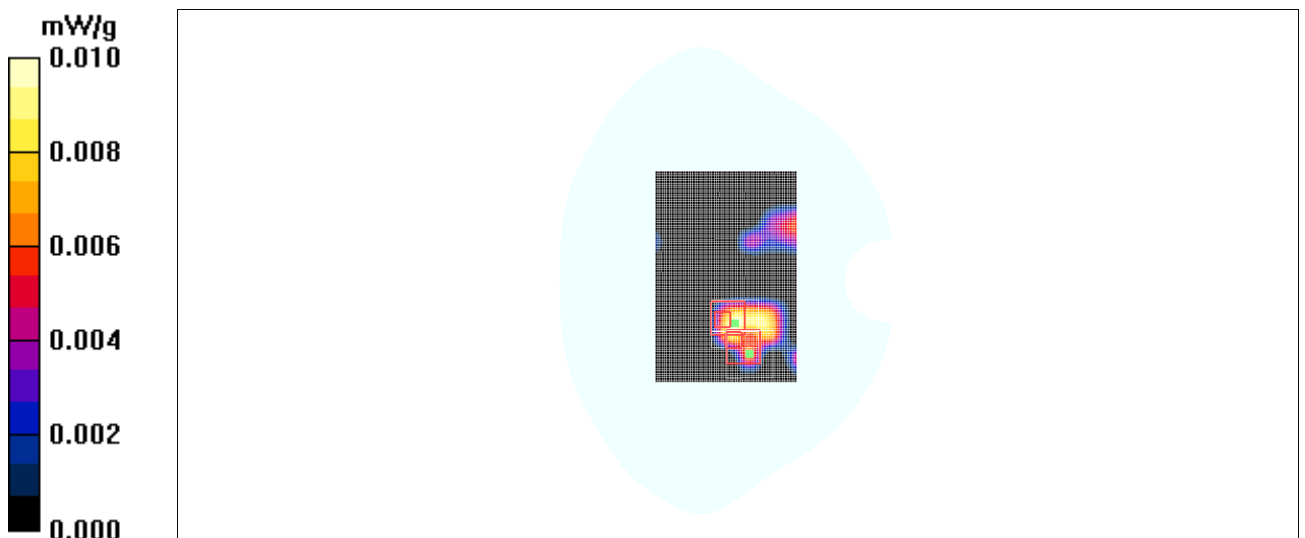


Fig.51 802.11b 1Mbps CH11

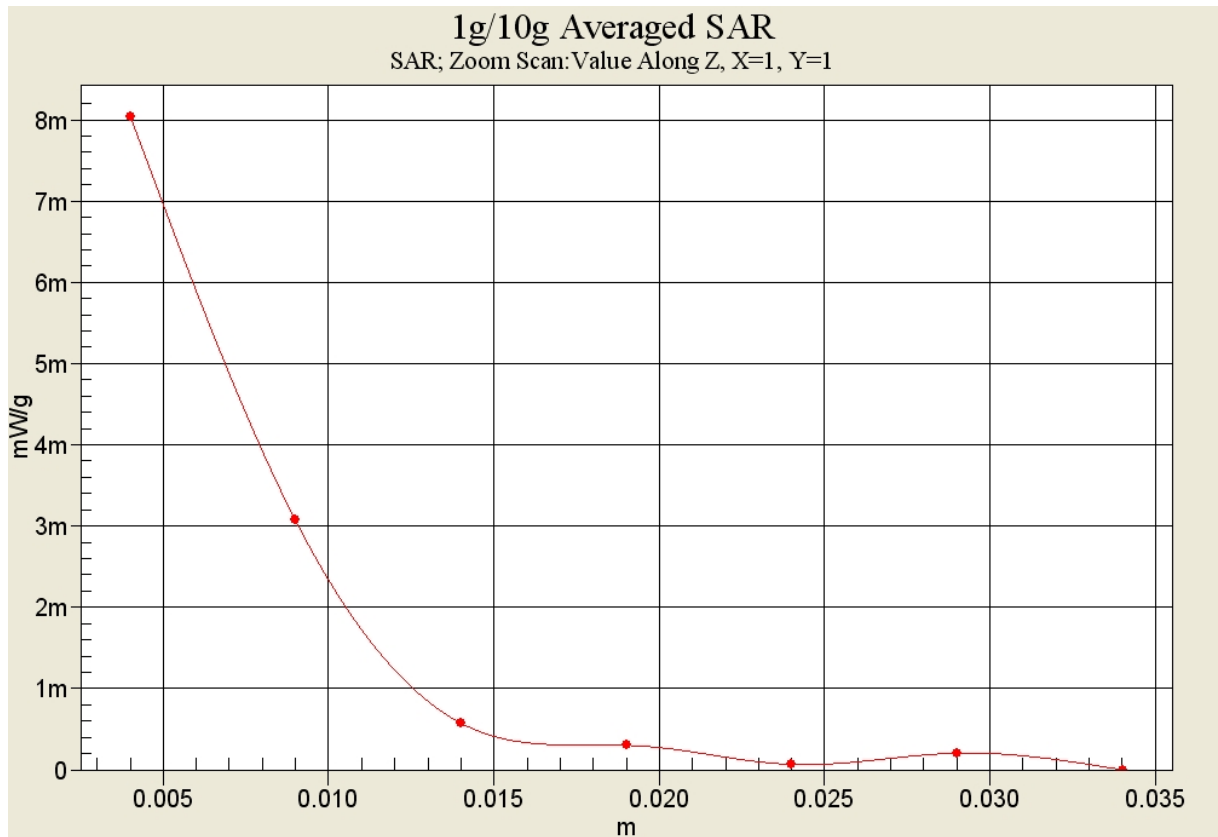


Fig. 51-1 Z-Scan at power reference point (2462 MHz CH11)

WiFi 802.11b 1Mbps Toward Phantom Channel 11

Date/Time: 2011-2-16 16:42:28

Electronics: DAE4 Sn771

Medium: Body 2450 MHz

Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.98$ mho/m; $\epsilon_r = 52.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5 °C

Communication System: WLAN 2450 Frequency: 2462 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(6.88, 6.88, 6.88)

Toward Phantom High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.011 mW/g

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

Reference Value = 1.40 V/m; Power Drift = -0.154 dB

Peak SAR (extrapolated) = 0.044 W/kg

SAR(1 g) = 0.00908 mW/g; SAR(10 g) = 0.00331 mW/g

Maximum value of SAR (measured) = 0.008 mW/g

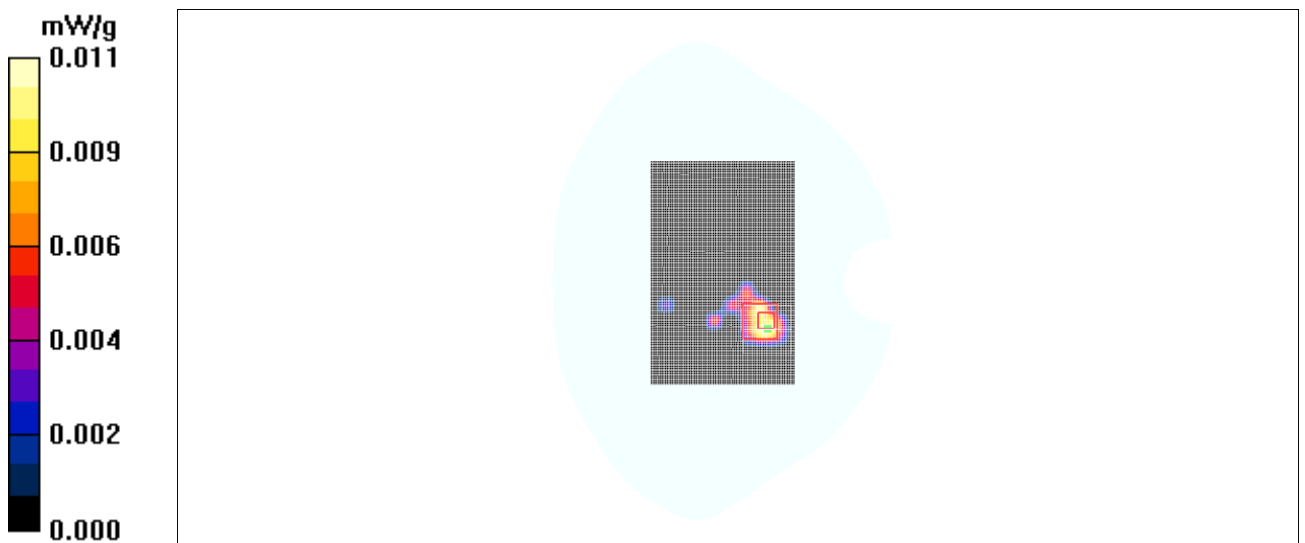


Fig.52 802.11b 1Mbps CH11

ANNEX D SYSTEM VALIDATION RESULTS

835MHz

Date/Time: 2011-2-19 7:27:32

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.88 \text{ mho/m}$; $\epsilon_r = 40.6$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

System Validation /Area Scan (101x101x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$
Maximum value of SAR (interpolated) = 2.62 mW/g

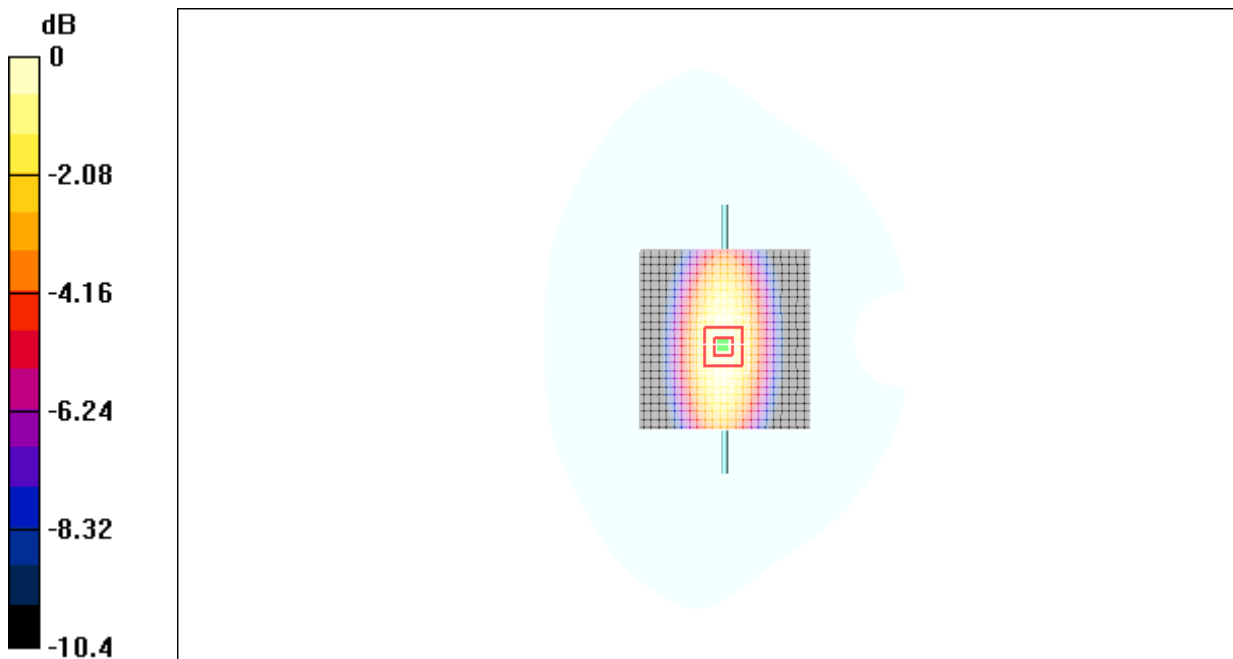
System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 56.3 V/m; Power Drift = 0.097 dB

Peak SAR (extrapolated) = 3.47 W/kg

SAR(1 g) = 2.41 mW/g; SAR(10 g) = 1.54 mW/g

Maximum value of SAR (measured) = 2.54 mW/g



0 dB = 2.54mW/g

Fig.53 validation 835MHz 250mW

835MHz

Date/Time: 2011-2-19 13:15:40

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.96 \text{ mho/m}$; $\epsilon_r = 54.4$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

System Validation /Area Scan (101x101x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$
Maximum value of SAR (interpolated) = 2.62 mW/g

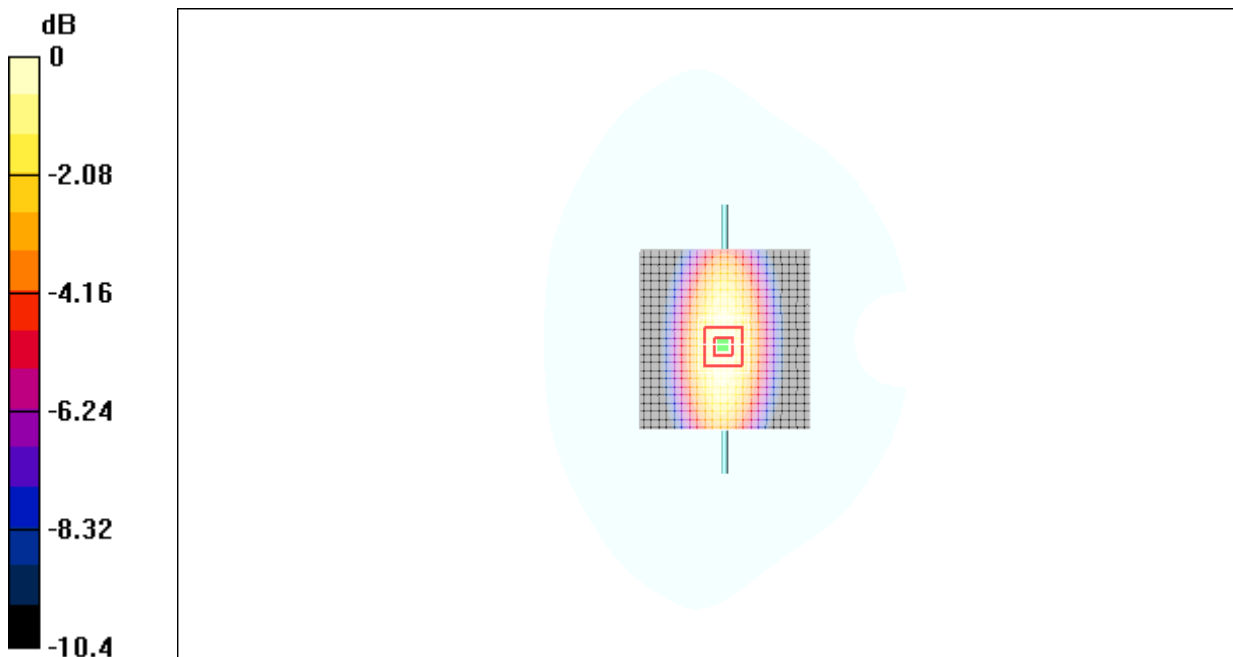
System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$,
 $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 52.2 V/m; Power Drift = 0.069 dB

Peak SAR (extrapolated) = 3.45 W/kg

SAR(1 g) = 2.44 mW/g; SAR(10 g) = 1.54 mW/g

Maximum value of SAR (measured) = 2.50 mW/g



0 dB = 2.50mW/g

Fig.54 validation 835MHz 250mW

1900MHz

Date/Time: 2011-2-20 7:28:15

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.39 \text{ mho/m}$; $\epsilon_r = 39.6$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

System Validation/Area Scan (101x101x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$
Maximum value of SAR (interpolated) = 11.6 mW/g

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

Reference Value = 92.3 V/m ; Power Drift = -0.044 dB

Peak SAR (extrapolated) = 14.9 W/kg

SAR(1 g) = 9.90 mW/g ; SAR(10 g) = 4.94 mW/g

Maximum value of SAR (measured) = 10.5 mW/g

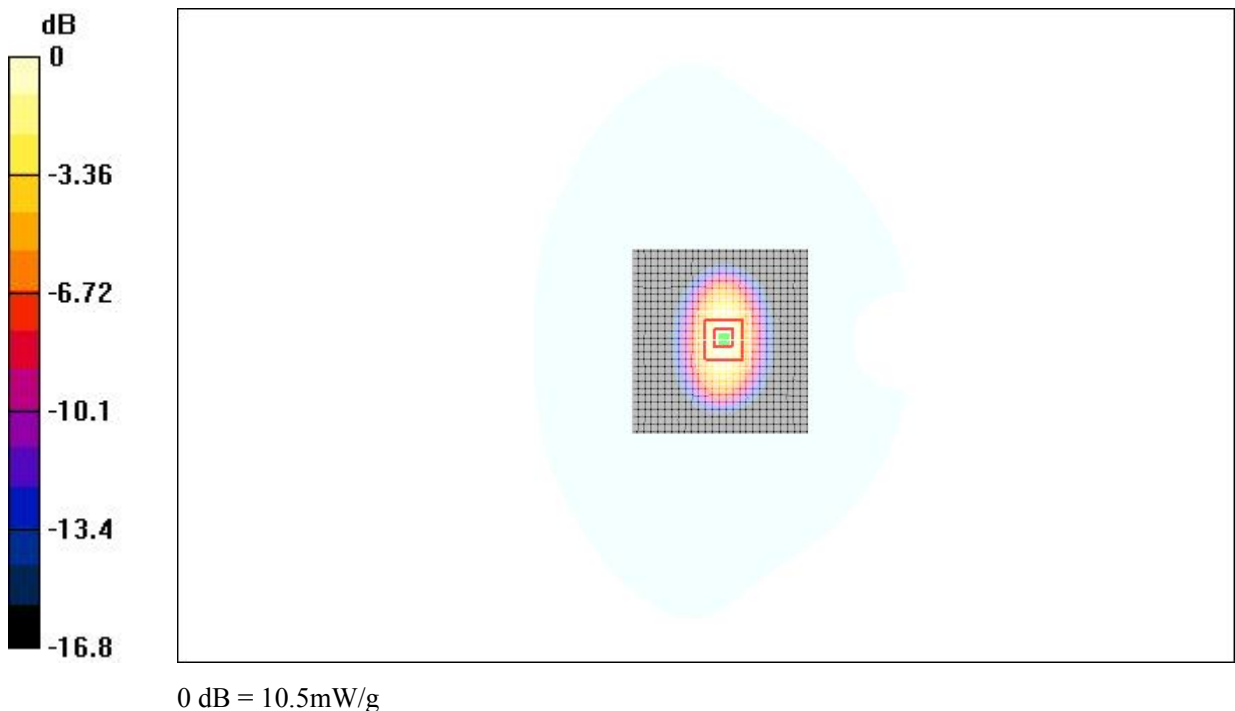


Fig.55 validation 1900MHz 250mW

1900MHz

Date/Time: 2011-2-20 13:19:25

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.53 \text{ mho/m}$; $\epsilon_r = 52.4$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

System Validation/Area Scan (101x101x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$
Maximum value of SAR (interpolated) = 11.4 mW/g

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

Reference Value = 93.5 V/m ; Power Drift = -0.058 dB

Peak SAR (extrapolated) = 16.2 W/kg

SAR(1 g) = 10.4 mW/g ; SAR(10 g) = 5.34 mW/g

Maximum value of SAR (measured) = 10.8 mW/g

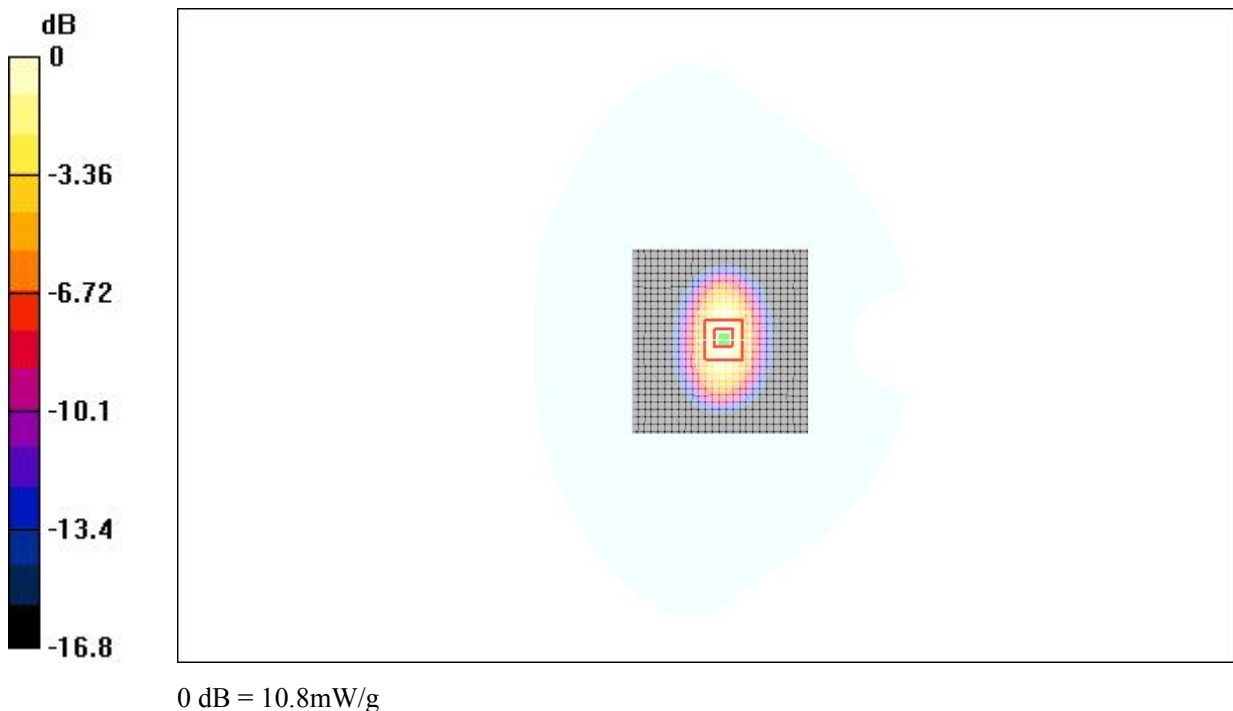


Fig.56 validation 1900MHz 250mW

2450MHz

Date/Time: 2011-2-16 7:30:27

Electronics: DAE4 Sn771

Medium: Head 2450 MHz

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.82$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C

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

Probe: EX3DV4 - SN3617 ConvF(7.19, 7.19, 7.19)

System Validation/Area Scan (101x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 14.7 mW/g

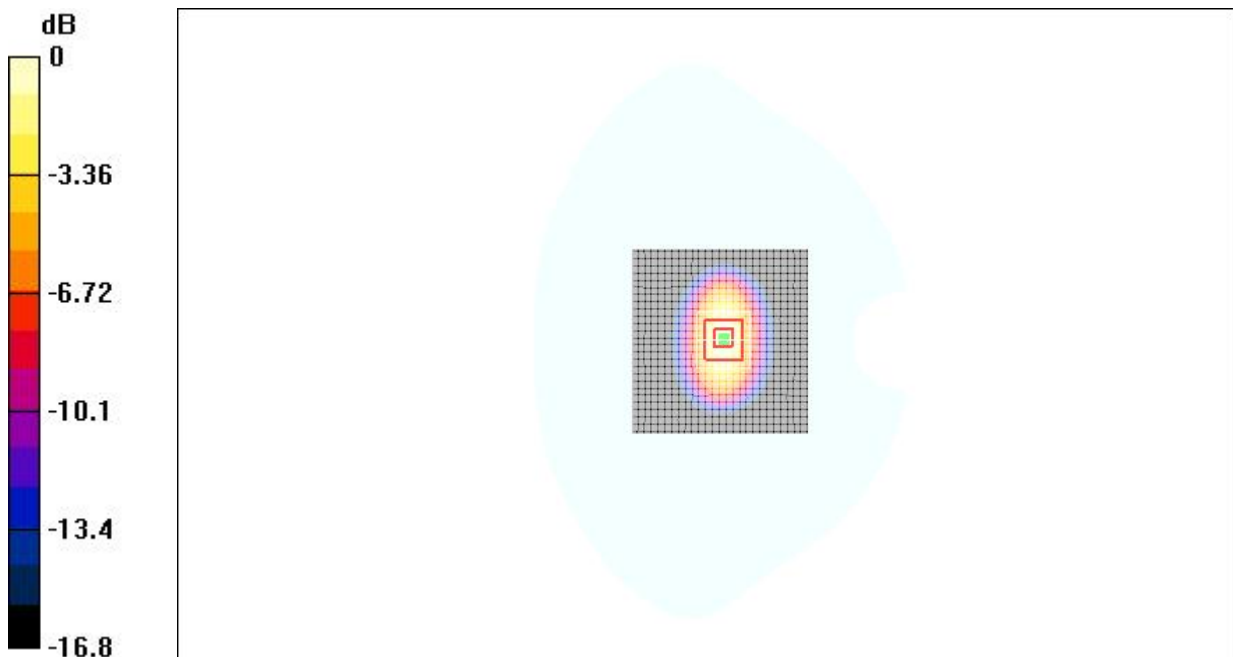
System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 86.7 V/m; Power Drift = -0.066 dB

Peak SAR (extrapolated) = 18.2 W/kg

SAR(1 g) = 12.9 mW/g; SAR(10 g) = 5.99 mW/g

Maximum value of SAR (measured) = 13.9 mW/g



0 dB = 13.9mW/g

Fig.57 validation 2450MHz 250mW

2450MHz

Date/Time: 2011-2-16 15:57:19

Electronics: DAE4 Sn771

Medium: Body 2450 MHz

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.96$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C

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

Probe: EX3DV4 - SN3617 ConvF(6.88, 6.88, 6.88)

System Validation/Area Scan (101x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 15.9 mW/g

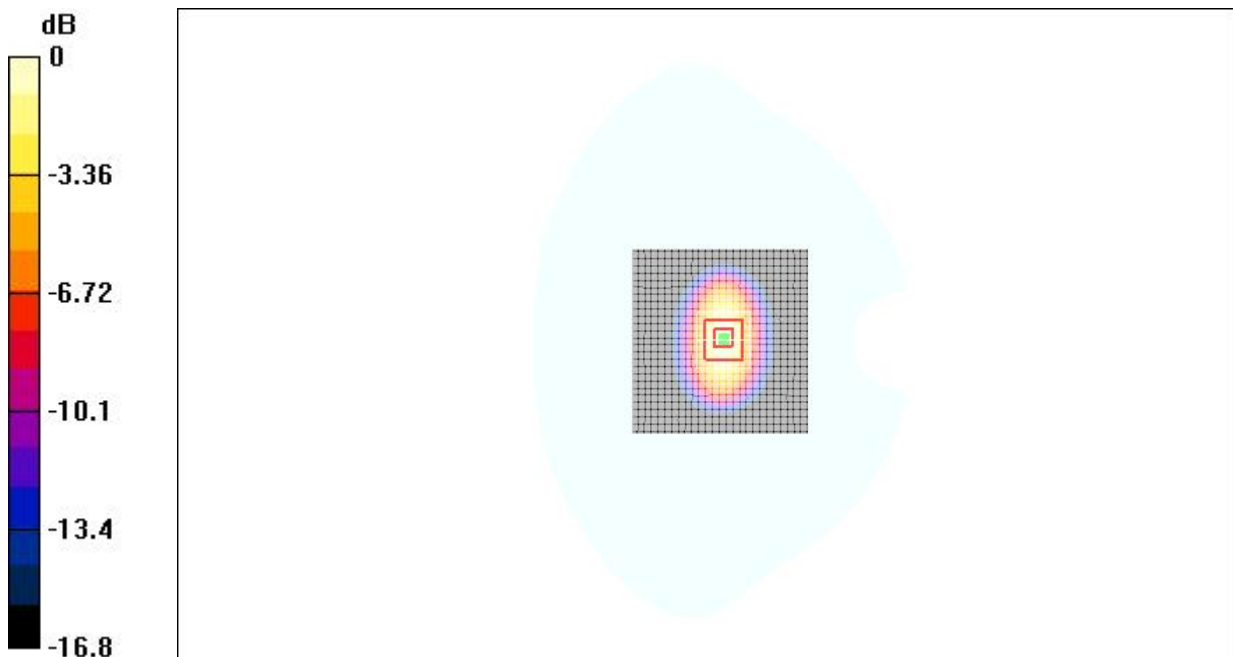
System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 84.6 V/m; Power Drift = -0.063 dB

Peak SAR (extrapolated) = 24.4 W/kg

SAR(1 g) = 13.1 mW/g; SAR(10 g) = 5.95 mW/g

Maximum value of SAR (measured) = 14.5 mW/g



0 dB = 14.5mW/g

Fig.58 validation 2450MHz 250mW

ANNEX E PROBE CALIBRATION CERTIFICATE

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **TMC China**

Certificate No: **ES3DV3-3149_Sep10**

CALIBRATION CERTIFICATE

Object	ES3DV3-SN: 3149
Calibration procedure(s)	QA CAL-01.v6 Calibration procedure for dosimetric E-field probes
Calibration date:	September 25, 2010
Condition of the calibrated item	In Tolerance

This calibration certify documents the traceability to national standards, which realize the physical units of measurements(SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.
All calibrations have been conducted at an environment temperature (22±3)°C and humidity<70%

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID#	Cal Data (Calibrated by, Certification NO.)	Scheduled Calibration
Power meter E4419B	GB41293874	5-May-10 (METAS, NO. 251-00388)	May-11
Power sensor E4412A	MY41495277	5-May-10 (METAS, NO. 251-00388)	May-11
Reference 3 dB Attenuator	SN:S5054 (3c)	10-Aug-10 (METAS, NO. 251-00403)	Aug-11
Reference 20 dB Attenuator	SN:S5086 (20b)	3-May-10 (METAS, NO. 251-00389)	May-11
Reference 30 dB Attenuator	SN:S5129 (30b)	10-Aug-10 (METAS, NO. 251-00404)	Aug-11
DAE4	SN:617	10-Jun-10 (SPEAG, NO.DAE4-907_Jun10)	Jun-11
Reference Probe ES3DV2	SN: 3013	12-Jan-10 (SPEAG, NO. ES3-3013_Jan10)	Jan-11

Secondary Standards	ID#	Check Data (in house)	Scheduled Calibration
RF generator HP8648C	US3642U01700	4-Aug-99(SPEAG, in house check Oct-09)	In house check: Oct-10
Network Analyzer HP 8753E	US37390585	18-Oct-01(SPEAG, in house check Nov-09)	In house check: Nov-10

Name	Function	Signature
Calibrated by: Katja Pokovic	Technical Manager	

Approved by: Niels Kuster	Quality Manager	
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Issued: **September 25, 2010**

This calibration certificate shall not be reported except in full without written approval of the laboratory.

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
S Service suisse d'étalonnage
C Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- **NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not effect the E^2 -field uncertainty inside TSL (see below *ConvF*).
- **NORM(f)_{x,y,z}** = NORM_{x,y,z} * *frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- **DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- **ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * *ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- **Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- **Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

ES3DV3 SN: 3149

September 25, 2010

Probe ES3DV3

SN: 3149

Manufactured: June 12, 2007

Calibrated: September 25, 2010

Calibrated for DASY4 System

ES3DV3 SN: 3149

September 25, 2010

DASY – Parameters of Probe: ES3DV3 SN:3149

Sensitivity in Free Space^A

Diode Compression^B

NormX	1.14±10.1%	$\mu V/(V/m)^2$	DCP X	94mV
NormY	1.23±10.1%	$\mu V/(V/m)^2$	DCP Y	95mV
NormZ	1.29±10.1%	$\mu V/(V/m)^2$	DCP Z	91mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8

Boundary Effect

TSL 900MHz Typical SAR gradient: 5% per mm

Sensor Center to Phantom Surface Distance		3.0 mm	4.0 mm
SARbe[%]	Without Correction Algorithm	3.8	1.6
SARbe[%]	With Correction Algorithm	0.8	0.7

TSL 1810MHz Typical SAR gradient: 10% per mm

Sensor Center to Phantom Surface Distance		3.0 mm	4.0 mm
SARbe[%]	Without Correction Algorithm	6.8	3.6
SARbe[%]	With Correction Algorithm	0.4	0.2

Sensor Offset

Probe Tip to Sensor Center 2.0 mm

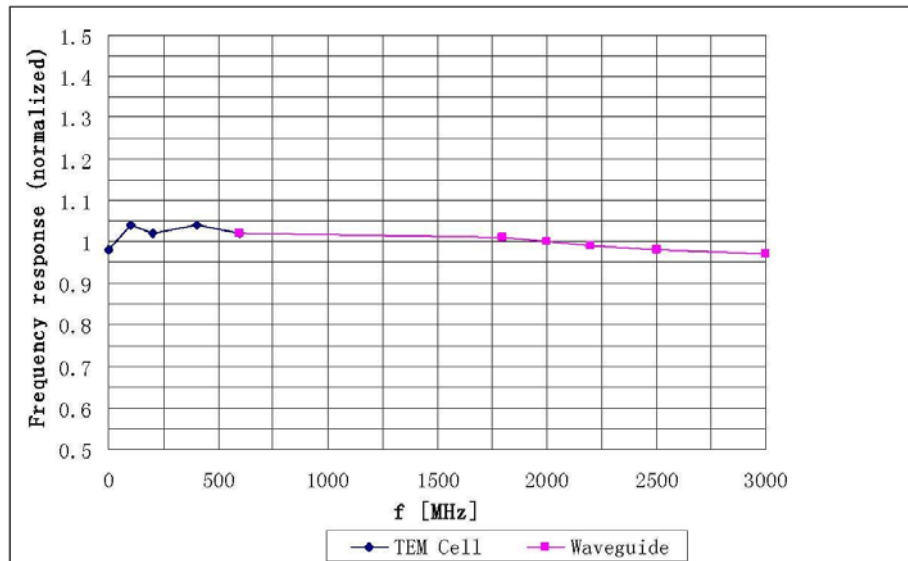
The reported uncertainty of measurement is stated as the standard uncertainty of Measurement multiplied by the coverage factor k=2, which for a normal distribution Corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Page 8).
^B Numerical linearization parameter: uncertainty not required.

ES3DV3 SN: 3149

September 25, 2010

Frequency Response of E-Field

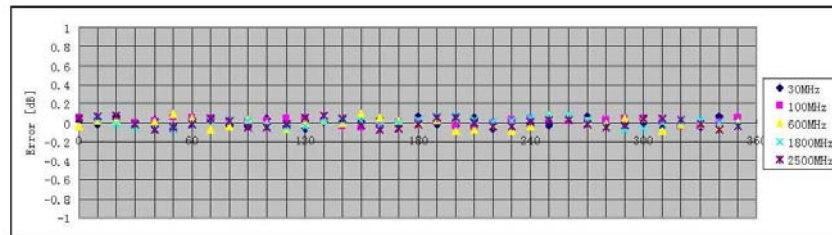
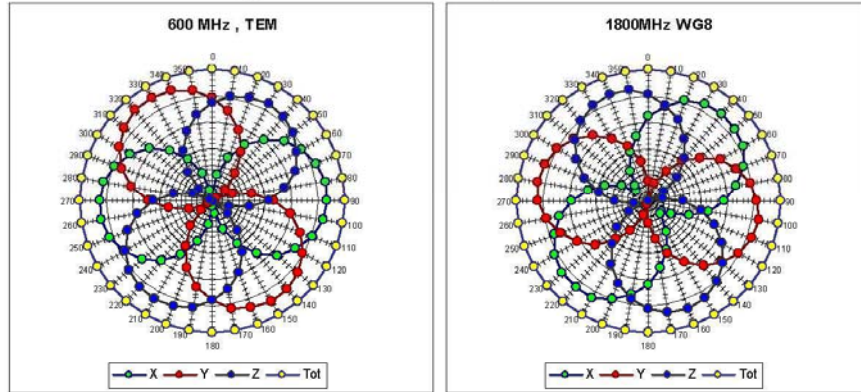


Uncertainty of Frequency Response of E-field: $\pm 5.0\%$ ($k=2$)

ES3DV3 SN: 3149

September 25, 2010

Receiving Pattern (ϕ), $\theta = 0^\circ$

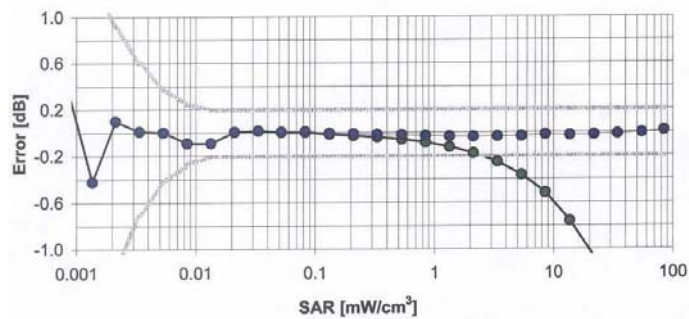
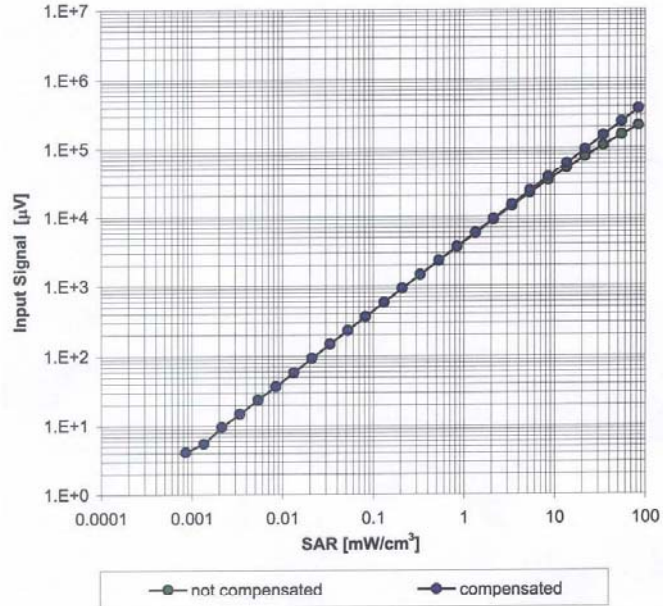


Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

ES3DV3 SN: 3149

September 25, 2010

Dynamic Range f(SAR_{head}) (Waveguide: WG8, f = 1800 MHz)



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