TEST REPORT

Application No.:	GLEMR070601895IT (SGS HK NO.:2013590/EE)
Applicant:	Ek1 iT Consulting Pty Ltd (trading as) vPedal. com
Equipment Under Test (EUT):	
EUT Name:	PC Game Product > Usb footpedal
Item No.:	Vp2
Serial No.:	Not supplied by client
Standards:	EN 55022: 1998 + A1: 2000 + A2: 2003, EN 55024: 1998 + A1: 2001 + A2: 2003, EN 61000-3-2: 2006, EN 61000-3-3: 1995 + A1: 2001 + A2: 2005.
Date of Receipt:	27 June 2007
Date of Test:	15 to 20 July 2007
Date of Issue:	23 July 2007

Test Result :	**PASS***

* In the configuration tested, the EUT complied with the standards specified above.

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EC Directives.

Jerry Chen
Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.
If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.
All test results in this report can be traceable to National or International Standards.

2 Test Summary

The customer requested EMC tests for an Electronic pingpong game.

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission, 30MHz to 1GHz	EN 55022: 1998 + A1: 2000 + A2: 2003	EN 55022: 1998 + A1:2000 + A2: 2003	Class B	PASS
Conducted Emission on AC, 150kHz to 30MHz	EN 55022: 1998 + A1: 2000 + A2: 2003	EN 55022: 1998 + A1: 2000 + A2: 2003	Class B	PASS
Harmonic Emission on AC, 100Hz to 2kHz	EN 61000-3-2: 2006	EN 61000-3-2: 2006	Clause 7 of EN 61000-3-2	N/A
Flicker Emission on AC	EN 61000-3-3 :1995 + A1: 2001 + A2: 2005	EN 61000-3-3 : 1995 + A1:2001 + A2: 2005	Clause 5 of EN 61000-3-3	N/A
ESD	EN 55024 :1998 + A1: 2001+A2: 2003	EN 61000-4-2: 1995 + A1:1998+A2:2001	Contact:±2, 4 kV Air: ±4, 6, 8 kV	PASS
Radiated Immunity, 80MHz to 1GHz	EN 55024 :1998 + A1: 2001+A2: 2003	EN 61000-4-3: 2002 + A1: 2002	3V/m, 80%, 1kHz Amp. Mod.	PASS
Electrical Fast Transients (EFT) on AC and Signal	EN 55024 :1998 + A1: 2001+A2: 2003	EN 61000-4-4: 1995 + A1:2001+A2:2001	AC: ± 1.0kV	PASS
Surge Immunity on AC	EN 55024 :1998 +A1: 2001+A2: 2003	EN 61000-4-5: 2006	± 1kV D.M.† ± 2kV C.M. ‡	PASS
Injected Currents on AC and Signal, 150kHz to 80MHz	EN 55024 :1998 + A1: 2001+A2: 2003	EN 61000-4-6: 1996 + A1: 2001	3Vrms (emf), 80%, 1kHz Amp. Mod.	PASS
Voltage Dips and Interruptions on AC	EN 55024 :1998 + A1: 2001+A2: 2003	EN 61000-4-11: 2004	0 % U_T* for 0.5per 0 % U_T* for 250per 70 % U_T* for 25per	PASS

* U_T is the nominal supply voltage

† D.M. – Differential Mode

‡ C.M. – Common Mode

N/A: not applicable. Please refer to Section 6.3 and 6.4 for further details.

3 Contents

4 General Information

4.1 Client Information

Applicant: Ek1 iT Consulting Pty Ltd (trading as) vPedal. com

Address of Applicant: P.O. Box 2034 St Kilda West, Melbourne, Victoria, 3182, Australia

4.2 General Description of E.U.T.

EUT Name: PC Game Product > Usb footpedal

Item No.: Vp2

Serial No.: Not supplied by client

4.3 Details of E.U.T.

Power Supply: DC 5V Supplied by PC usb port

Power Cord: 1.8m screened USB cable without ferrite

4.4 Description of Support Units

The EUT has been tested with a test PC.

Description	Manufacturer	Model No.	SN/Certificate NO
Test PC 2 for RE,CE			
Personal Computer	Hewlett-Packard	Dx7208	CNG62707HF
17'' Monitor	IBM	6737-P6N	VC-N2571/ FCC ID:BEJT17LD
Mouse	Maxell	MSMP-20	N/A
Keyboard	Hewlett-Packard	KB-0316	382925-AA1
Test PC 3 for ESD			
Personal Computer	DELL	DHS	N/A
15'' Monitor	DELL	E551c	CN-0462RM-64180-24J-00LG/ FCC ID:ARSCM356N
Mouse	IBM	MU29J	23-048982
Keyboard	IBM	SK-8820	08520200
ROM Programmer	DASI Electronics	EMP-100A	N/A
Printer	Hewlett-Packard	C5884A	DeskJet 670C
NoteBook for RI,EFT,CI			
NoteBook	IBM	T40	99-FBAF9 03/09
NoteBook	IBM	X22	FX-24148 00/10

4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory, No.198 Kezhu Road, Science Town Economic& Technology Development District Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

4.6 Test Facility

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

- **NVLAP (Lab Code: 200611-0)**

  SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

- **ACA**

  SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

  Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **CNAS (Lab Code: L0167)**

  SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

- **FCC (Registration No.: 282399)**

  SGS-CSTC Standards Technical Services 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 282399, May 31, 2002. With the above and NVLAP's accreditation, SGS-CSTC is an authorized test laboratory for the DoC process.

- **Industry Canada (Registration No.: 4620B-1)**

  The 3m/10m Alternate Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620B-1.

  Date of Registration: Jan 15, 2007. Valid until Jan 15, 2009

- **VCCI (Registration No.: R-2460 and C-2584)**

  The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2460 and C-2584 respectively.

  This certificate is valid until September 14.2009

4.7 Deviation from Standards

None.

4.8 Abnormalities from Standard Conditions

None

4.9 Monitoring of EUT for All Immunity Test

Visual: Monitored the PC monitor of the EUT.

Audio:

5 Equipments Used during Test

	RE in Chamber/OATS					
No:	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date (dd-mm-yy)**	**Cal.Due date (dd-mm-yy)**
EMC0525	Compact Semi-Anechoic Chamber	ChangZhou ZhongYu	N/A	N/A	06-03-2007	06-03-2008
EMC0522	EMI Test Receiver	Rohde & Schwarz	ESIB26	100249	05-12-2006	05-12-2007
N/A	EMI Test Software	Audix	E3	N/A	N/A	N/A
EMC0514	Coaxial cable	SGS	N/A	N/A	04-12-2006	04-12-2007
EMC0524	Bi-log Type Antenna	Schaffner -Chase	CBL6112B	2966	31-10-2006	31-10-2007
EMC0519	Bilog Type Antenna	Schaffner -Chase	CBL6143	5070	31-07-2006	31-07-2007
EMC0517	Horn Antenna	Rohde & Schwarz	HF906	100095	29-07-2006	29-07-2007
EMC0040	Spectrum Analyzer	Rohde & Schwarz	FSP30	100324	05-12-2006	05-12-2007
EMC0520	0.1-1300 MHz Pre-Amplifier	HP	8447D OPT 010	2944A06252	28-03-2007	28-03-2008
EMC0521	1-26.5 GHz Pre-Amplifier	Agilent	8449B	3008A01649	28-03-2007	28-03-2008
EMC0523	Active Loop Antenna	EMCO	6502	00042963	09-08-2006	09-08-2008
EMC0530	10m Semi- Anechoic Chamber	ETS	N/A	N/A	22-08-2006	22-08-2007

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	ESD					
No:	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date (dd-mm-yy)**	**Cal.Due date (dd-mm-yy)**
SEL0012	ESD Gun	Keytek	MZ-15/EC	0502182	07-04-2007	07-04-2008
EMC0804	ESD Ground Plane	SGS	3m x 3m	N/A	N/A	N/A

	EFT, Surge, Voltage dips and Interruption					
No:	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date (dd-mm-yy)**	**Cal.Due date (dd-mm-yy)**
EMC1010	EMC Immunity Test System	Thermo KeyTek	Pro-Plus	0501276	05-12-2006	05-12-2007
EMC1009	Capacitive Coupling Clamp	Thermo KeyTek	Pro-CCL	0501362	05-12-2006	05-12-2007
EMC1005	Digital Oscilloscope	Tektronix	TDS3012	B015508	16-07-2007	14-07-2008

Radiated Immunity						
No:	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date (dd-mm-yy)**	**Cal.Due date (dd-mm-yy)**
EMC0525	Compact 3m Semi- Anechoic Chamber	Changzhou zhongyu	N/A	N/A	06-03-2007	06-03-2008
EMC0516	Signal Generator	Rohde & Schwarz	SMR20	100416	05-12-2006	05-12-2007
EMC0915	Amplifier 20M-1GHz	EMPOWER	BBS2E4ALP	1007	06-03-2007	06-03-2008
EMC0914	Amplifier 800M-2.5GHz	EMPOWER	BBS3Q5KIN	1006	28-03-2007	28-03-2008
EMC0904	Power Meter	Rohde & Schwarz	NRVS	825770/074	16-07-2007	16-07-2008
EMC0905	Power Sensor	Rohde & Schwarz	NRV-Z5	825802/013	16-07-2007	16-07-2008
EMC0917	Dual Directional Coupler	EMCA	715-10-1.400	070031	06-10-2005	06-10-2007
EMC0907	Electric Field Probe	Wandel & Goltermann	EMC-20	M-0063	24-11-2006	24-11-2007
EMC0908	Oscilloscope Type 485	Tektronix	485	B144408	20-07-2007	20-07-2008
EMC0909	Monitor System	Mitsubish Corp.	M-0552AB	91510185	N/A	N/A
EMC0524	Bi-log Type Antenna	Schaffner -Chase	CBL6112B	2966	31-10-2006	31-10-2007
EMC0916	Microwave Horn Antenna(0.8-5GHz)	Amplifier Research	AT4002A	308071	25-10-2006	25-10-2007

Conducted Immunity						
No:	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date (dd-mm-yy)**	**Cal.Due date (dd-mm-yy)**
EMC1101	Signal Generator	Rohde & Schwarz	SMY01	825675/016	19-09-2006	18-09-2007
EMC1102	Amplifier 0.15-230MHz	Ophirrf	GRF5048	1003	28-03-2007	28-03-2008
EMC1103	Power Meter	Rohde & Schwarz	NRVS	825770/079	16-07-2007	16-07-2008
EMC0905	Power Sensor	Rohde & Schwarz	NRV-Z5	825802/013	16-07-2007	16-07-2008
EMC1105	Dual Directional coupler	Werlatone Inc.	C1795	6635	24-11-2006	24-11-2007
EMC0908	Oscilloscope Type 485	Tektronix	485	B144408	20-07-2007	20-07-2008
EMC1108	CDN M3	Schaffner Chase	CDN-M3-16	9866	05-12-2006	05-12-2007
EMC1107	CDN M2	Schaffner Chase	CDN-M2-16	9863	05-12-2006	05-12-2007
EMC1120	Immunity S/W Ver 4.31	Schaffner Chase	CIS9942	WHHPKB	N/A	N/A
EMC1116	Current Probe	Schaffner Chase	CIP9136	1155	25-11-2006	25-11-2007
EMC1117	Current Probe	Schaffner Chase	CSP8445	18	25-11-2006	25-11-2007

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6 Emission Test Results

6.1 Conducted Emissions Mains Terminals, 150kHz to 30MHz

Test Requirement:	EN 55022
Test Method:	EN 55022
Test Date:	20 July 2007
Frequency Range:	150KHz to 30MHz
Class / Severity:	Class B
Detector:	Peak for pre-scan
	Quasi-Peak and Average at frequency with maximum peak
	(9kHz resolution bandwidth)

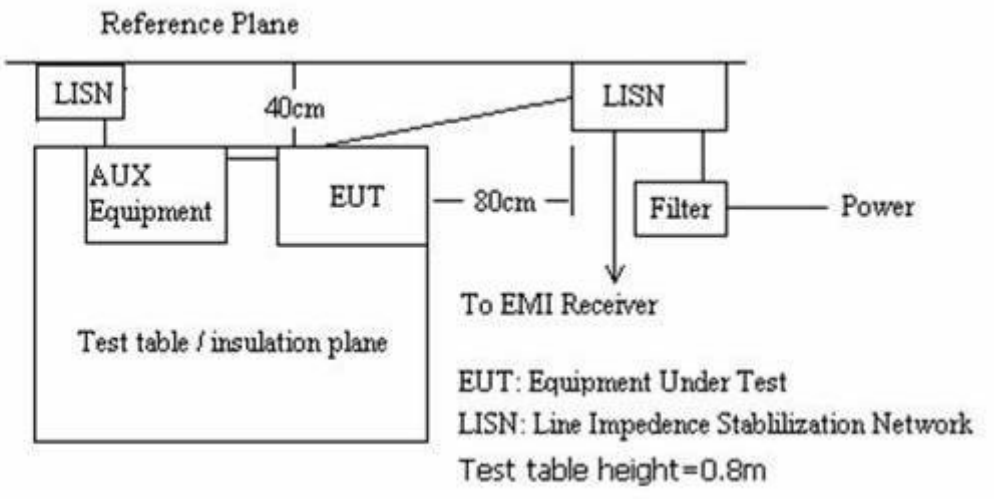
6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 25.0 °C Humidity: 52 % RH Atmospheric Pressure: 1028 mbar

EUT Operation: Test the EUT in PC connection mode.

6.1.2 Plan View of Test Setup



6.1.3 Measurement Data

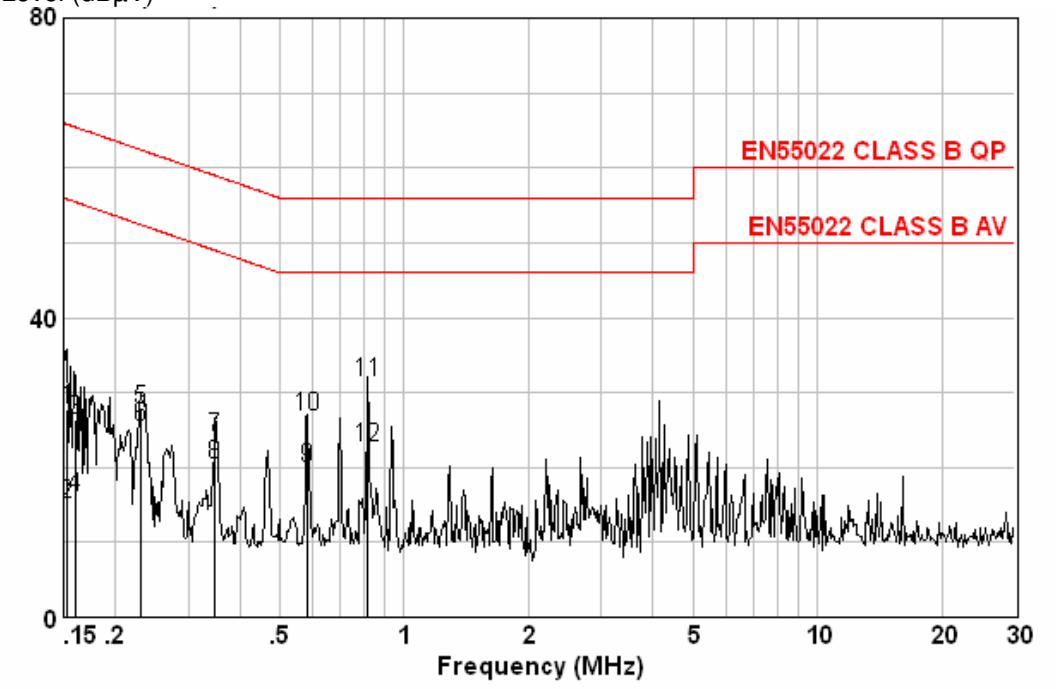
Pre-scan was performed with peak detected on both live and neutral cable. Quasi-peak & average measurements were performed on the neutral lines at the frequencies at which maximumu peak emission level were detected.

Please see the attached Quasi-peak and Average test results.

Live Line:

Peak Scan:

Level (dBµV)



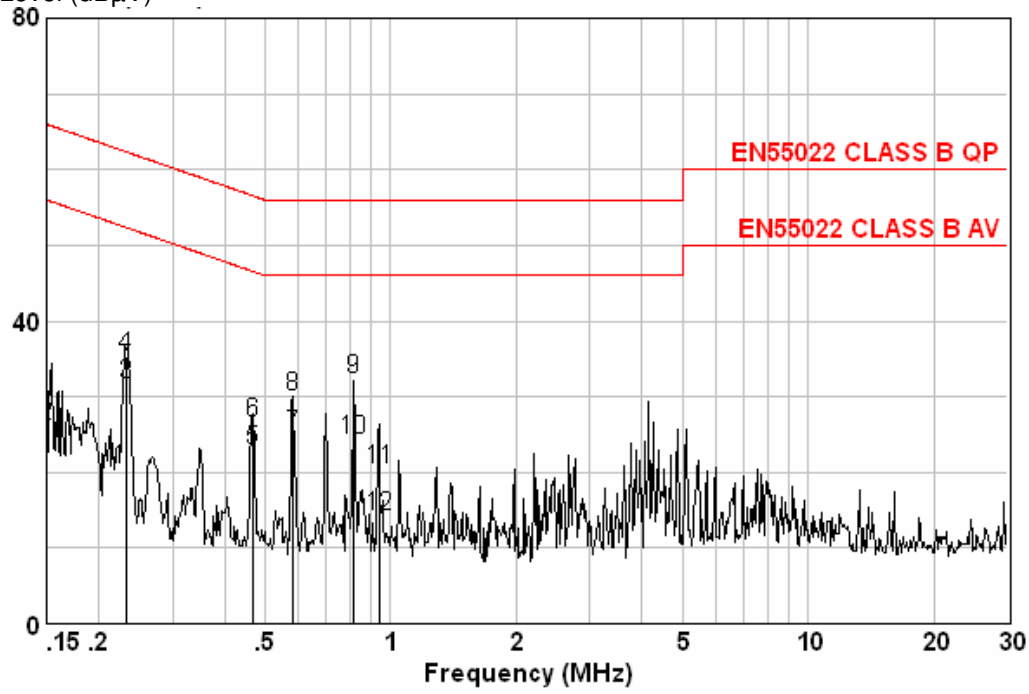
Quasi-peak and Average measurement:

Freq	Read Level	Cable Loss	LISN Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.152	27.81	0.00	0.01	27.82	65.87	-38.05	QP
0.152	15.08	0.00	0.01	15.09	55.87	-40.78	AVERAGE
0.160	26.26	0.00	0.02	26.28	65.47	-39.19	QP
0.160	15.95	0.00	0.02	15.97	55.47	-39.50	AVERAGE
0.230	27.62	0.00	0.10	27.72	62.44	-34.72	QP
0.230	25.33	0.00	0.10	25.43	52.44	-27.01	AVERAGE
0.348	24.06	0.00	0.10	24.16	59.00	-34.84	QP
0.348	20.23	0.00	0.10	20.33	49.00	-28.67	AVERAGE
0.585	19.83	0.00	0.05	19.88	46.00	-26.12	AVERAGE
0.585	26.89	0.00	0.05	26.94	56.00	-29.06	QP
0.817	31.32	0.00	0.04	31.36	56.00	-24.64	QP
0.817	22.71	0.00	0.04	22.75	46.00	-23.25	AVERAGE

Neutral Line

Peak Scan:

Level (dBµV)



Quasi-peak and Average measurement:

Freq	Read Level	Cable Loss	LISN Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.150	13.02	0.00	0.10	13.12	56.00	-42.88	AVERAGE
0.150	25.96	0.00	0.10	26.06	66.00	-39.94	QP
0.233	31.61	0.00	0.10	31.71	52.35	-20.64	AVERAGE
0.233	35.24	0.00	0.10	35.34	62.35	-27.01	QP
0.469	22.87	0.00	0.10	22.97	46.54	-23.57	AVERAGE
0.469	26.58	0.00	0.10	26.68	56.54	-29.86	QP
0.585	25.00	0.00	0.05	25.05	46.00	-20.95	AVERAGE
0.585	29.93	0.00	0.05	29.98	56.00	-26.02	QP
0.817	32.40	0.00	0.04	32.44	56.00	-23.56	QP
0.817	24.18	0.00	0.04	24.22	46.00	-21.78	AVERAGE
0.938	20.24	0.00	0.08	20.32	56.00	-35.68	QP
0.938	14.23	0.00	0.08	14.31	46.00	-31.69	AVERAGE

6.2 Radiated Emissions, 30MHz to 1GHz

Test Requirement:	EN 55022
Test Method:	EN 55022
Test Date:	15 July 2007
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m
Class:	Class B
Detector:	Peak for pre-scan
	Quasi-Peak(120kHz resolution bandwidth) if maximised peak within 6dB of limit

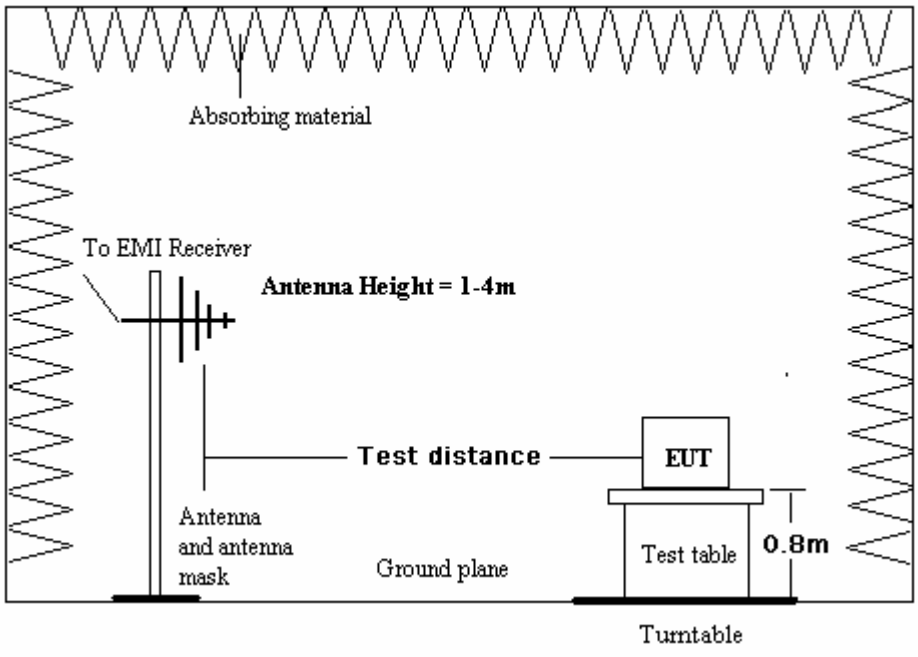
6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 29.0 °C Humidity: 54 % RH Atmospheric Pressure: 1011 mbar

EUT Operation: Test the EUT in PC connection mode.

6.2.2 Test Setup



6.2.3 Measurement Data

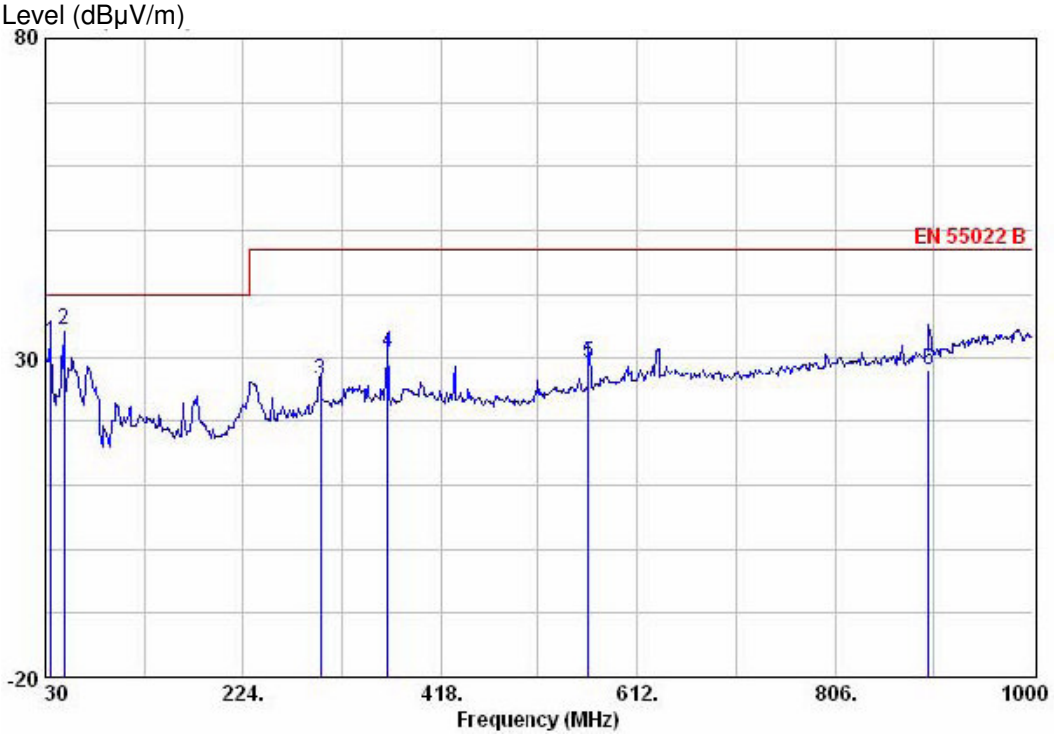
An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by Bilog antenna with 2 orthogonal polarities.

The following quasi-peak measurements were performed on the EUT on 12 July 2007.

Vertical:

Peak scan

Level (dBµV/m)



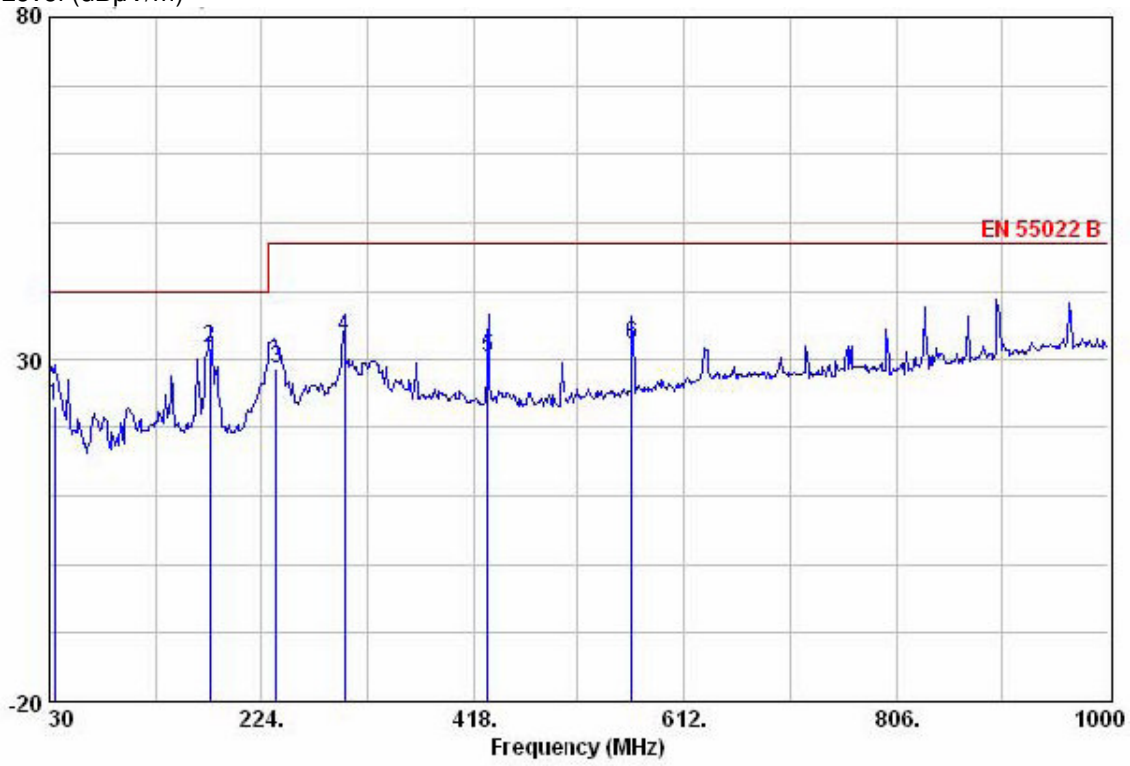
Quasi-peak measurement

Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
35.820	38.96	18.62	0.40	25.30	32.68	40.00	-7.32	QP
48.000	46.75	12.53	0.48	25.26	34.51	40.00	-5.49	QP
299.660	35.19	14.46	1.30	24.40	26.55	47.00	-20.45	QP
365.620	38.28	16.13	1.45	24.81	31.05	47.00	-15.95	QP
564.470	35.05	18.37	1.75	25.83	29.33	47.00	-17.67	QP
898.150	29.51	21.10	2.68	25.02	28.27	47.00	-18.73	QP

Horizontal:

Peak scan

Level (dBµV/m)



Quasi-peak measurement

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
34.850	25.24	22.64	0.40	25.30	22.98	40.00	-17.02	QP
176.470	44.03	11.69	0.96	24.80	31.88	43.50	-11.62	QP
237.580	37.54	14.53	1.10	24.45	28.72	46.00	-17.28	QP
299.660	38.77	17.65	1.30	24.40	33.32	46.00	-12.68	QP
430.610	37.70	16.47	1.50	25.30	30.37	46.00	-15.63	QP
564.470	38.55	17.92	1.75	25.83	32.38	46.00	-13.62	QP

Level = Read Level + Antenna Factor + Cable Loss – Preamp Factor.

6.3 Harmonics Test Results

Test Requirement: EN 61000-3-2

Test Method: N/A: See Remark Below

Frequency Range: 100Hz to 2kHz

There is no need for Harmonics test to be performed on this product (rated power is less than 75W) in accordance with EN 61000-3-2: 2006.

For further details, please refer to Clause 7, Note 1 of EN 61000-3-2 which states:

"For the following categories of equipment limits are not specified in this edition of the standard.

Note 1: Equipment with a rated power of 75W or less, other than lighting equipment."

6.4 Flicker Test Results

Test Requirement: EN 61000-3-3

Test Method: N/A: See Remark Below

There is no need for Flicker test to be performed on this product in accordance with EN 61000-3-3:1995 + A1:2001 + A2: 2005.

For further details, please refer to Clause 6.1 of EN 61000-3-3 which states:

"For voltage changes caused by manual switching, equipment is deemed to comply without further testing if the maximum r.m.s. input current (including inrush current)evaluated over each 10 ms half-period between zero-crossings does not exceed 20 A, and the supply current after inrush is within a variation band of 1,5A.."

7 Immunity Test Results

7.1 Performance Criteria Description in Clause 7 of EN 55024

Criterion A:

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 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, after the application of the phenomena 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.

During the test, degradation of performance is allowed. However, no change of operating state or stored data is allowed to persist after the test.

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 C:

Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions.

Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

7.2 ESD

Test Requirement:	EN 55024	
Test Method:	EN 61000-4-2	
Criterion required:	B	
Test Date:	19 July 2007	
Discharge Impedance:	330 Ω / 150 pF	
Discharge Voltage:	Air Discharge:	2, 4, 8 kV
	Contact Discharge:	2, 4 kV
	VCP / HCP:	2, 4 kV
Polarity:	Positive & Negative	
Number of Discharge:	Minimum 10 times at each test point	
Discharge Mode:	Single Discharge	
Discharge Period:	1 second minimum	

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25.0 °C Humidity: 50 % RH Atmospheric Pressure: 1003 mbar

EUT Operation: Test the EUT in PC connection mode.

7.2.2 Test Results

Direct Application Test Results

Observations: Test Point: 1. All insulated enclosure & seams.

2. All accessible metal parts of the enclosure.

Direct Application			Test Results	
Discharge Level (kV)	**Polarity (+/-)**	**Test Point**	**Contact Discharge**	**Air Discharge**
2, 4, 8	+/-	1	N/A	A
2, 4	+/-	2	A	N/A

Indirect Application Test Results

Observations: Test Point: 1. All sides.

Indirect Application			Test Results	
Discharge Level (kV)	**Polarity (+/-)**	**Test Point**	**Horizontal Coupling**	**Vertical Coupling**
2, 4	+/-	1	A	A

Results:

A: No degradation in the performance of the EUT was observed.

N/A: Not Applicable (not required by Standard).

7.3 Radiated Immunity

Test Requirement: EN 55024
Test Method: EN 61000-4-3
Criterion required: A
Test Date: 19 July 2007
Frequency Range: 80MHz to 1GHz
Antenna Polarization: Horizontal & Vertical
Severity: 3V/m 80%, 1kHz Amplitude Modulated

7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 29.0 °C Humidity: 54 % RH Atmospheric Pressure: 1011 mbar

EUT Operation: Test the EUT in PC connection mode.

7.3.2 Test Results

Frequency	Level	Modulation	EUT Face	Result / Observations
80MHz-1GHz	3V/m	1kHz, 80% Amp. Mod, 1% increment	0°V	A
			0°H	
			90°V	A
			90°H	
			180°V	A
			180°H	
			270°V	A
			270°H	

Remarks:

A: No degradation in the performance of the E.U.T. was observed.

7.4 Electrical Fast Transients (EFT)

Test Requirement: EN 55022
Test Method: EN 61000-4-4
Criterion required: B
Test Date: 18 July 2007
Test Level: 1.0kV on AC
Polarity: Positive & Negative
Repetition Frequency: 5kHz
Burst Duration: 300ms
Test Duration: 2 minute per level & polarity

7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 21.0 °C Humidity: 53% RH Atmospheric Pressure: 1013 mbar

EUT Operation: Test the EUT in Game mode with AC/DC adaptor supply.

7.4.2 Test Results On AC Supply:

Lead under Test	Level (±kV)	Coupling Direct/Clamp	EUT operating mode	Observations (Performance Criterion)
Live	±1.0	Direct		(B)
Neutral	± 1.0	Direct		(B)
Earth	±1.0	Direct		(B)
Live + Neutral + Earth	±1.0	Direct		(B)

B: The function of the EUT got abnormal during test, and after test it could be recovered automatically.

7.5 Surge

Test Requirement:	EN 55024
Test Method:	EN 61000-4-5
Criterion required::	B
Test Date:	18 July 2007
Test Level:	±1kV Line to Neutral
	±2kV Line, Neutral to Earth
Interval:	60s between each surge
No. of surges:	5 positive, 5 negative at 0°, 90°, 180°, 270°.

7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 21.0 °C Humidity: 54 % RH Atmospheric Pressure: 1013 mbar

EUT Operation: Test the EUT in PC connection mode.

7.5.2Test Results:

Pulse No	Line-Line	Coupling	Level (kV)	Surge Interval	Phase (deg)	Observation (Performance Criterion)
1–5	L-N	18uF	+1	60s	0°	No loss of performance (A)
6–10	L-N	18uF	-1	60s	0°	(A)
11–15	L-N	18uF	+1	60s	90°	(A)
16–20	L-N	18uF	-1	60s	90°	(A)
21–25	L-N	18uF	+1	60s	180°	(A)
26–30	L-N	18uF	-1	60s	180°	(A)
31–35	L-N	18uF	+1	60s	270°	(A)
36–40	L-N	18uF	-1	60s	270°	(A)
41–45	L-PE	9uF + 10Ω	+2	60s	0°	(A)
46–50	L-PE	9uF + 10Ω	-2	60s	0°	(A)
51–55	L-PE	9uF + 10Ω	+2	60s	90°	(A)
56–60	L-PE	9uF + 10Ω	-2	60s	90°	(A)
61–65	L-PE	9uF + 10Ω	+2	60s	180°	(A)
66–70	L-PE	9uF + 10Ω	-2	60s	180°	(A)
71–75	L-PE	9uF + 10Ω	+2	60s	270°	(A)
76–80	L-PE	9uF + 10Ω	-2	60s	270°	(A)
81–85	N-PE	9uF + 10Ω	+2	60s	0°	(A)
86–90	N-PE	9uF + 10Ω	-2	60s	0°	(A)
91–95	N-PE	9uF + 10Ω	+2	60s	90°	(A)
96–100	N-PE	9uF + 10Ω	-2	60s	90°	(A)
101–105	N-PE	9uF + 10Ω	+2	60s	180°	(A)
106–110	N-PE	9uF + 10Ω	-2	60s	180°	(A)
111–115	N-PE	9uF + 10Ω	+2	60s	270°	(A)
116–120	N-PE	9uF + 10Ω	-2	60s	270°	(A)

7.6 Conducted Immunity 0.15MHz to 80MHz

Test Requirement: EN 55024

Test Method: EN 61000-4-6

Criterion required: A

Test Date: 18 July 2007

Frequency Range: 0.15MHz to 80MHz

Test level: 3V rms on AC Ports (unmodulated emf into 150 Ω)

Modulation: 80%, 1kHz Amplitude Modulation

7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 26.0 °C Humidity: 48 % RH Atmospheric Pressure: 1010 mbar

EUT Operation: Test the EUT in PC connection mode.

7.6.2 Test Results:

Frequency	Line	Test Level	Modulation	Step Size	Dwell Time	Observation (Performance Criterion)
150kHz to 80MHz	2 Wire AC Supply Cable	3Vrms	80%, 1kHz Amp. Mod.	1%	1s	No Loss of Function (A)

7.7 Voltage Dips and Interruptions

Test Requirement: EN 55024

Test Method: EN 61000-4-11

Criterion required: >95%VD,0.5period: B; >95%VD,250periods: C;
30%VD, 25periods: C

Test Date: 18 July 2007

Test Level: 0% of U_T (Supply Voltage) for 0.5 Periods
0% of U_T (Supply Voltage) for 250 Periods
70 % of U_T (Supply Voltage) for 25 Periods

No. of Dips / Interruptions: 3 per Level

7.7.1 E.U.T. Operation

Operating Environment:

Temperature: 21.0 °C Humidity: 54 % RH Atmospheric Pressure: 1013 mbar

EUT Operation: Test the EUT in PC connection mode.

7.7.2 Test Results:

EUT operating mode	Test Level % U_T	Phase	Duration of dropout in Periods	No of dropout	Time between dropout	Observations (Performance Criterion)
Game Mode	0	0°	0.5	3	10s	No Loss of Function (A)
Game Mode	0	180°	0.5	3	10s	No Loss of Function (A)
Game Mode	0	0°	250	3	10s	(B)
Game Mode	70	0°	25	3	10s	No Loss of Function (A)

Performance B is within the acceptable criterion for Voltage Dips and Interruption test.

B: During test the EUT stopped working, after test it could recover automatically.

8 Photographs

8.1 Conducted Emission Test Setup

8.2 Radiated Emission Test Setup

8.3 ESD Test Setup

8.4 Radiated Immunity Test Setup

8.5 EFT, Surge, Voltage Dips and Interruptions Test Setup

8.6 Conducted Immunity Test Setup

8.7 EUT Constructional Details