

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

LED LCD TV

Brand	Model No.
Hisense	HU43K300UW
	43H7C
	43H7C+

FCC ID : W9HLCDD0048

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

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Report No. : ACI-F16200
Date of Test : Jul 27 - Aug 12, 2016
Date of Report : Aug 18, 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. : Refer to Sec.2.1
 Brand : Hisense
 Power Supply : 120V/60Hz

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2015
AND ANSI C63.4-2014*

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 Jul 27 - Aug 12, 2016 is technically compliance with the FCC official limits also.

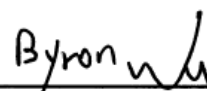

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

This report 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.F15251A1, a Verification report.

Date of Test : Jul 27 - Aug 12, 2016 Date of Report : Aug 18, 2016

Producer : 
 ALAN HE / Assistant

Review : 
 BYRON WU / Deputy Assistant Manager
 For and on behalf of
 Audix Technology (Shanghai) Co., Ltd.

Signatory : 
 Authorized Signature EMCBYRON 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 2015 AND ANSI C63.4-2014	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2015 AND ANSI C63.4-2014	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	:	HU43K300UW, 43H7C, 43H7C+
Note#1	:	The above models are all the same except for the model number. The 43H7C was tested and reported in the report.
Note#2	:	“+ ” represents any numerals, for different sales area.
Brand	:	Hisense
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. Hisense #3510 Parque Industrial Rosarito, C.P. 22710 Playas de Rosarito, B.C.
LCD Panel	:	Manufacturer : Hisense M/N : HD426DU-B51(010)
Tuner	:	Manufacturer : XUGUANG M/N : HFT-96S3/W11FJ2H
Max Resolution	:	3840*2160@60Hz
HDMI Cable*4 (Lab provide)	:	Shielded, Detachable, 1.50m
Power Cord	:	Unshielded, Detachable, 1.80m, 2C
USB Cable*3 (Lab provide)	:	Shielded, Detachable, 1.00m
LAN Cable	:	Shielded, Detachable, 1.50m

MHL to HDMI Adaptor: Manufacture: CE-Link
with RCP (Lab provide) 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 Hard-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 Hard-Disk #2
- (7) One USB2 Port : Connected with Hard-Disk #3
- (8) One ANT/CABLE IN Port : Connected with ATSC SG / TV SG

Back Port:

- (9) One LAN Port : Connected with PC
- (10) One HDMI3 Port : Connected with DVD PLAYER #1
- (11) One HDMI4 Port : Connected with PC
- (12) One Digital Audio Out Port : Connected with Audio Converter to Earphone
- (13) One component of YPbPr +Video Port : Connected with DVD PLAYER #2
- (14) One AV Port : Connected with DVD PLAYER #1

2.2 Peripherals

2.2.1 PC

Manufacturer : HP
Model Number : Pro3340
Serial Number : 6CR2512VFD
Power Cord : Unshielded, 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 *2

Manufacturer : EDIFIER
Model Number : H210

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, Undetachable, 1.8m.
Certificate : CE, FCC DoC

2.2.9 Hard Disk #2

Manufacturer : Tetasys
Model Number : F12
Serial Number : A010022-4A60007
Data Cable : Shielded, Undetachable, 1.8m.
Certificate : CE, FCC DoC

2.2.10 Hard Disk #3

Manufacturer : Tetasys
Model Number : F12
Serial Number : A010022-486006
Data Cable : Shielded, Undetachable, 1.8m.
Certificate : CE, FCC DoC

2.2.11 Smart Mobile Phone

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

2.2.12 ATSC Signal Generator

Manufacturer : SENCORE
Model Number : ATSC997
Serial Number : 6790071

2.2.13 TV Signal Generator

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

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
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

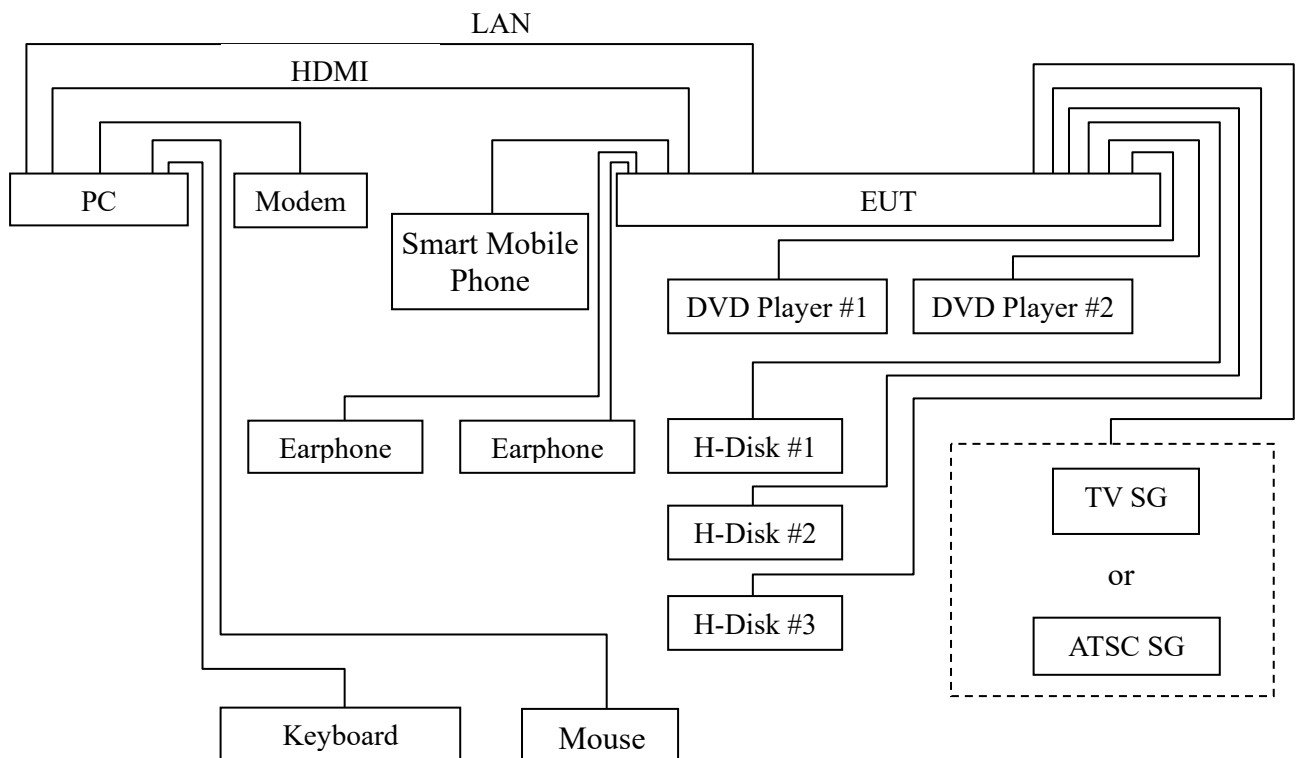
3.1 Test Equipment

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

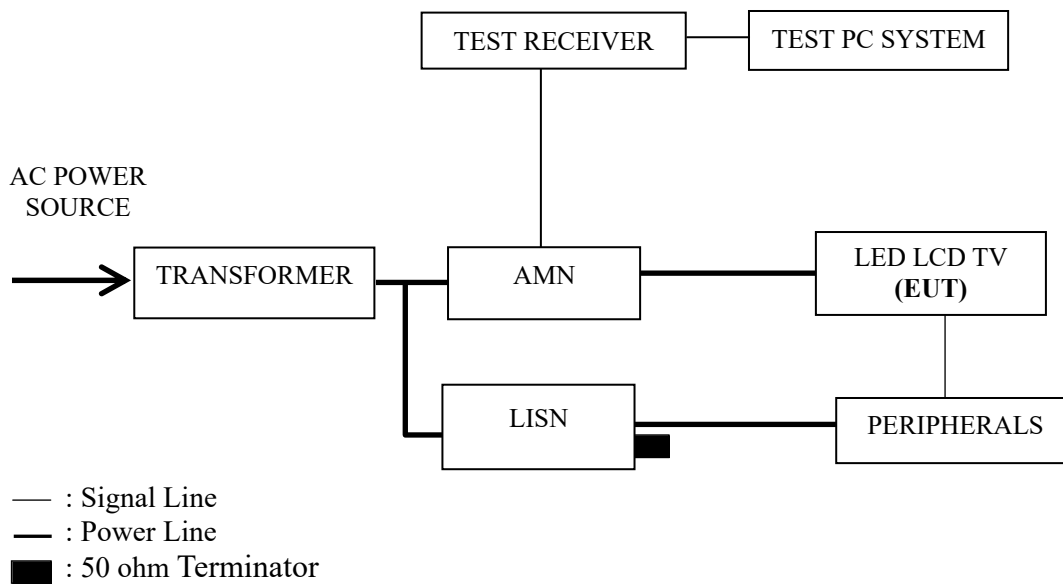
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	101302	Jul 03, 2016	Jul 02, 2017
2.	Artificial Mains Network (AMN)	R&S	ENV4200	100125	Jun 27, 2016	Jun 26, 2017
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-5	Mar 20, 2016	Mar 19, 2017
4.	50Ω Terminator	Anritsu	BNC	001	Mar 20, 2016	Mar 19, 2017
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 (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 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 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
HDMI1080P	P18
USB Play	P19
LAN Play	P20
MHL	P21

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 HDMI1080P test mode. The worst emission is detected at 0.605MHz (Quasi-Peak Value) with corrected signal level of 42.19dB (μV) (limit is 56.00 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT : LED LCD TV Temperature : 22°C

Model No. : 43H7C Humidity : 48%RH

Test Mode : HDMI 3840*2160@60Hz & 1kHz Playing Date of Test : Jul 29, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.217	35.70	10.52	46.22	62.95	16.73	QP
	0.486	29.50	10.40	39.90	56.23	16.33	
	0.652	27.50	10.40	37.90	56.00	18.10	
	1.205	27.29	10.41	37.70	56.00	18.30	
	2.551	25.80	10.42	36.22	56.00	19.78	
	18.210	27.50	10.58	38.08	60.00	21.92	
	0.217	22.60	10.52	33.12	52.95	19.83	AV
	0.486	14.80	10.40	25.20	46.23	21.03	
	0.652	14.90	10.40	25.30	46.00	20.70	
	1.205	16.09	10.41	26.50	46.00	19.50	
	2.551	15.70	10.42	26.12	46.00	19.88	
	18.210	21.60	10.58	32.18	50.00	17.82	
Neutral	0.215	33.00	10.51	43.51	63.01	19.50	QP
	0.605	31.71	10.38	42.09	56.00	13.91	
	1.207	26.30	10.41	36.71	56.00	19.29	
	2.013	26.90	10.43	37.33	56.00	18.67	
	4.080	21.69	10.49	32.18	56.00	23.82	
	18.220	27.60	10.69	38.29	60.00	21.71	
	0.215	18.70	10.51	29.21	53.01	23.80	AV
	0.605	19.21	10.38	29.59	46.00	16.41	
	1.207	16.00	10.41	26.41	46.00	19.59	
	2.013	15.40	10.43	25.83	46.00	20.17	
	4.080	16.09	10.49	26.58	46.00	19.42	
	18.220	21.70	10.69	32.39	50.00	17.61	

TEST ENGINEER: SEVEN LU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43H7C Humidity : 48%RH

Test Mode : HDMI 1920*1080@60Hz Date of Test : Jul 29, 2016
& 1kHz Playing

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.216	35.70	10.52	46.22	62.96	16.74	QP
	0.464	28.30	10.41	38.71	56.62	17.91	
	1.206	27.19	10.41	37.60	56.00	18.40	
	1.742	26.50	10.41	36.91	56.00	19.09	
	3.426	22.80	10.43	33.23	56.00	22.77	
	18.070	24.40	10.58	34.98	60.00	25.02	
	AV	0.216	22.60	10.52	33.12	52.96	19.84
		0.464	17.90	10.41	28.31	46.62	18.31
		1.206	16.19	10.41	26.60	46.00	19.40
		1.742	17.30	10.41	27.71	46.00	18.29
		3.426	14.80	10.43	25.23	46.00	20.77
		18.070	22.00	10.58	32.58	50.00	17.42
Neutral	0.222	34.60	10.50	45.10	62.75	17.65	QP
	0.470	28.90	10.40	39.30	56.52	17.22	
	0.597	31.01	10.38	41.39	56.00	14.61	
	1.204	26.60	10.41	37.01	56.00	18.99	
	2.614	26.80	10.45	37.25	56.00	18.75	
	18.450	27.70	10.69	38.39	60.00	21.61	
	AV	0.222	20.90	10.50	31.40	52.75	21.35
		0.470	18.00	10.40	28.40	46.52	18.12
		0.597	19.31	10.38	29.69	46.00	16.31
		1.204	16.20	10.41	26.61	46.00	19.39
		2.614	16.00	10.45	26.45	46.00	19.55
		18.450	21.90	10.69	32.59	50.00	17.41

TEST ENGINEER: SEVEN LU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43H7C Humidity : 48%RH

Test Mode : HDMI 1280*1024@60Hz & 1kHz Playing Date of Test : Jul 29, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.215	35.40	10.52	45.92	63.01	17.09	QP
	0.469	29.10	10.41	39.51	56.53	17.02	
	0.746	29.90	10.40	40.30	56.00	15.70	
	1.341	25.49	10.41	35.90	56.00	20.10	
	2.681	25.99	10.43	36.42	56.00	19.58	
	18.330	27.71	10.58	38.29	60.00	21.71	
	0.215	22.50	10.52	33.02	53.01	19.99	AV
	0.469	18.00	10.41	28.41	46.53	18.12	
	0.746	18.90	10.40	29.30	46.00	16.70	
	1.341	14.29	10.41	24.70	46.00	21.30	
	2.681	15.69	10.43	26.12	46.00	19.88	
	18.330	21.81	10.58	32.39	50.00	17.61	
Neutral	0.215	33.40	10.51	43.91	63.01	19.10	QP
	0.601	31.41	10.38	41.79	56.00	14.21	
	1.201	27.80	10.41	38.21	56.00	17.79	
	1.947	26.80	10.43	37.23	56.00	18.77	
	4.294	24.10	10.49	34.59	56.00	21.41	
	17.510	26.79	10.69	37.48	60.00	22.52	
	0.215	18.90	10.51	29.41	53.01	23.60	AV
	0.601	20.21	10.38	30.59	46.00	15.41	
	1.201	15.60	10.41	26.01	46.00	19.99	
	1.947	16.60	10.43	27.03	46.00	18.97	
	4.294	15.70	10.49	26.19	46.00	19.81	
	17.510	21.79	10.69	32.48	50.00	17.52	

TEST ENGINEER: SEVEN LU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43H7C Humidity : 48%RH

Test Mode : HDMI 640*480@60Hz & 1kHz Playing Date of Test : Jul 29, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.225	34.20	10.51	44.71	62.64	17.93	QP
	0.484	30.10	10.40	40.50	56.27	15.77	
	0.601	31.61	10.39	42.00	56.00	14.00	
	1.206	27.89	10.41	38.30	56.00	17.70	
	2.682	25.79	10.43	36.22	56.00	19.78	
	18.170	27.00	10.58	37.58	60.00	22.42	
	0.225	19.80	10.51	30.31	52.64	22.33	AV
	0.484	13.80	10.40	24.20	46.27	22.07	
	0.601	20.41	10.39	30.80	46.00	15.20	
	1.206	16.19	10.41	26.60	46.00	19.40	
	2.682	15.49	10.43	25.92	46.00	20.08	
	18.170	21.40	10.58	31.98	50.00	18.02	
Neutral	0.215	33.20	10.51	43.71	63.02	19.31	QP
	0.605	31.81	10.38	42.19	56.00	13.81	
	1.233	26.00	10.41	36.41	56.00	19.59	
	1.950	28.10	10.43	38.53	56.00	17.47	
	4.233	26.00	10.49	36.49	56.00	19.51	
	18.160	27.00	10.69	37.69	60.00	22.31	
	0.215	19.20	10.51	29.71	53.02	23.31	AV
	0.605	19.21	10.38	29.59	46.00	16.41	
	1.233	15.40	10.41	25.81	46.00	20.19	
	1.950	16.10	10.43	26.53	46.00	19.47	
	4.233	16.00	10.49	26.49	46.00	19.51	
	18.160	21.40	10.69	32.09	50.00	17.91	

TEST ENGINEER: SEVEN LU

EUT : LED LCD TV Temperature : 22°C
 Model No. : 43H7C Humidity : 48%RH
 Test Mode : HDMI 1080P Date of Test : Jul 29, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.215	35.70	10.52	46.22	63.00	16.78	QP
	0.497	31.40	10.40	41.80	56.05	14.25	
	0.910	26.10	10.40	36.50	56.00	19.50	
	2.013	27.00	10.41	37.41	56.00	18.59	
	4.097	23.20	10.44	33.64	56.00	22.36	
	18.030	27.10	10.58	37.68	60.00	22.32	
	AV	0.215	22.70	10.52	33.22	53.00	19.78
		0.497	21.30	10.40	31.70	46.05	14.35
		0.910	11.90	10.40	22.30	46.00	23.70
		2.013	15.40	10.41	25.81	46.00	20.19
		4.097	16.50	10.44	26.94	46.00	19.06
		18.030	21.30	10.58	31.88	50.00	18.12
Neutral	0.215	33.20	10.51	43.71	62.99	19.28	QP
	0.605	31.81	10.38	42.19	56.00	13.81	
	1.342	25.80	10.41	36.21	56.00	19.79	
	2.013	26.80	10.43	37.23	56.00	18.77	
	4.300	26.10	10.49	36.59	56.00	19.41	
	17.920	27.10	10.69	37.79	60.00	22.21	
	AV	0.215	19.20	10.51	29.71	52.99	23.28
		0.605	19.31	10.38	29.69	46.00	16.31
		1.342	13.90	10.41	24.31	46.00	21.69
		2.013	15.30	10.43	25.73	46.00	20.27
		4.300	15.70	10.49	26.19	46.00	19.81
		17.920	21.30	10.69	31.99	50.00	18.01

EUT : LED LCD TV Temperature : 22°C
 Model No. : 43H7C Humidity : 48%RH
 Test Mode : USB Play Date of Test : Jul 29, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.215	35.70	10.52	46.22	62.99	16.77	QP
	0.470	28.90	10.41	39.31	56.52	17.21	
	1.206	26.49	10.41	36.90	56.00	19.10	
	1.945	27.70	10.41	38.11	56.00	17.89	
	4.234	25.10	10.44	35.54	56.00	20.46	
	17.960	27.00	10.58	37.58	60.00	22.42	
	AV	0.215	22.80	10.52	33.32	52.99	19.67
		0.470	17.90	10.41	28.31	46.52	18.21
		1.206	16.09	10.41	26.50	46.00	19.50
		1.945	16.40	10.41	26.81	46.00	19.19
		4.234	15.90	10.44	26.34	46.00	19.66
		17.960	21.40	10.58	31.98	50.00	18.02
Neutral	0.214	33.50	10.51	44.01	63.06	19.05	QP
	0.605	31.61	10.38	41.99	56.00	14.01	
	1.204	27.10	10.41	37.51	56.00	18.49	
	1.945	26.70	10.43	37.13	56.00	18.87	
	4.298	25.80	10.49	36.29	56.00	19.71	
	18.050	27.00	10.69	37.69	60.00	22.31	
	AV	0.214	19.10	10.51	29.61	53.06	23.45
		0.605	18.91	10.38	29.29	46.00	16.71
		1.204	15.90	10.41	26.31	46.00	19.69
		1.945	16.40	10.43	26.83	46.00	19.17
		4.298	15.30	10.49	25.79	46.00	20.21
		18.050	21.50	10.69	32.19	50.00	17.81

TEST ENGINEER: SEVEN LU

EUT : LED LCD TV Temperature : 22°C
 Model No. : 43H7C Humidity : 48%RH
 Test Mode : LAN Play Date of Test : Jul 29, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark	
Line	0.216	35.70	10.52	46.22	62.99	16.77	QP	
	0.471	29.10	10.41	39.51	56.50	16.99		
	0.602	31.31	10.39	41.70	56.00	14.30		
	1.206	27.59	10.41	38.00	56.00	18.00		
	3.423	23.20	10.43	33.63	56.00	22.37		
	7.034	24.90	10.47	35.37	60.00	24.63		
	0.216	22.70	10.52	33.22	52.99	19.77	AV	
	0.471	17.90	10.41	28.31	46.50	18.19		
	0.602	20.01	10.39	30.40	46.00	15.60		
	1.206	16.09	10.41	26.50	46.00	19.50		
	3.423	14.50	10.43	24.93	46.00	21.07		
	7.034	19.80	10.47	30.27	50.00	19.73		
	Neutral	0.214	33.50	10.51	44.01	63.05	19.04	QP
		0.605	31.61	10.38	41.99	56.00	14.01	
1.267		26.60	10.41	37.01	56.00	18.99		
2.606		24.20	10.45	34.65	56.00	21.35		
4.296		25.10	10.49	35.59	56.00	20.41		
17.750		26.10	10.69	36.79	60.00	23.21		
0.214		19.00	10.51	29.51	53.05	23.54	AV	
0.605		18.51	10.38	28.89	46.00	17.11		
1.267		15.00	10.41	25.41	46.00	20.59		
2.606		15.30	10.45	25.75	46.00	20.25		
4.296		15.10	10.49	25.59	46.00	20.41		
17.750		21.40	10.69	32.09	50.00	17.91		

TEST ENGINEER: SEVEN LU

EUT : LED LCD TV Temperature : 22°C
 Model No. : 43H7C Humidity : 48%RH
 Test Mode : MHL Date of Test : Jul 29, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark	
Line	0.216	35.70	10.52	46.22	62.97	16.75	QP	
	0.605	31.51	10.39	41.90	56.00	14.10		
	0.925	26.20	10.40	36.60	56.00	19.40		
	1.944	27.70	10.41	38.11	56.00	17.89		
	4.095	23.90	10.44	34.34	56.00	21.66		
	17.740	26.90	10.58	37.48	60.00	22.52		
	Line	0.216	22.70	10.52	33.22	52.97	19.75	AV
		0.605	18.81	10.39	29.20	46.00	16.80	
		0.925	13.10	10.40	23.50	46.00	22.50	
		1.944	16.50	10.41	26.91	46.00	19.09	
		4.095	16.60	10.44	27.04	46.00	18.96	
		17.740	21.40	10.58	31.98	50.00	18.02	
Neutral	0.215	33.50	10.51	44.01	63.01	19.00	QP	
	0.469	28.00	10.40	38.40	56.53	18.13		
	0.928	25.20	10.40	35.60	56.00	20.40		
	1.734	26.49	10.43	36.92	56.00	19.08		
	4.298	23.90	10.49	34.39	56.00	21.61		
	18.060	26.90	10.69	37.59	60.00	22.41		
	Neutral	0.215	19.20	10.51	29.71	53.01	23.30	AV
		0.469	17.50	10.40	27.90	46.53	18.63	
		0.928	13.00	10.40	23.40	46.00	22.60	
		1.734	16.89	10.43	27.32	46.00	18.68	
		4.298	15.30	10.49	25.79	46.00	20.21	
		18.060	21.20	10.69	31.89	50.00	18.11	

4 RADIATED EMISSION TEST

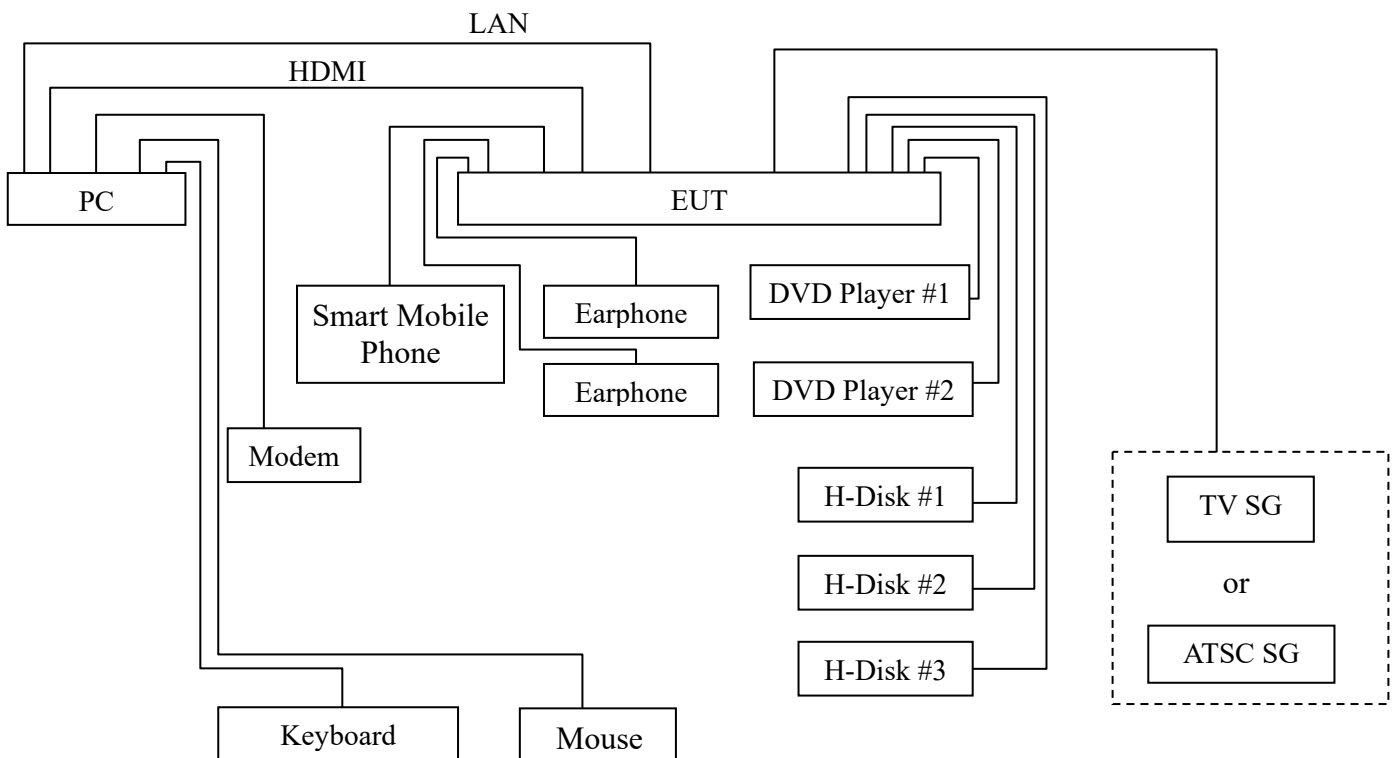
4.1 Test Equipment

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, 2016	May 06, 2017
2.	Preamplifier	Agilent	8447D	2944A06664	Apr 27, 2016	Apr 26, 2017
3.	Preamplifier	HP	8449B	3008A00864	Mar 20, 2016	Mar 19, 2017
4.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 15, 2016	May 14, 2017
5.	Horn Antenna	EMCO	3115	9607-4878	Jun 03, 2016	Jun 02, 2017
6.	Spectrum	Agilent	E7405A	MY45106600	Apr 26, 2016	Apr 25, 2017
7.	Spectrum	HP	8591EM	3628A00908	May 07, 2016	May 06, 2017
8.	Software	Audix	e3	6.2007-9-10	--	--

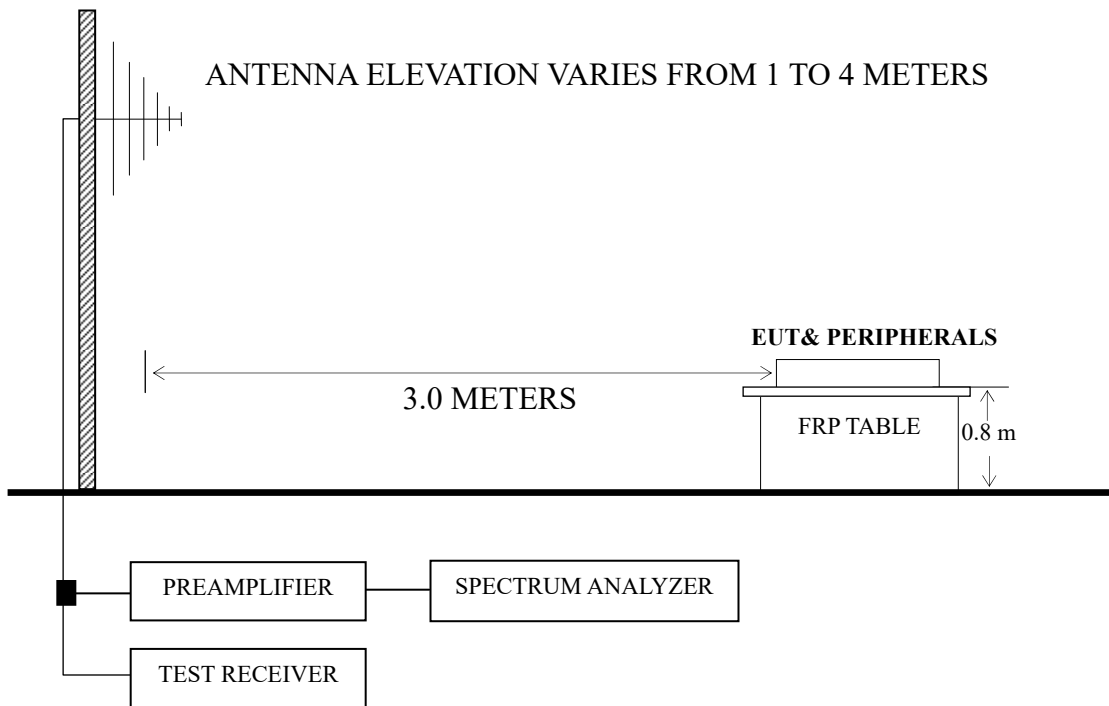
4.2 Block Diagram of Test Setup

4.2.1 EUT & Peripherals



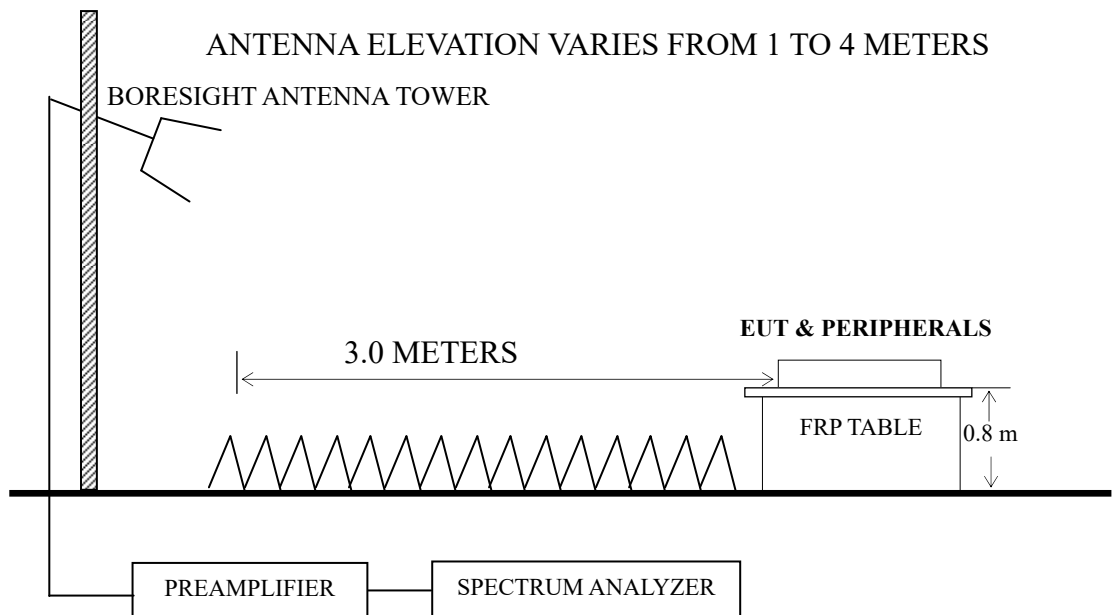
4.2.2 Radiated emission test setup

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	
		($\mu\text{V/m}$)	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 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	P26-P27
HDMI 1920*1080@60Hz & 1kHz playing	P28
HDMI 1280*1024@60Hz & 1kHz playing	P29
HDMI 640*480@60Hz & 1kHz playing	P30
HDMI1080P	P31
USB Play	P32
LAN Play	P33
MHL	P34

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 890.970 MHz with corrected signal level of 45.14 dB ($\mu\text{V}/\text{m}$) (limit is 46.00 dB ($\mu\text{V}/\text{m}$)), when the antenna was 2.10 m height and the turntable was at 120°. The worst emission at vertical polarization was detected at 890.728 MHz with corrected signal level of 44.10 dB ($\mu\text{V}/\text{m}$) (limit is 46.00 dB ($\mu\text{V}/\text{m}$)), when the antenna was 1.20 m height and the turntable was at 300°.

EUT : LED LCD TV Temperature : 22°C

Model No. : 43H7C Humidity : 60%RH

Test Mode : HDMI 3840*2160@60Hz & 1kHz Playing Date of Test : Aug 12, 2016

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	132.685	24.40	12.84	1.20	--	38.44	43.50	5.06	QP	
	164.990	30.00	11.10	1.35	--	42.45	43.50	1.05		
	240.830	27.18	12.16	1.61	--	40.95	46.00	5.05		
	297.224	29.45	13.60	1.75	--	44.80	46.00	1.20		
	848.056	17.10	20.50	2.98	--	40.58	46.00	5.42		
	890.970	20.97	21.10	3.07	--	45.14	46.00	0.86	PK	
	2130.001	56.17	27.76	4.58	35.12	53.39	74.00	20.61		
	2534.314	59.14	28.57	4.96	35.16	57.51	74.00	16.49		
	3813.107	50.56	32.33	5.94	34.45	54.38	74.00	19.62		
	2130.001	33.23	27.76	4.58	35.12	30.45	54.00	23.55		AV
	2534.314	36.28	28.57	4.96	35.16	34.65	54.00	19.35		
	3813.107	28.19	32.33	5.94	34.45	32.01	54.00	21.99		

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43H7C Humidity : 60%RH

Test Mode : HDMI 3840*2160@60Hz & 1kHz Playing Date of Test : Aug 12, 2016

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	82.359	25.95	9.41	0.90	--	36.26	40.00	3.74	QP
	148.441	22.16	12.23	1.27	--	35.66	43.50	7.84	
	201.393	24.83	10.13	1.48	--	36.44	43.50	7.06	
	242.525	26.40	12.28	1.61	--	40.29	46.00	5.71	
	297.224	25.61	13.60	1.75	--	40.96	46.00	5.04	
	890.728	19.93	21.10	3.07	--	44.10	46.00	1.90	PK
	1483.178	59.27	25.54	3.86	35.71	52.96	74.00	21.04	
	2126.188	59.33	27.75	4.58	35.11	56.55	74.00	17.45	
	3393.901	54.50	31.31	6.10	34.81	57.10	74.00	16.90	
	1483.178	35.68	25.54	3.86	35.71	29.37	54.00	24.63	
	2126.188	36.62	27.75	4.58	35.11	33.84	54.00	20.16	
3393.901	32.17	31.31	6.10	34.81	34.77	54.00	19.23	AV	

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43H7C Humidity : 60%RH

Test Mode : HDMI 1920*1080@60Hz Date of Test : Aug 12, 2016
& 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	73.617	25.17	8.07	0.86	34.10	40.00	5.90
	134.559	24.40	12.81	1.21	38.42	43.50	5.08
	165.487	25.64	11.07	1.35	38.06	43.50	5.44
	218.309	24.26	10.98	1.54	36.78	46.00	9.22
	344.386	21.64	14.93	1.89	38.46	46.00	7.54
	872.183	19.57	20.90	3.03	43.50	46.00	2.50
Vertical	46.830	22.86	9.48	0.68	33.02	40.00	6.98
	70.090	24.84	7.40	0.84	33.08	40.00	6.92
	133.619	22.42	12.82	1.20	36.44	43.50	7.06
	175.652	25.60	10.56	1.39	37.55	43.50	5.95
	369.405	20.25	15.60	1.96	37.81	46.00	8.19
	742.259	20.30	19.57	2.79	42.66	46.00	3.34

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43H7C Humidity : 60%RH

Test Mode : HDMI 1280*1024@60Hz Date of Test : Aug 12, 2016
& 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	85.290	24.36	9.85	1.15	35.36	40.00	4.64
	163.860	25.79	11.24	1.73	38.76	43.50	4.74
	234.670	25.46	11.40	2.10	38.96	46.00	7.04
	335.550	21.76	14.97	2.64	39.37	46.00	6.63
	725.490	19.28	20.03	3.59	42.90	46.00	3.10
	863.230	16.50	20.83	4.27	41.60	46.00	4.40
Vertical	49.400	25.25	7.99	0.80	34.04	40.00	5.96
	62.980	27.73	6.39	0.89	35.01	40.00	4.99
	103.720	23.43	12.45	1.35	37.23	43.50	6.27
	205.570	26.60	9.80	1.99	38.39	43.50	5.11
	265.710	24.93	13.20	2.29	40.42	46.00	5.58
	659.530	17.64	19.60	3.03	40.27	46.00	5.73

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43H7C Humidity : 60%RH

Test Mode : HDMI 640*480@60Hz & 1kHz Playing Date of Test : Aug 12, 2016

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	71.710	25.62	7.68	0.96	34.26	40.00	5.74
	124.090	23.71	13.04	1.49	38.24	43.50	5.26
	203.630	26.49	9.77	1.98	38.24	43.50	5.26
	276.380	24.90	13.20	2.39	40.49	46.00	5.51
	462.620	20.60	17.14	2.87	40.61	46.00	5.39
	832.190	15.89	20.70	3.97	40.56	46.00	5.44
Vertical	36.790	19.41	14.22	0.70	34.33	40.00	5.67
	83.350	24.31	9.66	1.13	35.10	40.00	4.90
	130.880	23.40	12.76	1.53	37.69	43.50	5.81
	208.480	26.29	9.96	2.01	38.26	43.50	5.24
	717.730	17.10	19.88	3.57	40.55	46.00	5.45
	841.890	16.42	20.77	4.07	41.26	46.00	4.74

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43H7C Humidity : 60%RH

Test Mode : HDMI1080P Date of Test : Aug 12, 2016

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	71.710	26.62	7.68	0.96	35.26	40.00	4.74
	150.280	24.62	11.46	1.63	37.71	43.50	5.79
	214.300	26.39	10.17	2.03	38.59	43.50	4.91
	340.400	21.06	15.10	2.65	38.81	46.00	7.19
	510.150	19.87	17.90	2.89	40.66	46.00	5.34
	878.750	17.70	21.03	4.36	43.09	46.00	2.91
Vertical	36.790	19.41	14.22	0.70	34.33	40.00	5.67
	94.020	24.31	11.50	1.26	37.07	43.50	6.43
	126.030	22.19	13.03	1.50	36.72	43.50	6.78
	144.460	24.68	12.15	1.60	38.43	43.50	5.07
	235.640	24.28	11.48	2.10	37.86	46.00	8.14
	510.150	22.11	17.90	2.89	42.90	46.00	3.10

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43H7C Humidity : 60%RH

Test Mode : USB Play Date of Test : Aug 12, 2016

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	68.800	23.41	7.12	0.92	31.45	40.00	8.55
	155.130	22.70	11.20	1.66	35.56	43.50	7.94
	224.000	28.03	10.75	2.07	40.85	46.00	5.15
	321.970	21.81	14.54	2.62	38.97	46.00	7.03
	560.590	16.76	18.90	2.52	38.18	46.00	7.82
	841.890	14.51	20.77	4.07	39.35	46.00	6.65
Vertical	64.920	26.03	6.50	0.90	33.43	40.00	6.57
	107.600	21.73	12.55	1.38	35.66	43.50	7.84
	172.590	25.08	10.79	1.80	37.67	43.50	5.83
	286.080	21.82	13.52	2.49	37.83	46.00	8.17
	457.770	18.17	17.04	2.85	38.06	46.00	7.94
	829.280	15.27	20.70	3.97	39.94	46.00	6.06

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43H7C Humidity : 60%RH

Test Mode : LAN Play Date of Test : Aug 12, 2016

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	78.500	24.14	9.12	1.05	34.31	40.00	5.69
	128.940	22.62	12.87	1.52	37.01	43.50	6.49
	203.630	25.79	9.77	1.98	37.54	43.50	5.96
	271.530	22.14	13.26	2.35	37.75	46.00	8.25
	681.840	16.43	19.85	3.28	39.56	46.00	6.44
Vertical	918.520	12.81	21.50	4.61	38.92	46.00	7.08
	34.850	17.73	15.80	0.68	34.21	40.00	5.79
	83.350	24.10	9.66	1.13	34.89	40.00	5.11
	151.250	21.62	11.43	1.65	34.70	43.50	8.80
	204.600	24.77	9.78	1.98	36.53	43.50	6.97
	458.740	17.42	17.04	2.85	37.31	46.00	8.69
	622.670	16.34	19.35	2.52	38.21	46.00	7.79

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43H7C Humidity : 60%RH

Test Mode : MHL Date of Test : Aug 12, 2016

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	94.990	23.14	11.70	1.27	36.11	43.50	7.39
	123.120	20.99	12.98	1.48	35.45	43.50	8.05
	193.930	26.05	10.17	1.94	38.16	43.50	5.34
	322.940	23.04	14.59	2.62	40.25	46.00	5.75
	450.980	17.24	16.80	2.84	36.88	46.00	9.12
	771.080	16.50	20.50	3.65	40.65	46.00	5.35
Vertical	52.310	25.23	7.06	0.83	33.12	40.00	6.88
	94.990	24.09	11.70	1.27	37.06	43.50	6.44
	179.380	26.13	10.53	1.83	38.49	43.50	5.01
	244.370	22.94	12.20	2.14	37.28	46.00	8.72
	374.350	18.70	16.39	2.69	37.78	46.00	8.22
	757.500	16.10	20.25	3.63	39.98	46.00	6.02

TEST ENGINEER: CAESAR WU

5 DEVIATION TO TEST SPECIFICATIONS

None.

6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Manufacturer	Location
SMcontact	SMR-TSL-4-3.5-5R	Qingdao Joinset Co., Ltd	See Internal Photos Figure 23
Conductive Tape	JCT-RF-40-20000	Shenzhen TAT Electronics Tech Co., Ltd.	See Internal Photos Figure 24

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:



(BYRON WU)