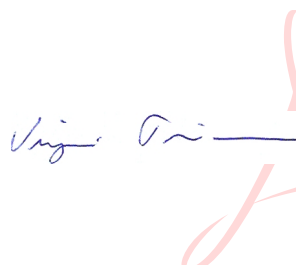


SAR Compliance Test Report

Test report no.:	FCC_RM-974_05	Date of report:	2014-07-24
Template version:	19.7	Number of pages:	68
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Measurements made by:	Nina Koskinen, Marko Laaksonen, Eva Lehtinen, Teuvo Miettinen		
Tested device:	RM-974		
FCC ID:	PDNRM-974	IC:	-
Supplement reports:	FCC_RM-974_01, SAR_Photo_RM-974_06		
Testing has been carried out in accordance with:	47CFR §2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices FCC published RF exposure KDB procedures RSS-102, Issue 4 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 - 2013 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 Microsoft.		
Test results:	The tested device complies with the requirements in respect of all parameters subject to the test. The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.		

Date and signatures:

For the contents:



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

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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	2014-03-25 to 2014-07-21
SN, HW and SW numbers of tested device	RM-974, SN: 004402/47/876167/3, HW: 3110, SW: 01061.00059.14212.33001, DUT: 18449 RM-974, SN: 004402/47/876161/6, HW: 3110, SW: 01061.00059.14212.33001, DUT: 18450 RM-974, SN: 004402/47/876262/2, HW: 3110, SW: 01061.00059.14212.33001, DUT: 18451 RM-974, SN: 004402/47/800253/2, HW: 2010, SW: 01061.00014.14112.00000, DUT: 18139 RM-974, SN: 004402/47/800177/3, HW: 2010, SW: 01061.00014.14112.00000, DUT: 18137 RM-974, SN: 004402/47/800076/7, HW: 2010, SW: 01061.00014.14112.00000, DUT: 18136 RM-974, SN: 004402/47/800075/9, HW: 2010, SW: 01061.00014.14112.00000, DUT: 18140
Batteries used in testing	BL-5H, DUT: 17900, 17901, 17902, 17903, 17904, 17905
Headsets used in testing	WH-108, DUT: 17569, 17570
Other accessories used in testing	CC-3085, DUT: 18131, 18132, 18133, 18134, 18135
State of sample	Prototype unit
Notes	-

1.1.1 Supplement reports referenced on the front cover of this report

FCC_RM-974_01 for RM-974 / HW:2010 / FCC ID: PDNRM-974

Head, Body-worn and Wireless Router SAR data for WLAN2450 have been taken from this report; 1 sample, SN: 004402/47/800253/2, was used in the RM-974/HW:2010 SAR testing to test the WLAN band.

Head, Body-worn and Wireless Router initial SAR testing for cellular and PCS bands have been done with RM-974/HW:2010 samples SN: 004402/47/800177/3, SN: 004402/47/800076/7 and SN: 004402/47/800075/9.

Head, Body-worn and Wireless Router optimized SAR testing for cellular and PCS bands have been done with RM-974/HW:3110 samples SN: 004402/47/876167/3, SN: 004402/47/876161/6 and SN: 004402/47/876262/2. Optimisation bases on the initial testing.

The FCC Grant for RM-974 / FCC ID: PDNRM-974 was issued on 13th May 2014.

1.2 Maximum Results

The maximum measured SAR values for Head configuration and Body Worn configuration are given in section 1.2.1 and 1.2.2 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 #
2-slot GPRS850	128 / 824.2	29.9 dBm	Left, Cheek	0.653 W/kg	0.72 W/kg	1.6 W/kg	PASSED	1
WCDMA850	4233 / 846.6	23.5 dBm	Right, Cheek	0.423 W/kg	0.46 W/kg	1.6 W/kg	PASSED	2
2-slot GPRS1900	512 / 1850.2	29.2 dBm	Left, Cheek	0.670 W/kg	0.70 W/kg	1.6 W/kg	PASSED	3
LTE2500 (Band 7)	21350 / 2560.0	19.9 dBm	Right, Cheek	0.680 W/kg	0.68 W/kg	1.6 W/kg	PASSED	4
WLAN2450	11 / 2462.0	16.4 dBm	Left, Cheek	0.656 W/kg	0.85 W/kg	1.6 W/kg	PASSED	5
2-slot GPRS850 + WLAN2450	-	-	Left, Cheek	0.760 W/kg	0.97 W/kg	1.6 W/kg	PASSED	-
WCDMA850 + WLAN2450	-	-	Left, Cheek	0.727 W/kg	0.93 W/kg	1.6 W/kg	PASSED	-
2-slot GPRS1900 + WLAN2450	-	-	Left, Cheek	0.731 W/kg	0.93 W/kg	1.6 W/kg	PASSED	-
LTE2500 (Band 7) + WLAN2450	-	-	Left, Cheek	0.722 W/kg	0.92 W/kg	1.6 W/kg	PASSED	-

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 #
2-slot GPRS850	251 / 848.8	29.8 dBm	1.5cm	0.664 W/kg	0.75 W/kg	1.6 W/kg	PASSED	6
WCDMA850	4233 / 846.6	23.5 dBm	1.5cm	0.414 W/kg	0.45 W/kg	1.6 W/kg	PASSED	7
2-slot GPRS1900	512 / 1850.2	28.9 dBm	1.5cm	0.683 W/kg	0.77 W/kg	1.6 W/kg	PASSED	8
LTE2500 (Band 7)	20850 / 2510.0	19.1 dBm	1.5cm	0.270 W/kg	0.33 W/kg	1.6 W/kg	PASSED	9
WLAN2450	11 / 2462.0	16.4 dBm	1.5cm	0.108 W/kg	0.14 W/kg	1.6 W/kg	PASSED	10
2-slot GPRS850 + WLAN2450	-	-	1.5 cm	0.676 W/kg	0.76 W/kg	1.6 W/kg	PASSED	-
WCDMA850 + WLAN2450	-	-	1.5 cm	0.436 W/kg	0.49 W/kg	1.6 W/kg	PASSED	-
2-slot GPRS1900 + WLAN2450	-	-	1.5 cm	0.669 W/kg	0.75 W/kg	1.6 W/kg	PASSED	-
LTE2500 (Band 7) + WLAN2450	-	-	1.5 cm	0.298 W/kg	0.34 W/kg	1.6 W/kg	PASSED	-

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 #
2-slot GPRS850	128 / 824.2	29.9 dBm	10.0 mm	0.847 W/kg	0.93 W/kg	1.6 W/kg	PASSED	11
WCDMA850	4233 / 846.6	23.5 dBm	10.0 mm	0.515 W/kg	0.57 W/kg	1.6 W/kg	PASSED	12
2-slot GPRS1900	661 / 1880.0	29.1 dBm	10.0 mm	1.15 W/kg	1.23 W/kg	1.6 W/kg	PASSED	13
LTE2500 (Band 7)	21100 / 2535.0	19.4 dBm	10.0 mm	0.646 W/kg	0.73 W/kg	1.6 W/kg	PASSED	14
WLAN2450	11 / 2462.0	16.4 dBm	10.0 mm	0.221 W/kg	0.29 W/kg	1.6 W/kg	PASSED	15
2-slot GPRS850 + WLAN2450	-	-	10.0 mm	0.860 W/kg	0.96 W/kg	1.6 W/kg	PASSED	-
WCDMA850 + WLAN2450	-	-	10.0 mm	0.555 W/kg	0.62 W/kg	1.6 W/kg	PASSED	-
2-slot GPRS1900 + WLAN2450	-	-	10.0 mm	1.16 W/kg	1.25 W/kg	1.6 W/kg	PASSED	-
LTE2500 (Band 7) + WLAN2450	-	-	10.0 mm	0.508 W/kg	0.61 W/kg	1.6 W/kg	PASSED	-

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

1.2.4 Summary SAR data

	FCC-defined SAR values for the Grants of Equipment Authorization		
	PCE	DTS	NII
Maximum Head SAR values	0.72 W/kg	0.85 W/kg	-
{Max + Max} Simultaneous Head SAR value	1.56 W/kg		
Maximum Body SAR values	0.77 W/kg	0.14 W/kg	-
{Max + Max} Simultaneous Body SAR value	0.88 W/kg		
Maximum Product Specific (Wireless Router) SAR values	1.23 W/kg	0.29 W/kg	-
{Max + Max} Simultaneous Product Specific SAR value	1.38 W/kg		
Maximum Simultaneous SAR value Head SAR: 2-slot GPRS850 + WLAN2450	1.56 W/kg		

Note:

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

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

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

1.2.5 Maximum Drift

Maximum drift covered by 5% scaling up of the SAR values	Maximum drift during measurements
0.2dB	0.11dB

1.2.6 Measurement Uncertainty

Expanded Uncertainty (k=2) 95%	± 29.8%
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2. DESCRIPTION OF THE DEVICE UNDER TEST

Device category	Portable
Exposure environment	General population / uncontrolled

Modes of Operation	Bands	Modulation Mode	Duty Cycle	Transmitter Frequency Range (MHz)	Power Tuning Target (dBm)				Upper Limit of Power Tuning Tolerance (dBm)			
					1-slot	2-slot	3-slot	4-slot	1-slot	2-slot	3-slot	4-slot
GSM / GPRS	850	GMSK	1/8 to 4/8	824 – 849	32.3	29.9	27.9	26.5	32.7	30.3	28.3	26.9
	1900			1850 – 1910	29.5	29.0	27.0	25.5	29.9	29.4	27.4	25.9
EGPRS	850	GMSK	1/8 to 4/8	824 – 849	26.5	25.4	23.5	22.1	26.9	25.8	23.9	22.5
	1900			1850 – 1910	25.4	25.2	23.3	22.0	25.8	25.6	23.7	22.4
WCDMA	850 (Band V)		1	826 – 847	23.5				23.9			
HSUPA	850 (Band V)		1	826 – 847	See Appendix D for details							
LTE	2500 (Band 7)	QPSK / 16QAM	1	2500 - 2570	19.5 / 18.5				19.9 / 18.9			
BT	2450	GFSK	1	2402 – 2480	10.0				11.5			
					Ch 1	Ch 2-10		Ch 11	Ch 1	Ch 2-10		Ch 11
WLAN b-mode	2450	BPSK / QPSK	1	2412 – 2472	16.0	16.0		16.0	17.5	17.5		17.5
WLAN g-mode	2450	up to 64QAM	1	2412 – 2472	13.0	16.0		11.0	14.5	17.5		12.5
WLAN n-mode 20MHz	2450	up to 64QAM	1	2412 – 2462 2412 – 2472	13.0	16.0		11.0	14.5	17.5		12.5

Outside of USA the transmitter of the device is capable of operating also in GSM/GPRS/EGPRS900, GSM/GPRS/EGPRS1800, WCDMA/HSUPA900, WCDMA/HSUPA2100, LTE850 (Band 20) and LTE1800 (Band 3) 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 one FCC LTE band, LTE2500 (Band 7). In LTE2500 (Band 7) the device possesses channel bandwidths of 20MHz, 15MHz, 10MHz and 5MHz.

This is a BT Class 1 device and its power tuning target upper limit is 11.5dBm. WLAN2450 power tuning target upper limit is 17.5dBm. Since WLAN2450 and BT use same frequency and antenna, WLAN2450 power is 6.0dB higher, and they cannot transmit simultaneously, the WLAN2450 standalone SAR is conservative estimation of BT SAR. As WLAN2450 SAR result is below limit, also BT SAR can be deemed to comply without further analysis or standalone measurements. Also WLAN2450+cellular bands combined SAR results can be regarded as conservative estimation of BT+cellular combined SARs. As WLAN2450+cellular combined SAR result are below limit, also BT+cellular combined SAR can be deemed to comply without further analysis and estimations required in KDB 447498 for simultaneous transmission exclusion.

Two antennas are used for transmission of some of the cellular bands in diversity-Tx mode. In this mode the antennas can not transmit at the same time. See table below for applicable antennas in each transmission band and mode. A separate single antenna is used for WLAN. All antennas are fully and separately SAR tested for individual transmission. Simultaneous transmissions with WLAN2450 are assessed separately for both cellular antennas.

	Tx Antennas	
	Antenna 1	Antenna 2
GSM/GPRS/EGPRS850		✓
GSM/GPRS/EGPRS1900	✓	
WCDMA850 (Band 5)	✓	
LTE2500 (Band 7)	✓	✓

Simultaneous transmission of any singular cellular and PCS band is possible with WLAN in Head, Body-worn and Wireless router use according to the table below.

Simultaneous transmission capabilities in Head, Body-worn and Wireless Router use	
	WLAN2450
GSM/GPRS/EGPRS850	✓
WCDMA850	✓
GSM/GPRS/EGPRS1900	✓
LTE2500 (Band 7)	✓

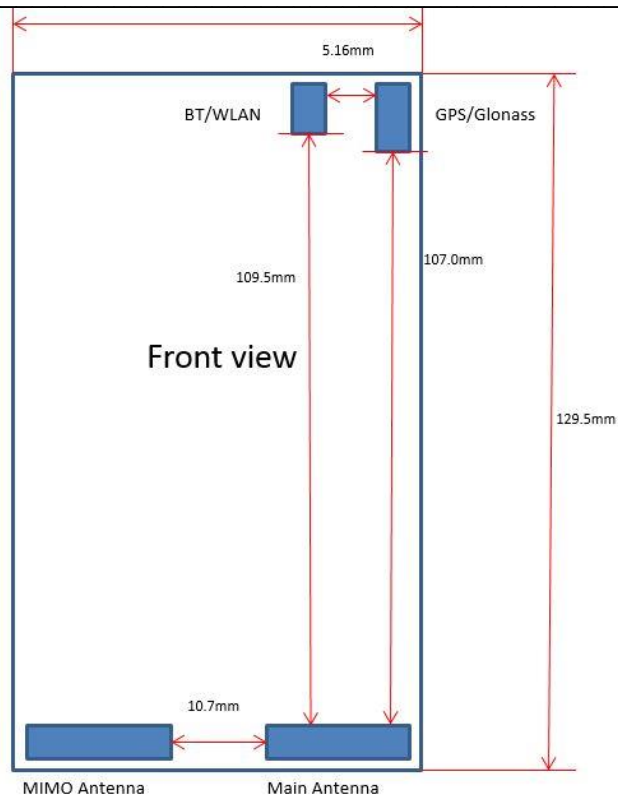
2.1 Power reductions in Wireless Router configurations

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

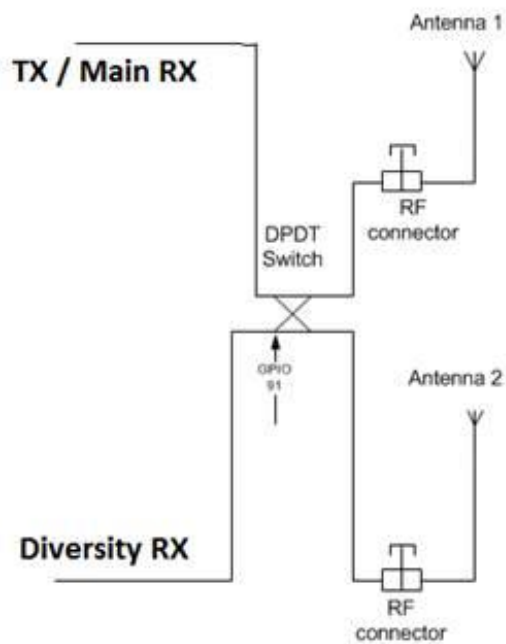
Band	Power reduction in WR mode	Target tuning power in WR mode	
GPRS/EGPRS850	0 dB	1-slot GPRS: 32.3dBm 2-slot GPRS: 29.9dBm 3-slot GPRS: 27.9dBm 4-slot GPRS: 26.5dBm	1-slot EGPRS: 26.5dBm 2-slot EGPRS: 25.4dBm 3-slot EGPRS: 23.5dBm 4-slot EGPRS: 22.1dBm
WCDMA850	0 dB	23.5dBm	
GPRS/EGPRS1900	0 dB	1-slot GPRS: 29.5dBm 2-slot GPRS: 29.0dBm 3-slot GPRS: 27.0dBm 4-slot GPRS: 25.5dBm	1-slot EGPRS: 25.4dBm 2-slot EGPRS: 25.2dBm 3-slot EGPRS: 23.3dBm 4-slot EGPRS: 22.0dBm
LTE2500 (QPSK)	0 dB	19.5dBm	
WLAN2450 b-mode (1Mbps DSSS)	0 dB	16.0 dBm	

2.2 Description of the Antenna

The device has 2 separate internal antennas for cellular, AWS and PCS use and one internal antenna for WLAN use. The cellular antenna 1 is located at the near right bottom underneath the back cover and cellular antenna 2 is located at the near left bottom underneath the back cover. The WLAN antenna is located at the top underneath the back cover.



Schematics showing Tx and Rx circuitry, antenna switch, conducted ports and antenna.



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

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

In all operating bands the measurements were performed on lowest, middle and highest channels, and/or on all required test channels as defined in Published FCC KDB Procedures.

The number of Tx slots in all GSM/GPRS mode tests was based on tuning target/conducted power data, see Appendix H. The number of slots with highest or equal highest time-average power was tested.

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.

The transmission mode of the device in all WLAN b-mode tests was BPSK 1Mbps. Additionally in WLAN b-mode QPSK 11Mbps was used for check measurements. These modes have the highest time-averaged output power of all the WLAN a, b, g and n modulation modes in this device as illustrated in table in Appendix J. All WLAN testing has been carried out in accordance with FCC KDB 248227: SAR Measurement Procedures for 802.11 a/b/g Transmitters.

LTE band has been tested according to the guidance given in KDB941225 D05 SAR for LTE Devices v02r02. MPR values as stipulated in Table 6.2.3_1 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

No additional MPR settings have been incorporated into the design of the device and therefore no A-MPR settings have been active during its testing.

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

KDB 941225 D05 SAR for LTE Devices v02r02
 KDB 941225 D01 SAR Measurement Procedures for 3G Devices
 KDB 248227 SAR Measurement Procedures for 802.11 a/b/g Transmitters
 KDB 648474 D04 SAR Handsets Multi Xmitter and Ant v01
 KDB 941225 D06 v01 Hot Spot SAR
 KDB 447498 D01 General RF Exposure Guidance v05
 KDB 690783 D01 SAR Listings on Grants
 KDB 865664 D01 SAR Measurements 100MHz to 6GHz v01
 KDB 865664 D02 SAR Reporting v01

4. DESCRIPTION OF THE TEST EQUIPMENT

4.1 Measurement System and Components

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

The following table lists calibration dates of SPEAG components:

Test Equipment	Serial Number	Calibration date	Calibration expiry
DAE4	538	2013-11	2014-11
DAE4	555	2014-05	2015-05
DAE4	793	2013-06	2014-06
DAE4	1302	2013-11	2014-11
DAE4	1355	2014-05	2015-05
E-field Probe ES3DV3	3131	2013-06	2014-06
E-field Probe ES3DV3	3165	2014-05	2015-05
E-field Probe ES3DV3	3194	2013-11	2014-11
E-field Probe EX3DV4	3834	2014-05	2015-05
E-field Probe EX3DV4	3960	2013-12	2014-12
Dipole Validation Kit, D835V2	462	2014-05	2015-05
Dipole Validation Kit, D835V2	480	2012-12	2014-12
Dipole Validation Kit, D1900V2	5d013	2012-12	2014-12
Dipole Validation Kit, D1900V2	5d030	2014-05	2015-05
Dipole Validation Kit, D2450V2	749	2012-12	2014-12
Dipole Validation Kit, D2600V2	1056	2012-11	2014-11
DASY5 software	Version 52.8	-	-

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration date	Calibration expiry
Signal Generator	E4438C	MY42080610	2013-08	2014-08
Signal Generator	SMB100A	105735	2013-08	2014-08
Signal Generator	E4436B	US39260114	2013-08	2014-08
Amplifier	5S1G4M3	302338	-	-
Amplifier	5S4G11	312661	-	-
Amplifier	5S1G4	25583	-	-
Power Meter	NRVS	838624/032	2013-08	2014-08
Power Meter	NRP	100714	2013-08	2014-08
Power Meter	NRVZ	849305/029	2013-08	2014-08
Power Sensor	NRV-Z32	100067	2013-08	2014-08
Power Sensor	NRP-Z92	100085	2013-08	2014-08
Power Sensor	NRV-Z32	825600/002	2013-08	2014-08
Call Tester	CMU 200	103293	-	-
Call Tester	CMU 200	101111	-	-
Call Tester	CMW 500	110565	-	-
Network Analyzer	ENA E5071C	MY46213166	2013-08	2014-08
Dielectric Probe Kit	DAK-3.5	1042	-	-

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
Application	Distance from probe tip to dipole centers: 2.0 mm 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
Application	Distance from probe tip to dipole centers: 1.0 mm 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.

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 conforms to the requirements of FCC published RF Exposure KDB Procedures.

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

4.3 Tissue Simulants

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

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

4.3.1 Tissue Simulant Recipes

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

800MHz band

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

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	Calibrated signal type(s)	DAE unit Type / SN	Validation done	
							Head tissue simulant	Body tissue simulant
835	TCC Salo / SAR-2	V52.8	D835V2 / 480	ES3DV4 / 3194	CW	DAE4 / 538	2014-02	2013-12
835	TCC Salo / SAR-2	V52.8	D835V2 / 462	ES3DV4 / 3194	CW	DAE4 / 538	2014-02	2013-12
1900	TCC Salo / SAR-1	V52.8	D1900V2 / 5d013	ES3DV3 / 3131	CW	DAE4 / 793	2013-07	2013-07
1900	TCC Salo / SAR-1	V52.8	D1900V2 / 5d030	EX3DV4 / 3834	CW	DAE4 / 1355	2014-06	2014-06
1900	TCC Salo / SAR-5	V52.8	D1900V2 / 5d030	EX3DV4 / 3165	CW	DAE4 / 555	2014-06	-
2450	TCC Salo / SAR-4	V52.8	D2450V2 / 749	EX3DV4 / 3960	CW	DAE4 / 1302	2014 -01	2014 -01
2600	TCC Salo / SAR-4	V52.8	D2600V2 / 1056	EX3DV4 / 3960	CW	DAE4 / 1302	2014-02	2014-02

4.4.2 System checking

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

System checking, head tissue simulant

f [MHz]	Description	SAR 1g [W/kg]	Estimated SAR 1g [W/kg]	Estimated SAR 1g Deviation	Scaled 1W SAR 1g [W/kg]	Dielectric Parameters*		SAR 1g Deviation from target	Dielectric Parameters Deviation from target		Temp [°C]	Plot #
				dSAR [%]		ϵ_r	σ [S/m]	dSAR [%]	$d\epsilon_r$ [%]	$d\sigma$ [%]		
	Tolerances			±3%				±10 %	±5 %	±5 %		
835	Reference result SN:480	-	-	-	9.40	41.5	0.90	TCC Salo/SAR-2 ES3DV3 SN:3194 Head 835MHz				
	2014-03-25	2.23	2.28	2.24	8.92	40.7	0.90	-5.11	-1.93	0.00	22.1	1
835	Reference result SN:462	-	-	-	9.19	41.5	0.90	TCC Salo/SAR-2 ES3DV3 SN:3194 Head 835MHz				
	2014-07-04	2.36	2.41	2.12	9.44	40.7	0.91	2.72	-1.93	1.11	22.2	2
1900	Reference result SN:5d013	-	-	-	40.60	40.0	1.40	TCC Salo/SAR-1 ES3DV3 SN:3131 Head 1900MHz				
	2014-03-28	9.52	9.69	1.79	38.08	39.3	1.41	-6.21	-1.75	0.71	21.7	3
1900	Reference result SN:5d030	-	-	-	39.70	40.0	1.40	TCC Salo/SAR-1 ES3DV3 SN:3165 Head 1900MHz				
	2014-07-07	9.93	10.20	2.72	39.72	38.5	1.46	0.05	-3.75	4.29	21.2	4
2450	Reference result SN:749	-	-	-	53.90	39.2	1.80	TCC Salo/SAR-4 EX3DV4 SN:3960 Head 2450MHz				
	2014-03-27	13.80	13.90	0.72	55.20	38.1	1.81	2.41	-2.81	0.56	20.8	5
	2014-03-28	13.80	13.90	0.72	55.20	38.6	1.82	2.41	-1.53	1.11	21.7	-
2600	Reference result SN:1056	-	-	-	57.80			TCC Salo/SAR-4 EX3DV4 SN:3960 Head 2600MHz				
	2014-03-25	14.60	15.00	2.74	58.40	38.3	1.98	1.04	-1.79	1.02	21.0	6
	2014-07-03	14.50	14.80	2.07	58.00	38.7	1.99	0.35	-0.77	1.53	21.1	-
	2014-07-07	14.50	14.80	2.07	58.00	39.0	1.99	0.35	0.00	1.53	21.1	-

* Dielectric parameter reference data taken from IEEE1528/IEC62209

System checking, body tissue simulant

f [MHz]	Description	SAR 1g [W/kg]	Estimated SAR 1g [W/kg]	Estimated SAR 1g Deviation	Scaled 1W SAR 1g [W/kg]	Dielectric Parameters *		SAR 1g Deviation from target	Dielectric Parameters Deviation from target		Temp [°C]	Plot #
				dSAR [%]		ϵ_r	σ [S/ m]	dSAR [%]	$d\epsilon_r$ [%]	$d\sigma$ [%]		
	Tolerances			±3%				±10 %	±5 %	±5 %		
835	Reference result SN:480	-	-	-	9.51	55.2	0.97	TCC Salo/SAR-2 ES3DV3 SN:3194 Body 835MHz				
	2014-03-27	2.33	2.36	1.29	9.32	54.1	0.98	-2.00	-1.99	1.03	21.6	7
835	Reference result SN:462	-	-	-	9.41	55.2	0.97	TCC Salo/SAR-2 ES3DV3 SN:3194 Body 835MHz				
	2014-07-09	2.38	2.39	0.42	9.52	53.8	0.98	1.17	-2.54	1.03	22.0	8
1900	Reference result SN:5d013	-	-	-	41.00	53.3	1.52	TCC Salo/SAR-1 ES3DV3 SN:3131 Body 1900MHz				
	2014-03-31	9.50	9.41	-0.95	38.00	51.6	1.53	-7.32	-3.19	0.66	20.9	9
1900	Reference result SN:5d030	-	-	-	40.30	53.3	1.52	TCC Salo/SAR-1 ES3DV3 SN:3834 Body 1900MHz				
	2014-07-03	10.20	10.10	-0.98	40.80	52.1	1.54	1.24	-2.25	1.32	21.0	10
2450	Reference result SN:749	-	-	-	51.50	52.7	1.95	TCC Salo/SAR-4 EX3DV4 SN:3960 Body 2450MHz				
	2014-03-28	12.60	12.50	-0.79	50.40	51.1	1.94	-2.14	-3.04	-0.51	21.2	-
	2014-03-31	12.40	12.40	0.00	49.60	51.6	1.94	-3.69	-2.09	-0.51	21.2	11
2600	Reference result SN:1056	-	-	-	55.60	52.5	2.16	TCC Salo/SAR-4 EX3DV4 SN:3960 Body 2600MHz				
	2014-03-31	13.90	14.10	1.44	55.60	51.2	2.12	0.00	-2.48	-1.85	21.2	-
	2014-04-01	14.00	14.20	1.43	56.00	50.8	2.13	0.72	-3.24	-1.39	21.1	12
	2014-07-08	13.90	14.10	1.44	55.60	51.1	2.14	0.00	-2.67	-0.93	20.9	-
	2014-07-09	14.00	14.20	1.43	56.00	50.9	2.15	0.72	-3.05	-0.46	20.9	-
	2014-07-21	13.90	14.10	1.44	55.60	50.7	2.13	0.00	-3.43	-1.39	21.0	-

* Dielectric parameter reference data taken from FCC Published RF Exposure KDB Procedures

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 recommended value		Temp [°C]
		ϵ_r	σ [S/m]	d ϵ_r [%]	d σ [%]	
	Tolerances			±5 %	±5 %	
835	Recommended value	41.5	0.90			
	2014-03-25	40.7	0.90	-1.93	0.00	22.1
	2014-07-04	40.7	0.91	-1.93	1.11	22.2
836	Recommended value	41.5	0.90			
	2014-03-25	40.7	0.90	-1.93	0.00	22.1
	2014-07-04	40.7	0.91	-1.93	1.11	22.2
1880	Recommended value	40.0	1.40			
	2014-03-28	39.4	1.38	-1.50	-1.43	21.7
	2014-07-07	38.6	1.43	-3.50	2.14	21.2
2437	Recommended value	39.2	1.79			
	2014-03-27	38.1	1.80	-2.81	0.56	20.8
	2014-03-28	38.7	1.80	-1.28	0.56	21.7
2535	Recommended value	39.1	1.89			
	2014-03-25	38.6	1.91	-1.28	1.06	21.0
	2014-07-03	38.9	1.92	-0.51	1.59	21.1
	2014-07-07	39.2	1.91	0.26	1.06	21.1

Body tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Dielectric Parameters Deviation from Recommended value		Temp [°C]
		ϵ_r	σ [S/m]	$d\epsilon_r$ [%]	$d\sigma$ [%]	
	Tolerances			± 5 %	± 5 %	
835	Recommended value	55.2	0.97			
	2014-03-27	54.1	0.98	-1.99	1.03	21.6
	2014-07-09	53.8	0.98	-2.54	1.03	22.0
836	Recommended value	55.2	0.97			
	2014-03-27	54.1	0.98	-1.99	1.03	21.6
	2014-07-09	53.8	0.98	-2.54	1.03	22.0
1880	Recommended value	53.3	1.52			
	2014-03-31	51.7	1.51	-3.00	-0.66	20.9
	2014-07-03	52.2	1.52	-2.06	0.00	21.0
2437	Recommended value	52.7	1.94			
	2014-03-28	51.1	1.93	-3.04	-0.52	21.2
	2014-03-31	51.7	1.92	-1.90	-1.03	21.2
2535	Recommended value	52.6	2.07			
	2014-03-31	51.4	2.04	-2.28	-1.45	21.2
	2014-04-01	51.0	2.05	-3.04	-0.97	21.1
	2014-07-08	51.3	2.06	-2.47	-0.48	20.9
	2014-07-09	51.0	2.06	-3.04	-0.48	20.9
	2014-07-21	51.0	2.05	-3.04	-0.97	21.0

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 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.



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 "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques".

5.2.2 Body Worn Configuration

The device was placed in the SPEAG holder using the spacer and placed below the flat 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.

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

5.2.3 Wireless Router Configuration

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

5.3 Scan Procedures

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

5.4 SAR Averaging Methods

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

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

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

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

6. MEASUREMENT UNCERTAINTY

Table 6.1 – Measurement uncertainty evaluation for 1g Full SAR in 0.3-6GHz range

Uncertainty Component	Section in IEEE 1528	Tol. (%)	Prob Dist	Div	G_i	$G_i \cdot U_i$ (%)	V_i
Measurement System							
Probe Calibration	E2.1	±6.6	N	1	1	±6.6	∞
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	±2.0	R	√3	1	±1.2	∞
Linearity	E2.4	±4.7	R	√3	1	±2.7	∞
System Detection Limits	E2.5	±1.0	R	√3	1	±0.6	∞
Modulation response	E2.5	±2.4	R	√3	1	±1.4	
Readout Electronics	E2.6	±0.3	N	1	1	±0.3	∞
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	±0.8	R	√3	1	±0.5	∞
Probe Positioning with respect to Phantom Shell	E6.3	±6.7	R	√3	1	±3.9	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E5	±4.0	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	±3.6	N	1	1	±3.6	5
Output Power Variation - SAR drift measurement	E2.9	±5.0	R	√3	1	±2.9	∞
Phantom and Tissue Parameters							
Phantom Uncertainty (shape and thickness tolerances)	E3.1	±6.6	R	√3	1	±3.8	∞
SAR correction	E3.2	±1.9	R	√3	1	±1.1	∞
Conductivity Target - tolerance	E3.4	±5.0	R	√3	0.6	±1.8	∞
Conductivity - measurement uncertainty	E3.3	±5.5	N	1	0.6	±3.5	5
Permittivity Target - tolerance	E3.4	±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			±14.0	198
Coverage Factor for 95%			k=2				
Expanded Uncertainty						±28.2	

Table 6.2 – Measurement uncertainty evaluation for 1g Fast SAR in 0.3-6GHz range

Relative DASY5 Uncertainty Budget for Fast SAR Tests According to IEEE 1528/2011 and IEC 62209-1/2011 (0.3-6 GHz range)						
Uncertainty Component	Tol. (%)	Prob Dist.	Div.	G_i	$G_i \cdot U_i$ (%)	ν_i
Measurement System						
Probe Calibration	±6.6	N	1	0		
Axial Isotropy	±4.7	R	√3	$(1-c_p)^{1/2}$	±1.9	∞
Hemispherical Isotropy	±9.6	R	√3	$(c_p)^{1/2}$	±3.9	∞
Boundary Effect	±2.0	R	√3	1	±1.2	∞
Linearity	±4.7	R	√3	1	±2.7	∞
System Detection Limits	±1.0	R	√3	1	±0.6	∞
Modulation Response	±2.4	R	√3	1	±1.4	∞
Readout Electronics	±0.3	N	1	0		
Response Time	±0.8	R	√3	0		
Integration Time	±2.6	R	√3	1	±1.5	∞
RF Ambient Conditions - Noise	±3.0	R	√3	1	±1.7	∞
RF Ambient Conditions - Reflections	±3.0	R	√3	0		
Probe Positioner Mechanical Tolerance	±0.8	R	√3	1	±0.5	∞
Probe Positioning with respect to Phantom Shell	±6.7	R	√3	1	±3.9	∞
Spatial x-y Resolution	±10.0	R	√3	1	±5.8	∞
Fast SAR z Approximation	±14.0	R	√3	1	±8.1	∞
Test sample Related						
Test Sample Positioning	±6.0	N	1	1	±6.0	12
Device Holder Uncertainty	±3.6	N	1	1	±3.6	5
Output Power Variation - SAR drift measurement	±5.0	R	√3	1	±2.9	∞
Power Scaling	±0	R	√3	0		
Phantom and Setup						
Phantom Uncertainty (shape and thickness tolerances)	±6.6	R	√3	1	±3.8	∞
SAR correction	±1.9	R	√3	0		
Conductivity Target - tolerance	±1.9	R	√3	0		
Conductivity - measurement uncertainty	±5.0	R	√3	0		
Permittivity Target - tolerance	±5.5	N	1	0		
Permittivity - measurement uncertainty	±5.0	R	√3	0		
Combined Standard Uncertainty		RSS			±14.9	748
Coverage Factor for 95%		k=2				
Expanded Uncertainty					±29.8	

7. RESULTS

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

GSM/GPRS/EGPRS850 Head SAR results / HW2010 / Antenna 2**

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz	Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz		
1-slot GPRS	Tuning Target + Tolerance [dBm]		32.7			Scaling factor*				
	Conducted Slot Average Power [dBm]		32.3	32.4	32.4	0.4	0.3	0.3	dB	
	Time-averaged power [dBm]		23.3	23.4	23.4	1.10	1.07	1.07	Lin	
			No testing required for this slot configuration.							
2-slot GPRS	Tuning Target + Tolerance [dBm]		30.3			Scaling factor*				
	Conducted Slot Average Power [dBm]		29.9	30.2	30.1	0.4	0.1	0.2	dB	
	Time-averaged power [dBm]		23.9	24.2	24.1	1.10	1.02	1.05	Lin	
	Left Cheek	Estimated SAR	0.628	0.599	0.595	0.689	0.613	0.623	0.03	1
		Full SAR	0.653	-	-	0.716	-	-		
	Left Tilt	Estimated SAR	-	0.362	-	-	0.370	-	-	-
		Full SAR	-	-	-	-	-	-		
	Right Cheek	Estimated SAR	-	0.482	-	-	0.493	-	-	-
		Full SAR	-	-	-	-	-	-		
	Right Tilt	Estimated SAR	-	0.375	-	-	0.384	-	-	-
		Full SAR	-	-	-	-	-	-		
	CC-3085 Left Cheek	Estimated SAR	0.602	0.593	0.575	0.660	0.607	0.602	-	-
		Full SAR	-	-	-	-	-	-		
3-slot GPRS	Tuning Target + Tolerance [dBm]		28.3			Scaling factor*				
	Conducted Slot Average Power [dBm]		27.9	28.2	28.1	0.4	0.1	0.2	dB	
	Time-averaged power [dBm]		23.6	23.9	23.8	1.10	1.02	1.05	Lin	
			No testing required for this slot configuration.							
4-slot GPRS	Tuning Target + Tolerance [dBm]		26.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		26.5	26.8	26.8	0.4	0.1	0.1	dB	
	Time-averaged power [dBm]		23.5	23.8	23.8	1.10	1.02	1.02	Lin	
			No testing required for this slot configuration.							
1-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		26.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		26.5	26.6	26.5	0.4	0.3	0.4	dB	
	Time-averaged power [dBm]		17.5	17.6	17.5	1.10	1.07	1.10	Lin	
			No testing required for this slot configuration.							

(GSM/GPRS/EGPRS850 Table/HW2010/Ant 2 continues)

(GSM/GPRS/EGPRS850 Table/HW2010/Ant 2 continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz	Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz		
2-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		25.8			Scaling factor*				
	Conducted Slot Average Power [dBm]		25.4	25.4	25.4	0.4	0.4	0.4	dB	
	Time-averaged power [dBm]		19.4	19.4	19.4	1.10	1.10	1.10	Lin	
	Left Cheek	Estimated SAR	0.221	-	-	0.242	-	-	-	-
		Full SAR	-	-	-	-	-	-	-	-
3-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		23.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		23.5	23.5	23.6	0.4	0.4	0.3	dB	
	Time-averaged power [dBm]		19.2	19.2	19.3	1.10	1.10	1.07	Lin	
			No testing required for this slot configuration.							
4-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		22.5			Scaling factor*				
	Conducted Slot Average Power [dBm]		22.1	22.3	22.1	0.4	0.2	0.4	dB	
	Time-averaged power [dBm]		19.1	19.3	19.1	1.10	1.05	1.10	Lin	
			No testing required for this slot configuration.							

GSM/GPRS/EGPRS850 Head SAR results / HW3110 / Antenna 2

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz	Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz		
1-slot GPRS	Tuning Target + Tolerance [dBm]		32.7			Scaling factor*				
	Conducted Slot Average Power [dBm]		31.8	32.0	32.0	0.9	0.7	0.7	dB	
	Time-averaged power [dBm]		22.8	23.0	23.0	1.23	1.17	1.17	Lin	
			No testing required for this slot configuration.							
2-slot GPRS	Tuning Target + Tolerance [dBm]		30.3			Scaling factor*				
	Conducted Slot Average Power [dBm]		29.8	30.0	29.8	0.5	0.3	0.5	dB	
	Time-averaged power [dBm]		23.8	24.0	23.8	1.12	1.07	1.12	Lin	
	Left Cheek	Estimated SAR	0.580	0.554	0.543	0.651	0.594	0.609	0.02	-
Full SAR		0.598	-	-	0.671	-	-			
3-slot GPRS	Tuning Target + Tolerance [dBm]		28.3			Scaling factor*				
	Conducted Slot Average Power [dBm]		27.7	27.9	27.7	0.6	0.4	0.6	dB	
	Time-averaged power [dBm]		23.4	23.6	23.4	1.15	1.10	1.15	Lin	
			No testing required for this slot configuration.							
4-slot GPRS	Tuning Target + Tolerance [dBm]		26.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		26.1	26.5	26.2	0.8	0.4	0.7	dB	
	Time-averaged power [dBm]		23.1	23.5	23.2	1.20	1.10	1.17	Lin	
			No testing required for this slot configuration.							
1-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		26.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		26.2	26.3	26.2	0.7	0.6	0.7	dB	
	Time-averaged power [dBm]		17.2	17.3	17.2	1.17	1.15	1.17	Lin	
			No testing required for this slot configuration.							
2-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		25.8			Scaling factor*				
	Conducted Slot Average Power [dBm]		25.1	25.2	25.1	0.7	0.6	0.7	dB	
	Time-averaged power [dBm]		19.1	19.2	19.1	1.17	1.15	1.17	Lin	
			No testing required for this slot configuration.							
3-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		23.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		23.1	23.3	23.1	0.8	0.6	0.8	dB	
	Time-averaged power [dBm]		18.8	19.0	18.8	1.20	1.15	1.20	Lin	
			No testing required for this slot configuration.							
4-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		22.1			Scaling factor*				
	Conducted Slot Average Power [dBm]		21.8	22.0	21.8	0.3	0.1	0.3	dB	
	Time-averaged power [dBm]		18.8	19.0	18.8	1.07	1.02	1.07	Lin	
			No testing required for this slot configuration.							

WCDMA850 Head SAR results / HW2010 / Antenna 1**

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz	Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz		
WCDMA	Tuning Target + Tolerance [dBm]		23.9			Scaling factor*				
	Conducted Power [dBm]		23.5	23.5	23.5	0.4	0.4	0.4	dB	
	Time-averaged power [dBm]		23.5	23.5	23.5	1.10	1.10	1.10	Lin	
	Left Cheek	Estimated SAR	-	0.325	-	-	0.356	-	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Left Tilt	Estimated SAR	-	0.194	-	-	0.213	-	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Right Cheek	Estimated SAR	0.370	0.397	0.407	0.406	0.435	0.446	0.02	2
		Full SAR	-	-	0.423	-	-	0.464		
	Right Tilt	Estimated SAR	-	0.232	-	-	0.254	-	-	-
		Full SAR	-	-	-	-	-	-	-	-
	CC-3085 Right Cheek	Estimated SAR	0.346	0.349	0.382	0.379	0.383	0.419	-	-
		Full SAR	-	-	-	-	-	-	-	-

WCDMA850 Head SAR results / HW3110 / Antenna 1

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 4132	Ch 4175	Ch 4233	Ch 4132	Ch 4175	Ch 4233		
			826.4 MHz	835.0 MHz	846.6 MHz	826.4 MHz	835.0 MHz	846.6 MHz		
WCDMA	Tuning Target + Tolerance [dBm]		23.9			Scaling factor*				
	Conducted Power [dBm]		23.6	23.7	23.7	0.3	0.2	0.2	dB	
	Time-averaged power [dBm]		23.6	23.7	23.7	1.07	1.05	1.05	Lin	
	Left Cheek	Estimated SAR	0.354	0.369	0.368	0.379	0.386	0.385	-	-
		Full SAR	-	-	-	-	-	-		
	Left Tilt	Estimated SAR	-	-	-	-	-	-	-	-
		Full SAR	-	-	-	-	-	-		
	Right Cheek	Estimated SAR	0.403	0.404	0.402	0.432	0.423	0.421	0.02	-
		Full SAR	0.418	-	-	0.448	-	-		
	Right Tilt	Estimated SAR	-	-	-	-	-	-	-	-
		Full SAR	-	-	-	-	-	-		

GSM/GPRS/EGPRS1900 Head SAR results / HW2010 / Antenna 1**

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz	Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz		
1-slot GPRS	Tuning Target + Tolerance [dBm]		29.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		29.9	29.8	29.9	0.0	0.1	0.0	dB	
	Time-averaged power [dBm]		20.9	20.8	20.9	1.00	1.02	1.00	Lin	
			No testing required for this slot configuration.							
2-slot GPRS	Tuning Target + Tolerance [dBm]		29.4			Scaling factor*				
	Conducted Slot Average Power [dBm]		29.2	29.1	29.3	0.2	0.3	0.1	dB	
	Time-averaged power [dBm]		23.2	23.1	23.3	1.05	1.07	1.02	Lin	
	Left Cheek	Estimated SAR	-	0.585	-	-	0.627	-	0.03	-
		Full SAR	-	-	-	-	-	-		
	Left Tilt	Estimated SAR	-	0.227	-	-	0.243	-	-	-
		Full SAR	-	-	-	-	-	-		
	Right Cheek	Estimated SAR	-	0.324	-	-	0.347	-	-	-
		Full SAR	-	-	-	-	-	-		
	Right Tilt	Estimated SAR	-	0.229	-	-	0.245	-	-	-
		Full SAR	-	-	-	-	-	-		
	CC-3085 Left Cheek	Estimated SAR	0.673	0.637	0.620	0.705	0.683	0.634	0.00	3
Full SAR		0.670	-	-	0.702	-	-			
3-slot GPRS	Tuning Target + Tolerance [dBm]		27.4			Scaling factor*				
	Conducted Slot Average Power [dBm]		27.0	27.0	27.2	0.4	0.4	0.2	dB	
	Time-averaged power [dBm]		22.7	22.7	22.9	1.10	1.10	1.05	Lin	
			No testing required for this slot configuration.							
4-slot GPRS	Tuning Target + Tolerance [dBm]		25.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		25.6	25.6	25.8	0.3	0.3	0.1	dB	
	Time-averaged power [dBm]		22.6	22.6	22.8	1.07	1.07	1.02	Lin	
			No testing required for this slot configuration.							
1-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		25.8			Scaling factor*				
	Conducted Slot Average Power [dBm]		25.7	25.4	25.5	0.1	0.4	0.3	dB	
	Time-averaged power [dBm]		16.7	16.4	16.5	1.02	1.10	1.07	Lin	
			No testing required for this slot configuration.							
2-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		25.6			Scaling factor*				
	Conducted Slot Average Power [dBm]		25.6	25.3	25.4	0.0	0.3	0.2	dB	
	Time-averaged power [dBm]		19.6	19.3	19.4	1.00	1.07	1.05	Lin	
	Left Cheek	Estimated SAR	0.320	-	-	0.320	-	-	-	-
		Full SAR	-	-	-	-	-	-		

(GSM/GPRS/EGPRS1900 Table/HW2010/Ant 1 continues)

(GSM/GPRS/EGPRS1900 Table/HW2010/Ant 1 continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz	Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz		
3-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		23.7			Scaling factor*				
	Conducted Slot Average Power [dBm]		23.5	23.4	23.5	0.2	0.3	0.2	dB	
	Time-averaged power [dBm]		19.2	19.1	19.2	1.05	1.07	1.05	Lin	
			No testing required for this slot configuration.							
4-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		22.4			Scaling factor*				
	Conducted Slot Average Power [dBm]		22.4	22.3	22.3	0.0	0.1	0.1	dB	
	Time-averaged power [dBm]		19.4	19.3	19.3	1.00	1.02	1.02	Lin	
			No testing required for this slot configuration.							

GSM/GPRS/EGPRS1900 Head SAR results / HW3110 / Antenna 1

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz	Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz		
1-slot GPRS	Tuning Target + Tolerance [dBm]		29.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		29.5	29.5	29.4	0.4	0.4	0.5	dB	
	Time-averaged power [dBm]		20.5	20.5	20.4	1.10	1.10	1.12	Lin	
			No testing required for this slot configuration.							
2-slot GPRS	Tuning Target + Tolerance [dBm]		29.4			Scaling factor*				
	Conducted Slot Average Power [dBm]		28.9	28.9	28.7	0.5	0.5	0.7	dB	
	Time-averaged power [dBm]		22.9	22.9	22.7	1.12	1.12	1.17	Lin	
	CC-3085 Left Cheek	Estimated SAR	0.557	0.523	0.531	0.625	0.587	0.624	0.01	-
	Full SAR	0.566	-	-	0.635	-	-			
3-slot GPRS	Tuning Target + Tolerance [dBm]		27.4			Scaling factor*				
	Conducted Slot Average Power [dBm]		27.0	27.0	27.2	0.4	0.4	0.2	dB	
	Time-averaged power [dBm]		22.7	22.7	22.9	1.10	1.10	1.05	Lin	
			No testing required for this slot configuration.							
4-slot GPRS	Tuning Target + Tolerance [dBm]		25.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		25.6	25.6	25.8	0.3	0.3	0.1	dB	
	Time-averaged power [dBm]		22.6	22.6	22.8	1.07	1.07	1.02	Lin	
			No testing required for this slot configuration.							

(GSM/GPRS/EGPRS1900 Table/HW3110/Ant 1 continues)

(GSM/GPRS/EGPRS1900 Table/HW3110/Ant 1 continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz	Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz		
1-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		25.8			Scaling factor*				
	Conducted Slot Average Power [dBm]		25.7	25.5	25.4	0.1	0.3	0.4	dB	
	Time-averaged power [dBm]		16.7	16.5	16.4	1.02	1.07	1.10	Lin	
			No testing required for this slot configuration.							
2-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		25.6			Scaling factor*				
	Conducted Slot Average Power [dBm]		25.6	25.5	25.4	0.0	0.1	0.2	dB	
	Time-averaged power [dBm]		19.6	19.5	19.4	1.00	1.02	1.05	Lin	
			No testing required for this slot configuration.							
3-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		23.7			Scaling factor*				
	Conducted Slot Average Power [dBm]		23.3	23.1	23.1	0.4	0.6	0.6	dB	
	Time-averaged power [dBm]		19.0	18.8	18.8	1.10	1.15	1.15	Lin	
			No testing required for this slot configuration.							
4-slot 8PSK EGPRS	Tuning Target + Tolerance [dBm]		22.4			Scaling factor*				
	Conducted Slot Average Power [dBm]		22.1	22.0	21.9	0.3	0.4	0.5	dB	
	Time-averaged power [dBm]		19.1	19.0	18.9	1.07	1.10	1.12	Lin	
			No testing required for this slot configuration.							

LTE2500 (Band 7) Head SAR results / HW2010 / Antenna 1**

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz	Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz		
20MHz Ch BW 1RB 0% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		19.4	19.6	19.7	0.5	0.3	0.2	dB	
	Time-averaged power [dBm]		19.4	19.6	19.7	1.12	1.07	1.05	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 1RB 50% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		19.3	19.6	19.6	0.6	0.3	0.3	dB	
	Time-averaged power [dBm]		19.3	19.6	19.6	1.15	1.07	1.07	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 1RB 100% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		19.5	19.7	19.8	0.4	0.2	0.1	dB	
	Time-averaged power [dBm]		19.5	19.7	19.8	1.10	1.05	1.02	Lin	
	Left Cheek	Estimated SAR	-	-	0.256	-	-	0.262	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Left Tilt	Estimated SAR	-	-	0.149	-	-	0.152	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Right Cheek	Estimated SAR	-	-	0.503	-	-	0.515	0.05	-
		Full SAR	-	-	0.549	-	-	0.562		
	Right Tilt	Estimated SAR	-	-	0.086	-	-	0.088	-	-
		Full SAR	-	-	-	-	-	-	-	-
	CC-3085 Right Cheek	Estimated SAR	-	-	0.383	-	-	0.392	-	-
Full SAR		-	-	-	-	-	-	-	-	
20MHz Ch BW 50% RB 0% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.5	18.7	18.8	0.4	0.2	0.1	dB	
	Time-averaged power [dBm]		18.5	18.7	18.8	1.10	1.05	1.02	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 50% RB 50% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.5	18.7	18.7	0.4	0.2	0.2	dB	
	Time-averaged power [dBm]		18.5	18.7	18.7	1.10	1.05	1.05	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

(Table LTE2500 (Band 7) Table/HW2010/Ant 1 continues)

(Table LTE2500 (Band 7) Table/HW2010/Ant 1 continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz	Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz		
20MHz Ch BW 50% RB 100% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.4	18.8	18.9	0.5	0.1	0.0	dB	
	Time-averaged power [dBm]		18.4	18.8	18.9	1.12	1.02	1.00	Lin	
	Left Cheek	Estimated SAR	-	-	0.219	-	-	0.219	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Left Tilt	Estimated SAR	-	-	0.116	-	-	0.116	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Right Cheek	Estimated SAR	-	-	0.402	-	-	0.402	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Right Tilt	Estimated SAR	-	-	0.067	-	-	0.067	-	-
Full SAR		-	-	-	-	-	-	-	-	
20MHz Ch BW 100%RB	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.5	18.8	18.8	0.4	0.1	0.1	dB	
	Time-averaged power [dBm]		18.5	18.8	18.8	1.10	1.02	1.02	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

LTE2500 (Band 7) Head SAR results / HW3110 / Antenna 1

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz	Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz		
20MHz Ch BW 1RB 0% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		19.4	19.7	19.7	0.5	0.2	0.2	dB	
	Time-averaged power [dBm]		19.4	19.7	19.7	1.12	1.05	1.05	Lin	
			No testing required for this CBW/RB/RB offset configuration							
20MHz Ch BW 1RB 50% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		19.6	19.8	19.7	0.3	0.1	0.2	dB	
	Time-averaged power [dBm]		19.6	19.8	19.7	1.07	1.02	1.05	Lin	
			No testing required for this CBW/RB/RB offset configuration							

(Table LTE2500 (Band 7) Table/HW3110/Ant 1 continues)

(Table LTE2500 (Band 7) Table/HW3110/Ant 1 continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz	Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz		
20MHz Ch BW 1RB 100% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		19.6	19.9	19.9	0.3	0.0	0.0	dB	
	Time-averaged power [dBm]		19.6	19.9	19.9	1.07	1.00	1.00	Lin	
	Left Cheek	Estimated SAR	0.289	0.301	0.343	0.310	0.301	0.343	-	-
		Full SAR	-	-	-	-	-	-		
	Left Tilt	Estimated SAR	-	-	-	-	-	-	-	-
		Full SAR	-	-	-	-	-	-		
	Right Cheek	Estimated SAR	0.515	0.576	0.671	0.552	0.576	0.671	0.01	4
		Full SAR	-	-	0.680	-	-	0.680		
	Right Tilt	Estimated SAR	-	-	-	-	-	-	-	-
Full SAR		-	-	-	-	-	-			
20MHz Ch BW 50% RB 0% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.6	18.8	18.6	0.3	0.1	0.3	dB	
	Time-averaged power [dBm]		18.6	18.8	18.6	1.07	1.02	1.07	Lin	
			No testing required for this CBW/RB/RB offset configuration							
20MHz Ch BW 50% RB 50% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.6	18.7	18.7	0.3	0.2	0.2	dB	
	Time-averaged power [dBm]		18.6	18.7	18.7	1.07	1.05	1.05	Lin	
			No testing required for this CBW/RB/RB offset configuration							
20MHz Ch BW 50% RB 100% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.6	18.8	18.6	0.3	0.1	0.3	dB	
	Time-averaged power [dBm]		18.6	18.8	18.6	1.07	1.02	1.07	Lin	
			No testing required for this CBW/RB/RB offset configuration							
20MHz Ch BW 100%RB	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.5	18.8	18.8	0.4	0.1	0.1	dB	
	Time-averaged power [dBm]		18.5	18.8	18.8	1.10	1.02	1.02	Lin	
			No testing required for this CBW/RB/RB offset configuration							

LTE2500 (Band 7) Head SAR results / HW2010 / Antenna 2**

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz	Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz		
20MHz Ch BW 1RB 0% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.9	19.1	19.2	1.0	0.8	0.7	dB	
	Time-averaged power [dBm]		18.9	19.1	19.2	1.26	1.20	1.17	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 1RB 50% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.8	19.1	19.1	1.1	0.8	0.8	dB	
	Time-averaged power [dBm]		18.8	19.1	19.1	1.29	1.20	1.20	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 1RB 100% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		19.0	19.2	19.3	0.9	0.7	0.6	dB	
	Time-averaged power [dBm]		19.0	19.2	19.3	1.23	1.17	1.15	Lin	
	Left Cheek	Estimated SAR	-	-	0.221	-	-	0.254	0.02	-
		Full SAR	-	-	0.200	-	-	0.230		
	Left Tilt	Estimated SAR	-	-	0.062	-	-	0.071	-	-
		Full SAR	-	-	-	-	-	-		
	Right Cheek	Estimated SAR	-	-	0.205	-	-	0.235	-	-
		Full SAR	-	-	-	-	-	-		
	Right Tilt	Estimated SAR	-	-	0.079	-	-	0.090	-	-
		Full SAR	-	-	-	-	-	-		
	CC-3085 Left Cheek	Estimated SAR	-	-	0.214	-	-	0.246	-	-
Full SAR		-	-	-	-	-	-			
20MHz Ch BW 50% RB 0% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.0	18.2	18.3	0.9	0.7	0.6	dB	
	Time-averaged power [dBm]		18.0	18.2	18.3	1.23	1.17	1.15	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 50% RB 50% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.0	18.2	18.2	0.9	0.7	0.7	dB	
	Time-averaged power [dBm]		18.0	18.2	18.2	1.23	1.17	1.17	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

(LTE2500 (Band 7) Table/HW2010/Ant 2 Table continues)

(LTE2500 (Band 7) Table/HW2010/Ant 2 Table continues)

Mode / HWID	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz	Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz		
20MHz Ch BW 50% RB 100% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		17.9	18.3	18.4	1.0	0.6	0.5	dB	
	Time-averaged power [dBm]		17.9	18.3	18.4	1.26	1.15	1.12	Lin	
	Left Cheek	Estimated SAR	-	-	0.178	-	-	0.200	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Left Tilt	Estimated SAR	-	-	0.053	-	-	0.059	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Right Cheek	Estimated SAR	-	-	0.165	-	-	0.185	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Right Tilt	Estimated SAR	-	-	0.063	-	-	0.071	-	-
Full SAR		-	-	-	-	-	-	-	-	
20MHz Ch BW 100%RB	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.0	18.3	18.3	0.9	0.6	0.6	dB	
	Time-averaged power [dBm]		18.0	18.3	18.3	1.23	1.15	1.15	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

LTE2500 (Band 7) Head SAR results / HW3110 / Antenna 2

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz	Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz		
20MHz Ch BW 1RB 0% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.9	19.2	19.2	1.0	0.7	0.7	dB	
	Time-averaged power [dBm]		18.9	19.2	19.2	1.26	1.17	1.17	Lin	
			No testing required for this CBW/RB/RB offset configuration							
20MHz Ch BW 1RB 50% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		19.1	19.3	19.2	0.8	0.6	0.7	dB	
	Time-averaged power [dBm]		19.1	19.3	19.2	1.20	1.15	1.17	Lin	
			No testing required for this CBW/RB/RB offset configuration							
20MHz Ch BW 1RB 100% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		19.1	19.4	19.4	0.8	0.5	0.5	dB	
	Time-averaged power [dBm]		19.1	19.4	19.4	1.20	1.12	1.12	Lin	
	Left Cheek	Estimated SAR	0.210	0.203	0.213	0.252	0.228	0.239	0.00	-
		Full SAR	0.210	-		0.252	-			
20MHz Ch BW 50% RB 0% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.1	18.3	18.1	0.8	0.6	0.8	dB	
	Time-averaged power [dBm]		18.1	18.3	18.1	1.20	1.15	1.20	Lin	
			No testing required for this CBW/RB/RB offset configuration							
20MHz Ch BW 50% RB 50% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.1	18.2	18.2	0.8	0.7	0.7	dB	
	Time-averaged power [dBm]		18.1	18.2	18.2	1.20	1.17	1.17	Lin	
			No testing required for this CBW/RB/RB offset configuration							
20MHz Ch BW 50% RB 100% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.1	18.3	18.1	0.8	0.6	0.8	dB	
	Time-averaged power [dBm]		18.1	18.3	18.1	1.20	1.15	1.20	Lin	
			No testing required for this CBW/RB/RB offset configuration							
20MHz Ch BW 100%RB	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.0	18.3	18.3	0.9	0.6	0.6	dB	
	Time-averaged power [dBm]		18.0	18.3	18.3	1.23	1.15	1.15	Lin	
			No testing required for this CBW/RB/RB offset configuration							

2450MHz Band Head SAR results / HW2010**

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR – Full SAR) [W/kg]	Plot #
			Ch 1 2412.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz	Ch 1 2412.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz		
WLAN b-mode BPSK 1Mbps	Tuning Target + Tolerance [dBm]		17.5			Scaling factor*				
	Conducted Slot Average Power [dBm]		16.1	16.2	16.4	1.4	1.3	1.1	dB	
	Time-averaged power [dBm]		16.1	16.2	16.4	1.38	1.35	1.29	Lin	
	Left Cheek	Estimated SAR	-	0.551	-	-	0.743	-	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Left Tilt	Estimated SAR	-	0.530	-	-	0.715	-	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Right Cheek	Estimated SAR	-	0.309	-	-	0.417	-	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Right Tilt	Estimated SAR	-	0.294	-	-	0.397	-	-	-
		Full SAR	-	-	-	-	-	-	-	-
CC-3085 Left Cheek	Estimated SAR	0.614	0.656	0.690	0.848	0.885	0.889	0.03	5	
	Full SAR	-	-	0.656	-	-	0.845			
WLAN b-mode BPSK 11Mbps	Tuning Target + Tolerance [dBm]		17.5			Scaling factor*				
	Conducted Slot Average Power [dBm]		-	16.5	-	-	1.0	-	dB	
	Time-averaged power [dBm]		-	16.5	-	-	1.26	-	Lin	
	CC-3085 Left Cheek	Estimated SAR	-	0.661	-	-	0.832	-	-	-
		Full SAR	-	0.665	-	-	0.837	-	-	-

**SAR data copied from FCC_RM-974_01 for HW2010

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

Test configuration	Max. Reported* 1g SAR results			
	WLAN**	Antenna 1		
		WCDMA 850	2-slot GPRS 1900	LTE2500 (Band7)
Head: Left, Cheek	0.845	0.386	0.702	0.343
Head: Left, Tilt	0.715	0.213	0.243	0.152
Head: Right, Cheek	0.417	0.464	0.347	0.680
Head: Right, Tilt	0.397	0.254	0.245	0.088

Test configuration	Max. Reported* 1g SAR results		
	WLAN**	Antenna 2	
		2-slot GPRS 850	LTE2500 (Band7)
Head: Left, Cheek	0.845	0.716	0.252
Head: Left, Tilt	0.715	0.370	0.071
Head: Right, Cheek	0.417	0.493	0.235
Head: Right, Tilt	0.397	0.384	0.090

**SAR data copied from FCC_RM-974_01 for HW2010

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

Test configuration	Max. Reported* 1g SAR results		
	Antenna 1 + WLAN		
	WCDMA 850 + WLAN	2-slot GPRS 1900 + WLAN	LTE2500 (Band 7) + WLAN
Head: Left, Cheek	1.23	1.55	1.19
Head: Left, Tilt	0.928	0.958	0.867
Head: Right, Cheek	0.881	0.764	1.10
Head: Right, Tilt	0.651	0.642	0.485

Test configuration	Max. Reported* 1g SAR results	
	Antenna 2 + WLAN	
	2-slot GPRS 850 + WLAN	LTE2500 (Band 7) + WLAN
Head: Left, Cheek	1.56	1.10
Head: Left, Tilt	1.09	0.786
Head: Right, Cheek	0.910	0.652
Head: Right, Tilt	0.781	0.487

Note: Simultaneous Transmission Procedures as described in KDB648474 are not required for this product.

7.1.1 Combined Head SAR data

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

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

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

Test configuration	Max. Reported* 1g SAR results		
	Antenna 1 + WLAN		
	WCDMA 850 + WLAN	2-slot GPRS 1900 + WLAN	LTE2500 (Band 7) + WLAN
Head: Left, Cheek	0.930	0.933	0.923
Head: Left, Tilt	-	-	-
Head: Right, Cheek	-	-	-
Head: Right, Tilt	-	-	-

Test configuration	Max. Reported* 1g SAR results	
	Antenna 2 + WLAN	
	2-slot GPRS 850 + WLAN	LTE2500 (Band 7) + WLAN
Head: Left, Cheek	0.967	-
Head: Left, Tilt	-	-
Head: Right, Cheek	-	-
Head: Right, Tilt	-	-

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

GSM/GPRS/EGPRS850 Body SAR results / HW2010 / Antenna 2**

Mode	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #	
				Ch 128	Ch 190	Ch 251	Ch 128	Ch 190	Ch 251			
				824.2 MHz	836.6 MHz	848.8 MHz	824.2 MHz	836.6 MHz	848.8 MHz			
2-slot GPRS	Tuning Target + Tolerance [dBm]			30.3			Scaling factor*					
	Conducted Slot Average Power [dBm]			29.9	30.2	30.1	0.4	0.1	0.2	dB		
	Time-averaged power [dBm]			23.9	24.2	24.1	1.10	1.02	1.05	Lin		
	Back facing phantom	Without headset	Estimated SAR	0.624	0.636	0.681	0.684	0.651	0.713	0.01	-	
			Full SAR	-	-	0.694	-	-	0.727			
		Headset WH-108	Estimated SAR	-	0.427	-	-	0.437	-	-	-	
			Full SAR	-	-	-	-	-	-			
	Display facing phantom	Without headset	Estimated SAR	-	0.555	-	-	0.568	-	-	-	
			Full SAR	-	-	-	-	-	-			
		Headset WH-108	Estimated SAR	-	0.400	-	-	0.409	-	-	-	
			Full SAR	-	-	-	-	-	-			
	CC-3085 Back facing phantom without headset			Estimated SAR	0.605	0.632	0.658	0.663	0.647	0.689	-	-
				Full SAR	-	-	-	-	-	-		

GSM/GPRS/EGPRS850 Body SAR results / HW3110 / Antenna 2

Mode	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz	Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz		
2-slot GPRS	Tuning Target + Tolerance [dBm]			30.3			Scaling factor*				
	Conducted Slot Average Power [dBm]			29.8	30.0	29.8	0.5	0.3	0.5	dB	
	Time-averaged power [dBm]			23.8	24.0	23.8	1.12	1.07	1.12	Lin	
	Back facing phantom	Without headset	Estimated SAR	0.622	0.626	0.643	0.698	0.671	0.721	0.02	6
			Full SAR	-	-	0.664	-	-	0.745		

WCDMA850 Body SAR results / HW2010 / Antenna 1**

Mode	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #	
				Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz	Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz			
WCDMA	Tuning Target + Tolerance [dBm]			23.9			Scaling factor*					
	Conducted Slot Average Power [dBm]			23.5	23.5	23.5	0.4	0.4	0.4	dB		
	Time-averaged power [dBm]			23.5	23.5	23.5	1.10	1.10	1.10	Lin		
	Back facing phantom	Without headset	Estimated SAR	0.386	0.392	0.406	0.423	0.430	0.445	0.01	7	
			Full SAR	-	-	0.414	-	-	0.454			
		Headset WH-108	Estimated SAR	-	0.303	-	-	0.332	-	-	-	
			Full SAR	-	-	-	-	-	-			
	Display facing phantom	Without headset	Estimated SAR	-	0.357	-	-	0.391	-	-	-	
			Full SAR	-	-	-	-	-	-			
		Headset WH-108	Estimated SAR	-	0.287	-	-	0.315	-	-	-	
			Full SAR	-	-	-	-	-	-			
	CC-3085 Back facing phantom without headset			Estimated SAR	0.352	0.373	0.369	0.386	0.409	0.405	-	-
				Full SAR	-	-	-	-	-	-		

WCDMA850 Body SAR results / HW3110 / Antenna 1

Mode	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz	Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz		
WCDMA	Tuning Target + Tolerance [dBm]			23.9			Scaling factor*				
	Conducted Slot Average Power [dBm]			23.6	23.7	23.7	0.3	0.2	0.2	dB	
	Time-averaged power [dBm]			23.6	23.7	23.7	1.07	1.05	1.05	Lin	
	Back facing phantom	Without headset	Estimated SAR	0.388	0.390	0.384	0.416	0.408	0.402	0.01	-
			Full SAR	0.394	-	-	0.422	-	-		

GSM/GPRS/EGPRS1900 Body SAR results / HW2010 / Antenna 1**

Mode	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #	
				Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz	Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz			
2-slot GPRS	Tuning Target + Tolerance [dBm]			29.4			Scaling factor*					
	Conducted Slot Average Power [dBm]			29.2	29.1	29.3	0.2	0.3	0.1	dB		
	Time-averaged power [dBm]			23.2	23.1	23.3	1.05	1.07	1.02	Lin		
	Back facing phantom	Without headset	Estimated SAR	-	0.564	-	-	0.604	-	-	-	
			Full SAR	-	-	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	0.487	-	-	0.522	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-	-
	Display facing phantom	Without headset	Estimated SAR	-	0.641	-	-	0.687	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-	-
		Headset WH-108	Estimated SAR	-	0.617	-	-	0.661	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-	-
	CC-3085 Display facing phantom without headset		Estimated SAR	0.701	0.698	0.641	0.734	0.748	0.656	0.01	-	
			Full SAR	-	0.707	-	-	0.758	-			

GSM/GPRS/EGPRS1900 Body SAR results / HW3110 / Antenna 1

Mode	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz	Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz		
2-slot GPRS	Tuning Target + Tolerance [dBm]			29.4			Scaling factor*				
	Conducted Slot Average Power [dBm]			28.9	28.9	28.7	0.5	0.5	0.7	dB	
	Time-averaged power [dBm]			22.9	22.9	22.7	1.12	1.12	1.17	Lin	
	CC-3085 Display facing phantom without headset		Estimated SAR	0.650	0.638	0.590	0.729	0.716	0.693	0.01	8
			Full SAR	0.683	-	-	0.766	-	-		

LTE2500 (Band 7) Body SAR results / HW2010 / Antenna 1**

Mode	Device orientation		SAR measurement		Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
					Ch 20850	Ch 21100	Ch 21350	Ch 20850	Ch 21100	Ch 21350		
					2510.0 MHz	2535.0 MHz	2560.0 MHz	2510.0 MHz	2535.0 MHz	2560.0 MHz		
20MHz Ch BW 1RB 0% offset	Tuning Target + Tolerance [dBm]			19.9			Scaling factor*					
	Conducted Slot Average Power [dBm]			19.4	19.6	19.7	0.5	0.3	0.2	dB		
	Time-averaged power [dBm]			19.4	19.6	19.7	1.12	1.07	1.05	Lin		
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								
20MHz Ch BW 1RB 50% offset	Tuning Target + Tolerance [dBm]			19.9			Scaling factor*					
	Conducted Slot Average Power [dBm]			19.3	19.6	19.6	0.6	0.3	0.3	dB		
	Time-averaged power [dBm]			19.3	19.6	19.6	1.15	1.07	1.07	Lin		
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								
20MHz Ch BW 1RB 100% offset	Tuning Target + Tolerance [dBm]			19.9			Scaling factor*					
	Conducted Slot Average Power [dBm]			19.5	19.7	19.8	0.4	0.2	0.1	dB		
	Time-averaged power [dBm]			19.5	19.7	19.8	1.10	1.05	1.02	Lin		
	Back facing phantom	Without headset	Estimated SAR	-	-	0.158	-	-	0.162	-	-	
			Full SAR	-	-	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	0.165	-	-	0.169	-	-	
			Full SAR	-	-	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	0.188	-	-	0.192	-	-	
			Full SAR	-	-	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	0.189	-	-	0.193	0.00	-	
			Full SAR	-	-	0.192	-	-	0.196			
	CC-3085 Display facing phantom with headset WH-108		Estimated SAR	-	-	0.134	-	-	0.137	-	-	
Full SAR			-	-	-	-	-	-				
20MHz Ch BW 50% RB 0% offset	Tuning Target + Tolerance [dBm]			18.9			Scaling factor*					
	Conducted Slot Average Power [dBm]			18.5	18.7	18.8	0.4	0.2	0.1	dB		
	Time-averaged power [dBm]			18.5	18.7	18.8	1.10	1.05	1.02	Lin		
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								

(LTE2500 Body Table / HW2010/Ant 1 continues)

(LTE2500 Body Table / HW2010/Ant 1 continues)

Mode	Device orientation		SAR measurement		Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
					Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz	Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz		
20MHz Ch BW 50% RB 50% offset	Tuning Target + Tolerance [dBm]			18.9			Scaling factor*					
	Conducted Slot Average Power [dBm]			18.5	18.7	18.7	0.4	0.2	0.2	dB		
	Time-averaged power [dBm]			18.5	18.7	18.7	1.10	1.05	1.05	Lin		
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								
20MHz Ch BW 50% RB 100% offset	Tuning Target + Tolerance [dBm]			18.9			Scaling factor*					
	Conducted Slot Average Power [dBm]			18.4	18.8	18.9	0.5	0.1	0.0	dB		
	Time-averaged power [dBm]			18.4	18.8	18.9	1.12	1.02	1.00	Lin		
	Back facing phantom	Without headset	Estimated SAR	-	-	0.137	-	-	0.137	-	-	
			Full SAR	-	-	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	0.141	-	-	0.141	-	-	
			Full SAR	-	-	-	-	-	-	-	-	
	Display facing phantom	Without headset	Estimated SAR	-	-	0.154	-	-	0.154	-	-	
			Full SAR	-	-	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	0.156	-	-	0.156	-	-	
Full SAR			-	-	-	-	-	-	-	-		
20MHz Ch BW 100%RB	Tuning Target + Tolerance [dBm]			18.9			Scaling factor*					
	Conducted Slot Average Power [dBm]			18.5	18.8	18.8	0.4	0.1	0.1	dB		
	Time-averaged power [dBm]			18.5	18.8	18.8	1.10	1.02	1.02	Lin		
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02								

LTE2500 (Band 7) Body SAR results / HW3110 / Antenna 1

Mode	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #	
				Ch 20850	Ch 21100	Ch 21350	Ch 20850	Ch 21100	Ch 21350			
				2510.0 MHz	2535.0 MHz	2560.0 MHz	2510.0 MHz	2535.0 MHz	2560.0 MHz			
20MHz Ch BW 1RB 100% offset	Tuning Target + Tolerance [dBm]			19.9			Scaling factor*					
	Conducted Slot Average Power [dBm]			19.6	19.9	19.9	0.3	0.0	0.0	dB		
	Time-averaged power [dBm]			19.6	19.9	19.9	1.07	1.00	1.00	Lin		
	Back facing phantom	Without headset	Estimated SAR	0.195	0.201	0.188	0.209	0.201	0.188	-	-	
			Full SAR	-	-	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-	-
	Display facing phantom	Without headset	Estimated SAR	-	-	-	-	-	-	-	-	
			Full SAR	-	-	-	-	-	-	-	-	
		Headset WH-108	Estimated SAR	0.202	0.214	0.234	0.216	0.214	0.234	0.00	-	
Full SAR			-	-	0.230	-	-	0.230	-	-		

LTE2500 (Band 7) Body SAR results / HW2010 / Antenna 2**

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz	Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz		
20MHz Ch BW 1RB 0% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.9	19.1	19.2	1.0	0.8	0.7	dB	
	Time-averaged power [dBm]		18.9	19.1	19.2	1.26	1.20	1.17	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 1RB 50% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.8	19.1	19.1	1.1	0.8	0.8	dB	
	Time-averaged power [dBm]		18.8	19.1	19.1	1.29	1.20	1.20	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

(LTE2500 Body Table / HW2010/Ant 2 continues)

(LTE2500 Body Table / HW2010/Ant 2 continues)

Mode	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz	Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz		
20MHz Ch BW 1RB 100% offset	Tuning Target + Tolerance [dBm]			19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]			19.0	19.2	19.3	0.9	0.7	0.6	dB	
	Time-averaged power [dBm]			19.0	19.2	19.3	1.23	1.17	1.15	Lin	
	Back facing phantom	Without headset	Estimated SAR	-	-	0.248	-	-	0.285	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Headset WH-108	Estimated SAR	-	-	0.241	-	-	0.277	-	-
			Full SAR	-	-	-	-	-	-	-	-
	Display facing phantom	Without headset	Estimated SAR	-	-	0.256	-	-	0.294	0.01	-
			Full SAR	-	-	0.261	-	-	0.300	-	-
Headset WH-108		Estimated SAR	-	-	0.253	-	-	0.290	-	-	
		Full SAR	-	-	-	-	-	-	-	-	
CC-3085 Display facing phantom without headset		Estimated SAR	-	-	0.252	-	-	0.289	-	-	
		Full SAR	-	-	-	-	-	-	-	-	
20MHz Ch BW 50% RB 0% offset	Tuning Target + Tolerance [dBm]			18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]			18.0	18.2	18.3	0.9	0.7	0.6	dB	
	Time-averaged power [dBm]			18.0	18.2	18.3	1.23	1.17	1.15	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 50% RB 50% offset	Tuning Target + Tolerance [dBm]			18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]			18.0	18.2	18.2	0.9	0.7	0.7	dB	
	Time-averaged power [dBm]			18.0	18.2	18.2	1.23	1.17	1.17	Lin	
				No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 50% RB 100% offset	Tuning Target + Tolerance [dBm]			18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]			17.9	18.3	18.4	1.0	0.6	0.5	dB	
	Time-averaged power [dBm]			17.9	18.3	18.4	1.26	1.15	1.12	Lin	
	Back facing phantom	Without headset	Estimated SAR	-	-	0.211	-	-	0.237	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Headset WH-108	Estimated SAR	-	-	0.208	-	-	0.233	-	-
			Full SAR	-	-	-	-	-	-	-	-
	Display facing phantom	Without headset	Estimated SAR	-	-	0.215	-	-	0.241	-	-
			Full SAR	-	-	-	-	-	-	-	-
Headset WH-108		Estimated SAR	-	-	0.202	-	-	0.227	-	-	
		Full SAR	-	-	-	-	-	-	-	-	

(LTE2500 Body Table / HW2010/Ant 2 continues)

(LTE2500 Body Table / HW2010/Ant 2 continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz	Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz		
20MHz Ch BW 100%RB	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.0	18.3	18.3	0.9	0.6	0.6	dB	
	Time-averaged power [dBm]		18.0	18.3	18.3	1.23	1.15	1.15	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

LTE2500 (Band 7) Body SAR results / HW3110 / Antenna 2

Mode	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 20850	Ch 21100	Ch 21350	Ch 20850	Ch 21100	Ch 21350		
				2510.0 MHz	2535.0 MHz	2560.0 MHz	2510.0 MHz	2535.0 MHz	2560.0 MHz		
20MHz Ch BW 1RB 100% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*					
	Conducted Slot Average Power [dBm]		19.1	19.4	19.4	0.8	0.5	0.5	dB		
	Time-averaged power [dBm]		19.1	19.4	19.4	1.20	1.12	1.12	Lin		
	Back facing phantom	Without headset	Estimated SAR	0.238	0.285	0.261	0.286	0.320	0.293	-	-
			Full SAR	-	-	-	-	-	-	-	-
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
	Display facing phantom	Without headset	Estimated SAR	0.272	0.283	0.274	0.327	0.318	0.307	0.00	9
			Full SAR	0.270	-	-	0.325	-	-	-	-
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-
	CC-3085 Display facing phantom without headset		Estimated SAR	-	-	-	-	-	-	-	-
			Full SAR	-	-	-	-	-	-	-	-

2450MHz Band Body SAR results /HW2010**

Mode	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
				Ch 1 2412 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz	Ch 1 2412 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz		
WLAN b-mode BPSK 1Mbps	Tuning Target + Tolerance [dBm]			17.5			Scaling factor*				
	Conducted Slot Average Power [dBm]			16.1	16.2	16.4	1.4	1.3	1.1	dB	
	Time-averaged power [dBm]			16.1	16.2	16.4	1.38	1.35	1.29	Lin	
	Back facing phantom	Without headset	Estimated SAR	0.080	0.093	0.101	0.110	0.125	0.130	-	-
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	-	-
	Display facing phantom	Without headset	Estimated SAR	-	0.068	-	-	0.092	-	-	-
		Headset WH-108	Estimated SAR	-	-	-	-	-	-	-	-
	CC-3085 Back facing phantom without headset		Estimated SAR	0.074	0.092	0.104	0.103	0.124	0.134	0.01	10
			Full SAR	-	-	0.108	-	-	0.139		
	Mode	Device orientation		SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]
-					Ch 6 2437.0 MHz	-	-	Ch 6 2437.0 MHz	-		
WLAN b-mode BPSK 11Mbps	Tuning Target + Tolerance [dBm]			17.5			Scaling factor*				
	Conducted Slot Average Power [dBm]			-	16.2	-	-	1.0	-	dB	
	Time-averaged power [dBm]			-	16.2	-	-	1.26	-	Lin	
	CC-3085 Back facing phantom without headset		Estimated SAR	-	0.095	-	-	0.120	-	-	-
			Full SAR	-	-	-	-	-	-		

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

Test configuration	Max. Reported* 1g SAR results			
	WLAN**	Antenna 1		
		WCDMA 850	2-slot GPRS 1900	LTE2500 (Band7)
Body: Back facing phantom, Without Headset	0.139	0.454	0.604	0.209
Body: Back facing phantom, Headset WH-108	0.122	0.332	0.522	0.169
Body: Display facing phantom, Without Headset	0.092	0.391	0.766	0.192
Body: Display facing phantom, Headset WH-108	0.089	0.315	0.661	0.230

Test configuration	Max. Reported* 1g SAR results		
	WLAN**	Antenna 2	
		2-slot GPRS 850	LTE2500 (Band7)
Body: Back facing phantom, Without Headset	0.139	0.745	0.320
Body: Back facing phantom, Headset WH-108	0.122	0.437	0.277
Body: Display facing phantom, Without Headset	0.092	0.568	0.325
Body: Display facing phantom, Headset WH-108	0.089	0.409	0.290

**SAR data copied from FCC_RM-974_01 for HW2010

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

Test configuration	Max. Reported* 1g SAR results		
	Antenna 1 + WLAN		
	WCDMA 850 + WLAN	2-slot GPRS 1900 + WLAN	LTE2500 (Band 7) + WLAN
Body: Back facing phantom, Without Headset	0.593	0.743	0.348
Body: Back facing phantom, Headset WH-108	0.454	0.644	0.291
Body: Display facing phantom, Without Headset	0.483	0.858	0.284
Body: Display facing phantom, Headset WH-108	0.404	0.750	0.319

Test configuration	Max. Reported* 1g SAR results	
	Antenna 2 + WLAN	
	2-slot GPRS 850 + WLAN	LTE2500 (Band 7) + WLAN
Body: Back facing phantom, Without Headset	0.884	0.459
Body: Back facing phantom, Headset WH-108	0.559	0.399
Body: Display facing phantom, Without Headset	0.660	0.417
Body: Display facing phantom, Headset WH-108	0.498	0.379

Note: Simultaneous Transmission Procedures as described in KDB648474 are not required for this product.

7.2.1 Combined Body SAR data

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

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

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

Test configuration	Max. Reported* 1g SAR results		
	Antenna 1 + WLAN		
	WCDMA 850 + WLAN	2-slot GPRS 1900 + WLAN	LTE2500 (Band 7) + WLAN
Body: Back facing phantom, Without Headset	0.486	-	-
Body: Back facing phantom, Headset WH-108	-	-	-
Body: Display facing phantom, Without Headset	-	0.754	-
Body: Display facing phantom, Headset WH-108	-	-	-

Test configuration	Max. Reported* 1g SAR results	
	Antenna 2 + WLAN	
	2-slot GPRS 850 + WLAN	LTE2500 (Band 7) + WLAN
Body: Back facing phantom, Without Headset	0.755	0.336
Body: Back facing phantom, Headset WH-108	-	-
Body: Display facing phantom, Without Headset	-	-
Body: Display facing phantom, Headset WH-108	-	-

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

GSM/GPRS/EGPRS850 Wireless Router SAR results / HW2010 / Antenna 2**

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz	Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz		
2-slot GPRS	Tuning Target + Tolerance [dBm]		30.3			Scaling factor*				
	Conducted Slot Average Power [dBm]		29.9	30.2	30.1	0.4	0.1	0.2	dB	
	Time-averaged power [dBm]		23.9	24.2	24.1	1.10	1.02	1.05	Lin	
	Back facing phantom	Estimated SAR	0.794	0.823	0.809	0.871	0.842	0.847	0.03	-
		Full SAR	0.822	-	-	0.901	-	-		
	Display facing phantom	Estimated SAR	-	0.658	-	-	0.673	-	0.03	-
		Full SAR	-	0.691	-	-	0.707	-		
	Top edge facing phantom	Estimated SAR	-	0.027	-	-	0.028	-	-	-
		Full SAR	-	-	-	-	-	-		
	Bottom edge facing phantom	Estimated SAR	-	0.314	-	-	0.321	-	-	-
		Full SAR	-	-	-	-	-	-		
	Left edge facing phantom	Estimated SAR	-	0.643	-	-	0.658	-	-	-
		Full SAR	-	-	-	-	-	-		
	Right edge facing phantom	Estimated SAR	-	0.393	-	-	0.402	-	-	-
		Full SAR	-	-	-	-	-	-		
	CC-3085 Back facing phantom	Estimated SAR	0.818	0.819	0.852	0.897	0.838	0.892	0.03	-
		Full SAR	0.847	-	-	0.929	-	-		
	Repeated SAR CC-3085, Back facing phantom	Estimated SAR	0.820	-	-	0.899	-	-	0.03	11
		Full SAR	0.847	-	-	0.929	-	-		

GSM/GPRS/EGPRS850 Wireless Router SAR results / HW3110 / Antenna 2

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz	Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz		
2-slot GPRS	Tuning Target + Tolerance [dBm]		30.3			Scaling factor*				
	Conducted Slot Average Power [dBm]		29.8	30.0	29.8	0.5	0.3	0.5	dB	
	Time-averaged power [dBm]		23.8	24.0	23.8	1.12	1.07	1.12	Lin	
	CC-3085 Back facing phantom	Estimated SAR	0.750	0.727	0.732	0.842	0.779	0.821	0.03	-
		Full SAR	0.776	-	-	0.871	-	-		

WCDMA850 Wireless Router SAR results / HW2010 / Antenna 1**

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz	Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz		
WCDMA	Tuning Target + Tolerance [dBm]		23.9			Scaling factor*				
	Conducted Power [dBm]		23.5	23.5	23.5	0.4	0.4	0.4	dB	
	Time-averaged power [dBm]		23.5	23.5	23.5	1.10	1.10	1.10	Lin	
	Back facing phantom	Estimated SAR	0.490	0.510	0.514	0.537	0.559	0.564	0.00	12
		Full SAR	-	-	0.515	-	-	0.565		
	Display facing phantom	Estimated SAR	-	0.418	-	-	0.458	-	-	-
		Full SAR	-	-	-	-	-	-		
	Top edge facing phantom	Estimated SAR	-	0.024	-	-	0.026	-	-	-
		Full SAR	-	-	-	-	-	-		
	Bottom edge facing phantom	Estimated SAR	-	0.298	-	-	0.327	-	-	-
		Full SAR	-	-	-	-	-	-		
	Left edge facing phantom	Estimated SAR	-	0.188	-	-	0.206	-	-	-
		Full SAR	-	-	-	-	-	-		
	Right edge facing phantom	Estimated SAR	-	0.423	-	-	0.464	-	-	-
		Full SAR	-	-	-	-	-	-		
	CC-3085 Back facing phantom	Estimated SAR	0.459	0.487	0.486	0.503	0.534	0.533	-	-
		Full SAR	-	-	-	-	-	-		

WCDMA850 Wireless Router SAR results / HW3110 / Antenna 1

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 4132	Ch 4175	Ch 4233	Ch 4132	Ch 4175	Ch 4233		
			826.4 MHz	835.0 MHz	846.6 MHz	826.4 MHz	835.0 MHz	846.6 MHz		
WCDMA	Tuning Target + Tolerance [dBm]		23.9			Scaling factor*				
	Conducted Power [dBm]		23.6	23.7	23.7	0.3	0.2	0.2	dB	
	Time-averaged power [dBm]		23.6	23.7	23.7	1.07	1.05	1.05	Lin	
	Back facing phantom	Estimated SAR	0.487	0.498	0.493	0.522	0.521	0.516	0.01	-
		Full SAR	0.500	-	-	0.536	-	-		

GSM/GPRS/EGPRS1900 Wireless Router SAR results / HW2010 / Antenna 1**

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #	
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz	Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz			
2-slot GPRS	Tuning Target + Tolerance [dBm]		29.4			Scaling factor*					
	Conducted Slot Average Power [dBm]		29.2	29.1	29.3	0.2	0.3	0.1	dB		
	Time-averaged power [dBm]		23.2	23.1	23.3	1.05	1.07	1.02	Lin		
	Back facing phantom	Estimated SAR	1.01	0.966	0.855	1.06	1.04	0.875	0.03	-	
		Full SAR	1.04	-	-	1.09	-	-			
	Display facing phantom	Estimated SAR	1.11	1.06	0.982	1.16	1.14	1.01	-	-	
		Full SAR	-	-	-	-	-	-			
	Top edge facing phantom	Estimated SAR	-	0.097	-	-	0.104	-	-	-	
		Full SAR	-	-	-	-	-	-			
	Bottom edge facing phantom	Estimated SAR	0.749	0.730	0.714	0.784	0.782	0.731	0.03	-	
		Full SAR	0.774	0.749	-	0.810	0.803	-			
	Left edge facing phantom	Estimated SAR	-	0.164	-	-	0.176	-	-	-	
		Full SAR	-	-	-	-	-	-			
	Right edge facing phantom	Estimated SAR	-	0.252	-	-	0.270	-	-	-	
		Full SAR	-	-	-	-	-	-			
	CC-3085 Display facing phantom	Estimated SAR	1.13	1.13	1.08	1.18	1.21	1.11	0.02	13	
		Full SAR	-	1.15	-	-	1.23	-			
	Repeated SAR		Estimated SAR	-	-	-	-	-	-		
	CC-3085, Display facing phantom		Full SAR	-	1.15	-	-	1.23	-	-	-

GSM/GPRS/EGPRS1900 Wireless Router SAR results / HW3110 / Antenna 1

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz	Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz		
2-slot GPRS	Tuning Target + Tolerance [dBm]		29.4			Scaling factor*				
	Conducted Slot Average Power [dBm]		28.9	28.9	28.7	0.5	0.5	0.7	dB	
	Time-averaged power [dBm]		22.9	22.9	22.7	1.12	1.12	1.17	Lin	
	CC-3085	Estimated SAR	0.650	0.638	0.590	0.729	0.716	0.693	0.03	-
	Display facing phantom	Full SAR	0.683	-	-	0.766	-	-		

LTE2500 (Band 7) Wireless Router SAR results / HW2010 / Antenna 1**

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz	Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz		
20MHz Ch BW 1RB 0% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		19.4	19.6	19.7	0.5	0.3	0.2	dB	
	Time-averaged power [dBm]		19.4	19.6	19.7	1.12	1.07	1.05	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 1RB 50% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		19.3	19.6	19.6	0.6	0.3	0.3	dB	
	Time-averaged power [dBm]		19.3	19.6	19.6	1.15	1.07	1.07	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 1RB 100% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		19.5	19.7	19.8	0.4	0.2	0.1	dB	
	Time-averaged power [dBm]		19.5	19.7	19.8	1.10	1.05	1.02	Lin	
	Back facing phantom	Estimated SAR	-	-	0.347	-	-	0.355	0.01	-
		Full SAR	-	-	0.340	-	-	0.348		
	Display facing phantom	Estimated SAR	-	-	0.346	-	-	0.354	-	-
		Full SAR	-	-	-	-	-	-		
	Top edge facing phantom	Estimated SAR	-	-	0.046	-	-	0.047	-	-
		Full SAR	-	-	-	-	-	-		
	Bottom edge facing phantom	Estimated SAR	-	-	0.334	-	-	0.342	-	-
		Full SAR	-	-	-	-	-	-		
	Left edge facing phantom	Estimated SAR	-	-	0.013	-	-	0.013	-	-
		Full SAR	-	-	-	-	-	-		
	Right edge facing phantom	Estimated SAR	-	-	0.284	-	-	0.291	-	-
		Full SAR	-	-	-	-	-	-		
	CC-3085 Back facing phantom	Estimated SAR	-	-	0.258	-	-	0.264	-	-
Full SAR		-	-	-	-	-	-			
20MHz Ch BW 50% RB 0% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.5	18.7	18.8	0.4	0.2	0.1	dB	
	Time-averaged power [dBm]		18.5	18.7	18.8	1.10	1.05	1.02	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 50% RB 50% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.5	18.7	18.7	0.4	0.2	0.2	dB	
	Time-averaged power [dBm]		18.5	18.7	18.7	1.10	1.05	1.05	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

(LTE2500 Antenna 1 Table continues)

(LTE2500 Antenna 1 Table continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz	Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz		
20MHz Ch BW 50% RB 100% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.4	18.8	18.9	0.5	0.1	0.0	dB	
	Time-averaged power [dBm]		18.4	18.8	18.9	1.12	1.02	1.00	Lin	
	Back facing phantom	Estimated SAR	-	-	0.289	-	-	0.289	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Display facing phantom	Estimated SAR	-	-	0.279	-	-	0.279	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Top edge facing phantom	Estimated SAR	-	-	0.040	-	-	0.040	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Bottom edge facing phantom	Estimated SAR	-	-	0.290	-	-	0.290	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Left edge facing phantom	Estimated SAR	-	-	0.012	-	-	0.012	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Right edge facing phantom	Estimated SAR	-	-	0.226	-	-	0.226	-	-
		Full SAR	-	-	-	-	-	-	-	-
20MHz Ch BW 100% RB	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.5	18.8	18.8	0.4	0.1	0.1	dB	
	Time-averaged power [dBm]		18.5	18.8	18.8	1.10	1.02	1.02	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

LTE2500 (Band 7) Wireless Router SAR results / HW3110 / Antenna 1

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz	Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz		
20MHz Ch BW 1RB 100% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		19.6	19.9	19.9	0.3	0.0	0.0	dB	
	Time-averaged power [dBm]		19.6	19.9	19.9	1.07	1.00	1.00	Lin	
	Back facing phantom	Estimated SAR	0.376	0.395	0.365	0.403	0.395	0.365	0.00	-
		Full SAR	0.380	-	-	0.407	-	-		

LTE2500 (Band 7) Wireless Router SAR results / HW2010 / Antenna 2**

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz	Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz		
20MHz Ch BW 1RB 0% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.9	19.1	19.2	1.0	0.8	0.7	dB	
	Time-averaged power [dBm]		18.9	19.1	19.2	1.26	1.20	1.17	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 1RB 50% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.8	19.1	19.1	1.1	0.8	0.8	dB	
	Time-averaged power [dBm]		18.8	19.1	19.1	1.29	1.20	1.20	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 1RB 100% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		19.0	19.2	19.3	0.9	0.7	0.6	dB	
	Time-averaged power [dBm]		19.0	19.2	19.3	1.23	1.17	1.15	Lin	
	Back facing phantom	Estimated SAR	-	-	0.441	-	-	0.506	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Display facing phantom	Estimated SAR	-	-	0.457	-	-	0.525	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Top edge facing phantom	Estimated SAR	-	-	0.013	-	-	0.015	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Bottom edge facing phantom	Estimated SAR	-	-	0.479	-	-	0.550	0.01	-
		Full SAR	-	-	0.486	-	-	0.558		
	Left edge facing phantom	Estimated SAR	-	-	0.069	-	-	0.079	-	-
		Full SAR	-	-	-	-	-	-		
	Right edge facing phantom	Estimated SAR	-	-	0.086	-	-	0.098	-	-
Full SAR		-	-	-	-	-	-			
CC-3085 Bottom edge facing phantom	Estimated SAR	-	-	0.482	-	-	0.553	0.00	-	
	Full SAR	-	-		-	-	0.553			
20MHz Ch BW 50% RB 0% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.5	18.7	18.8	0.4	0.2	0.1	dB	
	Time-averaged power [dBm]		18.5	18.7	18.8	1.10	1.05	1.02	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							
20MHz Ch BW 50% RB 50% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.0	18.2	18.2	0.9	0.7	0.7	dB	
	Time-averaged power [dBm]		18.0	18.2	18.2	1.23	1.17	1.17	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

(LTE2500 Antenna 2 Table continues)

(LTE2500 Antenna 2 Table continues)

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz	Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz		
20MHz Ch BW 50% RB 100% offset	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		17.9	18.3	18.4	1.0	0.6	0.5	dB	
	Time-averaged power [dBm]		17.9	18.3	18.4	1.26	1.15	1.12	Lin	
	Back facing phantom	Estimated SAR	-	-	0.381	-	-	0.427	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Display facing phantom	Estimated SAR	-	-	0.382	-	-	0.429	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Top edge facing phantom	Estimated SAR	-	-	0.010	-	-	0.011	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Bottom edge facing phantom	Estimated SAR	-	-	0.405	-	-	0.454	-	-
		Full SAR	-	-	-	-	-	-	-	-
	Left edge facing phantom	Estimated SAR	-	-	0.055	-	-	0.062	-	-
		Full SAR	-	-	-	-	-	-	-	-
Right edge facing phantom	Estimated SAR	-	-	0.064	-	-	0.072	-	-	
	Full SAR	-	-	-	-	-	-	-	-	
20MHz Ch BW 100% RB	Tuning Target + Tolerance [dBm]		18.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		18.0	18.3	18.3	0.9	0.6	0.6	dB	
	Time-averaged power [dBm]		18.0	18.3	18.3	1.23	1.15	1.15	Lin	
			No testing required for this CBW/RB/RB offset configuration according to KDB 941225 D05 SAR for LTE Devices v02r02							

LTE2500 (Band 7) Wireless Router SAR results / HW3110 / Antenna 2

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz	Ch 20850 2510.0 MHz	Ch 21100 2535.0 MHz	Ch 21350 2560.0 MHz		
20MHz Ch BW 1RB 100% offset	Tuning Target + Tolerance [dBm]		19.9			Scaling factor*				
	Conducted Slot Average Power [dBm]		19.1	19.4	19.4	0.8	0.5	0.5	dB	
	Time-averaged power [dBm]		19.1	19.4	19.4	1.20	1.12	1.12	Lin	
	Back facing phantom	Estimated SAR	0.484	0.500	0.461	0.582	0.561	0.517	-	-
		Full SAR	-	-	-	-	-	-		
	Display facing phantom	Estimated SAR	-	-		-	-		-	-
		Full SAR	-	-		-	-			
	Top edge facing phantom	Estimated SAR	-	-		-	-		-	-
		Full SAR	-	-		-	-			
	Bottom edge facing phantom	Estimated SAR	0.571	0.629	0.561	0.686	0.706	0.629	0.02	14
		Full SAR	-	0.646	-	-	0.725	-		
	Left edge facing phantom	Estimated SAR	-	-		-	-		-	-
		Full SAR	-	-		-	-			
	Right edge facing phantom	Estimated SAR	-	-		-	-		-	-
		Full SAR	-	-		-	-			

2450MHz Band Wireless Router SAR results / HW2010**

Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			Ch 1 2412 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz	Ch 1 2412 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz		
WLAN b-mode BPSK 1Mbps	Tuning Target + Tolerance [dBm]		17.5			Scaling factor*				
	Conducted Slot Average Power [dBm]		16.1	16.2	16.4	1.4	1.3	1.1	dB	
	Time-averaged power [dBm]		16.1	16.2	16.4	1.38	1.35	1.29	Lin	
	Back facing phantom	Estimated SAR	0.164	0.188	0.215	0.226	0.254	0.277	0.01	15
		Full SAR	-	-	0.221	-	-	0.285		
	Display facing phantom	Estimated SAR	-	0.113	-	-	0.152	-	-	-
		Full SAR	-	-	-	-	-	-		
	Top edge facing phantom	Estimated SAR	-	0.093	-	-	0.125	-	-	-
		Full SAR	-	-	-	-	-	-		
	Bottom edge facing phantom	Estimated SAR	-	0.010	-	-	0.014	-	-	-
		Full SAR	-	-	-	-	-	-		
	Left edge facing phantom	Estimated SAR	-	0.040	-	-	0.054	-	-	-
		Full SAR	-	-	-	-	-	-		
	Right edge facing phantom	Estimated SAR	-	0.055	-	-	0.074	-	-	-
		Full SAR	-	-	-	-	-	-		
CC-3085 Back facing phantom	Estimated SAR	0.165	0.185	0.186	0.228	0.250	0.240	-	-	
	Full SAR	-	-	-	-	-	-			
Mode	Device orientation	SAR measurement	Measured 1g SAR [W/kg]			Reported* 1g SAR [W/kg]			Max Deviation (Estimated SAR - Full SAR) [W/kg]	Plot #
			-	Ch 6 2437.0 MHz	-	-	Ch 6 2437.0 MHz	-		
WLAN b-mode BPSK 11Mbps	Tuning Target + Tolerance [dBm]		17.5			Scaling factor*				
	Conducted Slot Average Power [dBm]		-	16.5	-	-	1.0	-	dB	
	Time-averaged power [dBm]		-	16.5	-	-	1.26	-	Lin	
	CC-3085 Back facing phantom	Estimated SAR	-	0.185	-	-	0.233	-	-	-
		Full SAR	-	-	-	-	-	-		

Simultaneous transmissions: Combined SAR results – Individual band Max results

Test configuration	Max. Reported* 1g SAR results			
	WLAN**	Antenna 1		
		WCDMA 850	2-slot GPRS 1900	LTE2500 (Band7)
Back facing phantom	0.285	0.565	1.09	0.407
Display facing phantom	0.152	0.458	1.23	0.354
Top edge facing phantom	0.125	0.026	0.104	0.047
Bottom edge facing phantom	0.014	0.327	0.810	0.342
Left edge facing phantom	0.054	0.206	0.176	0.013
Right edge facing phantom	0.074	0.464	0.270	0.291

Test configuration	Max. Reported* 1g SAR results		
	WLAN**	Antenna 2	
		2-slot GPRS 850	LTE2500 (Band7)
Back facing phantom	0.285	0.929	0.582
Display facing phantom	0.152	0.707	0.525
Top edge facing phantom	0.125	0.028	0.015
Bottom edge facing phantom	0.014	0.321	0.725
Left edge facing phantom	0.054	0.658	0.079
Right edge facing phantom	0.074	0.402	0.098

**SAR data copied from FCC_RM-974_01 for HW2010

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

Test configuration	Max. Reported* 1g SAR results		
	Antenna 1 + WLAN		
	WCDMA 850 + WLAN	2-slot GPRS 1900 + WLAN	LTE2500 (Band 7) + WLAN
Back facing phantom	0.850	1.38	0.633
Display facing phantom	0.610	1.38	0.506
Top edge facing phantom	0.151	0.229	0.172
Bottom edge facing phantom	0.341	0.824	0.356
Left edge facing phantom	0.260	0.230	0.067
Right edge facing phantom	0.538	0.344	0.365

Test configuration	Max. Reported* 1g SAR results	
	Antenna 2 + WLAN	
	2-slot GPRS 850 + WLAN	LTE2500 (Band 7) + WLAN
Back facing phantom	1.21	0.867
Display facing phantom	0.859	0.677
Top edge facing phantom	0.153	0.140
Bottom edge facing phantom	0.335	0.739
Left edge facing phantom	0.712	0.133
Right edge facing phantom	0.476	0.172

Note: Simultaneous Transmission Procedures as described in KDB648474 are not required for this product.

7.3.1 Combined Body SAR data

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

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

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

Test configuration	Max. Reported* 1g SAR results		
	Antenna 1 + WLAN		
	WCDMA 850 + WLAN	2-slot GPRS 1900 + WLAN	LTE2500 (Band 7) + WLAN
Back facing phantom	0.623	-	-
Display facing phantom	-	1.25	-
Top edge facing phantom	-	-	-
Bottom edge facing phantom	-	-	-
Left edge facing phantom	-	-	-
Right edge facing phantom	-	-	-

Test configuration	Max. Reported* 1g SAR results	
	Antenna 2 + WLAN	
	2-slot GPRS 850 + WLAN	LTE2500 (Band 7) + WLAN
Back facing phantom	0.955	0.612
Display facing phantom	-	-
Top edge facing phantom	-	-
Bottom edge facing phantom	-	-
Left edge facing phantom	-	-
Right edge facing phantom	-	-

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.