12.3 SAR results for Standard procedure

There is not zoom scan measurement to be added except the highest measured SAR in each exposure configuration and band, because all SAR values are < 1.2 W/kg.

Table 12.10: SAR Values (GSM 850 MHz Band - Head) with battery CAB24Q0000C1

Ambient Temperature: 22.8 °C Liquid Temperature: 22.3 °C										
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
848.8	251	Right	Touch	Fig.1	31.76	0.712	**0.95**	1.02	**1.36**	-0.04

Table 12.11: SAR Values (GSM 850 MHz Band - Body) with battery CAB24Q0000C1

Ambient Temperature: 22.8 °C Liquid Temperature: 22.3 °C										
Frequency		Test Position	Headset	Figure No.	Conducted Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
836.6	190	Ground	/	Fig.2	31.74	0.523	**0.70**	0.721	**0.96**	0.00

Note1: The distance between the EUT and the phantom bottom is 10mm.

Table 12.12: SAR Values (GSM 1900 MHz Band - Head) with battery CAB24Q0000C1

Ambient Temperature: 22.6 °C Liquid Temperature: 22.2 °C										
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
1880	661	Right	Touch	Fig.3	29.26	0.478	**0.61**	0.866	**1.10**	-0.04

Table 12.13: SAR Values (GSM 1900 MHz Band - Body) with battery CAB24Q0000C1

Ambient Temperature: 22.6 °C Liquid Temperature: 22.2 °C										
Frequency		Test Position	Headset	Figure No.	Conducted Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
1880	661	Ground	/	Fig.4	29.26	0.485	**0.62**	0.839	**1.07**	-0.01

Note1: The distance between the EUT and the phantom bottom is 10mm.

13 SAR Measurement Variability

SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium.

The following procedures are applied to determine if repeated measurements are required.

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Table 13.1: SAR Measurement Variability for Head GSM 850 (1g)

Frequency		Side	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
MHz	Ch.						
848.8	251	Right	Touch	1.02	0.993	1.03	/

Table 13.2: SAR Measurement Variability for Head PCS 1900 (1g)

Frequency		Side	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
MHz	Ch.						
1880	661	Right	Touch	0.866	0.847	1.02	/

Table 13.3: SAR Measurement Variability for Body PCS 1900 (1g)

Frequency		Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
MHz	Ch.						
1880	661	Ground	10	0.839	0.833	1.01	/

14 Measurement Uncertainty

14.1 Measurement Uncertainty for Normal SAR Tests

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	5.5	N	1	1	1	5.5	5.5	∞
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	N	1	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	∞
10	RF ambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	∞
11	Probe positioned mech. restrictions	B	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	∞
12	Probe positioning with respect to phantom shell	B	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	∞
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
Test sample related										
14	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
15	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
16	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and set-up										
17	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
18	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞
19	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
20	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	∞
21	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521

Combined standard uncertainty	$u_c^{'} = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$					9.25	9.12	257
Expanded uncertainty (confidence interval of 95 %)	$u_e = 2u_c$					18.5	18.2	

14.2 Measurement Uncertainty for Fast SAR Tests

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	5.5	N	1	1	1	5.5	5.5	∞
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	N	1	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	∞
10	RF ambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	∞
11	Probe positioned mech. Restrictions	B	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	∞
12	Probe positioning with respect to phantom shell	B	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	∞
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
14	Fast SAR z-Approximation	B	7.0	R	$\sqrt{3}$	1	1	4.0	4.0	∞
Test sample related										
15	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
16	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
17	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and set-up										
18	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
19	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞

20	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
21	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	∞
22	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521
Combined standard uncertainty		$u_c' = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$						10.1	9.95	257
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$						20.2	19.9	

15 MAIN TEST INSTRUMENTS

Table 15.1: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	E5071C	MY46110673	February 15, 2013	One year
02	Power meter	NRVD	102083	September 11, 2013	One year
03	Power sensor	NRV-Z5	100542		
04	Signal Generator	E4438C	MY49071430	February 08, 2013	One Year
05	Amplifier	60S1G4	0331848	No Calibration Requested	
06	BTS	E5515C	MY50263375	January 30, 2013	One year
07	E-field Probe	SPEAG ES3DV3	3149	April 24, 2012	One year
08	E-field Probe	SPEAG EX3DV4	3846	September 03, 2013	One year
09	DAE	SPEAG DAE4	771	November 12, 2013	One year
10	Dipole Validation Kit	SPEAG D835V2	443	May 03, 2012	One year
11	Dipole Validation Kit	SPEAG D835V2	443	August 29, 2013	One year
12	Dipole Validation Kit	SPEAG D1900V2	541	May 09, 2012	One year
13	Dipole Validation Kit	SPEAG D1900V2	5d101	July 09, 2013	One year

END OF REPORT BODY

ANNEX A GRAPH RESULTS

850 Right Cheek High

Date: 2013-3-6
Electronics: DAE4 Sn771
Medium: Head 835 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.914 mho/m; εr = 40.598; ρ = 1000 kg/m^3
Ambient Temperature: 22.8°C Liquid Temperature: 22.3°C
Communication System: GSM; Frequency: 848.8 MHz; Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(6.26, 6.26, 6.26)

Cheek High/Area Scan (51x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.07 W/kg

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.574 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.36 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.712 W/kg
Maximum value of SAR (measured) = 1.09 W/kg

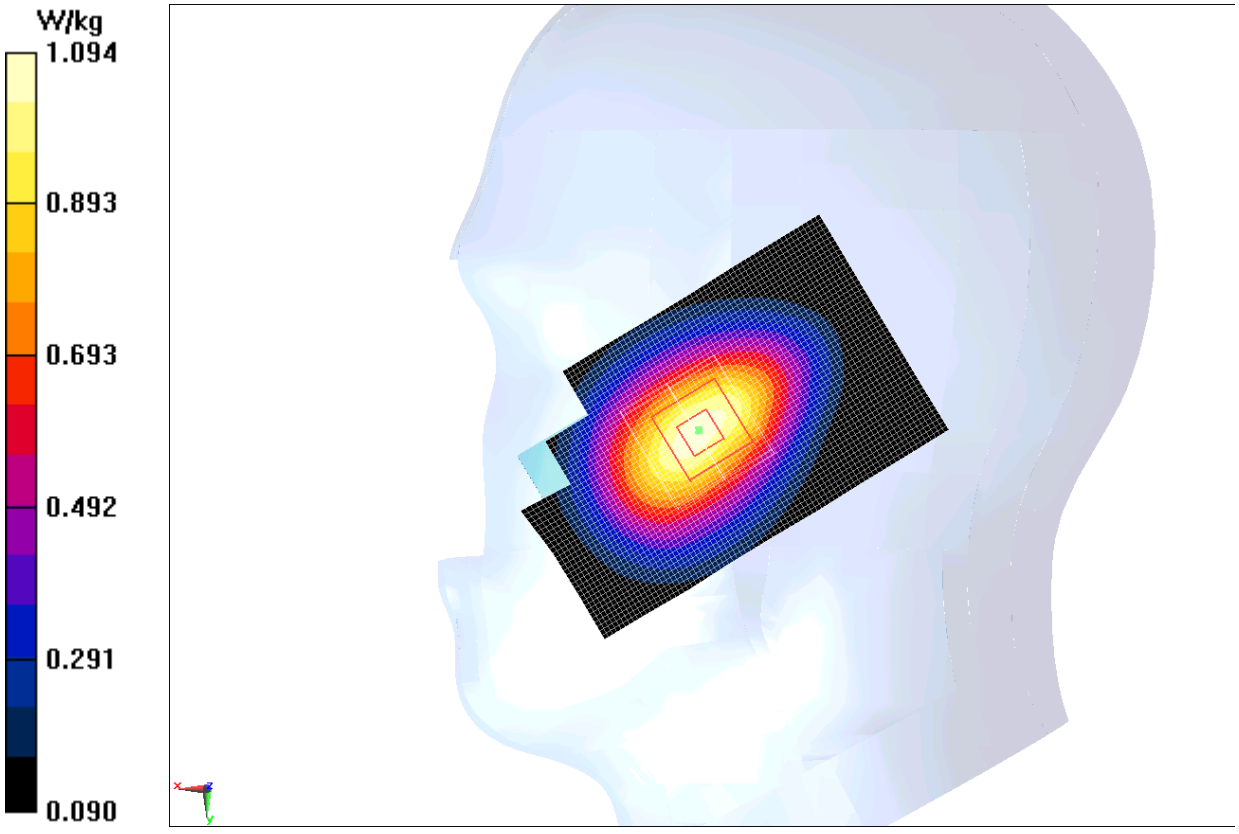


Fig. A.1 850 MHz CH251

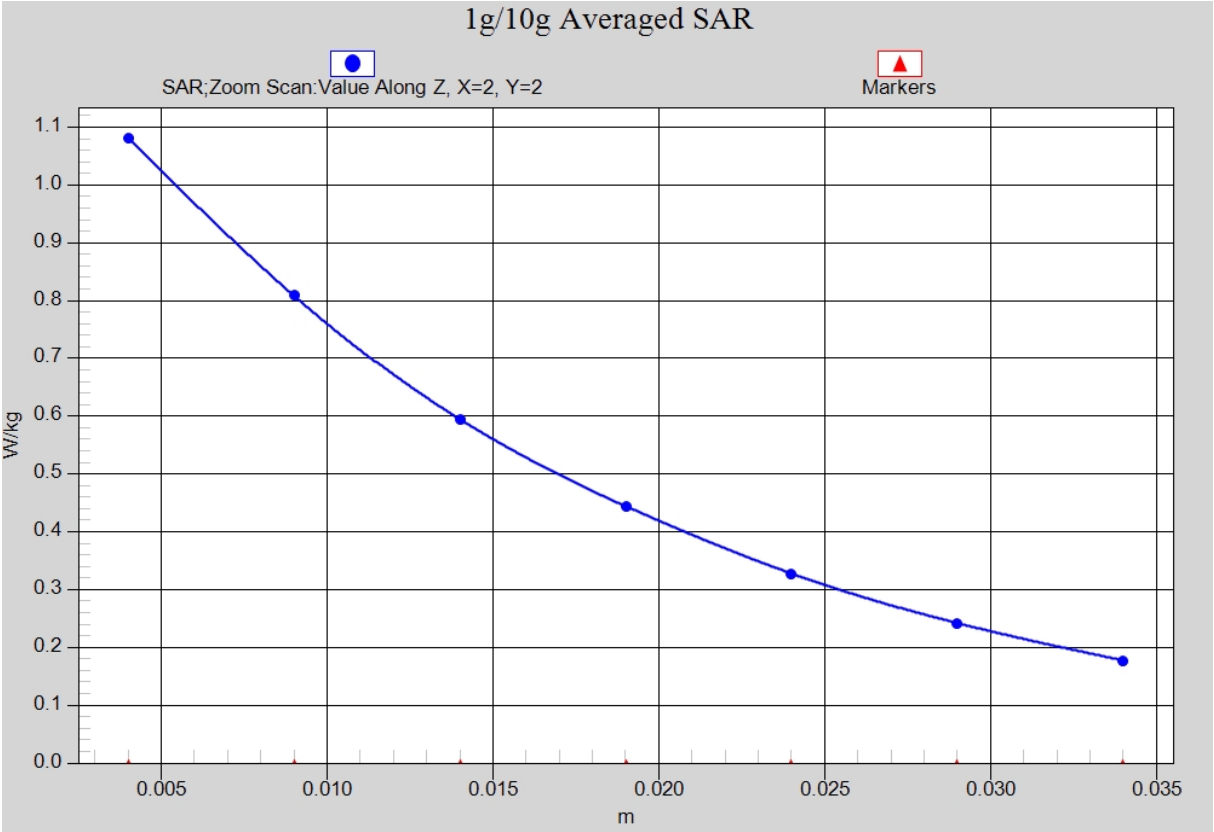


Fig. A.1-1 Z-Scan at power reference point (850 MHz CH251)

850 Body Toward Ground Middle

Date: 2013-3-6
Electronics: DAE4 Sn771
Medium: Body 835 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.992 mho/m; εr = 56.491; ρ = 1000 kg/m^3
Ambient Temperature: 22.8°C Liquid Temperature: 22.3°C
Communication System: GSM 850 Frequency: 836.6 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(6.14, 6.14, 6.14)

Toward Ground Middle/Area Scan (51x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.763 W/kg

Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.409 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.921 W/kg
SAR(1 g) = 0.721 W/kg; SAR(10 g) = 0.523 W/kg
Maximum value of SAR (measured) = 0.760 W/kg

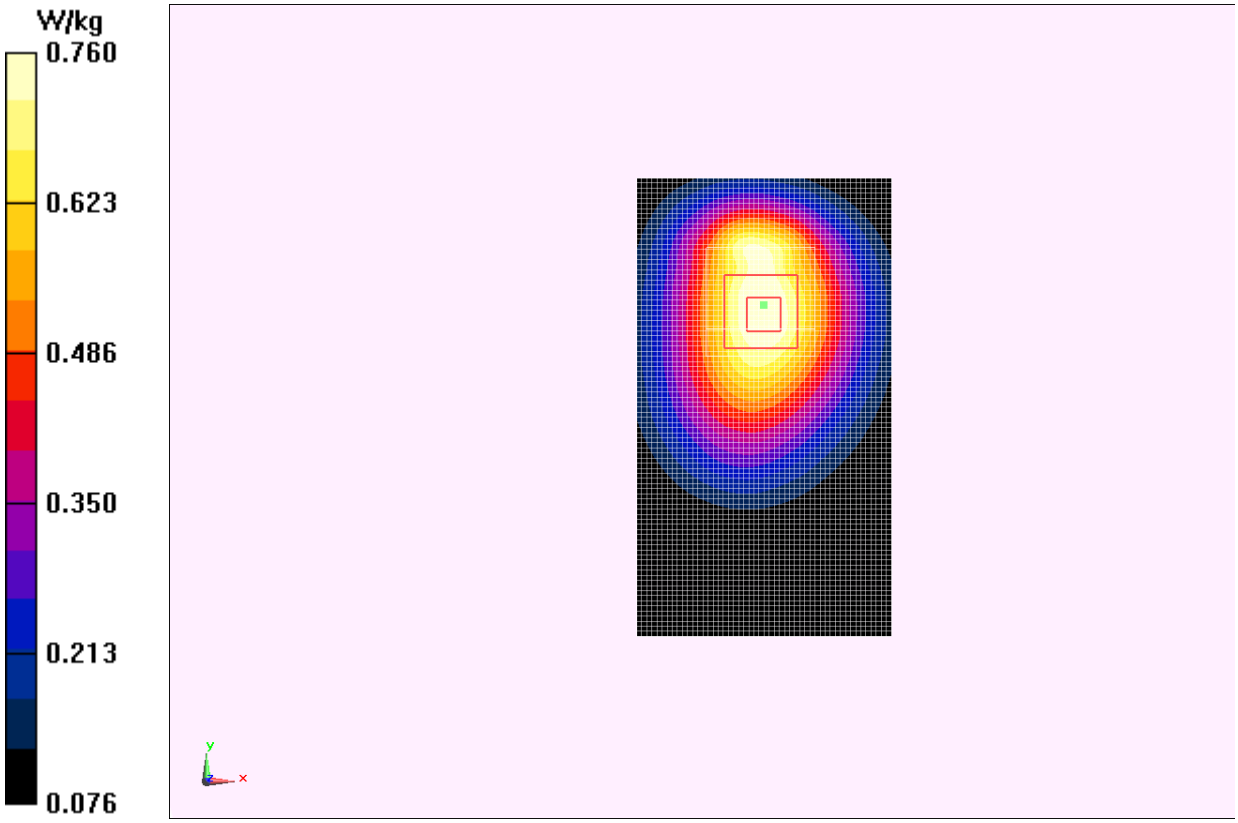


Fig. A.2 850 MHz CH190

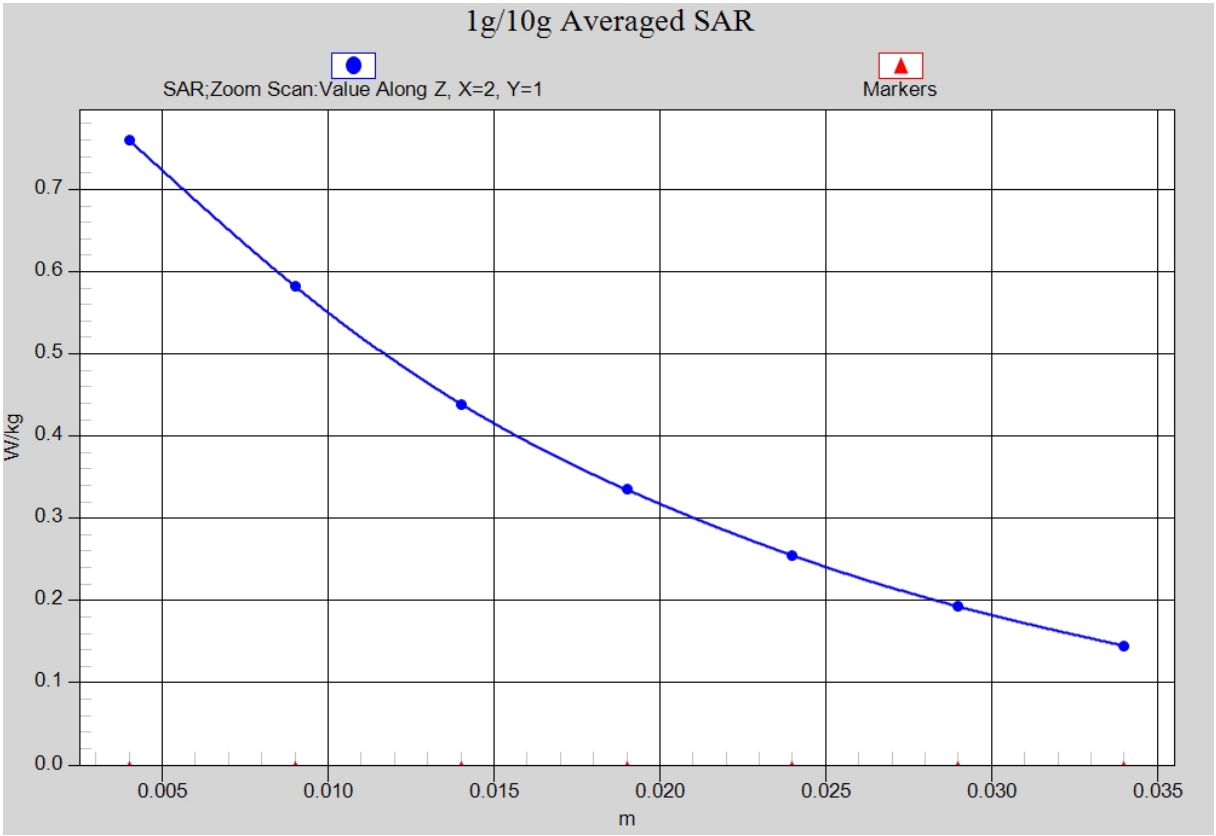


Fig. A.2-1 Z-Scan at power reference point (850 MHz CH190)

1900 Right Cheek Middle
Date: 2013-3-7
Electronics: DAE4 Sn771
Medium: Head GSM1900
Medium parameters used: f = 1880 MHz; σ = 1.397 mho/m; εr = 39.488; ρ = 1000 kg/m^3
Ambient Temperature: 22.6°C Liquid Temperature: 22.2°C
Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(5.19, 5.19, 5.19)

Cheek Middle/Area Scan (51x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.988 W/kg

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.962 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.532 W/kg
SAR(1 g) = 0.866 W/kg; SAR(10 g) = 0.478 W/kg
Maximum value of SAR (measured) = 0.975 W/kg

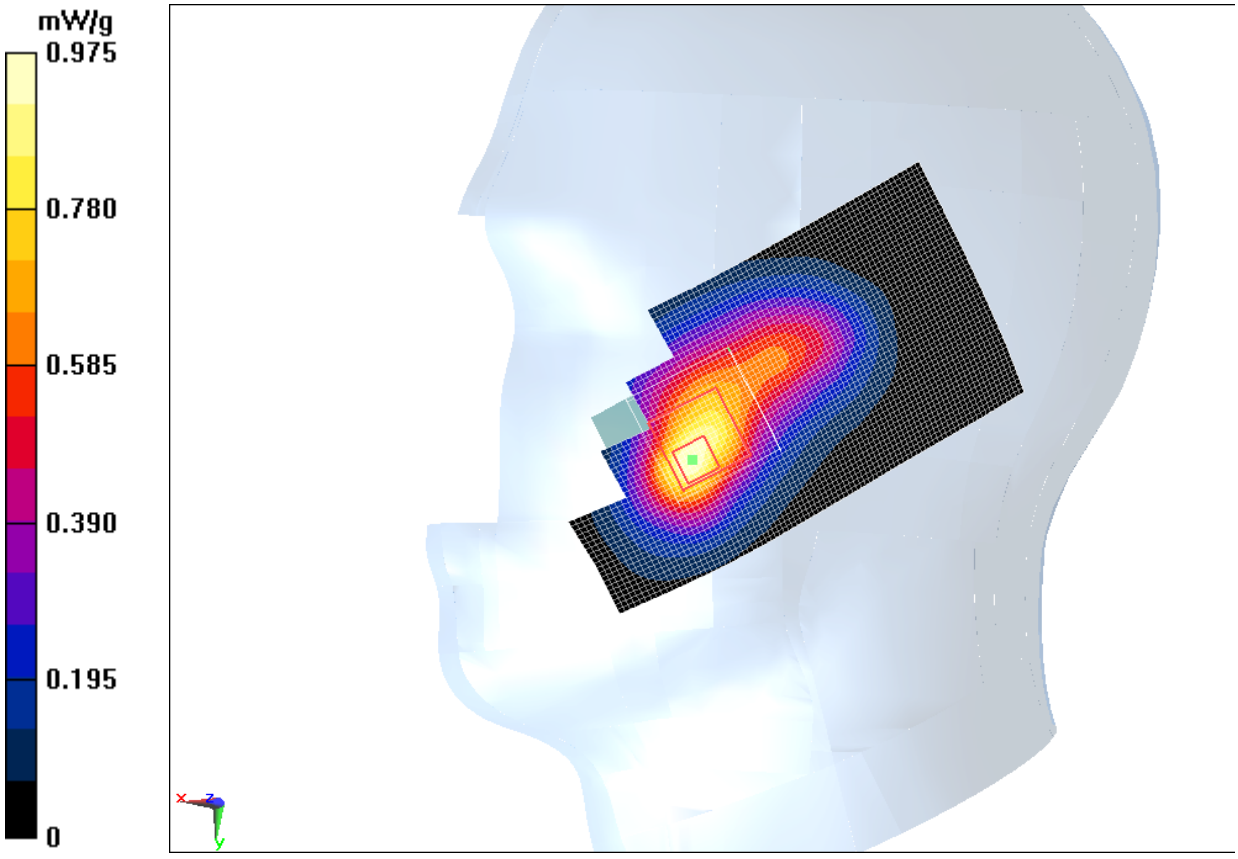


Fig. A.3 1900 MHz CH661

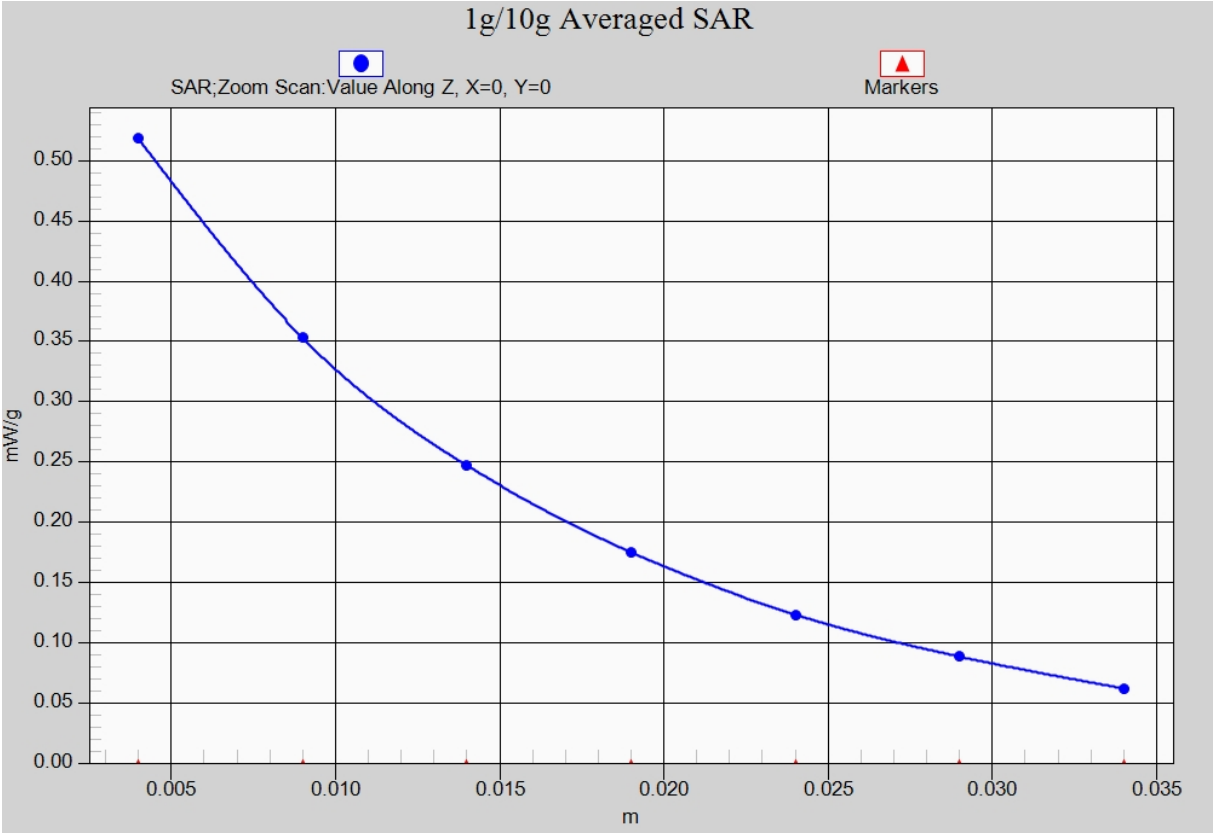


Fig. A.3-1 Z-Scan at power reference point (1900 MHz CH661)

1900 Body Toward Ground Middle

Date: 2013-3-7
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.515 mho/m; εr = 52.897; ρ = 1000 kg/m^3
Ambient Temperature: 22.6°C Liquid Temperature: 22.2°C
Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(4.64, 4.64, 4.64)

Toward Ground Middle/Area Scan (41x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.890 W/kg

Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.496 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.366 W/kg
SAR(1 g) = 0.839 W/kg; SAR(10 g) = 0.485 W/kg
Maximum value of SAR (measured) = 0.912 W/kg

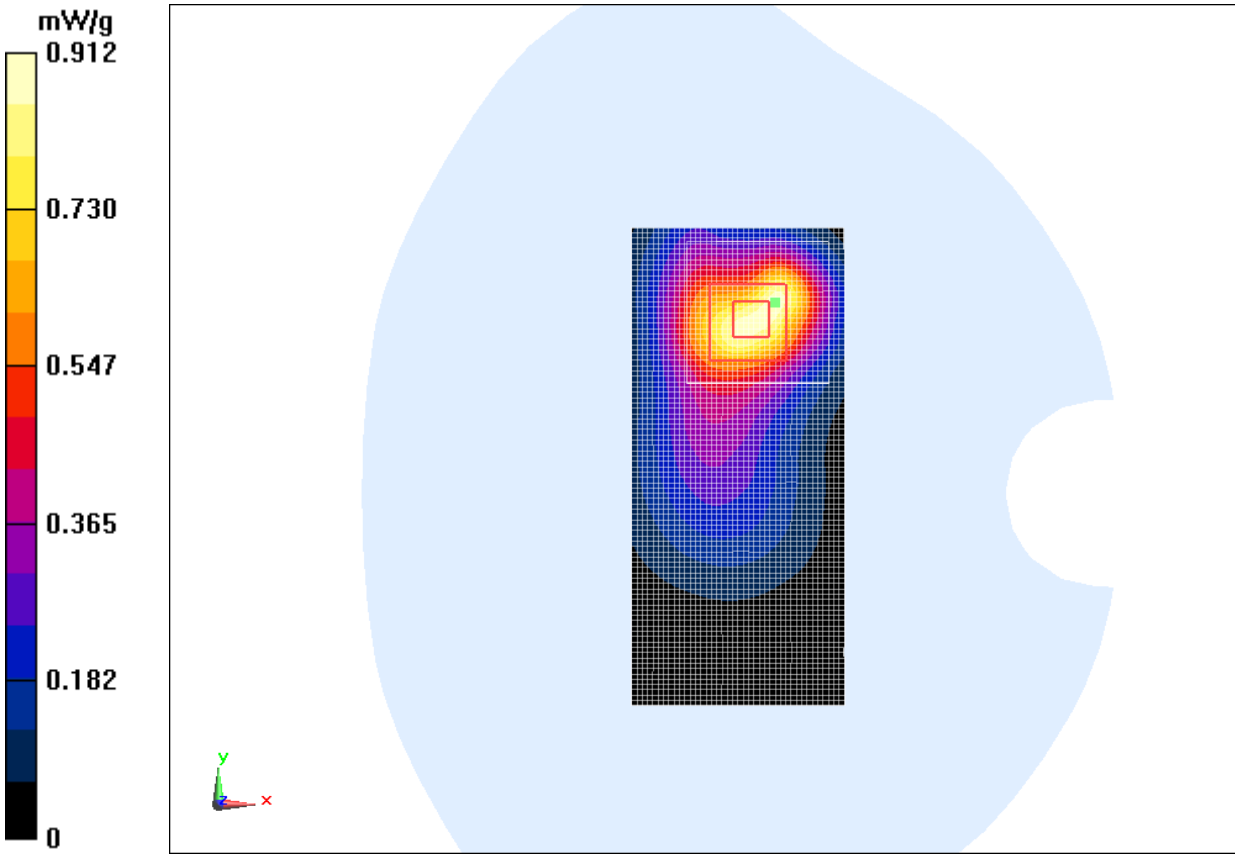


Fig. A.4 1900 MHz CH661

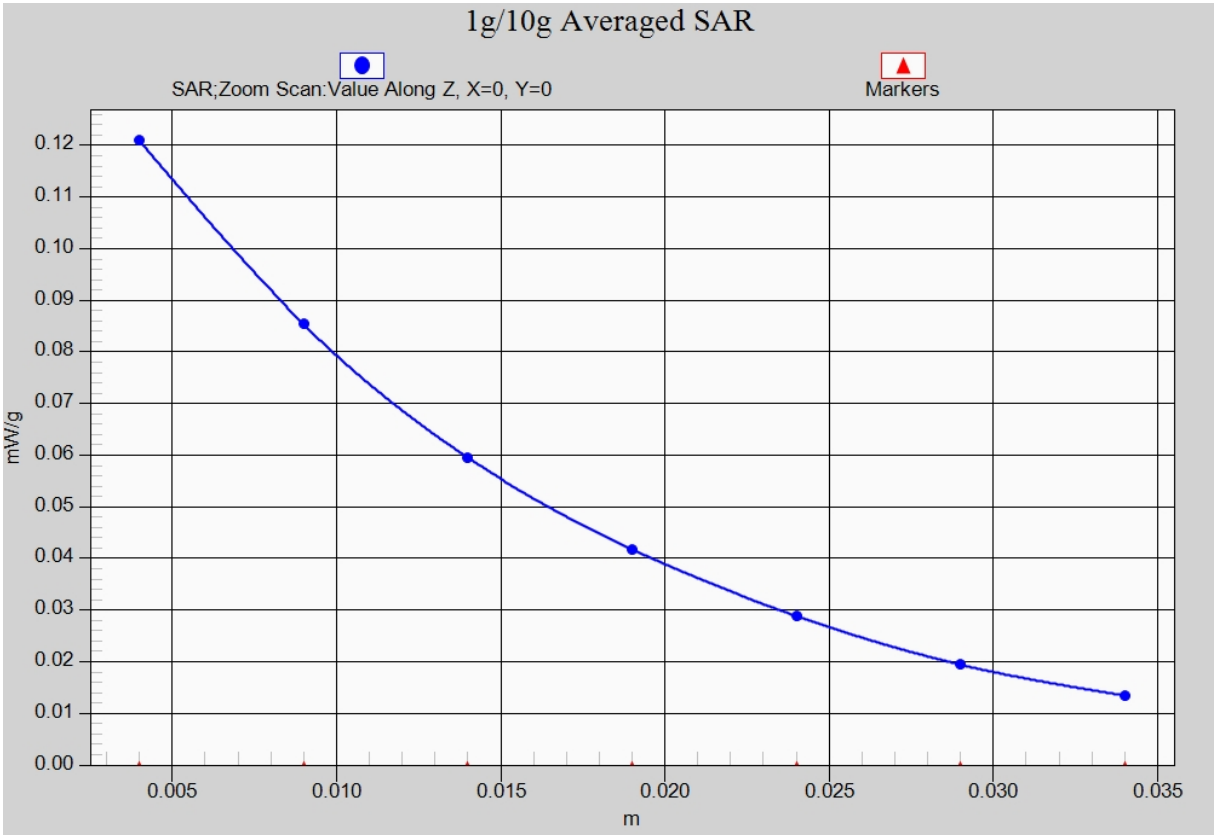


Fig. A.4-1 Z-Scan at power reference point (1900 MHz CH661)

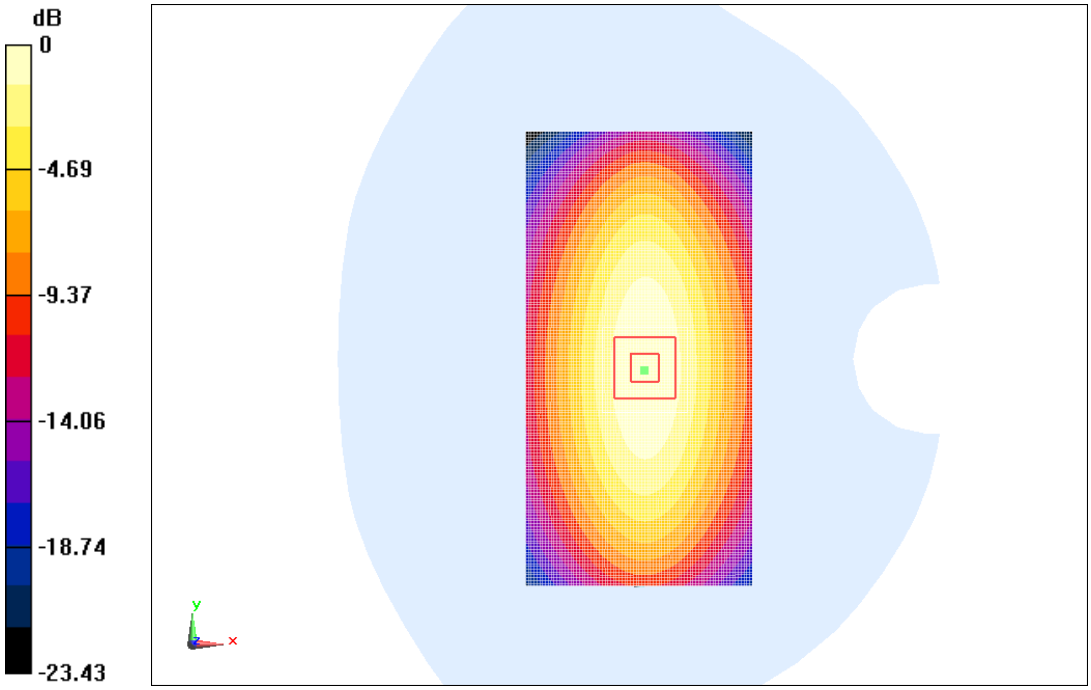
ANNEX B System Verification Results

835MHz

Date: 2013-3-6
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 835 MHz; σ = 0.891 mho/m; ε_r = 40.78; ρ = 1000 kg/m^3
Ambient Temperature: 22.8^{o}C Liquid Temperature: 22.3^{o}C
Communication System: CW Frequency: 835 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.26, 6.26, 6.26)

System Validation /Area Scan (81x161x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 52.613 V/m; Power Drift = 0.101 dB
Fast SAR: SAR(1 g) = 2.34 W/kg; SAR(10 g) = 1.50 W/kg
Maximum value of SAR (interpolated) = 2.55 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.613 V/m; Power Drift = 0.101 dB
Peak SAR (extrapolated) = 3.514 W/kg
SAR(1 g) = 2.37 W/kg; SAR(10 g) = 1.53 W/kg
Maximum value of SAR (measured) = 2.56 W/kg



0 dB = 2.55 W/kg = 8.13 dB W/kg

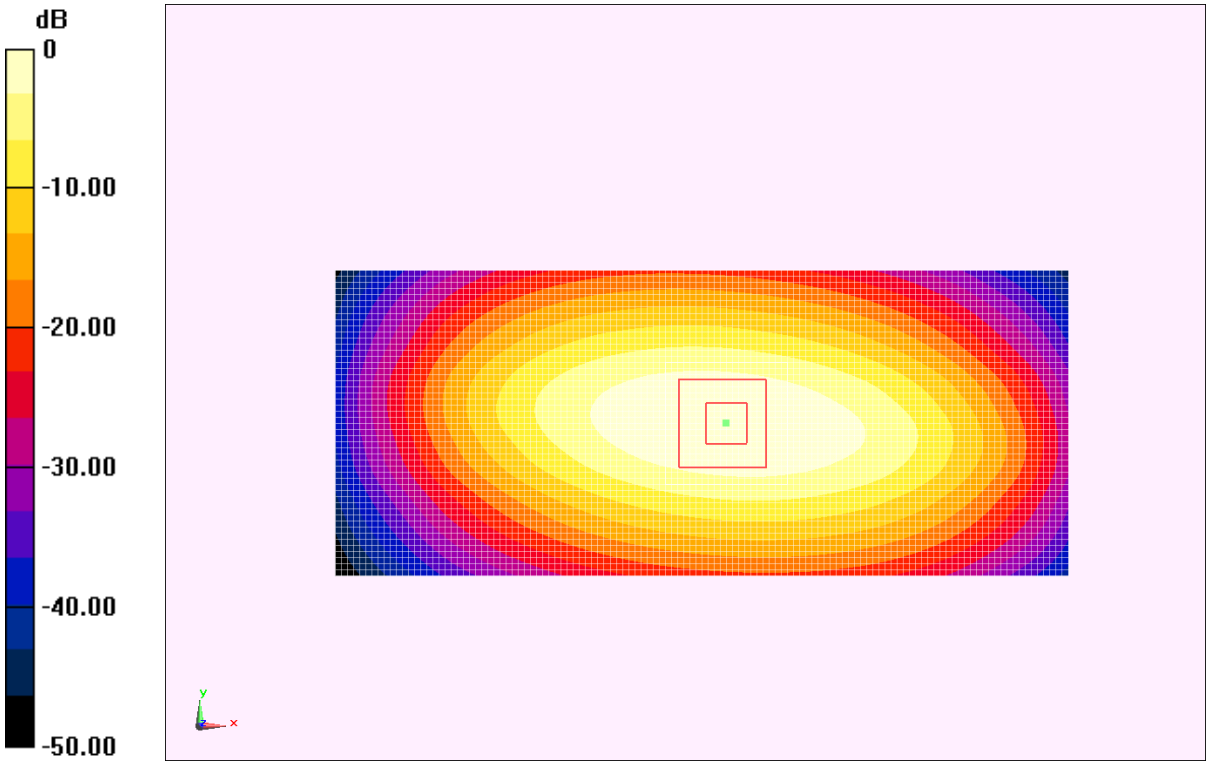
Fig.B.1 validation 835MHz 250mW

835MHz

Date: 2013-3-6
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 835 MHz; σ = 0.985 mho/m; ε_r = 56.47; ρ = 1000 kg/m^3
Ambient Temperature: 22.8^{o}C Liquid Temperature: 22.3^{o}C
Communication System: CW Frequency: 835 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.14, 6.14, 6.14)

System Validation /Area Scan (81x171x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 46.775 V/m; Power Drift = 0.09 dB
Fast SAR: SAR(1 g) = 2.38 W/kg; SAR(10 g) = 1.56 W/kg
Maximum value of SAR (interpolated) = 2.61 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 46.775 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 3.603 W/kg
SAR(1 g) = 2.41 W/kg; SAR(10 g) = 1.59 W/kg
Maximum value of SAR (measured) = 2.61 W/kg



0 dB = 2.61 W/kg = 8.33 dB W/kg

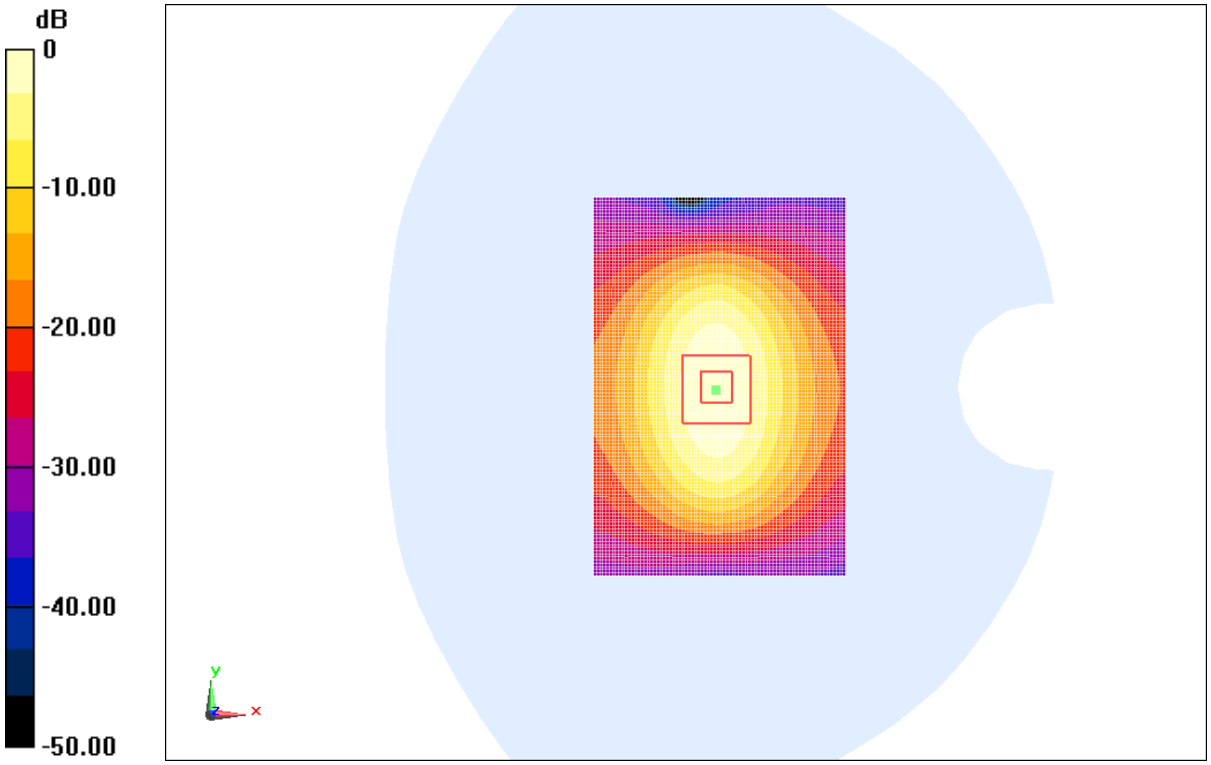
Fig.B.2 validation 835MHz 250mW

1900MHz

Date: 2013-3-7
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.414 mho/m; ε_r = 39.41; ρ = 1000 kg/m^3
Ambient Temperature: 22.6°C Liquid Temperature: 22.2°C
Communication System: CW Frequency: 1900 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(5.19, 5.19, 5.19)

System Validation/Area Scan (81x121x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 94.017 V/m; Power Drift = -0.075 dB
Fast SAR: SAR(1 g) = 9.75 W/kg; SAR(10 g) = 5.14 W/kg
Maximum value of SAR (interpolated) = 11.0 W/kg

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 94.017 V/m; Power Drift = -0.075 dB
Peak SAR (extrapolated) = 17.963 W/kg
SAR(1 g) = 9.64 W/kg; SAR(10 g) = 5.06 W/kg
Maximum value of SAR (measured) = 10.9 W/kg



0 dB = 11.0 W/kg = 20.83 dB W/kg

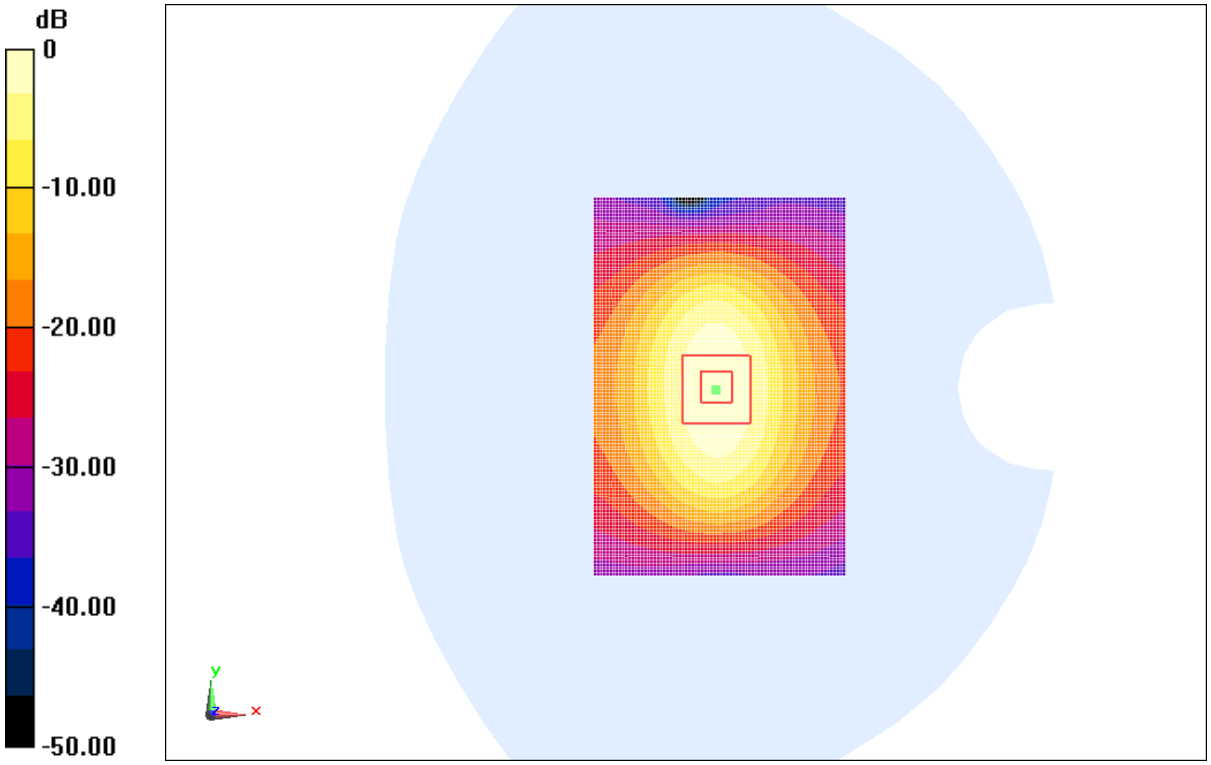
Fig.B.3 validation 1900MHz 250mW

1900MHz

Date: 2013-3-7
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.543 mho/m; ε_r = 52.88; ρ = 1000 kg/m^3
Ambient Temperature: 22.6°C Liquid Temperature: 22.2°C
Communication System: CW Frequency: 1900 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.64, 4.64, 4.64)

System Validation/Area Scan (81x121x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 88.248 V/m; Power Drift = 0.04 dB
Fast SAR: SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.37 W/kg
Maximum value of SAR (interpolated) = 11.6 W/kg

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 88.248 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 17.691 W/kg
SAR(1 g) = 10.2 W/kg; SAR(10 g) = 5.45 W/kg
Maximum value of SAR (measured) = 11.7 W/kg



0 dB = 11.6 W/kg = 21.29 dB W/kg

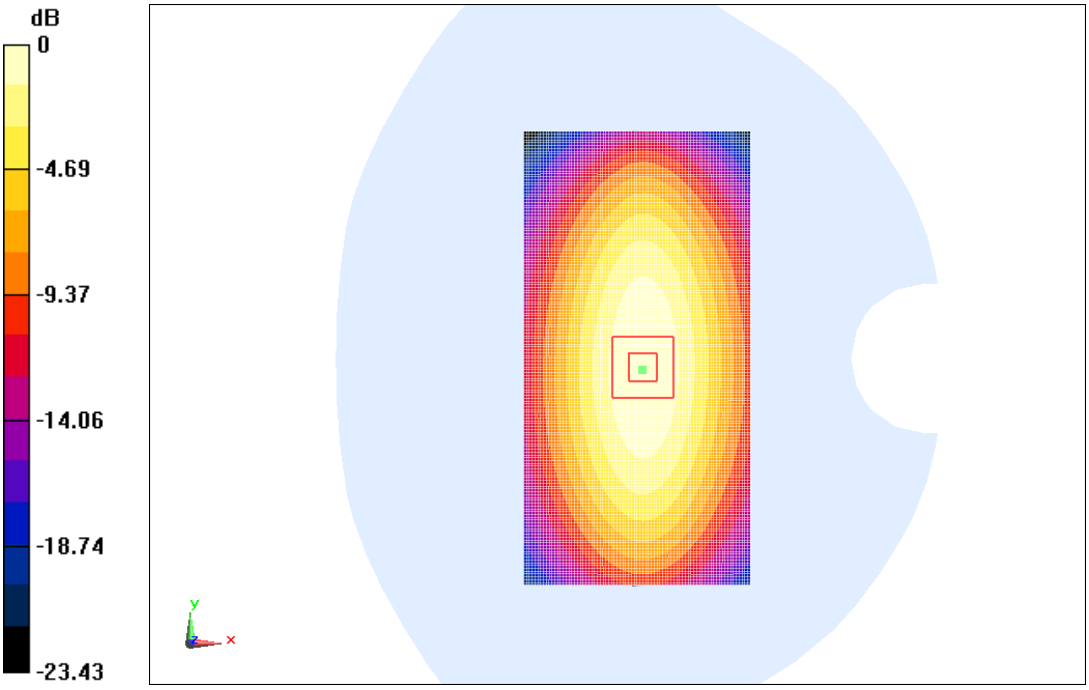
Fig.B.4 validation 1900MHz 250mW

835MHz

Date: 2014-1-3
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 835 MHz; σ = 0.913 mho/m; ε_r = 42.46; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 21.7°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): Measurement grid: dx=10mm, dy=10mm
Reference Value = 53.366 V/m; Power Drift = -0.15 dB
Fast SAR: SAR(1 g) = 2.43 W/kg; SAR(10 g) = 1.57 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 = 53.366 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 3.581 W/kg
SAR(1 g) = 2.45 W/kg; SAR(10 g) = 1.59 W/kg
Maximum value of SAR (measured) = 2.64 W/kg



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

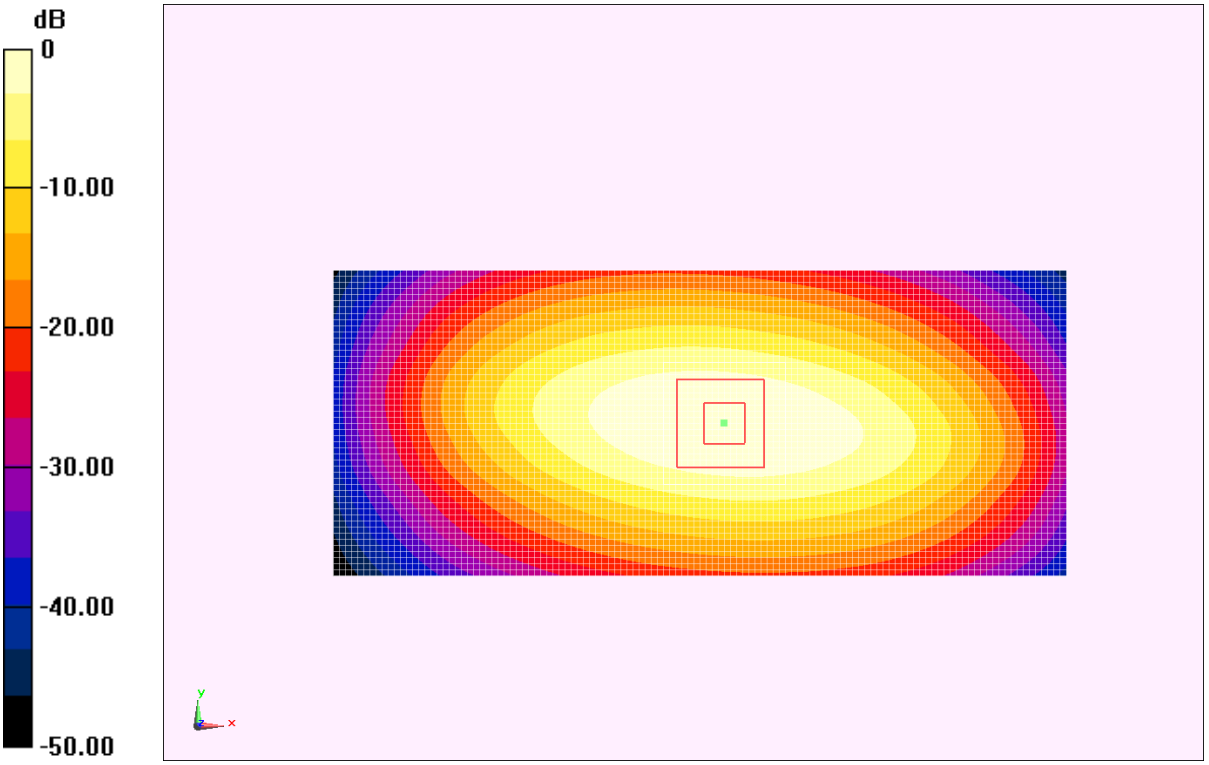
Fig.B.5 validation 835MHz 250mW

835MHz

Date: 2014-1-3
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 835 MHz; σ = 0.979 mho/m; ε_r = 55.42; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 21.7°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): Measurement grid: dx=10mm, dy=10mm
Reference Value = 46.498 V/m; Power Drift = -0.11 dB
Fast SAR: SAR(1 g) = 2.42 W/kg; SAR(10 g) = 1.61 W/kg
Maximum value of SAR (interpolated) = 2.60 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 46.498 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 3.59 W/kg
SAR(1 g) = 2.39 W/kg; SAR(10 g) = 1.58 W/kg
Maximum value of SAR (measured) = 2.58 W/kg



0 dB = 2.60 W/kg = 8.30 dB W/kg

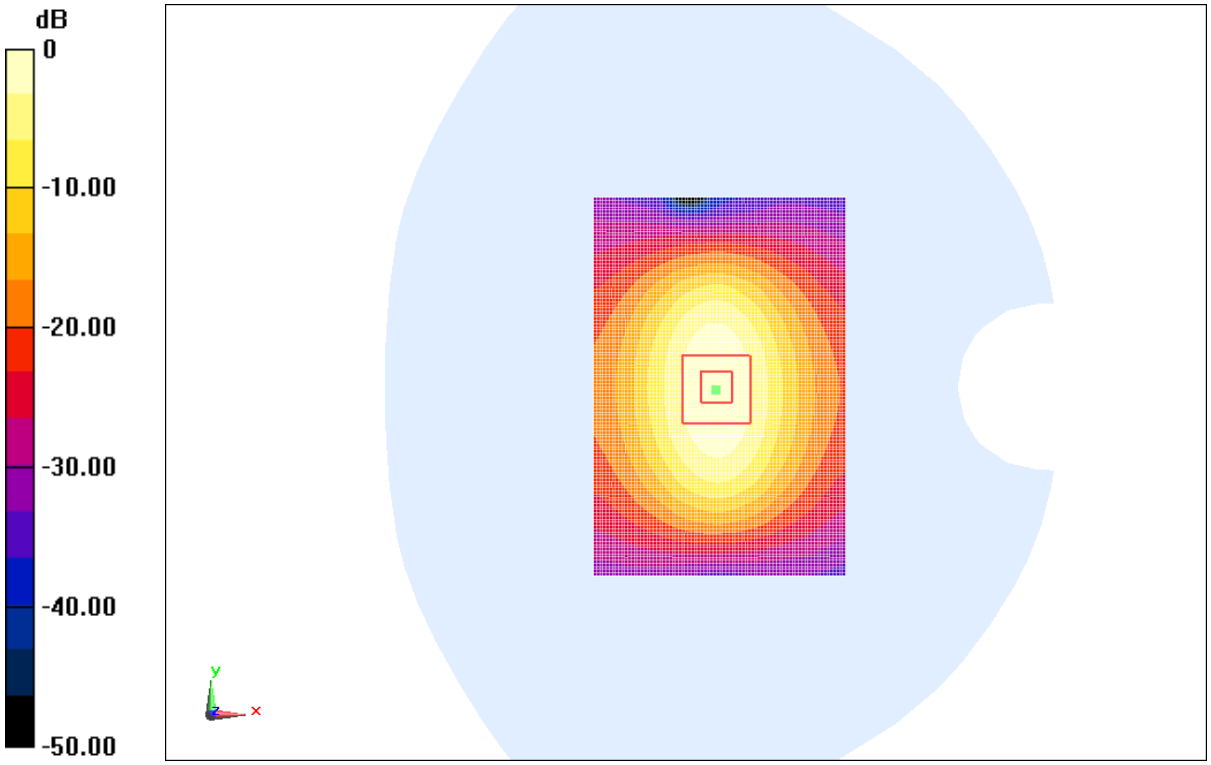
Fig.B.6 validation 835MHz 250mW

1900MHz

Date: 2014-1-2
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.412 mho/m; ε_r = 39.27; 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 = 96.387 V/m; Power Drift = -0.12 dB
Fast SAR: SAR(1 g) = 9.86 W/kg; SAR(10 g) = 5.26 W/kg
Maximum value of SAR (interpolated) = 11.2 W/kg

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.387 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 18.23 W/kg
SAR(1 g) = 9.79 W/kg; SAR(10 g) = 5.20 W/kg
Maximum value of SAR (measured) = 11.1 W/kg



0 dB = 11.2 W/kg = 20.98 dB W/kg

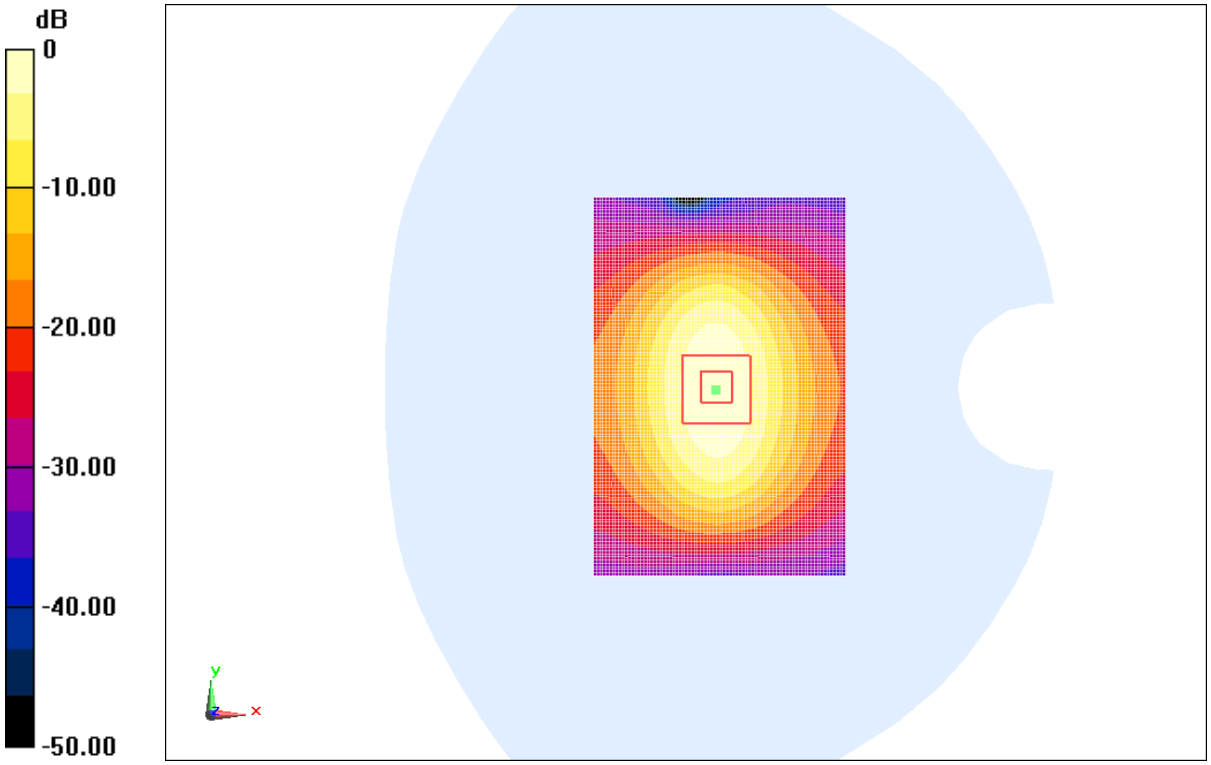
Fig.B.7 validation 1900MHz 250mW

1900MHz

Date: 2014-1-2
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.526 mho/m; ε_r = 53.01; 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): Measurement grid: dx=10mm, dy=10mm
Reference Value = 84.152 V/m; Power Drift = -0.07 dB
Fast SAR: SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.33 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 = 84.152 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 16.67 W/kg
SAR(1 g) = 10.2 W/kg; SAR(10 g) = 5.40 W/kg
Maximum value of SAR (measured) = 11.6 W/kg



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

Fig.B.8 validation 1900MHz 250mW

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.

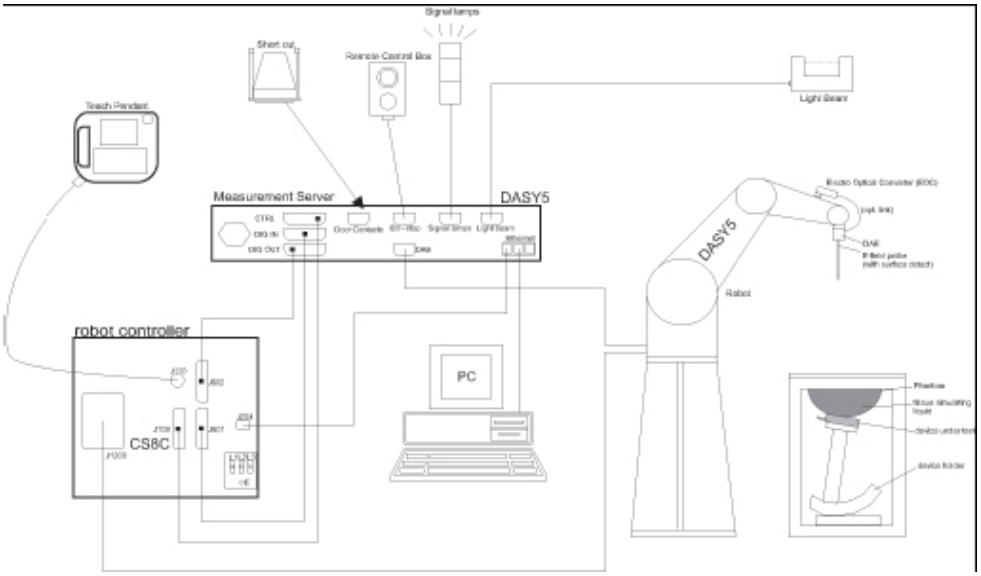
Table B.1 Comparison between area scan and zoom scan for system verification

Date	Band	Position	Area scan (1g)	Zoom scan (1g)	Drift (%)
2013-03-06	835	Head	2.34	2.37	-1.27
	835	Body	2.38	2.41	-1.24
2013-03-07	1900	Head	9.75	9.64	1.14
	1900	Body	10.1	10.2	-0.98
2014-01-03	835	Head	2.43	2.45	-0.82
	835	Body	2.42	2.39	1.26
2014-01-02	1900	Head	9.86	9.79	0.72
	1900	Body	10.1	10.2	-0.98

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.