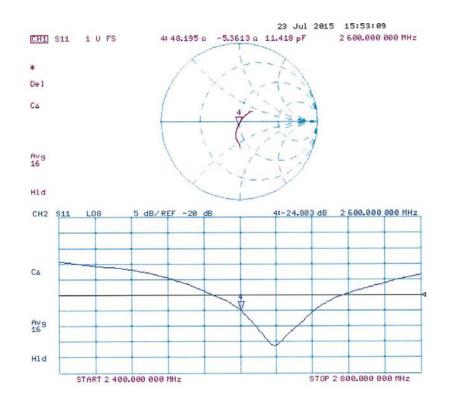


#### Impedance Measurement Plot for Head TSL



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#### DASY5 Validation Report for Body TSL

Date: 24.07.2015

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1012

Communication System: UID 0 - CW; Frequency: 2600 MHz Medium parameters used: f = 2600 MHz;  $\sigma$  = 2.22 S/m;  $\epsilon_r$  = 51.9;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 SN3205; ConvF(4.13, 4.13, 4.13); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 18.08.2014
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 97.86 V/m; Power Drift = -0.01 dB Peak SAR (extrapolated) = 29.5 W/kg SAR(1 g) = 14.3 W/kg; SAR(10 g) = 6.4 W/kg Maximum value of SAR (measured) = 19.2 W/kg



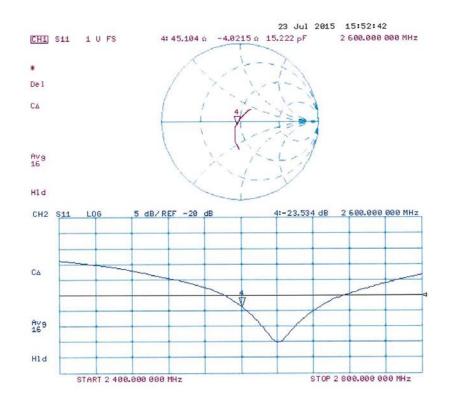
0 dB = 19.2 W/kg = 12.83 dBW/kg

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#### Impedance Measurement Plot for Body TSL



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# ANNEX I SPOT CHECK TEST

As the test lab for 7048W from TCL Communication Ltd, we, CTTL (Shouxiang), declare on our sole responsibility that, according to "Declaration of changes" provided by applicant, only the Spot check test should be performed. The test results are as below.

# I.1 Conducted power of selected case

		cleu power results for GSINO	50/1900					
GSM 850MHz		Conducted Power (dBm)						
	Channel 251(848.8MHz)	Channel 190(836.6MHz)	Channel 128(824.2MHz)					
	\	33.27	\					
COM	Conducted Power (dBm)							
	Channel 810(1909.8MHz)	Channel 661(1880MHz)	Channel 512(1850.2MHz)					
1900MHz	N	30.22	\					

#### Table L1: The conducted power results for GSM850/1900

# Table I.2: The conducted power results for GPRS

PCS1900	Measured Power (dBm)						
GPRS (GMSK)	810	661	512				
4 Txslots	26.03	١	\				

#### Table I.3: The conducted Power for WCDMA

ltem	band		FDDV result							
nem	ARFCN	4233 (846.6MHz)	4182 (836.4MHz)	4132 (826.4MHz)						
WCDMA for head	١	23.80	23.79	23.65						
ltem	band		FDDII result							
nem	ARFCN	9538 (1907.6MHz)	9400 (1880MHz)	9262 (1852.4MHz)						
WCDMA for head	١	24.00	23.92	24.00						

#### Table I.4: The conducted Power for LTE

LTE Band2	1900 (19100)	23.75	١
20MHz	1880 (18900)	١	١
1RB-Low (0)	1860 (18700)	١	١
LTE Band4	1745 (20300)	23.71	١
20MHz	1732.5 (20175)	١	١
1RB-Middle (50)	1720 (20050)	١	١

#### Table I.5: The conducted Power for WLAN

802.11b (dBm)				
Channel\data rate	1Mbps	2Mbps	5.5Mbps	11Mbps
1	17.68	17.6	17.49	17.33
6	18.13	18.04	18.15	17.87
11	17.83	17.71	17.69	17.54



### **I.2 Measurement results**

#### SAR Values (GSM 850 MHz Band - Head)

	Ambient Temperature: 22.9 °C Liquid Temperature: 22.5 °C															
Frequency			Teet	Figure	Conducted	Max.	Measured	Reported	Measured	Reported	Power					
	Side		Test Figure	Power	tune-upPow	SAR(10g)	SAR(10g)	SAR(1g)	SAR(1g)(	Drift						
MHz	Ch.		Position	No.	No.	No.	NO.	NO.	NO.	(dBm)	er (dBm)	(W/kg)	(W/kg)	(W/kg)	W/kg)	(dB)
848.8	251	Left	Touch	Fig.I.1	33.27	33.6	0.256	0.28	0.337	0.36	0.06					

#### SAR Values (GSM 1900 MHz Band - Head)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5 °C											
Frequency			Test	Figuro	Conducted	Max.	Measured	Reported	Measured	Reported	Power
	Side		Figure	Power	tune-upPow	SAR(10g)	SAR(10g)	SAR(1g)	SAR(1g)(	Drift	
MHz	Ch.		Position	No.	(dBm)	er (dBm)	(W/kg)	(W/kg)	(W/kg)	W/kg)	(dB)
1850.2	512	Left	Touch	Fig.I.2	30.22	30.5	0.118	0.13	0.200	0.21	0.07

#### SAR Values (GSM 1900 MHz Band-Body)

	Ambient Temperature: 22.9 °C Liquid Temperature: 22.5 °C													
Frequ	encv	Mode		Figure	Conducted	Max.	Measured	Reported	Measured	Reported	Power			
	(number		Test	Figure	Power	tune-upPowe	SAR(10g)	SAR(10g)	SAR(1g)	SAR(1g)	Drift			
MHz	Ch.	timeslots)	Position	No.	(dBm)	r (dBm)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(dB)			
1850.2	512	GPRS (4)	Rear	Fig.I.3	26.03	26.5	0.298	0.33	0.481	0.54	0.10			

Note1: The distance between the EUT and the phantom bottom is 10mm.

#### SAR Values (WCDMA 850 MHz Band - Head)

	Ambient Temperature: 22.9 °C Liquid Temperature: 22.5 °C													
Frequ	uency	Test		Figure	Conducted Max. tune-u		Measured	Reported	Measured	Reported	Power			
MHz	Ch.	Side	Position	No.	Power (dBm)	Power (dBm)	SAR(10g) (W/kg)	SAR(10g) (W/kg)	SAR(1g) (W/kg)	SAR(1g) (W/kg)	Drift (dB)			
836.4	4182	Right	Touch	Fig.I.4	23.79	24	0.266	0.28	0.351	0.37	-0.16			

#### SAR Values (WCDMA 1900 MHz Band - Head)

	Ambient Temperature: 22.9 °C Liquid Temperature: 22.5 °C												
						Conducted	Max tune un	Measured	Reported	Measured	Reported	Power	
-		,	Side		Power	Max. tune-up	SAR(10g)	SAR(10g)	SAR(1g)	SAR(1g)	Drift		
	MHz	Ch.		Position	No.	(dBm)	Power (dBm)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(dB)	
	1852.4	9262	Left	Touch	Fig.I.5	24.00	24	0.321	0.32	0.532	0.53	0.14	

#### SAR Values (LTE Band2 - Head)

	Ambient Temperature: 22.9 °C Liquid Temperature: 22.5 °C													
Freq	uency			Test	Figure	Conducted	Max. tune-up	Measured	Reported	Measured	Reported	Power		
		Mode	Side	Position	No.	Power	Power (dBm)	SAR(10g)	SAR(10g)	SAR(1g)	SAR(1g)	Drift		
MHz	Ch.			FUSILION	INO.	(dBm)	Fower (dBill)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(dB)		
1900	19100	1RB_Low	Left	Touch	Fig.I.6	23.75	24	0.229	0.24	0.401	0.42	0.16		

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#### Ambient Temperature: 22.9 °C Liquid Temperature: 22.5 °C Max. Frequency Conducted Measured Reported Measured Reported Power Test Figure tune-up SAR(10g) SAR(10g) SAR(1g) Mode Power SAR(1g) Drift Position Power No. MHz Ch. (W/kg) (dBm) (W/kg) (W/kg) (W/kg) (dB) (dBm) 0.74 19100 23.75 24 0.46 0.13 1900 1RB\_Low Rear Fig.I.7 0.433 0.698

## SAR Values (LTE Band2 - Body)

#### SAR Values (LTE Band4 - Head)

			Amb	ient Temp	erature:	22.9 °C	Liquid Temperature: 22.5 °C					
Frequ MHz	uency Ch.	Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. 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)
1745	20300	1RB_Mid	Left	Touch	Fig.I.8	23.71	24	0.214	0.23	0.345	0.37	0.12

#### SAR Values (LTE Band4 - Body)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5 °C											
Frequ	uency	Mode	Test Position	Figure No.	Conducted Power	Max. tune-up Power (dBm)	Measured SAR(10g)	Reported SAR(10g)	Measured SAR(1g)	Reported SAR(1g)	Power Drift
MHz	Ch.				(dBm)		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(dB)
1745	20300	1RB_Mid	Rear	Fig.I.9	23.71	24	0.423	0.45	0.675	0.72	0.08

#### SAR Values (WLAN - Body)

		A	mbient T	emperature:	Liquid Temperature: 22.5 °C					
Frequency		Test	Figure	Conducted	Max. tune-up	Measured	Reported	Measured	Reported	Power
				Power		SAR(10g)	SAR(10g)	SAR(1g)	SAR(1g)	Drift
MHz	Ch.	Position	No.	(dBm)	Power (dBm)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(dB)
2462	11	Тор	Fig.I.10	17.69	19.5	0.097	0.15	0.179	0.27	-0.01
2437	6	Тор	Fig.I.11	18.15	19	0.063	0.08	0.118	0.14	0.11

# I.3 Reported SAR Comparison

Exposure Configuration	Technology Band	Reported SAR 1g (W/Kg): original	Reported SAR 1g (W/Kg): spot check	
	GSM 850	0.36	0.36	
	PCS 1900	0.22	0.21	
Head	WCDMA 850	0.40	0.37	
(Separation Distance 0mm)	WCDMA 1900	0.53	0.53	
	LTE Band2	0.47	0.42	
	LTE Band4	0.47	0.37	
	PCS 1900	0.55	0.54	
Body-worn	LTE Band2	0.83	0.74	
(Separation Distance 10mm)	LTE Band4	0.73	0.72	
	WLAN	0.42	0.27	



# 850 Right Cheek Middle

Date: 2015-10-18 Electronics: DAE4 Sn777 Medium: Head 850 MHz Medium parameters used (interpolated): f = 836.6 MHz;  $\sigma = 0.928$  mho/m;  $\epsilon r = 41.42$ ;  $\rho = 1000 \text{ kg/m}^3$ Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C Communication System: GSM 850 Frequency: 836.6 MHz Duty Cycle: 1:8.3 Probe: EX3DV4 - SN3617 ConvF(9.71, 9.71, 9.71)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm Maximum value of SAR (interpolated) = 0.368 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 6.027 V/m; Power Drift = 0.06 dB Peak SAR (extrapolated) = 0.424 W/kg

SAR(1 g) = 0.337 W/kg; SAR(10 g) = 0.256 W/kg

Maximum value of SAR (measured) = 0.364 W/kg

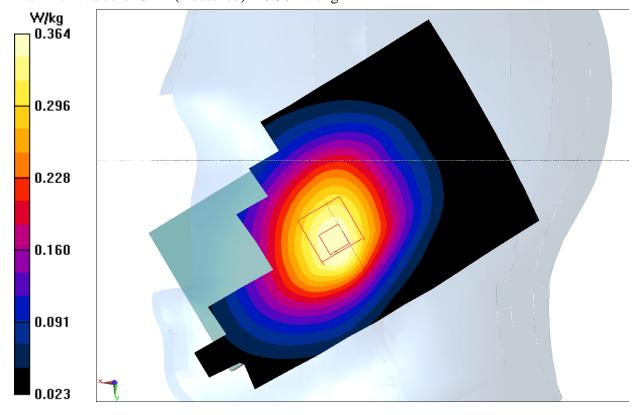


Fig.I.1 850MHz



# 1900 Right Cheek Middle

Date: 2015-10-20 Electronics: DAE4 Sn777 Medium: Head 1900 MHz Medium parameters used: f = 1880 MHz;  $\sigma = 1.396$  mho/m;  $\epsilon r = 40.366$ ;  $\rho = 1000$  kg/m<sup>3</sup> Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:8.3 Probe: EX3DV4 - SN3617 ConvF(8.07, 8.07, 8.07)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm Maximum value of SAR (interpolated) = 0.233 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 6.538 V/m; Power Drift = 0.07 dB Peak SAR (extrapolated) = 0.320 W/kg SAR(1 g) = 0.200 W/kg; SAR(10 g) = 0.118 W/kg Maximum value of SAR (measured) = 0.240 W/kg

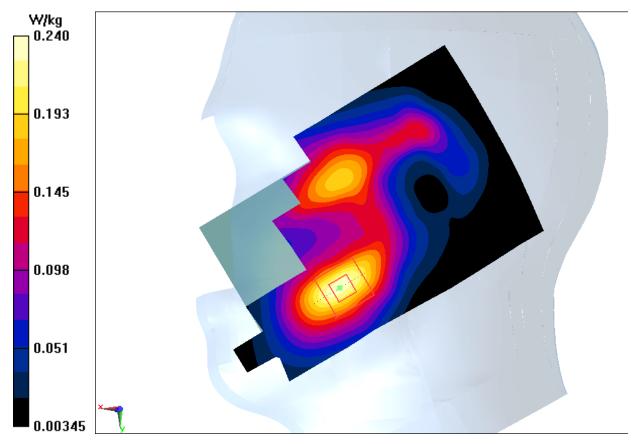


Fig.I.2 1900 MHz



# 1900 Body Rear High

Date: 2015-10-20 Electronics: DAE4 Sn777 Medium: Body 1900 MHz Medium parameters used: f = 1910 MHz;  $\sigma = 1.573$  mho/m;  $\epsilon r = 53.215$ ;  $\rho = 1000$  kg/m<sup>3</sup> Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:2 Probe: EX3DV4 - SN3617 ConvF(7.74, 7.74, 7.74)

**Area Scan (121x71x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm Maximum value of SAR (interpolated) = 0.601 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 10.50 V/m; Power Drift = 0.10 dB Peak SAR (extrapolated) = 0.831 W/kg SAR(1 g) = 0.481 W/kg; SAR(10 g) = 0.298 W/kg Maximum value of SAR (measured) = 0.552 W/kg

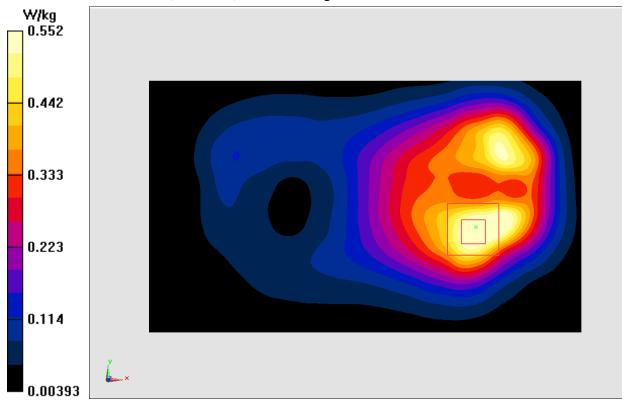


Fig.I.3 1900 MHz



# WCDMA 850 Right Cheek Middle

Date: 2015-10-18 Electronics: DAE4 Sn777 Medium: Head 850 MHz Medium parameters used (interpolated): f = 836.4 MHz;  $\sigma = 0.905$  mho/m;  $\epsilon r = 40.989$ ;  $\rho = 1000 \text{ kg/m}^3$ Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C Communication System: WCDMA; Frequency: 836.4 MHz; Duty Cycle: 1:1 Probe: EX3DV4 - SN3617 ConvF(9.71, 9.71, 9.71)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm Maximum value of SAR (interpolated) = 0.393 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 6.896 V/m; Power Drift = -0.16 dB Peak SAR (extrapolated) = 0.447 W/kg

SAR(1 g) = 0.351 W/kg; SAR(10 g) = 0.266 W/kg

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

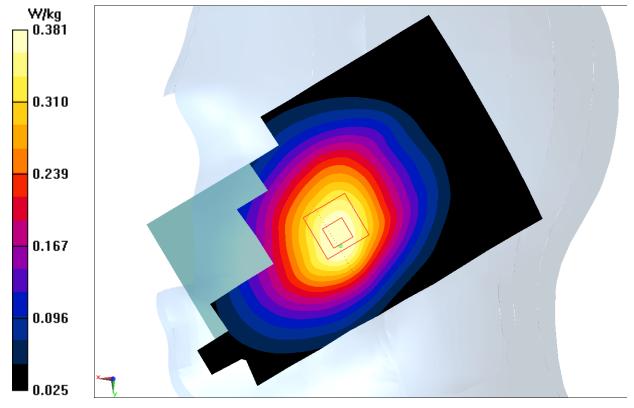


Fig.I.4 WCDMA 850



# WCDMA 1900 Left Cheek Low

Date: 2015-10-20 Electronics: DAE4 Sn777 Medium: Head 1900 MHz Medium parameters used (interpolated): f = 1852.4 MHz;  $\sigma = 1.378$  mho/m;  $\epsilon r = 39.895$ ;  $\rho = 1000 \text{ kg/m}^3$ Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C Communication System: WCDMA 1900 Frequency: 1852.4 MHz Duty Cycle: 1:1 Probe: EX3DV4 - SN3617 ConvF(8.07, 8.07, 8.07)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm Maximum value of SAR (interpolated) = 0.676 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 10.77 V/m; Power Drift = 0.14 dB Peak SAR (extrapolated) = 0.844 W/kg SAR(1 g) = 0.532 W/kg; SAR(10 g) = 0.321 W/kg

Maximum value of SAR (measured) = 0.635 W/kg

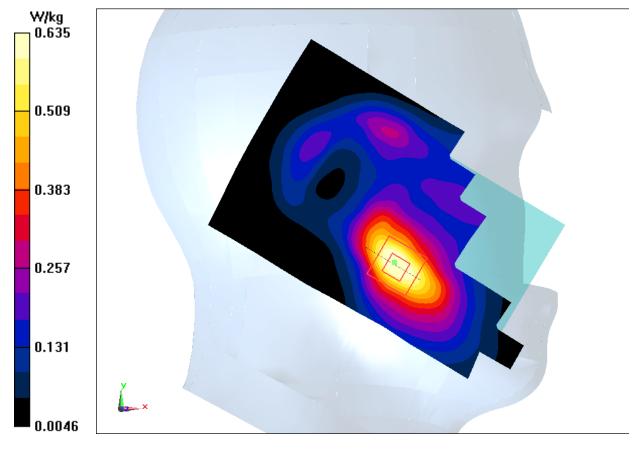


Fig.I.5 WCDMA1900



# LTE Band2 Left Cheek High with QPSK\_20M\_1RB\_Low

Date: 2015-10-20 Electronics: DAE4 Sn777 Medium: Head 1900 MHz Medium parameters used: f = 1900 MHz;  $\sigma = 1.408$  mho/m;  $\epsilon r = 40.54$ ;  $\rho = 1000$  kg/m<sup>3</sup> Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C Communication System: LTE Band2 Frequency: 1900 MHz Duty Cycle: 1:1 Probe: EX3DV4 - SN3617 ConvF(8.07, 8.07, 8.07)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm Maximum value of SAR (interpolated) = 0.492 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 9.008 V/m; Power Drift = 0.16 dB Peak SAR (extrapolated) = 0.662 W/kg SAR(1 g) = 0.401 W/kg; SAR(10 g) = 0.229 W/kg Maximum value of SAR (measured) = 0.487 W/kg

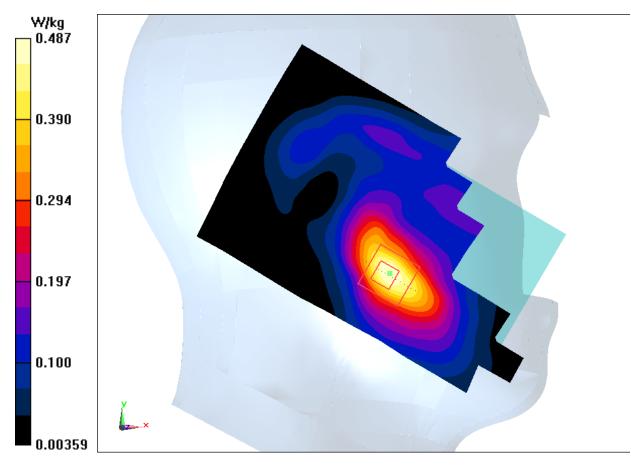


Fig.I.6 LTE Band2



# LTE Band2 Body Rear High with QPSK\_20M\_1RB\_Low

Date: 2015-10-20 Electronics: DAE4 Sn777 Medium: Body 1900 MHz Medium parameters used: f = 1900 MHz;  $\sigma = 1.557$  mho/m;  $\epsilon r = 52.93$ ;  $\rho = 1000$  kg/m<sup>3</sup> Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C Communication System: LTE Band4 Frequency: 1900 MHz Duty Cycle: 1:1 Probe: EX3DV4 - SN3617 ConvF(7.74, 7.74, 7.74)

**Area Scan (121x71x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm Maximum value of SAR (interpolated) = 0.826 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 11.86 V/m; Power Drift = 0.13 dB Peak SAR (extrapolated) = 1.12 W/kg SAR(1 g) = 0.698 W/kg; SAR(10 g) = 0.433 W/kg Maximum value of SAR (measured) = 0.783 W/kg

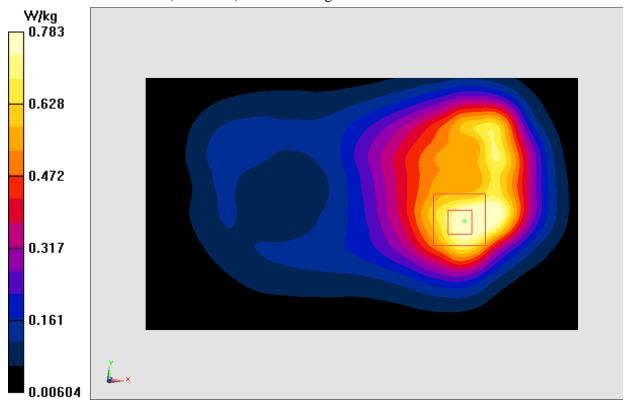


Fig.I.7 LTE Band2



# LTE Band4 Left Cheek High with QPSK\_20M\_1RB\_Middle

Date: 2015-10-19 Electronics: DAE4 Sn777 Medium: Head 1750 MHz Medium parameters used: f = 1745 MHz;  $\sigma = 1.452$  mho/m;  $\epsilon r = 39.662$ ;  $\rho = 1000$  kg/m<sup>3</sup> Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C Communication System: LTE Band4 Frequency: 1745 MHz Duty Cycle: 1:1 Probe: EX3DV4 - SN3617 ConvF(8.34, 8.34, 8.34)

**Area Scan (71x111x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm Maximum value of SAR (interpolated) = 0.396 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 9.887 V/m; Power Drift = 0.12 dB Peak SAR (extrapolated) = 0.534 W/kg SAR(1 g) = 0.345 W/kg; SAR(10 g) = 0.214 W/kg Maximum value of SAR (measured) = 0.409 W/kg

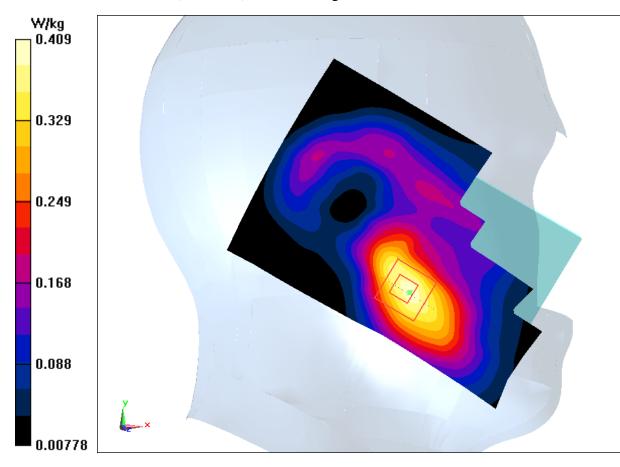


Fig.I.8 LTE Band4



# LTE Band4 Body Rear High with QPSK\_20M\_1RB\_Middle

Date: 2015-10-19 Electronics: DAE4 Sn777 Medium: Body 1750 MHz Medium parameters used: f = 1745 MHz;  $\sigma = 1.493$  mho/m;  $\epsilon r = 52.885$ ;  $\rho = 1000$  kg/m<sup>3</sup> Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C Communication System: LTE Band4 Frequency: 1745 MHz Duty Cycle: 1:1 Probe: EX3DV4 - SN3617 ConvF(7.96, 7.96, 7.96)

Area Scan (121x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm Maximum value of SAR (interpolated) = 0.894 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 11.66 V/m; Power Drift = 0.08 dB Peak SAR (extrapolated) = 1.08 W/kg SAR(1 g) = 0.675 W/kg; SAR(10 g) = 0.423 W/kg Maximum value of SAR (measured) = 0.902 W/kg

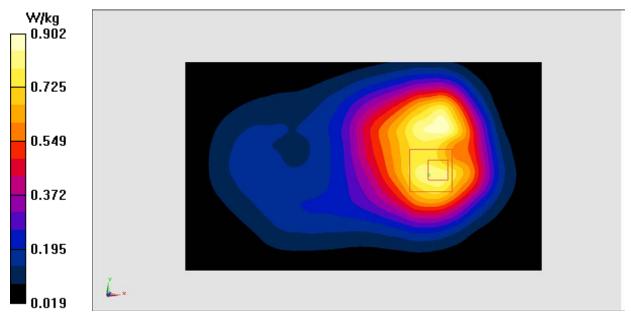


Fig.I.9 LTE Band4



# Wifi 802.11b Body Top Channel 11

Date: 2015-10-21 Electronics: DAE4 Sn777 Medium: Body 2450 MHz Medium parameters used (interpolated): f = 2462 MHz;  $\sigma = 2.115$  mho/m;  $\epsilon_r = 50.948$ ;  $\rho = 1000$  kg/m<sup>3</sup> Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C Communication System: WLan 2450 Frequency: 2462 MHz Duty Cycle: 1:1 Probe: EX3DV4 - SN3617 ConvF(7.35, 7.35, 7.35)

**Area Scan (121x71x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm Maximum value of SAR (interpolated) = 0.240 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 9.820 V/m; Power Drift = -0.01 dB Peak SAR (extrapolated) = 0.322 W/kg SAR(1 g) = 0.179 W/kg; SAR(10 g) = 0.097 W/kg Maximum value of SAR (measured) = 0.253 W/kg

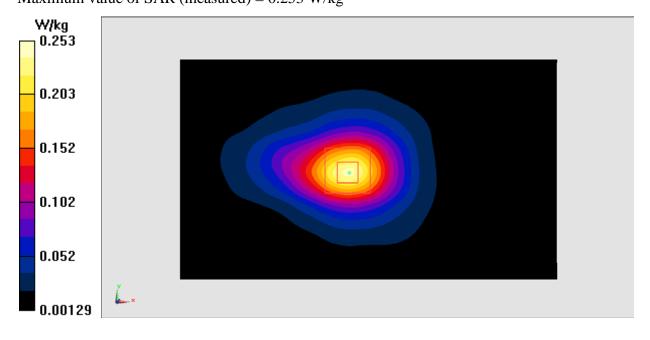


Fig.I.10 2450 MHz



# Wifi 802.11b Body Top Channel 6

Date: 2015-10-21 Electronics: DAE4 Sn777 Medium: Body 2450 MHz Medium parameters used (interpolated): f = 2437 MHz;  $\sigma = 2.092$  mho/m;  $\epsilon_r = 50.948$ ;  $\rho = 1000$  kg/m<sup>3</sup> Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1 Probe: EX3DV4 - SN3617 ConvF(7.35, 7.35, 7.35)

Area Scan (121x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm Maximum value of SAR (interpolated) = 0.166 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 7.028 V/m; Power Drift = 0.11 dB Peak SAR (extrapolated) = 0.215 W/kg SAR(1 g) = 0.118 W/kg; SAR(10 g) = 0.063 W/kg Maximum value of SAR (measured) = 0.165 W/kg

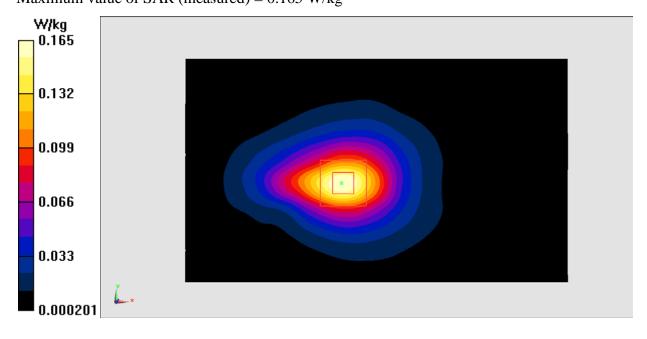


Fig.I.11 2450 MHz



# ANNEX J Accreditation Certificate

