

**Appendix (Additional assessments outside the scope of SCS 0108)**

**Antenna Parameters with Head TSL at 5200 MHz**

Impedance, transformed to feed point	50.5 $\Omega$ - 6.6 $j\Omega$
Return Loss	- 23.7 dB

**Antenna Parameters with Head TSL at 5300 MHz**

Impedance, transformed to feed point	47.5 $\Omega$ - 2.8 $j\Omega$
Return Loss	- 28.3 dB

**Antenna Parameters with Head TSL at 5500 MHz**

Impedance, transformed to feed point	51.1 $\Omega$ - 3.7 $j\Omega$
Return Loss	- 28.5 dB

**Antenna Parameters with Head TSL at 5600 MHz**

Impedance, transformed to feed point	54.0 $\Omega$ + 2.0 $j\Omega$
Return Loss	- 27.4 dB

**Antenna Parameters with Head TSL at 5800 MHz**

Impedance, transformed to feed point	52.3 $\Omega$ - 2.9 $j\Omega$
Return Loss	- 28.9 dB

**Antenna Parameters with Body TSL at 5200 MHz**

Impedance, transformed to feed point	49.7 $\Omega$ - 4.7 $j\Omega$
Return Loss	- 26.5 dB

**Antenna Parameters with Body TSL at 5300 MHz**

Impedance, transformed to feed point	46.8 $\Omega$ - 1.9 $j\Omega$
Return Loss	- 28.3 dB

**Antenna Parameters with Body TSL at 5500 MHz**

Impedance, transformed to feed point	50.7 $\Omega$ - 2.2 $j\Omega$
Return Loss	- 32.8 dB

**Antenna Parameters with Body TSL at 5600 MHz**

Impedance, transformed to feed point	55.1 $\Omega$ + 1.2 $j\Omega$
Return Loss	- 26.1 dB



### Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	52.5 $\Omega$ - 1.9 $j\Omega$
Return Loss	- 30.1 dB

### General Antenna Parameters and Design

Electrical Delay (one direction)	1.202 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

### Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 27, 2006

**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:**

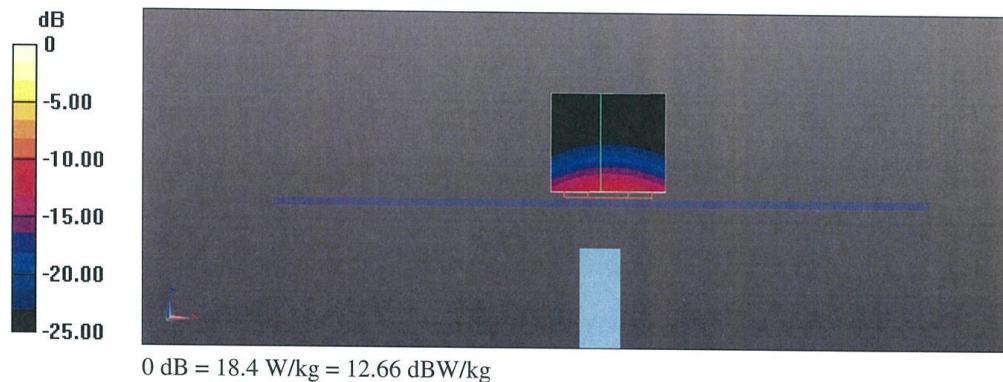
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

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

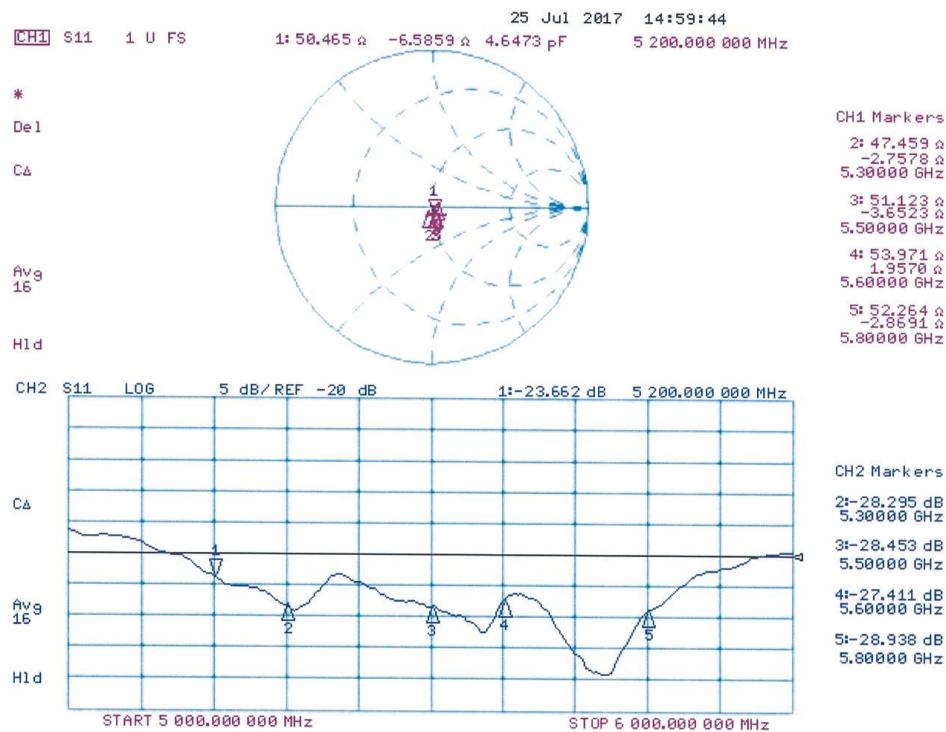
Peak SAR (extrapolated) = 33.2 W/kg

**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

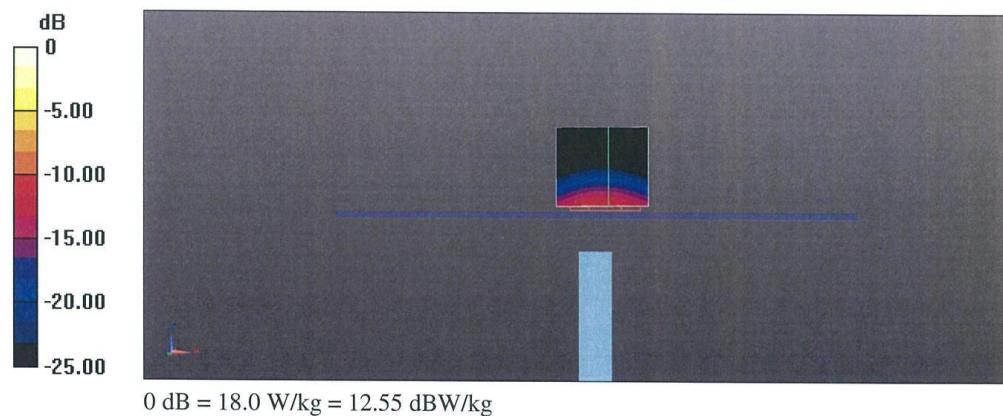
Peak SAR (extrapolated) = 34.2 W/kg

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

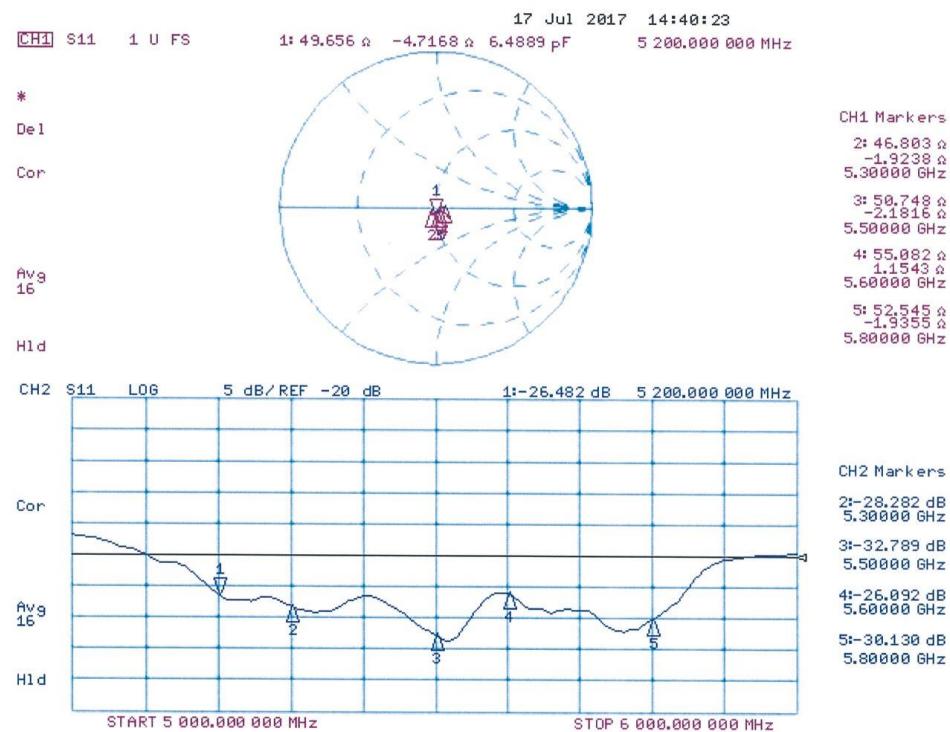
Maximum value of SAR (measured) = 19.9 W/kg

**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	29.56	/	/
PCS1900 GPRS (GMSK)	Measured Power (dBm)		
	810	661	512
4 Txslots	25.57	25.35	/

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

Item	band	FDDV result		
	ARFCN	4233 (846.6MHz)	4182 (836.4MHz)	4132 (826.4MHz)
WCDMA	\	/	23.53	23.56
Item	band	FDDII result		
	ARFCN	9538 (1907.6MHz)	9400 (1880MHz)	9262 (1852.4MHz)
WCDMA	\	23.89	23.78	/
Item	band	FDDIV result		
	ARFCN	1513 (1752.6MHz)	1412 (1732.4MHz)	1312 (1712.4MHz)
WCDMA	\	/	/	23.73

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

Band	Mode	Frequency (Channel)	Measured Power (dBm)
LTE Band2	20MHz-1RB-Middle (50)	1900 (19100)	23.40
LTE Band5	10MHz-1RB-High (49)	829 (20450)	23.10
LTE Band7	20MHz-1RB-High (99)	2535 (21100)	23.59
LTE Band12	10MHz-1RB-High (49)	711 (23130)	23.00
LTE Band13	10MHz-1RB-Low (0)	782 (23230)	22.92
LTE Band41	20MHz-1RB-Low (0)	2680 (41490)	23.72
LTE Band66	20MHz-1RB-Middle (50)	1720 (132072)	23.32

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

Mode / data rate	Channel	Measured Power (dBm)
802.11b (Low power)	1	16.98
802.11b	1	18.55
802.11a (Low power)	56	15.21
802.11a	132	17.21

## 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	251	848.8	Right	Fig I.1	29.56	30.5	0.172	<b>0.21</b>	0.232	<b>0.29</b>	0.04
GSM850	251	848.8	Rear	Fig I.2	29.56	30.5	0.295	<b>0.37</b>	0.388	<b>0.48</b>	-0.15
GSM1900	661	1880	Right	Fig I.3	25.35	26	0.087	<b>0.10</b>	0.138	<b>0.16</b>	0.05
GSM1900	810	1909.8	Rear	Fig I.4	25.57	26	0.301	<b>0.33</b>	0.594	<b>0.66</b>	-0.05
WCDMA 850	4182	836.4	Right	Fig I.5	23.53	24	0.166	<b>0.18</b>	0.220	<b>0.25</b>	0.03
WCDMA 850	4132	826.4	Rear	Fig I.6	23.56	24	0.263	<b>0.29</b>	0.343	<b>0.38</b>	0.16
WCDMA1700	1537	1712.4	Left	Fig I.7	23.73	24	0.168	<b>0.18</b>	0.256	<b>0.27</b>	-0.07
WCDMA1700	1537	1712.4	Rear	Fig I.8	23.73	24	0.496	<b>0.53</b>	0.966	<b>1.03</b>	-0.05
WCDMA1900	9800	1880	Right	Fig I.9	23.78	24	0.120	<b>0.13</b>	0.191	<b>0.20</b>	0.06
WCDMA1900	9938	1907.6	Rear	Fig I.10	23.89	24	0.355	<b>0.36</b>	0.740	<b>0.76</b>	-0.09
LTE Band2	19100	1900	Right	Fig I.11	23.40	24	0.083	<b>0.10</b>	0.136	<b>0.16</b>	0.09
LTE Band2	19100	1900	Rear	Fig I.12	23.40	24	0.424	<b>0.49</b>	0.836	<b>0.96</b>	0.04
LTE Band5	20450	829	Right	Fig I.13	23.10	24	0.102	<b>0.13</b>	0.144	<b>0.18</b>	0.04
LTE Band5	20450	829	Rear	Fig I.14	23.10	24	0.271	<b>0.33</b>	0.350	<b>0.43</b>	-0.11
LTE Band7	21100	2535	Left	Fig I.15	23.59	24	0.177	<b>0.19</b>	0.333	<b>0.37</b>	0.07
LTE Band7	21100	2535	Rear	Fig I.16	23.59	24	0.443	<b>0.49</b>	0.812	<b>0.89</b>	0.03
LTE Band12	23130	711	Right	Fig I.17	23.00	24	0.100	<b>0.13</b>	0.122	<b>0.15</b>	0.13
LTE Band12	23130	711	Rear	Fig I.18	23.00	24	0.182	<b>0.23</b>	0.235	<b>0.30</b>	-0.06
LTE Band13	23230	782	Right	Fig I.19	22.92	24	0.095	<b>0.12</b>	0.119	<b>0.15</b>	0.09
LTE Band13	23230	782	Rear	Fig I.20	22.92	24	0.202	<b>0.26</b>	0.256	<b>0.33</b>	-0.02
LTE Band41	41490	2680	Left	Fig I.21	23.72	24	0.059	<b>0.06</b>	0.115	<b>0.12</b>	0.03
LTE Band41	41490	2680	Bottom	Fig I.22	23.72	24	0.113	<b>0.12</b>	0.228	<b>0.24</b>	-0.02
LTE Band66	132072	1720	Right	Fig I.23	23.32	24	0.157	<b>0.18</b>	0.224	<b>0.26</b>	0.01
LTE Band66	132072	1720	Rear	Fig I.24	23.32	24	0.458	<b>0.54</b>	0.835	<b>0.98</b>	-0.04
Wi-Fi 2.4G	1	2412	Left	Fig I.25	16.98	17	0.419	<b>0.42</b>	1.00	<b>1.00</b>	0.03
Wi-Fi 2.4G	1	2412	Top	Fig I.26	18.55	20	0.218	<b>0.30</b>	0.454	<b>0.63</b>	-0.11
Wi-Fi 5G	56	5280	Right	Fig I.27	15.21	15.5	0.174	<b>0.19</b>	0.519	<b>0.55</b>	0.08
Wi-Fi 5G	132	5660	Top	Fig I.28	17.21	17.5	0.079	<b>0.08</b>	0.211	<b>0.23</b>	-0.06
Wi-Fi 2.4G	1	2412	Left	SIM2	16.98	17	0.407	<b>0.41</b>	0.975	<b>0.98</b>	0.05
LTE Band2	19100	1900	Rear	SIM2	23.40	24	0.416	<b>0.48</b>	0.818	<b>0.94</b>	0.06

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

Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR	Scaled reported SAR
MHz	Ch.					(1g) (W/kg)	(1g) (W/kg)
2412	1	Left	Tilt	99.05%	100%	<b>1.00</b>	<b>1.01</b>

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

Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR	Scaled reported SAR
MHz	Ch.				(1g) (W/kg)	(1g) (W/kg)
2412	1	Top	99.05%	100%	<b>0.63</b>	<b>0.64</b>

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

Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR	Scaled reported SAR
MHz	Ch.					(1g) (W/kg)	(1g) (W/kg)
5280	56	Right	Touch	86.93%	100%	<b>0.55</b>	<b>0.63</b>

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

Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR	Scaled reported SAR
MHz	Ch.				(1g) (W/kg)	(1g) (W/kg)
5660	132	Top	85.57%	100%	<b>0.23</b>	<b>0.27</b>

### I.3 Reported SAR Comparison

Exposure Configuration	Technology Band	Reported SAR 1g (W/Kg): spot check	Reported SAR 1g (W/Kg): original
Head (Separation Distance 0mm)	GSM 850	0.29	0.41
	PCS 1900	0.16	0.22
	UMTS FDD 5	0.25	0.23
	UMTS FDD 4	0.27	0.21
	UMTS FDD 2	0.20	0.23
	LTE Band 2	0.16	0.21
	LTE Band 5	0.18	0.22
	LTE Band 7	0.37	0.40
	LTE Band 12	0.15	0.17
	LTE Band 13	0.15	0.17
	LTE Band 41	0.12	0.16
	LTE Band 66	0.26	0.24
	WLAN 2.4 GHz	1.01	0.56
	WLAN 5 GHz	0.63	0.93
Hotspot (Separation Distance 10mm)	GSM 850	0.48	0.66
	PCS 1900	0.66	0.84
	UMTS FDD 5	0.38	0.37
	UMTS FDD 4	1.03	1.11
	UMTS FDD 2	0.76	1.14
	LTE Band 2	0.96	1.17
	LTE Band 5	0.43	0.35
	LTE Band 7	0.89	0.90
	LTE Band 12	0.30	0.42
	LTE Band 13	0.33	0.37
	LTE Band 41	0.24	0.35
	LTE Band 66	0.98	1.03
	WLAN 2.4 GHz	0.64	0.66
	WLAN 5 GHz	0.27	0.57

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 Right Cheek High

Date: 2018-6-4

Electronics: DAE4 Sn1525

Medium: Head 850 MHz

Medium parameters used:  $f = 848.8 \text{ MHz}$ ;  $\sigma = 0.891 \text{ mho/m}$ ;  $\epsilon_r = 41.83$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.9^\circ\text{C}$  Liquid Temperature:  $22.5^\circ\text{C}$

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

Maximum value of SAR (interpolated) = 0.246 W/kg

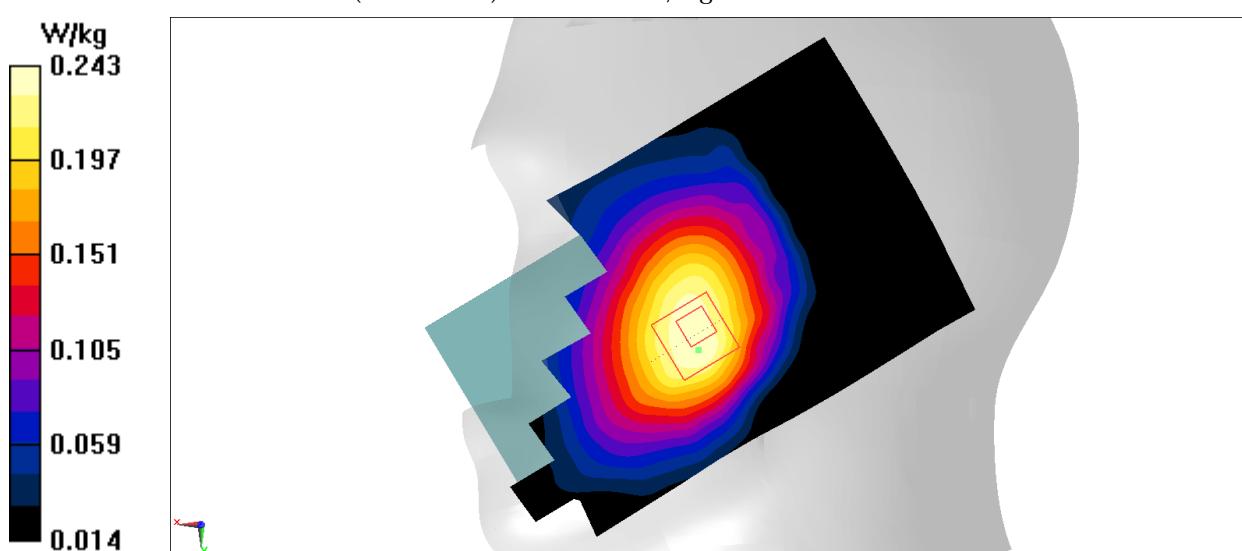
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 2.517 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.297 W/kg

SAR(1 g) = 0.232 W/kg; SAR(10 g) = 0.172 W/kg

Maximum value of SAR (measured) = 0.243 W/kg



**Fig I.1 850MHz**

## 850 Body Rear High

Date: 2018-6-6

Electronics: DAE4 Sn1525

Medium: Body 850 MHz

Medium parameters used:  $f = 848.8 \text{ MHz}$ ;  $\sigma = 0.991 \text{ mho/m}$ ;  $\epsilon_r = 55.94$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.9^\circ\text{C}$  Liquid Temperature:  $22.5^\circ\text{C}$

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 (121x71x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

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

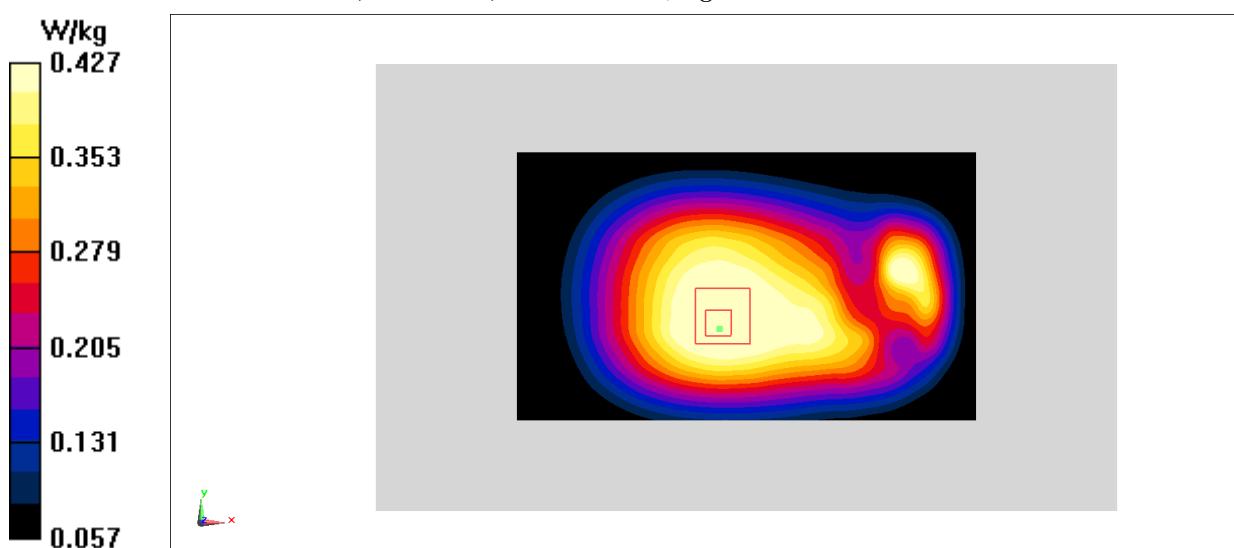
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 19.69 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.501 W/kg

SAR(1 g) = 0.388 W/kg; SAR(10 g) = 0.295 W/kg

Maximum value of SAR (measured) = 0.427 W/kg



**Fig I.2 850 MHz**

## 1900 Right Cheek Middle

Date: 2018-6-5

Electronics: DAE4 Sn1525

Medium: Head 1900 MHz

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.415 \text{ mho/m}$ ;  $\epsilon_r = 40.61$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.9^\circ\text{C}$  Liquid Temperature:  $22.5^\circ\text{C}$

Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:2

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

**Area Scan (71x131x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.203 W/kg

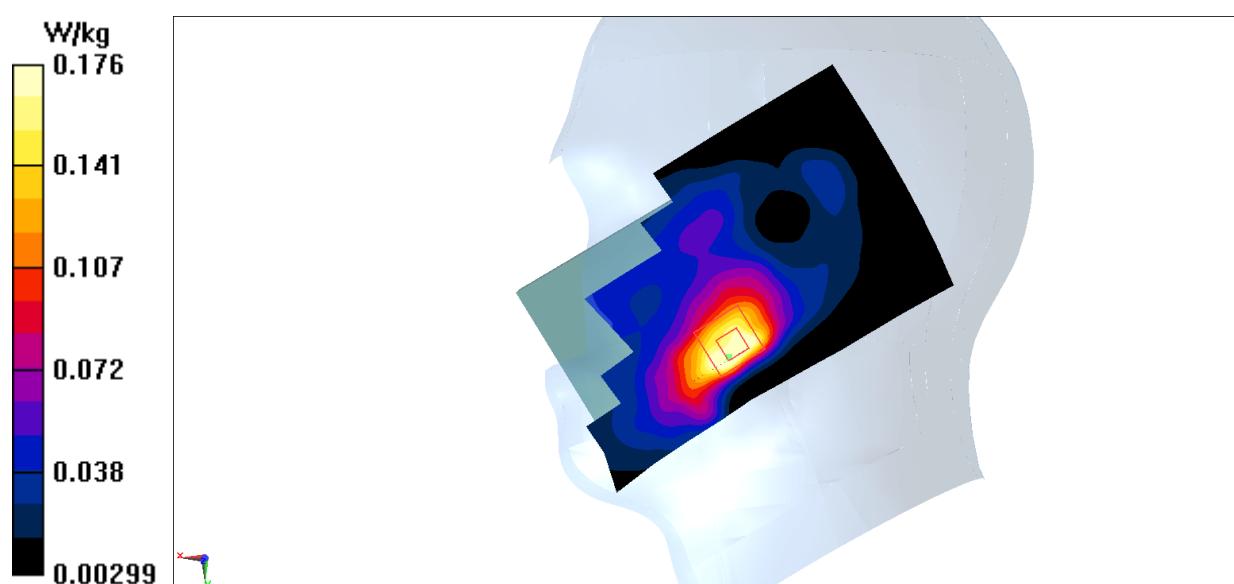
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 4.282 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.212 W/kg

SAR(1 g) = 0.138 W/kg; SAR(10 g) = 0.087 W/kg

Maximum value of SAR (measured) = 0.176 W/kg



**Fig I.3 1900 MHz**

## 1900 Body Rear High

Date: 2018-6-5

Electronics: DAE4 Sn1525

Medium: Body 1900 MHz

Medium parameters used (interpolated):  $f = 1909.8 \text{ MHz}$ ;  $\sigma = 1.584 \text{ mho/m}$ ;  $\epsilon_r = 52.56$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.9^\circ\text{C}$  Liquid Temperature:  $22.5^\circ\text{C}$

Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:2

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

**Area Scan (121x71x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) =  $0.852 \text{ W/kg}$

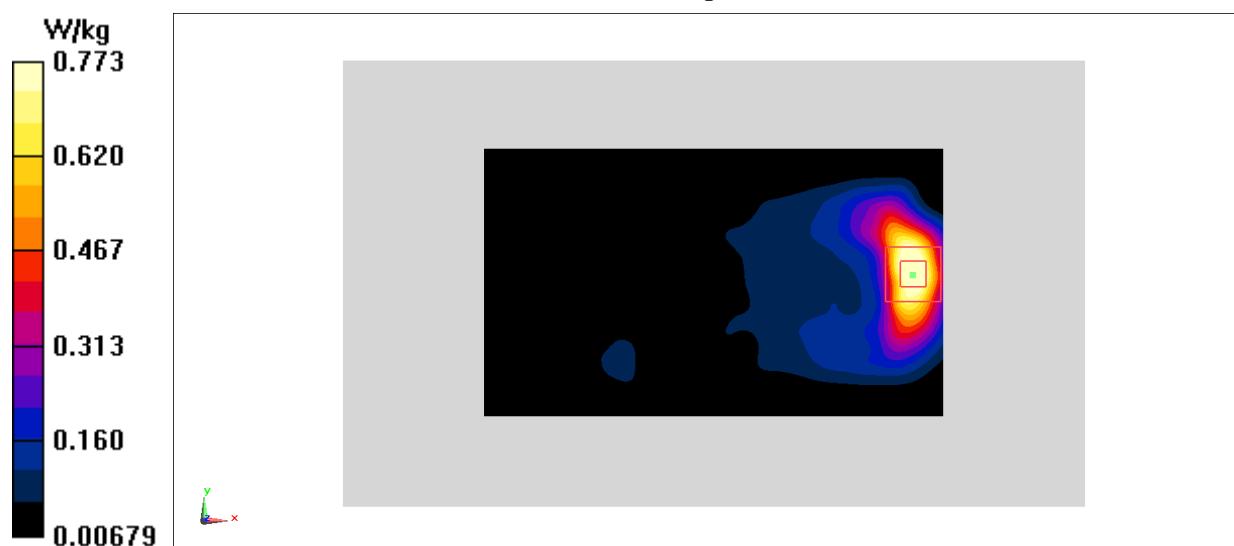
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $3.765 \text{ V/m}$ ; Power Drift =  $-0.05 \text{ dB}$

Peak SAR (extrapolated) =  $1.02 \text{ W/kg}$

SAR(1 g) =  $0.594 \text{ W/kg}$ ; SAR(10 g) =  $0.301 \text{ W/kg}$

Maximum value of SAR (measured) =  $0.773 \text{ W/kg}$



**Fig I.4 1900 MHz**

## WCDMA 850 Right Cheek Middle

Date: 2018-6-4

Electronics: DAE4 Sn1525

Medium: Head 850 MHz

Medium parameters used (interpolated):  $f = 836.4$  MHz;  $\sigma = 0.879$  mho/m;  $\epsilon_r = 41.965$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

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

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

**Area Scan (111x161x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

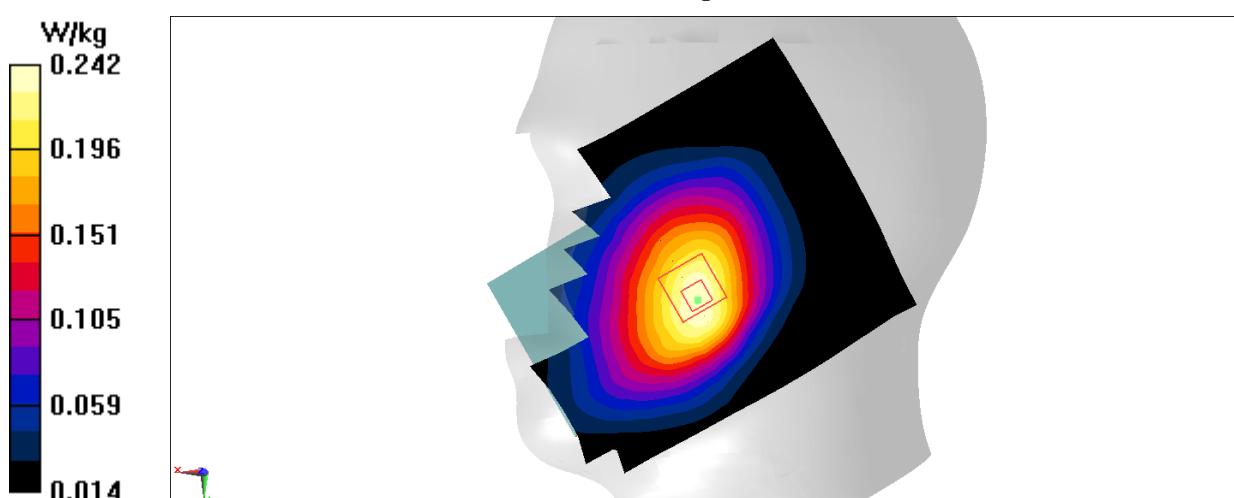
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.606 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.287 W/kg

SAR(1 g) = 0.220 W/kg; SAR(10 g) = 0.166 W/kg

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



**Fig I.5 WCDMA 850**

## WCDMA 850 Body Rear Low

Date: 2018-6-4

Electronics: DAE4 Sn1525

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 826.4$  MHz;  $\sigma = 0.969$  mho/m;  $\epsilon_r = 56.136$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

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

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

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

Maximum value of SAR (interpolated) = 0.393 W/kg

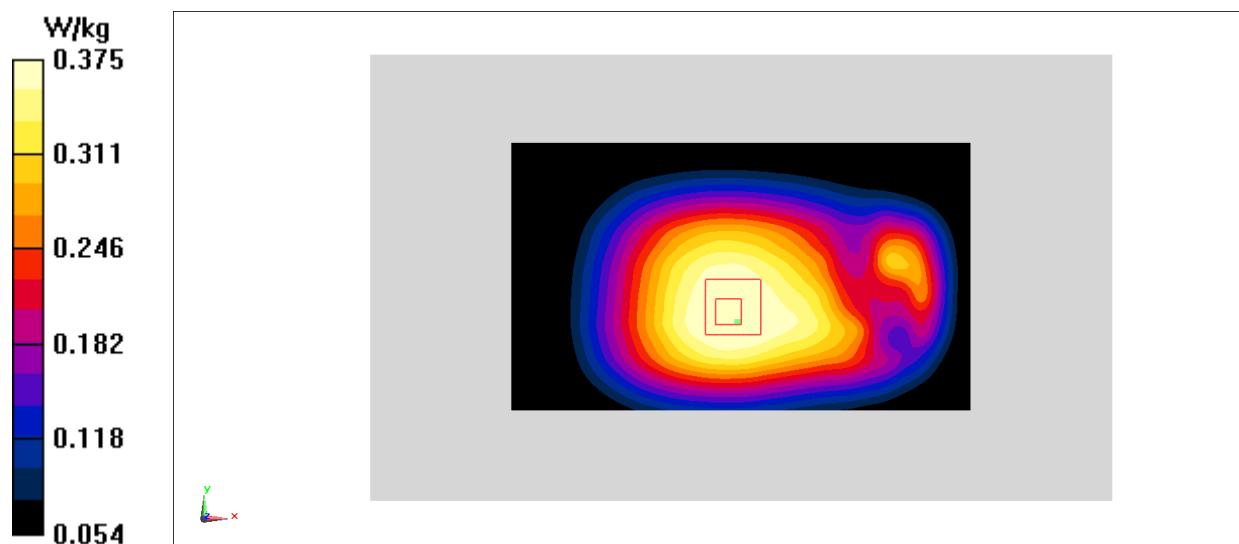
**Zoom Scan 2 (7x7x7) /Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.17 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.437 W/kg

SAR(1 g) = 0.343 W/kg; SAR(10 g) = 0.263 W/kg

Maximum value of SAR (measured) = 0.375 W/kg



**Fig I.6 WCDMA 850**

### WCDMA 1700 Left Cheek Low

Date: 2018-6-6

Electronics: DAE4 Sn1525

Medium: Head 1750 MHz

Medium parameters used (interpolated):  $f = 1712.4$  MHz;  $\sigma = 1.286$  mho/m;  $\epsilon_r = 40.557$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Maximum value of SAR (interpolated) = 0.280 W/kg

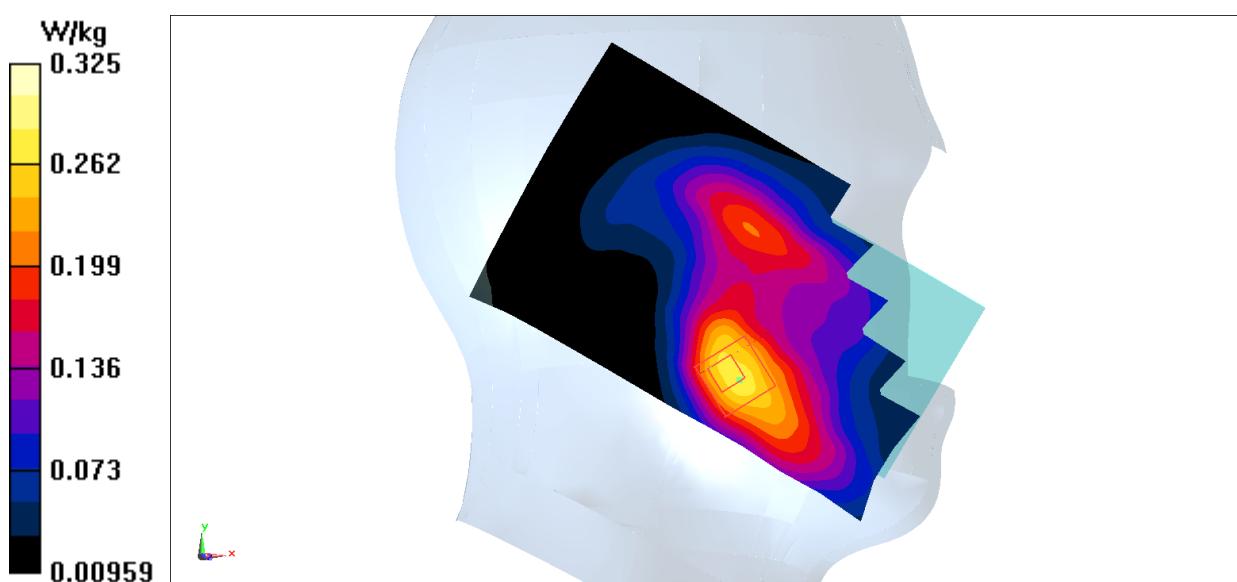
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.286 V/m; Power Drift = -0.07dB

Peak SAR (extrapolated) = 0.384 W/kg

SAR(1 g) = 0.256 W/kg; SAR(10 g) = 0.168 W/kg

Maximum value of SAR (measured) = 0.325 W/kg



**Fig I.7 WCDMA1700**

## WCDMA 1700 Body Rear Low

Date: 2018-6-6

Electronics: DAE4 Sn1525

Medium: Body 1750 MHz

Medium parameters used (interpolated):  $f = 1712.4$  MHz;  $\sigma = 1.488$  mho/m;  $\epsilon_r = 53.738$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: WCDMA 1900 Frequency: 1712.4 MHz Duty Cycle: 1:1

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

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

Maximum value of SAR (interpolated) = 1.39 W/kg

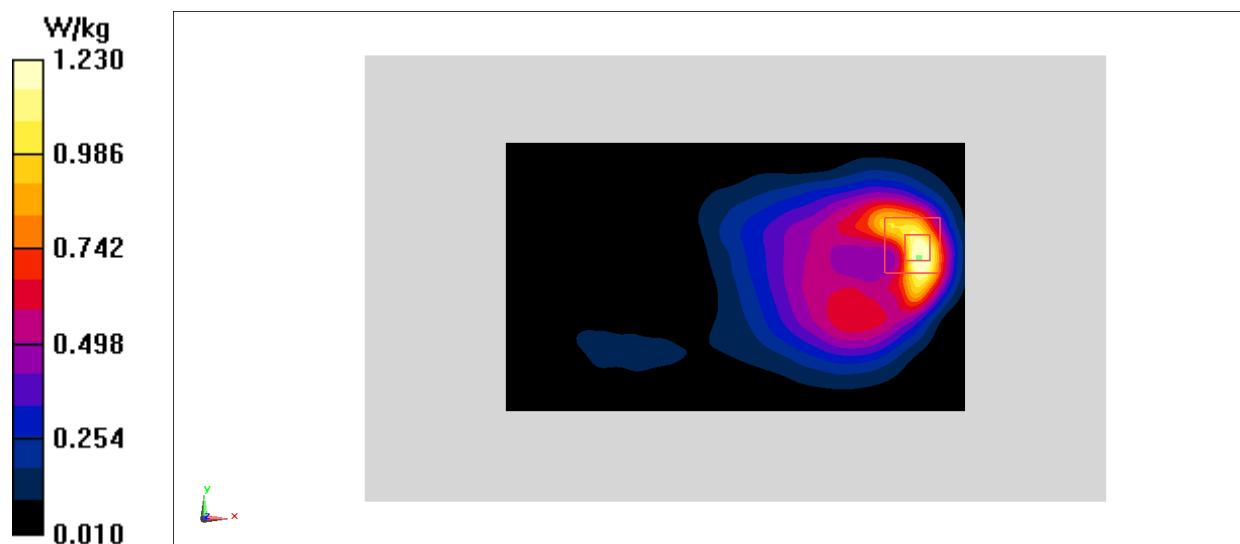
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.10 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 1.73 W/kg

SAR(1 g) = 0.966 W/kg; SAR(10 g) = 0.496 W/kg

Maximum value of SAR (measured) = 1.23 W/kg



**Fig I.8 WCDMA1700**

## WCDMA 1900 Right Cheek Middle

Date: 2018-6-5

Electronics: DAE4 Sn1525

Medium: Head 1900 MHz

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.415 \text{ mho/m}$ ;  $\epsilon_r = 40.61$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.9^\circ\text{C}$  Liquid Temperature:  $22.5^\circ\text{C}$

Communication System: WCDMA 1900 Frequency: 1880 MHz Duty Cycle: 1:1

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

**Area Scan (71x131x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.224 W/kg

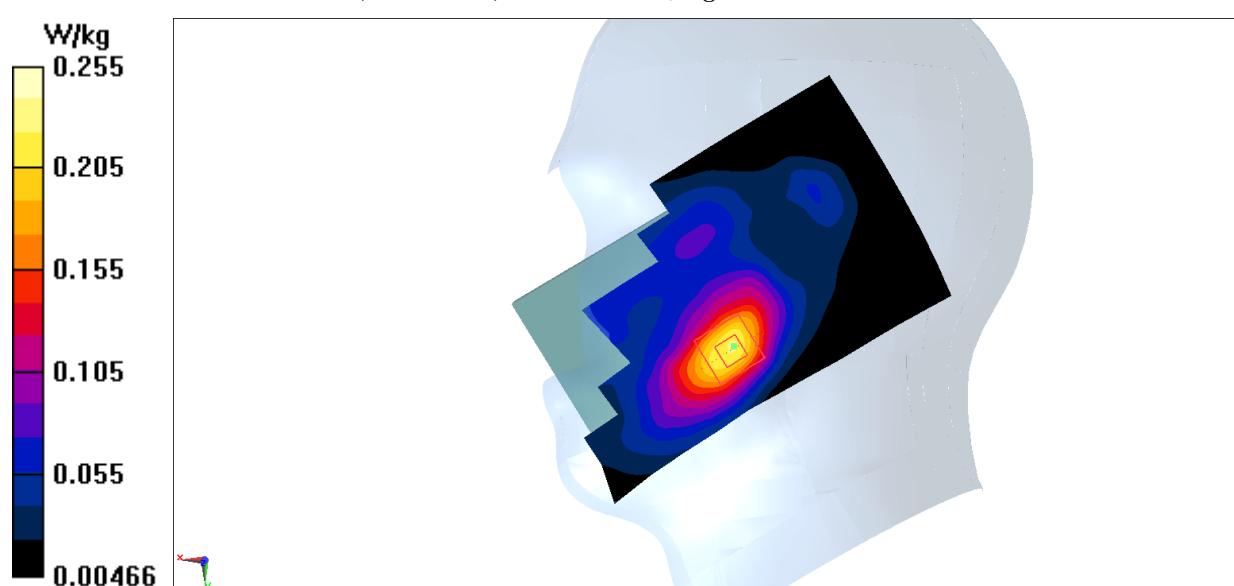
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 5.239 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.295 W/kg

SAR(1 g) = 0.191 W/kg; SAR(10 g) = 0.120 W/kg

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



**Fig I.9 WCDMA1900**

## WCDMA 1900 Body Rear High

Date: 2018-6-5

Electronics: DAE4 Sn1525

Medium: Body 1900 MHz

Medium parameters used (interpolated):  $f = 1907.6$  MHz;  $\sigma = 1.582$  mho/m;  $\epsilon_r = 52.83$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

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

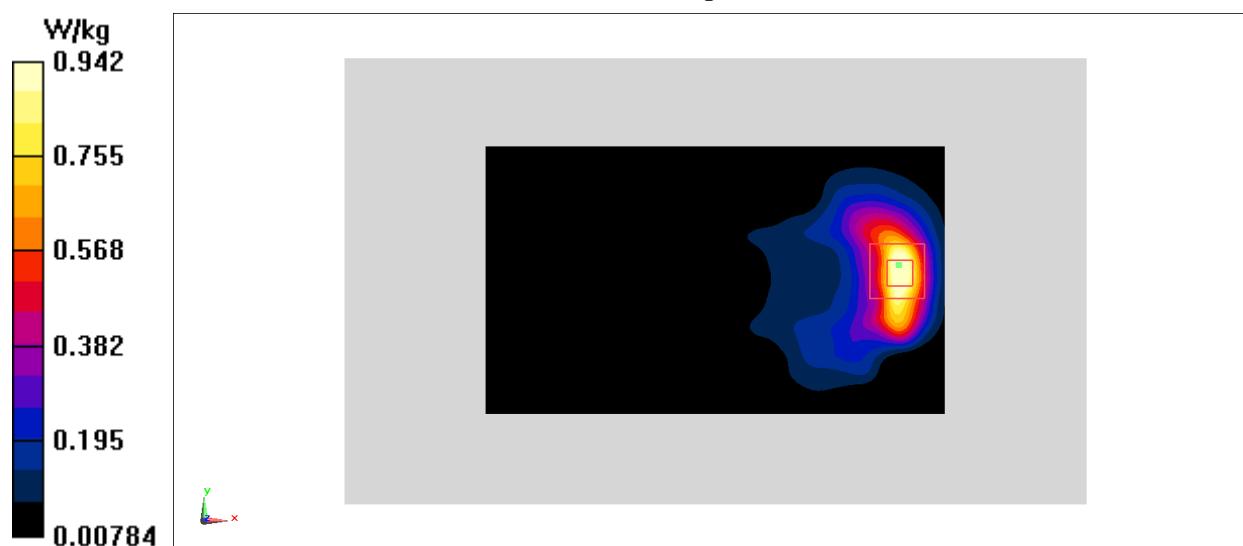
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.500 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 1.39 W/kg

SAR(1 g) = 0.740 W/kg; SAR(10 g) = 0.355 W/kg

Maximum value of SAR (measured) = 0.942 W/kg



**Fig I.10 WCDMA1900**

**LTE Band2 Right Cheek High with QPSK\_20M\_1RB\_Middle**

Date: 2018-6-5

Electronics: DAE4 Sn1525

Medium: Head 1900 MHz

Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.401 \text{ mho/m}$ ;  $\epsilon_r = 40.71$ ;  $\rho = 1000 \text{ kg/m}^3$ Ambient Temperature:  $22.9^\circ\text{C}$  Liquid Temperature:  $22.5^\circ\text{C}$ 

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) = 0.158 W/kg

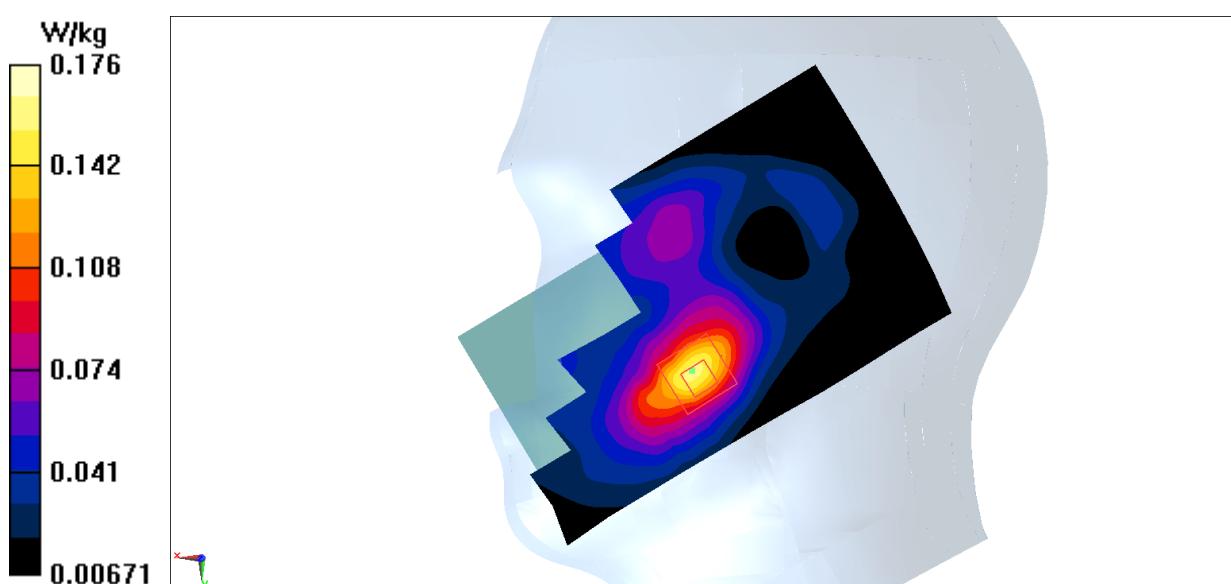
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 5.168 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.217 W/kg

SAR(1 g) = 0.136 W/kg; SAR(10 g) = 0.083 W/kg

Maximum value of SAR (measured) = 0.176 W/kg

**Fig I.11 LTE Band2**

**LTE Band2 Body Rear High with QPSK\_20M\_1RB\_Middle**

Date: 2018-6-5

Electronics: DAE4 Sn1525

Medium: Body 1900 MHz

Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.538 \text{ mho/m}$ ;  $\epsilon_r = 52.62$ ;  $\rho = 1000 \text{ kg/m}^3$ 

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) = 0.965 W/kg

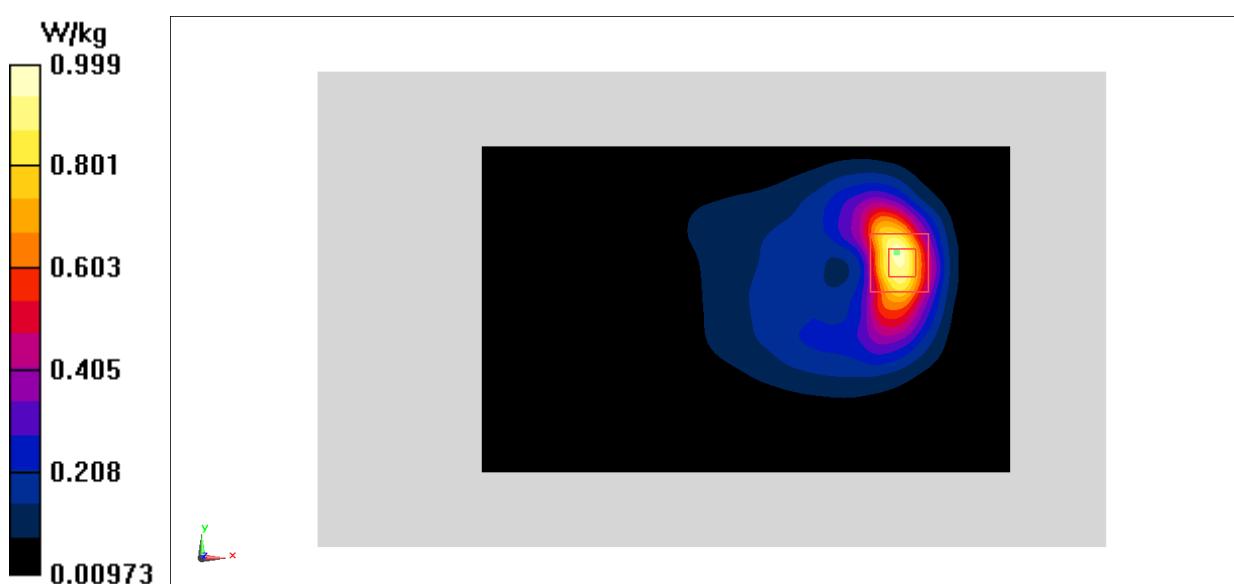
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 7.497 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.53 W/kg

SAR(1 g) = 0.836 W/kg; SAR(10 g) = 0.424 W/kg

Maximum value of SAR (measured) = 0.999 W/kg

**Fig I.12 LTE Band2**

**LTE Band5 Right Cheek Low with QPSK\_10M\_1RB\_High**

Date: 2018-6-4

Electronics: DAE4 Sn1525

Medium: Head 850 MHz

Medium parameters used (interpolated):  $f = 829$  MHz;  $\sigma = 0.883$  mho/m;  $\epsilon_r = 41.961$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Maximum value of SAR (interpolated) = 0.205 W/kg

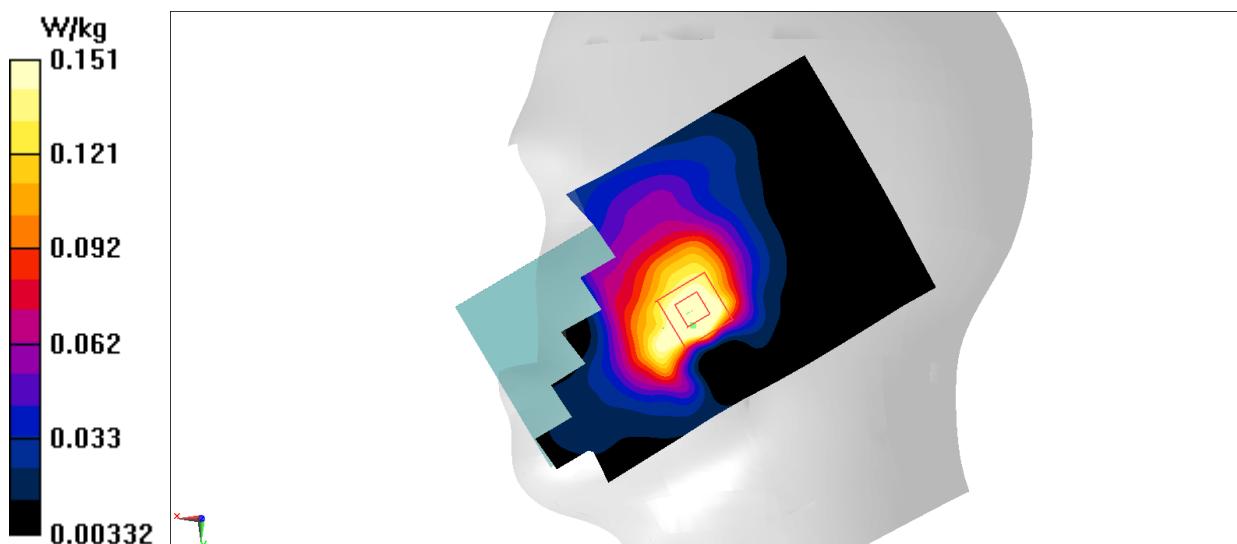
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.025 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.189 W/kg

SAR(1 g) = 0.144 W/kg; SAR(10 g) = 0.102 W/kg

Maximum value of SAR (measured) = 0.151 W/kg

**Fig I.13 LTE Band5**

**LTE Band5 Body Rear Low with QPSK\_10M\_1RB\_High**

Date: 2018-6-4

Electronics: DAE4 Sn1525

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 829$  MHz;  $\sigma = 1.01$  mho/m;  $\epsilon_r = 55.764$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Maximum value of SAR (interpolated) = 0.401 W/kg

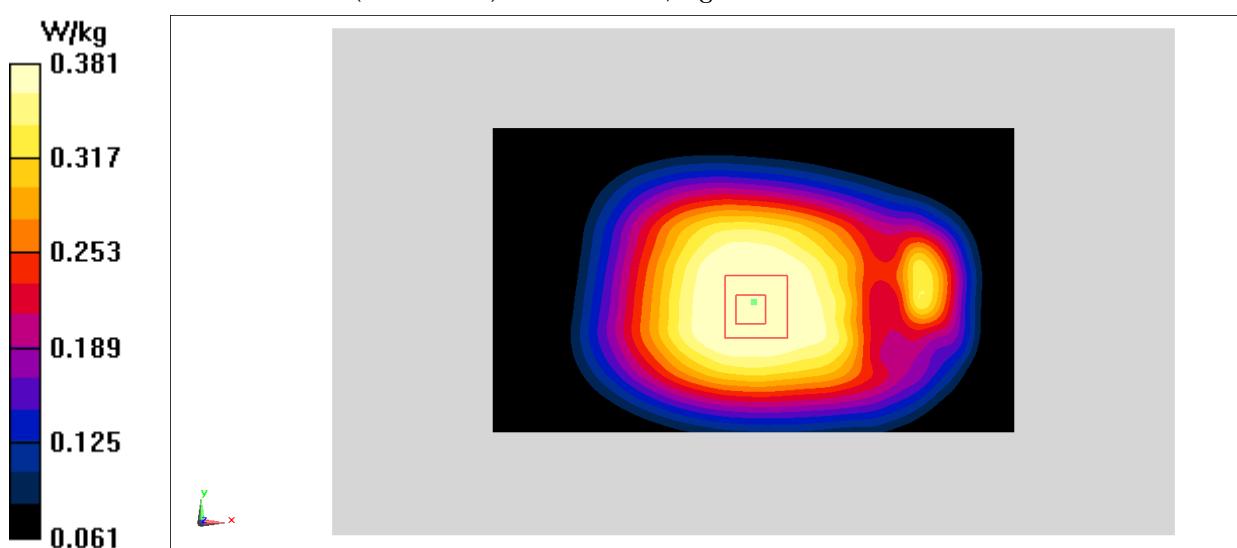
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 19.29 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.441 W/kg

SAR(1 g) = 0.350 W/kg; SAR(10 g) = 0.271 W/kg

Maximum value of SAR (measured) = 0.381 W/kg

**Fig I.14 LTE Band5**

**LTE Band7 Left Cheek Middle with QPSK\_20M\_1RB\_High**

Date: 2018-6-7

Electronics: DAE4 Sn1525

Medium: Head 2600 MHz

Medium parameters used:  $f = 2535$  MHz;  $\sigma = 1.966$  mho/m;  $\epsilon_r = 38.31$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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 (91x151x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.438 W/kg

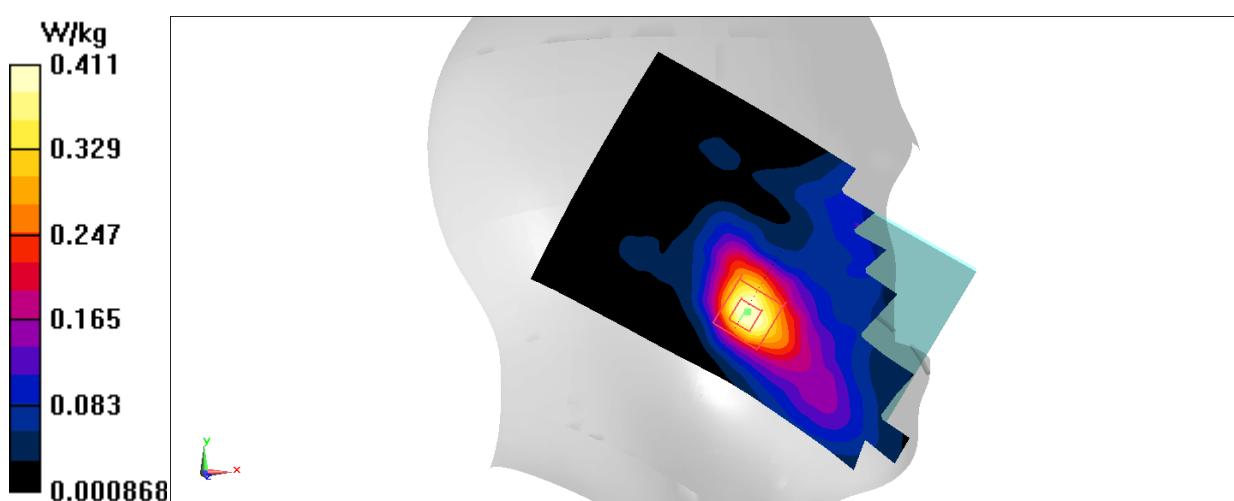
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.097 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.601 W/kg

SAR(1 g) = 0.333 W/kg; SAR(10 g) = 0.177 W/kg

Maximum value of SAR (measured) = 0.411 W/kg

**Fig I.15 LTE Band7**

**LTE Band7 Body Rear Middle with QPSK\_20M\_1RB\_High**

Date: 2018-6-7

Electronics: DAE4 Sn1525

Medium: Body 2600 MHz

Medium parameters used:  $f = 2535$  MHz;  $\sigma = 2.145$  mho/m;  $\epsilon_r = 52.75$ ;  $\rho = 1000$  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) = 0.989 W/kg

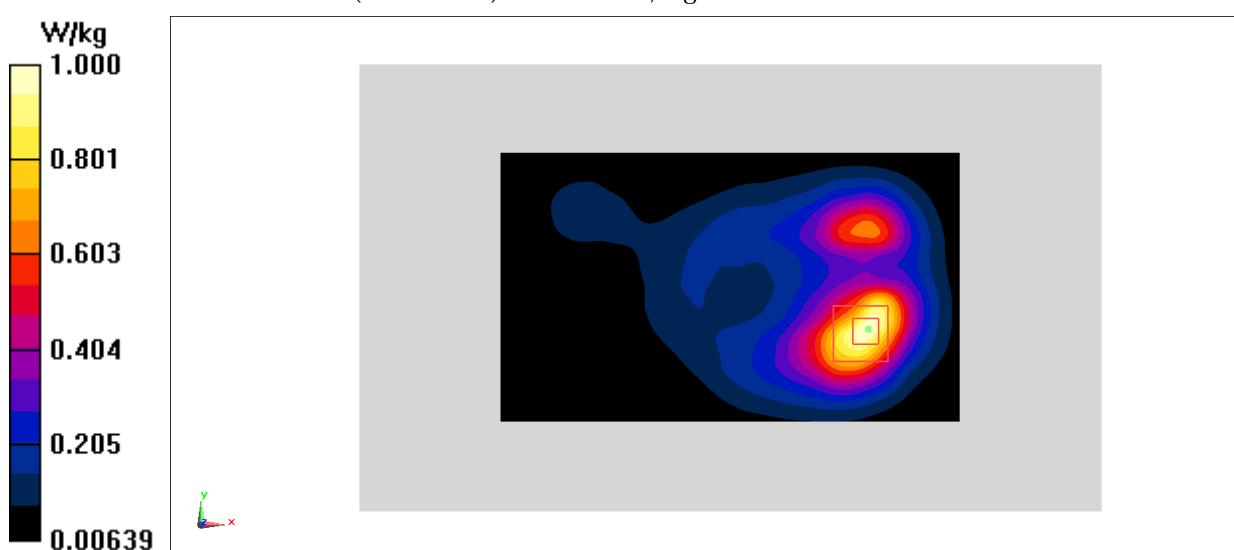
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.396 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.43 W/kg

SAR(1 g) = 0.812 W/kg; SAR(10 g) = 0.443 W/kg

Maximum value of SAR (measured) = 1.00 W/kg

**Fig I.16 LTE Band7**

**LTE Band12 Right Cheek High with QPSK\_10M\_1RB\_High**

Date: 2018-6-6

Electronics: DAE4 Sn1525

Medium: Head 750 MHz

Medium parameters used (interpolated):  $f = 711$  MHz;  $\sigma = 0.88$  mho/m;  $\epsilon_r = 42.52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: LTE Band12 Frequency: 711 MHz Duty Cycle: 1:1

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

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

Maximum value of SAR (interpolated) = 0.128 W/kg

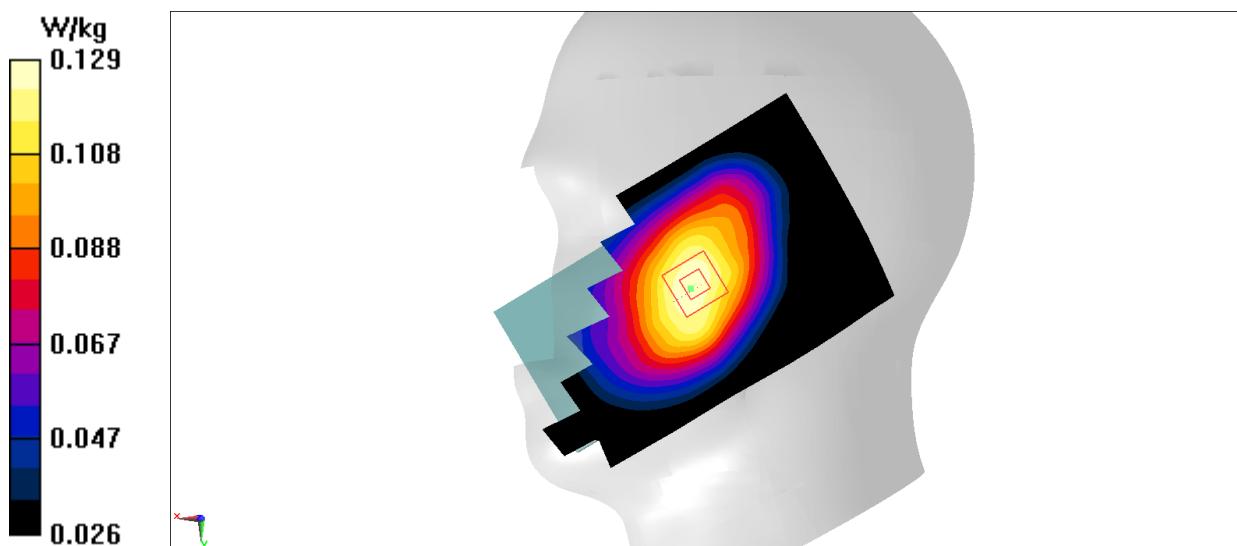
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.663 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.140 W/kg

SAR(1 g) = 0.122 W/kg; SAR(10 g) = 0.100 W/kg

Maximum value of SAR (measured) = 0.129 W/kg

**Fig I.17 LTE Band12**

**LTE Band12 Body Rear High with QPSK\_10M\_1RB\_High**

Date: 2018-6-6

Electronics: DAE4 Sn1525

Medium: Body750 MHz

Medium parameters used (interpolated):  $f = 711$  MHz;  $\sigma = 0.954$  mho/m;  $\epsilon_r = 56.34$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: LTE Band12Frequency: 711 MHz Duty Cycle: 1:1

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

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

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

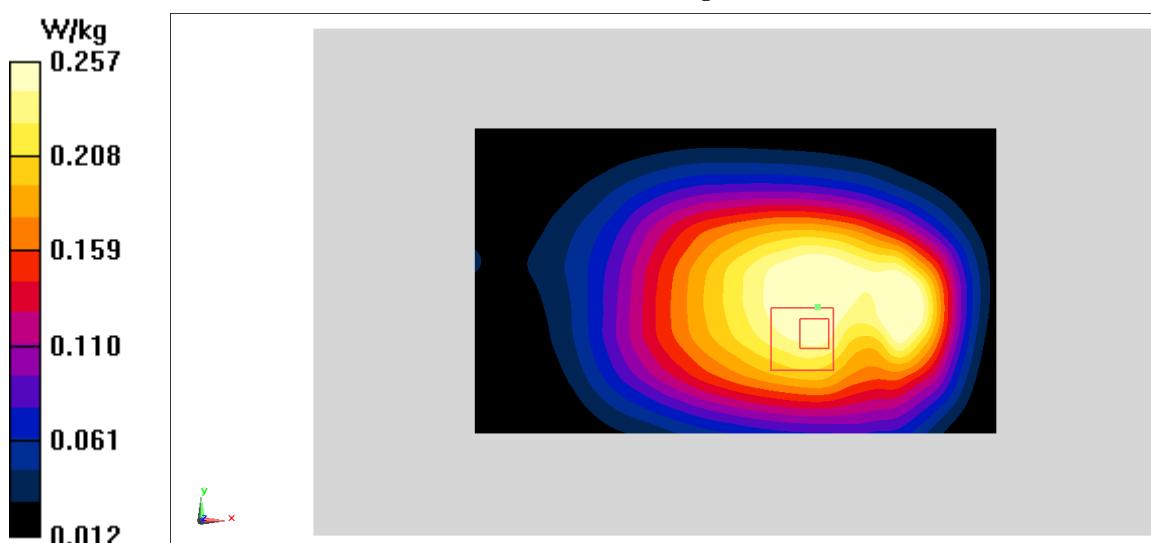
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.29 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.322 W/kg

SAR(1 g) = 0.235 W/kg; SAR(10 g) = 0.182 W/kg

Maximum value of SAR (measured) = 0.257 W/kg

**Fig I.18 LTE Band12**

**LTE Band13 Right Cheek with QPSK\_10M\_1RB\_Low**

Date: 2018-6-6

Electronics: DAE4 Sn1525

Medium: Head 750 MHz

Medium parameters used (interpolated):  $f = 782$  MHz;  $\sigma = 0.908$  mho/m;  $\epsilon_r = 42.37$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Maximum value of SAR (interpolated) = 0.127 W/kg

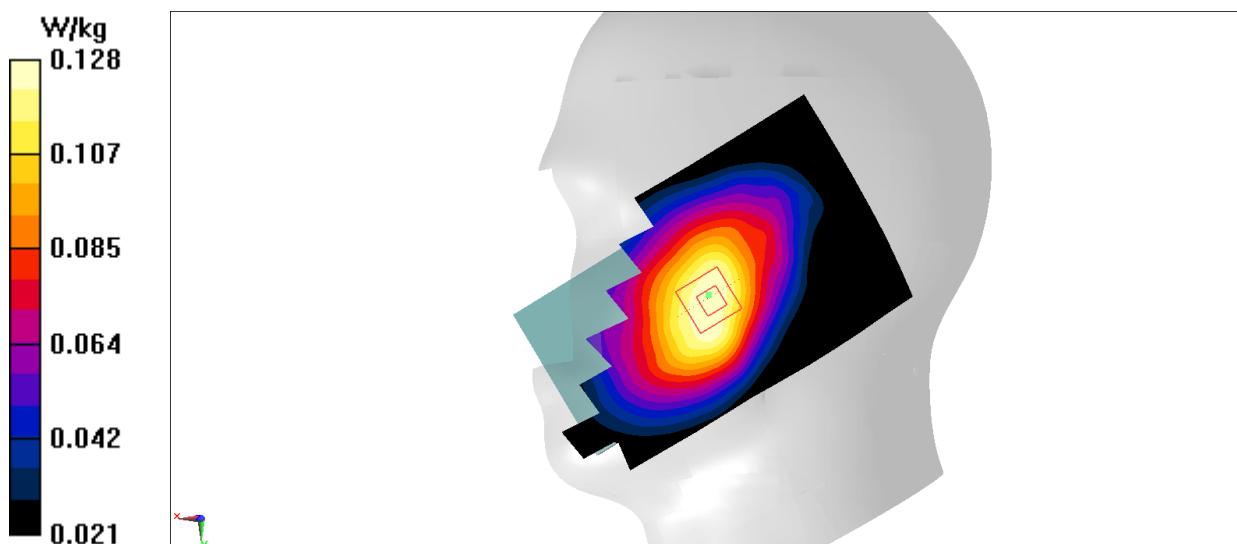
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.267 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.144 W/kg

SAR(1 g) = 0.119 W/kg; SAR(10 g) = 0.095 W/kg

Maximum value of SAR (measured) = 0.128 W/kg

**Fig I.19 LTE Band13**

**LTE Band13 Body Rear with QPSK\_10M\_1RB\_Low**

Date: 2018-6-6

Electronics: DAE4 Sn1525

Medium: Body 750 MHz

Medium parameters used (interpolated):  $f = 782$  MHz;  $\sigma = 0.981$  mho/m;  $\epsilon_r = 56.25$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

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

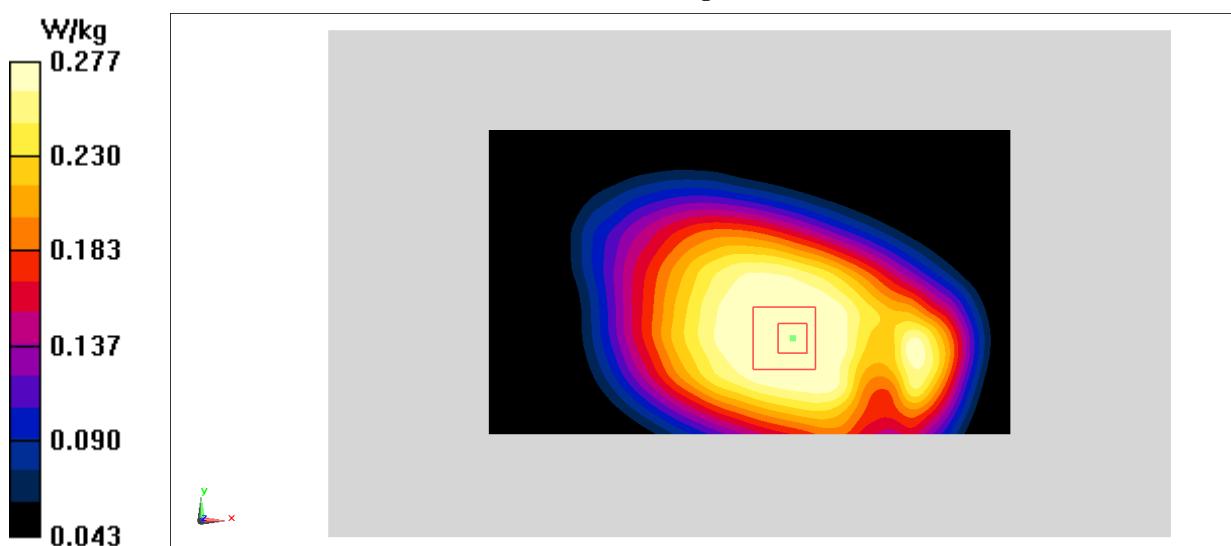
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.29 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.309 W/kg

SAR(1 g) = 0.256 W/kg; SAR(10 g) = 0.202 W/kg

Maximum value of SAR (measured) = 0.277 W/kg

**Fig I.20 LTE Band13**

**LTE Band 41 Left Cheek with QPSK\_20M\_1RB\_Low**

Date: 2018-6-7

Electronics: DAE4 Sn1525

Medium: Head 2600 MHz

Medium parameters used:  $f = 2680$  MHz;  $\sigma = 2.049$  mho/m;  $\epsilon_r = 39.09$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: LTE Band41 Frequency: 2680 MHz Duty Cycle: 1:1.58

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

**Area Scan (91x151x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.148 W/kg

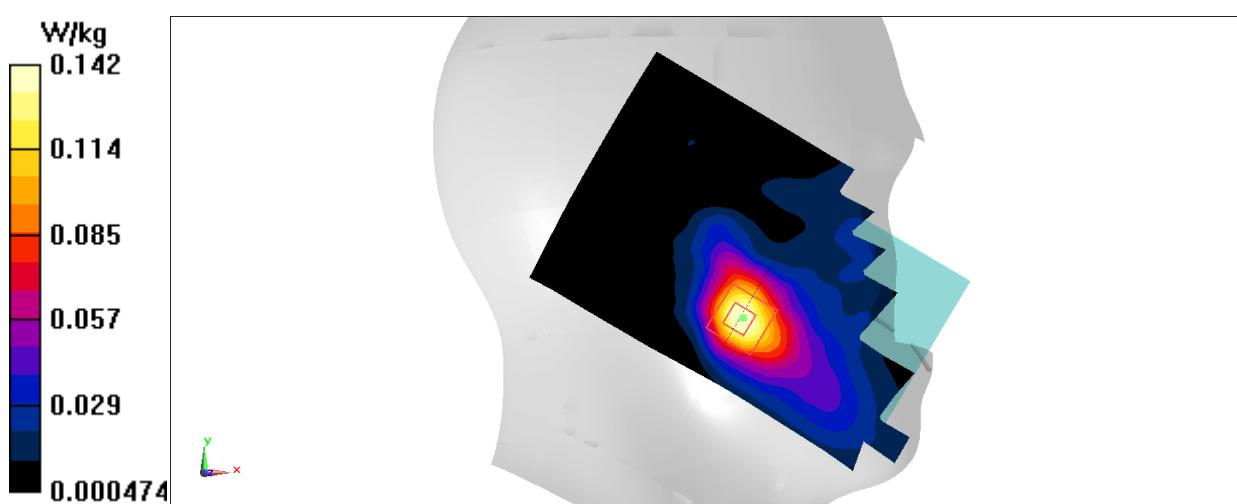
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.898 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.210 W/kg

SAR(1 g) = 0.115 W/kg; SAR(10 g) = 0.059 W/kg

Maximum value of SAR (measured) = 0.142 W/kg

**Fig I.21 LTE Band 41**

**LTE Band 41 Body Bottom with QPSK\_20M\_1RB\_Low**

Date: 2018-6-7

Electronics: DAE4 Sn1525

Medium: Body 2600 MHz

Medium parameters use:  $f = 2680$  MHz;  $\sigma = 2.239$  mho/m;  $\epsilon_r = 52.539$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: LTE Band41 Frequency: 2680 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) = 0.282 W/kg

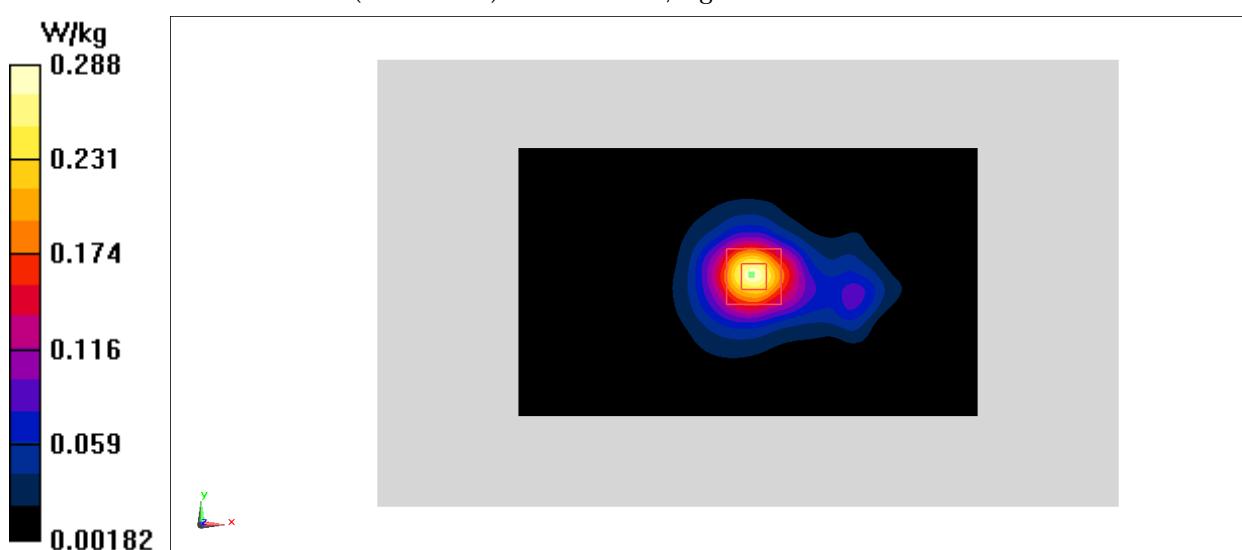
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.35 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.433 W/kg

SAR(1 g) = 0.228 W/kg; SAR(10 g) = 0.113 W/kg

Maximum value of SAR (measured) = 0.288 W/kg

**Fig I.22 LTE Band 41**

**LTE Band66 Right Cheek Low with QPSK\_20M\_1RB\_Middle**

Date: 2018-6-6

Electronics: DAE4 Sn1525

Medium: Head 1750 MHz

Medium parameters used  $f = 1720$  MHz;  $\sigma = 1.357$  mho/m;  $\epsilon_r = 40.595$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: LTE Band66 Frequency: 1720 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) = 0.281 W/kg

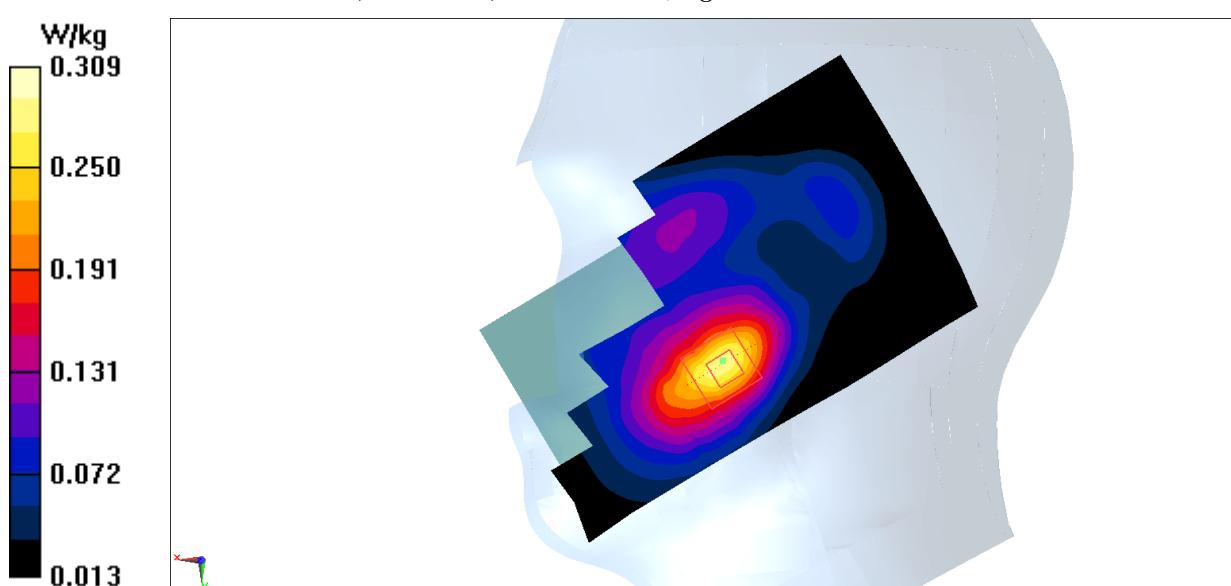
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.407 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.372 W/kg

SAR(1 g) = 0.244 W/kg; SAR(10 g) = 0.157 W/kg

Maximum value of SAR (measured) = 0.309 W/kg

**Fig I.23 LTE Band66**

**LTE Band66 Body Rear Low with QPSK\_20M\_1RB\_Middle**

Date: 2018-6-6

Electronics: DAE4 Sn1525

Medium: Body 1750 MHz

Medium parameters used:  $f = 1720$  MHz;  $\sigma = 1.509$  mho/m;  $\epsilon_r = 53.624$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: LTE Band66 Frequency: 1720 MHz Duty Cycle: 1:1

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

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

Maximum value of SAR (interpolated) = 0.997 W/kg

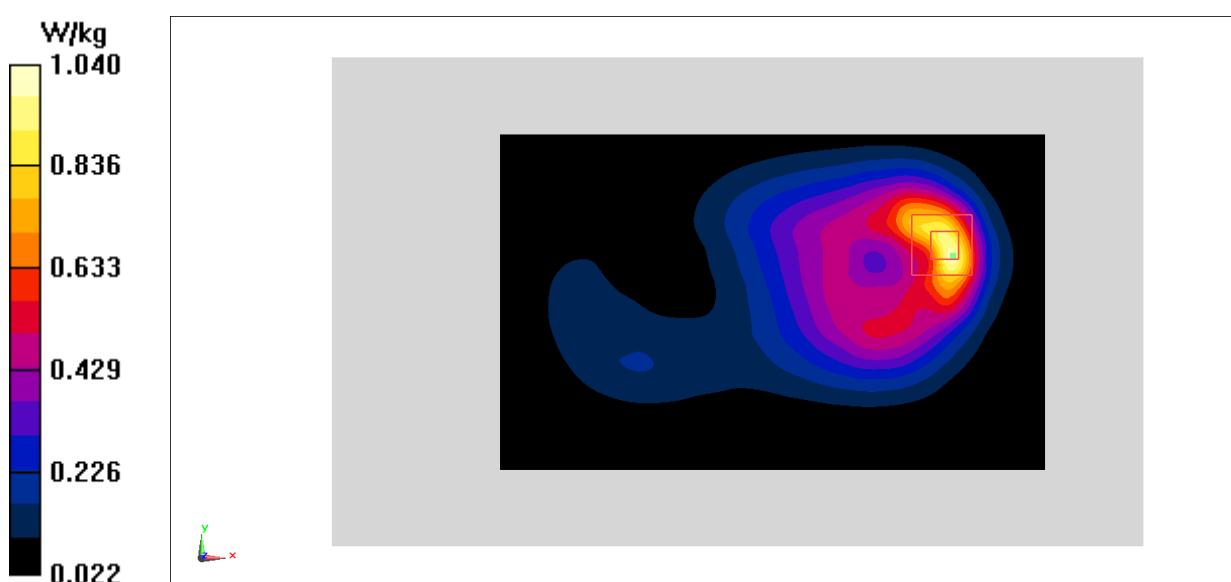
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.409 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.44 W/kg

SAR(1 g) = 0.835 W/kg; SAR(10 g) = 0.458 W/kg

Maximum value of SAR (measured) = 1.04 W/kg

**Fig I.24 LTE Band66**

## Wifi 802.11b Left Tilt Channel 1

Date: 2018-6-8

Electronics: DAE4 Sn1525

Medium: Head 2450 MHz

Medium parameters used (interpolated):  $f = 2412$  MHz;  $\sigma = 1.783$  mho/m;  $\epsilon_r = 38.85$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Communication System: WLan 2450 Frequency: 2412 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) = 1.35 W/kg

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

Reference Value = 14.87 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 2.25 W/kg

SAR(1 g) = 1 W/kg; SAR(10 g) = 0.419 W/kg

Maximum value of SAR (measured) = 1.37 W/kg

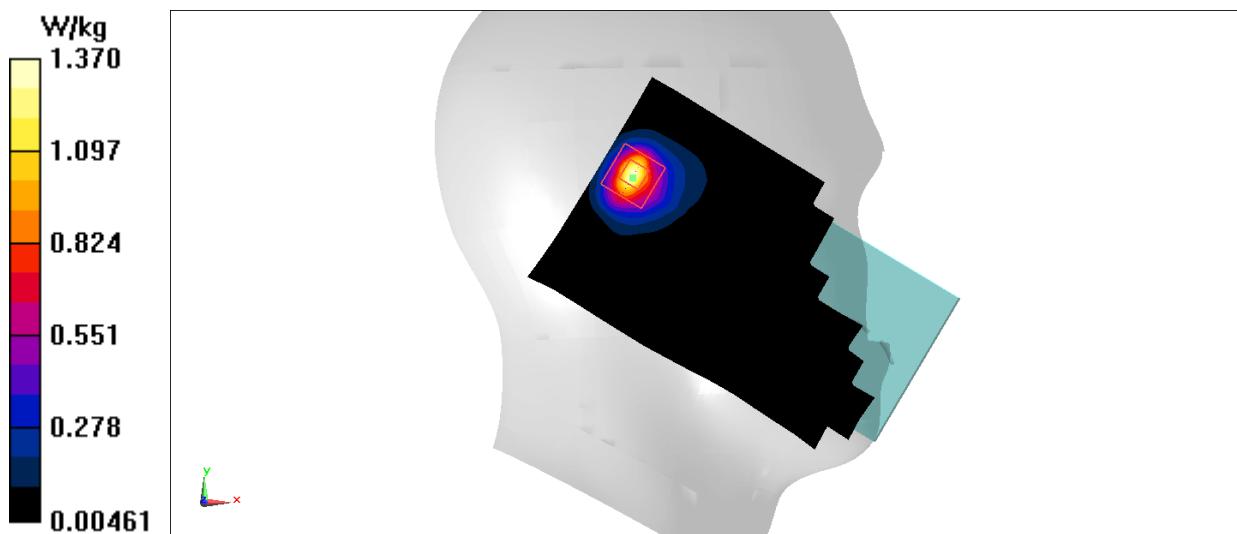


Fig I.25 2450 MHz

## Wifi 802.11b Body Top Edge Channel 1

Date: 2018-6-8

Electronics: DAE4 Sn1525

Medium: Body 2450 MHz

Medium parameters used (interpolated):  $f = 2412 \text{ MHz}$ ;  $\sigma = 1.921 \text{ mho/m}$ ;  $\epsilon_r = 52.09$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.9^\circ\text{C}$  Liquid Temperature:  $22.5^\circ\text{C}$

Communication System: WLan 2450 Frequency: 2412 MHz Duty Cycle: 1:1

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

**Area Scan (161x101x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) =  $0.621 \text{ W/kg}$

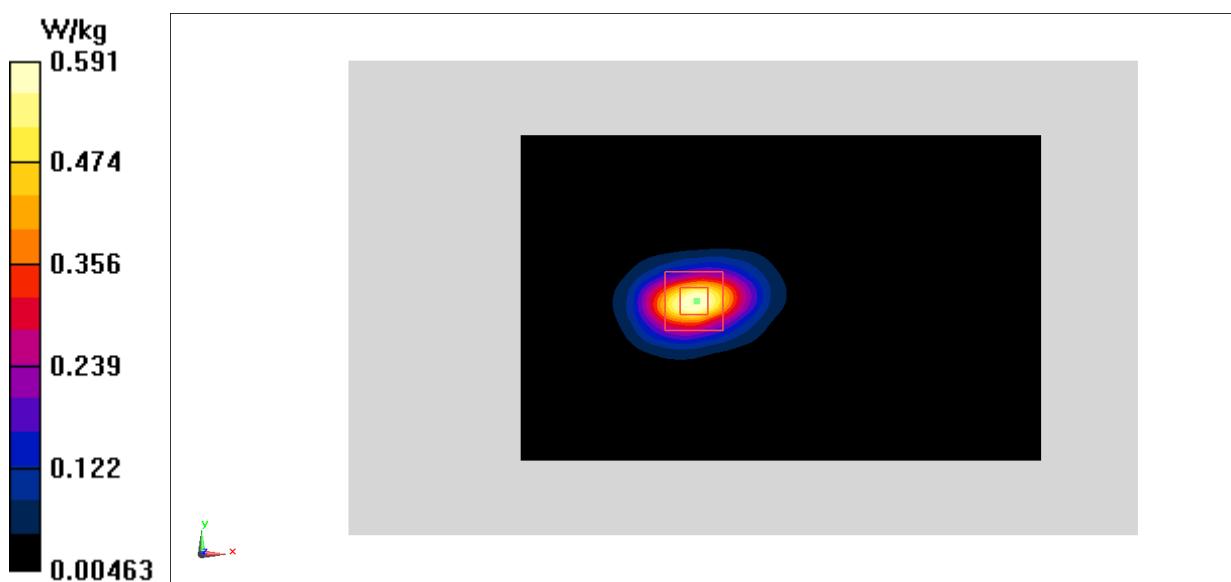
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $11.59 \text{ V/m}$ ; Power Drift =  $-0.11 \text{ dB}$

Peak SAR (extrapolated) =  $0.849 \text{ W/kg}$

SAR(1 g) =  $0.454 \text{ W/kg}$ ; SAR(10 g) =  $0.218 \text{ W/kg}$

Maximum value of SAR (measured) =  $0.591 \text{ W/kg}$



**Fig I.26 2450 MHz**

## Wifi 802.11a Right Cheek Channel 56

Date: 2018-6-8

Electronics: DAE4 Sn1525

Medium: Head 5 GHz

Medium parameters used:  $f = 5280$  MHz;  $\sigma = 4.706$  mho/m;  $\epsilon_r = 36.68$ ;  $\rho = 1000$  kg/m $^3$

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

Communication System: WLAN 5G Frequency: 5280 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(5.53, 5.53, 5.53)

**Area Scan (101x181x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.753 W/kg

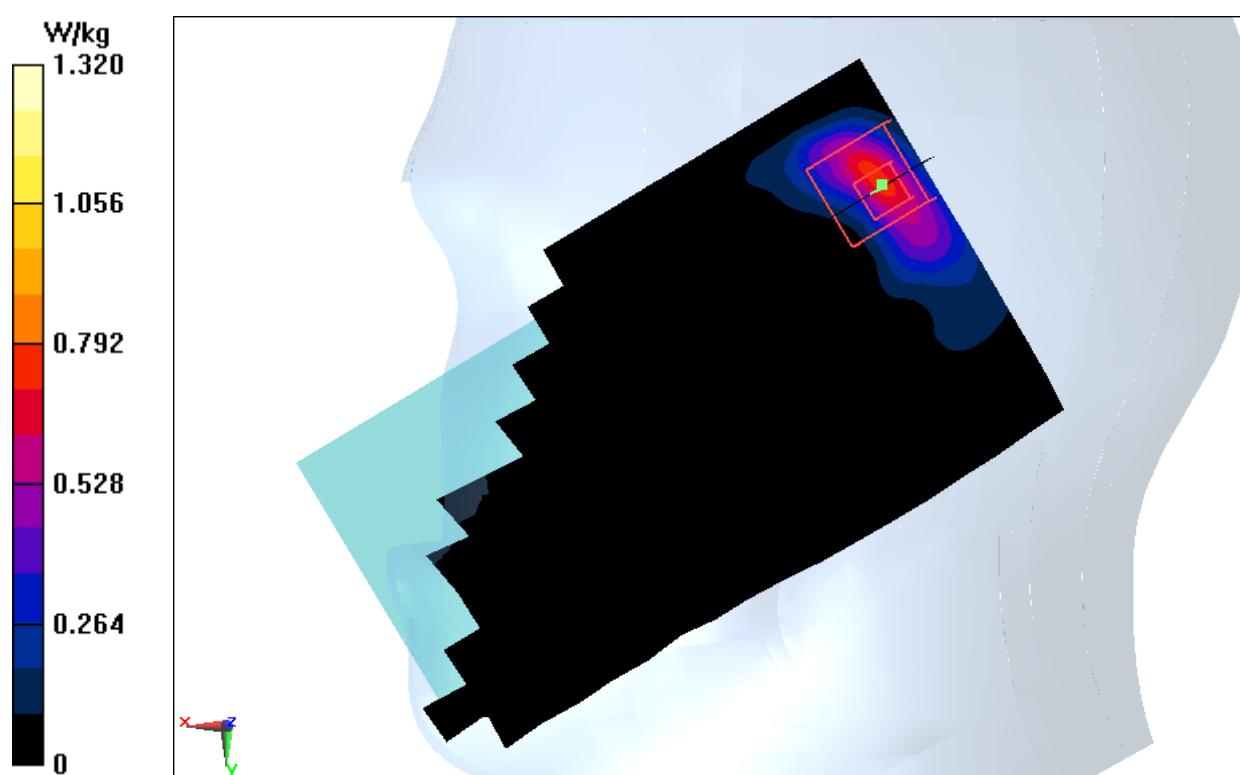
**Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 4.184 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 2.31 W/kg

SAR(1 g) = 0.519 W/kg; SAR(10 g) = 0.174 W/kg

Maximum value of SAR (measured) = 1.32 W/kg



**Fig I.27 5GHz**

## Wifi 802.11a Top Edge Channel 132

Date: 2018-6-8

Electronics: DAE4 Sn1525

Medium: Body 5 GHz

Medium parameters used:  $f = 5660$  MHz;  $\sigma = 5.769$  mho/m;  $\epsilon_r = 47.44$ ;  $\rho = 1000$  kg/m $^3$

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

Communication System: WLAN 5G Frequency: 5660 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(4.50, 4.50, 4.50)

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

Maximum value of SAR (interpolated) = 0.288 W/kg

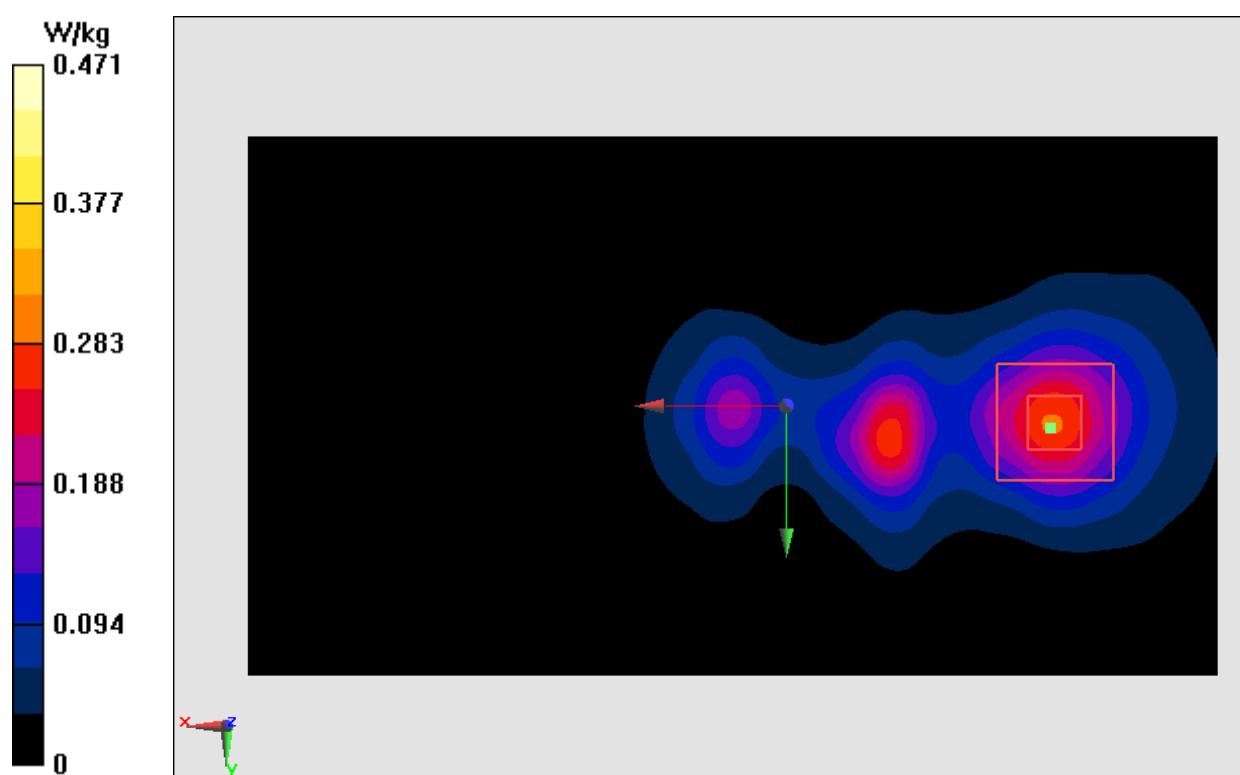
**Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 3.519 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.842 W/kg

SAR(1 g) = 0.211 W/kg; SAR(10 g) = 0.079 W/kg

Maximum value of SAR (measured) = 0.471 W/kg



**Fig I.28 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).*

2017-08-22 through 2018-09-30

Effective Dates



*Donna S. Lamm*  
For the National Voluntary Laboratory Accreditation Program