

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

LED LCD TV

Model No.	Brand
43CU6100,43H6C	Hisense

FCC ID : W9HLCDD0060

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

Prepared By : Audix Technology (Shanghai) Co., Ltd.
3F and 4F, 34Bldg 680 Guiping Rd,
Caohejing Hi-Tech Park,
Shanghai 200233, China

Tel: +86-21-64955500
Fax: +86-21-64955491

Report No. : ACI-F16184
Date of Test : Jul 15-22, 2016
Date of Report : Jul 29, 2016

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TEST REPORT FOR FCC CERTIFICATE

Applicant : Hisense Electric Co., Ltd.
Manufacturer : Hisense Electric Co., Ltd.
Factory #1 : Hisense Electric Co., Ltd.
Factory #2 : Tatung Mexico S.A. de C.V.
Factory #3 : HISENSE ELECTRONICA MEXICO, S.A. DE C.V.
EUT Description : LED LCD TV

Model No.	Brand	Power Supply
43CU6100, 43H6C	Hisense	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 15-22, 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 contains data that are not covered by the NVLAP accreditation.

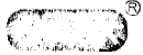
This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

The test results for EUT's TV functions are contained in No.F16183, a Verification report.

Date of Test : Jul 15-22, 2016 Date of Report : Jul 29, 2016

Producer : Huimin Yan
HUI MIN YAN / Assistant

Review : Byron Wu
BYRON WU / Deputy Assistant Manager

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

Signatory : Byron Kwo
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 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	:	☒ Production ☐ Pre-product ☐ Pro-type
Model No	:	43CU6100,43H6C
Note	:	The above models are all the same except for the model name. The 43CU6100 was tested and reported in the report.
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. Sharp #3510 Parque Industrial Rosarito, C.P. 22710 Playas de Rosarito, B.C.
LCD Panel	:	Manufacturer : Hisense M/N : HD426K3U21
Tuner	:	Manufacturer : XuGuang Tech. Co., Ltd M/N : HFT-96S3/W11FJ2H\ROH
Max Resolution	:	3840*2160@60Hz
HDMI Cable*4 (Lab provide)	:	Shielded, Detachable, 1.50m, with two cores
Power Cord	:	Unshielded, Detachable, 1.80m, 2C
USB Cable*2 (Lab provide)	:	Shielded, Detachable, 1.00m
LAN Cable	:	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 ANT Port : Connected with ATSC SG/TV SG
- (2) One USB #1 Port : Connected with Hard-Disk #1
- (3) One USB #2 Port : Connected with Hard-Disk #2
- (4) One Service Port : Do not open to the customers
- (5) One AUDIO OUT Port : Connected with Earphone #1
- (6) One HDMI1 /MHL Port : Connected with Smart Mobile Phone
- (7) One HDMI2 Port : Connected with PC

Bottom Port:

- (8) One COMPONENT IN / AV IN Port : Connected with DVD PLAYER #1
- (9) One LAN Port : Connected with PC
- (10) One DIGITAL AUDIO OUT Port : Connected with Audio Converter to Earphone#2
- (11) One HDMI3 Port : Connected with DVD PLAYER #1
- (12) One HDMI4 Port : Connected with DVD PLAYER #2

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 TV Signal Generator

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

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 : CCC

2.2.9 DVD PLAYER #2

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

2.2.10 Hard Disk #1

Manufacturer : Tetasys
Model Number : F12
Serial Number : A010022-4860010X
Data Cable : Shielded, Detachable, 1.8m.
Certificate : CE, FCC DoC

2.2.11 Hard Disk #2

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

2.2.12 Mobile Phone

Manufacturer : SAMSUNG
Model Number : GT-I9100G
Serial Number : 6935152011519
Data Cable : Shielded, Detachable, 1.5m.
Certificate : CE, EMC

2.3 Description of Test Facility

Site Description : Sept. 17, 1998 file on
(No.3 3m Chamber) Jan.15, 2015 Renewed
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046, USA

Name of Firm : Audix Technology (Shanghai) Co., Ltd.

Site Location : 3F 34Bldg 680 Guiping Rd,
Caohejing Hi-Tech Park,
Shanghai 200233, China

FCC registration Number : 91789

NVLAP Lab Code : 200371-0

2.4 Measurement Uncertainty

Conducted Emission Expanded Uncertainty : U = 3.4dB

Radiated Emission Expanded Uncertainty (30-200MHz):
U = 4.6dB(Horizontal)
U = 4.3dB (Vertical)

Radiated Emission Expanded Uncertainty (200M-1GHz):
U = 4.5dB (Horizontal)
U = 5.4dB (Vertical)

Radiated Emission Expanded Uncertainty (1GHz-6GHz):
U = 5.1dB

3 CONDUCTED EMISSION TEST

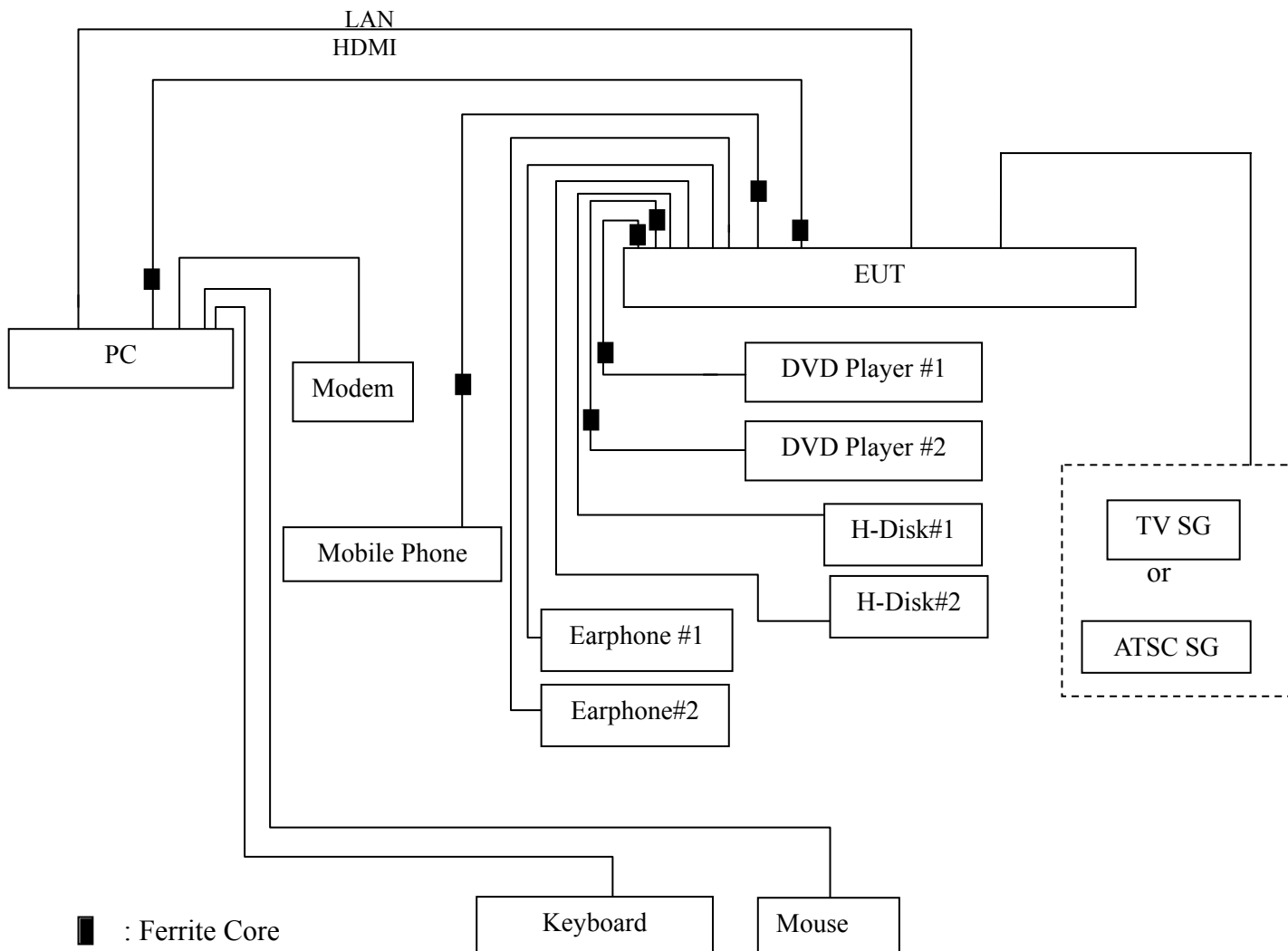
3.1 Test Equipment

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

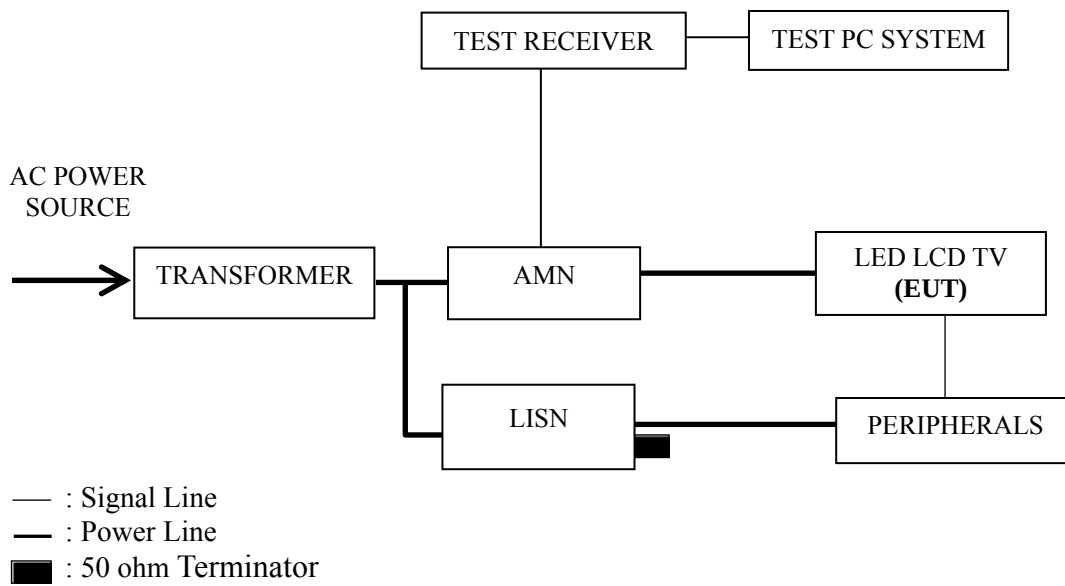
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	101302	Jul 03, 2016	Jul 02, 2017
2.	Artificial Mains Network (AMN)	R&S	ENV4200	100125	Jun 27, 2016	Jun 26, 2017
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Mar 20, 2016	Mar 19, 2017
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 (μV)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50
NOTE 1 – The lower limit shall apply at the transition frequencies. NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz		

3.4 Test Configuration

The EUT (listed in Sec.2.1) and the peripherals (listed in Sec 2.2) were installed as shown on Sec.3.2 to meet FCC requirement and operating in a manner that tends to maximize its emission level in a normal application.

3.5 Operating Condition of EUT

- 3.5.1 Setup the EUT and peripherals as shown in Sec. 3.2.
- 3.5.2 Turn on the power of all equipments and the EUT.
- 3.5.3 Set the contrast & brightness of EUT to maximum.
- 3.5.4 PC system ran the self-test program “EMC Test” by windows XP and sent “H” characters to EUT through graphic card, the EUT’s screen displayed and filled with “H” pattern by its resolution (Via HDMI Input).
- 3.5.5 PC system sent the 1kHz audio signal to EUT through audio port, the EUT speak out 1kHz audio signal.
- 3.5.6 In USB Play mode, set the EUT play digital media from H-Disk.
- 3.5.7 In LAN Play mode, set the EUT play digital media through LAN port
- 3.5.8 In MHL mode, set the EUT play digital media from mobile phone.
- 3.5.9 The other peripherals devices were driven and operated during the test.
- 3.5.10 The test modes are as follows:

Test Mode
HDMI 3840*2160@60Hz & 1kHz playing
HDMI 1920*1080@60Hz & 1kHz playing
HDMI 1280*1024@60Hz & 1kHz playing
HDMI 640*480@60Hz & 1kHz playing
HDMI 1080P
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 C63.4:2014 during conducted emission test.

The bandwidth of R&S Test Receiver ESCI was set at 9 kHz.

The frequency range from 150 kHz to 30 MHz was checked.

The test modes were done on conducted disturbance test and all the test results are listed in Sec. 3.7.

3.7 Test Results

< PASS >

The frequency and amplitude of the highest conducted emission relative to the limit is reported. All emissions not reported below are too low against the prescribed limits.

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

NOTE 1 – Factor = Cable Loss + AMN Factor.

NOTE 2 – Emission Level = Meter Reading + Factor.

NOTE 3 – “QP” means “Quasi-Peak” values, “AV” means “Average” values.

NOTE 4 –The worst case is for HDMI1080P test mode. The worst emission is detected at 0.150 Average Value) with corrected signal level of 65.88 dB (μV) (limit is 65.99dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT : LED LCD TV Temperature : 23°C

Model No. : 43CU6100 Humidity : 52%RH

Test Mode : HDMI 3840*2160@60Hz & 1kHz Playing Date of Test : Jul 15, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	55.10	10.59	65.69	65.99	0.30	QP
	0.186	39.20	10.55	49.75	64.24	14.49	
	0.646	16.60	10.40	27.00	56.00	29.00	
	1.600	20.91	10.40	31.31	56.00	24.69	
	3.278	19.40	10.43	29.83	56.00	26.17	
	6.480	26.20	10.47	36.67	60.00	23.33	
	0.150	35.20	10.59	45.79	55.99	10.20	AV
	0.186	23.10	10.55	33.65	54.24	20.59	
	0.646	7.10	10.40	17.50	46.00	28.50	
	1.600	13.21	10.40	23.61	46.00	22.39	
	3.278	14.20	10.43	24.63	46.00	21.37	
	6.480	21.00	10.47	31.47	50.00	18.53	
Neutral	0.151	55.10	10.58	65.68	65.96	0.28	QP
	0.185	40.10	10.54	50.64	64.27	13.63	
	0.687	11.20	10.39	21.59	56.00	34.41	
	1.603	16.10	10.42	26.52	56.00	29.48	
	3.027	17.80	10.46	28.26	56.00	27.74	
	6.137	24.90	10.52	35.42	60.00	24.58	
	0.151	35.80	10.58	46.38	55.96	9.58	AV
	0.185	24.80	10.54	35.34	54.27	18.93	
	0.687	3.10	10.39	13.49	46.00	32.51	
	1.603	8.20	10.42	18.62	46.00	27.38	
	3.027	12.50	10.46	22.96	46.00	23.04	
	6.137	20.00	10.52	30.52	50.00	19.48	

TEST ENGINEER: SENVEN LU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43CU6100 Humidity : 48%RH

Test Mode : HDMI 1920*1080@60Hz Date of Test : Jul 15, 2016
& 1kHz playing

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	54.50	10.59	65.09	65.98	0.89	QP
	0.185	39.10	10.55	49.65	64.24	14.59	
	0.718	19.50	10.40	29.90	56.00	26.10	
	1.618	20.81	10.40	31.21	56.00	24.79	
	2.977	19.30	10.43	29.73	56.00	26.27	
	6.496	27.30	10.47	37.77	60.00	22.23	
	0.150	34.90	10.59	45.49	55.98	10.49	AV
	0.185	22.80	10.55	33.35	54.24	20.89	
	0.718	9.30	10.40	19.70	46.00	26.30	
	1.618	13.01	10.40	23.41	46.00	22.59	
	2.977	14.50	10.43	24.93	46.00	21.07	
	6.496	22.00	10.47	32.47	50.00	17.53	
Neutral	0.150	55.00	10.58	65.58	65.98	0.40	QP
	0.185	40.20	10.54	50.74	64.26	13.52	
	0.615	15.11	10.38	25.49	56.00	30.51	
	1.603	16.60	10.42	27.02	56.00	28.98	
	3.060	17.80	10.46	28.26	56.00	27.74	
	6.751	24.70	10.53	35.23	60.00	24.77	
	0.150	35.70	10.58	46.28	55.98	9.70	AV
	0.185	25.10	10.54	35.64	54.26	18.62	
	0.615	4.41	10.38	14.79	46.00	31.21	
	1.603	8.00	10.42	18.42	46.00	27.58	
	3.060	12.30	10.46	22.76	46.00	23.24	
	6.751	19.50	10.53	30.03	50.00	19.97	

TEST ENGINEER: SENVEN LU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43CU6100 Humidity : 48%RH

Test Mode : HDMI 1280*1024@60Hz & 1kHz playing Date of Test : Jul 15, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	55.20	10.59	65.79	65.98	0.19	QP
	0.185	39.20	10.55	49.75	64.25	14.50	
	0.653	16.90	10.40	27.30	56.00	28.70	
	1.599	20.71	10.40	31.11	56.00	24.89	
	2.906	19.30	10.43	29.73	56.00	26.27	
	6.500	26.40	10.47	36.87	60.00	23.13	
	0.150	35.30	10.59	45.89	55.98	10.09	AV
	0.185	22.30	10.55	32.85	54.25	21.40	
	0.653	7.60	10.40	18.00	46.00	28.00	
	1.599	12.91	10.40	23.31	46.00	22.69	
	2.906	14.40	10.43	24.83	46.00	21.17	
	6.500	21.50	10.47	31.97	50.00	18.03	
Neutral	0.150	55.20	10.58	65.78	65.99	0.21	QP
	0.188	39.90	10.53	50.43	64.12	13.69	
	0.640	14.50	10.39	24.89	56.00	31.11	
	1.596	16.40	10.42	26.82	56.00	29.18	
	2.884	17.50	10.46	27.96	56.00	28.04	
	6.498	26.19	10.53	36.72	60.00	23.28	
	0.150	35.70	10.58	46.28	55.99	9.71	AV
	0.188	26.80	10.53	37.33	54.12	16.79	
	0.640	6.30	10.39	16.69	46.00	29.31	
	1.596	7.90	10.42	18.32	46.00	27.68	
	2.884	12.10	10.46	22.56	46.00	23.44	
	6.498	20.99	10.53	31.52	50.00	18.48	

TEST ENGINEER: SENVEN LU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43CU6100 Humidity : 48%RH

Test Mode : HDMI 640*480@60Hz & 1kHz playing Date of Test : Jul 15, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.151	55.20	10.59	65.79	65.97	0.18	QP
	0.185	38.80	10.55	49.35	64.28	14.93	
	0.642	16.00	10.40	26.40	56.00	29.60	
	1.599	20.51	10.40	30.91	56.00	25.09	
	3.279	19.20	10.43	29.63	56.00	26.37	
	6.901	25.90	10.47	36.37	60.00	23.63	
	0.151	35.30	10.59	45.89	55.97	10.08	AV
	0.185	21.60	10.55	32.15	54.28	22.13	
	0.642	6.40	10.40	16.80	46.00	29.20	
	1.599	13.11	10.40	23.51	46.00	22.49	
	3.279	14.30	10.43	24.73	46.00	21.27	
	6.901	20.80	10.47	31.27	50.00	18.73	
Neutral	0.150	55.00	10.58	65.58	65.98	0.40	QP
	0.185	40.50	10.54	51.04	64.24	13.20	
	0.720	10.90	10.39	21.29	56.00	34.71	
	1.603	16.30	10.42	26.72	56.00	29.28	
	3.028	17.70	10.46	28.16	56.00	27.84	
	6.495	25.69	10.53	36.22	60.00	23.78	
	0.150	35.70	10.58	46.28	55.98	9.70	AV
	0.185	25.30	10.54	35.84	54.24	18.40	
	0.720	3.30	10.39	13.69	46.00	32.31	
	1.603	7.90	10.42	18.32	46.00	27.68	
	3.028	12.30	10.46	22.76	46.00	23.24	
	6.495	20.59	10.53	31.12	50.00	18.88	

TEST ENGINEER: SENVEN LU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43CU6100 Humidity : 48%RH

Test Mode : HDMI 1080P Date of Test : Jul 15, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	54.60	10.59	65.19	65.98	0.79	QP
	0.185	38.50	10.55	49.05	64.27	15.22	
	0.720	19.10	10.40	29.50	56.00	26.50	
	1.357	19.09	10.41	29.50	56.00	26.50	
	2.906	19.30	10.43	29.73	56.00	26.27	
	6.489	26.00	10.47	36.47	60.00	23.53	
	0.150	34.70	10.59	45.29	55.98	10.69	AV
	0.185	21.40	10.55	31.95	54.27	22.32	
	0.720	8.20	10.40	18.60	46.00	27.40	
	1.357	11.69	10.41	22.10	46.00	23.90	
	2.906	14.20	10.43	24.63	46.00	21.37	
	6.489	20.80	10.47	31.27	50.00	18.73	
Neutral	0.150	55.30	10.58	65.88	65.99	0.11	QP
	0.187	40.09	10.54	50.63	64.15	13.52	
	0.613	13.01	10.38	23.39	56.00	32.61	
	1.602	16.40	10.42	26.82	56.00	29.18	
	3.031	17.50	10.46	27.96	56.00	28.04	
	6.496	25.99	10.53	36.52	60.00	23.48	
	0.150	35.80	10.58	46.38	55.99	9.61	AV
	0.187	26.59	10.54	37.13	54.15	17.02	
	0.613	3.51	10.38	13.89	46.00	32.11	
	1.602	7.90	10.42	18.32	46.00	27.68	
	3.031	12.20	10.46	22.66	46.00	23.34	
	6.496	20.89	10.53	31.42	50.00	18.58	

TEST ENGINEER: SENVEN LU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43CU6100 Humidity : 48%RH

Test Mode : USB Play Date of Test : Jul 15, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	54.60	10.59	65.19	65.98	0.79	QP
	0.186	38.80	10.55	49.35	64.22	14.87	
	0.653	16.90	10.40	27.30	56.00	28.70	
	1.583	18.81	10.40	29.21	56.00	26.79	
	2.879	19.40	10.43	29.83	56.00	26.17	
	6.501	26.20	10.47	36.67	60.00	23.33	
	0.150	34.50	10.59	45.09	55.98	10.89	AV
	0.186	22.50	10.55	33.05	54.22	21.17	
	0.653	7.50	10.40	17.90	46.00	28.10	
	1.583	12.21	10.40	22.61	46.00	23.39	
	2.879	14.20	10.43	24.63	46.00	21.37	
	6.501	21.00	10.47	31.47	50.00	18.53	
Neutral	0.150	54.30	10.58	64.88	65.98	1.10	QP
	0.187	39.79	10.54	50.33	64.15	13.82	
	0.798	15.20	10.39	25.59	56.00	30.41	
	2.183	17.21	10.43	27.64	56.00	28.36	
	3.055	17.90	10.46	28.36	56.00	27.64	
	6.701	24.60	10.53	35.13	60.00	24.87	
	0.150	35.00	10.58	45.58	55.98	10.40	AV
	0.187	26.39	10.54	36.93	54.15	17.22	
	0.798	4.30	10.39	14.69	46.00	31.31	
	2.183	10.71	10.43	21.14	46.00	24.86	
	3.055	12.60	10.46	23.06	46.00	22.94	
	6.701	19.70	10.53	30.23	50.00	19.77	

TEST ENGINEER: SENVEN LU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43CU6100 Humidity : 48%RH

Test Mode : LAN Play Date of Test : Jul 15, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	53.60	10.59	64.19	65.98	1.79	QP
	0.185	38.50	10.55	49.05	64.24	15.19	
	0.655	16.90	10.40	27.30	56.00	28.70	
	1.362	18.49	10.41	28.90	56.00	27.10	
	2.890	19.50	10.43	29.93	56.00	26.07	
	6.477	26.20	10.47	36.67	60.00	23.33	
	0.150	33.80	10.59	44.39	55.98	11.59	AV
	0.185	21.80	10.55	32.35	54.24	21.89	
	0.655	7.50	10.40	17.90	46.00	28.10	
	1.362	11.59	10.41	22.00	46.00	24.00	
	2.890	14.60	10.43	25.03	46.00	20.97	
	6.477	21.10	10.47	31.57	50.00	18.43	
Neutral	0.151	54.20	10.58	64.78	65.96	1.18	QP
	0.186	38.55	10.54	49.09	64.24	15.15	
	0.717	10.10	10.39	20.49	56.00	35.51	
	2.020	15.60	10.43	26.03	56.00	29.97	
	2.908	17.60	10.46	28.06	56.00	27.94	
	6.239	25.10	10.52	35.62	60.00	24.38	
	0.151	35.10	10.58	45.68	55.96	10.28	AV
	0.186	25.00	10.54	35.54	54.24	18.70	
	0.717	2.80	10.39	13.19	46.00	32.81	
	2.020	10.00	10.43	20.43	46.00	25.57	
	2.908	12.30	10.46	22.76	46.00	23.24	
	6.239	20.20	10.52	30.72	50.00	19.28	

TEST ENGINEER: SENVEN LU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43CU6100 Humidity : 48%RH

Test Mode : MHL Date of Test : Jul 15, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.151	53.70	10.59	64.29	65.97	1.68	QP
	0.185	37.90	10.55	48.45	64.24	15.79	
	0.642	15.90	10.40	26.30	56.00	29.70	
	1.230	19.39	10.41	29.80	56.00	26.20	
	2.190	19.90	10.41	30.31	56.00	25.69	
	6.684	25.90	10.47	36.37	60.00	23.63	
	0.151	33.80	10.59	44.39	55.97	11.58	AV
	0.185	22.10	10.55	32.65	54.24	21.59	
	0.642	6.40	10.40	16.80	46.00	29.20	
	1.230	11.09	10.41	21.50	46.00	24.50	
	2.190	14.00	10.41	24.41	46.00	21.59	
	6.684	20.70	10.47	31.17	50.00	18.83	
Neutral	0.150	53.40	10.58	63.98	65.98	2.00	QP
	0.185	39.50	10.54	50.04	64.25	14.21	
	0.694	10.70	10.39	21.09	56.00	34.91	
	1.374	13.60	10.41	24.01	56.00	31.99	
	2.659	17.19	10.46	27.65	56.00	28.35	
	6.497	26.09	10.53	36.62	60.00	23.38	
	0.150	34.20	10.58	44.78	55.98	11.20	AV
	0.185	24.40	10.54	34.94	54.25	19.31	
	0.694	2.90	10.39	13.29	46.00	32.71	
	1.374	6.20	10.41	16.61	46.00	29.39	
	2.659	12.09	10.46	22.55	46.00	23.45	
	6.497	20.89	10.53	31.42	50.00	18.58	

TEST ENGINEER: SENVEN LU

4 RADIATED EMISSION TEST

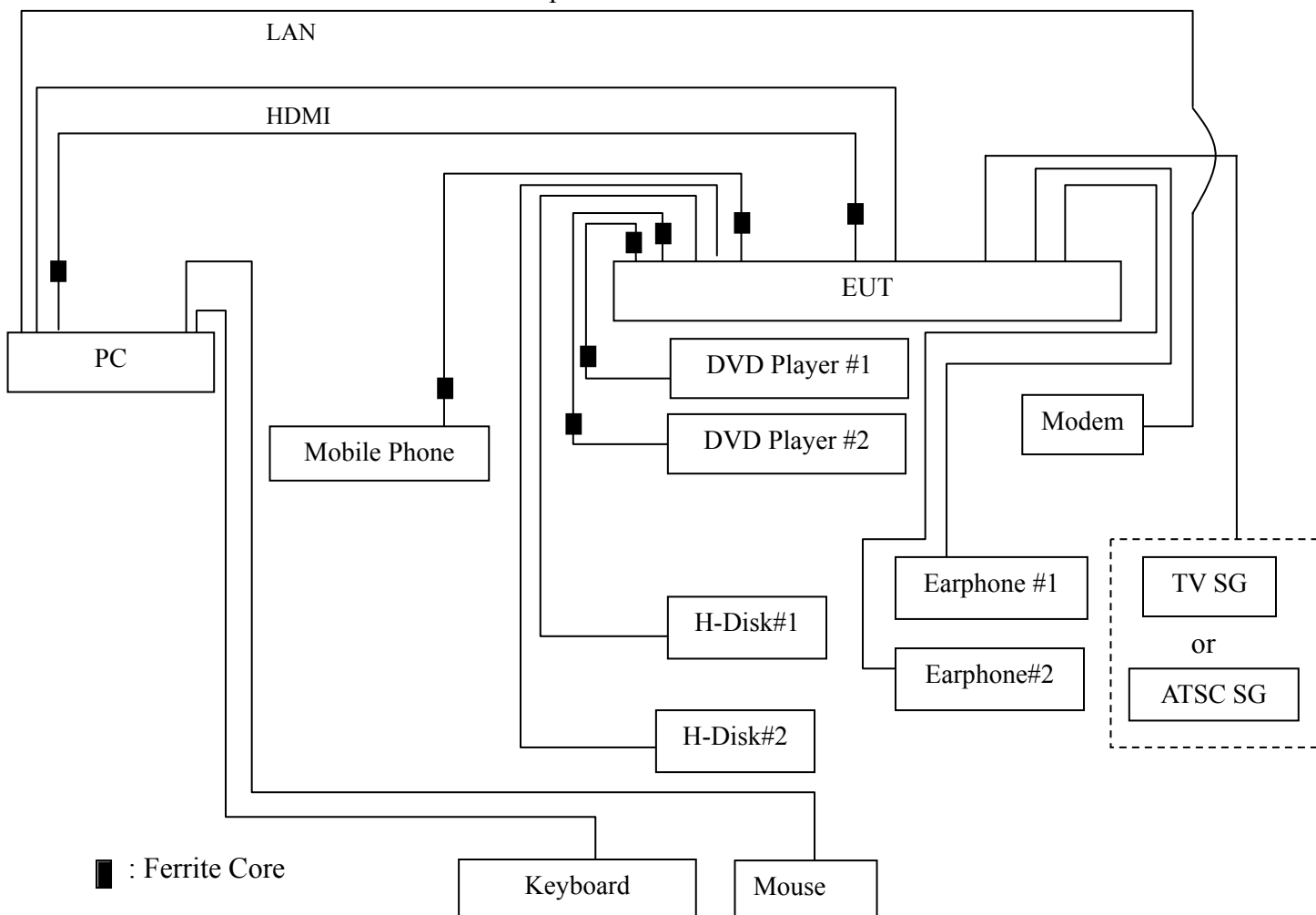
4.1 Test Equipment

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

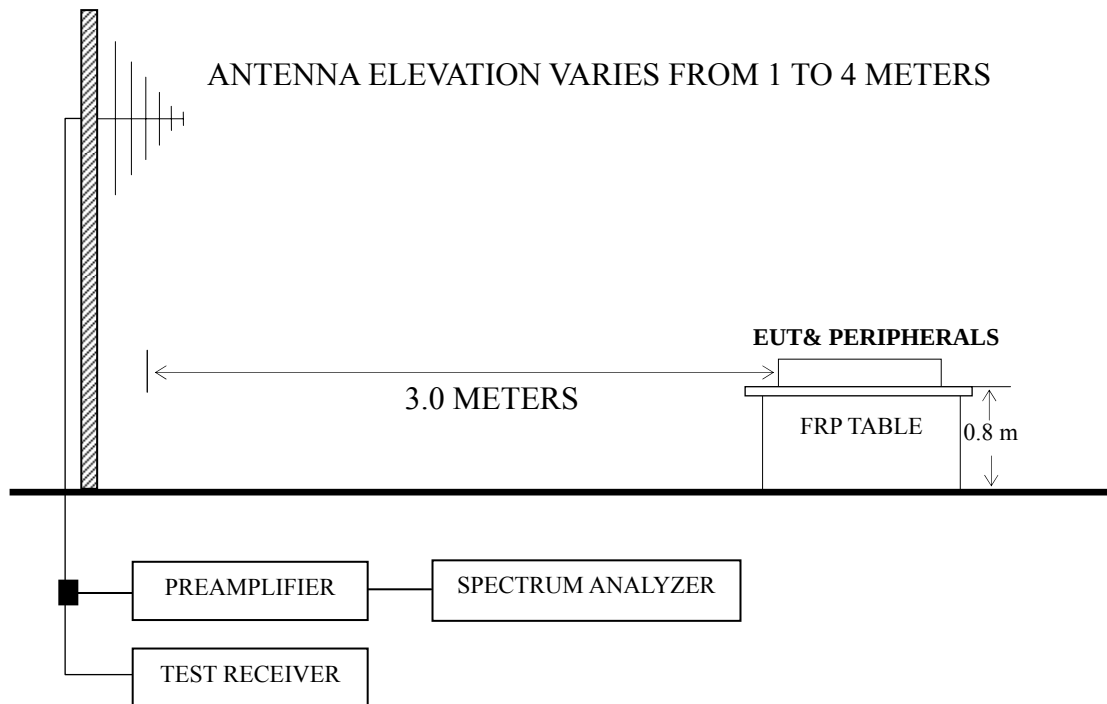
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	101303	May 07, 2016	May 06, 2017
2.	Preamplifier	Agilent	8447D	2944A06664	Apr 27, 2016	Apr 26, 2017
3.	Preamplifier	HP	8449B	3008A00864	Mar 20, 2016	Sep 19, 2016
4.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 15, 2016	May 14, 2017
5.	Horn Antenna	EMCO	3115	9607-4878	Jun 03, 2016	Jun 02, 2017
6.	Spectrum	Agilent	E7405A	MY45106600	Jun 12, 2016	Jun 11, 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



■ : 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 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.

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

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

NOTE 2 – All readings are Quasi-Peak values.

NOTE 3 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 4 –The worst case is for HDMI 3840*2160@60Hz & 1kHz playing test mode. The worst emission at horizontal polarization was detected at 890.73 MHz with corrected signal level of 44.66 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 2.2 m height and the turntable was at 75°. The worst emission at vertical polarization was detected at 890.73 MHz with corrected signal level of 44.04dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.0 m height and the turntable was at 240°.

EUT : LED LCD TV Temperature : 22°C

Model No. : 43CU6100 Humidity : 60%RH

Test Mode : HDMI 3840*2160@60Hz Date of Test : Jul 22, 2016
& 1kHz playing

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	74.396	24.37	8.19	0.86	--	33.42	40.00	6.58	QP
	111.738	24.27	12.21	1.08	--	37.56	43.50	5.94	
	237.476	21.84	11.98	1.60	--	35.42	46.00	10.58	
	297.224	23.39	13.60	1.75	--	38.74	46.00	7.26	
	848.056	17.64	20.50	2.98	--	41.12	46.00	4.88	
	890.728	20.49	21.10	3.07	--	44.66	46.00	1.34	
	2103.453	27.70	68.71	4.55	35.11	65.85	74.00	8.15	PK
	2806.823	29.73	56.29	5.47	35.18	56.31	74.00	17.69	
	3861.233	32.44	50.45	5.91	34.41	54.39	74.00	19.61	
	2103.453	27.70	46.24	4.55	35.11	43.38	54.00	10.62	AV
	2806.823	29.73	36.23	5.47	35.18	36.25	54.00	17.75	
	3861.233	32.44	30.23	5.91	34.41	34.17	54.00	19.83	

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43CU6100 Humidity : 60%RH

Test Mode : HDMI 3840*2160@60Hz Date of Test : Jul 22, 2016
& 1kHz playing

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	32.520	15.31	16.89	0.58	--	32.78	40.00	7.22	QP
	72.592	28.67	7.85	0.85	--	37.37	40.00	2.63	
	90.220	25.50	10.80	0.95	--	37.25	43.50	6.25	
	297.224	24.27	13.60	1.75	--	39.62	46.00	6.38	
	845.088	12.39	20.40	2.98	--	35.77	46.00	10.23	
	890.728	19.87	21.10	3.07	--	44.04	46.00	1.96	
	2111.004	27.72	63.24	4.55	35.11	60.40	74.00	13.60	PK
	2806.823	29.73	59.20	5.47	35.18	59.22	74.00	14.78	
	4230.695	33.18	51.32	6.31	34.20	56.61	74.00	17.39	
	2111.004	27.72	43.63	4.55	35.11	40.79	54.00	13.21	AV
	2806.823	29.73	38.00	5.47	35.18	38.02	54.00	15.98	
	4230.695	33.18	30.83	6.31	34.20	36.12	54.00	17.88	

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43CU6100 Humidity : 60%RH

Test Mode : HDMI 1920*1080@60Hz Date of Test : Jul 22, 2016
& 1kHz playing

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	86.807	21.25	10.35	0.93	32.53	40.00	7.47
	145.351	19.71	12.54	1.26	33.51	43.50	9.99
	243.377	20.62	12.28	1.61	34.51	46.00	11.49
	742.259	18.63	19.57	2.79	40.99	46.00	5.01
	845.088	15.30	20.40	2.98	38.68	46.00	7.32
	890.728	15.80	21.10	3.07	39.97	46.00	6.03
Vertical	32.067	15.01	17.05	0.58	32.64	40.00	7.36
	74.396	26.85	8.19	0.86	35.90	40.00	4.10
	90.855	24.32	10.93	0.95	36.20	43.50	7.30
	136.939	19.40	12.98	1.22	33.60	43.50	9.90
	446.414	17.20	16.73	2.15	36.08	46.00	9.92
	742.259	15.70	19.57	2.79	38.06	46.00	7.94

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43CU6100 Humidity : 60%RH

Test Mode : HDMI 1280*1024@60Hz Date of Test : Jul 22, 2016
& 1kHz playing

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	73.103	23.73	7.96	0.85	32.54	40.00	7.46
	110.957	21.73	12.15	1.07	34.95	43.50	8.55
	143.326	20.37	12.82	1.25	34.44	43.50	9.06
	234.991	21.94	11.80	1.59	35.33	46.00	10.67
	432.546	21.28	16.44	2.12	39.84	46.00	6.16
	845.088	16.24	20.40	2.98	39.62	46.00	6.38
Vertical	31.955	14.24	17.10	0.58	31.92	40.00	8.08
	71.832	27.87	7.74	0.84	36.45	40.00	3.55
	92.139	24.51	11.13	0.96	36.60	43.50	6.90
	140.342	19.84	13.20	1.23	34.27	43.50	9.23
	432.546	18.58	16.44	2.12	37.14	46.00	8.86
	845.088	12.11	20.40	2.98	35.49	46.00	10.51

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43CU6100 Humidity : 60%RH

Test Mode : HDMI 640*480@60Hz & 1kHz playing Date of Test : Jul 22, 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	72.847	23.28	7.91	0.85	32.04	40.00	7.96
	109.796	21.54	12.10	1.07	34.71	43.50	8.79
	144.335	20.45	12.68	1.25	34.38	43.50	9.12
	234.168	22.22	11.74	1.59	35.55	46.00	10.45
	477.169	12.93	17.18	2.22	32.33	46.00	13.67
	851.035	15.71	20.57	3.00	39.28	46.00	6.72
Vertical	32.406	15.32	16.94	0.58	32.84	40.00	7.16
	72.847	26.59	7.91	0.85	35.35	40.00	4.65
	88.652	25.43	10.60	0.94	36.97	43.50	6.53
	138.874	19.44	13.11	1.23	33.78	43.50	9.72
	219.845	20.91	11.00	1.54	33.45	46.00	12.55
	845.088	12.09	20.40	2.98	35.47	46.00	10.53

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43CU6100 Humidity : 60%RH

Test Mode : HDMI 1080P Date of Test : Jul 22, 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	80.081	20.39	8.90	0.89	30.18	40.00	9.82
	132.221	22.91	12.86	1.19	36.96	43.50	6.54
	241.676	23.92	12.22	1.61	37.75	46.00	8.25
	423.540	13.26	16.33	2.10	31.69	46.00	14.31
	848.056	17.05	20.50	2.98	40.53	46.00	5.47
	890.728	17.62	21.10	3.07	41.79	46.00	4.21
Vertical	32.179	16.21	16.99	0.58	33.78	40.00	6.22
	40.135	18.98	13.60	0.64	33.22	40.00	6.78
	72.084	23.51	7.79	0.85	32.15	40.00	7.85
	422.058	17.23	16.33	2.09	35.65	46.00	10.35
	593.050	19.74	18.25	2.50	40.49	46.00	5.51
	890.728	19.58	21.10	3.07	43.75	46.00	2.25

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43CU6100 Humidity : 60%RH

Test Mode : MHL Date of Test : Jul 22, 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	86.503	19.76	10.30	0.93	30.99	40.00	9.01
	136.460	19.89	12.93	1.22	34.04	43.50	9.46
	211.527	21.69	10.70	1.52	33.91	43.50	9.59
	239.147	20.37	12.04	1.60	34.01	46.00	11.99
	851.035	15.20	20.57	3.00	38.77	46.00	7.23
	872.183	14.48	20.90	3.03	38.41	46.00	7.59
Vertical	32.179	15.23	16.99	0.58	32.80	40.00	7.20
	40.559	18.73	13.19	0.64	32.56	40.00	7.44
	72.847	22.76	7.91	0.85	31.52	40.00	8.48
	91.495	23.36	11.07	0.96	35.39	43.50	8.11
	423.540	15.87	16.33	2.10	34.30	46.00	11.70
	845.088	11.99	20.40	2.98	35.37	46.00	10.63

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43CU6100 Humidity : 60%RH

Test Mode : USB Play Date of Test : Jul 22, 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	85.898	22.02	10.20	0.93	33.15	40.00	6.85
	140.342	17.93	13.20	1.23	32.36	43.50	11.14
	192.419	22.48	9.95	1.45	33.88	43.50	9.62
	247.682	22.91	12.52	1.63	37.06	46.00	8.94
	475.499	14.51	17.16	2.22	33.89	46.00	12.11
	848.056	14.96	20.50	2.98	38.44	46.00	7.56
Vertical	31.620	14.61	17.27	0.58	32.46	40.00	7.54
	40.559	19.44	13.19	0.64	33.27	40.00	6.73
	72.084	24.67	7.79	0.85	33.31	40.00	6.69
	90.220	23.61	10.80	0.95	35.36	43.50	8.14
	420.580	15.25	16.32	2.09	33.66	46.00	12.34
	851.035	13.21	20.57	3.00	36.78	46.00	9.22

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 43CU6100 Humidity : 60%RH

Test Mode : LAN Play Date of Test : Jul 22, 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	81.783	22.24	9.33	0.90	32.47	40.00	7.53
	148.441	20.35	12.23	1.27	33.85	43.50	9.65
	216.024	21.84	10.92	1.53	34.29	46.00	11.71
	236.645	21.96	11.92	1.59	35.47	46.00	10.53
	477.169	13.94	17.18	2.22	33.34	46.00	12.66
	848.056	15.47	20.50	2.98	38.95	46.00	7.05
Vertical	39.854	18.44	13.65	0.64	32.73	40.00	7.27
	72.592	24.11	7.85	0.85	32.81	40.00	7.19
	88.033	24.86	10.50	0.93	36.29	43.50	7.21
	148.963	22.45	12.16	1.28	35.89	43.50	7.61
	423.540	16.69	16.33	2.10	35.12	46.00	10.88
	845.088	12.66	20.40	2.98	36.04	46.00	9.96

TEST ENGINEER: CAESAR WU

5 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Manufacturer	Location
Conductive Tape	DCF/40\ROH	Tong an tai	See Appendix Figure 28
SM contact	SMR-TSL-4-3.5-5R	Qingdao Joinset.	See Appendix Figure 29

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)

6 DEVIATION TO TEST SPECIFICATIONS

None.

