



CETECOM ICT Services consulting - testing - certification >>>

TEST REPORT

Test report no.: 1-4254/12-24-13-A



Testing laboratory

CETECOM ICT Services GmbH

Untertuerkheimer Strasse 6 – 10 66117 Saarbruecken / Germany Phone: + 49 681 5 98 - 0 Fax: + 49 681 5 98 - 9075 Internet: http://www.cetecom.com

e-mail: ict@cetecom.com

Accredited Testing Laboratory:

The testing laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025 (2005) by the Deutsche Akkreditierungsstelle GmbH (DAkkS)

The accreditation is valid for the scope of testing procedures as stated in the accreditation certificate with

the registration number: D-PL-12076-01-01 Area of Testing: Radio/Satellite Communications

Applicant

Sony Mobile Communications AB

Nya Vattentornet 22188 Lund / SWEDEN Phone: +46 46 19 30 00 Fax: +46 46 19 32 95 Contact: Håkan Sjöberg

e-mail: hakan.sjoberg@sonymobile.com

Phone: +46 46 19 35 59

Manufacturer

Sony Mobile Communications AB

Nya Vattentomet 22188 Lund / SWEDEN

Test standard/s

47 CFR Part 15 Title 47 of the Code of Federal Regulations; Chapter I

Part 15 - Radio frequency devices

RSS - 210 Issue 8 Spectrum Management and Telecommunications - Radio Standards Specification

Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands):

Category I Equipment

For further applied test standards please refer to section 3 of this test report.

Test Item

Kind of test item: GSM Mobile Phone GPRS/EGPRS 850/900/1800/1900; UMTS FDDI/FDDV/FDDVI/FDDXIX;

HSPA; LTE Band 1; BT3.1; WLAN a/b/g/n; AGPS; RFID, FM Rx

Model name: PM-0020-BV

FCC ID: PY7PM-0020

IC:

Frequency: 13.56 MHz
Technology tested: RFID

Antenna: Integrated loop antenna
Power Supply: 3.7 V DC by Li-polymer battery

Temperature Range: -20°C to +55 °C

Test report authorised:

2012-06-26 Stefan Bös

Senior Testing Manager

Test performed:

2012-06-26 Christoph Schneider

2012-06-26 Page 1 of 40



Table of contents

1	Table of contents2					
-						
2	General information					
	2.1	Notes and disclaimer				
	2.2	Application details				
3	Test s	tandard/s	3			
4	Test environment4					
5	Test i	em	2			
6	Test la	aboratories sub-contracted	2			
7	Sumn	nary of measurement results				
8	RF me	easurements	6			
	8.1	Description of test setup				
	-	1.1 Radiated measurements				
	8.	1.2 Conducted measurements				
	8.2	Additional comments	7			
	8.3	RSP100 test report cover sheet / performance test data	8			
9	Measi	rement results	9			
	9.1	Timing of the transmitter	9			
	9.2	Field strength of the fundamental				
	9.3	Field strength of the harmonics and spurious				
	9.4	Frequency tolerance				
	9.5	AC line conducted	16			
10	T	est equipment and ancillaries used for tests	17			
11	0	bservations	18			
Anr	nex A	Photographs of the test setup	19			
Anr	nex B	External photographs of the EUT	22			
Anr	nex C	Internal photographs of the EUT	25			
Anr	nex D	Document history	39			
Anr	nex E	Further information	39			
Δnr	ov F	Accreditation Cartificate	40			



2 General information

2.1 Notes and disclaimer

The test results of this test report relate exclusively to the test item specified in this test report. CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalizations 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 CETECOM ICT Services GmbH.

The testing service provided by CETECOM ICT Services GmbH has been rendered under the current "General Terms and Conditions for CETECOM ICT Services GmbH".

CETECOM ICT Services GmbH will not be liable for any loss or damage resulting from false, inaccurate, inappropriate or incomplete product information provided by the customer.

Under no circumstances does the CETECOM ICT Services GmbH test report include any endorsement or warranty regarding the functionality, quality or performance of any other product or service provided.

Under no circumstances does the CETECOM ICT Services GmbH test report include or imply any product or service warranties from CETECOM ICT Services GmbH, including, without limitation, any implied warranties of merchantability, fitness for purpose, or non-infringement, all of which are expressly disclaimed by CETECOM ICT Services GmbH.

All rights and remedies regarding vendor's products and services for which CETECOM ICT Services GmbH has prepared this test report shall be provided by the party offering such products or services and not by CETECOM ICT Services GmbH.

In no case this test report can be considered as a Letter of Approval.

2.2 Application details

Date of receipt of order: 2012-04-26
Date of receipt of test item: 2012-05-19
Start of test: 2012-05-21
End of test: 2012-05-24

Person(s) present during the test: -/-

3 Test standard/s

Test standard	Date	Test standard description
47 CFR Part 15	2010-10	Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio frequency devices
RSS - 210 Issue 8	2010-12	Spectrum Management and Telecommunications - Radio Standards Specification Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment

2012-06-26 Page 3 of 40



Test environment

 T_{nom} +22 °C during room temperature tests Temperature:

+55 °C during high temperature tests T_{max}

 $\mathsf{T}_{\mathsf{min}}$ -20 ℃ during low temperature tests

Relative humidity content: 41 %

Barometric pressure: not relevant for this kind of testing

> 3.7 V V_{nom} DC by Li-polymer battery

4.1 V Power supply: V_{max}

3.3 V V_{min}

Test item 5

Kind of test item :		GSM Mobile Phone GPRS/EGPRS 850/900/1800/1900; UMTS FDDI/FDDV/FDDVI/FDDXIX; HSPA; LTE Band 1; BT3.1; WLAN a/b/g/n; AGPS; RFID, FM Rx			
Type identification	:	PM-0020-BV			
S/N serial number	:	Rad. CB5A1K30P9			
HW hardware status	:	AP1			
SW software status :		7.0.A.0.649			
Frequency band [MHz] :		13.56 MHz			
Type of modulation	:	Modulated carrier			
Number of channels :		1			
Antenna :		Integrated loop antenna			
Power supply :		3.7 V DC by Li-polymer battery			
Temperature range	:	-20℃ to +55 ℃			

Test laboratories sub-contracted

None

2012-06-26 Page 4 of 40



7	Summary of meas	urement results
	\boxtimes	No deviations from the technical specifications were ascertained
		There were deviations from the technical specifications ascertained

TC Identifier	Description	Verdict Date		Remark
RF-Testing	CFR Part 15	Passed	2012-06-26	-/-
Til Tooting	RSS 210, Issue 8, Annex 2.6	1 40004	2012 00 20	′

Test Specification Clause	Test Case	Temperature Conditions	Power Source Voltages	Pass	Fail	NA	NP	Results (max.)
§ 15.35 (c)/ RSS-GEN Issue 2 Section 4.5	Timing of the transmitter (Duty cycle correction factor)	Nominal	Nominal	\boxtimes				complies
§ 15.225 (a)/ RSS-210 Issue 8 Annex 2.6	Fieldstrength of Fundamental	Nominal	Nominal	\boxtimes				complies
§ 15.209/ RSS-210 Issue 8 Annex 2.6	Fieldstrength of harmonics and spurious	Nominal	Nominal					complies
§ 15.225 (e)/		Nominal	Extreme					
RSS-210 Issue 8 Annex 2.6	Frequency tolerance	Extreme	Nominal	\boxtimes				complies

Note: NA = Not Applicable; NP = Not Performed

2012-06-26 Page 5 of 40



8 RF measurements

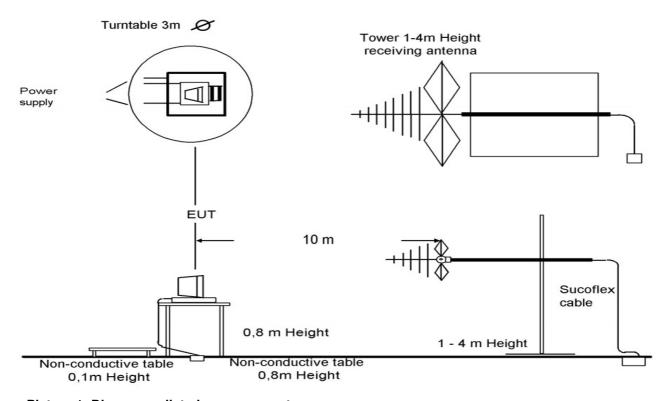
8.1 Description of test setup

8.1.1 Radiated measurements

The radiated measurements are performed in vertical and horizontal plane in the frequency range from 9 kHz to 25 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 confirmed with specifications ANSI C63.2-1996 clause 15 and ANSI C63.4-2009 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 setups 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 C63-4-2009 clause 4.2.

Antennas are confirmed with ANSI C63.2-1996 item 15.

Semi anechoic chamber



Picture 1: Diagram radiated measurements

9 kHz - 30 MHz: active loop antenna

30 MHz - 1 GHz: tri-log antenna

> 1 GHz: horn antenna

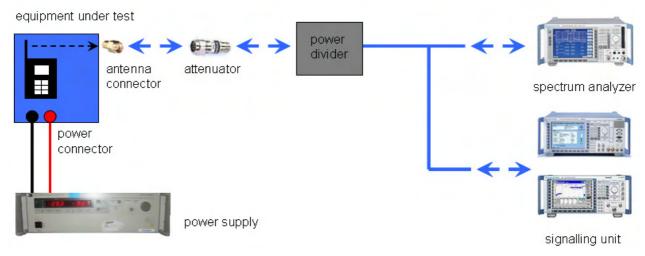
The EUT is powered by an external power supply with nominal voltage. The signalling is performed from outside the chamber with a signalling unit (CMU200 or other) by air link using signalling antenna.

2012-06-26 Page 6 of 40



8.1.2 Conducted measurements

The EUT's RF signal is coupled out by the antenna connector which is supplied by the manufacturer. The signal is first 10dB attenuated before it is power divided (~6dB loss per branch). One of the signal paths is connected to the communication base Station (CMU200 or other), the other one is connected to the spectrum analyzer. The specific losses for both signal paths are first checked within a calibration. The measurement readings on the signalling unit/spectrum analyzer are corrected by the specific test set-up loss. The attenuator, power divider, signalling unit and the spectrum analyzer are impedance matched on 50 Ohm.



Picture 2: Diagram conducted measurements

8.2 Additional comments

Reference documents: None

Special test descriptions: None

Configuration descriptions: None

2012-06-26 Page 7 of 40



8.3 RSP100 test report cover sheet / performance test data

Test Report Number		1-4254/12-24-13-A
Equipment Model Number	:	PM-0020-BV
Certification Number		
Manufacturer (complete Address)	•	Sony Mobile Communications AB Nya Vattentornet 22188 Lund / SWEDEN
Tested to radio standards specification no.	:	RSS 210, Issue 8, Annex 8
Open Area Test Site IC No.	:	IC 3462C-1
Frequency Range or fixed frequency	:	13.56 MHz
Field Strength [dBμV/m] (at which distance)	:	46 dBμV/m @ 10m
Occupied bandwidth (99%-BW) [Hz] :		27 Hz
Type of modulation		NON
Emission Designator (TRC-43)	:	27H0N0N
Antenna Information	:	Integrated loop antenna
Transmitter Spurious (worst case) [dBµV/m @ 3m]	:	22.2 dBµV/m @ 886.44 MHz
Receiver Spurious (worst case) [dBµV/m @ 3m]	:	No receiver mode!

ATTESTATION: DECLARATION OF COMPLIANCE:

I attest that the testing was performed or supervised by me; that the test measurements were made in accordance with the above-mentioned Industry Canada standard(s); and that the equipment identified in this application has been subjected to all the applicable test conditions specified in the Industry Canada standards and all of the requirements of the standard have been met.

Laboratory Manager:

2012-06-26 Christoph Schneider Signature



Measurement results

9.1 Timing of the transmitter

Measurement:

Measurement parameter				
Detector:	-/-			
Sweep time:	-/-			
Resolution bandwidth:	-/-			
Video bandwidth:	-/-			
Span:	-/-			
Trace-Mode:	-/-			

Limits:

FCC	IC			
CFR Part SUBCLAUSE § 15.35 (c)	RSS-GEN Issue 2 Section 4.5			
Timing of the transmitter				

Timing of the transmitter

(c) Unless otherwise specified, e.g. Section 15.255(b), when the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value. The exact method of calculating the average field strength shall be submitted with any application for certification or shall be retained in the measurement data file for equipment subject to notification or verification.

Duty cycle: 100%

Result: passed

2012-06-26 Page 9 of 40



9.2 Field strength of the fundamental

Measurement:

Measurement parameter				
Detector:	Quai Peak			
Resolution bandwidth:	200 Hz up to 150 kHz, 9 kHz up to 30 MHz, 120 kHz up to 1 GHz			
Video bandwidth:	≥ RBW			
Span:	Auto			
Trace-Mode:	Max Hold			

Limits:

FCC			IC		
CFR Part SUBCLAUSE §	15.225 (b)	RSS-210 Issue 8 Section A1.1.2 / 2.7 Table 4			
Fundamental Frequency (MHz)	Field strength ο (μV/		Measurement distance (m)		
	15848 μV/m (84 dBμV/m)		30		
13.553 to 13.567	158489 μV/m (104 dBμV/m)		•		10 (Recalculated acc. to FCC part15.31 (f2))

Result:

TEST CC	ONDITIONS	MAXIMUM POWER (dBμV/m)			
Fred	uency	13.56 MHz	13.56 MHz		
M	ode	at 10 m distance	at 30 m distance		
T _{nom} V _{nom}		46 dBμV/m 26 dBμV/m *			
Measureme	nt uncertainty	±30	dB		

^{*} Limits recalculated from 10m to 30m with 40 dB/decade according to FCC 15.31 (f2).

Result: passed

2012-06-26 Page 10 of 40



9.3 Field strength of the harmonics and spurious

Measurement:

Measurement parameter					
Detector:	Quasi Peak / Average				
Sweep time:	Auto				
Resolution bandwidth:	100 kHz / 1MHz				
Video bandwidth:	≥RBW				
Span:	Auto				
Trace-Mode:	Max Hold				

Limits:

FCC		IC						
SUBCLAUSE § 15	.209							
Fie	Field strength of the harmonics and spurious.							
Frequency (MHz)	Field strenç	jth (μV/m)	Measurement distance (m)					
0.009 - 0.490	2400/F	(kHz)	300					
0.490 - 1.705	24000/F	(kHz)	30					
1.705 – 30	30 (29.5 c	IBμV/m)	30					
30 – 88	100 (40 d	BμV/m)	3					
88 – 216	150 (43.5	dBμV/m)	3					
216 – 960	200 (46 d	BμV/m)	3					

Result:

EMISSION LIMITATIONS							
f [MHz]	Detector	Results					
			No peaks detected				

Result: passed

2012-06-26 Page 11 of 40

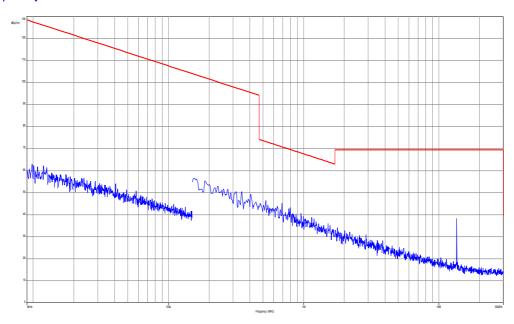


Plots of the measurements

Plot 1: 9 kHz – 30 MHz;

Part 15.209 Magnetics, Measurement distance 3m

Transmit frequency 13.56 MHz



2012-06-26 Page 12 of 40



Plot 2: 30 MHz - 1000 MHz

Transmit frequency 13.56 MHz

Common Information

EUT: PM-0020-BV Serial Number: CB5A1K30P9

Test Description: FCC part 15 C class B

Operating Conditions: RFID cont tx
Operator Name: Wolsdorfer
Comment: battery powered

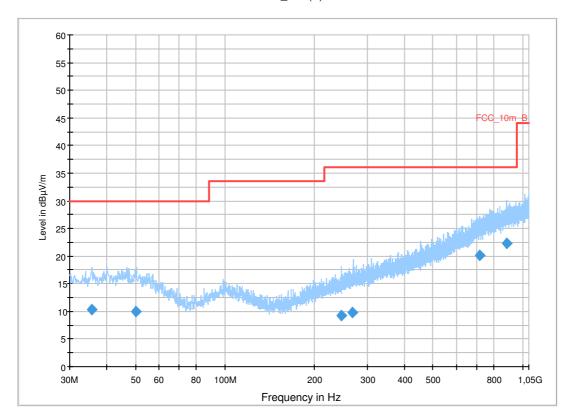
Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)

 $\begin{array}{ll} \text{Receiver:} & \quad \text{[ESCI 3]} \\ \text{Level Unit:} & \quad \text{dB}\mu\text{V/m} \end{array}$

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB

FCC_10m(B)



2012-06-26 Page 13 of 40



Final Result 1

Frequency (MHz)	QuasiPe ak (dBμV/m)	Meas. Time (ms)	Bandwid th (kHz)	Height (cm)	Po lari zat ion	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.581050	10.4	1000.0	120.000	200.0	V	1.0	13.1	19.6	30.0	
50.008050	10.0	1000.0	120.000	250.0	Н	-5.0	13.4	20.0	30.0	
246.154200	9.2	1000.0	120.000	106.0	Н	133.0	13.2	26.8	36.0	
268.370700	9.9	1000.0	120.000	106.0	Н	-5.0	13.8	26.1	36.0	
720.129900	20.1	1000.0	120.000	200.0	Ι	145.0	23.0	15.9	36.0	
886.444950	22.2	1000.0	120.000	400.0	V	315.0	25.0	13.8	36.0	

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 4.42

Signal Path: without Notch

FW 1.0

Antenna: VULB 9163

SN 9163-295, FW ---

Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113

Correction Table (vertical): Cable_EN_1GHz (1005) Correction Table (horizontal): Cable_EN_1GHz (1005)

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 8.52

Spectrum mask:

The transmitter holds the requirements of FCC 15.225 (a, b, c and d)

2012-06-26 Page 14 of 40



9.4 Frequency tolerance

Measurement:

Measurement parameter					
Detector:	Positive Peak				
Sweep time:	Auto				
Resolution bandwidth:	10 Hz				
Video bandwidth:	1 MHz				
Span:	10 kHz				
Trace-Mode:	Clear Write				

Limits:

FCC	IC
SUBCLAUSE § 15.225	RSS-210 Issue 8 Annex 2.6

The frequency tolerance of the carrier signal shall be maintained within \pm 0.01% of the operating frequency over a temperature variation of -20 degrees to \pm 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

Result: passed

	Frequency tolerance									
Over	temperature v	ariation	Ov	er voltage varia	ation					
Lir	nit is +/- 1.356	kHz	Lin	nit is +/- 1.356	kHz		MHz			
T (℃)]	Frequency	result	Power voltage	Frequency	result	F [MHz]	Detector	Level [μV/m]		
-20°	13.560118	Pass	3.3	13.560024	Pass					
-10°	13.560142	Pass	3.4	13.560024	Pass					
0°	13.560100	Pass	3.5	13.560024	Pass					
10°	13.560012	Pass	3.6	13.560026	Pass					
20°	13.560026	Pass	3.7	13.560026	Pass					
30°	13.559926	Pass	3.8	13.560026	Pass					
40°	13.559906	Pass	3.9	13.560026	Pass					
50°	13.559878	Pass	4.0	13.560030	Pass					
			4.1	13.560028	Pass					
					Pass					
Measure	ment uncertair	nty	±100 Hz	_						

2012-06-26 Page 15 of 40



9.5 AC line conducted

Not applicable!
The EUT stops transmission, when power connector is connected.

2012-06-26 Page 16 of 40



10 Test equipment and ancillaries used for tests

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).

In order to simplify the identification of the equipment used at some special tests, some items of test equipment and ancillaries can be provided with an identifier or number in the equipment list below (Labor/Item).

No.	Lab / Item	Equipment	Туре	Manufact.	Serial No.	INV. No Cetecom	Kind of Calibration	Last Calibration	Next Calibration
1	n. a.	Isolating Transformer	RT5A	Grundig	8041	300001626	g		
2	n. a.	DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2818A03450	300001040	Ve	12.01.2012	12.01.2015
3	n. a.	Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	8812-3088	300001032	vlKI!	11.05.2011	11.05.2013
4	n. a.	Active Loop Antenna	6502	EMCO	2210	300001015	ne		
5	n. a.	Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996	ev		
6	Spec.A. 2_2e	System rack for EMI measurement solution	85900	HP I.V.	*	300000222	ne		
7	9	Artificial Mains 9 kHz to 30 MHz	ESH3-Z5	R&S	828576/020	300001210	Ve	06.01.2012	06.01.2014
8	n. a.	Relais Matrix	3488A	HP Meßtechnik	2719A15013	300001156	ne		
9	n. a.	Relais Matrix	PSU	R&S	890167/024	300001168	ne		
10	n. a.	Isolating Transformer	RT5A	Grundig	9242	300001263	ne		
11	n. a.	Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		300000997	ne		
12	n. a.	Switch / Control Unit	3488A	HP	2605e08770	300001443	ne		
13	n. a.	Amplifier	js42- 00502650- 28-5a	Parzich GMBH	928979	300003143	ne		
14	n. a.	Band Reject filter	WRCG185 5/1910- 1835/1925- 40/8SS	Wainwright	7	300003350	ev		
15	n. a.	Band Reject filter	WRCG240 0/2483- 2375/2505- 50/10SS	Wainwright	11	300003351	ev		
16	n. a.	TILE-Software Emission	Quantum Change, Modell TILE- ICS/FULL	EMCO	none	300003451	ne		
17	n. a.	Highpass Filter	WHKX2.9/1 8G-12SS	Wainwright	1	300003492	ev		
18	n. a.	Highpass Filter	WHK1.1/15 G-10SS	Wainwright	3	300003255	ev		
19	n. a.	Highpass Filter	WHKX7.0/1 8G-8SS	Wainwright	18	300003789	ne		
20	n. a.	MXG Microwave Analog Signal Generator	N5183A	Agilent Technologi es	MY47420220	300003813	k	13.09.2010	13.09.2012
21	n. a.	RF Filter Section 9kHz - 1GHz	N9039A	Agilent Technologi es	MY48260003	300003825	vlKI!	08.09.2010	08.09.2012
22	n. a.	TRILOG Broadband	VULB9163	Schwarzbe ck	371	300003854	vIKI!	14.10.2011	14.10.2014

2012-06-26 Page 17 of 40



		Test-Antenna 30 MHz - 3 GHz							
23	n. a.	MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologi es	MY51210197	300004405	k	19.12.2011	19.12.2012
24	n.a.	Test Receiver	ESH2	R&S	871921/095	300002505	Ve	12.01.2012	12.01.2014
25	n. a.	Loop Antenna 9 KHz - 30 MHz	HFH2-Z2	R&S	872096/61	300001824	vIKI!	09.03.2012	09.03.2015
26	n. a.	EMI Test Receiver 9 kHz - 3 GHz incl. Preselector	ESPI3	R&S	101713	300004059	k	16.08.2011	16.08.2012
27	n. a.	Temperature Test Chamber	VT 4002	Heraeus Voetsch	521/83761	300002326	Ve	20.09.2011	20.09.2013
28	n. a.	Signal Analyzer 20Hz-26,5GHz- 150 to + 30 DBM	FSiQ26	R&S	835111/0004	300002678	Ve	04.11.2010	04.11.2012
29	n. a.	Temperature Test Chamber	T-40/50	CTS GmbH	064023	300003540	vlKI!	20.09.2011	20.09.2013

Agenda: Kind of Calibration

k calibration / calibrated EK limited calibration

ne not required (k, ev, izw, zw not required) zw cyclical maintenance (external cyclical maintenance)

ev periodic self verification izw internal cyclical maintenance
Ve long-term stability recognized g blocked for accredited testing

vlkl! Attention: extended calibration interval
NK! Attention: not calibrated *) next calibration ordered / currently in progress

11 Observations

No observations exceeding those reported with the single test cases have been made.

2012-06-26 Page 18 of 40



Annex F Accreditation Certificate



Front side of certificate

Back side of certificate

Note:

The current certificate including annex is published on our website (see link below) or may be received from CETECOM ICT Services on request.

http://www.cetecom.com/fileadmin/de/CETECOM D Saarbruecken/accreditations Jan 2010/DAKKS Akkredi Urk EN17025-En incl Annex.pdf

2012-06-26 Page 40 of 40