CETECOM ICT Services GmbH
Untertürkheimer Straße 6-10 . D-66117 Saarbrücken Phone: +49 (0) 681-598-0 Fax: -9075
RSC-Laboratory

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)

Annex to Test report no.	**:**	**1-1954-22-02/10**
Type identification	**:**	**AAD-3880072-BV**
Applicant	**:**	**Sony Ericsson Mobile Communications AB**
FCC ID	**:**	**PY7A3880072**
IC Certification No	**:**	**4170B-A3880072**
Test standards	**:**	**47 CFR Part 15**
		ICES-003 Issue 4

Table of contents

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:

2010-04-23	**Marco Bertolino**	
Date	Name	Signature

Technical responsibility for area of testing:

2010-04-23	**Stefan Bös**	
Date	Name	Signature

1.2 Testing laboratory

CETECOM ICT Services GmbH

Address:	**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

Name:	**Sony Ericsson Mobile Communications AB**
Street:	**Nya Vattentornet**
Town:	**22188 Lund**
Country:	**Sweden**
Telephone:	**+46-46-19-3000**
Fax:	**+46 (0) 46 19 32 95**
Contact:	**Johan Wedin**
E-mail:	**johan.wedin@sonyericsson.com**
Telephone:	**+46 (0) 707 19 57 36**

1.4 Application details

Date of receipt of order:	**2010-04-19**
Date of receipt of test item:	**2010-04-19**
Date of start test:	**2010-04-20**
Date of end test:	**2010-04-21**
Persons(s) who have been present during the test:	**-/-**

2 Test standard/s

47 CFR Part 15	**2008-07**	**Title 47 of the Code of Federal Regulations; Chapter I-Federal Communications Commission subchapter A - general, Part 15-Radio frequency devices**
ICES-003 Issue 4	**2004-04**	**Spectrum Management and Telecommunications Policy Interference-Causing Equipment Standard**

3 Technical tests

3.1 Details of manufacturer

Name:	**Sony Ericsson Mobile Communications AB**
Street:	**Nya Vattentornet**
Town:	**22188 Lund**
Country:	**Sweden**

3.2 Test item(s) and test configuration

No.: 1	CB511H88MF CB511H8BQ1 (A-GPS activated)	with	battery CBA-0002021 & EP800 USB charger
No.: 2	CB511H8BL4	with	power supply

3.3 Test item

Kind of test item	:	**GSM Mobile Phone 850/900/1800/1900 UMTS FDD1/FDD8, HSUPA/HSDPA, BT2.0+EDR, A-GPS, FM Rx, WLAN**
Type identification	:	**AAD-3880072-BV**
Serial Number	:	**Radiated: CB511H88MF** **CB511H8BQ1** **Conducted: CB511H8BVC** **CB511H8BL4**
Frequency	:	**1850.2 – 1909.8 MHz and 824.2 – 848.8 MHz**
Antenna Type	:	**Integrated PCB antenna!**
Power supply (normal)	:	**4.0 V DC by power supply / battery CBA-0002021 & charger**

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

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, passive loop antenna.

150 kHz - 30 MHz: Quasi Peak measurement, 9 kHz Bandwidth, passive 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

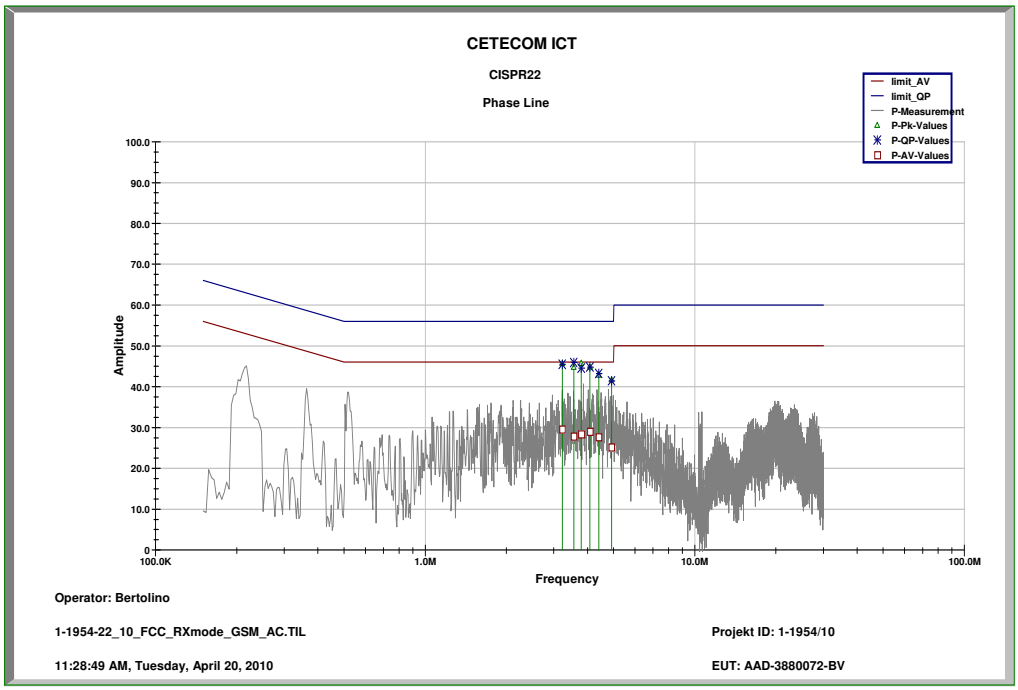
FCC:	CFR Part 15.207, 15.107
IC:	ICES-003 Issue 4

Limits: § 15.107 / 15.207

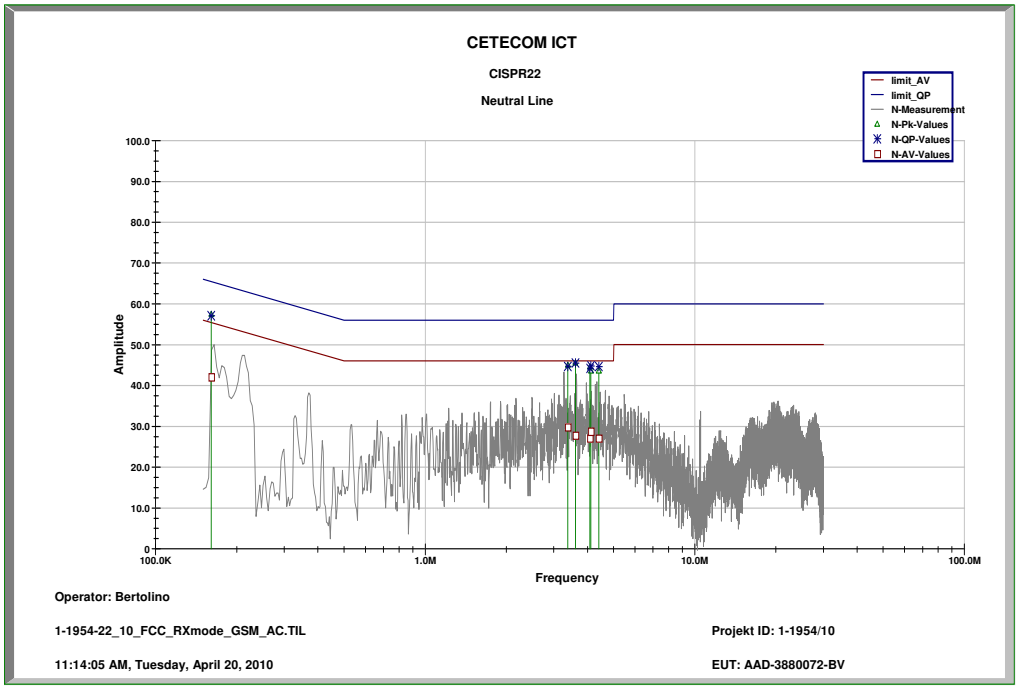
Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56 *	56 to 46 *
0.5 – 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency

Plot 1: RX mode, phase line



Plot 2: RX mode, neutral line



6.2 Unwanted emissions

Reference

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

Measurement Results

SPURIOUS EMISSIONS LEVEL (dBµV/m)								
Idle mode			-/-			-/-		
f (MHz)	Detector	Level (dBµV/m)	f (MHz)	Detector	Level (dBµV/m)	f (MHz)	Detector	Level (dBµV/m)
No critical peaks detected.								
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz f ≥ 1GHz : RBW/VBW: 1 MHz

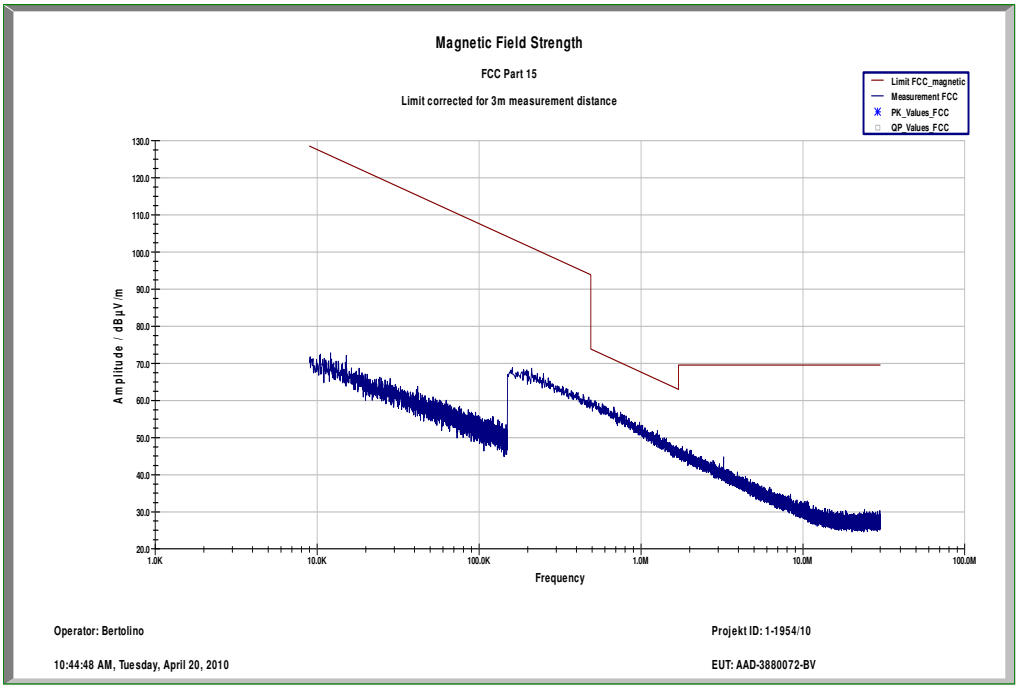
H = Horizontal; V= Vertical

For measurement distance see table below

Limits: § 15.109

Frequency (MHz)	Field strength (dBµV/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 mode, 10 kHz – 30 MHz (valid for all channels)



Plot 2: RX mode, 30 MHz – 1 GHz, vertical & horizontal polarization

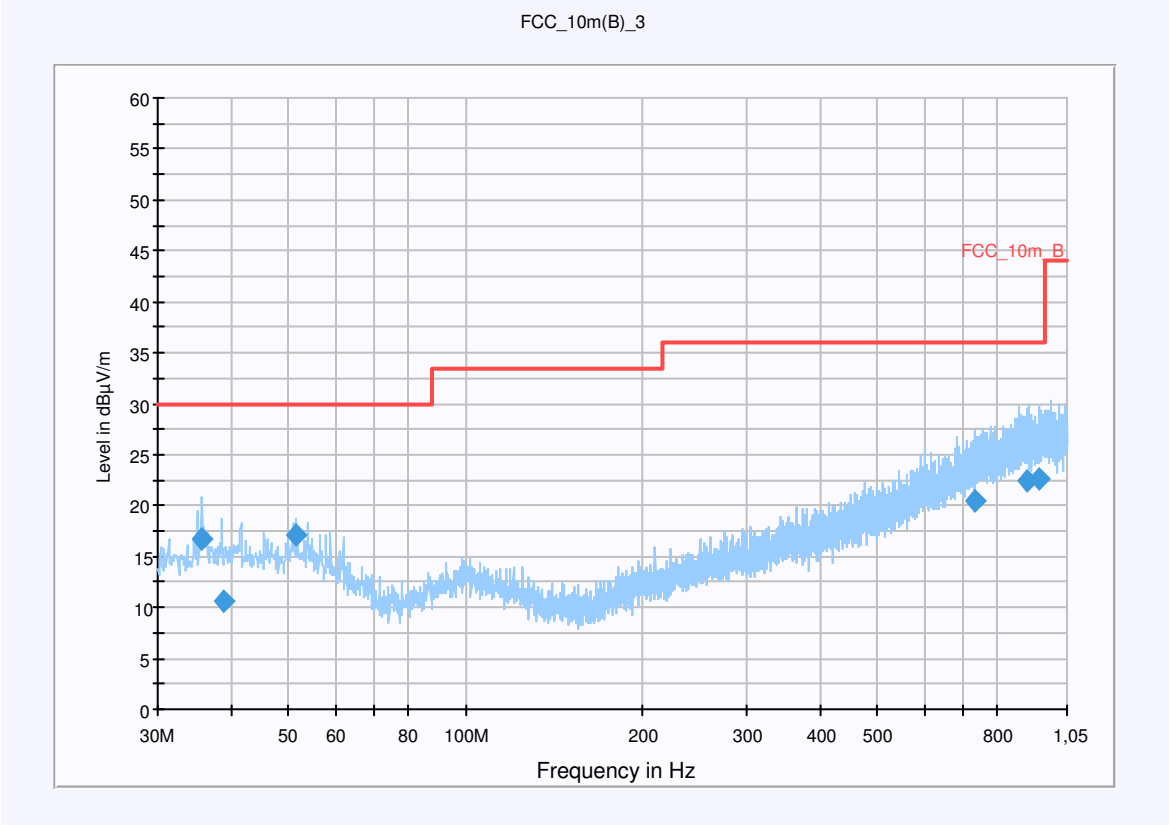
Common Information

EUT:	AAD-3880072-BV + Standard USB Charger EP800
Serial Number:	IMEI:00440214-048457-1
Test Description:	FCC part 15 B Class B @ 10m
Operating Conditions:	GSM idle / A-GPS active
Operator Name:	Lang
Comment:	AC: 115 V / 60 Hz

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

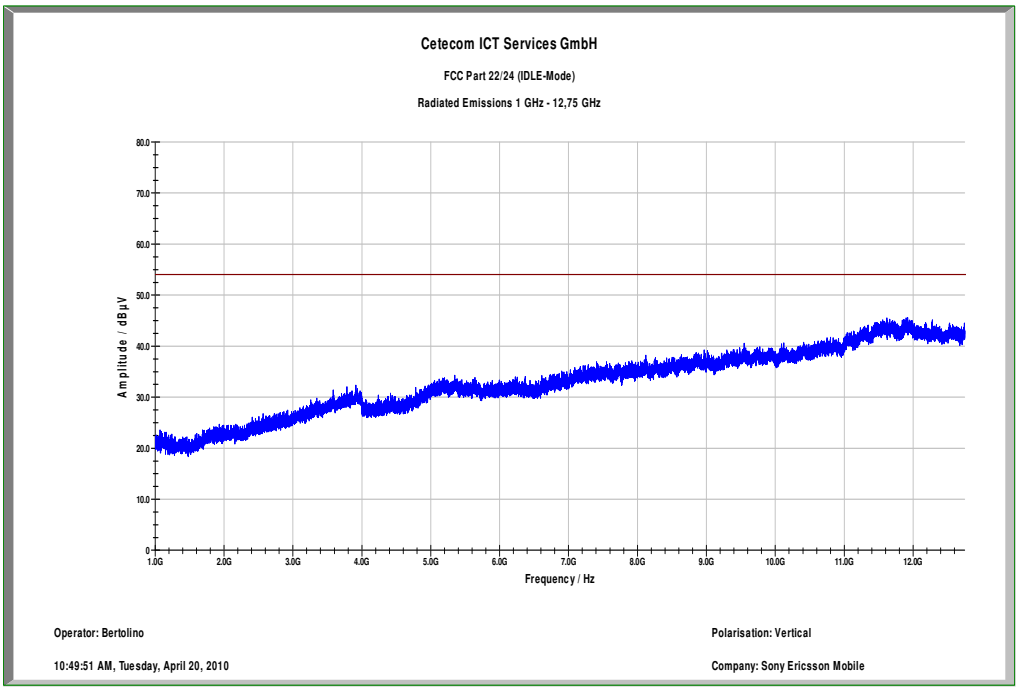
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.700900	16.7	15000.000	120.000	174.0	V	273.0	13.1	13.3	30.0	
38.766150	10.5	15000.000	120.000	199.0	V	203.0	13.3	19.5	30.0	
51.603300	17.1	15000.000	120.000	133.0	V	38.0	13.2	12.9	30.0	
734.064300	20.5	15000.000	120.000	220.0	V	63.0	23.2	15.5	36.0	
900.987000	22.4	15000.000	120.000	220.0	H	127.0	25.2	13.6	36.0	
938.897400	22.5	15000.000	120.000	220.0	H	153.0	25.3	13.5	36.0	

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

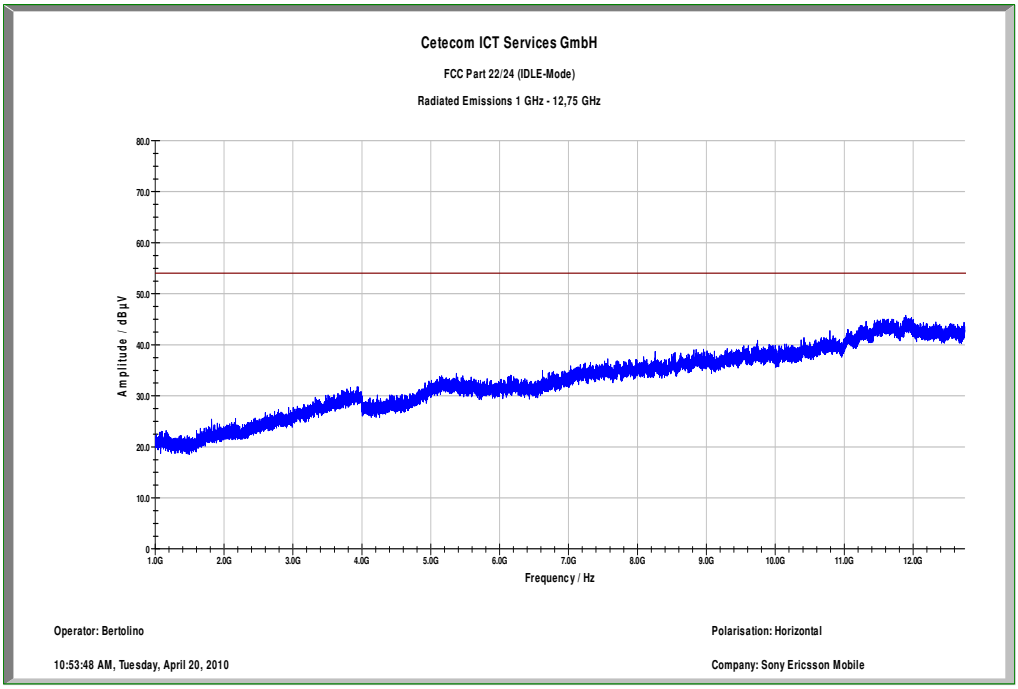
Subrange 1	
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113 Correction Table: Cable_EN_1GHz (0909)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

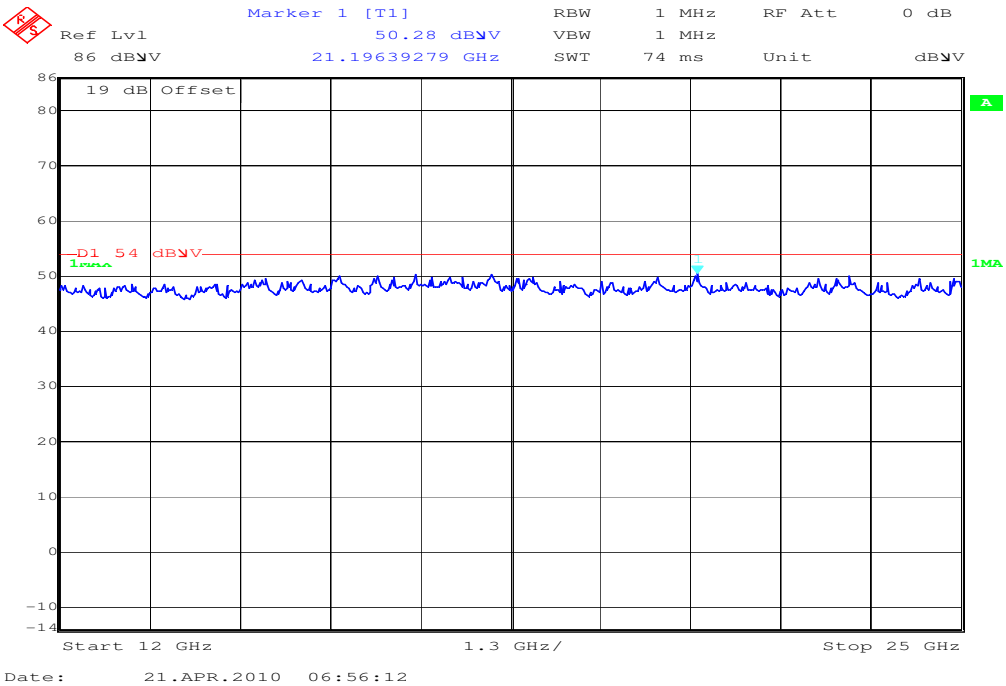
Plot 3: RX mode, 1 GHz – 12.75 GHz, vertical polarization



Plot 4: RX mode, 1 GHz – 12.75 GHz, horizontal polarization



Plot 5: RX mode, 12 GHz – 25 GHz (valid for all channels)



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	n. a.	System Autoranging DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2818A 03450	30000 1040	Ve	08.01. 2009	08.01. 2012
2	n. a.	PowerAttenuator	8325	Byrd	1530	30000 1595			
3	n. a.	Double-Ridged Waveguide Horn Antenna 1-26.5GHz	3115	EMCO	8812-3088	30000 1032	vlKI!	05.03. 2009	05.03. 2011
4	n. a.	Active Loop Antenna	6502	EMCO	2210	30000 1015	ne		
5	n. a.	Anechoic chamber		MWB	87400/02	30000 0996			
6	Spec.A. 2_2e	System-Rack	85900	HP I.V.	*	30000 0222	ne		
7	9	Artificial Mains 9 kHz to 30 MHz, 4 x 25 Ampere	ESH3-Z5	R&S	82857 6/020	30000 1210	Ve	06.01. 2010	06.01. 2012
8	n. a.	Relais Matrix	3488A	HP Meßtechnik	2719A 15013	30000 1156	ne		
9	n. a.	Relais Matrix	PSU	R&S	89016 7/024	30000 1168	ne		
10	n. a.	Isolating Transformer	RT5A	Grundig	9242	30000 1263	ne		
11	n. a.	Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		30000 0997	ne		
12	n. a.	Switch / Control Unit	3488A	HP	2605e 08770	30000 1443	ne		
13	n. a.	Band Reject filter	WRCG1855/1910 -1835/1925-40/8SS	Wainwright	7	30000 3350	ev		
14	n. a.	Band Reject filter	WRCG2400/2483 -2375/2505-50/10SS	Wainwright	11	30000 3351	ev		
15	n. a.	TILE-Software Emission	Quantum Change, Modell TILE-	EMCO	none	30000 3451	ne		

			ICS/FULL						
16	n. a.	Highpass Filter	WHKX2.9/18G-12SS	Wainwright	1	30000 3492	ev		
17	n. a.	Highpass Filter	WHK1.1/15G-10SS	Wainwright	3	30000 3255	ev		
18	n. a.	Highpass Filter	WHKX7.0/18G-8SS	Wainwright	18	30000 3789	ne		
19	n. a.	PSA Spectrum Analyzer 3 Hz - 26.5 GHz	E4440A	Agilent Vertr. Bad Hom	MY48 250080	30000 3812	k	05.08. 2008	05.08. 2010
20	n. a.	MXG Microwave Analog Signal Generator	N5183A	Agilent Vertr. Bad Hom	MY47 420220	30000 3813	k	06.08. 2008	06.08. 2010
21	n. a.	RF Filter Section 9kHz - 1GHz	N9039A	Agilent Vertr. Bad Hom	MY48 260003	30000 3825	vlKI!	19.08. 2008	19.08. 2010
22	n. a.	TRILOG Super Breitband Antenne	VULB9163	Schwarzbeck	371	30000 3854	vlKI!	17.12. 2008	17.12. 2010
23	45	Switch-Unit	3488A	HP Meßtechnik	2719A 14505	30000 0368	g		
24	50	Netzgerät	6032A	HP Meßtechnik	2920A 04466	30000 0580	k	06.01. 2009	06.01. 2011
25	n. a.	software	SPS_PHE 1.4f	Spitzberger & Spieß	B5981; 5D1081;B5979	30000 0210	k	03.09. 2001	03.09. 2003
26	n. a.	EMI-Messempfänger	ESCI 1166.5950.03	R&S	100083	30000 3312	k	08.01. 2010	08.01. 2012
27	n. a.	Analysator-Referenz-System (Harmonics u. Flicker)	ARS 16/1	SPS	A350907/00205	30000 3314	k	06.06. 2007	06.06. 2009
28	n. a.	Amplifier	JS42-00502650-28-5A	MITEQ	1084532	30000 3379	ev		
29	n. a.	Antennenmast	Model 2175	ETS-LINDGREN	64762	30000 3745	izw		
30	n. a.	Steuergerät	Model 2090	ETS-LINDGREN	64672	30000 3746	izw		
31	n. a.	Interface-Box für Drehtisch	Model 105637	ETS-LINDGREN	44583	30000 3747	izw		
32	n. a.	Breitbandantenne	VULB9163	Schwarzbeck	295	30000 3787	k	01.04. 2008	01.04. 2010
33	n. a.	Spectrum-Analyzer	FSU26	R&S	200809	30000 3874	k	08.01. 2010	08.01. 2012

8 Photographs of the Test Set-up

Photo documentation:

Photo 1:

Photo 2:

Photo 3:

9 Photographs of the EUT

Photo documentation: External photos

Photo 1:

Photo 2:

Photo 3:

Photo 4:

Photo 5:

Photo 6:

Photo 7:

Photo 8:

Photo documentation: Internal photos

Photo 1:

Photo 2:

Photo 3:

Photo 4:

Photo 5:

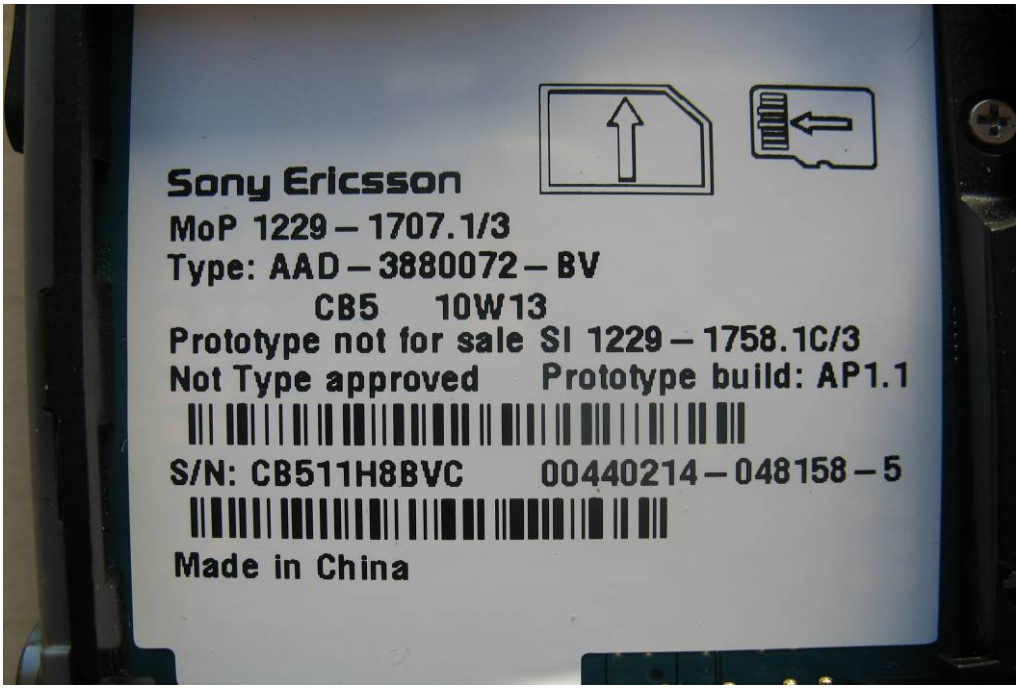


Photo 6:

Photo 7:

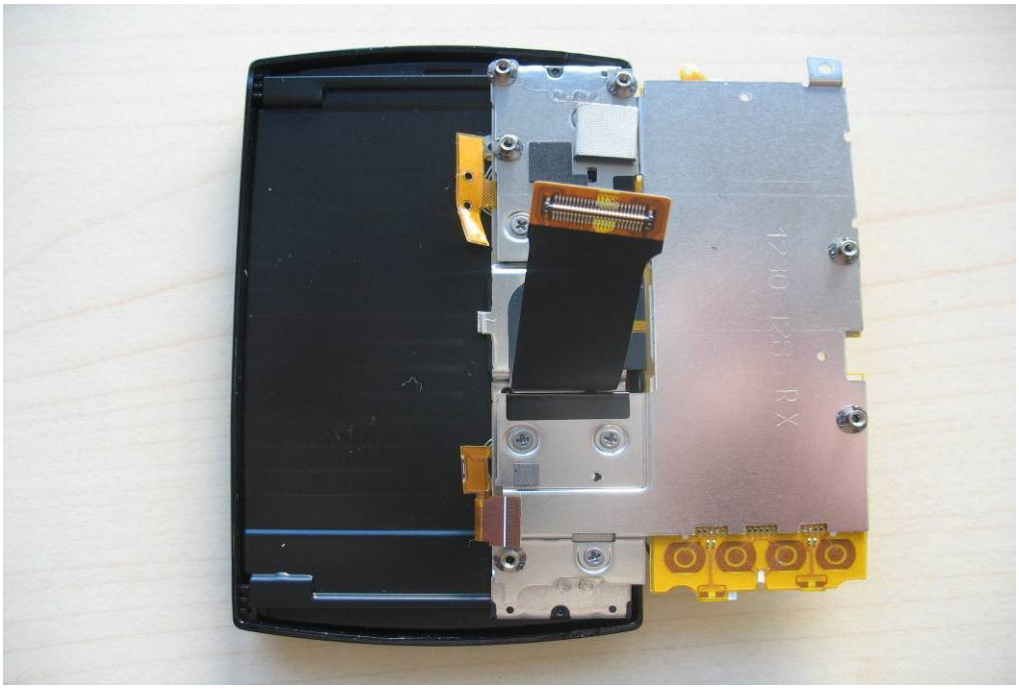
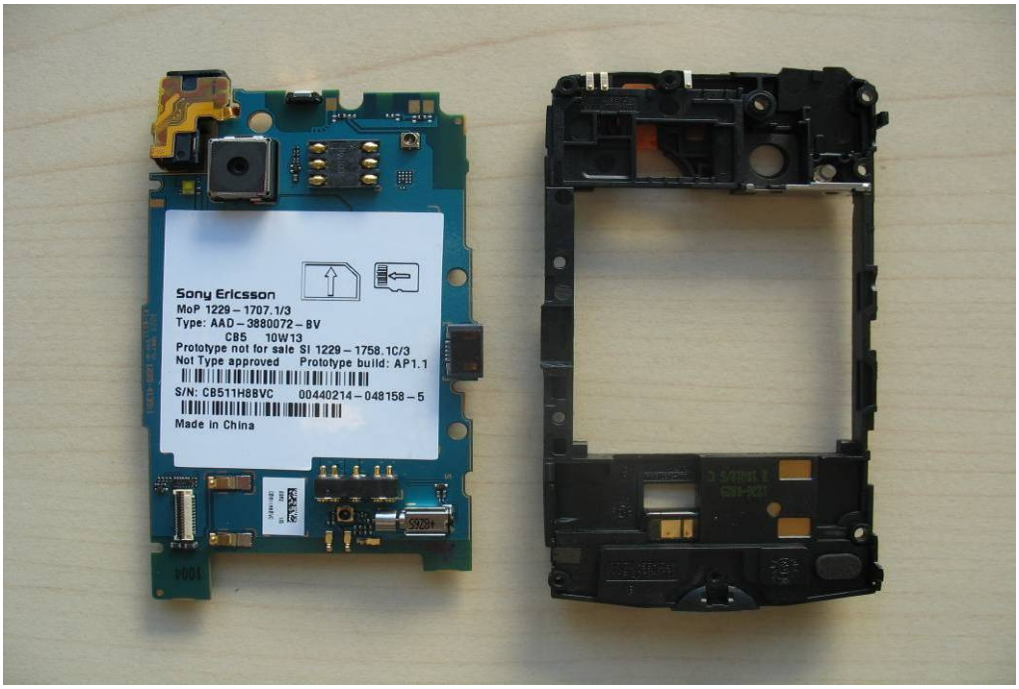


Photo 8:

Photo 9:

Photo 10:

Photo 11:



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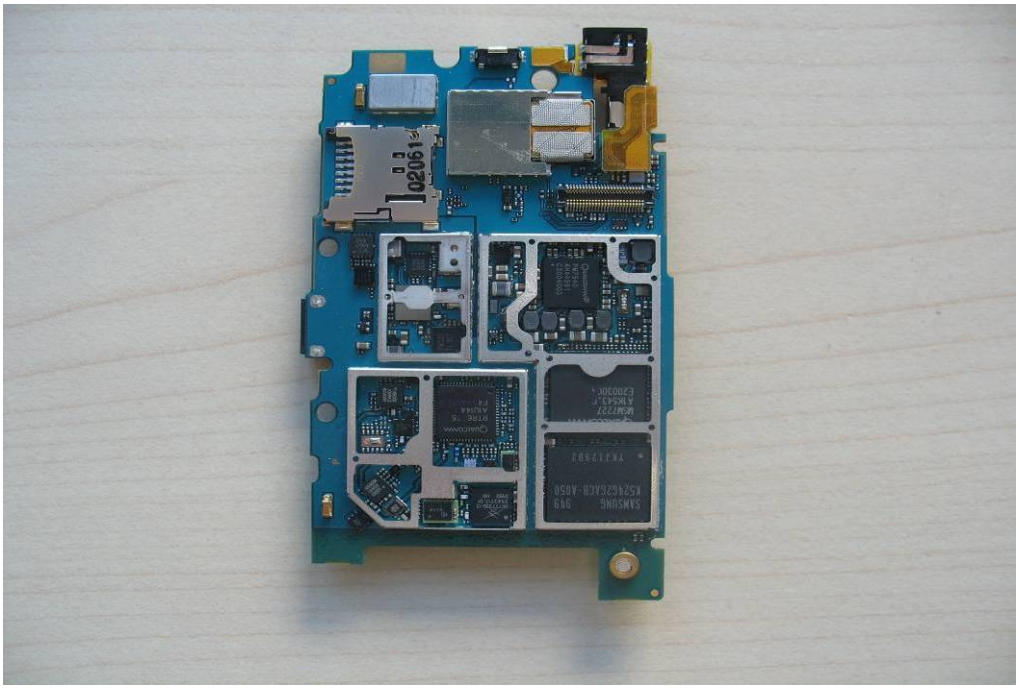

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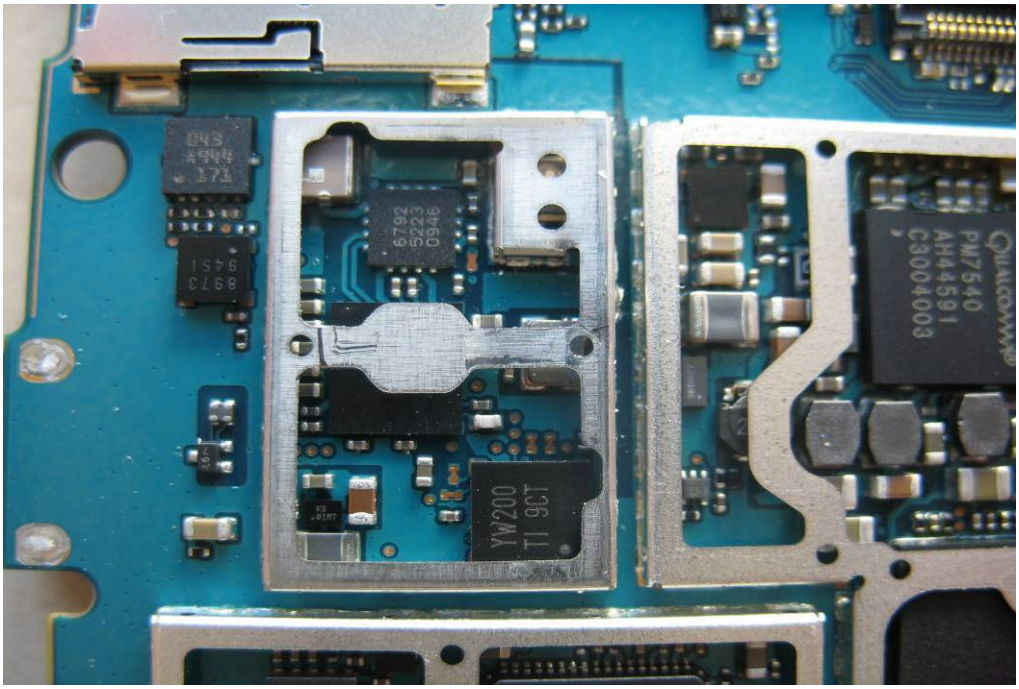

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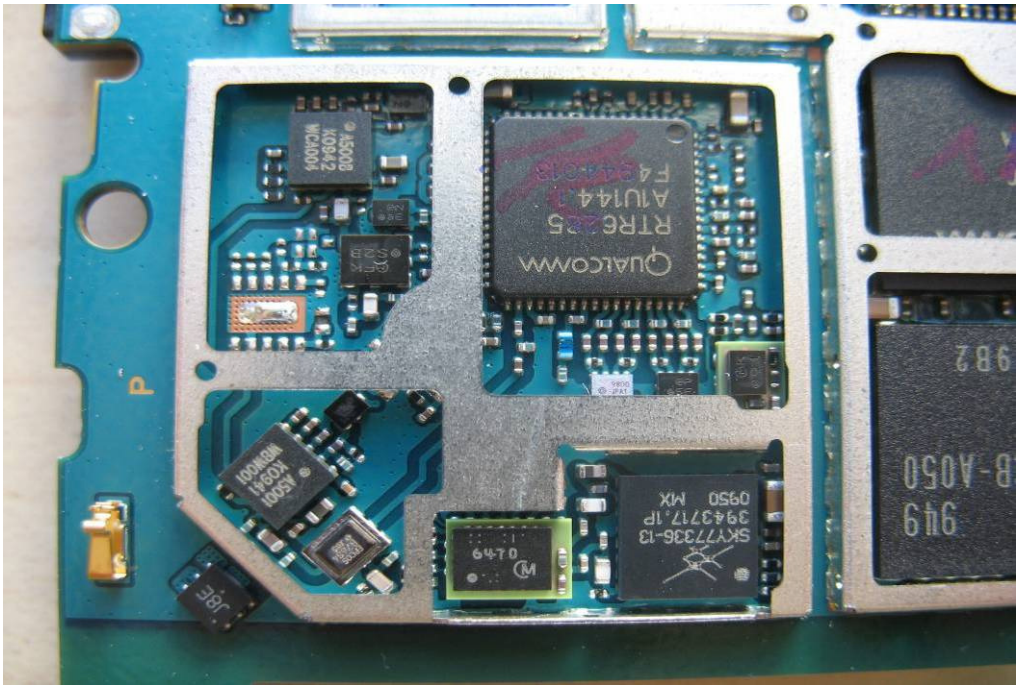

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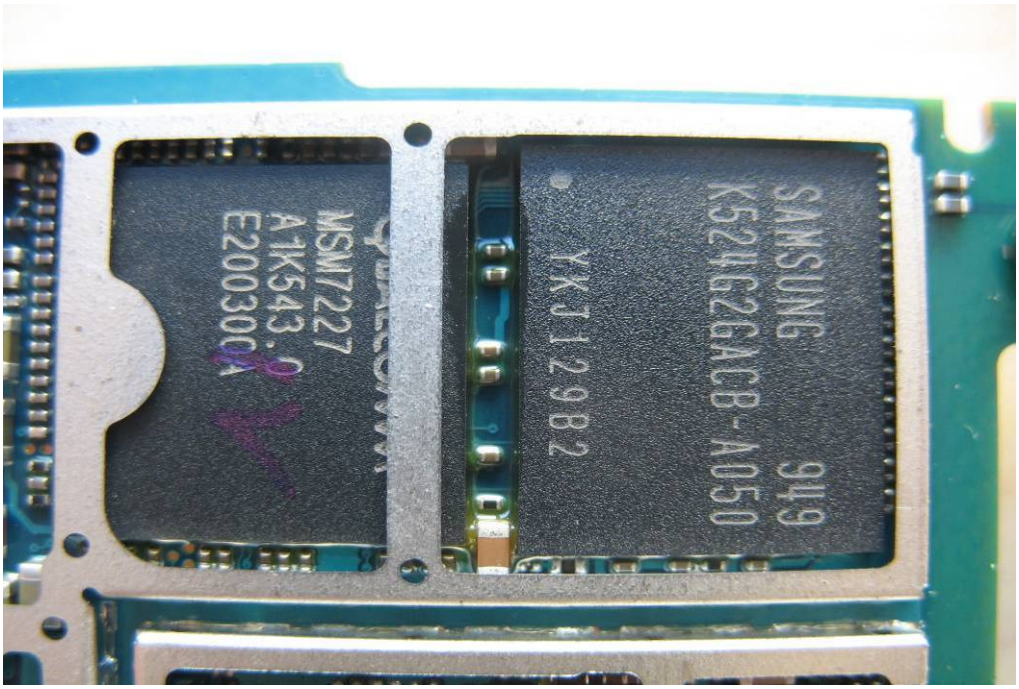

Photo 16:

Photo 17: