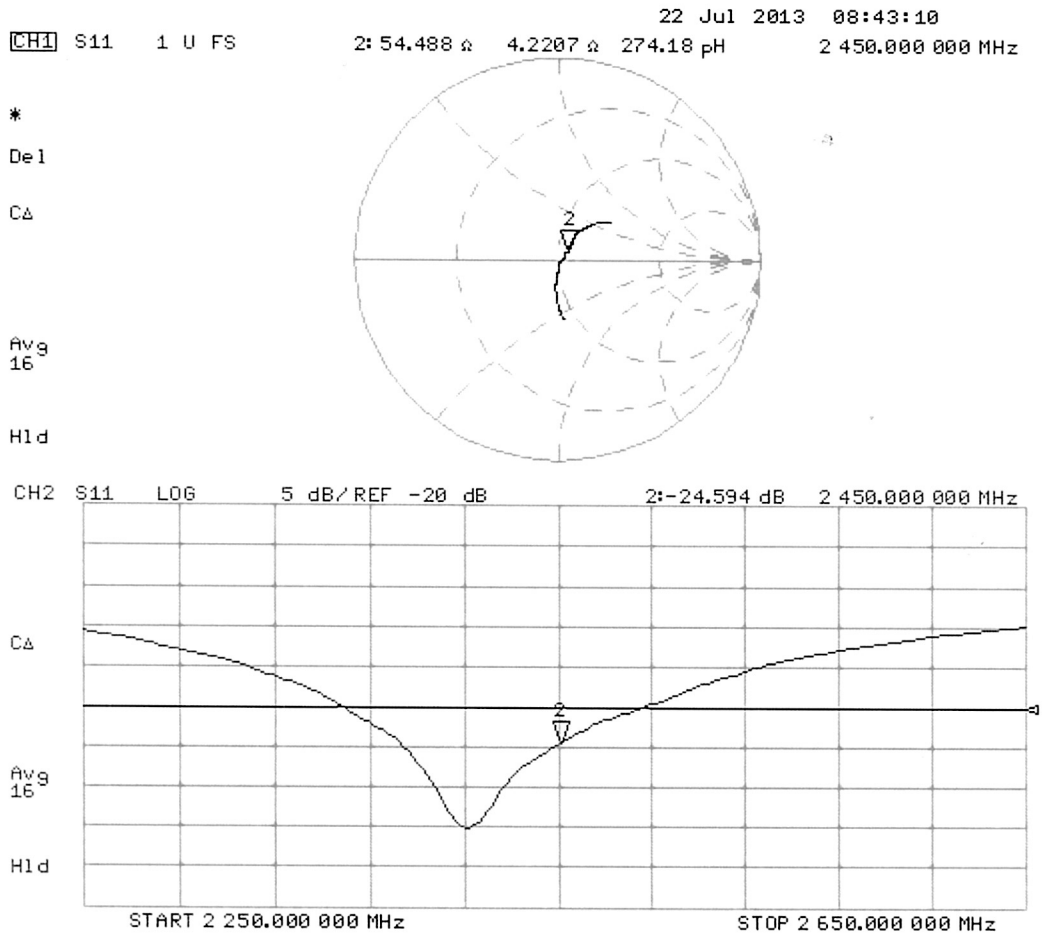
Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 19.07.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 857

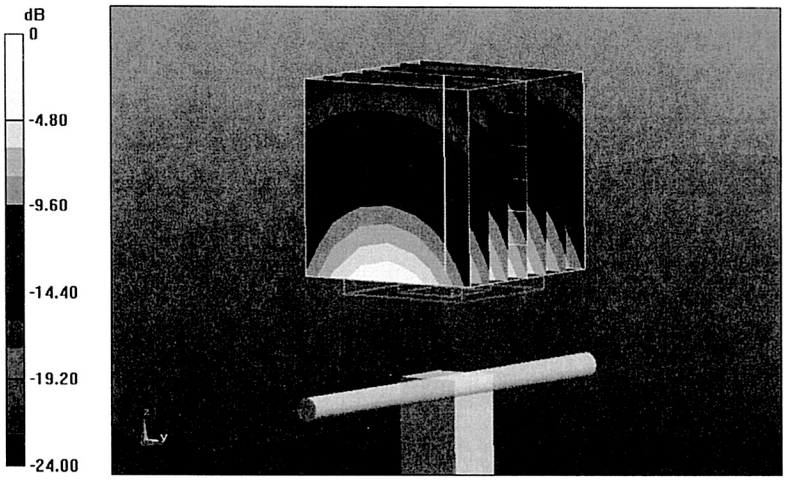
Communication System: UID 0 - CW ; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 2.01 S/m; ε_r = 50.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.42, 4.42, 4.42); Calibrated: 28.12.2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 25.04.2013
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

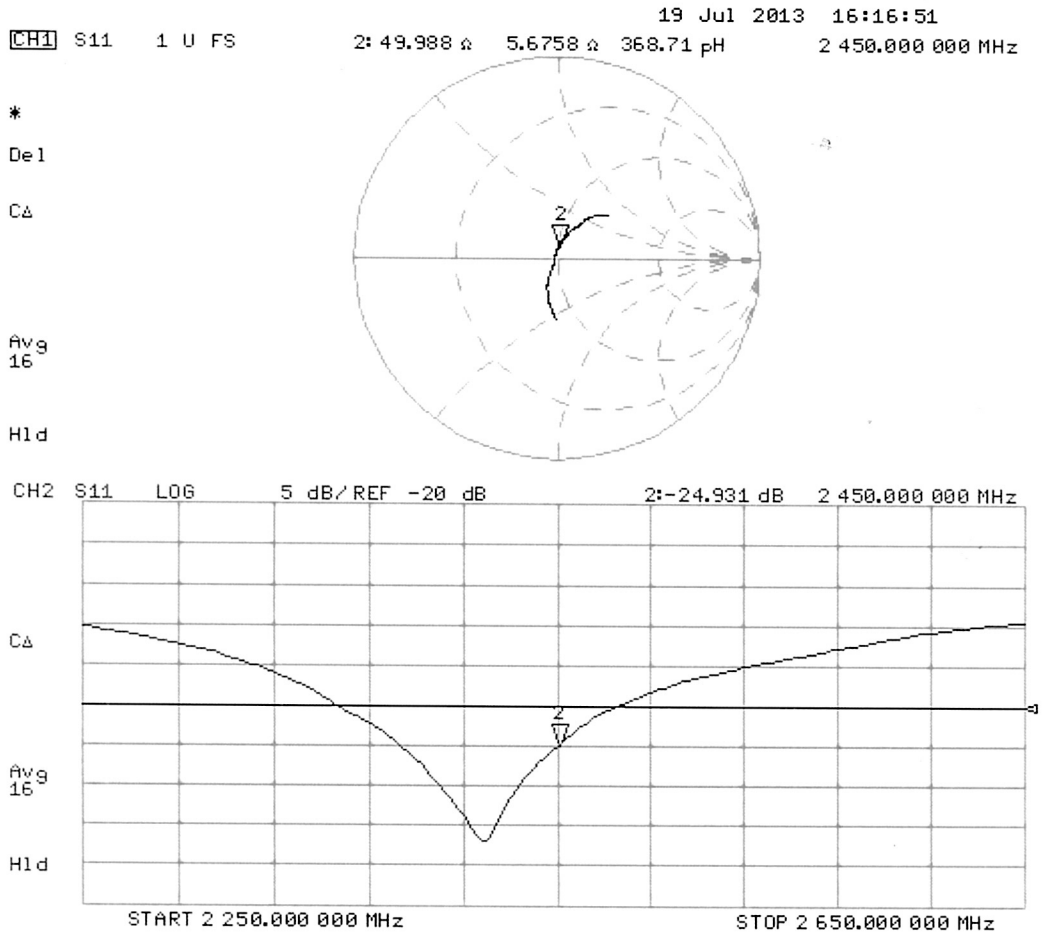
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 95.120 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 27.2 W/kg
SAR(1 g) = 13 W/kg; SAR(10 g) = 6.03 W/kg
Maximum value of SAR (measured) = 17.1 W/kg



0 dB = 17.1 W/kg = 12.33 dBW/kg

Impedance Measurement Plot for Body TSL



APPENDIX E - MEASURED FLUID DIELECTRIC PARAMETERS

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2.45GHz body fluid

November 12, 2013 08:28 AM

Frequency	e'	e''
2.400000000 GI	51.460	14.4178
2.402000000 GI	51.449	14.4426
2.404000000 GI	51.438	14.4395
2.406000000 GI	51.440	14.4470
2.408000000 GI	51.423	14.4647
2.410000000 GI	51.418	14.4780
2.412000000 GI	51.417	14.4931
2.414000000 GI	51.401	14.4948
2.416000000 GI	51.402	14.5135
2.418000000 GI	51.380	14.5350
2.420000000 GI	51.369	14.5457
2.422000000 GI	51.366	14.5552
2.424000000 GI	51.356	14.5687
2.426000000 GI	51.339	14.5900
2.428000000 GI	51.328	14.6118
2.430000000 GI	51.324	14.6185
2.432000000 GI	51.318	14.6243
2.434000000 GI	51.308	14.6443
2.436000000 GI	51.285	14.6583
2.438000000 GI	51.284	14.6777
2.440000000 GI	51.274	14.6977
2.442000000 GI	51.259	14.7057
2.444000000 GI	51.261	14.7400
2.446000000 GI	51.261	14.7417
2.448000000 GI	51.244	14.7535
2.450000000 GI	51.254	14.7659
2.452000000 GI	51.240	14.7654
2.454000000 GI	51.230	14.7852
2.456000000 GI	51.225	14.7955
2.458000000 GI	51.218	14.8002
2.460000000 GI	51.207	14.8032
2.462000000 GI	51.192	14.8251
2.464000000 GI	51.197	14.8142
2.466000000 GI	51.200	14.8325
2.468000000 GI	51.184	14.8423

APPENDIX F – PHANTOM CERTIFICATE OF CONFORMITY

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Schmid & Partner Engineering AG

s p e a g

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Certificate of conformity / First Article Inspection

Item	SAM Twin Phantom V4.0
Type No	QD 000 P40 C
Series No	TP-1150 and higher
Manufacturer / Origin	Untersee Composites Hauptstr. 69 CH-8559 Fruthwilen Switzerland

Tests

The series production process used allows the limitation to test of first articles.
Complete tests were made on the pre-series Type No. QD 000 P40 AA, Serial No. TP-1001 and on the series first article Type No. QD 000 P40 BA, Serial No. TP-1006. Certain parameters have been retested using further series units (called samples).

Test	Requirement	Details	Units tested
Shape	Compliance with the geometry according to the CAD model.	IT'IS CAD File (*)	First article, Samples
Material thickness	Compliant with the requirements according to the standards	2mm +/- 0.2mm in specific areas; 6mm +/- 0.2mm at ERP	First article, Samples
Material parameters	Dielectric parameters for required frequencies	200 MHz – 3 GHz Relative permittivity < 5 Loss tangent < 0.05.	Material sample TP 104-5
Material resistivity	The material has been tested to be compatible with the liquids defined in the standards if handled and cleaned according to the instructions	DEGMBE based simulating liquids	Pre-series, First article, Samples

Standards

[1] CENELEC EN 50361
[2] IEEE Std 1528-200x Draft CD 1.1 (Dec 02)
[3] IEC 62209/CD (Nov 02)
(*) The IT'IS CAD file is derived from [2] and is also within the tolerance requirements of the shapes of [1] and [3].

Conformity

Based on the sample tests above, we certify that this item is in compliance with the uncertainty requirements of SAR measurements specified in standard [1] and draft standards [2] and [3].

Date 7.8.2003

Signature / Stamp

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