



TEST REPORT

EN 55022:2010/EN 55024:2010

Report Reference No......: **TRE1303013507 R/C: 59940**

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Wenliang Li

Date of issue.....: May 22, 2013

Testing Laboratory Name: **Shenzhen Huatongwei International Inspection Co., Ltd**

Address.....: Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China

Applicant's name.....: **RICON TECHNOLOGIES FZE**

Address.....: Ras Al Khaimah, UAE P.O Box 16111

Test specification:

Standard.....: **EN 55022: 2010**
EN 55024: 2010
EN 61000-3-2: 2006 +A1: 2009+A2: 2009
EN 61000-3-3: 2008

TRF Originator.....: Shenzhen Huatongwei International Inspection CO., Ltd

Master TRF.....: Dated 2006-06

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Test item description : Cellular Router

Trade Mark: **RICON**

Manufacturer: **RICON TECHNOLOGIES FZE**

Model/Type reference.....: S9922

List Model: /

Ratings.....: DC12.0V adapter from AC 230V/50Hz

Result.....: **Positive**

TEST REPORT

Test Report No. :	TRE1303013507	May 22, 2013
		Date of issue

Equipment under Test : Cellular Router

Model /Type : S9922

Listed Models : /

Applicant : **RICON TECHNOLOGIES FZE**

Address : Ras Al Khaimah, UAE P.O Box 16111

Manufacturer : **RICON TECHNOLOGIES FZE**

Address : Ras Al Khaimah, UAE P.O Box 16111

Test Result according to the standards on page 4:	Positive
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The test report merely corresponds to the test sample.
 It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1. TEST STANDARDS

The tests were performed according to following standards:

[EN 55022: 2010](#) Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement

[EN 55024: 2010](#) Information technology equipment – Immunity characteristics – Limits and methods of measurement

[EN 61000-3-2: 2006 +A1: 2009+A2: 2009](#) Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)

[EN 61000-3-3: 2008](#) Electromagnetic compatibility (EMC) -- Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection

2. SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	Mar 26, 2013
Testing commenced on	:	Mar 26, 2013
Testing concluded on	:	May 22, 2013

2.2. Equipment Under Test

Power supply system utilised

Power supply voltage	:	<input type="radio"/> 230V / 50 Hz	<input type="radio"/> 115V / 60Hz
		<input type="radio"/> 12 V DC	<input type="radio"/> 24 V DC
		<input checked="" type="radio"/> Other (specified in blank below)	

DC 12.0 V Adapter from AC 230V/50Hz

2.3. Short description of the Equipment under Test (EUT)

2.4GHz (Cellular Router (M/N:S9922))

For more details, refer to the user's manual of

the EUT. Serial number: Prototype

2.4. EUT operation mode

The EUT has been tested under typical operating condition. No software used to control the EUT for staying in transmitting and receiving mode for testing.

2.5. Performance level

The test results shall be classified in terms of the loss of function or degradation of performance of the equipment under test relative to a performance criteria defined by its manufacturer or the requestor of the test, or agreed between the manufacturer and the purchaser of the product. Examples of functions defined by the manufacturer to be evaluated during testing include, but are not limited to, the following:

- essential operational modes and states;
- tests of all peripheral access(hard disks, floppy disks, printers, keyboard, mouse, etc.);
- quality of software execution
- quality of data display and transmission
- quality of speech transmission

Definition related to the performance level:

- based on the used product standard
- based on the declaration of the manufacturer, requestor or purchaser

Criterion A:

The apparatus shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these

may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Criterion B:

After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Criterion C:

Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

2.6. Modifications

No modifications were implemented to meet testing criteria.

2.7. NOTE

The EUT including GPRS,EGPRS, WCDMA and WLAN function,The functions of the EUT listed as below:

	Test Standards	Reference Report
Radio-WCDMA	ETSI EN 301 908-1 V5.2.1: 2011-05 ETSI EN 301 908-2 V4.2.1: 2010-03	TRE1303013501
Radio-GSM	ETSI EN 301 511 V9.0.2: 2003-03	TRE1303013502
Radio-WLAN	ETSI EN 300 328 V1.7.1: 2006-10	TRE1303013503
EMC-GSM	ETSI EN 301 489-1 V1.9.2: 2011-09 ETSI EN 301 489-7 V1.3.1: 2005-11	TRE1303013504
EMC-WCDMA	ETSI EN 301 489-1 V1.9.2: 2011-09 ETSI EN 301 489-24 V1.5.1: 2010-10	TRE1303013505
EMC-WLAN	ETSI EN 301 489-1 V1.9.2: 2011-09 ETSI EN 301 489-17 V2.2.1: 2012-09	TRE1303013506
EMC	EN 55022:2010 EN 55024:2010	TRE1303013507
EMF	EN62311:2008	TRE1303013508

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen Huatongwei International Inspection Co., Ltd
Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Phone: 86-755-26715686 Fax: 86-755-26748089

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 (2009) and CISPR Publication 22.

3.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories, Date of Registration: Mar. 01, 2012. Valid time is until Feb 28, 2015.

A2LA-Lab Cert. No. 2243.01

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is until Sept. 30, 2013.

FCC-Registration No.: 662850

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 662850, Renewal date Jun. 01, 2012, valid time is until Jun. 01, 2015.

IC-Registration No.: 5377A

The 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377A on Jan. 25, 2011, valid time is until Jan. 24, 2014.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

NEMKO-Aut. No.: ELA125

Shenzhen Huatongwei International Inspection Co., Ltd has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10, the authorization is valid through July 07, 2013

VCCI

The 3m Semi-anechoic chamber (12.2m×7.95m×6.7m) and Shielded Room (8m×4m×3m) of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-292. Date of Registration: Dec. 24, 2010. Valid time is until Dec. 23, 2013.

Main Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-2726. Date of Registration: Dec. 20, 2012. Valid time is until Dec. 19, 2015.

Telecommunication Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-1837. Date of Registration: May 07, 2013. Valid time is until May 06, 2016.

DNV

Shenzhen Huatongwei International Inspection Co., Ltd. has been found to comply with the requirements of DNV towards subcontractor of EMC and safety testing services in conjunction with the EMC and Low voltage Directives and in the voluntary field. The acceptance is based on a formal quality Audit and follow-ups according to relevant parts of ISO/IEC Guide 17025 (2005), in accordance with the requirements of the DNV Laboratory Quality Manual towards subcontractors. Valid time is until Aug. 24, 2013.

3.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature: 15-35 ° C

Humidity: 30-60 %

Atmospheric pressure: 950-1050mbar

3.4. Configuration of Tested System

Fig. 2-1 Configuration of Tested System

Mode 1:

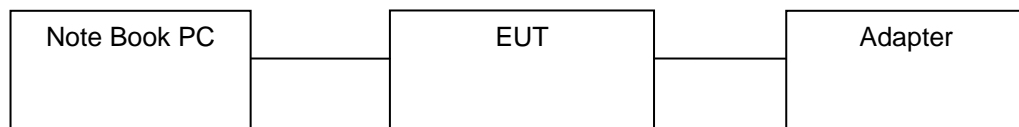


Table 2-1 Equipment Used in Tested System

No.	Product	Manufacturer	Model No.	Serial No.	FCC ID
1	Notebook PC	DELL	D610	CN-0D4571-48643-51S-0236	-----

Adapter:

Model: KW300-120E20
 Input:100-240V~50/60Hz 0.8A
 Output: +12V DC 2.0A
 Power Cable: 120cm
 ◇ Shielded ◆ Unshielded

3.5. Test Description

Emission Measurement requirements		
Radiated Emission	EN 55022: 2010	PASS
Conducted Disturbance	EN 55022: 2010	PASS
Harmonic Current	EN 61000-3-2: 2006 +A1: 2009+A2: 2009	PASS
Voltage Fluctuation and Flicker	EN 61000-3-3: 2008	PASS
Immunity Measurement requirements		
Electrostatic Discharge	EN 55024: 2010 IEC 61000-4-2: 2008	PASS
RF Field Strength Susceptibility	EN 55024: 2010 IEC 61000-4-3: 2010	PASS
Electrical Fast Transient/Burst Test	EN 55024: 2010 IEC 61000-4-4: 2011	PASS

Surge Test	EN 55024: 2010 IEC 61000-4-5: 2005	PASS
Conducted Susceptibility Test	EN 55024: 2010 IEC 61000-4-6: 2008	PASS
Voltage Dips and Interruptions Test	EN 55024: 2010 IEC 61000-4-11: 2004	PASS
Power Frequency Magnetic Field Susceptibility Test	EN 55024: 2010 IEC 61000-4-8: 2009	PASS

Remark: The measurement uncertainty is not included in the test result.

3.6. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.22dB	(1)
Radiated Emission	1~12.75GHz	4.35dB	(1)
Conducted Disturbance	0.15~30MHz	3.29dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.7. Equipments Used during the Test

Harmonic Current					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Purified Power Source	CALIFORNIA INSTRUMENTS	HFS500	54513	2012/10/27
2	Harmonic And Flicker Analyzer	EM TEST	DPA503S1	0500-10	2012/10/27

Conducted Disturbance					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100106	2012/10/27
2	Artificial Mains	ROHDE & SCHWARZ	ESH2-Z5	100028	2012/10/27
3	Pulse Limiter	ROHDE & SCHWARZ	ESHSZ2	100044	2012/10/27
4	EMI Test Software	ROHDE & SCHWARZ	ESK1	N/A	2012/10/27
5	Single Balanced Telecom Pair ISN	FCC	FCC-TLISN-T2-02	20371	2012/10/27
6	Two Balanced Telecom Pairs ISN	FCC	FCC-TLISN-T4-02	20373	2012/10/27

Electrostatic Discharge					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ESD Simulator	EM TEST	DITOC0103Z	0301-04	2012/10/27

Voltage Fluctuation and Flicker					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Purified Power Source	CALIFORNIA INSTRUMENTS	HFS500	54513	2012/10/27
2	Harmonic And Flicker Analyzer	EM TEST	DPA503S1	0500-10	2012/10/27

RF Field Strength Susceptibility					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal Generator	IFR	2032	203002/100	2012/10/27
2	Amplifier	AR	150W1000	301584	2012/10/27
3	Dual Directional Coupler	AR	DC6080	301508	2012/10/27
4	Power Head	AR	PH2000	301193	2012/10/27
5	Power Meter	AR	PM2002	302799	2012/10/27
6	Transmitting Aerial	AR	AT1080	28570	2012/10/27
7	Power Amplifier	AR	25S1G4A	0325511	2012/10/27
8	Dual Directional Coupler	AR	DC7144A	0325100	2012/10/27
9	Transmitting Aerial	AR	AT4002A	0324848	2012/10/27

Electrical Fast Transient/Burst Test					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Ultra Compact Simulator	EM TEST	UCS500M6	0500-19	2012/10/27
2	Coupling Clamp	EM TEST	HFK	1501-14	2012/10/27

Surge Test					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ULTRA COMPACT SIMULATOR	EM TEST	UCS500M6	0500-19	2012/10/27

Conducted Susceptibility Test					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal Generator	IFR	2023A	202304/060	2012/10/27
2	Amplifier	AR	75A250	302205	2012/10/27
3	Dual Directional Coupler	AR	DC2600	302389	2012/10/27
4	6db Attenuator	EMTEST	ATT6/75	0010230A	2012/10/27
5	EM CLAMP	LÜTHI	EM101	335625	2012/10/27
6	CDN	EMTEST	CDN M3	0802-03	2012/10/27

Voltage Dips and Interruptions Test					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Ultra Compact Simulator	EM TEST	UCS500M6	0500-19	2012/10/27
2	Motor Driven Voltage Transformer	EM TEST	MV2616	0301-11	2012/10/27

Power Frequency Magnetic Field Susceptibility Test					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Ultra Compact Simulator	EM TEST	UCS500M6	202304/060	2012/10/27
2	Motor Driven Voltage Transformer	EM TEST	MV2616	302205	2012/10/27
3	Current Transformer	EM TEST	MC2630	302389	2012/10/27
4	Magnetic Coil	EM TEST	MS100	0010230A	2012/10/27

Radiated Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	Rohde&Schwarz	ESI 26	100009	2012/10/27
2	EMI Test Software	Rohde&Schwarz	ESK1	N/A	2012/10/27
3	Ultra-Broadband Antenna	ShwarzBeck	VULB9163	538	2012/10/27
4	HORN ANTENNA	ShwarzBeck	9120D	1011	2012/10/27
5	TURNTABLE	MATURO	TT2.0	----	2012/10/27
6	ANTENNA MAST	MATURO	TAM-4.0-P	----	2012/10/27

The Calibration was one year.

4. TEST CONDITIONS AND RESULTS

4.1. Emission Measurement Requirements

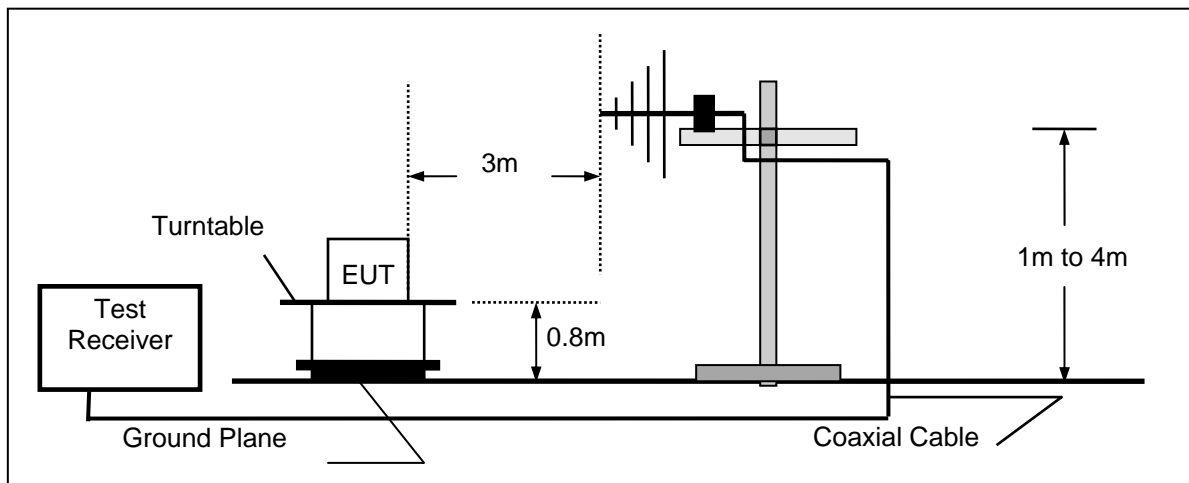
4.1.1. Radiated Emission

LIMIT

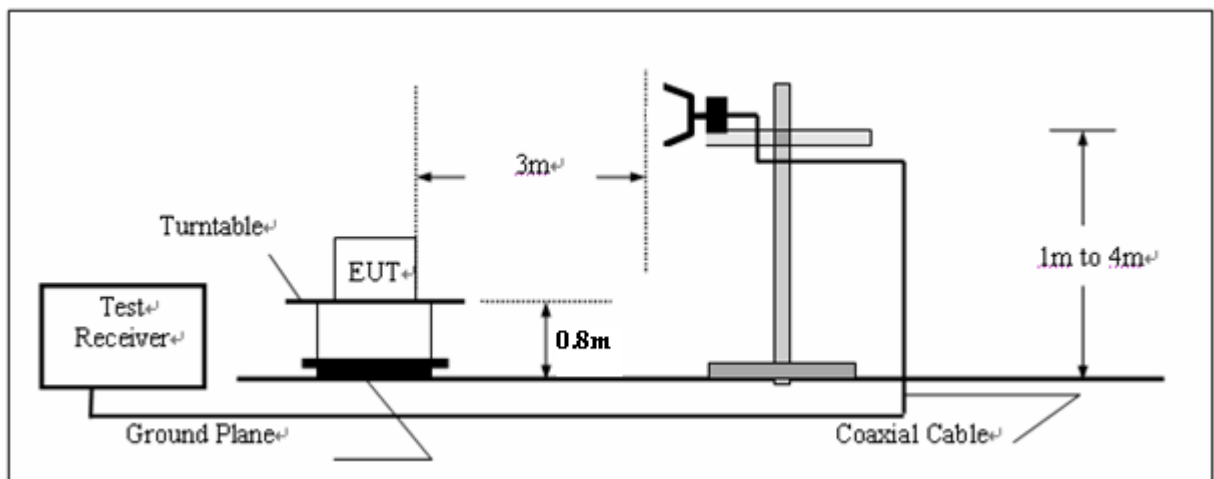
Please refer to EN 55022:2010 Clause 6, Table 6, Class B.

TEST CONFIGURATION

(a) Radiated Emission Test Set-Up, Frequency below 1000MHz



(b) Radiated Emission Test Set-Up, Frequency above 1000MHz



TEST PROCEDURE

Please refer to EN 55022:2010 for the measurement methods.

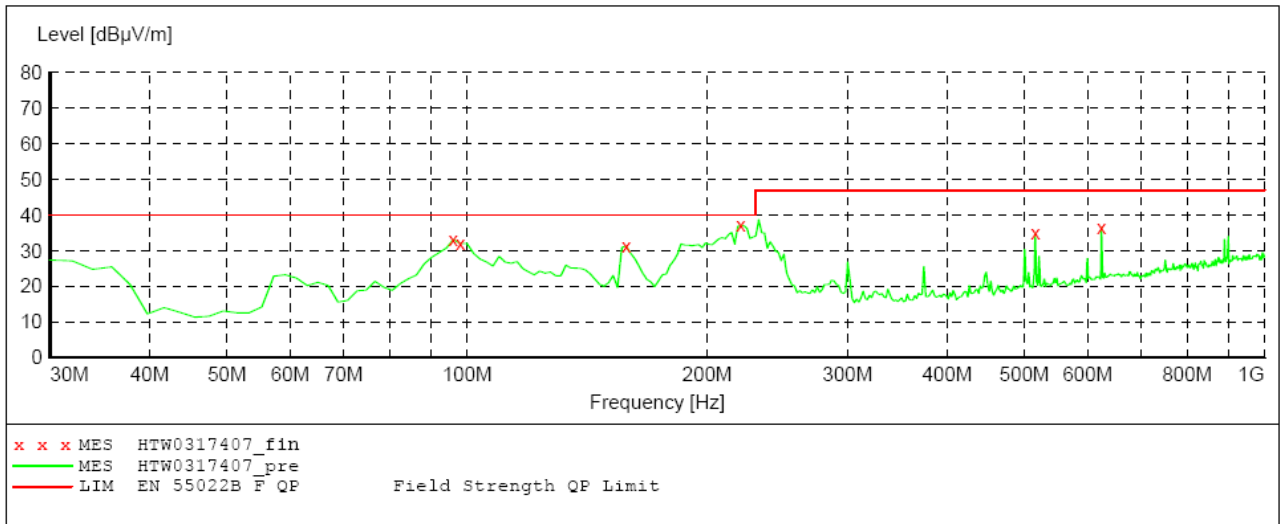
Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

TEST RESULTS

SCAN TABLE: "test Field (30M-1G) QP"

Short Description: Field Strength (30M-1G)
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 30.0 MHz 1.0 GHz 60.0 kHz QuasiPeak 1.0 s 120 kHz HL562



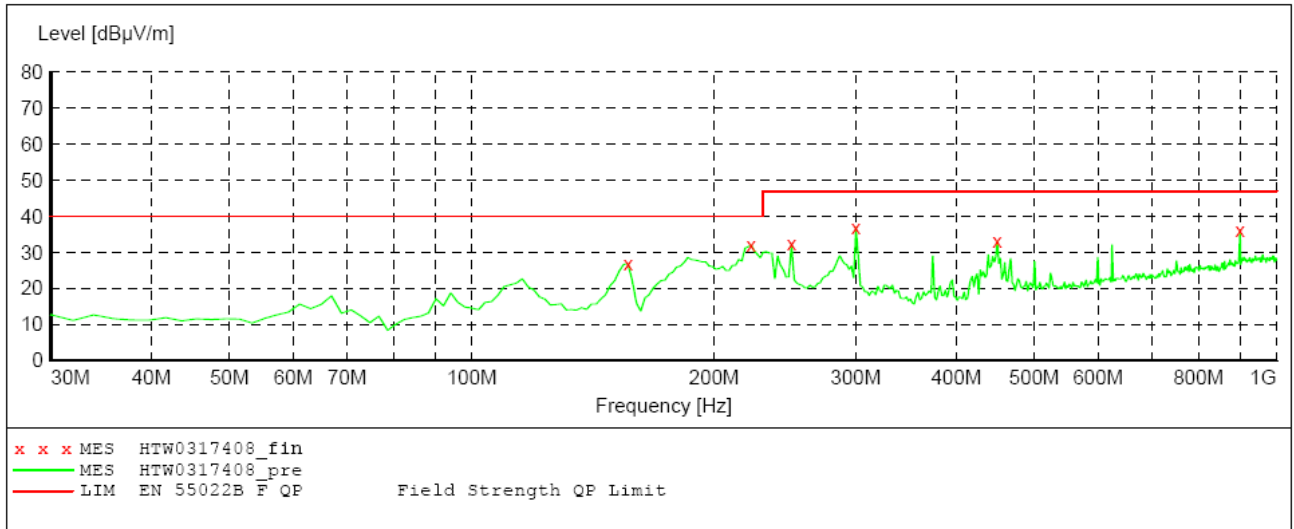
MEASUREMENT RESULT: "HTW0317407_fin"

5/17/2013 6:15PM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
96.092184	33.10	-15.9	40.0	6.9	QP	100.0	110.00	HORIZONTAL
98.036072	32.00	-15.8	40.0	8.0	QP	100.0	101.00	HORIZONTAL
158.296593	31.30	-19.1	40.0	8.7	QP	100.0	75.00	HORIZONTAL
220.501002	37.10	-15.5	40.0	2.9	QP	100.0	3.00	HORIZONTAL
515.971944	34.90	-8.1	47.0	12.1	QP	100.0	83.00	HORIZONTAL
624.829659	36.60	-5.7	47.0	10.4	QP	100.0	93.00	HORIZONTAL

SCAN TABLE: "test Field (30M-1G) QP"

Short Description:			Field Strength (30M-1G)			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
Frequency	Frequency	Width				
30.0 MHz	1.0 GHz	60.0 kHz	QuasiPeak	1.0 s	120 kHz	HL562

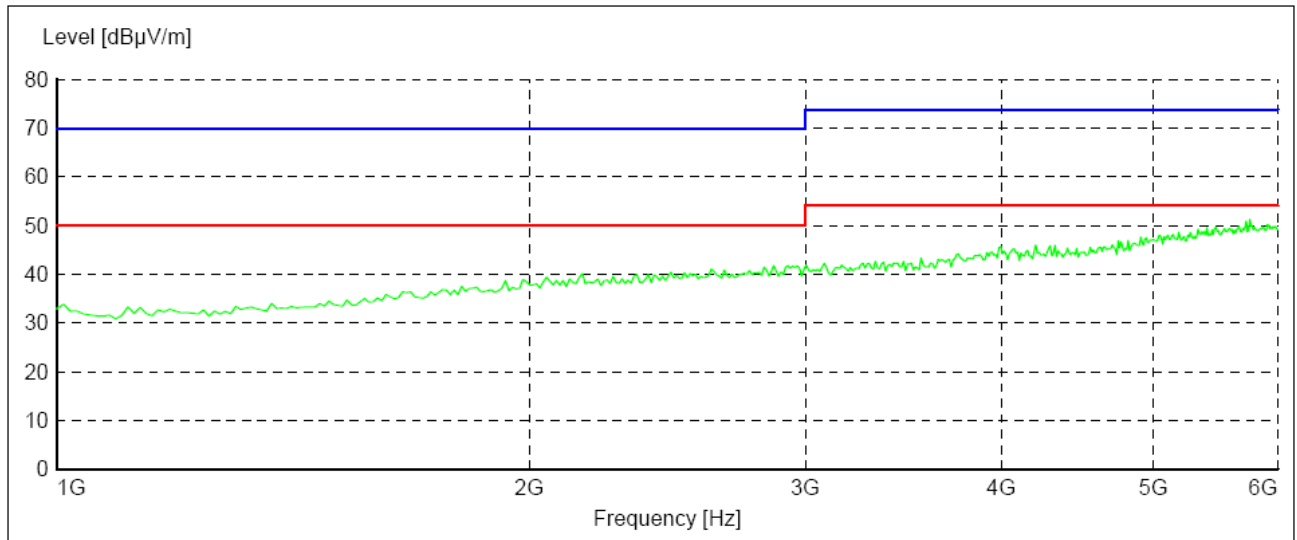


MEASUREMENT RESULT: "HTW0317408_fin"

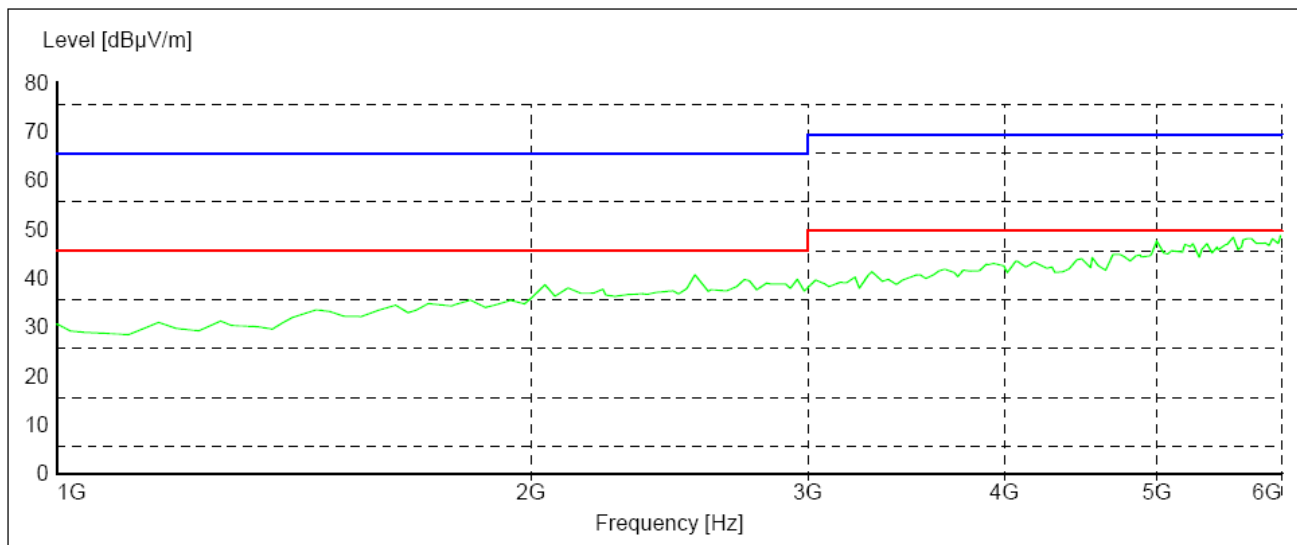
5/17/2013 6:17PM

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
156.352705	26.80	-19.3	40.0	13.2	QP	100.0	145.00	VERTICAL
222.444890	32.00	-15.4	40.0	8.0	QP	100.0	0.00	VERTICAL
249.659319	32.30	-14.3	47.0	14.7	QP	100.0	0.00	VERTICAL
300.200401	37.00	-13.1	47.0	10.0	QP	100.0	28.00	VERTICAL
449.879760	33.10	-9.8	47.0	13.9	QP	100.0	81.00	VERTICAL
900.861723	36.00	-2.1	47.0	11.0	QP	100.0	81.00	VERTICAL

Above 1GHz



Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Detector	Correction Factor (dB/m)	Polari zation
---	---	---	---	---	Peak	---	V
---	---	---	---	---	AV	---	V



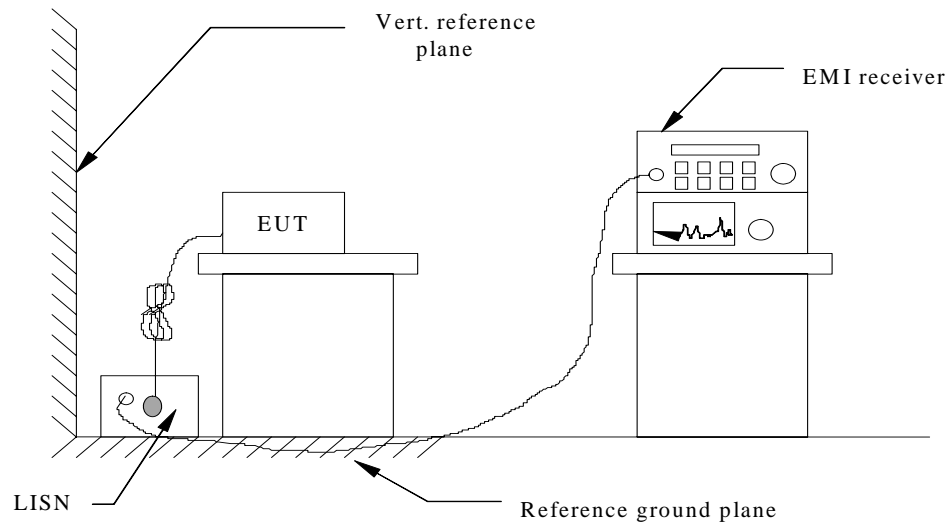
Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Detector	Correction Factor (dB/m)	Polari zation
---	---	---	---	---	Peak	---	H
---	---	---	---	---	AV	---	H

4.1.2. Conducted Emission (AC Mains)

LIMIT

Please refer to EN 55022:2010 Clause 5, Table 2, and Class B

TEST CONFIGURATION



TEST PROCEDURE

Please refer to EN 55022:2010 for the measurement methods.

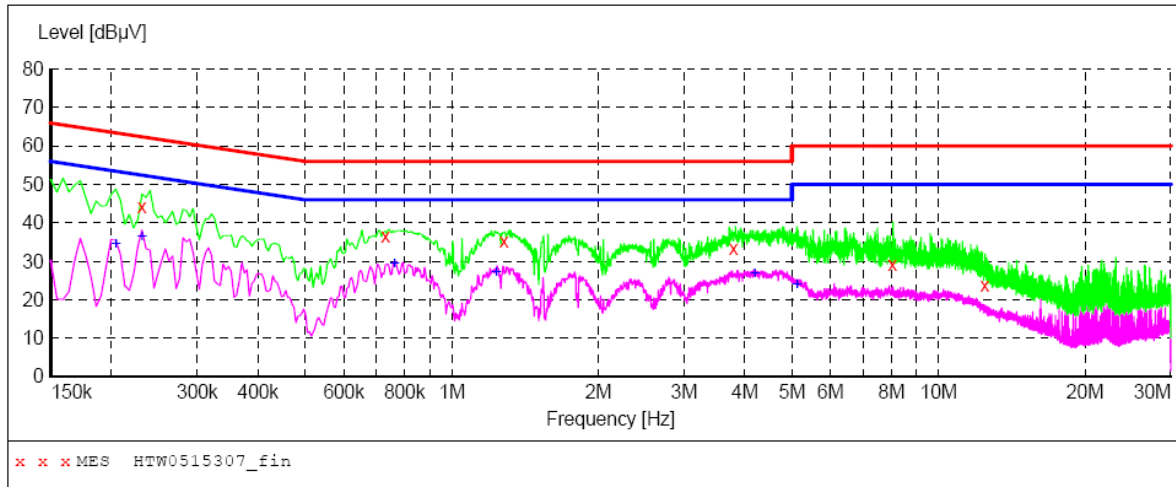
Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

TEST RESULTS

SCAN TABLE: "Voltage (9K-30M) FIN"

Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "HTW0515307_fin"

5/15/2013 9:35AM

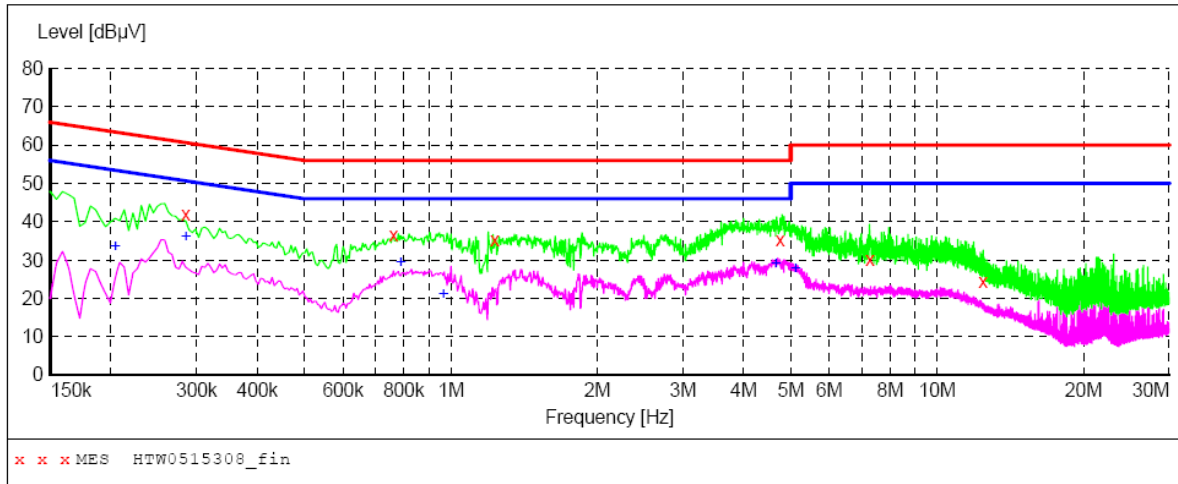
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.231000	44.10	10.2	62	18.3	QP	L1	GND
0.730500	36.70	10.1	56	19.3	QP	L1	GND
1.279500	35.20	10.2	56	20.8	QP	L1	GND
3.790500	33.30	10.2	56	22.7	QP	L1	GND
8.038500	29.10	10.3	60	30.9	QP	L1	GND
12.444000	23.80	10.3	60	36.2	QP	L1	GND

MEASUREMENT RESULT: "HTW0515307_fin2"

5/15/2013 9:35AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.204000	34.70	10.2	53	18.7	AV	L1	GND
0.231000	36.60	10.2	52	15.8	AV	L1	GND
0.762000	29.40	10.1	46	16.6	AV	L1	GND
1.234500	27.40	10.2	46	18.6	AV	L1	GND
4.191000	26.90	10.2	46	19.1	AV	L1	GND
5.127000	24.10	10.2	50	25.9	AV	L1	GND

SCAN TABLE: "Voltage (9K-30M) FIN"
 Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "HTW0515308_fin"

5/15/2013 9:38AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.285000	41.80	10.3	61	18.9	QP	N	GND
0.762000	36.60	10.1	56	19.4	QP	N	GND
1.230000	35.30	10.2	56	20.7	QP	N	GND
4.753500	35.30	10.2	56	20.7	QP	N	GND
7.278000	30.10	10.2	60	29.9	QP	N	GND
12.439500	24.50	10.3	60	35.5	QP	N	GND

MEASUREMENT RESULT: "HTW0515308_fin2"

5/15/2013 9:38AM

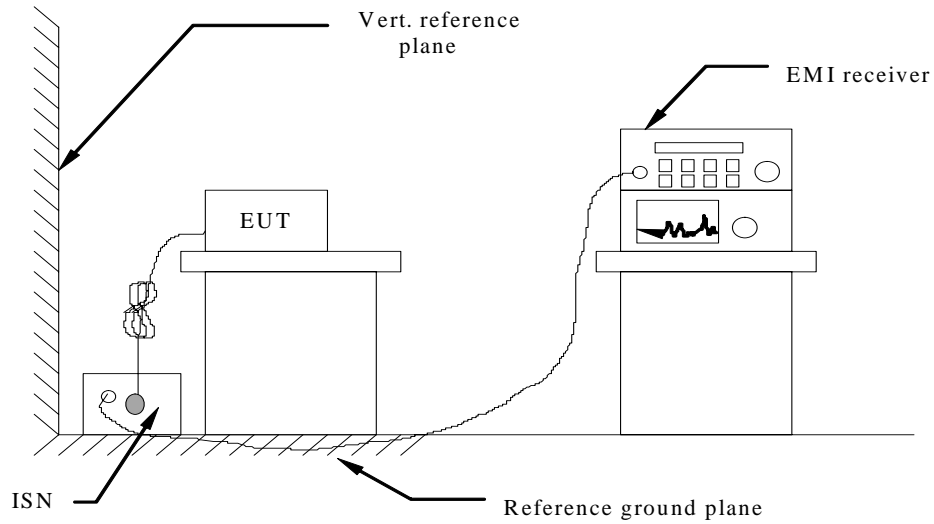
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.204000	33.80	10.2	53	19.6	AV	N	GND
0.285000	36.10	10.3	51	14.6	AV	N	GND
0.789000	29.60	10.1	46	16.4	AV	N	GND
0.964500	21.30	10.2	46	24.7	AV	N	GND
4.659000	29.10	10.2	46	16.9	AV	N	GND
5.109000	27.80	10.2	50	22.2	AV	N	GND

4.1.3. Conducted Emission (Communication Ports)

LIMIT

Please refer to EN 55022:2010 Clause 5, Table 4, Class B.

TEST CONFIGURATION



TEST PROCEDURE

Please refer to EN 55022: 2010 for the measurement methods.

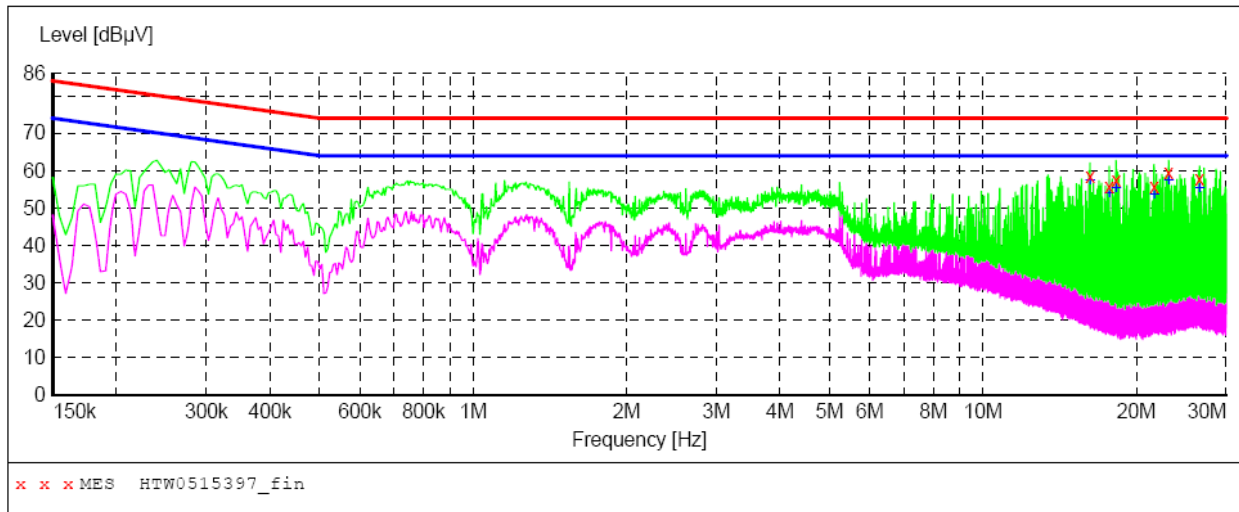
Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

TEST RESULTS

LAN port

SCAN TABLE: "EN 22 T Voltage FIN"
 Short Description: 150K-30MHz Voltage



MEASUREMENT RESULT: "HTW0515397_fin"

5/15/2013 10:06AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
16.228500	58.50	19.9	74	15.5	QP	LAN	GND
17.695500	55.80	19.9	74	18.2	QP	LAN	GND
18.244500	57.60	19.9	74	16.4	QP	LAN	GND
21.664500	55.70	19.9	74	18.3	QP	LAN	GND
23.127000	59.60	20.0	74	14.4	QP	LAN	GND
26.610000	57.90	20.0	74	16.1	QP	LAN	GND

MEASUREMENT RESULT: "HTW0515397_fin2"

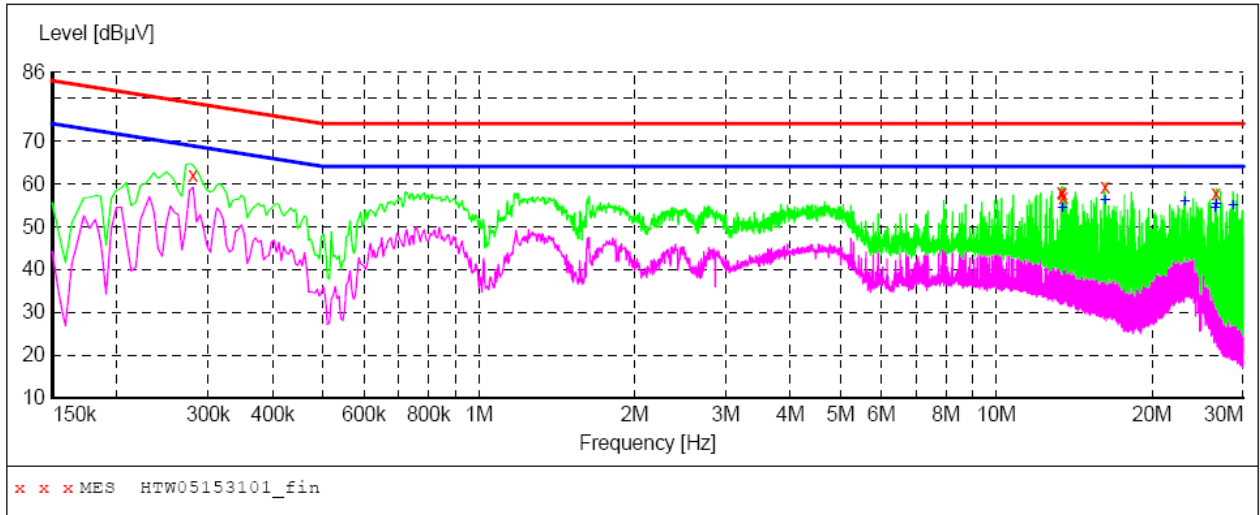
5/15/2013 10:06AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
16.228500	57.30	19.9	64	6.7	AV	LAN	GND
17.695500	54.20	19.9	64	9.8	AV	LAN	GND
18.244500	55.50	19.9	64	8.5	AV	LAN	GND
21.664500	53.70	19.9	64	10.3	AV	LAN	GND
23.127000	57.40	20.0	64	6.6	AV	LAN	GND
26.610000	55.40	20.0	64	8.6	AV	LAN	GND

WAN port

SCAN TABLE: "EN 22 T Voltage FIN"

Short Description: 150K-30MHz Voltage



MEASUREMENT RESULT: "HTW05153101_fin"

5/15/2013 10:24AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.280500	61.90	19.5	79	16.9	QP	WAN	GND
13.357500	58.00	19.9	74	16.0	QP	WAN	GND
13.420500	57.70	19.9	74	16.3	QP	WAN	GND
13.479000	57.00	19.9	74	17.0	QP	WAN	GND
16.228500	59.20	19.9	74	14.8	QP	WAN	GND
26.610000	57.80	20.0	74	16.2	QP	WAN	GND

MEASUREMENT RESULT: "HTW05153101_fin2"

5/15/2013 10:24AM

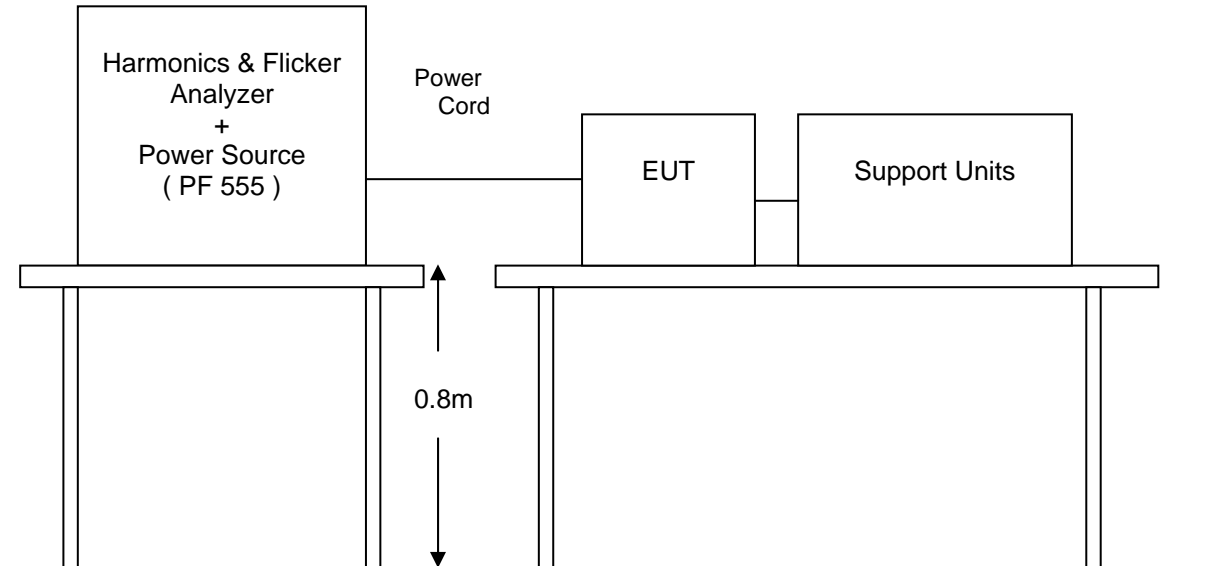
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
13.420500	54.50	19.9	64	9.5	AV	WAN	GND
16.228500	56.20	19.9	64	7.8	AV	WAN	GND
23.127000	55.90	20.0	64	8.1	AV	WAN	GND
26.488500	54.50	20.0	64	9.5	AV	WAN	GND
26.610000	55.40	20.0	64	8.6	AV	WAN	GND
28.684500	55.00	20.0	64	9.0	AV	WAN	GND

4.1.4. AC Mains Harmonic Current Emission

LIMIT

Please refer to EN 61000-3-2

TEST CONFIGURATION



TEST PROCEDURE

Please refer to EN 61000-3-2 for the measurement methods.

Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

TEST RESULTS

Report title:	HTW0425207
Company Name:	HTW
Date of test:	13:10 25.Apr 2013
Measurement file name:	Harmonics_3_2_Ed3.rsd
Tester:	Eric
Standard used:	EN/IEC 61000-3-2 Ed.3 Quasi-stationary Equipment class A <= 150% of the limit
Observation time:	150s
Windows width:	10 periods - (EN/IEC 61000-4-7 Edition 2002 + A1:2008)
Customer:	RICON TECHNOLOGIES FZE
E. U. T.:	S9922 AC 230V/50Hz

Test Result

E. U. T.:	PASS
Power Source:	PASS

Check harmonics 2..40 [exception odd 21..39]:**Harmonic(s) > 150%:**

Order (n):	None
------------	------

Harmonic(s) with average > 100%:

Order (n):	None
------------	------

Check odd harmonics 21..39:**All Partial Odd Harmonics below partial limits.****Harmonic(s) > 150%:**

Order (n):	None
------------	------

Harmonic(s) with average > 150%:

Order (n):	None
------------	------

Power Source Result**First dataset out of limit:**

DS (time):	None
------------	------

Harmonic(s) out of limit:

Order (n):	None
------------	------

Average harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	320.169E-3			
2	1.407E-3	0.130	1.08	PASS
3	303.078E-3	13.177	2.30	PASS
4	1.626E-3	0.378	430.00E-3	PASS
5	278.939E-3	24.468	1.14	PASS
6	1.844E-3	0.615	300.00E-3	PASS
7	247.323E-3	32.120	770.00E-3	PASS
8	2.309E-3	1.004	230.00E-3	PASS
9	211.295E-3	52.824	400.00E-3	PASS
10	2.503E-3	1.360	184.00E-3	PASS
11	175.660E-3	53.230	330.00E-3	PASS
12	2.781E-3	1.814	153.33E-3	PASS
13	144.023E-3	68.582	210.00E-3	PASS
14	2.722E-3	2.071	131.43E-3	PASS
15	119.090E-3	79.393	150.00E-3	PASS
16	2.837E-3	2.467	115.00E-3	PASS
17	101.211E-3	76.472	132.35E-3	PASS
18	2.874E-3	2.812	102.22E-3	PASS
19	87.939E-3	74.261	118.42E-3	PASS
20	2.581E-3	2.805	92.00E-3	PASS
21	76.596E-3	47.661	160.71E-3	PASS
22	2.239E-3	2.677	83.64E-3	PASS
23	65.336E-3	44.523	146.74E-3	PASS
24	1.924E-3	2.510	76.66E-3	PASS
25	53.608E-3	39.709	135.00E-3	PASS
26	1.620E-3	2.289	70.77E-3	PASS
27	42.111E-3	33.690	124.99E-3	PASS
28	1.349E-3	2.053	65.71E-3	PASS
29	31.855E-3	27.370	116.39E-3	PASS
30	1.129E-3	1.840	61.33E-3	PASS
31	23.871E-3	21.926	108.87E-3	PASS
32	968.590E-6	1.685	57.50E-3	PASS
33	18.457E-3	18.048	102.27E-3	PASS
34	865.518E-6	1.599	54.12E-3	PASS
35	15.003E-3	15.558	96.44E-3	PASS
36	713.179E-6	1.395	51.11E-3	PASS
37	12.500E-3	13.703	91.21E-3	PASS
38	604.028E-6	1.247	48.42E-3	PASS
39	10.163E-3	11.744	86.53E-3	PASS
40	532.469E-6	1.158	46.00E-3	PASS

Maximum harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	320.749E-3			
2	3.173E-3	0.196	1.62	PASS
3	303.698E-3	8.803	3.45	PASS
4	3.284E-3	0.509	645.00E-3	PASS
5	279.813E-3	16.363	1.71	PASS
6	3.386E-3	0.752	450.00E-3	PASS
7	248.134E-3	21.483	1.15	PASS
8	4.216E-3	1.222	345.00E-3	PASS
9	212.273E-3	35.379	600.00E-3	PASS
10	4.433E-3	1.606	276.00E-3	PASS
11	176.946E-3	35.747	495.00E-3	PASS
12	4.772E-3	2.075	229.99E-3	PASS
13	145.460E-3	46.178	315.00E-3	PASS
14	4.637E-3	2.352	197.15E-3	PASS
15	120.637E-3	53.617	225.00E-3	PASS
16	4.673E-3	2.709	172.50E-3	PASS
17	102.816E-3	51.790	198.52E-3	PASS
18	4.582E-3	2.989	153.33E-3	PASS
19	89.326E-3	50.287	177.63E-3	PASS
20	4.216E-3	3.055	138.00E-3	PASS
21	77.668E-3	48.328	160.71E-3	PASS
22	3.830E-3	3.052	125.46E-3	PASS
23	66.200E-3	45.113	146.74E-3	PASS
24	3.396E-3	2.954	114.99E-3	PASS
25	54.312E-3	40.231	135.00E-3	PASS
26	2.896E-3	2.728	106.16E-3	PASS
27	42.696E-3	34.158	124.99E-3	PASS
28	2.356E-3	2.391	98.57E-3	PASS
29	32.329E-3	27.778	116.39E-3	PASS
30	1.921E-3	2.089	92.00E-3	PASS
31	24.278E-3	22.300	108.87E-3	PASS
32	1.614E-3	1.872	86.25E-3	PASS
33	18.800E-3	18.383	102.27E-3	PASS
34	1.388E-3	1.710	81.18E-3	PASS
35	15.282E-3	15.847	96.44E-3	PASS
36	1.172E-3	1.529	76.66E-3	PASS
37	12.727E-3	13.953	91.21E-3	PASS
38	1.078E-3	1.484	72.63E-3	PASS
39	10.372E-3	11.986	86.53E-3	PASS
40	967.675E-6	1.402	69.00E-3	PASS

Maximum harmonic voltage results

Hn	Ueff [V]	Ueff [%]	Limit [%]	Result
1	150.19	65.298		
2	72.16E-3	0.031	0.2	PASS
3	175.10E-3	0.076	0.9	PASS
4	42.73E-3	0.019	0.2	PASS
5	56.74E-3	0.025	0.4	PASS
6	30.45E-3	0.013	0.2	PASS
7	83.80E-3	0.036	0.3	PASS
8	23.73E-3	0.010	0.2	PASS
9	70.56E-3	0.031	0.2	PASS
10	21.18E-3	0.009	0.2	PASS
11	89.83E-3	0.039	0.1	PASS
12	16.60E-3	0.007	0.1	PASS
13	72.65E-3	0.032	0.1	PASS
14	10.51E-3	0.005	0.1	PASS
15	69.46E-3	0.030	0.1	PASS
16	15.10E-3	0.007	0.1	PASS
17	71.75E-3	0.031	0.1	PASS
18	8.62E-3	0.004	0.1	PASS
19	61.87E-3	0.027	0.1	PASS
20	16.32E-3	0.007	0.1	PASS
21	66.00E-3	0.029	0.1	PASS
22	9.35E-3	0.004	0.1	PASS
23	62.98E-3	0.027	0.1	PASS
24	10.19E-3	0.004	0.1	PASS
25	54.38E-3	0.024	0.1	PASS
26	11.96E-3	0.005	0.1	PASS
27	47.36E-3	0.021	0.1	PASS
28	7.56E-3	0.003	0.1	PASS
29	38.03E-3	0.017	0.1	PASS
30	12.08E-3	0.005	0.1	PASS
31	34.53E-3	0.015	0.1	PASS
32	7.61E-3	0.003	0.1	PASS
33	23.93E-3	0.010	0.1	PASS
34	7.20E-3	0.003	0.1	PASS
35	27.52E-3	0.012	0.1	PASS
36	7.79E-3	0.003	0.1	PASS
37	23.35E-3	0.010	0.1	PASS
38	7.48E-3	0.003	0.1	PASS
39	19.79E-3	0.009	0.1	PASS
40	10.55E-3	0.005	0.1	PASS

4.1.5. AC Mains Voltage Fluctuation and Flicker

LIMIT

Please refer to EN 61000-3-3

TEST CONFIGURATION

Same as the configuration of the AC MAINS HARMONIC CURRENT EMISSIONS TEST

TEST PROCEDURE

Please refer to EN 61000-3-3 for the measurement methods.

Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

TEST RESULTS

Report title:	HTW0425208
Company Name:	HTW
Date of test:	16:25 25.Apr 2013
Tester:	Eric
Standard used:	EN/IEC 61000-3-3 Flicker
Short time (Pst):	10 min
Observation time:	120 min (12 Flicker measurements)
Flickermeter:	230V / 50Hz
Flicker Impedance:	Zref (IEC 60725)
Customer:	RICON TECHNOLOGIES FZE
E. U. T.:	S9922
	AC 230V/50Hz

Test Result	PASS
-------------	------

Maximum Flicker results

	EUT values	Limit	Result
Pst	0.028	1.00	PASS
Plt	0.028	0.65	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.224	4.00	PASS
dt [s]	0.000	0.50	PASS

Detail Flicker data

Flicker measurement 1	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.224	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 2	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.067	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 3	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.070	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 4	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.067	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 5	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.066	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 6	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.066	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 7	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.063	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 8	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.065	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 9	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.063	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 10	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.063	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 11	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.062	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 12	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.066	4.00	PASS
dt [s]	0.000	0.50	PASS

4.1.6. Electrostatic Discharge

LIMIT

Please refer to EN 61000-4-2

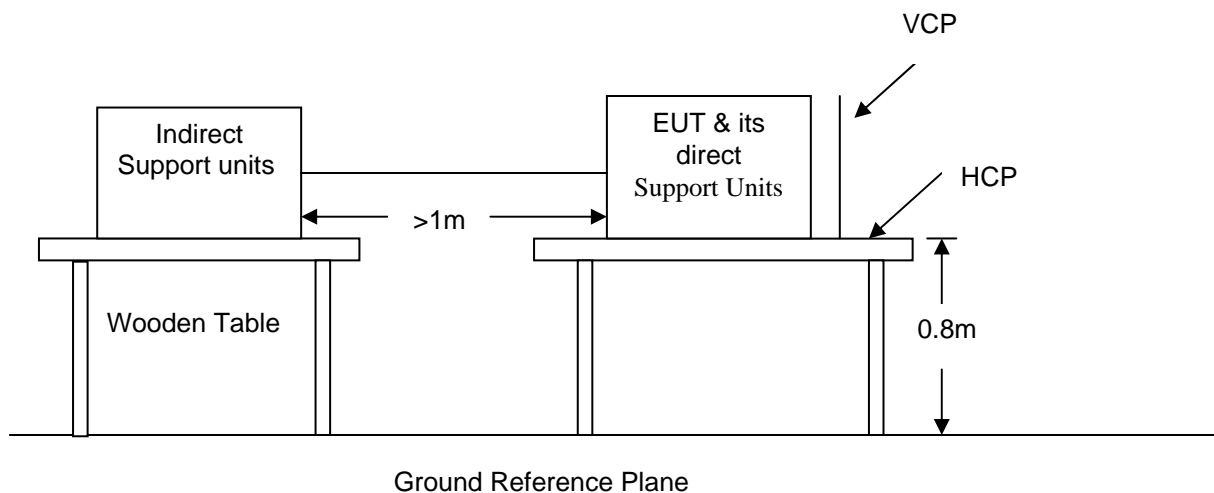
SEVERITY LEVELS OF ELECTROSTATIC DISCHARGE

Severity level: Contact Discharge at $\pm 4\text{KV}$ Air Discharge at $\pm 8\text{KV}$

Level	Test Voltage Contact Discharge (KV)	Test Voltage Air Discharge (KV)
1	2	2
2	4	4
3	6	8
4	8	15
X	Special	Special

Performance criterion: **B**

TEST CONFIGURATION



TEST PROCEDURE

Please refer to EN 61000-4-2 for the measurement methods.

TEST RESULTS

Contact Discharge:

The ESD generator is held perpendicular to the surface to which the discharge is applied and the tip of the discharge electrode touch the surface of EUT. Then turn the discharge switch. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

Air Discharge:

Air discharge is used where contact discharge can't be applied. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

Indirect discharge for horizontal coupling plane:

At least 10 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT.

Indirect discharge for vertical coupling plane:

At least 10 single discharges shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

Description of the Electrostatic Discharges (ESD)

Point of Discharge	Applied Voltage (KV)	Total No. of Discharge (Each Point)	Results	Criteria Level	Remark
Air Test Point	±2	20	PASS	B	-
	±4	20	PASS	B	-
	±8	20	PASS	B	-
VCP (4 sides)	±2	20	PASS	B	-
	±4	20	PASS	B	-
HCP (4 sides)	±2	50	PASS	B	-
	±4	50	PASS	B	-

The requirements are **Fulfilled**

Performance Criterion: **B**

Description of Discharge Point

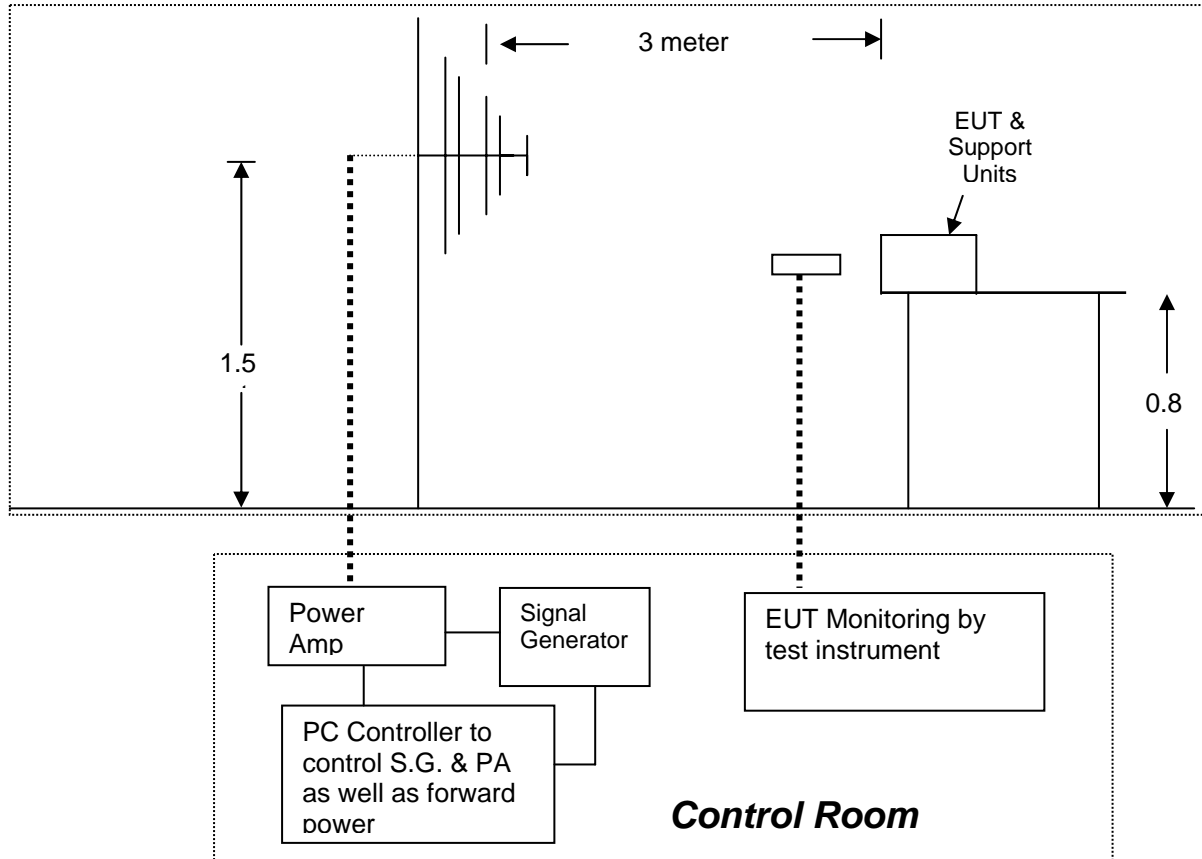
Contact Discharge 5 Test points		Air Discharge	
●	Metallic Screws	○	Plastic Screws
●	Metallic Case	○	Plastic Case(gap)
●	Metallic Connect ports	○	Plastic Connect Ports
●	Metallic Junctions	○	Plastic Junctions
●	Others	○	Others

4.1.7. RF Electromagnetic Field

LIMIT

Please refer to EN 61000-4-3

TEST CONFIGURATION



TEST PROCEDURE

Please refer to EN 61000-4-3 for the measurement methods.

Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

TEST RESULTS

Description of Preliminary Test (Playing & Downloading) Modes

	Freq. Range (MHz)	Field	Modulation	Polarity	Position (°)	Selection for the final test
1	80-1000	6V/m	Yes	H / V	Front	PASS
2	80-1000	6V/m	Yes	H / V	Right	PASS
3	80-1000	6V/m	Yes	H / V	Back	PASS
4	80-1000	6V/m	Yes	H / V	Left	PASS

Result of Final Tests

Freq. Range (MHz)	Field	Modulation	Polarity	Position	Mode	Result (Pass/Fail)
80-1000	3V/m	Yes	H / V	Front	Normal Operating	PASS

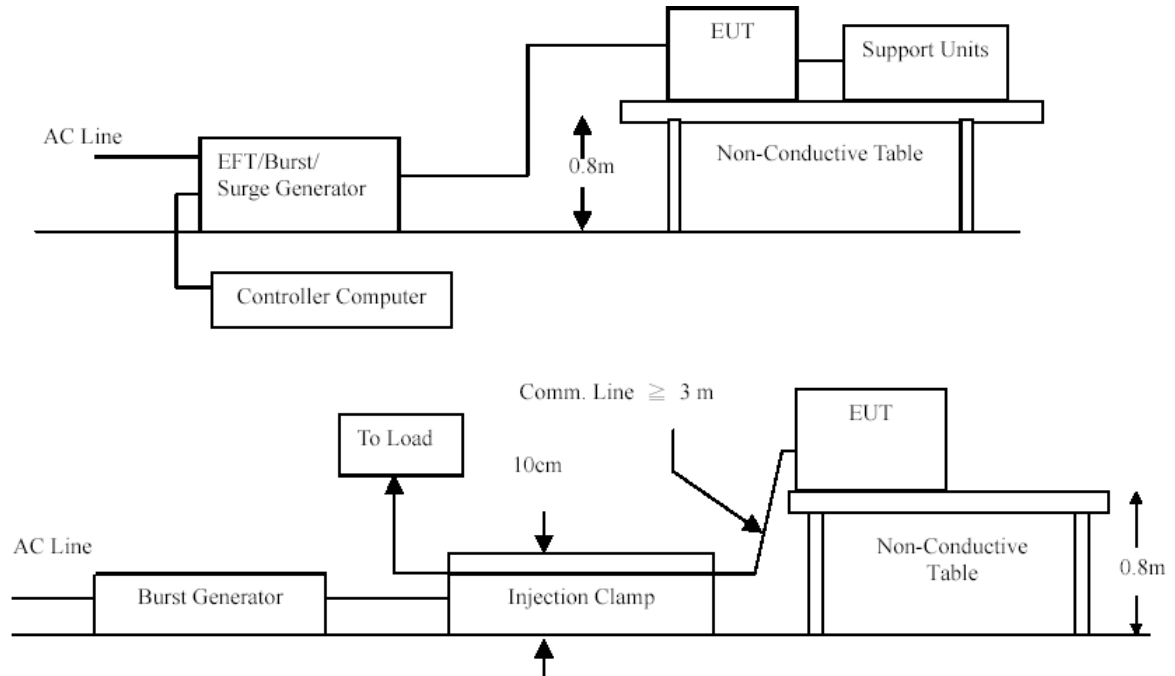
PERFORMANCE CRITERIA	
Criteria requested	<input checked="" type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C
Criteria meet	<input checked="" type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C

4.1.8. Fast Transients- Common Mode

LIMIT

Please refer to EN 61000-4-4

TEST CONFIGURATION



TEST PROCEDURE

Please refer to EN 61000-4-4 for the measurement methods.

Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

TEST RESULTS

Results of Final Tests (Operating Mode)

Impulse Frequency: 5 kHz

Tr/Th: 5/50ns

Burst Duration: 15ms

Burst Period: 3Hz

Injection Line	Voltage (kV)	Injected Method	Result (Pass / Fail)
<input checked="" type="checkbox"/> Line	±1	Direct	PASS
<input checked="" type="checkbox"/> Neutral	±1	Direct	PASS
<input type="checkbox"/> PE	± 1	Direct	PASS
<input checked="" type="checkbox"/> Line + Neutral	±1	Direct	PASS
<input type="checkbox"/> L + PE	± 1	Direct	PASS
<input type="checkbox"/> N + PE	± 1	Direct	PASS
<input type="checkbox"/> L + N + PE	± 1	Direct	PASS
<input checked="" type="checkbox"/> RJ45 port (LAN cable)	±0.5	Clamp	PASS
<input type="checkbox"/> RJ11 port (Line cable)	±0.5	Clamp	PASS

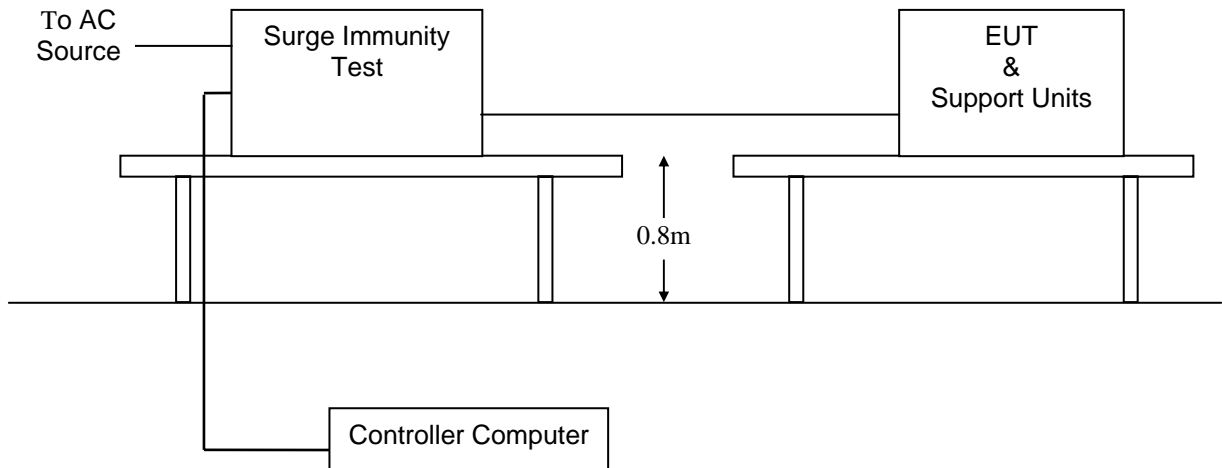
PERFORMANCE CRITERIA	
Criteria requested	<input type="checkbox"/> A / <input checked="" type="checkbox"/> B / <input type="checkbox"/> C
Criteria meet	<input checked="" type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C

4.1.9. Surge

LIMIT

Please refer to EN 61000-4-5

TEST CONFIGURATION



TEST PROCEDURE

Please refer to EN 61000-4-5 for the measurement methods.

Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

TEST RESULTS

Results of Final Tests (Operating Mode)

Voltage Waveform: 1.2/50 us

Current Waveform: 8/20 us

Polarity: Positive/Negative

Phase angle: 0°, 90°, 180°, 270°

Coupling Line	Voltage (kV)	Polarity	Coupling Method	Result (Pass/Fail)
<input checked="" type="checkbox"/> Line + Neutral	1	Pos./ Neg.	Capacitive	PASS
<input type="checkbox"/> L + PE	2	Pos./ Neg.	Capacitive	PASS
<input type="checkbox"/> N + PE	2	Pos./ Neg.	Capacitive	PASS
<input type="checkbox"/> T, R-Ground	0.5	Pos./ Neg.	Capacitive	PASS
<input checked="" type="checkbox"/> RJ45 port (LAN)	0.5	Pos./ Neg.	Capacitive	PASS
<input type="checkbox"/> RJ11 port (Line cable)	0.5	Pos./ Neg.	Capacitive	PASS

PERFORMANCE CRITERIA

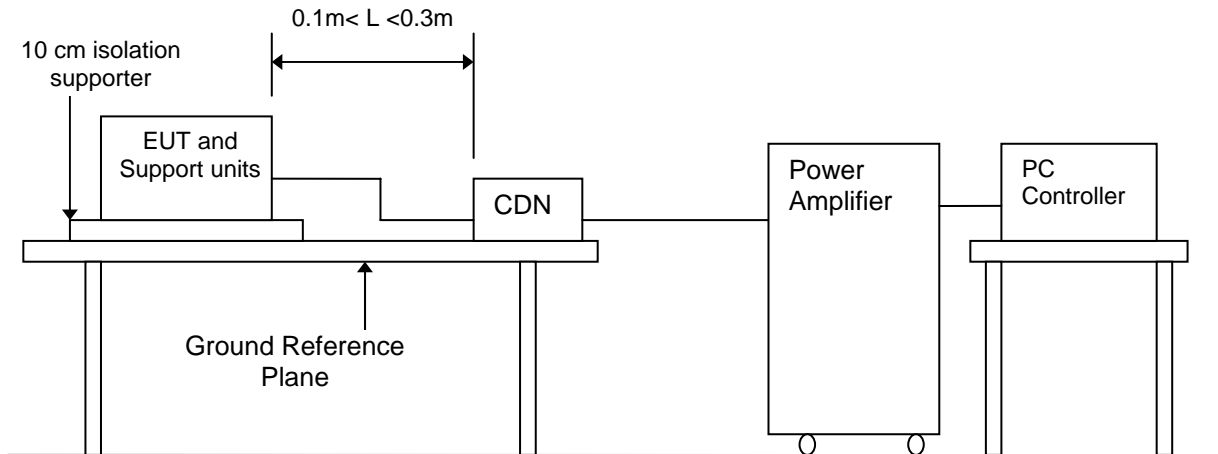
Criteria requested	<input type="checkbox"/> A / <input checked="" type="checkbox"/> B / <input type="checkbox"/> C
Criteria meet	<input type="checkbox"/> A / <input checked="" type="checkbox"/> B / <input type="checkbox"/> C

4.1.10. RF- Common Mode

LIMIT

Please refer to EN 61000-4-6

TEST CONFIGURATION



TEST PROCEDURE

Please refer to EN 61000-4-6 for the measurement methods.

Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

TEST RESULTS

Test conditions

Results of Final Tests (Operating Mode)

Frequency Range: 0.15MHz~80MHz

Frequency Step: 1% of fundamental

Dwell time: 1 Sec.

80% A.M., 1 kHz Sine wave (Field Strength: 3 V/m)

Coupling type: CDN / RF Current Probe/ EM CLAMP (LÜTHI)

Range (MHz)	Field	Modulation	Injected Position	Result (Pass/Fail)
0.15-80	3V	Yes	AC Main/RJ45	PASS

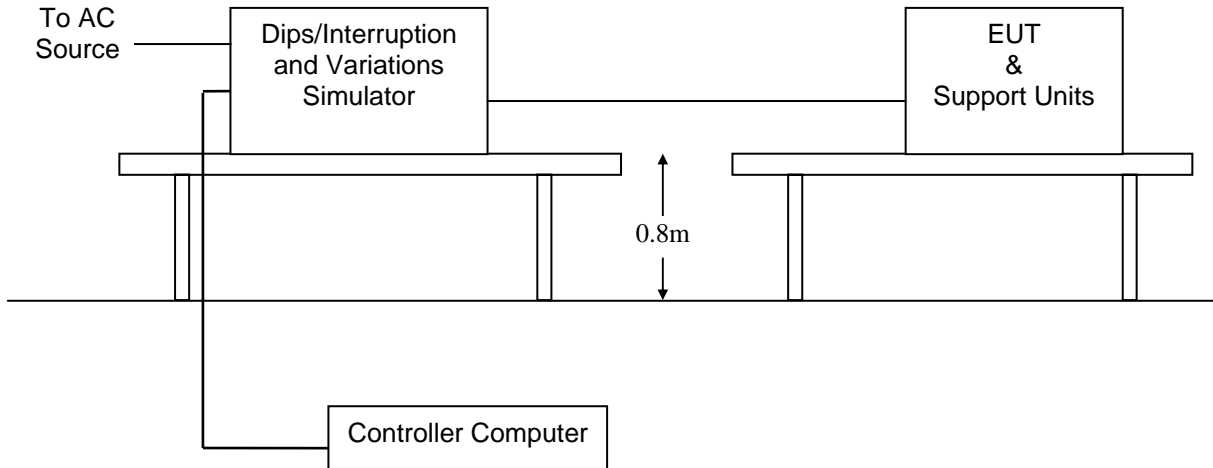
PERFORMANCE CRITERIA	
Criteria requested	<input checked="" type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C
Criteria meet	<input checked="" type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C

4.1.11. Voltage Dips and Interruptions

LIMIT

Please refer to EN 61000-4-11

TEST CONFIGURATION



TEST PROCEDURE

Please EN 61000-4-11 for the measurement methods.

Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar
- Test Voltages: AC 240V/50Hz & AC 100V/50Hz

TEST RESULTS

Test conditions

Interruption at phase angles of 0, 45, 90, 135, 180, 225, 270 and 315 degree in a 10 sec-interval.

	Test Level	Reduction % of the rated	Test Level (% UT)	Test Period	Duration (ms)	Criterion
Voltage Dips	1	>95%	<5%	0.5	10	B
	2	30%	70%	25	500	C
Voltage Interruption	3	>95%	<5%	250	5000	C

Note: The duration with a sequence of three dips/interruptions with a minimum interval of 10 s between each test event. The test level is U=100V and 240V.

Results of Final Tests *Voltage Dips*

Test Level	Reduction % of the rated	Test Level (% UT)	Test Period	Duration (ms)	Observation	Criterion
1	>95%	<5%	0.5	10	Normal	A
2	30%	70%	25	500	Normal	A

 Voltage Interruption

Test Level	Reduction % of the rated	Test Level (% UT)	Test Period	Duration (ms)	Observation	Criterion
3	>95%	<5%	250	5000	Normal	C

4.1.12. Power Frequency Magnetic Field Susceptibility Test

LIMIT

Please refer to EN 61000-4-8

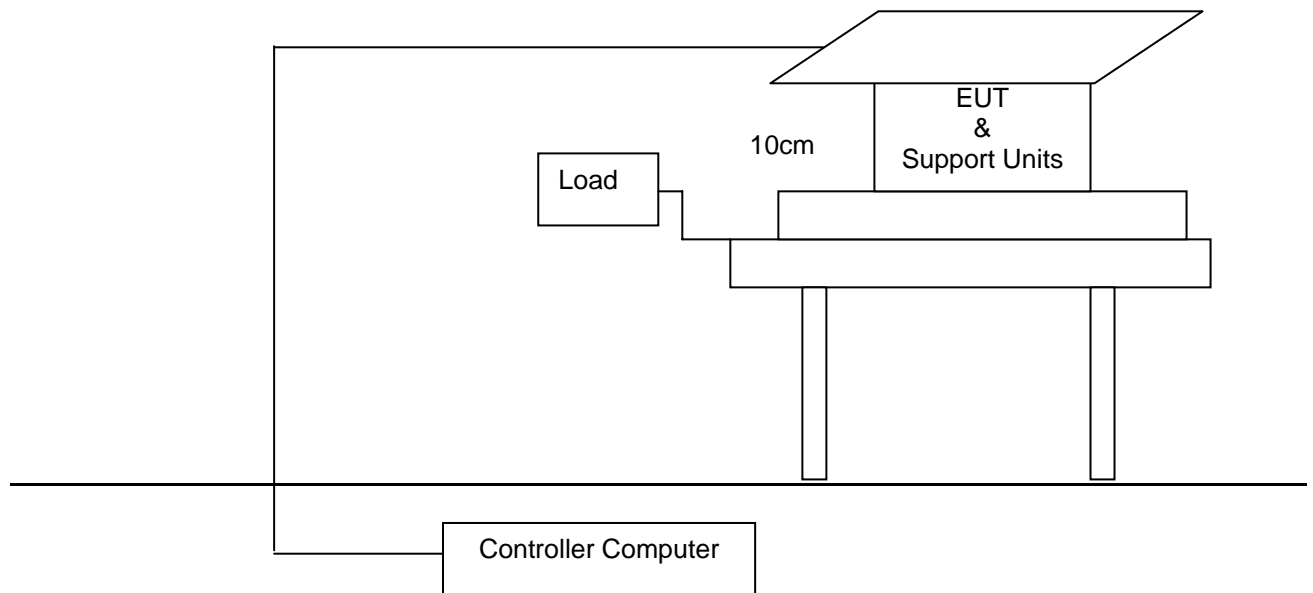
SEVERITY LEVELS OF ELECTROSTATIC DISCHARGE

Severity level: 1A/m

Level	Magnetic Field Strength (A/m)
1	1
2	3
3	10
4	30
5	100
X.	Special

Performance criterion: **A**

TEST CONFIGURATION



TEST PROCEDURE

Please EN 61000-4-8 for the measurement methods.

TEST RESULTS

Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

Description of the Power Frequency Magnetic Field Susceptibility Test

Test frequency:	<input checked="" type="checkbox"/> 50 Hz	<input checked="" type="checkbox"/> 60 Hz	
Continuous field:	<input checked="" type="checkbox"/> 1 A/m		
Test duration:	<input checked="" type="checkbox"/> 5 m		
Antenna factor:	0.917 A/m		
Axis:	<input checked="" type="checkbox"/> x-axis	<input checked="" type="checkbox"/> y-axis	<input checked="" type="checkbox"/> z-axis

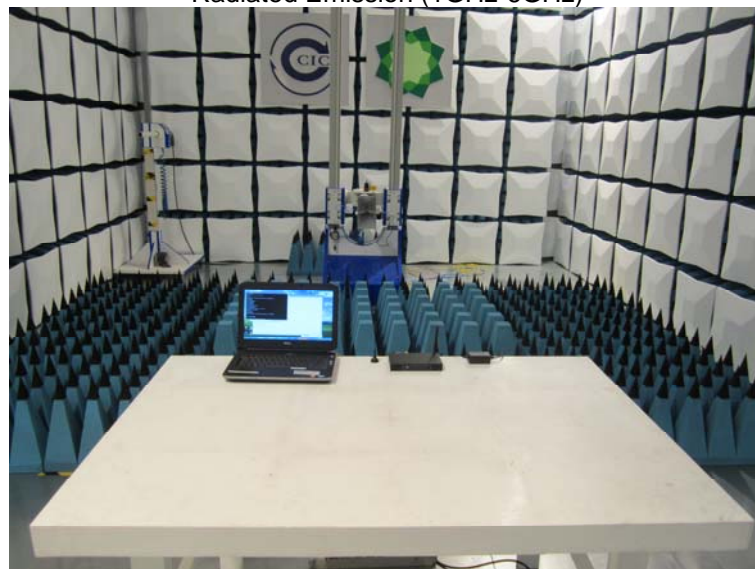
The requirements are **Fulfilled**Performance Criterion: **A****Remarks:** During the test no deviation was detected to the selected operation mode(s).

5. Test Setup Photos of the EUT

Radiated Emission (30MHz-1GHz)



Radiated Emission (1GHz-6GHz)



Conducted Emission (AC Mains)



Conducted Emission (RJ45)



AC Mains Voltage Fluctuation and Flicker/ Voltage Dips and Interruptions



Electrostatic Discharge



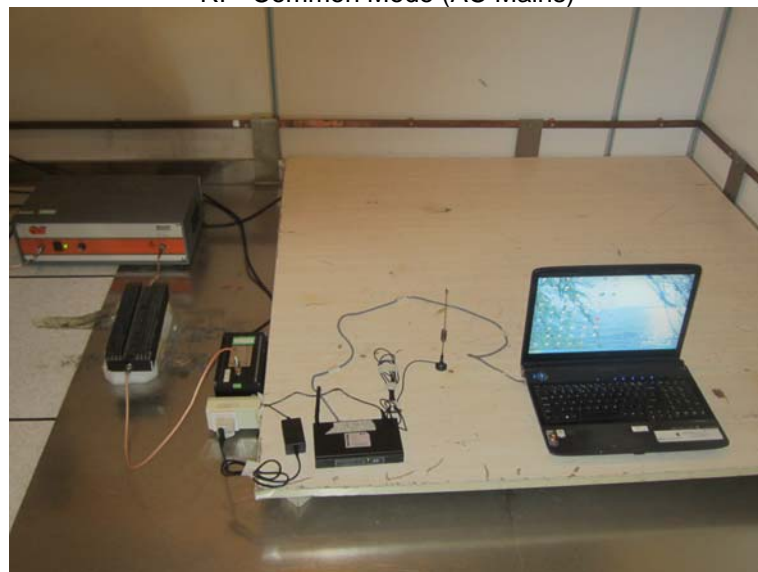
Surge /Fast Transients- Common Mode (AC Mains)



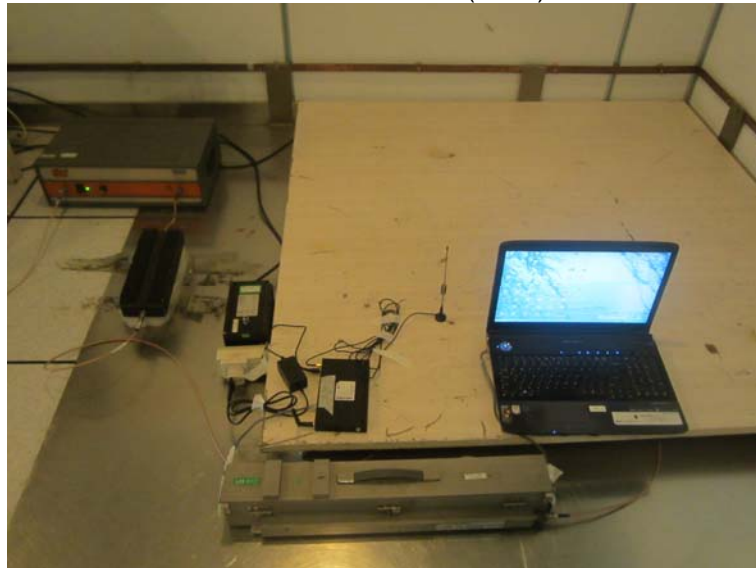
Surge (RJ45)



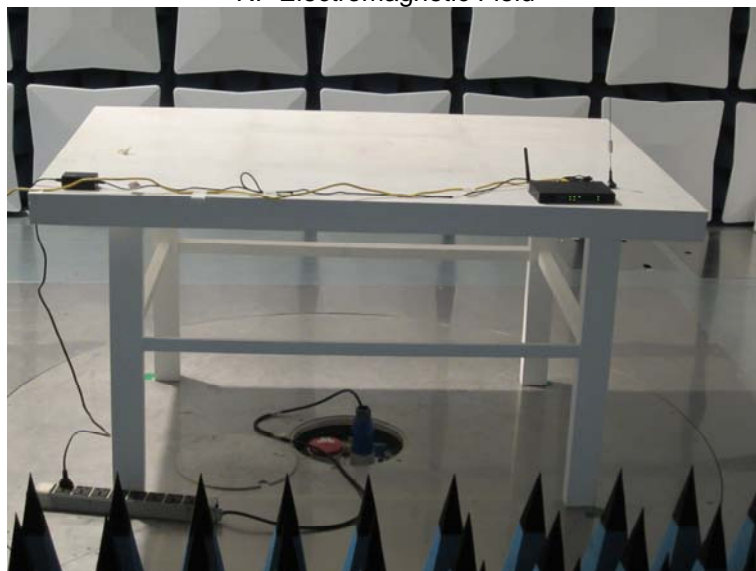
RF- Common Mode (AC Mains)



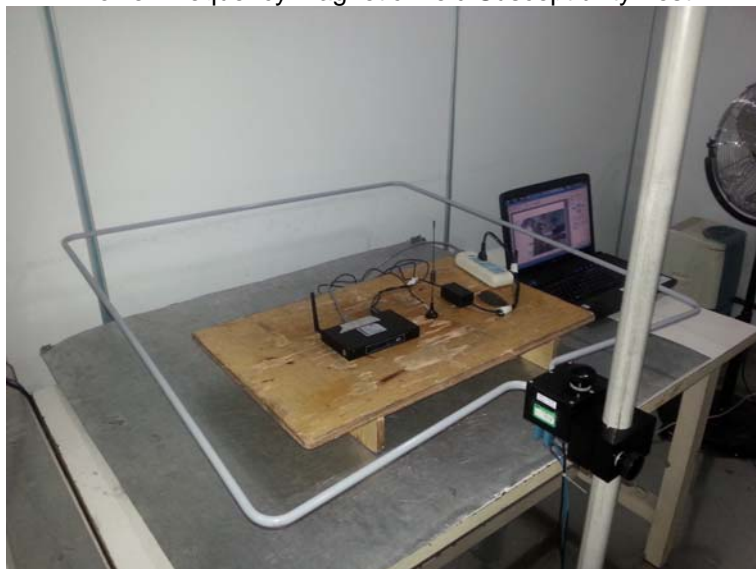
RF- Common Mode (RJ45)



RF Electromagnetic Field



Power Frequency Magnetic Field Susceptibility Test



.....End of Report.....