

SAR Compliance Test Report

Test report no.:	FCC_RM-942_01	Date of report:	2013-06-26
Template version:	19.4	Number of pages:	207
Testing laboratory:	TCC Nokia Beijing Laboratory Beijing Economic and Technological Development Area No.5 Donghuan Zhonglu Beijing PRC China 100176 Tel. +86 10 8711 8888 Fax. +86 10 8711 4550	Client:	Nokia Corporation Beijing Economic and Technological Development Area No.5 Donghuan Zhonglu Beijing PRC China 100176 Tel. +86 10 8711 8888 Fax. +86 10 8711 4550
Responsible test engineer:	Cai Jim	Product contact person:	Wang Jinling
Measurements made by:	Liu Xianchao, Zhang Luwen, Cai Jim		
Tested device:	RM-942		
FCC ID:	QTLRM-942	IC:	661AB-RM942
Supplement reports:	FCC_RM-941_03 for RM-941 / FCC ID: QTLRM-941, SAR_Photo_RM-942_02		
Testing has been carried out in accordance with:	47CFR §2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01) Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields 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:			

CONTENTS

1. SUMMARY OF SAR TEST REPORT	4
1.1 TEST DETAILS.....	4
1.2 MAXIMUM RESULTS.....	5
1.2.1 Head Configuration.....	5
1.2.2 Body Worn Configuration.....	6
1.2.3 Wireless Router Configuration.....	7
1.2.4 Summary SAR data.....	8
1.2.5 Maximum Drift	8
1.2.6 Measurement Uncertainty.....	8
2. DESCRIPTION OF THE DEVICE UNDER TEST	9
2.1 POWER REDUCTIONS IN WIRELESS ROUTER CONFIGURATIONS	11
2.2 DESCRIPTION OF THE ANTENNA.....	13
3. TEST CONDITIONS	13
3.1 TEMPERATURE AND HUMIDITY.....	13
3.2 TEST SIGNAL, FREQUENCIES AND OUTPUT POWER.....	14
3.3 TEST CASES AND TEST MINIMISATION	15
4. DESCRIPTION OF THE TEST EQUIPMENT.....	17
4.1 MEASUREMENT SYSTEM AND COMPONENTS	17
4.1.1 Isotropic E-field Probe Type ES3DV3	19
4.1.2 Isotropic E-field Probe Type EX3DV4.....	19
4.2 PHANTOMS	20
4.3 TISSUE SIMULANTS	20
4.3.1 Tissue Simulant Recipes.....	21
4.4 SYSTEM VALIDATION AND SYSTEM CHECKING.....	22
4.4.1 System validation status.....	22
4.4.2 System checking.....	22
4.5 TISSUE SIMULANTS USED IN THE MEASUREMENTS.....	25
5. DESCRIPTION OF THE TEST PROCEDURE.....	27
5.1 DEVICE HOLDER.....	27
5.2 TEST POSITIONS.....	27
5.2.1 Against Phantom Head.....	27
5.2.2 Wireless Router Configuration.....	28
5.3 SCAN PROCEDURES.....	28
5.4 SAR AVERAGING METHODS.....	28
6. MEASUREMENT UNCERTAINTY	29
7. RESULTS	30
7.1 THE MEASURED HEAD SAR VALUES FOR THE TEST DEVICE ARE TABULATED BELOW:	30
7.2 THE MEASURED BODY SAR VALUES FOR THE TEST DEVICE ARE TABULATED BELOW:	56
7.3 BODY SAR ASSESSMENT OF WIRELESS ROUTER MODE AT 10.0MM SEPARATION DISTANCE.....	75

APPENDIX A: SYSTEM CHECK SCANS

APPENDIX B: MEASUREMENT SCANS

APPENDIX C: DIELECTRIC PARAMETERS OF THE TISSUE SIMULANTS

APPENDIX D: CONDUCTED AVERAGE POWER MEASUREMENTS FOR WCDMA AND HSUPA

APPENDIX E: RELEVANT PAGES FROM PROBE CALIBRATION REPORT(S)

APPENDIX F: RELEVANT PAGES FROM DIPOLE VALIDATION REPORT(S)

APPENDIX G: CONDUCTED POWER MEASUREMENTS FOR SUPPORTED LTE TRANSMISSION MODES

APPENDIX H: CONDUCTED POWER MEASUREMENTS FOR SUPPORTED GSM/GPRS/EGPRS TRANSMISSION MODES

APPENDIX I: CONDUCTED POWER MEASUREMENTS FOR SUPPORTED WCDMA TRANSMISSION MODES

APPENDIX J: CONDUCTED POWER MEASUREMENTS FOR SUPPORTED WLAN TRANSMISSION MODES

1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2013-06-03 to 2013-06-25
SN, HW and SW numbers of tested device	SN: 004402/47/277425/0, HW: 2000, SW: 3037.0000.1318.0000, DUT: 53241 SN: 004402/47/277477/1, HW: 2000, SW: 3037.0000.1318.0000, DUT: 53240 SN: 004402/47/277461/5, HW: 2000, SW: 3037.0000.1318.0000, DUT: 53242 SN: 004402/47/277464/9, HW: 2000, SW: 3037.0000.1318.0000, DUT: 53239 SN: 004402/47/277487/0, HW: 2000, SW: 3037.0000.1318.0000, DUT: 53243 SN: 004402/47/277517/4, HW: 2000, SW: 3037.0000.1318.0000, DUT: 53238
Batteries used in testing	-
Headsets used in testing	WH-108, DUT: 52918, 52919
Other accessories used in testing	-
State of sample	Prototype unit
Notes	-

1.2 Maximum Results

The maximum measured SAR values for Head, Body worn and Wireless Router (“Hotspot”) configuration are given in section 1.2.1, 1.2.2 and 1.2.3 respectively. The device conforms to the requirements of the standard(s) 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	23780 / 709.0	24.18 dBm	Left, Cheek	0.315 W/kg	0.35 W/kg	1.6 W/kg	PASSED	1
3-slot GPRS850	128 / 824.2	29.00 dBm	Left, Cheek	0.377 W/kg	0.42 W/kg	1.6 W/kg	PASSED	2
WCDMA850	4132 / 826.4	24.22 dBm	Left, Cheek	0.424 W/kg	0.48 W/kg	1.6 W/kg	PASSED	3
LTE850	20450 / 829.0	23.86 dBm	Left, Cheek	0.369 W/kg	0.41 W/kg	1.6 W/kg	PASSED	4
WCDMA1700/2100	1513 / 1752.6	23.88 dBm	Right, Cheek	0.902 W/kg	1.01 W/kg	1.6 W/kg	PASSED	5
LTE1700/2100	20300 / 1745.0	23.38 dBm	Right, Cheek	0.806 W/kg	0.90 W/kg	1.6 W/kg	PASSED	6
GSM1900	661 / 1880.0	30.57 dBm	Right, Cheek	0.525 W/kg	0.59 W/kg	1.6 W/kg	PASSED	7
WCDMA1900	9262 / 1852.4	24.13 dBm	Right, Cheek	0.980 W/kg	1.10 W/kg	1.6 W/kg	PASSED	8
LTE1900	18700 / 1869.0	23.39 dBm	Right, Cheek	0.757 W/kg	0.85 W/kg	1.6 W/kg	PASSED	9
WLAN2450**	11 / 2462.0	15.08 dBm	Right, Cheek	0.422 W/kg	0.52 W/kg	1.6 W/kg	PASSED	10
LTE700 + WLAN2450	-	-	Right, Cheek	0.491 W/kg	0.55 W/kg	1.6 W/kg	PASSED	11
3-slot GPRS850 + WLAN2450	-	-	Right, Cheek	0.500 W/kg	0.56 W/kg	1.6 W/kg	PASSED	12
WCDMA850 + WLAN2450	-	-	Right, Cheek	0.500 W/kg	0.56 W/kg	1.6 W/kg	PASSED	13
LTE850 + WLAN2450	-	-	Right, Cheek	0.500 W/kg	0.56 W/kg	1.6 W/kg	PASSED	14
WCDMA1700/2100 + WLAN2450	-	-	Right, Cheek	0.946 W/kg	1.06 W/kg	1.6 W/kg	PASSED	15
LTE1700/2100 + WLAN2450	-	-	Right, Cheek	0.848 W/kg	0.95 W/kg	1.6 W/kg	PASSED	16
GSM1900 + WLAN2450	-	-	Right, Cheek	0.580 W/kg	0.65 W/kg	1.6 W/kg	PASSED	17
WCDMA1900 + WLAN2450	-	-	Right, Cheek	1.00 W/kg	1.12 W/kg	1.6 W/kg	PASSED	18
LTE1900 + WLAN2450	-	-	Right, Cheek	0.804 W/kg	0.90 W/kg	1.6 W/kg	PASSED	19

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	23800 / 711.0	24.17 dBm	15 mm	0.439 W/kg	0.49 W/kg	1.6 W/kg	PASSED	20
3-slot GPRS850	128 / 824.2	29.00 dBm	15 mm	0.549 W/kg	0.62 W/kg	1.6 W/kg	PASSED	21
WCDMA850	4132 / 826.4	24.22 dBm	15 mm	0.472 W/kg	0.53 W/kg	1.6 W/kg	PASSED	22
LTE850	20450 / 829.0	23.86 dBm	15 mm	0.512 W/kg	0.57 W/kg	1.6 W/kg	PASSED	23
WCDMA1700/2100	1513 / 1752.6	23.88 dBm	15 mm	0.605 W/kg	0.68 W/kg	1.6 W/kg	PASSED	24
LTE1700/2100	20300 / 1745.0	23.38 dBm	15 mm	0.465 W/kg	0.52 W/kg	1.6 W/kg	PASSED	25
GSM1900	661 / 1880.0	30.57 dBm	15 mm	0.279 W/kg	0.31 W/kg	1.6 W/kg	PASSED	26
WCDMA1900	9262 / 1852.4	24.13 dBm	15 mm	0.615 W/kg	0.69 W/kg	1.6 W/kg	PASSED	27
LTE1900	18700 / 1860.0	23.39 dBm	15 mm	0.465 W/kg	0.52 W/kg	1.6 W/kg	PASSED	28
WLAN2450**	11 / 2462.0	15.08 dBm	15 mm	0.076 W/kg	0.09 W/kg	1.6 W/kg	PASSED	29
LTE700 + WLAN2450	-	-	15 mm	0.439 W/kg	0.49 W/kg	1.6 W/kg	PASSED	20
3-slot GPRS850 + WLAN2450	-	-	15 mm	0.549 W/kg	0.62 W/kg	1.6 W/kg	PASSED	21
WCDMA850 + WLAN2450	-	-	15 mm	0.482 W/kg	0.54 W/kg	1.6 W/kg	PASSED	32
LTE850 + WLAN2450	-	-	15 mm	0.512 W/kg	0.57 W/kg	1.6 W/kg	PASSED	23
WCDMA1700/2100 + WLAN2450	-	-	15 mm	0.605 W/kg	0.68 W/kg	1.6 W/kg	PASSED	24
LTE1700/2100 + WLAN2450	-	-	15 mm	0.465 W/kg	0.52 W/kg	1.6 W/kg	PASSED	25
GSM1900 + WLAN2450	-	-	15 mm	0.286 W/kg	0.32 W/kg	1.6 W/kg	PASSED	36
WCDMA1900 + WLAN2450	-	-	15 mm	0.643 W/kg	0.72 W/kg	1.6 W/kg	PASSED	37
LTE1900 + WLAN2450	-	-	15 mm	0.473 W/kg	0.53 W/kg	1.6 W/kg	PASSED	38

1.2.3 Wireless Router Configuration

Summary of Maximum Results for Wireless Router mode at 10.0mm

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	23800 / 711.0	24.17 dBm	10 mm	0.652 W/kg	0.73 W/kg	1.6 W/kg	PASSED	39
3-slot GPRS850	128 / 824.2	29.00 dBm	10 mm	0.616 W/kg	0.69 W/kg	1.6 W/kg	PASSED	40
WCDMA850	4132 / 826.4	24.22 dBm	10 mm	0.650 W/kg	0.73 W/kg	1.6 W/kg	PASSED	41
LTE850	20450 / 829.0	23.86 dBm	10 mm	0.624 W/kg	0.70 W/kg	1.6 W/kg	PASSED	42
WCDMA1700/2100	1513 / 1752.6	23.88 dBm	10 mm	1.02 W/kg	1.14 W/kg	1.6 W/kg	PASSED	43
LTE1700/2100	20300 / 1745.0	23.38 dBm	10 mm	0.917 W/kg	1.03 W/kg	1.6 W/kg	PASSED	44
GSM1900	661 / 1880.0	30.57 dBm	10 mm	0.450 W/kg	0.51 W/kg	1.6 W/kg	PASSED	45
WCDMA1900	9262 / 1852.4	24.13 dBm	10 mm	1.03 W/kg	1.16 W/kg	1.6 W/kg	PASSED	46
LTE1900	18700 / 1869.0	23.39 dBm	10 mm	0.743 W/kg	0.83 W/kg	1.6 W/kg	PASSED	47
WLAN2450**	11 / 2462.0	15.08 dBm	10 mm	0.119 W/kg	0.15 W/kg	1.6 W/kg	PASSED	48
LTE700 + WLAN2450	-	-	10 mm	0.652 W/kg	0.73 W/kg	1.6 W/kg	PASSED	39
3-slot GPRS850 + WLAN2450	-	-	10 mm	0.620 W/kg	0.70 W/kg	1.6 W/kg	PASSED	50
WCDMA850 + WLAN2450	-	-	10 mm	0.650 W/kg	0.73 W/kg	1.6 W/kg	PASSED	41
LTE850 + WLAN2450	-	-	10 mm	0.624 W/kg	0.70 W/kg	1.6 W/kg	PASSED	42
WCDMA1700/2100 + WLAN2450	-	-	10 mm	1.02 W/kg	1.14 W/kg	1.6 W/kg	PASSED	43
LTE1700/2100 + WLAN2450	-	-	10 mm	0.917 W/kg	1.03 W/kg	1.6 W/kg	PASSED	44
GSM1900 + WLAN2450	-	-	10 mm	0.466 W/kg	0.52 W/kg	1.6 W/kg	PASSED	55
WCDMA1900 + WLAN2450	-	-	10 mm	1.05 W/kg	1.18 W/kg	1.6 W/kg	PASSED	56
LTE1900 + WLAN2450	-	-	10 mm	0.743 W/kg	0.83 W/kg	1.6 W/kg	PASSED	47

* Reported SAR values are scaled to, or measured at, upper limit of power tuning tolerance. In addition, SAR values are scaled up by 12% to cover measurement drift. As a consequence of this upward drift correction, the contribution of measurement drift to the overall measurement uncertainty (Section 6) is reduced to zero.

**SAR data taken from FCC_RM-941_03 for RM-941 / FCC ID: QTLRM-941.

1.2.4 Summary SAR data

	FCC-defined SAR values for the Grants of Equipment Authorization		
	PCE	DTS	NII
Maximum Head SAR values	1.10 W/kg	0.52 W/kg	-
{Max + Max} Simultaneous Head SAR value	1.53 W/kg		
Maximum Body SAR values	0.69 W/kg	0.09 W/kg	-
{Max + Max} Simultaneous Body SAR value	0.74 W/kg		
Maximum Product Specific (Wireless Router) SAR values	1.16 W/kg	0.15 W/kg	-
{Max + Max} Simultaneous Product Specific SAR value	1.24 W/kg		
Maximum Simultaneous SAR value	1.53 W/kg		
Head SAR: WCDMA1700/2100 + WLAN2450			

Note:

PCE contains the highest results between all cellular modes (cellular, AWS 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 5470-5725

1.2.5 Maximum Drift

Maximum drift covered by 12% scaling up of the SAR values	Maximum drift during measurements
0.5dB	0.48dB

1.2.6 Measurement Uncertainty

Expanded Uncertainty (k=2) 95%	± 26.4%
--------------------------------	---------

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	28.50	27.00	32.85	30.35	28.85	27.35
	1900			1850 – 1910	30.20	27.00	25.50	24.00	30.55	27.35	25.85	24.35
EGPRS	850	GMSK	1/8 to 4/8	824 – 849	27.00	25.50	24.00	22.50	26.85	26.35	25.35	24.35
	1900			1850 – 1910	26.00	24.50	23.00	21.50	26.35	24.85	23.35	21.85
WCDMA	850 (Band V)		1	826 – 847	23.80				24.15			
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								
HSUPA	1900 (Band II)		1	1852 – 1908								
LTE	700	QPSK / 16QAM		704 – 716	23.80				24.15			
LTE	850	QPSK / 16QAM		824 – 849	23.50				23.85			
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	6.00				7.50			
					Ch 1	Ch 6	Ch 11		Ch 1	Ch 6	Ch 11	
WLAN b-mode	2450	DSSS	1	2412 – 2472	14.00	14.00	14.00		15.50	15.50	15.50	
WLAN g-mode	2450	OFDM	1	2412 – 2472	10.00	10.00	10.00		11.50	11.50	11.50	
WLAN n-mode	2450	OFDM	1	2412 – 2462 2412 – 2472	10.00	10.00	10.00		11.50	11.50	11.50	

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

This 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 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 power tuning target is 6dBm (3.98mW), SAR testing was deemed unnecessary since $(7.08\text{mW}/5\text{mm}) \cdot \sqrt{2.48\text{GHz}} < 3.0$ (KDB447498 D01 General RF Exposure Guidelines v05 Section 4.3.1 Standalone SAR test exclusion considerations).

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
LTE700	✓
GSM/GPRS/EGPRS850	✓
WCDMA850	✓
LTE850	✓
WCDMA1700/2100	✓
LTE1700/2100	✓
GSM/GPRS/EGPRS1900	✓
WCDMA1900	✓
LTE1900	✓

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

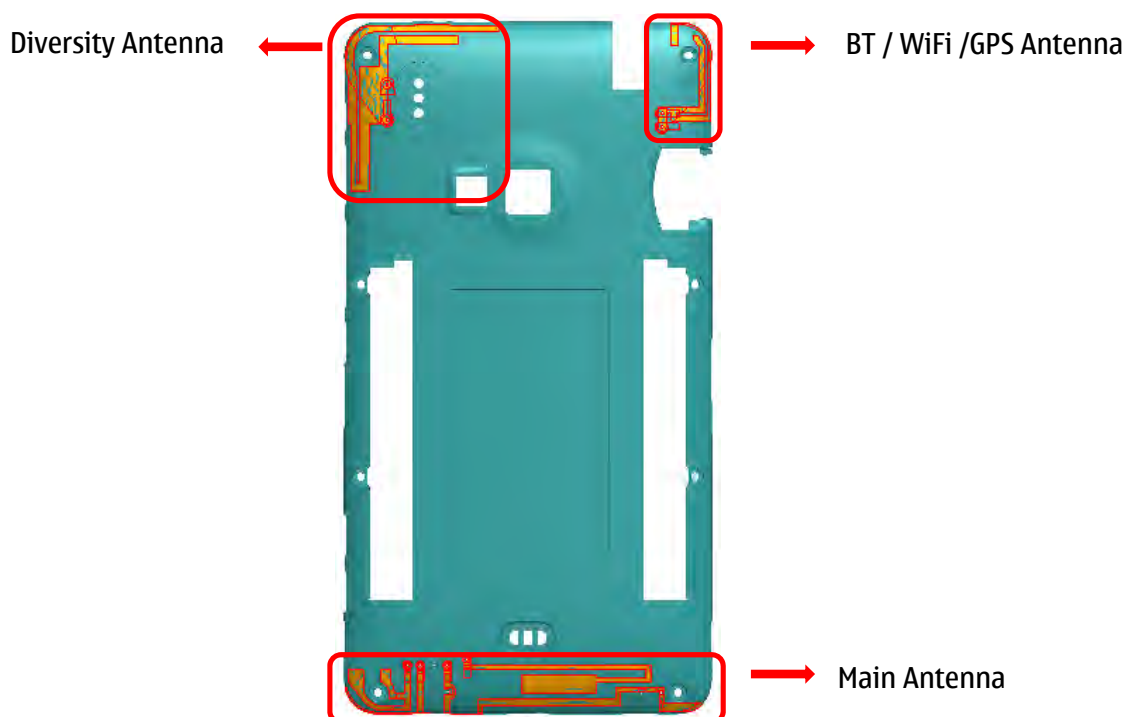
2.1 Power reductions in Wireless Router configurations

The following table details the power reductions active in Wireless Router mode:

Band	Power reduction in WR mode	Target tuning power in WR mode
LTE700	0 dB	23.8 dBm
GPRS/EGPRS850	0 dB 0 dB 0 dB 0 dB 0 dB 0 dB 0 dB 0 dB	1-slot GPRS: 32.5 dBm 2-slot GPRS: 30.5 dBm 3-slot GPRS: 28.5 dBm 4-slot GPRS: 27.0 dBm 1-slot EGPRS: 27.0 dBm 2-slot EGPRS: 25.5 dBm 3-slot EGPRS: 24.0 dBm 4-slot EGPRS: 22.5 dBm
WCDMA850	0 dB	23.8 dBm
LTE850	0 dB	23.5 dBm
WCDMA1700/2100	0 dB	23.5 dBm
LTE1700/2100	0 dB	23.0 dBm
GPRS/EGPRS1900	0 dB 0 dB 0 dB 0 dB 0 dB 0 dB 0 dB 0 dB	1-slot GPRS: 30.2 dBm 2-slot GPRS: 27.0 dBm 3-slot GPRS: 25.5 dBm 4-slot GPRS: 24.0 dBm 1-slot EGPRS: 26.0 dBm 2-slot EGPRS: 24.5 dBm 3-slot EGPRS: 23.0 dBm 4-slot EGPRS: 21.5 dBm
WCDMA1900	0 dB	23.5 dBm
LTE1900	0 dB	23.0 dBm
WLAN2450 b-mode (DSSS 1 Mbps)	0 dB	Ch 1-11: 14.0 dBm
WLAN2450 g-mode (OFDM 6 Mbps)	0 dB	Ch 1-11: 10.0 dBm
WLAN2450 n-mode (MCS 0 – OFDM 6.5 Mbps)	0 dB	Ch 1-11: 10.0 dBm

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 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; 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 radiated output power of the device was measured by a separate test laboratory on the same unit(s) as used for SAR testing. The results are given in the EMC report supporting this application.

The transmission mode of the device in all WLAN b-mode tests was DSSS QPSK 11Mbps. This mode has the highest (or equal highest) time-averaged output power of all the WLAN b and g modulation modes in Nokia devices. In WLAN n-mode, BPSK 6.5Mbps with 20MHz bandwidth was used. All WLAN testing has been carried out in accordance with FCC KDB 248227: SAR Measurement Procedures for 802.11 a/b/g Transmitters.

All the WLAN SAR results given in this report are taken from the test report FCC_RM-941_03 for RM-941 / FCC ID: QTLRM-941. Whilst RM-941 possesses different cellular bands to RM-942, the WLAN2450 engines, power amplifiers, feed networks, antennas and radiated performances are identical in the two products.

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

3.3 Test Cases and Test Minimisation

The tested device examined in this report may not incorporate all of the features described in the text that follows, but its SAR evaluation will have been subjected to the same considerations and test logic described below.

Whilst it's possible to identify the maximum SAR test cases from inspection of the conducted power levels given in the Results tables (Section 7), different modes in the same band and multi-slot transmit GSM/GPRS modes can create some difficulties. Therefore the sequence of the SAR tests made in evaluating this device has used test logic that is based on measured SAR values. Comparison of measured SAR values in this way, can also allow some test minimization (i.e. test elimination) to be made.

For example, when SAR testing multi-slot GSM/GPRS/EGPRS modes, it is an inefficient use of test resources to fully SAR test every test configuration in each of the different modes as these modes have a fixed power relationship between them that is the same, irrespective of the test configuration. In the case of multi-slot GSM/GPRS modes, a single comparative SAR test - using the same test channel and test configuration - is made in each of the n-slot modes; the mode with the highest measured SAR value is then subjected to full SAR testing in all test configurations. These comparative SAR tests (same frequency, same test configuration) are regarded as extremely accurate as they are relative tests in which the tested device changes neither its frequency nor its position between tests. For different modes that operate in the same band and use the same antenna e.g. GSM/GPRS850 and WCDMA850, full SAR testing is carried out in the GSM/GPRS850 mode but WCDMA850 testing is limited to 3 channel testing in the maximum SAR test configuration for GSM/GPRS850.

Multi-slot SAR testing against the Head is always performed whenever such a device offers Push to Talk over cellular with the internal earpiece active, Dual Transfer Mode (i.e. the ability to transmit voice and data simultaneously using the same transmitter) or has WLAN (which enables a Voice over IP call to take place whilst the device can simultaneously transmit data on a cellular band). Whenever a device has an intended multi-slot use against the head, it is also

Head SAR tested in EGPRS mode. It should be noted that EGPRS transmit modes can have either GMSK or 8PSK modulation but, when tested, only 8PSK EGPRS will appear explicitly in the results tables, as GMSK EGPRS mode has identical time-averaged power to the reported GPRS mode.

Devices that have flips or slides are fully SAR tested in all device configurations consistent with their intended usage. For example, flip phones that can receive a call in closed mode are SAR tested against the head in both open and closed configurations. Similarly, slide phones are fully SAR tested in all slide configurations in which calls are intended to be made or received.

In the results tables in Section 7, the maximum SAR value for the 'basic' tests (i.e. left cheek, left tilt, right cheek and right tilt in Head SAR testing; with and without headset with the back &/or display side facing the flat phantom in Body SAR testing) is bolded for each band. In some cases, after full testing of the basic SAR test configurations has been completed, additional checking SAR tests are made. These checking tests are always based on the bolded result from the 'basic' testing. When the SAR value of a checking test exceeds the maximum value from the basic tests, it is also bolded and used as the basis for any further checking tests that might be needed.

Checking tests are largely voluntary and can cover optional batteries, different camera slide positions, optional covers, etc. In the case of optional batteries, if the construction of the optional battery is significantly different to the battery used in the full testing e.g. if the outer can is floating electrically rather than grounded, then the maximum SAR test configuration in each band is tested with the optional battery in 3 channels. For camera slides, if the slide material is metal, then checking tests in 3 channels are again run for the maximum SAR test configuration in each band. For plastic camera slides, SAR checking is only carried out in the channel that provided the maximum SAR value for the original. Optional front and back covers are tested if their shape differs significantly from the original or if their metallic content varies by more than 15% from the original; in the former case, the testing depends on the extent of the physical differences, whereas in the latter case, 3 channel SAR testing is performed in every band in the max SAR test configuration.

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
DAE 4	710	2013-03	2014-03
DAE 4	1324	2013-03	2014-03
DAE 4	705	2012-12	2013-12
E-field Probe EX3DV4	3836	2013-03	2014-03
E-field Probe EX3DV4	3823	2012-12	2013-12
E-field Probe EX3DV4	3838	2013-03	2014-03
E-field Probe ES3DV3	3280	2013-03	2014-03
Dipole Validation Kit, D750V2	1048	2011-11	2013-11
Dipole Validation Kit, D835V2	4d005	2012-03	2014-03
Dipole Validation Kit, D835V2	479	2013-03	2015-03
Dipole Validation Kit, D1750V2	1085	2013-01	2015-01
Dipole Validation Kit, D1900V2	509	2012-12	2014-12
Dipole Validation Kit, D2450V2	883	2012-02	2014-02
DASY5 software	Version 52.8	-	-

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration date	Calibration expiry
Signal Generator	SME06	829445	2013-04	2014-04
Signal Generator	E4432B	US40052231	2013-04	2014-04
Signal Generator	SME06	829445/008	2013-04	2014-04
Call Tester	CMU200	835352/008	-	-
Call Tester	CMU200	831593/001	-	-
Call Tester	CMU200	110735	-	-
Call Tester	CMW500	113277	-	-
Call Tester	CMW500	115794	-	-
Amplifier	ZHL-42W	QA1252001	-	-
Amplifier	AR 551G4M1	306024	-	-
Amplifier	ZHL-4240W	e060204/1	-	-
RF Network Analyzer	8753ES	My40002096	2013-04	2014-04
RF Network Analyzer	8753ES	US39170317	2013-04	2014-04
Dielectric Probe Kit	85070C	2577	-	-
Dielectric Probe Kit	85070C	653	-	-
Power Meter	R&S NRP	101293	2013-04	2014-04
Power Sensor	R&S NRP-Z51	102842	2013-04	2014-04
Power Meter	Agilent E4419B	My41291520	2013-04	2014-04
Power Sensor	Agilent 8482A	US37295411	2013-04	2014-04
Power Meter	R&S NRVD	840297/008	2013-04	2014-04
Power Sensor	R&S NRV-Z51	101135	2013-04	2014-04

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 μ 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 μ 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

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 OET Bulletin 65, Supplement C.

The phantom used for all Body SAR tests i.e. for both system checks and device testing, was a "Flat Phantom ELI"/"Triple Flat Phantom", also manufactured by SPEAG; this phantom conform to the requirements of OET Bulletin 65, Supplement C.

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 Supplement C to OET Bulletin 65. 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 Head

Ingredient	Head (% by weight)
Deionised Water	40.65
HEC	0.25
Sugar	57.22
Preservative	0.15
Salt	1.73

700MHz band Body

Ingredient	Body (% by weight)
Deionised Water	69.23
Tween 20	29.56
Salt	1.21

800MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	39.74	55.97
HEC	0.25	1.21
Sugar	58.31	41.76
Preservative	0.15	0.27
Salt	1.55	0.79

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

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

2450MHz band

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

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	DAE unit Type / SN	Validation done	
						Head tissue simulant	Body tissue simulant
750	TCC Beijing / SAR-1	V52.8	D750V3 / 1048	EX3DV4 / 3836	DAE4 / 710	-	2013-04
750	TCC Beijing / SAR-4	V52.8	D750V3 / 1048	EX3DV4 / 3836	DAE4 / 710	2013-04	-
835	TCC Beijing / SAR-1	V52.8	D835V2 / 4d005	EX3DV4 / 3836	DAE4 / 710	2013-03	2013-03
835	TCC Beijing / SAR-3	V52.8	D835V2 / 479	EX3DV4 / 3838	DAE4 / 1324	2013-03	2013-04
1750	TCC Beijing / SAR-1	V52.8	D1750V2 / 1085	EX3DV4 / 3836	DAE4 / 710	-	2013-04
1750	TCC Beijing / SAR-3	V52.8	D1750V2 / 1085	ES3DV4 / 3280	DAE4 / 1324	2013-04	-
1900	TCC Beijing / SAR-3	V52.8	D1900V2 / 509	EX3DV4 / 3838	DAE4 / 1324	2013-03	2013-04
1900	TCC Beijing / SAR-4	V52.8	D1900V2 / 509	EX3DV4 / 3823	DAE4 / 705	2013-04	2013-02
2450	TCC Beijing / SAR-4	V52.8	D2450V2 / 883	EX3DV4 / 3823	DAE4 / 705	2013-03	2013-03

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, 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 [W/kg], 1g	Dielectric Parameters		SAR 1g Deviation from target dSAR [%]	Dielectric Parameters Deviation from target		Temp [°C]	Plot #
			ϵ_r	1g		d ϵ_r [%]	d σ [%]		
	Tolerances				±10 %	±5 %	±5 %		
750	IEEE1528 / IEC62209		41.9	0.89					
	Reference result SN:1048	2.17	42.3	0.92	TCC Beijing/SAR-4 EX3DV4 SN:3836 Head 750MHz				
	2013-06-13	2.14	42.7	0.89	-1.38	0.95	-3.26	22.1	-
	2013-06-14	2.23	42.4	0.90	2.76	0.24	-2.17	21.8	1
835	IEEE1528 / IEC62209		41.5	0.90					
	Reference result SN:479	2.48	40.9	0.94	TCC Beijing/SAR-3 EX3DV4 SN:3838 Head835				
	2013-06-05	2.40	40.2	0.91	-3.23	-1.71	-3.19	22.0	2
	Reference result SN:4d005	2.32	41.5	0.89	TCC Beijing/SAR-1 EX3DV4 SN:3836 Head835				
	2013-06-03	2.20	42.6	0.89	-5.17	2.65	0.00	22.5	-
	2013-06-04	2.10	41.6	0.88	-9.48	0.24	-1.12	22.2	3
1750	IEEE1528 / IEC62209		40.1	1.36					
	Reference result SN:1085	9.24	39.3	1.34	TCC Beijing/SAR-3 ES3DV4 SN:3280 Head 1750MHz				
	2013-06-13	8.87	38.6	1.34	-4.00	-1.78	0.00	22.5	-
	2013-06-14	8.70	38.2	1.33	-5.84	-2.80	-0.75	20.5	-
	2013-06-25	8.58	38.3	1.33	-7.14	-2.54	-0.75	21.5	4
1900	IEEE1528 / IEC62209		40.1	1.36					
	Reference result SN:509	9.63	39.5	1.38	TCC Beijing/SAR-4 EX3DV4 SN:3823 Head1900				
	2013-06-04	9.64	39.7	1.35	0.10	0.51	-2.17	22.3	-
	2013-06-05	10.1	40.1	1.36	4.88	1.52	-1.45	22.5	-
	2013-06-17	10.4	39.5	1.36	8.00	0.00	-1.45	22.0	5
1900	IEEE1528 / IEC62209		40.1	1.36					
	Reference result SN:509	9.63	39.5	1.38	TCC Beijing/SAR-3 EX3DV4 SN:3838 Head1900				
	2013-06-25	9.93	39.5	1.36	3.12	0.00	-1.45	21.5	6
2450	IEEE1528 / IEC62209		39.2	1.80					
	Reference result SN:883	13.8	38.9	1.86	TCC Beijing/SAR-4 EX3DV4 SN:3823 Head 2450MHz				
	2013-05-14	14.8	39.3	1.82	7.25	1.03	-2.15	22.5	7
	2013-05-15	14.8	39.5	1.81	7.25	1.54	-2.69	22.5	-

System checking, body tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		SAR 1g Deviation from target	Dielectric Parameters Deviation from target		Temp [°C]	Plot #
			ϵ_r	σ [S/m]		d ϵ_r [%]	d σ [%]		
750	Tolerances				±10 %	±5 %	±5 %		
	IEEE1528 / IEC62209		55.5	0.96					
	Reference result SN:1048	2.19	55.6	0.96	TCC Beijing/SAR-4 EX3DV4 SN:3823 Body835				
	2013-06-17	2.21	57.2	0.97	0.91	2.88	1.04	21.7	8
	2013-06-18	2.17	57.1	0.96	-0.91	2.70	0.00	21.5	-
835	IEEE1528 / IEC62209		55.2	0.97					
	Reference result SN:479	2.52	54.1	1.02	TCC Beijing/SAR-3 EX3DV4 SN:3838 Body835				
	2013-06-08	2.39	54.8	0.97	-5.16	1.29	-4.90	22.0	9
	IEEE1528 / IEC62209		55.2	0.97					
	Reference result SN:4d005	2.42	55.0	1.00	TCC Beijing/SAR-1 EX3DV4 SN:3836 Body835				
	2013-06-05	2.44	55.1	0.98	0.83	0.18	-2.00	22.1	-
	2013-06-06	2.45	55.3	0.97	1.24	0.55	-3.00	22.2	-
	2013-06-24	2.50	54.8	0.97	3.31	-0.36	-3.00	22.2	10
1750	IEEE1528 / IEC62209		53.3	1.52					
	Reference result SN:1085	9.50	51.8	1.47	TCC Beijing/SAR-1 EX4DV4 SN:3826 Body1900				
	2013-06-08	9.59	53.6	1.47	0.95	3.47	0.00	21.6	-
	2013-06-09	9.54	53.1	1.47	0.42	2.51	0.00	21.6	-
	2013-06-19	9.93	53.2	1.48	4.53	2.70	0.68	22.5	11
	2013-06-20	9.90	53.8	1.52	4.21	3.86	3.40	22.5	-
	2013-06-21	9.63	52.7	1.47	1.37	1.74	0.00	21.8	-
1900	IEEE1528 / IEC62209		53.3	1.52					
	Reference result SN:509	9.84	52.2	1.52	TCC Beijing/SAR-4 EX4DV4 SN:3823 Body1900				
	2013-06-06	10.6	51.0	1.50	7.72	-2.30	-1.32	22.1	12
	2013-06-08	10.3	50.9	1.51	4.67	-2.49	-0.66	22.1	-
	2013-06-18	9.98	50.7	1.51	1.42	-2.87	-0.66	21.9	-
	2013-06-19	10.2	50.7	1.53	3.66	-2.87	0.66	21.9	-
2450	IEEE1528 / IEC62209		52.7	1.95					
	Reference result SN:883	13.2	52.3	2.02	TCC Beijing/SAR-3 EX4DV4 SN:3280 Body2450				
	2013-05-16	14.0	50.3	1.93	6.06	-3.82	-4.46	22.5	13

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	Recommended value	42.1	0.89			
	2013-06-13	43.3	0.85	2.85	-4.49	22.1
	2013-06-14	42.9	0.86	1.90	-3.37	21.8
835	Recommended value	41.5	0.90			
	2013-06-03	42.6	0.89	2.65	-1.11	22.5
836	Recommended value	41.5	0.90			
	2013-06-03	42.6	0.89	2.65	-1.11	22.5
	2013-06-04	41.5	0.88	0.00	-2.22	22.2
	2013-06-05	40.2	0.91	-3.13	1.11	22.0
1732	Recommended value	40.1	1.36			
	2013-06-13	38.6	1.32	-3.74	-2.94	22.5
	2013-06-14	38.3	1.32	-4.49	-2.94	20.5
	2013-06-25	38.4	1.31	-4.24	-3.68	21.5
1880	Recommended value	40.0	1.40			
	2013-06-04	39.8	1.34	-0.50	-4.29	22.3
	2013-06-05	40.2	1.34	0.50	-4.29	22.5
	2013-06-17	39.6	1.34	-1.00	-4.29	22.0
	2013-06-25	39.7	1.35	-0.75	-3.57	21.5
2437	Recommended value	39.2	1.79			
	2013-05-14	39.3	1.81	0.26	1.12	22.5
	2013-05-15	39.5	1.80	0.77	0.56	22.5

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	Recommended value	55.7	0.96			
	2013-06-17	57.6	0.94	3.41	-2.08	21.7
	2013-06-18	57.7	0.92	3.59	-4.17	21.5
835	Recommended value	55.2	0.97			
	2013-06-05	55.1	0.98	-0.18	1.03	22.1
	2013-06-06	55.3	0.97	0.18	0.00	22.2
	2013-06-24	54.8	0.97	-0.72	0.00	22.2
836	Recommended value	55.2	0.97			
	2013-06-05	55.1	0.98	-0.18	1.03	22.1
	2013-06-06	55.3	0.97	0.18	0.00	22.2
	2013-06-08	54.8	0.97	-0.72	0.00	22.0
	2013-06-24	54.8	0.97	-0.72	0.00	22.2
1732	Recommended value	53.5	1.48			
	2013-06-08	53.7	1.45	0.37	-2.03	21.6
	2013-06-09	53.2	1.46	-0.56	-1.35	21.6
	2013-06-19	53.3	1.46	-0.37	-1.35	22.5
	2013-06-20	53.9	1.50	1.32	2.74	22.5
	2013-06-21	52.8	1.46	-1.31	-1.35	21.8
1880	Recommended value	53.3	1.52			
	2013-06-06	51.1	1.48	-4.13	-2.63	22.1
	2013-06-08	50.9	1.49	-4.50	-1.97	22.1
	2013-06-18	50.8	1.50	-4.69	-1.32	21.9
	2013-06-19	50.7	1.52	-4.88	0.00	21.9
2437	Recommended value	52.7	1.94			
	2013-05-16	50.4	1.91	-4.36	-1.55	22.5

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".

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.

5.2.2 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.

5.3 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.

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	√3	$(1-c_p)^{1/2}$	±1.9	∞
Hemispherical Isotropy	E2.2	±9.6	R	√3	$(c_p)^{1/2}$	±3.9	∞
Boundary Effect	E2.3	±1.0	R	√3	1	±0.6	∞
Linearity	E2.4	±4.7	R	√3	1	±2.7	∞
System Detection Limits	E2.5	±1.0	R	√3	1	±0.6	∞
Readout Electronics	E2.6	±1.0	N	1	1	±1.0	∞
Response Time	E2.7	±0.8	R	√3	1	±0.5	∞
Integration Time	E2.8	±2.6	R	√3	1	±1.5	∞
RF Ambient Conditions - Noise	E6.1	±3.0	R	√3	1	±1.7	∞
RF Ambient Conditions - Reflections	E6.1	±3.0	R	√3	1	±1.7	∞
Probe Positioner Mechanical Tolerance	E6.2	±0.4	R	√3	1	±0.2	∞
Probe Positioning with respect to Phantom Shell	E6.3	±2.9	R	√3	1	±1.7	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E5	±3.9	R	√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	±0.0	R	√3	1	±0.0	∞
Phantom and Tissue Parameters							
Phantom Uncertainty (shape and thickness tolerances)	E3.1	±4.0	R	√3	1	±2.3	∞
Conductivity Target - tolerance	E3.2	±5.0	R	√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	√3	0.6	±1.7	∞
Permittivity - measurement uncertainty	E3.3	±2.9	N	1	0.6	±1.7	5
Combined Standard Uncertainty			RSS			±13.2	116
Coverage Factor for 95%			k=2				
Expanded Uncertainty						±26.4	

7. RESULTS

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

LTE700 (Band 17) Head SAR results

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]		24.15			Scaling factor*			
	Conducted Power [dBm]		24.18	24.21	24.17	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		24.18	24.21	24.17	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	1
		Full SAR	0.315	0.295	0.304	0.353	0.331	0.341	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.151	-	-	0.169	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR		0.267		-	0.300	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR		0.150		-	0.168	-	
	Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]		
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 50% offset	Tuning Target + Tolerance [dBm]		24.15			Scaling factor*			
	Conducted Power [dBm]		24.16	24.17	24.19	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		24.16	24.17	24.19	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

(LTE700 (Band 17) Head SAR Table continues)

(LTE700 (Band 17) Head SAR Table continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 100% offset	Tuning Target + Tolerance [dBm]		24.15			Scaling factor*			
	Conducted Power [dBm]		24.21	24.19	24.16	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		24.21	24.19	24.16	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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]		24.15			Scaling factor*			
	Conducted Power [dBm]		24.18	24.18	24.23	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		24.18	24.18	24.23	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.274	-	-	0.307	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.138	-	-	0.155	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.231	-	-	0.259	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.125	-	-	0.140	

(LTE700 (Band 17) Head SAR Table continues)

(LTE700 (Band 17) Head SAR Table continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 50% offset	Tuning Target + Tolerance [dBm]		24.15			Scaling factor*			
	Conducted Power [dBm]		24.16	24.17	24.18	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		24.16	24.17	24.18	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
Full SAR		-	-	-	-	-	-		
Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 100% offset	Tuning Target + Tolerance [dBm]		24.15			Scaling factor*			
	Conducted Power [dBm]		24.15	24.21	24.20	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		24.15	24.21	24.20	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
Full SAR		-	-	-	-	-	-		

(LTE700 (Band 17) Head SAR Table continues)

(LTE700 (Band 17) Head SAR Table continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 100%RB	Tuning Target + Tolerance [dBm]		23.15			Scaling factor*			
	Conducted Power [dBm]		23.18	23.25	23.20	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		23.18	23.25	23.20	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

850MHz Band Head SAR results

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	
1-slot GPRS	Tuning Target + Tolerance [dBm]		32.85			Scaling factor*			
	Conducted Slot Average Power [dBm]		32.97	32.90	33.01	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.94	23.87	23.98	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.267	-	-	0.300	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
Full SAR		-	-	-	-	-	-		
2-slot GPRS	Tuning Target + Tolerance [dBm]		30.35			Scaling factor*			
	Conducted Slot Average Power [dBm]		30.42	30.38	30.47	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		24.40	24.36	24.45	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.246	-	-	0.276	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
Full SAR		-	-	-	-	-	-		
3-slot GPRS	Tuning Target + Tolerance [dBm]		28.85			Scaling factor*			
	Conducted Slot Average Power [dBm]		29.00	28.94	28.98	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		24.74	24.68	24.72	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	2
		Full SAR	0.377	0.300	0.189	0.423	0.337	0.212	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.161	-	-	0.181	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.262	-	-	0.294	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
Full SAR		-	0.154	-	-	0.173	-		

(850MHz Head SAR Table continues)

(850MHz Head SAR Table continues)

(836.6 MHz Head SAR table continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			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	
4-slot GPRS	Tuning Target + Tolerance [dBm]		27.35			Scaling factor*			
	Conducted Slot Average Power [dBm]		27.45	27.43	27.44	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		24.44	24.42	24.43	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.252	-	-	0.283	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
3-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		24.35			Scaling factor*			
	Conducted Slot Average Power [dBm]		24.38	24.46	24.41	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		20.12	20.20	20.15	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.232	-	-	0.260	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

(850MHz Head SAR Table continues)

(850MHz Head SAR Table continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]		24.15			Scaling factor*			
	Conducted Power [dBm]		24.22	24.24	24.27	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		24.22	24.24	24.27	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	3
		Full SAR	0.424	0.418	0.419	0.476	0.469	0.470	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.237	-	-	0.266	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.361	-	-	0.405	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.229	-	-	0.257	-	

LTE850 (Band 5) Head SAR results

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 1RB 0% offset	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*			
	Conducted Power [dBm]		23.86	24.02	23.91	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		23.86	24.02	23.91	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	4
		Full SAR	0.369	0.358	0.323	0.414	0.402	0.362	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.199	-	-	0.223	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.308	-	-	0.346	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.194	-	-	0.218	-	
Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 1RB 50% offset	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*			
	Conducted Power [dBm]		23.88	23.93	23.89	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		23.88	23.93	23.89	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

(LTE850 (Band 5) Head SAR Table continues)

(LTE850 (Band 5) Head SAR Table continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 1RB 100% offset	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*			
	Conducted Power [dBm]		23.90	23.86	23.83	0.50	0.50	0.52	dB
	Time-averaged Power [dBm]		23.90	23.86	23.83	1.12	1.12	1.13	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*			
	Conducted Power [dBm]		23.86	23.85	23.86	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		23.86	23.85	23.86	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

(LTE850 (Band 5) Head SAR Table continues)

(LTE850 (Band 5) Head SAR Table continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 50% offset	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*			
	Conducted Power [dBm]		23.92	23.86	23.83	0.50	0.50	0.52	dB
	Time-averaged Power [dBm]		23.92	23.86	23.83	1.12	1.12	1.13	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 100% offset	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*			
	Conducted Power [dBm]		23.95	23.86	23.85	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		23.95	23.86	23.85	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.289	-	-	0.324	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.166	-	-	0.186	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.246	-	-	0.276	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.166	-	-	0.186	-	-	

(LTE850 (Band 5) Head SAR Table continues)

(LTE850 (Band 5) Head SAR Table continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 100%RB	Tuning Target + Tolerance [dBm]		22.85			Scaling factor*			
	Conducted Power [dBm]		22.88	22.84	22.86	0.50	0.51	0.50	dB
	Time-averaged Power [dBm]		22.88	22.84	22.86	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

WCDMA1700/2100 Head SAR results

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*			
	Conducted Power [dBm]		23.85	24.00	23.88	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.85	24.00	23.88	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	-
		Full SAR	-	0.358	-	-	0.402	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	-
		Full SAR	-	0.313	-	-	0.351	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	5
		Full SAR	0.636	0.708	0.902	0.714	0.794	1.01	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	-
		Full SAR	-	0.323	-	-	0.362	-	
	Repeated: Right Cheek	Estimated SAR	-	-	-	-	-	-	-
		Full SAR	-	-	0.846	-	-	0.948	

LTE1700/2100 (Band 4) Head SAR results

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 20050	Ch 20175	Ch 20300	Ch 20050	Ch 20175	Ch 20300	
			1720.0 MHz	1732.5 MHz	1745.0 MHz	1720.0 MHz	1732.5 MHz	1745.0 MHz	
20MHz Ch BW 1RB 0% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.44	23.51	23.38	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		23.44	23.51	23.38	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR		0.350		-	0.393	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR		0.221		-	0.248	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	6
		Full SAR	0.643	0.601	0.806	0.721	0.674	0.904	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR		0.231		-	0.259	-	
	Repeated SAR: Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.767	-	-	0.861	
Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 20050	Ch 20175	Ch 20300	Ch 20050	Ch 20175	Ch 20300	
			1720.0 MHz	1732.5 MHz	1745.0 MHz	1720.0 MHz	1732.5 MHz	1745.0 MHz	
20MHz Ch BW 1RB 50% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.45	23.39	23.37	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		23.45	23.39	23.37	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

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

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

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 20050	Ch 20175	Ch 20300	Ch 20050	Ch 20175	Ch 20300	
			1720.0 MHz	1732.5 MHz	1745.0 MHz	1720.0 MHz	1732.5 MHz	1745.0 MHz	
20MHz Ch BW 1RB 100% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.40	23.37	23.36	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		23.40	23.37	23.36	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 20050	Ch 20175	Ch 20300	Ch 20050	Ch 20175	Ch 20300	
			1720.0 MHz	1732.5 MHz	1745.0 MHz	1720.0 MHz	1732.5 MHz	1745.0 MHz	
20MHz Ch BW 50% RB 0% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.37	23.42	23.38	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		23.37	23.42	23.38	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

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

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

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 20050	Ch 20175	Ch 20300	Ch 20050	Ch 20175	Ch 20300	
			1720.0 MHz	1732.5 MHz	1745.0 MHz	1720.0 MHz	1732.5 MHz	1745.0 MHz	
20MHz Ch BW 50% RB 50% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.44	23.39	23.37	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		23.44	23.39	23.37	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.225	-	-	0.252	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.158	-	-	0.177	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.460	-	-	0.516	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.179	-	-	0.201	-	-	
Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 20050	Ch 20175	Ch 20300	Ch 20050	Ch 20175	Ch 20300	
			1720.0 MHz	1732.5 MHz	1745.0 MHz	1720.0 MHz	1732.5 MHz	1745.0 MHz	
20MHz Ch BW 50% RB 100% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.39	23.37	23.36	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		23.39	23.37	23.36	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

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

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

(E1E1F06/2100 (Band 1) Head SAR Table continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 20050	Ch 20175	Ch 20300	Ch 20050	Ch 20175	Ch 20300	
			1720.0 MHz	1732.5 MHz	1745.0 MHz	1720.0 MHz	1732.5 MHz	1745.0 MHz	
20MHz Ch BW 100%RB	Tuning Target + Tolerance [dBm]		22.35			Scaling factor*			
	Conducted Power [dBm]		22.41	22.41	22.33	0.50	0.50	0.52	dB
	Time-averaged Power [dBm]		22.41	22.41	22.33	1.12	1.12	1.13	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

1900MHz Band Head SAR results

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]		30.55			Scaling factor*			
	Conducted Slot Average Power [dBm]		30.58	30.57	30.55	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		21.55	21.54	21.52	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.251	-	-	0.282	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.172	-	-	0.193	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	7
		Full SAR	0.461	0.525	0.469	0.517	0.589	0.526	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
Full SAR		-	0.201	-	-	0.226	-		
2-slot GPRS	Tuning Target + Tolerance [dBm]		27.35			Scaling factor*			
	Conducted Slot Average Power [dBm]		27.48	27.50	27.49	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		21.46	21.48	21.47	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.204	-	-	0.229	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
Full SAR		-	-	-	-	-	-		
3-slot GPRS	Tuning Target + Tolerance [dBm]		25.85			Scaling factor*			
	Conducted Slot Average Power [dBm]		25.89	25.90	25.98	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		21.63	21.64	21.72	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.217	-	-	0.243	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
Full SAR		-	-	-	-	-	-		

(1900MHz Head SAR Table continues)

(1900MHz Head SAR Table continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	
4-slot GPRS	Tuning Target + Tolerance [dBm]		24.35			Scaling factor*			
	Conducted Slot Average Power [dBm]		24.35	24.41	24.47	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		21.34	21.40	21.46	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.209	-	-	0.235	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
Full SAR		-	-	-	-	-	-		
1-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Slot Average Power [dBm]		23.51	23.51	23.57	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		20.50	20.50	20.56	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.145	-	-	0.163	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
Full SAR		-	-	-	-	-	-		

(1900MHz Head SAR Table continues)

(1900MHz Head SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*			
	Conducted Power [dBm]		24.13	24.04	23.96	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		24.13	24.04	23.96	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.423	-	-	0.475	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.443	-	-	0.497	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	8
		Full SAR	0.980	0.818	0.713	1.10	0.918	0.800	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.372	-	-	0.417	-	
	Repeated: Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.877	-	-	0.982	-	-	

LTE1900 (Band 2) Head SAR results

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 18700	Ch 18900	Ch 19100	Ch 18700	Ch 18900	Ch 19100	
			1869.0 MHz	1880.0 MHz	1900.0 MHz	1869.0 MHz	1880.0 MHz	1900.0 MHz	
20MHz Ch BW 1RB 0% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.44	23.45	23.40	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		23.44	23.45	23.40	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 18700	Ch 18900	Ch 19100	Ch 18700	Ch 18900	Ch 19100	
			1869.0 MHz	1880.0 MHz	1900.0 MHz	1869.0 MHz	1880.0 MHz	1900.0 MHz	
20MHz Ch BW 1RB 50% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.39	23.40	23.48	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		23.39	23.40	23.48	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.394	-	-	0.442	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.214	-	-	0.240	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	9
		Full SAR	0.757	0.677	0.679	0.849	0.760	0.762	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.258	-	-	0.289	

(LTE1900 (Band 2) Head SAR Table continues)

(LTE1900 (Band 2) Head SAR Table continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 18700	Ch 18900	Ch 19100	Ch 18700	Ch 18900	Ch 19100	
			1869.0 MHz	1880.0 MHz	1900.0 MHz	1869.0 MHz	1880.0 MHz	1900.0 MHz	
20MHz Ch BW 1RB 100% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.36	23.39	23.43	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		23.36	23.39	23.43	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 18700	Ch 18900	Ch 19100	Ch 18700	Ch 18900	Ch 19100	
			1869.0 MHz	1880.0 MHz	1900.0 MHz	1869.0 MHz	1880.0 MHz	1900.0 MHz	
20MHz Ch BW 50% RB 0% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.41	23.37	23.45	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		23.41	23.37	23.45	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.326	-	-	0.366	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.221	-	-	0.248	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.622	-	-	0.698	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.206	-	-	0.231	

(LTE1900 (Band 2) Head SAR Table continues)

(LTE1900 (Band 2) Head SAR Table continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 18700	Ch 18900	Ch 19100	Ch 18700	Ch 18900	Ch 19100	
			1869.0 MHz	1880.0 MHz	1900.0 MHz	1869.0 MHz	1880.0 MHz	1900.0 MHz	
20MHz Ch BW 50% RB 50% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.43	23.37	22.48	0.50	0.50	1.37	dB
	Time-averaged Power [dBm]		23.43	23.37	22.48	1.12	1.12	1.37	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 18700	Ch 18900	Ch 19100	Ch 18700	Ch 18900	Ch 19100	
			1869.0 MHz	1880.0 MHz	1900.0 MHz	1869.0 MHz	1880.0 MHz	1900.0 MHz	
20MHz Ch BW 50% RB 100% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.44	23.37	23.45	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		23.44	23.37	23.45	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

(LTE1900 (Band 2) Head SAR Table continues)

(LTE1900 (Band 2) Head SAR Table continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 18700	Ch 18900	Ch 19100	Ch 18700	Ch 18900	Ch 19100	
			1869.0 MHz	1880.0 MHz	1900.0 MHz	1869.0 MHz	1880.0 MHz	1900.0 MHz	
20MHz Ch BW 100%RB	Tuning Target + Tolerance [dBm]		22.35			Scaling factor*			
	Conducted Power [dBm]		22.41	22.41	22.51	0.50	0.50	0.50	dB
	Time-averaged Power [dBm]		22.41	22.41	22.51	1.12	1.12	1.12	Lin
	Left Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Cheek	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right Tilt	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

****2450MHz Head SAR results**

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 1Mbps	Tuning Target + Tolerance [dBm]		15.50			Scaling factor*			
	Conducted Power [dBm]		14.50	14.54	15.08	1.50	1.46	0.92	dB
	Time-averaged power [dBm]		14.50	14.54	15.08	1.41	1.40	1.24	Lin
	Left Cheek	Estimated SAR							
		Full SAR		0.125			0.175		
	Left Tilt	Estimated SAR							
		Full SAR		0.127			0.178		
	Right Cheek	Estimated SAR							10
		Full SAR	0.198	0.281	0.422	0.280	0.393	0.522	
	Right Tilt	Estimated SAR							
Full SAR			0.178			0.249			
Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 5.5Mbps	Tuning Target + Tolerance [dBm]		15.50			Scaling factor*			
	Conducted Power [dBm]		14.50	14.54	15.08	1.50	1.46	0.92	dB
	Time-averaged power [dBm]		14.50	14.54	15.08	1.41	1.40	1.24	Lin
	Right Cheek	Estimated SAR							
		Full SAR		0.288			0.377		

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

Test configuration	*Reported Max. 1g SAR results									
	WLAN 2450**	LTE 700	3-slot GPRS 850	WCDMA 850	LTE 850	WCDMA 1700/2100	LTE 1700/2100	1-slot GPRS 1900	WCDMA 1900	LTE 1900
Head: Left, Cheek	0.175	0.353	0.423	0.476	0.414	0.402	0.393	0.282	0.475	0.442
Head: Left, Tilt	0.178	0.169	0.181	0.266	0.223	0.351	0.248	0.193	0.497	0.240
Head: Right, Cheek	0.522	0.300	0.294	0.405	0.346	1.01	0.904	0.589	1.10	0.849
Head: Right, Tilt	0.249	0.168	0.173	0.257	0.218	0.362	0.259	0.226	0.417	0.289

**SAR data taken from FCC_RM-941_03 for RM-941 / FCC ID: QTLRM-941.

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

Test configuration	*Reported Max. 1g SAR results								
	LTE700 +WLAN 2450	3-slot GPRS850 +WLAN 2450	WCDMA 850 +WLAN 2450	LTE850 +WLAN 2450	WCDMA 1700/2100 +WLAN 2450	LTE 1700/2100 +WLAN 2450	1-slot GPRS1900 +WLAN 2450	WCDMA 1900 +WLAN 2450	LTE1900 +WLAN 2450
Head: Left, Cheek	0.528	0.598	0.651	0.589	0.577	0.568	0.457	0.650	0.617
Head: Left, Tilt	0.347	0.359	0.444	0.401	0.529	0.426	0.371	0.675	0.418
Head: Right, Cheek	0.822	0.816	0.927	0.868	1.53	1.43	1.11	1.62	1.37
Head: Right, Tilt	0.417	0.422	0.506	0.467	0.611	0.508	0.475	0.666	0.538

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 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.

The Combined SAR data given in the tables below has been voluntarily calculated.

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

Test configuration	*Reported Max. 1g SAR results								
	LTE700 +WLAN 2450	3-slot GPRS850 +WLAN 2450	WCDMA 850 +WLAN 2450	LTE850 +WLAN 2450	WCDMA 1700/ 2100 +WLAN 2450	LTE 1700/ 2100 +WLAN 2450	GSM1900 + WLAN 2450	WCDMA 1900 +WLAN 2450	LTE1900 +WLAN 2450
Head: Left, Cheek	-	-	-	-	-	-	-	-	-
Head: Left, Tilt	-	-	-	-	-	-	-	-	-
Head: Right, Cheek	0.554	0.558	0.560	0.559	1.06	0.954	0.646	1.12	0.902
Head: Right, Tilt	-	-	-	-	-	-	-	-	-

Note: Plots #11-19

Plots of the Measurement scans are given in Appendix B.1.

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

Right Cheek	WLAN 2450	WCDMA 1900
X [mm]	34.50	69.8
Y [mm]	-331.2	-253.0
Z [mm]	-176.8	-173.4
DISTANCE [mm]	85.90	
MAX + MAX (Reported SAR)	1.62	
SAR to peak location separation ratio	0.02	

All simultaneous transmitter configurations where all antenna pairs' SPLSR is equal to or below 0.04 are excluded from expanded zoom scan testing.

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

LTE700 (Band 17) Body SAR results

Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]			24.15			Scaling factor*			
	Conducted Power [dBm]			24.18	24.21	24.17	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			24.18	24.21	24.17	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	20
			Full SAR	0.418	0.407	0.439	0.469	0.457	0.493	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.327	-	-	0.367	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.331	-	-	0.371	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.257	-	-	0.288	-	
Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 50% offset	Tuning Target + Tolerance [dBm]			24.15			Scaling factor*			
	Conducted Power [dBm]			24.16	24.17	24.19	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			24.16	24.17	24.19	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	

(LTE700 (Band 17) Body SAR Table continues)

(LTE700 (Band 17) Body SAR Table continues)

Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 100% offset	Tuning Target + Tolerance [dBm]			24.15			Scaling factor*			
	Conducted Power [dBm]			24.21	24.19	24.16	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			24.21	24.19	24.16	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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]			24.15			Scaling factor*			
	Conducted Power [dBm]			24.18	24.18	24.23	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			24.18	24.18	24.23	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	0.318	-	-	0.357	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	0.285	-	-	0.320	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	0.233	-	-	0.261	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	0.200	-	-	0.224	

(LTE700 (Band 17) Body SAR Table continues)

(LTE700 (Band 17) Body SAR Table continues)

Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]			24.15			Scaling factor*			
	Conducted Power [dBm]			24.16	24.17	24.18	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			24.16	24.17	24.18	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 100% offset	Tuning Target + Tolerance [dBm]			24.15			Scaling factor*			
	Conducted Power [dBm]			24.15	24.21	24.20	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			24.15	24.21	24.20	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	

(LTE700 (Band 17) Body SAR Table continues)

(LTE700 (Band 17) Body SAR Table continues)

Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 100%RB	Tuning Target + Tolerance [dBm]			23.15			Scaling factor*			
	Conducted Power [dBm]			23.18	23.25	23.20	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			23.18	23.25	23.20	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	

850MHz Band Body SAR results

Mode	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	
3-slot GPRS	Tuning Target + Tolerance [dBm]			28.85			Scaling factor*			
	Conducted Slot Average Power [dBm]			29.00	28.94	28.98	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			24.74	24.68	24.72	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	21
			Full SAR	0.549	0.434	0.359	0.616	0.487	0.403	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.377	-	-	0.423	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.311	-	-	0.349	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
Full SAR			-	0.254	-	-	0.285	-		
Mode	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]			24.15			Scaling factor*			
	Conducted Power [dBm]			24.22	24.24	24.27	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			24.22	24.24	24.27	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	22
			Full SAR	0.472	0.399	0.367	0.530	0.448	0.412	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.284	-	-	0.319	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.297	-	-	0.333	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
Full SAR			-	0.192	-	-	0.215	-		

LTE850 (Band 5) Body SAR results

Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 1RB 0% offset	Tuning Target + Tolerance [dBm]			23.85			Scaling factor*			
	Conducted Power [dBm]			23.86	24.02	23.91	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			23.86	24.02	23.91	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	23
			Full SAR	0.512	0.499	0.375	0.574	0.560	0.421	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.332	-	-	0.373	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.325	-	-	0.365	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.225	-	-	0.252	-	
Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 1RB 50% offset	Tuning Target + Tolerance [dBm]			23.85			Scaling factor*			
	Conducted Power [dBm]			23.88	23.93	23.89	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			23.88	23.93	23.89	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	

(LTE850 (Band 5) Body SAR Table continues)

(LTE850 (Band 5) Body SAR Table continues)

Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 1RB 100% offset	Tuning Target + Tolerance [dBm]			23.85			Scaling factor*			
	Conducted Power [dBm]			23.90	23.86	23.83	0.50	0.50	0.52	dB
	Time-averaged power [dBm]			23.90	23.86	23.83	1.12	1.12	1.13	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]			23.85			Scaling factor*			
	Conducted Power [dBm]			23.86	23.85	23.86	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			23.86	23.85	23.86	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	

(LTE850 (Band 5) Body SAR Table continues)

(LTE850 (Band 5) Body SAR Table continues)

Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 50% offset	Tuning Target + Tolerance [dBm]			23.85			Scaling factor*			
	Conducted Power [dBm]			23.92	23.86	23.83	0.50	0.50	0.52	dB
	Time-averaged power [dBm]			23.92	23.86	23.83	1.12	1.12	1.13	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 100% offset	Tuning Target + Tolerance [dBm]			23.85			Scaling factor*			
	Conducted Power [dBm]			23.95	23.86	23.85	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			23.95	23.86	23.85	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	0.407	-	-	0.457	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	0.305	-	-	0.342	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	0.271	-	-	0.304	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	0.189	-	-	0.212	-	-	

(LTE850 (Band 5) Body SAR Table continues)

(LTE850 (Band 5) Body SAR Table continues)

Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 100%RB	Tuning Target + Tolerance [dBm]			22.85			Scaling factor*			
	Conducted Power [dBm]			22.88	22.84	22.86	0.50	0.51	0.50	dB
	Time-averaged power [dBm]			22.88	22.84	22.86	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	

WCDMA1700/2100 Body SAR results

Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]			23.85			Scaling factor*			
	Conducted Power [dBm]			23.85	24.00	23.88	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			23.85	24.00	23.88	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.442	-	-	0.496	-	
	Headset WH-108	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.459	-	-	0.515	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.490	-	-	0.550	-	
	Headset WH-108	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	0.493	0.515	0.605	0.553	0.578	0.679	24

LTE1700/2100 (Band 4) Body SAR results

Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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]			23.44	23.51	23.38	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			23.44	23.51	23.38	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.305	-	-	0.342	-	
	Headset WH-108	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.313	-	-	0.351	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	25
			Full SAR	0.426	0.374	0.465	0.478	0.420	0.522	
	Headset WH-108	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.350	-	-	0.393	-	
20MHz Ch BW 1RB 50% offset	Tuning Target + Tolerance [dBm]			23.35			Scaling factor*			
	Conducted Power [dBm]			23.45	23.39	23.37	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			23.45	23.39	23.37	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Headset WH-108	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Headset WH-108	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	

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

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

Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 1RB 100% offset	Tuning Target + Tolerance [dBm]			23.35			Scaling factor*			
	Conducted Power [dBm]			23.40	23.37	23.36	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			23.40	23.37	23.36	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-
		Headset WH-108	Full SAR	-	-	-	-	-	-	-
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-
		Headset WH-108	Full SAR	-	-	-	-	-	-	-
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-
		Headset WH-108	Full SAR	-	-	-	-	-	-	-
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-
		Headset WH-108	Full SAR	-	-	-	-	-	-	-
20MHz Ch BW 50% RB 0% offset	Tuning Target + Tolerance [dBm]			23.35			Scaling factor*			
	Conducted Power [dBm]			23.37	23.42	23.38	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			23.37	23.42	23.38	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-
		Headset WH-108	Full SAR	-	-	-	-	-	-	-
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-
		Headset WH-108	Full SAR	-	-	-	-	-	-	-
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-
		Headset WH-108	Full SAR	-	-	-	-	-	-	-
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-
		Headset WH-108	Full SAR	-	-	-	-	-	-	-
20MHz Ch BW 50% RB 50% offset	Tuning Target + Tolerance [dBm]			22.35			Scaling factor*			
	Conducted Power [dBm]			23.44	23.39	23.37	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			23.44	23.39	23.37	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-
		Headset WH-108	Full SAR	0.232	-	-	0.260	-	-	-
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-
		Headset WH-108	Full SAR	0.228	-	-	0.256	-	-	-
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-
		Headset WH-108	Full SAR	0.287	-	-	0.322	-	-	-
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-
		Headset WH-108	Full SAR	0.274	-	-	0.307	-	-	-

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

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

Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
				Ch 20050	Ch 23175	Ch 20300	Ch 20050	Ch 23175	Ch 20300	
				1720.0 MHz	1732.5 MHz	1745.0 MHz	1720.0 MHz	1732.5 MHz	1745.0 MHz	
20MHz Ch BW 50% RB 100% offset	Tuning Target + Tolerance [dBm]			23.35			Scaling factor*			
	Conducted Power [dBm]			23.39	23.37	23.36	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			23.39	23.37	23.36	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	-
Full SAR			-	-	-	-	-	-	-	
20MHz Ch BW 100%RB	Tuning Target + Tolerance [dBm]			22.35			Scaling factor*			
	Conducted Power [dBm]			22.41	22.41	22.33	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			22.41	22.41	22.33	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	-
Full SAR			-	-	-	-	-	-	-	

1900MHz Band Body SAR results

Mode	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]			30.55			Scaling factor*			
	Conducted Slot Average Power [dBm]			30.58	30.57	30.55	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			21.55	21.54	21.52	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.241	-	-	0.270	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.242	-	-	0.272	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	26
			Full SAR	0.278	0.279	0.237	0.312	0.313	0.266	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
Full SAR			-	0.278	-	-	0.312	-		
Mode	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]			23.85			Scaling factor*			
	Conducted Power [dBm]			24.13	24.04	23.96	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			24.13	24.04	23.96	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.482	-	-	0.541	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	0.478	-	-	0.536	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	27
			Full SAR	0.615	0.519	0.422	0.690	0.582	0.473	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
Full SAR			-	0.508	-	-	0.570	-		

LTE1900 (Band 2) Body SAR results

Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]			23.35			Scaling factor*			
	Conducted Power [dBm]			23.44	23.45	23.40	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			23.44	23.45	23.40	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
20MHz Ch BW 1RB 50% offset	Tuning Target + Tolerance [dBm]			23.35			Scaling factor*			
	Conducted Power [dBm]			23.39	23.40	23.48	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			23.39	23.40	23.48	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR			0.294	-	-	0.330	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR			0.353	-	-	0.396	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR			0.350	-	-	0.393	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	0.465	0.399	0.354	0.522	0.448	0.397	28

(LTE1900 (Band 2) Body SAR Table continues)

(LTE1900 (Band 2) Body SAR Table continues)

Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 100% offset	Tuning Target + Tolerance [dBm]			23.35			Scaling factor*			
	Conducted Power [dBm]			23.36	23.39	23.43	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			23.36	23.39	23.43	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
Full SAR			-	-	-	-	-	-		
20MHz Ch BW 50% RB 0% offset	Tuning Target + Tolerance [dBm]			23.35			Scaling factor*			
	Conducted Power [dBm]			23.41	23.37	23.45	0.50	0.50	0.50	dB
	Time-averaged power [dBm]			23.41	23.37	23.45	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	0.243	-	-	0.273	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	0.269	-	-	0.302	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	0.302	-	-	0.339	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
Full SAR			-	-	0.329	-	-	0.369		

(LTE1900 (Band 2) Body SAR Table continues)

(LTE1900 (Band 2) Body SAR Table continues)

Mode	Test configuration		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 50% RB 50% offset	Tuning Target + Tolerance [dBm]			23.35			Scaling factor*			
	Conducted Power [dBm]			23.43	23.37	23.48	0.67	0.50	0.50	dB
	Time-averaged power [dBm]			23.43	23.37	23.48	1.17	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
Full SAR			-	-	-	-	-	-		
20MHz Ch BW 50% RB 100% offset	Tuning Target + Tolerance [dBm]			23.35			Scaling factor*			
	Conducted Power [dBm]			23.44	23.37	23.45	0.51	0.50	0.50	dB
	Time-averaged power [dBm]			23.44	23.37	23.45	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
Full SAR			-	-	-	-	-	-		
20MHz Ch BW 100%RB	Tuning Target + Tolerance [dBm]			22.35			Scaling factor*			
	Conducted Power [dBm]			22.41	22.41	22.51	0.51	0.50	0.50	dB
	Time-averaged power [dBm]			22.41	22.41	22.51	1.12	1.12	1.12	Lin
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	
Full SAR			-	-	-	-	-	-		

2450MHz Body SAR results

Mode	Device orientation		SAR measurement		Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]			15.50			Scaling factor*				
	Conducted Power [dBm]			14.50	14.54	15.08	1.50	1.46	0.92	dB	
	Time-averaged power [dBm]			14.50	14.54	15.08	1.41	1.40	1.24	Lin	
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	29	
			Full SAR	0.030	0.039	0.076	0.042	0.055	0.094		
		Headset WH-108	Estimated SAR	-	-	-	-	-	-		
			Full SAR	-	0.025	-	-	0.035	-		
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-		
			Full SAR	-	0.033	-	-	0.046	-		
		Headset WH-108	Estimated SAR	-	-	-	-	-	-		
			Full SAR	-	0.024	-	-	0.034	-		
Mode	Device orientation		SAR measurement		Measured 1g SAR [W/kg]			Reported* 1g 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 5.5 Mbps	Tuning Target + Tolerance [dBm]			15.50			Scaling factor*				
	Conducted Power [dBm]				14.83			1.17		dB	
	Time-averaged power [dBm]				14.83			1.31		Lin	
	Back facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-		
			Full SAR	-	0.040	-	-	0.052	-		

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

Test configuration	*Reported Max. 1g SAR results									
	WLAN 2450* *	LTE 700	3-slot GPRS 850	WCDMA 850	LTE 850	WCDMA 1700/2100	LTE 1700/2100	GSM 1900	WCDMA 1900	LTE 1900
Body: Back facing phantom, Without Headset	0.094	0.493	0.616	0.530	0.574	0.496	0.342	0.270	0.541	0.330
Body: Back facing phantom, Headset WH-108	0.035	0.367	0.423	0.319	0.373	0.515	0.351	0.272	0.536	0.396
Body: Display facing phantom, Without Headset	0.046	0.371	0.349	0.333	0.365	0.550	0.522	0.313	0.690	0.393
Body: Display facing phantom, Headset WH-108	0.034	0.288	0.285	0.215	0.252	0.679	0.393	0.312	0.570	0.397

**SAR data taken from FCC_RM-941_03 for RM-941 / FCC ID: QTLRM-941.

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

Test configuration	*Reported Max. 1g SAR results								
	LTE700 +WLAN 2450	3-slot GPRS850 +WLAN 2450	WCDMA 850 +WLAN 2450	LTE850 +WLAN 2450	WCDMA 1700/2100 +WLAN 2450	LTE 1700/2100 +WLAN 2450	GSM 1900 +WLAN 2450	WCDMA 1900 +WLAN 2450	LTE1900 +WLAN 2450
Body: Back facing phantom, Without Headset	0.587	0.710	0.624	0.668	0.590	0.436	0.364	0.635	0.424
Body: Back facing phantom, Headset WH-108	0.402	0.458	0.354	0.408	0.550	0.386	0.307	0.571	0.431
Body: Display facing phantom, Without Headset	0.417	0.395	0.379	0.411	0.596	0.568	0.359	0.736	0.439
Body: Display facing phantom, Headset WH-108	0.322	0.319	0.249	0.286	0.713	0.427	0.346	0.604	0.431

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 and the cellular bands point-by-point and c) calculates the combined average SAR values.

The Combined SAR data given in the tables below has been voluntarily calculated.

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

Test configuration	*Reported Max. 1g SAR results								
	LTE700 +WLAN 2450	3-slot GPRS850 +WLAN 2450	WCDMA 850 +WLAN 2450	LTE850 +WLAN 2450	WCDMA 1700/ 2100 +WLAN 2450	LTE 1700/ 2100 +WLAN 2450	GSM 1900 + WLAN 2450	WCDMA 1900 +WLAN 2450	LTE1900 +WLAN 2450
Body: Back facing phantom, Without Headset	0.486	0.615	0.536	0.573			0.324		
Body: Back facing phantom, Headset WH-108									
Body: Display facing phantom, Without Headset						0.515		0.715	0.526
Body: Display facing phantom, Headset WH-108					0.661				

Note: Plots #30-38

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 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.

Note: Simultaneous Transmission Procedures as described in KDB648474 are not required for this product. The Combined SAR data given in the tables above has been voluntarily calculated.

Plots of the Measurement scans are given in Appendix B.

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

LTE700 (Band 17) Wireless Router SAR results

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]		24.15			Scaling factor*			
	Conducted Power [dBm]		24.18	24.21	24.17	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		24.18	24.21	24.17	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	39
		Full SAR	0.629	0.623	0.652	0.706	0.699	0.732	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.417	-	-	0.468	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.019	-	-	0.021	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.180	-	-	0.202	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.233	-	-	0.261	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.164	-	-	0.184	-	

(LTE700 (Band 17) WR SAR Table continues)

(LTE700 (Band 17) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 50% offset	Tuning Target + Tolerance [dBm]		24.15			Scaling factor*			
	Conducted Power [dBm]		24.16	24.17	24.19	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		24.16	24.17	24.19	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

(LTE700 (Band 17) WR SAR Table continues)

(LTE700 (Band 17) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 100% offset	Tuning Target + Tolerance [dBm]		24.15			Scaling factor*			
	Conducted Power [dBm]		24.21	24.19	24.16	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		24.21	24.19	24.16	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

(LTE700 (Band 17) WR SAR Table continues)

(LTE700 (Band 17) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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]		24.15			Scaling factor*			
	Conducted Power [dBm]		24.18	24.18	24.23	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		24.18	24.18	24.23	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.457	-	-	0.513	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.309	-	-	0.347	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.013	-	-	0.014	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.143	-	-	0.160	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.174	-	-	0.195	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.127	-	-	0.142	

(LTE700 (Band 17) WR SAR Table continues)

(LTE700 (Band 17) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 50% offset	Tuning Target + Tolerance [dBm]		24.15			Scaling factor*			
	Conducted Power [dBm]		24.16	24.17	24.18	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		24.16	24.17	24.18	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

(LTE700 (Band 17) WR SAR Table continues)

(LTE700 (Band 17) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 100% offset	Tuning Target + Tolerance [dBm]		24.15			Scaling factor*			
	Conducted Power [dBm]		24.15	24.21	24.20	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		24.15	24.21	24.20	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

(LTE700 (Band 17) WR SAR Table continues)

(LTE700 (Band 17) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 100% RB	Tuning Target + Tolerance [dBm]		23.15			Scaling factor*			
	Conducted Power [dBm]		23.18	23.25	23.20	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.18	23.25	23.20	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

850MHz Band Wireless Router SAR results

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			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	
3-slot GPRS	Tuning Target + Tolerance [dBm]		28.85			Scaling factor*			
	Conducted Slot Average Power [dBm]		29.00	28.94	28.98	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		24.74	24.68	24.72	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	40
		Full SAR	0.616	0.560	0.435	0.691	0.628	0.488	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.350	-	-	0.393	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.008	-	-	0.009	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.163	-	-	0.183	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.013	-	-	0.015	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.137	-	-	0.154	-	
Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]		24.15			Scaling factor*			
	Conducted Power [dBm]		24.22	24.24	24.27	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		24.22	24.24	24.27	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	41
		Full SAR	0.650	0.537	0.524	0.729	0.603	0.588	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.343	-	-	0.385	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.008	-	-	0.009	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.199	-	-	0.223	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.397	-	-	0.445	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.151	-	-	0.169	-	

LTE850 (Band 5) Wireless Router SAR results

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*			
	Conducted Power [dBm]		23.86	24.02	23.91	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.86	24.02	23.91	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	42
		Full SAR	0.624	0.582	0.497	0.699	0.653	0.558	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.358	-	-	0.402	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.009	-	-	0.010	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.186	-	-	0.209	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.447	-	-	0.502	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.135	-	-	0.151	-	

(LTE850 (Band 5) WR SAR Table continues)

(LTE850 (Band 5) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 50% offset	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*			
	Conducted Power [dBm]		23.88	23.93	23.89	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.88	23.93	23.89	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

(LTE850 (Band 5) WR SAR Table continues)

(LTE850 (Band 5) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 100% offset	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*			
	Conducted Power [dBm]		23.90	23.86	23.83	0.50	0.50	0.52	dB
	Time-averaged power [dBm]		23.90	23.86	23.83	1.12	1.12	1.13	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

(LTE850 (Band 5) WR SAR Table continues)

(LTE850 (Band 5) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*			
	Conducted Power [dBm]		23.86	23.85	23.86	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.86	23.85	23.86	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

(LTE850 (Band 5) WR SAR Table continues)

(LTE850 (Band 5) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 50% offset	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*			
	Conducted Power [dBm]		23.92	23.86	23.83	0.50	0.50	0.52	dB
	Time-averaged power [dBm]		23.92	23.86	23.83	1.12	1.12	1.13	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.463	-	-	0.519	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.284	-	-	0.319	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.008	-	-	0.009	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.148	-	-	0.166	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.357	-	-	0.401	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.190	-	-	0.213	-	-	

(LTE850 (Band 5) WR SAR Table continues)

(LTE850 (Band 5) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 100% offset	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*			
	Conducted Power [dBm]		23.95	23.86	23.85	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.95	23.86	23.85	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

(LTE850 (Band 5) WR SAR Table continues)

(LTE850 (Band 5) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 100% RB	Tuning Target + Tolerance [dBm]		22.85			Scaling factor*			
	Conducted Power [dBm]		22.88	22.84	22.86	0.50	0.51	0.50	dB
	Time-averaged power [dBm]		22.88	22.84	22.86	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

WCDMA1700/2100 Wireless Router SAR results

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*			
	Conducted Power [dBm]		23.85	24.00	23.88	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.85	24.00	23.88	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.601	0.767	0.871	0.674	0.861	0.977	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.832	0.807	0.990	0.934	0.905	1.11	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.116	-	-	0.130	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.344	-	-	0.386	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.163	-	-	0.183	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.409	-	-	0.459	-	
	Repeated SAR: Display facing phantom	Estimated SAR	-	-	-	-	-	-	43
		Full SAR	-	-	1.02	-	-	1.14	

LTE1700/2100 (Band 4) Wireless Router SAR results

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 20050 1720.0 MHz	Ch 20175 1732.5 MHz	Ch 20300 1745.0 MHz	Ch 20050 1720.0 MHz	Ch 20175 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]		23.44	23.51	23.38	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.44	23.51	23.38	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.576	-	-	0.646	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.724	0.665	0.821	0.812	0.746	0.921	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.084	-	-	0.094	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.264	-	-	0.296	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.118	-	-	0.132	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.313	-	-	0.351	-	
	Repeated SAR: Display facing phantom	Estimated SAR	-	-	-	-	-	-	44
		Full SAR	-	-	0.917	-	-	1.03	

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

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

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 20050	Ch 20175	Ch 20300	Ch 20050	Ch 20175	Ch 20300	
			1720.0 MHz	1732.5 MHz	1745.0 MHz	1720.0 MHz	1732.5 MHz	1745.0 MHz	
20MHz Ch BW 1RB 50% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.45	23.39	23.37	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.45	23.39	23.37	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

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

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

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 20050 1720.0 MHz	Ch 20175 1732.5 MHz	Ch 20300 1745.0 MHz	Ch 20050 1720.0 MHz	Ch 20175 1732.5 MHz	Ch 20300 1745.0 MHz	
20MHz Ch BW 1RB 100% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.40	23.37	23.36	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.40	23.37	23.36	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
Full SAR		-	-	-	-	-	-		
Right edge facing phantom	Estimated SAR	-	-	-	-	-	-		
	Full SAR	-	-	-	-	-	-		

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

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

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 20050	Ch 20175	Ch 20300	Ch 20050	Ch 20175	Ch 20300	
			1720.0 MHz	1732.5 MHz	1745.0 MHz	1720.0 MHz	1732.5 MHz	1745.0 MHz	
20MHz Ch BW 50% RB 0% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.37	23.42	23.38	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.37	23.42	23.38	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

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

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

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 20050	Ch 20175	Ch 20300	Ch 20050	Ch 20175	Ch 20300	
			1720.0 MHz	1732.5 MHz	1745.0 MHz	1720.0 MHz	1732.5 MHz	1745.0 MHz	
20MHZ Ch BW 50% RB 50% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.44	23.39	23.37	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.44	23.39	23.37	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.441	-	-	0.495	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.497	-	-	0.558	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.062	-	-	0.070	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.190	-	-	0.213	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.094	-	-	0.105	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.291	-	-	0.327	-	-	

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

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

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 20050 1720.0 MHz	Ch 20175 1732.5 MHz	Ch 20300 1745.0 MHz	Ch 20050 1720.0 MHz	Ch 20175 1732.5 MHz	Ch 20300 1745.0 MHz	
20MHz Ch BW 50% RB 100% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.39	23.37	23.36	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.39	23.37	23.36	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

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

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

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 20050	Ch 20175	Ch 20300	Ch 20050	Ch 20175	Ch 20300	
			1720.0 MHz	1732.5 MHz	1745.0 MHz	1720.0 MHz	1732.5 MHz	1745.0 MHz	
20MHz Ch BW 100% RB	Tuning Target + Tolerance [dBm]		22.35			Scaling factor*			
	Conducted Power [dBm]		22.41	22.41	22.33	0.50	0.50	0.52	dB
	Time-averaged power [dBm]		22.41	22.41	22.33	1.12	1.12	1.13	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

1900MHz Band Wireless Router SAR results

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	
GSM	Tuning Target + Tolerance [dBm]		30.55			Scaling factor*			
	Conducted Slot Average Power [dBm]		30.58	30.57	30.55	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		21.55	21.54	21.52	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.403	-	-	0.452	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	45
		Full SAR	0.446	0.450	0.380	0.500	0.505	0.426	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.042	-	-	0.047	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.227	-	-	0.255	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.096	-	-	0.108	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.258	-	-	0.289	-	
Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]		23.85			Scaling factor*			
	Conducted Slot Average Power [dBm]		24.13	24.04	23.96	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		24.13	24.04	23.96	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	0.940	0.736	0.560	1.06	0.826	0.628	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	46
		Full SAR	1.03	0.810	0.646	1.16	0.909	0.725	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.094	-	-	0.105	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.431	-	-	0.484	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.214	-	-	0.240	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	0.579	-	-	0.650	-	
	Repeated: Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	1.02	-	-	1.14	-	-	

LTE1900 (Band 2) Wireless Router SAR results

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 18700 1869.0 MHz	Ch 18900 1880.0 MHz	Ch 19100 1900.0 MHz	Ch 18700 1869.0 MHz	Ch 18900 1880.0 MHz	Ch 19100 1900.0 MHz	
20MHz Ch BW 1RB 0% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.44	23.45	23.40	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.44	23.45	23.40	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR				-	-	-	
		Full SAR				-	-	-	
	Display facing phantom	Estimated SAR				-	-	-	
		Full SAR				-	-	-	
	Top edge facing phantom	Estimated SAR				-	-	-	
		Full SAR				-	-	-	
	Bottom edge facing phantom	Estimated SAR				-	-	-	
		Full SAR				-	-	-	
	Left edge facing phantom	Estimated SAR				-	-	-	
Full SAR					-	-	-		
Right edge facing phantom	Estimated SAR				-	-	-		
	Full SAR				-	-	-		

(LTE1900 (Band 2) WR SAR Table continues)

(LTE1900 (Band 2) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 18700	Ch 18900	Ch 19100	Ch 18700	Ch 18900	Ch 19100	
			1869.0 MHz	1880.0 MHz	1900.0 MHz	1869.0 MHz	1880.0 MHz	1900.0 MHz	
20MHz Ch BW 1RB 50% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.39	23.40	23.48	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.39	23.40	23.48	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.522	-	-	0.586	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	47
		Full SAR	0.743	0.632	0.607	0.834	0.709	0.681	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.048	-	-	0.054	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.337	-	-	0.378	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.185	-	-	0.208	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.463	-	-	0.519	

(LTE1900 (Band 2) WR SAR Table continues)

(LTE1900 (Band 2) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 18700	Ch 18900	Ch 19100	Ch 18700	Ch 18900	Ch 19100	
			1869.0 MHz	1880.0 MHz	1900.0 MHz	1869.0 MHz	1880.0 MHz	1900.0 MHz	
20MHz Ch BW 1RB 100% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.36	23.39	23.43	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.36	23.39	23.43	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

(LTE1900 (Band 2) WR SAR Table continues)

(LTE1900 (Band 2) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 18700	Ch 18900	Ch 19100	Ch 18700	Ch 18900	Ch 19100	
			1869.0 MHz	1880.0 MHz	1900.0 MHz	1869.0 MHz	1880.0 MHz	1900.0 MHz	
20MHz Ch BW 50% RB 0% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.41	23.37	23.45	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.41	23.37	23.45	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.445	-	-	0.499	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.518	-	-	0.581	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.035	-	-	0.039	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.276	-	-	0.310	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.158	-	-	0.177	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	0.383	-	-	0.430	

(LTE1900 (Band 2) WR SAR Table continues)

(LTE1900 (Band 2) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 18700	Ch 18900	Ch 19100	Ch 18700	Ch 18900	Ch 19100	
			1869.0 MHz	1880.0 MHz	1900.0 MHz	1869.0 MHz	1880.0 MHz	1900.0 MHz	
20MHz Ch BW 50% RB 50% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.43	23.37	22.48	0.50	0.50	1.37	dB
	Time-averaged power [dBm]		23.43	23.37	22.48	1.12	1.12	1.37	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

(LTE1900 (Band 2) WR SAR Table continues)

(LTE1900 (Band 2) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 18700	Ch 18900	Ch 19100	Ch 18700	Ch 18900	Ch 19100	
			1869.0 MHz	1880.0 MHz	1900.0 MHz	1869.0 MHz	1880.0 MHz	1900.0 MHz	
20MHz Ch BW 50% RB 100% offset	Tuning Target + Tolerance [dBm]		23.35			Scaling factor*			
	Conducted Power [dBm]		23.44	23.37	23.45	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		23.44	23.37	23.45	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

(LTE1900 (Band 2) WR SAR Table continues)

(LTE1900 (Band 2) WR SAR Table continues)

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Plot #
			Ch 18700	Ch 18900	Ch 19100	Ch 18700	Ch 18900	Ch 19100	
			1869.0 MHz	1880.0 MHz	1900.0 MHz	1869.0 MHz	1880.0 MHz	1900.0 MHz	
20MHz Ch BW 100% RB	Tuning Target + Tolerance [dBm]		22.35			Scaling factor*			
	Conducted Power [dBm]		22.41	22.41	22.51	0.50	0.50	0.50	dB
	Time-averaged power [dBm]		22.41	22.41	22.51	1.12	1.12	1.12	Lin
	Back facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Display facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Top edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Bottom edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Left edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	
	Right edge facing phantom	Estimated SAR	-	-	-	-	-	-	
		Full SAR	-	-	-	-	-	-	

****2450MHz Wireless Router SAR results**

Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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	Tuning Target + Tolerance [dBm]		15.50			Scaling factor*			
	Conducted Power [dBm]		14.50	14.54	15.08	1.50	1.46	0.92	dB
	Time-averaged power [dBm]		14.50	14.54	15.08	1.41	1.40	1.24	Lin
	Back facing phantom	Estimated SAR							
		Full SAR		0.066			0.092		
	Display facing phantom	Estimated SAR							
		Full SAR		0.058			0.081		
	Top edge facing phantom	Estimated SAR							48
		Full SAR	0.049	0.070	0.119	0.069	0.098	0.147	
	Bottom edge facing phantom	Estimated SAR							
		Full SAR		0.005			0.007		
	Left edge facing phantom	Estimated SAR							
		Full SAR		0.046			0.064		
Right edge facing phantom	Estimated SAR								
	Full SAR		0.014			0.020			
Mode	Test configuration	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g 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 5.5Mbps	Tuning Target + Tolerance [dBm]		15.50			Scaling factor*			
	Conducted Power [dBm]		14.50	14.54	15.08	1.50	1.46	0.92	dB
	Time-averaged power [dBm]		14.50	14.54	15.08	1.41	1.40	1.24	Lin
	Top edge facing phantom	Estimated SAR							
		Full SAR		0.040			0.052		

Simultaneous transmissions: Combined SAR results – Individual band Max results

Test configuration	*Reported Max. 1g SAR results									
	WLAN 2450**	LTE 700	3-slot GPRS 850	WCDMA 850	LTE 850	WCDMA 1700/2100	LTE 1700/2100	GSM 1900	WCDMA 1900	LTE 1900
Back facing phantom	0.092	0.732	0.691	0.729	0.697	0.977	0.646	0.452	1.06	0.586
Display facing phantom	0.081	0.468	0.393	0.385	0.402	1.14	1.03	0.505	1.16	0.834
Top edge facing phantom	0.147	0.021	0.009	0.009	0.010	0.130	0.094	0.047	0.105	0.054
Bottom edge facing phantom	0.007	0.202	0.183	0.223	0.209	0.386	0.296	0.255	0.484	0.378
Left edge facing phantom	0.064	0.261	0.015	0.445	0.502	0.183	0.132	0.108	0.240	0.208
Right edge facing phantom	0.020	0.184	0.154	0.169	0.213	0.459	0.351	0.289	0.650	0.519

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

Test configuration	*Reported Max. 1g SAR results								
	LTE 850 + WLAN 2450	3-slot GPRS 850 + WLAN 2450	WCDMA 850 + WLAN 2450	LTE 850 + WLAN 2450	WCDMA 1700/ 2100 + WLAN 2450	LTE 1700/ 2100 + WLAN 2450	GSM 1900 + WLAN 2450	WCDMA 1900 + WLAN 2450	LTE 1900 + WLAN 2450
Back facing phantom	0.824	0.783	0.821	0.789	1.07	0.738	0.544	1.15	0.678
Display facing phantom	0.549	0.474	0.466	0.483	1.22	1.11	0.586	1.24	0.915
Top edge facing phantom	0.168	0.156	0.156	0.157	0.277	0.241	0.194	0.252	0.201
Bottom edge facing phantom	0.209	0.190	0.230	0.216	0.393	0.303	0.262	0.491	0.385
Left edge facing phantom	0.325	0.079	0.509	0.566	0.247	0.196	0.172	0.304	0.272
Right edge facing phantom	0.204	0.174	0.189	0.233	0.479	0.371	0.309	0.670	0.539

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 and the cellular bands point-by-point and c) calculates the combined average SAR values.

The Combined SAR data given in the tables below has been voluntarily calculated.

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

Test configuration	*Reported Max. 1g SAR results								
	LTE 850 + WLAN 2450	3-slot GPRS 850 + WLAN 2450	WCDMA 850 + WLAN 2450	LTE 850 + WLAN 2450	WCDMA 1700/2100 + WLAN 2450	LTE 1700/2100 + WLAN 2450	GSM 1900 + WLAN 2450	WCDMA 1900 + WLAN 2450	LTE 1900 + WLAN 2450
Back facing phantom	0.725	0.695	0.717	0.693					
Display facing phantom					1.11	0.959	0.522	1.18	0.814
Top edge facing phantom									
Bottom edge facing phantom									
Left edge facing phantom									
Right edge facing phantom									

Note: Plots #49-57

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 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.

Note: Simultaneous Transmission Procedures as described in KDB648474 are not required for this product. The Combined SAR data given in the tables above has been voluntarily calculated.

Plots of the Measurement scans are given in Appendix B.

APPENDIX A: SYSTEM CHECKING SCANS

Plot1:

Date/Time: 2013-06-14 10:36:59 AM

Test Laboratory: TCC Nokia

Type: D750V3; Serial: D750V3 - SN:1048

Communication System: CW

Frequency: 750 MHz; Duty Cycle: 1:1

Medium: Head 750; Medium Notes: Medium Temperature: $t = 21.8\text{ C}$

Medium parameters used: $f = 750\text{ MHz}$; $\sigma = 0.897\text{ S/m}$; $\epsilon_r = 42.415$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(9.44, 9.44, 9.44); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: SAM2; Type: QD000P40CD; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.8 (7028)

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

Maximum value of SAR (interpolated) = 2.60 W/kg

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

Reference Value = 54.738 V/m

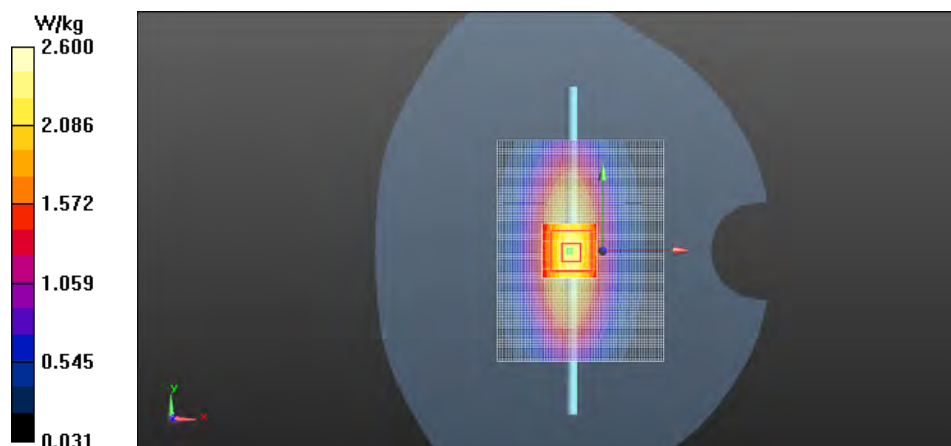
Peak SAR (extrapolated) = 3.35 W/kg

SAR(1 g) = 2.23 W/kg

SAR(10 g) = 1.47 W/kg

Power Drift = -0.19 dB

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



Plot2:

Date/Time: 2013-06-05 9:52:02 AM

Test Laboratory: TCC Nokia
Type: D835V2; Serial: 479

Communication System: CW

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Medium Temperature: $t = 22\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.912\text{ S/m}$; $\epsilon_r = 40.15$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(9.04, 9.04, 9.04); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2013-03-06
- Phantom: SAM9; Type: SAM; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

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

Maximum value of SAR (interpolated) = 2.57 W/kg

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

Reference Value = 53.732 V/m

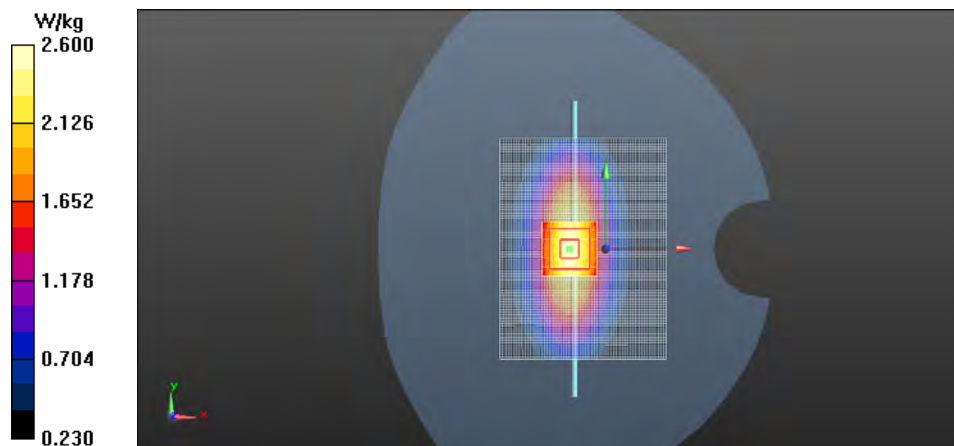
Peak SAR (extrapolated) = 3.60 W/kg

SAR(1 g) = 2.4 W/kg

SAR(10 g) = 1.57 W/kg

Power Drift = -0.06 dB

Maximum value of SAR (measured) = 2.60 W/kg



Plot3:

Date/Time: 2013-06-04 9:48:01 AM

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 4d005

Communication System: CW

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Medium Temperature: $t = 22.2\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.876\text{ S/m}$; $\epsilon_r = 41.556$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(9.03, 9.03, 9.03); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: SAM1; Type: SAM; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

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

Maximum value of SAR (interpolated) = 2.27 W/kg

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

Reference Value = 51.703 V/m

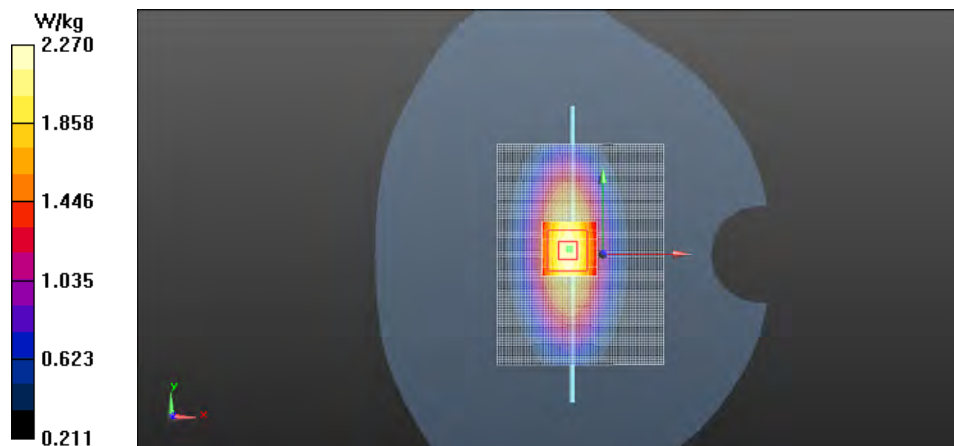
Peak SAR (extrapolated) = 3.17 W/kg

SAR(1 g) = 2.1 W/kg

SAR(10 g) = 1.38 W/kg

Power Drift = -0.19 dB

Maximum value of SAR (measured) = 2.27 W/kg



Plot4:

Date/Time: 2013-06-17 10:02:10 AM

Test Laboratory: TCC Nokia

Type: D1900V2; Serial: 509

Communication System: CW

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Head 1900; Medium Notes: Medium Temperature: $t=22.0$ C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.357$ S/m; $\epsilon_r = 39.448$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3823
- ConvF(7.62, 7.62, 7.62); Calibrated: 2012-12-12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn705; Calibrated: 2012-12-04
- Phantom: SAM 1; Type: QD000P40CC; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.8 (7028)

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

Maximum value of SAR (interpolated) = 12.4 W/kg

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

Reference Value = 92.381 V/m

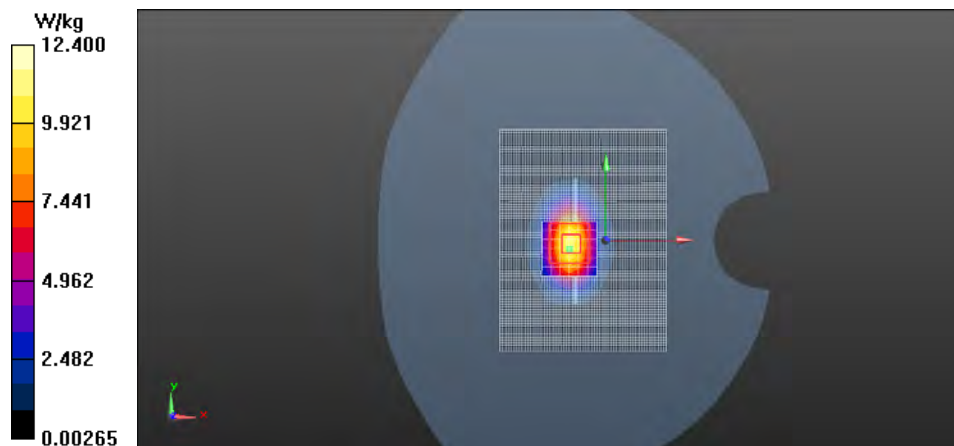
Peak SAR (extrapolated) = 19.1 W/kg

SAR(1 g) = 10.4 W/kg

SAR(10 g) = 5.4 W/kg

Power Drift = -0.05 dB

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



Plot5:

Date/Time: 2013-06-25 11:55:05 AM

Test Laboratory: TCC Nokia

Type: D1750V2; Serial: D1750V2 - SN:1085

Communication System: CW1750

Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: Head 1750; Medium Notes: Medium Temperature: t=21.5 C

Medium parameters used: f = 1750 MHz; $\sigma = 1.326$ S/m; $\epsilon_r = 38.297$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3280
- ConvF(5.35, 5.35, 5.35); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2013-03-06
- Phantom: SAM8; Type: SAM; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

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

Maximum value of SAR (interpolated) = 10.0 W/kg

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

Reference Value = 82.257 V/m

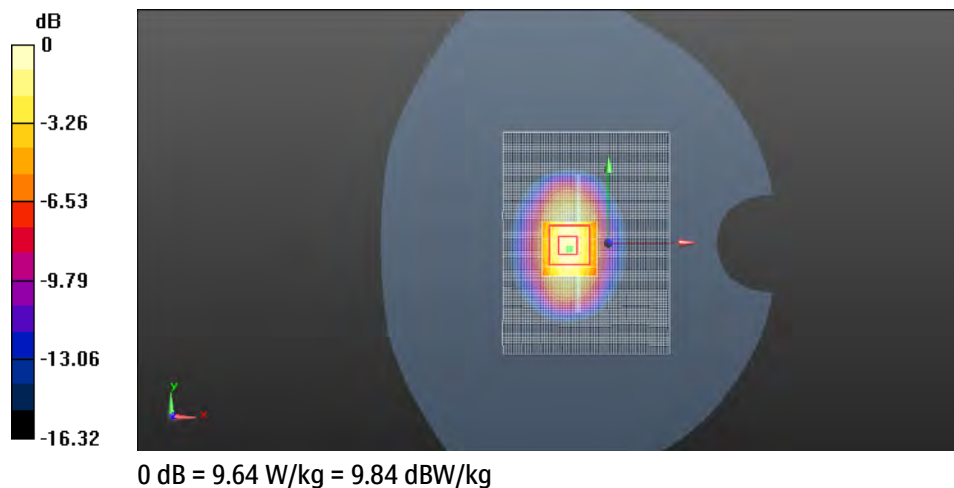
Peak SAR (extrapolated) = 15.2 W/kg

SAR(1 g) = 8.58 W/kg

SAR(10 g) = 4.61 W/kg

Power Drift = -0.04 dB

Maximum value of SAR (measured) = 9.64 W/kg



Plot6:

Date/Time: 2013-06-25 9:27:09 AM

Test Laboratory: TCC Nokia

Type: D1900V2; Serial: 509

Communication System: CW

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Head 1900; Medium Notes: Medium Temperature: $t=21.5\text{ C}$

Medium parameters used: $f = 1900\text{ MHz}$; $\sigma = 1.372\text{ S/m}$; $\epsilon_r = 39.612$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.46, 7.46, 7.46); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2013-03-06
- Phantom: SAM10; Type: SAM; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

d=10mm, Pin=250mW/Area Scan (81x61x1): Interpolated grid: $dx=1.500\text{ mm}$, $dy=1.500\text{ mm}$

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

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

Reference Value = 86.467 V/m

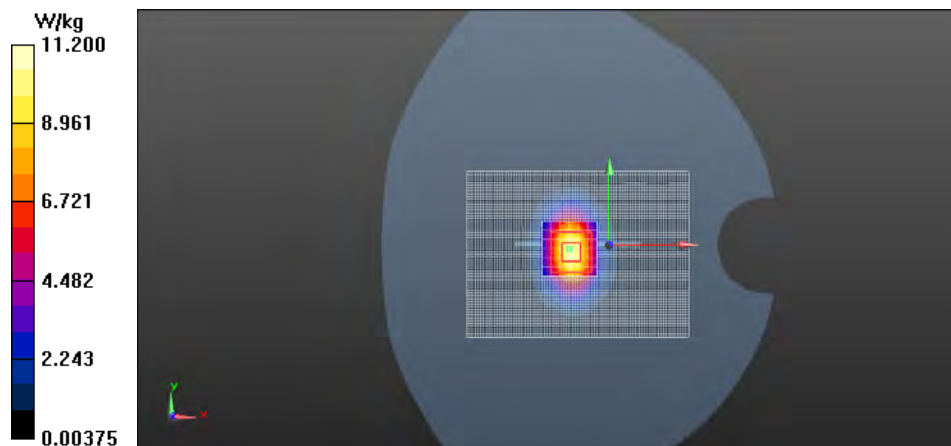
Peak SAR (extrapolated) = 18.1 W/kg

SAR(1 g) = 9.93 W/kg

SAR(10 g) = 5.22 W/kg

Power Drift = -0.01 dB

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



Plot7:

Date/Time: 2013-05-14 9:58:04 AM

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:883

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Medium Temperature: t=22.5 C

Medium parameters used: f = 2450 MHz; $\sigma = 1.822$ S/m; $\epsilon_r = 39.255$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3823
- ConvF(6.91, 6.91, 6.91); Calibrated: 2012-12-12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn705; Calibrated: 2012-12-04
- Phantom: SAM3; Type: QD000P40CC; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.8 (7028)

d=10mm, Pin=250mW/Area Scan (71x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 17.5 W/kg

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

Reference Value = 93.800 V/m

Peak SAR (extrapolated) = 30.7 W/kg

SAR(1 g) = 14.8 W/kg

SAR(10 g) = 6.84 W/kg

Power Drift = 0.09 dB

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



Plot8:

Date/Time: 2013-06-17 9:52:57 AM

Test Laboratory: TCC Nokia

Type: D750V3; Serial: D750V3 - SN:1048

Communication System: CW

Frequency: 750 MHz; Duty Cycle: 1:1

Medium: Body 750; Medium Notes: Medium Temperature: $t = 21.7$ C

Medium parameters used: $f = 750$ MHz; $\sigma = 0.972$ S/m; $\epsilon_r = 57.242$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(9.07, 9.07, 9.07); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

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

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 = 49.397 V/m

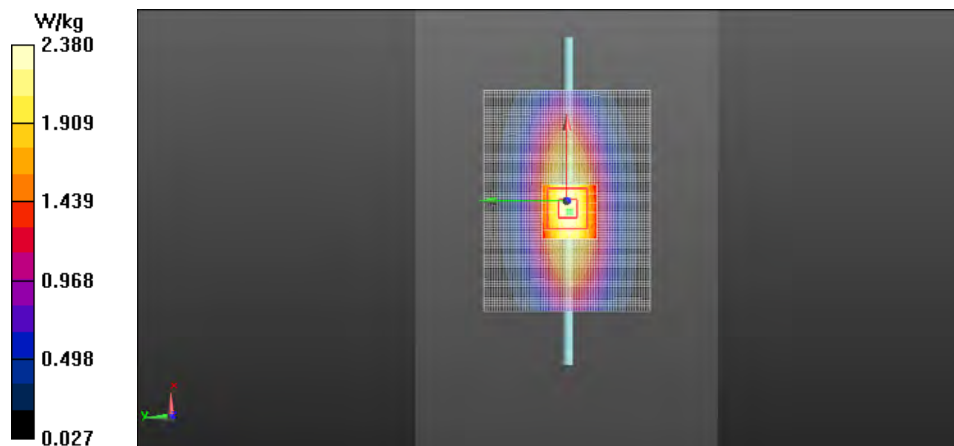
Peak SAR (extrapolated) = 3.28 W/kg

SAR(1 g) = 2.21 W/kg

SAR(10 g) = 1.47 W/kg

Power Drift = -0.01 dB

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



Plot9:

Date/Time: 2013-06-08 10:02:47 AM

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 479

Communication System: CW

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: $t = 22^\circ\text{C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.973\text{ S/m}$; $\epsilon_r = 54.775$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(9.07, 9.07, 9.07); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2013-03-06
- Phantom: TFP3 SAR3; Type: Not Specified; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

d=15mm, Pin=250mW/Area Scan (121x61x1): Interpolated grid: $dx=1.000\text{ mm}$, $dy=1.000\text{ mm}$

Maximum value of SAR (interpolated) = 2.59 W/kg

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

Reference Value = 51.791 V/m

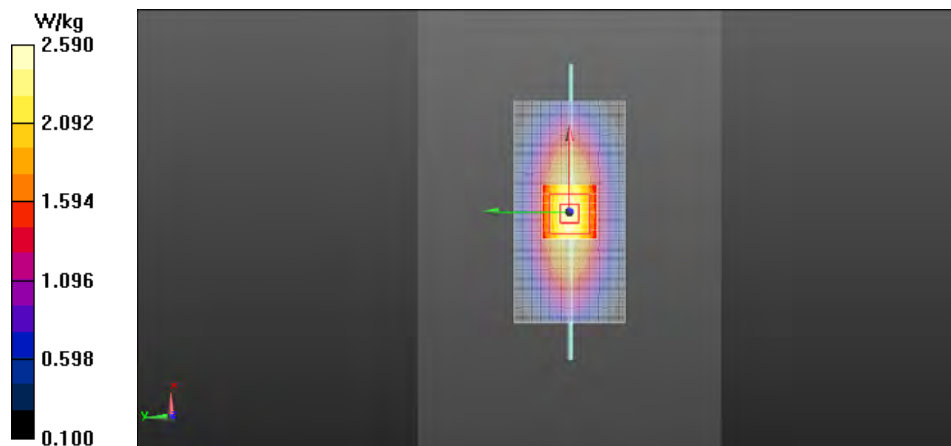
Peak SAR (extrapolated) = 3.49 W/kg

SAR(1 g) = 2.39 W/kg

SAR(10 g) = 1.58 W/kg

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 2.58 W/kg



Plot10:

Date/Time: 2013-06-24 9:51:40 AM

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 4d005

Communication System: CW

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: $t = 22.2^{\circ}\text{C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.973\text{ S/m}$; $\epsilon_r = 54.798$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.97, 8.97, 8.97); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

d=15mm, Pin=250mW/Area Scan (121x61x1): Interpolated grid: $dx=1.000\text{ mm}$, $dy=1.000\text{ mm}$

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

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

Reference Value = 52.464 V/m

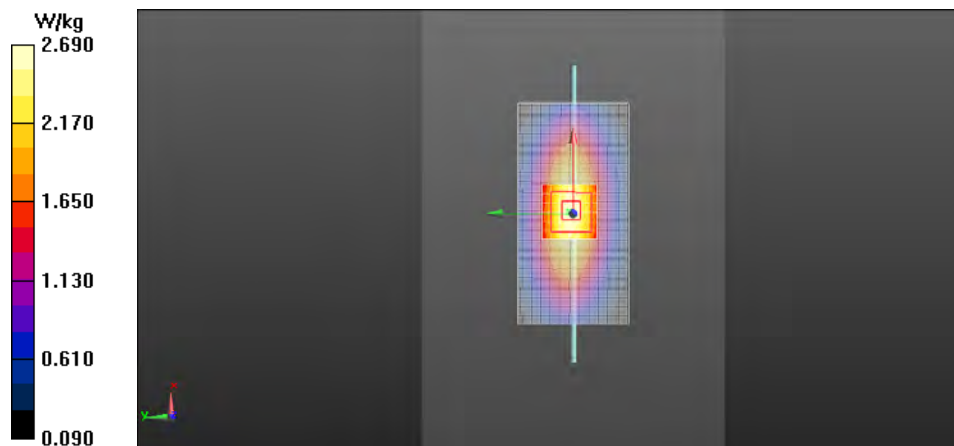
Peak SAR (extrapolated) = 3.69 W/kg

SAR(1 g) = 2.5 W/kg

SAR(10 g) = 1.65 W/kg

Power Drift = 0.00 dB

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



Plot11:

Date/Time: 2013-06-19 9:26:54 AM

Test Laboratory: TCC Nokia

Type: D1750V2; Serial: D1750V2 - SN:1085

Communication System: CW

Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: Body 1750; Medium Notes: Medium Temperature: $t = 22.5\text{ C}$

Medium parameters used: $f = 1750\text{ MHz}$; $\sigma = 1.479\text{ S/m}$; $\epsilon_r = 53.233$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.57, 7.57, 7.57); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

d=10mm, Pin=250mW 2/Area Scan (81x61x1): Interpolated grid: $dx=1.500\text{ mm}$, $dy=1.500\text{ mm}$

Maximum value of SAR (interpolated) = 11.3 W/kg

d=10mm, Pin=250mW 2/Zoom Scan (7x7x7) 2 (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 85.949 V/m

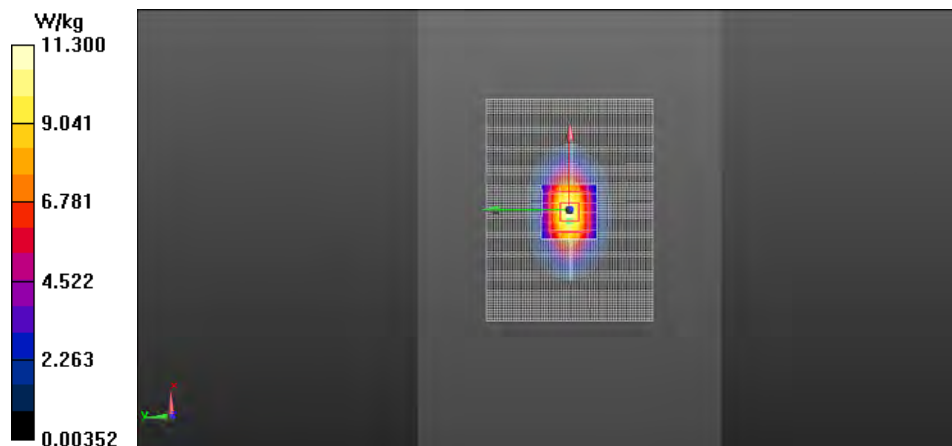
Peak SAR (extrapolated) = 17.8 W/kg

SAR(1 g) = 9.93 W/kg

SAR(10 g) = 5.32 W/kg

Power Drift = 0.11 dB

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



Plot12:

Date/Time: 2013-06-06 10:17:15 AM

Test Laboratory: TCC Nokia

Type: D1900V2; Serial: 509

Communication System: CW

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Body 1900; Medium Notes: Medium Temperature: t=22.1 C

Medium parameters used: f = 1900 MHz; $\sigma = 1.498$ S/m; $\epsilon_r = 51.018$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3823
- ConvF(7.28, 7.28, 7.28); Calibrated: 2012-12-12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn705; Calibrated: 2012-12-04
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.8 (7028)

d=10mm, Pin=250mW/Area Scan (81x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 12.4 W/kg

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

Reference Value = 88.929 V/m

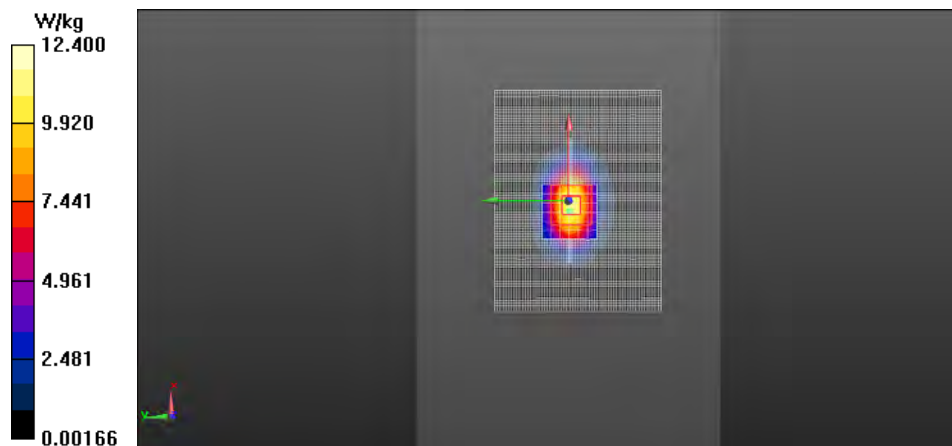
Peak SAR (extrapolated) = 19.3 W/kg

SAR(1 g) = 10.6 W/kg

SAR(10 g) = 5.51 W/kg

Power Drift = -0.01 dB

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



Plot13:

Date/Time: 2013-05-16 10:41:53 AM

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:883

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=22.5 C

Medium parameters used: f = 2450 MHz; $\sigma = 1.933$ S/m; $\epsilon_r = 50.34$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3823
- ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn705; Calibrated: 2012-12-04
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.8 (7028)

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

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

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

Reference Value = 90.556 V/m

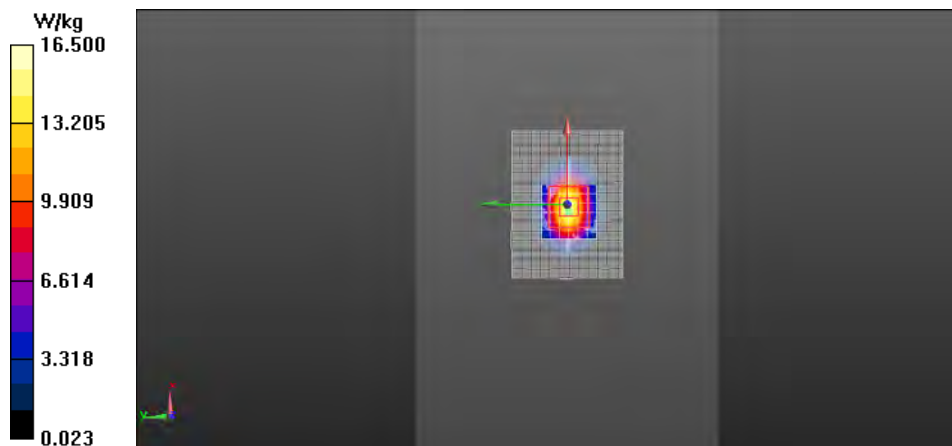
Peak SAR (extrapolated) = 28.4 W/kg

SAR(1 g) = 14 W/kg

SAR(10 g) = 6.53 W/kg

Power Drift = 0.06 dB

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



APPENDIX B: MEASUREMENT SCANS

Plot 1:

Date/Time: 2013-06-13 3:04:33 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277517/4

Communication System: LTE700 (Band 17)

Frequency: 709 MHz; Duty Cycle: 1:1

Medium: Head 750; Medium Notes: Medium Temperature: $t = 22.1\text{ C}$

Medium parameters used: $f = 709\text{ MHz}$; $\sigma = 0.848\text{ S/m}$; $\epsilon_r = 43.31$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(9.44, 9.44, 9.44); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: SAM2; Type: QD000P40CD; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.8 (7028)

LTE750 (Band 17) - Left/Cheek - Low - QPSK - 10MHz - 1RB - 0% offset/Area Scan (81x121x1): Interpolated grid:

$dx = 1.500\text{ mm}$, $dy = 1.500\text{ mm}$

Maximum value of SAR (interpolated) = 0.333 W/kg

LTE750 (Band 17) - Left/Cheek - Low - QPSK - 10MHz - 1RB - 0% offset/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: $dx = 7.5\text{mm}$, $dy = 7.5\text{mm}$, $dz = 5\text{mm}$

Reference Value = 5.039 V/m

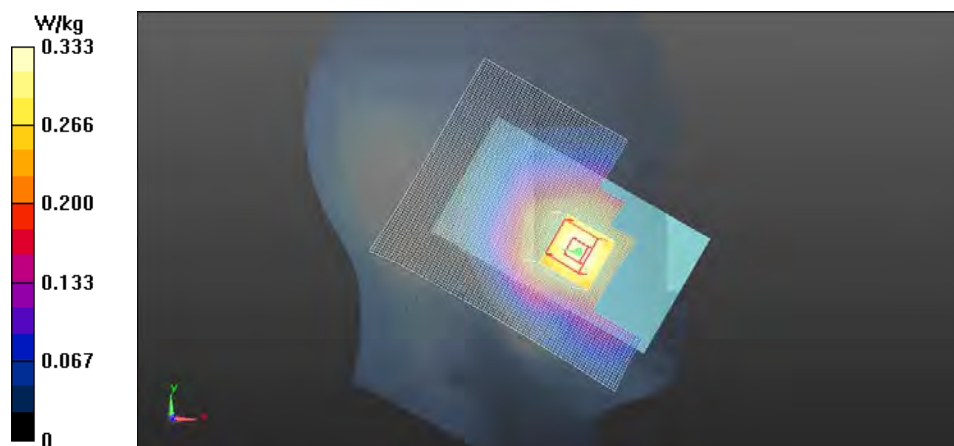
Peak SAR (extrapolated) = 0.381 W/kg

SAR(1 g) = 0.315 W/kg

SAR(10 g) = 0.246 W/kg

Power Drift = -0.04 dB

Maximum value of SAR (measured) = 0.330 W/kg



Plot 2:

Date/Time: 2013-06-05 3:16:20 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277425/0

Communication System: 3-slot GPRS850

Frequency: 824.2 MHz; Duty Cycle: 1:2.80027

Medium: Head 835; Medium Notes: Medium Temperature: t= 22 C

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.904 S/m; ϵ_r = 40.246; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(9.04, 9.04, 9.04); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2013-03-06
- Phantom: SAM9; Type: SAM; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

3-slot GPRS850 - Left/Cheek - Low/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.420 W/kg

3-slot GPRS850 - Left/Cheek - Low/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 5.048 V/m

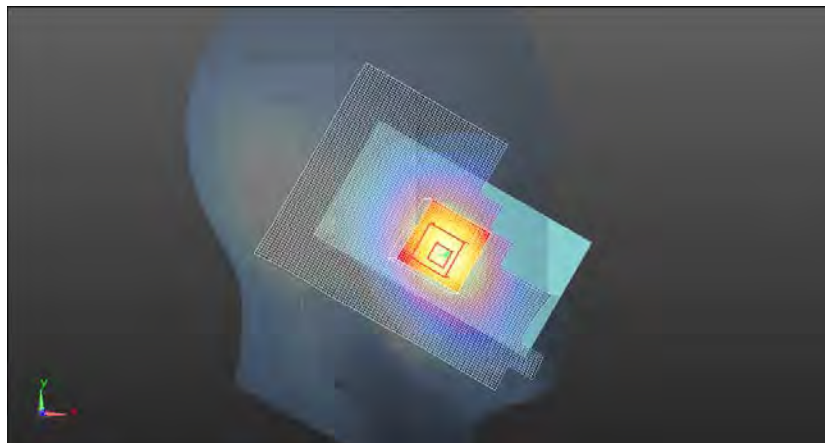
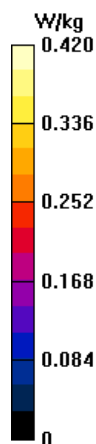
Peak SAR (extrapolated) = 0.476 W/kg

SAR(1 g) = 0.377 W/kg

SAR(10 g) = 0.285 W/kg

Power Drift = 0.14 dB

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



Plot 3:

Date/Time: 2013-06-03 2:44:11 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA850

Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Medium Temperature: t= 22.5 C

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.882 S/m; ϵ_r = 42.662; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(9.03, 9.03, 9.03); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: SAM1; Type: SAM; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

WCDMA850 (band 5) - Left/Cheek - Low/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.468 W/kg

WCDMA850 (band 5) - Left/Cheek - Low/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 4.181 V/m

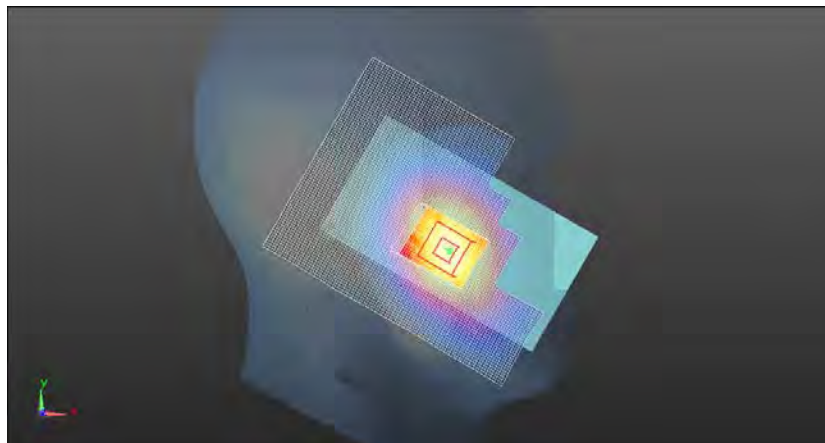
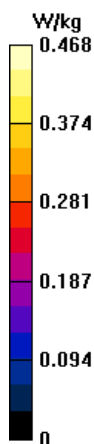
Peak SAR (extrapolated) = 0.532 W/kg

SAR(1 g) = 0.424 W/kg

SAR(10 g) = 0.323 W/kg

Power Drift = -0.18 dB

Maximum value of SAR (measured) = 0.444 W/kg



Plot 4:

Date/Time: 2013-06-03 12:46:13 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277487/0

Communication System: LTE850 (Band 5)

Frequency: 829 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Medium Temperature: $t = 22.5\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 829\text{ MHz}$; $\sigma = 0.885\text{ S/m}$; $\epsilon_r = 42.637$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(9.03, 9.03, 9.03); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: SAM1; Type: SAM; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

LTE850 (Band 5) - Left/Cheek - Low - QPSK - 10MHz - 1RB - 0% offset/Area Scan (81x121x1): Interpolated grid:

$dx=1.500\text{ mm}$, $dy=1.500\text{ mm}$

Maximum value of SAR (interpolated) = 0.399 W/kg

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

Reference Value = 4.812 V/m

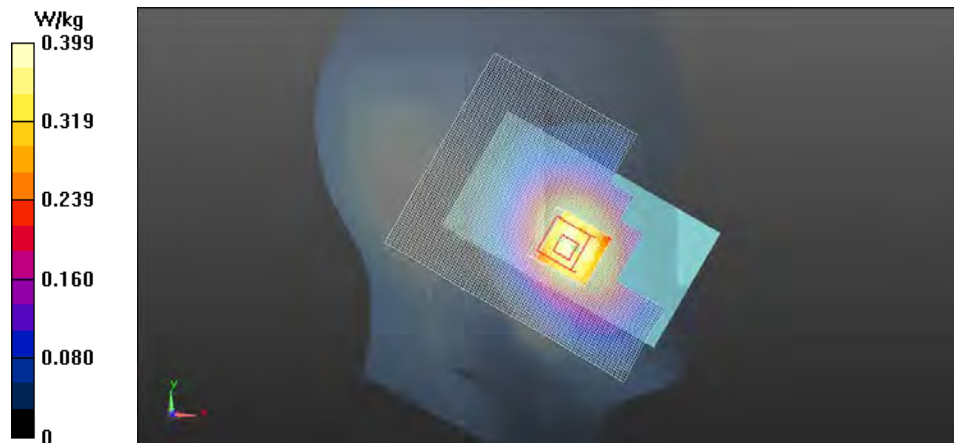
Peak SAR (extrapolated) = 0.463 W/kg

SAR(1 g) = 0.369 W/kg

SAR(10 g) = 0.282 W/kg

Power Drift = 0.28 dB

Maximum value of SAR (measured) = 0.382 W/kg



Plot 5:

Date/Time: 2013-06-13 3:47:13 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA1700/2100

Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium: Head 1750; Medium Notes: Medium Temperature: t=22.5 C

Medium parameters used: f = 1753 MHz; $\sigma = 1.34$ S/m; $\epsilon_r = 38.562$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3280
- ConvF(5.35, 5.35, 5.35); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2013-03-06
- Phantom: SAM8; Type: SAM; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

WCDMA1700 (Band 4) - Right/Cheek - High/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.03 W/kg

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

Reference Value = 10.951 V/m

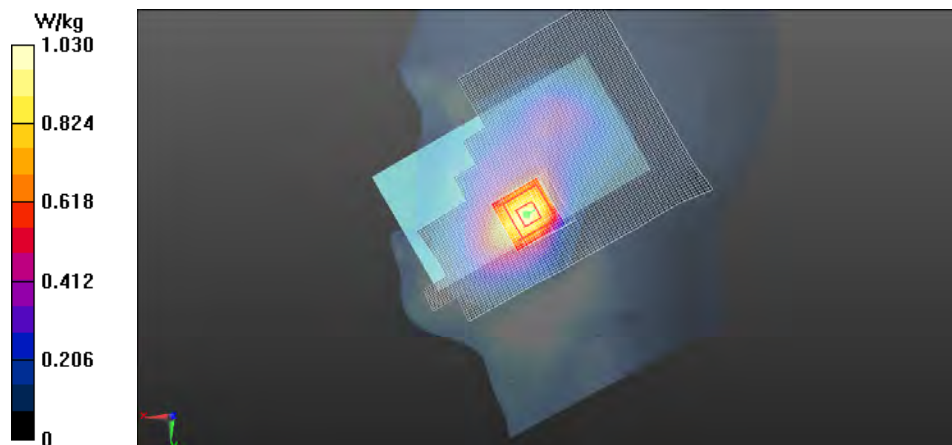
Peak SAR (extrapolated) = 1.34 W/kg

SAR(1 g) = 0.902 W/kg

SAR(10 g) = 0.567 W/kg

Power Drift = 0.04 dB

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



Plot 6:

Date/Time: 2013-06-13 4:53:19 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277464/9

Communication System: LTE1700/2100 (Band 4)

Frequency: 1745 MHz; Duty Cycle: 1:1

Medium: Head 1750; Medium Notes: Medium Temperature: $t=22.5$ C

Medium parameters used: $f = 1745$ MHz; $\sigma = 1.334$ S/m; $\epsilon_r = 38.578$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3280
- ConvF(5.35, 5.35, 5.35); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2013-03-06
- Phantom: SAM8; Type: SAM; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

LTE1700_2100 (Band 4) - Right/Cheek - High - QPSK - 20MHz - 1RB - 0 offset 3/Area Scan (81x121x1):

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

Maximum value of SAR (interpolated) = 0.923 W/kg

LTE1700_2100 (Band 4) - Right/Cheek - High - QPSK - 20MHz - 1RB - 0 offset 3/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 10.265 V/m

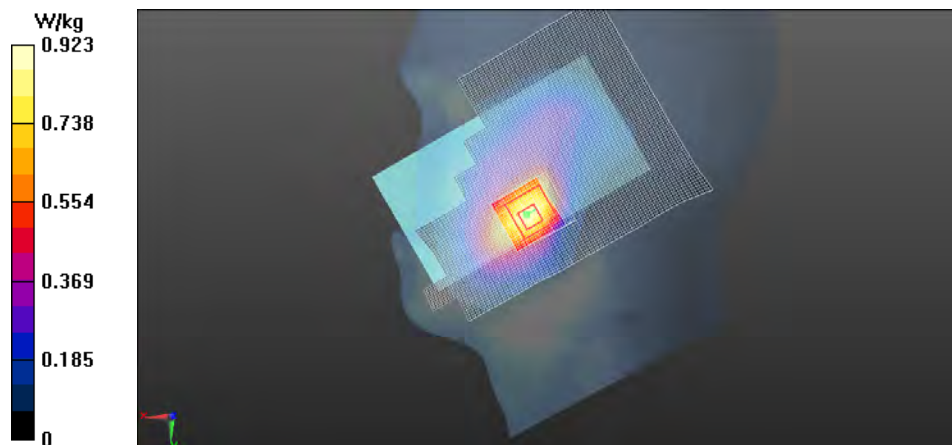
Peak SAR (extrapolated) = 1.18 W/kg

SAR(1 g) = 0.806 W/kg

SAR(10 g) = 0.512 W/kg

Power Drift = 0.21 dB

Maximum value of SAR (measured) = 0.868 W/kg



Plot 7:

Date/Time: 2013-06-17 12:35:56 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277425/0

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium: Head 1900; Medium Notes: Medium Temperature: t=22.0 C

Medium parameters used: f = 1880 MHz; $\sigma = 1.339$ S/m; $\epsilon_r = 39.56$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3823
- ConvF(7.62, 7.62, 7.62); Calibrated: 2012-12-12;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn705; Calibrated: 2012-12-04
- Phantom: SAM 1; Type: QD000P40CC; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.8 (7028)

GSM1900 - Right/Cheek - Middle/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.595 W/kg

GSM1900 - Right/Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 3.714 V/m

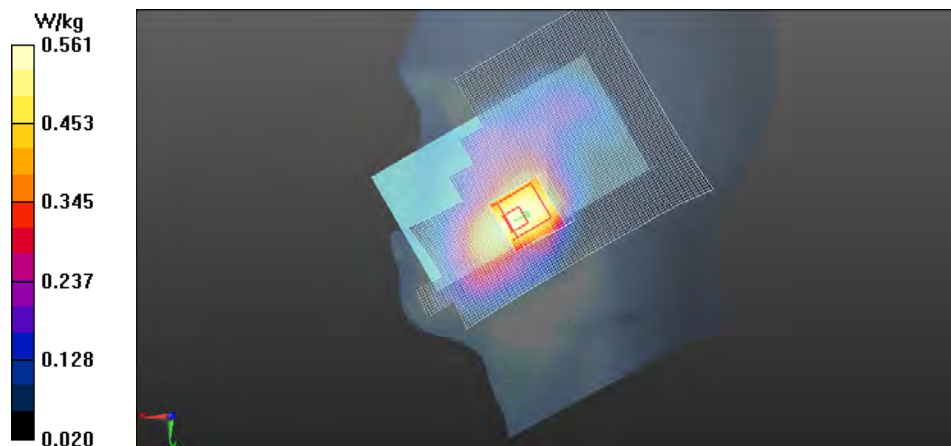
Peak SAR (extrapolated) = 0.794 W/kg

SAR(1 g) = 0.525 W/kg

SAR(10 g) = 0.344 W/kg

Power Drift = -0.26 dB

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



Plot 8:

Date/Time: 2013-06-04 12:59:26 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: Head 1900; Medium Notes: Medium Temperature: t=22.3 C

Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma = 1.323$ S/m; $\epsilon_r = 38.898$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3823
- ConvF(7.62, 7.62, 7.62); Calibrated: 2012-12-12;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn705; Calibrated: 2012-12-04
- Phantom: SAM10; Type: SAM; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

WCDMA1900 (Band 2) - Right/Cheek - Low/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

WCDMA1900 (Band 2) - Right/Cheek - Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 13.602 V/m

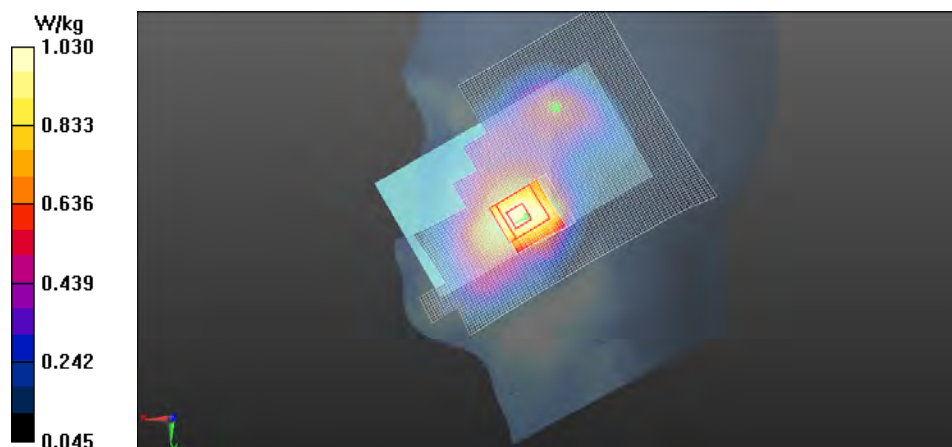
Peak SAR (extrapolated) = 1.44 W/kg

SAR(1 g) = 0.980 W/kg

SAR(10 g) = 0.648 W/kg

Power Drift = -0.13 dB

Maximum value of SAR (measured) = 1.03 W/kg



Plot 9:

Date/Time: 2013-06-04 2:51:32 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277461/5

Communication System: LTE1900 (Band 2)

Frequency: 1860 MHz; Duty Cycle: 1:1

Medium: Head 1900; Medium Notes: Medium Temperature: t=22.3 C

Medium parameters used: f = 1860 MHz; $\sigma = 1.326$ S/m; $\epsilon_r = 39.99$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3823
- ConvF(7.62, 7.62, 7.62); Calibrated: 2012-12-12;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn705; Calibrated: 2012-12-04
- Phantom: SAM 1; Type: QD000P40CC; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.8 (7028)

LTE1900 (Band 2) - Right/Cheek - Low - QPSK - 20MHz - 1RB - 50% offset/Area Scan (81x121x1): Interpolated
grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.846 W/kg

LTE1900 (Band 2) - Right/Cheek - Low - QPSK - 20MHz - 1RB - 50% offset/Zoom Scan (6x6x7)/Cube 0:

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

Reference Value = 10.035 V/m

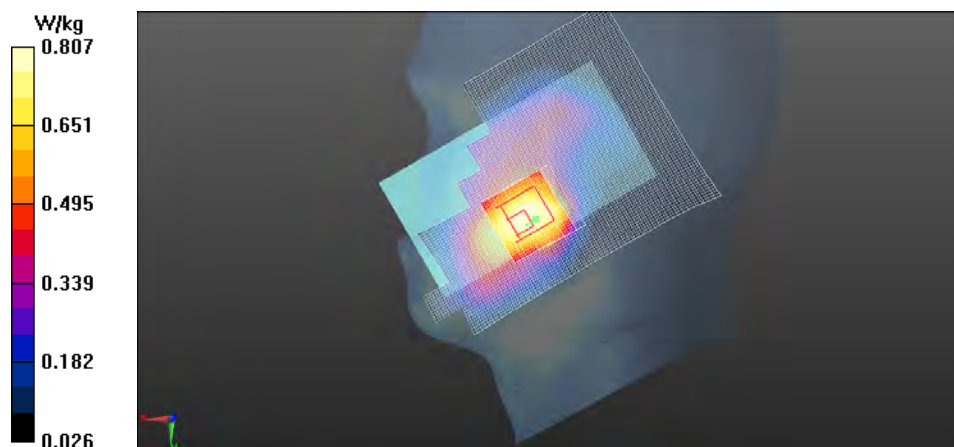
Peak SAR (extrapolated) = 1.14 W/kg

SAR(1 g) = 0.757 W/kg

SAR(10 g) = 0.500 W/kg

Power Drift = 0.03 dB

Maximum value of SAR (measured) = 0.807 W/kg



Plot 10:

Date/Time: 2013-05-14 4:19:51 PM

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

Communication System: WLAN2450

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Medium Temperature: t=22.5 C

Medium parameters used: f = 2462 MHz; $\sigma = 1.834$ S/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3823
- ConvF(6.91, 6.91, 6.91); Calibrated: 2012-12-12;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn705; Calibrated: 2012-12-04
- Phantom: SAM3; Type: QD000P40CC; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.8 (7028)

WLAN2450 b-mode - Right/Cheek - Channel 11 - DSSS 1 Mbps/Area Scan (121x181x1): Interpolated grid:

dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.497 W/kg

WLAN2450 b-mode - Right/Cheek - Channel 11 - DSSS 1 Mbps/Zoom Scan (8x7x7)/Cube 0: Measurement grid:

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

Reference Value = 15.532 V/m

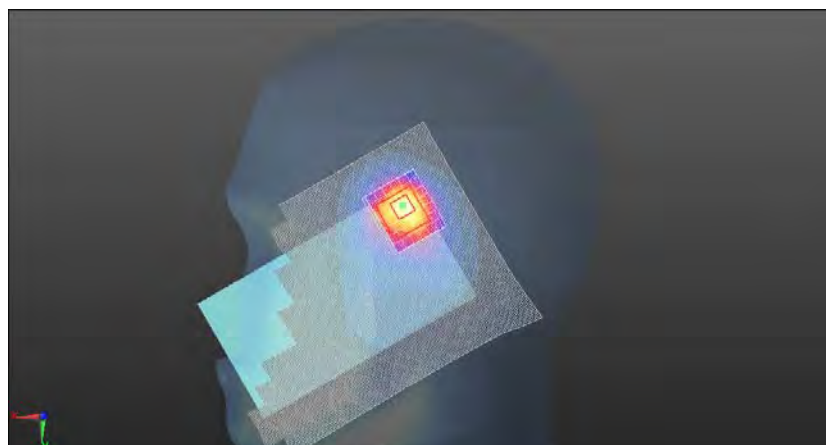
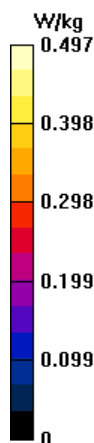
Peak SAR (extrapolated) = 0.835 W/kg

SAR(1 g) = 0.422 W/kg

SAR(10 g) = 0.215 W/kg

Power Drift = 0.04 dB

Maximum value of SAR (measured) = 0.464 W/kg



Plot 11:

Date/Time: 2013-05-14 4:19:51 PM

DASY Configuration for WLAN2450 b-mode - Right/Cheek - Channel 11 - DSSS 1 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

Communication System: WLAN2450; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Head 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.834$ S/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3823; ConvF(6.91, 6.91, 6.91); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: SAM3; Type: QD000P40CC; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-13 2:06:49 PM

DASY Configuration for LTE750 (Band 17) - Right/Cheek - Middle - QPSK - 10MHz - 1RB - 0% offset/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277517/4

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

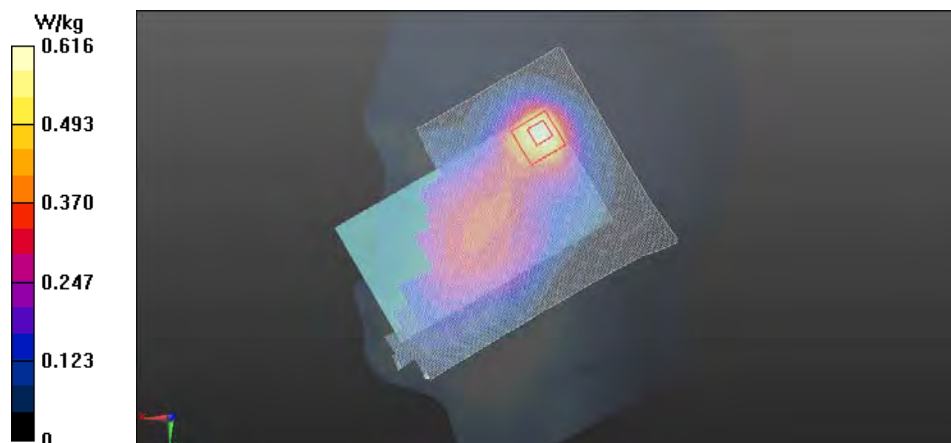
Medium: Head 750 Medium parameters used: $f = 710$ MHz; $\sigma = 0.849$ S/m; $\epsilon_r = 43.286$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3836; ConvF(9.44, 9.44, 9.44); Calibrated: 2013-03-08;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn710; Calibrated: 2013-03-08
Phantom: SAM2; Type: QD000P40CD; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Fast SAR of Combined Scans: SAR(1 g) = 0.554 W/kg; SAR(10 g) = 0.285 W/kg

Maximum value of SAR (interpolated) = 0.616 W/kg



Plot 12:

Date/Time: 2013-05-14 4:19:51 PM

DASY Configuration for WLAN2450 b-mode - Right/Cheek - Channel 11 - DSSS 1 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

Communication System: WLAN2450; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Head 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.834$ S/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3823; ConvF(6.91, 6.91, 6.91); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: SAM3; Type: QD000P40CC; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-05 1:05:15 PM

DASY Configuration for 3-slot GPRS850 - Right/Cheek - Middle/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277425/0

Communication System: 3-slot GPRS850; Frequency: 836.6 MHz; Duty Cycle: 1:2.80027; PMF: 1.6734

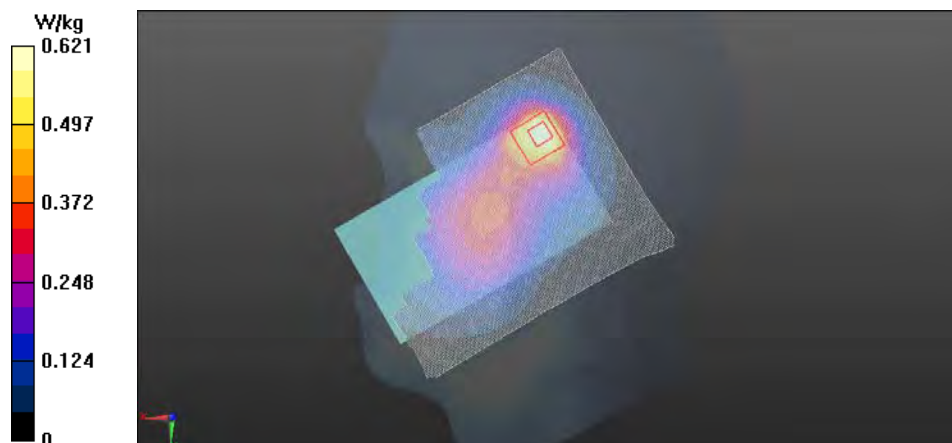
Medium: Head 835 Medium parameters used: $f = 837$ MHz; $\sigma = 0.913$ S/m; $\epsilon_r = 40.131$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3838; ConvF(9.04, 9.04, 9.04); Calibrated: 2013-03-08;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1324; Calibrated: 2013-03-06
Phantom: SAM9; Type: SAM; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.558 W/kg; SAR(10 g) = 0.288 W/kg

Maximum value of SAR (interpolated) = 0.621 W/kg



Plot 13:

Date/Time: 2013-05-14 4:19:51 PM

DASY Configuration for WLAN2450 b-mode - Right/Cheek - Channel 11 - DSSS 1 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

Communication System: WLAN2450 ; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Head 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.834$ S/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3823; ConvF(6.91, 6.91, 6.91); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: SAM3; Type: QD000P40CC; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-03 2:09:00 PM

DASY Configuration for WCDMA850 (band 5) - Right/Cheek - Middle/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA850; Frequency: 835 MHz; Duty Cycle: 1:1; PMF: 1

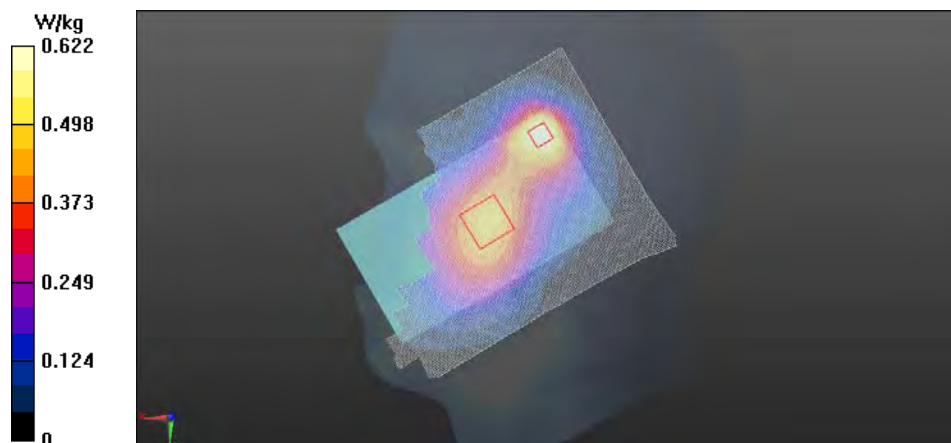
Medium: Head 835 Medium parameters used: $f = 835$ MHz; $\sigma = 0.891$ S/m; $\epsilon_r = 42.585$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3836; ConvF(9.03, 9.03, 9.03); Calibrated: 2013-03-08;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn710; Calibrated: 2013-03-08
Phantom: SAM1; Type: SAM; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.560 W/kg; SAR(10 g) = 0.308 W/kg

Maximum value of SAR (interpolated) = 0.622 W/kg



Plot 14:

Date/Time: 2013-05-14 4:19:51 PM

DASY Configuration for WLAN2450 b-mode - Right/Cheek - Channel 11 - DSSS 1 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

Communication System: WLAN2450 ; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Head 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.834$ S/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3823; ConvF(6.91, 6.91, 6.91); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: SAM3; Type: QD000P40CC; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-03 11:45:44 AM

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

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277487/0

Communication System: LTE850 (Band 5); Frequency: 836.5 MHz; Duty Cycle: 1:1; PMF: 1

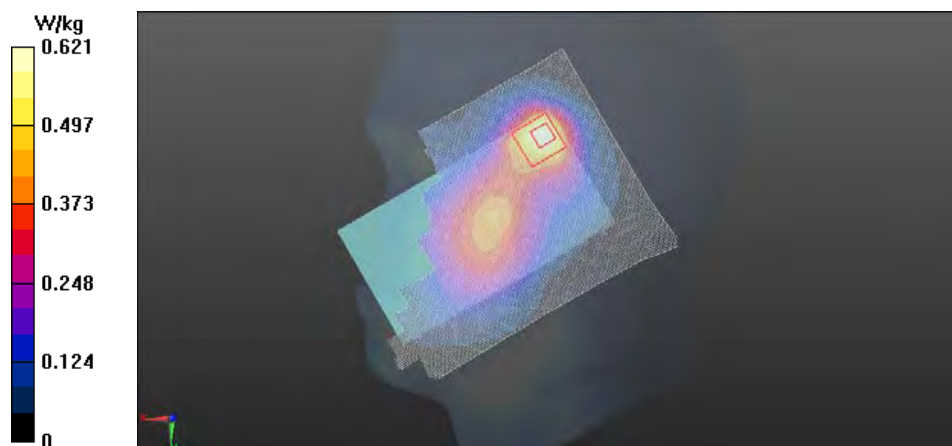
Medium: Head 835 Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.892$ S/m; $\epsilon_r = 42.56$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3836; ConvF(9.03, 9.03, 9.03); Calibrated: 2013-03-08;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn710; Calibrated: 2013-03-08
Phantom: SAM1; Type: SAM; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.559 W/kg; SAR(10 g) = 0.290 W/kg

Maximum value of SAR (interpolated) = 0.621 W/kg



Plot 15:

Date/Time: 2013-05-14 4:19:51 PM

DASY Configuration for WLAN2450 b-mode - Right/Cheek - Channel 11 - DSSS 1 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

Communication System: WLAN2450 ; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Head 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.834$ S/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3823; ConvF(6.91, 6.91, 6.91); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: SAM3; Type: QD000P40CC; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-13 3:47:13 PM

DASY Configuration for WCDMA1700 (Band 4) - Right/Cheek - High/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA1700/2100; Frequency: 1752.6 MHz; Duty Cycle: 1:1; PMF: 1

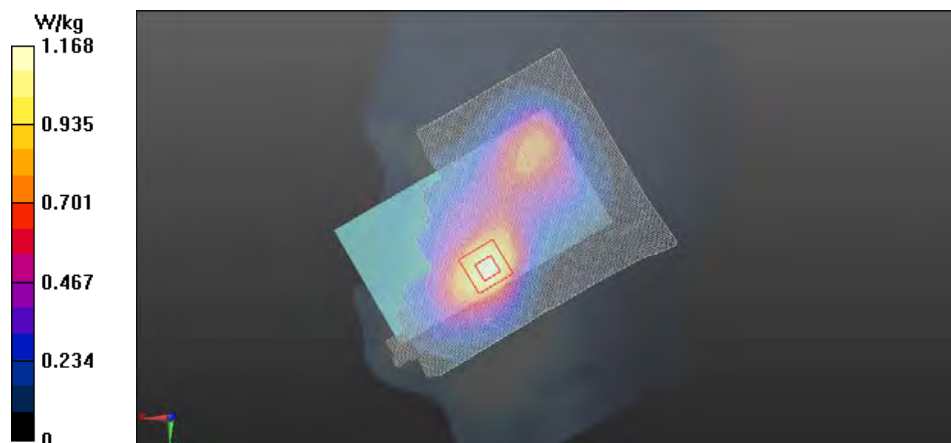
Medium: Head 1750 Medium parameters used: $f = 1753$ MHz; $\sigma = 1.34$ S/m; $\epsilon_r = 38.562$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: ES3DV3 - SN3280; ConvF(5.35, 5.35, 5.35); Calibrated: 2013-03-08;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1324; Calibrated: 2013-03-06
Phantom: SAM8; Type: SAM; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.620 W/kg

Maximum value of SAR (interpolated) = 1.17 W/kg



Plot 16:

Date/Time: 2013-05-14 4:19:51 PM

DASY Configuration for WLAN2450 b-mode - Right/Cheek - Channel 11 - DSSS 1 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

Communication System: WLAN2450 ; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Head 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.834$ S/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3823; ConvF(6.91, 6.91, 6.91); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: SAM3; Type: QD000P40CC; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-13 4:53:19 PM

DASY Configuration for LTE1700_2100 (Band 4) - Right/Cheek - High - QPSK - 20MHz - 1RB - 0 offset 3/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277464/9

Communication System: LTE1700/2100 (Band 4); Frequency: 1745 MHz; Duty Cycle: 1:1; PMF: 1

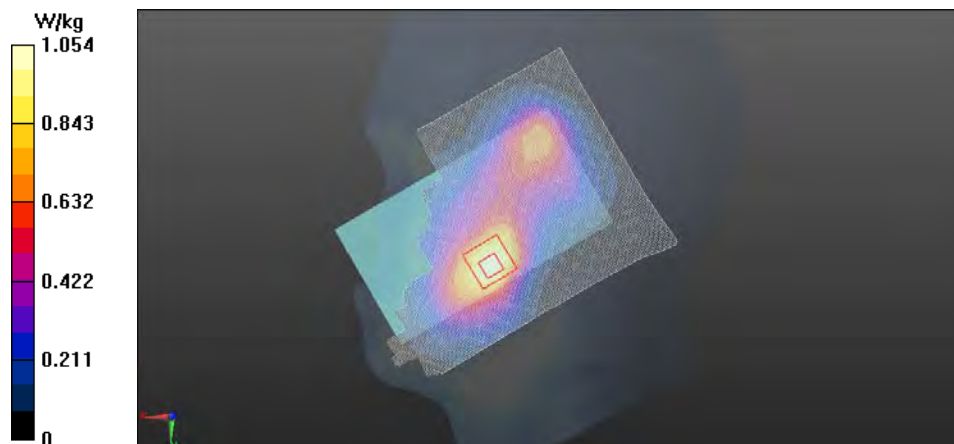
Medium: Head 1750 Medium parameters used: $f = 1745$ MHz; $\sigma = 1.334$ S/m; $\epsilon_r = 38.578$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: ES3DV3 - SN3280; ConvF(5.35, 5.35, 5.35); Calibrated: 2013-03-08;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1324; Calibrated: 2013-03-06
Phantom: SAM8; Type: SAM; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.954 W/kg; SAR(10 g) = 0.558 W/kg

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



Plot 17:

Date/Time: 2013-05-14 4:19:51 PM

DASY Configuration for WLAN2450 b-mode - Right/Cheek - Channel 11 - DSSS 1 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

Communication System: WLAN2450 ; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Head 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.834$ S/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3823; ConvF(6.91, 6.91, 6.91); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: SAM3; Type: QD000P40CC; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-17 12:35:56 PM

DASY Configuration for GSM1900 - Right/Cheek - Middle/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277425/0

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:8.30042; PMF: 2.88104

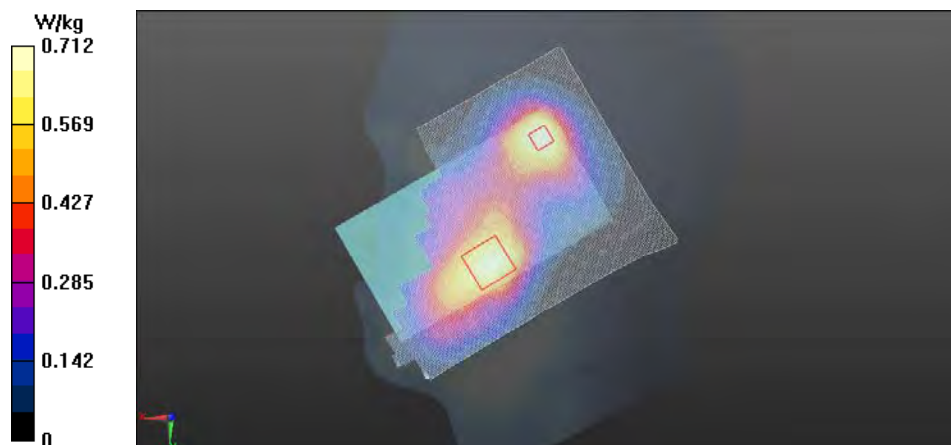
Medium: Head 1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.339$ S/m; $\epsilon_r = 39.56$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3823; ConvF(7.62, 7.62, 7.62); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: SAM 1; Type: QD000P40CC; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Fast SAR of Combined Scans: SAR(1 g) = 0.646 W/kg; SAR(10 g) = 0.380 W/kg

Maximum value of SAR (interpolated) = 0.712 W/kg



Plot 18:

Date/Time: 2013-05-14 4:19:51 PM

DASY Configuration for WLAN2450 b-mode - Right/Cheek - Channel 11 - DSSS 1 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

Communication System: WLAN2450 ; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Head 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.834$ S/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3823; ConvF(6.91, 6.91, 6.91); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: SAM3; Type: QD000P40CC; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-04 12:59:26 PM

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

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA1900; Frequency: 1852.4 MHz; Duty Cycle: 1:1; PMF: 1

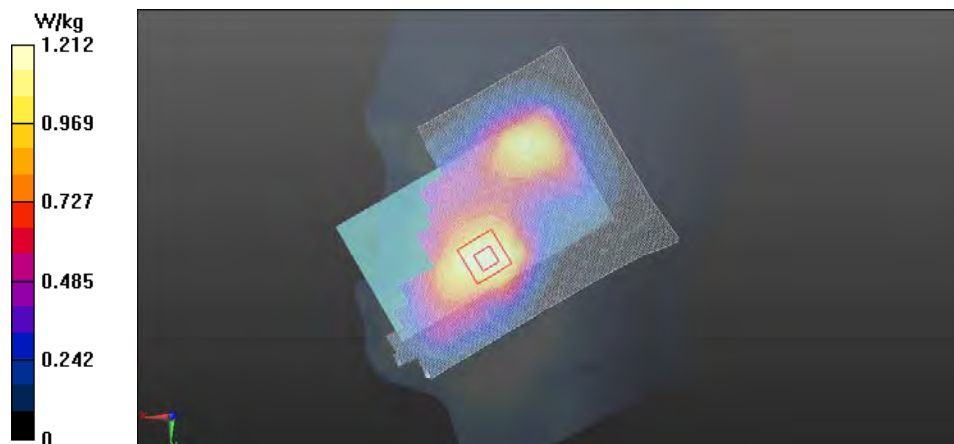
Medium: Head 1900 Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.323$ S/m; $\epsilon_r = 38.898$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3823; ConvF(7.62, 7.62, 7.62); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: SAM10; Type: SAM; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.680 W/kg

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



Plot 19:

Date/Time: 2013-05-14 4:19:51 PM

DASY Configuration for WLAN2450 b-mode - Right/Cheek - Channel 11 - DSSS 1 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

Communication System: WLAN2450 ; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Head 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.834$ S/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3823; ConvF(6.91, 6.91, 6.91); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: SAM3; Type: QD000P40CC; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-04 2:51:32 PM

DASY Configuration for LTE1900 (Band 2) - Right/Cheek - Low - QPSK - 20MHz - 1RB - 50% offset/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277461/5

Communication System: LTE1900 (Band 2); Frequency: 1860 MHz; Duty Cycle: 1:1; PMF: 1

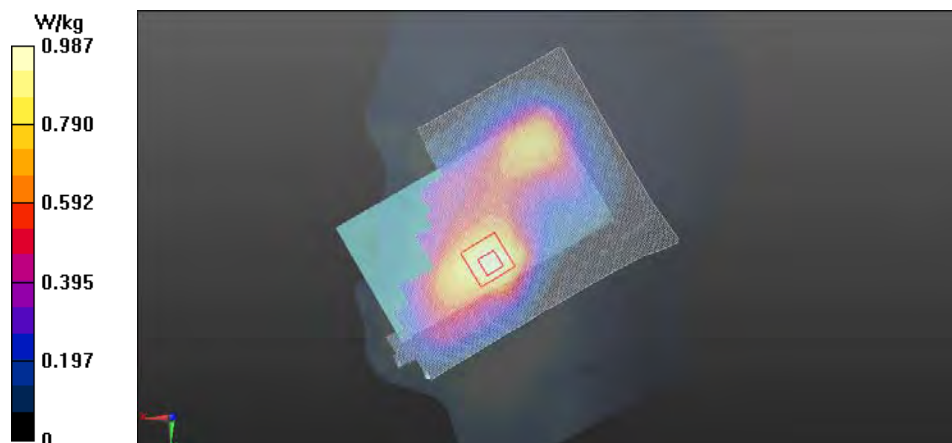
Medium: Head 1900 Medium parameters used: $f = 1860$ MHz; $\sigma = 1.326$ S/m; $\epsilon_r = 39.99$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3823; ConvF(7.62, 7.62, 7.62); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: SAM 1; Type: QD000P40CC; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Fast SAR of Combined Scans: SAR(1 g) = 0.902 W/kg; SAR(10 g) = 0.544 W/kg

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



Plot 20:

Date/Time: 2013-06-17 1:53:51 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277517/4

Communication System: LTE700 (Band 17)

Frequency: 711 MHz; Duty Cycle: 1:1

Medium: Body 750; Medium Notes: Medium Temperature: $t = 21.7\text{ C}$

Medium parameters used: $f = 711\text{ MHz}$; $\sigma = 0.937\text{ S/m}$; $\epsilon_r = 57.638$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(9.07, 9.07, 9.07); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

LTE700 (Band 17)/Body - High - QPSK - 10MHz - 1RB - 0% offset - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan (81x121x1): Interpolated grid: $dx=1.500\text{ mm}$, $dy=1.500\text{ mm}$

Maximum value of SAR (interpolated) = 0.460 W/kg

LTE700 (Band 17)/Body - High - QPSK - 10MHz - 1RB - 0% offset - Spacer 15mm - No Headset - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 16.555 V/m

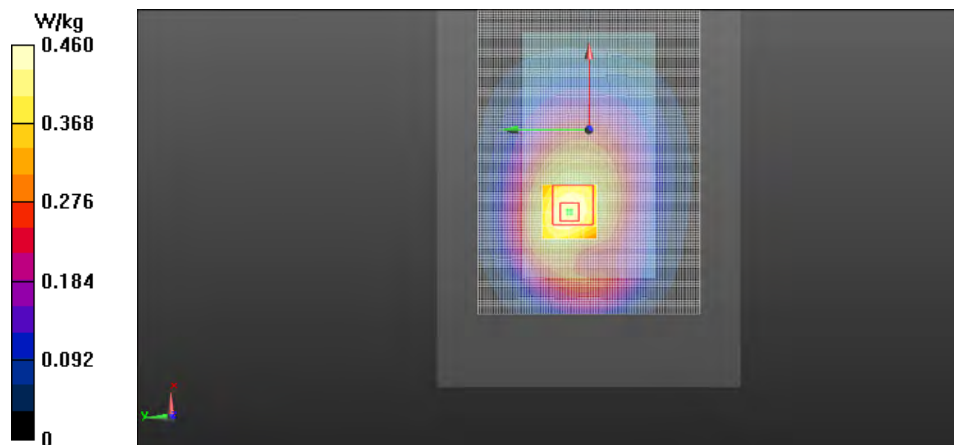
Peak SAR (extrapolated) = 0.589 W/kg

SAR(1 g) = 0.439 W/kg

SAR(10 g) = 0.322 W/kg

Power Drift = 0.07 dB

Maximum value of SAR (measured) = 0.465 W/kg



Plot 21:

Date/Time: 2013-06-08 11:42:55 AM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277425/0

Communication System: 3-slot GPRS850

Frequency: 824.2 MHz; Duty Cycle: 1:2.80027

Medium: Body 835; Medium Notes: Medium Temperature: t= 22C

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.961 S/m; ϵ_r = 54.882; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(9.07, 9.07, 9.07); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2013-03-06
- Phantom: TFP3 SAR3; Type: Not Specified; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

3-slot GPRS850/Body - Low - Spacer 15mm - WH-108 - Back Facing Phantom/Area Scan (81x121x1):

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

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

3-slot GPRS850/Body - Low - Spacer 15mm - WH-108 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 22.712 V/m

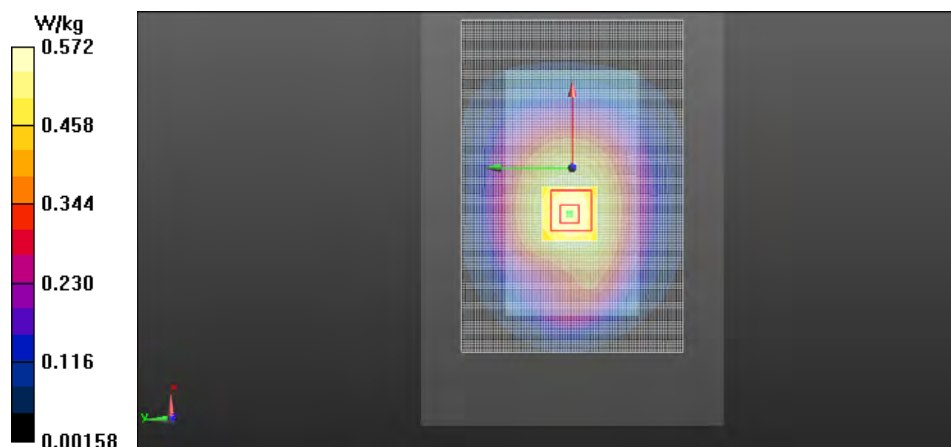
Peak SAR (extrapolated) = 0.680 W/kg

SAR(1 g) = 0.549 W/kg

SAR(10 g) = 0.418 W/kg

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 0.576 W/kg



Plot 22:

Date/Time: 2013-06-06 1:49:28 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA850

Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: t= 22.2C

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.965 S/m; ϵ_r = 55.399; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.97, 8.97, 8.97); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

WCDMA850 (Band 5)/Body - Low - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan (81x121x1):

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

Maximum value of SAR (interpolated) = 0.498 W/kg

WCDMA850 (Band 5)/Body - Low - Spacer 15mm - No Headset - Back Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 21.668 V/m

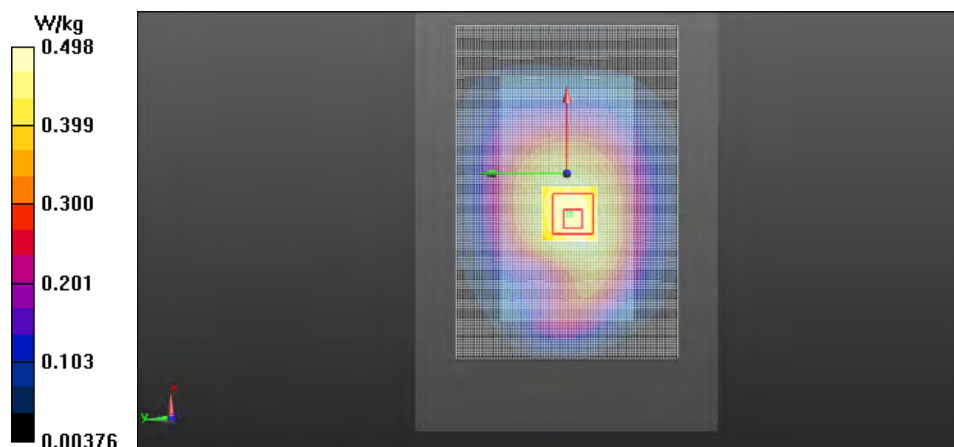
Peak SAR (extrapolated) = 0.593 W/kg

SAR(1 g) = 0.472 W/kg

SAR(10 g) = 0.360 W/kg

Power Drift = -0.08 dB

Maximum value of SAR (measured) = 0.493 W/kg



Plot 23:

Date/Time: 2013-06-05 3:35:19 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277487/0

Communication System: LTE850 (Band 5)

Frequency: 829 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: $t = 22.1^{\circ}\text{C}$

Medium parameters used: $f = 829\text{ MHz}$; $\sigma = 0.975\text{ S/m}$; $\epsilon_r = 55.194$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.97, 8.97, 8.97); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

LTE835 (Band 5)/Body - Low - QPSK - 10MHz - 1RB - 0% offset - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan (81x121x1): Interpolated grid: $dx=1.500\text{ mm}$, $dy=1.500\text{ mm}$

Maximum value of SAR (interpolated) = 0.533 W/kg

LTE835 (Band 5)/Body - Low - QPSK - 10MHz - 1RB - 0% offset - Spacer 15mm - No Headset - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 22.564 V/m

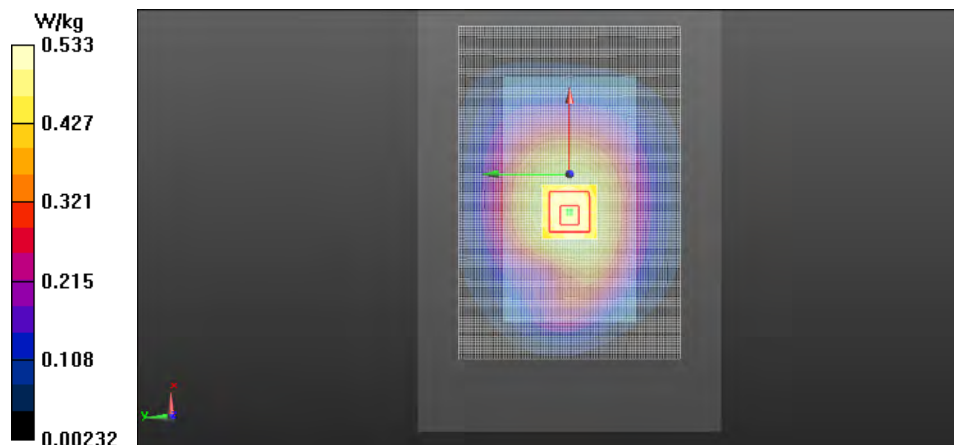
Peak SAR (extrapolated) = 0.642 W/kg

SAR(1 g) = 0.512 W/kg

SAR(10 g) = 0.390 W/kg

Power Drift = 0.07 dB

Maximum value of SAR (measured) = 0.538 W/kg



Plot 24:

Date/Time: 2013-06-09 2:59:37 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA1700/2100

Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium: Body 1750; Medium Notes: Medium Temperature: t= 21.6 C

Medium parameters used: f = 1753 MHz; $\sigma = 1.473$ S/m; $\epsilon_r = 53.142$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.57, 7.57, 7.57); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

WCDMA1750 (Band 4)/Body - High - Spacer 15mm - Headset WH-108 - Display Facing Phantom/Area Scan

(81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

WCDMA1750 (Band 4)/Body - High - Spacer 15mm - Headset WH-108 - Display Facing Phantom/Zoom Scan

(6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 13.219 V/m

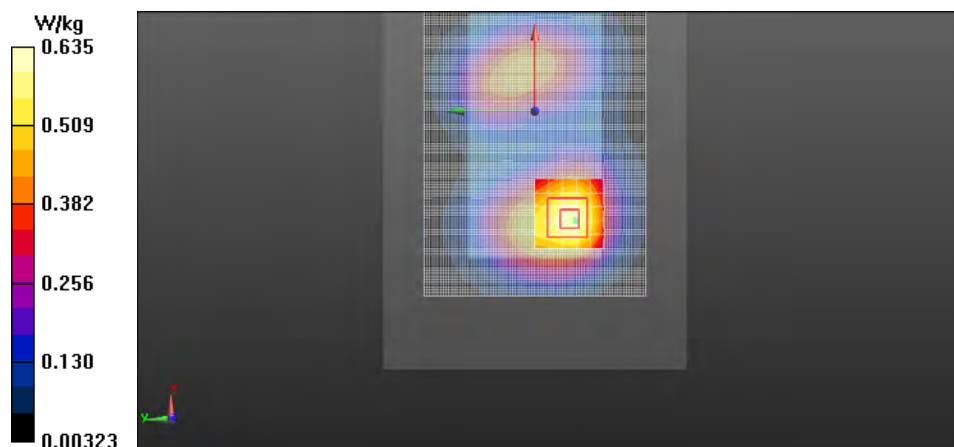
Peak SAR (extrapolated) = 0.921 W/kg

SAR(1 g) = 0.605 W/kg

SAR(10 g) = 0.388 W/kg

Power Drift = 0.15 dB

Maximum value of SAR (measured) = 0.642 W/kg



Plot 25:

Date/Time: 2013-06-08 4:11:02 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277464/9

Communication System: LTE1700/2100 (Band 4)

Frequency: 1745 MHz; Duty Cycle: 1:1

Medium: Body 1750; Medium Notes: Medium Temperature: $t = 21.6$ C

Medium parameters used: $f = 1745$ MHz; $\sigma = 1.466$ S/m; $\epsilon_r = 53.59$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.57, 7.57, 7.57); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

LTE1750 (Band 4)/Body - High - QPSK - 20MHz - 1RB - 0% offset - Spacer 15mm - No Headset - Display Facing Phantom/Area Scan (81x121x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.491 W/kg

LTE1750 (Band 4)/Body - High - QPSK - 20MHz - 1RB - 0% offset - Spacer 15mm - No Headset - Display Facing Phantom/Zoom Scan (6x6x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 10.656 V/m

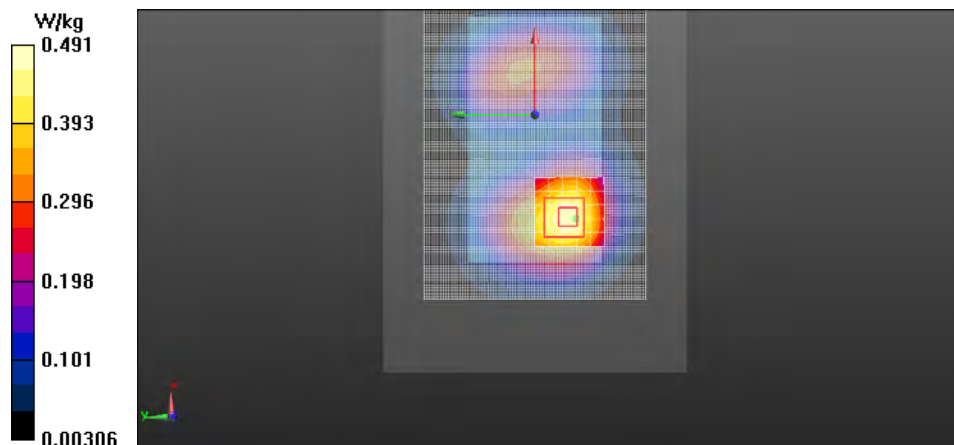
Peak SAR (extrapolated) = 0.697 W/kg

SAR(1 g) = 0.465 W/kg

SAR(10 g) = 0.300 W/kg

Power Drift = 0.11 dB

Maximum value of SAR (measured) = 0.492 W/kg



Plot 26:

Date/Time: 2013-06-18 11:07:37 AM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277425/0

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium: Body 1900; Medium Notes: Medium Temperature: t=21.9 C

Medium parameters used: f = 1880 MHz; $\sigma = 1.497$ S/m; $\epsilon_r = 50.764$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3823
- ConvF(7.28, 7.28, 7.28); Calibrated: 2012-12-12;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn705; Calibrated: 2012-12-04
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.8 (7028)

GSM1900/Body - Middle - Spacer 15mm - No Headset - Display Facing Phantom/Area Scan (81x121x1):

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

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

GSM1900/Body - Middle - Spacer 15mm - No Headset - Display Facing Phantom/Zoom Scan (6x6x7)/Cube 0:

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

Reference Value = 14.112 V/m

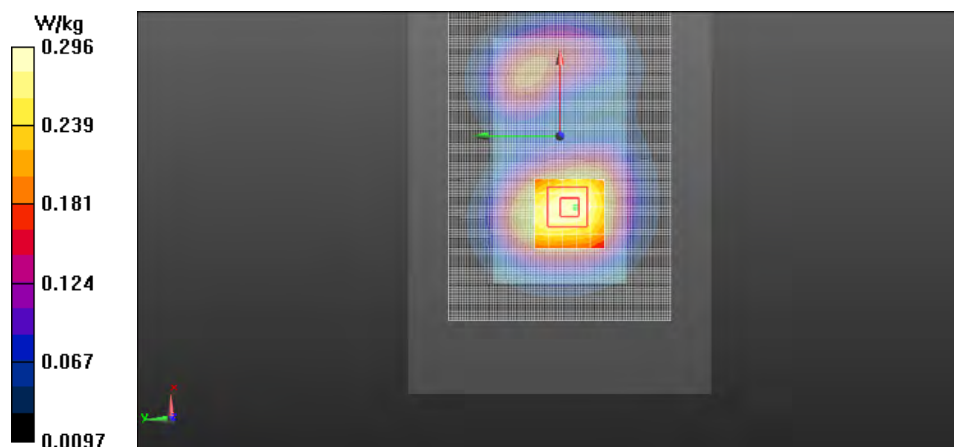
Peak SAR (extrapolated) = 0.414 W/kg

SAR(1 g) = 0.279 W/kg

SAR(10 g) = 0.186 W/kg

Power Drift = -0.03 dB

Maximum value of SAR (measured) = 0.296 W/kg



Plot 27:

Date/Time: 2013-06-18 2:00:47 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: Body 1900; Medium Notes: Medium Temperature: t=21.9 C

Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma = 1.47$ S/m; $\epsilon_r = 50.896$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3823
- ConvF(7.28, 7.28, 7.28); Calibrated: 2012-12-12;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn705; Calibrated: 2012-12-04
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.8 (7028)

WCDMA1900 (Band 2)/Body - Low - Spacer 15mm - No Headset - Display Facing Phantom/Area Scan

(81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.681 W/kg

WCDMA1900 (Band 2)/Body - Low - Spacer 15mm - No Headset - Display Facing Phantom/Zoom Scan

(6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 20.920 V/m

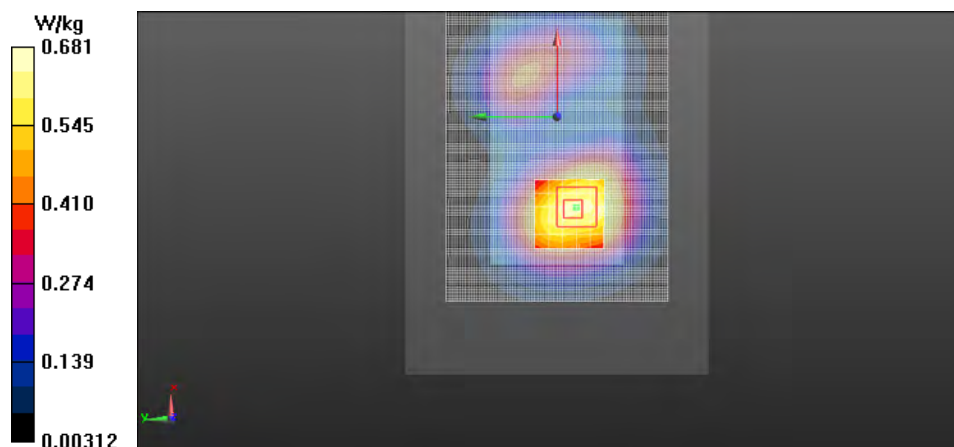
Peak SAR (extrapolated) = 0.911 W/kg

SAR(1 g) = 0.615 W/kg

SAR(10 g) = 0.412 W/kg

Power Drift = 0.05 dB

Maximum value of SAR (measured) = 0.651 W/kg



Plot 28:

Date/Time: 2013-06-06 2:56:33 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277461/5

Communication System: LTE1900 (Band 2)

Frequency: 1860 MHz; Duty Cycle: 1:1

Medium: Body 1900; Medium Notes: Medium Temperature: t=22.1 C

Medium parameters used: f = 1860 MHz; σ = 1.461 S/m; ϵ_r = 51.215; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3823
- ConvF(7.28, 7.28, 7.28); Calibrated: 2012-12-12;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn705; Calibrated: 2012-12-04
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.8 (7028)

LTE1900 (Band 2)/Body - Low - QPSK - 20MHz - 1RB - 50% offset - Spacer 15mm - WH-108 - Display Facing Phantom/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.510 W/kg

LTE1900 (Band 2)/Body - Low - QPSK - 20MHz - 1RB - 50% offset - Spacer 15mm - WH-108 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 10.348 V/m

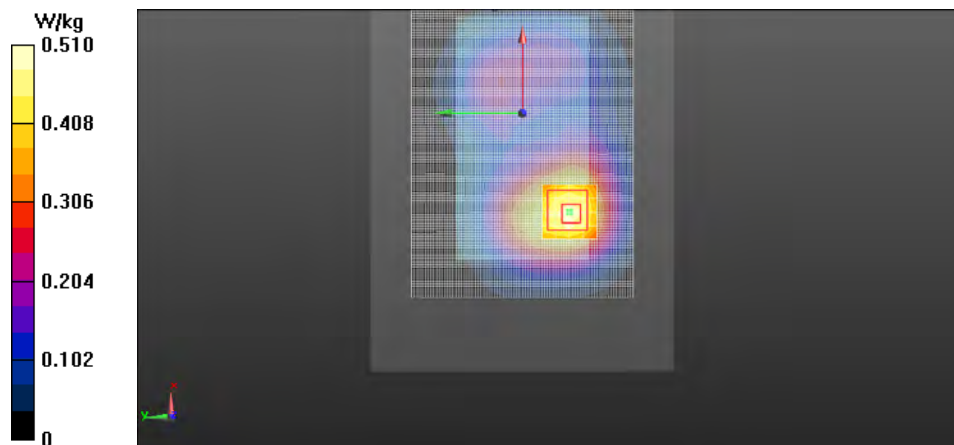
Peak SAR (extrapolated) = 0.709 W/kg

SAR(1 g) = 0.465 W/kg

SAR(10 g) = 0.301 W/kg

Power Drift = -0.03 dB

Maximum value of SAR (measured) = 0.494 W/kg



Plot 29:

Date/Time: 2013-05-17 10:22:13 AM

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

Communication System: WLAN2450 b-mode

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=22.5 C

Medium parameters used: f = 2462 MHz; σ = 1.956 S/m; ϵ_r = 50.322; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3823
- ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn705; Calibrated: 2012-12-04
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.8 (7028)

WLAN2450 b-mode/Body - Channel 11 - DSSS 1 Mbps - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan (121x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0859 W/kg

WLAN2450 b-mode/Body - Channel 11 - DSSS 1 Mbps - Spacer 15mm - No Headset - Back Facing Phantom/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.512 V/m

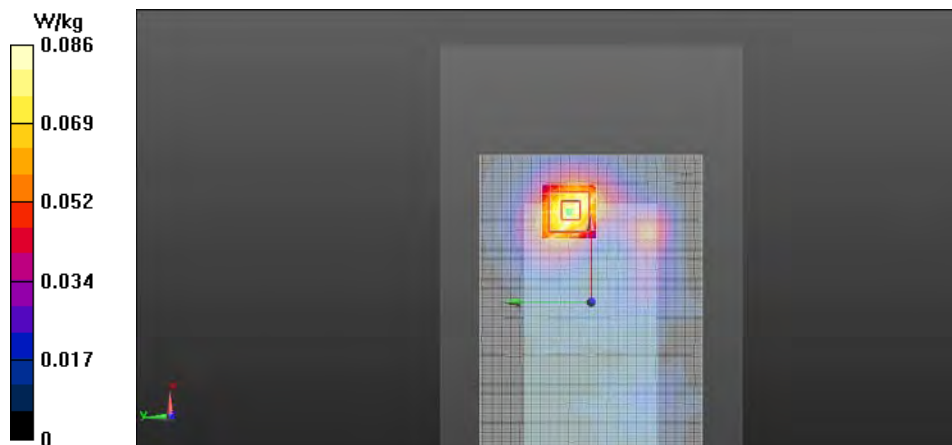
Peak SAR (extrapolated) = 0.130 W/kg

SAR(1 g) = 0.076 W/kg

SAR(10 g) = 0.044 W/kg

Power Drift = -0.18 dB

Maximum value of SAR (measured) = 0.0821 W/kg



Plot 30:

Date/Time: 2013-05-17 10:22:13 AM

DASY Configuration for WLAN2450 b-mode/Body - Channel 11 - DSSS 1 Mbps - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.956$ S/m; $\epsilon_r = 50.322$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-17 1:53:51 PM

DASY Configuration for LTE700 (Band 17)/Body - High - QPSK - 10MHz - 1RB - 0% offset - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277517/4

Communication System: LTE700 (Band 17); Frequency: 711 MHz; Duty Cycle: 1:1; PMF: 1

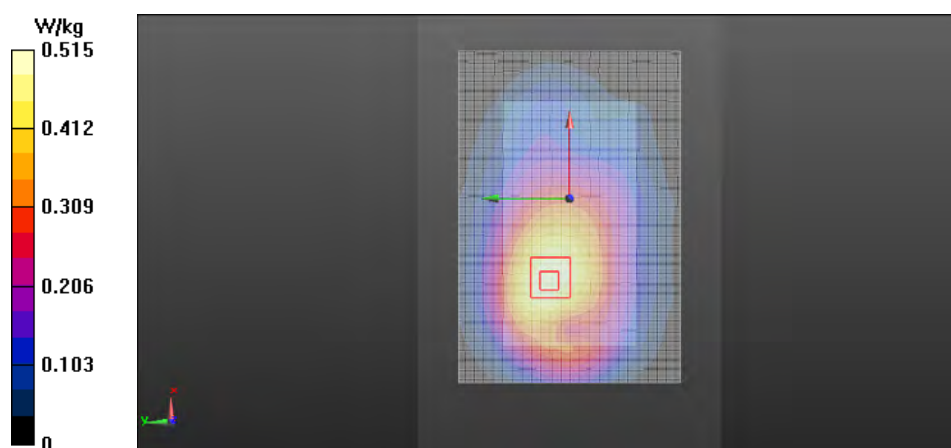
Medium: Body 750 Medium parameters used: $f = 711$ MHz; $\sigma = 0.937$ S/m; $\epsilon_r = 57.638$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3836; ConvF(9.07, 9.07, 9.07); Calibrated: 2013-03-08;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn710; Calibrated: 2013-03-08
Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.486 W/kg; SAR(10 g) = 0.346 W/kg

Maximum value of SAR (interpolated) = 0.515 W/kg



Plot 31:

Date/Time: 2013-05-17 10:22:13 AM

DASY Configuration for WLAN2450 b-mode/Body - Channel 11 - DSSS 1 Mbps - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.956$ S/m; $\epsilon_r = 50.322$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-08 11:42:55 AM

DASY Configuration for 3-slot GPRS850/Body - Low - Spacer 15mm - WH-108 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277425/0

Communication System: 3-slot GPRS850; Frequency: 824.2 MHz; Duty Cycle: 1:2.80027; PMF: 1.6734

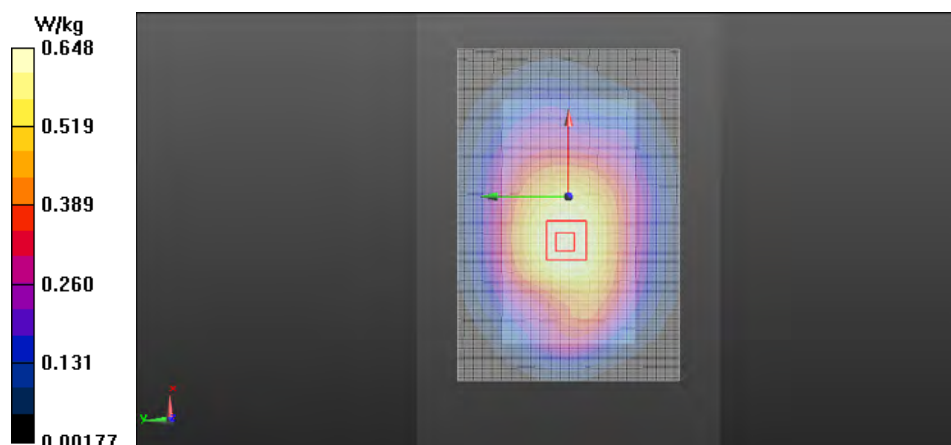
Medium: Body 835 Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 0.961$ S/m; $\epsilon_r = 54.882$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3838; ConvF(9.07, 9.07, 9.07); Calibrated: 2013-03-08;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1324; Calibrated: 2013-03-06
Phantom: TFP3 SAR3; Type: Not Specified; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.615 W/kg; SAR(10 g) = 0.442 W/kg

Maximum value of SAR (interpolated) = 0.648 W/kg



Plot 32:

Date/Time: 2013-05-17 10:22:13 AM

DASY Configuration for WLAN2450 b-mode/Body - Channel 11 - DSSS 1 Mbps - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.956$ S/m; $\epsilon_r = 50.322$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-06 1:49:28 PM

DASY Configuration for WCDMA850 (Band 5)/Body - Low - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA850; Frequency: 826.4 MHz; Duty Cycle: 1:1; PMF: 1

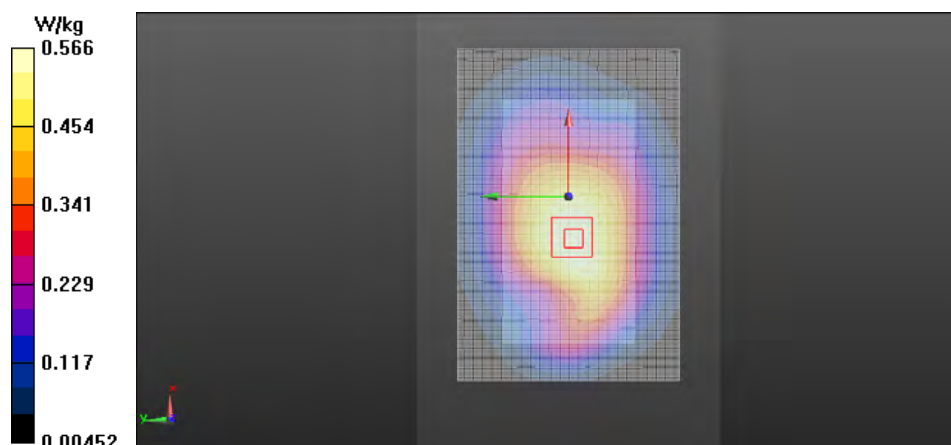
Medium: Body 835 Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.965$ S/m; $\epsilon_r = 55.399$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3836; ConvF(8.97, 8.97, 8.97); Calibrated: 2013-03-08;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn710; Calibrated: 2013-03-08
Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.536 W/kg; SAR(10 g) = 0.384 W/kg

Maximum value of SAR (interpolated) = 0.566 W/kg



Plot 33:

Date/Time: 2013-05-17 10:22:13 AM

DASY Configuration for WLAN2450 b-mode/Body - Channel 11 - DSSS 1 Mbps - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.956$ S/m; $\epsilon_r = 50.322$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-05 3:35:19 PM

DASY Configuration for LTE835 (Band 5)/Body - Low - QPSK - 10MHz - 1RB - 0% offset - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277487/0

Communication System: LTE850 (Band 5); Frequency: 829 MHz; Duty Cycle: 1:1; PMF: 1

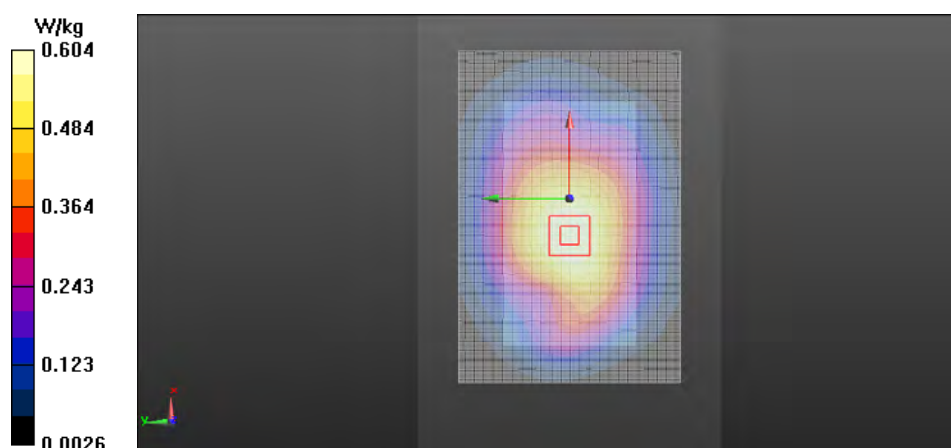
Medium: Body 835 Medium parameters used: $f = 829$ MHz; $\sigma = 0.975$ S/m; $\epsilon_r = 55.194$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3836; ConvF(8.97, 8.97, 8.97); Calibrated: 2013-03-08;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn710; Calibrated: 2013-03-08
Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.573 W/kg; SAR(10 g) = 0.411 W/kg

Maximum value of SAR (interpolated) = 0.604 W/kg



Plot 34:

Date/Time: 2013-05-16 3:14:31 PM

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 15mm - WH-108 - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

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

Medium: Body 2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.905$ S/m; $\epsilon_r = 50.347$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-09 2:59:37 PM

DASY Configuration for WCDMA1750 (Band 4)/Body - High - Spacer 15mm - Headset WH-108 - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA1700/2100; Frequency: 1752.6 MHz; Duty Cycle: 1:1; PMF: 1

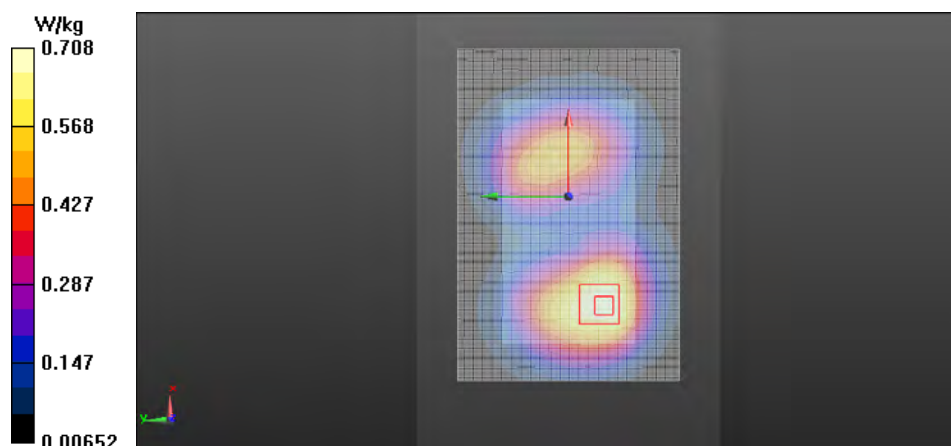
Medium: Body 1750 Medium parameters used: $f = 1753$ MHz; $\sigma = 1.473$ S/m; $\epsilon_r = 53.142$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3836; ConvF(7.57, 7.57, 7.57); Calibrated: 2013-03-08;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn710; Calibrated: 2013-03-08
Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.661 W/kg; SAR(10 g) = 0.420 W/kg

Maximum value of SAR (interpolated) = 0.708 W/kg



Plot 35:

Date/Time: 2013-05-16 3:36:58 PM

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-941; Serial: 004402/47/299339/7

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

Medium: Body 2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.905$ S/m; $\epsilon_r = 50.347$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-08 4:11:02 PM

DASY Configuration for LTE1750 (Band 4)/Body - High - QPSK - 20MHz - 1RB - 0% offset - Spacer 15mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277464/9

Communication System: LTE1700/2100 (Band 4); Frequency: 1745 MHz; Duty Cycle: 1:1; PMF: 1

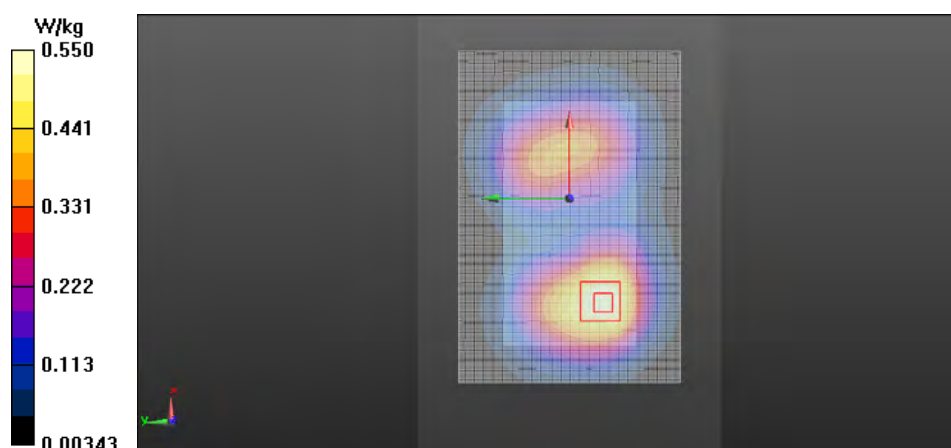
Medium: Body 1750 Medium parameters used: $f = 1745$ MHz; $\sigma = 1.466$ S/m; $\epsilon_r = 53.59$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3836; ConvF(7.57, 7.57, 7.57); Calibrated: 2013-03-08;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn710; Calibrated: 2013-03-08
Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.515 W/kg; SAR(10 g) = 0.325 W/kg

Maximum value of SAR (interpolated) = 0.550 W/kg



Plot 36:

Date/Time: 2013-05-17 10:22:13 AM

DASY Configuration for WLAN2450 b-mode/Body - Channel 11 - DSSS 1 Mbps - Spacer 15mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.956$ S/m; $\epsilon_r = 50.322$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-18 11:07:37 AM

DASY Configuration for GSM1900/Body - Middle - Spacer 15mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277425/0

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:8.30042; PMF: 2.88104

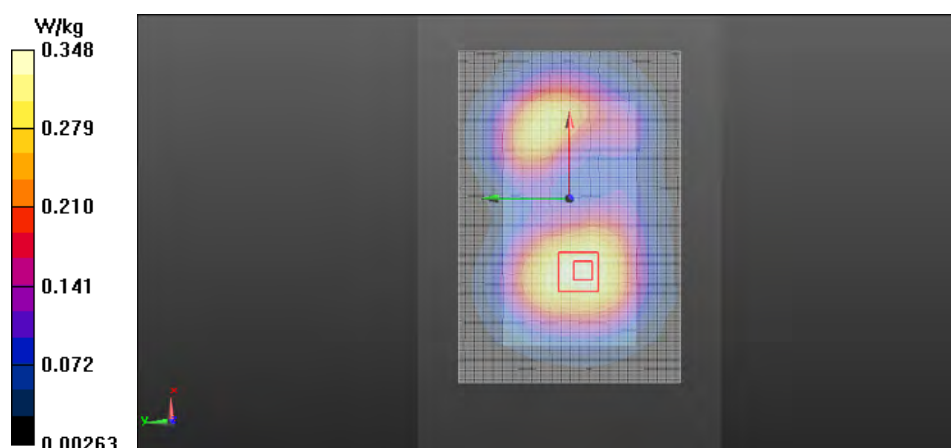
Medium: Body 1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.497$ S/m; $\epsilon_r = 50.764$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(7.28, 7.28, 7.28); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Fast SAR of Combined Scans: SAR(1 g) = 0.324 W/kg; SAR(10 g) = 0.202 W/kg

Maximum value of SAR (interpolated) = 0.348 W/kg



Plot 37:

Date/Time: 2013-05-16 3:36:58 PM

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-941; Serial: 004402/47/299339/7

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

Medium: Body 2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.905$ S/m; $\epsilon_r = 50.347$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-18 2:00:47 PM

DASY Configuration for WCDMA1900 (Band 2)/Body - Low - Spacer 15mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA1900; Frequency: 1852.4 MHz; Duty Cycle: 1:1; PMF: 1

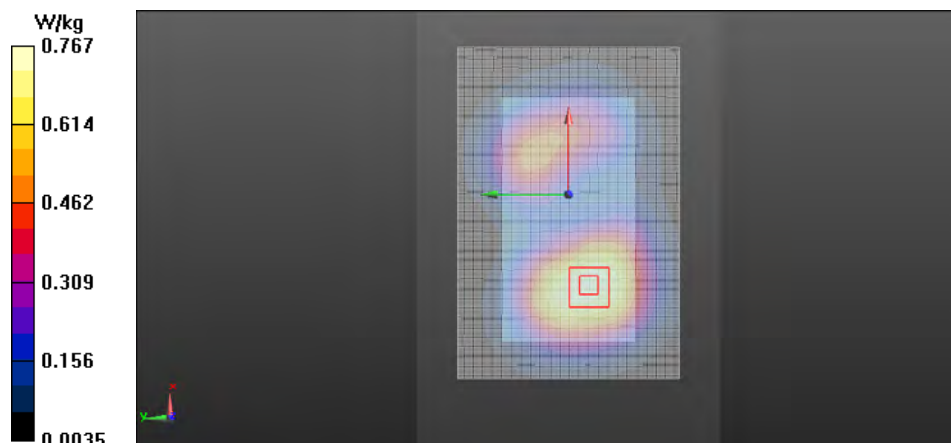
Medium: Body 1900 Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.47$ S/m; $\epsilon_r = 50.896$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(7.28, 7.28, 7.28); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Fast SAR of Combined Scans: SAR(1 g) = 0.715 W/kg; SAR(10 g) = 0.448 W/kg

Maximum value of SAR (interpolated) = 0.767 W/kg



Plot 38:

Date/Time: 2013-05-16 3:36:58 PM

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-941; Serial: 004402/47/299339/7

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

Medium: Body 2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.905$ S/m; $\epsilon_r = 50.347$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-06 2:56:33 PM

DASY Configuration for LTE1900 (Band 2)/Body - Low - QPSK - 20MHz - 1RB - 50% offset - Spacer 15mm - WH-108 - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277461/5

Communication System: LTE1900 (Band 2); Frequency: 1860 MHz; Duty Cycle: 1:1; PMF: 1

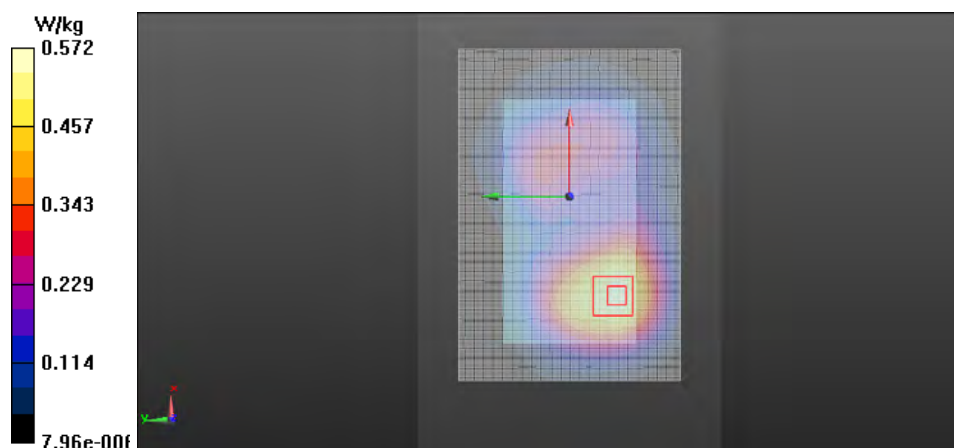
Medium: Body 1900 Medium parameters used: $f = 1860$ MHz; $\sigma = 1.461$ S/m; $\epsilon_r = 51.215$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(7.28, 7.28, 7.28); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Fast SAR of Combined Scans: SAR(1 g) = 0.526 W/kg; SAR(10 g) = 0.323 W/kg

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



Plot 39:

Date/Time: 2013-06-18 1:22:31 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277517/4

Communication System: LTE700 (Band 17)

Frequency: 711 MHz; Duty Cycle: 1:1

Medium: Body 750; Medium Notes: Medium Temperature: $t = 21.5\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 711\text{ MHz}$; $\sigma = 0.926\text{ S/m}$; $\epsilon_r = 57.656$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(9.07, 9.07, 9.07); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

LTE700 (Band 17)/Body - High - QPSK - 10MHz - 1RB - 0% offset - Spacer 10mm - No Headset - Back Facing Phantom 3/Area Scan (81x121x1): Interpolated grid: $dx=1.500\text{ mm}$, $dy=1.500\text{ mm}$

Maximum value of SAR (interpolated) = 0.692 W/kg

LTE700 (Band 17)/Body - High - QPSK - 10MHz - 1RB - 0% offset - Spacer 10mm - No Headset - Back Facing Phantom 3/Zoom Scan (6x6x7)/Cube 0: Measurement grid: $dx=7.5\text{ mm}$, $dy=7.5\text{ mm}$, $dz=5\text{ mm}$

Reference Value = 19.209 V/m

Peak SAR (extrapolated) = 0.904 W/kg

SAR(1 g) = 0.651 W/kg

SAR(10 g) = 0.472 W/kg

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 0.688 W/kg

LTE700 (Band 17)/Body - High - QPSK - 10MHz - 1RB - 0% offset - Spacer 10mm - No Headset - Back Facing Phantom 3/Zoom Scan 2 (8x10x7)/Cube 0: Measurement grid: $dx=7.5\text{ mm}$, $dy=7.5\text{ mm}$, $dz=5\text{ mm}$

Reference Value = 19.209 V/m

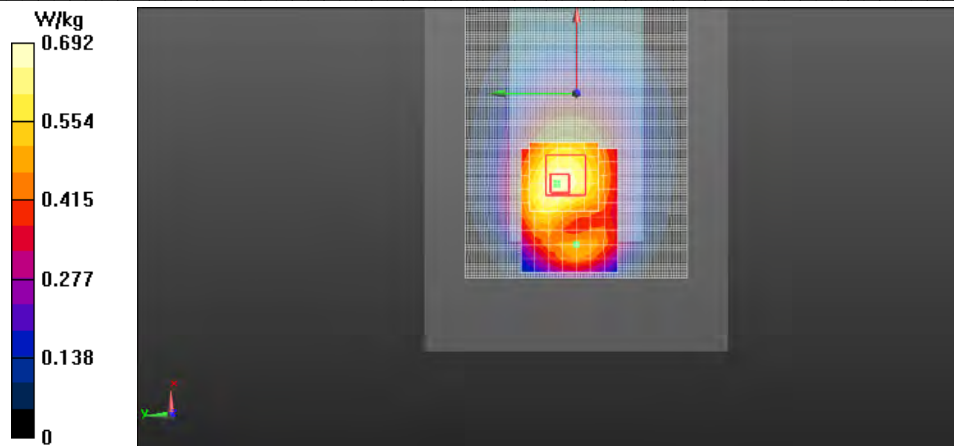
Peak SAR (extrapolated) = 0.906 W/kg

SAR(1 g) = 0.652 W/kg

SAR(10 g) = 0.473 W/kg

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 0.682 W/kg



Plot 40:

Date/Time: 2013-06-08 3:55:22 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277425/0

Communication System: 3-slot GPRS850

Frequency: 824.2 MHz; Duty Cycle: 1:2.80027

Medium: Body 835; Medium Notes: Medium Temperature: t= 22C

Medium parameters used (interpolated): f = 824.2 MHz; $\sigma = 0.961$ S/m; $\epsilon_r = 54.882$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(9.07, 9.07, 9.07); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2013-03-06
- Phantom: TFP3 SAR3; Type: Not Specified; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

3-slot GPRS850/Body - Low - Spacer 10mm - No Accessory - Back Facing Phantom/Area Scan (81x121x1):

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

Maximum value of SAR (interpolated) = 0.661 W/kg

3-slot GPRS850/Body - Low - Spacer 10mm - No Accessory - Back Facing Phantom/Zoom Scan (6x6x7)/Cube 0:

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

Reference Value = 18.914 V/m

Peak SAR (extrapolated) = 0.758 W/kg

SAR(1 g) = 0.616 W/kg

SAR(10 g) = 0.470 W/kg

Power Drift = 0.00 dB

Maximum value of SAR (measured) = 0.647 W/kg

3-slot GPRS850/Body - Low - Spacer 10mm - No Accessory - Back Facing Phantom/Zoom Scan 2 (6x10x7)/Cube 0:

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

Reference Value = 18.914 V/m

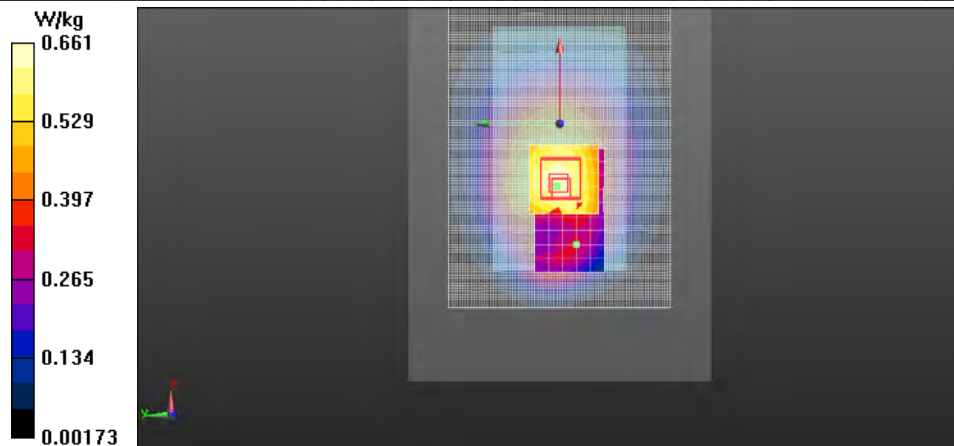
Peak SAR (extrapolated) = 0.549 W/kg

SAR(1 g) = 0.433 W/kg

SAR(10 g) = 0.329 W/kg

Power Drift = 0.00 dB

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



Plot 41:

Date/Time: 2013-06-24 11:40:36 AM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA850

Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: Body 850; Medium Notes: Medium Temperature: $t=22.2$ C

Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.967$ S/m; $\epsilon_r = 54.856$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF[8.97, 8.97, 8.97]; Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

WCDMA850 (Band 5)/Body - Low - Spacer 10mm - No Headset - Back Facing Phantom/Area Scan (81x121x1):

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

Maximum value of SAR (interpolated) = 0.681 W/kg

WCDMA850 (Band 5)/Body - Low - Spacer 10mm - No Headset - Back Facing Phantom/Zoom Scan (6x6x7)/Cube

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

Reference Value = 24.180 V/m

Peak SAR (extrapolated) = 0.811 W/kg

SAR(1 g) = 0.650 W/kg

SAR(10 g) = 0.494 W/kg

Power Drift = -0.03 dB

Maximum value of SAR (measured) = 0.683 W/kg

WCDMA850 (Band 5)/Body - Low - Spacer 10mm - No Headset - Back Facing Phantom/Zoom Scan 2

(7x10x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 24.180 V/m

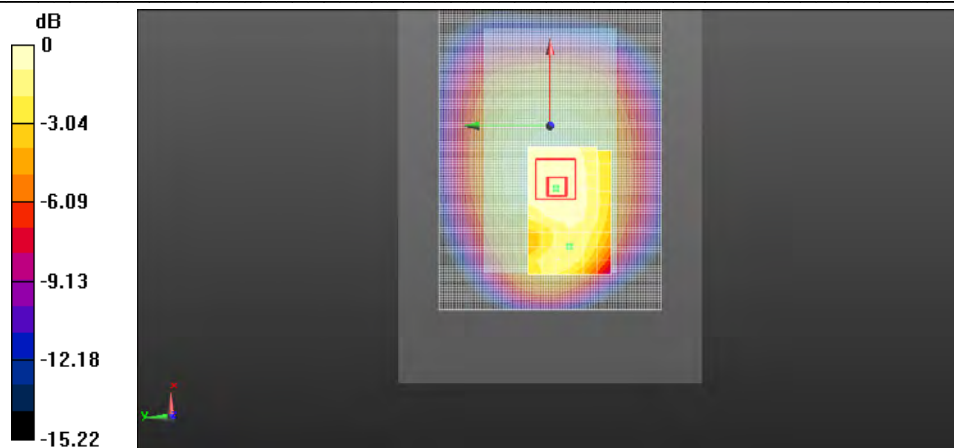
Peak SAR (extrapolated) = 0.818 W/kg

SAR(1 g) = 0.648 W/kg

SAR(10 g) = 0.492 W/kg

Power Drift = -0.03 dB

Maximum value of SAR (measured) = 0.679 W/kg



0 dB = 0.679 W/kg = -1.68 dBW/kg

Plot 42:

Date/Time: 2013-06-24 3:31:18 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277487/0

Communication System: LTE850 (Band 5)

Frequency: 829 MHz; Duty Cycle: 1:1

Medium: Body 850; Medium Notes: Medium Temperature: $t=22.2\text{ C}$

Medium parameters used: $f = 829\text{ MHz}$; $\sigma = 0.969\text{ S/m}$; $\epsilon_r = 54.863$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.97, 8.97, 8.97); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

LTE835 (Band 5)/Body - Low - QPSK - 10MHz - 1RB - 0% offset - Spacer 10mm - No Headset - Back Facing

Phantom/Area Scan (81x121x1): Interpolated grid: $dx=1.500\text{ mm}$, $dy=1.500\text{ mm}$

Maximum value of SAR (interpolated) = 0.658 W/kg

LTE835 (Band 5)/Body - Low - QPSK - 10MHz - 1RB - 0% offset - Spacer 10mm - No Headset - Back Facing

Phantom/Zoom Scan (5x6x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 24.265 V/m

Peak SAR (extrapolated) = 0.781 W/kg

SAR(1 g) = 0.621 W/kg

SAR(10 g) = 0.474 W/kg

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 0.651 W/kg

LTE835 (Band 5)/Body - Low - QPSK - 10MHz - 1RB - 0% offset - Spacer 10mm - No Headset - Back Facing

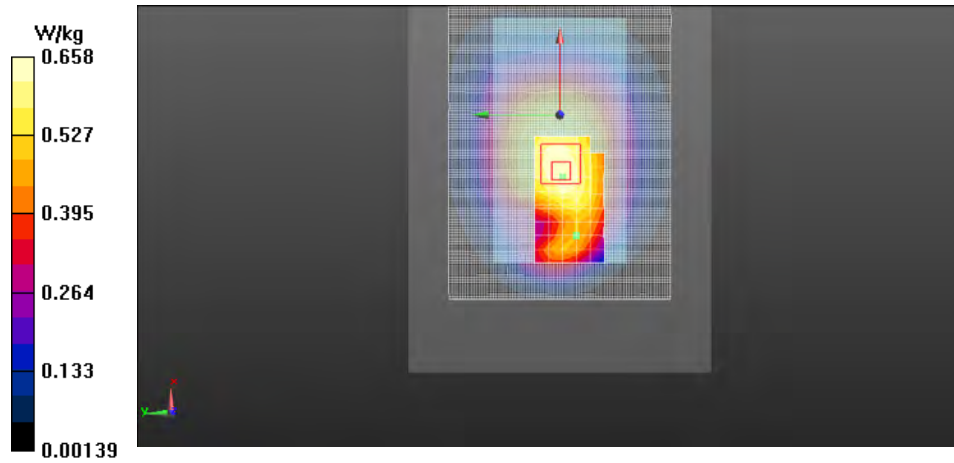
Phantom/Zoom Scan 2 (6x9x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 24.265 V/m

Peak SAR (extrapolated) = 0.787 W/kg

SAR(1 g) = 0.624 W/kg

Power Drift = -0.01 dB



Plot 43:

Date/Time: 2013-06-21 10:29:16 AM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA1700/2100

Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium: Body 1750; Medium Notes: Medium Temperature: t=21.8 C

Medium parameters used: f = 1753 MHz; $\sigma = 1.475$ S/m; $\epsilon_r = 52.699$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.57, 7.57, 7.57); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

WCDMA1700 (Band 4)/Body - High - Spacer 10mm - No Headset - Display Facing Phantom Repeated/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.11 W/kg

WCDMA1700 (Band 4)/Body - High - Spacer 10mm - No Headset - Display Facing Phantom Repeated/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 14.858 V/m

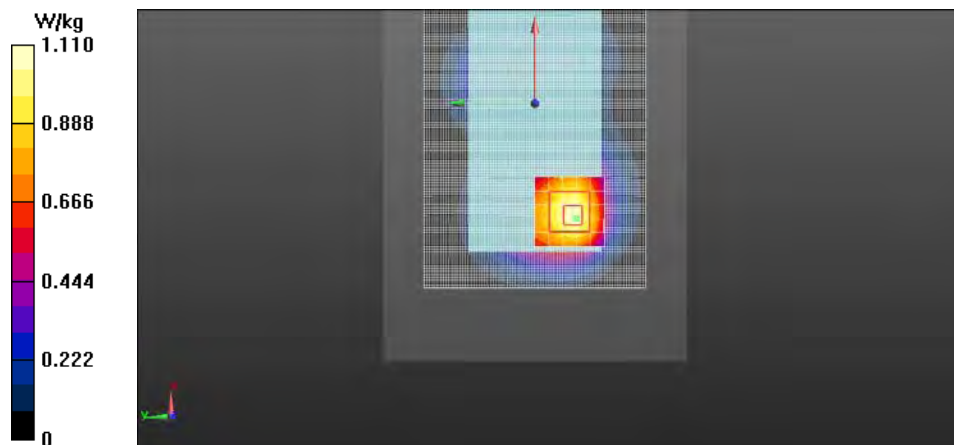
Peak SAR (extrapolated) = 1.58 W/kg

SAR(1 g) = 1.02 W/kg

SAR(10 g) = 0.646 W/kg

Power Drift = 0.23 dB

Maximum value of SAR (measured) = 1.10 W/kg



Plot 44:

Date/Time: 2013-06-19 2:27:40 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277464/9

Communication System: LTE1700/2100 (Band 4)

Frequency: 1745 MHz; Duty Cycle: 1:1

Medium: Body 1750; Medium Notes: Medium Temperature: t= 22.5 C

Medium parameters used: f = 1745 MHz; $\sigma = 1.474$ S/m; $\epsilon_r = 53.299$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.57, 7.57, 7.57); Calibrated: 2013-03-08;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2013-03-08
- Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.6.8 (7028)

LTE1750 (Band 4)/Body - High - QPSK - 20MHz -1RB -0% offset - Spacer 10mm - No Headset - Display Facing
Phantom repeated/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.956 W/kg

LTE1750 (Band 4)/Body - High - QPSK - 20MHz -1RB -0% offset - Spacer 10mm - No Headset - Display Facing
Phantom repeated/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 14.293 V/m

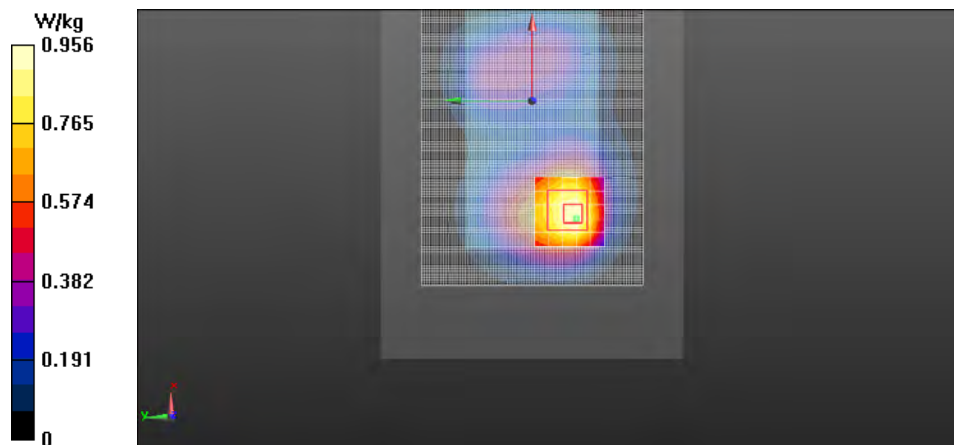
Peak SAR (extrapolated) = 1.44 W/kg

SAR(1 g) = 0.917 W/kg

SAR(10 g) = 0.579 W/kg

Power Drift = 0.41 dB

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



Plot 45:

Date/Time: 2013-06-19 3:42:23 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277425/0

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium: Body 1900; Medium Notes: Medium Temperature: t=21.9 C

Medium parameters used: f = 1880 MHz; σ = 1.517 S/m; ϵ_r = 50.737; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3823
- ConvF(7.28, 7.28, 7.28); Calibrated: 2012-12-12;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn705; Calibrated: 2012-12-04
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.8 (7028)

GSM1900/Body - Middle - Spacer 10mm - No Headset - Display Facing Phantom/Area Scan (81x121x1):

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

Maximum value of SAR (interpolated) = 0.503 W/kg

GSM1900/Body - Middle - Spacer 10mm - No Headset - Display Facing Phantom/Zoom Scan (6x6x7)/Cube 0:

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

Reference Value = 7.298 V/m

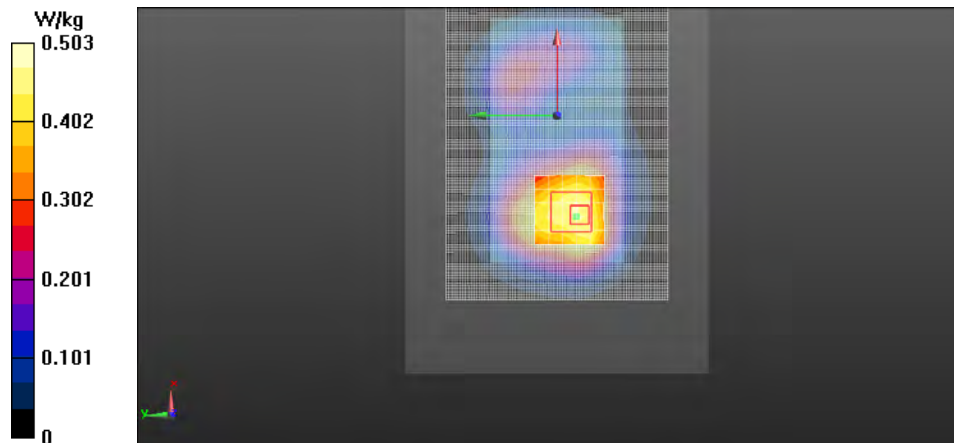
Peak SAR (extrapolated) = 0.697 W/kg

SAR(1 g) = 0.450 W/kg

SAR(10 g) = 0.297 W/kg

Power Drift = -0.10 dB

Maximum value of SAR (measured) = 0.477 W/kg



Plot 46:

Date/Time: 2013-06-19 2:46:12 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: Body 1900; Medium Notes: Medium Temperature: t=21.9 C

Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma = 1.496$ S/m; $\epsilon_r = 50.882$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3823
- ConvF(7.28, 7.28, 7.28); Calibrated: 2012-12-12;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn705; Calibrated: 2012-12-04
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.8 (7028)

WCDMA1900 (Band 2)/Body - Low - Spacer 10mm - No Headset - Display Facing Phantom/Area Scan

(81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.15 W/kg

WCDMA1900 (Band 2)/Body - Low - Spacer 10mm - No Headset - Display Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 10.739 V/m

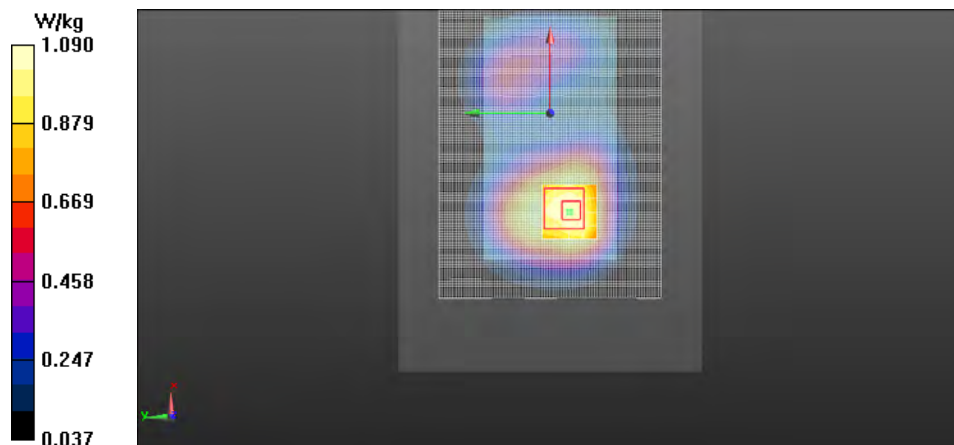
Peak SAR (extrapolated) = 1.56 W/kg

SAR(1 g) = 1.03 W/kg

SAR(10 g) = 0.684 W/kg

Power Drift = -0.04 dB

Maximum value of SAR (measured) = 1.09 W/kg



Plot 47:

Date/Time: 2013-06-08 4:42:26 PM

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277461/5

Communication System: LTE1900 (Band 2)

Frequency: 1860 MHz; Duty Cycle: 1:1

Medium: Body 1900; Medium Notes: Medium Temperature: t=22.1 C

Medium parameters used: f = 1860 MHz; σ = 1.469 S/m; ϵ_r = 50.977; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3823
- ConvF(7.28, 7.28, 7.28); Calibrated: 2012-12-12;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn705; Calibrated: 2012-12-04
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.8 (7028)

LTE1900 (Band 2)/Body - Low - QPSK - 20MHz - 1RB - 50% offset - Spacer 10mm - No Headset - Display Facing Phantom/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.779 W/kg

LTE1900 (Band 2)/Body - Low - QPSK - 20MHz - 1RB - 50% offset - Spacer 10mm - No Headset - Display Facing Phantom/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 11.137 V/m

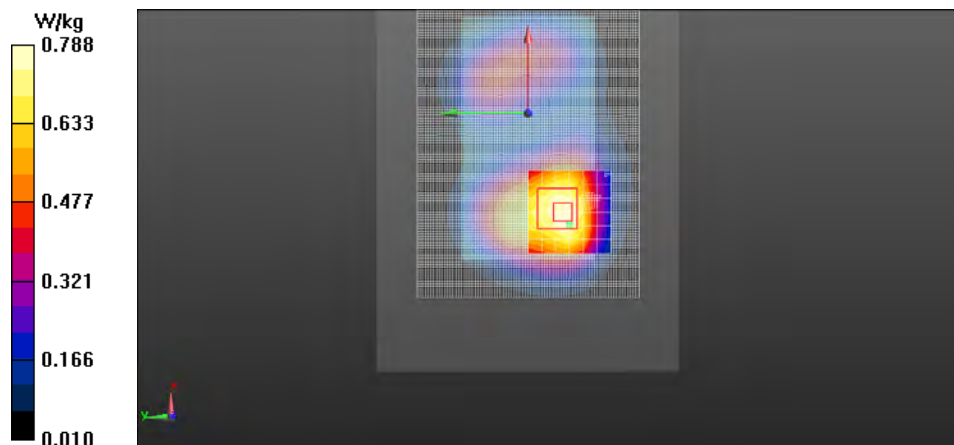
Peak SAR (extrapolated) = 1.12 W/kg

SAR(1 g) = 0.743 W/kg

SAR(10 g) = 0.485 W/kg

Power Drift = -0.00 dB

Maximum value of SAR (measured) = 0.788 W/kg



Plot 48:

Date/Time: 2013-05-17 12:22:01 PM

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

Communication System: WLAN2450 b-mode

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=21.9 C

Medium parameters used: f = 2462 MHz; σ = 1.953 S/m; ϵ_r = 50.567; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3823
- ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn705; Calibrated: 2012-12-04
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.8 (7028)

WLAN2450 b-mode/Body - Channel 11 - DSSS 1 Mbps - Spacer 10mm - No Headset - Top edge Facing

Phantom/Area Scan (61x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.135 W/kg

WLAN2450 b-mode/Body - Channel 11 - DSSS 1 Mbps - Spacer 10mm - No Headset - Top edge Facing

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

Reference Value = 7.597 V/m

Peak SAR (extrapolated) = 0.219 W/kg

SAR(1 g) = 0.119 W/kg

SAR(10 g) = 0.064 W/kg

Power Drift = 0.05 dB

Maximum value of SAR (measured) = 0.133 W/kg



Plot 49:

Date/Time: 2013-05-16 1:41:24 PM

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-941; Serial: 004402/47/299339/7

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

Medium: Body 2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.905$ S/m; $\epsilon_r = 50.347$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-18 1:22:31 PM

DASY Configuration for LTE700 (Band 17)/Body - High - QPSK - 10MHz - 1RB - 0% offset - Spacer 10mm - No Headset - Back Facing Phantom 3/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277517/4

Communication System: LTE700 (Band 17); Frequency: 711 MHz; Duty Cycle: 1:1; PMF: 1

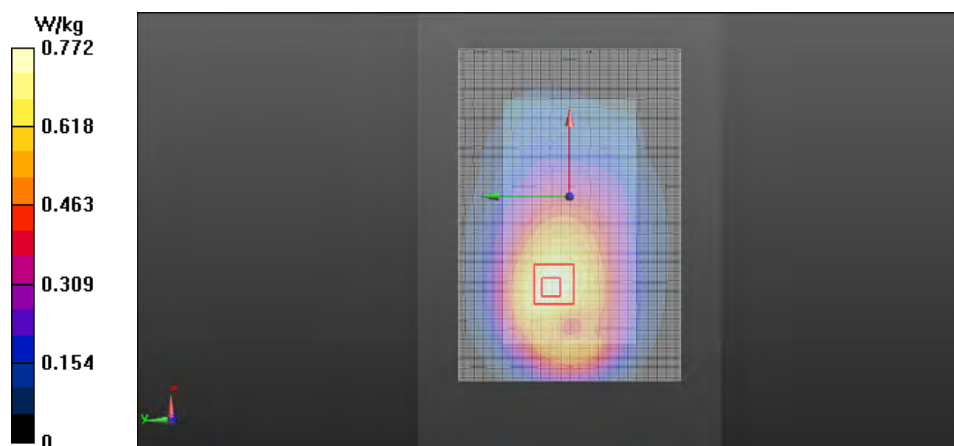
Medium: Body 750 Medium parameters used: $f = 711$ MHz; $\sigma = 0.926$ S/m; $\epsilon_r = 57.656$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3836; ConvF(9.07, 9.07, 9.07); Calibrated: 2013-03-08;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn710; Calibrated: 2013-03-08
Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.725 W/kg; SAR(10 g) = 0.513 W/kg

Maximum value of SAR (interpolated) = 0.772 W/kg



Plot 50:

Date/Time: 2013-05-16 1:41:24 PM

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-941; Serial: 004402/47/299339/7

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

Medium: Body 2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.905$ S/m; $\epsilon_r = 50.347$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-08 3:55:22 PM

DASY Configuration for 3-slot GPRS850/Body - Low - Spacer 10mm - No Accessory - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277425/0

Communication System: 3-slot GPRS850; Frequency: 824.2 MHz; Duty Cycle: 1:2.80027; PMF: 1.6734

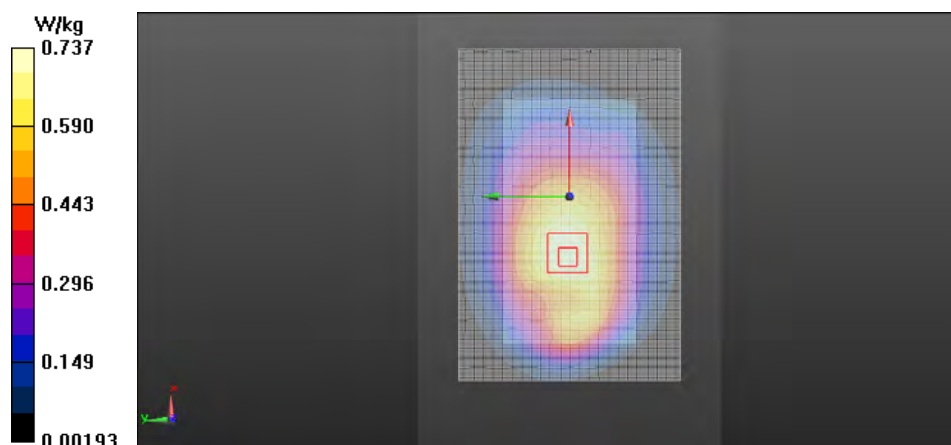
Medium: Body 835 Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 0.961$ S/m; $\epsilon_r = 54.882$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3838; ConvF(9.07, 9.07, 9.07); Calibrated: 2013-03-08;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1324; Calibrated: 2013-03-06
Phantom: TFP3 SAR3; Type: Not Specified; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.695 W/kg; SAR(10 g) = 0.496 W/kg

Maximum value of SAR (interpolated) = 0.737 W/kg



Plot 51:

Date/Time: 2013-05-16 1:41:24 PM

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-941; Serial: 004402/47/299339/7

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

Medium: Body 2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.905$ S/m; $\epsilon_r = 50.347$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn705; Calibrated: 2012-12-04

Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified

Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-24 11:40:36 AM

DASY Configuration for WCDMA850 (Band 5)/Body - Low - Spacer 10mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA850; Frequency: 826.4 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 850 Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.967$ S/m; $\epsilon_r = 54.856$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3836; ConvF(8.97, 8.97, 8.97); Calibrated: 2013-03-08;

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

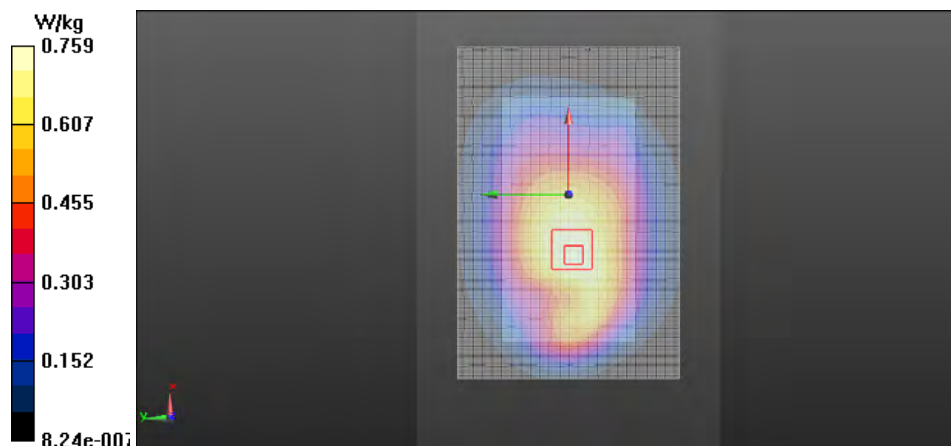
Electronics: DAE4 Sn710; Calibrated: 2013-03-08

Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified

Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.717 W/kg; SAR(10 g) = 0.512 W/kg

Maximum value of SAR (interpolated) = 0.759 W/kg



Plot 52:

Date/Time: 2013-05-16 1:41:24 PM

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-941; Serial: 004402/47/299339/7

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

Medium: Body 2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.905$ S/m; $\epsilon_r = 50.347$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-24 3:31:18 PM

DASY Configuration for LTE835 (Band 5)/Body - Low - QPSK - 10MHz - 1RB - 0% offset - Spacer 10mm - No Headset - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277487/0

Communication System: LTE850 (Band 5); Frequency: 829 MHz; Duty Cycle: 1:1; PMF: 1

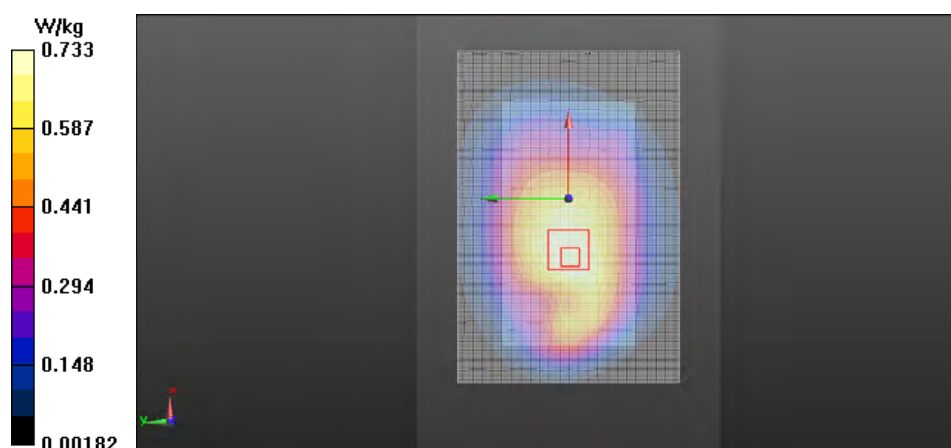
Medium: Body 850 Medium parameters used: $f = 829$ MHz; $\sigma = 0.969$ S/m; $\epsilon_r = 54.863$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3836; ConvF(8.97, 8.97, 8.97); Calibrated: 2013-03-08;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn710; Calibrated: 2013-03-08
Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.693 W/kg; SAR(10 g) = 0.498 W/kg

Maximum value of SAR (interpolated) = 0.733 W/kg



Plot 53:

Date/Time: 2013-05-16 4:00:27 PM

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

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

Medium: Body 2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.905$ S/m; $\epsilon_r = 50.347$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-21 10:29:16 AM

DASY Configuration for WCDMA1700 (Band 4)/Body - High - Spacer 10mm - No Headset - Display Facing Phantom Repeated/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA1700/2100; Frequency: 1752.6 MHz; Duty Cycle: 1:1; PMF: 1

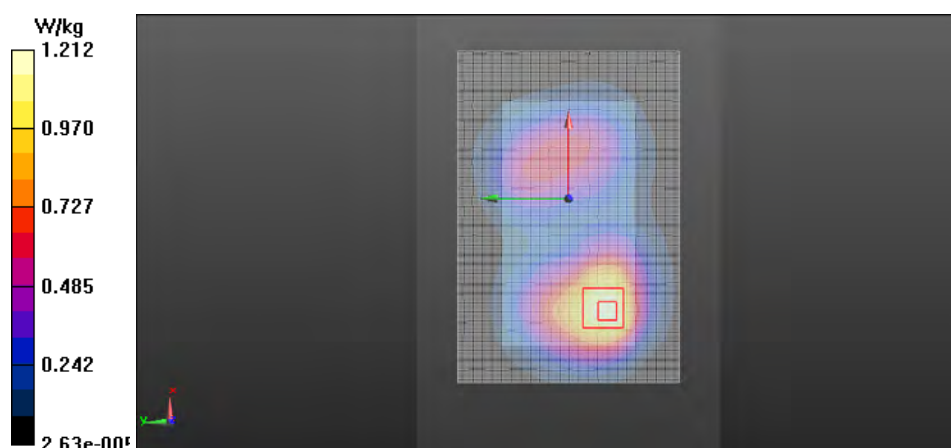
Medium: Body 1750 Medium parameters used: $f = 1753$ MHz; $\sigma = 1.475$ S/m; $\epsilon_r = 52.699$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3836; ConvF(7.57, 7.57, 7.57); Calibrated: 2013-03-08;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn710; Calibrated: 2013-03-08
Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.691 W/kg

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



Plot 54:

Date/Time: 2013-05-16 4:00:27 PM

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

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

Medium: Body 2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.905$ S/m; $\epsilon_r = 50.347$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-19 2:27:40 PM

DASY Configuration for LTE1750 (Band 4)/Body - High - QPSK - 20MHz -1RB -0% offset - Spacer 10mm - No Headset - Display Facing Phantom repeated/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277464/9

Communication System: LTE1700/2100 (Band 4); Frequency: 1745 MHz; Duty Cycle: 1:1; PMF: 1

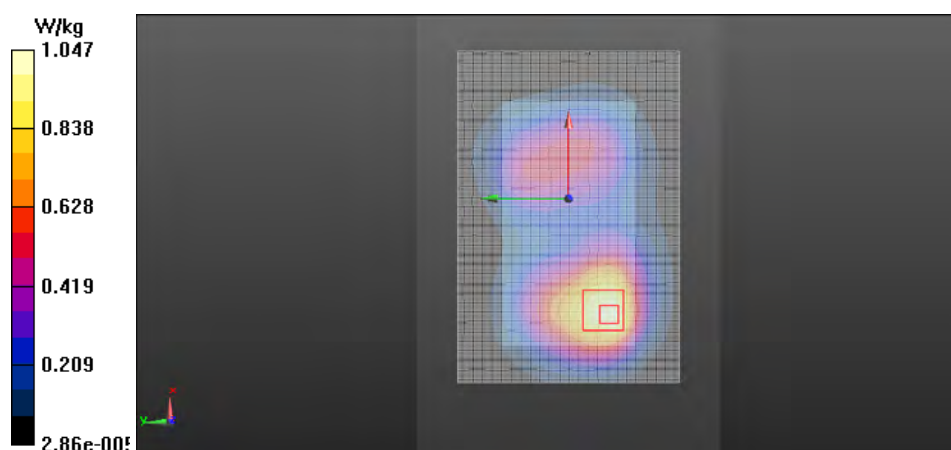
Medium: Body 1750 Medium parameters used: $f = 1745$ MHz; $\sigma = 1.474$ S/m; $\epsilon_r = 53.299$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3836; ConvF(7.57, 7.57, 7.57); Calibrated: 2013-03-08;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn710; Calibrated: 2013-03-08
Phantom: TFP3; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (5)

Fast SAR of Combined Scans: SAR(1 g) = 0.959 W/kg; SAR(10 g) = 0.594 W/kg

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



Plot 55:

Date/Time: 2013-05-16 4:00:27 PM

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

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

Medium: Body 2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.905$ S/m; $\epsilon_r = 50.347$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASYS2, Version 52.8 (1)

Date/Time: 2013-06-19 3:42:23 PM

DASY Configuration for GSM1900/Body - Middle - Spacer 10mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277425/0

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:8.30042; PMF: 2.88104

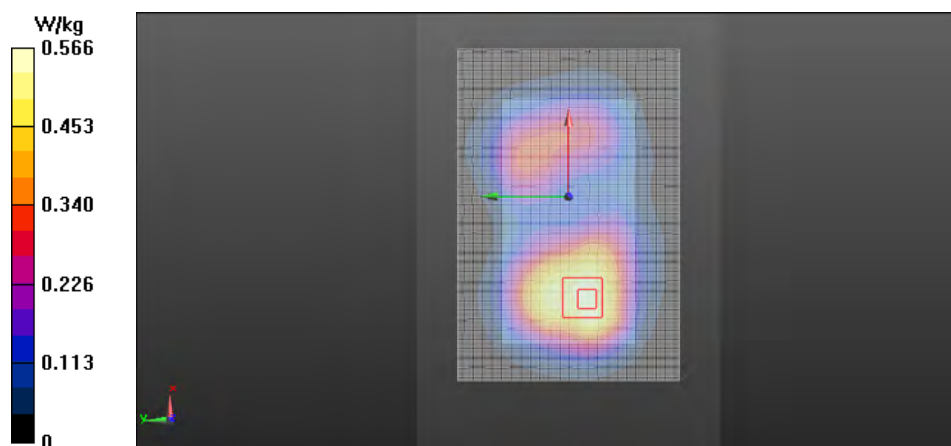
Medium: Body 1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.517$ S/m; $\epsilon_r = 50.737$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(7.28, 7.28, 7.28); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASYS2, Version 52.8 (1)

Fast SAR of Combined Scans: SAR(1 g) = 0.522 W/kg; SAR(10 g) = 0.325 W/kg

Maximum value of SAR (interpolated) = 0.566 W/kg



Plot 56:

Date/Time: 2013-05-16 4:00:27 PM

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

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

Medium: Body 2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.905$ S/m; $\epsilon_r = 50.347$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-19 2:46:12 PM

DASY Configuration for WCDMA1900 (Band 2)/Body - Low - Spacer 10mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277477/1

Communication System: WCDMA1900; Frequency: 1852.4 MHz; Duty Cycle: 1:1; PMF: 1

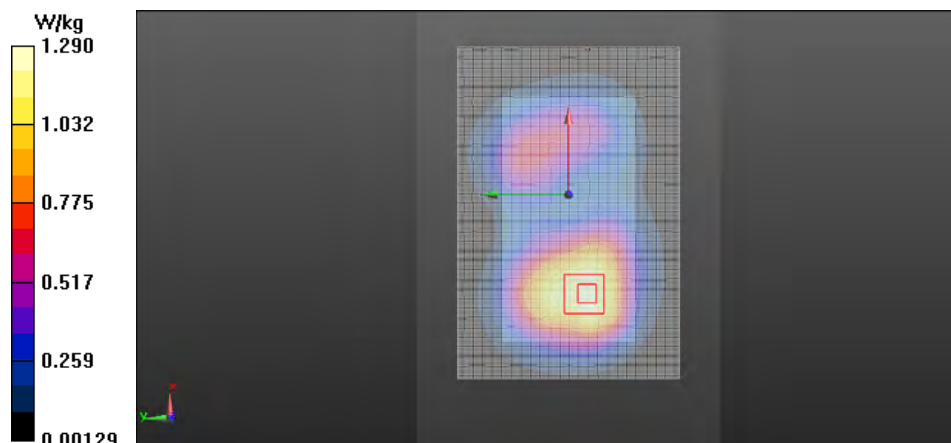
Medium: Body 1900 Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.496$ S/m; $\epsilon_r = 50.882$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(7.28, 7.28, 7.28); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Fast SAR of Combined Scans: SAR(1 g) = 1.18 W/kg; SAR(10 g) = 0.735 W/kg

Maximum value of SAR (interpolated) = 1.29 W/kg



Plot 57:

Date/Time: 2013-05-16 4:00:27 PM

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-941; Serial: 004402/47/299339/7

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

Medium: Body 2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.905$ S/m; $\epsilon_r = 50.347$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(6.9, 6.9, 6.9); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2013-06-08 4:42:26 PM

DASY Configuration for LTE1900 (Band 2)/Body - Low - QPSK - 20MHz - 1RB - 50% offset - Spacer 10mm - No Headset - Display Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-942; Serial: 004402/47/277461/5

Communication System: LTE1900 (Band 2); Frequency: 1860 MHz; Duty Cycle: 1:1; PMF: 1

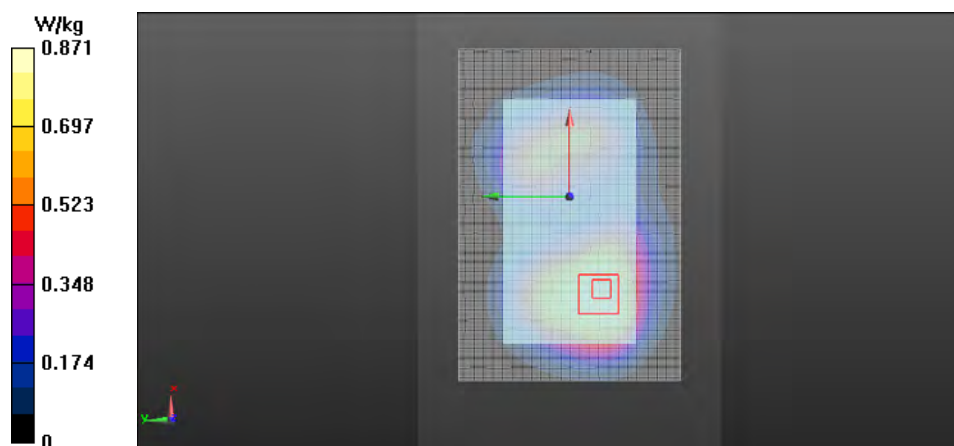
Medium: Body 1900 Medium parameters used: $f = 1860$ MHz; $\sigma = 1.469$ S/m; $\epsilon_r = 50.977$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3823; ConvF(7.28, 7.28, 7.28); Calibrated: 2012-12-12;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn705; Calibrated: 2012-12-04
Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: Not Specified
Measurement SW: DASY52, Version 52.8 (1)

Fast SAR of Combined Scans: SAR(1 g) = 0.814 W/kg; SAR(10 g) = 0.518 W/kg

Maximum value of SAR (interpolated) = 0.871 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	2013-06-13	43.3	0.85	43.3	0.85	43.3	0.85
	2013-06-14	42.9	0.86	42.9	0.86	42.9	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	2013-06-03	42.7	0.88	42.6	0.89	42.5	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	2013-06-03	42.6	0.89	42.6	0.89	42.5	0.90
	2013-06-04	41.6	0.87	41.5	0.88	41.5	0.88
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	2013-06-05	40.3	0.90	40.2	0.91	40.1	0.92
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	2013-06-13	38.7	1.31	38.6	1.32	38.6	1.33
	2013-06-14	38.3	1.31	38.3	1.32	38.3	1.33

(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	2013-06-13	38.7	1.30	38.6	1.32	38.6	1.34
	2013-06-25	38.4	1.29	38.4	1.31	38.3	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	2013-06-17	39.7	1.31	39.6	1.34	39.4	1.37
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	2013-06-04	40.0	1.32	39.8	1.34	39.7	1.36
	2013-06-25	39.8	1.33	39.7	1.35	39.6	1.38
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	2013-06-04	40.0	1.33	39.8	1.34	39.7	1.35
	2013-06-05	40.3	1.33	40.2	1.34	40.1	1.36
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	2013-05-14	39.4	1.78	39.3	1.81	39.2	1.83
	2013-05-15	39.7	1.76	39.5	1.80	39.4	1.83

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	2013-06-17	57.7	0.93	57.6	0.94	57.6	0.94
	2013-06-18	57.7	0.92	57.7	0.92	57.7	0.93
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	2013-06-05	55.2	0.97	55.1	0.98	55.0	0.99
	2013-06-06	55.4	0.96	55.3	0.97	55.2	0.99
	2013-06-24	54.8	0.97	54.8	0.97	54.6	0.98
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	2013-06-05	55.2	0.98	55.1	0.98	55.0	0.99
	2013-06-06	55.4	0.97	55.3	0.97	55.2	0.98
	2013-06-24	54.9	0.97	54.8	0.97	54.7	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	2013-06-08	54.9	0.96	54.8	0.97	54.7	0.98
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	2013-06-08	53.7	1.44	53.7	1.45	53.6	1.47
	2013-06-09	53.2	1.45	53.2	1.46	53.2	1.47
	2013-06-19	53.4	1.45	53.3	1.46	53.3	1.47

(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	2013-06-08	53.7	1.44	53.7	1.45	53.6	1.47
	2013-06-09	53.3	1.44	53.2	1.46	53.1	1.47
	2013-06-20	54.0	1.49	53.9	1.50	53.8	1.52
	2013-06-21	52.9	1.45	52.8	1.46	52.7	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	2013-06-18	50.9	1.47	50.8	1.50	50.6	1.52
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	2013-06-19	50.9	1.50	50.7	1.52	50.7	1.54
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	2013-06-06	51.2	1.46	51.1	1.48	51.0	1.50
	2013-06-08	51.0	1.47	50.9	1.49	50.9	1.51
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	2013-05-16	50.3	1.85	50.4	1.92	50.3	1.96

APPENDIX D: CONDUCTED AVERAGE POWER MEASUREMENTS FOR WCDMA AND HSUPA

Type: RM-942; Serial: 004402/47/277477/1, HW: 2000, SW: 3037.0000.1318.0000

D.1. WCDMA850 Test results

Average power

Ch / f (MHz)	P [dBm]
4132	24.22
4175	24.24
4233	23.27

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	23.66	22.21	22.04	22.14	23.67
4175	23.75	22.19	21.99	22.22	23.71
4233	23.86	22.28	21.93	22.08	23.82

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: MPR. 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
1.5dB	2.0dB	1.0dB	2.0dB	0.0dB

Type: RM-942; Serial: 004402/47/277477/1, HW: 2000, SW: 3037.0000.1318.0000

D.3. WCDMA1700/2100 Test results

Average power

Ch / f (MHz)	P [dBm]
1312	23.85
1412	24.00
1513	23.88

D.4. 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	23.45	21.93	22.24	22.35	23.35
1412	23.49	22.02	22.19	22.47	23.45
1513	23.38	21.99	22.01	22.46	23.39

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: MPR. 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
1.5dB	2.0dB	1.0dB	2.0dB	0.0dB

Type: RM-942; Serial: 004402/47/277477/1, HW: 2000, SW: 3037.0000.1318.0000

D.5. WCDMA1900 Test results

Average power

Ch / f (MHz)	P [dBm]
9262	24.13
9400	24.04
9538	23.96

D.6. 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	23.43	21.99	22.15	21.83	23.41
9400	23.51	21.96	22.12	21.93	23.51
9538	23.47	22.01	22.09	21.86	23.47

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs two separate HSUPA power control routines: MPR, and additional 1dB reduction to ensure PA linearity. 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
1.5dB	2.0dB	1.0dB	2.0dB	0.0dB

APPENDIX E: RELEVANT PAGES FROM PROBE CALIBRATION REPORT(S)



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 Beijing TCC**

Certificate No: **EX3-3836_Mar13**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3836**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-23.v4, QA CAL-25.v4**
Calibration procedure for dosimetric E-field probes

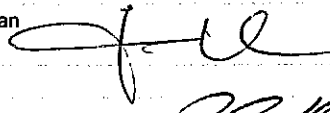
Calibration date: **March 8, 2013**

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	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-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:	Katja Pokovic	Technical Manager	
			Issued: March 8, 2013
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3836

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.40	0.47	0.45	$\pm 10.1 \%$
DCP (mV) ^B	89.8	101.7	96.3	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB $\sqrt{\mu\text{V}}$	C	D dB	VR mV	Unc ^E (k=2)
0	CW	X	0.0	0.0	1.0	0.00	143.5	$\pm 3.0 \%$
		Y	0.0	0.0	1.0		155.5	
		Z	0.0	0.0	1.0		149.3	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3836

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	9.44	9.44	9.44	0.80	0.60	± 12.0 %
835	41.5	0.90	9.03	9.03	9.03	0.79	0.60	± 12.0 %
1750	40.1	1.37	8.11	8.11	8.11	0.31	0.98	± 12.0 %
1900	40.0	1.40	7.79	7.79	7.79	0.35	0.92	± 12.0 %
2600	39.0	1.96	6.82	6.82	6.82	0.42	0.86	± 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: EX3DV4 - SN:3836

Calibration Parameter Determined in Body Tissue Simulating Media

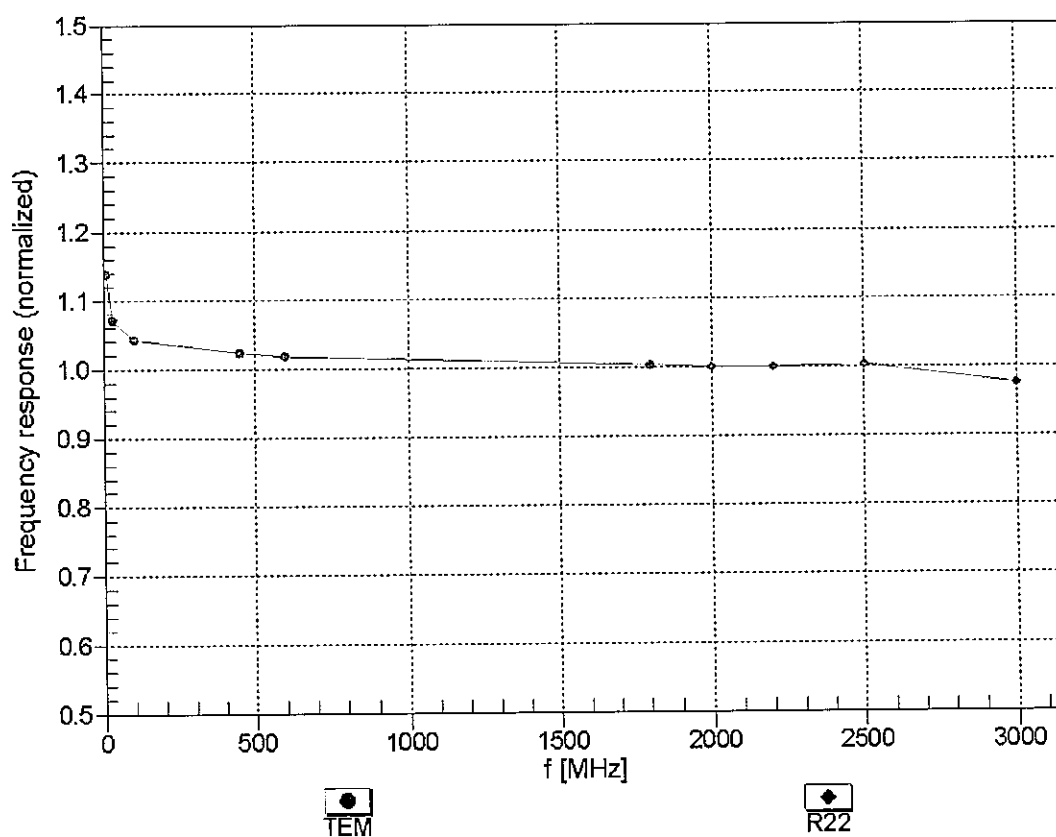
f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	55.5	0.96	9.07	9.07	9.07	0.80	0.61	± 12.0 %
835	55.2	0.97	8.97	8.97	8.97	0.70	0.67	± 12.0 %
1750	53.4	1.49	7.57	7.57	7.57	0.67	0.67	± 12.0 %
1900	53.3	1.52	7.18	7.18	7.18	0.80	0.61	± 12.0 %
2600	52.5	2.16	6.70	6.70	6.70	0.64	0.50	± 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.

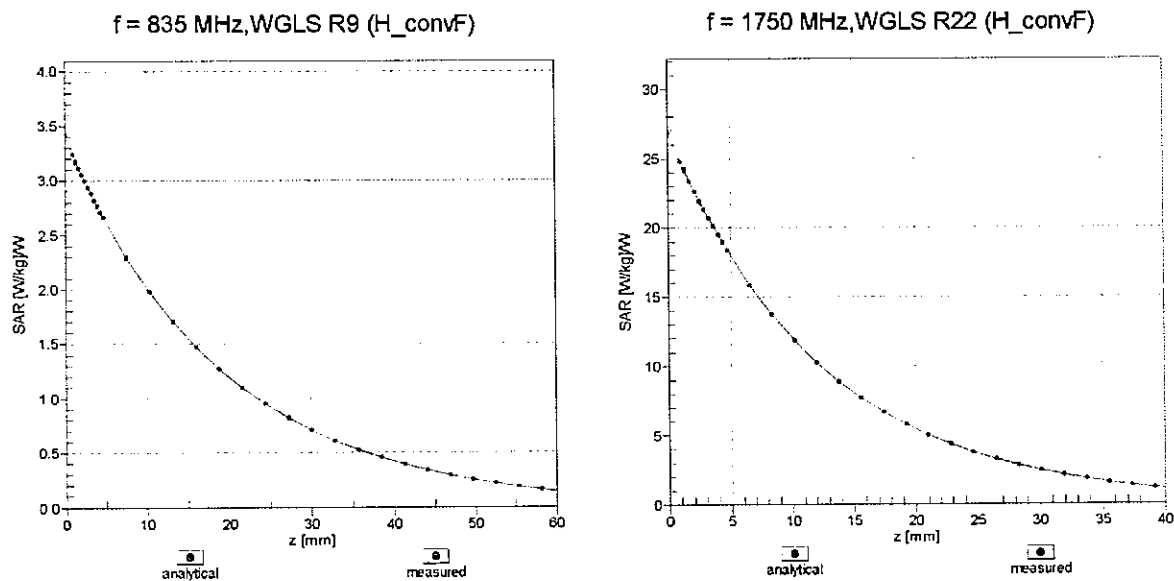
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



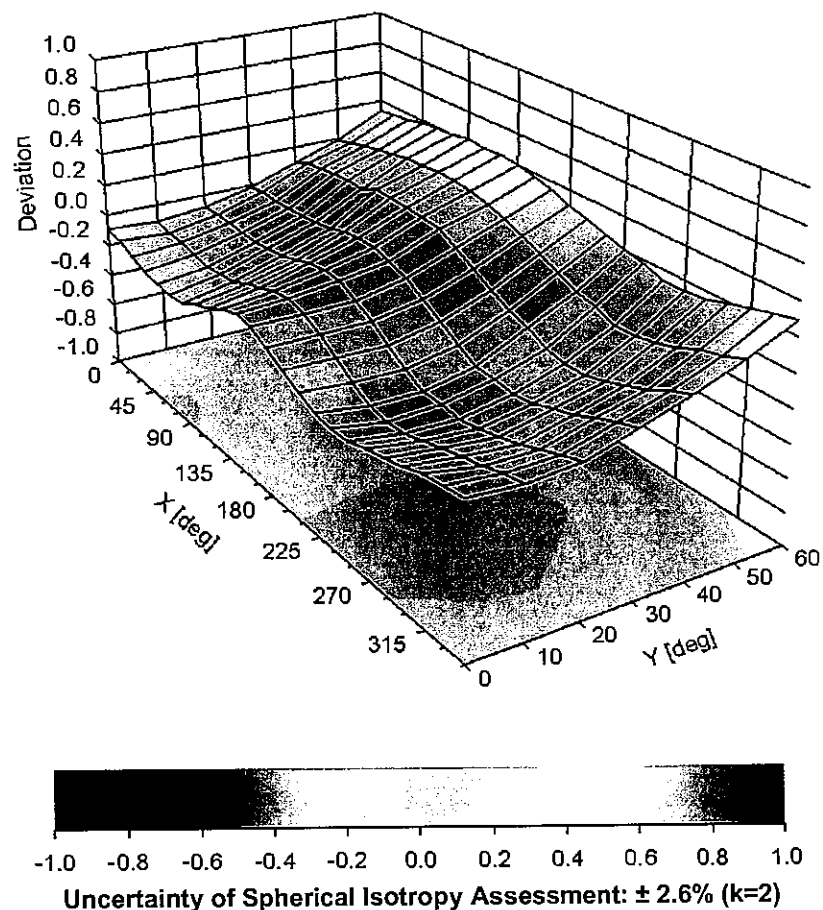
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, θ), $f = 900 \text{ MHz}$





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 Beijing TCC**

Certificate No: **EX3-3823_Dec12**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3823**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-23.v4, QA CAL-25.v4**
Calibration procedure for dosimetric E-field probes

Calibration date: **December 12, 2012**

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	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
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:	Name Katja Pckovic	Function Technical Manager	Signature

Issued: December 12, 2012

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3823

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.41	0.36	0.47	$\pm 10.1 \%$
DCP (mV) ^B	100.6	102.8	99.2	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc ^E (k=2)
0	CW	0.00	X	0.0	0.0	1.0	134.4	$\pm 3.5 \%$
			Y	0.0	0.0	1.0	138.9	
			Z	0.0	0.0	1.0	114.7	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E^2 -field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3823

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)
835	41.5	0.90	9.17	9.17	9.17	0.50	0.71	± 12.0 %
1750	40.1	1.37	7.86	7.86	7.86	0.52	0.71	± 12.0 %
1900	40.0	1.40	7.62	7.62	7.62	0.34	0.89	± 12.0 %
1950	40.0	1.40	7.33	7.33	7.33	0.39	0.80	± 12.0 %
2450	39.2	1.80	6.91	6.91	6.91	0.32	0.94	± 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: EX3DV4 - SN:3823

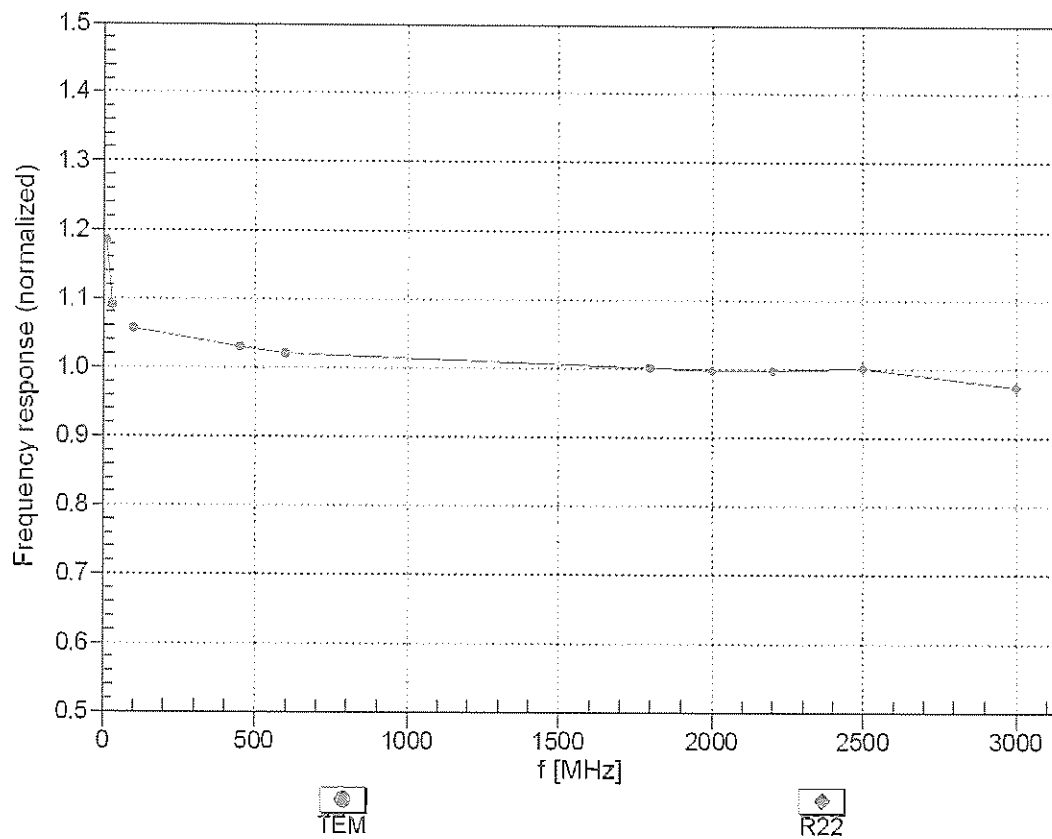
Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	9.09	9.09	9.09	0.38	0.82	± 12.0 %
1750	53.4	1.49	7.50	7.50	7.50	0.32	0.92	± 12.0 %
1900	53.3	1.52	7.28	7.28	7.28	0.41	0.78	± 12.0 %
1950	53.3	1.52	7.48	7.48	7.48	0.43	0.78	± 12.0 %
2450	52.7	1.95	6.90	6.90	6.90	0.80	0.50	± 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.

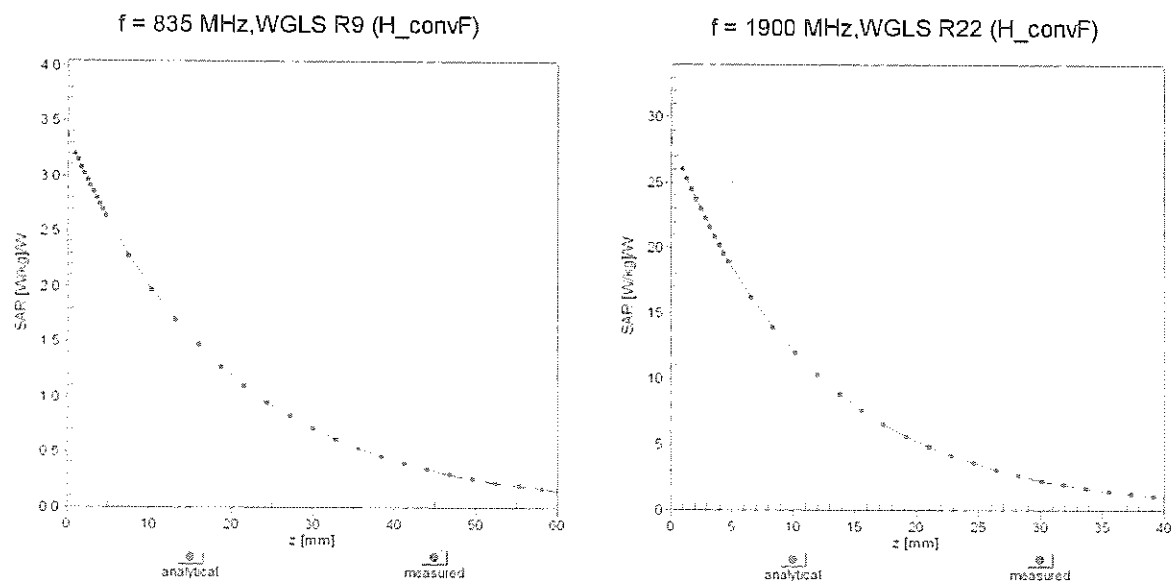
^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)



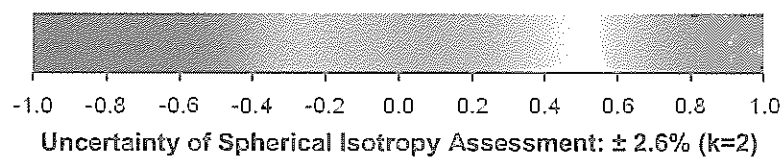
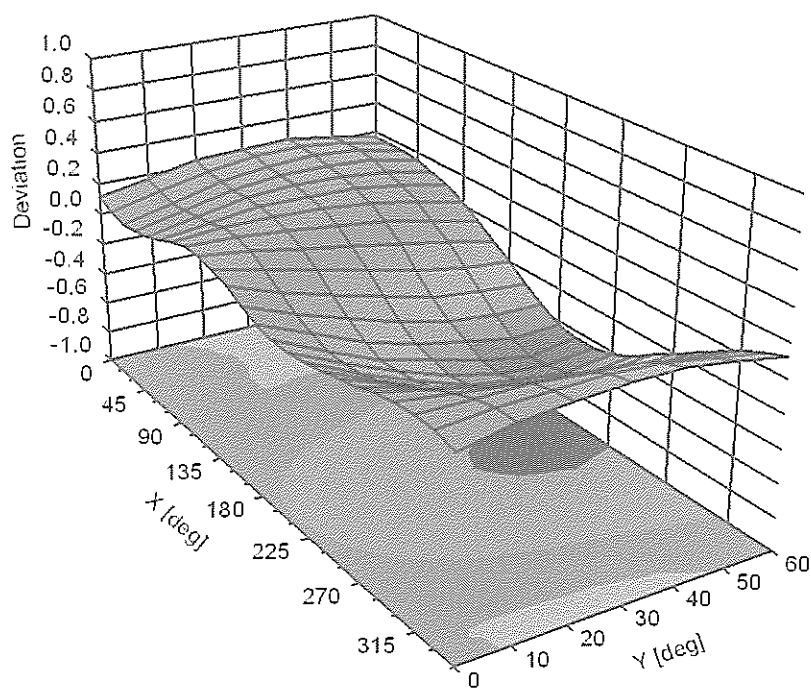
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, θ), $f = 900 \text{ MHz}$





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 Beijing TCC**

Certificate No: **EX3-3838_Mar13**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3838**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-23.v4, QA CAL-25.v4**
Calibration procedure for dosimetric E-field probes

Calibration date: **March 8, 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	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-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	
			Issued: March 11, 2013
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3838

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.37	0.60	0.53	± 10.1 %
DCP (mV) ^B	105.0	99.6	100.1	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB $\sqrt{\mu\text{V}}$	C	D dB	VR mV	Unc ^E (k=2)
0	CW	X	0.0	0.0	1.0	0.00	147.3	±3.5 %
		Y	0.0	0.0	1.0		139.3	
		Z	0.0	0.0	1.0		128.2	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3838

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)
835	41.5	0.90	9.04	9.04	9.04	0.20	1.34	± 12.0 %
1750	40.1	1.37	7.65	7.65	7.65	0.56	0.79	± 12.0 %
1900	40.0	1.40	7.46	7.46	7.46	0.80	0.65	± 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: EX3DV4 - SN:3838

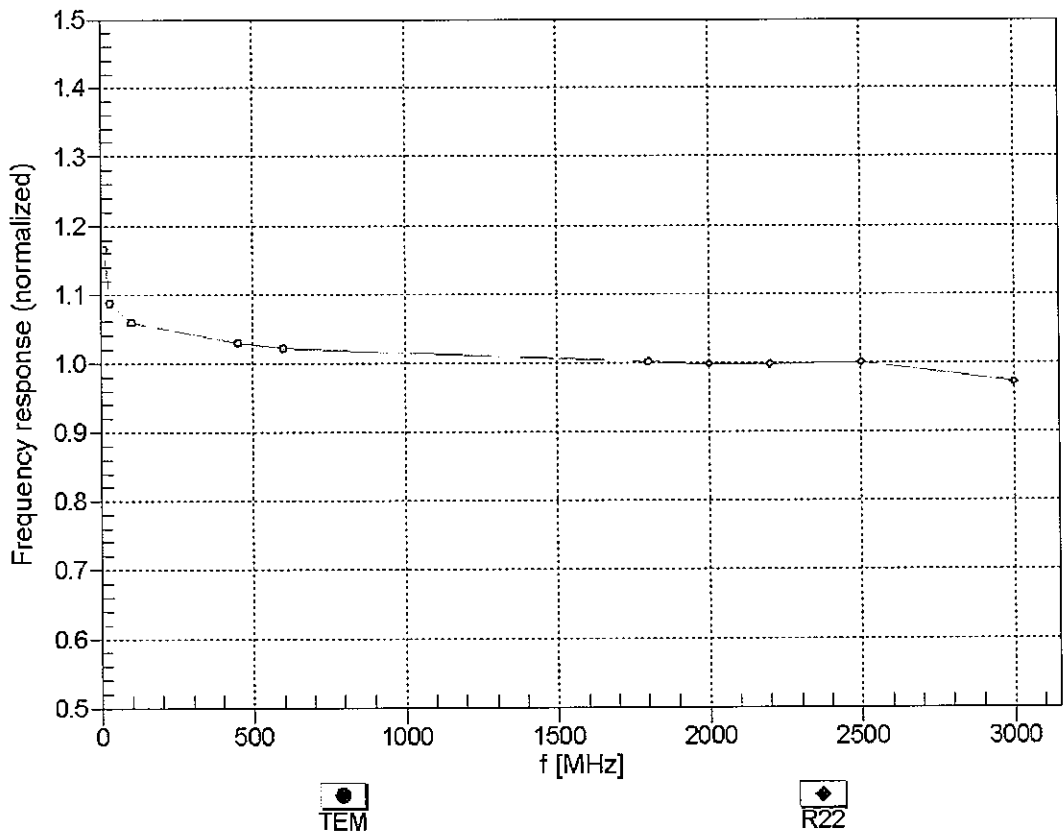
Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	9.07	9.07	9.07	0.27	1.22	± 12.0 %
1750	53.4	1.49	7.54	7.54	7.54	0.35	0.98	± 12.0 %
1900	53.3	1.52	7.21	7.21	7.21	0.30	1.04	± 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.

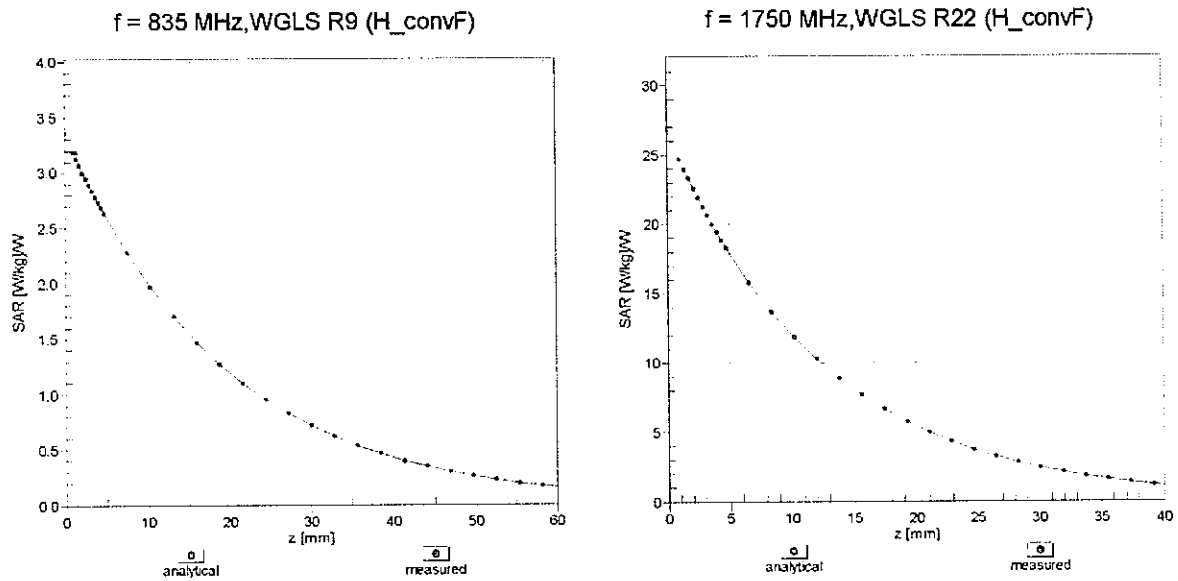
^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



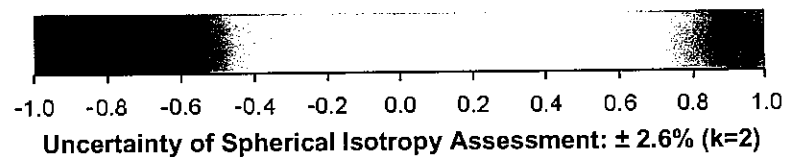
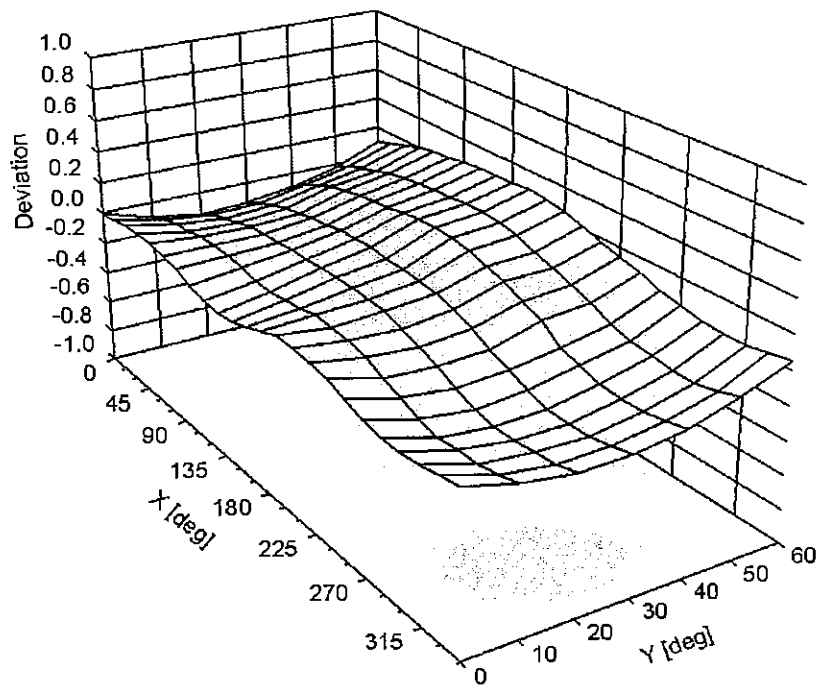
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ , θ), $f = 900 \text{ MHz}$





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 Beijing TCC**

Certificate No: **ES3-3280_Mar13**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3280**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-23.v4, QA CAL-25.v4**
Calibration procedure for dosimetric E-field probes

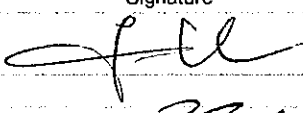
Calibration date: **March 8, 2013**

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	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-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:	Katja Pokovic	Technical Manager	
Issued: March 8, 2013			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3280

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	1.27	1.31	1.34	± 10.1 %
DCP (mV) ^B	101.4	104.7	101.9	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB $\sqrt{\mu\text{V}}$	C	D dB	VR mV	Unc ^E (k=2)
0	CW	X	0.0	0.0	1.0	0.00	167.3	±3.5 %
		Y	0.0	0.0	1.0		165.2	
		Z	0.0	0.0	1.0		161.1	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3280

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)
835	41.5	0.90	6.27	6.27	6.27	0.36	1.72	± 12.0 %
1750	40.1	1.37	5.35	5.35	5.35	0.49	1.50	± 12.0 %
1900	40.0	1.40	5.15	5.15	5.15	0.75	1.23	± 12.0 %
1950	40.0	1.40	4.97	4.97	4.97	0.80	1.17	± 12.0 %
2450	39.2	1.80	4.57	4.57	4.57	0.80	1.28	± 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:3280

Calibration Parameter Determined in Body Tissue Simulating Media

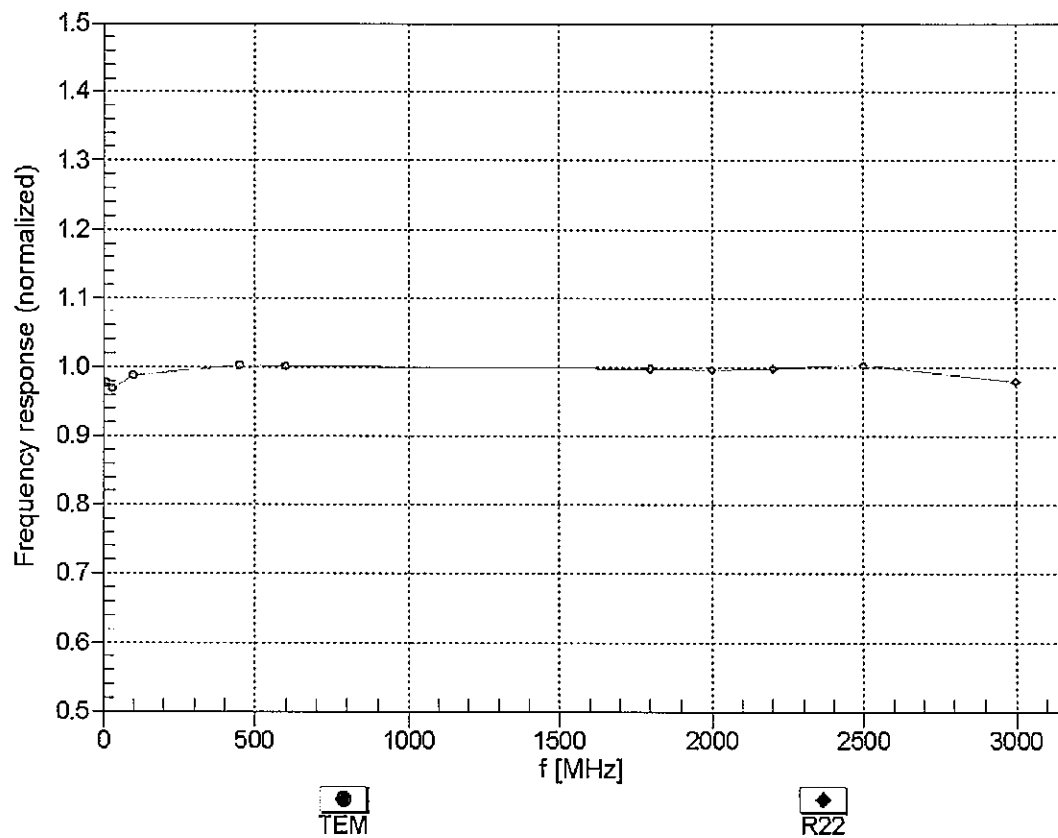
f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	6.08	6.08	6.08	0.28	2.07	± 12.0 %
1750	53.4	1.49	4.86	4.86	4.86	0.52	1.59	± 12.0 %
1900	53.3	1.52	4.64	4.64	4.64	0.57	1.50	± 12.0 %
1950	53.3	1.52	4.75	4.75	4.75	0.51	1.63	± 12.0 %
2450	52.7	1.95	4.28	4.28	4.28	0.68	1.13	± 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.

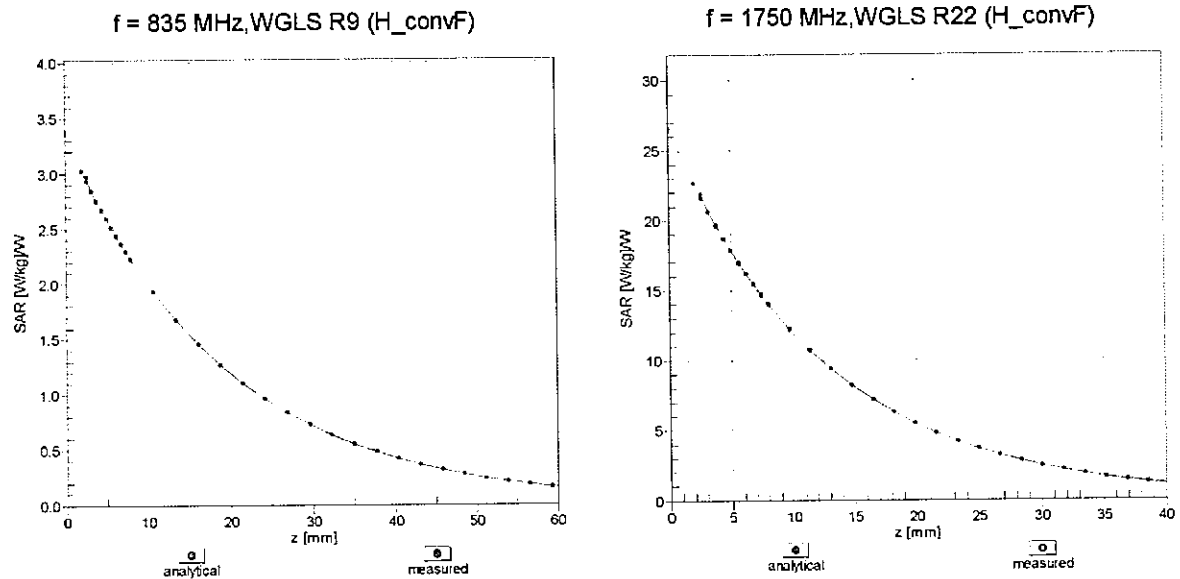
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



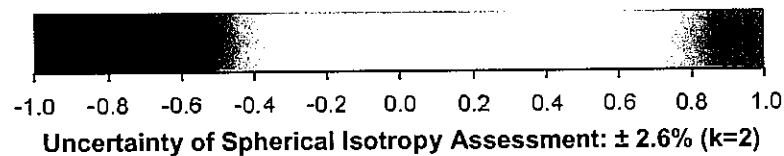
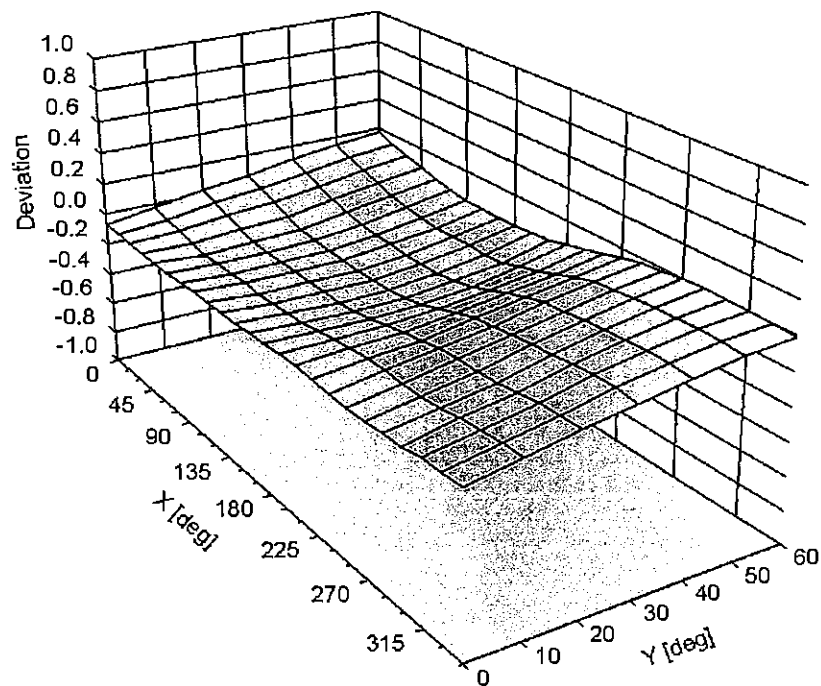
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), $f = 900 \text{ MHz}$



APPENDIX F: RELEVANT PAGES FROM DIPOLE VALIDATION KIT REPORT(S)



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 China (Auden)**

Certificate No: **D750V3-1048_Nov11**

CALIBRATION CERTIFICATE

Object **D750V3 - SN: 1048**

Calibration procedure(s) **QA CAL-05.v8**
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: **November 25, 2011**

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 EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5086 (20g)	29-Mar-11 (No. 217-01368)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	29-Apr-11 (No. ES3-3205_Apr11)	Apr-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

Calibrated by: **Jeton Kastrati** **Laboratory Technician**

Signature

Approved by: **Katja Pokovic** **Technical Manager**

Signature

Issued: November 25, 2011

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.3 Ω - 0.5 j Ω
Return Loss	- 29.9 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.7 Ω - 3.2 j Ω
Return Loss	- 29.2 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.035 ns
----------------------------------	----------

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

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	October 03, 2011

DASY5 Validation Report for Head TSL

Date: 25.11.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1048

Communication System: CW; Frequency: 750 MHz

Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.92 \text{ mho/m}$; $\epsilon_r = 42.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.33, 6.33, 6.33); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Head Tissue/Pin=250mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

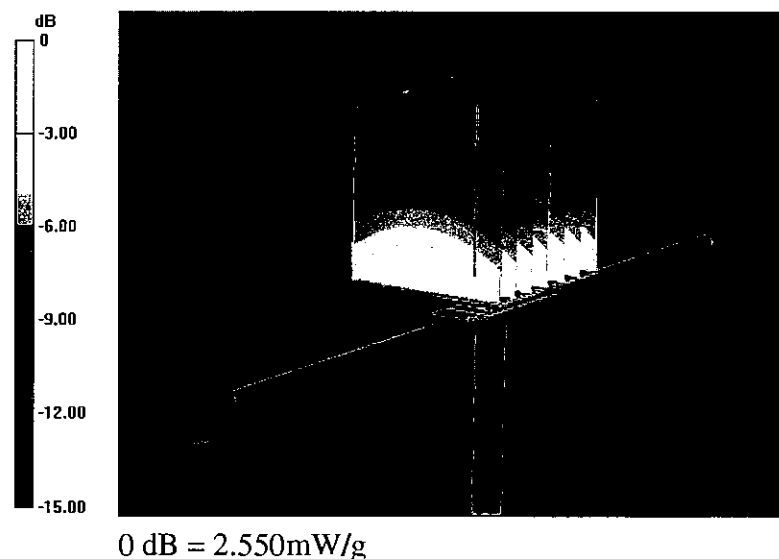
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 53.716 V/m; Power Drift = -0.03 dB

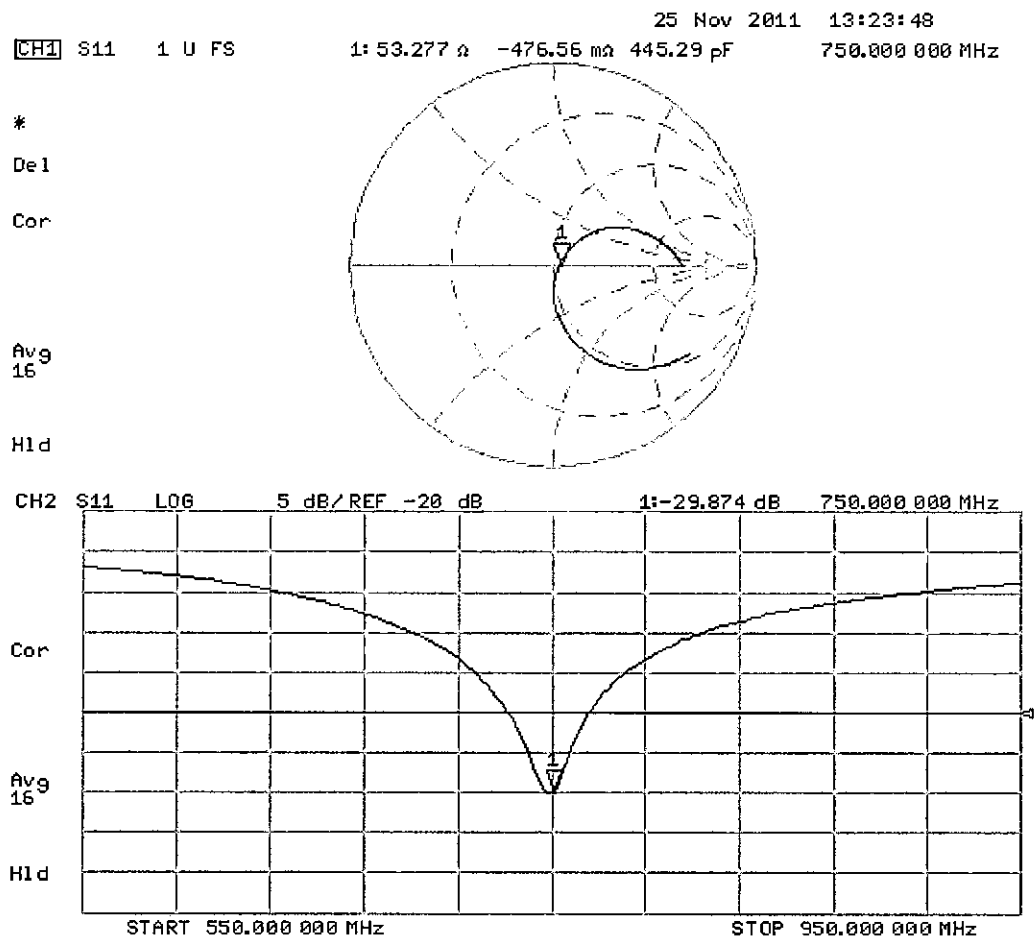
Peak SAR (extrapolated) = 3.296 W/kg

SAR(1 g) = 2.17 mW/g; SAR(10 g) = 1.42 mW/g

Maximum value of SAR (measured) = 2.547 mW/g



Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 25.11.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1048

Communication System: CW; Frequency: 750 MHz

Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.96 \text{ mho/m}$; $\epsilon_r = 55.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.12, 6.12, 6.12); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Body Tissue/Pin=250mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

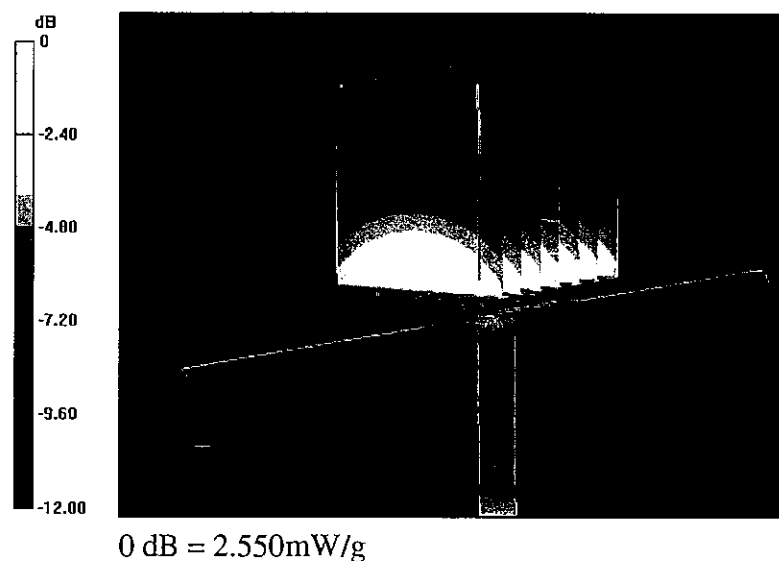
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 53.003 V/m; Power Drift = 0.01 dB

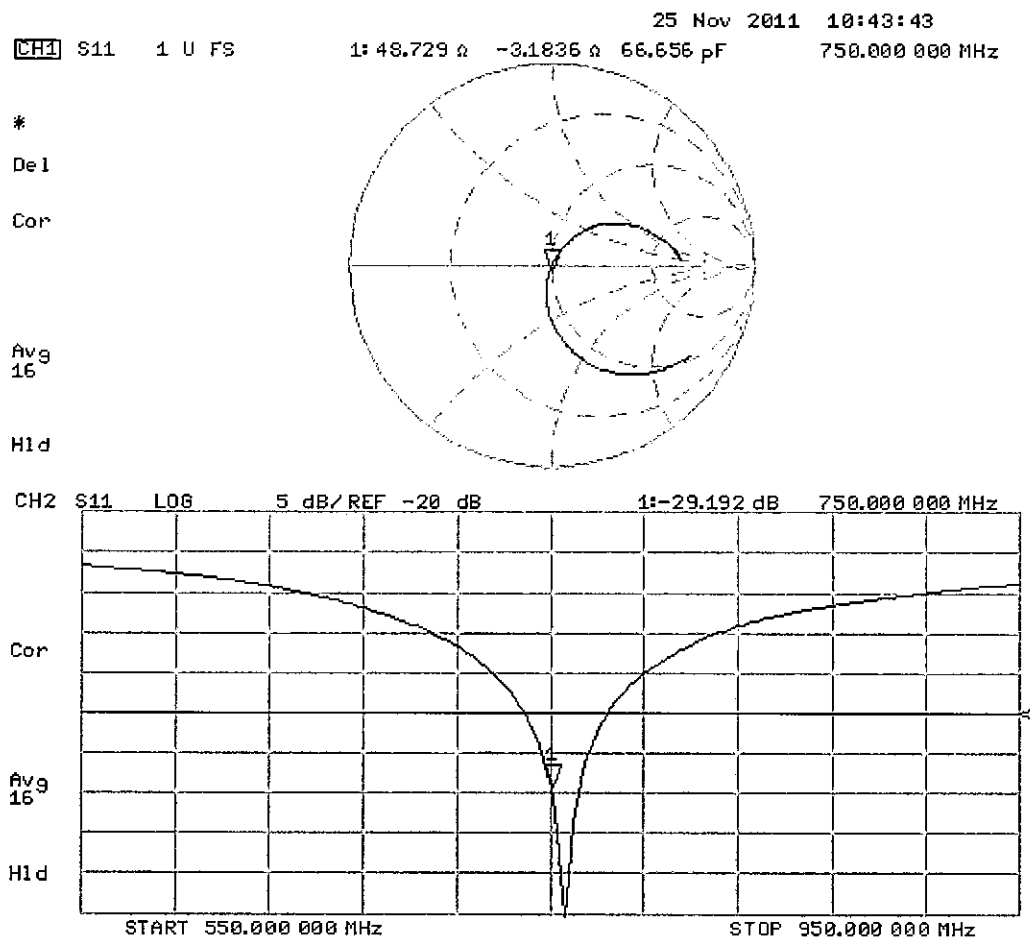
Peak SAR (extrapolated) = 3.254 W/kg

SAR(1 g) = 2.19 mW/g; SAR(10 g) = 1.45 mW/g

Maximum value of SAR (measured) = 2.552 mW/g



Impedance Measurement Plot for Body TSL





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 Beijing TCC**

Certificate No: **D835V2-4d005_Mar12**

CALIBRATION CERTIFICATE

Object **D835V2 - SN: 4d005**

Calibration procedure(s) **QA CAL-05.v8
Calibration procedure for dipole validation kits above 700 MHz**

Calibration date: **March 06, 2012**

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 EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5086 (20g)	29-Mar-11 (No. 217-01368)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Israe El-Naouq	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: March 6, 2012

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.7 Ω - 3.4 j Ω
Return Loss	- 27.5 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.8 Ω - 5.1 j Ω
Return Loss	- 24.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.394 ns
----------------------------------	----------

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	July 11, 2003

DASY5 Validation Report for Head TSL

Date: 06.03.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d005

Communication System: CW; Frequency: 835 MHz

Medium parameters used: $f = 835$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 41.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.07, 6.07, 6.07); Calibrated: 30.12.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

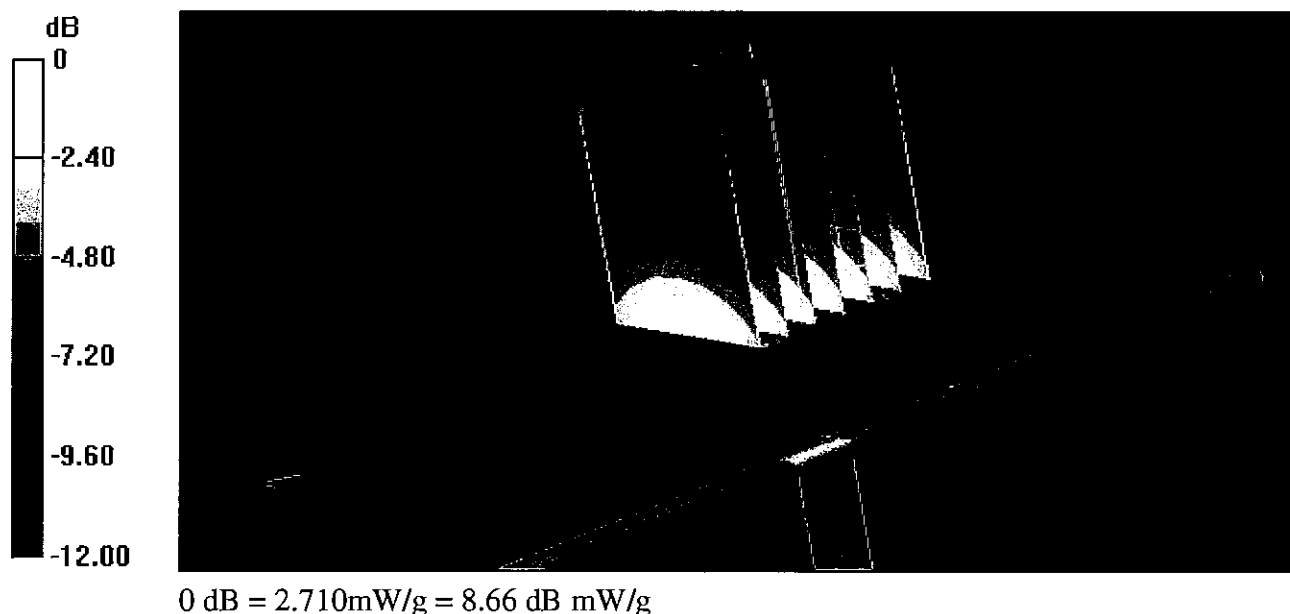
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.103 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 3.4310

SAR(1 g) = 2.32 mW/g; SAR(10 g) = 1.52 mW/g

Maximum value of SAR (measured) = 2.709 mW/g



Impedance Measurement Plot for Head TSL

6 Mar 2012 10:16:48
 [CH1] S11 1 U FS 1: 52.680 Ω -3.4238 Ω 55.670 pF 835.000 000 MHz

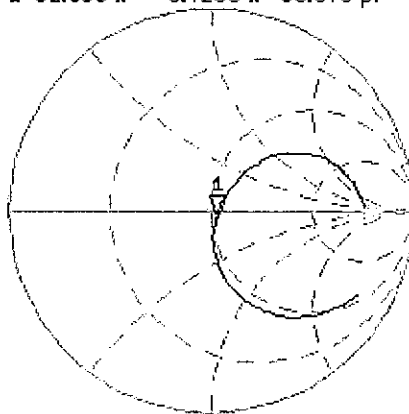
*

De1

Cor

Avg
16

H1d

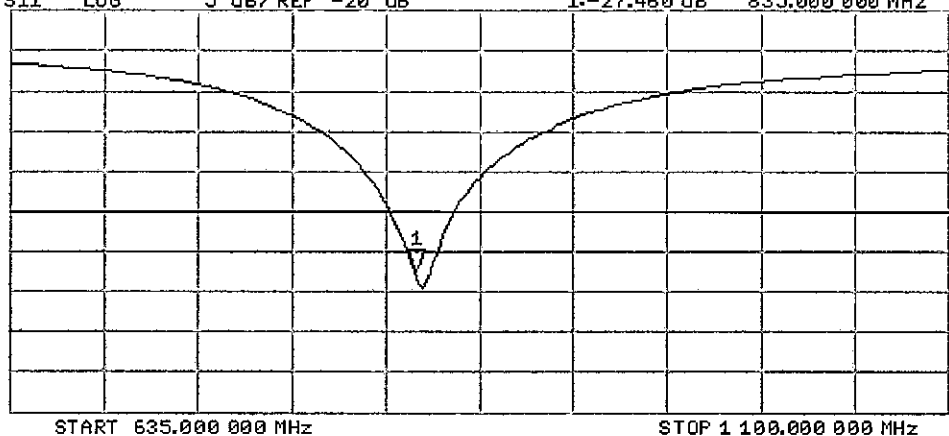


CH2 S11 LOG 5 dB/REF -20 dB 1: -27.460 dB 835.000 000 MHz

Cor

Avg
16

H1d



DASY5 Validation Report for Body TSL

Date: 05.03.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d005

Communication System: CW; Frequency: 835 MHz

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 1 \text{ mho/m}$; $\epsilon_r = 55$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.02, 6.02, 6.02); Calibrated: 30.12.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

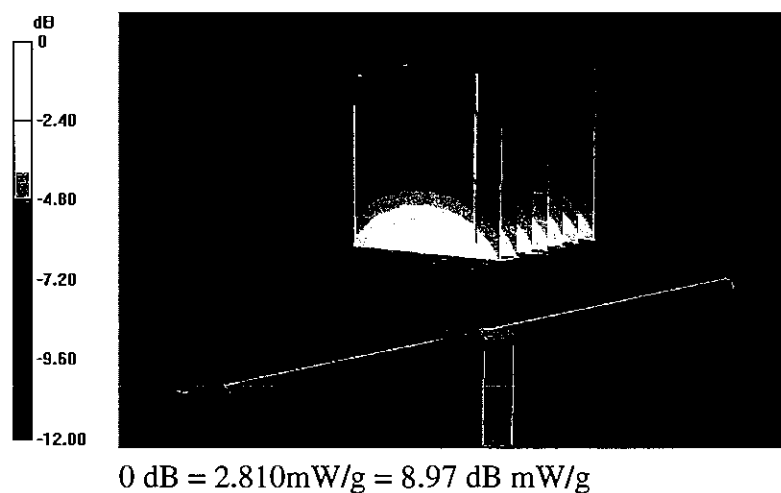
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 55.011 V/m; Power Drift = 0.0071 dB

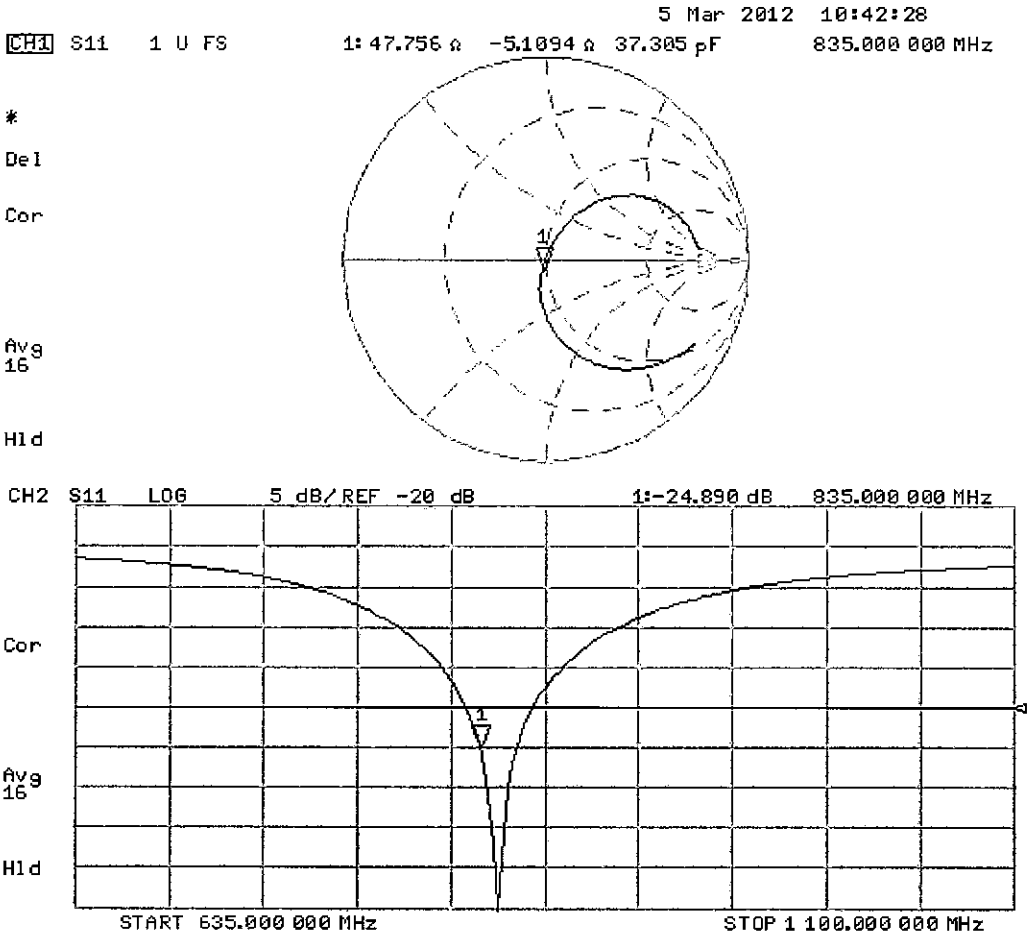
Peak SAR (extrapolated) = 3.4950

SAR(1 g) = 2.42 mW/g; SAR(10 g) = 1.59 mW/g

Maximum value of SAR (measured) = 2.812 mW/g



Impedance Measurement Plot for Body TSL



Dipole D835V2 – SN: 4d005 Antenna Parameters

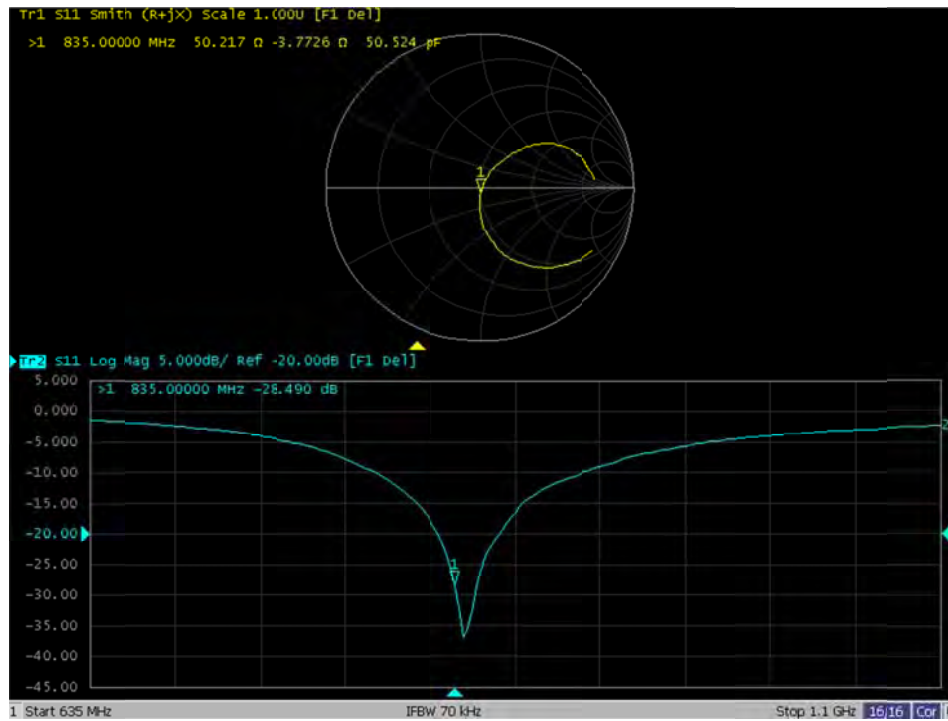
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement 2013-03-06
Impedance, transformed to feed point	52.7 Ω - 3.4 j Ω	50.2 Ω - 3.8 j Ω
Return loss	- 27.5 dB	- 28.5 dB

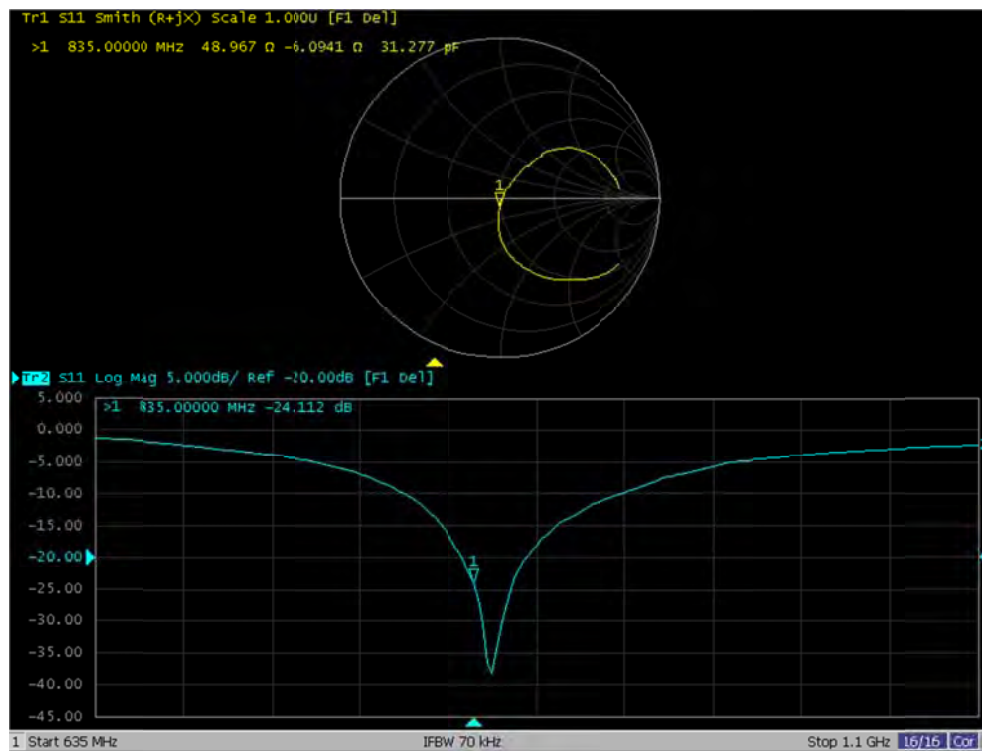
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement 2013-03-06
Impedance, transformed to feed point	47.8 Ω - 5.1 j Ω	49.0 Ω - 6.1 j Ω
Return loss	- 24.9 dB	- 24.1 dB

Impedance Measurement plot for Head TSL 835



Impedance Measurement plot for Body TSL 835





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 Beijing TCC**

Certificate No: **D835V2-479_Mar13**

CALIBRATION CERTIFICATE

Object **D835V2 - SN: 479**

Calibration procedure(s) **QA CAL-05.v9**
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: **March 11, 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 EPM-442A	GB37480704	01-Nov-12 (No. 217-01640)	Oct-13
Power sensor HP 8481A	US37292783	01-Nov-12 (No. 217-01640)	Oct-13
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.3 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	28-Dec-12 (No. ES3-3205_Dec12)	Dec-13
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

Calibrated by: **Israe El-Naouq** Name: **Israe El-Naouq** Function: **Laboratory Technician**

Approved by: **Katja Pokovic** Name: **Katja Pokovic** Function: **Technical Manager**

Signature

Issued: March 11, 2013

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.6 Ω - 3.7 j Ω
Return Loss	- 28.7 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.7 Ω - 5.7 j Ω
Return Loss	- 23.3 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.386 ns
----------------------------------	----------

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	January 28, 2003

DASY5 Validation Report for Head TSL

Date: 05.03.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 479

Communication System: CW; Frequency: 835 MHz

Medium parameters used: $f = 835$ MHz; $\sigma = 0.94$ S/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.05, 6.05, 6.05); Calibrated: 28.12.2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.5(1059); SEMCAD X 14.6.8(7028)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

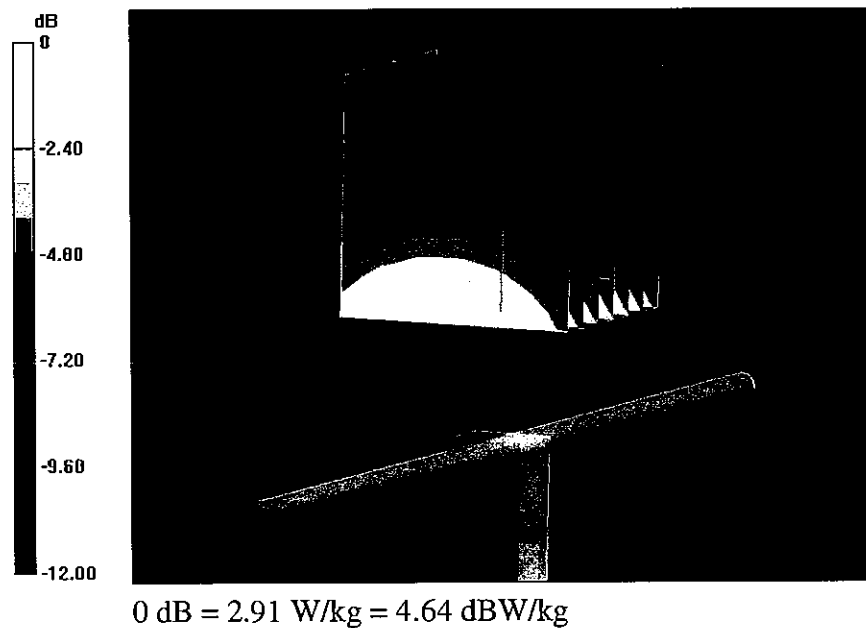
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.333 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 3.75 W/kg

SAR(1 g) = 2.48 W/kg; SAR(10 g) = 1.6 W/kg

Maximum value of SAR (measured) = 2.91 W/kg



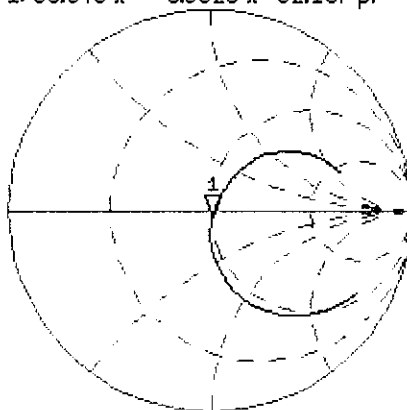
Impedance Measurement Plot for Head TSL

5 Mar 2013 09:30:45
 CH1 S11 1 U FS 1: 50.645 Ω -3.6523 Ω 52.187 pF 835.000 000 MHz

*
 De1
 CA

Avg
 16

H1d

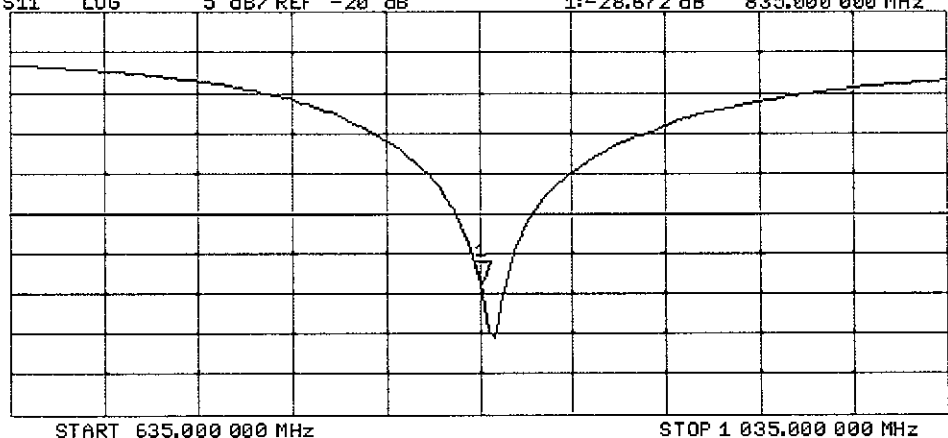


CH2 S11 LOG 5 dB/REF -20 dB 1:-28.672 dB 835.000 000 MHz

CA

Avg
 16

H1d



DASY5 Validation Report for Body TSL

Date: 11.03.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 479

Communication System: CW; Frequency: 835 MHz

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 1.02 \text{ S/m}$; $\epsilon_r = 54.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.04, 6.04, 6.04); Calibrated: 28.12.2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.5(1059); SEMCAD X 14.6.8(7028)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

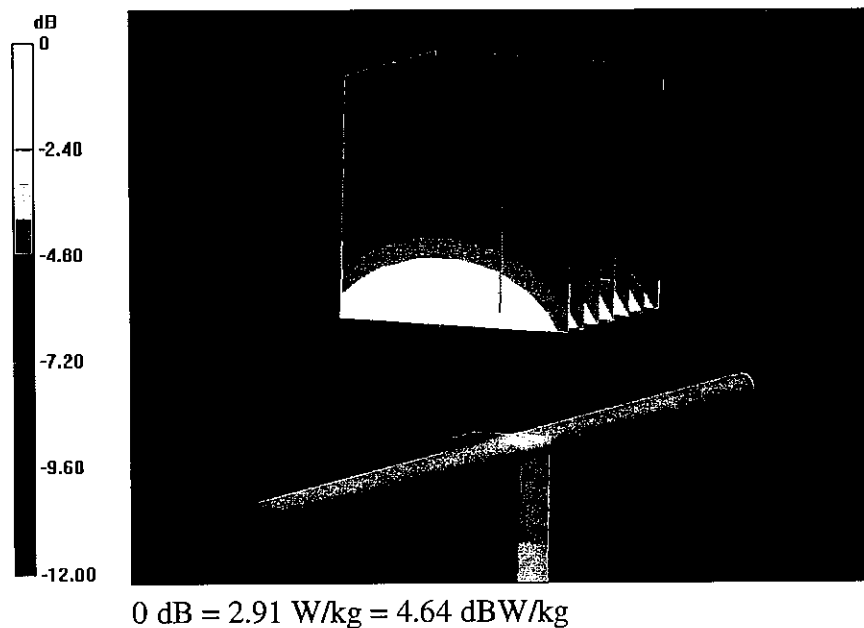
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 57.333 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 3.71 W/kg

SAR(1 g) = 2.52 W/kg; SAR(10 g) = 1.64 W/kg

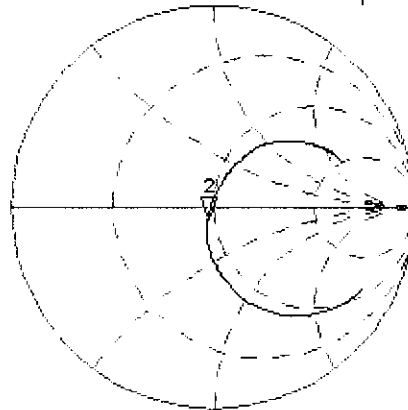
Maximum value of SAR (measured) = 2.91 W/kg



Impedance Measurement Plot for Body TSL

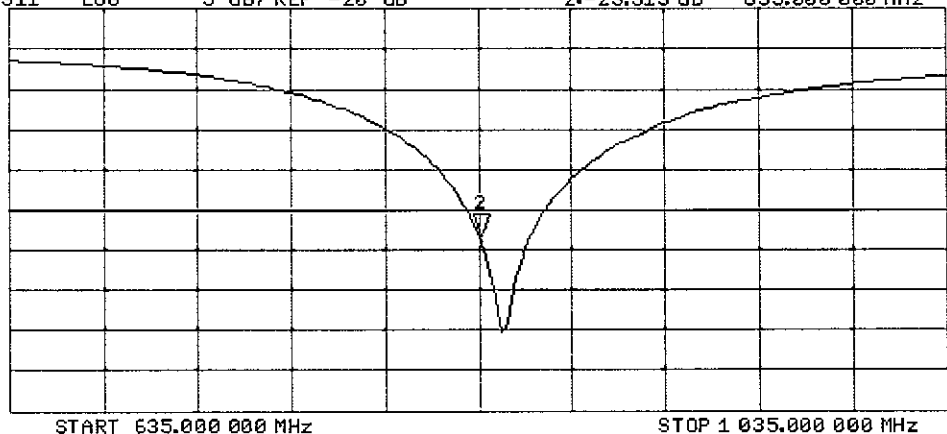
11 Mar 2013 15:25:17
 CH1 S11 1 U FS 2: 46.723 Ω -5.7461 Ω 33.171 pF 835.000 000 MHz

*
 De1
 CA
 Avg
 16
 H1 d



CH2 S11 LOG 5 dB/REF -20 dB 2:-23.313 dB 835.000 000 MHz

CA
 Avg
 16
 H1 d





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 Beijing TCC**

Certificate No: **D1750V2-1085_Jan13**

CALIBRATION CERTIFICATE

Object **D1750V2 - SN: 1085**

Calibration procedure(s) **QA CAL-05.v9**
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: **January 14, 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 EPM-442A	GB37480704	01-Nov-12 (No. 217-01640)	Oct-13
Power sensor HP 8481A	US37292783	01-Nov-12 (No. 217-01640)	Oct-13
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.3 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	28-Dec-12 (No. ES3-3205_Dec12)	Dec-13
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

Calibrated by: **Israe El-Naouq** Name: **Israe El-Naouq** Function: **Laboratory Technician**

Approved by: **Katja Pokovic** Name: **Katja Pokovic** Function: **Technical Manager**

Signature
Israe El-Naouq
Katja Pokovic

Issued: January 14, 2013

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.2 Ω - 1.1 j Ω
Return Loss	- 38.8 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.4 Ω - 0.7 j Ω
Return Loss	- 28.3 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.216 ns
----------------------------------	----------

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 07, 2012

DASY5 Validation Report for Head TSL

Date: 14.01.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1085

Communication System: CW; Frequency: 1750 MHz

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.34$ S/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.18, 5.18, 5.18); Calibrated: 28.12.2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.5(1059); SEMCAD X 14.6.8(7028)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

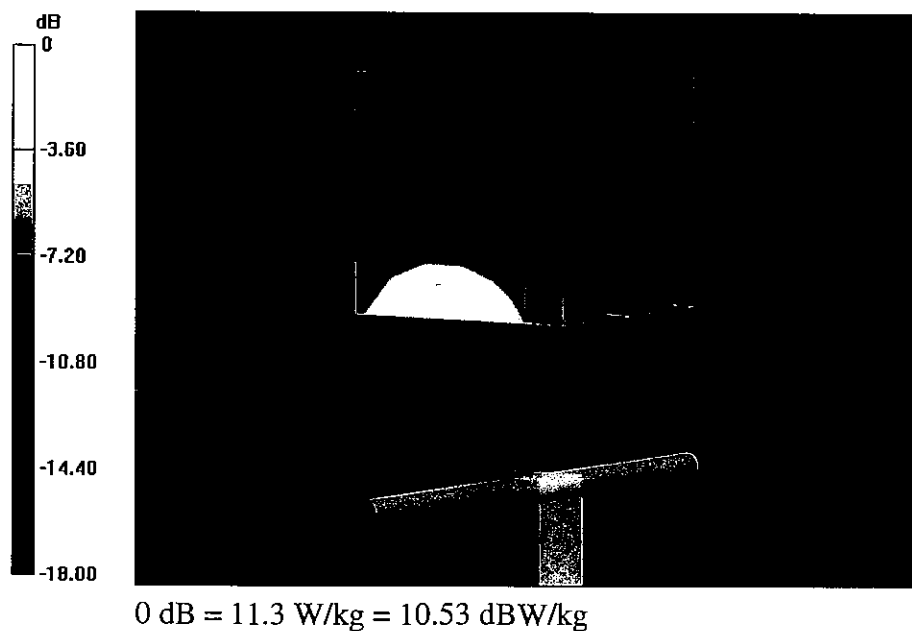
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 93.564 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 16.6 W/kg

SAR(1 g) = 9.24 W/kg; SAR(10 g) = 4.93 W/kg

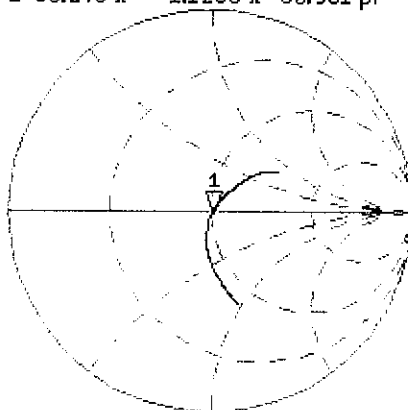
Maximum value of SAR (measured) = 11.3 W/kg



Impedance Measurement Plot for Head TSL

14 Jan 2013 11:49:04
[CH1] S11 1 U FS 1: 50.240 Ω -1.1230 Ω 80.981 pF 1 750.000 000 MHz

*
De1
Cor



Avg
16

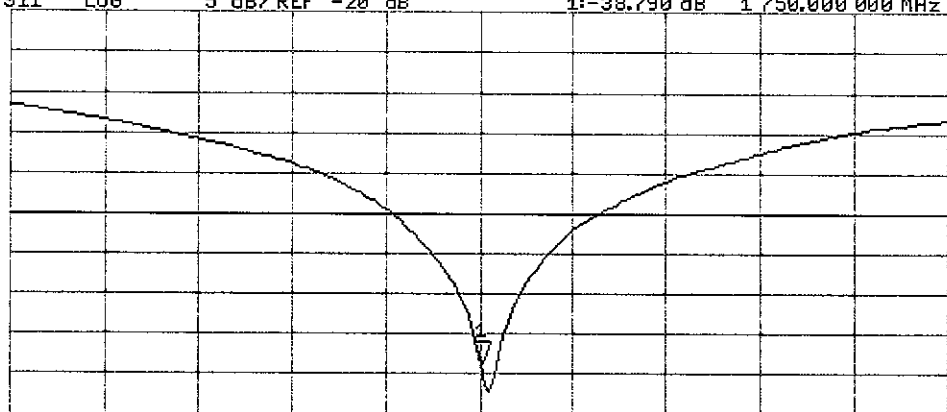
H1d

CH2 S11 LOG 5 dB/REF -20 dB 1:-38.790 dB 1 750.000 000 MHz

Cor

Avg
16

H1d



START 1 550.000 000 MHz

STOP 1 950.000 000 MHz

DASY5 Validation Report for Body TSL

Date: 14.01.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1085

Communication System: CW; Frequency: 1750 MHz

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.47$ S/m; $\epsilon_r = 51.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.83, 4.83, 4.83); Calibrated: 28.12.2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.5(1059); SEMCAD X 14.6.8(7028)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

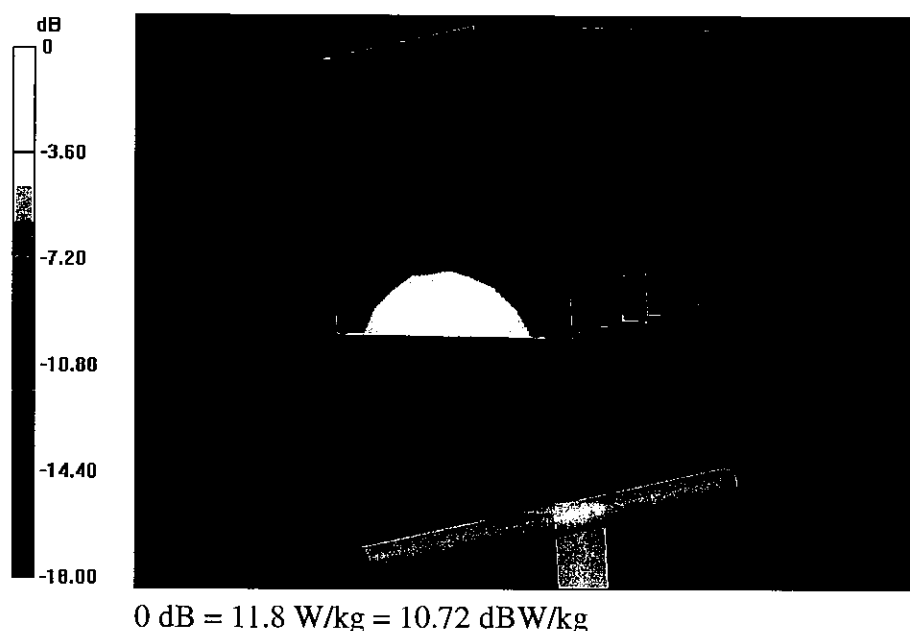
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 93.564 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 16.4 W/kg

SAR(1 g) = 9.5 W/kg; SAR(10 g) = 5.1 W/kg

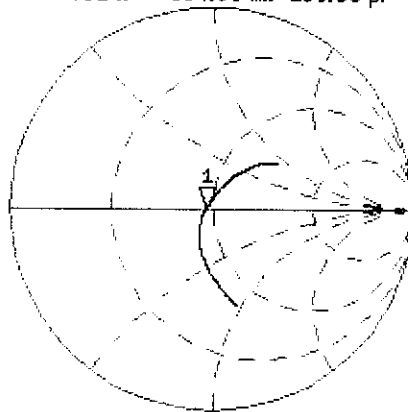
Maximum value of SAR (measured) = 11.8 W/kg



Impedance Measurement Plot for Body TSL

14 Jan 2013 11:48:41
CH1 S11 1 U FS 1: 46.352 Ω -654.30 $m\Omega$ 139.00 pF 1 750.000 000 MHz

*
De1
Cor



Avg
16

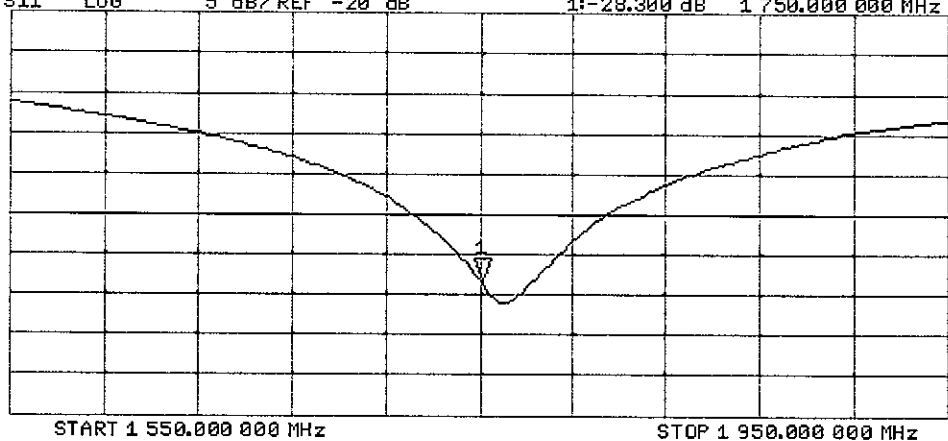
H1d

CH2 S11 LOG 5 dB/REF -20 dB 1: -28.300 dB 1 750.000 000 MHz

Cor

Avg
16

H1d





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 Beijing TCC

Certificate No: D1900V2-509_Dec12

CALIBRATION CERTIFICATE

Object D1900V2 - SN: 509

Calibration procedure(s) QA CAL-05.v8
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: December 06, 2012

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 EPM-442A	GB37480704	01-Nov-12 (No. 217-01640)	Oct-13
Power sensor HP 8481A	US37292783	01-Nov-12 (No. 217-01640)	Oct-13
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.3 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

Calibrated by: Name Israe El-Nacouq Function Laboratory Technician

Approved by: Katja Pokovic Technical Manager

Signature

Issued: December 6, 2012

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	47.1 Ω - 5.1 j Ω
Return Loss	- 24.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	43.7 Ω - 5.2 j Ω
Return Loss	- 21.2 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.192 ns
----------------------------------	----------

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	October 20, 1999

DASY5 Validation Report for Head TSL

Date: 06.12.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 509

Communication System: CW; Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.01, 5.01, 5.01); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

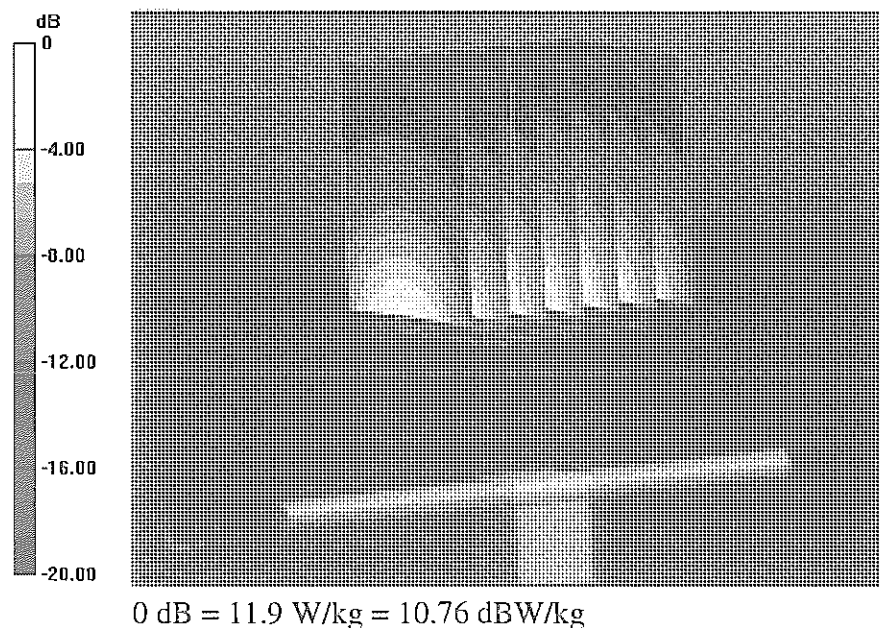
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.248 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 17.2 W/kg

SAR(1 g) = 9.63 W/kg; SAR(10 g) = 5.05 W/kg

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



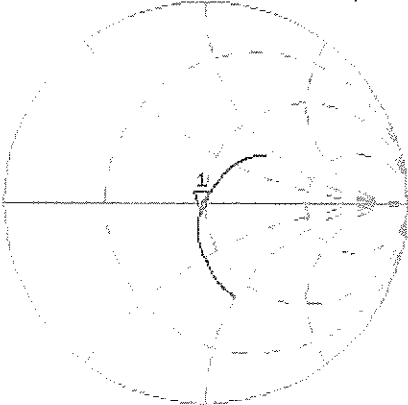
Impedance Measurement Plot for Head TSL

6 Dec 2012 12:54:32
CH1 S11 1 U FS 1: 47.143 Ω -5.1094 Ω 16.395 pF 1 900.000 000 MHz

*
De1
Cor

Avg
16

H1d

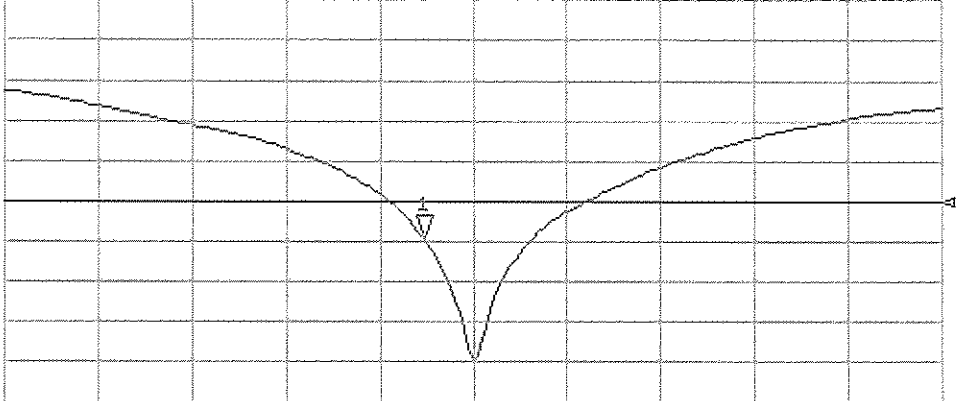


CH2 S11 LOG 5 dB/REF -20 dB 1:-24.418 dB 1 900.000 000 MHz

Cor

Avg
16

H1d



START 1 700.000 000 MHz

STOP 2 150.000 000 MHz

DASY5 Validation Report for Body TSL

Date: 06.12.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 509

Communication System: CW; Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.62, 4.62, 4.62); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

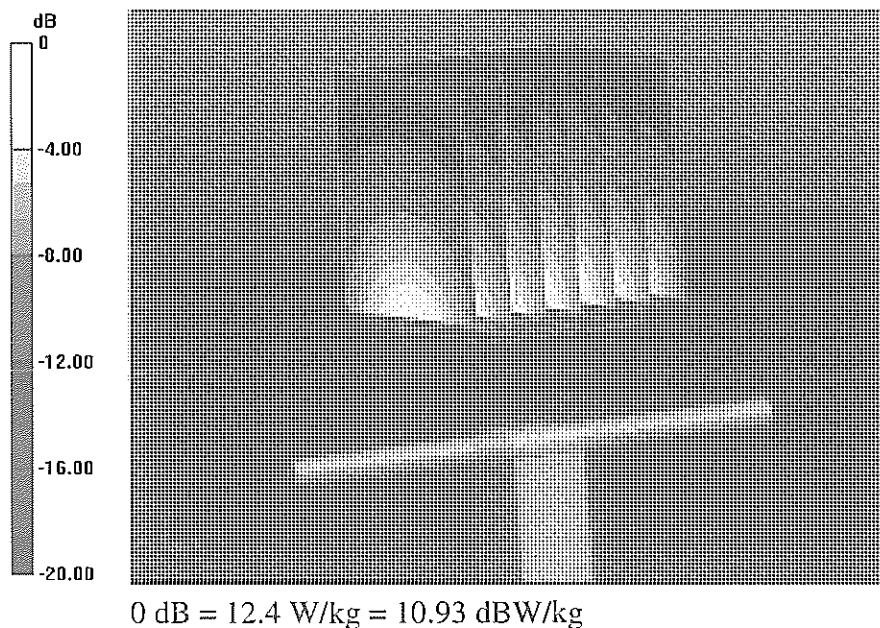
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.176 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 17.4 W/kg

SAR(1 g) = 9.84 W/kg; SAR(10 g) = 5.16 W/kg

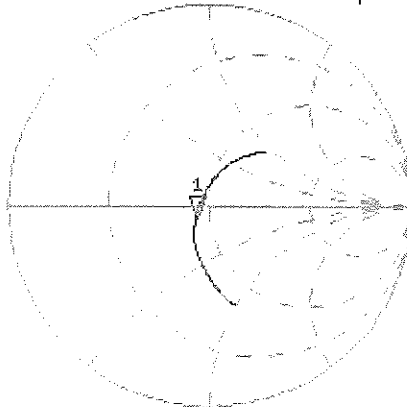
Maximum value of SAR (measured) = 12.4 W/kg



Impedance Measurement Plot for Body TSL

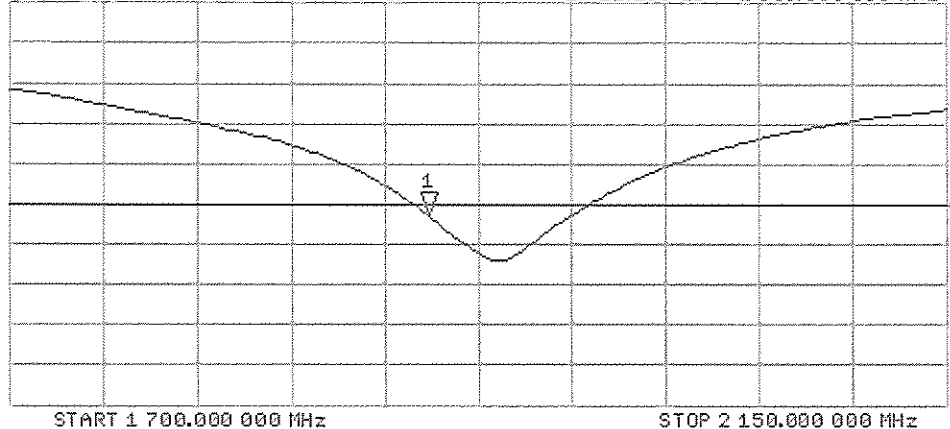
6 Dec 2012 12:54:05
 CH1 S11 1 U FS 1: 43.711 Ω -5.2129 Ω 16.069 pF 1 900.000 000 MHz

*
 Del
 Cor
 Avg
 16
 H1d



CH2 S11 LOG 5 dB/REF -20 dB 1:-21.206 dB 1 900.000 000 MHz

Cor
 Avg
 16
 H1d



Dipole D1900V2 – SN: 509 Antenna Parameters

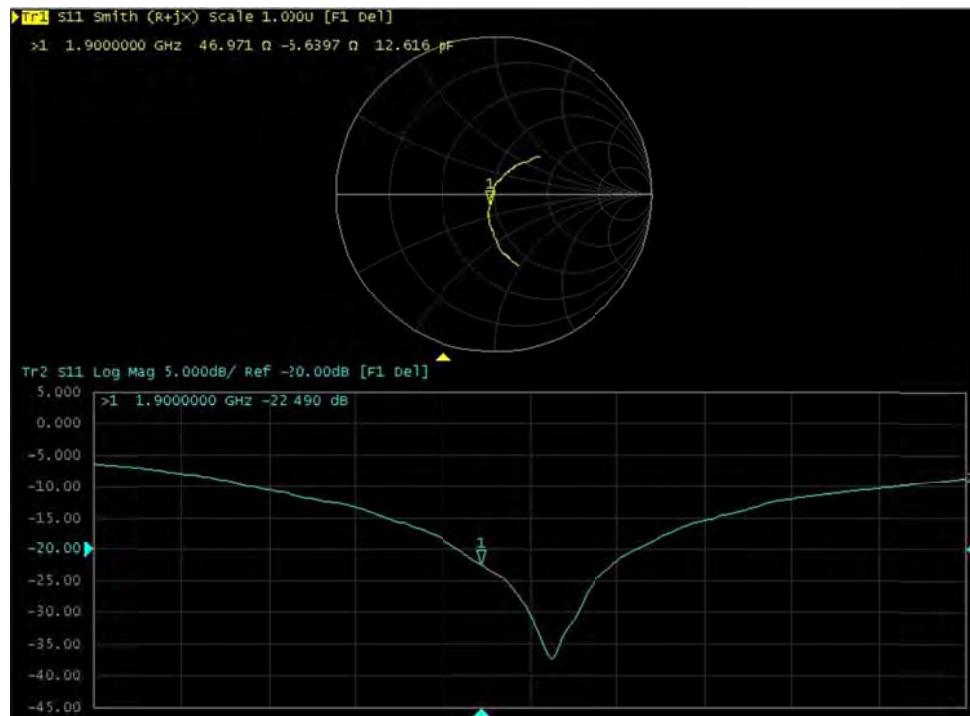
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement 2013-02-20
Impedance, transformed to feed point	47.1 Ω - 5.1 j Ω	47.0 Ω - 6.6 j Ω
Return loss	- 24.4 dB	- 22.5 dB

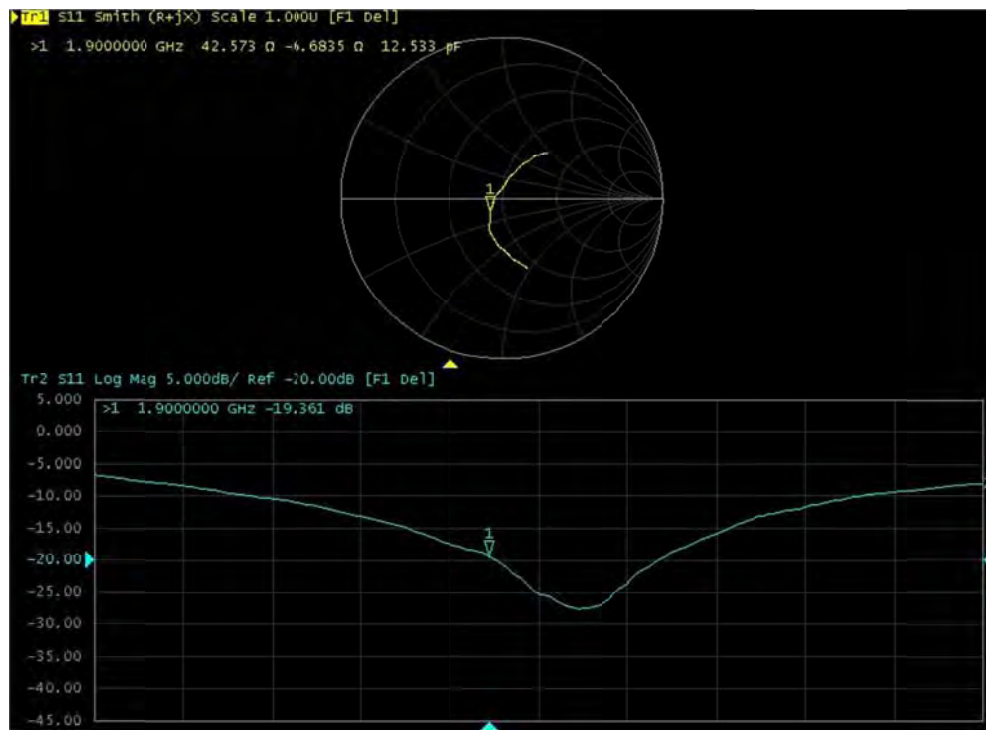
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement 2013-02-20
Impedance, transformed to feed point	43.7 Ω - 5.2 j Ω	42.6 Ω - 6.7 j Ω
Return loss	- 21.2 dB	- 19.4 dB

Impedance Measurement plot for Head TSL 1900



Impedance Measurement plot for Body TSL 1900





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 Beijing TCC**

Certificate No: **D2450V2-883_Feb12**

CALIBRATION CERTIFICATE

Object **D2450V2 - SN: 883**

Calibration procedure(s) **QA CAL-05.v8**
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: **February 23, 2012**

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 EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5086 (20g)	29-Mar-11 (No. 217-01368)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

Calibrated by:	Name Israe El-Naouq	Function Laboratory Technician	Signature
Approved by:	Katja Pokovic	Technical Manager	

Issued: February 23, 2012

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	54.1 Ω - 0.4 j Ω
Return Loss	- 28.1 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	50.4 Ω + 1.0 j Ω
Return Loss	- 39.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.165 ns
----------------------------------	----------

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	October 06, 2011

DASY5 Validation Report for Head TSL

Date: 23.02.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 883

Communication System: CW; Frequency: 2450 MHz

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.86$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.45, 4.45, 4.45); Calibrated: 30.12.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 100.8 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 28.8960

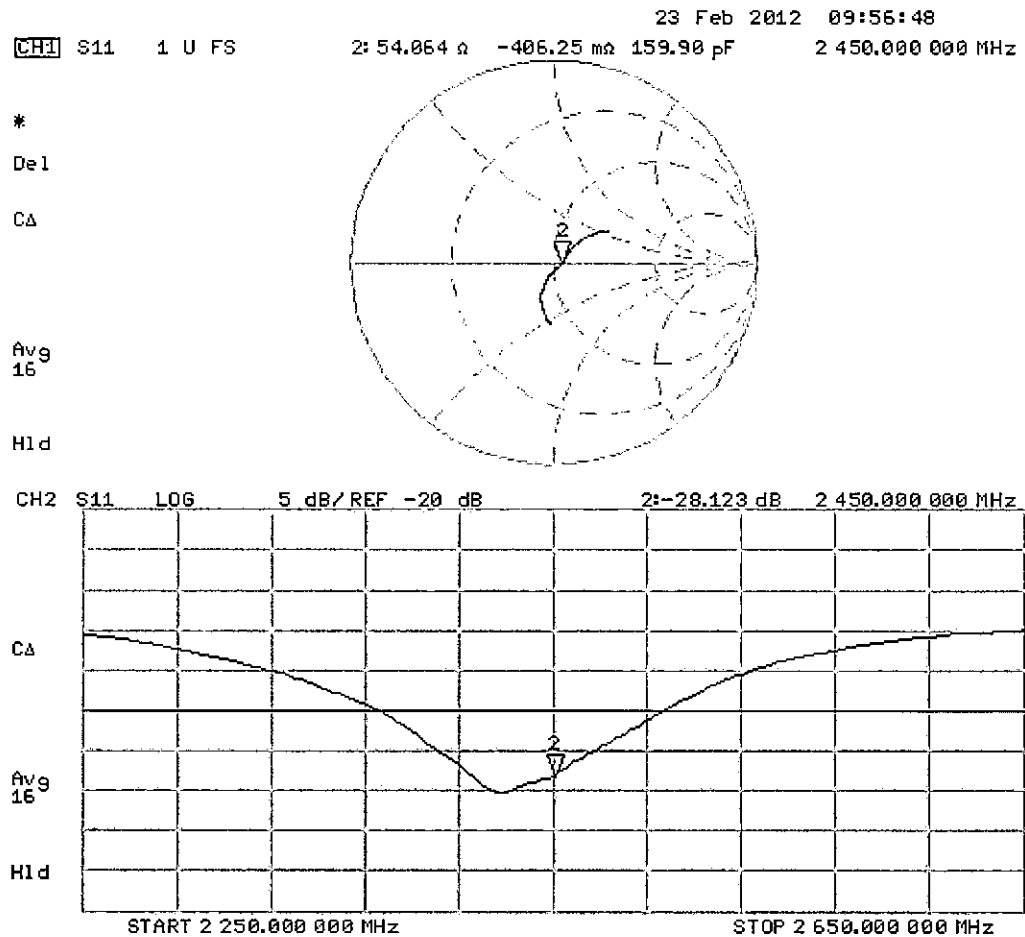
SAR(1 g) = 13.8 mW/g; SAR(10 g) = 6.36 mW/g

Maximum value of SAR (measured) = 17.788 mW/g



0 dB = 17.790mW/g = 25.00 dB mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 23.02.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 883

Communication System: CW; Frequency: 2450 MHz

Medium parameters used: $f = 2450$ MHz; $\sigma = 2.02$ mho/m; $\epsilon_r = 52.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.26, 4.26, 4.26); Calibrated: 30.12.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 96.084 V/m; Power Drift = -0.00038 dB

Peak SAR (extrapolated) = 26.9170

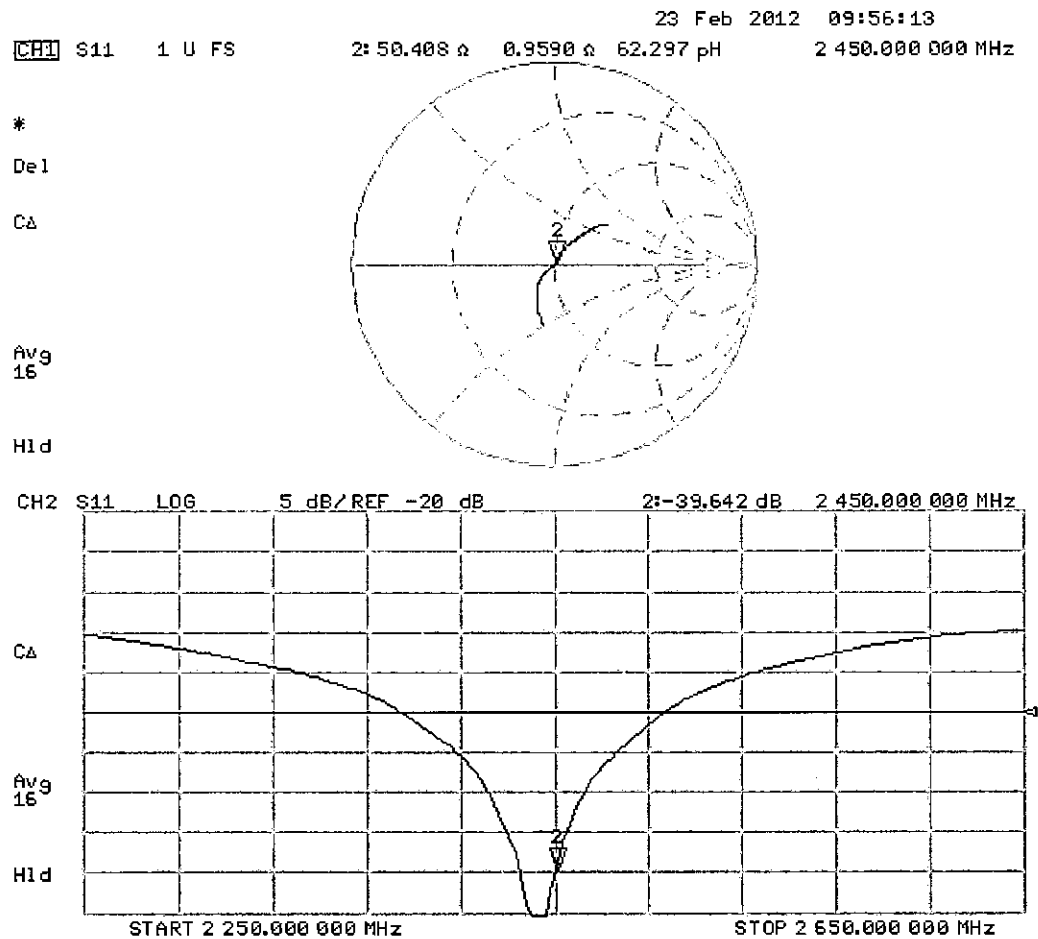
SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.12 mW/g

Maximum value of SAR (measured) = 17.333 mW/g



0 dB = 17.330mW/g = 24.78 dB mW/g

Impedance Measurement Plot for Body TSL



Dipole D2450V2 – SN: 883 Antenna Parameters

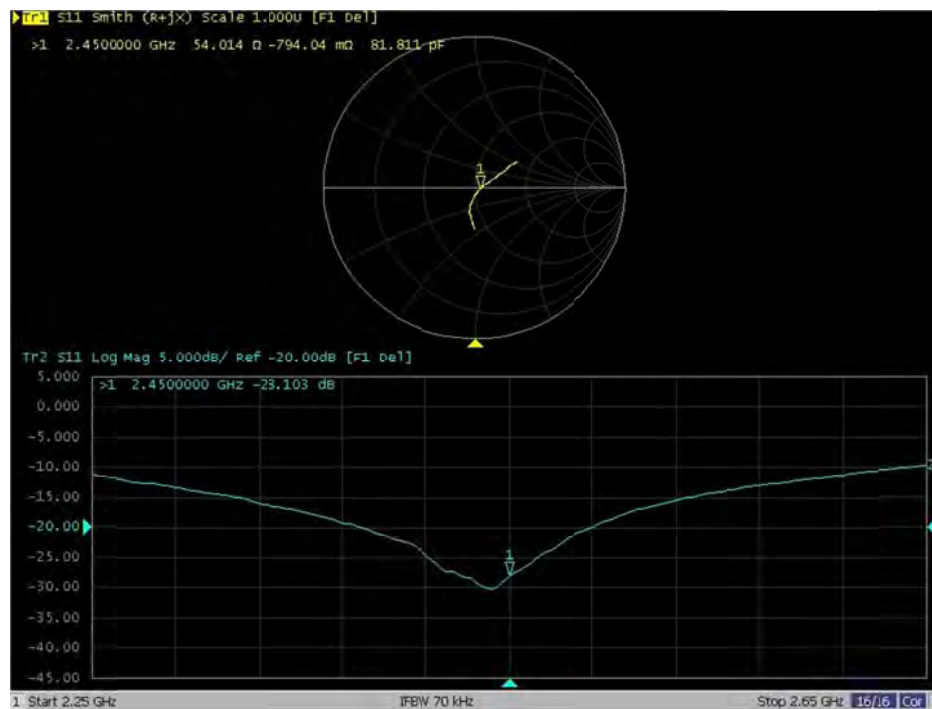
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement 2013-03-07
Impedance, transformed to feed point	54.1 Ω - 0.4 j Ω	54.0 Ω - 0.8 j Ω
Return loss	- 28.1 dB	- 28.1 dB

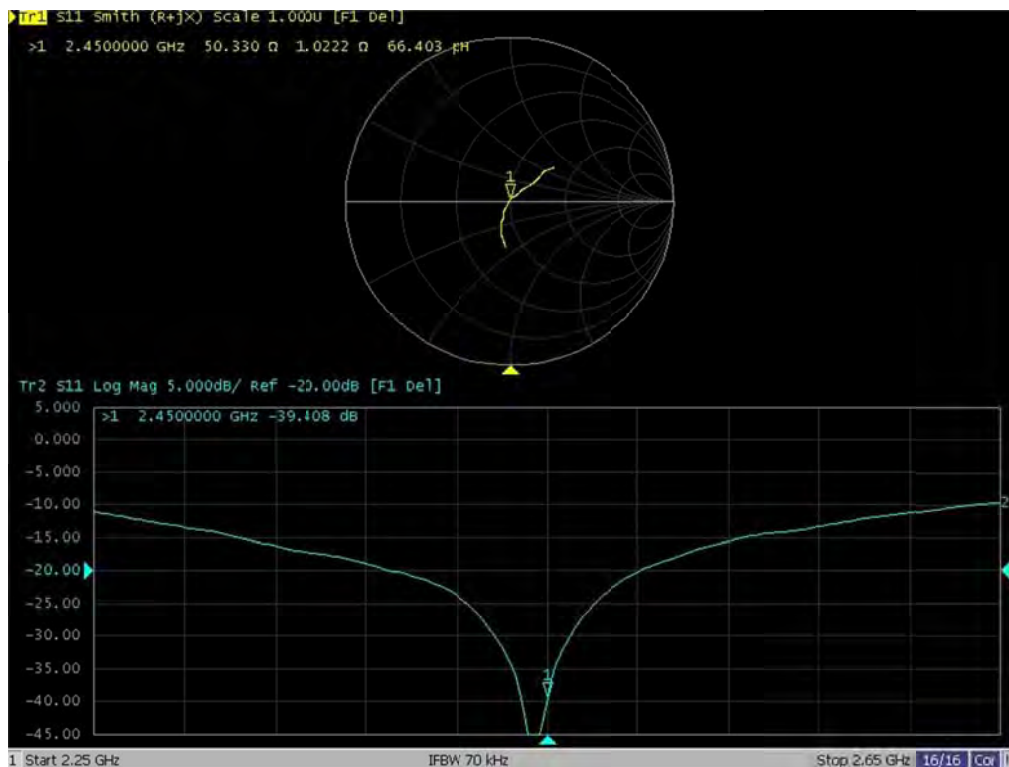
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement 2013-03-07
Impedance, transformed to feed point	50.4 Ω + 1.0 j Ω	50.3 Ω + 1.0 j Ω
Return loss	- 39.6 dB	- 39.4 dB

Impedance Measurement plot for Head TSL 2450



Impedance Measurement plot for Body TSL 2450



APPENDIX G: CONDUCTED POWER MEASUREMENTS FOR SUPPORTED LTE TRANSMISSION MODES

G.1 Power Tuning Targets

Band	Target Tuning Power in Head, Body-worn and Wireless Router measurements					
	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
LTE700 (Band 17)	N/A	N/A	23.8	23.8	N/A	N/A
LTE850 (Band 5)	23.5	23.5	23.5	23.5	N/A	N/A
LTE1700/2100 (Band 4)	23.0	23.0	23.0	23.0	23.0	23.0
LTE1900 (Band 2)	23.0	23.0	23.0	23.0	23.0	23.0

G.2 Conducted Power from the Samples used in the Testing

Type: RM-942; Serial number: 004402/47/277517/4 used for LTE700 (Band17) for Head, Body-worn and Wireless Router SAR measurements.

Channel bandwidth 5 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23.8	24.16	24.21	24.19
QPSK	1 RB, centered	23.8	24.26	24.18	24.23
QPSK	1 RB, max offset	23.8	24.26	24.22	24.22
QPSK	50 % RB, zero offset	23.8	24.22	24.25	24.1
QPSK	50 % RB, centered	23.8	24.25	24.15	24.2
QPSK	50 % RB, max offset	23.8	24.25	24.27	24.17
QPSK	100 % RB	22.8	23.32	23.16	23.21
16QAM	1 RB, zero offset	22.8	23.23	23.31	23.16
16QAM	1 RB, centered	22.8	23.34	23.25	23.26
16QAM	1 RB, max offset	22.8	23.29	23.24	23.24
16QAM	50 % RB, zero offset	22.8	23.31	23.19	23.28
16QAM	50 % RB, centered	22.8	23.34	23.22	23.27
16QAM	50 % RB, max offset	22.8	23.31	23.22	23.26
16QAM	100 % RB	21.8	22.27	22.26	22.23

Channel bandwidth 10 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23.8	24.18	24.21	24.17
QPSK	1 RB, centered	23.8	24.16	24.17	24.19
QPSK	1 RB, max offset	23.8	24.21	24.19	24.16
QPSK	50 % RB, zero offset	23.8	24.18	24.18	24.23
QPSK	50 % RB, centered	23.8	24.16	24.17	24.18
QPSK	50 % RB, max offset	23.8	24.15	24.21	24.2
QPSK	100 % RB	22.8	23.18	23.25	23.2
16QAM	1 RB, zero offset	22.8	23.24	23.16	23.31
16QAM	1 RB, centered	22.8	23.2	23.07	23.2
16QAM	1 RB, max offset	22.8	23.15	23.26	23.37
16QAM	50 % RB, zero offset	22.8	23.21	23.24	23.3
16QAM	50 % RB, centered	22.8	23.24	23.32	23.32
16QAM	50 % RB, max offset	22.8	23.14	23.22	23.29
16QAM	100 % RB	21.8	22.26	22.29	22.19

Type: RM-942; Serial number: 004402/47/277487/0 used for LTE850 (Band5) for Head, Body-worn and Wireless Router SAR measurements.

Channel bandwidth 1.4 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23.5	23.92	23.88	23.86
QPSK	1 RB, centered	23.5	23.92	23.93	23.96
QPSK	1 RB, max offset	23.5	23.91	23.88	23.91
QPSK	50 % RB, zero offset	23.5	23.89	23.9	23.93
QPSK	50 % RB, centered	23.5	23.9	23.93	23.9
QPSK	50 % RB, max offset	23.5	23.88	23.9	23.93
QPSK	100 % RB	22.5	22.92	22.96	22.99
16QAM	1 RB, zero offset	22.5	22.88	22.85	22.88
16QAM	1 RB, centered	22.5	22.91	22.93	22.96
16QAM	1 RB, max offset	22.5	22.85	22.83	22.86
16QAM	50 % RB, zero offset	22.5	22.89	22.86	22.89
16QAM	50 % RB, centered	22.5	22.86	22.75	22.78
16QAM	50 % RB, max offset	22.5	22.84	22.82	22.85
16QAM	100 % RB	21.5	21.76	21.8	21.83

Channel bandwidth 3 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23.5	23.93	23.91	23.86
QPSK	1 RB, centered	23.5	23.87	23.89	23.87
QPSK	1 RB, max offset	23.5	23.85	23.91	23.85
QPSK	50 % RB, zero offset	23.5	23.96	23.93	23.96
QPSK	50 % RB, centered	23.5	23.92	23.92	23.92
QPSK	50 % RB, max offset	23.5	23.93	23.91	23.93
QPSK	100 % RB	22.5	22.87	22.89	22.87
16QAM	1 RB, zero offset	22.5	22.9	22.93	22.9
16QAM	1 RB, centered	22.5	22.89	22.99	22.89
16QAM	1 RB, max offset	22.5	22.97	22.95	22.97
16QAM	50 % RB, zero offset	22.5	22.87	22.87	22.87
16QAM	50 % RB, centered	22.5	22.94	22.91	22.94
16QAM	50 % RB, max offset	22.5	22.88	22.89	22.88
16QAM	100 % RB	21.5	21.91	21.94	21.91

Channel bandwidth 5 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23.5	23.86	23.99	23.91
QPSK	1 RB, centered	23.5	23.9	23.91	24
QPSK	1 RB, max offset	23.5	23.93	23.86	23.93
QPSK	50 % RB, zero offset	23.5	23.89	23.89	23.89
QPSK	50 % RB, centered	23.5	23.86	23.85	23.93
QPSK	50 % RB, max offset	23.5	23.85	23.88	23.9
QPSK	100 % RB	22.5	22.87	22.86	22.91
16QAM	1 RB, zero offset	22.5	22.85	22.87	22.9
16QAM	1 RB, centered	22.5	22.89	22.9	22.93
16QAM	1 RB, max offset	22.5	22.88	22.91	22.9
16QAM	50 % RB, zero offset	22.5	22.86	22.89	22.87
16QAM	50 % RB, centered	22.5	22.85	22.92	22.86
16QAM	50 % RB, max offset	22.5	22.89	22.88	22.93
16QAM	100 % RB	21.5	21.87	21.84	21.91

Channel bandwidth 10 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23.5	23.86	24.02	23.91
QPSK	1 RB, centered	23.5	23.88	23.93	23.89
QPSK	1 RB, max offset	23.5	23.9	23.86	23.83
QPSK	50 % RB, zero offset	23.5	23.86	23.85	23.86
QPSK	50 % RB, centered	23.5	23.92	23.86	23.83
QPSK	50 % RB, max offset	23.5	23.95	23.86	23.85
QPSK	100 % RB	22.5	22.88	22.84	22.86
16QAM	1 RB, zero offset	22.5	22.92	22.83	22.85
16QAM	1 RB, centered	22.5	22.95	22.86	22.88
16QAM	1 RB, max offset	22.5	22.88	22.86	22.85
16QAM	50 % RB, zero offset	22.5	22.78	22.88	22.86
16QAM	50 % RB, centered	22.5	22.9	22.85	22.87
16QAM	50 % RB, max offset	22.5	22.79	22.86	22.8
16QAM	100 % RB	21.5	21.92	21.84	21.92

Type: RM-942; Serial number: 004402/47/277464/9 used for LTE1700/2100 (Band4) for Head, Body-worn and Wireless Router SAR measurements.

Channel bandwidth 1.4 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23	23.43	23.45	23.38
QPSK	1 RB, centered	23	23.45	23.45	23.47
QPSK	1 RB, max offset	23	23.48	23.48	23.38
QPSK	50 % RB, zero offset	23	23.44	23.44	23.4
QPSK	50 % RB, centered	23	23.48	23.38	23.41
QPSK	50 % RB, max offset	23	23.45	23.4	23.36
QPSK	100 % RB	22	22.46	22.36	22.4
16QAM	1 RB, zero offset	22	22.45	22.4	22.33
16QAM	1 RB, centered	22	22.48	22.38	22.46
16QAM	1 RB, max offset	22	22.45	22.37	22.39
16QAM	50 % RB, zero offset	22	22.42	22.36	22.4
16QAM	50 % RB, centered	22	22.39	22.4	22.35
16QAM	50 % RB, max offset	22	22.48	22.44	22.38
16QAM	100 % RB	21	21.46	21.39	21.38

Channel bandwidth 3 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23	23.38	23.43	23.41
QPSK	1 RB, centered	23	23.39	23.46	23.39
QPSK	1 RB, max offset	23	23.37	23.44	23.41
QPSK	50 % RB, zero offset	23	23.48	23.38	23.37
QPSK	50 % RB, centered	23	23.44	23.48	23.43
QPSK	50 % RB, max offset	23	23.45	23.49	23.46
QPSK	100 % RB	22	22.39	22.46	22.39
16QAM	1 RB, zero offset	22	22.42	22.36	22.36
16QAM	1 RB, centered	22	22.41	22.46	22.36
16QAM	1 RB, max offset	22	22.49	22.48	22.39
16QAM	50 % RB, zero offset	22	22.39	22.45	22.29
16QAM	50 % RB, centered	22	22.46	22.35	22.41
16QAM	50 % RB, max offset	22	22.4	22.42	22.3
16QAM	100 % RB	21	21.33	21.31	21.43

Channel bandwidth 5 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23	23.43	23.48	23.41
QPSK	1 RB, centered	23	23.43	23.4	23.41
QPSK	1 RB, max offset	23	23.46	23.38	23.36
QPSK	50 % RB, zero offset	23	23.47	23.35	23.39
QPSK	50 % RB, centered	23	23.5	23.4	23.4
QPSK	50 % RB, max offset	23	23.52	23.42	23.45
QPSK	100 % RB	22	22.39	22.43	22.39
16QAM	1 RB, zero offset	22	22.46	22.4	22.38
16QAM	1 RB, centered	22	22.41	22.38	22.37
16QAM	1 RB, max offset	22	22.43	22.42	22.32
16QAM	50 % RB, zero offset	22	22.46	22.41	22.35
16QAM	50 % RB, centered	22	22.43	22.4	22.35
16QAM	50 % RB, max offset	22	22.49	22.47	22.39
16QAM	100 % RB	21	21.45	21.4	21.43

Channel bandwidth 10 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23	23.44	23.51	23.36
QPSK	1 RB, centered	23	23.42	23.43	23.48
QPSK	1 RB, max offset	23	23.35	23.47	23.45
QPSK	50 % RB, zero offset	23	23.4	23.5	23.45
QPSK	50 % RB, centered	23	23.46	23.43	23.38
QPSK	50 % RB, max offset	23	23.5	23.37	23.39
QPSK	100 % RB	22	22.48	22.35	22.38
16QAM	1 RB, zero offset	22	22.37	22.39	22.45
16QAM	1 RB, centered	22	22.4	22.46	22.46
16QAM	1 RB, max offset	22	22.4	22.37	22.44
16QAM	50 % RB, zero offset	22	22.5	22.43	22.4
16QAM	50 % RB, centered	22	22.51	22.46	22.41
16QAM	50 % RB, max offset	22	22.47	22.29	22.31
16QAM	100 % RB	21	21.37	21.41	21.35

Channel bandwidth 15 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23	23.41	23.46	23.43
QPSK	1 RB, centered	23	23.41	23.4	23.47
QPSK	1 RB, max offset	23	23.4	23.37	23.42
QPSK	50 % RB, zero offset	23	23.38	23.42	23.44
QPSK	50 % RB, centered	23	23.37	23.44	22.47
QPSK	50 % RB, max offset	23	23.39	23.45	23.44
QPSK	100 % RB	22	22.42	22.42	22.5
16QAM	1 RB, zero offset	22	22.5	22.39	22.39
16QAM	1 RB, centered	22	22.52	22.42	22.47
16QAM	1 RB, max offset	22	22.49	22.32	22.37
16QAM	50 % RB, zero offset	22	22.39	22.44	22.44
16QAM	50 % RB, centered	22	22.46	22.33	22.38
16QAM	50 % RB, max offset	22	22.35	22.46	22.31
16QAM	100 % RB	21	21.5	21.39	21.42

Channel bandwidth 20 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23	23.44	23.51	23.38
QPSK	1 RB, centered	23	23.45	23.39	23.37
QPSK	1 RB, max offset	23	23.4	23.37	23.36
QPSK	50 % RB, zero offset	23	23.37	23.42	23.38
QPSK	50 % RB, centered	23	23.44	23.39	23.37
QPSK	50 % RB, max offset	23	23.39	23.37	23.36
QPSK	100 % RB	22	22.41	22.41	22.33
16QAM	1 RB, zero offset	22	22.41	22.45	22.38
16QAM	1 RB, centered	22	22.52	22.38	22.44
16QAM	1 RB, max offset	22	22.41	22.27	22.4
16QAM	50 % RB, zero offset	22	22.55	22.43	22.36
16QAM	50 % RB, centered	22	22.5	22.36	22.36
16QAM	50 % RB, max offset	22	22.44	22.4	22.34
16QAM	100 % RB	21	21.44	21.41	21.39

Type: RM-942; Serial number: 004402/47/277461/5 used for LTE1900 (Band2) for Head, Body-worn and Wireless Router SAR measurements.

Channel bandwidth 1.4 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23	23.36	23.47	23.37
QPSK	1 RB, centered	23	23.37	23.49	23.41
QPSK	1 RB, max offset	23	23.39	23.44	23.39
QPSK	50 % RB, zero offset	23	23.41	23.41	23.44
QPSK	50 % RB, centered	23	23.4	23.48	23.41
QPSK	50 % RB, max offset	23	23.39	23.43	23.39
QPSK	100 % RB	22	22.36	22.45	22.43
16QAM	1 RB, zero offset	22	22.41	22.45	22.47
16QAM	1 RB, centered	22	22.47	22.56	22.35
16QAM	1 RB, max offset	22	22.43	22.45	22.29
16QAM	50 % RB, zero offset	22	22.35	22.59	22.45
16QAM	50 % RB, centered	22	22.39	22.54	22.38
16QAM	50 % RB, max offset	22	22.37	22.48	22.42
16QAM	100 % RB	21	21.42	21.48	21.43

Channel bandwidth 3 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23	23.35	23.43	23.36
QPSK	1 RB, centered	23	23.46	23.58	23.48
QPSK	1 RB, max offset	23	23.49	23.51	23.39
QPSK	50 % RB, zero offset	23	23.45	23.47	23.41
QPSK	50 % RB, centered	23	23.39	23.51	23.42
QPSK	50 % RB, max offset	23	23.41	23.48	23.37
QPSK	100 % RB	22	22.37	22.49	22.41
16QAM	1 RB, zero offset	22	22.41	22.48	22.34
16QAM	1 RB, centered	22	22.39	22.51	22.47
16QAM	1 RB, max offset	22	22.38	22.48	22.4
16QAM	50 % RB, zero offset	22	22.37	22.45	22.41
16QAM	50 % RB, centered	22	22.41	22.42	22.36
16QAM	50 % RB, max offset	22	22.45	22.51	22.39
16QAM	100 % RB	21	21.34	21.49	21.31

Channel bandwidth 5 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23	23.4	23.48	23.41
QPSK	1 RB, centered	23	23.41	23.49	23.38
QPSK	1 RB, max offset	23	23.43	23.47	23.36
QPSK	50 % RB, zero offset	23	23.39	23.41	23.47
QPSK	50 % RB, centered	23	23.45	23.51	23.43
QPSK	50 % RB, max offset	23	23.48	23.52	23.44
QPSK	100 % RB	22	22.41	22.49	22.38
16QAM	1 RB, zero offset	22	22.34	22.39	22.41
16QAM	1 RB, centered	22	22.38	22.49	22.4
16QAM	1 RB, max offset	22	22.41	22.51	22.48
16QAM	50 % RB, zero offset	22	22.31	22.48	22.38
16QAM	50 % RB, centered	22	22.43	22.38	22.45
16QAM	50 % RB, max offset	22	22.32	22.45	22.39
16QAM	100 % RB	21	21.45	21.34	21.32

Channel bandwidth 10 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23	23.37	23.51	23.42
QPSK	1 RB, centered	23	23.43	23.45	23.41
QPSK	1 RB, max offset	23	23.38	23.48	23.39
QPSK	50 % RB, zero offset	23	23.41	23.49	23.36
QPSK	50 % RB, centered	23	23.42	23.52	23.41
QPSK	50 % RB, max offset	23	23.47	23.54	23.43
QPSK	100 % RB	22	22.41	22.41	22.44
16QAM	1 RB, zero offset	22	22.4	22.48	22.41
16QAM	1 RB, centered	22	22.39	22.43	22.39
16QAM	1 RB, max offset	22	22.34	22.45	22.43
16QAM	50 % RB, zero offset	22	22.37	22.48	22.42
16QAM	50 % RB, centered	22	22.37	22.45	22.41
16QAM	50 % RB, max offset	22	22.41	22.51	22.48
16QAM	100 % RB	21	21.45	21.47	21.41

Channel bandwidth 15 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23	23.38	23.49	23.43
QPSK	1 RB, centered	23	23.45	23.43	23.51
QPSK	1 RB, max offset	23	23.49	23.36	23.48
QPSK	50 % RB, zero offset	23	23.52	23.41	23.48
QPSK	50 % RB, centered	23	23.45	23.47	23.41
QPSK	50 % RB, max offset	23	23.39	23.51	23.42
QPSK	100 % RB	22	22.37	22.49	22.41
16QAM	1 RB, zero offset	22	22.41	22.38	22.48
16QAM	1 RB, centered	22	22.48	22.41	22.49
16QAM	1 RB, max offset	22	22.39	22.41	22.47
16QAM	50 % RB, zero offset	22	22.45	22.51	22.43
16QAM	50 % RB, centered	22	22.48	22.52	22.44
16QAM	50 % RB, max offset	22	22.31	22.48	22.34
16QAM	100 % RB	21	21.43	21.38	21.38

Channel bandwidth 20 MHz					
Modulation	Resource block configuration	Tuning target	Low channel	Mid channel	High channel
QPSK	1 RB, zero offset	23	23.44	23.45	23.4
QPSK	1 RB, centered	23	23.39	23.4	23.48
QPSK	1 RB, max offset	23	23.36	23.39	23.43
QPSK	50 % RB, zero offset	23	23.41	23.37	23.45
QPSK	50 % RB, centered	23	23.43	23.37	22.48
QPSK	50 % RB, max offset	23	23.44	23.37	23.45
QPSK	100 % RB	22	22.41	22.41	22.51
16QAM	1 RB, zero offset	22	22.38	22.49	22.4
16QAM	1 RB, centered	22	22.41	22.51	22.48
16QAM	1 RB, max offset	22	22.31	22.48	22.38
16QAM	50 % RB, zero offset	22	22.43	22.38	22.45
16QAM	50 % RB, centered	22	22.32	22.45	22.39
16QAM	50 % RB, max offset	22	22.45	22.34	22.32
16QAM	100 % RB	21	21.38	21.49	21.43

APPENDIX H: CONDUCTED POWER MEASUREMENTS FOR SUPPORTED GSM/GPRS/EGPRS TRANSMISSION MODES

H.1 Power Tuning Targets for Head, Body-worn and Wireless Router measurements

GSM 850			
Slot configuration	Low channel	Mid channel	High channel
GSM 1-slot	32.5	32.5	32.5
GPRS 2-slot	30.0	30.0	30.0
GPRS 3-slot	28.5	28.5	28.5
GPRS 4-slot	27.0	27.0	27.0
EGPRS 1-slot	27.0	27.0	27.0
EGPRS 2-slot	25.5	25.5	25.5
EGPRS 3-slot	24.0	24.0	24.0
EGPRS 4-slot	22.5	22.5	22.5

GSM 1900			
Slot configuration	Low channel	Mid channel	High channel
GSM 1-slot	30.2	30.2	30.2
GPRS 2-slot	27.0	27.0	27.0
GPRS 3-slot	25.5	25.5	25.5
GPRS 4-slot	24.0	24.0	24.0
EGPRS 1-slot	26.0	26.0	26.0
EGPRS 2-slot	24.5	24.5	24.5
EGPRS 3-slot	23.0	23.0	23.0
EGPRS 4-slot	21.5	21.5	21.5

H.2 Conducted Power from the Samples used in the Testing

Type: RM-942; Serial number: 004402/47/277425/0 used for GSM/GPRS/EGPRS850 SAR Head, Body-worn and Wireless Router measurements.

GSM 850			
Slot configuration	Low channel	Mid channel	High channel
GSM 1-slot	32.97	32.90	33.01
GPRS 2-slot	30.42	30.38	30.47
GPRS 3-slot	29.00	28.94	28.98
GPRS 4-slot	27.37	27.40	27.48
EGPRS 1-slot	27.35	27.50	27.46
EGPRS 2-slot	25.89	25.92	25.85
EGPRS 3-slot	24.38	24.46	24.41
EGPRS 4-slot	22.88	22.91	22.88

Type: RM-942; Serial number: 004402/47/277425/0 used for GSM/GPRS/EGPRS1900 SAR Head, Body-worn and Wireless Router measurements.

GSM 1900			
Slot configuration	Low channel	Mid channel	High channel
GSM 1-slot	30.58	30.57	30.55
GPRS 2-slot	27.48	27.50	27.49
GPRS 3-slot	25.89	25.90	25.98
GPRS 4-slot	24.35	24.41	24.47
EGPRS 1-slot	26.35	26.50	26.45
EGPRS 2-slot	24.94	24.86	24.86
EGPRS 3-slot	23.41	23.35	23.50
EGPRS 4-slot	21.93	21.86	21.89

APPENDIX I: CONDUCTED POWER MEASUREMENTS FOR SUPPORTED WCDMA TRANSMISSION MODES

I.1 Power Tuning Targets

Tuning targets			
Mode	Low channel	Mid channel	High channel
WCDMA850	23.80	23.80	23.80
WCDMA1900	23.50	23.50	23.50
WCDMA1700/2100	23.50	23.50	23.50

I.2 Conducted Power measurements from the Samples used in the Testing

Type: RM-942; Serial number: 004402/47/277477/1 used for WCDMA850 SAR Head, Body-worn and Wireless Router measurements.

WCDMA 850 (band 5)			
Mode	Low channel	Mid channel	High channel
WCDMA	24.22	24.24	24.27

Type: RM-942; Serial number: 004402/47/277477/1 used for WCDMA1700/2100 SAR Head, Body-worn and Wireless Router measurements.

WCDMA 1700/2100 (band 4)			
Mode	Low channel	Mid channel	High channel
WCDMA	23.85	24.00	23.88

Type: RM-942; Serial number: 004402/47/277477/1 used for WCDMA1900 SAR Head, Body-worn and Wireless Router measurements.

WCDMA 1900 (band 2)			
Mode	Low channel	Mid channel	High channel
WCDMA	24.13	24.04	23.96

WCDMA and HSUPA Subtest mode conducted powers, measured from as separate, fully representative sample are presented in Appendix D.

Appendix J: CONDUCTED POWER MEASUREMENTS FOR WLAN

J.1 Power Tuning Targets

WLAN 2.4 GHz: 20 MHz channel bandwidth							
			Tuning target				
Standard	Modulation	Data speed [Mbps]	CH 1	CH 2	CH 6	CH 10	CH 11
802.11b	BPSK	1	14	14	14	14	14
802.11b	QPSK	2	14	14	14	14	14
802.11b	QPSK	5.5	14	14	14	14	14
802.11b	QPSK	11	14	14	14	14	14
802.11g	BPSK	6	10	10	10	10	10
802.11g	BPSK	9	10	10	10	10	10
802.11g	QPSK	12	10	10	10	10	10
802.11g	QPSK	18	10	10	10	10	10
802.11g	16QAM	24	10	10	10	10	10
802.11g	16QAM	36	10	10	10	10	10
802.11g	64QAM	48	10	10	10	10	10
802.11g	64QAM	54	10	10	10	10	10
802.11n	BPSK	6.5 / 7.25	10	10	10	10	10
802.11n	QPSK	13.0 / 14.4	10	10	10	10	10
802.11n	QPSK	19.5 / 21.7	10	10	10	10	10
802.11n	16QAM	26.0 / 28.9	10	10	10	10	10
802.11n	16QAM	39.0 / 43.3	10	10	10	10	10
802.11n	64QAM	52.0 / 57.8	10	10	10	10	10
802.11n	64QAM	58.5 / 65.0	10	10	10	10	10
802.11n	64QAM	65.0 / 72.2	10	10	10	10	10

J.2 Conducted Power measurements from the Samples used in the Testing

Type: RM-941; Serial number: 004402/47/299339/7 used for WLAN for SAR Head and Body-worn measurements.

			Measured value				
Standard	Modulation	Data speed [Mbps]	CH 1	CH 2	CH 6	CH 10	CH 11
802.11b	BPSK	1	14.50	14.25	14.54	15.43	15.08
802.11b	QPSK	2	14.55	14.32	14.58	15.46	15.08
802.11b	QPSK	5.5	14.63	14.48	14.83	15.63	15.23
802.11b	QPSK	11	14.70	14.49	14.75	15.63	15.26
802.11g	BPSK	6	10.45	10.12	10.47	11.37	10.72
802.11g	BPSK	9	10.44	10.17	10.49	11.36	10.80
802.11g	QPSK	12	10.46	10.21	10.53	11.37	10.83
802.11g	QPSK	18	10.52	10.22	10.54	11.41	10.83
802.11g	16QAM	24	10.56	10.24	10.55	11.45	10.84
802.11g	16QAM	36	10.64	10.30	10.57	11.50	10.88
802.11g	64QAM	48	10.65	10.34	10.61	11.54	10.97
802.11g	64QAM	54	10.57	10.26	10.56	11.55	10.92
802.11n	BPSK	6.5 / 7.25	10.48	10.14	10.50	11.28	10.75
802.11n	QPSK	13.0 / 14.4	10.50	10.17	10.58	11.34	10.79
802.11n	QPSK	19.5 / 21.7	10.51	10.22	10.61	11.43	10.82
802.11n	16QAM	26.0 / 28.9	10.65	10.29	10.62	11.44	10.86
802.11n	16QAM	39.0 / 43.3	10.70	10.32	10.65	11.48	10.92
802.11n	64QAM	52.0 / 57.8	10.68	10.34	10.70	11.51	10.93
802.11n	64QAM	58.5 / 65.0	10.69	10.39	10.74	11.52	10.96
802.11n	64QAM	65.0 / 72.2	10.74	10.44	10.76	11.58	11.03