



## EMC UPDATE TEST REPORT

For

**Advantech Co., Ltd.**

**Panel PC**

**Model: PPC-123T; \*\*PPC-123T-12; \*\*PPC-123T-24**

**Trade Name: Advantech**

**Date of Test: September 17 ~ 23, 2003**

**Revision: 02**

### **Description of Rev. 02:**

1. Applicant adds two model numbers and all specification are identical with original model number except power source (DC power) as per customer declaration.  
(Please refer to \*\* mark items on this report)
2. Applicant adds one LCD Panel, two DC power supplies (inside of the EUT), two power adapters, one HDD and one CD-ROM to re-test and not put internal photograph as per customer requested.  
(Please refer have \*\* mark items on this report)
3. Other information, please refer to the 990624 (Rev.00 to Rev.01), 000761 (Rev.00 to Rev.01) and this (Rev.02) test report.

**Approved by:**

Jonson Lee

Director of Linkou Laboratory

Compliance Certification Services Inc.

**Reviewed by:**

Jessie Wang

Section Manager of Linkou Laboratory

Compliance Certification Services Inc.

**Note:** This report shall not be reproduced except in full, without the written approval of Compliance Certification Services Inc. Ltd. This document may be altered or revised by Compliance Certification Services Inc. personnel only, and shall be noted in the revision section of the document.



# 1 TEST RESULT CERTIFICATION

**Applicant:** Advantech Co., Ltd.  
No. 1, Alley 20, Lane 26, Rueiguang Road,  
Neihu District, Taipei 114, R.O.C.

**Manufacturer:** Advantech Co., Ltd.  
No. 1, Alley 20, Lane 26, Rueiguang Road,  
Neihu District, Taipei 114, R.O.C.

**Equipment Under Test:** Panel PC

**Trade Name:** Advantech

**Model:** PPC-123T; \*\*PPC-123T-12; \*\*PPC-123T-24

**Detailed EUT Description:** See Item 2 of this report

**Date of Test:** September 17 ~ 23, 2003

**Deviation:** None

Applicable Standard	Class/Limit/Criterion	Test Result
EN 55022: 1998	Class B	No non-compliance noted
EN 61000-3-2:1995 + A1: 1998 + A2: 1998	Class A/ D	No non-compliance noted
EN 61000-3-3:1995	Limit	No non-compliance noted
EN 55024:1998, including		
IEC 61000-4-2: 2001	Criterion B	No non-compliance noted
IEC 61000-4-3: 1995	Criterion A	No non-compliance noted
IEC 61000-4-4: 1995	Criterion B	No non-compliance noted
IEC 61000-4-5: 1995	Criterion B	No non-compliance noted
IEC 61000-4-6: 1996	Criterion A	No non-compliance noted
IEC 61000-4-8: 1993	Criterion A	No non-compliance noted
IEC 61000-4-11: 1994	Criterion B/C/C	No non-compliance noted
Deviation from Applicable Standard		
None		

The above equipment was tested by Compliance Certification Services Inc. for compliance with the requirements set forth in the EMC Directive 89/336/EMC and the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.



## 2 EUT DESCRIPTION

Product	Panel PC		
Trade Name	Advantech		
Model	PPC-123T; **PPC-123T-12; **PPC-123T-24		
Housing Type	Plastic		
EUT Power Rating	100~250VAC, 47/63Hz, 3A		
Power Supply Manufacturer	SKYNET	Model	SNP-8086 (AC)
		**	DC12-8081 (DC 12V)
		**	DC36-8081 (DC 24V)
Power Supply Power Rating	1) For SNP-8086 I/P: 100-250VAC, 47-63Hz, 3A O/P: DC 5V, 16A; DC 12V, 1.5A **2) For D12-8081 I/P: DC 12V O/P: DC +5V, 10A; DC +12V, 1.5A; **3) For DC36-8081 I/P: DC 18-56V, 7A O/P: DC +5V, 10A; DC +12V; 1.5A; DC –12VDC, 0.5A		
**Power Adapter Manufacturer	SKYNET	Model	SNP-A127
			SNP-A109
**Power Adapter Power Rating	1) For SNP-A127 I/P: 100-250VAC, 47-63Hz, 3A O/P: DC 12V, 9A 2) For SNP-A109 I/P: 115-230VAC, 50/60Hz, 1.5 / 0.8A O/P: DC 24V, 2.3A (40°C Ambient) DC 24V, 2.0A (50°C Ambient)		
AC Power Cord Type	Unshielded, 1.8m (Detachable)		
DC Power Cable Type	Unshielded, 1.8m (Detachable) (For Power Supply) Unshielded, 1.8m (Non-detachable) (For Power Adapter)		
Memory Capacity	Max: 128MB		



CPU Manufacturer	Intel	Model	Celeron™ 466 MHz
			Pentium III 850MHz
			Pentium III 1.26GHz
CPU Board Manufacturer	ADVANTECH	Model	PCM 9571
			PCM-9672
OSC/Clock Frequencies	100MHz / 133MHz		
HDD Manufacturer	IBM	Model	DBCA-204860
	** Fujitsu		MHR2010AT (10GB)
FDD Manufacturer	Y-E DATA	Model	YD-702J
CD-ROM Manufacturer	Toshiba	Model	XM-1902B
	** ASUS		SCD-2400
LCD Panel Manufacturer	Toshiba	Model	LTM12C275C
	IBM	Model	M121-SOHR
	SANYO	Model	LM121SV-02L01
			** TM121SV-22L11A
VGA Card Manufacturer	SILICON MOTION INC.	Model	Lynx SMI 710
Audio Card Manufacturer	ESS TECH.	Model	1946S

**Note:** The difference between of three model numbers (list on this report) are identical, all specification are identical with original mode number except power source (AC or DC power) as per customer declaration.

**I/O Port of EUT**

<b>I/O Port Type</b>	<b>Q'TY</b>	<b>TESTED WITH</b>
1). Parallel Port	1	1
2). Serial Port	4	4
3). Video Port	1	1
4). PS/2 Keyboard / Mouse Port	1	1
5). Game Port	1	1
6). Microphone Port	1	1
7). Line-in Port	1	1
8). Line-out Port	1	1
9). LAN Port	1	1
10). USB Port	2	2



### 3 TEST METHODOLOGY

#### 3.1 DECISION OF FINAL TEST MODE

1. The following test mode(s) were scanned during the preliminary test:

**Mode 1**

800 × 600 Resolution / 100 Mbps + CPU Intel Pentium III 1.26GHz +  
Advantech CPU Board + Sanyo TM121SV-22L11A LCP Panel – PPC-123T-12

**Mode 2**

640 × 480 Resolution / 100 Mbps + CPU Intel Pentium III 1.26GHz +  
Advantech CPU Board + Sanyo TM121SV-22L11A LCP Panel – PPC-123T-12

**Mode 3**

800 × 600 Resolution / 10Mbps + CPU Intel Pentium III 1.26GHz +  
Advantech CPU Board + Sanyo TM121SV-22L11A LCP Panel – PPC-123T-12

**Mode 4**

800 × 600 Resolution / 100 Mbps + CPU Intel Pentium III 1.26GHz +  
Advantech CPU Board + Sanyo TM121SV-22L11A LCP Panel – PPC-123T-24

2. After pre-scan, found mode 1 and 4 producing the highest emission level, used this mode for all final test.
3. For common mode conducted emission, mode 1 and mode 4 were chosen for final testing, for common mode conducted emission was only mode 1 was chosen because the revision is for the same LAN Port.



## 4 SETUP OF EQUIPMENT UNDER TEST

### Setup Diagram

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

### Support Equipment

No.	Equipment	Model No.	Serial No.	FCC ID	Trade Name	Data Cable	Power Cord
1	Monitor	959NF	AQ19H2RT706137Y	FCC DoC	SAMSUNG	Shielded, 1.8m with two cores	Unshielded, 1.8m
2	Modem	DM-1414	0304012267	IFAXDM1414	ACEEX	Shielded, 1.8m	Unshielded, 1.8m
3	Modem	DM-1414	0304012269	IFAXDM1414	ACEEX	Shielded, 1.8m	Unshielded, 1.8m
4	Printer	STYLUS C60	DR3K041995	FCC DoC	EPSON	Shielded, 1.8m	Unshielded, 1.8m
5	PS/2 Keyboard (One To Two Adapter)	KB-0133	N/A	FCC DoC	Compaq	Shielded, 1.8m	N/A
6	PS/2 Mouse (One To Two Adapter)	M-S69	N/A	FCC DoC	Compaq	Shielded, 1.8m	N/A
7	USB Mouse	MO19UCA	020440941	FCC DoC	HP	Shielded, 1.8m	N/A
8	USB Mouse	MO19UCA	020509279	FCC DoC	HP	Shielded, 1.8m	N/A
9	Mouse	M-MM43	LZE94052771	FCC DoC	Logitech	Shielded, 1.8m	N/A
10	Mouse	M-MM43	LZE93352988	FCC DoC	Logitech	Shielded, 1.8m	N/A
11	Walkman	RQ-L10	HB004471	FCC DoC	Panasonic	Unshielded, 1.8m	N/A
12	Multimedia Earphone	Axis-301	N/A	FCC DoC	Labtec	Unshielded, 1.8m	N/A
13	Joystick	G-ZA-PHI	PHB01600992	FCC DoC	Logitech	Shielded, 1.8m	N/A

**Note:** All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

**Grounding:** Grounding was in accordance with the manufacturer's requirements and conditions for the intended use.



## 5 INSTRUMENT AND CALIBRATION

### 5.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 5.2 TEST AND MEASUREMENT EQUIPMENT

The following list contains measurement equipment used for testing. The equipment conforms to the requirement of CISPR 16-1, ANSI C63.2 and other required standards.

Calibration of all test and measurement, including any accessories that may effect such calibration, is checked frequently to ensure the accuracy. Adjustments are made and correction factors are applied in accordance with the instructions contained in the respective manual.

#### Equipment Used for Emission Measurement

Conducted Emission Test Site # 3					
EQUIPMENT	MFR	MODEL	SERIAL NUMBER	LAST CAL.	CAL. DUE
EMI Test Receiver	R&S	ESHS30	828144/003	08/08/2003	08/07/2004
LISN	R&S	ESH2-Z5	843285/010	12/16/2002	12/15/2003
LISN	EMCO	3825/2	9003-1628	07/28/2003	07/27/2004
2X2 WIRE ISN	R&S	ENY22	100020	06/28/2003	06/27/2004
FOUR WIRE ISN	R&S	ENY41	100006	06/28/2003	06/27/2004

*Note: The measurement uncertainty is less than +/- 2.83dB, which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.*

Open Area Test Site # 4					
EQUIPMENT	MFR	MODEL	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	ADVANTEST	R3132	91700456	N.C.R	N.C.R
EMI Test Receiver	R&S	ESCS30	845552/030	02/18/2003	02/17/2004
Bilog Antenna	CHASE	CBL 6112B	2462	01/11/2003	01/10/2004
Turn Table	Chance most	N/A	N/A	N.C.R	N.C.R
Antenna Tower	Chance most	N/A	N/A	N.C.R	N.C.R
Controller	Chance most	N/A	N/A	N.C.R	N.C.R
RF Switch	ANRITSU	MP59B	M51067	N.C.R	N.C.R
Site NSA	C&C Lab.	N/A	N/A	08/09/2003	08/08/2004

*Note: The measurement uncertainty is less than +/- 3.36dB, which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.*





Power Harmonic & Voltage Fluctuation/Flicker Measurement (EN 61000-3-2&-3-3)					
EQUIPMENT	MFR	MODEL	SERIAL NUMBER	LAST CAL.	CAL DUE.
Harmonic & Flicker Tester	HAEFELY TRENCH	PHF555	080 419-25	10/14/2002	10/13/2003

**Equipment Used for Immunity Measurement**

ESD Test Site (EN 61000-4-2)					
EQUIPMENT	MFR	MODEL	SERIAL NUMBER	LAST CAL.	CAL DUE.
ESD Generator	SCHAFFNER	NSG438	170	04/24/2003	04/23/2004

Radiated Electromagnetic Field Immunity Test Site (EN 61000-4-3)					
EQUIPMENT	MFR	MODEL	SERIAL NUMBER	LAST CAL.	CAL DUE.
S.G.	R&S	SMY02	100094	08/06/2003	08/05/2004
Power Amplifier	ar	150W1000	300300	N/A	N/A
Power Antenna	EMCO	93141	9712-1083	N/A	N/A

Fast Transients/Burst Test Site (61000-4-4)					
EQUIPMENT	MFR	MODEL	SERIAL NUMBER	LAST CAL.	CAL DUE.
Fast Transients/Burst Generator	HAEFELY TRENCH	PEFT-JUNIOR	583 333-117	08/20/2003	08/19/2004
Clamp	HAEFELY TRENCH	093 506.1	080 421.13	N/A	N/A



Surge Immunity Test Site (EN 61000-4-5)					
EQUIPMENT	MFR	MODEL	SERIAL NUMBER	LAST CAL.	CAL DUE.
Surge Tester	HAEFELY TRENCH	PSUGER 4010	583 334-71	08/20/2003	08/19/2004

CS Test Site (EN 61000-4-6)					
EQUIPMENT	MFR	MODEL	SERIAL NUMBER	LAST CAL.	CAL DUE.
S.G.	R&S	SMY02	100094	08/06/2003	08/05/2004
Power Amplifier	ar	500A100A	300299	N/A	N/A
CDN	Lüthi	801-M3	1879	02/26/2003	02/25/2004
CDN	MEB	M2	A3002010	04/28/2003	04/27/2004
CDN	SCHAFFNER	T400	16906	10/17/2002	10/16/2003

Power Frequency Magnetic Field Immunity Test Site (61000-4-8)					
EQUIPMENT	MFR	MODEL	SERIAL NUMBER	LAST CAL.	CAL DUE.
TRIAX ELF Magnetic Field Meter	F.W.BELL	4090	9711	10/21/2002	10/20/2003
Clamp Meter	National	300K	11-5980 K	11/19/2002	11/18/2003
Magnetic Field Tester	HAEFELY TRENCH	MAG 100.1	080 938-01	N/A	N/A

Voltage Dips/Short Interruption and Voltage Variation Immunity Test Site (61000-4-11)					
EQUIPMENT	MFR	MODEL	SERIAL NUMBER	LAST CAL.	CAL DUE.
Dips/Interruption and Variations Simulator	HAEFELY TRENCH	PLINE 1610	080 344-05	03/28/2003	03/27/2004



## 6 TEST RESULTS

### Line Conducted Emission

**Model:** PPC-123T-12**Test Mode:** Mode 1**Temperature:** 26 °C**Humidity:** 68% RH**Test Results:** Passed**Tested by:** Michael Chen

(The chart below shows the highest readings taken from the final data)

FREQ MHz	Q.P. Raw dBuV	AVG Raw dBuV	Q.P. Limit dBuV	AVG Limit dBuV	Q.P. Margin dB	AVG Margin dB	NOTE
0.150	58.10	39.00	66.00	56.00	-7.90	-17.00	L1
0.920	34.50	---	56.00	46.00	-21.50	---	L1
13.090	51.20	47.00	60.00	50.00	-8.80	-3.00	L1
13.220	52.70	47.50	60.00	50.00	-7.30	-2.50	L1
14.760	41.60	---	60.00	50.00	-18.40	---	L1
16.560	40.70	---	60.00	50.00	-19.30	---	L1
0.150	57.40	39.00	66.00	56.00	-8.60	-17.00	L2
2.440	34.10	---	56.00	46.00	-21.90	---	L2
12.970	52.00	47.20	60.00	50.00	-8.00	-2.80	L2
13.220	52.90	47.70	60.00	50.00	-7.10	-2.30	L2
14.890	40.70	---	60.00	50.00	-19.30	---	L2
16.690	40.10	---	60.00	50.00	-19.90	---	L2

L1 = Line One (Hot side) / L2 = Line Two (Neutral side)

**Note:** “---” denotes the emission level was or more than 2dB below the Average limit, so no re-check anymore.

**Model:** PPC-123T-24**Test Mode:** Mode 4**Temperature:** 25 °C**Humidity:** 65% RH**Test Results:** Passed**Tested by:** Louis Tang

(The chart below shows the highest readings taken from the final data)

FREQ MHz	Q.P. Raw dBuV	AVG Raw dBuV	Q.P. Limit dBuV	AVG Limit dBuV	Q.P. Margin dB	AVG Margin dB	NOTE
0.150	49.10	---	66.00	56.00	-16.90	---	L1
1.120	40.40	---	56.00	46.00	-15.60	---	L1
3.760	41.00	---	56.00	46.00	-15.00	---	L1
4.360	44.90	40.40	56.00	46.00	-11.10	-5.60	L1
12.460	46.20	---	60.00	50.00	-13.80	---	L1
13.330	42.30	---	60.00	50.00	-17.70	---	L1
0.155	47.80	---	65.73	55.73	-17.93	---	L2
1.120	41.90	---	56.00	46.00	-14.10	---	L2
3.830	42.00	---	56.00	46.00	-14.00	---	L2
4.260	43.80	---	56.00	46.00	-12.20	---	L2
12.840	45.70	---	60.00	50.00	-14.30	---	L2
13.220	43.40	---	60.00	50.00	-16.60	---	L2

L1 = Line One (Hot side) / L2 = Line Two (Neutral side)

**Note:** "----" denotes the emission level was or more than 2dB below the Average limit, so no re-check anymore.

**Common Mode Conducted Emission****Model:** PPC-123T-12**Test Mode:** Mode 1**Temperature:** 25 °C**Humidity:** 65% RH**Test Results:** Passed**Tested by:** Louis Tang

(The chart below shows the highest readings taken from the final data)

<b>FREQ MHz</b>	<b>Q.P. Raw dBuV</b>	<b>AVG Raw dBuV</b>	<b>Q.P. Limit dBuV</b>	<b>AVG Limit dBuV</b>	<b>Q.P. Margin dB</b>	<b>AVG Margin dB</b>	<b>NOTE</b>
3.754	46.20	---	74.00	64.00	-27.80	---	10Base
5.090	43.40	---	74.00	64.00	-30.60	---	10Base
8.150	48.10	---	74.00	64.00	-25.90	---	10Base
8.750	53.20	---	74.00	64.00	-20.80	---	10Base
10.923	49.10	---	74.00	64.00	-24.90	---	10Base
13.910	44.80	---	74.00	64.00	-29.20	---	10Base
7.921	54.50	---	74.00	64.00	-19.50	---	100Base
10.060	53.20	---	74.00	64.00	-20.80	---	100Base
11.893	52.70	---	74.00	64.00	-21.30	---	100Base
14.150	54.00	---	74.00	64.00	-20.00	---	100Base
18.240	56.10	---	74.00	64.00	-17.90	---	100Base
29.230	55.00	---	74.00	64.00	-19.00	---	100Base

L1 = Line One (Hot side) / L2 = Line Two (Neutral side)

**Note:** "—" denotes the emission level was or more than 2dB below the Average limit, so no re-check anymore.

**Radiated Emission (A)****Model:** PPC-123T-12**Test Mode:** Mode 1**Temperature:** 23°C**Detector Function:** Quasi-peak.**Humidity:** 70% RH**Antenna:** Vertical at 10m**Test Results:** Pass**Tested by:** Michael Chen

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dBuV)	Corr. Factor (dB/m)	Emiss. Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
45.07	15.5	11.3	26.8	30.0	-3.2
50.10	15.0	10.9	25.9	30.0	-4.1
57.90	18.1	8.0	26.1	30.0	-3.9
66.39	18.2	8.1	26.3	30.0	-3.7
71.58	18.1	8.6	26.7	30.0	-3.3
85.62	15.5	10.5	26.0	30.0	-4.0
110.12	12.4	14.1	26.5	30.0	-3.5
120.03	10.2	14.6	24.8	30.0	-5.2
132.61	12.8	14.3	27.1	30.0	-2.9
166.29	9.8	13.1	22.9	30.0	-7.1
177.05	10.5	12.3	22.8	30.0	-7.2
210.72	12.7	12.8	25.5	30.0	-4.5



217.26	8.7	12.8	21.5	30.0	-8.5
<hr/>					
230.91	19.8	13.7	33.5	37.0	-3.5
<hr/>					
398.02	12.6	20.7	33.3	37.0	-3.7
<hr/>					
666.43	6.0	25.0	31.0	37.0	-6.0
<hr/>					

**Radiated Emission (B)****Model:** PPC-123T-12**Test Mode:** Mode 1**Temperature:** 23°C**Detector Function:** Quasi-peak.**Humidity:** 70% RH**Antenna:** Horizontal at 10m**Test Results:** Pass**Tested by:** Michael Chen

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dBuV)	Corr. Factor (dB/m)	Emiss. Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
33.24	9.4	16.1	25.5	30.0	-4.5
67.23	15.1	8.2	23.3	30.0	-6.7
75.20	15.4	8.9	24.3	30.0	-5.7
132.62	12.0	14.3	26.3	30.0	-3.7
165.84	8.7	13.1	21.8	30.0	-8.2
173.15	12.9	12.6	25.5	30.0	-4.5
200.04	12.3	12.7	25.0	30.0	-5.0
233.71	15.2	14.1	29.3	37.0	-7.7
397.80	10.8	20.7	31.5	37.0	-5.5
662.64	8.0	25.0	33.0	37.0	-4.0
933.17	6.7	27.8	34.5	37.0	-2.5



**Radiated Emission (C)****Model:** PPC-123T-24**Test Mode:** Mode 4**Temperature:** 33°C**Detector Function:** Quasi-peak.**Humidity:** 63% RH**Antenna:** Vertical at 10m**Test Results:** Pass**Tested by:** Michael Chen

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dBuV)	Corr. Factor (dB/m)	Emiss. Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
45.33	10.3	16.6	26.9	30.0	-3.1
50.69	10.6	15.6	26.2	30.0	-3.8
57.47	10.7	14.3	25.0	30.0	-5.0
66.45	13.5	12.1	25.6	30.0	-4.4
71.32	15.8	11.0	26.8	30.0	-3.2
85.61	12.9	11.4	24.3	30.0	-5.7
110.19	10.9	13.3	24.2	30.0	-5.8
119.88	9.2	13.1	22.3	30.0	-7.7
132.61	16.7	11.8	28.5	30.0	-1.5
165.93	11.1	11.4	22.5	30.0	-7.5
176.92	10.9	12.0	22.9	30.0	-7.1
182.63	11.2	12.5	23.7	30.0	-6.3



198.98	8.5	14.6	23.1	30.0	-6.9
<hr/>					
217.33	6.3	15.6	21.9	30.0	-8.1
<hr/>					
233.60	11.6	16.1	27.7	37.0	-9.3
<hr/>					
397.78	10.3	18.8	29.1	37.0	-7.9
<hr/>					
668.20	5.6	24.5	30.1	37.0	-6.9
<hr/>					

**Radiated Emission (D)****Model:** PPC-123T-24**Test Mode:** Mode 4**Temperature:** 33°C**Detector Function:** Quasi-peak.**Humidity:** 63% RH**Antenna:** Horizontal at 10m**Test Results:** Pass**Tested by:** Michael Chen

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dBuV)	Corr. Factor (dB/m)	Emiss. Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
33.15	14.3	13.4	27.7	30.0	-2.3
50.17	8.4	15.7	24.1	30.0	-5.9
66.34	9.0	12.1	21.1	30.0	-8.9
73.28	14.7	10.7	25.4	30.0	-4.6
132.60	16.2	11.8	28.0	30.0	-2.0
166.12	10.3	11.4	21.7	30.0	-8.3
196.76	8.8	14.3	23.1	30.0	-6.9
200.28	8.4	14.7	23.1	30.0	-6.9
232.00	11.9	16.1	28.0	37.0	-9.0
400.17	15.5	18.8	34.3	37.0	-2.7
531.80	7.3	21.6	28.9	37.0	-8.1
667.60	4.3	24.4	28.7	37.0	-8.3
935.90	2.6	28.8	31.4	37.0	-5.6

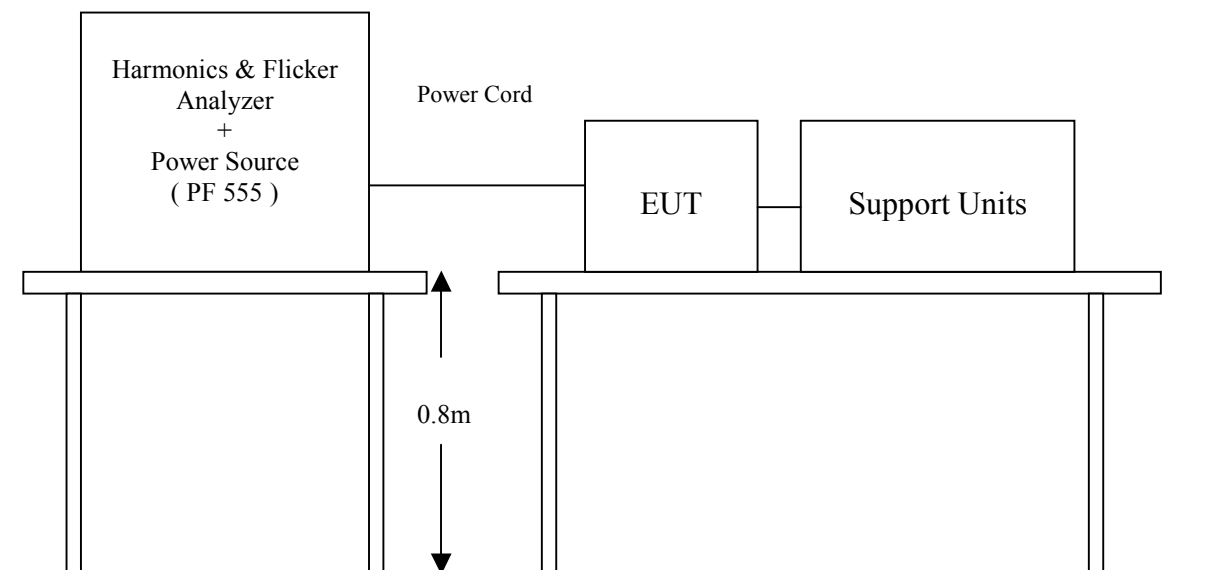


## 7 POWER HARMONICS TEST

**Port** : AC mains  
**Basic Standard** : EN 61000-3-2 (1995 + A1: 1998 + A2: 1998)  
**Limits** : ☒ CLASS A ; ☐ CLASS D  
**Tested by** : Michael Chen / Vic Wang (For Mode 1 / Mode 4)  
**Temperature** : 25°C / 27°C (For Mode 1 / Mode 4)  
**Humidity** : 55% RH / 51% RH (For Mode 1 / Mode 4)  
**Input Current Wave** : Without special wave shape (For Mode 1)

### Limit:

Limits for Class A equipment		Limits for Class D equipment		
Harmonics Order n	Max. permissible harmonics current A	Harmonics Order n	Max. permissible harmonics current per watt mA/W	Max. permissible harmonics current A
Odd harmonics		Odd Harmonics only		
3	2.30	3	3.4	2.30
5	1.14	5	1.9	1.14
7	0.77	7	1.0	0.77
9	0.40	9	0.5	0.40
11	0.33	11	0.35	0.33
13	0.21	13	0.30	0.21
15≤n≤39	0.15x15/n	15≤n≤39	3.85/n	0.15x15/n
Even harmonics				
2	1.08			
4	0.43			
6	0.30			
8≤n≤40	0.23x8/n			

**Block Diagram of Test Setup:****Test Procedure:**

- a. The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated to produce the maximum harmonic components under normal operating conditions for each successive harmonic component in turn.
- b. The correspondent test program of test instrument to measure the current harmonics emanated from EUT is chosen. The measure time shall be not less than the time necessary for the EUT to be exercised.

**Test Result :** (See Appendix II for details)**PASS****FAIL**

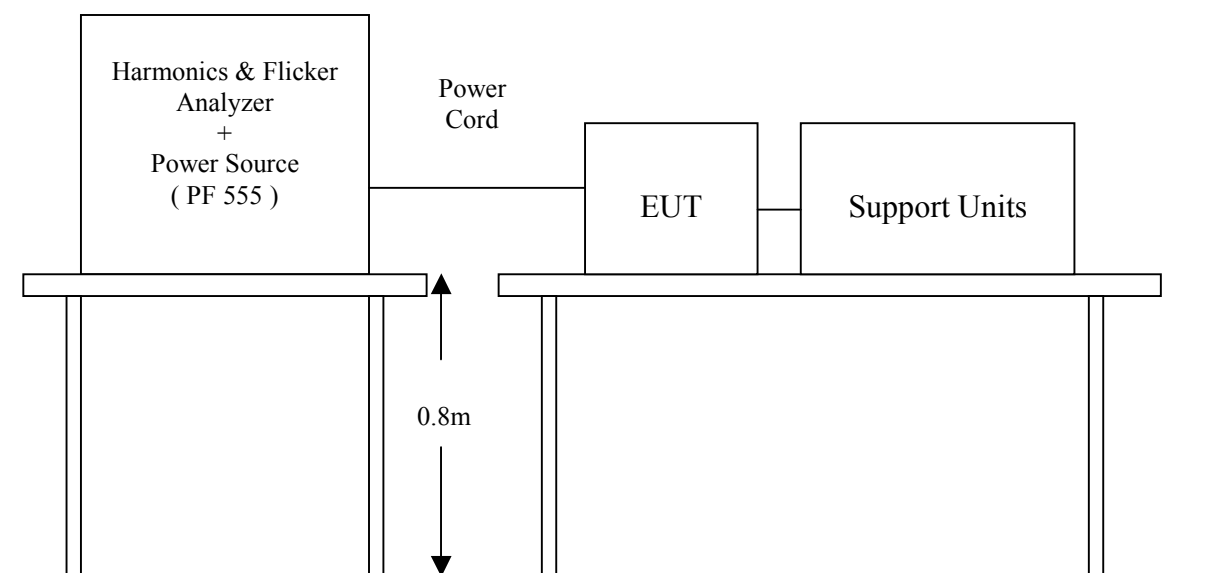
## 8 POWER VOLTAGE FLUCTUATION / FLICKER TEST

**Port** : AC mains  
**Basic Standard** : EN 61000-3-3 (1995)  
**Limits** : §5 of EN 61000-3-3  
**Tested by** : Michael Chen / Vic Wang (For Mode 1 / Mode 4)  
**Temperature** : 25°C / 27°C (For Mode 1 / Mode 4)  
**Humidity** : 55% RH / 51% RH (For Mode 1 / Mode 4)

### Limit:

TEST ITEM	LIMIT	REMARK
$P_{st}$	1.0	$P_{st}$ means short-term flicker indicator.
$P_{lt}$	0.65	$P_{lt}$ means long-term flicker indicator.
$T_{dt}$ (ms)	200	$T_{dt}$ means maximum time that dt exceeds 3 %.
$d_{max}$ (%)	4%	$d_{max}$ means maximum relative voltage change.
dc (%)	3%	dc means relative steady-state voltage change

### Block Diagram of Test Setup:



### **Test Procedure:**

- a. The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated to produce the most unfavorable sequence of voltage changes under normal operating conditions.
- b. During the flick measurement, the measure time shall include that part of whole operation cycle in which the EUT produce the most unfavorable sequence of voltage changes. The observation period for short-term flicker indicator is 10 minutes and the observation period for long-term flicker indicator is 2 hours.

### **Test Result:** (See Appendix II for details)

#### **Mode 1**

\*\* Continue

Test Parameter	Measurement Value	Limit	Result
$P_{st}$	0.001	1.0	Pass
$P_{lt}$	0.001	0.65	Pass
$T_{dt}$ (ms)	4	200	Pass
$d_{max}$ (%)	0.003%	4%	Pass
dc (%)	0.002%	3%	Pass

\*\* Manual Switch

Test Parameter	Measurement Value	Limit	Result
$P_{st}$	0.010	1.0	Pass
$P_{lt}$	0.010	0.65	Pass
$T_{dt}$ (ms)	8	200	Pass
$d_{max}$ (%)	0.009%	4%	Pass
dc (%)	0.009%	3%	Pass

**Mode 4****\*\* Continue**

Test Parameter	Measurement Value	Limit	Result
P <sub>st</sub>	0.018	1.0	Pass
P <sub>lt</sub>	0.018	0.65	Pass
T <sub>dt</sub> (ms)	0	200	Pass
d <sub>max</sub> (%)	0%	4%	Pass
dc (%)	0%	3%	Pass

**\*\* Manual Switch**

Test Parameter	Measurement Value	Limit	Result
P <sub>st</sub>	0.018	1.0	Pass
P <sub>lt</sub>	0.018	0.65	Pass
T <sub>dt</sub> (ms)	0	200	Pass
d <sub>max</sub> (%)	0%	4%	Pass
dc (%)	0%	3%	Pass

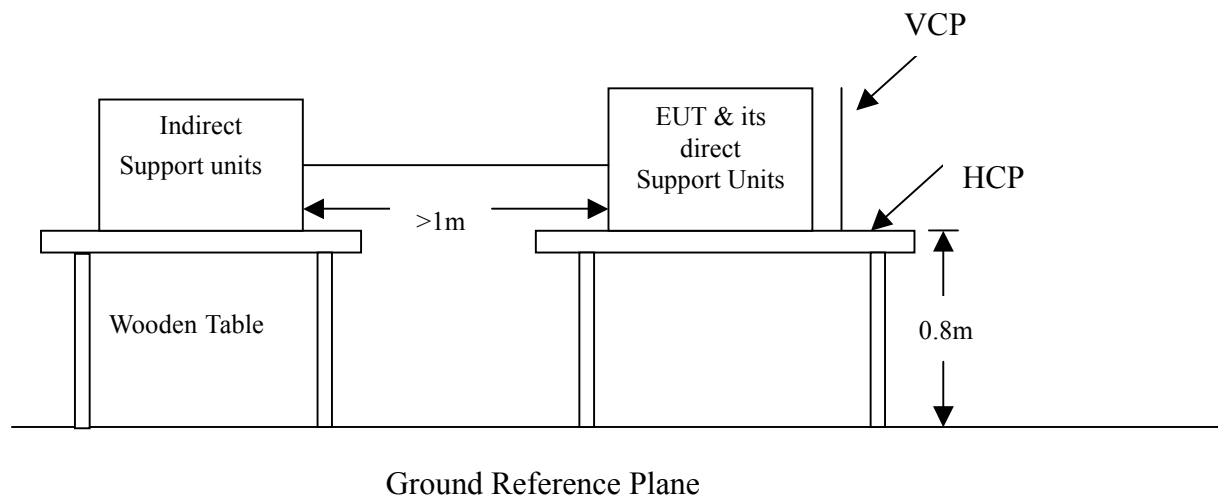


## 9 ELECTROSTATIC DISCHARGE (ESD) IMMUNITY TEST

<b>Port</b>	: Enclosure
<b>Basic Standard</b>	: IEC/EN 61000-4-2
<b>Test Level</b>	: $\pm 8$ kV (Air Discharge) $\pm 4$ kV (Contact Discharge) $\pm 4$ kV (Indirect Discharge)
<b>Performance Criterion</b>	: B (Standard Required)
<b>Tested by</b>	: Michael Chen
<b>Temperature</b>	: 24°C
<b>Humidity</b>	: 56%
<b>Pressure</b>	: 1015mbar
<b>Test Mode</b>	: 1, 4

### **Block Diagram of Test Setup:**

(The 470 k ohm resistors are installed per standard requirement.)



**Test Procedure:**

1. The EUT was located 0.1 m minimum from all side of the HCP.
2. The indirect support units were located 1 m minimum away from the EUT, but direct support unit was/were located at same location as EUT on the HCP and keep at a distance of 10 cm with EUT.
3. A scroll 'H' test program was loaded and executed in Windows 98 mode.
4. The EUT sent above message to LCD Panel of EUT and monitor and related peripherals through the test.
5. Active the communication function if the EUT with such port(s).
6. As per the requirement of EN 55024; applying direct contact discharge at the sides other than front of EUT at minimum 50 discharges (25 positive and 25 negative) if applicable, can't be applied direct contact discharge side of EUT then the indirect discharge shall be applied. One of the test points shall be subjected to at least 50 indirect discharge (contact) to the front edge of horizontal coupling plane.
7. Other parts of EUT where it is not possible to perform contact discharge then selecting appropriate points of EUT for air discharge, a minimum of 10 single air discharges shall be applied.
8. The application of ESD to the contact of open connectors is not required.
9. The EUT direct connection units also need to be applied ESD at the port of EUT cable connected.
10. Putting a mark on EUT to show tested points. The following test condition was followed during the tests.

**Note:** As per IEC/EN 61000-4-2, two 470k bleed resistors cable is connected between the EUT and HCP during the test applicable for power ungrounded or battery operating unit only.

The electrostatic discharges were applied as follows:

Amount of discharge	Voltage	Coupling	Result (Pass/Fail)
Mini 10 /Point	± 8 kV	Air Discharge	Pass
Mini 25 /Point	± 4 kV	Contact Discharge	Pass
Mini 25 /Point	± 4 kV	Indirect Discharge HCP (Front)	N/A
Mini 25 /Point	± 4 kV	Indirect Discharge VCP (Right)	Pass
Mini 25 /Point	± 4 kV	Indirect Discharge VCP (Left)	Pass
Mini 25 /Point	± 4 kV	Indirect Discharge VCP (Back)	Pass

**\*\*For the tested points to EUT, please refer to attached page.**

(Blue arrow mark for Contact Discharge and red arrow mark for Air Discharge)



## **Performance & Result:**

- ☒ **Criterion A:** The apparatus continues to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance.
- ☐ **Criterion B:** The apparatus continues to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
- ☐ **Criterion C:** Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

☒ **PASS**      ☐ **FAIL**

**Observation:** No function degraded during the tests.

## *The Tested Points of EUT*

*Photo 1 of 2*



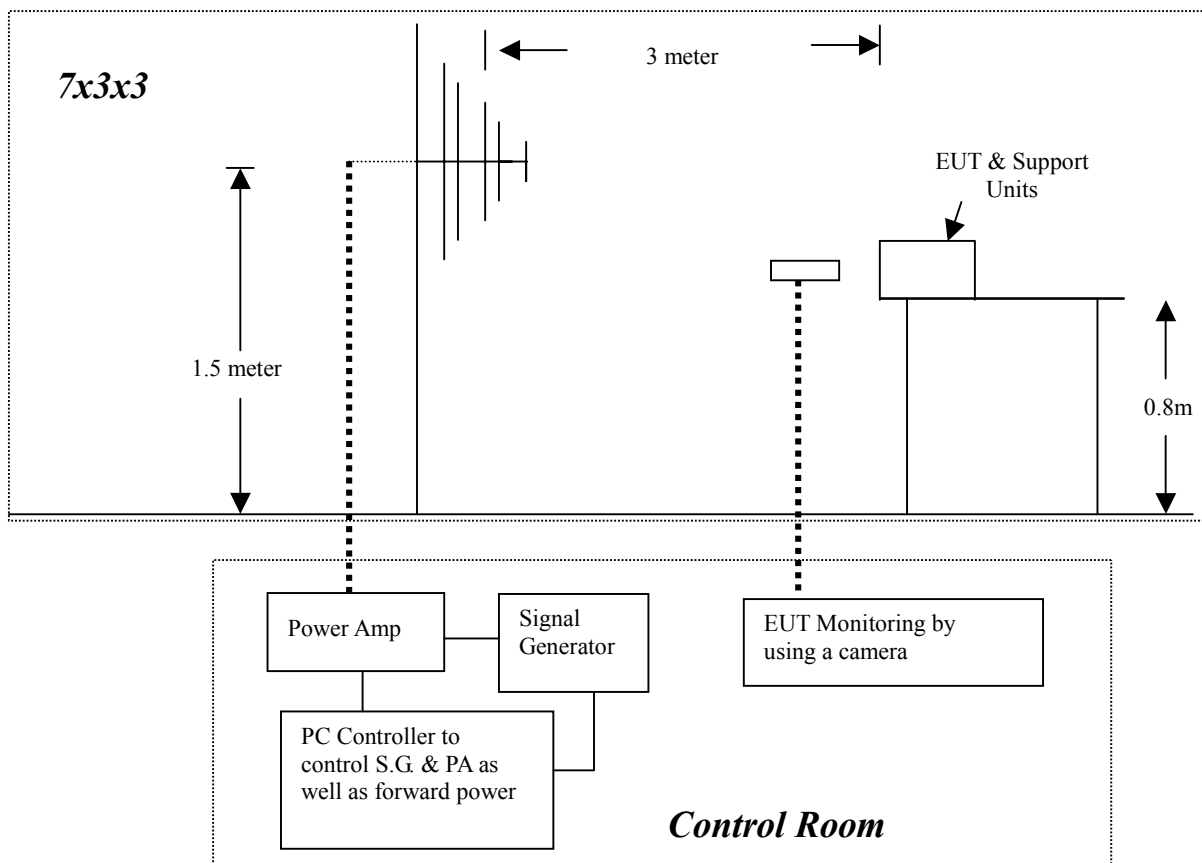
*Photo 2 of 2*



## 10 RADIATED ELECTROMAGNETIC FIELD IMMUNITY TEST

<b>Port</b>	: Enclosure
<b>Basic Standard</b>	: IEC/EN 61000-4-3
<b>Requirements</b>	: 3 V/m / with 80% AM. 1kHz Modulation.
<b>Performance Criterion</b>	: A (Standard Required)
<b>Tested by</b>	: Michael Chen
<b>Temperature</b>	: 25°C
<b>Humidity</b>	: 62%
<b>Pressure</b>	: 1015mbar
<b>Test Mode</b>	: 1, 4

### Block Diagram of Test Setup:



## **Test Procedure:**

1. The EUT was located at the edge of supporting table keep 3 meter away from transmitting antenna, it just the calibrated square area of field uniformity. The support units were located outside of the uniformity area, but the cable(s) connected with EUT were exposed to the calibrated field as per IEC/EN 61000-4-3.
2. Setting the testing parameters of RS test software per IEC/EN 61000-4-3.
3. Performing the pre-test at each side of with double specified level (6V/m) at 4% steps.
4. From the result of pre-test in step 5, choice the worst side of EUT for final test from 80 MHz to 1000 MHz at 1% steps.
5. Recording the test result in following table.
6. It is not necessary to perform test as per annex A of EN 55024 if the EUT doesn't belong to ITE product.

## **Preliminary test conditions:**

Test level : 6V/m  
 Steps : 4 % of fundamental  
 Dwell Time : 3 sec

Range (MHz)	Field	Modulation	Polarity	Position	Result (Pass/Fail)
80-1000	6V/m	Yes	H	Front	Pass
80-1000	6V/m	Yes	V	Front	Pass
80-1000	6V/m	Yes	H	Right	Pass
80-1000	6V/m	Yes	V	Right	Pass
80-1000	6V/m	Yes	H	Back	Pass
80-1000	6V/m	Yes	V	Back	Pass
80-1000	6V/m	Yes	H	Left	Pass
80-1000	6V/m	Yes	V	Left	Pass

## **Final test conditions:**

Test level : 3V/m  
 Steps : 1 % of fundamental  
 Dwell Time : 3 sec

Range (MHz)	Field	Modulation	Polarity	Position	Result (Pass/Fail)
80-1000	3V/m	Yes	H	Back	Pass
80-1000	3V/m	Yes	V	Back	Pass



### **Performance & Result:**

- ☒ **Criterion A:** The apparatus continues to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance.
- ☐ **Criterion B:** The apparatus continues to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
- ☐ **Criterion C:** Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

☒ **PASS**      ☐ **FAIL**

**Observation:** No function degraded during the tests.

## 11 FAST TRANSIENTS/BURST IMMUNITY TEST

**Port** : On Power Supply Lines and Data Cable

**Basic Standard** : IEC/EN 61000-4-4

**Requirements** :  $\pm 1$  kV for Power Supply Line  
 $\pm 0.5$  kV for LAN Cable

**Performance Criteria** : B (Standard Required)

**Tested by** : Michael Chen

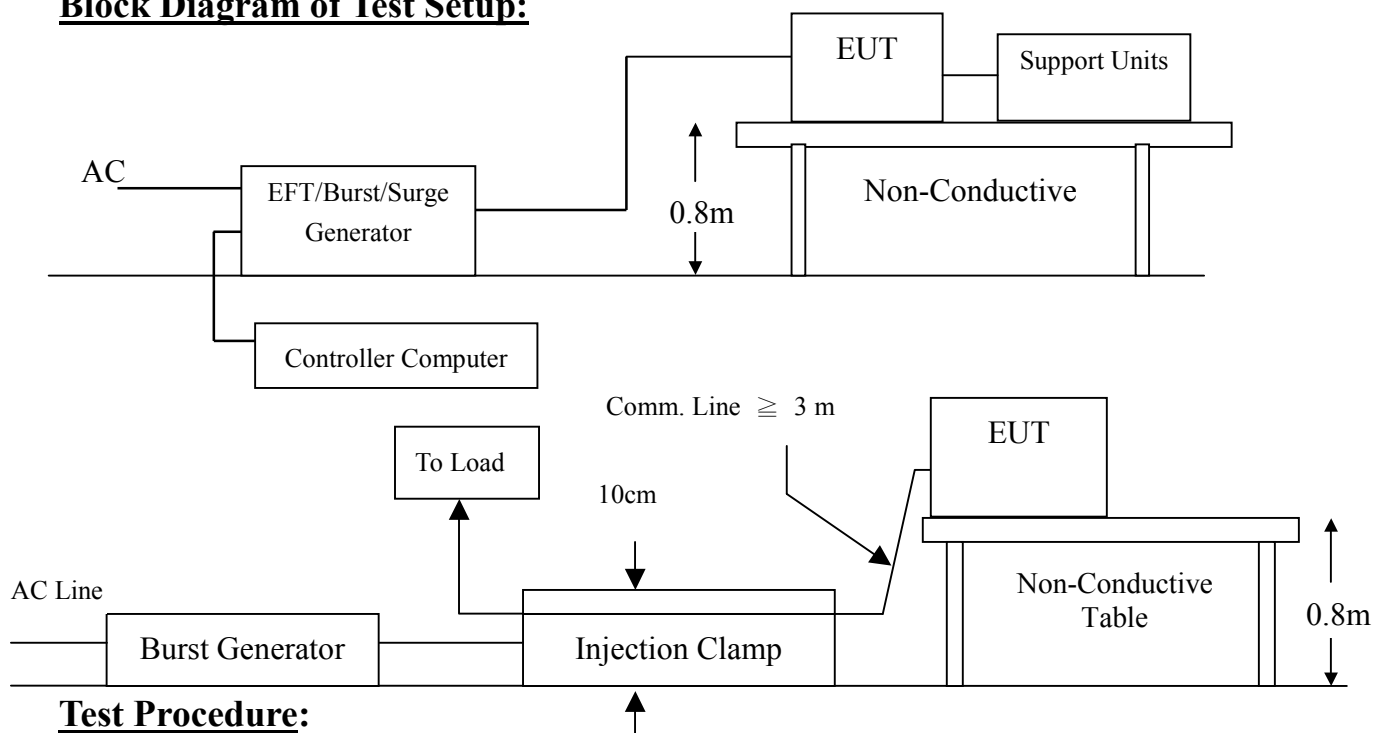
**Temperature** : 24°C

**Humidity** : 56%

**Pressure** : 1015mbar

**Test Mode** : 1, 4

### Block Diagram of Test Setup:



### Test Procedure:

1. The EUT and support units were located on a wooden table 0.8 m away from ground reference plane.
2. A 1.0 meter long power cord was attached to EUT during the test.
3. The length of communication cable between communication port and clamp was keeping within 1 meter.
4. Injected test voltage to the EUT ports from minimum to standard request or client request.
5. Recording the test result as shown in following table.



**Test conditions:**

Impulse Frequency : 5kHz

Tr/Th : 5/50ns

Burst Duration : 15ms

Burst Period : 3Hz

Inject Line	Voltage kV	Inject Method	Result (Pass/Fail)
L	$\pm 1$	Direct	Pass
N	$\pm 1$	Direct	Pass
PE	$\pm 1$	Direct	Pass
L + N	$\pm 1$	Direct	Pass
L + PE	$\pm 1$	Direct	Pass
N + PE	$\pm 1$	Direct	Pass
L + N + PE	$\pm 1$	Direct	Pass
RJ45 Port (LAN Cable)	$\pm 0.5$	Clamp	Pass

**Performance & Result:**

**Criterion A:** The apparatus continues to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance.



**Criterion B:** The apparatus continues to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.



**Criterion C:** Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

**PASS****FAIL**

**Observation:** No function degraded during the tests.

## 12 SURGE IMMUNITY TEST

**Port** : Power Cord

**Basic Standard** : IEC/EN 61000-4-5

**Requirements** :  $\pm 1$  kV (Line to Line)  
 $\pm 2$  kV (Line to Ground)

**Performance Criteria** : B (Standard Required)

**Tested by** : Michael Chen

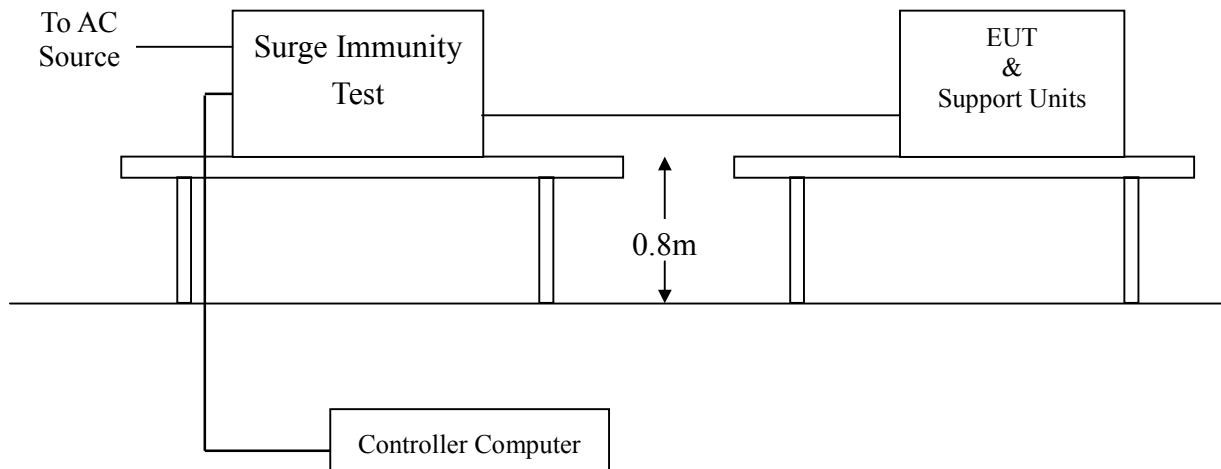
**Temperature** : 25°C

**Humidity** : 57%

**Pressure** : 1015mbar

**Test Mode** : 1, 4

### Block Diagram of Test Setup:



### Test Procedure:

1. The EUT and support units were located on a wooden table 0.8 m away from ground floor.
2. Injected test voltage to the EUT ports from minimum to standard request or client request.
3. Recording the test result as shown in following table.

**Test conditions:**Voltage Waveform : 1.2/50 *us*Current Waveform : 8/20 *us*

Polarity : Positive/Negative

Phase angle : 0°, 90°, 270°

Number of Test : 5

Coupling Line	Voltage (kV)	Polarity	Coupling Method	Result (Pass/Fail)
L1-L2	1	Positive	Capacitive	Pass
L1-PE	2	Positive	Capacitive	Pass
L2-PE	2	Positive	Capacitive	Pass
L1-L2	1	Negative	Capacitive	Pass
L1-PE	2	Negative	Capacitive	Pass
L2-PE	2	Negative	Capacitive	Pass

**Performance & Result:**

☒ **Criterion A:** The apparatus continues to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance.

☐ **Criterion B:** The apparatus continues to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.

☐ **Criterion C:** Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

☒ **PASS**      ☐ **FAIL**

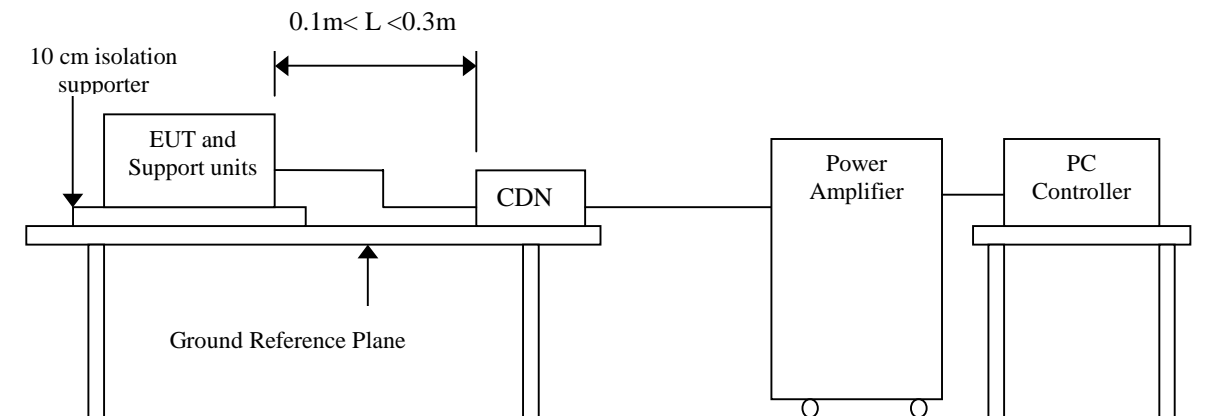
**Observation:** No function degraded during the tests.

# 13 CONDUCTED DISTURBANCE/INDUCED RADIO-FREQUENCY FIELD IMMUNITY TEST

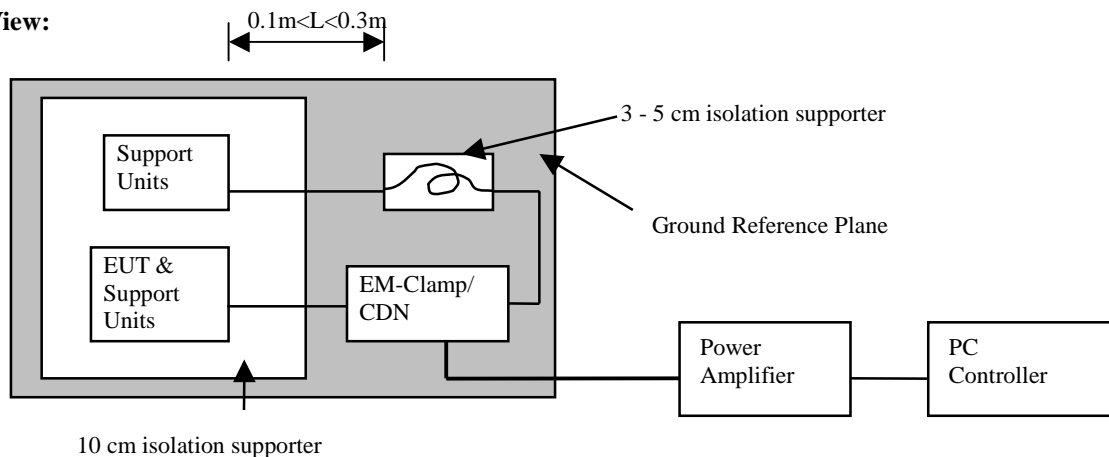
<b>Port</b>	: AC Port
<b>Basic Standard</b>	: IEC/EN 61000-4-6
<b>Requirements</b>	: 3 V with 80% AM. 1kHz Modulation.
<b>Injection Method</b>	: CDN-M3 CDN-T4 for LAN
<b>Performance Criterion</b>	: A (Standard Required)
<b>Tested by</b>	: Michael Chen
<b>Temperature</b>	: 25°C
<b>Humidity</b>	: 62%
<b>Pressure</b>	: 1015mbar
<b>Test Mode</b>	: 1, 4

## Block Diagram of Test Setup:

### Side View:



### Top View:



**Test Procedure:**

1. The EUT and support units were located at a ground reference plane with the interposition of a 0.1 m thickness insulating support and the CDN was located on GRP directly.
2. Setting the testing parameters of CS test software as per IEC/EN 61000-4-6.
3. Recording the test result in following table.

**Test conditions:**

Frequency Range : 0.15MHz-80MHz

Frequency Step : 1% of fundamental

Dwell Time : 3 sec

Range (MHz)	Field	Modulation	Result (Pass/Fail)
0.15-80	3V	Yes	Pass

**Performance & Result:**

**Criterion A:** The apparatus continues to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance.



**Criterion B:** The apparatus continues to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.



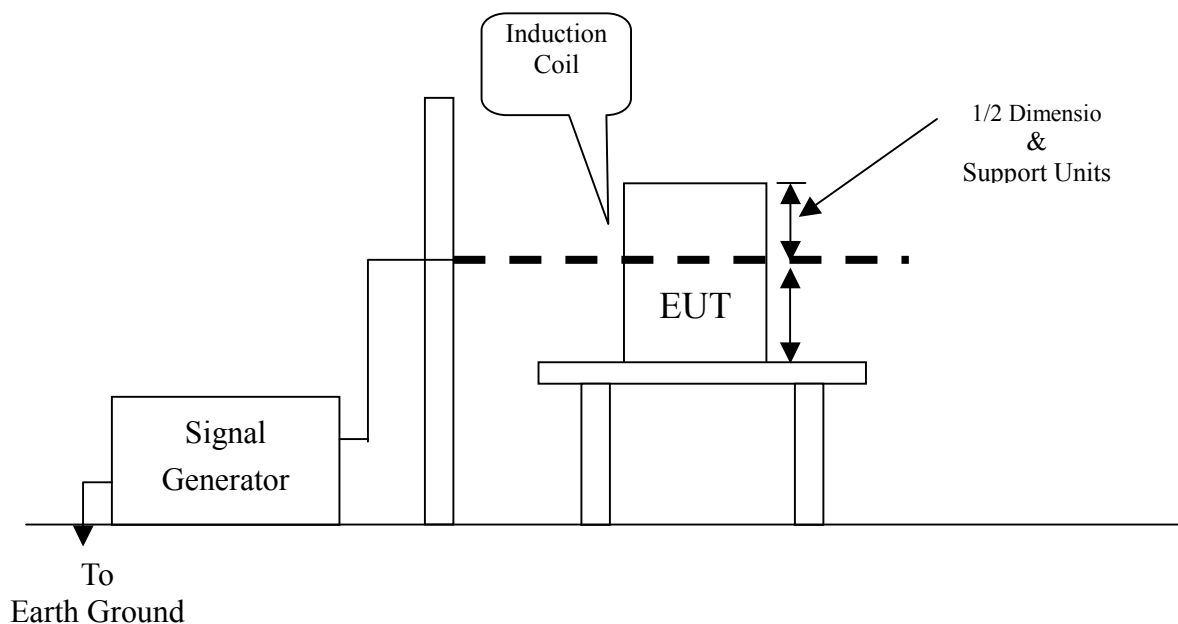
**Criterion C:** Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

<input checked="" type="checkbox"/> <b>PASS</b> <input type="checkbox"/> <b>FAIL</b>
<b>Observation:</b> No function degraded during the tests.

## 14 POWER FREQUENCY MAGNETIC FIELD IMMUNITY TEST

<b>Port</b>	: Enclosure
<b>Basic Standard</b>	: IEC/EN 61000-4-8
<b>Requirements</b>	: 1 A/m
<b>Performance Criterion</b>	: A (Standard Required)
<b>Tested by</b>	: Michael Chen
<b>Temperature</b>	: 25°C
<b>Humidity</b>	: 62%
<b>Pressure</b>	: 1015mbar
<b>Test Mode</b>	: 1, 4

### Block Diagram of Test Setup:



### Test Procedure:

1. The EUT and support units were located on Ground Reference Plane with the interposition of a 0.1 m thickness insulation support.
2. Putting the induction coil on horizontal direction. ( X direction )
3. Rotating the induction coil by 90° ( Y direction )
4. Rotating the induction coil by 90° again ( Z direction )
5. Recording the test result as shown in following table.

**Test conditions:**

Field Strength: 1A/m  
Power Freq.: 50Hz  
Orientation: X, Y, Z

Orientation	Field	Result (Pass/Fail)	Remark
X	1A/m	Pass	
Y	1A/m	Pass	
Z	1A/m	Pass	

**Performance & Result:**

☒ **Criterion A:** The apparatus continues to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance.

☐ **Criterion B:** The apparatus continues to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.

☐ **Criterion C:** Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

☒ **PASS**      ☐ **FAIL**

**Observation:** No function degraded during the tests.

## 15 VOLTAGE DIPS / SHORT INTERRUPTIONS

**Port** : AC mains

**Basic Standard** : IEC/EN 61000-4-11

**Requirement** : PHASE ANGLE 0, 45, 90, 135, 180, 225, 270, 315 degrees

Voltage Dips	Test Level % U <sub>T</sub>	Reduction (%)	Duration ( periods )	Performance Criteria
	<5	>95	0.5	B
	70	30	25	C

Voltage Interceptions	Test Level % U <sub>T</sub>	Reduction (%)	Duration ( periods )	Performance Criteria
	<5	>95	250	C

**Test Interval** : Min. 10 sec.

**Tested by** : Michael Chen

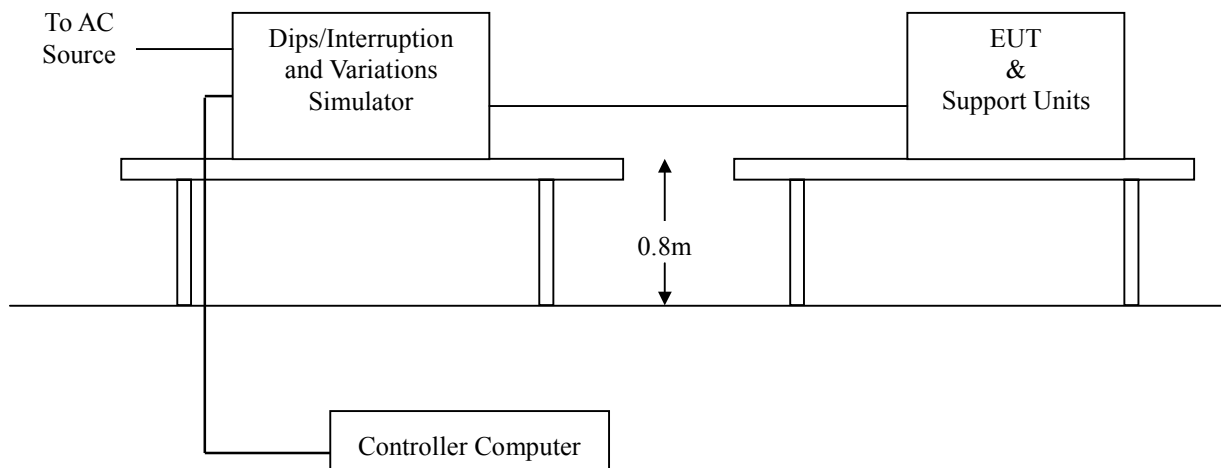
**Temperature** : 24 °C

**Humidity** : 57%

**Pressure** : 1015mbar

**Test Mode** : 1, 4

### Block Diagram of Test Setup:



### Test Procedure:

1. The EUT and support units were located on a wooden table, 0.8 m away from ground floor.
2. Setting the parameter of tests and then Perform the test software of test simulator.
3. Conditions changes to occur at 0 degree crossover point of the voltage waveform.
4. Recording the test result in test record form.



**Test conditions**

The duration with a sequence of three dips/interruptions with interval of 10 s minimum  
(Between each test event)

**Voltage Dips:**

Test Level % $U_T$	Reduction (%)	Duration (periods)	Observation	Meet Performance Criteria
0	100	0.5	Normal	A
70	30	25	Normal	A

**Voltage Interruptions:**

Test Level % $U_T$	Reduction (%)	Duration (periods)	Observation	Meet Performance Criteria
0	100	250	EUT shut down but can be recovered by manual, as the events disappear.	C

*Normal: No any functions degrade during and after the test.*

**Performance & Result:**

**Criteria A:** The apparatus continues to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance.

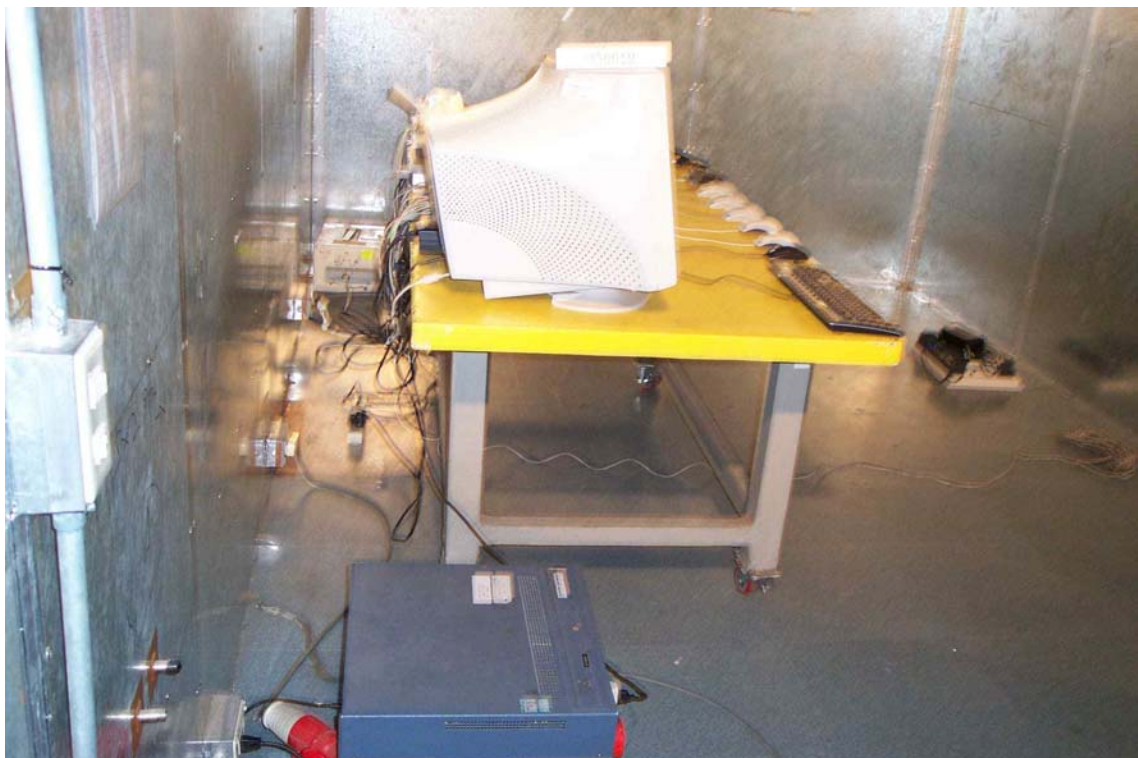
**Criteria B:** The apparatus continues to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.

**Criteria C:** Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

☒ **PASS**      ☐ **FAIL**

## APPENDIX I - PHOTOGRAPHS OF TEST SETUP

### LINE CONDUCTED EMISSION TEST (EN 55022)





## **COMMON MODE CONDUCTED EMISSION (EN 55022)**





**RADIATED EMISSION TEST (EN 55022)**



## POWER HARMONIC & VOLTAGE FLUCTUATION / FLICKER TEST





## ELECTROSTATIC DISCHARGE TEST





## RADIATED ELECTROMAGNETIC FIELD TEST





**FAST TRANSIENTS/BURST TEST**





## **SURGE IMMUNITY TEST**

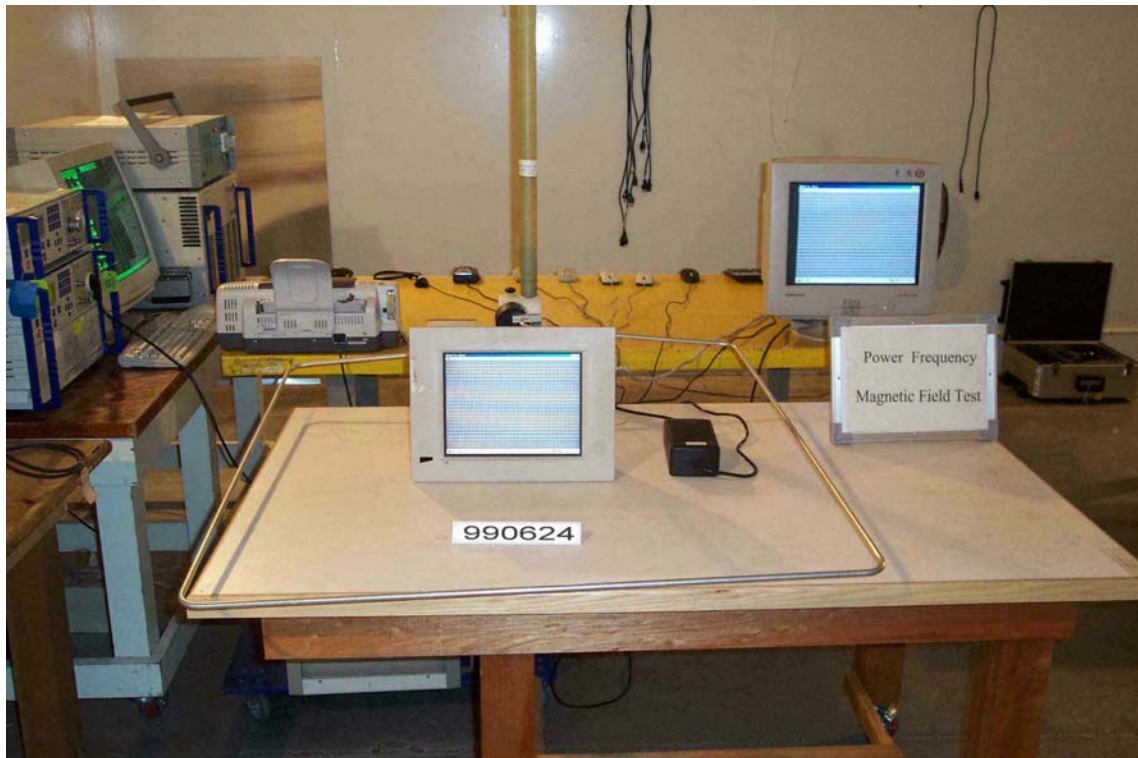


## CONDUCTED DISTURBANCE, INDUCED BY RADIO-FREQUENCY FIELDS TEST





## POWER FREQUENCY MAGNETIC FIELD IMMUNITY TEST



## VOLTAGE DIPS / INTERRUPTION TEST





## APPENDIX II – TEST RESULT OF EN 61000-3-2/-3

Test Mode 1

-----  
EN 61000-3-2 TEST REPORT 2003/9/22 04:46 PM  
-----

Unit: Panel PC

Model No.: PPC-123T-12

Remarks: Temp: 25 °C Humid: 55%

Operator: Michael Chen

=====

### TEST SETUP

-----

Test Freq.:	50.00 Hz.	Test Voltage:	230.0 vac
Waveform :	SINE	Test Time:	2.5 min.
Classification :	CLASS A	Test Type:	STEADY-STATE

Prog. Zo Enabled:	YES	Prog. Zo:	0.000
-------------------	-----	-----------	-------

Motor Driven with Phase Angle Control: NO

Impedance selected: DIRECT

Synthetic R+L Enabled: NO

Resistance: 0.380 Ohms Inductance: 460.000 uH

MAX WATTS: 80.8W

**TEST DATA**  
-----Result:        **PASS****Harmonic Current Results**  
-----

Hn	AMPS	LO Limit	HI Limit	Result
0	0.000	0.000	0.000	PASS
1	1.531	NaN	NaN	PASS
2	0.001	1.080	1.080	PASS
3	0.069	2.300	2.300	PASS
4	0.001	0.430	0.430	PASS
5	0.021	1.140	1.140	PASS
6	0.000	0.300	0.300	PASS
7	0.021	0.770	0.770	PASS
8	0.000	0.230	0.230	PASS
9	0.009	0.400	0.400	PASS
10	0.000	0.184	0.184	PASS
11	0.003	0.330	0.330	PASS
12	0.001	0.153	0.153	PASS
13	0.003	0.210	0.210	PASS
14	0.001	0.131	0.131	PASS
15	0.004	0.150	0.150	PASS
16	0.001	0.115	0.115	PASS
17	0.004	0.132	0.132	PASS
18	0.001	0.102	0.102	PASS
19	0.005	0.118	0.118	PASS
20	0.000	0.092	0.092	PASS



21	0.002	0.107	0.107	PASS
22	0.001	0.084	0.084	PASS
23	0.003	0.098	0.098	PASS
24	0.002	0.077	0.077	PASS
25	0.003	0.090	0.090	PASS
26	0.001	0.071	0.071	PASS
27	0.003	0.083	0.083	PASS
28	0.001	0.066	0.066	PASS
29	0.002	0.078	0.078	PASS
30	0.000	0.061	0.061	PASS
31	0.002	0.073	0.073	PASS
32	0.000	0.058	0.058	PASS
33	0.003	0.068	0.068	PASS
34	0.001	0.054	0.054	PASS
35	0.002	0.064	0.064	PASS
36	0.001	0.051	0.051	PASS
37	0.003	0.061	0.061	PASS
38	0.002	0.048	0.048	PASS
39	0.001	0.058	0.058	PASS
40	0.002	0.046	0.046	PASS

END OF REPORT



-----  
EN 61000-3-3 TEST REPORT 2003/9/22 05:12 PM  
-----

Unit: Panel PC

Model No.: PPC-123T-12 (Continue)

Remarks: Temp: 25 °C Humid: 55%

Operator: Michael Chen

=====

TEST SETUP

-----

Test Freq.: 50.00 Hz. Test Voltage: 230.0 vac

Waveform : SINE

Test Time: 10.0 min. Tshort: 10.0 min.

Prog. Zo Enabled: YES Prog. Zo: 0.000

Voltage Change less than once per Hour: NO

Impedance selected: DIRECT

Synthetic R+L Enabled: NO

Resistance: 0.380 Ohms Inductance: 460.000 uH

**TEST DATA**

-----

Result:        **PASS**

	EUT Data	Limit	Result	Test Enabled
Pst max	0.001	1.00	PASS	true
Plt max	0.001	0.65	PASS	true
dc %	0.002	3.00	PASS	true
dmax %	0.003	4.00	PASS	true
d(t) sec.	0.004	0.20	PASS	true

**Power Source Data**

Source Pst max	0.020	0.400	PASS	true
% THD	0.030	3.000	PASS	true

**END OF REPORT**





-----  
EN 61000-3-3 TEST REPORT 2003/9/22 05:28 PM  
-----

Unit: Panel PC

Model No.: PPC-123T-12 (Manual Switch)

Remarks: Temp: 25 °C Humid: 55%

Operator: Michael Chen

=====

TEST SETUP

-----

Test Freq.: 50.00 Hz. Test Voltage: 230.0 vac

Waveform : SINE

Test Time: 10.0 min. Tshort: 10.0 min.

Prog. Zo Enabled: YES Prog. Zo: 0.000

Voltage Change less than once per Hour: NO

Impedance selected: DIRECT

Synthetic R+L Enabled: NO

Resistance: 0.380 Ohms Inductance: 460.000 uH

**TEST DATA**

-----

Result:       **PASS**

	EUT Data	Limit	Result	Test Enabled
Pst max	0.010	1.00	PASS	true
Plt max	0.010	0.65	PASS	true
dc %	0.009	3.00	PASS	true
dmax %	0.009	4.00	PASS	true
d(t) sec.	0.008	0.20	PASS	true

**Power Source Data**

Source Pst max	0.021	0.400	PASS	true
% THD	0.030	3.000	PASS	true

**END OF REPORT**



Test Mode 4

-----  
EN 61000-3-2 TEST REPORT 2003/9/19 06:43 PM  
-----

Unit: Panel PC

Model No.: PPC-123T-24

Remarks: Temp: 27 °C Humid: 51%

Operator: Vic Wang

=====

TEST SETUP

-----

Test Freq.:	50.00 Hz.	Test Voltage:	230.0 vac
Waveform :	SINE	Test Time:	2.5 min.
Classification :	CLASS A	Test Type:	STEADY-STATE

Prog. Zo Enabled:	YES	Prog. Zo:	0.000
-------------------	-----	-----------	-------

Motor Driven with Phase Angle Control:	NO
Impedance selected:	DIRECT

Synthetic R+L Enabled:	NO		
Resistance:	0.380 Ohms	Inductance:	460.000 uH

MAX WATTS: 65.6W

**TEST DATA**  
-----

Result:        PASS

**Harmonic Current Results**  
-----

Hn	AMPS	LO Limit	HI Limit	Result
0	0.000	0.000	0.000	PASS
1	0.369	NaN	NaN	PASS
2	0.031	1.080	1.080	PASS
3	0.061	2.300	2.300	PASS
4	0.015	0.430	0.430	PASS
5	0.033	1.140	1.140	PASS
6	0.009	0.300	0.300	PASS
7	0.016	0.770	0.770	PASS
8	0.004	0.230	0.230	PASS
9	0.010	0.400	0.400	PASS
10	0.004	0.184	0.184	PASS
11	0.007	0.330	0.330	PASS
12	0.004	0.153	0.153	PASS
13	0.005	0.210	0.210	PASS
14	0.004	0.131	0.131	PASS
15	0.004	0.150	0.150	PASS
16	0.003	0.115	0.115	PASS
17	0.005	0.132	0.132	PASS
18	0.003	0.102	0.102	PASS
19	0.005	0.118	0.118	PASS
20	0.002	0.092	0.092	PASS



21	0.004	0.107	0.107	PASS
22	0.003	0.084	0.084	PASS
23	0.003	0.098	0.098	PASS
24	0.002	0.077	0.077	PASS
25	0.004	0.090	0.090	PASS
26	0.002	0.071	0.071	PASS
27	0.003	0.083	0.083	PASS
28	0.002	0.066	0.066	PASS
29	0.003	0.078	0.078	PASS
30	0.002	0.061	0.061	PASS
31	0.003	0.073	0.073	PASS
32	0.002	0.058	0.058	PASS
33	0.002	0.068	0.068	PASS
34	0.002	0.054	0.054	PASS
35	0.002	0.064	0.064	PASS
36	0.002	0.051	0.051	PASS
37	0.002	0.061	0.061	PASS
38	0.002	0.048	0.048	PASS
39	0.002	0.058	0.058	PASS
40	0.002	0.046	0.046	PASS

END OF REPORT



-----  
EN 61000-3-3 TEST REPORT 2003/9/19 06:20 PM  
-----

Unit: Panel PC

Model No.: PPC-123T-24 (Continue)

Remarks: Temp: 27 °C Humid: 51%

Operator: Vic Wang

=====

TEST SETUP

-----

Test Freq.: 50.00 Hz. Test Voltage: 230.0 vac

Waveform : SINE

Test Time: 10.0 min. Tshort: 10.0 min.

Prog. Zo Enabled: YES Prog. Zo: 0.000

Voltage Change less than once per Hour: NO

Impedance selected: DIRECT

Synthetic R+L Enabled: NO

Resistance: 0.380 Ohms Inductance: 460.000 uH

**TEST DATA**

-----

Result:        **PASS**

	EUT Data	Limit	Result	Test Enabled
Pst max	0.018	1.00	PASS	true
Plt max	0.018	0.65	PASS	true
dc %	0.00	3.00	PASS	true
dmax %	0.00	4.00	PASS	true
d(t) sec.	0.00	0.20	PASS	true

**Power Source Data**

Source Pst max	0.023	0.400	PASS	true
% THD	0.03	3.00	PASS	true

**END OF REPORT**



-----  
EN 61000-3-3 TEST REPORT 2003/9/19 06: 37 PM  
-----

Unit: Panel PC

Model No.: PPC-123T-24 (Manual Switch)

Remarks: Temp: 27 °C Humid: 51%

Operator: Vic Wang

=====

TEST SETUP

-----

Test Freq.: 50.00 Hz. Test Voltage: 230.0 vac

Waveform : SINE

Test Time: 10.0 min. Tshort: 10.0 min.

Prog. Zo Enabled: YES Prog. Zo: 0.000

Voltage Change less than once per Hour: NO

Impedance selected: DIRECT

Synthetic R+L Enabled: NO

Resistance: 0.380 Ohms Inductance: 460.000 uH



**TEST DATA**

-----

Result:        **PASS**

	EUT Data	Limit	Result	Test Enabled
Pst max	0.018	1.00	PASS	true
Plt max	0.018	0.65	PASS	true
dc %	0.00	3.00	PASS	true
dmax %	0.00	4.00	PASS	true
d(t) sec.	0.00	0.20	PASS	true

**Power Source Data**

Source Pst max	0.023	0.400	PASS	true
% THD	0.03	3.00	PASS	true

**END OF REPORT**