Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	200030.95	-2.42	-0.00
Channel X	+ Input	20004.11	-0.05	-0.00
Channel X	- Input	-20003.75	2.02	-0.01
Channel Y	+ Input	200031.20	-2.23	-0.00
Channel Y	+ Input	20001.46	-2.74	-0.01
Channel Y	- Input	-20005.92	-0.05	0.00
Channel Z	+ Input	200032.03	-1.05	-0.00
Channel Z	+ Input	20001.94	-2.11	-0.01
Channel Z	- Input	-20006.15	-0.20	0.00

Low Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	2000.66	0.19	0.01
Channel X	+ Input	200.40	-0.18	-0.09
Channel X	- Input	-198.67	0.81	-0.40
Channel Y	+ Input	2000.90	0.48	0.02
Channel Y	+ Input	199.98	-0.58	-0.29
Channel Y	- Input	-200.18	-0.62	0.31
Channel Z	+ Input	2000.68	0.32	0.02
Channel Z	+ Input	199.07	-1.45	-0.72
Channel Z	- Input	-201.14	-1.52	0.76

2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	18.32	16.76
	- 200	-15.73	-17.08
Channel Y	200	-20.47	-20.86
	- 200	20.66	20.31
Channel Z	200	13.43	13.46
	- 200	-15.65	-15.97

3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	0.08	-3.66
Channel Y	200	7.12	-	1.80
Channel Z	200	10.44	4.52	-

Certificate No: DAE4-1525_Oct17   Page 4 of 5

4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	High Range (LSB)	Low Range (LSB)
Channel X	15817	15005
Channel Y	16329	14457
Channel Z	15576	15478

5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec
Input 10MΩ

	Average (μV)	min. Offset (μV)	max. Offset (μV)	Std. Deviation (μV)
Channel X	0.63	-0.54	2.27	0.51
Channel Y	-2.07	-3.42	-1.02	0.49
Channel Z	-0.89	-2.38	0.83	0.54

6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

7. Input Resistance (Typical values for information)

	Zeroing (kOhm)	Measuring (MOhm)
Channel X	200	200
Channel Y	200	200
Channel Z	200	200

8. Low Battery Alarm Voltage (Typical values for information)

Typical values	Alarm Level (VDC)
Supply (+ Vcc)	+7.9
Supply (- Vcc)	-7.6

9. Power Consumption (Typical values for information)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.01	+6	+14
Supply (- Vcc)	−0.01	-8	-9

Certificate No: DAE4-1525_Oct17   Page 5 of 5

ANNEX J   Spot Check

J.1 Conducted power of selected case

Table J.1-1: The conducted power results for GSM850/1900

GSM 850MHz	Conducted Power (dBm)		
	Channel 251(848.8MHz)	Channel 190(836.6MHz)	Channel 128(824.2MHz)
	32.32	/	/
GSM 1900MHz	Conducted Power(dBm)		
	Channel 810(1909.8MHz)	Channel 661(1880MHz)	Channel 512(1850.2MHz)
	/	/	29.93

Table J.1-2: The conducted power results for GPRS

GSM 850	Measured Power (dBm)		
GPRS (GMSK)	251	190	128
2 Txslots	/	30.05	/
PCS1900	Measured Power (dBm)		
GPRS (GMSK)	810	661	512
2 Txslots	/	/	27.88

Table J.1-3: The conducted Power for WCDMA

Item	band	FDDV result		
	ARFCN	4233(846.6MHz)	4182(836.4MHz)	4132(826.4MHz)
WCDMA	\	23.21	23.27	/
Item	band	FDDII result		
	ARFCN	9538(1907.6MHz)	9400(1880MHz)	9262(1852.4MHz)
WCDMA	\	/	/	23.26
Item	band	FDDIV result		
	ARFCN	1513 (1752.6MHz)	1412 (1732.4MHz)	1312 (1712.4MHz)
WCDMA	\	/	23.07	/

Table J.1-4: The conducted Power for LTE

LTE Band2 20MHz	1RB-Middle	1900 (19100)	22.91
	1RB-Middle	1860 (18700)	22.86
LTE Band4 20MHz	1RB-Middle	1745 (20300)	22.90
	1RB-Middle	1720 (20050)	22.85
LTE Band5 10MHz	1RB-Middle	829 (20450)	23.37
LTE Band7 20MHz	1RB-Middle	2560 (21350)	22.12
	1RB-Middle	2510 (20850)	22.13
LTE Band12 10MHz	1RB-Middle	704 (23060)	23.19
LTE Band13 10MHz	1RB-Middle	782 (23230)	22.92

Table J.1-5: The conducted Power for WLAN

Mode / data rate	Channel	Measured Power (dBm)
802.11b – 1Mbps	6	15.90

J.2 Measurement results

Test Band	Channel	Frequency	Tune-Up	Measured Power	Test Position	Measured 10g SAR	Measured 1g SAR	Reported 10g SAR	Reported 1g SAR	Power Drift	Figure
WLAN2450	6	2437 MHz	16.5	15.90	Right Cheek	0.394	0.824	**0.45**	**0.95**	0.02	SIM2
WCDMA1900-BII	9262	1852.4 MHz	23.5	23.26	Bottom edge	0.584	1.07	**0.62**	**1.13**	0.06	SIM2

Test Band	Channel	Frequency	Tune-Up	Measured Power	Test Position	Measured 10g SAR	Measured 1g SAR	Reported 10g SAR	Reported 1g SAR	Power Drift	Figure
GSM850	251	848.8 MHz	33.3	32.32	Left Cheek	0.214	0.279	**0.27**	**0.35**	−0.09	Fig J.1
GSM850	190	836.6 MHz	30.5	30.05	Rear	0.384	0.508	**0.43**	**0.56**	−0.09	Fig J.2
PCS1900	512	1850.2 MHz	30.3	29.93	Right Cheek	0.221	0.314	**0.24**	**0.34**	0.08	Fig J.3
PCS1900	512	1850.2 MHz	28	27.88	Rear	0.559	1.01	**0.57**	**1.04**	−0.16	Fig J.4
WCDMA1900-BII	9262	1852.4 MHz	23.5	23.26	Left Cheek	0.125	0.221	**0.13**	**0.23**	0.03	Fig J.5
WCDMA1900-BII	9262	1852.4 MHz	23.5	23.26	Bottom edge	0.599	1.13	**0.63**	**1.19**	0.1	Fig J.6
WCDMA1700-BIV	1412	1732.4 MHz	23.5	23.07	Left Cheek	0.393	0.25	**0.43**	**0.28**	0.05	Fig J.7
WCDMA1700-BIV	1412	1732.4 MHz	23.5	23.07	Rear	0.546	0.966	**0.60**	**1.07**	−0.07	Fig J.8
WCDMA850-BV	4182	835.4 MHz	24	23.27	Left Cheek	0.22	0.295	**0.26**	**0.35**	0.05	Fig J.9
WCDMA850-BV	4233	846.6 MHz	24	23.21	Rear	0.301	0.398	**0.36**	**0.48**	0.05	Fig J.10
LTE1900-FDD2	19100	1900 MHz	23.5	22.91	Left Cheek	0.0763	0.133	**0.09**	**0.15**	−0.07	Fig J.11
LTE1900-FDD2	18700	1860 MHz	23.5	22.86	Bottom edge	0.512	0.963	**0.59**	**1.12**	0.04	Fig J.12
LTE1700-FDD4	20050	1720 MHz	23.5	22.85	Left Cheek	0.123	0.213	**0.14**	**0.25**	0.05	Fig J.13
LTE1700-FDD4	20300	1745 MHz	23.5	22.90	Rear	0.556	0.976	**0.64**	**1.12**	0.05	Fig J.14
LTE850-FDD5	20450	829 MHz	24	23.37	Left Cheek	0.172	0.225	**0.20**	**0.26**	−0.04	Fig J.15
LTE850-FDD5	20450	829 MHz	24	23.37	Rear	0.293	0.387	**0.34**	**0.45**	−0.01	Fig J.16
LTE2500-FDD7	20850	2510 MHz	22.2	22.13	Right Cheek	0.101	0.189	**0.10**	**0.19**	0.08	Fig J.17
LTE2500-FDD7	21350	2560 MHz	22.2	22.12	Bottom edge	0.452	0.958	**0.46**	**0.98**	0.04	Fig J.18
LTE700-FDD12	23060	704 MHz	24	23.19	Right Cheek	0.0959	0.123	**0.12**	**0.15**	0.01	Fig J.19
LTE700-FDD12	23060	704 MHz	24	23.19	Rear	0.206	0.267	**0.25**	**0.32**	0.11	Fig J.20
LTE750-FDD13	23230	782 MHz	24	22.92	Left Cheek	0.147	0.191	**0.19**	**0.24**	−0.03	Fig J.21
LTE750-FDD13	23230	782 MHz	24	22.92	Rear	0.292	0.383	**0.37**	**0.49**	0.08	Fig J.22
WLAN2450	6	2437 MHz	16.5	15.90	Right Cheek	0.403	0.854	**0.46**	**0.98**	0.08	Fig J.23
WLAN2450	6	2437 MHz	16.5	15.90	Rear	0.0784	0.164	**0.09**	**0.19**	−0.01	Fig J.24

Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR(1g)(W/kg)	Scaled reported SAR(1g)(W/kg)
MHz	Ch.					
2437	6	Right Cheek	100.00%	100.00%	**0.98**	**0.98**

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	100.00%	100.00%	**0.19**	**0.19**
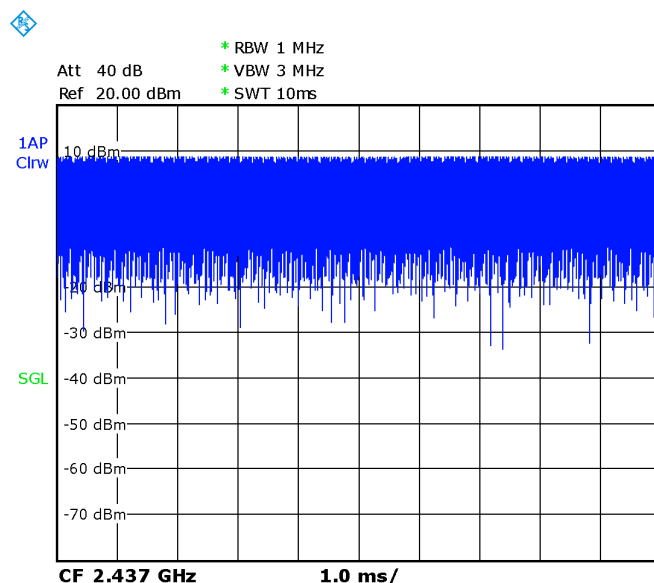
J.3 Reported SAR Comparison

Exposure Configuration	Technology Band	Reported SAR 1g (W/Kg): spot check	Reported SAR 1g (W/Kg): original
Head (Separation Distance 0mm)	GSM850	0.35	0.39
	PCS1900	0.34	0.38
	WCDMA1900-BII	0.23	0.23
	WCDMA1700-BIV	0.28	0.46
	WCDMA850-BV	0.35	0.39
	LTE1900-FDD2	0.15	0.16
	LTE1700-FDD4	0.25	0.33
	LTE850-FDD5	0.26	0.36
	LTE2500-FDD7	0.19	0.20
	LTE700-FDD12	0.15	0.22
	LTE750-FDD13	0.24	0.34
	WLAN2450	0.98	0.99
Hotspot (Separation Distance 10mm)	GSM850	0.56	0.46
	PCS1900	1.04	1.09
	WCDMA1900-BII	1.19	1.19
	WCDMA1700-BIV	1.07	1.18
	WCDMA850-BV	0.48	0.44
	LTE1900-FDD2	1.12	1.19
	LTE1700-FDD4	1.12	1.16
	LTE850-FDD5	0.45	0.41
	LTE2500-FDD7	0.98	1.19
	LTE700-FDD12	0.32	0.30
	LTE750-FDD13	0.49	0.37
	WLAN2450	0.19	0.16

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

GSM850_CH251 Left Cheek

Date: 4/12/2018

Electronics: DAE4 Sn1525

Medium: head 835 MHz

Medium parameters used: f = 848.8 MHz; σ = 0.914 mho/m; εr = 41.58; ρ = 1000 kg/m^3

Ambient Temperature: 22.5ºC,   Liquid Temperature: 22.3ºC

Communication System: GSM850 848.8 MHz Duty Cycle: 1:8.3

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) = 0.308 W/kg

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

Reference Value = 4.711 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.342 W/kg

SAR(1 g) = 0.279 W/kg; SAR(10 g) = 0.214 W/kg

Maximum value of SAR (measured) = 0.292 W/kg
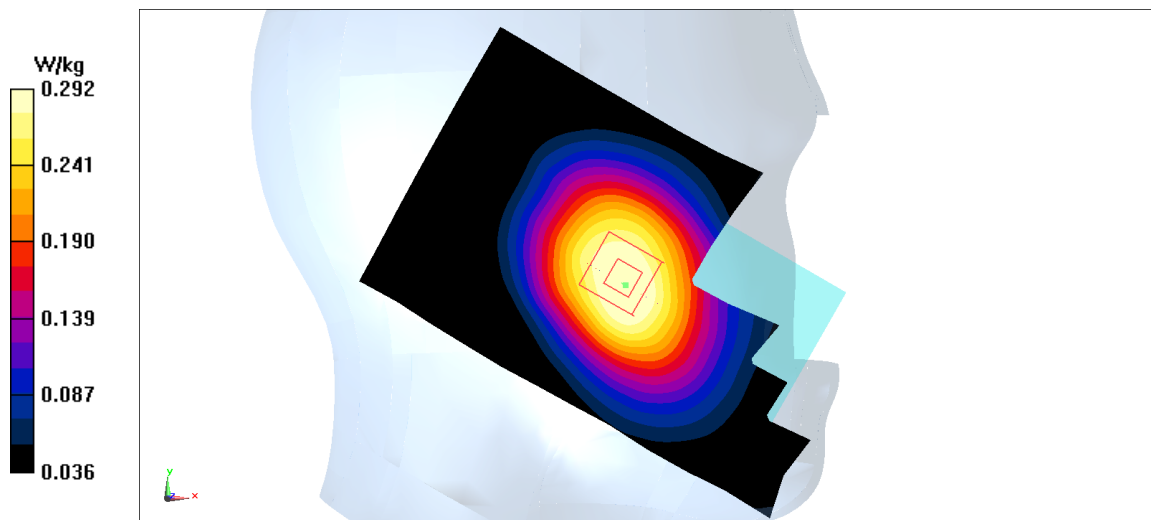
Fig J.1

GSM850_CH190 Rear

Date: 4/12/2018

Electronics: DAE4 Sn1525

Medium: body 835 MHz

Medium parameters used: f = 836.6 MHz; σ = 0.99 mho/m; εr = 56.1; ρ = 1000 kg/m^3

Ambient Temperature: 22.5^{o}C,   Liquid Temperature: 22.3^{o}C

Communication System: GSM850 836.6 MHz Duty Cycle: 1:4

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

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

Maximum value of SAR (interpolated) = 0.561 W/kg

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

Reference Value = 23.16 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.634 W/kg

SAR(1 g) = 0.508 W/kg; SAR(10 g) = 0.384 W/kg

Maximum value of SAR (measured) = 0.534 W/kg
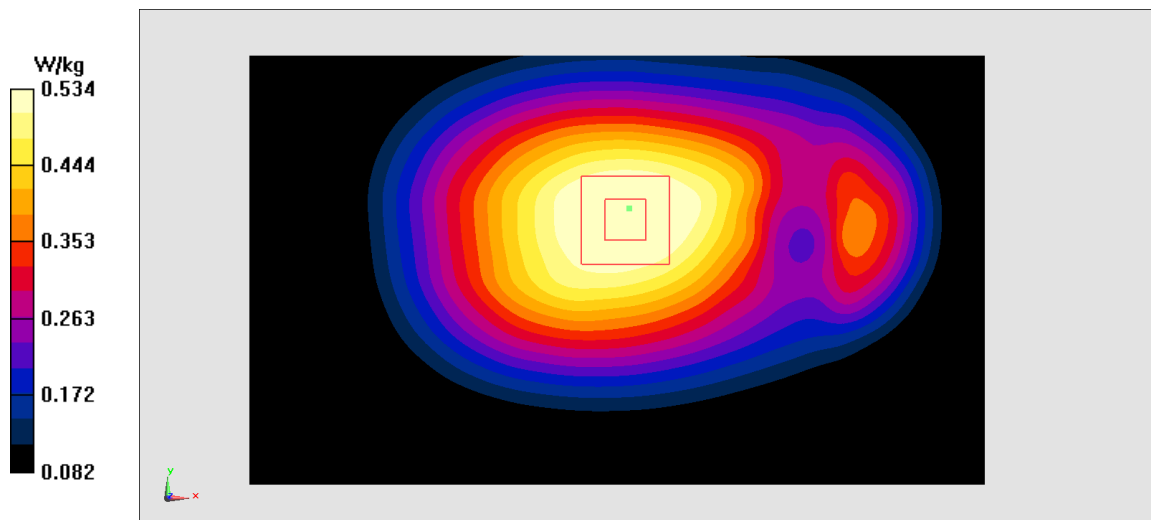
Fig J.2

PCS1900_CH512 Right Cheek

Date: 4/14/2018

Electronics: DAE4 Sn1525

Medium: head 1900 MHz

Medium parameters used: f = 1850.2 MHz; σ = 1.342 mho/m; εr = 39.61; ρ = 1000 kg/m^3

Ambient Temperature: 22.5ºC,   Liquid Temperature: 22.3ºC

Communication System: PCS1900 1850.2 MHz Duty Cycle: 1:8.3

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

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
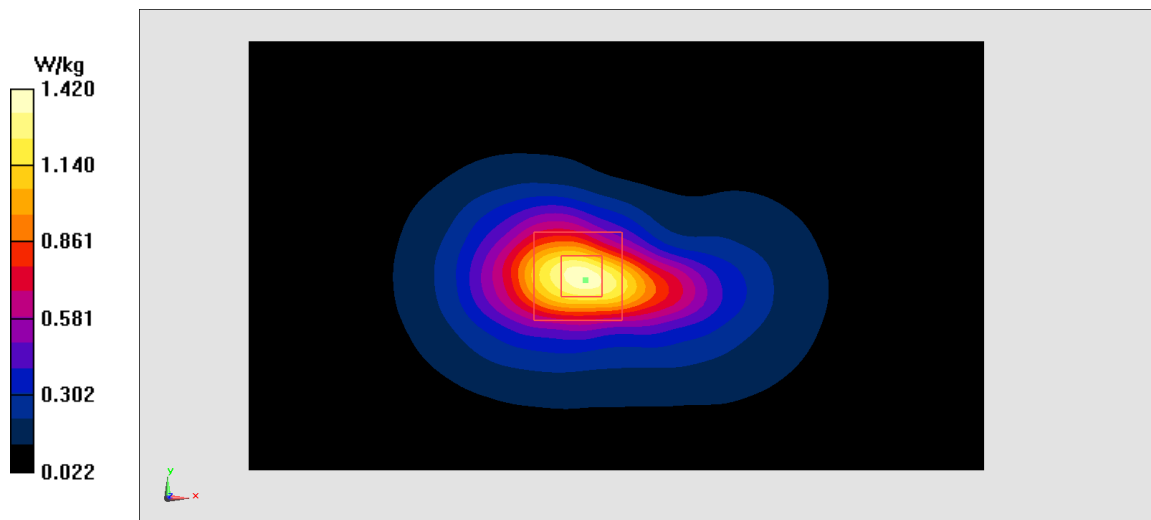
Maximum value of SAR (interpolated) = 0.0480 W/kg

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

Reference Value = 0.6970 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.0640 W/kg

SAR(1 g) = 0.314 W/kg; SAR(10 g) = 0.221 W/kg

Maximum value of SAR (measured) = 0.0445 W/kg
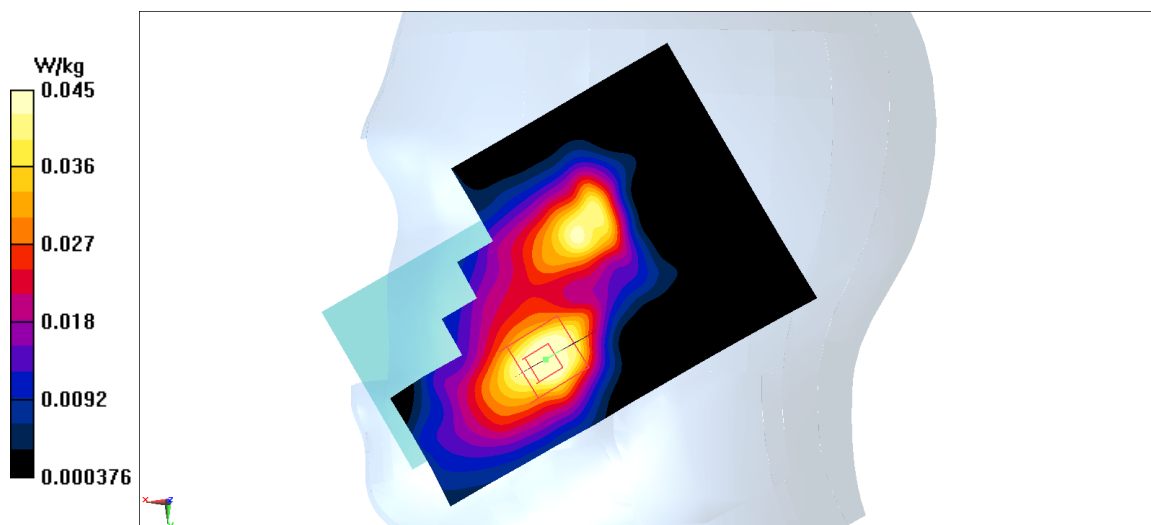
Fig J.3

PCS1900_CH512 Rear

Date: 4/14/2018

Electronics: DAE4 Sn1525

Medium: body 1900 MHz

Medium parameters used: f = 1850.2 MHz; σ = 1.488 mho/m; εr = 53.25; ρ = 1000 kg/m³

Ambient Temperature: 22.5ºC,   Liquid Temperature: 22.3ºC

Communication System: PCS1900 1850.2 MHz Duty Cycle: 1:4

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

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

Maximum value of SAR (interpolated) = 1.34 W/kg

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

Reference Value = 10.79 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 1.79 W/kg

SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.559 W/kg

Maximum value of SAR (measured) = 1.23 W/kg
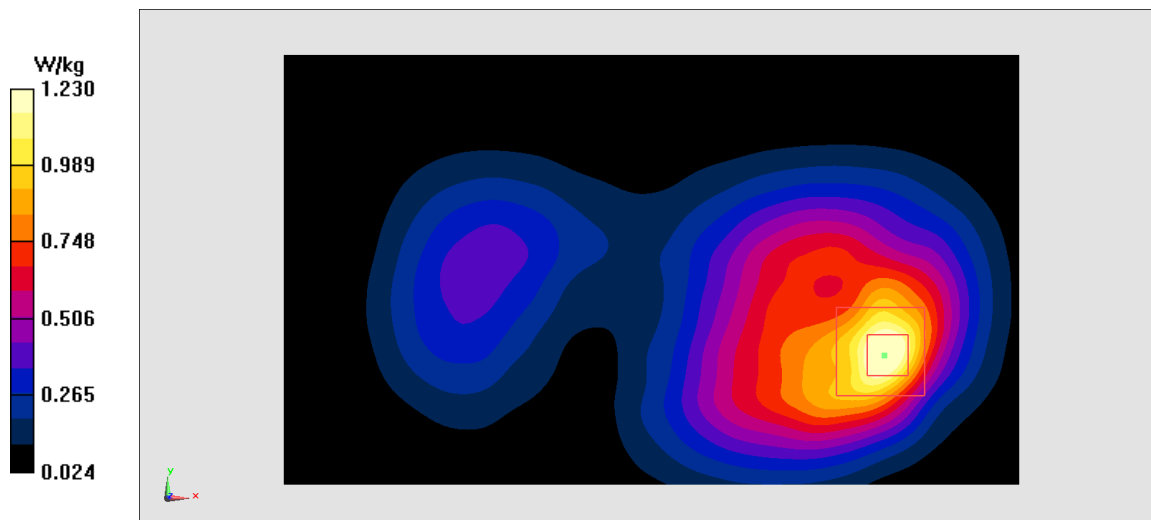
Fig J.4

WCDMA1900-BII_CH9262 Left Cheek

Date: 4/14/2018
Electronics: DAE4 Sn1525
Medium: head 1900 MHz
Medium parameters used: f = 1852.4 MHz; σ = 1.344 mho/m; εr = 39.61; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C,   Liquid Temperature: 22.3°C
Communication System: WCDMA1900-BII 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) = 0.0716 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.247 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.0970 W/kg
SAR(1 g) = 0.221 W/kg; SAR(10 g) = 0.125 W/kg
Maximum value of SAR (measured) = 0.0642 W/kg
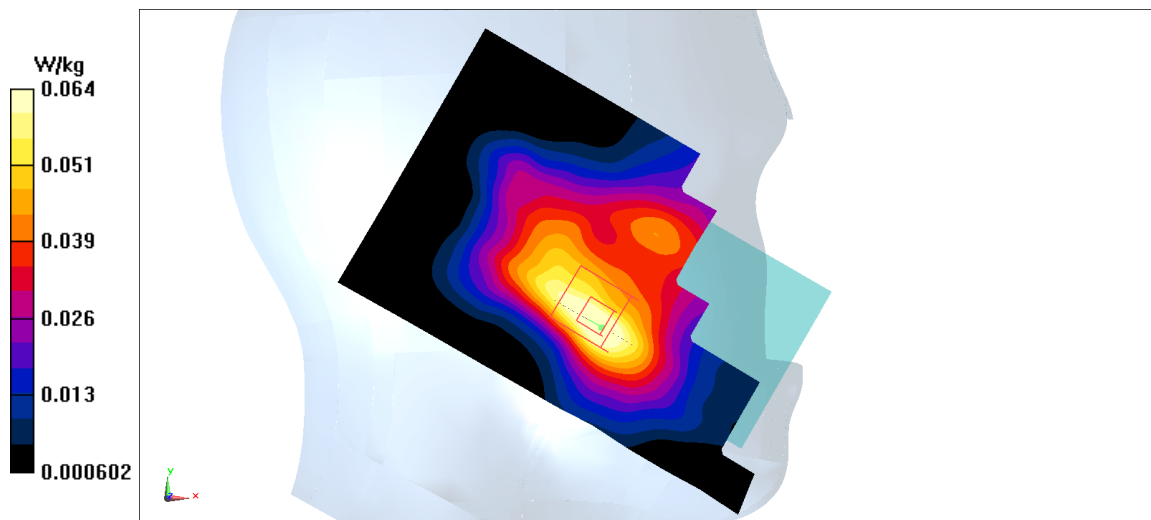
Fig J.5

WCDMA1900-BII_CH9262 Bottom edge

Date: 4/14/2018

Electronics: DAE4 Sn1525

Medium: body 1900 MHz

Medium parameters used: f = 1852.4 MHz; σ = 1.49 mho/m; εr = 53.25; ρ = 1000 kg/m^3

Ambient Temperature: 22.5ºC,   Liquid Temperature: 22.3ºC

Communication System: WCDMA1900-BII 1852.4 MHz Duty Cycle: 1:1

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

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

Maximum value of SAR (interpolated) = 1.40 W/kg

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

Reference Value = 23.64 V/m; Power Drift = 0.1 dB

Peak SAR (extrapolated) = 1.99 W/kg

SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.599 W/kg

Maximum value of SAR (measured) = 1.42 W/kg

Fig J.6

WCDMA1700-BIV_CH1412 Left Cheek

Date: 4/13/2018

Electronics: DAE4 Sn1525

Medium: head 1750 MHz

Medium parameters used: f = 1732.4 MHz; σ = 1.363 mho/m; εr = 40.7; ρ = 1000 kg/m^3

Ambient Temperature: 22.5°C,   Liquid Temperature: 22.3°C

Communication System: WCDMA1700-BIV 1732.4 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) = 0.489 W/kg

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

Reference Value = 4.882 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.577 W/kg

SAR(1 g) = 0.25 W/kg; SAR(10 g) = 0.393 W/kg

Maximum value of SAR (measured) = 0.459 W/kg
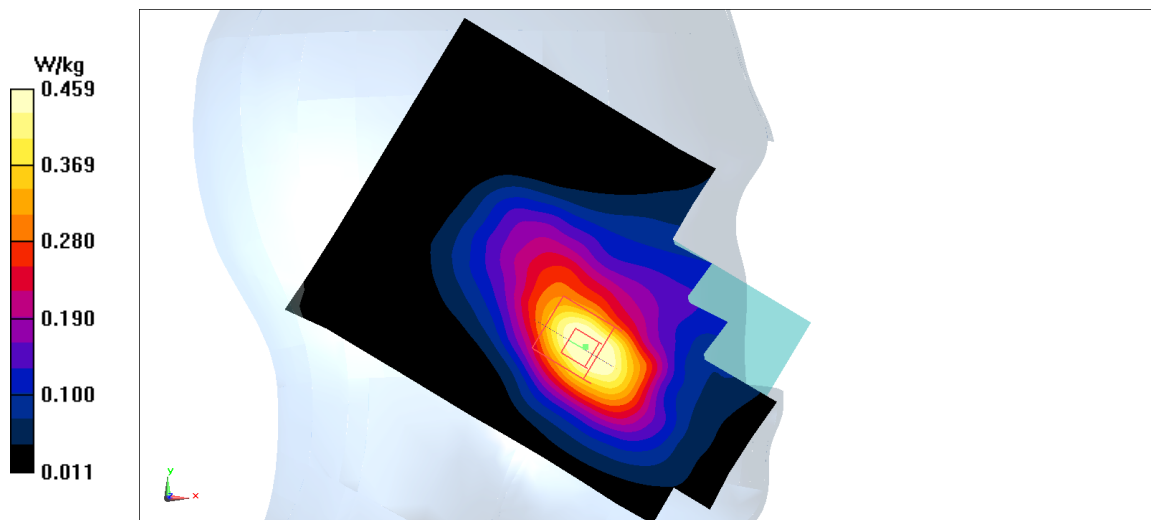
Fig J.7

WCDMA1700-BIV_CH1412 Rear

Date: 4/13/2018

Electronics: DAE4 Sn1525

Medium: body 1750 MHz

Medium parameters used: f = 1732.4 MHz; σ = 1.497 mho/m; εr = 53.24; ρ = 1000 kg/m^3

Ambient Temperature: 22.5ºC,   Liquid Temperature: 22.3ºC

Communication System: WCDMA1700-BIV 1732.4 MHz Duty Cycle: 1:1

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

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

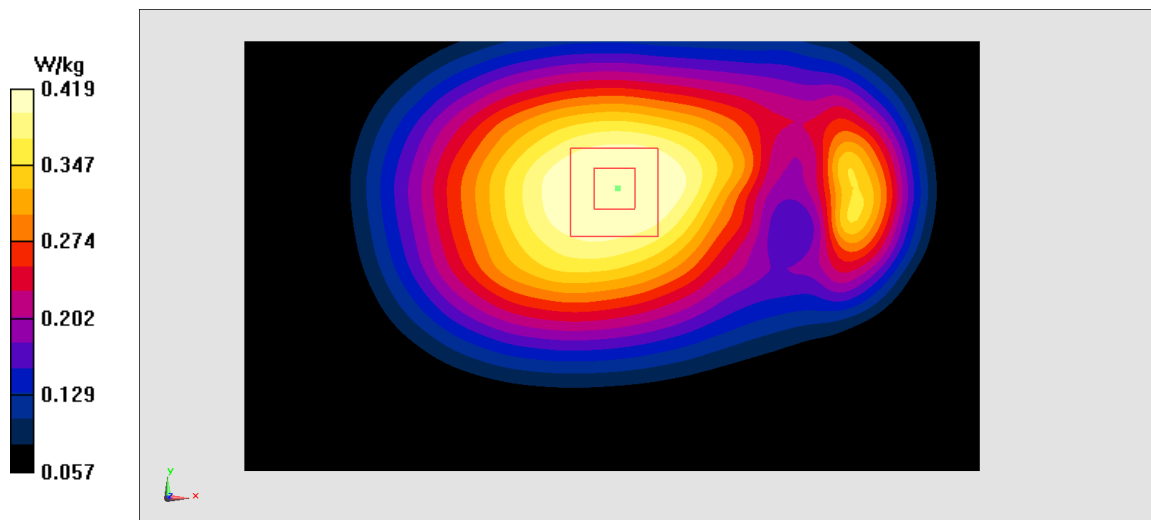Maximum value of SAR (interpolated) = 1.21 W/kg

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

Reference Value = 14.42 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 1.69 W/kg

SAR(1 g) = 0.966 W/kg; SAR(10 g) = 0.546 W/kg

Maximum value of SAR (measured) = 1.19 W/kg
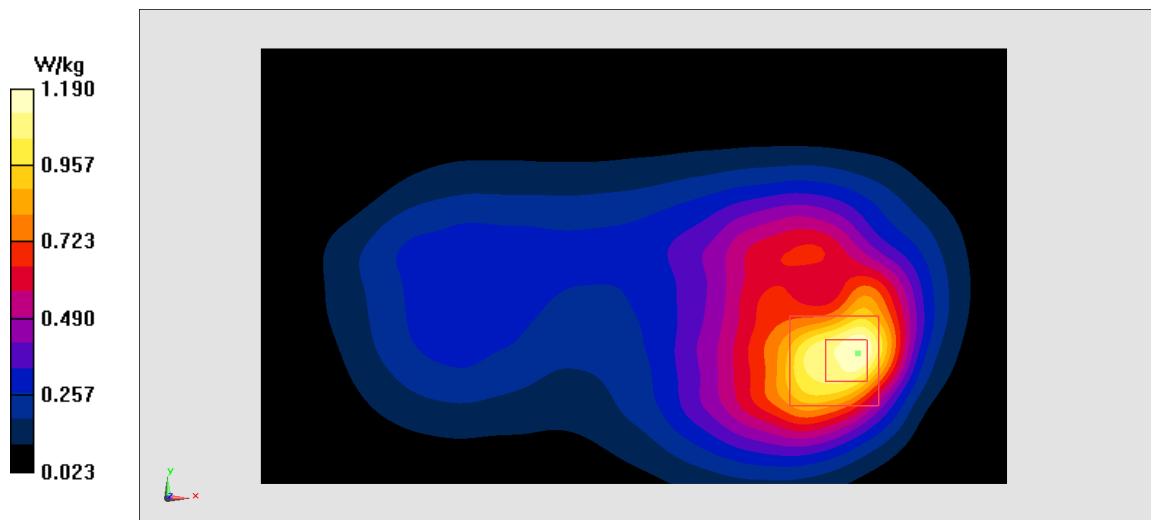
Fig J.8

WCDMA850-BV_CH4182 Left Cheek

Date: 4/12/2018
Electronics: DAE4 Sn1525
Medium: head 835 MHz
Medium parameters used: f = 835.4 MHz; σ = 0.901 mho/m; εr = 41.6; ρ = 1000 kg/m^3
Ambient Temperature: 22.5^{o}C,   Liquid Temperature: 22.3^{o}C
Communication System: WCDMA850-BV 835.4 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
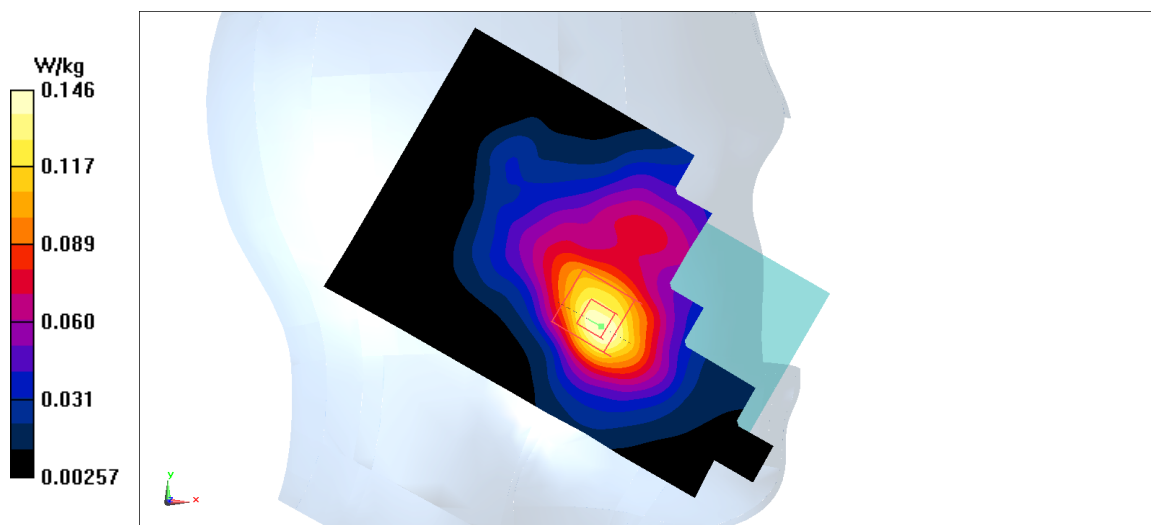Maximum value of SAR (interpolated) = 0.326 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.440 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.369 W/kg
SAR(1 g) = 0.295 W/kg; SAR(10 g) = 0.22 W/kg
Maximum value of SAR (measured) = 0.309 W/kg
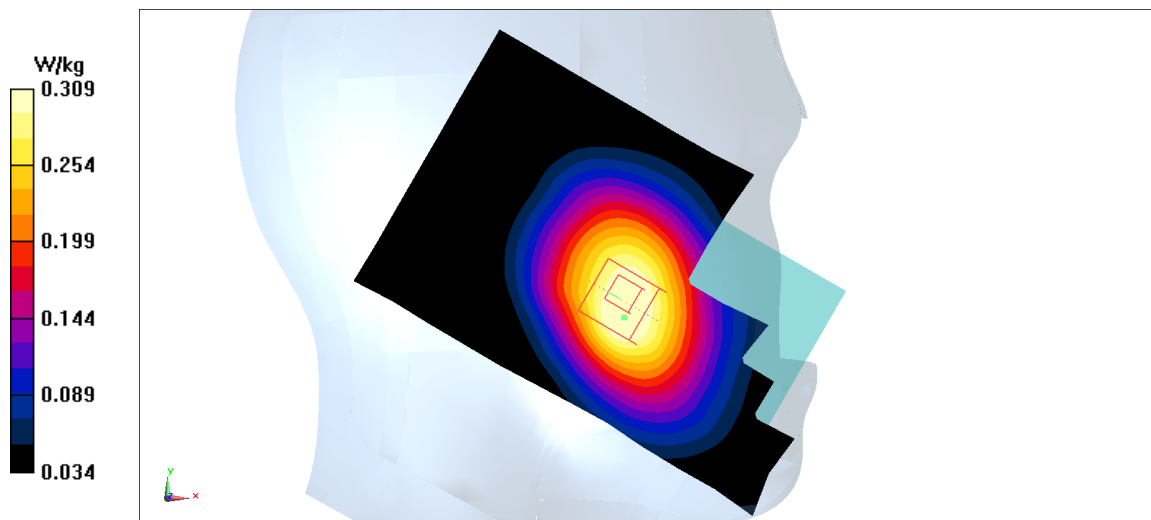
Fig J.9

WCDMA850-BV_CH4233 Rear

Date: 4/12/2018

Electronics: DAE4 Sn1525

Medium: body 835 MHz

Medium parameters used: f = 846.6 MHz; σ = 0.999 mho/m; εr = 56.09; ρ = 1000 kg/m^3

Ambient Temperature: 22.5°C,   Liquid Temperature: 22.3°C

Communication System: WCDMA850-BV 846.6 MHz Duty Cycle: 1:1

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

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

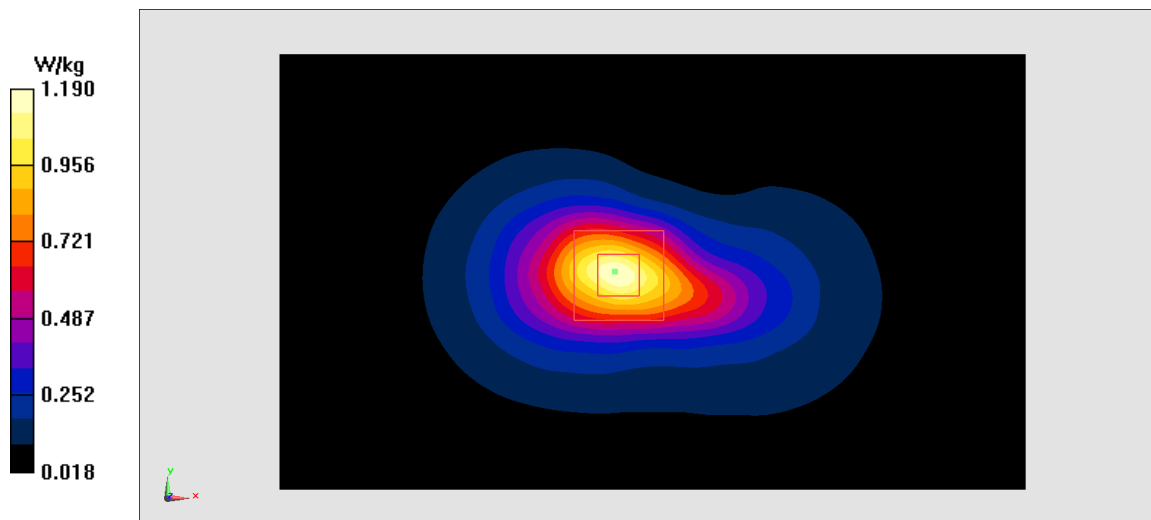Maximum value of SAR (interpolated) = 0.438 W/kg

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

Reference Value = 19.46 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.499 W/kg

SAR(1 g) = 0.398 W/kg; SAR(10 g) = 0.301 W/kg

Maximum value of SAR (measured) = 0.419 W/kg

Fig J.10

LTE1900-FDD2_CH19100 Left Cheek

Date: 4/14/2018

Electronics: DAE4 Sn1525

Medium: head 1900 MHz

Medium parameters used: f = 1900 MHz; σ = 1.39 mho/m; εr = 39.55; ρ = 1000 kg/m^3

Ambient Temperature: 22.5ºC,   Liquid Temperature: 22.3ºC

Communication System: LTE1900-FDD2 1900 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) = 0.151 W/kg

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

Reference Value = 2.270 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.227 W/kg

SAR(1 g) = 0.133 W/kg; SAR(10 g) = 0.0763 W/kg

Maximum value of SAR (measured) = 0.146 W/kg

Fig J.11

LTE1900-FDD2_CH18700 Bottom edge

Date: 4/14/2018

Electronics: DAE4 Sn1525

Medium: body 1900 MHz

Medium parameters used: f = 1860 MHz; σ = 1.498 mho/m; εr = 53.24; ρ = 1000 kg/m^3

Ambient Temperature: 22.5ºC,   Liquid Temperature: 22.3ºC

Communication System: LTE1900-FDD2 1860 MHz Duty Cycle: 1:1

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

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

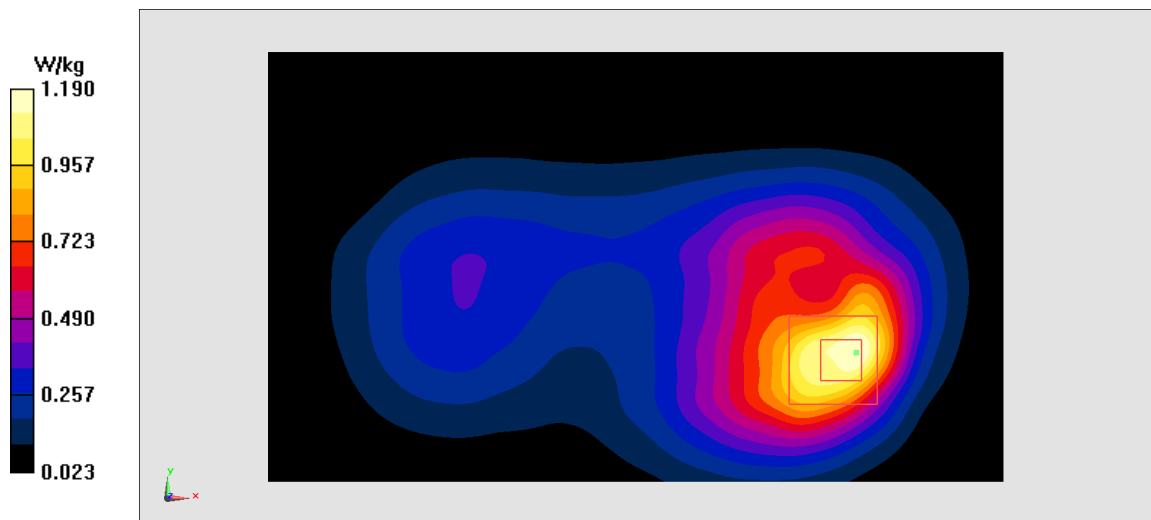Maximum value of SAR (interpolated) = 1.18 W/kg

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

Reference Value = 24.78 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.70 W/kg

SAR(1 g) = 0.963 W/kg; SAR(10 g) = 0.512 W/kg

Maximum value of SAR (measured) = 1.19 W/kg

Fig J.12

LTE1700-FDD4_CH20050 Left Cheek

Date: 4/13/2018

Electronics: DAE4 Sn1525

Medium: head 1750 MHz

Medium parameters used: f = 1720 MHz; σ = 1.352 mho/m; εr = 40.72; ρ = 1000 kg/m³

Ambient Temperature: 22.5ºC,   Liquid Temperature: 22.3ºC

Communication System: LTE1700-FDD4 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) = 0.0196 W/kg

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

Reference Value = 0.2930 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.0210 W/kg

SAR(1 g) = 0.213 W/kg; SAR(10 g) = 0.123 W/kg

Maximum value of SAR (measured) = 0.0123 W/kg
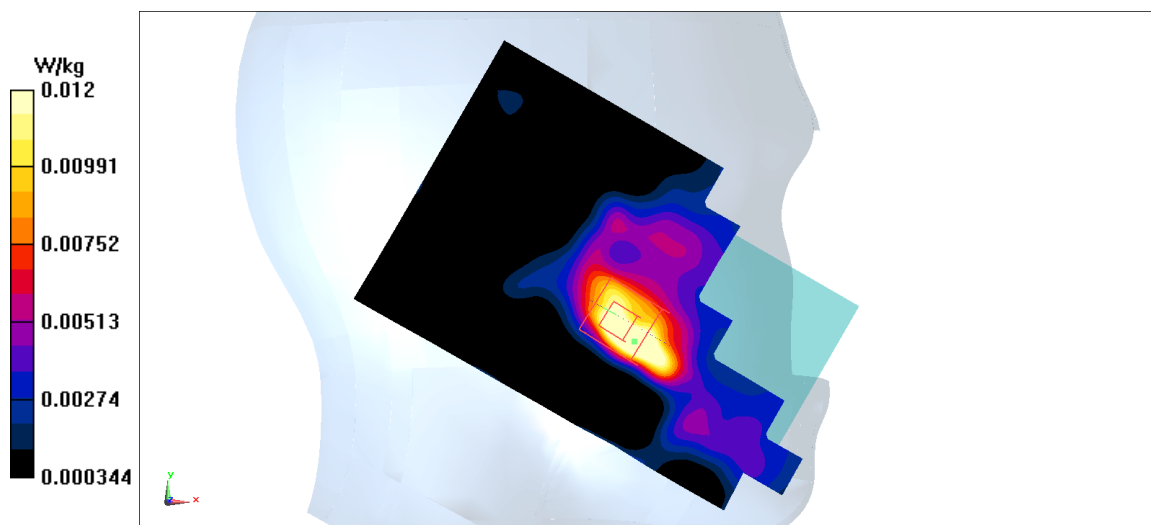
Fig J.13

LTE1700-FDD4_CH20300 Rear

Date: 4/13/2018

Electronics: DAE4 Sn1525

Medium: body 1750 MHz

Medium parameters used: f = 1745 MHz; σ = 1.509 mho/m; εr = 53.23; ρ = 1000 kg/m³

Ambient Temperature: 22.5ºC,   Liquid Temperature: 22.3ºC

Communication System: LTE1700-FDD4 1745 MHz Duty Cycle: 1:1

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

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

Maximum value of SAR (interpolated) = 1.21 W/kg

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

Reference Value = 13.51 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.70 W/kg

SAR(1 g) = 0.976 W/kg; SAR(10 g) = 0.556 W/kg

Maximum value of SAR (measured) = 1.19 W/kg

Fig J.14

LTE850-FDD5_CH20450 Left Cheek

Date: 4/12/2018
Electronics: DAE4 Sn1525
Medium: head 835 MHz
Medium parameters used: f = 829 MHz; σ = 0.895 mho/m; εr = 41.61; ρ = 1000 kg/m³
Ambient Temperature: 22.5ºC,   Liquid Temperature: 22.3ºC
Communication System: LTE850-FDD5 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
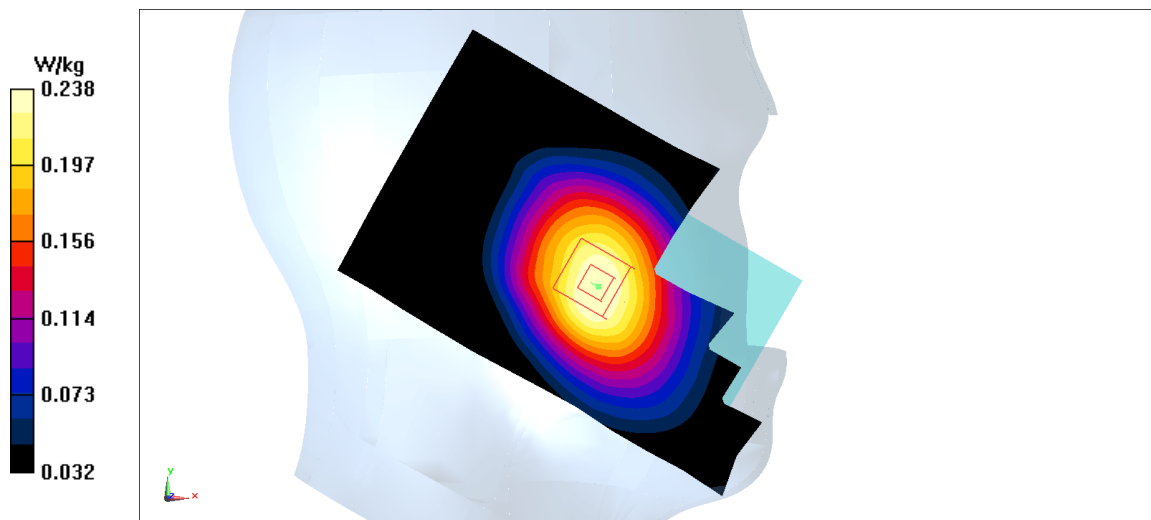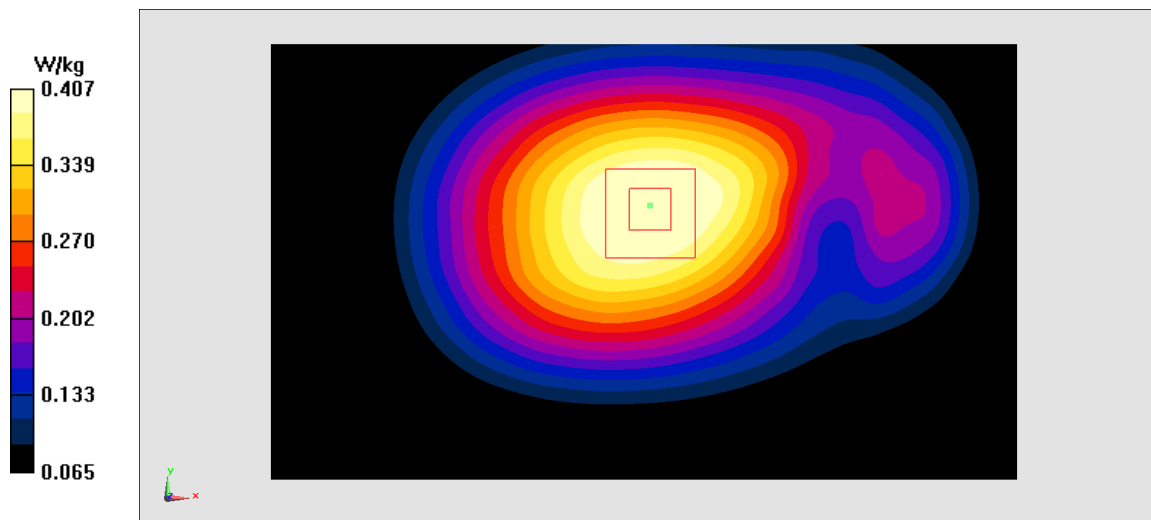Maximum value of SAR (interpolated) = 0.245 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.867 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.278 W/kg
SAR(1 g) = 0.225 W/kg; SAR(10 g) = 0.172 W/kg
Maximum value of SAR (measured) = 0.238 W/kg

Fig J.15

LTE850-FDD5_CH20450 Rear

Date: 4/12/2018

Electronics: DAE4 Sn1525

Medium: body 835 MHz

Medium parameters used: f = 829 MHz; σ = 0.982 mho/m; εr = 56.11; ρ = 1000 kg/m^3

Ambient Temperature: 22.5ºC,   Liquid Temperature: 22.3ºC

Communication System: LTE850-FDD5 829 MHz Duty Cycle: 1:1

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

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

Maximum value of SAR (interpolated) = 0.424 W/kg

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

Reference Value = 20.05 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.482 W/kg

SAR(1 g) = 0.387 W/kg; SAR(10 g) = 0.293 W/kg
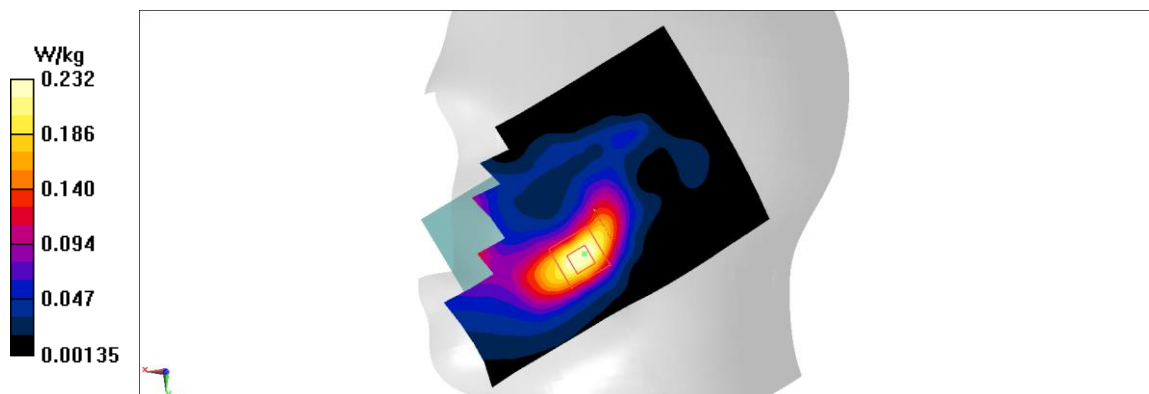
Maximum value of SAR (measured) = 0.407 W/kg

Fig J.16

LTE2500-FDD7_CH20850 Right Cheek

Date: 4/16/2018

Electronics: DAE4 Sn1525

Medium: head 2600 MHz

Medium parameters used: f = 2510 MHz; σ = 1.88 mho/m; εr = 39.68; ρ = 1000 kg/m^3

Ambient Temperature: 22.5ºC,   Liquid Temperature: 22.3ºC

Communication System: LTE2500-FDD7 2510 MHz Duty Cycle: 1:1

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

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

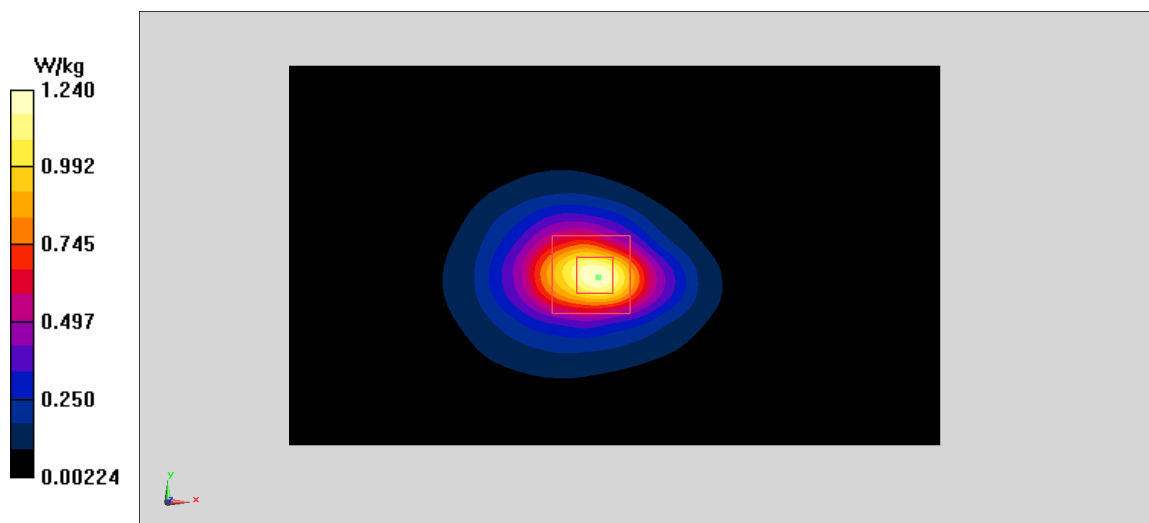Maximum value of SAR (interpolated) = 0.238 W/kg

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

Reference Value = 2.750 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.338 W/kg

SAR(1 g) = 0.189 W/kg; SAR(10 g) = 0.101 W/kg

Maximum value of SAR (measured) = 0.232 W/kg

Fig J.17

LTE2500-FDD7_CH21350 Bottom edge

Date: 4/16/2018

Electronics: DAE4 Sn1525

Medium: body 2600 MHz

Medium parameters used: f = 2560 MHz; σ = 2.1 mho/m; εr = 51.66; ρ = 1000 kg/m^3

Ambient Temperature: 22.5°C,   Liquid Temperature: 22.3°C

Communication System: LTE2500-FDD7 2560 MHz Duty Cycle: 1:1

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

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

Maximum value of SAR (interpolated) = 1.25 W/kg

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

Reference Value = 15.46 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.88 W/kg

SAR(1 g) = 0.958 W/kg; SAR(10 g) = 0.452 W/kg
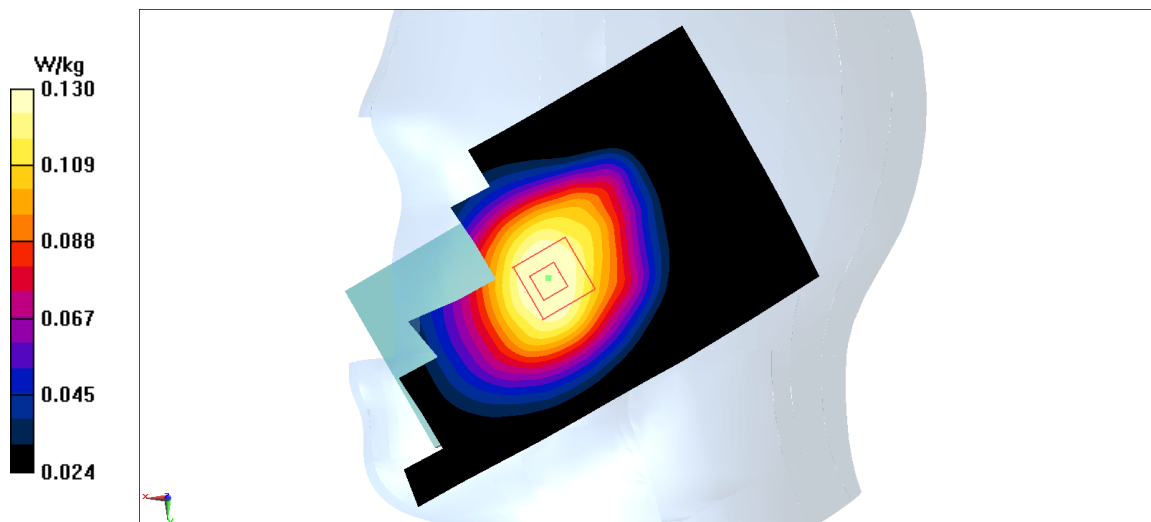
Maximum value of SAR (measured) = 1.24 W/kg

Fig J.18

LTE700-FDD12_CH23060 Right Cheek

Date: 4/11/2018

Electronics: DAE4 Sn1525

Medium: head 750 MHz

Medium parameters used: f = 704 MHz; σ = 0.854 mho/m; εr = 41.76; ρ = 1000 kg/m³

Ambient Temperature: 22.5ºC,   Liquid Temperature: 22.3ºC

Communication System: LTE700-FDD12 704 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

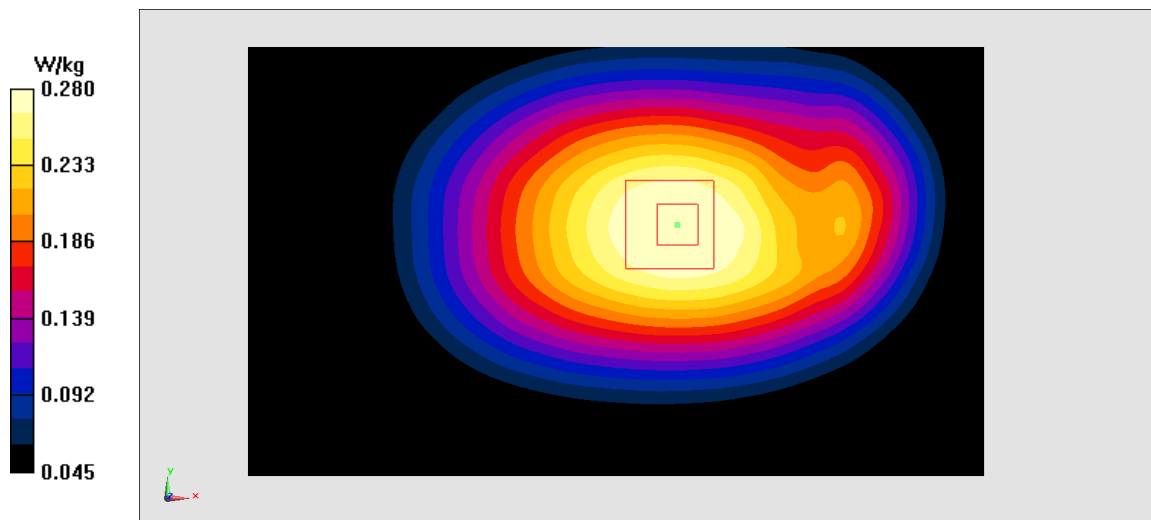Maximum value of SAR (interpolated) = 0.137 W/kg

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

Reference Value = 3.345 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.150 W/kg

SAR(1 g) = 0.123 W/kg; SAR(10 g) = 0.0959 W/kg

Maximum value of SAR (measured) = 0.130 W/kg

Fig J.19

LTE700-FDD12_CH23060 Rear

Date: 4/11/2018

Electronics: DAE4 Sn1525

Medium: body 750 MHz

Medium parameters used: f = 704 MHz; σ = 0.907 mho/m; εr = 55.41; ρ = 1000 kg/m^3

Ambient Temperature: 22.5ºC,   Liquid Temperature: 22.3ºC

Communication System: LTE700-FDD12 704 MHz Duty Cycle: 1:1

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

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

Maximum value of SAR (interpolated) = 0.286 W/kg

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

Reference Value = 17.34 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.330 W/kg

SAR(1 g) = 0.267 W/kg; SAR(10 g) = 0.206 W/kg

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

Fig J.20

LTE750-FDD13_CH23230 Left Cheek

Date: 4/11/2018

Electronics: DAE4 Sn1525

Medium: head 750 MHz

Medium parameters used: f = 782 MHz; σ = 0.928 mho/m; εr = 41.66; ρ = 1000 kg/m³

Ambient Temperature: 22.5ºC,　Liquid Temperature: 22.3ºC

Communication System: LTE750-FDD13 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
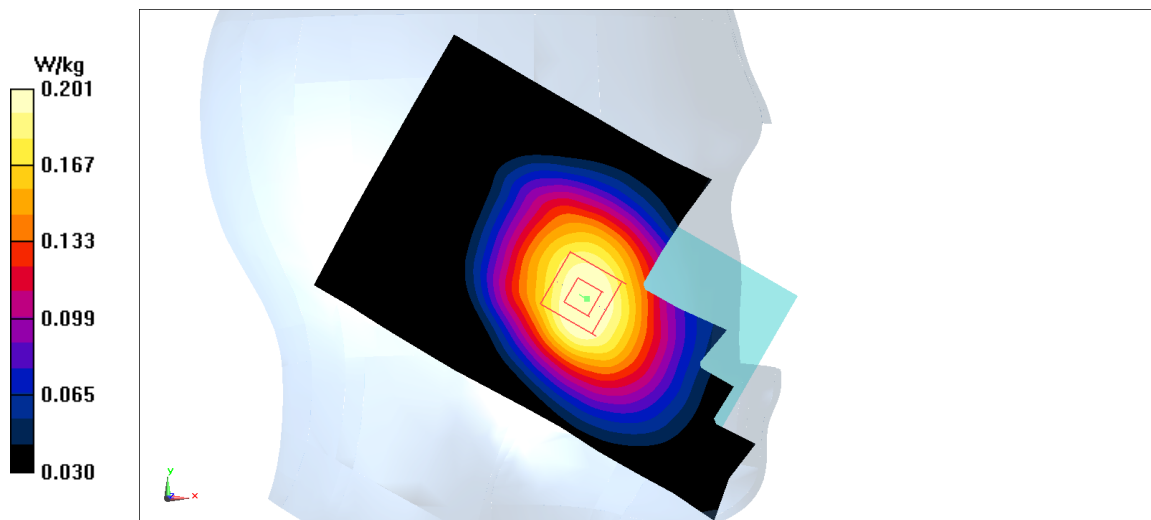
Maximum value of SAR (interpolated) = 0.212 W/kg

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

Reference Value = 3.714 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.236 W/kg

SAR(1 g) = 0.191 W/kg; SAR(10 g) = 0.147 W/kg

Maximum value of SAR (measured) = 0.201 W/kg

Fig J.21

LTE750-FDD13_CH23230 Rear

Date: 4/11/2018

Electronics: DAE4 Sn1525

Medium: body 750 MHz

Medium parameters used: f = 782 MHz; σ = 0.981 mho/m; εr = 55.31; ρ = 1000 kg/m³

Ambient Temperature: 22.5ºC,   Liquid Temperature: 22.3ºC

Communication System: LTE750-FDD13 782 MHz Duty Cycle: 1:1

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

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

Maximum value of SAR (interpolated) = 0.418 W/kg

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

Reference Value = 20.53 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.476 W/kg

SAR(1 g) = 0.383 W/kg; SAR(10 g) = 0.292 W/kg

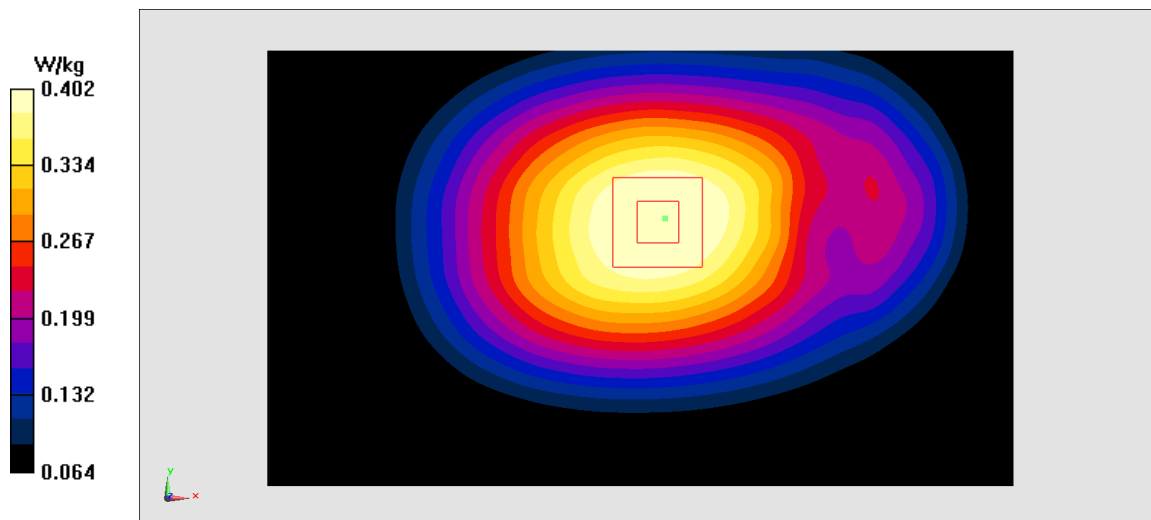Maximum value of SAR (measured) = 0.402 W/kg

Fig J.22

WLAN2450_CH6 Right Cheek

Date: 4/15/2018
Electronics: DAE4 Sn1525
Medium: head 2450 MHz
Medium parameters used: f = 2437 MHz; σ = 1.772 mho/m; εr = 39.07; ρ = 1000 kg/m^3
Ambient Temperature: 22.5℃,   Liquid Temperature: 22.3℃
Communication System: WLAN2450 2437 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(7.89,7.89,7.89)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.29 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.13 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.93 W/kg
SAR(1 g) = 0.854 W/kg; SAR(10 g) = 0.403 W/kg
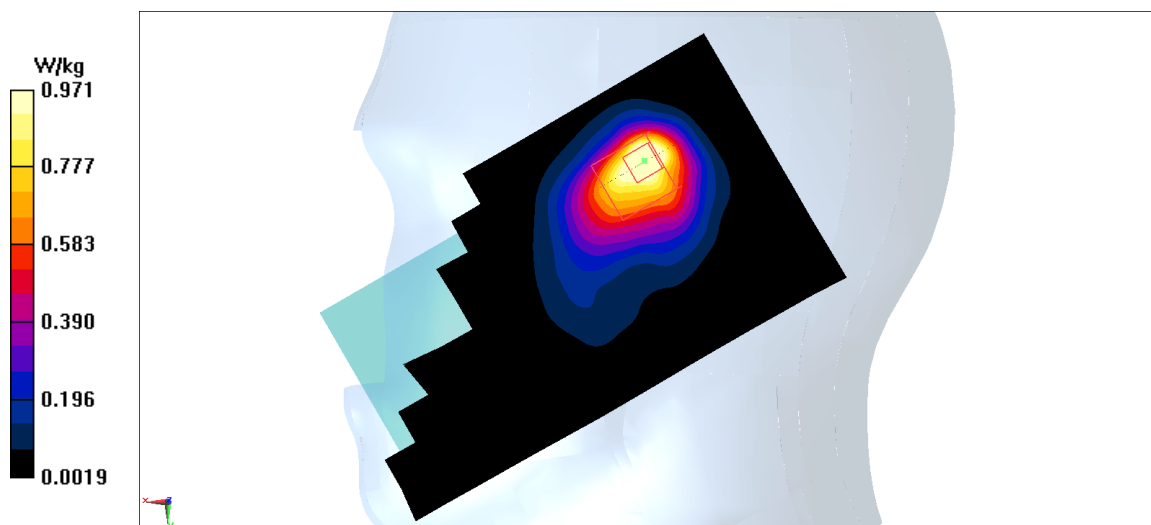Maximum value of SAR (measured) = 0.971 W/kg

Fig J.23

WLAN2450_CH6 Rear

Date: 4/15/2018

Electronics: DAE4 Sn1525

Medium: body 2450 MHz

Medium parameters used: f = 2437 MHz; σ = 1.954 mho/m; εr = 53.38; ρ = 1000 kg/m^3

Ambient Temperature: 22.5ºC,   Liquid Temperature: 22.3ºC

Communication System: WLAN2450 2437 MHz Duty Cycle: 1:1

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

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

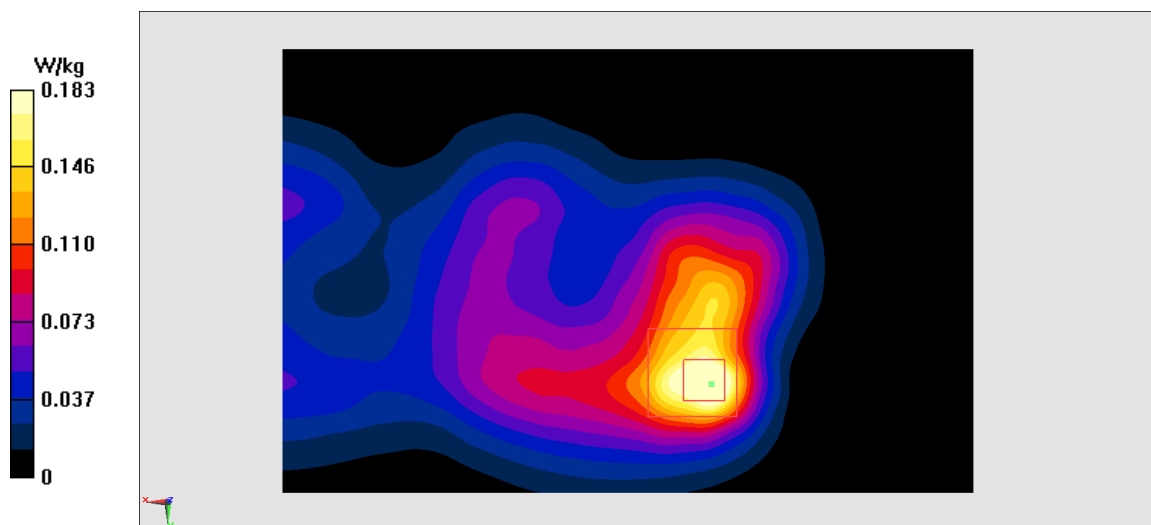Maximum value of SAR (interpolated) = 0.223 W/kg

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

Reference Value = 5.318 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.348 W/kg

SAR(1 g) = 0.164 W/kg; SAR(10 g) = 0.0784 W/kg

Maximum value of SAR (measured) = 0.183 W/kg

Fig J.24

ANNEX K   Accreditation Certificate

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 600118-0

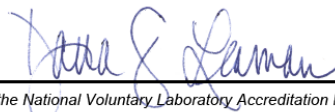**Telecommunication Technology Labs, CAICT**
Beijing
China

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 Communique dated January 2009).

2016-09-29 through 2017-09-30
Effective Dates

For the National Voluntary Laboratory Accreditation Program