

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

LCD Monitor

Model No.: W1954TEV

Serial No.: E2009091004

FCC ID : BEJW1954TEV

Prepared For : LG Electronics U.S.A., Inc.  
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NJ 07632, United States

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Report No. : ACI-F09083  
Date of Test : Sep 11 – 12, 2009  
Date of Report : Sep 19, 2009

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## TEST REPORT FOR FCC CERTIFICATE

Applicant : LG Electronics U.S.A., Inc.  
Manufacturer : LG Electronics Nanjing Display Co., Ltd.  
EUT Description : LCD Monitor  
(A) Model No. : W1954TEV  
(B) Serial No. : E2009091004  
(C) Power Supply : 120V/60Hz

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2008  
AND ANSI C63.4-2003*

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B (Class B) and ICES-003, Issue 4 February 2004 (CISPR 22:2002) limits both radiated and conducted emissions.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report shows that the EUT (M/N: W1954TEV; S/N: E2009091004) which was tested in 3m anechoic chamber Sep 11 – 12, 2009 is technically compliance with the FCC official limits also.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

This report contains data that are not covered by the NVLAP accreditation.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test : Sep 11 – 12, 2009 Date of Report : Sep 19, 2009

Producer : Zeno Gu  
ZENOGU / Assistant

Review : Samm Chen  
SAMMY CHEN / Assistant Manager

 For and on behalf of  
Audix Technology (Shanghai) Co., Ltd.

Signatory : Embyron Kwo  
Authorized Signature EMBYRON KWO / Manager

# 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<br>at the Mains Terminal | FCC RULES AND REGULATIONS PART<br>15 SUBPART B OCTOBER 2008<br>AND ANSI C63.4-2003 | 15.107(a)<br>Class B | Pass    |
| Radiated Disturbance                           | FCC RULES AND REGULATIONS PART<br>15 SUBPART B OCTOBER 2008<br>AND ANSI C63.4-2003 | 15.109(a)<br>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.      | : | W1954TEV                                                                                                                   |
| Serial No.     | : | E2009091004                                                                                                                |
| Real Power     | : | 22.00W                                                                                                                     |
| Applicant      | : | LG Electronics U.S.A., Inc.<br>1000 Sylvan Avenue, Englewood Cliffs,<br>NJ 07632, United States                            |
| Manufacturer   | : | LG Electronics Nanjing Display Co., Ltd.<br>No.346, Yao Xin Road, Economic & Technical<br>Development Zone, Nanjing, China |
| LCD Panel      | : | Manufacturer : LG Display<br>M/N : LM190WX1 (TL) (L2)                                                                      |
| Max Resolution | : | D-Sub 1440*900@75Hz<br>DVI 1440*900@60Hz                                                                                   |
| D-Sub Cable #1 | : | Shielded, Detachable, 1.85m,<br>with two cores on cable                                                                    |
| D-Sub Cable #2 | : | Shielded, Detachable, 1.85m,<br>with two cores in connector                                                                |
| DVI Cable #1   | : | Shielded, Detachable, 1.85m,<br>with two cores on cable                                                                    |
| DVI Cable #2   | : | Shielded, Detachable, 1.85m,<br>with two cores in connector                                                                |
| Power Cord     | : | Unshielded, Detachable, 1.80m                                                                                              |
| Note           | : | After evaluation, the D-Sub cable#1 and DVI<br>cable#1 were used in the test for they will cause<br>the maximum emission.  |

**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 : dx6120MT  
Serial Number : CNG53004J2  
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 Printer

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

## 2.2.3 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

## 2.2.4 Mouse

Manufacturer : Microsoft  
Model Number : RT2300  
Serial Number : 6965712071551  
Data Cable : Shielded, Undetachable, 1.85m.  
Certificate : FCC DoC, VCCI, CE/EMC, MIC, GS

## 2.2.5 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<br>(Semi-Anechoic Chamber) | : | Sept. 17, 1998 file on<br>Apr 29, 2009 Renewed<br>Federal Communications Commission<br>FCC Engineering Laboratory<br>7435 Oakland Mills Road<br>Columbia, MD 21046, USA |
| Name of Firm                                | : | Audix Technology (Shanghai) Co., Ltd.                                                                                                                                   |
| Site Location                               | : | 3F 34Bldg 680 Guiping Rd,<br>Caohejing Hi-Tech Park,<br>Shanghai 200233, China                                                                                          |
| NVLAP Lab Code                              | : | 200371-0                                                                                                                                                                |

## 2.4 Measurement Uncertainty

|                                          |             |
|------------------------------------------|-------------|
| Conducted Emission Expanded Uncertainty: | U = 1.26 dB |
| Radiated Emission Expanded Uncertainty : | U = 3.02 dB |

### 3 CONDUCTED EMISSION TEST

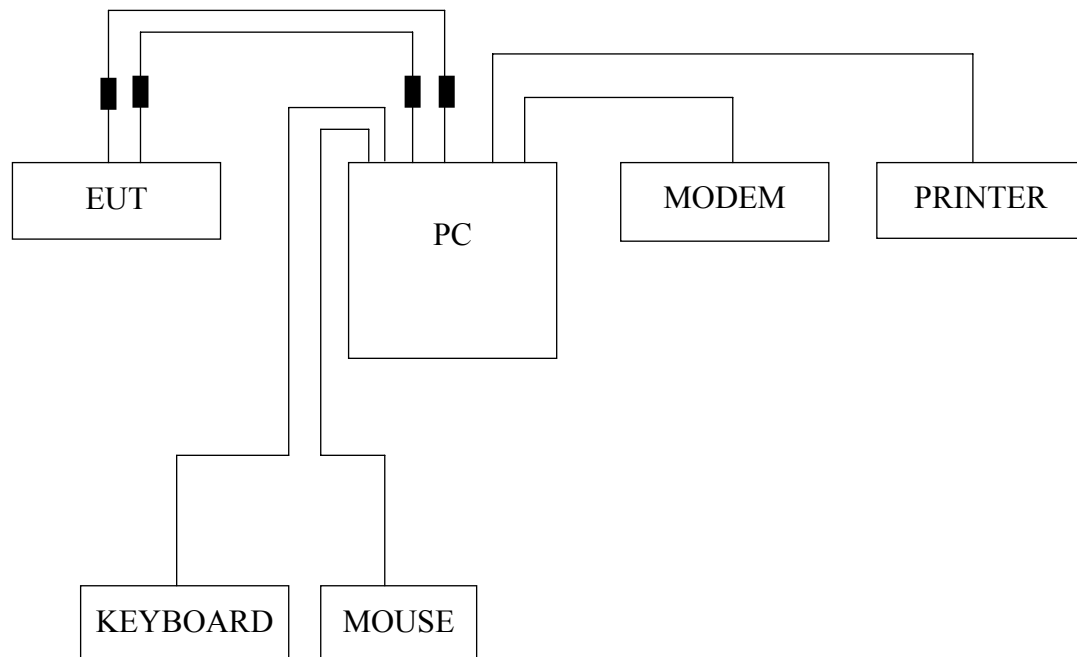
#### 3.1.1 Test Equipment

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               | Nov 21, 2008 | Nov 21, 2009 |
| 2.   | Artificial Mains Network (AMN)              | R&S          | ESH2-Z5   | 843890/011           | Apr 02, 2009 | Apr 02, 2010 |
| 3.   | Line Impedance Stabilization Network (LISN) | Kyoritsu     | KNW-407   | 8-1280-4             | Apr 02, 2009 | Apr 02, 2010 |
| 4.   | 50 $\Omega$ Coaxial Switch                  | Anritsu      | MP59B     | 6200426389           | Mar 19, 2009 | Sep 19, 2009 |
| 5.   | 50 $\Omega$ Terminator                      | Anritsu      | BNC       | 001                  | Apr 02, 2009 | Apr 02, 2010 |
| 6.   | Software                                    | Audix        | E3        | SET00200<br>9804M592 | --           | --           |

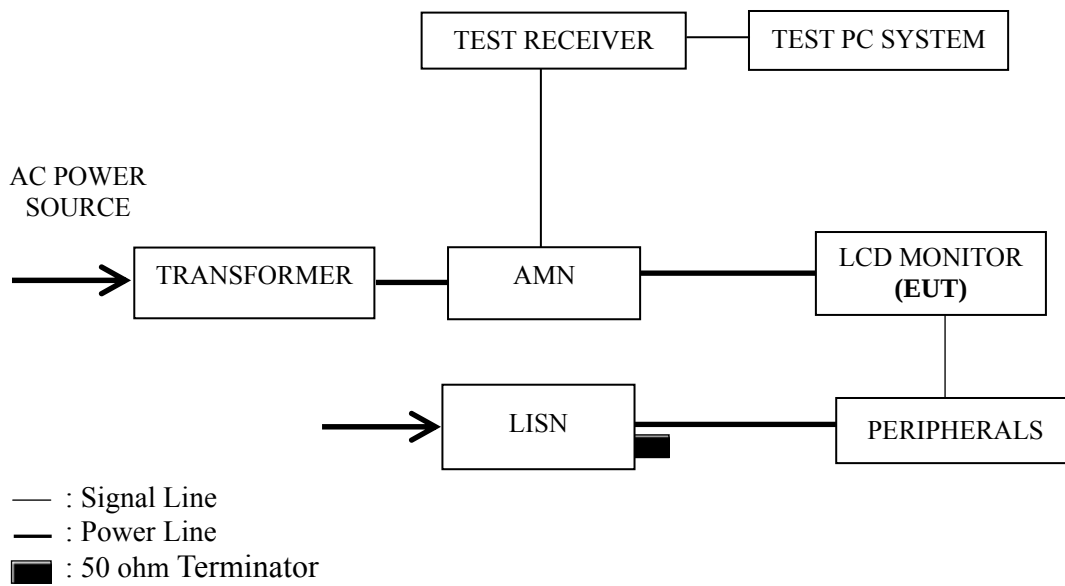
#### 3.2 Block Diagram of Test Setup

##### 3.2.1 EUT & Peripherals



■ : Ferrite core

### 3.2.2 Conducted Disturbance Test Setup



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

| Frequency Range<br>(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.<br>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, 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 640*480@60Hz   |
| D-Sub 800*600@60Hz   |
| D-Sub 1280*1024@75Hz |
| D-Sub 1440*900@75Hz  |
| DVI 640*480@60Hz     |
| DVI 800*600@60Hz     |
| DVI 1280*1024@75Hz   |
| DVI 1440*900@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 640*480@60Hz   | P12       |
| D-Sub 800*600@60Hz   | P13       |
| D-Sub 1280*1024@75Hz | P14       |
| D-Sub 1440*900@75Hz  | P15       |
| DVI 640*480@60Hz     | P16       |
| DVI 800*600@60Hz     | P17       |
| DVI 1280*1024@75Hz   | P18       |
| DVI 1440*900@60Hz    | P19       |

NOTE 1 – Factor = Cable Loss + AMN Factor.

NOTE 2 – Emission Level = Meter Reading + Factor.

NOTE 3 – “QP” means “Quasi-Peak” values, “AV” means “Average” values.

NOTE 4 – The worst case is for D-Sub 640\*480@60Hz test mode. The worst emission is detected at 0.197 MHz (Average) with corrected signal level of 48.14 dB (μV) (limit is 53.76dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT : LCD Monitor Temperature : 22°C

Model No. : W1954TEV Humidity : 48%RH

Serial No. : E2009091004 Date of Test : Sep 11, 2009

Test Mode : D-Sub 640\*480@60Hz

| Test Line | Frequency (MHz) | Meter Reading dB(μV) | Factor (dB) | Emission Level dB(μV) | Limits dB(μV) | Margin (dB) | Remark |
|-----------|-----------------|----------------------|-------------|-----------------------|---------------|-------------|--------|
| Line      | 0.197           | 53.01                | 0.22        | 53.23                 | 63.76         | 10.53       | QP     |
|           | 0.320           | 37.57                | 0.26        | 37.83                 | 59.71         | 21.88       |        |
|           | 0.558           | 31.38                | 0.28        | 31.66                 | 56.00         | 24.34       |        |
|           | 4.027           | 29.22                | 0.42        | 29.64                 | 56.00         | 26.36       |        |
|           | 6.769           | 35.25                | 0.47        | 35.72                 | 60.00         | 24.28       |        |
|           | 26.139          | 38.58                | 0.83        | 39.41                 | 60.00         | 20.59       |        |
|           | 0.197           | 47.43                | 0.22        | 47.65                 | 53.76         | 6.11        | AV     |
|           | 0.320           | 29.00                | 0.26        | 29.26                 | 49.71         | 20.45       |        |
|           | 0.558           | 26.55                | 0.28        | 26.83                 | 46.00         | 19.17       |        |
|           | 4.027           | 18.26                | 0.42        | 18.68                 | 46.00         | 27.32       |        |
|           | 6.769           | 22.43                | 0.47        | 22.90                 | 50.00         | 27.10       |        |
|           | 26.139          | 27.73                | 0.83        | 28.56                 | 50.00         | 21.44       |        |
| Neutral   | 0.197           | 53.37                | 0.20        | 53.57                 | 63.76         | 10.19       | QP     |
|           | 0.322           | 37.43                | 0.23        | 37.66                 | 59.66         | 22.00       |        |
|           | 0.521           | 30.18                | 0.26        | 30.44                 | 56.00         | 25.56       |        |
|           | 4.027           | 26.46                | 0.43        | 26.89                 | 56.00         | 29.11       |        |
|           | 6.769           | 32.10                | 0.48        | 32.58                 | 60.00         | 27.42       |        |
|           | 26.418          | 37.31                | 0.76        | 38.07                 | 60.00         | 21.93       |        |
|           | <b>0.197</b>    | <b>47.94</b>         | <b>0.20</b> | <b>48.14</b>          | <b>53.76</b>  | <b>5.62</b> | AV     |
|           | 0.322           | 27.02                | 0.23        | 27.25                 | 49.66         | 22.41       |        |
|           | 0.521           | 25.47                | 0.26        | 25.73                 | 46.00         | 20.27       |        |
|           | 4.027           | 18.71                | 0.43        | 19.14                 | 46.00         | 26.86       |        |
|           | 6.769           | 23.52                | 0.48        | 24.00                 | 50.00         | 26.00       |        |
|           | 26.418          | 27.95                | 0.76        | 28.71                 | 50.00         | 21.29       |        |

TEST ENGINEER: HUGU HUANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1954TEV Humidity : 48%RH

Serial No. : E2009091004 Date of Test : Sep 11, 2009

Test Mode : D-Sub 800\*600@60Hz

| Test Line | Frequency (MHz) | Meter Reading dB(μV) | Factor (dB) | Emission Level dB(μV) | Limits dB(μV) | Margin (dB) | Remark |
|-----------|-----------------|----------------------|-------------|-----------------------|---------------|-------------|--------|
| Line      | 0.197           | 52.72                | 0.22        | 52.94                 | 63.76         | 10.82       | QP     |
|           | 0.322           | 33.76                | 0.26        | 34.02                 | 59.66         | 25.64       |        |
|           | 0.521           | 28.98                | 0.29        | 29.27                 | 56.00         | 26.73       |        |
|           | 4.027           | 29.28                | 0.42        | 29.70                 | 56.00         | 26.30       |        |
|           | 6.769           | 32.62                | 0.47        | 33.09                 | 60.00         | 26.91       |        |
|           | 26.139          | 39.74                | 0.83        | 40.57                 | 60.00         | 19.43       |        |
|           | 0.197           | 43.94                | 0.22        | 44.16                 | 53.76         | 9.60        | AV     |
|           | 0.322           | 25.71                | 0.26        | 25.97                 | 49.66         | 23.69       |        |
|           | 0.521           | 22.23                | 0.29        | 22.52                 | 46.00         | 23.48       |        |
|           | 4.027           | 22.19                | 0.42        | 22.61                 | 46.00         | 23.39       |        |
|           | 6.769           | 25.18                | 0.47        | 25.65                 | 50.00         | 24.35       |        |
|           | 26.139          | 28.62                | 0.83        | 29.45                 | 50.00         | 20.55       |        |
| Neutral   | 0.197           | 52.61                | 0.20        | 52.81                 | 63.76         | 10.95       | QP     |
|           | 0.320           | 37.81                | 0.23        | 38.04                 | 59.71         | 21.67       |        |
|           | 0.647           | 32.32                | 0.27        | 32.59                 | 56.00         | 23.41       |        |
|           | 4.027           | 28.82                | 0.43        | 29.25                 | 56.00         | 26.75       |        |
|           | 6.769           | 34.53                | 0.48        | 35.01                 | 60.00         | 24.99       |        |
|           | 25.864          | 38.45                | 0.75        | 39.20                 | 60.00         | 20.80       |        |
|           | <b>0.197</b>    | <b>44.19</b>         | <b>0.20</b> | <b>44.39</b>          | <b>53.76</b>  | <b>9.37</b> | AV     |
|           | 0.320           | 29.33                | 0.23        | 29.56                 | 49.71         | 20.15       |        |
|           | 0.647           | 28.16                | 0.27        | 28.43                 | 46.00         | 17.57       |        |
|           | 4.027           | 20.60                | 0.43        | 21.03                 | 46.00         | 24.97       |        |
|           | 6.769           | 23.98                | 0.48        | 24.46                 | 50.00         | 25.54       |        |
|           | 25.864          | 27.13                | 0.75        | 27.88                 | 50.00         | 22.12       |        |

TEST ENGINEER: HUGU HUANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1954TEV Humidity : 48%RH

Serial No. : E2009091004 Date of Test : Sep 11, 2009

Test Mode : D-Sub 1280\*1024@75Hz

| Test Line | Frequency (MHz) | Meter Reading dB(μV) | Factor (dB) | Emission Level dB(μV) | Limits dB(μV) | Margin (dB) | Remark |
|-----------|-----------------|----------------------|-------------|-----------------------|---------------|-------------|--------|
| Line      | 0.194           | 52.28                | 0.22        | 52.50                 | 63.84         | 11.34       | QP     |
|           | 0.325           | 36.28                | 0.26        | 36.54                 | 59.57         | 23.03       |        |
|           | 0.647           | 33.33                | 0.27        | 33.60                 | 56.00         | 22.40       |        |
|           | 4.549           | 29.60                | 0.44        | 30.04                 | 56.00         | 25.96       |        |
|           | 7.329           | 34.23                | 0.47        | 34.70                 | 60.00         | 25.30       |        |
|           | 26.139          | 39.04                | 0.83        | 39.87                 | 60.00         | 20.13       |        |
|           | 0.194           | 43.22                | 0.22        | 43.44                 | 53.84         | 10.40       | AV     |
|           | 0.325           | 31.61                | 0.26        | 31.87                 | 49.57         | 17.70       |        |
|           | 0.647           | 28.68                | 0.27        | 28.95                 | 46.00         | 17.05       |        |
|           | 4.549           | 25.44                | 0.44        | 25.88                 | 46.00         | 20.12       |        |
|           | 7.329           | 26.52                | 0.47        | 26.99                 | 50.00         | 23.01       |        |
|           | 26.139          | 30.09                | 0.83        | 30.92                 | 50.00         | 19.08       |        |
| Neutral   | 0.197           | 52.31                | 0.20        | 52.51                 | 63.76         | 11.25       | QP     |
|           | 0.325           | 37.56                | 0.23        | 37.79                 | 59.57         | 21.78       |        |
|           | 0.558           | 32.70                | 0.26        | 32.96                 | 56.00         | 23.04       |        |
|           | 4.027           | 28.29                | 0.43        | 28.72                 | 56.00         | 27.28       |        |
|           | 6.769           | 35.34                | 0.48        | 35.82                 | 60.00         | 24.18       |        |
|           | 25.864          | 38.75                | 0.75        | 39.50                 | 60.00         | 20.50       |        |
|           | <b>0.197</b>    | <b>45.85</b>         | <b>0.20</b> | <b>46.05</b>          | <b>53.76</b>  | <b>7.71</b> | AV     |
|           | 0.325           | 32.05                | 0.23        | 32.28                 | 49.57         | 17.29       |        |
|           | 0.558           | 26.75                | 0.26        | 27.01                 | 46.00         | 18.99       |        |
|           | 4.027           | 19.19                | 0.43        | 19.62                 | 46.00         | 26.38       |        |
|           | 6.769           | 25.32                | 0.48        | 25.80                 | 50.00         | 24.20       |        |
|           | 25.864          | 28.23                | 0.75        | 28.98                 | 50.00         | 21.02       |        |

TEST ENGINEER: HUGU HUANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1954TEV Humidity : 48%RH

Serial No. : E2009091004 Date of Test : Sep 11, 2009

Test Mode : D-Sub 1440\*900@75Hz

| Test Line | Frequency (MHz) | Meter Reading dB(μV) | Factor (dB) | Emission Level dB(μV) | Limits dB(μV) | Margin (dB) | Remark |
|-----------|-----------------|----------------------|-------------|-----------------------|---------------|-------------|--------|
| Line      | 0.194           | 52.01                | 0.22        | 52.23                 | 63.84         | 11.61       | QP     |
|           | 0.322           | 34.67                | 0.26        | 34.93                 | 59.66         | 24.73       |        |
|           | 0.604           | 30.25                | 0.28        | 30.53                 | 56.00         | 25.47       |        |
|           | 4.549           | 29.57                | 0.44        | 30.01                 | 56.00         | 25.99       |        |
|           | 6.769           | 35.47                | 0.47        | 35.94                 | 60.00         | 24.06       |        |
|           | 25.864          | 39.86                | 0.82        | 40.68                 | 60.00         | 19.32       |        |
|           | 0.194           | 43.05                | 0.22        | 43.27                 | 53.84         | 10.57       | AV     |
|           | 0.322           | 26.36                | 0.26        | 26.62                 | 49.66         | 23.04       |        |
|           | 0.604           | 27.33                | 0.28        | 27.61                 | 46.00         | 18.39       |        |
|           | 4.549           | 25.18                | 0.44        | 25.62                 | 46.00         | 20.38       |        |
|           | 6.769           | 26.35                | 0.47        | 26.82                 | 50.00         | 23.18       |        |
|           | 25.864          | 28.78                | 0.82        | 29.60                 | 50.00         | 20.40       |        |
| Neutral   | 0.194           | 52.09                | 0.20        | 52.29                 | 63.84         | 11.55       | QP     |
|           | 0.325           | 36.94                | 0.23        | 37.17                 | 59.57         | 22.40       |        |
|           | 0.558           | 31.86                | 0.26        | 32.12                 | 56.00         | 23.88       |        |
|           | 4.549           | 29.05                | 0.45        | 29.50                 | 56.00         | 26.50       |        |
|           | 7.329           | 33.84                | 0.48        | 34.32                 | 60.00         | 25.68       |        |
|           | 29.371          | 36.64                | 0.81        | 37.45                 | 60.00         | 22.55       |        |
|           | <b>0.194</b>    | <b>46.72</b>         | <b>0.20</b> | <b>46.92</b>          | <b>53.84</b>  | <b>6.92</b> | AV     |
|           | 0.325           | 29.22                | 0.23        | 29.45                 | 49.57         | 20.12       |        |
|           | 0.558           | 27.12                | 0.26        | 27.38                 | 46.00         | 18.62       |        |
|           | 4.549           | 23.96                | 0.45        | 24.41                 | 46.00         | 21.59       |        |
|           | 7.329           | 28.24                | 0.48        | 28.72                 | 50.00         | 21.28       |        |
|           | 29.371          | 25.97                | 0.81        | 26.78                 | 50.00         | 23.22       |        |

TEST ENGINEER: HUGU HUANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1954TEV Humidity : 48%RH

Serial No. : E2009091004 Date of Test : Sep 11, 2009

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      | 0.194           | 47.44                | 0.22        | 47.66                 | 63.84         | 16.18        | QP     |
|           | 0.325           | 33.29                | 0.26        | 33.55                 | 59.57         | 26.02        |        |
|           | 0.558           | 32.02                | 0.28        | 32.30                 | 56.00         | 23.70        |        |
|           | 4.574           | 29.83                | 0.44        | 30.27                 | 56.00         | 25.73        |        |
|           | 7.606           | 37.77                | 0.48        | 38.25                 | 60.00         | 21.75        |        |
|           | 24.400          | 38.27                | 0.81        | 39.08                 | 60.00         | 20.92        |        |
|           | 0.194           | 38.34                | 0.22        | 38.56                 | 53.84         | 15.28        | AV     |
|           | 0.325           | 26.27                | 0.26        | 26.53                 | 49.57         | 23.04        |        |
|           | 0.558           | 28.28                | 0.28        | 28.56                 | 46.00         | 17.44        |        |
|           | 4.574           | 22.96                | 0.44        | 23.40                 | 46.00         | 22.60        |        |
|           | 7.606           | 29.35                | 0.48        | 29.83                 | 50.00         | 20.17        |        |
|           | 24.400          | 32.54                | 0.81        | 33.35                 | 50.00         | 16.65        |        |
| Neutral   | 0.194           | 47.77                | 0.20        | 47.97                 | 63.84         | 15.87        | QP     |
|           | 0.320           | 33.69                | 0.23        | 33.92                 | 59.71         | 25.79        |        |
|           | 0.647           | 34.43                | 0.27        | 34.70                 | 56.00         | 21.30        |        |
|           | 4.574           | 28.29                | 0.45        | 28.74                 | 56.00         | 27.26        |        |
|           | 7.526           | 37.94                | 0.49        | 38.43                 | 60.00         | 21.57        |        |
|           | 23.888          | 37.14                | 0.76        | 37.90                 | 60.00         | 22.10        |        |
|           | <b>0.194</b>    | <b>38.81</b>         | <b>0.20</b> | <b>39.01</b>          | <b>53.84</b>  | <b>14.83</b> | AV     |
|           | 0.320           | 23.65                | 0.23        | 23.88                 | 49.71         | 25.83        |        |
|           | 0.647           | 29.52                | 0.27        | 29.79                 | 46.00         | 16.21        |        |
|           | 4.574           | 19.18                | 0.45        | 19.63                 | 46.00         | 26.37        |        |
|           | 7.526           | 29.97                | 0.49        | 30.46                 | 50.00         | 19.54        |        |
|           | 23.888          | 29.95                | 0.76        | 30.71                 | 50.00         | 19.29        |        |

TEST ENGINEER: HUGU HUANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1954TEV Humidity : 48%RH

Serial No. : E2009091004 Date of Test : Sep 11, 2009

Test Mode : DVI 800\*600@60Hz

| Test Line | Frequency (MHz) | Meter Reading dB(μV) | Factor (dB) | Emission Level dB(μV) | Limits dB(μV) | Margin (dB)  | Remark |
|-----------|-----------------|----------------------|-------------|-----------------------|---------------|--------------|--------|
| Line      | 0.194           | 47.54                | 0.22        | 47.76                 | 63.84         | 16.08        | QP     |
|           | 0.325           | 34.44                | 0.26        | 34.70                 | 59.57         | 24.87        |        |
|           | 0.647           | 31.87                | 0.27        | 32.14                 | 56.00         | 23.86        |        |
|           | 4.574           | 28.90                | 0.44        | 29.34                 | 56.00         | 26.66        |        |
|           | 7.606           | 37.98                | 0.48        | 38.46                 | 60.00         | 21.54        |        |
|           | 22.298          | 37.58                | 0.85        | 38.43                 | 60.00         | 21.57        |        |
|           | <b>0.194</b>    | <b>41.87</b>         | <b>0.22</b> | <b>42.09</b>          | <b>53.84</b>  | <b>11.75</b> | AV     |
|           | 0.325           | 24.04                | 0.26        | 24.30                 | 49.57         | 25.27        |        |
|           | 0.647           | 29.13                | 0.27        | 29.40                 | 46.00         | 16.60        |        |
|           | 4.574           | 21.28                | 0.44        | 21.72                 | 46.00         | 24.28        |        |
|           | 7.606           | 31.37                | 0.48        | 31.85                 | 50.00         | 18.15        |        |
|           | 22.298          | 30.64                | 0.85        | 31.49                 | 50.00         | 18.51        |        |
| Neutral   | 0.194           | 48.20                | 0.20        | 48.40                 | 63.84         | 15.44        | QP     |
|           | 0.325           | 35.89                | 0.23        | 36.12                 | 59.57         | 23.45        |        |
|           | 0.647           | 34.35                | 0.27        | 34.62                 | 56.00         | 21.38        |        |
|           | 4.574           | 28.23                | 0.45        | 28.68                 | 56.00         | 27.32        |        |
|           | 7.526           | 37.68                | 0.49        | 38.17                 | 60.00         | 21.83        |        |
|           | 28.302          | 36.76                | 0.79        | 37.55                 | 60.00         | 22.45        |        |
|           | 0.194           | 40.31                | 0.20        | 40.51                 | 53.84         | 13.33        | AV     |
|           | 0.325           | 28.40                | 0.23        | 28.63                 | 49.57         | 20.94        |        |
|           | 0.647           | 29.48                | 0.27        | 29.75                 | 46.00         | 16.25        |        |
|           | 4.574           | 21.26                | 0.45        | 21.71                 | 46.00         | 24.29        |        |
|           | 7.526           | 28.74                | 0.49        | 29.23                 | 50.00         | 20.77        |        |
|           | 28.302          | 27.44                | 0.79        | 28.23                 | 50.00         | 21.77        |        |

TEST ENGINEER: HUGU HUANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1954TEV Humidity : 48%RH

Serial No. : E2009091004 Date of Test : Sep 11, 2009

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      | 0.192           | 47.57                | 0.22        | 47.79                 | 63.93         | 16.14        | QP     |
|           | 0.325           | 34.73                | 0.26        | 34.99                 | 59.57         | 24.58        |        |
|           | 0.647           | 31.53                | 0.27        | 31.80                 | 56.00         | 24.20        |        |
|           | 4.772           | 27.97                | 0.44        | 28.41                 | 56.00         | 27.59        |        |
|           | 7.526           | 36.08                | 0.48        | 36.56                 | 60.00         | 23.44        |        |
|           | 24.142          | 38.25                | 0.82        | 39.07                 | 60.00         | 20.93        |        |
|           | <b>0.192</b>    | <b>41.97</b>         | <b>0.22</b> | <b>42.19</b>          | <b>53.93</b>  | <b>11.74</b> | AV     |
|           | 0.325           | 27.02                | 0.26        | 27.28                 | 49.57         | 22.29        |        |
|           | 0.647           | 28.98                | 0.27        | 29.25                 | 46.00         | 16.75        |        |
|           | 4.772           | 21.73                | 0.44        | 22.17                 | 46.00         | 23.83        |        |
|           | 7.526           | 30.77                | 0.48        | 31.25                 | 50.00         | 18.75        |        |
|           | 24.142          | 26.77                | 0.82        | 27.59                 | 50.00         | 22.41        |        |
| Neutral   | 0.194           | 48.59                | 0.20        | 48.79                 | 63.84         | 15.05        | QP     |
|           | 0.322           | 36.23                | 0.23        | 36.46                 | 59.66         | 23.20        |        |
|           | 0.647           | 32.06                | 0.27        | 32.33                 | 56.00         | 23.67        |        |
|           | 3.472           | 29.73                | 0.42        | 30.15                 | 56.00         | 25.85        |        |
|           | 7.852           | 36.69                | 0.49        | 37.18                 | 60.00         | 22.82        |        |
|           | 28.755          | 37.25                | 0.80        | 38.05                 | 60.00         | 21.95        |        |
|           | 0.194           | 40.50                | 0.20        | 40.70                 | 53.84         | 13.14        | AV     |
|           | 0.322           | 29.06                | 0.23        | 29.29                 | 49.66         | 20.37        |        |
|           | 0.647           | 29.11                | 0.27        | 29.38                 | 46.00         | 16.62        |        |
|           | 3.472           | 24.29                | 0.42        | 24.71                 | 46.00         | 21.29        |        |
|           | 7.852           | 28.12                | 0.49        | 28.61                 | 50.00         | 21.39        |        |
|           | 28.755          | 28.98                | 0.80        | 29.78                 | 50.00         | 20.22        |        |

TEST ENGINEER: HUGU HUANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1954TEV Humidity : 48%RH

Serial No. : E2009091004 Date of Test : Sep 11, 2009

Test Mode : DVI 1440\*900@60Hz

| Test Line | Frequency (MHz) | Meter Reading dB(μV) | Factor (dB) | Emission Level dB(μV) | Limits dB(μV) | Margin (dB)  | Remark |
|-----------|-----------------|----------------------|-------------|-----------------------|---------------|--------------|--------|
| Line      | 0.194           | 47.97                | 0.22        | 48.19                 | 63.84         | 15.65        | QP     |
|           | 0.325           | 32.69                | 0.26        | 32.95                 | 59.57         | 26.62        |        |
|           | 0.647           | 33.71                | 0.27        | 33.98                 | 56.00         | 22.02        |        |
|           | 4.574           | 29.09                | 0.44        | 29.53                 | 56.00         | 26.47        |        |
|           | 7.526           | 37.25                | 0.48        | 37.73                 | 60.00         | 22.27        |        |
|           | 24.529          | 35.60                | 0.81        | 36.41                 | 60.00         | 23.59        |        |
|           | 0.194           | 39.82                | 0.22        | 40.04                 | 53.84         | 13.80        | AV     |
|           | 0.325           | 26.52                | 0.26        | 26.78                 | 49.57         | 22.79        |        |
|           | 0.647           | 29.08                | 0.27        | 29.35                 | 46.00         | 16.65        |        |
|           | 4.574           | 20.56                | 0.44        | 21.00                 | 46.00         | 25.00        |        |
|           | 7.526           | 32.29                | 0.48        | 32.77                 | 50.00         | 17.23        |        |
|           | 24.529          | 25.45                | 0.81        | 26.26                 | 50.00         | 23.74        |        |
| Neutral   | 0.194           | 48.29                | 0.20        | 48.49                 | 63.84         | 15.35        | QP     |
|           | 0.325           | 35.89                | 0.23        | 36.12                 | 59.57         | 23.45        |        |
|           | 0.647           | 34.26                | 0.27        | 34.53                 | 56.00         | 21.47        |        |
|           | 4.772           | 30.32                | 0.45        | 30.77                 | 56.00         | 25.23        |        |
|           | 7.606           | 37.68                | 0.49        | 38.17                 | 60.00         | 21.83        |        |
|           | 24.142          | 36.50                | 0.76        | 37.26                 | 60.00         | 22.74        |        |
|           | <b>0.194</b>    | <b>42.51</b>         | <b>0.20</b> | <b>42.71</b>          | <b>53.84</b>  | <b>11.13</b> | AV     |
|           | 0.325           | 29.07                | 0.23        | 29.30                 | 49.57         | 20.27        |        |
|           | 0.647           | 29.44                | 0.27        | 29.71                 | 46.00         | 16.29        |        |
|           | 4.772           | 22.30                | 0.45        | 22.75                 | 46.00         | 23.25        |        |
|           | 7.606           | 29.21                | 0.49        | 29.70                 | 50.00         | 20.30        |        |
|           | 24.142          | 27.99                | 0.76        | 28.75                 | 50.00         | 21.25        |        |

TEST ENGINEER: HUGU HUANG

## 4 RADIATED EMISSION TEST

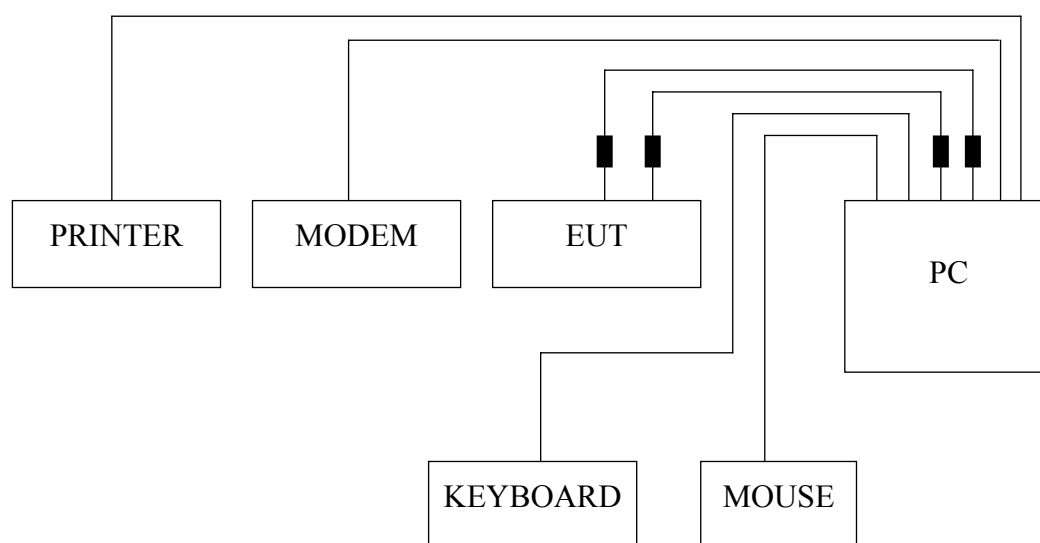
### 4.1 Test Equipment

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 07, 2009 | Mar 07, 2010 |
| 2.   | Preamplifier   | Agilent      | 8447D     | 2944A10548             | Mar 19, 2009 | Sep 19, 2009 |
| 3.   | Preamplifier   | HP           | 8449B     | 3008A00864             | May 19, 2009 | May 19, 2010 |
| 4.   | Bi-log Antenna | TESEQ        | CBL6112D  | 23193                  | May 14, 2008 | May 14, 2010 |
| 5.   | Spectrum       | Agilent      | E7405A    | MY45106600             | May 19, 2009 | May 19, 2010 |
| 6.   | Software       | Audix        | E3        | SET00200<br>9912M295-2 | --           | --           |

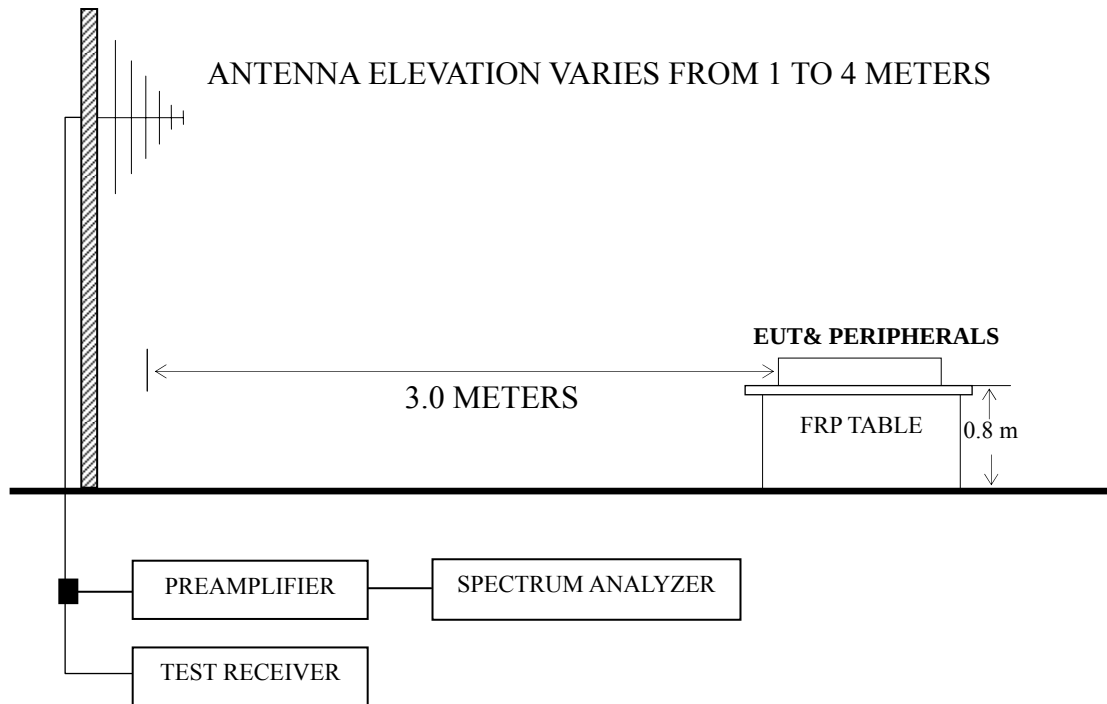
### 4.2 Block Diagram of Test Setup

#### 4.2.1 EUT and Peripherals



■ : Ferrite core

#### 4.2.2 Radiated emission test setup



■ : 50 ohm Coaxial Switch

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

| Frequency<br>(MHz) | Distance<br>(m) | Field strength limits |                        |
|--------------------|-----------------|-----------------------|------------------------|
|                    |                 | ( $\mu\text{V/m}$ )   | dB ( $\mu\text{V/m}$ ) |
| 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 ( $\mu\text{V/m}$ ) = 20 log Emission Level ( $\mu\text{V/m}$ )

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) 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 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 D-Sub/DVI 1280\*1024@75Hz, D-Sub 1440\*900@75Hz, and DVI 1440\*900@60Hz 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 640*480@60Hz   | P24       |
| D-Sub 800*600@60Hz   | P25       |
| D-Sub 1280*1024@75Hz | P26       |
| D-Sub 1440*900@75Hz  | P27       |
| DVI 640*480@60Hz     | P28       |
| DVI 800*600@60Hz     | P29       |
| DVI 1280*1024@75Hz   | P30       |
| DVI 1440*900@60Hz    | P31       |

NOTE 1 – Emission Level = Antenna Factor + Cable Loss + Meter Reading.( $< 1\text{GHz}$ )

NOTE 2 – Emission Level = Antenna Factor + Cable Loss – Preamp Factor + Meter Reading.( $> 1\text{GHz}$ )

NOTE 3 – The emission levels that are 20dB below the official limit are not reported.

NOTE 4 –  $0^\circ$  was the table front facing the antenna. Degree is calculated from  $0^\circ$  clockwise facing the antenna.

NOTE 5 – All reading are Quasi-Peak values below or equal to 1GHz and Peak values above 1GHz. For measurements above 1 GHz, the peak measured value complies with the average limit, it is unnecessary to perform an average measurement.

NOTE 6 – The worst case is for D-Sub 800\*600@60Hz test mode. The worst emission at horizontal polarization was detected at 147.370 MHz with corrected signal level of 39.53 dB ( $\mu\text{V/m}$ ) (limit is 43.50dB ( $\mu\text{V/m}$ )), when the antenna was 1.00 m height and the turntable was at  $85^\circ$ . The worst emission at vertical polarization was detected at 147.000 MHz with corrected signal level of 40.38 dB ( $\mu\text{V/m}$ ) (limit is 43.500 dB ( $\mu\text{V/m}$ )), when the antenna was 1.00 m height and the turntable was at  $150^\circ$ .

EUT : LCD Monitor Temperature : 22°C

Model No. : W1954TEV Humidity : 60%RH

Serial No. : E2009091004 Date of Test : Sep 12, 2009

Test Mode : D-Sub 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>33.880</b>   | <b>11.77</b>          | <b>17.44</b>          | <b>0.64</b>     | <b>29.85</b>             | <b>40.00</b>     | <b>10.15</b> |
|              | 142.520         | 19.96                 | 11.91                 | 1.20            | 33.07                    | 43.50            | 10.43        |
|              | 255.040         | 17.48                 | 13.01                 | 1.71            | 32.20                    | 46.00            | 13.80        |
|              | 357.860         | 15.72                 | 15.53                 | 2.07            | 33.32                    | 46.00            | 12.68        |
|              | 592.600         | 11.48                 | 19.11                 | 2.72            | 33.31                    | 46.00            | 12.69        |
|              | 871.960         | 8.64                  | 21.42                 | 3.37            | 33.43                    | 46.00            | 12.57        |
| Vertical     | 48.430          | 19.89                 | 9.62                  | 0.70            | 30.21                    | 40.00            | 9.79         |
|              | <b>93.050</b>   | <b>25.57</b>          | <b>10.09</b>          | <b>1.04</b>     | <b>36.70</b>             | <b>43.50</b>     | <b>6.80</b>  |
|              | 252.130         | 18.13                 | 12.94                 | 1.70            | 32.77                    | 46.00            | 13.23        |
|              | 373.380         | 16.79                 | 15.92                 | 2.12            | 34.83                    | 46.00            | 11.17        |
|              | 592.600         | 12.65                 | 19.11                 | 2.72            | 34.48                    | 46.00            | 11.52        |
|              | 904.940         | 7.47                  | 21.73                 | 3.44            | 32.64                    | 46.00            | 13.36        |

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1954TEV Humidity : 60%RH

Serial No. : E2009091004 Date of Test : Sep 12, 2009

Test Mode : D-Sub 800\*600@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   | 30.970          | 8.32                  | 19.03                 | 0.63            | 27.98                    | 40.00            | 12.02       |
|              | 94.020          | 18.43                 | 10.27                 | 1.05            | 29.75                    | 43.50            | 13.75       |
|              | <b>147.370</b>  | <b>26.80</b>          | <b>11.51</b>          | <b>1.22</b>     | <b>39.53</b>             | <b>43.50</b>     | <b>3.97</b> |
|              | 409.270         | 15.05                 | 16.62                 | 2.23            | 33.90                    | 46.00            | 12.10       |
|              | 592.600         | 11.79                 | 19.11                 | 2.72            | 33.62                    | 46.00            | 12.38       |
|              | 913.670         | 5.63                  | 21.78                 | 3.46            | 30.87                    | 46.00            | 15.13       |
| Vertical     | 42.610          | 18.73                 | 12.39                 | 0.68            | 31.80                    | 40.00            | 8.20        |
|              | 94.020          | 28.34                 | 10.27                 | 1.05            | 39.66                    | 43.50            | 3.84        |
|              | <b>147.000</b>  | <b>27.60</b>          | <b>11.56</b>          | <b>1.22</b>     | <b>40.38</b>             | <b>43.50</b>     | <b>3.12</b> |
|              | 377.260         | 20.12                 | 16.03                 | 2.13            | 38.28                    | 46.00            | 7.72        |
|              | 592.600         | 10.92                 | 19.11                 | 2.72            | 32.75                    | 46.00            | 13.25       |
|              | 981.570         | 9.59                  | 22.30                 | 3.60            | 35.49                    | 54.00            | 18.51       |

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1954TEV Humidity : 60%RH

Serial No. : E2009091004 Date of Test : Sep 12, 2009

Test Mode : D-Sub 1280\*1024@75Hz

| Polarization | Frequency (MHz) | Meter Reading dB (μV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Emission Level dB (μV/m) | Limits dB (μV/m) | Margin (dB) | Remark |
|--------------|-----------------|-----------------------|-----------------------|-----------------|--------------------------|--------------------------|------------------|-------------|--------|
| Horizontal   | 37.760          | 8.13                  | 15.20                 | 0.66            | --                       | 23.99                    | 40.00            | 16.01       | QP     |
|              | 90.140          | 17.93                 | 9.40                  | 1.02            | --                       | 28.35                    | 43.50            | 15.15       |        |
|              | <b>180.350</b>  | <b>22.85</b>          | <b>9.90</b>           | <b>1.43</b>     | --                       | <b>34.18</b>             | <b>43.50</b>     | <b>9.32</b> |        |
|              | 385.020         | 13.82                 | 16.20                 | 2.16            | --                       | 32.18                    | 46.00            | 13.82       |        |
|              | 592.600         | 10.91                 | 19.11                 | 2.72            | --                       | 32.74                    | 46.00            | 13.26       |        |
|              | 908.820         | 4.39                  | 21.76                 | 3.46            | --                       | 29.61                    | 46.00            | 16.39       |        |
|              | 1215.000        | 49.03                 | 23.82                 | 4.23            | 34.12                    | 42.96                    | 74.00            | 31.04       | PK     |
|              | 1318.000        | 48.71                 | 24.66                 | 4.45            | 34.13                    | 43.69                    | 74.00            | 30.31       |        |
|              | 1603.000        | 46.56                 | 26.40                 | 5.00            | 34.16                    | 43.80                    | 74.00            | 30.20       |        |
|              | 1729.000        | 45.72                 | 26.72                 | 5.25            | 34.17                    | 43.52                    | 74.00            | 30.48       |        |
|              | 1839.000        | 44.56                 | 27.12                 | 5.44            | 34.19                    | 42.93                    | 74.00            | 31.07       |        |
|              | 1904.000        | 44.78                 | 27.50                 | 5.51            | 34.19                    | 43.60                    | 74.00            | 30.40       |        |
| Vertical     | <b>44.550</b>   | <b>24.61</b>          | <b>11.38</b>          | <b>0.69</b>     | --                       | <b>36.68</b>             | <b>40.00</b>     | <b>3.32</b> | QP     |
|              | 90.140          | 27.25                 | 9.40                  | 1.02            | --                       | 37.67                    | 43.50            | 5.83        |        |
|              | 180.350         | 22.30                 | 9.90                  | 1.43            | --                       | 33.63                    | 43.50            | 9.87        |        |
|              | 364.650         | 16.16                 | 15.73                 | 2.10            | --                       | 33.99                    | 46.00            | 12.01       |        |
|              | 592.600         | 10.86                 | 19.11                 | 2.72            | --                       | 32.69                    | 46.00            | 13.31       |        |
|              | 851.590         | 8.54                  | 21.24                 | 3.32            | --                       | 33.10                    | 46.00            | 12.90       |        |
|              | 1060.000        | 51.63                 | 22.82                 | 3.85            | 34.10                    | 44.20                    | 74.00            | 29.80       | PK     |
|              | 1073.000        | 52.25                 | 22.92                 | 3.88            | 34.11                    | 44.94                    | 74.00            | 29.06       |        |
|              | 1269.000        | 54.11                 | 24.27                 | 4.34            | 34.13                    | 48.59                    | 74.00            | 25.41       |        |
|              | 1328.000        | 49.81                 | 24.70                 | 4.47            | 34.13                    | 44.85                    | 74.00            | 29.15       |        |
|              | 1391.000        | 51.70                 | 25.16                 | 4.59            | 34.14                    | 47.31                    | 74.00            | 26.69       |        |
|              | 1418.000        | 52.57                 | 25.31                 | 4.64            | 34.14                    | 48.38                    | 74.00            | 25.62       |        |

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1954TEV Humidity : 60%RH

Serial No. : E2009091004 Date of Test : Sep 12, 2009

Test Mode : D-Sub 1440\*900@75Hz

| Polarization | Frequency (MHz) | Meter Reading dB (μV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Emission Level dB (μV/m) | Limits dB (μV/m) | Margin (dB) | Remark |
|--------------|-----------------|-----------------------|-----------------------|-----------------|--------------------------|--------------------------|------------------|-------------|--------|
| Horizontal   | 30.970          | 4.68                  | 19.03                 | 0.63            | --                       | 24.34                    | 40.00            | 15.66       | QP     |
|              | 91.110          | 18.10                 | 9.65                  | 1.02            | --                       | 28.77                    | 43.50            | 14.73       |        |
|              | <b>182.290</b>  | <b>23.78</b>          | <b>9.99</b>           | <b>1.44</b>     | --                       | <b>35.21</b>             | <b>43.50</b>     | <b>8.29</b> |        |
|              | 388.900         | 13.00                 | 16.27                 | 2.18            | --                       | 31.45                    | 46.00            | 14.55       |        |
|              | 593.570         | 11.72                 | 19.14                 | 2.72            | --                       | 33.58                    | 46.00            | 12.42       |        |
|              | 903.970         | 6.74                  | 21.73                 | 3.44            | --                       | 31.91                    | 46.00            | 14.09       |        |
|              | 1154.000        | 56.88                 | 23.45                 | 4.10            | 34.11                    | 50.32                    | 74.00            | 23.68       | PK     |
|              | 1201.000        | 54.79                 | 23.74                 | 4.20            | 34.12                    | 48.61                    | 74.00            | 25.39       |        |
|              | 1400.000        | 49.08                 | 25.20                 | 4.60            | 34.14                    | 44.74                    | 74.00            | 29.26       |        |
|              | 1425.000        | 48.92                 | 25.34                 | 4.66            | 34.14                    | 44.78                    | 74.00            | 29.22       |        |
|              | 1579.000        | 48.07                 | 26.29                 | 4.96            | 34.16                    | 45.16                    | 74.00            | 28.84       |        |
|              | 1695.000        | 47.84                 | 26.65                 | 5.19            | 34.17                    | 45.51                    | 74.00            | 28.49       |        |
| Vertical     | 43.580          | 18.03                 | 11.88                 | 0.68            | --                       | 30.59                    | 40.00            | 9.41        | QP     |
|              | <b>91.110</b>   | <b>26.33</b>          | <b>9.65</b>           | <b>1.02</b>     | --                       | <b>37.00</b>             | <b>43.50</b>     | <b>6.50</b> |        |
|              | 182.290         | 23.99                 | 9.99                  | 1.44            | --                       | 35.42                    | 43.50            | 8.08        |        |
|              | 371.440         | 17.60                 | 15.88                 | 2.12            | --                       | 35.60                    | 46.00            | 10.40       |        |
|              | 597.450         | 9.88                  | 19.17                 | 2.72            | --                       | 31.77                    | 46.00            | 14.23       |        |
|              | 916.580         | 8.75                  | 21.81                 | 3.46            | --                       | 34.02                    | 46.00            | 11.98       |        |
|              | 1157.000        | 53.35                 | 23.48                 | 4.10            | 34.11                    | 46.82                    | 74.00            | 27.18       | PK     |
|              | 1313.000        | 53.36                 | 24.62                 | 4.43            | 34.13                    | 48.28                    | 74.00            | 25.72       |        |
|              | 1400.000        | 52.68                 | 25.20                 | 4.60            | 34.14                    | 48.34                    | 74.00            | 25.66       |        |
|              | 1422.000        | 48.97                 | 25.34                 | 4.65            | 34.14                    | 44.82                    | 74.00            | 29.18       |        |
|              | 1503.000        | 47.40                 | 25.84                 | 4.81            | 34.15                    | 43.90                    | 74.00            | 30.10       |        |
|              | 1663.000        | 47.21                 | 26.56                 | 5.12            | 34.17                    | 44.72                    | 74.00            | 29.28       |        |

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1954TEV Humidity : 60%RH

Serial No. : E2009091004 Date of Test : Sep 12, 2009

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   | 32.910          | 6.46                  | 17.95                 | 0.64            | 25.05                    | 40.00            | 14.95        |
|              | 97.900          | 6.70                  | 11.11                 | 1.07            | 18.88                    | 43.50            | 24.62        |
|              | 255.040         | 16.37                 | 13.01                 | 1.71            | 31.09                    | 46.00            | 14.91        |
|              | 400.540         | 13.54                 | 16.50                 | 2.20            | 32.24                    | 46.00            | 13.76        |
|              | <b>600.360</b>  | <b>11.43</b>          | <b>19.20</b>          | <b>2.74</b>     | <b>33.37</b>             | <b>46.00</b>     | <b>12.63</b> |
|              | 958.290         | 4.64                  | 22.13                 | 3.55            | 30.32                    | 46.00            | 15.68        |
| Vertical     | 45.520          | 16.43                 | 10.94                 | 0.69            | 28.06                    | 40.00            | 11.94        |
|              | 83.350          | 16.60                 | 8.30                  | 0.97            | 25.87                    | 40.00            | 14.13        |
|              | 251.160         | 18.99                 | 12.92                 | 1.70            | 33.61                    | 46.00            | 12.39        |
|              | <b>367.560</b>  | <b>17.53</b>          | <b>15.81</b>          | <b>2.10</b>     | <b>35.44</b>             | <b>46.00</b>     | <b>10.56</b> |
|              | 601.330         | 8.95                  | 19.21                 | 2.74            | 30.90                    | 46.00            | 15.10        |
|              | 956.350         | 8.45                  | 22.11                 | 3.55            | 34.11                    | 46.00            | 11.89        |

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1954TEV Humidity : 60%RH

Serial No. : E2009091004 Date of Test : Sep 12, 2009

Test Mode : DVI 800\*600@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   | 32.910          | 5.89                  | 17.95                 | 0.64            | 24.48                    | 40.00            | 15.52        |
|              | 98.870          | 9.58                  | 11.27                 | 1.07            | 21.92                    | 43.50            | 21.58        |
|              | 246.310         | 16.94                 | 12.75                 | 1.69            | 31.38                    | 46.00            | 14.62        |
|              | 388.900         | 13.39                 | 16.27                 | 2.18            | 31.84                    | 46.00            | 14.16        |
|              | <b>749.740</b>  | <b>10.60</b>          | <b>20.20</b>          | <b>3.07</b>     | <b>33.87</b>             | <b>46.00</b>     | <b>12.13</b> |
|              | 903.970         | 4.42                  | 21.73                 | 3.44            | 29.59                    | 46.00            | 16.41        |
| Vertical     | <b>45.520</b>   | <b>16.63</b>          | <b>10.94</b>          | <b>0.69</b>     | <b>28.26</b>             | <b>40.00</b>     | <b>11.74</b> |
|              | 79.470          | 16.63                 | 7.72                  | 0.94            | 25.29                    | 40.00            | 14.71        |
|              | 247.280         | 17.95                 | 12.79                 | 1.69            | 32.43                    | 46.00            | 13.57        |
|              | 373.380         | 15.67                 | 15.92                 | 2.12            | 33.71                    | 46.00            | 12.29        |
|              | 592.600         | 10.47                 | 19.11                 | 2.72            | 32.30                    | 46.00            | 13.70        |
|              | 970.900         | 7.21                  | 22.22                 | 3.58            | 33.01                    | 54.00            | 20.99        |

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1954TEV Humidity : 60%RH

Serial No. : E2009091004 Date of Test : Sep 12, 2009

Test Mode : DVI 1280\*1024@75Hz

| Polarization | Frequency (MHz) | Meter Reading dB (μV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Emission Level dB (μV/m) | Limits dB (μV/m) | Margin (dB) | Remark |
|--------------|-----------------|-----------------------|-----------------------|-----------------|--------------------------|--------------------------|------------------|-------------|--------|
| Horizontal   | 32.910          | 7.01                  | 17.95                 | 0.64            | --                       | 25.60                    | 40.00            | 14.40       | QP     |
|              | 83.350          | 10.15                 | 8.30                  | 0.97            | --                       | 19.42                    | 40.00            | 20.58       |        |
|              | 243.400         | 19.58                 | 12.64                 | 1.68            | --                       | 33.90                    | 46.00            | 12.10       |        |
|              | 338.460         | 20.01                 | 14.98                 | 2.02            | --                       | 37.01                    | 46.00            | 8.99        |        |
|              | <b>675.050</b>  | <b>16.83</b>          | <b>19.58</b>          | <b>2.89</b>     | --                       | <b>39.30</b>             | <b>46.00</b>     | <b>6.70</b> |        |
|              | 944.710         | 9.52                  | 22.02                 | 3.53            | --                       | 35.07                    | 46.00            | 10.93       |        |
|              | 1215.000        | 49.03                 | 23.82                 | 4.23            | 34.12                    | 42.96                    | 74.00            | 31.04       | PK     |
|              | 1318.000        | 48.71                 | 24.66                 | 4.45            | 34.13                    | 43.69                    | 74.00            | 30.31       |        |
|              | 1603.000        | 46.56                 | 26.40                 | 5.00            | 34.16                    | 43.80                    | 74.00            | 30.20       |        |
|              | 1729.000        | 45.72                 | 26.72                 | 5.25            | 34.17                    | 43.52                    | 74.00            | 30.48       |        |
|              | 1839.000        | 44.56                 | 27.12                 | 5.44            | 34.19                    | 42.93                    | 74.00            | 31.07       |        |
|              | 1904.000        | 44.78                 | 27.50                 | 5.51            | 34.19                    | 43.60                    | 74.00            | 30.40       |        |
| Vertical     | 47.460          | 18.23                 | 10.09                 | 0.69            | --                       | 29.01                    | 40.00            | 10.99       | QP     |
|              | 79.470          | 17.55                 | 7.72                  | 0.94            | --                       | 26.21                    | 40.00            | 13.79       |        |
|              | 243.400         | 16.53                 | 12.64                 | 1.68            | --                       | 30.85                    | 46.00            | 15.15       |        |
|              | 338.460         | 19.44                 | 14.98                 | 2.02            | --                       | 36.44                    | 46.00            | 9.56        |        |
|              | 540.220         | 17.00                 | 18.42                 | 2.58            | --                       | 38.00                    | 46.00            | 8.00        |        |
|              | <b>944.710</b>  | <b>13.14</b>          | <b>22.02</b>          | <b>3.53</b>     | --                       | <b>38.69</b>             | <b>46.00</b>     | <b>7.31</b> |        |
|              | 1060.000        | 51.63                 | 22.82                 | 3.85            | 34.10                    | 44.20                    | 74.00            | 29.80       | PK     |
|              | 1073.000        | 52.25                 | 22.92                 | 3.88            | 34.11                    | 44.94                    | 74.00            | 29.06       |        |
|              | 1269.000        | 54.11                 | 24.27                 | 4.34            | 34.13                    | 48.59                    | 74.00            | 25.41       |        |
|              | 1328.000        | 49.81                 | 24.70                 | 4.47            | 34.13                    | 44.85                    | 74.00            | 29.15       |        |
|              | 1391.000        | 51.70                 | 25.16                 | 4.59            | 34.14                    | 47.31                    | 74.00            | 26.69       |        |
|              | 1418.000        | 52.57                 | 25.31                 | 4.64            | 34.14                    | 48.38                    | 74.00            | 25.62       |        |

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1954TEV Humidity : 60%RH

Serial No. : E2009091004 Date of Test : Sep 12, 2009

Test Mode : DVI 1440\*900@60Hz

| Polarization | Frequency (MHz) | Meter Reading dB (μV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Emission Level dB (μV/m) | Limits dB (μV/m) | Margin (dB)  | Remark |
|--------------|-----------------|-----------------------|-----------------------|-----------------|--------------------------|--------------------------|------------------|--------------|--------|
| Horizontal   | 32.910          | 6.44                  | 17.95                 | 0.64            | --                       | 25.03                    | 40.00            | 14.97        | QP     |
|              | 95.960          | 11.58                 | 10.70                 | 1.05            | --                       | 23.33                    | 43.50            | 20.17        |        |
|              | 231.760         | 16.32                 | 12.20                 | 1.65            | --                       | 30.17                    | 46.00            | 15.83        |        |
|              | 426.730         | 12.09                 | 16.87                 | 2.27            | --                       | 31.23                    | 46.00            | 14.77        |        |
|              | <b>611.030</b>  | <b>11.48</b>          | <b>19.26</b>          | <b>2.76</b>     | --                       | <b>33.50</b>             | <b>46.00</b>     | <b>12.50</b> |        |
|              | 959.260         | 6.43                  | 22.13                 | 3.55            | --                       | 32.11                    | 46.00            | 13.89        |        |
|              | 1168.000        | 49.64                 | 23.54                 | 4.13            | 34.12                    | 43.19                    | 74.00            | 30.81        | PK     |
|              | 1215.000        | 51.03                 | 23.82                 | 4.23            | 34.12                    | 44.96                    | 74.00            | 29.04        |        |
|              | 1318.000        | 50.71                 | 24.66                 | 4.45            | 34.13                    | 45.69                    | 74.00            | 28.31        |        |
|              | 1391.000        | 48.06                 | 25.16                 | 4.59            | 34.14                    | 43.67                    | 74.00            | 30.33        |        |
|              | 1522.000        | 47.59                 | 25.96                 | 4.84            | 34.15                    | 44.24                    | 74.00            | 29.76        |        |
|              | 1603.000        | 48.56                 | 26.40                 | 5.00            | 34.16                    | 45.80                    | 74.00            | 28.20        |        |
| Vertical     | <b>48.430</b>   | <b>18.85</b>          | <b>9.62</b>           | <b>0.70</b>     | --                       | <b>29.17</b>             | <b>40.00</b>     | <b>10.83</b> | QP     |
|              | 77.530          | 15.76                 | 7.49                  | 0.92            | --                       | 24.17                    | 40.00            | 15.83        |        |
|              | 231.760         | 16.18                 | 12.20                 | 1.65            | --                       | 30.03                    | 46.00            | 15.97        |        |
|              | 367.560         | 16.34                 | 15.81                 | 2.10            | --                       | 34.25                    | 46.00            | 11.75        |        |
|              | 702.210         | 9.71                  | 19.73                 | 2.94            | --                       | 32.38                    | 46.00            | 13.62        |        |
|              | 959.260         | 8.88                  | 22.13                 | 3.55            | --                       | 34.56                    | 46.00            | 11.44        |        |
|              | 1073.000        | 53.25                 | 22.92                 | 3.88            | 34.11                    | 45.94                    | 74.00            | 28.06        | PK     |
|              | 1167.000        | 50.21                 | 23.54                 | 4.13            | 34.12                    | 43.76                    | 74.00            | 30.24        |        |
|              | 1269.000        | 55.11                 | 24.27                 | 4.34            | 34.13                    | 49.59                    | 74.00            | 24.41        |        |
|              | 1328.000        | 50.81                 | 24.70                 | 4.47            | 34.13                    | 45.85                    | 74.00            | 28.15        |        |
|              | 1391.000        | 52.70                 | 25.16                 | 4.59            | 34.14                    | 48.31                    | 74.00            | 25.69        |        |
|              | 1418.000        | 53.57                 | 25.31                 | 4.64            | 34.14                    | 49.38                    | 74.00            | 24.62        |        |

TEST ENGINEER: RAVEN JIN

## **5 DEVIATION TO TEST SPECIFICATIONS**

None.

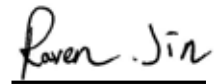
## 6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

| Name | M/N | Specifications<br>(mm) | Manufacturer | Location                        |
|------|-----|------------------------|--------------|---------------------------------|
| Tape | --  | 95*10*4T               | EXPAN        | See Internal Photo Figure<br>22 |
| Tape | --  | 290*10*4T              | EXPAN        | See Internal Photo Figure<br>22 |

Note: We had required the applicant and manufacturer that all electrical and mechanical devices employed for spurious radiation suppression, including any modifications made during certification testing, must be incorporated in each unit marked

TEST ENGINEER:



(RAVEN JIN)