

Application for FCC Certificate  
On Behalf of  
Hisense Electric Co., Ltd.

LED LCD TV

Model No.	Brand
40K366WN	Hisense

FCC ID : W9HLCDD0030

Prepared For : Hisense Electric Co., Ltd.  
No.218 Qianwangang Road, Economy & Technology  
Development Zone, Qingdao, China

Prepared By : Audix Technology (Shanghai) Co., Ltd.  
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Report No. : ACI-F13074  
Date of Test : May 22 – 24, 2013  
Date of Report : May 29, 2013

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## TEST REPORT FOR FCC CERTIFICATE

Applicant : Hisense Electric Co., Ltd.  
 Manufacturer : Hisense Electric Co., Ltd.  
 Factory #1 : Hisense Electric Co., Ltd.  
 Factory #2 : Tatung Mexico S.A. de C.V.  
 EUT Description : LED LCD TV

Model No.	Brand	Power Supply
40K366WN	Hisense	120V/60Hz

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2012  
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) 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: Refer to Sec.2.1) which was tested in 3m anechoic chamber May 22 – 24, 2013 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.

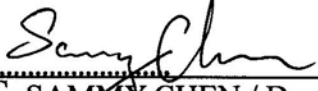
***The test results for EUT's TV functions are contained in No.F13073, a Verification report.***

Date of Test : May 22 – 24, 2013 Date of Report : May 29, 2013

Producer :   
 KATHY WANG / Supervisor

Review :   
 DIO YANG / Assistant Manager

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

Signatory :   
 Authorized Signature EMC SAMMY CHEN / Deputy 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 at the Mains Terminal	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2012 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2012 AND ANSI C63.4-2003	15.109(a) Class B	Pass

## 2 GENERAL INFORMATION

### 2.1 Description of Equipment Under Test

Description	:	LED LCD TV
Type of EUT	:	<input type="checkbox"/> Production <input checked="" type="checkbox"/> Pre-product <input type="checkbox"/> Pro-type
Model No.	:	40K366WN
Bread Name	:	Hisense
Applicant	:	Hisense Electric Co., Ltd. No.218 Qianwangang Road, Economy & Technology Development Zone, Qingdao, China
Manufacturer	:	Hisense Electric Co., Ltd. No.218 Qianwangang Road, Economy & Technology Development Zone, Qingdao, China
Factory #1	:	Hisense Electric Co., Ltd. No.218 Qianwangang Road, Economy & Technology Development Zone, Qingdao, China
Factory #2	:	Tatung Mexico S.A. de C.V. Miguel Catalán 420, Parque Industrial Rio Bravo, Cd. Juarez, Chih., CP 32557
LCD Panel	:	Manufacturer : Hisense M/N : HE400GF-B31(1000)\S1\PW1
Max Resolution	:	1024*768@60Hz
D-Sub Cable	:	Shielded, Detachable, 1.85m, with two cores on cable
HDMI Cable	:	Shielded, Detachable, 1.00m
Power Cord	:	Unshielded, Detachable, 1.80m

**Remark:**

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

**Bottom Port:**

- (1) One DIGITAL AUDIO OUT Port  
: Connected with DVD PLAYER #1
- (2) One LAN Port  
: Connected with PC
- (3) One HDMI3/ARC Port  
: Connected with DVD PLAYER #2
- (4) One HDMI2 Port  
: Connected with PC

- (5) One component of Audio/YPbPr Audio Port  
: Connected with DVD PLAYER #1
- (6) One component of Video/YPbPr Port  
: Connected with DVD PLAYER #1

## Side Port:

- (1) One ANT/CABLE IN Port  
: Connected with Antenna or ATSC SG / TV  
SG
- (2) One VGA Port  
: Connected with PC
- (3) One PC/DVI Audio In Port  
: Connected with PC
- (4) One HDMI1 Port  
: Connected with DVD PLAYER #1
- (7) One USB Port  
: Connected with U-Disk
- (8) One USB Port  
: Connected with U-Disk
- (9) One Audio Out Port  
: Connected with Earphone

## 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 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 : 1406  
 Serial Number : 0200702302609  
 Data Cable : Shielded, undetachable ,1.8m  
 Certificate : CE/EMC, FCC DoC, VCCI, MIC, C-Tick,  
 BSMI

## 2.2.4 Mouse

Manufacturer : Microsoft  
Model Number : 1405  
Serial Number : 0204603562213  
Data Cable : Shielded, undetachable, 1.8m.  
Certificate : CE/EMC, FCC DoC, VCCI, MIC, C-Tick,  
BSMI

## 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

## 2.2.6 TV Signal Generator

Manufacturer : FLUKE  
Model Number : 54200m01  
Serial Number : 814008  
Data Cable : Shielded, detachable, 2.0m  
Power Cord : Unshielded, detachable, 2.0m  
Certificate : CE/EMC, FCC DoC, CCC

## 2.2.7 ATSC Signal Generator

Manufacturer : SENCORE  
Model Number : ATSC997  
Serial Number : 6790071

## 2.2.8 DVD PLAYER #1

Manufacturer : PHILIPS  
Model Number : DVP3986K/93  
Serial Number : KX1A0902120108  
Certificate : FCC DoC, CE/EMC, CCC

## 2.2.9 DVD PLAYER #2

Manufacturer : LG  
Model Number : DF9921N  
Serial Number : 3850R-M846W  
Certificate : FCC DoC, CE/EMC, CCC

## 2.2.10 Earphone

Manufacturer : SONY  
Model Number : MDR-E808  
Serial Number : 1808030805305506

## 2.2.11 U-DISK\*2

Manufacturer : LG  
Model Number : 1GB

## 2.3 Description of Test Facility

Site Description (No.3 3m Chamber) : Sept. 17, 1998 file on  
Mar 16, 2012 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 = 3.42 dB

Radiated Emission Expanded Uncertainty (30-200MHz):  
U = 4.14 dB (Horizontal)  
U = 4.28 dB (Vertical)

Radiated Emission Expanded Uncertainty (200M-1GHz):  
U = 4.18 dB (Horizontal)  
U = 4.26 dB (Vertical)



### 3 CONDUCTED EMISSION TEST

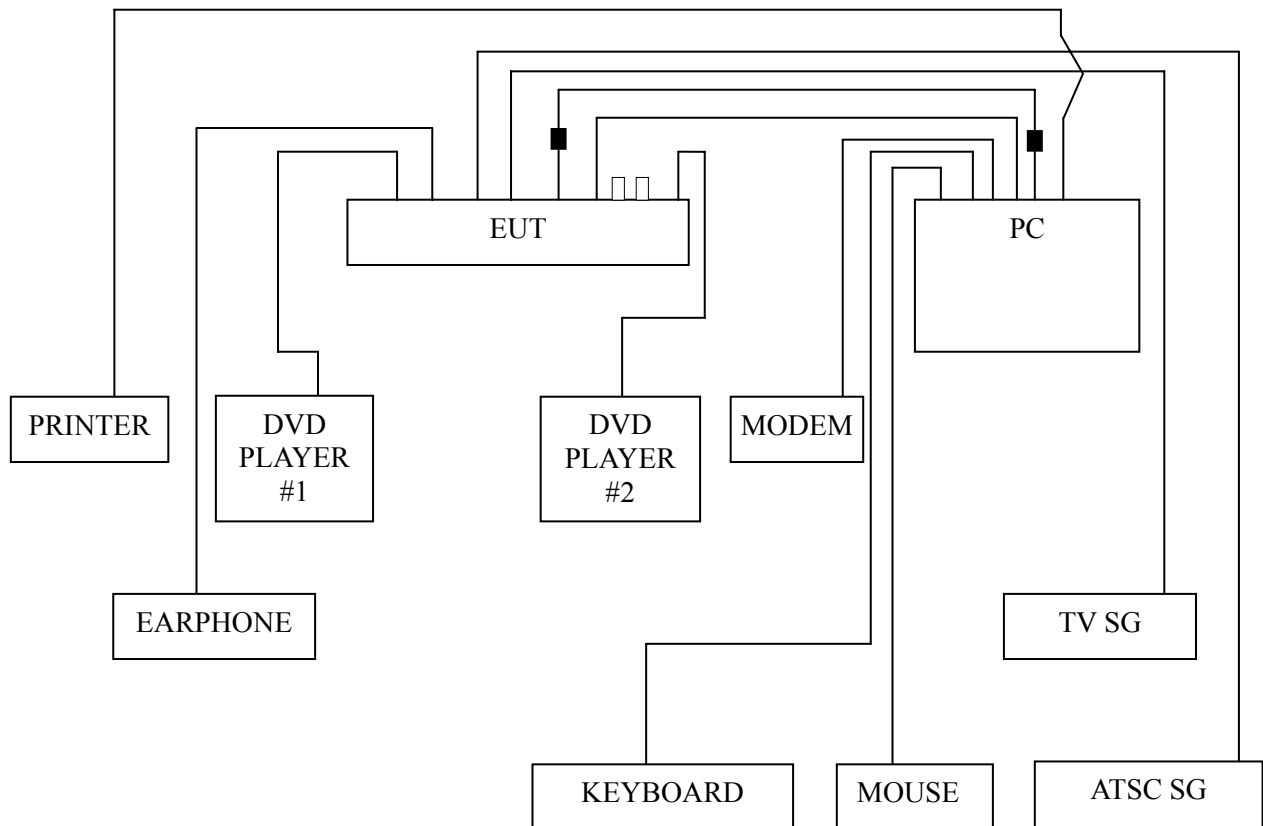
#### 3.1 Test Equipment

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 20, 2013	Mar 20, 2014
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	Feb 25, 2013	Feb 25, 2014
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Mar 20, 2013	Mar 20, 2014
4.	50 $\Omega$ Coaxial Switch	Anritsu	MP59B	6200426389	Mar 18, 2013	Sep 18, 2013
5.	50 $\Omega$ Terminator	Anritsu	BNC	001	Mar 20, 2013	Mar 20, 2014
6.	Software	Audix	E3	SET00200 9804M592	--	--

#### 3.2 Block Diagram of Test Setup

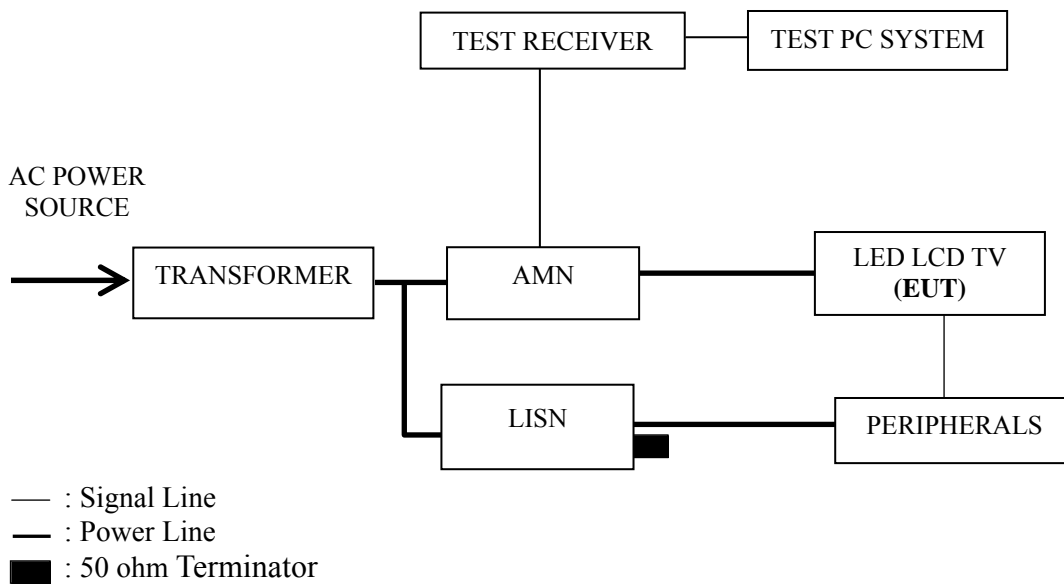
##### 3.2.1 EUT & Peripherals



■ : Ferrite core

□ : U-Disk

### 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, the EUT’s screen displayed and filled with “H” pattern by its resolution (Via D-Sub & HDMI Input).
- 3.5.5 In USB Play mode, set the EUT play digital media from U-Disk.
- 3.5.6 In LAN mode, set the EUT play digital media through LAN port.
- 3.5.7 The other peripherals devices were driven and operated during the test.
- 3.5.8 The test modes are as follows:

Test Mode
D-Sub 1024*768@60Hz
HDMI 1024*768@60Hz
D-Sub 800*600@60Hz
D-Sub 640*480@60Hz
USB Play
LAN

### 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 1024*768@60Hz	P13
HDMI 1024*768@60Hz	P14
D-Sub 800*600@60Hz	P15
D-Sub 640*480@60Hz	P16
USB Play	P17
LAN	P18

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 HDMI 1080p mode was tested and recorded in a FCC Verification test report (No. F13073).

NOTE 5 – The worst case is for USB Play test mode. The worst emission is detected at 0.153 MHz (Average Value) with corrected signal level of 60.13 dB ( $\mu$ V) (limit is 65.82 dB ( $\mu$ V)), when the Line of the EUT is connected to AMN.

EUT : LED LCD TV Temperature : 22°C

Model No. : 40K366WN Humidity : 48%RH

Test Mode : D-Sub 1024\*768@60Hz Date of Test : May 22, 2013

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark	
Line	<b>0.155</b>	<b>59.71</b>	<b>0.24</b>	<b>59.95</b>	<b>65.74</b>	<b>5.79</b>	QP	
	0.604	39.87	0.23	40.10	56.00	15.90		
	1.568	38.33	0.37	38.70	56.00	17.30		
	3.565	36.11	0.47	36.58	56.00	19.42		
	7.100	45.86	0.66	46.52	60.00	13.48		
	17.849	37.41	0.90	38.31	60.00	21.69		
	0.155	48.33	0.24	48.57	55.74	7.17	AV	
	0.604	26.60	0.23	26.83	46.00	19.17		
	1.568	26.30	0.37	26.67	46.00	19.33		
	3.565	24.96	0.47	25.43	46.00	20.57		
	7.100	34.15	0.66	34.81	50.00	15.19		
	17.849	24.90	0.90	25.80	50.00	24.20		
	Neutral	0.153	59.65	0.13	59.78	65.82	6.04	QP
		0.614	40.63	0.19	40.82	56.00	15.18	
1.535		37.14	0.17	37.31	56.00	18.69		
3.565		37.45	0.36	37.81	56.00	18.19		
7.100		45.96	0.59	46.55	60.00	13.45		
17.568		36.38	0.79	37.17	60.00	22.83		
0.153		47.56	0.13	47.69	55.82	8.13	AV	
0.614		28.10	0.19	28.29	46.00	17.71		
1.535		26.34	0.17	26.51	46.00	19.49		
3.565		24.45	0.36	24.81	46.00	21.19		
7.100		34.22	0.59	34.81	50.00	15.19		
17.568		25.26	0.79	26.05	50.00	23.95		

TEST ENGINEER: VEIGAR ZHOU

EUT : LED LCD TV Temperature : 22°C  
 Model No. : 40K366WN Humidity : 48%RH  
 Test Mode : HDMI 1024\*768@60Hz Date of Test : May 22, 2013

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark	
Line	<b>0.155</b>	<b>59.70</b>	<b>0.24</b>	<b>59.94</b>	<b>65.74</b>	<b>5.80</b>	QP	
	0.604	39.96	0.23	40.19	56.00	15.81		
	1.568	36.76	0.37	37.13	56.00	18.87		
	2.554	36.97	0.40	37.37	56.00	18.63		
	7.100	45.31	0.66	45.97	60.00	14.03		
	17.383	38.25	0.89	39.14	60.00	20.86		
	0.155	48.42	0.24	48.66	55.74	7.08	AV	
	0.604	28.11	0.23	28.34	46.00	17.66		
	1.568	24.15	0.37	24.52	46.00	21.48		
	2.554	25.46	0.40	25.86	46.00	20.14		
	7.100	34.12	0.66	34.78	50.00	15.22		
	17.383	26.60	0.89	27.49	50.00	22.51		
	Neutral	0.153	59.75	0.13	59.88	65.82	5.94	QP
		0.627	39.93	0.19	40.12	56.00	15.88	
1.552		37.76	0.17	37.93	56.00	18.07		
2.554		38.49	0.20	38.69	56.00	17.31		
7.368		45.64	0.58	46.22	60.00	13.78		
17.755		36.23	0.79	37.02	60.00	22.98		
0.153		47.09	0.13	47.22	55.82	8.60	AV	
0.627		27.70	0.19	27.89	46.00	18.11		
1.552		26.12	0.17	26.29	46.00	19.71		
2.554		25.59	0.20	25.79	46.00	20.21		
7.368		34.41	0.58	34.99	50.00	15.01		
17.755		24.56	0.79	25.35	50.00	24.65		

TEST ENGINEER: VEIGAR ZHOU

EUT : LED LCD TV Temperature : 22°C

Model No. : 40K366WN Humidity : 48%RH

Test Mode : D-Sub 800\*600@60Hz Date of Test : May 22, 2013

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark	
Line	<b>0.153</b>	<b>59.80</b>	<b>0.23</b>	<b>60.03</b>	<b>65.82</b>	<b>5.79</b>	QP	
	0.585	39.45	0.28	39.73	56.00	16.27		
	1.568	38.74	0.37	39.11	56.00	16.89		
	2.622	37.43	0.40	37.83	56.00	18.17		
	7.100	45.81	0.66	46.47	60.00	13.53		
	17.849	40.15	0.90	41.05	60.00	18.95		
	0.153	46.36	0.23	46.59	55.82	9.23	AV	
	0.585	28.50	0.28	28.78	46.00	17.22		
	1.568	27.60	0.37	27.97	46.00	18.03		
	2.622	24.58	0.40	24.98	46.00	21.02		
	7.100	34.25	0.66	34.91	50.00	15.09		
	17.849	27.56	0.90	28.46	50.00	21.54		
	Neutral	0.153	59.74	0.13	59.87	65.82	5.95	QP
		0.627	40.63	0.19	40.82	56.00	15.18	
1.908		37.86	0.17	38.03	56.00	17.97		
2.261		37.17	0.19	37.36	56.00	18.64		
7.100		45.78	0.59	46.37	60.00	13.96		
17.568		37.47	0.79	38.26	60.00	21.74		
0.153		48.05	0.13	48.18	55.82	7.64	AV	
0.627		28.25	0.19	28.44	46.00	17.56		
1.908		24.66	0.17	24.83	46.00	21.17		
2.261		24.59	0.19	24.78	46.00	21.22		
7.100		34.26	0.59	34.85	50.00	15.15		
17.568		27.63	0.79	28.42	50.00	21.58		

TEST ENGINEER: VEIGAR ZHOU

EUT : LED LCD TV Temperature : 22°C

Model No. : 40K366WN Humidity : 48%RH

Test Mode : D-Sub 640\*480@60Hz Date of Test : May 22, 2013

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark
Line	<b>0.153</b>	<b>59.79</b>	<b>0.23</b>	<b>60.02</b>	<b>65.82</b>	<b>5.80</b>	QP
	0.611	40.30	0.23	40.53	56.00	15.47	
	1.568	37.93	0.37	38.30	56.00	17.70	
	2.594	37.43	0.40	37.83	56.00	18.17	
	7.100	45.25	0.66	45.91	60.00	14.09	
	17.018	37.77	0.87	38.64	60.00	21.36	
	AV	0.153	46.55	0.23	46.78	55.82	9.04
		0.611	28.45	0.23	28.68	46.00	17.32
		1.568	24.00	0.37	24.37	46.00	21.63
		2.594	27.53	0.40	27.93	46.00	18.07
		7.100	34.60	0.66	35.26	50.00	14.74
		17.018	26.58	0.87	27.45	50.00	22.55
Neutral	0.152	59.80	0.13	59.93	65.91	5.98	QP
	0.614	40.54	0.19	40.73	56.00	15.27	
	1.568	38.09	0.17	38.26	56.00	17.74	
	2.237	37.39	0.18	37.57	56.00	18.43	
	7.175	45.37	0.59	45.96	60.00	14.04	
	17.568	36.65	0.79	37.44	60.00	22.56	
	AV	0.152	48.56	0.13	48.69	55.91	7.22
		0.614	29.05	0.19	29.24	46.00	16.76
		1.568	26.59	0.17	26.76	46.00	19.24
		2.237	26.45	0.18	26.63	46.00	19.37
		7.175	34.56	0.59	35.15	50.00	14.85
		17.568	24.41	0.79	25.20	50.00	24.80

TEST ENGINEER: VEIGAR ZHOU



EUT : LED LCD TV Temperature : 22°C  
 Model No. : 40K366WN Humidity : 48%RH  
 Test Mode : USB Play Date of Test : May 22, 2013

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark
Line	<b>0.153</b>	<b>59.90</b>	<b>0.23</b>	<b>60.13</b>	<b>65.82</b>	<b>5.69</b>	QP
	0.621	40.50	0.22	40.72	56.00	15.28	
	1.908	38.40	0.39	38.79	56.00	17.21	
	2.581	37.60	0.40	38.00	56.00	18.00	
	7.175	46.59	0.66	47.25	60.00	12.75	
	17.755	37.69	0.89	38.58	60.00	21.42	
	0.153	47.40	0.23	47.63	55.82	8.19	AV
	0.621	27.45	0.22	27.67	46.00	18.33	
	1.908	27.48	0.39	27.87	46.00	18.13	
	2.581	26.40	0.40	26.80	46.00	19.20	
	7.175	34.48	0.66	35.14	50.00	14.86	
	17.755	24.51	0.89	25.40	50.00	24.60	
Neutral	0.155	59.68	0.13	59.81	65.74	5.93	QP
	0.585	39.82	0.18	40.00	56.00	16.00	
	1.552	37.38	0.17	37.55	56.00	18.45	
	2.622	38.51	0.20	38.71	56.00	17.29	
	7.175	45.83	0.59	46.42	60.00	13.58	
	18.039	37.86	0.80	38.66	60.00	21.34	
	0.155	47.88	0.13	48.01	55.74	7.73	AV
	0.585	24.55	0.18	24.73	46.00	21.27	
	1.552	26.46	0.17	26.63	46.00	19.37	
	2.622	27.56	0.20	27.76	46.00	18.24	
	7.175	34.26	0.59	34.85	50.00	15.15	
	18.039	26.45	0.80	27.25	50.00	22.75	

TEST ENGINEER: VEIGAR ZHOU

EUT : LED LCD TV Temperature : 22°C  
 Model No. : 40K366WN Humidity : 48%RH  
 Test Mode : LAN Date of Test : May 22, 2013

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark
Line	<b>0.155</b>	<b>59.76</b>	<b>0.24</b>	<b>60.00</b>	<b>65.74</b>	<b>5.74</b>	QP
	0.627	40.26	0.21	40.47	56.00	15.53	
	1.568	36.95	0.37	37.32	56.00	18.68	
	2.581	37.78	0.40	38.18	56.00	17.82	
	7.175	45.85	0.66	46.51	60.00	13.49	
	17.755	38.12	0.89	39.01	60.00	20.99	
	0.155	49.63	0.24	49.87	55.74	5.87	AV
	0.627	28.46	0.21	28.67	46.00	17.33	
	1.568	24.88	0.37	25.25	46.00	20.75	
	2.581	26.48	0.40	26.88	46.00	19.12	
	7.175	34.12	0.66	34.78	50.00	15.22	
17.755	27.56	0.89	28.45	50.00	21.55		
Neutral	0.155	59.67	0.13	59.80	65.74	5.94	QP
	0.614	40.86	0.19	41.05	56.00	14.95	
	1.568	37.94	0.17	38.11	56.00	17.89	
	2.622	37.52	0.20	37.72	56.00	18.28	
	7.100	45.67	0.59	46.26	60.00	13.74	
	17.383	37.03	0.79	37.82	60.00	22.18	
	0.155	46.46	0.13	46.59	55.74	9.15	AV
	0.614	28.54	0.19	28.73	46.00	17.27	
	1.568	26.60	0.17	26.77	46.00	19.23	
	2.622	26.45	0.20	26.65	46.00	19.35	
	7.100	34.15	0.59	34.74	50.00	15.26	
17.383	26.39	0.79	27.18	50.00	22.82		

TEST ENGINEER: VEIGAR ZHOU

## 4 RADIATED EMISSION TEST

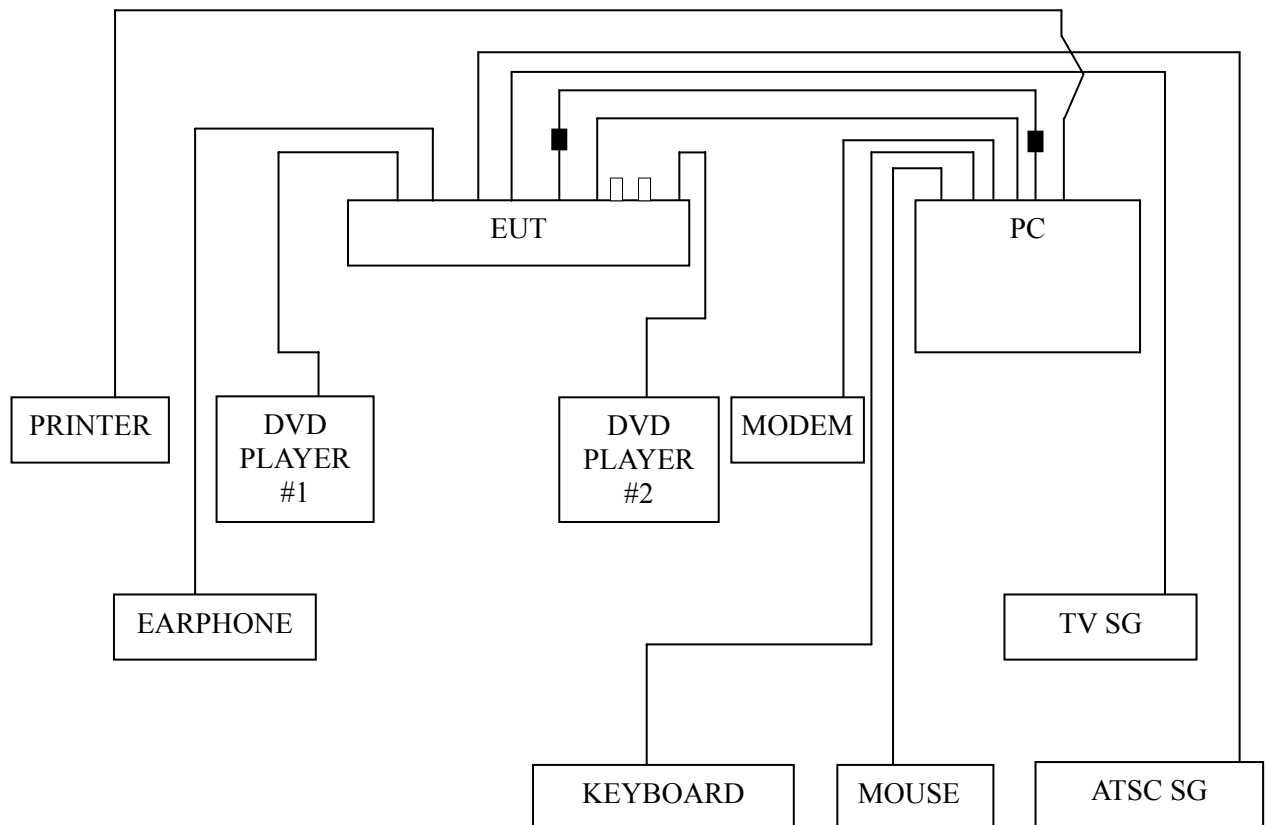
### 4.1 Test Equipment

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	ESCI	101302	Sep 11, 2012	Sep 11, 2013
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 18, 2013	Sep 18, 2013
3.	Bi-log Antenna	TESEQ	CBL6112D	23192	Nov 29, 2012	Nov 29, 2013
4.	Spectrum	Agilent	E7405A	MY45106600	Dec 17, 2012	Dec 17, 2013
5.	50Ω Coaxial Switch	Anritsu	MP59B	6200426390	Mar 18, 2013	Sep 18, 2013
6.	Software	Audix	E3	SET00200 9912M295-2	--	--

### 4.2 Block Diagram of Test Setup

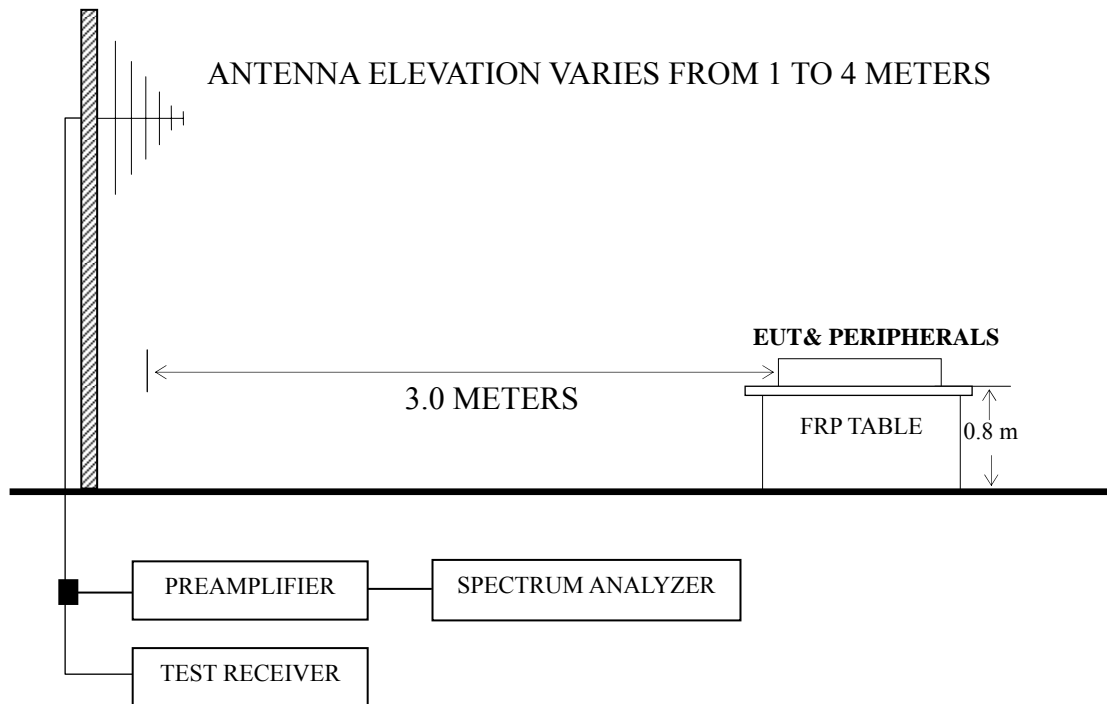
#### 4.2.1 EUT and Peripherals



■ : Ferrite core

□ : U-Disk

#### 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 (MHz)	Distance (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.

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 I.F. bandwidth of Test Receiver R&S ESCI was set at 120 kHz.

The frequency range from 30 MHz to 1000MHz was checked for all test 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 1024*768@60Hz	P22
HDMI 1024*768@60Hz	P23
D-Sub 800*600@60Hz	P24
D-Sub 640*480@60Hz	P25
USB Play	P26
LAN	P27

NOTE 1 – Emission Level = Antenna Factor + Cable Loss + Meter Reading.

NOTE 2 – All readings are Quasi-Peak values.

NOTE 3 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 4 – The HDMI 1080p mode was tested and recorded in a FCC Verification test report (No. F13073).

NOTE 5 – The worst case is for D-Sub 1024\*768@60Hz test mode. The worst emission at horizontal polarization was detected at 300.630 MHz with corrected signal level of 40.95 dB ( $\mu\text{V}/\text{m}$ ) (limit is 46.00 dB ( $\mu\text{V}/\text{m}$ )), when the antenna was 1.40 m height and the turntable was at 240°. The worst emission at vertical polarization was detected at 116.000 MHz with corrected signal level of 40.91 dB ( $\mu\text{V}/\text{m}$ ) (limit is 43.50 dB ( $\mu\text{V}/\text{m}$ )), when the antenna was 1.00 m height and the turntable was at 80°.

EUT : LED LCD TV Temperature : 22°C

Model No. : 40K366WN Humidity : 60%RH

Test Mode : D-Sub 1024\*768@60Hz Date of Test : May 24, 2013

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	86.260	19.58	7.57	1.17	28.32	40.00	11.68
	144.460	25.57	10.30	1.61	37.48	43.50	6.02
	239.520	18.51	11.00	2.15	31.66	46.00	14.34
	<b>300.630</b>	<b>25.80</b>	<b>12.60</b>	<b>2.55</b>	<b>40.95</b>	<b>46.00</b>	<b>5.05</b>
	372.410	17.79	14.90	2.66	35.35	46.00	10.65
	669.230	14.87	19.45	3.44	37.76	46.00	8.24
Vertical	30.970	17.13	17.65	0.67	35.45	40.00	4.55
	43.580	19.76	10.60	0.80	31.16	40.00	8.84
	<b>116.000</b>	<b>27.90</b>	<b>11.56</b>	<b>1.45</b>	<b>40.91</b>	<b>43.50</b>	<b>2.59</b>
	280.260	19.06	12.50	2.40	33.96	46.00	12.04
	366.590	15.76	14.87	2.65	33.28	46.00	12.72
	433.520	20.92	17.50	2.78	41.20	46.00	4.80

TEST ENGINEER: RAVEN JIN

EUT : LED LCD TV Temperature : 22°C

Model No. : 40K366WN Humidity : 60%RH

Test Mode : HDMI 1024\*768@60Hz Date of Test : May 24, 2013

Polarization	Frequency (MHz)	Meter Reading dB ( $\mu$ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB ( $\mu$ V/m)	Limits dB ( $\mu$ V/m)	Margin (dB)
Horizontal	42.610	9.35	11.30	0.79	21.44	40.00	18.56
	93.050	19.43	8.94	1.26	29.63	43.50	13.87
	<b>150.280</b>	<b>19.75</b>	<b>10.04</b>	<b>1.64</b>	<b>31.43</b>	<b>43.50</b>	<b>12.07</b>
	242.430	12.33	11.10	2.17	25.60	46.00	20.40
	296.750	10.71	12.55	2.52	25.78	46.00	20.22
	446.130	12.39	17.07	2.82	32.28	46.00	13.72
Vertical	72.680	17.25	6.20	0.97	24.42	40.00	15.58
	<b>210.420</b>	<b>20.54</b>	<b>7.60</b>	<b>2.00</b>	<b>30.14</b>	<b>43.50</b>	<b>13.36</b>
	319.060	8.66	13.83	2.58	25.07	46.00	20.93
	372.410	6.56	14.90	2.66	24.12	46.00	21.88
	446.130	8.25	17.07	2.82	28.14	46.00	17.86
	525.670	8.48	18.35	3.03	29.86	46.00	16.14

TEST ENGINEER: RAVEN JIN

EUT : LED LCD TV Temperature : 22°C

Model No. : 40K366WN Humidity : 60%RH

Test Mode : D-Sub 800\*600@60Hz Date of Test : May 24, 2013

Polarization	Frequency (MHz)	Meter Reading dB ( $\mu$ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB ( $\mu$ V/m)	Limits dB ( $\mu$ V/m)	Margin (dB)
Horizontal	92.080	16.39	8.66	1.24	26.29	43.50	17.21
	<b>142.520</b>	<b>19.87</b>	<b>10.30</b>	<b>1.60</b>	<b>31.77</b>	<b>43.50</b>	<b>11.73</b>
	206.540	15.43	7.75	1.98	25.16	43.50	18.34
	369.500	14.67	14.80	2.65	32.12	46.00	13.88
	444.190	7.01	17.15	2.82	26.98	46.00	19.02
	666.320	10.86	19.30	3.44	33.60	46.00	12.40
Vertical	146.400	23.89	10.25	1.62	35.76	43.50	7.74
	209.450	22.13	7.60	2.00	31.73	43.50	11.77
	444.190	10.59	17.15	2.82	30.56	46.00	15.44
	591.630	9.13	18.60	3.20	30.93	46.00	15.07
	704.150	15.09	20.13	3.55	38.77	46.00	7.23
	<b>879.720</b>	<b>14.94</b>	<b>19.77</b>	<b>4.32</b>	<b>39.03</b>	<b>46.00</b>	<b>6.97</b>

TEST ENGINEER: RAVEN JIN



EUT : LED LCD TV Temperature : 22°C

Model No. : 40K366WN Humidity : 60%RH

Test Mode : D-Sub 640\*480@60Hz Date of Test : May 24, 2013

Polarization	Frequency (MHz)	Meter Reading dB ( $\mu$ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB ( $\mu$ V/m)	Limits dB ( $\mu$ V/m)	Margin (dB)
Horizontal	<b>146.400</b>	<b>23.74</b>	<b>10.25</b>	<b>1.62</b>	<b>35.61</b>	<b>43.50</b>	<b>7.89</b>
	211.390	21.64	7.60	2.01	31.25	43.50	12.25
	241.460	14.93	11.07	2.17	28.17	46.00	17.83
	350.100	13.98	14.80	2.62	31.40	46.00	14.60
	448.070	10.58	16.98	2.82	30.38	46.00	15.62
	522.760	7.25	18.33	3.03	28.61	46.00	17.39
Vertical	94.020	17.27	9.12	1.27	27.66	43.50	15.84
	141.550	18.15	10.30	1.60	30.05	43.50	13.45
	211.390	17.95	7.60	2.01	27.56	43.50	15.94
	373.380	7.51	14.90	2.66	25.07	46.00	20.93
	448.070	7.62	16.98	2.82	27.42	46.00	18.58
	<b>705.120</b>	<b>12.56</b>	<b>19.97</b>	<b>3.55</b>	<b>36.08</b>	<b>46.00</b>	<b>9.92</b>

TEST ENGINEER: RAVEN JIN

EUT : LED LCD TV Temperature : 22°C

Model No. : 40K366WN Humidity : 60%RH

Test Mode : USB Play Date of Test : May 24, 2013

Polarization	Frequency (MHz)	Meter Reading dB ( $\mu$ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB ( $\mu$ V/m)	Limits dB ( $\mu$ V/m)	Margin (dB)
Horizontal	72.680	19.91	6.20	0.97	27.08	40.00	12.92
	193.930	24.43	8.10	1.92	34.45	43.50	9.05
	288.990	20.74	12.73	2.46	35.93	46.00	10.07
	371.440	20.38	14.85	2.66	37.89	46.00	8.11
	664.380	18.11	19.30	3.44	40.85	46.00	5.15
	<b>812.790</b>	<b>17.64</b>	<b>20.37</b>	<b>3.70</b>	<b>41.71</b>	<b>46.00</b>	<b>4.29</b>
Vertical	36.790	20.39	14.92	0.74	36.05	40.00	3.95
	100.810	21.17	10.58	1.35	33.10	43.50	10.40
	431.580	18.33	17.55	2.78	38.66	46.00	7.34
	518.880	21.50	18.30	3.03	42.83	46.00	3.17
	<b>591.630</b>	<b>21.03</b>	<b>18.60</b>	<b>3.20</b>	<b>42.83</b>	<b>46.00</b>	<b>3.17</b>
	812.790	15.97	20.37	3.70	40.04	46.00	5.96

TEST ENGINEER: RAVEN JIN

EUT : LED LCD TV Temperature : 22°C

Model No. : 40K366WN Humidity : 60%RH

Test Mode : LAN Date of Test : May 24, 2013

Polarization	Frequency (MHz)	Meter Reading dB ( $\mu$ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB ( $\mu$ V/m)	Limits dB ( $\mu$ V/m)	Margin (dB)
Horizontal	145.430	23.66	10.28	1.62	35.56	43.50	7.94
	288.990	21.14	12.73	2.46	36.33	46.00	9.67
	518.880	17.71	18.30	3.03	39.04	46.00	6.96
	667.290	15.42	19.45	3.44	38.31	46.00	7.69
	<b>812.790</b>	<b>15.83</b>	<b>20.37</b>	<b>3.70</b>	<b>39.90</b>	<b>46.00</b>	<b>6.10</b>
	958.290	14.78	20.10	4.72	39.60	46.00	6.40
Vertical	36.790	16.85	14.92	0.74	32.51	40.00	7.49
	99.840	20.77	10.32	1.34	32.43	43.50	11.07
	128.940	17.96	11.82	1.53	31.31	43.50	12.19
	446.130	18.55	17.07	2.82	38.44	46.00	7.56
	<b>591.630</b>	<b>19.61</b>	<b>18.60</b>	<b>3.20</b>	<b>41.41</b>	<b>46.00</b>	<b>4.59</b>
	812.790	15.73	20.37	3.70	39.80	46.00	6.20

TEST ENGINEER: RAVEN JIN

## 5 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Manufacturer	Location
Ferrite Core	ZCAT2132-1130	FEELUX	See Internal Photos Figure 16
		Rui Feng Electronic Co., Ltd.	
		Hai An Magnetic Material No.2 Factory	
		JIANGSU LETTALL ELECTRONICS CO., LTD.	
Gasket	35X0.7X41mm\VGA	Qingdao Joinset S&T Co., Ltd.	See Internal Photos Figure 17

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)**

## **6 DEVIATION TO TEST SPECIFICATIONS**

None.