



## Accredited testing-laboratory

**DAR registration number: DGA-PL-176/94-D1**

**Federal Motor Transport Authority (KBA)  
DAR registration number: KBA-P 00070-97**

**Recognized by the Federal Communications Commission**

**Anechoic chamber registration no.: 90462 (FCC)**

**Anechoic chamber registration no.: 3462C-1 (IC)**

**Certification ID: DE 0001**

**Accreditation ID: DE 0002**

**Accredited Bluetooth® Test Facility (BQTF)**

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### Annex

**to Test report no. : 1-1954-15-02/10**

**Type identification : AAD-3880068-BV**

**Applicant : Sony Ericsson Mobile Communications AB**

**FCC ID : PY7A3880068**

**IC Certification No : 4170B-A3880068**

**Test standards : 47 CFR Part 15**

**ICES-003 Issue 4**

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## 1 General information

### 1.1 Notes

The test results of this test report relate exclusively to the test item specified in 3.1.1. The CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalisations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the CETECOM ICT Services GmbH.

Test laboratory manager:

2010-03-16

Andreas Keller

Date

Name



Signature

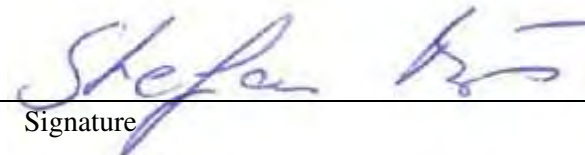
Technical responsibility for area of testing:

2010-03-16

Stefan Bös

Date

Name



Signature

## 1.2 Testing laboratory

CETECOM ICT Services GmbH

Untertürkheimer Straße 6 - 10

66117 Saarbrücken

Germany

Phone: + 49 681 5 98 - 0

Fax: + 49 681 5 98 - 9075

e-mail: info@ICT.cetecom.de

Internet: http://www.cetecom-ict.de

**State of accreditation:** The test laboratory (area of testing) is accredited according to  
DIN EN ISO/IEC 17025  
DAR registration number: DGA-PL-176/94-D1

**Accredited by:** Federal Motor Transport Authority (KBA)  
DAR registration number: KBA-P 00070-97

Testing location, if different from CETECOM ICT Services GmbH:

Name :  
Street :  
Town :  
Country :  
Phone :  
Fax :

## 1.3 Details of applicant

<b>Name:</b>	<b>Sony Ericsson Mobile Communications AB</b>
<b>Street:</b>	<b>Nya Vattentornet</b>
<b>Town:</b>	<b>22188 Lund</b>
<b>Country:</b>	<b>Sweden</b>
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<b>Contact:</b>	<b>Johan Wedin</b>
<b>E-mail:</b>	<b>johan.wedin@sonyericsson.com</b>
<b>Telephone:</b>	<b>+46 (0) 707 19 57 36</b>

## 1.4 Application details

<b>Date of receipt of order:</b>	<b>2010-03-06</b>
<b>Date of receipt of test item:</b>	<b>2010-03-10</b>
<b>Date of start test:</b>	<b>2010-03-10</b>
<b>Date of end test</b>	<b>2010-03-16</b>
<b>Persons(s) who have been present during the test:</b>	<b>-/-</b>



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### 3 Summary of Measurement Results and list of all performed test cases

- No deviations from the technical specifications were ascertained
- There were deviations from the technical specifications ascertained

Section in this Report	Test Name	Verdict
5.1	Conducted limits CFR Part 15.207, 15.107 ICES-003 Issue 4	Pass
5.2	Unwanted emissions CFR Part SUBCLAUSE § 15.109 ICES-003 Issue 4	Pass

## **4 Measurements and results**

The radiated measurements are performed in vertical and horizontal plane in the frequency range from 9 kHz to 20 GHz in semi-anechoic chambers. The EUT is positioned on a non-conductive support with a height of 0.80 m above a conductive ground plane that covers the whole chamber.

The receiving antennas are conforming to specifications ANSI C63.2-1996 clause 15 and ANSI C63.4-2003 clause 4.1.5. These antennas can be moved over the height range between 1.0 m and 4.0 m in order to search for maximum field strength emitted from EUT. The measurement distances between EUT and receiving antennas are indicated in the test set-ups for the various frequency ranges. For each measurement, the EUT is rotated in all three axes until the maximum field strength is received.

The wanted and unwanted emissions are received by spectrum analysers where the detector modes and resolution bandwidths over various frequency ranges are set according to requirement ANSI C63.4-2003 clause 4.2.

Antennas are conforming to ANSI C63.2-1996 item 15.

9 kHz – 150 kHz ,Quasi Peak measurement, 200 Hz Bandwidth, active loop antenna.

150 kHz - 30 MHz: Quasi Peak measurement, 9 kHz Bandwidth, active loop antenna.

30 MHz - 200 MHz: Quasi Peak measurement, 120 KHz Bandwidth, log periodic antenna

200MHz - 1GHz: Quasi Peak measurement, 120 KHz Bandwidth, log periodic antenna

>1GHz: Average, RBW 1MHz, VBW 10 Hz, wave guide horn

All measurement settings are according to FCC 15.109 and 15.107

## 5 Annex A: FCC Part 15 Subpart B

### 5.1 Conducted Limits

#### Reference

FCC:	CFR Part 15.207, 15.107
IC:	ICES-003 Issue 4

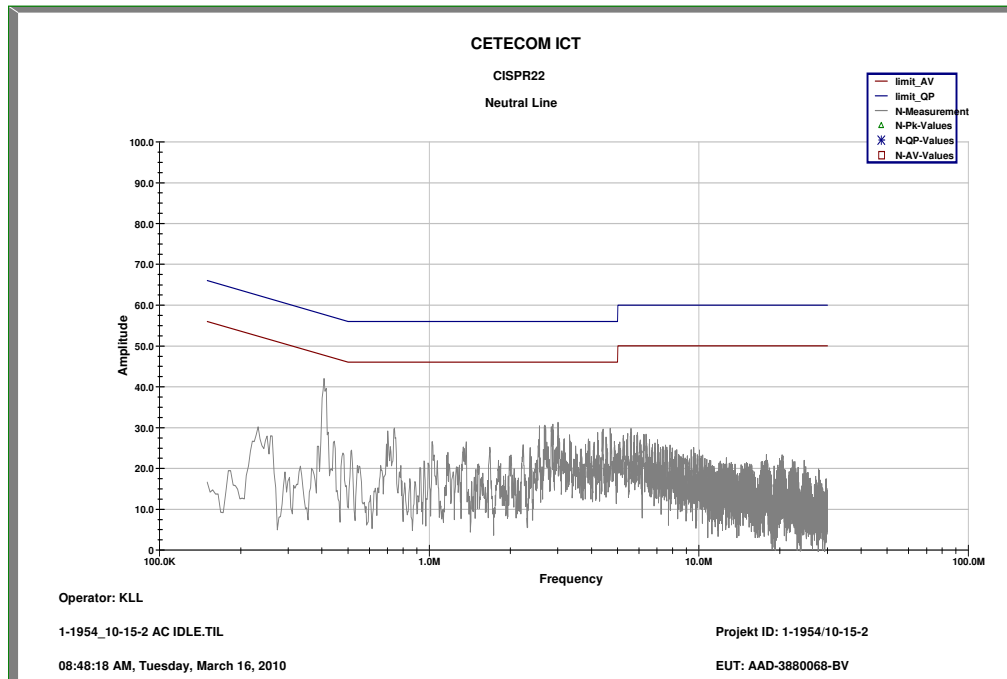
Limits: § 15.107 / 15.207

Frequency of Emission (MHz)	Conducted Limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56 *	56 to 46 *
0.5 – 5	56	46
5 - 30	60	50

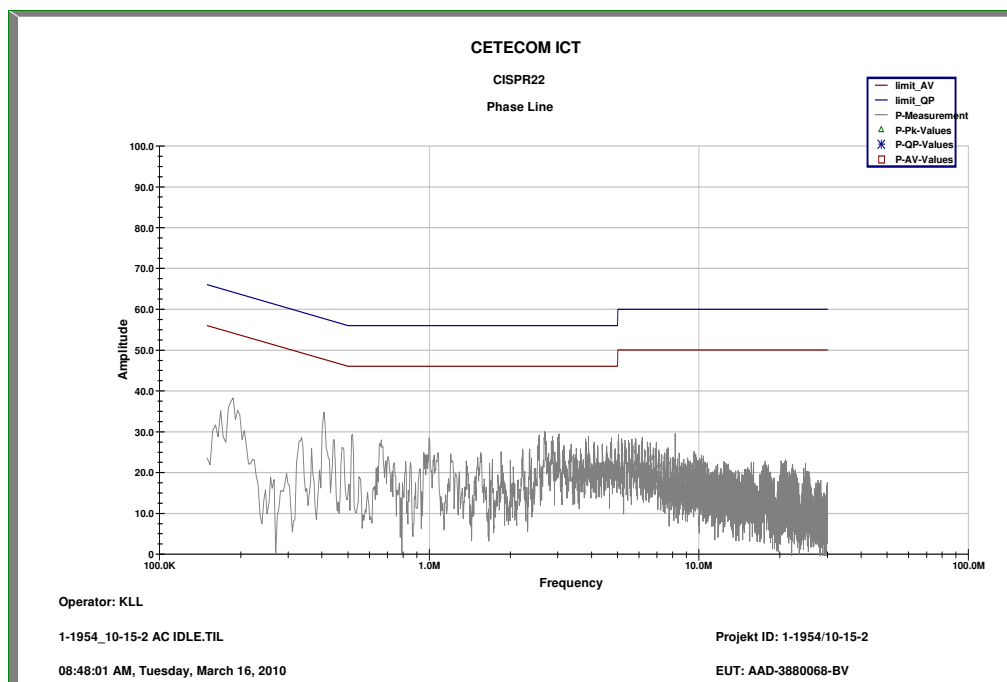
\* Decreases with the logarithm of the frequency



Plot 1: Idle Mode: 150 kHz – 30 MHz, Neutral Line



Plot 2: Idle Mode: 150 kHz – 30 MHz, Phase Line



## 5.2 Unwanted emissions

### Reference

FCC:	CFR Part SUBCLAUSE § 15.109
IC:	ICES-003 Issue 4

### Measurement Results

SPURIOUS EMISSIONS LEVEL (dB $\mu$ V/m)								
Idle mode			-/-			-/-		
f (MHz)	Detector	Level (dB $\mu$ V/m)	f (MHz)	Detector	Level (dB $\mu$ V/m)	f (MHz)	Detector	Level (dB $\mu$ V/m)
No critical peaks detected								
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

For measurement distance see table below

### Limits: § 15.109

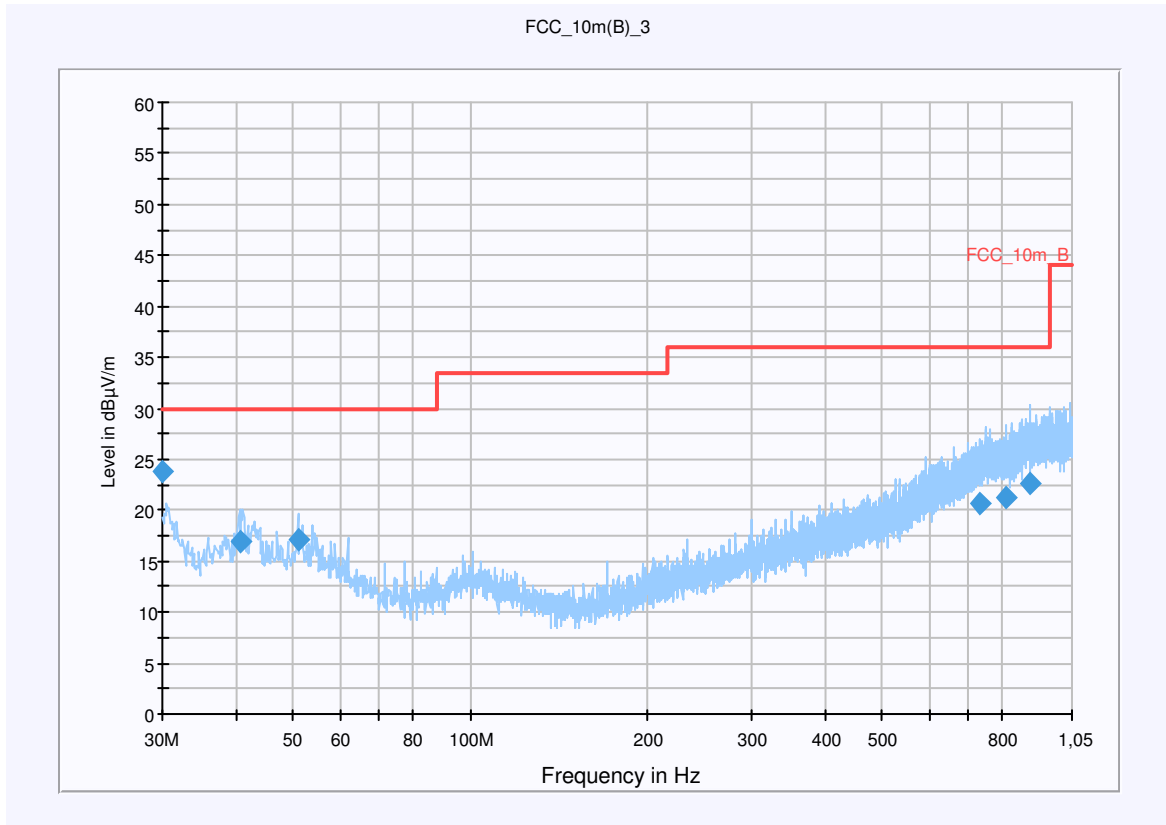
Frequency (MHz)	Field strength (dB $\mu$ V/m)	Measurement distance (m)
30 - 88	30.0	10
88 - 216	33.5	10
216 - 960	36.0	10
above 960	54.0	3

**Plot 1: (30 MHz to 4 GHz)**

EUT: AAD-3880068-BV  
 Serial Number: CB511G3K1K (IMEI:00440107-999180-4)  
 Test Description: FCC part 15 B class B @ 10 m  
 Operating Conditions: idle + charging + A-GPS active  
 Operator Name: Hennemann  
 Comment: AC: 115 V / 60 Hz

**Scan Setup: STAN\_Fin [EMI radiated]**

Hardware Setup: Electric Field (NOS)  
 Level Unit: dB $\mu$ V/m  
**Subrange**                      **Detectors**                      **IF Bandwidth**                      **Meas. Time**                      **Receiver**  
 30 MHz - 1,05 GHz              QuasiPeak                      120 kHz                      15 s                      Receiver



**Final Result 1**

Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)	Comment
30.025808	23.8	15000.000	120.000	128.0	V	109.0	12.5	6.2	30.0	
40.650750	16.9	15000.000	120.000	105.0	V	34.0	13.4	13.1	30.0	
50.995050	17.2	15000.000	120.000	220.0	V	27.0	13.3	12.8	30.0	
733.238100	20.7	15000.000	120.000	149.0	H	4.0	23.2	15.3	36.0	
809.211900	21.2	15000.000	120.000	98.0	V	101.0	23.9	14.8	36.0	
892.900800	22.6	15000.000	120.000	213.0	V	242.0	25.1	13.4	36.0	

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## Hardware Setup: EMI radiated\Electric Field (NOS) - [EMI radiated]

### Subrange 1

Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113 Correction Table: Cable_EN_1GHz (0909)
Antenna Tower:	Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

EMC 32 Version 8.10.00

## 6 Test equipment and ancillaries used for tests

In order to simplify the identification of the equipment used at each specific test, each item of test equipment and ancillaries are provided with an identifier or number in the equipment list below.

Typically, the calibrations of the test apparatus are commissioned to and performed by an accredited calibration laboratory. The calibration intervals are determined in accordance with the DIN EN ISO/IEC 17025. In addition to the external calibrations, the laboratory executes comparison measurements with other calibrated test systems or effective verifications. Weekly chamber inspections and range calibrations are performed. Where possible, rf-generating and signalling equipment as well as measuring receivers and analyzers are connected to an external high-precision 10 MHz reference (GPS-based or rubidium frequency standard).

No.	Labor / Item	Equipment	Type	Manufact.	Serial No.	INV. No Cetecom	Kal. Art	Last Calibration	Next Calibration
1	n. a.	Power Supply	6032A	HP Meßtechnik	2818A 03450	300001040	Ve	08.01. 2009	08.01. 2012
2	n. a.	Power Attenuator	8325	Byrd	1530	300001595			
3	n. a.	Double-Ridged Waveguide Horn Antenna 1-26.5GHz	3115	EMCO	8812- 3088	300001032	vIKI!	05.03. 2009	05.03. 2011
4	n. a.	Active Loop Antenna	6502	EMCO	2210	300001015	ne		
5	9	Netznach bildung Artificial Mains 9 kHz to 30 MHz	ESH3-Z5	R&S	828576/ 020	300001210	Ve	06.01. 2010	06.01. 2012
6	n. a.	Relais Matrix	3488A	HP Meßtechnik	2719A15 013	300001156	ne		
7	n. a.	Relais Matrix	PSU	R&S	890167/0 24	300001168	ne		
8	n. a.	Isolating Transformer	RT5A	Grundig	9242	300001263	ne		
9	n. a.	Switch / Control Unit	3488A	HP	2605e087 70	300001443	ne		
10	n. a.	Biconical Antenna, 20 MHz - 200 MHz	3104	EMCO	3758	300001602	g		
11	n. a.	Log. Period. Antenna	3146	EMCO	2130	300001603	g		
12	n. a.	Monitor	35731	HP		300002294			
13	n. a.	Workstation	9000/300	HP		300002295			
14	n. a.	Anechoic chamber		MWB	87400/02	300000996			
15	n. a.	Antenna mast	AM9104	Schwarzbeck		300001278			
16	n. a.	Antenna mast	UAA1p910 7	Schwarzbeck		300002478			
17	Spec.A. 2_2c	RF-Preselector	85685A	HP Meßtechnik	2833A00 768	400000081	NK!	18.01. 2008	
18	n. a.	Band Reject filter	WRCG185 5/1910- 1835/1925- 40/8SS	Wainwright	7	300003350	ev		
19	n. a.	Band Reject filter	WRCG240 0/2483- 2375/2505- 50/10SS	Wainwright	11	300003351	ev		
20	n. a.	TILE-Software Emission	Quantum Change, Modell TILE-ICS/FULL	EMCO	none	300003451	ne		
21	n. a.	Hygro-Thermometer	-/-, 5-45°C, 20-100%rF		-/-	400000110	izw	08.04. 2009	08.04. 2010
22	n. a.	Highpass Filter	WHK1.1/1	Wainwright	3	300003255	ev		

			5G-10SS						
23	n. a.	Highpass Filter	WHKX7.0/ 18G-8SS	Wainwright	18	300003789	ne		
24	n. a.	PSA Spectrum Analyzer 3 Hz - 26.5 GHz	E4440A	Agilent Vertr. Bad Hom	MY4825 0080	300003812	k	05.08. 2008	05.08. 2010
25	n. a.	MXG Microwave Analog Signal Generator	N5183A	Agilent Vertr. Bad Hom	MY4742 0220	300003813	k	06.08. 2008	06.08. 2010
26	n. a.	RF Filter Section 9kHz - 1GHz	N9039A	Agilent Vertr. Bad Hom	MY4826 0003	300003825	vIKI!	19.08. 2008	19.08. 2010