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, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
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	V52.10.0
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	37.2 ± 6 %	2.04 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	14.9 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**57.9 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.57 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**25.8 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	51.6 ± 6 %	2.22 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	14.1 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**55.5 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (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 Ω - 5.0 jΩ
Return Loss	- 24.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	43.5 Ω - 5.3 jΩ
Return Loss	- 21.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.151 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: 20.07.2017

Test Laboratory: SPEAG, Zurich, Switzerland

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

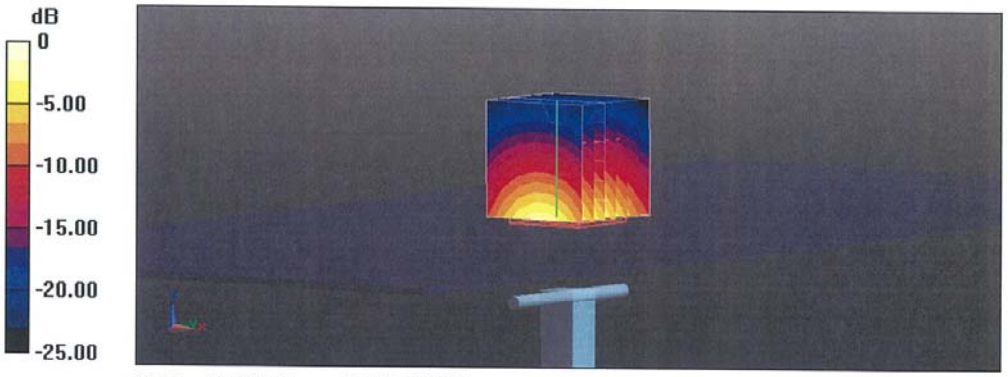
Communication System: UID 0 - CW; Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 2.04 S/m; ε_r = 37.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.96, 7.96, 7.96); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

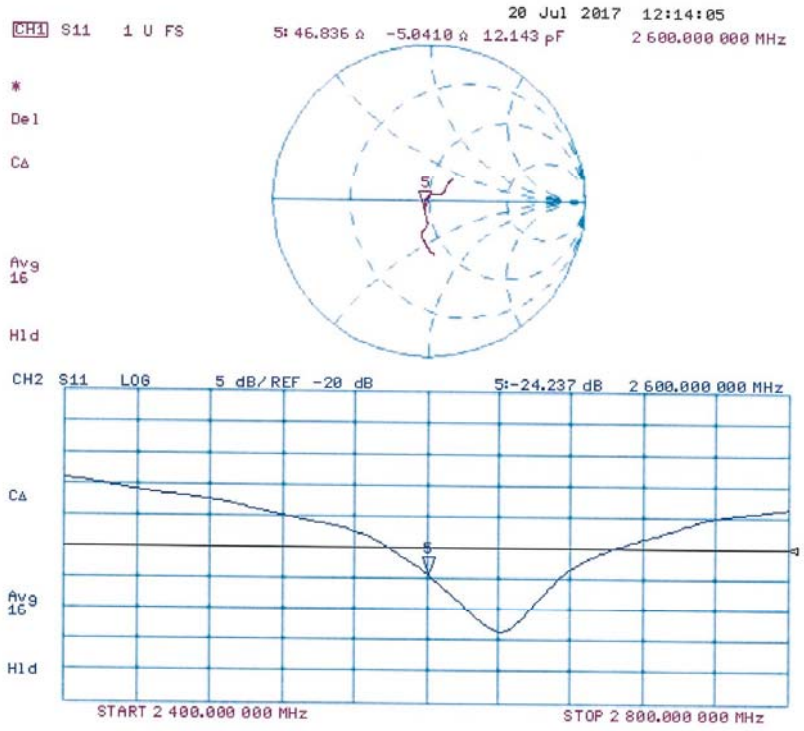
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 113.6 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 32.3 W/kg
SAR(1 g) = 14.9 W/kg; SAR(10 g) = 6.57 W/kg
Maximum value of SAR (measured) = 25.0 W/kg



0 dB = 25.0 W/kg = 13.98 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 21.07.2017

Test Laboratory: SPEAG, Zurich, Switzerland

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

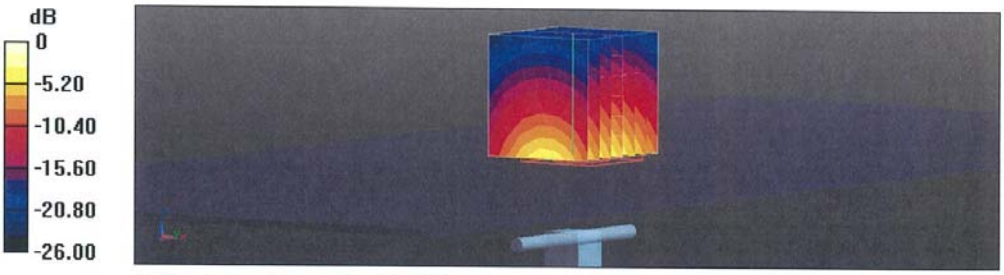
Communication System: UID 0 - CW; Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 2.22 S/m; ε_r = 51.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.94, 7.94, 7.94); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

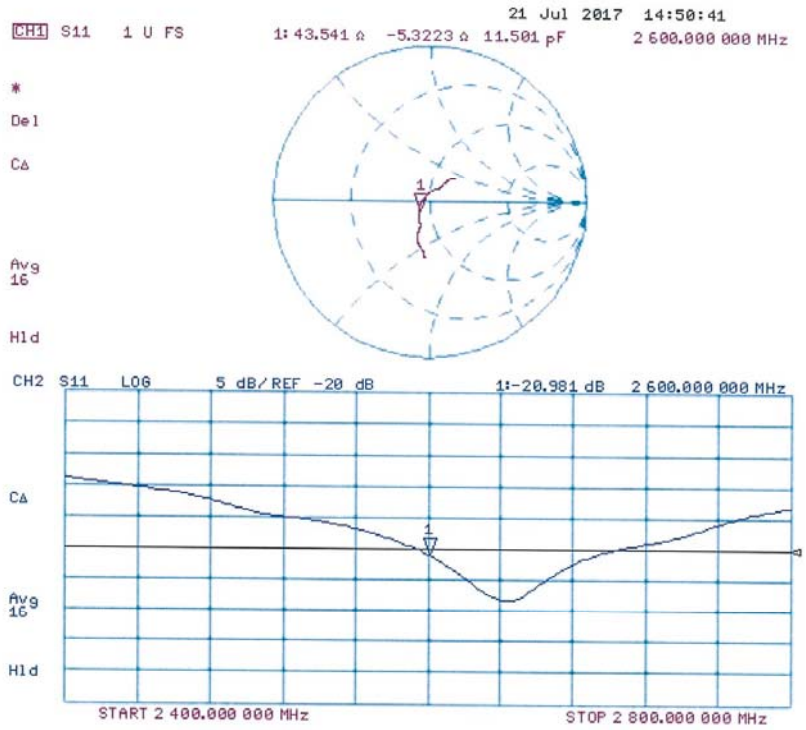
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 106.6 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 30.1 W/kg
SAR(1 g) = 14.1 W/kg; SAR(10 g) = 6.25 W/kg
Maximum value of SAR (measured) = 23.4 W/kg



0 dB = 23.4 W/kg = 13.69 dBW/kg

Impedance Measurement Plot for Body TSL



5 GHz Dipole Calibration Certificate

Calibration Laboratory of
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Accreditation No.: SCS 0108

Client CTTL-BJ (Auden)

Certificate No: D5GHzV2-1262_Sep17

CALIBRATION CERTIFICATE

Object	D5GHzV2 - SN:1262
Calibration procedure(s)	QA CAL-22.v2 Calibration procedure for dipole validation kits between 3-6 GHz
Calibration date:	September 06, 2017

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	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: 5058 (20k)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2 / 06327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX3DV4	SN: 3503	31-Dec-16 (No. EX3-3503_Dec16)	Dec-17
DAE4	SN: 601	28-Mar-17 (No. DAE4-601_Mar17)	Mar-18

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check: Oct-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-16)	In house check: Oct-17

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 6, 2017

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b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
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	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5250 MHz ± 1 MHz 5600 MHz ± 1 MHz 5750 MHz ± 1 MHz	

Head TSL parameters at 5250 MHz

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	35.9	4.71 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	36.7 ± 6 %	4.59 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.24 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**82.7 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.36 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.7 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	36.2 ± 6 %	4.95 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.43 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**84.5 W / kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.39 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.0 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5750 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.4	5.22 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	36.0 ± 6 %	5.12 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5750 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.02 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**80.4 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.27 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**22.8 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5250 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.9	5.36 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.0 ± 6 %	5.49 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5250 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.72 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**76.6 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.15 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.3 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.5	5.77 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.4 ± 6 %	5.96 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5600 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.96 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**79.0 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.23 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**22.1 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5750 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.3	5.94 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.1 ± 6 %	6.17 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5750 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.84 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**77.8 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.18 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.6 W/kg ± 19.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	48.1 Ω - 4.4 jΩ
Return Loss	- 26.3 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	51.1 Ω + 2.1 jΩ
Return Loss	- 32.7 dB

Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	53.3 Ω + 3.5 jΩ
Return Loss	- 26.6 dB

Antenna Parameters with Body TSL at 5250 MHz

Impedance, transformed to feed point	47.3 Ω - 2.5 jΩ
Return Loss	- 28.4 dB

Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	52.7 Ω + 1.9 jΩ
Return Loss	- 29.9 dB

Antenna Parameters with Body TSL at 5750 MHz

Impedance, transformed to feed point	54.4 Ω + 2.8 jΩ
Return Loss	- 26.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.194 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	December 14, 2016

DASY5 Validation Report for Head TSL

Date: 05.09.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1262

Communication System: UID 0 - CW; Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz
Medium parameters used: f = 5250 MHz; σ = 4.59 S/m; ε_r = 36.7; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5600 MHz; σ = 4.95 S/m; ε_r = 36.2; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5750 MHz; σ = 5.12 S/m; ε_r = 36; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

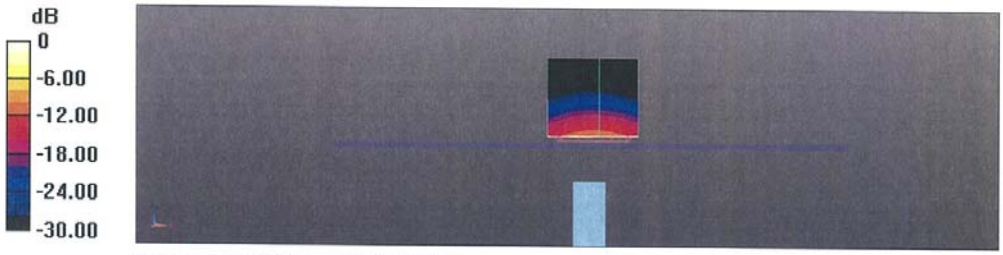
DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.58, 5.58, 5.58); Calibrated: 31.12.2016, ConvF(5.09, 5.09, 5.09); Calibrated: 31.12.2016, ConvF(5.02, 5.02, 5.02); Calibrated: 31.12.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 73.59 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 30.8 W/kg
SAR(1 g) = 8.24 W/kg; SAR(10 g) = 2.36 W/kg
Maximum value of SAR (measured) = 19.0 W/kg

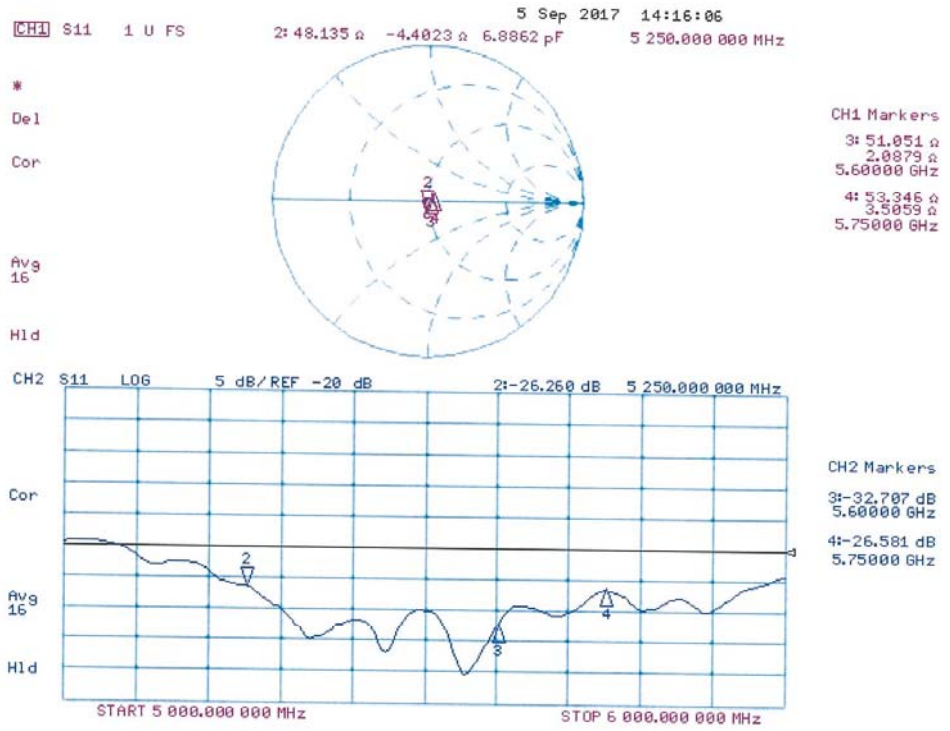
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 72.28 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 33.0 W/kg
SAR(1 g) = 8.43 W/kg; SAR(10 g) = 2.39 W/kg
Maximum value of SAR (measured) = 19.8 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 69.66 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 32.0 W/kg
SAR(1 g) = 8.02 W/kg; SAR(10 g) = 2.27 W/kg
Maximum value of SAR (measured) = 19.1 W/kg



0 dB = 19.1 W/kg = 12.81 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 06.09.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1262

Communication System: UID 0 - CW; Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz
Medium parameters used: f = 5250 MHz; σ = 5.49 S/m; ε_r = 47; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5600 MHz; σ = 5.96 S/m; ε_r = 46.4; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5750 MHz; σ = 6.17 S/m; ε_r = 46.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

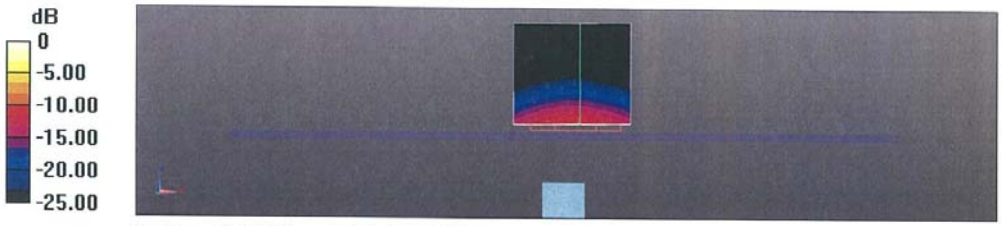
DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.14, 5.14, 5.14); Calibrated: 31.12.2016, ConvF(4.57, 4.57, 4.57); Calibrated: 31.12.2016, ConvF(4.51, 4.51, 4.51); Calibrated: 31.12.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 64.81 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 29.8 W/kg
SAR(1 g) = 7.72 W/kg; SAR(10 g) = 2.15 W/kg
Maximum value of SAR (measured) = 18.5 W/kg

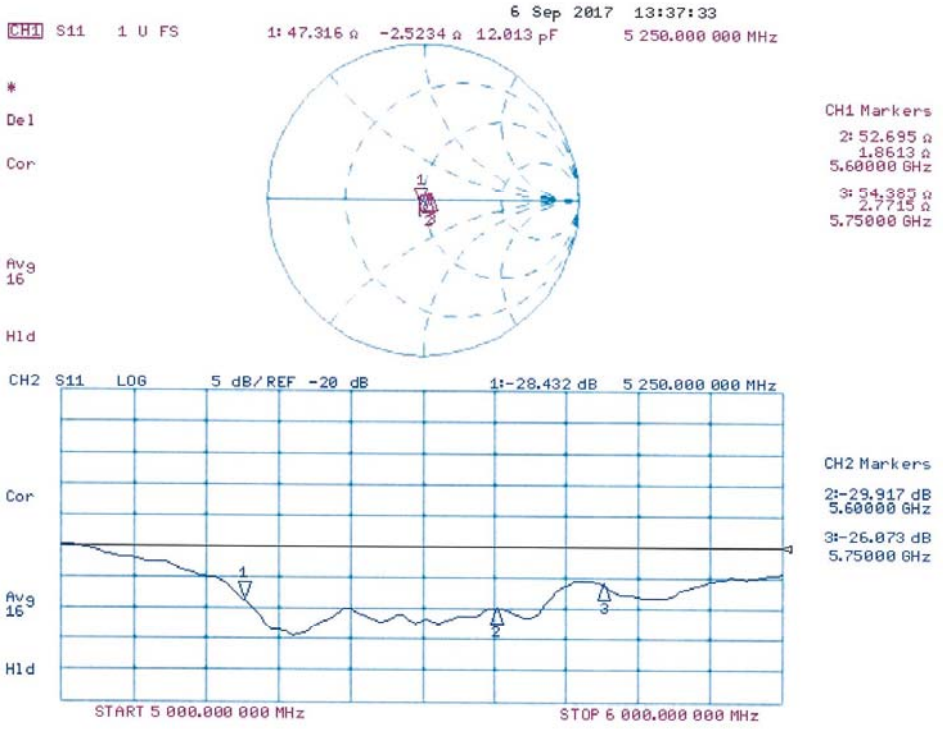
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 64.13 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 33.0 W/kg
SAR(1 g) = 7.96 W/kg; SAR(10 g) = 2.23 W/kg
Maximum value of SAR (measured) = 19.9 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 62.49 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 34.2 W/kg
SAR(1 g) = 7.84 W/kg; SAR(10 g) = 2.18 W/kg
Maximum value of SAR (measured) = 19.5 W/kg



0 dB = 19.5 W/kg = 12.90 dBW/kg

Impedance Measurement Plot for Body TSL



ANNEX I Spotcheck

I.1 Conducted power of selected case

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

GSM 850MHZ	Conducted Power (dBm)		
	Channel 251(848.8MHz)	Channel 190(836.6MHz)	Channel 128(824.2MHz)
Speech	33.29	33.26	33.27
GPRS 1TX	33.29	33.25	33.26
GSM 1900MHZ	Conducted Power(dBm)		
	Channel 810(1909.8MHz)	Channel 661(1880MHz)	Channel 512(1850.2MHz)
Speech	30.38	30.48	30.57
GPRS 1TX	30.38	30.46	30.56

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

Item	band	FDDII result		
	ARFCN	9538/9938	9400/9800	9262/9662
WCDMA	\	(1907.6MHz)	(1880MHz)	(1852.4MHz)
		23.38	23.35	23.21
Item	band	FDDV result		
	ARFCN	4233/4458	4182/4407	4132/4357
WCDMA	\	(846.6MHz)	(836.4MHz)	(826.4MHz)
		23.25	23.18	23.22

Table I.1-3: The conducted Power for LTE

LTE Band2 20MHz	1900 (19100)	23.22
	1880 (18900)	23.12
	1860 (18700)	23.15
LTE Band4 20MHz	1745 (20300)	22.78
	1732.5 (20175)	22.72
	1720 (20050)	22.70
LTE Band5 10MHz	844 (20600)	22.93
	836.5 (20525)	22.95
	829 (20450)	23.09
LTE Band7 20MHz	2560 (21350)	23.04
	2535 (21100)	22.99
	2510 (20850)	23.01
LTE Band12 10MHz	711 (23130)	22.92
	707.5 (23095)	22.97
	704 (23060)	23.00
LTE Band13 10MHz	782 (23230)	22.96

I.2 Measurement results

Test Band	Channel	Frequency	Tune-Up	Measured Power	Test Position	Measured 10g SAR	Measured 1g SAR	Reported 10g SAR	Reported 1g SAR	Power Drift	Figure
GSM850	251	848.8 MHz	34	33.29	Left Cheek	0.148	0.194	0.17	0.23	0.06	Fig I.1
GSM850	190	836.6 MHz	34	33.25	Rear	0.253	0.334	0.30	0.40	0.07	Fig I.2
PCS1900	661	1880 MHz	31	30.48	Right Cheek	0.0882	0.113	0.10	0.13	0.03	Fig I.3
PCS1900	512	1850.2 MHz	31	30.56	Bottom edge	0.388	0.733	0.43	0.81	-0.04	Fig I.4
WCDMA1900-BII	9538	1907.6 MHz	24	23.38	Right Cheek	0.104	0.17	0.12	0.20	0.03	Fig I.5
WCDMA1900-BII	9262	1852.4 MHz	24	23.21	Bottom edge	0.461	0.872	0.55	1.05	0.07	Fig I.6
WCDMA850-BV	4182	835.4 MHz	24.5	23.18	Left Cheek	0.136	0.176	0.18	0.24	0.06	Fig I.7
WCDMA850-BV	4182	835.4 MHz	24.5	23.18	Rear	0.269	0.364	0.36	0.49	0.01	Fig I.8
LTE1900-FDD2	18700	1860 MHz	24	23.15	Right Cheek	0.109	0.174	0.13	0.21	0.04	Fig I.9
LTE1900-FDD2	18700	1860 MHz	24	23.15	Bottom edge	0.439	0.831	0.53	1.01	0.1	Fig I.10
LTE1700-FDD4	20300	1745 MHz	24	22.78	Left Cheek	0.0995	0.161	0.13	0.21	0.09	Fig I.11
LTE1700-FDD4	20300	1745 MHz	24	22.78	Rear	0.195	0.376	0.26	0.50	-0.04	Fig I.12
LTE850-FDD5	20525	836.5 MHz	24	22.95	Right Cheek	0.127	0.163	0.16	0.21	-0.01	Fig I.13
LTE850-FDD5	20525	836.5 MHz	24	22.95	Rear	0.262	0.35	0.33	0.45	0.03	Fig I.14
LTE2500-FDD7	21350	2560 MHz	24	23.04	Right Cheek	0.0387	0.0744	0.05	0.09	0.02	Fig I.15
LTE2500-FDD7	21350	2560 MHz	24	23.04	Rear	0.269	0.585	0.34	0.73	0.07	Fig I.16
LTE700-FDD12	23060	704 MHz	24	23	Left Cheek	0.0939	0.117	0.12	0.15	0.08	Fig I.17
LTE700-FDD12	23060	704 MHz	24	23	Rear	0.218	0.275	0.27	0.35	-0.04	Fig I.18
LTE750-FDD13	23230	782 MHz	24	22.96	Right Cheek	0.0948	0.12	0.12	0.15	0.05	Fig I.19
LTE750-FDD13	23230	782 MHz	24	22.96	Rear	0.19	0.243	0.24	0.31	0.02	Fig I.20

I.3 Reported SAR Comparison

Band	Position	Spot Check SAR 10g (W/Kg)	Original SAR 10g (W/Kg)
GSM 850	Head	**0.23**	**0.23**
	Body	**0.40**	**0.38**
PCS 1900	Head	**0.13**	**0.19**
	Body	**0.81**	**1.19**
WCDMA 1900	Head	**0.20**	**0.19**
	Body	**1.05**	**1.27**
WCDMA 850	Head	**0.24**	**0.22**
	Body	**0.49**	**0.42**
LTE Band 2	Head	**0.21**	**0.11**
	Body	**1.01**	**1.06**
LTE Band 4	Head	**0.21**	**0.16**
	Body	**0.50**	**0.52**
LTE Band 5	Head	**0.21**	**0.17**
	Body	**0.45**	**0.36**
LTE Band 7	Head	**0.09**	**0.11**
	Body	**0.73**	**0.69**
LTE Band 12	Head	**0.15**	**0.18**
	Body	**0.35**	**0.31**
LTE Band 13	Head	**0.15**	**0.09**
	Body	**0.31**	**0.23**

Note: The spot check result which is larger than the original result will replace the original value and others are shared.

I.4 Graph Results for Spot check

GSM850_CH251 Left Cheek
Date: 4/2/2018
Electronics: DAE4 Sn1525
Medium: Head 835 MHz
Medium parameters used: f = 848.8 MHz; σ = 0.901 mho/m; εr = 40.67; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: GSM850 848.8 MHz Duty Cycle: 1:8.3
Probe: EX3DV4 – SN7464 ConvF(10.28,10.28,10.28)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.213 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.995 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.241 W/kg
SAR(1 g) = 0.194 W/kg; SAR(10 g) = 0.148 W/kg
Maximum value of SAR (measured) = 0.204 W/kg

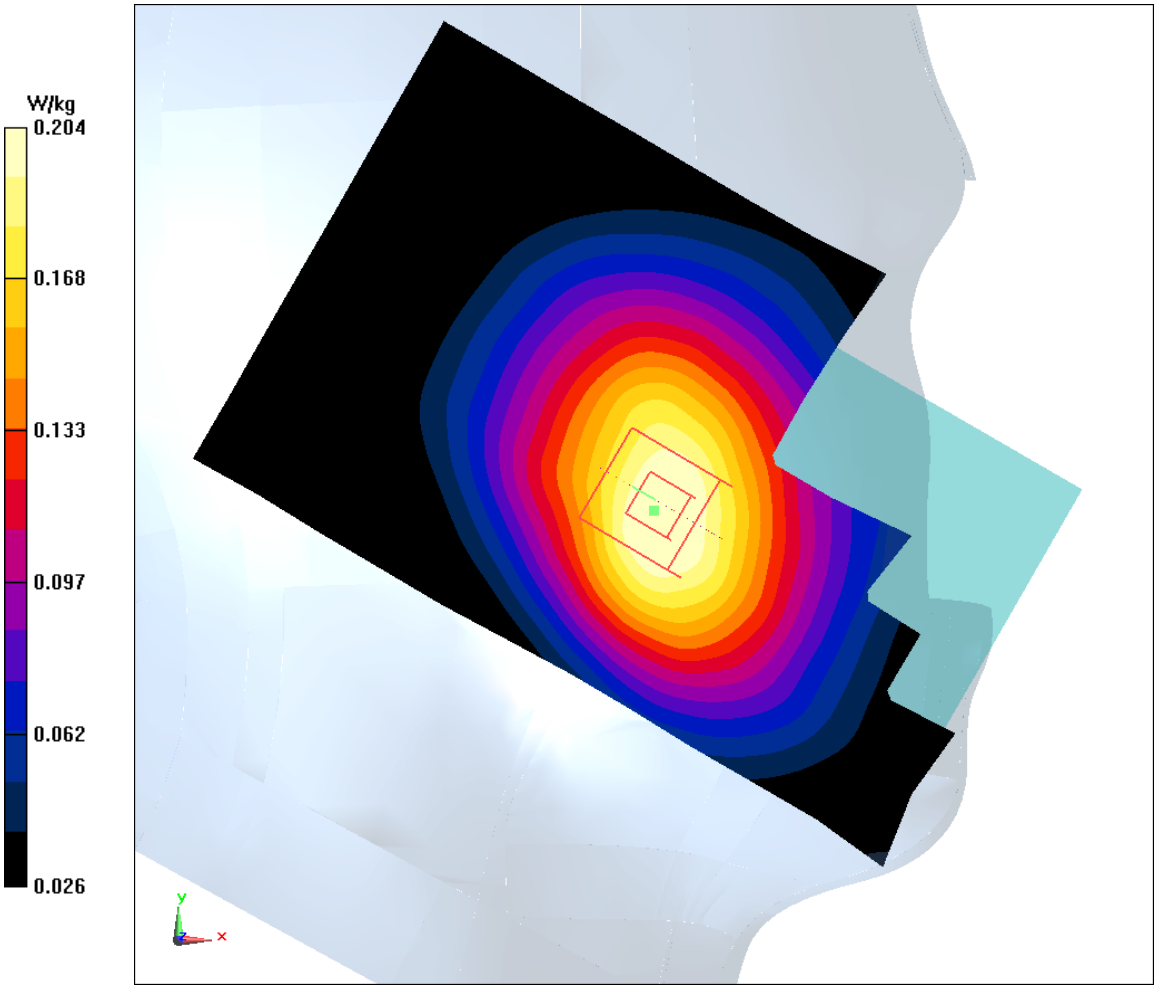


Fig I.1

GSM850_CH190 Rear
Date: 4/2/2018
Electronics: DAE4 Sn1525
Medium: Head 835 MHz
Medium parameters used: f = 836.6 MHz; σ = 0.957 mho/m; εr = 54.43; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: GSM850 836.6 MHz Duty Cycle: 1:8.3
Probe: EX3DV4 – SN7464 ConvF(10.21,10.21,10.21)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.373 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.05 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.424 W/kg
SAR(1 g) = 0.334 W/kg; SAR(10 g) = 0.253 W/kg
Maximum value of SAR (measured) = 0.352 W/kg

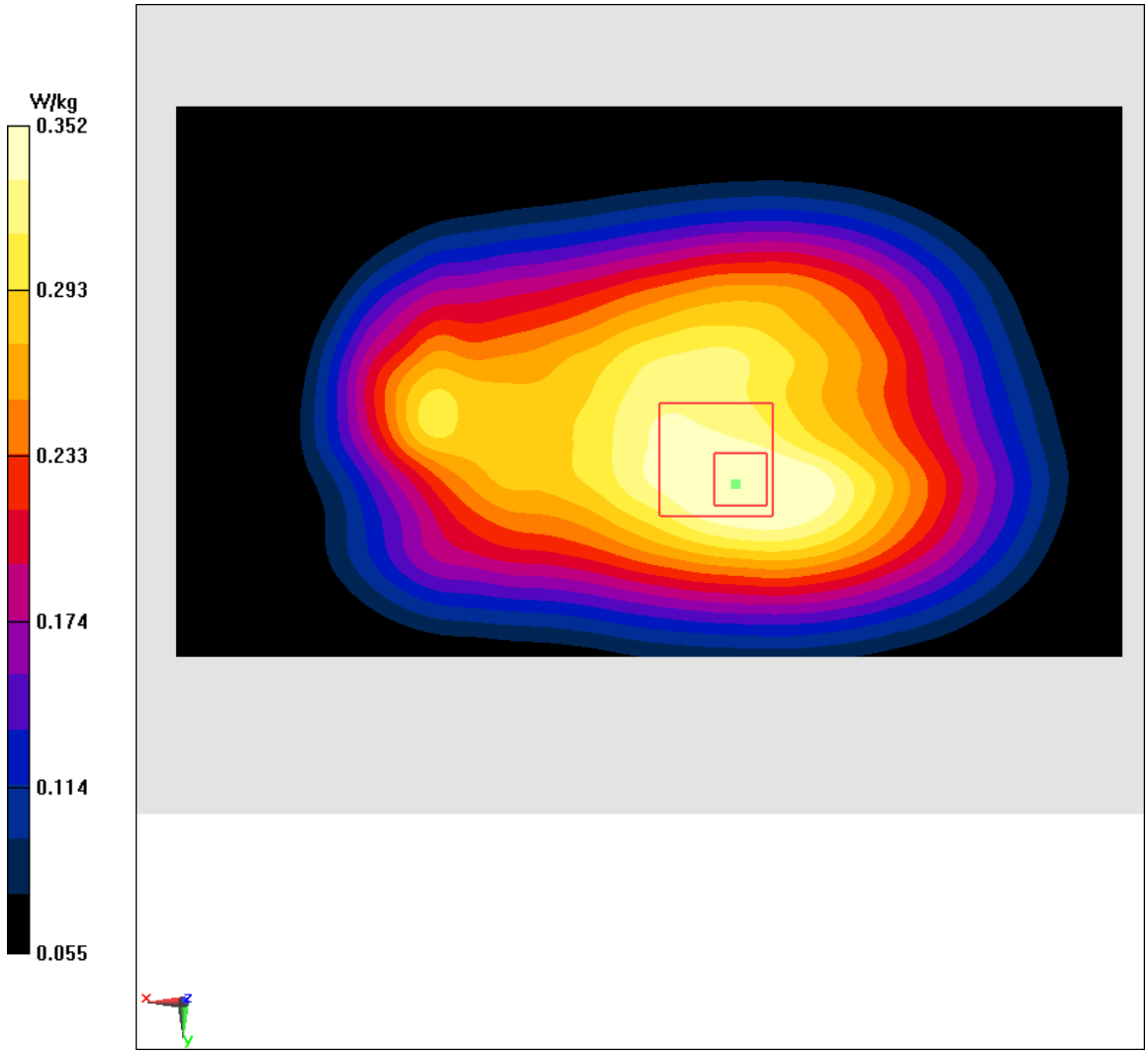


Fig I.2

PCS1900_CH661 Right Cheek
Date: 4/4/2018
Electronics: DAE4 Sn1525
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.392 mho/m; εr = 39.4; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: PCS1900 1880 MHz Duty Cycle: 1:8.3
Probe: EX3DV4 – SN7464 ConvF(9.39,9.39,9.39)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.162 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.962 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.197 W/kg
SAR(1 g) = 0.113 W/kg; SAR(10 g) = 0.0882 W/kg
Maximum value of SAR (measured) = 0.141 W/kg

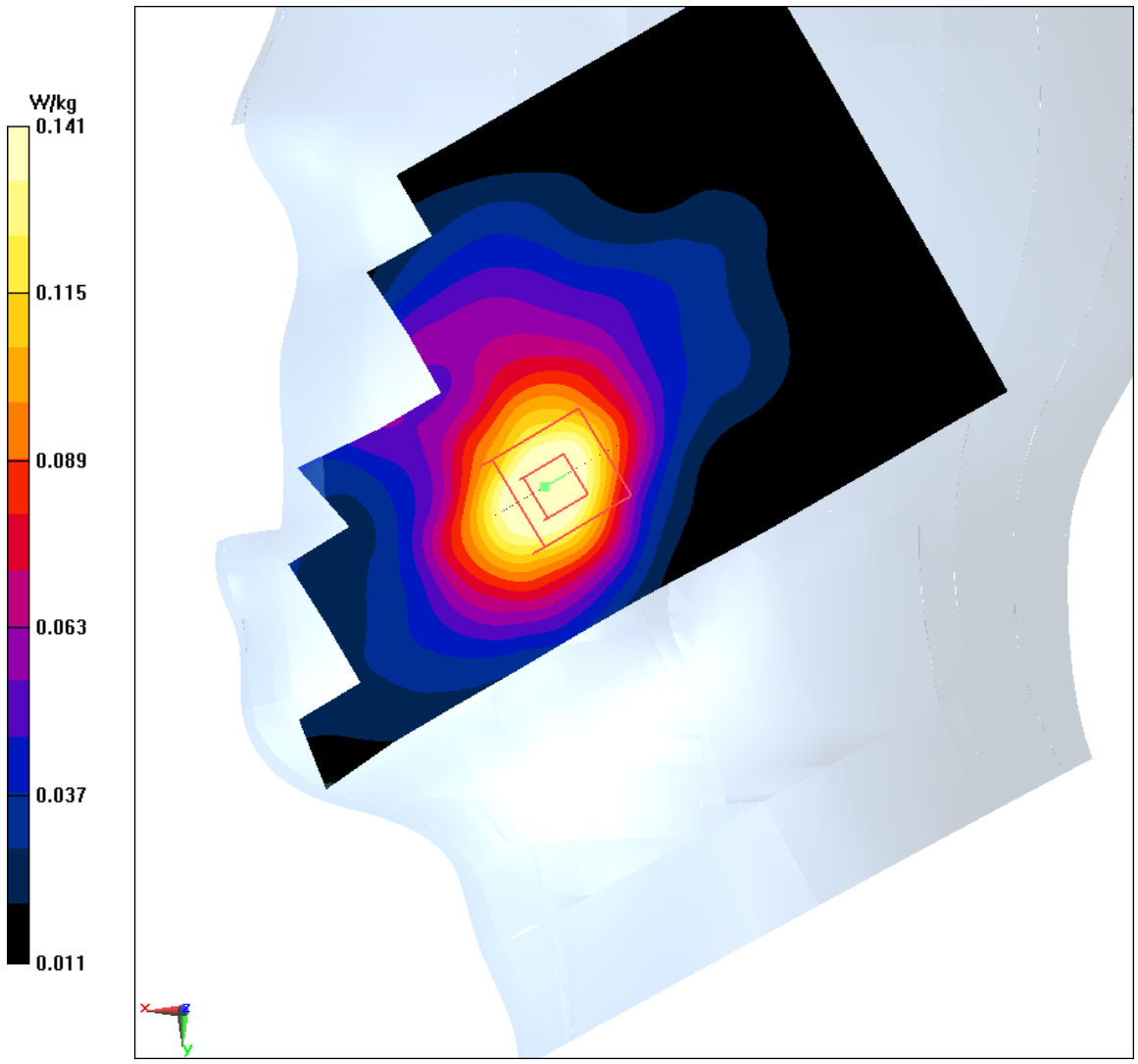


Fig I.3

PCS1900_CH512 Bottom edge
Date: 4/4/2018
Electronics: DAE4 Sn1525
Medium: Head 1900 MHz
Medium parameters used: f = 1850.2 MHz; σ = 1.448 mho/m; εr = 52.91; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: PCS1900 1850.2 MHz Duty Cycle: 1:8.3
Probe: EX3DV4 – SN7464 ConvF(8.32,8.32,8.32)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.925 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.03 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.733 W/kg; SAR(10 g) = 0.388 W/kg
Maximum value of SAR (measured) = 0.834 W/kg

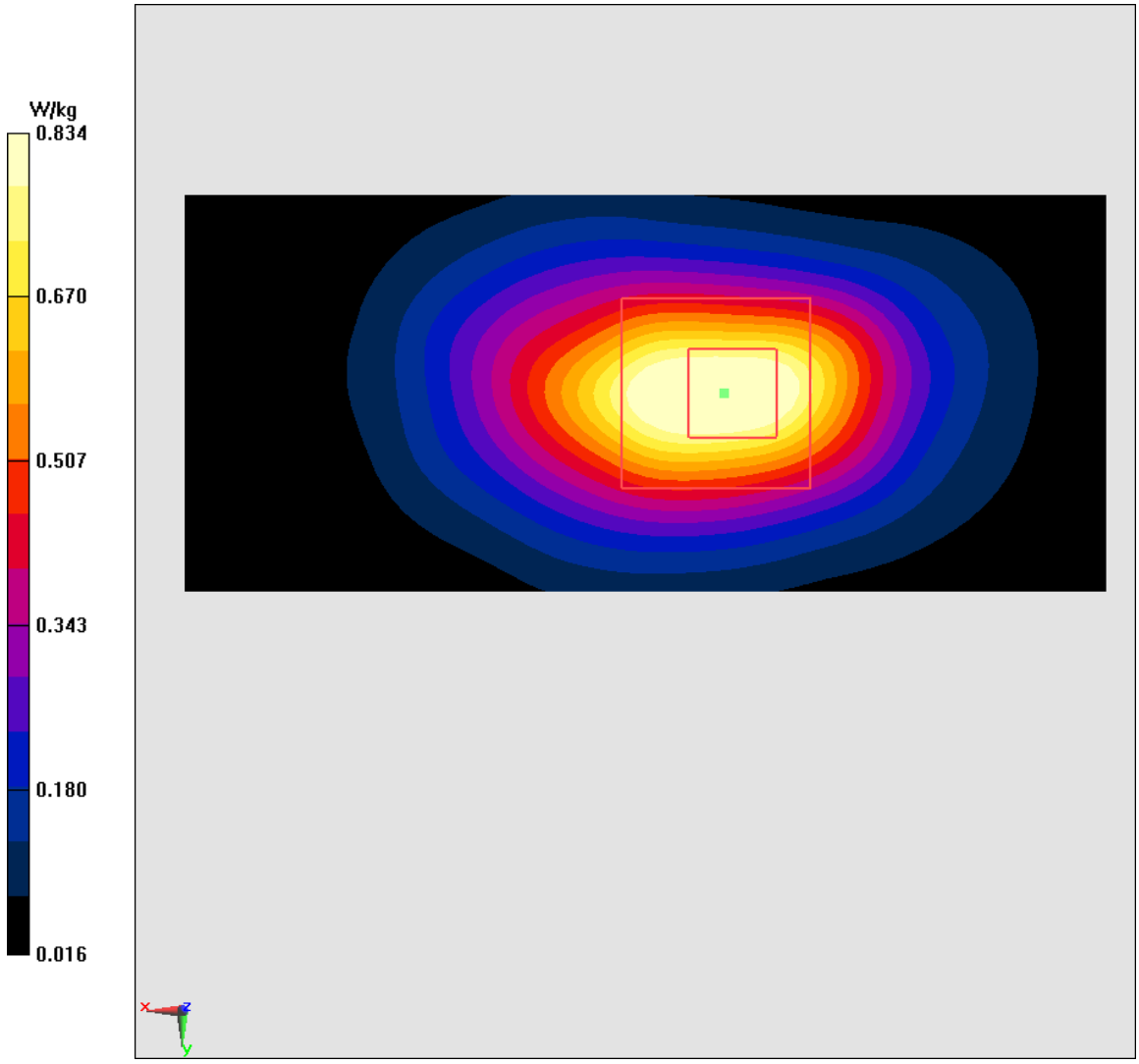


Fig I.4

WCDMA1900-BII_CH9538 Right Cheek
Date: 4/4/2018
Electronics: DAE4 Sn1525
Medium: Head 1900 MHz
Medium parameters used: f = 1907.6 MHz; σ = 1.419 mho/m; εr = 39.37; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1900-BII 1907.6 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(9.39,9.39,9.39)
Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.202 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.473 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.265 W/kg
SAR(1 g) = 0.17 W/kg; SAR(10 g) = 0.104 W/kg
Maximum value of SAR (measured) = 0.185 W/kg

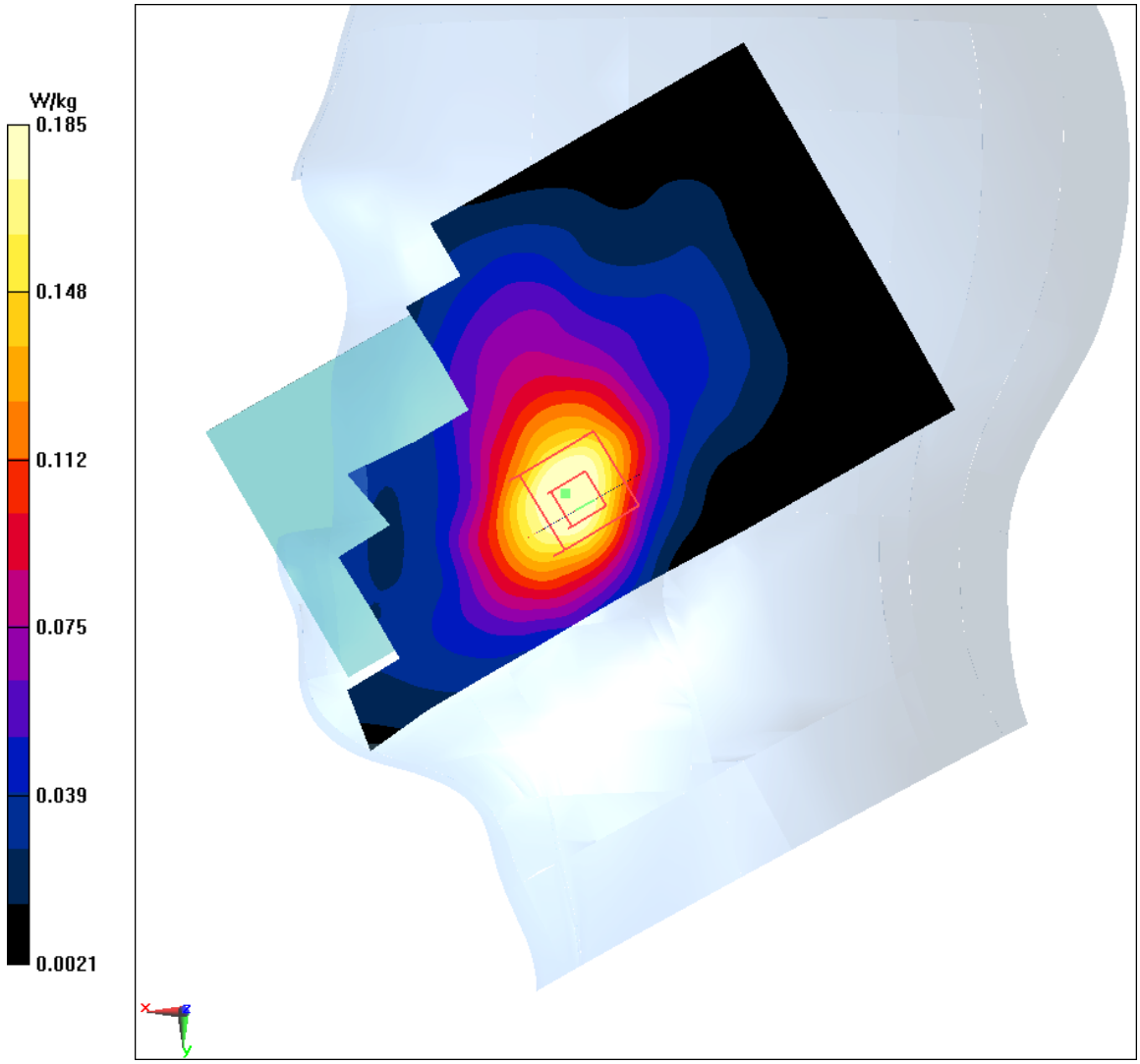


Fig I.5

WCDMA1900-BII_CH9262 Bottom edge
Date: 4/4/2018
Electronics: DAE4 Sn1525
Medium: Head 1900 MHz
Medium parameters used: f = 1852.4 MHz; σ = 1.45 mho/m; εr = 52.91; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1900-BII 1852.4 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(8.32,8.32,8.32)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.09 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.63 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.49 W/kg
SAR(1 g) = 0.872 W/kg; SAR(10 g) = 0.461 W/kg
Maximum value of SAR (measured) = 0.97 W/kg

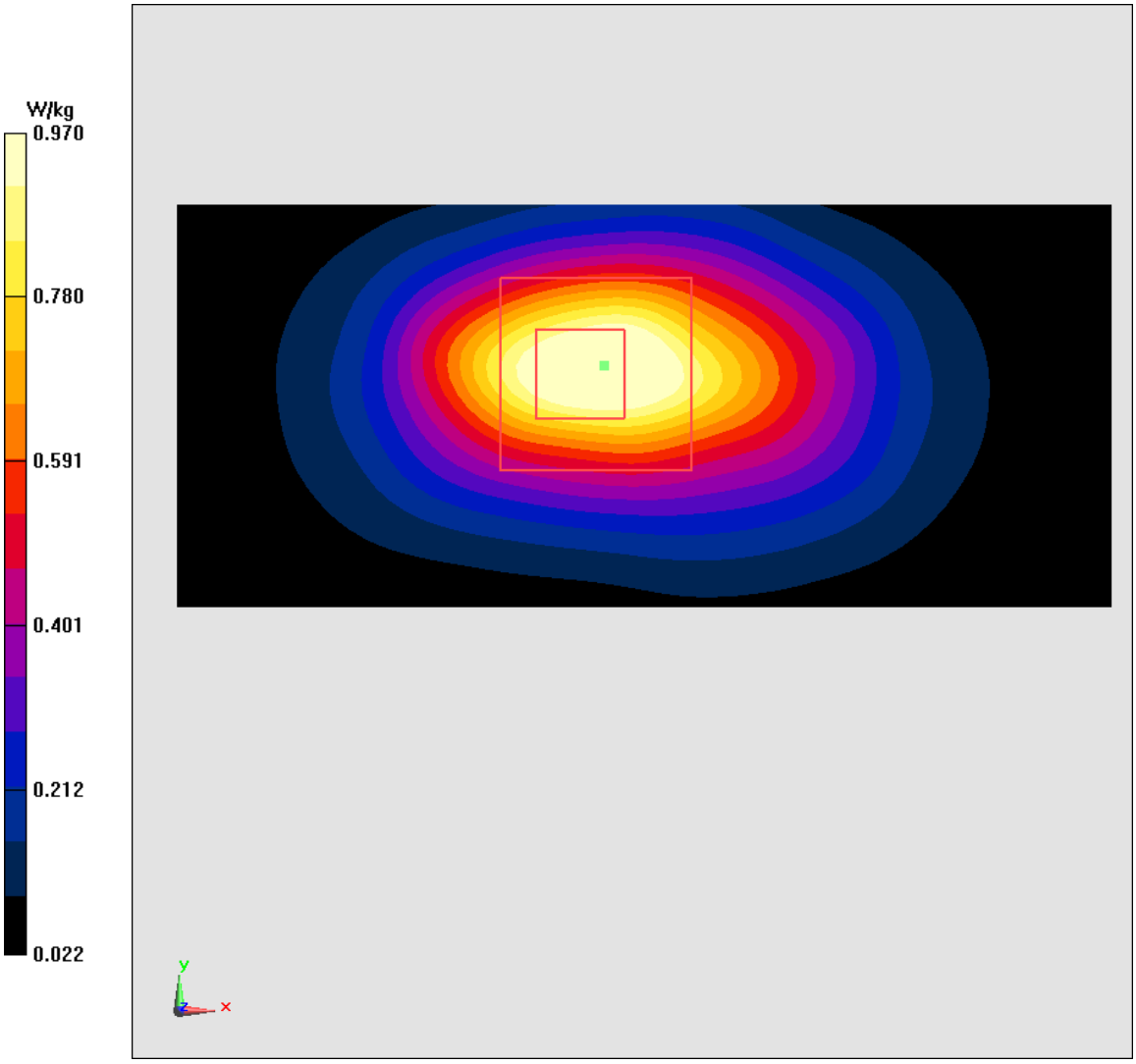


Fig I.6

WCDMA850-BV_CH4182 Left Cheek
Date: 4/2/2018
Electronics: DAE4 Sn1525
Medium: Head 835 MHz
Medium parameters used: f = 835.4 MHz; σ = 0.888 mho/m; εr = 40.69; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA850-BV 835.4 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(10.28,10.28,10.28)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.193 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.112 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.216 W/kg
SAR(1 g) = 0.176 W/kg; SAR(10 g) = 0.136 W/kg
Maximum value of SAR (measured) = 0.185 W/kg

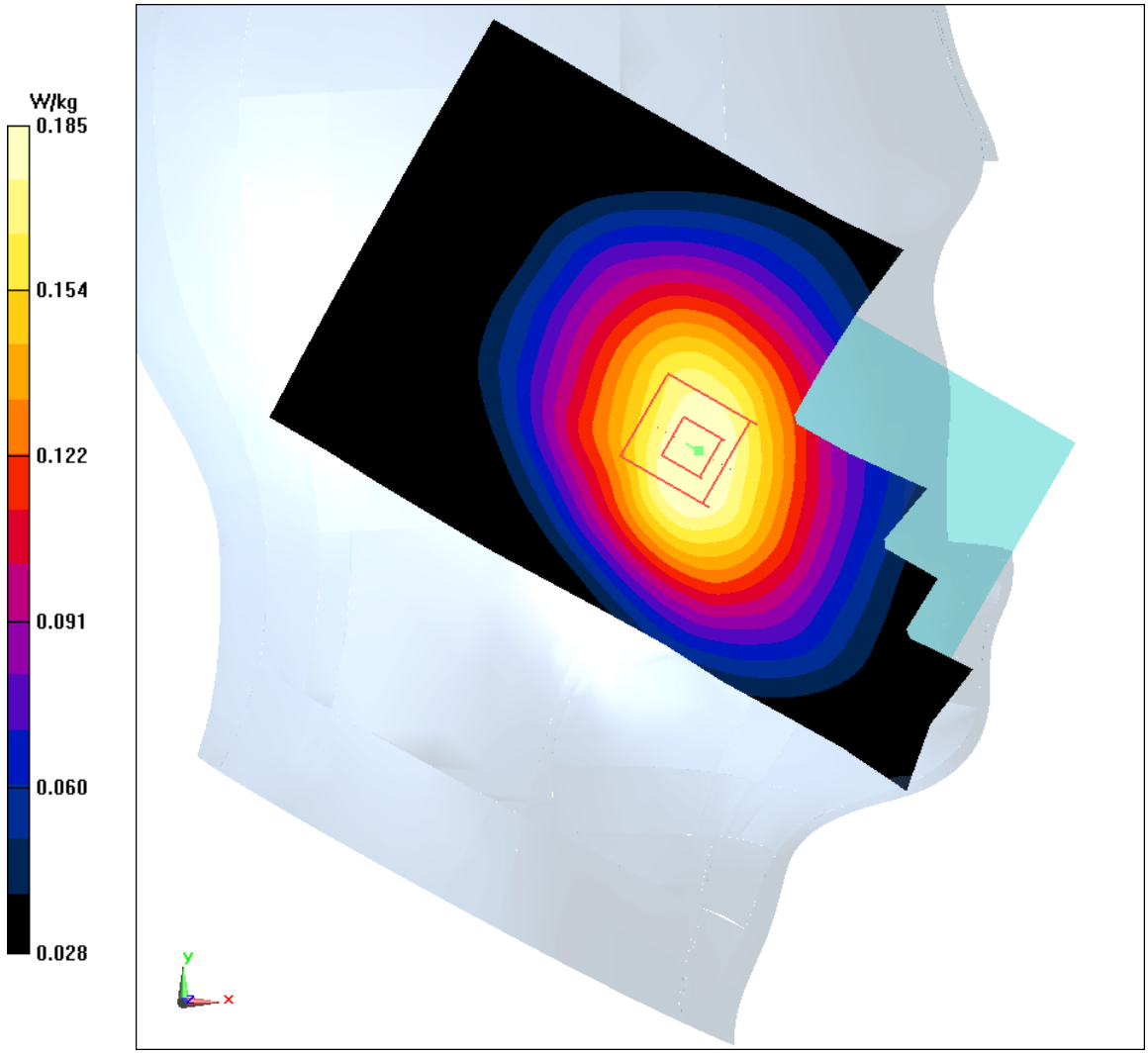


Fig I.7

WCDMA850-BV_CH4182 Rear
Date: 4/2/2018
Electronics: DAE4 Sn1525
Medium: Head 835 MHz
Medium parameters used: f = 835.4 MHz; σ = 0.955 mho/m; εr = 54.43; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA850-BV 835.4 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(10.21,10.21,10.21)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.41 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.62 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.478 W/kg
SAR(1 g) = 0.364 W/kg; SAR(10 g) = 0.269 W/kg
Maximum value of SAR (measured) = 0.387 W/kg

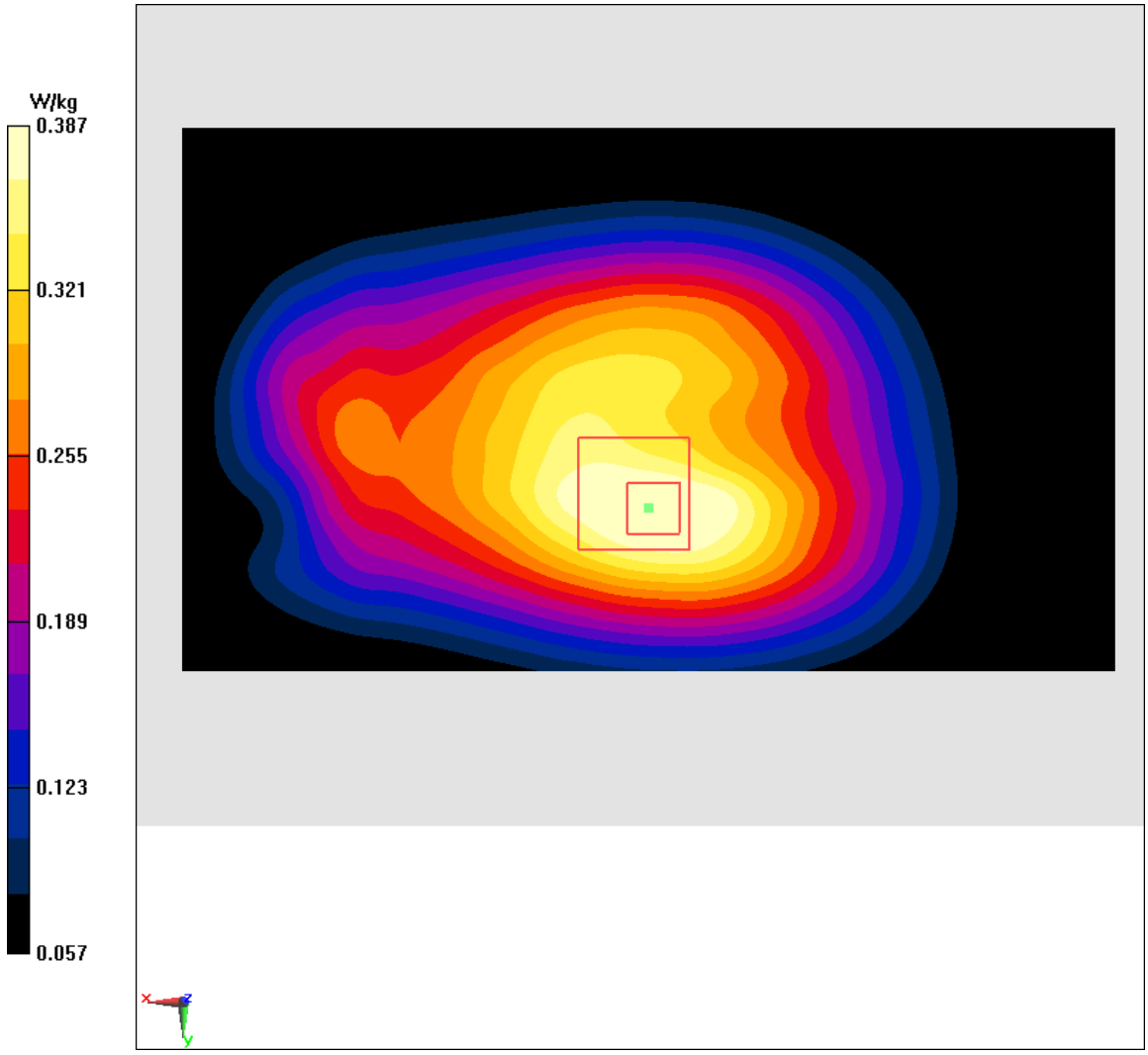


Fig I.8

LTE1900-FDD2_CH18700 Right Cheek
Date: 4/4/2018
Electronics: DAE4 Sn1525
Medium: Head 1900 MHz
Medium parameters used: f = 1860 MHz; σ = 1.373 mho/m; εr = 39.43; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1900-FDD2 1860 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(9.39,9.39,9.39)
Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.215 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.294 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.27 W/kg
SAR(1 g) = 0.174 W/kg; SAR(10 g) = 0.109 W/kg
Maximum value of SAR (measured) = 0.189 W/kg

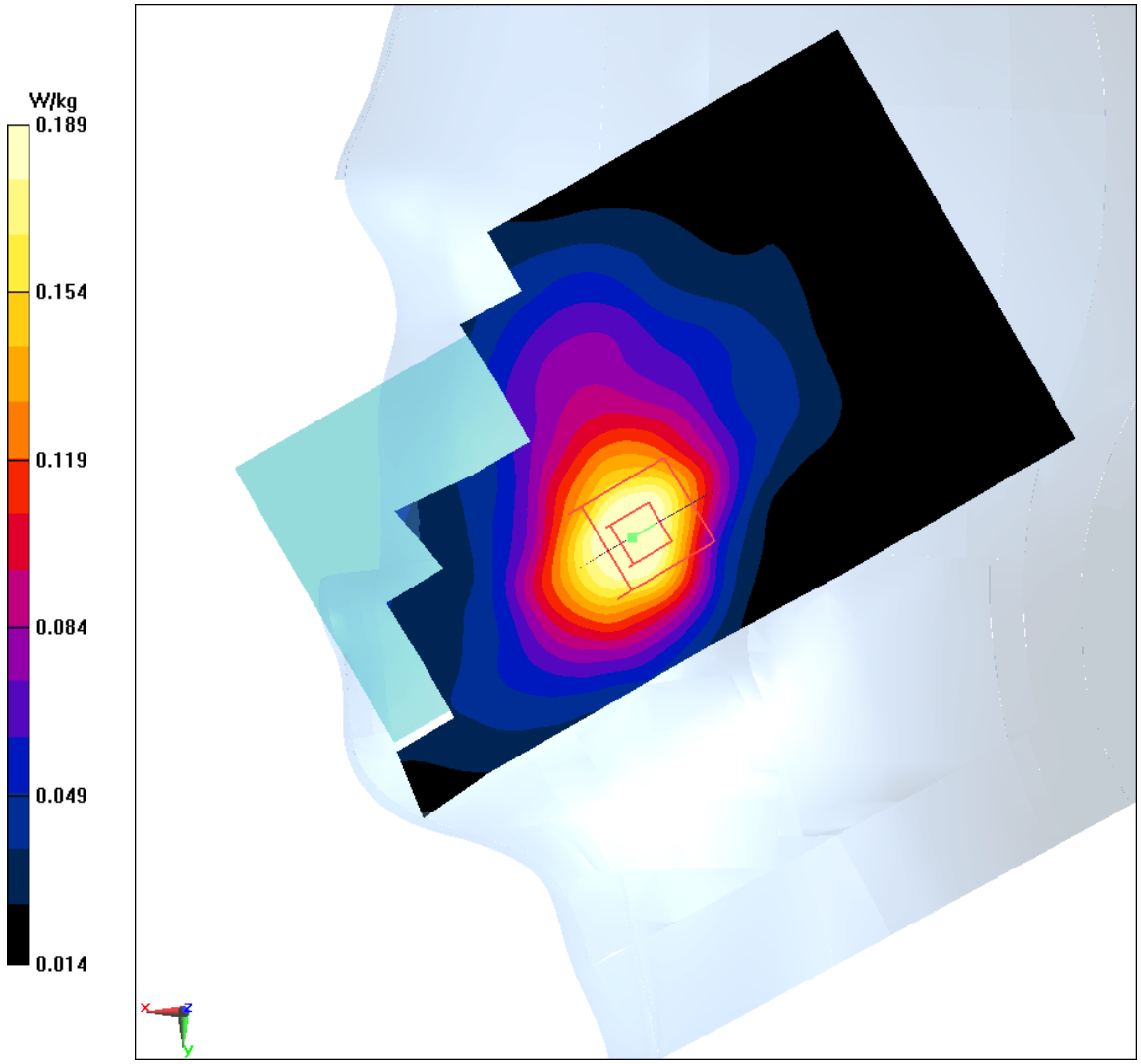


Fig I.9

LTE1900-FDD2_CH18700 Bottom edge
Date: 4/4/2018
Electronics: DAE4 Sn1525
Medium: Head 1900 MHz
Medium parameters used: f = 1860 MHz; σ = 1.458 mho/m; εr = 52.9; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1900-FDD2 1860 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(8.32,8.32,8.32)
Area Scan (71x121x1): 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 = 21.71 V/m; Power Drift = 0.1 dB
Peak SAR (extrapolated) = 1.42 W/kg
SAR(1 g) = 0.831 W/kg; SAR(10 g) = 0.439 W/kg
Maximum value of SAR (measured) = 0.933 W/kg

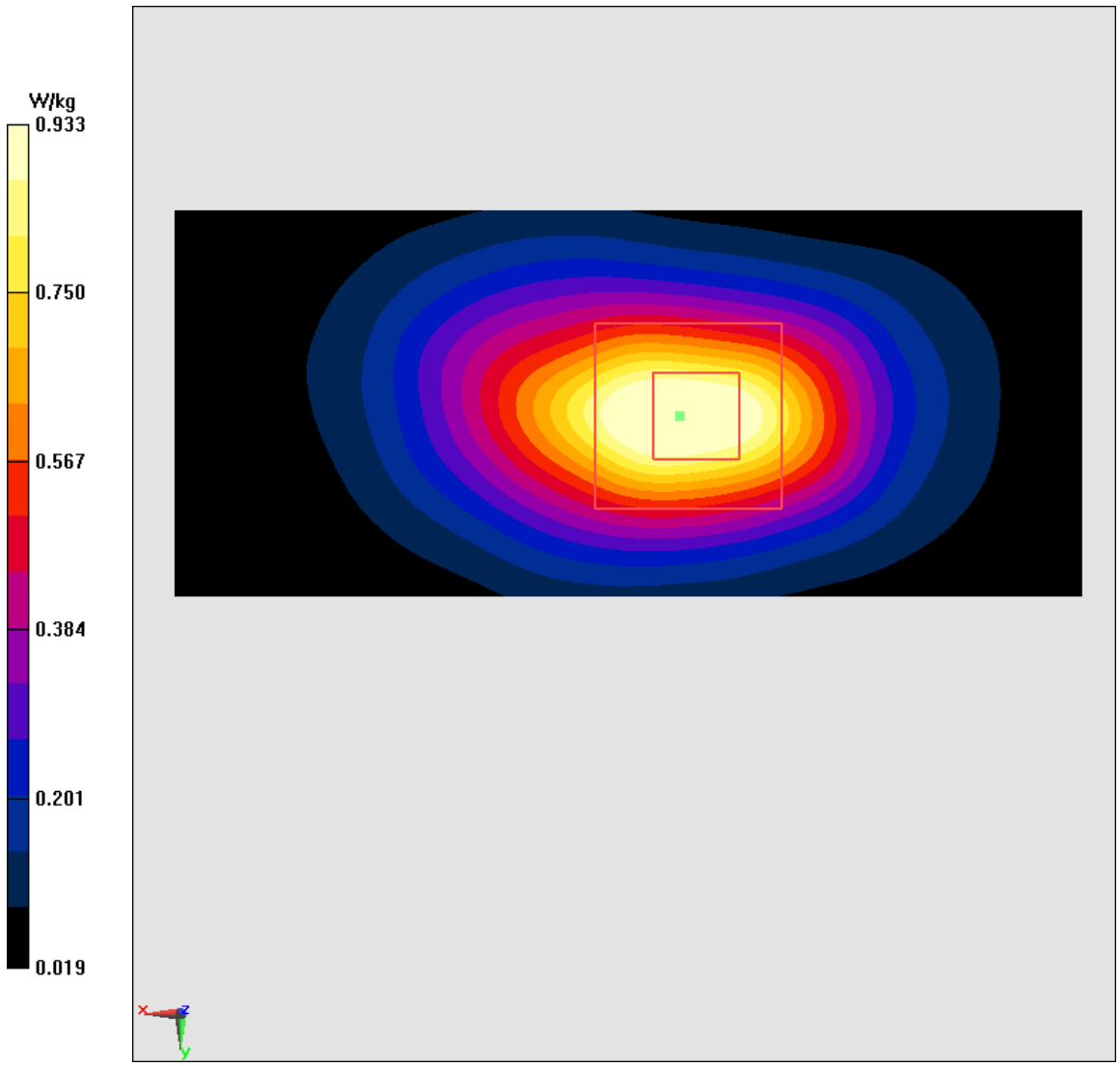


Fig I.10

LTE1700-FDD4_CH20300 Left Cheek
Date: 4/3/2018
Electronics: DAE4 Sn1525
Medium: Head 1750 MHz
Medium parameters used: f = 1745 MHz; σ = 1.349 mho/m; εr = 40.21; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1700-FDD4 1745 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(8.70,8.70,8.70)
Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.194 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.823 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.258 W/kg
SAR(1 g) = 0.161 W/kg; SAR(10 g) = 0.0995 W/kg
Maximum value of SAR (measured) = 0.175 W/kg

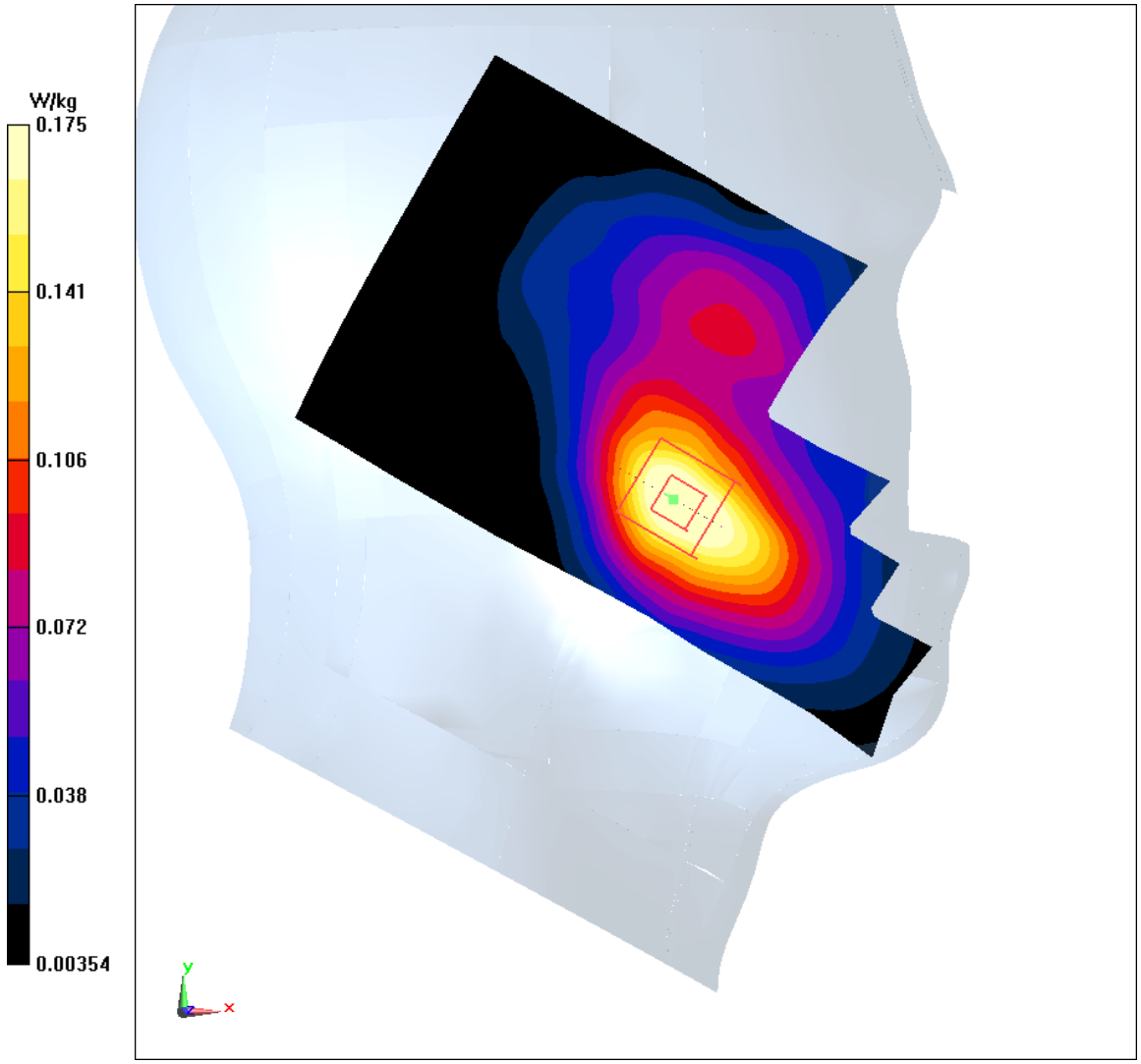


Fig I.11

LTE1700-FDD4_CH20300 Rear
Date: 4/3/2018
Electronics: DAE4 Sn1525
Medium: Head 1750 MHz
Medium parameters used: f = 1745 MHz; σ = 1.477 mho/m; εr = 53.08; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1700-FDD4 1745 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(8.60,8.60,8.60)
Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.464 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.2 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.721 W/kg
SAR(1 g) = 0.376 W/kg; SAR(10 g) = 0.195 W/kg
Maximum value of SAR (measured) = 0.42 W/kg

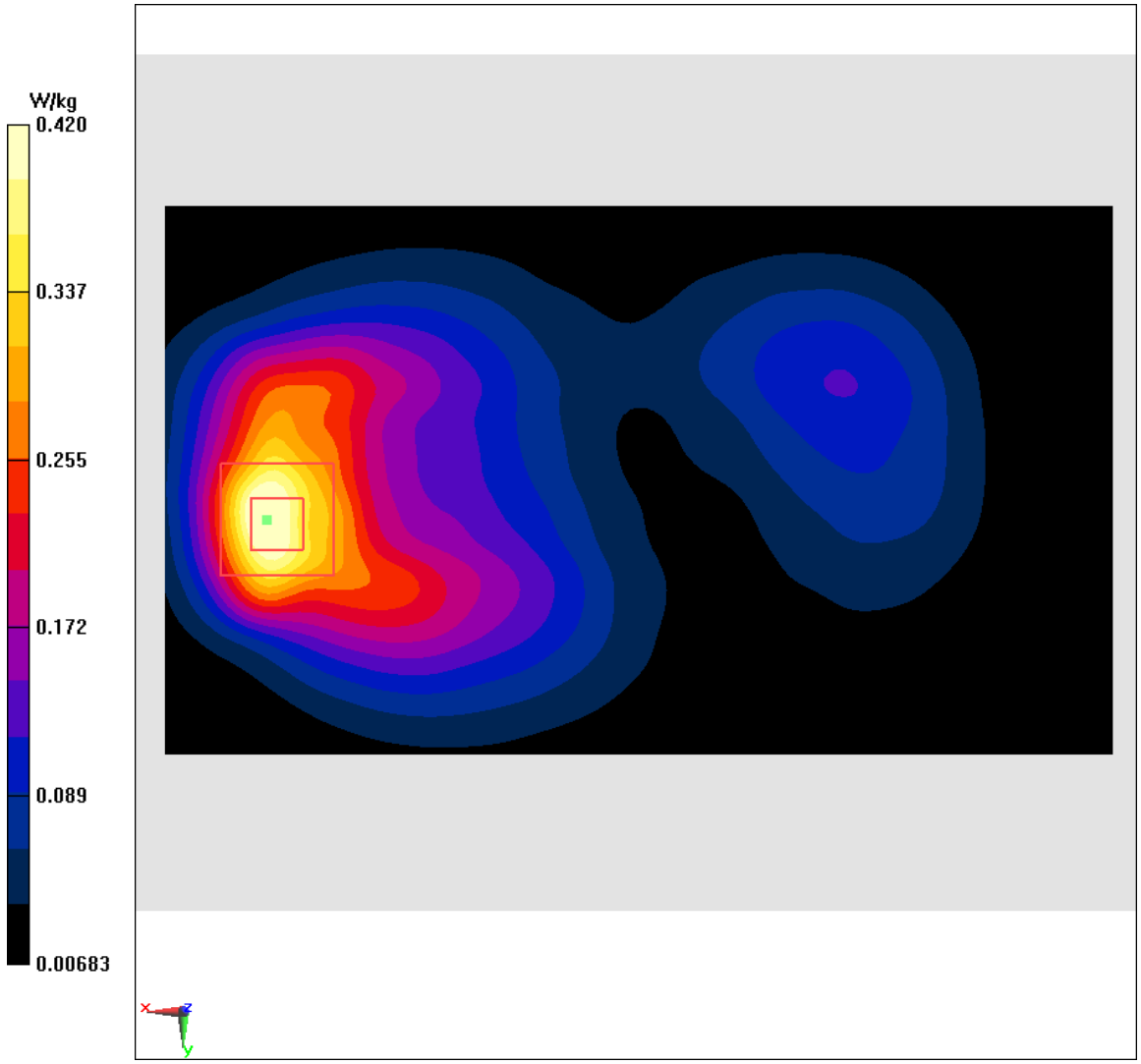


Fig I.12

LTE850-FDD5_CH20525 Right Cheek
Date: 4/2/2018
Electronics: DAE4 Sn1525
Medium: Head 835 MHz
Medium parameters used: f = 836.5 MHz; σ = 0.889 mho/m; εr = 40.69; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE850-FDD5 836.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(10.28,10.28,10.28)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.174 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.255 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.197 W/kg
SAR(1 g) = 0.163 W/kg; SAR(10 g) = 0.127 W/kg
Maximum value of SAR (measured) = 0.171 W/kg

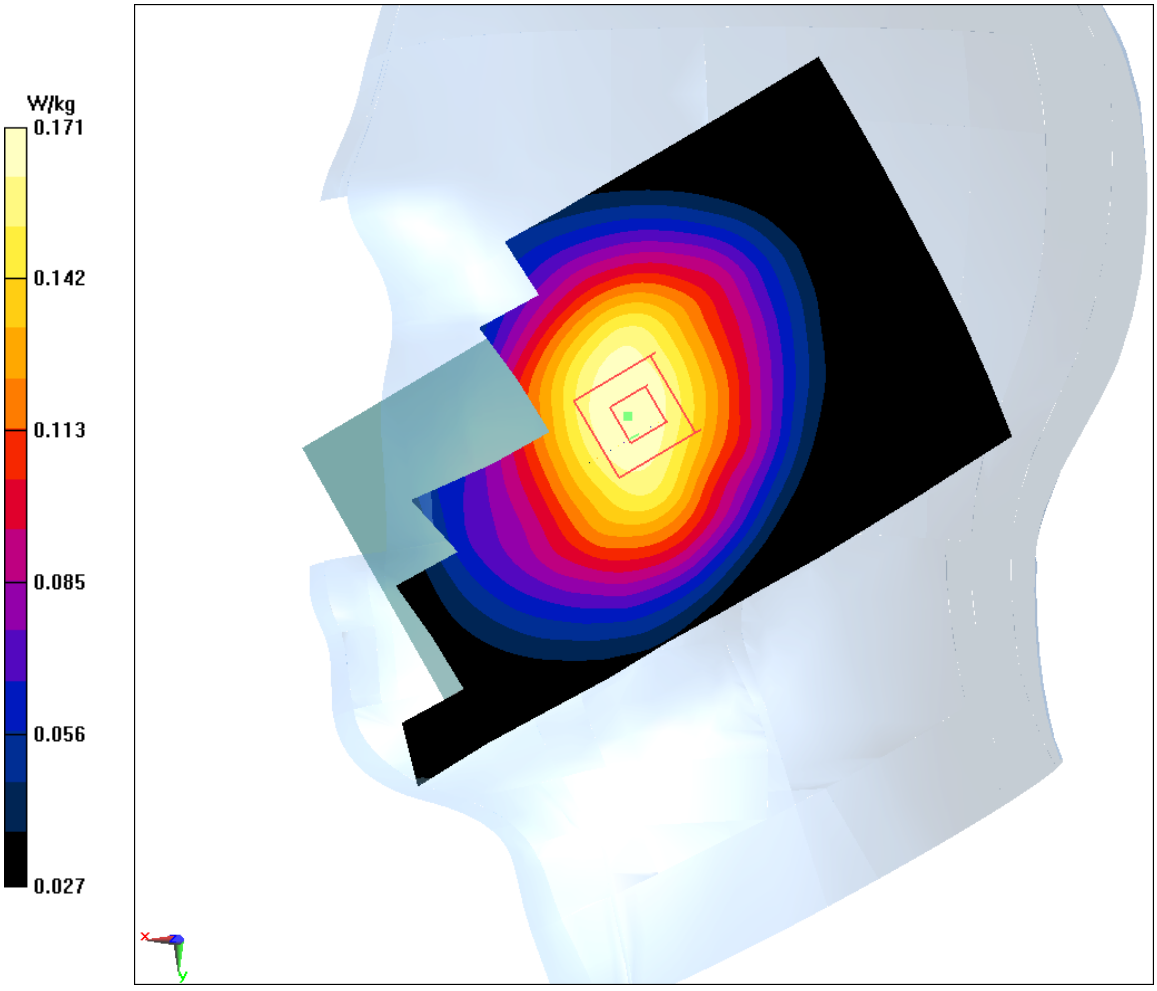


Fig I.13

LTE850-FDD5_CH20525 Rear
Date: 4/2/2018
Electronics: DAE4 Sn1525
Medium: Head 835 MHz
Medium parameters used: f = 836.5 MHz; σ = 0.956 mho/m; εr = 54.43; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE850-FDD5 836.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(10.21,10.21,10.21)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.392 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.17 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.456 W/kg
SAR(1 g) = 0.35 W/kg; SAR(10 g) = 0.262 W/kg
Maximum value of SAR (measured) = 0.369 W/kg

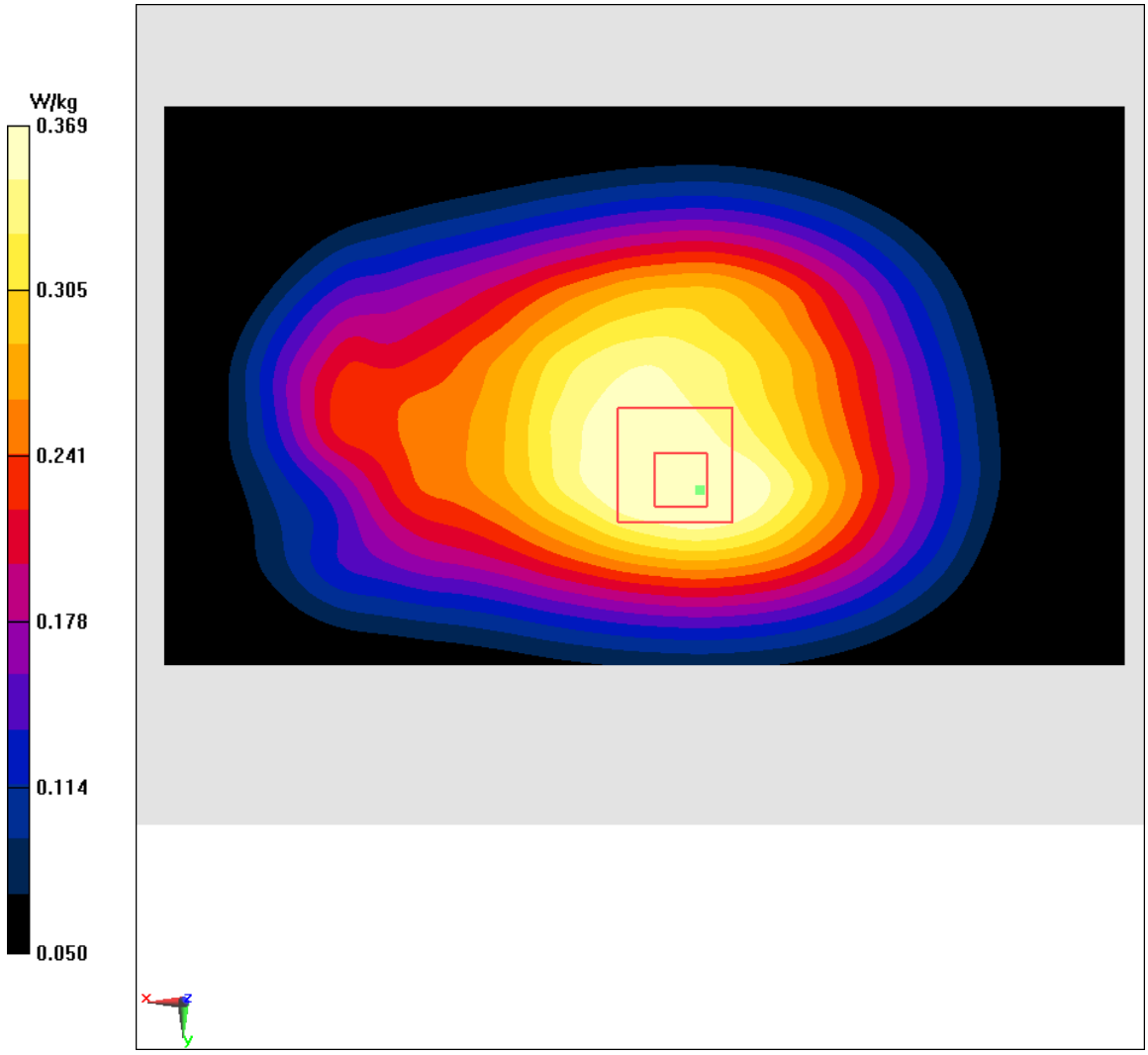


Fig I.14

LTE2500-FDD7_CH21350 Right Cheek
Date: 4/6/2018
Electronics: DAE4 Sn1525
Medium: Head 2600 MHz
Medium parameters used: f = 2560 MHz; σ = 1.918 mho/m; εr = 39.06; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2500-FDD7 2560 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(7.76,7.76,7.76)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0974 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.991 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.148 W/kg
SAR(1 g) = 0.0744 W/kg; SAR(10 g) = 0.0387 W/kg
Maximum value of SAR (measured) = 0.0821 W/kg

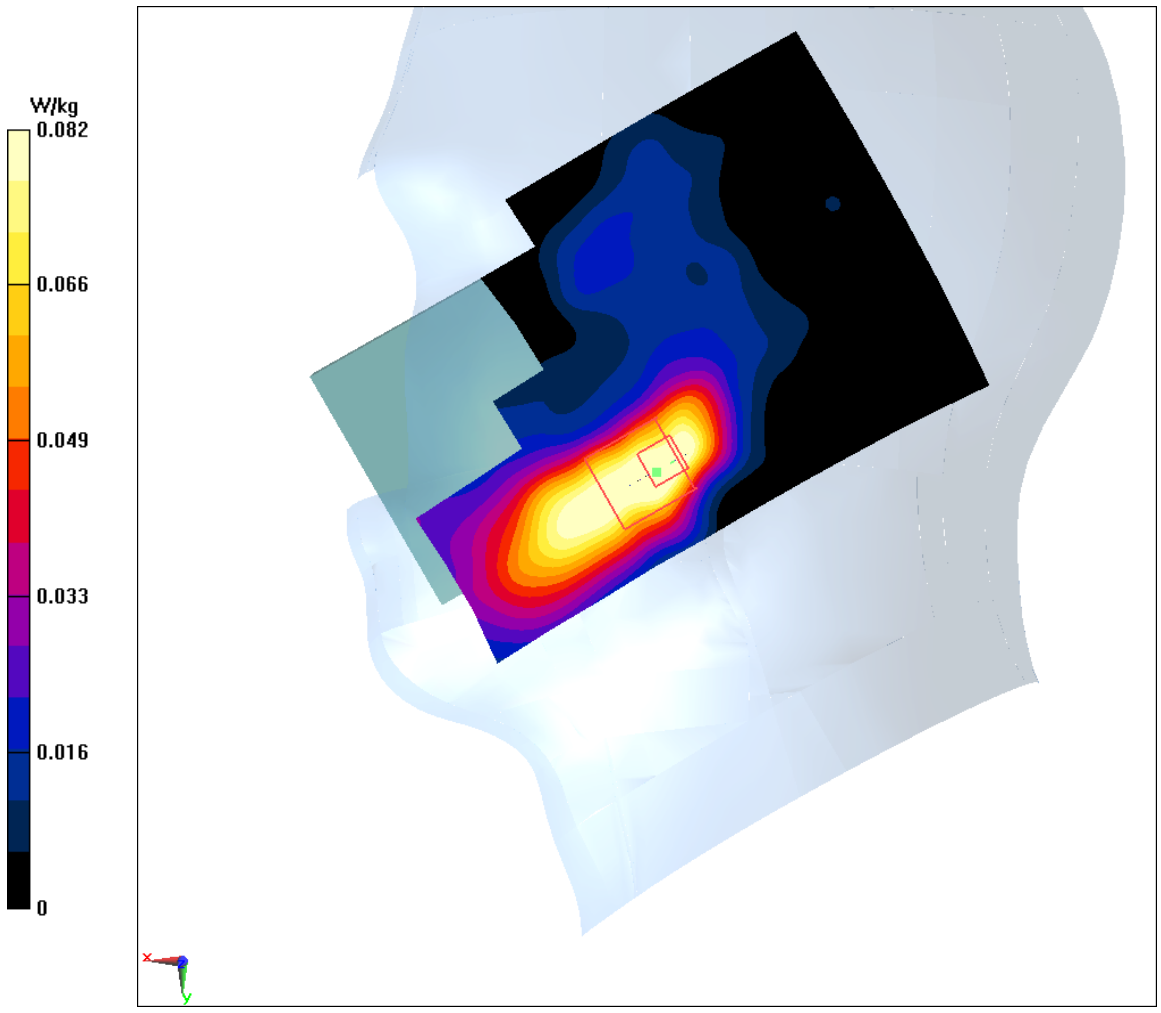


Fig I.15

LTE2500-FDD7_CH21350 Rear
Date: 4/6/2018
Electronics: DAE4 Sn1525
Medium: Head 2600 MHz
Medium parameters used: f = 2560 MHz; σ = 2.139 mho/m; εr = 52.35; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2500-FDD7 2560 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(7.84,7.84,7.84)

Area Scan (71x121x1): 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 = 3.033 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.16 W/kg
SAR(1 g) = 0.585 W/kg; SAR(10 g) = 0.269 W/kg
Maximum value of SAR (measured) = 0.673 W/kg

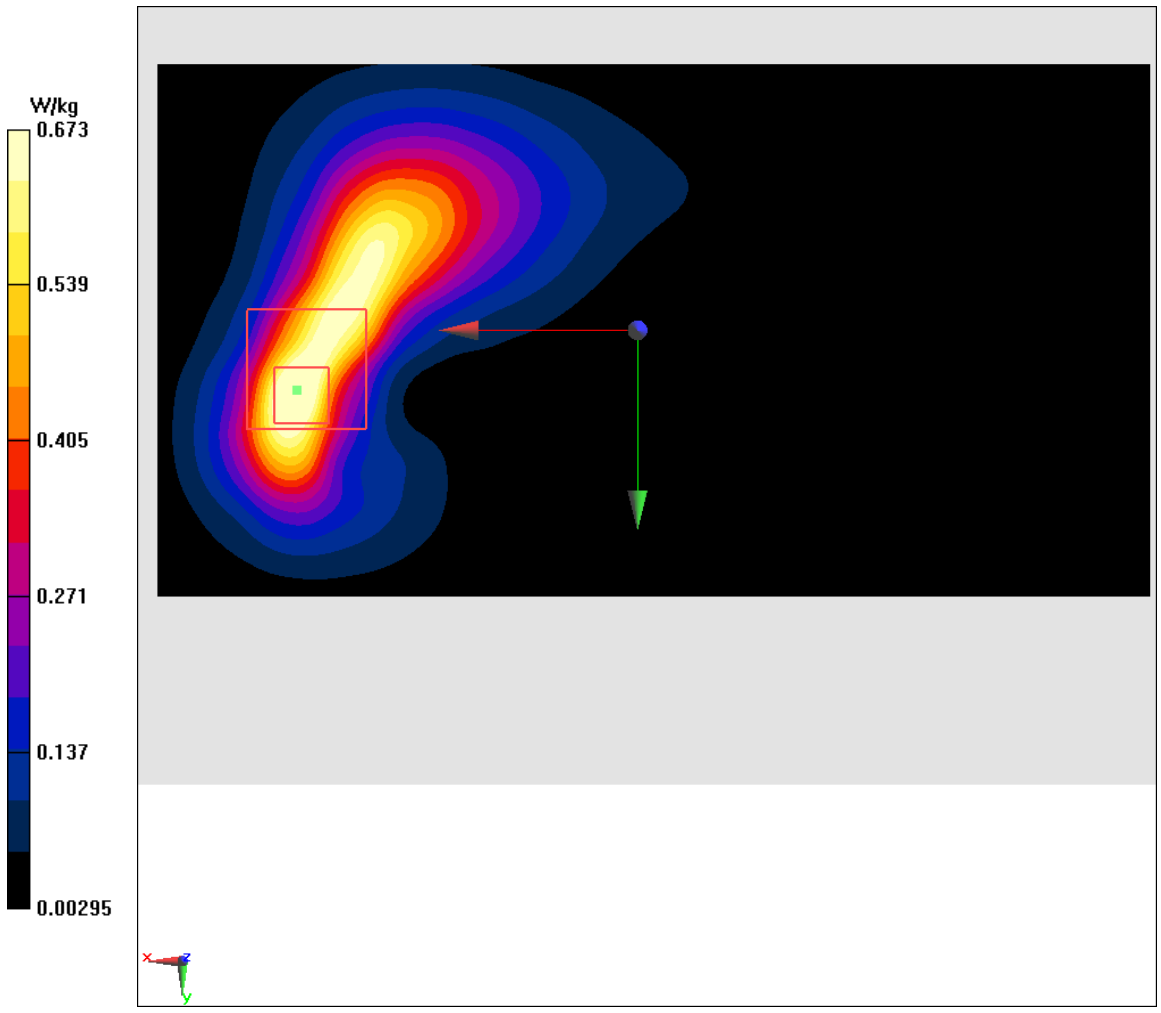


Fig I.16

LTE700-FDD12_CH23060 Left Cheek
Date: 4/1/2018
Electronics: DAE4 Sn1525
Medium: Head 750 MHz
Medium parameters used: f = 704 MHz; σ = 0.846 mho/m; εr = 42.56; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE700-FDD12 704 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(10.57,10.57,10.57)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.123 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.804 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.14 W/kg
SAR(1 g) = 0.117 W/kg; SAR(10 g) = 0.0939 W/kg
Maximum value of SAR (measured) = 0.122 W/kg

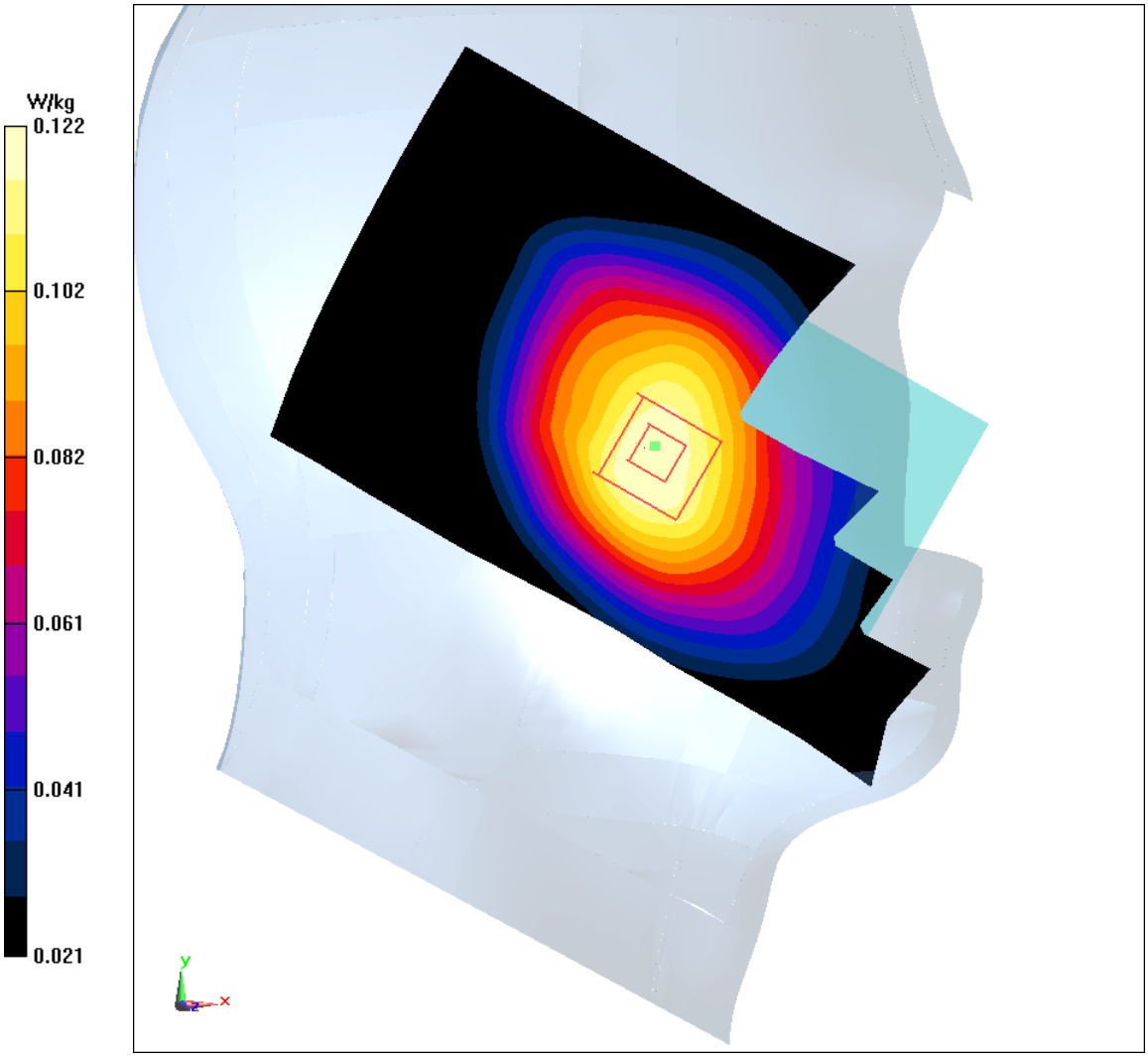


Fig I.17

LTE700-FDD12_CH23060 Rear
Date: 4/1/2018
Electronics: DAE4 Sn1525
Medium: Head 750 MHz
Medium parameters used: f = 704 MHz; σ = 0.926 mho/m; εr = 55.3; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE700-FDD12 704 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(10.63,10.63,10.63)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.301 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.99 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.334 W/kg
SAR(1 g) = 0.275 W/kg; SAR(10 g) = 0.218 W/kg
Maximum value of SAR (measured) = 0.286 W/kg

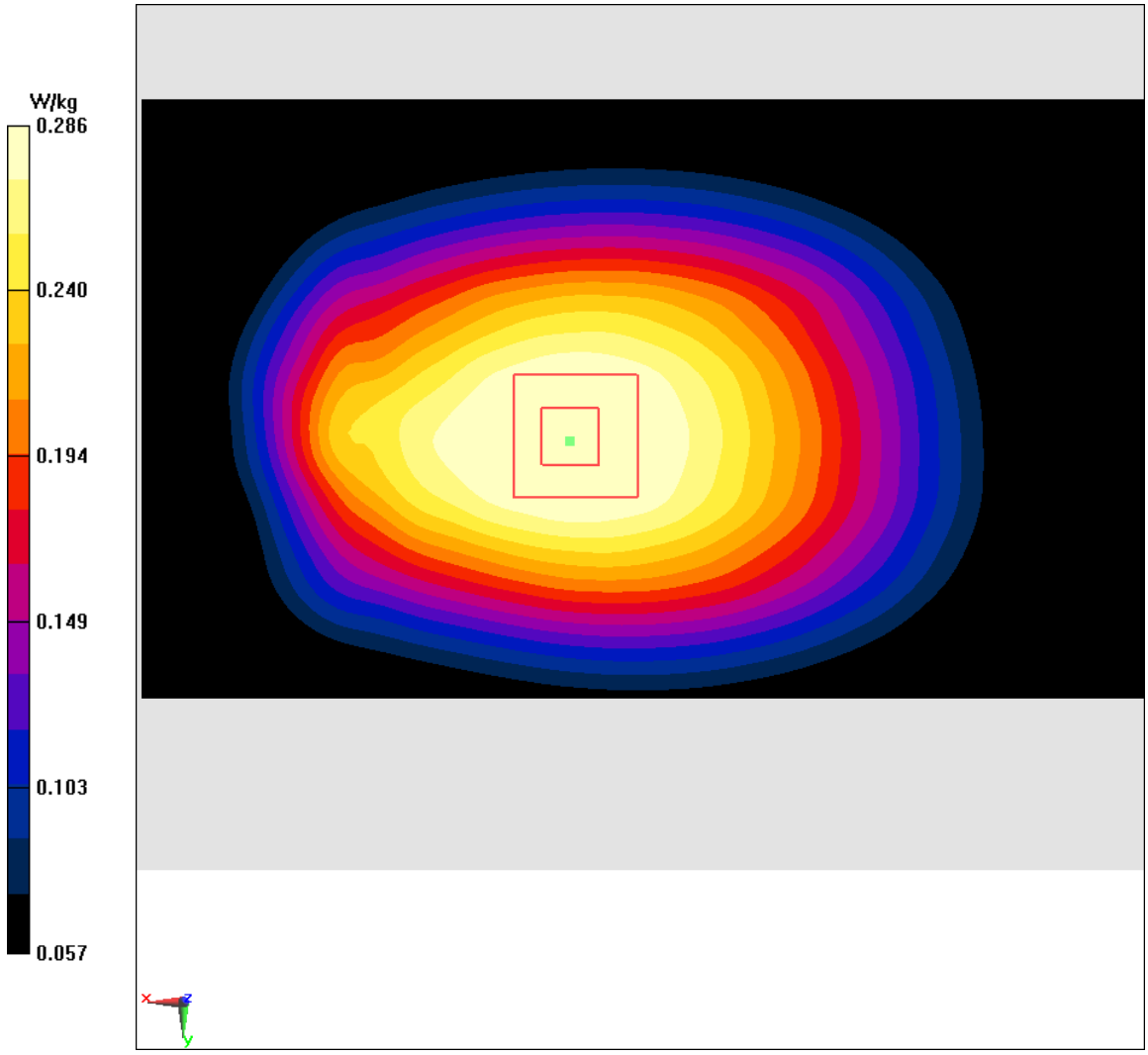


Fig I.18

LTE750-FDD13_CH23230 Right Cheek
Date: 4/1/2018
Electronics: DAE4 Sn1525
Medium: Head 750 MHz
Medium parameters used: f = 782 MHz; σ = 0.92 mho/m; εr = 42.46; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE750-FDD13 782 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(10.57,10.57,10.57)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.13 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.753 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.144 W/kg
SAR(1 g) = 0.12 W/kg; SAR(10 g) = 0.0948 W/kg
Maximum value of SAR (measured) = 0.125 W/kg

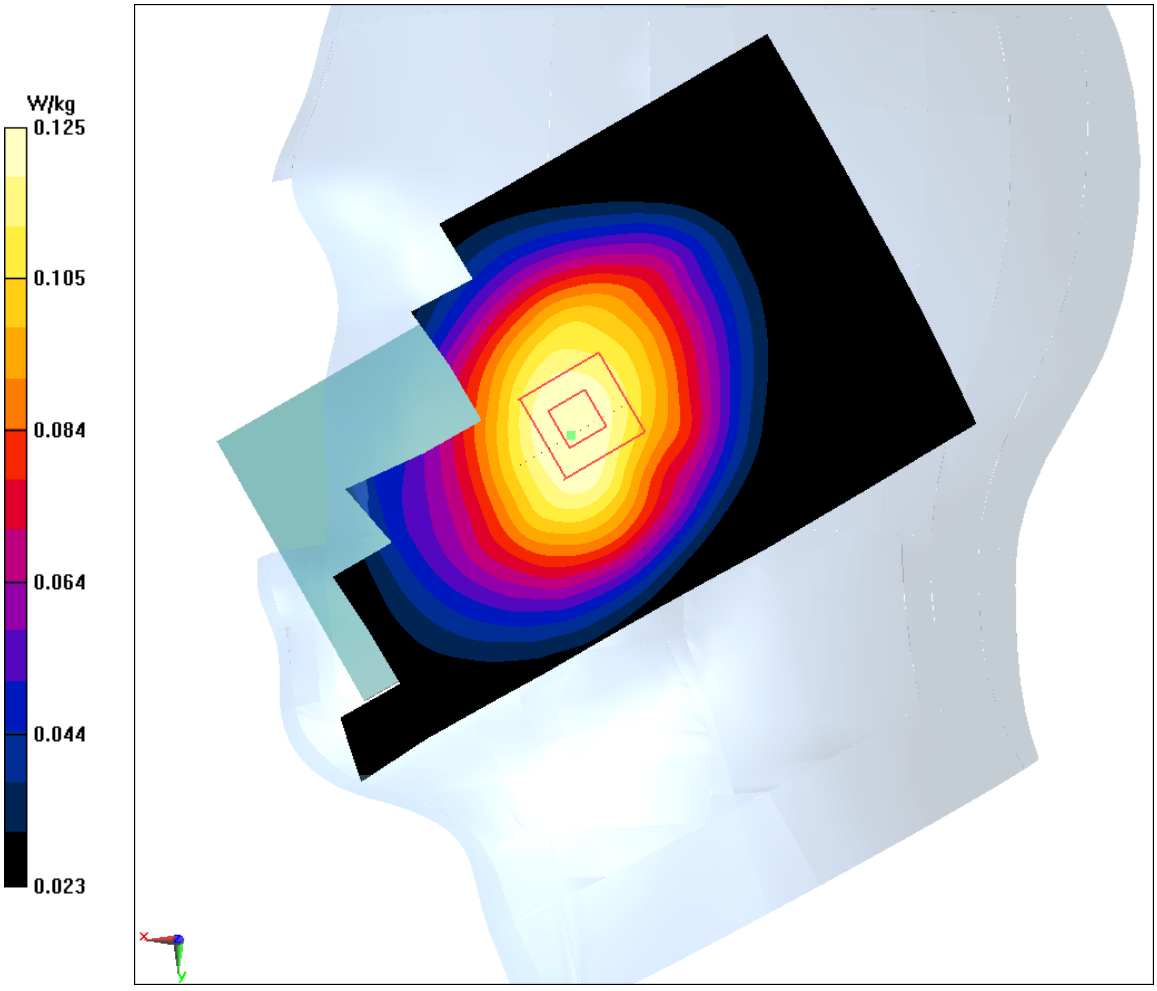


Fig I.19

LTE750-FDD13_CH23230 Rear
Date: 4/1/2018
Electronics: DAE4 Sn1525
Medium: Head 750 MHz
Medium parameters used: f = 782 MHz; σ = 1 mho/m; εr = 55.2; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE750-FDD13 782 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(10.63,10.63,10.63)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.266 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.29 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.305 W/kg
SAR(1 g) = 0.243 W/kg; SAR(10 g) = 0.19 W/kg
Maximum value of SAR (measured) = 0.254 W/kg

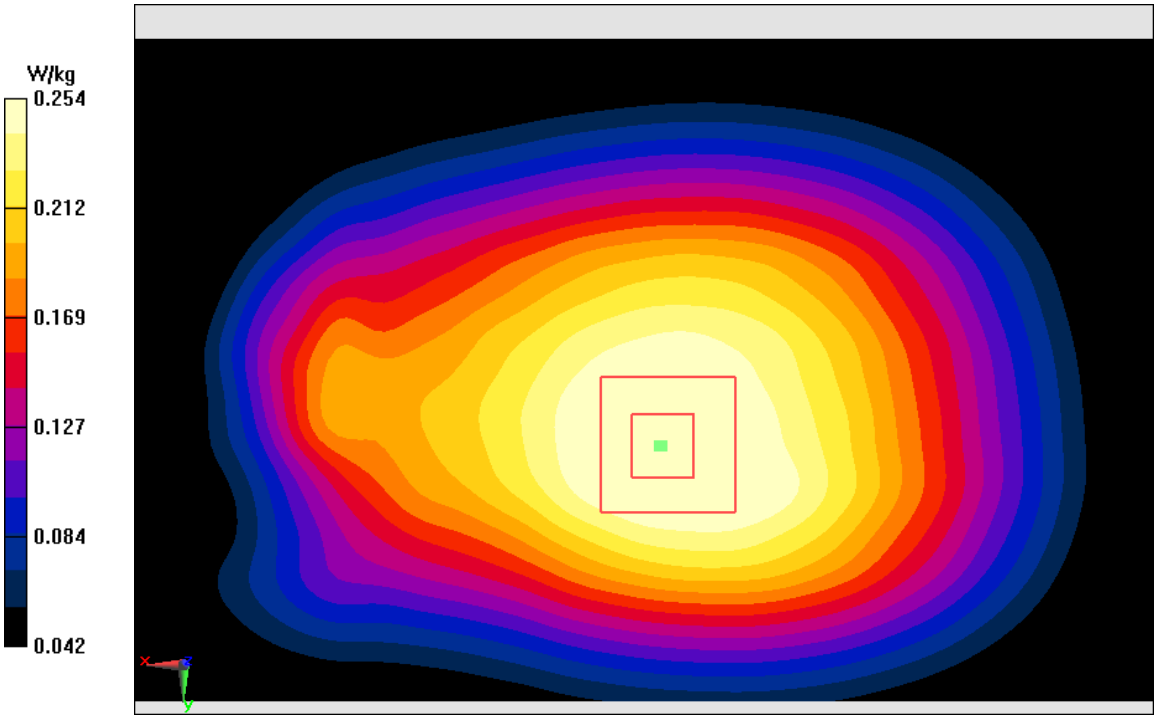


Fig I.20