

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

LED LCD TV

Model No.	Brand
55H7EG, 55K390GW	Hisense

FCC ID : W9HLCDF0049

Prepared For : Hisense Electric Co., Ltd.
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Development Zone, Qingdao, China

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Report No. : ACI-F14120
Date of Test : Jul 18 – 24, 2014
Date of Report : Jul 30, 2014

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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
55H7EG, 55K390GW	Hisense	120V/60Hz

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2013
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 Jul 18 – 24, 2014 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.F14121, a Verification report.

Date of Test : Jul 18 – 24, 2014 Date of Report : Jul 25, 2014

Producer : 
 EMILY ZHU / Assistant

Review : 
 DIO YANG / Deputy 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 2013 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2013 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 checked="" type="checkbox"/> Production <input type="checkbox"/> Pre-product <input type="checkbox"/> Pro-type
Model No.	:	55H7EG, 55K390GW
Note	:	The above models are all the same except for model name. 55H7EG model is tested and recorded in the report.
Brand 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 : HE550HF-B51(100)\S1
Max Resolution	:	HDMI 1920*1080@60Hz D-Sub 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 HDMI2 Port : Connected with DVD PLAYER #3
- (2) One HDMI3 Port : Connected with DVD PLAYER #1
- (3) One HDMI4 Port : Connected with DVD PLAYER #2
- (4) One LAN Port : Connected with PC
- (5) One IR Blaster Port : Connected with Terminal
- (6) One DIGITAL Output(Optical) Port : Connected with DVD PLAYER #3
- (7) One PC/ AUDIO IN Port : Connected with PC
- (8) One VGA In Port : Connected with PC

Side Port:

- (9) One component of AV/YPbPr Port : Connected with DVD PLAYER #3
- (10) One HDMI1 Port : Connected with PC
- (11) One Earphone/Audio Out Port : Connected with Earphone
- (12) One ANT/CABLE IN Port : Connected with ATSC SG / TV SG
- (13) Three USB Ports : Connected with U-Disk

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;
 BSMI, 3C, MIC

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 : RT2300
Serial Number : 7668200662248
Data Cable : Shielded, Undetachable, 1.8m
Certificate : CE/EMC, FCC DoC, VCCI, MIC, C-Tick,
BSMI

2.2.4 Mouse

Manufacturer : Microsoft
Model Number : RT2300
Serial Number : 6965712071551
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 : PHILIPS
Model Number : DVP3986K/93
Serial Number : KX1A0902120082
Certificate : FCC DoC, CE/EMC, CCC

2.2.10 DVD PLAYER #3

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

2.2.11 Earphone

Manufacturer : audio-technica
Model Number : ATH-CKL200

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 = 2.77 dB

Radiated Emission Expanded Uncertainty (30-200MHz):
U = 4.17 dB (Horizontal)
U = 4.02 dB (Vertical)

Radiated Emission Expanded Uncertainty (200M-1GHz):
U = 3.38 dB (Horizontal)
U = 3.28 dB (Vertical)

Radiated Emission Expanded Uncertainty (Above 1GHz):
U = 4.68 dB (Horizontal)
U = 4.87 dB (Vertical)

3 CONDUCTED EMISSION TEST

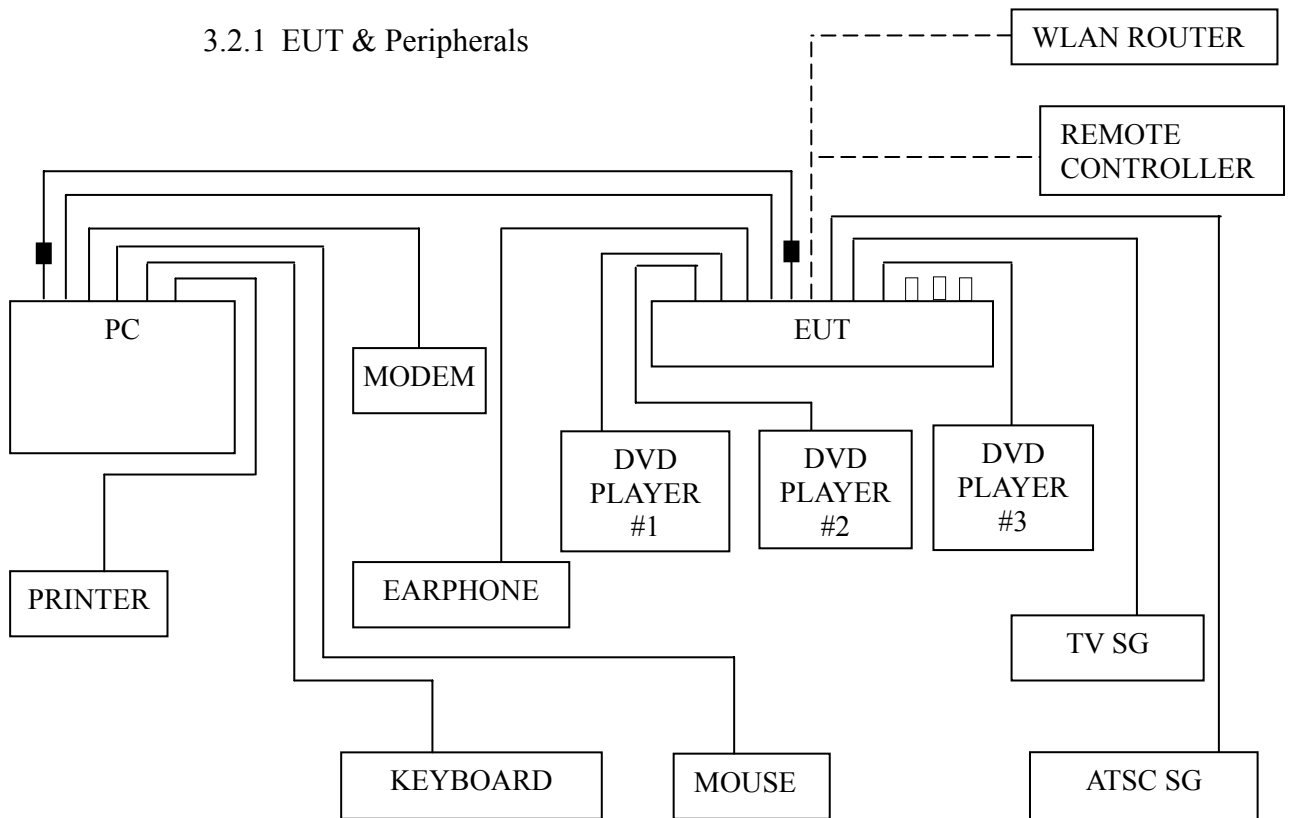
3.1 Test Equipment

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, 2013	Sep 10, 2014
2.	Artificial Mains Network (AMN)	R&S	ENV4200	100125	Jun 27, 2014	Jun 26, 2015
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Mar 20, 2014	Mar 19, 2015
4.	50Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 18, 2014	Sep 17, 2014
5.	50Ω Terminator	Anritsu	BNC	001	Mar 20, 2014	Mar 19, 2015
6.	Software	Audix	E3	6.111206	--	--

3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals

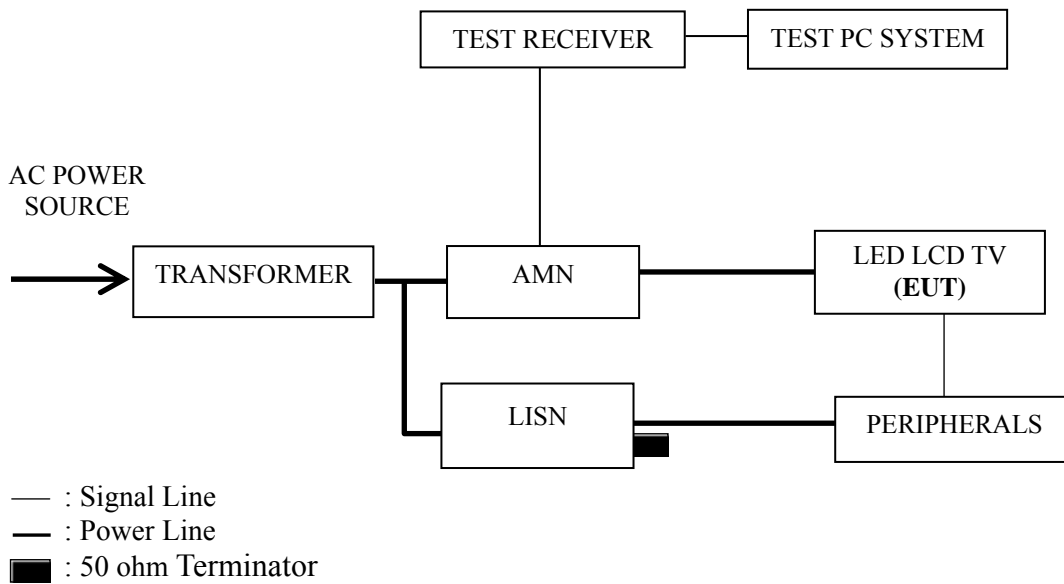


--- : WLAN/BT signal

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

3.5.7 The WLAN function is operating to communicate with WLAN router / the BT function is operating to communicate with the remote controller.

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

3.5.9 The test modes are as follows:

Test Mode
D-Sub 1024*768@60Hz
HDMI 1920*1080@60Hz
D-Sub 800*600@60Hz
D-Sub 640*480@60Hz
USB Play
LAN 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 1920*1080@60Hz	P14
D-Sub 800*600@60Hz	P15
D-Sub 640*480@60Hz	P16
USB Play	P17
LAN Play	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 worst case is for D-Sub 640*480@60Hz test mode. The worst emission is detected at 5.422 MHz (Average Value) with corrected signal level of 42.05 dB (μV) (limit is 50.00 dB (μV)), when the Line of the EUT is connected to AMN.

EUT : LED LCD TV Temperature : 22

Model No. : 55H7EG Humidity : 48%RH

Test Mode : D-Sub 1024*768@60Hz Date of Test : Jul 18, 2014

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark	
Line	0.151	38.10	10.58	48.68	65.95	17.27	QP	
	0.404	30.50	10.43	40.93	57.78	16.85		
	0.606	30.60	10.43	41.03	56.00	14.97		
	1.221	32.40	10.40	42.80	56.00	13.20		
	2.034	31.50	10.44	41.94	56.00	14.06		
	5.557	35.80	10.44	46.24	60.00	13.76		
	0.151	24.00	10.58	34.58	55.95	21.37	AV	
	0.404	22.30	10.43	32.73	47.78	15.05		
	0.606	18.70	10.43	29.13	46.00	16.87		
	1.221	23.70	10.40	34.10	46.00	11.90		
	2.034	22.40	10.44	32.84	46.00	13.16		
	5.557	30.00	10.44	40.44	50.00	9.56		
	Neutral	0.151	42.10	10.58	52.68	65.97	13.29	QP
		0.484	27.61	10.42	38.03	56.27	18.24	
0.673		28.90	10.42	39.32	56.00	16.68		
1.219		32.20	10.41	42.61	56.00	13.39		
2.029		31.30	10.46	41.76	56.00	14.24		
5.556		35.70	10.50	46.20	60.00	13.80		
0.151		23.60	10.58	34.18	55.97	21.79	AV	
0.484		17.11	10.42	27.53	46.27	18.74		
0.673		22.40	10.42	32.82	46.00	13.18		
1.219		23.70	10.41	34.11	46.00	11.89		
2.029		22.00	10.46	32.46	46.00	13.54		
5.556		30.00	10.50	40.50	50.00	9.50		

TEST ENGINEER: ERIC TANG

EUT : LED LCD TV Temperature : 22

Model No. : 55H7EG Humidity : 48%RH

Test Mode : HDMI 1920*1080@60Hz Date of Test : Jul 18, 2014

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark	
Line	0.151	37.60	10.58	48.18	65.96	17.78	QP	
	0.483	27.71	10.43	38.14	56.29	18.15		
	0.612	30.80	10.43	41.23	56.00	14.77		
	1.216	31.60	10.40	42.00	56.00	14.00		
	2.009	30.90	10.44	41.34	56.00	14.66		
	5.558	36.60	10.44	47.04	60.00	12.96		
	0.151	23.50	10.58	34.08	55.96	21.88	AV	
	0.483	17.41	10.43	27.84	46.29	18.45		
	0.612	19.50	10.43	29.93	46.00	16.07		
	1.216	23.50	10.40	33.90	46.00	12.10		
	2.009	22.00	10.44	32.44	46.00	13.56		
	5.558	29.50	10.44	39.94	50.00	10.06		
	Neutral	0.151	42.00	10.58	52.58	65.96	13.38	QP
		0.322	26.19	10.48	36.67	59.64	22.97	
0.606		30.10	10.42	40.52	56.00	15.48		
1.201		30.80	10.41	41.21	56.00	14.79		
2.304		29.71	10.46	40.17	56.00	15.83		
5.557		34.50	10.50	45.00	60.00	15.00		
0.151		23.40	10.58	33.98	55.96	21.98	AV	
0.322		14.39	10.48	24.87	49.64	24.77		
0.606		17.60	10.42	28.02	46.00	17.98		
1.201		22.30	10.41	32.71	46.00	13.29		
2.304		19.31	10.46	29.77	46.00	16.23		
5.557		29.50	10.50	40.00	50.00	10.00		

TEST ENGINEER: ERIC TANG

EUT : LED LCD TV Temperature : 22

Model No. : 55H7EG Humidity : 48%RH

Test Mode : D-Sub 800*600@60Hz Date of Test : Jul 18, 2014

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.150	38.10	10.58	48.68	66.00	17.32	QP
	0.323	31.30	10.48	41.78	59.63	17.85	
	0.489	29.20	10.44	39.64	56.19	16.55	
	1.209	32.40	10.40	42.80	56.00	13.20	
	2.852	29.69	10.45	40.14	56.00	15.86	
	5.340	36.59	10.46	47.05	60.00	12.95	
	AV	0.150	24.00	10.58	34.58	56.00	21.42
		0.323	19.20	10.48	29.68	49.63	19.95
		0.489	19.00	10.44	29.44	46.19	16.75
		1.209	23.30	10.40	33.70	46.00	12.30
2.852		20.19	10.45	30.64	46.00	15.36	
5.340		30.69	10.46	41.15	50.00	8.85	
Neutral	0.152	41.40	10.58	51.98	65.91	13.93	QP
	0.403	27.50	10.42	37.92	57.80	19.88	
	0.536	27.70	10.43	38.13	56.00	17.87	
	1.217	32.50	10.41	42.91	56.00	13.09	
	2.008	31.10	10.46	41.56	56.00	14.44	
	5.339	36.40	10.52	46.92	60.00	13.08	
	AV	0.152	22.90	10.58	33.48	55.91	22.43
		0.403	20.60	10.42	31.02	47.80	16.78
		0.536	14.40	10.43	24.83	46.00	21.17
		1.217	23.90	10.41	34.31	46.00	11.69
2.008		21.70	10.46	32.16	46.00	13.84	
	5.339	30.30	10.52	40.82	50.00	9.18	

TEST ENGINEER: ERIC TANG

EUT : LED LCD TV Temperature : 22

Model No. : 55H7EG Humidity : 48%RH

Test Mode : D-Sub 640*480@60Hz Date of Test : Jul 18, 2014

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.151	37.80	10.58	48.38	65.97	17.59	QP
	0.402	30.30	10.43	40.73	57.81	17.08	
	0.614	31.30	10.43	41.73	56.00	14.27	
	1.219	32.40	10.40	42.80	56.00	13.20	
	2.836	28.59	10.45	39.04	56.00	16.96	
	5.422	37.90	10.45	48.35	60.00	11.65	
	0.151	23.90	10.58	34.48	55.97	21.49	AV
	0.402	22.00	10.43	32.43	47.81	15.38	
	0.614	20.70	10.43	31.13	46.00	14.87	
	1.219	24.10	10.40	34.50	46.00	11.50	
	2.836	18.09	10.45	28.54	46.00	17.46	
	5.422	31.60	10.45	42.05	50.00	7.95	
Neutral	0.150	42.20	10.58	52.78	66.00	13.22	QP
	0.482	26.20	10.43	36.63	56.30	19.67	
	1.222	32.50	10.41	42.91	56.00	13.09	
	2.004	30.60	10.46	41.06	56.00	14.94	
	3.603	28.60	10.49	39.09	56.00	16.91	
	5.368	35.11	10.51	45.62	60.00	14.38	
	0.150	23.80	10.58	34.38	56.00	21.62	AV
	0.482	15.10	10.43	25.53	46.30	20.77	
	1.222	24.20	10.41	34.61	46.00	11.39	
	2.004	20.70	10.46	31.16	46.00	14.84	
	3.603	18.70	10.49	29.19	46.00	16.81	
	5.368	29.61	10.51	40.12	50.00	9.88	

TEST ENGINEER: ERIC TANG

EUT : LED LCD TV Temperature : 22

Model No. : 55H7EG Humidity : 48%RH

Test Mode : USB Play Date of Test : Jul 18, 2014

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.150	37.90	10.58	48.48	65.98	17.50	QP
	0.406	29.90	10.43	40.33	57.73	17.40	
	0.574	27.70	10.44	38.14	56.00	17.86	
	1.222	32.30	10.40	42.70	56.00	13.30	
	2.041	31.90	10.44	42.34	56.00	13.66	
	5.368	35.70	10.45	46.15	60.00	13.85	
	0.150	23.80	10.58	34.38	55.98	21.60	AV
	0.406	22.50	10.43	32.93	47.73	14.80	
	0.574	15.20	10.44	25.64	46.00	20.36	
	1.222	24.40	10.40	34.80	46.00	11.20	
2.041	22.40	10.44	32.84	46.00	13.16		
5.368	30.20	10.45	40.65	50.00	9.35		
Neutral	0.152	35.90	10.58	46.48	65.91	19.43	QP
	0.375	31.91	10.43	42.34	58.39	16.05	
	0.934	31.80	10.41	42.21	56.00	13.79	
	1.984	30.60	10.46	41.06	56.00	14.94	
	4.361	28.19	10.52	38.71	56.00	17.29	
	6.482	28.09	10.51	38.60	60.00	21.40	
	0.152	17.40	10.58	27.98	55.91	27.93	AV
	0.375	21.81	10.43	32.24	48.39	16.15	
	0.934	21.90	10.41	32.31	46.00	13.69	
	1.984	20.80	10.46	31.26	46.00	14.74	
4.361	19.49	10.52	30.01	46.00	15.99		
6.482	22.49	10.51	33.00	50.00	17.00		

TEST ENGINEER: ERIC TANG

EUT : LED LCD TV Temperature : 22

Model No. : 55H7EG Humidity : 48%RH

Test Mode : LAN Play Date of Test : Jul 18, 2014

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.158	41.10	10.57	51.67	65.59	13.92	QP
	0.476	26.20	10.44	36.64	56.41	19.77	
	1.204	31.10	10.40	41.50	56.00	14.50	
	2.809	28.19	10.45	38.64	56.00	17.36	
	6.488	27.10	10.43	37.53	60.00	22.47	
	15.718	24.11	10.54	34.65	60.00	25.35	
	0.158	26.20	10.57	36.77	55.59	18.82	AV
	0.476	16.60	10.44	27.04	46.41	19.37	
	1.204	21.90	10.40	32.30	46.00	13.70	
	2.809	18.39	10.45	28.84	46.00	17.16	
	6.488	21.40	10.43	31.83	50.00	18.17	
	15.718	18.71	10.54	29.25	50.00	20.75	
Neutral	0.157	36.80	10.57	47.37	65.63	18.26	QP
	0.376	31.81	10.43	42.24	58.37	16.13	
	0.934	31.90	10.41	42.31	56.00	13.69	
	2.010	30.40	10.46	40.86	56.00	15.14	
	5.993	29.10	10.48	39.58	60.00	20.42	
	15.180	23.10	10.66	33.76	60.00	26.24	
	0.157	24.40	10.57	34.97	55.63	20.66	AV
	0.376	21.91	10.43	32.34	48.37	16.03	
	0.934	22.10	10.41	32.51	46.00	13.49	
	2.010	20.20	10.46	30.66	46.00	15.34	
	5.993	23.20	10.48	33.68	50.00	16.32	
	15.180	17.80	10.66	28.46	50.00	21.54	

TEST ENGINEER: ERIC TANG

4 RADIATED EMISSION TEST

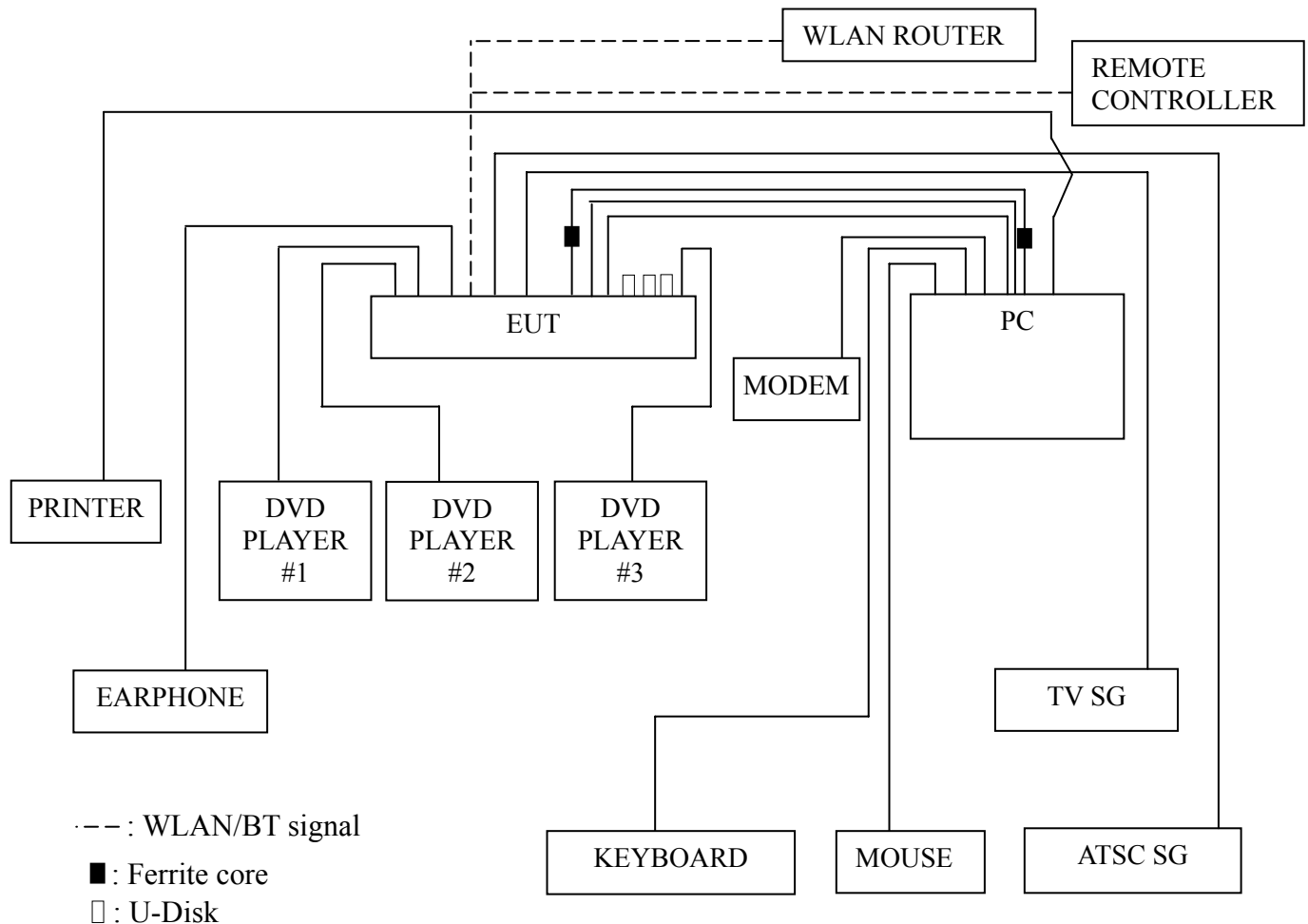
4.1 Test Equipment

The following test equipments are used during the radiated emission test in a semi-anechoic chamber:

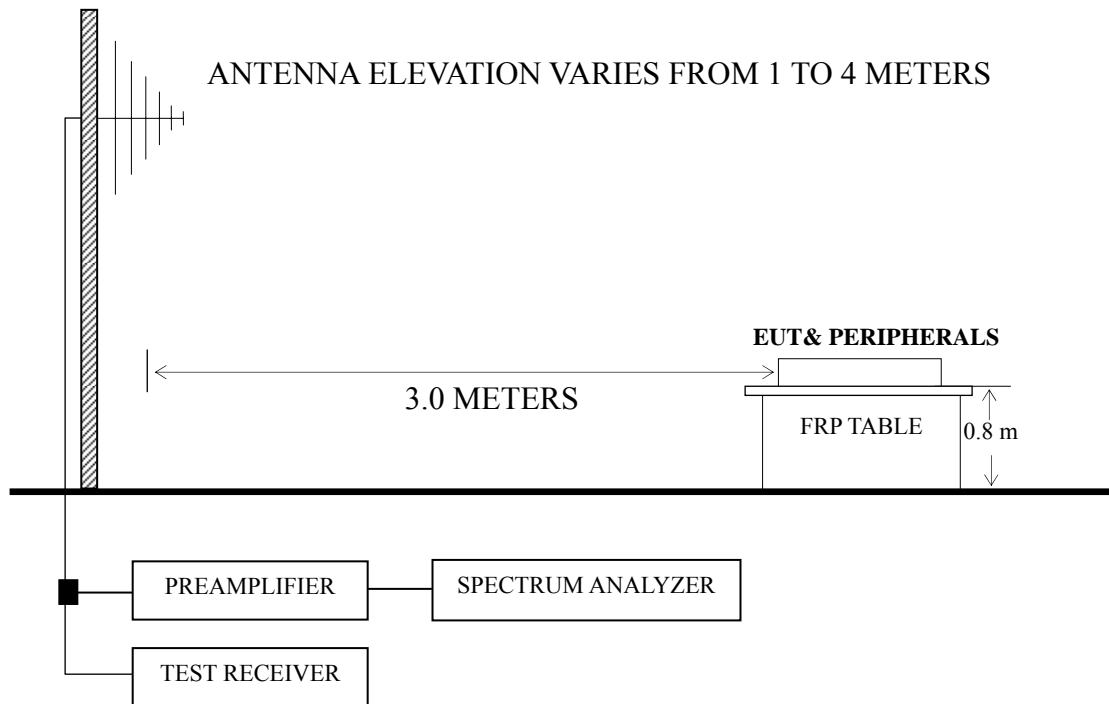
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	101302	Sep 03, 2013	Sep 02, 2014
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 18, 2014	Sep 17, 2014
3.	Preamplifier	HP	8449B	3008A00864	Mar 20, 2014	Mar 19, 2015
4.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 03, 2014	May 02, 2015
5.	Horn Antenna	EMCO	3115	9607-4878	May 11, 2014	May 10, 2015
6.	Spectrum	Agilent	E7405A	MY45106600	Nov 11, 2013	Nov 10, 2014
7.	50 Coaxial Switch	Anritsu	MP59B	6200426390	Mar 18, 2014	Sep 17, 2014
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



■ : 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 frequency range from 1 GHz to 24 GHz (10th harmonic of the 2.4GHz RF function) was checked for the worst emission 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
D-Sub 1024*768@60Hz	P23 – P24
HDMI 1920*1080@60Hz	P25
D-Sub 800*600@60Hz	P26
D-Sub 640*480@60Hz	P27
USB Play	P28
LAN Play	P29

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 USB Play test mode. The worst emission at horizontal polarization was detected at 74.620 MHz with corrected signal level of 31.67 dB ($\mu\text{V}/\text{m}$) (limit is 40.00 dB ($\mu\text{V}/\text{m}$)), when the antenna was 3.20 m height and the turntable was at 125°. The worst emission at vertical polarization was detected at 73.650 MHz with corrected signal level of 36.74 dB ($\mu\text{V}/\text{m}$) (limit is 40.00 dB ($\mu\text{V}/\text{m}$)), when the antenna was 1.00 m height and the turntable was at 253°.

EUT : LED LCD TV Temperature : 22

Model No. : 55H7EG Humidity : 60%RH

Test Mode : D-Sub 1024*768@60Hz Date of Test : Jul 24, 2014

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	30.970	10.63	18.10	0.64	--	29.37	40.00	10.63	QP
	72.680	25.24	6.65	0.95	--	32.84	40.00	7.16	
	87.230	25.48	8.01	1.12	--	34.61	40.00	5.39	
	120.210	18.44	12.04	1.36	--	31.84	43.50	11.66	
	159.010	19.84	9.27	1.58	--	30.69	43.50	12.81	
	263.770	16.60	12.18	2.25	--	31.03	46.00	14.97	
	1099.000	50.54	24.09	4.99	37.98	41.64	74.00	32.36	PK
	1227.000	49.51	24.67	5.20	37.67	41.71	74.00	32.29	
	1267.000	48.26	24.85	5.30	37.56	40.85	74.00	33.15	
	1377.000	46.52	25.27	5.55	37.26	40.08	74.00	33.92	
	1487.000	47.10	25.57	5.63	36.94	41.36	74.00	32.64	
	1557.000	48.74	26.20	5.65	36.77	43.82	74.00	30.18	
	1099.000	37.50	24.09	4.99	37.98	28.60	54.00	25.40	AV
	1227.000	37.96	24.67	5.20	37.67	30.16	54.00	23.84	
	1267.000	38.24	24.85	5.30	37.56	30.83	54.00	23.17	
	1377.000	38.68	25.27	5.55	37.26	32.24	54.00	21.76	
	1487.000	39.12	25.57	5.63	36.94	33.38	54.00	20.62	
	1557.000	36.99	26.20	5.65	36.77	32.07	54.00	21.93	

TEST ENGINEER: NEAL WANG

EUT : LED LCD TV Temperature : 22

Model No. : 55H7EG Humidity : 60%RH

Test Mode : D-Sub 1024*768@60Hz Date of Test : Jul 24, 2014

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	32.910	12.79	16.55	0.67	--	30.01	40.00	9.99	QP
	41.640	16.95	11.82	0.77	--	29.54	40.00	10.46	
	61.040	18.44	5.14	0.89	--	24.47	40.00	15.53	
	78.500	24.82	7.07	1.01	--	32.90	40.00	7.10	
	109.540	15.02	12.08	1.29	--	28.39	43.50	15.11	
	140.580	21.84	10.65	1.48	--	33.97	43.50	9.53	
	1057.000	47.34	23.91	4.96	38.07	38.14	74.00	35.86	PK
	1124.000	47.25	24.18	5.03	37.92	38.54	74.00	35.46	
	1252.000	48.01	24.79	5.25	37.61	40.44	74.00	33.56	
	1419.000	45.87	25.39	5.60	37.14	39.72	74.00	34.28	
	1532.000	46.14	25.96	5.64	36.83	40.91	74.00	33.09	
	1647.000	48.26	27.25	5.81	36.59	44.73	74.00	29.27	
	1057.000	38.60	23.91	4.96	38.07	29.40	54.00	24.60	AV
	1124.000	38.90	24.18	5.03	37.92	30.19	54.00	23.81	
	1252.000	39.30	24.79	5.25	37.61	31.73	54.00	22.27	
	1419.000	39.60	25.39	5.60	37.14	33.45	54.00	20.55	
	1532.000	38.11	25.96	5.64	36.83	32.88	54.00	21.12	
	1647.000	37.71	27.25	5.81	36.59	34.18	54.00	19.82	

TEST ENGINEER: NEAL WANG

EUT : LED LCD TV Temperature : 22

Model No. : 55H7EG Humidity : 60%RH

Test Mode : HDMI 1920*1080@60Hz Date of Test : Jul 24, 2014

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	76.560	24.23	7.03	1.00	32.26	40.00	7.74
	131.850	20.27	11.66	1.43	33.36	43.50	10.14
	148.340	19.74	10.53	1.51	31.78	43.50	11.72
	202.660	24.90	8.55	1.83	35.28	43.50	8.22
	262.800	20.30	12.27	2.25	34.82	46.00	11.18
	374.350	18.25	14.91	2.64	35.80	46.00	10.20
Vertical	30.000	13.68	19.10	0.63	33.41	40.00	6.59
	37.760	18.50	13.92	0.73	33.15	40.00	6.85
	73.650	25.97	6.80	0.97	33.74	40.00	6.26
	125.060	22.05	12.40	1.39	35.84	43.50	7.66
	148.340	23.36	10.53	1.51	35.40	43.50	8.10
	202.660	24.62	8.55	1.83	35.00	43.50	8.50

TEST ENGINEER: NEAL WANG

EUT : LED LCD TV Temperature : 22

Model No. : 55H7EG Humidity : 60%RH

Test Mode : D-Sub 800*600@60Hz Date of Test : Jul 24, 2014

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	59.100	10.88	5.25	0.88	17.01	40.00	22.99
	73.650	23.49	6.80	0.97	31.26	40.00	8.74
	86.260	20.79	7.91	1.10	29.80	40.00	10.20
	121.180	16.60	12.08	1.36	30.04	43.50	13.46
	172.590	19.16	8.05	1.66	28.87	43.50	14.63
	230.790	21.06	9.55	2.03	32.64	46.00	13.36
Vertical	32.910	16.13	16.55	0.67	33.35	40.00	6.65
	39.700	20.97	12.16	0.75	33.88	40.00	6.12
	77.530	26.62	7.05	1.01	34.68	40.00	5.32
	118.270	23.79	11.97	1.35	37.11	43.50	6.39
	155.130	22.33	9.50	1.55	33.38	43.50	10.12
	292.870	15.76	12.98	2.44	31.18	46.00	14.82

TEST ENGINEER: NEAL WANG

EUT : LED LCD TV Temperature : 22

Model No. : 55H7EG Humidity : 60%RH

Test Mode : D-Sub 640*480@60Hz Date of Test : Jul 24, 2014

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	127.000	22.79	12.25	1.41	36.45	43.50	7.05
	170.650	21.32	8.23	1.65	31.20	43.50	12.30
	195.870	24.52	8.25	1.78	34.55	43.50	8.95
	243.400	21.26	10.35	2.10	33.71	46.00	12.29
	373.380	11.44	14.98	2.64	29.06	46.00	16.94
	650.800	14.91	19.40	3.37	37.68	46.00	8.32
Vertical	45.520	16.05	8.97	0.81	25.83	40.00	14.17
	89.170	16.54	8.19	1.13	25.86	43.50	17.64
	137.670	20.63	10.82	1.46	32.91	43.50	10.59
	208.480	22.37	8.43	1.87	32.67	43.50	10.83
	312.270	14.19	13.35	2.53	30.07	46.00	15.93
	402.480	15.65	15.70	2.69	34.04	46.00	11.96

TEST ENGINEER: NEAL WANG

EUT : LED LCD TV Temperature : 22

Model No. : 55H7EG Humidity : 60%RH

Test Mode : USB Play Date of Test : Jul 24, 2014

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	30.000	6.77	19.10	0.63	26.50	40.00	13.50
	74.620	23.74	6.95	0.98	31.67	40.00	8.33
	131.850	20.27	11.66	1.43	33.36	43.50	10.14
	182.290	21.60	8.05	1.71	31.36	43.50	12.14
	253.100	20.15	12.00	2.17	34.32	46.00	11.68
Vertical	418.000	16.22	17.15	2.73	36.10	46.00	9.90
	31.940	15.99	17.10	0.65	33.74	40.00	6.26
	38.730	20.37	13.01	0.74	34.12	40.00	5.88
	73.650	28.97	6.80	0.97	36.74	40.00	3.26
	109.540	17.82	12.08	1.29	31.19	43.50	12.31
	148.340	23.36	10.53	1.51	35.40	43.50	8.10
	212.360	24.77	8.35	1.89	35.01	43.50	8.49

TEST ENGINEER: NEAL WANG

EUT : LED LCD TV Temperature : 22

Model No. : 55H7EG Humidity : 60%RH

Test Mode : LAN Play Date of Test : Jul 24, 2014

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	73.650	27.11	6.80	0.97	34.88	40.00	5.12
	88.200	24.76	8.12	1.12	34.00	43.50	9.50
	186.170	24.27	8.03	1.74	34.04	43.50	9.46
	243.400	21.26	10.35	2.10	33.71	46.00	12.29
	403.450	17.75	15.90	2.69	36.34	46.00	9.66
	522.760	10.62	17.77	2.97	31.36	46.00	14.64
Vertical	33.880	12.66	16.07	0.68	29.41	40.00	10.59
	41.640	16.95	11.82	0.77	29.54	40.00	10.46
	81.410	19.97	7.30	1.05	28.32	40.00	11.68
	122.150	18.71	12.16	1.38	32.25	43.50	11.25
	293.840	17.53	12.98	2.44	32.95	46.00	13.05
	650.800	13.79	19.40	3.37	36.56	46.00	9.44

TEST ENGINEER: NEAL WANG


5 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Manufacturer	Location
FFC	FFC-60-85	Dachang Electronic Technology Co., Ltd	See Internal Photo Appendix Figure 23

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:



(NEAL WANG)

6 DEVIATION TO TEST SPECIFICATIONS

None.