

### Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz $\pm$ 1 MHz	

### Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	40.6 $\pm$ 6 %	0.94 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.45 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	9.44 W/kg $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.59 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	6.18 W/kg $\pm$ 16.5 % (k=2)

### Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 $\pm$ 0.2) °C	54.9 $\pm$ 6 %	1.01 mho/m $\pm$ 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

### SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.50 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	9.69 W/kg $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.63 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	6.36 W/kg $\pm$ 16.5 % (k=2)

**Appendix (Additional assessments outside the scope of SCS 0108)****Antenna Parameters with Head TSL**

Impedance, transformed to feed point	51.9 $\Omega$ - 2.1 j $\Omega$
Return Loss	- 31.1 dB

**Antenna Parameters with Body TSL**

Impedance, transformed to feed point	48.8 $\Omega$ - 2.5 j $\Omega$
Return Loss	- 31.0 dB

**General Antenna Parameters and Design**

Electrical Delay (one direction)	1.394 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. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

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	November 09, 2007

## DASY5 Validation Report for Head TSL

Date: 20.07.2016

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 835 MHz D835V2; Type: D835V2; Serial: D835V2 - SN:4d069**

Communication System: UID 0 - CW; Frequency: 835 MHz

Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.94$  S/m;  $\epsilon_r = 40.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(9.72, 9.72, 9.72); Calibrated: 15.06.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

### Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

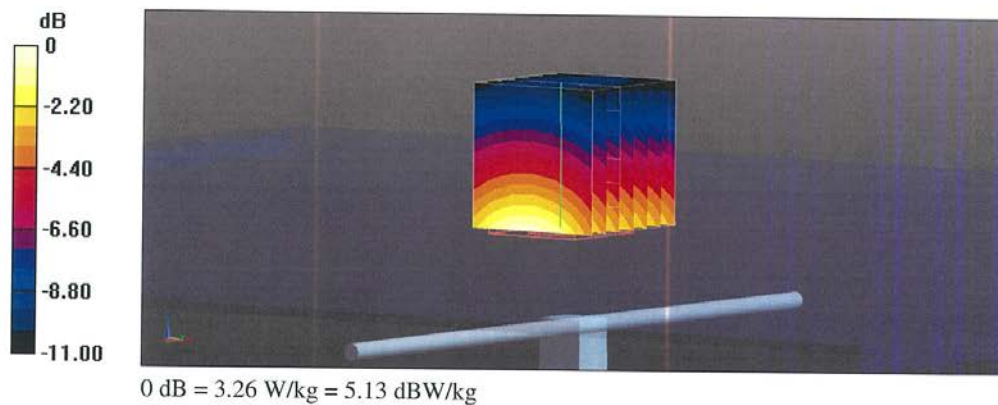
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 62.09 V/m; Power Drift = 0.02 dB

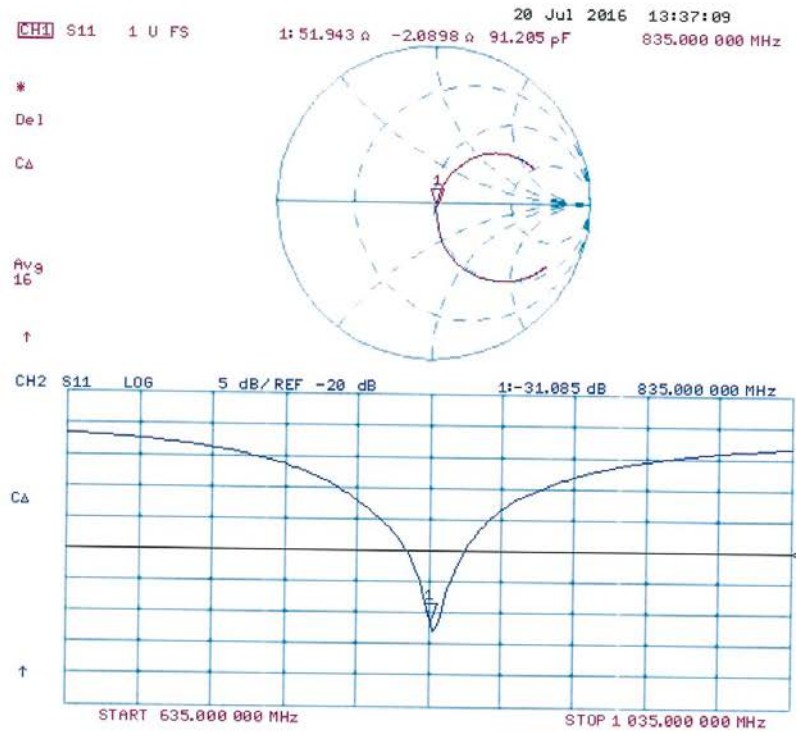
Peak SAR (extrapolated) = 3.70 W/kg

**SAR(1 g) = 2.45 W/kg; SAR(10 g) = 1.59 W/kg**

Maximum value of SAR (measured) = 3.26 W/kg



### Impedance Measurement Plot for Head TSL



## DASY5 Validation Report for Body TSL

Date: 20.07.2016

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 835 MHz D835V2; Type: D835V2; Serial: D835V2 - SN: 4d069**

Communication System: UID 0 - CW; Frequency: 835 MHz

Medium parameters used:  $f = 835$  MHz;  $\sigma = 1.01$  S/m;  $\epsilon_r = 54.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(9.73, 9.73, 9.73); 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=15mm/Zoom Scan (7x7x7)/Cube 0:

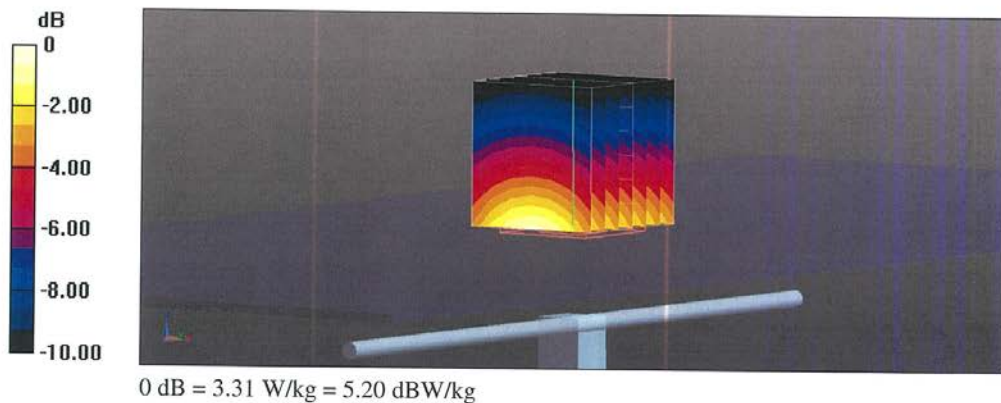
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 60.64 V/m; Power Drift = -0.02 dB

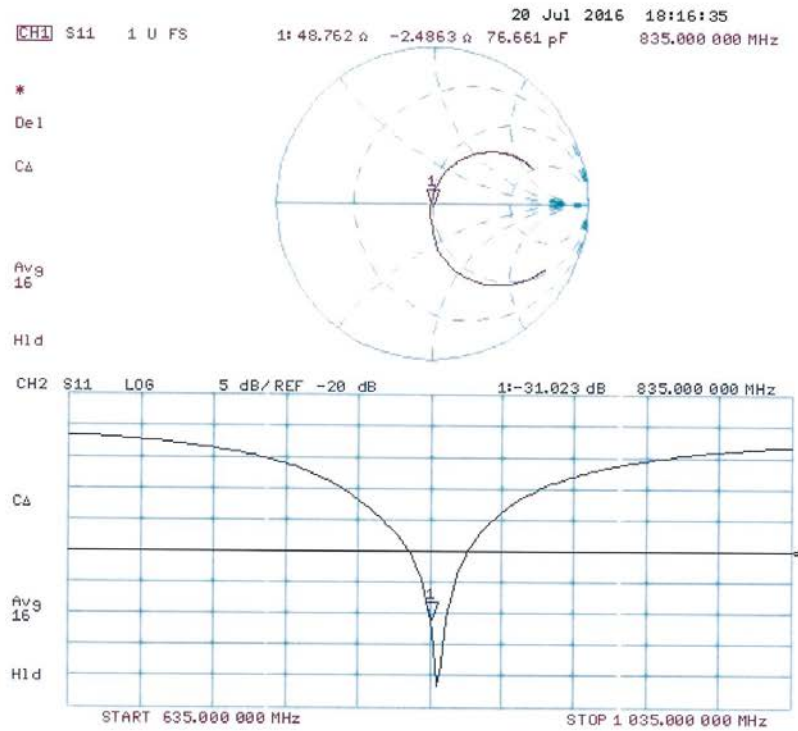
Peak SAR (extrapolated) = 3.68 W/kg

**SAR(1 g) = 2.5 W/kg; SAR(10 g) = 1.63 W/kg**

Maximum value of SAR (measured) = 3.31 W/kg



### Impedance Measurement Plot for Body TSL





## 1900 MHz Dipole Calibration Certificate for 2016

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



**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 0108**

Client **CTTL-BJ (Auden)**

Certificate No: **D1900V2-5d101\_Jul16**

### CALIBRATION CERTIFICATE

Object **D1900V2 - SN:5d101**

Calibration procedure(s) **QA CAL-05.v9**  
**Calibration procedure for dipole validation kits above 700 MHz**

Calibration date: **July 28, 2016**

This calibration certificate 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 in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	06-Apr-16 (No. 217-02288/02289)	Apr-17
Power sensor NRP-Z91	SN: 103244	06-Apr-16 (No. 217-02288)	Apr-17
Power sensor NRP-Z91	SN: 103245	06-Apr-16 (No. 217-02289)	Apr-17
Reference 20 dB Attenuator	SN: 5058 (20k)	05-Apr-16 (No. 217-02292)	Apr-17
Type-N mismatch combination	SN: 5047.2 / 06327	05-Apr-16 (No. 217-02295)	Apr-17
Reference Probe EX3DV4	SN: 7349	15-Jun-16 (No. EX3-7349_Jun16)	Jun-17
DAE4	SN: 601	30-Dec-15 (No. DAE4-601_Dec15)	Dec-16
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (No. 217-02223)	In house check: Oct-16
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Jun-15)	In house check: Oct-16
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

Calibrated by: **Michael Weber** **Laboratory Technician**

Approved by: **Katja Pokovic** **Technical Manager**

Signature




Issued: July 28, 2016

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

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



**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 0108**

**Glossary:**

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

**Calibration is Performed According to the Following Standards:**

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

**Additional Documentation:**

- DASY4/5 System Handbook

**Methods Applied and Interpretation of Parameters:**

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.



### Measurement Conditions

DASY system configuration, as far as not given on page 1.

<b>DASY Version</b>	DASY5	V52.8.8
<b>Extrapolation</b>	Advanced Extrapolation	
<b>Phantom</b>	Modular Flat Phantom	
<b>Distance Dipole Center - TSL</b>	10 mm	with Spacer
<b>Zoom Scan Resolution</b>	dx, dy, dz = 5 mm	
<b>Frequency</b>	1900 MHz $\pm$ 1 MHz	

### Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
<b>Nominal Head TSL parameters</b>	22.0 °C	40.0	1.40 mho/m
<b>Measured Head TSL parameters</b>	(22.0 $\pm$ 0.2) °C	39.8 $\pm$ 6 %	1.38 mho/m $\pm$ 6 %
<b>Head TSL temperature change during test</b>	< 0.5 °C	----	----

### SAR result with Head TSL

<b>SAR averaged over 1 cm<sup>3</sup> (1 g) of Head TSL</b>	Condition	
SAR measured	250 mW input power	10.1 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	40.7 W/kg $\pm$ 17.0 % (k=2)

<b>SAR averaged over 10 cm<sup>3</sup> (10 g) of Head TSL</b>	condition	
SAR measured	250 mW input power	5.28 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	21.2 W/kg $\pm$ 16.5 % (k=2)

### Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
<b>Nominal Body TSL parameters</b>	22.0 °C	53.3	1.52 mho/m
<b>Measured Body TSL parameters</b>	(22.0 $\pm$ 0.2) °C	52.7 $\pm$ 6 %	1.51 mho/m $\pm$ 6 %
<b>Body TSL temperature change during test</b>	< 0.5 °C	----	----

### SAR result with Body TSL

<b>SAR averaged over 1 cm<sup>3</sup> (1 g) of Body TSL</b>	Condition	
SAR measured	250 mW input power	10.0 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	40.1 W/kg $\pm$ 17.0 % (k=2)

<b>SAR averaged over 10 cm<sup>3</sup> (10 g) of Body TSL</b>	condition	
SAR measured	250 mW input power	5.32 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.3 W/kg $\pm$ 16.5 % (k=2)

**Appendix (Additional assessments outside the scope of SCS 0108)****Antenna Parameters with Head TSL**

Impedance, transformed to feed point	50.8 $\Omega$ + 5.5 j $\Omega$
Return Loss	- 25.1 dB

**Antenna Parameters with Body TSL**

Impedance, transformed to feed point	47.0 $\Omega$ + 6.7 j $\Omega$
Return Loss	- 22.4 dB

**General Antenna Parameters and Design**

Electrical Delay (one direction)	1.202 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. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

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	March 28, 2008

## DASY5 Validation Report for Head TSL

Date: 22.07.2016

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 1900 MHz D1900V2; Type: D1900V2; Serial: D1900V2 - SN:5d101**

Communication System: UID 0 - CW; Frequency: 1900 MHz

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.38$  S/m;  $\epsilon_r = 39.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.99, 7.99, 7.99); Calibrated: 15.06.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

### Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x8x7)/Cube 0:

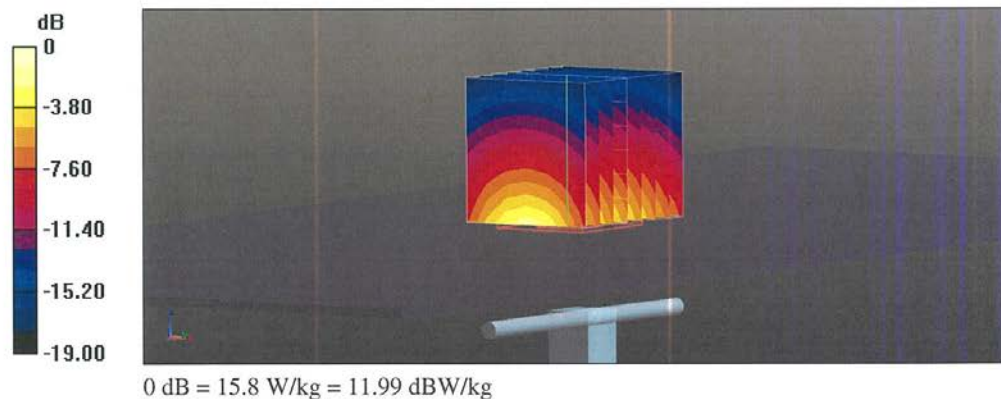
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 107.9 V/m; Power Drift = -0.02 dB

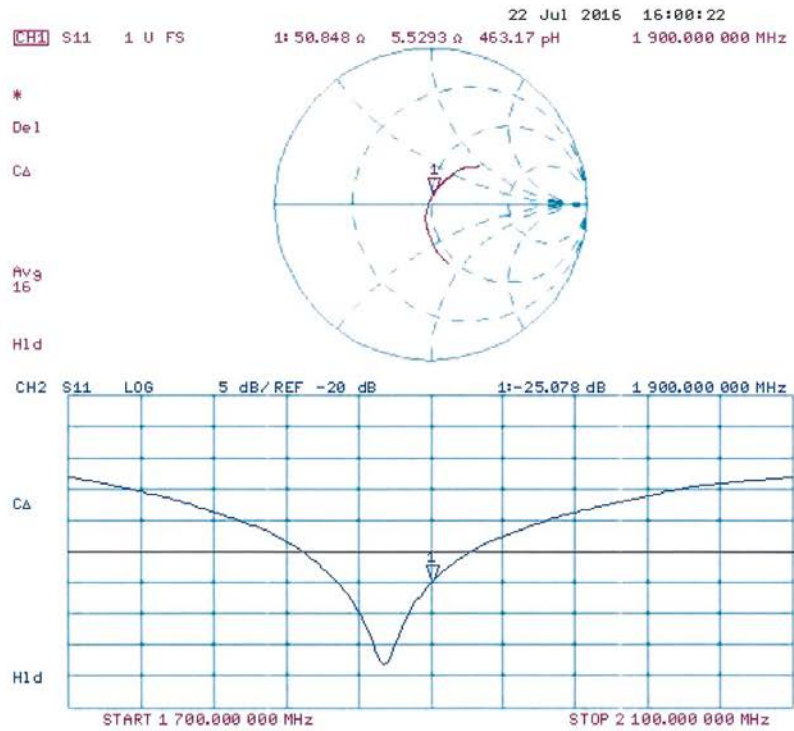
Peak SAR (extrapolated) = 19.0 W/kg

**SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.28 W/kg**

Maximum value of SAR (measured) = 15.8 W/kg



### Impedance Measurement Plot for Head TSL





## DASY5 Validation Report for Body TSL

Date: 28.07.2016

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 1900 MHz D1900V2; Type: D1900V2; Serial: D1900V2 - SN: 5d101**

Communication System: UID 0 - CW; Frequency: 1900 MHz

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.51$  S/m;  $\epsilon_r = 52.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.03, 8.03, 8.03); 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 = 104.2 V/m; Power Drift = -0.03 dB

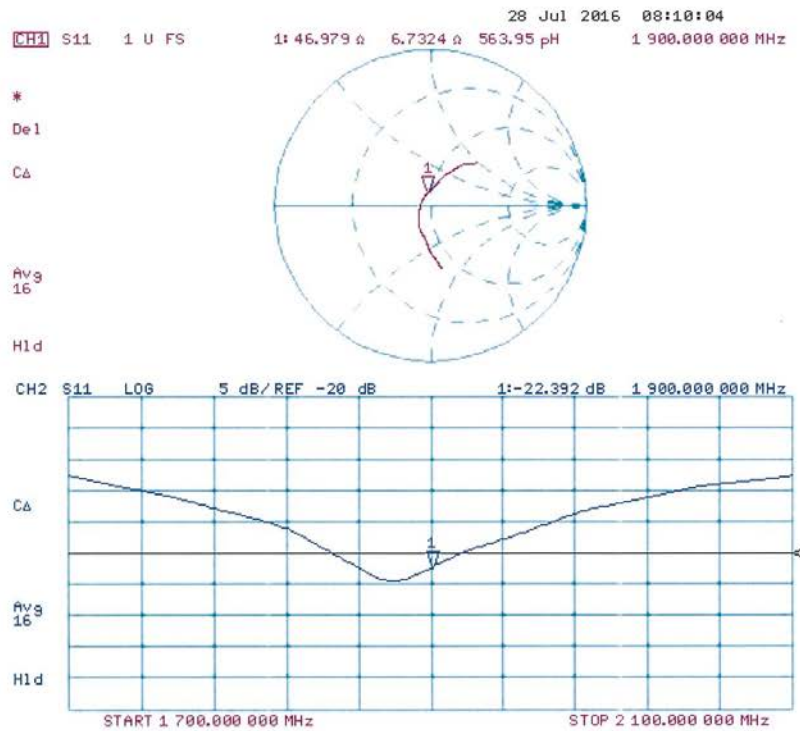
Peak SAR (extrapolated) = 17.6 W/kg

**SAR(1 g) = 10 W/kg; SAR(10 g) = 5.32 W/kg**

Maximum value of SAR (measured) = 15.0 W/kg



### Impedance Measurement Plot for Body TSL



## ANNEX I SPOT CHECK TEST

As the test lab for 2051A from TCL Communication Ltd, we, CTTL (Shouxiang), declare on our sole responsibility that, according to “Declaration of changes” provided by applicant, only the Spot check test should be performed. The test results are as below.

### I.1 Conducted power of selected case

**Table I.1-1: The conducted power results for GSM850/1900**

GSM 850MHz	Conducted Power (dBm)		
	Channel 251(848.8MHz)	Channel 190(836.6MHz)	Channel 128(824.2MHz)
	31.60	31.68	31.77
GSM 1900MHz	Conducted Power (dBm)		
	Channel 810(1909.8MHz)	Channel 661(1880MHz)	Channel 512(1850.2MHz)
	29.23	29.14	29.16

**Table I.1-2: The conducted power results for GPRS**

GSM 850 GPRS (GMSK)	Measured Power (dBm)		
	251	190	128
3 Txslots	28.37	28.48	28.60
PCS1900 GPRS (GMSK)	Measured Power (dBm)		
	810	661	512
3 Txslots	25.52	25.75	25.96

### I.2 Measurement results

**Table I.2-1: SAR Values (GSM 850 MHz Band - Head)**

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °C					
Frequency		Side	Test Position	Figure No./Battery	Conducted Power (dBm)	Max. 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)
MHz	Ch.										
848.8	251	Right	Touch	Fig.I.1 / B1	31.60	33.3	0.454	<b>0.67</b>	0.793	<b>1.17</b>	0.18
836.6	190	Right	Touch	B1	31.68	33.3	0.433	<b>0.63</b>	0.766	<b>1.11</b>	0.04
824.2	128	Right	Touch	B1	31.77	33.3	0.398	<b>0.57</b>	0.714	<b>1.02</b>	-0.07
848.8	251	Right	Touch	Fig.I.2 / B2	31.60	33.3	0.452	<b>0.67</b>	0.791	<b>1.17</b>	0.08

Note: B1 is the battery CAB22B0000C1, B2 is the new battery CAB0400016C1.

**Table I.2-2: SAR Values (GSM 850 MHz Band - Body)**

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °C					
Frequency		Mode (number of timeslots)	Test Position	Figure No./Battery	Conducted Power (dBm)	Max. 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)
MHz	Ch.										
848.8	251	GPRS (3)	Rear closed	Fig.I.3 / B1	28.37	29	0.664	<b>0.77</b>	0.936	<b>1.08</b>	-0.03
848.8	251	GPRS (3)	Rear closed	Fig.I.4 / B2	28.37	29	0.645	<b>0.75</b>	0.908	<b>1.05</b>	-0.13

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

Note2: B1 is the battery CAB22B0000C1, B2 is the new battery CAB0400016C1.

**Table I.2-3: SAR Values (GSM 1900 MHz Band - Head)**

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °C					
Frequency		Side	Test Position	Figure No./Battery	Conducted Power (dBm)	Max. 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)
MHz	Ch.										
1880	661	Right	Touch	Fig.I.5 / B1	29.14	30.3	0.163	<b>0.21</b>	0.291	<b>0.38</b>	0.06
1880	661	Right	Touch	Fig.I.6 / B2	29.14	30.3	0.164	<b>0.21</b>	0.289	<b>0.38</b>	-0.10

Note: B1 is the battery CAB22B0000C1, B2 is the new battery CAB0400016C1.

**Table I.2-4: SAR Values (GSM 1900 MHz Band - Body)**

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °C					
Frequency		Mode (number of timeslots)	Test Position	Figure No./Battery	Conducted Power (dBm)	Max. 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)
MHz	Ch.										
1850.2	512	GPRS (3)	Rear closed	Fig.I.7 / B1	25.96	26	0.54	<b>0.54</b>	0.926	<b>0.93</b>	0.06
1850.2	512	GPRS (3)	Rear closed	Fig.I.8 / B2	25.96	26	0.529	<b>0.53</b>	0.896	<b>0.90</b>	-0.08

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

Note2: B1 is the battery CAB22B0000C1, B2 is the new battery CAB0400016C1.

### I.3 Reported SAR Comparison

Exposure Configuration	Technology Band	Reported SAR 1g (W/Kg): original Battery1	Reported SAR 1g (W/Kg): spot check Battery1	Reported SAR 1g (W/Kg): spot check Battery2
Head (Separation Distance 0mm)	GSM 850	0.93	1.17	1.17
	PCS 1900	0.48	0.38	0.38
Body-worn (Separation Distance 10mm)	GSM 850	1.54	1.08	1.05
	PCS 1900	1.11	0.93	0.90

**Note: The spot check result of GSM850 for Head is larger than the original result, so it replace the original result and others are quoted. We have evaluated all position and the position with highest value is not changed.**



#### I.4 Graph Results

##### **GSM850 Right Cheek High with battery CAB22B0000C1**

Date: 2016-11-10

Electronics: DAE4 Sn1331

Medium: Head 850 MHz

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 0.938$  mho/m;  $\epsilon_r = 42.746$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C      Liquid Temperature: 22.0°C

Communication System: GSM 850 Frequency: 848.8 MHz Duty Cycle: 1:8.3

Probe: EX3DV4 – SN7307 ConvF(10.01, 10.01, 10.01)

**Area Scan (61x161x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.14 W/kg

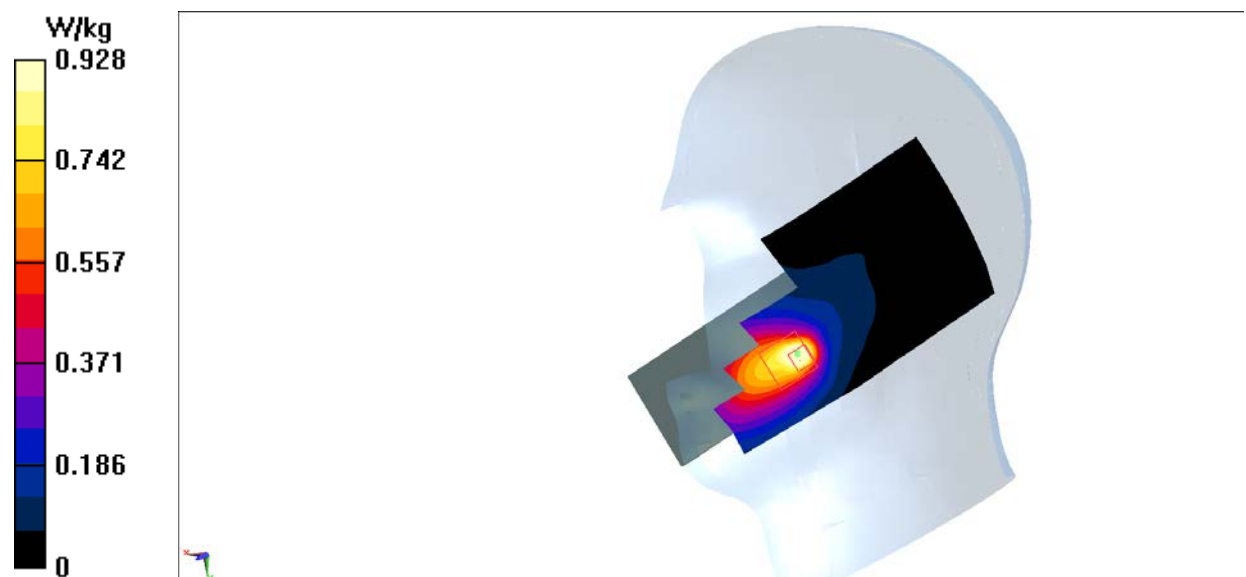
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.536 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 1.93 W/kg

**SAR(1 g) = 0.793 W/kg; SAR(10 g) = 0.454 W/kg**

Maximum value of SAR (measured) = 0.928 W/kg



**Fig I.1 GSM850MHz**

**GSM850 Right Cheek High with battery CAB0400016C1**

Date: 2016-11-10

Electronics: DAE4 Sn1331

Medium: Head 850 MHz

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 0.938$  mho/m;  $\epsilon_r = 42.746$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C      Liquid Temperature: 22.0°C

Communication System: GSM 850 Frequency: 848.8 MHz Duty Cycle: 1:8.3

Probe: EX3DV4 – SN7307 ConvF(10.01, 10.01, 10.01)

**Area Scan (61x161x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.03 W/kg

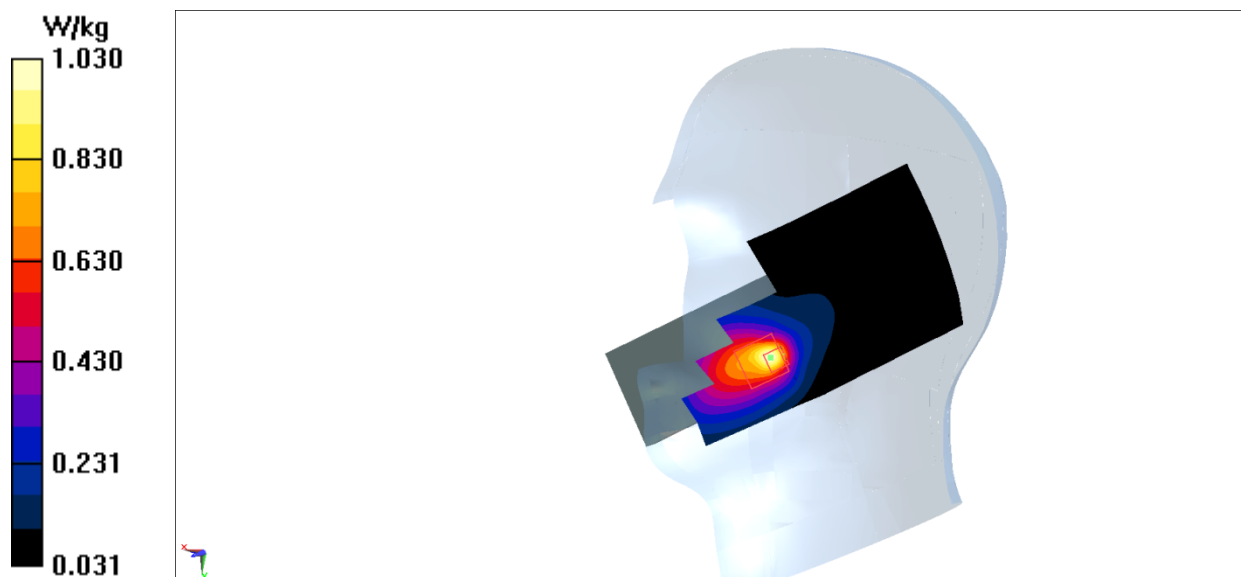
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.620 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 2.00 W/kg

**SAR(1 g) = 0.791 W/kg; SAR(10 g) = 0.452 W/kg**

Maximum value of SAR (measured) = 1.03 W/kg



**Fig I.2 GSM850MHz**

**GSM850 Body Rear closed High with battery CAB22B0000C1**

Date: 2016-11-10

Electronics: DAE4 Sn1331

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 0.967$  mho/m;  $\epsilon_r = 56.511$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C      Liquid Temperature: 22.0°C

Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:2.67

Probe: EX3DV4 – SN7307 ConvF(9.83, 9.83, 9.83)

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

Maximum value of SAR (interpolated) = 1.05 W/kg

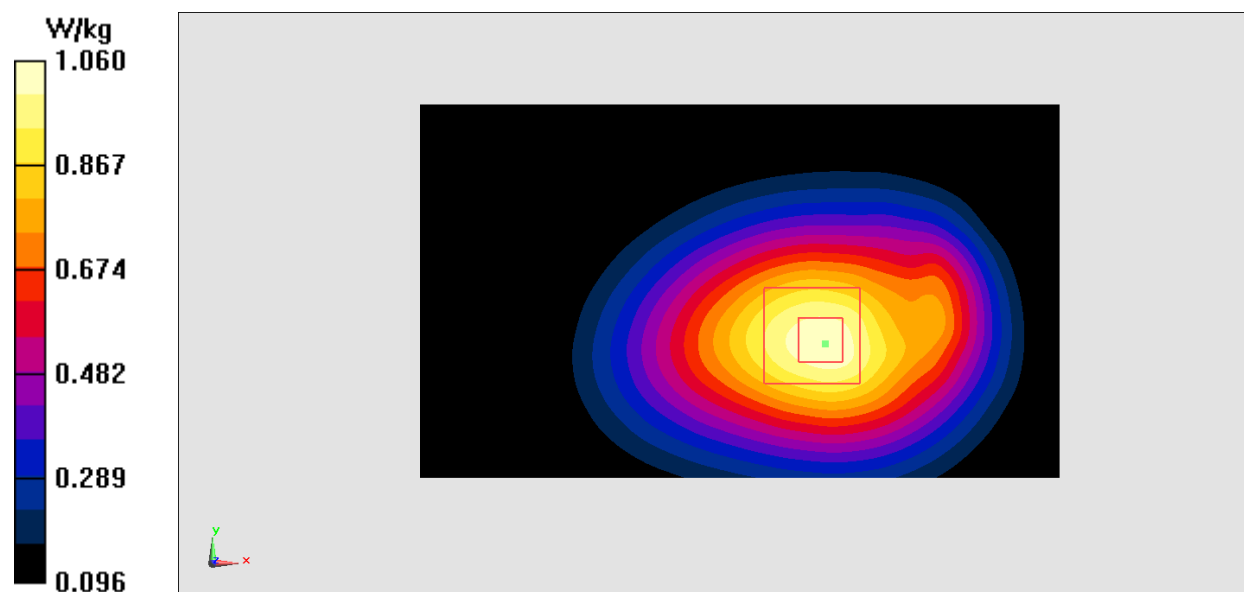
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 29.54 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.26 W/kg

**SAR(1 g) = 0.936 W/kg; SAR(10 g) = 0.664 W/kg**

Maximum value of SAR (measured) = 1.06 W/kg



**Fig I.3 GSM850 MHz**

**GSM850 Body Rear closed High with battery CAB0400016C1**

Date: 2016-11-10

Electronics: DAE4 Sn1331

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 0.967$  mho/m;  $\epsilon_r = 56.511$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C      Liquid Temperature: 22.0°C

Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:2.67

Probe: EX3DV4 – SN7307 ConvF(9.83, 9.83, 9.83)

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

Maximum value of SAR (interpolated) = 1.02 W/kg

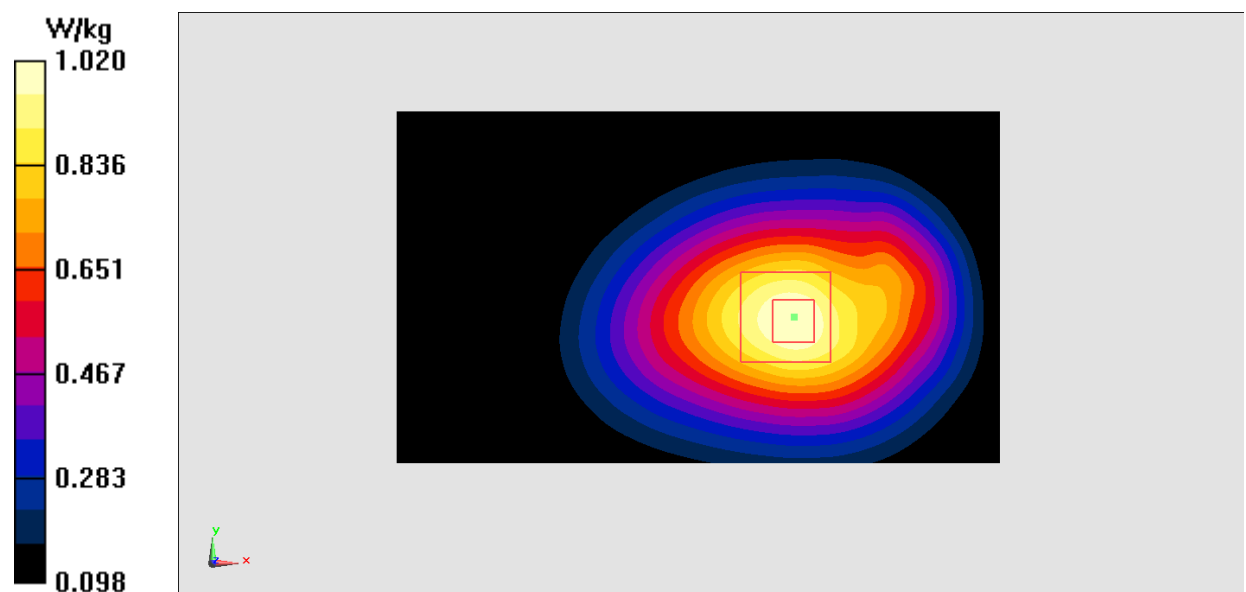
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 29.10 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 1.22 W/kg

**SAR(1 g) = 0.908 W/kg; SAR(10 g) = 0.645 W/kg**

Maximum value of SAR (measured) = 1.02 W/kg



**Fig I.4 GSM850 MHz**



**PCS1900 Right Cheek Middle with battery CAB22B0000C1**

Date: 2016-11-11

Electronics: DAE4 Sn1331

Medium: Head 1900 MHz

Medium parameters use:  $f = 1880$  MHz;  $\sigma = 1.409$  mho/m;  $\epsilon_r = 40.467$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C Liquid Temperature: 22.0°C

Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:8.3

Probe: EX3DV4 – SN7307 ConvF(8.10, 8.10, 8.10)

**Area Scan (61x141x1):** Interpolated grid:  $dx=1.000$  mm,  $dy=1.000$  mm

Maximum value of SAR (interpolated) = 0.296 W/kg

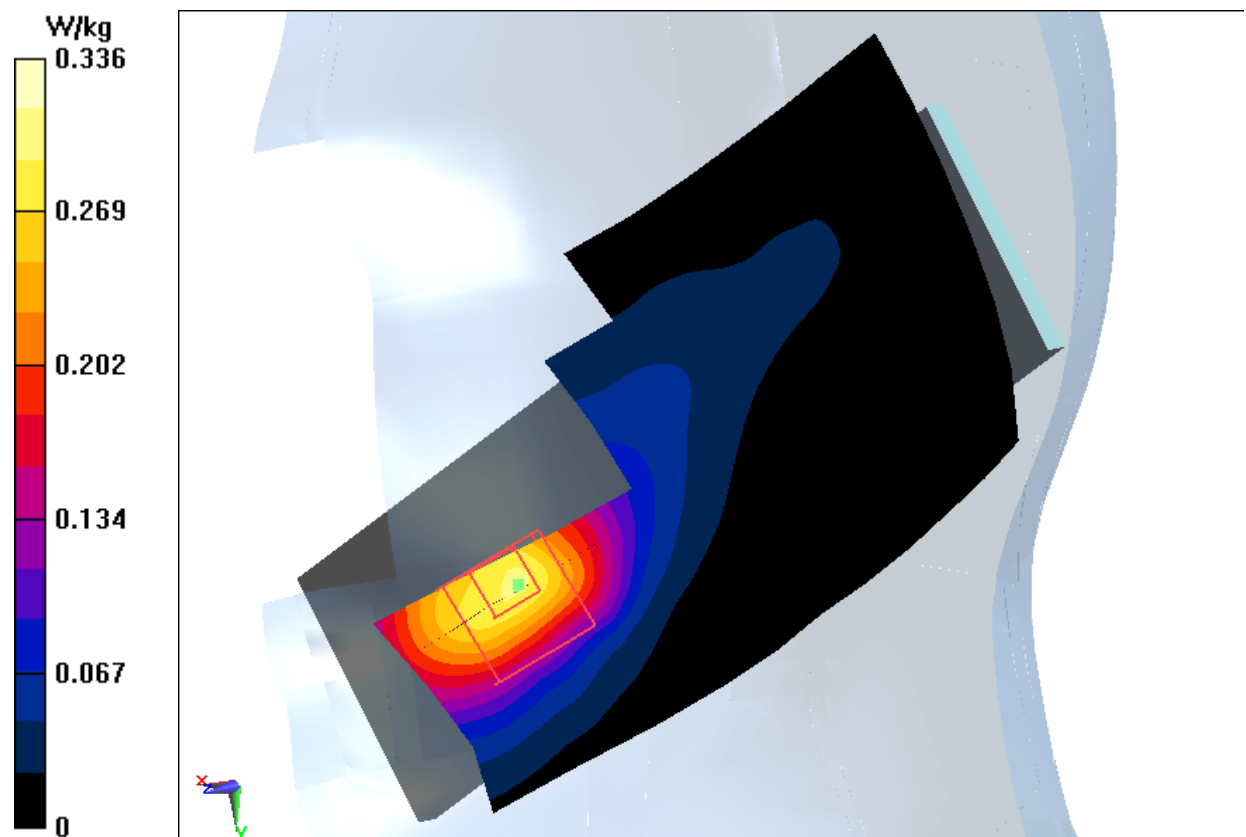
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

Reference Value = 1.582 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.445 W/kg

**SAR(1 g) = 0.291 W/kg; SAR(10 g) = 0.163 W/kg**

Maximum value of SAR (measured) = 0.336 W/kg



**Fig I.5 PCS1900 MHz**

**PCS1900 Right Cheek Middle with battery CAB0400016C1**

Date: 2016-11-11

Electronics: DAE4 Sn1331

Medium: Head 1900 MHz

Medium parameters use:  $f = 1880$  MHz;  $\sigma = 1.409$  mho/m;  $\epsilon_r = 40.467$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C      Liquid Temperature: 22.0°C

Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:8.3

Probe: EX3DV4 – SN7307 ConvF(8.10, 8.10, 8.10)

**Area Scan (61x141x1):** Interpolated grid:  $dx=1.000$  mm,  $dy=1.000$  mm

Maximum value of SAR (interpolated) = 0.307 W/kg

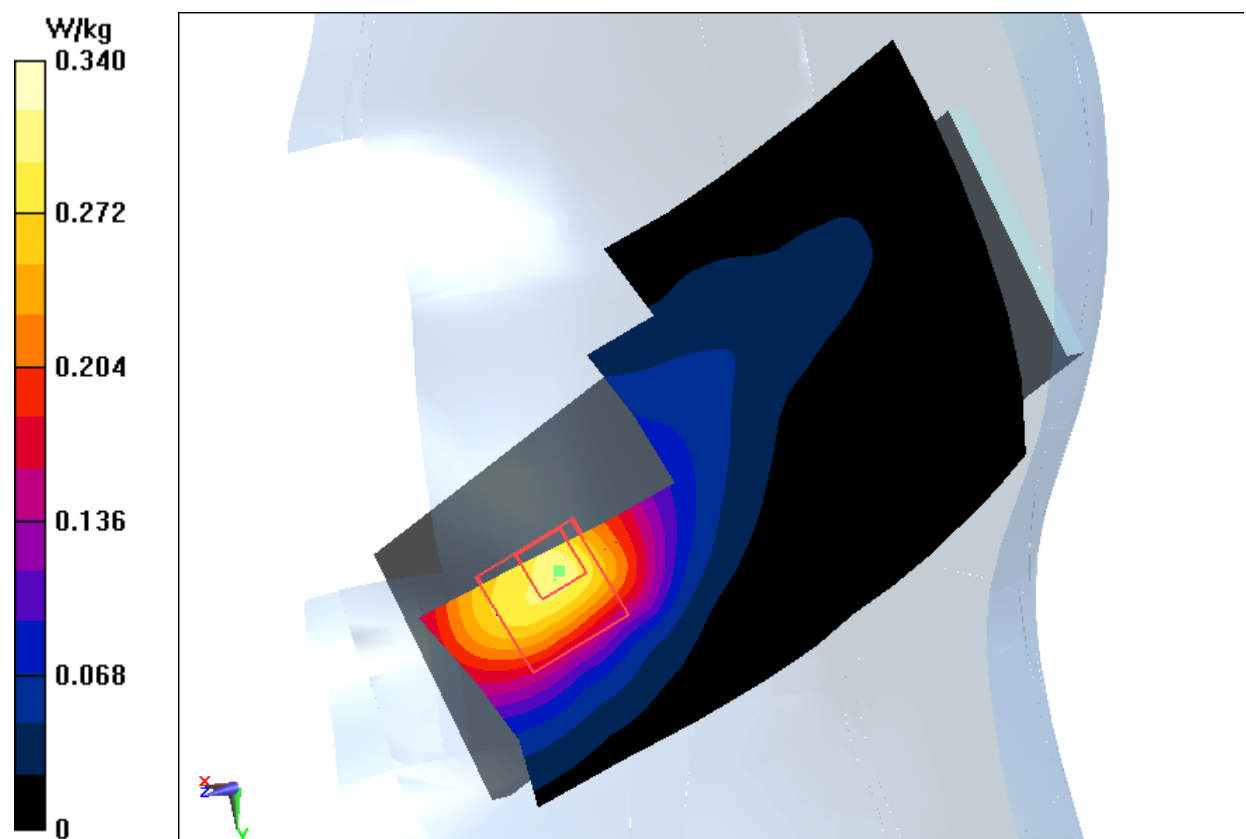
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

Reference Value = 1.531 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.443 W/kg

**SAR(1 g) = 0.289 W/kg; SAR(10 g) = 0.164 W/kg**

Maximum value of SAR (measured) = 0.340 W/kg



**Fig I.6 PCS1900 MHz**

**PCS1900 Body Rear closed Low with battery CAB22B0000C1**

Date: 2016-11-11

Electronics: DAE4 Sn1331

Medium: Body 1900 MHz

Medium parameters used (interpolated):  $f = 1850.2$  MHz;  $\sigma = 1.51$  mho/m;  $\epsilon_r = 54.418$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C      Liquid Temperature: 22.0°C

Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:2.67

Probe: EX3DV4 – SN7307 ConvF(7.67, 7.67, 7.67)

**Area Scan (91x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.13 W/kg

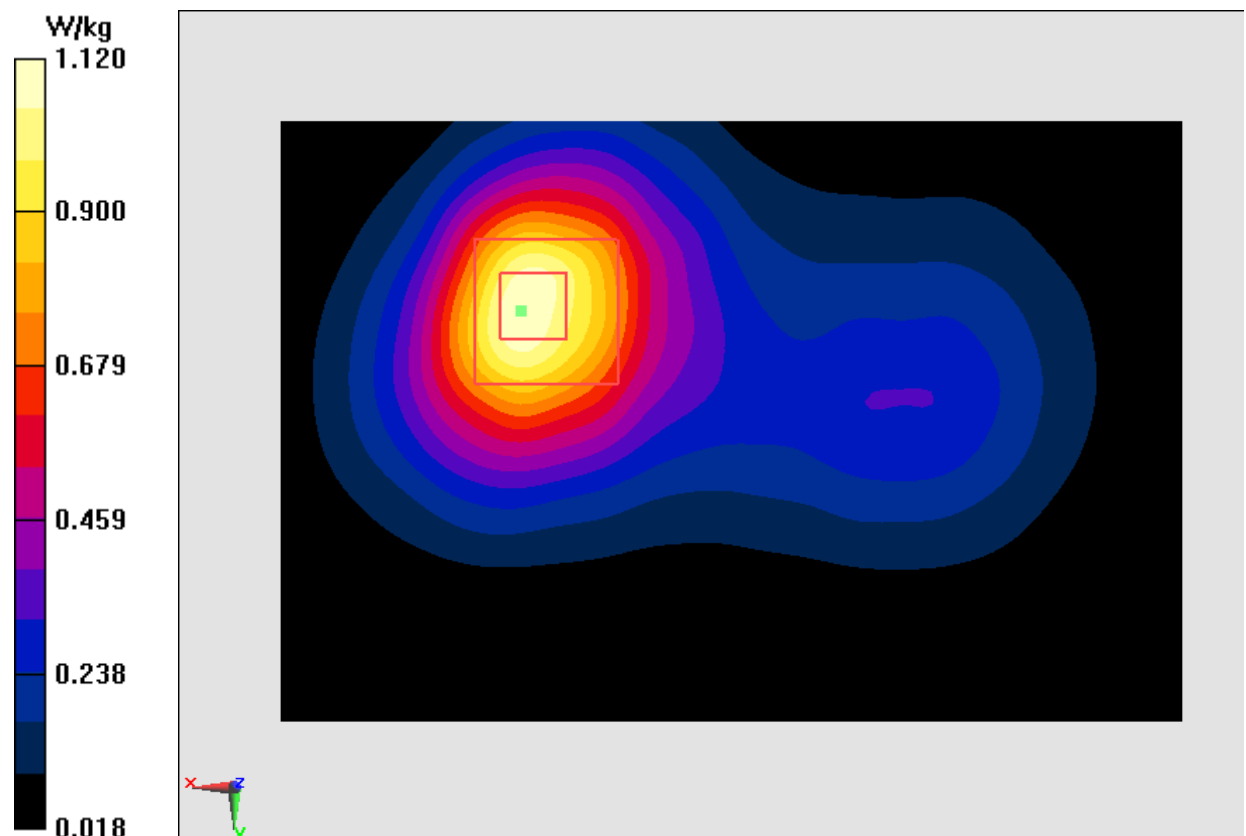
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.65 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.51 W/kg

**SAR(1 g) = 0.926 W/kg; SAR(10 g) = 0.540 W/kg**

Maximum value of SAR (measured) = 1.12 W/kg



**Fig I.7 PCS1900 MHz**

**PCS1900 Body Rear closed Low with battery CAB0400016C1**

Date: 2016-11-11

Electronics: DAE4 Sn1331

Medium: Body 1900 MHz

Medium parameters used (interpolated):  $f = 1850.2$  MHz;  $\sigma = 1.51$  mho/m;  $\epsilon_r = 54.418$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.5°C      Liquid Temperature: 22.0°C

Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:2.67

Probe: EX3DV4 – SN7307 ConvF(7.67, 7.67, 7.67)

**Area Scan (91x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.10 W/kg

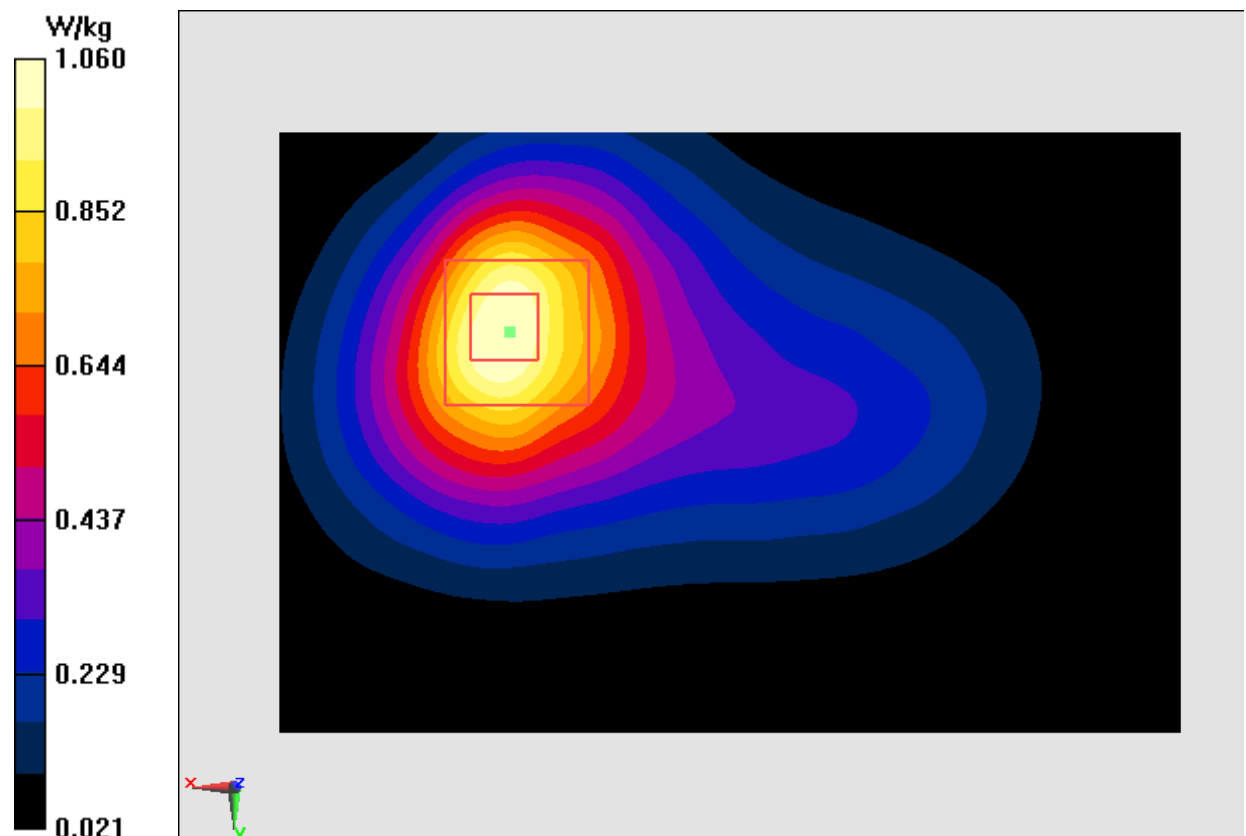
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.48 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 1.46 W/kg

**SAR(1 g) = 0.896 W/kg; SAR(10 g) = 0.529 W/kg**

Maximum value of SAR (measured) = 1.06 W/kg



**Fig I.8 PCS1900 MHz**



## ANNEX J Accreditation Certificate



**China National Accreditation Service for Conformity Assessment**  
**LABORATORY ACCREDITATION CERTIFICATE**  
(Registration No. CNAS L0570 )

**Telecommunication Technology Labs,  
Academy of Telecommunication Research, MIIT**

No.52, Huayuan North Road, Haidian District, Beijing, China

No.51, Xueyuan Road, Haidian District, Beijing, China

TCL International E City, No. 1001 Zhongshanyuan Road, Nanshan  
District, Shenzhen, Guangdong Province

*is accredited in accordance with ISO/IEC 17025:2005 General Requirements  
for the Competence of Testing and Calibration Laboratories(CNAS-CL01  
Accreditation Criteria for the Competence of Testing and Calibration  
Laboratories) for the competence to undertake testing and calibration service as  
described in the schedule attached to this certificate.*

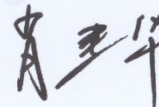
*The scope of accreditation is detailed in the attached schedule bearing the  
same registration number as above. The schedule form an integral part of this  
certificate.*

Date of Issue: 2015-11-13

Date of Expiry: 2017-06-19

Date of Initial Accreditation: 1998-07-03

Signed on behalf of China National Accreditation Service for Conformity Assessment



China National Accreditation Service for Conformity Assessment(CNAS) is authorized by Certification and Accreditation Administration of the People' s Republic of China (CNCA) to operate the national accreditation schemes for conformity assessment. CNAS is a signatory of the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC MRA) and the Asia Pacific Laboratory Accreditation Cooperation Mutual Recognition Arrangement (APLAC MRA). The validity of the certificate can be checked on CNAS website at <http://www.cnas.org.cn/english/findanaccreditedbody/index.shtml>