

TA Technology (Shanghai) Co., Ltd.
Test Report

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.4	1.49 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.1 ± 6 %	1.43 mho/m ± 6 %
Body TSL temperature during test	(22.0 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	condition	
SAR measured	250 mW input power	9.37 mW / g
SAR normalized	normalized to 1W	37.5 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	38.5 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.11 mW / g
SAR normalized	normalized to 1W	20.4 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	20.7 mW / g ± 16.5 % (k=2)

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Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.4 Ω + 1.1 $j\Omega$
Return Loss	- 38.1 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	45.1 Ω + 0.7 $j\Omega$
Return Loss	- 25.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.220 ns
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	December 02, 2009

DASY5 Validation Report for Head TSL

Date/Time: 17.05.2010 12:37:07

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1033

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: HSL U11 BB

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.33$ mho/m; $\epsilon_r = 39.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.25, 5.25, 5.25); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement

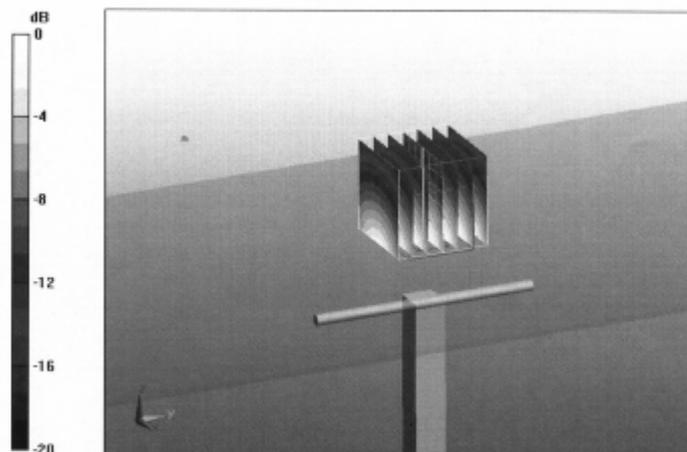
grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.6 V/m; Power Drift = 0.018 dB

Peak SAR (extrapolated) = 15.8 W/kg

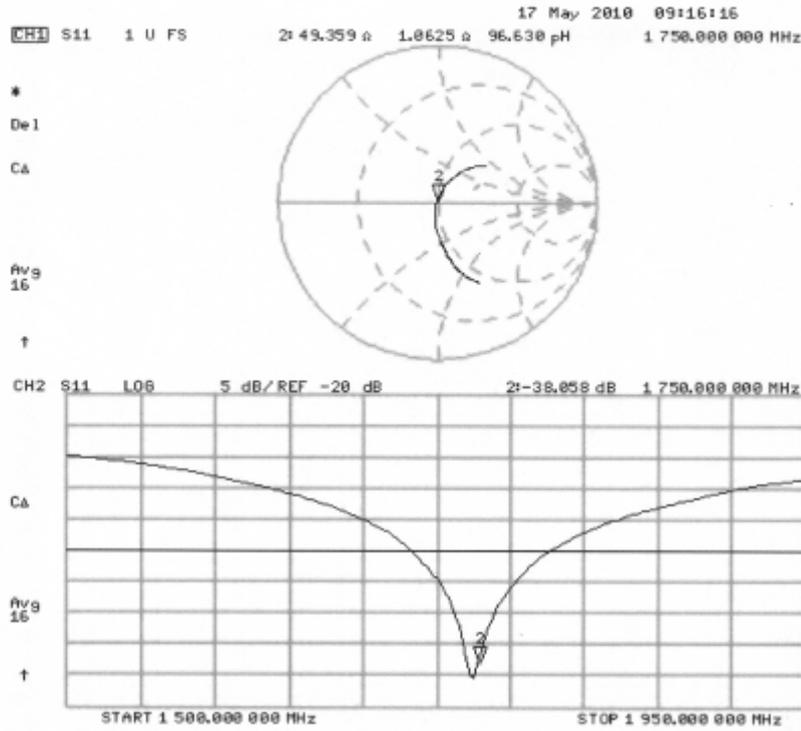
SAR(1 g) = 8.86 mW/g; SAR(10 g) = 4.74 mW/g

Maximum value of SAR (measured) = 11.1 mW/g



0 dB = 11.1mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date/Time: 14.05.2010 12:15:54

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1033

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: MSL U11 BB

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.43$ mho/m; $\epsilon_r = 54.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.8, 4.8, 4.8); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement

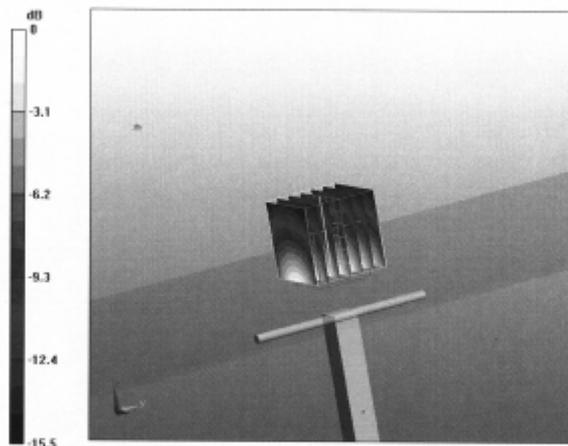
grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.4 V/m; Power Drift = 0.012 dB

Peak SAR (extrapolated) = 15.8 W/kg

SAR(1 g) = 9.37 mW/g; SAR(10 g) = 5.11 mW/g

Maximum value of SAR (measured) = 11.7 mW/g



0 dB = 11.7mW/g