850 Body Towards Ground Middle with GPRS

Date/Time: 2011-4-15 13:35:54

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated): f = 836.6 MHz; = 0.97 mho/m; r = 54.4; = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}C

Communication System: GSM 850 GPRS Frequency: 836.6 MHz Duty Cycle: 1:2

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) = 0.903 mW/g

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

Reference Value = 25.9 V/m; Power Drift = 0.001 dB

Peak SAR (extrapolated) = 1.14 W/kg

SAR(1 g) = 0.856 mW/g; SAR(10 g) = 0.610 mW/g

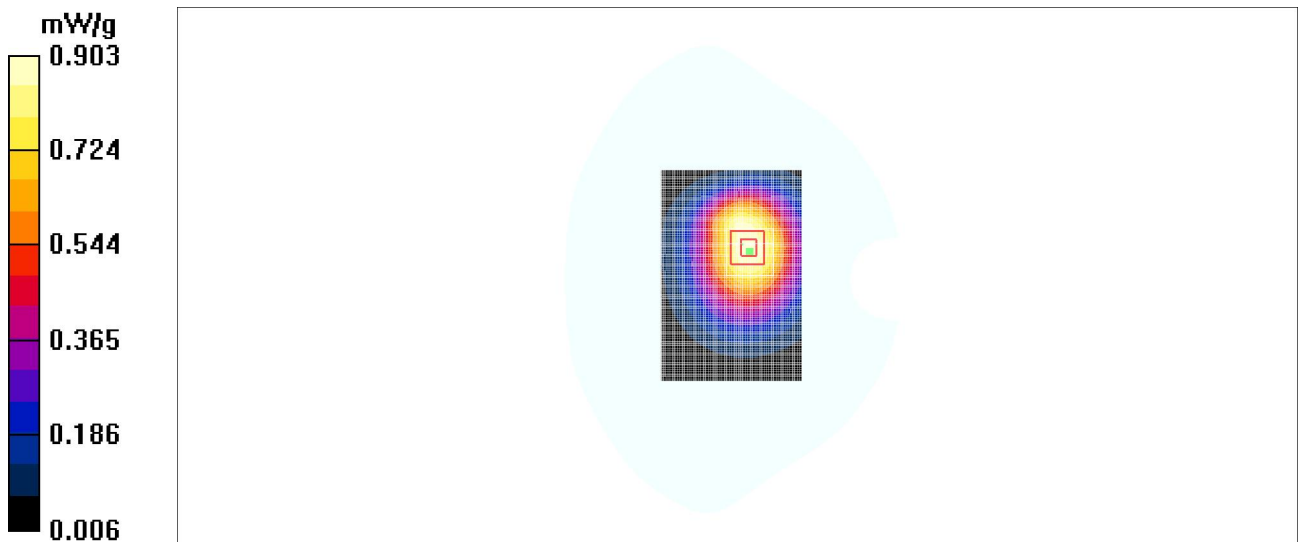Maximum value of SAR (measured) = 0.891 mW/g

Fig. 26   850 MHz CH190

850 Body Towards Ground Low with GPRS

Date/Time: 2011-4-15 13:52:17

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used: f = 825 MHz; = 0.953 mho/m; r = 54.5; = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}C

Communication System: GSM 850 GPRS Frequency: 824.2 MHz Duty Cycle: 1:2

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

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

Maximum value of SAR (interpolated) = 0.945 mW/g

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

Reference Value = 26.1 V/m; Power Drift = -0.008 dB

Peak SAR (extrapolated) = 1.17 W/kg

SAR(1 g) = 0.887 mW/g; SAR(10 g) = 0.633 mW/g
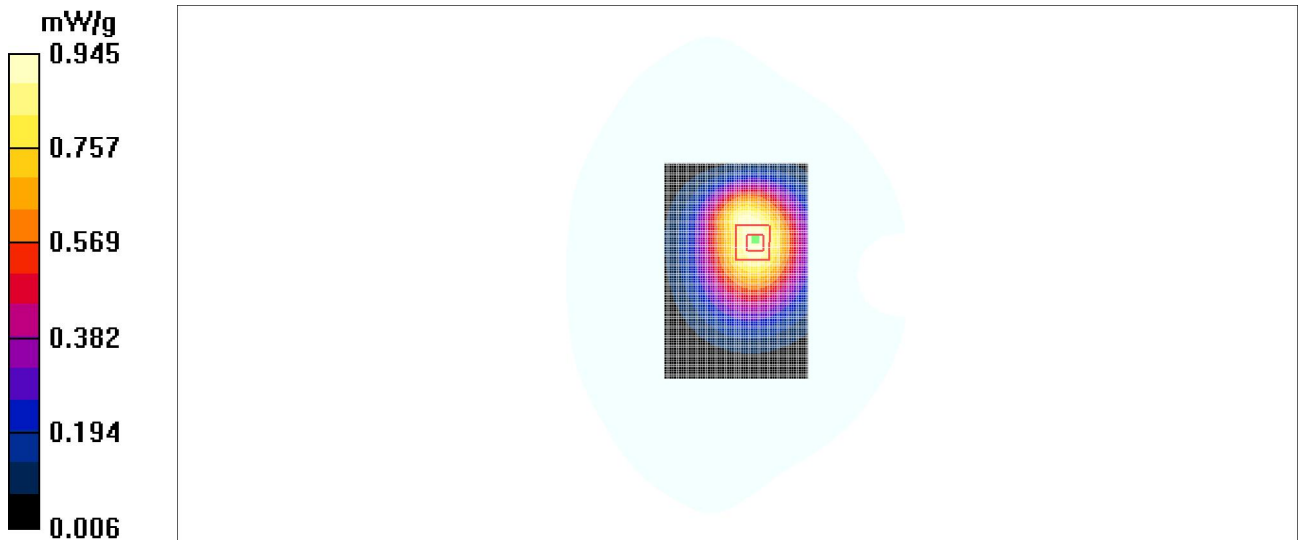
Maximum value of SAR (measured) = 0.917 mW/g
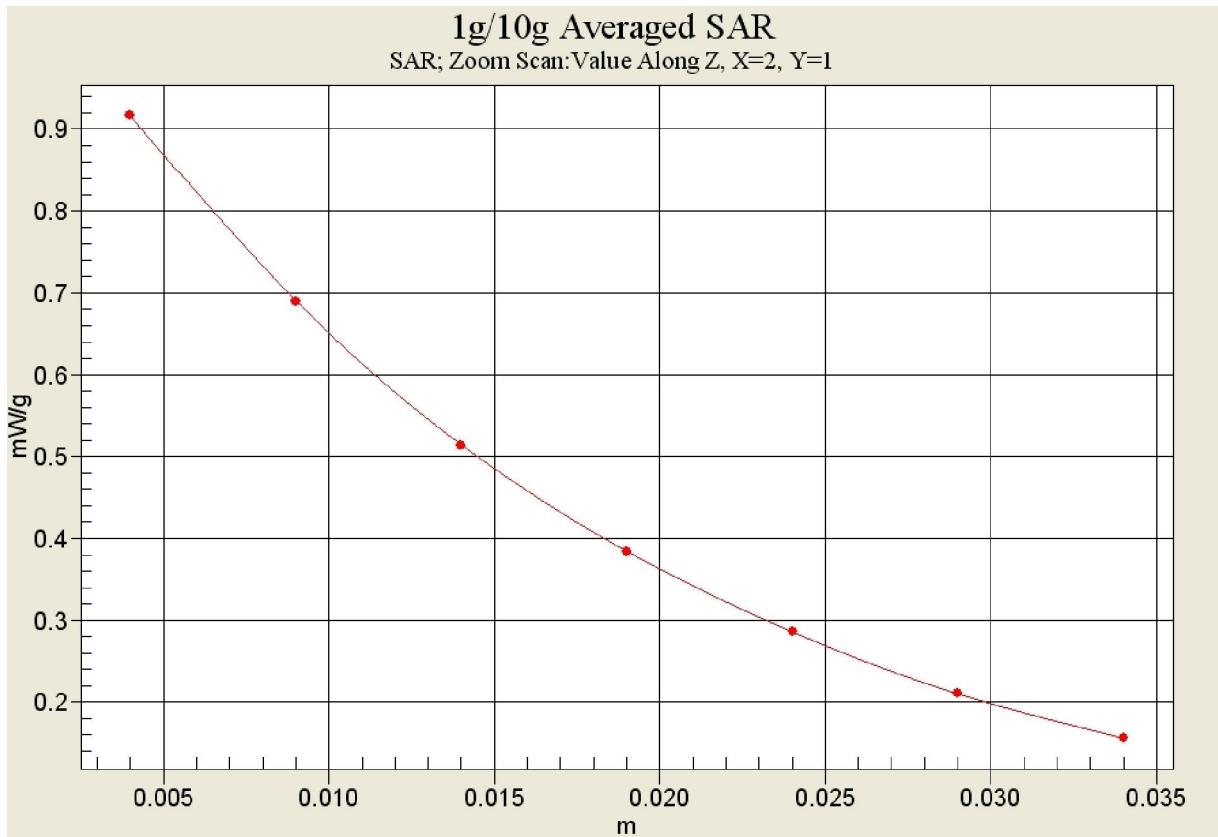

Fig. 27   850 MHz CH128

Fig. 27-1 Z-Scan at power reference point (850 MHz CH128)

850 Body Towards Phantom High with GPRS

Date/Time: 2011-4-15 14:10:48

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated): f = 848.8 MHz; = 0.98 mho/m; r = 54.3; = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}C

Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:2

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

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

Maximum value of SAR (interpolated) = 0.722 mW/g

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

Reference Value = 25.8 V/m; Power Drift = -0.135 dB

Peak SAR (extrapolated) = 0.866 W/kg

SAR(1 g) = 0.676 mW/g; SAR(10 g) = 0.494 mW/g
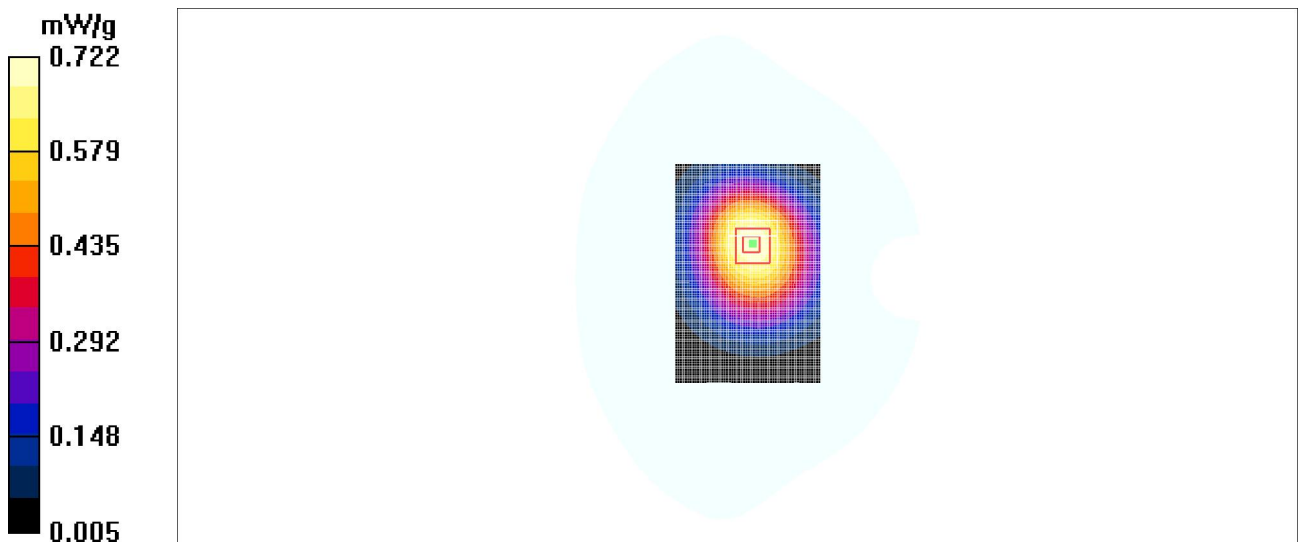
Maximum value of SAR (measured) = 0.701 mW/g

Fig. 28   850 MHz CH251

850 Body Towards Phantom Middle with GPRS

Date/Time: 2011-4-15 14:28:13

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated): f = 836.6 MHz; = 0.97 mho/m; r = 54.4; = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}C

Communication System: GSM 850 GPRS Frequency: 836.6 MHz Duty Cycle: 1:2

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

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

Maximum value of SAR (interpolated) = 0.710 mW/g

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

Reference Value = 24.0 V/m; Power Drift = -0.023 dB

Peak SAR (extrapolated) = 0.854 W/kg

SAR(1 g) = 0.669 mW/g; SAR(10 g) = 0.487 mW/g
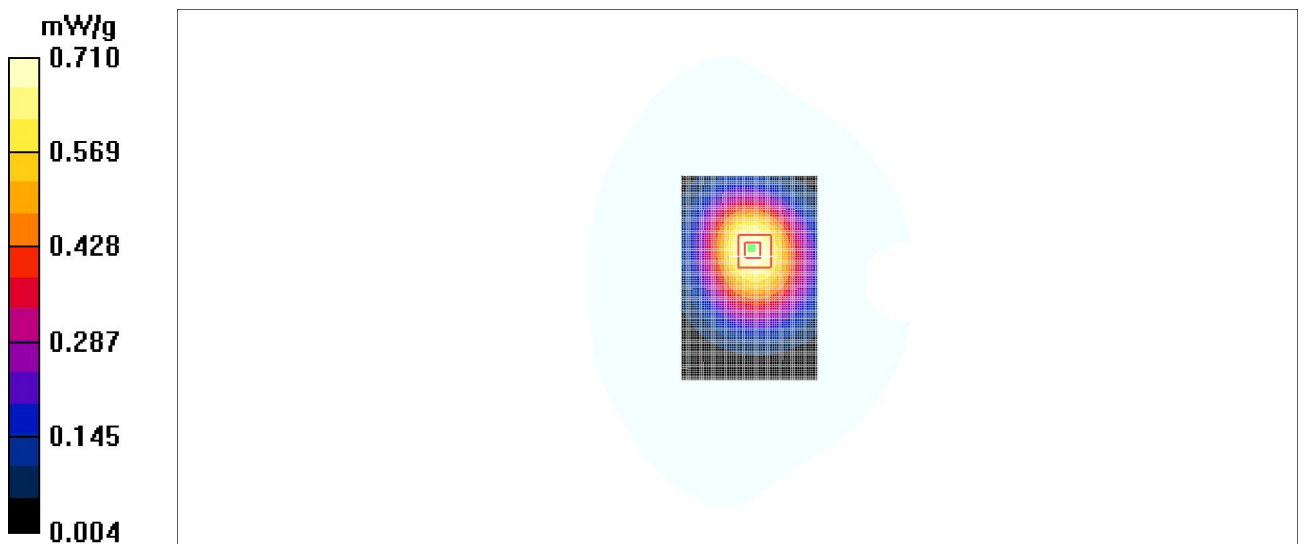
Maximum value of SAR (measured) = 0.689 mW/g

Fig. 29   850 MHz CH190

850 Body Towards Phantom Low with GPRS

Date/Time: 2011-4-15 14:46:51

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used: f = 825 MHz; = 0.953 mho/m; r = 54.5; = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}C

Communication System: GSM 850 GPRS Frequency: 824.2 MHz Duty Cycle: 1:2

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

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

Maximum value of SAR (interpolated) = 0.733 mW/g

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

Reference Value = 24.4 V/m; Power Drift = 0.001 dB

Peak SAR (extrapolated) = 0.887 W/kg

SAR(1 g) = 0.693 mW/g; SAR(10 g) = 0.508 mW/g

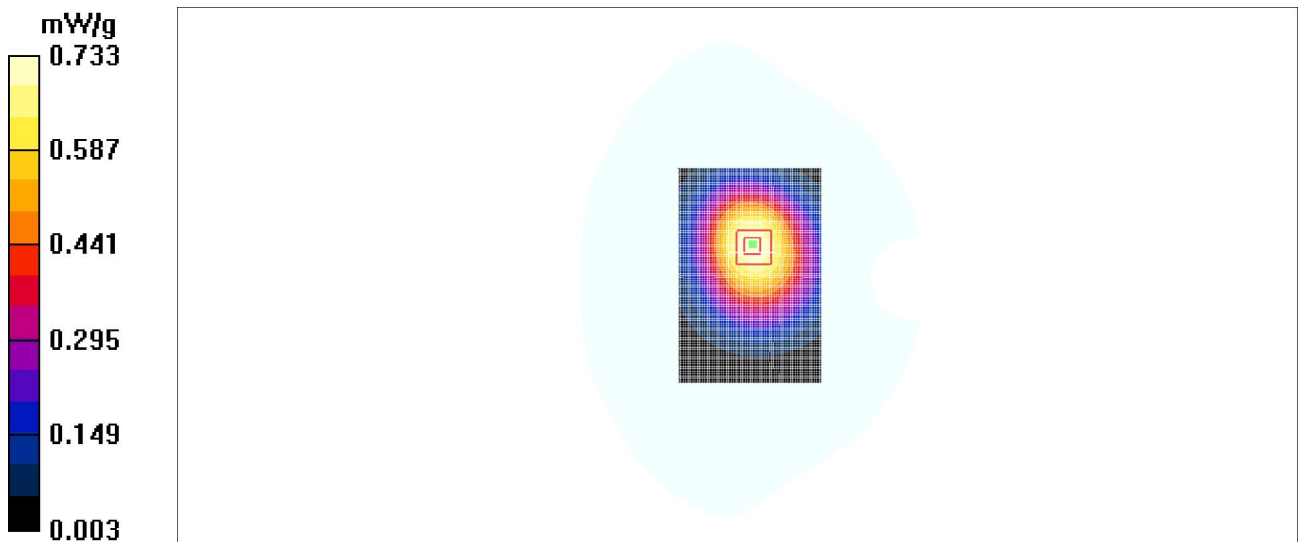Maximum value of SAR (measured) = 0.712 mW/g

Fig. 30   850 MHz CH128

850 Body Towards Ground Low with Headset_CCB31C0A10C0

Date/Time: 2011-4-15 15:07:12

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used: f = 825 MHz; = 0.953 mho/m; r = 54.5; = 1000 kg/m^3

Ambient Temperature:23.0^{o}C　　　Liquid Temperature: 22.5^{o}C

Communication System: GSM 850 GPRS Frequency: 824.2 MHz Duty Cycle: 1:8.3

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

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

Maximum value of SAR (interpolated) = 0.662 mW/g

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

Reference Value = 22.4 V/m; Power Drift = 0.017 dB

Peak SAR (extrapolated) = 0.828 W/kg

SAR(1 g) = 0.628 mW/g; SAR(10 g) = 0.448 mW/g

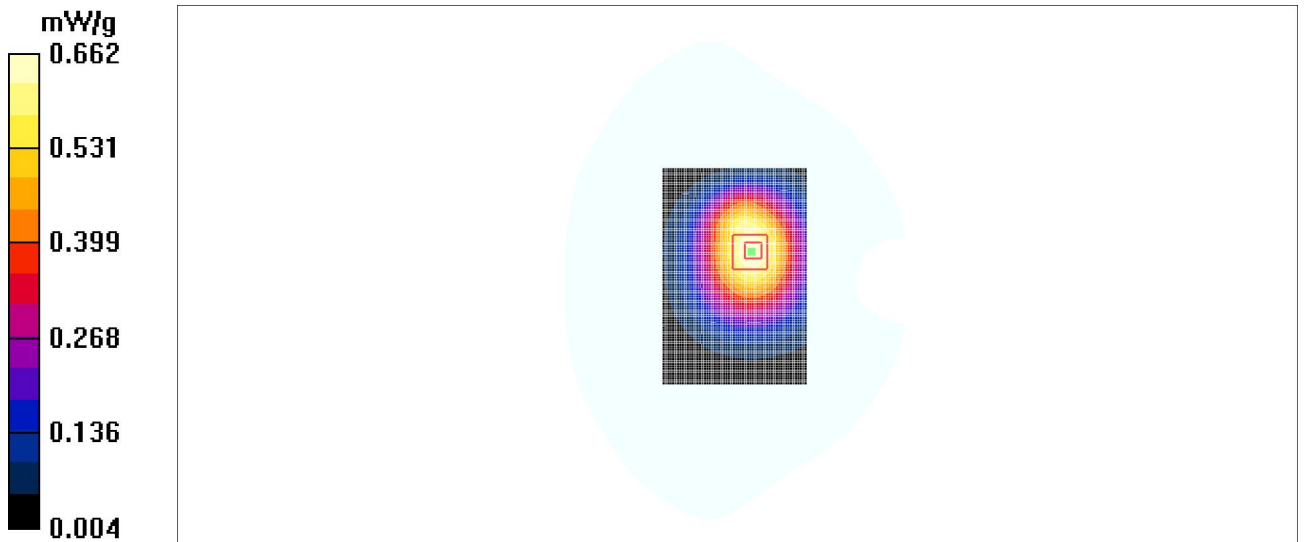Maximum value of SAR (measured) = 0.650 mW/g

Fig. 31　850 MHz CH128

1900 Body Towards Ground High with GPRS

Date/Time: 2011-4-16 13:41:26

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used: f = 1910 MHz; = 1.52 mho/m; r = 52.1;   = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}C

Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:2

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) = 0.612 mW/g

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

Reference Value = 12.9 V/m; Power Drift = -0.006 dB

Peak SAR (extrapolated) = 0.966 W/kg

SAR(1 g) = 0.567 mW/g; SAR(10 g) = 0.334 mW/g

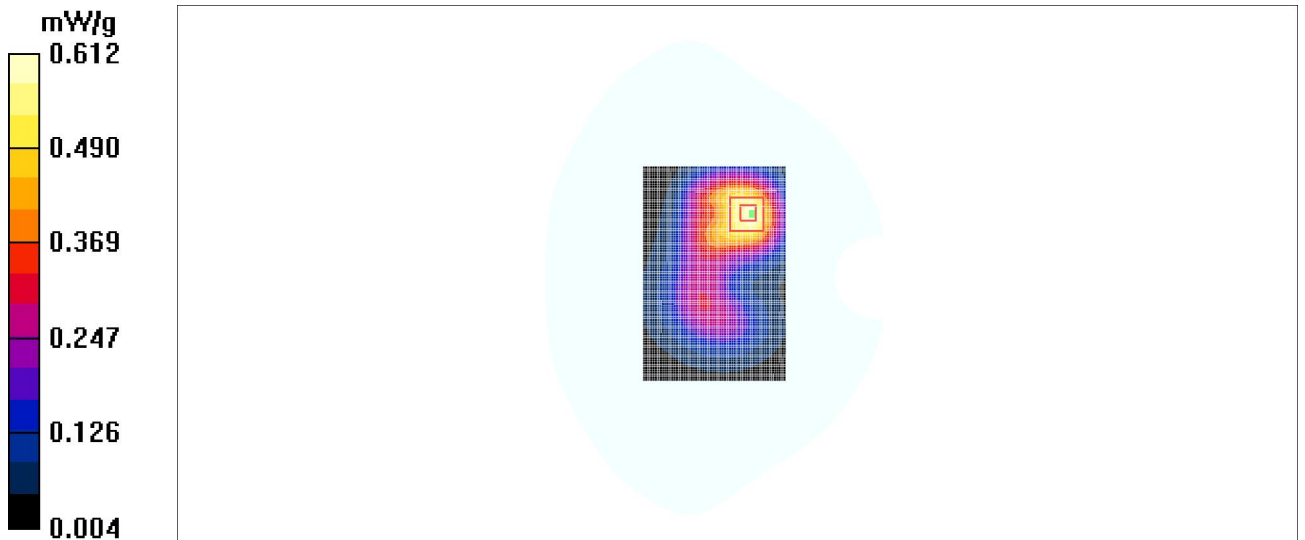Maximum value of SAR (measured) = 0.595 mW/g

Fig. 32 1900 MHz CH810

1900 Body Towards Ground Middle with GPRS

Date/Time: 2011-4-16 13:58:35

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used: f = 1880 MHz;   = 1.49 mho/m; r = 52.2;   = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}C

Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:2

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

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

Maximum value of SAR (interpolated) = 0.666 mW/g

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

Reference Value = 10.5 V/m; Power Drift = -0.004 dB

Peak SAR (extrapolated) = 1.06 W/kg

SAR(1 g) = 0.619 mW/g; SAR(10 g) = 0.362 mW/g

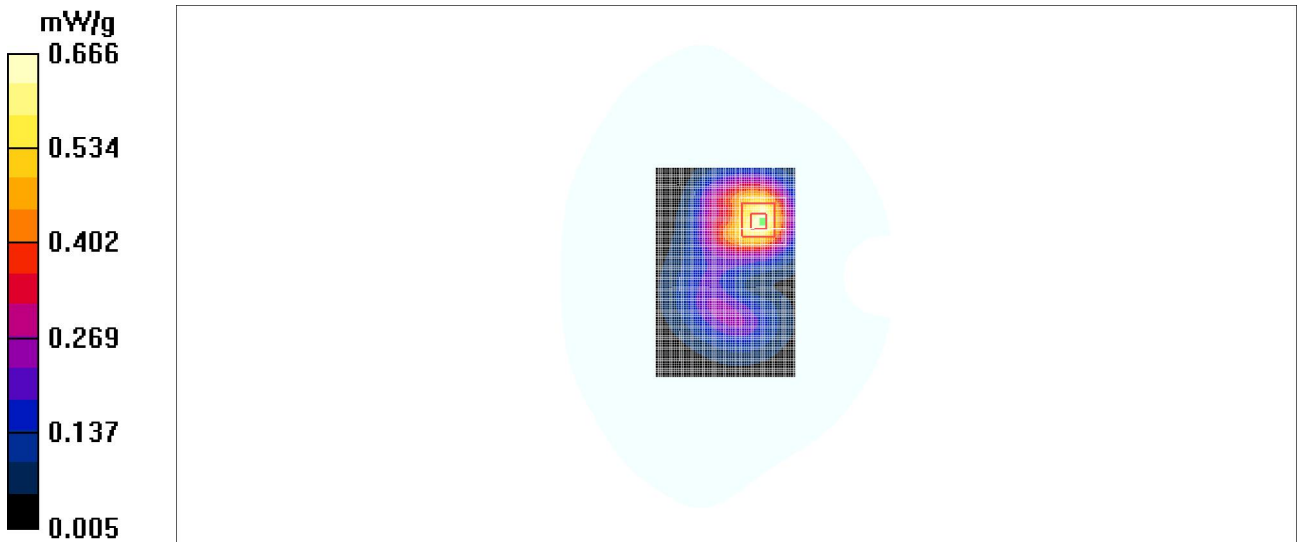Maximum value of SAR (measured) = 0.643 mW/g

Fig. 33 1900 MHz CH661

1900 Body Towards Ground Low with GPRS

Date/Time: 2011-4-16 14:16:22

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used (interpolated): f = 1850.2 MHz;   = 1.47 mho/m; r = 52.2;   = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}C

Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:2

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) = 0.694 mW/g

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

Reference Value = 10.7 V/m; Power Drift = 0.077 dB

Peak SAR (extrapolated) = 1.08 W/kg

SAR(1 g) = 0.638 mW/g; SAR(10 g) = 0.371 mW/g

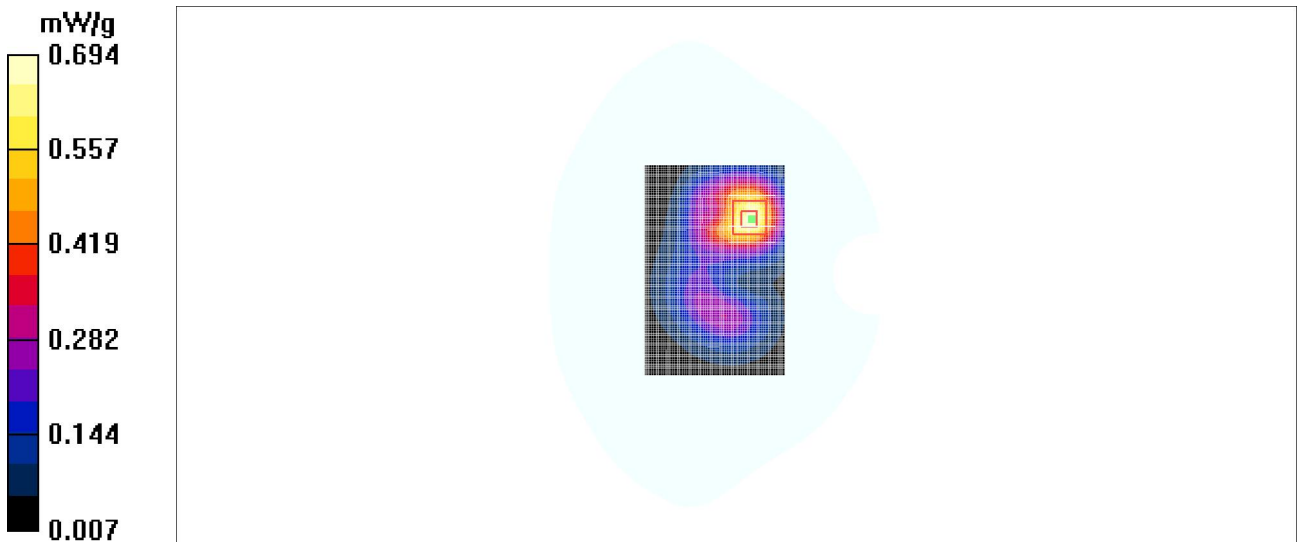Maximum value of SAR (measured) = 0.657 mW/g
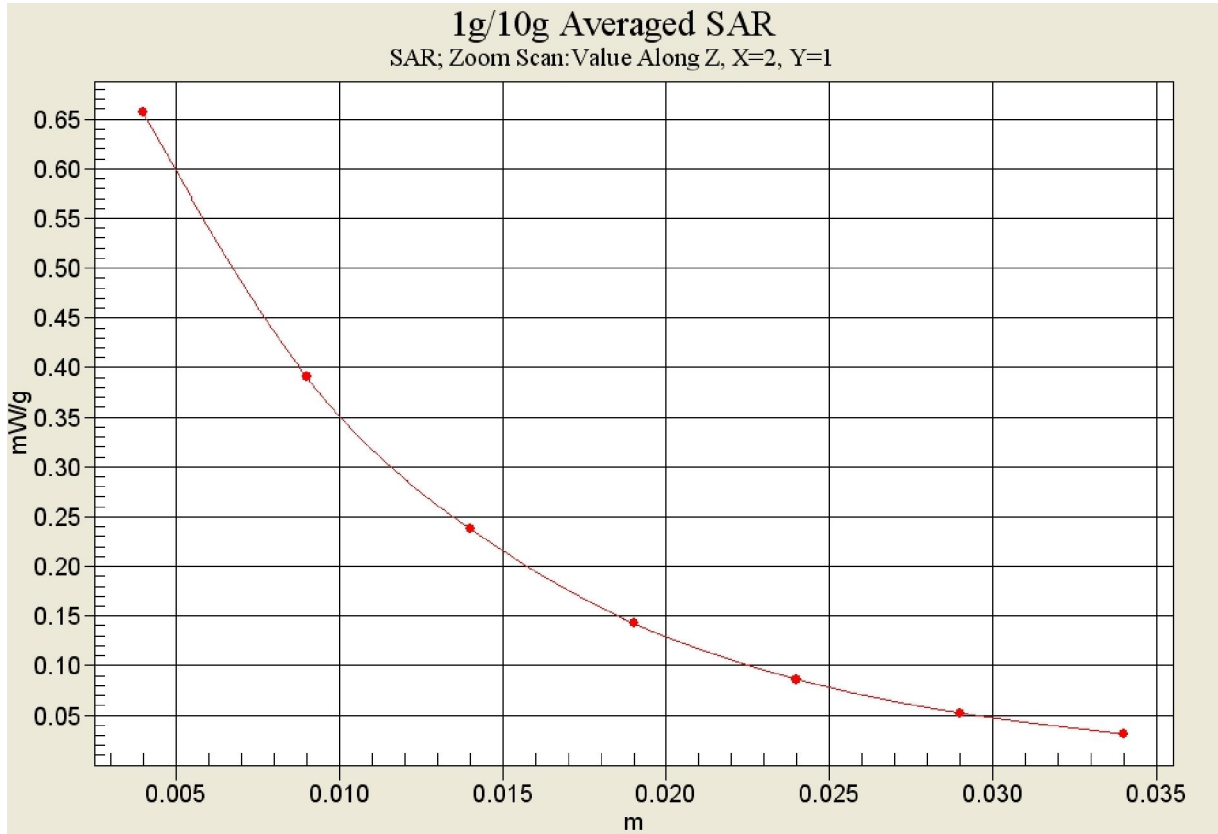

Fig. 34 1900 MHz CH512

Fig. 34-1 Z-Scan at power reference point (1900 MHz CH512)

1900 Body Towards Phantom High with GPRS

Date/Time: 2011-4-16 14:34:17

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used: f = 1910 MHz;   = 1.52 mho/m; r = 52.1;   = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}C

Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:2

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) = 0.608 mW/g

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

Reference Value = 8.97 V/m; Power Drift = -0.096 dB

Peak SAR (extrapolated) = 0.920 W/kg

SAR(1 g) = 0.541 mW/g; SAR(10 g) = 0.317 mW/g

Maximum value of SAR (measured) = 0.554 mW/g

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

Reference Value = 8.97 V/m; Power Drift = -0.096 dB

Peak SAR (extrapolated) = 0.567 W/kg

SAR(1 g) = 0.359 mW/g; SAR(10 g) = 0.224 mW/g

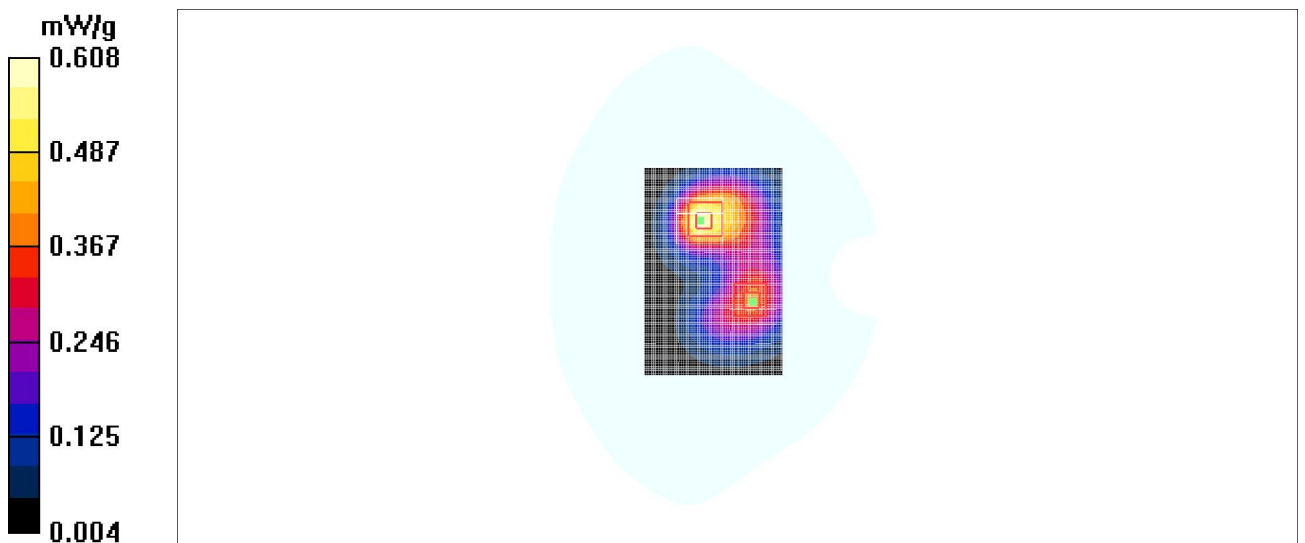Maximum value of SAR (measured) = 0.368 mW/g

Fig. 35 1900 MHz CH810

1900 Body Towards Phantom Middle with GPRS

Date/Time: 2011-4-16 14:56:10

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used: f = 1880 MHz; = 1.49 mho/m; r = 52.2; = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}C

Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:2

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) = 0.557 mW/g

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

Reference Value = 8.65 V/m; Power Drift = 0.012 dB

Peak SAR (extrapolated) = 0.832 W/kg

SAR(1 g) = 0.489 mW/g; SAR(10 g) = 0.283 mW/g

Maximum value of SAR (measured) = 0.500 mW/g

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

Reference Value = 8.65 V/m; Power Drift = 0.012 dB

Peak SAR (extrapolated) = 0.506 W/kg

SAR(1 g) = 0.324 mW/g; SAR(10 g) = 0.203 mW/g

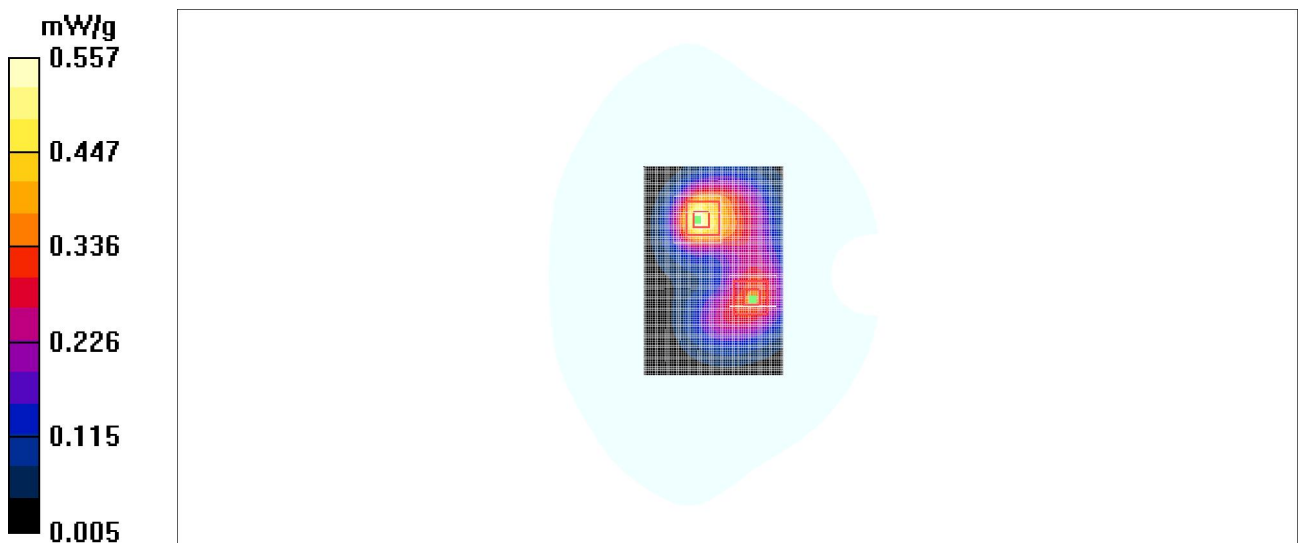Maximum value of SAR (measured) = 0.334 mW/g

Fig. 36 1900 MHz CH661

1900 Body Towards Phantom Low with GPRS

Date/Time: 2011-4-16 15:28:31

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used (interpolated): f = 1850.2 MHz;   = 1.47 mho/m; r = 52.2;   = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}C

Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:2

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) = 0.557 mW/g

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

Reference Value = 9.29 V/m; Power Drift = 0.059 dB

Peak SAR (extrapolated) = 0.842 W/kg

SAR(1 g) = 0.496 mW/g; SAR(10 g) = 0.285 mW/g

Maximum value of SAR (measured) = 0.513 mW/g

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

Reference Value = 9.29 V/m; Power Drift = 0.059 dB

Peak SAR (extrapolated) = 0.513 W/kg

SAR(1 g) = 0.331 mW/g; SAR(10 g) = 0.211 mW/g

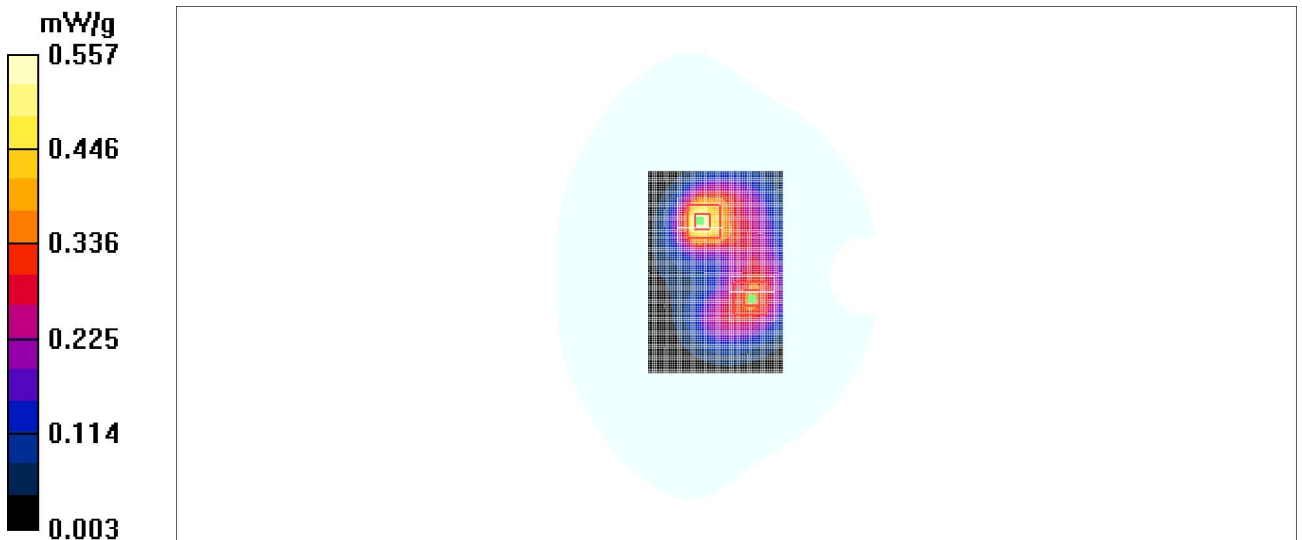Maximum value of SAR (measured) = 0.342 mW/g

Fig. 37 1900 MHz CH512

1900 Body Towards Ground Low with Headset_CCB31C0A10C0

Date/Time: 2011-4-16 15:46:52

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used (interpolated): f = 1850.2 MHz; = 1.47 mho/m; r = 52.2; = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}C

Communication System: GSM 1900MHz Frequency: 1850.2 MHz Duty Cycle: 1:8.3

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) = 0.316 mW/g

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

Reference Value = 8.43 V/m; Power Drift = -0.042 dB

Peak SAR (extrapolated) = 0.508 W/kg

SAR(1 g) = 0.300 mW/g; SAR(10 g) = 0.177 mW/g

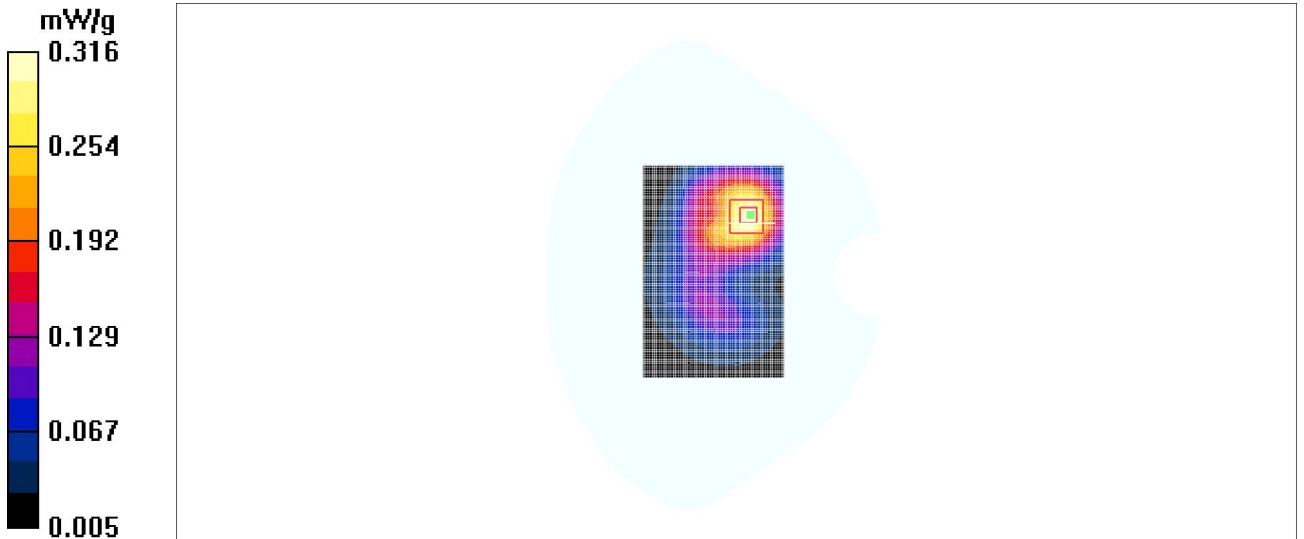Maximum value of SAR (measured) = 0.314 mW/g

Fig. 38 1900 MHz CH512

ANNEX D   SYSTEM VALIDATION RESULTS

835MHz

Date/Time: 2011-4-15 7:24:25
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 835 MHz;   = 0.89 mho/m; $_r$ = 40.9;   = 1000 kg/m^3
Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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=10mm, dy=10mm
Maximum value of SAR (interpolated) = 2.65 mW/g

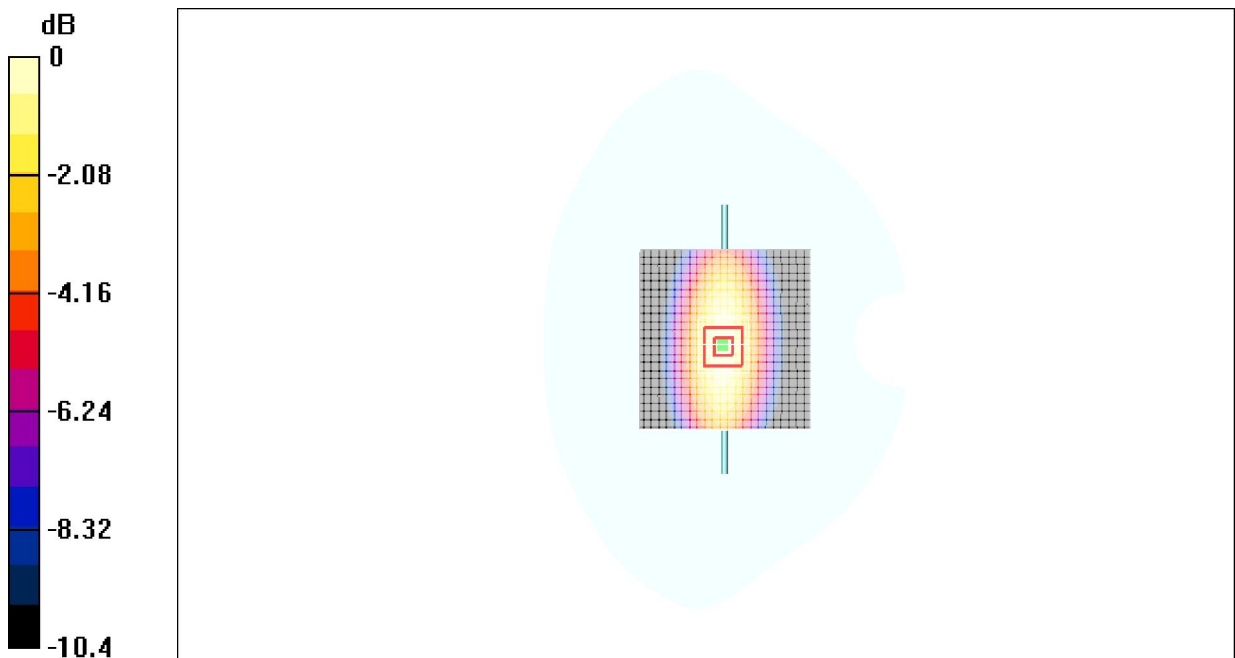**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.4 V/m; Power Drift = -0.112 dB
Peak SAR (extrapolated) = 3.41 W/kg
SAR(1 g) = 2.43 mW/g; SAR(10 g) = 1.51 mW/g
Maximum value of SAR (measured) = 2.55 mW/g

0 dB = 2.55mW/g

Fig.39 validation 835MHz 250mW

835MHz

Date/Time: 2011-4-15 12:32:28
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 835 MHz; = 0.96 mho/m; $_r$ = 54.4; = 1000 kg/m^3
Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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=10mm, dy=10mm
Maximum value of SAR (interpolated) = 2.57 mW/g

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.9 V/m; Power Drift = -0.081 dB
Peak SAR (extrapolated) = 3.34 W/kg
SAR(1 g) = 2.36 mW/g; SAR(10 g) = 1.52 mW/g
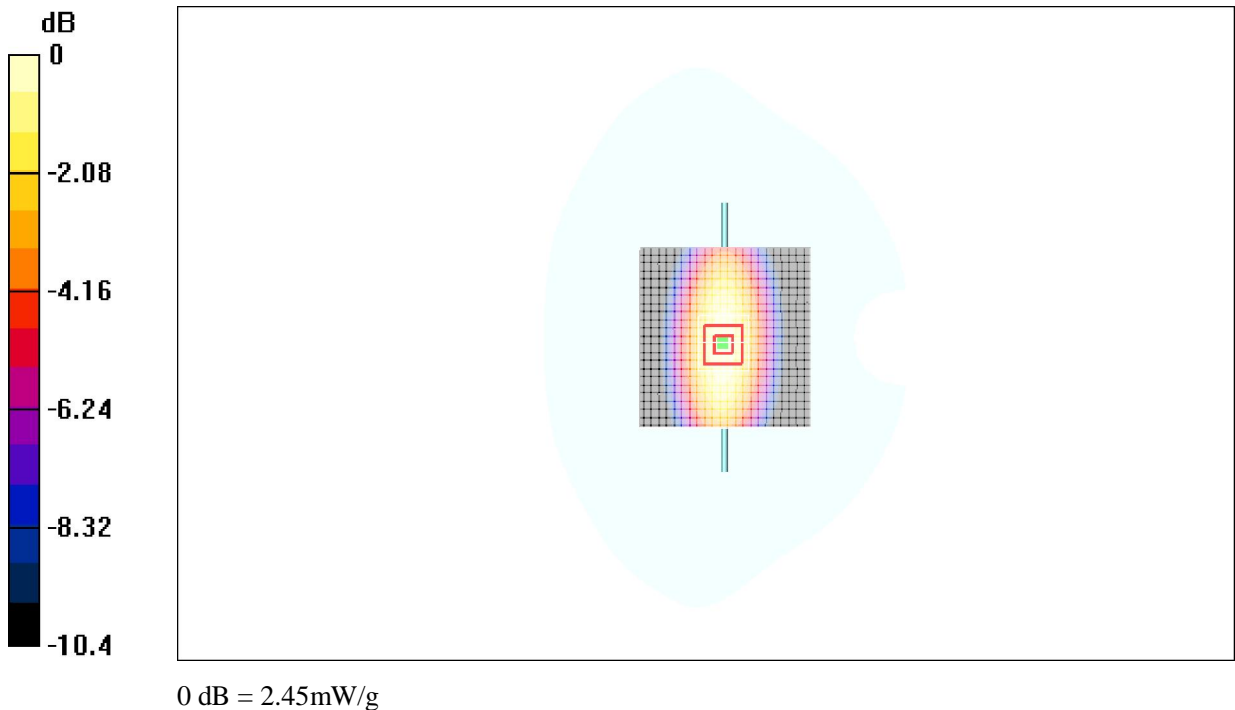Maximum value of SAR (measured) = 2.45 mW/g

0 dB = 2.45mW/g

Fig.40 validation 835MHz 250mW

1900MHz

Date/Time: 2011-4-16 7:37:33

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used: f = 1900 MHz; = 1.38 mho/m; $_r$ = 39.5; = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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=10mm, dy=10mm

Maximum value of SAR (interpolated) = 11.5 mW/g

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

Reference Value = 90.2 V/m; Power Drift = 0.053 dB

Peak SAR (extrapolated) = 14.8 W/kg

SAR(1 g) = 9.81 mW/g; SAR(10 g) = 4.94 mW/g

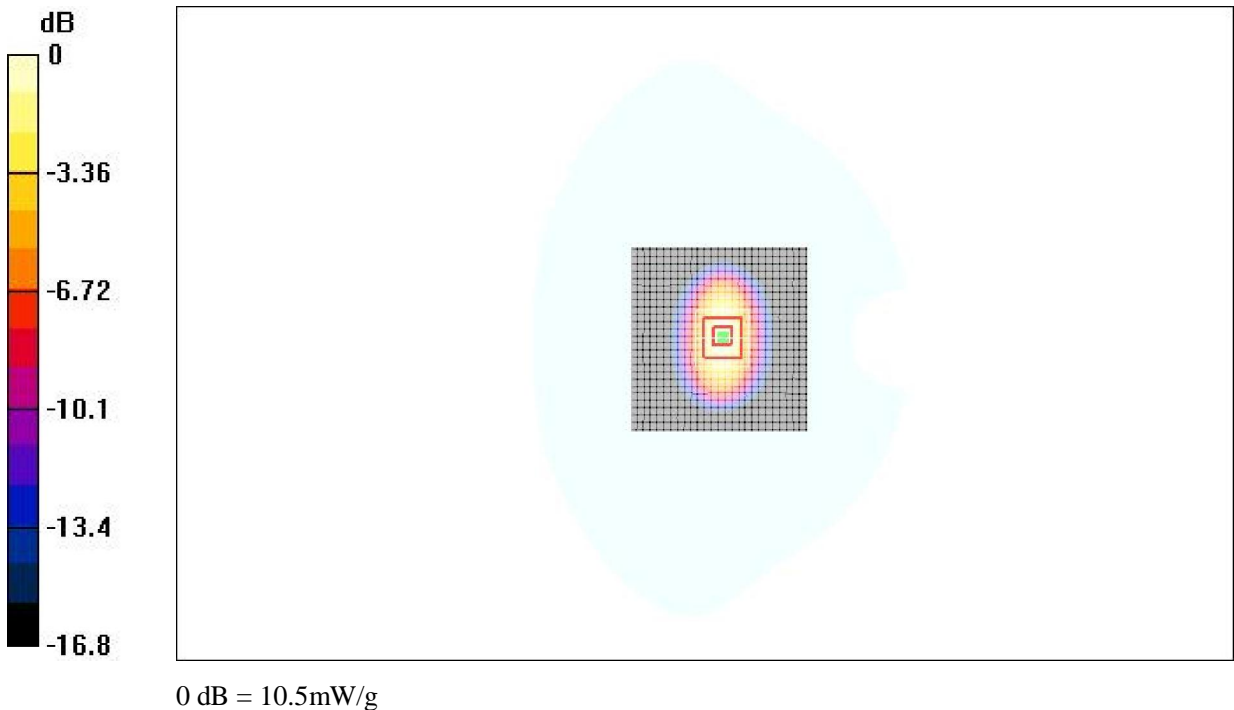Maximum value of SAR (measured) = 10.5 mW/g

0 dB = 10.5mW/g

Fig.41 validation 1900MHz 250mW

1900MHz

Date/Time: 2011-4-16 12:17:36

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used: f = 1900 MHz; = 1.51 mho/m; $_r$ = 52.1; = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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=10mm, dy=10mm

Maximum value of SAR (interpolated) = 11.4 mW/g

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

Reference Value = 91.7 V/m; Power Drift = 0.050 dB

Peak SAR (extrapolated) = 15.1 W/kg

SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.18 mW/g

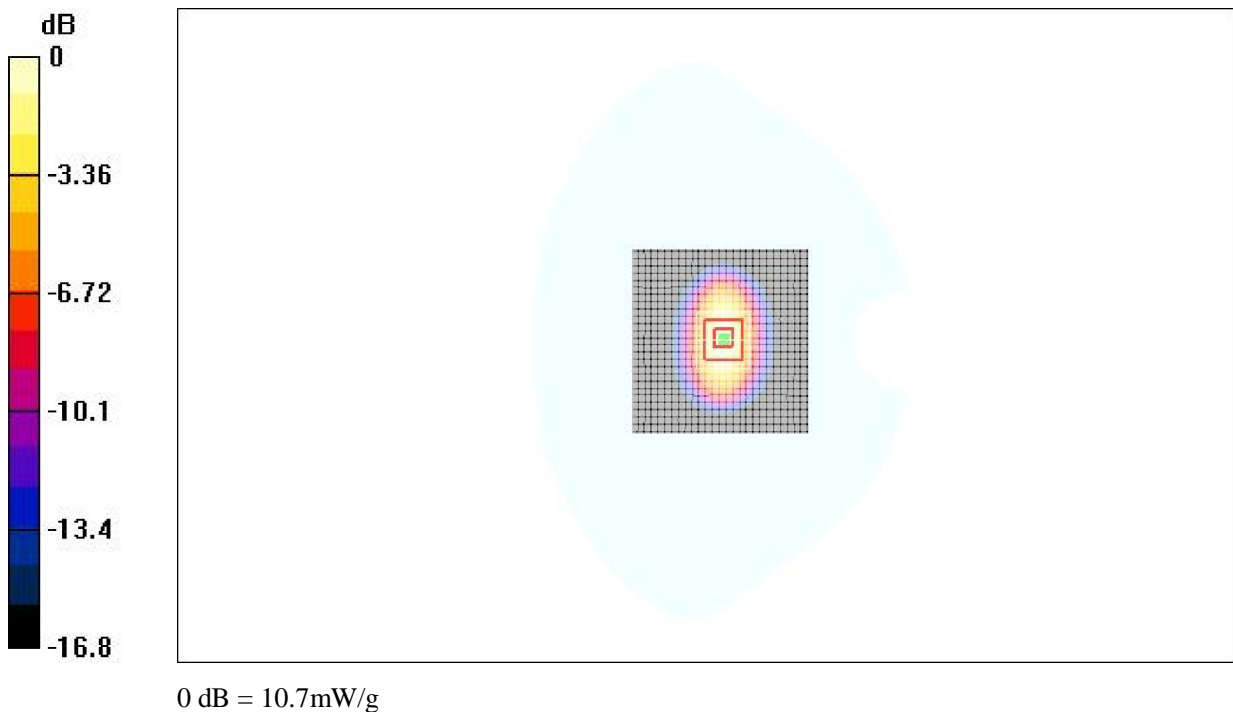Maximum value of SAR (measured) = 10.7 mW/g

0 dB = 10.7mW/g

Fig.42 validation 1900MHz 250mW

ANNEX E   PROBE CALIBRATION CERTIFICATE

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

ilac-MRA

SWISS CALIBRATION

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 $(22\pm3)^0$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	

Issued: September 25, 2010

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