

**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  
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:**

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

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

- a) 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
- b) 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
- c) 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
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

#### **Additional Documentation:**

- e) 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>	$dx, dy, dz = 5 \text{ mm}$	
<b>Frequency</b>	$2450 \text{ MHz} \pm 1 \text{ MHz}$	

### Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
<b>Nominal Head TSL parameters</b>	22.0 °C	39.2	1.80 mho/m
<b>Measured Head TSL parameters</b>	$(22.0 \pm 0.2) \text{ °C}$	$38.0 \pm 6 \text{ %}$	$1.86 \text{ mho/m} \pm 6 \text{ %}$
<b>Head TSL temperature change during test</b>	$< 0.5 \text{ °C}$	---	---

### 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	13.5 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	<b>52.8 W/kg <math>\pm 17.0 \text{ % (k=2)}</math></b>

<b>SAR averaged over 10 cm<sup>3</sup> (10 g) of Head TSL</b>	Condition	
SAR measured	250 mW input power	6.23 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	<b>24.6 W/kg <math>\pm 16.5 \text{ % (k=2)}</math></b>

### Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
<b>Nominal Body TSL parameters</b>	22.0 °C	52.7	1.95 mho/m
<b>Measured Body TSL parameters</b>	$(22.0 \pm 0.2) \text{ °C}$	$51.8 \pm 6 \text{ %}$	$2.03 \text{ mho/m} \pm 6 \text{ %}$
<b>Body TSL temperature change during test</b>	$< 0.5 \text{ °C}$	---	---

### 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	13.1 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	<b>51.2 W/kg <math>\pm 17.0 \text{ % (k=2)}</math></b>

<b>SAR averaged over 10 cm<sup>3</sup> (10 g) of Body TSL</b>	Condition	
SAR measured	250 mW input power	6.10 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	<b>24.1 W/kg <math>\pm 16.5 \text{ % (k=2)}</math></b>

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

Impedance, transformed to feed point	53.7 $\Omega$ + 5.1 $j\Omega$
Return Loss	- 24.3 dB

**Antenna Parameters with Body TSL**

Impedance, transformed to feed point	50.0 $\Omega$ + 4.5 $j\Omega$
Return Loss	- 27.0 dB

**General Antenna Parameters and Design**

Electrical Delay (one direction)	1.162 ns
----------------------------------	----------

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 10, 2009

**DASY5 Validation Report for Head 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;  $\sigma = 1.86$  S/m;  $\epsilon_r = 38$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.72, 7.72, 7.72); 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 (7x7x7)/Cube 0:**

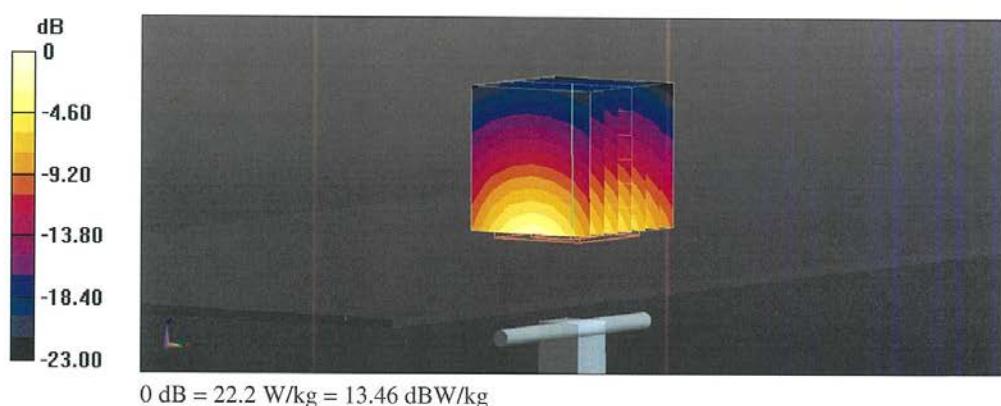
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 115.0 V/m; Power Drift = 0.00 dB

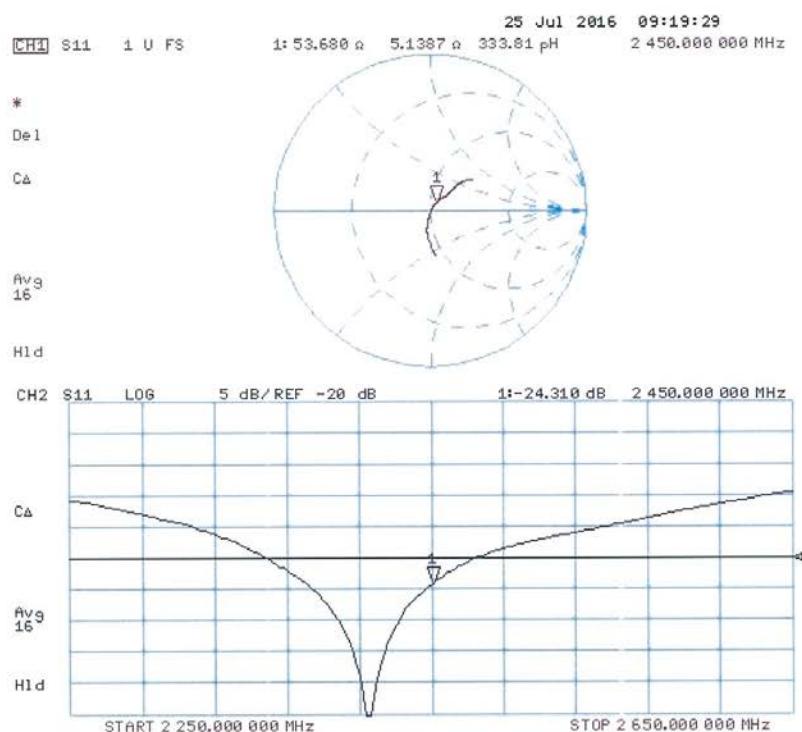
Peak SAR (extrapolated) = 27.5 W/kg

**SAR(1 g) = 13.5 W/kg; SAR(10 g) = 6.23 W/kg**

Maximum value of SAR (measured) = 22.2 W/kg



## Impedance Measurement Plot for Head TSL



**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:**

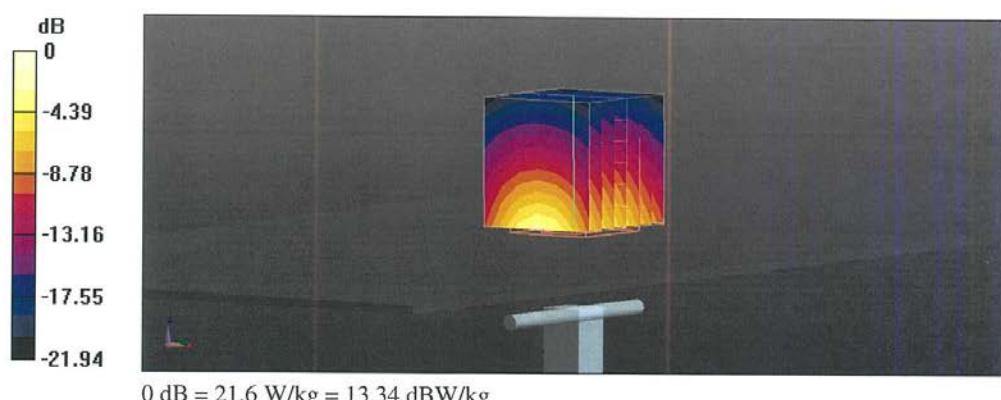
Measurement grid: dx=5mm, dy=5mm, dz=5mm

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

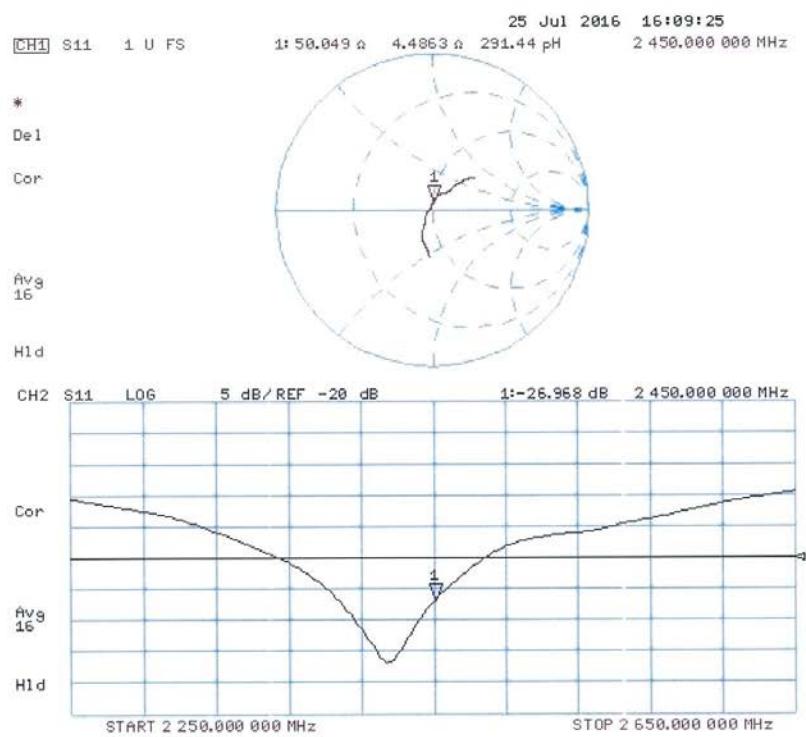
Peak SAR (extrapolated) = 26.3 W/kg

**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





No.I16Z42254-SEM01

Page 205 of 234

## 2600 MHz Dipole Calibration Certificate

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: **D2600V2-1012\_Jul16**

### CALIBRATION CERTIFICATE

Object	D2600V2 - SN:1012
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	July 25, 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  $(22 \pm 3)^\circ\text{C}$  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:	Name Michael Weber	Function Laboratory Technician	Signature 
----------------	-----------------------	-----------------------------------	---------------

Approved by:	Katja Pokovic	Technical Manager	
--------------	---------------	-------------------	--

Issued: July 26, 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:**

- a) 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
- b) 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
- c) 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
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

#### **Additional Documentation:**

- e) 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.

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2600 MHz ± 1 MHz	

### Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.0	1.96 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.5 ± 6 %	2.02 mho/m ± 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	14.5 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	56.7 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.39 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	25.2 W/kg ± 16.5 % (k=2)

### Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.5	2.16 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	51.4 ± 6 %	2.20 mho/m ± 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	14.0 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	55.3 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.25 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	24.8 W/kg ± 16.5 % (k=2)

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

Impedance, transformed to feed point	46.8 $\Omega$ - 6.6 $j\Omega$
Return Loss	- 22.4 dB

**Antenna Parameters with Body TSL**

Impedance, transformed to feed point	44.1 $\Omega$ - 4.9 $j\Omega$
Return Loss	- 21.8 dB

**General Antenna Parameters and Design**

Electrical Delay (one direction)	1.152 ns
----------------------------------	----------

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	October 30, 2007

**DASY5 Validation Report for Head TSL**

Date: 22.07.2016

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 2600 MHz D2600V2; Type: D2600V2; Serial: D2600V2 - SN:1012**

Communication System: UID 0 - CW; Frequency: 2600 MHz

Medium parameters used:  $f = 2600$  MHz;  $\sigma = 2.02$  S/m;  $\epsilon_r = 37.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.56, 7.56, 7.56); 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 (7x7x7)/Cube 0:**

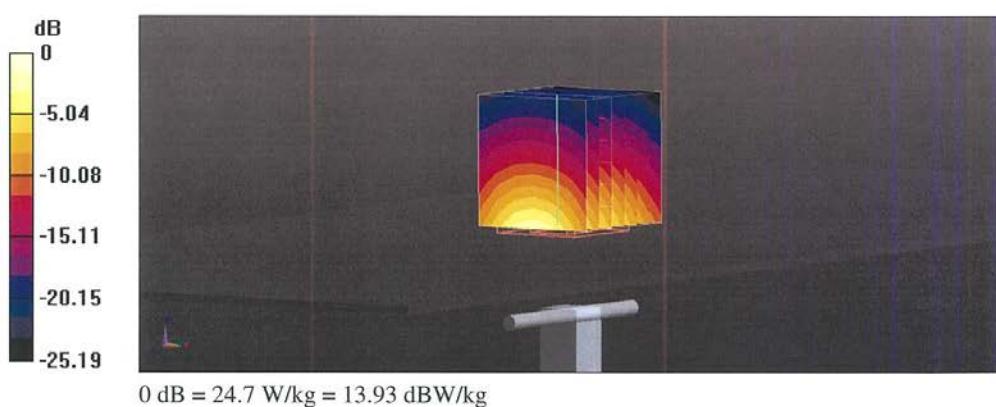
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 115.3 V/m; Power Drift = -0.02 dB

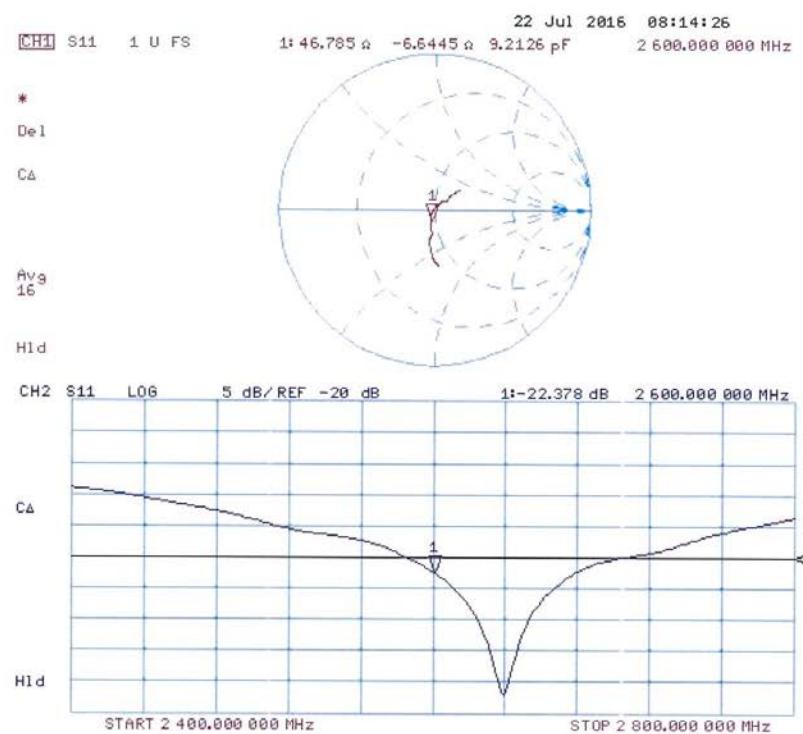
Peak SAR (extrapolated) = 30.9 W/kg

**SAR(1 g) = 14.5 W/kg; SAR(10 g) = 6.39 W/kg**

Maximum value of SAR (measured) = 24.7 W/kg



## Impedance Measurement Plot for Head TSL



**DASY5 Validation Report for Body TSL**

Date: 22.07.2016

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 2600 MHz D2600V2; Type: D2600V2; Serial: D2600V2 - SN:1012**

Communication System: UID 0 - CW; Frequency: 2600 MHz

Medium parameters used:  $f = 2600$  MHz;  $\sigma = 2.2$  S/m;  $\epsilon_r = 51.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.48, 7.48, 7.48); 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:**

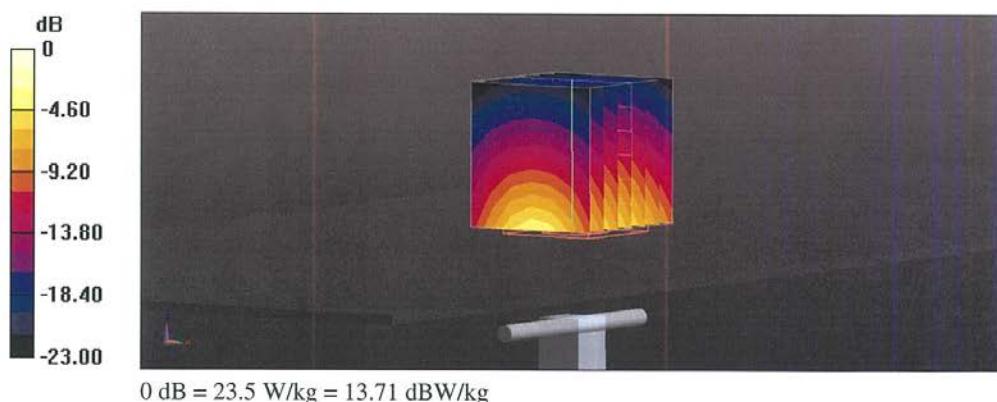
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 108.8 V/m; Power Drift = -0.03 dB

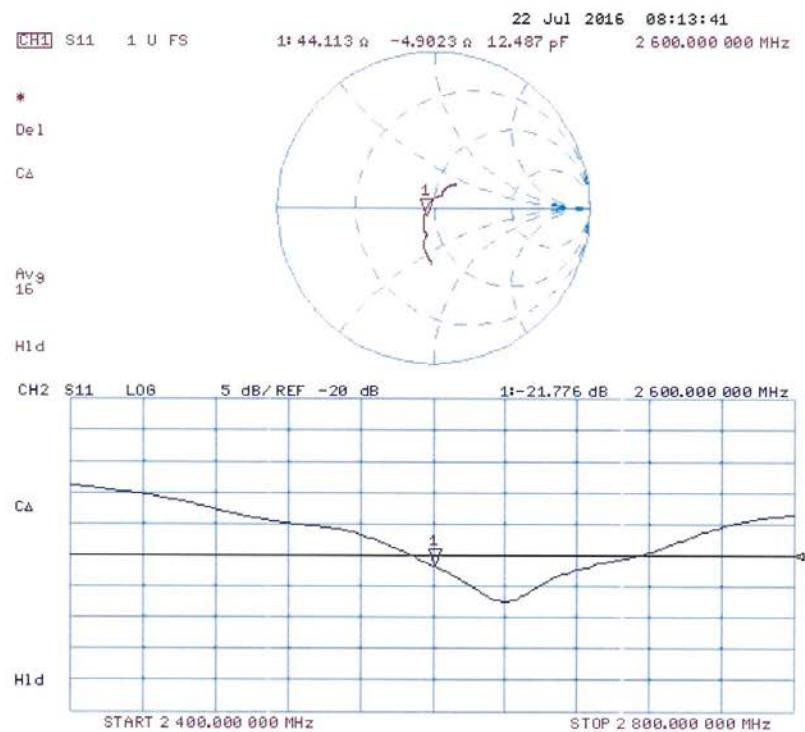
Peak SAR (extrapolated) = 28.9 W/kg

**SAR(1 g) = 14 W/kg; SAR(10 g) = 6.25 W/kg**

Maximum value of SAR (measured) = 23.5 W/kg



## Impedance Measurement Plot for Body TSL



## ANNEX I SPOT CHECK TEST

As the test lab for 4044V 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 for WCDMA

Item	band	FDDV result		
	ARFCN	4132/4357	4182/4407	4233/4458
WCDMA	\	(826.4MHz)	(836.4MHz)	(846.6MHz)
		23.38	\	23.26
Item	band	FDDII result		
	ARFCN	9262/9662	9400/9800	9538/9938
WCDMA	\	(1852.4MHz)	(1880MHz)	(1907.6MHz)
		23.35	23.49	\
Item	band	FDDIV result		
	ARFCN	1312/1537	1412/1675	1513/1738
WCDMA	\	(1712.4MHz)	(1732.4MHz)	(1752.6MHz)
		\	\	23.48

Table I.1-2: The conducted Power for LTE

LTE Band2 20MHz	1RB-Low (0)	1900 (19100)	\
		1880 (18900)	\
		1860 (18700)	23.68
LTE Band4 20MHz	1RB-Low (0)	1745 (20300)	23.88
		1732.5 (20175)	\
		1720 (20050)	\
LTE Band5 10MHz	1RB-Middle (24)	844 (20600)	\
		836.5 (20525)	23.51
		829 (20450)	\
LTE Band7 20MHz	1RB-Low (0)	2560 (21350)	23.76
		2535 (21100)	\
		2510 (20850)	\
LTE Band12 10MHz	1RB-High (49)	711 (23130)	\
		707.5 (23095)	\
		704 (23060)	23.71

## I.2 Measurement results

**Table I.2-1: SAR Values (WCDMA850 MHz Band - Head)**

Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)		Reported SAR(1g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.						Ambient Temperature: 22.9 °C	Liquid Temperature: 22.5 °C				
826.4	4132	Right	Touch	Fig.I.1	23.38	24.2	0.269	<b>0.32</b>	0.389	<b>0.47</b>	0.10	

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

Frequency		Test Position	Figure No.	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.									
826.4	4132	Rear closed	Fig.I.2	23.38	24.2	0.201	<b>0.24</b>	0.297	<b>0.36</b>	0.05

Note1: The distance between the EUT and the phantom bottom is 15mm.

**Table I.2-3: SAR Values (WCDMA1700 MHz Band - Head)**

Frequency		Side	Test Position	Figure No.	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.										
1752.6	1513	Left	Touch	Fig.I.3	23.48	24.2	0.149	<b>0.18</b>	0.221	<b>0.26</b>	-0.02

**Table I.2-4: SAR Values (WCDMA1700 MHz Band-Body)**

Frequency		Test Position	Figure No.	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.									
1752.6	1513	Rear open	Fig.I.4	23.48	24.2	0.552	<b>0.65</b>	0.876	<b>1.03</b>	-0.01

Note1: The distance between the EUT and the phantom bottom is 15mm.

**Table I.2-5: SAR Values (WCDMA1900 MHz Band - Head)**

Frequency		Side	Test Position	Figure No.	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	9400	Left	Touch	Fig.I.5	23.49	24.2	0.143	<b>0.17</b>	0.227	<b>0.27</b>	-0.03

**Table I.2-6: SAR Values (WCDMA1900 MHz Band-Body)**

Ambient Temperature: 22.9 °C				Liquid Temperature: 22.5 °C						
Frequency		Test Position	Figure No.	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.			(dBm)	(dBm)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(dB)
1852.4	9262	Rear open	Fig.I.6	23.35	24.2	0.536	<b>0.65</b>	0.871	<b>1.06</b>	-0.01

Note1: The distance between the EUT and the phantom bottom is 15mm.

**Table I.2-7: SAR Values (LTE Band2 - Head)**

Ambient Temperature: 22.9 °C				Liquid Temperature: 22.5 °C								
Frequency		Mode	Side	Test Position	Figure No.	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.					(dBm)	(dBm)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(dB)
1860	18700	1RB_Low	Left	Touch	Fig.I.7	23.68	24.2	0.138	<b>0.16</b>	0.221	<b>0.25</b>	-0.05

Note1: The LTE mode is QPSK\_20MHz.

**Table I.2-8: SAR Values (LTE Band2 - Body)**

Ambient Temperature: 22.9 °C				Liquid Temperature: 22.5 °C							
Frequency		Mode	Test Position	Figure No.	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.				(dBm)	(dBm)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(dB)
1860	18700	1RB_Low	Rear closed	Fig.I.8	23.68	24.2	0.424	<b>0.48</b>	0.688	<b>0.78</b>	0.08

Note1: The distance between the EUT and the phantom bottom is 15mm.

Note2: The LTE mode is QPSK\_20MHz.

**Table I.2-9: SAR Values(LTE Band4 - Head)**

Ambient Temperature: 22.9 °C				Liquid Temperature: 22.5 °C								
Frequency		Mode	Side	Test Position	Figure No.	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.					(dBm)	(dBm)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(dB)
1745	20300	1RB_Low	Left	Touch	Fig.I.9	23.88	24.2	0.162	<b>0.17</b>	0.227	<b>0.24</b>	0.06

Note1: The LTE mode is QPSK\_20MHz.

**Table I.2-10: SAR Values (LTE Band4 - Body)**

Ambient Temperature: 22.9 °C				Liquid Temperature: 22.5 °C								
Frequency		Mode	Side	Test Position	Figure No.	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.					(dBm)	(dBm)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(dB)
1745	20300	1RB_Low	Rear open	Fig.I.10		23.88	24.2	0.609	<b>0.66</b>	0.976	<b>1.05</b>	0.13

Note1: The distance between the EUT and the phantom bottom is 15mm.

Note2: The LTE mode is QPSK\_20MHz.

Table I.2-11: SAR Values (LTE Band5 - Head)

Frequency		Ambient Temperature: 22.9 °C				Liquid Temperature: 22.5 °C							
MHz	Ch.	Mode	Side	Test Position	Figure No.	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)	
836.5	20525	1RB_Mid	Right	Touch	Fig.I.11	23.51	24.2	0.317	<b>0.37</b>	0.483	<b>0.57</b>	0.16	

Note1: The LTE mode is QPSK\_10MHz.

Table I.2-12: SAR Values (LTE Band5 -Body)

Frequency		Ambient Temperature: 22.9 °C				Liquid Temperature: 22.5 °C							
MHz	Ch.	Mode	Test Position	Figure No.	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)		
836.5	20525	1RB_Mid	Rear closed	Fig.I.12	23.51	24.2	0.189	<b>0.22</b>	0.282	<b>0.33</b>	0.02		

Note1: The distance between the EUT and the phantom bottom is 15mm.

Note2: The LTE mode is QPSK\_10MHz.

Table I.2-13: SAR Values (LTEBand7 - Head)

Frequency		Ambient Temperature: 22.9 °C				Liquid Temperature: 22.5 °C							
MHz	Ch.	Mode	Side	Test Position	Figure No.	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)	
2560	21350	1RB_Low	Left	Touch	Fig.I.13	23.76	24.5	0.120	<b>0.14</b>	0.216	<b>0.26</b>	0.00	

Note1: The LTE mode is QPSK\_20MHz.

Table I.2-14: SAR Values (LTE Band7 -Body)

Frequency		Ambient Temperature: 22.9 °C				Liquid Temperature: 22.5 °C							
MHz	Ch.	Mode	Test Position	Figure No.	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)		
2560	21350	1RB_Low	Rear closed	Fig.I.14	23.76	24.5	0.190	<b>0.23</b>	0.341	<b>0.40</b>	0.09		

Note1: The distance between the EUT and the phantom bottom is 15mm.

Note2: The LTE mode is QPSK\_20MHz.

Table I.2-15: SAR Values(LTE Band12 - Head)

Ambient Temperature: 22.9 °C      Liquid Temperature: 22.5 °C												
Frequency		Mode	Side	Test Position	Figure No.	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.											
704	23060	1RB_High	Left	Touch	Fig.I.15	23.71	24.2	0.181	<b>0.20</b>	0.263	<b>0.29</b>	0.09

Note1: The LTE mode is QPSK\_10MHz.

Table I.2-16: SAR Values (LTE Band12-Body)

Ambient Temperature: 22.9 °C      Liquid Temperature: 22.5 °C											
Frequency		Mode	Test Position	Figure No.	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.										
704	23060	1RB_High	Rear open	Fig.I.16	23.71	24.2	0.353	<b>0.40</b>	0.477	<b>0.53</b>	0.17

Note1: The distance between the EUT and the phantom bottom is 15mm. Note2: The LTE mode is QPSK\_10MHz.

### 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)		WCDMA 850	0.47	0.58
		WCDMA 1700	0.26	0.39
		WCDMA 1900	0.27	0.28
		LTE Band2	0.25	0.32
		LTE Band4	0.24	0.25
		LTE Band5	0.57	0.61
		LTE Band7	0.26	0.30
		LTE Band12	0.29	0.33
Body-worn (Data) (Separation Distance 15mm)		WCDMA 850	0.36	0.40
		WCDMA 1700	1.03	1.11
		WCDMA 1900	1.06	1.14
		LTE Band2	0.78	0.85
		LTE Band4	1.05	1.14
		LTE Band5	0.33	0.45
		LTE Band7	0.40	0.40
		LTE Band12	0.53	0.53

#### I.4 Graph Results for Spot check

#### WCDMA850\_826.4\_Right Cheek

Date: 11/16/2016

Electronics: DAE4 Sn1331

Medium: Head 850 MHz

Medium parameters used (interpolated):  $f = 826.4$  MHz;  $\sigma = 0.914$  mho/m;  $\epsilon_r = 40.885$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: WCDMA850 Frequency: 826.4MHz Duty Cycle: 1:1

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) = 0.449 W/kg

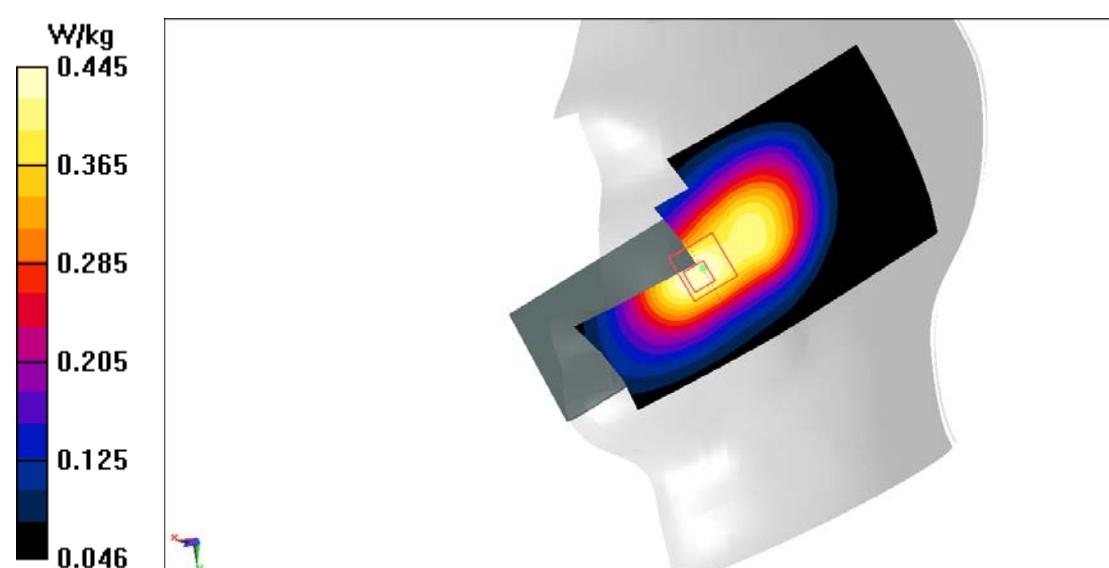
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.208 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.577 W/kg

**SAR(1 g) = 0.389 W/kg; SAR(10 g) = 0.269 W/kg**

Maximum value of SAR (measured) = 0.445 W/kg



**Figure I.1**

## WCDMA850\_826.4\_Rear closed

Date: 11/16/2016

Electronics: DAE4 Sn1331

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 826.4$  MHz;  $\sigma = 0.95$  mho/m;  $\epsilon_r = 55.663$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: WCDMA850 Frequency: 826.4MHz Duty Cycle: 1:1

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) = 0.345 W/kg

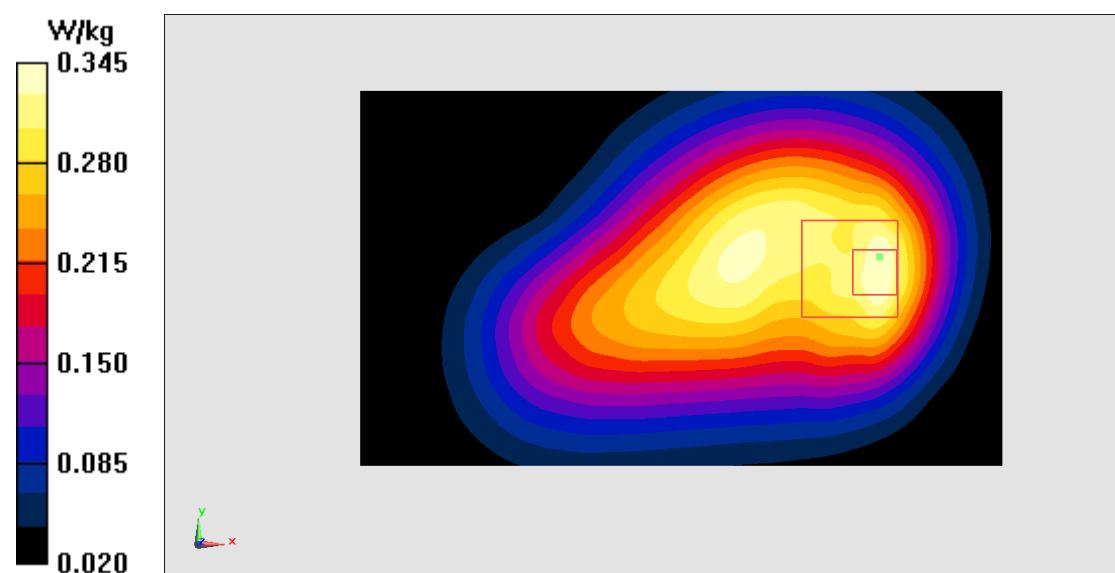
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.17 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.447 W/kg

**SAR(1 g) = 0.297 W/kg; SAR(10 g) = 0.201 W/kg**

Maximum value of SAR (measured) = 0.345 W/kg



**Figure I.2**

## WCDMA1700\_1752.6\_Left Cheek

Date: 11/20/2016

Electronics: DAE4 Sn1331

Medium: Head 1750 MHz

Medium parameters used (interpolated):  $f = 1752.6$  MHz;  $\sigma = 1.376$  mho/m;  $\epsilon_r = 39.633$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: WCDMA1700 Frequency: 1752.6MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(8.37, 8.37, 8.37)

**Area Scan (71x161x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.259 W/kg

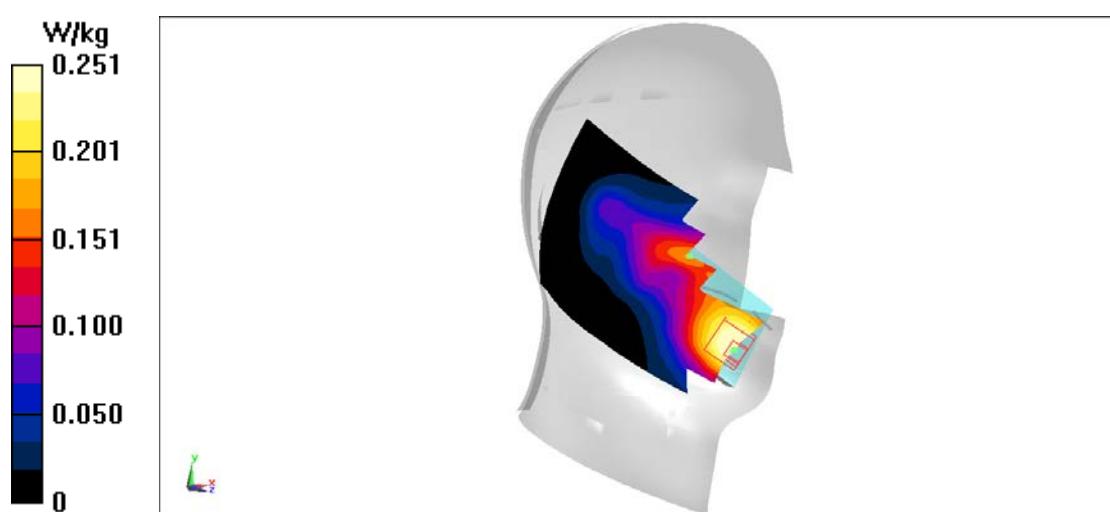
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.777 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.808 W/kg

**SAR(1 g) = 0.221 W/kg; SAR(10 g) = 0.149 W/kg**

Maximum value of SAR (measured) = 0.251 W/kg



**Figure I.3**

**WCDMA1700\_1752.6\_Rear open**

Date: 11/20/2016

Electronics: DAE4 Sn1331

Medium: Body 1750 MHz

Medium parameters used (interpolated):  $f = 1752.6$  MHz;  $\sigma = 1.545$  mho/m;  $\epsilon_r = 53.872$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: WCDMA1700 Frequency: 1752.6MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(8.18, 8.18, 8.18)

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

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

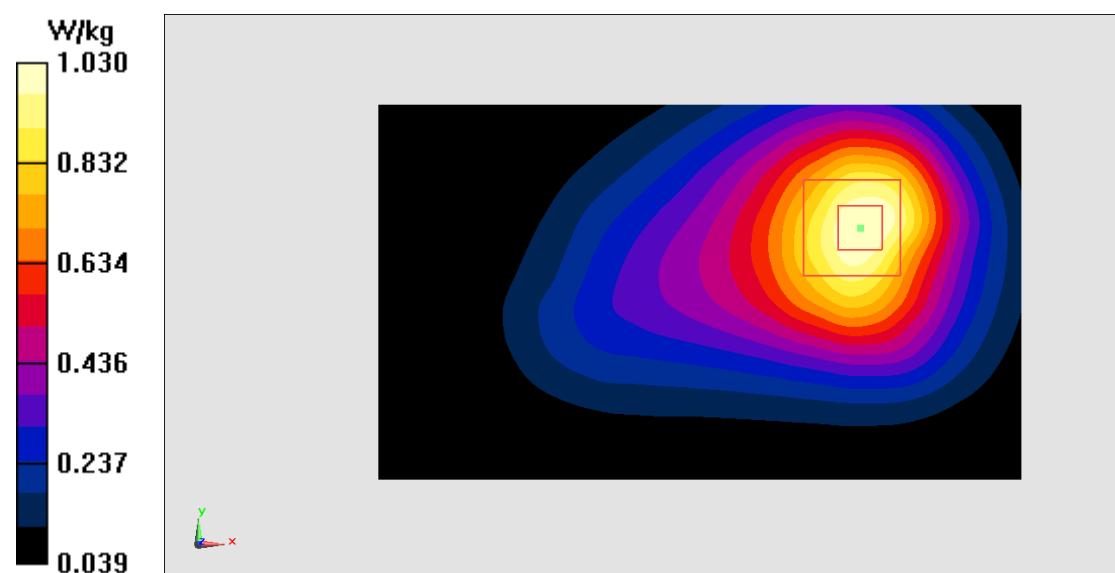
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.72 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.33 W/kg

**SAR(1 g) = 0.876 W/kg; SAR(10 g) = 0.552 W/kg**

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



**Figure I.4**

## WCDMA1900\_1880\_Left Cheek

Date: 11/18/2016

Electronics: DAE4 Sn1331

Medium: Head 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.413$  mho/m;  $\epsilon_r = 40.355$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: WCDMA1900 Frequency: 1880MHz Duty Cycle: 1:1

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

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

Maximum value of SAR (interpolated) = 0.236 W/kg

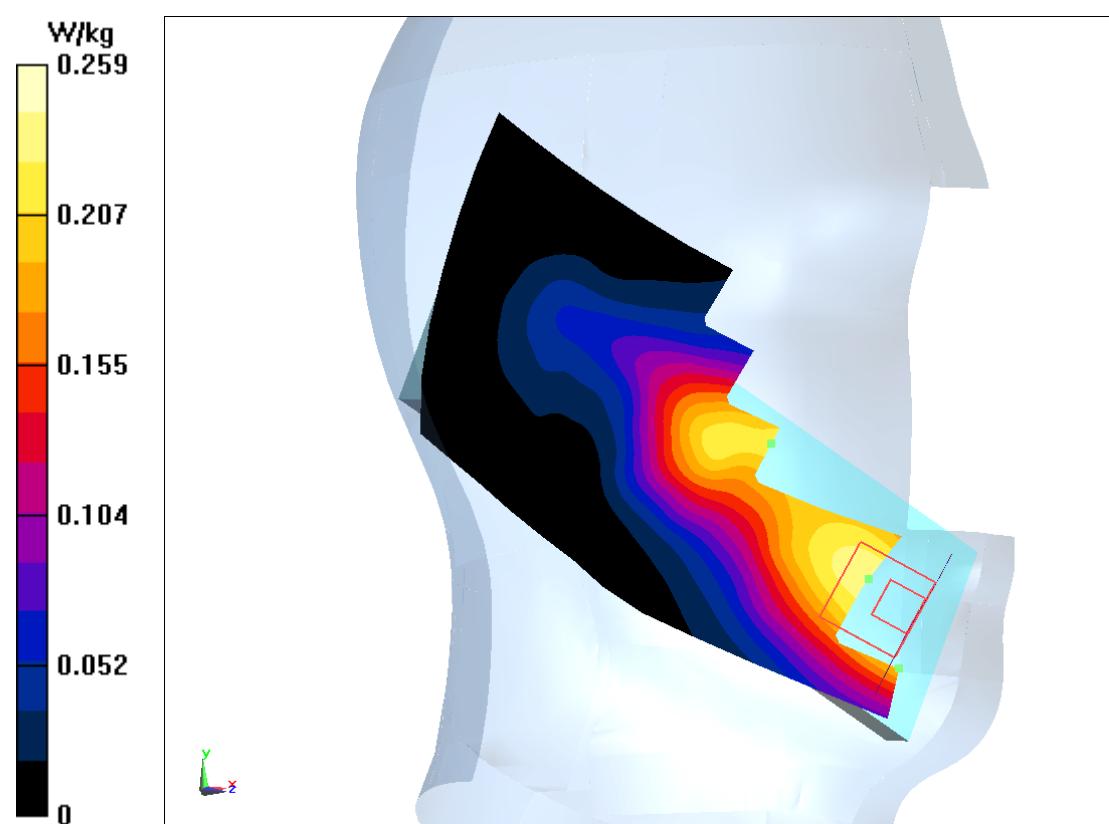
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.194 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.331 W/kg

**SAR(1 g) = 0.227 W/kg; SAR(10 g) = 0.143 W/kg**

Maximum value of SAR (measured) = 0.259 W/kg



**Figure I.5**

**WCDMA1900\_1852.4\_Rear open**

Date: 11/18/2016

Electronics: DAE4 Sn1331

Medium: Body 1900 MHz

Medium parameters used (interpolated):  $f = 1852.4$  MHz;  $\sigma = 1.507$  mho/m;  $\epsilon_r = 53.53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: WCDMA1900 Frequency: 1852.4MHz Duty Cycle: 1:1

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

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

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

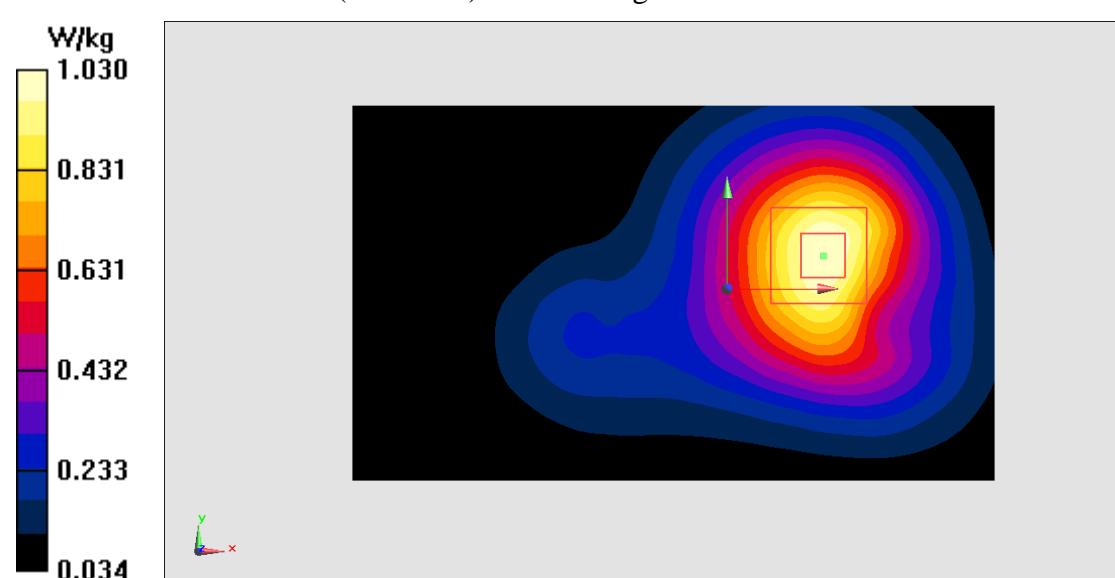
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.93 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.35 W/kg

**SAR(1 g) = 0.871 W/kg; SAR(10 g) = 0.536 W/kg**

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



**Figure I.6**

## LTEBand2\_1860\_Left Cheek

Date: 11/18/2016

Electronics: DAE4 Sn1331

Medium: Head 1900 MHz

Medium parameters used (interpolated):  $f = 1860$  MHz;  $\sigma = 1.438$  mho/m;  $\epsilon_r = 40.91$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTEBand2 Frequency: 1860MHz Duty Cycle: 1:1

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

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

Maximum value of SAR (interpolated) = 0.212 W/kg

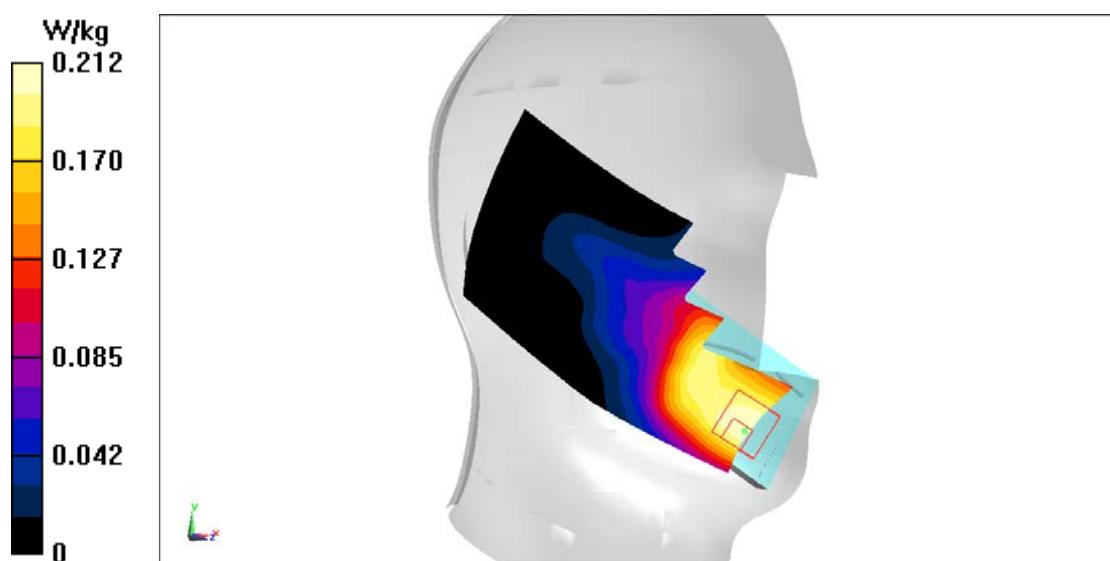
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.179 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.402 W/kg

**SAR(1 g) = 0.221 W/kg; SAR(10 g) = 0.138 W/kg**

Maximum value of SAR (measured) = 0.212 W/kg



**Figure I.7**

**LTEBand2\_1860\_Rear closed**

Date: 11/18/2016

Electronics: DAE4 Sn1331

Medium: Body 1900 MHz

Medium parameters used (interpolated):  $f = 1860$  MHz;  $\sigma = 1.497$  mho/m;  $\epsilon_r = 53.73$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTEBand2 Frequency: 1860MHz Duty Cycle: 1:1

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

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

Maximum value of SAR (interpolated) = 0.765 W/kg

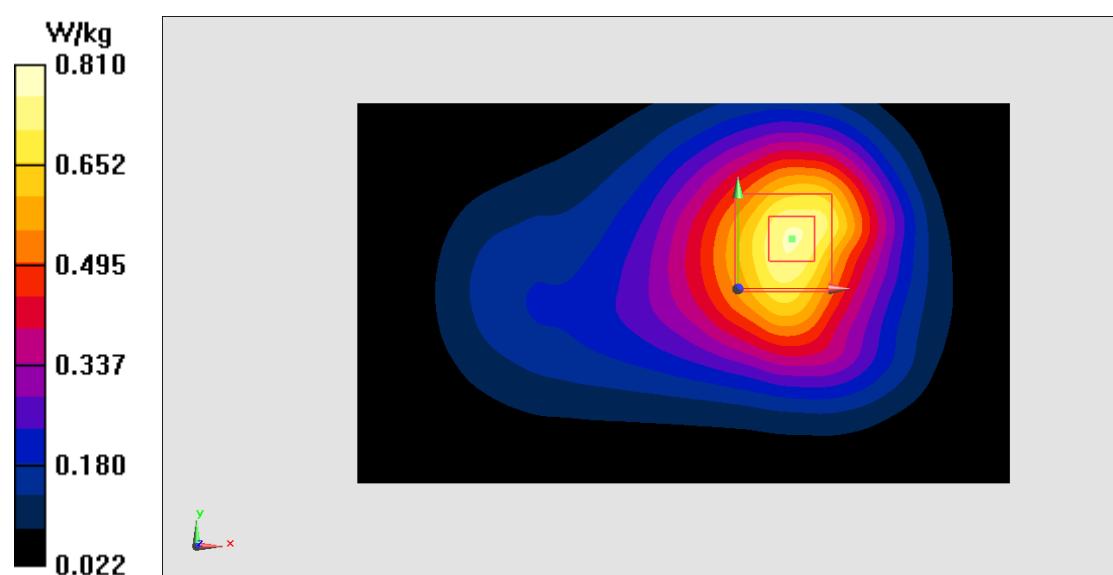
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 19.08 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.08 W/kg

**SAR(1 g) = 0.688 W/kg; SAR(10 g) = 0.424 W/kg**

Maximum value of SAR (measured) = 0.810 W/kg



**Figure I.8**

### LTEBand4\_1745\_Left Cheek

Date: 11/20/2016

Electronics: DAE4 Sn1331

Medium: Head 1750 MHz

Medium parameters used (interpolated):  $f = 1745$  MHz;  $\sigma = 1.436$  mho/m;  $\epsilon_r = 39.51$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTEBand4 Frequency: 1745MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(8.37, 8.37, 8.37)

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

Maximum value of SAR (interpolated) = 0.277 W/kg

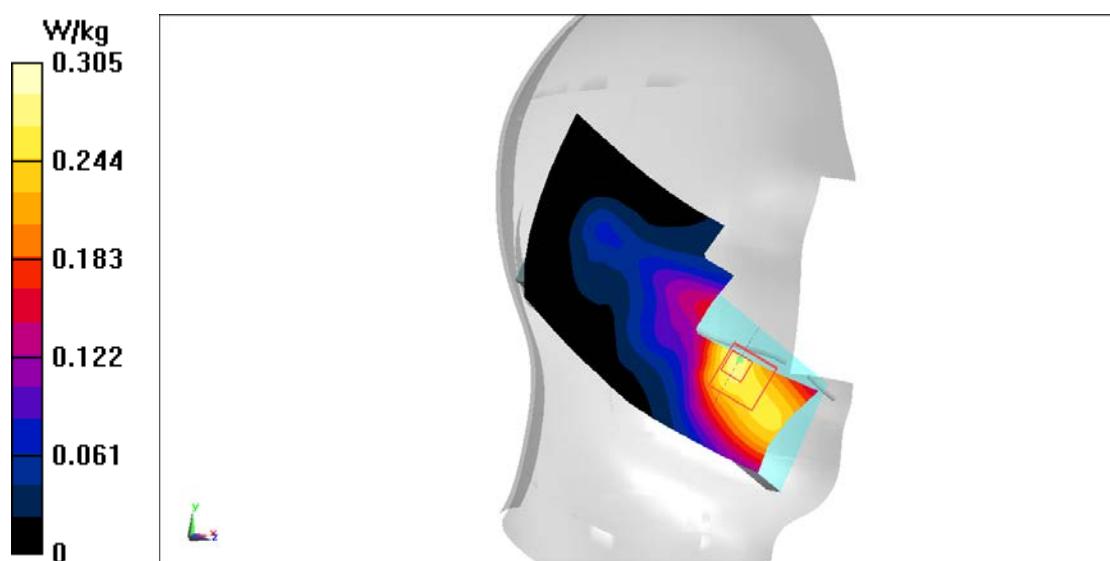
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.907 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.408 W/kg

**SAR(1 g) = 0.227 W/kg; SAR(10 g) = 0.162 W/kg**

Maximum value of SAR (measured) = 0.305 W/kg



**Figure I.9**

**LTEBand4\_1745\_Rear open**

Date: 11/20/2016

Electronics: DAE4 Sn1331

Medium: Body 1750 MHz

Medium parameters used (interpolated):  $f = 1745$  MHz;  $\sigma = 1.523$  mho/m;  $\epsilon_r = 54.29$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTEBand4 Frequency: 1745MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(8.18, 8.18, 8.18)

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

Maximum value of SAR (interpolated) = 1.15 W/kg

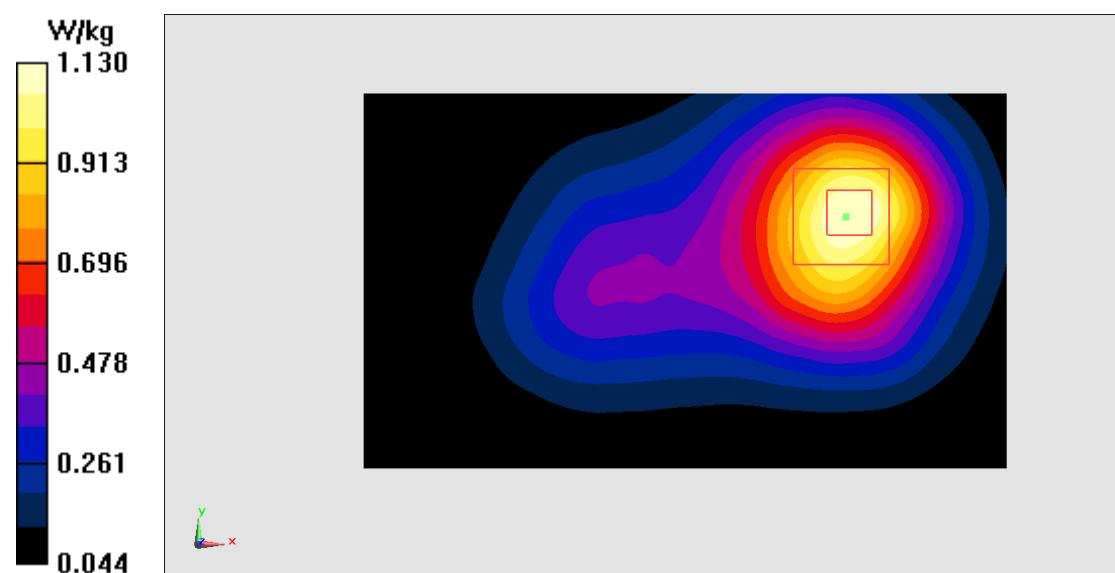
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.13 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 1.48 W/kg

**SAR(1 g) = 0.976 W/kg; SAR(10 g) = 0.609 W/kg**

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



**Figure I.10**

## LTEBand5\_836.5\_Right Cheek

Date: 11/16/2016

Electronics: DAE4 Sn1331

Medium: Head850 MHz

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.93$  mho/m;  $\epsilon_r = 40.53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTEBand5 Frequency: 836.5MHz Duty Cycle: 1:1

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) = 0.539 W/kg

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

Reference Value = 5.392 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.729 W/kg

**SAR(1 g) = 0.483 W/kg; SAR(10 g) = 0.317 W/kg**

Maximum value of SAR (measured) = 0.562 W/kg

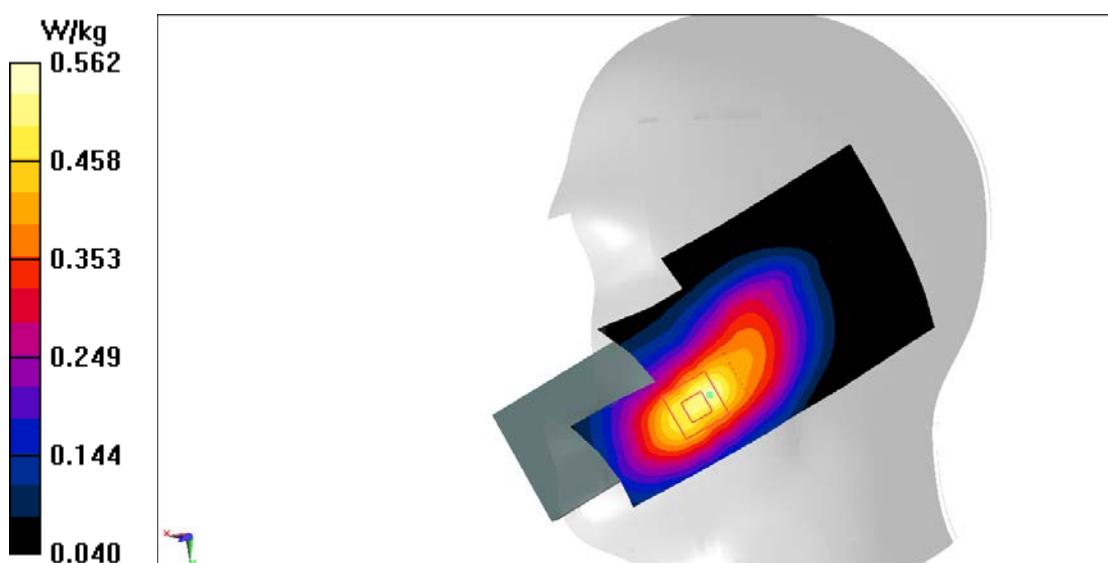


Figure I.11

**LTEBand5\_836.5\_Rear closed**

Date: 11/16/2016

Electronics: DAE4 Sn1331

Medium: Body850 MHz

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 55.67$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTEBand5 Frequency: 836.5MHz Duty Cycle: 1:1

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) = 0.338 W/kg

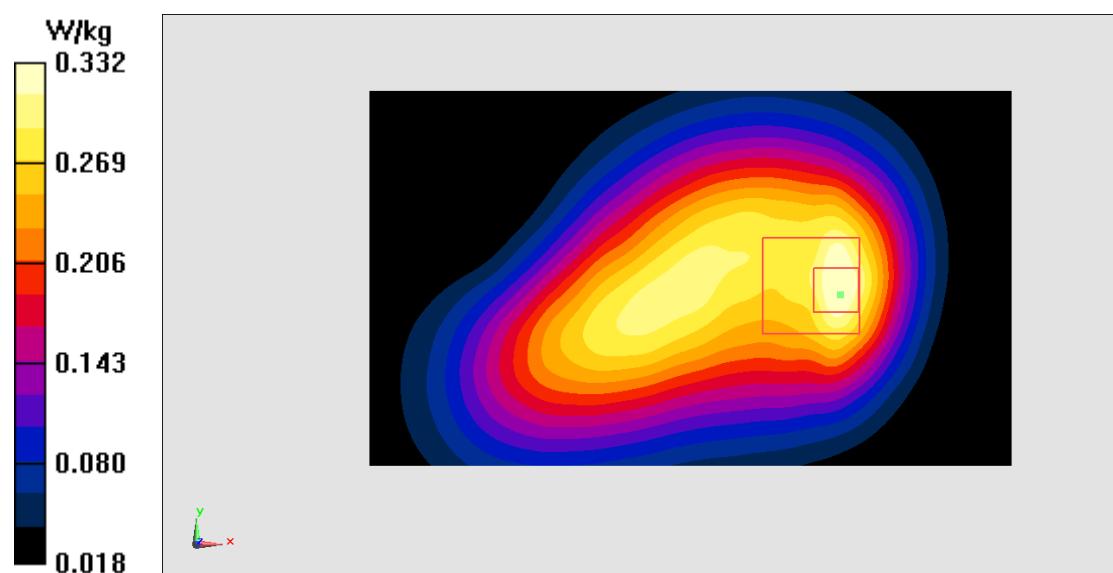
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.93 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.426 W/kg

**SAR(1 g) = 0.282 W/kg; SAR(10 g) = 0.189 W/kg**

Maximum value of SAR (measured) = 0.332 W/kg



**Figure I.12**

## LTEBand7\_2560\_Left Cheek

Date: 11/20/2016

Electronics: DAE4 Sn1331

Medium: Head2600 MHz

Medium parameters used (interpolated):  $f = 2560$  MHz;  $\sigma = 1.898$  mho/m;  $\epsilon_r = 37.912$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTEBand7 Frequency: 2560MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(7.21, 7.21, 7.21)

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

Maximum value of SAR (interpolated) = 0.297 W/kg

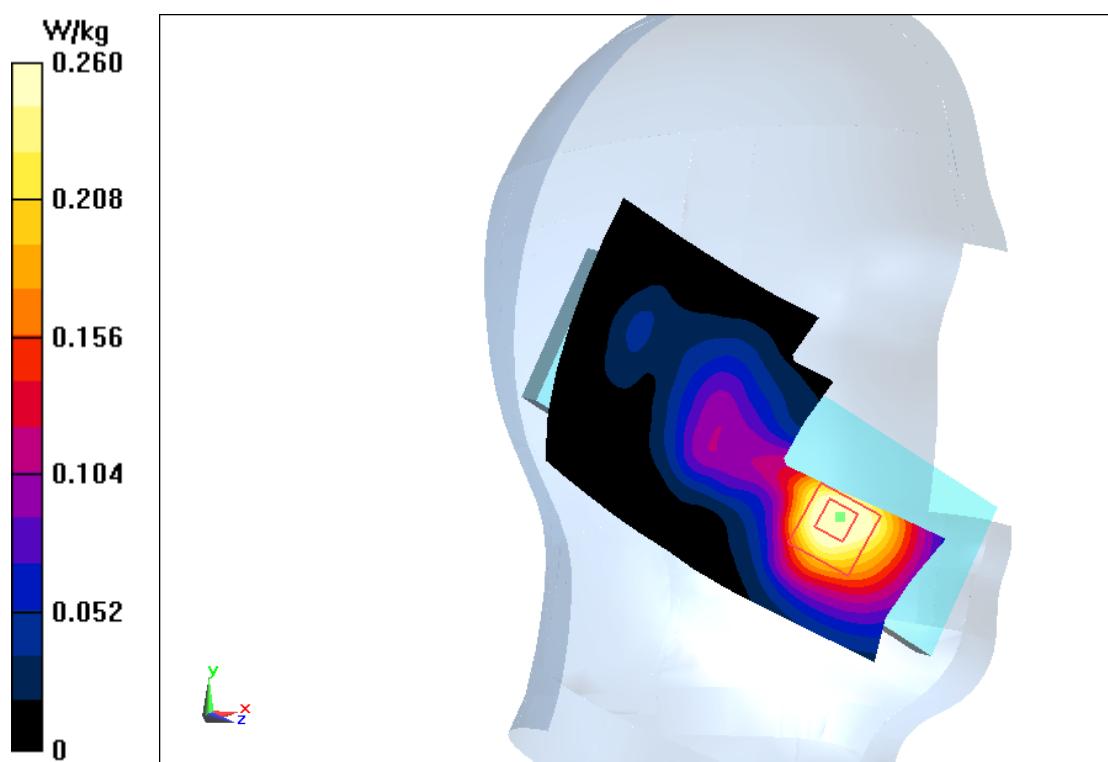
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.127 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.411 W/kg

**SAR(1 g) = 0.216 W/kg; SAR(10 g) = 0.120 W/kg**

Maximum value of SAR (measured) = 0.260 W/kg



**Figure I.13**

**LTEBand7\_2560\_Rear closed**

Date: 11/20/2016

Electronics: DAE4 Sn1331

Medium: Body2600 MHz

Medium parameters used (interpolated):  $f = 2560$  MHz;  $\sigma = 1.963$  mho/m;  $\epsilon_r = 51.44$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTEBand7 Frequency: 2560MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(7.03, 7.03, 7.03)

**Area Scan (101x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.410 W/kg

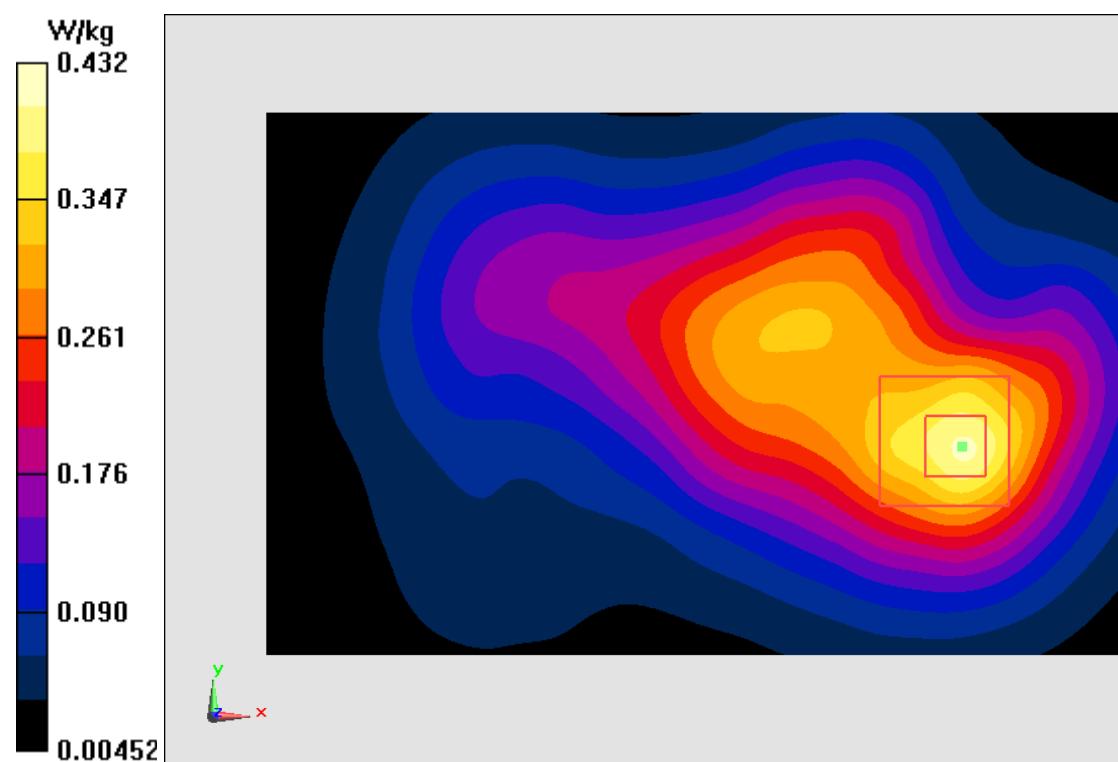
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.83 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.638 W/kg

**SAR(1 g) = 0.341 W/kg; SAR(10 g) = 0.190 W/kg**

Maximum value of SAR (measured) = 0.432 W/kg

**Figure I.14**

**LTEBand12\_704\_Left Cheek**

Date: 11/21/2016

Electronics: DAE4 Sn1331

Medium: Head750 MHz

Medium parameters used (interpolated):  $f = 704$  MHz;  $\sigma = 0.857$  mho/m;  $\epsilon_r = 40.943$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTEBand12 Frequency: 704MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(10.47, 10.47, 10.47)

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

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

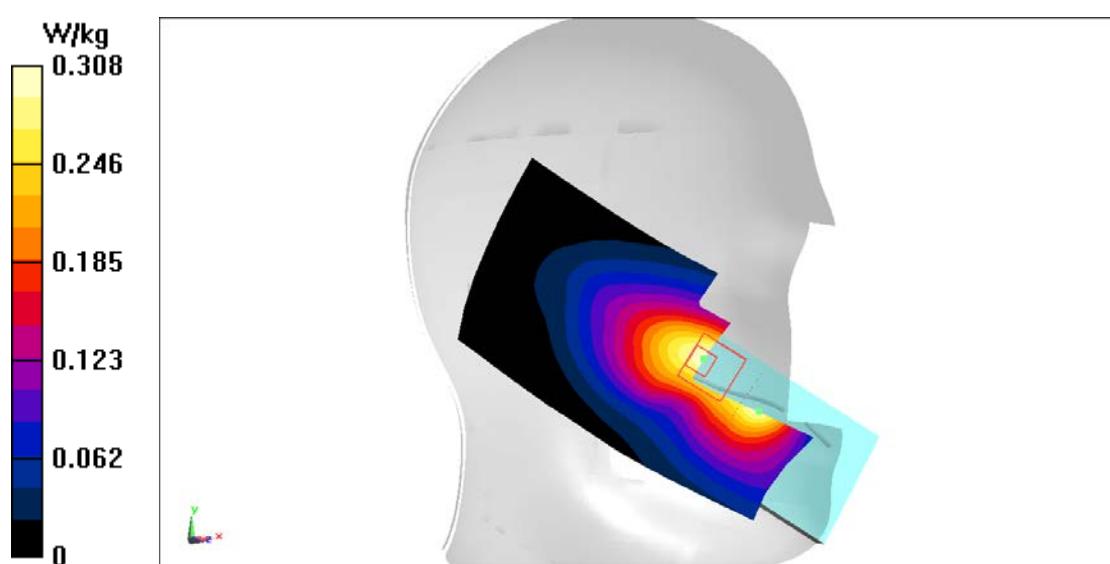
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.561 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.395 W/kg

**SAR(1 g) = 0.263 W/kg; SAR(10 g) = 0.181 W/kg**

Maximum value of SAR (measured) = 0.308 W/kg



**Figure I.15**

**LTEBand12\_704\_Rear open**

Date: 11/21/2016

Electronics: DAE4 Sn1331

Medium: Body750 MHz

Medium parameters used (interpolated):  $f = 704$  MHz;  $\sigma = 0.942$  mho/m;  $\epsilon_r = 55.93$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTEBand12 Frequency: 704MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(9.93, 9.93, 9.93)

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

Maximum value of SAR (interpolated) = 0.519 W/kg

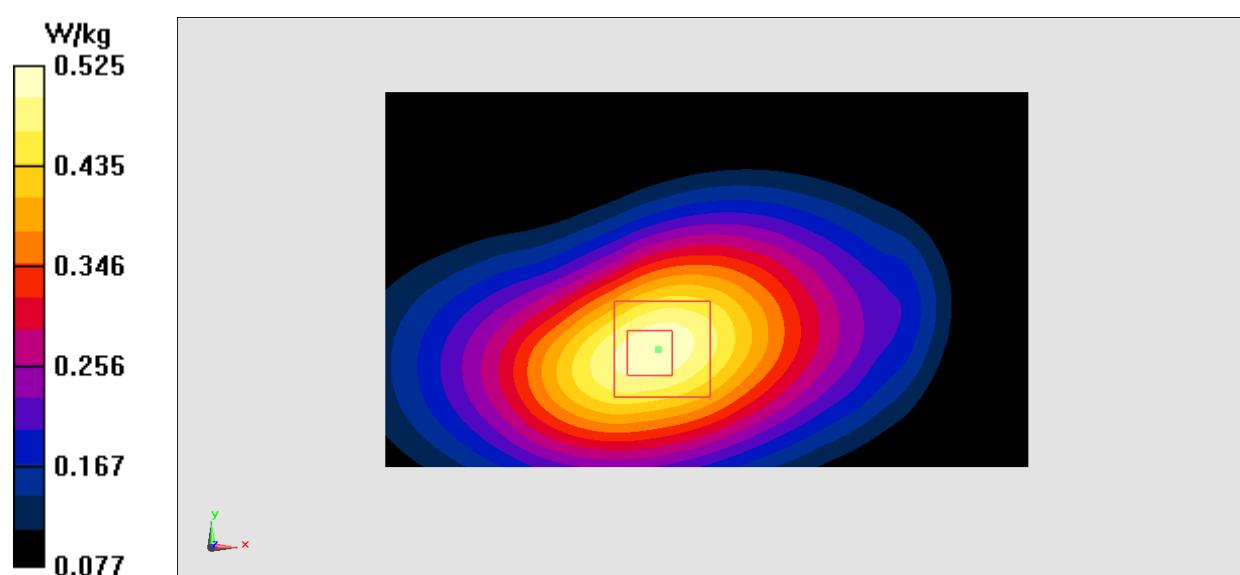
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.95 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.621 W/kg

**SAR(1 g) = 0.477 W/kg; SAR(10 g) = 0.353 W/kg**

Maximum value of SAR (measured) = 0.525 W/kg

**Figure I.16**