

E.M.C. TEST REPORT

According to the standard(s):

EN 55014-1: 2006 / A1:2009 / A2: 2011
EN 50130-4: 2011

Equipment under test:

Radon sensor
Model RADOSTAT

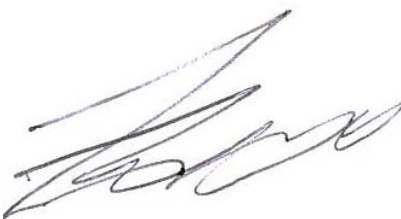
Company:

AYKOW

Diffusion: M. JEAN Grégory

(Company: AYKOW)

Number of pages: 30 including 1 annex

Ed.	Date	Modified page(s)	Written by		Technical verification Quality approval	
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0	08 / 04 / 13	Creation	A. ROUE		O. COZETTE	

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S10 DT - 000 FOR 00039 (01)



*NAME OF THE EQUIPMENT
UNDER TEST (E.U.T.)* : Radon sensor model RADOSTAT

Serial number : R1315

P/N : -

Software version : -

MANUFACTURER'S NAME : AYKOW

APPLICANT'S ADDRESS:

Company : AYKOW

Address : 7, rue Alfred Kastler
France

*Person(s) present during the
tests* : None

Responsible : M. JEAN Grégory

DATE(S) OF TESTS : 04 and 05 /04/2013

TESTS LOCATION(S) : Emitech Rennes laboratory in Le Rheu (35) FRANCE

TESTS SUPERVISOR(S) : NONE

TESTS OPERATOR(S) : A. ROUE

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ANNEX 1: PHOTOGRAPH(S)

1. INTRODUCTION

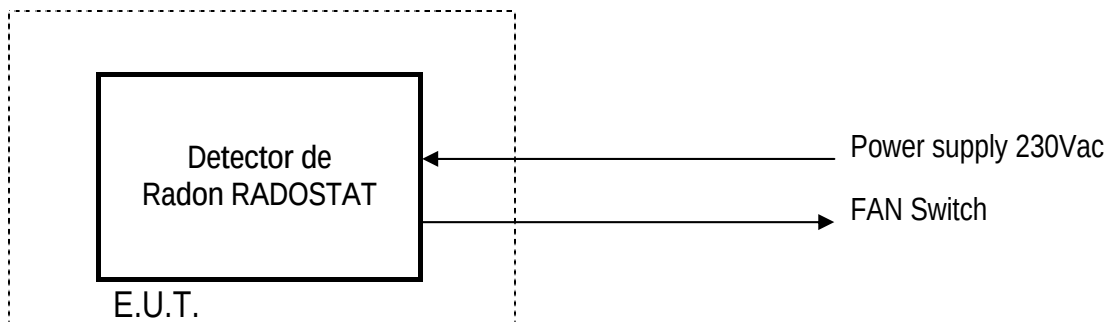
This document submits the results of Electromagnetic Compatibility tests performed on the equipment Radon sensor model RADOSTAT (denominated hereafter E.U.T.: equipment under test) according to document(s) listed below.

2. REFERENCE DOCUMENT(S)

EN 55014-1: 2006 / A1:2009 / A2: 2011
EN 50130-4: 2011

3. EQUIPMENT UNDER TEST CONFIGURATION SCHEME

Equipment under test (E.U.T.) description: equipment is used in home application to control the radon exposition.



Equipment control procedure during immunity tests: Checking the switching relay ventilation with a bulb.

Susceptibility criteria during a continuous disturbance: See Customer's questionnaire

Susceptibility criteria during a transitory disturbance: See Customer's questionnaire

Cycle and operating mode during emission tests: During test the equipment is connected to a light bulb relay open and in waiting to release by alarm detection.

Equipment modifications applied during tests: No

4. SUMMARY OF TEST RESULTS

Tests designation	Results satisfying?	Comments
EMISSION		
Conducted emission	YES	Class 23
Radiated electric field measurement	YES	Class B
IMMUNITY		
Electrostatic discharges immunity	YES	
Radiated, radio-frequency, electromagnetic field immunity	YES	
Electrical fast transient/burst immunity	YES	
Surge immunity	YES	
Immunity to conducted disturbances, induced by radio-frequency fields	YES	
Voltage dips and short interruptions immunity	YES	

N.P.: Not Performed.

N.A.: Not Applicable.

▪ In emission:

Sample subject to the test can be considered as compliant with prescriptions of the standard:
EN 55014-1: 2006 / A1: 2009 / A2: 2011
edition 2008 according to limits, specified in this test report.

▪ In immunity:

Sample subject to the test can be considered as compliant with prescriptions of the standard:
EN 50130-4 edition 2011
according to criteria, specified in this test report.

5. CONDUCTED EMISSION

Temperature (°C): 23

Humidity (%HR): 26.2

Pressure (hPa): 1006.7

Standard: EN 55014-1: 2006 / A1: 2009 / A2: 2011

Test method: EN 55016-2-1: 2009 / A1: 2011

Test configuration:

Tested cable(s)	Measure with	E.U.T. height
230Vac/50Hz power supply	L.I.S.N.	40cm

An artificial hand covers the part asking for handling of an operator.

Frequency band	Tested cable(s)	Resolution bandwidth	Video bandwidth
150kHz-1MHz	230Vac/50Hz power supply	9kHz	1MHz
1MHz-30MHz	230Vac/50Hz power supply	9kHz	1MHz

Test method deviation: No

Test equipment list:

CATEGORY	BRAND	TYPE	N° EMITECH	DATE CAL.	DATE VAL
Software	Nexio	BAT EMC	0000	Permanently validity	
Shielded enclosure	Siepel	C.R1	5957	Permanently validity	
Cable		N-10m	5902	26/09/2012	26/11/2014
Cable		N-2m	5904	26/09/2012	26/11/2014
Limiter	Rohde & Schwarz	ESH3-Z2	7595	26/03/2012	26/05/2014
Receiver	Advantest	R3361C	5900	22/04/2011	22/06/2013
LISN	Rohde & Schwarz	ESH3-Z5	5124	06/02/2013	06/04/2015

BAT-EMC software version: V3.6.0.24

Results: See Graph(s) hereafter.

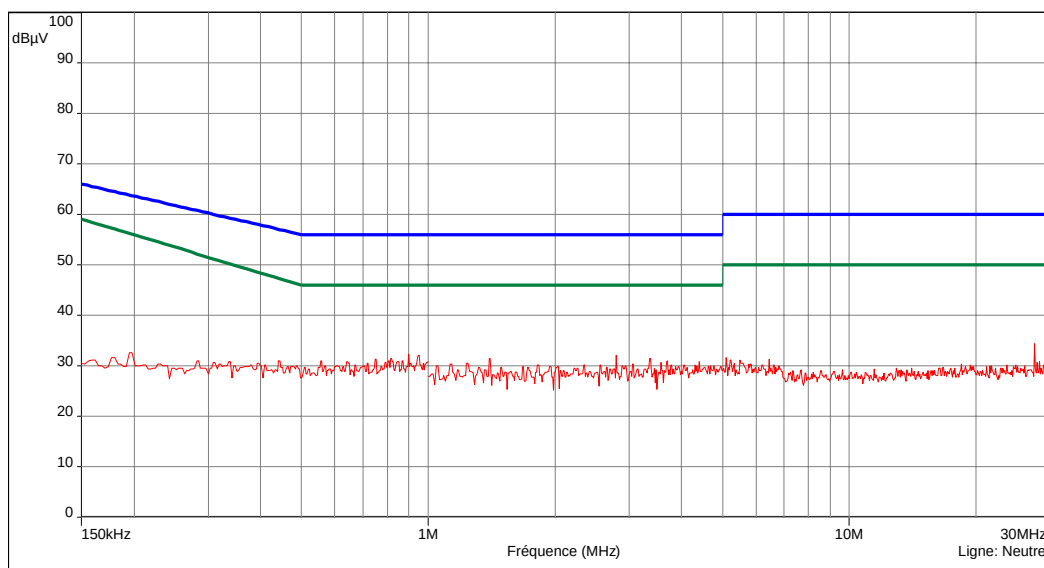
Limits on the graphs are average and quasi-peak limits (upper limit).

Conducted voltage emission (measurement)

230Vac/50Hz power supply

EMI1681

EN 55014-1 : 06 (A1A2) - Classe:23 - Moyenne/
EN 55014-1 : 06 (A1A2) - Classe:23 - QCrête/
Mes.Peak (Neutre)



Date: 04/04/2013 10:51:56

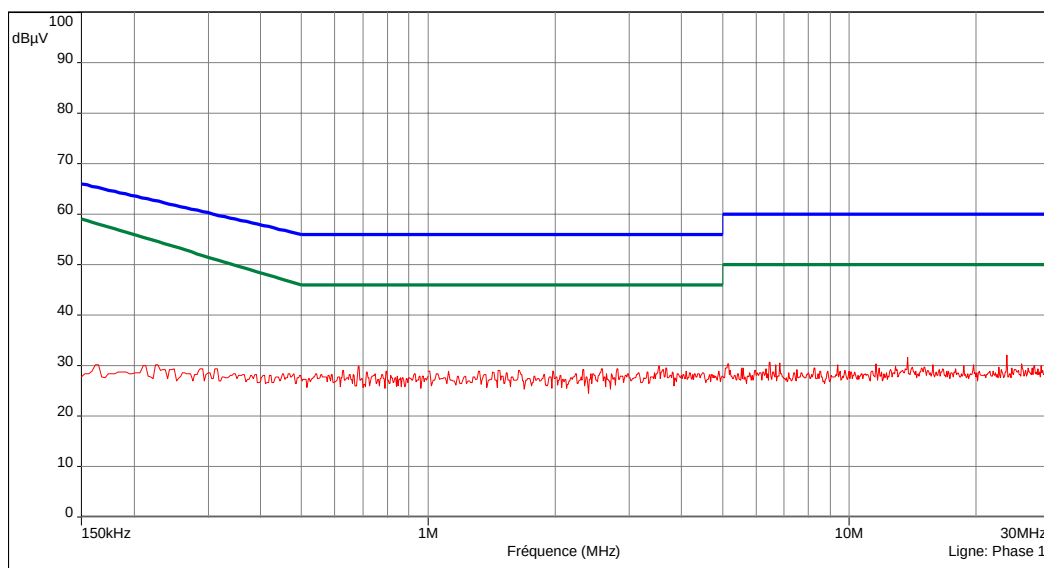
Technician: AR

Class: 23 of the standard

Detection:
Peak

Modification(s) during test:

EN 55014-1 : 06 (A1A2) - Classe:23 - Moyenne/
EN 55014-1 : 06 (A1A2) - Classe:23 - QCrête/
Mes.Peak (Phase 1)



6. RADIATED ELECTRIC FIELD MEASUREMENT

Temperature (°C): 23

Humidity (%HR): 26.2

Pressure (hPa): 1006.7

Standard: EN 55014-1: 2006 / A1: 2009 / A2: 2011

Test method: EN 55022: 2010

Test configuration:

Frequency band	Tested side	Resolution bandwidth	Video bandwidth	E.U.T. height
30MHz-1GHz	Front side	120kHz	1MHz	80cm
30MHz-1GHz	Right side	120kHz	1MHz	80cm
30MHz-1GHz	Back side	120kHz	1MHz	80cm
30MHz-1GHz	Left side	120kHz	1MHz	80cm

Test method deviation: Radiated emission limits are specified at 10 meters. Measurement distance used during the test, subject of this report, is 3 meters. Then published results come from a theoretical conversion as described in the standard.

Measuring distance: 3 meters

Test equipment list:

CATEGORY	BRAND	TYPE	N° EMITECH	DATE CAL.	DATE VAL
Software	Nexio	BAT EMC	0000	Permanently validity	
Shielded enclosure	Siepel	C.R1	5957	Permanently validity	
Antenna	ARA	LPB 2513	5955	03/04/2009	03/06/2013
Cable		N-2m	5903	18/07/2012	18/09/2014
Cable		N-5m	5901	18/07/2012	18/09/2014
Preamplifier	ADE	1100-25-10	5936	31/07/2012	30/09/2013
Receiver	Advantest	R3361C	5900	22/04/2011	22/06/2013

BAT-EMC software version: V3.6.0.24

Results: See Graph(s) hereafter.

The levels measured in anechoic shielded chamber, at 3 meters, are much lower than the standard limit. Measurement on an open area test site is not necessary to attest the conformity of the E.U.T. to the essential requirements of the Directive.

Radiated electric emission (measurement)

EMI1692

Front side

EN 55022 : 10 - Class:B - Moyenne/3.0mV
 EN 55022 : 10 - Class:B - QCrête/3.0mV
 EN 55022 : 10 - Class:B - Crête/3.0mV
 Mes.Peak (Horizontale)

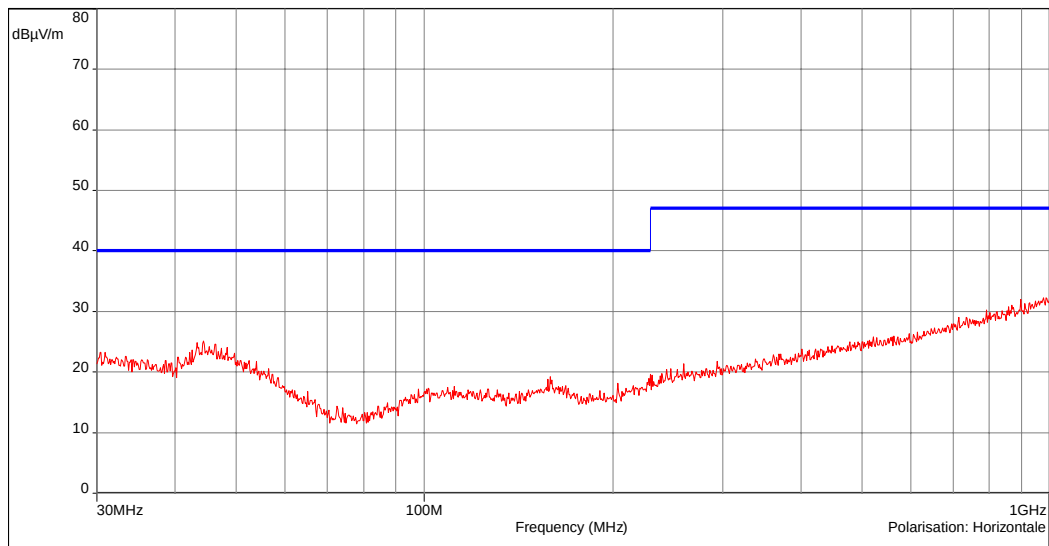
Date: 04/04/2013 11:15:38

Technician: AR

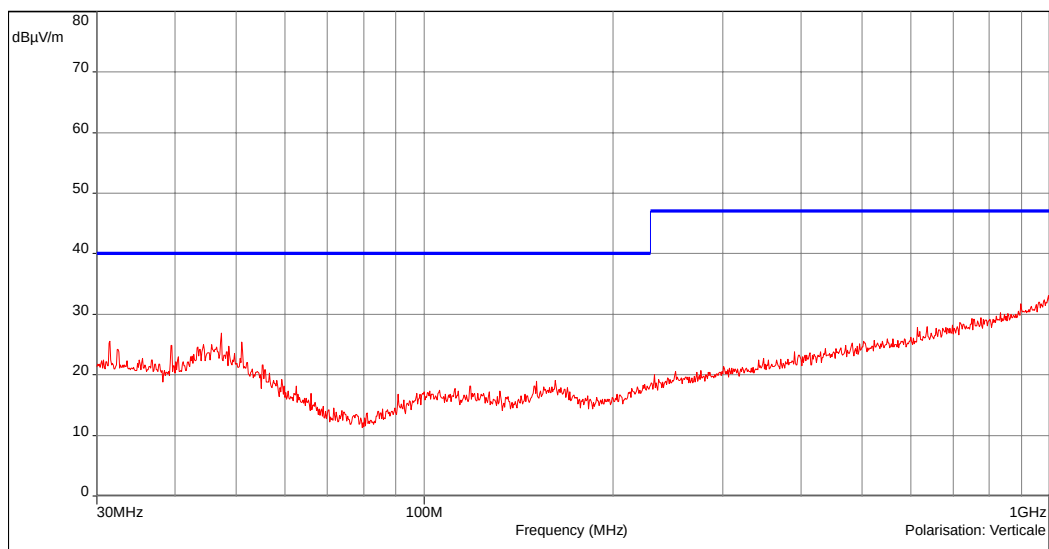
Class: B of the standard

Detection:
Peak

Modification(s) during test:



EN 55022 : 10 - Class:B - Moyenne/3.0mV
 EN 55022 : 10 - Class:B - QCrête/3.0mV
 EN 55022 : 10 - Class:B - Crête/3.0mV
 Mes.Peak (Verticale)

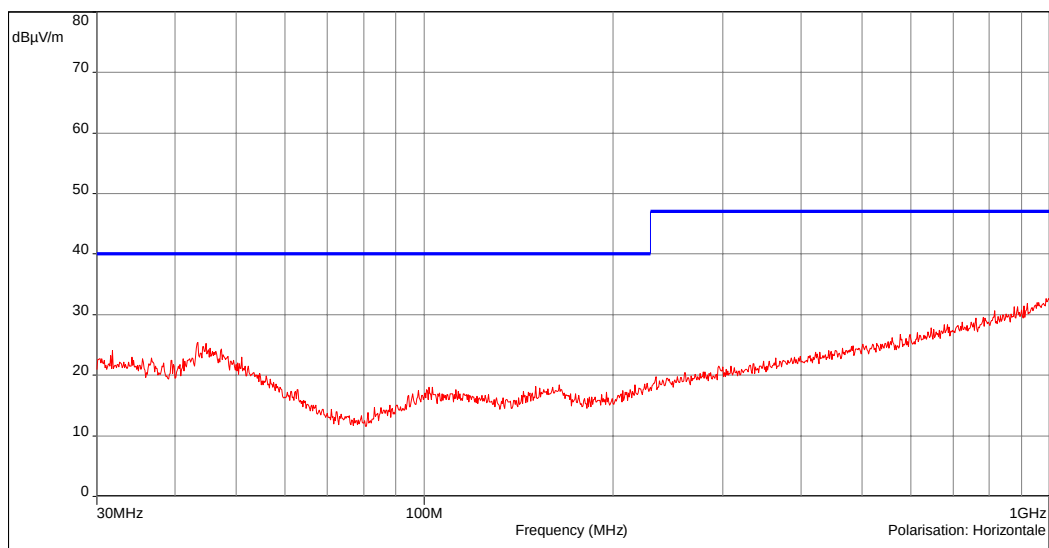


Radiated electric emission (measurement)

EMI1730

Right side

EN 55022 : 10 - Class:B - Moyenne/3.0m/
 EN 55022 : 10 - Class:B - QCrête/3.0m/
 EN 55022 : 10 - Class:B - Crête/3.0m/
 Mes.Peak (Horizontale)



Date: 04/04/2013 11:27:15

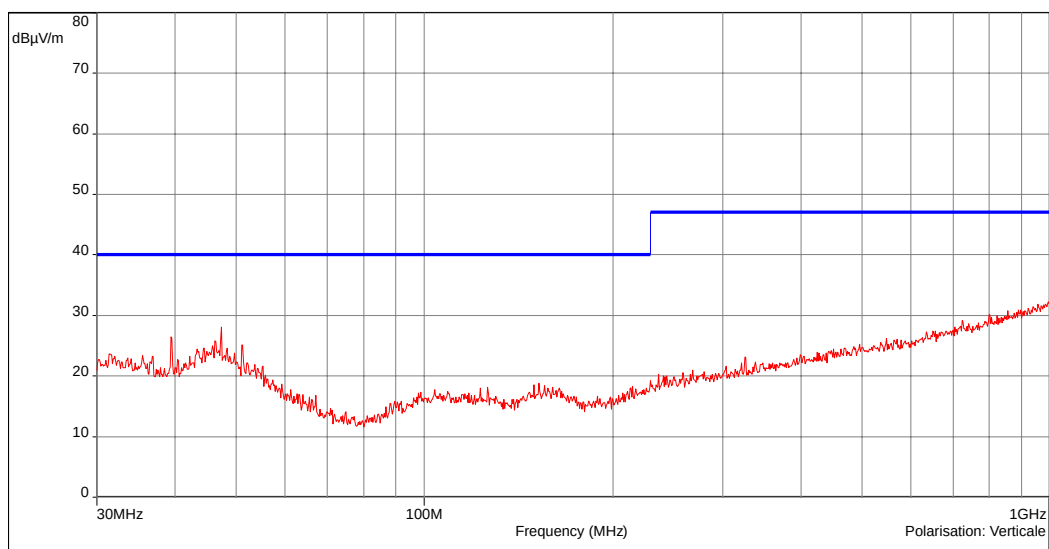
Technician:

Class: B of the standard

Detection:
Peak

Modification(s) during test:

EN 55022 : 10 - Class:B - Moyenne/3.0m/
 EN 55022 : 10 - Class:B - QCrête/3.0m/
 EN 55022 : 10 - Class:B - Crête/3.0m/
 Mes.Peak (Verticale)

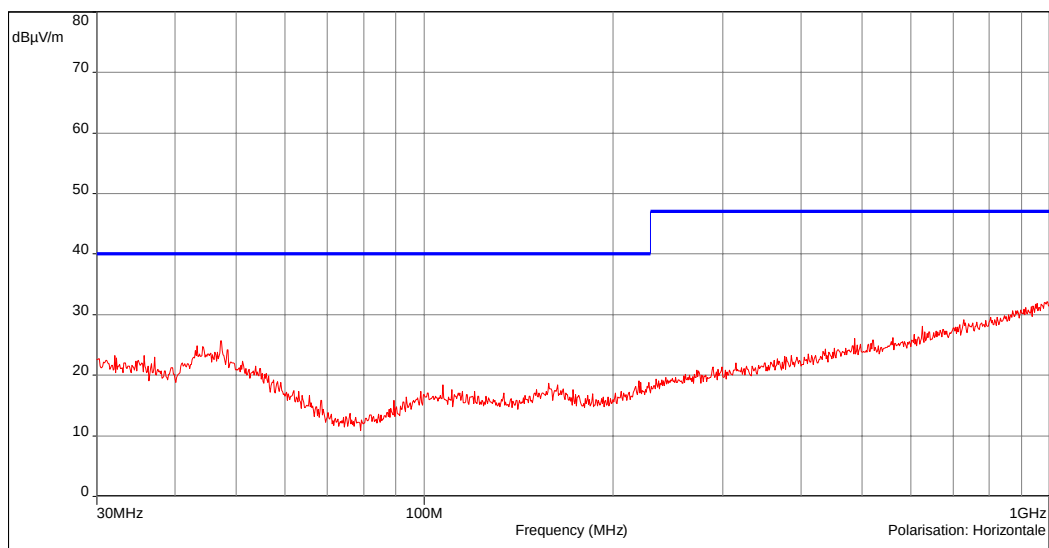


Radiated electric emission (measurement)

EMI1731

Back side

EN 55022 : 10 - Class:B - Moyenne/3.0m/
 EN 55022 : 10 - Class:B - QCrête/3.0m/
 EN 55022 : 10 - Class:B - Crête/3.0m/
 Mes.Peak (Horizontale)



Date: 04/04/2013 11:36:54

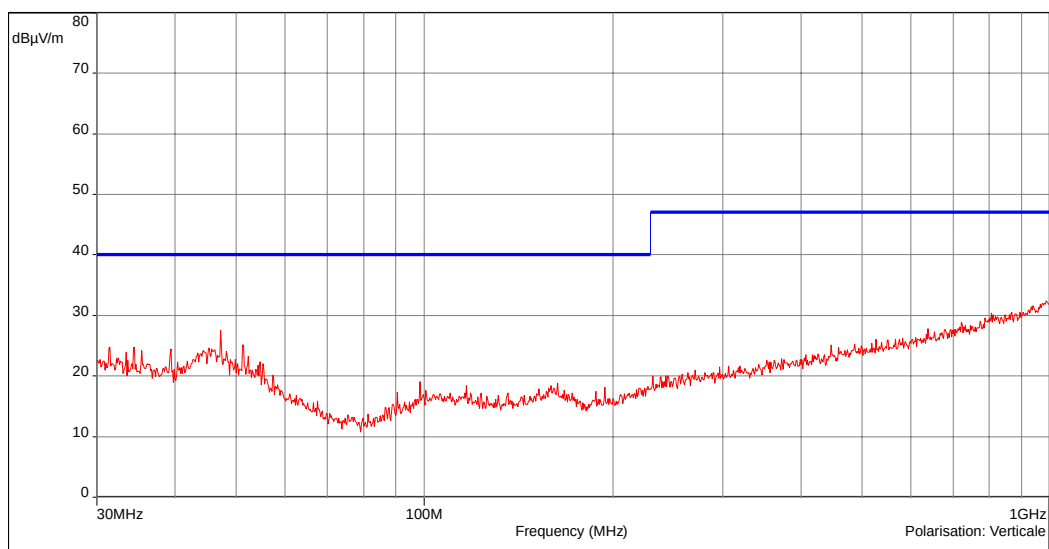
Technician:

Class: B of the standard

Detection:
Peak

Modification(s) during test:

EN 55022 : 10 - Class:B - Moyenne/3.0m/
 EN 55022 : 10 - Class:B - QCrête/3.0m/
 EN 55022 : 10 - Class:B - Crête/3.0m/
 Mes.Peak (Verticale)



Radiated electric emission (measurement)

EMI1732

Left side

EN 55022 : 10 - Class:B - Moyenne/3.0m/
 EN 55022 : 10 - Class:B - QCrête/3.0m/
 EN 55022 : 10 - Class:B - Crête/3.0m/
 Mes.Peak (Horizontale)

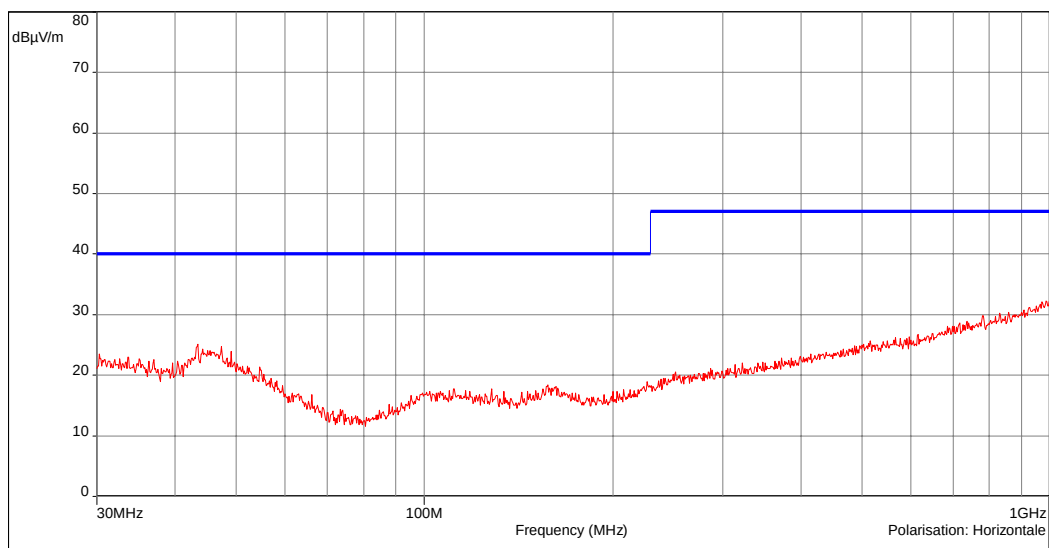
Date: 04/04/2013 11:44:24

Technician:

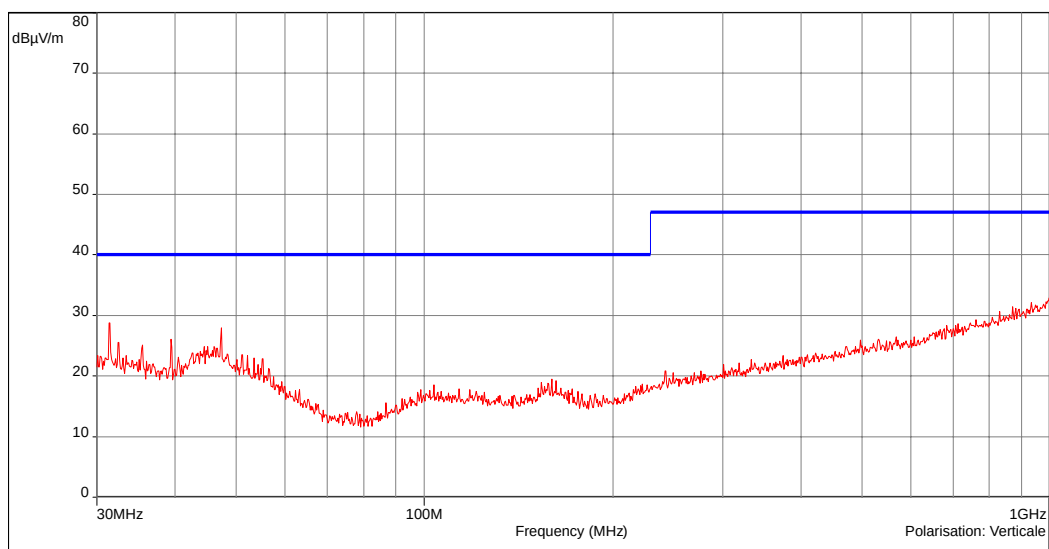
Class: B of the standard

Detection:
Peak

Modification(s) during test:



EN 55022 : 10 - Class:B - Moyenne/3.0m/
 EN 55022 : 10 - Class:B - QCrête/3.0m/
 EN 55022 : 10 - Class:B - Crête/3.0m/
 Mes.Peak (Verticale)



7. ELECTROSTATIC DISCHARGES IMMUNITY

Temperature (°C): 23

Humidity (%HR): 26.2

Pressure (hPa): 1006.7

Standard: EN 50130-4: 2011

Test method: EN 61000-4-2: 2009

Test configuration: E.U.T. is set on an insulated support at 0.8m above the ground plane. It is set on a coupling plane, separated from the latter by an insulating sheet of 0.5 mm thick.

Test method deviation: No

Test equipment list:

CATEGORY	BRAND	TYPE	N° EMITECH	DATE CAL.	DATE VAL
ESD generator	Schaffner	NSG 435	5866	13/08/2012	13/10/2013
Horizontal coupling plane	Emitech	Coupling H	5868	Permanently validity	
Vertical coupling plane	Emitech	Coupling V	5869	Permanently validity	
Resistors	Emitech	2 x 470 kOhms	5870	02/10/2012	02/12/2013
Resistors	Emitech	2 x 470 kOhms	5871	02/10/2012	02/12/2013
Shielded enclosure	Siepel	C.R1	5957	Permanently validity	

a) Air Discharges:

Aptitude criteria: 9.4. of the standard.

Polarities: Positive and negative

Injection points: On all reputed insulating surface (See photo(s) in annex 1 –red points ●)

Results: See Board below.

Level	Polarity	Comments
2kV	+	N.T.R.
	-	N.T.R.
4kV	+	N.T.R.
	-	N.T.R.
8kV	+	N.T.R.
	-	N.T.R.

N.T.R. = Nothing to report

N.P. = Not Performed

b) Direct Discharges:

Aptitude criteria: 9.4. of the standard.

Polarities: Positive and negative

Injection points: On all reputed conducting surface (See photo(s) in annex 1 – green points ●)

Results: See Board below.

Level	Polarity	Comments
6kV	+	N.T.R.
	-	N.T.R.

N.T.R. = Nothing to report

N.P. = Not Performed

c) Indirect Discharges:

Aptitude criteria: 9.4. of the standard.

Polarities: Positive and negative

Injection points: On each coupling plane. The vertical coupling plane is placed at 10 cm of the tested side.
10 D.E.S. of each polarity are applied at each point selected.

Results: See Boards below.

Level	Polarity	Vertical coupling - Comments			
		Front side	Back side	Left side	Right side
6kV	+	N.T.R.	N.T.R.	N.T.R.	N.T.R.
	-	N.T.R.	N.T.R.	N.T.R.	N.T.R.

N.T.R. = Nothing to report

N.P. = Not Performed

Level	Polarity	Horizontal coupling - Comments			
		Front side	Back side	Left side	Right side
6kV	+	N.T.R.	N.T.R.	N.T.R.	N.T.R.
	-	N.T.R.	N.T.R.	N.T.R.	N.T.R.

N.T.R. = Nothing to report

N.P. = Not Performed

8. RADIATED, RADIO-FREQUENCY, ELECTROMAGNETIC FIELD IMMUNITY

Temperature (°C): 23

Humidity (%HR): 26.2

Pressure (hPa): 1006.7

Standard: EN 50130-4: 2011

Test method: EN 61000-4-3: 2006

Test configuration:

Tested side	Frequency band	E.U.T. height	Polarization	Level	Step
Front side	80MHz-1GHz	80cm	Vertical	10 V/m	1%
	80MHz-1GHz	80cm	Horizontal	10 V/m	1%
	1GHz-2.7GHz	80cm	Horizontal	10 V/m	1%
	1GHz-2.7GHz	80cm	Vertical	10 V/m	1%
Right side	80MHz-1GHz	80cm	Vertical	10 V/m	1%
	80MHz-1GHz	80cm	Horizontal	10 V/m	1%
	1GHz-2.7GHz	80cm	Horizontal	10 V/m	1%
	1GHz-2.7GHz	80cm	Vertical	10 V/m	1%
Left side	80MHz-1GHz	80cm	Vertical	10 V/m	1%
	80MHz-1GHz	80cm	Horizontal	10 V/m	1%
	1GHz-2.7GHz	80cm	Horizontal	10 V/m	1%
	1GHz-2.7GHz	80cm	Vertical	10 V/m	1%
Back side	80MHz-1GHz	80cm	Vertical	10 V/m	1%
	80MHz-1GHz	80cm	Horizontal	10 V/m	1%
	1GHz-2.7GHz	80cm	Horizontal	10 V/m	1%
	1GHz-2.7GHz	80cm	Vertical	10 V/m	1%

Tested side	Calibration(s) used during the test
Front side	PV-(80-1000M)-3m-18V/m-27.03.12-160cm-150x150cm
	PH-(80-1000M)-3m-18V/m-27.03.12-160cm-150x150cm
	PH-(1-3G)-3m-18V/m-27.03.12-160cm-150x150cm
	PV-(1-3G)-3m-18V/m-27.03.12-160cm-150x150cm
Right side	PV-(80-1000M)-3m-18V/m-27.03.12-160cm-150x150cm
	PH-(80-1000M)-3m-18V/m-27.03.12-160cm-150x150cm
	PH-(1-3G)-3m-18V/m-27.03.12-160cm-150x150cm
	PV-(1-3G)-3m-18V/m-27.03.12-160cm-150x150cm
Left side	PV-(80-1000M)-3m-18V/m-27.03.12-160cm-150x150cm
	PH-(80-1000M)-3m-18V/m-27.03.12-160cm-150x150cm
	PH-(1-3G)-3m-18V/m-27.03.12-160cm-150x150cm
	PV-(1-3G)-3m-18V/m-27.03.12-160cm-150x150cm
Back side	PV-(80-1000M)-3m-18V/m-27.03.12-160cm-150x150cm
	PH-(80-1000M)-3m-18V/m-27.03.12-160cm-150x150cm
	PH-(1-3G)-3m-18V/m-27.03.12-160cm-150x150cm
	PV-(1-3G)-3m-18V/m-27.03.12-160cm-150x150cm

Modulation	Duration
CW	50ms
AM (80%, 1kHz)	3000ms
PM ext (500ms, 500000µs)	3000ms

The filename calibration of the homogeneous zone is formalized and defined the following parameters:

PX(Fo-Fn)-D-EV/m-date-Hcm-dxdcm such as

X = polarization of the transmit antenna

Fo-Fn = frequency range

D = Distance from the antenna in terms of the homogeneous zone

E = Field level during the calibration of the homogeneous zone

H = Height of the transmitting antenna

d = distance a side of the homogeneous zone

The test is performed on 2 sides (See photographs in annex 1).

The equipment under test is set out in such a way that the side submitted to the test be located in homogeneous zone of the previously calibrated field. In compliance with the calibration, some anechoic panels are placed on the ground and antennas used are placed according to the calibration.

Aptitude criteria: 10.4. of the standard.

Test method deviation: No.

Test equipment list:

CATEGORY	BRAND	TYPE	N° EMITECH	DATE CAL.	DATE VAL
Antenna	ETS LINDGREN	3117	5492	03/08/2012	03/10/2016
Antenna	ARA	LPB 2513	5955	03/04/2009	03/06/2013
Cable		N-2m	5903	18/07/2012	18/09/2014
Cable		N-5m	5901	18/07/2012	18/09/2014
Preamplifier	ADE	1100-25-10	5936	31/07/2012	30/09/2013
Preamplifier	MITEQ	AFS42	6237	03/08/2012	03/10/2013
Receiver	Rohde & Schwarz	FSU	6804	11/05/2011	11/07/2013
Receiver	Advantest	R3361C	5900	22/04/2011	22/06/2013
Shielded enclosure	Siepel	C.R1	5957	Permanently validity	
Software	Nexio	BAT EMC	0000	Permanently validity	

BAT-EMC software version: V3.6.0.24

Results: See Graph(s) hereafter.

- Front side NTR
- Right side NTR
- Left side NTR
- Back side NTR

9. ELECTRICAL FAST TRANSIENT/BURST IMMUNITY

Temperature (°C): 23

Humidity (%HR): 26.2

Pressure (hPa): 1006.7

Standard: EN 50130-4: 2011

Test method: EN 61000-4-4: 2004 / A1: 2010

Test configuration:

Tested cable(s)	E.U.T. height	Coupling mode	Test level	Repetition frequency
Power supply 230Vac	10cm	Generator	2kV	100kHz
FAN RELAY	10cm	Coupling clamp	1kV	100kHz

The transient generator is laid on the ground plane to which it is connected.

Transients characteristics: 5/50 ns.

Test method deviation: No

Test equipment list:

CATEGORY	BRAND	TYPE	N° EMITECH	DATE CAL.	DATE VAL
Transient immunity tester:TRANSIENT 1000	EMC PARTNER	TRA 1000	5899	20/01/2012	20/03/2014
Shielded enclosure	Siepel	C.R1	5957	Permanently validity	
Coupling clamp	EMITECH	Coupling clamp	6642	30/08/2011	30/10/2013

Aptitude criteria:

- Power supply 230Vac: 12.4 of the standard.
- FAN RELAY: 12.4 of the standard.

Results: See Board(s) hereafter.

POWER SUPPLY 230VAC

Level	Duration	Comments
+ 2kV	1min	N.T.R.
- 2kV	1min	N.T.R.

N.T.R. = Nothing to report

FAN RELAY

Level	Duration	Comments
+ 1kV	1min	N.T.R.
- 1kV	1min	N.T.R.

N.T.R. = Nothing to report

10. SURGE IMMUNITY*Temperature (°C): 23**Humidity (%HR): 26.2**Pressure (hPa): 1006.7*Standard: EN 50130-4: 2011Test method: EN 61000-4-5: 2006Test configuration:

Tested cable(s)	E.U.T. height	Coupling mode	Differential mode level	Common mode level
230Vac/50Hz power supply	10cm	Generator	0.5kV	0.5kV
230Vac/50Hz power supply	10cm	Generator	1kV	1kV
230Vac/50Hz power supply	10cm	Generator	N.A.	2kV

N.A.= Not Applicable

Test method deviation: NoTest equipment list:

CATEGORY	BRAND	TYPE	N° EMITECH	DATE CAL.	DATE VAL
Transient immunity tester: TRANSIENT 1000	EMC PARTNER	TRA 1000	5899	20/01/2012	20/03/2014

Transients characteristics: (1,2/50) μ sPolarities: Positive and negativeAptitude criteria:

- 230Vac/50Hz power supply: 13.4. of the standard.

Results: See Board(s) hereafter.

230VAC/50HZ POWER SUPPLY - DIFFERENTIAL MODE

Level	Phase(s) shifting	Number of pulse	Comments
+ 0.5kV	0°	5	N.T.R.
	90°	5	N.T.R.
	180°	5	N.T.R.
	270°	5	N.T.R.
- 0.5kV	0°	5	N.T.R.
	90°	5	N.T.R.
	180°	5	N.T.R.
	270°	5	N.T.R.

N.T.R. = Nothing to report

N.P. = Not Performed

230VAC/50HZ POWER SUPPLY - DIFFERENTIAL MODE

Level	Phase(s) shifting	Number of pulse	Comments
+ 1kV	0°	5	N.T.R.
	90°	5	N.T.R.
	180°	5	N.T.R.
	270°	5	N.T.R.
- 1kV	0°	5	N.T.R.
	90°	5	N.T.R.
	180°	5	N.T.R.
	270°	5	N.T.R.

N.T.R. = Nothing to report

N.P. = Not Performed

230VAC/50HZ POWER SUPPLY - COMMON MODE

Level	Phase(s) shifting	Number of pulse	Comments	
			N-T	L-T
+ 0.5kV	0°	5	N.T.R.	N.T.R.
	90°	5	N.T.R.	N.T.R.
	180°	5	N.T.R.	N.T.R.
	270°	5	N.T.R.	N.T.R.
- 0.5kV	0°	5	N.T.R.	N.T.R.
	90°	5	N.T.R.	N.T.R.
	180°	5	N.T.R.	N.T.R.
	270°	5	N.T.R.	N.T.R.

N.T.R. = Nothing to report

N.P. = Not Performed

230VAC/50Hz POWER SUPPLY - COMMON MODE

Level	Phase(s) shifting	Number of pulse	Comments	
			N-T	L-T
+ 1kV	0°	5	N.T.R.	N.T.R.
	90°	5	N.T.R.	N.T.R.
	180°	5	N.T.R.	N.T.R.
	270°	5	N.T.R.	N.T.R.
- 1kV	0°	5	N.T.R.	N.T.R.
	90°	5	N.T.R.	N.T.R.
	180°	5	N.T.R.	N.T.R.
	270°	5	N.T.R.	N.T.R.

N.T.R. = Nothing to report

N.P. = Not Performed

230VAC/50Hz POWER SUPPLY - COMMON MODE

Level	Phase(s) shifting	Number of pulse	Comments	
			N-T	L-T
+ 2kV	0°	5	N.T.R.	N.T.R.
	90°	5	N.T.R.	N.T.R.
	180°	5	N.T.R.	N.T.R.
	270°	5	N.T.R.	N.T.R.
- 2kV	0°	5	N.T.R.	N.T.R.
	90°	5	N.T.R.	N.T.R.
	180°	5	N.T.R.	N.T.R.
	270°	5	N.T.R.	N.T.R.

N.T.R. = Nothing to report

N.P. = Not Performed

11. IMMUNITY TO CONDUCTED DISTURBANCES, INDUCED BY RADIO-FREQUENCY FIELDS

Temperature (°C): 23

Humidity (%HR): 26.2

Pressure (hPa): 1006.7

Standard: EN 50130-4: 2011

Test method: EN 61000-4-6: 2009

Test configuration:

Tested cable(s)	Frequency band	50Ω load on:	Injection mode	Level	Step
Power supply	150kHz-100MHz	/	M2 (5878/04_12/C)	10 V	1%
Fan Relay	150kHz-100MHz	M2	PINCE_EM (5935/04_12/C)	10 V	1%

E.U.T. is set out at 10cm above the reference ground plane.

Modulation	Duration
CW	50ms
AM (80%, 1kHz)	3000ms
PM ext (500ms, 500000μs)	3000ms

Aptitude criteria:

- ventilator switch: 11.4 of the standard.
- Power supply: 11.4 of the standard.

Test method deviation: No

Test equipment list:

CATEGORY	BRAND	TYPE	N° EMITECH	DATE CAL.	DATE VAL
Software	Nexio	BAT EMC	0000	Permanently validity	
Amplifier	AR	250L	5867	29/08/2011	29/10/2013
Attenuator	DICONEX	16-3763	5921	31/07/2012	30/09/2014
Cable	BNC	0.5m	7622	26/03/2012	26/05/2014
Cable		N-10m	5902	26/09/2012	26/11/2014
Cable		N-2m	5904	26/09/2012	26/11/2014
Cable		N-2m	5906	26/09/2012	26/11/2014
Coupler	Emitech	40dB	5885	18/07/2012	18/09/2014
CDN	SCHAFFNER	M2	5878	23/01/2012	23/03/2014
Power probe	Rohde & Schwarz	NRV-Z5	6810	01/09/2011	01/11/2013
Synthesizer	Marconi Instruments	2031	7620	26/03/2012	26/05/2014
Wattmeter	Rohde & Schwarz	NRVS	6809	01/09/2011	01/11/2013
Shielded enclosure	Siepel	C.R1	5957	Permanently validity	

BAT-EMC software version: V

Results: See Graph(s) hereafter.

- Fan Relay : NTR
- Power supply : NTR

12. VOLTAGE DIPS AND SHORT INTERRUPTIONS IMMUNITY*Temperature (°C): 23**Humidity (%HR): 22.6**Pressure (hPa): 1006.7*Standard: EN 50130-4: 2011Test method: EN 61000-4-11: 2004

Test configuration: Equipment under test is connected to the power supply by its own specified shortest cable. Cycles given in the board below correspond to main power frequency (respectively 50Hz and/or 60Hz).

Test method deviation: NoTest equipment list:

CATEGORY	BRAND	TYPE	N° EMITECH	DATE CAL.	DATE VAL
Transient immunity tester: TRANSIENT 1000	EMC PARTNER	TRA 1000	5899	20/01/2012	20/03/2014
Shielded enclosure	Siepel	C.R1	5957	Permanently validity	

Test characteristics and results:

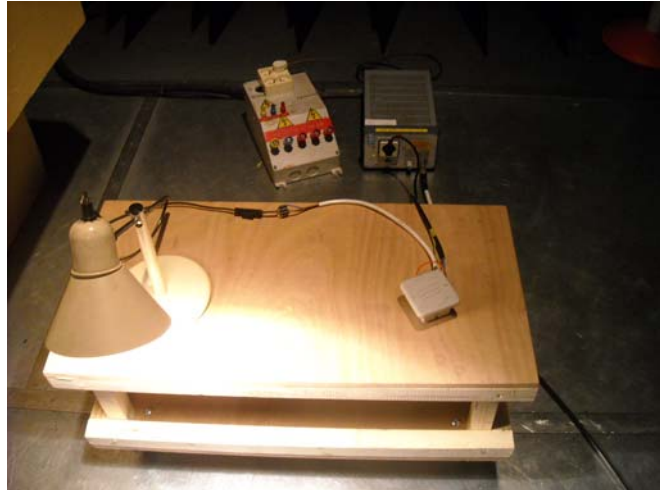
Test	Duration	Level applied	Aptitude criteria	Results
Power supply 230Vac 184V 5s	5000	80%Un	8.4 of the standard	N.T.R.
Power supply 230Vac 161V 500ms	500	70%Un	8.4. of the standard	N.T.R.
Power supply 230Vac 92V 200ms	200	40%Un	8.4 of the standard	N.T.R.
Power supply 230Vac 0V 5s	5000	0%Un	8.4 of the standard	N.T.R.
Power supply 230Vac/50Hz 253Vac	1 cycle	110%	7.4. of the standard	N.T.R.
Power supply 230Vac/50Hz 195.5Vac	1 cycle	75%Un	7.4 of the standard	N.T.R.

N.T.R. = Nothing to report

End of report – 2 annexes to be forwarded

ANNEX 1: PHOTOGRAPH(S)

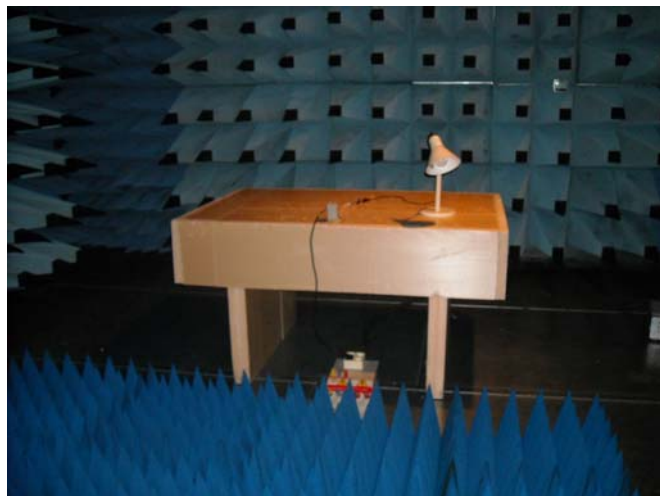
Conducted voltage emission



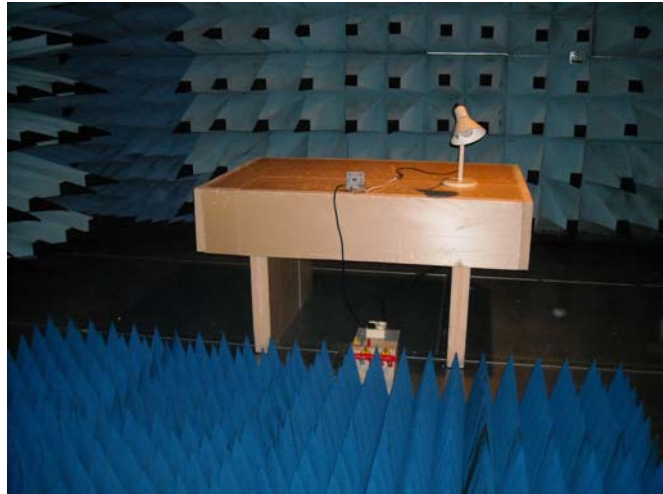
Radiated electric emission



Radiated electric emission



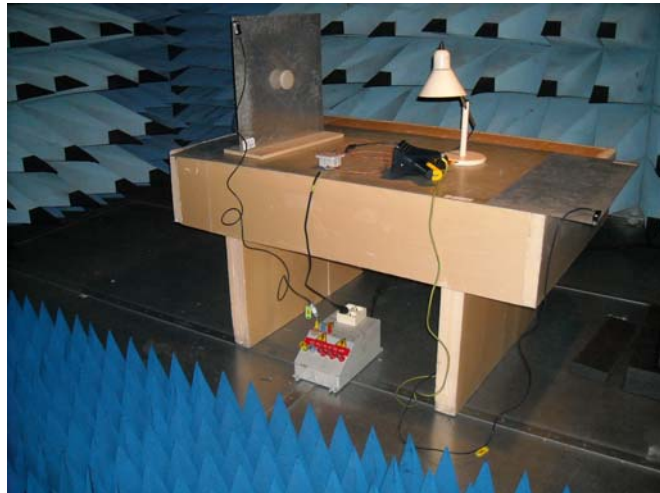
Radiated electric emission



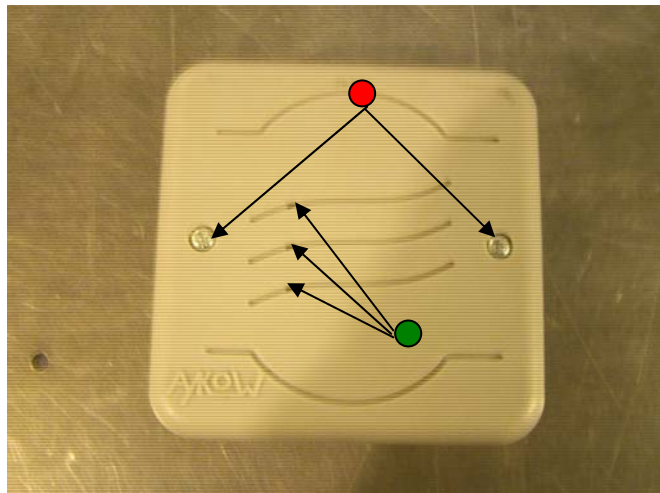
Radiated electric emission



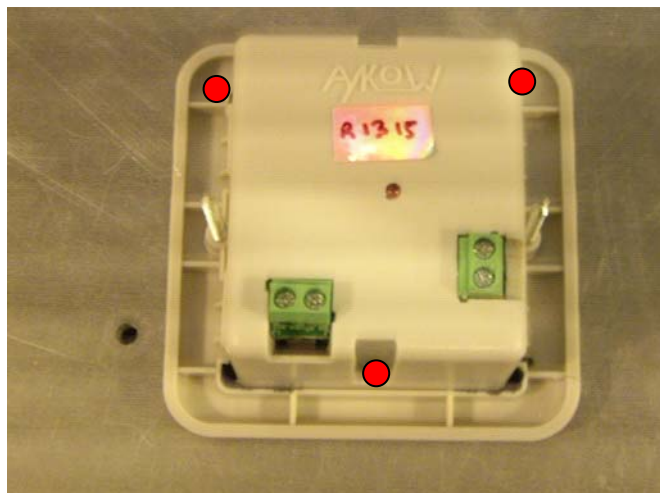
Electrostatic discharges immunity



Electrostatic discharges immunity



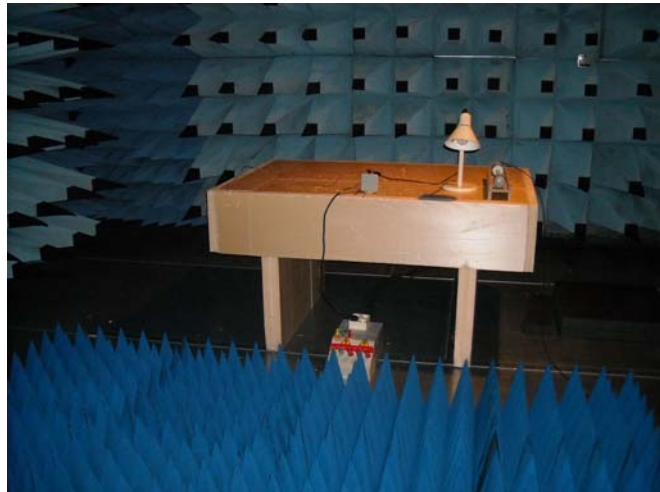
Electrostatic discharges immunity



Electrostatic discharges immunity



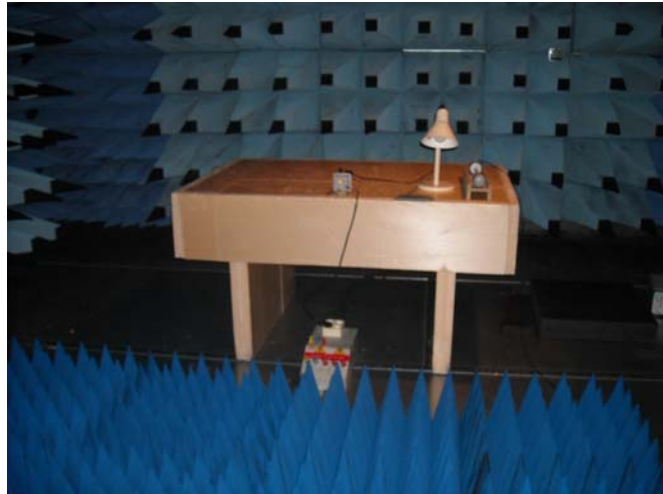
Radiated electric immunity



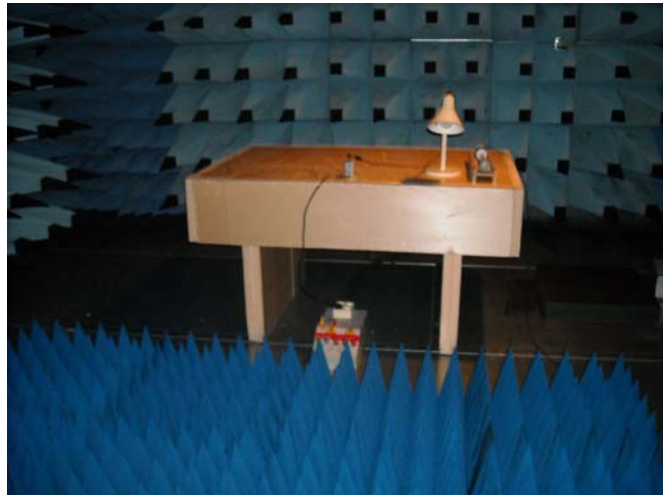
Radiated electric immunity



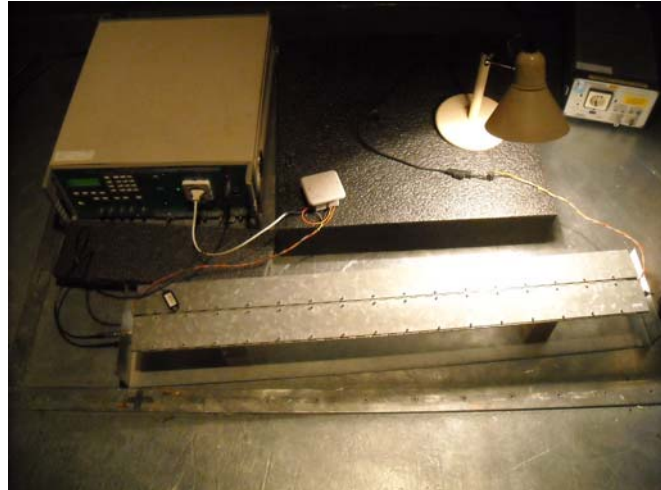
Radiated electric immunity



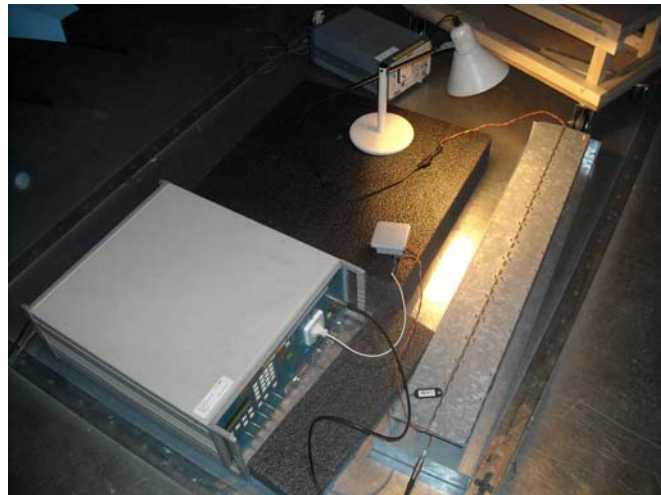
Radiated electric immunity



Electrical fast transient/burst
immunity



Electrical fast transient/burst
immunity



Surge immunity



Conducted voltage immunity



Immunity to voltage dips, short interruptions and voltage variation

