

## DASY5 Validation Report for Body TSL

Date: 25.07.2016

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:853**

Communication System: UID 0 - CW; Frequency: 2450 MHz

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 2.03$  S/m;  $\epsilon_r = 51.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.79, 7.79, 7.79); Calibrated: 15.06.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

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

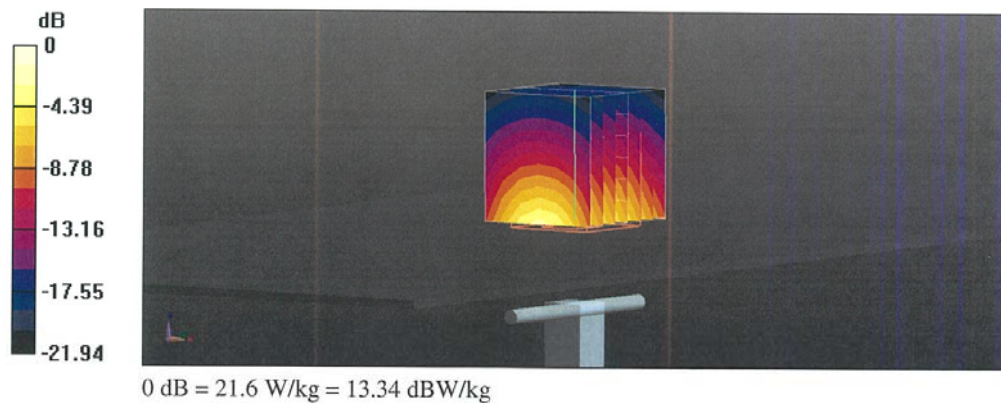
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 107.4 V/m; Power Drift = -0.02 dB

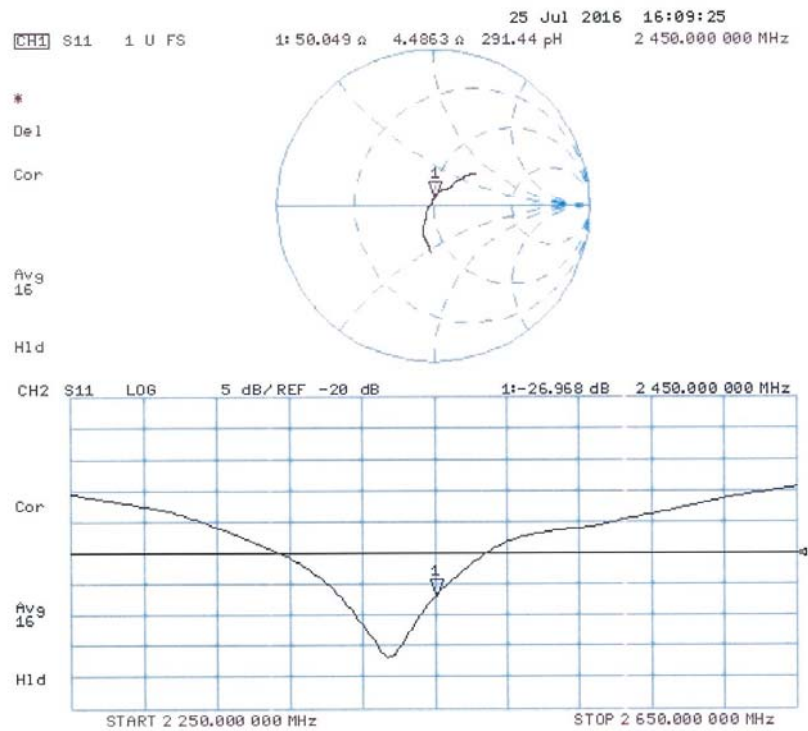
Peak SAR (extrapolated) = 26.3 W/kg

**SAR(1 g) = 13.1 W/kg; SAR(10 g) = 6.1 W/kg**

Maximum value of SAR (measured) = 21.6 W/kg



### Impedance Measurement Plot for Body TSL



## ANNEX I Spot Check

### I.1 Conducted power of selected case

**Table I.1-5: The conducted Power for WLAN**

Mode / data rate	Channel	Measured Power (dBm)
802.11b – 1Mbps	1	17.09
	6	17.44
	11	17.30

### I.2 Measurement results

Test Band	Channel	Frequency	Test Position	Figure No./Note	Conducted Power (dBm)	Tune-up 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)
Wi-Fi 2.4G	6	2437	Left Cheek	Fig I.1	17.44	18	0.418	<b>0.48</b>	0.890	<b>1.01</b>	0.16
Wi-Fi 2.4G	11	2462	Top	Fig I.2	17.3	18	0.066	<b>0.08</b>	0.120	<b>0.14</b>	0.05

**Table I.2-1: SAR Values (WLAN - Head) – 802.11b (Scaled Reported SAR)**

Ambient Temperature: 22.5°C				Liquid Temperature: 23.3°C			
Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.						
2437	6	Left	Touch	98.25%	100%	<b>1.01</b>	<b>1.03</b>

**Table I.2-2: SAR Values (WLAN - Body) – 802.11b (Scaled Reported SAR)**

Ambient Temperature: 22.5°C							Liquid Temperature: 23.3°C						
Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)							
MHz	Ch.												
2462	11	Top	98.25%	100%	<b>0.14</b>	<b>0.14</b>							

### I.3 Reported SAR Comparison

Exposure Configuration	Technology Band	Reported SAR 1g (W/Kg): spot check	Reported SAR 1g (W/Kg): original
Head (Separation Distance 0mm)	WLAN 2.4 GHz	1.03	1.06
Hotspot (Separation Distance 10mm)	WLAN 2.4 GHz	0.14	0.19

**Note: All the spot check results marked blue are smaller than the original result. So we share the original result directly.**

#### I.4 Graph Results of spot check

##### Wifi 802.11b Right Tilt Channel 6

Date: 2017-7-2

Electronics: DAE4 Sn1331

Medium: Head 2450 MHz

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.788$  mho/m;  $\epsilon_r = 39.17$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C Liquid Temperature: 23.3°C

Communication System: Wlan 2450 Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN3846 ConvF(7.22, 7.22, 7.22)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.04 W/kg

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

Reference Value = 11.77 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 2.04 W/kg

**SAR(1 g) = 0.890 W/kg; SAR(10 g) = 0.418 W/kg**

Maximum value of SAR (measured) = 1.11 W/kg

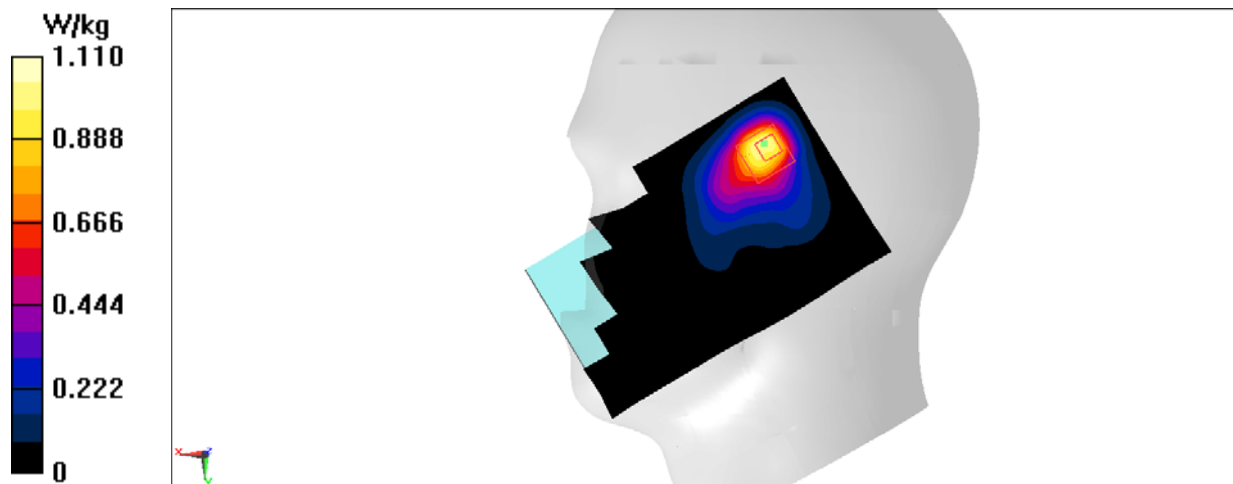


Fig.I.1 2450 MHz

### Wifi 802.11b Body Top Channel 11

Date: 2017-7-2

Electronics: DAE4 Sn1331

Medium: Body 2450 MHz

Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 1.946$  mho/m;  $\epsilon_r = 51.75$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C Liquid Temperature: 23.3°C

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

Probe: EX3DV4 – SN3846 ConvF(7.31, 7.31, 7.31)

**Area Scan (121x71x1):** Interpolated grid:  $dx=1.000$  mm,  $dy=1.000$  mm

Maximum value of SAR (interpolated) = 0.172 W/kg

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

Reference Value = 5.619 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.217 W/kg

**SAR(1 g) = 0.120 W/kg; SAR(10 g) = 0.066 W/kg**

Maximum value of SAR (measured) = 0.169 W/kg

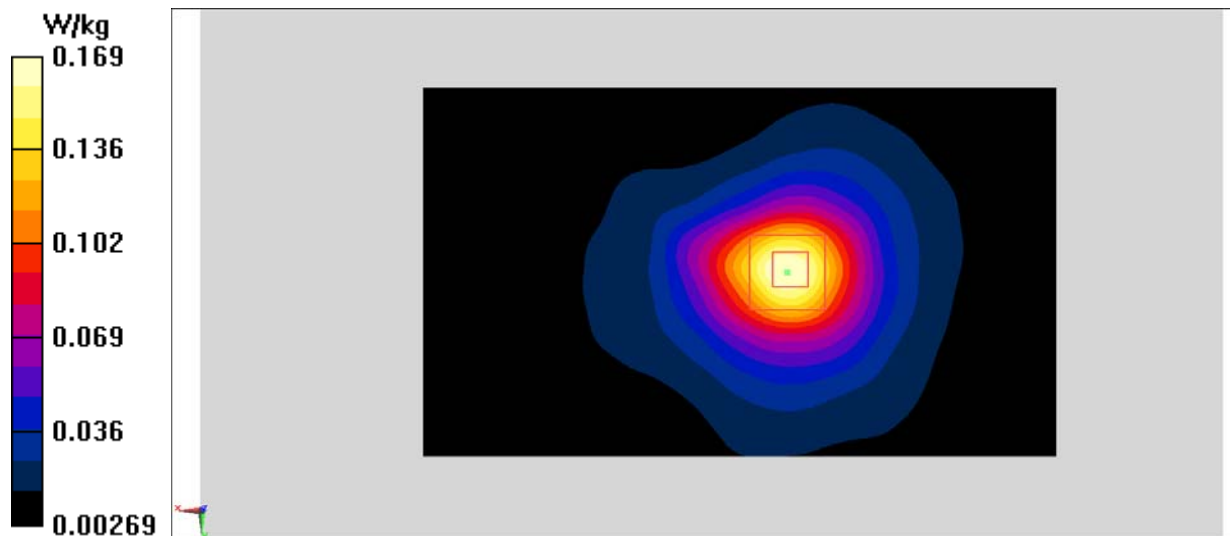





Fig.I. 2 2450 MHz

**ANNEX J Accreditation Certificate**

<p>United States Department of Commerce National Institute of Standards and Technology</p> <p><b>NVLAP<sup>®</sup></b></p> <hr/> <p><b>Certificate of Accreditation to ISO/IEC 17025:2005</b></p> <hr/> <p>NVLAP LAB CODE: 600118-0</p> <p><b>Telecommunication Technology Labs, CAICT</b> Beijing China</p> <p><i>is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:</i></p> <p><b>Electromagnetic Compatibility &amp; Telecommunications</b></p> <p><i>This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).</i></p> <table><tr><td><hr/><p>2016-09-29 through 2017-09-30 <i>Effective Dates</i></p></td><td></td><td><hr/><p><i>[Signature]</i> For the National Voluntary Laboratory Accreditation Program</p></td></tr></table>		<hr/> <p>2016-09-29 through 2017-09-30 <i>Effective Dates</i></p>		<hr/> <p><i>[Signature]</i> For the National Voluntary Laboratory Accreditation Program</p>
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