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 cm^3 (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 cm^3 (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 cm^3 (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 cm^3 (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 cm^3 (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 cm^3 (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 cm^3 (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 cm^3 (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 cm^3 (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 cm^3 (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 cm^3 (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 cm^3 (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 cm^3 (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 cm^3 (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 cm^3 (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 cm^3 (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)

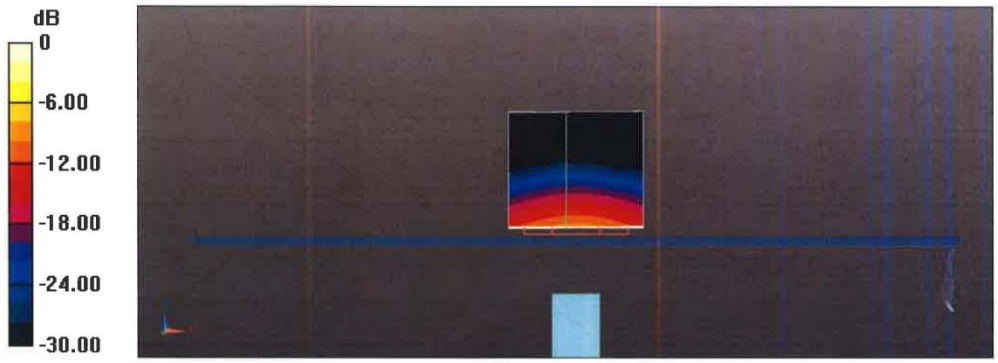
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 70.35 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 27.9 W/kg
SAR(1 g) = 7.76 W/kg; SAR(10 g) = 2.22 W/kg
Maximum value of SAR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

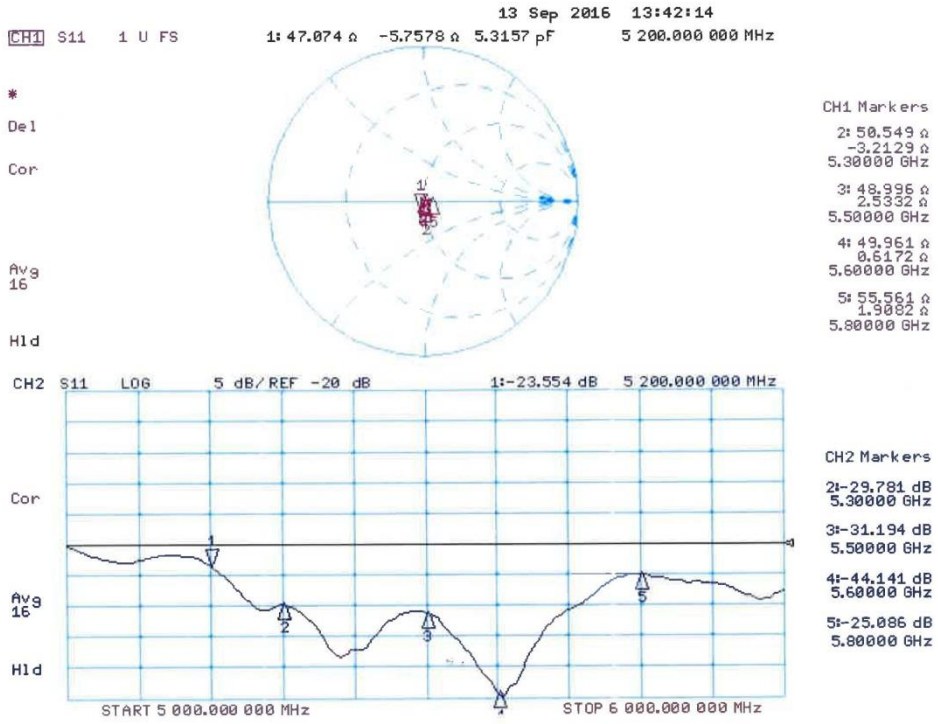
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 71.51 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 32.8 W/kg
SAR(1 g) = 8.38 W/kg; SAR(10 g) = 2.39 W/kg
Maximum value of SAR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

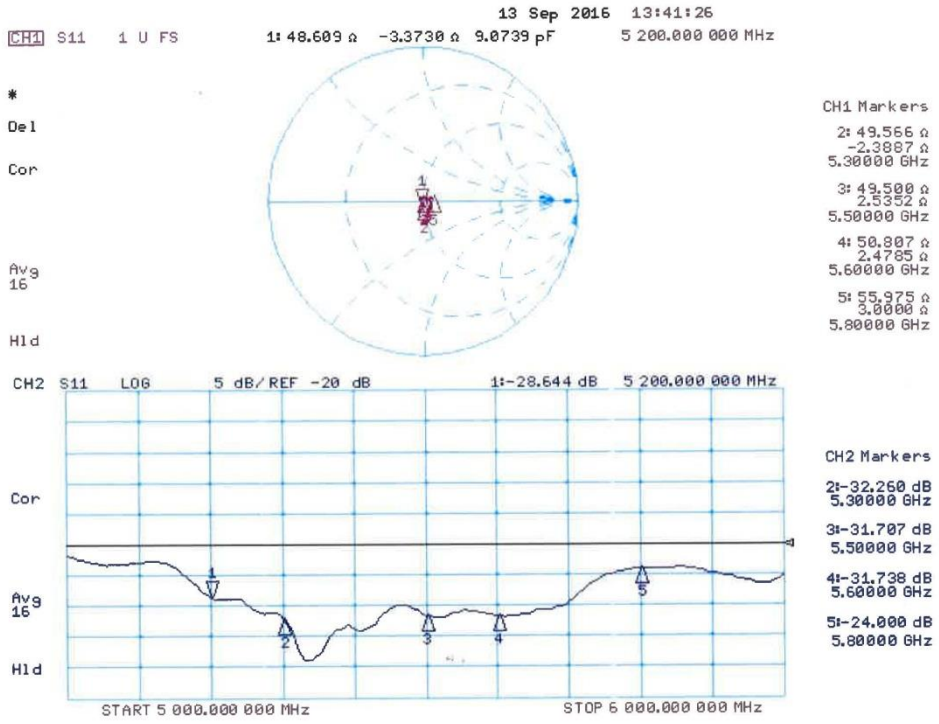
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5500 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 67.20 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 32.4 W/kg
SAR(1 g) = 8.03 W/kg; SAR(10 g) = 2.23 W/kg
Maximum value of SAR (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 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 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 D2550V2– serial no.1010

Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2015-7-24	-29.5		52.8		-2.0	
2016-7-22	-26.4	10.5	51.1	1.7	-2.62	-0.62
2017-7.21	-27.3	7.5	53.9	1.1	-3.84	-1.84

Body						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2015-7-24	-36.6		50.0		-1.5	
2016-7-22	-34.2	6.6	52.8	2.8	-2.67	-1.17
2017-7-21	-37.5	-2.5	52.4	2.4	-3.11	-1.61

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 TA-1061 from HMD Global Oy, 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
EUT5	004402971272533	0403	00WW_0_266

K.2 Measurement results

SAR Values (GSM850)

Frequency		Test Position		SAR(1g) (W/kg)		
				Spot check data		Original data
MHz	Ch.			Measured SAR	Reported SAR	
836.6	190	Head	Right Touch	0.164	**0.21**	0.12
836.6	190	Body	Front	0.260	**0.29**	0.23

SAR Values (GSM1900)

Frequency		Test Position		SAR(1g) (W/kg)		
				Spot check data		Original data
MHz	Ch.			Measured SAR	Reported SAR	
1880	661	Head	Left Touch	0.121	**0.17**	**0.17**
1850.2	512	Body	Bottom	1.12	1.25	**1.34**

SAR Values (WCDMA 850)

Frequency		Test Position		SAR(1g) (W/kg)		
				Spot check data		Original data
MHz	Ch.			Measured SAR	Reported SAR	
836.4	4182	Head	Right Touch	0.262	**0.29**	0.24
836.4	4182	Body	Front	0.422	0.46	**0.56**

SAR Values (LTE-Band 5)

Frequency		Test Position		SAR(1g) (W/kg)		
				Spot check data		Original data
MHz	Ch.			Measured SAR	Reported SAR	
836.5	20525	Head	Right Touch	0.277	0.34	**0.35**
836.5	20525	Body	Front	0.440	0.53	**0.55**

SAR Values (LTE-Band 7)

Frequency		Test Position		SAR(1g) (W/kg)		
				Spot check data		Original data
MHz	Ch.			Measured SAR	Reported SAR	
2535	21100	Head	Left Touch	0.142	0.17	**0.25**
2535	21100	Body	Bottom	0.480	**0.59**	0.50

SAR Values (LTE-Band 38)

Frequency		Test Position		SAR(1g) (W/kg)		
				Spot check data		Original data
MHz	Ch.			Measured SAR	Reported SAR	
2595	38000	Head	Left Touch	0.079	0.10	**0.14**
2595	38000	Body	Bottom	0.296	**0.36**	0.32

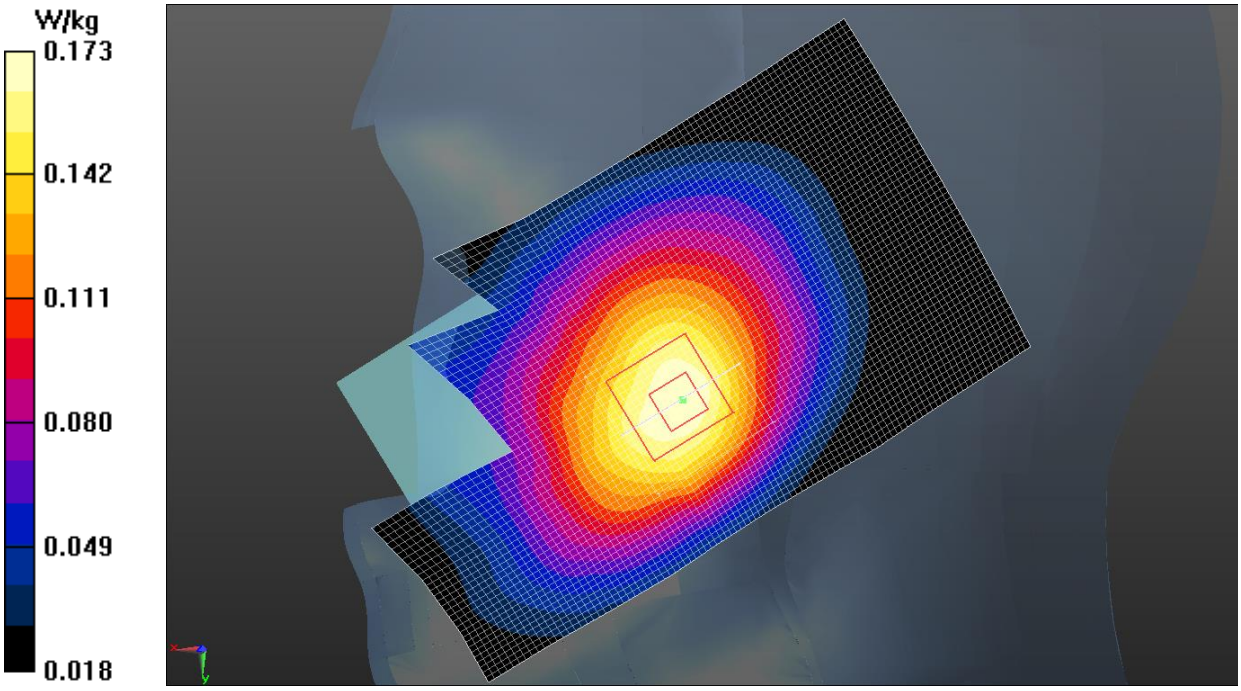
SAR Values (WLAN 2.4G)

Frequency		Test Position		SAR(1g) (W/kg)		
				Spot check data		Original data
MHz	Ch.			Measured SAR	Reported SAR	
2462	11	Head	Left Touch	0.625	0.73	**0.82**
2437	6	Body	Top	0.072	0.08	**0.18**

GSM850 Head
Date: 2018-5-8
Electronics: DAE4 Sn786
Medium: Head 835 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.892 S/m; ε_r = 41.709; 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: 1:8.30042
Probe: EX3DV4 – SN3633 ConvF (9.33, 9.33, 9.33);

Right Cheek Mid/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.175 W/kg

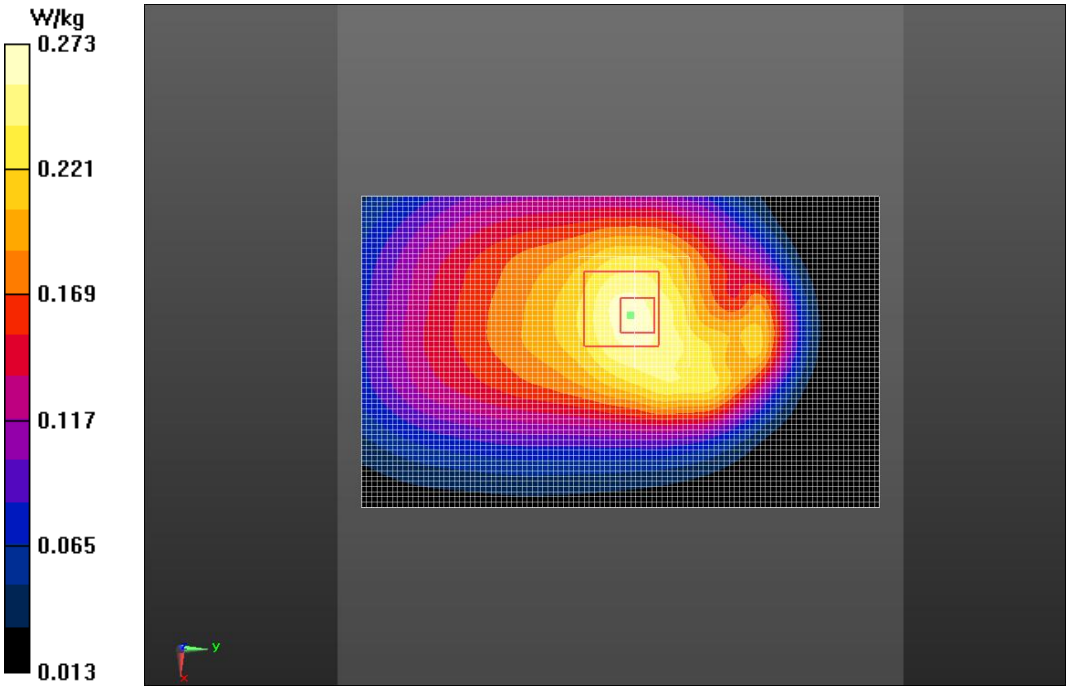
Right Cheek Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.145 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.213 W/kg
SAR(1 g) = 0.164 W/kg; SAR(10 g) = 0.123 W/kg
Maximum value of SAR (measured) = 0.173 W/kg



GSM850 Body
Date: 2018-5-8
Electronics: DAE4 Sn786
Medium: Body 835 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.99 S/m; ε_r = 52.671; ρ = 1000 kg/m^3
Ambient Temperature: 22.0^{o}C Liquid Temperature: 21.5^{o}C
Communication System: UID 0, GPRS 4Txslot (0) Frequency: 836.6 MHz Duty Cycle: 1:2
Probe: EX3DV4 – SN3633 ConvF (9.69, 9.69, 9.69);

Front side Mid/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.264 W/kg

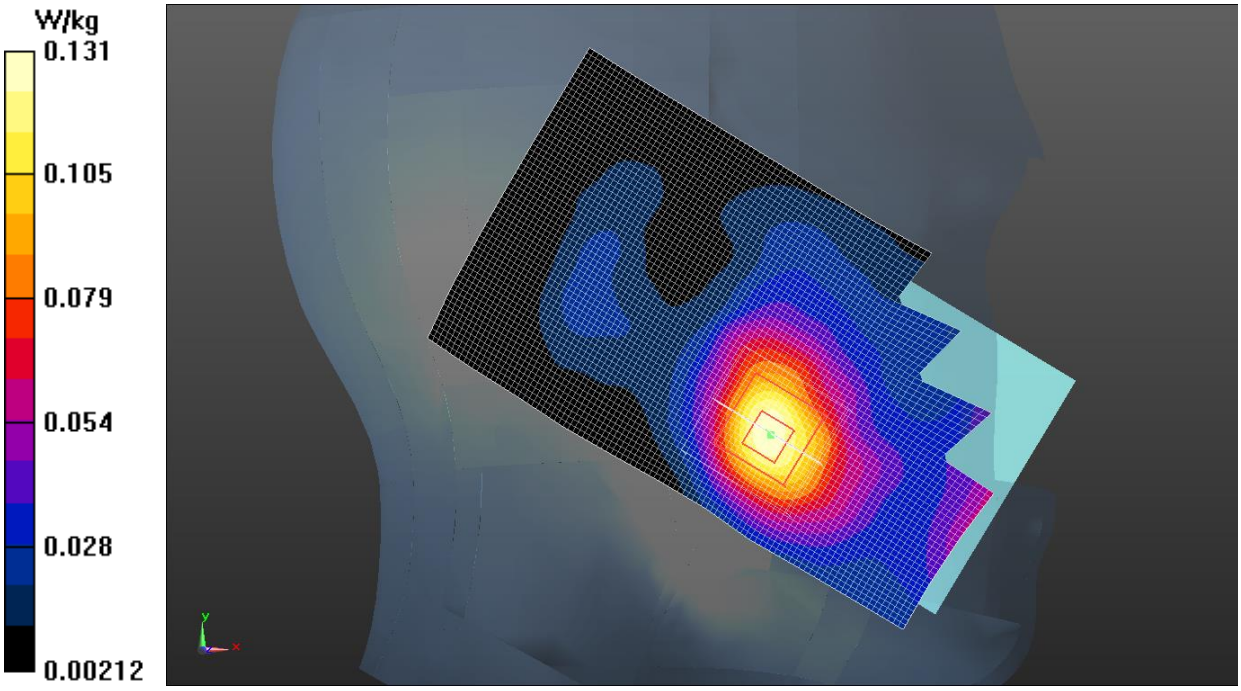
Front side Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.90 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.370 W/kg
SAR(1 g) = 0.260 W/kg; SAR(10 g) = 0.184 W/kg
Maximum value of SAR (measured) = 0.273 W/kg



GSM1900 Head
Date: 2018-5-2
Electronics: DAE4 Sn786
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.399 S/m; ε_r = 39.745; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.5°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);

Left Cheek Mid/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.131 W/kg

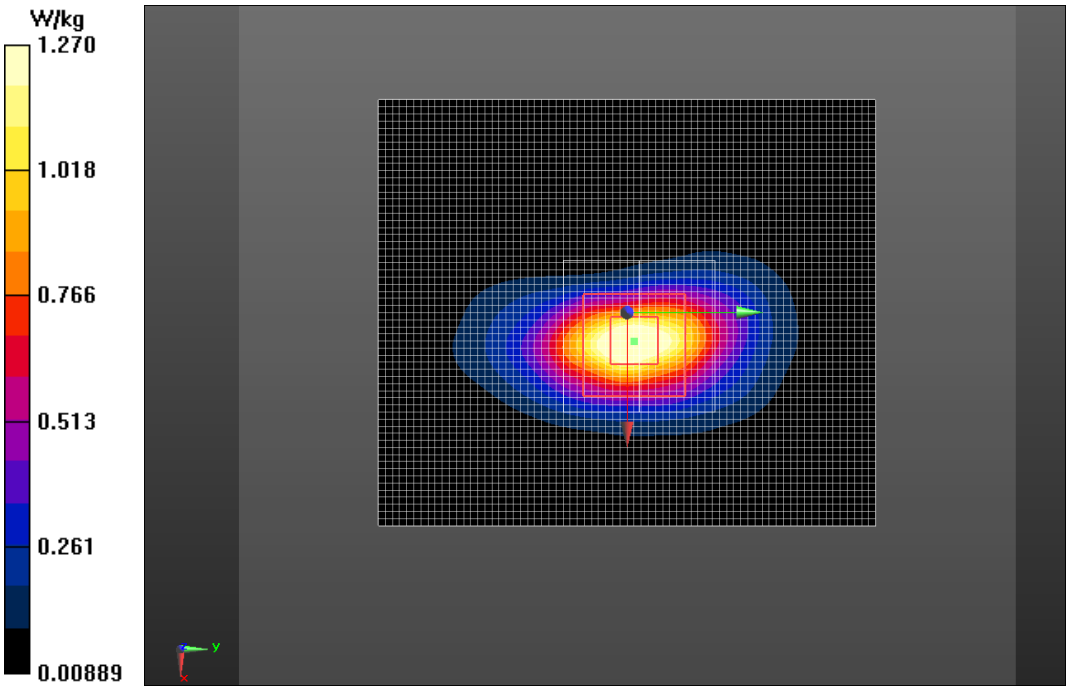
Left Cheek Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.064 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.181 W/kg
SAR(1 g) = 0.121 W/kg; SAR(10 g) = 0.076 W/kg
Maximum value of SAR (measured) = 0.131 W/kg



GSM1900 Body
Date: 2018-5-14
Electronics: DAE4 Sn786
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.532 S/m; ε_r = 53.064; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C
Communication System: UID 0, GPRS 3Txslot (0) Frequency: 1850.2 MHz Duty Cycle: 1:2.67
Probe: EX3DV4 – SN3633 ConvF (7.75, 7.75, 7.75);

Bottom Side Low /Area Scan (61x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.48 W/kg

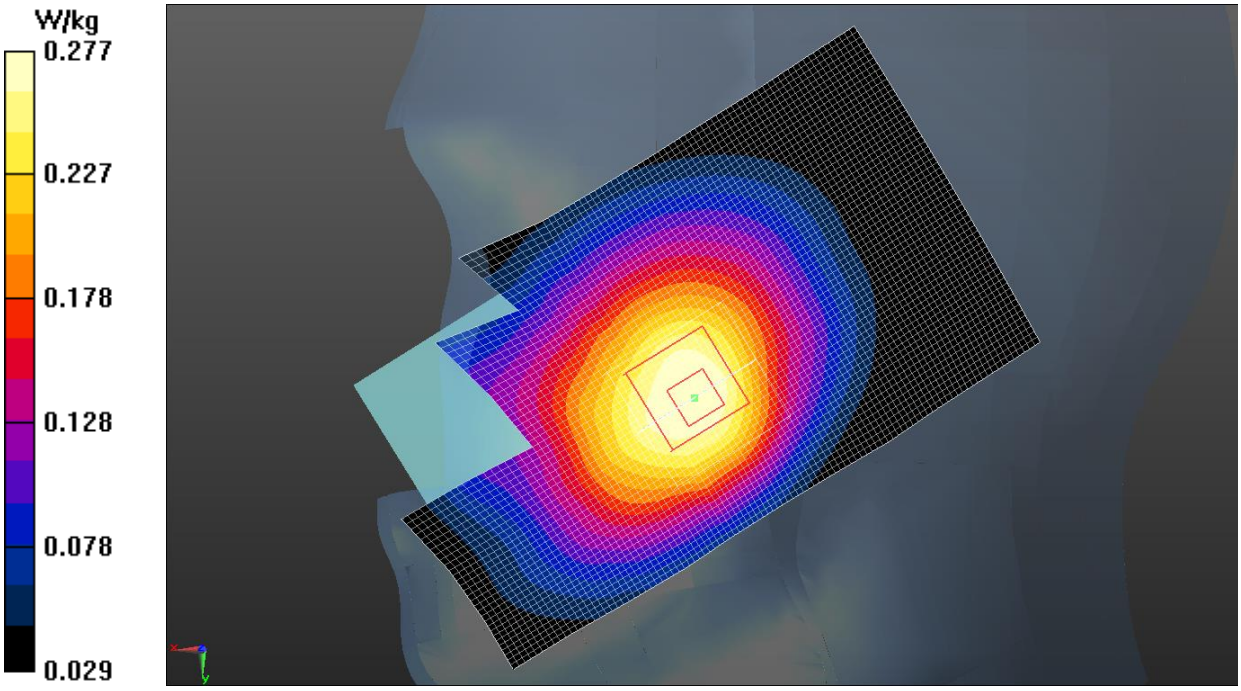
Bottom Side Low /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.28 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 2.03 W/kg
SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.562 W/kg
Maximum value of SAR (measured) = 1.27 W/kg



WCDMA850 Head
Date: 2018-5-8
Electronics: DAE4 Sn786
Medium: Head 835 MHz
Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.892 S/m; εr = 41.711; 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);

Right Cheek Mid/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.287 W/kg

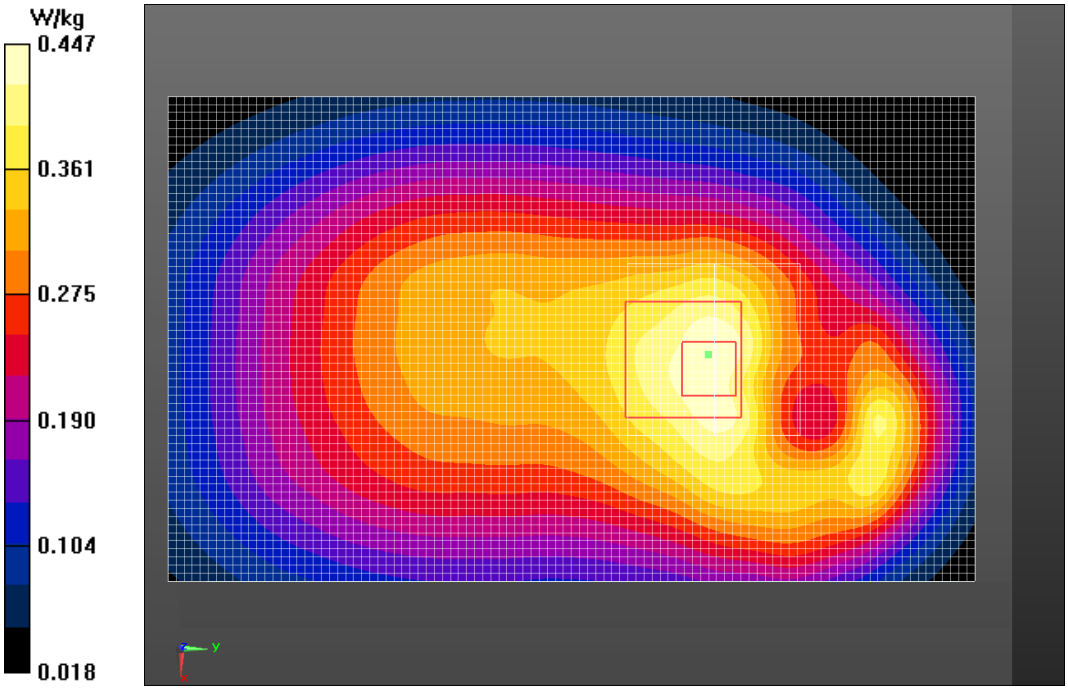
Right Cheek Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.009 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.340 W/kg
SAR(1 g) = 0.262 W/kg; SAR(10 g) = 0.197 W/kg
Maximum value of SAR (measured) = 0.277 W/kg



WCDMA850 Body
Date: 2018-5-8
Electronics: DAE4 Sn786
Medium: Body 835 MHz
Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.99 S/m; ε_r = 52.673; ρ = 1000 kg/m^3
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 (9.69, 9.69, 9.69);

Front side Mid/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.448 W/kg

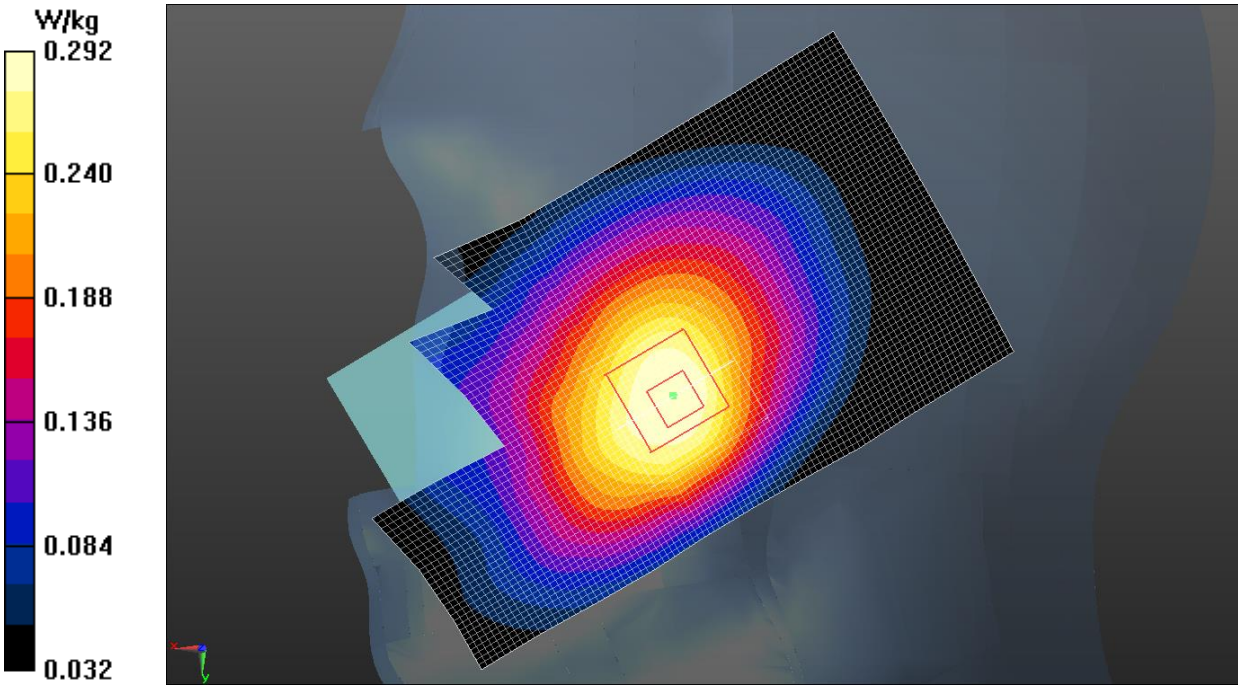
Front side Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.78 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.596 W/kg
SAR(1 g) = 0.422 W/kg; SAR(10 g) = 0.300 W/kg
Maximum value of SAR (measured) = 0.447 W/kg



LTE Band 5 Head
Date: 2018-5-8
Electronics: DAE4 Sn786
Medium: Head 835 MHz
Medium parameters used (extrapolated): f = 836.5 MHz; σ = 0.892 S/m; εr = 41.710; 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 Mid 1RB_Low/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.306 W/kg

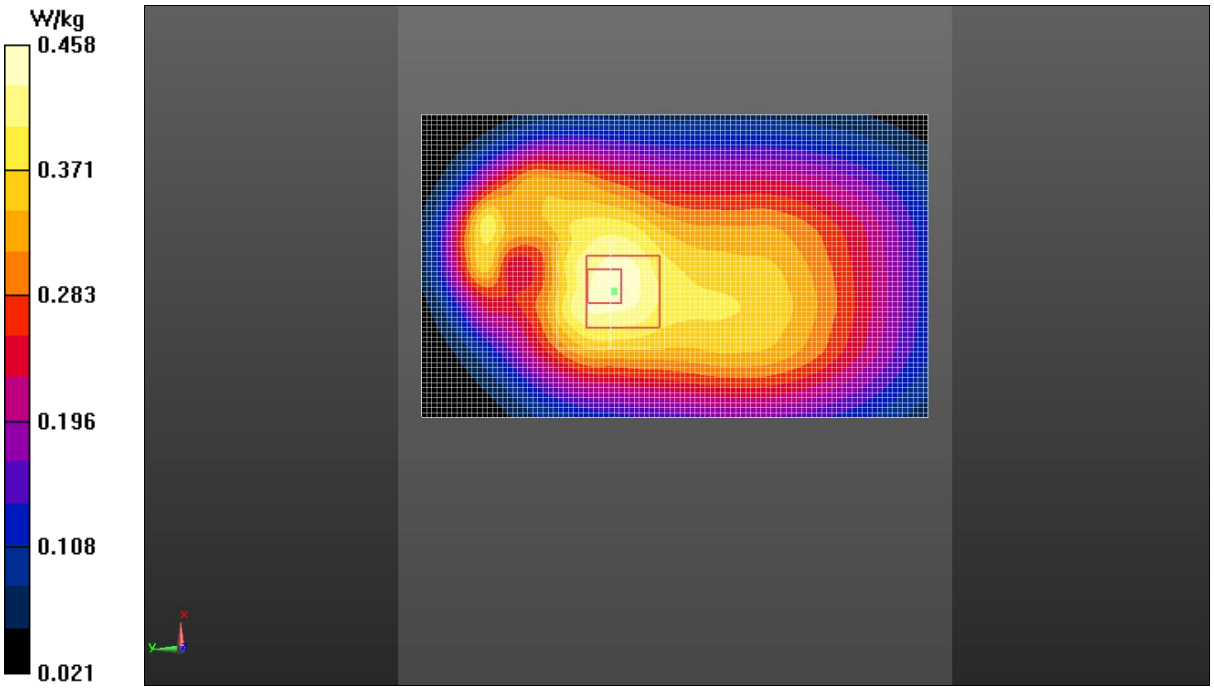
Right Cheek Mid 1RB_Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.988 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.355 W/kg
SAR(1 g) = 0.277 W/kg; SAR(10 g) = 0.208 W/kg
Maximum value of SAR (measured) = 0.292 W/kg



LTE Band 5 Body
Date: 2018-5-8
Electronics: DAE4 Sn786
Medium: Body 835 MHz
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.99 S/m; ε_r = 52.672; 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 (9.69, 9.69, 9.69);

Front side Mid 1RB_Low/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.444 W/kg

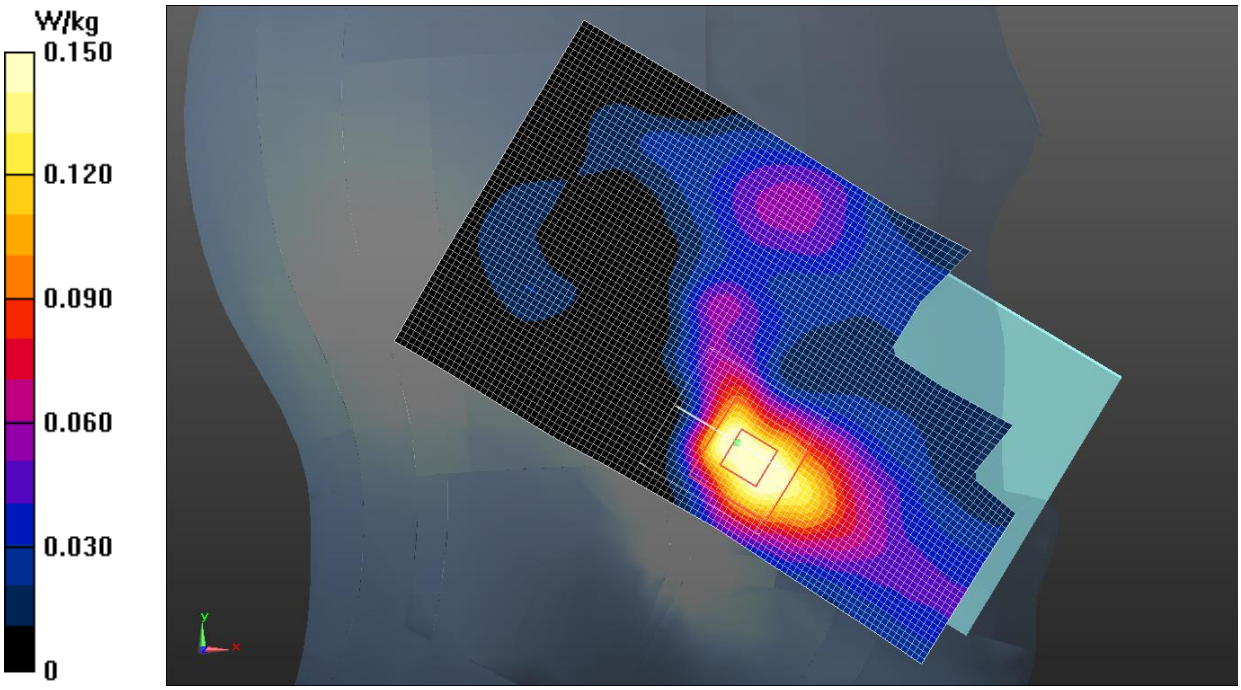
Front side Mid 1RB_Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.71 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.652 W/kg
SAR(1 g) = 0.440 W/kg; SAR(10 g) = 0.306 W/kg
Maximum value of SAR (measured) = 0.458 W/kg



LTE Band 7 Head
Date: 2018-5-5
Electronics: DAE4 Sn786
Medium: Head 2550 MHz
Medium parameters used (interpolated): f = 2535 MHz; σ = 1.953 S/m; ε_r = 38.417; 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: 2535 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3633 ConvF (7.28, 7.28, 7.28);

Left Cheek Mid 1RB_High/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.160 W/kg

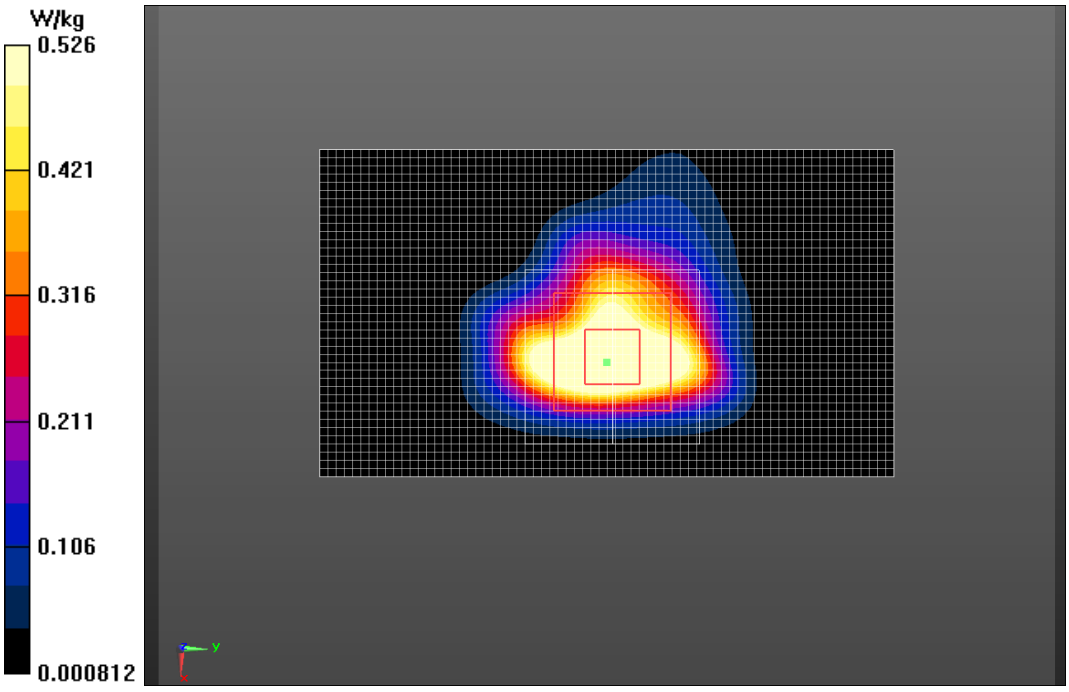
Left Cheek Mid 1RB_High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.354 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.244 W/kg
SAR(1 g) = 0.142 W/kg; SAR(10 g) = 0.078 W/kg
Maximum value of SAR (measured) = 0.150 W/kg



LTE Band 7 Body
Date: 2018-5-5
Electronics: DAE4 Sn786
Medium: Body 2550 MHz
Medium parameters used (interpolated): f = 2535 MHz; σ = 2.034 S/m; ε_r = 53.265; 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);

Bottom Side Mid 1RB_HIgh/Area Scan (41x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.03 W/kg

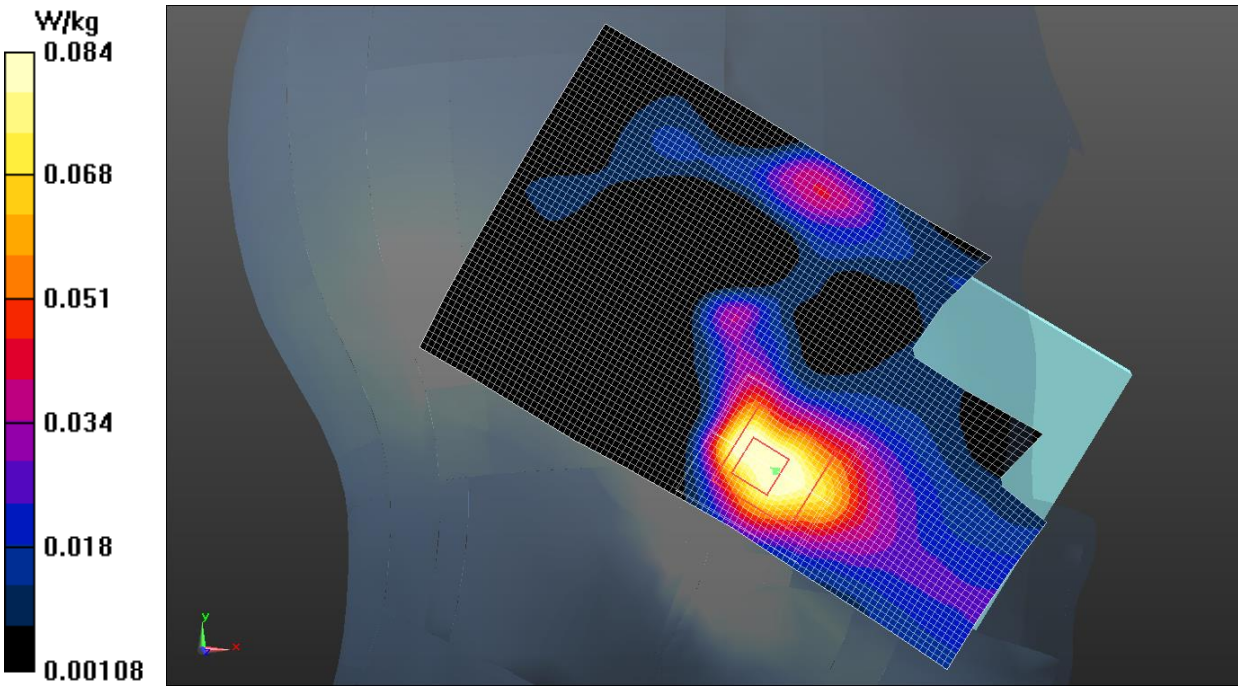
Bottom Side Mid 1RB_HIgh/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.43 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.973 W/kg
SAR(1 g) = 0.480 W/kg; SAR(10 g) = 0.244 W/kg
Maximum value of SAR (measured) = 0.526 W/kg



LTE Band 38 Head
Date: 2018-5-5
Electronics: DAE4 Sn786
Medium: Head 2550 MHz
Medium parameters used (interpolated): f = 2595 MHz; σ = 2.023 S/m; ε_r = 38.196; 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 Mid 1RB_Low/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0903 W/kg

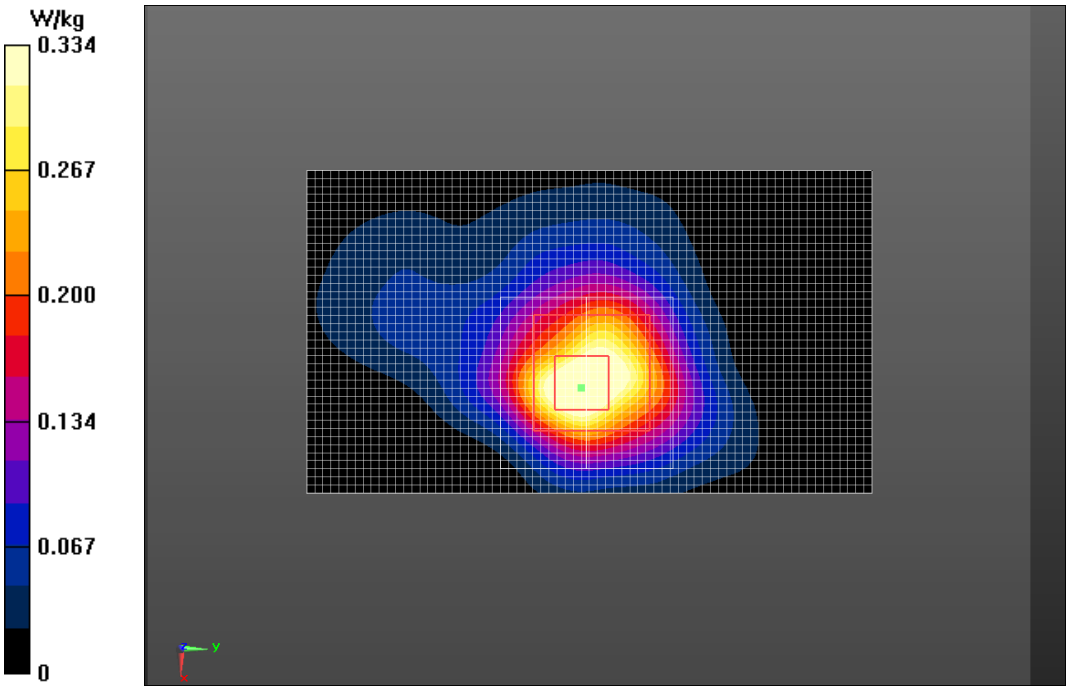
Left Cheek Mid 1RB_Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.074 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.142 W/kg
SAR(1 g) = 0.079 W/kg; SAR(10 g) = 0.043 W/kg
Maximum value of SAR (measured) = 0.0842 W/kg



LTE Band 38 Body
Date: 2018-5-5
Electronics: DAE4 Sn786
Medium: Body 2550 MHz
Medium parameters used (interpolated): f = 2595 MHz; σ = 2.105 S/m; εr = 53.073; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.5°C
Communication System: UID 0, LTE_FDD (0) Frequency: 2595 MHz Duty Cycle: 1:1.58
Probe: EX3DV4 – SN3633 ConvF (7.31, 7.31, 7.31);

Bottom Side Mid 1RB_Low/Area Scan (41x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.399 W/kg

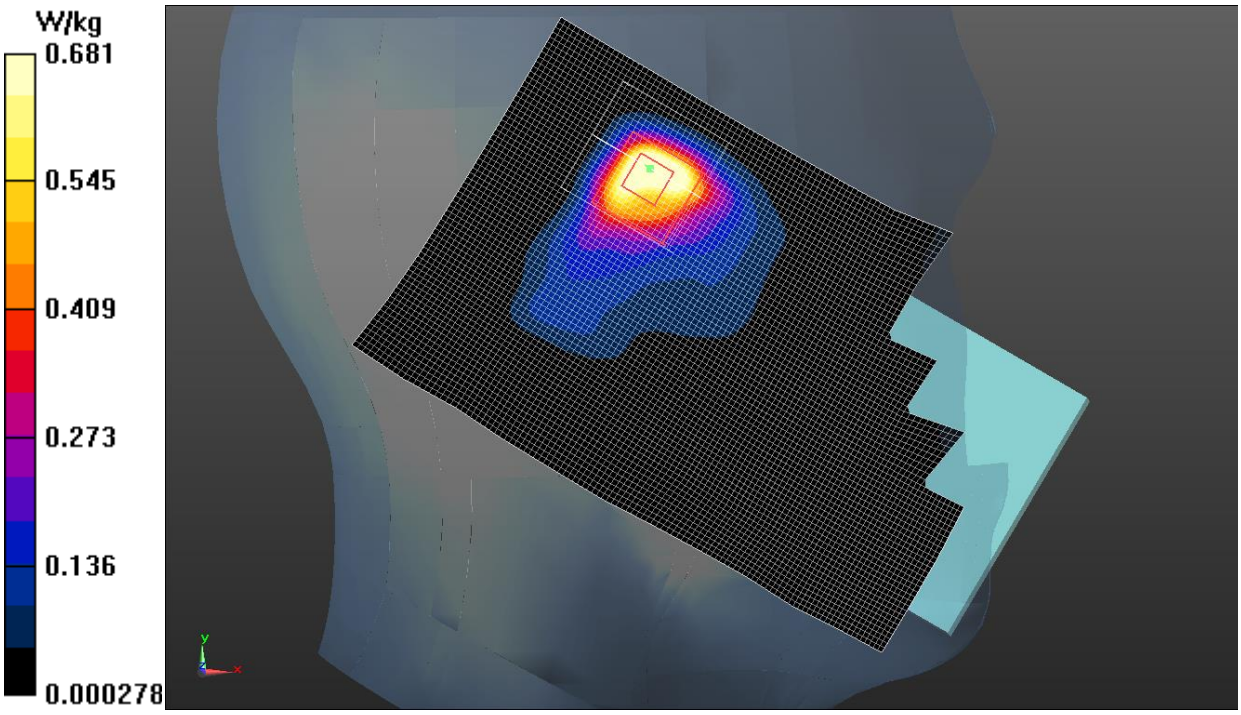
Bottom Side Mid 1RB_Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.87 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.623 W/kg
SAR(1 g) = 0.296 W/kg; SAR(10 g) = 0.143 W/kg
Maximum value of SAR (measured) = 0.334 W/kg



Wi-Fi 2.4G Head
Date: 2018-5-16
Electronics: DAE4 Sn786
Medium: Head 2450 MHz
Medium parameters used: f = 2462 MHz; σ = 1.856 S/m; ε_r = 38.701; 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);

Left Cheek High/Area Scan (71x111x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.963 W/kg

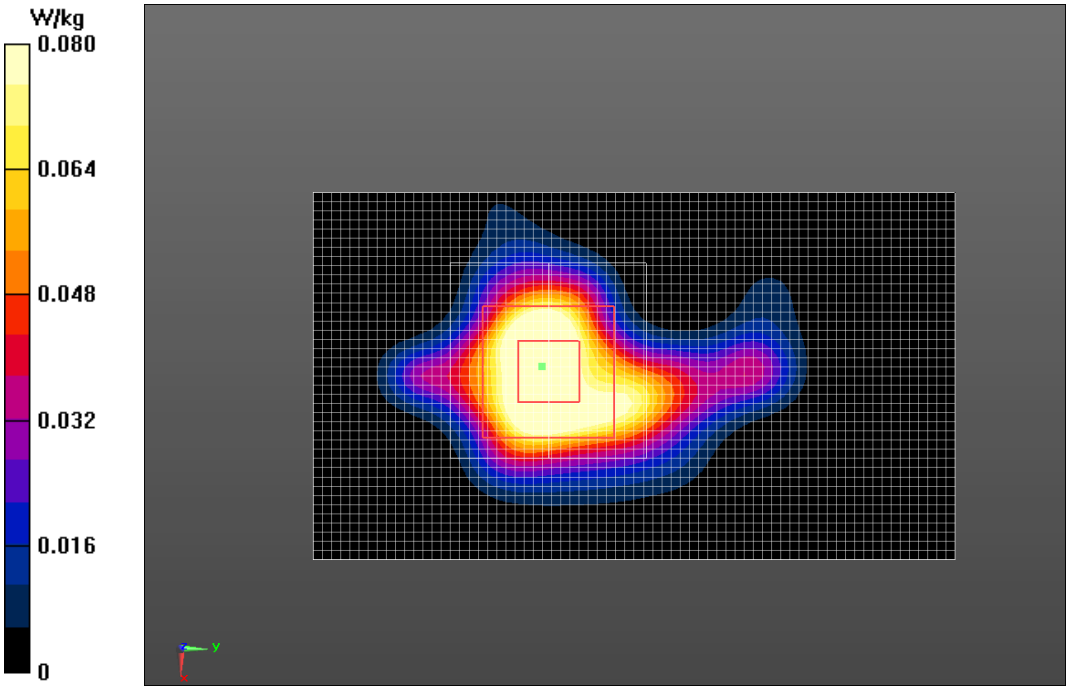
Left Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.535 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 1.78 W/kg
SAR(1 g) = 0.625 W/kg; SAR(10 g) = 0.261 W/kg
Maximum value of SAR (measured) = 0.681 W/kg



Wi-Fi 2.4G Body
Date: 2018-5-16
Electronics: DAE4 Sn786
Medium: Body 2450 MHz
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.911 S/m; ε_r = 53.568; 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);

Top Side Middle/Area Scan (41x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.130 W/kg

Top Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.943 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.118 W/kg
SAR(1 g) = 0.072 W/kg; SAR(10 g) = 0.039 W/kg
Maximum value of SAR (measured) = 0.0796 W/kg



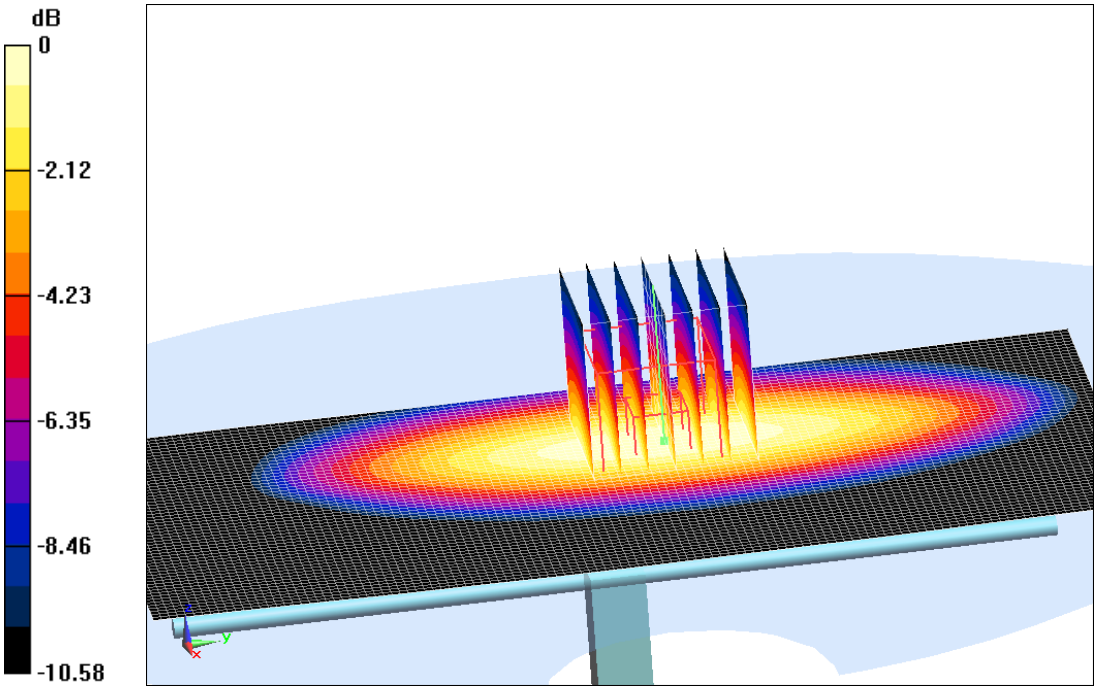
ANNEX L SystemVerification Results for Spot Check Test

835MHz

Date: 2018-5-8
Electronics: DAE4 Sn786
Medium: Head 835 MHz
Medium parameters used: f = 835 MHz; σ =0.890 S/m; εr = 41.722; 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 = 55.864 V/m; Power Drift = -0.05 dB
SAR(1 g) = 2.28 W/kg; SAR(10 g) = 1.50 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 = 55.864 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 3.36 W/kg
SAR(1 g) = 2.24 W/kg; SAR(10 g) = 1.48 W/kg
Maximum value of SAR (measured) = 2.51 W/kg



0 dB = 2.51 W/kg = 4.00 dBW/kg

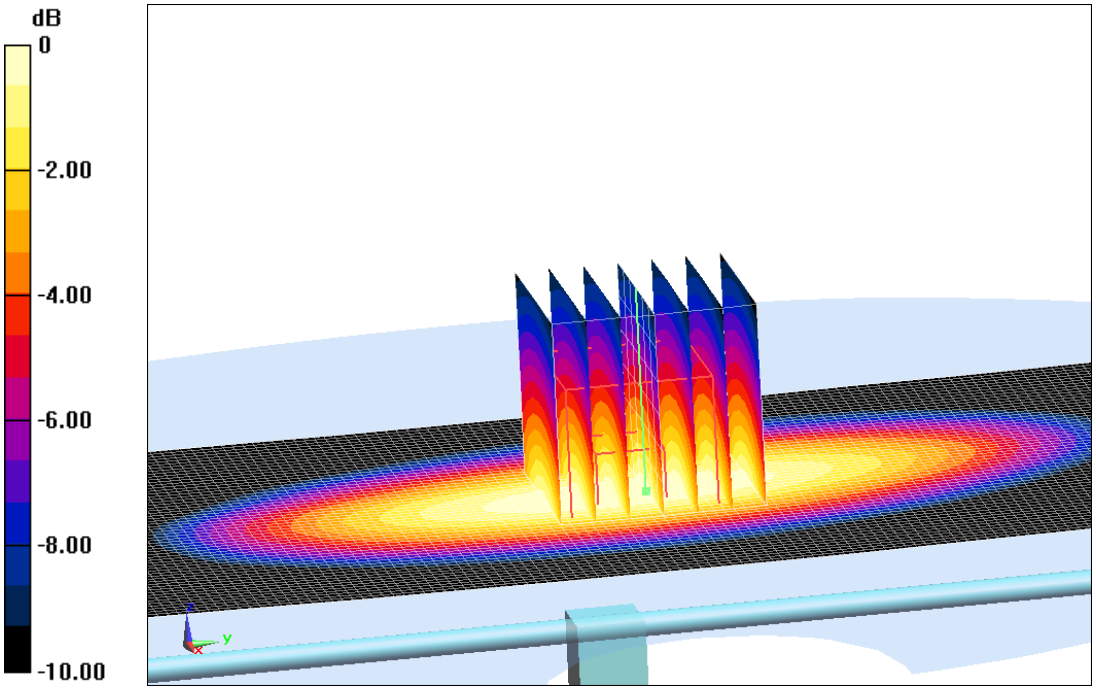
Validation 835MHz 250mW

835MHz

Date: 2018-5-8
Electronics: DAE4 Sn786
Medium: Body 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.988 S/m; ε_r = 53.689; 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 (9.69, 9.69, 9.69);

System Validation /Area Scan (81x171x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 58.723 V/m; Power Drift = 0.07 dB
SAR(1 g) = 2.42 W/kg; SAR(10 g) = 1.57 W/kg
Maximum value of SAR (interpolated) = 2.60 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 58.723 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 3.75 W/kg
SAR(1 g) = 2.46 W/kg; SAR(10 g) = 1.59 W/kg
Maximum value of SAR (measured) = 2.68 W/kg



0 dB = 2.68 W/kg = 4.28 dBW/kg

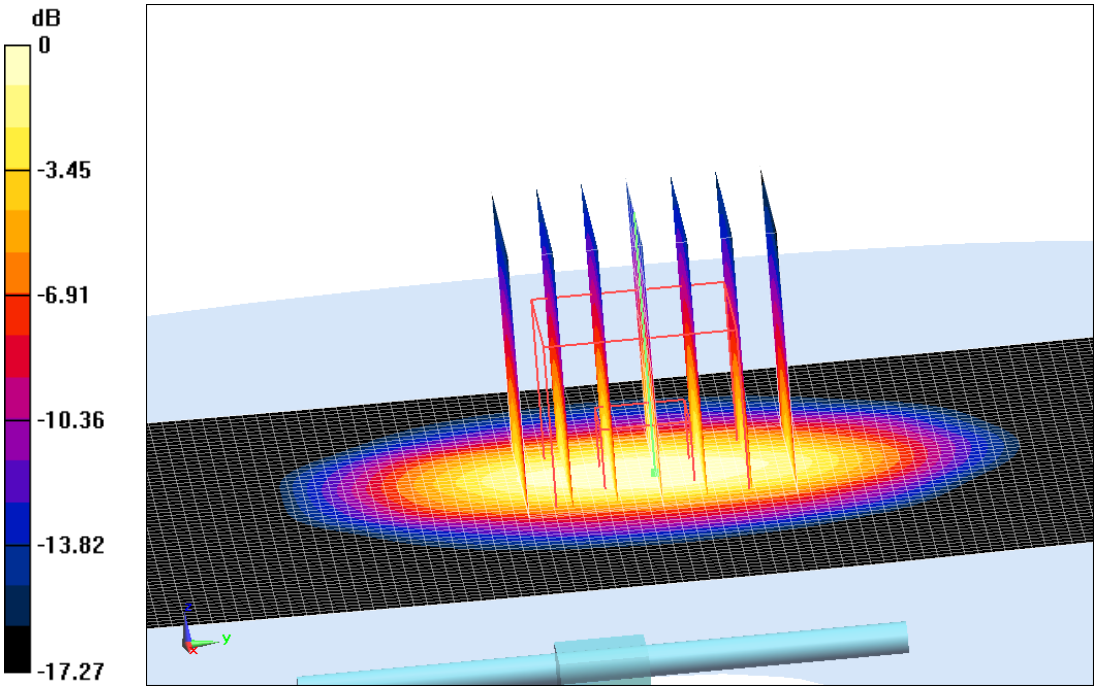
Validation 835MHz 250mW

1900MHz

Date: 2018-5-2
Electronics: DAE4 Sn786
Medium: Head 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.419 S/m; ε_r = 39.61; 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 = 92.967 V/m; Power Drift = 0.06 dB
SAR(1 g) = 10.3 W/kg; SAR(10 g) = 5.28 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 = 92.967 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 20.2 W/kg
SAR(1 g) = 10.5 W/kg; SAR(10 g) = 5.33 W/kg
Maximum value of SAR (measured) = 13.6 W/kg



0 dB = 13.6 W/kg = 11.34 dB W/kg

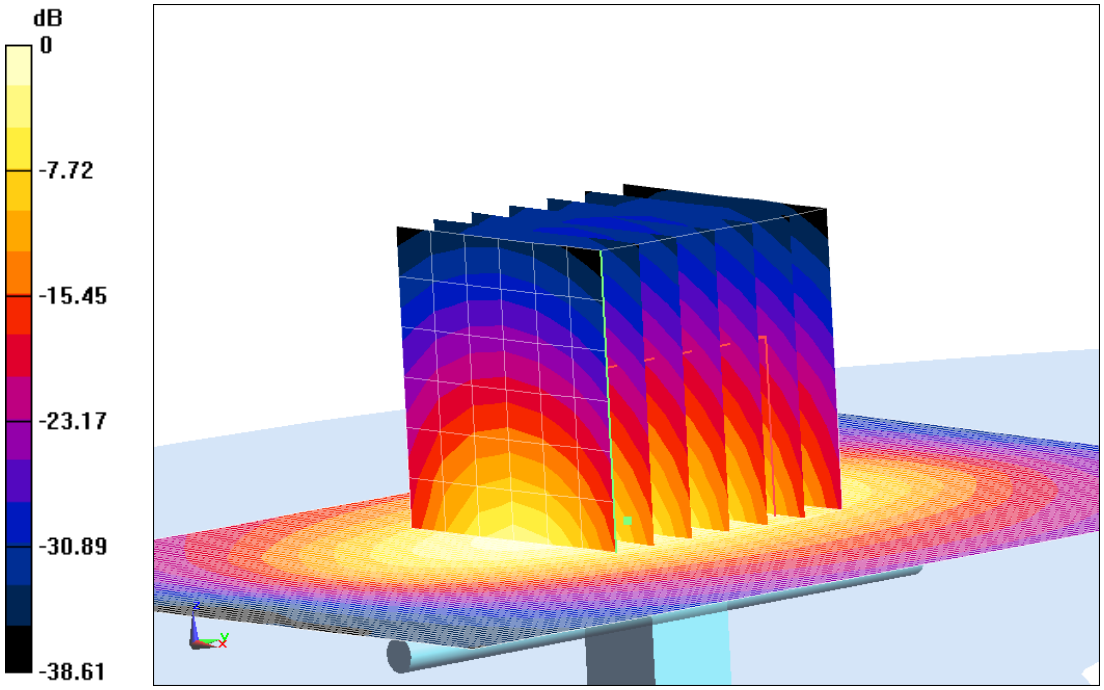
Validation 1900MHz 250mW

1900MHz

Date: 2018-5-14
Electronics: DAE4 Sn786
Medium: Body 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.574 S/m; ε_r = 52.948; 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 = 85.862 V/m; Power Drift = 0.11 dB
SAR(1 g) = 10.5 W/kg; SAR(10 g) = 5.44 W/kg
Maximum value of SAR (interpolated) = 13.5 W/kg

System validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 85.862 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 20.7 W/kg
SAR(1 g) = 10.7 W/kg; SAR(10 g) = 5.48 W/kg
Maximum value of SAR (measured) = 13.9 W/kg



0 dB = 13.9 W/kg = 11.43 dB W/kg

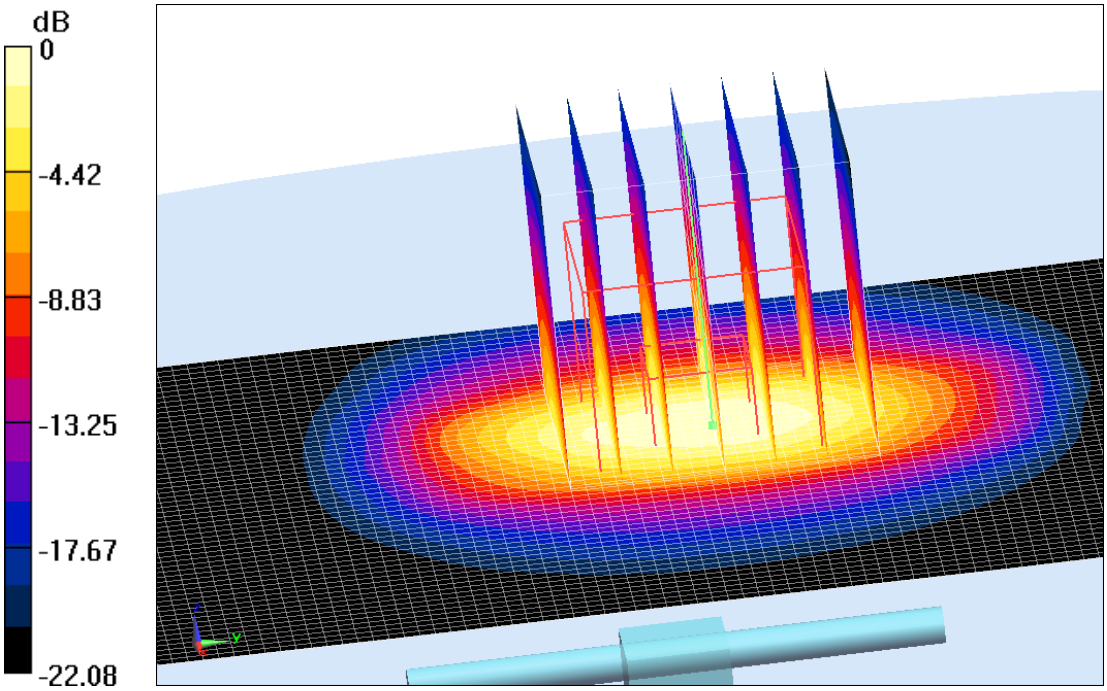
Validation 1900MHz 250mW

2450MHz

Date: 2018-5-16
Electronics: DAE4 Sn786
Medium: Head 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.842 S/m; ε_r = 38.743; 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 = 90.544 V/m; Power Drift = 0.08 dB
SAR(1 g) = 13.5 W/kg; SAR(10 g) = 6.13 W/kg
Maximum value of SAR (interpolated) = 15.2 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 90.544 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 25.5 W/kg
SAR(1 g) = 13.6 W/kg; SAR(10 g) = 6.18 W/kg
Maximum value of SAR (measured) = 15.6 W/kg



0 dB = 15.6 W/kg = 11.93 dB W/kg

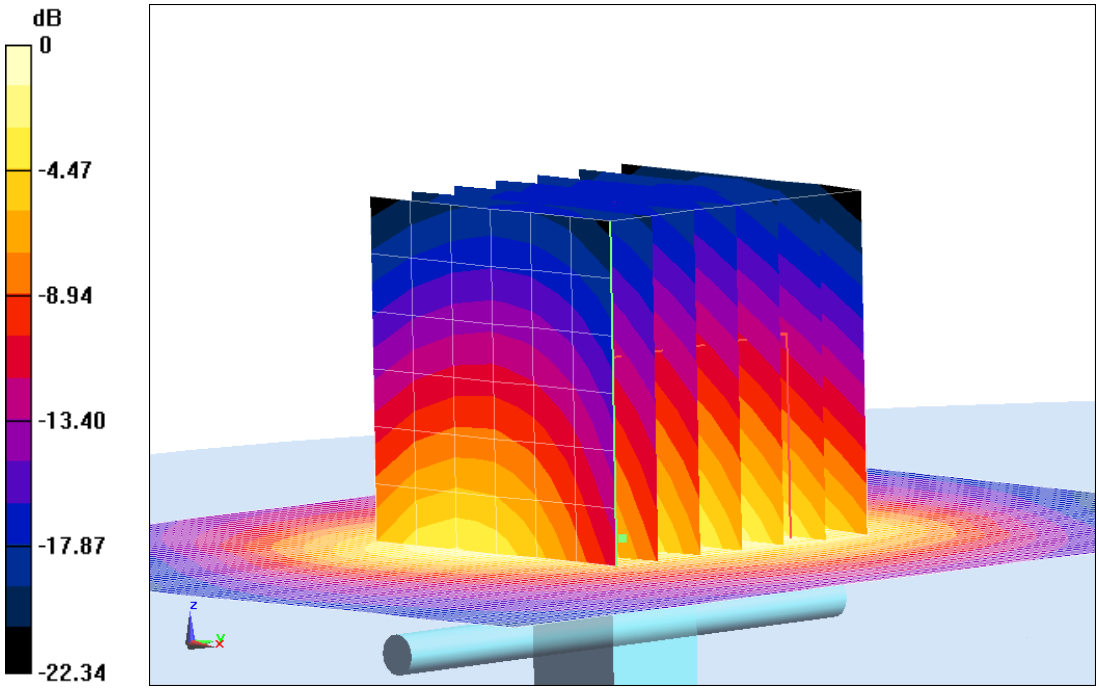
Validation 2450MHz 250mW

2450MHz

Date: 2018-5-16
Electronics: DAE4 Sn786
Medium: Body 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.928 S/m; ε_r = 53.526; 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 = 86.785 V/m; Power Drift = -0.02 dB
SAR(1 g) = 12.9 W/kg; SAR(10 g) = 6.07 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 = 86.785 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 23.9 W/kg
SAR(1 g) = 12.7 W/kg; SAR(10 g) = 6.02 W/kg
Maximum value of SAR (measured) = 14.4 W/kg



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

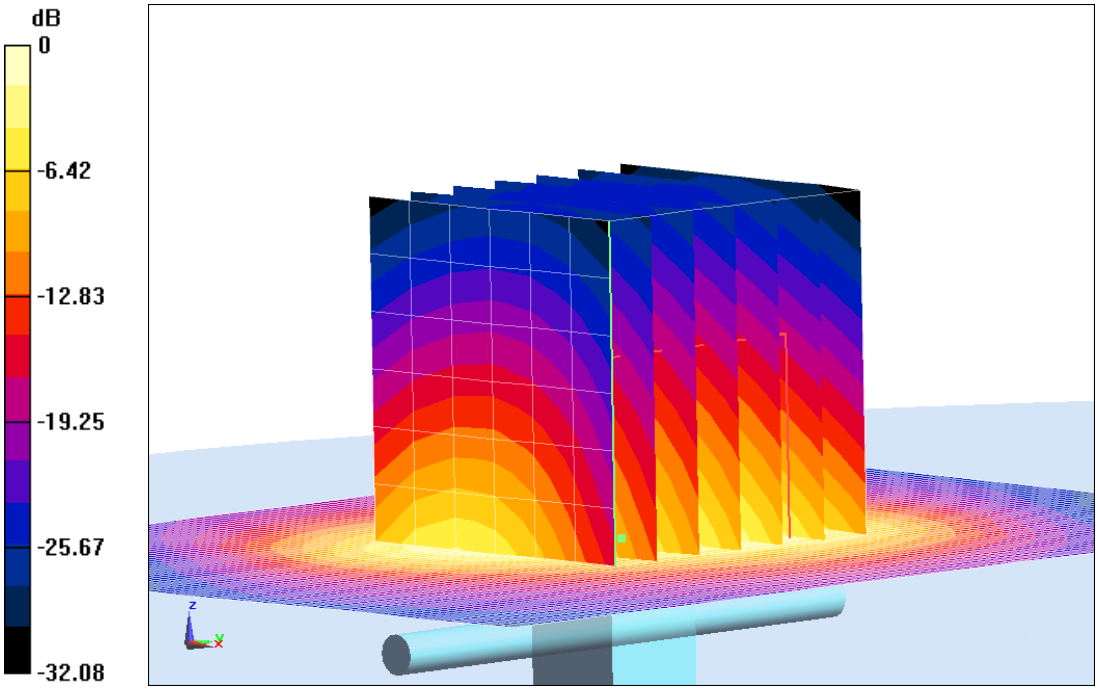
Validation 2450MHz 250mW

2550MHz

Date: 2018-5-5
Electronics: DAE4 Sn786
Medium: Head 2550 MHz
Medium parameters used: f = 2550 MHz; σ = 1.971 S/m; ε_r = 38.36; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.6°C
Communication System: CW Frequency: 2550 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 = 93.242 V/m; Power Drift = 0.02 dB
SAR(1 g) = 14.4 W/kg; SAR(10 g) = 6.55 W/kg
Maximum value of SAR (interpolated) = 16.1 W/kg

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.242 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 28.8 W/kg
SAR(1 g) = 14.5 W/kg; SAR(10 g) = 6.58 W/kg
Maximum value of SAR (measured) = 16.6 W/kg



0 dB = 16.6 W/kg = 12.20 dB W/kg

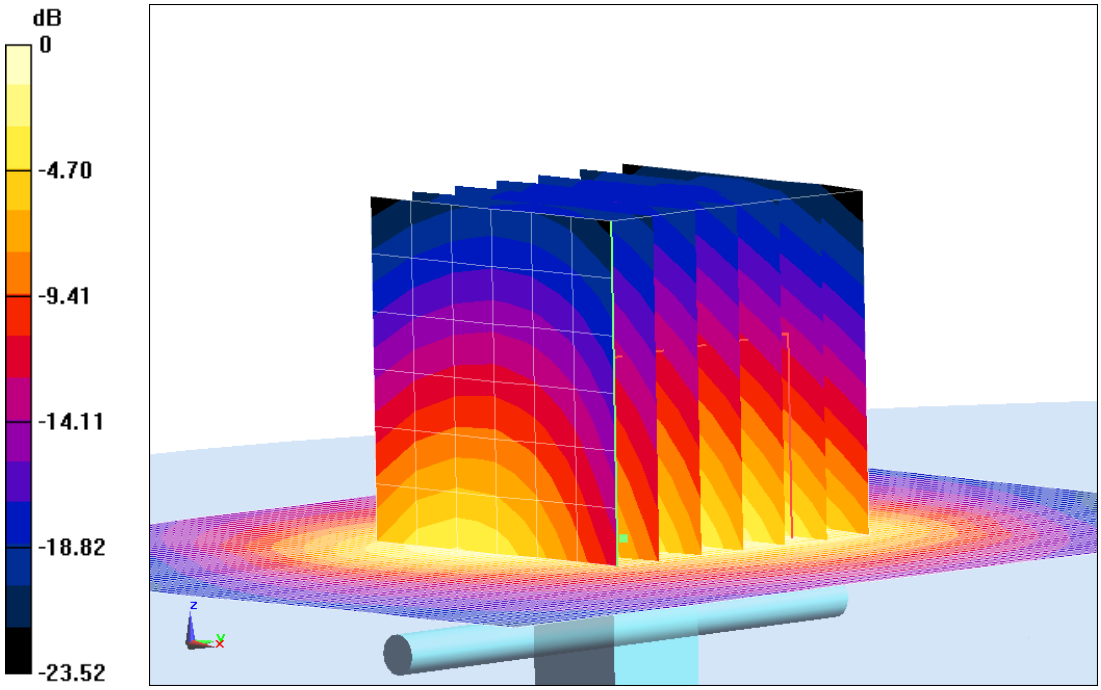
Validation 2550MHz 250mW

2550MHz

Date: 2018-5-5
Electronics: DAE4 Sn786
Medium: Body 2550 MHz
Medium parameters used: f = 2550 MHz; σ = 2.052 S/m; ε_r = 53.214; ρ = 1000 kg/m^3
Ambient Temperature: 22.0°C Liquid Temperature: 21.6°C
Communication System: CW Frequency: 2550 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 = 86.296 V/m; Power Drift = -0.08 dB
SAR(1 g) = 13.3 W/kg; SAR(10 g) = 6.25 W/kg
Maximum value of SAR (interpolated) = 15.0 W/kg

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 86.296 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 26.0 W/kg
SAR(1 g) = 13.2 W/kg; SAR(10 g) = 6.20 W/kg
Maximum value of SAR (measured) = 14.8 W/kg



0 dB = 14.8 W/kg = 11.70 dB W/kg

Validation 2550MHz 250mW