

CERTIFICATE OF CONFORMITY

For the following information

Ref. File No.: C1M1510105

Product	LCD Monitor
Model Number	(1)E2275SW** (2)215LM000**
Brand	AOC
Applicant	Taiwan BOE Vision-electronic
Manufacturer	Taiwan BOE Vision-electronic
Factory	K Tronics (Suzhou) Technology Co., Ltd.
Test Report Number	EM-E150675
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-E150675.

Signature

Alex Deng/Deputy Manager Date: 2015. 11. 17

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



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		ation	Ref. File No.: C1M1510105		
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Model Num	ber	:	(1)E2275SW** (2)215LM000**		
Brand	:	:	AOC		
Applicant	:	:	Taiwan BOE Vision-electronic		
Manufacture	er	:	Taiwan BOE Vision-electronic		
Factory	:	:	K Tronics (Suzhou) Technology Co., Ltd.		
Standards	:	:			
Emission:	EN 55022:20	10 + A	AC: 2011, Class B		
	AS/NZS CISI	PR 22	2:2009 +A1:2010		
	EN 61000-3-2	2:201	4 and EN 61000-3-3:2013		
Immunity: EN 55024:2010					
	(IEC 61000-4	-2:20	008, 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,				
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EMC TEST REPORT for Taiwan BOE Vision-electronic LCD Monitor Model No. : (1)E2275SW** (2)215LM000** 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

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:	C1M1510105
:	EM-E150675
:	2015. 11. 11 ~ 17
:	2015. 11. 17
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APPENDIX (Photos of EUT)

TEST REPORT VERIFICATION

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

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 standard.

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. 11. 11 ~ 17 Producer : (Patty Yu/Administrator) Signatory :

(Alex Deng/Deputy M

Date of Report : 2015. 11. 17

AUDIX Technology Corporation Report No. EM-E150675

1. DESCRIPTION OF VERSION

Edition No.	Date of Revision	Revision Summary	Report Number
0	2015. 11. 17	Original Report.	EM-E150675

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
IM	MUNITY (EN 55024:2010)		
Description of Test Item	Basic Standard	Performance Criteria	Results
Electrostatic discharge (ESD)	IEC 61000-4-2:2008	В	PASS
Radio-frequency, Continuous radiated disturbance	IEC 61000-4-3:2010	А	PASS
Electrical fast transient (EFT)	IEC 61000-4-4:2012	В	PASS
Surge (Input a.c. power ports)	· IEC 61000-4-5:2014	В	PASS
Surge (Telecommunication ports)	IEC 01000-4-5.2014	N/A	N/A
Radio-frequency, Continuous conducted disturbance	IEC 61000-4-6:2013	А	PASS
Power frequency magnetic field	IEC 61000-4-8:2009	A	PASS
Voltage dips, >95% reduction		В	PASS
	IEC 61000-4-11:2004	С	PASS
Voltage dips, 30% reduction	IEC 61000-4-11:2004	C	

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** ("*" = alphameric or blank) The difference of above models are in sales marketing. The model E2275SWDA was tested in this report.
Brand	:	AOC
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
AC Power Cord	:	Unshielded, Detachable, 1.5m (3C)
Date of Receipt of Sample	:	2015. 11. 09
Date of Test	:	2015. 11. 11 ~ 17

Remark 1:

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

Back View:

- (1) One AC Input Port
- (2) One DVI Port
- (3) One D-Sub Port
- (4) One Audio Port
- (5) One Earphone Port

Remark 2:

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

Test Item	Input Port	Display, Resolution/Frequency		
Conducted Disturbance		"H" Pattern, 1920*1080/60Hz		
		"H" Pattern, 1280*1024/75Hz		
& Radiated Disturbance		"H" Pattern, 640*480/60Hz		
	D-Sub	"H" Pattern, 1920*1080/60Hz		
H & V & EMS test	DVI	"H" Pattern, 1920*1080/60Hz		

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

Test Item	Input Port	Display, Resolution/Frequency	
Conducted Disturbance	DVI	"H" Pattern, 1920*1080/60Hz	
Radiated Disturbance	DVI	"H" Pattern, 1920*1080/60Hz	
H & V & EMS test	DVI	"H" Pattern, 1920*1080/60Hz	

3.2. Description of Tested Supporting Unit and Cable

No.	Product	Brand	Model No.	Serial No.	Approval				
	[Only For Conducted, Radiated Disturbance Measurements Tests Used]								
1.	PC System	DELL	DC8M1F	24283942660	By DoC				
2.	Printer	hp	C2642A		B94C2642X				
3.	USB Keyboard	DELL	KB212-B	CN-05V23T-71581-2 8R-000U					
4.	USB Mouse	DELL	MS111-L	CN-09RRC7-48723-2 B7-0H3M	By DoC				
5.	I-POD Player	APPLE	A1204	4H722TGDVTE	By DoC				
6.	Earphone	SAMPO	EK-Y1251MP	N/A	N/A				
	Conly For Harmon	ic、Flicker Me	asurements and E	MS Immunity Tests	Used 】				
1.	PC System	Lenovo	RK4	PBFK914	By DoC				
2.	USB Keyboard	Lenovo	SK-8825	0056462	By DoC				
3.	USB Mouse	Lenovo	45J4886	N/A	By DoC				
4.	Earphone	SAMPO	EK-Y1251MP	N/A	N/A				

3.2.1. Support Peripheral Unit

3.2.2. Support Peripheral Unit

No.	Cable Description Of The Above Support Units					
	[Only For Conducted、 Radiated Disturbance Measurements Tests Used]					
1.	DVI Cable: Shielded, Detachable, 1.5m, Bonded two ferrite cores Audio Cable: Unshielded, Detachable, 1.5m AC Power Cord: Unshielded, Detachable, 1.8m					
2.	USB Cable: Shielded, Detachable, 1.5m O/P Power Cord: Unshielded, Undetachable, 0.6m I/P 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, 1.2m					
	[Only For Harmonic、Flicker Measurements and EMS Immunity Tests Used]					
1.	DVI Cable: Shielded, Detachable, 1.5m, Bonded two ferrite cores Audio Cable: Unshielded, Detachable, 1.5m 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 Site	:	No. 4 Shielded Room & No. 7 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
	30MHz~1000MHz	±5.3dB
Radiation Test	1GHz~6GHz	±4.8dB
	6GHz~18GHz	±4.8dB
	80MHz~200MHz	±1.7dB
RF Field Strength Susceptibility Test	200MHz~1000MHz	±1.8dB
Susceptionity Test	1GHz~6GHz	±1.7dB

Remark : Uncertainty = $ku_c(y)$

4. CONDUCTED DISTURBANCE MEASUREMENT

4.1. Test Equipment

The following test equipment were used during the conducted disturbance measurement : (No. 4 Shielded Room)

Item	Туре	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Test Receiver	R&S	ESCI	100555	2015. 05. 06	1 Year
2.	A.M.N.	R&S	ESH2-Z5	890485/023	2015.04.15	1 Year
3.	L.I.S.N.	Kyoritsu	KNW-407	8-1430-5	2015.01.22	1 Year
4.	Pulse Limiter	R&S	ESH3-Z2	100356	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)

Fraguanay	Maximum RF Line Voltage					
Frequency	Quasi-Peak Level	Average Level				
$150 \mathrm{kHz} \sim 500 \mathrm{kHz}$	$66 \sim 56 \text{ dB}\mu\text{V}$	$56 \sim 46 \ dB\mu V$				
$500 kHz \sim 5 MHz$	56 dBµV	46 dBµV				
$5 MHz \sim 30 MHz$	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 "Hwin" by Windows 7 and sending "H" characters to the EUT via DVI input, the screen was filling with "H" pattern by 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 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 ESCI 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 the worst 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. : E2275SWDA

Test Date : 2015. 11. 11 Temperature : 24°C Humidity : 62%

The details of test modes are as follows :

	Mode	Input Port	Display, Resolution/Frequency	Reference Test Data No.		
		input Port	Display, Resolution/Frequency	Neutral	Line	
	1	DVI	"H" Pattern, 1920*1080/60Hz	# 10	# 9	



Power Rating : 230Vac/50Hz

: 1920*1080/60Hz DVI

Test Mode

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	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.156	0.15	0.02	9.86	34.90	44.93	55.65	10.72	Average
2	0.156	0.15	0.02	9.86	43.26	53.29	65.65	12.36	QP
3	0.202	0.15	0.02	9.85	27.99	38.01	53.54	15.53	Average
4	0.202	0.15	0.02	9.85	37.85	47.87	63.54	15.67	QP
5	0.251	0.16	0.02	9.86	22.72	32.76	51.73	18.97	Average
6	0.251	0.16	0.02	9.86	32.03	42.07	61.73	19.66	QP
7	2.396	0.26	0.04	9.86	16.22	26.38	46.00	19.62	Average
8	2.396	0.26	0.04	9.86	23.78	33.94	56.00	22,06	QP
9	3.293	0.29	0.05	9.86	16.97	27.17	46.00	18.83	Average
10	3.293	0.29	0.05	9.86	24.93	35.13	56.00	20.87	QP
11	21.486	1.15	0.14	9.96	18.05	29.30	50.00	20.70	Average
12	21.486	1.15	0.14	9.96	24.08	35.33	60.00	24.67	QP
Rema	rks: 1. E	mission	Level=	AMN Fact	or + Cabl	le Loss +	Pulse Att	. + Readin	g.
	2. I	f the av	erage 1	imit is	met when	useing a	quasi-pea	k detector	' ,
	t	he EUT s	hall be	deemed	to meet b	oth limit	s and mea	surement	
			-						

with average detector is unnecessary.



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	-		
Test Mode	:	1920*1080/60Hz	DVI

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.158	0.17	0.02	9.86	36.40	46.45	55.56	9.11	Average
2	0.158	0.17	0.02	9.86	41.88	51.93	65.56	13.63	QP
3	0.211	0.17	0.02	9.85	31.34	41.38	53.18	11.80	Average
4	0.211	0.17	0.02	9.85	36.32	46.36	63.18	16.82	QP
5	0.260	0.18	0.02	9.86	29.76	39.82	51.42	11.60	Average
6	0.260	0.18	0.02	9.86	33.65	43.71	61.42	17.71	QP
7	0.367	0.19	0.03	9.86	25.45	35.53	48.56	13.03	Average
8	0.367	0.19	0.03	9.86	30.31	40.39	58,56	18.17	QP
9	0.644	0.20	0.03	9.85	19.01	29.09	46.00	16.91	Average
10	0.644	0.20	0.03	9.85	30.21	40.29	56.00	15.71	QP
11	1.449	0.23	0.04	9.86	21.14	31.27	46.00	14.73	Average
12	1.449	0.23	0.04	9.86	29.63	39.76	56.00	16.24	QP
Remai	rks: 1. E	mission	Level=	AMN Fact	tor + Cabl	le Loss +	Pulse Att	. + Readir	ng.
	2. I	f the av	erage 1	imit is	met when	useing a	quasi-pea	k detector	`,
	t	he EUT s	hall be	deemed	to meet b	oth limit	s and mea	surement	

with average detector is unnecessary.

5. RADIATED DISTURBANCE MEASUREMENT

5.1. Test Equipment

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

Item	Туре	Manufacturer	Model No.	Serial No.	Cal. Due Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A-507	MY48031090	2015. 10. 12	1 Year
2.	Test Receiver	R&S	ESCI	100557	2015. 01. 07	1 Year
3.	Amplifier	HP	8447D	2727A06154	N.C.R	N.C.R
4.	Bilog Antenna	ETC	MCTD 2786	BL13F03010	2015. 01. 26	1 Year

5.1.1. For 30MHz-1000MHz Frequency (At No. 7 Open Area Test Site)

5.1.2.	For Above 1	GHz Frequency	(At No.2	Semi-Anechoic	Chamber)
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Item	Туре	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A-526	MY48031076	2015. 09. 24	1 Year
2.	Amplifier	HP	8447D	2944A07178	2015.05.05	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



ANTENNA TOWER

5.3. Limits for Radiated Disturbance

(EN 55022/ AS/NZS CISPR 22, Class B)

5.3.1. Limit below 1GHz

Frequency	Distance	Field Strengths Limits
(MHz)	(Meters)	(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	Distance	Average Limits	Peak Limits
(GHz)	(Meters)	$(dB\mu V/m)$	$(dB\mu V/m)$
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 30MHz-1000MHz, which measurement was at Open Area Test Site:

The EUT and its simulator were placed on a turn table which was 0.8 meter above ground. The turn table rotate 360 degrees to determine the position of the maximum emission level. EUT was set to 10 meters away from the receiving antenna which were mounted on an antenna tower. The antenna could be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna was used as a receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to EN 55022 Class B requirements.

The bandwidth of the R & S Test Receiver ESCI 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 above 1GHz, which measurement was 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 polarization 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 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:

 $w = 2 \times d \times \tan(0.5 \times \theta_{3dB})$

	3115 Horn					
Frequency	d =	3m				
GHz	$\theta_{\rm 3Db(min)}$	$W(\min)$				
	(°)	(m)				
1.00	66	3.90				
2.00	54	2.42				
4.00	50	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*. (*w*min) 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 was performed during this section testing and all the test results are listed in section 5.6.1.

EUT: LCD Monitor Model No.: E2275SWDA

Test Date: 2015. 11. 11 Temperature: 25°C Humidity: 57%

The details of test modes are as follows :

Mada	Mode Input Port Display, Resolution/Frequency	Display Baselution/Frequency	Reference Test Data No.			
widde		Horizontal	Vertical			
1	DVI	"H" Pattern, 1920*1080/60Hz	# 2	# 1		

For above 1GHz frequency range:

The EUT was performed during this section testing and all the test results are listed in section 5.6.2.

EUT: LCD Monitor Model No.: E2275SWDA

Test Date: 2015. 11. 12 Temperature: 24°C Humidity: 52%

The details of test modes are as follows :

Mode	e Input Port Display, Resolution/Frequency	Reference T	est Data No.	
widde	input Fort	Display, Resolution/Frequency	Horizontal	Vertical
1	DVI	"H" Pattern, 1920*1080/60Hz	# 4	# 3

5.6.1. Radiated Disturbance Measurement Results at Open Area Test Site (30-1000MHz)



	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	191.732	10.50	1.82	9.33	21.65	30.00	8.35	QP
2	214.796	11.66	1.95	8.21	21.81	30.00	8.19	QP
3	281.740	14.15	2.28	10.33	26.76	37.00	10.24	QP
4	445.498	17.74	2.72	9.87	30.34	37.00	6.66	QP
5	594.008	19.02	3.47	8.27	30.76	37.00	6.24	QP
6	742.498	20.63	3.97	7.09	31.70	37.00	5.30	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 was detected at 742.498MHz with corrected signal level of $31.70dB\mu V/m$ (limit is $37.0dB\mu V/m$) when the antenna was at horizontal polarization and was at 4m high and the turn table was at 70°.
- 4. 0°was the table front facing the antenna. Degree is calculated from 0°clockwise facing the antenna.



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Site no.	:	OATS NO.7	Data no.	:	1
Dis. / Ant.	:	10m BILOG ANTENNA 2786	Ant. pol.	:	VERTICAL
Limit	:	EN55022 CLASS-B			
Env. / Ins.	:	25*C/57% ESCI (557)	Engineer	:	Garry Chao
EUT M/N	:	E2275SWDA			
Power Rating	:	230Vac/50Hz			
Test Mode	:	1920*1080/60Hz DVI			

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	49.650	9.78	0.83	11.12	21.74	30.00	8.26	QP
2	191.999	10.50	1.82	12.65	24.97	30.00	5.03	QP
3	214.802	11.66	1.95	11.87	25.48	30.00	4.52	QP *
4	445.499	17.74	2.72	9.11	29.57	37.00	7.43	QP
5	594.010	19.02	3.47	5.74	28.23	37.00	8.77	QP
6	742.493	20.63	3.97	3.24	27.84	37.00	9.16	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 was detected at 214.802MHz with corrected signal level of 25.48dBµV/m (limit is 30.0dBµV/m) when the antenna was at vertical polarization and was at 1m high and the turn table was at 40°.
- 4. O'was the table front facing the antenna. Degree is calculated from 0°clockwise facing the antenna.

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



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Dís. / Ant.	:	3m HORN3115-3775	Ant. pol.	:	HORIZONTAL
Limit	:	CLASS B-PK			
Env. / Ins.	:	24*C / 52% N9010A (076)	Engineer	:	Edward_lin
EUT	:	E2275SWDA			
Power Rating	:	230/ac/50Hz			
Test Mode	:	1920*1080/60Hz DVI			

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	PREAMP Gain (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	
1	1340.00	25.70	5.37	36.09	57.54	52.52	70.00	17.48	Peak
2	1340.70	25.70	5.38	36.09	41.42	36.41	50.00	13.59	Average
3	1855.00	27.68	6.98	35.40	56.91	56.17	70.00	13.83	Peak
4	1856.78	27.68	6.98	35.40	41.42	40.68	50.00	9.32	Average
5	1995.00	28.28	7.44	35.27	56.86	57.31	70.00	12.69	Peak
6	1996.93	28.28	7.45	35.27	41.35	41.81	50.00	8.19	Average
Remark	s: 1. Emis	sion Lev	el= Ant	enna Fa	ctor + C	able Loss	- Preamp G	5ain + Rea	ding.
	2. The	emission	levels	that a	re 20dB	below the	official 1	limit are	not

reported.



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	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	PREAMP Gain (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	
1	1600.00	26.45	6.14	35.68	59.43	56.34	70.00	13.66	Peak
2	1603.24	26.45	6.15	35.67	41.13	38.06	50.00	11.94	Average
3	2123.96	28.41	7.57	35.21	40.37	41.14	50.00	8.86	Average
4	2125.00	28.41	7.57	35.21	58.32	59.09	70.00	10.91	Peak
5	2344.86	28.59	7.80	35.13	42.73	43.99	50.00	6.01	Average
6	2345.00	28.59	7.80	35.13	59.22	60.48	70.00	9.52	Peak
Remark							- Preamp @ official]		

6. POWER HARMONIC & FLICKER MEASUREMENT

Item	Туре	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	AC Power Source	TESEQ	NSG 1007-45	1248A04038	2014. 01. 17	2 Years
	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

6.1. Test Equipment

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 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	Input Port	Display, Resolution/Frequency
1	DVI	"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.

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

EUT: E2275SWDA Tested by: jason chou Test category: Class-D per Ed. 4.0 (2014) (European limits) Test Margin: 100 Test date: 2015/11/16 Test duration (min): 2.5 Data file name: CTSMXL_H-000243.cts_data Comment: 1920*1080/60Hz(DVI)

Test Result: N/L Source qualification: Normal

Current & voltage waveforms



European Limits

Harmonics and Class D limit line



Test result: N/L Worst harmonic was #11 with 461.7% of the limit.

Current Test Result Summary (Run time)

 EUT: E2275SWDA
 Tested by: jason chou

 Test category: Class-D per Ed. 4.0 (2014) (European limits)
 Test Margin: 100

 Test date: 2015/11/16
 Test duration (min): 2.5
 Data file name: CTSMXL_H-000243.cts_data

 Comment: 1920*1080/60Hz(DVI)
 Test Result: N/L
 Source qualification: Normal

 THC(A): 0.000
 LTHD(%): 0.0
 POHC(A): 0.000
 POHC Limit(A): 0.000

THC	C(A): 0.000	I-THD(%): 0).0 POł	IC(A): 0.000	POHC Lim	it(A): 0.000	
Highest	t parameter va	alues during	test:				
	V_RMS (Volts	s): 230.187		Frequency(Hz)	: 50.00		
	I_Peak (Amps			I_RMS (Amps)	: 0.188		
	Fund (Amp	s): 0.09Z		Crest Factor:	4.122		
	Power (Watts	s): 20.2		Power Factor:	0.467		
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	0.084	0.069	N/A	0.084	0.103	N/A	Pass
2 3 4 5 6	0.004	0.000	N/A	0.004	0.000	N/A	Pass
5	0.078	0.038	N/A	0.079	0.058	N/A	Pass
6	0.003	0.000	N/A	0.004	0.000	N/A	Pass
7	0.070	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	0.060	0.010	N/A	0.060	0.015	N/A	Pass
10	0.002	0.000	N/A	0.003	0.000	N/A	Pass
11	0.049	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	0.019	0.007	N/A	Pass
18	0.001	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	0.001	0.000	N/A	Pass
21	0.006	0.004	N/A	0.006	0.006	N/A	Pass
22	0.001	0.000	N/A	0.001	0.000	N/A	Pass
23	0.006	0.003	N/A	0.007	0.005	N/A	Pass
24	0.001	0.000	N/A	0.001	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	0.001	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	0.007	0.003	N/A	0.007	0.004	N/A	Pass
30	0.001	0.000	N/A	0.001	0.000	N/A	Pass
31	0.006	0.003	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	0.004	0.004	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: E2275SWDA
 Tested by: JASON CHOU

 Test category: dt,dmax,dc and Pst (European limits)
 Test Margin: 100

 Test date: 2015/11/16
 Test duration (min): 10
 Data file name: CTSMXL_F-000244.cts_data

 Comment: 1920*1080/60Hz(DVI)
 Comment: 1920*1080/60Hz(DVI)
 Test duration (min): 10

Test Result: Pass

Status: Test Completed



Plt and limit line



Parameter values recorded dur	ing the test:	
Vrms at the end of test (Volt):		
Highest dt (%):	0.00	
T-max (mS):	0.0	
Highest dc (%):	0.00	
Highest dmax (%):	-0.05	
Highest Pst (10 min. period):	0.111	

Test limit (%):	N/A	N/A
Test limit (mS):	500.0	Pass
Test limit (%):	3.30	Pass
Test limit (%):	4.00	Pass
Test limit (%):	4.00	Pass
Test limit:	1.000	Pass

7. ELECTROSTATIC DISCHARGE IMMUNITY TEST

7.1. Test Equipment

Item	Туре	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	ESD Simulator	TESEQ	NSG 437	316	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

Laval	Test Voltage	Test Voltage		
Level	Contact Discharge (kV)	Air Discharge (kV)		
1.	2	2		
2.	4	4		
3.	6	8		
4.	8	15		
Х	Special	Special		

7.4.1. Severity level

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 B)

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	Input Port	Display, Resolution/Frequency				
1	DVI	"H" Pattern, 1920*1080/60Hz				

Electrostatic Discharge Immunity Test Results AUDIX TECHNOLOGY CORPORATION

				st Date :	2010.11		
EUT : LCD Monito	or, M/N E227	5SWDA	Тег	nperature :	22		
Power Supply :	AC 230V, 50	Hz	Hu	midity :	49	%	
Working Condition :	See Section	4.4.	Atn	nospheric pr	essure :	99 kF	Pa
Engineer <u>:</u> Xar	Zhuo		Tes	st Mode:	See Sectio	n 7.7.	
Air Discharge	Voltage k	V Level / D	ischarge p	er polarity .	10 / Result:	Pass	
Test Location	+2	-2	+4	-4	+8	-8	Comments
Screen (1-4)	ND	ND	ND	ND	A	В	Note
LED (5)	ND	ND	ND	ND	ND	ND	
Button (6-10)	ND	ND	ND	ND	ND	ND	
Seam (11-13)	ND	ND	ND	ND	ND	ND	
Contact Discharge	Voltage k	V Level / D	ischarge p	er polarity 2	25 / Result:	Pass	
Test Location	+2	-2	+4	-4			Comments
Audio Out (14)	A	A	A	A			
Audio In (15)	A	A	A	A			
D-Sub (16)	A	A	A	A			
DVI (17)	A	A	A	A			
4C In (18)	A	A	A	A			
Indirect Contact	Voltage k	V Level / D	ischarge p	er polarity 2	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							
	s Please refer to the Photos of ESD Test Points						

interference was stopped.
8. RF FIELD STRENGTH IMMUNITY TEST

Item	Туре	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
	Radiated Immunity System	TESEQ	ITS 6006	033009	2015. 09. 24	1 Year
2.	Power Amplifier	TESEQ	CBA 1G-275	T44214	N.C.R	N.C.R
3.	Power Meter	TESEQ	PM 6006	073364	2015. 09. 26	1 Year
4.	Power Antenna	Schwarzbeck	STLP 9128 E	9128E084	N.C.R	N.C.R
5.	Direction Coupler	TESEQ	C5982-10	98618	2015.08.12	1 Year

8.1. Test Equipment

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
Х	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 1.55 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
 Field Strength Amplitude Modulated Scanning Frequency Step Size The Rate of Sweep Dwell Time 	3 V/m (r.m.s, Unmodulated, Severity Level 2) 1kHz, 80%AM 80 - 1000 MHz 1% increments 0.0015 decade/s 3 Sec.
1	

8.7. Test Results

PASSED. (Complied with Criterion A)

The EUT with the 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	Input Port	Display, Resolution/Frequency
1	DVI	"H" Pattern, 1920*1080/60Hz

RF Field Strength Immunity Test Results AUDIX TECHNOLOGY CORPORATION

Applicant : Taiwan	BOE Vision-ele	ctronic	Test Date : 201	5. 11. 14	
EUT : LCD Monit	or, M/N E2275S	SWDA	Temperature :	25	
Power Supply :	AC 230V, 50Hz		Humidity : 5.	3 %	
Working Condition :	See Section 4.	4.	Test Mode: See Sec	etion 8.7.	
Engineer : Rex	c Wang				
Frequency Range (MHz)	Position (Angle)	Polarity (H or V)	Field Strength (V/m)	Results & Performance Criterion	
80~1000	0°	Н	3V/m+Modulated	Pass, A	
80 ~ 1000	90°	Н	3V/m+Modulated	Pass, A	
80 ~ 1000	180°	Н	3V/m+Modulated	Pass, A	
80 ~ 1000	270°	Н	3V/m+Modulated	Pass, A	
80 ~ 1000	<i>0</i> °	V	3V/m+Modulated	Pass, A	
80 ~ 1000	<i>90</i> °	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	Туре	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
	EMS Immunity Test System	TESEQ	NSG 3060	1519	2015. 07. 29	1 Year
2.	C.D.N.	TESEQ	CDN 3063	2074	2015.07.29	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	r port, PE	On I/O (input/output) signal, data and control ports			
Level	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 :	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	^a "X" is an open level. The level has to be specified in the dedicated					
equipment specification						

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 the 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	Input Port	Display, Resolution/Frequency
1	DVI	"H" Pattern, 1920*1080/60Hz

Electrical Fast Transient/Burst Immunity Test Results AUDIX TECHNOLOGY CORPORATION

4	Applicant : Taiwan BOE Vision-electronic				Tart Data		015 11 17		
Аррисані	: Idiwa	an BOE Visi	lon-electror		Test Date	. 20	015. 11. 17		
EUT :	EUT : LCD Monitor, M/N E2275SWDA				Temperat	ure :	22		
Power Su	Power Supply : AC 230V, 50Hz				Humidity	:	53	%	
Working	Working Condition : See Section 4.4.				Test Mode	e: See	Section 9.7	•	
Engineer	Engineer : Jacky Chen								
Inject Place: Power Supply Line					Inject I	Place : I/C) 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					
Ν	+0.5, 1	60	Direct	Pass, A					
Ν	- 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	Туре	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
	EMS Immunity Test System	TESEQ	NSG 3060	1519	2015. 07. 29	1 Year
2.	C.D.N.	TESEQ	CDN 3063	2074	2015.07.29	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 the 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	Input Port	Display, Resolution/Frequency
1	DVI	"H" Pattern, 1920*1080/60Hz

Surge Immunity Test Results AUDIX TECHNOLOGY CORPORATION

nitor, M/N E	2275SWDA					
		_	Temperature : 22			
AC 230V,	50Hz		Humidity : 53	%		
Working Condition : See Section 4.4.				Test Mode: See Section 10.7.		
Engineer : Jacky Chen						
	Input A	nd Outpu	t AC Power Port			
Polarity	Phase Angle	No of Pulse	Pulse Voltage (kV)	Results & Performance Criterion		
+	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		
+	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		
+	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		
	Polarity + + + + + + + + + + + + +	Input A Polarity Phase Angle + 0 + 90 + 180 + 270 - 0 - 90 - 180 - 270 + 0 + 90 - 180 - 270 + 90 + 180 - 270 + 0 + 90 + 180 - 270 - 0 - 90 - 180 - 270 + 0 + 90 - 180 + 270 - 0 - 90 - 180 - 90 - 180 - 180 - 270 - 180 <tr td=""> <t< td=""><td>Input And Output Polarity Phase Angle No of Pulse + 0 5 + 90 5 + 180 5 + 270 5 - 0 5 - 90 5 - 90 5 - 270 5 - 270 5 + 90 5 - 270 5 + 90 5 + 90 5 + 90 5 + 90 5 - 90 5 - 90 5 - 180 5 - 270 5 + 90 5 + 90 5 + 90 5 + 90 5 + 180 5 - 0 5 - 90 5 -</td></t<><td>acky Chen Input And Output AC Power Port Polarity Phase Angle No of Pulse Pulse Voltage (kV) + 0 5 0.5kV, 1.0kV + 90 5 0.5kV, 1.0kV + 90 5 0.5kV, 1.0kV + 180 5 0.5kV, 1.0kV + 270 5 0.5kV, 1.0kV - 0 5 0.5kV, 1.0kV - 0 5 0.5kV, 1.0kV - 90 5 0.5kV, 1.0kV - 180 5 0.5kV, 1.0kV - 180 5 0.5kV, 1.0kV - 180 5 0.5kV, 1.0kV, 2.0kV + 90 5 0.5kV, 1.0kV, 2.0kV + 180 5 0.5kV, 1.0kV, 2.0kV - 90 5 0.5kV, 1.0kV, 2.0kV - 180 5 0.5kV, 1.0kV, 2.0kV - 180 5 0.5kV, 1.0kV, 2.0kV</td></tr>	Input And Output Polarity Phase Angle No of Pulse + 0 5 + 90 5 + 180 5 + 270 5 - 0 5 - 90 5 - 90 5 - 270 5 - 270 5 + 90 5 - 270 5 + 90 5 + 90 5 + 90 5 + 90 5 - 90 5 - 90 5 - 180 5 - 270 5 + 90 5 + 90 5 + 90 5 + 90 5 + 180 5 - 0 5 - 90 5 -	acky Chen Input And Output AC Power Port Polarity Phase Angle No of Pulse Pulse Voltage (kV) + 0 5 0.5kV, 1.0kV + 90 5 0.5kV, 1.0kV + 90 5 0.5kV, 1.0kV + 180 5 0.5kV, 1.0kV + 270 5 0.5kV, 1.0kV - 0 5 0.5kV, 1.0kV - 0 5 0.5kV, 1.0kV - 90 5 0.5kV, 1.0kV - 180 5 0.5kV, 1.0kV - 180 5 0.5kV, 1.0kV - 180 5 0.5kV, 1.0kV, 2.0kV + 90 5 0.5kV, 1.0kV, 2.0kV + 180 5 0.5kV, 1.0kV, 2.0kV - 90 5 0.5kV, 1.0kV, 2.0kV - 180 5 0.5kV, 1.0kV, 2.0kV - 180 5 0.5kV, 1.0kV, 2.0kV		
Input And Output Polarity Phase Angle No of Pulse + 0 5 + 90 5 + 180 5 + 270 5 - 0 5 - 90 5 - 90 5 - 270 5 - 270 5 + 90 5 - 270 5 + 90 5 + 90 5 + 90 5 + 90 5 - 90 5 - 90 5 - 180 5 - 270 5 + 90 5 + 90 5 + 90 5 + 90 5 + 180 5 - 0 5 - 90 5 -	acky Chen Input And Output AC Power Port Polarity Phase Angle No of Pulse Pulse Voltage (kV) + 0 5 0.5kV, 1.0kV + 90 5 0.5kV, 1.0kV + 90 5 0.5kV, 1.0kV + 180 5 0.5kV, 1.0kV + 270 5 0.5kV, 1.0kV - 0 5 0.5kV, 1.0kV - 0 5 0.5kV, 1.0kV - 90 5 0.5kV, 1.0kV - 180 5 0.5kV, 1.0kV - 180 5 0.5kV, 1.0kV - 180 5 0.5kV, 1.0kV, 2.0kV + 90 5 0.5kV, 1.0kV, 2.0kV + 180 5 0.5kV, 1.0kV, 2.0kV - 90 5 0.5kV, 1.0kV, 2.0kV - 180 5 0.5kV, 1.0kV, 2.0kV - 180 5 0.5kV, 1.0kV, 2.0kV					

11.CONDUCTED DISTURBANCE IMMUNITY TEST

11.1.Test Equipment

Item	Туре	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	RF Generator	TESEQ	NSG 4070B-30	035076	2015. 11. 03	1 Year
2.	6dB Attenuator	TESEQ	ATN 6050	38424	2015.03.09	1 Year
3.	C.D.N	TESEQ	CDN M016	34607	2015.11.05	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

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

11.4.1. Severity levels

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 the 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	Input Port	Display, Resolution/Frequency
1	DVI	"H" Pattern, 1920*1080/60Hz

Conducted Disturbance Immunity Test Results AUDIX TECHNOLOGY CORPORATION

Applicant : Taiwan BOE Vision-electronic			Test Date : 2015. 11. 16		
EUT: LCD Mor	nitor, M/N E2275SWD2	4	Temperati	ure: 23	
Power Supply: AC 230V, 50Hz			Humidity	: 55	%
Working Condition : See Section 4.4.			Test Mode: See Section 11.7.		
Engineer : MinXaing Yang					
Frequency Range (MHz)	Inject Position	Stre	ngth	Results	Performance Criterion
0.15MHz ~ 80MHz	Main (Power Line)	`	rms) ılated	Pass	A
Remark :Modulati	on Signal:1kHz 80%	AM.			

12. POWER FREQUENCY MAGNETIC FIELD IMMUNITY TEST

12.1.Test Equipment

Item	Туре	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Magnetic field generator	Narda S.T.S. / PMM	PMM1008	0100X30101	2014. 11. 20	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 $(1m \times 2.6m)$. 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 the 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	Input Port	Display, Resolution/Frequency
1	DVI	"H" Pattern, 1920*1080/60Hz

Power Frequency Magnetic Field Immunity Test Results AUDIX TECHNOLOGY CORPORATION

Applicant : Taiwan BOE	Vision-electronic	Test Date : 201	15. 11. 16			
EUT: LCD Monitor, M	I/N E2275SWDA	Temperature :	Temperature : 25			
Power Supply : AC 230V, 50Hz		Humidity :	Humidity : 53 %			
Working Condition : See Section 4.4.		Test Mode: See Se	ction 12.7.			
Engineer : Jason Chor	и	_				
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 occurr	red.					

13. VOLTAGE DIPS AND INTERRUPTIONS IMMUNITY TEST

13.1.Test Equipment

Item	Туре	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Programmable Power Source	TESEQ	NSG1007	1248A04038	2014. 01. 17	2 Years

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

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	Х	Х	Х	Х	Х					

13.4.1. Preferred severity levels and durations for voltage dips

^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.

"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	Х				

^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.

"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 in Voltage Interruption & Criterion A in Voltage Dips).

The EUT with the 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	Input Port	Display, Resolution/Frequency
1	DVI	"H" Pattern, 1920*1080/60Hz

Voltage Dips and Interruptions Immunity Test Results AUDIX TECHNOLOGY CORPORATION

Applicant : Taiwan BOE Vision-electronic			Test Date : 2015. 11. 16					
LUI . I	EUT : LCD Monitor, M/N E2275SWDA				Temperature : 25			
Power Suppl	<i>Power Supply : AC 100-240V, 50/60Hz</i>				Humidity : 48 %			
Working Condition : See Section 4.4.				Test Mode: See Section 13.7.				
Engineer : Jason Chou								
Single Test Voltage								
Type of Test	Test Voltage	Phase Angle	% Reduc	tion	period	Test Results & Performance Criterion		
		0	> 95		250	Pass, B, Note		
		45	> 95		250	Pass, B, Note		
	100/240V	90	> 95		250	Pass, B, Note		
Voltage		135	> 95		250	Pass, B, Note		
Interruptions		180	> 95		250	Pass, B, Note		
		225	> 95		250	Pass, B, Note		
		270	> 95		250	Pass, B, Note		
		315	> 95		250	Pass, B, Note		
		0	30		25	Pass, A		
		45	30		25	Pass, A		
		90	30		25	Pass, A		
	100/240V	135	30		25	Pass, A		
		180	30		25	Pass, A		
		225	30		25	Pass, A		
		270	30		25	Pass, A		
Voltage Dips		315	30		25	Pass, A		
vollage Dips	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 : Performance Criteria B, During the test, the EUT was interfered and its monitor turned to black, but it's self-recoverable after test.								

14.PHOTOGRAPHS

14.1.Photos of Conducted Disturbance Measurement



FRONT VIEW OF CONDUCTED MEASUREMENT



BACK VIEW OF CONDUCTED MEASUREMENT



14.2.Photos of Radiated Disturbance Measurement at Open Area Test Site

(30-1000MHz)

FRONT VIEW OF RADIATED MEASUREMENT



BACK VIEW OF RADIATED MEASUREMENT

14.3.Photos of Radiated Disturbance Measurement at Semi-Anechoic Chamber



(Above 1GHz)

FRONT VIEW OF RADIATED MEASUREMENT



BACK VIEW OF RADIATED MEASUREMENT



14.4.Photos of Harmonic & Flicker Measurement

14.5.Photos of Electrostatic Discharge Immunity Test

Air & Contact Discharge



VCP & HCP





Photo of Points

Photo of Points 5





Photo of Points





14.6.Photos of RF Strength Immunity Test



14.7.Photos of Electrical Fast Transient/Burst Immunity Test

14.8.Photos of Surge Immunity Test





14.9.Photos of Injected Currents Immunity Test

14.10.Photos of Power Frequency Magnetic Field Immunity Test





14.11.Photos of Voltage Dips and Interruptions Immunity Test

APPENDIX (Photos of EUT)

Total Pages: 7 Pages

Figure 1 General Appearance (Front View)



Figure 2 General Appearance (Back View)



Figure 3 General Appearance (Bottom View)



Figure 4 Appearance (Removed Base, I/O Ports View)



Figure 5 Internal View (Removed Back Cover)



Figure 6 Internal View (Removed Metal Cover)





Figure 8 Internal View (Main Board, Back View)





Figure 9 Internal View (Button Control Board, Front View)

Figure 10 Internal View (Button Control Board, Back View)



Figure 11 Internal View (LCD Panel, Front View)



Figure 12 Internal View (LCD Panel, Back View)



Figure 13 D-Sub Cable



Figure 14 AC Power Cord

