



## 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. : 1-1954-10-02/10**  
**Type identification : AAD-3880069-BV**  
**Applicant : Sony Ericsson Mobile Communications AB**  
**FCC ID : PY7A3880069**  
**IC Certification No : 4170B-A3880069**  
**Test standards : 47 CFR Part 15**  
**RSS - 210 Issue 7**  
**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:

2010-03-01

Marco Bertolino



Date

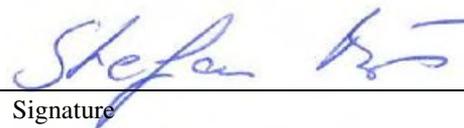
Name

Signature

#### Technical responsibility for area of testing:

2010-03-01

Stefan Bös



Date

Name

Signature

## 1.2 Testing laboratory

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>	Sony Ericsson Mobile Communications AB
<b>Street:</b>	Nya Vattentornet
<b>Town:</b>	22188 Lund
<b>Country:</b>	Sweden
<b>Telephone:</b>	+46-46-19-3000
<b>Fax:</b>	-/-
<b>Contact:</b>	Johan Wedin
<b>E-mail:</b>	johan.wedin@sonyericsson.com
<b>Telephone:</b>	-/-

## 1.4 Application details

<b>Date of receipt of order:</b>	2010-02-19
<b>Date of receipt of test item:</b>	2010-02-22
<b>Date of start test:</b>	2010-02-22
<b>Date of end test:</b>	2010-03-01
<b>Persons(s) who have been present during the test:</b>	-/-

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## 2 Test standard/s

<b>FCC Part 15</b>	<b>2008-07</b>	<b>Title 47 of the Code of Federal Regulations; Chapter I- Federal Communications Commission subchapter A - general, Part 15-Radio frequency devices</b>
<b>RSS 210</b>	<b>2007-06</b>	<b>Spectrum Management and Telecommunications - Radio Standards Specification Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment</b>

### 3 Technical tests

#### 3.1 Details of manufacturer

Name:	<b>Sony Ericsson Mobile Communications AB</b>
Street:	<b>Nya Vattentorget</b>
Town:	<b>22188 Lund</b>
Country:	<b>Sweden</b>

#### 3.2 Test item

Kind of test item	:	<b>Mobile Phone GSM 850/900/1800/1900, UMTS FDD1/FDD8</b>
Type identification	:	<b>AAD-3880069-BV</b>
Serial Number	:	<b>Rad. CB511G2A3F CB511G2AR0 Cond. CB511G29Y2 CB511G28CB</b>
Frequency	:	<b>1850.2 – 1909.8 MHz and 824.2 – 848.8 MHz</b>
Antenna Type	:	<b>Integrated PCB antenna</b>
Power supply (normal)	:	<b>4 DC by battery+charger CA0002016-BV / power supply</b>

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**4 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
6.1	Conducted limits CFR Part 15.207, 15.107 ICES-003 Issue 4	Passed
6.2	Unwanted emissions CFR Part SUBCLAUSE § 15.109 ICES-003 Issue 4	Passed

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## 5 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, tri-log antenna

200MHz - 1GHz: Quasi Peak measurement, 120 kHz Bandwidth, tri-log antenna

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

All measurement settings are according to FCC 15.109 and 15.107

## 6 Annex A: FCC Part 15 Subpart B

### 6.1 Conducted Limits

#### Reference

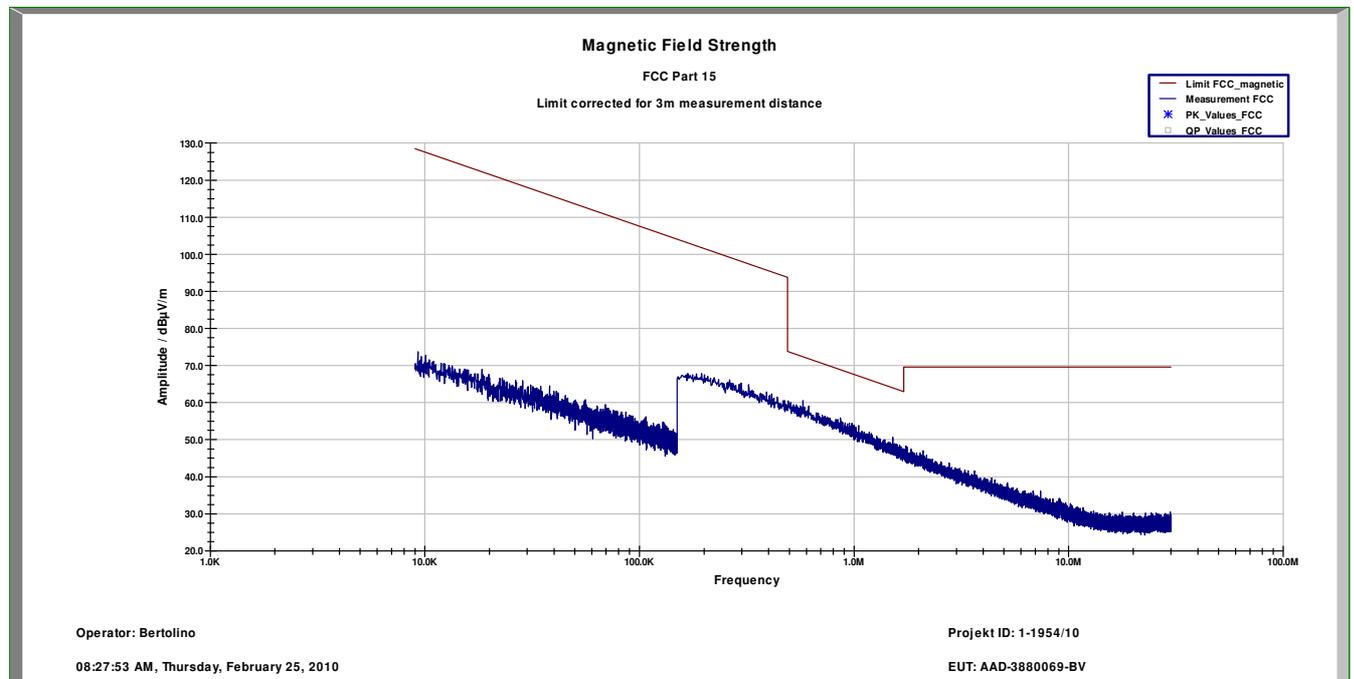
FCC:	CFR Part 15.207, 15.107
IC:	ICES-003 Issue 4

Limits: § 15.107 / 15.207

Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	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:** RX / Idle mode, magnetic



## 6.2 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. All emissions are below the limit!								
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

H = Horizontal; V= Vertical

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: RX / Idle mode, 30 MHz – 1 GHz, vertical & horizontal polarization

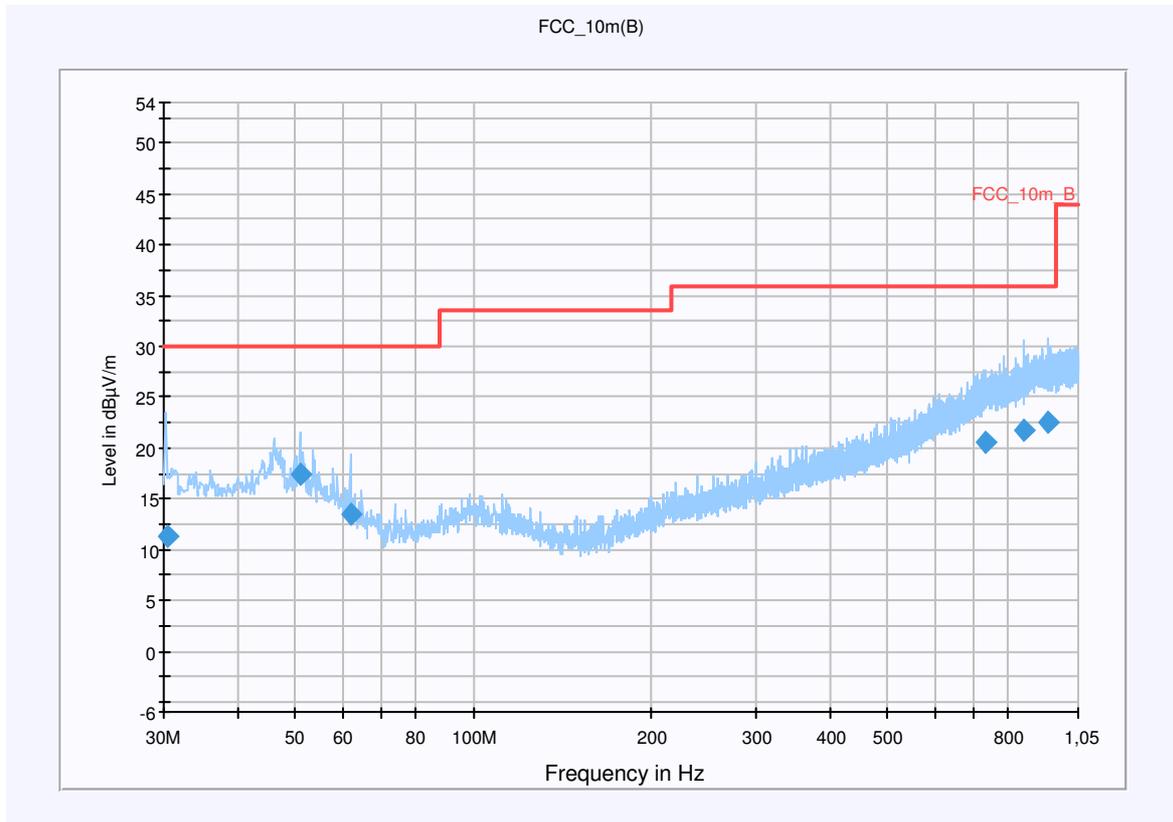
**Common Information**

EUT: AAD-3880069-BV + AC / USB adaptor  
 Serial Number: CB511G2AR0  
 Test Description: FCC Part 15 B @ 10m  
 Operating Conditions: GSM idle + A-GPS active + charging  
 Operator Name: Langer  
 Comment: 115 V / 60 Hz AC

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

Hardware Setup: Electric Field (NOS)  
 Level Unit: dBμV/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 (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
30.553991	11.3	15000.000	120.000	387.0	H	-1.0	12.6	18.7	30.0	
50.991300	17.3	15000.000	120.000	98.0	V	95.0	13.3	12.7	30.0	
61.973400	13.5	15000.000	120.000	273.0	V	98.0	11.1	16.5	30.0	
732.158700	20.5	15000.000	120.000	400.0	V	19.0	23.2	15.5	36.0	
847.206300	21.7	15000.000	120.000	259.0	V	34.0	24.5	14.3	36.0	
932.483100	22.5	15000.000	120.000	400.0	H	141.0	25.3	13.5	36.0	

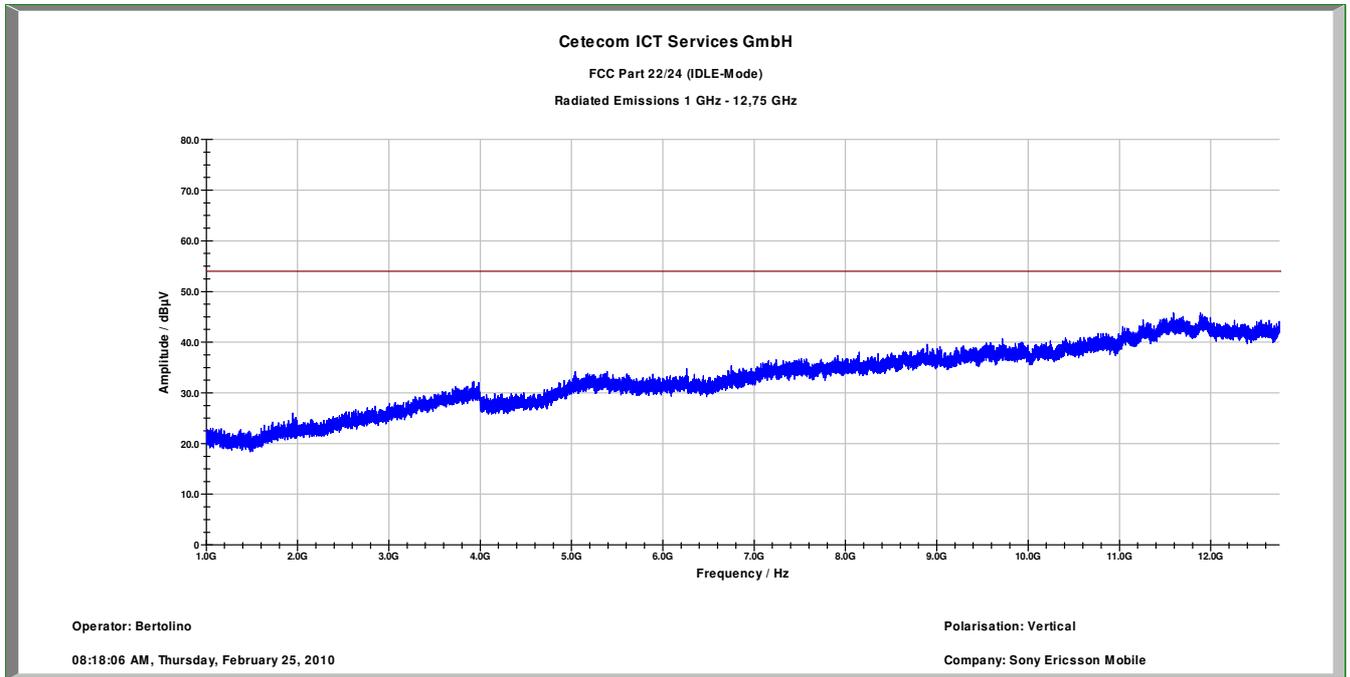
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**Hardware Setup: EMI radiated\Electric Field (NOS) - [EMI radiated]**

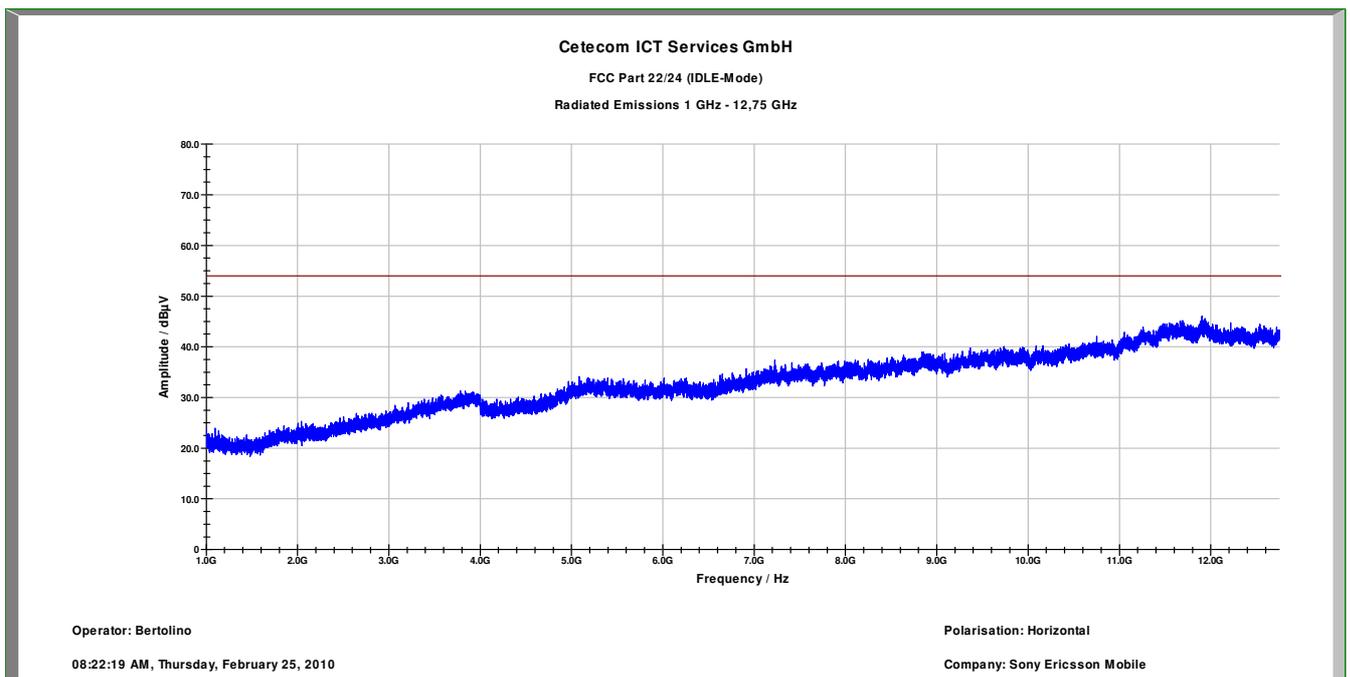
Subrange 1	
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113 Correction Table: Cable_EN_1GHz (0909)
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

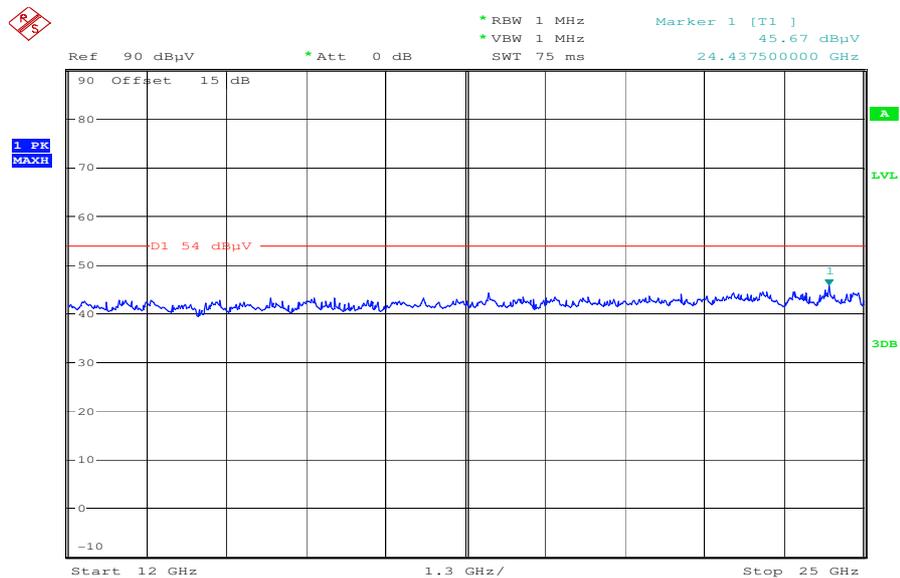
Plot 2: RX / Idle mode, 1 GHz – 12.75 GHz, vertical polarization



Plot 3: RX / Idle mode, 1 GHz – 12.75 GHz, horizontal polarization



**Plot 4: RX / Idle mode, 12 GHz – 25 GHz, vertical & horizontal polarization**



Date: 1.MAR.2010 09:39:50

## 7 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	45	Switch-Unit	3488A	HP Meßtechnik	2719A14505	300000368	g		
2	50	Netzgerät	6032A	HP Meßtechnik	2920A04466	300000580	k	06.01.09	06.01.11
3	n. a.	software	SPS_PHE 1.4f	Spitzberger & Spieß	B5981; 5D1081;B5979	300000210	k	03.09.01	03.09.03
4	n. a.	EMI- Messempfänger	ESCI 1166.5950.03	R&S	100083	300003312	k	08.01.10	08.01.12
5	n. a.	Analysator- Referenz-System (Harmonics u. Flicker)	ARS 16/1	SPS	A3509 07/0 0205	300003314	k	06.06.07	06.06.09
6	n. a.	Amplifier	JS42-00502650- 28-5A	MITEQ	1084532	300003379	ev		
7	n. a.	Antennenmast	Model 2175	ETS- LINDGREN	64762	300003745	izw		
8	n. a.	Steuergerät	Model 2090	ETS- LINDGREN	64672	300003746	izw		
9	n. a.	Interface-Box für Drehtisch	Model 105637	ETS- LINDGREN	44583	300003747	izw		
10	n. a.	Breitband- -antenne	VULB9163	Schwarzbeck	295	300003787	k	01.04.08	01.04.10
11	n. a.	Spectrum- Analyzer	FSU26	R&S	200809	300003874	k	08.01.10	08.01.12
12	n. a.	Netzgerät	6032A	HP Meßtechnik	2818A03450	300001040	Ve	08.01.09	08.01.12
13	n. a.	Power Dämpfungsglied	8325	Byrd	1530	300001595			
14	n. a.	Horn Antenne 1- 26.5GHz	3115	EMCO	8812-3088	300001032	vIKI !	05.03.09	05.03.11
15	n. a.	Active Loop Antenne	6502	EMCO	2210	300001015	ne		
16	n. a.	Busisolator		Kontron		300001056	g		
17	n. a.	Absorberhalle		MWB	87400/02	300000996			
18	Spec.A. 2_2e	System-Rack	85900	HP I.V.	*	300000222	ne		
19	9	Netznachbildung Artificial Mains 9 kHz to 30 MHz	ESH3-Z5	R&S	828576/020	300001210	Ve	06.01.10	06.01.2012
20	n. a.	Relais Matrix	3488A	HP Meßtechnik	2719A15013	300001156	ne		
21	n. a.	Relais Matrix	PSU	R&S	890167/024	300001168	ne		
22	n. a.	Trenntrafo	RT5A	Grundig	9242	300001263	ne		
23	n. a.	Leitungsteiler	11850C	HP Meßtechnik		300000997	ne		
24	n. a.	Switch / Control Unit	3488A	HP	2605e08770	300001443	ne		
25	n. a.	Band Reject filter	WRCG1855/1910 -1835/1925- 40/8SS	Wainwright	7	300003350	ev		
26	n. a.	Band Reject filter	WRCG2400/2483 -2375/2505- 50/10SS	Wainwright	11	300003351	ev		

27	n. a.	TILE-Software Emission	Quantum Change, Modell TILE-ICS/FULL	EMCO	none	300003451	ne		
28	n. a.	Hochpassfilter	WHKX2.9/18G-12SS	Wainwright	1	300003492	ev		
29	n. a.	Hochpassfilter	WHK1.1/15G-10SS	Wainwright	3	300003255	ev		
30	n. a.	Hochpassfilter	WHKX7.0/18G-8SS	Wainwright	18	300003789	ne		
31	n. a.	PSA-Spektrumanalysator 3 Hz - 26,5 GHz	E4440A	Agilent Vertr. Bad Hom	MY48250080	300003812	k	05.08.08	05.08.10
32	n. a.	Microwave Analog Signal Generator	N5183A	Agilent Vertr. Bad Hom	MY47420220	300003813	k	06.08.08	06.08.10
33	n. a.	EMI Preselector 9kHz - 1 GHz	N9039A	Agilent Vertr. Bad Hom	MY48260003	300003825	vKI !	19.08.08	19.08.10
34	n. a.	TRILOG Super Breitband Antenne	VULB9163	Schwarzbeck	371	300003854	vKI !	17.12.08	17.12.10
35	n. a.	Netzgerät	6032A	HP Meßtechnik	2920A04590	300001041	Ve	08.01.09	08.01.12
36	n. a.	Klimaschrank	VT 4002	Heraeus Voetsch	521/83761	300002326	Ve	28.05.09	28.05.11
37	n. a.	Signal Analyzer 20Hz-26,5GHz-150 to + 30 DBM	FSiQ26	R&S	835111/0004	300002678	Ve	06.01.09	06.01.11
38	A029	Std. Gain Horn Antenne	638	Narda		300002442	ne		
39	n. a.	Spektrumanalysator 20 Hz - 50 GHz	FSU50	R&S	200012	300003443	ve	05.06.08	05.06.10