

## Test report

2009-2306-3540N-REN

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38

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Equipment under test:	Name: <b>Control Unit</b> Model: <b>Barionet 50</b> Manufacturer: BARIX AG	The EUT has been modified during compliance testing.		
Date of tests:	02/20/2009 - 03/26/2009			
Test specifications:				
Emission:	EN 61326-1:2006-05 EN 50121-4:2006			
Immunity:	EN 61326-1:2006-05 EN 50121-4:2006			
<b>Test summary:</b>				
Emission	Tested port	Limit class	Result	
Conducted emissions at DC mains terminals	150 kHz - 30 MHz	24 VDC	A Passed	
Radiated emissions - electromagnetic fields	30 MHz - 1000 MHz	Enclosure	A Passed	
Immunity to ...	Tested port	Test level	Crit.	Result
Electrostatic discharge (ESD)	Enclosure	Air: 8 kV Cont.: 6 kV	A	Passed
Electromagnetic fields	80 MHz - 2700 MHz (AM)	10 V/m	A	Passed
Electromagnetic fields	800 MHz - 1000 MHz (AM)	20 V/m	A	Passed
Electrical fast transients (Burst)	24 VDC Other	2 kV 2 kV	A	Passed
Surge	24 VDC	1 kV	A	Passed
Surge	LAN RS485	2 kV 2 kV	A	Passed
Conducted RF disturbances	150 kHz - 80 MHz (AM)	See inside test report	10 V	A Passed
Testing location:	ELMAC GmbH Boschstraße 2 D-71149 Bondorf	Phone: ++49(0)7457-9441-0 Fax: ++49(0)7457-9441-99 WWW: <a href="http://www.elmac.de/">http://www.elmac.de/</a> E-Mail: <a href="mailto:info@elmac.de">info@elmac.de</a>		
Tested by:	<i>C. Hermann</i>	May 24, 2016	Verified by:	<i>J. Bühne</i>
i.V. C. Hermann	Date		J. Bühne	Date

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ELMAC GmbH informs the client that testing is done in accordance with the standard procedures stated under paragraph 2. All deviations will be listed separately. The test results of this report exclusively refer to the specific sample tested under stated test conditions. ELMAC GmbH shall have no liability for any deductions, inferences or generalisations drawn from the test results. This report must only be reproduced in full. Publications or reproductions in the form of extracts have to be approved in written form by ELMAC GmbH.

## 2. Test specifications

### Emission

Document No.	Title	Limit class
EN 61326-1:2006-05 IEC 61326-1:2005-12 DIN EN 61326-1:2006-10	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements	A
EN 50121-4:2006 DIN EN 50121-4:2006	Railway applications, EMC, Emission and immunity of the signalling and telecommunication apparatus	

### Immunity

Document No.	Title	Severity level
EN 61326-1:2006-05 IEC 61326-1:2005-12 DIN EN 61326-1:2006-10	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements	
EN 50121-4:2006 DIN EN 50121-4:2006	Railway applications, EMC, Emission and immunity of the signalling and telecommunication apparatus	

emvID: 2900

### 3. Equipment Under Test (EUT)

Name	<b>Control Unit</b>				
Model	<b>Barionet 50</b>				
S/N	0008E100006A (...6B)				
Manufacturer	BARIX AG				
Kind/Type of EUT	Control Unit				
Day of receipt	02/20/2009				
Kind of EUT handling	Table top	During the tests: As table top equipment			
Base unit covering the EUT	-				
Accessories (Part of the EUT)	-				
Support equipment (Not part of the EUT)	-				
Connected cables and lines	24 VDC Ethernet RS485 other	2-wire shielded shielded unshielded	unshielded >3m >3m >3m		
Power supply	24 VDC				
Class of protection against electrical shock	III (SELV)				
Remarks	9-30 VDC				
EUT Modifications	The EUT was modified as following: R58=4.7kOhm RS232: 270pF capacitor from Rx to GND and Tx to GND inductance between reverse voltage protection diode and suppressor diode				

eutID: 3540

#### Tested operation modes

Emission	Immunity	Test criteria
execution of test software	execution of test software	criterion A: Unwanted changes of selected operation mode: - error messages
Remarks:		

## 4. General Test Conditions

### 4.1. Environment conditions

If not stated otherwise in this test report the tests have been carried out under the following environment conditions:

Temperature: 15 ... 35 °C  
Relative Humidity: 30 ... 60 %  
Atmospheric pressure: 860 ... 1060 hPa

### 4.2. Calibration of test equipment

All test equipment having an important influence on the certainty of the test results is incorporated into a system of regular calibration and maintenance. The calibration system is a part of ELMAC's quality management system.

### 4.3. Measurement uncertainty

All EMC tests have a measurement uncertainty. The measurement uncertainty is a parameter related to a quantitative testing characterizing the range of values that with a certain probability still can be assigned to the result. Commonly the measurement uncertainty is given so, that the named probability is 95 %.

The emission limits and immunity severity levels (test levels) given in common EMC generic and product standards are related to the requirements for EMC test equipment defined by the EMC basic standards (like CISPR 16-x, IEC 61000-4-x).

That means: Under the condition that the EMC test equipment used for tests is compliant with the parameters defined by the EMC basic standards it can be assumed ...

- for emission tests: The equipment under test (EUT) passed the test, if the measurement value is lower or equal to the limit;
- for immunity tests: The EUT passed the test, if the EUT complies with the required performance criterion at the stated or higher test level. (See prEN 50222:1995.)

ELMAC's quality management system including calibration system guarantees that the above condition is given.

### 4.4. Performance criteria

If no other performance criteria specified in the standards listed in section 2. The performance criteria of EN 61326:1997 + A1:1998+A2:2001 section 6.5 are applied.

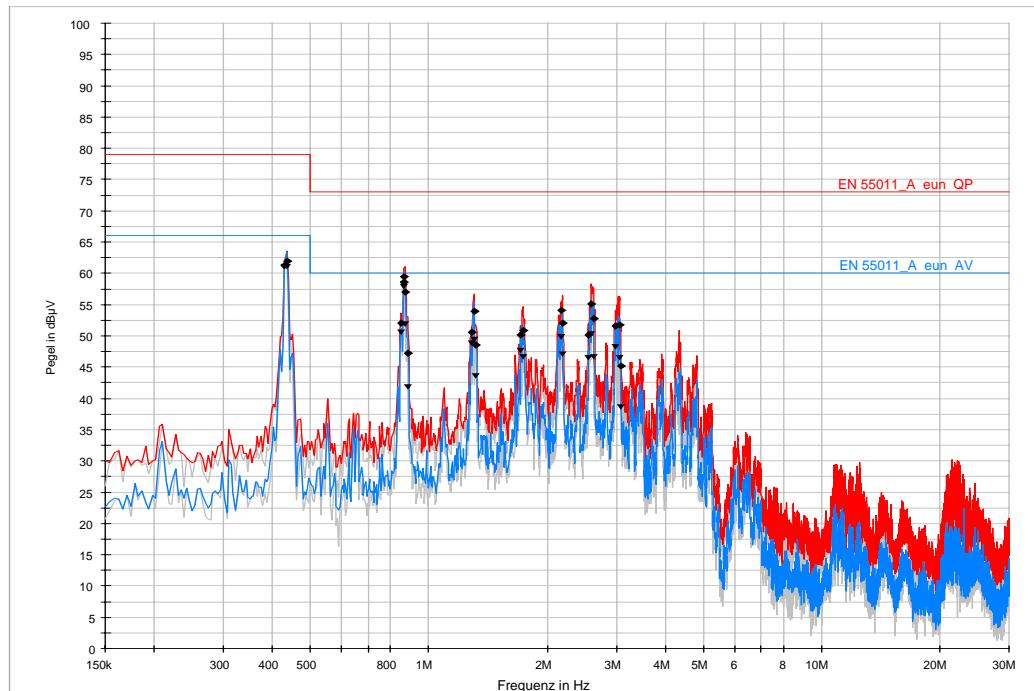
## 5. Test Results

See next pages.

**5.1. Conducted emissions at DC mains terminals  
150 kHz - 30 MHz**

euDCID: 473

EUT:	Control Unit Barionet 50	Kind of test:	Emission
		Basic standard:	EN 55011:1998 + A1:1999 + A2:2002
Operation mode:	execution of test software		
Port:	24 VDC		
Date of test:	02/20/2009		
Tested by:	TB	EUT modified:	No
Limit class:	A	Result:	Passed
Remarks:			

**PEAK Detection**

Test equipment used					
Name	Model	Manufacturer	S/N	INV	Remarks
V-LISN	MN2050D	Schaffner	1403	251	
EMI Receiver	ESHS 10	R&S	862970/012	35	

**ad 5.1. Conducted emissions at DC mains terminals  
150 kHz - 30 MHz**

**- Continuation -**

euDCID: 473

EUT:	Control Unit Barionet 50		
Operation mode:	execution of test software		

**QUASI-PEAK Detection**

Frequen- cy(MHz)	QuasiPe- ak(dB $\mu$ V)	Phase	Margin(dB)	Limit(dB $\mu$ V)	Comment
0.430000	61.2	N	17.8	79.0	
0.434000	62.0	N	17.0	79.0	
0.850000	52.0	N	21.0	73.0	
0.862000	58.6	N	14.4	73.0	
0.866000	59.5	N	13.5	73.0	
0.870000	57.0	L1	16.0	73.0	
0.886000	47.2	L1	25.8	73.0	
1.282000	50.6	N	22.4	73.0	
1.302000	53.9	L1	19.1	73.0	
1.318000	48.6	N	24.4	73.0	
1.714000	50.1	L1	22.9	73.0	
1.738000	50.8	N	22.2	73.0	
2.170000	54.0	L1	19.0	73.0	
2.186000	52.1	L1	20.9	73.0	
2.550000	50.1	L1	22.9	73.0	
2.598000	55.0	N	18.0	73.0	
2.626000	52.8	N	20.2	73.0	
2.990000	51.6	N	21.4	73.0	
3.062000	51.7	L1	21.3	73.0	
3.078000	45.2	L1	27.8	73.0	

**AVERAGE Detection**

Frequen- cy(MHz)	Aver- age(dB $\mu$ V)	Phase	Margin(dB)	Limit(dB $\mu$ V)	Comment
0.430000	61.0	N	5.0	66.0	
0.434000	61.1	N	4.9	66.0	
0.850000	50.6	N	9.4	60.0	
0.862000	57.8	N	2.2	60.0	
0.866000	58.4	N	1.6	60.0	
0.870000	52.0	L1	8.0	60.0	
0.886000	41.8	L1	18.2	60.0	
1.282000	48.8	N	11.2	60.0	
1.302000	49.4	L1	10.6	60.0	
1.318000	43.6	N	16.4	60.0	
1.714000	47.7	L1	12.3	60.0	
1.738000	46.7	N	13.3	60.0	
2.170000	49.9	L1	10.1	60.0	
2.186000	47.1	L1	12.9	60.0	
2.550000	46.6	L1	13.4	60.0	
2.598000	50.3	N	9.7	60.0	
2.626000	46.6	N	13.4	60.0	
2.990000	48.2	N	11.8	60.0	
3.062000	46.5	L1	13.5	60.0	
3.078000	38.7	L1	21.3	60.0	

**ad 5.1. Conducted emissions at DC mains terminals  
150 kHz - 30 MHz**

euDCID: 473

EUT:	Control Unit Barionet 50		



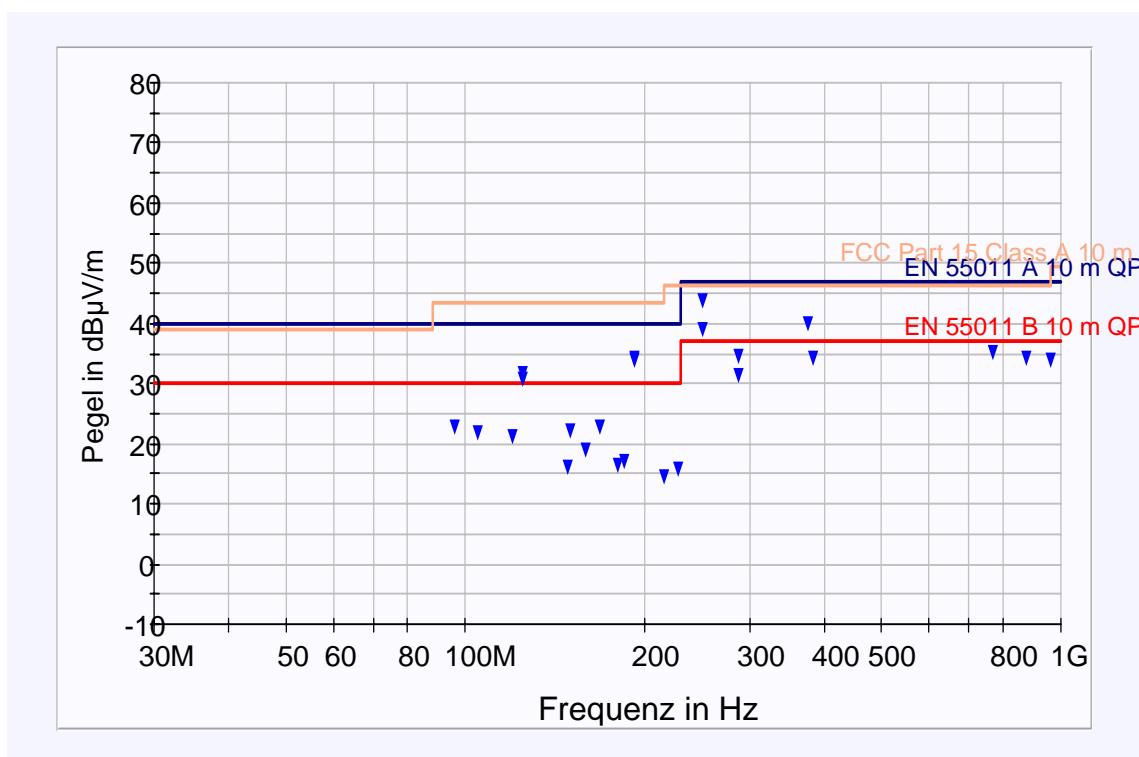
EuDC-1.jpg

**5.2. Radiated emissions - electromagn. fields  
30 MHz - 1000 MHz**

eeID: 3936

EUT:	Control Unit Barionet 50	Kind of test:	Emission
		Generic standard:	EN 55011:1998 + A1:1999 + A2:2002
Operation mode:	execution of test software		
Port:	Enclosure	MU	4.5
Date of test:	02/20/2009		
Tested by:	TB		
Prescan:	Done		
Final test:	Done		
Test site (final):	Open Area Test Site (OATS)	EUT modified:	No
Antenna distance:	10 m	Result:	Passed
Limit class:	A		
Remarks:			

## QUASI-PEAK Detection



Test equipment used					
Name	Model	Manufacturer	S/N	INV	Remarks
BiConiLog Antenna	3141	EMCO	9806-1102	357	
Spectrum Analyser	FSL6	R&S	100123	302	

**ad 5.2. Radiated emissions - electromagn. fields  
30 MHz - 1000 MHz**

**- Continuation -**

eeID: 3936

EUT:	Control Unit Barionet 50		
Operation mode:			

**QUASI-PEAK Detection**

55011-A:

Frequen- cy(MHz)	QuasiPe- ak(dB $\mu$ V/m)	Margin(dB)	Li- mit(dB $\mu$ V/m)	Comment
96.040000	22.7	17.3	40.0	
105.000000	21.7	18.3	40.0	
119.800000	21.2	18.8	40.0	
125.040000	30.8	9.2	40.0	
125.040000	31.6	8.4	40.0	
148.320000	16.2	23.8	40.0	
150.040000	22.0	18.0	40.0	
158.920000	19.0	21.0	40.0	
168.280000	22.8	17.2	40.0	
180.640000	16.3	23.7	40.0	
184.520000	16.9	23.1	40.0	
192.040000	34.1	5.9	40.0	
192.040000	34.0	6.0	40.0	
215.440000	14.6	25.4	40.0	
227.080000	15.8	24.2	40.0	
250.040000	38.9	8.1	47.0	
250.040000	43.6	3.4	47.0	
288.040000	34.5	12.5	47.0	
288.040000	31.4	15.6	47.0	
375.000000	39.9	7.1	47.0	
384.080000	34.3	12.7	47.0	
768.160000	35.2	11.8	47.0	
875.040000	34.1	12.9	47.0	
960.240000	33.9	13.1	47.0	

FCC-A:

Frequen- cy(MHz)	QuasiPe- ak(dB $\mu$ V/m)	Margin(dB)	Li- mit(dB $\mu$ V/m)	Coment
96.040000	22.7	20.8	43.5	
105.000000	21.7	21.8	43.5	
119.800000	21.2	22.3	43.5	
125.040000	30.8	12.7	43.5	
125.040000	31.6	11.9	43.5	
148.320000	16.2	27.3	43.5	
150.040000	22.0	21.5	43.5	
158.920000	19.0	24.5	43.5	
168.280000	22.8	20.7	43.5	
180.640000	16.3	27.2	43.5	
184.520000	16.9	26.6	43.5	
192.040000	34.1	9.4	43.5	
192.040000	34.0	9.5	43.5	
215.440000	14.6	28.9	43.5	
227.080000	15.8	30.6	46.4	
250.040000	38.9	7.5	46.4	
250.040000	43.6	2.8	46.4	
288.040000	34.5	11.9	46.4	
288.040000	31.4	15.0	46.4	
375.000000	39.9	6.5	46.4	
384.080000	34.3	12.1	46.4	
768.160000	35.2	11.2	46.4	
875.040000	34.1	12.3	46.4	
960.240000	33.9	15.6	49.5	

**ad 5.2. Radiated emissions - electromagn. fields  
30 MHz - 1000 MHz**

eeID: 3936

EUT:	Control Unit Barionet 50		



Ee-1.jpg

**ad 5.2. Radiated emissions - electromagn. fields  
30 MHz - 1000 MHz**

eeID: 3936

EUT:	Control Unit Barionet 50		



Ee-2.jpg

**ad 5.2. Radiated emissions - electromagn. fields  
30 MHz - 1000 MHz**

eeID: 3936

EUT:	Control Unit Barionet 50		

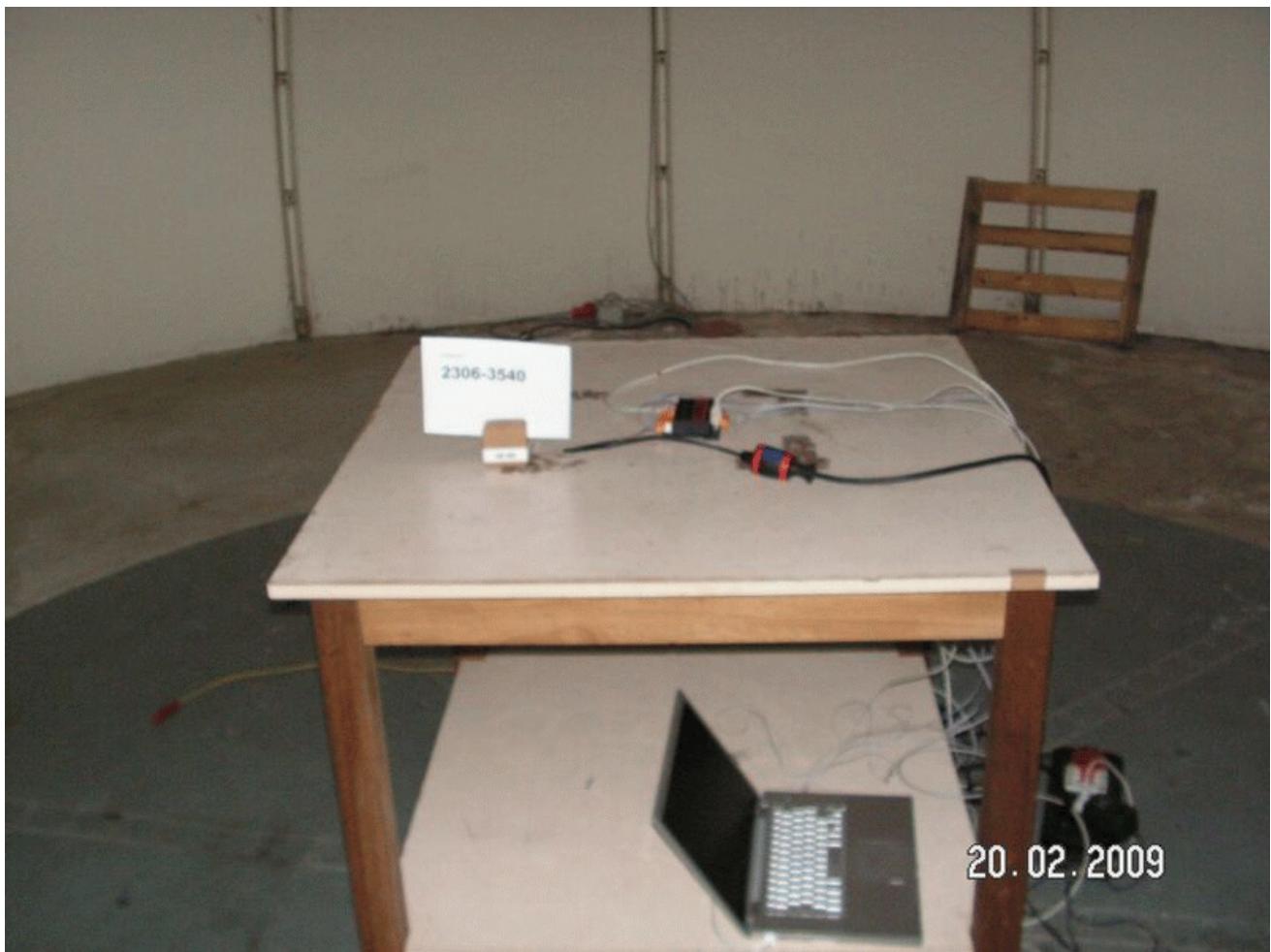


Ee-3.jpg

**ad 5.2. Radiated emissions - electromagn. fields  
30 MHz - 1000 MHz**

eeID: 3936

EUT:	Control Unit Barionet 50		



Ee-4.jpg

**ad 5.2. Radiated emissions - electromagn. fields  
30 MHz - 1000 MHz**

eeID: 3936

EUT:	Control Unit Barionet 50		



Ee-5.jpg

### 5.3. Electrostatic discharge (ESD)

idID: 1924

EUT:	Control Unit Barionet 50	Kind of test:	Immunity
		Basic standard:	EN 61000-4-2:1995 + A1:1998 + A2:2001
Operation mode:	execution of test software		
Tested Port:	Enclosure		
Date of test:	02/20/2009		
Tested by:	TB	EUT modified:	No
Required performance criterion	B	Result:	Passed
Remarks:			

Kind of discharge	Kind of coupling	Done	Test points of EUT	Max. test voltage (kV)	Passed Performance criterion	Remarks
Air	Direct	✓	all contactable non-conductive housing surfaces	8	A	
Contact	Direct	✓	all contactable conductive housing surfaces	6	A	
	Indirect	✓	HKP: ✓      VKP: ✓	6	A	
Notes:  HKP = Horizontal coupling plate VKP = Vertical coupling plate						
All tests were done at the following steps of test voltage (until max. test voltage): 2 / 4 / 6 / 8 kV. At each test voltage at least 10 positive test pulses with a time interval of 1 s and 10 negative test pulses with a time interval of 1 s were carried out.						

Test equipment used					
Name	Model	Manufacturer	S/N	INV	Remarks
ESD Generator	NSG 435	Schaffner	222	182	

**ad 5.3. Electrostatic discharge (ESD)**

idID: 1924

EUT:	Control Unit Barionet 50		



Id-1.jpg

**ad 5.3. Electrostatic discharge (ESD)**

idID: 1924

EUT:	Control Unit Barionet 50		



Id-2.jpg

**ad 5.3. Electrostatic discharge (ESD)**

idID: 1924

EUT:	Control Unit Barionet 50		



Id-3.jpg

**ad 5.3. Electrostatic discharge (ESD)**

idID: 1924

EUT:	Control Unit Barionet 50		



Id-4.jpg

**5.4.1 Radio-frequency electromagnetic fields  
80 MHz - 2700 MHz**

ifID: 3136

EUT:	Control Unit Barionet 50	Kind of test:	Immunity
		Basic standard:	EN 61000-4-3:2006-12
Operation mode:	execution of test software		
Port:	Enclosure		
Test site:	Fully Anechoic Chamber		
Date of test:	03/10/2009		
Tested by:	CE	EUT modified:	No
Required performance criterion:	A	Result:	<b>Passed</b>
Remarks:			

Test parameters	Settings	
	Amplitude-modulated Field	Puls-modulated Field
Frequency range	80 MHz - 2700 MHz	
Frequency step Dwell time	1 % 1 s	
Modulation	1 kHz/AM 80%	
Test level (field strength)	10 V/m	
Polarization	horizontal + vertical	
Distance transmitting antenna - EUT	2.40 m (> 1GHz 1m)	
Tested sides of the EUT	EUT oriented to all three orthogonal directions	
<b>Result</b>		
Passed Performance criterion	A	
Remarks		

Test equipment used					
Name	Model	Manufacturer	S/N	INV	Remarks
Signal Generator	SML03	R&S	100935	353	
Power Amplifier	100W1000M1	Ampl. Res.	12812	45	
Power Amplifier	5101F	OPHIR	1006 "N/C"	296	
BiLog Antenna	CBL6140A	Schaffner	1118	219	
Double Ridged Guide Antenna	3115	EMCO	9607-4883	156	

**5.4.2 Radio-frequency electromagnetic fields  
800 MHz - 1000 MHz**

ifID: 3137

EUT:	Control Unit Barionet 50	Kind of test:	Immunity
		Basic standard:	EN 61000-4-3:2006-12
Operation mode:	execution of test software		
Port:	Enclosure		
Test site:	Fully Anechoic Chamber		
Date of test:	03/10/2009		
Tested by:	CE	EUT modified:	No
Required performance criterion:	A	Result:	Passed
Remarks:			

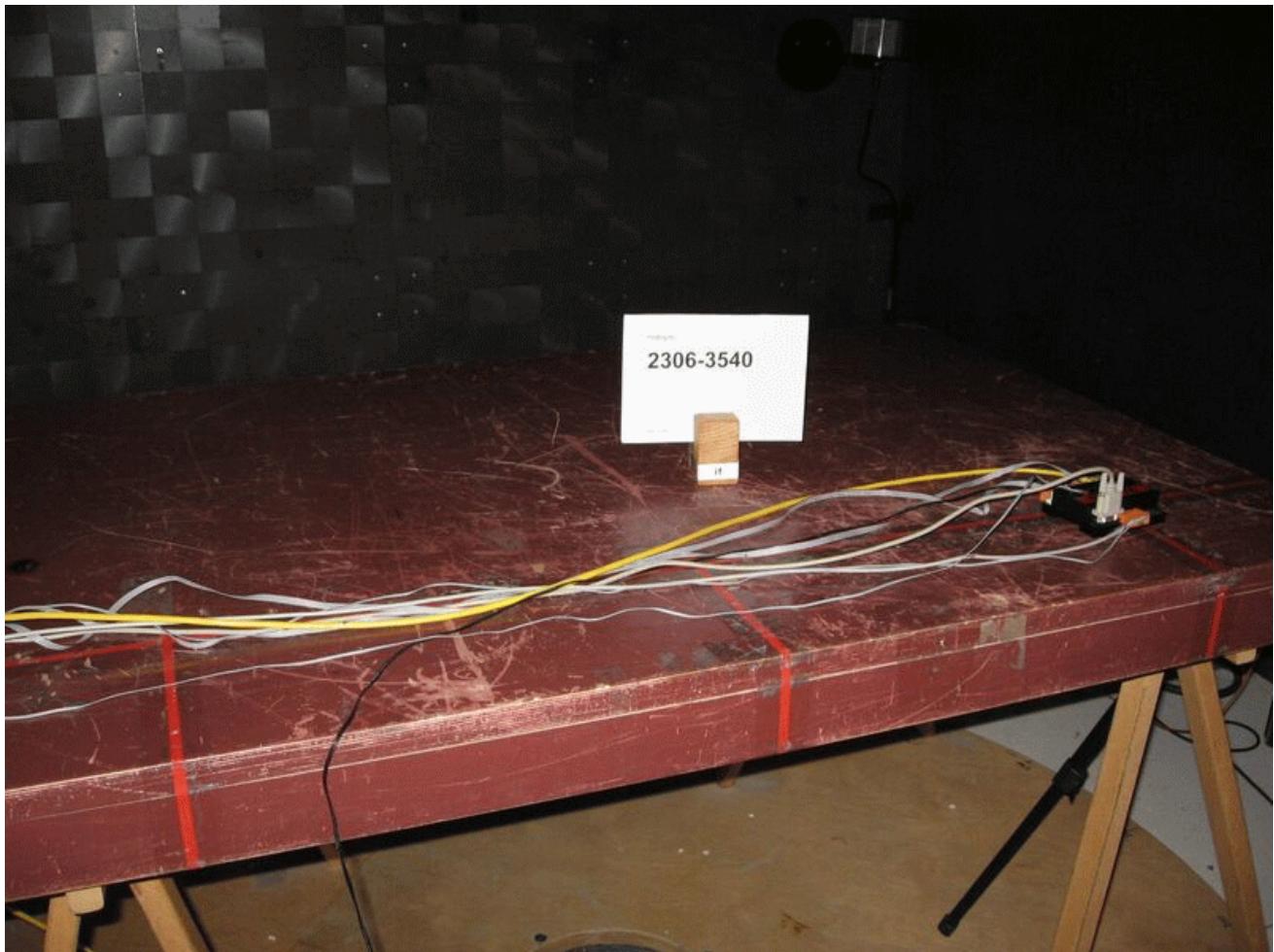
Test parameters	Settings	
	Amplitude-modulated Field	Puls-modulated Field
Frequency range	800 MHz - 1000 MHz	
Frequency step Dwell time	1 % 1 s	
Modulation	1 kHz/AM 80%	
Test level (field strength)	20 V/m	
Polarization	horizontal + vertical	
Distance transmitting antenna - EUT	2.40 m	
Tested sides of the EUT	EUT oriented to all three orthogonal directions	
<b>Result</b>		
Passed Performance criterion	A	
Remarks		

Test equipment used					
Name	Model	Manufacturer	S/N	INV	Remarks
Signal Generator	SML03	R&S	100935	353	
Power Amplifier	100W1000M1	Ampl. Res.	12812	45	
Power Amplifier	5101F	OPHIR	1006 "N/C"	296	
BiLog Antenna	CBL6140A	Schaffner	1118	219	
Double Ridged Guide Antenna	3115	EMCO	9607-4883	156	

**ad 5.4. Radio-frequency electromagnetic fields**

ifID: 3137

EUT:	Control Unit Barionet 50		

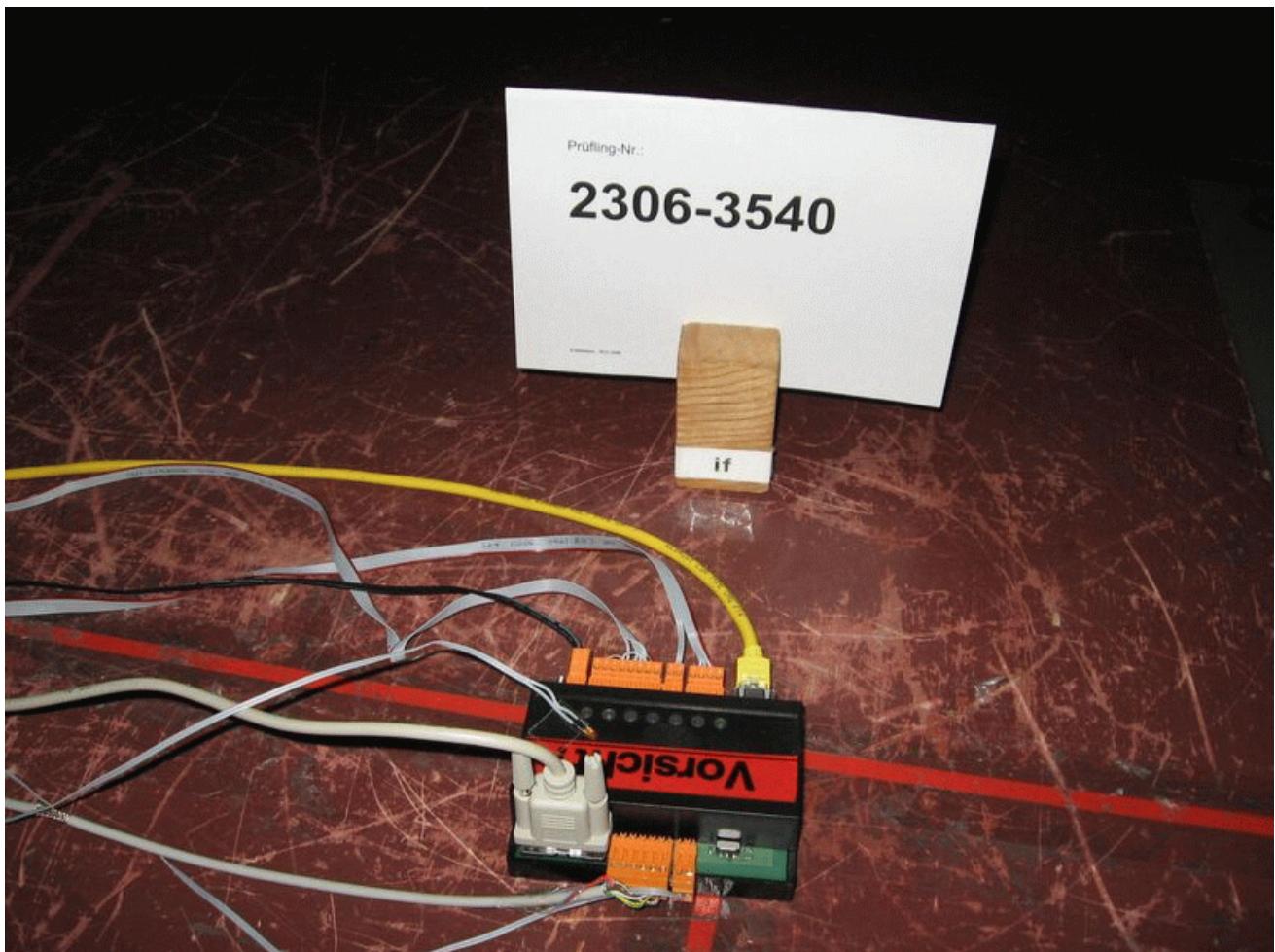


lf-1.jpg

**ad 5.4. Radio-frequency electromagnetic fields**

ifID: 3137

EUT:	Control Unit Barionet 50		



lf-2.jpg

**ad 5.4. Radio-frequency electromagnetic fields**

ifID: 3137

EUT:	Control Unit Barionet 50		

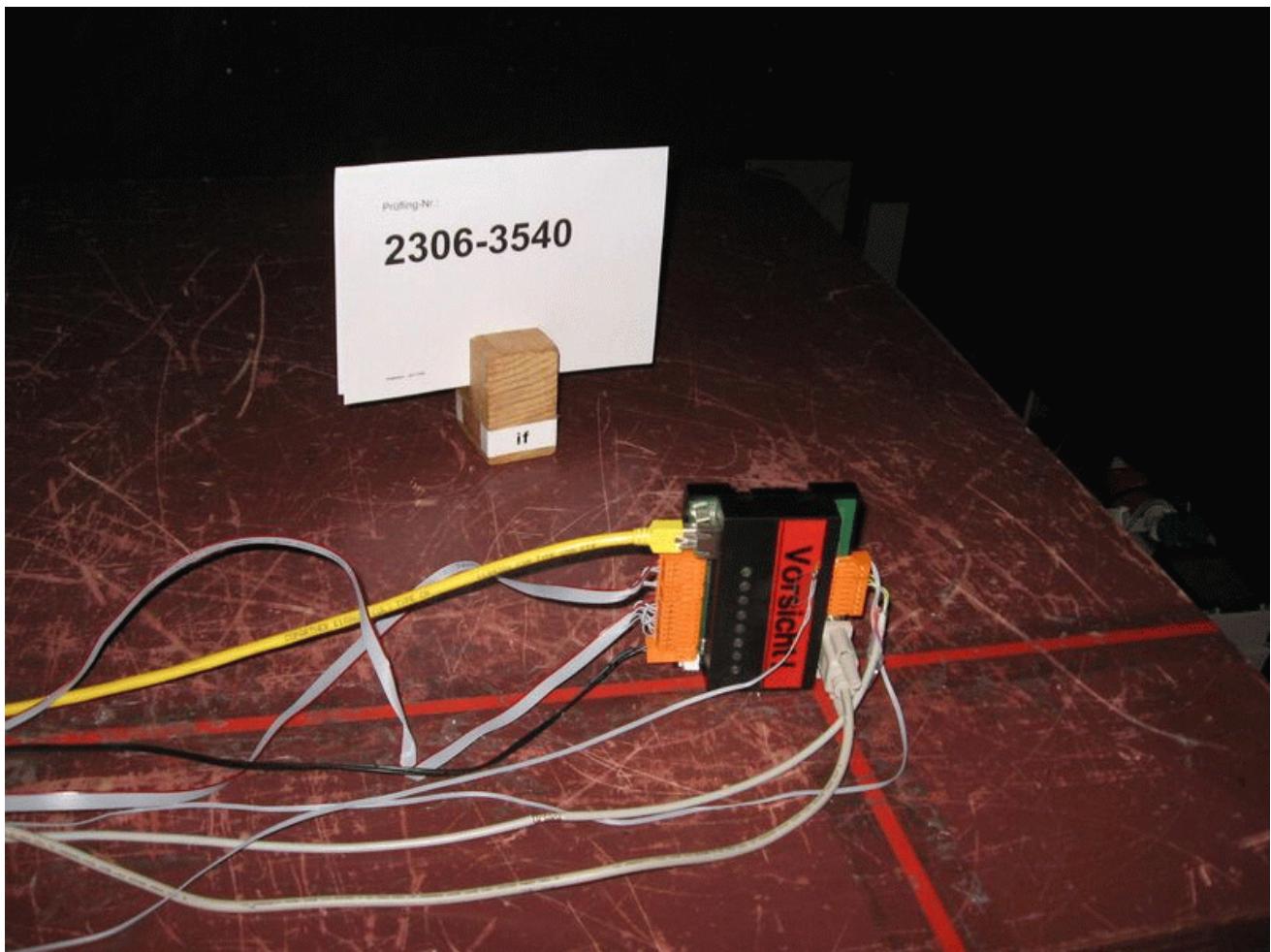


lf-3.jpg

**ad 5.4. Radio-frequency electromagnetic fields**

ifID: 3137

EUT:	Control Unit Barionet 50		



lf-4.jpg

## 5.5. Electrical fast transients (Burst)

ibID: 1952

EUT:	Control Unit Barionet 50	Kind of test:	Immunity
		Basic standard:	EN 61000-4-4:2004
Operation mode:	execution of test software		
Date of test:	02/20/2009		
Tested by:	TB	EUT modified:	No
Required performance criterion:	B	Result:	Passed
Remarks:			

Coupling devices and Kind of coupling	Tested cables/lines	Test voltage (kV)	Passed Performance criterion	Remarks
Coupling device network (in each case unsymmetrically and asymmetrically)	24 VDC	2	A	
Capacitive coupling clamp (asymmetrically)	Ethernet, RS485	2	A	
	all other	1	A	
<b>Notes:</b>				
Tested polarization:	Positive + Negative (at each kind of coupling)			
Duration of test: 60 s	at each polarity and kind of coupling			
Test puls:	5/50 ns; $Z_i = 50 \text{ Ohm}$			
Repetition frequency:	5 kHz; at test level $\geq 4 \text{ kV}$ : 2.5 kHz			

Test equipment used					
Name	Model	Manufacturer	S/N	INV	Remarks
Burst Generator	NSG 2025	Schaffner	1188	237	
Capacitive Coupling Clamp	CDN 125	Schaffner	647	239	

**ad 5.5. Electrical fast transients (Burst)**

ibID: 1952

EUT:	Control Unit Barionet 50		



lb-1.jpg

**ad 5.5. Electrical fast transients (Burst)**

ibID: 1952

EUT:	Control Unit Barionet 50		



lb-2.jpg

**ad 5.5. Electrical fast transients (Burst)**

ibID: 1952

EUT:	Control Unit Barionet 50		



lb-3.jpg

### 5.6.1 Surge

isID: 1726

EUT:	Control Unit Barionet 50	Kind of test:	Immunity
		Basic standard:	EN 61000-4-5:1995+ A1:2001
Operation mode:	execution of test software		
Date of test:	03/26/2009		
Tested by:	CE	EUT modified:	Yes
Required performance criterion:	B	Result:	Passed
Remarks:			

Tested port	Lines	Kind of coupling	Coupling impedance	Max. test voltage (kV)	Passed Performance criterion	Remarks
24 VDC	(+) - (-)	s	18 µF	1	A	

Notes:

Kind of coupling:

s = symmetrically

u = unsymmetrically

Test puls:

1.2/50µs;  $Z_i = 2 \text{ Ohm}$ 

Polarity:

positive and negative at each test voltage

Number of test pulses:

 $\geq 6$  at each test voltage

Time interval between pulses:

 $\geq 60 \text{ s}$ 

Tested voltage steps:

0.5 / 1 kV, if max. test voltage = 1 kV

0.5 / 1 / 1.5 / 2 kV, if max. test voltage = 2 kV

1 / 2 / 3 / 4 kV, if max. test voltage = 4 kV

Tested phase angels (at AC):

90°/180°/270°

Test equipment used					
Name	Model	Manufacturer	S/N	INV	Remarks
Hybrid Generator	PSurge 4.1	Haefely	082876-11	227	

## 5.6.2 Surge

isID: 1727

EUT:	Control Unit Barionet 50	Kind of test:	Immunity
		Basic standard:	EN 61000-4-5:1995+ A1:2001
Operation mode:	execution of test software		
Date of test:	03/13/2009		
Tested by:	TB	EUT modified:	No
Required performance criterion:	B	Result:	Passed
Remarks:			

Tested port	Lines	Kind of coupling	Coupling impedance	Max. test voltage (kV)	Passed Performance criterion	Remarks
LAN	shield		18 µF on shielding	2	A	coupling between GND-HUB and GND-EUT
RS485	shield		18 µF on shielding	2	A	coupling between GND-EUT and the shielding of the far end

Notes:

Kind of coupling:                    s = symmetrically  
     u = unsymmetrically

Test puls:                            1.2/50µs;  $Z_i = 2 \text{ Ohm}$

Polarity:                            positive and negative at each test voltage

Number of test pulses:             $\geq 6$  at each test voltage

Time interval between pulses:    $\geq 20 \text{ s}$

Tested voltage steps:            0,5 / 1 kV, if max. test voltage = 1 kV

    0,5 / 1 / 1,5 / 2 kV, if max. test voltage = 2 kV

    1 / 2 / 3 / 4 kV, if max. test voltage = 4 kV

Tested phase angels (at AC):    $90^\circ/180^\circ/270^\circ$

Test equipment used					
Name	Model	Manufacturer	S/N	INV	Remarks
Hybrid Generator	PSurge 4.1	Haefely	082876-11	227	

<b>5.7. Conducted disturbances, induced by radio-frequency fields 150 kHz - 80 MHz</b>			
icsID: 1993			
EUT:	Control Unit Barionet 50	Kind of test: Basic standard:	Immunity EN 61000-4-6:1996 + A1:2001
Operation mode:	execution of test software		
Date of test:	02/20/2009		
Tested by:	TB	EUT modified:	Yes
Required performance criterion:	A	Result:	Passed
Remarks:			

Test parameter	Settings		
Frequency range	150 kHz - 80 MHz		
Frequency step	1 %		
Dwell time	1 s		
Modulation	1 kHz/AM 80%		
Test voltage	10 V		
Tested cables/lines		Cable/line/port of the EUT	Coupling device used
		power supply	CDN 801 M2 INV 96
		relay out	CDN 725 INV 280
		1-wire	EM 101 INV 315
		digital in	CDN 725 INV 218
		RS232, Ethernet, RS485	CDN 801 S INV 198
Result			
Passed Performance criterion	A		
Remarks	1 kHz-tone audible: - relay out from 60MHz - digital in from 12MHz		

Test equipment used					
Name	Model	Manufacturer	S/N	INV	Remarks
RF Generator	NSG 2070-1	Schaffner	135	222	
Coupling Network	CDN 801 M2	E. Fiedler		96	
EM Injection Clamp	CDN 725	Schaffner	146	280	
EM Injection Clamp	EM 101	Lüthi	none	315	
EM Injection Clamp	CDN 725	Schaffner	133	218	
Coupling Network	CDN 801 S	ELMAC		198	

**ad 5.7. Conducted disturbances, induced by radio-frequency fields  
150 kHz - 80 MHz**

icsID: 1993

EUT:	Control Unit Barionet 50		

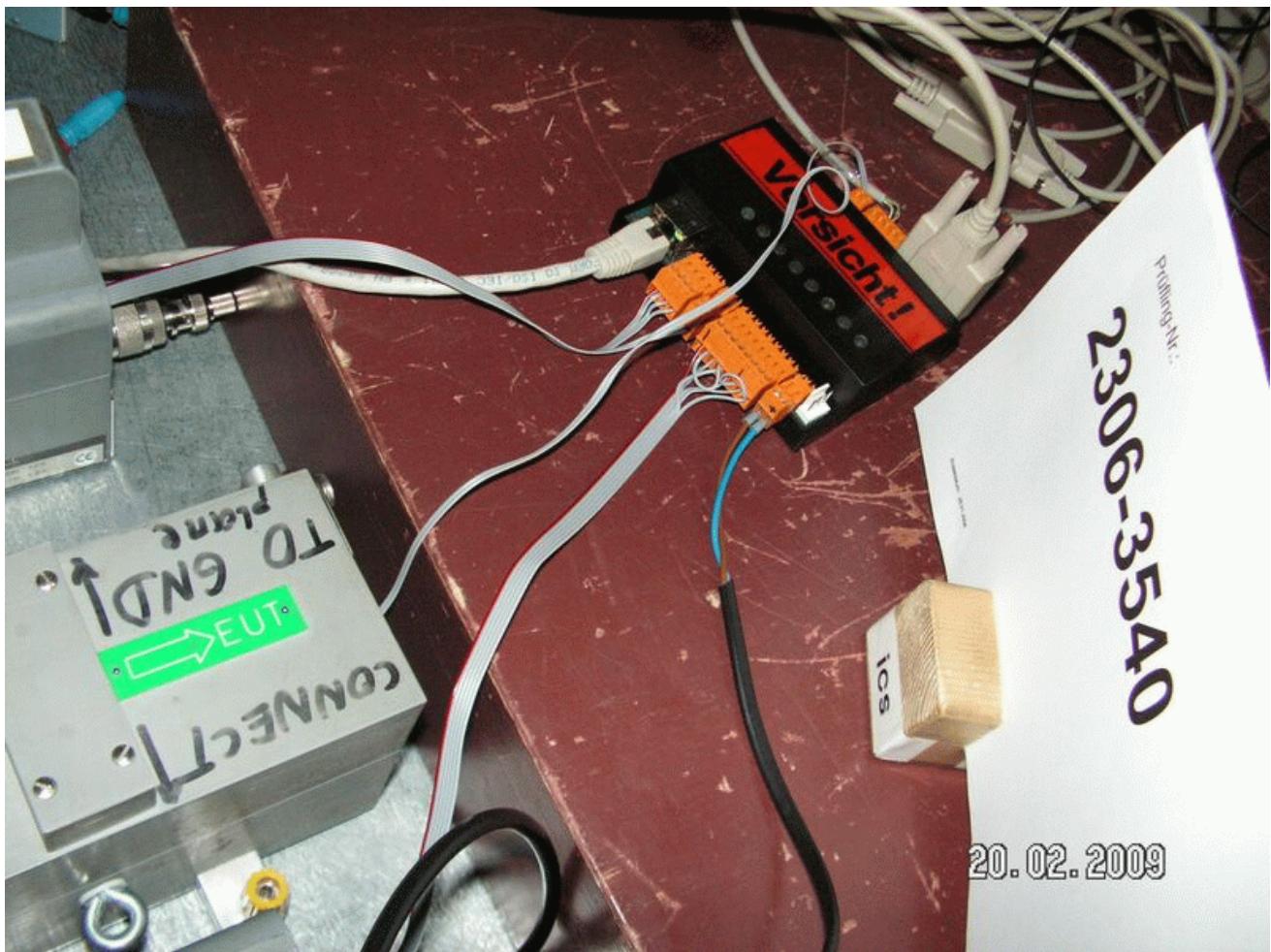


lcs-1.jpg

**ad 5.7. Conducted disturbances, induced by radio-frequency fields  
150 kHz - 80 MHz**

icsID: 1993

EUT:	Control Unit Barionet 50		



lcs-2.jpg

**ad 5.7. Conducted disturbances, induced by radio-frequency fields  
150 kHz - 80 MHz**

icsID: 1993

EUT:	Control Unit Barionet 50		

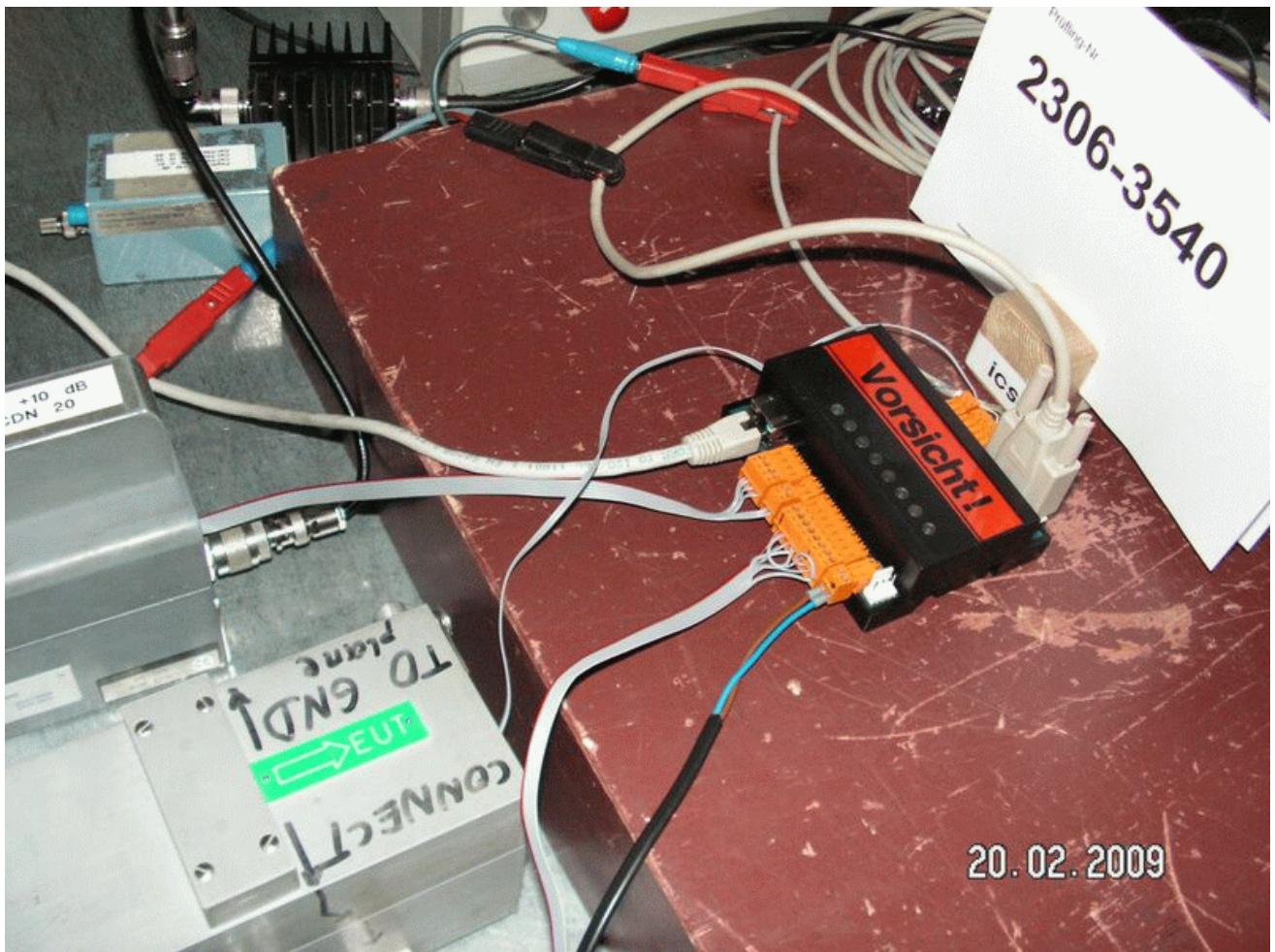


lcs-3.jpg

**ad 5.7. Conducted disturbances, induced by radio-frequency fields  
150 kHz - 80 MHz**

icsID: 1993

EUT:	Control Unit Barionet 50		



lcs-4.jpg