Sony Ericsson

Company Internal
REPORT

Prepared (also subject responsible if other)		No.		
BA/SEMC/BGLINS *Robert Carr*		*BGLI08:899.*		
Approved	Checked	Date	Rev	Reference
LD/SEMC/BGLIVMC *Mats Hansson*	*081024*	*081024*	C	File

Report issued by Accredited SAR Laboratory

for

PY7A3880002 (X1a)

Date of test: September 10th to September 23rd, 2008

Laboratory:
Sony Ericsson SAR Test Laboratory
Sony Ericsson Mobile Communications AB
Maplewood, Chineham Business Park
Basingstoke, RG24 8YB,
England

Testing Engineer:
Robert Carr
Robert.Carr@sonyericsson.com
+44 1256 77 48 95

Testing Approval:
Mat Hansson
Mats.hansson@sonyericsson.com
+46-46-18 13 57

ROBERT CARR

Statement of Compliance

Sony Ericsson Mobile Communications AB declares under its sole responsibility that the product

Sony Ericsson Type AAD-3880002-BV; FCC ID PY7A3880002; IC 4170B-A3880002

to which this declaration relates, is in conformity with the appropriate RF exposure standards recommendations and guidelines. It also declares that the product was tested in accordance with the appropriate measurement standards, guidelines and recommended practices. Any deviations from these standards, guidelines and recommended practices are noted below:

(None)

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1 Introduction

In this test report, compliance of the Sony Ericsson PY7A3880002 (X1a) portable telephone with RF safety guidelines is demonstrated. The applicable RF safety guidelines and the SAR measurement specifications used for the test are described in the SAR Measurement Specifications of Wireless Handsets [1].

2 Customer details

Company Name:	Sony Ericsson Mobile Communications AB
Address:	370 Convention Way Redwood City California, 94063 U.S.A
Contact Name:	Erik Mollerstedt

3 Device Under Test

3.1 Antenna Description

Type	Internal antenna	
Location	Bottom of phone	
Main and WLAN antennas distance	89mm	
Dimensions	Max length	45 mm
	Max width	14 mm
Configuration	PIFA	

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3.2 Device Description

Device model	AAD-3880002-BV					
Market name	X1a					
Serial number (EUT #)	GT2000046 (#13262) GT2000045P (#13760) GT20000721 (#13391) WLAN Sample					
Mode	GSM 850			GSM 1900		
Crest factor	8.3			8.3		
Multiple access scheme	TDMA			TDMA		
Channel No.	128	190	251	512	661	885
Maximum output power setting [dBm]	33.5	33.5	33.5	30.5	30.5	30.5
Factory tolerance in power setting	±0.5 dB			±0.5 dB		
Maximum peak output power [dBm]	34.0	34.0	34.0	31.0	31.0	31.0
Data mode	GPRS			GPRS		
Crest factor	4.15			4.15		
Maximum output power setting [dBm]	33.5	33.5	33.5	30.5	30.5	30.5
Factory tolerance in power setting	±0.5 dB			±0.5 dB		
Maximum peak output power [dBm]	34.0	34.0	34.0	31.0	31.0	31.0
Data mode	EDGE			EDGE		
Crest factor	4.15			4.15		
Maximum output power setting [dBm]	26.5	26.5	26.5	25.5	25.6	25.5
Factory tolerance in power setting	±0.5 dB			±0.5 dB		
Maximum peak output power [dBm]	27.0	27.0	27.0	26.0	26.0	26.0
Transmitting frequency range [MHz]	824.0 - 849.0			1850.0 - 1910.0		

Mode	UMTS 2			UMTS 5		
Crest factor	1			1		
Multiple access scheme	WCDMA			WCDMA		
Channel No.	9262	9400	9538	2712	2788	2863
Maximum output power setting[1] [dBm]	24,5	24,5	24,5	23,5	23,5	23,5
Factory tolerance in power setting[1]	±0,5 dB			±0,5 dB		
Maximum peak output power[1] [dBm]	25,0	25,0	25,0	24,0	24,0	24,0
Data Mode	(See section 3.3)					
Transmitting frequency range [MHz]	1852.5 - 1907.6			882,4 – 912,6		

GPRS Multislot class	10
EDGE class	10
GPRS Capability class	B
BT class and conducted power	Class 2, 0 dBm
Prototype or production unit	Preproduction
Hardware Version	PQ1
Software version	R1AA006
Device category	Portable
RF exposure environment	General population / uncontrolled

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WLAN Output Power					
Mode	Max Output Power [1] (dBm)	Factory Tolerance [1] (dB)	EUT (#13391) power (dBm) [1]		
			Ch 1	Ch6	Ch 13
802.11b 1Mbit/sec	18.5	1	18.3	18.6	18.5
802.11b 2Mbit/sec					
802.11b 5.5Mbit/sec					
802.11b 11Mbit/sec					
802.11g 6Mbit/sec	18.0	1	17.7	18.1	18.0
802.11g 9Mbit/sec					
802.11g 12Mbit/sec	16.0	1	15.4	15.6	15.9
802.11g 18Mbit/sec					
802.11g 24Mbit/sec	15.0	1	13.8	14.1	14.4
802.11g 36Mbit/sec					
802.11g 48Mbit/sec	13.5	1	13.1	13.4	13.6
802.11g 54Mbit/sec					

[1] Measured output values were provided by the customer.

3.3 Output power in UMTS

The conducted output power of the device was measured in two circuit switched (CS) modes: RMC and voice; four high speed downlink packet access (HSDPA) modes and five high speed uplink packet access (HSUPA) modes. A CMU-200 was used to establish the call processing and modulation settings. A RF power meter was used for power measurement.

The results are presented in the following table:

Output power [dBm]	**UMTS Band II**			**UMTS Band V**		
	Channel No.					
Mode	**9262**	**9400**	**9538**	**4132**	**4183**	**4233**
CS - RMC	24.3	24.3	24.3	23.3	23.5	23.4
CS - voice	24.3	24.3	24.3	23.3	23.5	23.4
HSDPA Sub test 1	24.5	24.5	24.3	23.1	23.3	23.2
HSDPA Sub test 2	22.8	22.6	22.8	22.6	22.8	22.7
HSDPA Sub test 3	22.6	22.6	22.9	22.6	22.8	22.9
HSDPA Sub test 4	22.2	22.2	22.2	22.4	22.5	22.5
HSUPA Sub test 1	21.9	21.8	22.0	22.0	21.7	21.9
HSUPA Sub test 2	21.9	21.7	21.7	20.1	20.2	20.3
HSUPA Sub test 3	21.9	21.8	22.0	21.9	21.9	21.6
HSUPA Sub test 4	21.9	21.6	21.9	20.9	21.0	20.9
HSUPA Sub test 5	**22.8**	**22.8**	**22.8**	**22.16**	**22.1**	**22.4**

3.4 Test set-up information for UMTS

3.4.1 RMC

In RMC mode, the conducted power at a bit rate of 12.2kbit/s was measured. This corresponds with a spreading factor (SF) of 64. In RMC mode only DPCCH and DPDCH are active. As bit rate changes do not influence the relative power of any code channel, the measured RMS output power remains on the same level which is set to maximum by transmit power control (TPC) pattern type ‘All 1’.

3.4.2 HSDPA

HSDPA adds the HS-DPCCH in uplink as a control channel for high speed data transfer in downlink. In HSDPA mode, 4 sub-tests are defined by 3GPP TS 34.121 [7] according to the following table:

Sub-test	**$ß_c$**	**$ß_d$**	**$ß_d$(SF)**	**$ß_c/ß_d$**	**$ß_{hs}$(1)**	**CM(dB)(2)**
1	2/15	15/15	64	2/15	4/15	0.0
2	12/15(3)	15/15(3)	64	12/15(3)	24/15	1.0
3	15/15	8/15	64	15/8	30/15	1.5
4	15/15	4/15	64	15/4	30/15	1.5

Note 1: $\Delta_{ACK}, \Delta_{NACK}, \Delta_{CQI} = 8$ <==> $A_{hs} = ß_{hs}/ß_c = 30/15$ <==> $ß_{hs} = 30/15 * ß_c$
Note 2: CM = 1 for $ß_c/ß_d = 12/15$, $ß_{hs}/ß_c = 24/15$
Note 3: For sub-test 2 the $ß_c/ß_d$ ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $ß_c = 11/15$ and $ß_d = 15/15$

The $ß_c$ and $ß_d$ gain factors for DPCCH and DPDCH were set according to the values in the above table, $ß_{hs}$ for HS-DPCCH is set automatically to the correct value when $\Delta_{ACK}, \Delta_{NACK}, \Delta_{CQI} = 8$. The variation of the $ß_c/ß_d$ ratio causes a power reduction at sub-tests 2-4.

The measurements were performed with a Fixed Reference Channel (FRC) and H-Set 1 QPSK.

Parameter	Value
Nominal average inf. Bit rate	534 kbit/s
Inter-TTI distance	3 TTIs
Number of HARQ processes	2 processes
Information bit payload	3202 bits
MAC-d PDU size	336 bits
Number code blocks	1 block
Binary channel bits per TTI	4800 bits
Total available SMLs in UE	19200 SMLs
Number of SMLs per HARQ process	9600 SMLs
Coding rate	0.67
Number of physical channel codes	5

3.4.3 HSUPA

In HSUPA mode, additional code channels (E-DPCCH, E-DPDCHn) are added for data transfer in the uplink at higher bit rates.

5 sub-tests are defined by 3GPP TS 34.121 [7] according to the following table:

Sub-test	$ß_c$	$ß_d$	$ß_d$ (SF)	$ß_c/ß_d$	$ß_{hs}$ (1)	$ß_{ec}$	$ß_{ed}$	$ß_{ec}$ (SF)	$ß_{ed}$ (code)	CM (dB) (2)	MPR (dB)	AG (4) Index	E-TFCI
1	11/15 (3)	15/15 (3)	64	11/15 (3)	22/15	209/225	1039/225	4	1	0.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	1.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$ß_{ed1}$:47/15 $ß_{ed2}$:47/15	4	2	1.5	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	1.5	2.0	17	71
5	15/15 (4)	15/15 (4)	64	15/15 (4)	30/15	24/15	134/15	4	1	1.5	0.0	21	81

Note 1: $\Delta_{ACK}, \Delta_{NACK}, \Delta_{CQI} = 8$ <==> $A_{hs} = ß_{hs}/ß_c = 30/15$ <==> $ß_{hs} = 30/15 * ß_c$
Note 2: CM = 1 for $ß_c/ß_d = 12/15$, $ß_{hs}/ß_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference
Note 3: For sub-test 1 the $ß_c/ß_d$ ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $ß_c = 10/15$ and $ß_d = 15/15$
Note 4: For sub-test 5 the $ß_c/ß_d$ ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $ß_c = 14/15$ and $ß_d = 15/15$
Note 5: Testing UE using E-DPDCH Physical Layer category 1 sub-test 3 is not required according to TS 25.306 Table 5.1g
Note 6: $ß_{ed}$ cannot be set directly; it is set by Absolute Grant Value

To achieve the settings above some additional procedures were defined by 3GPP TS 34.121 [7]. Those have been included in an application note for the CMU200 and were exactly followed:

Test mode connection (BS signal tab):
RMC 12.2kbit/s + HSPA 34.108 with loop mode 1

HS-DSCH settings (BS signal tab):
FRC with H-set 1 QPSK
ACK-NACK repetition factor = 3
CQI feedback cycle = 4ms
CQI repetition factor = 2

HSUPA specific signalling settings (UE signal tab):
E-TCFI table index = 0
E-DCH minimum set E-TCFI = 9
Puncturing limit non-max = 0.84
Max. no. of channelisation codes = 2xSF4
Initial serving grant value = off

HSDPA and HSUPA Gain factors (UE signal tab):

Sub-test	**$ß_c$**	**$ß_d$**	**$\Delta_{ACK}, \Delta_{NACK}, \Delta_{CQI}$**	**ΔE-DPCCH[1]**
1	10	15	8	6
2	6	15	8	8
3	15	9	8	8
4	2	15	8	5
5	14	15	8	7

Note 1: $ß_{ec}$ and $ß_{ed}$ ratios (relative to $ß_c$ and $ß_d$) are set by ΔE-DPCCH

HSUPA Reference E-TFCIs (UE signal tab > HSUPA gain factors):

Sub-test	1,2,4,5				
No. of E-TCFIs	5				
Ref. E-TCFI	11	67	71	75	81
Ref. E-TCFI power offset	4	18	23	26	27

Sub-test	3	
No. of E-TCFIs	2	
Ref. E-TCFI	11	92
Ref. E-TCFI power offset	4	18

HSUPA specific generator parameters (BS signal tab > HSUPA > E-AGCH > AG Pattern:

Sub-test	Absolute Grant Value (AG Index)
1	20
2	12
3	15
4	17
5	21

Power Level settings (BS signal tab > Node B settings):
- Level reference: Output channel power (Ior)
- Output Channel Power (Ior): -86dBm

Downlink Physical Channel settings (BS signal tab):
- P-CPICH: -10dB
- S-CPICH: Off
- P-SCH: -15dB
- S-SCH: -15dB
- P-CCPCH: -12dB
- S-CCPCH: -12dB
- PICH: -15dB
- AICH: -12dB
- DPDCH: -10dB
- HS-SCCH: -8dB
- HS-PDSCH: -3dB
- E-AGCH: -20dB
- E-RGCH/E-HICH: -20dB
- E-RGCH Active: Off

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4 Test equipment

4.1 Dosimetric system

SAR measurements were made using the DASY4 professional system (software version 4.7, Build 55) with SAM twin phantom, manufactured by Schmid & Partner Engineering AG (SPEAG). The list of calibrated equipment is given below.

Description	Serial Number	Due Date
DASY4 DAE3	449	2008-12
E-field probe ET3DV6	1611	2008-12
Dipole Validation Kit, D835V2	442	2008-12
Dipole Validation Kit, D1900V2	539	2008-12
Dipole Validation Kit, D2450V2	721	2009-01

4.2 Additional equipment

Description	Inventory Number	Due Date
Signal generator R&S SMY 02	3.094	2009-04
Directional coupler HP778D	15.233	None
Power meter R&S NRVD	4.073	2009-04
Power sensor R&S NRV-Z5	4.074	2009-04
Power sensor R&S NRV-Z5	4.076	2009-04
Network analyzer Agilent 8719D	2.022	2009-04
Dielectric probe kit HP8507C	14.046	Self Cal
R&S CMU200	20011270	2009-04

5 Electrical parameters on the tissue simulating liquid

Prior to conducting SAR measurements, the relative permittivity, ε_r, and the conductivity σ, of the tissue simulating liquids were measured with the dielectric probe kit. These values are shown in the table below. The mass density, ρ, entered into the DASY4 software is also given. Recommended limits for permittivity ε_r, conductivity σ and mass density ρ are also shown.

f [MHz]	Tissue type	Measured / Recommended	Dielectric Parameters		Density
			ε_r	σ [S/m]	ρ [g/cm³]
835	Head	Measured, 2008-09-10	41.3	0.88	1.00
		Recommended	41.5	0.90	1.00
835	Body	Measured, 2008-09-19	54.4	0.98	1.00
		Recommended	55.2	0.97	1.00
835	Head	Measured, 2008-09-22	40.8	0.87	1.00
		Recommended	41.5	0.90	1.00
835	Body	Measured, 2008-09-23	54.3	0.98	1.00
		Recommended	55.2	0.97	1.00
1900	Head	Measured, 2008-09-11	38.0	1.47	1.00
		Recommended	40.0	1.40	1.00
1900	Body	Measured, 2008-09-12	50.9	1.58	1.00
		Recommended	53.3	1.52	1.00
1900	Head	Measured, 2008-09-15	38.3	1.45	1.00
		Recommended	40.0	1.40	1.00
1900	Body	Measured, 2008-09-15	50.8	1.56	1.00
		Recommended	53.3	1.52	1.00
2450	Head	Measured, 2008-09-24	37.4	1.89	1.00
		Recommended	39.2	1.80	1.00
2450	Body	Measured, 2008-09-25	50.9	2.04	1.00
		Recommended	52.7	1.95	1.00

6 System accuracy verification

A system accuracy verification of the DASY4 was performed using the dipole validation kit listed in section 3.1. The system verification test was conducted on the same day as the measurement of the DUT. The measurements were made at an ambient temperature of 22.0 -23.0 °C and humidity 35-47 %. The obtained results are displayed in the table below.
RF noise had been measured in liquid when all RF equipment in lab was switched off. Measured value was 0.0002 mW/g in 1g mass.

f [MHz]	Tissue type	Measured / Reference	SAR [W/kg] 1g / 10g	Dielectric Parameters		Density	Liquid T[°C]
				ε_r	σ [S/m]	ρ [g/cm³]	
835	Head	Measured, 2008-09-10	9.60 / 6.40	41.3	0.88	1.00	22.0
		Reference	9.43 / 6.17	41.5	0.90	1.00	22.0
835	Body	Measured, 2008-09-19	9.76 / 6.48	54.4	0.98	1.00	22.5
		Reference	9.70 / 6.51	55.2	0.97	1.00	22.0
835	Head	Measured, 2008-09-22	9.64 / 6.40	40.8	0.87	1.00	21.9
		Reference	9.43 / 6.17	41.5	0.90	1.00	22.0
835	Body	Measured, 2008-09-23	10.0 / 6.64	54.3	0.98	1.00	22.8
		Reference	9.70 / 6.51	55.2	0.97	1.00	22.0
1900	Head	Measured, 2008-09-11	38.8 / 20.3	38.0	1.47	1.00	21.9
		Reference	35.9 / 19.1	40.0	1.40	1.00	22.0
1900	Body	Measured, 2008-09-12	39.9 / 21.0	50.9	1.58	1.00	22.1
		Reference	37.0 / 19.8	53.3	1.52	1.00	22.0
1900	Head	Measured, 2008-09-15	38.0 / 20.0	38.3	1.45	1.00	22.6
		Reference	35.9 / 19.1	40.0	1.40	1.00	22.0
1900	Body	Measured, 2008-09-15	39.4 / 20.7	50.8	1.56	1.00	22.8
		Reference	37.0 / 19.8	53.3	1.52	1.00	22.0
2450	Head	Measured, 2008-09-24	53.6 / 24.3	37.4	1.89	1.00	22.0
		Reference	54.8 / 25.3	39.2	1.80	1.00	22.0
2450	Body	Measured, 2008-09-25	54.0 / 24.6	50.9	2.04	1.00	22.6
		Reference	52.1 / 24.3	52.7	1.95	1.00	22.0

7 SAR measurement uncertainty

SAR measurement uncertainty evaluation for Sony Ericsson PY7A3880002 (X1a) phone According to IEEE 1528

Uncertainty Component	Uncer. (%)	Prob Dist.	Div.	C_i	1g mass
Measurement System					
Probe Calibration	±5.9	N	1	1	±5.9
Axial Isotropy	±4.7	R	√3	0.7	±1.9
Spherical Isotropy	±9.6	R	√3	0.7	±3.9
Boundary effect	±1.0	R	√3	1	±0.6
Probe linearity	±4.7	R	√3	1	±2.7
Detection limit	±1.0	R	√3	1	±0.6
Readout electronics	±0.3	N	1	1	±0.3
Response time	±0.8	R	√3	1	±0.5
Integration time	±2.6	R	√3	1	±1.5
RF Ambient Conditions	±3.0	R	√3	1	±1.7
Mech. Constraints of robot	±0.4	R	√3	1	±0.2
Probe positioning	±2.9	R	√3	1	±1.7
Extrap, interpolation and integration	±1.0	R	√3	1	±0.6
Measurement System Uncertainty					*±8.4*
Test Sample Related					
Device positioning	±3.5	N	1	1	±3.5
Device holder uncertainty	±3.5	N	1	1	±3.5
Power drift	±5.0	R	√3	1	±2.9
Test Sample Related Uncertainty					*±5.5*
Phantom and Tissue Parameters					
Phantom uncertainty	±4.0	R	√3	1	±2.3
Liquid conductivity (measured)	±2.5	R	1	0.64	±1.6
Liquid conductivity (target)	±5.0	R	√3	0.64	±1.8
Liquid Permittivity (measured)	±2.5	R	1	0.6	±1.5
Liquid Permittivity (target)	±5.0	R	√3	0.6	±1.7
Phantom and Tissue Parameters Uncertainty					*±4.1*
Combined standard uncertainty					*±10.8*
Extended standard uncertainty (k=2)					***±21.6***

8 Test results

The ambient humidity and temperature of test facility were 35-47% and 22.0-23.0 °C respectively. A base station simulator was used to control the device during the SAR measurement. The DUT was supplied with a fully charged battery for each measurement. SAR in WLAN mode had been measured with 100% duty-cycle with Bit rate speed of 1Mbit/sec.

For head measurement, the DUT was tested on the right-hand side, and the left-hand side of the phantom in two phone positions, cheek (touch) and tilt (cheek + 15°). The DUT was tested at the lowest, middle and highest frequencies in the transmission band. The measured 1-gram averaged SAR values of the DUT towards the head are provided in Table 1.

For body measurement the DUT was tested with the back (antenna) and front(display) towards the phantom flat section with 15 mm distance in both speech and data mode. For all modes, the device was tested at the lowest, middle and highest frequencies in the transmission band. For portable hands free (PHF) usage the Sony Ericsson head set HPB-60 was connected to the DUT. The measured 1-gram averaged SAR values of the DUT towards the body are provided in Table 2.

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Band	Channel	Measured output power[1] [dBm]	Position	Liquid T [°C]	Measured SAR [W/kg]	
					Left-hand 1g mass	Right-hand 1g mas
GSM 850	128	33.4	Cheek	22.0	0.34	0.34
			Tilt	22.0	-	0.36
	190	33.5	Cheek	22.0	0.30	0.32
			Tilt	22.0	0.28	0.33
	251	33.4	Cheek	22.0	0.26	0.24
			Tilt	22.0	-	0.22
GSM 1900	512	30.4	Cheek	21.9	0.26	0.21
			Tilt	21.9	-	-
	661	30.5	Cheek	21.9	0.26	0.20
			Tilt	21.9	0.09	0.11
	810	30.4	Cheek	21.9	0.25	0.21
			Tilt	21.9	-	-
UMTS 2	9262	24.3	Cheek	22.6	0.43	0.38
			Tilt	22.6	-	-
	9400	24.3	Cheek	22.6	**0.45**	0.42
			Tilt	22.6	0.16	0.17
	9538	24.3	Cheek	22.6	0.44	0.35
			Tilt	22.6	-	-
UMTS 5	4132	23.3	Cheek	21.9	0.12	0.16
			Tilt	21.9	-	-
	4183	23.5	Cheek	21.9	0.17	0.23
			Tilt	21.9	0.17	0.19
	4233	23.4	Cheek	21.9	0.18	0.21
			Tilt	21.9	-	-
WLAN	1	18.3	Cheek	22.0	-	-
			Tilt	22.0	0.16	0.13
	6	18.6	Cheek	22.0	0.07	0.05
			Tilt	22.0	0.11	0.09
	11	19.1	Cheek	22.0	-	-
			Tilt	22.0	0.10	0.10

Table 1: SAR measurement result for Sony Ericsson PY7A3880002 telephone at highest possible output power. Measured towards the head.

[1] Measured output values were provided by the customer.

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Approved	Checked	Date	Rev	Reference
LD/SEMC/BGLIVMC *Mats Hansson*	*081024*	*081024*	C	File

Band	Channel	Measured output power[2] [dBm]	Position / Mode	Liquid T [°C]	Measured SAR [W/kg] 1g mass
GSM 850	128	33.4	Back / CS	22.5	0.99
			Back / PHF	22.5	0.83
			Back / GPRS	22.5	1.07
			Front To Phantom	22.5	0.37
		26.5	Back / EDGE	22.5	0.39
	190	33.5	Back / GPRS	22.5	0.90
			Back / CS	22.5	0.84
	251	33.4	Back / GPRS	22.5	0.77
			Back / CS	22.5	0.71
GSM 1900	512	30.4	Back / GPRS	22.1	0.67
			Back / CS	22.1	0.63
	661	30.5	Back / GPRS	22.1	0.68
			Back / CS	22.1	0.65
	810	30.4	Back / GPRS	22.1	0.70
			Back / CS	22.1	0.67
			Back / PHF	22.1	0.60
			Front To Phantom	22.1	0.09
		25.5	Back / EDGE	22.1	0.40
UMTS 2	9262	24.3	Back / HSDPA	22.8	1.06
			Back / HSUPA	22.8	0.71
			Back / CS	22.8	**1.22**
			Back / PHF	22.8	1.05
			Front to Phantom	22.8	0.19
	9400	24.3	Back / HSDPA	22.8	0.99
			Back / CS	22.8	1.13
	9538	24.3	Back / HSDPA	22.8	1.01
			Back / CS	22.8	1.14
UMTS 5	4132	23.3	Back / HSDPA	22.8	0.38
			Back / CS	22.8	0.43
	4183	23.5	Back / HSDPA	22.8	0.50
			Back / CS	22.8	0.56
	4233	23.4	Back / HSDPA	22.8	0.53
			Back / CS	22.8	0.60
			Back / PHF	22.8	0.47
			Front to Phantom	22.8	0.14
WLAN	1	18.3	Back / WLAN	22.8	0.10
			Front to Phantom	22.8	0.02
	6	18.6	Back / WLAN	22.8	0.07
	11	19.1	Back / WLAN	22.8	0.07

Table 2: SAR measurement result for Sony Ericsson PY7A3880002 telephone at highest possible output power. Measured towards the body.

[2] Measured output values were provided by the customer.

9 References

[1] R.Plicanic. “SAR Measurement Specification of Wireless Handsets”. Sony Ericsson SAR Test Laboratory internal document GUG/N 03:141

[2] FCC. “Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields: Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radio Frequency Emissions.” Supplement C (Edition 01-01) to OET Bulletin 65 (Edition 97- 01).

[3] IEEE. “Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques.” Std 1528-2003. June. 2003.

[4] IEC 62209-1. "Procedure to measure the Specific Absorption Rate (SAR) for hand-held mobile wireless devices in the frequency range of 300 MHz to 3 GHz". February 2005.

[5] FCC KDB248227. "SAR Measurement procedure for 802.11a/b/g Transmitters”, May 2007.

[6] FCC KDB648474. "SAR Evaluation Consideration for HANDSETS with Multiple Transmitters and Antenna", April 2008.

[7] 3GPP TS 34.121 Universal Mobile Telecommunications System (UMTS); Terminal Conformance Specification, Radio Transmission and Reception (FDD).

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Appendix

9.1 Photographs of the device under test

Front & Back

Sides

Back side with battery

Top and Bottom

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9.2 Device position at SAM Twin Phantom

DUT position towards the head: Cheek (touch) position

DUT position towards the head: Tilt (touch + 15°) position

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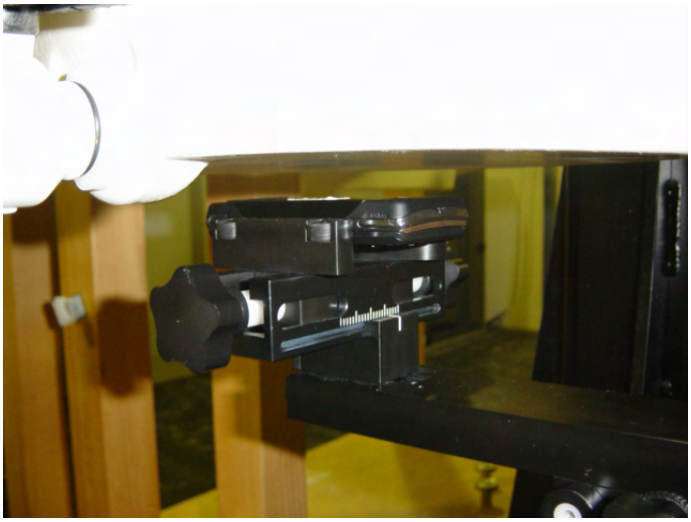

DUT in body position with 15 mm distance

9.3 Attachments

- System validation
- Measurement plots for head and body position
- Probe calibration
- Dipole calibration

Prepared by
Jeff Chou
Contents responsible if other than preparer

Approved by

Date
September 9, 2008
Remarks

Antenna Drawings

Table of Contents

Prepared by
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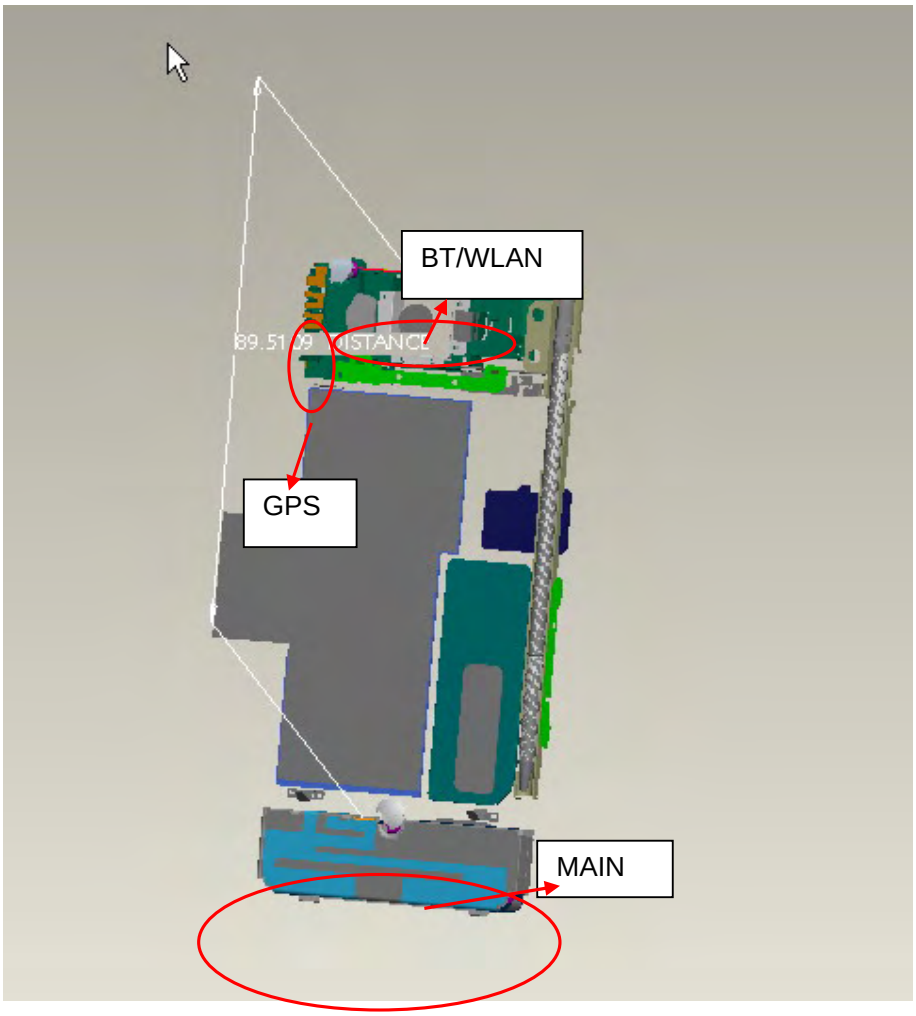
Antenna Positions



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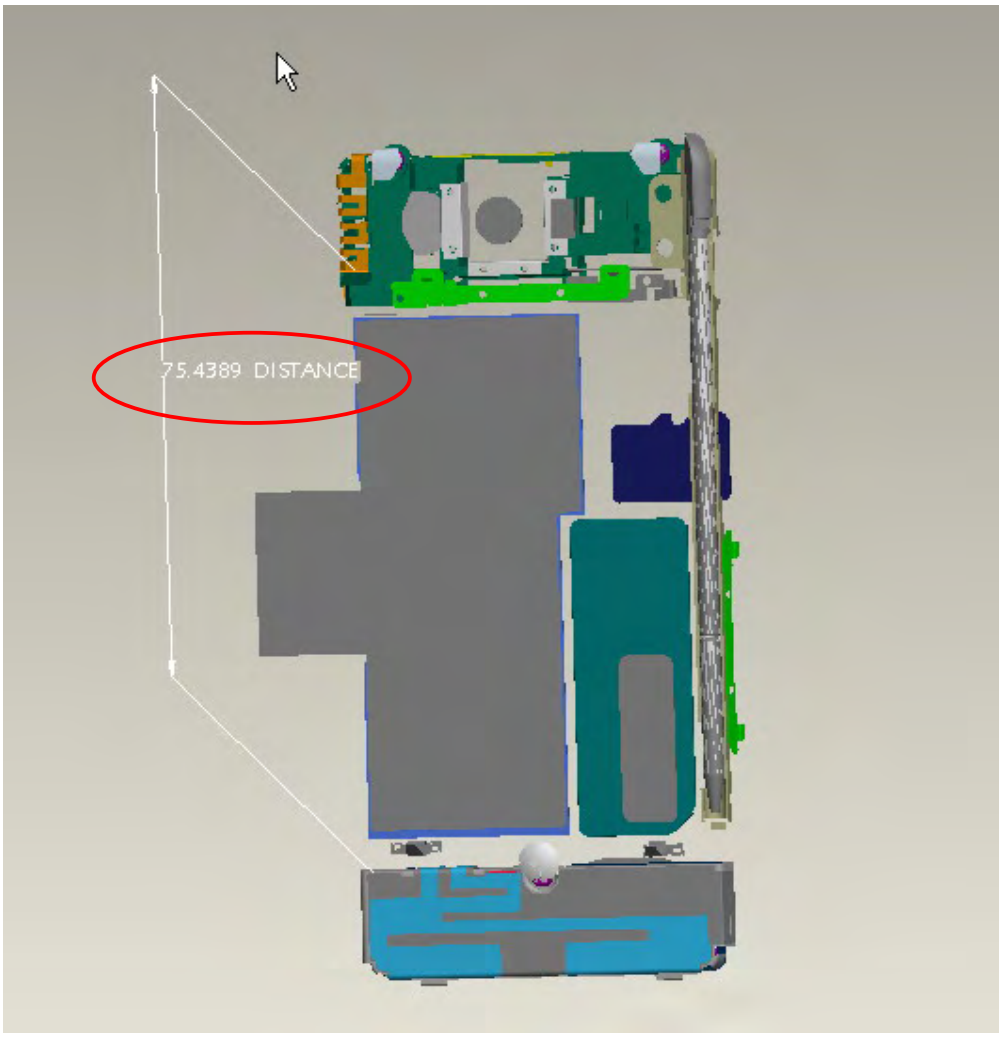
Distance between MAIN&GPS antennas (mm)



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Distance between MAIN&BT/WLAN antennas (mm)