

DASY5 Validation Report for Head TSL

Date: 25.07.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1060

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5300 MHz, Frequency: 5500 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz

Medium parameters used: $f = 5200 \text{ MHz}$; $\sigma = 4.51 \text{ S/m}$; $\epsilon_r = 36.3$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used: $f = 5300 \text{ MHz}$; $\sigma = 4.61 \text{ S/m}$; $\epsilon_r = 36.1$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used: $f = 5500 \text{ MHz}$; $\sigma = 4.81 \text{ S/m}$; $\epsilon_r = 35.8$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used: $f = 5600 \text{ MHz}$; $\sigma = 4.92 \text{ S/m}$; $\epsilon_r = 35.7$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used: $f = 5800 \text{ MHz}$; $\sigma = 5.14 \text{ S/m}$; $\epsilon_r = 35.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.76, 5.76, 5.76); Calibrated: 31.12.2016, ConvF(5.35, 5.35, 5.35); Calibrated: 31.12.2016, ConvF(5.2, 5.2, 5.2); Calibrated: 31.12.2016, ConvF(5.09, 5.09, 5.09); Calibrated: 31.12.2016, ConvF(5.01, 5.01, 5.01); Calibrated: 31.12.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 70.18 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 29.8 W/kg

SAR(1 g) = 8.05 W/kg; SAR(10 g) = 2.30 W/kg

Maximum value of SAR (measured) = 18.4 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 = 69.70 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 30.5 W/kg

SAR(1 g) = 8.38 W/kg; SAR(10 g) = 2.4 W/kg

Maximum value of SAR (measured) = 19.4 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 = 68.97 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 33.3 W/kg

SAR(1 g) = 8.48 W/kg; SAR(10 g) = 2.41 W/kg

Maximum value of SAR (measured) = 20.2 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 = 69.72 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 33.6 W/kg

SAR(1 g) = 8.45 W/kg; SAR(10 g) = 2.41 W/kg

Maximum value of SAR (measured) = 20.2 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0:

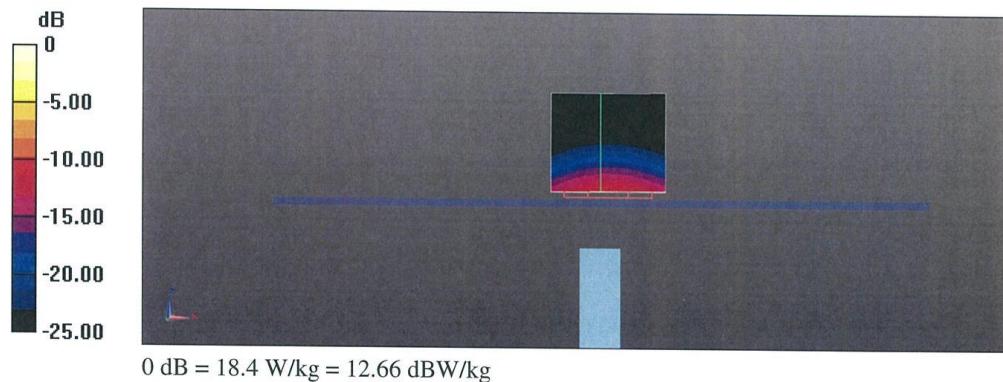
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 67.66 V/m; Power Drift = -0.02 dB

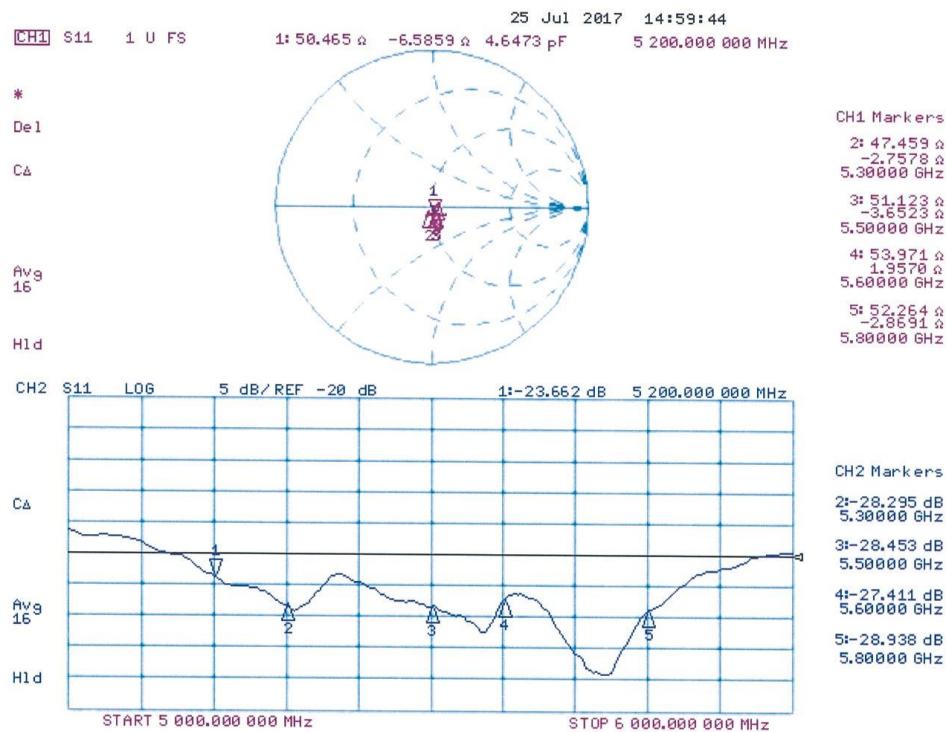
Peak SAR (extrapolated) = 33.2 W/kg

SAR(1 g) = 8.10 W/kg; SAR(10 g) = 2.29 W/kg

Maximum value of SAR (measured) = 19.6 W/kg



Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 17.07.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1060

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5300 MHz, Frequency: 5500 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz

Medium parameters used: $f = 5200 \text{ MHz}$; $\sigma = 5.45 \text{ S/m}$; $\epsilon_r = 47.4$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used: $f = 5300 \text{ MHz}$; $\sigma = 5.58 \text{ S/m}$; $\epsilon_r = 47.2$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used: $f = 5500 \text{ MHz}$; $\sigma = 5.85 \text{ S/m}$; $\epsilon_r = 46.9$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used: $f = 5600 \text{ MHz}$; $\sigma = 5.99 \text{ S/m}$; $\epsilon_r = 46.7$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used: $f = 5800 \text{ MHz}$; $\sigma = 6.28 \text{ S/m}$; $\epsilon_r = 46.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.29, 5.29, 5.29); Calibrated: 31.12.2016, ConvF(5.04, 5.04, 5.04); Calibrated: 31.12.2016, ConvF(4.62, 4.62, 4.62); Calibrated: 31.12.2016, ConvF(4.57, 4.57, 4.57); Calibrated: 31.12.2016, ConvF(4.48, 4.48, 4.48); Calibrated: 31.12.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5200MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 64.89 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 29.2 W/kg

SAR(1 g) = 7.56 W/kg; SAR(10 g) = 2.13 W/kg

Maximum value of SAR (measured) = 18.0 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 = 64.82 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 30.7 W/kg

SAR(1 g) = 7.75 W/kg; SAR(10 g) = 2.18 W/kg

Maximum value of SAR (measured) = 18.6 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 = 66.03 V/m; Power Drift = -0.05 dB

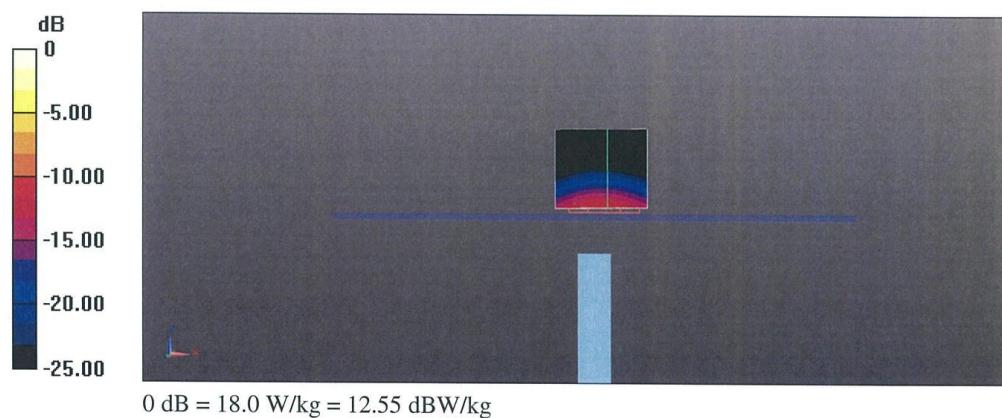
Peak SAR (extrapolated) = 34.2 W/kg

SAR(1 g) = 8.19 W/kg; SAR(10 g) = 2.27 W/kg

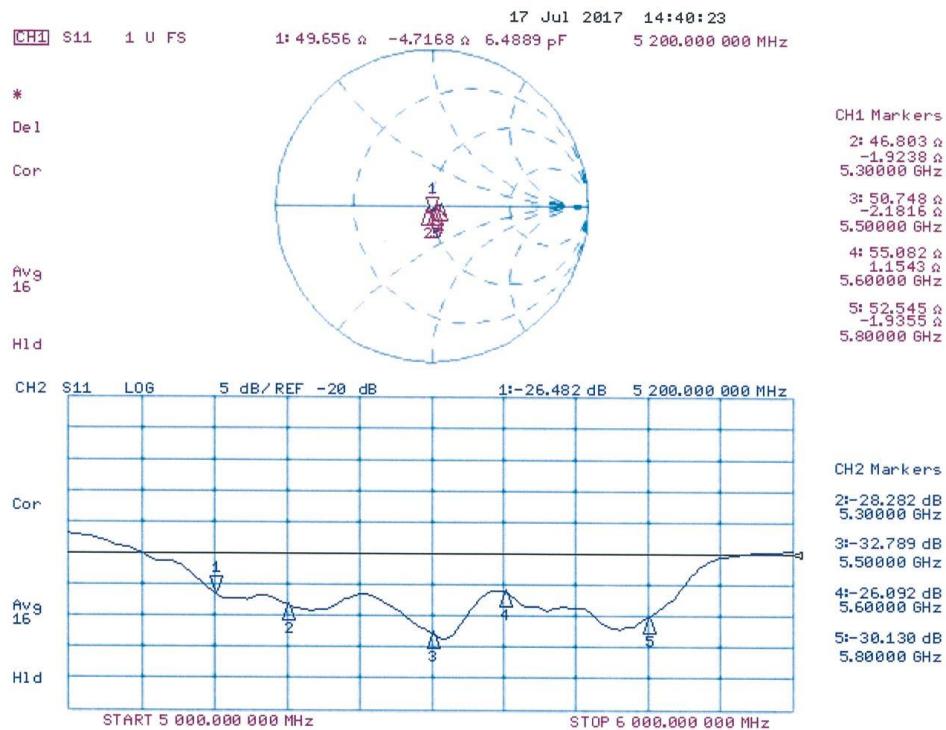
Maximum value of SAR (measured) = 19.9 W/kg

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 = 65.05 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 34.5 W/kg
SAR(1 g) = 8.1 W/kg; SAR(10 g) = 2.28 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 = 63.30 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 35.2 W/kg
SAR(1 g) = 7.84 W/kg; SAR(10 g) = 2.19 W/kg
Maximum value of SAR (measured) = 19.7 W/kg



Impedance Measurement Plot for Body TSL



ANNEX I SPOT CHECK

I.1 Conducted power of selected case

Table I.1-1: The conducted power results for GPRS

GSM 850 GPRS (GMSK)	Measured Power (dBm)		
	251	190	128
3 Txslots	28.61	/	/
PCS1900 GPRS (GMSK)	Measured Power (dBm) – Normal power		
	810	661	512
2 Txslots	/	/	28.18
PCS1900 GPRS (GMSK)	Measured Power (dBm) – Low Power		
	810	661	512
1 Txslot	/	29.10	/

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

Item	band	FDDV result		
	ARFCN	4233 (846.6MHz)	4182 (836.4MHz)	4132 (826.4MHz)
WCDMA	\	23.12	22.99	23.06
Item	band	FDDII result – Normal power		
	ARFCN	9538 (1907.6MHz)	9400 (1880MHz)	9262 (1852.4MHz)
WCDMA	\	/	/	23.62
Item	band	FDDIV result – Normal power		
	ARFCN	1513 (1752.6MHz)	1412 (1732.4MHz)	1312 (1712.4MHz)
WCDMA	\	/	/	23.45
Item	band	FDDII result – Low power		
	ARFCN	9538 (1907.6MHz)	9400 (1880MHz)	9262 (1852.4MHz)
WCDMA	\	18.55	/	/
Item	band	FDDIV result – Low power		
	ARFCN	1513 (1752.6MHz)	1412 (1732.4MHz)	1312 (1712.4MHz)
WCDMA	\	19.17	/	/

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

LTE Band2 Normal power	1RB-Low (0)	1900 (19100)	23.58
LTE Band2 Low power	1RB-Low (0)	1900 (19100)	19.11
LTE Band4 Normal power	1RB-Low (0)	1745 (20300)	23.27
LTE Band4 Low power	100RB (0)	1745 (20300)	20.02
LTE Band5	1RB-High (49)	829 (20450)	23.36
	25RB-High (25)	844 (20600)	22.49
LTE Band7 Normal power	1RB-Low (0)	2535 (21100)	22.58
LTE Band7 Low power	1RB-Low (0)	2535 (21100)	18.70
LTE Band12	1RB-Middle (24)	707.5 (23095)	23.33
LTE Band13	1RB-Middle (24)	782 (23230)	23.34
LTE Band30 Normal power	1RB-High (49)	2310 (27710)	23.18
LTE Band30 Low power	1RB-Low (0)	2310 (27710)	20.19
LTE Band41	1RB-Middle (50)	2506 (39750)	22.96

Table I.1-4: The conducted Power for WLAN

Mode / data rate	Channel	Measured Power (dBm)
802.11b – 1Mbps	6	19.72
802.11a – 6Mbps	64	18.01
	157	14.36

I.2 Measurement results

Test Band	Channel	Frequency	Test Position	Figure No./Note	Conducted Power (dBm)	Tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
GSM850 ant1	251	848.8	Left	Fig I.1	28.61	30	0.208	0.29	0.274	0.38	0.18
GSM850 ant1	251	848.8	Left	Fig I.2	28.61	30	0.261	0.36	0.386	0.53	-0.08
GSM850 ant2	251	848.8	Right	Fig I.3	28.61	30	0.154	0.21	0.200	0.28	-0.09
GSM850 ant2	251	848.8	Right	Fig I.4	28.61	30	0.273	0.38	0.399	0.55	0.03
GSM1900	512	1850.2	Right	Fig I.5	28.18	29	0.097	0.12	0.151	0.18	0.05
GSM1900	661	1880	Bottom	Fig I.6	29.10	30.5	0.408	0.56	0.786	1.08	-0.10
W850 ant1	4132	826.4	Left	Fig I.7	23.06	24	0.135	0.17	0.177	0.22	0.06
W850 ant1	4233	836.4	Left	Fig I.8	23.12	24	0.158	0.19	0.233	0.29	0.01
W850 ant2	4182	836.4	Right	Fig I.9	22.99	24	0.112	0.14	0.149	0.19	0.04
W850 ant2	4233	846.6	Right	Fig I.10	23.12	24	0.233	0.29	0.340	0.42	-0.04
W1700	1537	1712.4	Right	Fig I.11	23.45	24	0.279	0.32	0.423	0.48	0.07
W1700	1738	1752.6	Bottom	Fig I.12	19.17	21	0.331	0.50	0.622	0.95	0.08
W1900	9662	1852.4	Right	Fig I.13	23.62	24	0.137	0.15	0.211	0.23	0.09
W1900	9938	1907.6	Bottom	Fig I.14	18.55	20	0.314	0.44	0.611	0.85	0.01
LTE Band2	19100	1900	Right	Fig I.15	23.58	25	0.141	0.20	0.220	0.31	0.05
LTE Band2	19100	1900	Bottom	Fig I.16	19.11	21	0.354	0.55	0.684	1.06	-0.04
LTE Band4	20300	1745	Right	Fig I.17	23.27	24	0.307	0.36	0.479	0.57	0.19
LTE Band4	20300	1745	Bottom	Fig I.18	20.02	22	0.341	0.54	0.648	1.02	-0.05
LTE Band5 ant1	20600	844	Left	Fig I.19	22.49	23	0.146	0.16	0.193	0.22	0.10
LTE Band5 ant1	20600	844	Left	Fig I.20	22.49	23	0.169	0.19	0.250	0.28	-0.09
LTE Band5 ant2	20450	829	Left	Fig I.21	23.36	24	0.166	0.19	0.216	0.25	0.01
LTE Band5 ant2	20450	829	Bottom	Fig I.22	23.36	24	0.193	0.22	0.323	0.37	0.07
LTE Band7	21100	2535	Right	Fig I.23	22.58	24	0.070	0.10	0.129	0.18	-0.12
LTE Band7	21100	2535	Bottom	Fig I.24	18.70	20	0.358	0.48	0.765	1.03	-0.05
LTE Band12 ant1	23095	707.5	Left	Fig I.25	23.33	24	0.152	0.18	0.194	0.23	-0.08
LTE Band12 ant1	23095	707.5	Left	Fig I.26	23.33	24	0.079	0.09	0.110	0.13	-0.03
LTE Band12 ant2	23095	707.5	Left	Fig I.27	23.33	24	0.142	0.17	0.179	0.21	-0.03
LTE Band12 ant2	23095	707.5	Right	Fig I.28	23.33	24	0.222	0.26	0.311	0.36	-0.18
LTE Band13 ant1	23230	782	Left	Fig I.29	23.34	24	0.174	0.20	0.224	0.26	0.14
LTE Band13 ant1	23230	782	Left	Fig I.30	23.34	24	0.207	0.24	0.298	0.35	-0.11
LTE Band13 ant2	23230	782	Left	Fig I.31	23.34	24	0.166	0.19	0.215	0.25	-0.08
LTE Band13 ant2	23230	782	Right	Fig I.32	23.34	24	0.287	0.33	0.410	0.48	-0.04

LTE Band30	27710	2310	Right	Fig I.33	23.18	24	0.066	0.08	0.128	0.15	0.04
LTE Band30	27710	2310	Bottom	Fig I.34	20.19	22	0.365	0.55	0.746	1.13	-0.09
LTE Band41	39750	2506	Right	Fig I.35	22.96	24	0.030	0.04	0.056	0.07	0.07
LTE Band41	39750	2506	Bottom	Fig I.36	22.96	24	0.353	0.45	0.774	0.98	-0.03
Wi-Fi 2.4G	6	2437	Left	Fig I.37	19.72	21	0.087	0.12	0.175	0.23	0.01
Wi-Fi 2.4G	6	2437	Rear	Fig I.38	19.72	21	0.064	0.09	0.130	0.17	-0.07
Wi-Fi 5G	157	5785	Left	Fig I.39	14.36	15	0.005	0.01	0.021	0.02	0.03
Wi-Fi 5G	64	5320	Rear	Fig I.40	18.01	20	0.148	0.23	0.363	0.57	0.07
LTE Band4	20300	1745	Right	SIM2	23.27	24	0.291	0.34	0.452	0.53	0.07
LTE Band2	19100	1900	Bottom	SIM2	19.11	21	0.334	0.52	0.663	1.02	0.05

Table I.2-1: SAR Values (WLAN - Head) – 802.11b (Scaled Reported SAR)

Ambient Temperature: 22.5 °C				Liquid Temperature: 23.3°C			
Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.						
2437	6	Left	Touch	98.75%	100%	0.23	0.23

Table I.2-2: SAR Values (WLAN - Body) – 802.11b (Scaled Reported SAR)

Ambient Temperature: 22.5 °C				Liquid Temperature: 23.3°C		
Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.					
2437	6	Rear	98.75%	100%	0.17	0.17

Table I.2-3: SAR Values (WLAN - Head) – 802.11a (Scaled Reported SAR)

Ambient Temperature: 22.9 °C				Liquid Temperature: 22.5°C		
Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)
MHz	Ch.					
5785	157	Left	Touch	98.28%	100%	0.02

Table I.2-4: SAR Values (WLAN - Body) – 802.11a (Scaled Reported SAR)

Ambient Temperature: 23.0 °C				Liquid Temperature: 22.5 °C		
Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.					
5320	64	Rear	98.28%	100%	0.57	0.58

I.3 Reported SAR Comparison

Exposure Configuration	Technology Band	Reported SAR 1g (W/Kg): original	Reported SAR 1g (W/Kg): spot check
Head (Separation Distance 0mm)	GSM 850 antenna1	0.47	0.38
	GSM 850 antenna2	0.40	0.28
	PCS 1900	0.24	0.18
	UMTS FDD 5 antenna1	0.37	0.22
	UMTS FDD 5 antenna2	0.36	0.19
	UMTS FDD 4	0.52	0.48
	UMTS FDD 2	0.28	0.23
	LTE Band 2	0.22	0.31
	LTE Band 4	0.35	0.57
	LTE Band 5 antenna1	0.24	0.22
	LTE Band 5 antenna2	0.22	0.25
	LTE Band 7	0.18	0.18
	LTE Band 12 antenna1	0.16	0.23
	LTE Band 12 antenna2	0.20	0.21
	LTE Band 13 antenna1	0.24	0.26
	LTE Band 13 antenna2	0.23	0.25
	LTE Band 30	0.13	0.15
	LTE Band 41	0.08	0.07
	WLAN 2.4 GHz	0.29	0.23
	WLAN 5 GHz	0.05	0.02
Hotspot (Separation Distance 10mm)	GSM 850 antenna1	0.58	0.53
	GSM 850 antenna2	0.54	0.55
	PCS 1900	1.21	1.08
	UMTS FDD 5 antenna1	0.44	0.29
	UMTS FDD 5 antenna2	0.34	0.42
	UMTS FDD 4	1.07	0.95
	UMTS FDD 2	1.27	0.85
	LTE Band 2	1.31	1.06
	LTE Band 4	1.14	1.02
	LTE Band 5 antenna1	0.30	0.28
	LTE Band 5 antenna2	0.32	0.37
	LTE Band 7	1.12	1.03
	LTE Band 12 antenna1	0.31	0.13
	LTE Band 12 antenna2	0.31	0.36
	LTE Band 13 antenna1	0.43	0.35
	LTE Band 13 antenna2	0.29	0.48
	LTE Band 30	1.21	1.13
	LTE Band 41	1.17	0.98
	WLAN 2.4 GHz	0.56	0.17
	WLAN 5 GHz	0.59	0.58

Note: All the spot check results marked blue are larger than the original result. So it replace the original results and others are shared.

I.4 Graph Results of spot check

850 Left Cheek High – antenna1

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Head 850 MHz

Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 0.912$ mho/m; $\epsilon_r = 41.72$; $\rho = 1000$ kg/m³

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

Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:2.67

Probe: EX3DV4 – SN7464 ConvF(10.28, 10.28, 10.28)

Area Scan (71x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.301 W/kg

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

Reference Value = 6.526 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.347 W/kg

SAR(1 g) = 0.274 W/kg; SAR(10 g) = 0.208 W/kg

Maximum value of SAR (measured) = 0.303 W/kg

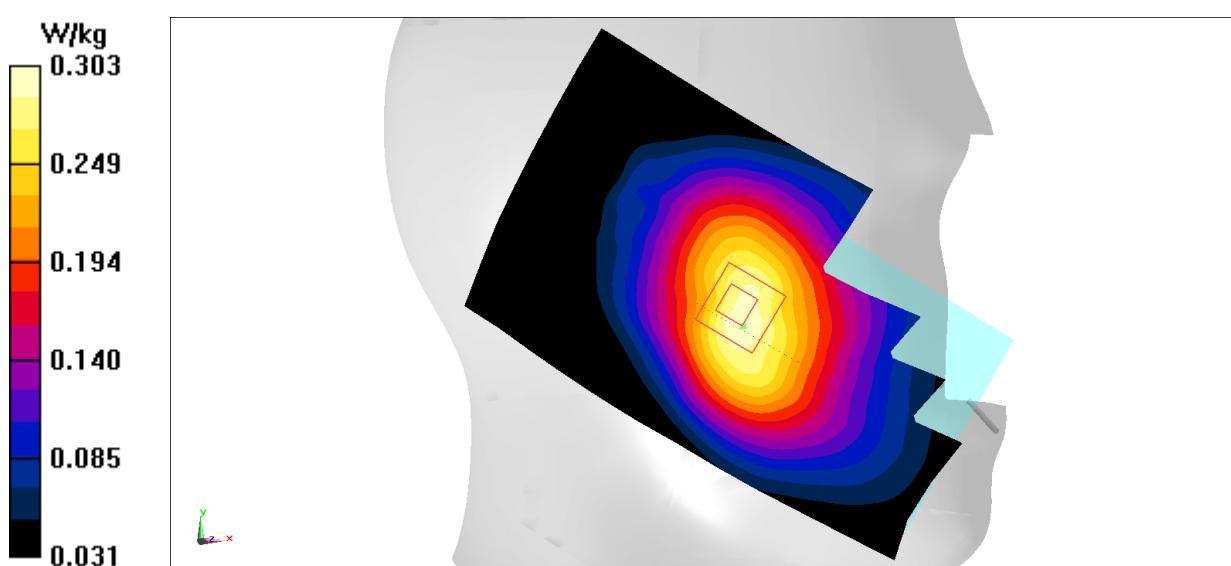


Fig I.1 850MHz

850 Body Left High – antenna1

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Body 850 MHz

Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 0.984$ mho/m; $\epsilon_r = 55.87$; $\rho = 1000$ kg/m³

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

Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:2.67

Probe: EX3DV4 – SN7464 ConvF(10.21, 10.21, 10.21)

Area Scan (131x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.439 W/kg

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

Reference Value = 20.61 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.554 W/kg

SAR(1 g) = 0.386 W/kg; SAR(10 g) = 0.261 W/kg

Maximum value of SAR (measured) = 0.443 W/kg

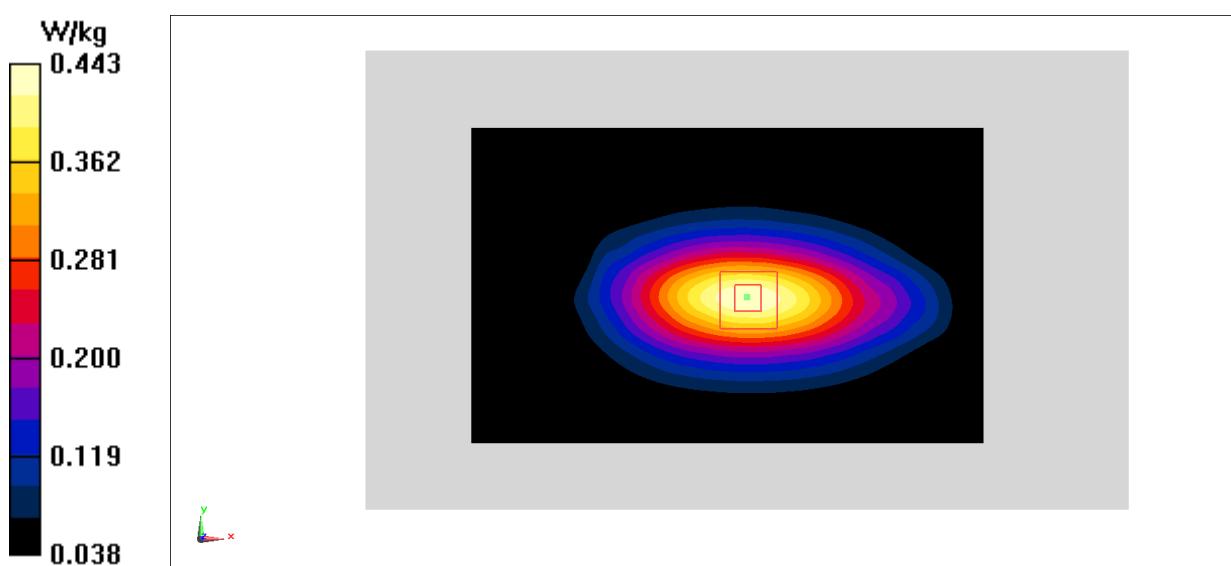


Fig I.2 850 MHz

850 Right Cheek High – antenna2

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Head 850 MHz

Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 0.912$ mho/m; $\epsilon_r = 41.72$; $\rho = 1000$ kg/m³

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

Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:2.67

Probe: EX3DV4 – SN7464 ConvF(10.28, 10.28, 10.28)

Area Scan (71x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.216 W/kg

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

Reference Value = 6.792 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.257 W/kg

SAR(1 g) = 0.200 W/kg; SAR(10 g) = 0.154 W/kg

Maximum value of SAR (measured) = 0.219 W/kg

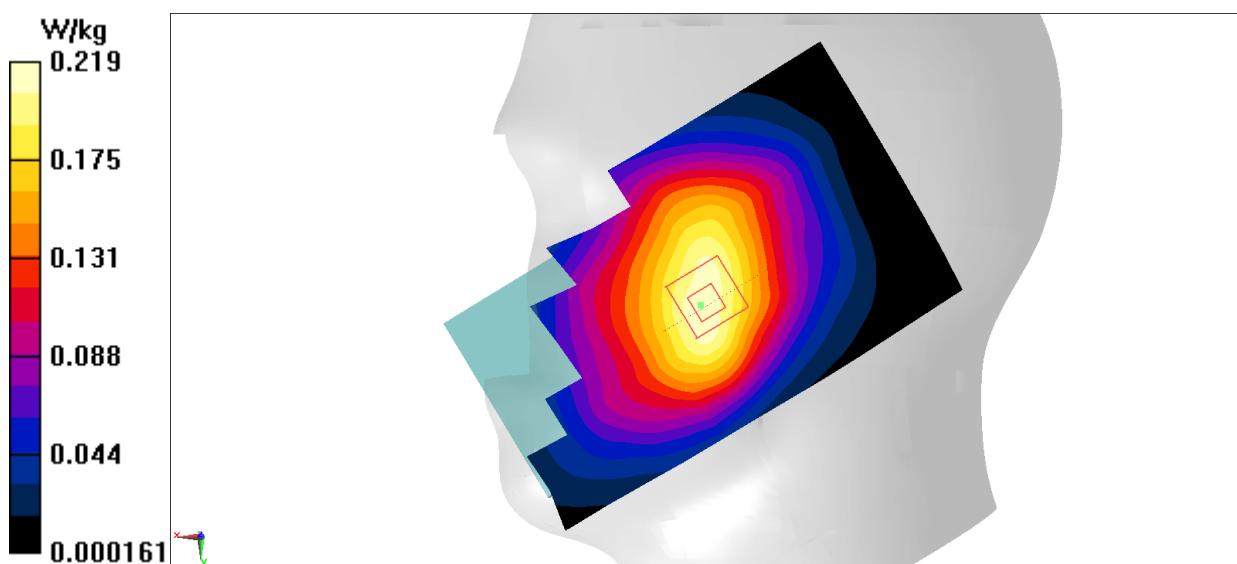


Fig I.3 850MHz

850 Body Right High – antenna2

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Body 850 MHz

Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 0.984$ mho/m; $\epsilon_r = 55.87$; $\rho = 1000$ kg/m³

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

Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:2.67

Probe: EX3DV4 – SN7464 ConvF(10.21, 10.21, 10.21)

Area Scan (131x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.454 W/kg

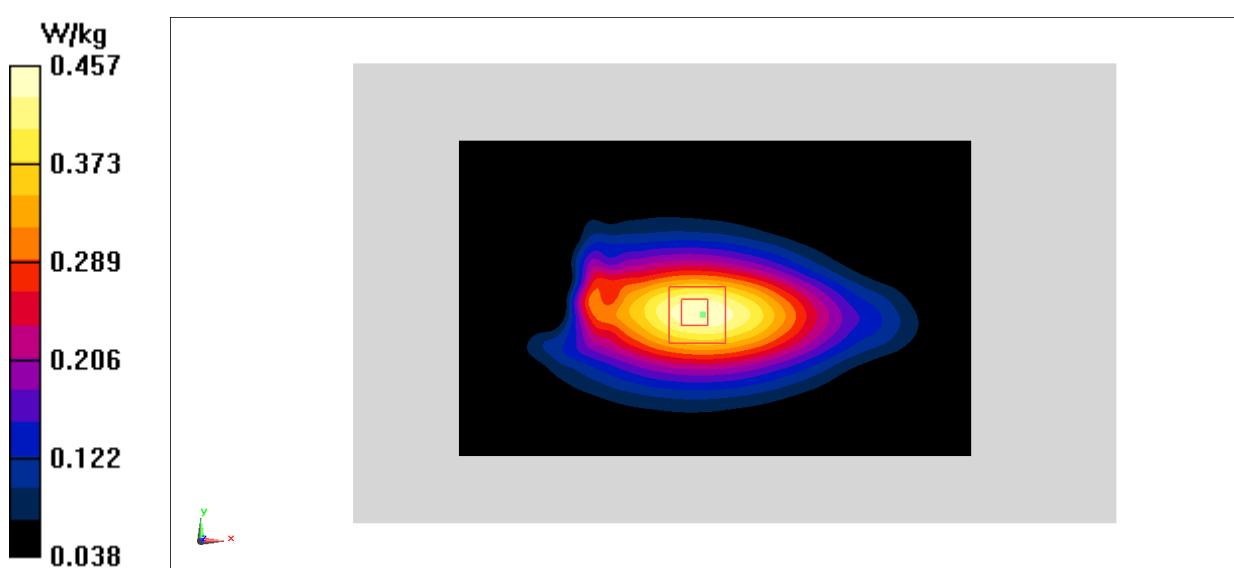
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 19.08 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.569 W/kg

SAR(1 g) = 0.399 W/kg; SAR(10 g) = 0.273 W/kg

Maximum value of SAR (measured) = 0.457 W/kg

**Fig I.4 850 MHz**

1900 Right Cheek Low

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Head 1900 MHz

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.399$ mho/m; $\epsilon_r = 40.66$; $\rho = 1000$ kg/m³

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

Communication System: GSM 1900MHz GRPS Frequency: 1850.2 MHz Duty Cycle: 1:4

Probe: EX3DV4– SN7464 ConvF(8.39, 8.39, 8.39)

Cheek/Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.178 W/kg

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

Reference Value = 2.554 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.242 W/kg

SAR(1 g) = 0.151 W/kg; SAR(10 g) = 0.097 W/kg

Maximum value of SAR (measured) = 0.209 W/kg

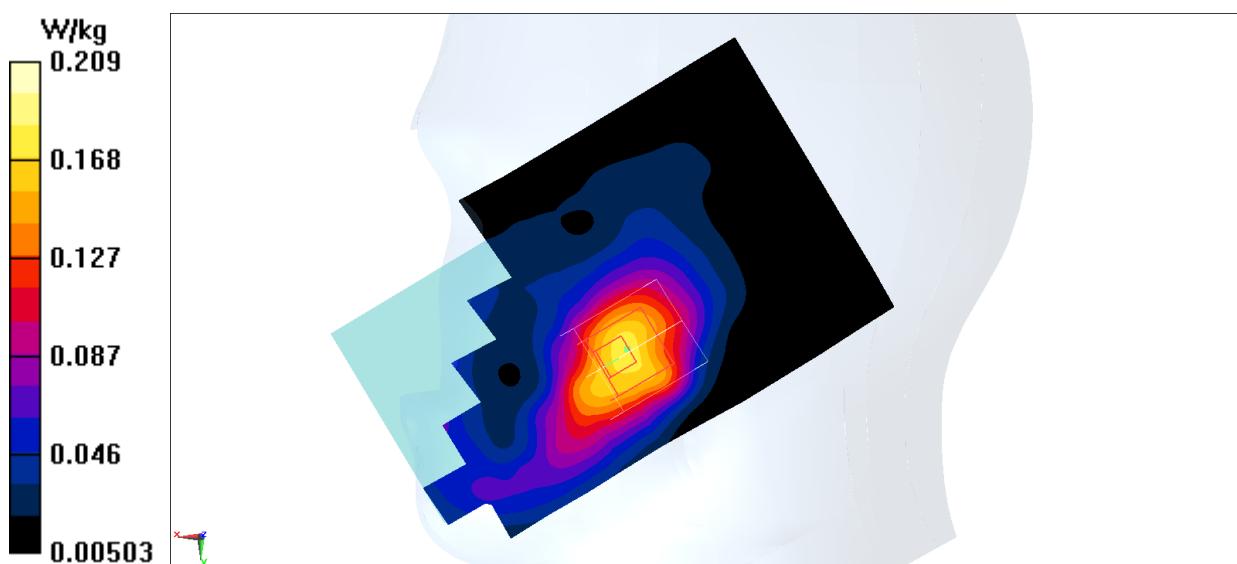


Fig I.5 1900 MHz

1900 Body Bottom Middle

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Body 1900 MHz

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.545 \text{ mho/m}$; $\epsilon_r = 52.73$; $\rho = 1000 \text{ kg/m}^3$

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

Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:8.3

Probe: EX3DV4- SN7464 ConvF(8.32, 8.32, 8.32)

Area Scan (131x81x1): Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 1.06 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 23.32 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 1.38 W/kg

SAR(1 g) = 0.786 W/kg; SAR(10 g) = 0.408 W/kg

Maximum value of SAR (measured) = 0.989 W/kg

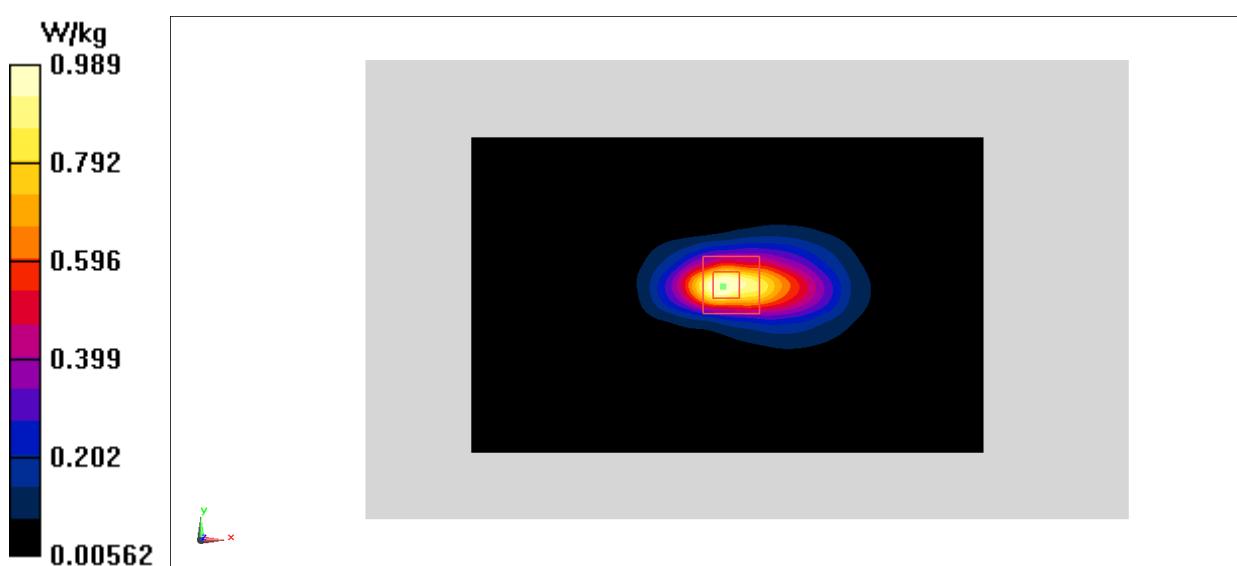


Fig I.6 1900 MHz

WCDMA 850 Left Cheek Low – antenna1

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Head 850 MHz

Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.891$ mho/m; $\epsilon_r = 41.965$; $\rho = 1000$ kg/m³

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

Communication System: WCDMA; Frequency: 826.4 MHz; Duty Cycle: 1:1

Probe: EX3DV4 – SN7464ConvF(10.28, 10.28, 10.28)

Area Scan (71x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.196 W/kg

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

Reference Value = 6.839 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.228 W/kg

SAR(1 g) = 0.177 W/kg; SAR(10 g) = 0.135 W/kg

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

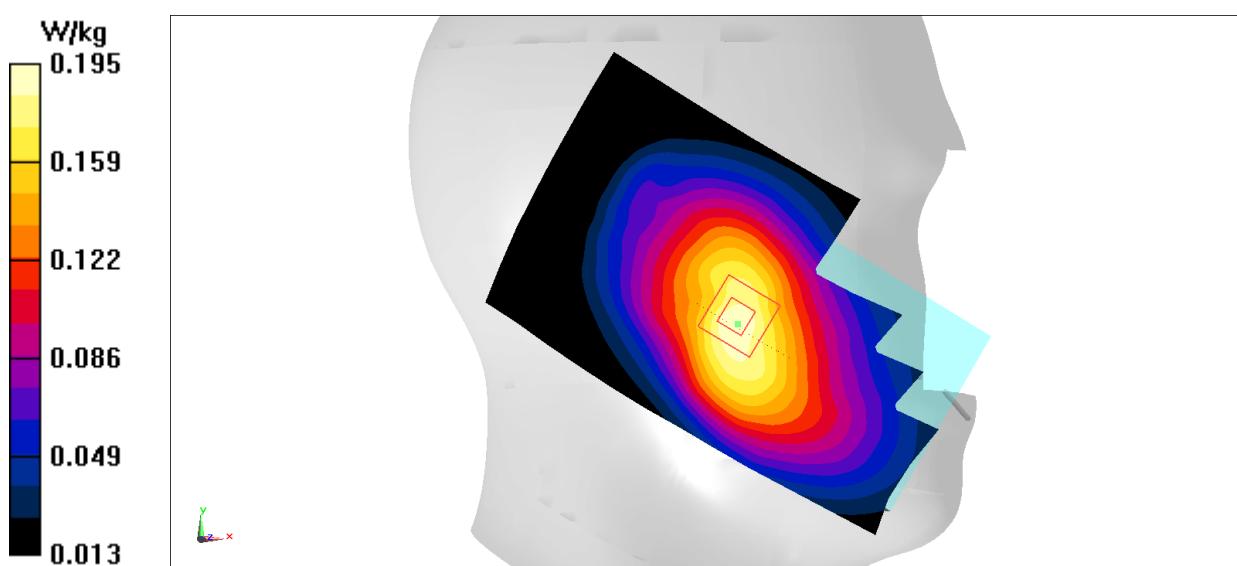


Fig I.7 WCDMA 850

WCDMA 850 Body Left High – antenna1

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Body 850 MHz

Medium parameters used (interpolated): $f = 846.6$ MHz; $\sigma = 0.981$ mho/m; $\epsilon_r = 55.876$; $\rho = 1000$ kg/m³

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

Communication System: WCDMA; Frequency: 846.6 MHz; Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(10.21, 10.21, 10.21)

Area Scan (131x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.267 W/kg

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

Reference Value = 13.94 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.337 W/kg

SAR(1 g) = 0.233 W/kg; SAR(10 g) = 0.158 W/kg

Maximum value of SAR (measured) = 0.269 W/kg

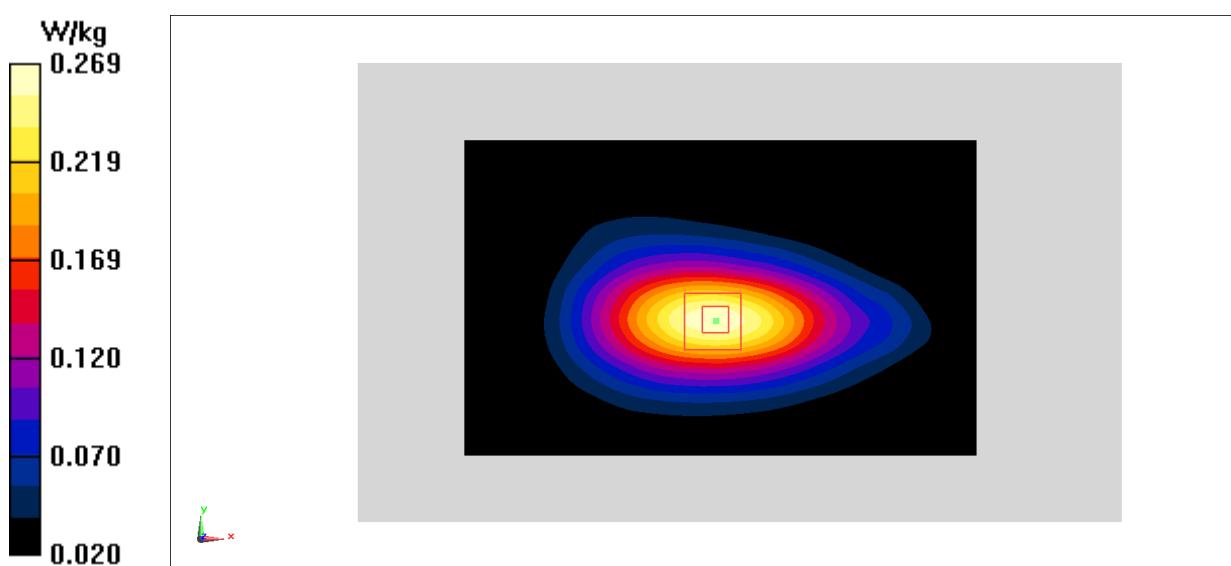


Fig I.8 WCDMA 850

WCDMA 850 Right Cheek Middle – antenna2

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Head 850 MHz

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 0.921$ mho/m; $\epsilon_r = 42.315$; $\rho = 1000$ kg/m³

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

Communication System: WCDMA; Frequency: 836.4 MHz; Duty Cycle: 1:1

Probe: EX3DV4 – SN7464ConvF(10.28, 10.28, 10.28)

Area Scan (71x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.161 W/kg

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

Reference Value = 6.331 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.195 W/kg

SAR(1 g) = 0.149 W/kg; SAR(10 g) = 0.112 W/kg

Maximum value of SAR (measured) = 0.165 W/kg

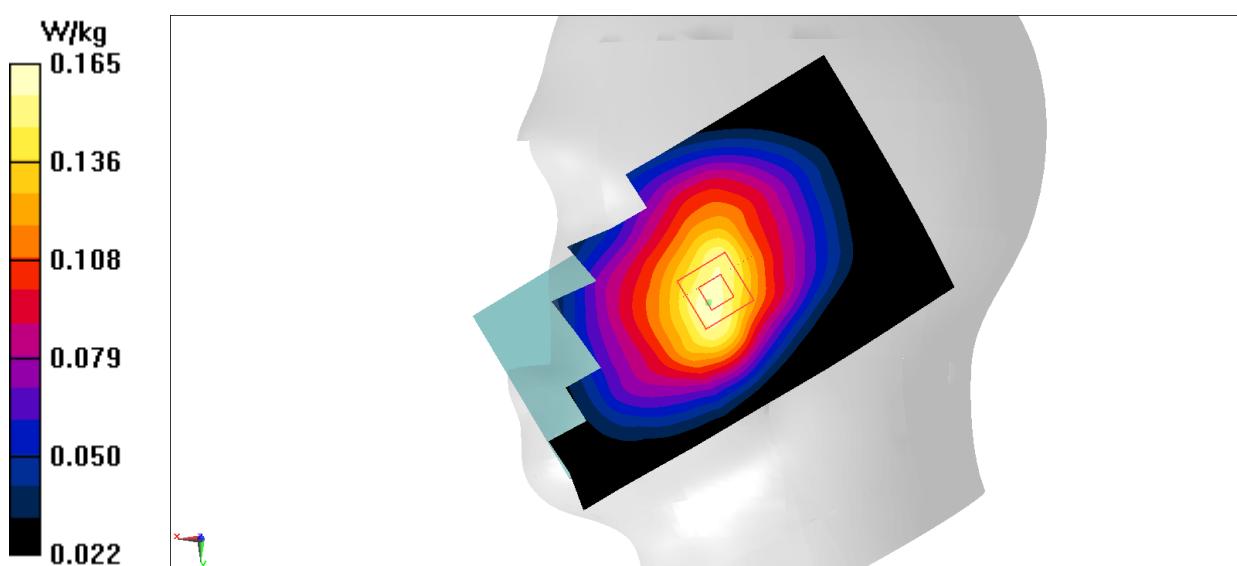


Fig I.9 WCDMA 850

WCDMA 850 Body Right High – antenna2

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Body 850 MHz

Medium parameters used (interpolated): $f = 846.6$ MHz; $\sigma = 0.981$ mho/m; $\epsilon_r = 55.876$; $\rho = 1000$ kg/m³

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

Communication System: WCDMA; Frequency: 846.6 MHz; Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(10.21, 10.21, 10.21)

Area Scan (131x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.388 W/kg

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

Reference Value = 17.78 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.489 W/kg

SAR(1 g) = 0.340 W/kg; SAR(10 g) = 0.233 W/kg

Maximum value of SAR (measured) = 0.392 W/kg

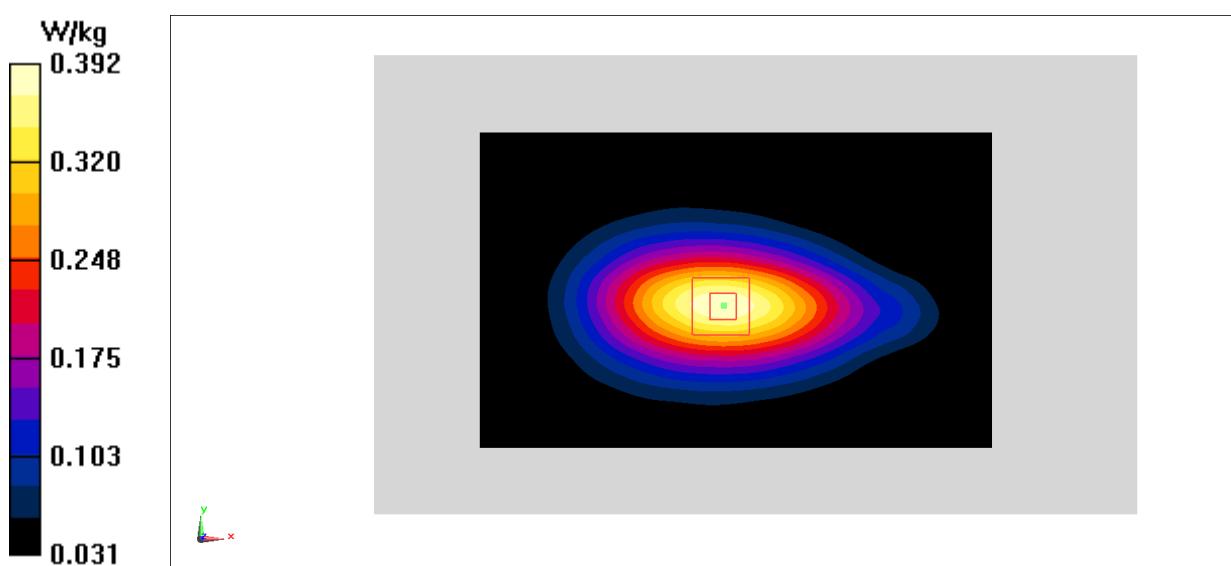


Fig I.10 WCDMA 850

WCDMA 1700 Right Cheek Low

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Head 1750 MHz

Medium parameters used (interpolated): $f = 1712.4$ MHz; $\sigma = 1.37$ mho/m; $\epsilon_r = 40.677$; $\rho = 1000$ kg/m³

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

Communication System: WCDMA 1750 Frequency: 1712.4 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN7464 ConvF(8.70, 8.70, 8.70)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.483 W/kg

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

Reference Value = 3.222 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.666 W/kg

SAR(1 g) = 0.423 W/kg; SAR(10 g) = 0.279 W/kg

Maximum value of SAR (measured) = 0.572 W/kg

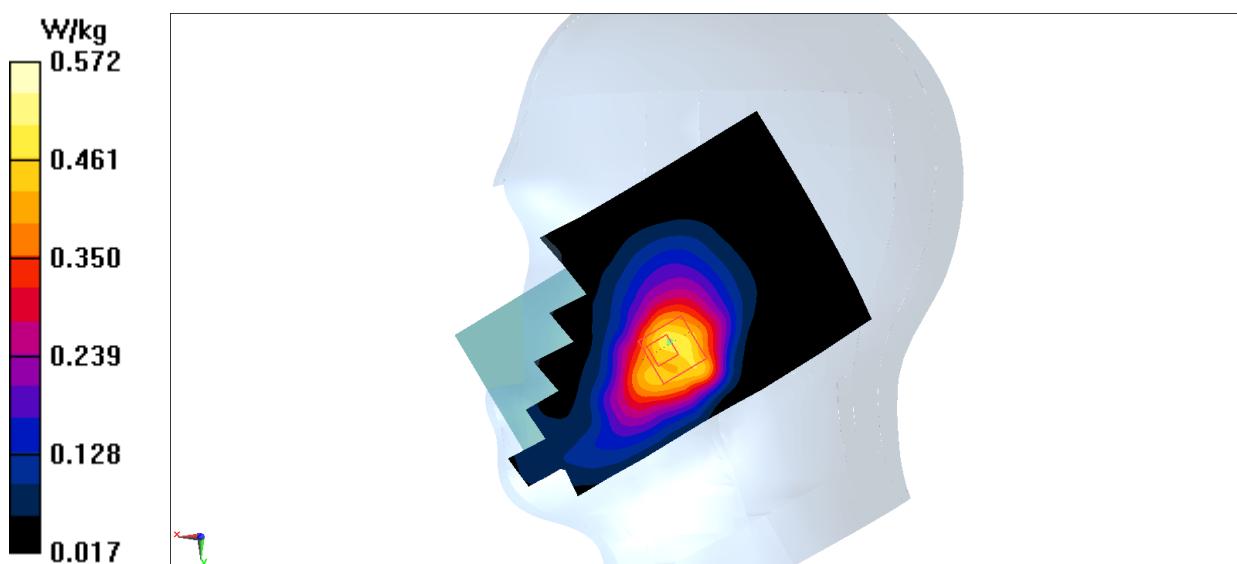


Fig I.11 WCDMA1700

WCDMA 1700 Body Bottom High

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Body 1750 MHz

Medium parameters used: $f = 1752.6 \text{ MHz}$; $\sigma = 1.509 \text{ mho/m}$; $\epsilon_r = 53.718$; $\rho = 1000 \text{ kg/m}^3$

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

Communication System: WCDMA 1900 Frequency: 1752.6 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN7464 ConvF(8.60, 8.60, 8.60)

Area Scan (131x81x1): Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.784 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 19.74 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.04 W/kg

SAR(1 g) = 0.622 W/kg; SAR(10 g) = 0.331 W/kg

Maximum value of SAR (measured) = 0.768 W/kg

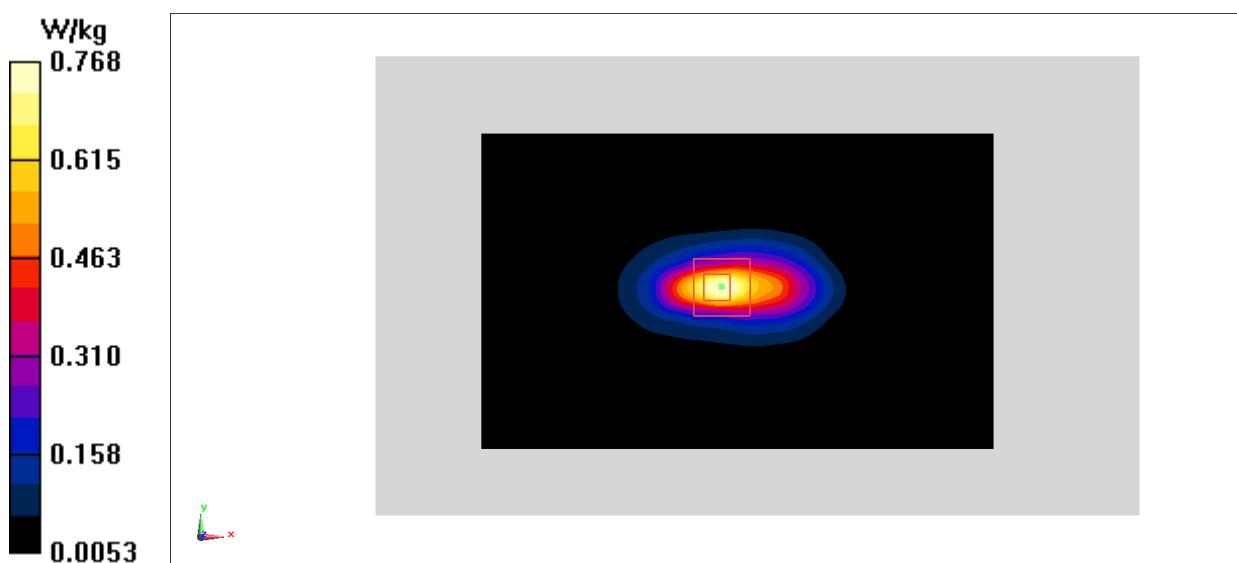


Fig I.12 WCDMA1700

WCDMA 1900 Right Cheek Low

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Head 1900 MHz

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.422$ mho/m; $\epsilon_r = 41.076$; $\rho = 1000$ kg/m³

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

Communication System: WCDMA 1900 Frequency: 1852.4 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN7464 ConvF(8.39, 8.39, 8.39)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.247 W/kg

Zoom Scan (7x7x5)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.595 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.338 W/kg

SAR(1 g) = 0.211 W/kg; SAR(10 g) = 0.137 W/kg

Maximum value of SAR (measured) = 0.289 W/kg

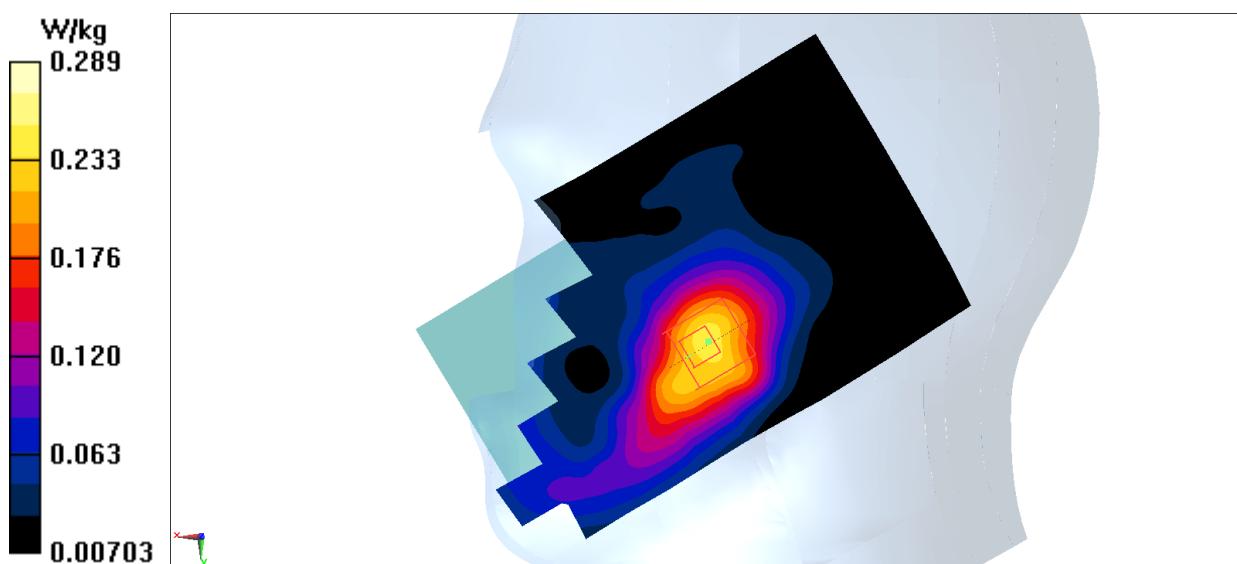


Fig I.13 WCDMA1900

WCDMA 1900 Body Bottom High

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Body 1900 MHz

Medium parameters used (interpolated): $f = 1907.6$ MHz; $\sigma = 1.561$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³

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

Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN7464 ConvF(8.32, 8.32, 8.32)

Area Scan (131x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.799 W/kg

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

Reference Value = 19.04 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.611 W/kg; SAR(10 g) = 0.314 W/kg

Maximum value of SAR (measured) = 0.758 W/kg

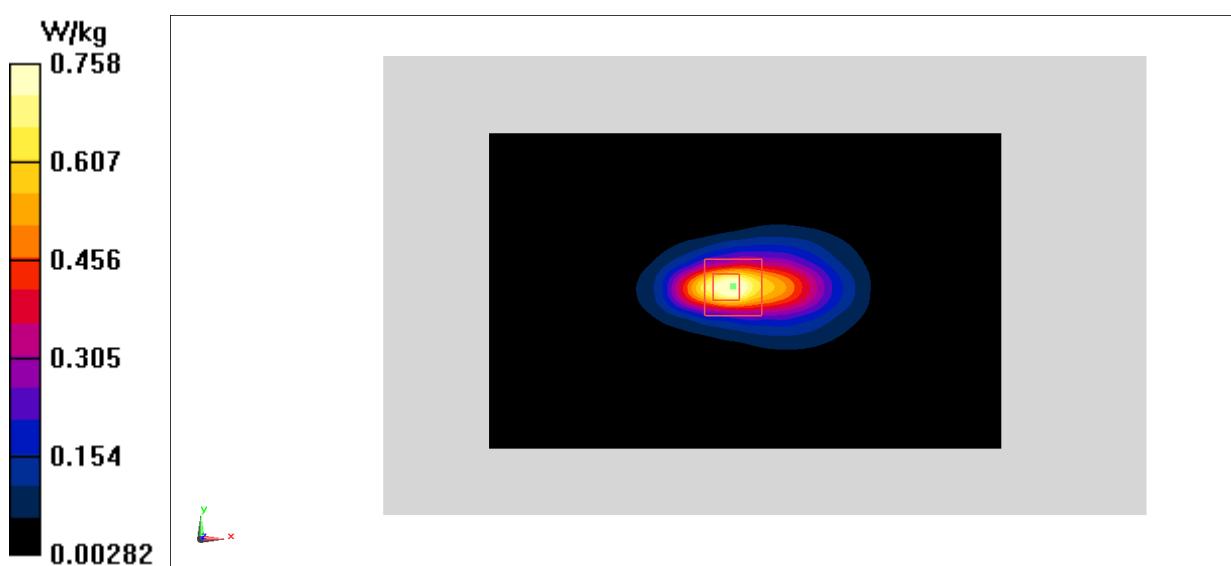


Fig I.14 WCDMA1900

LTE Band2 Right Cheek High with QPSK_20M_1RB_Low

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Head 1900 MHz

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.411 \text{ mho/m}$; $\epsilon_r = 40.61$; $\rho = 1000 \text{ kg/m}^3$ Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: LTE Band2 Frequency: 1900 MHz Duty Cycle: 1:1

Probe: EX3DV4- SN7464 ConvF(8.39, 8.39, 8.39)

Area Scan (71x121x1): Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.255 W/kg

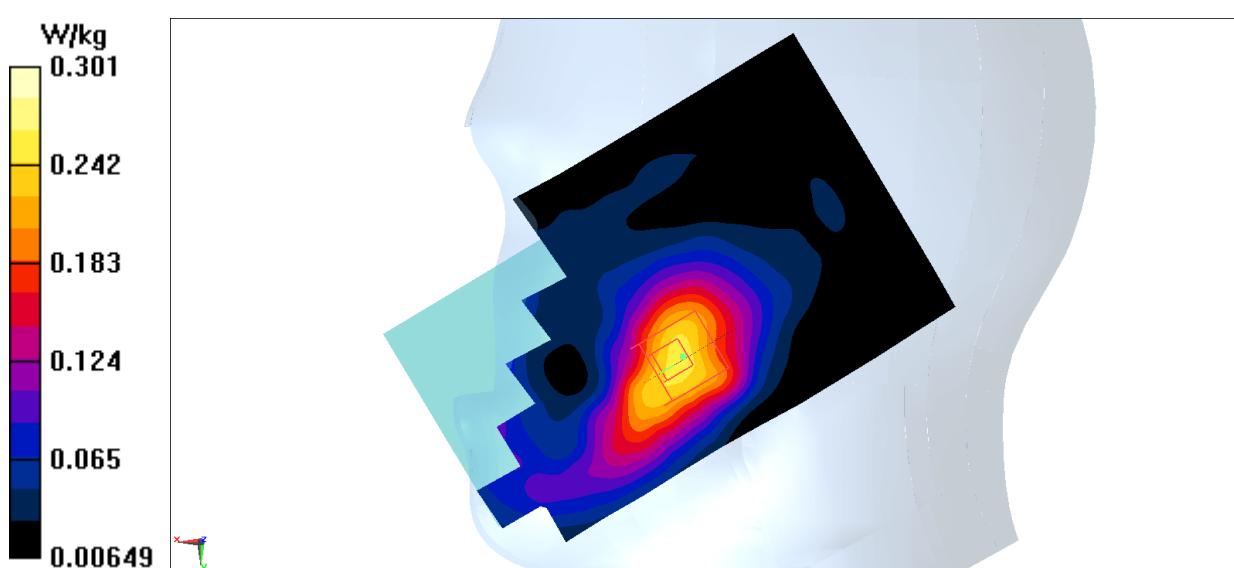
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 4.102 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.351 W/kg

SAR(1 g) = 0.220 W/kg; SAR(10 g) = 0.141 W/kg

Maximum value of SAR (measured) = 0.301 W/kg

**Fig I.15 LTE Band2**

LTE Band2 Body Bottom High with QPSK_20M_1RB_Low

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Body 1900 MHz

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.527 \text{ mho/m}$; $\epsilon_r = 52.71$; $\rho = 1000 \text{ kg/m}^3$ Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: LTE Band2 Frequency: 1900 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN7464 ConvF(8.32, 8.32, 8.32)

Area Scan (131x81x1): Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.899 W/kg

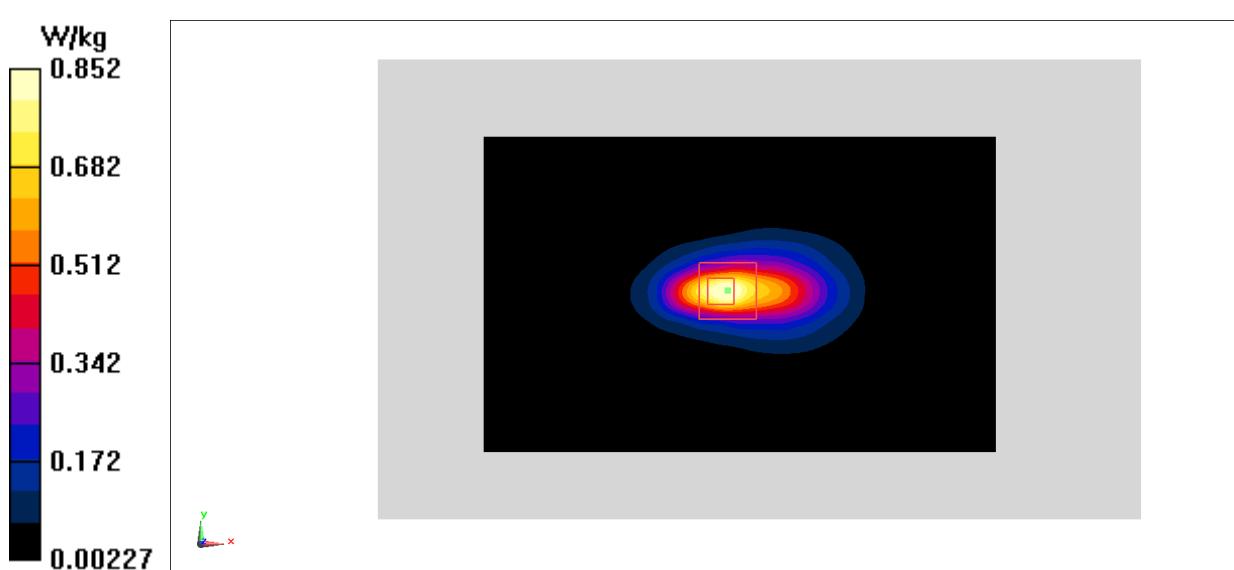
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 20.31 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.20 W/kg

SAR(1 g) = 0.684 W/kg; SAR(10 g) = 0.354 W/kg

Maximum value of SAR (measured) = 0.852 W/kg

**Fig I.16 LTE Band2**

LTE Band4 Right Cheek High with QPSK_20M_1RB_Low

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Head 1750 MHz

Medium parameters used $f = 1745$ MHz; $\sigma = 1.379$ mho/m; $\epsilon_r = 40.387$; $\rho = 1000$ kg/m 3

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

Communication System: LTE Band4 Frequency: 1745MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(8.70, 8.70, 8.70)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.546 W/kg

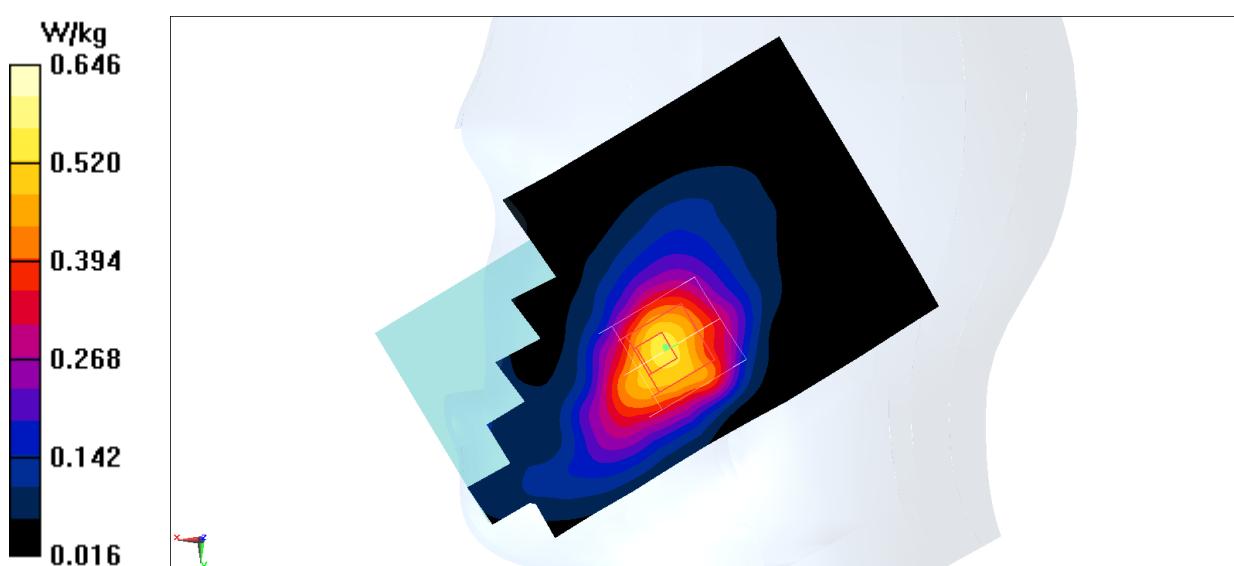
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.454 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 0.748 W/kg

SAR(1 g) = 0.479 W/kg; SAR(10 g) = 0.307 W/kg

Maximum value of SAR (measured) = 0.646 W/kg

**Fig I.17 LTE Band4**

LTE Band4 Body Bottom High with QPSK_20M_100RB

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Body 1750 MHz

Medium parameters used: $f = 1745 \text{ MHz}$; $\sigma = 1.521 \text{ mho/m}$; $\epsilon_r = 53.629$; $\rho = 1000 \text{ kg/m}^3$ Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: LTE Band4 Frequency: 1745 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(8.60, 8.60, 8.60)

Area Scan (131x81x1): Interpolated grid: $dx=1.00 \text{ 0mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.806 W/kg

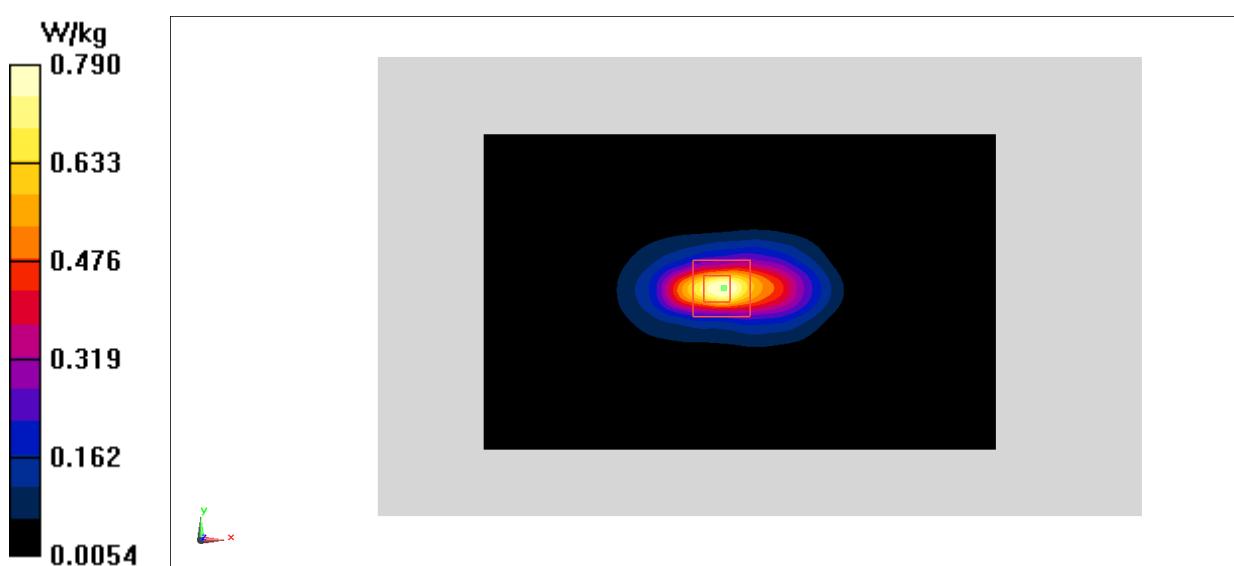
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 19.45 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 1.10 W/kg

SAR(1 g) = 0.648 W/kg; SAR(10 g) = 0.341 W/kg

Maximum value of SAR (measured) = 0.790 W/kg

**Fig I.18 LTE Band4**

LTE Band5 Left Cheek High with QPSK_10M_25RB_High – antenna1

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Head 850 MHz

Medium parameters used (interpolated): $f = 844$ MHz; $\sigma = 0.918$ mho/m; $\epsilon_r = 41.631$; $\rho = 1000$ kg/m³

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

Communication System: LTE Band5 Frequency: 844 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7464 ConvF(10.28, 10.28, 10.28)

Area Scan (71x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.209 W/kg

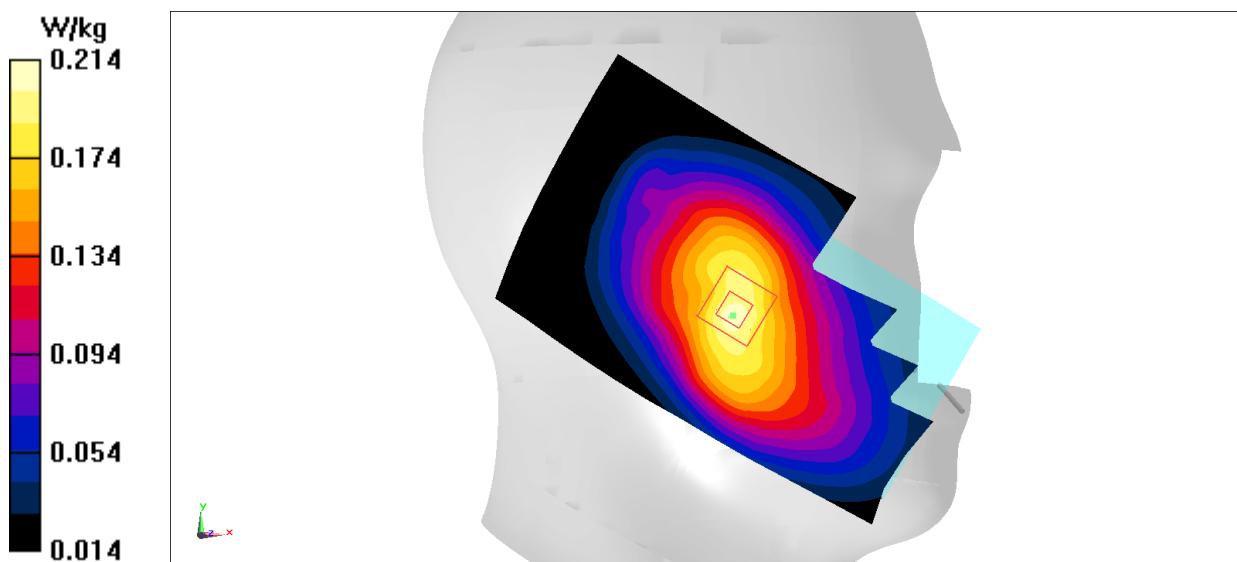
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.381 V/m; Power Drift = 0.10dB

Peak SAR (extrapolated) = 0.252 W/kg

SAR(1 g) = 0.193 W/kg; SAR(10 g) = 0.146 W/kg

Maximum value of SAR (measured) = 0.214 W/kg

**Fig I.19 LTE Band5**

LTE Band5 Body Left High with QPSK_10M_25RB_High – antenna1

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Body 850 MHz

Medium parameters used (interpolated): $f = 844$ MHz; $\sigma = 1.036$ mho/m; $\epsilon_r = 55.534$; $\rho = 1000$ kg/m³

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

Communication System: LTE Band5 Frequency: 844 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7464 ConvF(10.21, 10.21, 10.21)

Area Scan (131x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.291 W/kg

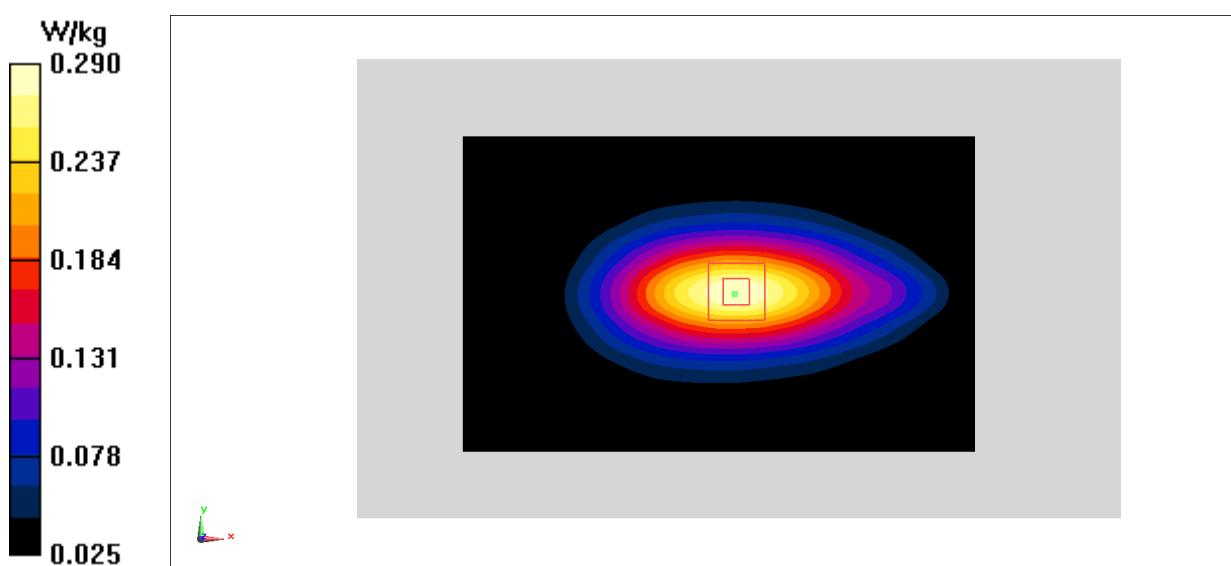
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.94 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.362 W/kg

SAR(1 g) = 0.250 W/kg; SAR(10 g) = 0.169 W/kg

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

**Fig I.20 LTE Band5**

LTE Band5 Left Cheek Low with QPSK_10M_1RB_High – antenna2

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Head 850 MHz

Medium parameters used (interpolated): $f = 829$ MHz; $\sigma = 0.904$ mho/m; $\epsilon_r = 41.851$; $\rho = 1000$ kg/m³

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

Communication System: LTE Band5 Frequency: 829 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7464 ConvF(10.28, 10.28, 10.28)

Area Scan (71x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.235 W/kg

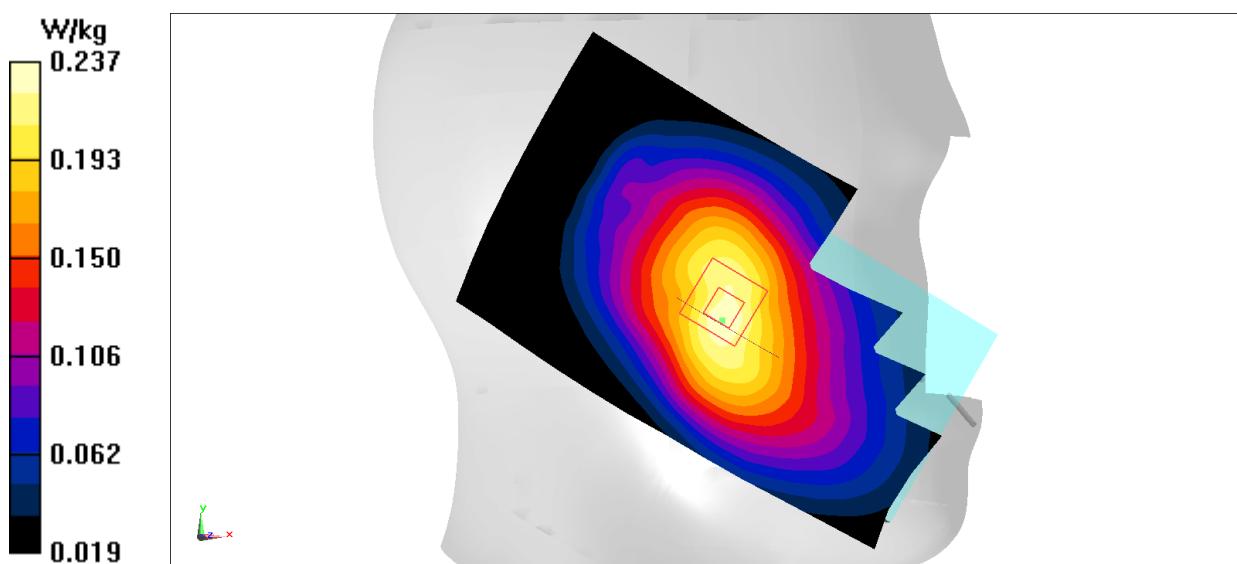
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.828 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.278 W/kg

SAR(1 g) = 0.216 W/kg; SAR(10 g) = 0.166 W/kg

Maximum value of SAR (measured) = 0.237 W/kg

**Fig I.21 LTE Band5**

LTE Band5 Body Bottom Low with QPSK_10M_1RB_High – antenna2

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Body 850 MHz

Medium parameters used (interpolated): $f = 829$ MHz; $\sigma = 1.023$ mho/m; $\epsilon_r = 55.694$; $\rho = 1000$ kg/m³

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

Communication System: LTE Band5 Frequency: 829 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7464 ConvF(10.21, 10.21, 10.21)

Area Scan (131x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.397 W/kg

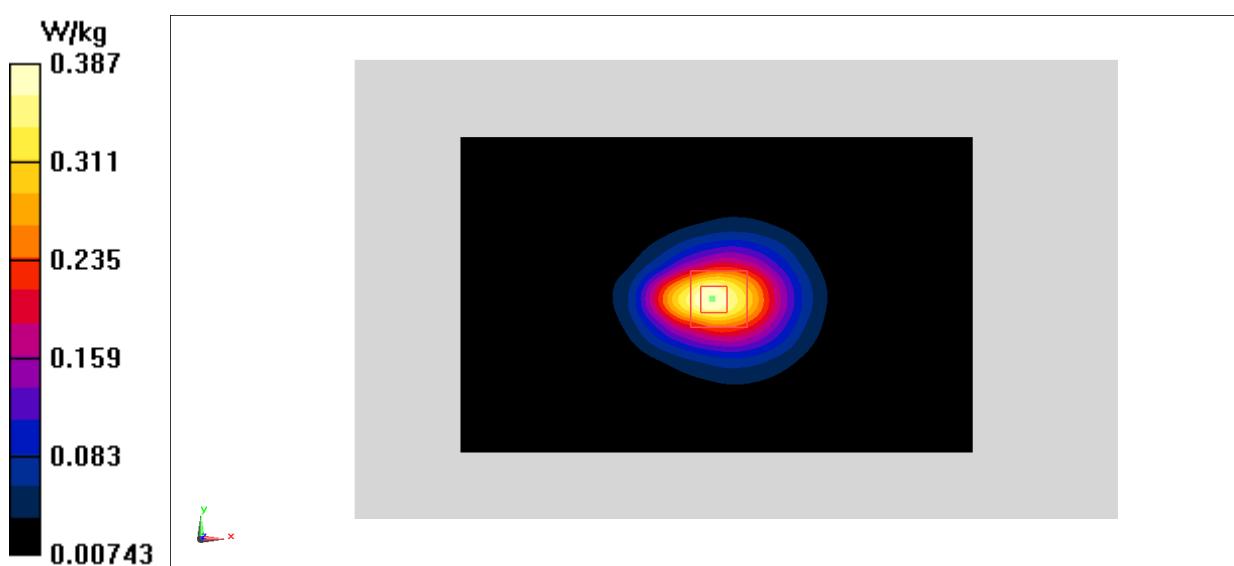
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.52 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.523 W/kg

SAR(1 g) = 0.323 W/kg; SAR(10 g) = 0.193 W/kg

Maximum value of SAR (measured) = 0.387 W/kg

**Fig I.22 LTE Band5**

LTE Band7 Right Cheek Middle with QPSK_20M_1RB_Low

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Head2600 MHz

Medium parameters used: $f = 2535$ MHz; $\sigma = 1.946$ mho/m; $\epsilon_r = 38.42$; $\rho = 1000$ kg/m 3

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

Communication System: LTE Band7 Frequency: 2535 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN7464 ConvF(7.76, 7.76, 7.76)

Area Scan (91x161x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.168 W/kg

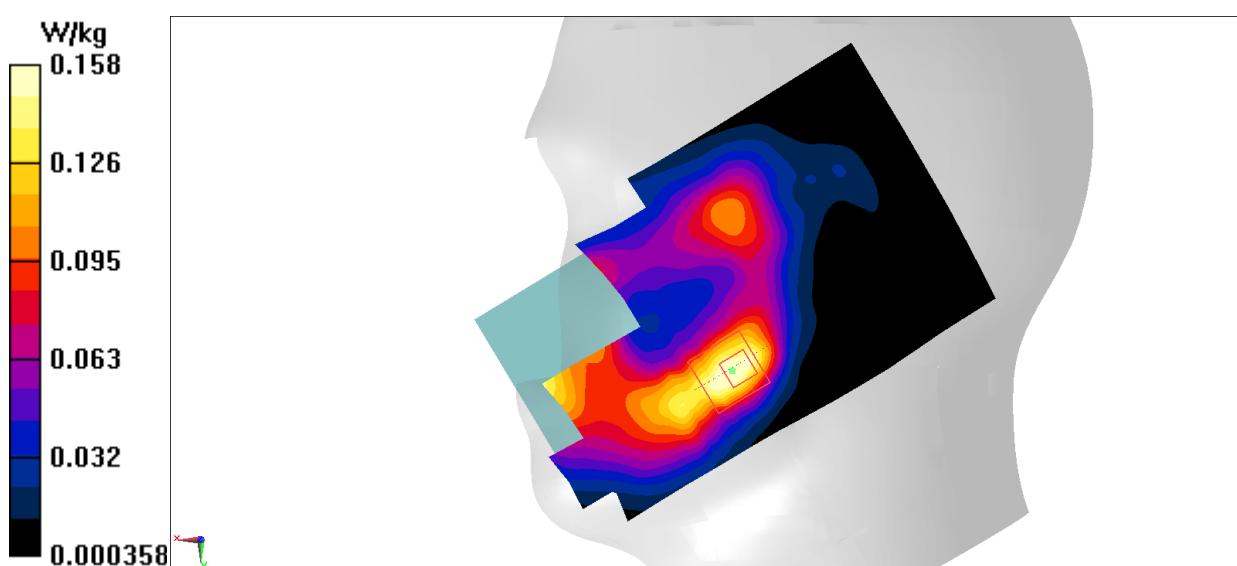
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.803 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.239 W/kg

SAR(1 g) = 0.129 W/kg; SAR(10 g) = 0.070 W/kg

Maximum value of SAR (measured) = 0.158 W/kg

**Fig I.23 LTE Band7**

LTE Band7 Body Bottom Middle with QPSK_20M_1RB_Low

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Body2600 MHz

Medium parameters used: $f = 2535$ MHz; $\sigma = 2.118$ mho/m; $\epsilon_r = 51.81$; $\rho = 1000$ kg/m 3

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

Communication System: LTE Band7 Frequency: 2535 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN7464 ConvF(7.84, 7.84, 7.84)

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

Maximum value of SAR (interpolated) = 0.939 W/kg

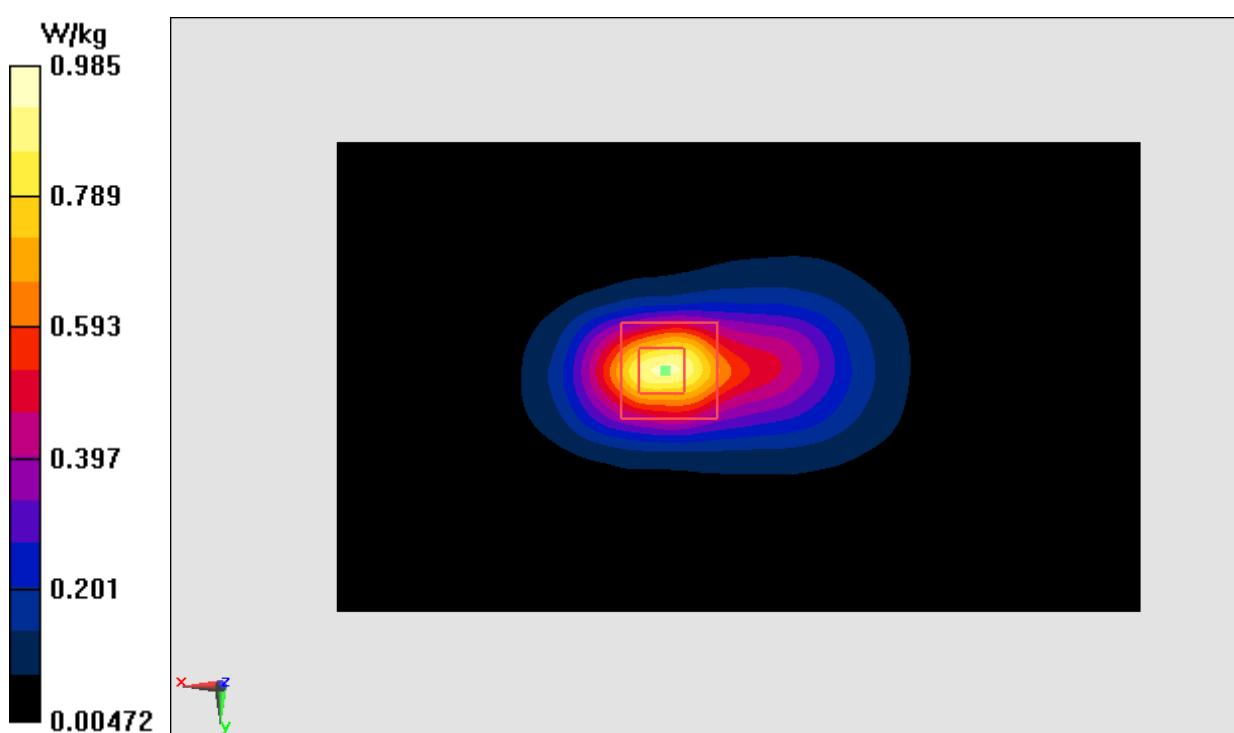
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.17 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 1.48 W/kg

SAR(1 g) = 0.765 W/kg; SAR(10 g) = 0.358 W/kg

Maximum value of SAR (measured) = 0.985 W/kg

**Fig I.24 LTE Band7**

LTE Band12 Left Cheek Middle with QPSK_10M_1RB_Middle – antenna1

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Head750 MHz

Medium parameters used (interpolated): $f = 707.5$ MHz; $\sigma = 0.861$ mho/m; $\epsilon_r = 42.25$; $\rho = 1000$ kg/m³

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

Communication System: LTE Band12 Frequency: 707.5 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN7464 ConvF(10.57,10.57, 10.57)

Area Scan (71x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.218 W/kg

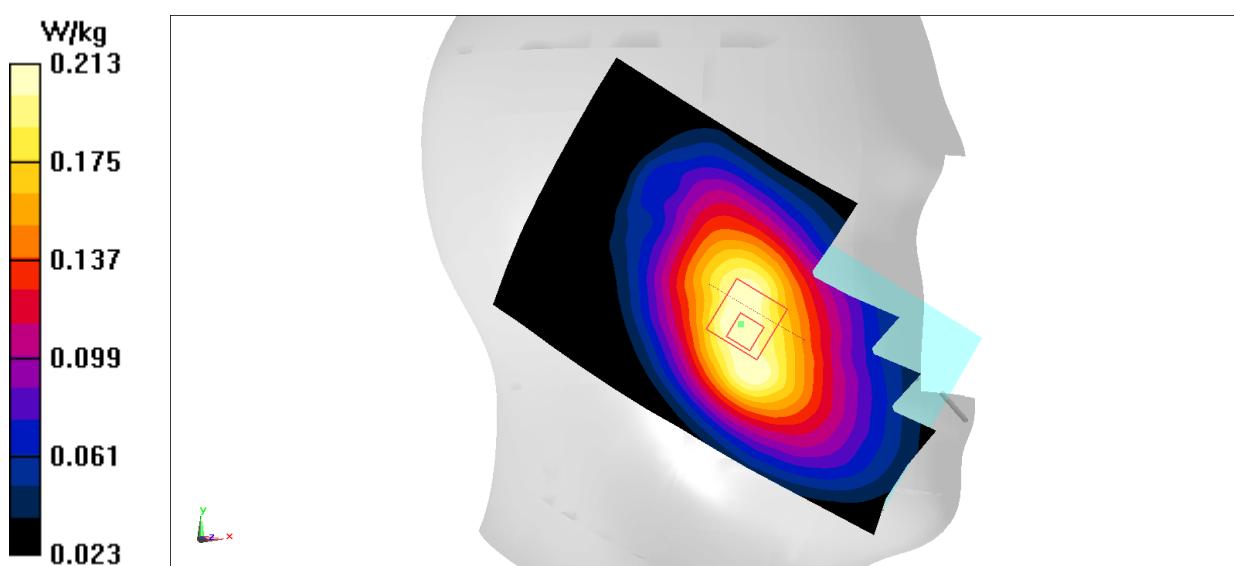
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.788 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.242 W/kg

SAR(1 g) = 0.194 W/kg; SAR(10 g) = 0.152 W/kg

Maximum value of SAR (measured) = 0.213 W/kg

**Fig I.25 LTE Band12**

LTE Band12 Body Left Middle with QPSK_10M_1RB_Middle – antenna1

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Body750 MHz

Medium parameters used (interpolated): $f = 707.5$ MHz; $\sigma = 0.932$ mho/m; $\epsilon_r = 56.47$; $\rho = 1000$ kg/m³

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

Communication System: LTE Band12Frequency: 707.5 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN7464 ConvF(10.63, 10.63, 10.63)

Area Scan (131x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.123 W/kg

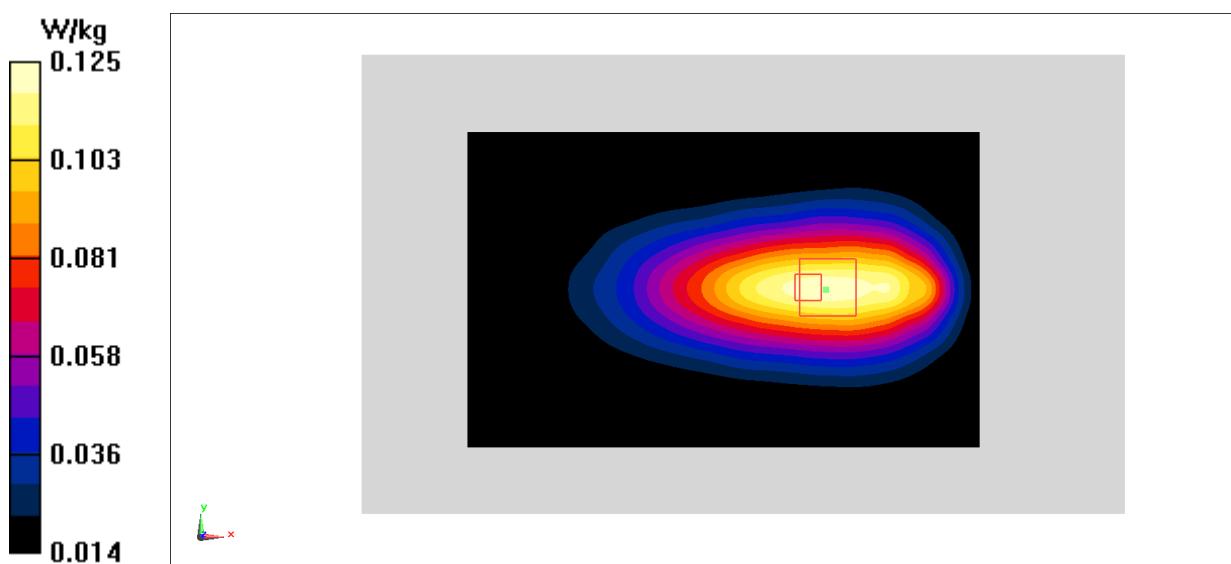
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.07 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.152 W/kg

SAR(1 g) = 0.110 W/kg; SAR(10 g) = 0.079 W/kg

Maximum value of SAR (measured) = 0.125 W/kg

**Fig I.26 LTE Band12**

LTE Band12 Left Cheek Middle with QPSK_10M_1RB_Middle – antenna2

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Head750 MHz

Medium parameters used (interpolated): $f = 707.5$ MHz; $\sigma = 0.861$ mho/m; $\epsilon_r = 42.25$; $\rho = 1000$ kg/m³

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

Communication System: LTE Band12 Frequency: 707.5 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN7464 ConvF(10.57,10.57, 10.57)

Area Scan (71x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.190 W/kg

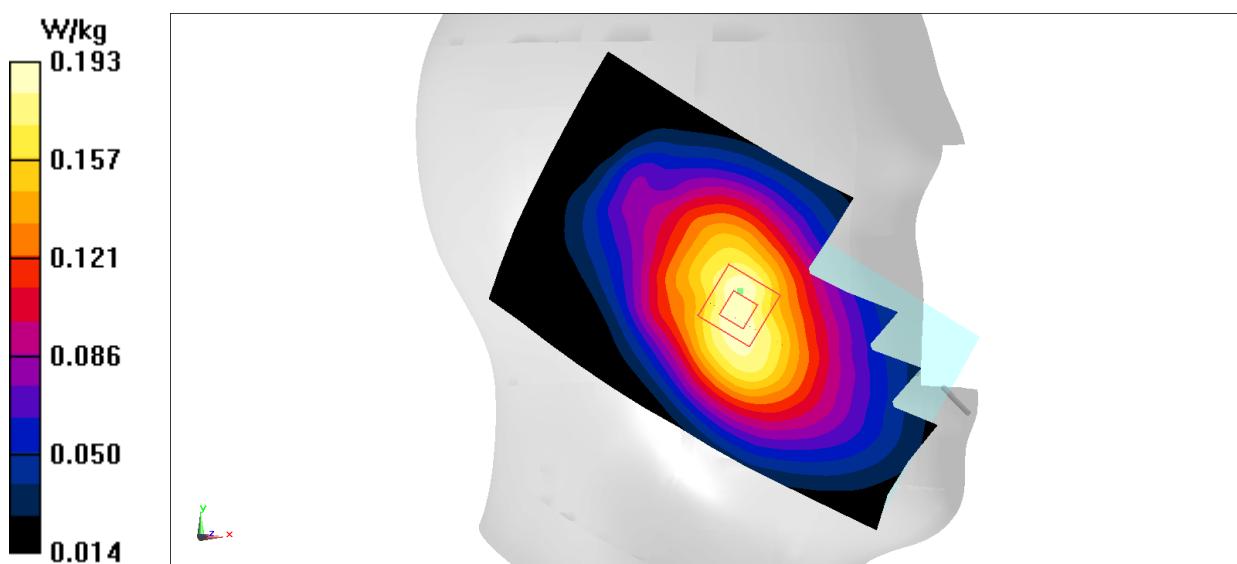
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.613 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.223 W/kg

SAR(1 g) = 0.179 W/kg; SAR(10 g) = 0.142 W/kg

Maximum value of SAR (measured) = 0.193 W/kg

**Fig I.27 LTE Band12**

LTE Band12 Body Right Middle with QPSK_10M_1RB_Middle – antenna2

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Body750 MHz

Medium parameters used (interpolated): $f = 707.5$ MHz; $\sigma = 0.932$ mho/m; $\epsilon_r = 56.47$; $\rho = 1000$ kg/m³

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

Communication System: LTE Band12Frequency: 707.5 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN7464 ConvF(10.63, 10.63, 10.63)

Area Scan (131x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.354 W/kg

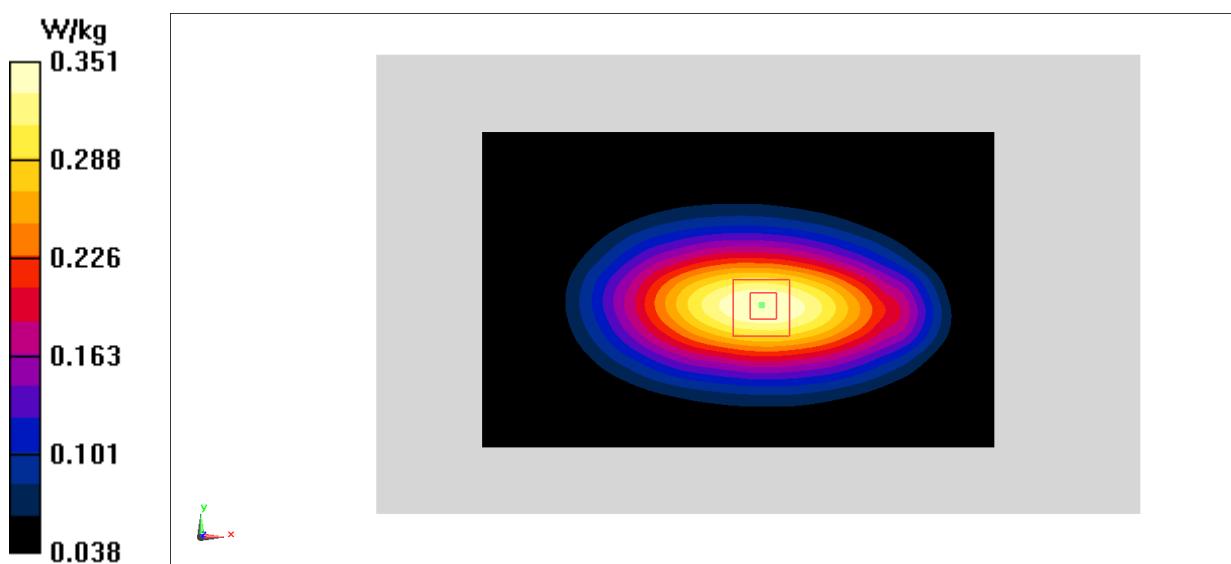
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 19.20 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.426 W/kg

SAR(1 g) = 0.311 W/kg; SAR(10 g) = 0.222 W/kg

Maximum value of SAR (measured) = 0.351 W/kg

**Fig I.28 LTE Band12**

LTE Band13 Left Cheek with QPSK_10M_1RB_Middle – antenna1

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Head750 MHz

Medium parameters used (interpolated): $f = 782$ MHz; $\sigma = 0.899$ mho/m; $\epsilon_r = 42.28$; $\rho = 1000$ kg/m³

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

Communication System: LTE Band13 Frequency: 782 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN7464 ConvF(10.57,10.57, 10.57)

Area Scan (71x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.245 W/kg

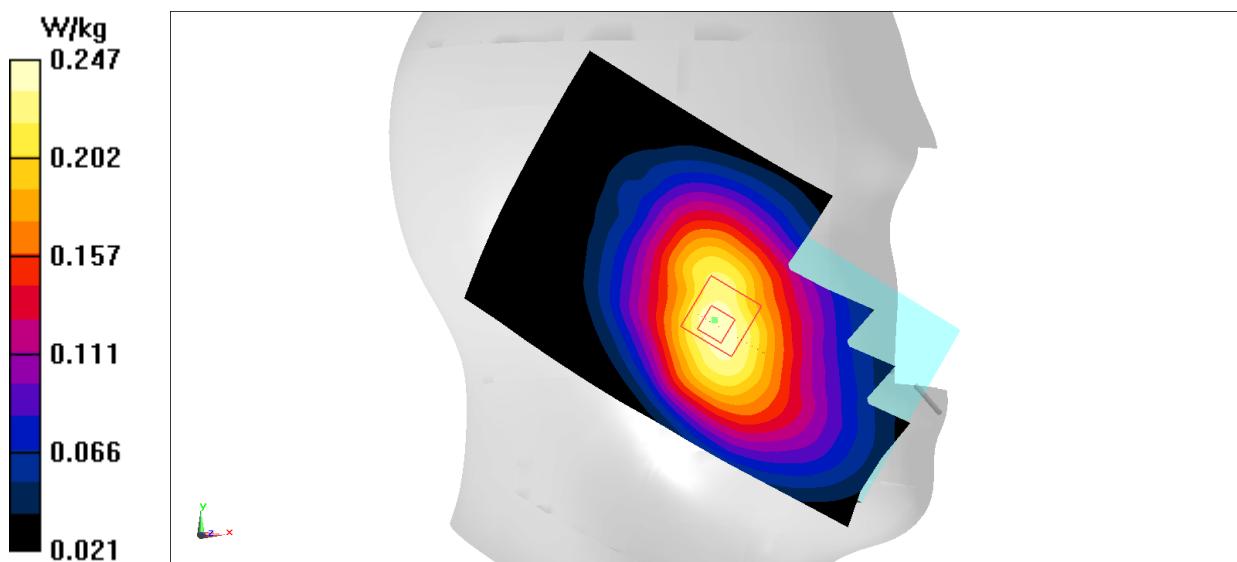
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.506 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.288 W/kg

SAR(1 g) = 0.224 W/kg; SAR(10 g) = 0.174 W/kg

Maximum value of SAR (measured) = 0.247 W/kg

**Fig I.29 LTE Band13**

LTE Band13 Body Left with QPSK_10M_1RB_Middle – antenna1

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Body750 MHz

Medium parameters used (interpolated): $f = 782$ MHz; $\sigma = 0.96$ mho/m; $\epsilon_r = 56.36$; $\rho = 1000$ kg/m³

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

Communication System: LTE Band13Frequency: 782 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN7464 ConvF(10.63, 10.63, 10.63)

Area Scan (131x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.335 W/kg

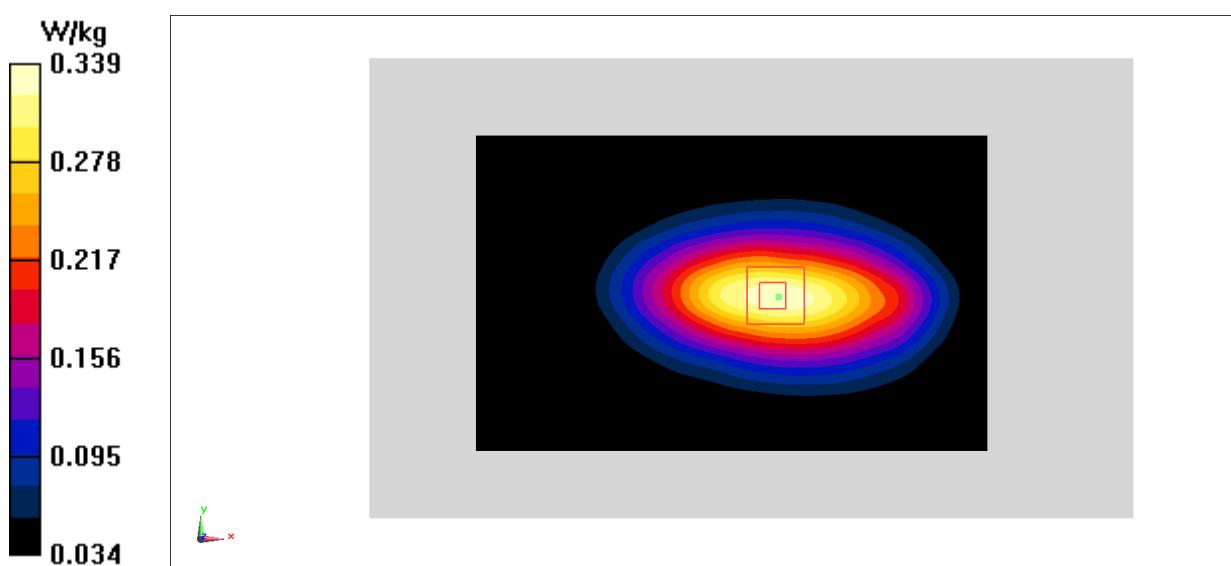
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.70 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.424 W/kg

SAR(1 g) = 0.298 W/kg; SAR(10 g) = 0.207 W/kg

Maximum value of SAR (measured) = 0.339 W/kg

**Fig I.30 LTE Band13**

LTE Band13 Left Cheek with QPSK_10M_1RB_Middle – antenna2

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Head750 MHz

Medium parameters used (interpolated): $f = 782$ MHz; $\sigma = 0.899$ mho/m; $\epsilon_r = 42.28$; $\rho = 1000$ kg/m³

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

Communication System: LTE Band13 Frequency: 782 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN7464 ConvF(10.57,10.57, 10.57)

Area Scan (71x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.230 W/kg

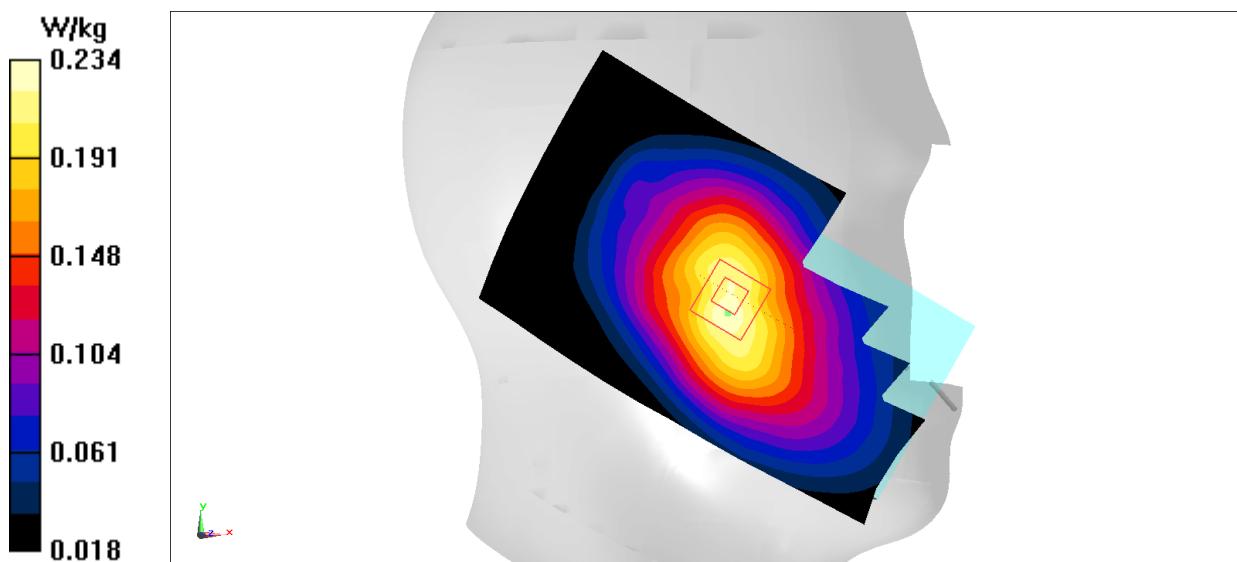
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.718 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.272 W/kg

SAR(1 g) = 0.215 W/kg; SAR(10 g) = 0.166 W/kg

Maximum value of SAR (measured) = 0.234 W/kg

**Fig I.31 LTE Band13**

LTE Band13 Body Right with QPSK_10M_1RB_Middle – antenna2

Date: 2018-4-2

Electronics: DAE4 Sn1525

Medium: Body750 MHz

Medium parameters used (interpolated): $f = 782$ MHz; $\sigma = 0.96$ mho/m; $\epsilon_r = 56.36$; $\rho = 1000$ kg/m³

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

Communication System: LTE Band13 Frequency: 782 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN7464 ConvF(10.63, 10.63, 10.63)

Area Scan (131x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.472 W/kg

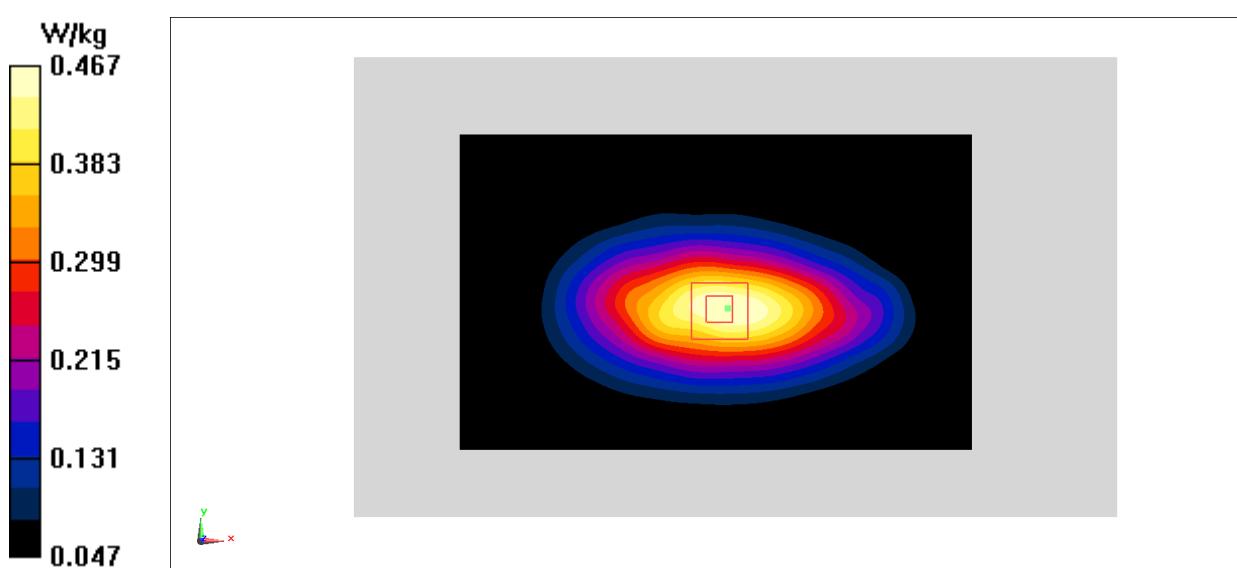
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 20.95 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.554 W/kg

SAR(1 g) = 0.410 W/kg; SAR(10 g) = 0.287 W/kg

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

**Fig I.32 LTE Band13**

LTE Band30 Right Cheek with QPSK_10M_1RB_High

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Head 2300 MHz

Medium parameters used: $f = 2310 \text{ MHz}$; $\sigma = 1.66 \text{ mho/m}$; $\epsilon_r = 39.194$; $\rho = 1000 \text{ kg/m}^3$ Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: LTE Band30 Frequency: 2310 MHz Duty Cycle: 1:1

Probe: EX3DV4- SN7464 ConvF(8.40, 8.40, 8.40)

Area Scan (91x161x1): Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.158 W/kg

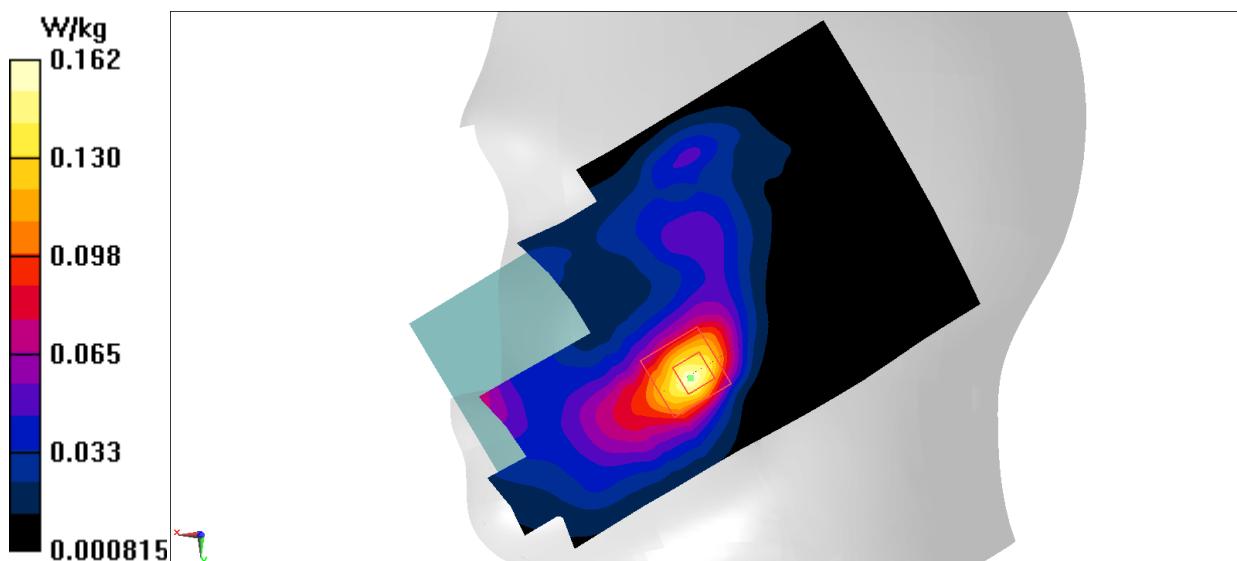
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 1.607 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.237 W/kg

SAR(1 g) = 0.128 W/kg; SAR(10 g) = 0.066 W/kg

Maximum value of SAR (measured) = 0.162 W/kg

**Fig I.33 LTE Band30**

LTE Band30 Body Bottom with QPSK_10M_1RB_Low

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Body 2300 MHz

Medium parameters used: $f = 2310 \text{ MHz}$; $\sigma = 1.907 \text{ mho/m}$; $\epsilon_r = 52.925$; $\rho = 1000 \text{ kg/m}^3$

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

Communication System: LTE Band30 Frequency: 2310 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN7464 ConvF(8.30, 8.30, 8.30)

Area Scan (161x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.987 W/kg

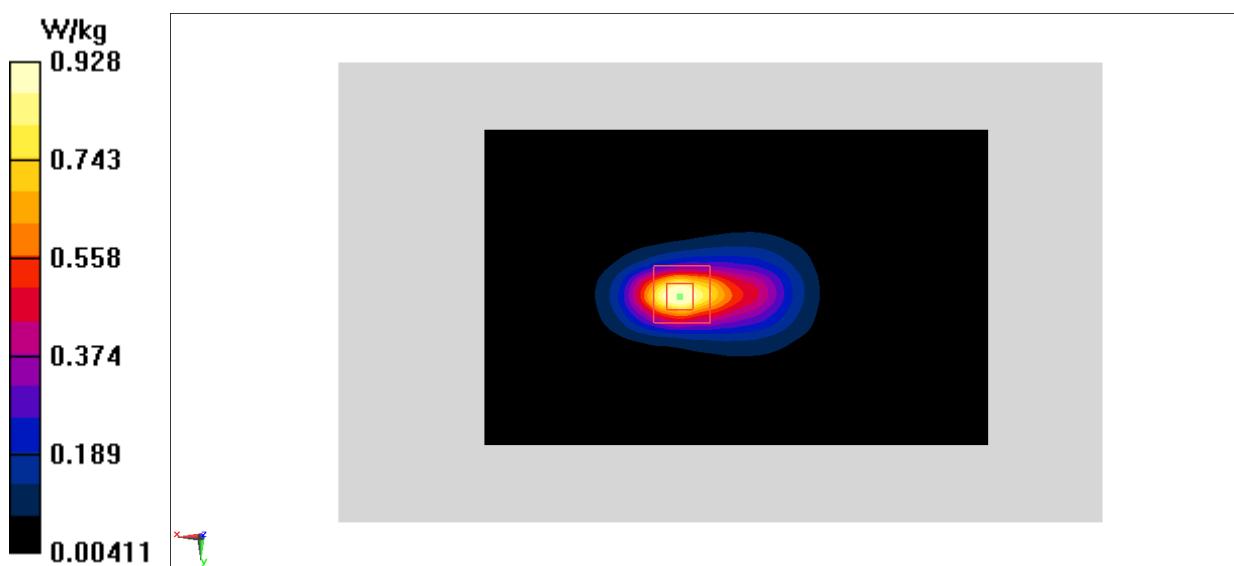
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.80 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 1.35 W/kg

SAR(1 g) = 0.746 W/kg; SAR(10 g) = 0.365 W/kg

Maximum value of SAR (measured) = 0.928 W/kg

**Fig I.34 LTE Band30**

LTE Band 41 Right Cheek Low with QPSK_20M_1RB_Middle

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Head 2600 MHz

Medium parameters used (interpolated): $f = 2506$ MHz; $\sigma = 1.855$ mho/m; $\epsilon_r = 38.91$; $\rho = 1000$ kg/m³

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

Communication System: LTE Band41 Frequency: 2506 MHz Duty Cycle: 1:1.58

Probe: EX3DV4 - SN7464 ConvF(7.76, 7.76, 7.76)

Area Scan (91x161x1): Interpolated grid: dx=1.000 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0732 W/kg

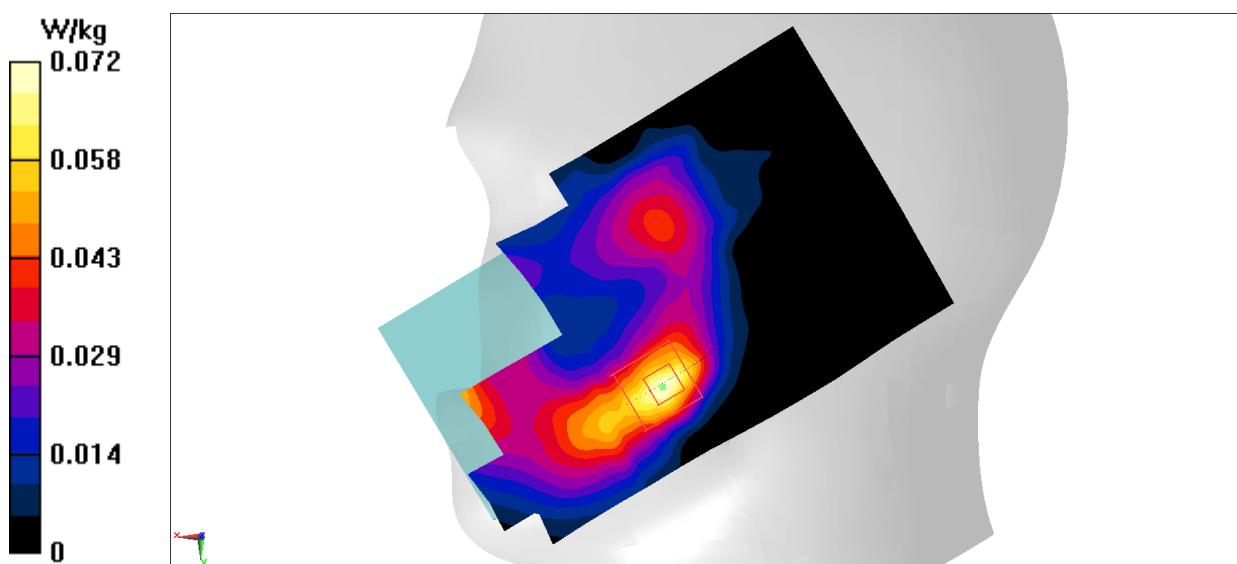
Zoom Scan (10x9x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.338 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.103 W/kg

SAR(1 g) = 0.056 W/kg; SAR(10 g) = 0.030 W/kg

Maximum value of SAR (measured) = 0.0723 W/kg

**Fig I.35 LTE Band 41**

LTE Band 41 Body Bottom Low with QPSK_20M_1RB_Middle

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Body 2600 MHz

Medium parameters use (interpolated): $f = 2506$ MHz; $\sigma = 2.013$ mho/m; $\epsilon_r = 52.139$; $\rho = 1000$ kg/m³

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

Communication System: LTE Band41 Frequency: 2506 MHz Duty Cycle: 1:1.58

Probe: EX3DV4 - SN7464 ConvF(7.84, 7.84, 7.84)

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

Maximum value of SAR (interpolated) = 0.920 W/kg

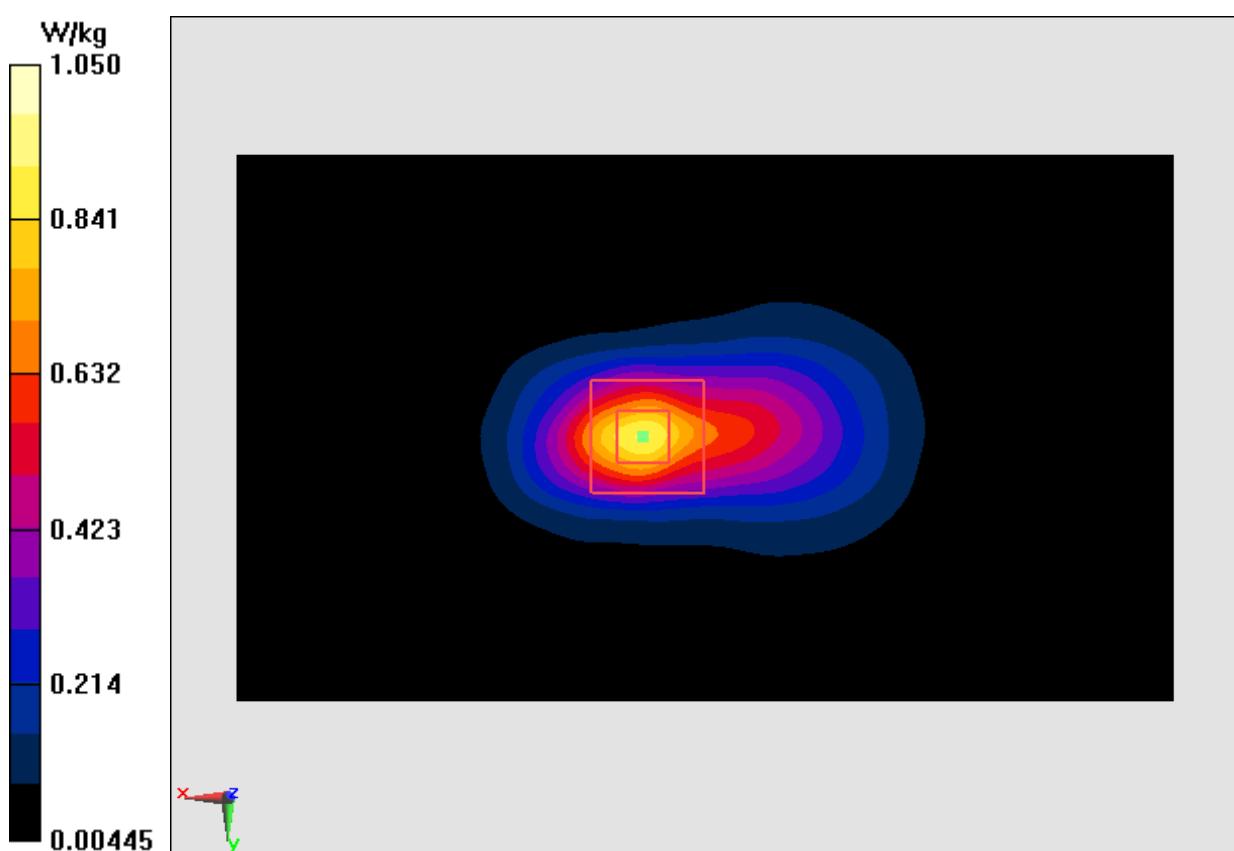
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.63 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.57 W/kg

SAR(1 g) = 0.774 W/kg; SAR(10 g) = 0.353 W/kg

Maximum value of SAR (measured) = 1.05 W/kg

**Fig I.36 LTE Band 41**

Wifi 802.11b Left Cheek Channel 6

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Head 2450 MHz

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.799$ mho/m; $\epsilon_r = 38.97$; $\rho = 1000$ kg/m³

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

Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN7464 ConvF(7.89, 7.89, 7.89)

Area Scan (91x161x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.221 W/kg

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

Reference Value = 5.925 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.374 W/kg

SAR(1 g) = 0.175 W/kg; SAR(10 g) = 0.087 W/kg

Maximum value of SAR (measured) = 0.230 W/kg

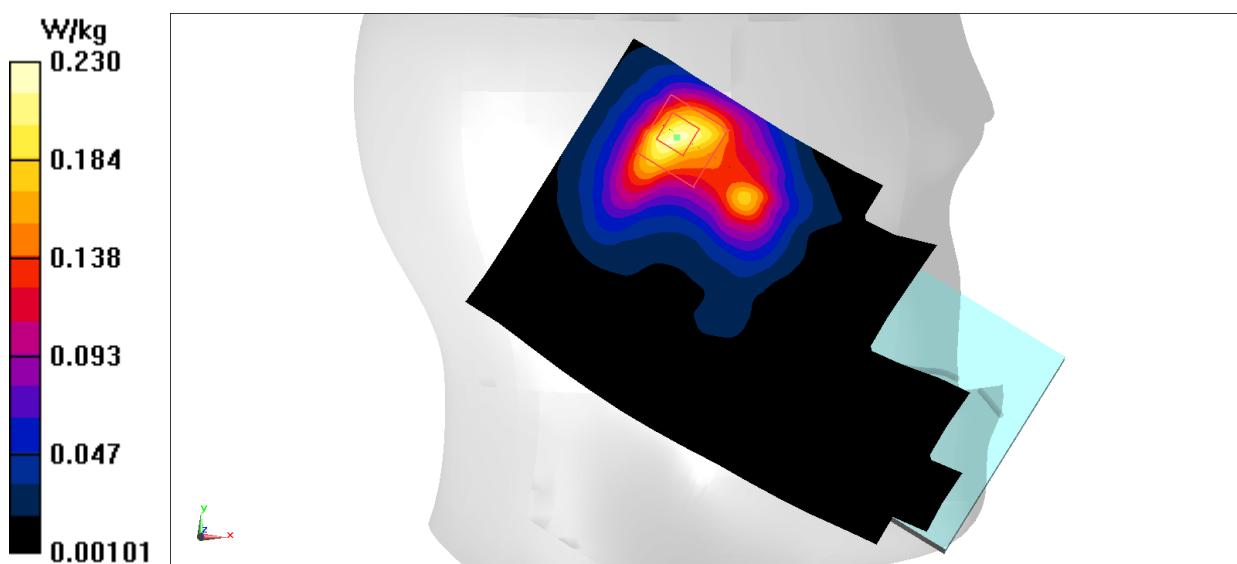


Fig I.37 2450 MHz

Wifi 802.11b Body Rear Channel 6

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Body 2450 MHz

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.966$ mho/m; $\epsilon_r = 52.12$; $\rho = 1000$ kg/m³

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

Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(8.09, 8.09, 8.09)

Area Scan (151x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.165 W/kg

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

Reference Value = 4.505 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.256 W/kg

SAR(1 g) = 0.130 W/kg; SAR(10 g) = 0.064 W/kg

Maximum value of SAR (measured) = 0.168 W/kg

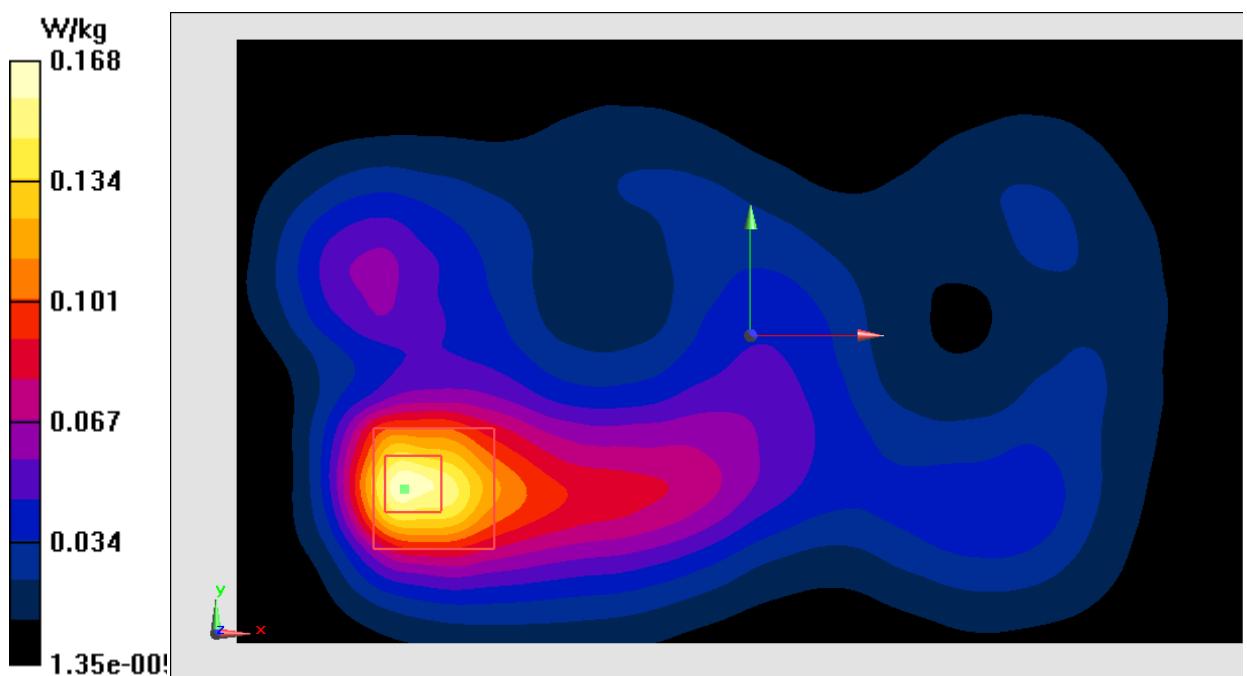


Fig I.38 2450 MHz

Wifi 802.11a Left Cheek Channel 157

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Head 5 GHz

Medium parameters used: $f = 5785$ MHz; $\sigma = 5.072$ mho/m; $\epsilon_r = 35.088$; $\rho = 1000$ kg/m³

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

Communication System: WLan 5G Frequency: 5785 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(5.11, 5.11, 5.11)

Area Scan (111x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0272 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 1.295 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.295 W/kg

SAR(1 g) = 0.021 W/kg; SAR(10 g) = 0.00462 W/kg

Maximum value of SAR (measured) = 0.0832 W/kg

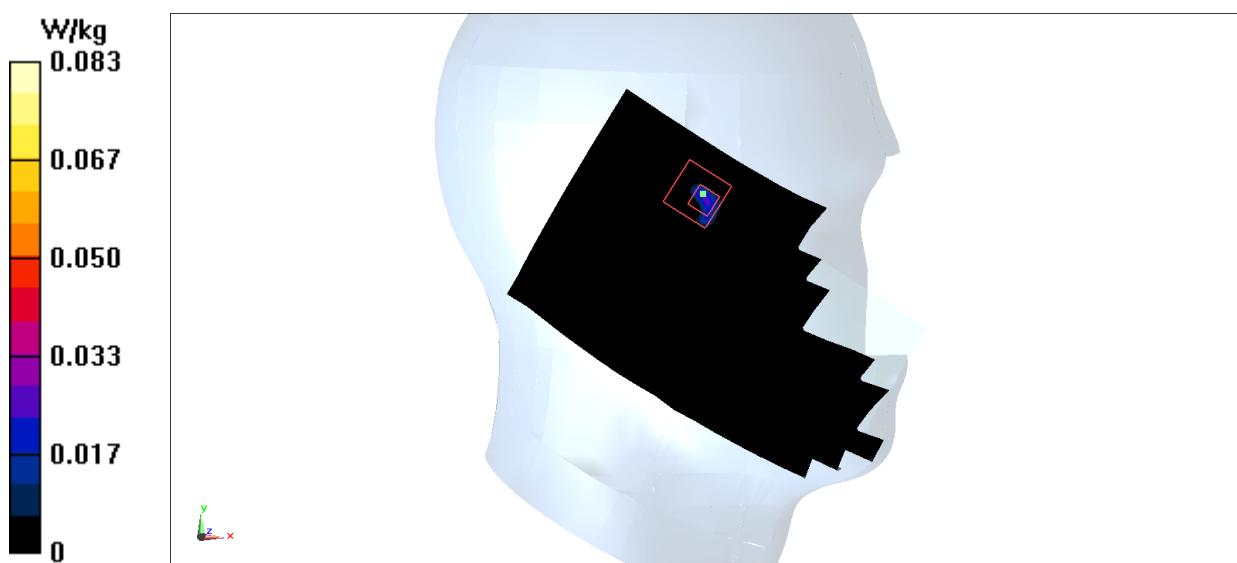


Fig I.39 5GHz

Wifi 802.11a Rear Channel 64

Date: 2018-4-3

Electronics: DAE4 Sn1525

Medium: Body 5 GHz

Medium parameters used: $f = 5320$ MHz; $\sigma = 5.388$ mho/m; $\epsilon_r = 47.668$; $\rho = 1000$ kg/m³

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

Communication System: WLAN 5G Frequency: 5320 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(5.19, 5.19, 5.19)

Area Scan (181x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 2.476 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 1.38 W/kg

SAR(1 g) = 0.364 W/kg; SAR(10 g) = 0.148 W/kg

Maximum value of SAR (measured) = 0.818 W/kg

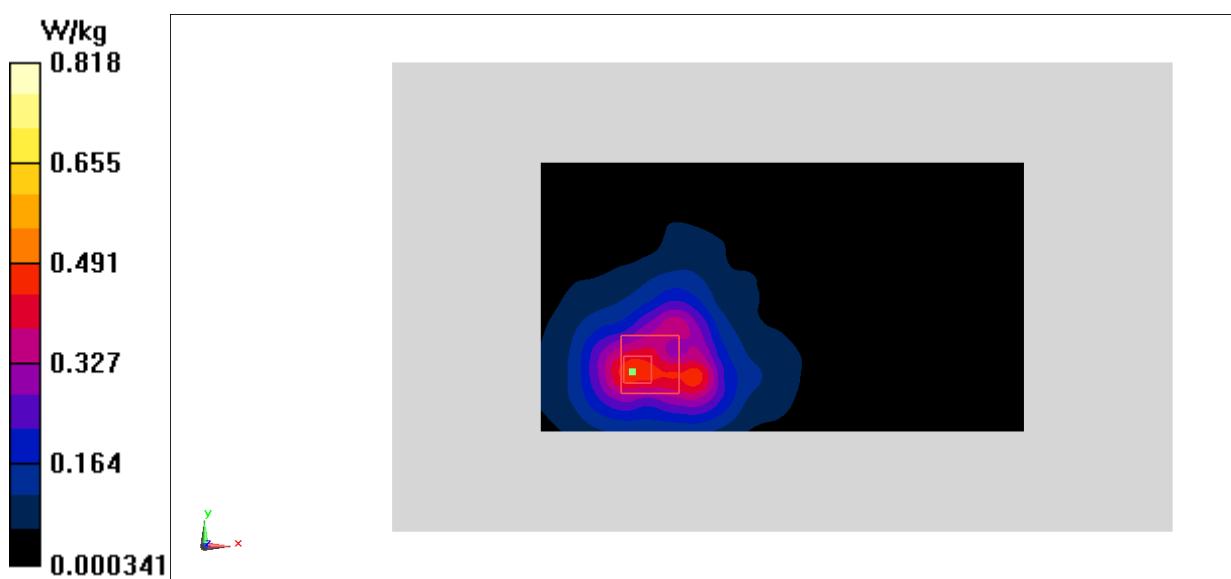


Fig I.40 5GHz



ANNEX J Accreditation Certificate

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 600118-0

Telecommunication Technology Labs, CAICT

Beijing
China

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

Electromagnetic Compatibility & Telecommunications

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communiqué dated January 2009).*

2016-09-29 through 2017-09-30

Effective Dates



For the National Voluntary Laboratory Accreditation Program