

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; $\sigma = 5.45$ S/m; $\epsilon_r = 47.5$; $\rho = 1000$ kg/m³

Medium parameters used: $f = 5300$ MHz; $\sigma = 5.59$ S/m; $\epsilon_r = 47.3$; $\rho = 1000$ kg/m³

Medium parameters used: $f = 5500$ MHz; $\sigma = 5.86$ S/m; $\epsilon_r = 47.0$; $\rho = 1000$ kg/m³

Medium parameters used: $f = 5600$ MHz; $\sigma = 6.00$ S/m; $\epsilon_r = 46.8$; $\rho = 1000$ kg/m³

Medium parameters used: $f = 5800$ MHz; $\sigma = 6.29$ S/m; $\epsilon_r = 46.4$; $\rho = 1000$ kg/m³

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

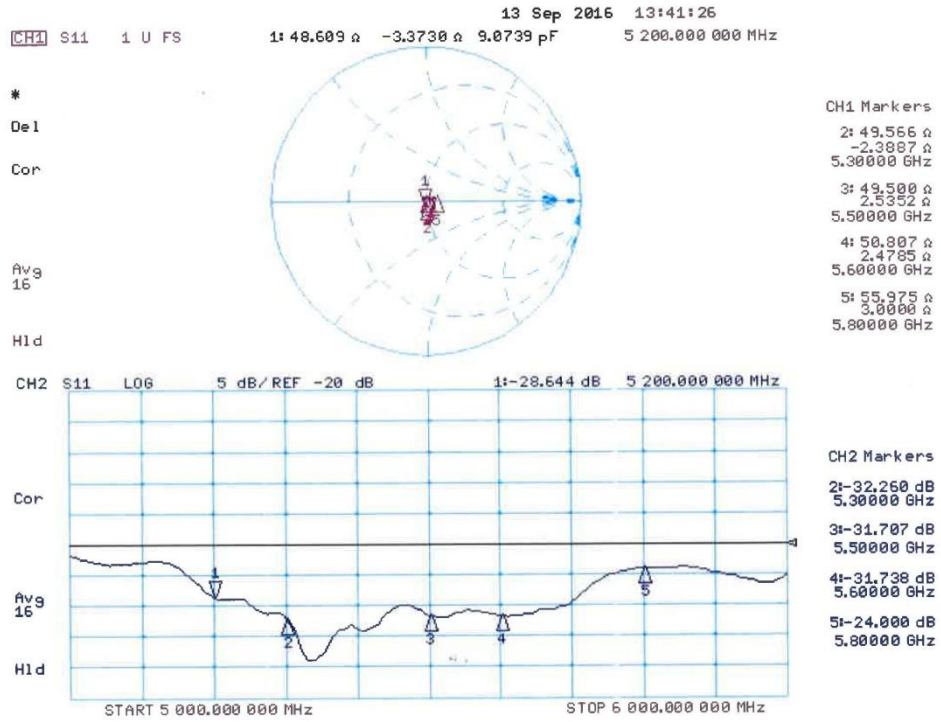
Maximum value of SAR (measured) = 19.2 W/kg

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



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)
2016-09-19	-26.8	/	54.5	/	-1.8	/
2017-09-17	-25.4	5.2	53.2	1.3	-2.5	-0.7
2018-09-15	-24.9	7.6	52.7	1.8	-2.8	-1.0

Body						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2016-09-19	-29.0	/	49.8	/	-3.5	/
2017-09-17	-25.2	13.1	46.9	2.9	-2.8	0.7
2018-09-15	-24.4	15.9	45.5	4.3	-3.0	0.5

Justification of Extended Calibration SAR Dipole D1750V2– serial no.1152

Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2016-09-09	-42.9	/	50.5	/	-0.5	/
2017-09-08	-40.6	5.4	48.8	1.7	-0.4	0.1
2018-09-06	-38.7	9.8	46.5	4.0	-0.3	0.2

Body						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2016-09-09	-27.6	/	46.3	/	-1.6	/
2017-09-08	-25.8	6.5	45.4	0.9	-1.4	0.2
2018-09-06	-24.6	10.9	44.7	1.6	-1.2	0.4

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)
2016-09-21	5200MHz	-23.6	/	47.1	/	5.80	/
2017-09-20		-21.7	8.1	48.3	1.2	3.38	2.42
2018-09-18		-21.2	10.2	48.7	1.6	3.25	2.55
2016-09-21	5300MHz	-29.8	/	50.5	/	3.20	/
2017-09-20		-27.8	6.7	51.9	1.4	4.51	1.31
2018-09-18		-26.2	12.1	53.3	2.8	4.82	1.62
2016-09-21	5500MHz	-31.2	/	49.0	/	2.50	/
2017-09-20		-29.5	5.4	50.3	1.3	1.24	1.26
2018-09-18		-28.1	9.9	51.4	2.4	1.55	0.95
2016-09-21	5600MHz	-44.1	/	50.0	/	0.60	/
2017-09-20		-42.6	3.4	51.5	1.5	2.55	1.95
2018-09-18		-40.5	8.2	53.3	3.3	3.01	2.41
2016-09-21	5800MHz	-25.1	/	55.6	/	1.90	/
2017-09-20		-23.8	5.2	56.9	1.3	3.04	1.14
2018-09-18		-22.7	9.6	57.3	1.7	2.88	0.98

Body							
Date of Measurement	Frequency	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2016-09-21	5200MHz	-28.6	/	48.6	/	3.40	/
2017-09-20		-26.4	7.7	50.0	1.4	3.72	0.32
2018-09-18		-24.6	14.0	51.2	2.6	3.85	0.45
2016-09-21	5300MHz	-32.3	/	49.6	/	2.40	/
2017-09-20		-30.5	5.6	51.3	1.7	3.64	1.24
2018-09-18		-28.9	10.5	52.6	3.0	3.77	1.37
2016-09-21	5500MHz	-31.7	/	49.5	/	2.50	/
2017-09-20		-29.8	6.0	51.4	1.9	4.25	1.75
2018-09-18		-27.5	13.2	52.8	3.3	4.44	1.94
2016-09-21	5600MHz	-31.7	/	50.8	/	2.50	/
2017-09-20		-29.5	6.9	52.3	1.5	2.91	0.41
2018-09-18		-28.6	9.8	52.9	2.1	3.03	0.53
2016-09-21	5800MHz	-24.0	/	56.0	/	3.00	/
2017-09-20		-22.8	5.0	57.3	1.3	4.23	1.23
2018-09-18		-21.5	10.4	57.8	1.6	4.46	1.46

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.

SAR Values (WLAN 2.4G - Head)

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.								
Ambient Temperature: 22.6°C Liquid Temperature: 22.0°C									
<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.

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.

SAR Values (WLAN 2.4G - Body)

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.								
Ambient Temperature: 22.6°C Liquid Temperature: 22.0°C									
<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.

SAR Values (WLAN - Body) – 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.					
Ambient Temperature: 22.6°C Liquid Temperature: 22.0°C						
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

SAR Values (WLAN 5G - Head)

<Main antenna>

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.								
Ambient Temperature: 22.5°C Liquid Temperature: 22.0°C									
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 ≤ 1.2 W/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>

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.								
Ambient Temperature: 22.5°C Liquid Temperature: 22.0°C									
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 ≤ 1.2 W/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>

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.								
Ambient Temperature: 22.5°C Liquid Temperature: 22.0°C									
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 ≤ 1.2 W/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.

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

SAR Values (WLAN 5G - Body)

<Main antenna>

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.								
Ambient Temperature: 22.5°C Liquid Temperature: 22.0°C									
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 ≤ 1.2 W/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 ≤ 1.2 W/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 ≤ 1.2 W/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.

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; $\sigma = 0.878$ S/m; $\epsilon_r = 41.908$; $\rho = 1000$ kg/m³

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

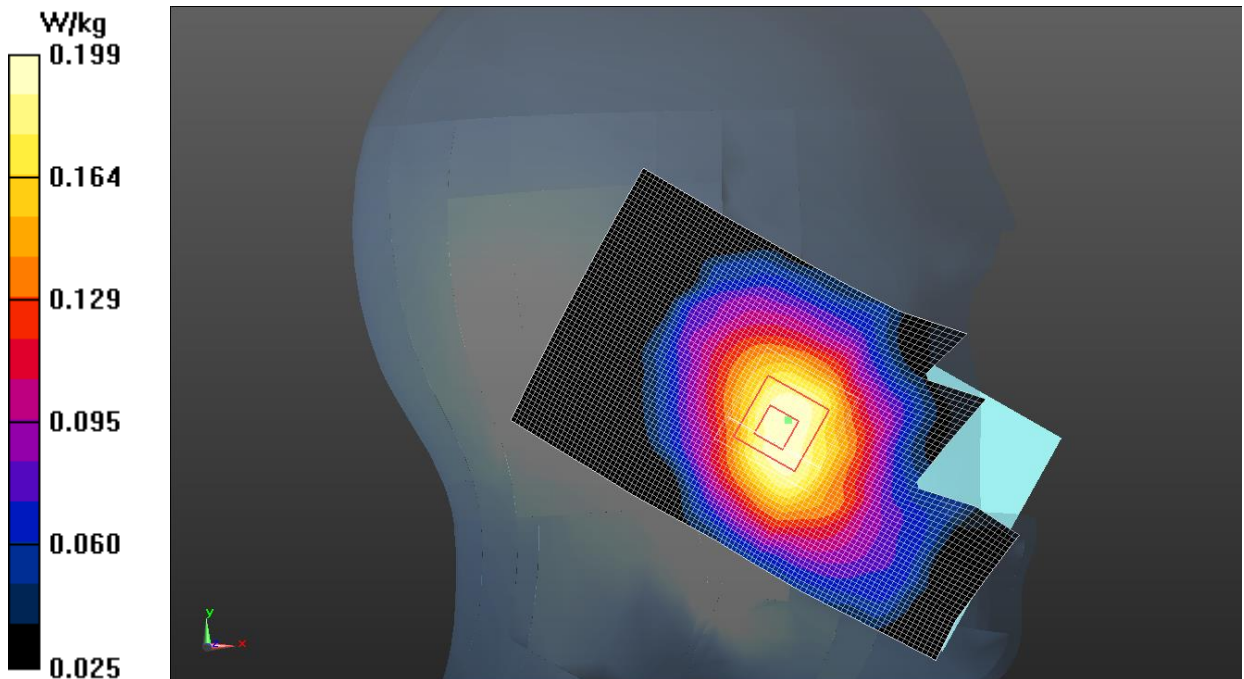
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; $\sigma = 0.978$ S/m; $\epsilon_r = 54.022$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°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

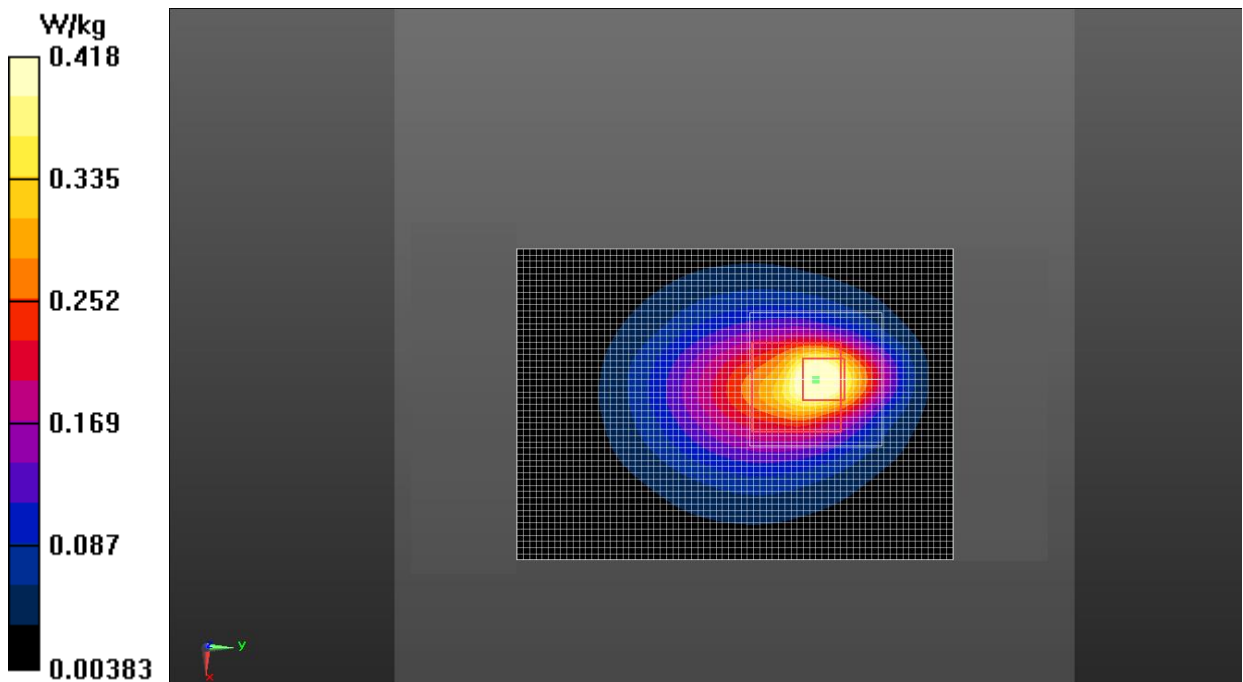
Bottom Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; $\sigma = 1.389$ S/m; $\epsilon_r = 39.203$; $\rho = 1000$ kg/m³

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);

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

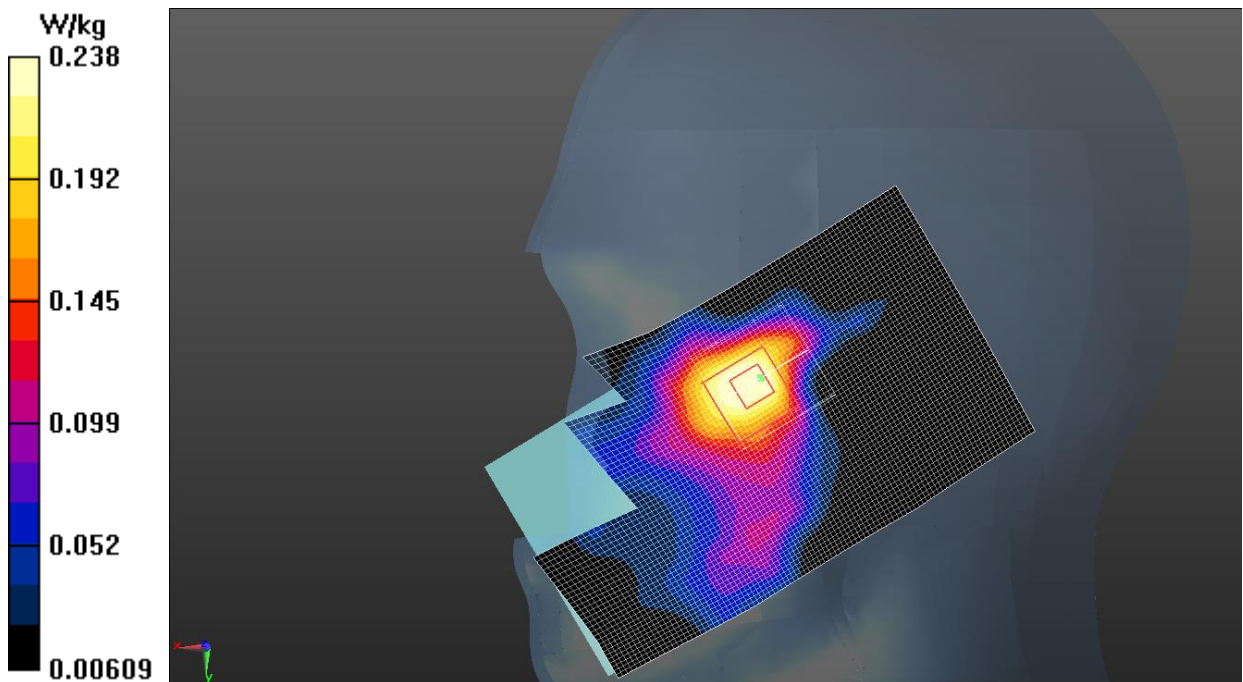
Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; $\sigma = 1.531$ S/m; $\epsilon_r = 52.601$; $\rho = 1000$ kg/m³

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

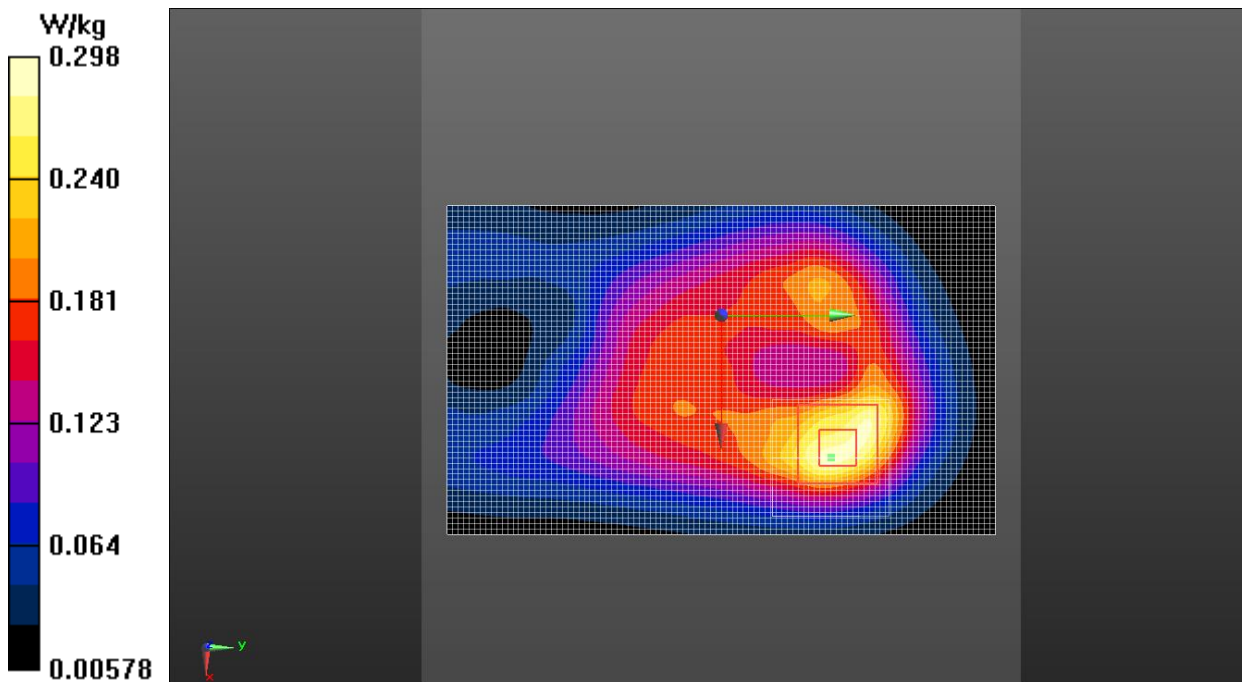
Front Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; $\sigma = 0.878$ S/m; $\epsilon_r = 41.91$; $\rho = 1000$ 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

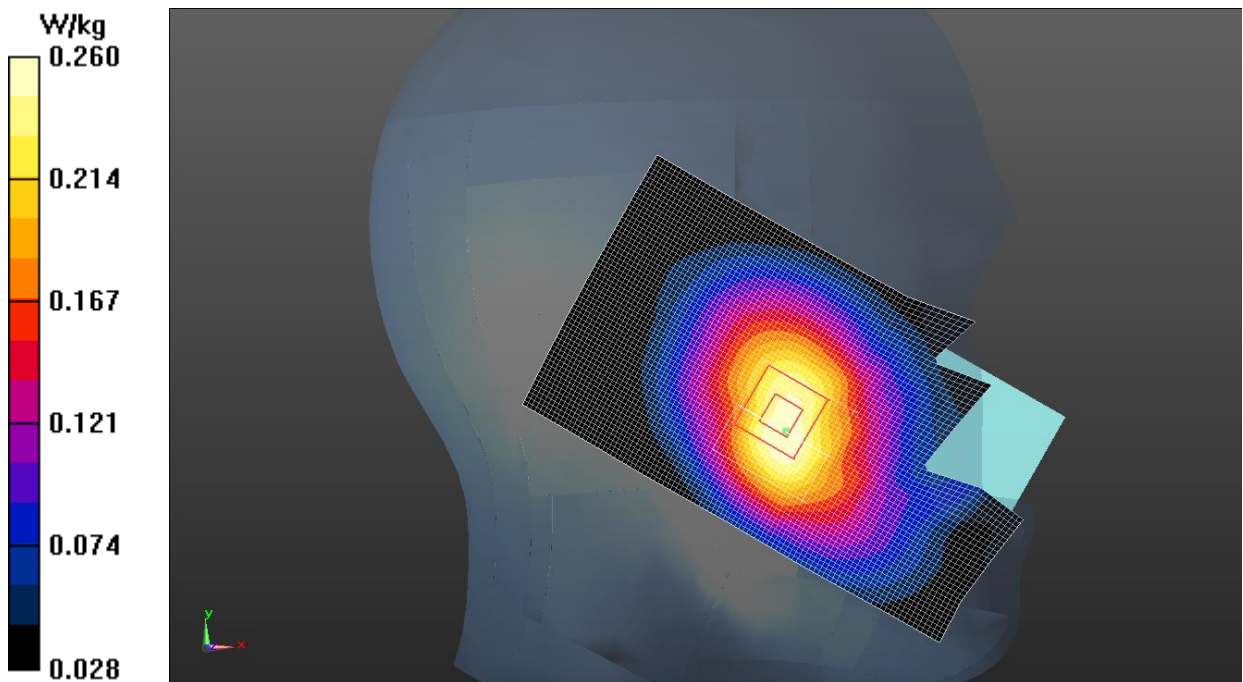
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; $\sigma = 0.978$ S/m; $\epsilon_r = 54.025$; $\rho = 1000$ 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 (9.69, 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

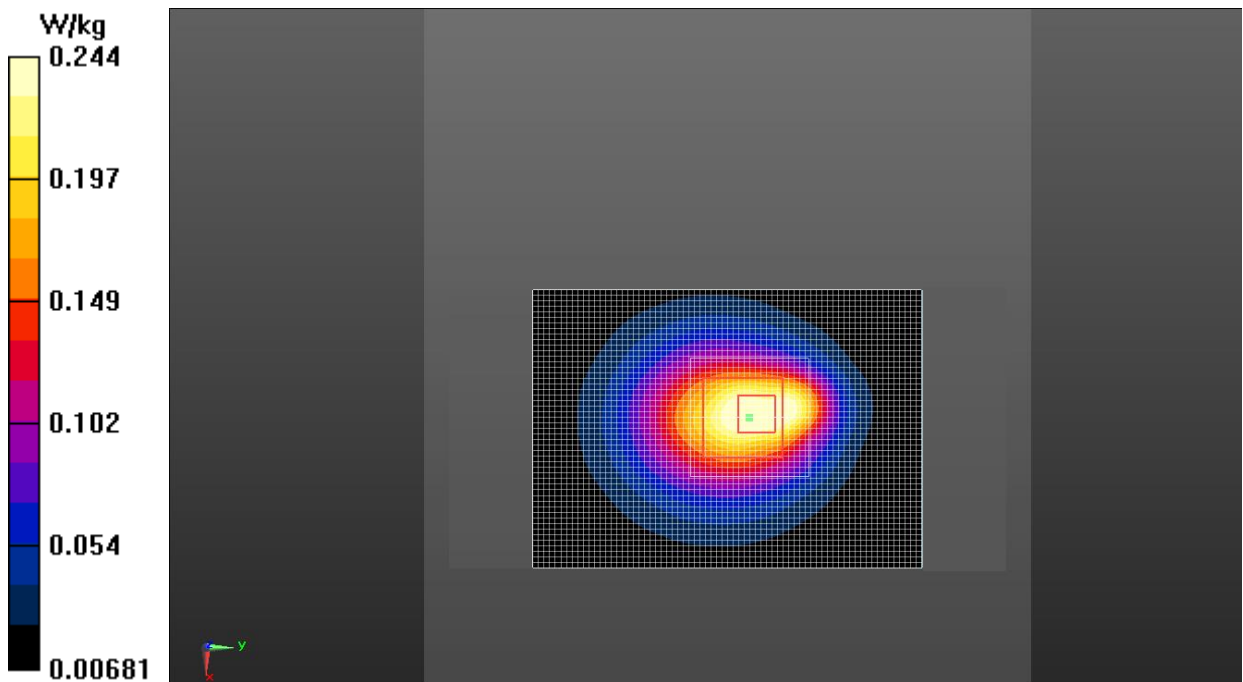
Bottom Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; $\sigma = 1.389$ S/m; $\epsilon_r = 39.203$; $\rho = 1000$ kg/m³

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 (7.81, 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

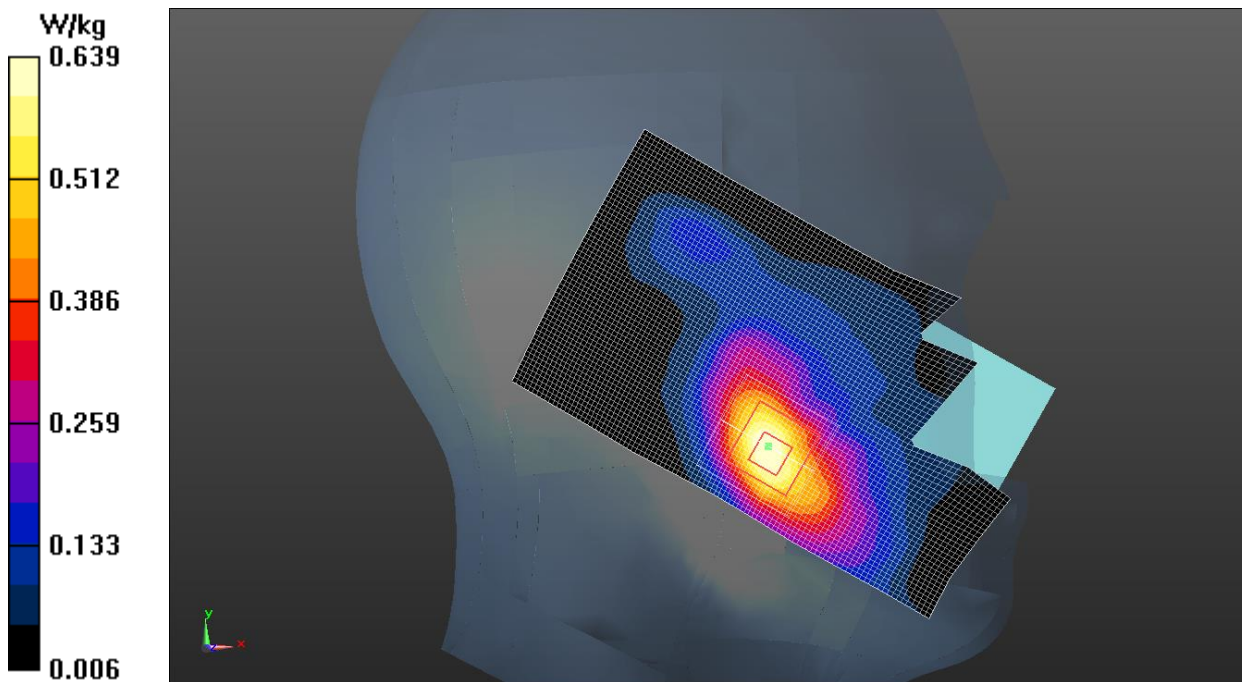
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; $\sigma = 1.531$ S/m; $\epsilon_r = 52.601$; $\rho = 1000$ kg/m³

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

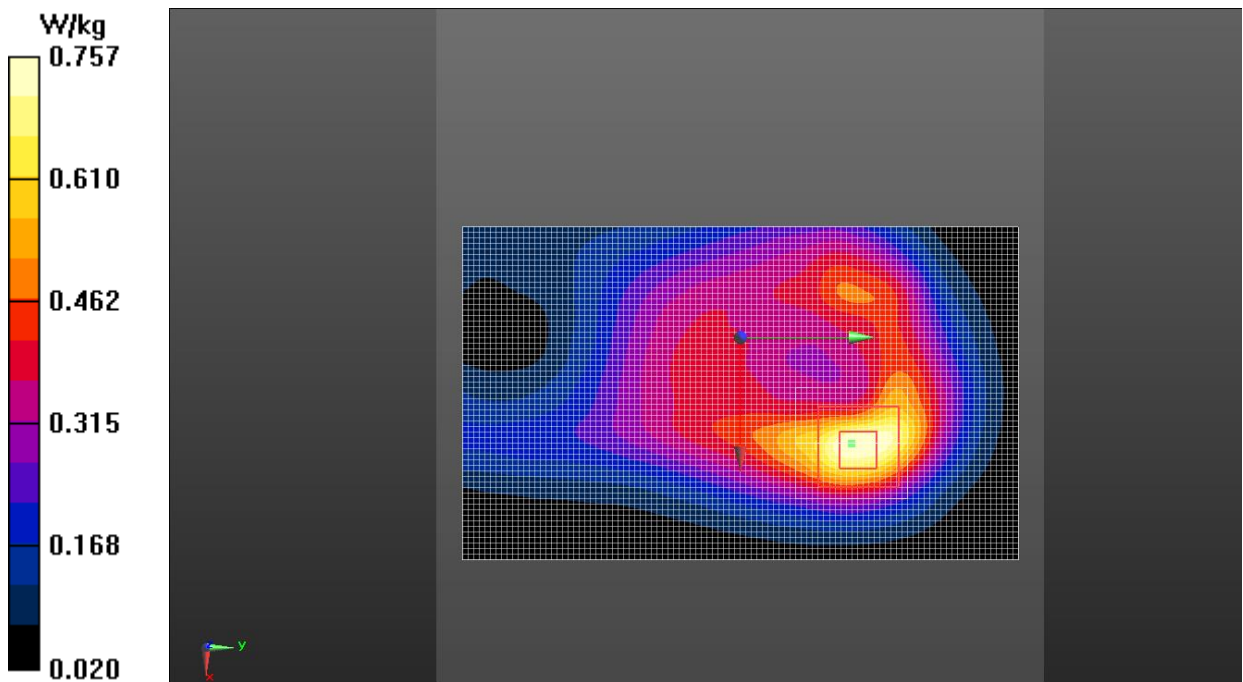
Front Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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; $\sigma = 1.363$ S/m; $\epsilon_r = 39.612$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°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

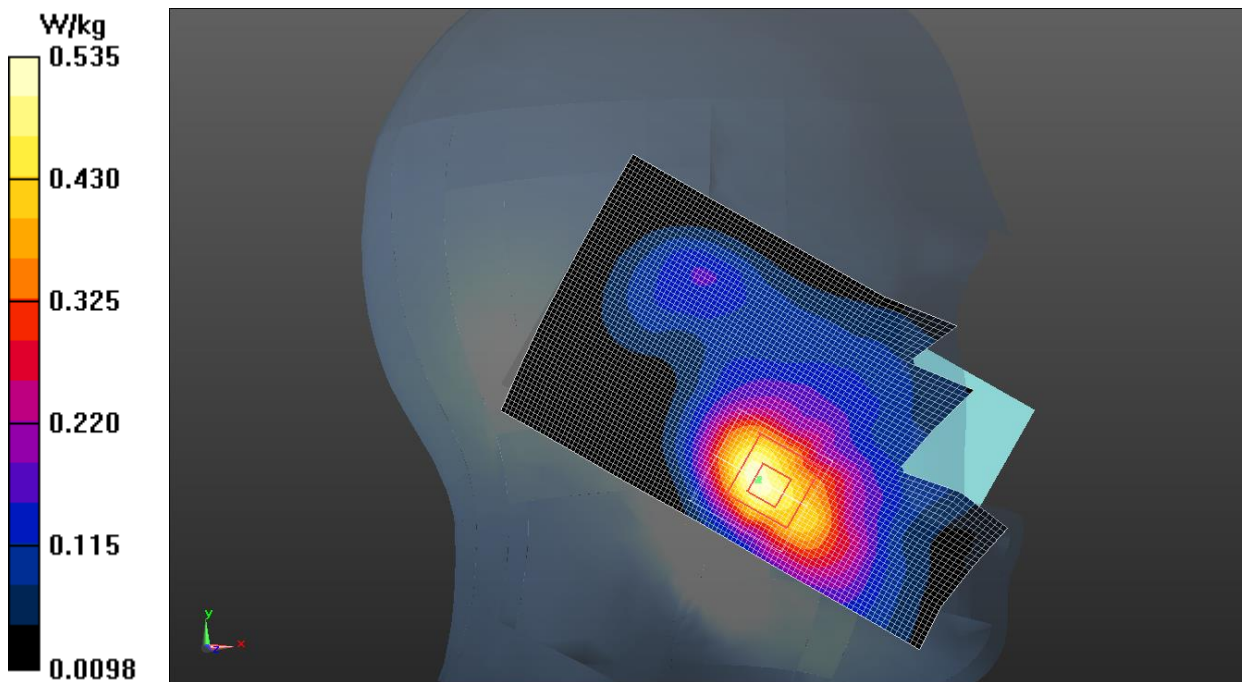
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; $\sigma = 1.442$ S/m; $\epsilon_r = 53.951$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°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

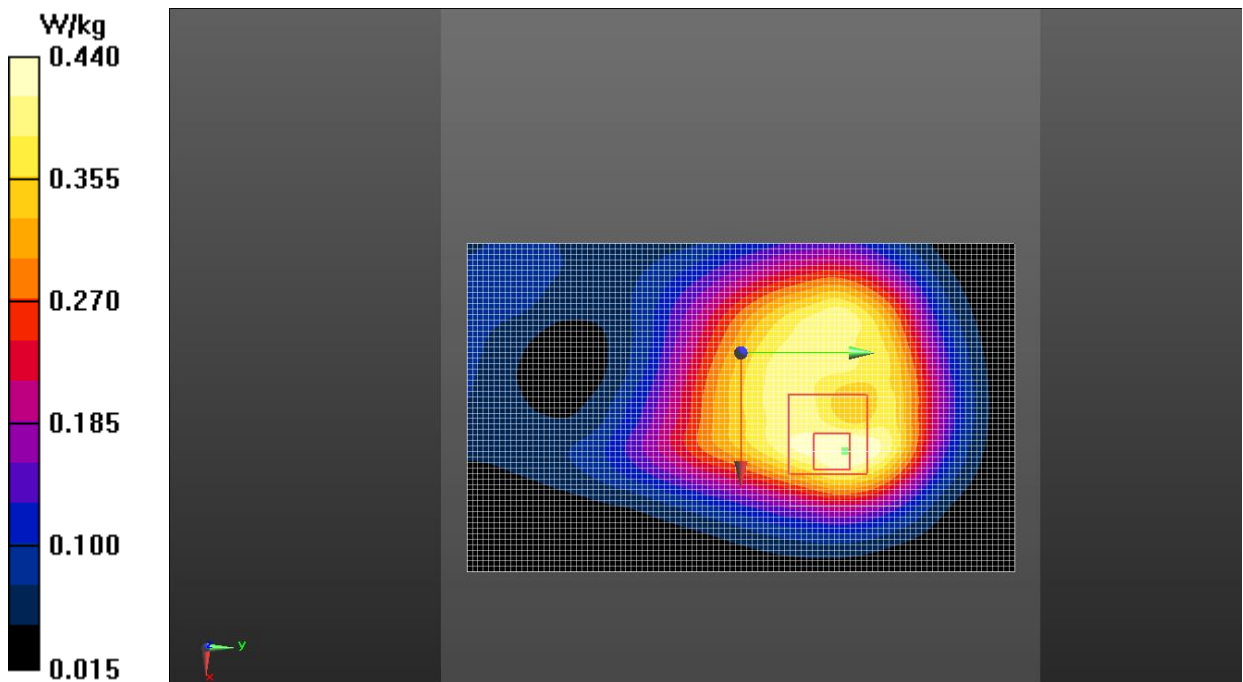
Front Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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; $\sigma = 1.389$ S/m; $\epsilon_r = 39.203$; $\rho = 1000$ kg/m³

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

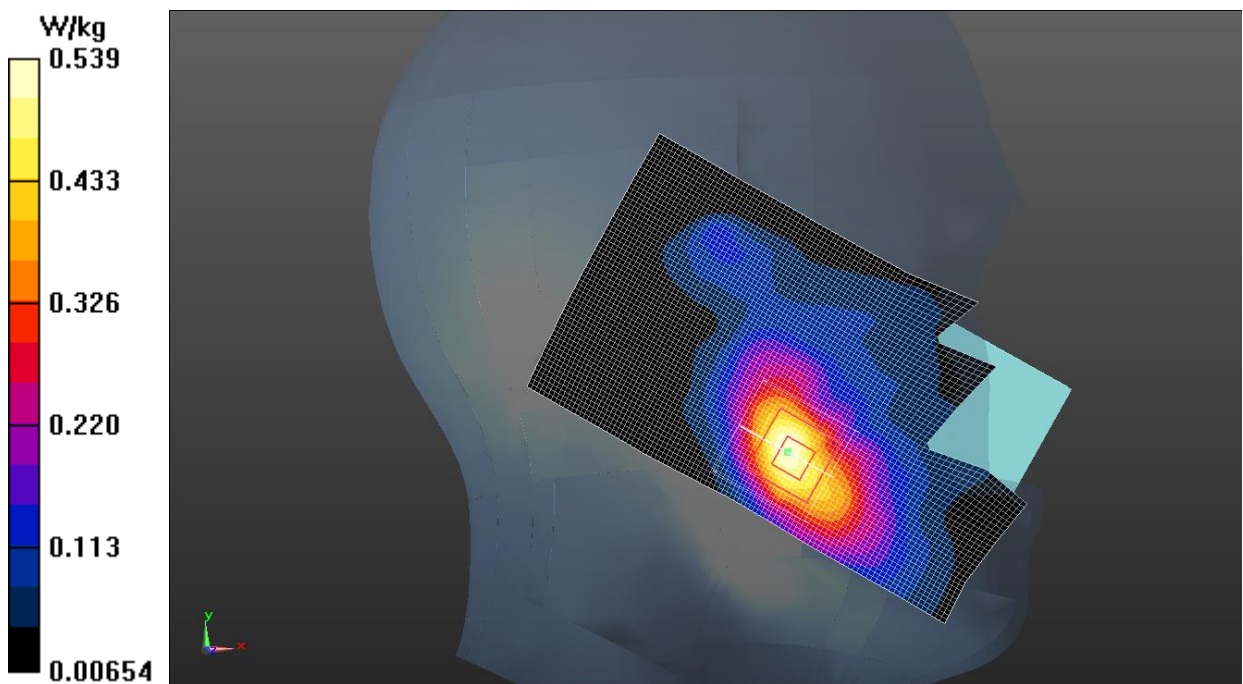
Left Cheek Middle 1RB_Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; $\sigma = 1.531$ S/m; $\epsilon_r = 52.601$; $\rho = 1000$ kg/m³

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

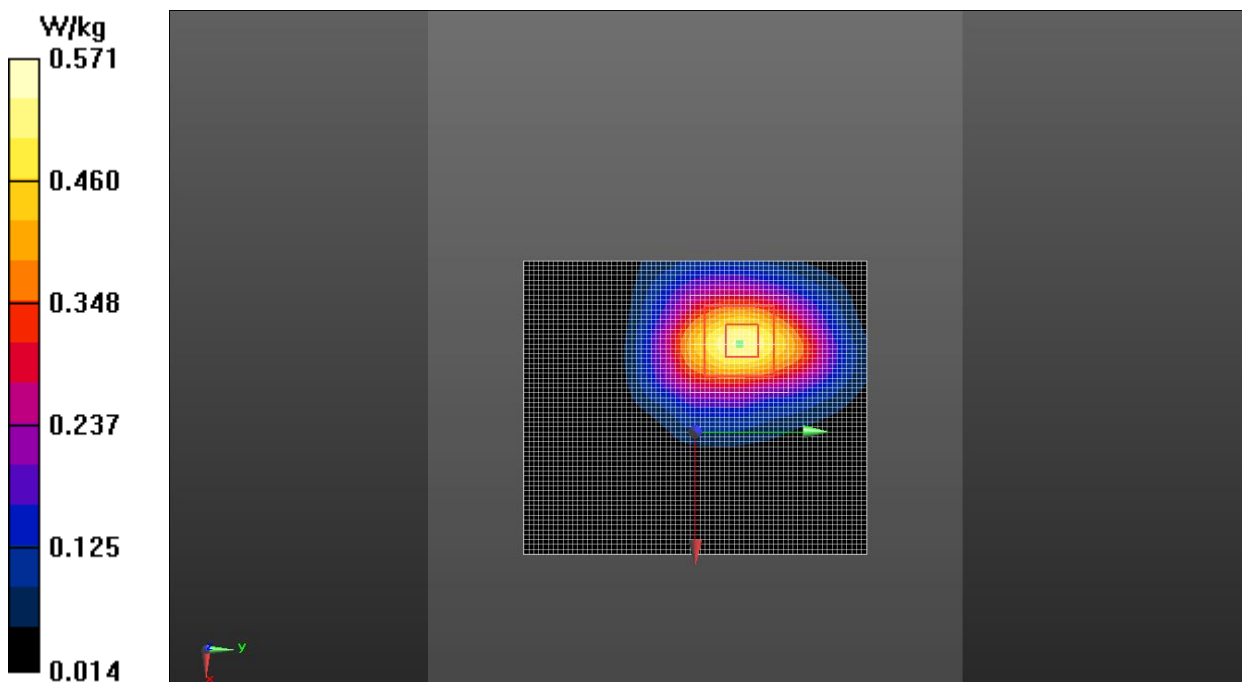
Bottom Side Middle 1RB_Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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; $\sigma = 1.363$ S/m; $\epsilon_r = 39.613$; $\rho = 1000$ kg/m³

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 (8.12, 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

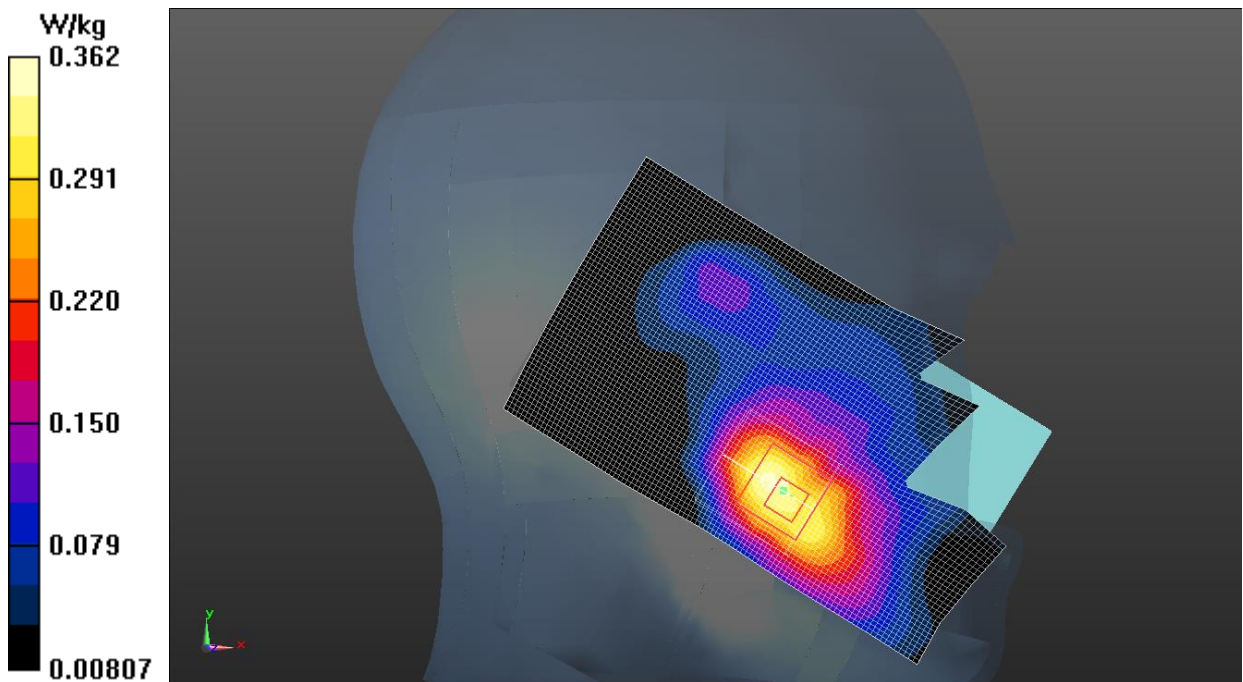
Left Cheek Middle 1RB_Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; $\sigma = 1.442$ S/m; $\epsilon_r = 53.952$; $\rho = 1000$ kg/m³

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

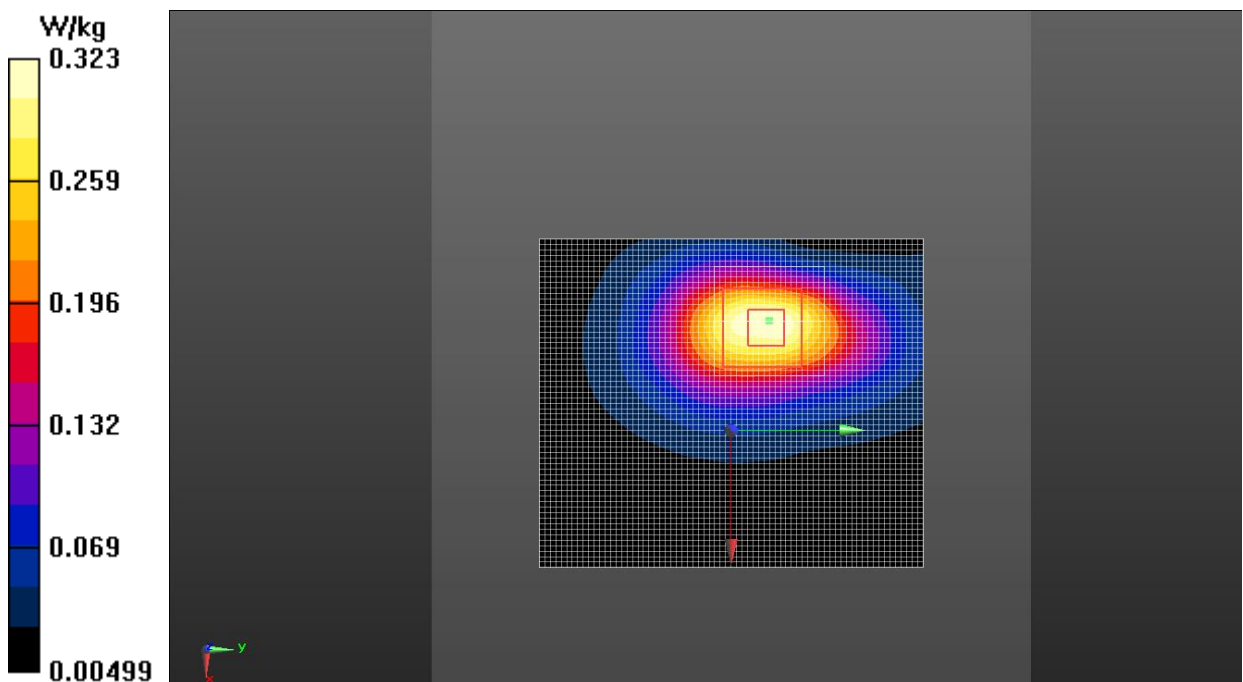
Bottom Side Middle 1RB_Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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; $\sigma = 0.878$ S/m; $\epsilon_r = 41.909$; $\rho = 1000$ kg/m³

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

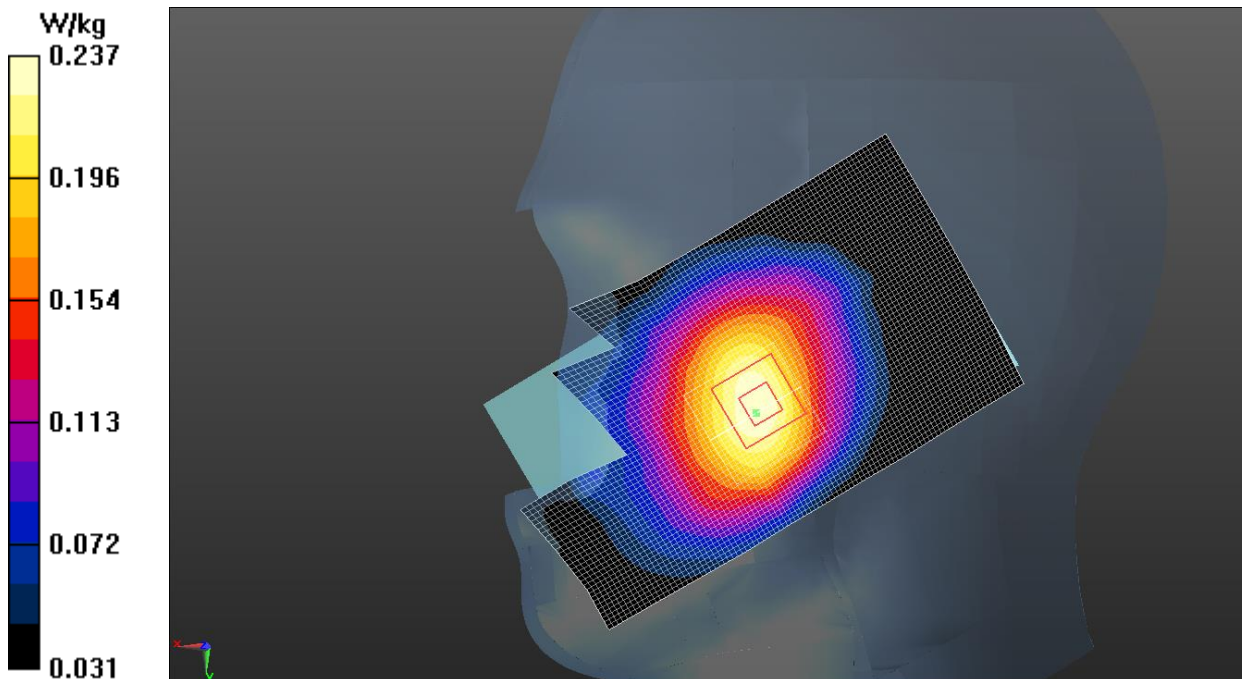
Right Cheek Middle 1RB_Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; $\sigma = 0.978$ S/m; $\epsilon_r = 54.023$; $\rho = 1000$ kg/m³

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);

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

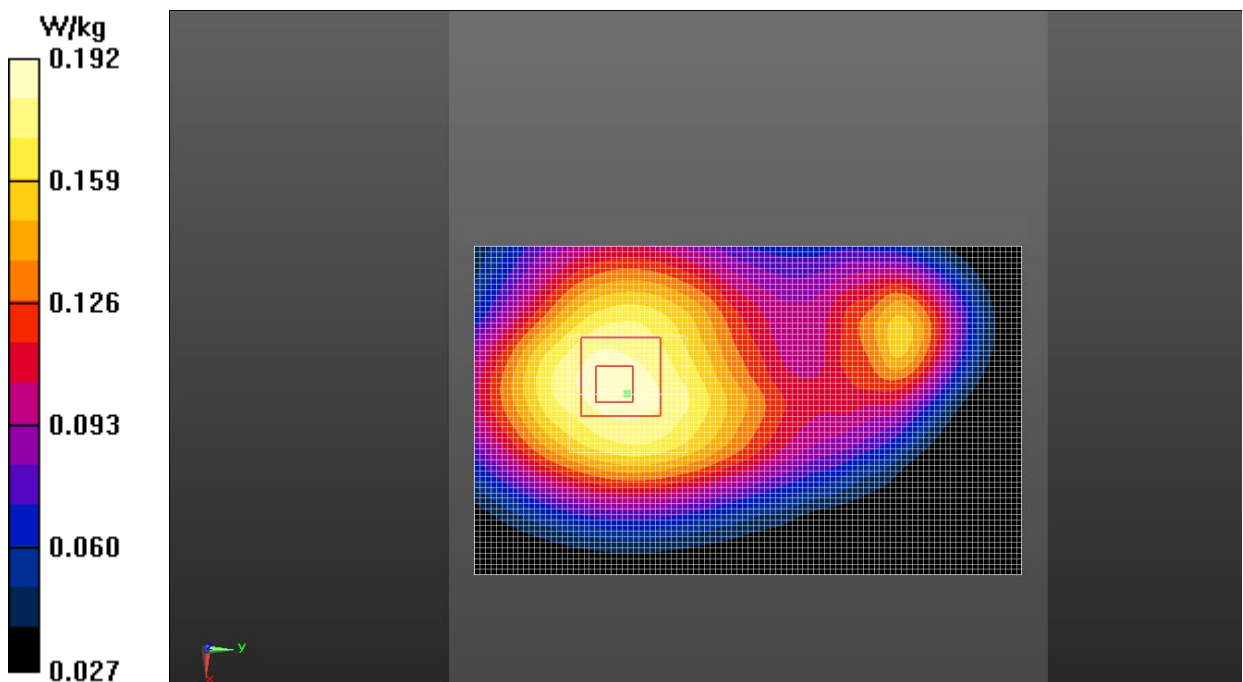
Rear Side Middle 1RB_Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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 2600 MHz

Medium parameters used (interpolated): $f = 2535$ MHz; $\sigma = 1.916$ S/m; $\epsilon_r = 38.185$; $\rho = 1000$ kg/m³

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

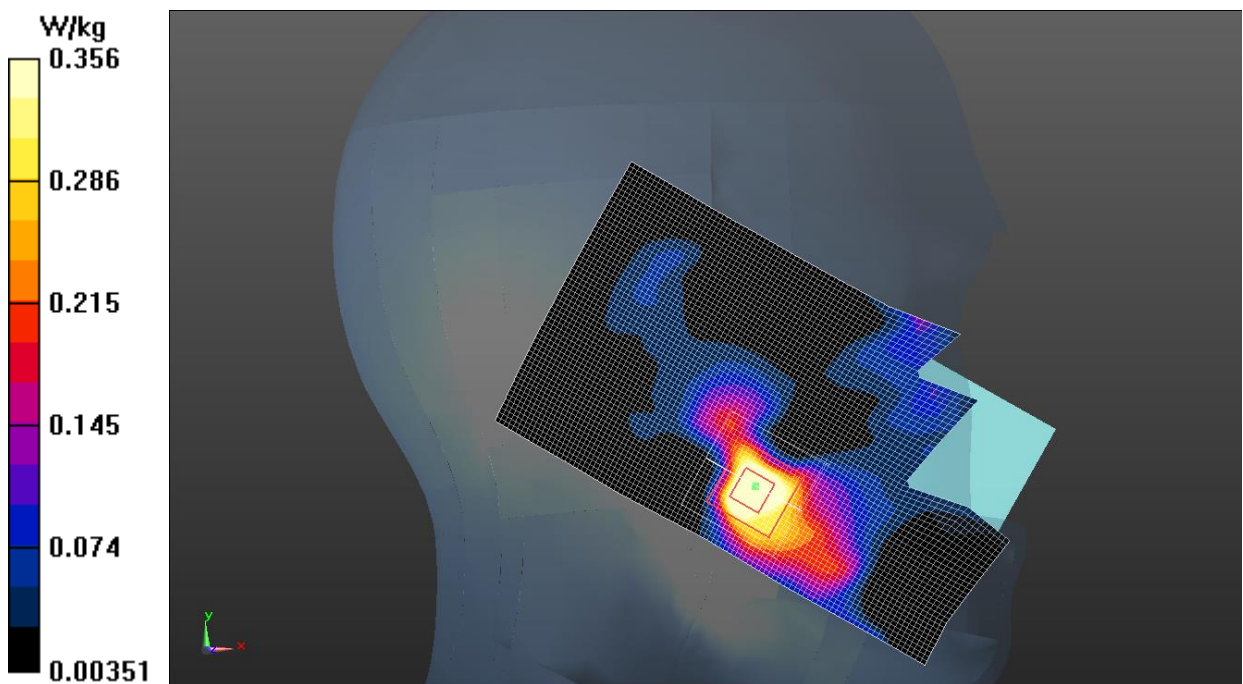
Left Cheek Middle 1RB_High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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 2600 MHz

Medium parameters used (interpolated): $f = 2535$ MHz; $\sigma = 2.049$ S/m; $\epsilon_r = 53.032$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.0°C Liquid Temperature: 21.5°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

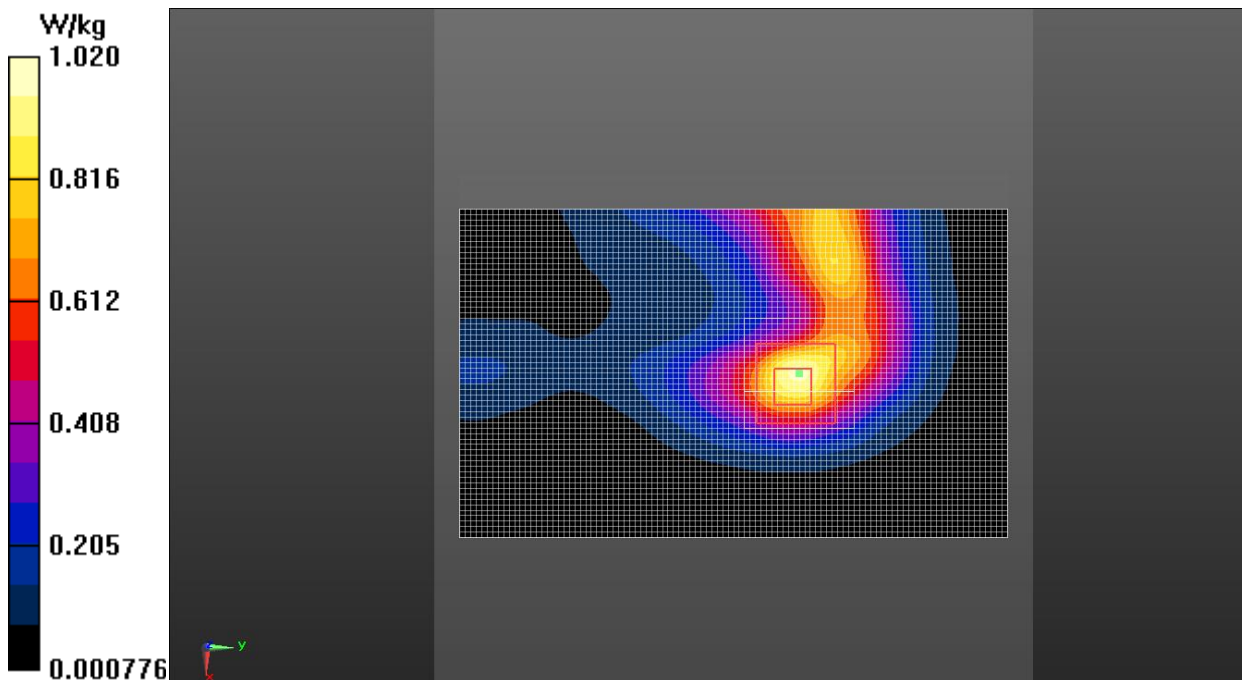
Front Side Middle 1RB_High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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; $\sigma = 0.872$ S/m; $\epsilon_r = 41.977$; $\rho = 1000$ kg/m³

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

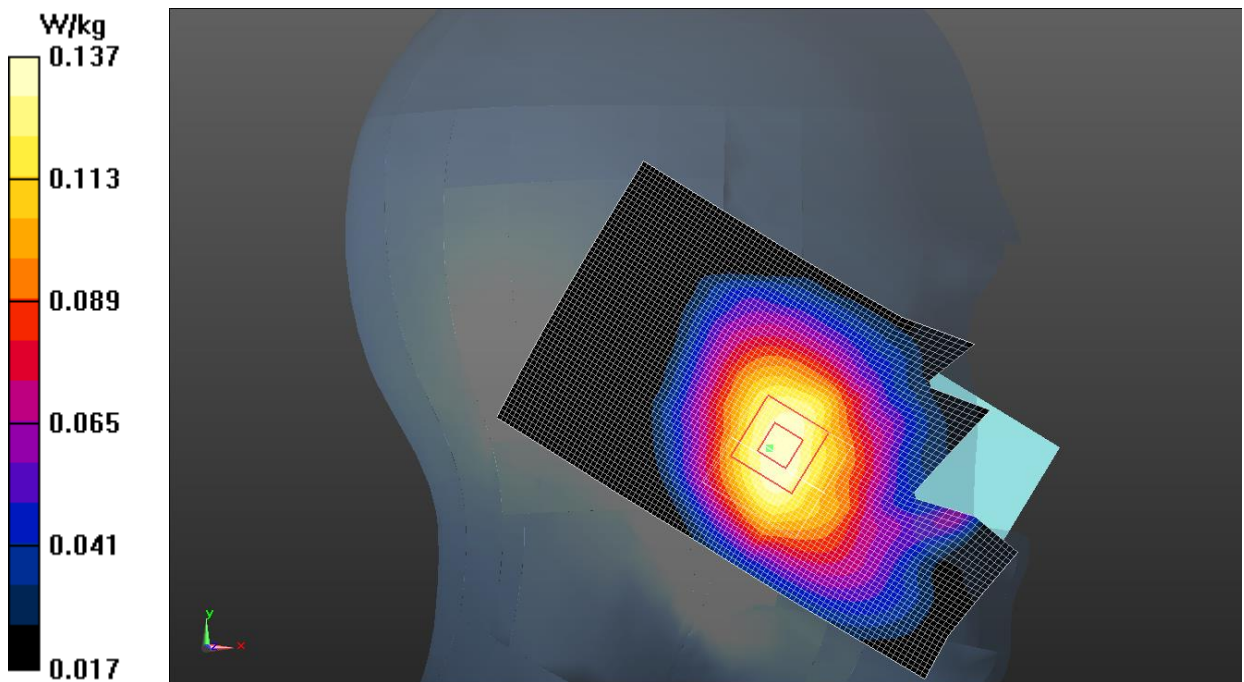
Left Cheek Middle 1RB_Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; $\sigma = 0.930$ S/m; $\epsilon_r = 54.151$; $\rho = 1000$ kg/m³

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

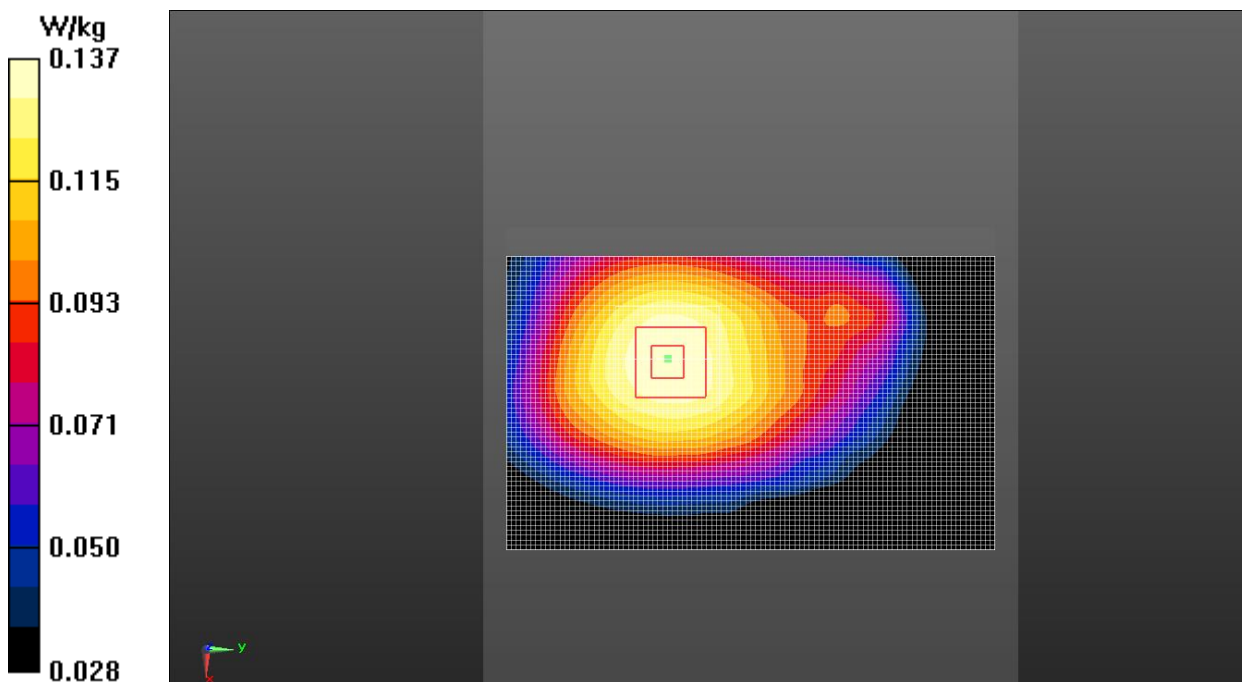
Rear Side Middle 1RB_Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; $\sigma = 0.941$ S/m; $\epsilon_r = 40.906$; $\rho = 1000$ kg/m³

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

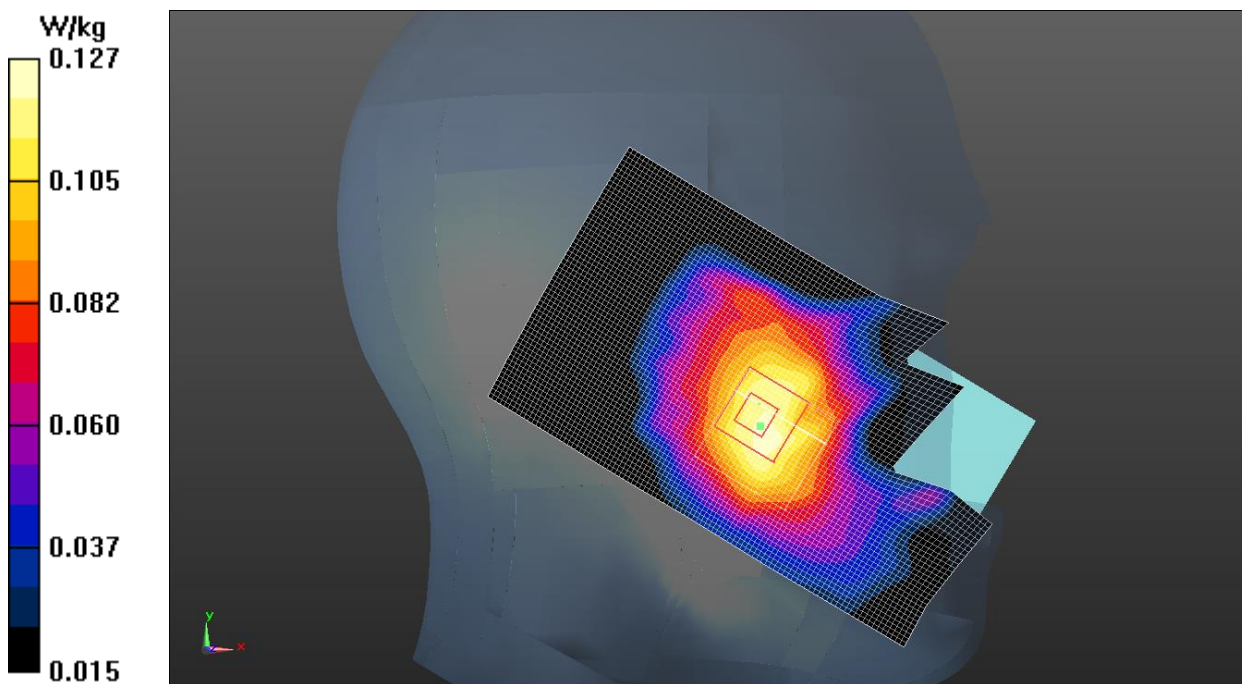
Left Cheek Middle 1RB_Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; $\sigma = 1.003$ S/m; $\epsilon_r = 53.512$; $\rho = 1000$ kg/m³

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

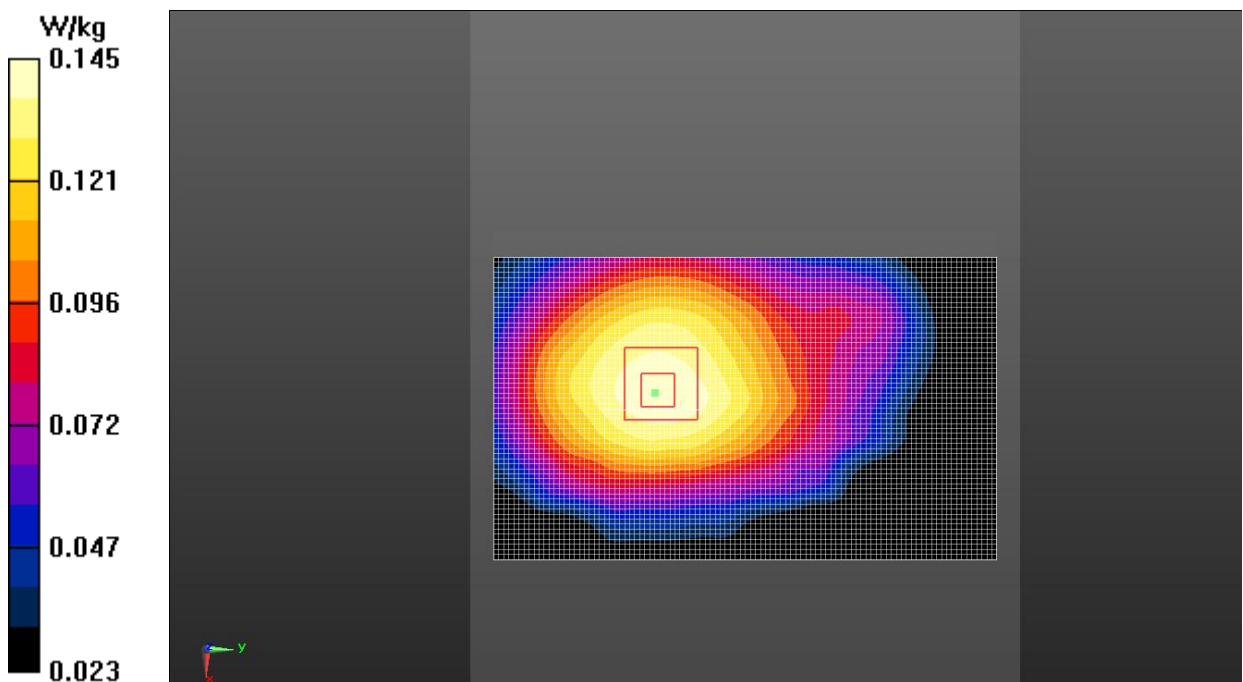
Rear Side Middle 1RB_Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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; $\sigma = 1.391$ S/m; $\epsilon_r = 39.197$; $\rho = 1000$ 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

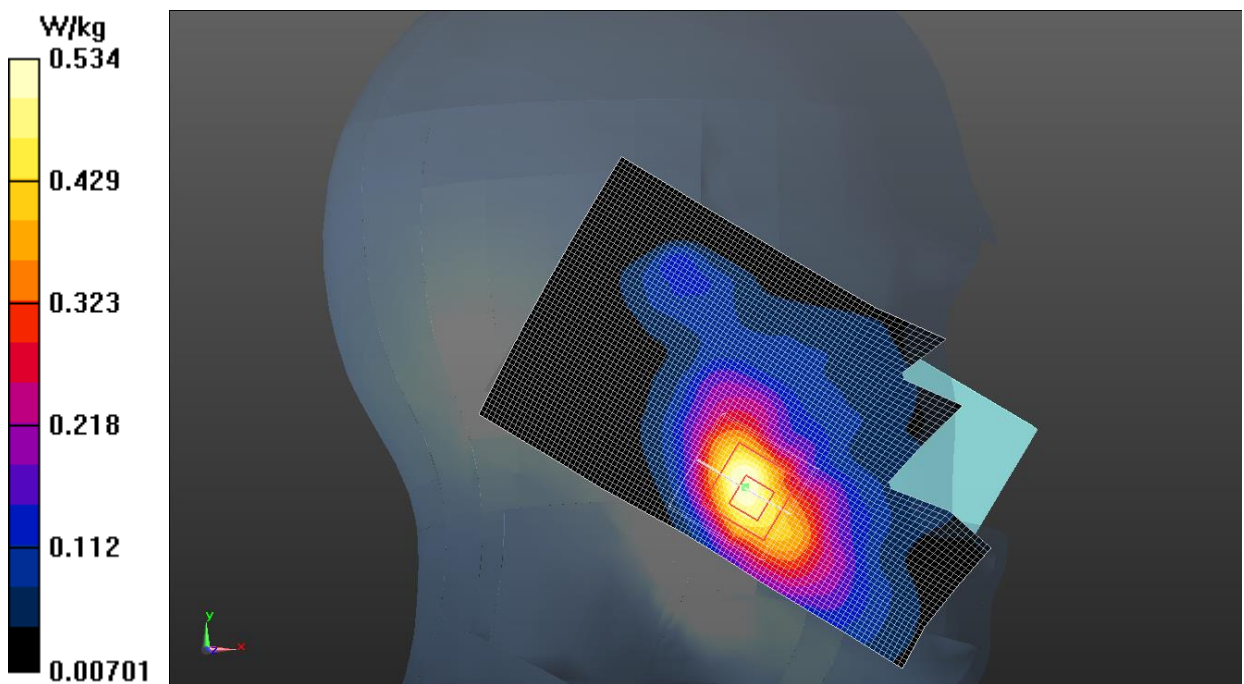
Left Cheek Middle 1RB_Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; $\sigma = 1.533$ S/m; $\epsilon_r = 52.586$; $\rho = 1000$ 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

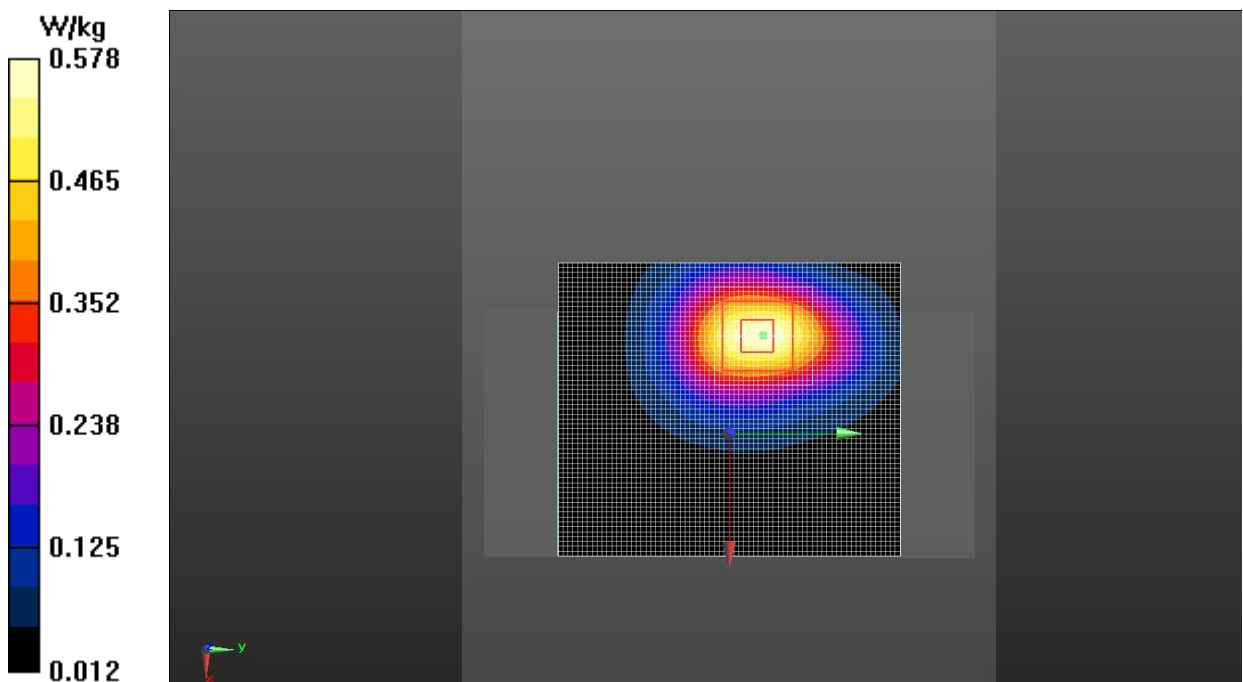
Bottom Side Middle 1RB_Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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; $\sigma = 0.872$ S/m; $\epsilon_r = 41.947$; $\rho = 1000$ 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

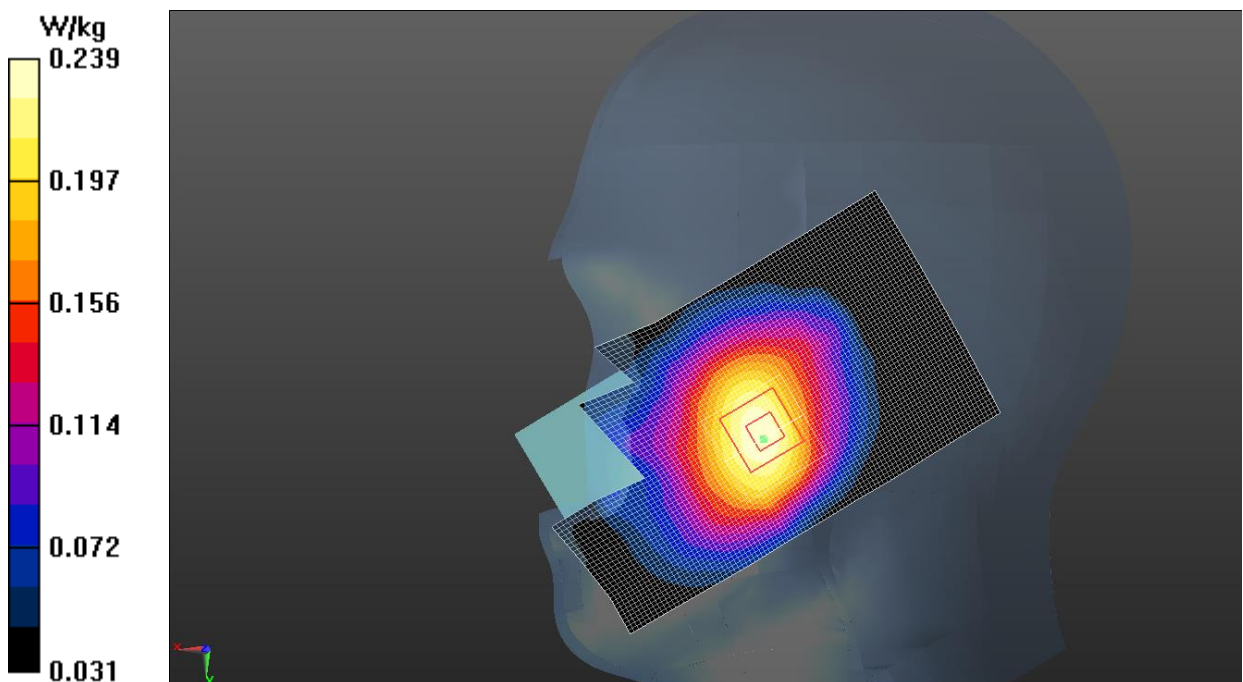
Right Cheek Middle 1RB_High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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; $\sigma = 0.974$ S/m; $\epsilon_r = 54.071$; $\rho = 1000$ 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

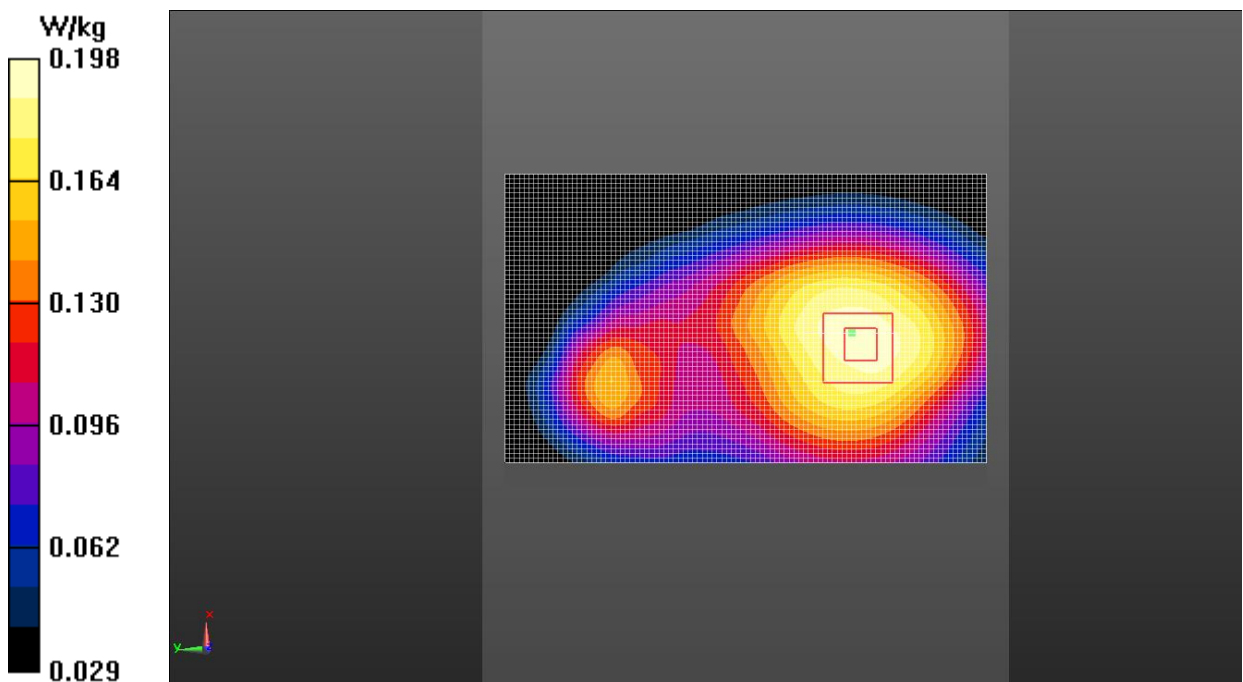
Front Side Middle 1RB_High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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 2600 MHz

Medium parameters used (interpolated): $f = 2595$ MHz; $\sigma = 1.984$ S/m; $\epsilon_r = 37.964$; $\rho = 1000$ kg/m³

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 (7.28, 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

