CETECOM ICT Services GmbH
Untertürkheimer Straße 6-10 . D-66117 Saarbrücken Phone: +49 (0) 681-598-0 Fax:-9075
EMC-Laboratory Phone: +49 (0) 681-598-0 Fax:-8475

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.: 3463 (IC)
Certification ID: DE 0001
Accreditation ID: DE 0002

Recognized by the Voluntary Control Council for Interference by Information Technology Equipment under the no.:
T-169, C-2043, R-1896

Test report no.	**:**	**4-2156-01-02/06**
Type identification	**:**	**Q24 Plus Wireless CPU**
Applicant	**:**	**Wavecom SA**
Test standards	**:**	**ETSI EN 301 489-1 V1.6.1**
		ETSI EN 301 489-7 V1.3.1

Table of contents

1 General information

1.1 Notes

The test results of this test report relate exclusively to the test item specified in 1.5. 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:

2006-10-09	**Christophe Weiden**	
Date	Name	Signature

Technical responsibility for area of testing:

2006-10-09	**Ralf Hoehn**	
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: 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:	**Wavecom SA**
Street:	**3 esplanade du Foncet**
Town:	**92442 Issy-les-Moulineaux**
Country:	**France**
Telephone:	**+33 (0) 1 46 29 43 60**
Fax:	**+33 (0) 1 46 29 43 70**
Contact:	**Mr. Eric Michel**
E-mail:	**eric.michel@wavecom.com**

1.4 Application details

Date of receipt of order:	**2006-09-15**
Date of receipt of test item:	**2006-09-15**
Date of start test:	**2006-09-21**
Date of end test	**2006-09-30**

Persons(s) who have been present during the test:

1.5 Information about test item

1.5.1 Details of manufacturer

Name:	**Wavecom SA**
Street:	**3 esplanade du Foncet**
Town:	**92442 Issy-les-Moulineaux**
Country:	**France**

EUT: Type, S/N etc. and short descriptions used in this test report

	Radio equipment	Type	Serial number	Hardware status	Software status
EUT A	**WIRELESS CPU**	**Q24 Plus Wireless CPU**	**726010000499304 04**	**304**	**--**
Note: EUT short description is used to simplify the identification of the EUT in this test report.					

EUT A

Environment classification:	Residential, commercial and light industry environment		
Equipment classification :	Equipment for fixed use (according to EN 301 489-1, clause 5.5)		
Used Frequency :	GSM-DCS : ARFCN 60 and 700		
Operating frequency band :	EGSM/GPRS – Wireless CPU (900/1800/850/1900 MHz)		
Supply voltage :	DC 3,8 V,		
Ports : (maximum cable lengths declared by manufacturer)	Description	Direction	Length
	DC power port:	in / output	< 3m
	Serial port	in-out	< 3m
	--	--	--
Does EUT contain devices susceptible to magnetic fields, e.g. Hall elements, electrodynamic microphones, etc.?			no
Is mounting position / usual operating position defined?			no

1.5.2 Photo documentation of test item

Photo 1: EUT A

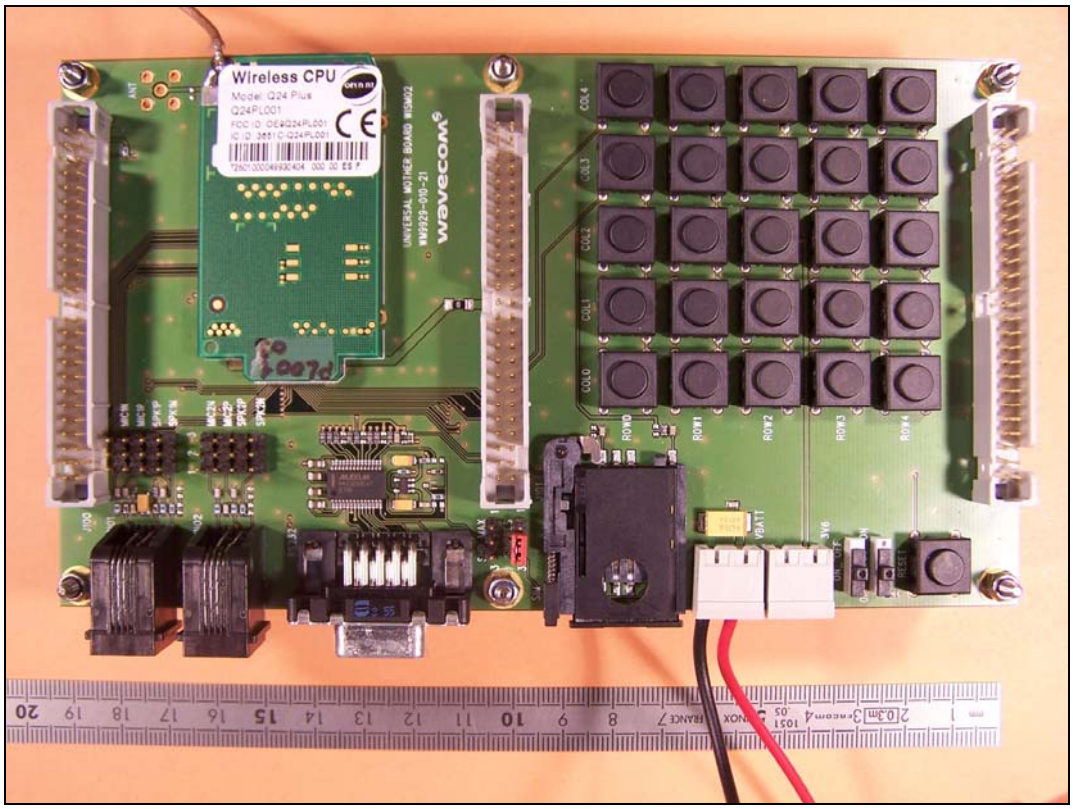


Photo 2: EUT A

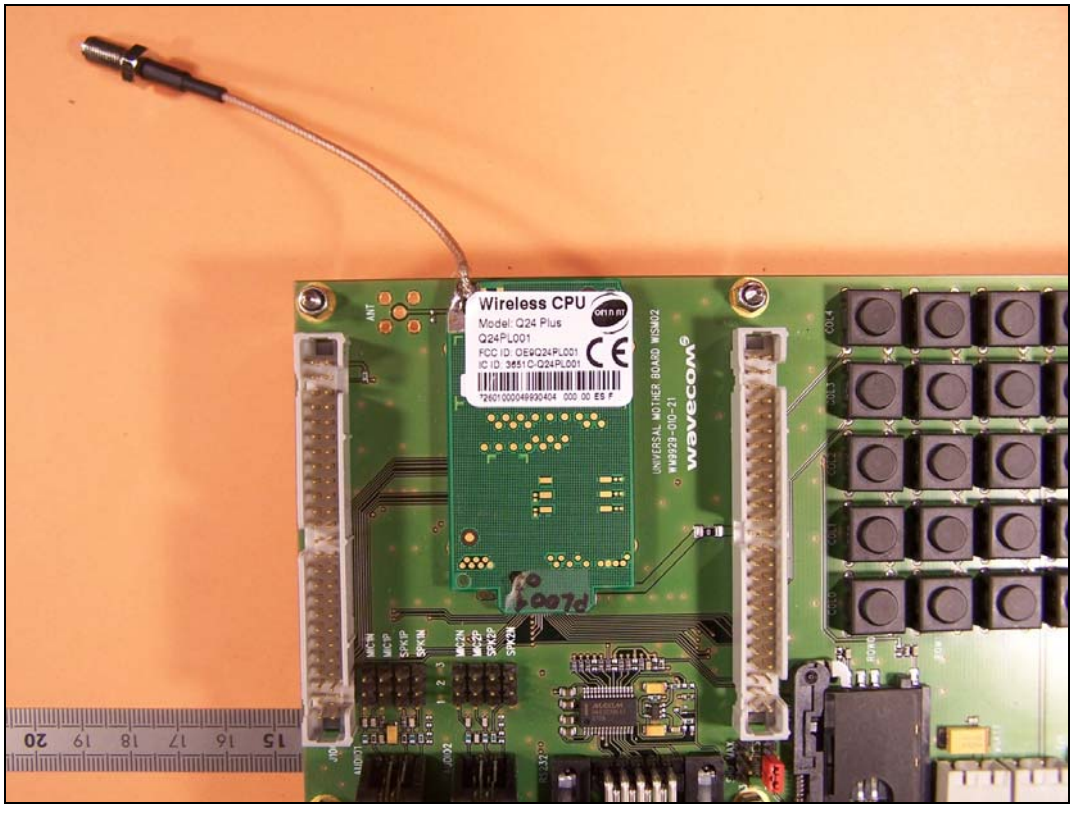
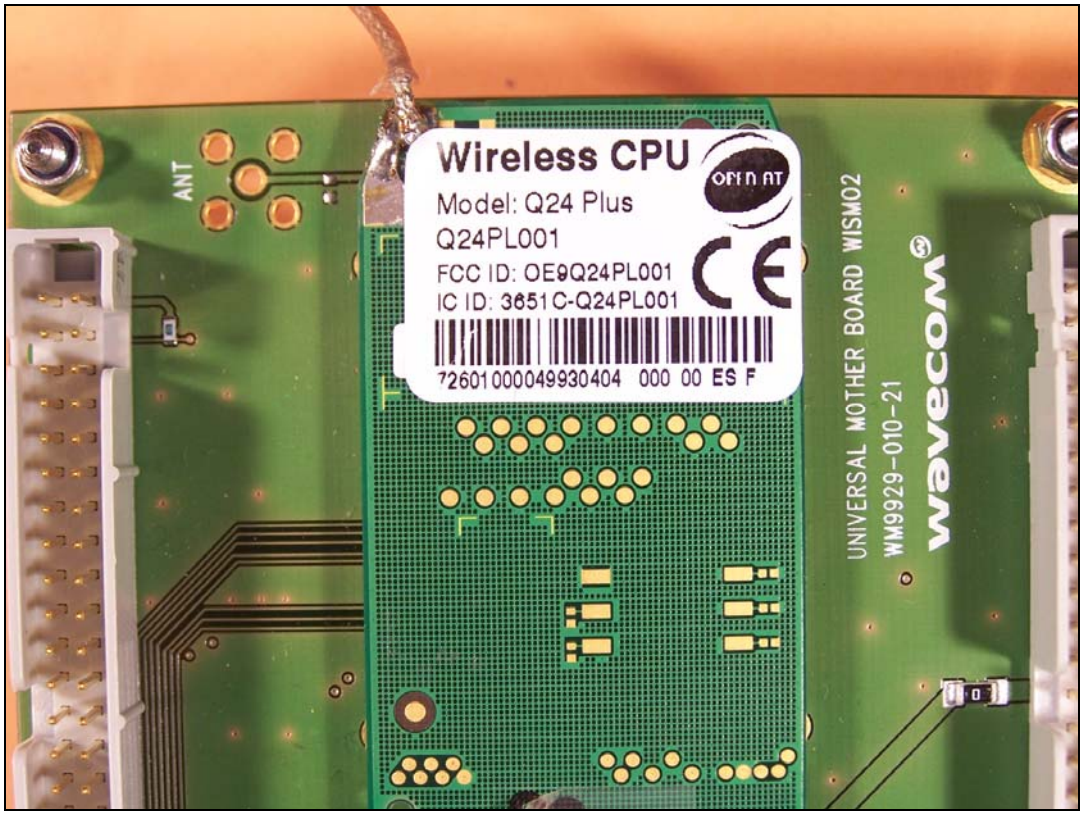


Photo 3: EUT A


Wireless CPU
Model: Q24 Plus
Q24PL001
FCC ID: OE9Q24PL001
IC ID: 3651C-Q24PL001
726010000499304040 00 00 ES F
ANT
UNIVERSAL MOTHER BOARD WISMO2
WM9929-010-21
wavecom

1.5.3 Auxiliary equipment (AE): Type, S/N etc. and short descriptions

	Auxiliary Equipment	Type	Serial number	Hardware status	Software status
AE 1	**Wavecom Development kit**	UNIVERAL MOTHER BOARD WISMO2	WM9929-010-21	--	--
AE 2	**Signaling Unit**	CMD 65 or CMU	--	--	--
NOTE: AE short description is used to simplify the identification of the auxiliary equipment in this test report.					

1.5.4 EUT set-ups

	Combination of EUT and AE	Remarks
SET 1	EUT A + AE1 + AE2	--
NOTE 1: The set-up short description is used to simplify the identification of the set-up in this test report. NOTE 2: Each set-up was used in combination with AE2 and for audio tests also with AE1.		

1.5.5 EUT operating modes

	Description of operating modes	Additional information
OP 1	Idle mode 900 MHz	Mobile was switched on an a location update into test network was performed
OP 2	Idle mode 1800 MHz	Mobile was switched on an a location update into test network was performed
OP 3	Traffic mode 900 MHz	A communication link was established in the mentioned band 1→ **RXQ** was observed during test according to the standard 2→ Continuing working in correct operating mode after test
OP 4	Traffic mode 180 MHz	A communication link was established in the mentioned band 1→ **RXQ** was observed during test according to the standard 2→ Continuing working in correct operating mode after test

1.1 Test standard/s:

ETSI EN 301 489-1 V1.6.1	**2005-09**	**Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements**
ETSI EN 301 489-7 V1.3.1	**2005-11**	**Part 7: Specific conditions for mobile and portable radio and ancillary equipment of digital cellular radio telecommunications systems (GSM and DCS)**

2 Technical tests

2.1 Summary of test results

☒ **No deviations from the technical specifications were ascertained**

☐ There were deviations from the technical specifications ascertained

2.1.1.1

EMI Phenomenon	Frequency range	Emission level (Limit) Class B	Basic standard	EUT	Result
		Quasi-peak			
Radiated Interference Field Strength	30 – 230 MHz 230 - 1000 MHz	30 dBµV/m 37 dBµV/m	EN 55022: 1998 + A1: 2000 + A2: 2003	NA1	--
EMI Phenomenon	**Frequency range**	**Emission level (Limit) Class A**	**Basic standard**	**EUT**	**Result**
		Quasi-peak			
Radiated Interference Field Strength	30 – 230 MHz 230 - 1000 MHz	40 dBµV/m 47 dBµV/m	EN 55022: 1998 + A1: 2000 + A2: 2003	NA1	--

2.1.1.2 DC power input/output ports

EMI Phenomenon	Frequency range	Emission level (Limit) Class B		Basic standard	EUT	Result
		Quasi-peak	Average			
Conducted interference voltage	0,15 – 0,5 MHz 0,5 – 5 MHz 5 – 30 MHz	66 – 56 dBµV 56 dBµV 60 dBµV	56 – 46 dBµV 46 dBµV 50 dBµV	EN 55022: 1998 + A1: 2000 + A2: 2003	NA4	--

2.1.2 Immunity

2.1.2.1 Enclosure

EMS Phenomenon	Frequency range	Immunity level	Basic standard	EUT	Result
Electrostatic discharge (ESD)		Air discharge 8 kV Contact discharge 4 kV	EN 61000-4-2	SET 2	complies
RF-electro-magnetic field	80 – 1000MHz 1400 – 2000MHz	3 V/m; 1 kHz; 80% AM	EN 61000-4-3	SET 1	complies

2.1.2.2 AC mains power input/output ports

EMS Phenomenon	Frequency range	Immunity level	Basic standard	EUT	Result
Fast transients, common mode BURST		0.5 kV	EN 61000-4-4	NA2	--
Surge		line – ground: 1 kV; 1,2/50µs line – line: 0,5 kV; 1,2/50µs	EN 61000-4-5	NA2	--
Radio-frequency common mode	0,15 – 80 MHz	3 V; 1 kHz; 80% AM	EN 61000-4-6	NA2	--
Voltage dips, interruptions, and fluctuations		30%; 10 ms 60%; 100 ms >95%; 5000 ms	EN 61000-4-11	NA2	--

2.1.2.3 Signal/control port /DC power input

EMS Phenomenon	Frequency range	Immunity level	Basic standard	EUT	Result
Fast transients, common mode BURST		0,5 kV	EN 61000-4-4	SET 1	complies
Radio-frequency common mode	0,15 – 80 MHz	3 V; 1 kHz; 80% AM	EN 61000-4-6	SET 1	complies

Remarks:

NA1	Not tested because not required by used standard
NA2	Test not applicable because port does not exists
NA3	Test not applicable because port only for services
NA4	Test not applicable because port lengths not longer than 3m
NA5	Not tested because not required by customer
NA6	For equipment with a rated power of ≤75 W, other then lighting equipment, no limits are specified in this edition of the standard.
NA7	No test shall be made on equipment which is unlikely to produce significant voltage fluctuations or flicker.

2.2 Test environment

Temperature : 21°C – 23°C

Relative humidity content : 55 %

Air pressure : 1020 hPa

Details of mains power : AC 230 V +/- 5%

2.3 Measurement and test set-up

Note: The test configuration is in accordance with the requirements given in the standards in point 1.6

2.4 Test equipment utilised

To simplify the identification of the test equipment used on each page of the test report, each item of test equipment and ancillaries such as probes are identified throughout the report by numbers in brackets
according to the table below.

No.	Instrument/Ancillary	Manufacturer	Type	Serial-No.	Internal identification
	Radiated immunity in chamber B				
1.	Fully anechoic chamber B	Frankonia			
2.	Controll computer	Tecline	DT6/400H1300P II	FW09910190	300002591
3.	Software	R&S	EMS-K1		300002591a
4.	Position control unit	Deisel	HD 100	100/322/93	300002187
5.	Antenna positioner (Horn)	Deisel	MA 240	240/308 Bj.93	300002187a
6.	Antenna positioner (Log. Per.)	Deisel	MA 240	240/309 Bj.93	300002187b
7.	log.-per. field generating antenna (80 – 1300 MHz)	R&S	HL 023A1	323704/016	
8.	Horn antenna 1-4.2 GHz	Amplifire research	AT4002 ar	19739	300000633
9.	Isotropic Field Probe	HI-6005	Holaday	107894	300003042
10.	Directional coupler unit	R&S	DCU	316790/005	300002242
11.	Amplifier 0.01-220 MHz	Amplifire research	250L	13163	300002180
12.	Amplifier 25MHz-1GHz	Ampl. Res.	100W1000M7	12930	300002183
13.	Amplifier 1- 2.5 GHz	Bonn.	BLMA 0825-60		300001631
14.	Data Processing / Interface Unit	EMCO	7110	9303-1225	30002194
15.	Signal generator 0.1-2000 MHz	R&S	SMH	864219/033	300001410
16.	Signal generator0.1-4320 MHz	R&S	SMHU	860292/019	300002232
17.	Relay matrix	R&S	PSN	892176/0002	300001149
18.	Power meter	R&S	URV 5	833658/005	300002238
19.	power sensor, insertion unit A	R&S	URV5-Z2	832874/021	300002239
20.	power sensor, insertion unit B	R&S	URV5-Z2	832874/022	300002240
21.	power sensor, insertion unit A	R&S	URV5-Z2		300002234
22.	power sensor, insertion unit B	R&S	URV5-Z2		300002235
23.	Bus extender	National Instruments	GPIB-110	10688	300002205
	Observation equipment, audio rack 1 in chamber B				
24.	Connection field	R&S	1039.8944.91	316790/001	300002244
25.	Relay matrix	Electronics Corporation	4874B	ohne	300002189
26.	Bus Extender	National Instruments	GPIB-110	10700	300002206
27.	Control computer				300002694
28.	Software	ICT			
29.	band pass	B&K	1618	1125088	
30.	Measurement amplifier	B&K	2636	1537486	
31.	Optical fibre microphone system	Sennheiser		keine	
32.	Artificial mouth with AF transformer	B&K	4227	1536875	300002314
33.	sound calibrator	CR511F	CYRRUS	34688	
34.	empty				
35.	empty				
	Other observation equipment in chamber B and room 006				
36.	HF- filter				300001624
37.	Radio communication analyser	R&S	CMTA		300001053
38.	RF Receiver	R&S	ESVP		300002224
39.	Voltmeter	R&S	UDS5		300000864
40.	Relay matrix	R&S	PSN		300002221
41.	Power supply	HP	6032A		300001511
42.	Pneumatic controller	Heiden	2004-300		300001631
43.	Control computer for pneumatic	R&S			300001419
44.	PDH/SDH Test Set	HP	37717A		300002072
45.	Selective level meter	HP	3586A		300000395
46.	empty				
47.	empty				

No.	Instrument/Ancillary	Manufacturer	Type	Serial-No.	Internal identification
	ESD in room 006				
48.	ESD- Generator	Schlöder	SESD 30000	402125	300003223
49.	Pistol	Schlöder	SESD 30000	402125	300003223a
50.	Module set	Schlöder	SESD 30000	402125	300003223b
	Conducted immunity in room 006				
51.	Signal generator	R&S	SMGU	900	300001515
52.	Amplifier 10 KHz – 250 MHz	Amplifier Research	100A250	18468	300000947
53.	Electromagnetic Injection clamp	Lüthi	EM 101	35197	300001708
54.	Filter clamp	Lüthi	FTC101	4229	300000942
55.	6 dB RF attenuator	BNOS Electronics	AT 50-6-250	521013	300001708a
56.	CDN M2				300001708b
57.	CDN M3				300001708c
58.	CDN T2				300001708d
59.	Signal generator	R&S	SMG	861064/025	300000221a
60.	Ultra Compact Simulator	EM-TEST	UCS 500 M4	0804-06	300003258
61.	Motor Variac	EM-TEST	MV2616-V	0397-12	300003259
62.	Coupling Decoupling Network	Schaffner	CDN 8014	142	300002250
	Observation equipment, audio rack 2 in Room 006				
63.	Control computer				300002694
64.	Software	ICT			
65.	band pass	B&K	1618	1125088	
66.	Measurement amplifier	B&K	2636	1537486	
67.	Optical fibre microphone system	Sennheiser		keine	
68.	Artificial mouth with AF transformer	B&K	4227	1536875	300002314
69.	sound calibrator	CR511F	CYRRUS	34688	
	Conducted emission in room 006				
70.	RF Meas receiver 9 kHz – 30 MHz	R&S	ESH3	1138,5	300002490
71.	RF Meas receiver 9 kHz – 30 MHz	R&S	ESH3	890174/002	300000296
72.	Spectrum Monitor	R&S	EZM	883086/026	300001469
73.	Relay Matrix	R&S	PSU	879930/008	300001148
74.	Relay Matrix	R&S	PSU	828628/007	300002475
75.	Software	R&S	ESK-1		
76.	RF Meas receiver	R&S	ESVP	881487/021	300002491
77.	Absorbing clamp	Schwarzbeck	MDS21		300000166
78.	DC power supply	HP	6032A	2743A-02600	300001498
79.	V-Network AC	R&S	ESH3-Z5	861189/014	300001458
80.	V-Network DC	R&S	ESH3-Z6	893689/012	300001504
81.	V-Network DC	R&S	ESH3-Z6	861406/005	300001518
82.	Loop antenna	R&S	HFH2-Z2	872096/62	300001823
83.	4-wire T-network	R&S	EZ-10	816121502	300000611
84.	empty				
85.	empty				
	Car Pulse equipment in room 006				
86.	Burst Generator	EM Test	EFT 200	000 009	300002279
87.	Mikro Pulse Generator	EM Test	MPG 200	000 005	300002278
88.	Load Dump Generator	EM Test	LD 200	000 007	300002074
89.	Voltage Drop Generator	EM Test	VDS 200	000 009	300002280
90.	Coupling network	EM Test	ACC	0495-01	300002281
91.	Termination resistor for ACC	EM Test	Kw 50 Ohm	--	
92.	2 Kanal Digital Oszilioskop	Tektronix	TDS 520	H700392	300001436
93.	Car Switch	Hilo	CAR-SWITCH	20043048	300003222
	Radiated emission in chamber C				
94.	Absorber Schirmkabine	MWB	---	87400/002	
95.	Spectrum Analyzer	Hewlett-Packard	85660 B	2747A05306	300001000
96.	Analyzer Display	Hewlett-Packard	85662 A	2816A16541	300002297
97.	Quasi Peak Adapter	Hewlett-Packard	85650 A	2811A01131	300000999
98.	RF-Preselector	Hewlett-Packard	85685 A	2833A00768	
99.	Biconical Antenne	Emco	3104	3758	
100.	Log. Per. Antenne	Emco	3146	2130	
101.	Double Ridge Horn	Emco	3115	3088	
102.	Controler	EMCO	1061	100/322/93	
103.	Relais Matrix	Hewlett-Packard	3488A	829 065/003	
104.	Power Supply	Hewlett Packard	6032A	2818A03450	300001040

2.5 Measurement uncertainty

The uncertainty of the measurement equipment fulfils CISPR 16 and the related European and national standards.

The semi anechoic chamber fulfils the requirements of CISPR 16-1 (ANSI C63.4) for a test volume of 3m ∅.

Measurement uncertainty calculations are on file and available from the test laboratory upon request.

3 Test performed

3.1 Immunity tests

3.1.1 Radio-frequency electromagnetic field (80 MHz to 2.000 MHz)

3.1.1.1 **Instrumentation for test (see equipment list)**

Chamber B	**24**	**25**	**26**	**27**	**28**	**29+**	**30**	**31**	**32**	**33**	

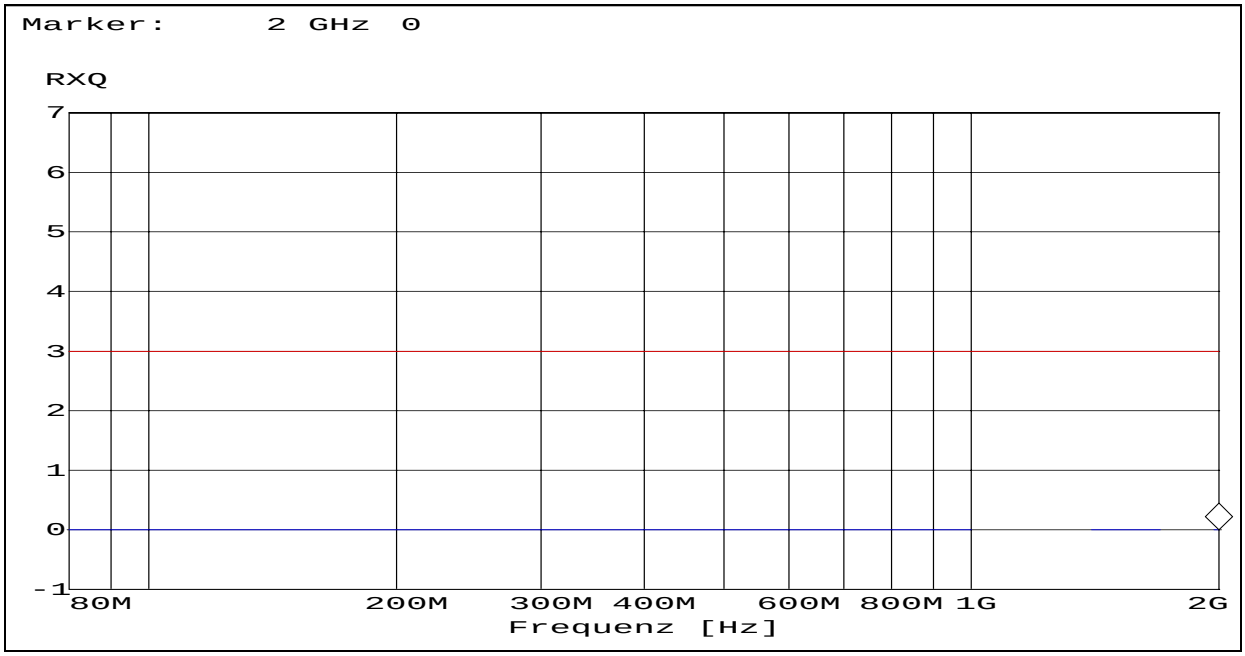
3.1.1.2 **Test plan**

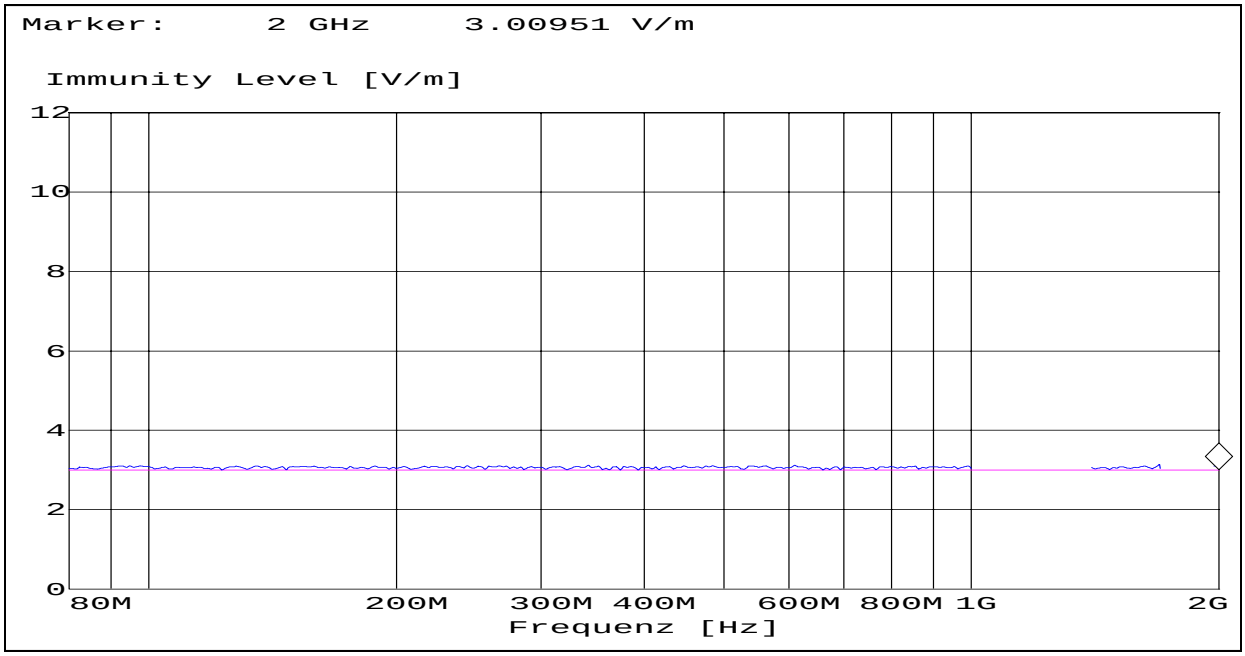
EUT set-up	**SET 1**				
Operating mode	**OP 1**				
Test condition dwell time:	Field strength (unmod., rms)	Start frequency	Stop frequency	Frequency step	Modulation
3 s	3 V/m	80 MHz 1400 MHz	1000 MHz 2000 MHz	log 1%	1 kHz; AM 80%

View to EUT surface	Antenna	Reaction of EUT	Result
front side	vertical	no reaction recognized	complies
	horizontal	no reaction recognized	complies
left side	vertical	no reaction recognized	complies
	horizontal	no reaction recognized	complies
rear side	vertical	no reaction recognized	complies
	horizontal	no reaction recognized	complies
right side	vertical	no reaction recognized	complies
	horizontal	no reaction recognized	complies
top side	vertical	not tested	- / -
	horizontal	not tested	- / -
bottom side	vertical	not tested	- / -
	horizontal	not tested	- / -

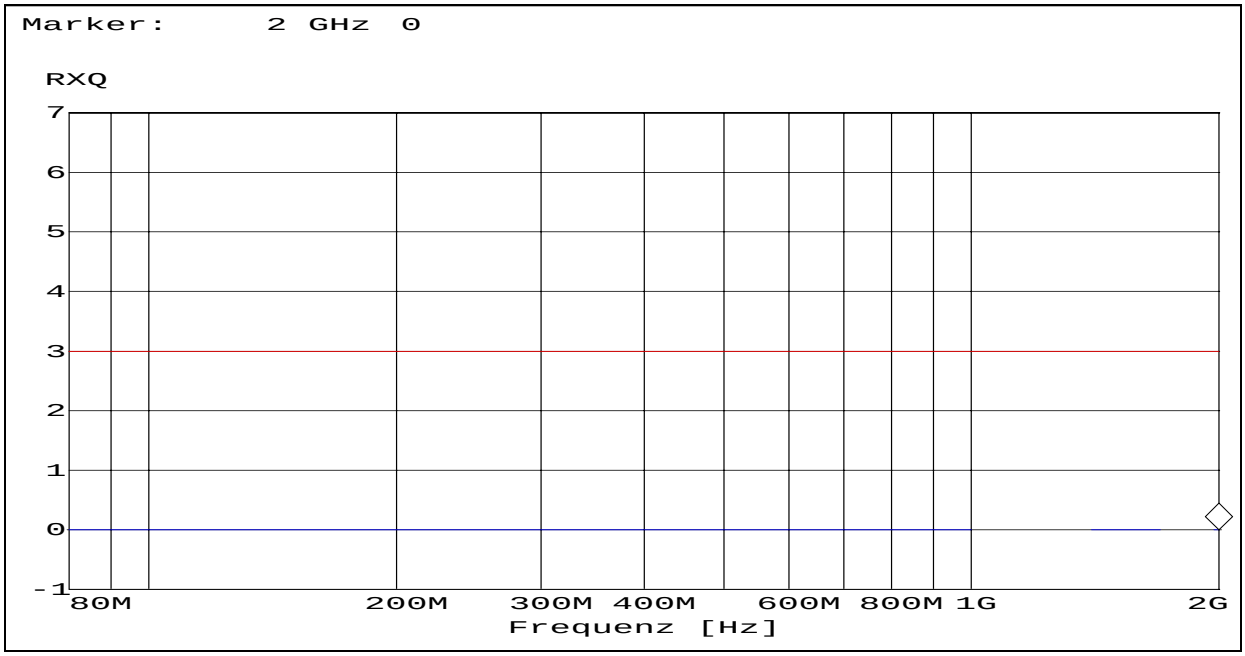
Remarks :	no deviations

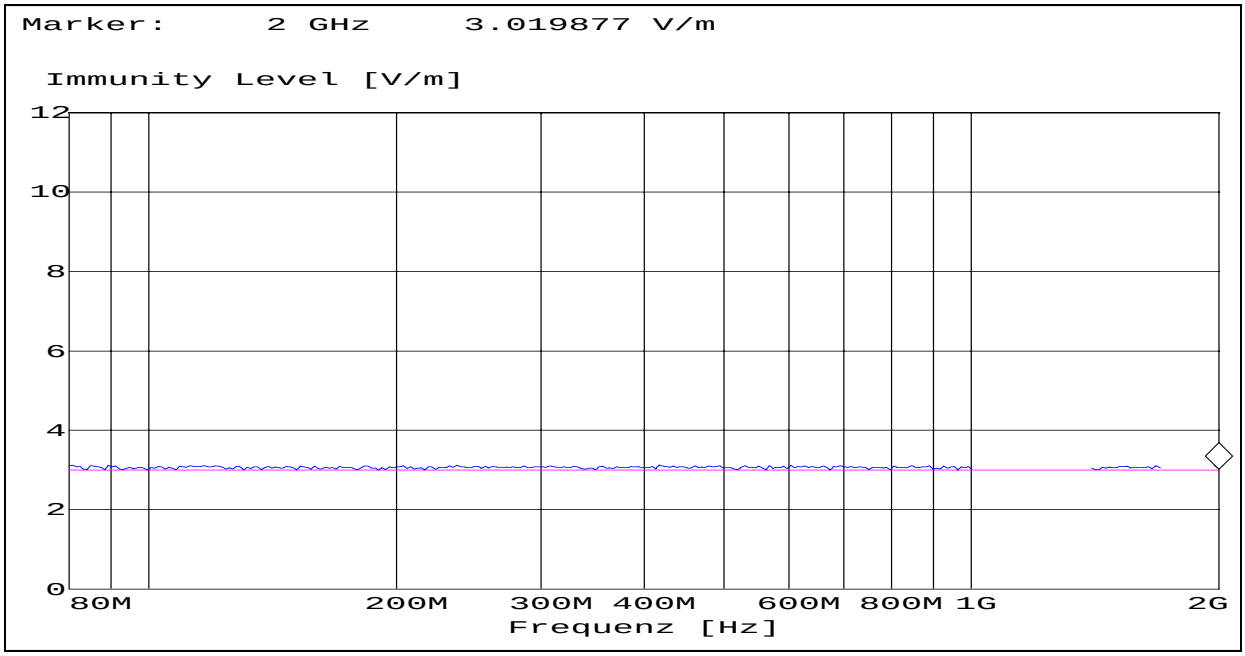
EUT: Q24 Plus Wireless CPU
Manufacturer: Wavecom
Operating Condition: GSM 1800 MHz, ARFCN: 62 PLC: 5, Vol.: 3/5
Test Site: CETECOM ICT Services GmbH, Hall B
Operator: daub
Turntable Position: 180 deg back side
Antenna Position: horizontal
Date of Measurement: 25.09.2006 16:12:31



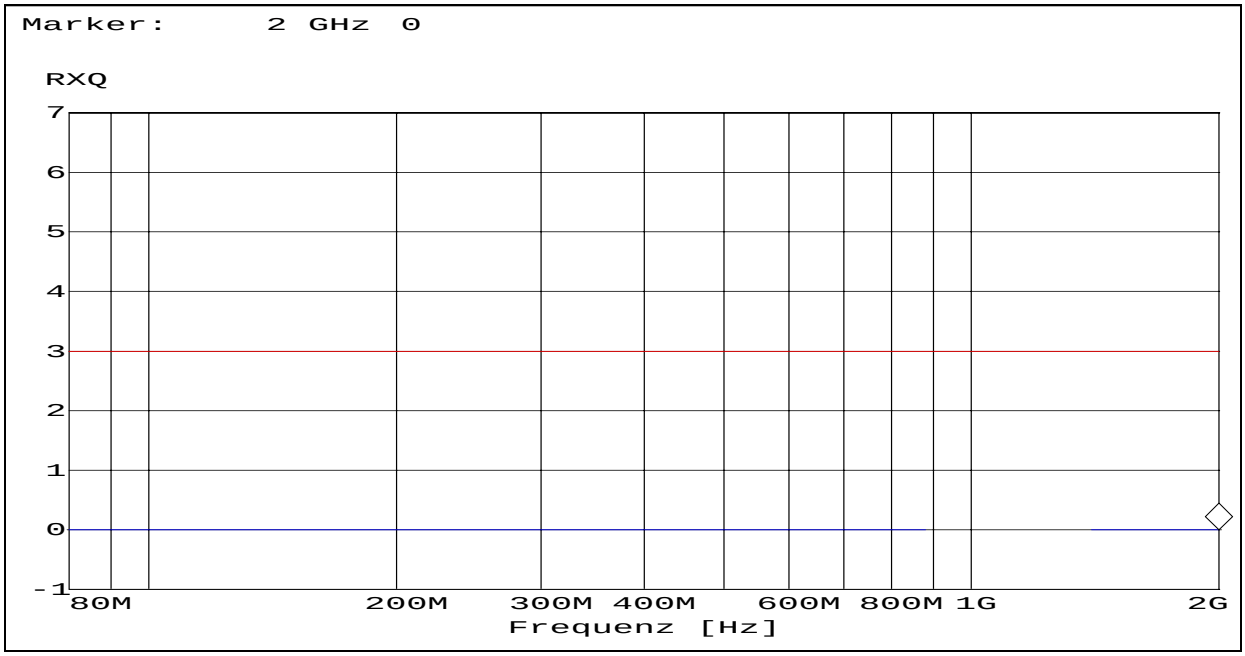


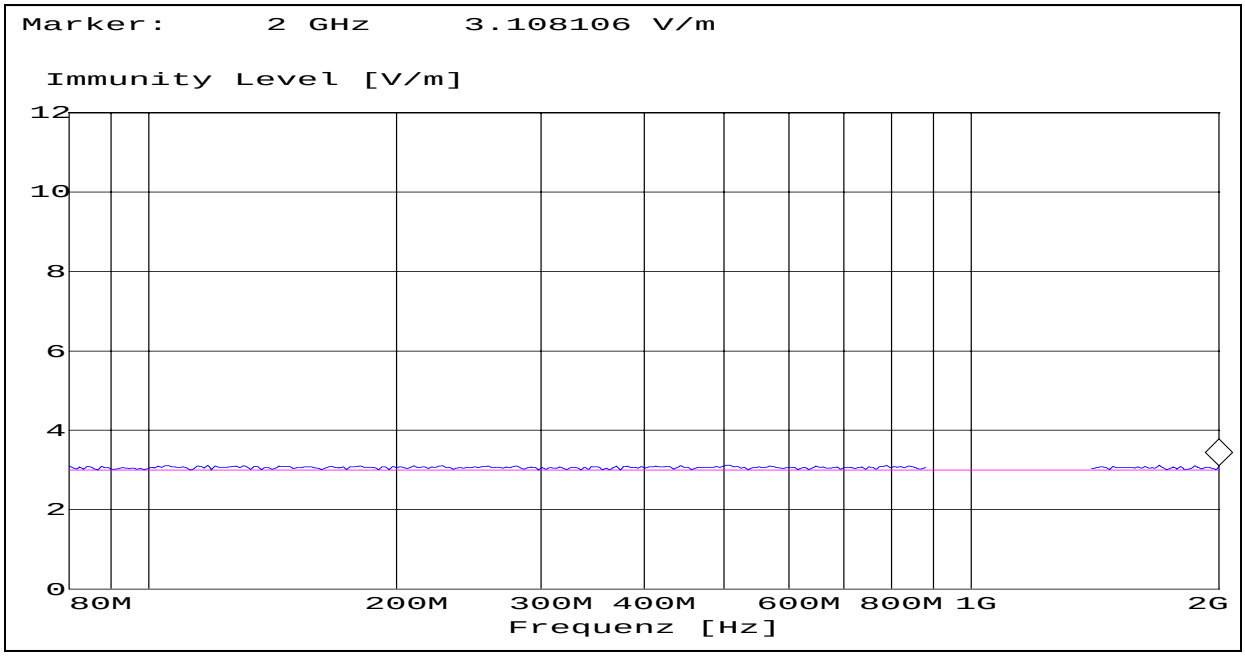
EUT: Q24 Plus Wireless CPU
Manufacturer: Wavecom
Operating Condition: GSM 1800 MHz, ARFCN: 62 PLC: 5, Vol.: 3/5
Test Site: CETECOM ICT Services GmbH, Hall B
Operator: daub
Turntable Position: 180 deg back side
Antenna Position: vertical
Date of Measurement: 25.09.2006 17:23:25



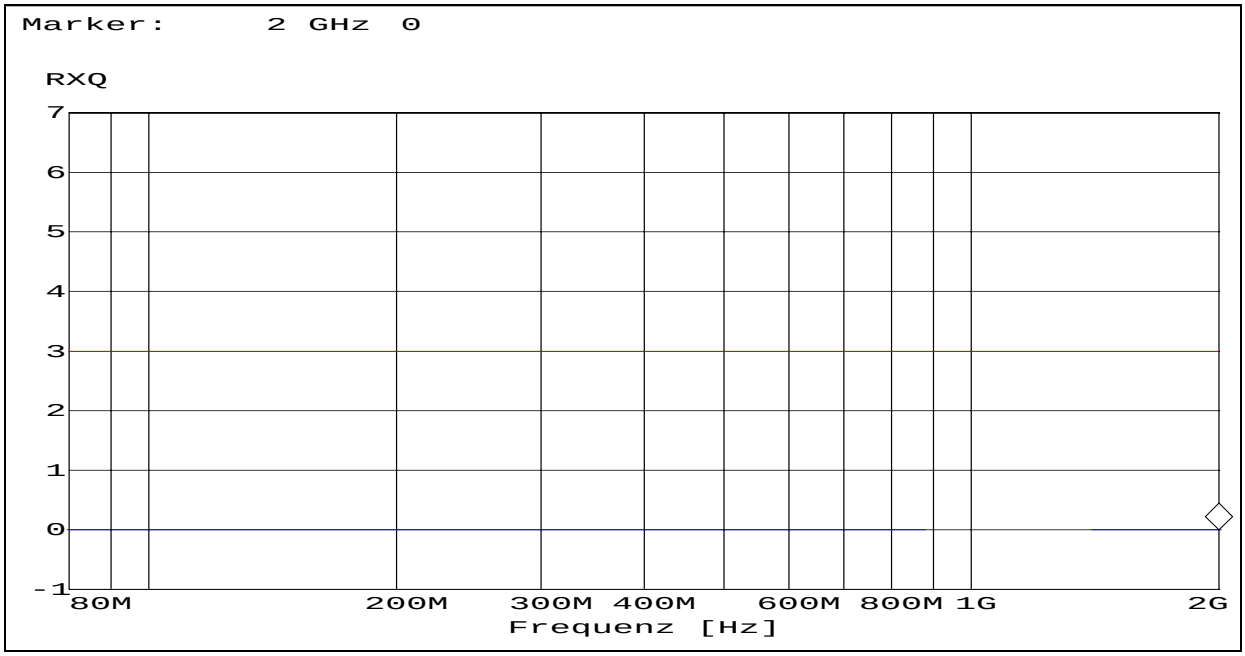


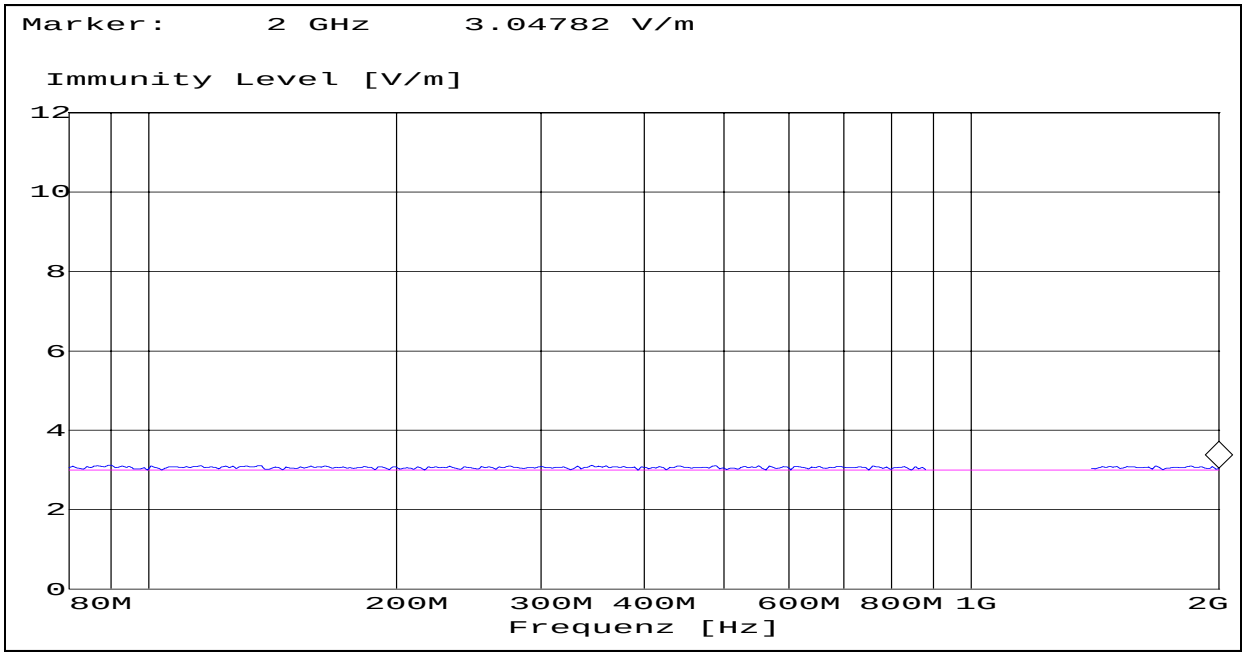
EUT: Q24 Plus Wireless CPU
Manufacturer: Wavecom
Operating Condition: GSM 900 MHz, ARFCN: 62 PLC: 5, Vol.: 3/5
Test Site: CETECOM ICT Services GmbH, Hall B
Operator: daub
Turntable Position: 00 deg front side
Antenna Position: horizontal
Date of Measurement: 25.09.2006 14:59:24



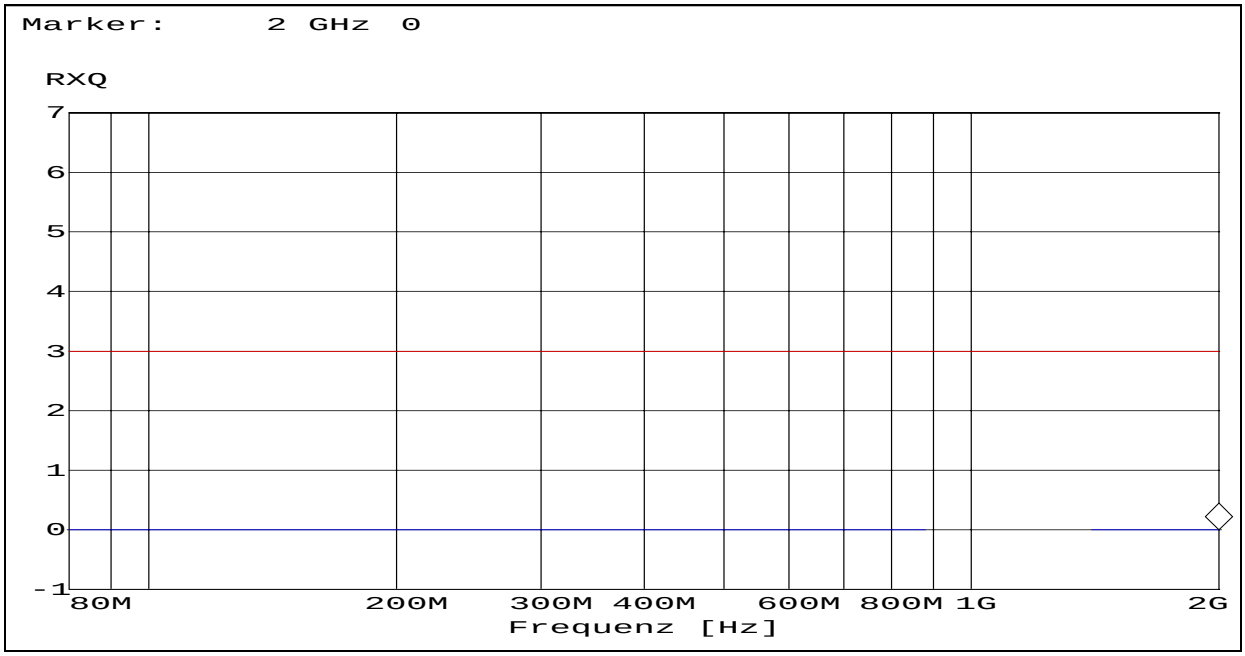


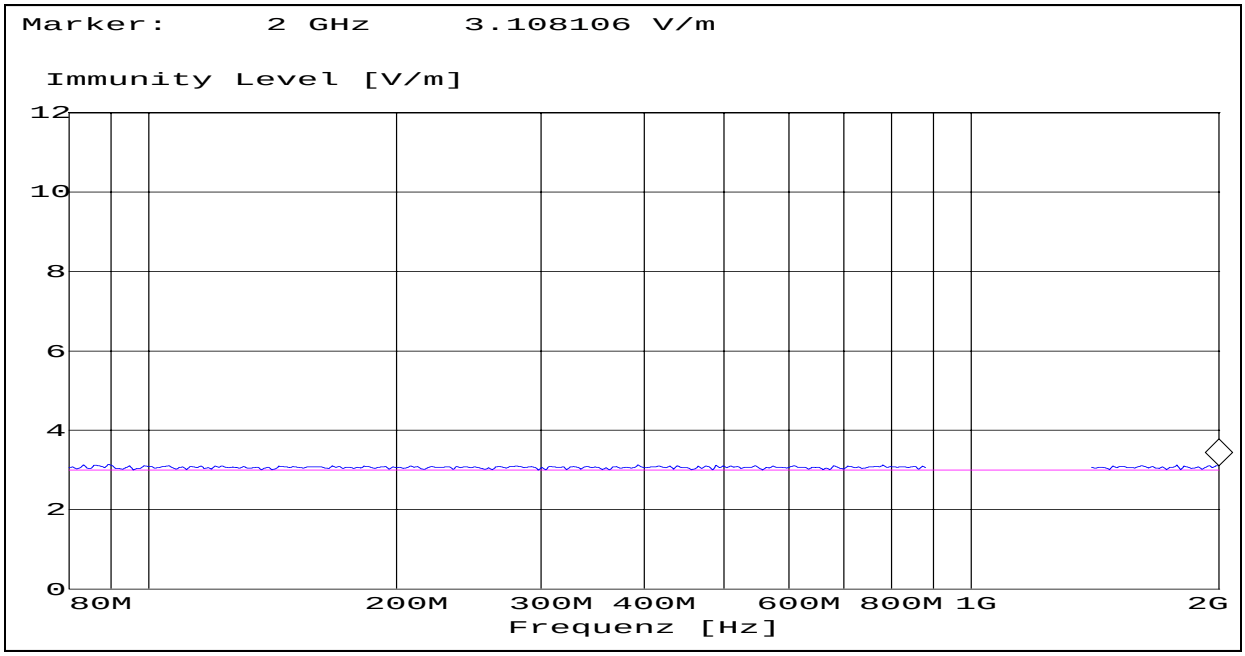
EUT: Q24 Plus Wireless CPU
Manufacturer: Wavecom
Operating Condition: GSM 900 MHz, ARFCN: 62 PLC: 5, Vol.: 3/5
Test Site: CETECOM ICT Services GmbH, Hall B
Operator: daub
Turntable Position: 00 deg front side
Antenna Position: vertical
Date of Measurement: 25.09.2006 14:23:17



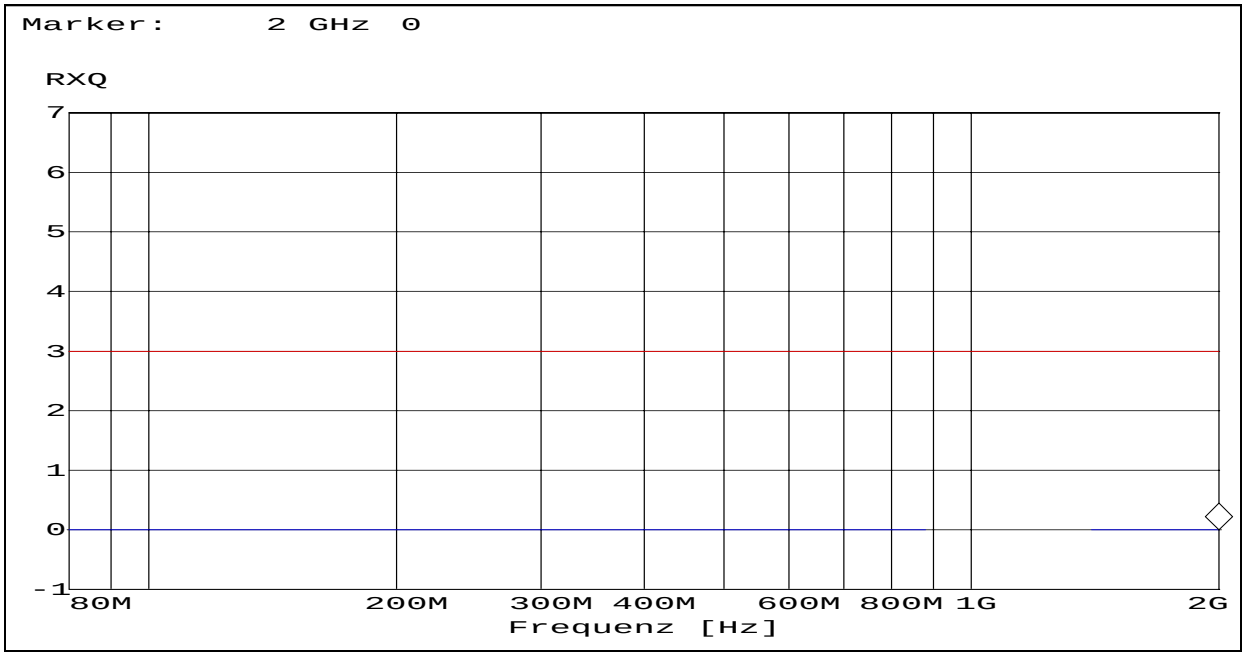


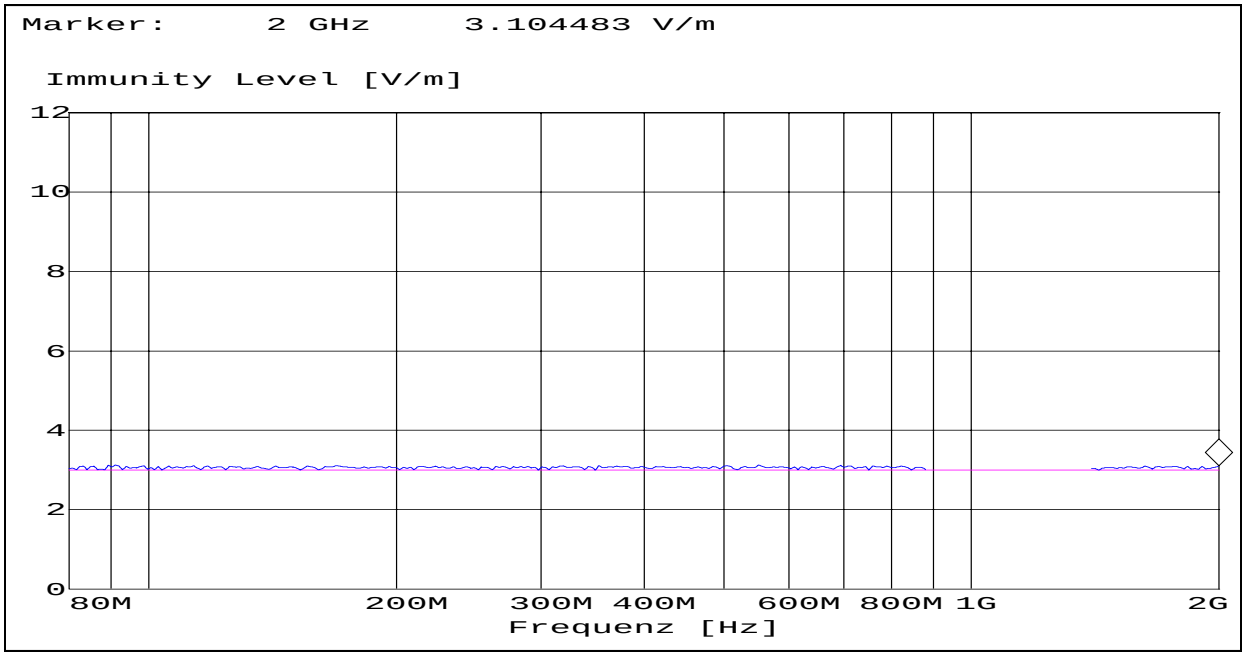
EUT: Q24 Plus Wireless CPU
Manufacturer: Wavecom
Operating Condition: GSM 900 MHz, ARFCN: 62 PLC: 5, Vol.: 3/5
Test Site: CETECOM ICT Services GmbH, Hall B
Operator: daub
Turntable Position: 90 deg left side
Antenna Position: horizontal
Date of Measurement: 25.09.2006 14:48:16



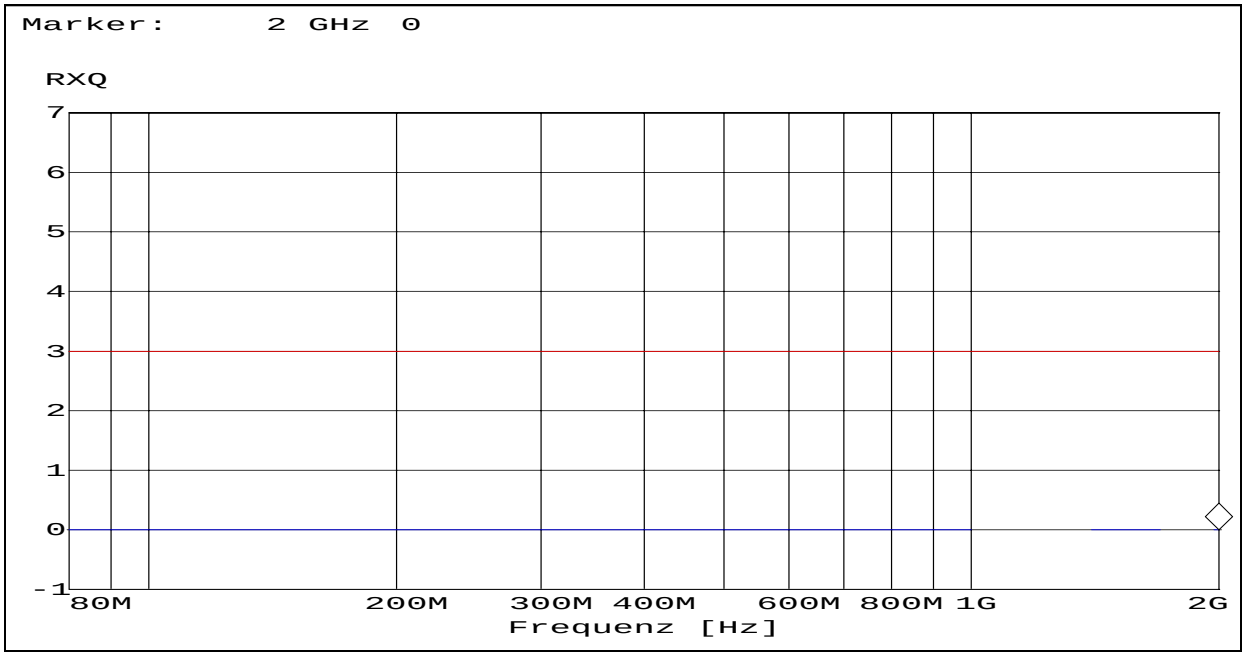


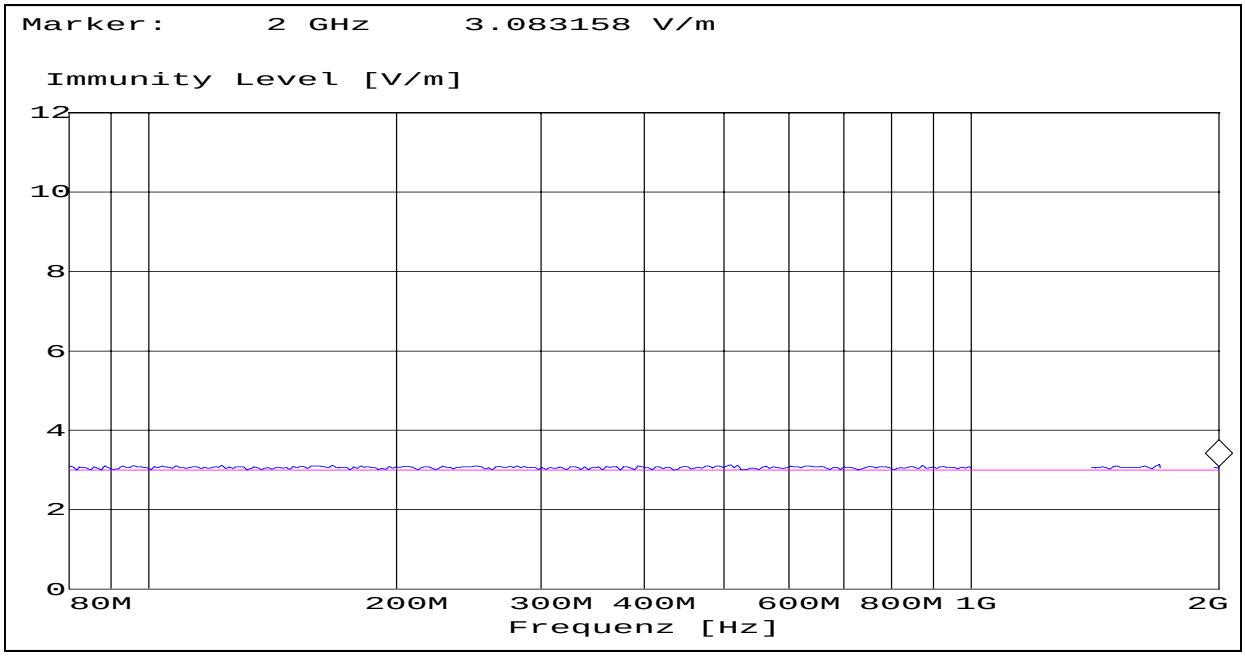
EUT: Q24 Plus Wireless CPU
Manufacturer: Wavecom
Operating Condition: GSM 900 MHz, ARFCN: 62 PLC: 5, Vol.: 3/5
Test Site: CETECOM ICT Services GmbH, Hall B
Operator: daub
Turntable Position: 90 deg left side
Antenna Position: vertical
Date of Measurement: 25.09.2006 14:36:44



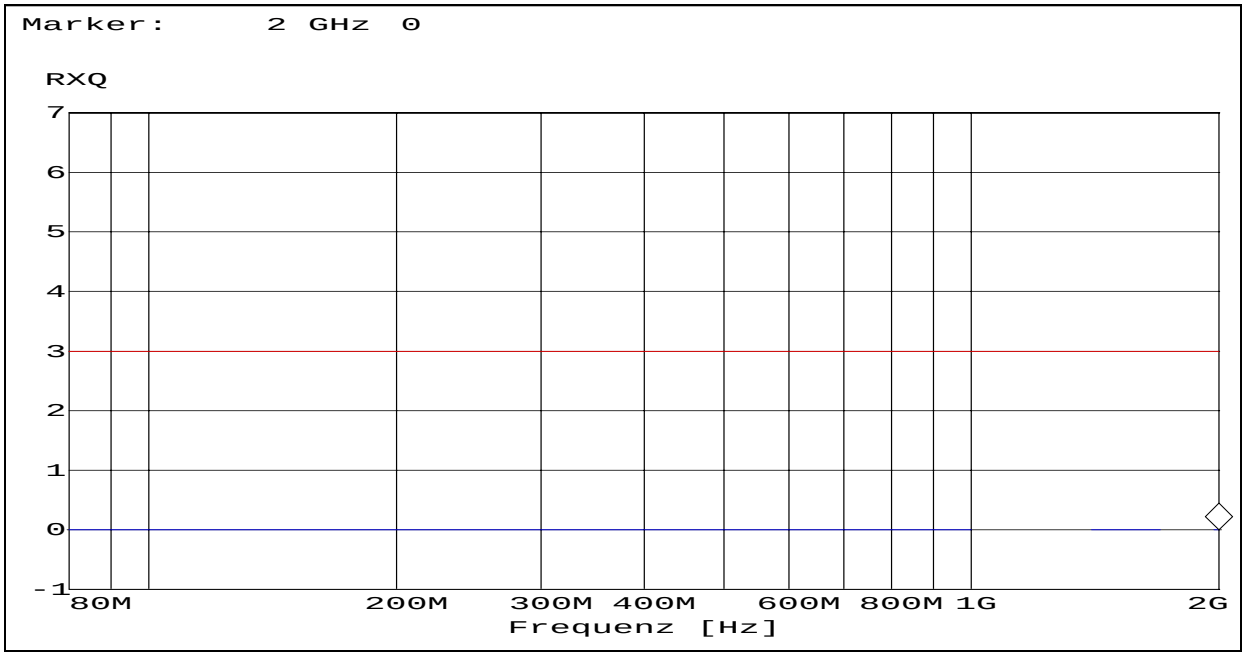


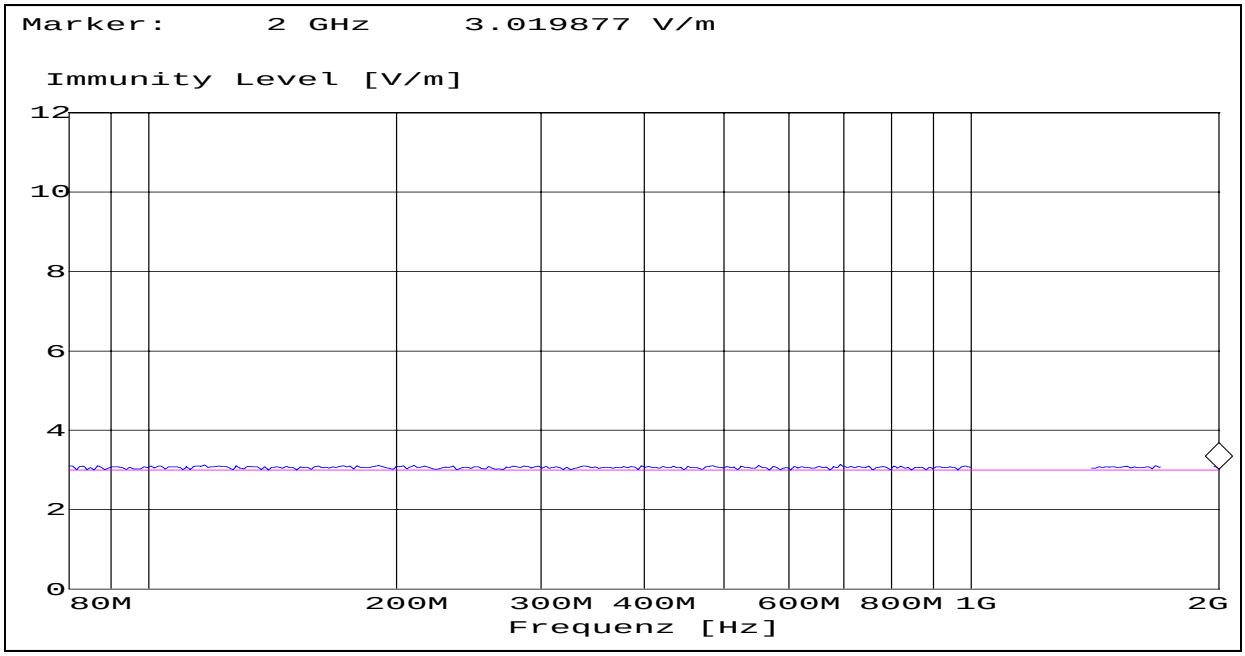
EUT: Q24 Plus Wireless CPU
Manufacturer: Wavecom
Operating Condition: GSM 1800 MHz, ARFCN: 62 PLC: 5, Vol.: 3/5
Test Site: CETECOM ICT Services GmbH, Hall B
Operator: daub
Turntable Position: 270 deg right side
Antenna Position: horizontal
Date of Measurement: 25.09.2006 16:36:41





EUT: Q24 Plus Wireless CPU
Manufacturer: Wavecom
Operating Condition: GSM 1800 MHz, ARFCN: 62 PLC: 5, Vol.: 3/5
Test Site: CETECOM ICT Services GmbH, Hall B
Operator: daub
Turntable Position: 270 deg right side
Antenna Position: vertical
Date of Measurement: 25.09.2006 17:00:22



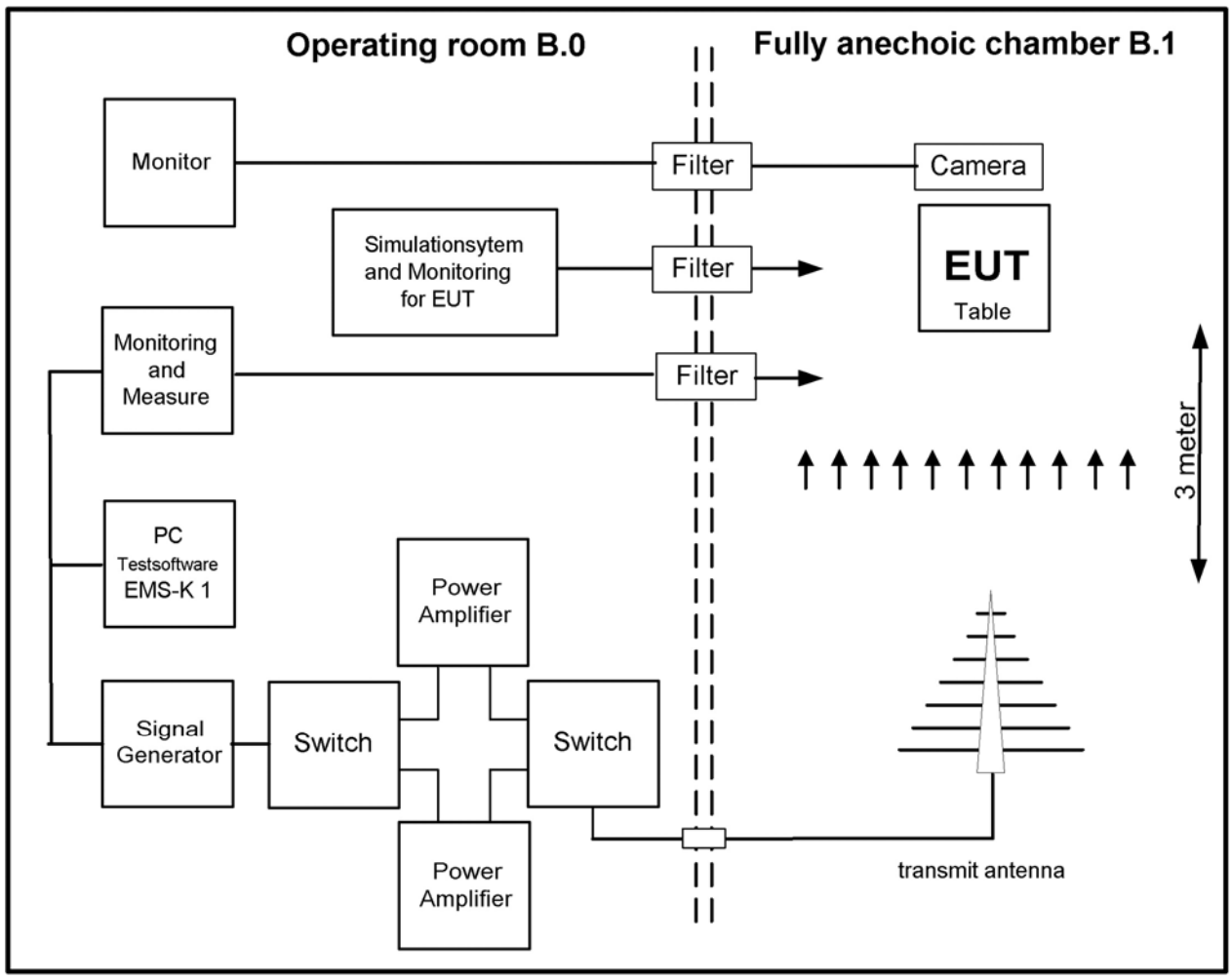


3.1.1.3 **Test condition and test set-up**

According to EMC basic standard **EN 61000-4-3**

The distance between turntable-axis and TX-antenna-tip is 3m.

3.1.1.4 **Drawing of test set-up**



3.1.1.5 **Photo documentation of test set-up**

Photo 4: Test set-up for radiated immunity

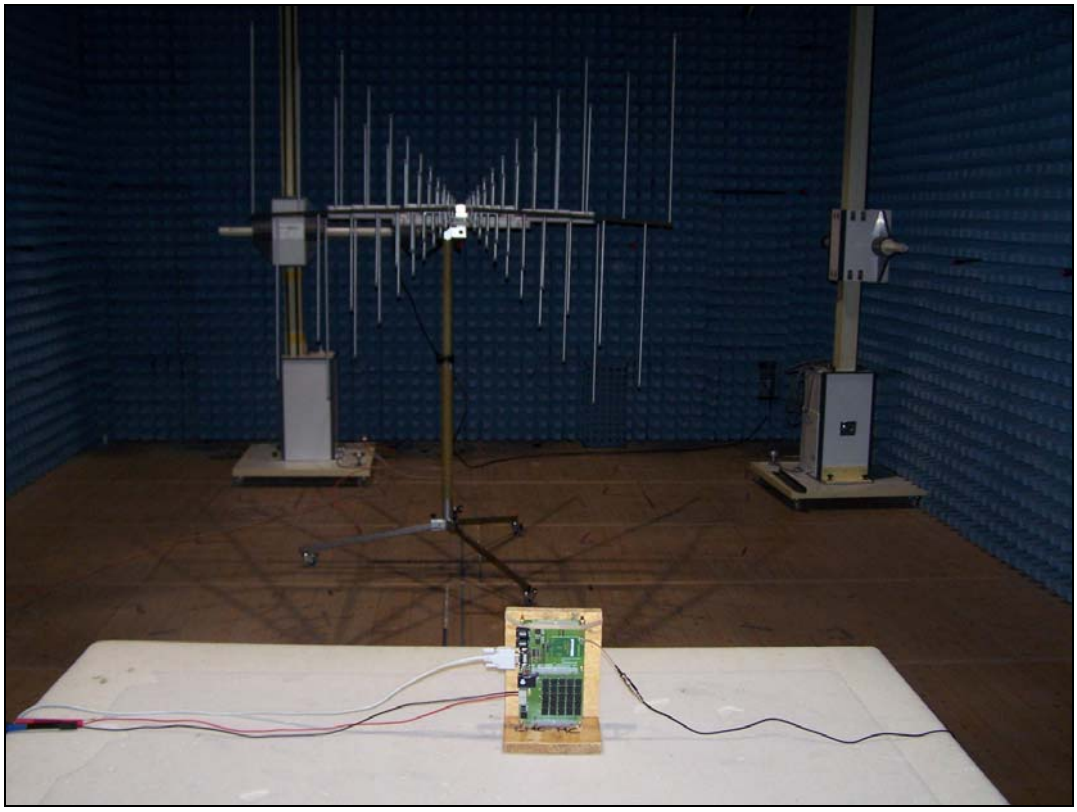
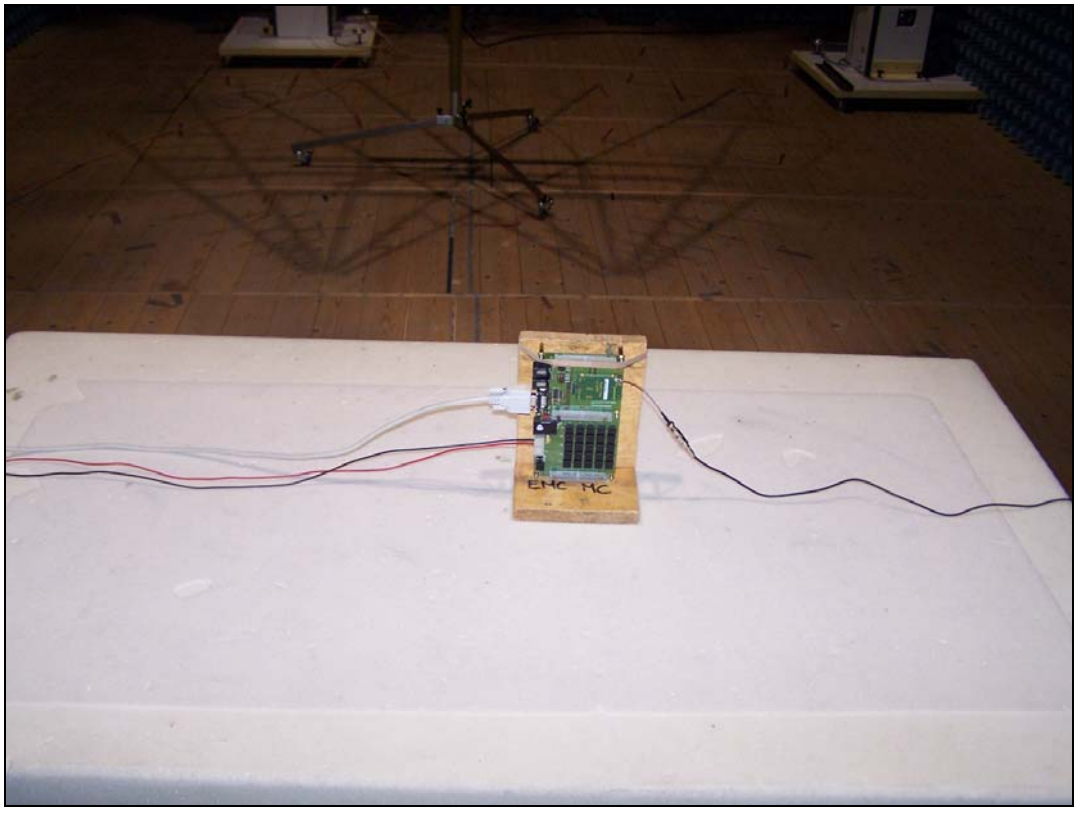


Photo 5: Test set-up for radiated immunity



3.1.2 Immunity against electrostatic discharge (ESD)

3.1.2.1 Instrumentation for test (see equipment list)

48	**59**	**50**									

3.1.2.2 Test plan

10 Single impulses at each test point and for each test voltage

EUT set-up	**SET 1**		
Operating mode	**OP 1**		
	contact discharge to conducted surfaces and to coupling planes		air discharge at insulating surfaces
	direct contact discharge	indirect contact discharge	
Test voltage	reaction of EUT	reaction of EUT	reaction of EUT
+2 kV -2 kV	not applicable not applicable	no reaction recognized no reaction recognized	not applicable not applicable
+4 kV -4 kV	not applicable not applicable	no reaction recognized no reaction recognized	not applicable not applicable
+8 kV -8 kV	- -	- -	not applicable not applicable
+12 kV -12 kV	- -	- -	- -
+15 kV -15 kV	- -	- -	- -

Remark :	No deviations

Test result:

☒ normal performance within the specification limits

☐ temporary degradation or loss of function or performance which is self-recoverable

☐ temporary degradation or loss of function or performance which requires operator intervention or system reset

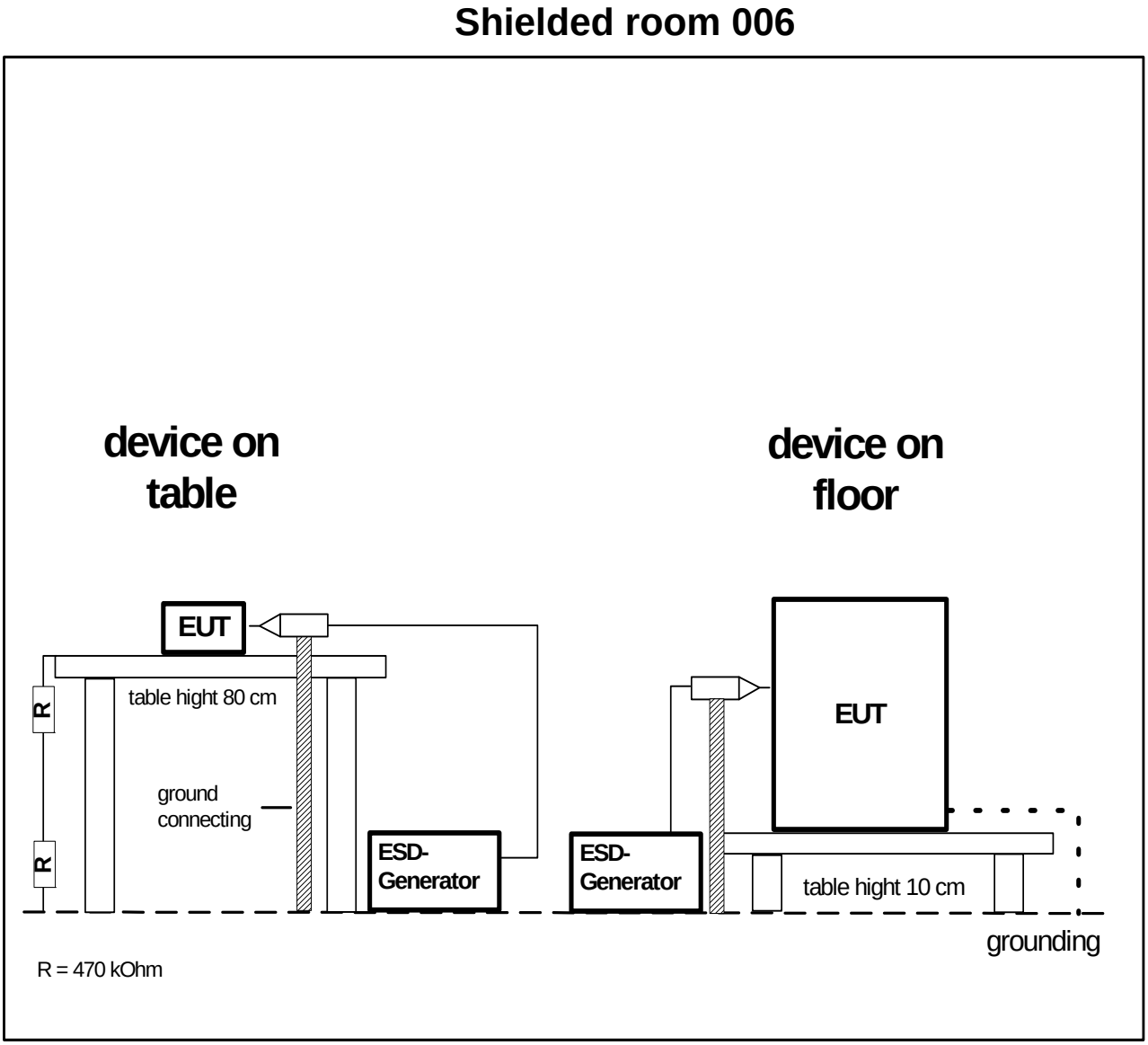
☐ degradation or loss of function which is not recoverable due to damage of equipment (components) or software, or loss of data

3.1.2.3 System test configuration

The test configuration is in accordance with the requirements given in **EN 61000-4-2**

This test is intended to demonstrate the immunity of the instrumentation to discharge caused from operators directly and to adjacent objects.

3.1.2.4 Drawing of test set-up



3.1.2.5 **Photo documentation of test set-up**

Photo 6: Test set-up for ESD

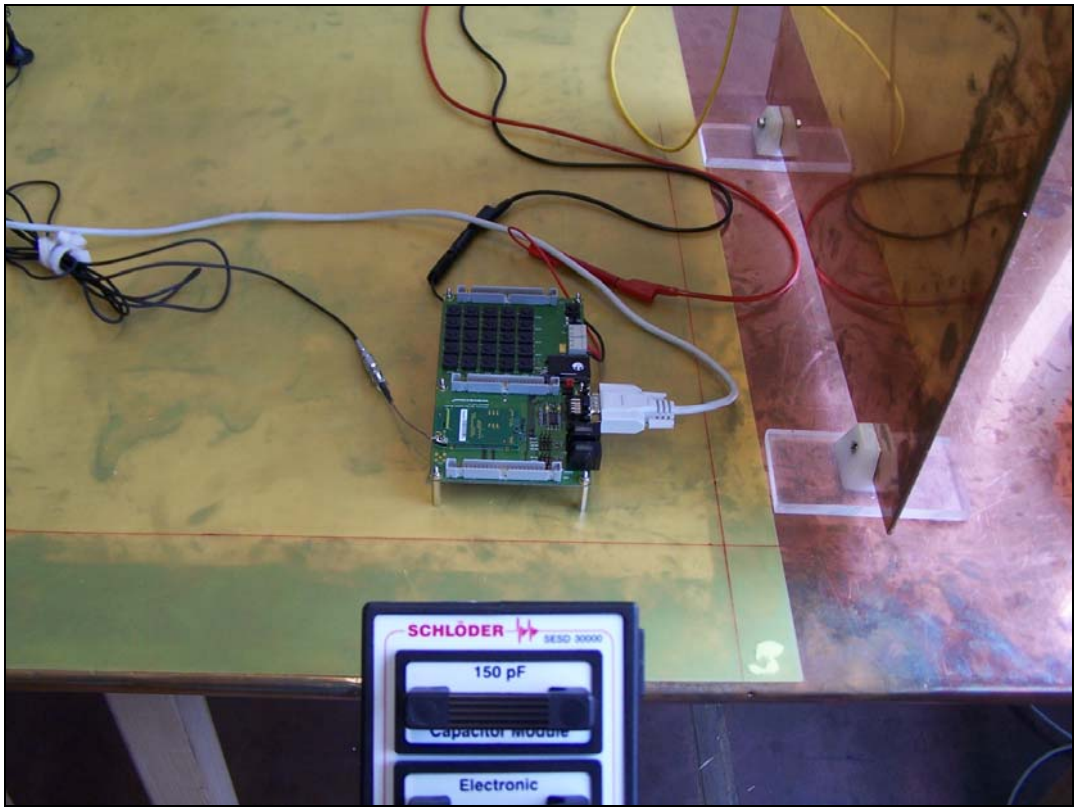
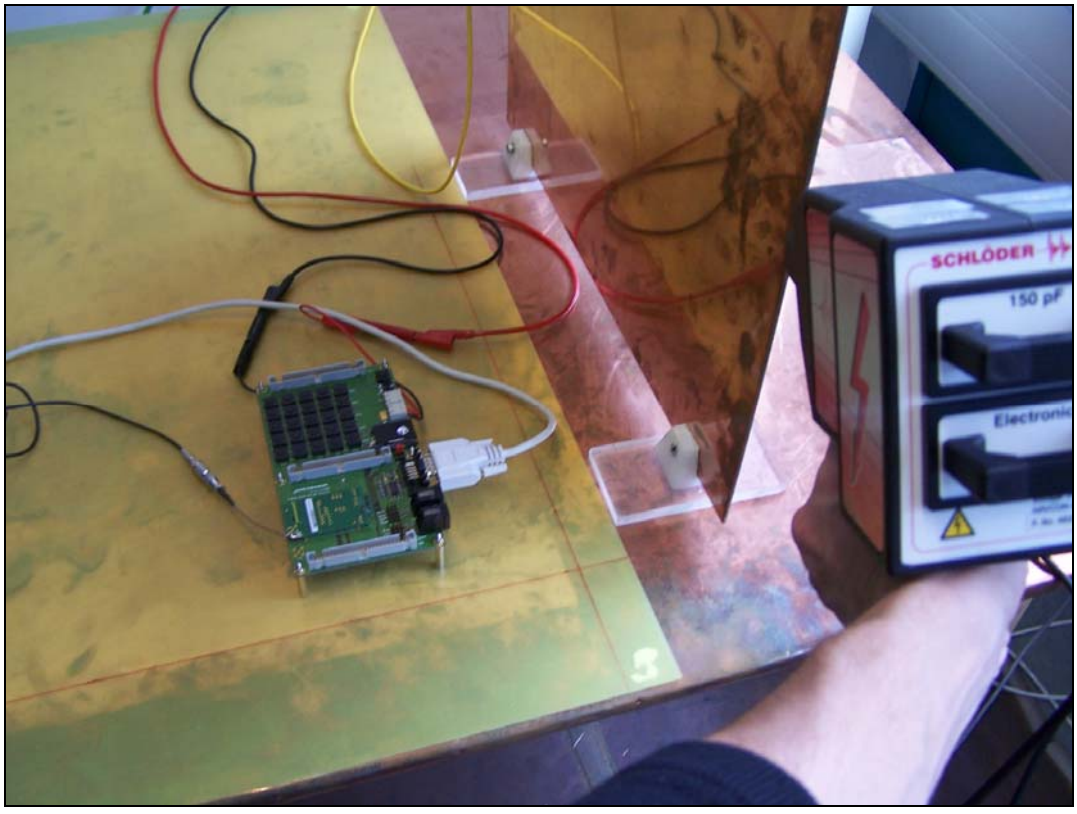


Photo 7: Test set-up for ESD



3.1.3 Electrical fast transients (Burst on power line)

Instrumentation for test (see equipment list)

60											

Test plan

EUT set-up		**SET 1**	
Operating mode		**OP 3-4**	
testing on power line (direct injection)		☐ L1, N, PE => Ground ☐ L1, N => Ground ☑ (+), (-) => Ground ☐ L1, L2, L3, N, PE => Ground	
test voltage	repetition frequency	reaction of the test object during and after test	results
-0,5 kV +0,5 kV	5 kHz 5 kHz	no reaction recognized no reaction recognized	complies complies
-1,0 kV +1,0 kV	5 kHz 5 kHz	N.A. N.A.	-- --
-1,5 kV +1,5 kV	5 kHz 5 kHz	N.A. N.A.	-- --
-2,0 kV +2,0 kV	5 kHz 5 kHz	N.A. N.A.	-- --
-2,0 kV +2,0 kV	2,5 kHz 2,5 kHz	N.A. N.A.	-- --
-3,0 kV +3,0 kV	2,5 kHz 2,5 kHz	N.A. N.A.	-- --
-4,0 kV +4,0 kV	2,5 kHz 2,5 kHz	N.A. N.A.	-- --

Remarks:	

System test configuration

The test configuration is in accordance with the requirements given in EN 61000-4-4.

The test is intended to demonstrate the immunity of the instrumentation when subjected to types of transient interference such as that originating from switching transients (interruption of inductive loads etc.).

Drawing of test set-up

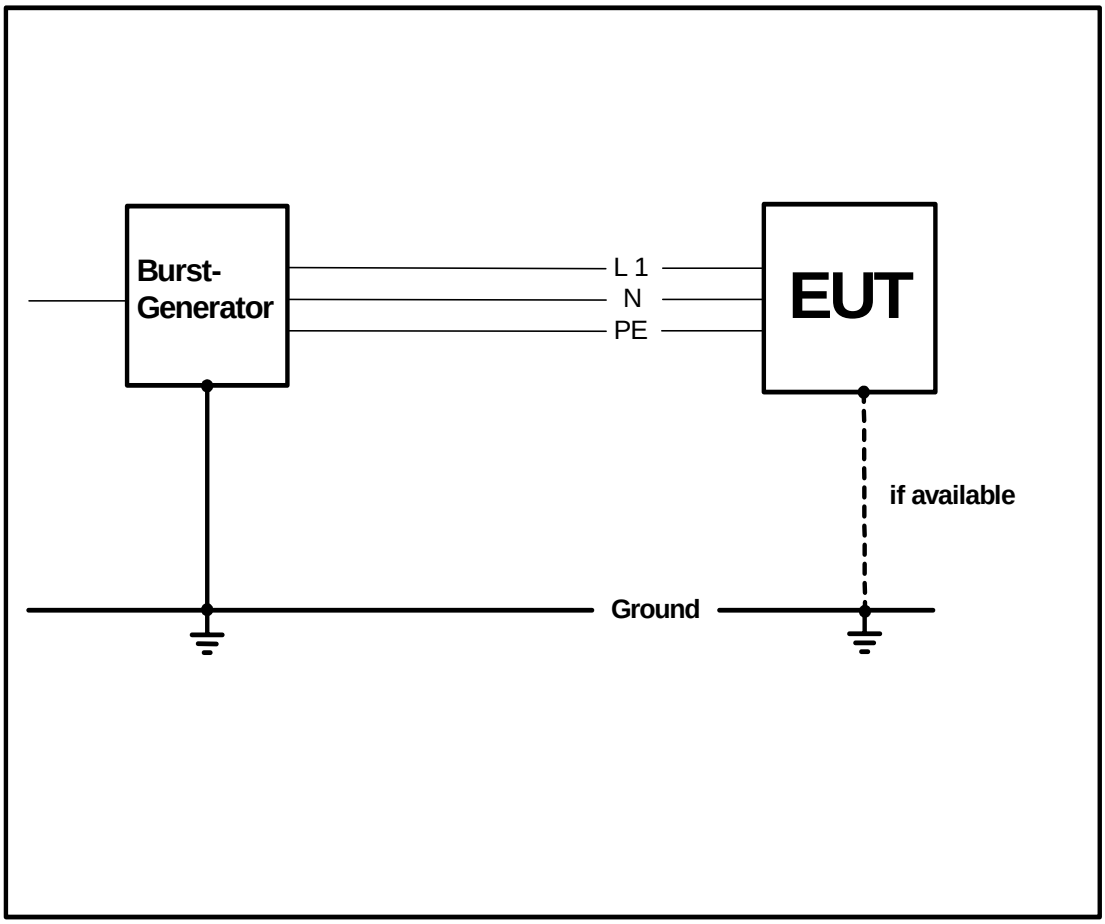


Photo documentation of test set-up

Photo 8: Test set-up for burst

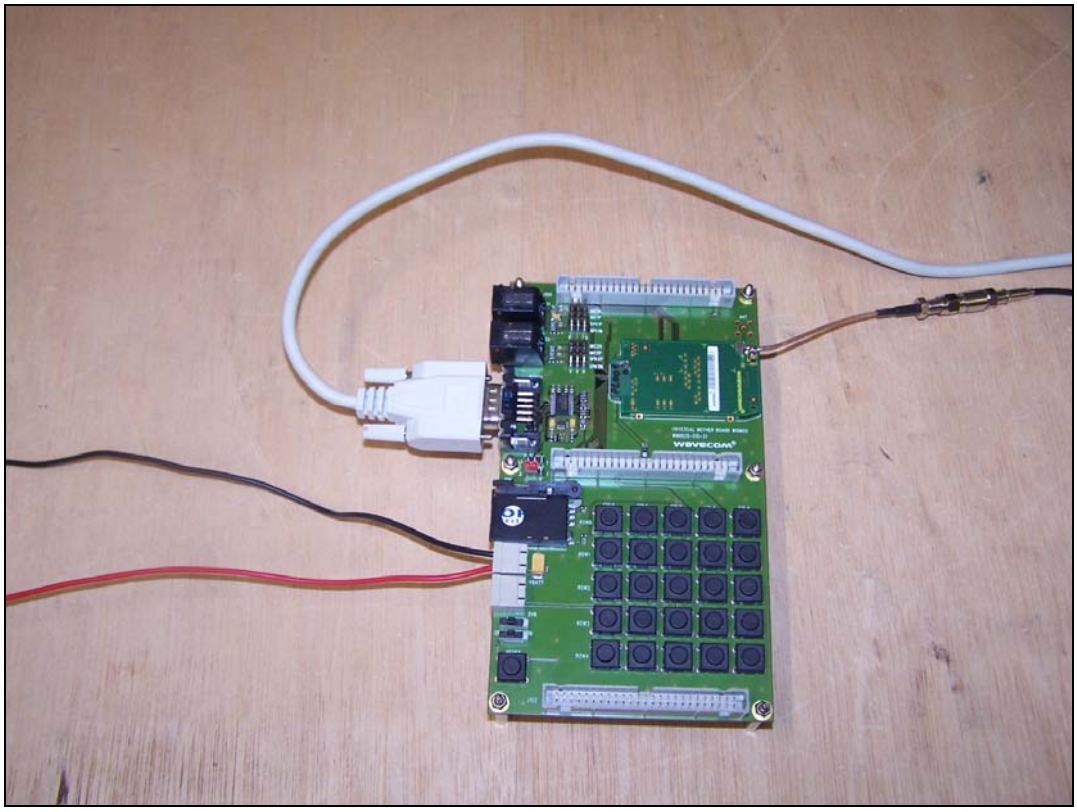
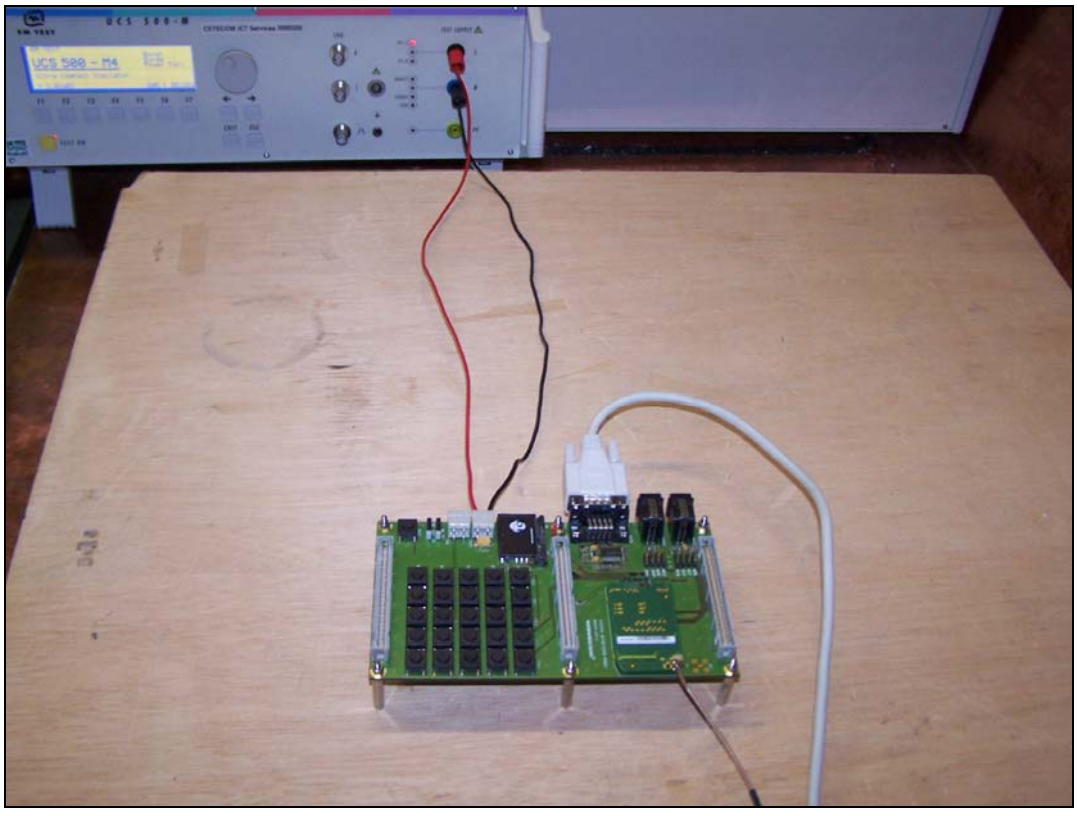


Photo 9: Test set-up for burst



3.1.4 Immunity to conducted disturbances induced by radio frequency fields

3.1.4.1 Instrumentation for test (see equipment list)

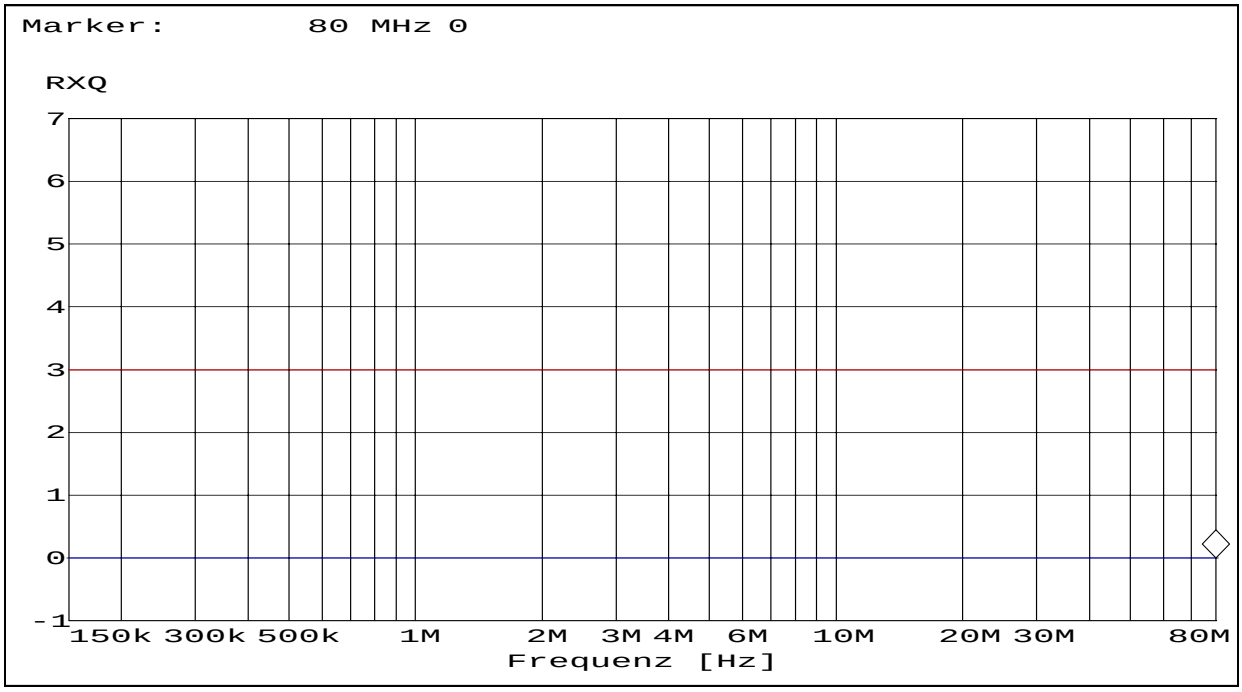
52	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**	**66**	**67**	**68**
69	**70**	**71**	**72**								

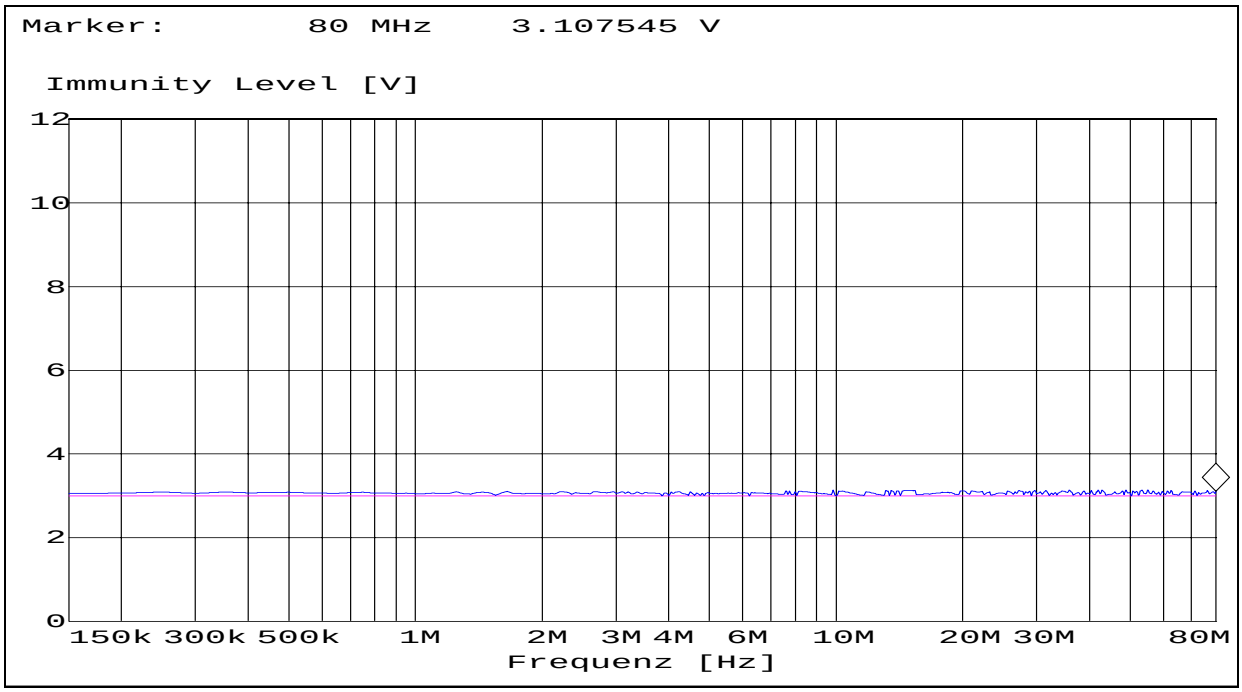
3.1.4.2 Test plan

EUT set-up	**SET 1**				
Operating mode	**OP 1**				
Test condition dwell time:	Level (unmod., rms)	Start frequency	Stop frequency	Frequency step	Modulation
3 s	3 V	150 kHz 5 MHz	5 MHz 80 MHz	lin 50 kHz log 1%	1 kHz; AM 80%
Disturbance coupled with:	☐ EM-clamp	☑ CDN		☐ Current clamp	
Port	Reaction of EUT				Result
AC	no reaction recognized				complies

Remarks :	no deviations

EUT: Q24 Plus Wireless CPU
Manufacturer: Wavecom
Operating Condition: GSM 900 MHz, ARFCN: 60, PLC: 5
Test site: Room 006
Operator: daub
Disturbance of: DC Port
Antenna Position: CDN M2
Date of Measurement: 29.09.2006 11:36:23





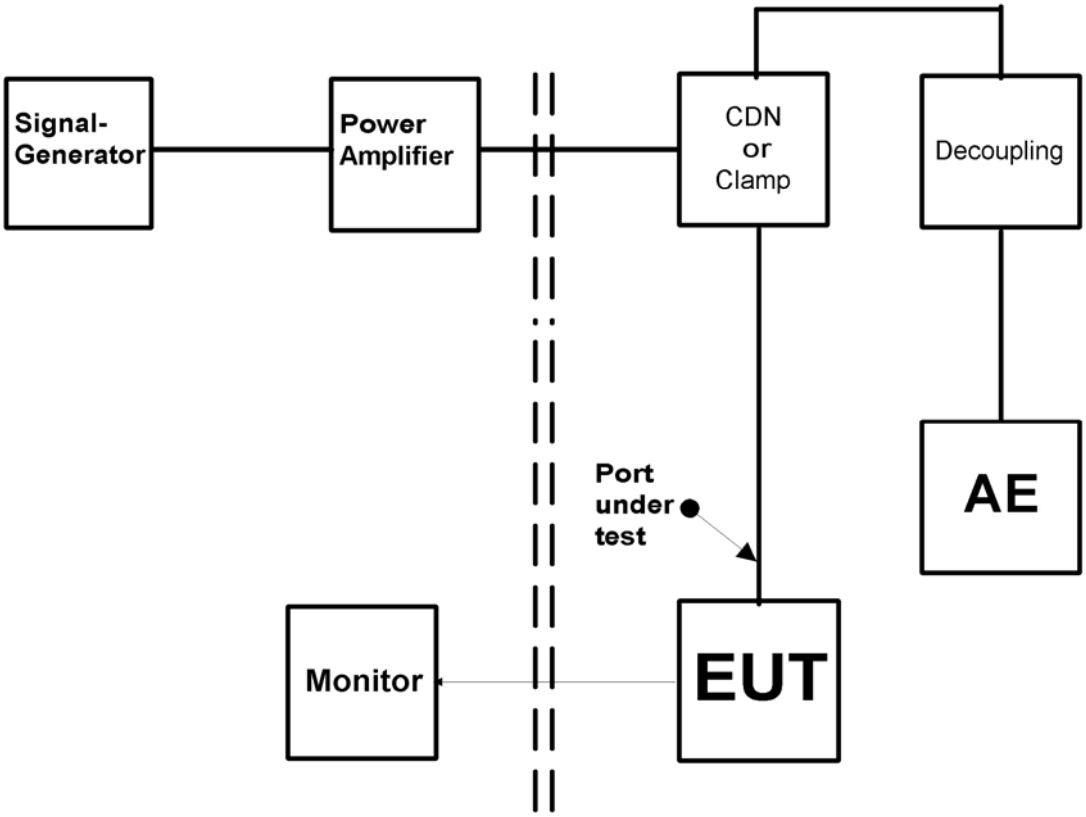
3.1.4.3 System test configuration

The test configuration is in accordance with the requirements given in **EN 61000-4-6**

The interference are injected in the frequency range 150 kHz to 80 MHz on lines

3.1.4.4 Drawing of test set-up

Shielded room 006



3.1.4.5 **Photo documentation of test set-up**

Photo 10: Test set-up for conducted immunity

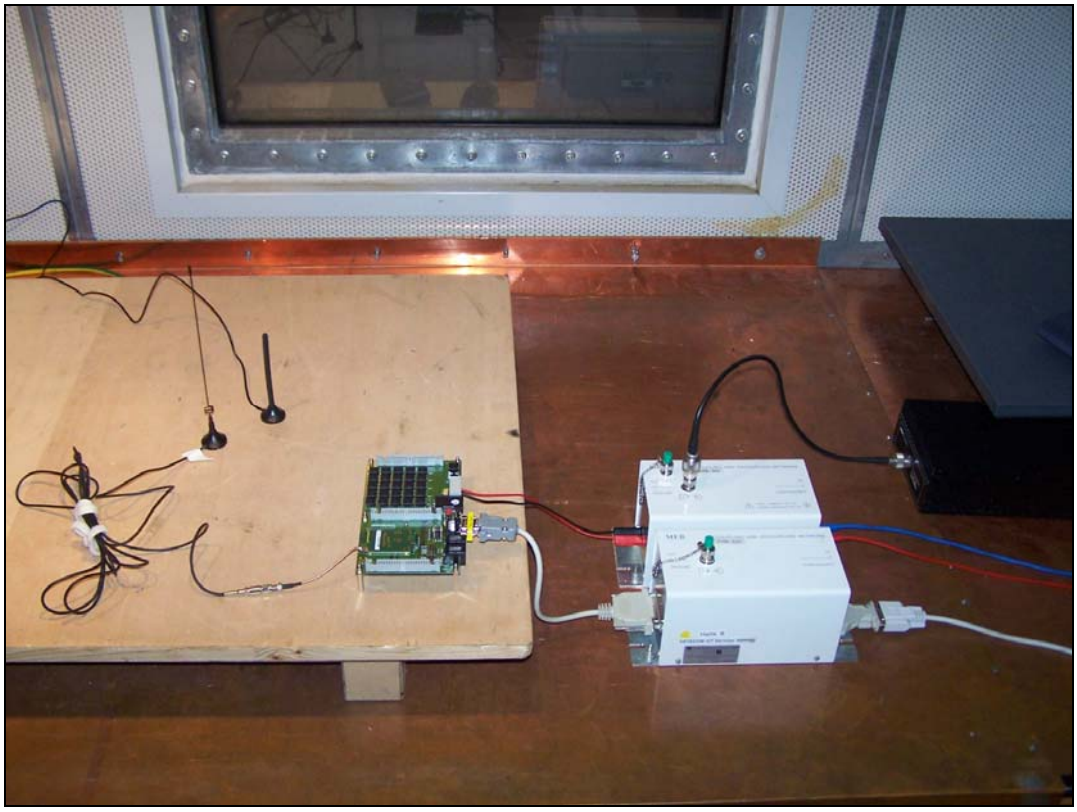


Photo 11: Test set-up for conducted immunity