

Application for FCC Certificate  
On Behalf of  
LG Electronics U.S.A., Inc.

LCD Monitor

Model No.: E2211PX

Serial No.: E1206719-01/01

FCC ID : BEJE2211PX

Prepared For : LG Electronics U.S.A., Inc.  
1000 Sylvan Avenue, Englewood Cliffs,  
NJ 07632, United States

Prepared By : Audix Technology (Shanghai) Co., Ltd.  
3F and 4F, 34Bldg 680 Guiping Rd,  
Caohejing Hi-Tech Park,  
Shanghai 200233, China

Tel: +86-21-64955500  
Fax: +86-21-64955491

Report No. : ACI-F12108  
Date of Test : Jun 11 – 12, 2012  
Date of Report : Jun 14, 2012

## TABLE OF CONTENTS

	Page
<b>1 SUMMARY OF STANDARDS AND RESULTS.....</b>	<b>4</b>
1.1 Description of Standards and Results.....	4
<b>2 GENERAL INFORMATION.....</b>	<b>5</b>
2.1 Description of Equipment Under Test.....	5
2.2 Peripherals.....	6
2.3 Description of Test Facility.....	7
2.4 Measurement Uncertainty.....	7
<b>3 CONDUCTED EMISSION TEST.....</b>	<b>8</b>
3.1 Test Equipment.....	8
3.2 Block Diagram of Test Setup.....	8
3.3 Conducted Emission Limit [FCC Part 15 Subpart B 15.107(a)].....	9
3.4 Test Configuration.....	9
3.5 Operating Condition of EUT.....	10
3.6 Test Procedures.....	10
3.7 Test Results.....	11
<b>4 RADIATED EMISSION TEST.....</b>	<b>17</b>
4.1 Test Equipment.....	17
4.2 Block Diagram of Test Setup.....	17
4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)].....	19
4.4 Test Configuration.....	19
4.5 Operating Condition of EUT.....	19
4.6 Test Procedures.....	20
4.7 Test Results.....	21
<b>5 DEVIATION TO TEST SPECIFICATIONS.....</b>	<b>29</b>



# 1 SUMMARY OF STANDARDS AND RESULTS

## 1.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Description of Test Item	Standard	Limits	Results
<b>EMISSION</b>			
Conducted Disturbance at the Mains Terminal	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2011 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2011 AND ANSI C63.4-2003	15.109(a) Class B	Pass

## 2 GENERAL INFORMATION

### 2.1 Description of Equipment Under Test

Description	: LCD Monitor
Type of EUT	: <input checked="" type="checkbox"/> Production <input type="checkbox"/> Pre-product <input type="checkbox"/> Pro-type
Model No.	: E2211PX
Serial No.	: E1206719-01/01
Note	: The data of E2211PX at rotate 90 degree condition (only radiated emission) was also tested and recorded in this report. The mode tested was the worst case of E2211PX in normal condition.
Real Power	: 21.60W
Applicant	: LG Electronics U.S.A., Inc. 1000 Sylvan Avenue, Englewood Cliffs, NJ 07632, United States
Manufacturer	: LG Electronics Nanjing Display Co., Ltd. No.346, Yao Xin Road, Economic & Technical Development Zone, Nanjing, China
LCD Panel	: Manufacturer: AU Optronics M/N : M215HW03
Max Resolution	: 1920*1080@60Hz
D-Sub Cable #1	: Shielded, Detachable, 1.85m
D-Sub Cable #2	: Shielded, Detachable, 1.50m
DVI Cable #1	: Shielded, Detachable, 2.00m
DVI Cable #2	: Shielded, Detachable, 1.50m
Power Cord	: Unshielded, Detachable, 1.80m
Note	: The D-Sub cable #2 and DVI cable #2 were selected to be used in the test.

**Remark:**

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

- (1) One D-Sub Port : Connected with PC
- (2) One DVI Port : Connected with PC
- (3) One AC In Port : Connected with Power

**2.2 Peripherals**

**2.2.1 PC**

Manufacturer : HP  
 Model Number : dx7200MT  
 Serial Number : CNG622017W  
 Power Cord : Unshielded, Detachable, 1.8m  
 Certificate : FCC DoC; CE/EMC; VCCI; C-Tick; UL  
 BSMI (R33001) 3C (A000111)  
 MIC (E-A011-04-2659(B))

**2.2.2 Graphics Card (Used in PC)**

Manufacturer : ASUS  
 Model Number : EAH6670  
 Output port : DVI, D-Sub, HDMI

**2.2.3 Printer**

Manufacturer : HP  
 Model Number : C3990A  
 Serial Number : JPZX020487  
 Data Cable : Shielded, Detachable, 1.5m  
 Certificate : GS, CE/EMC, C-Tick, FCC DoC

**2.2.4 Keyboard**

Manufacturer : Microsoft  
 Model Number : RT2300  
 Serial Number : 7668200662248  
 Data Cable : Shielded, Undetachable, 1.8m  
 Certificate : CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

**2.2.5 Mouse**

Manufacturer : Microsoft  
 Model Number : RT2300  
 Serial Number : 6965712071551  
 Data Cable : Shielded, Undetachable, 1.8m.  
 Certificate : CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

### 2.2.6 Modem

Manufacturer : TP-LINK  
Model Number : TM-EC5658V  
Serial Number : 07123301053  
Data Cable : Shielded, Detachable, 1.8m  
Certificate : FCC DoC, CE/EMC, CCC

### 2.3 Description of Test Facility

Site Description (Semi-Anechoic Chamber) : Sept. 17, 1998 file on  
Apr 29, 2009 Renewed  
Federal Communications Commission  
FCC Engineering Laboratory  
7435 Oakland Mills Road  
Columbia, MD 21046, USA

Name of Firm : Audix Technology (Shanghai) Co., Ltd.

Site Location : 3F 34Bldg 680 Guiping Rd,  
Caohejing Hi-Tech Park,  
Shanghai 200233, China

NVLAP Lab Code : 200371-0

### 2.4 Measurement Uncertainty

Conducted Emission Expanded Uncertainty: U = 3.43 dB

Radiated Emission Expanded Uncertainty (30-200MHz):  
U = 4.67 dB (Horizontal)  
U = 4.72 dB (Vertical)

Radiated Emission Expanded Uncertainty (200M-1GHz):  
U = 4.81 dB (Horizontal)  
U = 4.69 dB (Vertical)

Radiated Emission Expanded Uncertainty (Above 1GHz) :  
U= 4.50 dB (Horizontal)  
U= 4.16 dB (Vertical)

### 3 CONDUCTED EMISSION TEST

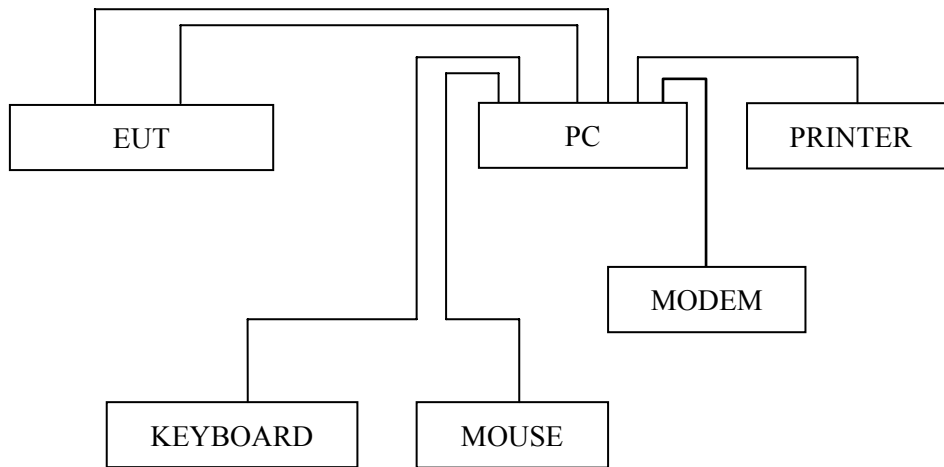
#### 3.1 Test Equipment

The following test equipments are used during the conducted emission test in a shielded room:

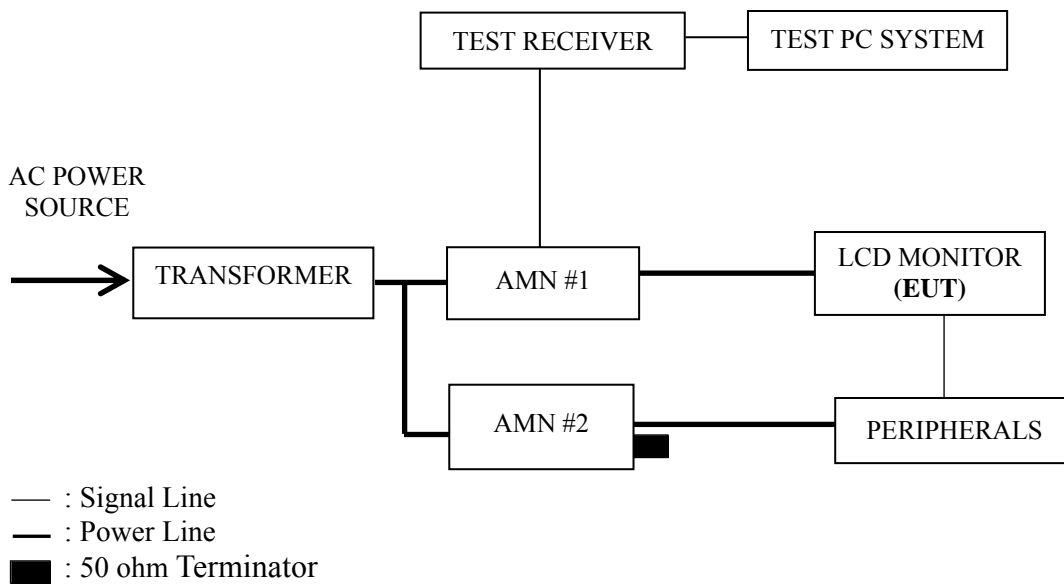
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	100841	Mar 22, 2012	Mar 22, 2013
2.	Artificial Mains Network (AMN #1)	R&S	ESH2-Z5	843890/011	Feb 13, 2012	Feb 13, 2013
3.	Artificial Mains Network (AMN #2)	R&S	ENV4200	100125	Mar 22, 2012	Mar 22, 2013
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 18, 2012	Sep 18, 2012
5.	50Ω Terminator	Anritsu	BNC	001	Mar 22, 2012	Mar 22, 2013
6.	Software	Audix	E3	SET00200 9804M592	--	--

#### 3.2 Block Diagram of Test Setup

##### 3.2.1 EUT & Peripherals



### 3.2.2 Conducted Disturbance Test Setup



### 3.3 Conducted Emission Limit [FCC Part 15 Subpart B 15.107(a)]

Frequency Range (MHz)	Limits dB ( $\mu$ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE 1 – The lower limit shall apply at the transition frequencies.  
 NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz

### 3.4 Test Configuration

The EUT (listed in Sec.2.1) and the peripherals (listed in Sec 2.2) were installed as shown on Sec.3.2 to meet FCC requirement and operating in a manner that tends to maximize its emission level in a normal application.

### 3.5 Operating Condition of EUT

3.5.1 Setup the EUT and peripherals as shown in Sec. 3.2.

3.5.2 Turn on the power of all equipments and the EUT.

3.5.3 Set the contrast & brightness of EUT to maximum.

3.5.4 PC system ran the self-test program "EMC Test" by windows XP and sent "H" characters to EUT through graphic card (we use white letters on a black background to represent all colors), the EUT's screen displayed and filled with "H" pattern by its resolution (Via D-Sub/DVI Input).

3.5.5 Repeat above procedure from 3.5.3 to 3.5.4 for difference test mode.

3.5.6 The other peripherals devices were driven and operated during the test.

3.5.7 The test modes are as follows:

Test Mode
D-Sub 1920*1080@60Hz
DVI 1920*1080@60Hz
DVI 1680*1050@60Hz
DVI 1280*1024@75Hz
DVI 640*480@60Hz

### 3.6 Test Procedures

The EUT and peripherals were connected to the power mains through an Artificial Mains Network (AMN). This provided a 50 ohm coupling impedance for the measuring equipment.

Both sides of AC line (Line & Neutral) 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 or manipulated according to ANSI C63.4:2003 during conducted emission test.

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

The frequency range from 150 kHz to 30 MHz was checked.

The test modes were done on conducted disturbance test and all the test results are listed in Sec. 3.7.

### 3.7 Test Results

< **PASS** >

The frequency and amplitude of the highest conducted emission relative to the limit is reported. All emissions not reported below are too low against the prescribed limits.

Test Mode	Data Page
D-Sub 1920*1080@60Hz	P12
<b>DVI 1920*1080@60Hz</b>	<b>P13</b>
DVI 1680*1050@60Hz	P14
DVI 1280*1024@75Hz	P15
DVI 640*480@60Hz	P16

NOTE 1 – The **bold test mode** listed above means the worst test mode.

NOTE 2 – Factor = Cable Loss + AMN Factor.

NOTE 3 – Emission Level = Meter Reading + Factor.

NOTE 4 – “QP” means “Quasi-Peak” values, “AV” means “Average” values.

NOTE 5 – The worst case is for DVI 1920\*1080@60Hz test mode. The worst emission is detected at 0.408 MHz (Average Value) with corrected signal level of 32.96 dB (μV) (limit is 47.68 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT :           LCD Monitor                Temperature :           22°C          

Model No. :           E2211PX                Humidity :           48%RH          

Serial No. :           E1206719-01/01                Date of Test :           Jun 11, 2012          

Test Mode :           D-Sub 1920\*1080@60Hz          

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.182	41.40	0.25	41.65	64.42	22.77	QP
	0.244	33.50	0.25	33.75	61.95	28.20	
	0.408	34.50	0.33	34.83	57.68	22.85	
	0.611	33.59	0.23	33.82	56.00	22.18	
	3.293	32.88	0.43	33.31	56.00	22.69	
	24.790	36.47	1.18	37.65	60.00	22.35	
	0.182	32.80	0.25	33.05	54.42	21.37	AV
	0.244	25.60	0.25	25.85	51.95	26.10	
	<b>0.408</b>	<b>28.31</b>	<b>0.33</b>	<b>28.64</b>	<b>47.68</b>	<b>19.04</b>	
	0.611	26.40	0.23	26.63	46.00	19.37	
	3.293	23.90	0.43	24.33	46.00	21.67	
	24.790	25.79	1.18	26.97	50.00	23.03	
Neutral	0.150	41.13	0.13	41.26	66.00	24.74	QP
	0.253	34.60	0.11	34.71	61.64	26.93	
	0.408	34.74	0.16	34.90	57.68	22.78	
	0.813	28.08	0.22	28.30	56.00	27.70	
	9.352	30.39	0.49	30.88	60.00	29.12	
	24.400	34.49	1.04	35.53	60.00	24.47	
	0.150	33.40	0.13	33.53	56.00	22.47	AV
	0.253	26.51	0.11	26.62	51.64	25.02	
	0.408	27.20	0.16	27.36	47.68	20.32	
	0.813	21.30	0.22	21.52	46.00	24.48	
	9.352	22.20	0.49	22.69	50.00	27.31	
	24.400	26.51	1.04	27.55	50.00	22.45	

TEST ENGINEER: SAWEN LI

EUT :           LCD Monitor                Temperature :           22°C          

Model No. :           E2211PX                Humidity :           48%RH          

Serial No. :           E1206719-01/01                Date of Test :           Jun 11, 2012          

Test Mode :           DVI 1920\*1080@60Hz          

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.183	44.24	0.25	44.49	64.33	19.84	QP
	0.244	37.49	0.25	37.74	61.95	24.21	
	0.406	37.62	0.33	37.95	57.73	19.78	
	0.813	32.99	0.24	33.23	56.00	22.77	
	3.276	36.07	0.43	36.50	56.00	19.50	
	24.529	38.64	1.16	39.80	60.00	20.20	
	0.183	36.50	0.25	36.75	54.33	17.58	AV
	0.244	28.60	0.25	28.85	51.95	23.10	
	0.406	31.91	0.33	32.24	47.73	15.49	
	0.813	22.70	0.24	22.94	46.00	23.06	
	3.276	26.70	0.43	27.13	46.00	18.87	
	24.529	27.61	1.16	28.77	50.00	21.23	
Neutral	0.180	44.32	0.12	44.44	64.50	20.06	QP
	0.256	37.40	0.11	37.51	61.56	24.05	
	0.408	37.96	0.16	38.12	57.68	19.56	
	0.813	32.05	0.22	32.27	56.00	23.73	
	9.352	33.09	0.49	33.58	60.00	26.42	
	24.529	37.90	1.04	38.94	60.00	21.06	
	0.180	36.50	0.12	36.62	54.50	17.88	AV
	0.256	28.61	0.11	28.72	51.56	22.84	
	<b>0.408</b>	<b>32.80</b>	<b>0.16</b>	<b>32.96</b>	<b>47.68</b>	<b>14.72</b>	
	0.813	23.30	0.22	23.52	46.00	22.48	
	9.352	24.50	0.49	24.99	50.00	25.01	
	24.529	26.81	1.04	27.85	50.00	22.15	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C  
 Model No. : E2211PX Humidity : 48%RH  
 Serial No. : E1206719-01/01 Date of Test : Jun 11, 2012  
 Test Mode : DVI 1680\*1050@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.182	41.09	0.25	41.34	64.42	23.08	QP
	0.242	32.22	0.25	32.47	62.04	29.57	
	0.406	34.56	0.33	34.89	57.73	22.84	
	0.813	30.42	0.24	30.66	56.00	25.34	
	3.293	35.70	0.43	36.13	56.00	19.87	
	24.400	36.22	1.16	37.38	60.00	22.62	
	0.182	33.20	0.25	33.45	54.42	20.97	AV
	0.242	24.50	0.25	24.75	52.04	27.29	
	<b>0.406</b>	<b>29.91</b>	<b>0.33</b>	<b>30.24</b>	<b>47.73</b>	<b>17.49</b>	
	0.813	22.60	0.24	22.84	46.00	23.16	
	3.293	26.80	0.43	27.23	46.00	18.77	
	24.400	25.81	1.16	26.97	50.00	23.03	
Neutral	0.202	42.16	0.12	42.28	63.54	21.26	QP
	0.242	31.88	0.11	31.99	62.04	30.05	
	0.408	35.37	0.16	35.53	57.68	22.15	
	0.813	28.66	0.22	28.88	56.00	27.12	
	9.552	30.32	0.49	30.81	60.00	29.19	
	24.790	34.67	1.06	35.73	60.00	24.27	
	0.202	34.70	0.12	34.82	53.54	18.72	AV
	0.242	22.90	0.11	23.01	52.04	29.03	
	0.408	28.70	0.16	28.86	47.68	18.82	
	0.813	20.50	0.22	20.72	46.00	25.28	
	9.552	22.10	0.49	22.59	50.00	27.41	
	24.790	23.49	1.06	24.55	50.00	25.45	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C  
 Model No. : E2211PX Humidity : 48%RH  
 Serial No. : E1206719-01/01 Date of Test : Jun 11, 2012  
 Test Mode : DVI 1280\*1024@75Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.182	41.29	0.25	41.54	64.42	22.88	QP
	0.242	32.53	0.25	32.78	62.04	29.26	
	0.406	34.58	0.33	34.91	57.73	22.82	
	0.813	30.78	0.24	31.02	56.00	24.98	
	9.352	32.28	0.73	33.01	60.00	26.99	
	24.529	36.44	1.16	37.60	60.00	22.40	
	0.182	32.90	0.25	33.15	54.42	21.27	AV
	0.242	24.40	0.25	24.65	52.04	27.39	
	0.406	28.21	0.33	28.54	47.73	19.19	
	0.813	23.90	0.24	24.14	46.00	21.86	
	9.352	23.20	0.73	23.93	50.00	26.07	
	24.529	25.81	1.16	26.97	50.00	23.03	
Neutral	0.183	41.23	0.12	41.35	64.33	22.98	QP
	0.262	32.37	0.11	32.48	61.38	28.90	
	0.408	35.14	0.16	35.30	57.68	22.38	
	0.813	27.92	0.22	28.14	56.00	27.86	
	9.352	30.46	0.49	30.95	60.00	29.05	
	24.400	34.77	1.04	35.81	60.00	24.19	
	0.183	33.70	0.12	33.82	54.33	20.51	AV
	0.262	23.91	0.11	24.02	51.38	27.36	
	<b>0.408</b>	<b>28.40</b>	<b>0.16</b>	<b>28.56</b>	<b>47.68</b>	<b>19.12</b>	
	0.813	18.40	0.22	18.62	46.00	27.38	
	9.352	21.10	0.49	21.59	50.00	28.41	
	24.400	23.61	1.04	24.65	50.00	25.35	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C  
 Model No. : E2211PX Humidity : 48%RH  
 Serial No. : E1206719-01/01 Date of Test : Jun 11, 2012  
 Test Mode : DVI 640\*480@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.184	40.77	0.25	41.02	64.28	23.26	QP
	0.262	33.47	0.25	33.72	61.38	27.66	
	0.406	34.57	0.33	34.90	57.73	22.83	
	0.813	30.86	0.24	31.10	56.00	24.90	
	3.293	35.65	0.43	36.08	56.00	19.92	
	24.400	36.48	1.16	37.64	60.00	22.36	
	0.184	32.80	0.25	33.05	54.28	21.23	AV
	0.262	24.30	0.25	24.55	51.38	26.83	
	0.406	28.21	0.33	28.54	47.73	19.19	
	0.813	20.60	0.24	20.84	46.00	25.16	
	3.293	26.90	0.43	27.33	46.00	18.67	
	24.400	27.11	1.16	28.27	50.00	21.73	
Neutral	0.204	42.33	0.12	42.45	63.45	21.00	QP
	0.259	34.16	0.11	34.27	61.47	27.20	
	0.408	34.59	0.16	34.75	57.68	22.93	
	0.813	28.48	0.22	28.70	56.00	27.30	
	9.352	29.44	0.49	29.93	60.00	30.07	
	24.529	35.38	1.04	36.42	60.00	23.58	
	<b>0.204</b>	<b>34.80</b>	<b>0.12</b>	<b>34.92</b>	<b>53.45</b>	<b>18.53</b>	AV
	0.259	26.31	0.11	26.42	51.47	25.05	
	0.408	28.80	0.16	28.96	47.68	18.72	
	0.813	20.30	0.22	20.52	46.00	25.48	
	9.352	21.90	0.49	22.39	50.00	27.61	
	24.529	24.11	1.04	25.15	50.00	24.85	

TEST ENGINEER: SAWEN LI

## 4 RADIATED EMISSION TEST

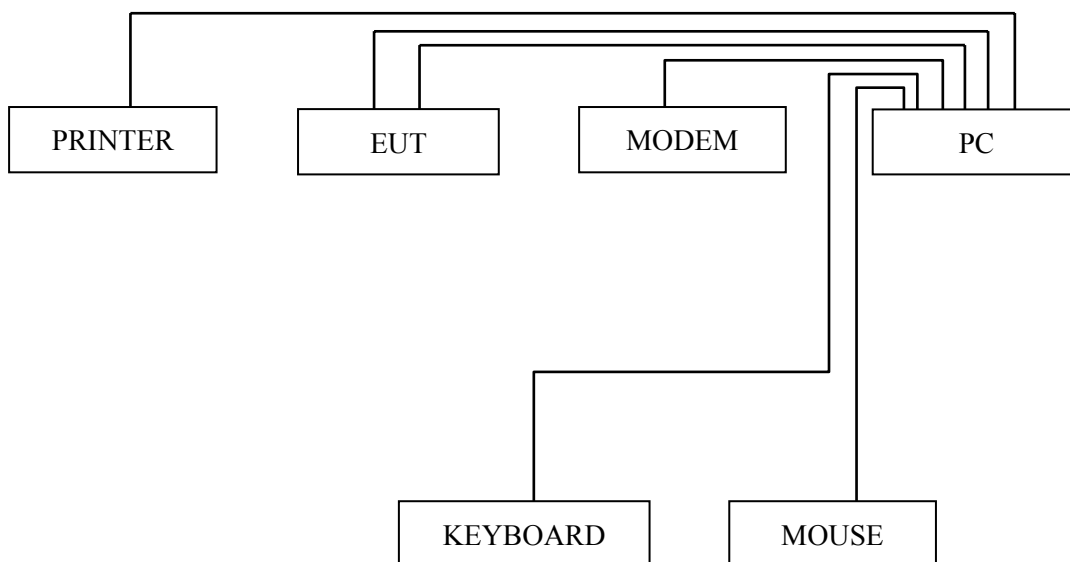
### 4.1 Test Equipment

The following test equipments are used during the radiated emission test in a semi-anechoic chamber:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESVS10	844594/001	Mar 22, 2012	Mar 22, 2013
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 18, 2012	Sep 18, 2012
3.	Preamplifier	HP	8449B	3008A00864	Mar 22, 2012	Mar 22, 2013
4.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2011	Dec 01, 2012
5.	Horn Antenna	EMCO	3115	9607-4878	May 06, 2012	May 06, 2013
6.	Spectrum	Agilent	E7405A	MY45106600	Mar 22, 2012	Mar 22, 2013
7.	50Ω Coaxial Switch	Anritsu	MP59B	6200426390	Mar 18, 2012	Sep 18, 2012
8.	Software	Audix	E3	SET00200 9912M295-2	--	--

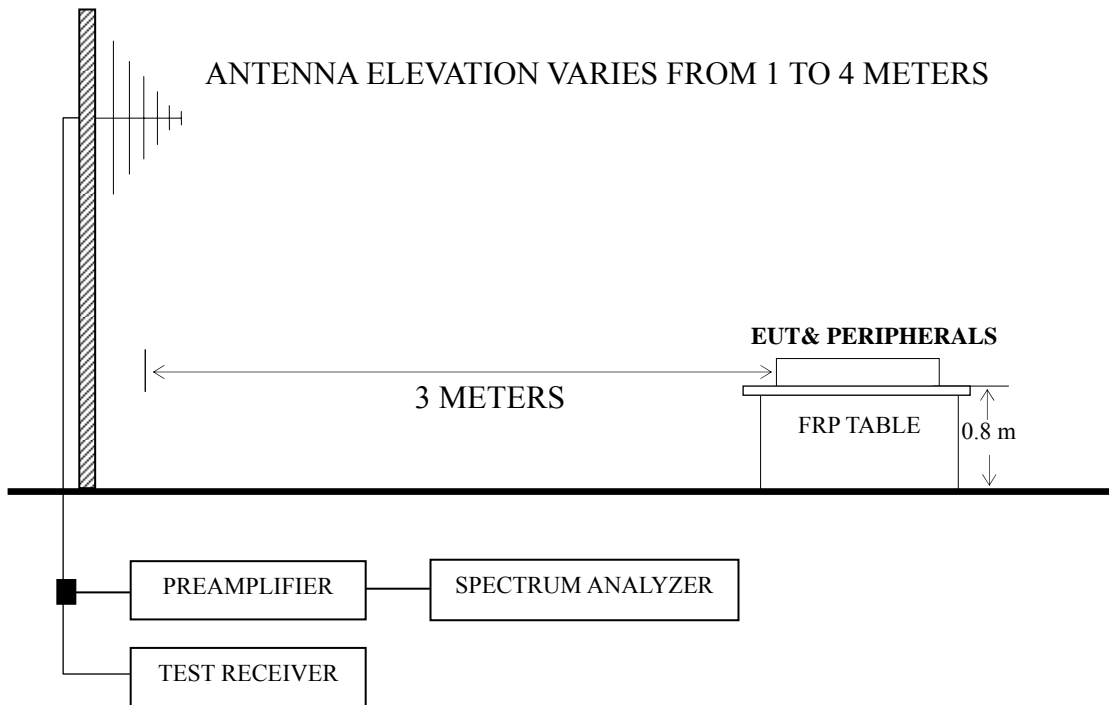
### 4.2 Block Diagram of Test Setup

#### 4.2.1 EUT and Peripherals



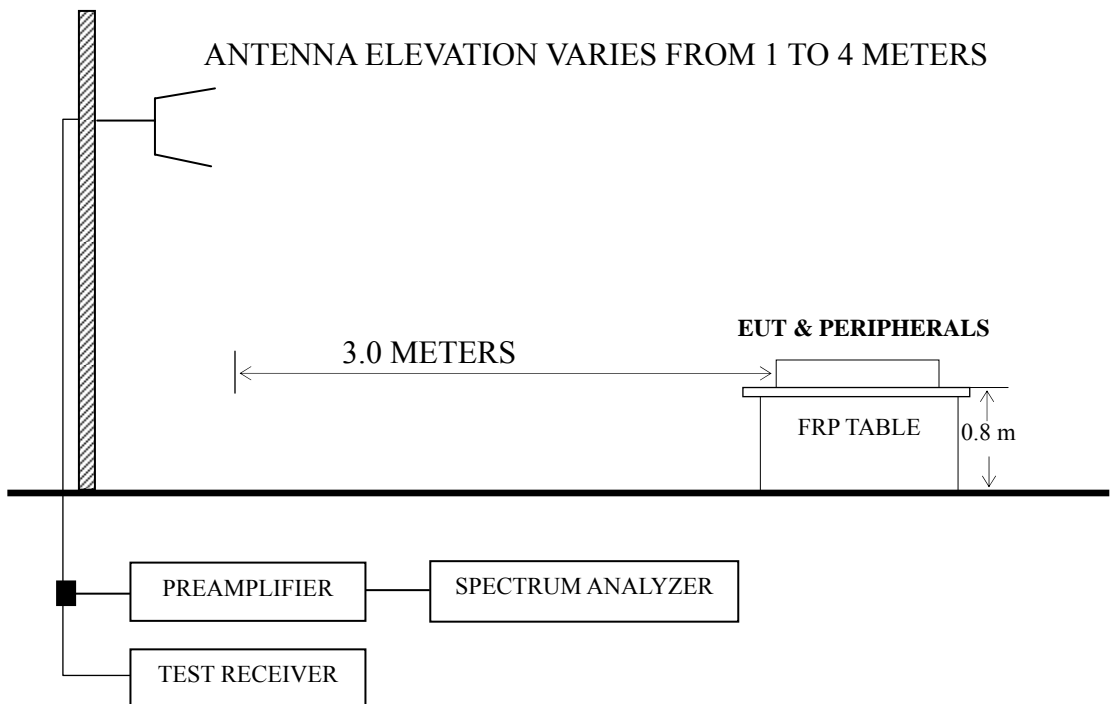
### 4.2.2 Radiated emission test setup

#### 4.2.2.1 Below 1GHz



■ : 50 ohm Coaxial Switch

#### 4.2.2.2 Above 1GHz



■ : 50 ohm Coaxial Switch

### 4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)]

Frequency (MHz)	Distance (m)	Field strength limits	
		( $\mu$ V/m)	dB ( $\mu$ V/m)
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0

NOTE 1 - Emission Level dB ( $\mu$ V/m) = 20 log Emission Level ( $\mu$ V/m)  
NOTE 2 - The tighter limit applies at the band edges.  
NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.  
NOTE 4 - The limits shown are based on Quasi-peak value detector below or equal to 1GHz and Average value detector above 1GHz.  
NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT.

### 4.4 Test Configuration

The configuration of the EUT and peripherals are same as those used in conducted emission test.

Please refer to Sec.3.4.

### 4.5 Operating Condition of EUT

Same as conducted emission test which is listed in Sec.3.5, except for the test setup replaced by Sec.4.2.

## 4.6 Test Procedures

The EUT and peripherals were placed on a FRP turntable that is 0.8 meter above ground. The FRP turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. Broadband antenna (Calibrated Bilog Antenna) or Horn Antenna was used as receiving antenna. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.4:2003 requirements during radiated emission test.

The I.F. bandwidth of Test Receiver R&S ESVS10 was set at 120 kHz below 1GHz and The Spectrum Agilent E7405A was set at 1MHz above 1GHz.

The frequency range from 30 MHz to 1000MHz was checked for all test modes.

The frequency range from 1 GHz to 2 GHz was checked for maximum resolution modes.

The test modes were done on radiated disturbance test and all the test results are listed in Sec.4.7.

## 4.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Test Mode	Data Page
D-Sub 1920*1080@60Hz	P22
<b>DVI 1920*1080@60Hz</b>	<b>P23-P24</b>
DVI 1680*1050@60Hz	P25
DVI 1280*1024@75Hz	P26
DVI 640*480@60Hz	P27
DVI 1920*1080@60Hz (Rotation)	P28

NOTE 1 – **The bold test mode** listed above means the worst test mode.

NOTE 2 – Emission Level = Antenna Factor + Cable Loss + Meter Reading. (< 1GHz)

NOTE 3 – Emission Level = Antenna Factor + Cable Loss – Preamp Factor + Meter Reading. (> 1GHz)

NOTE 4 – All readings are Quasi-Peak values below or equal to 1GHz, Peak and Average values above 1GHz.

NOTE 5 – The emission levels that are 20dB below the official limit are not reported.

NOTE 6 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 7 – The worst case is for DVI 1920\*1080@60Hz test mode. The worst emission at horizontal polarization was detected at 31.940 MHz with corrected signal level of 28.25 dB (µV/m) (limit is 40.00 dB (µV/m)), when the antenna was 1.00 m height and the turntable was at 250°. The worst emission at vertical polarization was detected at 31.940 MHz with corrected signal level of 37.91 dB (µV/m) (limit is 40.00 dB (µV/m)), when the antenna was 1.00 m height and the turntable was at 100°.

EUT :           LCD Monitor                Temperature :           22°C          

Model No. :           E2211PX                Humidity :           60%RH          

Serial No. :           E1206719-01/01                Date of Test :           Jun 12, 2012          

Test Mode :           D-Sub 1920\*1080@60Hz          

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	<b>31.940</b>	<b>10.46</b>	<b>17.29</b>	<b>0.82</b>	<b>28.57</b>	<b>40.00</b>	<b>11.43</b>
	72.680	11.04	10.08	1.47	22.59	40.00	17.41
	143.490	10.50	10.54	2.19	23.23	43.50	20.27
	242.430	16.70	11.65	2.58	30.93	46.00	15.07
	358.830	6.68	15.37	2.90	24.95	46.00	21.05
	533.430	6.90	17.80	3.33	28.03	46.00	17.97
Vertical	<b>31.580</b>	<b>18.90</b>	<b>17.50</b>	<b>0.82</b>	<b>37.22</b>	<b>40.00</b>	<b>2.78</b>
	38.730	17.37	13.40	0.86	31.63	40.00	8.37
	58.130	17.89	9.02	1.14	28.05	40.00	11.95
	85.290	18.47	10.80	1.66	30.93	40.00	9.07
	128.940	16.11	10.84	2.10	29.05	43.50	14.45
	484.930	7.46	17.44	3.23	28.13	46.00	17.87

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C  
 Model No. : E2211PX Humidity : 60%RH  
 Serial No. : E1206719-01/01 Date of Test : Jun 12, 2012  
 Test Mode : DVI 1920\*1080@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (µV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (µV/m)	Limits dB (µV/m)	Margin (dB)	Remark
Horizontal	<b>31.940</b>	<b>10.14</b>	<b>17.29</b>	<b>0.82</b>	--	<b>28.25</b>	<b>40.00</b>	<b>11.75</b>	QP
	72.680	4.45	10.08	1.47	--	16.00	40.00	24.00	
	124.090	8.26	10.93	2.05	--	21.24	43.50	22.26	
	162.890	10.64	10.21	2.29	--	23.14	43.50	20.36	
	242.430	15.70	11.65	2.58	--	29.93	46.00	16.07	
	446.130	8.70	16.92	3.11	--	28.73	46.00	17.27	
	1149.000	49.82	24.29	5.32	37.86	41.57	74.00	32.43	PK
	1235.000	51.03	24.70	5.40	37.65	43.48	74.00	30.52	
	1537.000	50.98	26.01	5.83	36.82	46.00	74.00	28.00	
	1598.000	51.24	26.66	5.93	36.69	47.14	74.00	26.86	
	1799.000	51.18	29.11	6.20	36.35	50.14	74.00	23.86	
	1912.000	49.74	30.25	6.32	36.20	50.11	74.00	23.89	
	1148.200	27.80	24.29	5.32	37.87	19.54	54.00	34.46	AV
	1234.100	27.60	24.70	5.40	37.65	20.05	54.00	33.95	
	1536.700	26.50	26.01	5.83	36.82	21.52	54.00	32.48	
	1596.000	31.40	26.66	5.93	36.70	27.29	54.00	26.71	
	1798.500	30.60	29.11	6.20	36.35	29.56	54.00	24.44	
	1910.200	30.10	30.25	6.32	36.20	30.47	54.00	23.53	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C  
 Model No. : E2211PX Humidity : 60%RH  
 Serial No. : E1206719-01/01 Date of Test : Jun 12, 2012  
 Test Mode : DVI 1920\*1080@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (µV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (µV/m)	Limits dB (µV/m)	Margin (dB)	Remark
Vertical	<b>31.940</b>	<b>19.80</b>	<b>17.29</b>	<b>0.82</b>	--	<b>37.91</b>	<b>40.00</b>	<b>2.09</b>	QP
	58.130	18.43	9.02	1.14	--	28.59	40.00	11.41	
	85.290	15.20	10.80	1.66	--	27.66	40.00	12.34	
	128.940	16.02	10.84	2.10	--	28.96	43.50	14.54	
	240.490	11.56	11.55	2.58	--	25.69	46.00	20.31	
	429.640	7.10	16.69	3.08	--	26.87	46.00	19.13	
	1034.000	56.57	23.83	5.23	38.13	47.50	74.00	26.50	PK
	1165.000	57.53	24.37	5.33	37.82	49.41	74.00	24.59	
	1257.000	55.39	24.80	5.45	37.60	48.04	74.00	25.96	
	1532.000	53.72	25.96	5.83	36.83	48.68	74.00	25.32	
	1600.000	53.43	26.71	5.93	36.69	49.38	74.00	24.62	
	1981.000	52.96	30.87	6.41	36.12	54.12	74.00	19.88	
	1033.200	28.50	23.82	5.23	38.13	19.42	54.00	34.58	AV
	1166.700	32.09	24.37	5.33	37.82	23.97	54.00	30.03	
	1256.700	29.50	24.80	5.45	37.60	22.15	54.00	31.85	
	1530.100	31.30	25.92	5.83	36.83	26.22	54.00	27.78	
	1601.500	30.09	26.71	5.93	36.67	26.06	54.00	27.94	
	1980.200	31.90	30.82	6.41	36.12	33.01	54.00	20.99	

TEST ENGINEER: RAVEN JIN

EUT :           LCD Monitor                                Temperature :           22°C          

Model No. :           E2211PX                                Humidity :           60%RH          

Serial No. :           E1206719-01/01                                Date of Test :           Jun 12, 2012          

Test Mode :           DVI 1680\*1050@60Hz          

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	<b>30.970</b>	<b>9.39</b>	<b>17.78</b>	<b>0.81</b>	<b>27.98</b>	<b>40.00</b>	<b>12.02</b>
	75.590	11.92	10.27	1.53	23.72	40.00	16.28
	121.180	8.65	10.99	2.03	21.67	43.50	21.83
	162.890	10.80	10.21	2.29	23.30	43.50	20.20
	245.340	16.67	11.75	2.60	31.02	46.00	14.98
	531.490	6.21	17.78	3.33	27.32	46.00	18.68
Vertical	<b>31.940</b>	<b>18.76</b>	<b>17.29</b>	<b>0.82</b>	<b>36.87</b>	<b>40.00</b>	<b>3.13</b>
	58.130	17.84	9.02	1.14	28.00	40.00	12.00
	75.590	19.73	10.27	1.53	31.53	40.00	8.47
	87.230	18.82	10.88	1.70	31.40	40.00	8.60
	145.430	15.52	10.50	2.20	28.22	43.50	15.28
	478.140	6.77	17.34	3.21	27.32	46.00	18.68

TEST ENGINEER: RAVEN JIN

EUT :           LCD Monitor                Temperature :           22°C          

Model No. :           E2211PX                Humidity :           60%RH          

Serial No. :           E1206719-01/01                Date of Test :           Jun 12, 2012          

Test Mode :           DVI 1280\*1024@75Hz          

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	<b>31.940</b>	<b>10.24</b>	<b>17.29</b>	<b>0.82</b>	<b>28.35</b>	<b>40.00</b>	<b>11.65</b>
	70.740	4.60	9.93	1.43	15.96	40.00	24.04
	121.180	8.40	10.99	2.03	21.42	43.50	22.08
	159.980	10.82	10.25	2.27	23.34	43.50	20.16
	242.430	16.75	11.65	2.58	30.98	46.00	15.02
	526.640	5.18	17.76	3.33	26.27	46.00	19.73
Vertical	<b>31.940</b>	<b>19.28</b>	<b>17.29</b>	<b>0.82</b>	<b>37.39</b>	<b>40.00</b>	<b>2.61</b>
	58.130	19.30	9.02	1.14	29.46	40.00	10.54
	82.380	14.66	10.67	1.63	26.96	40.00	13.04
	121.180	15.70	10.99	2.03	28.72	43.50	14.78
	240.490	12.60	11.55	2.58	26.73	46.00	19.27
	478.140	7.59	17.34	3.21	28.14	46.00	17.86

TEST ENGINEER: RAVEN JIN

EUT :           LCD Monitor                Temperature :           22°C          

Model No. :           E2211PX                Humidity :           60%RH          

Serial No. :           E1206719-01/01                Date of Test :           Jun 12, 2012          

Test Mode :           DVI 640\*480@60Hz          

Polarization	Frequency (MHz)	Meter Reading dB (µV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (µV/m)	Limits dB (µV/m)	Margin (dB)
Horizontal	<b>31.940</b>	<b>10.40</b>	<b>17.29</b>	<b>0.82</b>	<b>28.51</b>	<b>40.00</b>	<b>11.49</b>
	77.530	5.84	10.39	1.56	17.79	40.00	22.21
	119.240	7.90	11.02	2.01	20.93	43.50	22.57
	162.890	10.83	10.21	2.29	23.33	43.50	20.17
	247.280	15.89	11.85	2.60	30.34	46.00	15.66
	378.230	7.82	15.83	2.95	26.60	46.00	19.40
Vertical	<b>31.940</b>	<b>19.74</b>	<b>17.29</b>	<b>0.82</b>	<b>37.85</b>	<b>40.00</b>	<b>2.15</b>
	58.130	19.34	9.02	1.14	29.50	40.00	10.50
	85.290	14.45	10.80	1.66	26.91	40.00	13.09
	121.180	14.07	10.99	2.03	27.09	43.50	16.41
	247.280	10.52	11.85	2.60	24.97	46.00	21.03
	429.640	8.10	16.69	3.08	27.87	46.00	18.13

TEST ENGINEER: RAVEN JIN

EUT :           LCD Monitor                Temperature :           22°C          

Model No. :           E2211PX                Humidity :           60%RH          

Serial No. :           E1206719-01/01                Date of Test :           Jun 12, 2012          

Test Mode :           DVI 1920\*1080@60Hz            
          (Rotation)          

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	31.940	6.28	17.29	0.82	24.39	40.00	15.61
	75.590	11.07	10.27	1.53	22.87	40.00	17.13
	121.180	10.71	10.99	2.03	23.73	43.50	19.77
	<b>213.330</b>	<b>16.72</b>	<b>10.33</b>	<b>2.47</b>	<b>29.52</b>	<b>43.50</b>	<b>13.98</b>
	361.740	9.56	15.45	2.91	27.92	46.00	18.08
	754.590	5.31	20.12	3.80	29.23	46.00	16.77
Vertical	<b>31.940</b>	<b>17.69</b>	<b>17.29</b>	<b>0.82</b>	<b>35.80</b>	<b>40.00</b>	<b>4.20</b>
	38.730	18.14	13.40	0.86	32.40	40.00	7.60
	58.130	16.87	9.02	1.14	27.03	40.00	12.97
	128.940	16.02	10.84	2.10	28.96	43.50	14.54
	227.880	13.71	10.97	2.53	27.21	46.00	18.79
	504.330	6.87	17.62	3.28	27.77	46.00	18.23

TEST ENGINEER: RAVEN JIN

## **5 DEVIATION TO TEST SPECIFICATIONS**

None.