



Accredited testing-laboratory

DAR registration number: DAT-P-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.: 3463A-1 (IC)

Certification ID: DE 0001

Accreditation ID: DE 0002

Accredited Bluetooth® Test Facility (BQTF)

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Annex to Test

report no. : 4-2927-06-06/08-A

Type identification : MC2008

Applicant : Sagem Mobiles

FCC ID : M9HMC08

IC Certification No : -/-

Test standards : 47 CFR Part 24

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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 (test report). 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:

2008-04-18

Date

Jakob Reschke

Name

A black ink signature of Jakob Reschke, written in a cursive style.

Signature

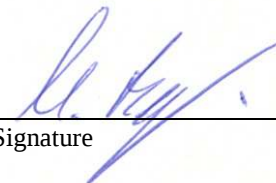
Technical responsibility for area of testing:

2008-04-18

Date

Michael Berg

Name

A blue ink signature of Michael Berg, written in a cursive style.

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: DAT-P-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:	Sagem Mobiles FR 93 440 349 181
Street:	2 rue du Petit Albi
Town:	95801 Cergy Pontoise Cedex
Country:	France
Telephone:	+33-(0)1-58-11-91-72
Fax:	+33(0)1-5811-14-11
Contact:	Herrn Jean Marquet
E-mail:	jean.marquet@sagem.com
Telephone:	+33(0)1-5811-91-72

1.4 Application details

Date of receipt of order:	2008-03-11
Date of receipt of test item:	2008-04-16
Date of start test:	2008-04-16
Date of end test:	2008-04-18
Persons(s) who have been present during the test:	-/-

2 Technical tests

2.1 Details of manufacturer

Name:	Sagem Mobiles FR 93 440 349 181
Street:	2 rue du Petit Albi
Town:	95801 Cergy Pontoise Cedex
Country:	France

2.2 Test item(s) and test configuration

No.: 1	Standard Charger DCH3-050EU-0606 189732783	with	MC2008
No.: 2	Standard Charger DCH3-050UK-0606 189732775	with	MC2008

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 RSS 210, Issue 7, Section 6.6 , 7.4	Pass
5.2	Receiver spurious emission radiated (Idle mode) CFR Part SUBCLAUSE § 15.109 RSS 210, Issue 7, Section 7.3 Receiver Spurious Emissions (Radiated)	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, 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, biconical 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:	RSS 210, Issue 7, Section 6.6 , 7.4

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

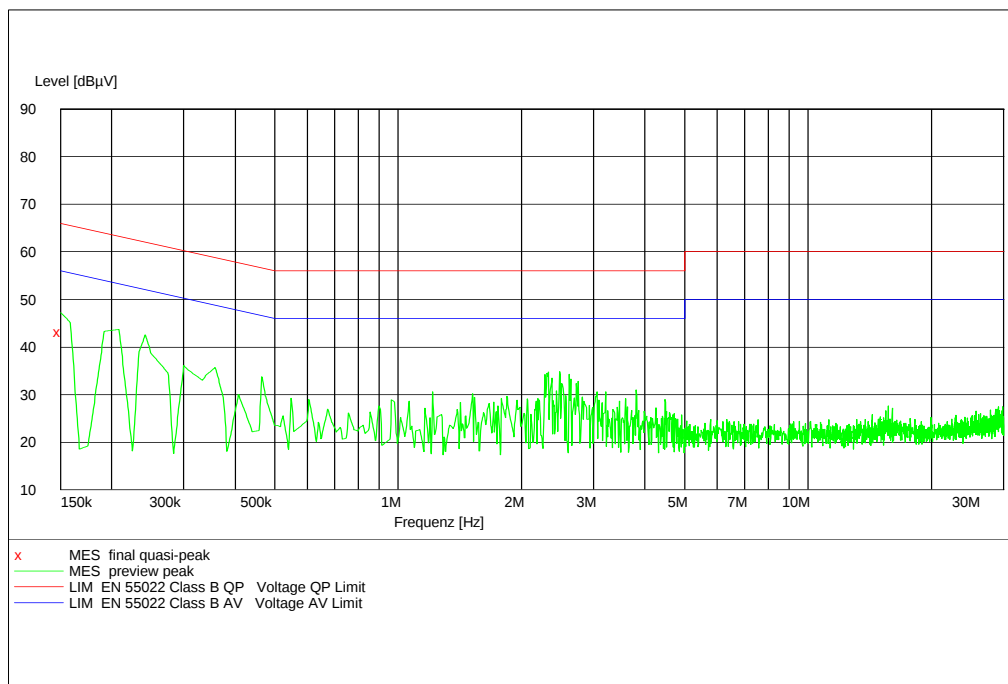
Setup No. 1

Plot 1: Phase Line

Idle Mode: 150 kHz – 30 MHz

EN 55022 Class B

EUT: MC2007 with AC/DC adaptor DCH3-050EU-0606
 Manufacturer: Sagem Mobiles
 Operating Condition: Idle 1900 MHz
 Test site: CETECOM ICT Services Room 006
 Operator: Weiden
 Power Supply: AC-mains 110V AC
 Comment: ---
 Start of Test: 11.06.2008 / 14:05:44



MEASUREMENT RESULT: "final quasi-peak"

11.06.2008 14:09

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		

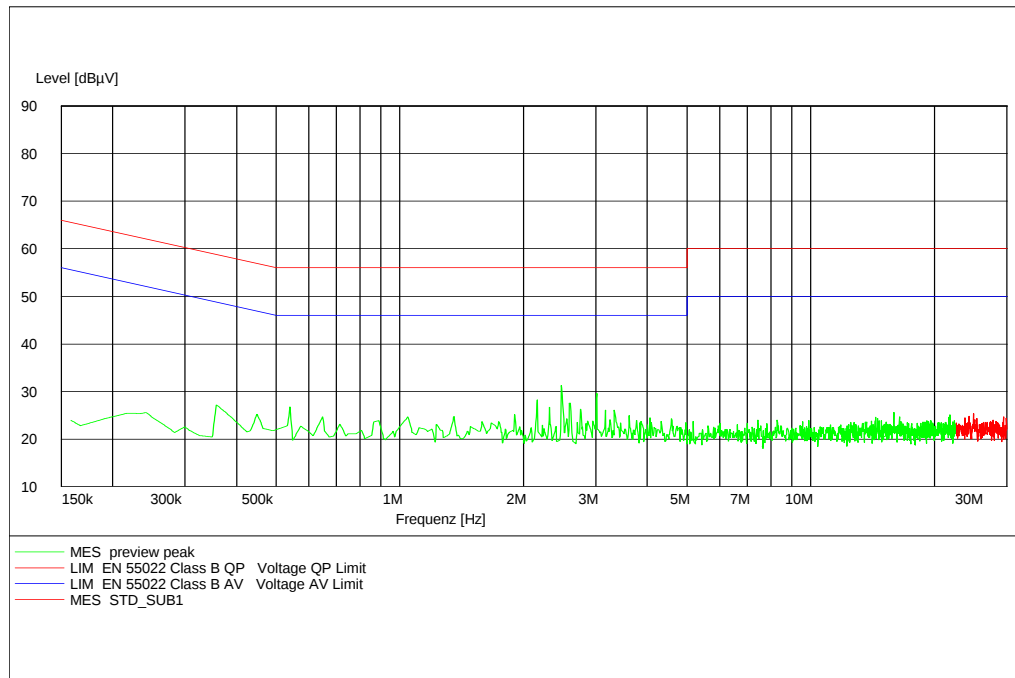
0.151000	43.10	12.0	66	22.9	L1	GND
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Plot 2: Phase Line

Traffic Mode : 150 kHz – 30 MHz

EN 55022 Class B

EUT: MC2007 with AC/DC adaptor DCH3-050EU-0606
 Manufacturer: SAGEM Mobiles
 Operating Condition: Traffic 1900 MHz
 Test site: CETECOM ICT Services Room 006
 Operator: Weiden
 Power Supply: AC-mains 110V AC
 Comment: ---
 Start of Test: 11.06.2008 / 13:59:01



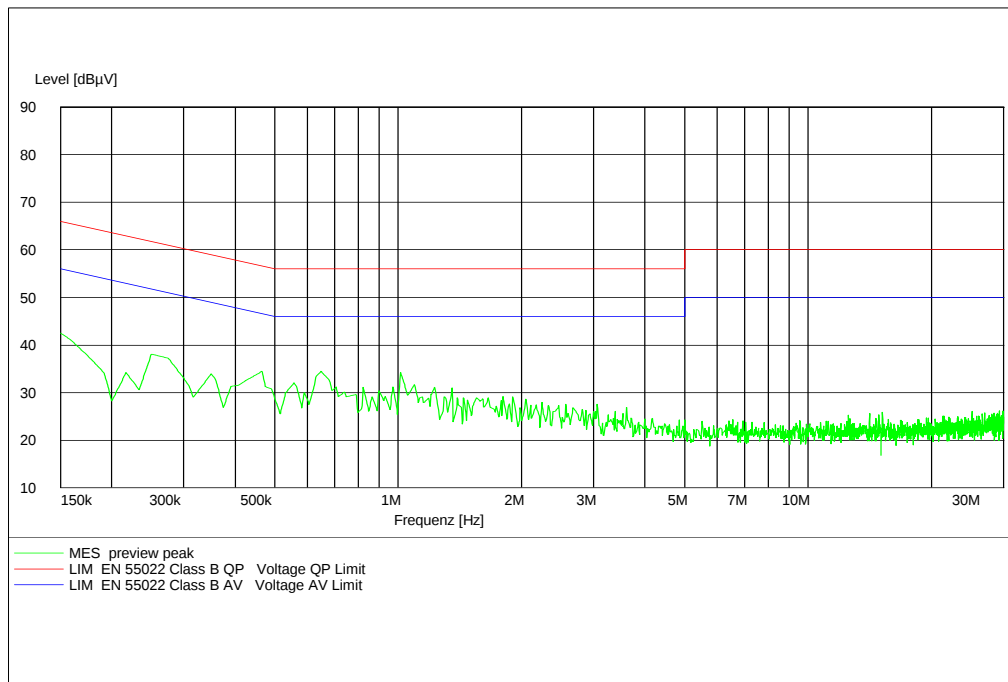
Setup No. 2

Plot 1: Phase Line

Idle Mode: 150 kHz – 30 MHz

EN 55022 Class B

EUT: MC2007 with AC/DC adaptor DCH3-050UK-0606
Manufacturer: Sagem Mobiles
Operating Condition: Idle 1900 MHz
Test site: CETECOM ICT Services Room 006
Operator: Weiden
Power Supply: AC-mains 110V AC
Comment: ---
Start of Test: 11.06.2008 / 14:12:40

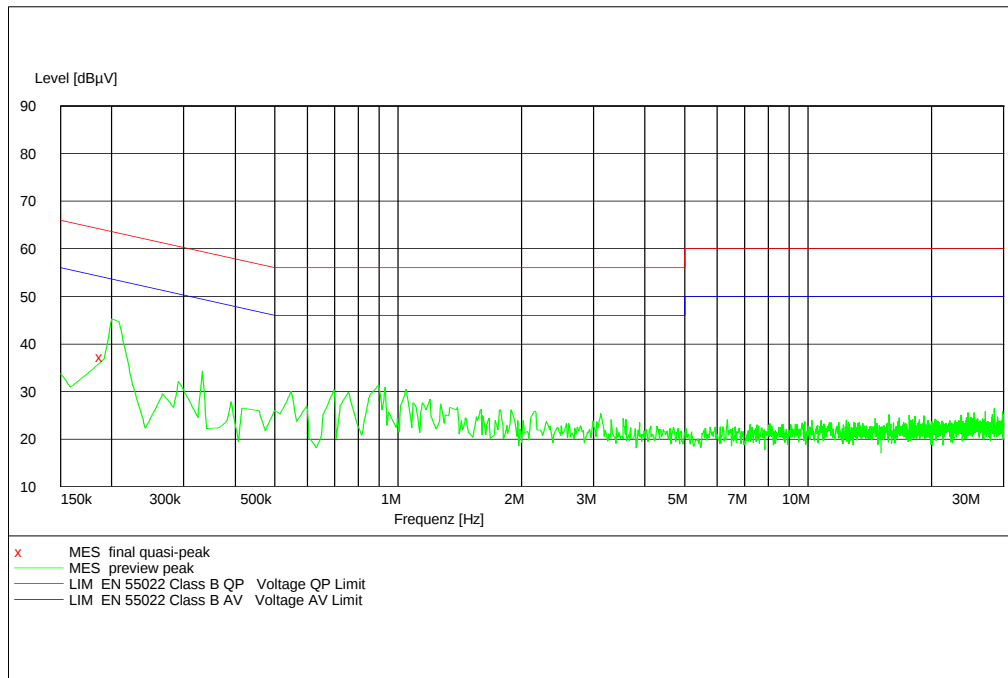


Plot 2: Phase Line

Traffic Mode : 150 kHz – 30 MHz

EN 55022 Class B

EUT: MC2007 with AC/DC adaptor DCH3-050UK-0606
 Manufacturer: Sagem Mobiles
 Operating Condition: Traffic 1900 MHz
 Test site: CETECOM ICT Services Room 006
 Operator: Weiden
 Power Supply: AC-mains 110V AC
 Comment: ---
 Start of Test: 11.06.2008 / 14:17:33



MEASUREMENT RESULT: "final quasi-peak"

11.06.2008 14:21

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		

0.191000	37.30	11.6	64	26.7	N	GND
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5.2 Receiver spurious emission radiated (Idle mode)

Reference

FCC:	CFR Part SUBCLAUSE § 15.109
IC:	RSS 210, Issue 7, Section 7.3 Receiver Spurious Emissions (Radiated)

SPURIOUS EMISSIONS LEVEL (µV/m)								
Idle Mode			-/-			-/-		
F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]
No critical peaks detected.								
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Limits: § 15.109

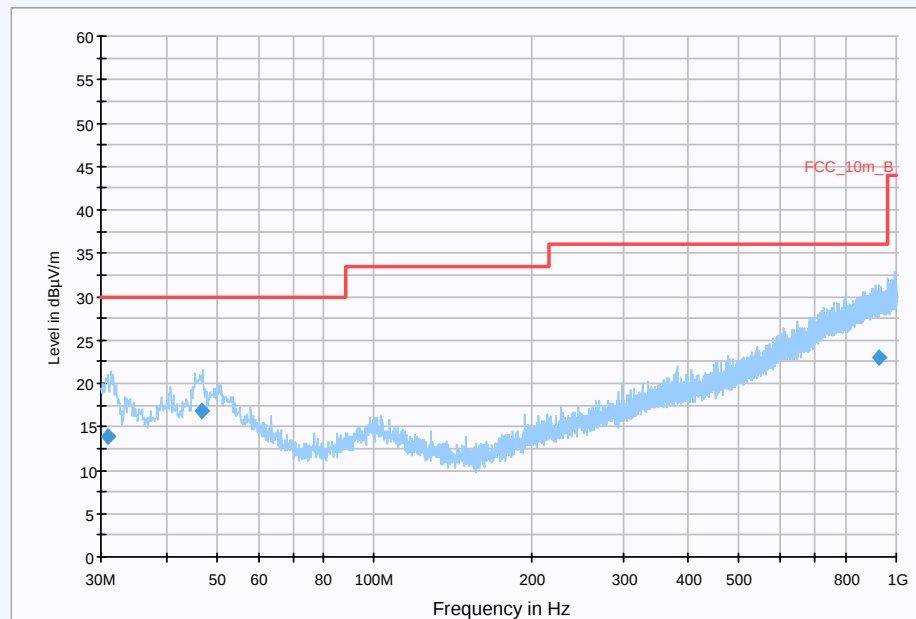
Frequency (MHz)	Field strength (dBµV/m)	Measurement distance (m)
30 - 88	30.0	10
88 - 216	33.5	10
216 - 960	36.0	10
above 960	54.0	3

Idle Mode (30 MHz - 1 GHz)**Information**

EUT: MC28008 + DCH3-050 EU
Serial Number: 35227402 0002379 + 219986 R1 0748 LF
Test Description: FCC class B @ 10 m
Operating Conditions: IDLE 1900 + charging
Operator Name: Hennemann
Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

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

FCC_1GHz**Final Measurement Detector 1**

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
30.978750	13.8	1000.000	120.000	120.0	V	-1.0	12.7	16.2	30.0	
46.817800	16.9	1000.000	120.000	120.0	V	86.0	13.5	13.1	30.0	
923.452800	23.1	1000.000	120.000	120.0	V	101.0	26.2	13.0	36.0	

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

Subrange 1

Frequency Range: 30MHz - 2GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 3.32, CAL 07.01.2009

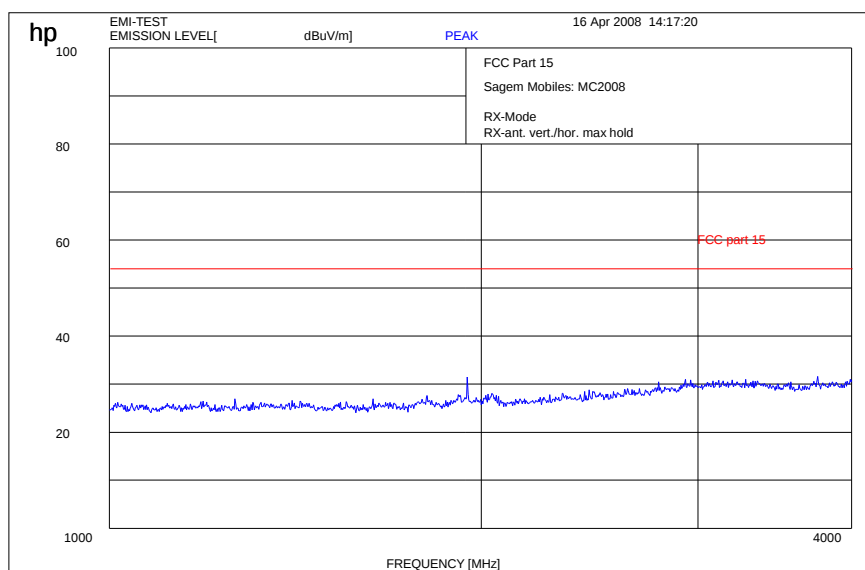
Signal Path: without Notch
FW 1.0

Antenna: VULB 9163
SN 9163-295, FW ---, CAL 08.04.2010
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cabel with switch (0408)

Antenna Tower: Tower [EMCO 2090 Antenna Tower]
@ GPIB0 (ADR 8), FW REV 3.12

Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9)

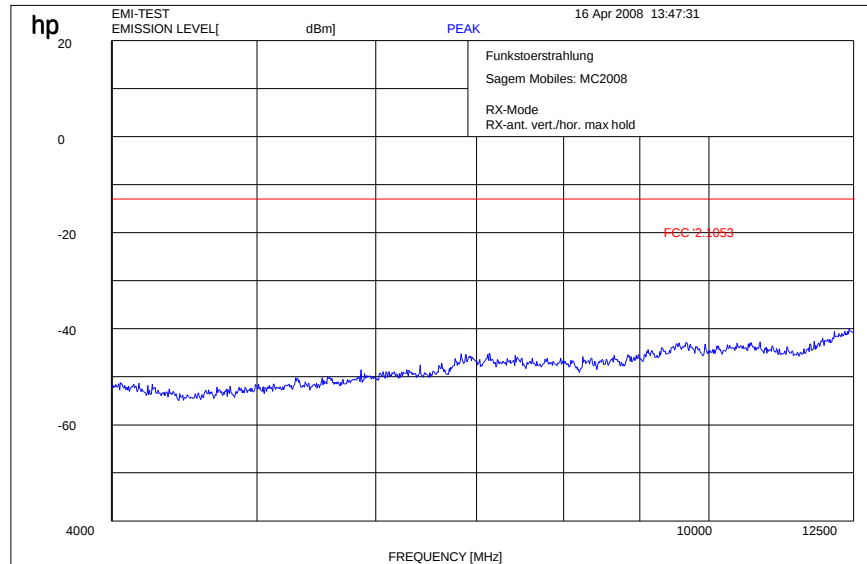
Idle Mode (1 MHz - 4 GHz)



$f < 1 \text{ GHz}$: RBW/VBW: 100 kHz

$f \geq 1 \text{ GHz}$: RBW / VBW 1 MHz

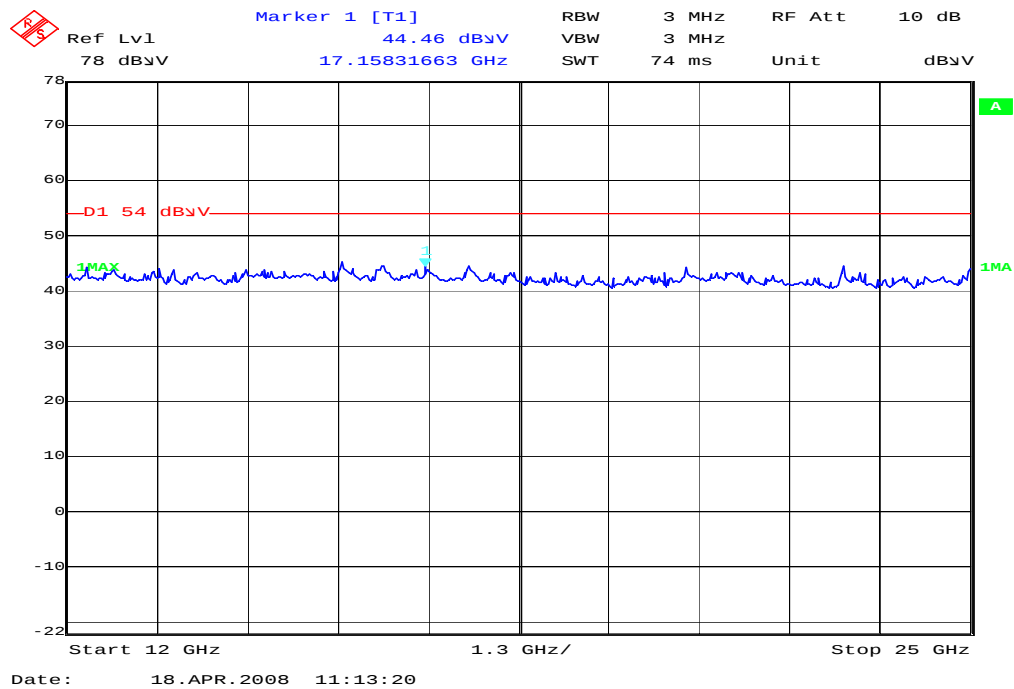
Idle Mode (4 GHz – 12.0 GHz)



$f < 1 \text{ GHz}$: RBW/VBW: 100 kHz

$f \geq 1 \text{ GHz}$: RBW / VBW 1 MHz

Idle Mode (12 GHz - 25 GHz)



6 Test equipment and ancillaries used for tests

To simplify the identification on each page of the test equipment used, on each page of the test report, each item of test equipment and ancillaries such as cables are identified (numbered) by the Test Laboratory, below.

Anechoic chamber C:

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	Anechoic chamber	MWB	87400/02	300000996	Monthly verification		
2	System-Rack 85900	HP I.V.	*	300000222	n.a.		
3	Measurement System 1						
4	Spektrum Analyzer 8566B	HP	2747A05306	300001000	05.10.2006	24	05.10.2008
5	Spektrum Analyzer Display 85662A	HP	2816A16541	300002297	05.10.2006	24	05.10.2008
6	Quasi-Peak-Adapter 85650A	HP	2811A01131	300000999	05.10.2006	24	05.10.2008
7	RF-Preselector 85685A	HP	2837A00779	300000218	08.11.2006	24	08.11.2008
8	PC Vectra VL	HP		300001688	n.a.		
9	Software EMI	HP		300000983	n.a.		
10	Measurement System 2						
11	FSP 30	R&S	100623	ICT 300003464	05.10.2007	24	15.10.2009
12	PC	F+W			n.a.		
13	TILE	TILE			n.a.		
14	Biconical antenna	EMCO	S/N: 860 942/003		Monthly verification (System cal.)		
15	Log. Period. Antenna 3146	EMCO	2130	300001603	Monthly verification (System cal.)		
16	Double Ridged Antenna HP 3115P	EMCO	3088	300001032	Monthly verification (System cal.)		
17	Active Loop Antenna 6502	EMCO	2210	300001015	Monthly verification (System cal.)		
18	Power Supply 6032A	HP	2818A03450	300001040	12.05.2007	36	12.05.2010
19	Busisolator	Kontron		300001056	n.a.		
20	Leitungsteiler 11850C	HP		300000997	Monthly verification (System cal.)		
21	Power attenuator 8325	Byrd	1530	300001595	Monthly verification (System cal.)		
22	Band reject filter WRCG1855/1910	Wainwright	7	300003350	Monthly verification (System cal.)		
23	Band reject filter WRCG2400/2483	Wainwright	11	300003351	Monthly verification (System cal.)		

Anechoic chamber F:

No.	Instrument/Ancillary	Manufacturer	Type	Serial-No.	Internal identification
Radiated emission in chamber F					
F-1	Control Computer	F+W		FW0502032	300003303
F-2	Bilog antenna	Chase	CBL 6112A	2110	300000573
F-3a	Amplifier	Veritech Microwave Inc.	0518C-138	- / -	- / -
F-4b	Switch	HP	3488A	- / -	300000368
F-5	EMI Test receiver	R&S	ESCI	100083	300003312
F-6	Turntable Controller	EMCO	1061 3M	1218	300000661
F-7	Tower Controller	EMCO	1051 Controller	1262	300000625
F-8	Tower	EMCO	1051 Tower	1262	300000625
F-9	Ultra Notch-Filter Rejected band Ch. 62	WRCD		9	
Radiated immunity in chamber F					
F-10	Control Computer	F+W		FW0502032	300003303
F-11	Signal Generator	R&S	SML 03	102519	300003407
F-12	RF-Amplifier	ar	50W1000	12932	300001438
F-13	Directional Coupler	ar	DC 3010	12708	300001428
F-14	Logper Antenna	R&S	HL023A1	323704/016	300001476
F-15	RF-Amplifier	ar	60S1G3	313649	300003410
F-16	Directional Coupler	ar	DC7144A	312786	300003411
F-17	Horn Antenna	ar	AT 4002	19739	300000633
F-18	Power Meter	R&S	NRV	860327/024	F033
F-19	Power sensor	R&S	URV5-Z2	839080/005	300002844.02
F-20	Power sensor	R&S	URV5-Z2	830755/057	F032
Harmonics and flicker in front of chamber F					
F-21	Flicker and Harmonics Test System	Spitzenberger & Spies	PHE4500/B I PHE4500/B II	B5983 B5984	300000210
F-22	Control Unit	Spitzenberger & Spies	STE	B5980	300000210
F-23	Power Amplifier	Spitzenberger & Spies	EP 4500/B	B5976	300000210
F-24	Conect Panel	Spitzenberger & Spies	Conect panel	B5982	300000210
F-25	Power Supply	Spitzenberger & Spies	NT-EP 4500	B3977	300000210
F-26	Additional transformer	Spitzenberger & Spies	UT-EP 4500	B5978	300000210
F-27	Analyzer Reference System	Spitzenberger & Spies	ARS 16/1	A3509 07/0 0205	300003314
F-26	Power Supply	Hewlett Packard	6032 A	2920 A 04466	300000580

7 Photographs of the Test Set-up

Photo documentation

Photo 1:



Photo 2:



Photo 3:

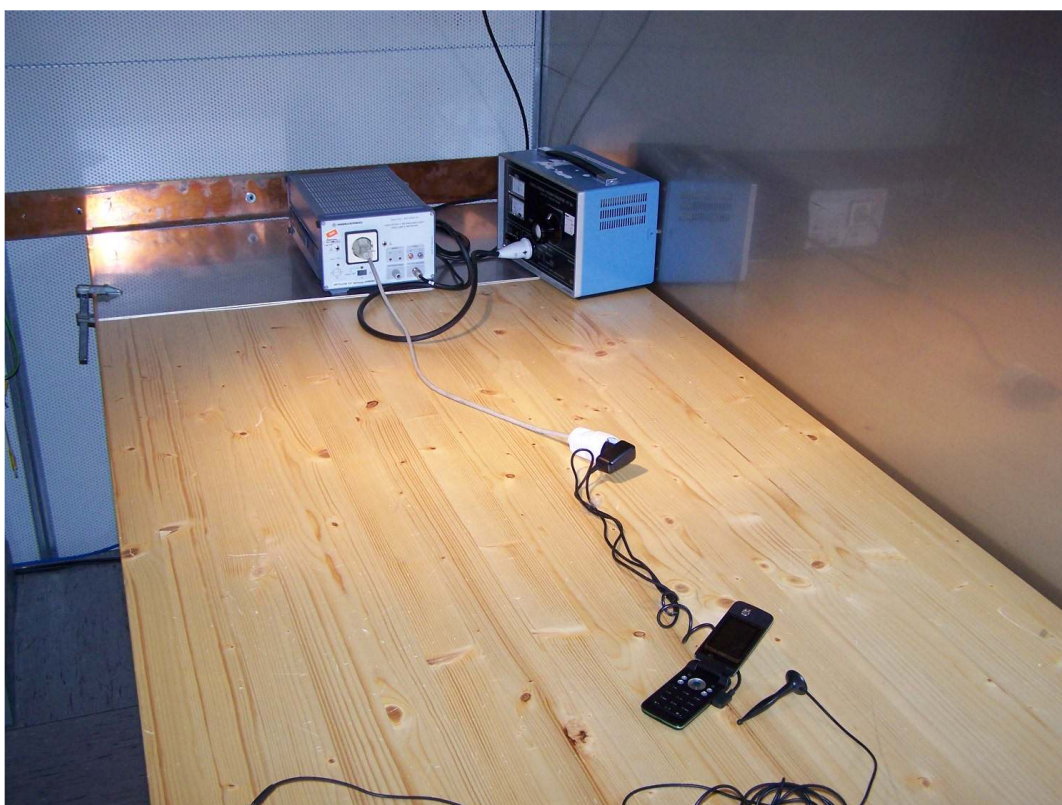
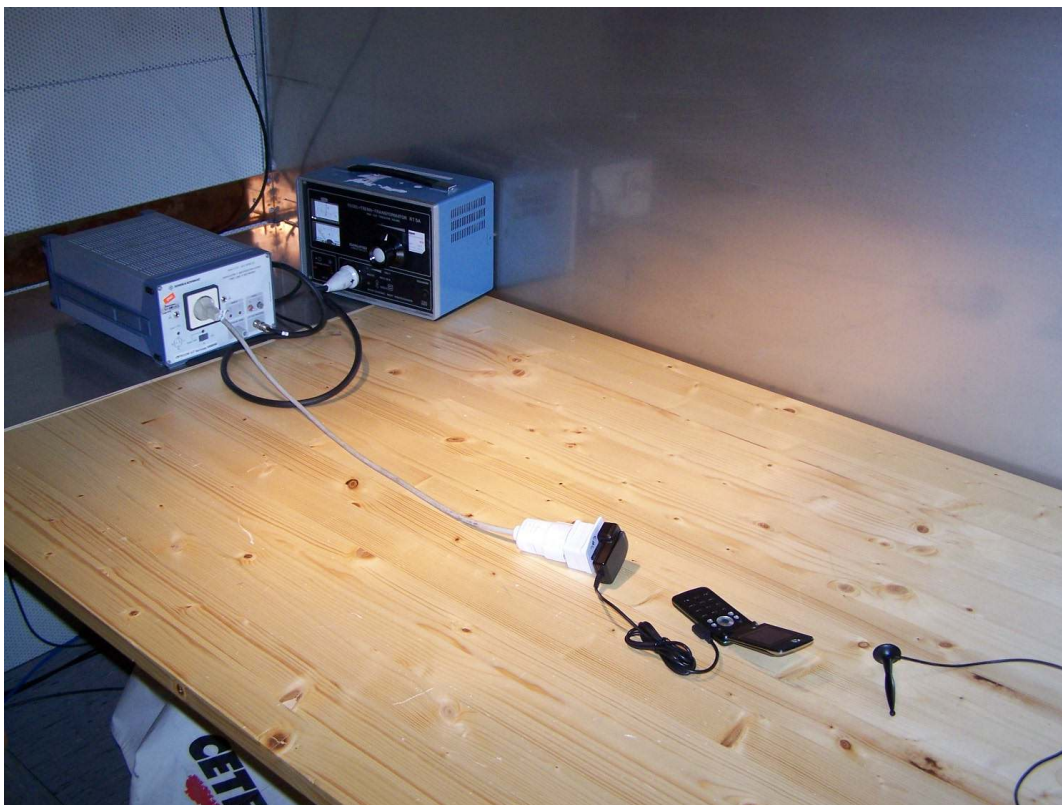


Photo 4:



8 Photographs of the EUT

Photo documentation

Photo 5:

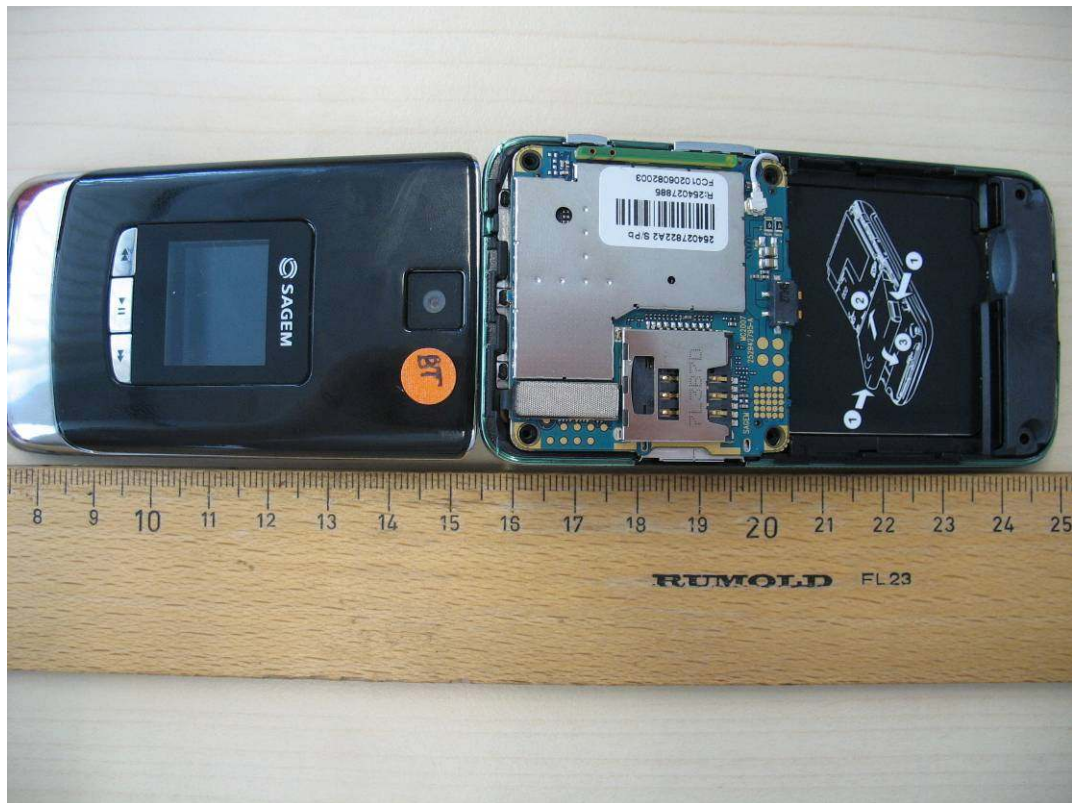


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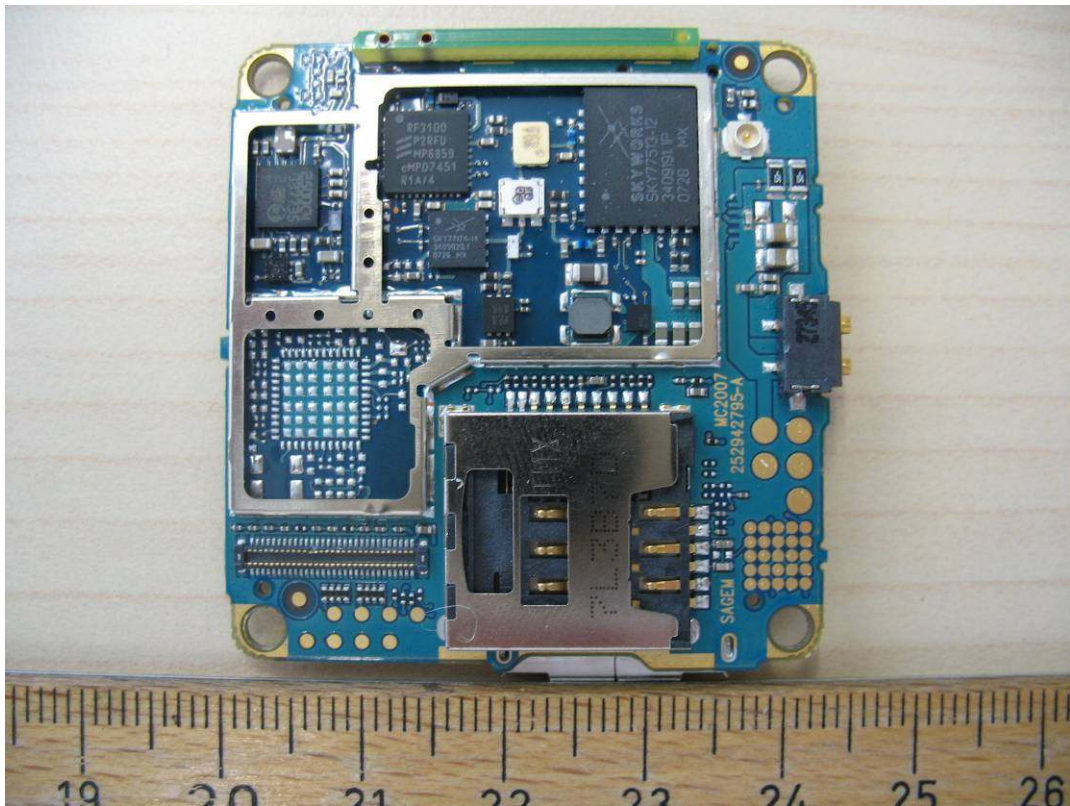


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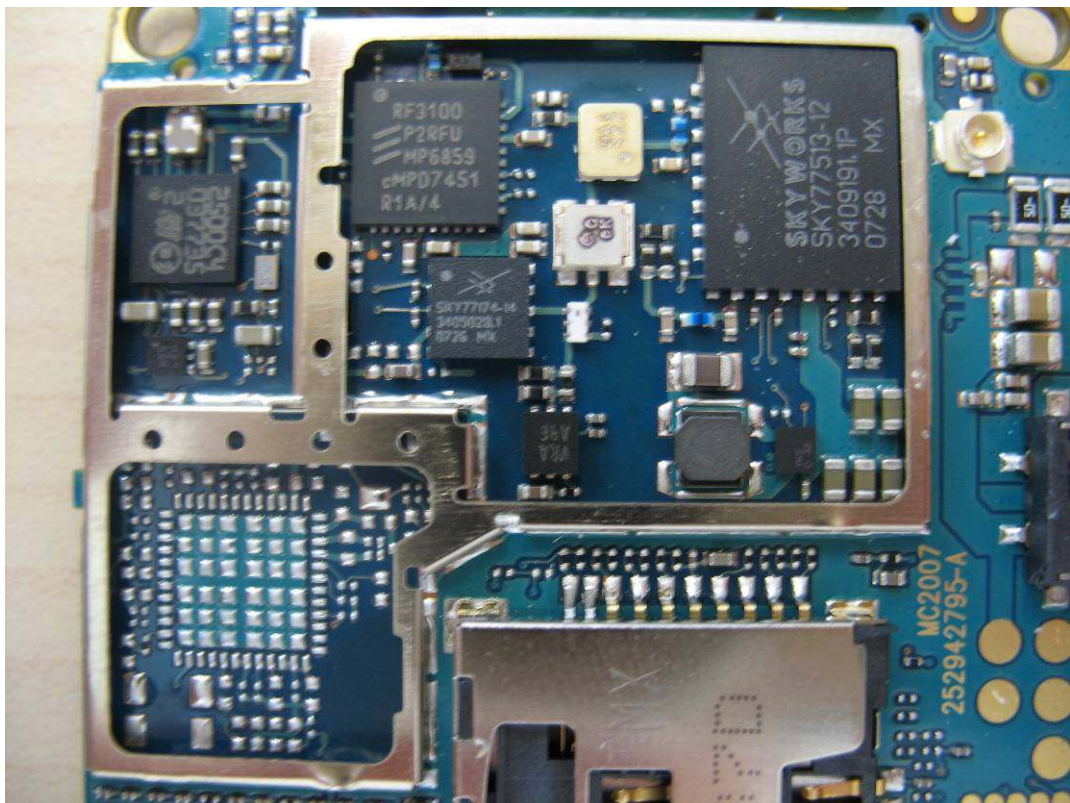


Photo 8:

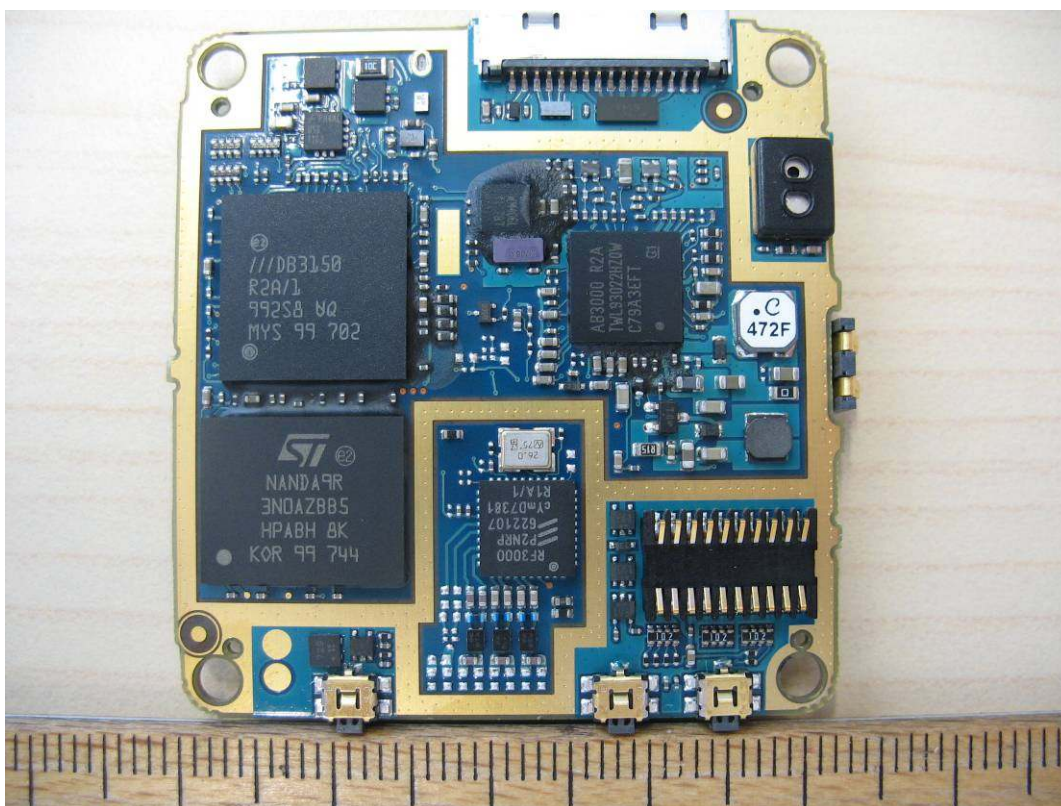


Photo 9:



Photo 10:



Photo 11:



Photo 12:



Photo 13:



Photo 14:



Photo 15:

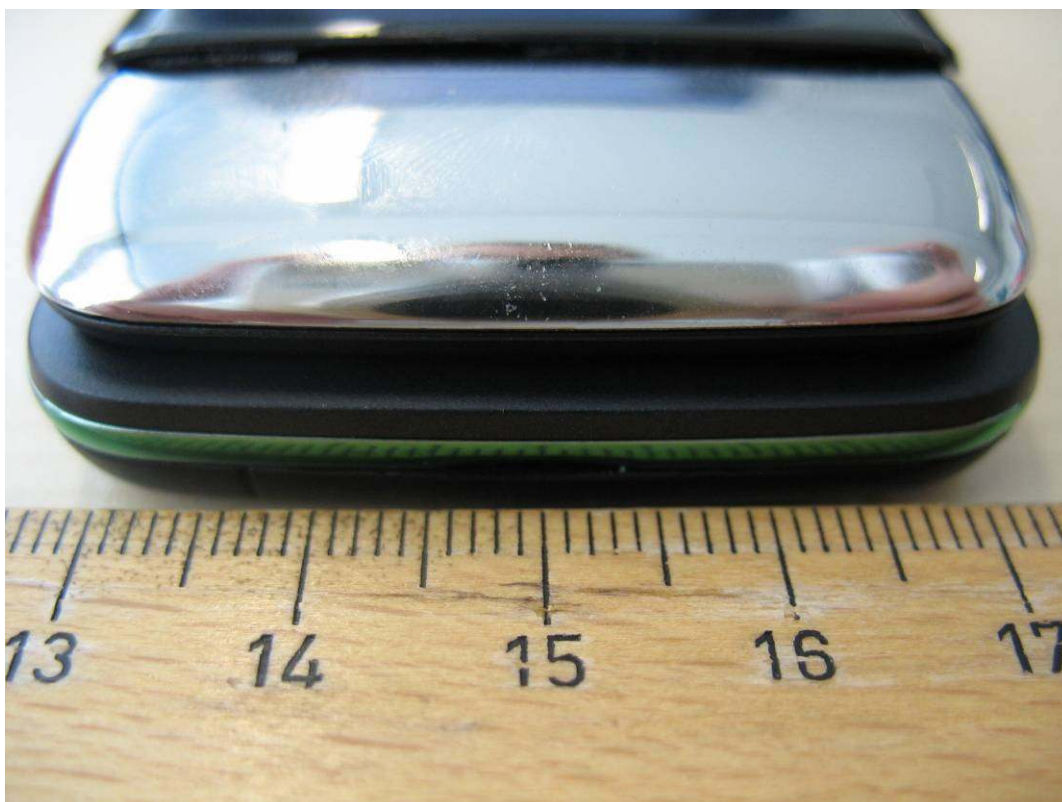


Photo 16:

