

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

LED LCD TV

Model No.	Brand
50K20DG	Hisense
50K21DG	
50K22DG	
50K23DG	
50K24DG	
LTDN50K20DGUS	

FCC ID : W9HLCDF0024

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-F13140
Date of Test : Aug 14 – 15, 2013
Date of Report : Aug 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
Refer to Sec2.1	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 Aug 14 – 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.

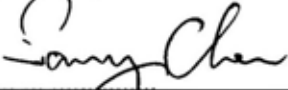
The test results for EUT's TV functions are contained in No.F13141, a Verification report.

Date of Test : Aug 14 – 15, 2013 Date of Report : Aug 24, 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
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.	:	50K20DG, 50K21DG, 50K22DG, 50K23DG, 50K24DG, LTDN50K20DGUS
Note	:	The above models are all the same except for the different model name. The 50K20DG was tested and reported in the report.
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 : HD500DF-B57\S0
Max Resolution	:	1920*1080@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 HDMI1 Port : Connected with PC
- (2) One Component of YPbPr/AV Port : Connected with DVD PLAYER
- (3) One USB Port : Connected with U-Disk

Side Port:

- (1) One HDMI2/MHL Port : Connected with Smart Mobile Phone
- (2) One DVI Audio in Port : Connected with PC
- (3) One ANT/Cable in Port : Connected with ATSC SG / TV SG
- (4) One DIGITAL Output Port : Connected with DVD PLAYER
- (5) 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

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

2.2.9 Earphone

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

2.2.10 U-DISK

Manufacturer : LG
Model Number : 1GB

2.2.11 Smart Mobile Phone

Manufacturer : SAMSUNG
Model Number : GT-I9100G

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

3 CONDUCTED EMISSION TEST

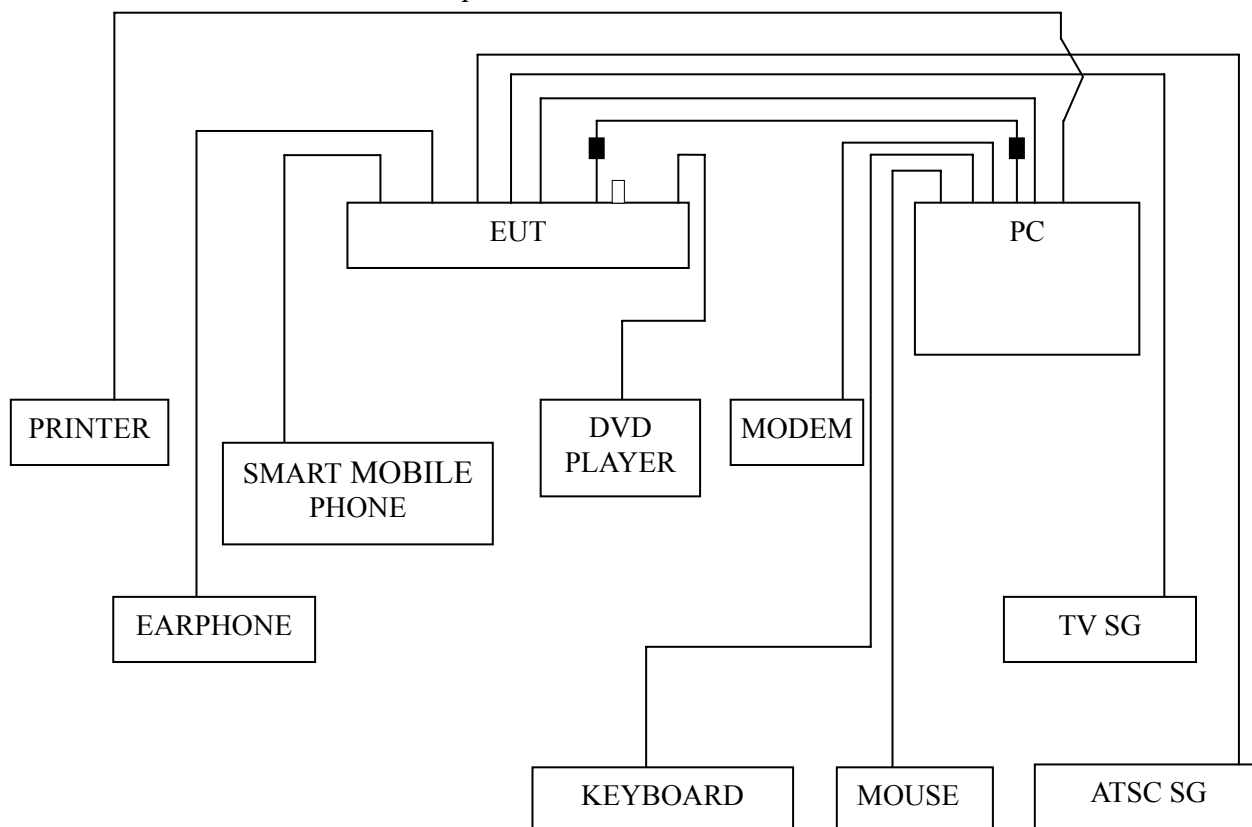
3.1 Test Equipment

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	100841	Mar 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.	50 Ω Terminator	Anritsu	BNC	001	Mar 20, 2013	Mar 20, 2014
6.	Software	Audix	E3	SET00200 9804M592	--	--

3.2 Block Diagram of Test Setup

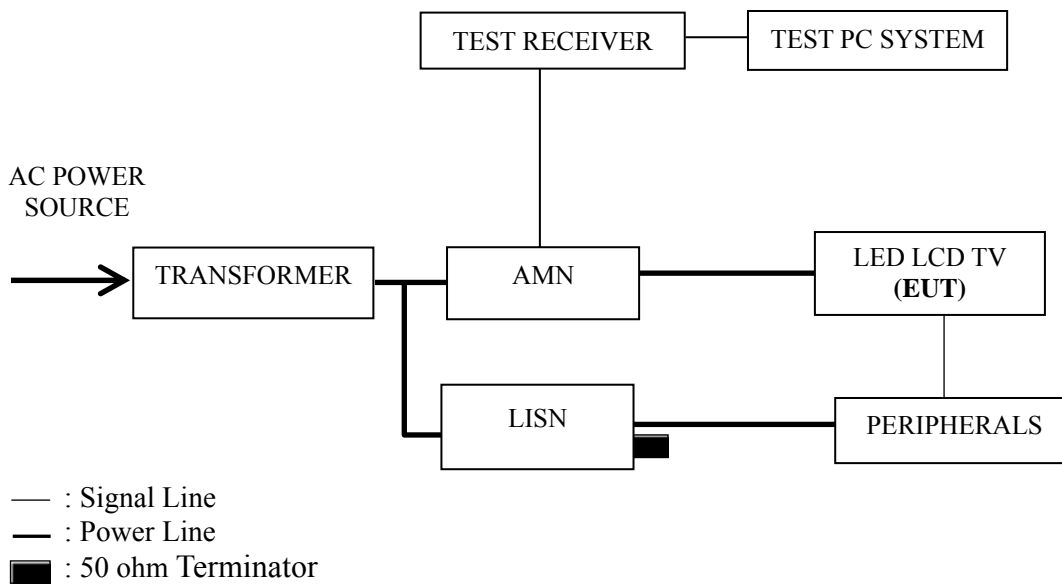
3.2.1 EUT & Peripherals



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

3.5.7 The test modes are as follows:

Test Mode
HDMI 1920*1080@60Hz
HDMI 1280*1024@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
HDMI 1920*1080@60Hz	P13
HDMI 1280*1024@60Hz	P14
HDMI 640*480@60Hz	P15
USB Play	P16

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 HDMI 640*480@60Hz test mode. The worst emission is detected at 0.644 MHz (Quasi-Peak Value) with corrected signal level of 52.02 dB (μ V) (limit is 56.00 dB (μ V)), when the Line of the EUT is connected to AMN.

EUT : LED LCD TV Temperature : 22

Model No. : 50K20DG Humidity : 48%RH

Test Mode : HDMI 1920*1080@60Hz Date of Test : Aug 14, 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	0.300	51.10	0.12	51.22	60.24	9.02	QP
	0.480	52.00	0.11	52.11	56.33	4.22	
	0.640	51.51	0.21	51.72	56.00	4.28	
	1.066	44.80	0.19	44.99	56.00	11.01	
	2.374	43.79	0.23	44.02	56.00	11.98	
	6.075	48.00	0.35	48.35	60.00	11.65	
	AV	0.300	33.00	0.12	33.12	50.24	17.12
		0.480	37.10	0.11	37.21	46.33	9.12
		0.640	36.21	0.21	36.42	46.00	9.58
		1.066	23.40	0.19	23.59	46.00	22.41
		2.374	29.59	0.23	29.82	46.00	16.18
		6.075	43.40	0.35	43.75	50.00	6.25
Neutral	0.298	50.30	0.28	50.58	60.27	9.69	QP
	0.478	50.90	0.36	51.26	56.36	5.10	
	0.640	51.60	0.29	51.89	56.00	4.11	
	1.264	46.00	0.31	46.31	56.00	9.69	
	2.376	44.30	0.30	44.60	56.00	11.40	
	6.075	47.90	0.40	48.30	60.00	11.70	
	AV	0.298	33.80	0.28	34.08	50.27	16.19
		0.478	37.70	0.36	38.06	46.36	8.30
		0.640	34.70	0.29	34.99	46.00	11.01
		1.264	29.90	0.31	30.21	46.00	15.79
		2.376	29.90	0.30	30.20	46.00	15.80
		6.075	42.90	0.40	43.30	50.00	6.70

TEST ENGINEER: WENCY YANG

EUT : LED LCD TV Temperature : 22

Model No. : 50K20DG Humidity : 48%RH

Test Mode : HDMI 1280*1024@60Hz Date of Test : Aug 14, 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	0.310	51.20	0.12	51.32	59.97	8.65	QP
	0.480	51.80	0.11	51.91	56.32	4.41	
	0.641	51.41	0.21	51.62	56.00	4.38	
	1.084	46.50	0.19	46.69	56.00	9.31	
	2.631	43.81	0.23	44.04	56.00	11.96	
	6.080	45.00	0.35	45.35	60.00	14.65	
	AV	0.310	33.50	0.12	33.62	49.97	16.35
		0.480	37.20	0.11	37.31	46.32	9.01
		0.641	36.51	0.21	36.72	46.00	9.28
		1.084	26.30	0.19	26.49	46.00	19.51
		2.631	29.11	0.23	29.34	46.00	16.66
		6.080	38.70	0.35	39.05	50.00	10.95
Neutral	0.311	50.60	0.29	50.89	59.94	9.05	QP
	0.479	51.40	0.36	51.76	56.35	4.59	
	0.642	51.60	0.29	51.89	56.00	4.11	
	1.265	45.11	0.31	45.42	56.00	10.58	
	2.387	44.10	0.30	44.40	56.00	11.60	
	6.136	47.20	0.40	47.60	60.00	12.40	
	AV	0.311	33.50	0.29	33.79	49.94	16.15
		0.479	37.90	0.36	38.26	46.35	8.09
		0.642	36.50	0.29	36.79	46.00	9.21
		1.265	28.40	0.31	28.71	46.00	17.29
		2.387	29.80	0.30	30.10	46.00	15.90
		6.136	36.80	0.40	37.20	50.00	12.80

TEST ENGINEER: WENCY YANG

EUT : LED LCD TV Temperature : 22

Model No. : 50K20DG Humidity : 48%RH

Test Mode : HDMI 640*480@60Hz Date of Test : Aug 14, 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	0.309	51.60	0.12	51.72	60.00	8.28	QP
	0.480	52.00	0.11	52.11	56.33	4.22	
	0.644	51.81	0.21	52.02	56.00	3.98	
	1.095	46.80	0.19	46.99	56.00	9.01	
	2.377	43.89	0.23	44.12	56.00	11.88	
	6.075	48.20	0.35	48.55	60.00	11.45	
	AV	0.309	33.40	0.12	33.52	50.00	16.48
		0.480	38.00	0.11	38.11	46.33	8.22
		0.644	37.21	0.21	37.42	46.00	8.58
		1.095	27.00	0.19	27.19	46.00	18.81
		2.377	29.59	0.23	29.82	46.00	16.18
		6.075	43.80	0.35	44.15	50.00	5.85
Neutral	0.310	50.60	0.29	50.89	59.95	9.06	QP
	0.481	51.60	0.36	51.96	56.31	4.35	
	0.642	51.70	0.29	51.99	56.00	4.01	
	1.097	46.61	0.31	46.92	56.00	9.08	
	2.628	43.70	0.30	44.00	56.00	12.00	
	6.142	47.90	0.40	48.30	60.00	11.70	
	AV	0.310	33.40	0.29	33.69	49.95	16.26
		0.481	37.20	0.36	37.56	46.31	8.75
		0.642	36.70	0.29	36.99	46.00	9.01
		1.097	26.81	0.31	27.12	46.00	18.88
		2.628	28.80	0.30	29.10	46.00	16.90
		6.142	36.80	0.40	37.20	50.00	12.80

TEST ENGINEER: WENCY YANG

EUT : LED LCD TV Temperature : 22

Model No. : 50K20DG Humidity : 48%RH

Test Mode : USB Play Date of Test : Aug 14, 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	0.305	51.10	51.22	60.11	0.12	8.89	QP
	0.482	51.70	51.81	56.31	0.11	4.50	
	0.642	51.21	51.42	56.00	0.21	4.58	
	1.095	46.70	46.89	56.00	0.19	9.11	
	3.366	42.60	42.86	56.00	0.26	13.14	
	6.011	47.60	47.95	60.00	0.35	12.05	
	AV	0.305	32.30	32.42	50.11	0.12	17.69
		0.482	37.70	37.81	46.31	0.11	8.50
		0.642	36.51	36.72	46.00	0.21	9.28
		1.095	27.20	27.39	46.00	0.19	18.61
		3.366	29.10	29.36	46.00	0.26	16.64
		6.011	36.00	36.35	50.00	0.35	13.65
Neutral	0.297	50.30	50.58	60.33	0.28	9.75	QP
	0.483	51.50	51.86	56.29	0.36	4.43	
	0.644	51.60	51.89	56.00	0.29	4.11	
	1.274	46.50	46.81	56.00	0.31	9.19	
	3.385	43.50	43.81	56.00	0.31	12.19	
	6.151	46.80	47.20	60.00	0.40	12.80	
	AV	0.297	34.30	34.58	50.33	0.28	15.75
		0.483	36.40	36.76	46.29	0.36	9.53
		0.644	37.20	37.49	46.00	0.29	8.51
		1.274	28.40	28.71	46.00	0.31	17.29
		3.385	29.90	30.21	46.00	0.31	15.79
		6.151	37.50	37.90	50.00	0.40	12.10

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

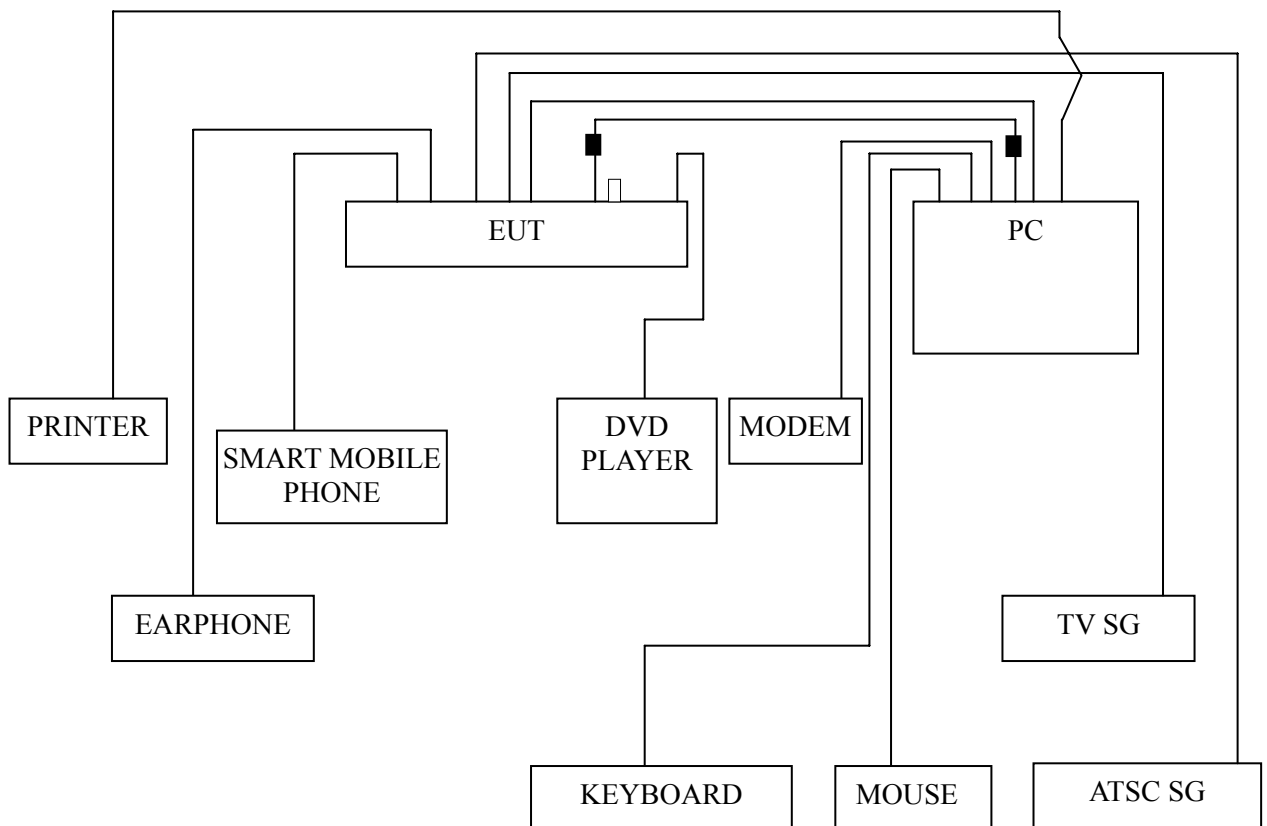
4.1 Test Equipment

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.	Preamplifier	HP	8449B	3008A00864	Mar 20, 2013	Mar 20, 2014
4.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 03, 2013	May 03, 2014
5.	Horn Antenna	EMCO	3115	9607-4878	May 11, 2013	May 11, 2014
6.	Spectrum	Agilent	E7405A	MY45106600	Dec 17, 2012	Dec 17, 2013
7.	50 Coaxial Switch	Anritsu	MP59B	6200426390	Mar 18, 2013	Sep 18, 2013
8.	Software	Audix	E3	SET00200 9912M295-2	--	--

4.2 Block Diagram of Test Setup

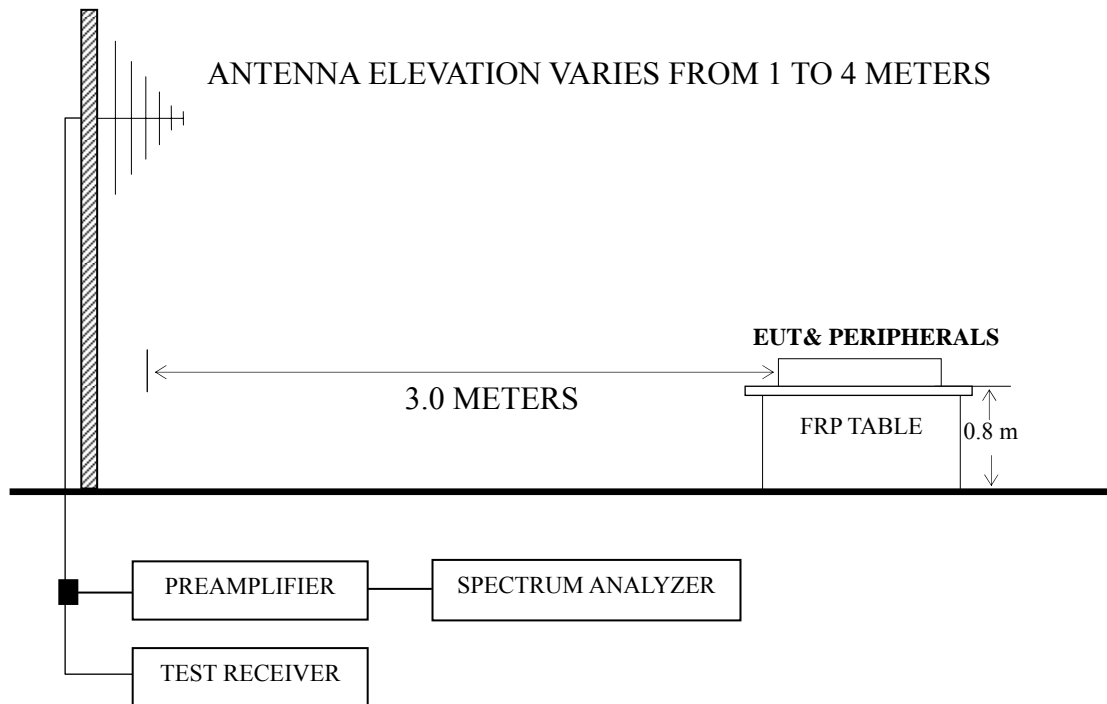
4.2.1 EUT and Peripherals



■ : 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 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 the worst test mode in 30 – 1000 MHz test.

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
HDMI 1920*1080@60Hz	P20
HDMI 1280*1024@60Hz	P21
HDMI 640*480@60Hz	P22
USB Play	P23

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 worst case is for HDMI 1920*1080@60Hz test mode. The worst emission at horizontal polarization was detected at 60.070 MHz with corrected signal level of 38.49 dB ($\mu\text{V}/\text{m}$) (limit is 40.00 dB ($\mu\text{V}/\text{m}$)), when the antenna was 1.70 m height and the turntable was at 243°. The worst emission at vertical polarization was detected at 594.540 MHz with corrected signal level of 44.34 dB ($\mu\text{V}/\text{m}$) (limit is 46.00 dB ($\mu\text{V}/\text{m}$)), when the antenna was 1.70 m height and the turntable was at 143°.

EUT : LED LCD TV Temperature : 22

Model No. : 50K20DG Humidity : 60%RH

Test Mode : HDMI 1920*1080@60Hz Date of Test : Aug 15, 2013

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)	Remark
Horizontal	60.070	32.90	4.70	0.89	--	38.49	40.00	1.51	QP
	71.710	27.73	6.02	0.95	--	34.70	40.00	5.30	
	143.490	26.16	10.30	1.61	--	38.07	43.50	5.43	
	223.030	28.00	8.43	2.06	--	38.49	46.00	7.51	
	523.730	20.07	18.33	3.03	--	41.43	46.00	4.57	
	591.630	22.65	18.60	3.20	--	44.45	46.00	1.55	
	1037.000	48.54	23.84	4.92	38.12	39.18	74.00	34.82	PK
	1087.000	48.09	24.03	4.99	38.00	39.11	74.00	34.89	
	1215.000	47.52	24.60	5.15	37.70	39.57	74.00	34.43	
	1480.000	46.10	25.56	5.63	36.96	40.33	74.00	33.67	
	1744.000	48.09	28.43	6.06	36.43	46.15	74.00	27.85	
	1904.000	45.52	30.20	6.18	36.21	45.69	74.00	28.31	
	1037.000	35.24	23.84	4.92	38.12	25.88	54.00	28.12	AV
	1087.000	35.30	24.03	4.99	38.00	26.32	54.00	27.68	
	1215.000	34.22	24.60	5.15	37.70	26.27	54.00	27.73	
	1480.000	33.29	25.56	5.63	36.96	27.52	54.00	26.48	
	1744.000	35.30	28.43	6.06	36.43	33.36	54.00	20.64	
	1904.000	32.11	30.20	6.18	36.21	32.28	54.00	21.72	

TEST ENGINEER: NEAL WANG

EUT : LED LCD TV Temperature : 22

Model No. : 50K20DG Humidity : 60%RH

Test Mode : HDMI 1920*1080@60Hz Date of Test : Aug 15, 2013

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	64.920	31.83	4.70	0.90	--	37.43	40.00	2.57	QP
	84.320	27.82	7.32	1.13	--	36.27	40.00	3.73	
	221.090	25.60	8.37	2.06	--	36.03	46.00	9.97	
	518.880	19.54	18.30	3.03	--	40.87	46.00	5.13	
	594.540	22.64	18.50	3.20	--	44.34	46.00	1.66	
	668.260	17.98	19.45	3.44	--	40.87	46.00	5.13	
	1035.000	46.84	23.83	4.92	38.12	37.47	74.00	36.53	PK
	1218.000	45.69	24.61	5.15	37.69	37.76	74.00	36.24	
	1396.000	45.67	25.32	5.59	37.21	39.37	74.00	34.63	
	1539.000	45.43	26.01	5.64	36.82	40.26	74.00	33.74	
	1737.000	44.61	28.37	6.06	36.44	42.60	74.00	31.40	
	1890.000	44.76	30.05	6.18	36.23	44.76	74.00	29.24	
	1035.000	33.30	23.83	4.92	38.12	23.93	54.00	30.07	AV
	1218.000	32.20	24.61	5.15	37.69	24.27	54.00	29.73	
	1396.000	32.19	25.32	5.59	37.21	25.89	54.00	28.11	
	1539.000	32.11	26.01	5.64	36.82	26.94	54.00	27.06	
1737.000	31.29	28.37	6.06	36.44	29.28	54.00	24.72		
1890.000	31.98	30.05	6.18	36.23	31.98	54.00	22.02		

TEST ENGINEER: NEAL WANG

EUT : LED LCD TV Temperature : 22

Model No. : 50K20DG Humidity : 60%RH

Test Mode : HDMI 1280*1024@60Hz Date of Test : Aug 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	55.220	24.03	6.08	0.87	30.98	40.00	9.02
	69.770	26.27	5.74	0.92	32.93	40.00	7.07
	103.720	21.07	11.08	1.37	33.52	43.50	9.98
	224.000	29.29	8.47	2.08	39.84	46.00	6.16
	296.750	27.25	12.55	2.52	42.32	46.00	3.68
	594.540	21.55	18.50	3.20	43.25	46.00	2.75
Vertical	70.740	26.84	5.89	0.94	33.67	40.00	6.33
	102.750	21.01	10.93	1.36	33.30	43.50	10.20
	223.030	32.14	8.43	2.06	42.63	46.00	3.37
	296.750	28.23	12.55	2.52	43.30	46.00	2.70
	597.450	21.07	18.40	3.20	42.67	46.00	3.33
	821.520	17.99	20.70	3.80	42.49	46.00	3.51

TEST ENGINEER: NEAL WANG

EUT : LED LCD TV Temperature : 22

Model No. : 50K20DG Humidity : 60%RH

Test Mode : HDMI 640*480@60Hz Date of Test : Aug 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	34.850	20.09	15.85	0.71	36.65	40.00	3.35
	149.310	22.99	10.12	1.64	34.75	43.50	8.75
	296.750	26.67	12.55	2.52	41.74	46.00	4.26
	520.820	18.12	18.32	3.03	39.47	46.00	6.53
	597.450	19.70	18.40	3.20	41.30	46.00	4.70
	821.520	17.72	20.70	3.80	42.22	46.00	3.78
Vertical	102.750	21.01	10.93	1.36	33.30	43.50	10.20
	202.660	27.85	8.00	1.97	37.82	43.50	5.68
	296.750	26.81	12.55	2.52	41.88	46.00	4.12
	591.630	20.95	18.60	3.20	42.75	46.00	3.25
	674.080	17.10	19.40	3.48	39.98	46.00	6.02
	825.400	17.51	20.63	3.89	42.03	46.00	3.97

TEST ENGINEER: NEAL WANG

EUT : LED LCD TV Temperature : 22

Model No. : 50K20DG Humidity : 60%RH

Test Mode : USB Play Date of Test : Aug 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	57.160	25.31	5.81	0.88	32.00	40.00	8.00
	69.770	26.02	5.74	0.92	32.68	40.00	7.32
	109.540	15.84	11.84	1.40	29.08	43.50	14.42
	164.830	20.78	8.40	1.75	30.93	43.50	12.57
	371.440	16.05	14.85	2.66	33.56	46.00	12.44
	644.010	10.42	18.47	3.35	32.24	46.00	13.76
Vertical	33.880	17.47	16.12	0.70	34.29	40.00	5.71
	54.250	27.66	6.18	0.87	34.71	40.00	5.29
	139.610	19.96	10.37	1.59	31.92	43.50	11.58
	224.970	25.40	8.50	2.08	35.98	46.00	10.02
	514.030	12.78	18.38	3.01	34.17	46.00	11.83
	844.800	6.58	20.70	3.98	31.26	46.00	14.74

TEST ENGINEER: NEAL WANG

5 DEVIATION TO TEST SPECIFICATIONS

None.