

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

LED LCD TV

Model No.	Brand
32K366W	Hisense

FCC ID : W9HLCDC0021

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-F13053
Date of Test : Apr 11 – 15, 2013
Date of Report : Apr 18, 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
32K366W	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 Apr 11 – 15, 2013 is technically compliance with the FCC official limits also.

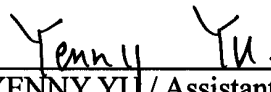
This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

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.

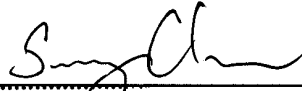
The test results for EUT's TV functions are contained in No.F13052, a Verification report.

Date of Test : Apr 11 – 15, 2013 Date of Report : Apr 18, 2013

Producer : 
 YENNY YU / Assistant

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
EMISSION			
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.	:	32K366W
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 : HE315GH-E77
Tuner	:	Manufacturer : XuGuang Tech.Co.,Ltd M/N : SDVT-10A/WF2\ROH
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:

Side Port:

- (1) One VGA Port
: Connected with PC
- (2) One PC/DVI AUDIO IN Port
: Connected with PC
- (3) One ANT/CABLE Port
: Connected with ATSC SG / TV SG
- (4) One HDMI2 Port
: Connected with DVD Player #1
- (5) One HDMI1 Port
: Connected with PC
- (6) One AUDIO OUT Port
: Connected with Earphone
- (7) Three USB Ports
: Connected with U-Disk #1/#2/#3

Bottom Port:

- (1) One Digital Audio Out Port
: Connected with DVD Player #1
- (2) One LAN Port
: Connected with PC
- (3) One HDMI4 Port
: Connected with DVD Player #3
- (4) One HDMI3 Port
: Connected with DVD Player #2
- (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

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 Earphone

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

2.2.7 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

2.2.8 ATSC Signal Generator

Manufacturer : SENCORE
Model Number : ATSC997
Serial Number : 6790071

2.2.9 DVD PLAYER #1

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

2.2.10 DVD PLAYER #2

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

2.2.11 DVD PLAYER #3

Manufacturer : DGT RONIK
Model Number : DV-A340
Serial Number : 10004184-C
Certificate : FCC DoC, CE/EMC, CCC

2.2.12 U-DISK*3

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 = 3.46 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

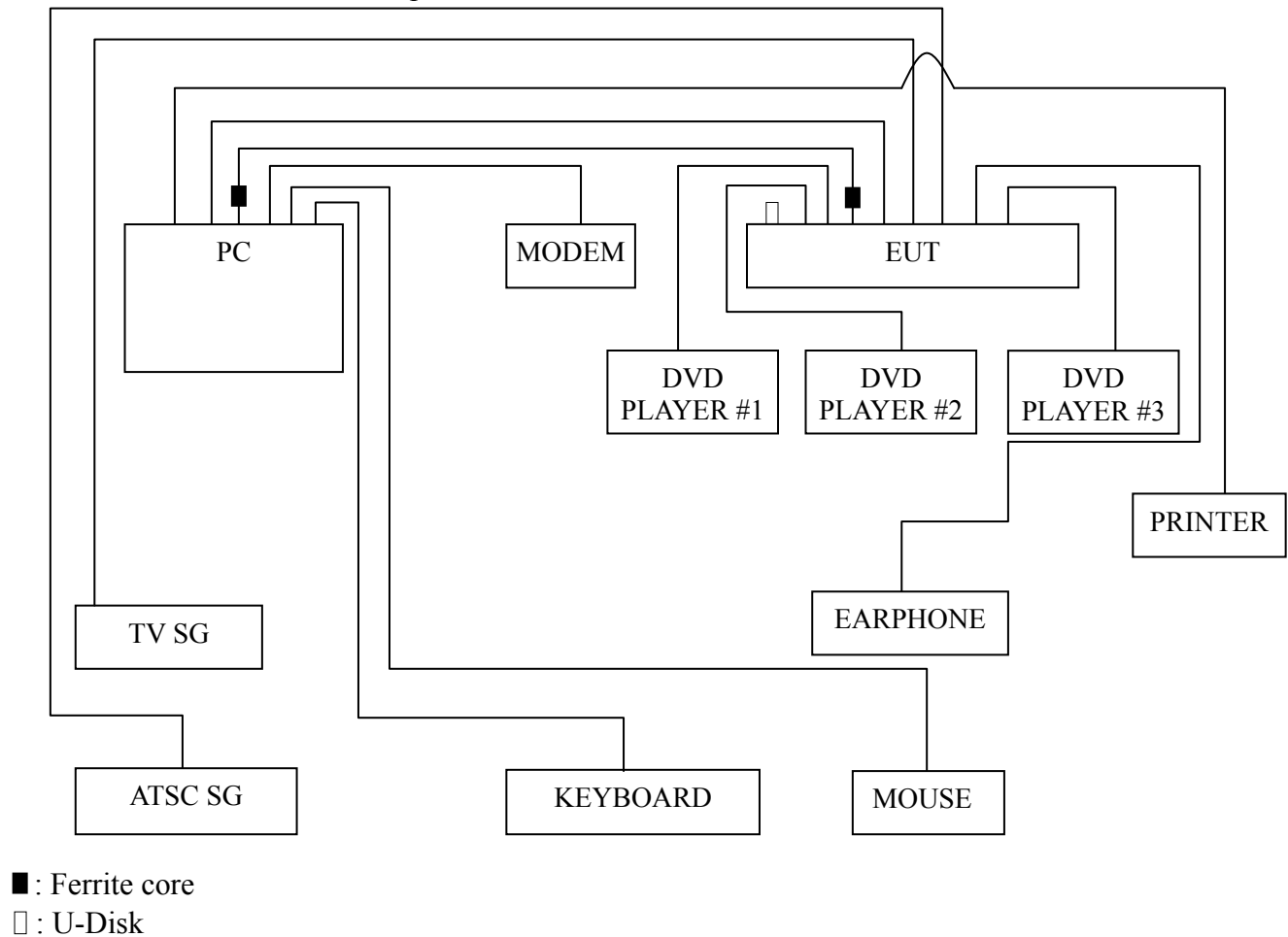
3.1 Test Equipment

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

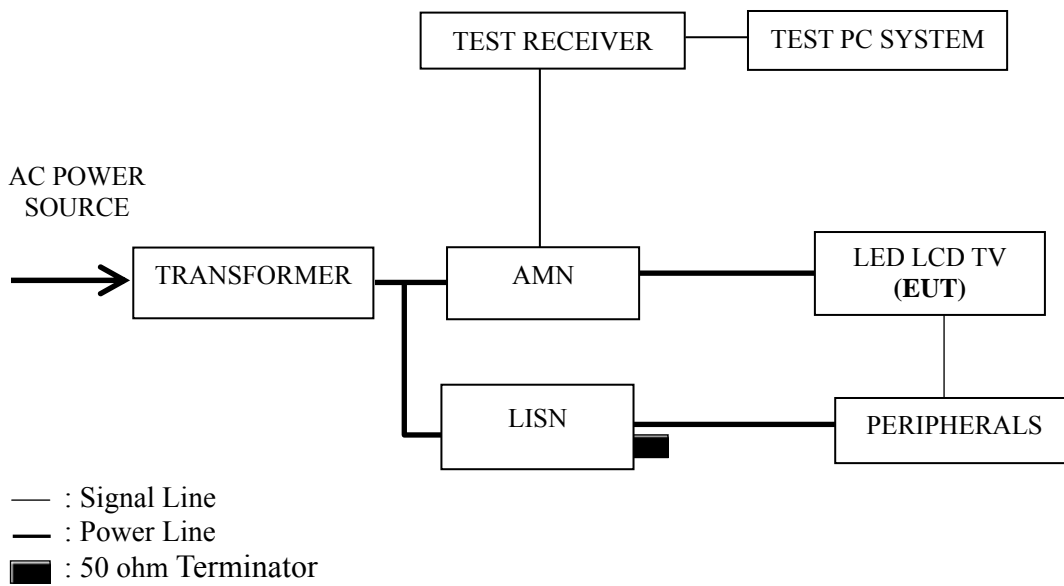
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	101303	Sep 11, 2012	Sep 11, 2013
2.	Artificial Mains Network (AMN)	R&S	ENV4200	100125	Jul 08, 2012	Jul 08, 2013
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-5	Mar 20, 2013	Mar 20, 2014
4.	Pulse Limiter	Yalian	TTS-1	001	Nov 27, 2012	May 27, 2013
5.	50Ω 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



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 (μ 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. F13052).

NOTE 5 – The worst case is for D-Sub 1024*768@60Hz test mode. The worst emission is detected at 8.501 MHz (Quasi-Peak Value) with corrected signal level of 51.58 dB (μ V) (limit is 60.00 dB (μ V)), when the Neutral of the EUT is connected to AMN.

EUT : LED LCD TV Temperature : 22

Model No. : 32K366W Humidity : 48%RH

Test Mode : D-Sub 1024*768@60Hz Date of Test : Apr 11, 2013

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.197	30.97	19.98	50.95	63.76	12.81	QP
	0.253	23.15	19.98	43.13	61.64	18.51	
	0.339	16.06	19.97	36.03	59.22	23.19	
	0.720	16.34	20.03	36.37	56.00	19.63	
	2.261	8.98	19.92	28.90	56.00	27.10	
	9.204	25.41	20.12	45.53	60.00	14.47	
	0.197	20.33	19.98	40.31	53.76	13.45	AV
	0.253	12.85	19.98	32.83	51.64	18.81	
	0.339	6.36	19.97	26.33	49.22	22.89	
	0.720	5.60	20.03	25.63	46.00	20.37	
	2.261	-2.22	19.92	17.70	46.00	28.30	
	9.204	14.26	20.12	34.38	50.00	15.62	
Neutral	0.192	30.39	19.95	50.34	63.93	13.59	QP
	0.252	22.70	19.95	42.65	61.69	19.04	
	0.325	17.23	19.94	37.17	59.57	22.40	
	0.720	15.13	20.00	35.13	56.00	20.87	
	2.422	14.09	19.80	33.89	56.00	22.11	
	8.501	31.65	19.93	51.58	60.00	8.42	
	0.192	11.57	19.95	31.52	53.93	22.41	AV
	0.252	6.20	19.95	26.15	51.69	25.54	
	0.325	6.90	19.94	26.84	49.57	22.73	
	0.720	4.63	20.00	24.63	46.00	21.37	
	2.422	-1.23	19.80	18.57	46.00	27.43	
	8.501	15.27	19.93	35.20	50.00	14.80	

TEST ENGINEER: VEIGAR ZHOU

EUT : LED LCD TV Temperature : 22

Model No. : 32K366W Humidity : 48%RH

Test Mode : HDMI 1024*768@60Hz Date of Test : Apr 11, 2013

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.190	30.49	19.98	50.47	64.02	13.55	QP
	0.249	22.57	19.98	42.55	61.78	19.23	
	0.332	18.26	19.97	38.23	59.40	21.17	
	0.727	17.31	20.03	37.34	56.00	18.66	
	2.261	9.97	19.92	29.89	56.00	26.11	
	8.822	27.23	20.07	47.30	60.00	12.70	
	0.190	20.23	19.98	40.21	54.02	13.81	AV
	0.249	11.41	19.98	31.39	51.78	20.39	
	0.332	7.60	19.97	27.57	49.40	21.83	
	0.727	6.50	20.03	26.53	46.00	19.47	
2.261	0.20	19.92	20.12	46.00	25.88		
8.822	16.52	20.07	36.59	50.00	13.41		
Neutral	0.192	29.84	19.95	49.79	63.93	14.14	QP
	0.249	22.92	19.95	42.87	61.78	18.91	
	0.339	15.57	19.93	35.50	59.22	23.72	
	0.720	15.01	20.00	35.01	56.00	20.99	
	2.396	9.01	19.80	28.81	56.00	27.19	
	8.501	27.11	19.93	47.04	60.00	12.96	
	0.192	17.55	19.95	37.50	53.93	16.43	AV
	0.249	11.10	19.95	31.05	51.78	20.73	
	0.339	5.22	19.93	25.15	49.22	24.07	
	0.720	4.25	20.00	24.25	46.00	21.75	
2.396	-0.01	19.80	19.79	46.00	26.21		
	8.501	16.57	19.93	36.50	50.00	13.50	

TEST ENGINEER: VEIGAR ZHOU

EUT : LED LCD TV Temperature : 22

Model No. : 32K366W Humidity : 48%RH

Test Mode : D-Sub 800*600@60Hz Date of Test : Apr 11, 2013

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.192	29.45	19.98	49.43	63.93	14.50	QP
	0.253	22.42	19.98	42.40	61.64	19.24	
	0.317	14.59	19.97	34.56	59.80	25.24	
	0.720	14.98	20.03	35.01	56.00	20.99	
	2.261	8.88	19.92	28.80	56.00	27.20	
	8.822	27.30	20.07	47.37	60.00	12.63	
	0.192	16.55	19.98	36.53	53.93	17.40	AV
	0.253	11.50	19.98	31.48	51.64	20.16	
	0.317	4.33	19.97	24.30	49.80	25.50	
	0.720	4.36	20.03	24.39	46.00	21.61	
2.261	-2.36	19.92	17.56	46.00	28.44		
8.822	16.89	20.07	36.96	50.00	13.04		
Neutral	0.190	29.43	19.96	49.39	64.02	14.63	QP
	0.213	25.33	19.95	45.28	63.10	17.82	
	0.325	14.66	19.94	34.60	59.57	24.97	
	0.727	15.38	20.00	35.38	56.00	20.62	
	2.178	8.69	19.84	28.53	56.00	27.47	
	8.501	27.18	19.93	47.11	60.00	12.89	
	0.190	18.50	19.96	38.46	54.02	15.56	AV
	0.213	16.33	19.95	36.28	53.10	16.82	
	0.325	4.22	19.94	24.16	49.57	25.41	
	0.727	5.30	20.00	25.30	46.00	20.70	
2.178	-2.10	19.84	17.74	46.00	28.26		
8.501	14.57	19.93	34.50	50.00	15.50		

TEST ENGINEER: VEIGAR ZHOU

EUT : LED LCD TV Temperature : 22

Model No. : 32K366W Humidity : 48%RH

Test Mode : D-Sub 640*480@60Hz Date of Test : Apr 11, 2013

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.190	29.50	19.98	49.48	64.02	14.54	QP
	0.249	22.42	19.98	42.40	61.78	19.38	
	0.313	16.13	19.98	36.11	59.88	23.77	
	0.727	15.30	20.03	35.33	56.00	20.67	
	2.396	8.96	19.92	28.88	56.00	27.12	
	8.501	25.40	20.06	45.46	60.00	14.54	
	AV	0.190	18.25	19.98	38.23	54.02	15.79
		0.249	11.42	19.98	31.40	51.78	20.38
		0.313	5.86	19.98	25.84	49.88	24.04
		0.727	4.23	20.03	24.26	46.00	21.74
2.396		-3.02	19.92	16.90	46.00	29.10	
8.501		14.52	20.06	34.58	50.00	15.42	
Neutral	0.192	29.50	19.95	49.45	63.93	14.48	QP
	0.253	22.35	19.95	42.30	61.64	19.34	
	0.317	15.94	19.94	35.88	59.80	23.92	
	0.720	15.45	20.00	35.45	56.00	20.55	
	2.527	8.87	19.80	28.67	56.00	27.33	
	8.822	26.97	19.93	46.90	60.00	13.10	
	AV	0.192	18.52	19.95	38.47	53.93	15.46
		0.253	12.00	19.95	31.95	51.64	19.69
		0.317	4.98	19.94	24.92	49.80	24.88
		0.720	5.22	20.00	25.22	46.00	20.78
2.527		-2.25	19.80	17.55	46.00	28.45	
	8.822	14.55	19.93	34.48	50.00	15.52	

TEST ENGINEER: VEIGAR ZHOU

EUT : LED LCD TV Temperature : 22

Model No. : 32K366W Humidity : 48%RH

Test Mode : USB Play Date of Test : Apr 11, 2013

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.192	29.00	19.98	48.98	63.93	14.95	QP
	0.249	22.57	19.98	42.55	61.78	19.23	
	0.322	17.11	19.97	37.08	59.66	22.58	
	0.735	15.24	20.03	35.27	56.00	20.73	
	2.527	8.79	19.92	28.71	56.00	27.29	
	8.822	26.82	20.07	46.89	60.00	13.11	
	AV	0.192	17.55	19.98	37.53	53.93	16.40
		0.249	11.25	19.98	31.23	51.78	20.55
		0.322	6.96	19.97	26.93	49.66	22.73
		0.735	4.22	20.03	24.25	46.00	21.75
2.527		-2.80	19.92	17.12	46.00	28.88	
8.822		15.25	20.07	35.32	50.00	14.68	
Neutral	0.188	29.51	19.96	49.47	64.11	14.64	QP
	0.256	21.72	19.95	41.67	61.56	19.89	
	0.322	15.46	19.94	35.40	59.66	24.26	
	0.716	15.25	20.00	35.25	56.00	20.75	
	2.384	8.96	19.80	28.76	56.00	27.24	
	8.501	26.11	19.93	46.04	60.00	13.96	
	AV	0.188	18.22	19.96	38.18	54.11	15.93
		0.256	10.23	19.95	30.18	51.56	21.38
		0.322	4.58	19.94	24.52	49.66	25.14
		0.716	4.20	20.00	24.20	46.00	21.80
2.384		-1.28	19.80	18.52	46.00	27.48	
	8.501	15.27	19.93	35.20	50.00	14.80	

TEST ENGINEER: VEIGAR ZHOU

EUT : LED LCD TV Temperature : 22

Model No. : 32K366W Humidity : 48%RH

Test Mode : LAN Date of Test : Apr 11, 2013

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.186	29.14	19.98	49.12	64.20	15.08	QP
	0.186	18.22	19.98	38.20	54.20	16.00	
	0.259	22.46	19.98	42.44	61.47	19.03	
	0.259	10.22	19.98	30.20	51.47	21.27	
	0.343	16.94	19.97	36.91	59.13	22.22	
	0.343	5.60	19.97	25.57	49.13	23.56	
	AV	0.716	15.37	20.03	35.40	56.00	20.60
		0.716	4.50	20.03	24.53	46.00	21.47
		2.474	8.91	19.92	28.83	56.00	27.17
		2.474	0.22	19.92	20.14	46.00	25.86
		8.822	27.11	20.07	47.18	60.00	12.82
		8.822	16.55	20.07	36.62	50.00	13.38
Neutral	0.188	29.60	19.96	49.56	64.11	14.55	QP
	0.256	21.45	19.95	41.40	61.56	20.16	
	0.343	16.27	19.93	36.20	59.13	22.93	
	0.716	14.90	20.00	34.90	56.00	21.10	
	2.334	9.21	19.80	29.01	56.00	26.99	
	9.107	25.62	19.96	45.58	60.00	14.42	
	AV	0.188	18.20	19.96	38.16	54.11	15.95
		0.256	10.14	19.95	30.09	51.56	21.47
		0.343	5.90	19.93	25.83	49.13	23.30
		0.716	5.20	20.00	25.20	46.00	20.80
		2.334	-1.20	19.80	18.60	46.00	27.40
		9.107	14.20	19.96	34.16	50.00	15.84

TEST ENGINEER: VEIGAR ZHOU

4 RADIATED EMISSION TEST

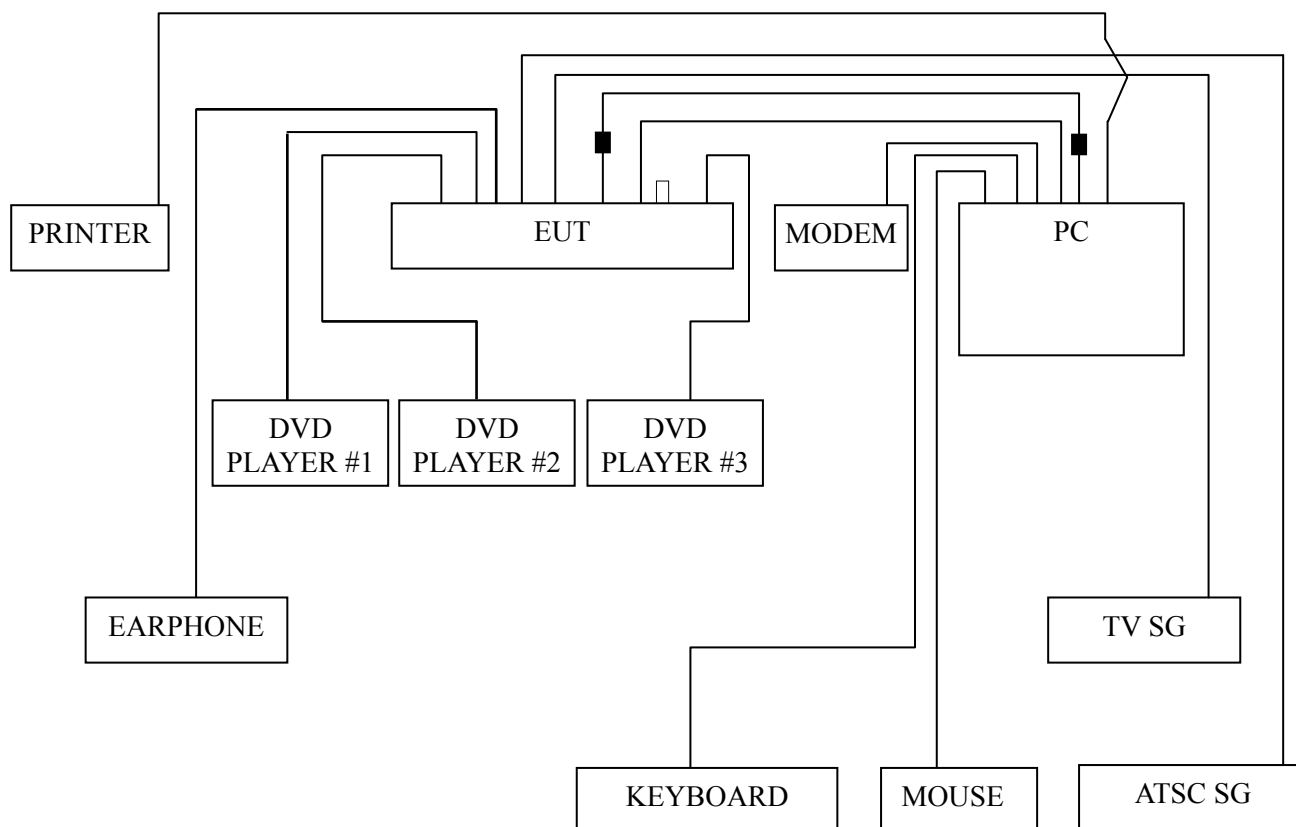
4.1 Test Equipment

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	23193	May 03, 2012	May 03, 2013
4.	Spectrum	Agilent	E7405A	MY45106600	Dec 17, 2012	Dec 17, 2013
5.	50 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

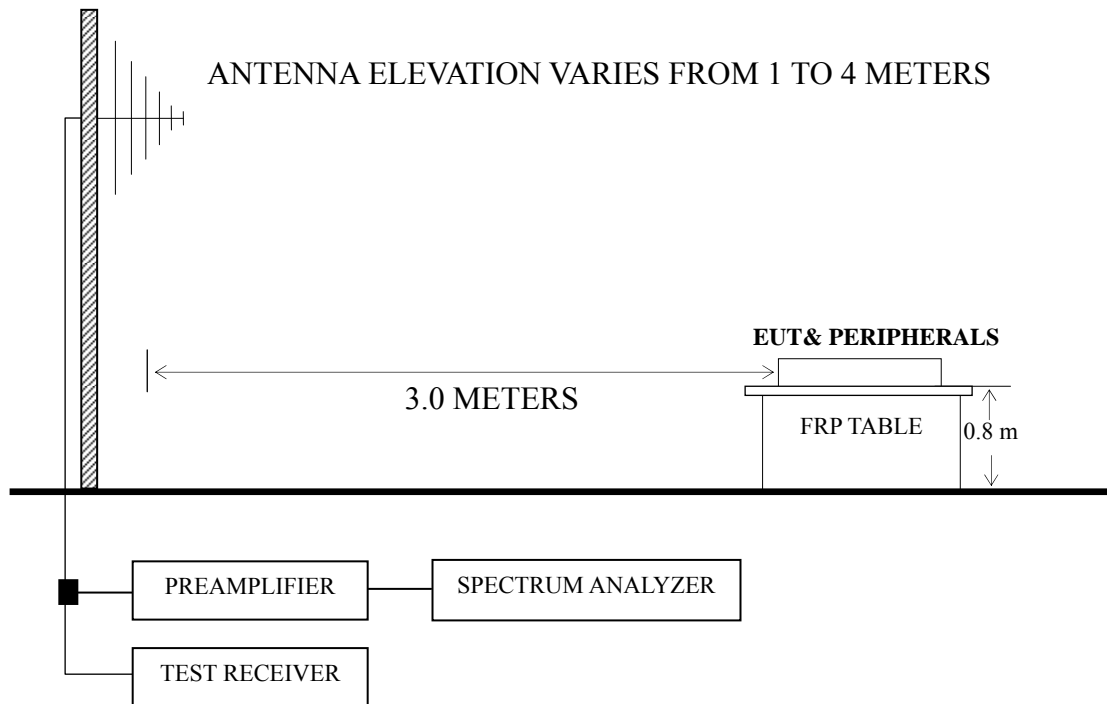
4.2.1 EUT and Peripherals



■ : 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. F13052).

NOTE 5 – The worst case is for D-Sub 1024*768@60Hz test mode. The worst emission at horizontal polarization was detected at 699.300 MHz with corrected signal level of 43.24 dB ($\mu\text{V}/\text{m}$) (limit is 46.00 dB ($\mu\text{V}/\text{m}$)), when the antenna was 1.00 m height and the turntable was at 155°. The worst emission at vertical polarization was detected at 902.600 MHz with corrected signal level of 44.05 dB ($\mu\text{V}/\text{m}$) (limit is 46.00 dB ($\mu\text{V}/\text{m}$)), when the antenna was 1.00 m height and the turntable was at 215°.

EUT : LED LCD TV Temperature : 22

Model No. : 32K366W Humidity : 60%RH

Test Mode : D-Sub 1024*768@60Hz Date of Test : Apr 15, 2013

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	75.590	23.21	6.54	1.01	30.76	40.00	9.24
	119.240	22.30	11.42	1.47	35.19	43.50	8.31
	271.530	24.68	12.60	2.35	39.63	46.00	6.37
	450.980	12.96	16.90	2.84	32.70	46.00	13.30
	699.300	19.40	20.30	3.54	43.24	46.00	2.76
	902.030	14.78	19.30	4.55	38.63	46.00	7.37
Vertical	30.970	14.36	17.65	0.67	32.68	40.00	7.32
	70.740	27.21	5.89	0.94	34.04	40.00	5.96
	119.240	21.32	11.42	1.47	34.21	43.50	9.29
	201.690	28.80	8.07	1.95	38.82	43.50	4.68
	450.980	21.63	16.90	2.84	41.37	46.00	4.63
	902.600	20.20	19.30	4.55	44.05	46.00	1.95

TEST ENGINEER: RAVEN JIN

EUT : LED LCD TV Temperature : 22

Model No. : 32K366W Humidity : 60%RH

Test Mode : HDMI 1024*768@60Hz Date of Test : Apr 15, 2013

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	119.240	16.30	11.42	1.47	29.19	43.50	14.31
	138.640	16.50	10.51	1.59	28.60	43.50	14.90
	271.530	18.68	12.60	2.35	33.63	46.00	12.37
	450.980	6.96	16.90	2.84	26.70	46.00	19.30
	625.580	9.53	18.65	3.28	31.46	46.00	14.54
	699.300	14.22	20.30	3.54	38.06	46.00	7.94
Vertical	70.740	22.21	5.89	0.94	29.04	40.00	10.96
	119.240	16.32	11.42	1.47	29.21	43.50	14.29
	201.690	23.80	8.07	1.95	33.82	43.50	9.68
	261.830	23.77	12.90	2.27	38.94	46.00	7.06
	450.980	16.63	16.90	2.84	36.37	46.00	9.63
	751.680	13.93	18.73	3.58	36.24	46.00	9.76

TEST ENGINEER: RAVEN JIN

EUT : LED LCD TV Temperature : 22

Model No. : 32K366W Humidity : 60%RH

Test Mode : D-Sub 800*600@60Hz Date of Test : Apr 15, 2013

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	75.590	22.92	6.54	1.01	30.47	40.00	9.53
	119.240	21.99	11.42	1.47	34.88	43.50	8.62
	138.640	23.28	10.51	1.59	35.38	43.50	8.12
	250.190	25.40	12.20	2.20	39.80	46.00	6.20
	318.090	19.73	13.75	2.58	36.06	46.00	9.94
	453.890	14.09	17.03	2.84	33.96	46.00	12.04
Vertical	75.590	21.68	6.54	1.01	29.23	40.00	10.77
	119.240	21.81	11.42	1.47	34.70	43.50	8.80
	138.640	23.41	10.51	1.59	35.51	43.50	7.99
	250.190	26.16	12.20	2.20	40.56	46.00	5.44
	315.180	20.91	13.60	2.57	37.08	46.00	8.92
	453.890	15.79	17.03	2.84	35.66	46.00	10.34

TEST ENGINEER: RAVEN JIN

EUT : LED LCD TV Temperature : 22

Model No. : 32K366W Humidity : 60%RH

Test Mode : D-Sub 640*480@60Hz Date of Test : Apr 15, 2013

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	75.590	17.96	6.54	1.01	25.51	40.00	14.49
	119.240	17.37	11.42	1.47	30.26	43.50	13.24
	138.640	17.54	10.51	1.59	29.64	43.50	13.86
	250.190	19.86	12.20	2.20	34.26	46.00	11.74
	316.150	14.96	13.68	2.57	31.21	46.00	14.79
	450.980	8.19	16.90	2.84	27.93	46.00	18.07
Vertical	75.590	17.78	6.54	1.01	25.33	40.00	14.67
	119.240	17.95	11.42	1.47	30.84	43.50	12.66
	138.640	18.21	10.51	1.59	30.31	43.50	13.19
	250.190	21.85	12.20	2.20	36.25	46.00	9.75
	625.580	11.51	18.65	3.28	33.44	46.00	12.56
	698.330	15.44	20.30	3.54	39.28	46.00	6.72

TEST ENGINEER: RAVEN JIN

EUT : LED LCD TV Temperature : 22

Model No. : 32K366W Humidity : 60%RH

Test Mode : USB Play Date of Test : Apr 15, 2013

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	138.640	22.50	10.51	1.59	34.60	43.50	8.90
	184.230	20.58	8.28	1.86	30.72	43.50	12.78
	208.480	23.09	7.63	2.00	32.72	43.50	10.78
	271.530	23.68	12.60	2.35	38.63	46.00	7.37
	450.980	10.96	16.90	2.84	30.70	46.00	15.30
	625.580	11.53	18.65	3.28	33.46	46.00	12.54
Vertical	70.740	21.21	5.89	0.94	28.04	40.00	11.96
	119.240	15.32	11.42	1.47	28.21	43.50	15.29
	201.690	22.80	8.07	1.95	32.82	43.50	10.68
	261.830	22.77	12.90	2.27	37.94	46.00	8.06
	450.980	15.63	16.90	2.84	35.37	46.00	10.63
	751.680	12.93	18.73	3.58	35.24	46.00	10.76

TEST ENGINEER: RAVEN JIN

EUT : LED LCD TV Temperature : 22

Model No. : 32K366W Humidity : 60%RH

Test Mode : LAN Date of Test : Apr 15, 2013

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	75.590	15.92	6.54	1.01	23.47	40.00	16.53
	138.640	16.28	10.51	1.59	28.38	43.50	15.12
	250.190	18.40	12.20	2.20	32.80	46.00	13.20
	453.890	7.09	17.03	2.84	26.96	46.00	19.04
	625.580	8.30	18.65	3.28	30.23	46.00	15.77
	698.330	12.80	20.30	3.54	36.64	46.00	9.36
Vertical	59.970	27.97	4.70	0.89	33.56	40.00	6.44
	119.240	14.81	11.42	1.47	27.70	43.50	15.80
	197.000	18.37	8.20	1.94	28.51	43.50	14.99
	309.400	12.80	13.30	2.56	28.66	46.00	17.34
	489.970	9.88	17.60	2.96	30.44	46.00	15.56
	987.490	10.03	21.07	4.83	35.93	54.00	18.07

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	Manufacturer	Location
Gasket	DAA14X1X55.7\CR\VGA\ ROH	Qingdao Joinset S&T Co., Ltd.	See Internal Photos Figure 15
Aluminum Tape	DBA40X100\ROH	Qingdao Joinset S&T Co., Ltd.	See Internal Photos Figure 14