

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

LED LCD TV

Model No.	Brand
55H9B	Hisense
55H9B1	
55H9B2	

FCC ID : W9HLCDF0060

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

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Report No. : ACI-F15121
Date of Test : Jun 23 – Jul 02, 2015
Date of Report : Jul 08, 2015

TABLE OF CONTENTS

	Page
1 SUMMARY OF STANDARDS AND RESULTS	4
1.1 Description of Standards and Results.....	4
2 GENERAL INFORMATION	5
2.1 Description of Equipment Under Test.....	5
2.2 Peripherals.....	6
2.3 Description of Test Facility.....	8
2.4 Measurement Uncertainty.....	9
3 CONDUCTED EMISSION TEST	10
3.1 Test Equipment.....	10
3.2 Block Diagram of Test Setup.....	10
3.3 Conducted Emission Limit [FCC Part 15 Subpart B 15.107(a)].....	11
3.4 Test Configuration.....	11
3.5 Operating Condition of EUT.....	12
3.6 Test Procedures.....	12
3.7 Test Results.....	13
4 RADIATED EMISSION TEST	20
4.1 Test Equipment.....	20
4.2 Block Diagram of Test Setup.....	20
4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)].....	22
4.4 Test Configuration.....	22
4.5 Operating Condition of EUT.....	22
4.6 Test Procedures.....	22
4.7 Test Results.....	23
5 DEVIATION TO TEST SPECIFICATIONS	31

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 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 Jun 23 – Jul 02, 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 Nso.F15122, a Verification report.

Date of Test : Jun 23 – Jul 02, 2015 Date of Report : Jun 08, 2015

Producer : 
 KATHY WANG / Assistant

Review : 
 SAMMY CHEN / Manager

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

Signatory : 
 Authorized Signature EMC BYRON KWO / Assistant General 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 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	:	<input checked="" type="checkbox"/> Production <input type="checkbox"/> Pre-product <input type="checkbox"/> Pro-type
Model No.	:	55H9B, 55H9B1, 55H9B2
Note	:	The EUT has two appearances. The above models are all the same except for model name. 55H9B model was 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 : HD550FU-B51(100)\S2\ROH
Max Resolution	:	3840*2160@60Hz
HDMI Cable*4 (Lab provide)	:	Shielded, Detachable, 1.00m, with two cores
Power Cord	:	Unshielded, Detachable, 1.80m
LAN Cable (Lab provide)	:	Unshielded, Detachable, 1.50m
USB Cable (Lab provide)	:	Shielded, Detachable, 1.50m
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 USB3 Port : Connected with U-Disk #1
- (2) One HDMI2/ARC Port : Connected with DVD PLAYER #2
- (3) One HDMI1/MHL Port : Connected with Smart Mobile Phone
- (4) One Audio out Port : Connected with Earphone
- (5) One Service Port : Do not open to customer
- (6) One USB1 Port : Connected with U-Disk #2
- (7) One USB2 Port : Connected with U-Disk #3
- (8) One ANT/CABLE IN Port : Connected with Antenna or ATSC SG / TV SG

Back Port:

- (1) One LAN Port : Connected with PC
- (2) One HDMI3(2.0) Port : Connected with DVD PLAYER #1
- (3) One HDMI4(2.0) Port : Connected with PC
- (4) One Digital Audio Out Port : Connected with DVD PLAYER #1
- (5) One component of YPbPr Port : Connected with DVD PLAYER #2
- (6) One AV Port : Connected with DVD PLAYER #1

2.2 Peripherals**2.2.1 PC**

Manufacturer : HP
 Model Number : dx7200MT
 Serial Number : CNG622017W
 Power Cord : Unshielded, Detachable, 1.8m
 Certificate : FCC DoC; CE/EMC; VCCI; C-Tick;
 BSMI, 3C, MIC

2.2.2 Printer

Manufacturer : HP
Model Number : P1007
Serial Number : VNFN713831
Data Cable : Shielded, detachable, 1.8m
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 Earphone

Manufacturer : audio-technica
Model Number : ATH-CKL200

2.2.7 TV Signal Generator

Manufacturer : FLUKE
Model Number : 54200m01
Serial Number : 814008
Data Cable : Shielded, detachable, 2.0m
Power Cord : Unshielded, detachable, 2.0m
Certificate : CE/EMC, FCC DoC, CCC

2.2.8 ATSC Signal Generator

Manufacturer : SENCORE
Model Number : ATSC997
Serial Number : 6790071

2.2.9 DVD PLAYER #1

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

2.2.10 DVD PLAYER #2

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

2.2.11 U-Disk #1

Manufacturer : Kingmax
Model Number : 8G
Certificate : CE/EMC, FCC DoC, IC

2.2.12 U-Disk #2

Manufacturer : Kingmax
Model Number : 8G
Certificate : CE/EMC, FCC DoC, IC

2.2.13 U-Disk #3

Manufacturer : Transcend
Model Number : 8G
Certificate : CE/EMC, FCC DoC, IC

2.2.14 Smart Mobile Phone

Manufacturer : SAMSUNG
Model Number : GT-I9100G
Serial Number : RV1C2250B7J
Certificate : CE/EMC, CCC

2.3 Description of Test Facility

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

NVLAP Lab Code : 200371-0

2.4 Measurement Uncertainty

Conducted Emission Expanded Uncertainty :	U = 2.8dB
Radiated Emission Expanded Uncertainty (30-200MHz):	U = 4.4dB (Horizontal)
	U = 4.4dB (Vertical)
Radiated Emission Expanded Uncertainty (200M-1GHz):	U = 4.4dB (Horizontal)
	U = 5.5dB (Vertical)
Radiated Emission Expanded Uncertainty (1GHz-6GHz):	U = 5.1dB

3 CONDUCTED EMISSION TEST

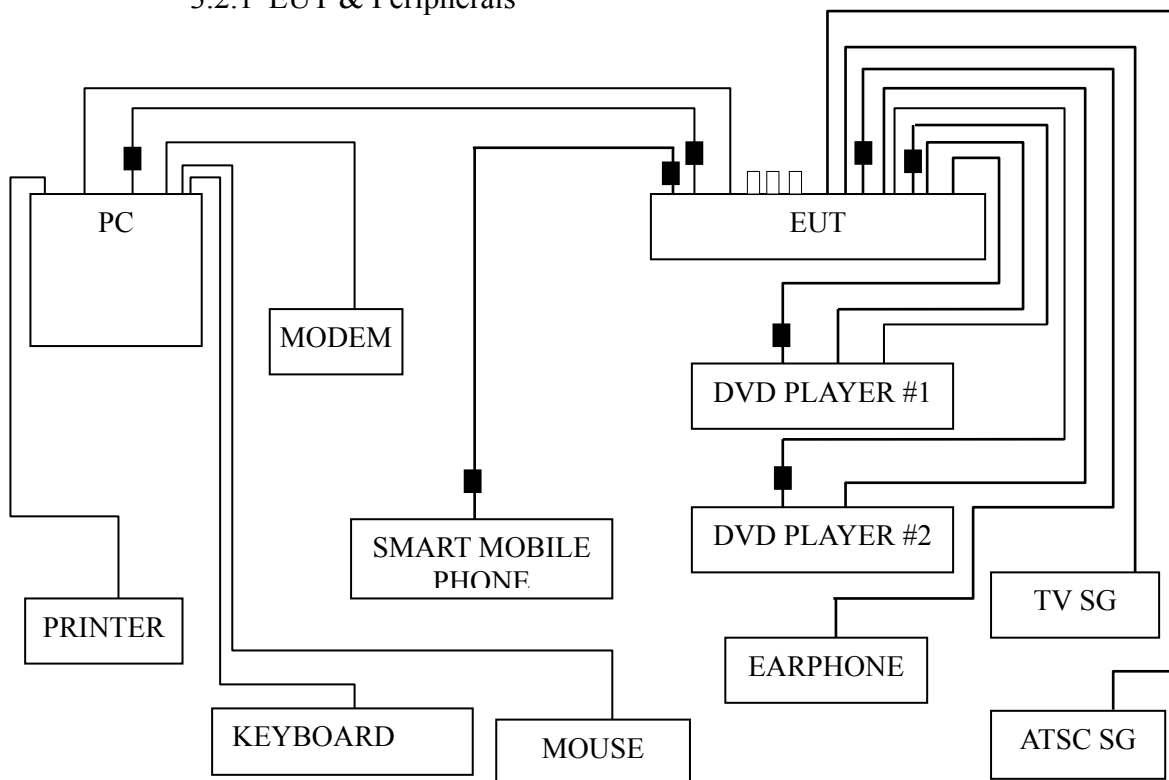
3.1 Test Equipment

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

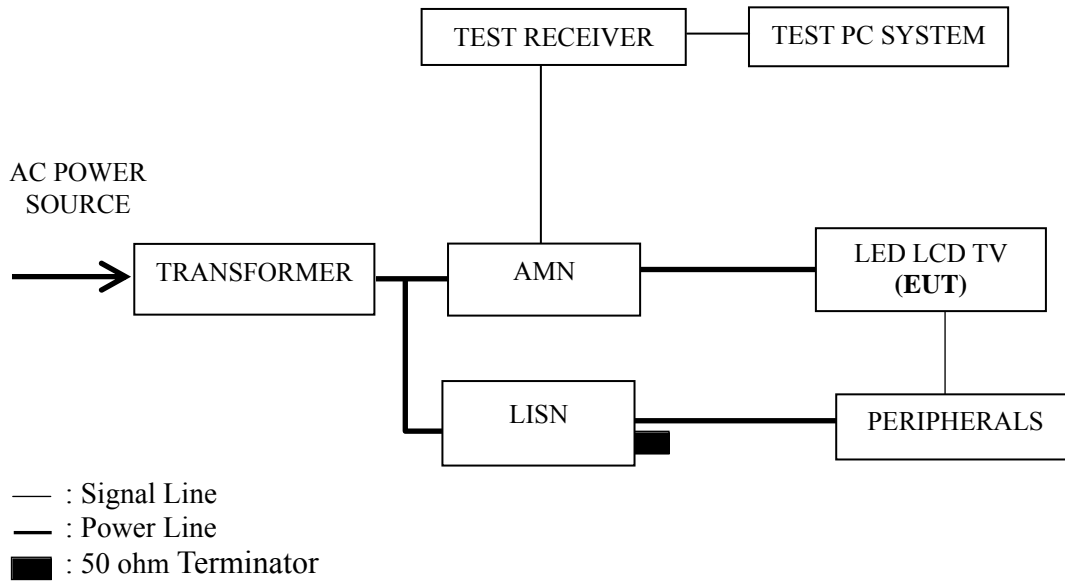
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	101303	Jul 01, 2015	Jun 30, 2016
2.	Artificial Mains Network (AMN)	R&S	ENV4200	100125	Jun 27, 2015	Jun 26, 2016
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Mar 20, 2015	Mar 19, 2016
4.	50Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 18, 2015	Sep 17, 2015
5.	50Ω Terminator	Anritsu	BNC	001	Mar 20, 2015	Mar 19, 2016
6.	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 (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 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 U-Disk.
- 3.5.7 In LAN Play mode, set the EUT play digital media through LAN port.
- 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
HDMI 3840*2160@60Hz & 1kHz playing
HDMI 1920*1080@60Hz & 1kHz playing
HDMI 1280*1024@60Hz & 1kHz playing
HDMI 640*480@60Hz & 1kHz playing
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
HDMI 3840*2160@60Hz & 1kHz playing	P14
HDMI 1920*1080@60Hz & 1kHz playing	P15
HDMI 1280*1024@60Hz & 1kHz playing	P16
HDMI 640*480@60Hz & 1kHz playing	P17
USB Play	P18
LAN Play	P19

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 USB Play test mode. The worst emission is detected at 0.585 MHz (QP Value) with corrected signal level of 49.20 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. : 55H9B Humidity : 48%RH

Test Mode : HDMI 3840*2160@60Hz Date of Test : Jul 02, 2015
& 1kHz Playing

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.269	33.10	10.48	43.58	61.15	17.57	QP
	0.472	33.20	10.41	43.61	56.48	12.87	
	0.588	36.00	10.40	46.40	56.00	9.60	
	1.048	33.10	10.39	43.49	56.00	12.51	
	4.819	34.80	10.45	45.25	56.00	10.75	
	7.174	33.60	10.47	44.07	60.00	15.93	
	AV	0.269	24.80	10.48	35.28	51.15	15.87
		0.472	22.80	10.41	33.21	46.48	13.27
		0.588	25.10	10.40	35.50	46.00	10.50
		1.048	23.80	10.39	34.19	46.00	11.81
		4.819	26.10	10.45	36.55	46.00	9.45
		7.174	28.10	10.47	38.57	50.00	11.43
Neutral	0.477	33.60	10.40	44.00	56.39	12.39	QP
	0.587	36.00	10.39	46.39	56.00	9.61	
	1.150	33.51	10.40	43.91	56.00	12.09	
	2.444	32.80	10.45	43.25	56.00	12.75	
	4.634	35.99	10.51	46.50	56.00	9.50	
	6.132	34.50	10.53	45.03	60.00	14.97	
	AV	0.477	22.70	10.40	33.10	46.39	13.29
		0.587	23.40	10.39	33.79	46.00	12.21
		1.150	23.81	10.40	34.21	46.00	11.79
		2.444	23.60	10.45	34.05	46.00	11.95
		4.634	26.89	10.51	37.40	46.00	8.60
		6.132	27.40	10.53	37.93	50.00	12.07

TEST ENGINEER: WENCY YANG

EUT : LED LCD TV Temperature : 22

Model No. : 55H9B Humidity : 48%RH

Test Mode : HDMI 1920*1080@60Hz Date of Test : Jul 02, 2015
& 1kHz Playing

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.266	32.79	10.49	43.28	61.25	17.97	QP
	0.588	37.80	10.40	48.20	56.00	7.80	
	1.956	32.70	10.41	43.11	56.00	12.89	
	4.874	34.40	10.45	44.85	56.00	11.15	
	7.248	35.30	10.47	45.77	60.00	14.23	
	20.250	33.40	10.62	44.02	60.00	15.98	
	AV	0.266	23.89	10.49	34.38	51.25	16.87
		0.588	26.30	10.40	36.70	46.00	9.30
		1.956	24.40	10.41	34.81	46.00	11.19
		4.874	24.60	10.45	35.05	46.00	10.95
		7.248	27.00	10.47	37.47	50.00	12.53
		20.250	23.20	10.62	33.82	50.00	16.18
Neutral	0.268	32.90	10.47	43.37	61.18	17.81	QP
	0.446	34.49	10.41	44.90	56.95	12.05	
	0.587	37.60	10.39	47.99	56.00	8.01	
	1.841	32.50	10.43	42.93	56.00	13.07	
	4.696	33.59	10.51	44.10	56.00	11.90	
	7.237	33.50	10.55	44.05	60.00	15.95	
	AV	0.268	23.70	10.47	34.17	51.18	17.01
		0.446	23.29	10.41	33.70	46.95	13.25
		0.587	25.30	10.39	35.69	46.00	10.31
		1.841	23.10	10.43	33.53	46.00	12.47
		4.696	27.39	10.51	37.90	46.00	8.10
		7.237	26.60	10.55	37.15	50.00	12.85

TEST ENGINEER: WENCY YANG

EUT : LED LCD TV Temperature : 22

Model No. : 55H9B Humidity : 48%RH

Test Mode : HDMI 1280*1024@60Hz & 1kHz Playing Date of Test : Jul 02, 2015

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.269	33.30	10.48	43.78	61.15	17.37	QP
	0.460	34.00	10.41	44.41	56.69	12.28	
	0.587	38.20	10.40	48.60	56.00	7.40	
	1.827	34.40	10.41	44.81	56.00	11.19	
	4.743	34.60	10.45	45.05	56.00	10.95	
	7.783	33.80	10.47	44.27	60.00	15.73	AV
	0.269	23.40	10.48	33.88	51.15	17.27	
	0.460	23.20	10.41	33.61	46.69	13.08	
	0.587	26.60	10.40	37.00	46.00	9.00	
	1.827	25.00	10.41	35.41	46.00	10.59	
4.743	26.70	10.45	37.15	46.00	8.85	QP	
7.783	24.50	10.47	34.97	50.00	15.03		
0.293	31.90	10.46	42.36	60.44	18.08		
0.441	34.90	10.41	45.31	57.05	11.74		
0.588	38.30	10.39	48.69	56.00	7.31		
1.269	32.50	10.41	42.91	56.00	13.09	AV	
4.732	36.89	10.51	47.40	56.00	8.60		
7.101	35.29	10.55	45.84	60.00	14.16		
0.293	21.20	10.46	31.66	50.44	18.78		
0.441	23.50	10.41	33.91	47.05	13.14		
0.588	25.90	10.39	36.29	46.00	9.71	AV	
1.269	20.90	10.41	31.31	46.00	14.69		
4.732	27.09	10.51	37.60	46.00	8.40		
7.101	28.10	10.55	38.65	50.00	11.35		

TEST ENGINEER: WENCY YANG

EUT : LED LCD TV Temperature : 22

Model No. : 55H9B Humidity : 48%RH

Test Mode : HDMI 640*480@60Hz & 1kHz Playing Date of Test : Jul 02, 2015

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark	
Line	0.443	35.30	10.42	45.72	57.01	11.29	QP	
	0.588	38.60	10.40	49.00	56.00	7.00		
	1.822	34.70	10.41	45.11	56.00	10.89		
	4.655	35.50	10.45	45.95	56.00	10.05		
	7.103	35.20	10.47	45.67	60.00	14.33		
	19.990	34.70	10.61	45.31	60.00	14.69		
	0.443	24.20	10.42	34.62	47.01	12.39	AV	
	0.588	26.70	10.40	37.10	46.00	8.90		
	1.822	26.30	10.41	36.71	46.00	9.29		
	4.655	27.80	10.45	38.25	46.00	7.75		
	7.103	28.29	10.47	38.76	50.00	11.24		
	19.990	24.10	10.61	34.71	50.00	15.29		
	Neutral	0.267	33.49	10.48	43.97	61.20	17.23	QP
		0.587	38.50	10.39	48.89	56.00	7.11	
1.866		33.70	10.43	44.13	56.00	11.87		
4.590		34.59	10.51	45.10	56.00	10.90		
6.012		35.50	10.53	46.03	60.00	13.97		
19.660		35.10	10.72	45.82	60.00	14.18		
0.267		23.69	10.48	34.17	51.20	17.03	AV	
0.587		25.90	10.39	36.29	46.00	9.71		
1.866		23.90	10.43	34.33	46.00	11.67		
4.590		27.39	10.51	37.90	46.00	8.10		
6.012		26.60	10.53	37.13	50.00	12.87		
19.660		23.90	10.72	34.62	50.00	15.38		

TEST ENGINEER: WENCY YANG

EUT : LED LCD TV Temperature : 22

Model No. : 55H9B Humidity : 48%RH

Test Mode : USB Play Date of Test : Jul 02, 2015

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.453	34.90	10.41	45.31	56.82	11.51	QP
	0.585	38.80	10.40	49.20	56.00	6.80	
	1.621	35.00	10.40	45.40	56.00	10.60	
	4.632	34.60	10.45	45.05	56.00	10.95	
	6.082	34.31	10.45	44.76	60.00	15.24	
	19.870	34.90	10.61	45.51	60.00	14.49	
	0.453	24.70	10.41	35.11	46.82	11.71	AV
	0.585	27.00	10.40	37.40	46.00	8.60	
	1.621	24.00	10.40	34.40	46.00	11.60	
	4.632	28.10	10.45	38.55	46.00	7.45	
	6.082	27.61	10.45	38.06	50.00	11.94	
	19.870	23.50	10.61	34.11	50.00	15.89	
Neutral	0.268	33.59	10.48	44.07	61.19	17.12	QP
	0.446	35.20	10.41	45.61	56.96	11.35	
	0.589	38.70	10.39	49.09	56.00	6.91	
	1.617	35.10	10.42	45.52	56.00	10.48	
	4.751	34.10	10.51	44.61	56.00	11.39	
	6.076	36.20	10.53	46.73	60.00	13.27	
	0.268	24.19	10.48	34.67	51.19	16.52	AV
	0.446	24.30	10.41	34.71	46.96	12.25	
	0.589	26.10	10.39	36.49	46.00	9.51	
	1.617	24.20	10.42	34.62	46.00	11.38	
	4.751	27.00	10.51	37.51	46.00	8.49	
	6.076	27.70	10.53	38.23	50.00	11.77	

TEST ENGINEER: WENCY YANG

EUT : LED LCD TV Temperature : 22

Model No. : 55H9B Humidity : 48%RH

Test Mode : LAN Play Date of Test : Jul 02, 2015

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.263	33.69	10.49	44.18	61.32	17.14	QP
	0.442	35.30	10.42	45.72	57.02	11.30	
	0.584	38.80	10.40	49.20	56.00	6.80	
	2.222	34.29	10.42	44.71	56.00	11.29	
	4.794	36.00	10.45	46.45	56.00	9.55	
	7.165	34.90	10.47	45.37	60.00	14.63	
	AV	0.263	25.29	10.49	35.78	51.32	15.54
		0.442	23.70	10.42	34.12	47.02	12.90
		0.584	26.90	10.40	37.30	46.00	8.70
		2.222	24.89	10.42	35.31	46.00	10.69
		4.794	25.90	10.45	36.35	46.00	9.65
		7.165	28.00	10.47	38.47	50.00	11.53
Neutral	0.454	34.80	10.40	45.20	56.80	11.60	QP
	0.593	38.80	10.39	49.19	56.00	6.81	
	1.615	34.70	10.42	45.12	56.00	10.88	
	4.632	34.59	10.51	45.10	56.00	10.90	
	6.624	34.00	10.54	44.54	60.00	15.46	
	19.600	35.50	10.72	46.22	60.00	13.78	
	AV	0.454	24.20	10.40	34.60	46.80	12.20
		0.593	25.40	10.39	35.79	46.00	10.21
		1.615	23.50	10.42	33.92	46.00	12.08
		4.632	28.29	10.51	38.80	46.00	7.20
		6.624	27.50	10.54	38.04	50.00	11.96
		19.600	27.40	10.72	38.12	50.00	11.88

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

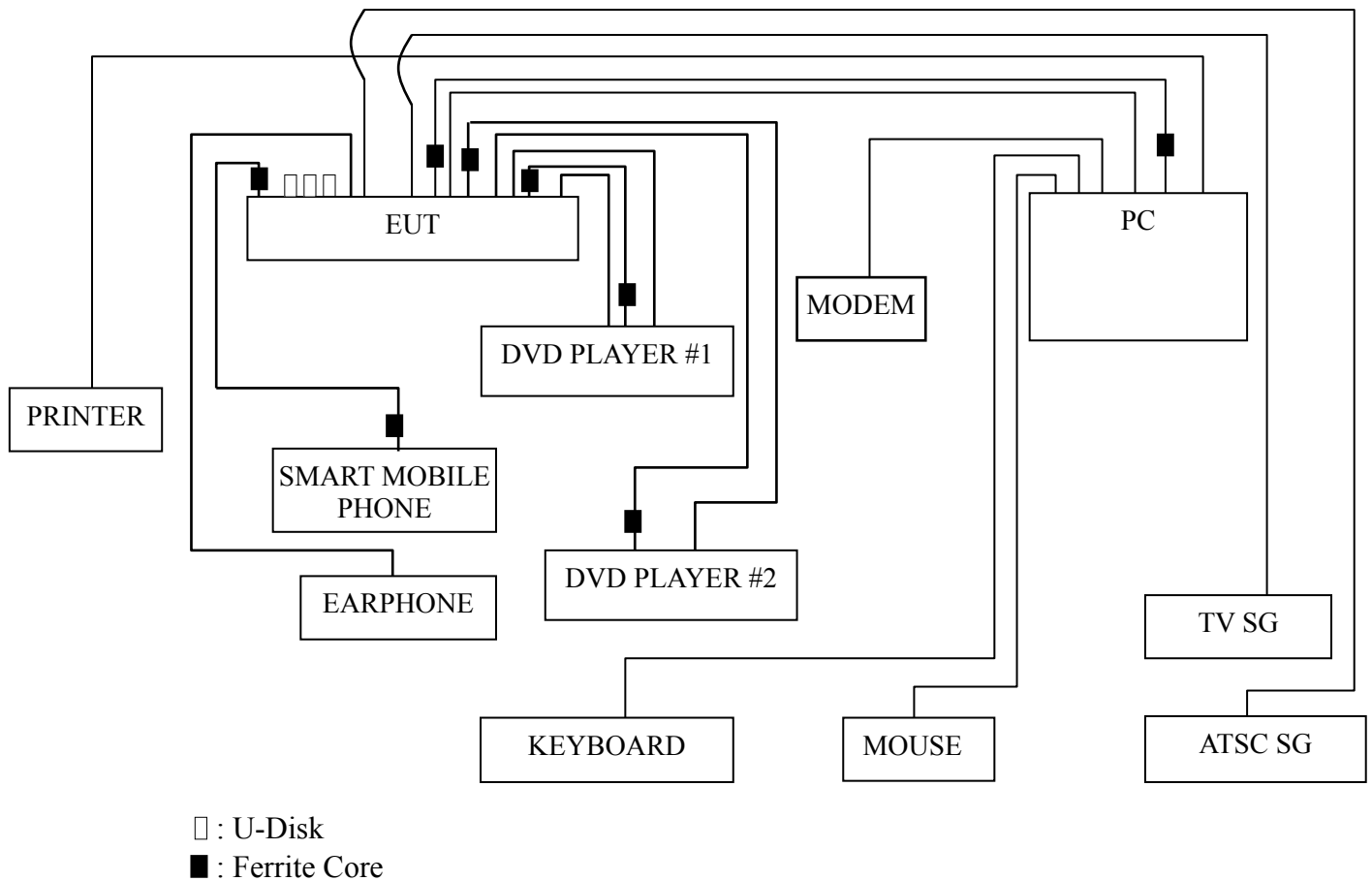
4.1 Test Equipment

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	Apr 27, 2015	Apr 26, 2016
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 18, 2015	Sep 17, 2015
3.	Preamplifier	HP	8449B	3008A00864	Mar 20, 2015	Sep 19, 2015
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	E7405A	MY45106600	Apr 27, 2015	Apr 26, 2016
7.	50 Coaxial Switch	Anritsu	MP59B	6200426390	Mar 18, 2015	Sep 17, 2015
8.	Software	Audix	E3	6.2007-9-10	--	--

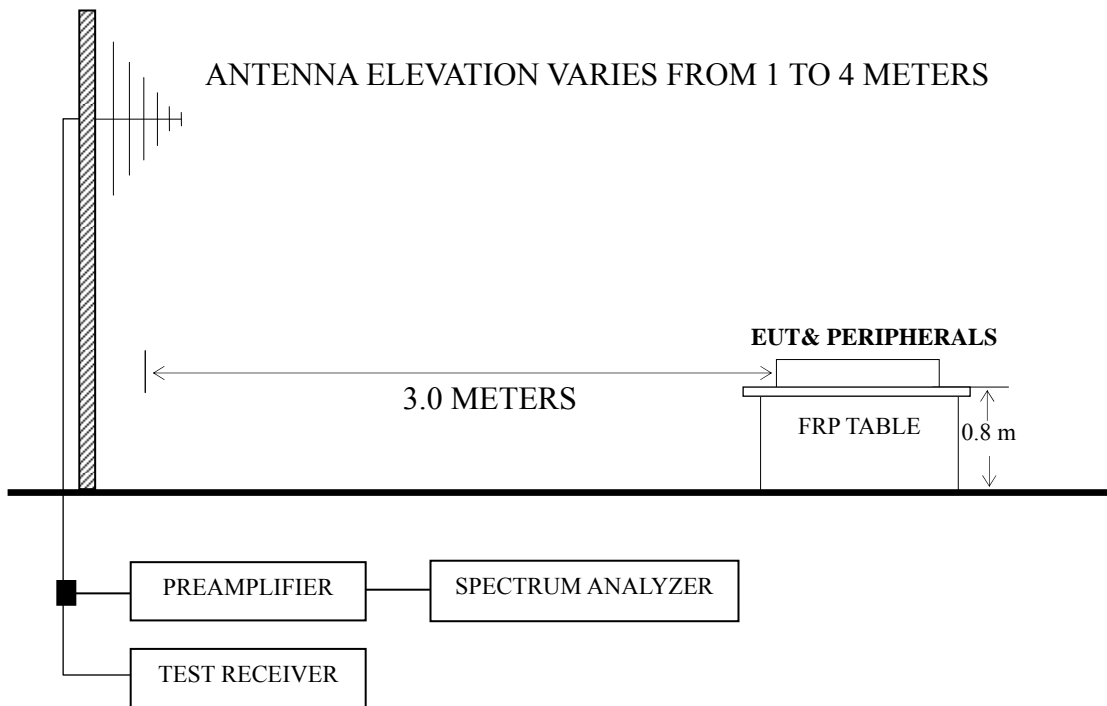
4.2 Block Diagram of Test Setup

4.2.1 EUT & Peripherals

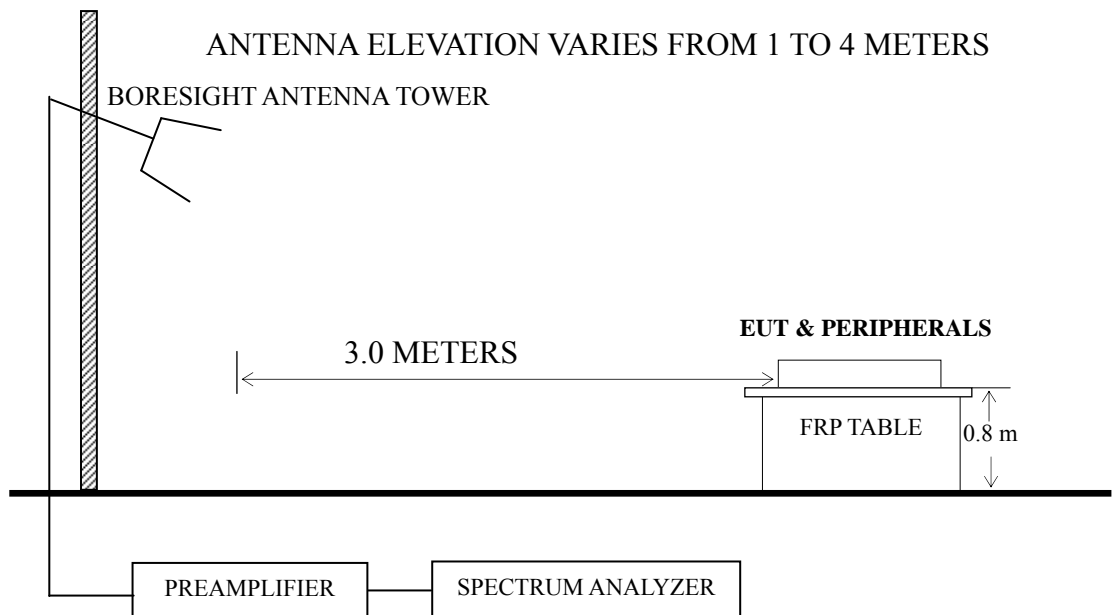


4.2.2 Radiated emission test setup

4.2.2.1 Below 1GHz



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	
		($\mu\text{V/m}$)	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 2 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
USB Play	P30
LAN Play	P31

- 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 & 1kHz Playing test mode. The worst emission at horizontal polarization was detected at 662.440 MHz with corrected signal level of 38.73 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 2.1 m height and the turntable was at 303°. The worst emission at vertical polarization was detected at 842.860 MHz with corrected signal level of 43.08 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.30m height and the turntable was at 125°.

EUT : LED LCD TV Temperature : 22

Model No. : 55H9B Humidity : 60%RH

Test Mode : HDMI 3840*2160@60Hz & 1kHz Playing Date of Test : Jun 23, 2015

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	91.110	19.62	10.80	1.23	--	31.65	43.50	11.85	QP
	234.670	17.80	11.40	2.10	--	31.30	46.00	14.70	
	427.700	16.49	16.80	2.78	--	36.07	46.00	9.93	
	459.710	15.01	17.10	2.85	--	34.96	46.00	11.04	
	662.440	16.10	19.60	3.03	--	38.73	46.00	7.27	
	742.950	15.14	19.97	3.60	--	38.71	46.00	7.29	
	1757.240	56.82	26.65	4.13	35.36	52.24	74.00	21.76	PK
	1938.254	56.59	27.24	4.35	35.17	53.01	74.00	20.99	
	2262.885	55.71	27.97	4.69	35.13	53.24	74.00	20.76	
	3033.914	54.55	30.97	5.83	35.16	56.19	74.00	17.81	
	3684.398	48.72	32.21	6.02	34.56	52.39	74.00	21.61	
	4071.383	48.78	32.76	6.07	34.27	53.34	74.00	20.66	AV
	1757.240	41.46	26.65	4.13	35.36	36.88	54.00	17.12	
	1938.254	38.35	27.24	4.35	35.17	34.77	54.00	19.23	
	2262.885	37.69	27.97	4.69	35.13	35.22	54.00	18.78	
	3033.914	37.68	30.97	5.83	35.16	39.32	54.00	14.68	
3684.398	34.68	32.21	6.02	34.56	38.35	54.00	15.65		
4071.383	31.68	32.76	6.07	34.27	36.24	54.00	17.76		

TEST ENGINEER: MARK LI

EUT : LED LCD TV Temperature : 22

Model No. : 55H9B Humidity : 60%RH

Test Mode : HDMI 3840*2160@60Hz & 1kHz Playing Date of Test : Jun 23, 2015

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
Vertical	30.000	15.48	18.90	0.63	--	35.01	40.00	4.99	QP
	83.350	24.28	9.66	1.13	--	35.07	40.00	4.93	
	284.140	17.60	13.43	2.45	--	33.48	46.00	12.52	
	621.700	16.55	19.35	2.52	--	38.42	46.00	7.58	
	842.860	18.24	20.77	4.07	--	43.08	46.00	2.92	
	895.240	14.57	21.30	4.46	--	40.33	46.00	5.67	
	1826.184	56.31	26.90	4.19	35.28	52.12	74.00	21.88	PK
	2155.617	55.30	27.72	4.61	35.12	52.51	74.00	21.49	
	2345.212	54.90	28.14	4.78	35.14	52.68	74.00	21.32	
	3053.436	52.14	31.01	5.86	35.14	53.87	74.00	20.13	
	3624.129	50.05	32.10	6.06	34.61	53.60	74.00	20.40	
	4158.097	50.32	32.83	6.19	34.23	55.11	74.00	18.89	AV
	1826.184	45.33	26.90	4.19	35.28	41.14	54.00	12.86	
	2155.617	43.77	27.72	4.61	35.12	40.98	54.00	13.02	
	2345.212	34.35	28.14	4.78	35.14	32.13	54.00	21.87	
	3053.436	36.57	31.01	5.86	35.14	38.30	54.00	15.70	
3624.129	35.57	32.10	6.06	34.61	39.12	54.00	14.88		
4158.097	36.56	32.83	6.19	34.23	41.35	54.00	12.65		

TEST ENGINEER: MARK LI

EUT : LED LCD TV Temperature : 22

Model No. : 55H9B Humidity : 60%RH

Test Mode : HDMI 1920*1080@60Hz & 1kHz Playing Date of Test : Jun 23, 2015

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	80.440	21.89	9.43	1.09	32.41	40.00	7.59
	243.400	19.24	12.10	2.13	33.47	46.00	12.53
	456.800	20.62	16.98	2.85	40.45	46.00	5.55
	594.000	20.08	18.85	2.31	41.24	46.00	4.76
	846.740	16.19	20.73	4.07	40.99	46.00	5.01
	924.340	15.28	21.57	4.61	41.46	46.00	4.54
Vertical	32.910	15.70	16.99	0.66	33.35	40.00	6.65
	83.350	23.28	9.66	1.13	34.07	40.00	5.93
	163.860	18.21	11.24	1.73	31.18	43.50	12.32
	425.760	18.80	16.80	2.78	38.38	46.00	7.62
	665.350	16.83	19.60	3.16	39.59	46.00	6.41
	850.260	17.40	20.70	4.17	42.27	46.00	3.73

TEST ENGINEER: MARK LI

EUT : LED LCD TV Temperature : 22

Model No. : 55H9B Humidity : 60%RH

Test Mode : HDMI 1280*1024@60Hz Date of Test : Jun 23, 2015
& 1kHz Playing

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	86.260	23.23	9.95	1.16	34.34	40.00	5.66
	241.460	20.01	12.00	2.13	34.14	46.00	11.86
	359.800	11.99	15.90	2.67	30.56	46.00	15.44
	458.740	16.67	17.04	2.85	36.56	46.00	9.44
	662.440	13.85	19.60	3.03	36.48	46.00	9.52
	924.340	15.28	21.57	4.61	41.46	46.00	4.54
Vertical	32.910	17.06	16.99	0.66	34.71	40.00	5.29
	86.260	23.45	9.95	1.16	34.56	40.00	5.44
	156.100	19.14	11.18	1.68	32.00	43.50	11.50
	425.760	18.12	16.80	2.78	37.70	46.00	8.30
	621.700	18.31	19.35	2.52	40.18	46.00	5.82
	842.860	17.53	20.77	4.07	42.37	46.00	3.63

TEST ENGINEER: MARK LI

EUT : LED LCD TV Temperature : 22

Model No. : 55H9B Humidity : 60%RH

Test Mode : HDMI 640*480@60Hz & 1kHz Playing Date of Test : Jun 23, 2015

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	80.440	23.43	9.43	1.09	33.95	40.00	6.05
	241.460	19.14	12.00	2.13	33.27	46.00	12.73
	458.740	16.93	17.04	2.85	36.82	46.00	9.18
	665.350	14.45	19.60	3.16	37.21	46.00	8.79
	849.650	14.32	20.70	4.17	39.19	46.00	6.81
	925.320	14.35	21.57	4.61	40.53	46.00	5.47
Vertical	32.910	15.38	16.99	0.66	33.03	40.00	6.97
	86.260	23.52	9.95	1.16	34.63	40.00	5.37
	158.040	17.99	11.14	1.70	30.83	43.50	12.67
	427.700	18.64	16.80	2.78	38.22	46.00	7.78
	662.440	18.07	19.60	3.03	40.70	46.00	5.30
	839.950	17.85	20.80	4.07	42.72	46.00	3.28

TEST ENGINEER: MARK LI

EUT : LED LCD TV Temperature : 22

Model No. : 55H9B Humidity : 60%RH

Test Mode : USB Play Date of Test : Jun 23, 2015

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	82.380	20.72	9.60	1.12	31.44	40.00	8.56
	132.820	7.64	12.69	1.54	21.87	43.50	21.63
	224.970	19.14	10.80	2.07	32.01	46.00	13.99
	413.150	17.99	16.64	2.75	37.38	46.00	8.62
	600.360	17.86	19.10	2.26	39.22	46.00	6.78
	751.680	12.90	20.15	3.62	36.67	46.00	9.33
Vertical	33.880	14.98	16.47	0.67	32.12	40.00	7.88
	68.800	24.55	7.12	0.92	32.59	40.00	7.41
	173.560	15.00	10.76	1.80	27.56	43.50	15.94
	269.590	12.98	13.30	2.32	28.60	46.00	17.40
	444.190	17.63	16.85	2.82	37.30	46.00	8.70
	817.640	15.97	20.67	3.88	40.52	46.00	5.48

TEST ENGINEER: MARK LI

EUT : LED LCD TV Temperature : 22

Model No. : 55H9B Humidity : 60%RH

Test Mode : LAN Play Date of Test : Jun 23, 2015

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	47.460	10.47	9.11	0.79	20.37	40.00	19.63
	86.260	23.23	9.95	1.16	34.34	40.00	5.66
	121.180	11.19	12.86	1.46	25.51	43.50	17.99
	221.090	19.77	10.60	2.05	32.42	46.00	13.58
	546.040	12.59	18.68	2.63	33.90	46.00	12.10
	870.020	13.24	20.90	4.27	38.41	46.00	7.59
Vertical	33.880	14.76	16.47	0.67	31.90	40.00	8.10
	66.860	23.34	6.81	0.91	31.06	40.00	8.94
	120.210	13.54	12.83	1.46	27.83	43.50	15.67
	356.890	14.34	15.81	2.67	32.82	46.00	13.18
	650.800	14.65	19.75	2.90	37.30	46.00	8.70
	823.460	15.49	20.70	3.88	40.07	46.00	5.93

TEST ENGINEER: MARK LI

5 DEVIATION TO TEST SPECIFICATIONS

None.