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

LED LCD TV

Model No.	Brand
LC-60N7000U LC-60N7000C	Sharp

FCC ID : W9HLCDF0067

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-F16010
Date of Test : Dec 22-31, 2015
Date of Report : Jan 11, 2016

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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.

Factory #3 : HISENSE ELECTRONICA MEXICO, S.A. DE C.V.

EUT Description : LED LCD TV

Model No.	Brand	Power Supply
LC-60N7000U LC-60N7000C	Sharp	120V/60Hz

Test Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2014 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 Dec 22-31, 2015 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.F16009, a Verification report.

Date of Test : Dec 22-31, 2015 Date of Report : Jan 11, 2016

Producer : HUIMIN YAN / Assistant

Review : SAMMY CHEN / Manager

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

Signatory : BYRON KWO / Assistant General Manager

Authorized Signature EMC

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 2014 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2014 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	:	LC-60N7000U, LC-60N7000C
Note	:	The above models are all the same except for model number.LC-60N7000U model is tested and recorded in the report.
Brand	:	Sharp
Applicant	:	Hisense Electric Co., Ltd. No.218 Qianwangang Road, Economy & Technology Development Zone, Qingdao, China
Manufacturer	:	Same as Applicant
Factory #1	:	Same as Applicant
Factory #2	:	Tatung Mexico S.A. de C.V. Miguel Catalán 420, Parque Industrial Rio Bravo, Cd. Juarez, Chih., CP 32557
Factory #3	:	HISENSE ELECTRONICA MEXICO,S.A. DE C.V. Blvd. Sharp #3510 Parque Industrial Rosarito, C.P. 22710 Playas de Rosarito, B.C.
LCD Panel	:	Manufacturer : Hisense M/N : HE600HU-B21
Tuner .	:	Manufacturer : XuGuang Tech. Co. Ltd. M/N : HFT-96S3\W11FJ2H\ROH
Max Resolution	:	3840*2160@60Hz
HDMI Cable*4 (Lab provide)	:	Shielded, Detachable, 1.50m
Power Cord	:	Unshielded, Detachable, 1.80m
LAN Cable	:	Shielded, Detachable, 1.50m
USB Cable*3 (Lab provide)	:	Shielded, Detachable, 1.00m, with one core
MHL to HDMI Adaptor: with RCP (Lab provide)		Manufacture: CE-Link M/N: 3002

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

Side Port:
(1) One HDMI2 Port
: Connected with PC
(2) One HDMI1/MHL Port
: Connected with Mobile Phone
(3) One USB#1 Port
: Connected with H-Disk#1
(4) One USB#2 Port
: Connected with H-Disk#2
(5) One USB#3 Port
: Connected with H-Disk#3
(6) One ANT Port
: Connected with ATSC SG
(7) One Digital Audio Out Port
: Connected with Earphone

Back Port:
(8) One COMPONENT IN/AV IN Port
: Connected with DVD PLAYER#1
(9) One HDMI3 Port
: Connected with DVD PLAYER #1
(10) One HDMI4 Port
: Connected with DVD PLAYER #2
(11) One LAN Port
: Connected with PC
(12) One Digital Audio Out Port
: Connected with DVD PLAYER#1

2.2 Peripherals

2.2.1 PC

Manufacturer	:	HP
Model Number	:	dx7400MT
Serial Number	:	CNG8130K89
Power Cord	:	Shielded, Detachable, 1.8m
Certificate	:	FCC DoC; CE/EMC; VCCI; C-Tick;

2.2.2 Keyboard

Manufacturer	:	Microsoft
Model Number	:	RT2300
Serial Number	:	7668200662248
Data Cable	:	Shielded, Detachable, 1.5m
Certificate	:	CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

2.2.3 Mouse

Manufacturer	:	Microsoft
Model Number	:	RT2300
Serial Number	:	6965712071551
Data Cable	:	Shielded, Detachable, 1.5m.
Certificate	:	CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

2.2.4 Modem

Manufacturer	:	TP-LINK
Model Number	:	TM-EC5658V
Serial Number	:	07123301053
Data Cable	:	Shielded, Detachable, 1.5m
Certificate	:	CCC

2.2.5 Earphone

Manufacturer	:	audio-technica
Model Number	:	ATH-CKL200

2.2.6 DVD PLAYER #1

Manufacturer	:	PHILIPS
Model Number	:	DVP3986K/93
Serial Number	:	KX1A0902120108
Certificate	:	CCC

2.2.7 DVD PLAYER #2

Manufacturer	:	PHILIPS
Model Number	:	DVP3986K/93
Serial Number	:	KX1A0902120082
Certificate	:	CCC

2.2.8 Hard Disk #1

Manufacturer	:	Tetasys
Model Number	:	F12
Serial Number	:	A010022-4860010X
Data Cable	:	Shielded, Detachable, 1.5m.
Certificate	:	CE, FCC DoC

2.2.9 Hard Disk #2

Manufacturer	:	Tetasys
Model Number	:	F12
Serial Number	:	A010022-4860007
Data Cable	:	Shielded, Detachable, 1.5m.
Certificate	:	CE, FCC DoC

2.2.10 Hard Disk #3

Manufacturer	:	Tetasys
Model Number	:	F12
Serial Number	:	A010022-40F0005
Data Cable	:	Shielded, Detachable, 1.5m.
Certificate	:	CE, FCC DoC

2.2.11 ATSC Signal Generator

Manufacturer : SENCORE
Model Number : ATSC997
Serial Number : 6790071

2.2.12 TV Signal Generator

Manufacturer : FLUKE
Model Number : 54200M01
Serial Number : 814008

2.2.13 Smart Mobile Phone

Manufacturer : SAMSUNG
Model Number : GT-I9100G
Serial Number : 6935152011519
Certificate : CE/EMC

2.3 Description of Test Facility

Site Description : Sept. 17, 1998 file on
(No.3 3m Chamber) Jan.15, 2015 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

FCC registration Number : 91789

NVLAP Lab Code : 200371-0

2.4 Measurement Uncertainty

Conducted Emission Expanded Uncertainty : U = 3.4dB
Radiated Emission Expanded Uncertainty (30-200MHz):
U = 4.6dB(Horizontal)
U = 4.3dB (Vertical)
Radiated Emission Expanded Uncertainty (200M-1GHz):
U = 4.5dB (Horizontal)
U = 5.4dB (Vertical)
Radiated Emission Expanded Uncertainty (1GHz-6GHz):
U = 5.1dB

3 CONDUCTED EMISSION TEST

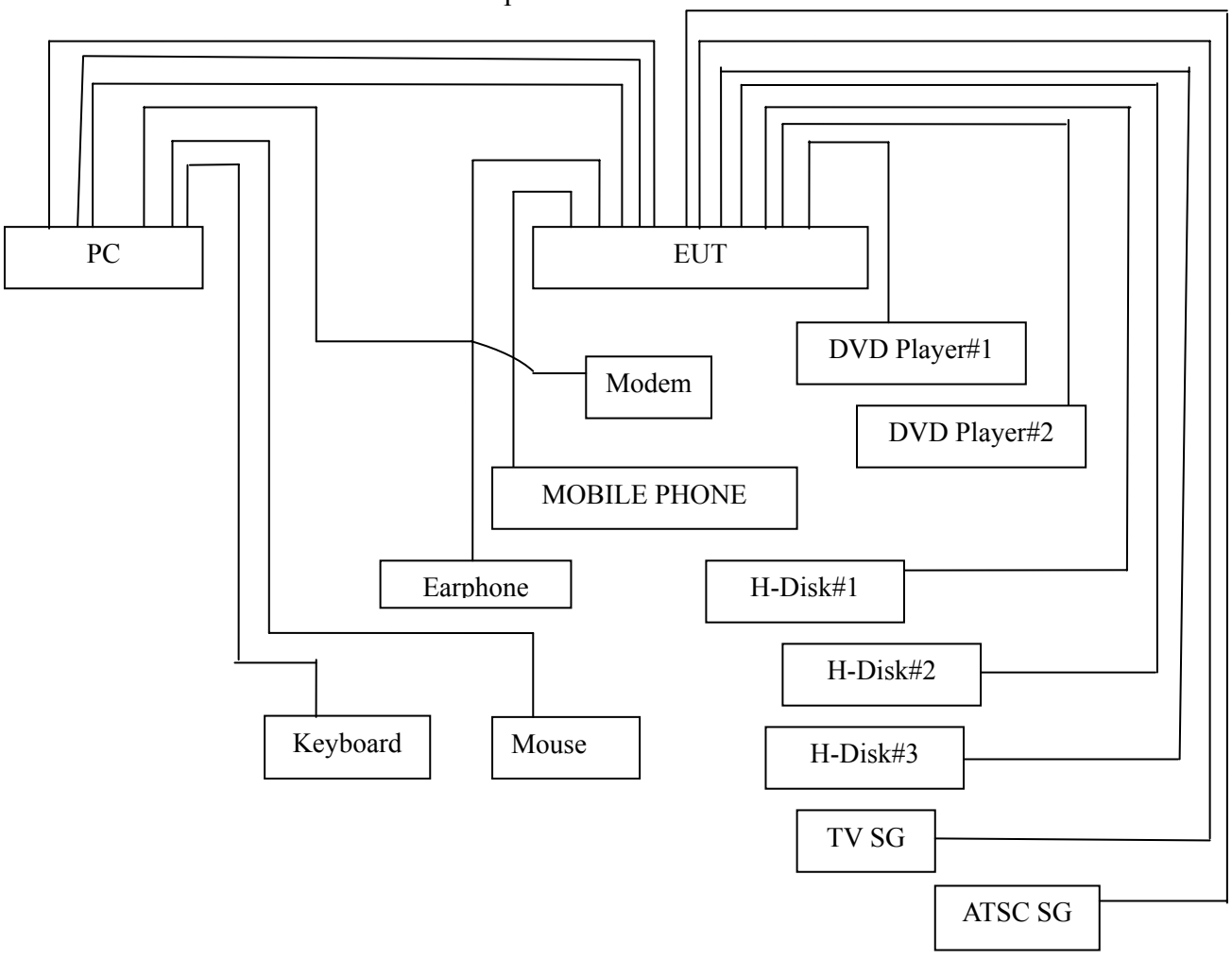
3.1 Test Equipment

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

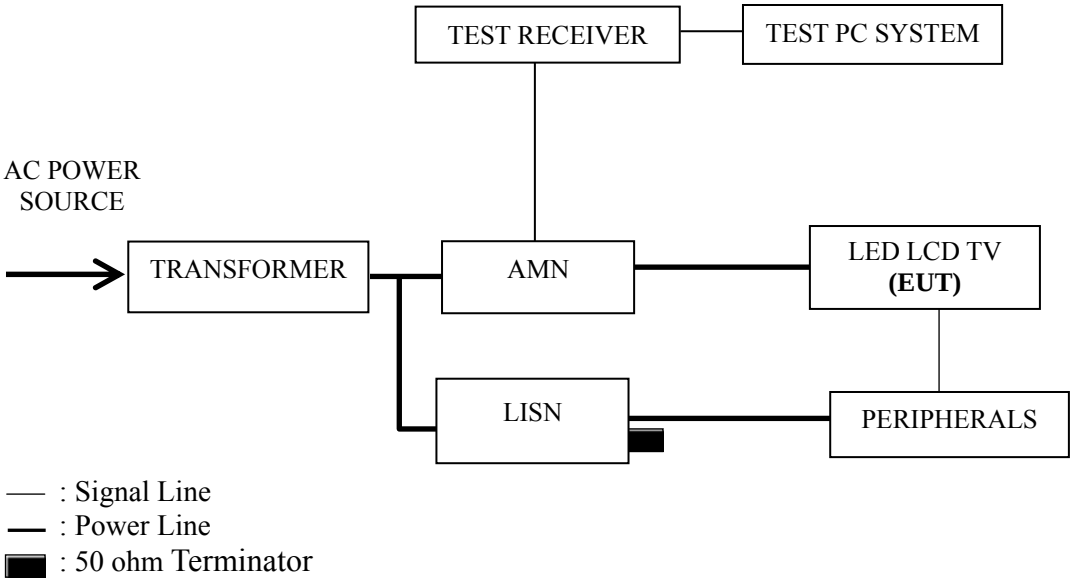
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	101302	Jul 03, 2015	Jul 02, 2016
2.	Artificial Mains Network (AMN)	R&S	ENV4200	100125	Jun 27, 2015	Jun 26, 2016
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-5	Mar 20, 2015	Mar 19, 2016
4.	50Ω Terminator	Anritsu	BNC	001	Mar 20, 2015	Mar 19, 2016
5.	Software	Audix	E3	6.111206	--	--

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 (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 HDMI Input).

3.5.5 PC system sent the 1kHz audio signal to EUT through audio port, the EUT speak out 1kHz audio signal.

3.5.6 In USB Play mode, set the EUT play digital media from H-Disk.

3.5.7 In LAN Play mode, set the EUT play digital media through LAN port.

3.5.8 In MHL mode, set the EUT play digital media from mobile phone.

3.5.9 The other peripherals devices were driven and operated during the test.

3.5.10 The test modes are as follows:

Test Mode
HDMI 3840*2160@60Hz & 1kHz playing
HDMI 1920*1080@60Hz & 1kHz playing
HDMI 1280*1024@60Hz & 1kHz playing
HDMI 640*480@60Hz & 1kHz playing
HDMI1080P
USB Play
LAN Play
MHL

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 3840*2160@60Hz & 1kHz playing	P13
HDMI 1920*1080@60Hz & 1kHz playing	P14
HDMI 1280*1024@60Hz & 1kHz playing	P15
HDMI 640*480@60Hz & 1kHz playing	P16
HDMI1080P	P17
USB Play	P18
LAN Play	P19
MHL	P20

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 3840*2160@60Hz & 1kHz playing test mode. The worst emission is detected at 0.163MHz (QP Value) with corrected signal level of 62.17dB (μV) (limit is 65.30 dB (μV)), when the Line of the EUT is connected to AMN.

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LC-60N7000U	Humidity :	48%RH	
Test Mode	:	HDMI 3840*2160@60Hz & 1kHz Playing	Date of Test :	Dec 22, 2015	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.163**	**51.60**	**10.57**	**62.17**	**65.30**	**3.13**	QP
	0.386	32.10	10.43	42.53	58.16	15.63	
	0.576	29.90	10.38	40.28	56.00	15.72	
	1.160	27.81	10.38	38.19	56.00	17.81	
	2.687	24.69	10.44	35.13	56.00	20.87	
	5.247	30.51	10.47	40.98	60.00	19.02	
	0.163	38.50	10.57	49.07	55.30	6.23	AV
	0.386	22.50	10.43	32.93	48.16	15.23	
	0.576	18.10	10.38	28.48	46.00	17.52	
	1.160	15.11	10.38	25.49	46.00	20.51	
	2.687	15.99	10.44	26.43	46.00	19.57	
	5.247	27.11	10.47	37.58	50.00	12.42	
Neutral	**0.165**	**51.30**	**10.56**	**61.86**	**65.19**	**3.33**	QP
	0.389	29.90	10.41	40.31	58.10	17.79	
	0.582	29.90	10.36	40.26	56.00	15.74	
	1.170	27.11	10.37	37.48	56.00	18.52	
	3.504	25.10	10.45	35.55	56.00	20.45	
	5.726	28.20	10.49	38.69	60.00	21.31	
	0.165	39.50	10.56	50.06	55.19	5.13	AV
	0.389	19.60	10.41	30.01	48.10	18.09	
	0.582	19.10	10.36	29.46	46.00	16.54	
	1.170	16.81	10.37	27.18	46.00	18.82	
	3.504	15.50	10.45	25.95	46.00	20.05	
	5.726	23.70	10.49	34.19	50.00	15.81	

TEST ENGINEER: WENCY YANG

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LC-60N7000U	Humidity	:	48%RH
Test Mode	:	HDMI 1920*1080@60Hz & 1kHz Playing	Date of Test	:	Dec 22, 2015

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.167**	**50.90**	**10.56**	**61.46**	**65.12**	**3.66**	QP
	0.384	31.90	10.43	42.33	58.19	15.86	
	0.591	31.90	10.38	42.28	56.00	13.72	
	0.964	29.90	10.38	40.28	56.00	15.72	
	3.120	25.70	10.44	36.14	56.00	19.86	
	5.765	25.60	10.47	36.07	60.00	23.93	
	0.167	39.10	10.56	49.66	55.12	5.46	AV
	0.384	21.70	10.43	32.13	48.19	16.06	
	0.591	19.20	10.38	29.58	46.00	16.42	
	0.964	20.20	10.38	30.58	46.00	15.42	
	3.120	14.60	10.44	25.04	46.00	20.96	
	5.765	19.40	10.47	29.87	50.00	20.13	
Neutral	**0.168**	**50.59**	**10.56**	**61.15**	**65.08**	**3.93**	QP
	0.395	29.59	10.41	40.00	57.97	17.97	
	0.587	30.20	10.36	40.56	56.00	15.44	
	1.387	27.50	10.39	37.89	56.00	18.11	
	2.891	25.90	10.43	36.33	56.00	19.67	
	5.765	25.20	10.49	35.69	60.00	24.31	
	0.168	38.99	10.56	49.55	55.08	5.53	AV
	0.395	17.19	10.41	27.60	47.97	20.37	
	0.587	19.30	10.36	29.66	46.00	16.34	
	1.387	15.40	10.39	25.79	46.00	20.21	
	2.891	16.40	10.43	26.83	46.00	19.17	
	5.765	19.10	10.49	29.59	50.00	20.41	

TEST ENGINEER: WENCY YANG

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LC-60N7000U	Humidity :	48%RH	
Test Mode	:	HDMI 1280*1024@60Hz & 1kHz Playing	Date of Test :	Dec 22, 2015	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.165**	**50.99**	**10.57**	**61.56**	**65.21**	**3.65**	QP
	0.382	31.40	10.43	41.83	58.24	16.41	
	0.591	31.90	10.38	42.28	56.00	13.72	
	1.605	27.70	10.40	38.10	56.00	17.90	
	3.534	27.00	10.45	37.45	56.00	18.55	
	5.759	25.70	10.47	36.17	60.00	23.83	
	0.165	37.29	10.57	47.86	55.21	7.35	AV
	0.382	20.70	10.43	31.13	48.24	17.11	
	0.591	19.30	10.38	29.68	46.00	16.32	
	1.605	17.80	10.40	28.20	46.00	17.80	
	3.534	17.70	10.45	28.15	46.00	17.85	
	5.759	17.80	10.47	28.27	50.00	21.73	
Neutral	**0.167**	**50.99**	**10.56**	**61.55**	**65.13**	**3.58**	QP
	0.394	29.69	10.41	40.10	57.97	17.87	
	0.592	30.10	10.36	40.46	56.00	15.54	
	1.167	28.11	10.37	38.48	56.00	17.52	
	2.858	25.40	10.43	35.83	56.00	20.17	
	5.780	27.90	10.49	38.39	60.00	21.61	
	0.167	38.89	10.56	49.45	55.13	5.68	AV
	0.394	17.49	10.41	27.90	47.97	20.07	
	0.592	17.40	10.36	27.76	46.00	18.24	
	1.167	17.91	10.37	28.28	46.00	17.72	
	2.858	16.20	10.43	26.63	46.00	19.37	
	5.780	24.10	10.49	34.59	50.00	15.41	

TEST ENGINEER: WENCY YANG

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LC-60N7000U	Humidity :	48%RH	
Test Mode	:	HDMI 640*480@60Hz & 1kHz Playing	Date of Test :	Dec 22, 2015	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.167**	**50.90**	**10.56**	**61.46**	**65.12**	**3.66**	QP
	0.388	31.90	10.43	42.33	58.12	15.79	
	0.581	30.00	10.38	40.38	56.00	15.62	
	0.964	29.90	10.38	40.28	56.00	15.72	
	2.214	26.10	10.42	36.52	56.00	19.48	
	5.767	25.40	10.47	35.87	60.00	24.13	
	0.167	38.80	10.56	49.36	55.12	5.76	AV
	0.388	21.30	10.43	31.73	48.12	16.39	
	0.581	18.40	10.38	28.78	46.00	17.22	
	0.964	20.60	10.38	30.98	46.00	15.02	
	2.214	16.30	10.42	26.72	46.00	19.28	
	5.767	18.50	10.47	28.97	50.00	21.03	
Neutral	**0.166**	**51.00**	**10.56**	**61.56**	**65.18**	**3.62**	QP
	0.389	29.70	10.41	40.11	58.08	17.97	
	0.579	28.90	10.36	39.26	56.00	16.74	
	0.963	29.40	10.37	39.77	56.00	16.23	
	3.300	24.39	10.45	34.84	56.00	21.16	
	5.767	25.40	10.49	35.89	60.00	24.11	
	0.166	37.90	10.56	48.46	55.18	6.72	AV
	0.389	19.50	10.41	29.91	48.08	18.17	
	0.579	17.40	10.36	27.76	46.00	18.24	
	0.963	20.30	10.37	30.67	46.00	15.33	
	3.300	13.89	10.45	24.34	46.00	21.66	
	5.767	18.30	10.49	28.79	50.00	21.21	

TEST ENGINEER: WENCY YANG

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LC-60N7000U	Humidity	:	48%RH
Test Mode	:	HDMI 1080P	Date of Test	:	Dec 22, 2015

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.167**	**51.10**	**10.56**	**61.66**	**65.12**	**3.46**	QP
	0.386	31.80	10.43	42.23	58.15	15.92	
	0.580	30.00	10.38	40.38	56.00	15.62	
	0.965	29.80	10.38	40.18	56.00	15.82	
	2.882	25.70	10.44	36.14	56.00	19.86	
	5.766	25.30	10.47	35.77	60.00	24.23	
	0.167	38.70	10.56	49.26	55.12	5.86	AV
	0.386	21.60	10.43	32.03	48.15	16.12	
	0.580	18.20	10.38	28.58	46.00	17.42	
	0.965	20.40	10.38	30.78	46.00	15.22	
	2.882	17.10	10.44	27.54	46.00	18.46	
	5.766	18.80	10.47	29.27	50.00	20.73	
Neutral	**0.167**	**50.89**	**10.56**	**61.45**	**65.09**	**3.64**	QP
	0.386	29.70	10.41	40.11	58.14	18.03	
	0.587	29.90	10.36	40.26	56.00	15.74	
	1.173	28.11	10.37	38.48	56.00	17.52	
	2.273	25.90	10.42	36.32	56.00	19.68	
	5.765	25.30	10.49	35.79	60.00	24.21	
	0.167	38.79	10.56	49.35	55.09	5.74	AV
	0.386	20.30	10.41	30.71	48.14	17.43	
	0.587	19.20	10.36	29.56	46.00	16.44	
	1.173	17.71	10.37	28.08	46.00	17.92	
	2.273	16.30	10.42	26.72	46.00	19.28	
	5.765	19.10	10.49	29.59	50.00	20.41	

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LC-60N7000U	Humidity	:	48%RH
Test Mode	:	USB Play	Date of Test	:	Dec 22, 2015

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.165**	**50.99**	**10.57**	**61.56**	**65.19**	**3.63**	QP
	0.385	31.70	10.43	42.13	58.18	16.05	
	0.587	31.10	10.38	41.48	56.00	14.52	
	1.179	28.91	10.38	39.29	56.00	16.71	
	3.537	25.80	10.45	36.25	56.00	19.75	
	5.766	25.40	10.47	35.87	60.00	24.13	
	0.165	37.89	10.57	48.46	55.19	6.73	AV
	0.385	21.80	10.43	32.23	48.18	15.95	
	0.587	20.20	10.38	30.58	46.00	15.42	
	1.179	18.61	10.38	28.99	46.00	17.01	
	3.537	16.40	10.45	26.85	46.00	19.15	
	5.766	18.90	10.47	29.37	50.00	20.63	
Neutral	**0.166**	**50.90**	**10.56**	**61.46**	**65.18**	**3.72**	QP
	0.394	29.69	10.41	40.10	57.98	17.88	
	0.587	29.90	10.36	40.26	56.00	15.74	
	1.568	26.91	10.39	37.30	56.00	18.70	
	3.110	26.71	10.43	37.14	56.00	18.86	
	5.783	30.40	10.49	40.89	60.00	19.11	
	0.166	37.80	10.56	48.36	55.18	6.82	AV
	0.394	17.59	10.41	28.00	47.98	19.98	
	0.587	19.30	10.36	29.66	46.00	16.34	
	1.568	17.01	10.39	27.40	46.00	18.60	
	3.110	15.61	10.43	26.04	46.00	19.96	
	5.783	27.80	10.49	38.29	50.00	11.71	

TEST ENGINEER: WENCY YANG

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LC-60N7000U	Humidity	:	48%RH
Test Mode	:	LAN Play	Date of Test	:	Dec 22, 2015

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.167**	**51.00**	**10.56**	**61.56**	**65.12**	**3.56**	QP
	0.389	31.90	10.43	42.33	58.10	15.77	
	0.580	30.20	10.38	40.58	56.00	15.42	
	0.962	30.20	10.38	40.58	56.00	15.42	
	2.893	26.60	10.44	37.04	56.00	18.96	
	5.765	25.50	10.47	35.97	60.00	24.03	
	0.167	38.70	10.56	49.26	55.12	5.86	AV
	0.389	21.30	10.43	31.73	48.10	16.37	
	0.580	18.40	10.38	28.78	46.00	17.22	
	0.962	20.10	10.38	30.48	46.00	15.52	
	2.893	17.70	10.44	28.14	46.00	17.86	
	5.765	19.20	10.47	29.67	50.00	20.33	
Neutral	**0.167**	**50.89**	**10.56**	**61.45**	**65.10**	**3.65**	QP
	0.386	29.70	10.41	40.11	58.14	18.03	
	0.587	30.30	10.36	40.66	56.00	15.34	
	1.619	26.51	10.39	36.90	56.00	19.10	
	2.884	25.60	10.43	36.03	56.00	19.97	
	5.790	26.60	10.49	37.09	60.00	22.91	
	0.167	38.69	10.56	49.25	55.10	5.85	AV
	0.386	20.20	10.41	30.61	48.14	17.53	
	0.587	19.20	10.36	29.56	46.00	16.44	
	1.619	16.21	10.39	26.60	46.00	19.40	
	2.884	16.40	10.43	26.83	46.00	19.17	
	5.790	19.70	10.49	30.19	50.00	19.81	

TEST ENGINEER: WENCY YANG

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LC-60N7000U	Humidity	:	48%RH
Test Mode	:	MHL	Date of Test	:	Dec 22, 2015

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.165**	**50.79**	**10.57**	**61.36**	**65.22**	**3.86**	QP
	0.385	31.70	10.43	42.13	58.17	16.04	
	0.592	31.60	10.38	41.98	56.00	14.02	
	0.965	29.90	10.38	40.28	56.00	15.72	
	2.344	25.90	10.42	36.32	56.00	19.68	
	5.287	25.71	10.47	36.18	60.00	23.82	
	0.165	36.69	10.57	47.26	55.22	7.96	AV
	0.385	21.80	10.43	32.23	48.17	15.94	
	0.592	18.50	10.38	28.88	46.00	17.12	
	0.965	20.50	10.38	30.88	46.00	15.12	
	2.344	16.60	10.42	27.02	46.00	18.98	
	5.287	18.51	10.47	28.98	50.00	21.02	
Neutral	**0.166**	**51.10**	**10.56**	**61.66**	**65.16**	**3.50**	QP
	0.386	29.70	10.41	40.11	58.15	18.04	
	0.587	29.90	10.36	40.26	56.00	15.74	
	1.576	27.91	10.39	38.30	56.00	17.70	
	3.321	27.39	10.45	37.84	56.00	18.16	
	5.766	25.00	10.49	35.49	60.00	24.51	
	0.166	38.00	10.56	48.56	55.16	6.60	AV
	0.386	20.30	10.41	30.71	48.15	17.44	
	0.587	19.10	10.36	29.46	46.00	16.54	
	1.576	17.21	10.39	27.60	46.00	18.40	
	3.321	16.49	10.45	26.94	46.00	19.06	
	5.766	18.60	10.49	29.09	50.00	20.91	

4 RADIATED EMISSION TEST

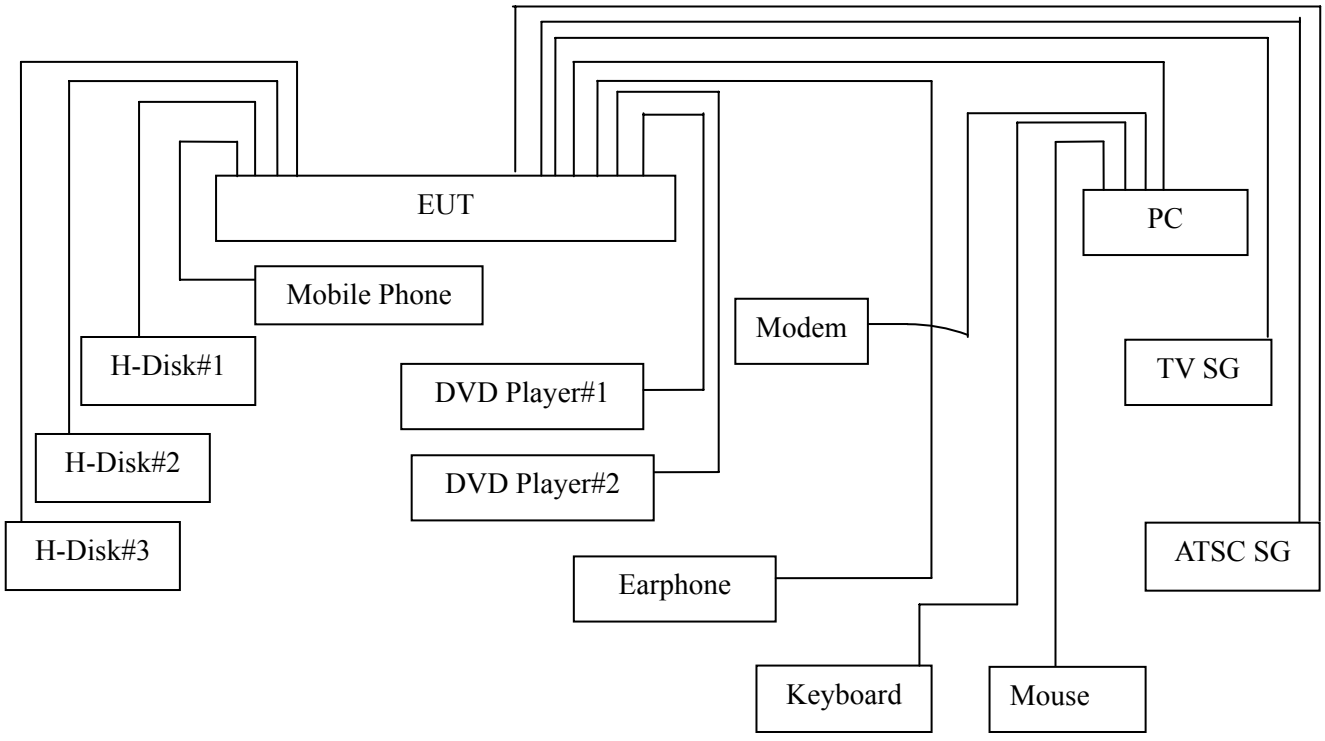
4.1 Test Equipment

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	101303	May 07, 2015	May 06, 2016
2.	Preamplifier	Agilent	8447D	2944A06664	Apr 27, 2015	Apr 26, 2016
3.	Preamplifier	HP	8449B	3008A00864	Mar 20, 2015	Sep 19, 2016
4.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 15, 2015	May 14, 2016
5.	Horn Antenna	EMCO	3115	9607-4878	Jun 03, 2015	Jun 02, 2016
6.	Spectrum	Agilent	N9010A	MY52221182	Jun 12, 2015	Jun 11, 2016
7.	Spectrum	HP	8591EM	3628A00908	May 07, 2015	May 06, 2016
8.	Software	Audix	E3	6.2007-9-10	--	--

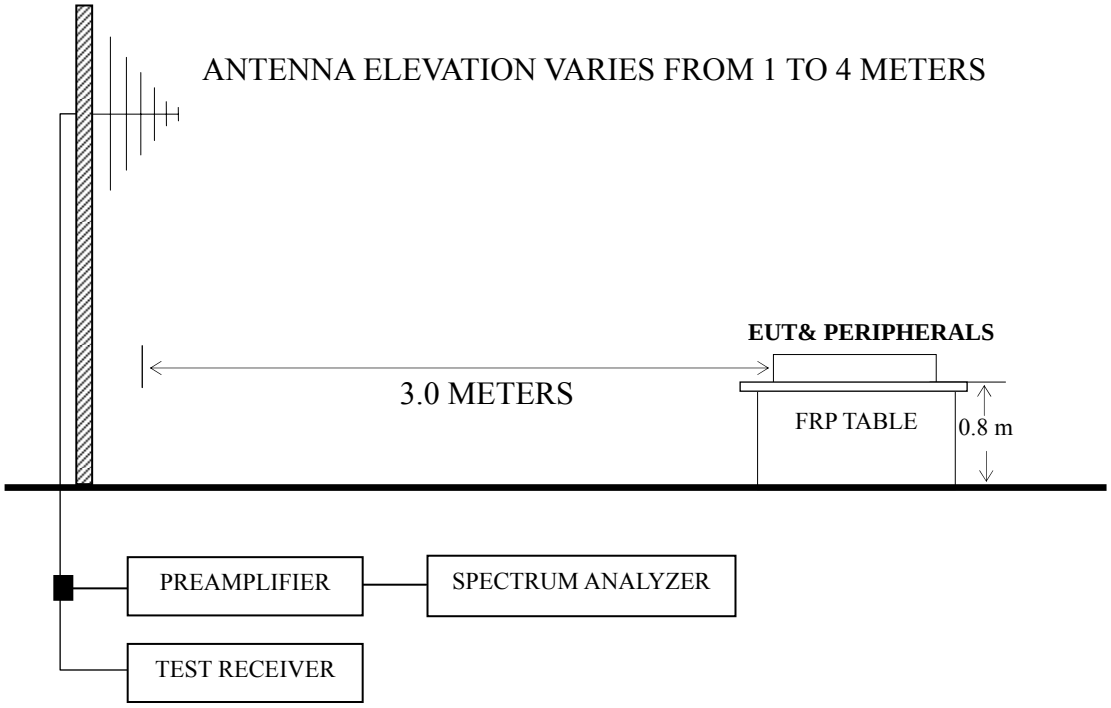
4.2 Block Diagram of Test Setup

4.2.1 EUT & Peripherals



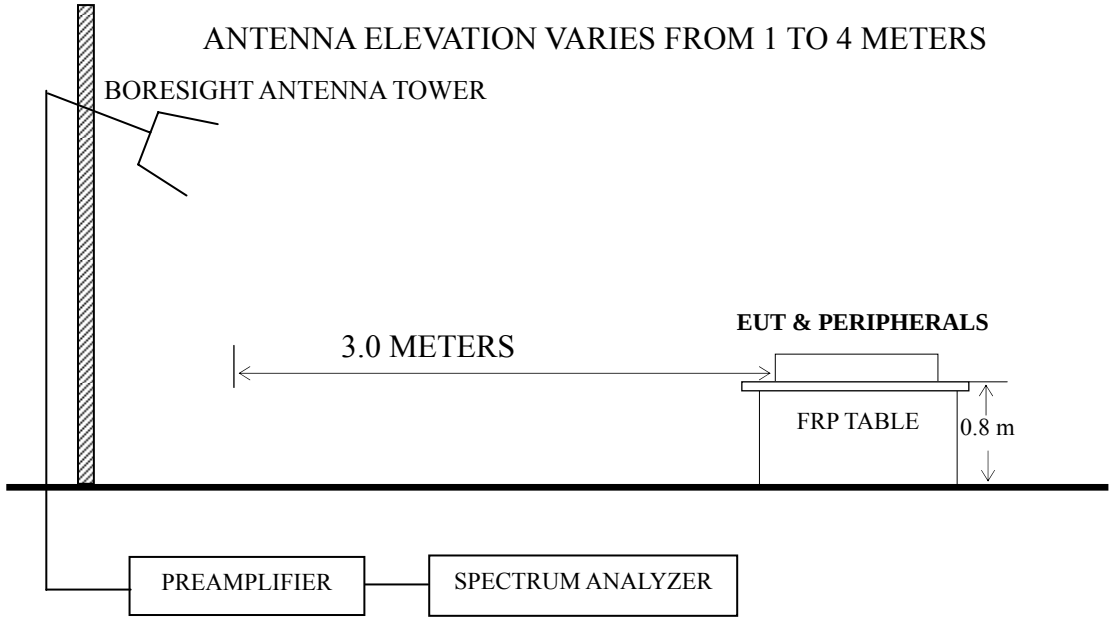
4.2.2 Radiated emission test setup

4.2.2.1 Below 1GHz



■ : 50 ohm Coaxial Switch

4.2.2.2 Above 1GHz



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 frequency range from 1 GHz to 6 GHz was checked for the maximum resolution test mode.

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 3840*2160@60Hz & 1kHz playing	P25-P26
HDMI 1920*1080@60Hz & 1kHz playing	P27
HDMI 1280*1024@60Hz & 1kHz playing	P28
HDMI 640*480@60Hz & 1kHz playing	P29
HDMI1080P	P30
USB Play	P31
LAN Play	P32
MHL	P33

NOTE 1 – Emission Level = Antenna Factor + Cable Loss + Meter Reading. (< 1GHz);
Emission Level = Antenna Factor + Cable Loss – Preamp Factor + Meter Reading. (> 1GHz)

NOTE 2 – All readings are Quasi-Peak values below or equal to 1GHz, Peak and Average values above 1GHz.

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 3840*2160@60Hz & 1 kHz playing test mode. The worst emission at horizontal polarization was detected at 765.260 MHz with corrected signal level of 42.61 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 2.10 m height and the turntable was at 140°. The worst emission at vertical polarization was detected at 767.200 MHz with corrected signal level of 44.35 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 2.1m height and the turntable was at 250°.

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LC-60N7000U	Humidity :	60%RH
Test Mode	:	HDMI 3840*2160@60Hz & 1kHz Playing	Date of Test :	Dec 31, 2015

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
Horizontal	152.220	21.85	11.35	1.65	--	34.85	43.50	8.65	QP
	299.660	22.08	13.80	2.59	--	38.47	46.00	7.53	
	723.550	19.01	19.97	3.57	--	42.55	46.00	3.45	
	765.260	**18.61**	**20.37**	**3.63**	--	**42.61**	**46.00**	**3.39**	
	891.000	16.50	21.30	4.46	--	42.26	46.00	3.74	
	959.260	13.76	22.20	4.75	--	40.71	46.00	5.29	
	1485.838	65.96	3.86	25.56	35.70	59.68	74.00	14.32	PK
	2534.314	60.39	4.96	28.57	35.16	58.76	74.00	15.24	
	2972.460	66.00	5.76	30.40	35.20	66.96	74.00	7.04	
	3369.664	61.69	6.10	31.25	34.83	64.21	74.00	9.79	
	4223.122	53.19	6.31	33.16	34.20	58.46	74.00	15.54	
	5882.902	47.11	8.31	35.05	34.08	56.39	74.00	17.61	
	1485.838	47.83	3.86	25.56	35.70	41.55	54.00	12.45	AV
	2534.314	42.81	4.96	28.57	35.16	41.18	54.00	12.82	
	2972.460	47.39	5.76	30.40	35.20	48.35	54.00	5.65	
	3369.664	44.20	6.10	31.25	34.83	46.72	54.00	7.28	
	4223.122	36.94	6.31	33.16	34.20	42.21	54.00	11.79	
	5882.902	32.13	8.31	35.05	34.08	41.41	54.00	12.59	

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LC-60N7000U	Humidity	: 60%RH
Test Mode	:	HDMI 3840*2160@60Hz & 1kHz Playing	Date of Test	: Dec 31, 2015

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	59.880	27.80	6.20	0.88	--	34.88	40.00	5.12	QP
	143.490	23.42	12.20	1.60	--	37.22	43.50	6.28	
	160.950	26.77	11.13	1.72	--	39.62	43.50	3.88	
	723.550	18.01	19.97	3.57	--	41.55	46.00	4.45	
	767.200	**20.27**	**20.43**	**3.65**	**--**	**44.35**	**46.00**	**1.65**	
	891.000	15.50	21.30	4.46	--	41.26	46.00	4.74	
	1485.838	63.82	3.86	25.56	35.70	57.54	74.00	16.46	PK
	2047.672	60.32	4.50	27.59	35.11	57.30	74.00	16.70	
	2543.413	66.36	4.96	28.60	35.16	64.76	74.00	9.24	
	2972.460	66.50	5.76	30.40	35.20	67.46	74.00	6.54	
	3381.760	58.52	6.10	31.29	34.82	61.09	74.00	12.91	
	5904.021	50.60	8.31	35.06	34.08	59.89	74.00	14.11	
	1485.838	45.21	3.86	25.56	35.70	38.93	54.00	15.07	AV
	2047.672	44.00	4.50	27.59	35.11	40.98	54.00	13.02	
	2543.413	48.21	4.96	28.60	35.16	46.61	54.00	7.39	
	2972.460	47.32	5.76	30.40	35.20	48.28	54.00	5.72	
	3381.760	39.03	6.10	31.29	34.82	41.60	54.00	12.40	
	5904.021	33.10	8.31	35.06	34.08	42.39	54.00	11.61	

TEST ENGINEER: MARK LI

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LC-60N7000U	Humidity :	60%RH
Test Mode	:	HDMI 1920*1080@60Hz & 1kHz Playing	Date of Test :	Dec 31, 2015

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	24.89	6.81	0.91	32.61	40.00	7.39
	152.220	21.79	11.35	1.65	34.79	43.50	8.71
	507.240	16.48	17.90	2.89	37.27	46.00	8.73
	745.860	16.77	20.03	3.62	40.42	46.00	5.58
	893.300	13.84	21.30	4.46	39.60	46.00	6.40
	959.260	**14.51**	**22.20**	**4.75**	**41.46**	**46.00**	**4.54**
Vertical	61.040	27.19	6.26	0.88	34.33	40.00	5.67
	143.490	22.63	12.20	1.60	36.43	43.50	7.07
	473.290	18.98	17.38	2.88	39.24	46.00	6.76
	745.860	16.45	20.03	3.62	40.10	46.00	5.90
	893.300	15.79	21.30	4.46	41.55	46.00	4.45
	956.350	**15.07**	**22.05**	**4.75**	**41.87**	**46.00**	**4.13**

TEST ENGINEER: MARK LI

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LC-60N7000U	Humidity :	60%RH
Test Mode	:	HDMI 1280*1024@60Hz & 1kHz Playing	Date of Test :	Dec 31, 2015

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	**63.950**	**26.19**	**6.44**	**0.90**	**33.53**	**40.00**	**6.47**
	102.750	19.89	12.41	1.34	33.64	43.50	9.86
	154.160	21.22	11.24	1.66	34.12	43.50	9.38
	728.400	13.37	20.03	3.59	36.99	46.00	9.01
	847.710	12.53	20.70	4.07	37.30	46.00	8.70
	963.140	14.33	22.27	4.75	41.35	54.00	12.65
Vertical	61.040	28.45	6.26	0.88	35.59	40.00	4.41
	141.550	23.32	12.40	1.59	37.31	43.50	6.19
	425.760	18.22	16.80	2.78	37.80	46.00	8.20
	471.350	17.80	17.34	2.88	38.02	46.00	7.98
	892.520	**16.20**	**21.30**	**4.46**	**41.96**	**46.00**	**4.04**
	955.380	11.80	22.05	4.75	38.60	46.00	7.40

TEST ENGINEER: MARK LI

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LC-60N7000U	Humidity :	60%RH
Test Mode	:	HDMI 640*480@60Hz & 1kHz Playing	Date of Test :	Dec 31, 2015

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	63.950	25.70	6.44	0.90	33.04	40.00	6.96
	154.160	21.33	11.24	1.66	34.23	43.50	9.27
	510.150	13.75	17.90	2.89	34.54	46.00	11.46
	820.550	13.80	20.70	3.88	38.38	46.00	7.62
	892.330	13.42	21.30	4.46	39.18	46.00	6.82
	955.380	**14.29**	**22.05**	**4.75**	**41.09**	**46.00**	**4.91**
Vertical	39.700	18.12	12.95	0.73	31.80	40.00	8.20
	62.010	29.17	6.33	0.89	36.39	40.00	3.61
	146.400	23.80	11.95	1.61	37.36	43.50	6.14
	469.410	17.51	17.30	2.88	37.69	46.00	8.31
	892.330	**17.10**	**21.30**	**4.46**	**42.86**	**46.00**	**3.14**
	959.260	13.78	22.20	4.75	40.73	46.00	5.27

TEST ENGINEER: MARK LI

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LC-60N7000U	Humidity :	60%RH
Test Mode	:	HDMI1080P	Date of Test :	Dec 31, 2015

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**	**27.26**	**6.81**	**0.91**	**34.98**	**40.00**	**5.02**
	300.630	19.37	13.84	2.59	35.80	46.00	10.20
	723.550	15.10	19.97	3.57	38.64	46.00	7.36
	852.560	14.70	20.73	4.17	39.60	46.00	6.40
	891.000	13.70	21.30	4.46	39.46	46.00	6.54
	959.260	12.26	22.20	4.75	39.21	46.00	6.79
Vertical	64.920	26.73	6.50	0.90	34.13	40.00	5.87
	145.430	24.35	12.03	1.61	37.99	43.50	5.51
	472.320	17.27	17.34	2.88	37.49	46.00	8.51
	721.240	16.20	19.90	3.57	39.67	46.00	6.33
	892.330	**14.90**	**21.30**	**4.46**	**40.66**	**46.00**	**5.34**
	960.230	13.27	22.20	4.75	40.22	54.00	13.78

TEST ENGINEER: MARK LI

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LC-60N7000U	Humidity :	60%RH
Test Mode	:	USB Play	Date of Test :	Dec 31, 2015

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	78.500	23.40	9.12	1.05	33.57	40.00	6.43
	246.310	20.10	12.34	2.14	34.58	46.00	11.42
	482.990	**20.27**	**17.54**	**2.91**	**40.72**	**46.00**	**5.28**
	678.930	17.50	19.90	3.28	40.68	46.00	5.32
	745.860	15.85	20.03	3.62	39.50	46.00	6.50
	961.200	11.69	22.27	4.75	38.71	54.00	15.29
Vertical	32.910	16.20	16.99	0.66	33.85	40.00	6.15
	82.380	23.43	9.60	1.12	34.15	40.00	5.85
	136.700	18.66	12.57	1.56	32.79	43.50	10.71
	481.050	18.43	17.52	2.90	38.85	46.00	7.15
	681.840	14.62	19.85	3.28	37.75	46.00	8.25
	892.330	**14.72**	**21.30**	**4.46**	**40.48**	**46.00**	**5.52**

TEST ENGINEER: MARK LI

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LC-60N7000U	Humidity :	60%RH
Test Mode	:	LAN Play	Date of Test :	Dec 31, 2015

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	250.190	24.47	12.50	2.15	39.12	46.00	6.88
	482.990	15.81	17.54	2.91	36.26	46.00	9.74
	678.930	**17.72**	**19.90**	**3.28**	**40.90**	**46.00**	**5.10**
	850.620	15.23	20.70	4.17	40.10	46.00	5.90
	891.000	14.40	21.30	4.46	40.16	46.00	5.84
	924.340	13.21	21.57	4.61	39.39	46.00	6.61
Vertical	59.100	27.43	6.20	0.87	34.50	40.00	5.50
	131.850	21.12	12.71	1.53	35.36	43.50	8.14
	202.660	25.12	9.75	1.98	36.85	43.50	6.65
	679.900	15.41	19.90	3.28	38.59	46.00	7.41
	892.330	**14.74**	**21.30**	**4.46**	**40.50**	**46.00**	**5.50**
	924.340	13.87	21.57	4.61	40.05	46.00	5.95

TEST ENGINEER: MARK LI

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LC-60N7000U	Humidity :	60%RH
Test Mode	:	MHL	Date of Test :	Dec 31, 2015

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	58.130	25.02	6.20	0.87	32.09	40.00	7.91
	151.250	21.18	11.43	1.65	34.26	43.50	9.24
	300.630	18.84	13.84	2.59	35.27	46.00	10.73
	508.210	12.53	17.90	2.89	33.32	46.00	12.68
	891.360	**14.48**	**21.30**	**4.46**	**40.24**	**46.00**	**5.76**
	963.140	13.46	22.27	4.75	40.48	54.00	13.52
Vertical	**62.980**	**26.54**	**6.39**	**0.89**	**33.82**	**40.00**	**6.18**
	145.430	22.42	12.03	1.61	36.06	43.50	7.44
	426.730	13.85	16.80	2.78	33.43	46.00	12.57
	597.450	13.81	18.98	2.31	35.10	46.00	10.90
	892.440	14.00	21.30	4.46	39.76	46.00	6.24
	965.080	15.12	22.27	4.75	42.14	54.00	11.86

TEST ENGINEER: MARK LI

5 DEVIATION TO TEST SPECIFICATIONS

None.

APPENDIX I

PHOTOGRAPHS OF TEST