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

LED LCD TV

Model No.	Brand
40K360MN	Hisense

FCC ID : W9HLCDD0031

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

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

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

Report No. : ACI-F13068
Date of Test : May 17 – 22, 2013
Date of Report : May 24, 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
40K360MN	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 Sec2.1) which was tested in 3m anechoic chamber May 17 – 22, 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.F13069, a Verification report.

Date of Test : May 17 – 22, 2013 Date of Report : May 24, 2013

Producer : Kathy Wang
KATHY WANG / Supervisor

Review : Dio Yang
DIO YANG / Assistant Manager

AUDIX® 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	:	☐ Production ☑ Pre-product ☐ Pro-type
Model No.	:	40K360MN
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 USB Port
: Connected with U-Disk

(3) One HDMI3/ARC Port
: Connected with DVD PLAYER #2

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

Side Port:
(1) One HDMI2/DVI Port
: Connected with PC
(2) One HDMI1 Port
: Connected with DVD PLAYER #1
(3) One ANT/CABLE IN Port
: Connected with Antenna or ATSC SG / TV SG
(4) One VGA Port
: Connected with PC
(5) One PC/DVI Audio In Port
: Connected with PC

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

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

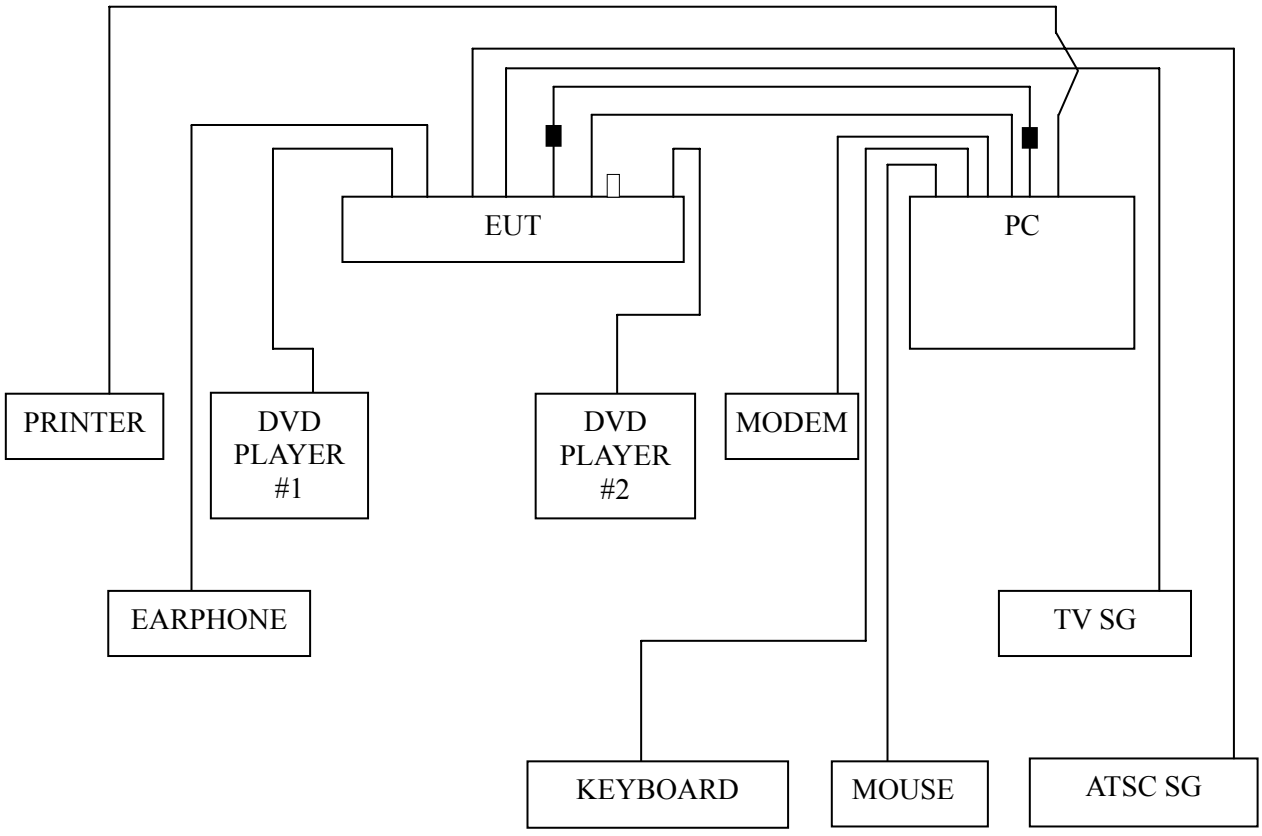
3.1 Test Equipment

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 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 18, 2013	Sep 18, 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

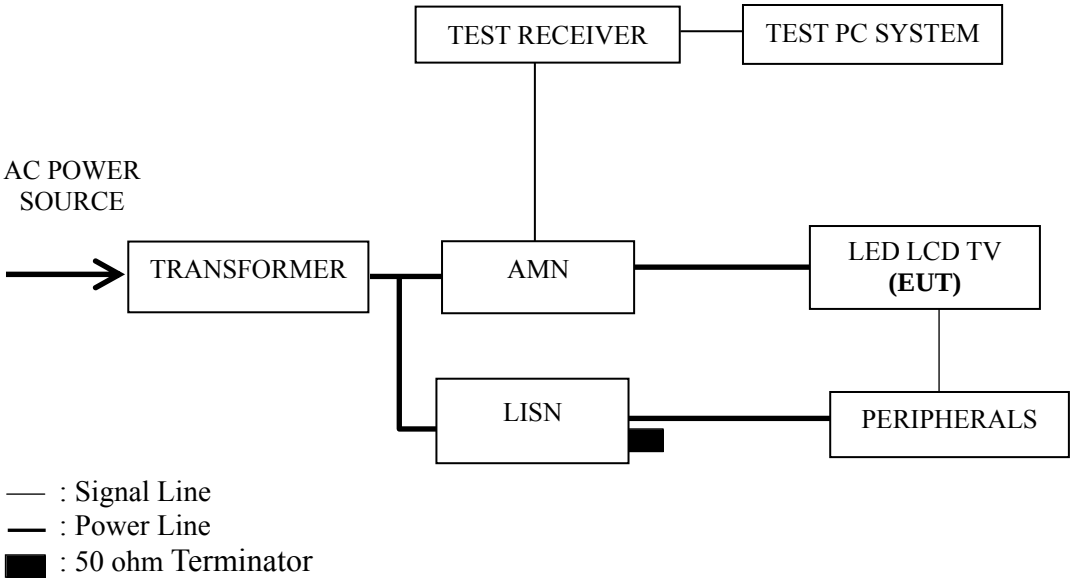
3.2.1 EUT & Peripherals



■: 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 (μV)	
	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 The other peripherals devices were driven and operated during the test.

3.5.7 The test modes are as follows:

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

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
HDMI 800*600@60Hz	P15
HDMI 640*480@60Hz	P16
USB Play	P17

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. F13069).
NOTE 5 – The worst case is for USB Play test mode. The worst emission is detected at 4.721 MHz (Quasi-Peak Value) with corrected signal level of 48.30 dB (μV) (limit is 56.00 dB (μV)), when the Line of the EUT is connected to AMN.

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	40K360MN	Humidity	:	48%RH
Test Mode	:	D-Sub 1024*768@60Hz	Date of Test	:	May 17, 2013

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.176	34.55	0.24	34.79	64.68	29.89	QP
	0.400	42.47	0.33	42.80	57.86	15.06	
	0.461	43.73	0.35	44.08	56.67	12.59	
	1.338	40.80	0.34	41.14	56.00	14.86	
	5.005	**47.49**	**0.50**	**47.99**	**60.00**	**12.01**	
	25.864	36.54	1.19	37.73	60.00	22.27	
	0.176	21.20	0.24	21.44	54.68	33.24	AV
	0.400	30.24	0.33	30.57	47.86	17.29	
	0.461	31.22	0.35	31.57	46.67	15.10	
	1.338	28.55	0.34	28.89	46.00	17.11	
	5.005	34.55	0.50	35.05	50.00	14.95	
	25.864	24.33	1.19	25.52	50.00	24.48	
Neutral	0.186	31.01	0.12	31.13	64.20	33.07	QP
	0.400	42.26	0.16	42.42	57.86	15.44	
	0.461	43.68	0.17	43.85	56.67	12.82	
	1.338	40.38	0.21	40.59	56.00	15.41	
	5.005	46.63	0.42	47.05	60.00	12.95	
	21.600	33.20	0.88	34.08	60.00	25.92	
	0.186	20.11	0.12	20.23	54.20	33.97	AV
	0.400	30.22	0.16	30.38	47.86	17.48	
	0.461	30.21	0.17	30.38	46.67	16.29	
	1.338	28.21	0.21	28.42	46.00	17.58	
	5.005	31.55	0.42	31.97	50.00	18.03	
	21.600	21.20	0.88	22.08	50.00	27.92	

TEST ENGINEER: VEIGAR ZHOU

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	40K360MN	Humidity	:	48%RH
Test Mode	:	HDMI 1024*768@60Hz	Date of Test	:	May 17, 2013

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.192	30.95	0.25	31.20	63.93	32.73	QP
	0.400	42.27	0.33	42.60	57.86	15.26	
	0.456	43.85	0.35	44.20	56.76	12.56	
	1.338	40.50	0.34	40.84	56.00	15.16	
	4.822	46.75	0.50	47.25	56.00	8.75	
	24.142	32.73	1.16	33.89	60.00	26.11	
	0.192	18.58	0.25	18.83	53.93	35.10	AV
	0.400	31.45	0.33	31.78	47.86	16.08	
	0.456	31.44	0.35	31.79	46.76	14.97	
	1.338	28.13	0.34	28.47	46.00	17.53	
	4.822	34.55	0.50	35.05	46.00	10.95	
	24.142	21.36	1.16	22.52	50.00	27.48	
Neutral	0.176	35.27	0.12	35.39	64.68	29.29	QP
	0.400	42.44	0.16	42.60	57.86	15.26	
	0.452	44.24	0.17	44.41	56.85	12.44	
	1.338	40.82	0.21	41.03	56.00	14.97	
	4.672	**47.42**	**0.42**	**47.84**	**56.00**	**8.16**	
	26.139	35.45	1.07	36.52	60.00	23.48	
	0.176	23.11	0.12	23.23	54.68	31.45	AV
	0.400	30.44	0.16	30.60	47.86	17.26	
	0.452	32.55	0.17	32.72	46.85	14.13	
	1.338	28.44	0.21	28.65	46.00	17.35	
	4.672	34.47	0.42	34.89	46.00	11.11	
	26.139	23.55	1.07	24.62	50.00	25.38	

TEST ENGINEER: VEIGAR ZHOU

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	40K360MN	Humidity	:	48%RH
Test Mode	:	HDMI 800*600@60Hz	Date of Test	:	May 17, 2013

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.180	35.68	0.25	35.93	64.50	28.57	QP
	0.400	42.19	0.33	42.52	57.86	15.34	
	0.452	44.09	0.35	44.44	56.85	12.41	
	1.352	40.75	0.34	41.09	56.00	14.91	
	4.952	**47.14**	**0.50**	**47.64**	**56.00**	**8.36**	
	25.591	37.83	1.18	39.01	60.00	20.99	
	0.180	24.32	0.25	24.57	54.50	29.93	AV
	0.400	30.13	0.33	30.46	47.86	17.40	
	0.452	31.22	0.35	31.57	46.85	15.28	
	1.352	27.56	0.34	27.90	46.00	18.10	
	4.952	35.22	0.50	35.72	46.00	10.28	
	25.591	26.22	1.18	27.40	50.00	22.60	
Neutral	0.172	31.68	0.12	31.80	64.86	33.06	QP
	0.400	42.19	0.16	42.35	57.86	15.51	
	0.456	44.12	0.17	44.29	56.76	12.47	
	1.352	40.53	0.21	40.74	56.00	15.26	
	4.952	47.03	0.42	47.45	56.00	8.55	
	26.139	32.90	1.07	33.97	60.00	26.03	
	0.172	18.22	0.12	18.34	54.86	36.52	AV
	0.400	31.11	0.16	31.27	47.86	16.59	
	0.456	31.21	0.17	31.38	46.76	15.38	
	1.352	28.44	0.21	28.65	46.00	17.35	
	4.952	36.11	0.42	36.53	46.00	9.47	
	26.139	21.11	1.07	22.18	50.00	27.82	

TEST ENGINEER: VEIGAR ZHOU

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	40K360MN	Humidity	:	48%RH
Test Mode	:	HDMI 640*480@60Hz	Date of Test	:	May 17, 2013

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.178	35.23	0.25	35.48	64.59	29.11	QP
	0.400	42.41	0.33	42.74	57.86	15.12	
	0.461	44.07	0.35	44.42	56.67	12.25	
	1.568	40.75	0.37	41.12	56.00	14.88	
	4.672	46.89	0.50	47.39	56.00	8.61	
	25.864	37.76	1.19	38.95	60.00	21.05	
	0.178	24.29	0.25	24.54	54.59	30.05	AV
	0.400	31.23	0.33	31.56	47.86	16.30	
	0.461	31.23	0.35	31.58	46.67	15.09	
	1.568	28.32	0.37	28.69	46.00	17.31	
	4.672	34.22	0.50	34.72	46.00	11.28	
	25.864	24.33	1.19	25.52	50.00	24.48	
Neutral	0.188	31.23	0.12	31.35	64.11	32.76	QP
	0.375	42.03	0.15	42.18	58.39	16.21	
	0.466	43.80	0.17	43.97	56.58	12.61	
	1.352	40.19	0.21	40.40	56.00	15.60	
	4.772	**47.51**	**0.42**	**47.93**	**56.00**	**8.07**	
	26.418	33.16	1.07	34.23	60.00	25.77	
	0.188	20.30	0.12	20.42	54.11	33.69	AV
	0.375	30.11	0.15	30.26	48.39	18.13	
	0.466	31.25	0.17	31.42	46.58	15.16	
	1.352	28.32	0.21	28.53	46.00	17.47	
	4.772	36.52	0.42	36.94	46.00	9.06	
	26.418	21.20	1.07	22.27	50.00	27.73	

TEST ENGINEER: VEIGAR ZHOU

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	40K360MN	Humidity	:	48%RH
Test Mode	:	USB Play	Date of Test	:	May 17, 2013

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.170	35.39	0.24	35.63	64.94	29.31	QP
	0.398	42.87	0.33	43.20	57.90	14.70	
	0.456	44.33	0.35	44.68	56.76	12.08	
	1.338	40.88	0.34	41.22	56.00	14.78	
	4.721	**47.80**	**0.50**	**48.30**	**56.00**	**7.70**	
	25.591	36.64	1.18	37.82	60.00	22.18	
	0.170	23.22	0.24	23.46	54.94	31.48	AV
	0.398	30.42	0.33	30.75	47.90	17.15	
	0.456	31.11	0.35	31.46	46.76	15.30	
	1.338	28.44	0.34	28.78	46.00	17.22	
	4.721	34.33	0.50	34.83	46.00	11.17	
	25.591	23.11	1.18	24.29	50.00	25.71	
Neutral	0.170	32.50	0.12	32.62	64.94	32.32	QP
	0.400	42.61	0.16	42.77	57.86	15.09	
	0.461	44.06	0.17	44.23	56.67	12.44	
	1.338	40.38	0.21	40.59	56.00	15.41	
	4.874	47.28	0.42	47.70	56.00	8.30	
	22.896	32.51	0.99	33.50	60.00	26.50	
	0.170	20.22	0.12	20.34	54.94	34.60	AV
	0.400	30.44	0.16	30.60	47.86	17.26	
	0.461	30.14	0.17	30.31	46.67	16.36	
	1.338	28.48	0.21	28.69	46.00	17.31	
	4.874	34.55	0.42	34.97	46.00	11.03	
	22.896	20.63	0.99	21.62	50.00	28.38	

TEST ENGINEER: VEIGAR ZHOU

4 RADIATED EMISSION TEST

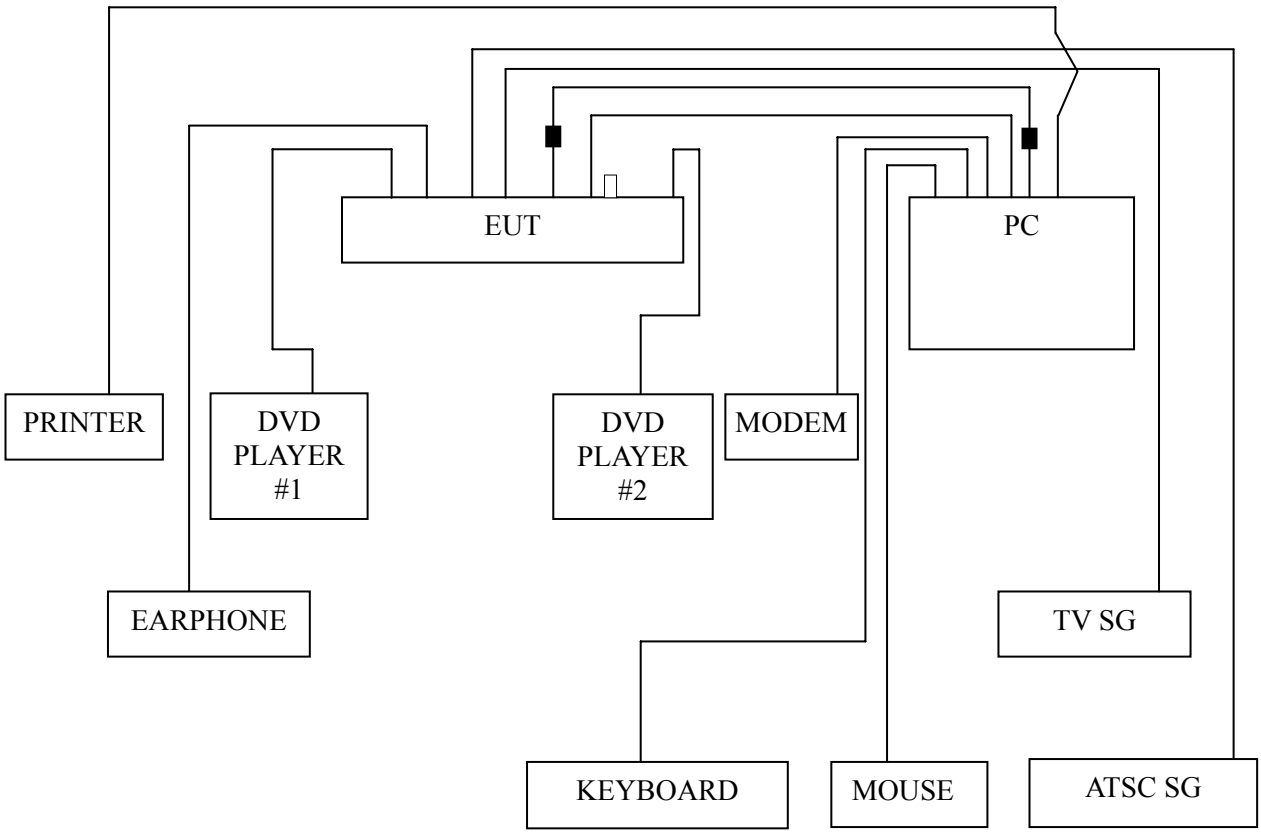
4.1 Test Equipment

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

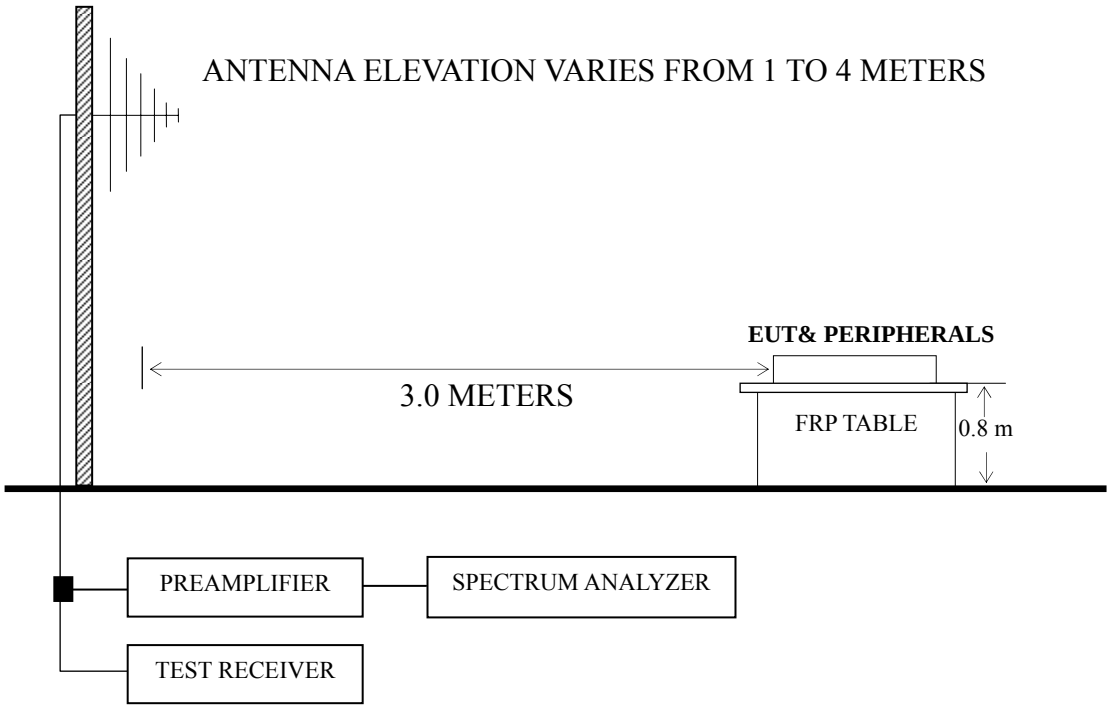
4.2.1 EUT and Peripherals



■: 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	
		(μV/m)	dB (μV/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 (μV/m) = 20 log Emission Level (μV/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	P21
HDMI 1024*768@60Hz	P22
D-Sub 800*600@60Hz	P23
D-Sub 640*480@60Hz	P24
USB Play	P25

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. F13069).

NOTE 5 – The worst case is for D-Sub 1024*768@60Hz test mode. The worst emission at horizontal polarization was detected at 79.470 MHz with corrected signal level of 32.58 dB (μV/m) (limit is 40.00 dB (μV/m)), when the antenna was 1.80 m height and the turntable was at 245°. The worst emission at vertical polarization was detected at 166.770 MHz with corrected signal level of 41.50 dB (μV/m) (limit is 43.50 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 90°.

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	40K360MN	Humidity :	60%RH
Test Mode	:	D-Sub 1024*768@60Hz	Date of Test :	May 22, 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	66.860	23.73	5.12	0.91	29.76	40.00	10.24
	79.470	**24.76**	**6.76**	**1.06**	**32.58**	**40.00**	**7.42**
	103.720	21.36	11.08	1.37	33.81	43.50	9.69
	239.520	20.28	11.00	2.15	33.43	46.00	12.57
	335.550	14.23	14.65	2.61	31.49	46.00	14.51
	568.350	12.89	19.30	3.14	35.33	46.00	10.67
Vertical	30.970	15.03	17.65	0.67	33.35	40.00	6.65
	58.130	27.98	5.58	0.88	34.44	40.00	5.56
	95.090	27.10	9.39	1.29	37.78	43.50	5.72
	166.770	**31.35**	**8.40**	**1.75**	**41.50**	**43.50**	**2.00**
	353.010	15.06	14.87	2.63	32.56	46.00	13.44
	581.930	16.80	18.78	3.16	38.74	46.00	7.26

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	40K360MN	Humidity :	60%RH
Test Mode	:	HDMI 1024*768@60Hz	Date of Test :	May 22, 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	77.530	19.39	10.39	1.56	31.34	40.00	8.66
	102.750	12.55	11.31	1.88	25.74	43.50	17.76
	213.330	11.12	10.33	2.47	23.92	43.50	19.58
	437.400	7.93	16.79	3.09	27.81	46.00	18.19
	662.440	1.62	19.04	3.60	24.26	46.00	21.74
	764.290	**16.74**	**20.23**	**3.82**	**40.79**	**46.00**	**5.21**
Vertical	**56.190**	**27.27**	**8.88**	**1.08**	**37.23**	**40.00**	**2.77**
	87.230	22.11	10.88	1.70	34.69	40.00	5.31
	164.830	17.19	10.18	2.30	29.67	43.50	13.83
	281.230	12.37	13.17	2.70	28.24	46.00	17.76
	394.720	13.33	16.20	2.98	32.51	46.00	13.49
	526.640	13.56	17.76	3.33	34.65	46.00	11.35

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	40K360MN	Humidity :	60%RH
Test Mode	:	D-Sub 800*600@60Hz	Date of Test :	May 22, 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	30.970	4.07	17.65	0.67	22.39	40.00	17.61
	56.190	17.36	6.00	0.87	24.23	40.00	15.77
	207.510	16.33	7.67	1.98	25.98	43.50	17.52
	239.520	15.98	11.00	2.15	29.13	46.00	16.87
	378.230	12.30	15.07	2.66	30.03	46.00	15.97
	833.160	**7.49**	**20.50**	**3.89**	**31.88**	**46.00**	**14.12**
Vertical	65.890	26.82	4.88	0.91	32.61	40.00	7.39
	82.380	**25.55**	**7.10**	**1.11**	**33.76**	**40.00**	**6.24**
	160.950	24.11	9.40	1.72	35.23	43.50	8.27
	248.250	14.13	11.87	2.20	28.20	46.00	17.80
	366.590	7.05	14.87	2.65	24.57	46.00	21.43
	529.550	4.61	18.40	3.05	26.06	46.00	19.94

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	40K360MN	Humidity :	60%RH
Test Mode	:	D-Sub 640*480@60Hz	Date of Test :	May 22, 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	**79.470**	**22.33**	**6.76**	**1.06**	**30.15**	**40.00**	**9.85**
	105.660	16.41	11.40	1.38	29.19	43.50	14.31
	120.210	16.43	11.41	1.48	29.32	43.50	14.18
	239.520	17.19	11.00	2.15	30.34	46.00	15.66
	335.550	11.03	14.65	2.61	28.29	46.00	17.71
	433.520	10.04	17.50	2.78	30.32	46.00	15.68
Vertical	39.700	15.03	12.54	0.77	28.34	40.00	11.66
	45.520	19.85	9.32	0.82	29.99	40.00	10.01
	164.830	**27.28**	**8.40**	**1.75**	**37.43**	**43.50**	**6.07**
	384.050	12.55	15.27	2.67	30.49	46.00	15.51
	432.550	17.51	17.55	2.78	37.84	46.00	8.16
	500.450	8.91	18.10	2.98	29.99	46.00	16.01

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	40K360MN	Humidity :	60%RH
Test Mode	:	USB Play	Date of Test :	May 22, 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	30.970	6.77	17.65	0.67	25.09	40.00	14.91
	75.590	21.20	6.54	1.01	28.75	40.00	11.25
	97.900	18.78	10.01	1.32	30.11	43.50	13.39
	120.210	17.73	11.41	1.48	30.62	43.50	12.88
	191.990	**23.23**	**8.00**	**1.91**	**33.14**	**43.50**	**10.36**
	371.440	12.51	14.85	2.66	30.02	46.00	15.98
Vertical	36.790	18.43	14.92	0.74	34.09	40.00	5.91
	53.280	**28.46**	**6.46**	**0.86**	**35.78**	**40.00**	**4.22**
	212.360	23.23	7.60	2.01	32.84	43.50	10.66
	280.260	16.15	12.50	2.40	31.05	46.00	14.95
	365.620	16.16	14.90	2.64	33.70	46.00	12.30
	566.410	13.13	19.30	3.14	35.57	46.00	10.43

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 13
		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 14
		Shenzhen TAT Electronic Technology Co., Ltd.	

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

(RAVEN JIN)

6 DEVIATION TO TEST SPECIFICATIONS

None.