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s p e a g
CALIBRATION LABORATORY
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2079 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com Http://www.chinattl.cn

DASY5 Validation Report for Body TSL Date: 10.30.2015

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 873

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2450 MHz; σ = 1.936 S/m; ε_r = 53.11; ρ = 1000 kg/m^3

Phantom section: Center Section

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3617; ConvF(7.35, 7.35, 7.35); Calibrated: 8/26/2015;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn777; Calibrated: 8/26/2015
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: 1161/1
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

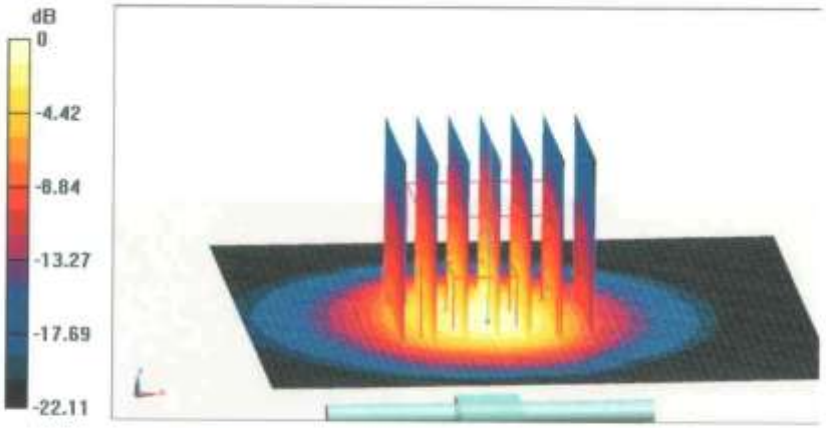
Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 100.0 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 26.3 W/kg

SAR(1 g) = 13 W/kg; SAR(10 g) = 6.07 W/kg

Maximum value of SAR (measured) = 19.5 W/kg



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

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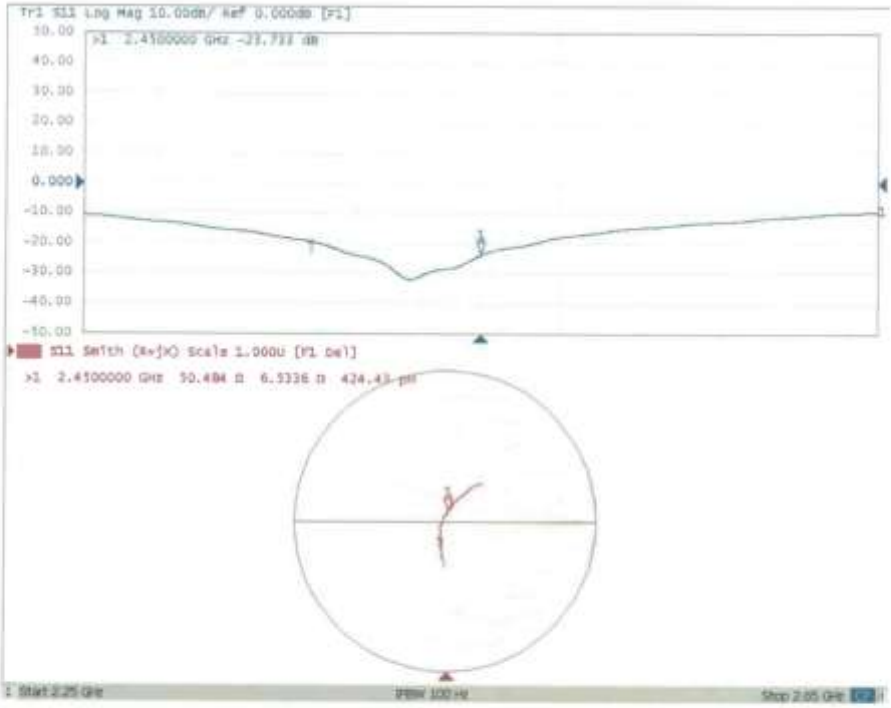
Impedance Measurement Plot for Body TSL



2600 MHz Dipole Calibration Certificate

Calibration Laboratory of
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Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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Accreditation No.: SCS 0108

Client Auden

Certificate No: D2600V2-1058_Jun18

CALIBRATION CERTIFICATE

Object	D2600V2 - SN:1058
Calibration procedure(s)	QA CAL-05.v10 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	June 19, 2018

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-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-18 (No. 217-02682)	Apr-19
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dec-18
DAE4	SN: 601	26-Oct-17 (No. DAE4-601_Oct17)	Oct-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-17)	In house check: Oct-18

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: June 21, 2018

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

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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	V52.10.1
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	37.4 ± 6 %	2.03 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	14.3 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**55.8 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**25.1 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	51.8 ± 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	13.8 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**54.4 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.15 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**24.4 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	49.7 Ω - 7.5 jΩ
Return Loss	- 22.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	45.3 Ω - 6.9 jΩ
Return Loss	- 21.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.149 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	August 14, 2012

DASY5 Validation Report for Head TSL

Date: 19.06.2018

Test Laboratory: SPEAG, Zurich, Switzerland

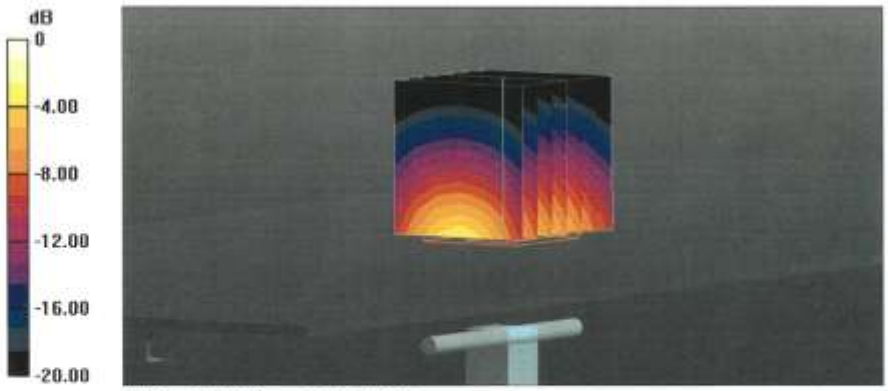
DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1058

Communication System: UID 0 - CW; Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 2.03 S/m; ε_r = 37.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

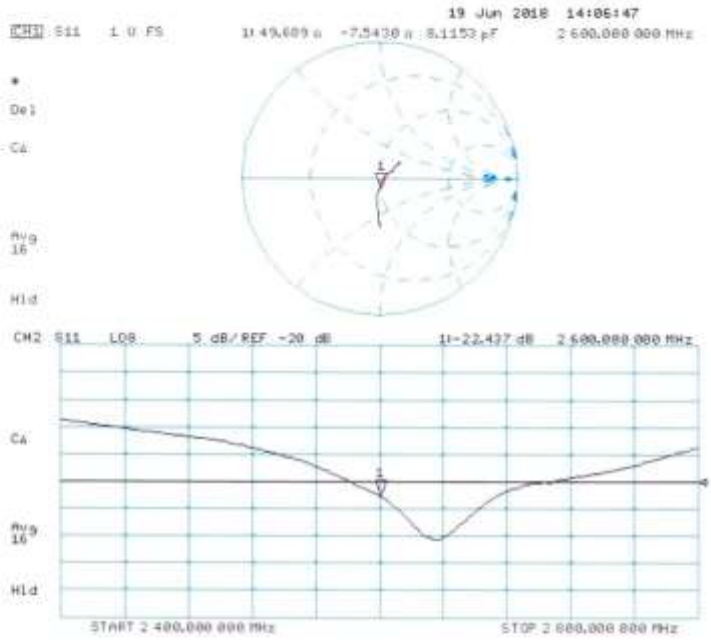
- Probe: EX3DV4 - SN7349; ConvF(7.7, 7.7, 7.7) @ 2600 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.1(1476); SEMCAD X 14.6.11(7439)

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 = 117.8 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 28.5 W/kg
SAR(1 g) = 14.3 W/kg; SAR(10 g) = 6.38 W/kg
Maximum value of SAR (measured) = 23.8 W/kg



0 dB = 23.8 W/kg = 13.77 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 19.06.2018

Test Laboratory: SPEAG, Zurich, Switzerland

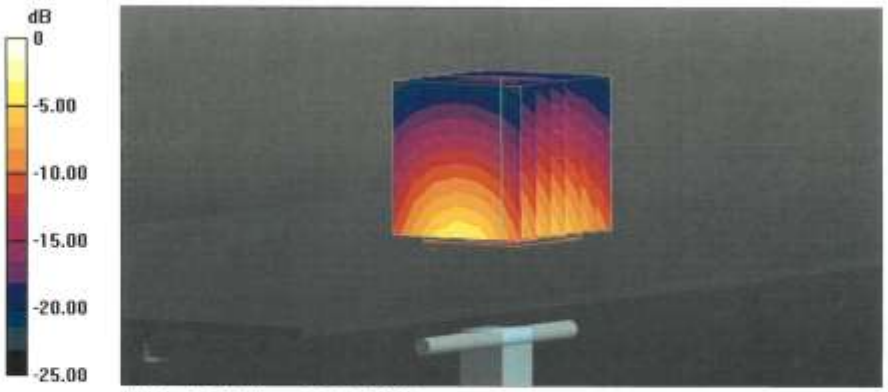
DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1058

Communication System: UID 0 - CW; Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 2.22 S/m; ε_r = 51.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

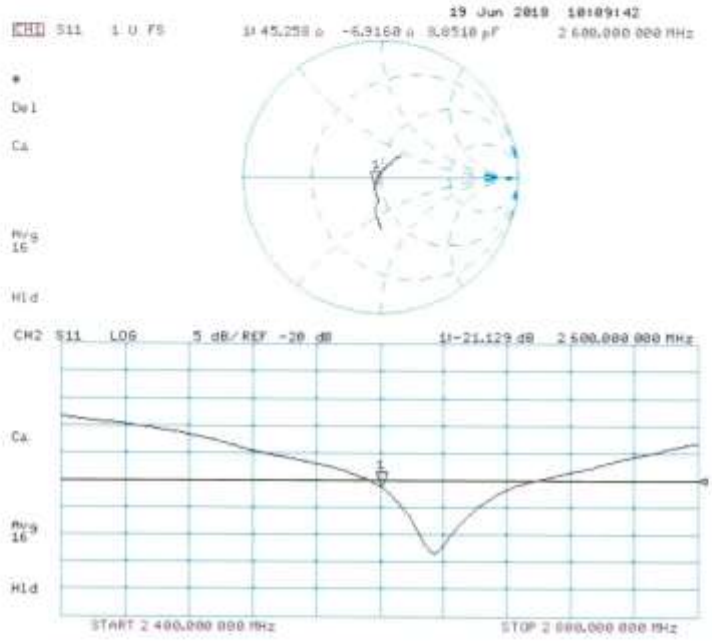
- Probe: EX3DV4 - SN7349; ConvF(7.81, 7.81, 7.81) @ 2600 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.1(1476); SEMCAD X 14.6.11(7439)

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 = 107.8 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 28.0 W/kg
SAR(1 g) = 13.8 W/kg; SAR(10 g) = 6.15 W/kg
Maximum value of SAR (measured) = 23.1 W/kg



0 dB = 23.1 W/kg = 13.64 dBW/kg

Impedance Measurement Plot for Body TSL



5G Dipole Calibration Certificate

Calibration Laboratory of
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Zeughausstrasse 43, 8004 Zurich, Switzerland

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Accreditation No.: SCS 0108

Client TMC-SZ (Auden)

Certificate No: D5GHzV2-1238_Sep16

CALIBRATION CERTIFICATE

Object	D5GHzV2 - SN:1238
Calibration procedure(s)	QA CAL-22.v2 Calibration procedure for dipole validation kits between 3-6 GHz
Calibration date:	September 21, 2016

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	06-Apr-16 (No. 217-02288/02289)	Apr-17
Power sensor NRP-Z91	SN: 103244	06-Apr-16 (No. 217-02288)	Apr-17
Power sensor NRP-Z91	SN: 103245	06-Apr-16 (No. 217-02289)	Apr-17
Reference 20 dB Attenuator	SN: 5058 (20k)	05-Apr-16 (No. 217-02292)	Apr-17
Type-N mismatch combination	SN: 5047.2 / 06327	05-Apr-16 (No. 217-02295)	Apr-17
Reference Probe EX3DV4	SN: 3503	30-Jun-16 (No. EX3-3503_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

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 22, 2016

Calibration Laboratory of
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Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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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 62209-2, "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
c) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

d) 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 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	5200 MHz ± 1 MHz 5300 MHz ± 1 MHz 5500 MHz ± 1 MHz 5600 MHz ± 1 MHz 5800 MHz ± 1 MHz	

Head TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	36.0	4.66 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.6 ± 6 %	4.54 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5200 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.76 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**76.9 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**21.9 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5300 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.9	4.76 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.4 ± 6 %	4.63 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5300 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**83.0 W / kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.40 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.7 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5500 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.6	4.96 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.2 ± 6 %	4.83 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5500 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.21 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**81.3 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.34 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.1 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	34.0 ± 6 %	4.93 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	8.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**82.9 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	**23.6 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.3	5.27 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	33.7 ± 6 %	5.14 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5800 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.96 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**78.8 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.26 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**22.3 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	49.0	5.30 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.5 ± 6 %	5.45 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5200 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.48 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**74.4 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.10 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**20.9 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5300 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.9	5.42 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.3 ± 6 %	5.59 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5300 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.69 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**76.5 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.17 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.5 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5500 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.6	5.65 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.0 ± 6 %	5.86 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5500 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	8.03 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**79.9 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 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	46.8 ± 6 %	6.00 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	7.95 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**79.1 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 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.2	6.00 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.4 ± 6 %	6.29 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5800 MHz

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.66 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**76.2 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.13 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.1 W/kg ± 19.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5200 MHz

Impedance, transformed to feed point	47.1 Ω - 5.8 jΩ
Return Loss	- 23.6 dB

Antenna Parameters with Head TSL at 5300 MHz

Impedance, transformed to feed point	50.5 Ω - 3.2 jΩ
Return Loss	- 29.8 dB

Antenna Parameters with Head TSL at 5500 MHz

Impedance, transformed to feed point	49.0 Ω + 2.5 jΩ
Return Loss	- 31.2 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	50.0 Ω + 0.6 jΩ
Return Loss	- 44.1 dB

Antenna Parameters with Head TSL at 5800 MHz

Impedance, transformed to feed point	55.6 Ω + 1.9 jΩ
Return Loss	- 25.1 dB

Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	48.6 Ω - 3.4 jΩ
Return Loss	- 28.6 dB

Antenna Parameters with Body TSL at 5300 MHz

Impedance, transformed to feed point	49.6 Ω - 2.4 jΩ
Return Loss	- 32.3 dB

Antenna Parameters with Body TSL at 5500 MHz

Impedance, transformed to feed point	49.5 Ω + 2.5 jΩ
Return Loss	- 31.7 dB

Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	50.8 Ω + 2.5 jΩ
Return Loss	- 31.7 dB

Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	56.0 Ω + 3.0 jΩ
Return Loss	- 24.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.191 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	May 04, 2015

DASY5 Validation Report for Head TSL

Date: 21.09.2016

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1238

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5300 MHz, Frequency: 5500 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz
Medium parameters used: f = 5200 MHz; σ = 4.54 S/m; ε_r = 34.6; ρ = 1000 kg/m^3
Medium parameters used: f = 5300 MHz; σ = 4.63 S/m; ε_r = 34.4; ρ = 1000 kg/m^3
Medium parameters used: f = 5500 MHz; σ = 4.83 S/m; ε_r = 34.2; ρ = 1000 kg/m^3
Medium parameters used: f = 5600 MHz; σ = 4.93 S/m; ε_r = 34.0; ρ = 1000 kg/m^3
Medium parameters used: f = 5800 MHz; σ = 5.14 S/m; ε_r = 33.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.59, 5.59, 5.59); Calibrated: 30.06.2016, ConvF(5.14, 5.14, 5.14); Calibrated: 30.06.2016, ConvF(5.02, 5.02, 5.02); Calibrated: 30.06.2016, ConvF(4.89, 4.89, 4.89); Calibrated: 30.06.2016, ConvF(4.85, 4.85, 4.85); Calibrated: 30.06.2016;
- 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)

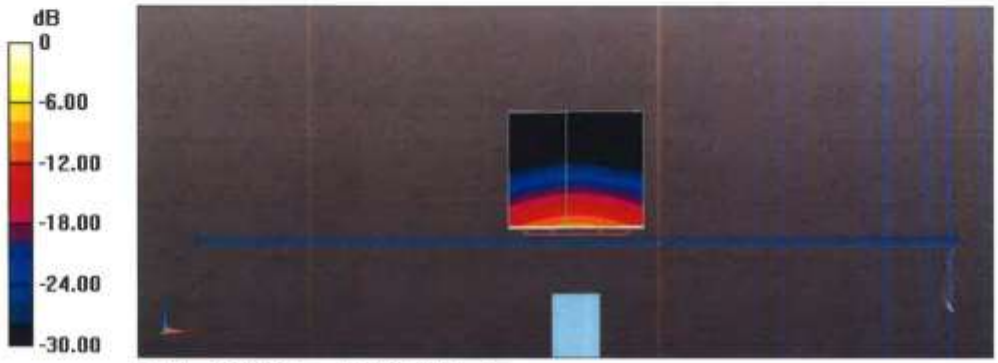
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 70.35 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 27.9 W/kg
SAR(1 g) = 7.76 W/kg; SAR(10 g) = 2.22 W/kg
Maximum value of SAR (measured) = 17.9 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 72.80 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 31.1 W/kg
SAR(1 g) = 8.38 W/kg; SAR(10 g) = 2.4 W/kg
Maximum value of SAR (measured) = 19.5 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5500 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 70.90 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 31.9 W/kg
SAR(1 g) = 8.21 W/kg; SAR(10 g) = 2.34 W/kg
Maximum value of SAR (measured) = 19.5 W/kg

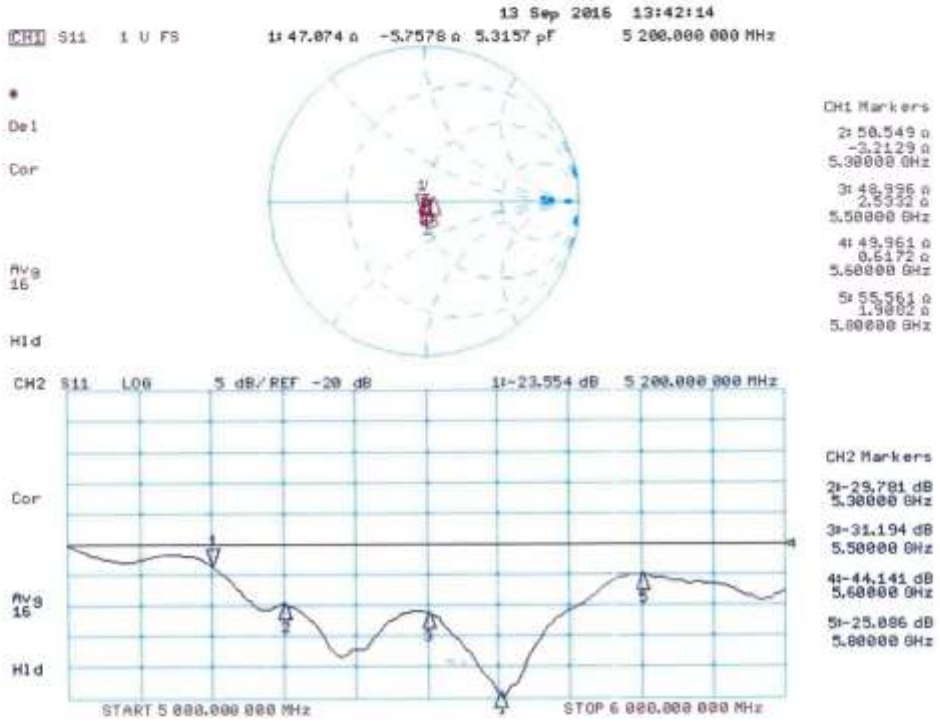
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 71.51 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 32.8 W/kg
SAR(1 g) = 8.38 W/kg; SAR(10 g) = 2.39 W/kg
Maximum value of SAR (measured) = 20.0 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 69.07 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 32.5 W/kg
SAR(1 g) = 7.96 W/kg; SAR(10 g) = 2.26 W/kg
Maximum value of SAR (measured) = 19.4 W/kg



0 dB = 17.9 W/kg = 12.53 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 20.09.2016

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1238

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5300 MHz, Frequency: 5500 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz
Medium parameters used: f = 5200 MHz; σ = 5.45 S/m; ε_r = 47.5; ρ = 1000 kg/m^3
Medium parameters used: f = 5300 MHz; σ = 5.59 S/m; ε_r = 47.3; ρ = 1000 kg/m^3
Medium parameters used: f = 5500 MHz; σ = 5.86 S/m; ε_r = 47.0; ρ = 1000 kg/m^3
Medium parameters used: f = 5600 MHz; σ = 6.00 S/m; ε_r = 46.8; ρ = 1000 kg/m^3
Medium parameters used: f = 5800 MHz; σ = 6.29 S/m; ε_r = 46.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(4.99, 4.99, 4.99); Calibrated: 30.06.2016, ConvF(4.75, 4.75, 4.75); Calibrated: 30.06.2016, ConvF(4.4, 4.4, 4.4); Calibrated: 30.06.2016, ConvF(4.35, 4.35, 4.35); Calibrated: 30.06.2016, ConvF(4.27, 4.27, 4.27); Calibrated: 30.06.2016;
- 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=100mW, dist=10mm, f=5200MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 66.67 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 27.8 W/kg
SAR(1 g) = 7.48 W/kg; SAR(10 g) = 2.1 W/kg
Maximum value of SAR (measured) = 17.3 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 67.01 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 29.4 W/kg
SAR(1 g) = 7.69 W/kg; SAR(10 g) = 2.17 W/kg
Maximum value of SAR (measured) = 18.0 W/kg

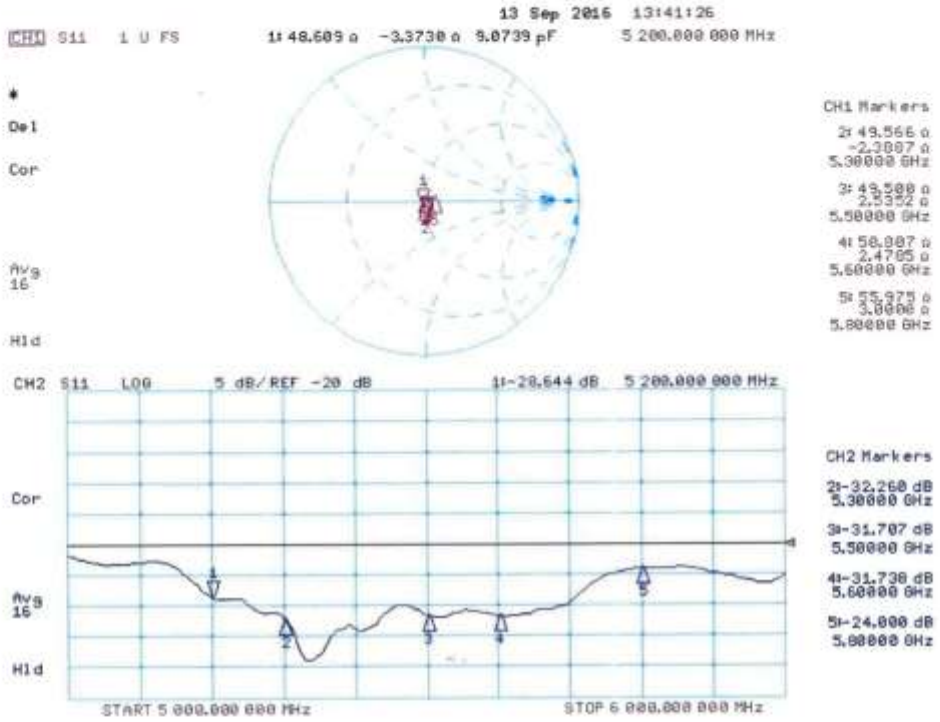
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5500 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 67.20 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 32.4 W/kg
SAR(1 g) = 8.03 W/kg; SAR(10 g) = 2.23 W/kg
Maximum value of SAR (measured) = 19.2 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 = 66.47 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 32.7 W/kg
SAR(1 g) = 7.95 W/kg; SAR(10 g) = 2.23 W/kg
Maximum value of SAR (measured) = 19.1 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 64.40 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 33.2 W/kg
SAR(1 g) = 7.66 W/kg; SAR(10 g) = 2.13 W/kg
Maximum value of SAR (measured) = 18.8 W/kg

0 dB = 17.3 W/kg = 12.38 dBW/kg

Impedance Measurement Plot for Body TSL



ANNEX J Extended Calibration SAR Dipole

Referring to KDB865664 D01, if dipoles are verified in return loss (<-20dBm, within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

Justification of Extended Calibration SAR Dipole D750V3– serial no.1163

Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2016-9-19	-26.8		54.5		-1.8	
2017-9-17	-25.4	5.2	53.2	1.3	-2.5	-0.7
/	/	/	/	/	/	/

Body						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2016-9-19	-29.0		49.8		-3.5	
2017-9-17	-25.2	13.1	46.9	2.9	-2.8	0.7
/	/	/	/	/	/	/

Justification of Extended Calibration SAR Dipole D835V2– serial no.4d057

Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2015-10-22	-29.8		49.2		-3.12	
2016-10-20	-26.7	10.4	47.5	-1.7	-5.74	-2.62
2017-10-18	-26.2	12.1	47.9	-1.3	-5.32	-2.20

Body						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2015-10-22	-24.7		48.1		-5.38	
2016-10-20	-22.4	9.3	46.7	1.4	-4.86	0.52
2017-10-18	-22.9	7.3	46.4	1.7	-4.79	0.59

Justification of Extended Calibration SAR Dipole D1800V2– serial no.2d147

Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2015-10-3	-26.9		47.6		-3.68	
2016-9-28	-25.7	4.4	45.8	-1.8	-2.81	0.87
2017-9-25	-25.1	6.7	48.2	0.6	-5.20	-1.52

Body						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2015-10-3	-21.1		44.4		-6.17	
2016-9-28	-22.8	-8.1	46.2	1.8	-5.56	0.61
2017-9-25	-22.9	-8.5	46.8	2.4	-5.32	0.85

Justification of Extended Calibration SAR Dipole D1900V2– serial no.5d088

Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2015-10-4	-22.4		52.7		7.33	
2016-9-28	-25.3	-12.9	50.8	-1.9	5.82	1.51
2017-9-25	-24.9	-11.2	51.2	-1.5	6.22	1.11

Body						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2015-10-4	-25.4		50.9		5.36	
2016-9-28	-23.7	6.7	48.9	-2.0	2.74	-2.62
2017-9-25	-23.2	8.7	48.3	-2.6	3.84	-1.52

Justification of Extended Calibration SAR Dipole D2450V2– serial no.873

Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2015-10-30	-26.6		53.4		3.42	
2016-10-20	-25.1	5.6	55.1	1.7	2.91	0.51
2017-10-18	-25.7	3.4	54.6	0.8	3.04	0.38

Body						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2015-10-30	-23.7		50.5		6.53	
2016-10-20	-24.9	5.1	49.2	1.3	7.28	0.75
2017-10-18	-25.5	7.6	49.6	0.9	7.11	0.58

Justification of Extended Calibration SAR Dipole D5GHzV2– serial no.1238

Head							
Date of Measurement	Frequency	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2016-9-21	5200MHz	-23.6		47.1		5.8	
2017-9-20	5200MHz	-21.7	8.1	48.3	1.2	2.38	2.42
2016-9-21	5300MHz	-29.8		50.5		3.2	
2017-9-20	5300MHz	-27.8	6.7	51.9	1.4	4.51	1.31
2016-9-21	5500MHz	-31.2		49.0		2.5	
2017-9-20	5500MHz	-29.5	5.4	50.3	1.3	1.24	1.26
2016-9-21	5600MHz	-44.1		50.0		0.6	
2017-9-20	5600MHz	-42.6	3.4	51.5	1.5	2.55	1.95
2016-9-21	5800MHz	-25.1		55.6		1.9	
2017-9-20	5800MHz	-23.8	5.2	56.9	1.3	3.04	1.14

Body							
Date of Measurement	Frequency	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2016-9-21	5200MHz	-28.6		48.6		3.4	
2017-9-20	5200MHz	-26.4	7.7	50.0	1.4	3.72	0.32
2016-9-21	5300MHz	-32.3		49.6		2.4	
2017-9-20	5300MHz	-30.5	5.6	51.3	1.7	3.64	1.24
2016-9-21	5500MHz	-31.7		49.5		2.5	
2017-9-20	5500MHz	-29.8	6.0	51.4	1.9	4.25	1.75
2016-9-21	5600MHz	-31.7		50.8		2.5	
2017-9-20	5600MHz	-29.5	6.9	52.3	1.5	2.91	0.41
2016-9-21	5800MHz	-24.0		56.0		3.0	
2017-9-20	5800MHz	-22.8	5.0	57.3	1.3	4.23	1.23

The Return-Loss is <-20dB, and within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the value result should support extended c.

ANNEX K Spot Check Test

As the test lab for 9640 from Spectralink Corp, we, Shenzhen Academy of Information and Communications Technology, declare on our sole responsibility that, according to "Justification Letter" provided by applicant, only the Spot check test should be performed. The test results are as below.

K.1 Internal Identification of EUT used during the spot check test

EUT ID*	IMEI	HW Version	SW Version
EUT3	357023090000382	PIO	vF03

K.2 Measurement results

SAR Values (GSM 850)

Frequency		Test Position		SAR(1g) (W/kg)		
MHz	Ch.			Spot check data		Original data
				Measured SAR	Reported SAR	
836.6	190	Head	Left Touch	0.190	**0.24**	**0.20**
836.6	190	Body	Bottom	0.255	**0.31**	**0.28**

SAR Values (GSM 1900)

Frequency		Test Position		SAR(1g) (W/kg)		
MHz	Ch.			Spot check data		Original data
				Measured SAR	Reported SAR	
1880	661	Head	Right Touch	0.244	**0.25**	**0.10**
1880	661	Body	Front	0.249	**0.28**	**0.34**

SAR Values (WCDMA 850)

Frequency		Test Position		SAR(1g) (W/kg)		
MHz	Ch.			Spot check data		Original data
				Measured SAR	Reported SAR	
836.4	4182	Head	Left Touch	0.223	**0.24**	**0.13**
836.4	4182	Body	Bottom	0.204	**0.22**	**0.22**

SAR Values (WCDMA 1900)

Frequency		Test Position		SAR(1g) (W/kg)		
MHz	Ch.			Spot check data		Original data
				Measured SAR	Reported SAR	
1880	9400	Head	Left Touch	0.587	**0.61**	**0.55**
1880	9400	Body	Front	0.557	**0.58**	**0.47**

SAR Values (WCDMA 1700)

Frequency		Test Position		SAR(1g) (W/kg)		
MHz	Ch.			Spot check data		Original data
				Measured SAR	Reported SAR	
1732.6	1413	Head	Left Touch	0.414	**0.44**	**0.39**
1732.6	1413	Body	Front	0.333	**0.36**	**0.41**

SAR Values (LTE-Band 2)

Frequency		Test Position		SAR(1g) (W/kg)		
MHz	Ch.			Spot check data		Original data
				Measured SAR	Reported SAR	
1880	18900	Head	Left Touch	0.496	**0.57**	**0.54**
1880	18900	Body	Bottom	0.431	**0.49**	**0.54**

SAR Values (LTE-Band 4)

Frequency		Test Position		SAR(1g) (W/kg)		
MHz	Ch.			Spot check data		Original data
				Measured SAR	Reported SAR	
1732.5	20175	Head	Left Touch	0.340	**0.41**	**0.41**
1732.5	20175	Body	Bottom	0.242	**0.29**	**0.53**

SAR Values (LTE-Band 5)

Frequency		Test Position		SAR(1g) (W/kg)		
MHz	Ch.			Spot check data		Original data
				Measured SAR	Reported SAR	
836.5	20525	Head	Left Touch	0.207	**0.22**	**0.13**
836.5	20525	Body	Rear	0.162	**0.17**	**0.04**

SAR Values (LTE-Band 7)

Frequency		Test Position		SAR(1g) (W/kg)		
MHz	Ch.			Spot check data		Original data
				Measured SAR	Reported SAR	
2535	21100	Head	Left Touch	0.331	**0.41**	**0.28**
2535	21100	Body	Front	0.684	**0.85**	**0.87**

SAR Values (LTE-Band 12)

Frequency		Test Position		SAR(1g) (W/kg)		
MHz	Ch.			Spot check data		Original data
				Measured SAR	Reported SAR	
707.5	23095	Head	Left Touch	0.119	**0.12**	**0.11**
707.5	23095	Body	Rear	0.120	**0.12**	**0.15**

SAR Values (LTE-Band 13)

Frequency		Test Position		SAR(1g) (W/kg)		
MHz	Ch.			Spot check data		Original data
				Measured SAR	Reported SAR	
782	23230	Head	Left Touch	0.109	**0.12**	**0.10**
782	23230	Body	Rear	0.125	**0.14**	**0.10**

SAR Values (LTE-Band 25)

Frequency		Test Position		SAR(1g) (W/kg)		
MHz	Ch.			Spot check data		Original data
				Measured SAR	Reported SAR	
1882.5	26365	Head	Left Touch	0.491	**0.53**	**0.49**
1882.5	26365	Body	Bottom	0.433	**0.47**	**0.49**

SAR Values (LTE-Band 26)

Frequency		Test Position		SAR(1g) (W/kg)		
MHz	Ch.			Spot check data		Original data
				Measured SAR	Reported SAR	
831.5	26865	Head	Right Touch	0.208	**0.24**	**0.14**
831.5	26865	Body	Rear	0.167	**0.19**	**0.05**

SAR Values (LTE-Band 38)

Frequency		Test Position		SAR(1g) (W/kg)		
MHz	Ch.			Spot check data		Original data
				Measured SAR	Reported SAR	
2595	38000	Head	Left Touch	0.229	**0.26**	**0.26**
2595	38000	Body	Front	0.502	**0.57**	**0.45**

SAR Values (LTE-Band 66)

Frequency		Test Position		SAR(1g) (W/kg)		
MHz	Ch.			Spot check data		Original data
				Measured SAR	Reported SAR	
1745	132322	Head	Left Touch	0.329	**0.38**	**0.41**
1745	132322	Body	Front	0.289	**0.33**	**0.51**

K.3 WLAN Evaluation for 2.4G

According to the KDB248227 D01, SAR is measured for 2.4GHz 802.11b DSSS using the initial test position procedure.

Table 14.32: SAR Values (WLAN 2.4G - Head)

Ambient Temperature: 22.6°C Liquid Temperature: 22.0°C									
Frequency		Test Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.								
<Main antenna>									
2437	6	802.11 b	Left Touch	/	18.39	19	**0.522**	0.60	0.07
2437	6	802.11 b	Left Tilt	/	18.39	19	0.427	0.49	0.04
2437	6	802.11 b	Right Touch	/	18.39	19	0.171	0.20	0.09
2437	6	802.11 b	Right Tilt	/	18.39	19	0.185	0.21	0.03
<Second antenna>									
2462	11	802.11 b	Left Touch	/	18.56	19	0.331	0.37	-0.04
2462	11	802.11 b	Left Tilt	/	18.56	19	0.289	0.32	0.08
2462	11	802.11 b	Right Touch	/	18.56	19	**0.548**	**0.61**	-0.01
2462	11	802.11 b	Right Tilt	/	18.56	19	0.396	0.44	0.12
<MIMO>									
2412	1	802.11 n	Left Touch	/	17.21	18	**0.209**	0.25	-0.06
2412	1	802.11 n	Left Tilt	/	17.21	18	0.201	0.24	0.10
2412	1	802.11 n	Right Touch	/	17.21	18	0.194	0.23	0.05
2412	1	802.11 n	Right Tilt	/	17.21	18	0.185	0.22	0.03

Note1:For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

According to the KDB248227 D01, The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. A maximum transmission duty factor of 100% is achievable for WLAN in this project and the scaled reported SAR is presented as below.

Table 14.33: SAR Values (WLAN - Head) – 802.11b 1Mbps (Scaled Reported SAR)

Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
MHz	Ch.					
2462	11	Right Touch	100%	100%	0.61	**0.61**

SAR is not required for OFDM because the 802.11b adjusted SAR ≤ 1.2 W/kg.

Table 14.34: SAR Values (WLAN 2.4G - Body)

Ambient Temperature: 22.6°C Liquid Temperature: 22.0°C									
Frequency		Test Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.								
<Main antenna>									
2437	6	802.11 b	Front	/	18.39	19	0.106	0.12	0.04
2437	6	802.11 b	Rear	/	18.39	19	**0.213**	**0.25**	-0.15
2437	6	802.11 b	Right	/	18.39	19	0.090	0.10	-0.09
2437	6	802.11 b	Top	/	18.39	19	0.117	0.13	0.01
<Second antenna>									
2462	11	802.11 b	Front	/	18.56	19	0.105	0.12	0.09
2462	11	802.11 b	Rear	/	18.56	19	**0.175**	0.19	0.09
2462	11	802.11 b	Left	/	18.56	19	0.136	0.15	0.09
2462	11	802.11 b	Top	/	18.56	19	0.061	0.07	0.07
<MIMO>									
2412	1	802.11 n	Front	/	17.21	18	0.055	0.07	0.07
2412	1	802.11 n	Rear	/	17.21	18	**0.092**	0.11	0.04
2412	1	802.11 n	Left	/	17.21	18	0.058	0.07	-0.01
2412	1	802.11 n	Right	/	17.21	18	0.027	0.03	0.01
2412	1	802.11 n	Top	/	17.21	18	0.053	0.06	0.01

Note1: For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

According to the KDB248227 D01, The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. A maximum transmission duty factor of 100% is achievable for WLAN in this project and the scaled reported SAR is presented as below.

Table 14.35: SAR Values (WLAN - Body) – 802.11b 1Mbps (Scaled Reported SAR)

Ambient Temperature: 22.6°C Liquid Temperature: 22.0°C						
Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
MHz	Ch.					
2437	6	Rear	100%	100%	0.25	**0.25**

SAR is not required for OFDM because the 802.11b adjusted SAR ≤ 1.2 W/kg.

K.4 WLAN Evaluation for 5G

Table 14.36: SAR Values (WLAN 5G - Head)

<Main antenna>

Ambient Temperature: 22.5°C Liquid Temperature: 22.0°C									
Frequency		Test Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.								
U-NII-2A									
5260	52	802.11 a	Left Touch	/	13.78	15	0.112	0.15	0.02
5260	52	802.11 a	Left Tilt	/	13.78	15	0.136	0.18	0.08
5260	52	802.11 a	Right Touch	/	13.78	15	0.305	0.40	0.02
5260	52	802.11 a	Right Tilt	/	13.78	15	**0.460**	0.61	0.09
U-NII-2C									
5600	120	802.11 a	Left Touch	/	13.86	15	0.133	0.17	0.07
5600	120	802.11 a	Left Tilt	/	13.86	15	0.136	0.18	0.07
5600	120	802.11 a	Right Touch	/	13.86	15	0.355	0.46	0.00
5600	120	802.11 a	Right Tilt	/	13.86	15	**0.421**	0.55	0.04
U-NII-3									
5825	165	802.11 a	Left Touch	/	13.25	14.5	0.123	0.16	-0.12
5825	165	802.11 a	Left Tilt	/	13.25	14.5	0.102	0.14	0.07
5825	165	802.11 a	Right Touch	/	13.25	14.5	**0.198**	0.26	-0.12
5825	165	802.11 a	Right Tilt	/	13.25	14.5	0.155	0.21	-0.05

Note1: U-NII-1 and U-NII-2A bands have the same specified maximum output and tolerance; SAR is measured for U-NII-2A band first. Adjusted SAR of U-NII-2A band is ≤ 1.2W/kg, SAR is not required for U-NII-1 band.

Note2: For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

<Second antenna>

Ambient Temperature: 22.5°C Liquid Temperature: 22.0°C									
Frequency		Test Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.								
U-NII-2A									
5280	56	802.11 a	Left Touch	/	14.13	15	0.386	0.47	-0.05
5280	56	802.11 a	Left Tilt	/	14.13	15	0.474	0.58	-0.04
5280	56	802.11 a	Right Touch	/	14.13	15	0.566	0.69	-0.15
5280	56	802.11 a	Right Tilt	/	14.13	15	**0.623**	0.76	0.04
U-NII-2C									
5600	120	802.11 a	Left Touch	/	14.06	15	0.289	0.36	-0.06
5600	120	802.11 a	Left Tilt	/	14.06	15	0.320	0.40	-0.07
5600	120	802.11 a	Right Touch	/	14.06	15	0.495	0.61	0.04
5600	120	802.11 a	Right Tilt	/	14.06	15	**0.594**	0.74	0.06
U-NII-3									
5745	149	802.11 a	Left Touch	/	12.56	13.5	0.232	0.29	-0.05
5745	149	802.11 a	Left Tilt	/	12.56	13.5	0.223	0.28	-0.13
5745	149	802.11 a	Right Touch	/	12.56	13.5	0.336	0.42	-0.10
5745	149	802.11 a	Right Tilt	/	12.56	13.5	**0.391**	0.49	0.03

Note1: U-NII-1 and U-NII-2A bands have the same specified maximum output and tolerance; SAR is measured for U-NII-2A band first. Adjusted SAR of U-NII-2A band is ≤ 1.2W/kg, SAR is not required for U-NII-1 band.

Note2: For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

<MIMO>

Ambient Temperature: 22.5°C Liquid Temperature: 22.0°C									
Frequency		Test Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.								
U-NII-2A									
5260	52	802.11 n	Left Touch	/	16.91	18.5	0.413	0.60	0.07
5260	52	802.11 n	Left Tilt	/	16.91	18.5	0.444	0.64	0.06
5260	52	802.11 n	Right Touch	/	16.91	18.5	0.535	0.77	0.07
5260	52	802.11 n	Right Tilt	/	16.91	18.5	**0.636**	**0.92**	0.06
5280	56	802.11 n	Right Tilt	/	16.88	18.5	0.604	0.88	0.06
U-NII-2C									
5600	120	802.11 n	Left Touch	/	16.91	18	0.323	0.42	0.05
5600	120	802.11 n	Left Tilt	/	16.91	18	0.440	0.57	0.05
5600	120	802.11 n	Right Touch	/	16.91	18	0.481	0.62	0.01
5600	120	802.11 n	Right Tilt	/	16.91	18	**0.655**	0.84	0.06
5500	100	802.11 n	Right Tilt	/	16.89	18	0.629	0.81	0.04
U-NII-3									
5745	149	802.11 n	Left Touch	/	15.96	17	0.190	0.24	0.05
5745	149	802.11 n	Left Tilt	/	15.96	17	0.233	0.30	-0.05
5745	149	802.11 n	Right Touch	/	15.96	17	0.303	0.38	-0.07
5745	149	802.11 n	Right Tilt	/	15.96	17	0.388	0.49	-0.08

Note1: U-NII-1 and U-NII-2A bands have the same specified maximum output and tolerance; SAR is measured for U-NII-2A band first. Adjusted SAR of U-NII-2A band is ≤ 1.2W/kg, SAR is not required for U-NII-1 band.
Note2: For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

According to the KDB248227 D01, The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. A maximum transmission duty factor of 100% is achievable for WLAN in this project and the scaled reported SAR is presented as below.

Table 14.37: SAR Values (WLAN 5G - Head) – (Scaled Reported SAR)

Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
MHz	Ch.					
5260	52	Right Tilt	100%	100%	0.92	**0.92**

Table 14.38: SAR Values (WLAN 5G - Body)

<Main antenna>

Ambient Temperature: 22.5°C Liquid Temperature: 22.0°C									
Frequency		Test Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.								
U-NII-2A									
5260	52	802.11 a	Front	/	13.78	15	0.032	0.04	0.03
5260	52	802.11 a	Rear	/	13.78	15	**0.070**	0.09	0.09
5260	52	802.11 a	Right	/	13.78	15	0.026	0.03	0.02
5260	52	802.11 a	Top	/	13.78	15	0.005	0.01	0.04
U-NII-2C									
5600	120	802.11 a	Front	/	13.86	15	0.001	< 0.01	0.03
5600	120	802.11 a	Rear	/	13.86	15	**0.045**	0.06	0.09
5600	120	802.11 a	Right	/	13.86	15	0.013	0.02	0.04
5600	120	802.11 a	Top	/	13.86	15	0.010	0.01	0.01
U-NII-3									
5825	165	802.11 a	Front	/	13.25	14.5	0.001	< 0.01	0.05
5825	165	802.11 a	Rear	/	13.25	14.5	**0.012**	0.02	-0.07
5825	165	802.11 a	Right	/	13.25	14.5	0.001	< 0.01	-0.14
5825	165	802.11 a	Top	/	13.25	14.5	0.006	0.01	-0.13

Note1: U-NII-1 and U-NII-2A bands have the same specified maximum output and tolerance; SAR is measured for U-NII-2A band first. Adjusted SAR of U-NII-2A band is ≤ 1.2W/kg, SAR is not required for U-NII-1 band.

Note2: For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

<Second antenna>

Ambient Temperature: 22.5°C Liquid Temperature: 22.0°C									
Frequency		Test Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.								
U-NII-2A									
5280	56	802.11 a	Front	/	14.13	15	0.050	0.06	-0.04
5280	56	802.11 a	Rear	/	14.13	15	0.077	0.09	-0.05
5280	56	802.11 a	Left	/	14.13	15	0.065	0.08	0.15
5280	56	802.11 a	Top	/	14.13	15	**0.097**	0.12	-0.03
U-NII-2C									
5600	120	802.11 a	Front	/	14.06	15	0.053	0.07	-0.07
5600	120	802.11 a	Rear	/	14.06	15	0.040	0.05	-0.15
5600	120	802.11 a	Left	/	14.06	15	0.076	0.09	-0.14
5600	120	802.11 a	Top	/	14.06	15	**0.091**	0.11	-0.03
U-NII-3									
5745	149	802.11 a	Front	/	12.56	13.5	0.011	0.01	0.05
5745	149	802.11 a	Rear	/	12.56	13.5	0.004	< 0.01	-0.14
5745	149	802.11 a	Left	/	12.56	13.5	0.032	0.04	-0.15
5745	149	802.11 a	Top	/	12.56	13.5	**0.049**	0.06	0.05

Note1: U-NII-1 and U-NII-2A bands have the same specified maximum output and tolerance; SAR is measured for U-NII-2A band first. Adjusted SAR of U-NII-2A band is ≤ 1.2W/kg, SAR is not required for U-NII-1 band.

Note2: For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

<MIMO>

Ambient Temperature: 22.5°C Liquid Temperature: 22.0°C									
Frequency		Test Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.								
U-NII-2A									
5260	52	802.11 n	Front	/	16.91	18.5	0.023	0.03	0.01
5260	52	802.11 n	Rear	/	16.91	18.5	0.079	0.11	0.06
5260	52	802.11 n	Left	/	16.91	18.5	0.112	0.16	-0.07
5260	52	802.11 n	Right	/	16.91	18.5	0.010	0.01	-0.05
5260	52	802.11 n	Top	/	16.91	18.5	**0.116**	**0.17**	-0.11
U-NII-2C									
5600	120	802.11 n	Front	/	16.91	18	0.038	0.05	-0.05
5600	120	802.11 n	Rear	/	16.91	18	0.081	0.10	-0.05
5600	120	802.11 n	Left	/	16.91	18	0.010	0.01	-0.17
5600	120	802.11 n	Right	/	16.91	18	0.036	0.05	-0.07
5600	120	802.11 n	Top	/	16.91	18	**0.083**	0.11	0.05
U-NII-3									
5745	149	802.11 n	Front	/	15.96	17	0.019	0.02	0.07
5745	149	802.11 n	Rear	/	15.96	17	**0.067**	0.09	0.03
5745	149	802.11 n	Left	/	15.96	17	0.004	< 0.01	0.04
5745	149	802.11 n	Right	/	15.96	17	0.014	0.02	-0.01
5745	149	802.11 n	Top	/	15.96	17	0.048	0.06	-0.03

Note1: U-NII-1 and U-NII-2A bands have the same specified maximum output and tolerance; SAR is measured for U-NII-2A band first. Adjusted SAR of U-NII-2A band is ≤ 1.2W/kg, SAR is not required for U-NII-1 band.

Note2: For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

According to the KDB248227 D01, The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. A maximum transmission duty factor of 100% is achievable for WLAN in this project and the scaled reported SAR is presented as below.

Table 14.39: SAR Values (WLAN 5G - Body) – (Scaled Reported SAR)

Ambient Temperature: 22.5°C Liquid Temperature: 22.0°C						
Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
MHz	Ch.					
5260	52	Top	100%	100%	0.17	**0.17**

K.5 Graph Results for Spot Check

GSM850 Head

Date: 2018-8-25

Electronics: DAE4 Sn786

Medium: Head 835 MHz

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.878 S/m; ε_r = 41.908; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C

Communication System: UID 0, GSM (0) Frequency: 836.6 MHz Duty Cycle: 1:8.3

Probe: EX3DV4 – SN3633 ConvF (9.33, 9.33, 9.33);

Left Cheek Middle/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.201 W/kg

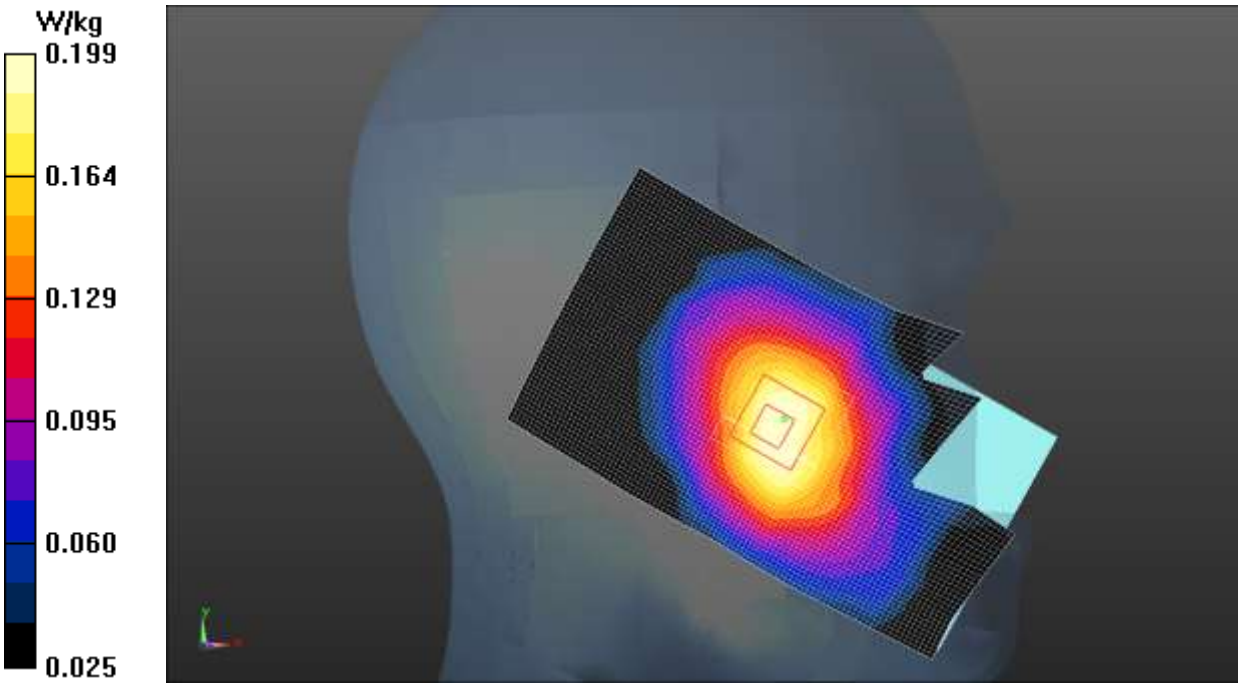
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.658 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.234 W/kg

SAR(1 g) = 0.190 W/kg; SAR(10 g) = 0.144 W/kg

Maximum value of SAR (measured) = 0.199 W/kg



GSM850 Body

Date: 2018-8-26

Electronics: DAE4 Sn786

Medium: Body 835 MHz

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.978 S/m; ε_r = 54.022; ρ = 1000 kg/m^3

Ambient Temperature: 22.0^{o}C Liquid Temperature: 21.5^{o}C

Communication System: UID 0, GPRS 2Txslot (0) Frequency: 836.6 MHz Duty Cycle: 1:4

Probe: EX3DV4 – SN3633 ConvF (9.69, 9.69, 9.69);

Bottom Side Middle/Area Scan (51x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.482 W/kg

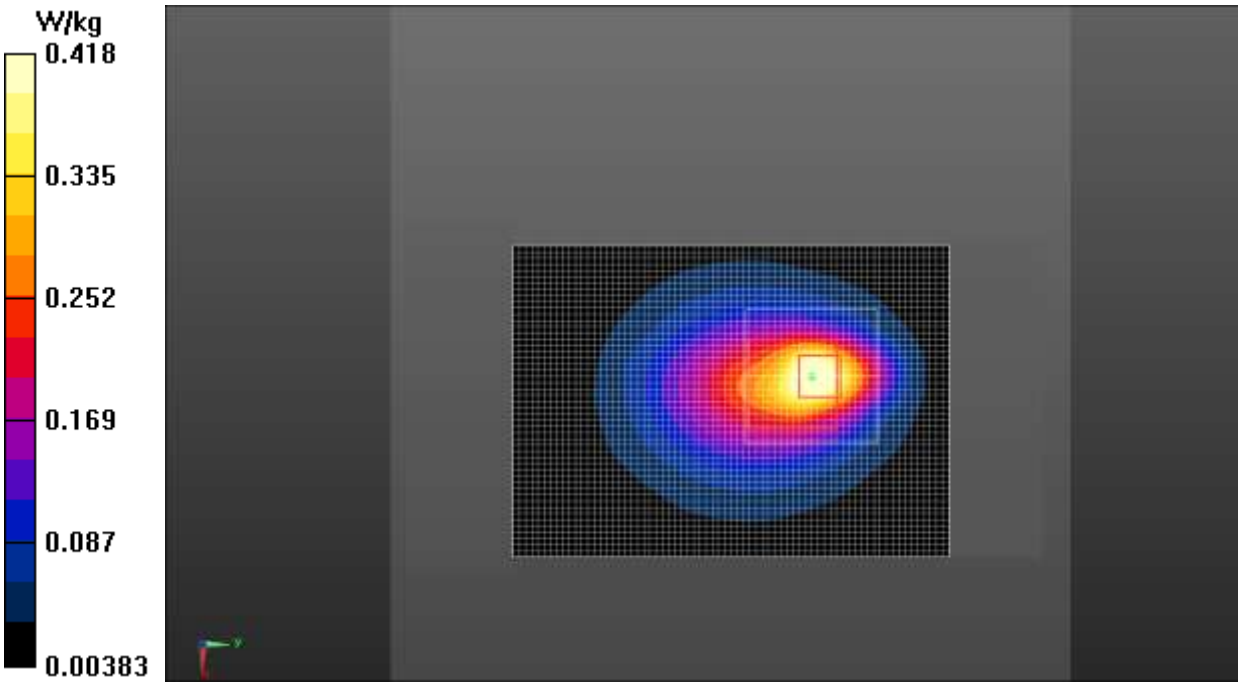
Bottom Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.46 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.918 W/kg

SAR(1 g) = 0.255 W/kg; SAR(10 g) = 0.130 W/kg

Maximum value of SAR (measured) = 0.418 W/kg



GSM1900 Head

Date: 2018-8-25

Electronics: DAE4 Sn786

Medium: Head 1900 MHz

Medium parameters used: f = 1880 MHz; σ = 1.389 S/m; ε_r = 39.203; ρ = 1000 kg/m^3

Ambient Temperature: 22.0^{o}C Liquid Temperature: 21.5^{o}C

Communication System: UID 0, GSM (0) Frequency: 1880 MHz Duty Cycle: 1:8.3

Probe: EX3DV4 – SN3633 ConvF (7.81, 7.81, 7.81);

Right Cheek Middle/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.240 W/kg

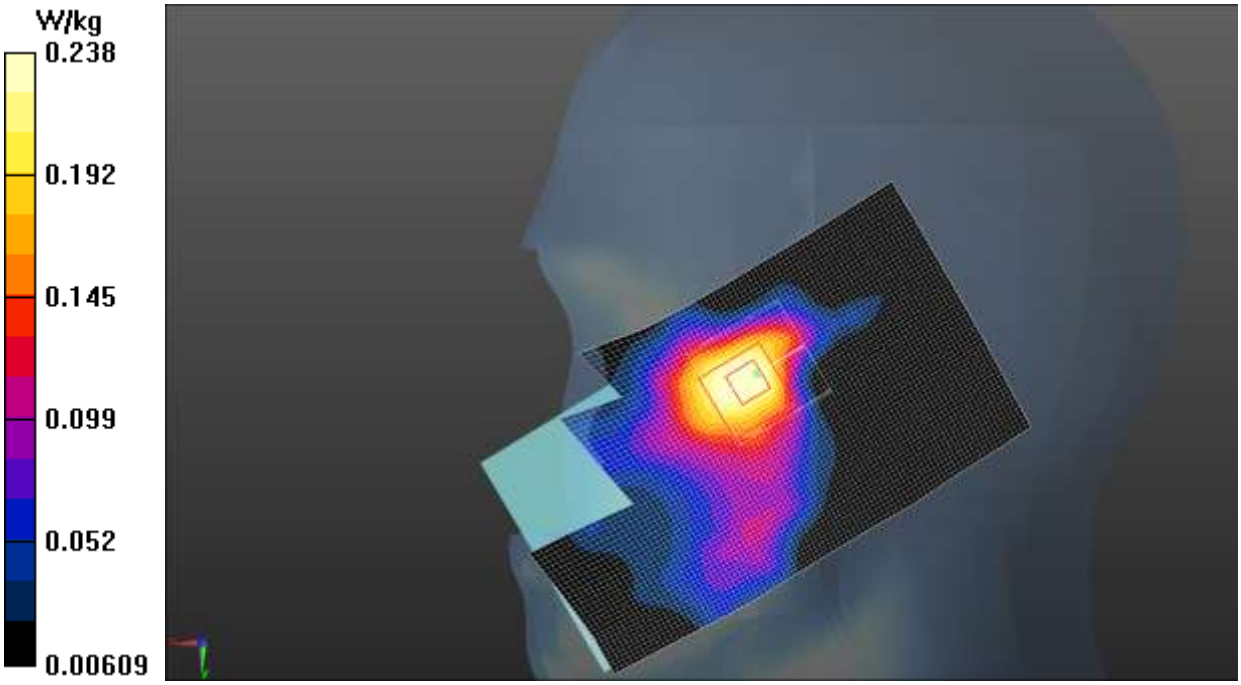
Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.233 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.332 W/kg

SAR(1 g) = 0.224 W/kg; SAR(10 g) = 0.142 W/kg

Maximum value of SAR (measured) = 0.238 W/kg



GSM1900 Body

Date: 2018-8-26

Electronics: DAE4 Sn786

Medium: Body 1900 MHz

Medium parameters used: f = 1880 MHz; σ = 1.531 S/m; ε_r = 52.601; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C

Communication System: UID 0, GPRS 2Txslot (0) Frequency: 1880 MHz Duty Cycle: 1:4

Probe: EX3DV4 – SN3633 ConvF (7.75, 7.75, 7.75);

Front Side Middle/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.290 W/kg

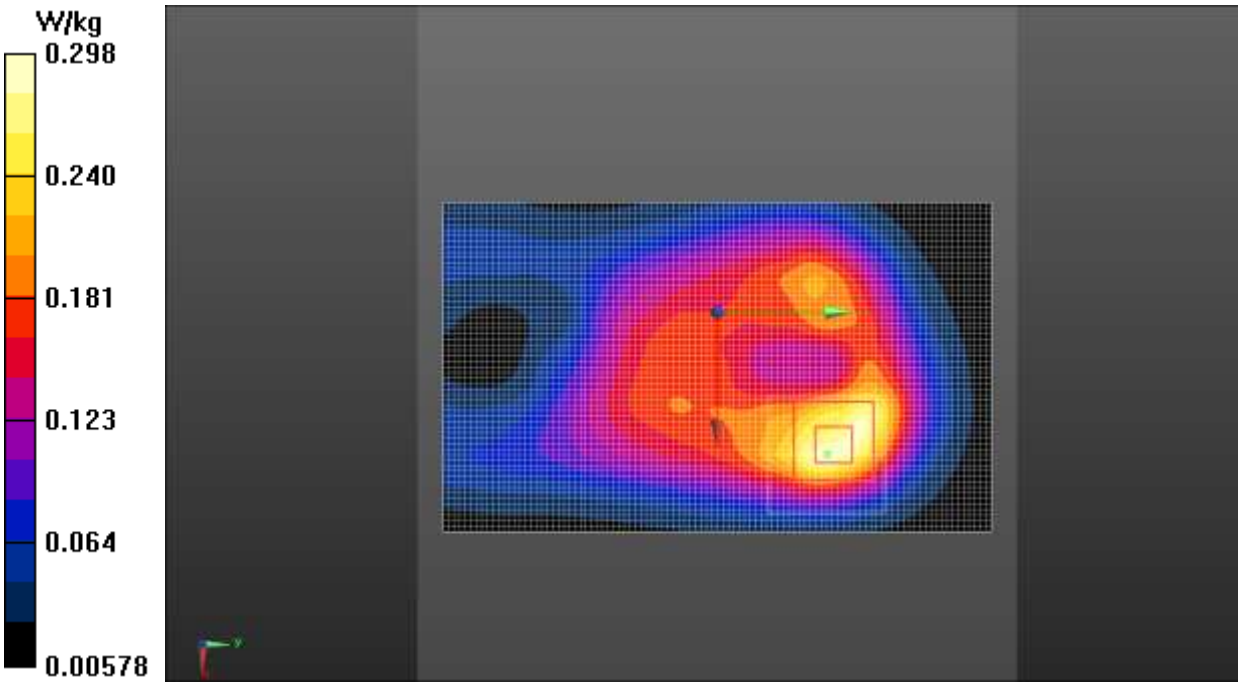
Front Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.04 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.432 W/kg

SAR(1 g) = 0.249 W/kg; SAR(10 g) = 0.140 W/kg

Maximum value of SAR (measured) = 0.298 W/kg



WCDMA 850 Head

Date: 2018-8-25

Electronics: DAE4 Sn786

Medium: Head 835 MHz

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.878 S/m; εr = 41.91; ρ = 1000 kg/m3

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C

Communication System: UID 0, WCDMA (0) Frequency: 836.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3633 ConvF (9.33, 9.33, 9.33);

Left Cheek Middle/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

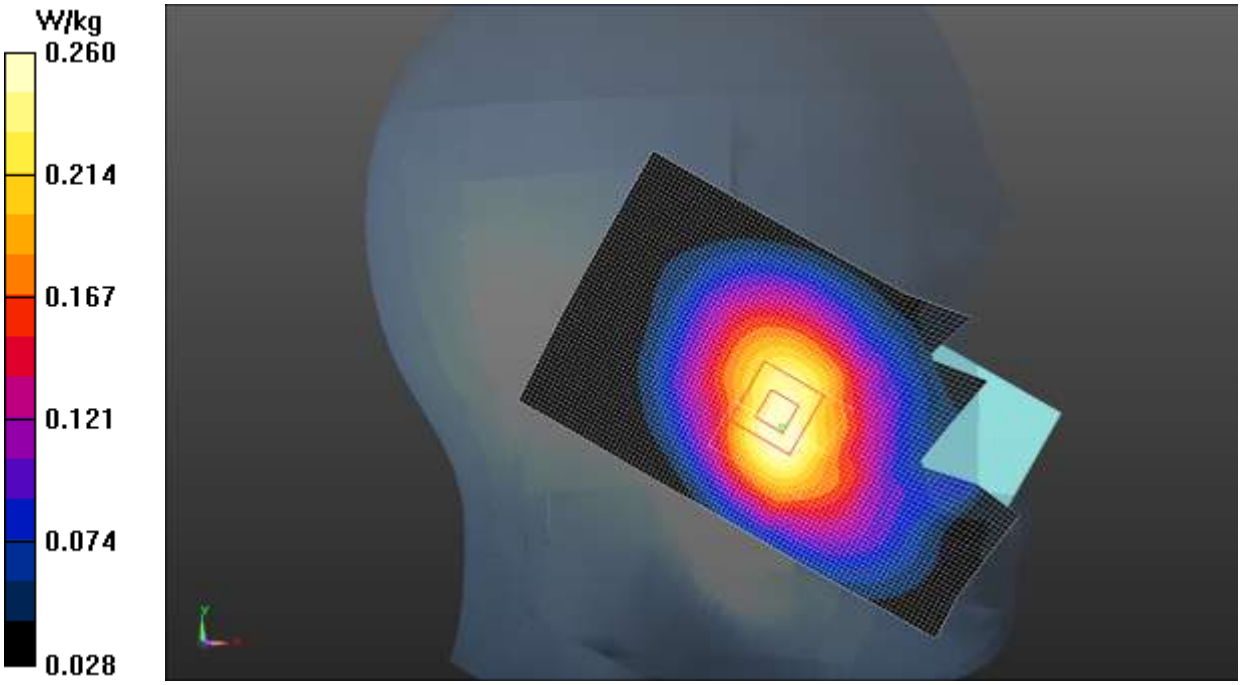
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.883 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.297 W/kg

SAR(1 g) = 0.223 W/kg; SAR(10 g) = 0.165 W/kg

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



WCDMA 850 Body

Date: 2018-8-26

Electronics: DAE4 Sn786

Medium: Body 835 MHz

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.978 S/m; εr = 54.025; ρ = 1000 kg/m^3

Ambient Temperature: 22.0^{o}C Liquid Temperature: 21.5^{o}C

Communication System: UID 0, WCDMA (0) Frequency: 836.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3633 ConvF (9.69, 9.69, 9.69);

Bottom Side Middle/Area Scan (51x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.256 W/kg

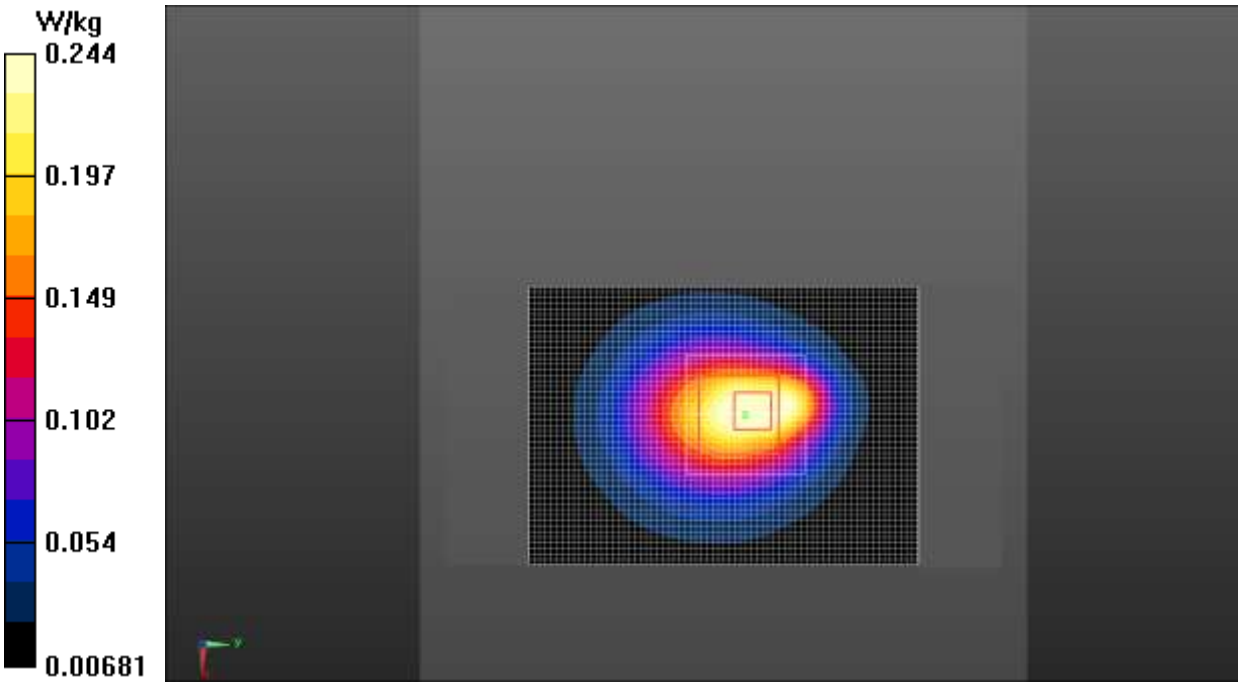
Bottom Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.33 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.371 W/kg

SAR(1 g) = 0.204 W/kg; SAR(10 g) = 0.121 W/kg

Maximum value of SAR (measured) = 0.244 W/kg



WCDMA 1900 Head

Date: 2018-8-25

Electronics: DAE4 Sn786

Medium: Head 1900 MHz

Medium parameters used: f = 1880 MHz; σ = 1.389 S/m; ε_r = 39.203; ρ = 1000 kg/m^3

Ambient Temperature: 22.0^{o}C Liquid Temperature: 21.5^{o}C

Communication System: UID 0, WCDMA (0) Frequency: 1880 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3633 ConvF (7.81, 7.81, 7.81);

Left Cheek Middle/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.657 W/kg

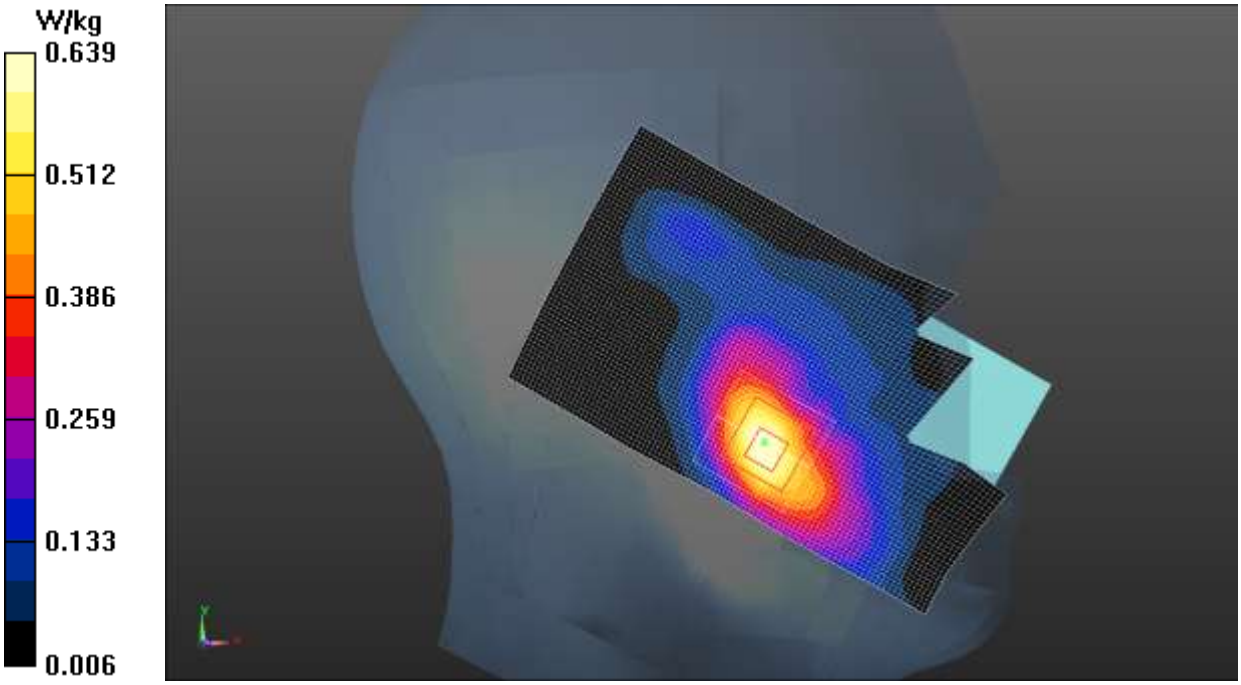
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.930 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.940 W/kg

SAR(1 g) = 0.587 W/kg; SAR(10 g) = 0.350 W/kg

Maximum value of SAR (measured) = 0.639 W/kg



WCDMA 1900 Body

Date: 2018-8-26

Electronics: DAE4 Sn786

Medium: Body 1900 MHz

Medium parameters used: f = 1880 MHz; σ = 1.531 S/m; ε_r = 52.601; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C

Communication System: UID 0, WCDMA (0) Frequency: 1880 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3633 ConvF (7.75, 7.75, 7.75);

Front Side Middle/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.766 W/kg

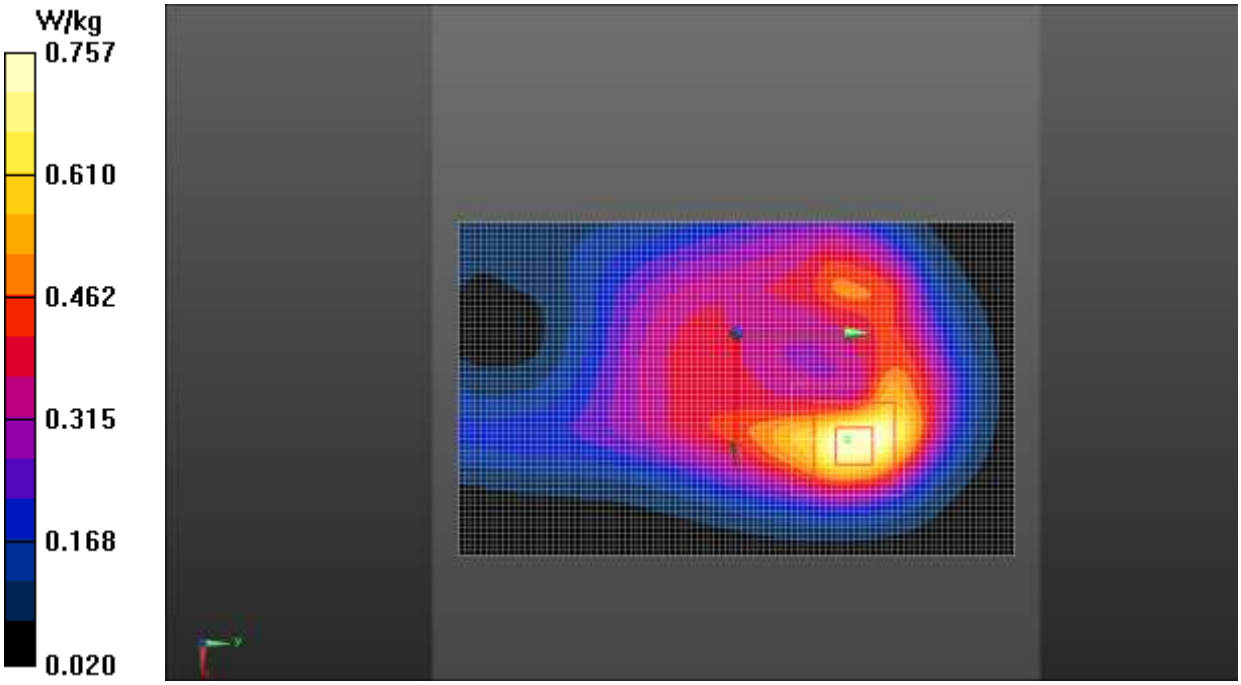
Front Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.28 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.956 W/kg

SAR(1 g) = 0.557 W/kg; SAR(10 g) = 0.311 W/kg

Maximum value of SAR (measured) = 0.757 W/kg



WCDMA 1700 Head

Date: 2018-8-25

Electronics: DAE4 Sn786

Medium: Head 1800 MHz

Medium parameters used (interpolated): f = 1732.6 MHz; σ = 1.363 S/m; ε_r = 39.612; ρ = 1000 kg/m^3

Ambient Temperature: 22.0^{o}C Liquid Temperature: 21.5^{o}C

Communication System: UID 0, WCDMA (0) Frequency: 1732.6 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3633 ConvF (8.12, 8.12, 8.12);

Left Cheek Middle/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.526 W/kg

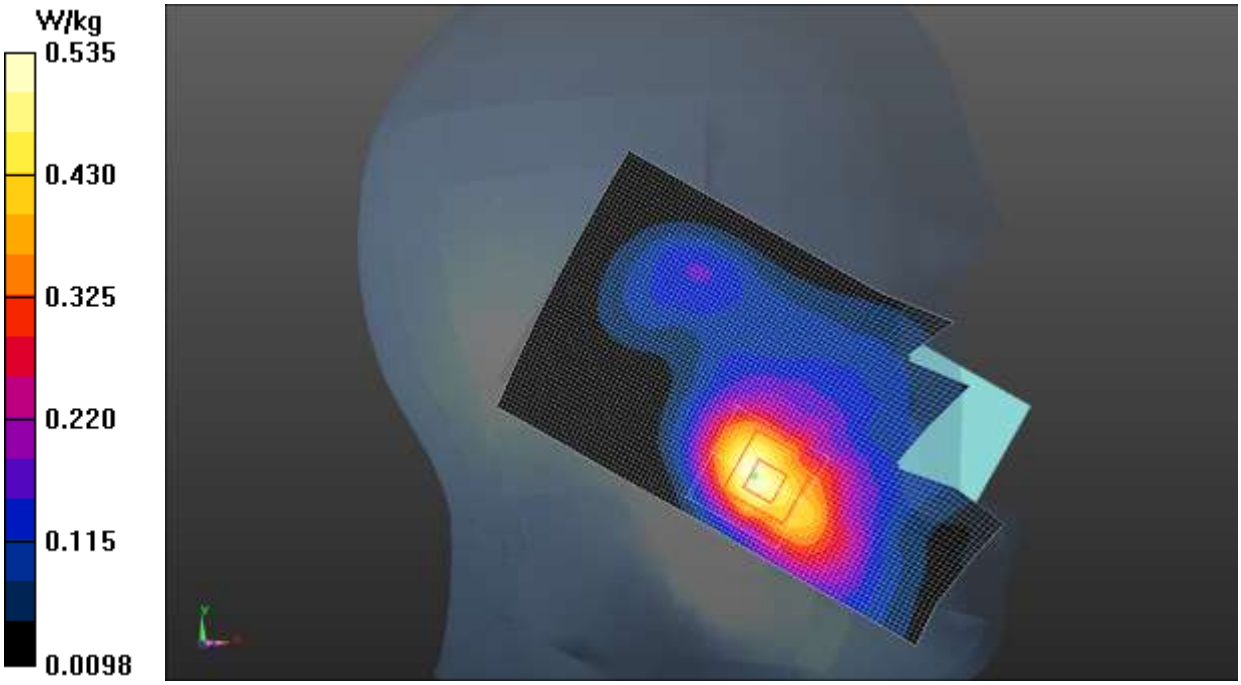
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.672 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.647 W/kg

SAR(1 g) = 0.414 W/kg; SAR(10 g) = 0.256 W/kg

Maximum value of SAR (measured) = 0.535 W/kg



WCDMA 1700 Body

Date: 2018-8-26

Electronics: DAE4 Sn786

Medium: Body 1800 MHz

Medium parameters used (interpolated): f = 1732.6 MHz; σ = 1.442 S/m; ε_r = 53.951; ρ = 1000 kg/m^3

Ambient Temperature: 22.0^{o}C Liquid Temperature: 21.5^{o}C

Communication System: UID 0, WCDMA (0) Frequency: 1732.6 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3633 ConvF (8.05, 8.05, 8.05);

Front Side Middle/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.467 W/kg

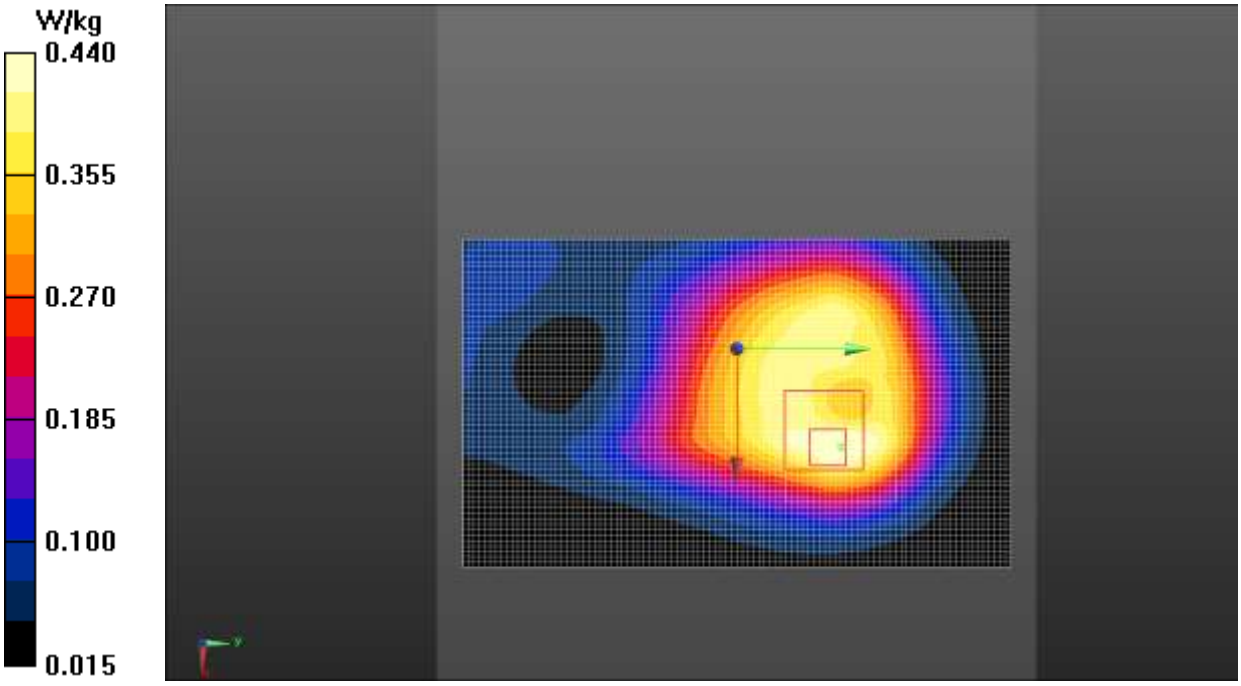
Front Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.27 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.542 W/kg

SAR(1 g) = 0.333 W/kg; SAR(10 g) = 0.213 W/kg

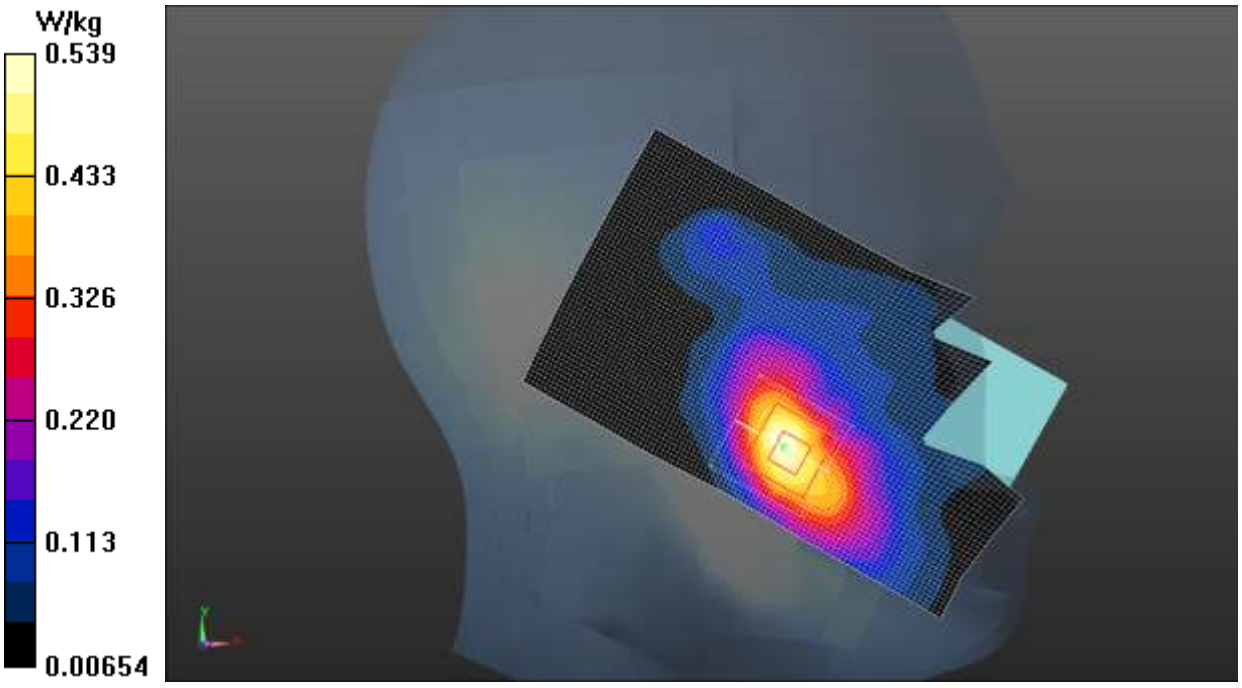
Maximum value of SAR (measured) = 0.440 W/kg



LTE Band 2 Head
Date: 2018-8-25
Electronics: DAE4 Sn786
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.389 S/m; ε_r = 39.203; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C
Communication System: UID 0, LTE_FDD (0) Frequency: 1880 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (7.81, 7.81, 7.81);

Left Cheek Middle 1RB_Low/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.552 W/kg

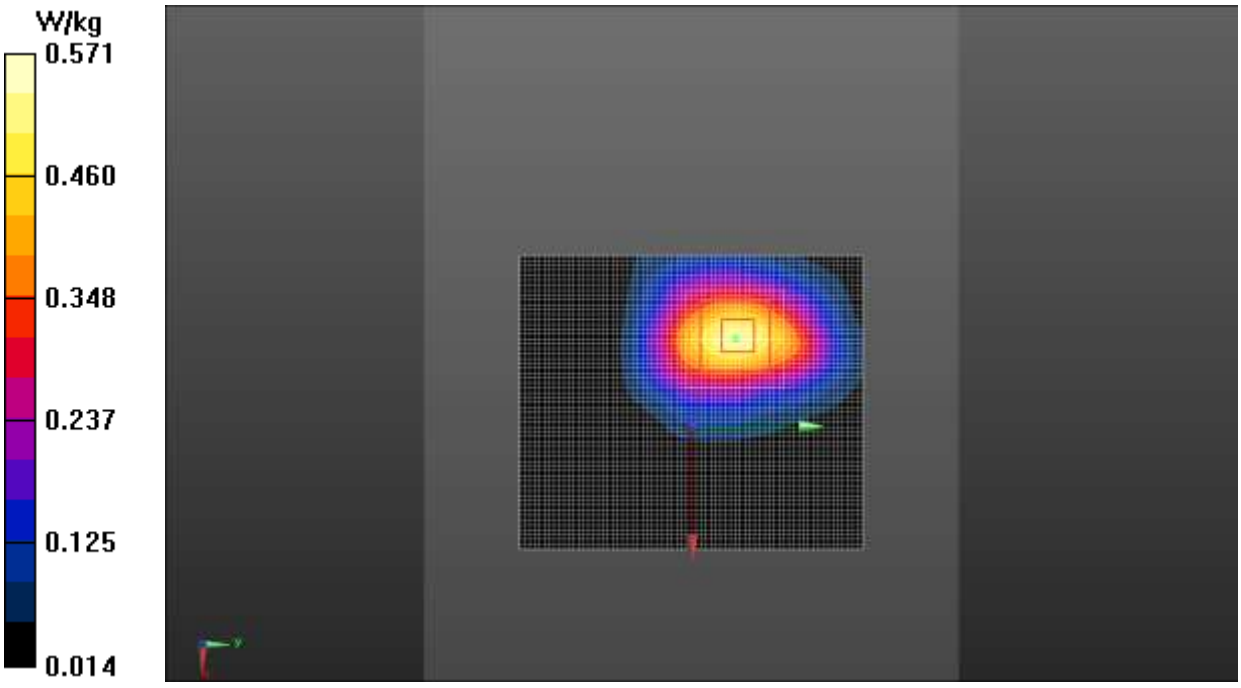
Left Cheek Middle 1RB_Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.213 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.796 W/kg
SAR(1 g) = 0.496 W/kg; SAR(10 g) = 0.297 W/kg
Maximum value of SAR (measured) = 0.539 W/kg



LTE Band 2 Body
Date: 2018-8-26
Electronics: DAE4 Sn786
Medium: Body 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.531 S/m; ε_r = 52.601; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C
Communication System: UID 0, LTE_FDD (0) Frequency: 1880 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (7.75, 7.75, 7.75);

Bottom Side Middle 1RB_Low/Area Scan (61x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.538 W/kg

Bottom Side Middle 1RB_Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.164 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.701 W/kg
SAR(1 g) = 0.431 W/kg; SAR(10 g) = 0.250 W/kg
Maximum value of SAR (measured) = 0.571 W/kg



LTE Band 4 Head

Date: 2018-8-25

Electronics: DAE4 Sn786

Medium: Head 1800 MHz

Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 39.613; ρ = 1000 kg/m^3

Ambient Temperature: 22.0^{o}C Liquid Temperature: 21.5^{o}C

Communication System: UID 0, LTE_FDD (0) Frequency: 1732.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3633 ConvF (8.12, 8.12, 8.12);

Left Cheek Middle 1RB_Low/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.347 W/kg

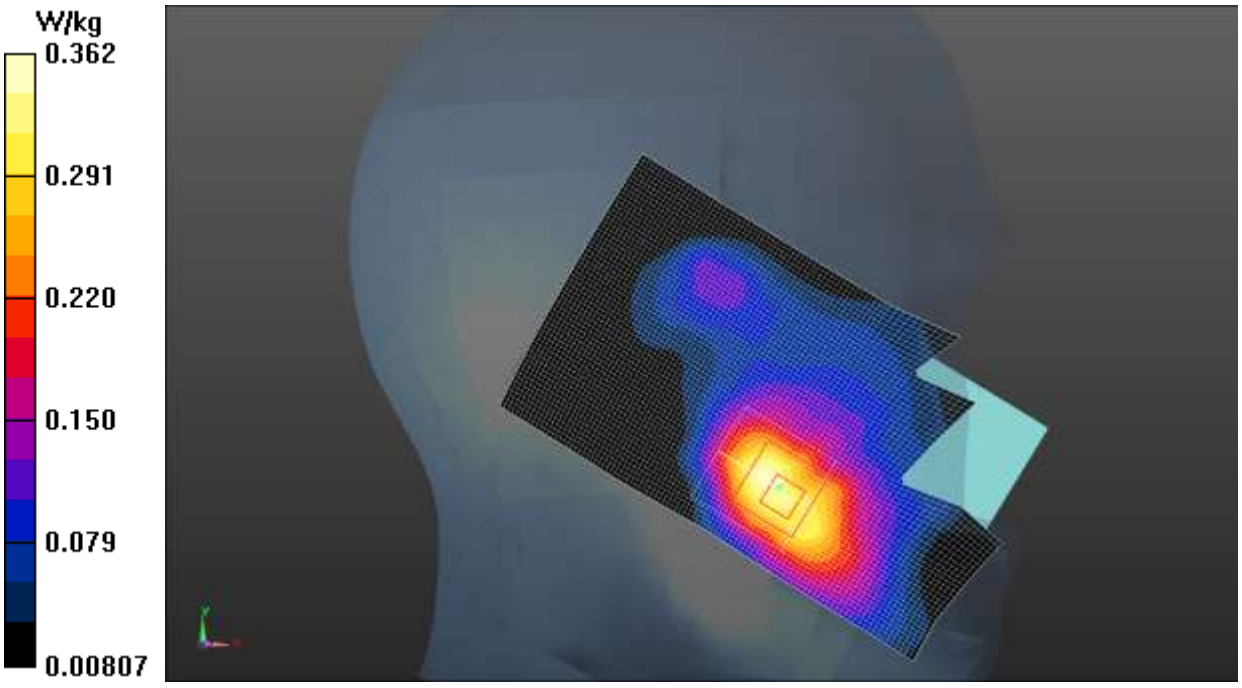
Left Cheek Middle 1RB_Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.472 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.533 W/kg

SAR(1 g) = 0.340 W/kg; SAR(10 g) = 0.210 W/kg

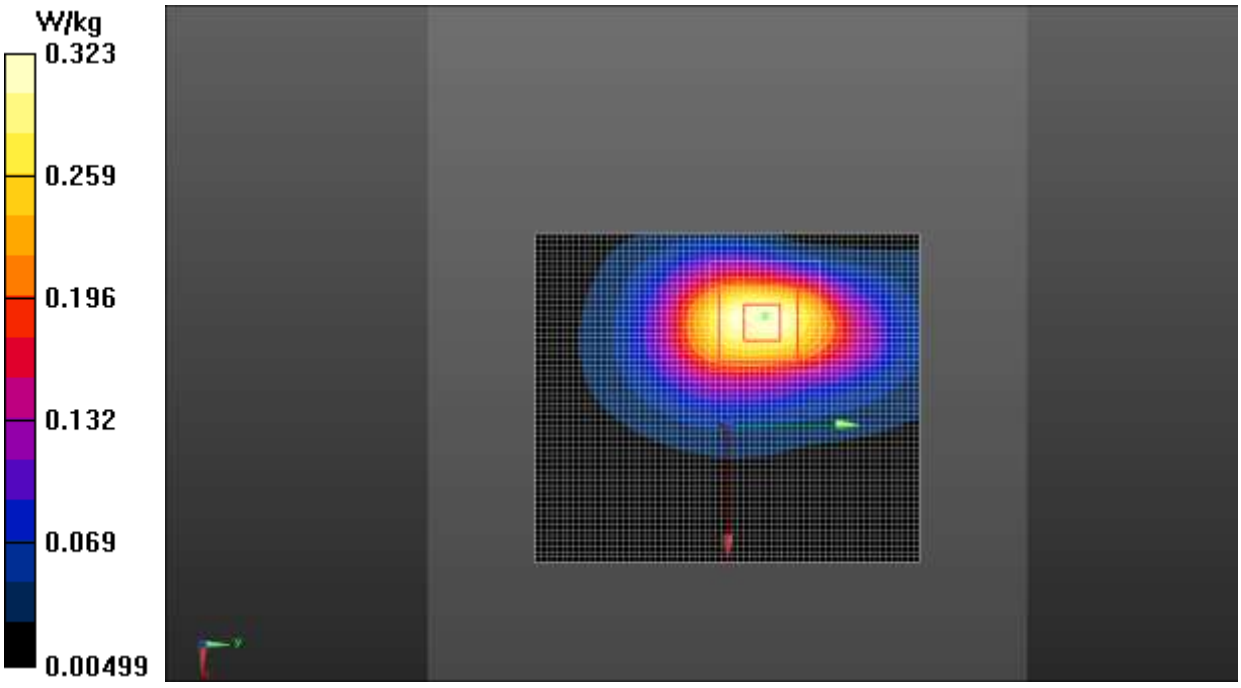
Maximum value of SAR (measured) = 0.362 W/kg



LTE Band 4 Body
Date: 2018-8-26
Electronics: DAE4 Sn786
Medium: Body 1800 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.442 S/m; ε_r = 53.952; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C
Communication System: UID 0, LTE_FDD (0) Frequency: 1732.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (8.05, 8.05, 8.05);

Bottom Side Middle 1RB_Low/Area Scan (61x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.326 W/kg

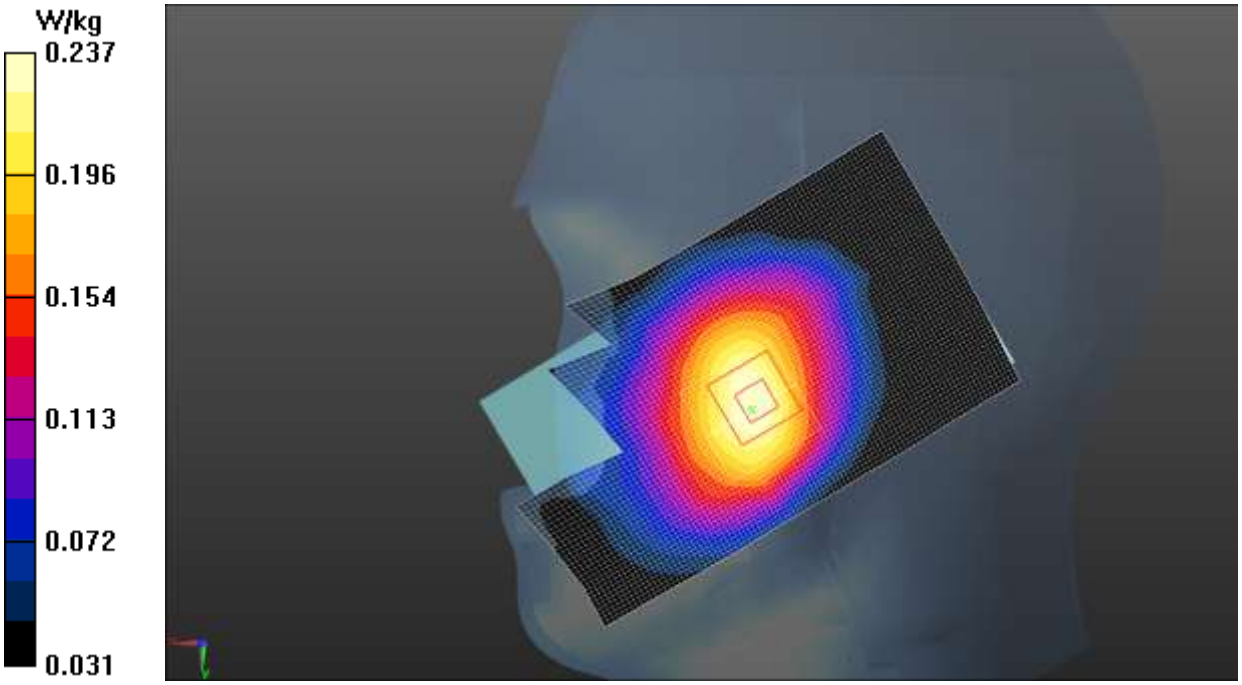
Bottom Side Middle 1RB_Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.654 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.399 W/kg
SAR(1 g) = 0.242 W/kg; SAR(10 g) = 0.141 W/kg
Maximum value of SAR (measured) = 0.323 W/kg



LTE Band 5 Head
Date: 2018-8-25
Electronics: DAE4 Sn786
Medium: Head 835 MHz
Medium parameters used (extrapolated): f = 836.5 MHz; σ = 0.878 S/m; εr = 41.909; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C
Communication System: UID 0, LTE_FDD (0) Frequency: 836.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (9.33, 9.33, 9.33);

Right Cheek Middle 1RB_Middle/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.237 W/kg

Right Cheek Middle 1RB_Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.985 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.263 W/kg
SAR(1 g) = 0.207 W/kg; SAR(10 g) = 0.156 W/kg
Maximum value of SAR (measured) = 0.237 W/kg



LTE Band 5 Body

Date: 2018-8-26

Electronics: DAE4 Sn786

Medium: Body 835 MHz

Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.978 S/m; εr = 54.023; ρ = 1000 kg/m^3

Ambient Temperature: 22.0^{o}C Liquid Temperature: 21.5^{o}C

Communication System: UID 0, LTE_FDD (0) Frequency: 836.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3633 ConvF (9.69, 9.69, 9.69);

Rear Side Middle 1RB_Middle/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.188 W/kg

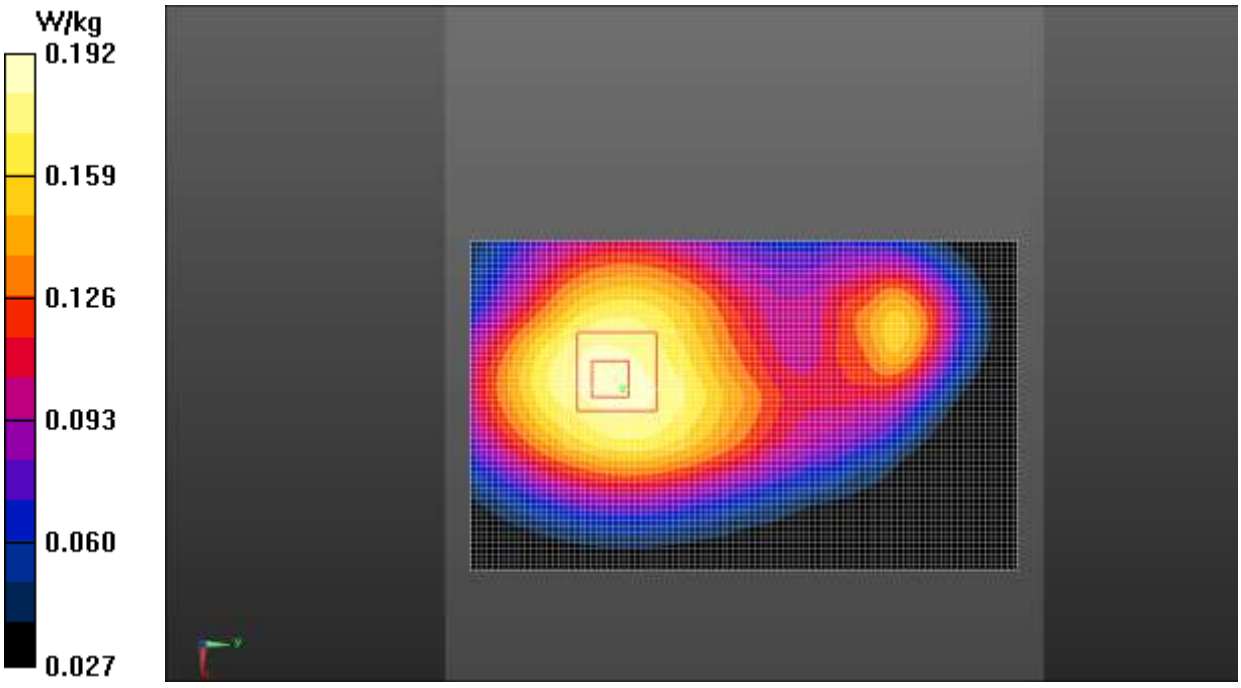
Rear Side Middle 1RB_Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.50 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.222 W/kg

SAR(1 g) = 0.162 W/kg; SAR(10 g) = 0.122 W/kg

Maximum value of SAR (measured) = 0.192 W/kg



LTE Band 7 Head

Date: 2018-8-23

Electronics: DAE4 Sn786

Medium: Head 2550 MHz

Medium parameters used (interpolated): f = 2535 MHz; σ = 1.916 S/m; ε_r = 38.185; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C

Communication System: UID 0, LTE_FDD (0) Frequency: 2535 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3633 ConvF (7.28, 7.28, 7.28);

Left Cheek Middle 1RB_High/Area Scan (61x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.684 W/kg

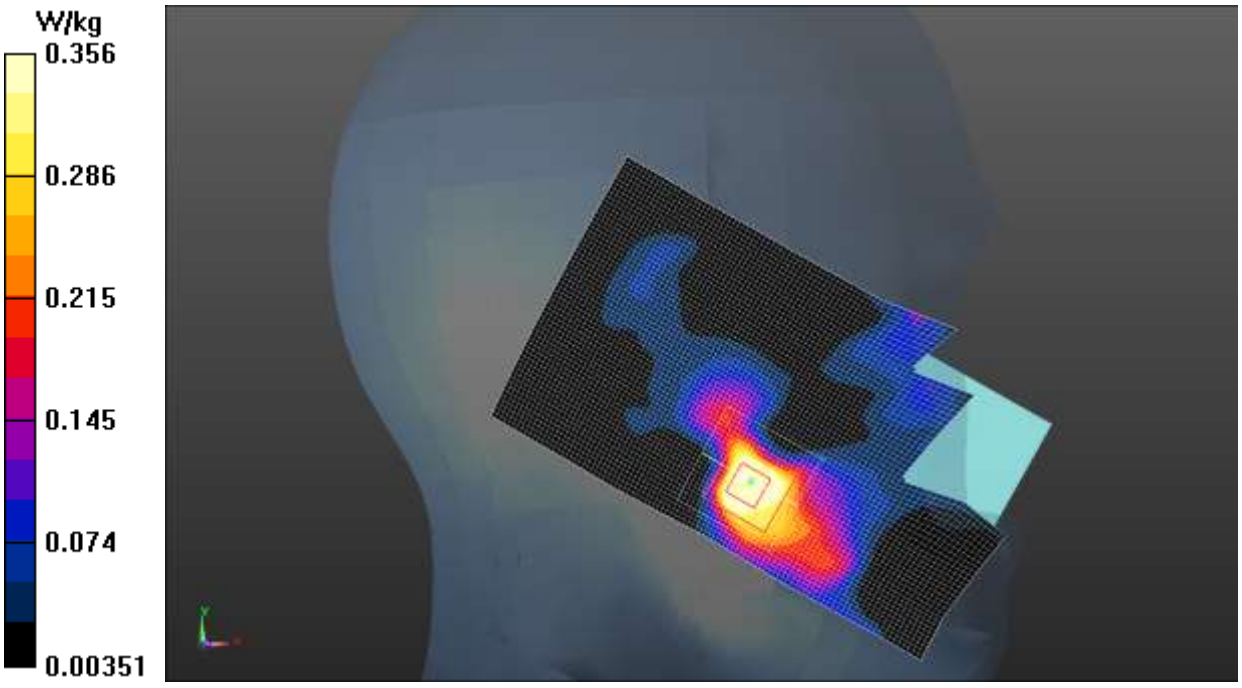
Left Cheek Middle 1RB_High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.688 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.584 W/kg

SAR(1 g) = 0.331 W/kg; SAR(10 g) = 0.181 W/kg

Maximum value of SAR (measured) = 0.356 W/kg



LTE Band 7 Body

Date: 2018-8-23

Electronics: DAE4 Sn786

Medium: Body 2550 MHz

Medium parameters used (interpolated): f = 2535 MHz; σ = 2.049 S/m; ε_r = 53.032; ρ = 1000 kg/m^3

Ambient Temperature: 22.0^{o}C Liquid Temperature: 21.5^{o}C

Communication System: UID 0, 4G_LTE_FDD (0) Frequency: 2535 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3633 ConvF (7.31, 7.31, 7.31);

Front Side Middle 1RB_High/Area Scan (61x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.978 W/kg

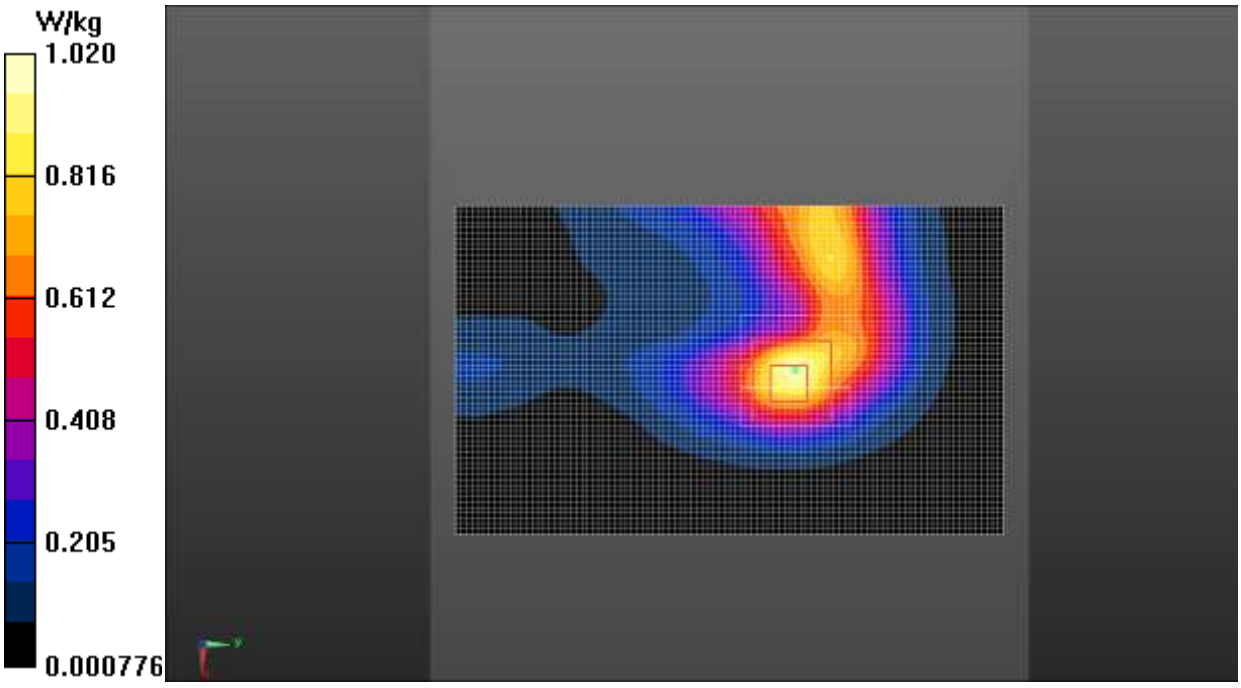
Front Side Middle 1RB_High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.741 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 1.37 W/kg

SAR(1 g) = 0.684 W/kg; SAR(10 g) = 0.323 W/kg

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



LTE Band 12 Head

Date: 2018-8-25

Electronics: DAE4 Sn786

Medium: Head 750 MHz

Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.872 S/m; ε_r = 41.977; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C

Communication System: UID 0, LTE_FDD (0) Frequency: 707.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3633 ConvF (9.33, 9.33, 9.33);

Left Cheek Middle 1RB_Middle/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.136 W/kg

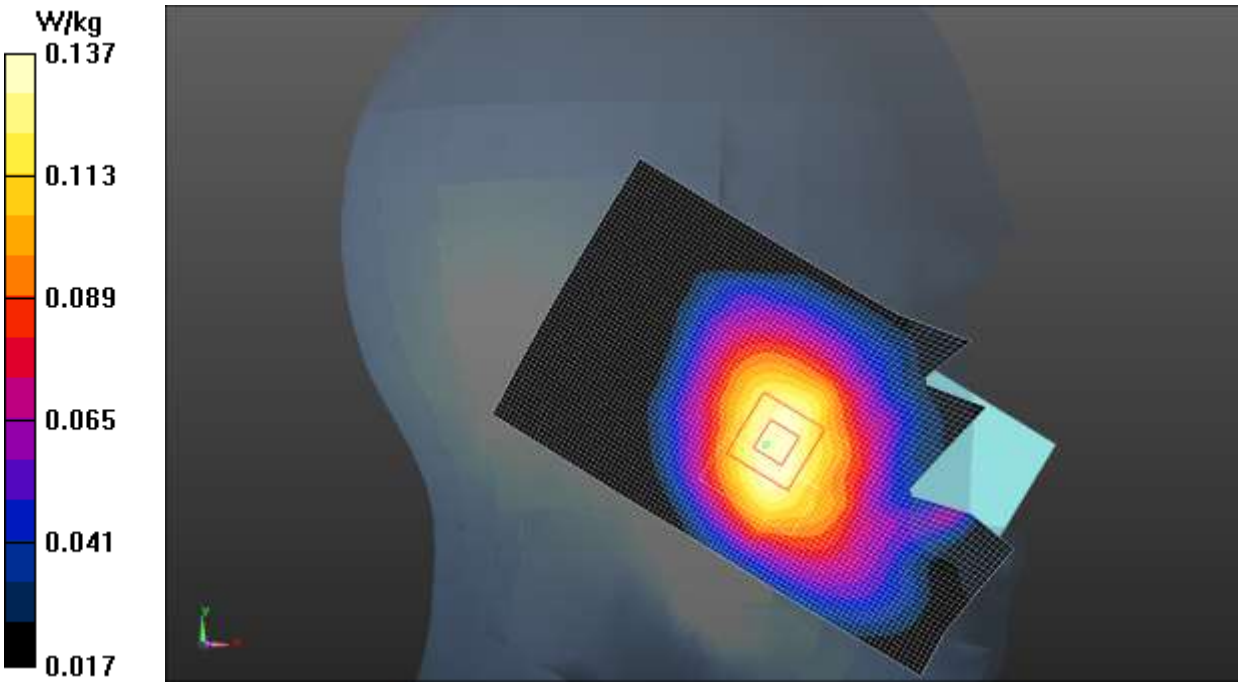
Left Cheek Middle 1RB_Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.032 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.153 W/kg

SAR(1 g) = 0.119 W/kg; SAR(10 g) = 0.091 W/kg

Maximum value of SAR (measured) = 0.137 W/kg



LTE Band 12 Body

Date: 2018-8-26

Electronics: DAE4 Sn786

Medium: Body 750 MHz

Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.930 S/m; ε_r = 54.151; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C

Communication System: UID 0, LTE_FDD (0) Frequency: 707.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3633 ConvF (9.69, 9.69, 9.69);

Rear Side Middle 1RB_Middle/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.136 W/kg

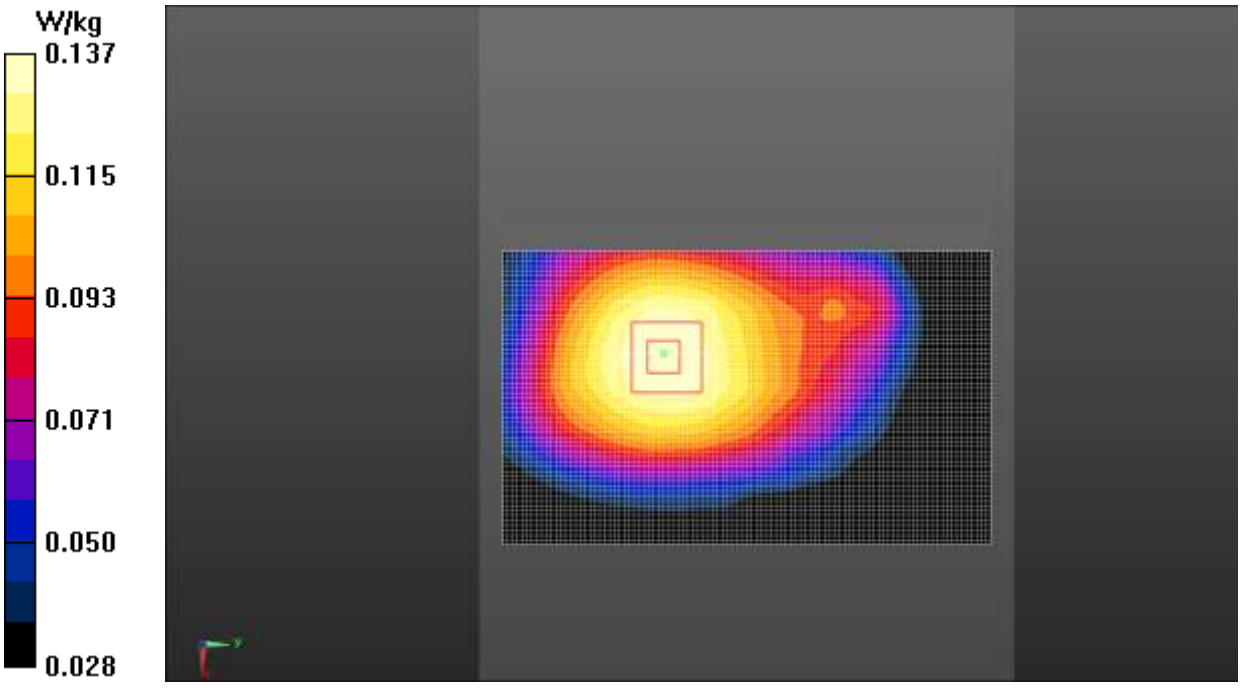
Rear Side Middle 1RB_Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.06 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.152 W/kg

SAR(1 g) = 0.120 W/kg; SAR(10 g) = 0.094 W/kg

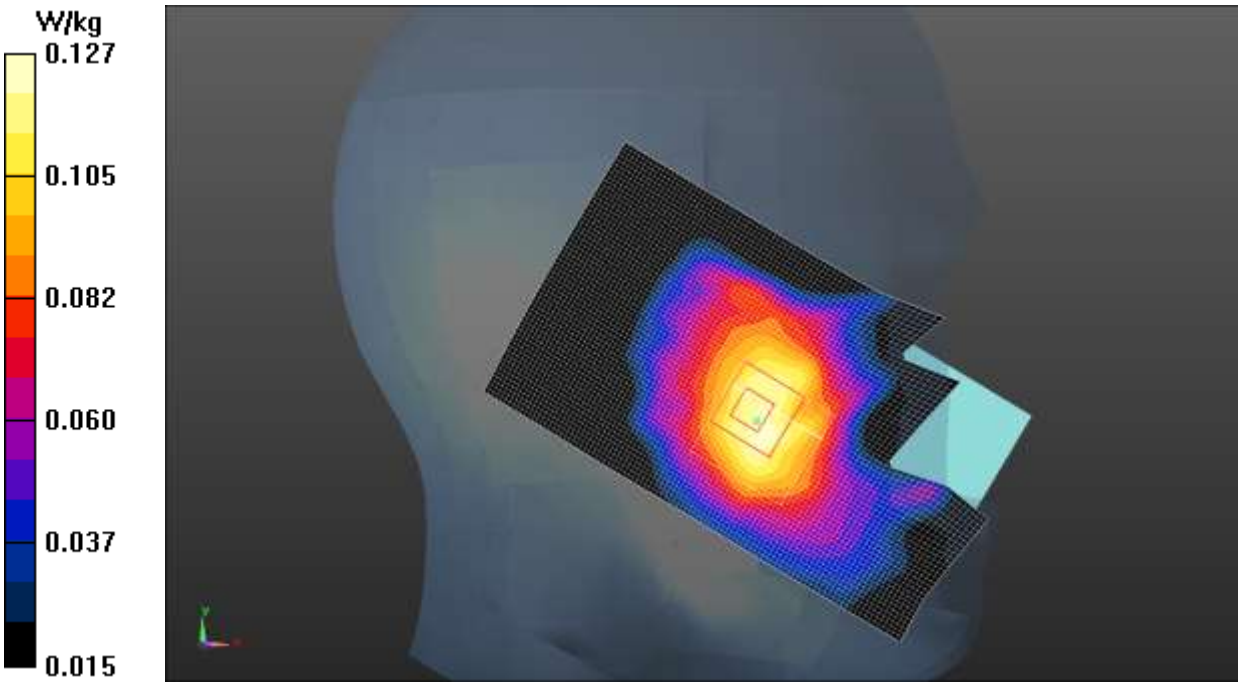
Maximum value of SAR (measured) = 0.137 W/kg



LTE Band 13 Head
Date: 2018-8-25
Electronics: DAE4 Sn786
Medium: Head 750 MHz
Medium parameters used: f = 782 MHz; σ = 0.943 S/m; ε_r = 40.906; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C
Communication System: UID 0, LTE_FDD (0) Frequency: 782 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (9.33, 9.33, 9.33);

Left Cheek Middle 1RB_Middle/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.124 W/kg

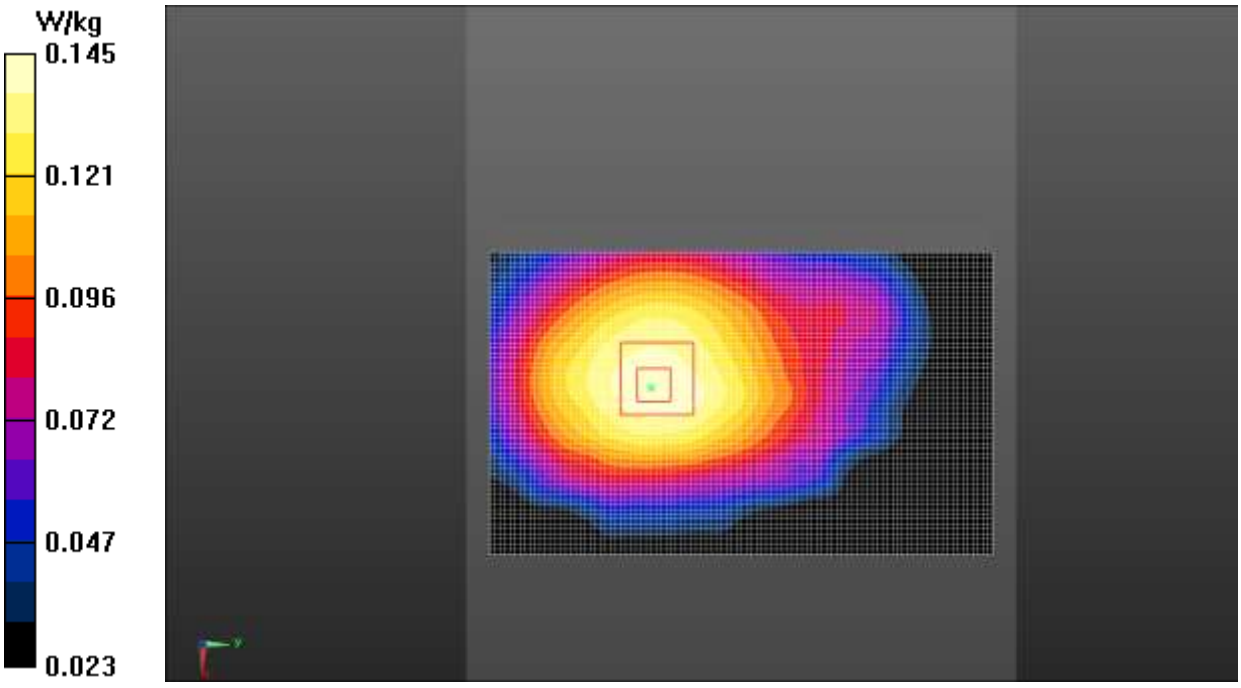
Left Cheek Middle 1RB_Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.190 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.145 W/kg
SAR(1 g) = 0.109 W/kg; SAR(10 g) = 0.082 W/kg
Maximum value of SAR (measured) = 0.127 W/kg



LTE Band 13 Body
Date: 2018-8-26
Electronics: DAE4 Sn786
Medium: Body 750 MHz
Medium parameters used: f = 782 MHz; σ = 1.003 S/m; ε_r = 53.512; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C
Communication System: UID 0, LTE_FDD (0) Frequency: 782 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (9.69, 9.69, 9.69);

Rear Side Middle 1RB_Middle/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.144 W/kg

Rear Side Middle 1RB_Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.58 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.165 W/kg
SAR(1 g) = 0.125 W/kg; SAR(10 g) = 0.096 W/kg
Maximum value of SAR (measured) = 0.145 W/kg



LTE Band 25 Head

Date: 2018-8-25

Electronics: DAE4 Sn786

Medium: Head 1900 MHz

Medium parameters used (interpolated): f = 1882.5 MHz; σ = 1.391 S/m; εr = 39.197; ρ = 1000 kg/m3

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C

Communication System: UID 0, LTE_FDD (0) Frequency: 1882.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3633 ConvF (7.81, 7.81, 7.81);

Left Cheek Middle 1RB_Low/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.553 W/kg

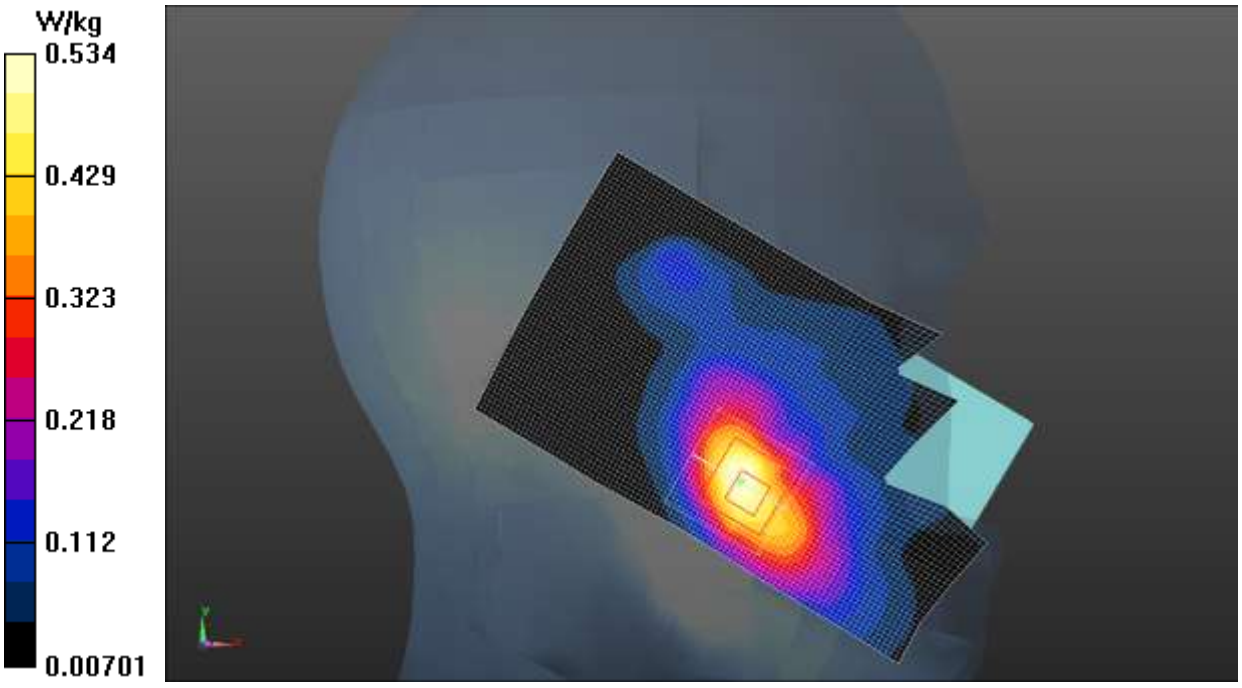
Left Cheek Middle 1RB_Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.282 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.784 W/kg

SAR(1 g) = 0.491 W/kg; SAR(10 g) = 0.294 W/kg

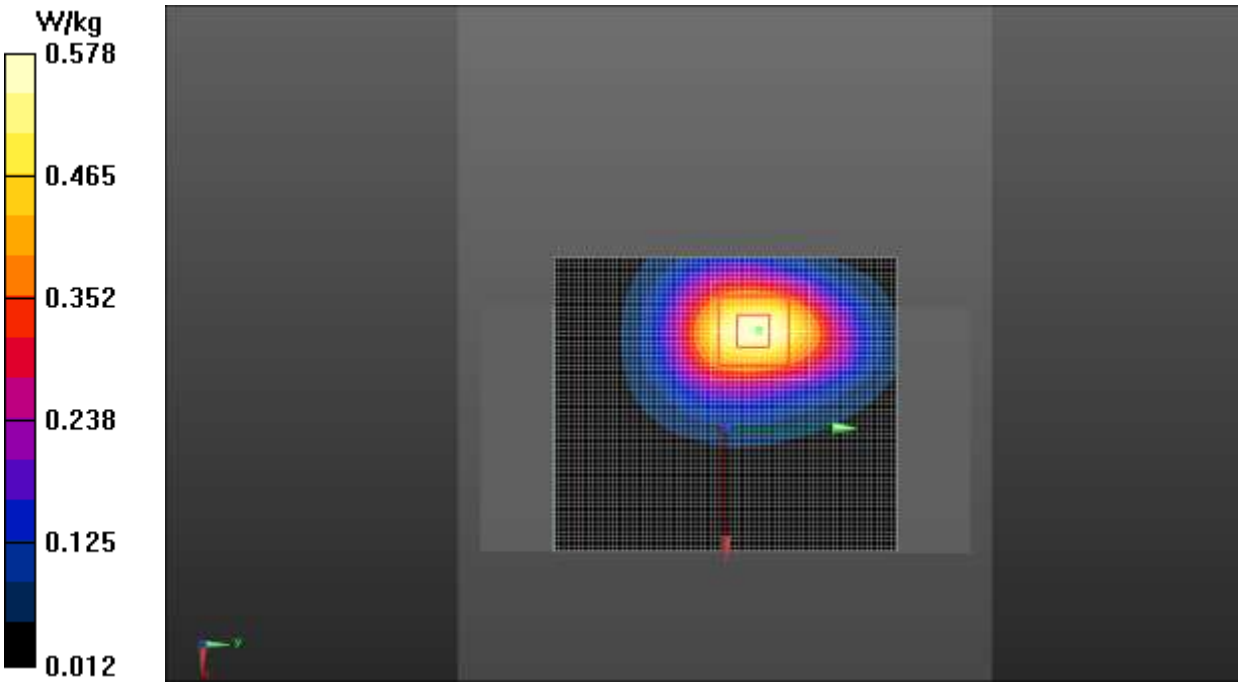
Maximum value of SAR (measured) = 0.534 W/kg



LTE Band 25 Body
Date: 2018-8-26
Electronics: DAE4 Sn786
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1882.5 MHz; σ = 1.533 S/m; εr = 52.586; ρ = 1000 kg/m3
Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C
Communication System: UID 0, LTE_FDD (0) Frequency: 1882.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (7.75, 7.75, 7.75);

Bottom Side Middle 1RB_Low/Area Scan (61x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.577 W/kg

Bottom Side Middle 1RB_Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.702 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.709 W/kg
SAR(1 g) = 0.433 W/kg; SAR(10 g) = 0.250 W/kg
Maximum value of SAR (measured) = 0.578 W/kg



LTE Band 26 Head

Date: 2018-8-25

Electronics: DAE4 Sn786

Medium: Head 835 MHz

Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.872 S/m; εr = 41.947; ρ = 1000 kg/m3

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C

Communication System: UID 0, LTE_FDD (0) Frequency: 831.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3633 ConvF (9.33, 9.33, 9.33);

Right Cheek Middle 1RB_High/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.239 W/kg

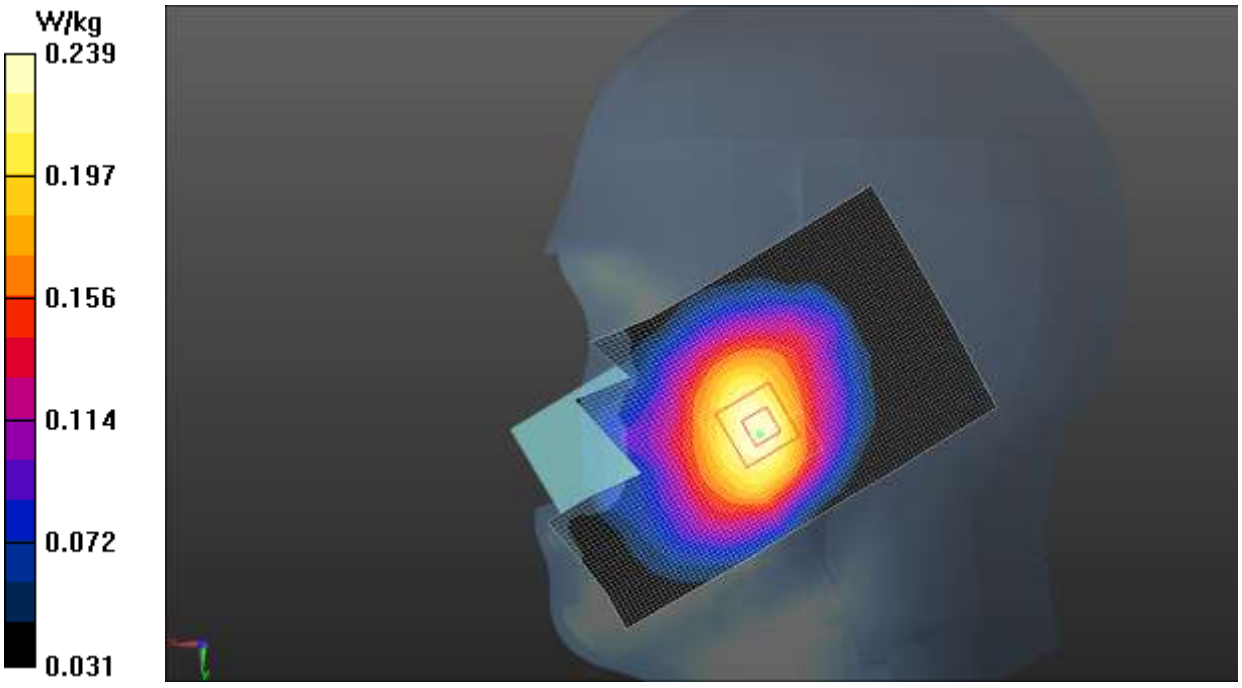
Right Cheek Middle 1RB_High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.212 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.263 W/kg

SAR(1 g) = 0.208 W/kg; SAR(10 g) = 0.157 W/kg

Maximum value of SAR (measured) = 0.239 W/kg



LTE Band 26 Body

Date: 2018-8-26

Electronics: DAE4 Sn786

Medium: Body 835 MHz

Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.974 S/m; εr = 54.071; ρ = 1000 kg/m3

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C

Communication System: UID 0, LTE_FDD (0) Frequency: 831.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3633 ConvF (9.69, 9.69, 9.69);

Front Side Middle 1RB_High/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.195 W/kg

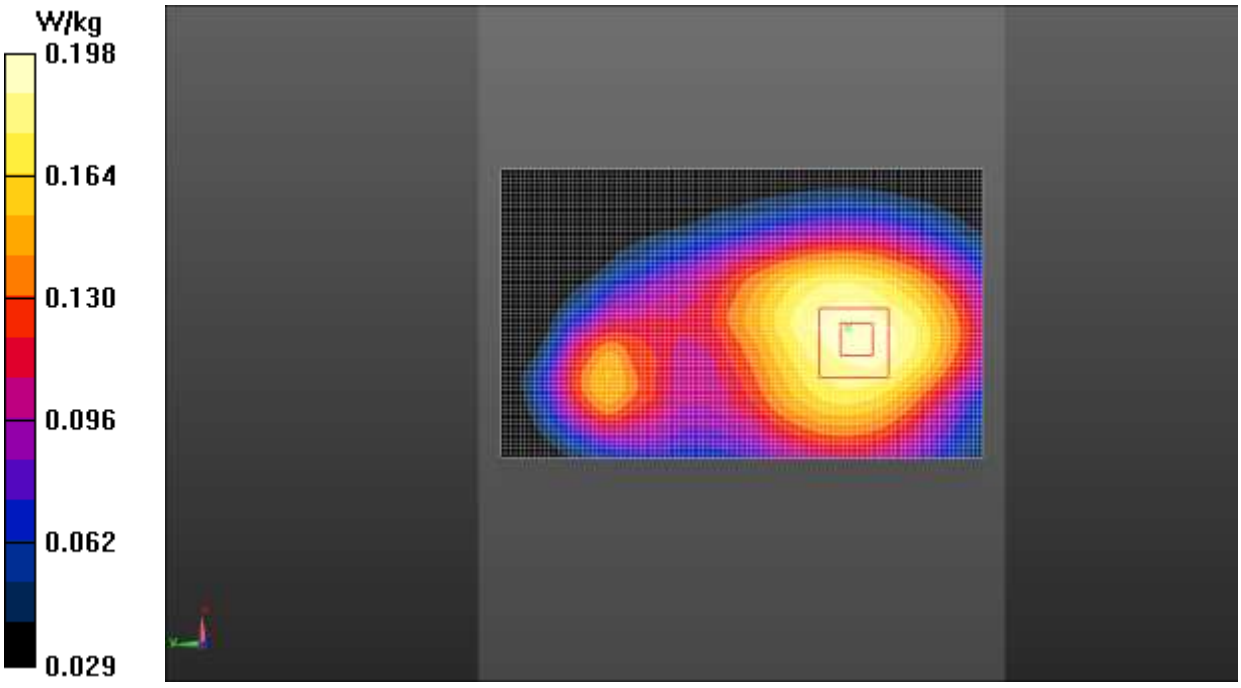
Front Side Middle 1RB_High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.80 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.230 W/kg

SAR(1 g) = 0.167 W/kg; SAR(10 g) = 0.126 W/kg

Maximum value of SAR (measured) = 0.198 W/kg



LTE Band 38 Head

Date: 2018-8-23

Electronics: DAE4 Sn786

Medium: Head 2550 MHz

Medium parameters used (interpolated): f = 2595 MHz; σ = 1.984 S/m; ε_r = 37.964; ρ = 1000 kg/m^3

Ambient Temperature: 22.0^{o}C Liquid Temperature: 21.5^{o}C

Communication System: UID 0, LTE_TDD (0) Frequency: 2595 MHz Duty Cycle: 1:1.58

Probe: EX3DV4 – SN3633 ConvF (7.28, 7.28, 7.28);

Left Cheek Middle 1RB_Low/Area Scan (61x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.264 W/kg

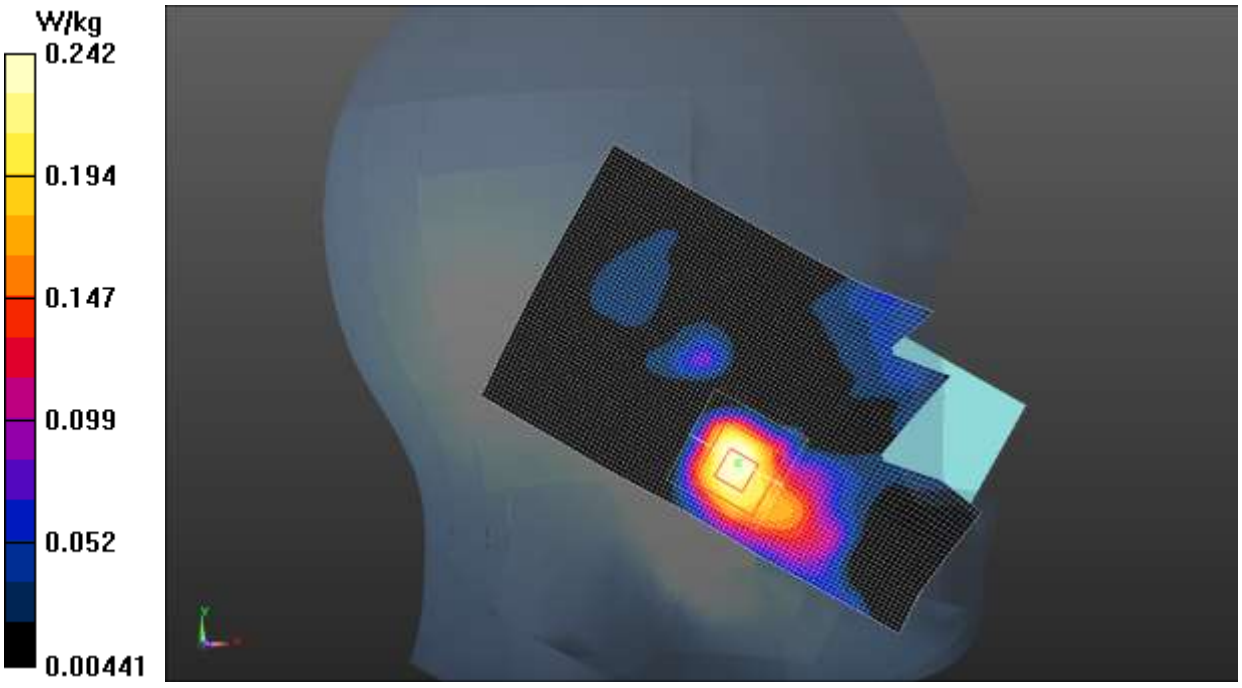
Left Cheek Middle 1RB_Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.377 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.413 W/kg

SAR(1 g) = 0.229 W/kg; SAR(10 g) = 0.127 W/kg

Maximum value of SAR (measured) = 0.242 W/kg



LTE Band 38 Body

Date: 2018-8-23

Electronics: DAE4 Sn786

Medium: Body 2550 MHz

Medium parameters used (interpolated): f = 2595 MHz; σ = 2.110 S/m; εr = 52.857; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C

Communication System: UID 0, LTE_TDD (0) Frequency: 2595 MHz Duty Cycle: 1:1.58

Probe: EX3DV4 – SN3633 ConvF (7.31, 7.31, 7.31);

Front Side Middle 1RB_Low/Area Scan (61x101x1): Interpolated grid: dx=1.000 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.727 W/kg

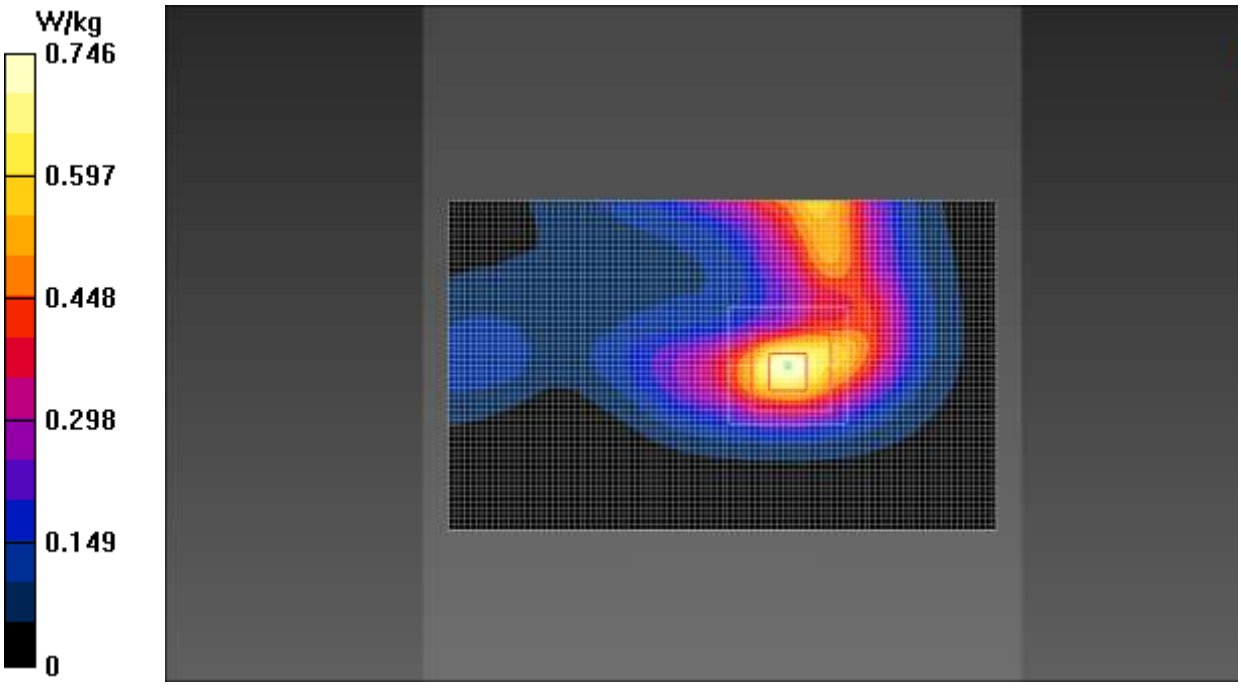
Front Side Middle 1RB_Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.477 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.02 W/kg

SAR(1 g) = 0.502 W/kg; SAR(10 g) = 0.236 W/kg

Maximum value of SAR (measured) = 0.746 W/kg



LTE Band 66 Head

Date: 2018-8-25

Electronics: DAE4 Sn786

Medium: Head 1800 MHz

Medium parameters used: f = 1745 MHz; σ = 1.374 S/m; ε_r = 39.553; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C

Communication System: UID 0, LTE_FDD (0) Frequency: 1745 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3633 ConvF (8.12, 8.12, 8.12);

Left Cheek Middle 1RB_Low/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.402 W/kg

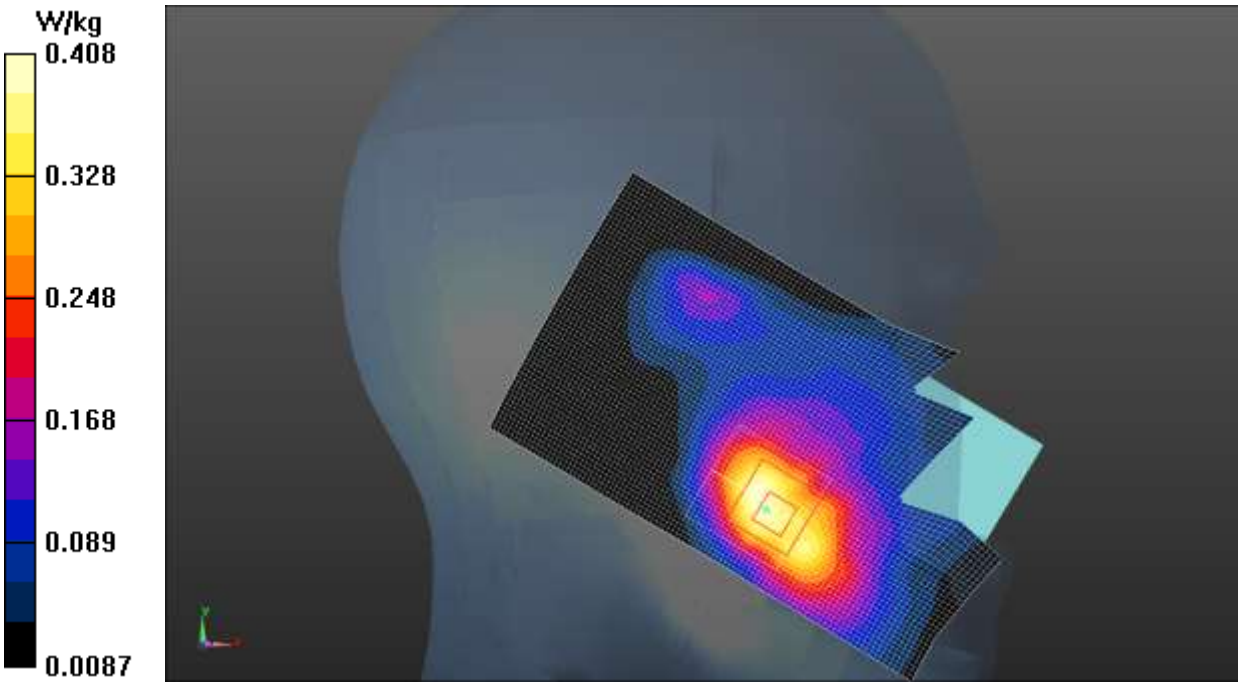
Left Cheek Middle 1RB_Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.153 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.521 W/kg

SAR(1 g) = 0.329 W/kg; SAR(10 g) = 0.202 W/kg

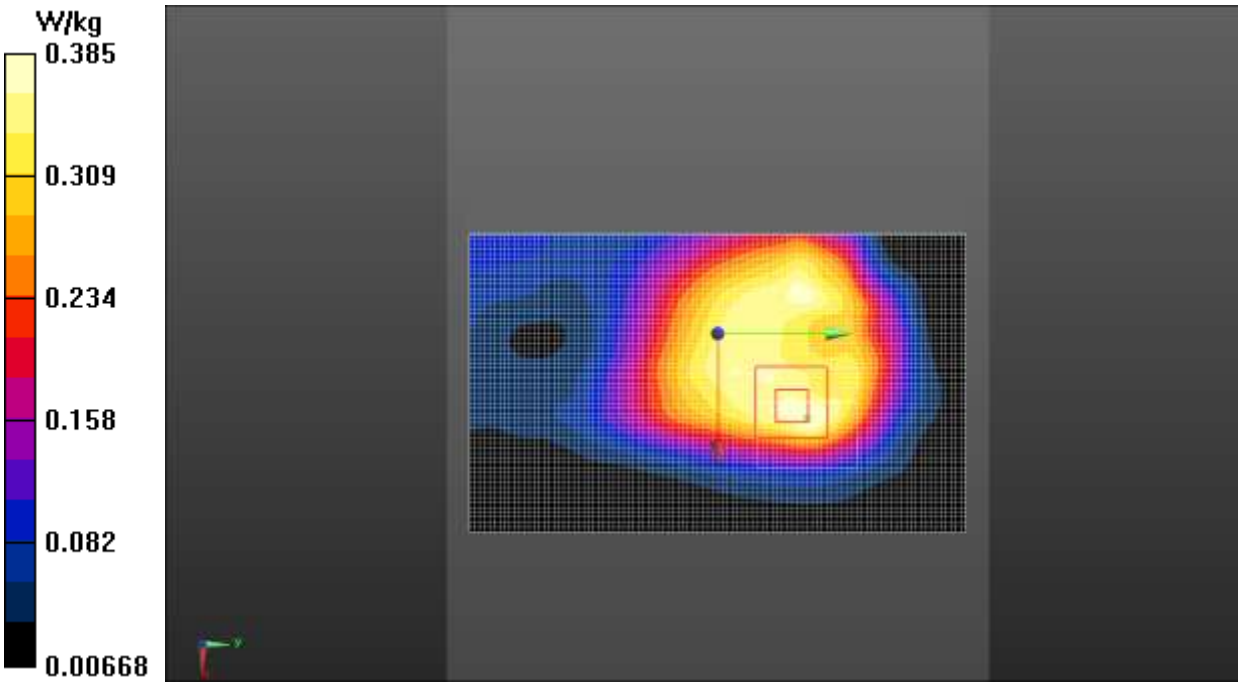
Maximum value of SAR (measured) = 0.408 W/kg



LTE Band 66 Body
Date: 2018-8-26
Electronics: DAE4 Sn786
Medium: Body 1800 MHz
Medium parameters used: f = 1745 MHz; σ = 1.452 S/m; εr = 53.894; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C
Communication System: UID 0, LTE_FDD (0) Frequency: 1745 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (8.05, 8.05, 8.05);

Front Side Middle 1RB_Low/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.392 W/kg

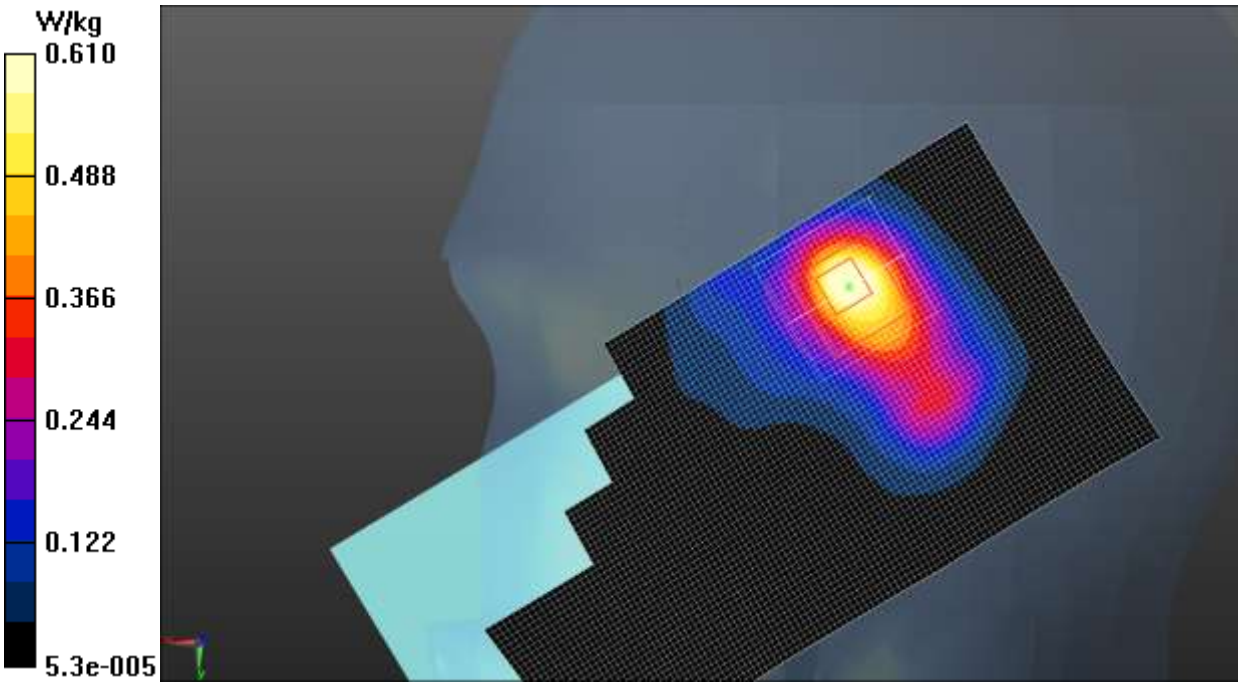
Front Side Middle 1RB_Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.30 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.495 W/kg
SAR(1 g) = 0.289 W/kg; SAR(10 g) = 0.175 W/kg
Maximum value of SAR (measured) = 0.385 W/kg



Wi-Fi 2.4G Head
Date: 2018-9-11
Electronics: DAE4 Sn786
Medium: Head 2450 MHz
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.853 S/m; ε_r = 38.207; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C
Communication System: UID 0, WiFi (0) Frequency: 2462 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (7.42, 7.42, 7.42);

Right Cheek High/Area Scan (61x61x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.940 W/kg

Right Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.84 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.33 W/kg
SAR(1 g) = 0.548 W/kg; SAR(10 g) = 0.254 W/kg
Maximum value of SAR (measured) = 0.610 W/kg



Wi-Fi 2.4G Body

Date: 2018-9-11

Electronics: DAE4 Sn786

Medium: Body 2450 MHz

Medium parameters used: f = 2437 MHz; σ = 1.907 S/m; ε_r = 53.131; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C

Communication System: UID 0, WiFi (0) Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3633 ConvF (7.47, 7.47, 7.47);

Rear Side Middle/Area Scan (61x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.319 W/kg

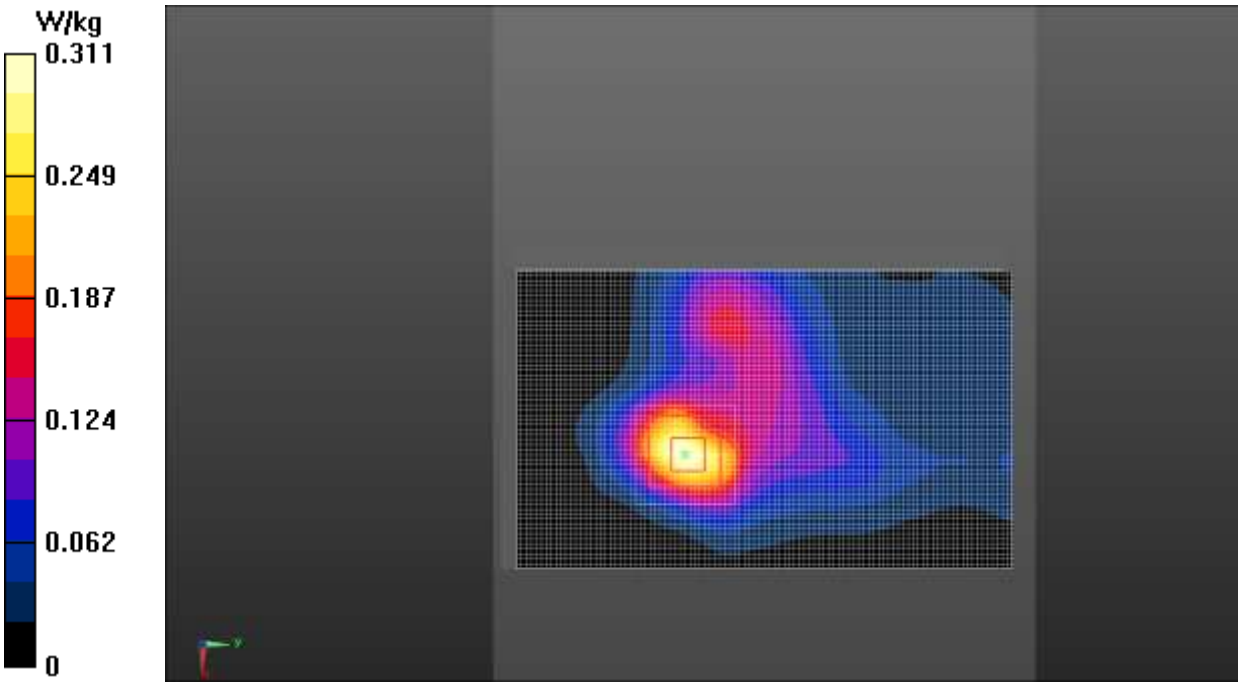
Rear Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.696 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.406 W/kg

SAR(1 g) = 0.213 W/kg; SAR(10 g) = 0.103 W/kg

Maximum value of SAR (measured) = 0.311 W/kg



Wi-Fi 5G Head

Date: 2018-9-14

Electronics: DAE4 Sn786

Medium: Head 5300 MHz

Medium parameters used: f = 5260 MHz; σ = 4.761 S/m; ε_r = 35.346; ρ = 1000 kg/m^3

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C

Communication System: UID 0, WIFI 5G (0) Frequency: 5260 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3633 ConvF (5.61, 5.61, 5.61);

Right Tilt CH52/Area Scan (61x61x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.832 W/kg

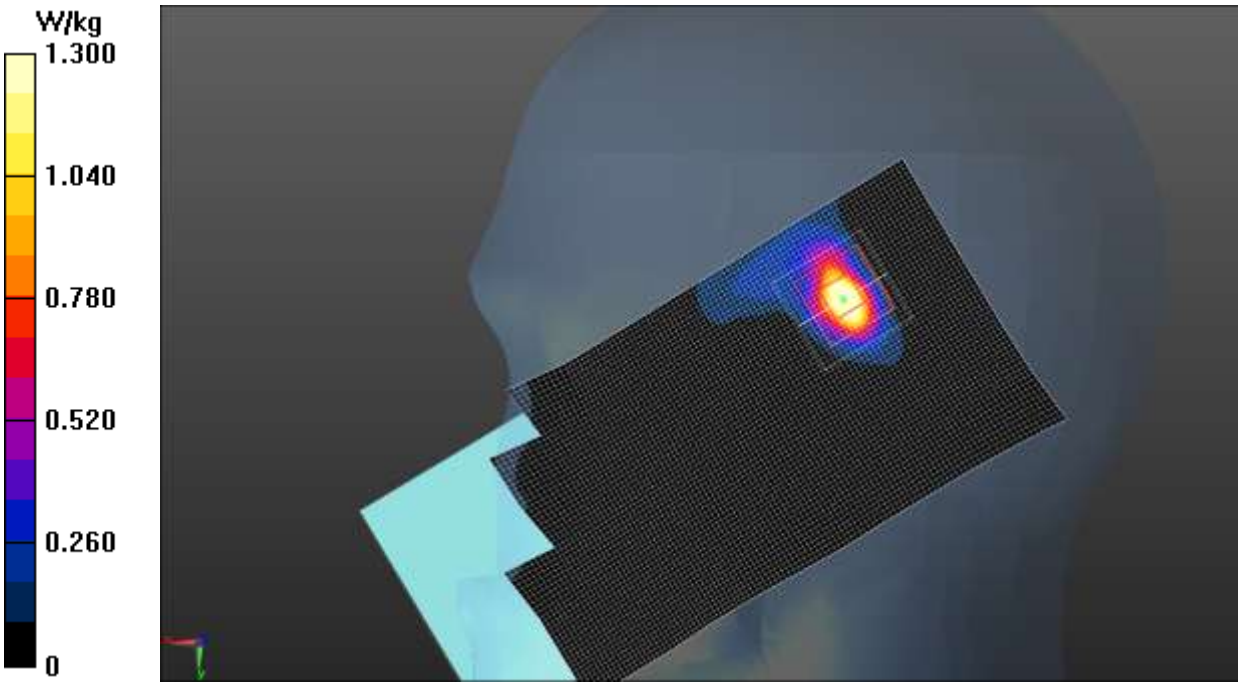
Right Tilt CH52/Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 4.712 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 2.39 W/kg

SAR(1 g) = 0.636 W/kg; SAR(10 g) = 0.193 W/kg

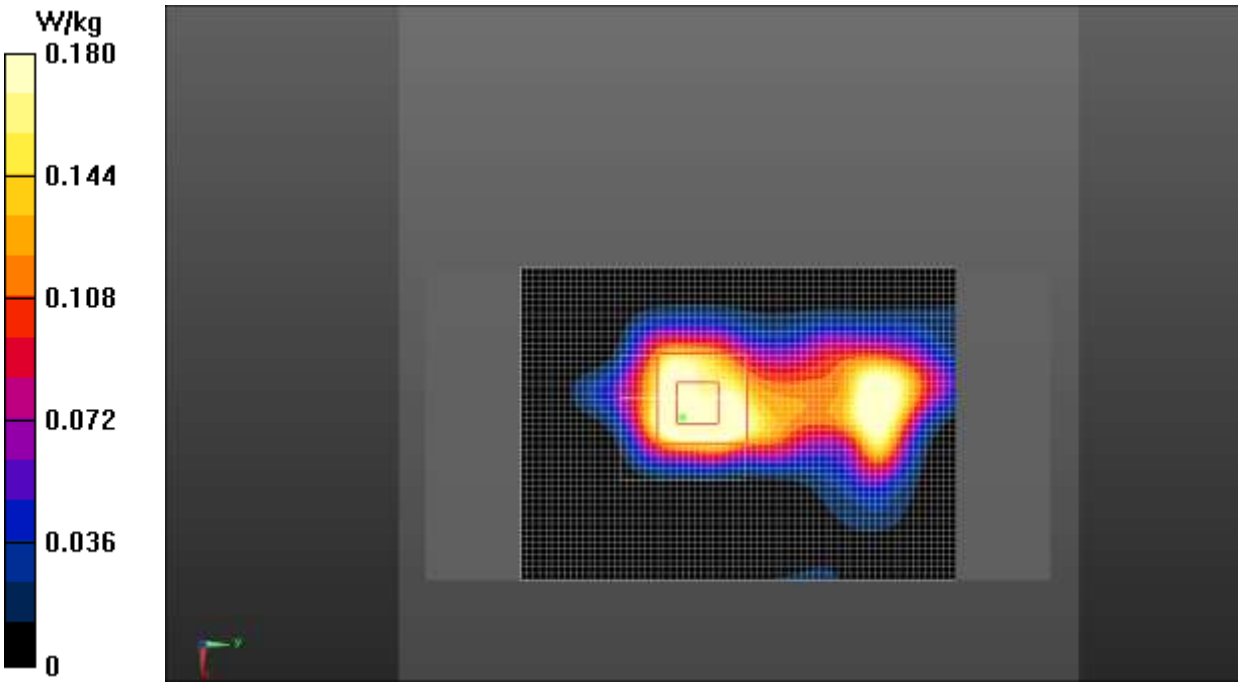
Maximum value of SAR (measured) = 1.30 W/kg



Wi-Fi 5G Body
Date: 2018-9-14
Electronics: DAE4 Sn786
Medium: Body 5300 MHz
Medium parameters used: f = 5260 MHz; σ = 5.262 S/m; ε_r = 49.533; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C
Communication System: UID 0, WIFI 5G (0) Frequency: 5260 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3633 ConvF (5.15, 5.15, 5.15);

Top Side CH52/Area Scan (51x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.259 W/kg

Top Side CH52/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 3.679 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.477 W/kg
SAR(1 g) = 0.116 W/kg; SAR(10 g) = 0.039 W/kg
Maximum value of SAR (measured) = 0.180 W/kg



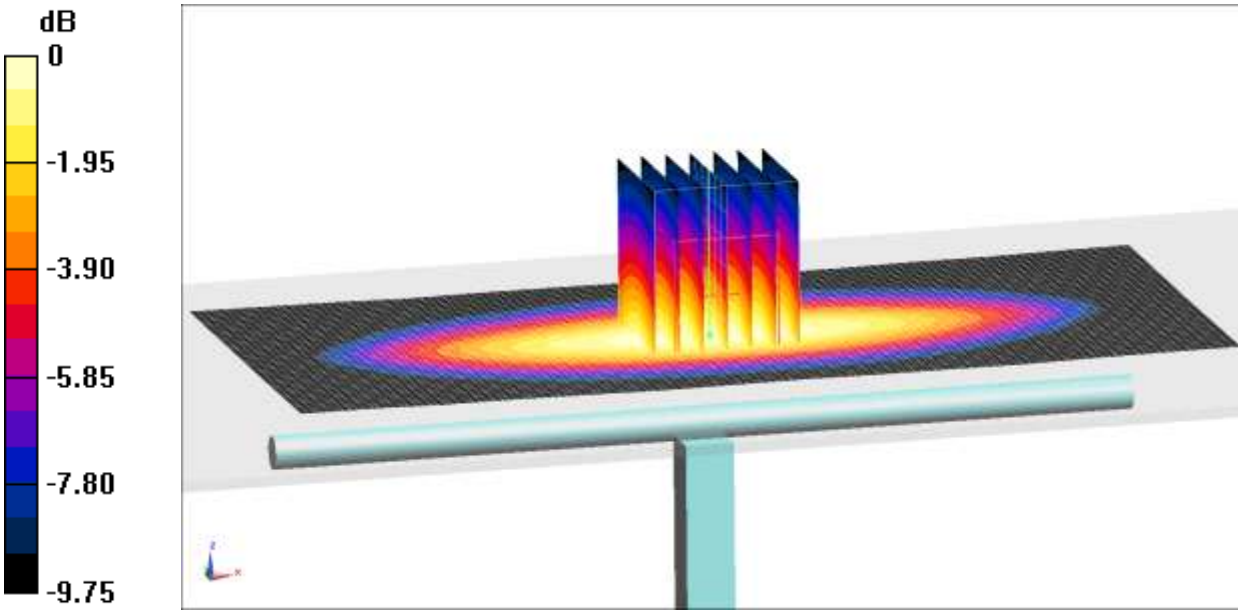
ANNEX L System Verification Results for Spot Check Test

750MHz

Date: 2018-8-25
Electronics: DAE4 Sn786
Medium: Head 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.913 S/m; εr = 41.348; ρ = 1000 kg/m3
Ambient Temperature: 22.5°C Liquid Temperature: 22.0°C
Communication System: CW Frequency: 750 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (9.33, 9.33, 9.33);

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 58.488 V/m; Power Drift = 0.06 dB
SAR(1 g) = 2.08 W/kg; SAR(10 g) = 1.36 W/kg
Maximum value of SAR (interpolated) = 2.20 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 58.488 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 2.66 W/kg
SAR(1 g) = 2.11 W/kg; SAR(10 g) = 1.37 W/kg
Maximum value of SAR (measured) = 2.23 W/kg



0 dB = 2.23 W/kg = 3.48 dB W/kg

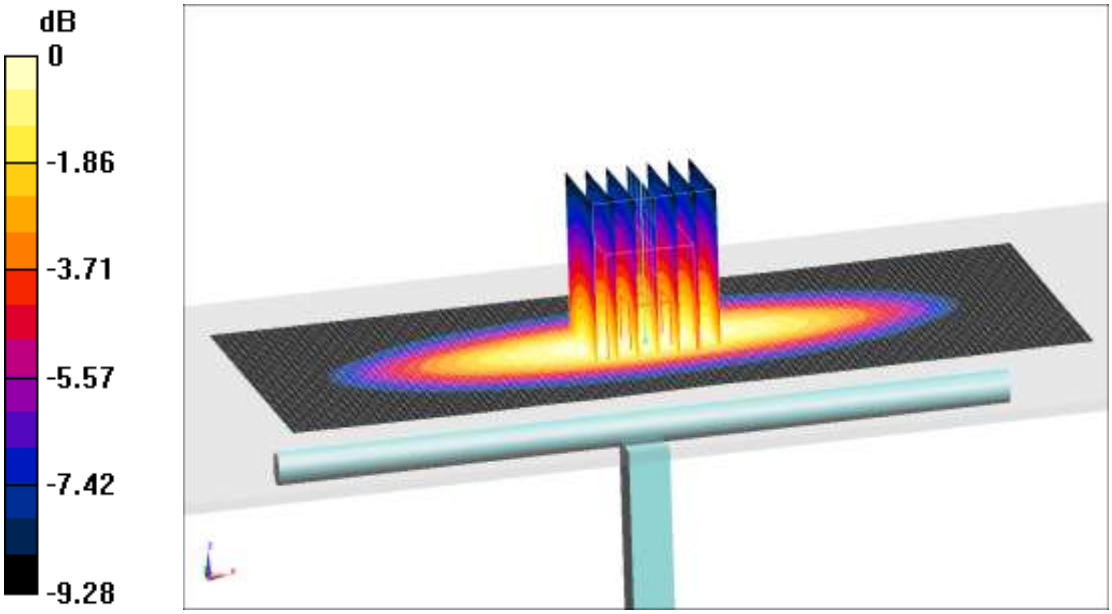
Fig.L.1. Validation 750MHz 250mW

750MHz

Date: 2018-8-26
Electronics: DAE4 Sn786
Medium: Body 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.972 S/m; ε_r = 53.862; ρ = 1000 kg/m^3
Ambient Temperature: 22.5^{o}C Liquid Temperature: 22.0^{o}C
Communication System: CW Frequency: 750 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (9.69, 9.69, 9.69);

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 59.145 V/m; Power Drift = 0.09 dB
SAR(1 g) = 2.18 W/kg; SAR(10 g) = 1.42 W/kg
Maximum value of SAR (interpolated) = 2.28 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 59.145 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 2.78 W/kg
SAR(1 g) = 2.22 W/kg; SAR(10 g) = 1.44 W/kg
Maximum value of SAR (measured) = 2.30 W/kg



0 dB = 2.30 W/kg = 3.61 dB W/kg

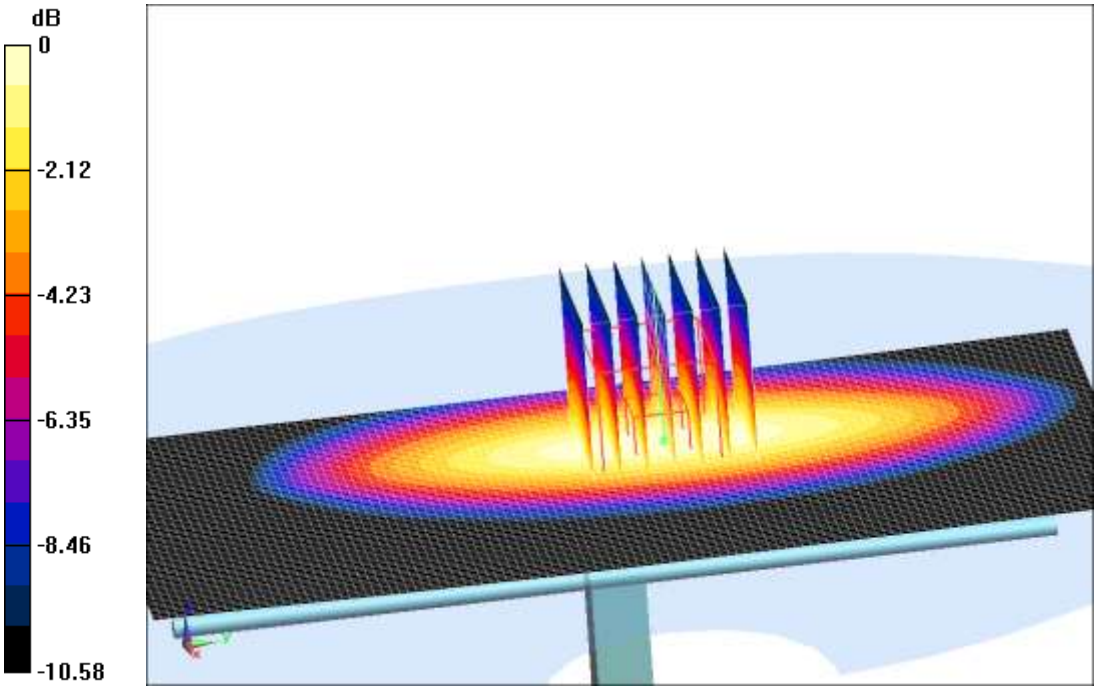
Fig.L.2. Validation 750MHz 250mW

835MHz

Date: 2018-8-25
Electronics: DAE4 Sn786
Medium: Head 835 MHz
Medium parameters used: f = 835 MHz; σ =0.875 S/m; εr = 41.924; ρ = 1000 kg/m^3
Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C
Communication System: CW Frequency: 835 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (9.33, 9.33, 9.33);

System Validation /Area Scan (81x161x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 56.583 V/m; Power Drift = -0.02 dB
SAR(1 g) = 2.26 W/kg; SAR(10 g) = 1.50 W/kg
Maximum value of SAR (interpolated) = 2.49 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.583 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 3.11 W/kg
SAR(1 g) = 2.23 W/kg; SAR(10 g) = 1.48 W/kg
Maximum value of SAR (measured) = 2.46 W/kg



0 dB = 2.46 W/kg = 3.91 dB W/kg

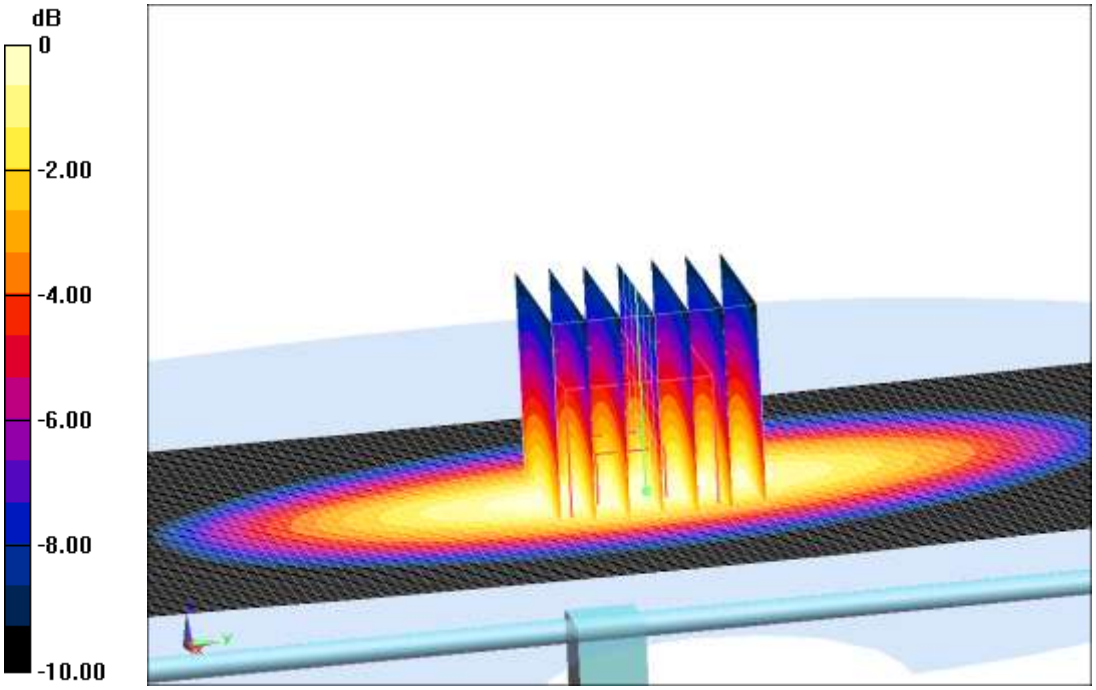
Fig.L.3. Validation 835MHz 250mW

835MHz

Date: 2018-8-26
Electronics: DAE4 Sn786
Medium: Body 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.977 S/m; ε_r = 54.037; ρ = 1000 kg/m^3
Ambient Temperature: 22.9^{o}C Liquid Temperature: 22.5^{o}C
Communication System: CW Frequency: 835 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (9.69, 9.69, 9.69);

System Validation /Area Scan (81x171x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 58.672 V/m; Power Drift = 0.11 dB
SAR(1 g) = 2.43 W/kg; SAR(10 g) = 1.58 W/kg
Maximum value of SAR (interpolated) = 2.55 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 58.672 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 3.57 W/kg
SAR(1 g) = 2.46 W/kg; SAR(10 g) = 1.59 W/kg
Maximum value of SAR (measured) = 2.59 W/kg



0 dB = 2.59 W/kg = 4.13 dB W/kg

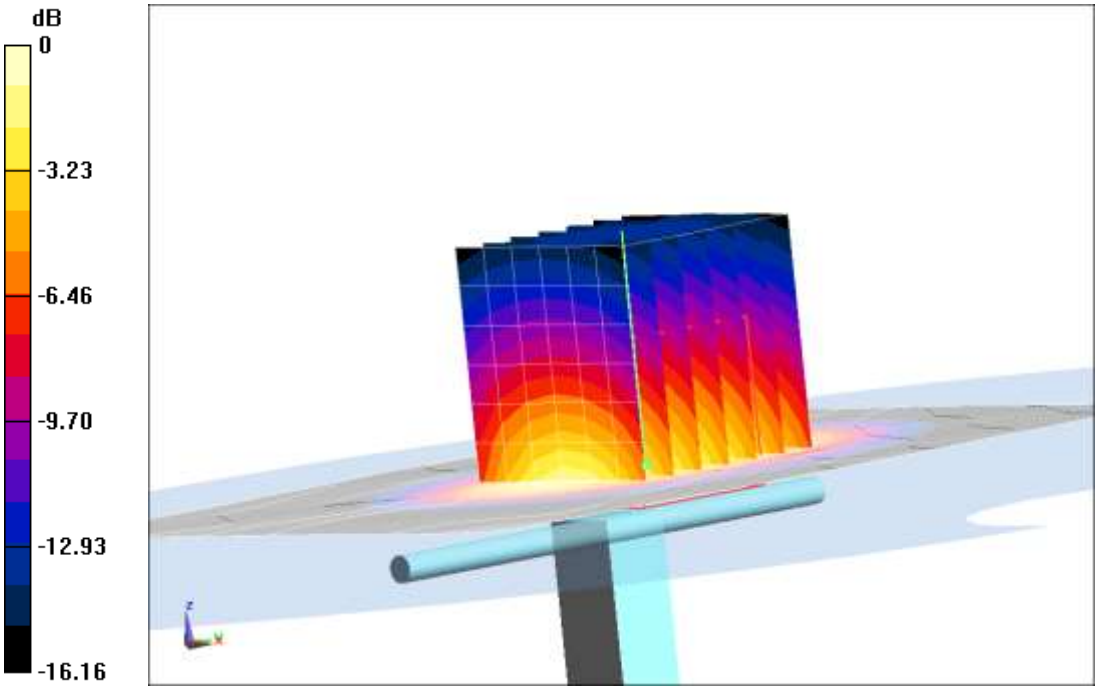
Fig.L.4. Validation 835MHz 250mW

1800MHz

Date: 2018-8-25
Electronics: DAE4 Sn786
Medium: Head 1800 MHz
Medium parameters used: f = 1800 MHz; σ = 1.426 S/m; ε_r = 39.38; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C
Communication System: CW Frequency: 1800 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (8.12, 8.12, 8.12);

System Validation/Area Scan (61x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 80.686 V/m; Power Drift = 0.07 dB
SAR(1 g) = 9.88 W/kg; SAR(10 g) = 5.22 W/kg
Maximum value of SAR (interpolated) = 12.6 W/kg

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 80.686 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 19.9 W/kg
SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.27 W/kg
Maximum value of SAR (measured) = 12.9 W/kg



0 dB = 12.9 W/kg = 11.11 dB W/kg

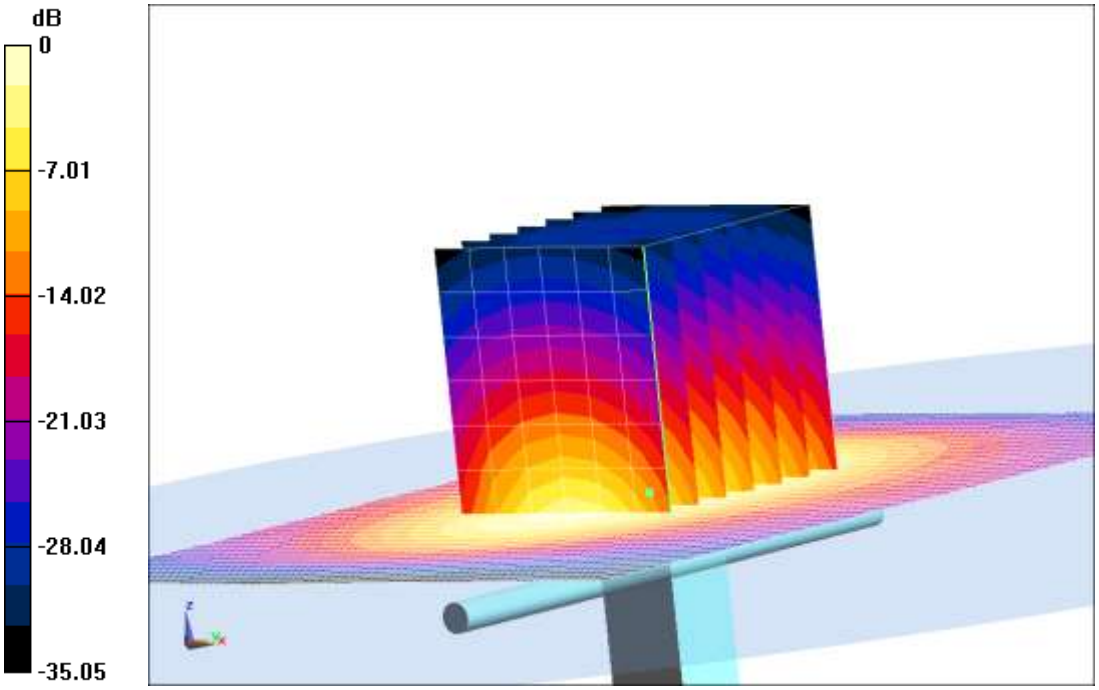
Fig.L.5. Validation 1800MHz 250mW

1800MHz

Date: 2018-8-26
Electronics: DAE4 Sn786
Medium: Body 1800 MHz
Medium parameters used: f = 1800 MHz; σ = 1.505 S/m; ε_r = 53.733; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C
Communication System: CW Frequency: 1800 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (8.05, 8.05, 8.05);

System Validation/Area Scan (61x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 78.285 V/m; Power Drift = -0.01 dB
SAR(1 g) = 9.78 W/kg; SAR(10 g) = 5.24 W/kg
Maximum value of SAR (interpolated) = 12.2 W/kg

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 78.285 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 18.7 W/kg
SAR(1 g) = 9.63 W/kg; SAR(10 g) = 5.19 W/kg
Maximum value of SAR (measured) = 11.8 W/kg



0 dB = 11.8 W/kg = 10.72 dB W/kg

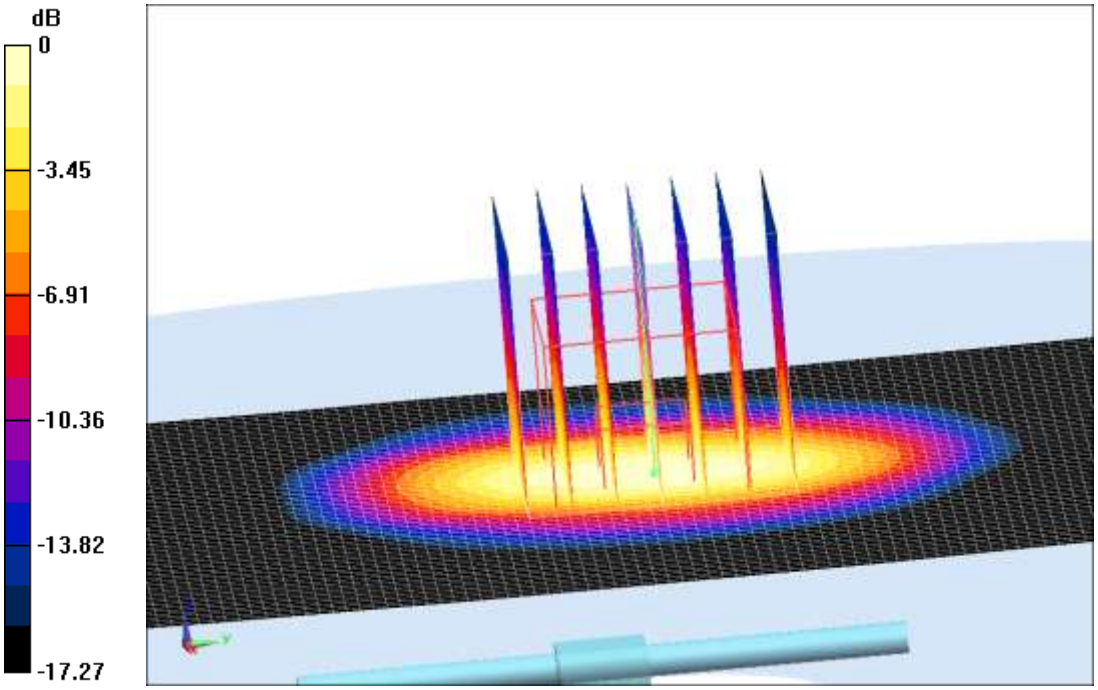
Fig.L.6. Validation 1800MHz 250mW

1900MHz

Date: 2018-8-25
Electronics: DAE4 Sn786
Medium: Head 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.408 S/m; ε_r = 39.105; ρ = 1000 kg/m^3
Ambient Temperature: 22.9^{o}C Liquid Temperature: 22.5^{o}C
Communication System: CW Frequency: 1900 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (7.81, 7.81, 7.81);

System Validation /Area Scan (81x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 91.896 V/m; Power Drift = 0.06 dB
SAR(1 g) = 10.2 W/kg; SAR(10 g) = 5.25 W/kg
Maximum value of SAR (interpolated) = 13.2 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 91.896 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 21.2 W/kg
SAR(1 g) = 10.3 W/kg; SAR(10 g) = 5.27 W/kg
Maximum value of SAR (measured) = 13.5 W/kg



0 dB = 13.5 W/kg = 11.30 dB W/kg

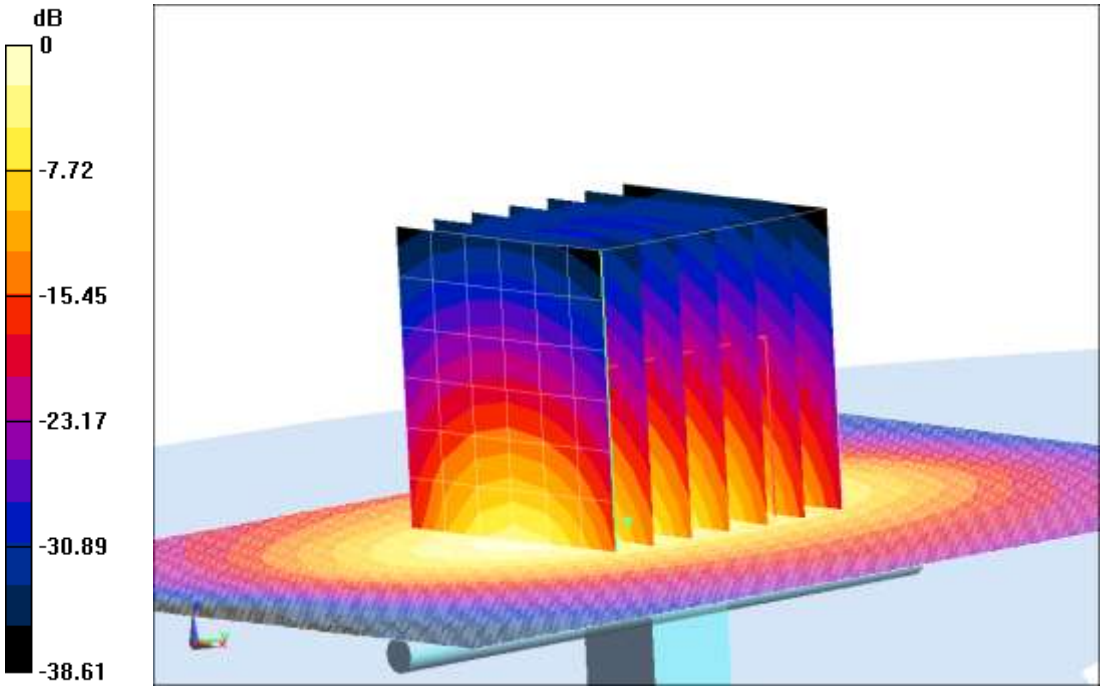
Fig.L.7. Validation 1900MHz 250mW

1900MHz

Date: 2018-8-26
Electronics: DAE4 Sn786
Medium: Body 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.552 S/m; ε_r = 52.546; ρ = 1000 kg/m^3
Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C
Communication System: CW Frequency: 1900 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (7.75, 7.75, 7.75);

System validation /Area Scan (81x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 88.611 V/m; Power Drift = -0.10 dB
SAR(1 g) = 10.6 W/kg; SAR(10 g) = 5.43 W/kg
Maximum value of SAR (interpolated) = 13.8 W/kg

System validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 88.611 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 21.7 W/kg
SAR(1 g) = 10.5 W/kg; SAR(10 g) = 5.40 W/kg
Maximum value of SAR (measured) = 13.7 W/kg



0 dB = 13.7 W/kg = 11.37 dB W/kg

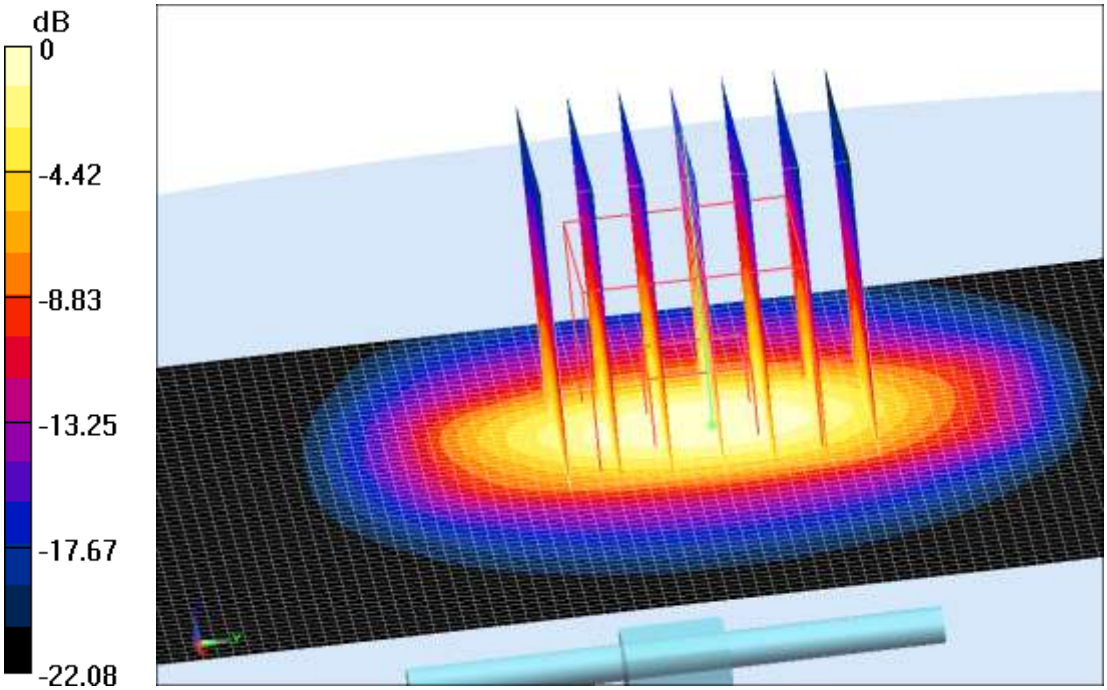
Fig.L.8. Validation 1900MHz 250mW

2450MHz

Date: 2018-9-11
Electronics: DAE4 Sn786
Medium: Head 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.839 S/m; ε_r = 38.261; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.6°C
Communication System: CW Frequency: 2450 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (7.42, 7.42, 7.42);

System Validation /Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 90.587 V/m; Power Drift = 0.08 dB
SAR(1 g) = 13.3 W/kg; SAR(10 g) = 6.08 W/kg
Maximum value of SAR (interpolated) = 14.8 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 90.587 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 25.4 W/kg
SAR(1 g) = 13.5 W/kg; SAR(10 g) = 6.13 W/kg
Maximum value of SAR (measured) = 15.2 W/kg



0 dB = 15.2 W/kg = 11.82 dB W/kg

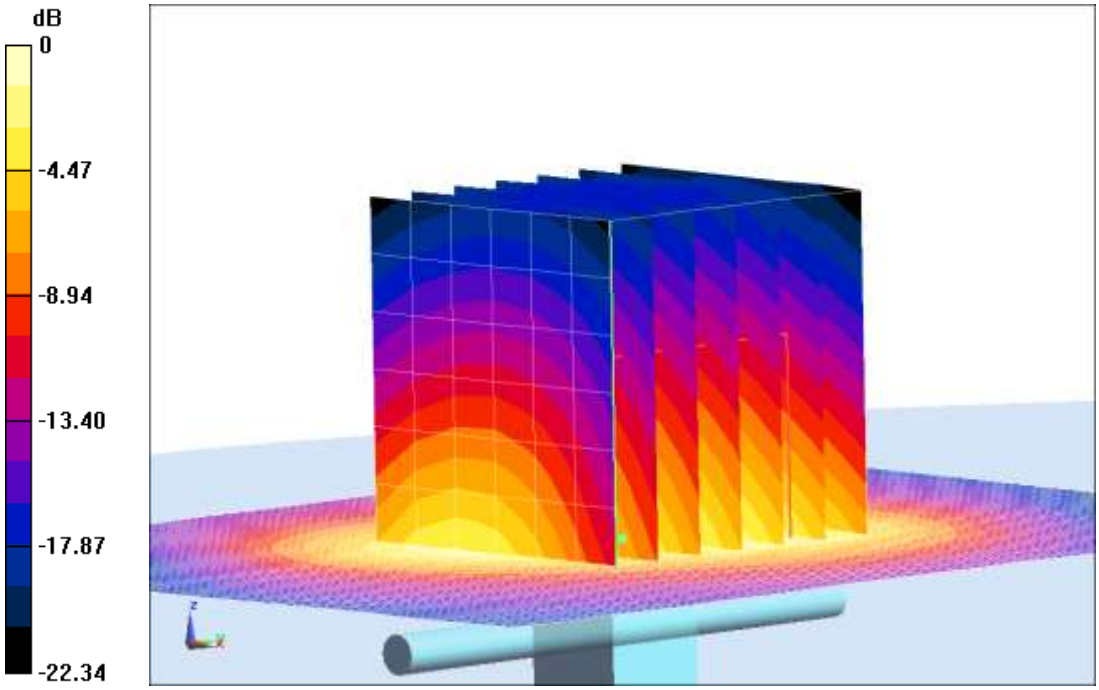
Fig.L.9. Validation 2450MHz 250mW

2450MHz

Date: 2018-9-11
Electronics: DAE4 Sn786
Medium: Body 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.922 S/m; ε_r = 53.088; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.6°C
Communication System: CW Frequency: 2450 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (7.47, 7.47, 7.47);

System Validation/Area Scan (81x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 86.755 V/m; Power Drift = -0.12 dB
SAR(1 g) = 12.9 W/kg; SAR(10 g) = 6.09 W/kg
Maximum value of SAR (interpolated) = 14.4 W/kg

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 86.755 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 23.0 W/kg
SAR(1 g) = 12.8 W/kg; SAR(10 g) = 6.05 W/kg
Maximum value of SAR (measured) = 14.1 W/kg



0 dB = 14.1 W/kg = 11.49 dB W/kg

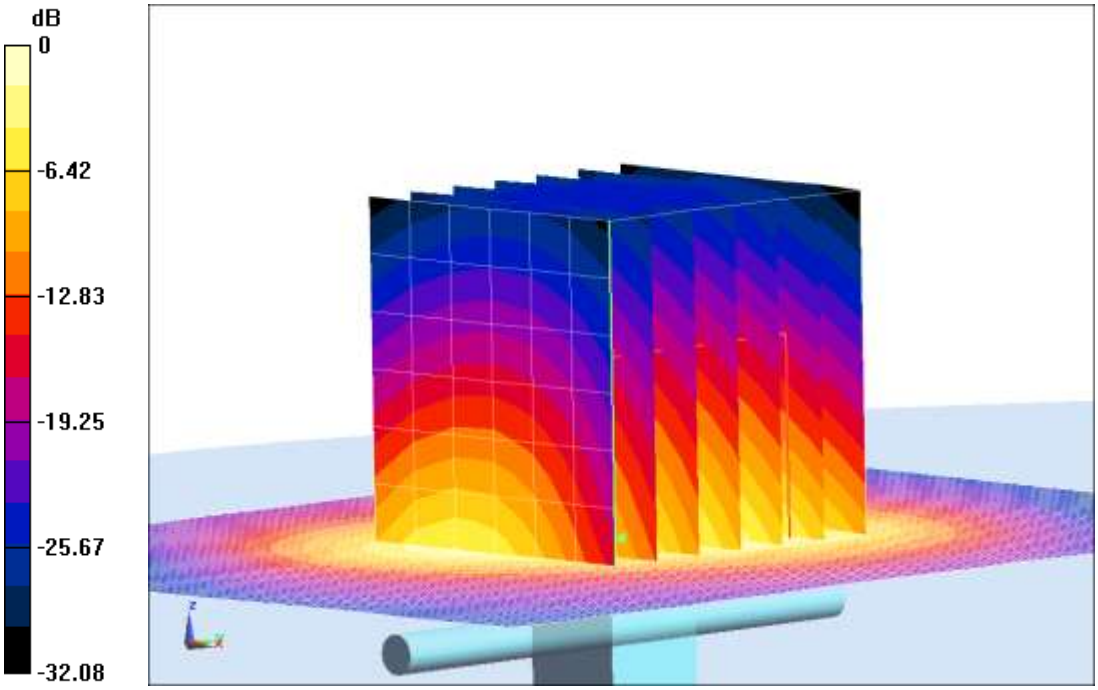
Fig.L.10. Validation 2450MHz 250mW

2600MHz

Date: 2018-8-23
Electronics: DAE4 Sn786
Medium: Head 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 1.988 S/m; ε_r = 37.947; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.6°C
Communication System: CW Frequency: 2600 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (7.28, 7.28, 7.28);

System Validation/Area Scan (81x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 92.613 V/m; Power Drift = -0.03 dB
SAR(1 g) = 14.6 W/kg; SAR(10 g) = 6.50 W/kg
Maximum value of SAR (interpolated) = 16.3 W/kg

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.613 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 28.2 W/kg
SAR(1 g) = 14.4 W/kg; SAR(10 g) = 6.41 W/kg
Maximum value of SAR (measured) = 15.9 W/kg



0 dB = 15.9 W/kg = 12.01 dB W/kg

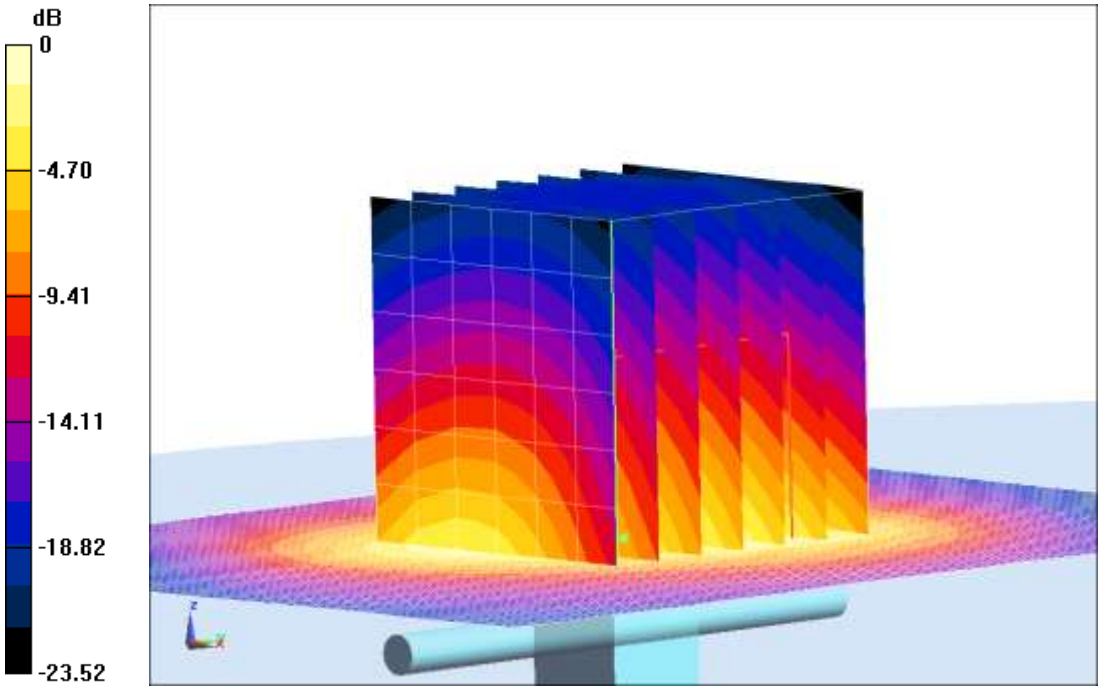
Fig.L.11. Validation 2600MHz 250mW

2600MHz

Date: 2018-8-23
Electronics: DAE4 Sn786
Medium: Body 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 2.126 S/m; ε_r = 52.839; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.6°C
Communication System: CW Frequency: 2600 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (7.31, 7.31, 7.31);

System Validation/Area Scan (81x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 86.158 V/m; Power Drift = -0.05 dB
SAR(1 g) = 13.4 W/kg; SAR(10 g) = 6.08 W/kg
Maximum value of SAR (interpolated) = 14.7 W/kg

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 86.158 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 26.3 W/kg
SAR(1 g) = 13.2 W/kg; SAR(10 g) = 6.01 W/kg
Maximum value of SAR (measured) = 14.4 W/kg



0 dB = 14.4 W/kg = 11.58 dB W/kg

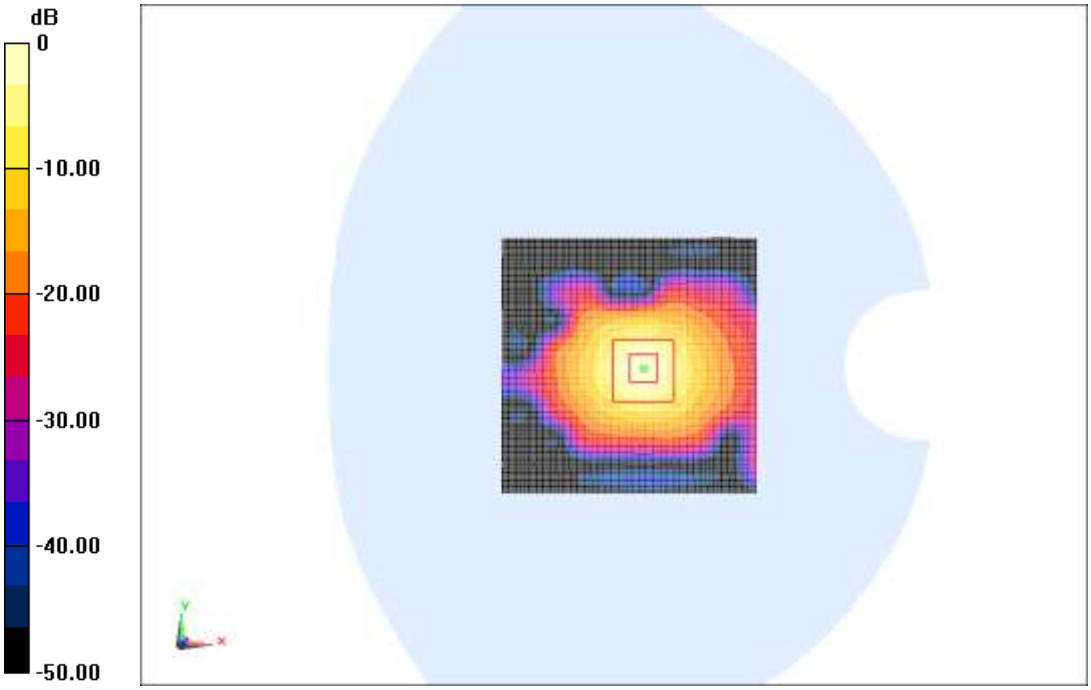
Fig.L.12. Validation 2600MHz 250mW

5300MHz

Date: 2018-9-14
Electronics: DAE4 Sn786
Medium: Head 5300 MHz
Medium parameters used: f = 5300 MHz; σ = 4.815 S/m; ε_r = 35.244; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: CW Frequency: 5300 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3633 ConvF (5.61, 5.61, 5.61);

System Validation /Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 58.489 V/m; Power Drift = 0.06 dB
SAR(1 g) = 8.40 W/kg; SAR(10 g) = 2.38 W/kg
Maximum value of SAR (interpolated) =10.1 W/kg

System Validation/Zoom Scan (8x8x8)/Cube0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 58.489 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 30.3 W/kg
SAR(1 g) = 8.44 W/kg; SAR(10 g) = 2.39 W/kg
Maximum value of SAR (measured) =10.3 W/kg



0 dB = 10.3 W/kg = 10.13 dB W/kg

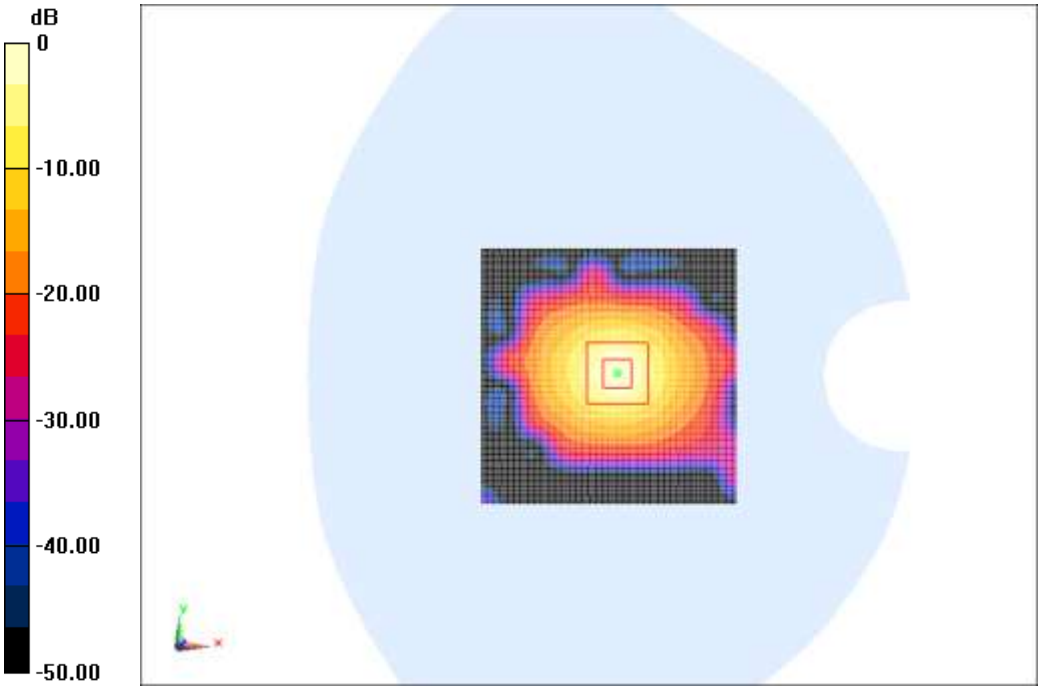
Fig.L.13. validation 5300MHz 100mW

5300MHz

Date: 2018-9-14
Electronics: DAE4 Sn786
Medium: Body 5300 MHz
Medium parameters used: f = 5300 MHz; σ = 5.366 S/m; ε_r = 49.232; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: CW Frequency: 5300 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3633 ConvF (5.15, 5.15, 5.15);

System Validation /Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 55.384 V/m; Power Drift = -0.14 dB
SAR(1 g) = 7.44 W/kg; SAR(10 g) = 2.12 W/kg
Maximum value of SAR (interpolated) = 9.80 W/kg

System Validation/Zoom Scan (8x8x8)/Cube0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 55.384 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 25.7 W/kg
SAR(1 g) = 7.35 W/kg; SAR(10 g) = 2.10 W/kg
Maximum value of SAR (measured) = 9.77 W/kg



0 dB = 9.77 W/kg = 9.90 dB W/kg

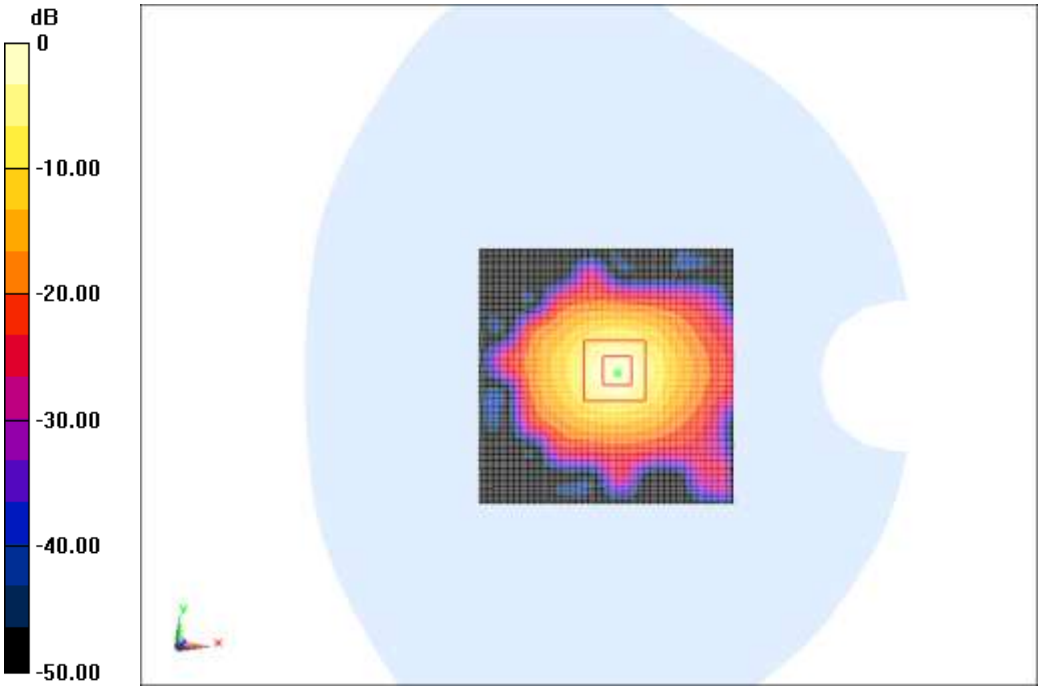
Fig.L.14. validation 5300MHz 100mW

5600MHz

Date: 2018-9-14
Electronics: DAE4 Sn786
Medium: Head 5600 MHz
Medium parameters used: f = 5600 MHz; σ = 5.114 S/m; ε_r =35.066; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: CW Frequency: 5600 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3633 ConvF (4.86, 4.86, 4.86);

System Validation /Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 62.534 V/m; Power Drift = 0.09 dB
SAR(1 g) = 8.47 W/kg; SAR(10 g) = 2.40 W/kg
Maximum value of SAR (interpolated) =10.5 W/kg

System Validation/Zoom Scan (8x8x8)/Cube0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 62.534 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 33.3 W/kg
SAR(1 g) = 8.59 W/kg; SAR(10 g) = 2.42 W/kg
Maximum value of SAR (measured) = 10.7 W/kg



0 dB = 10.7 W/kg = 10.29 dB W/kg

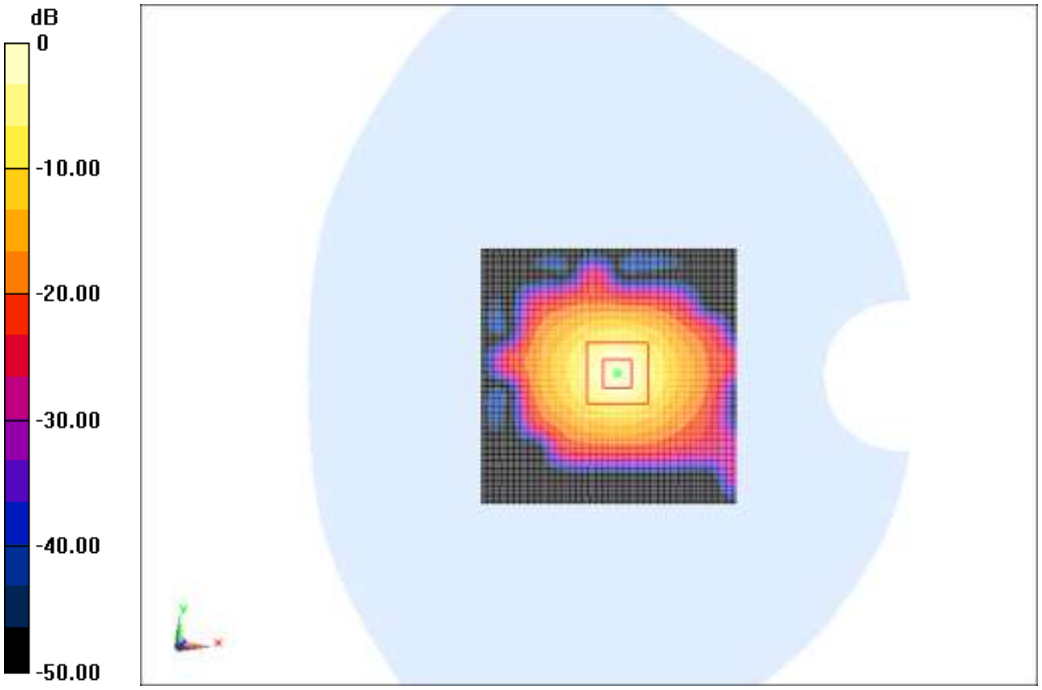
Fig.L.15. validation 5600MHz 100mW

5600MHz

Date: 2018-9-14
Electronics: DAE4 Sn786
Medium: Body 5600 MHz
Medium parameters used: f = 5600 MHz; σ = 5.689 S/m; ε_r = 48.98; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: CW Frequency: 5600 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3633 ConvF (4.33, 4.33, 4.33);

System Validation /Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 58.696 V/m; Power Drift = -0.02 dB
SAR(1 g) = 7.79 W/kg; SAR(10 g) = 2.18 W/kg
Maximum value of SAR (interpolated) =9.85 W/kg

System Validation/Zoom Scan (8x8x8)/Cube0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 58.696 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 27.9 W/kg
SAR(1 g) = 7.70 W/kg; SAR(10 g) = 2.17 W/kg
Maximum value of SAR (measured) = 9.82 W/kg



0 dB = 9.82 W/kg = 9.92 dB W/kg

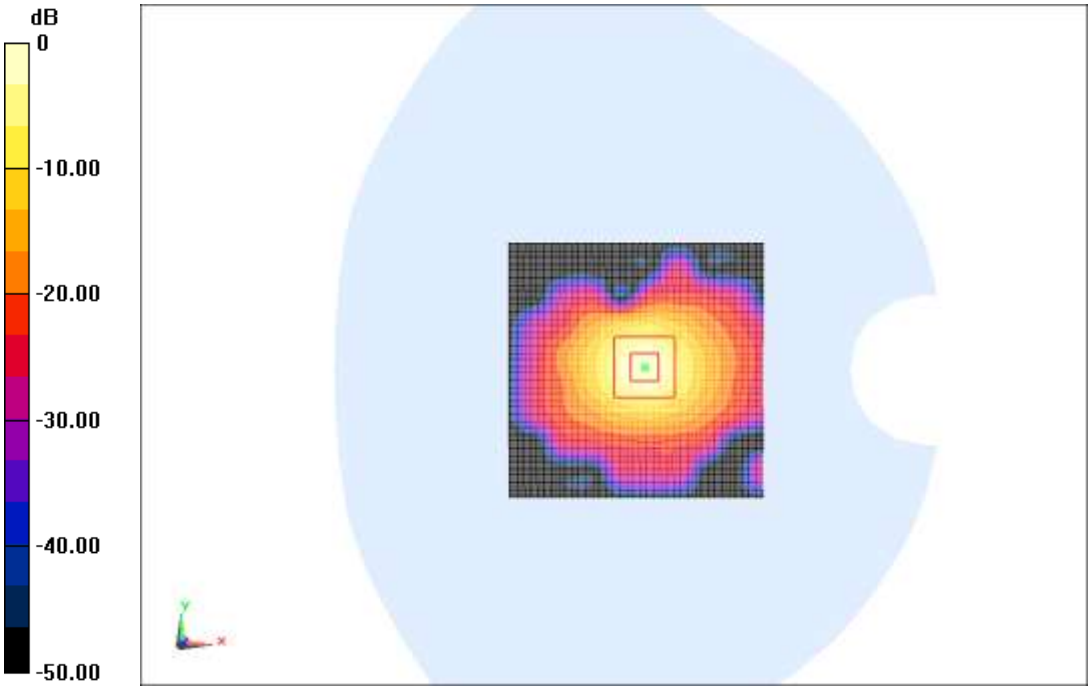
Fig.L.16. validation 5600MHz 100mW

5800MHz

Date: 2018-9-14
Electronics: DAE4 Sn786
Medium: Head 5800 MHz
Medium parameters used: f = 5800 MHz; σ = 5.256 S/m; ε_r = 35.664; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: CW Frequency: 5800 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3633 ConvF (4.81, 4.81, 4.81);

System Validation/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 59.685 V/m; Power Drift = -0.08 dB
SAR(1 g) = 7.68 W/kg; SAR(10 g) = 2.22 W/kg
Maximum value of SAR (interpolated) =9.80 W/kg

System Validation/Zoom Scan (8x8x8)/Cube0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 59.685 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 26.5 W/kg
SAR(1 g) =7.62 W/kg; SAR(10 g) = 2.18 W/kg
Maximum value of SAR (measured) = 9.75 W/kg



0 dB = 9.75 W/kg = 9.89 dB W/kg

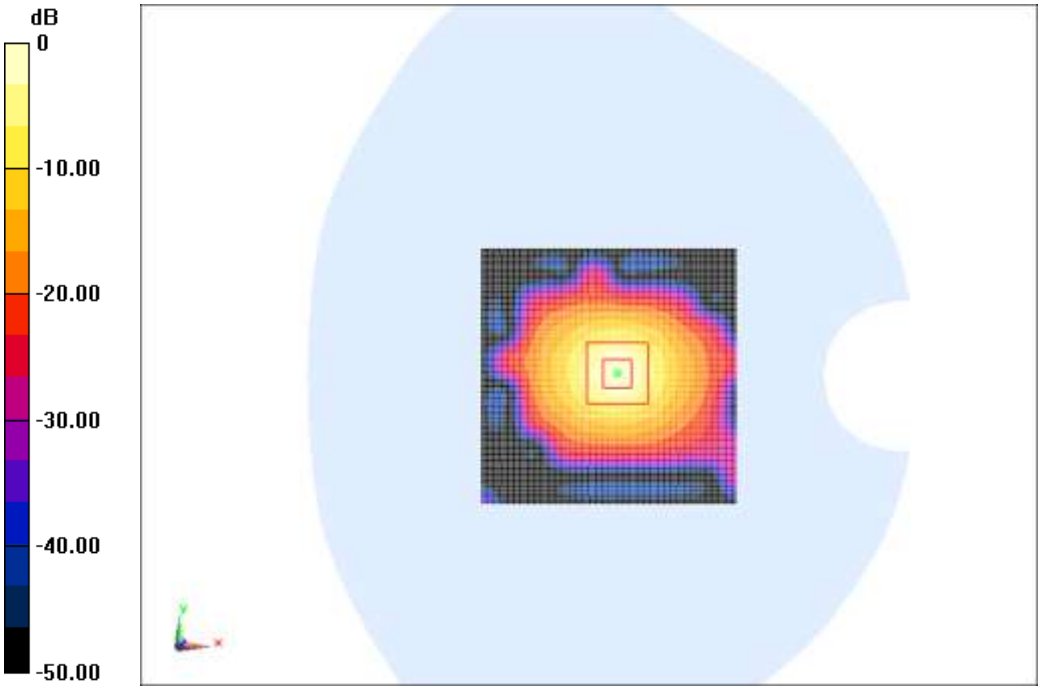
Fig.L.17. Validation 5800MHz 100mW

5800MHz

Date: 2018-9-14
Electronics: DAE4 Sn786
Medium: Body 5800 MHz
Medium parameters used: f = 5800 MHz; σ = 6.105 S/m; ε_r = 47.587; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: CW Frequency: 5800 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3633 ConvF (4.48, 4.48, 4.48);

System Validation/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 60.904 V/m; Power Drift = 0.13 dB
SAR(1 g) =7.77 W/kg; SAR(10 g) = 2.13 W/kg
Maximum value of SAR (interpolated) =9.87 W/kg

System Validation/Zoom Scan (8x8x8)/Cube0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 60.904 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 28.6 W/kg
SAR(1 g) = 7.84 W/kg; SAR(10 g) = 2.15 W/kg
Maximum value of SAR (measured) = 9.93 W/kg



0 dB = 9.93 W/kg = 9.97 dB W/kg

Fig.L.18. Validation 5800MHz 100mW