CERTIFICATE OF CONFORMITY

For the following information

Ref. File No.: C1M1512036

Product	LCD Monitor
Model Number	(1)E2275SW** (2)215LM000** (3)E2275PW**
Brand	AOC
Applicant	Taiwan BOE Vision-electronic
Manufacturer	Taiwan BOE Vision-electronic
Factory	K Tronics (Suzhou) Technology Co., Ltd.
Test Report Number	EM-E150812
Standards	EN 55022:2010 +AC: 2011, Class B AS/NZS CISPR 22:2009 +A1:2010 EN 61000-3-2:2014 and EN 61000-3-3:2013 EN 55024:2010 (IEC 61000-4-2:2008, IEC 61000-4-3:2010, IEC 61000-4-4:2012, IEC 61000-4-5:2014, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2004)

We hereby certify that the above product has been tested by us with the listed standards and found in compliance with the council EMC directive 2004/108/EC. The test data and results are issued on the EMC test report no. **EM-E150812**.

Signature

Alex Deng/Deputy Manager
Date: 2015. 12. 16

Test Laboratory:
AUDIX Technology Corporation, EMC Department
TAF Accreditation No.: 1724
Web Site: www.audixtech.com

Testing Laboratory
1724

The statement is based on a single evaluation of one sample of the above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab logo.

Technical Compliance Statement

CE EMC Test Report

For the following information **Ref. File No.: C1M1512036**

Product	:	LCD Monitor
Model Number	:	(1)E2275SW** (2)215LM000** (3)E2275PW**
Brand	:	AOC
Applicant	:	Taiwan BOE Vision-electronic
Manufacturer	:	Taiwan BOE Vision-electronic
Factory	:	K Tronics (Suzhou) Technology Co., Ltd.
Standards	:	

Emission: EN 55022:2010 +AC: 2011, Class B
AS/NZS CISPR 22:2009 +A1:2010
EN 61000-3-2:2014 and EN 61000-3-3:2013

Immunity: EN 55024:2010
(IEC 61000-4-2:2008, IEC 61000-4-3:2010, IEC 61000-4-4:2012,
IEC 61000-4-5:2014, IEC 61000-4-6:2013, IEC 61000-4-8:2009,
IEC 61000-4-11:2004)

We hereby certify that the above product has been tested by us with the listed standards and found in compliance with the council EMC directive 2004/108/EC. The test data & results are issued on the EMC test report no. **EM-E150812**.

Signature

Alex Deng/Deputy Manager
Date: 2015. 12. 16

Test Laboratory:
AUDIX Technology Corporation, EMC Department
TAF Accreditation No.: 1724
Web Site: www.audixtech.com

Testing Laboratory
1724

The statement is based on a single evaluation of one sample of the above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab logo.

EMC TEST REPORT
for
Taiwan BOE Vision-electronic
LCD Monitor
Model No.: (1)E2275SW** (2)215LM000** (3)E2275PW**
Brand：AOC

Prepared for : Taiwan BOE Vision-electronic
7F, No.2, Rei Kung Road., Nei Hu,
Taipei, Taiwan, ROC

Prepared By : AUDIX Technology Corporation
EMC Department
No. 53-11, Dingfu, Linkou Dist.,
New Taipei City 244, Taiwan

Tel : (02) 2609-9301, 2609-2133
Fax : (02) 2609-9303

File Number	：	C1M1512036
Report Number	：	EM-E150812
Date of Test	：	2015. 12. 14 ~ 15
Date of Report	：	2015. 12. 16

TABLE OF CONTENTS

TEST REPORT VERIFICATION

Applicant	:	Taiwan BOE Vision-electronic
Manufacturer	:	Taiwan BOE Vision-electronic
Factory	:	K Tronics (Suzhou) Technology Co., Ltd.
EUT Description	:	LCD Monitor
(A) Model No.	:	(1)E2275SW** (2)215LM000** (3)E2275PW**
(B) Brand	:	AOC
(C) Serial No.	:	N/A
(D) Power Supply	:	AC 100-240V, 50/60Hz
(E) Test Voltage	:	AC 230V, 50Hz

Measurement Procedure Used:

Emission: EN 55022:2010 +AC: 2011, Class B
AS/NZS CISPR 22:2009 +A1:2010
EN 61000-3-2:2014 and EN 61000-3-3:2013

Immunity: EN 55024:2010
(IEC 61000-4-2:2008, IEC 61000-4-3:2010, IEC 61000-4-4:2012,
IEC 61000-4-5:2014, IEC 61000-4-6:2013, IEC 61000-4-8:2009,
IEC 61000-4-11:2004)

(Note: The EN 55022 emission measurement results are deemed satisfactory evidence of compliance with AS/NZS CISPR 22 regulations)

The device described above was tested by AUDIX Technology Corporation to determine the maximum emission levels emanating from the device, its ensured severity levels, and performance criterion. This test report contains the measurement results, and AUDIX Technology Corporation assumes full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT is technically compliance with the requirements of EN 55022(CISPR 22 & AS/NZS CISPR 22)、EN 61000-3-2, -3 and EN 55024 standards.

This report applies to above tested sample only and shall not be reproduced in part without written approval of AUDIX Technology Corporation.

Date of Test : 2015. 12. 14 ~ 15 Date of Report : 2015. 12. 16

Producer : Patty yu
(Patty Yu/Administrator)

Signatory : Alex Deng
(Alex Deng/Deputy Manager)

1. DESCRIPTION OF VERSION

Edition No.	Date of Revision	Revision Summary	Report Number
0	2015. 12. 16	Original Report.	EM-E150812

2. SUMMARY OF STANDARDS AND RESULTS

2.1. Description of Standards and Results

The EUT has been tested according to the applicable standards as referenced below.

EMISSION			
Description of Test Item	**Standard**	**Limits**	**Results**
Conducted disturbance at main terminal	EN 55022:2010 +AC: 2011	Class B	PASS
Conducted common mode disturbance at telecommunication port	EN 55022:2010 +AC: 2011	N/A	N/A
Radiated disturbance	EN 55022:2010 +AC: 2011	Class B	PASS
Harmonic current emissions	EN 61000-3-2:2014	Class D	PASS
Voltage fluctuations & flicker	EN 61000-3-3:2013	Section 5	PASS
IMMUNITY (EN 55024:2010)			
Description of Test Item	**Basic Standard**	**Performance Criteria**	**Results**
Electrostatic discharge (ESD)	IEC 61000-4-2:2008	B	PASS
Radio-frequency, Continuous radiated disturbance	IEC 61000-4-3:2010	A	PASS
Electrical fast transient (EFT)	IEC 61000-4-4:2012	B	PASS
Surge (Input a.c. power ports)	IEC 61000-4-5:2014	B	PASS
Surge (Telecommunication ports)		N/A	N/A
Radio-frequency, Continuous conducted disturbance	IEC 61000-4-6:2013	A	PASS
Power frequency magnetic field	IEC 61000-4-8:2009	A	PASS
Voltage dips, >95% reduction	IEC 61000-4-11:2004	B	PASS
Voltage dips, 30% reduction		C	PASS
Voltage interruptions		C	PASS
N/A is an abbreviation for Not Applicable.			

2.2. Description of Performance Criteria

2.2.1. Performance criterion A

During the test, when seen from the normal viewing distance, the EUT shall operate with no change beyond the manufacturer's specification, in flicker, colour, focus and jitter (except for the power frequency magnetic field test).

Power frequency magnetic field test

For CRT monitors, the following also applies:
The jitter shall be measured when the CRT monitor is immersed in a continuous magnetic field of 1 A/m (r.m.s.) at one of the power frequencies of 50 Hz or 60 Hz.
For displays with pixels having continuous luminance distributions only, jitter may be measured using a measuring microscope of at least 20 power. The movement is determined by visual alignment of the microscope cursor or comparator reticle with the extreme positions of the centroid or edge of a character or test object during the observation period.
For any display type, a special display-measuring device may be used. This device shall determine, on a scan-by-scan basis, the relative location of a character or test object. If a device is used that determines movement along the horizontal and vertical axes only, the extent of the jitter shall be defined as the square root of the sum of the squares of the maximum horizontal and vertical differences.
Observations shall extend for periods of at least 4 s. Measuring devices that sample scans shall accumulate a number of scans equivalent to at least 4 s of continuous observation.

The maximum jitter permitted is given by:

$$J \leq \frac{(C+\ 0{,}3)\times 2{,}5}{33{,}3}$$

where

J is the jitter (in mm);

C is the character height (in mm).

Alternatively, a field of 50 A/m may be applied, and a transparent graduated mask used to assess the jitter. In this case, the jitter shall not exceed 50 times the value in the above formula.
The EUT shall be tested in two positions, both perpendicular to the magnetic field.

2.2.2. Performance criterion B

Screen disturbances during the application of the test are permissible if they self-recover after removal of the external disturbance.

2.2.3. Performance criterion C

Failures during the test that cannot self-recover after removal of the external disturbance, but which can be recovered after the test to normal operation by reset or reboot are permissible.

3. GENERAL INFORMATION

3.1. Description of Device

Description : LCD Monitor

Model Number : (1)E2275SW** (2)215LM000** (3)E2275PW**
The difference of above models are in sales marketing、Base and switch.
The difference between models is in list.

Difference / Model	Base	Switch
E2275SW**	Fixed Base	X
E2275PW**、215LM000**	Adjustable Base in vertical angle and height.	○

The models E2275SWJ、E2275PWJ were tested in this report.

Applicant : Taiwan BOE Vision-electronic
7F, No.2, Rei Kung Road., Nei Hu,
Taipei, Taiwan, ROC

Manufacturer : Taiwan BOE Vision-electronic
7F, No.2, Rei Kung Road., Nei Hu,
Taipei, Taiwan, ROC

Factory : K Tronics (Suzhou) Technology Co., Ltd.
No. 1700, Zhongshan North Road,
Economic and Technological Development Zone,Wujiang District, Suzhou, Jiangsu Province, PRC

Max. Resolution : 1920*1080/60Hz

D-Sub Cable : Shielded, Detachable, 1.5m
Bonded two ferrite cores

Audio Cable : Unshielded, Detachable, 1.5m

AC Power Cord : Unshielded, Detachable, 1.5m (3C)

Date of Receipt of Sample : 2015. 12. 10

Date of Test : 2015. 12. 14 ~ 15

Remark 1:
The EUT is a LCD Monitor which input/output ports as follows:

Back View:
(1) One AC Input Port
(2) One HDMI Port
(3) One DVI Port
(4) One D-Sub Port
(5) One Audio Port
(6) One Earphone Port

Remark 2:
The EUT with the following test modes were pre-scanned.

Test Item	Test Model	Input Port	Panel Angle	Display, Resolution/Frequency
Conducted Disturbance	E2275PWJ	HDMI	0°	”H” Pattern, 1920*1080/60Hz
				”H” Pattern, 1280*1024/75Hz
				”H” Pattern, 640*480/60Hz
		DVI		”H” Pattern, 1920*1080/60Hz
		D-Sub		”H” Pattern, 1920*1080/60Hz
		HDMI	90°	”H” Pattern, 1080*1920/60Hz
	E2275SWJ	HDMI	0°	”H” Pattern, 1920*1080/60Hz
Radiated Disturbance	E2275PWJ	HDMI	0°	”H” Pattern, 1920*1080/60Hz
				”H” Pattern, 1280*1024/75Hz
				”H” Pattern, 640*480/60Hz
		DVI		”H” Pattern, 1920*1080/60Hz
		D-Sub		”H” Pattern, 1920*1080/60Hz
		HDMI	90°	”H” Pattern, 1080*1920/60Hz
	E2275SWJ	HDMI	0°	”H” Pattern, 1920*1080/60Hz
H & V & EMS test	E2275PWJ	HDMI	0°	”H” Pattern, 1920*1080/60Hz
	E2275SWJ	HDMI	0°	”H” Pattern, 1920*1080/60Hz

Finally, the under worse test modes were demonstrated compliance with the standards in the report.

Test Item	Test Model	Input Port	Panel Angle	Display, Resolution/Frequency
Conducted Disturbance	E2275PWJ	HDMI	0°	”H” Pattern, 1920*1080/60Hz
	E2275SWJ	HDMI	0°	”H” Pattern, 1920*1080/60Hz
Radiated Disturbance	E2275PWJ	HDMI	0°	”H” Pattern, 1920*1080/60Hz
	E2275SWJ	HDMI	0°	”H” Pattern, 1920*1080/60Hz
H & V & EMS test	E2275PWJ	HDMI	0°	”H” Pattern, 1920*1080/60Hz
	E2275SWJ	HDMI	0°	”H” Pattern, 1920*1080/60Hz

3.2. Tested Supporting System Details

3.2.1. Support Peripheral Unit

No.	Product	Brand	Model No.	Serial No.	Approval
【For Conducted、Radiated Disturbance Measurements Tests Used】					
1.	PC System	LENOVO	MT-M 7611-PV2	R82RT30	By DoC
2.	Printer	HP	VCVRA-1004	CN36719PF6	By DoC
3.	USB Keyboard	LENOVO	KU-0225	0904493	By DoC
4.	USB Mouse	LENOVO	M-U0025-0	N/A	By DoC
5.	I-POD Player	APPLE	A1204	4H722THMVTE	By DoC
6.	Earphone	Panasonic	RP-HV103	N/A	N/A
【For Harmonic、Flicker Measurements and EMS Immunity Tests Used】					
1.	PC System	LENOVO	MT-M 7611-PV2	R82RT30	By DoC
2.	USB Keyboard	LENOVO	SK-8825	00556863	By DoC
3.	USB Mouse	LENOVO	M-U0025-0	N/A	By DoC
4.	Earphone	SAMPO	EK-Y1251MP	N/A	N/A

3.2.2. Cable List

No.	Cable Description Of The Above Support Units
【For Conducted、Radiated Disturbance Measurements Tests Used】	
1.	DVI Cable: Shielded, Detachable, 1.8m, Bonded two ferrite cores HDMI Cable: Shielded, Detachable, 1.8m AC Power Cord: Unshielded, Detachable, 1.8m
2.	Data Cable: Shielded, Detachable, 1.8m Power Adapter: HP, S/N H622K732BK02L, Cord: Unshielded, Undetachable, 0.6m AC Power Cord: Unshielded, Detachable, 1.7m
3.	USB Cable: Shielded, Undetachable, 1.8m
4.	USB Cable: Shielded, Undetachable, 1.8m
5.	USB Cable: Shielded, Undetachable, 1.0m
6.	Earphone Cable: Unshielded, Undetachable, 1.1m
【For Harmonic、Flicker Measurements and EMS Immunity Tests Used】	
1.	DVI Cable: Shielded, Detachable, 1.8m, Bonded two ferrite cores HDMI Cable: Shielded, Detachable, 1.8m AC Power Cord: Unshielded, Detachable, 1.8m
2.	USB Cable: Shielded, Undetachable, 1.8m
3.	USB Cable: Shielded, Undetachable, 1.8m
4.	Earphone Cable: Unshielded, Undetachable, 1.2m

3.3. Description of Test Facility

Name of Firm	:	**AUDIX Technology Corporation** **EMC Department** No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan
Test Facility & Location	:	**No. 5 Shielded Room &** **No. 6 Open Area Test Site &** **No. 2 Semi-Anechoic Chamber** No. 67-4, Dingfu, Linkou Dist., New Taipei City 244, Taiwan **Immunity Test Site** No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan
NVLAP Lab. Code	:	200077-0
TAF Accreditation No	:	1724

3.4. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)
Conduction Test	150kHz~30MHz	±3.5dB
Radiation Test	30MHz~1000MHz	±4.3dB
	1GHz~6GHz	±4.8dB
	6GHz~18GHz	±4.8dB
RF Field Strength Susceptibility Test	80MHz ~ 200MHz	±1.7dB
	200MHz ~ 1000MHz	±1.8dB
	Above 1GHz	±1.7dB

Remark：Uncertainty = $ku_c(y)$

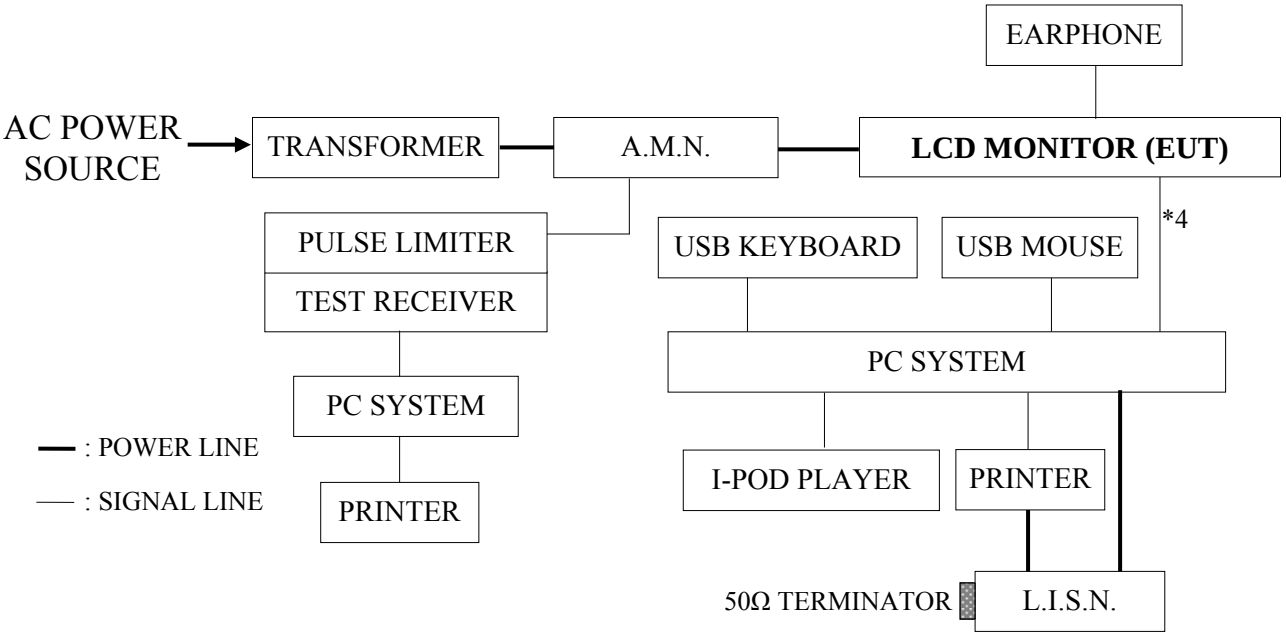
4. CONDUCTED DISTURBANCE MEASUREMENT

4.1. Test Equipment

The following test equipment were used during the powerline conducted disturbance measurement：(No. 5 Shielded Room)

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Test Receiver	R&S	ESR3	101773	2015. 02. 11	1 Year
2.	A.M.N.	R&S	ENV4200	100003	2015. 06. 08	1 Year
3.	L.I.S.N.	Kyoritsu	KNW-407	8-1539-2	2015. 01. 06	1 Year
4.	Pulse Limiter	R&S	ESH3-Z2	100355	2015. 01. 17	1 Year

4.2. Block Diagram of Test Setup



4.3. Limits for Conducted Disturbance

(EN 55022、AS/NZS CISPR 22, Class B)

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dBμV	56 ~ 46 dBμV
500kHz ~ 5MHz	56 dBμV	46 dBμV
5MHz ~ 30MHz	60 dBμV	50 dBμV

Remark 1.: If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.

2.: The lower limit applies at the band edges.

4.4. Operating Condition of EUT

4.4.1. Set up the **LCD Monitor (EUT)** and simulator as shown on 4.2.

4.4.2. To turn on the power of all equipment.

4.4.3. The PC system read data from disk.

4.4.4. The PC system was running the self-test program "IBM Test" by Windows 7 and sending "H" characters to the **LCD Monitor (EUT)** via HDMI input, the screen was filling with "H" pattern by **LCD Monitor (EUT)**'s resolution.

4.4.5. The PC system was running the program "Windows Media Player" and sending sounds to Earphone.

4.4.6. The other peripheral devices were driven and operated in turn during all testing.

4.5. Test Procedure

The EUT was put on table which was above the ground by 80cm and its power cord was connected to the AC mains through an Artificial Mains Network (A.M.N.). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provided a 50 ohm coupling impedance for the measuring equipment. (Please refer to the block diagram of the test setup and photographs.)
Both sides of A.C. line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed according to EN 55022 Class B regulations during conducted emission measurement.

The bandwidth of the R&S Test Receiver ESR3 was set at 9kHz.

The frequency range from 150kHz to 30MHz was pre-scanned with a peak detector.

The all final readings from test receiver were measured with Quasi-Peak detector and Average detector. (Remark : If the Average limit is met when using a Quasi-Peak detector, the Average detector is unnecessary)

4.6. Conducted Disturbance Measurement Results

PASSED. All emissions not reported are below too low against the prescribed limits.

The EUT with following test mode was performed during this section testing and to read Q.P and Average value, and the test data are listed in next pages.

EUT：LCD Monitor Model No.：(1)E2275SWJ (2)E2275PWJ

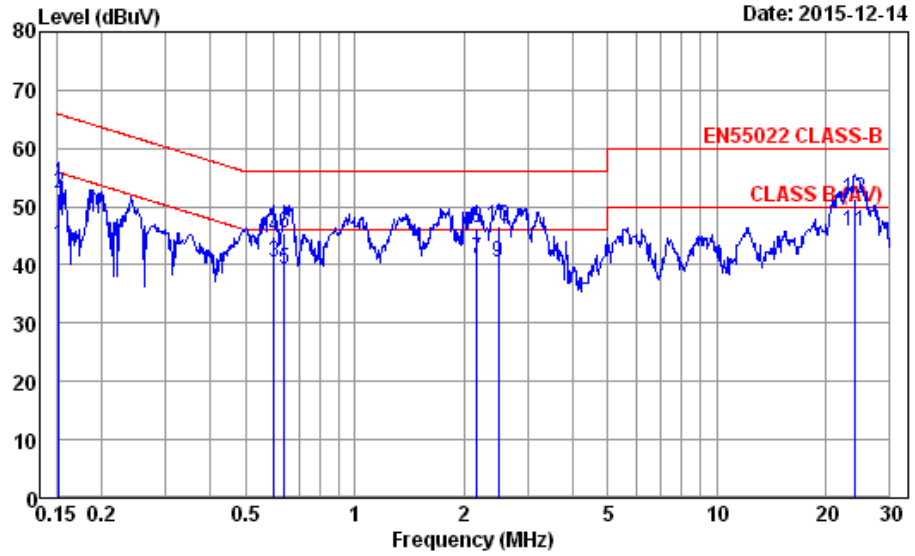
Test Date：2015. 12. 14 Temperature：24℃ Humidity：54%

The details of test modes are as follows：

Mode	Test Model	Input Port	Panel Angle	Display, Resolution/Frequency	Reference Test Data No.	
					Neutral	Line
1	E2275PWJ	HDMI	0°	"H" Pattern, 1920*1080/60Hz	# 2	# 1
2	E2275SWJ	HDMI	0°	"H" Pattern, 1920*1080/60Hz	# 26	# 25

AUDIX Technology Corp. EMC Department
No. 53-11, Dingfu, Linkou, Dist., New Taipei City
244, Taiwan, R.O.C.
Tel: +886-2-26092133 Fax: +886-2-26099303
E-mail: emc@audixtech.com

Data: 2 File: D:\test-data\Report\2015\C1M1512XXX\C1M1512036-C.EM6 (54)



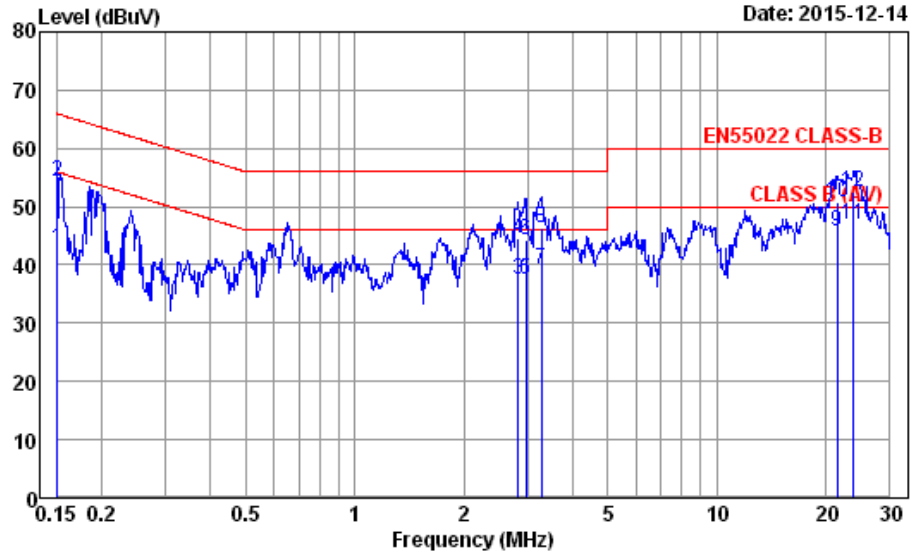
Site no. : No.5 Shielded Room Data no. : 2
Condition : ENV4200 100003 LISN Phase : NEUTRAL
Limit : EN55022 CLASS-B
Env. / Ins. : 24°C/54% ESR3 (101773) Engineer : EDWARD
EUT : E2275PWJ
Power Rating : 230Vac / 50Hz
Test Mode : 1920*1080/60Hz HDMI

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.152	10.20	0.03	9.86	23.34	43.43	55.87	12.44	Average
2	0.152	10.20	0.03	9.86	32.08	52.17	65.87	13.70	QP
3	0.598	10.00	0.03	9.87	20.55	40.45	46.00	5.55	Average
4	0.598	10.00	0.03	9.87	25.06	44.96	56.00	11.04	QP
5	0.641	10.00	0.04	9.87	19.40	39.31	46.00	6.69	Average
6	0.641	10.00	0.04	9.87	25.47	45.38	56.00	10.62	QP
7	2.178	10.02	0.06	9.86	21.02	40.96	46.00	5.04	Average
8	2.178	10.02	0.06	9.86	26.27	46.21	56.00	9.79	QP
9	2.487	10.04	0.07	9.86	20.58	40.55	46.00	5.45	Average
10	2.487	10.04	0.07	9.86	26.64	46.61	56.00	9.39	QP
11	24.142	13.68	0.21	9.96	22.04	45.89	50.00	4.11	Average
12	24.142	13.68	0.21	9.96	27.37	51.22	60.00	8.78	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

AUDIX Technology Corp. EMC Department
No. 53-11, Dingfu, Linkou, Dist., New Taipei City
244, Taiwan, R.O.C.
Tel: +886-2-26092133 Fax: +886-2-26099303
E-mail: emc@audixtech.com

Data: 1 File: D:\test-data\Report\2015\C1M1512XXX\C1M1512036-C.EM6 (54)



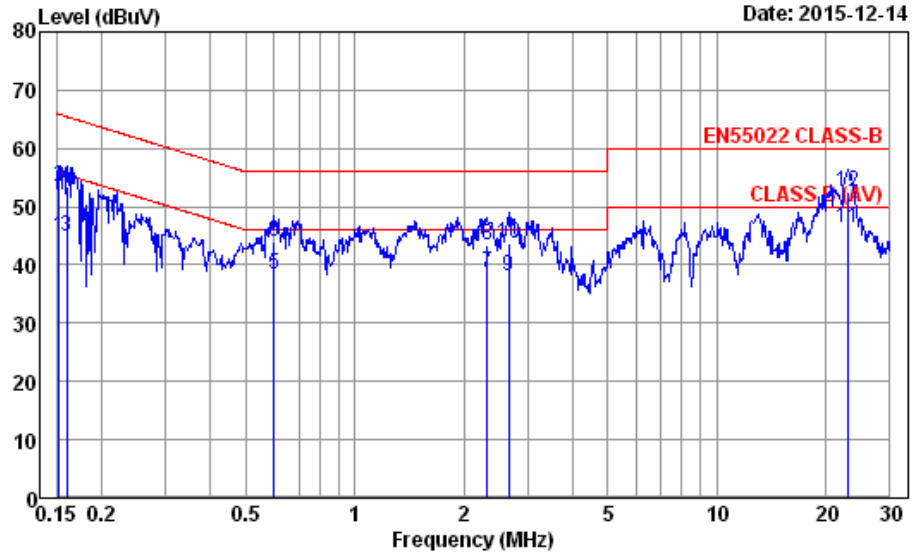
Site no. : No.5 Shielded Room Data no. : 1
Condition : ENV4200 100003 LISN Phase : LINE
Limit : EN55022 CLASS-B
Env. / Ins. : 24*C/54% ESR3 (101773) Engineer : EDWARD
EUT : E2275PWJ
Power Rating : 230Vac / 50Hz
Test Mode : 1920*1080/60Hz HDMI

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.151	10.21	0.03	9.86	22.72	42.82	55.96	13.14	Average
2	0.151	10.21	0.03	9.86	34.08	54.18	65.96	11.78	QP
3	2.824	10.14	0.07	9.86	17.40	37.47	46.00	8.53	Average
4	2.824	10.14	0.07	9.86	24.56	44.63	56.00	11.37	QP
5	2.962	10.16	0.07	9.86	17.46	37.55	46.00	8.45	Average
6	2.962	10.16	0.07	9.86	24.22	44.31	56.00	11.69	QP
7	3.276	10.18	0.07	9.86	19.14	39.25	46.00	6.75	Average
8	3.276	10.18	0.07	9.86	26.14	46.25	56.00	9.75	QP
9	21.486	13.55	0.21	9.95	22.06	45.77	50.00	4.23	Average
10	21.486	13.55	0.21	9.95	26.96	50.67	60.00	9.33	QP
11	23.888	14.04	0.21	9.96	22.66	46.87	50.00	3.13	Average
12	23.888	14.04	0.21	9.96	28.30	52.51	60.00	7.49	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

AUDIX Technology Corp. EMC Department
No. 53-11, Dingfu, Linkou, Dist., New Taipei City
244, Taiwan, R.O.C.
Tel: +886-2-26092133 Fax: +886-2-26099303
E-mail: emc@audixtech.com

Data: 26 File: D:\test-data\Report\2015\C1M1512XXX\C1M1512036-C.EM6 (54)



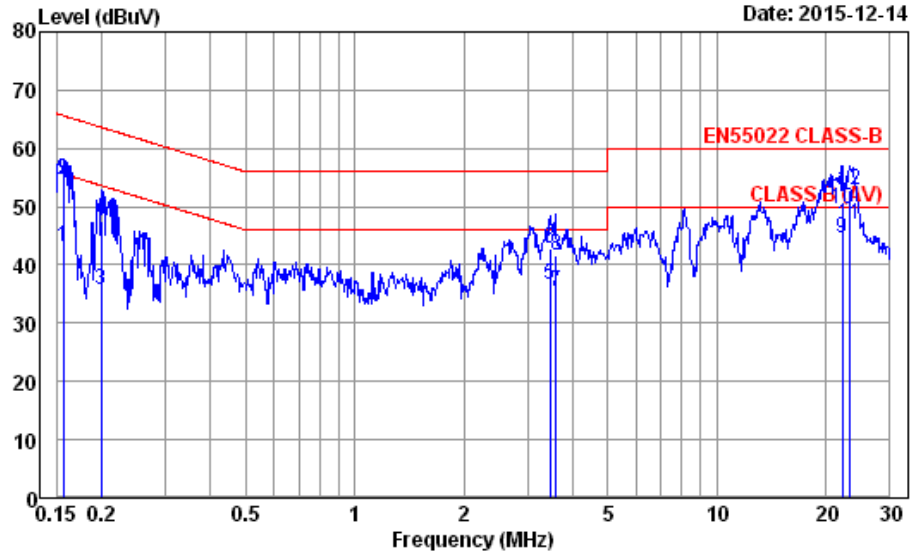
Site no. : No.5 Shielded Room Data no. : 26
Condition : ENV4200 100003 LISN Phase : NEUTRAL
Limit : EN55022 CLASS-B
Env. / Ins. : 24*C/54% ESR3 (101773) Engineer : EDWARD
EUT : E2275SWJ
Power Rating : 230Vac / 50Hz
Test Mode : 1920*1080/60Hz HDMI

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.152	10.20	0.03	9.86	24.91	45.00	55.87	10.87	Average
2	0.152	10.20	0.03	9.86	33.45	53.54	65.87	12.33	QP
3	0.160	10.19	0.03	9.86	24.66	44.74	55.47	10.73	Average
4	0.160	10.19	0.03	9.86	33.41	53.49	65.47	11.98	QP
5	0.598	10.00	0.03	9.87	18.33	38.23	46.00	7.77	Average
6	0.598	10.00	0.03	9.87	24.10	44.00	56.00	12.00	QP
7	2.321	10.03	0.06	9.86	18.70	38.65	46.00	7.35	Average
8	2.321	10.03	0.06	9.86	23.54	43.49	56.00	12.51	QP
9	2.664	10.06	0.07	9.86	18.15	38.14	46.00	7.86	Average
10	2.664	10.06	0.07	9.86	23.57	43.56	56.00	12.44	QP
11	23.018	13.43	0.21	9.96	22.85	46.45	50.00	3.55	Average
12	23.018	13.43	0.21	9.96	28.90	52.50	60.00	7.50	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

AUDIX Technology Corp. EMC Department
No. 53-11, Dingfu, Linkou, Dist., New Taipei City
244, Taiwan, R.O.C.
Tel: +886-2-26092133 Fax: +886-2-26099303
E-mail: emc@audixtech.com

Data: 25 File: D:\test-data\Report\2015\C1M1512XXX\C1M1512036-C.EM6 (54)



Site no. : No.5 Shielded Room Data no. : 25
Condition : ENV4200 100003 LISN Phase : LINE
Limit : EN55022 CLASS-B
Env. / Ins. : 24*C/54% ESR3 (101773) Engineer : EDWARD
EUT : E2275SWJ
Power Rating : 230Vac / 50Hz
Test Mode : 1920*1080/60Hz HDMI

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.156	10.20	0.03	9.86	22.92	43.01	55.65	12.64	Average
2	0.156	10.20	0.03	9.86	34.67	54.76	65.65	10.89	QP
3	0.200	10.16	0.03	9.86	15.79	35.84	53.62	17.78	Average
4	0.200	10.16	0.03	9.86	27.53	47.58	63.62	16.04	QP
5	3.462	10.19	0.08	9.86	16.44	36.57	46.00	9.43	Average
6	3.462	10.19	0.08	9.86	22.65	42.78	56.00	13.22	QP
7	3.594	10.20	0.08	9.87	15.25	35.40	46.00	10.60	Average
8	3.594	10.20	0.08	9.87	21.60	41.75	56.00	14.25	QP
9	22.180	13.70	0.21	9.95	20.65	44.51	50.00	5.49	Average
10	22.180	13.70	0.21	9.95	25.60	49.46	60.00	10.54	QP
11	23.263	13.92	0.21	9.96	22.86	46.95	50.00	3.05	Average
12	23.263	13.92	0.21	9.96	28.75	52.84	60.00	7.16	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

5. RADIATED DISTURBANCE MEASUREMENT

5.1. Test Equipment

The following test equipment was used during the radiated emission measurement:

5.1.1. For 30MHz-1000MHz Frequency (At No. 6 Open Area Test Site)

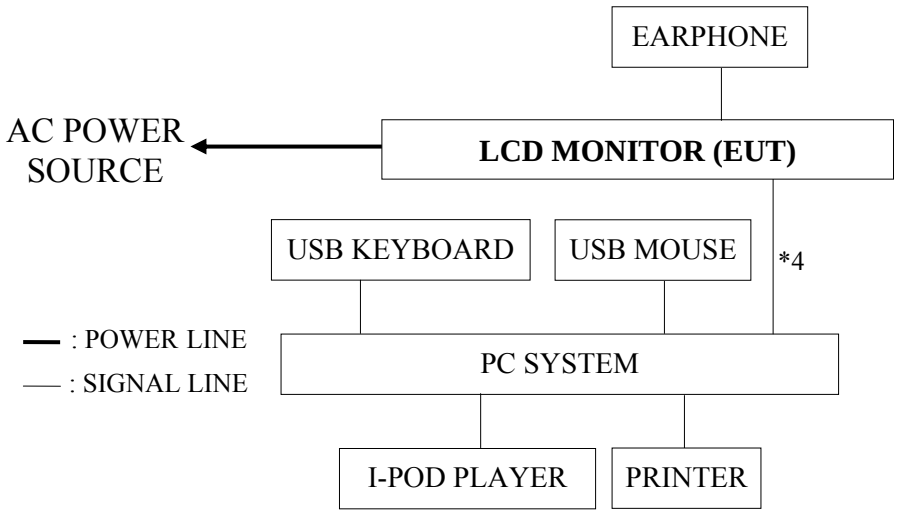
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A-507	MY49061167	2015. 04. 24	1 Year
2.	Test Receiver	R&S	ESCS30	100339	2015. 04. 23	1 Year
3.	Amplifier	HP	8447D	2727A05737	N.C.R.	N.C.R.
4.	Bilog Antenna	Schaffner	CBL6112B	2818	2015. 02. 27	1 Year

5.1.2. For Above 1GHz Frequency (At No.2 Semi-Anechoic Chamber)

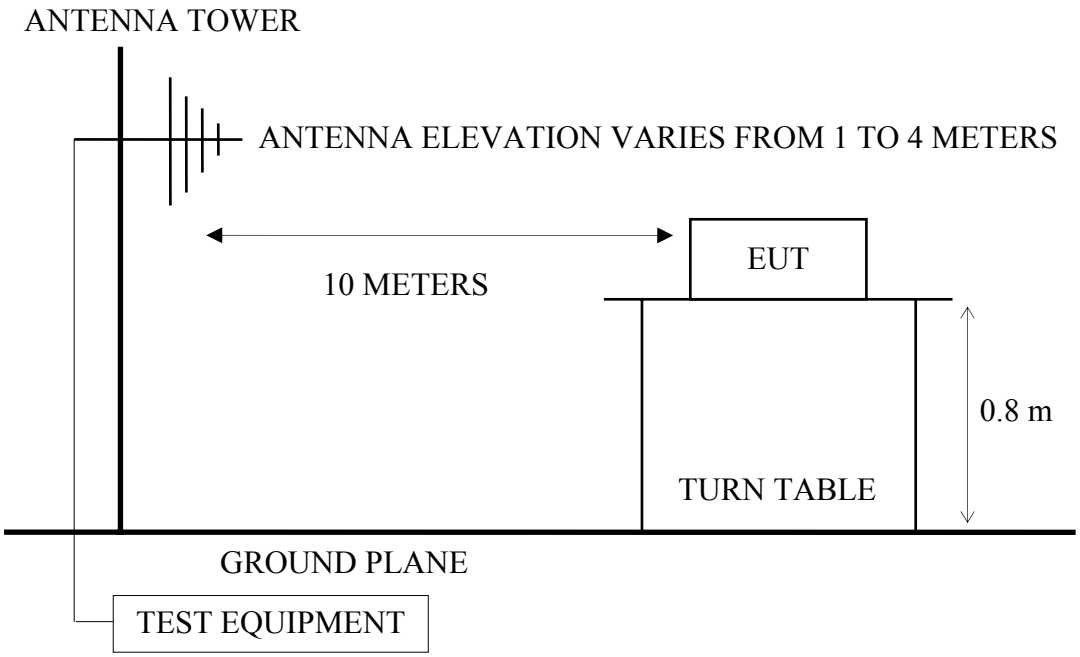
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A-526	MY48031076	2015. 09. 24	1 Year
2.	Amplifier	Agilent	8449B	3008A02596	2015. 01. 08	1 Year
3.	Horn Antenna	EMCO	3115	9112-3775	2015. 05. 11	1 Year

5.2. Block Diagram of Test Setup

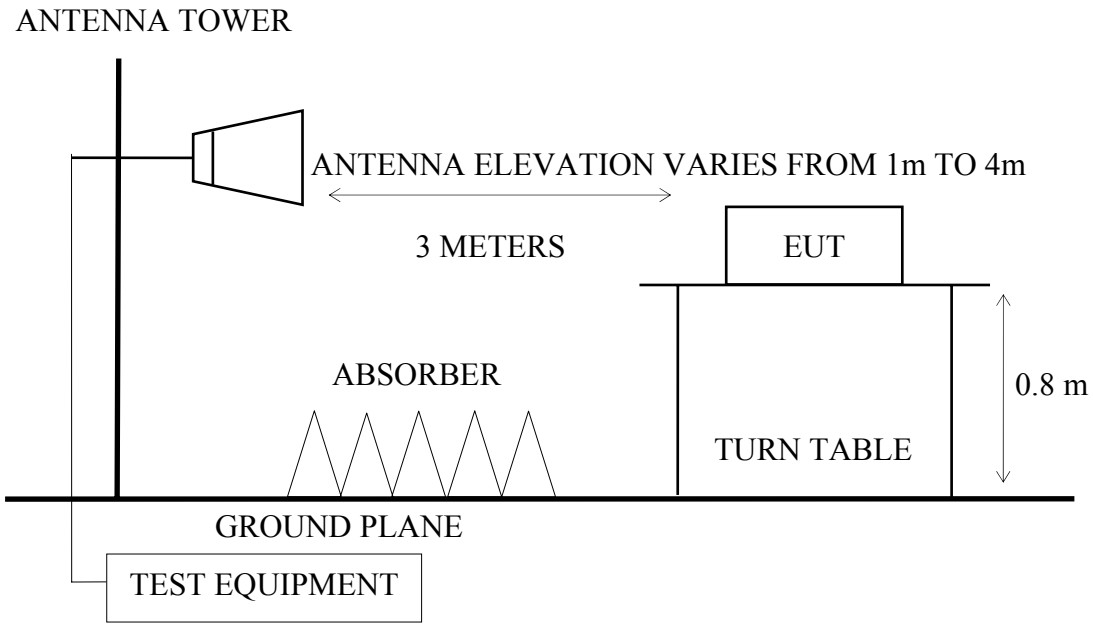
5.2.1. Block Diagram of connection between EUT and simulators



5.2.2. Open Area Test Site (10m) Setup Diagram for 30-1000MHz



5.2.3. Semi-Anechoic Chamber (3m) Setup Diagram for above 1GHz



5.3. Limits for Radiated Disturbance

(EN 55022、AS/NZS CISPR 22, Class B)

5.3.1. Limit below 1GHz

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dBμV/m)
30 ~ 230	10	30
230 ~ 1000	10	37

Notes: (1) The tighter limit applies at the edge between two frequency bands.
(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the E.U.T.

5.3.2. Limit above 1GHz

Frequency (GHz)	Distance (Meters)	Average Limits (dBμV/m)	Peak Limits (dBμV/m)
1 ~ 3	3	50	70
3 ~ 6	3	54	74

Note： (1) The lower limit applies at the transition frequency.
(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the E.U.T.

5.4. Operating Condition of EUT

Same as conducted measurement which is listed in 4.4.
except the test set up replaced by section 5.2.

5.5. Test Procedure

5.5.1. For Frequency Range was 30MHz-1000MHz which measurement distance was 10m at Open Area Test Site:

The EUT was placed on a turn table which was 0.8 meter above ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. EUT was set to 10 meters away from the receiving antenna which is mounted on an antenna tower. The antenna could be moved up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna was used as receiving antenna. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to EN55022 Class B requirements.

The bandwidth of the R&S Test Receiver ESCS30 was set at 120 kHz.

The frequency range from 30MHz to 1000MHz was pre-scanned with Peak detector and all the final readings of measurement were with Quasi-Peak detector.

5.5.2. For Frequency Range was above 1GHz which measurement distance was 3m at Semi-Anechoic Chamber:

The EUT and its simulators were placed on a turn table which was 0.8 meter above ground. The portion of the test volume that was obstructed by absorber placed on the floor (30cm maximum). The turn table rotated 360 degrees to determine the position of the maximum emission level. EUT was set to 3 meters away from the receiving antenna which was mounted on an antenna tower. The antenna could be moved up and down between 1 to 4 meters to find out the maximum emission level. A calibrated Horn Antenna was used as a receiving antenna. Both horizontal and vertical polarizations of the antenna were set on measurement, and both average and peak emission level were recorded form spectrum analyzer. In order to find the maximum emission level, all the interface cables were manipulated according to EN 55022 Class B on radiated measurement.

The resolution bandwidth of Agilent Spectrum Analyzer N9010A-526 was set at 1MHz.

The frequency range above 1GHz was checked and all final readings of measurement were with Peak and Average detector.

In chapter 7.6.6.1 the standard EN 55016-2-3:2010 requires to include the values of w in the test report:
"*w*": The dimension of the line tangent to the EUT formed by θ_{3dB} at the measurement distance *d*. Equation shall be used to calculate *w* for each actual antenna and measurement distance used. The values of *w* shall be included in the test report. This calculation may be based on the manufacturer-provided receive-antenna beamwidth specifications:
$w = 2 \times d \times \tan(0{,}5 \times \theta_{3dB})$

Frequency GHz	3115 Horn	
	d = 3m	
	θ_{3dB} (°)	*w* *m*
1.00	66	3.90
2.00	44	2.42
4.00	38	2.07
6.00	34	1.83

The values of w. are greater than chapter 7.6.6.1 of Table 3, the minimum dimension of w. (wmin) requirements.

5.6. Radiated Disturbance Measurement Results

PASSED. All emissions not reported are below too low against the prescribed limits.

For 30MHz-1000MHz frequency range:

The EUT with following test modes was measured during this section testing and the test results were attached in 5.6.1.

EUT：LCD Monitor M/N：(1)E2275SWJ (2)E2275PWJ

Test Date：2015. 12. 14 Temperature：24℃ Humidity：61%

The details of test modes are as follows：

Mode	Test Model	Input Port	Panel Angle	Display, Resolution/Frequency	Reference Test Data No.	
					Horizontal	Vertical
1	E2275PWJ	HDMI	0°	"H" Pattern, 1920*1080/60Hz	# 2	# 1
2	E2275SWJ	HDMI	0°	"H" Pattern, 1920*1080/60Hz	# 28	# 27

For Above 1GHz frequency range

The EUT with following test modes was measured during this section testing and all the test results were attached in section 5.6.2.

EUT：LCD Monitor M/N：(1)E2275SWJ (2)E2275PWJ

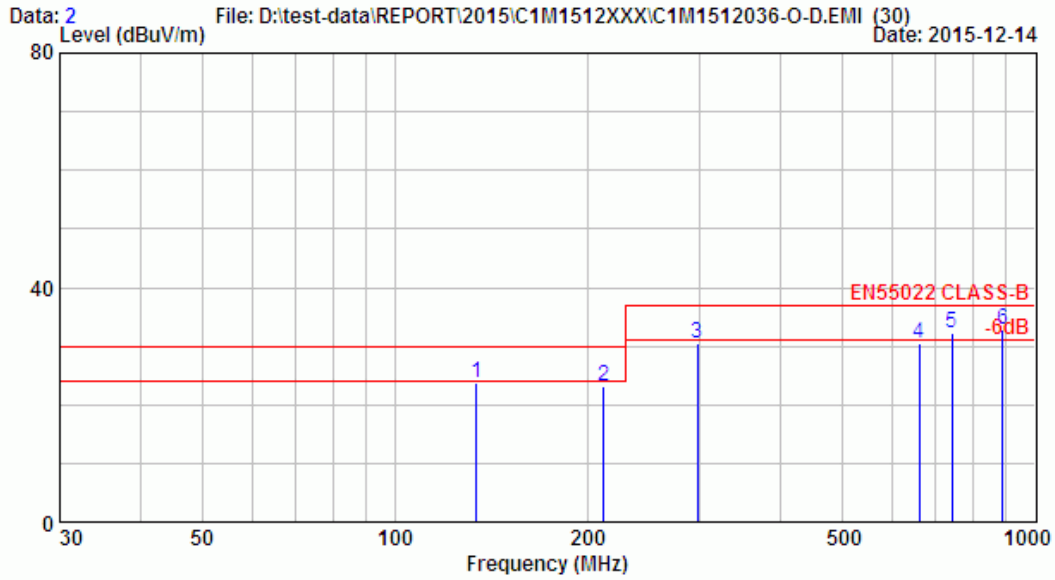
Test Date：2015. 12. 14 Temperature：29℃ Humidity：53%

The details of test modes are as follows:

Mode	Test Model	Input Port	Panel Angle	Display, Resolution/Frequency	Reference Test Data No.	
					Horizontal	Vertical
1	E2275PWJ	HDMI	0°	"H" Pattern, 1920*1080/60Hz	# 18	# 17
2	E2275SWJ	HDMI	0°	"H" Pattern, 1920*1080/60Hz	# 12	# 11

5.6.1. 30 - 1000MHz Frequency Range Radiated Disturbance Measurement Results at Open Area Test Site

AUDIX Technology Corp. EMC Department
No.53-11, Dingfu , Linkou , Dist. , New Taipei City , 244 Taiwan , R.O.C.
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:emc@audixtech.com



Site no. : OATS NO.6 Data no. : 2
Dis. / Ant. : 10m CBL6112B(2818) Ant. pol. : HORIZONTAL
Limit : EN55022 CLASS-B
Env. / Ins. : 24*C / 61% ESCS 30 (339) Engineer : Edward
EUT : E2275PWJ
Power Rating : 230Vac / 50Hz
Test Mode : 1920*1080/60Hz HDMI

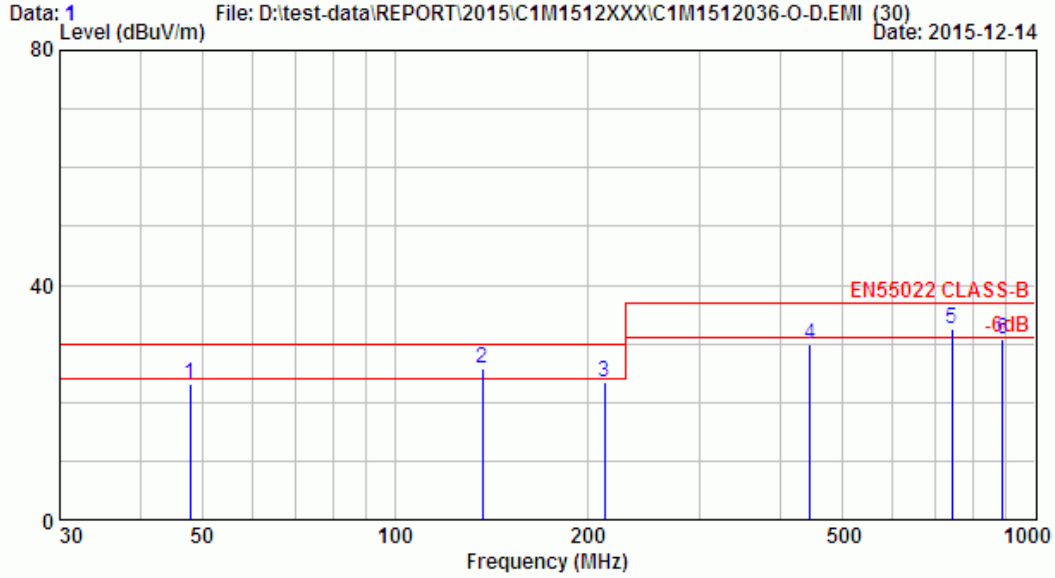
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	134.330	11.65	1.68	10.45	23.78	30.00	6.22	QP
2	212.030	10.51	2.21	10.46	23.19	30.00	6.81	QP
3	296.702	13.19	2.66	14.54	30.39	37.00	6.61	QP
4	660.014	19.12	4.15	7.21	30.48	37.00	6.52	QP
5	742.501	19.78	4.44	8.13	32.34	37.00	4.66	QP
6	891.015	20.59	4.94	7.15	32.68	37.00	4.32	QP *

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

3. The worst emission is detected at 891.015MHz with corrected signal level of 32.68dBµV/m (limit is 37.0dBµV/m) when the antenna is at horizontal polarization and is at 4.0m high and the turn table is at 70°.

4. 0°was the table front facing the antenna. Degree is calculated from 0°clockwise facing the antenna.

AUDIX Technology Corp. EMC Department
No.53-11, Dingfu , Linkou , Dist. , New Taipei City , 244 Taiwan , R.O.C.
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:emc@audixtech.com



Site no. : OATS NO.6 Data no. : 1
Dis. / Ant. : 10m CBL6112B(2818) Ant. pol. : VERTICAL
Limit : EN55022 CLASS-B
Env. / Ins. : 24*C / 61% ESCS 30 (339) Engineer : Edward
EUT : E2275PWJ
Power Rating : 230Vac / 50Hz
Test Mode : 1920*1080/60Hz HDMI

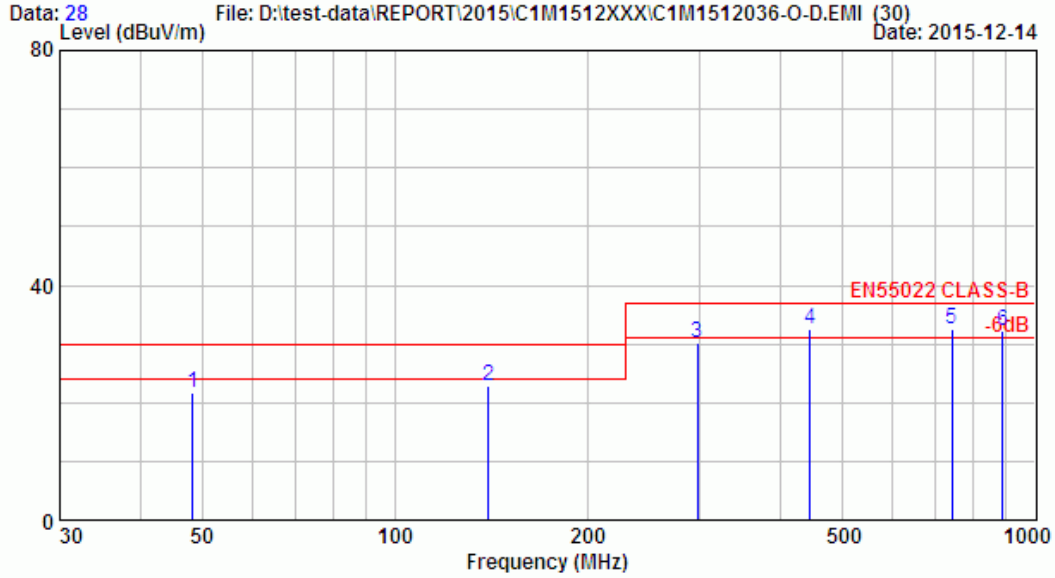
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	47.900	10.49	0.93	11.81	23.23	30.00	6.77	QP
2	137.268	11.52	1.70	12.58	25.81	30.00	4.19	QP *
3	212.900	10.56	2.22	10.79	23.57	30.00	6.43	QP
4	445.565	16.49	3.32	10.20	30.01	37.00	6.99	QP
5	742.515	19.78	4.44	8.26	32.47	37.00	4.53	QP
6	891.025	20.59	4.94	5.20	30.73	37.00	6.27	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

3. The worst emission is detected at 137.268MHz with corrected signal level of 25.81dBµV/m (limit is 30.0dBµV/m) when the antenna is at vertical polarization and is at 1m high and the turn table is at 40°.

4. 0°was the table front facing the antenna. Degree is calculated from 0°clockwise facing the antenna.

AUDIX Technology Corp. EMC Department
No.53-11, Dingfu , Linkou , Dist. , New Taipei City , 244 Taiwan , R.O.C.
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:emc@audixtech.com

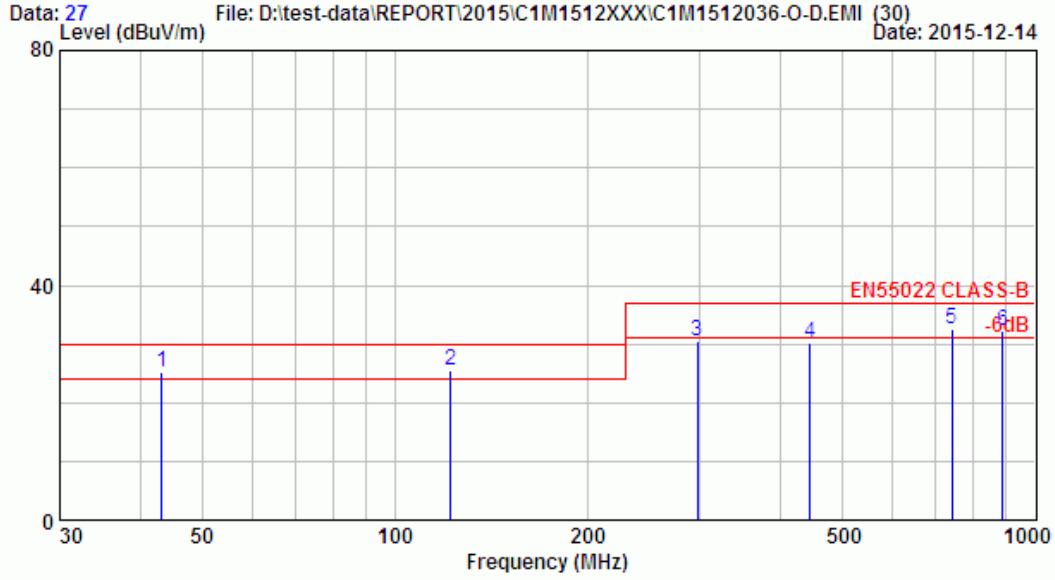


Site no. : OATS NO.6 Data no. : 28
Dis. / Ant. : 10m CBL6112B(2818) Ant. pol. : HORIZONTAL
Limit : EN55022 CLASS-B
Env. / Ins. : 24*C / 61% ESCS 30 (339) Engineer : Edward
EUT : E2275SWJ
Power Rating : 230Vac / 50Hz
Test Mode : 1920*1080/60Hz HDMI

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	48.351	10.34	0.94	10.48	21.77	30.00	8.23	QP
2	140.227	11.41	1.72	9.63	22.76	30.00	7.24	QP
3	296.691	13.19	2.66	14.34	30.19	37.00	6.81	QP
4	445.052	16.49	3.32	12.66	32.47	37.00	4.53	QP
5	741.743	19.78	4.44	8.40	32.62	37.00	4.38	QP
6	890.147	20.59	4.94	6.84	32.37	37.00	4.63	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

AUDIX Technology Corp. EMC Department
No.53-11, Dingfu , Linkou , Dist. , New Taipei City , 244 Taiwan , R.O.C.
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:emc@audixtech.com



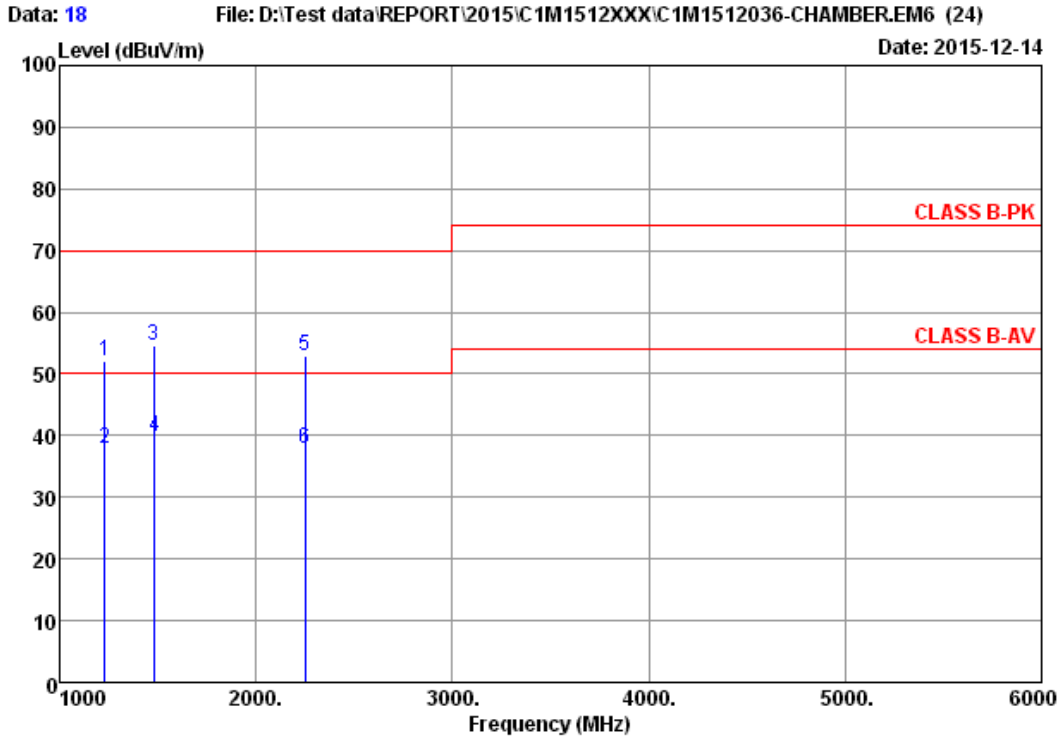
Site no. : OATS NO.6 Data no. : 27
Dis. / Ant. : 10m CBL6112B(2818) Ant. pol. : VERTICAL
Limit : EN55022 CLASS-B
Env. / Ins. : 24*C / 61% ESCS 30 (339) Engineer : Edward
EUT : E2275SWJ
Power Rating : 230Vac / 50Hz
Test Mode : 1920*1080/60Hz HDMI

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	43.280	11.69	0.88	12.56	25.14	30.00	4.86	QP
2	122.134	12.22	1.59	11.76	25.56	30.00	4.44	QP
3	296.712	13.20	2.67	14.67	30.53	37.00	6.47	QP
4	445.044	16.49	3.32	10.35	30.16	37.00	6.84	QP
5	741.745	19.78	4.44	8.20	32.41	37.00	4.59	QP
6	890.182	20.59	4.94	6.68	32.21	37.00	4.79	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

5.6.2. Radiated Disturbance Measurement Results at Semi-Anechoic Chamber (Above 1GHz)

AUDIX Technology Corp. EMC Department
No.53-11, Dingfu, Linkou Dist., New Taipei City,
244 Taiwan R.O.C.
Tel: +886-2-26092133 Fax: +886-2-26099303
Email: emc@audixtech.com



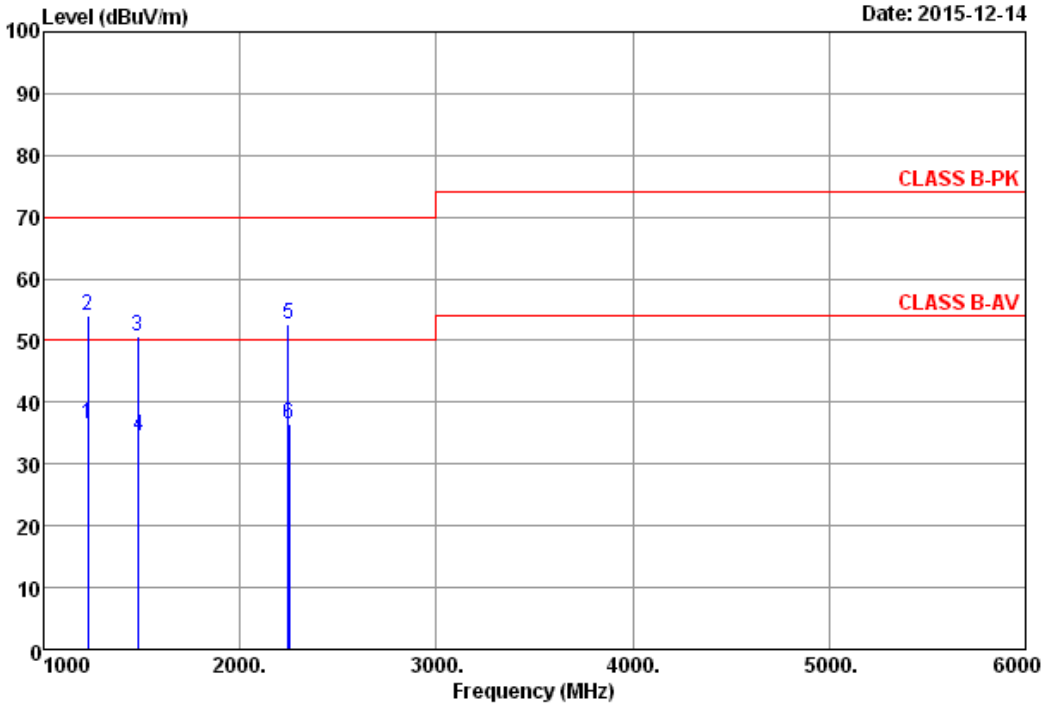
Site no. : Audix No.2 Chamber Data no. : 18
Dis. / Ant. : 3m HORN3115-3775 Ant. pol. : HORIZONTAL
Limit : CLASS B-PK
Env. / Ins. : 29*C / 53% N9010A (076) Engineer : EDWARD
EUT : E2275PWJ
Power Rating : 230Vac/50Hz
Test Mode : 1920*1080/60Hz HDMI

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	PREAMP Gain (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	
1	1230.00	25.56	5.06	36.32	57.75	52.05	70.00	17.95	Peak
2	1230.81	25.56	5.06	36.32	43.46	37.76	50.00	12.24	Average
3	1480.00	25.88	5.75	35.82	58.76	54.57	70.00	15.43	Peak
4	1482.93	25.88	5.77	35.82	44.11	39.94	50.00	10.06	Average
5	2250.00	28.51	7.70	35.17	51.92	52.96	70.00	17.04	Peak
6	2251.37	28.51	7.71	35.16	36.72	37.78	50.00	12.22	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Preamp Gain + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

AUDIX Technology Corp. EMC Department
No.53-11, Dingfu, Linkou Dist., New Taipei City,
244 Taiwan R.O.C.
Tel: +886-2-26092133 Fax: +886-2-26099303
Email: emc@audixtech.com

Data: 17 File: D:\Test data\REPORT\2015\C1M1512XXX\C1M1512036-CHAMBER.EM6 (24)



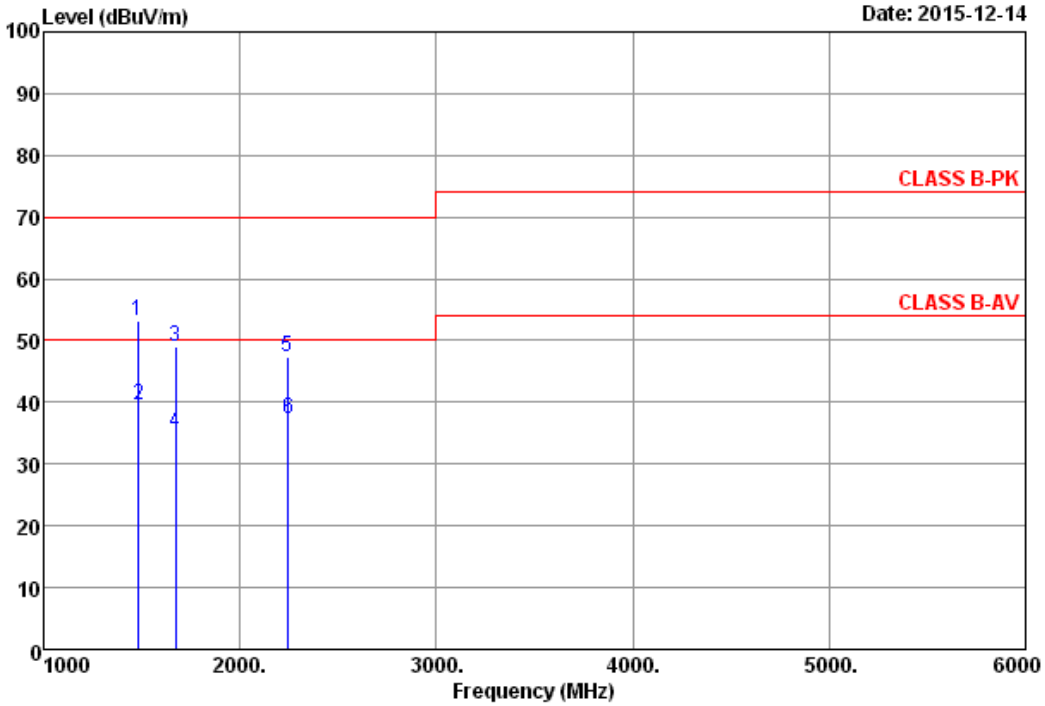
Site no. : Audix No.2 Chamber Data no. : 17
Dis. / Ant. : 3m HORN3115-3775 Ant. pol. : VERTICAL
Limit : CLASS B-PK
Env. / Ins. : 29*C / 53% N9010A (076) Engineer : EDWARD
EUT : E2275PWJ
Power Rating : 230Vac/50Hz
Test Mode : 1920*1080/60Hz HDMI

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	PREAMP Gain (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	
1	1223.58	25.55	5.03	36.34	42.21	36.45	50.00	13.55	Average
2	1225.00	25.55	5.04	36.33	59.71	53.97	70.00	16.03	Peak
3	1480.00	25.88	5.75	35.82	54.82	50.63	70.00	19.37	Peak
4	1482.26	25.88	5.77	35.82	38.76	34.59	50.00	15.41	Average
5	2245.00	28.51	7.70	35.17	51.66	52.70	70.00	17.30	Peak
6	2249.94	28.51	7.70	35.17	35.41	36.45	50.00	13.55	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Preamp Gain + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

AUDIX Technology Corp. EMC Department
No.53-11, Dingfu, Linkou Dist., New Taipei City,
244 Taiwan R.O.C.
Tel: +886-2-26092133 Fax: +886-2-26099303
Email: emc@audixtech.com

Data: 12 File: D:\Test data\REPORT\2015\C1M1512XXX\C1M1512036-CHAMBER.EM6 (24)



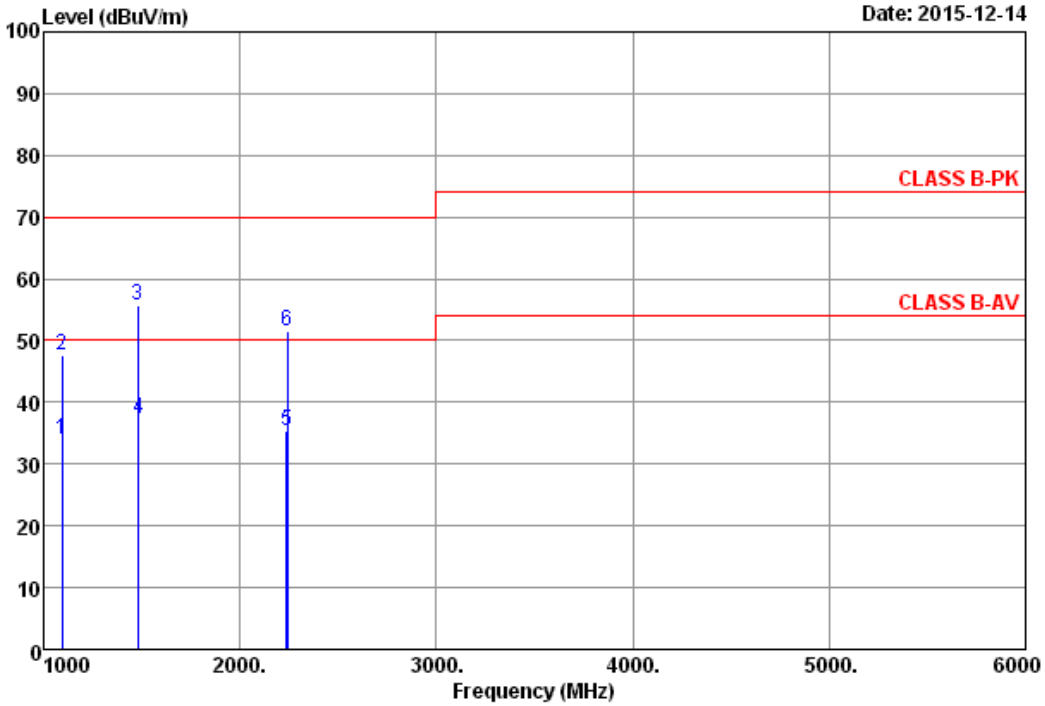
Site no. : Audix No.2 Chamber Data no. : 12
Dis. / Ant. : 3m HORN3115-3775 Ant. pol. : HORIZONTAL
Limit : CLASS B-PK
Env. / Ins. : 29*C / 53% N9010A (076) Engineer : EDWARD
EUT : E2275SWJ
Power Rating : 230Vac/50Hz
Test Mode : 1920*1080/60Hz HDMI

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	PREAMP Gain (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	
1	1480.00	25.88	5.75	35.82	57.45	53.26	70.00	16.74	Peak
2	1482.87	25.88	5.77	35.82	43.72	39.55	50.00	10.45	Average
3	1670.00	26.79	6.36	35.60	51.51	49.06	70.00	20.94	Peak
4	1673.72	26.81	6.38	35.59	37.63	35.23	50.00	14.77	Average
5	2240.00	28.50	7.69	35.17	46.21	47.23	70.00	22.77	Peak
6	2243.46	28.51	7.69	35.17	36.37	37.40	50.00	12.60	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Preamp Gain + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

AUDIX Technology Corp. EMC Department
No.53-11, Dingfu, Linkou Dist., New Taipei City,
244 Taiwan R.O.C.
Tel: +886-2-26092133 Fax: +886-2-26099303
Email: emc@audixtech.com

Data: 11 File: D:\Test data\REPORT\2015\C1M1512XXX\C1M1512036-CHAMBER.EM6 (24)



Site no. : Audix No.2 Chamber Data no. : 11
Dis. / Ant. : 3m HORN3115-3775 Ant. pol. : VERTICAL
Limit : CLASS B-PK
Env. / Ins. : 29*C / 53% N9010A (076) Engineer : EDWARD
EUT : E2275SWJ
Power Rating : 230Vac/50Hz
Test Mode : 1920*1080/60Hz HDMI

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	PREAMP Gain (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	
1	1092.55	25.36	4.60	36.63	40.66	33.99	50.00	16.01	Average
2	1095.00	25.36	4.61	36.63	54.17	47.51	70.00	22.49	Peak
3	1480.00	25.88	5.75	35.82	59.93	55.74	70.00	14.26	Peak
4	1483.12	25.88	5.77	35.82	41.57	37.40	50.00	12.60	Average
5	2238.46	28.50	7.69	35.17	34.36	35.38	50.00	14.62	Average
6	2240.00	28.50	7.69	35.17	50.54	51.56	70.00	18.44	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Preamp Gain + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

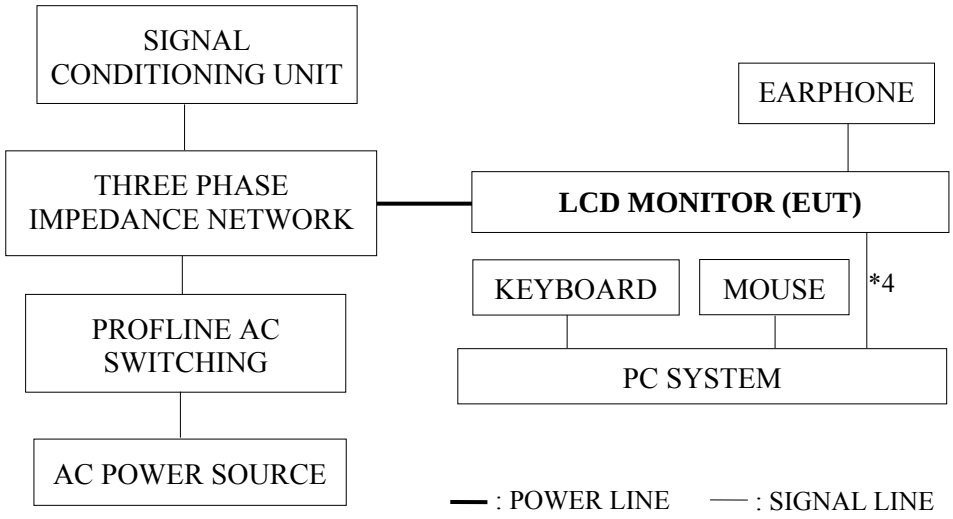
POWER HARMONIC & FLICKER MEASUREMENT

6.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	AC Power Source	TESEQ	NSG 1007-45	1248A04038	2014. 01. 17	2 Years
2.	Signal Conditioning Unit	TESEQ	CCN 1000-3	1234A03680	2014. 01. 17	2 Years
3.	Three Phase Impedance Network	TESEQ	INA 2197	1234A03681	2014. 01. 17	2 Years
4.	Profline AC Switching Unit	TESEQ	NSG 2200-3	EK 22713	2014. 01. 17	2 Years

6.2. Block Diagram of Test Setup

6.2.1. Block Diagram of connection between EUT and simulators



6.3. Test Standard

EN 61000-3-2:2014 and EN 61000-3-3:2013

6.4. Operating Condition of EUT

Same as conducted measurement which is listed in 4.4.
except the test set up replaced by section 6.2.

6.5. Test Results

PASSED. (Complied with Class D limit)

The EUT with following test mode was performed during this section testing and all the test results are listed in next pages.

The details of test modes are as follows：

Mode	Test Model	Input Port	Panel Angle	Display, Resolution/Frequency
1	E2275PWJ	HDMI	0°	"H" Pattern, 1920*1080/60Hz
2	E2275SWJ	HDMI	0°	"H" Pattern, 1920*1080/60Hz

Remark: Due to the maximum r.m.s input current (including inrush current) dose not exceed 20A, and the supply current after inrush is within a variation band of 1.5A, it's not applicable to test the manual switching.

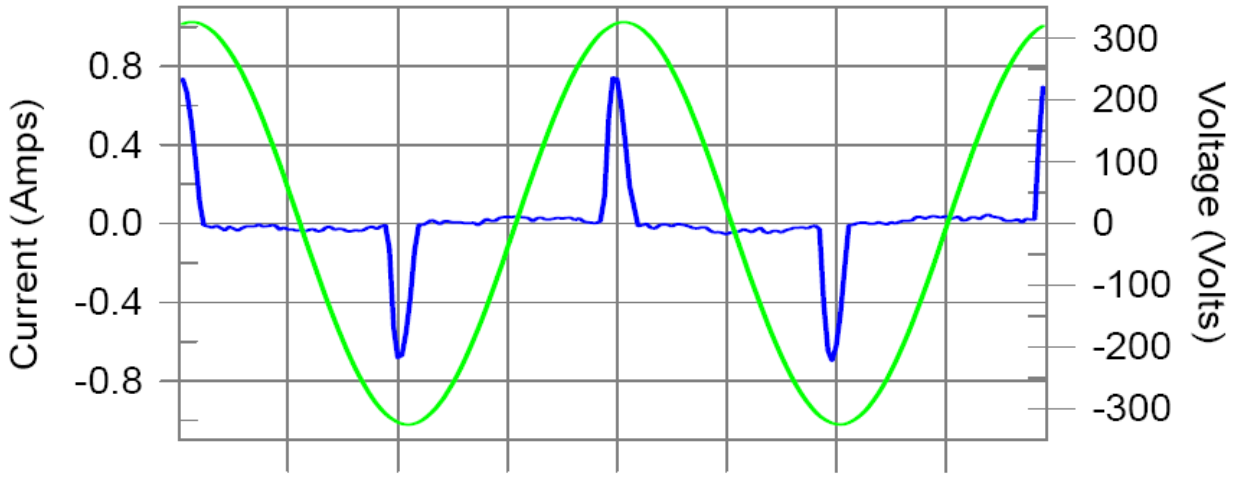
Test Model: E2275PWJ

Harmonics – Class-D per Ed. 4.0 (2014)(Run time)

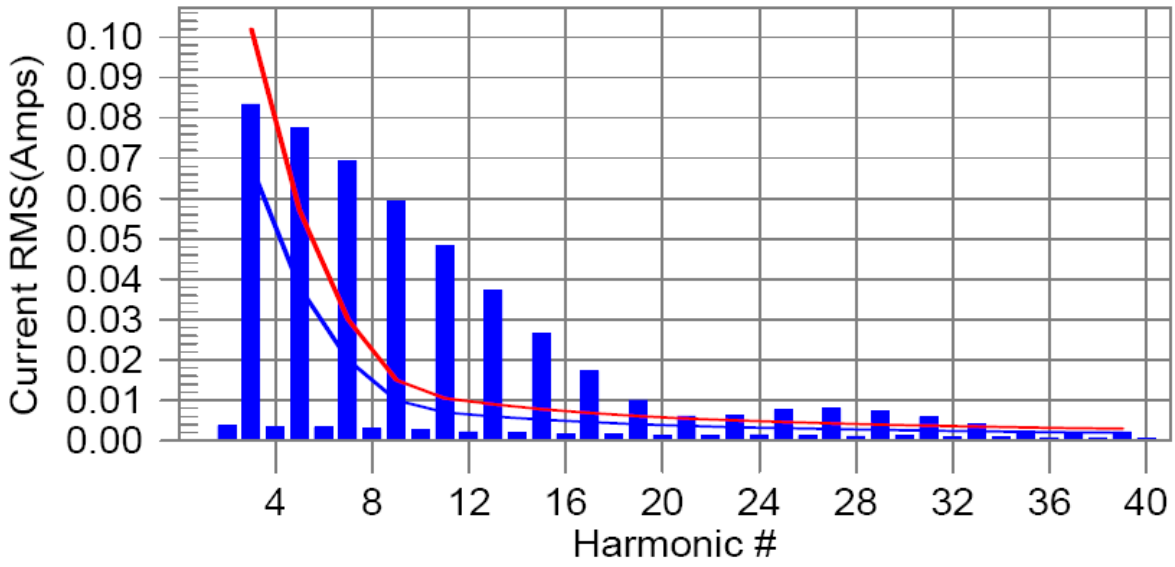
EUT: E2275PWJ
Tested by: Minxaing Yang
Test category: Class-D per Ed. 4.0 (2014) (European limits)
Test Margin: 100
Test date: 2015/12/15
Test duration (min): 2.5
Data file name: CTSMXL_H-000175.cts_data
Comment: 1920*1080/60Hz(HDMI)

Test Result: N/L
Source qualification: Normal

Current & voltage waveforms



Harmonics and Class D limit line
European Limits



Test result: N/L
Worst harmonic was #11 with 465.0% of the limit.

Current Test Result Summary (Run time)

EUT:E2275PWJ — **Tested by:** Minxaing Yang
Test category: Class-D per Ed. 4.0 (2014) (European limits) — **Test Margin:** 100
Test date: 2015/12/15
Test duration (min): 2.5 — **Data file name:** CTSMXL_H-000175.cts_data
Comment: 1920*1080/60Hz(HDMI)

Test Result: N/L — **Source qualification:** Normal
THC(A): 0.000 — I-THD(%): 0.0 — POHC(A): 0.000 — POHC Limit(A): 0.000

Highest parameter values during test:

V_RMS (Volts):	230.160	Frequency(Hz):	50.00
I_Peak (Amps):	0.767	I_RMS (Amps):	0.188
I_Fund (Amps):	0.091	Crest Factor:	4.102
Power (Watts):	20.0	Power Factor:	0.466

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.004	0.000	N/A	0.004	0.000	N/A	Pass
3	0.083	0.068	N/A	0.084	0.102	N/A	Pass
4	0.004	0.000	N/A	0.004	0.000	N/A	Pass
5	0.078	0.038	N/A	0.078	0.057	N/A	Pass
6	0.003	0.000	N/A	0.004	0.000	N/A	Pass
7	0.069	0.020	N/A	0.070	0.030	N/A	Pass
8	0.003	0.000	N/A	0.003	0.000	N/A	Pass
9	0.059	0.010	N/A	0.060	0.015	N/A	Pass
10	0.003	0.000	N/A	0.003	0.000	N/A	Pass
11	0.048	0.007	N/A	0.049	0.011	N/A	Pass
12	0.002	0.000	N/A	0.002	0.000	N/A	Pass
13	0.037	0.006	N/A	0.038	0.009	N/A	Pass
14	0.002	0.000	N/A	0.002	0.000	N/A	Pass
15	0.027	0.005	N/A	0.027	0.008	N/A	Pass
16	0.002	0.000	N/A	0.002	0.000	N/A	Pass
17	0.017	0.005	N/A	0.018	0.007	N/A	Pass
18	0.002	0.000	N/A	0.002	0.000	N/A	Pass
19	0.010	0.004	N/A	0.011	0.006	N/A	Pass
20	0.001	0.000	N/A	0.002	0.000	N/A	Pass
21	0.006	0.004	N/A	0.006	0.005	N/A	Pass
22	0.001	0.000	N/A	0.002	0.000	N/A	Pass
23	0.006	0.003	N/A	0.006	0.005	N/A	Pass
24	0.001	0.000	N/A	0.003	0.000	N/A	Pass
25	0.008	0.003	N/A	0.008	0.005	N/A	Pass
26	0.001	0.000	N/A	0.002	0.000	N/A	Pass
27	0.008	0.003	N/A	0.009	0.004	N/A	Pass
28	0.001	0.000	N/A	0.002	0.000	N/A	Pass
29	0.007	0.003	N/A	0.008	0.004	N/A	Pass
30	0.001	0.000	N/A	0.003	0.000	N/A	Pass
31	0.006	0.002	N/A	0.006	0.004	N/A	Pass
32	0.001	0.000	N/A	0.001	0.000	N/A	Pass
33	0.004	0.002	N/A	0.005	0.003	N/A	Pass
34	0.001	0.000	N/A	0.001	0.000	N/A	Pass
35	0.002	0.002	N/A	0.003	0.003	N/A	Pass
36	0.001	0.000	N/A	0.001	0.000	N/A	Pass
37	0.002	0.002	N/A	0.002	0.003	N/A	Pass
38	0.001	0.000	N/A	0.001	0.000	N/A	Pass
39	0.002	0.002	N/A	0.002	0.003	N/A	Pass
40	0.001	0.000	N/A	0.001	0.000	N/A	Pass

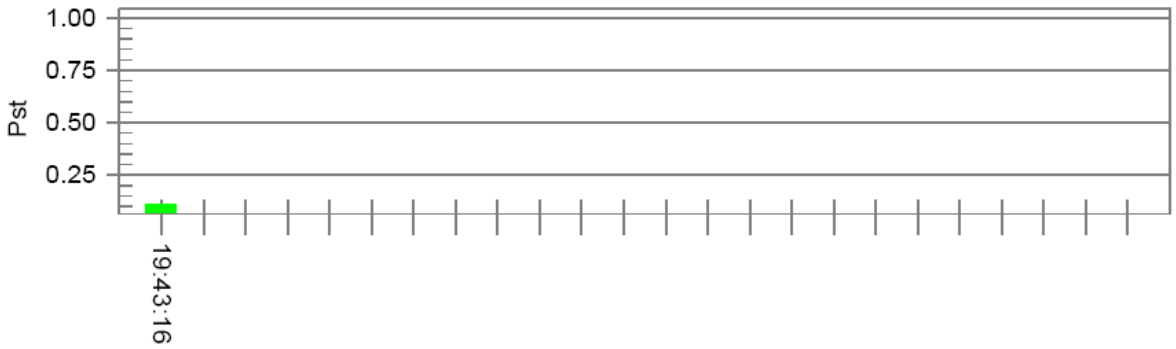
Note: The EUT power level is below 75.0 Watts and therefore has no defined limits

Flicker Test Summary per EN/IEC61000-3-3 Ed. 3.0 (2013) (Run time)

EUT: E2275PWJ **Tested by:** Minxaing Yang
Test category: dt,dmax,dc and Pst (European limits) **Test Margin:** 100
Test date: 2015/12/15
Test duration (min): 10 **Data file name:** CTSMXL_F-000176.cts_data
Comment: 1920*1080/60Hz(HDMI)

Test Result: Pass **Status:** Test Completed

Pst_i and limit line **European Limits**



Plt and limit line

Parameter values recorded during the test:

Vrms at the end of test (Volt):	230.08			
Highest dt (%):	0.00	Test limit (%):	N/A	N/A
T-max (mS):	0.0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.04	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.108	Test limit:	1.000	Pass

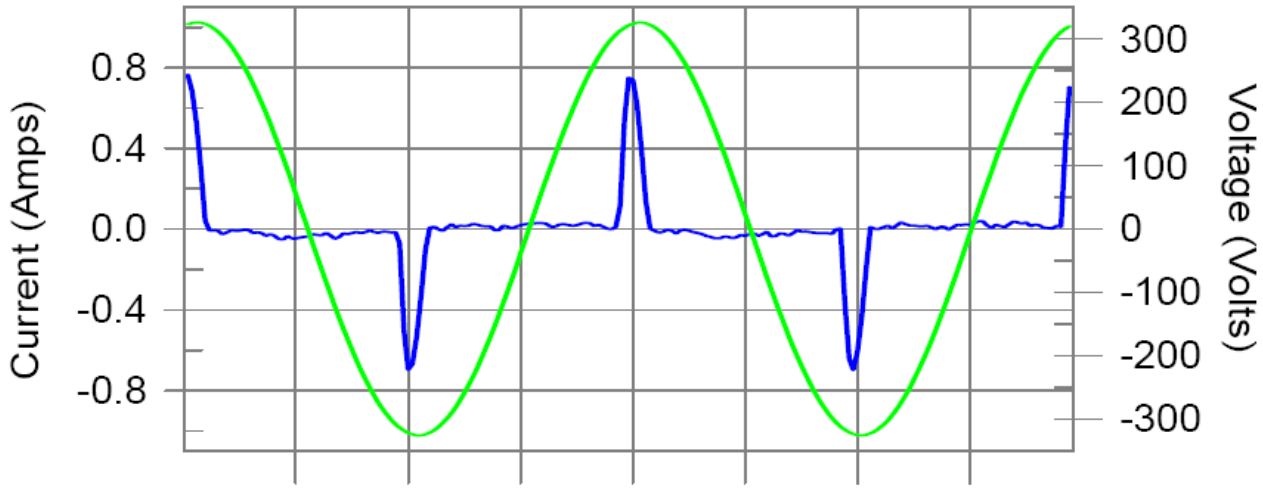
Test Model: E2275SWJ

Harmonics – Class-D per Ed. 4.0 (2014)(Run time)

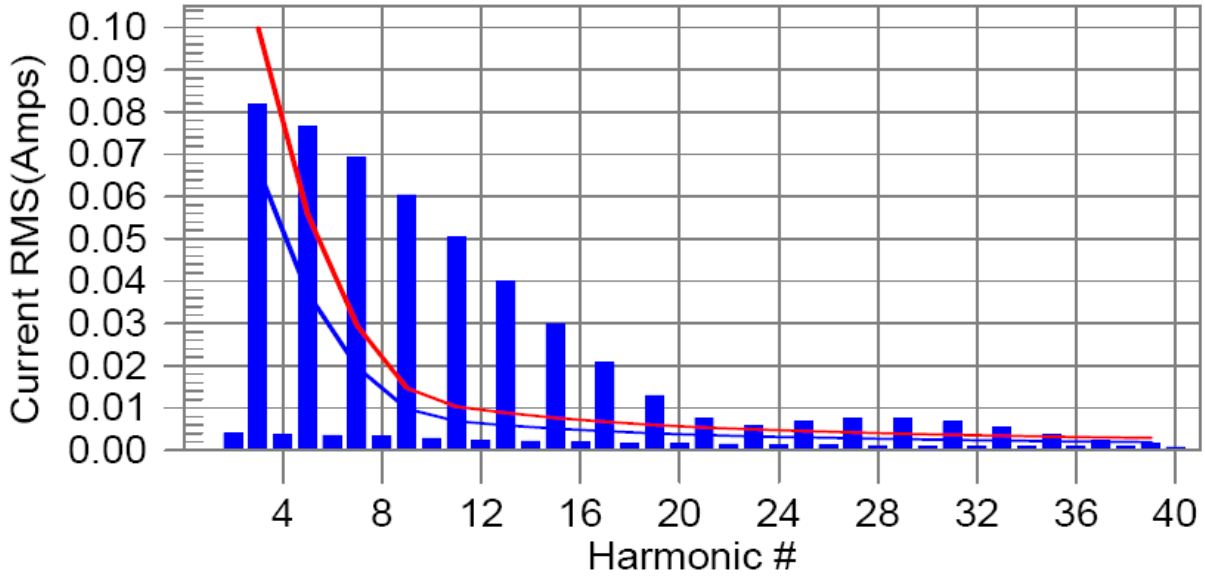
EUT: E2275SWJ
Tested by: Minxaing Yang
Test category: Class-D per Ed. 4.0 (2014) (European limits)
Test Margin: 100
Test date: 2015/12/15
Test duration (min): 2.5
Data file name: CTSMXL_H-000181.cts_data
Comment: 1920*1080/60Hz(HDMI)

Test Result: N/L **Source qualification: Normal**

Current & voltage waveforms



Harmonics and Class D limit line **European Limits**



Test result: N/L Worst harmonic was #11 with 490.4% of the limit.

Current Test Result Summary (Run time)

EUT: E2275SWJ — **Tested by:** Minxaing Yang
Test category: Class-D per Ed. 4.0 (2014) (European limits) — **Test Margin:** 100
Test date: 2015/12/15
Test duration (min): 2.5 — **Data file name:** CTSMXL_H-000181.cts_data
Comment: 1920*1080/60Hz(HDMI)

Test Result: N/L — **Source qualification:** Normal
THC(A): 0.000 — I-THD(%): 0.0 — POHC(A): 0.000 — POHC Limit(A): 0.000

Highest parameter values during test:

V_RMS (Volts):	230.158	Frequency(Hz):	50.00
I_Peak (Amps):	0.790	I_RMS (Amps):	0.188
I_Fund (Amps):	0.089	Crest Factor:	4.219
Power (Watts):	19.6	Power Factor:	0.454

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.004	0.000	N/A	0.006	0.000	N/A	Pass
3	0.082	0.067	N/A	0.082	0.100	N/A	Pass
4	0.004	0.000	N/A	0.006	0.000	N/A	Pass
5	0.077	0.037	N/A	0.077	0.056	N/A	Pass
6	0.004	0.000	N/A	0.005	0.000	N/A	Pass
7	0.069	0.020	N/A	0.070	0.029	N/A	Pass
8	0.003	0.000	N/A	0.006	0.000	N/A	Pass
9	0.060	0.010	N/A	0.061	0.015	N/A	Pass
10	0.003	0.000	N/A	0.004	0.000	N/A	Pass
11	0.050	0.007	N/A	0.050	0.010	N/A	Pass
12	0.002	0.000	N/A	0.003	0.000	N/A	Pass
13	0.040	0.006	N/A	0.040	0.009	N/A	Pass
14	0.002	0.000	N/A	0.002	0.000	N/A	Pass
15	0.030	0.005	N/A	0.030	0.008	N/A	Pass
16	0.002	0.000	N/A	0.002	0.000	N/A	Pass
17	0.021	0.005	N/A	0.021	0.007	N/A	Pass
18	0.002	0.000	N/A	0.002	0.000	N/A	Pass
19	0.013	0.004	N/A	0.013	0.006	N/A	Pass
20	0.002	0.000	N/A	0.002	0.000	N/A	Pass
21	0.008	0.004	N/A	0.008	0.005	N/A	Pass
22	0.001	0.000	N/A	0.002	0.000	N/A	Pass
23	0.006	0.003	N/A	0.006	0.005	N/A	Pass
24	0.001	0.000	N/A	0.001	0.000	N/A	Pass
25	0.007	0.003	N/A	0.007	0.005	N/A	Pass
26	0.001	0.000	N/A	0.001	0.000	N/A	Pass
27	0.008	0.003	N/A	0.008	0.004	N/A	Pass
28	0.001	0.000	N/A	0.001	0.000	N/A	Pass
29	0.008	0.003	N/A	0.008	0.004	N/A	Pass
30	0.001	0.000	N/A	0.001	0.000	N/A	Pass
31	0.007	0.002	N/A	0.007	0.004	N/A	Pass
32	0.001	0.000	N/A	0.001	0.000	N/A	Pass
33	0.005	0.002	N/A	0.005	0.003	N/A	Pass
34	0.001	0.000	N/A	0.001	0.000	N/A	Pass
35	0.004	0.002	N/A	0.004	0.003	N/A	Pass
36	0.001	0.000	N/A	0.001	0.000	N/A	Pass
37	0.002	0.002	N/A	0.002	0.003	N/A	Pass
38	0.001	0.000	N/A	0.001	0.000	N/A	Pass
39	0.002	0.002	N/A	0.002	0.003	N/A	Pass
40	0.001	0.000	N/A	0.001	0.000	N/A	Pass

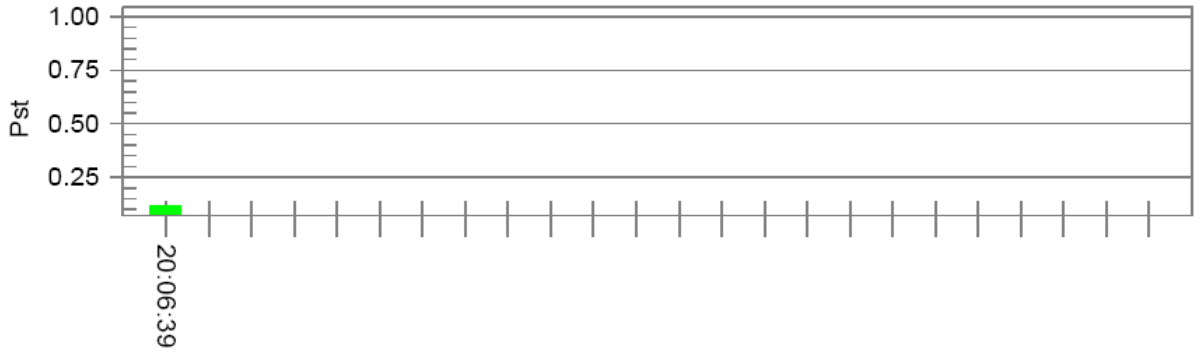
Note: The EUT power level is below 75.0 Watts and therefore has no defined limits

Flicker Test Summary per EN/IEC61000-3-3 Ed. 3.0 (2013) (Run time)

EUT: E2275SWJ
Tested by: Minxaing Yang
Test category: dt,dmax,dc and Pst (European limits)
Test Margin: 100
Test date: 2015/12/15
Test duration (min): 10
Data file name: CTSMXL_F-000179.cts_data
Comment: 1920*1080/60Hz(HDMI)

Test Result: Pass
Status: Test Completed

Pst_i and limit line **European Limits**



Plt and limit line

Parameter values recorded during the test:

Vrms at the end of test (Volt):	230.07			
Highest dt (%):	0.00	Test limit (%):	N/A	N/A
T-max (mS):	0.0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.04	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.115	Test limit:	1.000	Pass

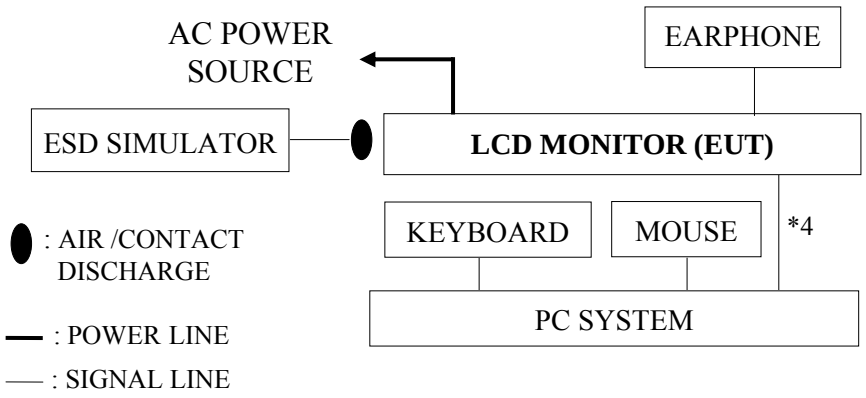
7. ELECTROSTATIC DISCHARGE IMMUNITY TEST

7.1. Test Equipment

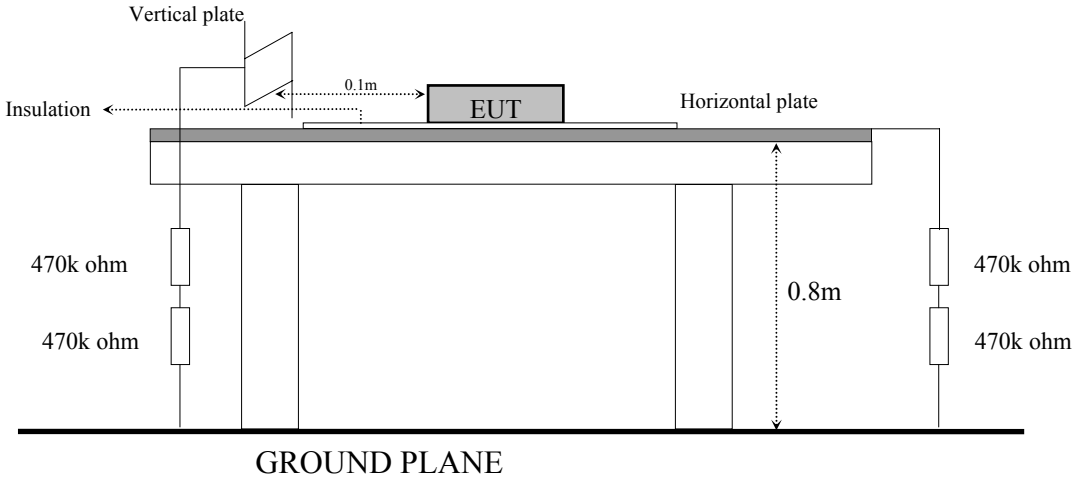
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	ESD Simulator	EM TEST	dito	V0503100055	2015. 03. 24	1 Year

7.2. Block Diagram of Test Setup

7.2.1. Block Diagram of connection between EUT and simulators



7.2.2. Test Setup Diagram



7.3. Test Standard

EN 55024:2010
【IEC 61000-4-2: 2008, Severity Level：Contact: ±4kV, Air: ±8kV】

7.4. Severity Levels and Performance Criterion

7.4.1. Severity level

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

7.4.2. Performance criterion：**B**

7.5. Operating Condition of EUT

Same as conducted disturbance measurement which is listed in 4.4 except the test set up replaced by section 7.2.

7.6. Test Procedure

7.6.1. Air Discharge：

This test is done on a non-conductive surfaces. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the ESD generator discharge electrode shall be removed from the EUT. The generator is then retrigged for a new single discharge and repeated 10 discharges each at positive and negative polarity for each preselected test point. This procedure shall be repeated until all the air discharge completed.

7.6.2. Contact Discharge：

All the procedure shall be same as 7.6.1. except that the tip of the discharge electrode shall touch the EUT conductive surfaces & repeated 25 discharges each at positive and negative polarity for each test point before the discharge switch is operated.

7.6.3. Indirect discharge for horizontal coupling plane

At least 25 discharges each at positive and negative polarity shall be applied to the horizontal coupling plane, at points on each side of the EUT. The ESD generator positions vertically at a distance of 0.1m from the EUT and with the discharge electrode touching the coupling plane.

7.6.4. Indirect discharge for vertical coupling plane

At least 25 discharges each at positive and negative polarity 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.

7.6.5. For above tests, the voltage was increased from the minimum to the selected test level.

7.7. Test Results

PASSED. (Complied with Criterion A)

The EUT with following test mode was performed during this section testing and all the test results are listed in next page.

The details of test modes are as follows：

Mode	Test Model	Input Port	Panel Angle	Display, Resolution/Frequency
1	E2275PWJ	HDMI	0°	“H” Pattern, 1920*1080/60Hz
2	E2275SWJ	HDMI	0°	“H” Pattern, 1920*1080/60Hz

Electrostatic Discharge Immunity Test Results

AUDIX TECHNOLOGY CORPORATION

Applicant： Taiwan BOE Vision-electronic	Test Date： 2015. 12. 15
EUT： LCD Monitor, M/N E2275PWJ	Temperature： 20 ℃
Power Supply： AC 230V, 50Hz	Humidity： 51 %
Working Condition： See Section 4.4.	Atmospheric pressure： 99 kPa
Engineer： Gary Lin	Test Mode: See Section 7.7., Mode 1

Air Discharge	**Voltage kV Level / Discharge per polarity 10 / Result: Pass**						
Test Location	+2	-2	+4	-4	+8	-8	**Comments**
Screen(1~4)	ND	ND	ND	ND	A	A	
Seam(5~8)	ND	ND	ND	ND	ND	ND	
LED(9)	ND	ND	ND	ND	ND	ND	
Button(10~14)	ND	ND	ND	ND	ND	ND	
AC IN(15)	ND	ND	ND	ND	ND	ND	
HDMI(16)	ND	ND	ND	ND	A	A	
DVI(17)	ND	ND	ND	ND	A	A	
D-Sub(18)	ND	ND	ND	ND	A	A	
Audio In(19)	ND	ND	ND	ND	A	A	
EAR(20)	ND	ND	ND	ND	A	A	
Switch(21)	ND	ND	ND	ND	ND	ND	
Contact Discharge	**Voltage kV Level / Discharge per polarity 25 / Result: Pass**						
Test Location	+2	-2	+4	-4			**Comments**
Screw(22)	A	A	A	A			
Metal(23)	A	A	A	A			
Indirect Contact	**Voltage kV Level / Discharge per polarity 25 / Result: Pass**						
Test Location	+2	-2	+4	-4			**Comments**
VCP Front	A	A	A	A			
VCP Right	A	A	A	A			
VCP Left	A	A	A	A			
VCP Back	A	A	A	A			
HCP Bottom	A	A	A	A			
Additional Notes							
Measurement Points	**Please refer to the Photos of ESD Test Points**						

ND=No Discharge: Meets criteria but unable to obtain an electrostatic discharge (ESD) at this test point.

Electrostatic Discharge Immunity Test Results

AUDIX TECHNOLOGY CORPORATION

Applicant： Taiwan BOE Vision-electronic	Test Date： 2015. 12. 15
EUT： LCD Monitor, M/N E2275SWJ	Temperature： 20 ℃
Power Supply： AC 230V, 50Hz	Humidity： 51 %
Working Condition： See Section 4.4.	Atmospheric pressure： 99 kPa
Engineer： Gary Lin	Test Mode: See Section 7.7., Mode 2

Air Discharge	**Voltage kV Level / Discharge per polarity 10 / Result: Pass**						
Test Location	+2	-2	+4	-4	+8	-8	**Comments**
Screen(1~4)	ND	ND	ND	ND	A	A	**Note**
Seam(5~8)	ND	ND	ND	ND	ND	ND	
LED(9)	ND	ND	ND	ND	ND	ND	
Button(10~14)	ND	ND	ND	ND	ND	ND	
AC IN(15)	ND	ND	ND	ND	ND	ND	
HDMI(16)	ND	ND	ND	ND	A	A	
DVI(17)	ND	ND	ND	ND	A	A	
D-Sub(18)	ND	ND	ND	ND	A	A	
Audio In(19)	ND	ND	ND	ND	A	A	
EAR(20)	ND	ND	ND	ND	A	A	
Contact Discharge	**Voltage kV Level / Discharge per polarity 25 / Result: Pass**						
Test Location	+2	-2	+4	-4			**Comments**
Screw(21)	A	A	A	A			
Metal(22)	A	A	A	A			
Indirect Contact	**Voltage kV Level / Discharge per polarity 25 / Result: Pass**						
Test Location	+2	-2	+4	-4			**Comments**
VCP Front	A	A	A	A			
VCP Right	A	A	A	A			
VCP Left	A	A	A	A			
VCP Back	A	A	A	A			
HCP Bottom	A	A	A	A			
Additional Notes							
Measurement Points	**Please refer to the Photos of ESD Test Points**						

ND=No Discharge: Meets criteria but unable to obtain an electrostatic discharge (ESD) at this test point.

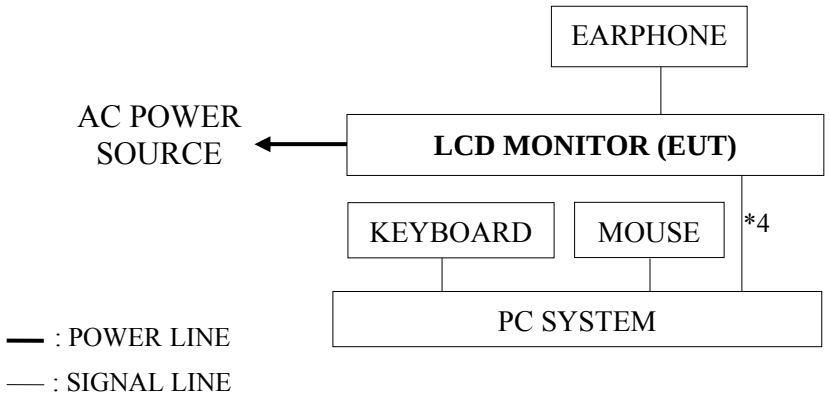
8. RF FIELD STRENGTH IMMUNITY TEST

8.1. Test Equipment

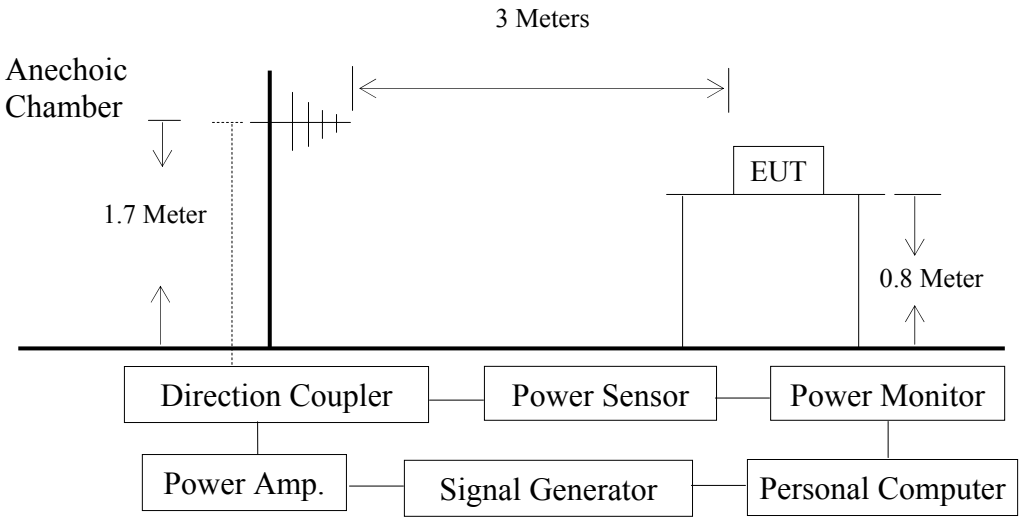
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Signal Generator	R & S	SML03	103251	2014. 12. 30	1 Year
2.	Power Amplifier	A/R	250W1000A	0329092	N.C.R.	N.C.R.
3.	Power Sensor	Agilent	E9327A	US40441766	2015. 01. 21	1 Year
4.	Power Monitor	A & R	E4417A	GB41291797	2015. 01. 21	1 Year
5.	Power Antenna	A & R	AT1080	13002	N.C.R.	N.C.R.
6.	Direction Coupler	A & R	DC6180	19323	2015. 04. 24	1 Year

8.2. Block Diagram of Test Setup

8.2.1. Block Diagram of connection between EUT and simulators



8.2.2. R/S Test Setup



8.3. Test Standard

EN 55024:2010
【IEC 61000-4-3:2010, Severity Level：2, 3V/m】

8.4. Severity Levels and Performance Criterion

8.4.1. Severity level

Level	Field Strength V/m
1.	1
2.	3
3.	10
X	Special

8.4.2. Performance criterion：**A**

8.5. Operating Condition of EUT

Same as conducted disturbance measurement which is listed in 4.4 except the test set up replaced by section 8.2.

8.6. Test Procedure

The field sensor is placed on the EUT table (0.8 meter above the ground) which is 3 meters away from the transmitting antenna. Through the signal generator, power amplifier and transmitting antenna to produce a uniformity field strength (3V/m measured by field sensor) around the EUT table from frequency range 80 - 1000 MHz and records the signal generator's output level at the same time for whole measured frequency range. Then, put EUT and its simulators on the EUT turn table and keep them 3 meters away from the transmitting antenna which is mounted on an antenna tower and fixes at 1.7 meter (for 80 - 1000MHz) height above the ground. Using the recorded signal generator's output level to measure the EUT from frequency range 80 - 1000 MHz and both horizontal & vertical polarization of antenna must be set and measured. Each of the four sides of EUT must be faced this transmitting antenna and measures individually.

A CCD camera was put inside the chamber and through its display to monitor the EUT operational situation to judge the EUT Compliance criterion during measurement.

All the scanning conditions are as follows：

Condition of Test	Remarks
1. Field Strength	3 V/m (r.m.s, Unmodulated, Severity Level 2)
2. Amplitude Modulated	1kHz, 80%AM
3. Scanning Frequency	80 - 1000 MHz
4. Step Size	1% increments
5. The Rate of Sweep	0.0015 decade/s
6. Dwell Time	3 Sec.

8.7. Test Results

PASSED. (Complied with Criterion A)

The EUT with following test mode was measured during this section testing and all the test results are listed in next page.

The details of test modes are as follows：

Mode	Test Model	Input Port	Panel Angle	Display, Resolution/Frequency
1	E2275PWJ	HDMI	0°	"H" Pattern, 1920*1080/60Hz
2	E2275SWJ	HDMI	0°	"H" Pattern, 1920*1080/60Hz

RF Field Strength Immunity Test Results

AUDIX TECHNOLOGY CORPORATION

Applicant： Taiwan BOE Vision-electronic	Test Date： 2015. 12. 15
EUT： LCD Monitor, M/N (1)E2275SWJ (2)E2275PWJ	Temperature： 21 ℃
Power Supply： AC 230V, 50Hz	Humidity： 49 %
Working Condition： See Section 4.4.	Test Mode: See Section 8.7.
Engineer： James Shen	

Frequency Range (MHz)	Position (Angle)	Polarity (H or V)	Field Strength (V/m)	Results & Performance Criterion
80 ~ 1000	0°	H	3V/m+Modulated	**Pass, A**
80 ~ 1000	90°	H	3V/m+Modulated	**Pass, A**
80 ~ 1000	180°	H	3V/m+Modulated	**Pass, A**
80 ~ 1000	270°	H	3V/m+Modulated	**Pass, A**
80 ~ 1000	0°	V	3V/m+Modulated	**Pass, A**
80 ~ 1000	90°	V	3V/m+Modulated	**Pass, A**
80 ~ 1000	180°	V	3V/m+Modulated	**Pass, A**
80 ~ 1000	270°	V	3V/m+Modulated	**Pass, A**

Remark: Modulation Signal:1kHz 80% AM.

9. ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

9.1. Test Equipment

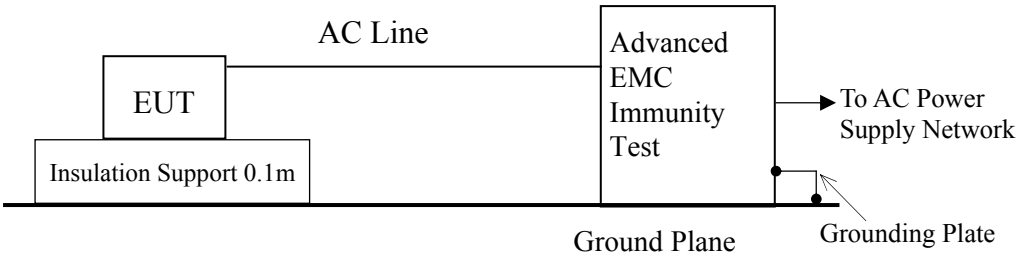
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Advanced EMC Immunity Test System	Keytek	EMCPro Plus	1005199	2015. 09. 08	1 Year

9.2. Block Diagram of Test Setup

9.2.1. Block Diagram of connection between EUT and simulators.

Same as Section 8.2.1.

9.2.2. EFT Test Setup



9.3. Test Standard

EN 55024:2010
【IEC 61000-4-4:2012, Power Line-±1kV; Signal Line-±0.5kV, Repetition : 5kHz】

9.4. Severity Levels and Performance Criterion

9.4.1. Severity levels

Open circuit output test voltage and repetition rate of the impulses				
Level	On power port, PE		On I/O (input/output) signal, data and control ports	
	Voltage peak kV	Repetition rate kHz	Voltage peak kV	Repetition rate kHz
1.	0.5	5 or 100	0.25	5 or 100
2.	1	5 or 100	0.5	5 or 100
3.	2	5 or 100	1	5 or 100
4.	4	5 or 100	2	5 or 100
X[a]	Special	Special	Special	Special
Note 1 : Use of 5kHz repetition rates is traditional; however, 100kHz is closer to reality. Product committees should determine which frequencies are relevant for specific products or product types. Note 2 : With some products, there may be no clear distinction between power ports and I/O ports, in which case it is up to product committees to make this determination for test purposes.				
[a] "X" is an open level. The level has to be specified in the dedicated equipment specification.				

9.4.2. Performance criterion：**B**

9.5. Operating Condition of EUT

Same as conducted disturbance measurement which is listed in 4.4 except the test set up replaced by section 9.2.

9.6. Test Procedure

The EUT and its simulators and all cables were placed 0.1m high above the ground reference plane which was a min. 1m*1m metallic sheet with 0.65mm minimum thickness. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

9.6.1. For input and output AC power ports：

The EUT was connected to the power mains by using a coupling device which couples the EFT interference signal to AC power lines, and the length of the power line between the coupling device and the EUT shall be 0.5m or less . Both polarities of the test voltage should be applied during compliance test and the duration of the test can‘t less than 1min.

9.6.2. For signal lines and control lines ports：

The interface cables‘ length is less than 3m, therefore, it’s unnecessary to measure.

9.6.3. For DC input and DC output power ports：

No DC ports. It’s unnecessary to measure.

9.7. Test Results

PASSED. (Complied with Criterion A)

The EUT with following test mode was measured during this section testing and all the test results are listed in next page.

The details of test modes are as follows：

Mode	Test Model	Input Port	Panel Angle	Display, Resolution/Frequency
1	E2275PWJ	HDMI	0°	“H” Pattern, 1920*1080/60Hz
2	E2275SWJ	HDMI	0°	“H” Pattern, 1920*1080/60Hz

Electrical Fast Transient/Burst Immunity Test Results

AUDIX TECHNOLOGY CORPORATION

Applicant： Taiwan BOE Vision-electronic	Test Date： 2015. 12. 15
EUT： LCD Monitor, M/N (1)E2275SWJ (2)E2275PWJ	Temperature： 21 ℃
Power Supply： AC 230V, 50Hz	Humidity： 49 %
Working Condition： See Section 4.4.	Test Mode: See Section 9.7.
Engineer： James Shen	

Inject Place: Power Supply Line					Inject Place : I/O Cable				
Inject Line	Voltage kV	Inject Time(s)	Inject Method	Results & Criterion	Inject Line	Voltage kV	Inject Time(s)	Inject Method	Results
L	+0.5, 1	60	Direct	**Pass, A**					
L	−0.5, 1	60	Direct	**Pass, A**					
N	+0.5, 1	60	Direct	**Pass, A**					
N	−0.5, 1	60	Direct	**Pass, A**					
PE	+0.5, 1	60	Direct	**Pass, A**					
PE	−0.5, 1	60	Direct	**Pass, A**					
L ,N, PE	+0.5, 1	60	Direct	**Pass, A**					
L, N, PE	−0.5, 1	60	Direct	**Pass, A**					

Remark: No error occurred.

10. SURGE IMMUNITY TEST

10.1. Test Equipment

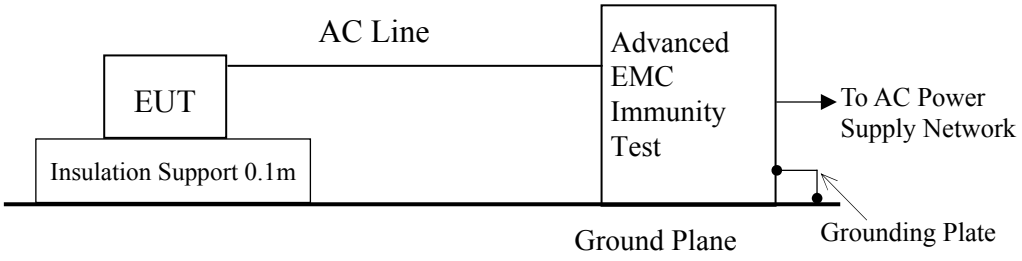
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Advanced EMC Immunity Test System	Keytek	EMCPro Plus	1005199	2015. 09. 08	1 Year

10.2. Block Diagram of Test Setup

10.2.1. Block Diagram of connection between EUT and simulators.

Same as Section 8.2.1.

10.2.2. Test Setup



10.3. Test Standard

EN 55024:2010
【IEC 61000-4-5:2014,
Test Level：line to earth - ± 2kV, line to line - ± 1kV, 1.2/50 (8/20) Tr/Thμs.】

10.4. Severity Levels and Performance Criterion

10.4.1. Test Levels

Level	Open-circuit test Voltage +/- 10%, kV
1.	0.5
2.	1.0
3.	2.0
4.	4.0
X	Special

10.4.2. Performance Criterion：**B**

10.5. Operating Condition of EUT

Same as conducted disturbance measurement which is listed in 4.4 except the test set up replaced by section 10.2.

10.6. Test Procedure

10.6.1. Set up the EUT and test generator as shown on section 10.2.

10.6.2. For line to line coupling mode, provided a 0.5/1kV 1.2/50 μs current surge (at open-circuit condition) and 8/20 μs current surge to EUT selected points.

10.6.3. At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate were conducted during test.

10.6.4. Different phase angles were done individually.

10.6.5. Repeat procedure 10.6.2. to 10.6.4. except the open-circuit test voltages 0.5kV/1kV/2kV for line to earth coupling mode test.

10.6.6. Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

10.7. Test Results

PASSED. (Complied with Criterion A)

The EUT with following test mode was measured during this section testing and all the test results are listed in next page.

The details of test modes are as follows

Mode	Test Model	Input Port	Panel Angle	Display, Resolution/Frequency
1	E2275PWJ	HDMI	0°	"H" Pattern, 1920*1080/60Hz
2	E2275SWJ	HDMI	0°	"H" Pattern, 1920*1080/60Hz

Surge Immunity Test Results

AUDIX TECHNOLOGY CORPORATION

Applicant： Taiwan BOE Vision-electronic	Test Date： 2015. 12. 15
EUT： LCD Monitor, M/N (1)E2275SWJ (2)E2275PWJ	Temperature： 21 ℃
Power Supply： AC 230V, 50Hz	Humidity： 49 %
Working Condition： See Section 4.4.	Test Mode: See Section 10.7.
Engineer： James Shen	

Input And Output AC Power Port

Location	Polarity	Phase Angle	No of Pulse	Pulse Voltage (kV)	Results & Performance Criterion
L-N	+	0	5	0.5kV, 1.0kV	**Pass, A**
	+	90	5	0.5kV, 1.0kV	**Pass, A**
	+	180	5	0.5kV, 1.0kV	**Pass, A**
	+	270	5	0.5kV, 1.0kV	**Pass, A**
	-	0	5	0.5kV, 1.0kV	**Pass, A**
	-	90	5	0.5kV, 1.0kV	**Pass, A**
	-	180	5	0.5kV, 1.0kV	**Pass, A**
	-	270	5	0.5kV, 1.0kV	**Pass, A**
L-PE	+	0	5	0.5kV, 1.0kV, 2.0kV	**Pass, A**
	+	90	5	0.5kV, 1.0kV, 2.0kV	**Pass, A**
	+	180	5	0.5kV, 1.0kV, 2.0kV	**Pass, A**
	+	270	5	0.5kV, 1.0kV, 2.0kV	**Pass, A**
	-	0	5	0.5kV, 1.0kV, 2.0kV	**Pass, A**
	-	90	5	0.5kV, 1.0kV, 2.0kV	**Pass, A**
	-	180	5	0.5kV, 1.0kV, 2.0kV	**Pass, A**
	-	270	5	0.5kV, 1.0kV, 2.0kV	**Pass, A**
N-PE	+	0	5	0.5kV, 1.0kV, 2.0kV	**Pass, A**
	+	90	5	0.5kV, 1.0kV, 2.0kV	**Pass, A**
	+	180	5	0.5kV, 1.0kV, 2.0kV	**Pass, A**
	+	270	5	0.5kV, 1.0kV, 2.0kV	**Pass, A**
	-	0	5	0.5kV, 1.0kV, 2.0kV	**Pass, A**
	-	90	5	0.5kV, 1.0kV, 2.0kV	**Pass, A**
	-	180	5	0.5kV, 1.0kV, 2.0kV	**Pass, A**
	-	270	5	0.5kV, 1.0kV, 2.0kV	**Pass, A**

Remark: No error occurred.

11. CONDUCTED DISTURBANCE IMMUNITY TEST

11.1. Test Equipment

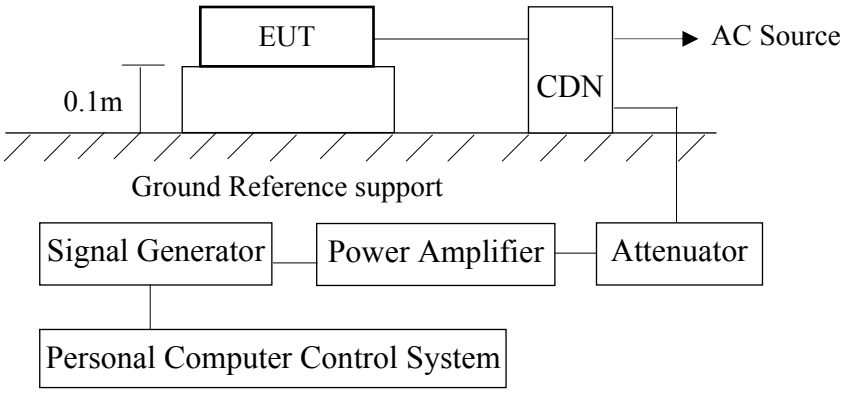
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Signal Generator	R & S	SML03	103251	2014. 12. 30	1 Year
2.	Power Amplifier	A & R	100A250	0330351	N.C.R.	N.C.R.
3.	Power Sensor	Agilent	E9327A	US40441766	2015. 01. 21	1 Year
4.	Power Meter	Agilent	E4417A	GB41291797	2015. 01. 21	1 Year
5.	Attenuator	Weinschel	40-6-34	NB538	2015. 04. 24	1 Year
6.	CDN-M3	Fischer	FCC-801-M3-25 A	9961	2015. 03. 05	1 Year

11.2. Block Diagram of Test Setup

11.2.1. Block Diagram of connection between EUT and simulators.

Same as Section 8.2.1.

11.2.2. Test Setup



11.3. Test Standard

EN 55024:2010
【IEC 61000-4-6:2013, Severity Level : 0.15-80MHz, 3V, 80%AM (1kHz)】

11.4. Severity Levels and Performance Criterion

11.4.1. Severity levels

Frequency range 0.15MHz - 80MHz		
Level	Voltage level (e.m.f.)	
	U_0 dB(μV)	U_0 V
1.	120	1
2.	130	3
3.	140	10
X[a]	Special	
[a] X is an open level.		

11.4.2. Performance criterion：**A**

11.5. Operating Condition of EUT

Same as conducted disturbance measurement which is listed in 4.4 except the test set up replaced by section 11.2.

11.6. Test Procedure

11.6.1. Set up the EUT, CDN and test generators as shown on section 11.2.

11.6.2. The EUT and supporting equipment were placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) was placed on the ground plane making direct contact with it at about 0.1-0.3m from EUT. Cables between CDN and EUT were as short as possible.

11.6.3. The disturbance signal described below was injected to EUT through CDN.

11.6.4. The EUT operates within its operational mode(s) under intended climatic conditions after power on.

11.6.5. The frequency range was swept from 150kHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1kHz sine wave.

11.6.6. The rate of sweep shall not exceed 1.5*10^3decades/s. Where the frequency was swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.

11.6.7. Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

11.7. Test Results

PASSED. (Complied with Criterion A)

The EUT with following test mode was measured during this section testing and all the test results are listed in next page.

The details of test modes are as follows：

Mode	Test Model	Input Port	Panel Angle	Display, Resolution/Frequency
1	E2275PWJ	HDMI	0°	“H” Pattern, 1920*1080/60Hz
2	E2275SWJ	HDMI	0°	“H” Pattern, 1920*1080/60Hz

Conducted Disturbance Immunity Test Results

AUDIX TECHNOLOGY CORPORATION

Applicant： Taiwan BOE Vision-electronic	Test Date： 2015. 12. 15
EUT： LCD Monitor, M/N (1)E2275SWJ (2)E2275PWJ	Temperature： 21 ℃
Power Supply： AC 230V, 50Hz	Humidity： 49 %
Working Condition： See Section 4.4.	Test Mode: See Section 11.7.
Engineer： James Shen	

Frequency Range (MHz)	Inject Position	Strength	Results	Performance Criterion
0.15MHz ~ 80MHz	Main (Power Line)	3V(rms) Modulated	**Pass**	**A**

Remark :Modulation Signal:1kHz 80% AM.

12. POWER FREQUENCY MAGNETIC FIELD IMMUNITY TEST

12.1. Test Equipment

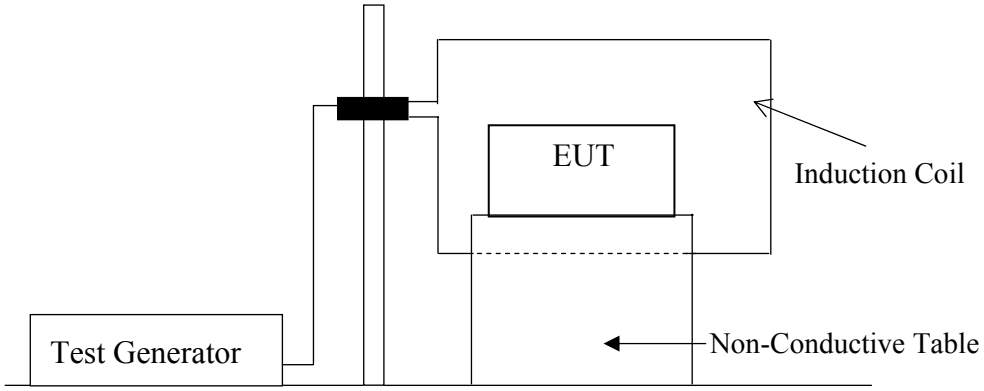
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Magnetic Field Tester	Haefely	MAG 100.1	080015-01	2015. 05. 06	1 Year

12.2. Block Diagram of Test Setup

12.2.1. Block Diagram of connection between EUT and simulators.

Same as Section 8.2.1.

12.2.2. Test Setup



12.3. Test Standard

EN 55024:2010
【IEC 61000-4-8:2009, Severity Level：50Hz or 60Hz, 1A/m (r.m.s.)】

12.4. Severity Levels and Performance Criterion

12.4.1. Severity level

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

12.4.2. Performance criterion：**A**

12.5. Operating Condition of EUT

Same as conducted disturbance measurement which is listed in 4.4 except the test set up replaced by section 12.2.

12.6. Test Procedure

The EUT placed on 0.8m high table. And subjected to the test magnetic field by using the induction coil of standard dimensions (1m x 1m). The induction coil rotated by 90 degrees in order to expose the EUT to the test field with different orientations. All cables of EUT exposed to magnetic field for 1m of their length.

12.7. Test Results

PASSED. (Complied with Criterion A)

The EUT with following test mode was measured during this section testing and all the test results are listed in next page.

The details of test modes are as follows：

Mode	Test Model	Input Port	Panel Angle	Display, Resolution/Frequency
1	E2275PWJ	HDMI	0°	“H” Pattern, 1920*1080/60Hz
2	E2275SWJ	HDMI	0°	“H” Pattern, 1920*1080/60Hz

Power Frequency Magnetic Field Immunity Test Results

AUDIX TECHNOLOGY CORPORATION

Applicant： Taiwan BOE Vision-electronic	Test Date： 2015. 12. 15
EUT： LCD Monitor, M/N (1)E2275SWJ (2)E2275PWJ	Temperature： 20 ℃
Power Supply： AC 230V, 50Hz	Humidity： 51 %
Working Condition： See Section 4.4.	Test Mode: See Section 12.7.
Engineer： Gary Lin	

Power Frequency Magnetic Field	Testing Duration	Coil Orientation	Results & Performance Criterion
50Hz, 1 A/m	1 Min	X-axis	**Pass, A**
50Hz, 1 A/m	1 Min	Y-axis	**Pass, A**
50Hz, 1 A/m	1 Min	Z-axis	**Pass, A**

Remark: No error occurred.

13. VOLTAGE DIPS AND INTERRUPTIONS IMMUNITY TEST

13.1. Test Equipment

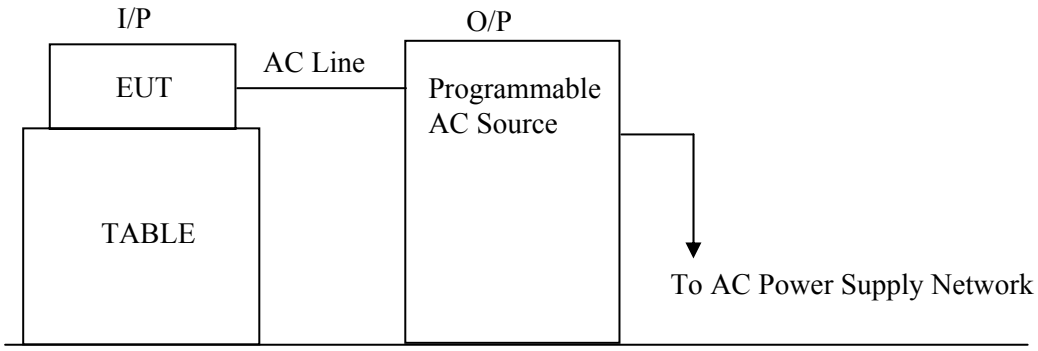
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Programmable Power Source	Chroma	6590	65900086	2015. 07. 16	1 Year

13.2. Block Diagram of Test Setup

13.2.1. Block Diagram of connection between EUT and simulators.

Same as Section 8.2.1.

13.2.2. Test Setup



13.3. Test Standard

EN 55024:2010
【IEC 61000-4-11:2004,
Severity Level：Voltage interruptions : >95% reduction , 250 period ;
Voltage dips : >95% reduction, 0.5 period ; 30% reduction, 25 period.】

13.4. Severity Levels and Performance Criterion

13.4.1. Preferred severity levels and durations for voltage dips

Class[a]	**Test level and durations for voltage dips (t_s) (50Hz/60Hz)**				
Class 1	Case-by-case according to the equipment requirements				
Class 2	0% during ½ cycle	0% during 1 cycle	70% during 25/30[c] cycles		
Class 3	0% during ½ cycle	0% during 1 cycle	40% during 10/12[c] cycles	70% during 25/30[c] cycles	80% during 250/300[c] cycles
Class X[b]	X	X	X	X	X

[a] Classes as per IEC 61000-2-4.

[b] To be defined by product committee. For equipment connected directly or indirectly to the public network, the levels must not be less severe than Class 2.

[c] "25/30 cycles" means "25 cycles for 50Hz test" and "30 cycles for 60Hz test".

13.4.2. Preferred severity levels and durations for short interruptions

Class[a]	**Test level and durations for short interruptions (t_s) (50Hz/60Hz)**
Class 1	Case-by-case according to the equipment requirements
Class 2	0% during 250/300[c] cycles
Class 3	80% during 250/300[c] cycles
Class X[b]	X

[a] Classes as per IEC 61000-2-4.

[b] To be defined by product committee. For equipment connected directly or indirectly to the public network, the levels must not be less severe than Class 2.

[c] "250/300 cycles" means "250 cycles for 50Hz test" and "300 cycles for 60Hz test".

13.4.3. Performance criterion：

1) Voltage dips >95% reduction performance criterion **B.**

2) Voltage dips 30% reduction performance criterion **C.**

3) Voltage interruption >95% reduction performance criterion **C.**

13.5. Operating Condition of EUT

Same as conducted disturbance measurement which is listed in 4.4 except the test set up replaced by section 13.2.

13.6. Test Procedure

13.6.1. Set up the EUT and test generator as shown on section 13.2.

13.6.2. The interruption was introduced at selected phase angles with specified duration. There was a 10s minimum interval between each test event.

13.6.3. After each test a full functional check was performed before the next test.

13.6.4. Repeat procedures 13.6.2. & 13.6.3. for voltage dips, only the test level and duration was changed.

13.6.5. Record any degradation of performance.

13.7. Test Results

PASSED. (Complied with Criterion B)

The EUT with following test mode was measured during this section testing and all the test results are listed in next page.

The details of test modes are as follows：

Mode	Test Model	Input Port	Panel Angle	Display, Resolution/Frequency
1	E2275PWJ	HDMI	0°	"H" Pattern, 1920*1080/60Hz
2	E2275SWJ	HDMI	0°	"H" Pattern, 1920*1080/60Hz

Voltage Dips and Interruptions Immunity Test Results

AUDIX TECHNOLOGY CORPORATION

Applicant： Taiwan BOE Vision-electronic	Test Date： 2015. 12. 15
EUT： LCD Monitor, M/N (1)E2275SWJ (2)E2275PWJ	Temperature： 20 ℃
Power Supply： AC 100-240V, 50/60Hz	Humidity： 51 %
Working Condition： See Section 4.4.	Test Mode: See Section 13.7.
Engineer： Gary Lin	

Single Test Voltage

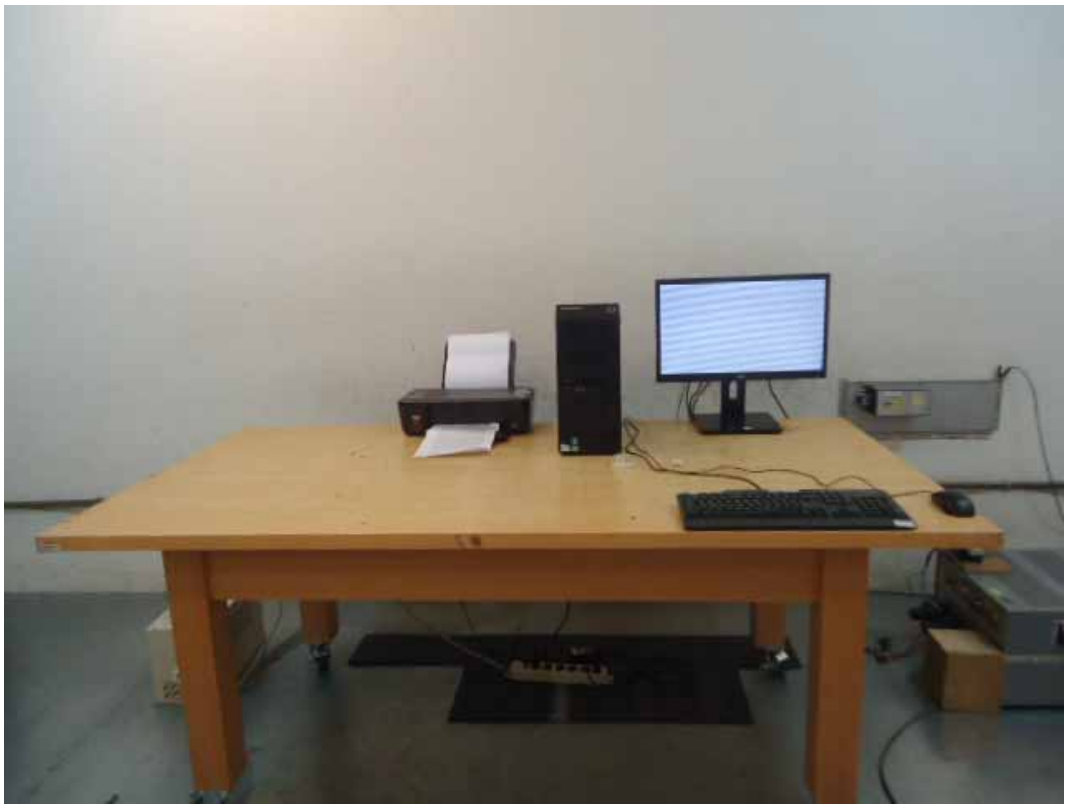
Type of Test	Test Voltage	Phase Angle	% Reduction	period	Test Results & Performance Criterion
Voltage Interruptions	100/240V	0	> 95	250	**Pass, B; Note**
		45	> 95	250	**Pass, B; Note**
		90	> 95	250	**Pass, B; Note**
		135	> 95	250	**Pass, B; Note**
		180	> 95	250	**Pass, B; Note**
		225	> 95	250	**Pass, B; Note**
		270	> 95	250	**Pass, B; Note**
		315	> 95	250	**Pass, B; Note**
Voltage Dips	100/240V	0	30	25	**Pass, A**
		45	30	25	**Pass, A**
		90	30	25	**Pass, A**
		135	30	25	**Pass, A**
		180	30	25	**Pass, A**
		225	30	25	**Pass, A**
		270	30	25	**Pass, A**
		315	30	25	**Pass, A**
	100/240V	0	> 95	0.5	**Pass, A**
		45	> 95	0.5	**Pass, A**
		90	> 95	0.5	**Pass, A**
		135	> 95	0.5	**Pass, A**
		180	> 95	0.5	**Pass, A**
		225	> 95	0.5	**Pass, A**
		270	> 95	0.5	**Pass, A**
		315	> 95	0.5	**Pass, A**

Note : The EUT was stopped operating during the test, but it's self-recoverable after test.

14. PHOTOGRAPHS

14.1. Photos of Conducted Disturbance Measurement

Test Model: E2275PWJ



FRONT VIEW OF CONDUCTED MEASUREMENT

BACK VIEW OF CONDUCTED MEASUREMENT

Test Model: E2275SWJ

FRONT VIEW OF CONDUCTED MEASUREMENT

BACK VIEW OF CONDUCTED MEASUREMENT

14.2.Photos of Radiated Disturbance Measurement at Open Area Test Site (30-1000MHz)

Test Model: E2275PWJ

FRONT VIEW OF RADIATED MEASUREMENT

BACK VIEW OF RADIATED MEASUREMENT

Test Model: E2275SWJ

FRONT VIEW OF RADIATED MEASUREMENT

BACK VIEW OF RADIATED MEASUREMENT

14.3. Photos of Radiated Emission Measurement at Semi-Anechoic Chamber (Above 1GHz)

Test Model: E2275PWJ

FRONT VIEW OF RADIATED MEASUREMENT

BACK VIEW OF RADIATED MEASUREMENT

Test Model: E2275SWJ

FRONT VIEW OF RADIATED MEASUREMENT

BACK VIEW OF RADIATED MEASUREMENT

14.4.Photos of Harmonic & Flicker Measurement

Test Model: E2275PWJ

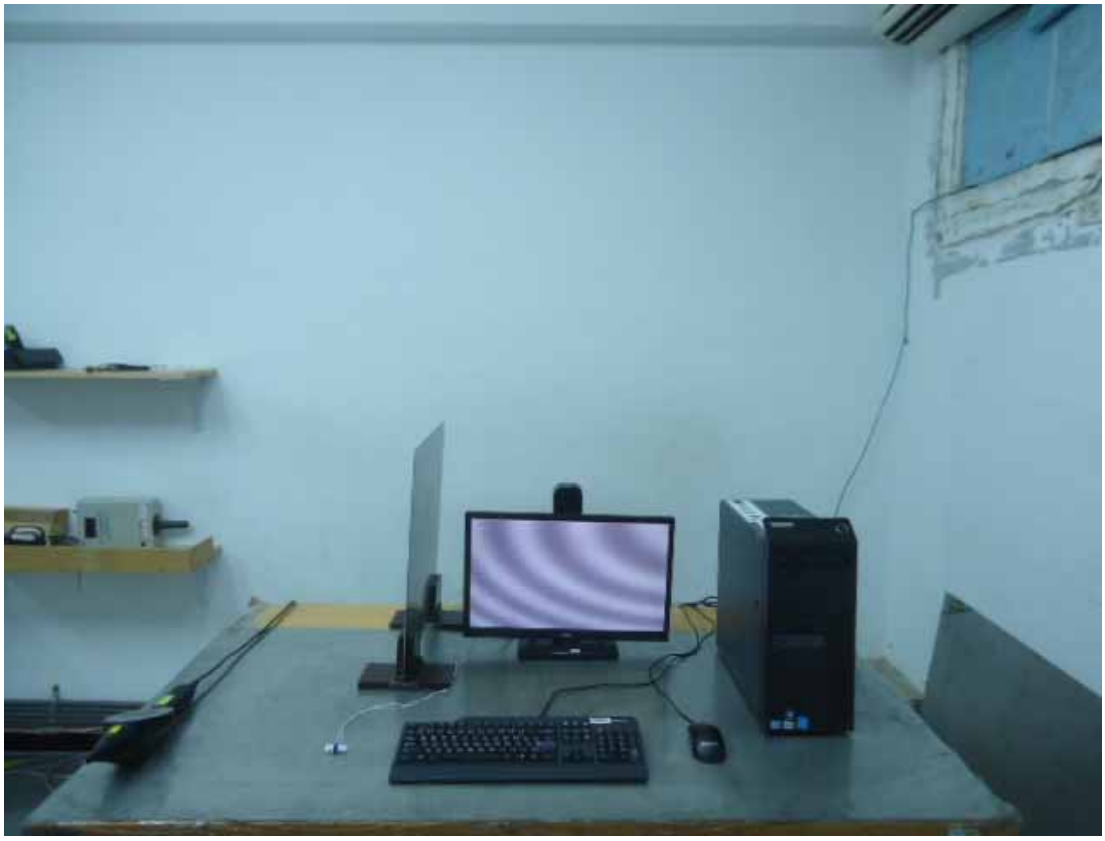
Test Model: E2275SWJ

14.5. Photos of Electrostatic Discharge Immunity Test

Test Model: E2275PWJ

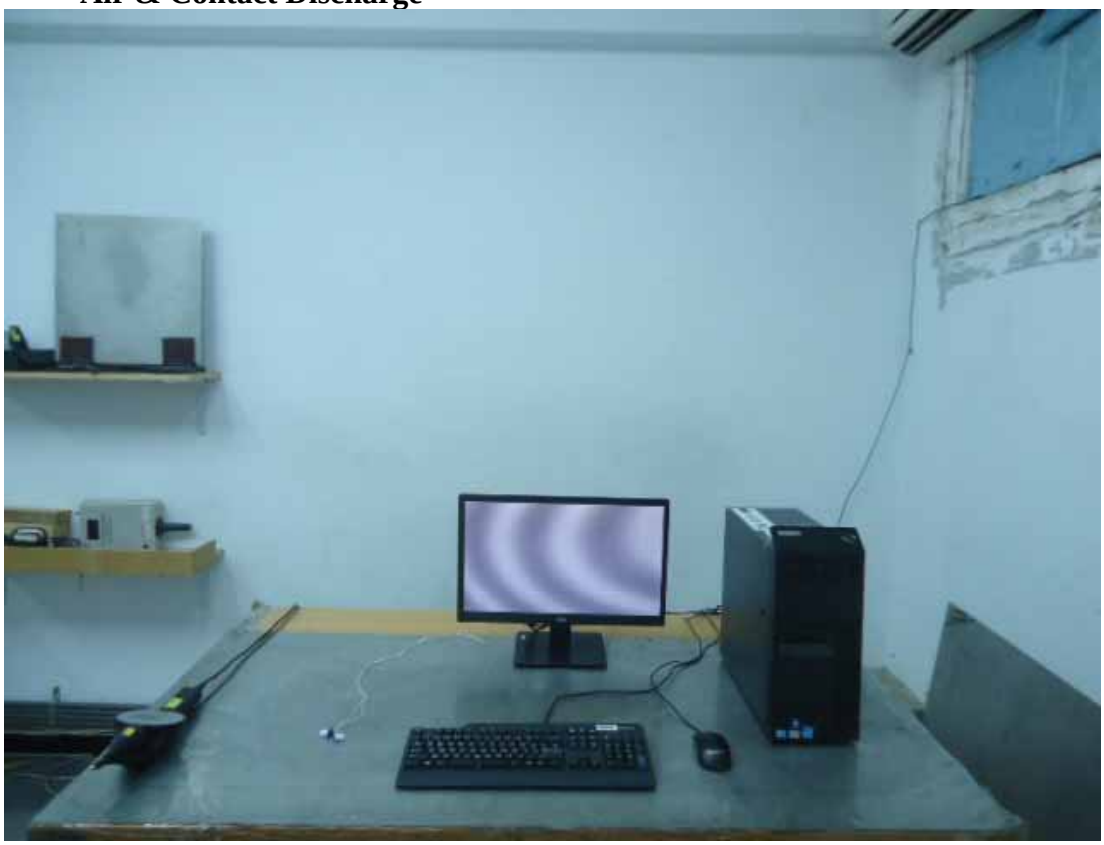
Air & Contact Discharge

VCP & HCP



Test Model: E2275SWJ

Air & Contact Discharge



VCP & HCP

Test Model: E2275PWJ

Photo of Points

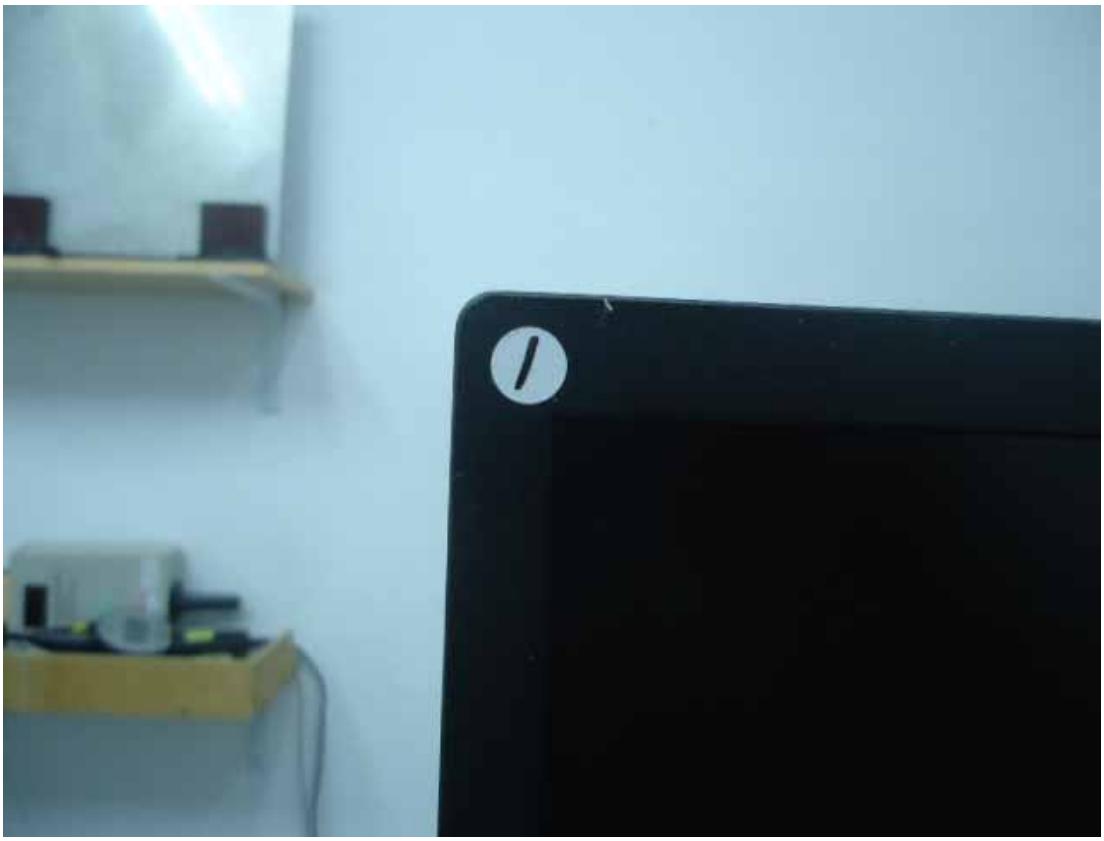


Photo of Points

Photo of Points

Photo of Points

Photo of Points

Photo of Points

Test Model: E2275SWJ

Photo of Points

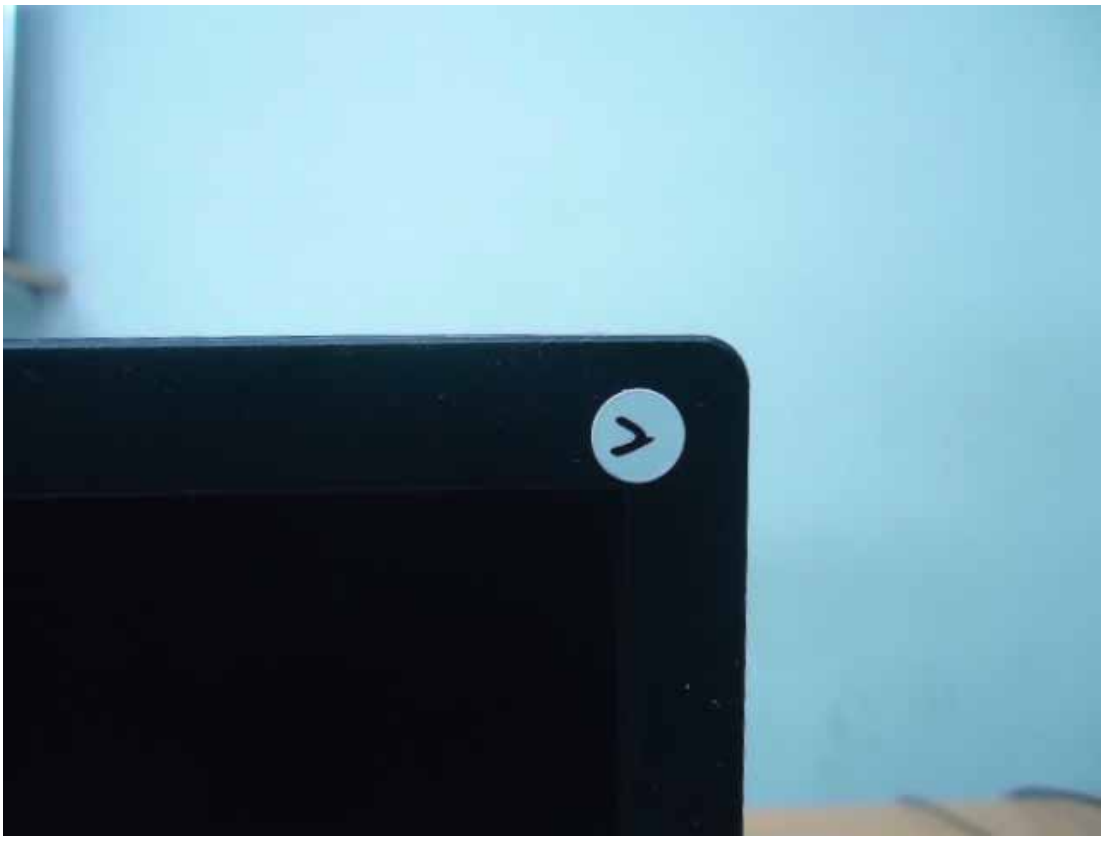


Photo of Points

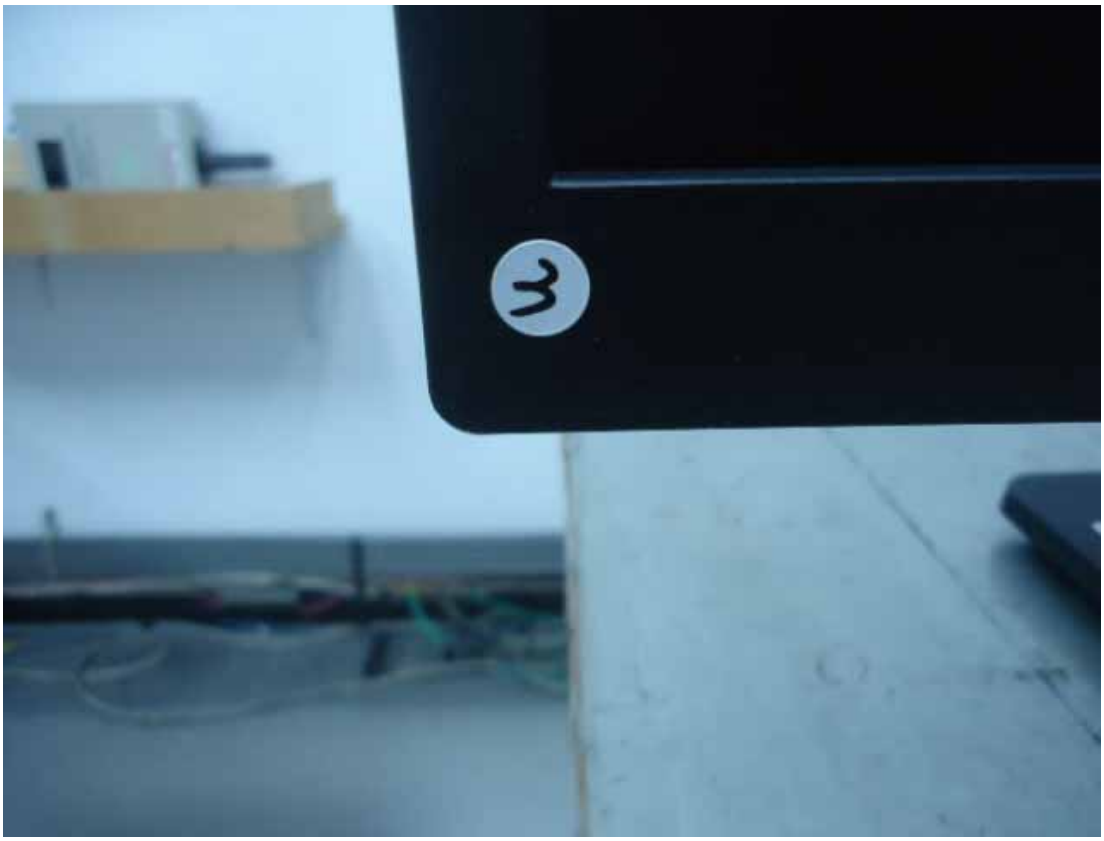


Photo of Points

Photo of Points

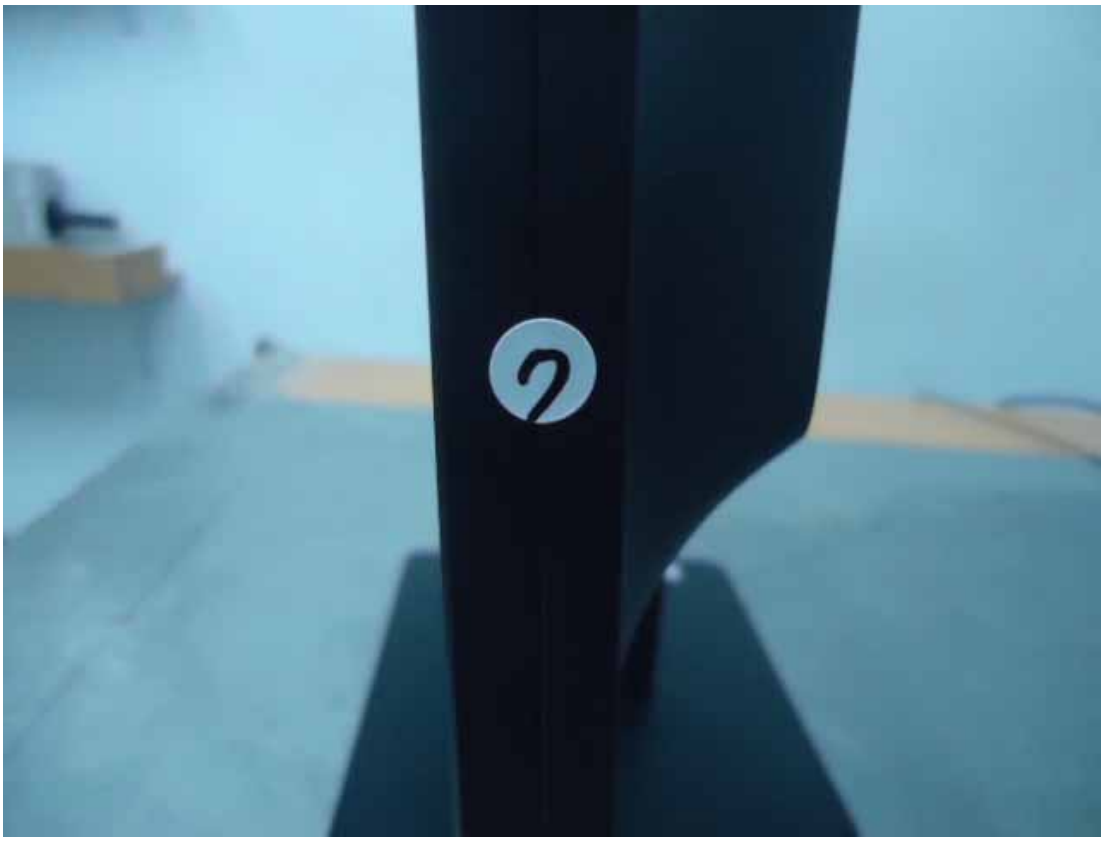


Photo of Points

Photo of Points

14.6.Photos of RF Strength Immunity Test

Test Model: E2275PWJ

Test Model: E2275SWJ

14.7.Photos of Electrical Fast Transient/Burst Immunity Test

Test Model: E2275PWJ

Test Model: E2275SWJ

14.8.Photos of Surge Immunity Test

Test Model: E2275PWJ

Test Model: E2275SWJ

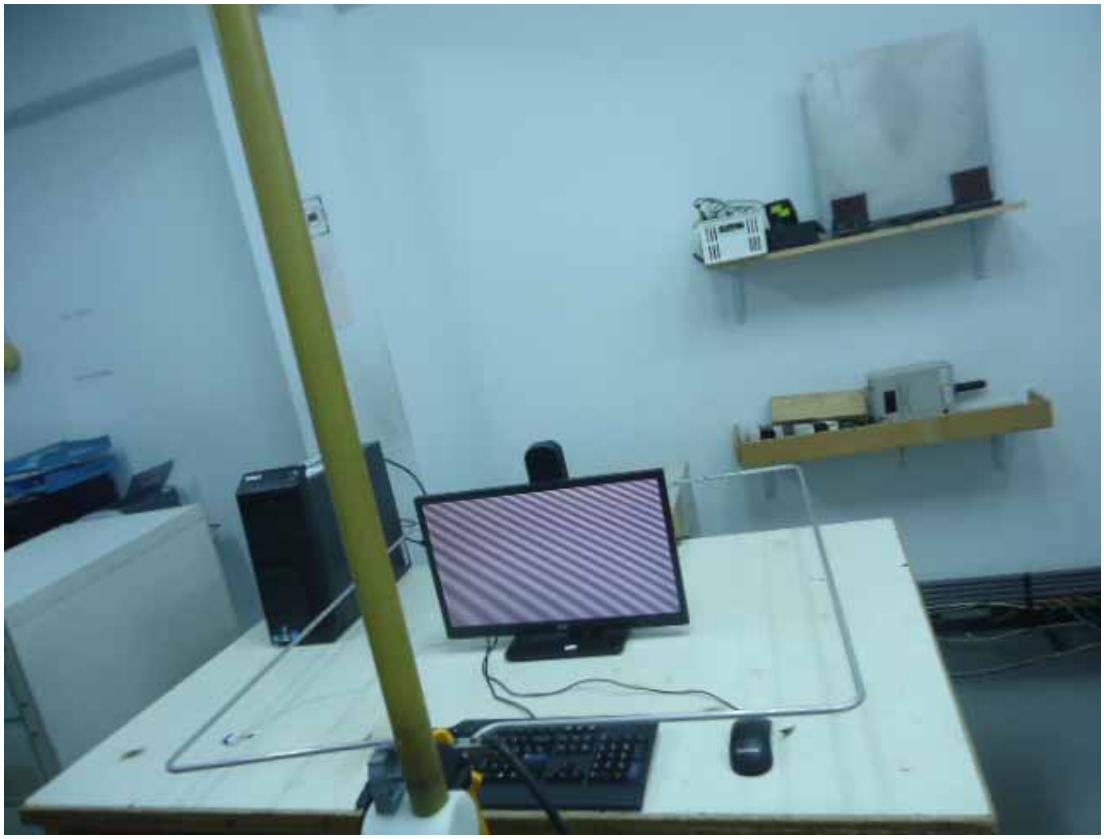
14.9.Photos of Injected Currents Immunity Test

Test Model: E2275PWJ

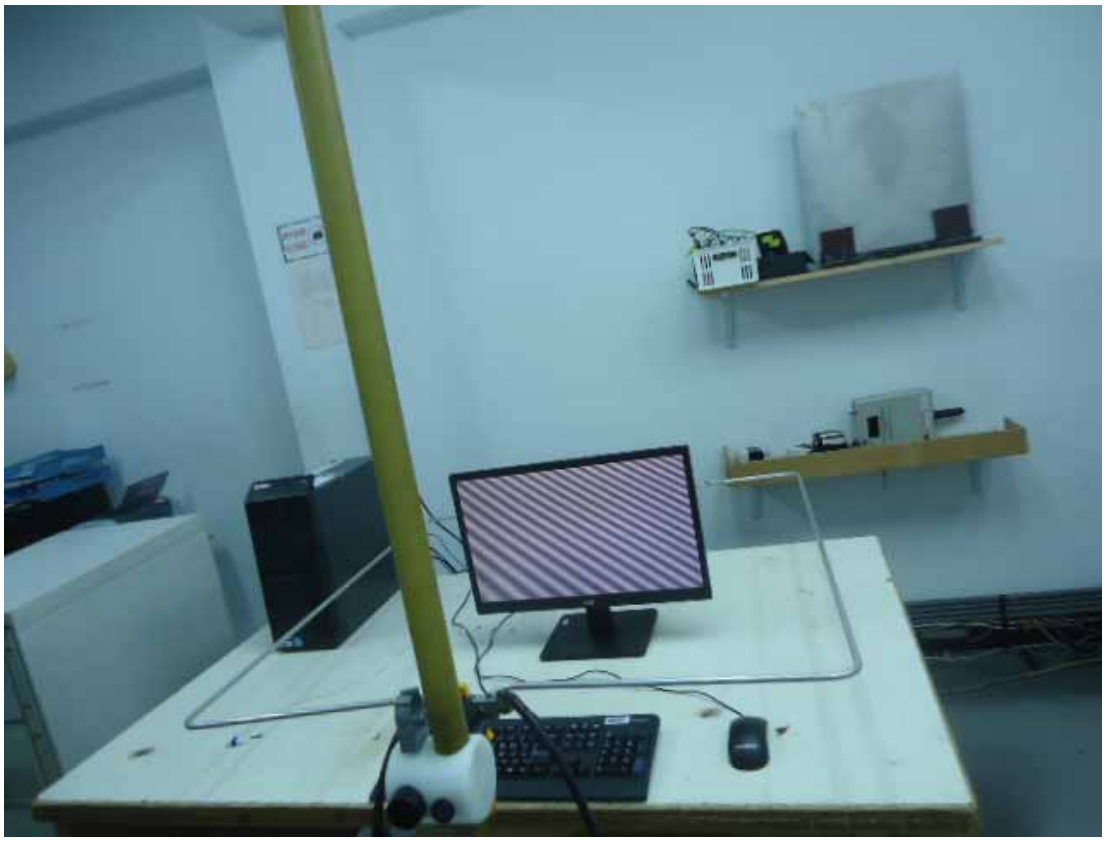
Test Model: E2275SWJ

14.10.Photos of Power Frequency Magnetic Field Immunity Test

Test Model: E2275PWJ

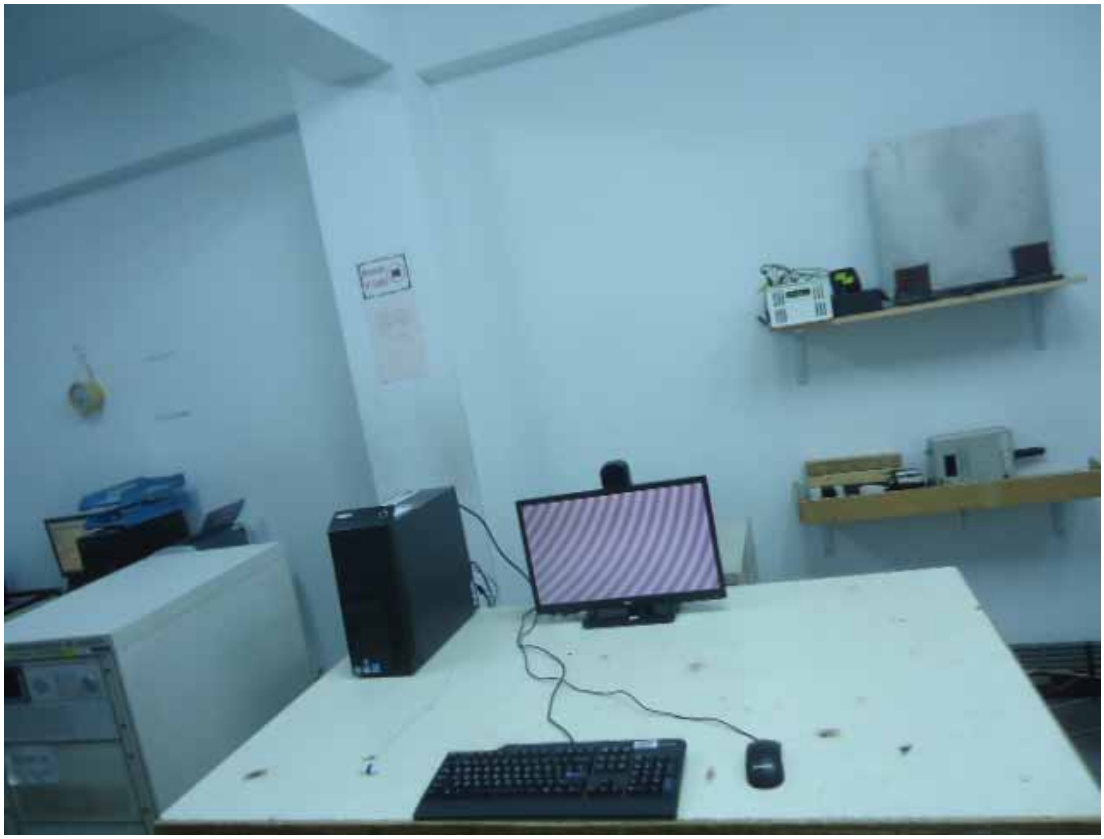


Test Model: E2275SWJ

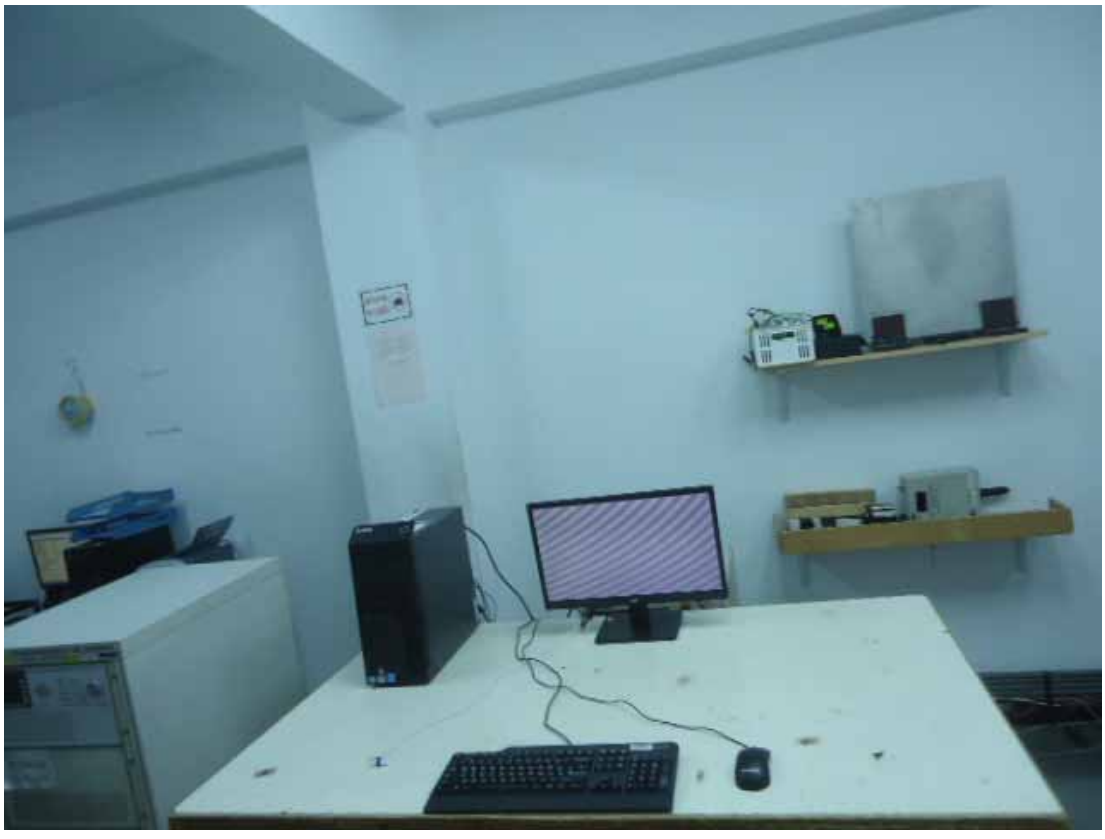


14.11.Photos of Voltage Dips and Interruptions Immunity Test

Test Model: E2275PWJ



Test Model: E2275SWJ



APPENDIX

(Photos of EUT)

Total Pages: 16 Pages

M/N E2275PWJ Figure 1 ~ Figure 16

Figure 1

Panel Angle: 0°, General Appearance (Front View)

Figure 2

Panel Angle: 0°, General Appearance (Back View)

Figure 3
Panel Angle: 90°, General Appearance (Front View)

Figure 4
Panel Angle: 90°, General Appearance (Back View)

Figure 5
General Appearance (I/O Ports View)

Figure 6
General Appearance (I/O Ports View)

Figure 7
Internal View (Removed Back Cover)

Figure 8
Internal View (Removed Metal Cover)

Figure 9
Internal View (Main Board, Front View)

Figure 10
Internal View (Main Board, Back View)

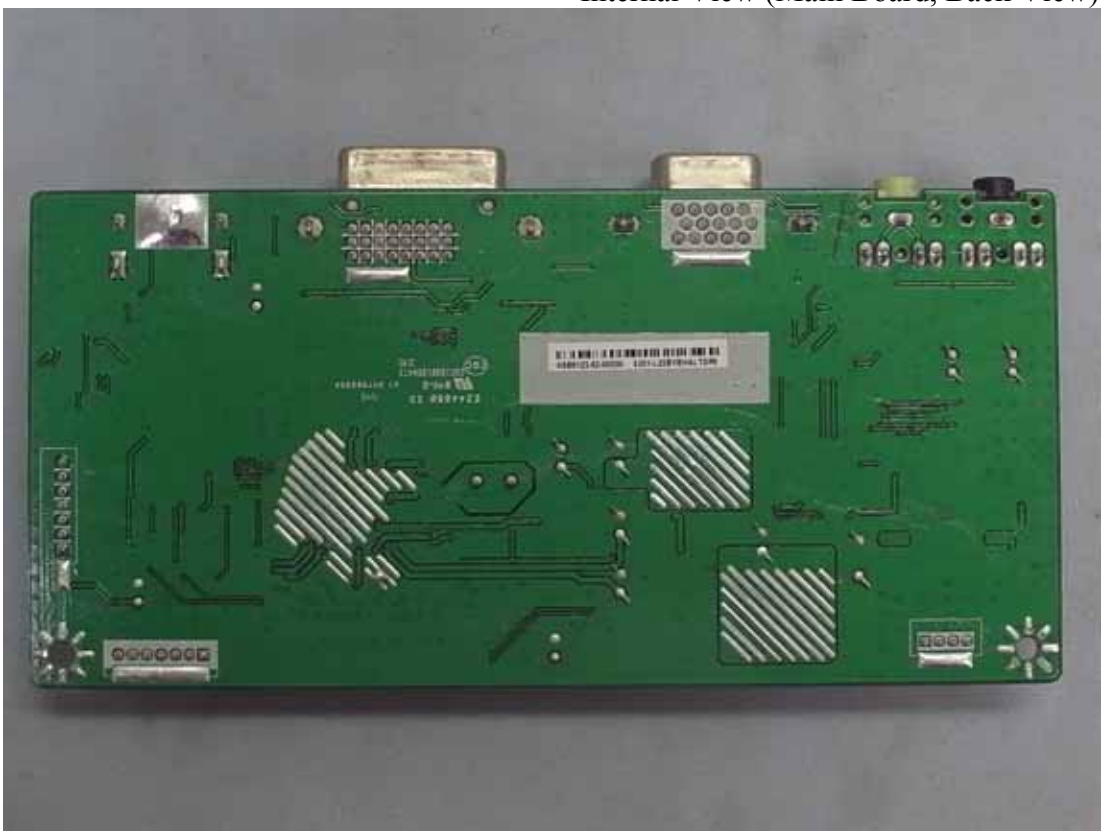


Figure 11
Internal View (Power Board, Front View)

Figure 12
Internal View (Power Board, Back View)

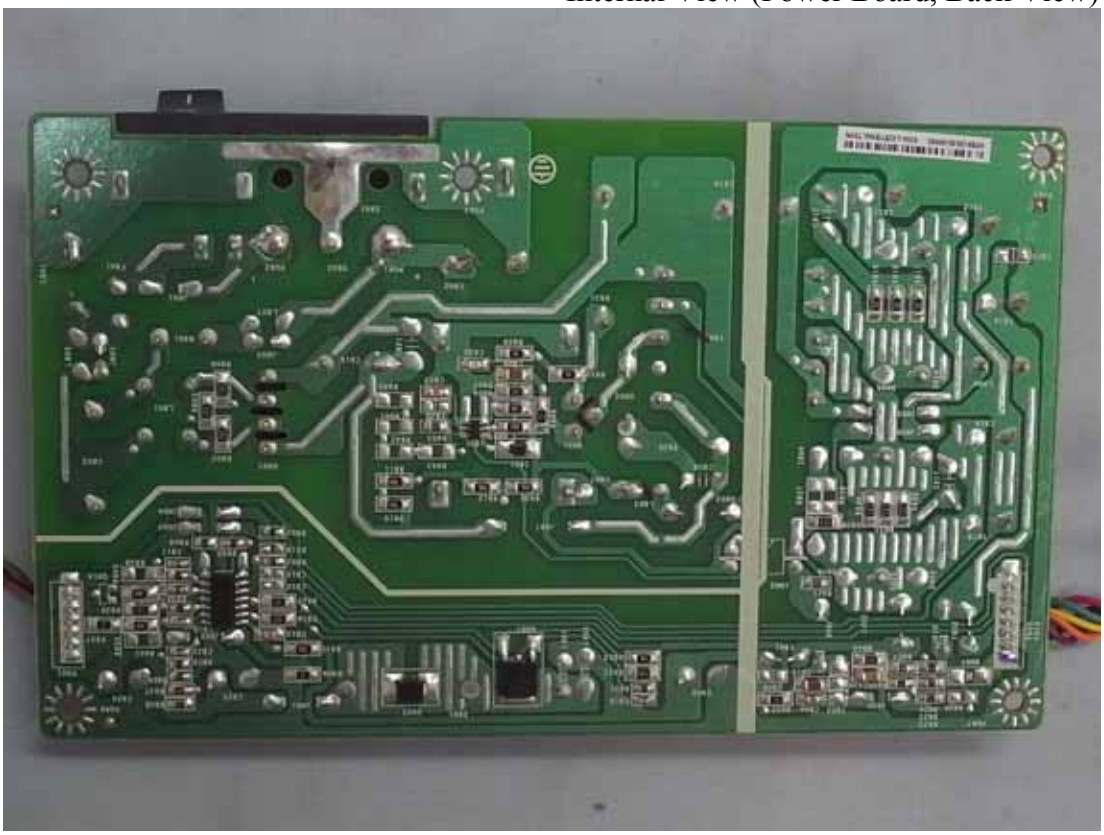


Figure 13
Internal View (Button Control Board, Front View)

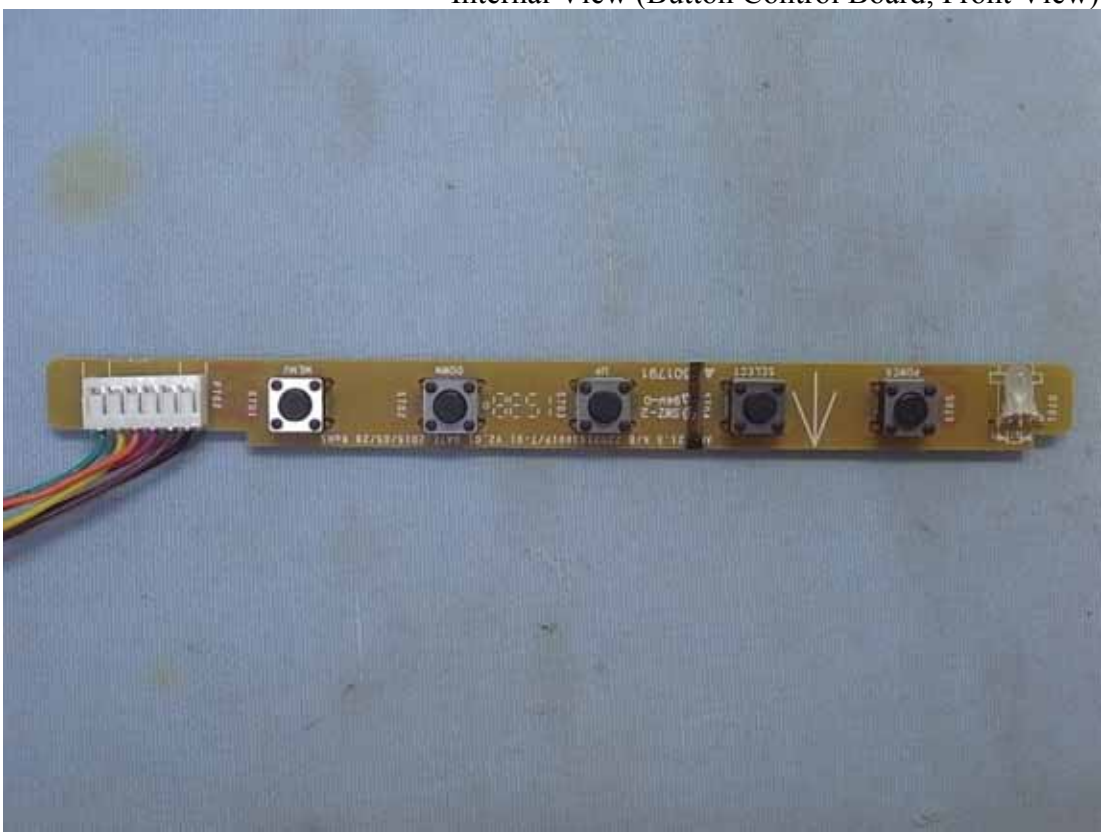


Figure 14
Internal View (Button Control Board, Back View)

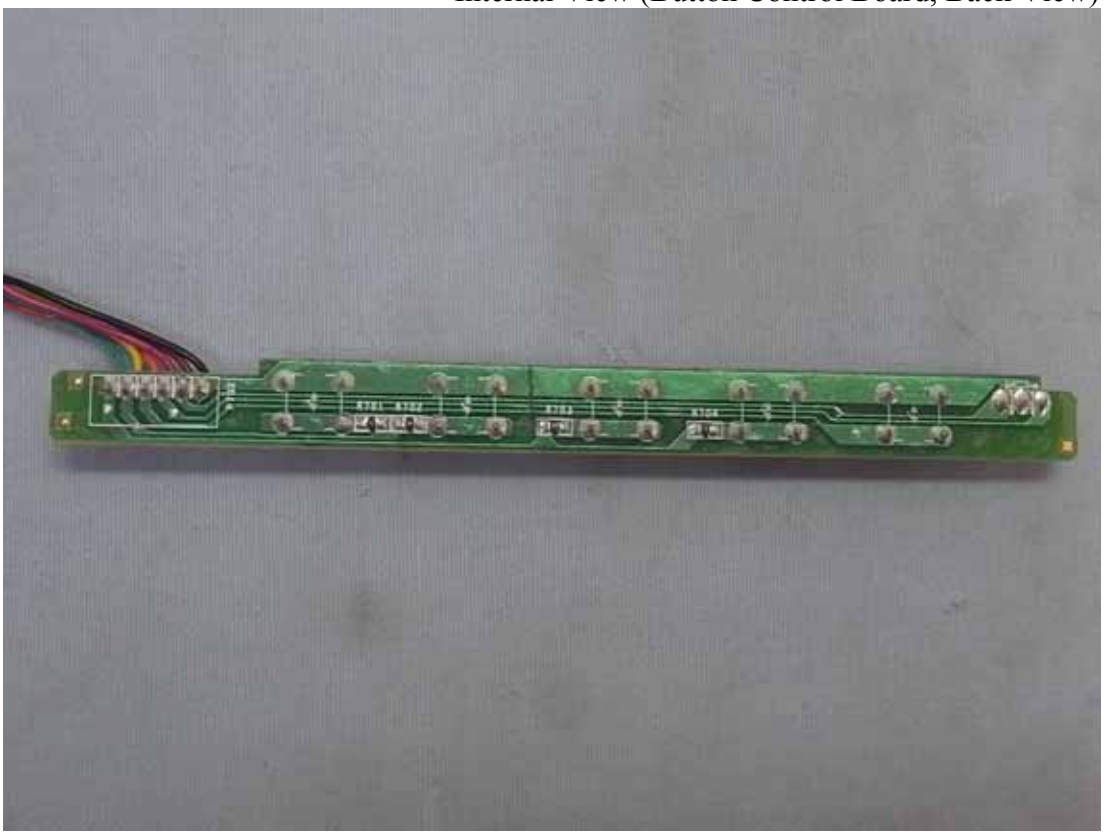


Figure 15
Internal View (Removed Front Frame)

Figure 16
Internal View (LCD Panel, Back View)

M/N E2275SWJ Figure 17 ~ Figure 29

Figure 17
General Appearance (Front View)

Figure 18
General Appearance (Back View)

Figure 19
General Appearance (I/O Ports View)

Figure 20
General Appearance (I/O Ports View)

Figure 21
Internal View (Removed Back Cover)

Figure 22
Internal View (Removed Metal Cover)

Figure 23
Internal View (Main Board, Front View)

Figure 24
Internal View (Main Board, Back View)

Figure 25
Internal View (Power Board, Front View)

Figure 26
Internal View (Power Board, Back View)

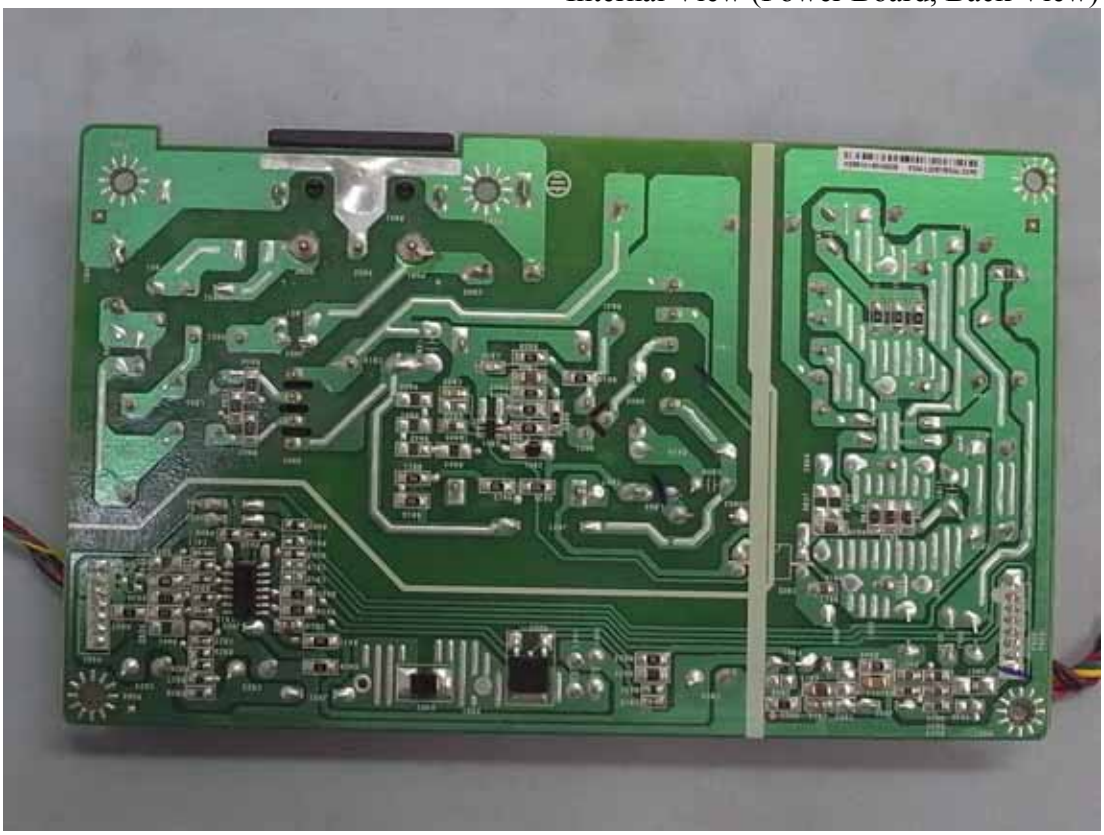


Figure 27
Internal View (Button Control Board, Front View)

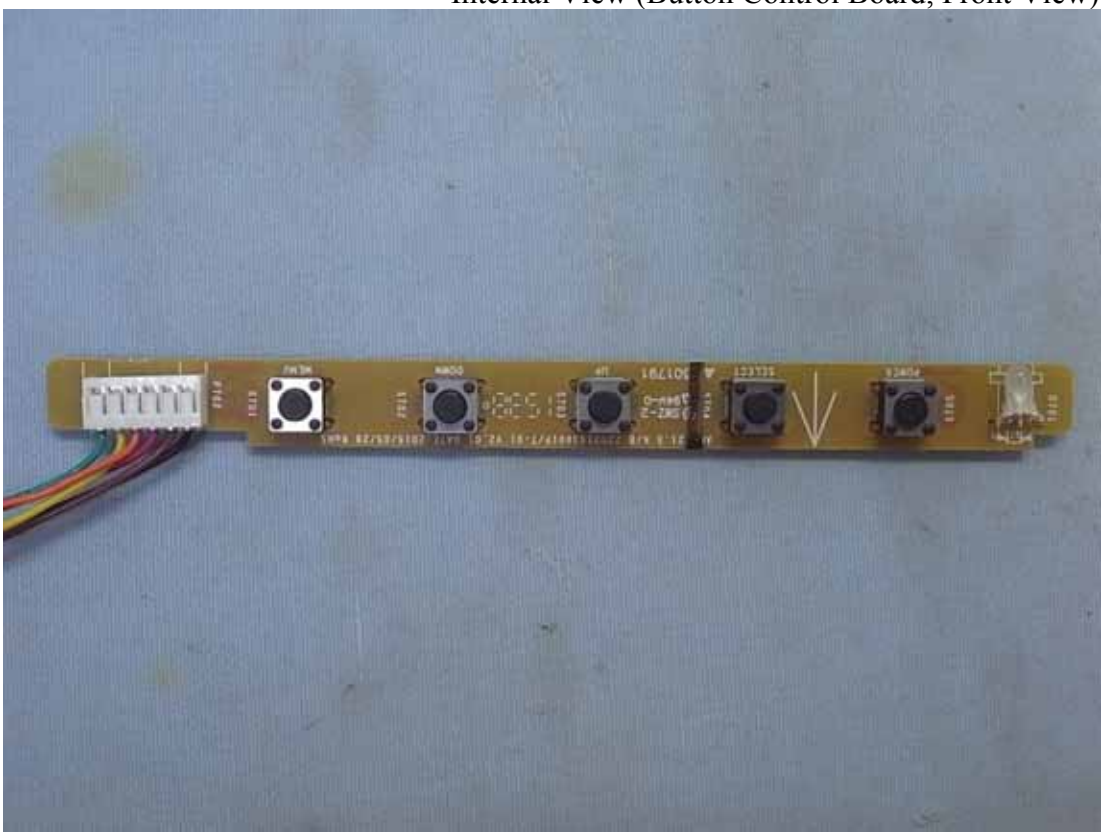


Figure 28
Internal View (Button Control Board, Back View)

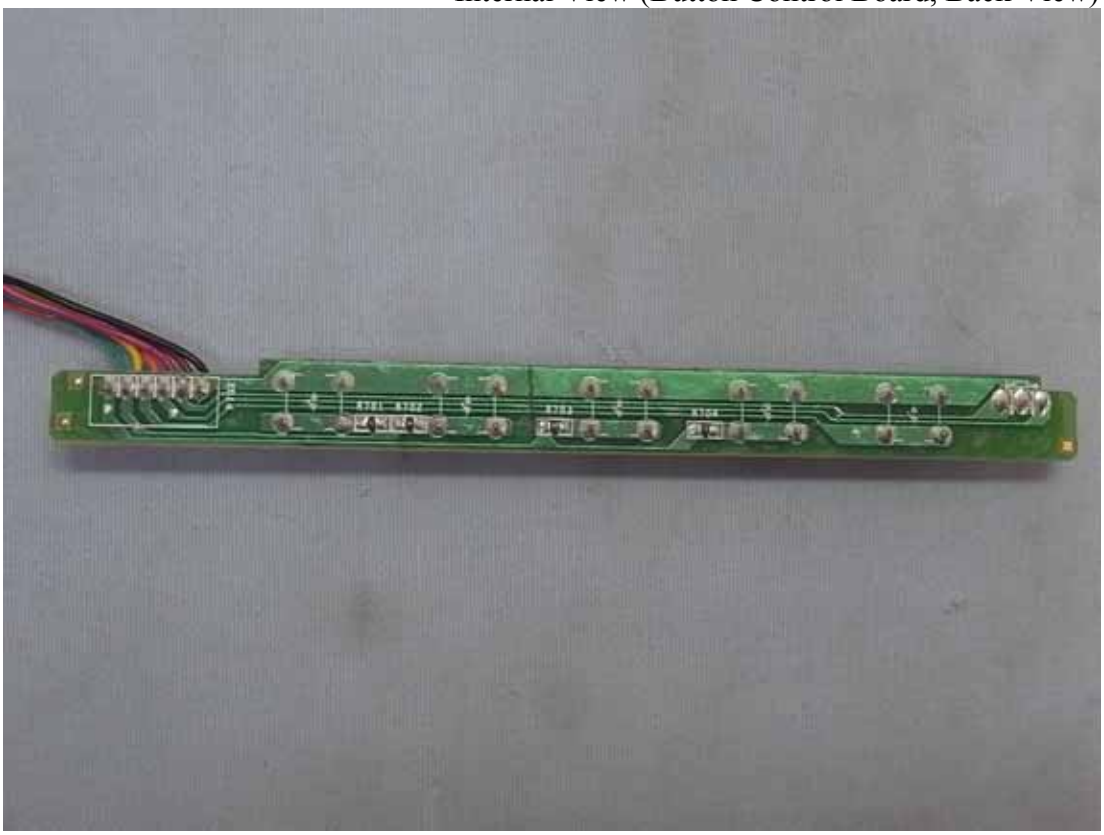


Figure 29
Internal View (LCD Panel, Back View)

Figure 30
D-Sub Cable

Figure 31
Audio Cable

Figure 32
Power Cord