

SAR Compliance Test Report

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Tested device:	RM-938, RM-940		
FCC ID:	PYAB	IC:	661V-B
Supplement reports:	SAR_Photo_RM-938_04		
Testing has been carried out in accordance with:	47CFR §2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices FCC published RF exposure KDB procedures RSS-102 Evaluation Procedure for Mobile and Portable Radio Transmitters with Respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields IEEE 1528 - 2003 IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Technique		
Documentation:	The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.		
Test results:	The tested device complies with the requirements in respect of all parameters subject to the test. The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.		
Date and signatures:			
For the contents:			

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1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2013-07-17 to 2013-09-17
SN, HW and SW numbers of tested device	SN: 004402/47/342576/1, HW: 2100, SW: 1028.0301.1326.22195, DUT: 17575 SN: 004402/47/342571/2, HW: 2100, SW: 1028.0301.1326.22195, DUT: 17576 SN: 004402/47/342581/1, HW: 2100, SW: 1028.0301.1326.22195, DUT: 17577 SN: 004402/47/342574/6, HW: 2100, SW: 1028.0301.1326.22195, DUT: 17578 SN: 004402/47/342579/5, HW: 2100, SW: 1028.0305.1328.10122, DUT: 17600 SN: 004402/47/342578/7, HW: 2100, SW: 1028.0305.1328.10122, DUT: 17601 SN: 004402/47/342580/3, HW: 2100, SW: 1028.0301.1326.22195, DUT: 17602 SN: 004402/47/342572/0, HW: 2100, SW: 1028.0301.1326.22195, DUT: 17603 SN: 004402/47/497037/7, HW: 2200, SW: 1028.3500.1332.2000, DUT: 17644 SN: 004402/47/497033/6, HW: 2200, SW: 1028.3500.1332.2000, DUT: 17645 SN: 004402/47/497032/8, HW: 2200, SW: 1028.3500.1332.2000, DUT: 17646 SN: 004402/47/497038/5, HW: 2200, SW: 1028.3500.1332.2000, DUT: 17660 SN: 004402/47/497030/2, HW: 2200, SW: 1028.3507.1335.0000, DUT: 17663
Batteries used in testing	-
Headsets used in testing	WH-208; DUT: 17573, 17574
Other accessories used in testing	-
State of sample	Prototype unit
Notes	-

1.2 Maximum Results

The maximum measured SAR values for Head, Body-Worn, Wireless Router (“Hotspot”) and 10-g Extremity SAR configurations are given in section 1.2.1, 1.2.2, 1.2.3 and 1.2.4 respectively. The device conforms to the requirements of the standards when the maximum measured SAR value is less than or equal to the limit.

1.2.1 Head Configuration

Mode	Ch / f(MHz)	Conducted power	Position	Measured SAR value (1g avg)	Reported* SAR value (1g avg)	SAR limit (1g avg)	Result	Plot #
LTE700	23790 / 710.0	22.66 dBm	Left, Cheek	0.127 W/kg	0.15 W/kg	1.6 W/kg	PASSED	1
2-slot GPRS850	251 / 848.8	30.00 dBm	Left, Cheek	0.241 W/kg	0.26 W/kg	1.6 W/kg	PASSED	2
WCDMA850	4233 / 846.6	23.46 dBm	Right, Cheek	0.207 W/kg	0.23 W/kg	1.6 W/kg	PASSED	3
LTE850	20600 / 844.0	22.87 dBm	Left, Cheek	0.186 W/kg	0.21 W/kg	1.6 W/kg	PASSED	4
WCDMA1700/2100	1513 / 1752.6	23.70 dBm	Left, Cheek	0.250 W/kg	0.26 W/kg	1.6 W/kg	PASSED	5
LTE1700/2100	23175 / 1732.5	22.79 dBm	Left, Cheek	0.164 W/kg	0.19 W/kg	1.6 W/kg	PASSED	6
2-slot GPRS1900	512 / 1850.2	26.94 dBm	Left, Cheek	0.121 W/kg	0.13 W/kg	1.6 W/kg	PASSED	7
WCDMA1900	9262 / 1852.4	23.59 dBm	Left, Cheek	0.242 W/kg	0.26 W/kg	1.6 W/kg	PASSED	8
LTE1900	18900 / 1880.0	23.34 dBm	Left, Cheek	0.183 W/kg	0.18 W/kg	1.6 W/kg	PASSED	9
WLAN2450	6 / 2437.0	16.60 dBm	Left, Cheek	1.13 W/kg	1.39 W/kg	1.6 W/kg	PASSED	10
WLAN5000	52 / 5260.0	13.82 dBm	Left, Tilt	1.17 W/kg	1.37 W/kg	1.6 W/kg	PASSED	11
LTE700 + WLAN2450	-	-	Left, Cheek	1.18 W/kg	1.45 W/kg	1.6 W/kg	PASSED	12
2-slot GPRS850 + WLAN2450	-	-	Left, Cheek	1.19 W/kg	1.46 W/kg	1.6 W/kg	PASSED	13
WCDMA850 + WLAN2450	-	-	Left, Cheek	1.18 W/kg	1.45 W/kg	1.6 W/kg	PASSED	14
LTE850 + WLAN2450	-	-	Left, Cheek	1.19 W/kg	1.46 W/kg	1.6 W/kg	PASSED	15
WCDMA1700/2100 + WLAN2450	-	-	Left, Cheek	1.18 W/kg	1.45 W/kg	1.6 W/kg	PASSED	16
LTE1700/2100 + WLAN2450	-	-	Left, Cheek	1.19 W/kg	1.46 W/kg	1.6 W/kg	PASSED	17
2-slot GPRS1900 + WLAN2450	-	-	Left, Cheek	1.18 W/kg	1.45 W/kg	1.6 W/kg	PASSED	18
WCDMA1900 + WLAN2450	-	-	Left, Cheek	1.20 W/kg	1.47 W/kg	1.6 W/kg	PASSED	19
LTE1900 + WLAN2450	-	-	Left, Cheek	1.20 W/kg	1.46 W/kg	1.6 W/kg	PASSED	20
LTE700 + WLAN5000	-	-	Left, Tilt	1.17 W/kg	1.37 W/kg	1.6 W/kg	PASSED	11**
2-slot GPRS850 + WLAN5000	-	-	Left, Tilt	1.17 W/kg	1.37 W/kg	1.6 W/kg	PASSED	11**
WCDMA850 + WLAN5000	-	-	Left, Tilt	1.17 W/kg	1.37 W/kg	1.6 W/kg	PASSED	11**
LTE850 + WLAN5000	-	-	Left, Tilt	1.17 W/kg	1.37 W/kg	1.6 W/kg	PASSED	11**
WCDMA1700/2100 + WLAN5000	-	-	Left, Tilt	1.17 W/kg	1.37 W/kg	1.6 W/kg	PASSED	11**

(Head Table continues)

(Head Table continues)

Mode	Ch / f(MHz)	Conducted power	Position	Measured SAR value (1g avg)	Reported* SAR value (1g avg)	SAR limit (1g avg)	Result	Plot #
LTE1700/2100 + WLAN5000	-	-	Left, Tilt	1.17 W/kg	1.37 W/kg	1.6 W/kg	PASSED	11**
2-slot GPRS1900 + WLAN5000	-	-	Left, Tilt	1.17 W/kg	1.37 W/kg	1.6 W/kg	PASSED	11**
WCDMA1900 + WLAN5000	-	-	Left, Tilt	1.17 W/kg	1.37 W/kg	1.6 W/kg	PASSED	11**
LTE1900 + WLAN5000	-	-	Left, Tilt	1.17 W/kg	1.37 W/kg	1.6 W/kg	PASSED	11**

1.2.2 Body-Worn Configuration

Mode	Ch / f(MHz)	Conducted power	Separation distance	Measured SAR value (1g avg)	Reported* SAR value (1g avg)	SAR limit (1g avg)	Result	Plot#
LTE700	23790 / 710.0	23.34 dBm	15 mm	0.253 W/kg	0.25 W/kg	1.6 W/kg	PASSED	30
2-slot GPRS850	251 / 848.8	30.00 dBm	15 mm	0.240 W/kg	0.26 W/kg	1.6 W/kg	PASSED	31
WCDMA850	4233 / 846.6	23.66 dBm	15 mm	0.249 W/kg	0.26 W/kg	1.6 W/kg	PASSED	32
LTE850	20600 / 844.0	23.28 dBm	15 mm	0.206 W/kg	0.21 W/kg	1.6 W/kg	PASSED	33
WCDMA1700/2100	1412 / 1732.4	23.56 dBm	15 mm	0.167 W/kg	0.18 W/kg	1.6 W/kg	PASSED	34
LTE1700/2100	23175 / 1732.5	23.34 dBm	15 mm	0.132 W/kg	0.15 W/kg	1.6 W/kg	PASSED	35
2-slot GPRS1900	512 / 1850.2	26.73 dBm	15 mm	0.164 W/kg	0.19 W/kg	1.6 W/kg	PASSED	36
WCDMA1900	9262 / 1852.4	23.59 dBm	15 mm	0.326 W/kg	0.35 W/kg	1.6 W/kg	PASSED	37
LTE1900	18900 / 1880.0	23.34 dBm	15 mm	0.291 W/kg	0.29 W/kg	1.6 W/kg	PASSED	38
WLAN2450	11 / 2462.0	16.08 dBm	15 mm	0.108 W/kg	0.15 W/kg	1.6 W/kg	PASSED	39
WLAN5000	104 / 5520.0	13.96 dBm	15 mm	0.163 W/kg	0.19 W/kg	1.6 W/kg	PASSED	40
LTE700 + WLAN2450	-	-	15 mm	0.266 W/kg	0.27 W/kg	1.6 W/kg	PASSED	41
2-slot GPRS850 + WLAN2450	-	-	15 mm	0.252 W/kg	0.28 W/kg	1.6 W/kg	PASSED	42
WCDMA850 + WLAN2450	-	-	15 mm	0.258 W/kg	0.27 W/kg	1.6 W/kg	PASSED	43
LTE850 + WLAN2450	-	-	15 mm	0.228 W/kg	0.25 W/kg	1.6 W/kg	PASSED	44
WCDMA1700/2100 + WLAN2450	-	-	15 mm	0.203 W/kg	0.24 W/kg	1.6 W/kg	PASSED	45
LTE1700/2100 + WLAN2450	-	-	15 mm	0.146 W/kg	0.19 W/kg	1.6 W/kg	PASSED	46

(Body-Worn Table continues)

(Body-Worn Table continues)

Mode	Ch / f(MHz)	Conducted power	Separation distance	Measured SAR value (1g avg)	Reported* SAR value (1g avg)	SAR limit (1g avg)	Result	Plot#
2-slot GPRS1900 + WLAN2450	-	-	15 mm	0.178 W/kg	0.21 W/kg	1.6 W/kg	PASSED	47
WCDMA1900 + WLAN2450	-	-	15 mm	0.338 W/kg	0.36 W/kg	1.6 W/kg	PASSED	48
LTE1900 + WLAN2450	-	-	15 mm	0.294 W/kg	0.30 W/kg	1.6 W/kg	PASSED	49
LTE700 + WLAN5000	-	-	15 mm	0.253 W/kg	0.25 W/kg	1.6 W/kg	PASSED	30**
2-slot GPRS850 + WLAN5000	-	-	15 mm	0.244 W/kg	0.26 W/kg	1.6 W/kg	PASSED	51
WCDMA850 + WLAN5000	-	-	15 mm	0.251 W/kg	0.26 W/kg	1.6 W/kg	PASSED	52
LTE850 + WLAN5000	-	-	15 mm	0.206 W/kg	0.21 W/kg	1.6 W/kg	PASSED	33**
WCDMA1700/2100 + WLAN5000	-	-	15 mm	0.211 W/kg	0.23 W/kg	1.6 W/kg	PASSED	54
LTE1700/2100 + WLAN5000	-	-	15 mm	0.158 W/kg	0.18 W/kg	1.6 W/kg	PASSED	55
2-slot GPRS1900 + WLAN5000	-	-	15 mm	0.168 W/kg	0.19 W/kg	1.6 W/kg	PASSED	56
WCDMA1900 + WLAN5000	-	-	15 mm	0.306 W/kg	0.35 W/kg	1.6 W/kg	PASSED	57
LTE1900 + WLAN5000	-	-	15 mm	0.293 W/kg	0.29 W/kg	1.6 W/kg	PASSED	58

1.2.3 Wireless Router Configuration

Mode	Ch / f(MHz)	Conducted power	Separation distance	Measured SAR value (1g avg)	Reported* SAR value (1g avg)	SAR limit (1g avg)	Result	Plot#
LTE700	23790 / 710.0	23.34 dBm	10 mm	0.319 W/kg	0.32 W/kg	1.6 W/kg	PASSED	59
2-slot GPRS850	251 / 848.8	30.00 dBm	10 mm	0.410 W/kg	0.44 W/kg	1.6 W/kg	PASSED	60
WCDMA850	4233 / 846.6	23.66 dBm	10 mm	0.371 W/kg	0.39 W/kg	1.6 W/kg	PASSED	61
LTE850	20600 / 844.0	23.28 dBm	10 mm	0.296 W/kg	0.30 W/kg	1.6 W/kg	PASSED	62
WCDMA1700/2100	1532 / 1752.6	23.70 dBm	10 mm	0.405 W/kg	0.42 W/kg	1.6 W/kg	PASSED	63
LTE1700/2100	23175 / 1732.5	22.79 dBm	10 mm	0.340 W/kg	0.39 W/kg	1.6 W/kg	PASSED	64
2-slot GPRS1900	512 / 1850.2	26.73 dBm	10 mm	0.323 W/kg	0.37 W/kg	1.6 W/kg	PASSED	65
WCDMA1900	9400 / 1880.0	23.75 dBm	10 mm	0.597 W/kg	0.61 W/kg	1.6 W/kg	PASSED	66
LTE1900	18900 / 1880.0	23.34 dBm	10 mm	0.751 W/kg	0.75 W/kg	1.6 W/kg	PASSED	67
WLAN2450	11 / 2462.0	16.08 dBm	10 mm	0.188 W/kg	0.26 W/kg	1.6 W/kg	PASSED	68
LTE700 + WLAN2450	-	-	10 mm	0.352 W/kg	0.36 W/kg	1.6 W/kg	PASSED	69
2-slot GPRS850 + WLAN2450	-	-	10 mm	0.445 W/kg	0.49 W/kg	1.6 W/kg	PASSED	70
WCDMA850 + WLAN2450	-	-	10 mm	0.402 W/kg	0.43 W/kg	1.6 W/kg	PASSED	71
LTE850 + WLAN2450	-	-	10 mm	0.341 W/kg	0.36 W/kg	1.6 W/kg	PASSED	72
WCDMA1700/2100 + WLAN2450	-	-	10 mm	0.442 W/kg	0.47 W/kg	1.6 W/kg	PASSED	73
LTE1700/2100 + WLAN2450	-	-	10 mm	0.346 W/kg	0.40 W/kg	1.6 W/kg	PASSED	74
2-slot GPRS1900 + WLAN2450	-	-	10 mm	0.348 W/kg	0.41 W/kg	1.6 W/kg	PASSED	75
WCDMA1900 + WLAN2450	-	-	10 mm	0.607 W/kg	0.63 W/kg	1.6 W/kg	PASSED	76
LTE1900 + WLAN2450	-	-	10 mm	0.784 W/kg	0.79 W/kg	1.6 W/kg	PASSED	77

1.2.4 10-g Extremity SAR

Mode	Ch / f(MHz)	Conducted power	Separation distance	Measured SAR value (10g avg)	Reported* SAR value (10g avg)	SAR limit (1g avg)	Result	Plot#
WLAN5000	60 / 5300.0	13.84 dBm	0 mm	0.794 W/kg	0.92 W/kg	4.0 W/kg	PASSED	78

* Reported SAR values are scaled to, or measured at, upper limit of power tuning tolerance.

** This is due to fact that in some of the cases combined SAR values are less than the maximum SAR values for the contributing individual band and therefore plot numbers might be the same i.e. the ones providing highest SAR value.

1.2.5 Summary SAR data

	FCC-defined SAR values for the Grants of Equipment Authorization		
	PCE	DTS	NII
Maximum Head SAR values	0.26 W/kg	1.39 W/kg	1.37 W/kg
{Max + Max} Simultaneous Head SAR value	1.58 W/kg †		
Maximum Body SAR values	0.35 W/kg	0.15 W/kg	0.19 W/kg
{Max + Max} Simultaneous Body SAR value	0.50 W/kg		
Maximum Product Specific (Wireless Router) SAR values	0.75 W/kg	0.26 W/kg	N/A
{Max + Max} Simultaneous Product Specific SAR value	0.98 W/kg		
Maximum Simultaneous SAR value Head SAR: LTE1700/2100+WLAN2450	1.58 W/kg		

PCE contains the highest results between all cellular modes (cellular and PCS bands)

DTS contains the highest results between WLAN 2.4GHz + RLAN 5725-5850MHz

NII contains the highest results between RLAN 5150-5250, 5250-5350 and 5470-5725MHz

† From Section 7.1:

The highest {Max + Max} Simultaneous Head SAR value is 1.65W/kg i.e. > 1.6W/kg for 2-slot GPRS850+WLAN2450 Left Cheek test configuration. As described in KDB447498 D01 v05 the Antenna Pair SAR to Peak Separation Ratio = 0.03, hence Simultaneous Transmission Procedures are not required (see Section 7.1.1 Simultaneous Transmission SAR Test Exclusion Considerations for Head Measurements).

The second highest {Max + Max} Simultaneous Head SAR value is 1.65W/kg i.e. > 1.6W/kg for WCDMA1700/2100+WLAN2450 Left Cheek test configuration. As described in KDB447498 D01 v05 the Antenna Pair SAR to Peak Separation Ratio = 0.03, hence Simultaneous Transmission Procedures are not required (see Section 7.1.1 Simultaneous Transmission SAR Test Exclusion Considerations for Head Measurements).

The third highest {Max + Max} Simultaneous Head SAR value is 1.65W/kg i.e. > 1.6W/kg for WCDMA1900+WLAN2450 Left Cheek test configuration. As described in KDB447498 D01 v05 the Antenna Pair SAR to Peak Separation Ratio = 0.03, hence Simultaneous Transmission Procedures are not required (see Section 7.1.1 Simultaneous Transmission SAR Test Exclusion Considerations for Head Measurements).

The fourth highest {Max + Max} Simultaneous Head SAR value is 1.60W/kg i.e. > 1.6W/kg for LTE850+WLAN2450 Left Cheek test configuration. As described in KDB447498 D01 v05 the Antenna Pair SAR to Peak Separation Ratio = 0.03, hence Simultaneous Transmission Procedures are not required (see Section 7.1.1 Simultaneous Transmission SAR Test Exclusion Considerations for Head Measurements).

Consequently {Max + Max} Simultaneous Head SAR quoted here is 1.58W/kg for LTE1700/2100+WLAN2450.

1.2.6 Maximum Drift

Maximum drift covered by 5% scaling up of the SAR values	Maximum drift during measurements
0.2dB	0.17dB

1.2.7 Measurement Uncertainty

Expanded Uncertainty (k=2) 95%	± 27.8%
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2. DESCRIPTION OF THE DEVICE UNDER TEST

Device category	Portable
Exposure environment	General population / uncontrolled

Modes of Operation	Bands	Modulation Mode	Duty Cycle	Transmitter Frequency Range (MHz)	Power Tuning Target (dBm)				Upper Limit of Power Tuning Tolerance (dBm)			
					1-slot	2-slot	3-slot	4-slot	1-slot	2-slot	3-slot	4-slot
GSM / GPRS	850	GMSK	1/8 to 4/8	824 – 849	32.50	30.00	28.20	27.00	32.85	30.35	28.55	27.35
	1900			1850 – 1910	30.00	27.00	25.20	24.00	30.35	27.35	25.55	24.35
EGPRS	850	8PSK	1/8 to 4/8	824 – 849	26.50	26.00	25.00	23.00	26.85	26.35	25.35	23.35
	1900			1850 – 1910	25.50	25.00	24.00	22.00	25.85	25.35	24.35	22.35
WCDMA	850 (Band V)		1	826 – 847	23.50				23.85			
WCDMA	1700/2100 (Band IV)		1	1712 – 1753	23.50				23.85			
WCDMA	1900 (Band II)		1	1852 – 1908	23.50				23.85			
HSUPA	850 (Band V)		1	826 – 847	See Appendix D for details							
HSUPA	1700/2100 (Band IV)		1	1712 – 1753	See Appendix D for details							
HSUPA	1900 (Band II)		1	1852 – 1908	See Appendix D for details							
LTE	700	QPSK / 16QAM		704 – 716	23.00				23.35			
LTE	850	QPSK / 16QAM		824 – 849	23.00				23.35			
LTE	1700/2100	QPSK / 16QAM		1710 – 1755	23.00				23.35			
LTE	1900	QPSK / 16QAM		1850 – 1910	23.00				23.35			
BT	2450	GFSK	1	2402 – 2480	8.00				9.50			
					Ch 1-11				Ch 1-11			
WLAN b-mode* 20MHz	2450	BPSK QPSK	1	2412 – 2472	16.00				17.50			
WLAN g-mode* 20MHz	2450	Up to 64QAM	1	2412 – 2472	14.50				16.00			
WLAN n-mode* 20MHz	2450	Up to 64QAM	1	2412 – 2472	13.00				14.50			
					Ch 36-165				Ch 36-165			
WLAN a-mode* 20MHz	5000	Up to 64QAM	1	5180 – 5825	13.00				14.50			
WLAN n-mode* 20MHz	5000	Up to 64QAM	1	5180 – 5825	12.00				13.50			

(Table continues)

(Table continues)

					Ch 38-163	Ch 38-163
WLAN n-mode* 40MHz	5000	Up to 64QAM	1	5180 – 5825	12.00	13.50
					Ch 36-165	Ch 36-165
WLAN ac-mode* 20MHz	5000	Up to 256QAM	1	5180 – 5805	7.00	8.50
					Ch 38-163	Ch 38-163
WLAN ac-mode* 40MHz	5000	Up to 256QAM	1	5180 – 5805	7.00	8.50
					Ch 42-155	Ch 42-155
WLAN ac-mode* 80MHz	5000	Up to 256QAM	1	5180 – 5805	11.00	12.50

*Maximum tuning targets are presented above. See full details in Appendix J.

Outside of USA and Canada, the transmitter of the device is capable of operating also in GSM/GPRS/EGPRS900, GSM/GPRS/EGPRS1800, WCDMA900, WCDMA2100 and LTE2500 (Band 7) bands which are not part of this filing.

The tested device has Voice-over-IP/Dual Transfer Mode capability for use at the ear. Therefore, SAR for multi slot GPRS mode was evaluated against the head profile of the phantom. Dual Transfer Mode is a feature that utilises the multi-slot GPRS capability in this device; it allows simultaneous transmission of voice and data during the same call, using the same transmitter and antenna. This device is Class B DTM device. Multislot DTM capability is multislot class 11 as defined in 3GPP TS 45.002, Annex B. The maximum number of timeslots for voice and data transmission are 1 and 3, respectively. See Chapter 3.2 for test reduction of GSM/GPRS multislot vs. DTM mode.

This is a WCDMA HSUPA device, but SAR tests for HSUPA mode have not been performed as no HSUPA Sub-test mode has an average power > 0.25dB above the basic WCDMA 12.2kbps RMC mode. Appendix D of this report gives a summary of the measured WCDMA and HSUPA average powers; a detailed report of these WCDMA and HSUPA conducted power tests is submitted separately.

This is an LTE Category 3 device; it contains four LTE bands, namely LTE bands 700, 850, 1700/2100 and 1900. In LTE700(Band 17), the device possesses Channel Bandwidths of 10MHz and 5MHz; in LTE850(Band 5), the device possesses Channel Bandwidths of 10MHz, 5MHz, 3MHz and 1.4MHz; in LTE1700/2100 (Band 4) and in LTE1900(Band 2) Channel Bandwidths of 20MHz, 15MHz, 10MHz, 5MHz, 3MHz and 1.4MHz are available.

This is a BT Class 1 device; as its upper limit of power tuning tolerance is 9.5dBm (8.91mW), SAR testing was deemed unnecessary since $(8.91\text{mW}/5\text{mm}) \cdot \sqrt{2.48\text{GHz}} < 3.0$ (KDB447498 D01 General RF Exposure Guidelines v05 Section 4.3.1 Standalone SAR test exclusion considerations). Since WLAN2450 and BT use same frequency and antenna, WLAN2450 power is 8dB higher, and they can not transmit simultaneously, the WLAN2450+cellular bands combined SAR results can be regarded as conservative estimation of BT+cellular combined SARs. As WLAN2450+cellular combined SAR result are below limit, also BT+cellular combined SAR can be deemed to comply without further analysis and estimations required in KDB 447498 for simultaneous transmission exclusion.

This device has Wireless Router "Hotspot" mode capability.

This device uses a single antenna for transmission of all cellular, AWS and PCS bands; a separate single antenna is used for WLAN. Simultaneous transmission of any singular cellular and PCS band is possible with WLAN in Head and Body-worn use according to the table below.

Simultaneous transmission capabilities in Head and Body-worn use		
	WLAN2450	WLAN5000
LTE700	✓	✓
GSM/GPRS/EGPRS850	✓	✓
WCDMA850	✓	✓
LTE850	✓	✓
WCDMA1700/2100	✓	✓
LTE1700/2100	✓	✓
GSM/GPRS/EGPRS1900	✓	✓
WCDMA1900	✓	✓
LTE1900	✓	✓

Simultaneous transmission capabilities in Wireless Router use		
	WLAN2450	WLAN5000
LTE700	✓	–
GSM/GPRS/EGPRS850	✓	–
WCDMA850	✓	–
LTE850	✓	–
WCDMA1700/2100	✓	–
LTE1700/2100	✓	–
GSM/GPRS/EGPRS1900	✓	–
WCDMA1900	✓	–
LTE1900	✓	–

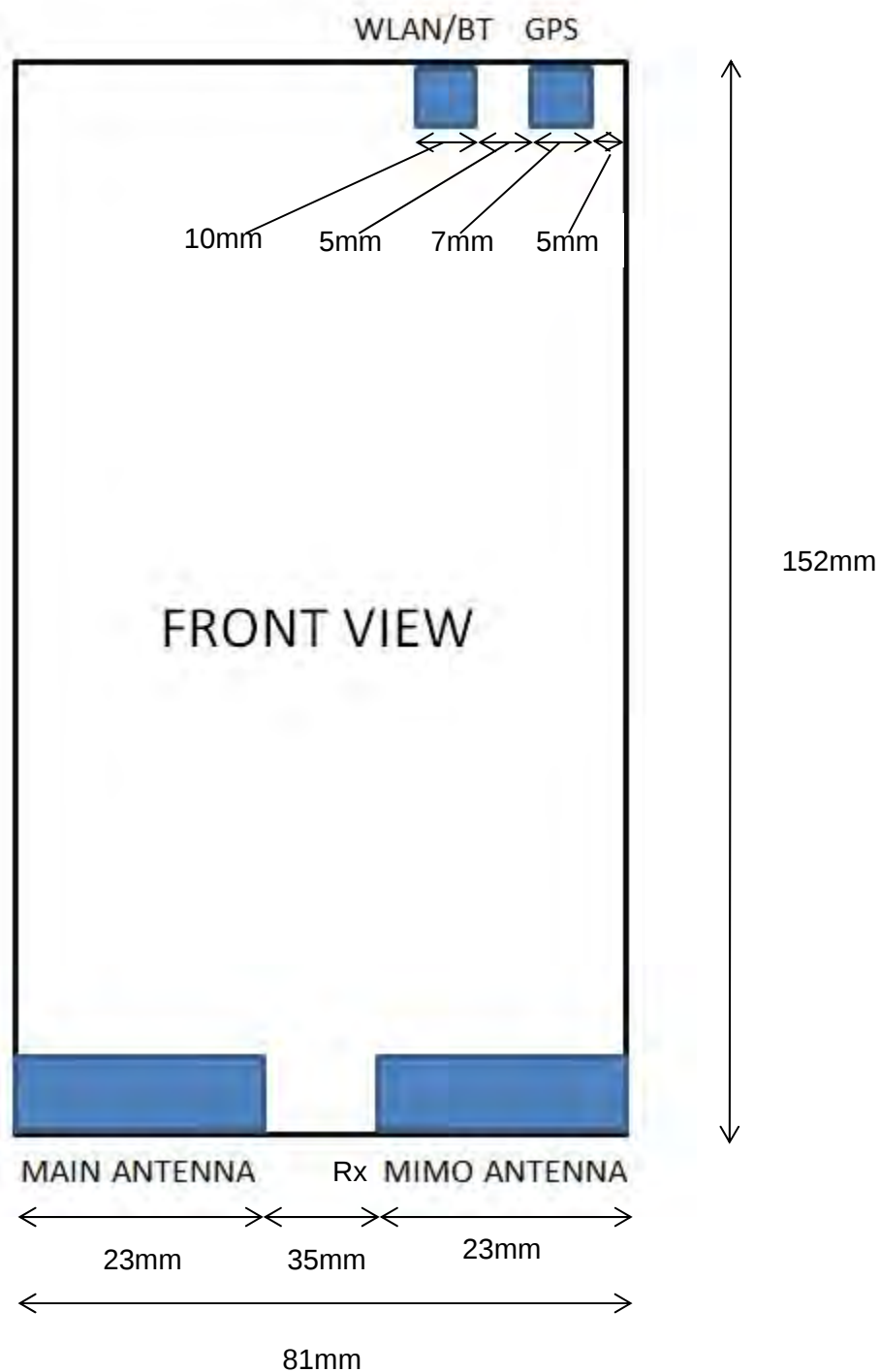
The hotspot mode (Wireless Router mode) may operate concurrently in DTM mode with voice calls. The reported SAR test results are conservative regarding that use case, since output power in hotspot mode is equal to or lower than in normal voice and data modes. See following chapter for hotspot mode power reductions. Also simultaneous transmissions with WLANs are already conservatively assessed for head and body-worn exposure conditions due to VoIP capability.

2.1 Power reductions in Wireless Router configurations

There are no specific power reductions for Wireless Router mode.

2.2 Description of the Antenna

The device has internal antennas for both cellular and WLAN use. The cellular antenna is located at the bottom underneath the back cover. The WLAN antenna is located at the top underneath the back cover.



3. TEST CONDITIONS

3.1 Temperature and Humidity

Ambient temperature (°C):	20.5 – 22.5
Ambient humidity (RH %):	35 - 55

3.2 Test Signal, Frequencies and Output Power

The device was put into operation by using a call tester except for testing WLAN2450/WLAN5000 where control software was used. Communication between the device and the call tester was established by air link.

The device output power was set to maximum power level for all tests; a fully charged battery was used for every test sequence.

This device was tested in all the available multi-slot GMSK GPRS modes (this is a multi-slot class 12 device); Dual Transfer Mode was not specifically tested as the average power in multi-slot GMSK GPRS mode is always greater than, or equal to, the average power in Dual Transfer Mode in Nokia devices.

The transmission mode of the device in all WCDMA tests was configured to 12.2kbps RMC with all TPC bits set as “1”. All WCDMA testing has been carried out in accordance with FCC KDB 941225: SAR Measurement Procedures for 3G Devices.

In all operating bands the measurements were performed on lowest, middle and highest channels.

The conducted output power of the device was measured by a separate test laboratory on the same units as used for SAR testing. The results are given in Appendices G-J of this report.

The standard transmission mode of the device in all WLAN b-mode tests was DSSS QPSK 1Mbps. The standard transmission mode of the device in all WLAN a-mode tests was OFDM 6 Mbps; WLAN ac-mode OFDM 87.8 / 97.5 Mbps was additionally used for. The standard transmission modes used have maximum time-averaged output powers within 0.25dB of the highest time-averaged output power of all the WLAN a, b, g, n and ac modulation modes in this device as illustrated by the tables in Appendix J. All WLAN testing has been carried out in accordance with FCC KDB 248227: SAR Measurement Procedures for 802.11 a/b/g Transmitters.

LTE band has been tested according to the guidance given in KDB941225 D05 SAR for LTE Devices v02r02. MPR values as stipulated in Table 6.2.3 of 3GPP TS 36.101 (presented below)

have been incorporated into the device; these MPR values are dependent on the modulation, Channel Bandwidth and Resource Block allocations as shown:

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

Although A-MPR will be supported by the final production device, for all the reported testing A-MPR was deactivated in the test samples.

Difference between RM-938 and RM-940 is that DTM feature and WCDM1700/2100 (Band 4) will be disabled from RM-940, and RM-940 will GPRS support multi-slot class 10. In the testing reported here multi-slot class 12 has been available as worst case in all the samples. Additionally, difference between RM-940 and RM-938 is that RM-940 has only Wireless Charging interface pins in the backcover, while RM-938 has built-in Wireless Charging (WPC/Qi) loop. This HW difference was tested according to FCC KDB 648474 D03 Wireless Chargers Battery Cover V01R02.

Here is a summary list of the KDB documents used in the reported testing:

KDB941225 D05 SAR for LTE Devices v02r02
KDB 941225 D01 SAR Measurement Procedures for 3G Devices
KDB 248227: SAR Measurement Procedures for 802.11 a/b/g Transmitters
KDB 648474 D03 Wireless Chargers Battery Cover V01R02
KDB 648474 D04 Handset SAR v01r01
KDB 941225 D06 v01 Hot Spot SAR
KDB 447498 D01 General RF Exposure Guidance v05r01
KDB 690783 D01 SAR Listings on Grants
KDB 865664 D01 SAR Measurement 100MHz to 6GHz v01r01
865664 D02 SAR reporting v01r01

4. DESCRIPTION OF THE TEST EQUIPMENT

4.1 Measurement System and Components

The measurements were performed using an automated DASY near-field scanning system manufactured by Schmid & Partner Engineering AG (SPEAG) in Switzerland. The SAR extrapolation algorithm used in all measurements was the 'advanced extrapolation' algorithm.

The following table lists calibration dates of SPEAG components:

Test Equipment	Serial Number	Calibration date	Calibration expiry
DAE4	793	2013-06	2014-06
DAE4	1309	2013-01	2014-01
DAE4	555	2013-01	2014-01
DAE4	1355	2013-01	2014-01
E-field Probe ES3DV3	3131	2013-06	2014-06
E-field Probe ES3DV3	3165	2013-01	2014-01
E-field Probe EX3DV4	3573	2013-01	2014-01
E-field Probe EX3DV4	3834	2013-01	2014-01
Dipole Validation Kit, D835V2	480	2012-12	2014-12
Dipole Validation Kit, D1750V2	1082	2012-12	2014-12
Dipole Validation Kit, D1900V2	5d013	2012-12	2014-12
Dipole Validation Kit, D2450V2	749	2012-12	2014-12
Dipole Validation Kit, D5GHzV2	1048	2012-12	2014-12
DASY5 software	Version 52.8	-	-

Test Equipment / CETECOM IST Service	Serial Number	Calibration date	Calibration expiry
DAE3V1	413	2013-01	2014-01
E-field Probe ES3DV3	3320	2013-06	2014-06
Dipole Validation Kit, D750V3	1041	2011-08	2013-08
Dipole Validation Kit, D750V3	1041	2013-08	2015-08
Dipole Validation Kit, D835V2	4d153	2013-06	2015-06
Dipole Validation Kit, D1750V2	1093	2013-06	2015-06
Dipole Validation Kit, D1900V2	5d009	2013-05	2015-05
DASY5 software	DASY52 52.8.7	-	-

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration date	Calibration expiry
Signal Generator	E4438C	MY42080610	2012-08	2013-08
			2013-08	2014-08
Signal Generator	SML03	101264	2012-08	2013-08
			2013-08	2014-08
Signal Generator	SMB100A	105735	2012-08	2013-08
			2013-08	2014-08
Signal Generator	E4436B	US39260114	2012-08	2013-08
			2013-08	2014-08
Amplifier	5S1G4M3	302338	-	-
Amplifier	ZHL-42-SMA	N072095-5	-	-
Amplifier	5S4G11	312661	-	-
Amplifier	5S1G4	25583	-	-
Power Meter	NRVS	838624/032	2012-08	2013-08
			2013-08	2014-08
Power Meter	NRVD	840023/028	2012-08	2013-08
			2013-08	2014-08
Power Meter	NRP	100714	2012-08	2013-08
			2013-08	2014-08
Power Meter	NRVZ	849305/029	2012-08	2013-08
			2013-08	2014-08
Power Sensor	NRV-Z32	100067	2012-08	2013-08
			2013-08	2014-08
Power Sensor	NRV-Z32	849745/018	2012-08	2013-08
			2013-08	2014-08
Power Sensor	NRP-Z92	100085	2012-08	2013-08
			2013-08	2014-08
Power Sensor	NRV-Z32	825600/002	2012-08	2013-08
			2013-08	2014-08

(Table continues)

(Table continues)

Test Equipment	Model	Serial Number	Calibration date	Calibration expiry
Call Tester	CMU 200	103293	-	-
Call Tester	CMU 200	101111	-	-
Call Tester	CMU 200	104983	-	-
Call Tester	CMU 200	103294	-	-
Call Tester	MT8820C	6200883095	-	-
Call Tester	CMW 500	110565	-	-
Call Tester	CMW 500	110556	-	-
Network Analyzer	ENA E5071C	MY46213166	2012-08	2013-08
			2013-08	2014-08
Dielectric Probe Kit	DAK-3.5	1042	-	-

Test Equipment / CETECOM IST Service	Model	Serial Number	Calibration date	Calibration expiry
Amplifier	25S1G4(25 Watt)	20452	-	-
Power Meter	NRP	101367	2013-01	2015-01
Power Sensor	NRP Z22	100227	2013-01	2014-01
Universal Radio Communication Tester	CMU 200	106826	2013-01	2014-01
Universal Radio Communication Tester	CMW 500	102375	2013-01	2014-01
Vector Network Analyzer	8753ES	US39174436	2012-02	2014-02
Dielectric Probe Kit	85070C	US99360146	-	-
Directional Coupler	778D	19171	2013-01	2014-01

4.1.1 Isotropic E-field Probe Type ES3DV3

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., butyl diglycol)
Calibration	Calibration certificate in Appendix E
Frequency	10 MHz to 4 GHz (dosimetry); Linearity: ± 0.2 dB (30 MHz to 4 GHz)
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.3 dB in HSL (rotation normal to probe axis)
Dynamic Range	5 $\mu\text{W/g}$ to > 100 mW/g; Linearity: ± 0.2 dB
Dimensions	Overall length: 330 mm Tip length: 20 mm Body diameter: 12 mm Tip diameter: 3.9 mm Distance from probe tip to dipole centers: 2.0 mm
Application	General dosimetry up to 4 GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms

4.1.2 Isotropic E-field Probe Type EX3DV4

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Calibration certificate in Appendix E
Frequency	10 MHz to > 6 GHz (dosimetry); Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 $\mu\text{W/g}$ to > 100 mW/g; Linearity: ± 0.2 dB
Dimensions	Overall length: 330 mm Tip length: 10 mm Body diameter: 12 mm Tip diameter: 2.5 mm Distance from probe tip to dipole centers: 1.0 mm

Application	General dosimetry up to 6 GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms
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4.2 Phantoms

The phantom used for all Head SAR tests i.e. for both system checks and device testing, was the twin-headed "SAM Phantom", manufactured by SPEAG; the SAM phantom conforms to the requirements of IEEE 1528-2003.

The phantom used for all Body SAR tests i.e. for both system checks and device testing, was a flat phantom also manufactured by SPEAG this phantom conform to the requirements of FCC published RF Exposure KDB Procedures.

The SPEAG device holder (see Section 5.1) was used to position the device in all tests whilst a tripod was used to position the validation dipoles against the flat section of phantom.

4.3 Tissue Simulants

Recommended values for the dielectric parameters of the tissue simulants are given in IEEE 1528 - 2003 and FCC published RF Exposure KDB Procedures. All tests were carried out using simulants whose dielectric parameters were within $\pm 5\%$ of the recommended values. All tests were carried out within 24 hours of measuring the dielectric parameters.

The depth of the tissue simulant was at least 15.0 cm for all system check and device tests, measured from the ear reference point in the case of the SAM phantom and from the inner surface of the flat phantom.

4.3.1 Tissue Simulant Recipes

The following recipe(s) were used for Head and Body tissue simulant(s):

700MHz band		
Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	41.1	51.7
Salt	1.4	0.9
Sugar	57.0	47.2
HEC	0.2	0.0
Bactericide	0.2	0.1

800MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	51.50	69.25
Tween 20	47.35	30.00
Salt	1.15	0.75

800MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	41.45	52.4
Salt	1.45	1.40
Sugar	56.0	45.0
HEC	1.0	1.0
Bactericide	0.1	0.1

1800MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	54.0	70.20
Tween 20	45.6	29.37
Salt	0.4	0.43

1800MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	52.64	69.91
Salt	0.36	0.13
DGBE	47.0	29.96

1900MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	54.50	70.25
Tween 20	45.23	29.41
Salt	0.27	0.34

1900MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	54.9	69.91
Salt	0.18	0.13
DGBE	44.92	29.96

2450MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	56.0	70.20
Tween 20	44.0	29.62
Salt	-	0.18

5000MHz band †

Ingredient	Head (% by weight)	Body (% by weight)
Water	50-65	60-80
Oil	10-30	-
Emulsifiers, Esters, Inhibitors	8-25	20-40
Sodium salt	0-1.5	0-1.5

† Recipe is proprietary to SPEAG. The proportions of the constituents have not been disclosed.

4.4 System validation and System checking

4.4.1 System validation status

Probe Calibration Point f / MHz	Test System	DASY SW	Dipole Type / SN	Probe Type / SN	Calibrated signal type(s)	DAE unit Type / SN	Validation done	
							Head tissue simulant	Body tissue simulant
750	Cetecom / SAR-1	V52.8	D750V2 / 1041	ES3DV3 / 3320	CW	DAE3 / 413	2013-07	2013-07
835	TCC Salo / SAR-3	V52.8	D835V2 / 480	ES3DV4 / 3165	CW	DAE4 / 1355	2013-05	2013-05
835	Cetecom / SAR-1	V52.8	D835V2 / 4d153	ES3DV3 / 3320	CW	DAE3 / 413	2013-06	2013-07
1750	TCC Salo / SAR-1	V52.8	D1750V2 / 1082	ES3DV3 / 3131	CW	DAE4 / 793	2013-07	2013-07
1750	Cetecom / SAR-1	V52.8	D1750V2 / 1093	ES3DV3 / 3320	CW	DAE3 / 413	2013-07	2013-07
1900	TCC Salo / SAR-1	V52.8	D1900V2 / 5d013	ES3DV3 / 3131	CW	DAE4 / 793	2013-07	2013-07
1900	Cetecom / SAR-1	V52.8	D1900V2 / 5d009	ES3DV3 / 3320	CW	DAE3 / 413	2013-07	2013-07
2450	TCC Salo / SAR-4	V52.8	D2450V2 / 749	EX3DV4 / 3834	CW	DAE4 / 555	2013-06	2013-06
5200	TCC Salo / SAR-2	V52.8	D5GHzV2 / 1048	EX3DV4 / 3573	CW/OFDM	DAE4 / 1309	2013-02	2013-02
5300	TCC Salo / SAR-2	V52.8	D5GHzV2 / 1048	EX3DV4 / 3573	CW/OFDM	DAE4 / 1309	2013-02	2013-02
5500	TCC Salo / SAR-2	V52.8	D5GHzV2 / 1048	EX3DV4 / 3573	CW/OFDM	DAE4 / 1309	2013-02	2013-02
5600	TCC Salo / SAR-2	V52.8	D5GHzV2 / 1048	EX3DV4 / 3573	CW/OFDM	DAE4 / 1309	2013-02	2013-02
5800	TCC Salo / SAR-2	V52.8	D5GHzV2 / 1048	EX3DV4 / 3573	CW/OFDM	DAE4 / 1309	2013-02	2013-02

4.4.2 System checking

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulants were measured every day using the dielectric probe kit and the network analyser. A system check measurement was made following the determination of the dielectric parameters of the simulant, using the dipole validation kit. A power level of 250 mW was supplied to the dipole antenna (except in the case of the 5000MHz dipole for which 100mW was supplied), which was placed under the flat section of the twin SAM phantom for head system checking, and under the flat phantom for body system checking. The system checking results (dielectric parameters and SAR values) are given in the table below.

System checking, head tissue simulant

f [MHz]	Description	SAR 1g [W/kg]	Estimated SAR 1g [W/kg]	Estimated SAR 1g Deviation	Dielectric Parameters		SAR 1g Deviation from target	Dielectric Parameters Deviation from target		Temp [°C]	Plot #
				dSAR [%]	ϵ_r	σ [S/m]	dSAR [%]	d ϵ_r [%]	d σ [%]		
	Tolerances			±3%			±10 %	±5 %	±5 %		
750	IEEE1528 / IEC62209				41.9	0.89					
	Reference result SN:1041	2.16	-		42.3	0.92	Cetecom / SAR-1 ES3DV3 SN:3320 Head 750				
	2013-07-30	2.06	2.07	0.49	41.5	0.89	-4.63	-1.89	-3.15	21.2	1
750	IEEE1528 / IEC62209				41.9	0.89					
	Reference result SN:1041	2.15	-		41.7	0.90	Cetecom / SAR-1 ES3DV3 SN:3320 Head 750				
	2013-09-10	2.07	2.06	-0.48	41.5	0.90	-3.72	-0.48	0.00	21.2	2
835	IEEE1528 / IEC62209				41.5	0.90					
	Reference result SN:480	2.39	-		41.4	0.92	TCC Salo/SAR-3 ES3DV3 SN:3165 Head 835MHz				
	2013-07-29	2.25	2.20	-2.22	40.4	0.91	-5.86	-2.42	-1.09	21.9	-
	2013-07-30	2.24	2.20	-1.79	39.9	0.90	-6.28	-3.62	-2.17	22.7	-
	2013-09-09	2.21	2.22	0.45	41.0	0.90	-7.53	-0.97	-2.17	21.1	3
835	IEEE1528 / IEC62209				41.5	0.90					
	Reference result SN: 4d153	2.49	-		40.4	0.94	Cetecom/SAR-1 ES3DV3 SN:3320 Head 835				
	2013-07-17	2.63	2.61	-0.76	41.1	0.90	5.62	1.73	-4.25	22.0	4
	2013-08-02	2.38	2.39	0.42	42.6	0.89	-4.42	2.77	-5.00	22.0	-
	2013-09-10	2.37	2.40	1.27	42.4	0.91	-4.82	2.19	0.60	22.0	-
1750	IEEE1528 / IEC62209				40.1	1.37					
	Reference result SN:1082	8.99	-		39.3	1.34	TCC Salo/SAR-1 ES3DV3 SN:3131 Head 1750MHz				
	2013-08-01	8.90	8.88	-0.22	38.6	1.32	-1.00	-1.78	-1.49	20.6	5
	2013-09-14	8.90	8.99	1.01	39.2	1.33	-1.00	-0.25	-0.75	20.8	-

(System checking Head table continues)

(System checking Head table continues)

f [MHz]	Description	SAR 1g [W/kg]	Estimated SAR 1g [W/kg]	Estimated SAR 1g Deviation	Dielectric Parameters		SAR 1g Deviation from target	Dielectric Parameters Deviation from target		Temp [°C]	Plot #
				dSAR [%]	ϵ_r	σ [S/m]	dSAR [%]	$d\epsilon_r$ [%]	$d\sigma$ [%]		
1750	IEEE1528 / IEC62209				40.1	1.37					
	Reference result SN: 1093	8.98	-		39.1	1.32	Cetecom/SAR-1 ES3DV3 SN:3320 Head 1750MHz				
	2013-07-23	9.52	9.55	0.32	40.1	1.38	6.01	2.56	4.55	22.0	6
	2013-09-10	9.39	9.47	0.85	39.9	1.39	4.57	-0.55	1.53	22.0	-
1900	IEEE1528 / IEC62209				40.0	1.40					
	Reference result SN:5d013	10.1	-		39.5	1.38	TCC Salo/SAR-1 ES3DV3 SN:3131 Head 1900MHz				
	2013-07-29	10.1	10.1	0.00	39.2	1.38	0.00	-0.76	0.00	22.3	-
	2013-07-30	10.2	10.2	0.00	38.6	1.37	0.99	-2.28	-0.72	21.1	-
	2013-08-02	10.2	10.4	1.96	38.5	1.38	0.99	-2.53	0.00	21.8	-
	2013-09-13	9.98	9.89	-0.90	38.6	1.39	-1.19	-2.28	0.72	20.8	-
	2013-09-17	10.4	10.4	0.00	38.6	1.42	2.97	-2.28	2.90	20.6	7
1900	IEEE1528 / IEC62209				40.0	1.40					
	Reference result SN: 5d009	9.85	-		39.3	1.35	Cetecom/SAR-1 ES3DV3 SN:3320 Head 1900MHz				
	2013-07-25	10.0	10.00	0.00	39.0	1.40	1.52	-0.76	3.70	22.0	8
	2013-09-09	9.89	9.98	0.91	39.9	1.37	0.41	1.53	1.48	22.0	-
2450	IEEE1528 / IEC62209				39.2	1.80					
	Reference result SN:749	13.7	-		38.2	1.84	TCC Salo/SAR-4 EX3DV4 SN:3834 Head 2450MHz				
	2013-07-26	13.5	13.6	0.74	37.9	1.81	-1.46	-0.79	-1.63	21.1	-
	2013-07-29	13.7	13.8	0.73	38.6	1.80	0.00	1.05	-2.17	21.4	-
	2013-08-12	13.2	13.3	0.76	37.7	1.78	-3.65	-1.31	-3.26	21.3	9
	2013-09-09	13.5	13.5	0.00	37.8	1.77	-1.46	-1.05	-3.80	21.4	-
	2013-09-15	13.6	13.6	0.00	37.7	1.78	-0.73	-1.31	-3.26	0.0	-

(System checking Head table continues)

(System checking Head table continues)

f [MHz]	Description	SAR 1g [W/kg]	Estimated SAR 1g [W/kg]	Estimated SAR 1g Deviation	Dielectric Parameters		SAR 1g Deviation from target	Dielectric Parameters Deviation from target		Temp [°C]	Plot #
				dSAR [%]	ϵ_r	σ [S/m]	dSAR [%]	$d\epsilon_r$ [%]	$d\sigma$ [%]		
5200	IEEE1528 / IEC62209*				36.0	4.66					
	Reference result SN:1048	8.04	-		34.6	4.46	TCC Salo/SAR-2 EX3DV4 SN:3573 Head 5200MHz				
	2013-07-26	7.67	7.11	-7.30	35.3	4.44	-4.60	2.02	-0.45	21.9	-
	2013-07-30	7.59	7.22	-4.87	35.4	4.47	-5.60	2.31	0.22	22.4	10
	2013-09-16	8.03	7.45	-7.22	36.1	4.62	-0.12	4.34	3.59	21.7	-
5300	IEEE1528 / IEC62209*				35.9	4.76					
	Reference result SN:1048	8.34	-		34.4	4.55	TCC Salo/SAR-2 EX3DV4 SN:3573 Head 5300MHz				
	2013-07-29	8.26	7.79	-5.69	35.4	4.54	-0.96	2.91	-0.22	22.1	-
	2013-08-12	8.13	7.49	-7.87	35.2	4.55	-2.52	2.33	0.00	21.0	11
	2013-09-16	8.36	7.80	-6.70	35.9	4.71	0.24	4.36	3.52	21.7	-
5500	IEEE1528 / IEC62209*				35.6	4.96					
	Reference result SN:1048	8.31	-		34.2	4.72	TCC Salo/SAR-2 EX3DV4 SN:3573 Head 5500MHz				
	2013-07-31	7.98	7.54	-5.51	35.1	4.75	-4.23	2.63	0.42	22.5	12
5600	IEEE1528 / IEC62209*				35.5	5.07					
	Reference result SN:1048	8.41	-		34.0	4.81	TCC Salo/SAR-2 EX3DV4 SN:3573 Head 5600MHz				
	2013-07-31	8.13	7.68	-5.54	35.0	4.86	-3.33	2.94	1.04	22.5	13
	2013-08-01	8.19	7.79	-4.88	34.9	4.84	-2.62	2.65	0.62	21.5	-
	2013-09-16	8.39	8.17	-2.62	35.5	5.02	-0.24	4.41	4.37	21.7	-
5800	IEEE1528 / IEC62209*				35.3	5.27					
	Reference result SN:1048	7.93	-		33.8	5.04	TCC Salo/SAR-2 EX3DV4 SN:3573 Head 5800MHz				
	2013-07-31	7.76	7.40	-4.64	34.7	5.08	-2.14	2.66	0.79	22.5	-
	2013-08-01	7.79	7.29	-6.42	34.8	5.07	-1.77	2.96	0.60	22.7	-
	2013-09-16	7.74	7.34	-5.17	35.2	5.23	-2.40	4.14	3.77	21.7	14

* Dielectric parameter data taken from IEC62209-2.

System checking, body tissue simulant

f [MHz]	Description	SAR 1g [W/kg]	Estimated SAR 1g [W/kg]	Estimated SAR 1g Deviation	Dielectric Parameters		SAR 1g Deviation from target	Dielectric Parameters Deviation from target		Temp [°C]	Plot #
				dSAR [%]	ϵ_r	σ [S/m]	dSAR [%]	d ϵ_r [%]	d σ [%]		
	Tolerances			±3%			±10 %	±5 %	±5 %		
750	IEEE1528 / IEC62209				55.5	0.96					
	Reference result SN:1041	2.20	-		55.6	0.96	Cetecom/SAR-1 ES3DV3 SN:3320 Body 750				
	2013-07-27	2.21	2.20	-0.45	56.2	0.97	0.45	1.08	1.04	21.4	15
750	IEEE1528 / IEC62209				55.5	0.96					
	Reference result SN:1041	2.23	-		54.5	0.98	Cetecom/SAR-1 ES3DV3 SN:3320 Body 750				
	2013-09-11	2.13	2.15	0.94	55.2	0.95	-4.48	1.28	-3.06	21.4	16
835	IEEE1528 / IEC62209				55.2	0.97					
	Reference result SN:480	2.42	-		54.5	0.99	TCC Salo/SAR-3 ES3DV3 SN:3165 Body 835MHz				
	2013-07-30	2.32	2.28	-1.72	54.1	0.99	-4.13	-0.73	0.00	22.3	-
	2013-09-05	2.31	2.33	0.87	53.1	0.98	-4.55	-2.57	-1.01	22.5	17
835	IEEE1528 / IEC62209				55.2	0.97					
	Reference result SN: 4d153	2.41	-		54.5	1.00	Cetecom/SAR-1 ES3DV3 SN:3320 Body 835MHz				
	2013-07-18	2.54	2.52	-0.79	55.4	1.00	5.39	1.65	0.00	22.0	18
	2013-08-14	2.33	2.33	0.00	55.9	0.97	-3.32	2.57	-3.00	22.3	-
	2013-09-11	2.45	2.44	-0.41	54.4	0.97	1.66	-0.18	-3.00	22.0	-
1750	IEEE1528 / IEC62209				53.4	1.49					
	Reference result SN:1082	9.21	-		51.8	1.47	TCC Salo/SAR-1 ES3DV3 SN:3131 Body 1750MHz				
	2013-08-02	8.75	8.84	1.03	51.8	1.46	-4.99	0.00	-0.68	21.0	19
	2013-09-10	9.30	9.34	0.43	51.7	1.47	0.98	-0.19	0.00	20.3	-
1750	IEEE1528 / IEC62209				53.4	1.49					
	Reference result SN: 1093	9.47	-		51.7	1.47	Cetecom/SAR-2 ES3DV3 SN:3320 Body 1750MHz				
	2013-07-26	9.11	9.14	0.33	52.8	1.51	-3.80	2.13	2.72	22.0	-
	2013-08-14	8.75	8.87	1.37	52.5	1.43	-7.60	1.55	-2.72	22.3	20
	2013-08-20	9.11	9.23	1.32	52.7	1.54	-3.80	1.93	4.76	22.4	-
	2013-08-21	9.38	9.40	0.21	52.6	1.50	-0.95	1.74	2.04	22.9	-
	2013-09-11	9.33	9.37	0.43	52.6	1.51	-1.48	1.75	2.72	22.0	-

(System checking Body table continues)

(System checking Body table continues)

f [MHz]	Description	SAR 1g [W/kg]	Estimated SAR 1g [W/kg]	Estimated SAR 1g Deviation	Dielectric Parameters		SAR 1g Deviation from target	Dielectric Parameters Deviation from target		Temp [°C]	Plot #
				dSAR [%]	ε _r	σ [S/m]	dSAR [%]	dε _r [%]	dσ [%]		
1900	IEEE1528 / IEC62209				53.3	1.52					
	Reference result SN:5d013	10.3	-		52.2	1.52	TCC Salo/SAR-1 ES3DV3 SN:3131 Body 1900MHz				
	2013-07-31	9.56	9.56	0.00	51.7	1.51	-7.18	-0.96	-0.66	20.5	21
	2013-08-12	9.81	9.83	0.20	51.1	1.54	-4.76	-2.11	1.32	20.7	-
	2013-09-15	9.87	9.89	0.20	51.2	1.55	-4.17	-1.92	1.97	21.0	-
1900	IEEE1528 / IEC62209				53.3	1.52					
	Reference result SN: 5d009	10.10	-		53.6	1.49	Cetecom/SAR-1 ES3DV3 SN:3320 Body 1900MHz				
	2013-07-19	9.68	9.79	1.14	52.3	1.48	-4.16	-2.43	-0.67	22.0	22
	2013-08-02	9.90	9.84	-0.61	53.0	1.52	-1.98	-1.12	2.01	22.0	-
	2013-09-11	10.1	9.97	-1.29	53.6	1.50	0.00	0.00	0.67	22.0	-
2450	IEEE1528 / IEC62209				52.7	1.95					
	Reference result SN:749	13.2	-		50.7	2.02	TCC Salo/SAR-4 EX3DV4 SN:3834 Body 2450MHz				
	2013-07-29	12.70	12.80	0.79	50.7	1.95	-3.79	0.00	-3.47	21.4	23
	2013-07-30	12.90	13.00	0.78	51.1	1.96	-2.27	0.79	-2.97	21.7	-
	2013-09-10	13.10	13.20	0.76	51.1	1.94	-0.76	0.79	-3.96	20.6	-
5200	FCC Published RF Exposure KDB Procedures				49.0	5.30					
	Reference result SN:1048	7.20	-		47.1	5.40	TCC Salo/SAR-2 EX3DV4 SN:3573 Body 5200MHz				
	2013-08-02	7.56	7.07	-6.48	48.3	5.39	5.00	2.55	-0.19	22.3	-
	2013-08-05	7.37	6.93	-5.97	47.7	5.29	2.36	1.27	-2.04	22.6	-
	2013-08-12	7.61	7.17	-5.78	47.8	5.43	5.69	1.49	0.56	21.7	-
	2013-09-11	7.86	7.41	-5.73	47.1	5.21	9.17	0.00	-3.52	21.0	24
5300	FCC Published RF Exposure KDB Procedures				48.9	5.42					
	Reference result SN:1048	7.45	-		46.9	5.51	TCC Salo/SAR-2 EX3DV4 SN:3573 Body 5300MHz				
	2013-08-05	7.72	7.32	-5.18	47.7	5.36	3.62	1.71	-2.72	21.7	-
	2013-08-12	8.06	7.37	-8.56	47.6	5.53	8.19	1.49	0.36	21.7	25
	2013-09-11	7.73	7.16	-7.37	46.8	5.29	3.76	-0.21	-3.99	20.7	-

(System checking Body table continues)

(System checking Body table continues)

f [MHz]	Description	SAR 1g [W/kg]	Estimated SAR 1g [W/kg]	Estimated SAR 1g Deviation	Dielectric Parameters		SAR 1g Deviation from target	Dielectric Parameters Deviation from target		Temp [°C]	Plot #
				dSAR [%]	ϵ_r	σ [S/m]	dSAR [%]	d ϵ_r [%]	d σ [%]		
5500	FCC Published RF Exposure KDB Procedures				48.6	5.65					
	Reference result SN:1048	7.62	-		46.6	5.76	TCC Salo/SAR-2 EX3DV4 SN:3573 Body 5500MHz				
	2013-08-06	7.49	7.00	-6.54	46.7	5.63	-1.71	0.21	-2.26	22.5	-
	2013-08-08	7.51	7.21	-3.99	47.5	5.74	-1.44	1.93	-0.35	22.2	-
	2013-09-12	7.94	7.67	-3.40	46.3	5.68	4.20	-0.64	-1.56	20.9	26
5600	FCC Published RF Exposure KDB Procedures				48.5	5.77					
	Reference result SN:1048	7.73	-		46.4	5.88	TCC Salo/SAR-2 EX3DV4 SN:3573 Body 5600MHz				
	2013-08-06	8.06	7.72	-4.22	46.5	5.74	4.27	0.22	-2.38	22.5	-
	2013-09-12	8.23	7.82	-4.98	46.1	5.82	6.47	-0.65	-1.19	20.9	27
5800	FCC Published RF Exposure KDB Procedures				48.2	6.00					
	Reference result SN:1048	7.25	-		46.1	6.17	TCC Salo/SAR-2 EX3DV4 SN:3573 Body 5800MHz				
	2013-08-07	7.02	6.69	-4.70	46.5	6.16	-3.17	0.87	-0.16	22.0	28
	2013-08-08	7.10	6.61	-6.90	47.1	6.18	-2.07	2.17	0.16	22.2	-
	2013-08-12	7.09	6.76	-4.65	47.0	6.17	-2.21	1.95	0.00	21.7	-
	2013-09-14	7.22	6.54	-9.42	46.1	6.22	-0.41	0.00	0.81	21.2	-

Plots of the system checking scans are given in Appendix A.

4.5 Tissue simulants used in the measurements

Head tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Dielectric Parameters Deviation from Standard target		Temp [°C]
		ϵ_r	σ [S/m]	$d\epsilon_r$ [%]	$d\sigma$ [%]	
	Tolerances			±5 %	±5 %	
710 Cetecom	Recommended value	42.1	0.89			
	2013-07-30	42.1	0.85	0.00	-4.08	21.2
	2013-09-10	42.0	0.86	-0.24	-3.37	21.2
835	Recommended value	41.5	0.90			
	2013-07-29	40.4	0.91	-2.65	1.11	21.9
	2013-09-09	41.0	0.90	-1.20	0.00	21.1
836 Cetecom	Recommended value	41.5	0.90			
	2013-07-17	41.1	0.90	-0.96	0.00	22.0
	2013-08-02	42.6	0.89	2.65	-1.11	22.0
	2013-09-10	42.4	0.91	2.19	0.60	22.0
836	Recommended value	41.5	0.90			
	2013-07-29	40.4	0.91	-2.65	1.11	21.9
	2013-07-30	39.9	0.90	-3.86	0.00	22.7
	2013-09-09	41.0	0.90	-1.20	0.00	21.1
1732 Cetecom	Recommended value	40.1	1.36			
	2013-07-23	40.1	1.36	0.00	0.00	22.0
	2013-09-10	39.9	1.37	-0.47	0.74	22.0
1732	Recommended value	40.1	1.36			
	2013-08-01	38.6	1.30	-3.74	-4.41	20.6
	2013-09-14	39.2	1.31	-2.24	-3.68	20.8
1880 Cetecom	Recommended value	40.0	1.40			
	2013-07-25	39.1	1.39	-2.25	-0.71	22.0
	2013-09-09	40.0	1.36	-0.02	-3.21	22.0
1880	Recommended value	40.0	1.40			
	2013-07-29	39.3	1.36	-1.75	-2.86	22.3
	2013-07-30	38.7	1.36	-3.25	-2.86	21.1
	2013-08-02	38.6	1.36	-3.50	-2.86	21.8
	2013-09-13	38.7	1.37	-3.25	-2.14	20.8
	2013-09-17	39.3	1.37	-1.75	-2.14	20.6

(Head tissue simulant table continues)

(Head tissue simulant table continues)

f [MHz]	Description	Dielectric Parameters		Dielectric Parameters Deviation from Standard target		Temp [°C]
		ϵ_r	σ [S/m]	$d\epsilon_r$ [%]	$d\sigma$ [%]	
2437	Recommended value	39.2	1.79			
	2013-07-26	37.9	1.79	-3.32	0.00	21.1
	2013-07-29	38.6	1.79	-1.53	0.00	21.4
	2013-08-12	37.8	1.76	-3.57	-1.68	21.3
	2013-09-09	37.9	1.76	-3.32	-1.68	21.4
	2013-09-15	37.8	1.76	-3.57	-1.68	0.0
5210	Recommended value	36.0	4.67			
	2013-07-26	35.3	4.45	-1.94	-4.71	21.9
	2013-07-30	35.4	4.48	-1.67	-4.07	22.4
	2013-09-16	36.1	4.63	0.28	-0.86	21.7
5290	Recommended value	35.9	4.75			
	2013-07-29	35.5	4.53	-1.11	-4.63	22.1
	2013-08-12	35.2	4.54	-1.95	-4.42	21.0
	2013-09-16	36.0	4.70	0.28	-1.05	21.7
5520	Recommended value	35.6	4.99			
	2013-07-31	35.1	4.77	-1.40	-4.41	22.5
5620	Recommended value	35.5	5.09			
	2013-07-31	34.9	4.87	-1.69	-4.32	22.5
	2013-08-01	34.8	4.86	-1.97	-4.52	21.5
	2013-09-16	35.5	5.04	0.00	-0.98	21.7
5760	Recommended value	35.3	5.23			
	2013-07-31	34.7	5.03	-1.70	-3.82	22.5
	2013-08-01	34.6	5.02	-1.98	-4.02	21.5
	2013-09-16	35.3	5.19	0.00	-0.76	21.7

Body tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Dielectric Parameters Deviation from Standard target		Temp [°C]
		ϵ_r	σ [S/m]	$d\epsilon_r$ [%]	$d\sigma$ [%]	
	Tolerances			±5 %	±5 %	
710 Cetecom	Recommended value	55.7	0.96			
	2013-07-27	56.4	0.93	1.26	-2.08	22.0
	2013-09-11	55.7	0.92	-0.09	-4.17	22.0
835	Recommended value	55.2	0.97			
	2013-07-30	54.1	0.99	-1.99	2.06	22.3
	2013-09-05	53.1	0.98	-3.80	1.03	22.5
836 Cetecom	Recommended value	55.2	0.97			
	2013-07-18	55.3	1.00	0.18	3.09	22.0
	2013-08-14	55.9	0.97	1.27	0.00	22.3
	2013-09-11	54.4	0.97	-1.45	0.00	22.0
836	Recommended value	55.2	0.97			
	2013-07-30	54.1	0.99	-1.99	2.06	22.3
	2013-09-05	53.1	0.98	-3.80	1.03	22.5
1732 Cetecom	Recommended value	53.5	1.48			
	2013-07-26	52.9	1.49	-1.12	0.68	22.0
	2013-08-14	52.6	1.42	-1.68	4.05	22.3
	2013-08-20	52.7	1.52	-1.50	2.70	22.4
	2013-08-21	52.6	1.48	-1.68	0.00	22.9
	2013-09-11	52.6	1.49	-1.70	0.68	22.0
1732	Recommended value	53.5	1.48			
	2013-08-02	51.9	1.44	-2.99	-2.70	21.0
	2013-09-10	51.7	1.46	-3.36	-1.35	20.3
1880 Cetecom	Recommended value	53.3	1.52			
	2013-07-19	52.4	1.46	-1.69	-3.95	22.0
	2013-08-02	53.1	1.49	-0.38	-1.97	22.0
	2013-09-11	53.7	1.49	0.69	-2.24	22.0
1880	Recommended value	53.3	1.52			
	2013-07-31	51.7	1.50	-3.00	-1.32	20.5
	2013-08-12	51.2	1.52	-3.94	0.00	20.7
	2013-09-15	51.3	1.53	-3.75	0.66	21.0

(Body tissue simulant table continues)

(Body tissue simulant table continues)

f [MHz]	Description	Dielectric Parameters		Dielectric Parameters Deviation from Standard target		Temp [°C]
		ϵ_r	σ [S/m]	d ϵ_r [%]	d σ [%]	
	Tolerances			±5 %	±5 %	
2437	Recommended value	52.7	1.94			
	2013-07-29	50.7	1.93	-3.80	-0.52	21.4
	2013-07-30	51.1	1.94	-3.04	0.00	21.7
	2013-09-10	51.2	1.92	-2.85	-1.03	20.6
5210	Recommended value	49.0	5.31			
	2013-08-02	48.3	5.40	-1.43	1.69	22.3
	2013-08-05	47.9	5.26	-2.24	-0.94	22.6
	2013-08-12	47.9	5.44	-2.24	2.45	21.7
	2013-09-11	47.1	5.22	-3.88	-1.69	21.0
5290	Recommended value	48.9	5.40			
	2013-08-05	47.8	5.36	-2.25	-0.74	21.7
	2013-08-12	47.6	5.52	-2.66	2.22	21.7
	2013-09-11	46.8	5.28	-4.29	-2.22	20.7
5520	Recommended value	48.6	5.67			
	2013-08-06	46.7	5.65	-3.91	-0.35	22.5
	2013-08-08	47.5	5.78	-2.26	1.94	22.2
	2013-09-12	46.3	5.70	-4.73	0.53	20.9
5620	Recommended value	48.4	5.79			
	2013-08-06	46.7	5.73	-3.51	-1.04	22.5
	2013-09-12	46.1	5.83	-4.75	0.69	20.9
5760	Recommended value	48.3	5.95			
	2013-08-07	46.5	6.11	-3.73	2.69	22.0
	2013-08-08	47.1	6.11	-2.48	2.69	22.2
	2013-08-12	47.0	6.17	-2.69	3.70	21.7
	2013-09-14	46.1	6.19	-4.55	4.03	21.2

Dielectric parameter data for the band edges is given in Appendix C.

5. DESCRIPTION OF THE TEST PROCEDURE

5.1 Device Holder

The device was placed in the device holder (illustrated below) that is supplied by SPEAG as an integral part of the Dasy system.



Device holder supplied by SPEAG

A Nokia designed spacer (illustrated below) was used to position the device within the SPEAG holder. The spacer positions the device so that the holder has minimal effect on the test results but still holds the device securely. The spacer was removed before the tests.



Nokia spacer

5.2 Test Positions

5.2.1 Against Phantom Head

Measurements were made in “cheek” and “tilt” positions on both the left hand and right hand sides of the phantom.

The positions used in the measurements were according to IEEE 1528 - 2003 "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques".

5.2.2 Body Worn Configuration

The device was placed in the SPEAG holder using the Nokia spacer and placed below the flat section of the phantom. The distance between the device and the phantom was kept at the separation distance indicated in Section 1.2.2 using a separate flat spacer that was removed before the start of the measurements.

Nokia body-worn accessories are commonly available for the separation distance used in this testing.

5.2.3 Wireless Router Configuration

The device was placed in the SPEAG holder and, in sequence, the back, display and each of the 4 edges was positioned 10.0mm away from the flat phantom. The spacer was removed before the start of the measurements.

5.2.4 10g Extremity SAR

The device was placed in the SPEAG holder and, in sequence, the back, display and each of the 4 edges was positioned 0.0mm away from the flat phantom.

5.3 Scan Procedures

First, area scans were used for determination of the field distribution. Next, a zoom scan, a minimum of 5x5x7 points covering a volume of at least 30x30x30mm, was performed around the highest E-field value to determine the averaged SAR value. Drift was determined by measuring the same point at the start of the area scan and again at the end of the zoom scan. Fast SAR is measured according to the KDB 447498 D01 Exposure Guidance v05r01.

5.4 SAR Averaging Methods

The maximum SAR value was averaged over a cube of tissue using interpolation and extrapolation.

The interpolation, extrapolation and maximum search routines within Dasy4 are all based on the modified Quadratic Shepard's method (Robert J. Renka, "Multivariate Interpolation Of Large Sets Of Scattered Data", University of North Texas ACM Transactions on Mathematical Software, vol. 14, no. 2, June 1988, pp. 139-148).

The interpolation scheme combines a least-square fitted function method with a weighted average method. A trivariate 3-D / bivariate 2-D quadratic function is computed for each measurement point and fitted to neighbouring points by a least-square method. For the zoom scan, inverse distance weighting is incorporated to fit distant points more accurately. The interpolating function is finally calculated as a weighted average of the quadratics.

In the zoom scan, the interpolation function is used to extrapolate the Peak SAR from the deepest measurement points to the inner surface of the phantom.

6. MEASUREMENT UNCERTAINTY

Table 6.1 – Measurement uncertainty evaluation

Uncertainty Component	Section in IEEE 1528	Tol. (%)	Prob Dist	Div	C_i	$C_i \cdot U_i$ (%)	V_i
Measurement System							
Probe Calibration	E2.1	±6.55	N	1	1	±6.55	∞
Axial Isotropy	E2.2	±4.7	R	$\sqrt{3}$	$(1-c_p)^{1/2}$	±1.9	∞
Hemispherical Isotropy	E2.2	±9.6	R	$\sqrt{3}$	$(c_p)^{1/2}$	±3.9	∞
Boundary Effect	E2.3	±1.0	R	$\sqrt{3}$	1	±0.6	∞
Linearity	E2.4	±4.7	R	$\sqrt{3}$	1	±2.7	∞
System Detection Limits	E2.5	±1.0	R	$\sqrt{3}$	1	±0.6	∞
Readout Electronics	E2.6	±1.0	N	1	1	±1.0	∞
Response Time	E2.7	±0.8	R	$\sqrt{3}$	1	±0.5	∞
Integration Time	E2.8	±2.6	R	$\sqrt{3}$	1	±1.5	∞
RF Ambient Conditions - Noise	E6.1	±3.0	R	$\sqrt{3}$	1	±1.7	∞
RF Ambient Conditions - Reflections	E6.1	±3.0	R	$\sqrt{3}$	1	±1.7	∞
Probe Positioner Mechanical Tolerance	E6.2	±0.4	R	$\sqrt{3}$	1	±0.2	∞
Probe Positioning with respect to Phantom Shell	E6.3	±2.9	R	$\sqrt{3}$	1	±1.7	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E5	±3.9	R	$\sqrt{3}$	1	±2.3	∞
Test sample Related							
Test Sample Positioning	E4.2	±6.0	N	1	1	±6.0	11
Device Holder Uncertainty	E4.1	±5.0	N	1	1	±5.0	7
Output Power Variation - SAR drift measurement	6.6.3	±5.0	R	$\sqrt{3}$	1	±2.9	∞
Phantom and Tissue Parameters							
Phantom Uncertainty (shape and thickness tolerances)	E3.1	±4.0	R	$\sqrt{3}$	1	±2.3	∞
Conductivity Target - tolerance	E3.2	±5.0	R	$\sqrt{3}$	0.64	±1.8	∞
Conductivity - measurement uncertainty	E3.3	±5.5	N	1	0.64	±3.5	5
Permittivity Target - tolerance	E3.2	±5.0	R	$\sqrt{3}$	0.6	±1.7	∞
Permittivity - measurement uncertainty	E3.3	±2.9	N	1	0.6	±1.7	5
Combined Standard Uncertainty			RSS			±13.5	116
Coverage Factor for 95%			k=2				
Expanded Uncertainty						±27.1	

Table 6.2 – Measurement uncertainty evaluation for Fast SAR

Relative DASY5 Uncertainty Budget for Fast SAR Tests According to IEEE 1528/2011 and IEC 62209-1/2011 (0.3-6 GHz range)						
Uncertainty Component	Tol. (%)	Prob Dist.	Div.	C_i	$C_i \cdot U_i$ (%)	V_i
Measurement System						
Probe Calibration	±6.55	N	1	0		
Axial Isotropy	±4.7	R	√3	0.7	±1.9	∞
Hemispherical Isotropy	±9.6	R	√3	0.7	±3.9	∞
Boundary Effect	±2.0	R	√3	1	±1.2	∞
Linearity	±4.7	R	√3	1	±2.7	∞
System Detection Limits	±1.0	R	√3	1	±0.6	∞
Modulation Response	±2.4	R	√3	1	±1.4	∞
Readout Electronics	±0.3	N	1	0		
Response Time	±0.8	R	√3	0		
Integration Time	±2.6	R	√3	1	±1.5	∞
RF Ambient Conditions - Noise	±3.0	R	√3	1	±1.7	∞
RF Ambient Conditions - Reflections	±3.0	R	√3	0		
Probe Positioner Mechanical Tolerance	±0.8	R	√3	1	±0.5	∞
Probe Positioning with respect to Phantom Shell	±6.7	R	√3	1	±3.9	∞
Spatial x-y Resolution	±10.0	R	√3	1	±5.8	∞
Fast SAR z Approximation	±14.0	R	√3	1	±8.1	∞
Test sample Related						
Test Sample Positioning	±2.9	N	1	1	±2.9	145
Device Holder Uncertainty	±3.6	N	1	1	±3.6	5
Output Power Variation - SAR drift measurement	±5.0	R	√3	1	±2.9	∞
Power Scaling	±0	R	√3	0		
Phantom and Setup						
Phantom Uncertainty (shape and thickness tolerances)	±6.6	R	√3	1	±3.8	∞
SAR correction	±1.9	R	√3	0		
Conductivity - measurement uncertainty	±2.5	R	√3	0		
Permittivity - measurement uncertainty	±2.5	R	√3	0		
Temperature - Conductivity	±3.4	R	√3	0		
Temperature - Permittivity	±0.4	R	√3	0		
Combined Standard Uncertainty		RSS			±13.9	748
Coverage Factor for 95%		k=2				
Expanded Uncertainty					±27.8	

7. RESULTS

7.1 The measured Head SAR values for the test device are tabulated below:

LTE700 (Band 17) Head SAR results

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 23780 709.0 MHz	Ch 23790 710.0 MHz	Ch 23800 711.0 MHz	Ch 23780 709.0 MHz	Ch 23790 710.0 MHz	Ch 23800 711.0 MHz		
10MHz Ch BW 1RB 0% offset	RM-940	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.27	23.34	23.17	0.08	0.01	0.18	dB	
		Time-averaged Power [dBm]		23.27	23.34	23.17	1.02	1.00	1.04	Lin	
		Left Cheek	Estimated SAR	-	0.125	-	-	0.125	-	-	-
			Full SAR	-	-	-	-	-	-		
		Left Tilt	Estimated SAR	-	0.070	-	-	0.071	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right Cheek	Estimated SAR	-	0.094	-	-	0.094	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right Tilt	Estimated SAR	-	0.050	-	-	0.050	-	-	-
	Full SAR		-	-	-	-	-	-			
	RM-938	Conducted Power [dBm]		22.73	22.66	22.67	0.62	0.69	0.68	dB	
		Time-averaged Power [dBm]		22.73	22.66	22.67	1.15	1.17	1.17	Lin	
		Left Cheek	Estimated SAR	-	0.126	-	-	0.148	-	0.00	1
			Full SAR	-	0.127	-	-	0.149	-		
10MHz Ch BW 1RB 50% offset		Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.31	23.30	23.26	0.04	0.05	0.09	dB	
		Time-averaged Power [dBm]		23.31	23.30	23.26	1.01	1.01	1.02	Lin	
	No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02										
10MHz Ch BW 1RB 100% offset		Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.27	23.22	23.31	0.08	0.13	0.04	dB	
		Time-averaged Power [dBm]		23.27	23.22	23.31	1.02	1.03	1.01	Lin	
	No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02										
10MHz Ch BW 50% RB 0% offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		22.29	22.27	22.25	0.06	0.08	0.10	dB	
		Time-averaged Power [dBm]		22.29	22.27	22.25	1.01	1.02	1.02	Lin	
	No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02										

(LTE700 Head SAR Table continues)

(LTE700 Head SAR Table continues)

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 23780 709.0 MHz	Ch 23790 710.0 MHz	Ch 23800 711.0 MHz	Ch 23780 709.0 MHz	Ch 23790 710.0 MHz	Ch 23800 711.0 MHz		
10MHz Ch BW 50% RB 50% offset	RM-940	Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		22.33	22.22	22.21	0.02	0.13	0.14	dB	
		Time-averaged Power [dBm]		22.33	22.22	22.21	1.00	1.03	1.03	Lin	
		Left Cheek	Estimated SAR	0.125	-	-	0.126	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Left Tilt	Estimated SAR	0.061	-	-	0.061	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Right Cheek	Estimated SAR	0.087	-	-	0.087	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Right Tilt	Estimated SAR	0.046	-	-	0.047	-	-	-	-
	Full SAR		-	-	-	-	-	-	-	-	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								
10MHz Ch BW 50% RB 100% offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		22.29	22.28	22.21	0.06	0.07	0.14	dB	
		Time-averaged Power [dBm]		22.29	22.28	22.21	1.01	1.02	1.03	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								
10MHz Ch BW 100% RB		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		22.14	22.11	22.19	0.21	0.24	0.16	dB	
		Time-averaged Power [dBm]		22.14	22.11	22.19	1.05	1.06	1.04	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								

850MHz Band Head SAR results

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz	Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz		
GSM	RM-940	Tuning Target + Tolerance [dBm]		32.85			Scaling factor*				
		Conducted Slot Average Power [dBm]		32.63	32.67	32.67	0.22	0.18	0.18	dB	
		Time-averaged power [dBm]		23.60	23.64	23.64	1.05	1.04	1.04	Lin	
		Left Cheek	Estimated SAR	-	0.179	-	-	0.187	-	-	-
Full SAR	-		-	-	-	-	-				
2-slot GPRS	RM-940	Tuning Target + Tolerance [dBm]		30.35			Scaling factor*				
		Conducted Slot Average Power [dBm]		30.01	30.04	30.00	0.34	0.31	0.35	dB	
		Time-averaged power [dBm]		23.99	24.02	23.98	1.08	1.07	1.08	Lin	
		Left Cheek	Estimated SAR	0.132	0.193	0.230	0.143	0.207	0.249	0.01	2
			Full SAR	-	-	0.241	-	-	0.261		
		Left Tilt	Estimated SAR	-	0.102	-	-	0.110	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right Cheek	Estimated SAR	-	0.168	-	-	0.180	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right Tilt	Estimated SAR	-	0.087	-	-	0.093	-	-	-
			Full SAR	-	-	-	-	-	-		
	RM-938	Conducted Slot Average Power [dBm]		30.20	30.18	30.06	0.15	0.17	0.29	dB	
		Time-averaged power [dBm]		24.18	24.16	24.04	1.04	1.04	1.07	Lin	
		Left Cheek	Estimated SAR	0.139	0.178	0.211	0.144	0.185	0.226	0.01	-
			Full SAR	-	-	-	-	-	-		
3-slot GPRS	RM-940	Tuning Target + Tolerance [dBm]		28.55			Scaling factor*				
		Conducted Slot Average Power [dBm]		28.24	28.24	28.14	0.31	0.31	0.41	dB	
		Time-averaged power [dBm]		23.98	23.98	23.88	1.07	1.07	1.10	Lin	
		Left Cheek	Estimated SAR	-	0.188	-	-	0.202	-	-	-
Full SAR	-		-	-	-	-	-				
4-slot GPRS	RM-940	Tuning Target + Tolerance [dBm]		27.35			Scaling factor*				
		Conducted Slot Average Power [dBm]		27.27	27.22	27.13	0.08	0.13	0.22	dB	
		Time-averaged power [dBm]		24.26	24.21	24.12	1.02	1.03	1.05	Lin	
		Left Cheek	Estimated SAR	-	0.196	-	-	0.202	-	-	-
Full SAR	-		-	-	-	-	-				
2-slot 8PSK EGPRS	RM-940	Tuning Target + Tolerance [dBm]		26.35			Scaling factor*				
		Conducted Slot Average Power [dBm]		25.72	25.87	25.92	0.63	0.48	0.43	dB	
		Time-averaged power [dBm]		22.71	22.86	22.91	1.16	1.12	1.10	Lin	
		Left Cheek	Estimated SAR	-	-	0.098	-	-	0.108	-	-
Full SAR	-		-	-	-	-	-				

(850MHz Head SAR Table continues)

(850MHz Head SAR Table continues)

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 4132	Ch 4175	Ch 4233	Ch 4132	Ch 4175	Ch 4233		
				826.4 MHz	835.0 MHz	846.6 MHz	826.4 MHz	835.0 MHz	846.6 MHz		
WCDMA	RM-940	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*				
		Conducted Power [dBm]		23.67	23.50	23.66	0.18	0.35	0.19	dB	
		Time-averaged power [dBm]		23.67	23.50	23.66	1.04	1.08	1.04	Lin	
		Left Cheek	Estimated SAR	-	0.123	-	-	0.133	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Left Tilt	Estimated SAR	-	0.065	-	-	0.071	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Right Cheek	Estimated SAR	0.119	0.123	0.136	0.124	0.133	0.142	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Right Tilt	Estimated SAR	-	0.060	-	-	0.065	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
	RM-938	Conducted Power [dBm]		23.34	23.36	23.46	0.51	0.49	0.39	dB	
		Time-averaged power [dBm]		23.34	23.36	23.46	1.12	1.12	1.09	Lin	
		Right Cheek	Estimated SAR	0.161	0.193	0.208	0.181	0.216	0.228	0.00	3
			Full SAR	-	-	0.207	-	-	0.226		

LTE850 (Band 5) Head SAR results

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 20450 829.0 MHz	Ch 20525 836.5 MHz	Ch 20600 844.0 MHz	Ch 20450 829.0 MHz	Ch 20525 836.5 MHz	Ch 20600 844.0 MHz		
10MHz Ch BW 1RB 0% offset	RM-940	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.06	23.13	23.28	0.29	0.22	0.07	dB	
		Time-averaged Power [dBm]		23.06	23.13	23.28	1.07	1.05	1.02	Lin	
		Left Cheek	Estimated SAR	-	-	0.186	-	-	0.189	-	-
			Full SAR	-	-	-	-	-	-		
		Left Tilt	Estimated SAR	-	-	0.103	-	-	0.105	-	-
			Full SAR	-	-	-	-	-	-		
		Right Cheek	Estimated SAR	-	-	0.174	-	-	0.177	-	-
			Full SAR	-	-	-	-	-	-		
	Right Tilt	Estimated SAR	-	-	0.094	-	-	0.096	-	-	
		Full SAR	-	-	-	-	-	-			
	RM-938	Conducted Power [dBm]		22.98	22.90	22.87	0.37	0.45	0.48	dB	
Time-averaged Power [dBm]		22.98	22.90	22.87	1.09	1.11	1.12	Lin			
Left Cheek		Estimated SAR	-	-	0.182			0.203	0.00	4	
		Full SAR	-	-	0.186			0.208			
10MHz Ch BW 1RB 50% offset		Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.09	23.12	23.24	0.26	0.23	0.11	dB	
		Time-averaged Power [dBm]		23.09	23.12	23.24	1.06	1.05	1.03	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
10MHz Ch BW 1RB 100% offset		Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.06	23.07	23.27	0.29	0.28	0.08	dB	
		Time-averaged Power [dBm]		23.06	23.07	23.27	1.07	1.07	1.02	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

(LTE850 Head SAR Table continues)

(LTE850 Head SAR Table continues)

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 20450 829.0 MHz	Ch 20525 836.5 MHz	Ch 20600 844.0 MHz	Ch 20450 829.0 MHz	Ch 20525 836.5 MHz	Ch 20600 844.0 MHz		
10MHz Ch BW 50% RB 0% offset	RM-940	Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.97	21.97	22.22	0.38	0.38	0.13	dB	
		Time-averaged power [dBm]		21.97	21.97	22.22	1.09	1.09	1.03	Lin	
		Left Cheek	Estimated SAR	-	-	0.142	-	-	0.146	-	-
			Full SAR	-	-	-	-	-	-		
		Left Tilt	Estimated SAR	-	-	0.075	-	-	0.077	-	-
			Full SAR	-	-	-	-	-	-		
		Right Cheek	Estimated SAR	-	-	0.138	-	-	0.142	-	-
			Full SAR	-	-	-	-	-	-		
		Right Tilt	Estimated SAR	-	-	0.074	-	-	0.076	-	-
Full SAR	-		-	-	-	-	-				
10MHz Ch BW 50% RB 50% offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		22.01	22.01	22.19	0.34	0.34	0.16	dB	
		Time-averaged power [dBm]		22.01	22.01	22.19	1.08	1.08	1.04	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
10MHz Ch BW 50% RB 100% offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.91	22.06	22.13	0.44	0.29	0.22	dB	
		Time-averaged power [dBm]		21.91	22.06	22.13	1.11	1.07	1.05	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
10MHz Ch BW 100% RB		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.92	21.89	21.99	0.43	0.46	0.36	dB	
		Time-averaged power [dBm]		21.92	21.89	21.99	1.10	1.11	1.09	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

WCDMA1700/2100 Head SAR results

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 1312	Ch 1412	Ch 1513	Ch 1312	Ch 1412	Ch 1513		
				1712.4 MHz	1732.4 MHz	1752.6 MHz	1712.4 MHz	1732.4 MHz	1752.6 MHz		
WCDMA	RM-940	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*				
		Conducted Power [dBm]		23.63	23.56	23.70	0.22	0.29	0.15	dB	
		Time-averaged power [dBm]		23.63	23.56	23.70	1.05	1.07	1.04	Lin	
		Left Cheek	Estimated SAR	0.196	0.234	0.245	0.206	0.250	0.254	0.01	5
			Full SAR	-	-	0.250	-	-	0.259		
		Left Tilt	Estimated SAR	-	0.110	-	-	0.118	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right Cheek	Estimated SAR	-	0.145	-	-	0.155	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right Tilt	Estimated SAR	-	0.121	-	-	0.129	-	-	-
			Full SAR	-	-	-	-	-	-		
	RM-938	Conducted Power [dBm]		23.55	23.55	23.54	0.30	0.30	0.31	dB	
		Time-averaged power [dBm]		23.55	23.55	23.54	1.07	1.07	1.07	Lin	
		Left Cheek	Estimated SAR	0.144	0.173	0.196	0.154	0.185	0.211	-	-
			Full SAR	-	-	-	-	-	-		

LTE1700/2100 (Band 4) Head SAR results

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #	
				Ch 20050 1720.0 MHz	Ch 23175 1732.5 MHz	Ch 20300 1745.0 MHz	Ch 20050 1720.0 MHz	Ch 23175 1732.5 MHz	Ch 20300 1745.0 MHz			
20MHz Ch BW 1RB 0% offset		Tuning Target + Tolerance [dBm]		23.35			Scaling factor*					
		Conducted Power [dBm]		23.27	23.20	23.28	0.08	0.15	0.07	dB		
		Time-averaged Power [dBm]		23.27	23.20	23.28	1.02	1.04	1.02	Lin		
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								
20MHz Ch BW 1RB 50% offset	RM-940	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*					
		Conducted Power [dBm]		23.17	23.34	23.07	0.18	0.01	0.28	dB		
		Time-averaged Power [dBm]		23.17	23.34	23.07	1.04	1.00	1.07	Lin		
		Left Cheek	Estimated SAR	-	0.086	-	-	0.086	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-	-
		Left Tilt	Estimated SAR	-	0.042	-	-	0.042	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-	-
		Right Cheek	Estimated SAR	-	0.048	-	-	0.048	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-	-
		Right Tilt	Estimated SAR	-	0.044	-	-	0.044	-	-	-	-
	Full SAR		-	-	-	-	-	-	-	-	-	
	RM-938	Conducted Power [dBm]		23.00	22.79	22.90	0.35	0.56	0.45	dB		
		Time-averaged Power [dBm]		23.00	22.79	22.90	1.08	1.14	1.11	Lin		
		Left Cheek	Estimated SAR	-	0.161	-	-	0.183	-	0.00	6	
Full SAR			-	0.164	-	-	0.187	-				
20MHz Ch BW 1RB 100% offset		Tuning Target + Tolerance [dBm]		23.35			Scaling factor*					
		Conducted Power [dBm]		23.26	23.17	22.95	0.09	0.18	0.40	dB		
		Time-averaged Power [dBm]		23.26	23.17	22.95	1.02	1.04	1.10	Lin		
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								
20MHz Ch BW 50% RB 0% offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*					
		Conducted Power [dBm]		21.99	21.98	21.89	0.36	0.37	0.46	dB		
		Time-averaged power [dBm]		21.99	21.98	21.89	1.09	1.09	1.11	Lin		
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								

(LTE1700/2100 Head SAR Table continues)

(LTE1700/2100 Head SAR Table continues)

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 20050 1720.0 MHz	Ch 23175 1732.5 MHz	Ch 20300 1745.0 MHz	Ch 20050 1720.0 MHz	Ch 23175 1732.5 MHz	Ch 20300 1745.0 MHz		
20MHz Ch BW 50% RB 50% offset	RM-940	Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.92	22.01	21.82	0.43	0.34	0.53	dB	
		Time-averaged power [dBm]		21.92	22.01	21.82	1.10	1.08	1.13	Lin	
		Left Cheek	Estimated SAR	-	0.064	-	-	0.069	-	-	-
			Full SAR	-	-	-	-	-	-		
		Left Tilt	Estimated SAR	-	0.031	-	-	0.033	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right Cheek	Estimated SAR	-	0.036	-	-	0.038	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right Tilt	Estimated SAR	-	0.034	-	-	0.037	-	-	-
			Full SAR	-	-	-	-	-	-		
20MHz Ch BW 50% RB 100% offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.80	21.98	21.77	0.55	0.37	0.58	dB	
		Time-averaged power [dBm]		21.80	21.98	21.77	1.14	1.09	1.14	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 100% RB		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.93	22.07	21.91	0.42	0.28	0.44	dB	
		Time-averaged power [dBm]		21.93	22.07	21.91	1.10	1.07	1.11	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

1900MHz Band Head SAR results

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimate d SAR - Full SAR) [W/kg]	Plot #	
				Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz	Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz			
GSM	RM-940	Tuning Target + Tolerance [dBm]		30.35			Scaling factor*					
		Conducted Slot Average Power [dBm]		29.81	30.00	30.07	0.54	0.35	0.28	dB		
		Time-averaged power [dBm]		20.78	20.97	21.04	1.13	1.08	1.07	Lin		
		Left Cheek	Estimated SAR	-	0.096	-	-	0.104	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-	-
2-slot GPRS	RM-940	Tuning Target + Tolerance [dBm]		27.35			Scaling factor*					
		Conducted Slot Average Power [dBm]		26.73	26.95	27.04	0.62	0.40	0.31	dB		
		Time-averaged power [dBm]		20.71	20.93	21.02	1.15	1.10	1.07	Lin		
		Left Cheek	Estimated SAR	0.107	0.100	0.082	0.123	0.110	0.088	-	-	
			Full SAR	-	-	-	-	-	-	-	-	
		Left Tilt	Estimated SAR	-	0.052	-	-	0.057	-	-	-	
			Full SAR	-	-	-	-	-	-	-	-	
		Right Cheek	Estimated SAR	-	0.085	-	-	0.093	-	-	-	
			Full SAR	-	-	-	-	-	-	-	-	
		Right Tilt	Estimated SAR	-	0.049	-	-	0.054	-	-	-	
			Full SAR	-	-	-	-	-	-	-	-	
	RM-938	Conducted Slot Average Power [dBm]		26.94	27.20	27.33	0.41	0.15	0.02	dB		
		Time-averaged power [dBm]		20.92	21.18	21.31	1.10	1.04	1.00	Lin		
		Left Cheek	Estimated SAR	0.107	0.099	0.084	0.118	0.103	0.084	0.01	7	
			Full SAR	0.121	-	-	0.133	-	-	-	-	
	3-slot GPRS	RM-940	Tuning Target + Tolerance [dBm]		25.55			Scaling factor*				
			Conducted Slot Average Power [dBm]		25.08	25.18	25.35	0.47	0.37	0.20	dB	
Time-averaged power [dBm]			20.82	20.92	21.09	1.11	1.09	1.05	Lin			
Left Cheek			Estimated SAR	-	0.099	-	-	0.107	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-	-
4-slot GPRS	RM-940	Tuning Target + Tolerance [dBm]		24.35			Scaling factor*					
		Conducted Slot Average Power [dBm]		23.93	23.99	24.15	0.42	0.36	0.20	dB		
		Time-averaged power [dBm]		20.92	20.98	21.14	1.10	1.09	1.05	Lin		
		Left Cheek	Estimated SAR	-	0.097	-	-	0.105	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-	-

(1900MHz Head SAR Table continues)

(1900MHz Head SAR Table continues)

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz	Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz		
2-slot 8PSK EGPRS	RM-940	Tuning Target + Tolerance [dBm]		25.35			Scaling factor*				
		Conducted Slot Average Power [dBm]		24.95	25.05	25.18	0.40	0.30	0.17	dB	
		Time-averaged power [dBm]		21.94	22.04	22.17	1.10	1.07	1.04	Lin	
		Left Cheek	Estimated SAR	-	-	-	-	-	-	-	-
Full SAR	0.079		-	-	0.087	-	-				
Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz	Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz		
WCDMA	RM-940	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*				
		Conducted Power [dBm]		23.59	23.75	23.74	0.26	0.10	0.11	dB	
		Time-averaged power [dBm]		23.59	23.75	23.74	1.06	1.02	1.03	Lin	
		Left Cheek	Estimated SAR	0.208	0.205	0.194	0.221	0.210	0.199	0.03	8
			Full SAR	0.242	-	-	0.257	-	-		
		Left Tilt	Estimated SAR	-	0.103	-	-	0.105	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right Cheek	Estimated SAR	-	0.165	-	-	0.169	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right Tilt	Estimated SAR	-	0.105	-	-	0.107	-	-	-
			Full SAR	-	-	-	-	-	-		
	RM-938	Conducted Power [dBm]		23.39	23.60	23.61	0.46	0.25	0.24	dB	
		Time-averaged power [dBm]		23.39	23.60	23.61	1.11	1.06	1.06	Lin	
		Left Cheek	Estimated SAR	0.160	0.202	0.164	0.178	0.214	0.173	-	-
			Full SAR	-	-	-	-	-	-		

LTE1900 (Band 2) Head SAR results

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 18700 1860.0 MHz	Ch 18900 1880.0 MHz	Ch 19100 1900.0 MHz	Ch 18700 1860.0 MHz	Ch 18900 1880.0 MHz	Ch 19100 1900.0 MHz		
20MHz Ch BW 1RB 0% offset	RM-940	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.23	23.34	23.17	0.12	0.01	0.18	dB	
		Time-averaged Power [dBm]		23.23	23.34	23.17	1.03	1.00	1.04	Lin	
		Left Cheek	Estimated SAR	-	0.191	-	-	0.191	-	0.01	9
			Full SAR	-	0.183	-	-	0.183	-		
		Left Tilt	Estimated SAR	-	0.087	-	-	0.087	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right Cheek	Estimated SAR	-	0.157	-	-	0.157	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right Tilt	Estimated SAR	-	0.081	-	-	0.081	-	-	-
			Full SAR	-	-	-	-	-	-		
	RM-938	Conducted Power [dBm]		23.23	23.25	23.09	0.12	0.10	0.26	dB	
		Time-averaged Power [dBm]		23.23	23.25	23.09	1.03	1.02	1.06	Lin	
		Left Cheek	Estimated SAR	-	0.162	-	-	0.166	-	-	-
			Full SAR	-	-	-	-	-	-		
20MHz Ch BW 1RB 50% offset		Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.24	23.09	23.19	0.11	0.26	0.16	dB	
		Time-averaged Power [dBm]		23.24	23.09	23.19	1.03	1.06	1.04	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 1RB 100% offset		Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.10	23.01	23.15	0.25	0.34	0.20	dB	
		Time-averaged Power [dBm]		23.10	23.01	23.15	1.06	1.08	1.05	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 50% RB 0% offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.89	21.88	22.01	0.46	0.47	0.34	dB	
		Time-averaged power [dBm]		21.89	21.88	22.01	1.11	1.11	1.08	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

(LTE1900 (Band 2) Head SAR Table continues)

(LTE1900 (Band 2) Head SAR Table continues)

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 18700 1860.0 MHz	Ch 18900 1880.0 MHz	Ch 19100 1900.0 MHz	Ch 18700 1860.0 MHz	Ch 18900 1880.0 MHz	Ch 19100 1900.0 MHz		
20MHz Ch BW 50% RB 50% offset	RM-940	Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.85	21.82	22.06	0.50	0.53	0.29	dB	
		Time-averaged power [dBm]		21.85	21.82	22.06	1.12	1.13	1.07	Lin	
		Left Cheek	Estimated SAR	-	-	0.135	-	-	0.144	-	-
			Full SAR	-	-	-	-	-	-		
		Left Tilt	Estimated SAR	-	-	0.044	-	-	0.047	-	-
			Full SAR	-	-	-	-	-	-		
		Right Cheek	Estimated SAR	-	-	0.103	-	-	0.110	-	-
			Full SAR	-	-	-	-	-	-		
		Right Tilt	Estimated SAR	-	-	0.060	-	-	0.064	-	-
Full SAR	-		-	-	-	-	-				
20MHz Ch BW 50% RB 100% offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.88	21.90	21.96	0.47	0.45	0.39	dB	
		Time-averaged power [dBm]		21.88	21.90	21.96	1.11	1.11	1.09	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 100% RB		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.93	21.90	22.06	0.42	0.45	0.29	dB	
		Time-averaged power [dBm]		21.93	21.90	22.06	1.10	1.11	1.07	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

2450MHz Head SAR results

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 1 2412.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz	Ch 1 2412.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz		
WLAN b-mode DSSS 1Mbps	RM-940	Tuning Target + Tolerance [dBm]		17.50			Scaling factor*				
		Conducted Power [dBm]		16.21	16.00	16.08	1.29	1.50	1.42	dB	
		Time-averaged power [dBm]		16.21	16.00	16.08	1.35	1.41	1.39	Lin	
		Left Cheek	Estimated SAR	0.930	0.944	0.979	1.25	1.33	1.36	0.05	-
			Full SAR	-	-	0.926	-	-	1.28		
		Left Tilt	Estimated SAR	0.745	0.720	0.772	1.00	1.02	1.07	0.03	-
			Full SAR	-	-	0.742	-	-	1.03		
		Right Cheek	Estimated SAR	-	0.407	-	-	0.575	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right Tilt	Estimated SAR	-	0.351	-	-	0.496	-	-	-
			Full SAR	-	-	-	-	-	-		
	RM-938	Conducted Power [dBm]		16.70	16.60	16.74	0.80	0.90	0.76	dB	
		Time-averaged power [dBm]		16.70	16.60	16.74	1.20	1.23	1.19	Lin	
		Left Cheek	Estimated SAR	1.13	1.15	1.15	1.36	1.42	1.37	0.07	-
			Full SAR	-	1.08	-	-	1.33	-		
		Left Cheek Repeated SAR	Estimated SAR	-	-	-	-	-	-	-	10
			Full SAR	-	1.13	-	-	1.39	-		

**5000MHz Head SAR results
5150–5250 MHz and 5250–5350 MHz**

Mode	HW	Device Orientation	SAR Measurement	Measured 1g SAR [W/kg]				Reported* 1g SAR [W/kg]				Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 40 5200.0 MHz	Ch 44 5220.0 MHz	Ch 52 5260.0 MHz	Ch 60 5300.0 MHz	Ch 40 5200.0 MHz	Ch 44 5220.0 MHz	Ch 52 5260.0 MHz	Ch 60 5300.0 MHz		
WLAN a-mode OFDM 6 Mbps Mode	RM-940	Tuning Target + Tolerance [dBm]		14.50				Scaling factor*					
		Conducted Power [dBm]		13.97	13.87	13.82	13.84	0.53	0.63	0.68	0.66	dB	
		Time-averaged power [dBm]		13.97	13.87	13.82	13.84	1.13	1.16	1.17	1.16	Lin	
		Left Cheek	Estimated SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	0.980	0.993	0.972	0.940	1.11	1.15	1.14	1.09	-	-
		Left Tilt	Estimated SAR	-	-	-	-	-	-	-	-	-	11
			Full SAR	-	1.18	1.17	-	-	1.36	1.37	-	-	-
		Right Cheek	Estimated SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	-	0.632	0.623	-	-	0.731	0.729	-	-	-
		Right Tilt	Estimated SAR	-	-	-	-	-	-	-	-	-	-
	Full SAR		-	0.763	0.744	-	-	0.882	0.870	-	-	-	
	Left Tilt Repeated SAR	Estimated SAR	-	-	-	-	-	-	-	-	-	-	
		Full SAR	-	1.13	1.14	-	-	1.31	1.33	-	-	-	
	RM-938	Tuning Target + Tolerance [dBm]		13.50				Scaling factor*					
		Conducted Power [dBm]		-	13.38	12.98	-	-	0.12	0.52	-	dB	
		Time-averaged power [dBm]		-	13.38	12.98	-	-	1.03	1.13	-	Lin	
		Left Tilt	Estimated SAR	-	-	-	-	-	-	-	-	-	-
	Full SAR		-	1.15	1.17	-	-	1.18	1.32	-	-	-	
	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]				Reported* 1g SAR [W/kg]				Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				-	-	Ch 58 5290.0 MHz	-	-	-	Ch 58 5290.0 MHz	-		
WLAN ac-mode OFDM 87.8/ 97.5 Mbps	RM-940	Tuning Target + Tolerance [dBm]		12.50				Scaling factor*					
		Conducted Power [dBm]		-	-	11.25	-	-	-	1.25	-	dB	
		Time-averaged power [dBm]		-	-	11.25	-	-	-	1.33	-	Lin	
		Left Tilt	Estimated SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	-	-	0.425	-	-	-	0.567	-	-	-

**5000MHz Head SAR results
5470–5725 MHz**

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]				Reported* 1g SAR [W/kg]				Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 104 5520.0 MHz	Ch 120 5600.0 MHz	Ch 128 5640.0 MHz	Ch 140 5700.0 MHz	Ch 104 5520.0 MHz	Ch 120 5600.0 MHz	Ch 128 5640.0 MHz	Ch 140 5700.0 MHz		
WLAN a-mode OFDM 6 Mbps	RM-940	Tuning Target + Tolerance [dBm]		14.50				Scaling factor*					
		Conducted Power [dBm]		13.96	13.83	13.87	13.99	0.54	0.67	0.63	0.51	dB	
		Time-averaged power [dBm]		13.96	13.83	13.87	13.99	1.13	1.17	1.16	1.12	Lin	
		Left Cheek	Estimated SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	0.819	0.859	0.866	0.831	0.927	1.00	1.00	0.935		
		Left Tilt	Estimated SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	-	-	0.990	-	-	-	1.15	-		
		Right Cheek	Estimated SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	-	-	0.656	-	-	-	0.758	-		
		Right Tilt	Estimated SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	-	-	0.735	-	-	-	0.850	-		
		Left Tilt Repeated SAR	Estimated SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	-	-	1.03	-	-	-	1.19	-		
	RM-938	Tuning Target + Tolerance [dBm]		13.50				Scaling factor*					
		Conducted Power [dBm]		-	-	12.67	-	-	-	0.83	-	dB	
		Time-averaged power [dBm]		-	-	12.67	-	-	-	1.21	-	Lin	
		Left Tilt	Estimated SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	-	-	0.947	-	-	-	1.15	-		

5000MHz Head SAR results
5725–5850 MHz

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 149 5745.0 MHz	Ch 157 5785.0 MHz	Ch 161 5805.0 MHz	Ch 149 5745.0 MHz	Ch 157 5785.0 MHz	Ch 161 5805.0 MHz		
WLAN a-mode OFDM 6 Mbps	RM-940	Tuning Target + Tolerance [dBm]		14.5			Scaling factor*				
		Conducted Power [dBm]		14.21	14.08	14.06	0.29	0.42	0.44	dB	
		Time-averaged power [dBm]		14.21	14.08	14.06	1.07	1.10	1.11	Lin	
		Left Cheek	Estimated SAR	-	-	-	-	-	-	-	-
			Full SAR	0.749	0.811	0.823	0.801	0.893	0.911		
		Left Tilt	Estimated SAR	-	-	-	-	-	-	-	-
			Full SAR	-	-	0.949	-	-	1.05		
		Right Cheek	Estimated SAR	-	-	-	-	-	-	-	-
			Full SAR	-	-	0.653	-	-	0.723		
		Right Tilt	Estimated SAR	-	-	-	-	-	-	-	-
			Full SAR	-	-	0.751	-	-	0.831		
		Left Tilt Repeated SAR	Estimated SAR	-	-	-	-	-	-	-	-
			Full SAR	-	-	0.979	-	-	1.08		
	RM-938	Left Tilt	Estimated SAR	-	-	-	-	-	-	-	-
			Full SAR	-	-	0.827	-	-	1.05		

**Simultaneous transmissions: Combined head SAR results –
Individual band Max results**

Test configuration	Max. Reported* 1g SAR results					
	WLAN 2450	WLAN 5000	LTE 700	2-slot GPRS850	WCDMA 850	LTE 850
Head: Left, Cheek	1.39	1.15	0.149	0.261	0.133	0.208
Head: Left, Tilt	1.03	1.37	0.071	0.110	0.071	0.105
Head: Right, Cheek	0.658	0.758	0.094	0.180	0.226	0.177
Head: Right, Tilt	0.496	0.882	0.050	0.093	0.065	0.096
Test configuration	Max. Reported* 1g SAR results					
	WCDMA 1700/2100	LTE 1700/2100	2-slot GPRS1900	WCDMA 1900	LTE 1900	-
Head: Left, Cheek	0.259	0.187	0.133	0.257	0.183	-
Head: Left, Tilt	0.118	0.042	0.057	0.105	0.087	-
Head: Right, Cheek	0.155	0.048	0.093	0.169	0.157	-
Head: Right, Tilt	0.129	0.044	0.054	0.107	0.081	-

**Simultaneous transmissions: Combined head SAR results –
Max + Max combined results**

Test configuration	Max. Reported* 1g SAR results				
	LTE700 + WLAN2450	2-slot GPRS850 + WLAN2450	WCDMA850 + WLAN2450	LTE850 + WLAN2450	-
Head: Left, Cheek	1.54	1.65	1.52	1.60	-
Head: Left, Tilt	1.10	1.14	1.10	1.14	-
Head: Right, Cheek	0.752	0.838	0.884	0.835	-
Head: Right, Tilt	0.546	0.589	0.561	0.592	-
Test configuration	Max. Reported* 1g SAR results				
	WCDMA1700/2100 + WLAN2450	LTE1700/2100 + WLAN2450	2-slot GPRS1900 + WLAN2450	WCDMA1900 + WLAN2450	LTE1900 + WLAN2450
Head: Left, Cheek	1.65	1.58	1.52	1.65	1.57
Head: Left, Tilt	1.15	1.07	1.09	1.14	1.12
Head: Right, Cheek	0.813	0.706	0.751	0.827	0.815
Head: Right, Tilt	0.625	0.540	0.550	0.603	0.577
Test configuration	Max. Reported* 1g SAR results				
	LTE700 + WLAN5000	2-slot GPRS850 + WLAN5000	WCDMA850 + WLAN5000	LTE850 + WLAN5000	-
Head: Left, Cheek	1.30	1.41	1.28	1.36	-
Head: Left, Tilt	1.44	1.48	1.44	1.48	-
Head: Right, Cheek	0.852	0.938	0.984	0.935	-
Head: Right, Tilt	0.932	0.975	0.947	0.978	-
Test configuration	Max. Reported* 1g SAR results				
	WCDMA1700/2100 + WLAN5000	LTE1700/2100 + WLAN5000	2-slot GPRS1900 + WLAN5000	WCDMA1900 + WLAN5000	LTE1900 + WLAN5000
Head: Left, Cheek	1.41	1.34	1.28	1.41	1.33
Head: Left, Tilt	1.49	1.41	1.43	1.48	1.46
Head: Right, Cheek	0.913	0.806	0.851	0.927	0.915
Head: Right, Tilt	1.01	0.926	0.936	0.989	0.963

7.1.1 Simultaneous Transmission SAR Test Exclusion Considerations for Head Measurements

Simultaneous transmission SAR test exclusion procedures as described in KDB 447498 D01 v05.

Following table gives antenna pair SAR to peak location separation ratios for the transmitter combinations for which the sum of simultaneously transmitting 1g SAR was above limit (See “Max+Max Combined results” table in previous section).

Antenna Pair SAR to Peak Location Separation Ratio

Left Cheek	2-slot GPRS850	WLAN 2450	LTE850	WLAN 2450	WCDMA 1700/2100	WLAN 2450	WCDMA 1900	WLAN 2450
X [mm]	63.5	27.4	62.9	27.4	65.2	27.4	60.7	27.4
Y [mm]	267.1	324.8	269.1	324.8	252.2	324.8	253.2	324.8
Z [mm]	-174.0	-176.3	-173.4	-176.3	-172.9	-176.3	-172.8	-176.3
DISTANCE [mm]	68.08		66.13		81.94		79.03	
MAX + MAX (Reported SAR)	1.65		1.60		1.65		1.65	
SAR to peak location separation ratio	0.03		0.03		0.03		0.03	

All simultaneous transmitter configurations where all antenna pairs’ SPLSR is equal to or below 0.04 are excluded from expanded zoom scan testing. No expanded zoom scans are needed in this testing.

7.1.2 Area scan based combined Head SAR data

The Combined SAR data given in the tables below has been voluntarily calculated and should be ignored for FCC certification.

The following table gives a more accurate assessment of the SAR values for simultaneous transmission. These values have been calculated using the SPEAG Combined Multiband algorithm, which is based on area scans. It a) converts the 2D area scans into 3D volume scans by assuming frequency-dependent decay characteristics for the E-field, b) sums the SAR values for WLAN2450 or WLAN5000 and the cellular bands point-by-point and c) calculates the combined average SAR values.

**Simultaneous transmissions: Combined head SAR results –
SPEAG Combined Multiband algorithm results**

Test configuration	Max. Reported* 1g SAR results				
	LTE700 + WLAN2450	2-slot GPRS850 + WLAN2450	WCDMA850 + WLAN2450	LTE850 + WLAN2450	-
Head: Left, Cheek	1.45	1.46	1.45	1.46	-
Head: Left, Tilt	-	-	-	-	-
Head: Right, Cheek	-	-	-	-	-
Head: Right, Tilt	-	-	-	-	-
Test configuration	Max. Reported* 1g SAR results				
	WCDMA1700/2100 + WLAN2450	LTE1700/2100 + WLAN2450	2-slot GPRS1900 + WLAN2450	WCDMA1900 + WLAN2450	LTE1900 + WLAN2450
Head: Left, Cheek	1.45	1.46	1.45	1.47	1.46
Head: Left, Tilt	-	-	-	-	-
Head: Right, Cheek	-	-	-	-	-
Head: Right, Tilt	-	-	-	-	-
Test configuration	Max. Reported* 1g SAR results				
	LTE700 + WLAN5000	2-slot GPRS850 + WLAN5000	WCDMA850 + WLAN5000	LTE850 + WLAN5000	-
Head: Left, Cheek	-	-	-	-	-
Head: Left, Tilt	1.19	1.20	1.20	1.21	-
Head: Right, Cheek	-	-	-	-	-
Head: Right, Tilt	-	-	-	-	-
Test configuration	Max. Reported* 1g SAR results				
	WCDMA1700/2100 + WLAN5000	LTE1700/2100 + WLAN5000	2-slot GPRS1900 + WLAN5000	WCDMA1900 + WLAN5000	LTE1900 + WLAN5000
Head: Left, Cheek	-	-	-	-	-
Head: Left, Tilt	1.26	1.19	1.19	1.22	1.22
Head: Right, Cheek	-	-	-	-	-
Head: Right, Tilt	-	-	-	-	-

Plots #: 12-29

Some of the Combined SAR values in the above table are less than the maximum SAR values for the contributing cellular band. This is due to a) minimal overlap of the SAR distributions of the cellular band with WLAN2450 or WLAN5000 and b) uncertainties associated with the different methods of calculation. In these cases, the maximum SAR values given for the combined Modes in the Summary table in Section 1.2 are those for the individual cellular band.

7.2 The measured Body SAR values for the test device are tabulated below:

LTE700 (Band 17) Body SAR results

Mode	HW	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimate d SAR - Full SAR) [W/kg]	Plot #	
					Ch 23780 709.0 MHz	Ch 23790 710.0 MHz	Ch 23800 711.0 MHz	Ch 23780 709.0 MHz	Ch 23790 710.0 MHz	Ch 23800 711.0 MHz			
10MHz Ch BW 1RB 0% offset	RM-940	Tuning Target + Tolerance [dBm]			23.35			Scaling factor*					
		Conducted Power [dBm]			23.27	23.34	23.17	0.08	0.01	0.18	dB		
		Time-averaged power [dBm]			23.27	23.34	23.17	1.02	1.00	1.04	Lin		
		Back facing phantom	Without headset	Estimated SAR	-	0.237	-	-	0.238	-	-	-	-
				Full SAR	-	-	-	-	-	-	-	-	-
			Headset WH-208	Estimated SAR	-	0.257	-	-	0.258	-	-	0.00	30
				Full SAR	-	0.253	-	-	0.253	-	-	-	-
		Display facing phantom	Without headset	Estimated SAR	-	0.176	-	-	0.176	-	-	-	-
				Full SAR	-	-	-	-	-	-	-	-	-
			Headset WH-208	Estimated SAR	-	0.168	-	-	0.168	-	-	-	-
				Full SAR	-	-	-	-	-	-	-	-	-
	RM-938	Conducted Power [dBm]			22.73	22.66	22.67	22.73	22.66	22.67	dB		
		Time-averaged power [dBm]			22.73	22.66	22.67	22.73	22.66	22.67	Lin		
		Back facing phantom	Headset WH-208	Estimated SAR	-	0.177	-	-	0.207	-	-	-	
				Full SAR	-	-	-	-	-	-	-	-	
10MHz Ch BW 1RB 50% offset		Tuning Target + Tolerance [dBm]			23.35			Scaling factor*					
		Conducted Power [dBm]			23.31	23.30	23.26	0.04	0.05	0.09	dB		
		Time-averaged power [dBm]			23.31	23.30	23.26	1.01	1.01	1.02	Lin		
					No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								
10MHz Ch BW 1RB 100% offset		Tuning Target + Tolerance [dBm]			23.35			Scaling factor*					
		Conducted Power [dBm]			23.27	23.22	23.31	0.08	0.13	0.04	dB		
		Time-averaged power [dBm]			23.27	23.22	23.31	1.02	1.03	1.01	Lin		
					No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								

(LTE700 (Band 17) Body SAR Table continues)

(LTE700 (Band 17) Body SAR Table continues)

Mode	HW	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #	
				Ch 23780	Ch 23790	Ch 23800	Ch 23780	Ch 23790	Ch 23800			
				709.0 MHz	710.0 MHz	711.0 MHz	709.0 MHz	710.0 MHz	711.0 MHz			
10MHz Ch BW 50% RB 0% offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*					
		Conducted Power [dBm]		22.29	22.27	22.25	0.06	0.08	0.10	dB		
		Time-averaged power [dBm]		22.29	22.27	22.25	1.01	1.02	1.02	Lin		
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								
10MHz Ch BW 50% RB 50% offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*					
		Conducted Power [dBm]		-	22.22	22.21	0.02	0.13	0.14	dB		
		Time-averaged power [dBm]		22.33	22.22	22.21	1.00	1.03	1.03	Lin		
		Back facing phantom	Without headset	Estimated SAR	0.183	-	-	0.184	-	-	-	-
				Full SAR	-	-	-	-	-	-	-	-
			Headset WH-208	Estimated SAR	0.193	-	-	0.194	-	-	-	-
				Full SAR	-	-	-	-	-	-	-	-
		Display facing phantom	Without headset	Estimated SAR	0.145	-	-	0.146	-	-	-	-
				Full SAR	-	-	-	-	-	-	-	-
			Headset WH-208	Estimated SAR	0.140	-	-	0.141	-	-	-	-
Full SAR	-			-	-	-	-	-	-	-		
10MHz Ch BW 50% RB 100% offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*					
		Conducted Power [dBm]		22.29	22.28	22.21	0.06	0.07	0.14	dB		
		Time-averaged power [dBm]		22.29	22.28	22.21	1.01	1.02	1.03	Lin		
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								
10MHz Ch BW 100% RB		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*					
		Conducted Power [dBm]		22.14	22.11	22.19	0.21	0.24	0.16	dB		
		Time-averaged power [dBm]		22.14	22.11	22.19	1.05	1.06	1.04	Lin		
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								

850MHz Band Body SAR results

Mode	HW	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #	
					Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz	Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz			
2-slot GPRS	RM-940	Tuning Target + Tolerance [dBm]			30.35			Scaling factor*					
		Conducted Slot Average Power [dBm]			30.01	30.04	30.00	0.34	0.31	0.35	dB		
		Time-averaged power [dBm]			23.99	24.02	23.98	1.08	1.07	1.08	Lin		
		Back facing phantom	Without headset	Estimated SAR	-	0.202	-	-	0.217	-	-	-	-
				Full SAR	-	-	-	-	-	-	-	-	
			Headset WH-208	Estimated SAR	0.210	0.230	0.242	0.227	0.247	0.262	0.00	31	
				Full SAR	-	-	0.240	-	-	0.260	-	-	
		Display facing phantom	Without headset	Estimated SAR	-	0.216	-	-	0.232	-	-	-	
				Full SAR	-	-	-	-	-	-	-	-	
			Headset WH-208	Estimated SAR	-	0.215	-	-	0.231	-	-	-	
				Full SAR	-	-	-	-	-	-	-	-	
	RM-938	Conducted Slot Average Power [dBm]			30.20	30.18	30.06	0.15	0.17	0.29	dB		
		Time-averaged power [dBm]			24.18	24.16	24.04	1.04	1.04	1.07	Lin		
		Back facing phantom	Headset WH-208	Estimated SAR	0.229	0.214	0.209	0.237	0.223	0.223	-	-	
				Full SAR	-	-	-	-	-	-	-	-	
Mode		HW	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
	Ch 4132 826.4 MHz					Ch 4175 835.0 MHz	Ch 4233 846.6 MHz	Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz			
WCDMA	RM-940	Tuning Target + Tolerance [dBm]			23.85			Scaling factor*					
		Conducted Power [dBm]			23.67	23.50	23.66	0.18	0.35	0.19	dB		
		Time-averaged power [dBm]			23.67	23.50	23.66	1.04	1.08	1.04	Lin		
		Back facing phantom	Without headset	Estimated SAR	-	0.193	-	-	0.209	-	-	-	-
				Full SAR	-	-	-	-	-	-	-	-	
			Headset WH-208	Estimated SAR	0.218	0.225	0.248	0.227	0.244	0.259	0.00	32	
				Full SAR	-	-	0.249	-	-	0.260	-	-	
		Display facing phantom	Without headset	Estimated SAR	-	0.182	-	-	0.197	-	-	-	
				Full SAR	-	-	-	-	-	-	-	-	
			Headset WH-208	Estimated SAR	-	0.198	-	-	0.215	-	-	-	
				Full SAR	-	-	-	-	-	-	-	-	
	RM-938	Conducted Power [dBm]			23.34	23.36	23.46	0.51	0.49	0.39	dB		
		Time-averaged power [dBm]			23.34	23.36	23.46	1.12	1.12	1.09	Lin		
		Back facing phantom	Headset WH-208	Estimated SAR	0.208	0.217	0.227	0.234	0.243	0.248	-	-	
				Full SAR	-	-	-	-	-	-	-	-	

LTE850 (Band 5) Body SAR results

Mode	HW	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
					Ch 20450 829.0 MHz	Ch 20525 836.5 MHz	Ch 20600 844.0 MHz	Ch 20450 829.0 MHz	Ch 20525 836.5 MHz	Ch 20600 844.0 MHz		
10MHz Ch BW 1RB 0% offset	RM-940	Tuning Target + Tolerance [dBm]			23.35			Scaling factor*				
		Conducted Power [dBm]			23.06	23.13	23.28	0.29	0.22	0.07	dB	
		Time-averaged power [dBm]			23.06	23.13	23.28	1.07	1.05	1.02	Lin	
		Back facing phantom	Without headset	Estimated SAR	-	-	0.199	-	-	0.202	-	-
				Full SAR	-	-	-	-	-	-	-	-
			Headset WH-208	Estimated SAR	-	-	0.206	-	-	0.209	0.00	33
				Full SAR	-	-	0.206	-	-	0.209		
		Display facing phantom	Without headset	Estimated SAR	-	-	0.168	-	-	0.171	-	-
				Full SAR	-	-	-	-	-	-	-	-
			Headset WH-208	Estimated SAR	-	-	0.177	-	-	0.180	-	-
				Full SAR	-	-	-	-	-	-	-	-
	RM-938	Conducted Power [dBm]			-	-	22.87	-	-	0.48	dB	
		Time-averaged power [dBm]			-	-	22.87	-	-	1.12	Lin	
		Back facing phantom	Headset WH-208	Estimated SAR	-	-	0.167	-	-	0.187	-	-
				Full SAR	-	-	-	-	-	-	-	-
10MHz Ch BW 1RB 50% offset		Tuning Target + Tolerance [dBm]			23.35			Scaling factor*				
		Conducted Power [dBm]			23.09	23.12	23.24	0.26	0.23	0.11	dB	
		Time-averaged power [dBm]			23.09	23.12	23.24	1.06	1.05	1.03	Lin	
					No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
10MHz Ch BW 1RB 100% offset		Tuning Target + Tolerance [dBm]			23.35			Scaling factor*				
		Conducted Power [dBm]			23.06	23.07	23.27	0.29	0.28	0.08	dB	
		Time-averaged power [dBm]			23.06	23.07	23.27	1.07	1.07	1.02	Lin	
					No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

(LTE850 Body SAR Table continues)

(LTE850 Body SAR Table continues)

Mode	HW	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #	
					Ch 20450	Ch 20525	Ch 20600	Ch 20450	Ch 20525	Ch 20600			
					829.0 MHz	836.5 MHz	844.0 MHz	829.0 MHz	836.5 MHz	844.0 MHz			
10MHz Ch BW 50% RB 0% offset	RM-940	Tuning Target + Tolerance [dBm]			22.35			Scaling factor*					
		Conducted Power [dBm]			21.97	21.97	22.22	0.38	0.38	0.13	dB		
		Time-averaged power [dBm]			21.97	21.97	22.22	1.09	1.09	1.03	Lin		
		Back facing phantom	Without headset	Estimated SAR	-	-	0.156	-	-	0.161	-	-	
				Full SAR	-	-	-	-	-	-			
			Headset WH-208	Estimated SAR	-	-	0.168	-	-	0.173	-	-	
				Full SAR	-	-	-	-	-	-			
		Display facing phantom	Without headset	Estimated SAR	-	-	0.132	-	-	0.136	-	-	
				Full SAR	-	-	-	-	-	-			
			Headset WH-208	Estimated SAR	-	-	0.139	-	-	0.143	-	-	
				Full SAR	-	-	-	-	-	-			
10MHz Ch BW 50% RB 50% offset		Tuning Target + Tolerance [dBm]			22.35			Scaling factor*					
		Conducted Power [dBm]			22.01	22.01	22.19	0.34	0.34	0.16	dB		
		Time-averaged power [dBm]			22.01	22.01	22.19	1.08	1.08	1.04	Lin		
					No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								
10MHz Ch BW 50% RB 100% offset		Tuning Target + Tolerance [dBm]			22.35			Scaling factor*					
		Conducted Power [dBm]			21.91	22.06	22.13	0.44	0.29	0.22	dB		
		Time-averaged power [dBm]			21.91	22.06	22.13	1.11	1.07	1.05	Lin		
					No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								
10MHz Ch BW 100% RB		Tuning Target + Tolerance [dBm]			22.35			Scaling factor*					
		Conducted Power [dBm]			21.92	21.89	21.99	0.43	0.46	0.36	dB		
		Time-averaged power [dBm]			21.92	21.89	21.99	1.10	1.11	1.09	Lin		
					No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								

WCDMA1700/2100 Body SAR results

Mode	HW	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
					Ch 1312 1712.4 MHz	Ch 1412 1732.4 MHz	Ch 1513 1752.6 MHz	Ch 1312 1712.4 MHz	Ch 1412 1732.4 MHz	Ch 1513 1752.6 MHz		
WCDMA	RM-940	Tuning Target + Tolerance [dBm]			23.85			Scaling factor*				
		Conducted Power [dBm]			23.63	23.56	23.70	0.22	0.29	0.15	dB	
		Time-averaged power [dBm]			23.63	23.56	23.70	1.05	1.07	1.04	Lin	
		Back Facing phantom	Without headset	Estimated SAR	0.161	0.209	0.179	0.169	0.223	0.185	0.04	34
				Full SAR	-	0.167	-	-	0.179	-		
			Headset WH-208	Estimated SAR	-	0.183	-	-	0.196	-	-	-
				Full SAR	-	-	-	-	-	-	-	-
		Display facing phantom	Without headset	Estimated SAR	-	0.149	-	-	0.159	-	-	-
				Full SAR	-	-	-	-	-	-	-	-
			Headset WH-208	Estimated SAR	-	0.149	-	-	0.159	-	-	-
				Full SAR	-	-	-	-	-	-	-	-
	RM-938	Conducted Power [dBm]			23.55	23.55	23.54	0.30	0.30	0.31	dB	
		Time-averaged power [dBm]			23.55	23.55	23.54	1.07	1.07	1.07	Lin	
		Back facing phantom	Without headset	Estimated SAR	0.135	0.161	0.185	0.145	0.173	0.199	-	-
				Full SAR	-	-	-	-	-	-		

LTE1700/2100 (Band 4) Body SAR results

Mode	HW	Test configuration		SAR Measure-ment	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #	
					Ch 20050 1720.0 MHz	Ch 23175 1732.5 MHz	Ch 20300 1745.0 MHz	Ch 20050 1720.0 MHz	Ch 23175 1732.5 MHz	Ch 20300 1745.0 MHz			
10MHz Ch BW 1RB 0% offset		Tuning Target + Tolerance [dBm]			23.35			Scaling factor*					
		Conducted Power [dBm]			23.27	23.20	23.28	0.08	0.15	0.07	dB		
		Time-averaged power [dBm]			23.27	23.20	23.28	1.02	1.04	1.02	Lin		
					No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								
10MHz Ch BW 1RB 50% offset	RM-940	Tuning Target + Tolerance [dBm]			23.35			Scaling factor*					
		Conducted Power [dBm]			23.17	23.34	23.07	0.18	0.01	0.28	dB		
		Time-averaged power [dBm]			23.17	23.34	23.07	1.04	1.00	1.07	Lin		
		Back facing phantom	Without headset	Estimated SAR	-	0.072	-	-	0.072	-	-	-	
				Full SAR	-	-	-	-	-	-	-	-	
			Headset WH-208	Estimated SAR	-	0.075	-	-	0.075	-	-	-	-
				Full SAR	-	-	-	-	-	-	-	-	-
		Display facing phantom	Without headset	Estimated SAR	-	0.066	-	-	0.066	-	-	-	-
				Full SAR	-	-	-	-	-	-	-	-	-
	Headset WH-208		Estimated SAR	-	0.065	-	-	0.065	-	-	-	-	
	Full SAR	-	-	-	-	-	-	-	-	-	-		
	RM-938	Conducted Power [dBm]			-	22.79	-	-	0.56	-	dB		
		Time-averaged power [dBm]			-	22.79	-	-	1.14	-	Lin		
Back facing phantom		Headset WH-208	Estimated SAR	-	0.131	-	-	0.149	-	0.00	35		
			Full SAR	-	0.132	-	-	0.150	-				
10MHz Ch BW 1RB 100% offset		Tuning Target + Tolerance [dBm]			23.35			Scaling factor*					
		Conducted Power [dBm]			23.26	23.17	22.95	0.09	0.18	0.40	dB		
		Time-averaged power [dBm]			23.26	23.17	22.95	1.02	1.04	1.10	Lin		
					No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								
10MHz Ch BW 50% RB 0% offset		Tuning Target + Tolerance [dBm]			22.35			Scaling factor*					
		Conducted Power [dBm]			21.99	21.98	21.89	0.36	0.37	0.46	dB		
		Time-averaged power [dBm]			21.99	21.98	21.89	1.09	1.09	1.11	Lin		
					No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								

(LTE1700/2100 Body SAR Table continues)

(LTE1700/2100 Body SAR Table continues)

Mode	HW	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimate d SAR - Full SAR) [W/kg]	Plot #	
					Ch 20050 1720.0 MHz	Ch 23175 1732.5 MHz	Ch 20300 1745.0 MHz	Ch 20050 1720.0 MHz	Ch 23175 1732.5 MHz	Ch 20300 1745.0 MHz			
10MHz Ch BW 50% RB 50% offset	RM-940	Tuning Target + Tolerance [dBm]			22.35			Scaling factor*					
		Conducted Power [dBm]			21.92	22.01	21.82	0.43	0.34	0.53	dB		
		Time-averaged power [dBm]			21.92	22.01	21.82	1.10	1.08	1.13	Lin		
		Back facing phantom	Without headset	Estimated SAR	-	0.071	-	-	0.077	-	-	-	
				Full SAR	-	-	-	-	-	-	-		
			Headset WH-208	Estimated SAR	-	0.071	-	-	0.076	-	-	-	
				Full SAR	-	-	-	-	-	-	-		
		Display facing phantom	Without headset	Estimated SAR	-	0.050	-	-	0.054	-	-	-	
				Full SAR	-	-	-	-	-	-	-		
			Headset WH-208	Estimated SAR	-	0.050	-	-	0.054	-	-	-	
				Full SAR	-	-	-	-	-	-	-		
10MHz Ch BW 50% RB 100% offset		Tuning Target + Tolerance [dBm]			22.35			Scaling factor*					
		Conducted Power [dBm]			21.80	21.98	21.77	0.55	0.37	0.58	dB		
		Time-averaged power [dBm]			21.80	21.98	21.77	1.14	1.09	1.14	Lin		
					No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								
10MHz Ch BW 100% RB		Tuning Target + Tolerance [dBm]			22.35			Scaling factor*					
		Conducted Power [dBm]			21.93	22.07	21.91	0.42	0.28	0.44	dB		
		Time-averaged power [dBm]			21.93	22.07	21.91	1.10	1.07	1.11	Lin		
					No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								

1900MHz Band Body SAR results

Mode	HW	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #	
					Ch 512	Ch 661	Ch 810	Ch 512	Ch 661	Ch 810			
					1850.2 MHz	1880.0 MHz	1909.8 MHz	1850.2 MHz	1880.0 MHz	1909.8 MHz			
2-slot GPRS	RM-940	Tuning Target + Tolerance [dBm]			27.35			Scaling factor*					
		Conducted Slot Average Power [dBm]			26.73	26.95	27.04	0.62	0.40	0.31	dB		
		Time-averaged power [dBm]			20.71	20.93	21.02	1.15	1.10	1.07	Lin		
		Back facing phantom	Without headset	Estimated SAR	-	0.150	-	-	0.164	-	-	-	
				Full SAR	-	-	-	-	-	-	-	-	
			Headset WH-208	Estimated SAR	-	0.149	-	-	0.163	-	-	-	-
				Full SAR	-	-	-	-	-	-	-	-	-
		Display facing phantom	Without headset	Estimated SAR	0.160	0.151	0.133	0.185	0.166	0.143	0.00	36	
				Full SAR	0.164	-	-	0.189	-	-	-	-	-
			Headset WH-208	Estimated SAR	-	0.149	-	-	0.163	-	-	-	-
				Full SAR	-	-	-	-	-	-	-	-	-
	RM-938	Conducted Slot Average Power [dBm]			26.94	27.20	27.33	0.41	0.15	0.02	dB		
		Time-averaged power [dBm]			20.92	21.18	21.31	1.10	1.04	1.00	Lin		
		Display facing phantom	Without headset	Estimated SAR	0.126	0.122	0.103	0.138	0.126	0.103	-	-	
				Full SAR	-	-	-	-	-	-	-	-	-

(1900MHz Body SAR Table continues)

(1900MHz Body SAR Table continues)

Mode	HW	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
					Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz	Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz		
WCDMA	RM-940	Tuning Target + Tolerance [dBm]			23.85			Scaling factor*				
		Conducted Power [dBm]			23.59	23.75	23.74	0.26	0.10	0.11	dB	
		Time-averaged power [dBm]			23.59	23.75	23.74	1.06	1.02	1.03	Lin	
		Back facing phantom	Without headset	Estimated SAR	-	0.292	-	-	0.299	-	-	-
				Full SAR	-	-	-	-	-	-	-	
		Headset WH-208	Headset WH-208	Estimated SAR	0.325	0.297	0.269	0.345	0.304	0.276	0.00	37
				Full SAR	0.326	-	-	0.346	-	-	-	-
		Display facing phantom	Without headset	Estimated SAR	-	0.286	-	-	0.293	-	-	-
				Full SAR	-	-	-	-	-	-	-	-
		Headset WH-208	Headset WH-208	Estimated SAR	-	0.279	-	-	0.285	-	-	-
				Full SAR	-	-	-	-	-	-	-	-
	RM-938	Conducted Power [dBm]			23.39	23.60	23.61	0.46	0.25	0.24	dB	
		Time-averaged power [dBm]			23.39	23.60	23.61	1.11	1.06	1.06	Lin	
		Back facing phantom	Headset WH-208	Estimated SAR	0.251	0.267	0.243	0.279	0.283	0.257	0.00	-
				Full SAR	-	-	-	-	-	-	-	-

LTE1900 (Band 2) Body SAR results

Mode	HW	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
					Ch 18700 1860.0 MHz	Ch 18900 1880.0 MHz	Ch 19100 1900.0 MHz	Ch 18700 1860.0 MHz	Ch 18900 1880.0 MHz	Ch 19100 1900.0 MHz		
20MHz Ch BW 1RB 0% offset	RM-940	Tuning Target + Tolerance [dBm]			23.35			Scaling factor*				
		Conducted Power [dBm]			23.23	23.34	23.17	0.12	0.01	0.18	dB	
		Time-averaged power [dBm]			23.23	23.34	23.17	1.03	1.00	1.04	Lin	
		Back facing phantom	Without headset	Estimated SAR	-	0.289	-	-	0.290	-	0.00	38
				Full SAR	-	0.291	-	-	0.292	-		
			Headset WH-208	Estimated SAR	-	0.283	-	-	0.284	-	-	-
				Full SAR	-	-	-	-	-	-	-	-
		Display facing phantom	Without headset	Estimated SAR	-	0.261	-	-	0.262	-	-	-
				Full SAR	-	-	-	-	-	-	-	-
			Headset WH-208	Estimated SAR	-	0.263	-	-	0.264	-	-	-
				Full SAR	-	-	-	-	-	-	-	-
	RM-938	Conducted Power [dBm]			23.23	23.25	23.09	0.12	0.10	0.26	dB	
		Time-averaged power [dBm]			23.23	23.25	23.09	1.03	1.02	1.06	Lin	
		Back facing phantom	Without headset	Estimated SAR	-	0.260	-	-	0.266	-	-	-
				Full SAR	-	-	-	-	-	-	-	-
20MHz Ch BW 1RB 50% offset		Tuning Target + Tolerance [dBm]			23.35			Scaling factor*				
		Conducted Power [dBm]			23.24	23.09	23.19	0.11	0.26	0.16	dB	
		Time-averaged power [dBm]			23.24	23.09	23.19	1.03	1.06	1.04	Lin	
					No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 1RB 100% offset		Tuning Target + Tolerance [dBm]			23.35			Scaling factor*				
		Conducted Power [dBm]			23.10	23.01	23.15	0.25	0.34	0.20	dB	
		Time-averaged power [dBm]			23.10	23.01	23.15	1.06	1.08	1.05	Lin	
					No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 50% RB 0% offset		Tuning Target + Tolerance [dBm]			23.35			Scaling factor*				
		Conducted Power [dBm]			21.89	21.88	22.01	0.46	0.47	0.34	dB	
		Time-averaged power [dBm]			21.89	21.88	22.01	1.11	1.11	1.08	Lin	
					No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

(LTE1900 Body SAR Table continues)

(LTE1900 (Band 2) Body SAR Table continues)

Mode	HW	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
					Ch 18700 1860.0 MHz	Ch 18900 1880.0 MHz	Ch 19100 1900.0 MHz	Ch 18700 1860.0 MHz	Ch 18900 1880.0 MHz	Ch 19100 1900.0 MHz		
20MHz Ch BW 50% RB 50% offset	RM-940	Tuning Target + Tolerance [dBm]			22.35			Scaling factor*				
		Conducted Power [dBm]			21.85	21.82	22.06	0.50	0.53	0.29	dB	
		Time-averaged power [dBm]			21.85	21.82	22.06	1.12	1.13	1.07	Lin	
		Back facing phantom	Without headset	Estimated SAR	-	-	0.194	-	-	0.207	-	-
				Full SAR	-	-	-	-	-	-		
			Headset WH-208	Estimated SAR	-	-	0.199	-	-	0.213	-	-
				Full SAR	-	-	-	-	-	-		
		Display facing phantom	Without headset	Estimated SAR	-	-	0.181	-	-	0.193	-	-
				Full SAR	-	-	-	-	-	-		
			Headset WH-208	Estimated SAR	-	-	0.182	-	-	0.195	-	-
				Full SAR	-	-	-	-	-	-		
20MHz Ch BW 50% RB 100% offset		Tuning Target + Tolerance [dBm]			22.35			Scaling factor*				
		Conducted Power [dBm]			21.88	21.90	21.96	0.47	0.45	0.39	dB	
		Time-averaged power [dBm]			21.88	21.90	21.96	1.11	1.11	1.09	Lin	
					No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 100% RB		Tuning Target + Tolerance [dBm]			22.35			Scaling factor*				
		Conducted Power [dBm]			21.93	21.90	22.06	0.42	0.45	0.29	dB	
		Time-averaged power [dBm]			21.93	21.90	22.06	1.10	1.11	1.07	Lin	
					No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

2450MHz Body SAR results

Mode	HW	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #	
					Ch 1 2412.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz	Ch 1 2412.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz			
WLAN b-mode DSSS 1 Mbps	RM-940	Tuning Target + Tolerance [dBm]			17.50			Scaling factor*					
		Conducted Power [dBm]			16.21	16.00	16.08	1.29	1.50	1.42	dB		
		Time-averaged power [dBm]			16.21	16.00	16.08	1.35	1.41	1.39	Lin		
		Back facing phantom	Without headset	Estimated SAR	-	0.088	-	-	0.124	-	-	-	
				Full SAR	-	-	-	-	-	-	-	-	
			Headset WH-208	Estimated SAR	-	0.097	-	-	0.137	-	-	-	-
				Full SAR	-	-	-	-	-	-	-	-	-
		Display facing phantom	Without headset	Estimated SAR	-	0.101	-	-	0.143	-	-	-	-
				Full SAR	-	-	-	-	-	-	-	-	-
			Headset WH-208	Estimated SAR	0.094	0.104	0.107	0.126	0.147	0.148	0.00	39	
				Full SAR	-	-	0.108	-	-	0.150	-	-	-
	RM-938	Conducted Power [dBm]			16.70	16.60	16.74	0.80	0.90	0.76	dB		
		Time-averaged power [dBm]			16.70	16.60	16.74	1.20	1.23	1.19	Lin		
		Display facing phantom	Headset WH-208	Estimated SAR	0.104	0.104	0.113	0.125	0.128	0.135	-	-	
				Full SAR	-	-	-	-	-	-	-	-	-

**5000MHz Body SAR results
5150–5250 MHz and 5250–5350 MHz**

Mode	HW	Test configuration		SAR Measurement	Measured 1g SAR [W/kg]				Reported* 1g SAR [W/kg]				Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #	
					Ch 40 5200.0 MHz	Ch 44 5220.0 MHz	Ch 52 5260.0 MHz	Ch 60 5300.0 MHz	Ch 40 5200.0 MHz	Ch 44 5220.0 MHz	Ch 52 5260.0 MHz	Ch 60 5300.0 MHz			
WLAN a-mode OFDM 6 Mbps	RM-940	Tuning Target + Tolerance [dBm]			14.50				Scaling factor*						
		Conducted Power [dBm]			13.97	13.87	13.82	13.84	0.53	0.63	0.68	0.66	dB		
		Time-averaged power [dBm]			13.97	13.87	13.82	13.84	1.13	1.16	1.17	1.16	Lin		
		Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-	-	-	-	
				Full SAR	0.100	0.099	0.113	0.125	0.113	0.114	0.132	0.146	-	-	
			Headset WH-208	Estimated SAR	-	-	-	-	-	-	-	-	-	-	-
				Full SAR	-	0.134	-	0.135	-	0.155	-	0.157	-	-	-
		Display Facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-	-	-	-	
				Full SAR	-	0.063	-	0.070	-	0.073	-	0.081	-	-	
			Headset WH-208	Estimated SAR	-	-	-	-	-	-	-	-	-	-	-
				Full SAR	-	0.064	-	0.061	-	0.074	-	0.071	-	-	-
	RM-938	Tuning Target + Tolerance [dBm]			13.50				Scaling factor*						
		Conducted Power [dBm]			-	13.38	-	13.11	-	0.12	-	0.39	dB		
		Time-averaged power [dBm]			-	13.38	-	13.11	-	1.03	-	1.09	Lin		
		Back facing phantom	Without headset	Estimated SAR	-	-	-		-	-	-	-	-	-	
				Full SAR	-	0.110	-	0.126	-	0.113	-	0.138	-	-	

5000MHz Body SAR results
5470–5725 MHz

Mode	HW	Test configuration		SAR measurement	Measured 1g SAR [W/kg]				Reported* 1g SAR [W/kg]				Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
					Ch 104	Ch 120	Ch 128	Ch 140	Ch 104	Ch 120	Ch 128	Ch 140		
					5520.0 MHz	5600.0 MHz	5640.0 MHz	5700.0 MHz	5520.0 MHz	5600.0 MHz	5640.0 MHz	5700.0 MHz		
WLAN a-mode OFDM 6 Mbps	RM-940	Tuning Target + Tolerance [dBm]			14.50				Scaling factor*					
		Conducted Power [dBm]			13.96	13.83	13.87	13.99	0.54	0.67	0.63	0.51	dB	
		Time-averaged power [dBm]			13.96	13.83	13.87	13.99	1.13	1.17	1.16	1.12	Lin	
		Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-	-	-	40
				Full SAR	0.163	0.140	0.143	0.120	0.185	0.163	0.165	0.135		
			Headset WH-208	Estimated SAR	-	-	-	-	-	-	-	-	-	-
				Full SAR	0.137	-	-	-	0.155	-	-	-		
		Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-	-	-	-
				Full SAR	0.082	-	-	-	0.092	-	-	-		
			Headset WH-208	Estimated SAR	-	-	-	-	-	-	-	-	-	-
				Full SAR	0.066	-	-	-	0.075	-	-	-		
	RM-938	Tuning Target + Tolerance [dBm]			13.50				Scaling factor*					
		Conducted Power [dBm]			12.91	-	-	-	0.59	-	-	-	dB	
		Time-averaged power [dBm]			12.91	-	-	-	1.15	-	-	-	Lin	
		Back facing phantom	Without headset	Estimated SAR	-	-	-	-		-	-	-	-	-
				Full SAR	0.137	-	-	-	0.157	-	-	-		
Mode	HW	Test configuration		SAR measurement	Measured 1g SAR [W/kg]				Reported* 1g SAR [W/kg]				Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
Ch 106	-				-	-	Ch 106	-	-	-				
					5530.0 MHz	-	-	-	5530.0 MHz	-	-	-		
WLAN ac-mode 87.8/97.5 Mbps	RM-940	Tuning Target + Tolerance [dBm]			12.50				Scaling factor*					
		Conducted Power [dBm]			11.10	-	-	-	1.40	-	-		dB	
		Time-averaged power [dBm]			11.10	-	-	-	1.38	-	-	-	Lin	
		Back facing phantom, without headset		Estimated SAR	-	-	-	-	-	-	-	-	-	
				Full SAR	0.046	-	-	-	0.063	-	-			-

**5000MHz Body SAR results
5725–5850 MHz**

Mode	HW	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #	
					Ch 149 5745.0 MHz	Ch 157 5785.0 MHz	Ch 161 5805.0 MHz	Ch 149 5745.0 MHz	Ch 157 5785.0 MHz	Ch 161 5805.0 MHz			
WLAN a-mode DSSS 6 Mbps	RM-940	Tuning Target + Tolerance [dBm]			14.50			Scaling factor*					
		Conducted Power [dBm]			14.21	14.08	14.06	0.29	0.42	0.44	dB		
		Time-averaged power [dBm]			14.21	14.08	14.06	1.07	1.10	1.11	Lin		
		Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-	-	-
				Full SAR	0.116	0.130	0.122	0.124	0.143	0.135	-	-	
			Headset WH-208	Estimated SAR	-	-	-	-	-	-	-	-	-
				Full SAR	-	0.120	-	-	0.132	-	-	-	-
		Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-	-	-
				Full SAR	-	0.058	-	-	0.064	-	-	-	-
			Headset WH-208	Estimated SAR	-	-	-	-	-	-	-	-	-
				Full SAR	-	0.070	-	-	0.077	-	-	-	-
WLAN a-mode DSSS 6 Mbps	RM-938	Tuning Target + Tolerance [dBm]			13.50			Scaling factor*					
		Conducted Power [dBm]			-	12.69	-	-	0.81	-	dB		
		Time-averaged power [dBm]			-	12.69	-	-	1.21	-	Lin		
		Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-	-	-
				Full SAR	-	0.118	-	-	0.142	-	-	-	-

**Simultaneous transmissions: Combined body SAR results –
Individual band Max results**

Test configuration	Max. Reported* 1g SAR results					
	WLAN 2450	WLAN 5000	LTE 700	2-slot GPRS850	WCDMA 850	LTE 850
Body: Back facing phantom, Without Headset	0.124	0.185	0.238	0.217	0.209	0.202
Body: Back facing phantom, Headset WH-208	0.137	0.157	0.253	0.260	0.260	0.209
Body: Display facing phantom, Without Headset	0.143	0.092	0.176	0.232	0.197	0.171
Body: Display facing phantom, Headset WH-208	0.150	0.077	0.168	0.231	0.215	0.180
Test configuration	Max. Reported* 1g SAR results					
	WCDMA 1700/2100	LTE 1700/2100	2-slot GPRS1900	WCDMA 1900	LTE 1900	-
Body: Back facing phantom, Without Headset	0.179	0.077	0.164	0.299	0.292	-
Body: Back facing phantom, Headset WH-208	0.196	0.150	0.163	0.346	0.284	-
Body: Display facing phantom, Without Headset	0.159	0.066	0.189	0.293	0.262	-
Body: Display facing phantom, Headset WH-208	0.159	0.065	0.163	0.285	0.264	-

Simultaneous transmissions: Combined body SAR results – Max + Max combined results

Test configuration	Max. Reported* 1g SAR results				
	LTE700 + WLAN2450	2-slot GPRS850 + WLAN2450	WCDMA850 + WLAN2450	LTE850 + WLAN2450	-
Body: Back facing phantom, Without Headset	0.362	0.341	0.333	0.326	-
Body: Back facing phantom, Headset WH-208	0.390	0.397	0.397	0.346	-
Body: Display facing phantom, Without Headset	0.319	0.375	0.340	0.314	-
Body: Display facing phantom, Headset WH-208	0.318	0.381	0.365	0.330	-
Test configuration	Max. Reported* 1g SAR results				
	WCDMA1700/2100 + WLAN2450	LTE1700/2100 + WLAN2450	2-slot GPRS1900 + WLAN2450	WCDMA1900 + WLAN2450	LTE1900 + WLAN2450
Body: Back facing phantom, Without Headset	0.303	0.201	0.288	0.423	0.416
Body: Back facing phantom, Headset WH-208	0.333	0.287	0.300	0.483	0.421
Body: Display facing phantom, Without Headset	0.302	0.209	0.332	0.436	0.405
Body: Display facing phantom, Headset WH-208	0.309	0.215	0.313	0.435	0.414
Test configuration	Max. Reported* 1g SAR results				
	LTE700 + WLAN5000	2-slot GPRS850 + WLAN5000	WCDMA850 + WLAN5000	LTE850 + WLAN5000	-
Body: Back facing phantom, Without Headset	0.423	0.402	0.394	0.387	-
Body: Back facing phantom, Headset WH-208	0.410	0.417	0.417	0.366	-
Body: Display facing phantom, Without Headset	0.268	0.324	0.289	0.263	-
Body: Display facing phantom, Headset WH-208	0.245	0.308	0.292	0.257	-
Test configuration	Max. Reported* 1g SAR results				
	WCDMA1700/2100 + WLAN5000	LTE1700/2100 + WLAN5000	2-slot GPRS1900 + WLAN5000	WCDMA1900 + WLAN5000	LTE1900 + WLAN5000
Body: Back facing phantom, Without Headset	0.364	0.262	0.349	0.484	0.477
Body: Back facing phantom, Headset WH-208	0.353	0.307	0.320	0.503	0.441
Body: Display facing phantom, Without Headset	0.251	0.158	0.281	0.385	0.354
Body: Display facing phantom, Headset WH-208	0.236	0.142	0.240	0.362	0.341

Note: Simultaneous Transmission Procedures as described in KDB447498 are not required for this product.

7.2.1 Area scan based on combined Body SAR data

The Combined SAR data given in the tables below has been voluntarily calculated and should be ignored for FCC certification.

The following table gives a more accurate assessment of the SAR values for simultaneous transmission. These values have been calculated using the SPEAG Combined Multiband algorithm, which is based on area scans. It a) converts the 2D area scans into 3D volume scans by assuming frequency-dependent decay characteristics for the E-field, b) sums the SAR values for WLAN2450 or WLAN5000 and the cellular bands point-by-point and c) calculates the combined average SAR values.

**Simultaneous transmissions: Combined body SAR results –
SPEAG Combined Multiband algorithm results**

Test configuration	Max. Reported* 1g SAR results				
	LTE700 + WLAN2450	2-slot GPRS850 + WLAN2450	WCDMA850 + WLAN2450	LTE850 + WLAN2450	-
Body: Back facing phantom, Without Headset	-	-	-	-	-
Body: Back facing phantom, Headset WH-208	0.270	0.275	0.272	0.247	-
Body: Display facing phantom, Without Headset	-	-	-	-	-
Body: Display facing phantom, Headset WH-208	-	-	-	-	-
Test configuration	Max. Reported* 1g SAR results				
	WCDMA1700/2100 + WLAN2450	LTE1700/2100 + WLAN2450	2-slot GPRS1900 + WLAN2450	WCDMA1900 + WLAN2450	LTE1900 + WLAN2450
Body: Back facing phantom, Without Headset	-	-	-	-	-
Body: Back facing phantom, Headset WH-208	0.237	0.193	-	0.362	0.299
Body: Display facing phantom, Without Headset	-	-	0.209	-	-
Body: Display facing phantom, Headset WH-208	-	-	-	-	-

(SPEAG combined table continues)

(SPEAG combined table continues)

Test configuration	Max. Reported* 1g SAR results				
	LTE700 + WLAN5000	2-slot GPRS850 + WLAN5000	WCDMA850 + WLAN5000	LTE850 + WLAN5000	-
Body: Back facing phantom, Without Headset	0.238	-	-	0.202	-
Body: Back facing phantom, Headset WH-208	-	0.264	0.262	-	-
Body: Display facing phantom, Without Headset	-	-	-	-	-
Body: Display facing phantom, Headset WH-208	-	-	-	-	-
Test configuration	Max. Reported* 1g SAR results				
	WCDMA1700/2100 + WLAN5000	LTE1700/2100 + WLAN5000	2-slot GPRS1900 + WLAN5000	WCDMA1900 + WLAN5000	LTE1900 + WLAN5000
Body: Back facing phantom, Without Headset	0.233		0.193	-	0.293
Body: Back facing phantom, Headset WH-208	-	0.183	-	0.348	-
Body: Display facing phantom, Without Headset	-	-	-	-	-
Body: Display facing phantom, Headset WH-208	-	-	-	-	-

Plots #: 41-58

Some of the Combined SAR values in the above table are less than the maximum SAR values for the contributing cellular band. This is due to a) minimal overlap of the SAR distributions of the cellular band with WLAN2450 or WLAN5000 and b) uncertainties associated with the different methods of calculation. In these cases, the maximum SAR values given for the combined Modes in the Summary table in Section 1.2 are those for the individual cellular band.

7.3 Body SAR assessment of Wireless Router mode at 10.0mm separation distance

LTE700 (Band 17) Wireless Router SAR results

Mode	HW	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 23780	Ch 23790	Ch 23800	Ch 23780	Ch 23790	Ch 23800		
				709.0 MHz	710.0 MHz	711.0 MHz	709.0 MHz	710.0 MHz	711.0 MHz		
10MHz Ch BW 1RB 0 % Offset	RM-940	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.27	23.34	23.17	0.08	0.01	0.18	dB	
		Time-averaged power [dBm]		23.27	23.34	23.17	1.02	1.00	1.04	Lin	
		Back facing phantom	Estimated SAR	-	0.326	-	-	0.327	-	0.01	59
			Full SAR	-	0.319	-	-	0.320	-		
		Display facing phantom	Estimated SAR	-	0.273	-	-	0.274	-	-	-
			Full SAR	-	-	-	-	-	-		
		Top edge facing phantom	Estimated SAR	-	0.009	-	-	0.009	-	-	-
			Full SAR	-	-	-	-	-	-		
		Bottom edge facing phantom	Estimated SAR	-	0.083	-	-	0.083	-	-	-
			Full SAR	-	-	-	-	-	-		
		Left edge facing phantom	Estimated SAR	-	0.229	-	-	0.230	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right edge facing phantom	Estimated SAR	-	0.089	-	-	0.090	-	-	-
			Full SAR	-	-	-	-	-	-		
	RM-938	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		22.73	22.66	22.67	0.62	0.69	0.68	dB	
		Time-averaged power [dBm]		22.73	22.66	22.67	1.15	1.17	1.17	Lin	
		Back facing phantom	Estimated SAR	-	0.248	-	-	0.291	-	-	-
			Full SAR	-	-	-	-	-	-		
10MHz Ch BW 1RB 50 % offset		Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.31	23.30	23.26	0.04	0.05	0.09	dB	
		Time-averaged power [dBm]		23.31	23.30	23.26	1.01	1.01	1.02	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
10MHz Ch BW 1RB 100 % offset		Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.27	23.22	23.31	0.08	0.13	0.04	dB	
		Time-averaged power [dBm]		23.27	23.22	23.31	1.02	1.03	1.01	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
10MHz Ch BW 50% RB 0 % offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		22.29	22.27	22.25	0.06	0.08	0.10	dB	
		Time-averaged power [dBm]		22.29	22.27	22.25	1.01	1.02	1.02	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

(LTE700 WR SAR Table continues)

(LTE700 WR SAR Table continues)

Mode	HW	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #	
				Ch 23780 709.0 MHz	Ch 23790 710.0 MHz	Ch 23800 711.0 MHz	Ch 23780 709.0 MHz	Ch 23790 710.0 MHz	Ch 23800 711.0 MHz			
10MHz Ch BW 50% RB 50 % offset	RM-940	Tuning Target + Tolerance [dBm]		22.35			Scaling factor*					
		Conducted Power [dBm]		22.33	22.22	22.21	0.02	0.13	0.14	dB		
		Time-averaged power [dBm]		22.33	22.22	22.21	1.00	1.03	1.03	Lin		
		Back facing phantom	Estimated SAR	0.259	-	-	0.260	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-	-
		Display facing phantom	Estimated SAR	0.217	-	-	0.218	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-	-
		Top edge facing phantom	Estimated SAR	0.007	-	-	0.007	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-	-
		Bottom edge facing phantom	Estimated SAR	0.060	-	-	0.060	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-	-
		Left edge facing phantom	Estimated SAR	0.182	-	-	0.183	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-	-
		Right edge facing phantom	Estimated SAR	0.085	-	-	0.086	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-	-
10MHz Ch BW 50% RB 100 % offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*					
		Conducted Power [dBm]		22.29	22.28	22.21	0.06	0.07	0.14	dB		
		Time-averaged power [dBm]		22.29	22.28	22.21	1.01	1.02	1.03	Lin		
		No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02										
10MHz Ch BW 100% RB		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*					
		Conducted Power [dBm]		22.14	22.11	22.19	0.21	0.24	0.16	dB		
		Time-averaged power [dBm]		22.14	22.11	22.19	1.05	1.06	1.04	Lin		
		No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02										

850MHz Band Wireless Router SAR results

Mode		Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
	HW			Ch 128	Ch 190	Ch 251	Ch 128	Ch 190	Ch 251		
				824.2 MHz	836.6 MHz	848.8 MHz	824.2 MHz	836.6 MHz	848.8 MHz		
2-slot GPRS	RM-940	Tuning Target + Tolerance [dBm]		30.35			Scaling factor*				
		Conducted Slot Average Power [dBm]		30.01	30.04	30.00	0.34	0.31	0.35	dB	
		Time-averaged power [dBm]		23.99	24.02	23.98	1.08	1.07	1.08	Lin	
		Back facing phantom	Estimated SAR	0.248	0.364	0.416	0.268	0.391	0.451	0.01	60
			Full SAR	-	-	0.410	-	-	0.444		
		Display facing phantom	Estimated SAR	-	0.326	-	-	0.350	-	-	-
			Full SAR	-	-	-	-	-	-		
		Top edge facing phantom	Estimated SAR	-	0.020	-	-	0.021	-	-	-
			Full SAR	-	-	-	-	-	-		
		Bottom edge facing phantom	Estimated SAR	-	0.129	-	-	0.139	-	-	-
			Full SAR	-	-	-	-	-	-		
		Left edge facing phantom	Estimated SAR	-	0.105	-	-	0.113	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right edge facing phantom	Estimated SAR	-	0.123	-	-	0.132	-	-	-
			Full SAR	-	-	-	-	-	-		
	RM-938	Tuning Target + Tolerance [dBm]		30.35			Scaling factor*				
		Conducted Slot Average Power [dBm]		30.20	30.18	30.06	0.15	0.17	0.29	dB	
		Time-averaged power [dBm]		24.18	24.16	24.04	1.04	1.04	1.07	Lin	
		Back facing phantom	Estimated SAR	0.318	0.378	0.403	0.329	0.393	0.431	-	-
			Full SAR	-	-	-	-	-	-		

(850MHz band WR SAR Table continues)

(850MHz band WR SAR Table continues)

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz	Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz		
WCDMA	RM-940	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*				
		Conducted Power [dBm]		23.67	23.50	23.66	0.18	0.35	0.19	dB	
		Time-averaged power [dBm]		23.67	23.50	23.66	1.04	1.08	1.04	Lin	
		Back facing phantom	Estimated SAR	0.318	0.352	0.373	0.331	0.382	0.390	0.00	61
			Full SAR	-	-	0.371	-	-	0.388		
		Display facing phantom	Estimated SAR	-	0.284	-	-	0.308	-	-	-
			Full SAR	-	-	-	-	-	-		
		Top edge facing phantom	Estimated SAR	-	0.018	-	-	0.019	-	-	-
			Full SAR	-	-	-	-	-	-		
		Bottom edge facing phantom	Estimated SAR	-	0.124	-	-	0.134	-	-	-
			Full SAR	-	-	-	-	-	-		
		Left edge facing phantom	Estimated SAR	-	0.116	-	-	0.126	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right edge facing phantom	Estimated SAR	-	0.128	-	-	0.139	-	-	-
			Full SAR	-	-	-	-	-	-		
	RM-938	Conducted Power [dBm]		23.34	23.36	23.46	0.51	0.49	0.39	dB	
		Time-averaged power [dBm]		23.34	23.36	23.46	1.12	1.12	1.09	Lin	
		Back facing phantom	Estimated SAR	0.343	0.337	0.347	0.386	0.377	0.380	-	-
			Full SAR	-	-	-	-	-	-		

LTE850 (Band 5) Wireless Router SAR results

Mode	HW	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 20450 829.0 MHz	Ch 20525 836.5 MHz	Ch 20600 844.0 MHz	Ch 20450 829.0 MHz	Ch 20525 836.5 MHz	Ch 20600 844.0 MHz		
10MHz Ch BW 1RB 0 % offset	RM-940	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.06	23.13	23.28	0.29	0.22	0.07	dB	
		Time-averaged power [dBm]		23.06	23.13	23.28	1.07	1.05	1.02	Lin	
		Back facing phantom	Estimated SAR	-	-	0.312	-	-	0.317	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Display facing phantom	Estimated SAR	-	-	0.313	-	-	0.318	0.02	62
			Full SAR	-	-	0.296	-	-	0.301		
		Top edge facing phantom	Estimated SAR	-	-	0.014	-	-	0.014	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Bottom edge facing phantom	Estimated SAR	-	-	0.107	-	-	0.109	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Left edge facing phantom	Estimated SAR	-	-	0.134	-	-	0.136	-	-
	Full SAR		-	-	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	0.086	-	-	0.087	-	-	
		Full SAR	-	-	-	-	-	-	-	-	
	RM-938	Conducted Power [dBm]		-	-	22.87	-	-	0.48	dB	
		Time-averaged power [dBm]		-	-	22.87	-	-	1.12	Lin	
Display facing phantom		Estimated SAR	-	-	0.295	-	-	0.293	-	-	
		Full SAR	-	-	-	-	-	-	-	-	
10MHz Ch BW 1RB 50 % offset		Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.09	23.12	23.24	0.26	0.23	0.11	dB	
		Time-averaged power [dBm]		23.09	23.12	23.24	1.06	1.05	1.03	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
10MHz Ch BW 1RB 100 % offset		Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.06	23.07	23.27	0.29	0.28	0.08	dB	
		Time-averaged power [dBm]		23.06	23.07	23.27	1.07	1.07	1.02	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

(LTE850 (Band 5) WR SAR Table continues)

(LTE850 (Band 5) WR SAR Table continues)

Mode	HW	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 20450	Ch 20525	Ch 20600	Ch 20450	Ch 20525	Ch 20600		
				829.0 MHz	836.5 MHz	844.0 MHz	829.0 MHz	836.5 MHz	844.0 MHz		
10MHz Ch BW 50% RB 0 % offset	RM-940	Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.97	21.97	22.22	0.38	0.38	0.13	dB	
		Time-averaged power [dBm]		21.97	21.97	22.22	1.09	1.09	1.03	Lin	
		Back facing phantom	Estimated SAR	-	-	0.247	-	-	0.255	-	-
			Full SAR	-	-	-	-	-	-		
		Display facing phantom	Estimated SAR	-	-	0.247	-	-	0.255	-	-
			Full SAR	-	-	-	-	-	-		
		Top edge facing phantom	Estimated SAR	-	-	0.011	-	-	0.011	-	-
			Full SAR	-	-	-	-	-	-		
		Bottom edge facing phantom	Estimated SAR	-	-	0.085	-	-	0.087	-	-
			Full SAR	-	-	-	-	-	-		
		Left edge facing phantom	Estimated SAR	-	-	0.103	-	-	0.106	-	-
			Full SAR	-	-	-	-	-	-		
		Right edge facing phantom	Estimated SAR	-	-	0.070	-	-	0.072	-	-
			Full SAR	-	-	-	-	-	-		
10MHz Ch BW 50% RB 50 % offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		22.01	22.01	22.19	0.34	0.34	0.16	dB	
		Time-averaged power [dBm]		22.01	22.01	22.19	1.08	1.08	1.04	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
10MHz Ch BW 50% RB 100 % offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.91	22.06	22.13	0.44	0.29	0.22	dB	
		Time-averaged power [dBm]		21.91	22.06	22.13	1.11	1.07	1.05	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
10MHz Ch BW 100% RB		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.92	21.89	21.99	0.43	0.46	0.36	dB	
		Time-averaged power [dBm]		21.92	21.89	21.99	1.10	1.11	1.09	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

WCDMA1700/2100 Wireless Router SAR results

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 1312 1712.4 MHz	Ch 1412 1732.4 MHz	Ch 1513 1752.6 MHz	Ch 1312 1712.4 MHz	Ch 1412 1732.4 MHz	Ch 1513 1752.6 MHz		
WCDMA	RM-940	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*				
		Conducted Power [dBm]		23.63	23.56	23.70	0.22	0.29	0.15	dB	
		Time-averaged power [dBm]		23.63	23.56	23.70	1.05	1.07	1.04	Lin	
		Back facing phantom	Estimated SAR	0.297	0.337	0.414	0.312	0.360	0.429	0.01	63
			Full SAR	-	-	0.405	-	-	0.419		
		Display facing phantom	Estimated SAR	-	0.336	-	-	0.359	-	-	-
			Full SAR	-	-	-	-	-	-		
		Top edge facing phantom	Estimated SAR	-	0.040	-	-	0.043	-	-	-
			Full SAR	-	-	-	-	-	-		
		Bottom edge facing phantom	Estimated SAR	-	0.184	-	-	0.197	-	-	-
			Full SAR	-	-	-	-	-	-		
		Left edge facing phantom	Estimated SAR	-	0.188	-	-	0.201	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right edge facing phantom	Estimated SAR	-	0.090	-	-	0.096	-	-	-
			Full SAR	-	-	-	-	-	-		
	RM-938	Conducted Power [dBm]		23.55	23.55	23.54	0.30	0.30	0.31	dB	
		Time-averaged power [dBm]		23.55	23.55	23.54	1.07	1.07	1.07	Lin	
		Back facing phantom	Estimated SAR	0.231	0.277	0.318	0.248	0.297	0.342	-	-
			Full SAR	-	-	-	-	-	-		

LTE1700/2100 (Band 4) Wireless Router SAR results

Mode	HW	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 20050 1720.0 MHz	Ch 23175 1732.5 MHz	Ch 20300 1745.0 MHz	Ch 20050 1720.0 MHz	Ch 23175 1732.5 MHz	Ch 20300 1745.0 MHz		
10MHz Ch BW 1RB 0 % offset		Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.27	23.20	23.28	0.08	0.15	0.07	dB	
		Time-averaged power [dBm]		23.27	23.20	23.28	1.02	1.04	1.02	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
10MHz Ch BW 1RB 50 % offset	RM-940	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.17	23.34	23.07	0.18	0.01	0.28	dB	
		Time-averaged power [dBm]		23.17	23.34	23.07	1.04	1.00	1.07	Lin	
		Back facing phantom	Estimated SAR	-	0.134	-	-	0.134	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Display facing phantom	Estimated SAR	-	0.159	-	-	0.159	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Top edge facing phantom	Estimated SAR	-	0.010	-	-	0.010	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Bottom edge facing phantom	Estimated SAR	-	0.068	-	-	0.069	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Left edge facing phantom	Estimated SAR	-	0.035	-	-	0.035	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Right edge facing phantom	Estimated SAR	-	0.098	-	-	0.098	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
	RM-938	Conducted Power [dBm]		-	22.79	-	-	0.56	-	dB	
		Time-averaged power [dBm]		-	22.79	-	-	1.14	-	Lin	
		Display facing phantom	Estimated SAR	-	0.321	-	-	0.365	-	0.02	64
			Full SAR	-	0.340	-	-	0.387	-		
10MHz Ch BW 1RB 100 % offset		Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.26	23.17	22.95	0.09	0.18	0.40	dB	
		Time-averaged power [dBm]		23.26	23.17	22.95	1.02	1.04	1.10	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
10MHz Ch BW 50% RB 0 % offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.99	21.98	21.89	0.36	0.37	0.46	dB	
		Time-averaged power [dBm]		21.99	21.98	21.89	1.09	1.09	1.11	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

(LTE1700/2100 (Band 4) WR SAR Table continues)

(LTE1700/2100 (Band 4) WR SAR Table continues)

Mode	HW	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 20050 1720.0 MHz	Ch 23175 1732.5 MHz	Ch 20300 1745.0 MHz	Ch 20050 1720.0 MHz	Ch 23175 1732.5 MHz	Ch 20300 1745.0 MHz		
10MHz Ch BW 50% RB 50 % offset	RM-940	Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.92	22.01	21.82	0.43	0.34	0.53	dB	
		Time-averaged power [dBm]		21.92	22.01	21.82	1.10	1.08	1.13	Lin	
		Back facing phantom	Estimated SAR	-	0.101	-	-	0.109	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Display facing phantom	Estimated SAR	-	0.114	-	-	0.123	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Top edge facing phantom	Estimated SAR	-	0.008	-	-	0.008	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Bottom edge facing phantom	Estimated SAR	-	0.052	-	-	0.057	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Left edge facing phantom	Estimated SAR	-	0.027	-	-	0.029	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Right edge facing phantom	Estimated SAR	-	0.072	-	-	0.078	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
10MHz Ch BW 50% RB 100 % offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.80	21.98	21.77	0.55	0.37	0.58	dB	
		Time-averaged power [dBm]		21.80	21.98	21.77	1.14	1.09	1.14	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
10MHz Ch BW 100% RB		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.93	22.07	21.91	0.42	0.28	0.44	dB	
		Time-averaged power [dBm]		21.93	22.07	21.91	1.10	1.07	1.11	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

1900MHz Band Wireless Router SAR results

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz	Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz		
2-slot GPRS	RM-940	Tuning Target + Tolerance [dBm]		27.35			Scaling factor*				
		Conducted Slot Average Power [dBm]		26.73	26.95	27.04	0.62	0.40	0.31	dB	
		Time-averaged power [dBm]		20.71	20.93	21.02	1.15	1.10	1.07	Lin	
		Back facing phantom	Estimated SAR	0.322	0.293	0.250	0.371	0.321	0.268	0.00	65
			Full SAR	0.323	-	-	0.373	-	-		
		Display facing phantom	Estimated SAR	-	0.272	-	-	0.298	-	-	-
			Full SAR	-	-	-	-	-	-		
		Top edge facing phantom	Estimated SAR	-	0.019	-	-	0.021	-	-	-
			Full SAR	-	-	-	-	-	-		
		Bottom edge facing phantom	Estimated SAR	-	0.124	-	-	0.136	-	-	-
			Full SAR	-	-	-	-	-	-		
		Left edge facing phantom	Estimated SAR	-	0.129	-	-	0.141	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right edge facing phantom	Estimated SAR	-	0.047	-	-	0.052	-	-	-
			Full SAR	-	-	-	-	-	-		
	RM-938	Conducted Slot Average Power [dBm]		26.94	27.20	27.33	0.41	0.15	0.02	dB	
		Time-averaged power [dBm]		20.92	21.18	21.31	1.10	1.04	1.00	Lin	
		Back facing phantom	Estimated SAR	0.300	0.290	0.256	0.330	0.300	0.257	-	-
			Full SAR	-	-	-	-	-	-		

(1900MHz band WR SAR Table continues)

(1900MHz band WR SAR Table continues)

Mode	HW	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz	Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz		
WCDMA	RM-940	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*				
		Conducted Power [dBm]		23.59	23.75	23.74	0.26	0.10	0.11	dB	
		Time-averaged power [dBm]		23.59	23.75	23.74	1.06	1.02	1.03	Lin	
		Back facing phantom	Estimated SAR	-	0.536	-	-	0.548	-	-	-
			Full SAR	-	-	-	-	-	-		
		Display facing phantom	Estimated SAR	0.488	0.581	0.523	0.518	0.595	0.536	0.02	66
			Full SAR	-	0.597	-	-	0.611	-		
		Top edge facing phantom	Estimated SAR	-	0.037	-	-	0.037	-	-	-
			Full SAR	-	-	-	-	-	-		
		Bottom edge facing phantom	Estimated SAR	-	0.220	-	-	0.225	-	-	-
			Full SAR	-	-	-	-	-	-		
		Left edge facing phantom	Estimated SAR	-	0.292	-	-	0.299	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right edge facing phantom	Estimated SAR	-	0.113	-	-	0.116	-	-	-
			Full SAR	-	-	-	-	-	-		
	RM-938	Conducted Power [dBm]		23.39	23.60	23.61	0.46	0.25	0.24	dB	
		Time-averaged power [dBm]		23.39	23.60	23.61	1.11	1.06	1.06	Lin	
		Display facing phantom	Estimated SAR	0.456	0.450	0.422	0.507	0.477	0.446	-	-
			Full SAR	-	-	-	-	-	-		

LTE1900 (Band 2) Wireless Router SAR results

Mode	HW	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 18700	Ch 18900	Ch 19100	Ch 18700	Ch 18900	Ch 19100		
				1860.0 MHz	1880.0 MHz	1900.0 MHz	1860.0 MHz	1880.0 MHz	1900.0 MHz		
20MHz Ch BW 1RB 0 % offset	RM-940	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.23	23.34	23.17	0.12	0.01	0.18	dB	
		Time-averaged power [dBm]		23.23	23.34	23.17	1.03	1.00	1.04	Lin	
		Back facing phantom	Estimated SAR	-	0.755	-	-	0.757	-	0.00	67
			Full SAR	-	0.751	-	-	0.753	-		
		Display facing phantom	Estimated SAR	-	0.357	-	-	0.358	-	-	-
			Full SAR	-	-	-	-	-	-		
		Top edge facing phantom	Estimated SAR	-	0.041	-	-	0.041	-	-	-
			Full SAR	-	-	-	-	-	-		
		Bottom edge facing phantom	Estimated SAR	-	0.204	-	-	0.204	-	-	-
			Full SAR	-	-	-	-	-	-		
		Left edge facing phantom	Estimated SAR	-	0.242	-	-	0.243	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right edge facing phantom	Estimated SAR	-	0.089	-	-	0.089	-	-	-
			Full SAR	-	-	-	-	-	-		
	RM-938	Conducted Power [dBm]		-	23.25	-	-	0.10	-	dB	
		Time-averaged power [dBm]		-	23.25	-	-	1.02	-	Lin	
Back facing phantom		-	-	0.562	-	-	0.575	-	-	-	
		-	-	-	-	-	-	-			
20MHz Ch BW 1RB 50 % offset		Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.24	23.09	23.19	0.11	0.26	0.16	dB	
		Time-averaged power [dBm]		23.24	23.09	23.19	1.03	1.06	1.04	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 1RB 100 % offset		Tuning Target + Tolerance [dBm]		23.35			Scaling factor*				
		Conducted Power [dBm]		23.10	23.01	23.15	0.25	0.34	0.20	dB	
		Time-averaged power [dBm]		23.10	23.01	23.15	1.06	1.08	1.05	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 50% RB 0 % offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.89	21.88	22.01	0.46	0.47	0.34	dB	
		Time-averaged power [dBm]		21.89	21.88	22.01	1.11	1.11	1.08	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

(LTE1900 (Band 2) WR SAR Table continues)

(LTE1900 (Band 2) WR SAR Table continues)

Mode	HW	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 18700 1860.0 MHz	Ch 18900 1880.0 MHz	Ch 19100 1900.0 MHz	Ch 18700 1860.0 MHz	Ch 18900 1880.0 MHz	Ch 19100 1900.0 MHz		
20MHz Ch BW 50% RB 50 % offset	RM-940	Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.85	21.82	22.06	0.50	0.53	0.29	dB	
		Time-averaged power [dBm]		21.85	21.82	22.06	1.12	1.13	1.07	Lin	
		Back facing phantom	Estimated SAR	-	-	0.412	-	-	0.440	-	-
			Full SAR	-	-	-	-	-	-		
		Display facing phantom	Estimated SAR	-	-	0.251	-	-	0.268	-	-
			Full SAR	-	-	-	-	-	-		
		Top edge facing phantom	Estimated SAR	-	-	0.022	-	-	0.024	-	-
			Full SAR	-	-	-	-	-	-		
		Bottom edge facing phantom	Estimated SAR	-	-	0.145	-	-	0.155	-	-
			Full SAR	-	-	-	-	-	-		
		Left edge facing phantom	Estimated SAR	-	-	0.169	-	-	0.181	-	-
			Full SAR	-	-	-	-	-	-		
		Right edge facing phantom	Estimated SAR	-	-	0.057	-	-	0.061	-	-
			Full SAR	-	-	-	-	-	-		
20MHz Ch BW 50% RB 100 % offset		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.88	21.90	21.96	0.47	0.45	0.39	dB	
		Time-averaged power [dBm]		21.88	21.90	21.96	1.11	1.11	1.09	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 100% RB		Tuning Target + Tolerance [dBm]		22.35			Scaling factor*				
		Conducted Power [dBm]		21.93	21.90	22.06	0.42	0.45	0.29	dB	
		Time-averaged power [dBm]		21.93	21.90	22.06	1.10	1.11	1.07	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

2450MHz Wireless Router SAR results

Mode	HW	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 1	Ch 6	Ch 11	Ch 1	Ch 6	Ch 11		
				2412.0 MHz	2437.0 MHz	2462.0 MHz	2412.0 MHz	2437.0 MHz	2462.0 MHz		
WLAN b-mode DSSS 1 Mbps	RM-940	Tuning Target + Tolerance [dBm]		17.50			Scaling factor*				
		Conducted Power [dBm]		16.21	16.00	16.08	1.29	1.50	1.42	dB	
		Time-averaged power [dBm]		16.21	16.00	16.08	1.35	1.41	1.39	Lin	
		Back facing phantom	Estimated SAR	-	0.163	-	-	0.230	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Display facing phantom	Estimated SAR	0.155	0.179	0.190	0.209	0.253	0.263	0.00	68
			Full SAR	-	-	0.188	-	-	0.261		
		Top edge facing phantom	Estimated SAR	-	0.087	-	-	0.123	-	-	-
			Full SAR	-	-	-	-	-	-		
		Bottom edge facing phantom	Estimated SAR	-	0.052	-	-	0.074	-	-	-
			Full SAR	-	-	-	-	-	-		
		Left edge facing phantom	Estimated SAR	-	0.015	-	-	0.021	-	-	-
			Full SAR	-	-	-	-	-	-		
		Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	-	-
			Full SAR	-	0.090	-	-	0.127	-		
	RM-938	Conducted Power [dBm]		16.70	16.60	16.74	0.80	0.90	0.76	dB	
		Time-averaged power [dBm]		16.70	16.60	16.74	1.20	1.23	1.19	Lin	
		Display facing phantom	Estimated SAR	0.179	0.186	0.190	0.215	0.229	0.226	-	-
			Full SAR	-	-	-	-	-	-		

**Simultaneous transmissions: Combined SAR results
– Individual band Max results**

Test configuration	Max. Reported* 1g SAR results				
	WLAN 2450	LTE 700	2-slot GPRS850	WCDMA 850	LTE 850
Back facing phantom	0.230	0.320	0.444	0.388	0.317
Display facing phantom	0.261	0.274	0.350	0.308	0.301
Top edge facing phantom	0.123	0.009	0.021	0.019	0.014
Bottom edge facing phantom	0.074	0.083	0.139	0.134	0.109
Left edge facing phantom	0.021	0.230	0.113	0.126	0.136
Right edge facing phantom	0.127	0.090	0.132	0.139	0.087
Test configuration	Max. Reported* 1g SAR results				
	WCDMA 1700/2100	LTE 1700/2100	2-slot GPRS1900	WCDMA 1900	LTE 1900
Back facing phantom	0.419	0.134	0.373	0.548	0.753
Display facing phantom	0.359	0.387	0.298	0.611	0.358
Top edge facing phantom	0.043	0.010	0.021	0.037	0.041
Bottom edge facing phantom	0.197	0.069	0.136	0.225	0.204
Left edge facing phantom	0.201	0.035	0.141	0.299	0.243
Right edge facing phantom	0.096	0.098	0.052	0.116	0.089

**Simultaneous transmissions: Combined SAR results
– Max + Max combined results**

Test configuration	Max. Reported* 1g SAR results				
	LTE 700 + WLAN2450	2-slot GPRS850 + WLAN2450	WCDMA 850 + WLAN2450	LTE 850 + WLAN2450	-
Back facing phantom	0.550	0.674	0.618	0.547	-
Display facing phantom	0.535	0.611	0.569	0.562	-
Top edge facing phantom	0.132	0.144	0.142	0.137	-
Bottom edge facing phantom	0.157	0.213	0.208	0.183	-
Left edge facing phantom	0.251	0.134	0.147	0.157	-
Right edge facing phantom	0.217	0.259	0.266	0.214	-
Test configuration	Max. Reported* 1g SAR results				
	WCDMA 1700/2100 + WLAN2450	LTE 1700/2100 + WLAN2450	2-slot GPRS1900 + WLAN2450	WCDMA 1900 + WLAN2450	LTE 1900 + WLAN2450
Back facing phantom	0.649	0.364	0.603	0.778	0.983
Display facing phantom	0.620	0.648	0.559	0.872	0.619
Top edge facing phantom	0.166	0.133	0.144	0.160	0.164
Bottom edge facing phantom	0.271	0.143	0.210	0.299	0.278
Left edge facing phantom	0.222	0.056	0.162	0.320	0.264
Right edge facing phantom	0.223	0.225	0.179	0.243	0.216

Note: Simultaneous Transmission Procedures as described in KDB447498 are not required for this product.

7.3.1 Area scan based combined Body SAR data of Wireless Router mode

The Combined SAR data given in the tables below has been voluntarily calculated and should be ignored for FCC certification.

The following table gives a more accurate assessment of the SAR values for simultaneous transmission. These values have been calculated using the SPEAG Combined Multiband algorithm, which is based on area scans. It a) converts the 2D area scans into 3D volume scans by assuming frequency-dependent decay characteristics for the E-field, b) sums the SAR values for WLAN2450 or WLAN5000 and the cellular bands point-by-point and c) calculates the combined average SAR values. It is these values that appear in the Summary table in Section 1.2.

**Simultaneous transmissions: Combined SAR results –
SPEAG Combined Multiband algorithm results**

Test configuration	Max. Reported* 1g SAR results				
	LTE 700 + WLAN2450	2-slot GPRS850 + WLAN2450	WCDMA 850 + WLAN2450	LTE 850 + WLAN2450	-
Back facing phantom	0.363	0.490	0.428	-	-
Display facing phantom	-	-	-	0.359	-
Top edge facing phantom	-	-	-	-	-
Bottom edge facing phantom	-	-	-	-	-
Left edge facing phantom	-	-	-	-	-
Right edge facing phantom	-	-	-	-	-
Test configuration	Max. Reported* 1g SAR results				
	WCDMA 1700/2100 + WLAN2450	LTE 1700/2100 + WLAN2450	2-slot GPRS1900 + WLAN2450	WCDMA 1900 + WLAN2450	LTE 1900 + WLAN2450
Back facing phantom	0.469	-	0.407	-	0.794
Display facing phantom	-	0.401	-	0.628	-
Top edge facing phantom	-	-	-	-	-
Bottom edge facing phantom	-	-	-	-	-
Left edge facing phantom	-	-	-	-	-
Right edge facing phantom	-	-	-	-	-

Plot #: 69-77

Plots of the Measurement scans are given in Appendix B.

7.4 The measured 10-g Extremity SAR values for the test device are tabulated below

All other bands/communication systems have Wireless Router SAR less than 1.2W/kg for all surfaces and edges, therefore only WLAN5000 need to be tested for Phablet 10-g extremity SAR according to KDB 648474 D04 Handset SAR v01r01. WLAN5000 was not tested for Wireless Router SAR because it does not support WR mode.

5000MHz Extremity SAR results 5150–5250 MHz and 5250–5350 MHz

Mode	HW	Test configuration	SAR Measurement	Measured 10g SAR [W/kg]				Reported* 10g SAR [W/kg]				Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 40 5200.0 MHz	Ch 44 5220.0 MHz	Ch 52 5260.0 MHz	Ch 60 5300.0 MHz	Ch 40 5200.0 MHz	Ch 44 5220.0 MHz	Ch 52 5260.0 MHz	Ch 60 5300.0 MHz		
WLAN a-mode OFDM 6 Mbps	RM-940	Tuning Target + Tolerance [dBm]		14.50				Scaling factor*					
		Conducted Power [dBm]		13.97	13.87	13.82	13.84	0.53	0.63	0.68	0.66	dB	
		Time-averaged power [dBm]		13.97	13.87	13.82	13.84	1.13	1.16	1.17	1.16	Lin	
		Back facing phantom	Estimate d SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	0.323	0.314	0.331	0.335	0.365	0.363	0.387	0.390		
		Display facing phantom	Estimate d SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	0.346	-	-	0.285	0.391	-	-	0.332		
		Top edge facing phantom	Estimate d SAR	-	-	-	-	-	-	-	-	-	78
			Full SAR	0.750	-	-	0.794	0.847	-	-	0.924		
		Bottom edge* facing phantom	Estimate d SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-		
		Left edge facing phantom	Estimate d SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	0.036	-	-	0.035	0.041	-	-	0.041		
		Right edge facing phantom	Estimate d SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	0.028	-	-	0.030	0.032	-	-	0.034		
	RM-938	Tuning Target + Tolerance [dBm]		13.50				Scaling factor*					
		Conducted Power [dBm]		13.28			13.11	0.22			0.39	dB	
		Time-averaged power [dBm]		13.28			13.11	1.05			1.09	Lin	
		Top edge facing phantom	Estimate d SAR									-	-
			Full SAR	0.772	-	-	0.223	0.812			0.244		

(5150–5250 MHz and 5250–5350 MHz table continues)

(5150–5250 MHz and 5250–5350 MHz table continues)

Mode	HW	Test configuration	SAR Measurement	Measured 10g SAR [W/kg]				Reported* 10g SAR [W/kg]				Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				-	-	-	Ch 58	-	-	-	Ch 58		
				-	-	-	5290.0 MHz	-	-	-	5290.0 MHz		
WLAN ac-mode OFDM 87.8/97.5 Mbps	RM-940	Tuning Target + Tolerance [dBm]		12.50				Scaling factor*					
		Conducted Power [dBm]		-	-	-	11.25	-	-	-	1.25	dB	
		Time-averaged power [dBm]		-	-	-	11.25	-	-	-	1.33	Lin	
		Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	0.473		

**5000MHz Extremity SAR results
5470–5725 MHz**

Mode	HW	Device orientation	SAR measurement	Measured 10g SAR [W/kg]				Reported* 10g SAR [W/kg]				Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 104 5520.0 MHz	Ch 120 5600.0 MHz	Ch 128 5640.0 MHz	Ch 140 5700.0 MHz	Ch 104 5520.0 MHz	Ch 120 5600.0 MHz	Ch 128 5640.0 MHz	Ch 140 5700.0 MHz		
WLAN a-mode OFDM 6 Mbps	RM-940	Tuning Target + Tolerance [dBm]		14.50				Scaling factor*					
		Conducted Power [dBm]		13.96	13.83	13.87	13.99	0.54	0.67	0.63	0.51	dB	
		Time-averaged power [dBm]		13.96	13.83	13.87	13.99	1.13	1.17	1.16	1.12	Lin	
		Back facing phantom	Estimated SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	0.317	0.293	0.293	0.284	0.359	0.342	0.339	0.319		
		Display facing phantom	Estimated SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	0.271	-	-	-	0.307	-	-	-		
		Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	0.692	-	-	-	0.784	-	-	-		
		Bottom edge* facing phantom	Estimated SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-		
		Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	0.026	-	-	-	0.029	-	-	-		
		Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	-	-	-	-
			Full SAR	0.048	-	-	-	0.055	-	-	-		
	RM-938	Tuning Target + Tolerance [dBm]		13.50				Scaling factor*					
		Conducted Power [dBm]		12.91	-	-	-	0.59				dB	
		Time-averaged power [dBm]		12.91	-	-	-	1.15				Lin	
		Top edge facing phantom	Estimated SAR	-	-	-	-					-	-
			Full SAR	0.612	-	-	-	0.701					

**5000MHz Extremity SAR results
5725–5850 MHz**

Mode	HW	Device orientation	SAR measurement	Measured 10g SAR [W/kg]			Reported* 10g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 149 5745.0 MHz	Ch 157 5785.0 MHz	Ch 161 5805.0 MHz	Ch 149 5745.0 MHz	Ch 157 5785.0 MHz	Ch 161 5805.0 MHz		
WLAN a-mode OFDM 6 Mbps	RM-940	Tuning Target + Tolerance [dBm]		14.50			Scaling factor*				
		Conducted Power [dBm]		14.21	14.08	14.06	0.29	0.42	0.44	dB	
		Time-averaged power [dBm]		14.21	14.08	14.06	1.07	1.10	1.11	Lin	
		Back facing phantom	Estimated SAR	-	-	-	-	-	-	-	-
			Full SAR	0.273	0.274	0.312	0.292	0.302	0.345		
		Display facing phantom	Estimated SAR	-	-	-	-	-	-	-	-
			Full SAR	-	-	0.287	-	-	0.318		
		Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	-	-
			Full SAR	-	-	0.646	-	-	0.715		
		Bottom* edge facing phantom	Estimated SAR	-	-	-	-	-	-	-	-
			Full SAR	-	-	-	-	-	-		
		Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	-	-
			Full SAR	-	-	0.021	-	-	0.023		
		Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	-	-
			Full SAR	-	-	0.055	-	-	0.061		
WLAN a-mode OFDM 6 Mbps	RM-938	Tuning Target + Tolerance [dBm]		13.5			Scaling factor*				
		Conducted Power [dBm]				12.48			1.02	dB	
		Time-averaged power [dBm]				12.48			1.26	Lin	
		Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	-	-
			Full SAR	-	-	0.561	-	-	0.710		

*Bottom edge is not measured because of distance between WLAN 5GHz antenna and bottom edge is more than 2.5cm (KDB 648474 D04 Handset SAR v01r01).

APPENDIX A: SYSTEM CHECKING SCANS

Plot #1

Date/Time: 2013-07-30 09:32:55

Test Laboratory: CETECOM IST Service

Type: D750V3; Serial: 1041

Communication System: CW750

Frequency: 750 MHz; Duty Cycle: 1:1

Medium: HSL750; Medium Notes: Not Specified

Medium parameters used: $f = 750$ MHz; $\sigma = 0.891$ S/m; $\epsilon_r = 41.496$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(6.54, 6.54, 6.54); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: SAM; Type: SAM; Serial: 1043
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

d=15mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 50.844 V/m

Fast SAR: SAR(1 g) = 2.07 W/kg

Fast SAR(10 g) = 1.42 W/kg

Maximum value of SAR (interpolated) = 2.22 W/kg

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 50.844 V/m

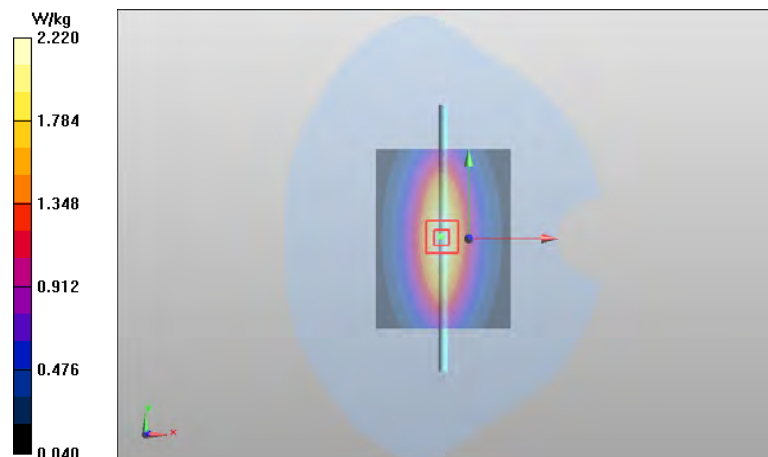
Peak SAR (extrapolated) = 3.13 W/kg

SAR(1 g) = 2.06 W/kg

SAR(10 g) = 1.34 W/kg

Power Drift = -0.09 dB

Maximum value of SAR (measured) = 2.24 W/kg



Plot #2

Date/Time: 2013-09-10 11:17:15

Test Laboratory: CETECOM ICT Services
Type: D750V3; Serial: 1041

Communication System: CW750

Frequency: 750 MHz; Duty Cycle: 1:1

Medium: HSL750; Medium Notes:

Medium parameters used: $f = 750$ MHz; $\sigma = 0.896$ S/m; $\epsilon_r = 41.49$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(6.54, 6.54, 6.54); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: SAM; Type: SAM; Serial: 1043
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.9 (7117)

d=15mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 49.788 V/m

Fast SAR: SAR(1 g) = 2.06 W/kg

Fast SAR(10 g) = 1.41 W/kg

Maximum value of SAR (interpolated) = 2.22 W/kg

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 49.788 V/m

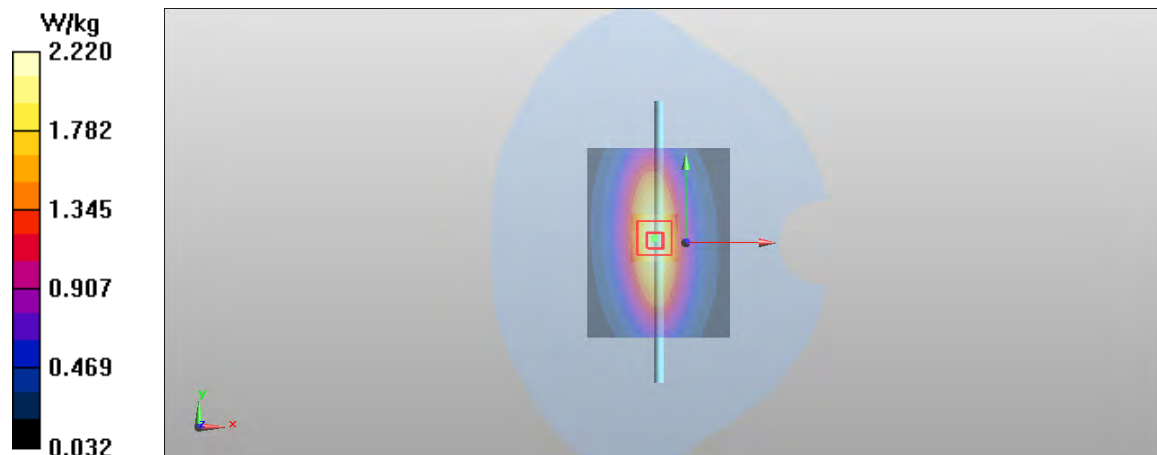
Peak SAR (extrapolated) = 3.13 W/kg

SAR(1 g) = 2.07 W/kg

SAR(10 g) = 1.34 W/kg

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 2.23 W/kg



Plot #3

Date/Time: 2013-09-09 10:05:00

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21.1 C

Medium parameters used: f = 835 MHz; $\sigma = 0.897$ S/m; $\epsilon_r = 40.997$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.2, 6.2, 6.2); Calibrated: 2013-01-21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1355; Calibrated: 2013-01-08
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.9 (7117)

d=15mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 52.504 V/m

Fast SAR: SAR(1 g) = 2.22 W/kg

Fast SAR(10 g) = 1.51 W/kg

Maximum value of SAR (interpolated) = 2.38 W/kg

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 52.504 V/m

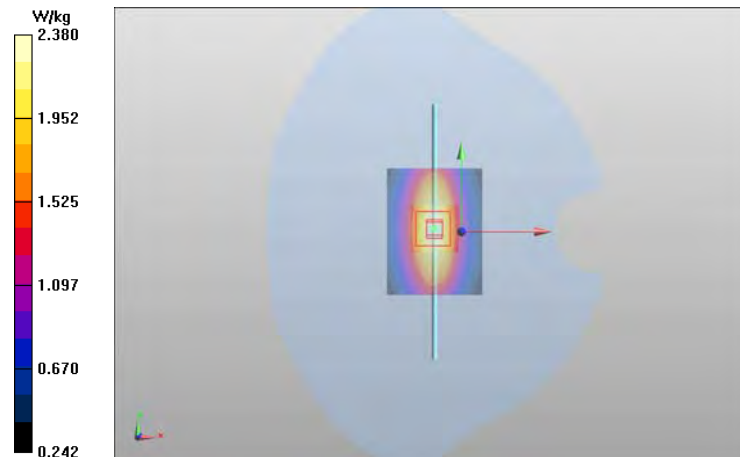
Peak SAR (extrapolated) = 3.23 W/kg

SAR(1 g) = 2.21 W/kg

SAR(10 g) = 1.46 W/kg

Power Drift = 0.02 dB

Maximum value of SAR (measured) = 2.39 W/kg



Plot #4

Date/Time: 2013-07-17 15:30:17

Test Laboratory: CETECOM IST Service

Type: D835V2; Serial: SN:4d153

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL835; Medium Notes: Calibration date: 2013-07-17

Medium parameters used: $f = 835$ MHz; $\sigma = 0.896$ S/m; $\epsilon_r = 41.131$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(6.32, 6.32, 6.32); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: SAM; Type: SAM; Serial: 1043
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

d=15mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 57.649 V/m

Fast SAR: SAR(1 g) = 2.61 W/kg

Fast SAR(10 g) = 1.78 W/kg

Maximum value of SAR (interpolated) = 2.80 W/kg

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.649 V/m

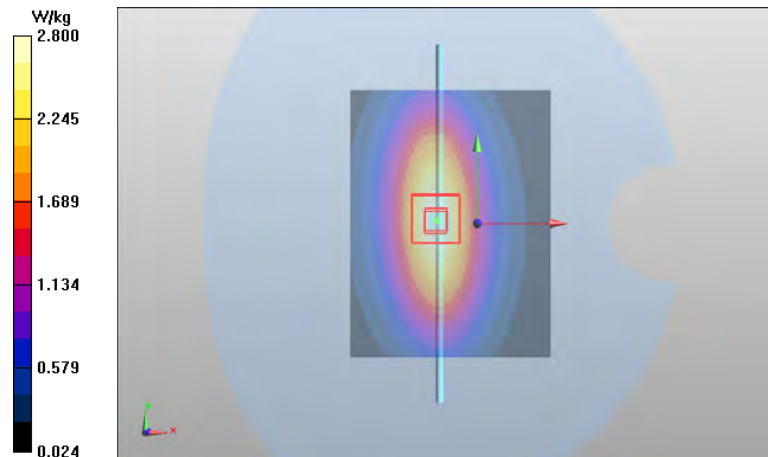
Peak SAR (extrapolated) = 3.95 W/kg

SAR(1 g) = 2.63 W/kg

SAR(10 g) = 1.72 W/kg

Power Drift = -0.19 dB

Maximum value of SAR (measured) = 2.82 W/kg



Plot #5

Date/Time: 2013-08-01 07:24:18

Test Laboratory: TCC Nokia

Type: D1750V2; Serial: D1750V2 - SN:1082

Communication System: CW1750

Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: HSL1800; Medium Notes: t= 20.5 C

Medium parameters used: f = 1750 MHz; $\sigma = 1.318$ S/m; $\epsilon_r = 38.577$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.17, 5.17, 5.17); Calibrated: 2013-06-18;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2013-06-10
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1692
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 88.175 V/m

Fast SAR: SAR(1 g) = 8.88 W/kg

Fast SAR(10 g) = 4.86 W/kg

Maximum value of SAR (interpolated) = 10.3 W/kg

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 88.175 V/m

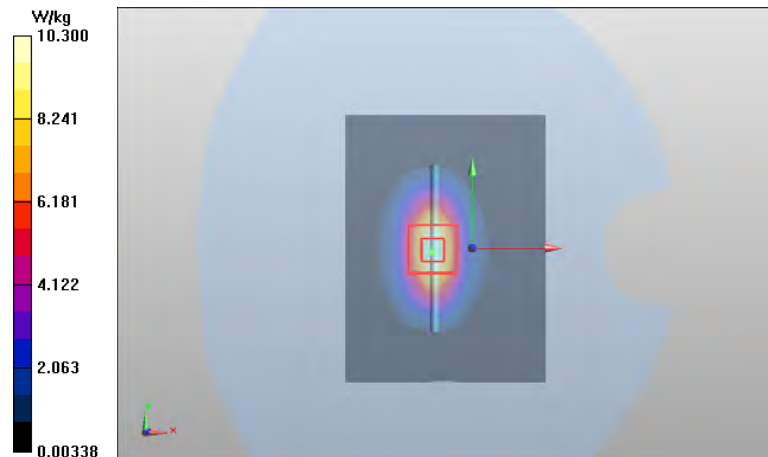
Peak SAR (extrapolated) = 16.2 W/kg

SAR(1 g) = 8.9 W/kg

SAR(10 g) = 4.7 W/kg

Power Drift = 0.02 dB

Maximum value of SAR (measured) = 10.1 W/kg



Plot #6

Date/Time: 2013-07-23 13:30:54

Test Laboratory: CETECOM IST Service
Type: D1750V2; Serial: 1093

Communication System: CW1750

Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: HSL1750; Medium Notes: 2013-07-23

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.379$ S/m; $\epsilon_r = 40.106$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(5.23, 5.23, 5.23); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: SAM; Type: SAM; Serial: 1043
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 88.094 V/m

Fast SAR: SAR(1 g) = 9.55 W/kg

Fast SAR(10 g) = 5.25 W/kg

Maximum value of SAR (interpolated) = 11.1 W/kg

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 88.094 V/m

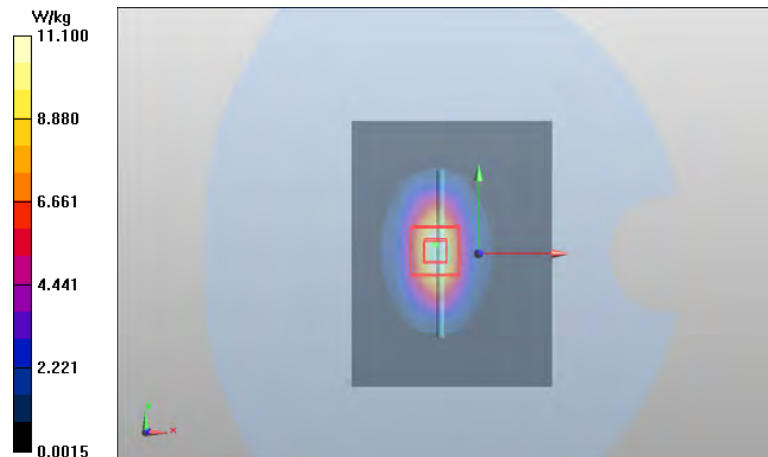
Peak SAR (extrapolated) = 17.6 W/kg

SAR(1 g) = 9.52 W/kg

SAR(10 g) = 5.01 W/kg

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 10.7 W/kg



Plot #7

Date/Time: 2013-09-17 14:23:18

Test Laboratory: TCC Nokia

Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 20.6 C

Medium parameters used: f = 1900 MHz; $\sigma = 1.416$ S/m; $\epsilon_r = 38.639$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.98, 4.98, 4.98); Calibrated: 2013-06-18;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2013-06-10
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.9 (7117)

d=10mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 90.359 V/m

Fast SAR: SAR(1 g) = 10.4 W/kg

Fast SAR(10 g) = 5.47 W/kg

Maximum value of SAR (interpolated) = 11.9 W/kg

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 90.359 V/m

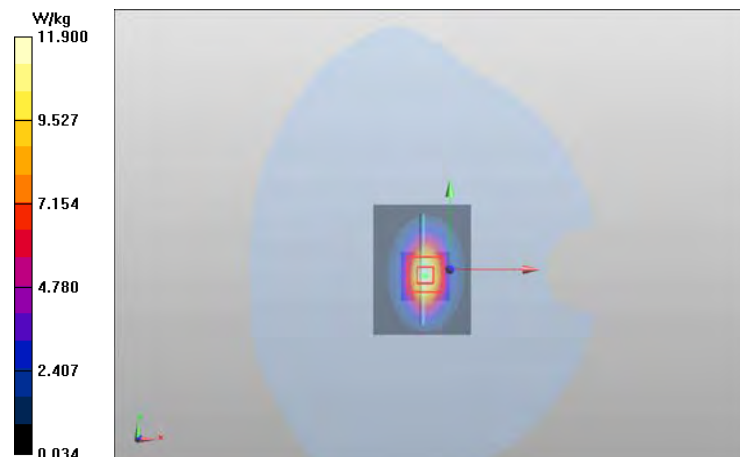
Peak SAR (extrapolated) = 19.1 W/kg

SAR(1 g) = 10.4 W/kg

SAR(10 g) = 5.39 W/kg

Power Drift = -0.06 dB

Maximum value of SAR (measured) = 11.6 W/kg



Plot #8

Date/Time: 2013-07-25 09:03:33

Test Laboratory: CETECOM IST Service
Type: D1900V2; Serial: 5d009

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: 2013-07-25

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.404$ S/m; $\epsilon_r = 38.968$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(5.06, 5.06, 5.06); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: SAM; Type: SAM; Serial: 1043
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 91.263 V/m

Fast SAR: SAR(1 g) = 10 W/kg

Fast SAR(10 g) = 5.3 W/kg

Maximum value of SAR (interpolated) = 11.8 W/kg

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 91.263 V/m

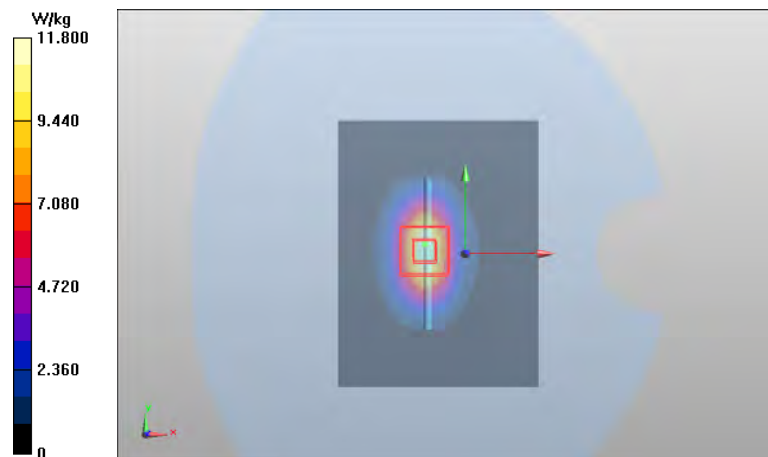
Peak SAR (extrapolated) = 18.4 W/kg

SAR(1 g) = 10 W/kg

SAR(10 g) = 5.19 W/kg

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 11.2 W/kg



Plot #9

Date/Time: 2013-08-12 09:03:57

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 21.3 C

Medium parameters used: f = 2450 MHz; $\sigma = 1.781$ S/m; $\epsilon_r = 37.699$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3834
- ConvF(6.88, 6.88, 6.88); Calibrated: 2013-01-23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2013-01-11
- Phantom: #4 SAM, SAR4 ; Type: QD000P40CD; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 92.798 V/m

Fast SAR: SAR(1 g) = 13.3 W/kg

Fast SAR(10 g) = 5.89 W/kg

Maximum value of SAR (interpolated) = 15.4 W/kg

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 92.798 V/m

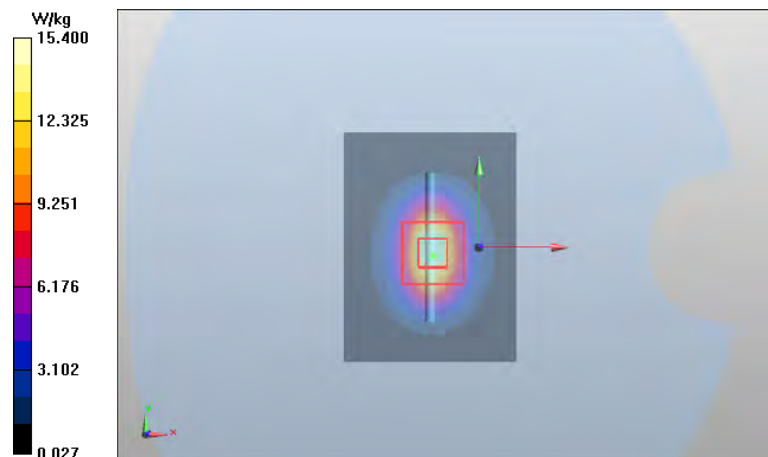
Peak SAR (extrapolated) = 27.5 W/kg

SAR(1 g) = 13.2 W/kg

SAR(10 g) = 6.07 W/kg

Power Drift = -0.11 dB

Maximum value of SAR (measured) = 15.1 W/kg



Plot #10

Date/Time: 2013-07-30 07:47:57

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1048

Communication System: CW5200

Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: HSL5000; Medium Notes: t= 22.4 C

Medium parameters used: f = 5200 MHz; $\sigma = 4.471$ S/m; $\epsilon_r = 35.404$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(4.51, 4.51, 4.51); Calibrated: 2013-01-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=100mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 63.203 V/m

Fast SAR: SAR(1 g) = 7.22 W/kg

Fast SAR(10 g) = 2.01 W/kg

Maximum value of SAR (interpolated) = 15.9 W/kg

d=10mm, Pin=100mW/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 63.203 V/m

Peak SAR (extrapolated) = 29.0 W/kg

SAR(1 g) = 7.59 W/kg

SAR(10 g) = 2.19 W/kg

Power Drift = -0.23 dB

Maximum value of SAR (measured) = 14.6 W/kg



Plot #11

Date/Time: 2013-08-12 14:39:09

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1048

Communication System: CW5300

Frequency: 5300 MHz; Duty Cycle: 1:1

Medium: HSL5000; Medium Notes: t= 21.0 C

Medium parameters used: f = 5300 MHz; $\sigma = 4.549$ S/m; $\epsilon_r = 35.216$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(4.29, 4.29, 4.29); Calibrated: 2013-01-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=100mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 62.291 V/m

Fast SAR: SAR(1 g) = 7.49 W/kg

Fast SAR(10 g) = 2.1 W/kg

Maximum value of SAR (interpolated) = 16.5 W/kg

d=10mm, Pin=100mW Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 62.291 V/m

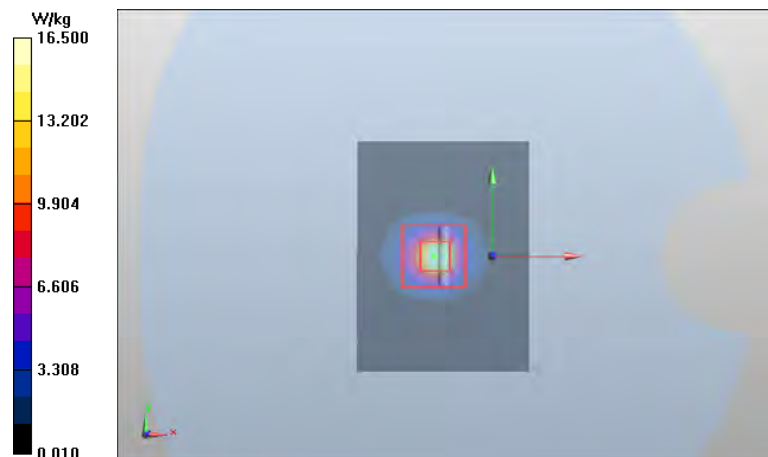
Peak SAR (extrapolated) = 31.3 W/kg

SAR(1 g) = 8.13 W/kg

SAR(10 g) = 2.3 W/kg

Power Drift = 0.14 dB

Maximum value of SAR (measured) = 15.2 W/kg



Plot #12

Date/Time: 2013-07-31 06:32:13

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1048

Communication System: CW5500

Frequency: 5500 MHz; Duty Cycle: 1:1

Medium: HSL5000; Medium Notes: t= 22.5 C

Medium parameters used: f = 5500 MHz; $\sigma = 4.751$ S/m; $\epsilon_r = 35.125$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(4.17, 4.17, 4.17); Calibrated: 2013-01-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=100mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 63.170 V/m

Fast SAR: SAR(1 g) = 7.54 W/kg

Fast SAR(10 g) = 2.04 W/kg

Maximum value of SAR (interpolated) = 17.1 W/kg

d=10mm, Pin=100mW/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 63.170 V/m

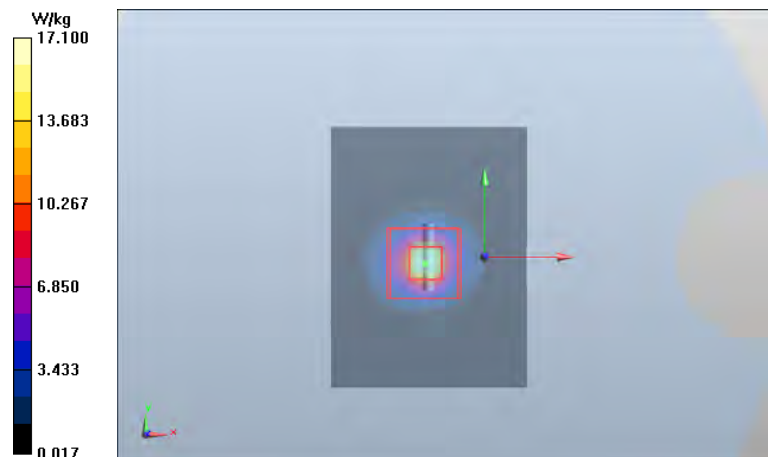
Peak SAR (extrapolated) = 32.7 W/kg

SAR(1 g) = 7.98 W/kg

SAR(10 g) = 2.25 W/kg

Power Drift = -0.12 dB

Maximum value of SAR (measured) = 15.2 W/kg



Plot #13

Date/Time: 2013-07-31 07:10:31

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1048

Communication System: CW5600

Frequency: 5600 MHz; Duty Cycle: 1:1

Medium: HSL5000; Medium Notes: t= 22.5 C

Medium parameters used: f = 5600 MHz; $\sigma = 4.862$ S/m; $\epsilon_r = 35.008$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(4.1, 4.1, 4.1); Calibrated: 2013-01-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=100mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 62.051 V/m

Fast SAR: SAR(1 g) = 7.68 W/kg

Fast SAR(10 g) = 2.09 W/kg

Maximum value of SAR (interpolated) = 17.3 W/kg

d=10mm, Pin=100mW/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 62.051 V/m

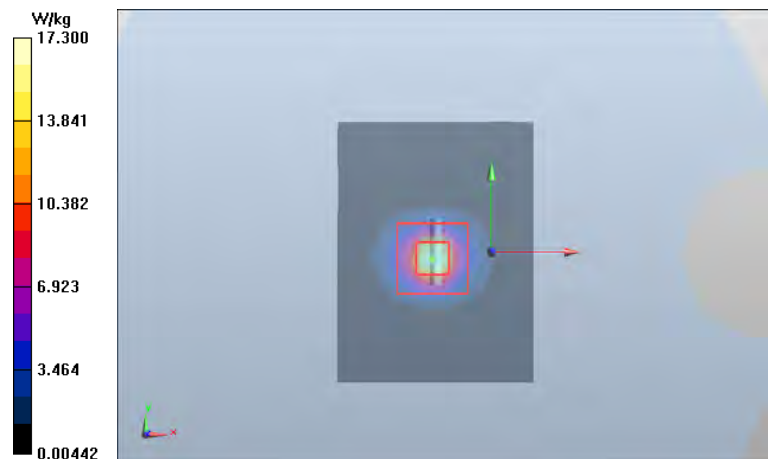
Peak SAR (extrapolated) = 34.0 W/kg

SAR(1 g) = 8.13 W/kg

SAR(10 g) = 2.3 W/kg

Power Drift = -0.10 dB

Maximum value of SAR (measured) = 15.7 W/kg



Plot #14

Date/Time: 2013-09-16 16:21:40

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1048

Communication System: CW5800

Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: HSL5000; Medium Notes: t= 20.7 C

Medium parameters used: f = 5800 MHz; $\sigma = 5.239$ S/m; $\epsilon_r = 35.204$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(4.08, 4.08, 4.08); Calibrated: 2013-01-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.9 (7117)

d=10mm, Pin=100mW 5800/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 54.632 V/m

Fast SAR: SAR(1 g) = 7.34 W/kg

Fast SAR(10 g) = 2.06 W/kg

Maximum value of SAR (interpolated) = 16.9 W/kg

d=10mm, Pin=100mW 5800/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 54.632 V/m

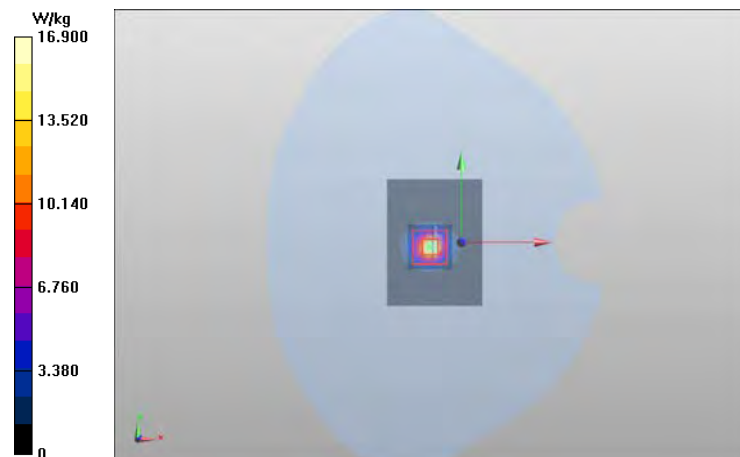
Peak SAR (extrapolated) = 34.0 W/kg

SAR(1 g) = 7.74 W/kg

SAR(10 g) = 2.17 W/kg

Power Drift = -0.11 dB

Maximum value of SAR (measured) = 14.9 W/kg



Plot #15

Date/Time: 2013-07-27 11:57:40

Test Laboratory: CETECOM IST Service
Type: D750V3; Serial: 1041

Communication System: CW750

Frequency: 750 MHz; Duty Cycle: 1:1

Medium: MSL750; Medium Notes: Not Specified

Medium parameters used: $f = 750$ MHz; $\sigma = 0.972$ S/m; $\epsilon_r = 56.221$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(6.36, 6.36, 6.36); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASYS2, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

d=15mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 49.944 V/m

Fast SAR: SAR(1 g) = 2.2 W/kg

Fast SAR(10 g) = 1.5 W/kg

Maximum value of SAR (interpolated) = 2.37 W/kg

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 49.944 V/m

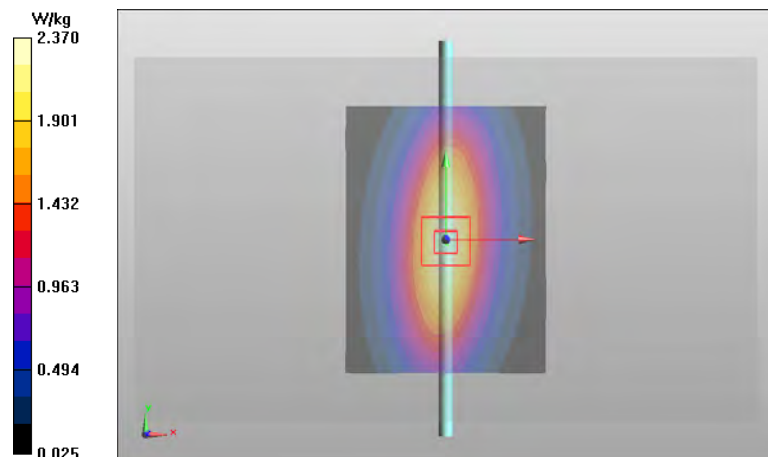
Peak SAR (extrapolated) = 3.23 W/kg

SAR(1 g) = 2.21 W/kg

SAR(10 g) = 1.47 W/kg

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 2.38 W/kg



Plot #16

Date/Time: 2013-09-11 09:45:54

Test Laboratory: CETECOM ICT Services

Type: D750V3; Serial: 1041

Communication System: CW750

Frequency: 750 MHz; Duty Cycle: 1:1

Medium: MSL750; Medium Notes:

Medium parameters used: $f = 750$ MHz; $\sigma = 0.955$ S/m; $\epsilon_r = 55.233$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(6.36, 6.36, 6.36); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.9 (7117)

d=15mm, Pin=250mW/Area Scan (81x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 49.755 V/m

Fast SAR: SAR(1 g) = 2.15 W/kg

Fast SAR(10 g) = 1.46 W/kg

Maximum value of SAR (interpolated) = 2.31 W/kg

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 49.755 V/m

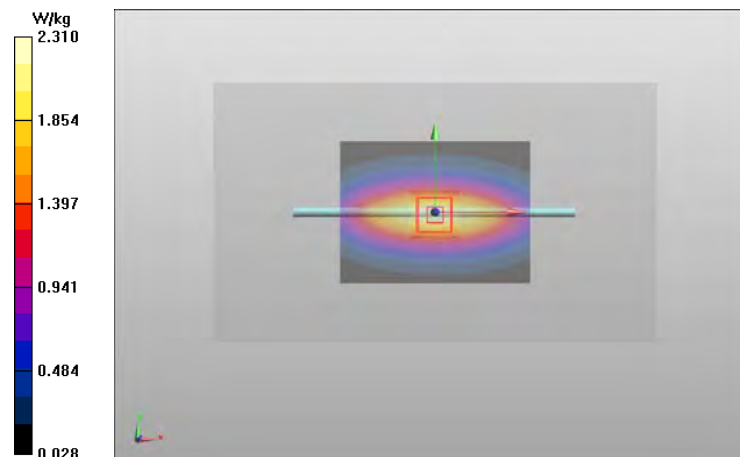
Peak SAR (extrapolated) = 3.13 W/kg

SAR(1 g) = 2.13 W/kg

SAR(10 g) = 1.41 W/kg

Power Drift = -0.06 dB

Maximum value of SAR (measured) = 2.30 W/kg



Plot #17

Date/Time: 2013-09-05 16:26:24

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 22,5 C

Medium parameters used: f = 835 MHz; $\sigma = 0.985$ S/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2013-01-21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1355; Calibrated: 2013-01-08
- Phantom: 1. Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.9 (7117)

d=15mm, Pin=250mW/Area Scan (81x61x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 50.847 V/m

Fast SAR: SAR(1 g) = 2.33 W/kg

Fast SAR(10 g) = 1.57 W/kg

Maximum value of SAR (interpolated) = 2.50 W/kg

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 50.847 V/m

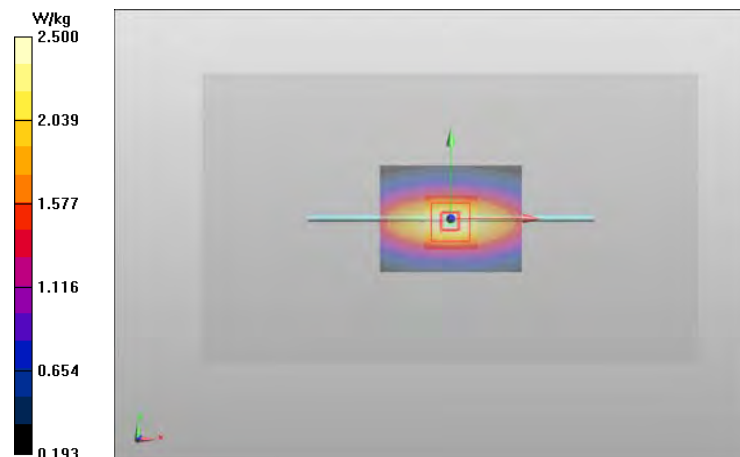
Peak SAR (extrapolated) = 3.38 W/kg

SAR(1 g) = 2.31 W/kg

SAR(10 g) = 1.53 W/kg

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 2.50 W/kg



Plot #18

Date/Time: 2013-07-18 12:56:10

Test Laboratory: CETECOM IST Service

Type: D835V2; Serial: SN:4d153

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: MSL900; Medium Notes: 2013-07-18

Medium parameters used: $f = 835$ MHz; $\sigma = 0.995$ S/m; $\epsilon_r = 55.357$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(6.29, 6.29, 6.29); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

d=15mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 53.233 V/m

Fast SAR: SAR(1 g) = 2.52 W/kg

Fast SAR(10 g) = 1.71 W/kg

Maximum value of SAR (interpolated) = 2.72 W/kg

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 53.233 V/m

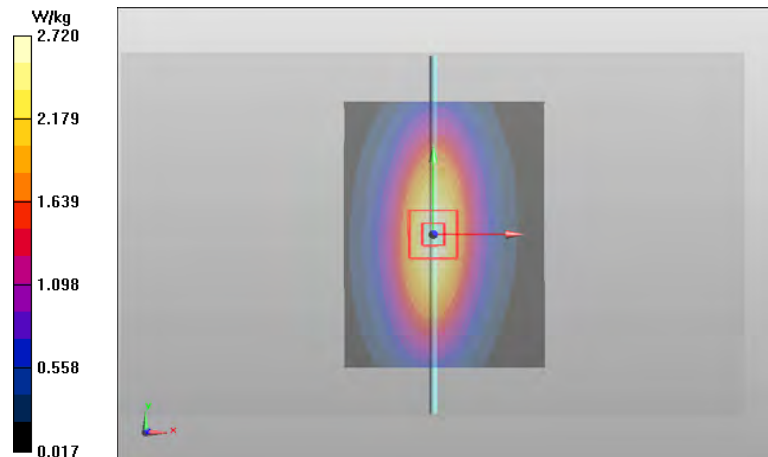
Peak SAR (extrapolated) = 3.72 W/kg

SAR(1 g) = 2.54 W/kg

SAR(10 g) = 1.68 W/kg

Power Drift = -0.03 dB

Maximum value of SAR (measured) = 2.74 W/kg



Plot #19

Date/Time: 2013-08-02 09:47:53

Test Laboratory: TCC Nokia

Type: D1750V2; Serial: D1750V2 - SN:1082

Communication System: CW1750

Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: HSL1800; Medium Notes: t= 21.0 C

Medium parameters used: f = 1750 MHz; $\sigma = 1.456$ S/m; $\epsilon_r = 51.798$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.87, 4.87, 4.87); Calibrated: 2013-06-18;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2013-06-10
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 84.831 V/m

Fast SAR: SAR(1 g) = 8.84 W/kg

Fast SAR(10 g) = 4.74 W/kg

Maximum value of SAR (interpolated) = 10.3 W/kg

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 84.831 V/m

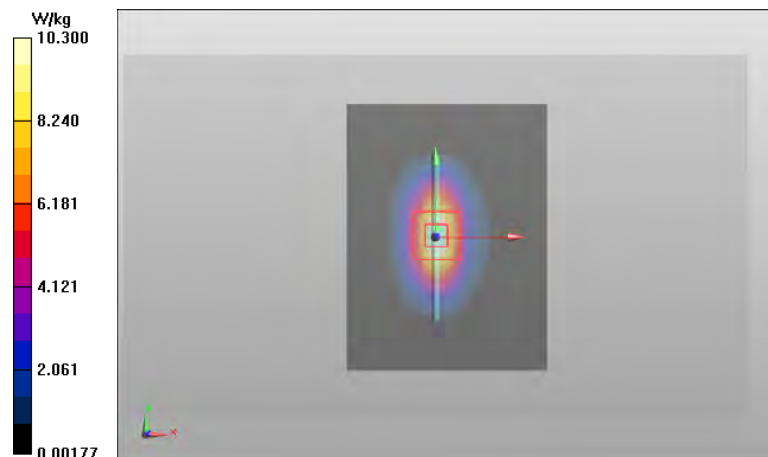
Peak SAR (extrapolated) = 14.6 W/kg

SAR(1 g) = 8.75 W/kg

SAR(10 g) = 4.76 W/kg

Power Drift = 0.00 dB

Maximum value of SAR (measured) = 9.87 W/kg



Plot #20

Date/Time: 2013-08-14 16:53:25

Test Laboratory: CETECOM IST Service
Type: D1750V2; Serial: 1093

Communication System: CW1750

Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: MSL1750; Medium Notes: Not Specified

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.432$ S/m; $\epsilon_r = 52.511$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(5.04, 5.04, 5.04); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 83.663 V/m

Fast SAR: SAR(1 g) = 8.87 W/kg

Fast SAR(10 g) = 4.67 W/kg

Maximum value of SAR (interpolated) = 10.6 W/kg

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 83.663 V/m

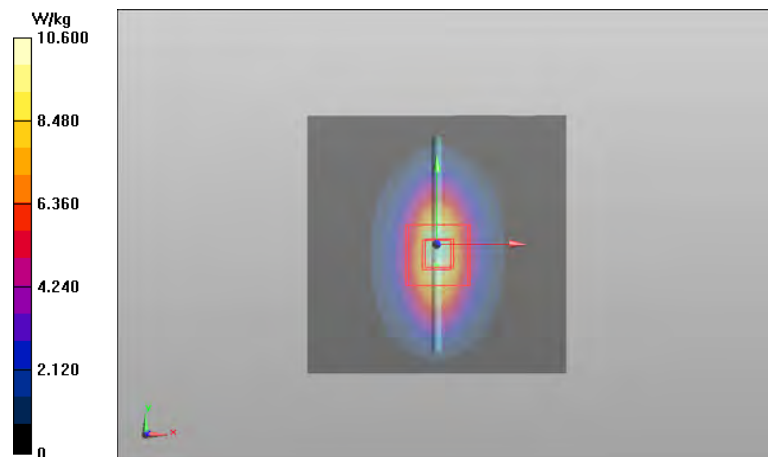
Peak SAR (extrapolated) = 15.7 W/kg

SAR(1 g) = 8.75 W/kg

SAR(10 g) = 4.66 W/kg

Power Drift = -0.07 dB

Maximum value of SAR (measured) = 9.81 W/kg



Plot #21

Date/Time: 2013-07-31 06:43:09

Test Laboratory: TCC Nokia

Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 20.5$ C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.514$ S/m; $\epsilon_r = 51.692$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.62, 4.62, 4.62); Calibrated: 2013-06-18;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2013-06-10
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 87.459 V/m

Fast SAR: SAR(1 g) = 9.56 W/kg

Fast SAR(10 g) = 4.97 W/kg

Maximum value of SAR (interpolated) = 11.2 W/kg

d=10mm, Pin=250mW/Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 87.459 V/m

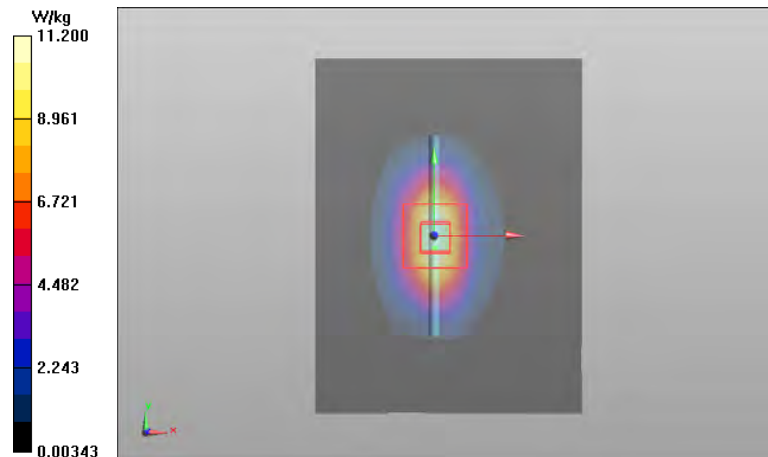
Peak SAR (extrapolated) = 16.4 W/kg

SAR(1 g) = 9.56 W/kg

SAR(10 g) = 5.08 W/kg

Power Drift = -0.00 dB

Maximum value of SAR (measured) = 10.8 W/kg



Plot #22

Date/Time: 2013-07-19 08:26:21

Test Laboratory: CETECOM IST Service
Type: D1900V2; Serial: 5d009

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: MSL1900; Medium Notes: 2013-07-19

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.483$ S/m; $\epsilon_r = 52.294$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(4.78, 4.78, 4.78); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASYS2, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 87.342 V/m

Fast SAR: SAR(1 g) = 9.79 W/kg

Fast SAR(10 g) = 5.09 W/kg

Maximum value of SAR (interpolated) = 11.7 W/kg

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 87.342 V/m

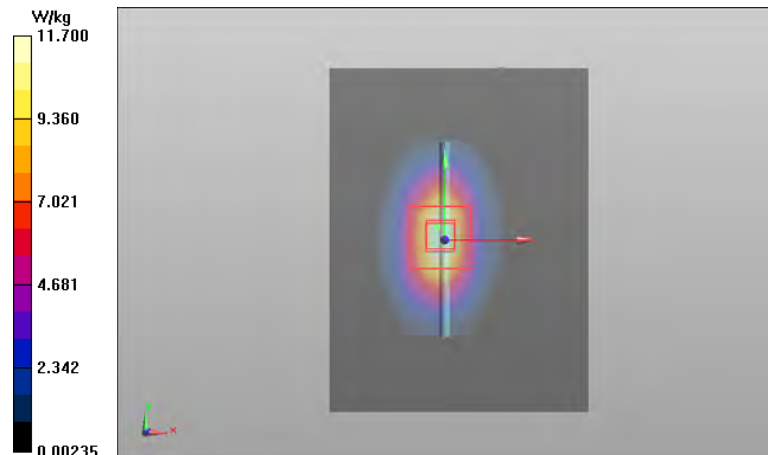
Peak SAR (extrapolated) = 17.2 W/kg

SAR(1 g) = 9.68 W/kg

SAR(10 g) = 5.14 W/kg

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 11.0 W/kg



Plot #23

Date/Time: 2013-07-29 07:29:02

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 21.4$ C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.948$ S/m; $\epsilon_r = 50.689$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3834
- ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2013-01-11
- Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 87.006 V/m

Fast SAR: SAR(1 g) = 12.8 W/kg

Fast SAR(10 g) = 5.63 W/kg

Maximum value of SAR (interpolated) = 14.7 W/kg

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 87.006 V/m

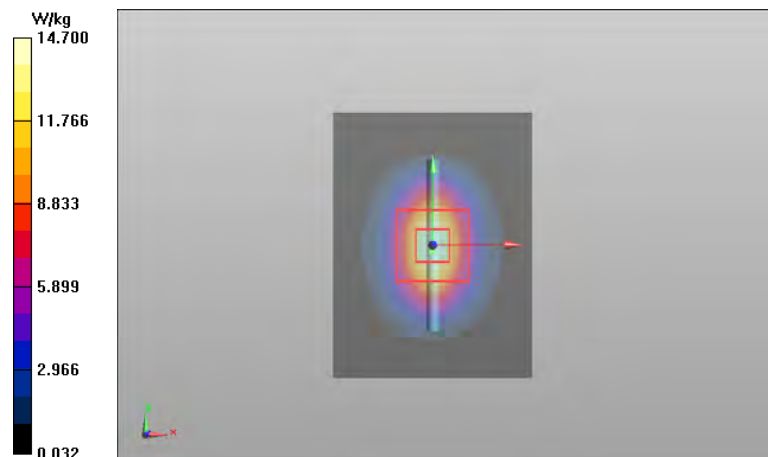
Peak SAR (extrapolated) = 25.6 W/kg

SAR(1 g) = 12.7 W/kg

SAR(10 g) = 5.94 W/kg

Power Drift = -0.00 dB

Maximum value of SAR (measured) = 14.6 W/kg



Plot #24

Date/Time: 2013-09-11 08:06:11

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1048

Communication System: CW5200

Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: BSL5000; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.212$ S/m; $\epsilon_r = 47.055$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(4.04, 4.04, 4.04); Calibrated: 2013-01-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.9 (7117)

d=10mm, Pin=100mW 5200/Area Scan (81x61x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 60.289 V/m

Fast SAR: SAR(1 g) = 7.41 W/kg

Fast SAR(10 g) = 2.03 W/kg

Maximum value of SAR (interpolated) = 16.6 W/kg

d=10mm, Pin=100mW 5200/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 60.289 V/m

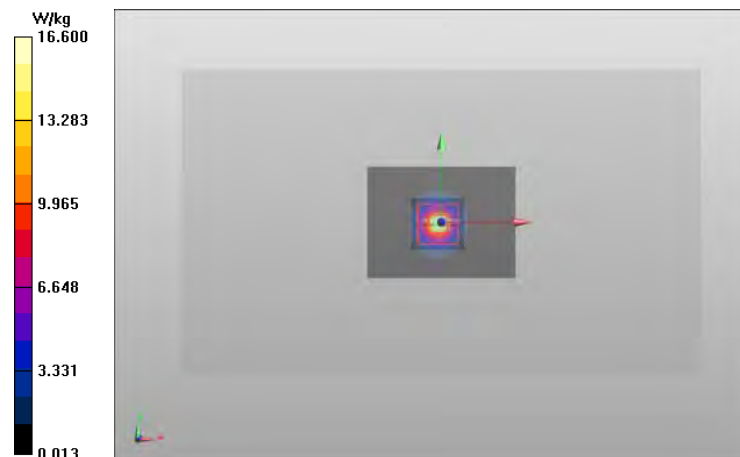
Peak SAR (extrapolated) = 32.1 W/kg

SAR(1 g) = 7.86 W/kg

SAR(10 g) = 2.21 W/kg

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 15.2 W/kg



Plot #25

Date/Time: 2013-08-12 14:00:31

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1048

Communication System: CW5300

Frequency: 5300 MHz; Duty Cycle: 1:1

Medium: BSL5000; Medium Notes: $t = 21.7$ C

Medium parameters used: $f = 5300$ MHz; $\sigma = 5.542$ S/m; $\epsilon_r = 47.608$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(3.85, 3.85, 3.85); Calibrated: 2013-01-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=100mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 59.066 V/m

Fast SAR: SAR(1 g) = 7.37 W/kg

Fast SAR(10 g) = 2.01 W/kg

Maximum value of SAR (interpolated) = 16.5 W/kg

d=10mm, Pin=100mW/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 59.066 V/m

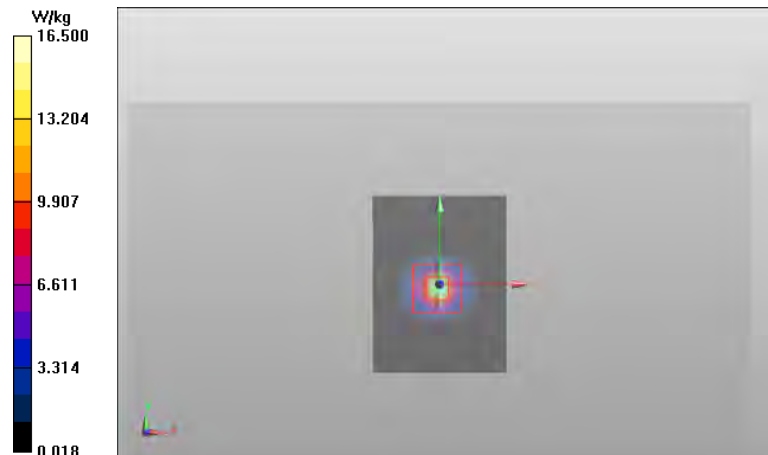
Peak SAR (extrapolated) = 32.9 W/kg

SAR(1 g) = 8.06 W/kg

SAR(10 g) = 2.25 W/kg

Power Drift = -0.11 dB

Maximum value of SAR (measured) = 16.0 W/kg



Plot #26

Date/Time: 2013-09-12 17:13:59

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1048

Communication System: CW5500

Frequency: 5500 MHz; Duty Cycle: 1:1

Medium: BSL5000; Medium Notes: $t = 20.9$ C

Medium parameters used: $f = 5500$ MHz; $\sigma = 5.681$ S/m; $\epsilon_r = 46.314$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(3.56, 3.56, 3.56); Calibrated: 2013-01-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.9 (7117)

d=10mm, Pin=100mW 5500/Area Scan (81x61x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 17.9 W/kg

d=10mm, Pin=100mW 5500/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 54.985 V/m

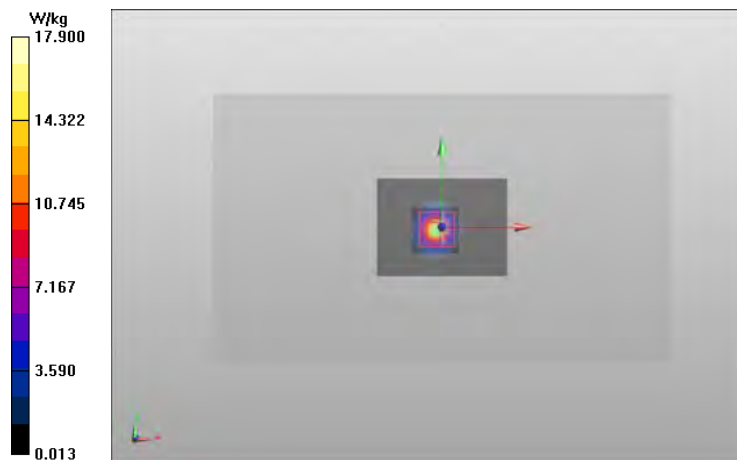
Peak SAR (extrapolated) = 32.7 W/kg

SAR(1 g) = 7.94 W/kg

SAR(10 g) = 2.22 W/kg

Power Drift = 0.07 dB

Maximum value of SAR (measured) = 15.9 W/kg



Plot #27

Date/Time: 2013-09-12 17:47:28

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1048

Communication System: CW5600

Frequency: 5600 MHz; Duty Cycle: 1:1

Medium: BSL5000; Medium Notes: $t = 20.9$ C

Medium parameters used: $f = 5600$ MHz; $\sigma = 5.816$ S/m; $\epsilon_r = 46.15$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(3.38, 3.38, 3.38); Calibrated: 2013-01-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.9 (7117)

d=10mm, Pin=100mW 5600/Area Scan (81x61x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 18.4 W/kg

d=10mm, Pin=100mW 5600/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 54.417 V/m

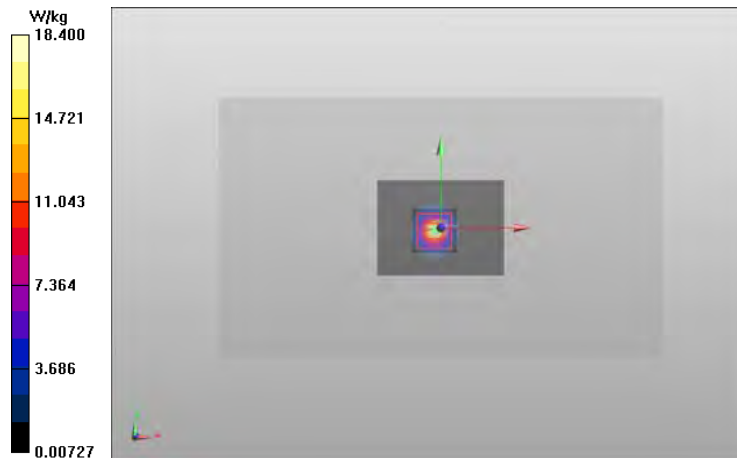
Peak SAR (extrapolated) = 34.8 W/kg

SAR(1 g) = 8.23 W/kg

SAR(10 g) = 2.29 W/kg

Power Drift = 0.03 dB

Maximum value of SAR (measured) = 16.5 W/kg



Plot #28

Date/Time: 2013-08-07 07:45:42

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1048

Communication System: CW5800

Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: BSL5000; Medium Notes: $t = 22.0$ C

Medium parameters used: $f = 5800$ MHz; $\sigma = 6.158$ S/m; $\epsilon_r = 46.469$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(3.6, 3.6, 3.6); Calibrated: 2013-01-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=100mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 55.795 V/m

Fast SAR: SAR(1 g) = 6.69 W/kg

Fast SAR(10 g) = 1.8 W/kg

Maximum value of SAR (interpolated) = 15.3 W/kg

d=10mm, Pin=100mW/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 55.795 V/m

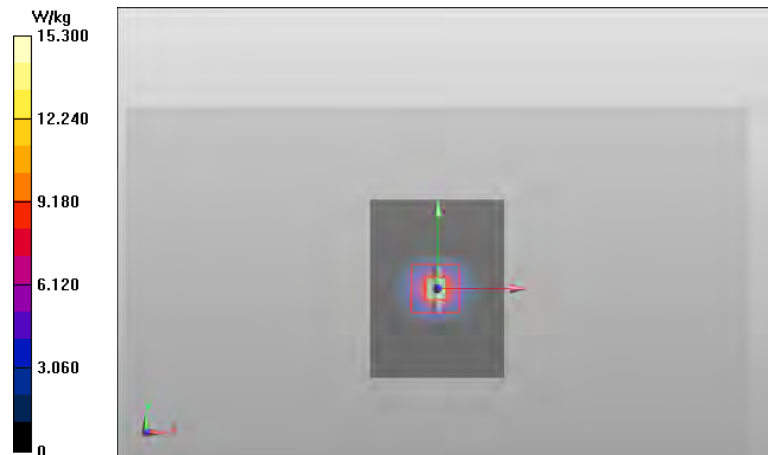
Peak SAR (extrapolated) = 29.0 W/kg

SAR(1 g) = 7.02 W/kg

SAR(10 g) = 1.95 W/kg

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 14.2 W/kg



APPENDIX B: MEASUREMENT SCANS

Plot #1

Date/Time: 2013-09-10 12:47:08

Test Laboratory: CETECOM ICT Services

Type: RM-938; Serial: 004402/47/497032/8

Communication System: LTE700 (Band 17)

Frequency: 710 MHz; Duty Cycle: 1:1

Medium: HSL750; Medium Notes:

Medium parameters used: $f = 710$ MHz; $\sigma = 0.858$ S/m; $\epsilon_r = 42.005$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(6.54, 6.54, 6.54); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: SAM; Type: SAM; Serial: 1043
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.9 (7117)

LTE700 (Band 17) - Left/Cheek - Middle - QPSK - 10MHz - 1 RB - 0% offset/Area Scan (81x141x1): Interpolated
grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 3.400 V/m

Fast SAR: SAR(1 g) = 0.126 W/kg

Fast SAR(10 g) = 0.090 W/kg

Maximum value of SAR (interpolated) = 0.134 W/kg

LTE700 (Band 17) - Left/Cheek - Middle - QPSK - 10MHz - 1 RB - 0% offset/Zoom Scan (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 12.462 V/m

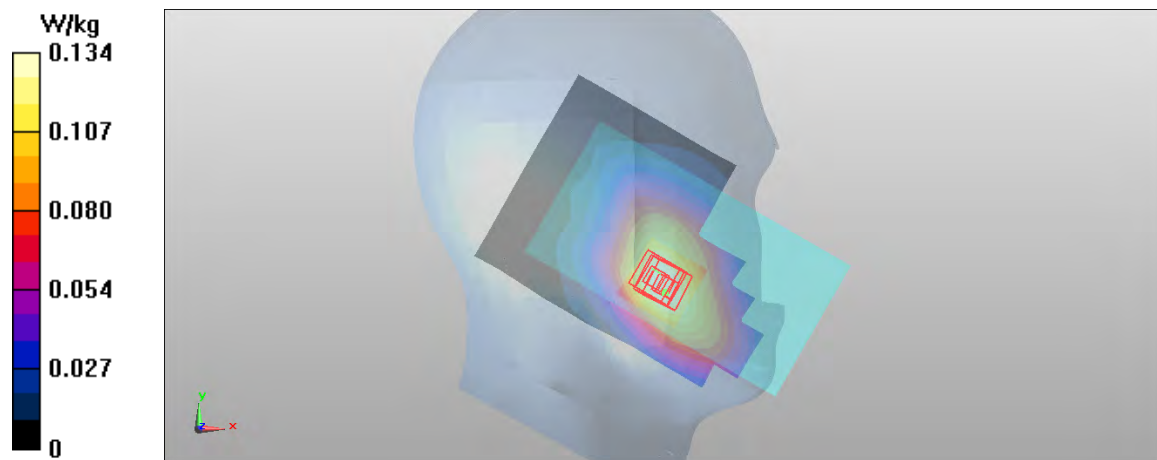
Peak SAR (extrapolated) = 0.161 W/kg

SAR(1 g) = 0.127 W/kg

SAR(10 g) = 0.097 W/kg

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 0.132 W/kg



Plot #2

Date/Time: 2013-07-29 21:48:32

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342572/0

Communication System: 2-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:4.19952

Medium: HSL850; Medium Notes: t= 21.9 C

Medium parameters used: f = 849 MHz; σ = 0.916 S/m; ϵ_r = 40.276; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.2, 6.2, 6.2); Calibrated: 2013-01-21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1355; Calibrated: 2013-01-08
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.9 (7117)

2-slot GPRS850 - Left/Cheek - High/Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 16.467 V/m

Fast SAR: SAR(1 g) = 0.230 W/kg

Fast SAR(10 g) = 0.162 W/kg

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

2-slot GPRS850 - Left/Cheek - High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 16.467 V/m

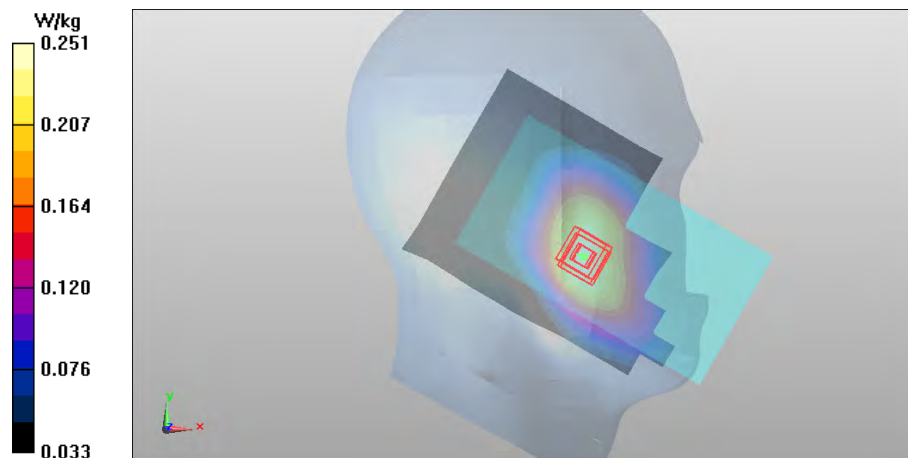
Peak SAR (extrapolated) = 0.301 W/kg

SAR(1 g) = 0.241 W/kg

SAR(10 g) = 0.185 W/kg

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 0.251 W/kg



Plot #3

Date/Time: 2013-09-09 14:29:16

Test Laboratory: TCC Nokia

Type: RM-938; Serial: 004402/47/497037/7

Communication System: WCDMA850 (Band 5)

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21.1 C

Medium parameters used: f = 847 MHz; $\sigma = 0.905$ S/m; $\epsilon_r = 40.932$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.2, 6.2, 6.2); Calibrated: 2013-01-21;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1355; Calibrated: 2013-01-08
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.9 (7117)

WCDMA850 (Band 5) - Right/Cheek - High/Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 5.550 V/m

Fast SAR: SAR(1 g) = 0.208 W/kg

Fast SAR(10 g) = 0.147 W/kg

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

WCDMA850 (Band 5) - Right/Cheek - High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 15.571 V/m

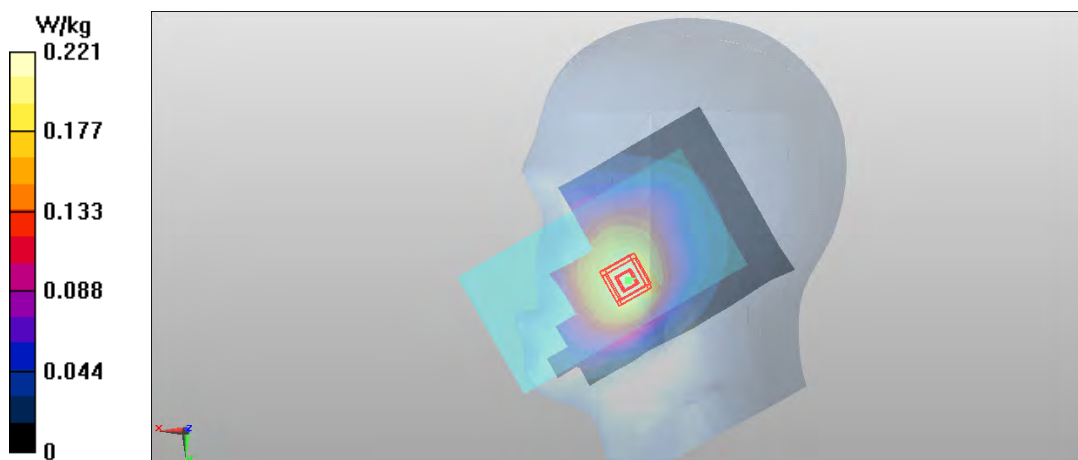
Peak SAR (extrapolated) = 0.248 W/kg

SAR(1 g) = 0.207 W/kg

SAR(10 g) = 0.163 W/kg

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 0.217 W/kg



Plot #4

Date/Time: 2013-09-10 16:26:15

Test Laboratory: CETECOM ICT Services

Type: RM-938; Serial: 004402/47/497032/8

Communication System: LTE850 (Band 5)

Frequency: 844 MHz; Duty Cycle: 1:1

Medium: HSL835; Medium Notes:

Medium parameters used: $f = 844$ MHz; $\sigma = 0.914$ S/m; $\epsilon_r = 42.281$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(6.32, 6.32, 6.32); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: SAM; Type: SAM; Serial: 1043
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.9 (7117)

LTE850 (Band 5) - Left/Cheek - High - QPSK - 10MHz - 1 RB - 0% offset/Area Scan (81x141x1): Interpolated grid:
dx=1.500 mm, dy=1.500 mm

Reference Value = 4.276 V/m

Fast SAR: SAR(1 g) = 0.182 W/kg

Fast SAR(10 g) = 0.128 W/kg

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

LTE850 (Band 5) - Left/Cheek - High - QPSK - 10MHz - 1 RB - 0% offset/Zoom Scan (5x5x7)/Cube 0: Measurement
grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 14.789 V/m

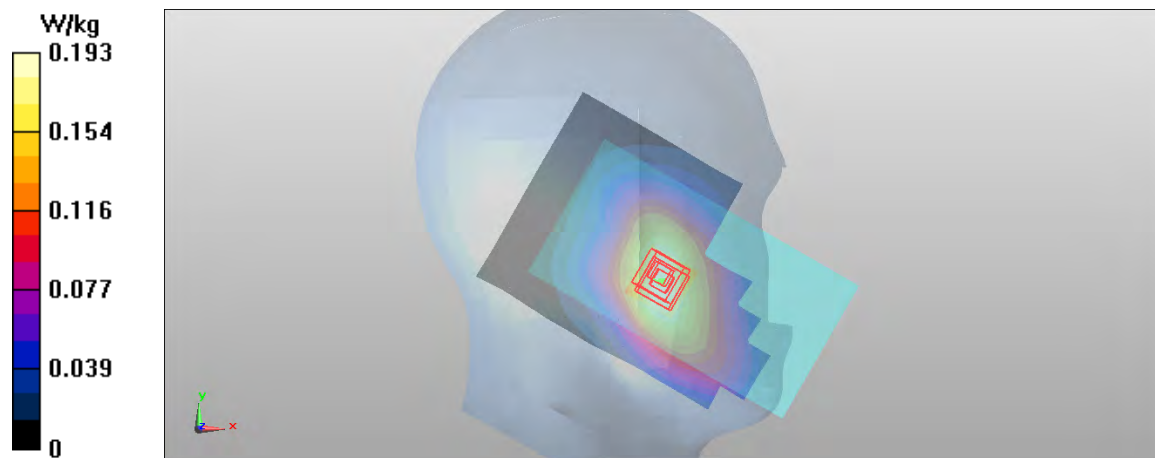
Peak SAR (extrapolated) = 0.231 W/kg

SAR(1 g) = 0.186 W/kg

SAR(10 g) = 0.143 W/kg

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 0.194 W/kg



Plot #5

Date/Time: 2013-08-01 11:00:37

Test Laboratory: TCC Nokia

Type: RM-940, Serial: 004402/47342580/3

Communication System: WCDMA1700/2100 (Band 4)

Frequency: 1753 MHz, Duty Cycle: 1:1.000

Medium: HSL1800; Medium notes: t= 20.5 C

Medium Parameters used: f=1753 MHz; $\sigma = 1.320$ S/m; $\epsilon_r = 38.57$; $\rho = 1.000$ g/cm³;

Phantom section: Left Section

DASY Configuration:

Probe: ES3DV3 - SN3131; ConvF(5.17,5.17,5.17); Calibrated: 2013-06-18;

Sensor-Surface: 4 mm (Mechanical Surface Detection (Locations From Previous Scan Used))

Electronics: DAE4 Sn793; Calibrated: 2013-06-10

Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1692

Measurement SW: DASY52 52.8.6(1115); SEMCAD X Version 14.6.9 (7117)

WCDMA1700/2100 (Band 4)/Cheek - High/Area Scan (81x141x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.245 W/kg; SAR(10g) = 0.146 W/kg

Maximum value of SAR (interpolated) = 0.273 W/kg

WCDMA1700/2100 (Band 4)/Cheek - High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5 mm, dy=7.5 mm, dz=5 mm

Reference Value = 14.099 V/m

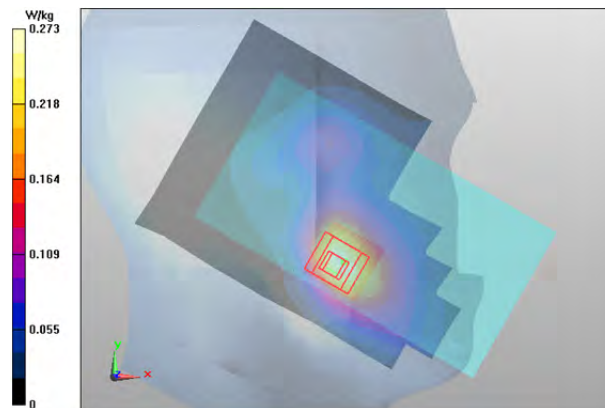
Peak SAR (extrapolated) = 0.364 W/kg

Maximum value of SAR (measured) 0.263 W/kg

SAR(1g) = 0.250 W/kg;

SAR(10g) = 0.159 W/kg

Power Drift = 0.085 dB



Plot #6

Date/Time: 2013-09-10 19:42:33

Test Laboratory: CETECOM ICT Services

Type: RM-938; Serial: 004402/47/497032/8

Communication System: LTE1700/2100 (Band 4)

Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium: HSL1750; Medium Notes:

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.37$ S/m; $\epsilon_r = 39.92$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(5.23, 5.23, 5.23); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: SAM; Type: SAM; Serial: 1043
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.9 (7117)

LTE1700/2100 (Band 4) - Left/Cheek - Middle - QPSK - 20MHz - 1 RB - 50% offset/Area Scan (81x141x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Reference Value = 5.362 V/m

Fast SAR: SAR(1 g) = 0.161 W/kg

Fast SAR(10 g) = 0.097 W/kg

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

LTE1700/2100 (Band 4) - Left/Cheek - Middle - QPSK - 20MHz - 1 RB - 50% offset/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 11.389 V/m

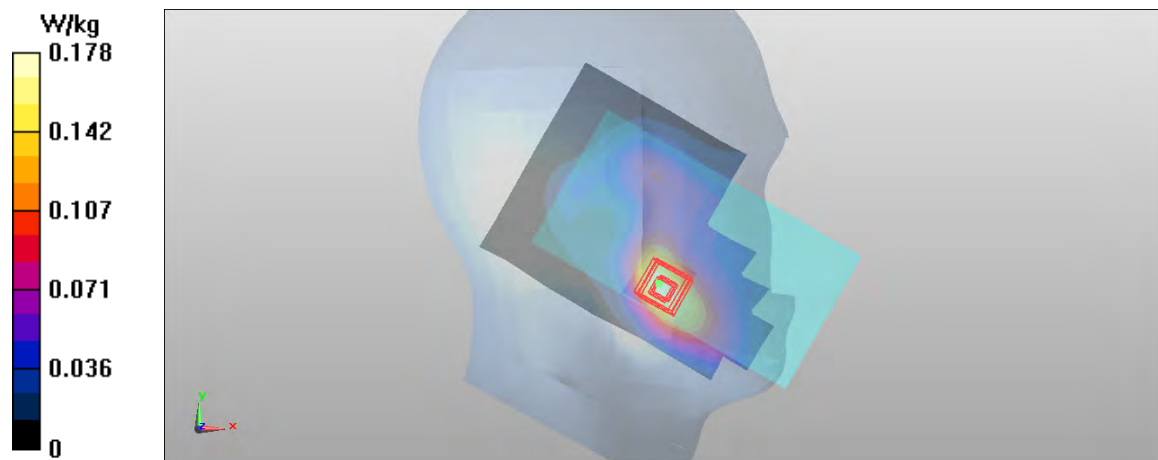
Peak SAR (extrapolated) = 0.242 W/kg

SAR(1 g) = 0.164 W/kg

SAR(10 g) = 0.105 W/kg

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 0.177 W/kg



Plot #7

Date/Time: 2013-07-29 13:32:37

Test Laboratory: TCC Nokia

Type: RM-940, Serial: 004402/47342580/3

Communication System: 2-slot GPRS1900

Frequency: 1850 MHz, Duty Cycle: 1:4.200

Medium: HSL1900; Medium notes: t= 22.3

Medium Parameters used: f=1850.2 MHz; $\sigma = 1.336$ S/m; $\epsilon_r = 39.41$; $\rho = 1.000$ g/cm³;

Phantom section: Left Section

DASY Configuration:

Probe: ES3DV3 - SN3131; ConvF(5.17,5.17,5.17); Calibrated: 2013-06-18;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 2013-06-10

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

Measurement SW: DASY52 52.8.6(1115); SEMCAD X Version 14.6.9 (7117)

2-slot GPRS1900/Cheek - Low/Area Scan (81x141x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.107 W/kg; SAR(10g) = 0.0636 W/kg

Maximum value of SAR (interpolated) = 0.120 W/kg

2-slot GPRS1900/Cheek - Low/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5 mm, dy=7.5 mm, dz=5 mm

Reference Value = 9.116 V/m

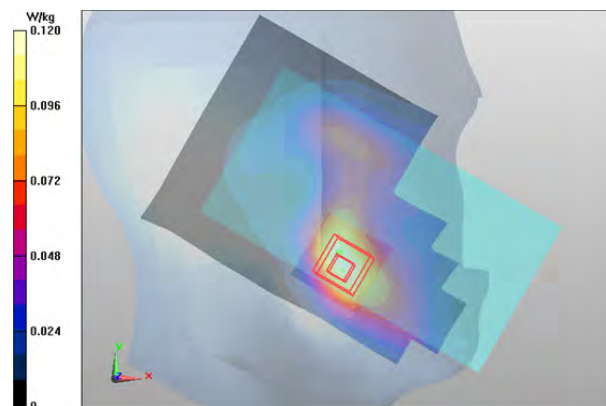
Peak SAR (extrapolated) = 0.163 W/kg

Maximum value of SAR (measured) 0.121 W/kg

SAR(1g) = 0.113 W/kg;

SAR(10g) = 0.0741 W/kg

Power Drift = 0.173 dB



Plot #8

Date/Time: 2013-07-30 17:59:59

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: WCDMA1900 (Band 2)

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.1 C

Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma = 1.343$ S/m; $\epsilon_r = 38.782$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.98, 4.98, 4.98); Calibrated: 2013-06-18;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2013-06-10
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.9 (7117)

WCDMA1900 (Band 2) - Left/Cheek - Low/Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 13.065 V/m

Fast SAR: SAR(1 g) = 0.208 W/kg

Fast SAR(10 g) = 0.124 W/kg

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

WCDMA1900 (Band 2) - Left/Cheek - Low/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 13.794 V/m

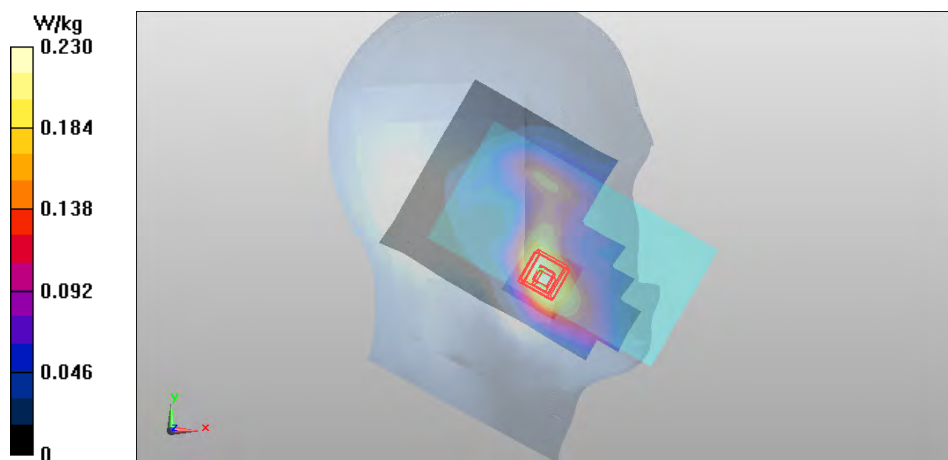
Peak SAR (extrapolated) = 0.356 W/kg

SAR(1 g) = 0.242 W/kg

SAR(10 g) = 0.158 W/kg

Power Drift = -0.15 dB

Maximum value of SAR (measured) = 0.259 W/kg



Plot #9

Date/Time: 2013-07-25 09:47:47

Test Laboratory: CETECOM IST Service
Type: RM-940; Serial: 004402/47/342581/1

Communication System: LTE1900 (Band 2)

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: 2013-07-25

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.387$ S/m; $\epsilon_r = 39.133$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(5.06, 5.06, 5.06); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: SAM; Type: SAM; Serial: 1043
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.9 (7117)

LTE1900 (Band 2) - Left/Cheek - Middle - QPSK - 20MHz - 1 RB - 0% offset/Area Scan (81x141x1): Interpolated
grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 5.060 V/m

Fast SAR: SAR(1 g) = 0.191 W/kg

Fast SAR(10 g) = 0.112 W/kg

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

LTE1900 (Band 2) - Left/Cheek - Middle - QPSK - 20MHz - 1 RB - 0% offset/Zoom Scan (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 5.060 V/m

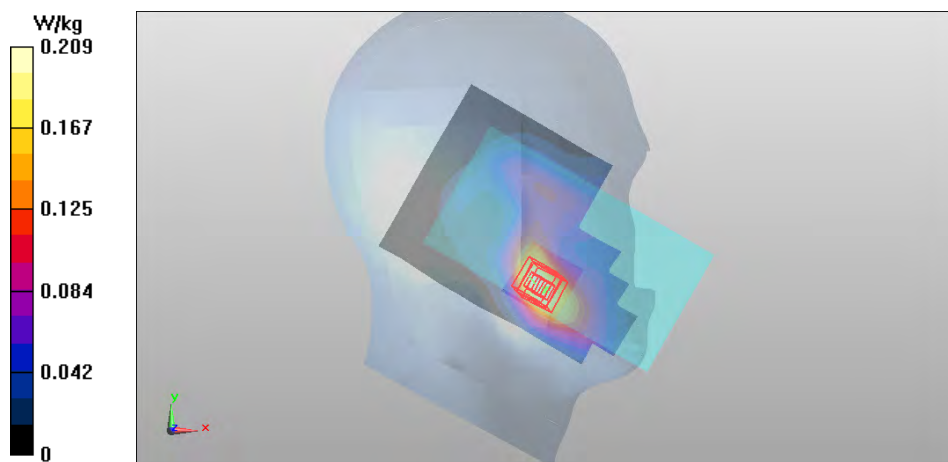
Peak SAR (extrapolated) = 0.267 W/kg

SAR(1 g) = 0.183 W/kg

SAR(10 g) = 0.117 W/kg

Power Drift = 0.02 dB

Maximum value of SAR (measured) = 0.200 W/kg



Plot #10

Date/Time: 2013-07-26 10:52:40

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 21.1 C

Medium parameters used: f = 2462 MHz; $\sigma = 1.824$ S/m; $\epsilon_r = 37.809$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3834
- ConvF(6.88, 6.88, 6.88); Calibrated: 2013-01-23;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2013-01-11
- Phantom: #4 SAM, SAR4 ; Type: QD000P40CD; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.9 (7117)

WLAN2450 b-mode - Left/Cheek - Channel 11 - DSSS 1 Mbps/Area Scan (121x211x1): Interpolated grid:

dx=1.000 mm, dy=1.000 mm

Reference Value = 22.037 V/m

Fast SAR: SAR(1 g) = 0.979 W/kg

Fast SAR(10 g) = 0.508 W/kg

Maximum value of SAR (interpolated) = 1.14 W/kg

WLAN2450 b-mode - Left/Cheek - Channel 11 - DSSS 1 Mbps/Zoom Scan (7x8x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm

Reference Value = 22.660 V/m

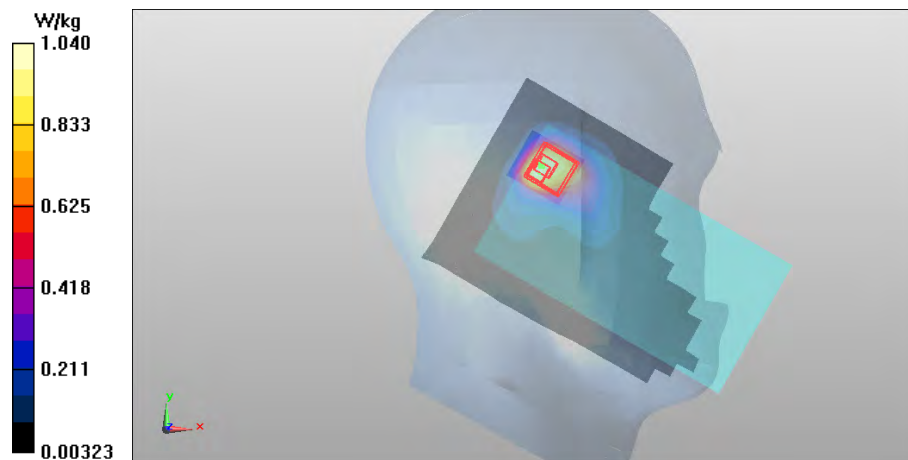
Peak SAR (extrapolated) = 2.02 W/kg

SAR(1 g) = 0.926 W/kg

SAR(10 g) = 0.482 W/kg

Power Drift = -0.02 dB

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



Plot #11

Date/Time: 2013-07-29 10:40:31

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode

Frequency: 5260 MHz; Duty Cycle: 1:1

Medium: HSL5000; Medium Notes: t= 22.1 C

Medium parameters used: f = 5260 MHz; $\sigma = 4.51$ S/m; $\epsilon_r = 35.479$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(4.29, 4.29, 4.29); Calibrated: 2013-01-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.9 (7117)

WLAN5000 a-mode - Left/Tilt - Channel 52 - OFDM 6 Mbps/Area Scan (121x211x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 26.087 V/m

Fast SAR: SAR(1 g) = 1.01 W/kg

Fast SAR(10 g) = 0.285 W/kg

Maximum value of SAR (interpolated) = 2.61 W/kg

WLAN5000 a-mode - Left/Tilt - Channel 52 - OFDM 6 Mbps/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 26.087 V/m

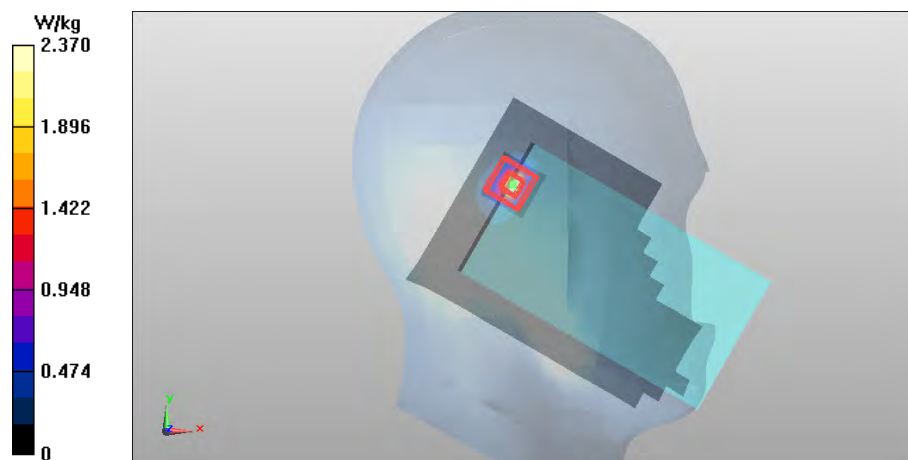
Peak SAR (extrapolated) = 4.79 W/kg

SAR(1 g) = 1.17 W/kg

SAR(10 g) = 0.316 W/kg

Power Drift = -0.03 dB

Maximum value of SAR (measured) = 2.37 W/kg



Plot #12

Date/Time: 2013-09-10 12:47:08

DASY Configuration for LTE700 (Band 17) - Left/Cheek - Middle - QPSK - 10MHz - 1 RB - 0% offset/Area Scan:

Test Laboratory: CETECOM ICT Services

Type: RM-938; Serial: 004402/47/497032/8

Communication System: LTE700 (Band 17); Frequency: 710 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL750 Medium parameters used: $f = 710 \text{ MHz}$; $\sigma = 0.858 \text{ S/m}$; $\epsilon_r = 42.005$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Probe: ES3DV3 - SN3320; ConvF(6.54, 6.54, 6.54); Calibrated: 2013-06-04;

Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))

Electronics: DAE3 Sn413; Calibrated: 2013-01-11

Phantom: SAM; Type: SAM; Serial: 1043

Measurement SW: DASY52, Version 52.8 (7)

Date/Time: 2013-09-15 19:43:17

DASY Configuration for WLAN2450 b-mode - Left/Cheek - Channel 6 - DSSS 1 Mbps - Repeated/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-938; Serial: 004402/47/497038/5

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL2450 Medium parameters used: $f = 2437 \text{ MHz}$; $\sigma = 1.765 \text{ S/m}$; $\epsilon_r = 37.771$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Probe: EX3DV4 - SN3834; ConvF(6.88, 6.88, 6.88); Calibrated: 2013-01-23;

Sensor-Surface: 4mm (Mechanical Surface Detection)

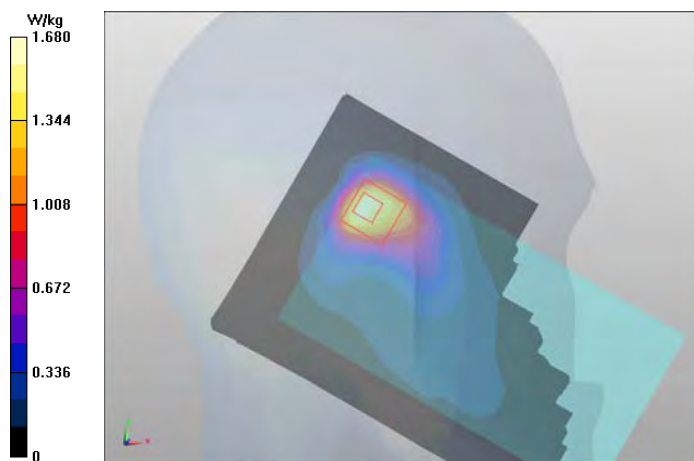
Electronics: DAE4 Sn555; Calibrated: 2013-01-11

Phantom: #4 SAM, SAR4 ; Type: QD000P40CD; Serial: TP:xxxx

Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 1.45 W/kg; SAR(10 g) = 0.759 W/kg

Maximum value of SAR (interpolated) = 1.68 W/kg



Note: LTE700 (Band 17) result was scaled by a factor of 1.17 and WLAN2450 result was scaled by a factor of 1.23 before combining.

Plot #13

Date/Time: 2013-07-29 21:48:32

DASY Configuration for 2-slot GPRS850 - Left/Cheek - High/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342570/4

Communication System: 2-slot GPRS850; Frequency: 848.8 MHz; Duty Cycle: 1:4.19952; PMF: 2.04927

Medium: HSL850 Medium parameters used: $f = 849$ MHz; $\sigma = 0.916$ S/m; $\epsilon_r = 40.276$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: ES3DV3 - SN3165; ConvF(6.2, 6.2, 6.2); Calibrated: 2013-01-21;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1355; Calibrated: 2013-01-08

Phantom: SAM2; Type: SAM; Serial: TP-1570

Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-09-15 19:43:17

DASY Configuration for WLAN2450 b-mode - Left/Cheek - Channel 6 - DSSS 1 Mbps - Repeated/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-938; Serial: 004402/47/497038/5

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.765$ S/m; $\epsilon_r = 37.771$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3834; ConvF(6.88, 6.88, 6.88); Calibrated: 2013-01-23;

Sensor-Surface: 4mm (Mechanical Surface Detection)

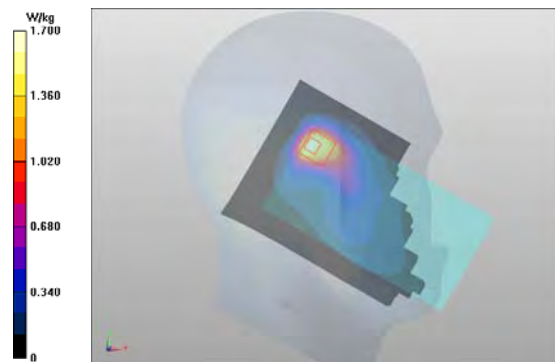
Electronics: DAE4 Sn555; Calibrated: 2013-01-11

Phantom: #4 SAM, SAR4 ; Type: QD000P40CD; Serial: TP:xxxx

Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 1.46 W/kg; SAR(10 g) = 0.774 W/kg

Maximum value of SAR (interpolated) = 1.70 W/kg



Note: 2-slot GPRS850 result was scaled by a factor of 1.08 and WLAN2450 result was scaled by a factor of 1.23 before combining.

Plot #14

Date/Time: 2013-07-29 09:33:56

DASY Configuration for WCDMA850 (Band 5) - Left/Cheek - Middle/Robot Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342570/4

Communication System: WCDMA850 (Band 5); Frequency: 835 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL850 Medium parameters used: $f = 835$ MHz; $\sigma = 0.906$ S/m; $\epsilon_r = 40.39$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: ES3DV3 - SN3165; ConvF(6.2, 6.2, 6.2); Calibrated: 2013-01-21;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1355; Calibrated: 2013-01-08

Phantom: SAM2; Type: SAM; Serial: TP-1570

Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-09-15 19:43:17

DASY Configuration for WLAN2450 b-mode - Left/Cheek - Channel 6 - DSSS 1 Mbps - Repeated/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-938; Serial: 004402/47/497038/5

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.765$ S/m; $\epsilon_r = 37.771$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3834; ConvF(6.88, 6.88, 6.88); Calibrated: 2013-01-23;

Sensor-Surface: 4mm (Mechanical Surface Detection)

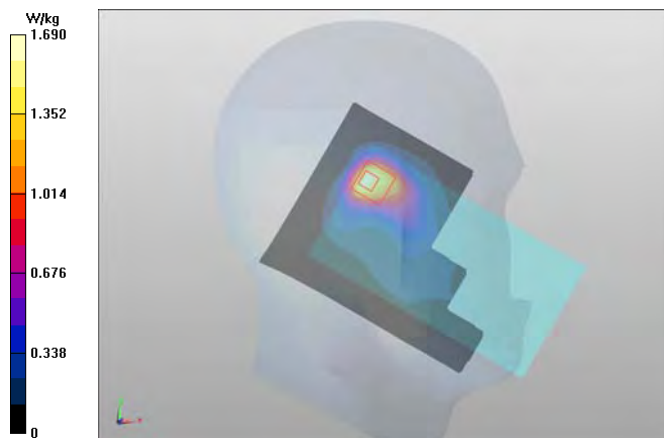
Electronics: DAE4 Sn555; Calibrated: 2013-01-11

Phantom: #4 SAM, SAR4 ; Type: QD000P40CD; Serial: TP:xxxx

Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 1.45 W/kg; SAR(10 g) = 0.763 W/kg

Maximum value of SAR (interpolated) = 1.69 W/kg



Note: WCDMA850 result was scaled by a factor of 1.08 and WLAN2450 result was scaled by a factor of 1.23 before combining.

Plot #15

Date/Time: 2013-09-10 16:26:15

DASY Configuration for LTE850 (Band 5) - Left/Cheek - High - QPSK - 10MHz - 1 RB - 0% offset/Area Scan:

Test Laboratory: CETECOM ICT Services

Type: RM-938; Serial: 004402/47/497032/8

Communication System: LTE850 (Band 5); Frequency: 844 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL835 Medium parameters used: $f = 844$ MHz; $\sigma = 0.914$ S/m; $\epsilon_r = 42.281$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: ES3DV3 - SN3320; ConvF(6.32, 6.32, 6.32); Calibrated: 2013-06-04;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE3 Sn413; Calibrated: 2013-01-11
Phantom: SAM; Type: SAM; Serial: 1043
Measurement SW: DASY52, Version 52.8 (7)

Date/Time: 2013-09-15 19:43:17

DASY Configuration for WLAN2450 b-mode - Left/Cheek - Channel 6 - DSSS 1 Mbps - Repeated/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-938; Serial: 004402/47/497038/5

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

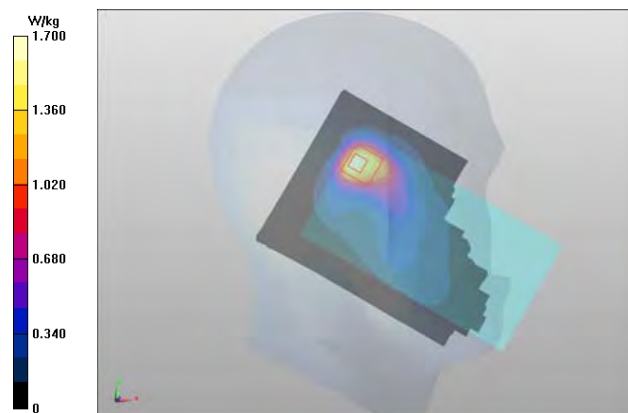
Medium: HSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.765$ S/m; $\epsilon_r = 37.771$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3834; ConvF(6.88, 6.88, 6.88); Calibrated: 2013-01-23;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn555; Calibrated: 2013-01-11
Phantom: #4 SAM, SAR4 ; Type: QD000P40CD; Serial: TP:xxxx
Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 1.46 W/kg; SAR(10 g) = 0.773 W/kg

Maximum value of SAR (interpolated) = 1.70 W/kg



Note: LTE850 (Band 5) result was scaled by a factor of 1.12 and WLAN2450 result was scaled by a factor of 1.23 before combining.

Plot #16

Date/Time: 2013-08-01 11:00:37

DASY Configuration for WCDMA1700_2100 (Band 4) - Left/Cheek - High/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: WCDMA1700/2100 (Band 4); Frequency: 1752.6 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL1800 Medium parameters used: $f = 1753$ MHz; $\sigma = 1.32$ S/m; $\epsilon_r = 38.566$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: ES3DV3 - SN3131; ConvF(5.17, 5.17, 5.17); Calibrated: 2013-06-18;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn793; Calibrated: 2013-06-10
Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1692
Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-09-15 19:43:17

DASY Configuration for WLAN2450 b-mode - Left/Cheek - Channel 6 - DSSS 1 Mbps - Repeated/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-938; Serial: 004402/47/497038/5

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

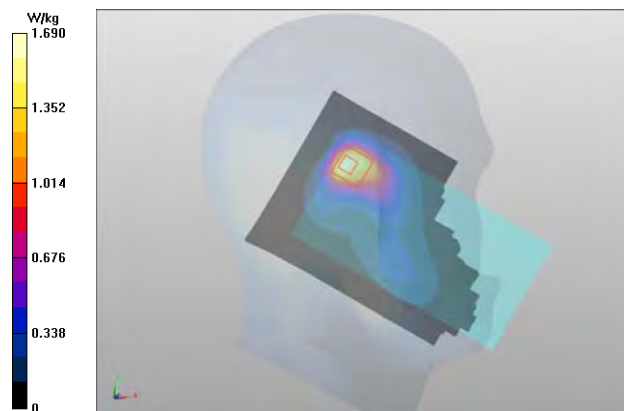
Medium: HSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.765$ S/m; $\epsilon_r = 37.771$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3834; ConvF(6.88, 6.88, 6.88); Calibrated: 2013-01-23;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn555; Calibrated: 2013-01-11
Phantom: #4 SAM, SAR4 ; Type: QD000P40CD; Serial: TP:xxxx
Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 1.45 W/kg; SAR(10 g) = 0.766 W/kg

Maximum value of SAR (interpolated) = 1.69 W/kg



Note: WCDMA1700/2100 (Band 4) result was scaled by a factor of 1.04 and WLAN2450 result was scaled by a factor of 1.23 before combining.

Plot #17

Date/Time: 2013-09-10 19:42:33

DASY Configuration for LTE1700 (Band 4) - Left/Cheek - Middle - QPSK - 20MHz - 1 RB - 50% offset/Area Scan:

Test Laboratory: CETECOM ICT Services

Type: RM-938; Serial: 004402/47/497032/8

Communication System: LTE1700/2100 (Band 4); Frequency: 1732.5 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL1750 Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.37$ S/m; $\epsilon_r = 39.92$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: ES3DV3 - SN3320; ConvF(5.23, 5.23, 5.23); Calibrated: 2013-06-04;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE3 Sn413; Calibrated: 2013-01-11
Phantom: SAM; Type: SAM; Serial: 1043
Measurement SW: DASY52, Version 52.8 (7)

Date/Time: 2013-09-15 19:43:17

DASY Configuration for WLAN2450 b-mode - Left/Cheek - Channel 6 - DSSS 1 Mbps - Repeated/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-938; Serial: 004402/47/497038/5

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

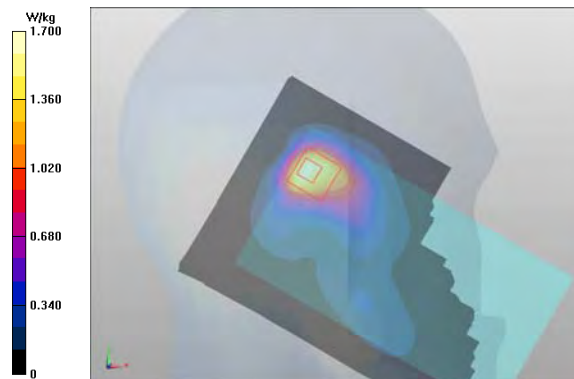
Medium: HSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.765$ S/m; $\epsilon_r = 37.771$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3834; ConvF(6.88, 6.88, 6.88); Calibrated: 2013-01-23;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn555; Calibrated: 2013-01-11
Phantom: #4 SAM, SAR4 ; Type: QD000P40CD; Serial: TP:xxxx
Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 1.46 W/kg; SAR(10 g) = 0.768 W/kg

Maximum value of SAR (interpolated) = 1.70 W/kg



Note: LTE1700/2100 (Band 4) result was scaled by a factor of 1.14 and WLAN2450 result was scaled by a factor of 1.23 before combining.

Plot #18

Date/Time: 2013-09-14 11:25:42

DASY Configuration for 2-slot GPRS1900 - Left/Cheek - Low/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-938; Serial: 004402/47/497033/6

Communication System: 2-slot GPRS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4.19952; PMF: 2.04927

Medium: HSL1900 Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.343$ S/m; $\epsilon_r = 38.766$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: ES3DV3 - SN3131; ConvF(4.98, 4.98, 4.98); Calibrated: 2013-06-18;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn793; Calibrated: 2013-06-10
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-09-15 19:43:17

DASY Configuration for WLAN2450 b-mode - Left/Cheek - Channel 6 - DSSS 1 Mbps - Repeated/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-938; Serial: 004402/47/497038/5

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

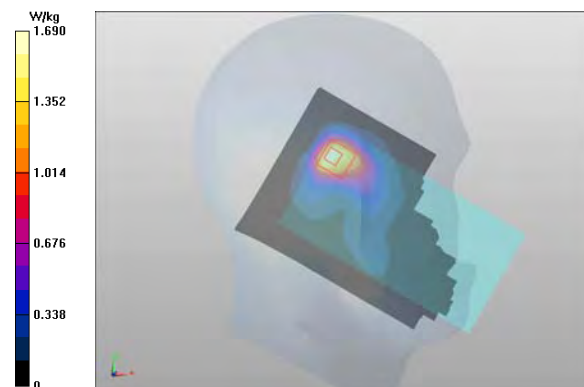
Medium: HSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.765$ S/m; $\epsilon_r = 37.771$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3834; ConvF(6.88, 6.88, 6.88); Calibrated: 2013-01-23;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn555; Calibrated: 2013-01-11
Phantom: #4 SAM, SAR4 ; Type: QD000P40CD; Serial: TP:xxxx
Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 1.45 W/kg; SAR(10 g) = 0.760 W/kg

Maximum value of SAR (interpolated) = 1.69 W/kg



Note: 2-slot GPRS1900 result was scaled by a factor of 1.10 and WLAN2450 result was scaled by a factor of 1.23 before combining.

Plot #19

SAR Report
Appendix B for FCC_RM-938_01
Applicant: Nokia Corporation

Type: RM-938

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Date/Time: 2013-07-30 17:59:59

DASY Configuration for WCDMA1900 (Band 2) - Left/Cheek - Low/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: WCDMA1900 (Band 2); Frequency: 1852.4 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL1900 Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.343$ S/m; $\epsilon_r = 38.782$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: ES3DV3 - SN3131; ConvF(4.98, 4.98, 4.98); Calibrated: 2013-06-18;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn793; Calibrated: 2013-06-10
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-09-15 19:43:17

DASY Configuration for WLAN2450 b-mode - Left/Cheek - Channel 6 - DSSS 1 Mbps - Repeated/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-938; Serial: 004402/47/497038/5

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

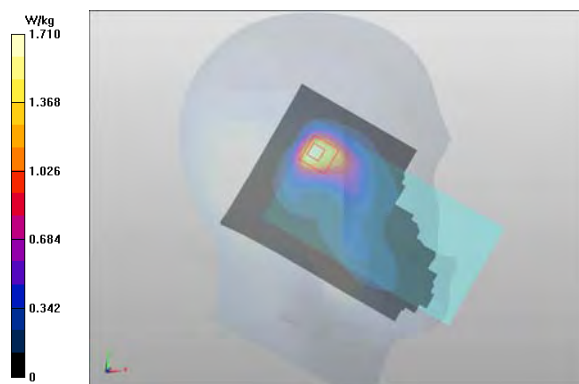
Medium: HSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.765$ S/m; $\epsilon_r = 37.771$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3834; ConvF(6.88, 6.88, 6.88); Calibrated: 2013-01-23;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn555; Calibrated: 2013-01-11
Phantom: #4 SAM, SAR4 ; Type: QD000P40CD; Serial: TP:xxxx
Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 1.47 W/kg; SAR(10 g) = 0.779 W/kg

Maximum value of SAR (interpolated) = 1.71 W/kg



Note: WCDMA1900 (Band 2) result was scaled by a factor of 1.06 and WLAN2450 result was scaled by a factor of 1.23 before combining.

Plot #20

Date/Time: 2013-07-25 09:47:47

DASY Configuration for LTE1900 (Band 2) - Left/Cheek - Middle - QPSK - 20MHz - 1 RB - 0% offset/Area Scan:

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342581/1

Communication System: LTE1900 (Band 2); Frequency: 1880 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.387$ S/m; $\epsilon_r = 39.133$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: ES3DV3 - SN3320; ConvF(5.06, 5.06, 5.06); Calibrated: 2013-06-04;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE3 Sn413; Calibrated: 2013-01-11

Phantom: SAM; Type: SAM; Serial: 1043

Measurement SW: DASY52, Version 52.8 (7)

Date/Time: 2013-09-15 19:43:17

DASY Configuration for WLAN2450 b-mode - Left/Cheek - Channel 6 - DSSS 1 Mbps - Repeated/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-938; Serial: 004402/47/497038/5

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.765$ S/m; $\epsilon_r = 37.771$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3834; ConvF(6.88, 6.88, 6.88); Calibrated: 2013-01-23;

Sensor-Surface: 4mm (Mechanical Surface Detection)

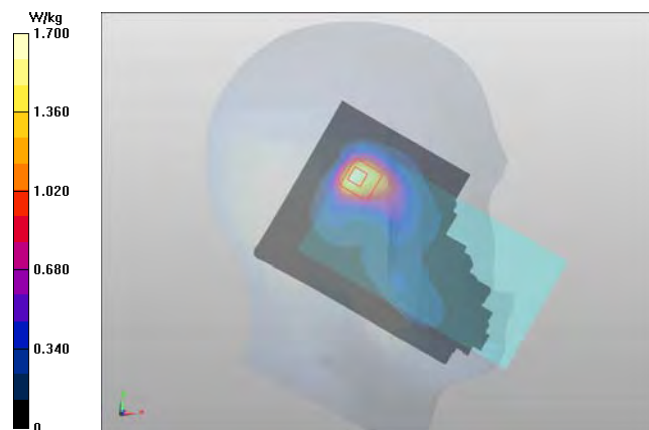
Electronics: DAE4 Sn555; Calibrated: 2013-01-11

Phantom: #4 SAM, SAR4 ; Type: QD000P40CD; Serial: TP:xxxx

Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 1.46 W/kg; SAR(10 g) = 0.769 W/kg

Maximum value of SAR (interpolated) = 1.70 W/kg



Note: LTE1900 (Band 2) result was scaled by a factor of 1.00 and WLAN2450 result was scaled by a factor of 1.23 before combining.

Plot #21

Date/Time: 2013-07-30 11:41:14

DASY Configuration for LTE700 (Band 17) - Left/Tilt - Middle - QPSK - 10MHz - 1 RB - 0% offset/Area Scan:

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342571/2

Communication System: LTE700 (Band 17); Frequency: 710 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL750 Medium parameters used: $f = 710 \text{ MHz}$; $\sigma = 0.854 \text{ S/m}$; $\epsilon_r = 42.099$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Probe: ES3DV3 - SN3320; ConvF(6.54, 6.54, 6.54); Calibrated: 2013-06-04;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE3 Sn413; Calibrated: 2013-01-11
Phantom: SAM; Type: SAM; Serial: 1043
Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-07-29 10:40:31

DASY Configuration for WLAN5000 a-mode - Left/Tilt - Channel 52 - OFDM 6 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5260 MHz; Duty Cycle: 1:1; PMF: 1

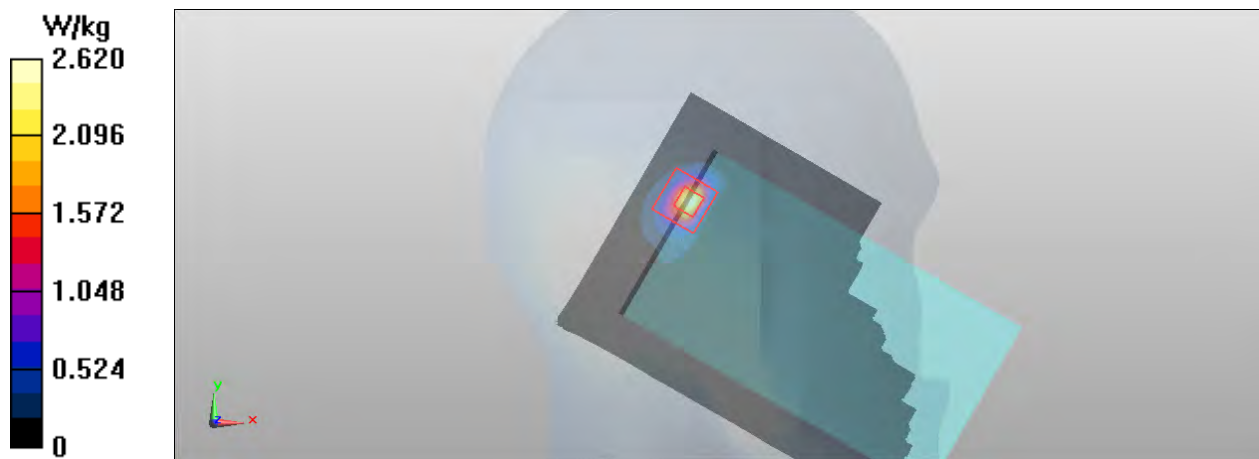
Medium: HSL5000 Medium parameters used: $f = 5260 \text{ MHz}$; $\sigma = 4.51 \text{ S/m}$; $\epsilon_r = 35.479$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Probe: EX3DV4 - SN3573; ConvF(4.29, 4.29, 4.29); Calibrated: 2013-01-23;
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 1.19 W/kg; SAR(10 g) = 0.344 W/kg

Maximum value of SAR (interpolated) = 2.62 W/kg



Note: LTE700 (Band 17) result was scaled by a factor of 1.00 and WLAN5000 result was scaled by a factor of 1.17 before combining.

Plot #22

Date/Time: 2013-07-29 18:46:12

DASY Configuration for 2-slot GPRS850 - Left/Tilt - Middle/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342572/0

Communication System: 2-slot GPRS850; Frequency: 836.6 MHz; Duty Cycle: 1:4.19952; PMF: 2.04927

Medium: HSL850 Medium parameters used: $f = 837$ MHz; $\sigma = 0.908$ S/m; $\epsilon_r = 40.375$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: ES3DV3 - SN3165; ConvF(6.2, 6.2, 6.2); Calibrated: 2013-01-21;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1355; Calibrated: 2013-01-08

Phantom: SAM2; Type: SAM; Serial: TP-1570

Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-07-29 10:40:31

DASY Configuration for WLAN5000 a-mode - Left/Tilt - Channel 52 - OFDM 6 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5260 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL5000 Medium parameters used: $f = 5260$ MHz; $\sigma = 4.51$ S/m; $\epsilon_r = 35.479$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3573; ConvF(4.29, 4.29, 4.29); Calibrated: 2013-01-23;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))

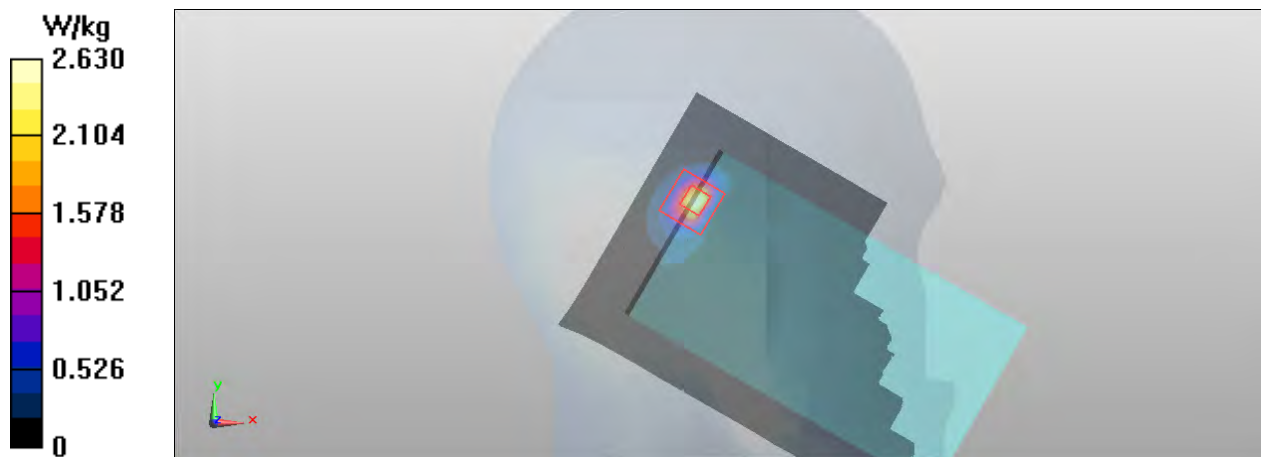
Electronics: DAE4 Sn1309; Calibrated: 2013-01-11

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 1.2 W/kg; SAR(10 g) = 0.350 W/kg

Maximum value of SAR (interpolated) = 2.63 W/kg



Note: 2-slot GPRS850 result was scaled by a factor of 1.07 and WLAN5000 result was scaled by a factor of 1.17 before combining.

Plot #23

Date/Time: 2013-07-29 09:54:57

DASY Configuration for WCDMA850 (Band 5) - Left/Tilt - Middle/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342572/0

Communication System: WCDMA850 (Band 5); Frequency: 835 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL850 Medium parameters used: $f = 835$ MHz; $\sigma = 0.906$ S/m; $\epsilon_r = 40.39$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: ES3DV3 - SN3165; ConvF(6.2, 6.2, 6.2); Calibrated: 2013-01-21;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1355; Calibrated: 2013-01-08
Phantom: SAM2; Type: SAM; Serial: TP-1570
Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-07-29 10:40:31

DASY Configuration for WLAN5000 a-mode - Left/Tilt - Channel 52 - OFDM 6 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5260 MHz; Duty Cycle: 1:1; PMF: 1

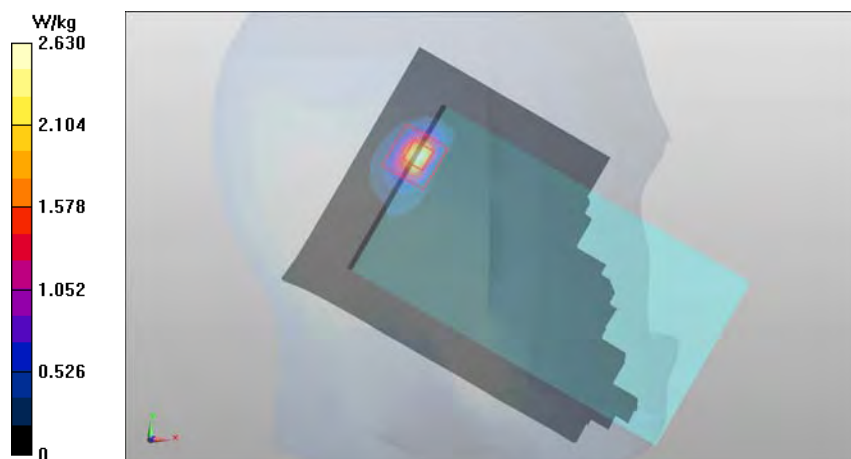
Medium: HSL5000 Medium parameters used: $f = 5260$ MHz; $\sigma = 4.51$ S/m; $\epsilon_r = 35.479$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3573; ConvF(4.29, 4.29, 4.29); Calibrated: 2013-01-23;
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 1.2 W/kg; SAR(10 g) = 0.348 W/kg

Maximum value of SAR (interpolated) = 2.63 W/kg



Note: WCDMA850 (Band 5) result was scaled by a factor of 1.08 and WLAN5000 result was scaled by a factor of 1.17 before combining.

Plot #24

Date/Time: 2013-07-17 16:43:49

DASY Configuration for LTE850 (Band 5) - Left/Tilt - High - QPSK - 10MHz - 1 RB - 0% offset/Area Scan:

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342576/1

Communication System: LTE850 (Band 5); Frequency: 844 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL835 Medium parameters used: $f = 844$ MHz; $\sigma = 0.905$ S/m; $\epsilon_r = 41.005$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: ES3DV3 - SN3320; ConvF(6.32, 6.32, 6.32); Calibrated: 2013-06-04;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE3 Sn413; Calibrated: 2013-01-11
Phantom: SAM; Type: SAM; Serial: 1043
Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-07-29 10:40:31

DASY Configuration for WLAN5000 a-mode - Left/Tilt - Channel 52 - OFDM 6 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5260 MHz; Duty Cycle: 1:1; PMF: 1

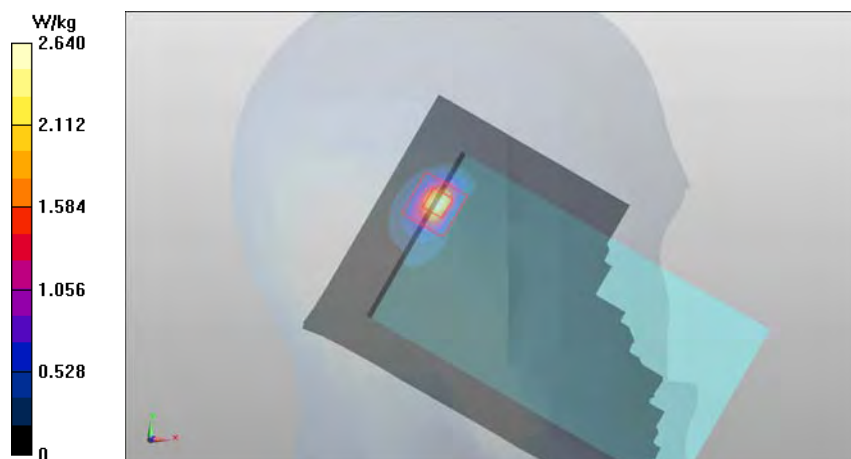
Medium: HSL5000 Medium parameters used: $f = 5260$ MHz; $\sigma = 4.51$ S/m; $\epsilon_r = 35.479$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3573; ConvF(4.29, 4.29, 4.29); Calibrated: 2013-01-23;
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 1.21 W/kg; SAR(10 g) = 0.356 W/kg

Maximum value of SAR (interpolated) = 2.64 W/kg



Note: LTE850 (Band 5) result was scaled by a factor of 1.02 and WLAN5000 result was scaled by a factor of 1.17 before combining.

Plot #25

Date/Time: 2013-08-01 09:28:29

DASY Configuration for WCDMA1700/2100 (Band 4) - Left/Tilt - Middle/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: WCDMA1700/2100 (Band 4); Frequency: 1732.4 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL1800 Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.304$ S/m; $\epsilon_r = 38.632$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: ES3DV3 - SN3131; ConvF(5.17, 5.17, 5.17); Calibrated: 2013-06-18;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn793; Calibrated: 2013-06-10
Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1692
Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-07-29 10:40:31

DASY Configuration for WLAN5000 a-mode - Left/Tilt - Channel 52 - OFDM 6 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5260 MHz; Duty Cycle: 1:1; PMF: 1

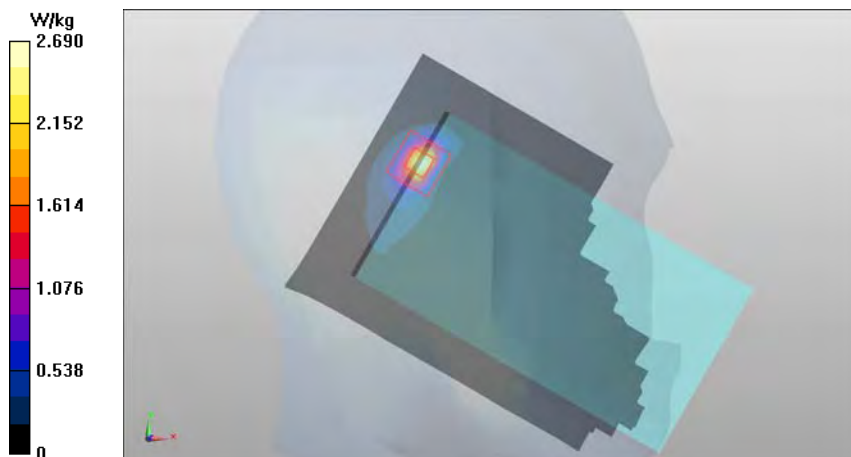
Medium: HSL5000 Medium parameters used: $f = 5260$ MHz; $\sigma = 4.51$ S/m; $\epsilon_r = 35.479$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3573; ConvF(4.29, 4.29, 4.29); Calibrated: 2013-01-23;
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 1.26 W/kg; SAR(10 g) = 0.383 W/kg

Maximum value of SAR (interpolated) = 2.69 W/kg



Note: WCDMA1700/2100 (Band 4) result was scaled by a factor of 1.07 and WLAN5000 result was scaled by a factor of 1.17 before combining.

Plot #26

Date/Time: 2013-07-29 10:40:31

DASY Configuration for WLAN5000 a-mode - Left/Tilt - Channel 52 - OFDM 6 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5260 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL5000 Medium parameters used: $f = 5260$ MHz; $\sigma = 4.51$ S/m; $\epsilon_r = 35.479$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3573; ConvF(4.29, 4.29, 4.29); Calibrated: 2013-01-23;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))

Electronics: DAE4 Sn1309; Calibrated: 2013-01-11

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

Measurement SW: DASY52, Version 52.8 (5)

Date/Time: 2013-07-23 15:04:36

DASY Configuration for LTE1700 (Band 4) - Left/Tilt - Middle - QPSK - 20MHz - 1 RB - 50% offset/Area Scan:

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342574/6

Communication System: LTE1700/2100 (Band 4); Frequency: 1732.5 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL1750 Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.364$ S/m; $\epsilon_r = 40.107$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: ES3DV3 - SN3320; ConvF(5.23, 5.23, 5.23); Calibrated: 2013-06-04;

Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))

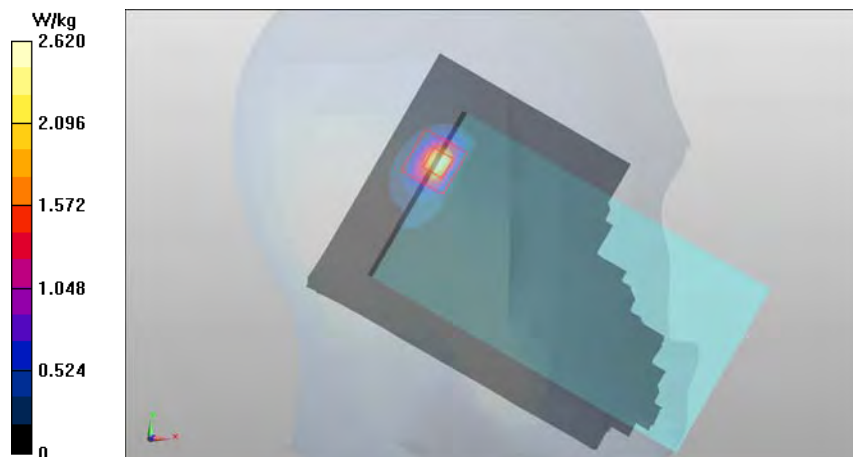
Electronics: DAE3 Sn413; Calibrated: 2013-01-11

Phantom: SAM; Type: SAM; Serial: 1043

Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 1.19 W/kg; SAR(10 g) = 0.342 W/kg

Maximum value of SAR (interpolated) = 2.62 W/kg



Note: LTE1700/2100 (Band 4) result was scaled by a factor of 1.00 and WLAN5000 result was scaled by a factor of 1.17 before combining.

SAR Report

Appendix B for FCC_RM-938_01

Applicant: Nokia Corporation

Type: RM-938

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Plot #27

Date/Time: 2013-07-29 12:22:33

DASY Configuration for 2-slot GPRS1900 - Left/Tilt - Middle/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:8.30042; PMF: 2.88104

Medium: HSL1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.364$ S/m; $\epsilon_r = 39.279$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: ES3DV3 - SN3131; ConvF(4.98, 4.98, 4.98); Calibrated: 2013-06-18;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn793; Calibrated: 2013-06-10
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-07-29 10:40:31

DASY Configuration for WLAN5000 a-mode - Left/Tilt - Channel 52 - OFDM 6 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5260 MHz; Duty Cycle: 1:1; PMF: 1

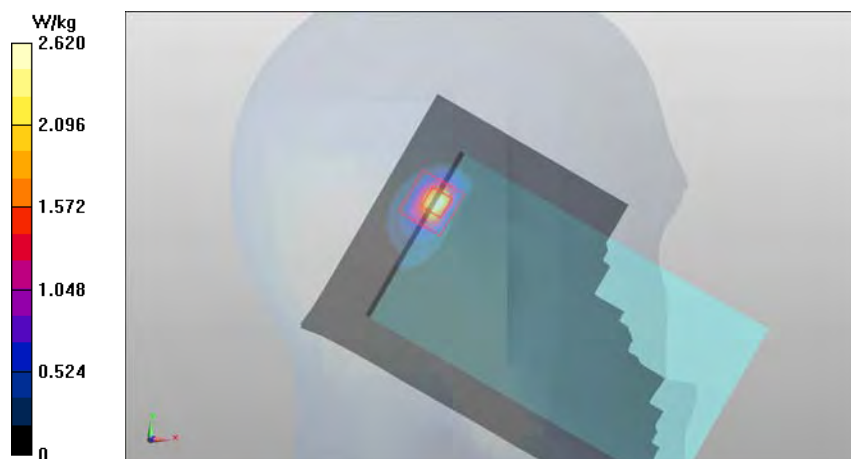
Medium: HSL5000 Medium parameters used: $f = 5260$ MHz; $\sigma = 4.51$ S/m; $\epsilon_r = 35.479$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3573; ConvF(4.29, 4.29, 4.29); Calibrated: 2013-01-23;
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 1.19 W/kg; SAR(10 g) = 0.344 W/kg

Maximum value of SAR (interpolated) = 2.62 W/kg



Note: 2-slot GPRS1900 result was scaled by a factor of 1.10 and WLAN5000 result was scaled by a factor of 1.17 before combining.

Plot #28

Date/Time: 2013-07-30 13:43:58

DASY Configuration for WCDMA1900 (Band 2) - Left/Tilt - Middle/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: WCDMA1900 (Band 2); Frequency: 1880 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.361$ S/m; $\epsilon_r = 38.694$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: ES3DV3 - SN3131; ConvF(4.98, 4.98, 4.98); Calibrated: 2013-06-18;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn793; Calibrated: 2013-06-10
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-07-29 10:40:31

DASY Configuration for WLAN5000 a-mode - Left/Tilt - Channel 52 - OFDM 6 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5260 MHz; Duty Cycle: 1:1; PMF: 1

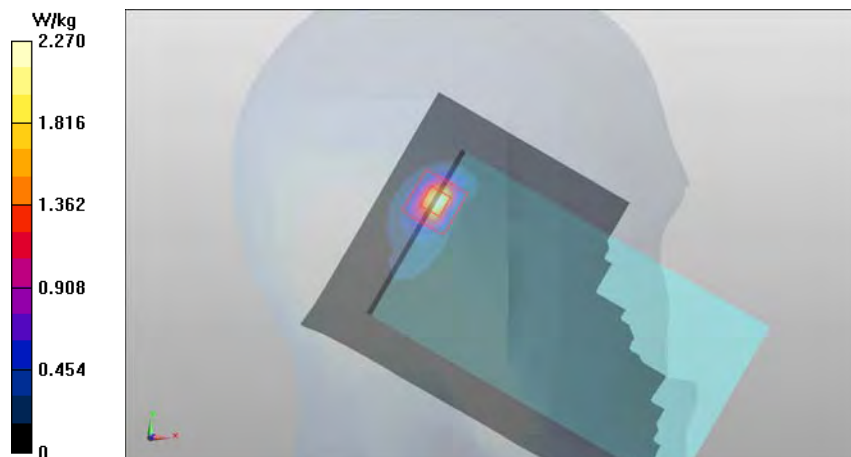
Medium: HSL5000 Medium parameters used: $f = 5260$ MHz; $\sigma = 4.51$ S/m; $\epsilon_r = 35.479$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3573; ConvF(4.29, 4.29, 4.29); Calibrated: 2013-01-23;
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.311 W/kg

Maximum value of SAR (interpolated) = 2.27 W/kg



Note: WCDMA1900 (Band 2) result was scaled by a factor of 1.02 and WLAN5000 result was scaled by a factor of 1.17 before combining.

Plot #29

Date/Time: 2013-07-25 10:20:45

DASY Configuration for LTE1900 (Band 2) - Left/Tilt - Middle - QPSK - 20MHz - 1 RB - 0% offset/Area Scan:

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342581/1

Communication System: LTE1900 (Band 2); Frequency: 1880 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.387$ S/m; $\epsilon_r = 39.133$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: ES3DV3 - SN3320; ConvF(5.06, 5.06, 5.06); Calibrated: 2013-06-04;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE3 Sn413; Calibrated: 2013-01-11
Phantom: SAM; Type: SAM; Serial: 1043
Measurement SW: DASY52, Version 52.8 (7)

Date/Time: 2013-07-29 10:40:31

DASY Configuration for WLAN5000 a-mode - Left/Tilt - Channel 52 - OFDM 6 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5260 MHz; Duty Cycle: 1:1; PMF: 1

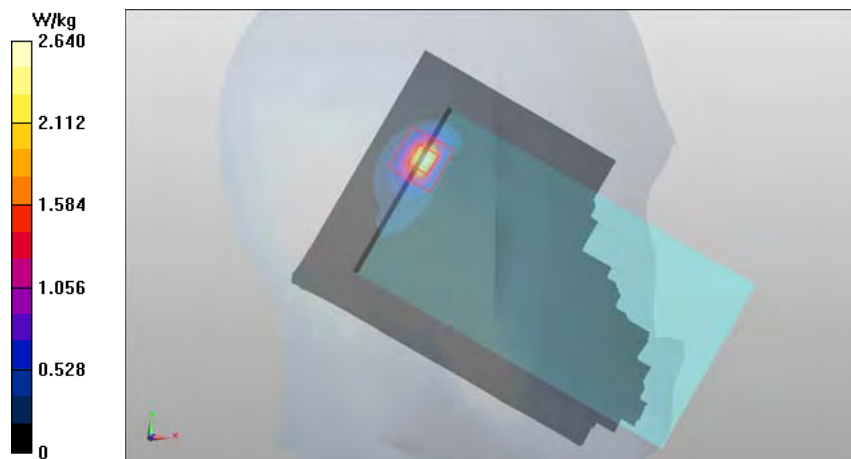
Medium: HSL5000 Medium parameters used: $f = 5260$ MHz; $\sigma = 4.51$ S/m; $\epsilon_r = 35.479$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3573; ConvF(4.29, 4.29, 4.29); Calibrated: 2013-01-23;
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 1.22 W/kg; SAR(10 g) = 0.357 W/kg

Maximum value of SAR (interpolated) = 2.64 W/kg



Note: LTE1900 (Band 2) result was scaled by a factor of 1.00 and WLAN5000 result was scaled by a factor of 1.17 before combining.

Plot #30

Date/Time: 2013-07-27 19:08:35

Test Laboratory: CETECOM IST Service
Type: RM-940; Serial: 004402/47/342571/2

Communication System: LTE700 (Band 17)

Frequency: 710 MHz; Duty Cycle: 1:1

Medium: MSL750; Medium Notes: -

Medium parameters used: $f = 710$ MHz; $\sigma = 0.927$ S/m; $\epsilon_r = 56.435$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(6.36, 6.36, 6.36); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASYS2, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

LTE700 (Band 17)/Body - Middle - QPSK - 10MHz - 1 RB - 0% offset - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 11.140 V/m

Fast SAR: SAR(1 g) = 0.257 W/kg

Fast SAR(10 g) = 0.183 W/kg

Maximum value of SAR (interpolated) = 0.273 W/kg

LTE700 (Band 17)/Body - Middle - QPSK - 10MHz - 1 RB - 0% offset - Spacer 15mm - WH-208 - Back Facing Phantom/Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.028 V/m

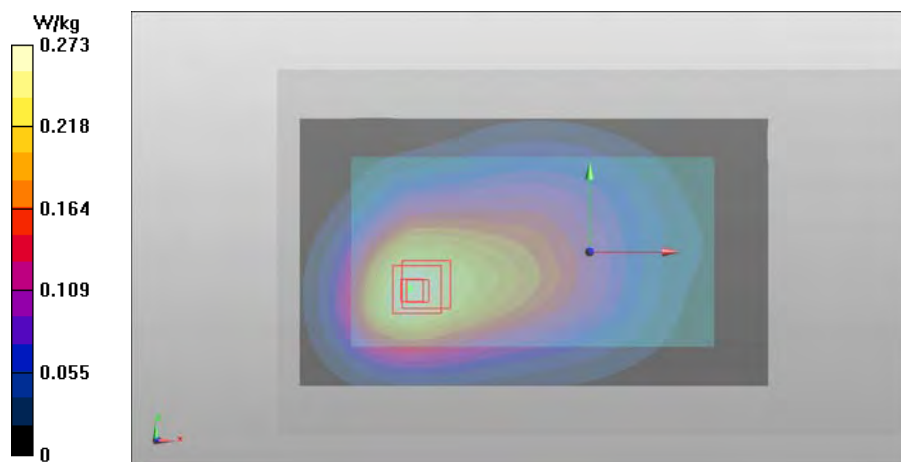
Peak SAR (extrapolated) = 0.341 W/kg

SAR(1 g) = 0.253 W/kg

SAR(10 g) = 0.184 W/kg

Power Drift = -0.14 dB

Maximum value of SAR (measured) = 0.271 W/kg



Plot #31

Date/Time: 2013-07-30 12:39:45

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342572/0

Communication System: 2-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:4.19952

Medium: BSL835; Medium Notes: t= 22.3 C

Medium parameters used: f = 849 MHz; $\sigma = 0.999$ S/m; $\epsilon_r = 54.085$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2013-01-21;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1355; Calibrated: 2013-01-08
- Phantom: 1. Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.10 (7164)

2-slot GPRS850/Body - High - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan (81x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 14.254 V/m

Fast SAR: SAR(1 g) = 0.242 W/kg

Fast SAR(10 g) = 0.172 W/kg

Maximum value of SAR (interpolated) = 0.256 W/kg

2-slot GPRS850/Body - High - Spacer 15mm - WH-208 - Back Facing Phantom/Zoom Scan (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 14.254 V/m

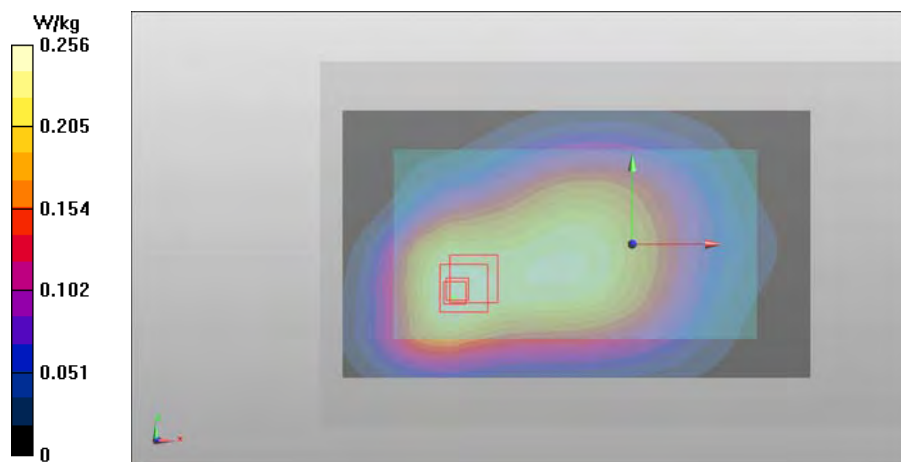
Peak SAR (extrapolated) = 0.335 W/kg

SAR(1 g) = 0.240 W/kg

SAR(10 g) = 0.177 W/kg

Power Drift = 0.03 dB

Maximum value of SAR (measured) = 0.254 W/kg



Plot #32

Date/Time: 2013-07-30 13:56:58

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342572/0

Communication System: WCDMA850 (Band 5)

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: BSL835; Medium Notes: t= 22.3 C

Medium parameters used: f = 847 MHz; $\sigma = 0.998$ S/m; $\epsilon_r = 54.088$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2013-01-21;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1355; Calibrated: 2013-01-08
- Phantom: 1. Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.10 (7164)

WCDMA850 (Band 5)/Body - High - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan (81x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 12.588 V/m

Fast SAR: SAR(1 g) = 0.248 W/kg

Fast SAR(10 g) = 0.173 W/kg

Maximum value of SAR (interpolated) = 0.263 W/kg

WCDMA850 (Band 5)/Body - High - Spacer 15mm - WH-208 - Back Facing Phantom/Zoom Scan (6x6x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 12.588 V/m

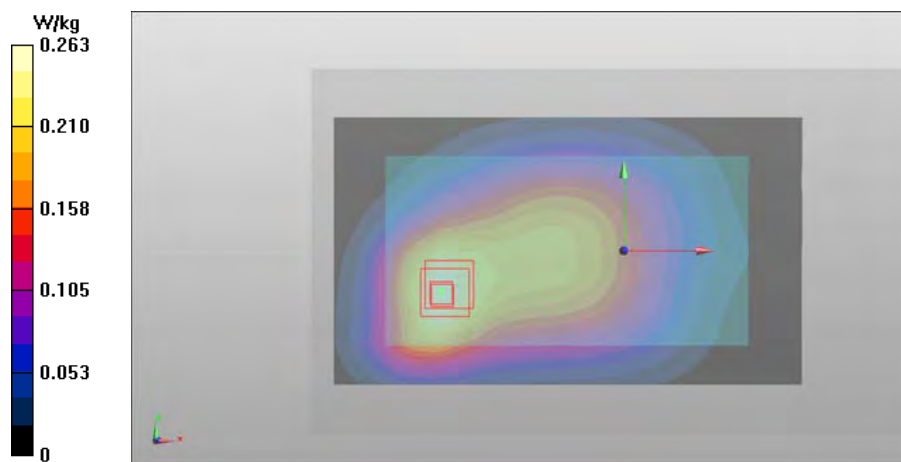
Peak SAR (extrapolated) = 0.351 W/kg

SAR(1 g) = 0.249 W/kg

SAR(10 g) = 0.177 W/kg

Power Drift = 0.03 dB

Maximum value of SAR (measured) = 0.265 W/kg



Plot #33

Date/Time: 2013-08-14 15:23:02

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342576/1

Communication System: LTE850 (Band 5)

Frequency: 844 MHz; Duty Cycle: 1:1

Medium: MSL835; Medium Notes: 2013-07-18

Medium parameters used: $f = 844$ MHz; $\sigma = 0.976$ S/m; $\epsilon_r = 55.838$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(6.29, 6.29, 6.29); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

LTE850 (Band 5)/Body - High - QPSK - 10MHz - 1% RB - 0% offset - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 14.720 V/m

Fast SAR: SAR(1 g) = 0.206 W/kg

Fast SAR(10 g) = 0.149 W/kg

Maximum value of SAR (interpolated) = 0.217 W/kg

LTE850 (Band 5)/Body - High - QPSK - 10MHz - 1% RB - 0% offset - Spacer 15mm - WH-208 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 15.064 V/m

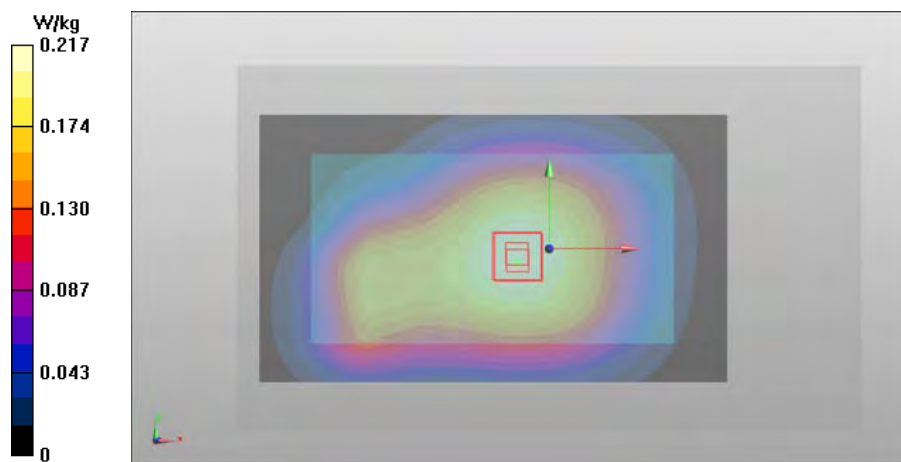
Peak SAR (extrapolated) = 0.258 W/kg

SAR(1 g) = 0.206 W/kg

SAR(10 g) = 0.158 W/kg

Power Drift = -0.03 dB

Maximum value of SAR (measured) = 0.215 W/kg



Plot #34

Date/Time: 2013-08-02 11:04:25

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: WCDMA1700/2100 (Band 4)

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: HSL1800; Medium Notes: t= 21.0 C

Medium parameters used (interpolated): f = 1732.4 MHz; $\sigma = 1.44$ S/m; $\epsilon_r = 51.853$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.87, 4.87, 4.87); Calibrated: 2013-06-18;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2012-08-28
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.10 (7164)

WCDMA1700_2100 (Band 4)/Body - Middle - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 5.016 V/m

Fast SAR: SAR(1 g) = 0.209 W/kg

Fast SAR(10 g) = 0.127 W/kg

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

WCDMA1700_2100 (Band 4)/Body - Middle - Spacer 15mm - No Headset - Back Facing Phantom/Zoom Scan 3 (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 5.016 V/m

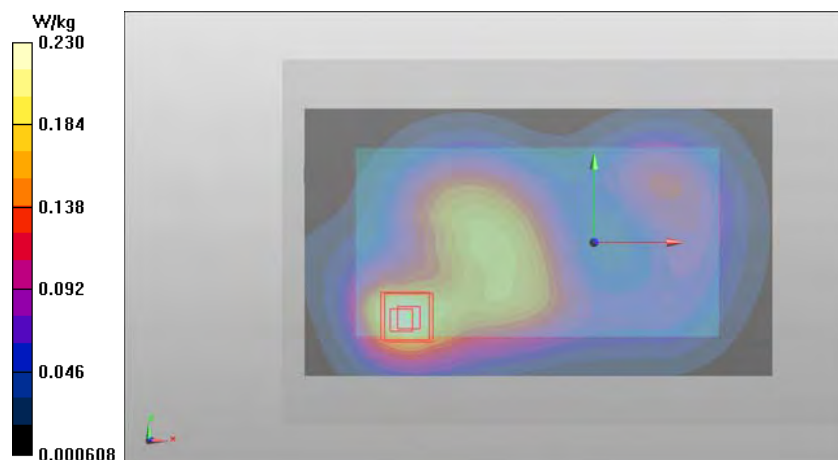
Peak SAR (extrapolated) = 0.260 W/kg

SAR(1 g) = 0.167 W/kg

SAR(10 g) = 0.099 W/kg

Power Drift = 0.07 dB

Maximum value of SAR (measured) = 0.181 W/kg



Plot #35

Date/Time: 2013-09-11 17:01:22

Test Laboratory: CETECOM ICT Services

Type: RM-938; Serial: 004402/47/497032/8

Communication System: LTE1700/2100 (Band 4)

Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium: MSL1750; Medium Notes:

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.491$ S/m; $\epsilon_r = 52.589$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(5.04, 5.04, 5.04); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.9 (7117)

LTE1700 (Band 4)/Body - Middle - QPSK - 20MHz - 1 RB - 50% offset - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 3.611 V/m

Fast SAR: SAR(1 g) = 0.131 W/kg

Fast SAR(10 g) = 0.084 W/kg

Maximum value of SAR (interpolated) = 0.144 W/kg

LTE1700 (Band 4)/Body - Middle - QPSK - 20MHz - 1 RB - 50% offset - Spacer 15mm - WH-208 - Back Facing Phantom/Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.882 V/m

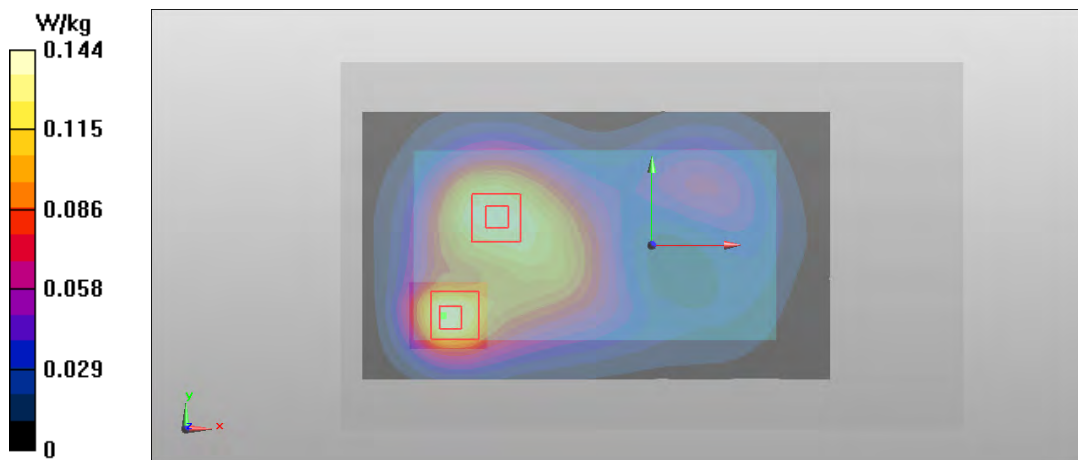
Peak SAR (extrapolated) = 0.220 W/kg

SAR(1 g) = 0.132 W/kg

SAR(10 g) = 0.077 W/kg

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 0.144 W/kg



Plot #36

Date/Time: 2013-07-31 08:19:41

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: 2-slot GPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:4.19952

Medium: BSL1900; Medium Notes: $t = 20.5$ C

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.489$ S/m; $\epsilon_r = 51.803$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.62, 4.62, 4.62); Calibrated: 2013-06-18;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2013-06-10
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: -
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.10 (7164)

2-slot GPRS1900/Body - Low - Spacer 15mm - No Headset - Display Facing Phantom/Area Scan (81x141x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Reference Value = 6.901 V/m

Fast SAR: SAR(1 g) = 0.160 W/kg

Fast SAR(10 g) = 0.093 W/kg

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

2-slot GPRS1900/Body - Low - Spacer 15mm - No Headset - Display Facing Phantom/Zoom Scan (5x5x7)/Cube

0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 11.147 V/m

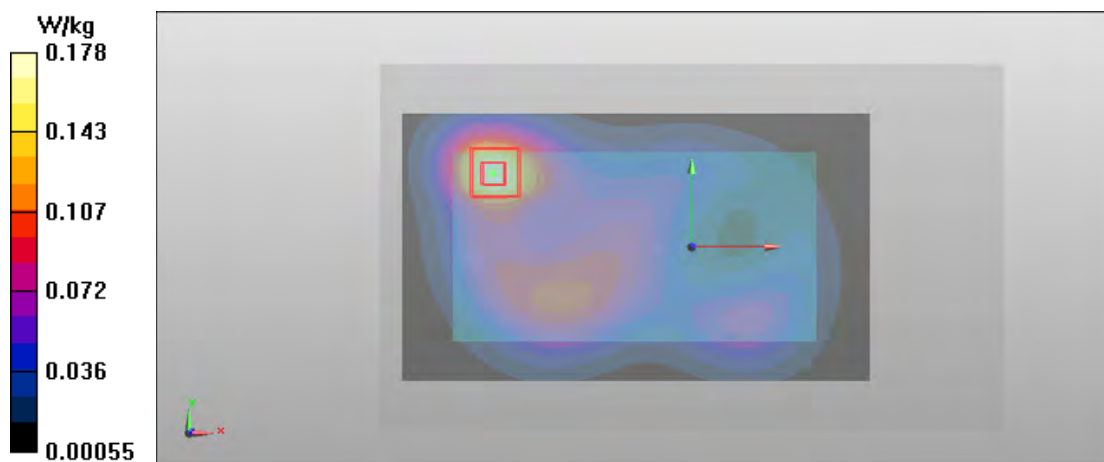
Peak SAR (extrapolated) = 0.254 W/kg

SAR(1 g) = 0.164 W/kg

SAR(10 g) = 0.096 W/kg

Power Drift = 0.02 dB

Maximum value of SAR (measured) = 0.181 W/kg



Plot #37

Date/Time: 2013-08-12 12:42:22

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: WCDMA1900 (Band 2)

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 20.7$ C

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.493$ S/m; $\epsilon_r = 51.262$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.62, 4.62, 4.62); Calibrated: 2013-06-18;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2013-06-10
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: -
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.10 (7164)

WCDMA1900 (Band 2)/Body - Low - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan (81x141x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Reference Value = 14.273 V/m

Fast SAR: SAR(1 g) = 0.325 W/kg

Fast SAR(10 g) = 0.191 W/kg

Maximum value of SAR (interpolated) = 0.360 W/kg

WCDMA1900 (Band 2)/Body - Low - Spacer 15mm - WH-208 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 14.273 V/m

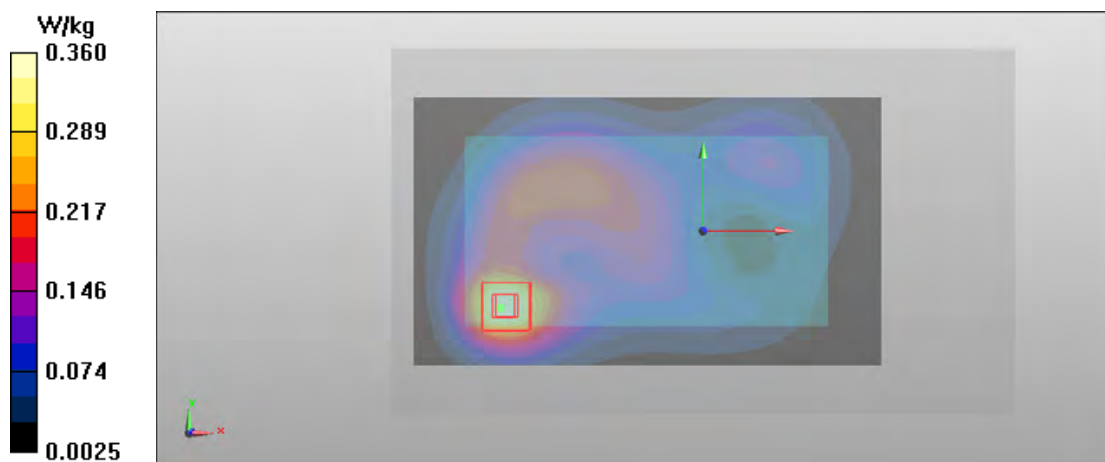
Peak SAR (extrapolated) = 0.510 W/kg

SAR(1 g) = 0.326 W/kg

SAR(10 g) = 0.193 W/kg

Power Drift = -0.08 dB

Maximum value of SAR (measured) = 0.358 W/kg



Plot #38

Date/Time: 2013-07-19 17:37:10

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342581/1

Communication System: LTE1900 (Band 2)

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: MSL1900; Medium Notes: 2013-07-19

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.462$ S/m; $\epsilon_r = 52.379$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(4.78, 4.78, 4.78); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

LTE1900 (Band 2)/Body - Middle - QPSK - 20MHz - 1 RB - 0% offset - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 7.205 V/m

Fast SAR: SAR(1 g) = 0.289 W/kg

Fast SAR(10 g) = 0.171 W/kg

Maximum value of SAR (interpolated) = 0.315 W/kg

LTE1900 (Band 2)/Body - Middle - QPSK - 20MHz - 1 RB - 0% offset - Spacer 15mm - No Headset - Back Facing Phantom/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.594 V/m

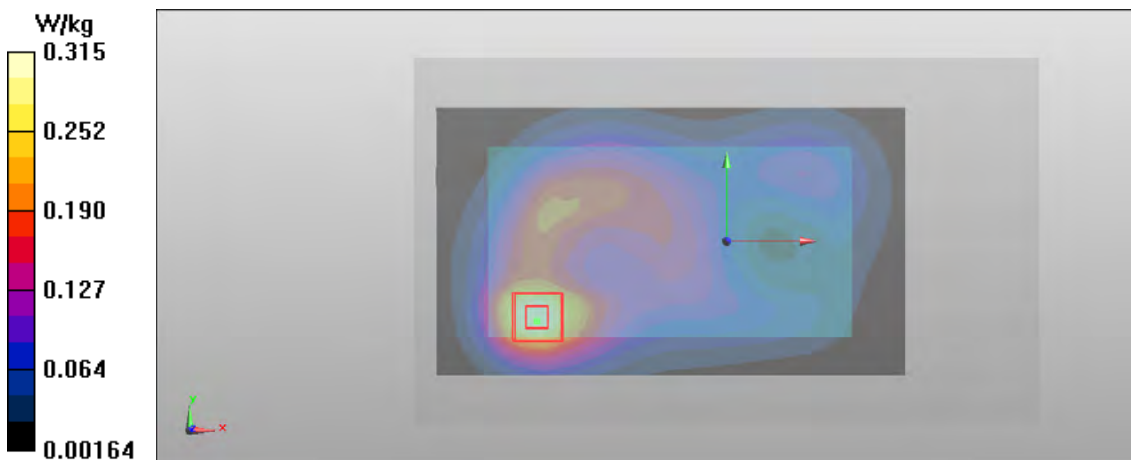
Peak SAR (extrapolated) = 0.480 W/kg

SAR(1 g) = 0.291 W/kg

SAR(10 g) = 0.172 W/kg

Power Drift = 0.03 dB

Maximum value of SAR (measured) = 0.316 W/kg



Plot #39

Date/Time: 2013-07-29 21:08:40

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 21.4$ C

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.964$ S/m; $\epsilon_r = 50.665$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3834
- ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2013-01-11
- Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: -
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.10 (7164)

WLAN2450 b-mode/Body - Channel 11 - DSSS 1 Mbps - Spacer 15mm - WH-208 - Display Facing Phantom/Area Scan (121x211x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 7.788 V/m

Fast SAR: SAR(1 g) = 0.107 W/kg

Fast SAR(10 g) = 0.055 W/kg

Maximum value of SAR (interpolated) = 0.117 W/kg

WLAN2450 b-mode/Body - Channel 11 - DSSS 1 Mbps - Spacer 15mm - WH-208 - Display Facing Phantom/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.788 V/m

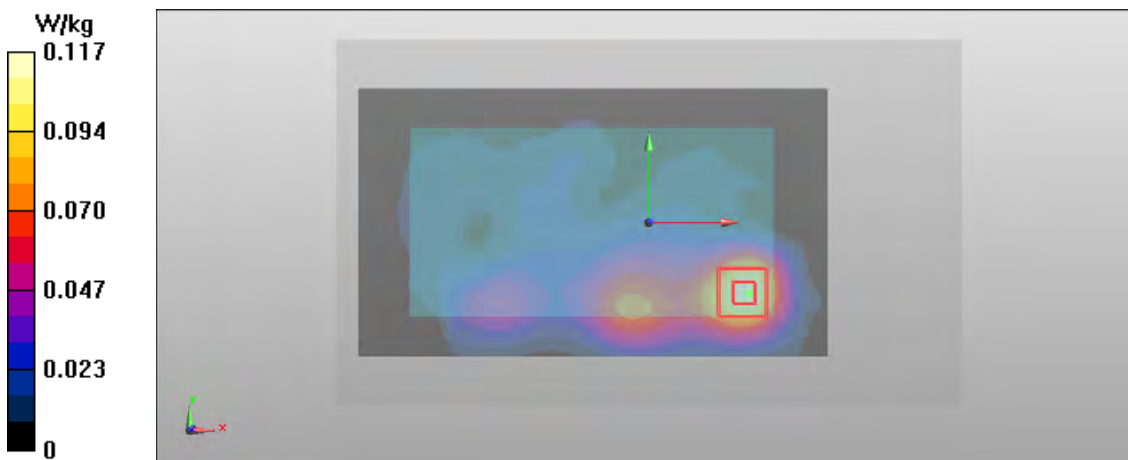
Peak SAR (extrapolated) = 0.196 W/kg

SAR(1 g) = 0.108 W/kg

SAR(10 g) = 0.059 W/kg

Power Drift = -0.06 dB

Maximum value of SAR (measured) = 0.119 W/kg



Plot #40

Date/Time: 2013-08-06 18:05:52

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode

Frequency: 5520 MHz; Duty Cycle: 1:1

Medium: BSL5000; Medium Notes: $t = 22.5$ C

Medium parameters used: $f = 5520$ MHz; $\sigma = 5.651$ S/m; $\epsilon_r = 46.727$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(3.56, 3.56, 3.56); Calibrated: 2013-01-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.10 (7164)

WLAN5000 a-mode/Body - Channel 104 - OFDM 6 Mbps - Spacer 15mm - No Headset - Back Facing

Phantom/Area Scan (121x211x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Reference Value = -

Fast SAR: $SAR(1\text{ g}) = 0.143$ W/kg

Fast SAR(10 g) = 0.058 W/kg

Maximum value of SAR (interpolated) = 0.254 W/kg

WLAN5000 a-mode/Body - Channel 104 - OFDM 6 Mbps - Spacer 15mm - No Headset - Back Facing

Phantom/Zoom Scan (8x8x12)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 7.805 V/m

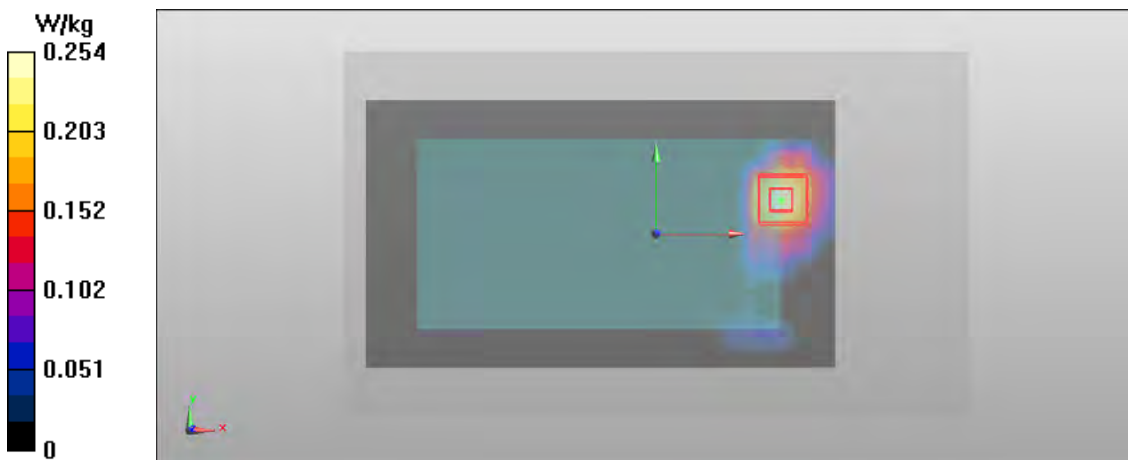
Peak SAR (extrapolated) = 0.577 W/kg

SAR(1 g) = 0.163 W/kg

SAR(10 g) = 0.064 W/kg

Power Drift = -0.01 dB

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



Plot #41

Date/Time: 2013-07-27 19:08:35

DASY Configuration for LTE700 (Band 17)/Body - Middle - QPSK - 10MHz - 1 RB - 0% offset - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342571/2

Communication System: LTE700 (Band 17); Frequency: 710 MHz; Duty Cycle: 1:1; PMF: 1

Medium: MSL750 Medium parameters used: $f = 710 \text{ MHz}$; $\sigma = 0.927 \text{ S/m}$; $\epsilon_r = 56.435$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Center Section

Probe: ES3DV3 - SN3320; ConvF(6.36, 6.36, 6.36); Calibrated: 2013-06-04;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE3 Sn413; Calibrated: 2013-01-11
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (7)

Date/Time: 2013-07-29 18:56:16

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

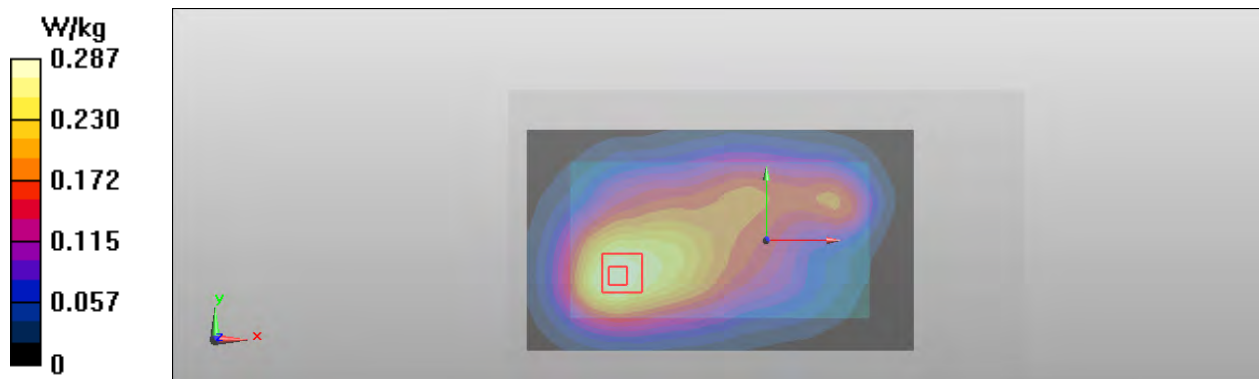
Medium: BSL2450 Medium parameters used: $f = 2437 \text{ MHz}$; $\sigma = 1.931 \text{ S/m}$; $\epsilon_r = 50.743$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn555; Calibrated: 2013-01-11
Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: -
Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.270 W/kg; SAR(10 g) = 0.190 W/kg

Maximum value of SAR (interpolated) = 0.287 W/kg



Note: LTE700 (Band 17) result was scaled by a factor of 1.00 and WLAN2450 result was scaled by a factor of 1.41 before combining.

Plot #42

Date/Time: 2013-07-30 12:39:45

DASY Configuration for 2-slot GPRS850/Body - High - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342572/0

Communication System: 2-slot GPRS850; Frequency: 848.8 MHz; Duty Cycle: 1:4.19952; PMF: 2.04927

Medium: BSL835 Medium parameters used: $f = 849$ MHz; $\sigma = 0.999$ S/m; $\epsilon_r = 54.085$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3165; ConvF(6.04, 6.04, 6.04); Calibrated: 2013-01-21;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1355; Calibrated: 2013-01-08
Phantom: 1. Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-07-29 18:56:16

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.931$ S/m; $\epsilon_r = 50.743$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn555; Calibrated: 2013-01-11
Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: -
Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.275 W/kg; SAR(10 g) = 0.193 W/kg

Maximum value of SAR (interpolated) = 0.293 W/kg



Note: 2-slot GPRS850 result was scaled by a factor of 1.08 and WLAN2450 result was scaled by a factor of 1.41 before combining.

Plot #43

Date/Time: 2013-07-30 13:56:58

DASY Configuration for WCDMA850 (Band 5)/Body - High - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342572/0

Communication System: WCDMA850 (Band 5); Frequency: 846.6 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL835 Medium parameters used: $f = 847$ MHz; $\sigma = 0.998$ S/m; $\epsilon_r = 54.088$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3165; ConvF(6.04, 6.04, 6.04); Calibrated: 2013-01-21;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1355; Calibrated: 2013-01-08
Phantom: 1. Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-07-29 18:56:16

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

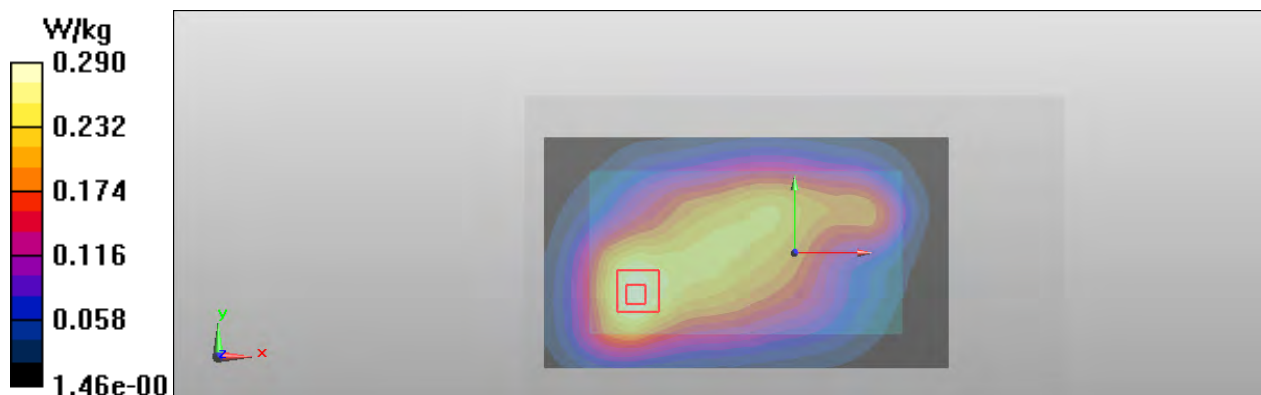
Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.931$ S/m; $\epsilon_r = 50.743$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn555; Calibrated: 2013-01-11
Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: -
Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.272 W/kg; SAR(10 g) = 0.188 W/kg

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



Note: WCDMA850 (Band 5) result was scaled by a factor of 1.04 and WLAN2450 result was scaled by a factor of 1.41 before combining.

Plot #44

Date/Time: 2013-08-14 15:23:02

DASY Configuration for LTE850 (Band 5)/Body - High - QPSK - 10MHz - 1% RB - 0% offset - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342576/1

Communication System: LTE850 (Band 5); Frequency: 844 MHz; Duty Cycle: 1:1; PMF: 1

Medium: MSL835 Medium parameters used: $f = 844$ MHz; $\sigma = 0.976$ S/m; $\epsilon_r = 55.838$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3320; ConvF(6.29, 6.29, 6.29); Calibrated: 2013-06-04;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE3 Sn413; Calibrated: 2013-01-11

Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

Measurement SW: DASY52, Version 52.8 (7)

Date/Time: 2013-07-29 18:56:16

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.931$ S/m; $\epsilon_r = 50.743$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;

Sensor-Surface: 4mm (Mechanical Surface Detection)

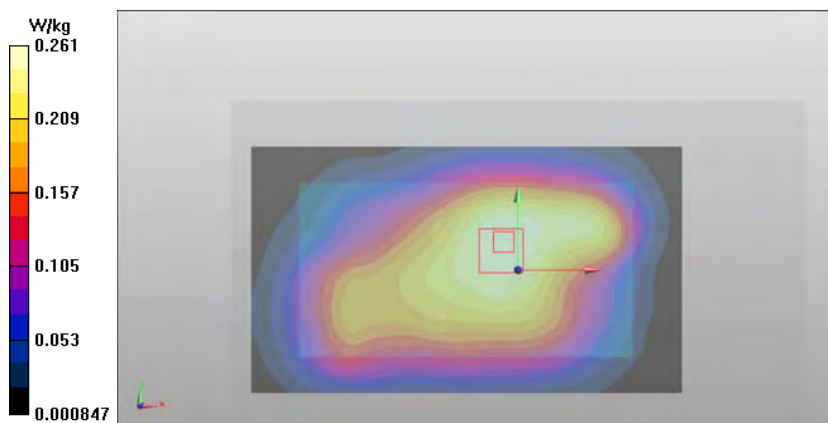
Electronics: DAE4 Sn555; Calibrated: 2013-01-11

Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: Not Specified

Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.247 W/kg; SAR(10 g) = 0.170 W/kg

Maximum value of SAR (interpolated) = 0.261 W/kg



Note: LTE850 (Band 5) result was scaled by a factor of 1.02 and WLAN2450 result was scaled by a factor of 1.41 before combining.

SAR Report

Appendix B for FCC_RM-938_01

Applicant: Nokia Corporation

Type: RM-938

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Plot #45

Date/Time: 2013-08-02 12:30:42

DASY Configuration for WCDMA1700/2100 (Band 4)/Body - Middle - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: WCDMA1700/2100 (Band 4); Frequency: 1732.4 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL1800 Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.44$ S/m; $\epsilon_r = 51.853$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3131; ConvF(4.87, 4.87, 4.87); Calibrated: 2013-06-18;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn793; Calibrated: 2012-08-28
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: -
Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-07-29 18:56:16

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

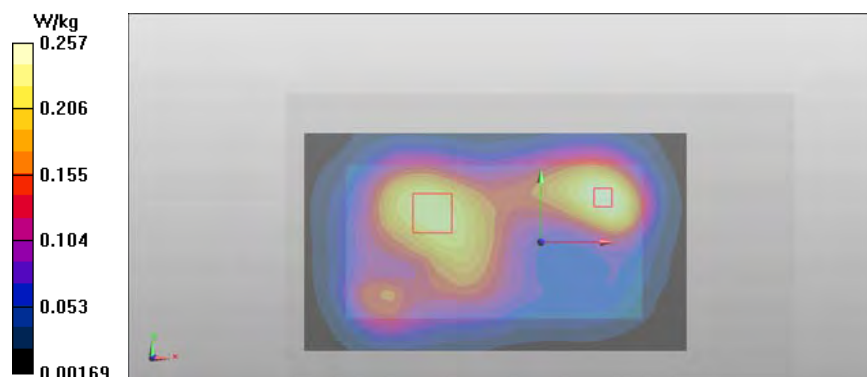
Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.931$ S/m; $\epsilon_r = 50.743$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn555; Calibrated: 2013-01-11
Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: -
Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.237 W/kg; SAR(10 g) = 0.142 W/kg

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



Note: WCDMA1700/2100 (Band 4) result was scaled by a factor of 1.07 and WLAN2450 result was scaled by a factor of 1.41 before combining.

Plot #46

Date/Time: 2013-09-11 17:01:22

DASY Configuration for LTE1700 (Band 4)/Body - Middle - QPSK - 20MHz - 1 RB - 50% offset - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: CETECOM ICT Services

Type: RM-938; Serial: 004402/47/497032/8

Communication System: LTE1700/2100 (Band 4); Frequency: 1732.5 MHz; Duty Cycle: 1:1; PMF: 1

Medium: MSL1750 Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.491$ S/m; $\epsilon_r = 52.589$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3320; ConvF(5.04, 5.04, 5.04); Calibrated: 2013-06-04;

Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))

Electronics: DAE3 Sn413; Calibrated: 2013-01-11

Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

Measurement SW: DASY52, Version 52.8 (7)

Date/Time: 2013-07-29 18:56:16

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.931$ S/m; $\epsilon_r = 50.743$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;

Sensor-Surface: 4mm (Mechanical Surface Detection)

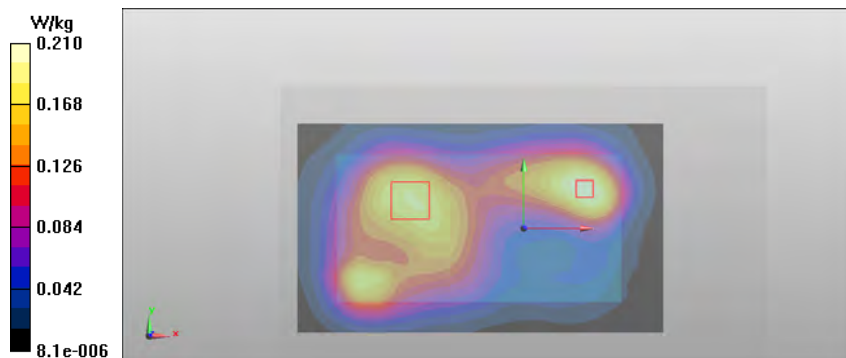
Electronics: DAE4 Sn555; Calibrated: 2013-01-11

Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial:

Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.193 W/kg; SAR(10 g) = 0.109 W/kg

Maximum value of SAR (interpolated) = 0.210 W/kg



Note: LTE1700/2100 (Band 4) result was scaled by a factor of 1.14 and WLAN2450 result was scaled by a factor of 1.41 before combining.

Plot #47

Date/Time: 2013-07-31 08:19:41

DASY Configuration for 2-slot GPRS1900/Body - Low - Spacer 15mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: 2-slot GPRS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4.19952; PMF: 2.04927

Medium: BSL1900 Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.489$ S/m; $\epsilon_r = 51.803$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3131; ConvF(4.62, 4.62, 4.62); Calibrated: 2013-06-18;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn793; Calibrated: 2013-06-10
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: -
Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-07-29 20:09:02

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 15mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

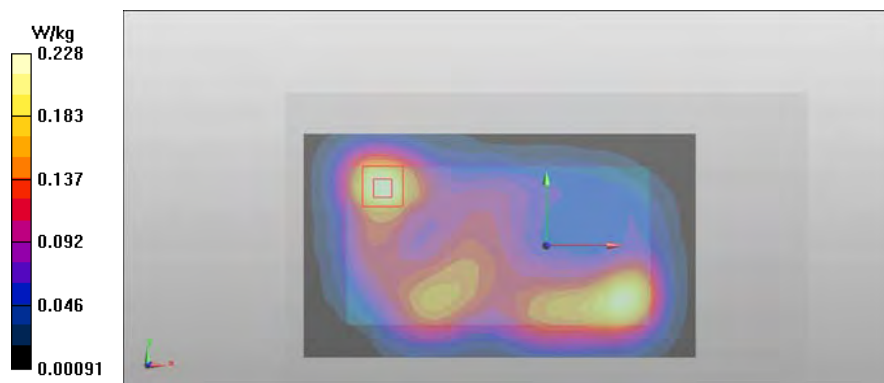
Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.931$ S/m; $\epsilon_r = 50.743$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn555; Calibrated: 2013-01-11
Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: -
Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.209 W/kg; SAR(10 g) = 0.120 W/kg

Maximum value of SAR (interpolated) = 0.228 W/kg



Note: 2-slot GPRS1900 result was scaled by a factor of 1.15 and WLAN2450 result was scaled by a factor of 1.41 before combining.

Plot #48

Date/Time: 2013-08-12 12:42:22

DASY Configuration for WCDMA1900 (Band 2)/Body - Low - Spacer 15mm - WH-208 - Back Facing

Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: WCDMA1900 (Band 2); Frequency: 1852.4 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL1900 Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.493$ S/m; $\epsilon_r = 51.262$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3131; ConvF(4.62, 4.62, 4.62); Calibrated: 2013-06-18;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 2013-06-10

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: -

Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-07-29 18:56:16

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.931$ S/m; $\epsilon_r = 50.743$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;

Sensor-Surface: 4mm (Mechanical Surface Detection)

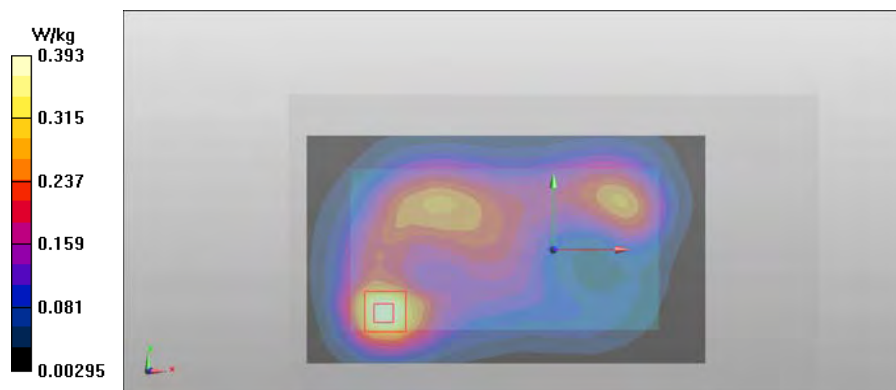
Electronics: DAE4 Sn555; Calibrated: 2013-01-11

Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: -

Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.362 W/kg; SAR(10 g) = 0.211 W/kg

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



Note: WCDMA1900 (Band 2) result was scaled by a factor of 1.06 and WLAN2450 result was scaled by a factor of 1.41 before combining.

SAR Report

Appendix B for FCC_RM-938_01

Applicant: Nokia Corporation

Type: RM-938

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Plot #49

Date/Time: 2013-07-19 17:43:18

DASY Configuration for LTE1900 (Band 2)/Body - Middle - QPSK - 20MHz - 1 RB - 0% offset - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342581/1

Communication System: LTE1900 (Band 2); Frequency: 1880 MHz; Duty Cycle: 1:1; PMF: 1

Medium: MSL1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.462$ S/m; $\epsilon_r = 52.379$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3320; ConvF(4.78, 4.78, 4.78); Calibrated: 2013-06-04;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE3 Sn413; Calibrated: 2013-01-11
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (7)

Date/Time: 2013-07-29 18:56:16

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

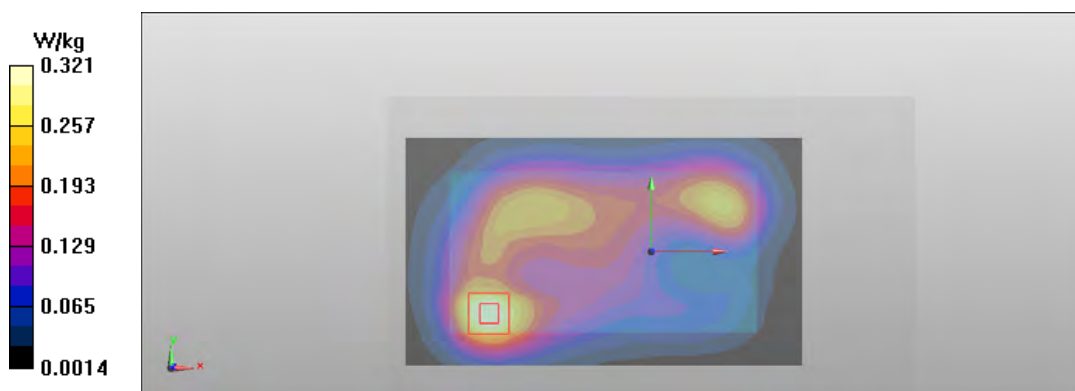
Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.931$ S/m; $\epsilon_r = 50.743$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn555; Calibrated: 2013-01-11
Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: -
Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.299 W/kg; SAR(10 g) = 0.176 W/kg

Maximum value of SAR (interpolated) = 0.321 W/kg



Note: LTE1900 (Band 2) result was scaled by a factor of 1.00 and WLAN2450 result was scaled by a factor of 1.41 before combining.

Plot #50

Date/Time: 2013-07-27 16:03:52

DASY Configuration for LTE700 (Band 17)/Body - Middle - QPSK - 10MHz - 1 RB - 0% offset - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342571/2

Communication System: LTE700 (Band 17); Frequency: 710 MHz; Duty Cycle: 1:1; PMF: 1

Medium: MSL750 Medium parameters used: $f = 710 \text{ MHz}$; $\sigma = 0.927 \text{ S/m}$; $\epsilon_r = 56.435$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Center Section

Probe: ES3DV3 - SN3320; ConvF(6.36, 6.36, 6.36); Calibrated: 2013-06-04;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE3 Sn413; Calibrated: 2013-01-11
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (7)

Date/Time: 2013-08-06 18:05:52

DASY Configuration for WLAN5000 a-mode/Body - Channel 104 - OFDM 6 Mbps - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5520 MHz; Duty Cycle: 1:1; PMF: 1

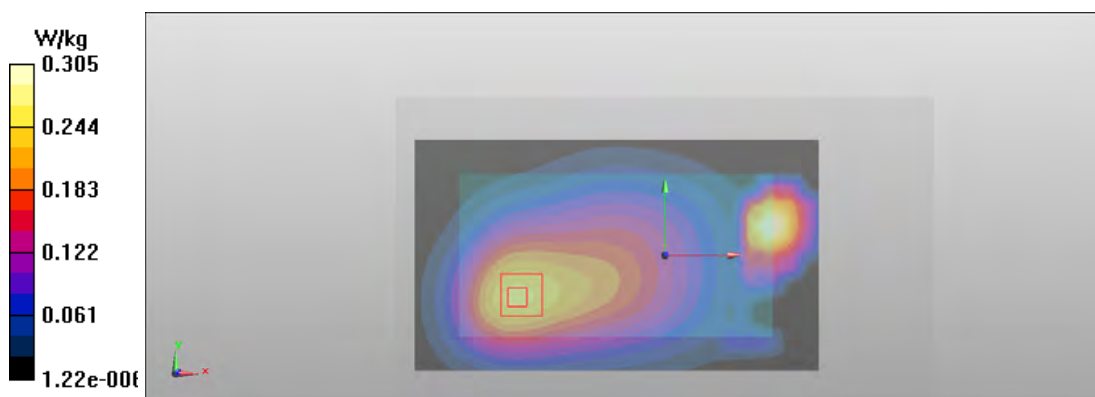
Medium: BSL5000 Medium parameters used: $f = 5520 \text{ MHz}$; $\sigma = 5.651 \text{ S/m}$; $\epsilon_r = 46.727$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Center Section

Probe: EX3DV4 - SN3573; ConvF(3.56, 3.56, 3.56); Calibrated: 2013-01-23;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.238 W/kg; SAR(10 g) = 0.171 W/kg

Maximum value of SAR (interpolated) = 0.305 W/kg



Note: LTE700 (Band 17) result was scaled by a factor of 1.00 and WLAN5000 result was scaled by a factor of 1.12 before combining.

Plot #51

Date/Time: 2013-07-30 12:39:45

DASY Configuration for 2-slot GPRS850/Body - High - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342572/0

Communication System: 2-slot GPRS850; Frequency: 848.8 MHz; Duty Cycle: 1:4.19952; PMF: 2.04927

Medium: BSL835 Medium parameters used: $f = 849$ MHz; $\sigma = 0.999$ S/m; $\epsilon_r = 54.085$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3165; ConvF(6.04, 6.04, 6.04); Calibrated: 2013-01-21;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1355; Calibrated: 2013-01-08
Phantom: 1. Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-08-05 13:53:48

DASY Configuration for WLAN5000 a-mode/Body - Channel 60 - OFDM 6 Mbps - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5300 MHz; Duty Cycle: 1:1; PMF: 1

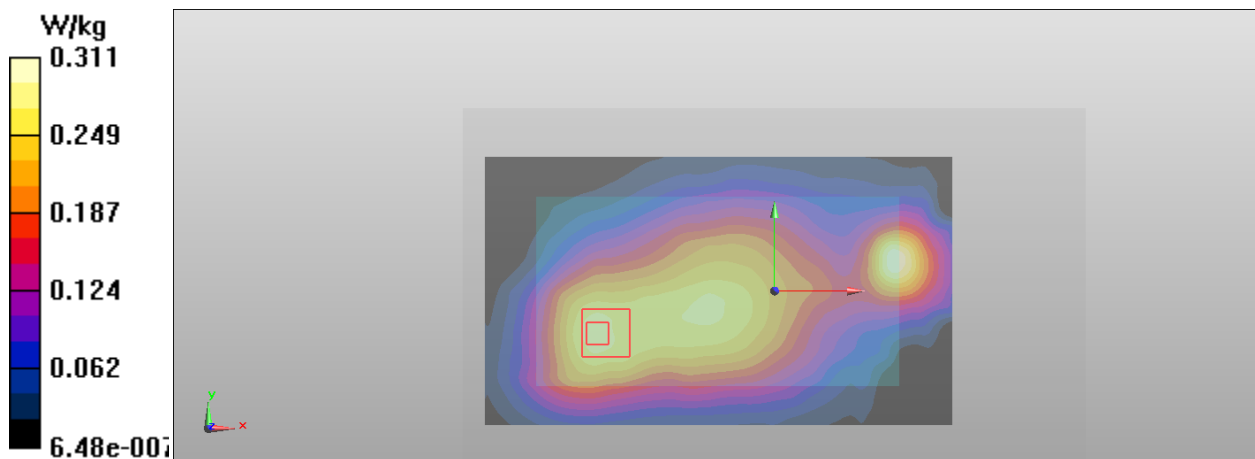
Medium: BSL5000 Medium parameters used: $f = 5300$ MHz; $\sigma = 5.367$ S/m; $\epsilon_r = 47.744$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3573; ConvF(3.85, 3.85, 3.85); Calibrated: 2013-01-23;
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.264 W/kg; SAR(10 g) = 0.188 W/kg

Maximum value of SAR (interpolated) = 0.311 W/kg



Note: 2-slot GPRS850 result was scaled by a factor of 1.08 and WLAN5000 result was scaled by a factor of 1.16 before combining.

Plot #52

Date/Time: 2013-07-30 13:56:58

DASY Configuration for WCDMA850 (Band 5)/Body - High - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342572/0

Communication System: WCDMA850 (Band 5); Frequency: 846.6 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL835 Medium parameters used: $f = 847$ MHz; $\sigma = 0.998$ S/m; $\epsilon_r = 54.088$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3165; ConvF(6.04, 6.04, 6.04); Calibrated: 2013-01-21;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1355; Calibrated: 2013-01-08
Phantom: 1. Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-08-05 13:53:48

DASY Configuration for WLAN5000 a-mode/Body - Channel 60 - OFDM 6 Mbps - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5300 MHz; Duty Cycle: 1:1; PMF: 1

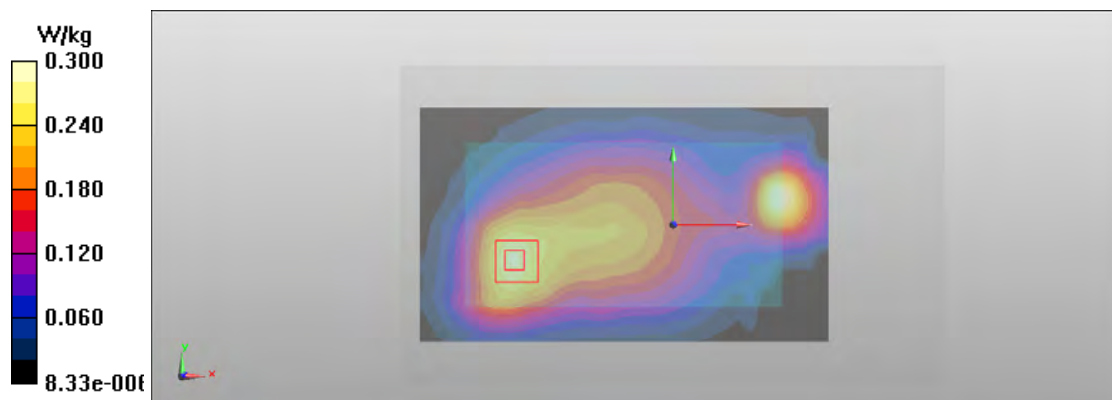
Medium: BSL5000 Medium parameters used: $f = 5300$ MHz; $\sigma = 5.367$ S/m; $\epsilon_r = 47.744$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3573; ConvF(3.85, 3.85, 3.85); Calibrated: 2013-01-23;
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.262 W/kg; SAR(10 g) = 0.182 W/kg

Maximum value of SAR (interpolated) = 0.300 W/kg



Note: WCDMA850 (Band 5) result was scaled by a factor of 1.04 and WLAN5000 result was scaled by a factor of 1.16 before combining.

Plot #53

Date/Time: 2013-07-18 13:27:23

DASY Configuration for LTE850 (Band 5)/Body - High - QPSK - 10MHz - 1 RB - 0% offset - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342576/1

Communication System: LTE850 (Band 5); Frequency: 844 MHz; Duty Cycle: 1:1; PMF: 1

Medium: MSL835 Medium parameters used: $f = 844$ MHz; $\sigma = 1.002$ S/m; $\epsilon_r = 55.233$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3320; ConvF(6.29, 6.29, 6.29); Calibrated: 2013-06-04;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE3 Sn413; Calibrated: 2013-01-11

Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

Measurement SW: DASY52, Version 52.8 (7)

Date/Time: 2013-08-06 18:05:52

DASY Configuration for WLAN5000 a-mode/Body - Channel 104 - OFDM 6 Mbps - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5520 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL5000 Medium parameters used: $f = 5520$ MHz; $\sigma = 5.651$ S/m; $\epsilon_r = 46.727$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3573; ConvF(3.56, 3.56, 3.56); Calibrated: 2013-01-23;

Sensor-Surface: 2mm (Mechanical Surface Detection)

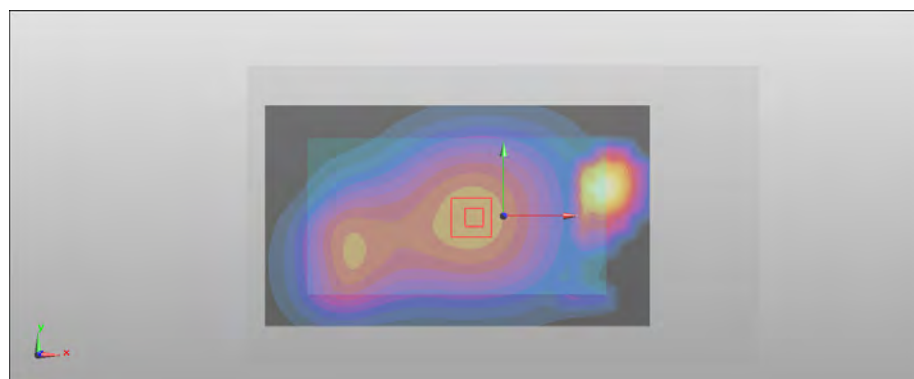
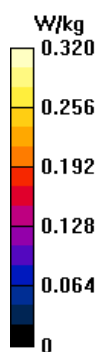
Electronics: DAE4 Sn1309; Calibrated: 2013-01-11

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.202 W/kg; SAR(10 g) = 0.146 W/kg

Maximum value of SAR (interpolated) = 0.320 W/kg



Note: LTE850 (Band 5) result was scaled by a factor of 1.02 and WLAN5000 result was scaled by a factor of 1.12 before combining.

Plot #54

Date/Time: 2013-08-02 11:04:25

DASY Configuration for WCDMA1700/2100 (Band 4)/Body - Middle - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: WCDMA1700/2100 (Band 4); Frequency: 1732.4 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL1800 Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.44$ S/m; $\epsilon_r = 51.853$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3131; ConvF(4.87, 4.87, 4.87); Calibrated: 2013-06-18;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 2012-08-28

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: -

Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-08-06 18:05:52

DASY Configuration for WLAN5000 a-mode/Body - Channel 104 - OFDM 6 Mbps - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5520 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL5000 Medium parameters used: $f = 5520$ MHz; $\sigma = 5.651$ S/m; $\epsilon_r = 46.727$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3573; ConvF(3.56, 3.56, 3.56); Calibrated: 2013-01-23;

Sensor-Surface: 2mm (Mechanical Surface Detection)

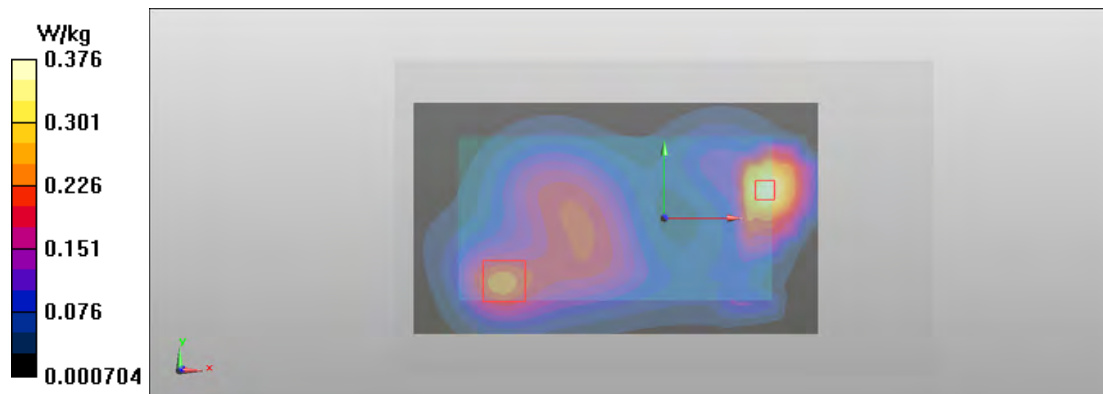
Electronics: DAE4 Sn1309; Calibrated: 2013-01-11

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.233 W/kg; SAR(10 g) = 0.135 W/kg

Maximum value of SAR (interpolated) = 0.376 W/kg



Note: WCDMA1700/2100 (Band 4) result was scaled by a factor of 1.07 and WLAN5000 result was scaled by a factor of 1.12 before combining.

SAR Report

Appendix B for FCC_RM-938_01

Applicant: Nokia Corporation

Type: RM-938

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Plot #55

Date/Time: 2013-09-11 17:01:22

DASY Configuration for LTE1700 (Band 4)/Body - Middle - QPSK - 20MHz - 1 RB - 50% offset - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: CETECOM ICT Services

Type: RM-938; Serial: 004402/47/497032/8

Communication System: LTE1700/2100 (Band 4); Frequency: 1732.5 MHz; Duty Cycle: 1:1; PMF: 1

Medium: MSL1750 Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.491$ S/m; $\epsilon_r = 52.589$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3320; ConvF(5.04, 5.04, 5.04); Calibrated: 2013-06-04;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE3 Sn413; Calibrated: 2013-01-11
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (7)

Date/Time: 2013-08-05 13:53:48

DASY Configuration for WLAN5000 a-mode/Body - Channel 60 - OFDM 6 Mbps - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5300 MHz; Duty Cycle: 1:1; PMF: 1

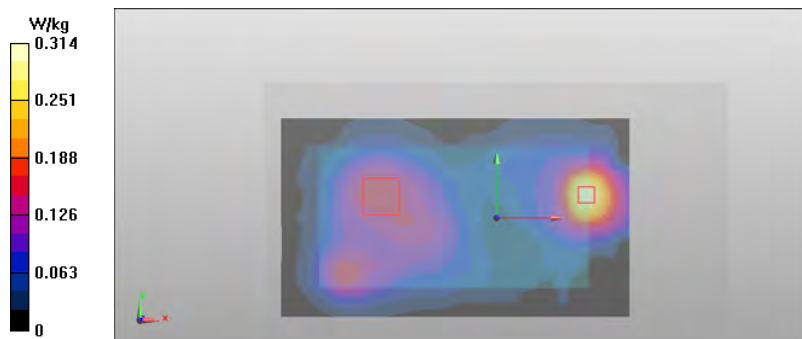
Medium: BSL5000 Medium parameters used: $f = 5300$ MHz; $\sigma = 5.367$ S/m; $\epsilon_r = 47.744$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3573; ConvF(3.85, 3.85, 3.85); Calibrated: 2013-01-23;
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.183 W/kg; SAR(10 g) = 0.096 W/kg

Maximum value of SAR (interpolated) = 0.314 W/kg



Note: LTE1700/2100 (Band 4) result was scaled by a factor of 1.14 and WLAN5000 result was scaled by a factor of 1.16 before combining.

Plot #56

Date/Time: 2013-07-31 07:35:08

DASY Configuration for 2-slot GPRS1900/Body - Middle - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: 2-slot GPRS1900; Frequency: 1880 MHz; Duty Cycle: 1:4.19952; PMF: 2.04927

Medium: BSL1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ S/m; $\epsilon_r = 51.738$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3131; ConvF(4.62, 4.62, 4.62); Calibrated: 2013-06-18;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 2013-06-10

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: -

Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-08-06 18:05:52

DASY Configuration for WLAN5000 a-mode/Body - Channel 104 - OFDM 6 Mbps - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5520 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL5000 Medium parameters used: $f = 5520$ MHz; $\sigma = 5.651$ S/m; $\epsilon_r = 46.727$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3573; ConvF(3.56, 3.56, 3.56); Calibrated: 2013-01-23;

Sensor-Surface: 2mm (Mechanical Surface Detection)

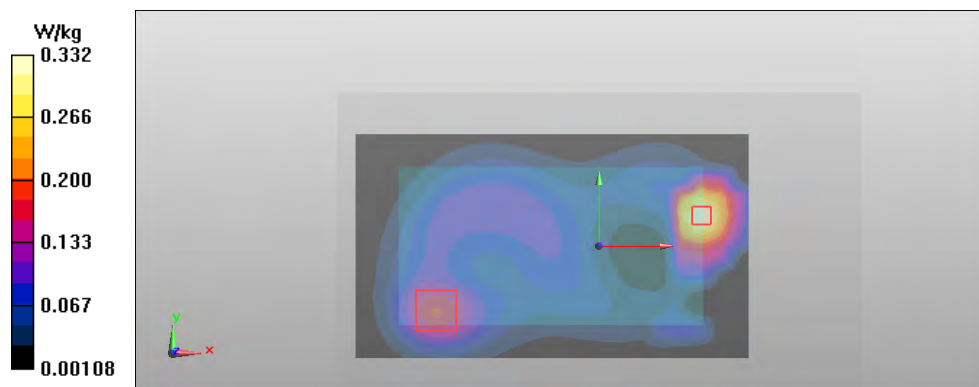
Electronics: DAE4 Sn1309; Calibrated: 2013-01-11

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.193 W/kg; SAR(10 g) = 0.097 W/kg

Maximum value of SAR (interpolated) = 0.332 W/kg



Note: 2-slot GPRS1900 result was scaled by a factor of 1.10 and WLAN5000 result was scaled by a factor of 1.12 before combining.

Plot #57

Date/Time: 2013-08-12 12:42:22

DASY Configuration for WCDMA1900 (Band 2)/Body - Low - Spacer 15mm - WH-208 - Back Facing

Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: WCDMA1900 (Band 2); Frequency: 1852.4 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL1900 Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.493$ S/m; $\epsilon_r = 51.262$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3131; ConvF(4.62, 4.62, 4.62); Calibrated: 2013-06-18;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 2013-06-10

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: -

Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-08-05 13:53:48

DASY Configuration for WLAN5000 a-mode/Body - Channel 60 - OFDM 6 Mbps - Spacer 15mm - WH-208 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5300 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL5000 Medium parameters used: $f = 5300$ MHz; $\sigma = 5.367$ S/m; $\epsilon_r = 47.744$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3573; ConvF(3.85, 3.85, 3.85); Calibrated: 2013-01-23;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))

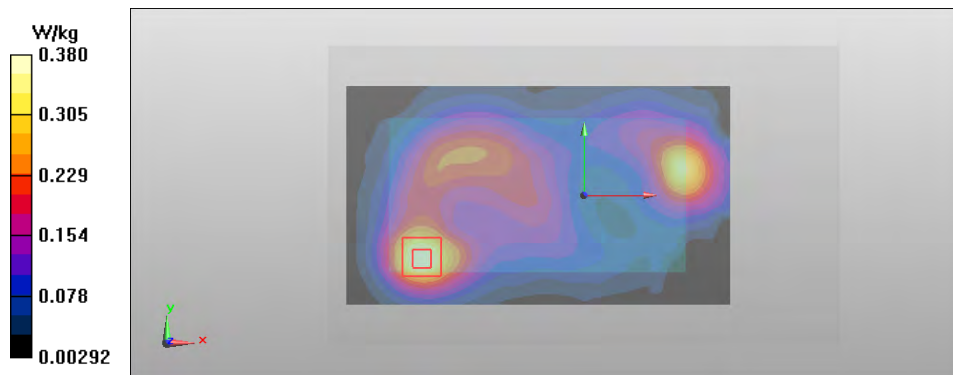
Electronics: DAE4 Sn1309; Calibrated: 2013-01-11

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.348 W/kg; SAR(10 g) = 0.202 W/kg

Maximum value of SAR (interpolated) = 0.380 W/kg



Note: WCDMA1900 (Band 2) result was scaled by a factor of 1.06 and WLAN5000 result was scaled by a factor of 1.16 before combining.

SAR Report

Appendix B for FCC_RM-938_01

Applicant: Nokia Corporation

Type: RM-938

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Plot #58

Date/Time: 2013-07-19 17:37:10

DASY Configuration for LTE1900 (Band 2)/Body - Middle - QPSK - 20MHz - 1 RB - 0% offset - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342581/1

Communication System: LTE1900 (Band 2); Frequency: 1880 MHz; Duty Cycle: 1:1; PMF: 1

Medium: MSL1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.462$ S/m; $\epsilon_r = 52.379$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3320; ConvF(4.78, 4.78, 4.78); Calibrated: 2013-06-04;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE3 Sn413; Calibrated: 2013-01-11
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (7)

Date/Time: 2013-08-06 18:05:52

DASY Configuration for WLAN5000 a-mode/Body - Channel 104 - OFDM 6 Mbps - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode; Frequency: 5520 MHz; Duty Cycle: 1:1; PMF: 1

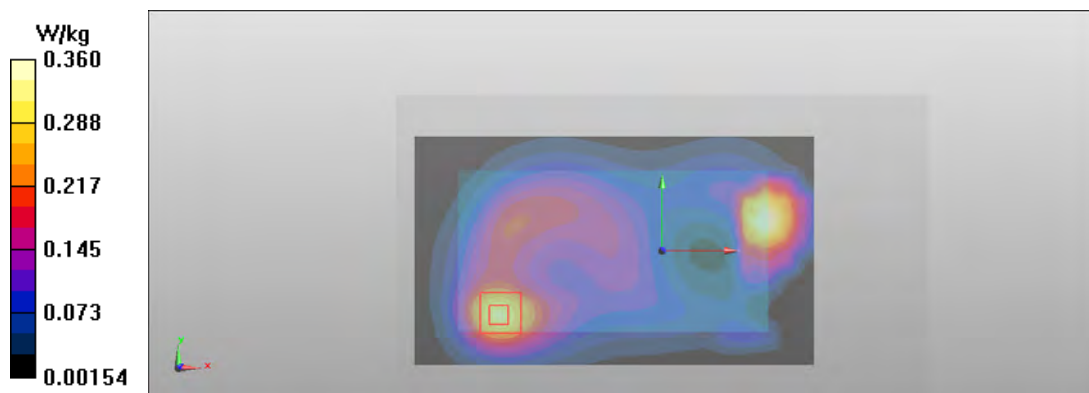
Medium: BSL5000 Medium parameters used: $f = 5520$ MHz; $\sigma = 5.651$ S/m; $\epsilon_r = 46.727$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3573; ConvF(3.56, 3.56, 3.56); Calibrated: 2013-01-23;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.293 W/kg; SAR(10 g) = 0.171 W/kg

Maximum value of SAR (interpolated) = 0.360 W/kg



Note: LTE1900 (Band 2) result was scaled by a factor of 1.00 and WLAN5000 result was scaled by a factor of 1.12 before combining.

Plot #59

Date/Time: 2013-07-27 15:32:38

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342571/2

Communication System: LTE700 (Band 17)

Frequency: 710 MHz; Duty Cycle: 1:1

Medium: MSL750; Medium Notes: -

Medium parameters used: $f = 710$ MHz; $\sigma = 0.927$ S/m; $\epsilon_r = 56.435$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(6.36, 6.36, 6.36); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASYS2, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

LTE700 (Band 17)/Body - Middle - QPSK - 10MHz - 1 RB - 0% offset- Spacer 10mm - No Headset - Back Facing Phantom/Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 13.400 V/m

Fast SAR: SAR(1 g) = 0.326 W/kg

Fast SAR(10 g) = 0.230 W/kg

Maximum value of SAR (interpolated) = 0.348 W/kg

LTE700 (Band 17)/Body - Middle - QPSK - 10MHz - 1 RB - 0% offset- Spacer 10mm - No Headset - Back Facing Phantom/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 18.847 V/m

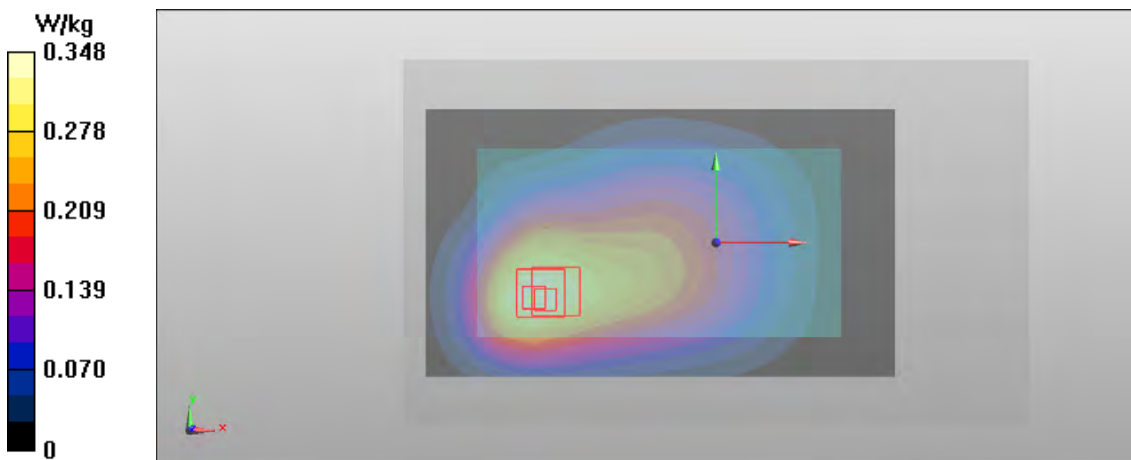
Peak SAR (extrapolated) = 0.440 W/kg

SAR(1 g) = 0.319 W/kg

SAR(10 g) = 0.232 W/kg

Power Drift = 0.03 dB

Maximum value of SAR (measured) = 0.338 W/kg



Plot #60

Date/Time: 2013-07-30 20:54:27

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342572/0

Communication System: 2-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:4.19952

Medium: BSL835; Medium Notes: t= 22.3 C

Medium parameters used: f = 849 MHz; $\sigma = 0.999$ S/m; $\epsilon_r = 54.085$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2013-01-21;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1355; Calibrated: 2013-01-08
- Phantom: 1. Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.10 (7164)

2-slot GPRS850/Body - High - Spacer 10mm - No Headset - Back Facing Phantom/Area Scan (81x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 16.295 V/m

Fast SAR: SAR(1 g) = 0.416 W/kg

Fast SAR(10 g) = 0.284 W/kg

Maximum value of SAR (interpolated) = 0.449 W/kg

2-slot GPRS850/Body - High - Spacer 10mm - No Headset - Back Facing Phantom/Zoom Scan (6x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 16.295 V/m

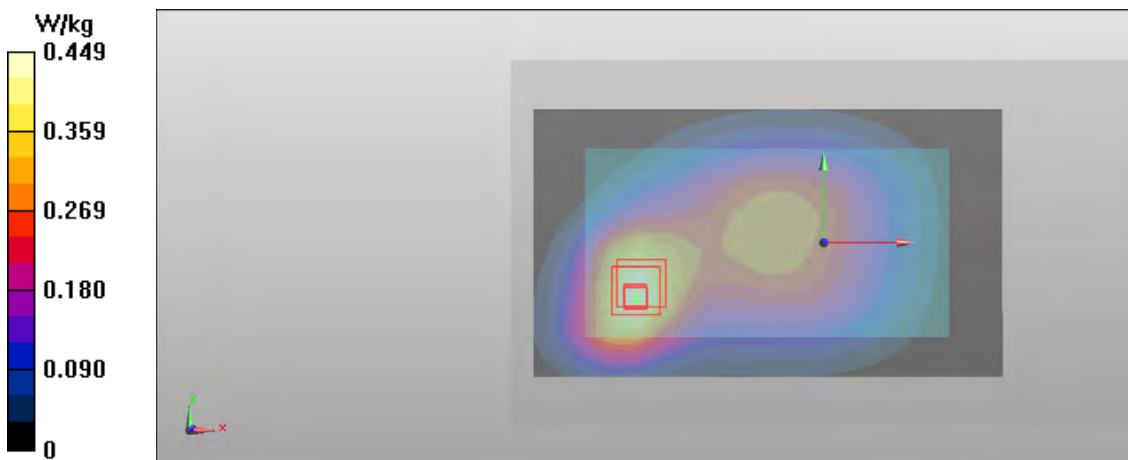
Peak SAR (extrapolated) = 0.649 W/kg

SAR(1 g) = 0.410 W/kg

SAR(10 g) = 0.272 W/kg

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 0.441 W/kg



Plot #61

Date/Time: 2013-07-30 19:08:29

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342572/0

Communication System: WCDMA850 (Band 5)

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: BSL835; Medium Notes: t= 22.3 C

Medium parameters used: f = 847 MHz; σ = 0.998 S/m; ϵ_r = 54.088; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2013-01-21;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1355; Calibrated: 2013-01-08
- Phantom: 1. Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.10 (7164)

WCDMA850 (Band 5)/Body - High - Spacer 10mm - No Headset - Back Facing Phantom/Area Scan (81x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 14.964 V/m

Fast SAR: SAR(1 g) = 0.373 W/kg

Fast SAR(10 g) = 0.256 W/kg

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

WCDMA850 (Band 5)/Body - High - Spacer 10mm - No Headset - Back Facing Phantom/Zoom Scan (6x5x7)/Cube

0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 14.964 V/m

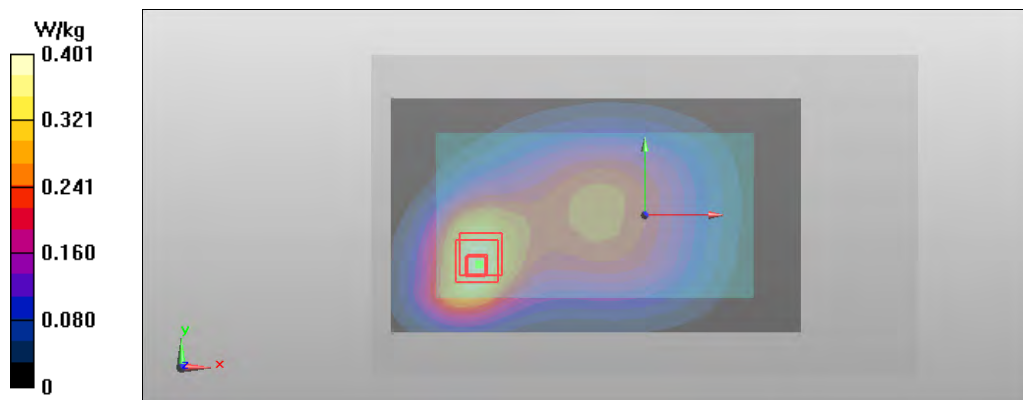
Peak SAR (extrapolated) = 0.583 W/kg

SAR(1 g) = 0.371 W/kg

SAR(10 g) = 0.247 W/kg

Power Drift = -0.00 dB

Maximum value of SAR (measured) = 0.398 W/kg



Plot #62

Date/Time: 2013-07-18 15:18:01

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342576/1

Communication System: LTE850 (Band 5)

Frequency: 844 MHz; Duty Cycle: 1:1

Medium: MSL835; Medium Notes: 2013-07-18

Medium parameters used: $f = 844$ MHz; $\sigma = 1.002$ S/m; $\epsilon_r = 55.233$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(6.29, 6.29, 6.29); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASYS2, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

LTE850 (Band 5)/Body - High - QPSK - 10MHz - 1 RB - 0% offset- Spacer 10mm - No Headset - Display Facing Phantom/Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 13.506 V/m

Fast SAR: SAR(1 g) = 0.313 W/kg

Fast SAR(10 g) = 0.212 W/kg

Maximum value of SAR (interpolated) = 0.341 W/kg

LTE850 (Band 5)/Body - High - QPSK - 10MHz - 1 RB - 0% offset- Spacer 10mm - No Headset - Display Facing Phantom/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 18.229 V/m

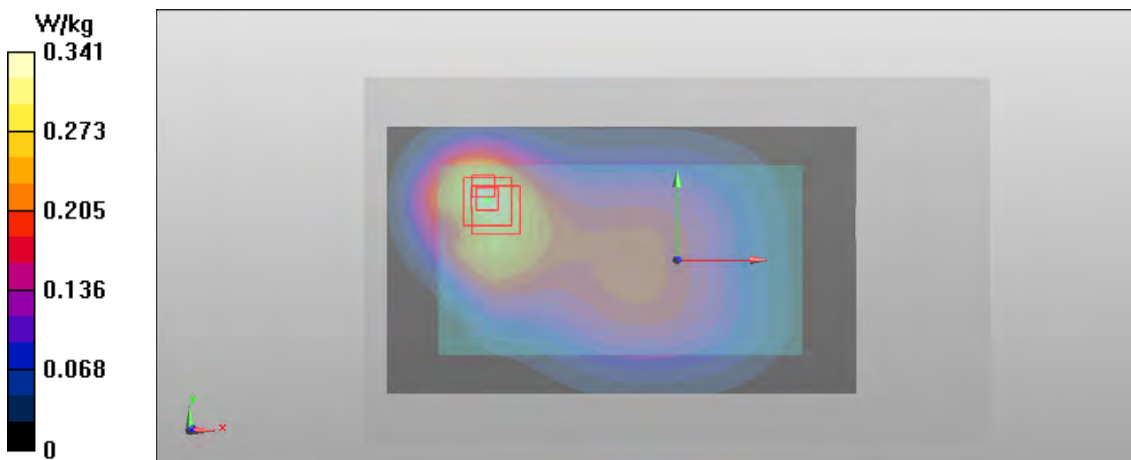
Peak SAR (extrapolated) = 0.477 W/kg

SAR(1 g) = 0.296 W/kg

SAR(10 g) = 0.192 W/kg

Power Drift = -0.12 dB

Maximum value of SAR (measured) = 0.319 W/kg



Plot #63

Date/Time: 2013-08-02 16:09:05

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: WCDMA1700/2100 (Band 4)

Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium: HSL1800; Medium Notes: t= 21.0 C

Medium parameters used: f = 1753 MHz; $\sigma = 1.459$ S/m; $\epsilon_r = 51.786$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.87, 4.87, 4.87); Calibrated: 2013-06-18;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2012-08-28
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: -
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.10 (7164)

WCDMA1700_2100 (Band 4)/Body - High - Spacer 10mm - No Headset - Back Facing Phantom/Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 5.600 V/m

Fast SAR: SAR(1 g) = 0.414 W/kg

Fast SAR(10 g) = 0.236 W/kg

Maximum value of SAR (interpolated) = 0.484 W/kg

WCDMA1700_2100 (Band 4)/Body - High - Spacer 10mm - No Headset - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 17.487 V/m

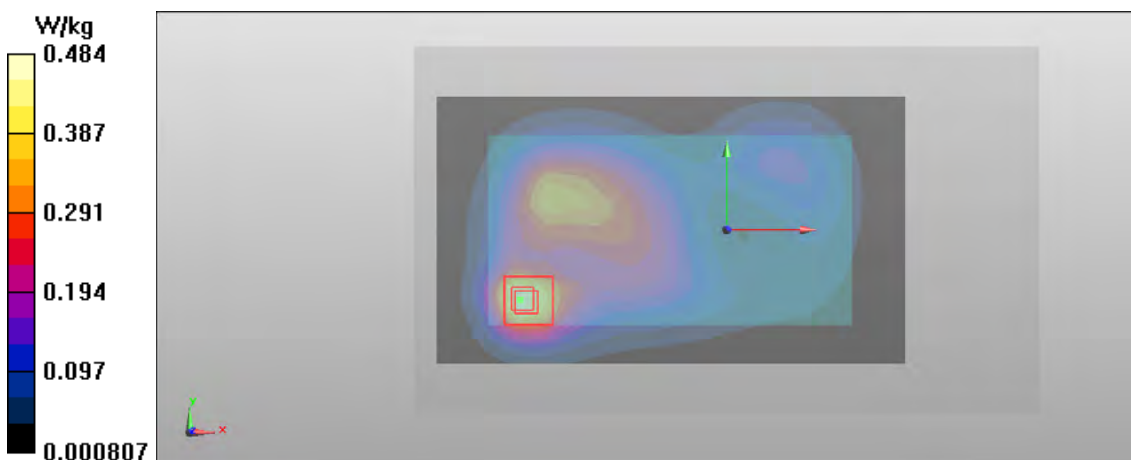
Peak SAR (extrapolated) = 0.661 W/kg

SAR(1 g) = 0.405 W/kg

SAR(10 g) = 0.229 W/kg

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 0.446 W/kg



Plot #64

Date/Time: 2013-09-11 18:08:26

Test Laboratory: CETECOM ICT Services

Type: RM-938; Serial: 004402/47/497032/8

Communication System: LTE1700/2100 (Band 4)

Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium: MSL1750; Medium Notes:

Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.491$ S/m; $\epsilon_r = 52.589$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(5.04, 5.04, 5.04); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASYS2, Version 52.8 (7); SEMCAD X Version 14.6.9 (7117)

Display - LTE1700 (Band 4)/Body - Middle - QPSK - 20MHz - 1 RB - 50% offset - Spacer 10mm - No Headset -

Display Facing Phantom/Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 4.296 V/m

Fast SAR: SAR(1 g) = 0.321 W/kg

Fast SAR(10 g) = 0.180 W/kg

Maximum value of SAR (interpolated) = 0.377 W/kg

Display - LTE1700 (Band 4)/Body - Middle - QPSK - 20MHz - 1 RB - 50% offset - Spacer 10mm - No Headset -

Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 15.216 V/m

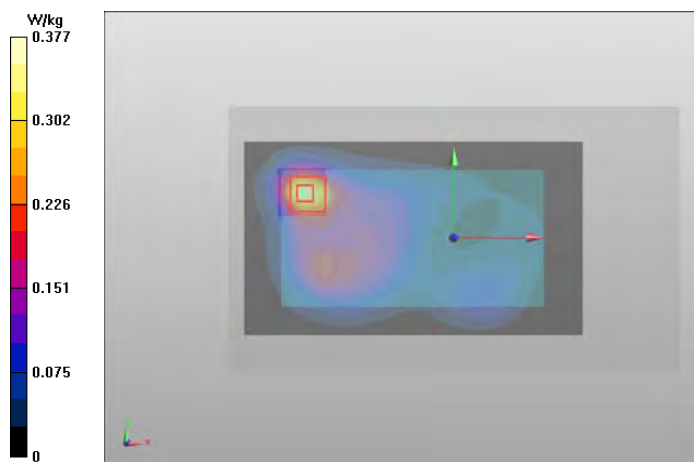
Peak SAR (extrapolated) = 0.597 W/kg

SAR(1 g) = 0.340 W/kg

SAR(10 g) = 0.186 W/kg

Power Drift = 0.02 dB

Maximum value of SAR (measured) = 0.378 W/kg



Plot #65

Date/Time: 2013-08-12 13:08:57

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: 2-slot GPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:4.19952

Medium: BSL1900; Medium Notes: $t = 20.7$ C

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.49$ S/m; $\epsilon_r = 51.268$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.62, 4.62, 4.62); Calibrated: 2013-06-18;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2013-06-10
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: -
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.10 (7164)

2-slot GPRS1900/Body - Low - Spacer 10mm - No Headset - Back Facing Phantom/Area Scan (81x141x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Reference Value = -

Fast SAR: $SAR(1\text{ g}) = 0.322$ W/kg

Fast SAR(10 g) = 0.182 W/kg

Maximum value of SAR (interpolated) = 0.368 W/kg

2-slot GPRS1900/Body - Low - Spacer 10mm - No Headset - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 15.173 V/m

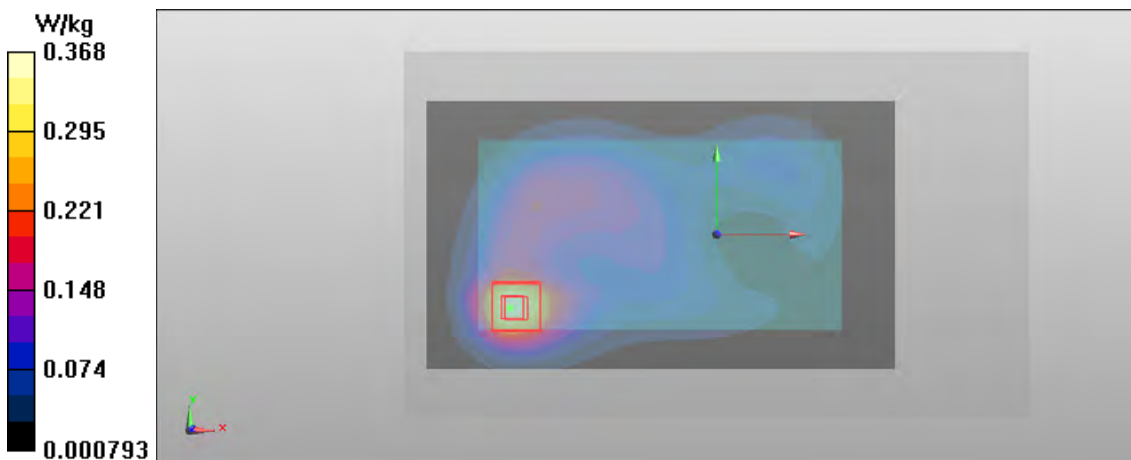
Peak SAR (extrapolated) = 0.522 W/kg

$SAR(1\text{ g}) = 0.323$ W/kg

$SAR(10\text{ g}) = 0.184$ W/kg

Power Drift = 0.00 dB

Maximum value of SAR (measured) = 0.357 W/kg



Plot #66

Date/Time: 2013-07-31 16:52:17

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: WCDMA1900 (Band 2)

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 20.5$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ S/m; $\epsilon_r = 51.738$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.62, 4.62, 4.62); Calibrated: 2013-06-18;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2013-06-10
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: -
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.10 (7164)

WCDMA1900 (Band 2)/Body - Middle - Spacer 10mm - No Headset - Display Facing Phantom/Area Scan

(81x141x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Reference Value = 7.192 V/m

Fast SAR: $SAR(1\text{ g}) = 0.581$ W/kg

Fast SAR(10 g) = 0.328 W/kg

Maximum value of SAR (interpolated) = 0.650 W/kg

WCDMA1900 (Band 2)/Body - Middle - Spacer 10mm - No Headset - Display Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 7.192 V/m

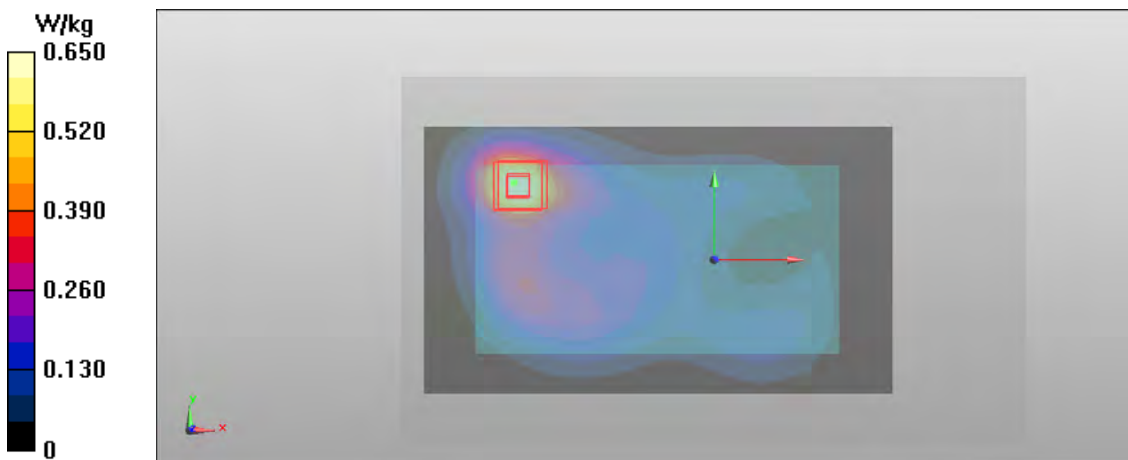
Peak SAR (extrapolated) = 0.974 W/kg

$SAR(1\text{ g}) = 0.597$ W/kg

$SAR(10\text{ g}) = 0.336$ W/kg

Power Drift = 0.09 dB

Maximum value of SAR (measured) = 0.666 W/kg



Plot #67

Date/Time: 2013-07-19 17:22:01

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342581/1

Communication System: LTE1900 (Band 2)

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: MSL1900; Medium Notes: 2013-07-19

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.462$ S/m; $\epsilon_r = 52.379$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3320
- ConvF(4.78, 4.78, 4.78); Calibrated: 2013-06-04;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn413; Calibrated: 2013-01-11
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Back&Display - LTE1900 (Band 2)/Body - Middle - QPSK - 20MHz - 1 RB - 0% offset- Spacer 10mm - No Headset - Back Facing Phantom/Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 7.908 V/m

Fast SAR: SAR(1 g) = 0.755 W/kg

Fast SAR(10 g) = 0.431 W/kg

Maximum value of SAR (interpolated) = 0.863 W/kg

Back&Display - LTE1900 (Band 2)/Body - Middle - QPSK - 20MHz - 1 RB - 0% offset- Spacer 10mm - No Headset - Back Facing Phantom/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 23.773 V/m

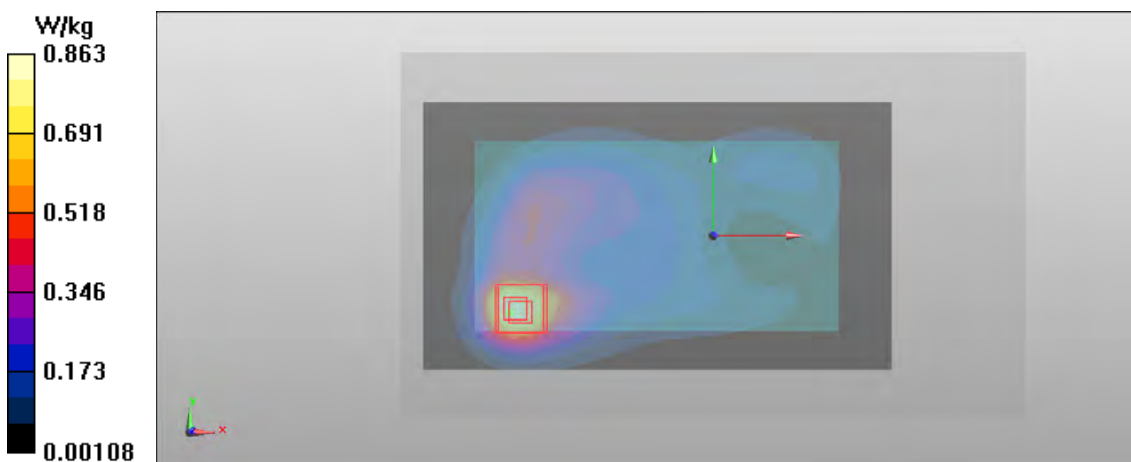
Peak SAR (extrapolated) = 1.31 W/kg

SAR(1 g) = 0.751 W/kg

SAR(10 g) = 0.419 W/kg

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 0.821 W/kg



Plot #68

Date/Time: 2013-07-30 12:34:11

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 21.7$ C

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.972$ S/m; $\epsilon_r = 51.02$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3834
- ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2013-01-11
- Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: -
- Measurement SW: DASY52, Version 52.8 (6); SEMCAD X Version 14.6.10 (7164)

WLAN2450 b-mode/Body - Channel 11 - DSSS 1 Mbps - Spacer 10mm - No Headset - Display Facing

Phantom/Area Scan (121x211x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Reference Value = 10.273 V/m

Fast SAR: SAR(1 g) = 0.190 W/kg

Fast SAR(10 g) = 0.102 W/kg

Maximum value of SAR (interpolated) = 0.211 W/kg

WLAN2450 b-mode/Body - Channel 11 - DSSS 1 Mbps - Spacer 10mm - No Headset - Display Facing

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

Reference Value = 10.355 V/m

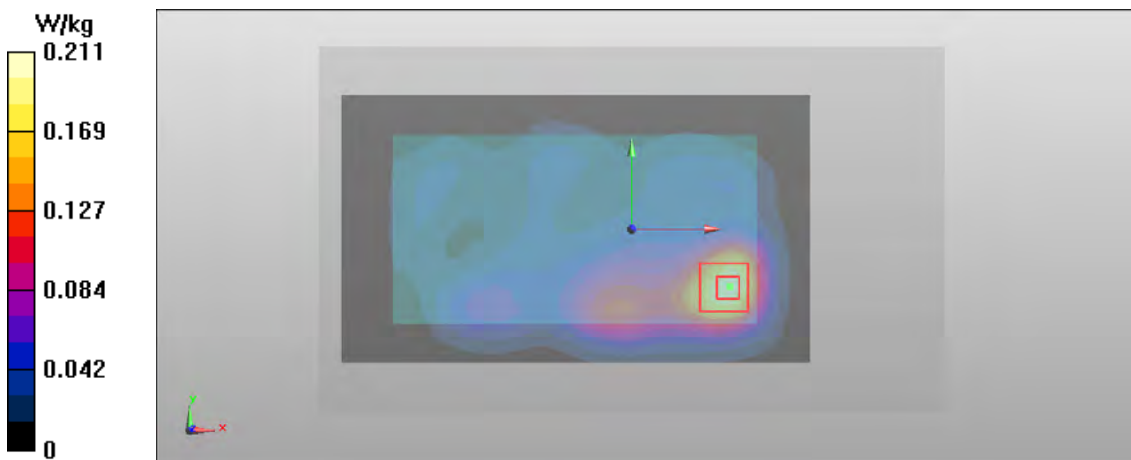
Peak SAR (extrapolated) = 0.336 W/kg

SAR(1 g) = 0.188 W/kg

SAR(10 g) = 0.103 W/kg

Power Drift = 0.02 dB

Maximum value of SAR (measured) = 0.206 W/kg



Plot #69

Date/Time: 2013-07-27 15:32:38

**DASY Configuration for Back - LTE700 (Band 17)/Body - Middle - QPSK - 10MHz - 1 RB - 0% offset- Spacer 10mm
- No Headset - Back Facing Phantom/Area Scan:**

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342571/2

Communication System: LTE700 (Band 17); Frequency: 710 MHz; Duty Cycle: 1:1; PMF: 1

Medium: MSL750 Medium parameters used: $f = 710$ MHz; $\sigma = 0.927$ S/m; $\epsilon_r = 56.435$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3320; ConvF(6.36, 6.36, 6.36); Calibrated: 2013-06-04;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE3 Sn413; Calibrated: 2013-01-11
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (7)

Date/Time: 2013-07-30 07:34:28

**DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Headset - Back
Facing Phantom/Area Scan:**

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

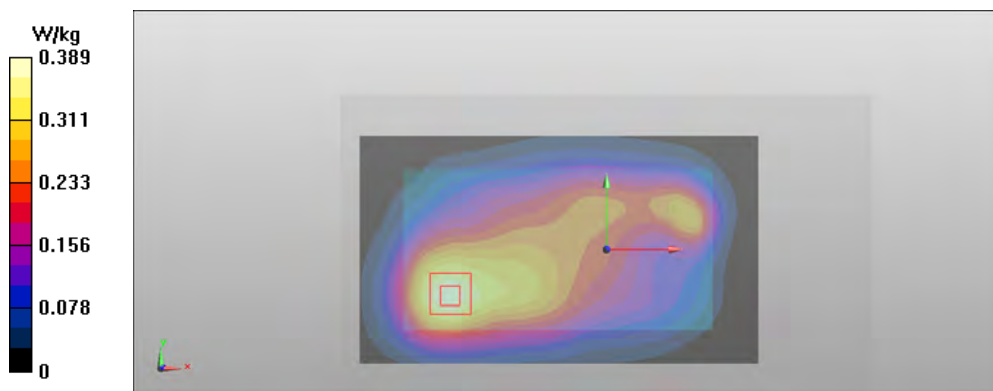
Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.941$ S/m; $\epsilon_r = 51.115$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn555; Calibrated: 2013-01-11
Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: -
Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.363 W/kg; SAR(10 g) = 0.249 W/kg

Maximum value of SAR (interpolated) = 0.389 W/kg



Note: LTE700 (Band 17) result was scaled by a factor of 1.00 and WLAN2450 result was scaled by a factor of 1.41 before combining.

Plot #70

Date/Time: 2013-07-30 20:54:27

DASY Configuration for 2-slot GPRS850/Body - High - Spacer 10mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342572/0

Communication System: 2-slot GPRS850; Frequency: 848.8 MHz; Duty Cycle: 1:4.19952; PMF: 2.04927

Medium: BSL835 Medium parameters used: $f = 849$ MHz; $\sigma = 0.999$ S/m; $\epsilon_r = 54.085$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3165; ConvF(6.04, 6.04, 6.04); Calibrated: 2013-01-21;

Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))

Electronics: DAE4 Sn1355; Calibrated: 2013-01-08

Phantom: 1. Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-07-30 07:34:28

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.941$ S/m; $\epsilon_r = 51.115$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;

Sensor-Surface: 4mm (Mechanical Surface Detection)

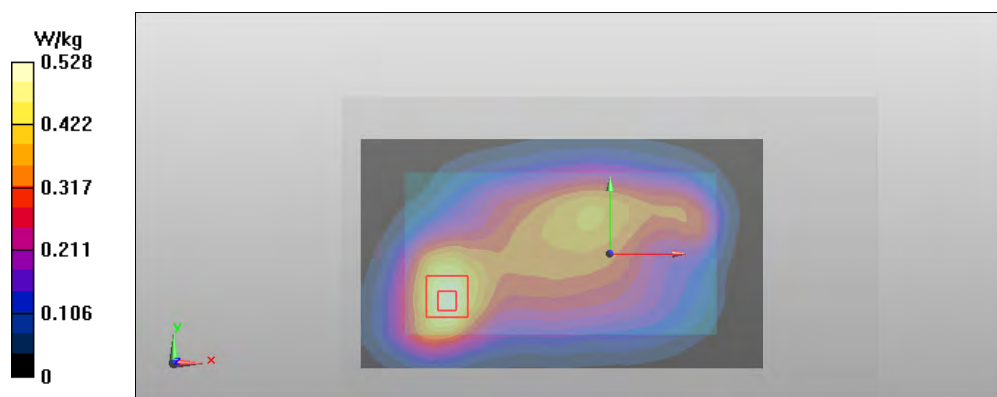
Electronics: DAE4 Sn555; Calibrated: 2013-01-11

Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: -

Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.490 W/kg; SAR(10 g) = 0.329 W/kg

Maximum value of SAR (interpolated) = 0.528 W/kg



Note: 2-slot GPRS850 result was scaled by a factor of 1.08 and WLAN2450 result was scaled by a factor of 1.41 before combining.

Plot #71

Date/Time: 2013-07-30 19:08:29

DASY Configuration for WCDMA850 (Band 5)/Body - High - Spacer 10mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342572/0

Communication System: WCDMA850 (Band 5); Frequency: 846.6 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL835 Medium parameters used: $f = 847$ MHz; $\sigma = 0.998$ S/m; $\epsilon_r = 54.088$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3165; ConvF(6.04, 6.04, 6.04); Calibrated: 2013-01-21;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1355; Calibrated: 2013-01-08
Phantom: 1. Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-07-30 07:34:28

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

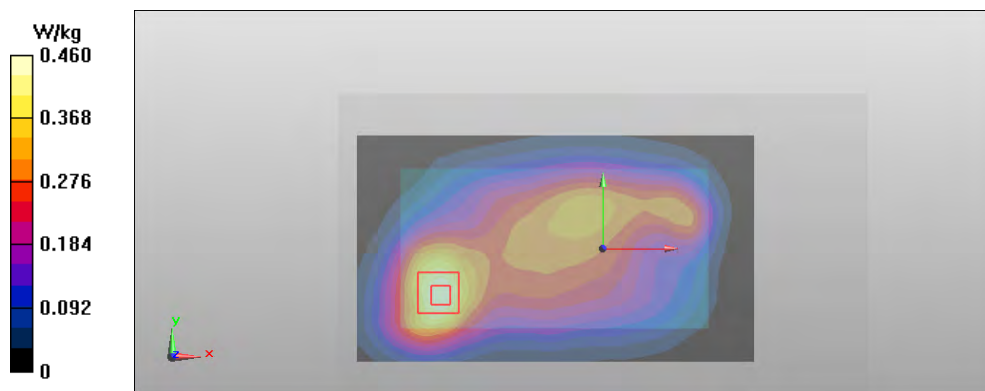
Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.941$ S/m; $\epsilon_r = 51.115$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn555; Calibrated: 2013-01-11
Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: -
Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.428 W/kg; SAR(10 g) = 0.289 W/kg

Maximum value of SAR (interpolated) = 0.460 W/kg



Note: WCDMA850 (Band 5) result was scaled by a factor of 1.04 and WLAN2450 result was scaled by a factor of 1.41 before combining.

Plot #72

Date/Time: 2013-07-18 15:18:01

DASY Configuration for LTE850 (Band 5)/Body - High - QPSK - 10MHz - 1 RB - 0% offset- Spacer 10mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342576/1

Communication System: LTE850 (Band 5); Frequency: 844 MHz; Duty Cycle: 1:1; PMF: 1

Medium: MSL835 Medium parameters used: $f = 844$ MHz; $\sigma = 1.002$ S/m; $\epsilon_r = 55.233$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3320; ConvF(6.29, 6.29, 6.29); Calibrated: 2013-06-04;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE3 Sn413; Calibrated: 2013-01-11

Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

Measurement SW: DASY52, Version 52.8 (7)

Date/Time: 2013-07-30 12:34:11

DASY Configuration for WLAN2450 b-mode/Body - Channel 11 - DSSS 1 Mbps - Spacer 10mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.972$ S/m; $\epsilon_r = 51.02$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;

Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))

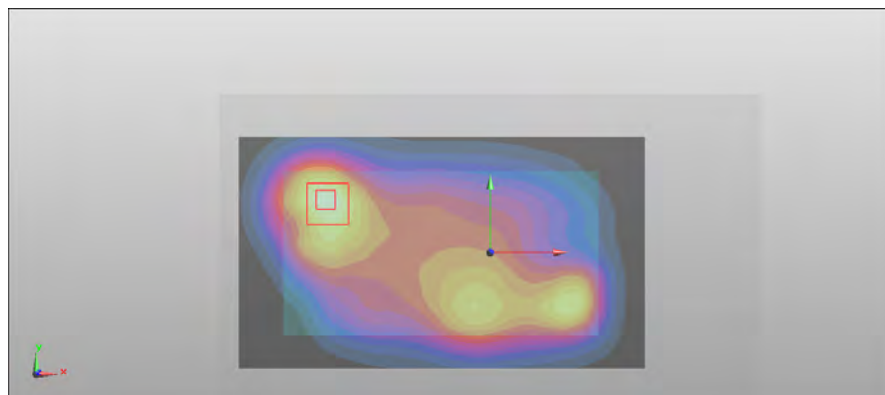
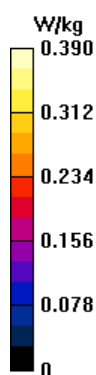
Electronics: DAE4 Sn555; Calibrated: 2013-01-11

Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: -

Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.359 W/kg; SAR(10 g) = 0.239 W/kg

Maximum value of SAR (interpolated) = 0.390 W/kg



Note: LTE850 (Band 5) result was scaled by a factor of 1.02 and WLAN2450 result was scaled by a factor of 1.39 before combining.

Plot #73

Date/Time: 2013-08-02 16:09:05

DASY Configuration for WCDMA1700/2100 (Band 4)/Body - High - Spacer 10mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: WCDMA1700/2100 (Band 4); Frequency: 1752.6 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL1800 Medium parameters used: $f = 1753$ MHz; $\sigma = 1.459$ S/m; $\epsilon_r = 51.786$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3131; ConvF(4.87, 4.87, 4.87); Calibrated: 2013-06-18;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 2012-08-28

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: -

Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-07-30 07:34:28

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.941$ S/m; $\epsilon_r = 51.115$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;

Sensor-Surface: 4mm (Mechanical Surface Detection)

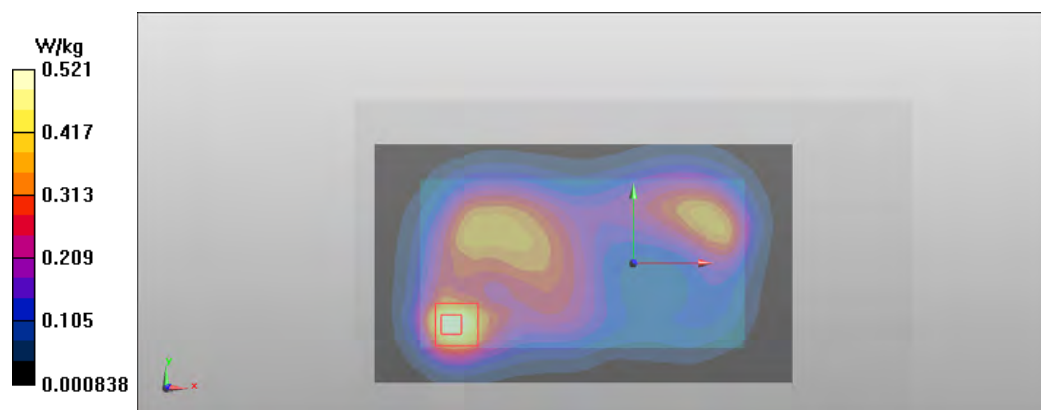
Electronics: DAE4 Sn555; Calibrated: 2013-01-11

Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: -

Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.469 W/kg; SAR(10 g) = 0.267 W/kg

Maximum value of SAR (interpolated) = 0.521 W/kg



Note: WCDMA1700/2100 (Band 4) result was scaled by a factor of 1.04 and WLAN2450 result was scaled by a factor of 1.41 before combining.

SAR Report

Appendix B for FCC_RM-938_01

Applicant: Nokia Corporation

Type: RM-938

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Plot #74

Date/Time: 2013-09-11 18:08:26

DASY Configuration for Display - LTE1700 (Band 4)/Body - Middle - QPSK - 20MHz - 1 RB - 50% offset - Spacer 10mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: CETECOM ICT Services

Type: RM-938; Serial: 004402/47/497032/8

Communication System: LTE1700/2100 (Band 4); Frequency: 1732.5 MHz; Duty Cycle: 1:1; PMF: 1

Medium: MSL1750 Medium parameters used (interpolated): $f = 1732.5$ MHz; $\sigma = 1.491$ S/m; $\epsilon_r = 52.589$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3320; ConvF(5.04, 5.04, 5.04); Calibrated: 2013-06-04;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE3 Sn413; Calibrated: 2013-01-11
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (7)

Date/Time: 2013-07-30 12:34:11

DASY Configuration for WLAN2450 b-mode/Body - Channel 11 - DSSS 1 Mbps - Spacer 10mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

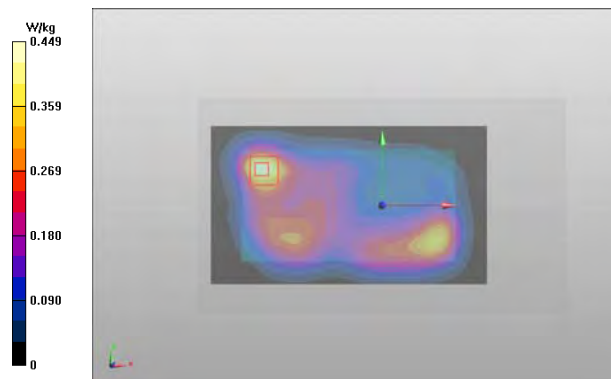
Medium: BSL2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.972$ S/m; $\epsilon_r = 51.02$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn555; Calibrated: 2013-01-11
Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.401 W/kg; SAR(10 g) = 0.226 W/kg

Maximum value of SAR (interpolated) = 0.449 W/kg



Note: LTE1700/2100 (Band 4) result was scaled by a factor of 1.14 and WLAN2450 result was scaled by a factor of 1.39 before combining.

Plot #75

Date/Time: 2013-08-12 13:08:57

DASY Configuration for 2-slot GPRS1900/Body - Low - Spacer 10mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: 2-slot GPRS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4.19952; PMF: 2.04927

Medium: BSL1900 Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.49$ S/m; $\epsilon_r = 51.268$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3131; ConvF(4.62, 4.62, 4.62); Calibrated: 2013-06-18;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn793; Calibrated: 2013-06-10
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: -
Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-07-30 07:34:28

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

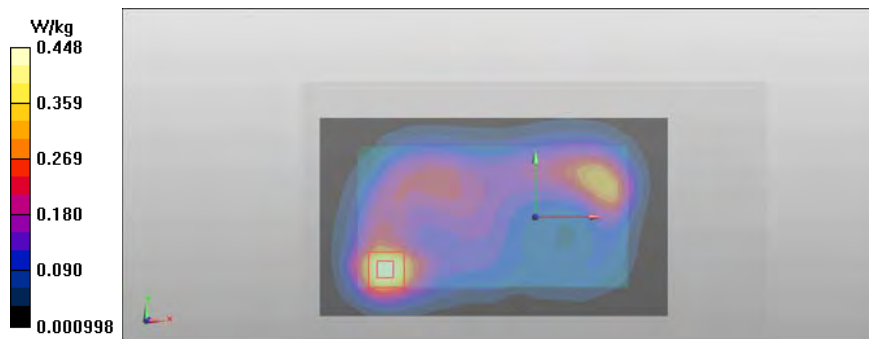
Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.941$ S/m; $\epsilon_r = 51.115$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn555; Calibrated: 2013-01-11
Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: -
Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.407 W/kg; SAR(10 g) = 0.230 W/kg

Maximum value of SAR (interpolated) = 0.448 W/kg



Note: 2-slot GPRS1900 result was scaled by a factor of 1.15 and WLAN2450 result was scaled by a factor of 1.41 before combining.

Plot #76

Date/Time: 2013-07-31 16:52:17

DASY Configuration for WCDMA1900 (Band 2)/Body - Middle - Spacer 10mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47342580/3

Communication System: WCDMA1900 (Band 2); Frequency: 1880 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ S/m; $\epsilon_r = 51.738$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3131; ConvF(4.62, 4.62, 4.62); Calibrated: 2013-06-18;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 2013-06-10

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: -

Measurement SW: DASY52, Version 52.8 (6)

Date/Time: 2013-07-30 12:34:11

DASY Configuration for WLAN2450 b-mode/Body - Channel 11 - DSSS 1 Mbps - Spacer 10mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.972$ S/m; $\epsilon_r = 51.02$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;

Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))

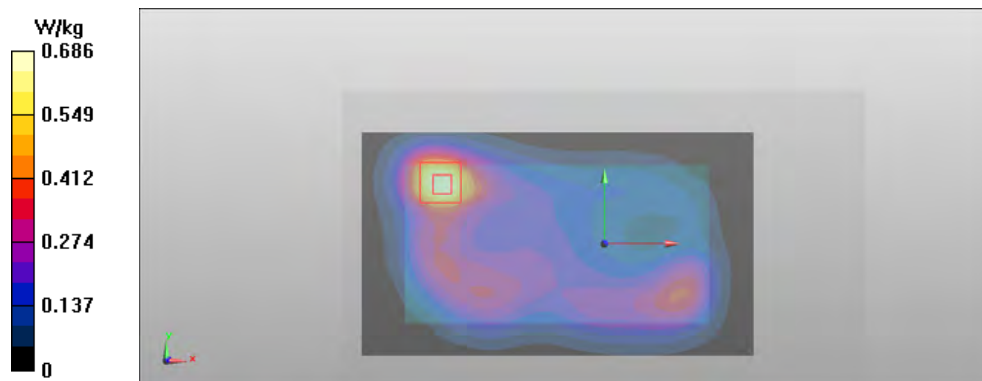
Electronics: DAE4 Sn555; Calibrated: 2013-01-11

Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: -

Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.628 W/kg; SAR(10 g) = 0.353 W/kg

Maximum value of SAR (interpolated) = 0.686 W/kg



Note: WCDMA1900 (Band 2) result was scaled by a factor of 1.02 and WLAN2450 result was scaled by a factor of 1.39 before combining.

Plot #77

Date/Time: 2013-07-19 17:22:01

DASY Configuration for Back - LTE1900 (Band 2)/Body - Middle - QPSK - 20MHz - 1 RB - 0% offset- Spacer 10mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: CETECOM IST Service

Type: RM-940; Serial: 004402/47/342581/1

Communication System: LTE1900 (Band 2); Frequency: 1880 MHz; Duty Cycle: 1:1; PMF: 1

Medium: MSL1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.462$ S/m; $\epsilon_r = 52.379$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3320; ConvF(4.78, 4.78, 4.78); Calibrated: 2013-06-04;

Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))

Electronics: DAE3 Sn413; Calibrated: 2013-01-11

Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

Measurement SW: DASY52, Version 52.8 (7)

Date/Time: 2013-07-30 07:34:28

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342578/7

Communication System: WLAN2450; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.941$ S/m; $\epsilon_r = 51.115$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3834; ConvF(6.9, 6.9, 6.9); Calibrated: 2013-01-23;

Sensor-Surface: 4mm (Mechanical Surface Detection)

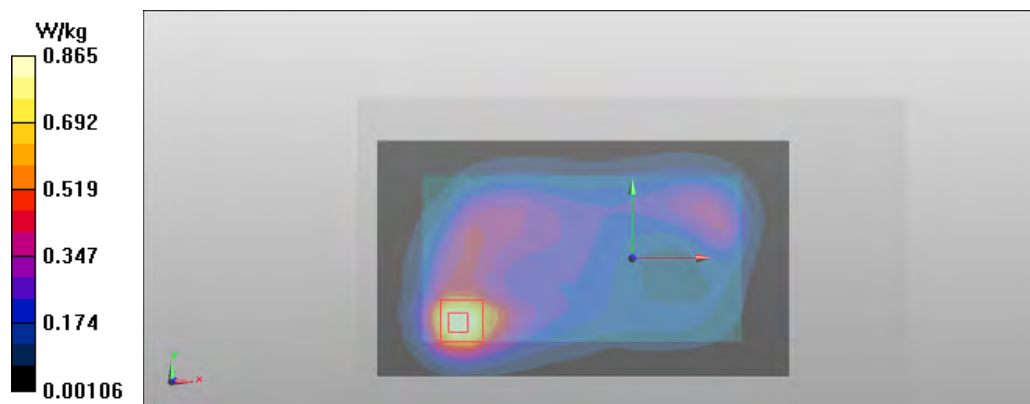
Electronics: DAE4 Sn555; Calibrated: 2013-01-11

Phantom: #2 Triple, SAR4; Type: QD 000 P51 CA; Serial: -

Measurement SW: DASY52, Version 52.8 (6)

Fast SAR of Combined Scans: SAR(1 g) = 0.794 W/kg; SAR(10 g) = 0.451 W/kg

Maximum value of SAR (interpolated) = 0.865 W/kg



Note: LTE1900 (Band 2) result was scaled by a factor of 1.00 and WLAN2450 result was scaled by a factor of 1.41 before combining.

Plot #78

Date/Time: 2013-08-05 18:35:42

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342579/5

Communication System: WLAN5000 a-mode

Frequency: 5300 MHz; Duty Cycle: 1:1

Medium: BSL5000; Medium Notes: $t = 22.6$ C

Medium parameters used: $f = 5300$ MHz; $\sigma = 5.433$ S/m; $\epsilon_r = 47.638$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(3.85, 3.85, 3.85); Calibrated: 2013-01-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2013-01-11
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.10 (7164)

WLAN5000 a-mode/Body - Channel 60 - OFDM 6 Mbps - Spacer 0mm - No Headset - Top Edge Facing

Phantom/Area Scan (61x151x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Reference Value = -

Fast SAR: $SAR(1\text{ g}) = 2.74$ W/kg

Fast SAR(10 g) = 0.612 W/kg

Maximum value of SAR (interpolated) = 8.60 W/kg

WLAN5000 a-mode/Body - Channel 60 - OFDM 6 Mbps - Spacer 0mm - No Headset - Top Edge Facing

Phantom/Zoom Scan (8x8x12)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 45.699 V/m

Peak SAR (extrapolated) = 29.0 W/kg

$SAR(1\text{ g}) = 4.2$ W/kg

$SAR(10\text{ g}) = 0.794$ W/kg

Power Drift = -0.08 dB

Maximum value of SAR (measured) = 12.6 W/kg



APPENDIX C: DIELECTRIC PARAMETERS OF THE TISSUE SIMULANTS

Head tissue simulant dielectric parameters used in the measurements:

f (MHz)	Date	Dielectric Parameters					
		Ch 23780 709.0 MHz		Ch 23790 710.0 MHz		Ch 23800 711.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
710 Cetecom	2013-07-30	42.1	0.85	42.1	0.85	42.1	0.86
	2013-09-10	42.1	0.86	42.0	0.86	42.0	0.86
f (MHz)	Date	Dielectric Parameters					
		Ch 4132 826.4 MHz		Ch 4175 835.0 MHz		Ch 4233 846.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
835	2013-07-29	40.5	0.90	40.4	0.91	40.3	0.91
	2013-09-09	41.0	0.89	41.0	0.90	40.9	0.90
f (MHz)	Date	Dielectric Parameters					
		Ch 20450 829.0 MHz		Ch 20525 836.5 MHz		Ch 20600 844.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
836 Cetecom	2013-07-17	41.2	0.89	41.1	0.90	41.0	0.90
	2013-08-02	42.7	0.88	42.6	0.89	42.5	0.90
	2013-09-10	42.5	0.90	42.4	0.91	42.3	0.91
f (MHz)	Date	Dielectric Parameters					
		Ch 128 824.2 MHz		Ch 190 836.6 MHz		Ch 251 848.8 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
836	2013-07-29	40.5	0.90	40.4	0.91	40.3	0.91
	2013-07-30	40.0	0.90	39.9	0.90	39.9	0.91
	2013-09-09	41.1	0.89	41.0	0.90	40.9	0.91
f (MHz)	Date	Dielectric Parameters					
		Ch 20050 1720.0 MHz		Ch 20175 1732.5 MHz		Ch 20300 1745.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1732 Cetecom	2013-07-23	40.1	1.35	40.1	1.36	40.1	1.37
	2013-09-10	39.9	1.35	39.9	1.37	39.9	1.38

(Head tissue simulant table continues)

(Head tissue simulant table continues)

f (MHz)	Date	Dielectric Parameters					
		Ch 1312 1712.4 MHz		Ch 1412 1732.4 MHz		Ch 1513 1752.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1732	2013-08-01	38.7	1.29	38.6	1.30	38.6	1.32
	2013-09-14	39.3	1.29	39.2	1.31	39.1	1.33
f (MHz)	Date	Dielectric Parameters					
		Ch 512 1850.2 MHz		Ch 661 1880.0 MHz		Ch 810 1909.8 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880	2013-07-29	39.4	1.33	39.3	1.36	39.2	1.39
	2013-09-13	38.8	1.34	38.7	1.37	38.6	1.40
f (MHz)	Date	Dielectric Parameters					
		Ch 9262 1852.4 MHz		Ch 9400 1880.0 MHz		Ch 9538 1907.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880	2013-07-29	39.4	1.34	39.3	1.36	39.2	1.39
	2013-07-30	38.8	1.34	38.7	1.36	38.6	1.38
	2013-08-02	38.7	1.33	38.6	1.36	38.5	1.38
	2013-09-13	38.8	1.34	38.7	1.37	38.6	1.40
	2013-09-17	38.8	1.37	38.8	1.40	38.6	1.42
f (MHz)	Date	Dielectric Parameters					
		Ch 18700 1860.0 MHz		Ch 18900 1880.0 MHz		Ch 19100 1900.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880 Cetecom	2013-07-25	39.2	1.37	39.1	1.39	39.0	1.40
	2013-09-09	40.1	1.34	40.0	1.36	39.9	1.37
f (MHz)	Date	Dielectric Parameters					
		Ch 1 2412.0 MHz		Ch 6 2437.0 MHz		Ch 11 2462.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
2437	2013-07-26	38.0	1.77	37.9	1.79	37.8	1.82
	2013-07-29	38.7	1.76	38.6	1.79	38.5	1.82
	2013-08-12	37.9	1.74	37.8	1.76	37.7	1.79
	2013-09-09	38.0	1.74	37.9	1.76	37.8	1.79
	2013-09-15	37.9	1.74	37.8	1.77	37.7	1.79

Head tissue simulant dielectric parameters used in the measurements 5180 – 5805 MHz:

f (MHz)	Date	Dielectric Parameters									
		Ch 40 5200.0 MHz		5210.0 MHz		Ch 44 5220.0 MHz		-		-	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
5210	2013-07-26	35.4	4.45	35.3	4.45	35.3	4.46	-	-	-	-
	2013-07-30	35.4	4.47	35.4	4.48	35.4	4.49	-	-	-	-
	2013-09-16	36.1	4.63	36.1	4.64	36.1	4.64	-	-	-	-
f (MHz)	Date	Dielectric Parameters									
		Ch 52 5260.0 MHz		5290.0 MHz		Ch 60 5300.0 MHz		-		-	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
5290	2013-07-29	35.5	4.51	35.5	4.53	35.4	4.55	-	-	-	-
	2013-08-12	35.2	4.52	35.2	4.54	35.2	4.55	-	-	-	-
	2013-09-16	36.0	4.68	36.0	4.71	35.9	4.72	-	-	-	-
f (MHz)	Date	Dielectric Parameters									
		Ch 104 5520.0 MHz		Ch 120 5600.0 MHz		5620.0 MHz		Ch 128 5640.0 MHz		Ch 140 5700.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
5520 5620	2013-07-31	35.1	4.77	35.0	4.86	34.9	4.87	34.9	4.91	34.9	4.97
	2013-08-01	35.0	4.77	34.9	4.85	34.8	4.86	34.8	4.90	34.8	4.96
	2013-09-16	35.6	4.94	35.5	5.03	35.5	5.05	35.4	5.07	35.4	5.14
f (MHz)	Date	Dielectric Parameters									
		Ch 149 5745.0 MHz		5760.0 MHz		Ch 157 5785.0 MHz		Ch 161 5805.0 MHz		-	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
5760	2013-07-31	34.8	5.01	34.7	5.03	34.7	5.05	34.6	5.06	-	-
	2013-08-01	34.7	5.00	34.6	5.02	34.6	5.05	34.6	5.06	-	-
	2013-09-16	35.3	5.18	35.3	5.20	35.2	5.22	35.2	5.25	-	-

Body tissue simulant dielectric parameters used in the measurements:

f (MHz)	Date	Dielectric Parameters					
		Ch 23780 709.0 MHz		Ch 23790 710.0 MHz		Ch 23800 711.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
710 Cetecom	2013-07-27	56.5	0.93	56.4	0.93	56.4	0.93
	2013-09-11	55.6	0.92	55.6	0.92	55.6	0.92
F (MHz)	Date	Dielectric Parameters					
		Ch 4132 826.4 MHz		Ch 4175 835.0 MHz		Ch 4233 846.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
835	2013-07-30	54.2	0.98	54.1	0.99	54.1	1.00
	2013-09-05	53.1	0.98	53.1	0.98	53.0	0.99
f (MHz)	Date	Dielectric Parameters					
		Ch 20450 829.0 MHz		Ch 20525 836.5 MHz		Ch 20600 844.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
836 Cetecom	2013-07-18	55.4	0.99	55.3	1.00	55.2	1.00
	2013-08-14	56.0	0.96	55.9	0.97	55.8	0.98
	2013-09-11	54.5	0.96	54.4	0.97	54.3	0.98
f (MHz)	Date	Dielectric Parameters					
		Ch 128 824.2 MHz		Ch 190 836.6 MHz		Ch 251 848.8 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
836	2013-07-30	54.2	0.98	54.1	0.99	54.1	1.00
	2013-09-05	53.2	0.98	53.1	0.99	53.0	0.99
F (MHz)	Date	Dielectric Parameters					
		Ch 20050 1720.0 MHz		Ch 20175 1732.5 MHz		Ch 20300 1745.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1732 Cetecom	2013-07-26	53.0	1.47	52.9	1.49	52.9	1.50
	2013-08-14	52.6	1.40	52.6	1.42	52.5	1.43
	2013-08-20	52.8	1.51	52.7	1.52	52.7	1.53
	2013-08-21	52.7	1.47	52.6	1.48	52.6	1.50
	2013-09-11	52.6	1.47	52.6	1.49	52.6	1.51

(Body tissue simulant table continues)

(Body tissue simulant table continues)

F (MHz)	Date	Dielectric Parameters					
		Ch 1312 1712.4 MHz		Ch 1412 1732.4 MHz		Ch 1513 1752.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1732	2013-08-02	51.9	1.42	51.9	1.44	51.8	1.46
	2013-09-10	51.8	1.44	51.7	1.46	51.7	1.48
f (MHz)	Date	Dielectric Parameters					
		Ch 512 1850.2 MHz		Ch 661 1880.0 MHz		Ch 810 1909.8 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880	2013-07-31	51.8	1.49	51.7	1.50	51.7	1.52
	2013-08-12	51.3	1.49	51.2	1.52	51.1	1.55
	2013-09-15	51.4	1.50	51.3	1.53	51.2	1.56
f (MHz)	Date	Dielectric Parameters					
		Ch 9262 1852.4 MHz		Ch 9400 1880.0 MHz		Ch 9538 1907.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880	2013-07-31	51.8	1.49	51.7	1.50	51.7	1.52
	2013-08-12	51.3	1.49	51.2	1.52	51.1	1.55
	2013-09-15	51.4	1.50	51.3	1.53	51.2	1.56
f (MHz)	Date	Dielectric Parameters					
		Ch 18700 1860.0 MHz		Ch 18900 1880.0 MHz		Ch 19100 1900.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880 Cetecom	2013-07-19	52.4	1.44	52.4	1.46	52.3	1.48
	2013-08-02	53.1	1.47	53.1	1.49	53.0	1.50
	2013-09-11	53.8	1.46	53.7	1.49	53.6	1.50
f (MHz)	Date	Dielectric Parameters					
		Ch 1 2412.0 MHz		Ch 6 2437.0 MHz		Ch 11 2462.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
2437	2013-07-29	50.8	1.90	50.7	1.93	50.7	1.96
	2013-07-30	51.2	1.91	51.1	1.94	51.0	1.97
	2013-09-10	51.3	1.90	51.2	1.92	51.1	1.95

Body tissue simulant dielectric parameters used in the measurements 5180 – 5805 MHz:

f (MHz)	Date	Dielectric Parameters									
		Ch 40 5200.0 MHz		5210.0 MHz		Ch 44 5220.0 MHz		-		-	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
5210	2013-08-02	48.3	5.40	48.3	5.40	48.3	5.43	-	-	-	-
	2013-08-05	47.9	5.26	47.9	5.26	47.9	5.27	-	-	-	-
	2013-08-12	47.9	5.43	47.9	5.44	47.9	5.45	-	-	-	-
	2013-09-11	47.1	5.21	47.1	5.23	47.1	5.24	-	-	-	-
f (MHz)	Date	Dielectric Parameters									
		Ch 52 5260.0 MHz		5290.0 MHz		Ch 60 5300.0 MHz		-		-	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
5290	2013-08-05	47.8	5.32	47.8	5.36	47.7	5.37	-	-	-	-
	2013-08-12	47.8	5.47	47.6	5.52	47.6	5.54	-	-	-	-
	2013-09-11	47.0	5.28	46.9	5.32	46.9	5.33	-	-	-	-
f (MHz)	Date	Dielectric Parameters									
		Ch 104 5520.0 MHz		Ch 120 5600.0 MHz		5620.0 MHz		Ch 128 5640.0 MHz		Ch 140 5700.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
5520 5620	2013-08-06	46.7	5.65	46.7	5.73	46.5	5.79	46.5	5.81	46.3	5.85
	2013-08-08	47.5	5.78	47.4	5.90	47.3	5.91	47.3	5.94	47.3	6.05
	2013-09-12	46.3	5.71	46.2	5.82	46.1	5.84	46.1	5.87	46.0	5.95
f (MHz)	Date	Dielectric Parameters									
		Ch 149 5745.0 MHz		5760.0 MHz		Ch 157 5785.0 MHz		Ch 161 5805.0 MHz		-	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
5760	2013-08-07	46.6	6.09	46.5	6.11	46.5	6.14	46.5	6.17	-	-
	2013-08-08	47.1	6.08	47.1	6.11	47.1	6.16	47.1	6.19	-	-
	2013-08-12	47.0	6.14	47.0	6.17	47.0	6.18	47.0	6.18	-	-
	2013-09-14	46.1	6.17	46.1	6.20	46.2	6.22	46.1	6.23	-	-

APPENDIX D: CONDUCTED AVERAGE POWER MEASUREMENTS FOR WCDMA AND HSUPA

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342572/0, HW: 2100, SW: 1028.0301.1326.22195

D.1. WCDMA850 Test results

Average power

Ch / f(MHz)	P [dBm]
4132 / 826.4	23.67
4175 / 835.0	23.50
4233 / 846.6	23.66

D.2. HSUPA850 Test results

Average power

Ch / f(MHz)	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
4132 / 826.4	22.82	21.72	21.69	22.36	22.97
4175 / 835.0	22.35	21.68	21.59	22.32	22.80
4233 / 846.6	22.35	21.91	21.65	22.16	22.92

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs a single HSUPA power control routine. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
0.0dB	2.0dB	1.0dB	2.0dB	0.0dB

Test Laboratory: TCC Nokia

Type: RM-938; Serial: 004402/47/497037/7, HW: 2200, SW: 1028.3500.1332.2000

D.3. WCDMA850 Test results

Average power

Ch / f(MHz)	P [dBm]
4132 / 826.4	23.34
4175 / 835.0	23.36
4233 / 846.6	23.46

D.4. HSUPA850 Test results

Average power

Ch / f(MHz)	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
4132 / 826.4	21.64	21.12	20.79	21.81	22.37
4175 / 835.0	22.47	21.23	20.85	21.87	22.43
4233 / 846.6	21.73	21.30	20.91	21.93	22.49

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs a single HSUPA power control routine. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
0.0dB	2.0dB	1.0dB	2.0dB	0.0dB

Test Laboratory: TCC Nokia

Type: RM-940; Serial: 004402/47/342580/3, HW: 2100, SW: 1028.0301.1326.22195

D.5. WCDMA1700/2100 Test results

Average power

Ch / f(MHz)	P [dBm]
1312 / 1712.4	23.63
1412 / 1732.4	23.56
1513 / 1756.6	23.70

D.6. HSUPA1700/2100 Test results

Average power

Ch / f(MHz)	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
1312 / 1712.4	22.13	21.63	21.46	22.28	22.81
1412 / 1732.4	22.14	21.53	21.39	22.07	22.61
1513 / 1756.6	22.79	21.58	21.58	22.28	22.73

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs a single HSUPA power control routine. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
0.0dB	2.0dB	1.0dB	2.0dB	0.0dB

Test Laboratory: TCC Nokia

Type: RM-938; Serial: 004402/47/497033/6, HW: 2200, SW: 1028.3500.1332.2000

D.7. WCDMA1700/2100 Test results

Average power

Ch / f(MHz)	P [dBm]
1312 / 1712.4	23.55
1412 / 1732.4	23.55
1513 / 1756.6	23.54

D.8. HSUPA1700/2100 Test results

Average power

Ch / f(MHz)	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
1312 / 1712.4	22.51	21.21	21.51	21.99	22.63
1412 / 1732.4	22.08	21.54	21.12	22.15	22.70
1513 / 1756.6	21.93	21.34	21.55	22.26	22.63

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs a single HSUPA power control routine. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
0.0dB	2.0dB	1.0dB	2.0dB	0.0dB

Test Laboratory: TCC Nokia
Type: RM-940; Serial: 004402/47/342580/3, HW: 2100, SW: 1028.0301.1326.22195

D.9. WCDMA1900 Test results

Average power

Ch / f(MHz)	P [dBm]
9262 / 1852.4	23.59
9400 / 1880.0	23.75
9538 / 1907.6	23.71

D.10. HSUPA1900 Test results

Average power

Ch / f(MHz)	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
9262 / 1852.4	22.89	21.39	21.63	22.47	23.00
9400 / 1880.0	21.97	21.27	21.26	21.26	22.43
9538 / 1907.6	21.67	20.59	20.59	20.57	21.72

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs a single HSUPA power control routine. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
0.0dB	2.0dB	1.0dB	2.0dB	0.0dB

Test Laboratory: TCC Nokia

Type: RM-938; Serial: 004402/47/497033/6, HW: 2200, SW: 1028.3500.1332.2000

D.11. WCDMA1900 Test results

Average power

Ch / f(MHz)	P [dBm]
9262 / 1852.4	23.39
9400 / 1880.0	23.60
9538 / 1907.6	23.61

D.12. HSUPA1900 Test results

Average power

Ch / f(MHz)	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
9262 / 1852.4	21.75	21.38	21.00	21.96	22.52
9400 / 1880.0	21.88	21.49	21.40	22.12	22.67
9538 / 1907.6	22.01	21.52	20.90	22.16	22.64

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs a single HSUPA power control routine. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
0.0dB	2.0dB	1.0dB	2.0dB	0.0dB

APPENDIX E: RELEVANT PAGES FROM PROBE CALIBRATION REPORTS



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Client **Nokia Salo TCC**

Certificate No: **ES3-3165_Jan13**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3165**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-23.v4, QA CAL-25.v4**
Calibration procedure for dosimetric E-field probes

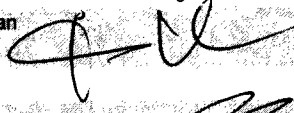
Calibration date: **January 21, 2013**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	28-Dec-12 (No. ES3-3013_Dec12)	Dec-13
DAE4	SN: 660	20-Jun-12 (No. DAE4-660_Jun12)	Jun-13
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

Calibrated by:	Name Jeton Kastrati	Function Laboratory Technician	Signature 
Approved by:	Name Katja Pokovic	Function Technical Manager	Signature 

Issued: January 21, 2013

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3165

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	41.9	0.89	6.46	6.46	6.46	0.23	2.34	± 12.0 %
835	41.5	0.90	6.20	6.20	6.20	0.33	1.65	± 12.0 %
1750	40.1	1.37	5.19	5.19	5.19	0.67	1.25	± 12.0 %
1900	40.0	1.40	5.02	5.02	5.02	0.43	1.47	± 12.0 %
2450	39.2	1.80	4.45	4.45	4.45	0.60	1.41	± 12.0 %
2600	39.0	1.96	4.28	4.28	4.28	0.70	1.34	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3165

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	55.5	0.96	6.10	6.10	6.10	0.31	1.92	± 12.0 %
835	55.2	0.97	6.04	6.04	6.04	0.71	1.22	± 12.0 %
1750	53.4	1.49	4.86	4.86	4.86	0.54	1.49	± 12.0 %
1900	53.3	1.52	4.60	4.60	4.60	0.46	1.72	± 12.0 %
2450	52.7	1.95	4.18	4.18	4.18	0.64	1.17	± 12.0 %
2600	52.5	2.16	3.98	3.98	3.98	0.80	1.00	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.



Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Nokia Sala TCC**

Certificate No: **EX3-3834_Jan13**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3834**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-14.v3, QA CAL-23.v4, QA CAL-25.v4**
Calibration procedure for dosimetric E-field probes

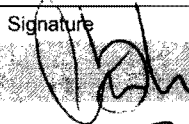
Calibration date: **January 23, 2013**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	28-Dec-12 (No. ES3-3013_Dec12)	Dec-13
DAE4	SN: 660	20-Jun-12 (No. DAE4-660_Jun12)	Jun-13
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

Calibrated by:	Name Claudio Leubler	Function Laboratory Technician	Signature 
Approved by:	Katja Pokovic	Technical Manager	

Issued: January 26, 2013

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3834

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	41.9	0.89	9.55	9.55	9.55	0.65	0.67	± 12.0 %
835	41.5	0.90	9.12	9.12	9.12	0.80	0.50	± 12.0 %
1750	40.1	1.37	7.93	7.93	7.93	0.53	0.76	± 12.0 %
1900	40.0	1.40	7.64	7.64	7.64	0.80	0.65	± 12.0 %
2450	39.2	1.80	6.88	6.88	6.88	0.45	0.84	± 12.0 %
2600	39.0	1.96	6.79	6.79	6.79	0.50	0.81	± 12.0 %
5200	36.0	4.66	4.99	4.99	4.99	0.35	1.80	± 13.1 %
5300	35.9	4.76	4.68	4.68	4.68	0.40	1.80	± 13.1 %
5500	35.6	4.96	4.61	4.61	4.61	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.43	4.43	4.43	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.49	4.49	4.49	0.40	1.80	± 13.1 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3834

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	55.5	0.96	9.14	9.14	9.14	0.32	1.03	± 12.0 %
835	55.2	0.97	8.99	8.99	8.99	0.34	0.98	± 12.0 %
1750	53.4	1.49	7.82	7.82	7.82	0.60	0.71	± 12.0 %
1900	53.3	1.52	7.25	7.25	7.25	0.37	0.90	± 12.0 %
2450	52.7	1.95	6.90	6.90	6.90	0.75	0.59	± 12.0 %
2600	52.5	2.16	6.59	6.59	6.59	0.80	0.50	± 12.0 %
5200	49.0	5.30	4.30	4.30	4.30	0.45	1.90	± 13.1 %
5300	48.9	5.42	4.12	4.12	4.12	0.45	1.90	± 13.1 %
5500	48.6	5.65	3.87	3.87	3.87	0.45	1.90	± 13.1 %
5600	48.5	5.77	3.75	3.75	3.75	0.40	1.90	± 13.1 %
5800	48.2	6.00	3.82	3.82	3.82	0.60	1.90	± 13.1 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.



Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Nokia Salo TCC**

Certificate No: **EX3-3573_Jan13**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3573**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-14.v3, QA CAL-23.v4, QA CAL-25.v4**
Calibration procedure for dosimetric E-field probes

Calibration date: **January 23, 2013**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	28-Dec-12 (No. ES3-3013_Dec12)	Dec-13
DAE4	SN: 660	20-Jun-12 (No. DAE4-660_Jun12)	Jun-13
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

Calibrated by:	Name Claudio Lautler	Function Laboratory Technician	Signature
Approved by:	Name Katja Pokovic	Function Technical Manager	Signature

Issued: January 26, 2013

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3573

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	41.9	0.89	8.84	8.84	8.84	0.19	1.36	± 12.0 %
835	41.5	0.90	8.48	8.48	8.48	0.31	0.95	± 12.0 %
1750	40.1	1.37	7.33	7.33	7.33	0.58	0.69	± 12.0 %
1900	40.0	1.40	7.08	7.08	7.08	0.63	0.67	± 12.0 %
2450	39.2	1.80	6.47	6.47	6.47	0.36	0.85	± 12.0 %
2600	39.0	1.96	6.30	6.30	6.30	0.47	0.80	± 12.0 %
5200	36.0	4.66	4.51	4.51	4.51	0.45	1.80	± 13.1 %
5300	35.9	4.76	4.29	4.29	4.29	0.45	1.80	± 13.1 %
5500	35.6	4.96	4.17	4.17	4.17	0.45	1.80	± 13.1 %
5600	35.5	5.07	4.10	4.10	4.10	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.08	4.08	4.08	0.45	1.80	± 13.1 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3573

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	55.5	0.96	8.63	8.63	8.63	0.37	0.99	± 12.0 %
835	55.2	0.97	8.52	8.52	8.52	0.27	1.23	± 12.0 %
1750	53.4	1.49	7.10	7.10	7.10	0.54	0.74	± 12.0 %
1900	53.3	1.52	6.80	6.80	6.80	0.28	1.05	± 12.0 %
2450	52.7	1.95	6.50	6.50	6.50	0.80	0.50	± 12.0 %
2600	52.5	2.16	6.22	6.22	6.22	0.80	0.50	± 12.0 %
5200	49.0	5.30	4.04	4.04	4.04	0.50	1.90	± 13.1 %
5300	48.9	5.42	3.85	3.85	3.85	0.50	1.90	± 13.1 %
5500	48.6	5.65	3.56	3.56	3.56	0.55	1.90	± 13.1 %
5600	48.5	5.77	3.38	3.38	3.38	0.55	1.90	± 13.1 %
5800	48.2	6.00	3.60	3.60	3.60	0.60	1.90	± 13.1 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

The Swiss Accreditation Service is one of the signatories to the EA
 Multilateral Agreement for the recognition of calibration certificates

Client **Nokia Salo TCC**

Certificate No: **ES3-3131_Jun13**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3131**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-23.v4, QA CAL-25.v4**
Calibration procedure for dosimetric E-field probes

Calibration date: **June 18, 2013**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^\circ\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	04-Apr-13 (No. 217-01733)	Apr-14
Power sensor E4412A	MY41498087	04-Apr-13 (No. 217-01733)	Apr-14
Reference 3 dB Attenuator	SN: S5054 (3c)	04-Apr-13 (No. 217-01737)	Apr-14
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-13 (No. 217-01735)	Apr-14
Reference 30 dB Attenuator	SN: S5129 (30b)	04-Apr-13 (No. 217-01738)	Apr-14
Reference Probe ES3DV2	SN: 3013	28-Dec-12 (No. ES3-3013_Dec12)	Dec-13
DAE4	SN: 660	31-Jan-13 (No. DAE4-660_Jan13)	Jan-14
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-13)	In house check: Apr-15
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

Calibrated by:	Name Israe El-Naouq	Function Laboratory Technician	Signature
Approved by:	Name Katja Pokovic	Function Technical Manager	Signature

Issued: June 18, 2013

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3131

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	41.9	0.89	6.23	6.23	6.23	0.31	1.83	± 12.0 %
835	41.5	0.90	5.96	5.96	5.96	0.26	1.99	± 12.0 %
1750	40.1	1.37	5.17	5.17	5.17	0.49	1.47	± 12.0 %
1900	40.0	1.40	4.98	4.98	4.98	0.67	1.27	± 12.0 %
2450	39.2	1.80	4.33	4.33	4.33	0.80	1.14	± 12.0 %
2600	39.0	1.96	4.21	4.21	4.21	0.80	1.09	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3131

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	55.5	0.96	6.10	6.10	6.10	0.30	1.90	± 12.0 %
835	55.2	0.97	6.03	6.03	6.03	0.39	1.68	± 12.0 %
1750	53.4	1.49	4.87	4.87	4.87	0.31	2.53	± 12.0 %
1900	53.3	1.52	4.62	4.62	4.62	0.28	2.70	± 12.0 %
2450	52.7	1.95	4.27	4.27	4.27	0.68	1.20	± 12.0 %
2600	52.5	2.16	4.17	4.17	4.17	0.50	1.10	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

1 Calibration report "Probe ES3DV3"

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
S Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client **Cetecom**

Certificate No: **ES3-3320_Jun13**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3320**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-23.v4, QA CAL-25.v4
Calibration procedure for dosimetric E-field probes**

Calibration date: **June 4, 2013**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	04-Apr-13 (No. 217-01733)	Apr-14
Power sensor E4412A	MY41498087	04-Apr-13 (No. 217-01733)	Apr-14
Reference 3 dB Attenuator	SN: S5054 (3c)	04-Apr-13 (No. 217-01737)	Apr-14
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-13 (No. 217-01735)	Apr-14
Reference 30 dB Attenuator	SN: S5129 (30b)	04-Apr-13 (No. 217-01738)	Apr-14
Reference Probe ES3DV2	SN: 3013	28-Dec-12 (No. ES3-3013_Dec12)	Dec-13
DAE4	SN: 660	31-Jan-13 (No. DAE4-660_Jan13)	Jan-14
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-13)	In house check: Apr-15
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

	Name	Function	Signature
Calibrated by:	Leif Klynsner	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: June 4, 2013

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3320

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^c	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	41.9	0.89	6.54	6.54	6.54	0.80	1.13	± 12.0 %
835	41.5	0.90	6.32	6.32	6.32	0.80	1.15	± 12.0 %
900	41.5	0.97	6.21	6.21	6.21	0.80	1.06	± 12.0 %
1750	40.1	1.37	5.23	5.23	5.23	0.80	1.19	± 12.0 %
1900	40.0	1.40	5.06	5.06	5.06	0.61	1.39	± 12.0 %
2450	39.2	1.80	4.49	4.49	4.49	0.80	1.30	± 12.0 %

^c Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3320

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	55.5	0.96	6.36	6.36	6.36	0.80	1.14	± 12.0 %
835	55.2	0.97	6.29	6.29	6.29	0.79	1.16	± 12.0 %
900	55.0	1.05	6.25	6.25	6.25	0.73	1.03	± 12.0 %
1750	53.4	1.49	5.04	5.04	5.04	0.74	1.29	± 12.0 %
1900	53.3	1.52	4.78	4.78	4.78	0.56	1.52	± 12.0 %
2450	52.7	1.95	4.36	4.36	4.36	0.74	1.11	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.