

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

LED LCD TV

Model No.:

Model No.	Brand
LC-50N8002U, LC-50P8000U, LC-50P8000U+, LC-50P80+0U, LC-50P80+0U1, LC-50P80+0U2, LC-50P8+0U, LC-50P8+0U1, LC-50P8+0U2	Sharp

FCC ID : W9HLCDF0136

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

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Report No. : ACI-F17240  
Date of Test : Jun 29-Jul 01, 2017  
Date of Report : Jul 07, 2017

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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 : Sharp  
                   Power Supply : 120V/60Hz

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B  
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 Jun 29-Jul 01, 2017 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.F17239, a Verification report.***

Date of Test : Jun 29-Jul 01, 2017      Date of Report : Jul 07, 2017

Producer : HUI MIN YAN  
                   HUI MIN YAN / Assistant

Review : Byron Wu  
                   BYRON WU / Deputy Assistant 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
<b>EMISSION</b>			
Conducted Disturbance at the Mains Terminal	FCC RULES AND REGULATIONS PART 15 SUBPART B AND ANSI C63.4-2014	15.107(a) Class B	Pass
		Minimum passing margin is 6.71dB at 2.178MHz	
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B AND ANSI C63.4-2014	15.109(a) Class B	Pass
		Minimum passing margin is 2.97 dB at 714.173MHz (Horizontal, 2.0m/250°)	

## 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	:	LC-50N8002U, LC-50P8000U LC-50P8000U+, LC-50P80+0U LC-50P80+0U1, LC-50P80+0U2 LC-50P8+0U, LC-50P8+0U1 LC-50P8+0U2
Note #1	:	The above models are all the same except for model number. LC-50N8002U model is tested and recorded in the report.
Note #2	:	“+”represents any of the Arabic numeral.
Note #3	:	The tuner port comply with the 15.111 requirement.
Brand	:	Sharp
RF module FCC ID	:	2AJVQ-ZDGFMT7612U
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 : HD500M5U51-TAB1
Tuner	:	Manufacturer : SILICON LABS M/N : Si2151-A10
Max Resolution	:	3840*2160@60Hz
HDMI Cable*4 (Lab provide)	:	Shielded, Detachable, 1.80m

Power Cord	:	Unshielded, Detachable, 1.80m, 2C
LAN Cable	:	Unshielded, Detachable, 1.50m
USB Cable*3 (Lab provide)	:	Shielded, Detachable, 1.00m

**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
- (3) One USB 2 Port : Connected with Hard-Disk
- (4) One Service Port : Do not open to the customers
- (5) One AUDIO OUT Port : Connected with Earphone#1
- (6) One HDMI 1/MHL Port : Connected with Mobile phone
- (7) One HDMI2 Port : Connected with PC
- (8) One USB 3 Port : Connected with Hard-Disk

## Back Port:

- (9) One COMPONENT IN/AV IN Port : Connected with DVD PLAYER
- (10) One LAN IN Port : Connected with PC
- (11) One Digital Audio Out Port : Connected with Audio Converter to Earphone#2
- (12) One HDMI3 Port : Connected with PC
- (13) One HDMI4 Port : Connected with DVD PLAYER

## 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, undetachable, 1.8m  
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, Undetachable, 1.8m.  
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, 1.8m  
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

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

## 2.2.9 Hard Disk#1

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

## 2.2.10 Hard Disk #2

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

## 2.2.11 Hard Disk #3

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

## 2.2.12 Mobile Phone

Manufacturer : SAMSUNG  
Model Number : GT-I9100G  
Serial Number : 6935152011519



## 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 = 4.3 dB (Horizontal)  
U = 4.6 dB (Vertical)

Radiated Emission Expanded Uncertainty (200M-1GHz):  
U = 4.3 dB (Horizontal)  
U = 5.5 dB (Vertical)

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

### 3 CONDUCTED EMISSION TEST

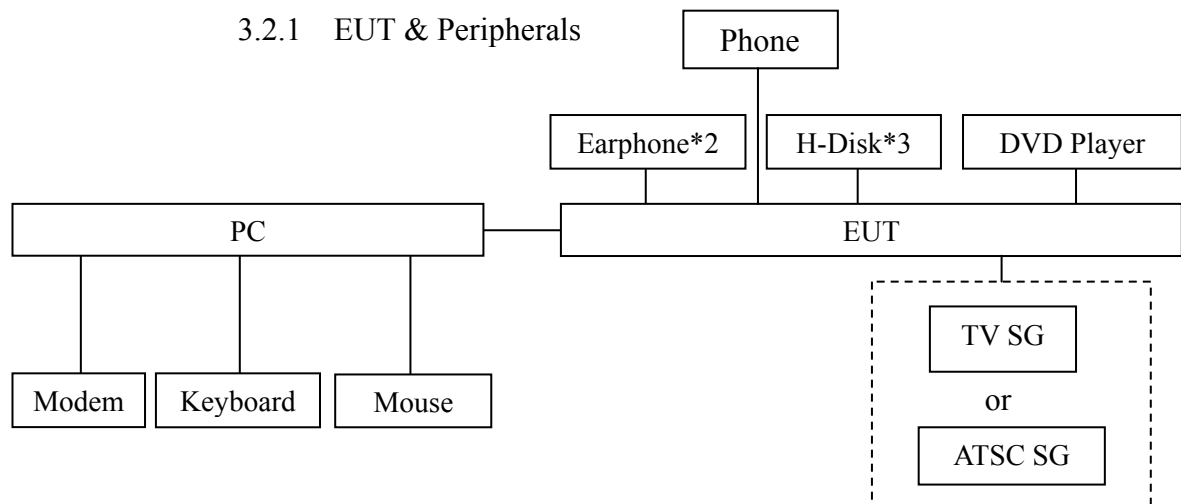
#### 3.1 Test Equipment

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

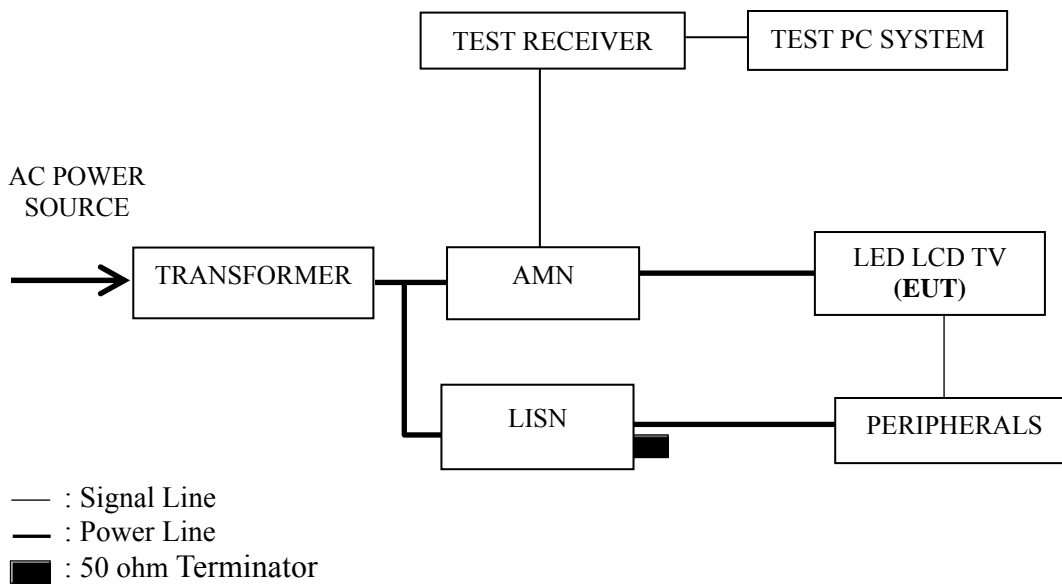
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	101302	Apr 27, 2017	Apr 26, 2018
2.	Artificial Mains Network (AMN)	R&S	ENV4200	100125	Jun 25, 2018	Jun 24, 2018
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Mar 17, 2017	Mar 16, 2018
4.	50Ω Terminator	Anritsu	BNC	001	Mar 20, 2017	Sep 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 ( $\mu$ 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 WIFI mode, set the EUT play digital media through WIFI.
- 3.5.9 In MHL mode, set the EUT play digital media from mobile phone.
- 3.5.10 The other peripherals devices were driven and operated during the test.
- 3.5.11 The test modes are as follows:

Test Mode
HDMI1 3840*2160@60Hz & 1kHz playing
HDMI1 1920*1080@60Hz & 1kHz playing
HDMI1 1280*1024@60Hz & 1kHz playing
HDMI1 640*480@60Hz & 1kHz playing
HDMI2 3840*2160@60Hz & 1kHz playing
HDMI3 3840*2160@30Hz & 1kHz playing
HDMI4 3840*2160@30Hz & 1kHz playing
HDMI1080P
USB Play
LAN Play
WIFI
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
HDMI1 3840*2160@60Hz & 1kHz playing	P14
HDMI1 1920*1080@60Hz & 1kHz playing	P15
HDMI1 1280*1024@60Hz & 1kHz playing	P16
HDMI1 640*480@60Hz & 1kHz playing	P17
HDMI2 3840*2160@60Hz & 1kHz playing	P18
HDMI3 3840*2160@30Hz & 1kHz playing	P19
HDMI4 3840*2160@30Hz & 1kHz playing	P20
HDMI1080P	P21
USB Play	P22
<b>LAN Play</b>	<b>P23</b>
WIFI	P24
MHL	P25

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.

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 48%RH

Test Mode : HDMI1 Date of Test : Jun 29, 2017  
3840\*2160@60Hz &  
1kHz Playing

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark	
Line	0.180	40.26	10.56	50.82	64.50	13.68	QP	
	0.447	35.11	10.40	45.51	56.93	11.42		
	0.679	36.08	10.38	46.46	56.00	9.54		
	0.909	35.45	10.39	45.84	56.00	10.16		
	1.781	35.03	10.41	45.44	56.00	10.56		
	2.500	38.14	10.42	48.56	56.00	7.44		
	Line	0.180	27.26	10.56	37.82	54.50	16.68	AV
		0.447	20.11	10.40	30.51	46.93	16.42	
		0.679	20.08	10.38	30.46	46.00	15.54	
		0.909	22.45	10.39	32.84	46.00	13.16	
1.781		21.03	10.41	31.44	46.00	14.56		
2.500		25.14	10.42	35.56	46.00	10.44		
Neutral	0.180	40.72	10.50	51.22	64.50	13.28	QP	
	0.444	35.66	10.39	46.05	56.98	10.93		
	0.679	36.01	10.39	46.40	56.00	9.60		
	0.909	35.24	10.39	45.63	56.00	10.37		
	1.819	35.30	10.42	45.72	56.00	10.28		
	<b>2.500</b>	<b>38.65</b>	<b>10.43</b>	<b>49.08</b>	<b>56.00</b>	<b>6.92</b>		
	Neutral	0.180	28.72	10.50	39.22	54.50	15.28	AV
		0.444	20.66	10.39	31.05	46.98	15.93	
		0.679	20.01	10.39	30.40	46.00	15.60	
		0.909	22.24	10.39	32.63	46.00	13.37	
		1.819	22.30	10.42	32.72	46.00	13.28	
		2.500	25.65	10.43	36.08	46.00	9.92	

TEST ENGINEER: KALSI CHEN

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 48%RH

Test Mode : HDMI1 Date of Test : Jun 29, 2017  
1920\*1080@60Hz &  
1kHz Playing

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark
Line	0.182	40.29	10.56	50.85	64.42	13.57	QP
	0.456	35.08	10.40	45.48	56.76	11.28	
	0.694	36.45	10.38	46.83	56.00	9.17	
	1.129	35.29	10.39	45.68	56.00	10.32	
	1.839	35.32	10.41	45.73	56.00	10.27	
	2.358	37.72	10.42	48.14	56.00	7.86	
	AV	0.182	27.29	10.56	37.85	54.42	16.57
		0.456	21.08	10.40	31.48	46.76	15.28
		0.694	20.45	10.38	30.83	46.00	15.17
		1.129	22.29	10.39	32.68	46.00	13.32
1.839		21.32	10.41	31.73	46.00	14.27	
2.358		25.72	10.42	36.14	46.00	9.86	
Neutral	0.182	40.97	10.50	51.47	64.42	12.95	QP
	0.444	35.86	10.39	46.25	56.98	10.73	
	0.694	36.22	10.39	46.61	56.00	9.39	
	1.129	35.71	10.39	46.10	56.00	9.90	
	1.839	35.64	10.42	46.06	56.00	9.94	
	<b>2.554</b>	<b>38.21</b>	<b>10.43</b>	<b>48.64</b>	<b>56.00</b>	<b>7.36</b>	
	AV	0.182	28.97	10.50	39.47	54.42	14.95
		0.444	20.86	10.39	31.25	46.98	15.73
		0.694	20.22	10.39	30.61	46.00	15.39
		1.129	22.71	10.39	33.10	46.00	12.90
		1.839	22.64	10.42	33.06	46.00	12.94
		2.554	25.21	10.43	35.64	46.00	10.36

TEST ENGINEER: KALSI CHEN

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 48%RH

Test Mode : HDMI1 Date of Test : Jun 29, 2017  
1280\*1024@60Hz &  
1kHz Playing

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark	
Line	0.182	40.98	10.56	51.54	64.42	12.88	QP	
	0.456	34.98	10.40	45.38	56.76	11.38		
	0.694	36.74	10.38	47.12	56.00	8.88		
	0.923	35.78	10.39	46.17	56.00	9.83		
	1.819	35.29	10.41	45.70	56.00	10.30		
	2.554	37.10	10.42	47.52	56.00	8.48		
	Line	0.182	27.98	10.56	38.54	54.42	15.88	AV
		0.456	20.98	10.40	31.38	46.76	15.38	
		0.694	20.74	10.38	31.12	46.00	14.88	
		0.923	22.78	10.39	33.17	46.00	12.83	
		1.819	21.29	10.41	31.70	46.00	14.30	
		2.554	25.10	10.42	35.52	46.00	10.48	
Neutral	0.183	40.22	10.49	50.71	64.33	13.62	QP	
	0.461	35.05	10.39	45.44	56.67	11.23		
	0.694	36.62	10.39	47.01	56.00	8.99		
	1.117	35.80	10.39	46.19	56.00	9.81		
	1.839	35.58	10.42	46.00	56.00	10.00		
	<b>2.178</b>	<b>37.79</b>	<b>10.42</b>	<b>48.21</b>	<b>56.00</b>	<b>7.79</b>		
	Neutral	0.183	28.22	10.49	38.71	54.33	15.62	AV
		0.461	20.05	10.39	30.44	46.67	16.23	
		0.694	20.62	10.39	31.01	46.00	14.99	
		1.117	22.80	10.39	33.19	46.00	12.81	
		1.839	22.58	10.42	33.00	46.00	13.00	
		2.178	25.79	10.42	36.21	46.00	9.79	

TEST ENGINEER: KALSI CHEN



EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 48%RH

Test Mode : HDMI1 640\*480@60Hz Date of Test : Jun 29, 2017  
& 1kHz Playing

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark
Line	0.183	40.96	10.55	51.51	64.33	12.82	QP
	0.456	35.57	10.40	45.97	56.76	10.79	
	0.694	35.79	10.38	46.17	56.00	9.83	
	1.129	35.52	10.39	45.91	56.00	10.09	
	1.949	35.57	10.41	45.98	56.00	10.02	
	2.474	38.56	10.42	48.98	56.00	7.02	
	0.183	27.96	10.55	38.51	54.33	15.82	AV
	0.456	20.57	10.40	30.97	46.76	15.79	
	0.694	20.79	10.38	31.17	46.00	14.83	
	1.129	22.52	10.39	32.91	46.00	13.09	
	1.949	21.57	10.41	31.98	46.00	14.02	
	2.474	25.56	10.42	35.98	46.00	10.02	
Neutral	0.184	40.74	10.49	51.23	64.28	13.05	QP
	0.452	35.22	10.39	45.61	56.85	11.24	
	0.694	36.71	10.39	47.10	56.00	8.90	
	0.923	35.58	10.39	45.97	56.00	10.03	
	1.819	35.43	10.42	45.85	56.00	10.15	
	<b>2.527</b>	<b>38.65</b>	<b>10.43</b>	<b>49.08</b>	<b>56.00</b>	<b>6.92</b>	
	0.184	28.74	10.49	39.23	54.28	15.05	AV
	0.452	20.22	10.39	30.61	46.85	16.24	
	0.694	20.71	10.39	31.10	46.00	14.90	
	0.923	22.58	10.39	32.97	46.00	13.03	
	1.819	22.43	10.42	32.85	46.00	13.15	
	2.527	25.65	10.43	36.08	46.00	9.92	

TEST ENGINEER: KALSI CHEN

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 48%RH

Test Mode : HDMI2 Date of Test : Jun 29, 2017  
3840\*2160@60Hz &  
1kHz Playing

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.182	40.28	10.56	50.84	64.42	13.58	QP
	0.452	35.77	10.40	46.17	56.85	10.68	
	0.679	36.37	10.38	46.75	56.00	9.25	
	0.909	35.07	10.39	45.46	56.00	10.54	
	1.781	35.72	10.41	46.13	56.00	9.87	
	2.285	37.03	10.42	47.45	56.00	8.55	
	AV	0.182	27.28	10.56	37.84	54.42	16.58
		0.452	20.77	10.40	31.17	46.85	15.68
		0.679	20.37	10.38	30.75	46.00	15.25
		0.909	22.07	10.39	32.46	46.00	13.54
		1.781	21.72	10.41	32.13	46.00	13.87
		2.285	25.03	10.42	35.45	46.00	10.55
Neutral	0.180	40.66	10.50	51.16	64.50	13.34	QP
	0.447	35.78	10.39	46.17	56.93	10.76	
	0.679	36.05	10.39	46.44	56.00	9.56	
	0.899	35.41	10.39	45.80	56.00	10.20	
	1.781	34.26	10.42	44.68	56.00	11.32	
	<b>2.474</b>	<b>37.91</b>	<b>10.43</b>	<b>48.34</b>	<b>56.00</b>	<b>7.66</b>	
	AV	0.180	28.66	10.50	39.16	54.50	15.34
		0.447	20.78	10.39	31.17	46.93	15.76
		0.679	20.05	10.39	30.44	46.00	15.56
		0.899	22.41	10.39	32.80	46.00	13.20
		1.781	22.26	10.42	32.68	46.00	13.32
		2.474	25.91	10.43	36.34	46.00	9.66

TEST ENGINEER: KALSI CHEN

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 48%RH

Test Mode : HDMI3 Date of Test : Jun 29, 2017  
3840\*2160@30Hz &  
1kHz Playing

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.183	40.14	10.55	50.69	64.33	13.64	QP
	0.444	35.88	10.40	46.28	56.98	10.70	
	0.679	36.18	10.38	46.56	56.00	9.44	
	0.909	35.42	10.39	45.81	56.00	10.19	
	1.781	35.22	10.41	45.63	56.00	10.37	
	2.500	38.05	10.42	48.47	56.00	7.53	
	0.183	27.14	10.55	37.69	54.33	16.64	AV
	0.444	20.88	10.40	31.28	46.98	15.70	
	0.679	20.18	10.38	30.56	46.00	15.44	
	0.909	22.42	10.39	32.81	46.00	13.19	
	1.781	21.22	10.41	31.63	46.00	14.37	
	2.500	25.05	10.42	35.47	46.00	10.53	
Neutral	0.178	40.24	10.50	50.74	64.59	13.85	QP
	0.447	35.63	10.39	46.02	56.93	10.91	
	0.679	36.14	10.39	46.53	56.00	9.47	
	0.909	35.88	10.39	46.27	56.00	9.73	
	1.819	35.71	10.42	46.13	56.00	9.87	
	<b>2.448</b>	<b>38.15</b>	<b>10.43</b>	<b>48.58</b>	<b>56.00</b>	<b>7.42</b>	
	0.178	28.24	10.50	38.74	54.59	15.85	AV
	0.447	20.63	10.39	31.02	46.93	15.91	
	0.679	20.14	10.39	30.53	46.00	15.47	
	0.909	22.88	10.39	33.27	46.00	12.73	
	1.819	22.71	10.42	33.13	46.00	12.87	
	2.448	25.15	10.43	35.58	46.00	10.42	

TEST ENGINEER: KALSI CHEN

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 48%RH

Test Mode : HDMI4 Date of Test : Jun 29, 2017  
3840\*2160@30Hz &  
1kHz Playing

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.184	40.96	10.55	51.51	64.28	12.77	QP
	0.444	35.24	10.40	45.64	56.98	11.34	
	0.694	36.61	10.38	46.99	56.00	9.01	
	0.914	35.21	10.39	45.60	56.00	10.40	
	1.819	35.50	10.41	45.91	56.00	10.09	
	2.554	37.43	10.42	47.85	56.00	8.15	
	AV	0.184	27.96	10.55	38.51	54.28	15.77
		0.444	20.24	10.40	30.64	46.98	16.34
		0.694	20.61	10.38	30.99	46.00	15.01
		0.914	22.21	10.39	32.60	46.00	13.40
		1.819	21.50	10.41	31.91	46.00	14.09
		2.554	25.43	10.42	35.85	46.00	10.15
Neutral	0.184	40.40	10.49	50.89	64.28	13.39	QP
	0.452	35.19	10.39	45.58	56.85	11.27	
	0.694	36.59	10.39	46.98	56.00	9.02	
	0.923	35.46	10.39	45.85	56.00	10.15	
	1.819	35.67	10.42	46.09	56.00	9.91	
	<b>2.384</b>	<b>38.14</b>	<b>10.43</b>	<b>48.57</b>	<b>56.00</b>	<b>7.43</b>	
	AV	0.184	28.40	10.49	38.89	54.28	15.39
		0.452	20.19	10.39	30.58	46.85	16.27
		0.694	20.59	10.39	30.98	46.00	15.02
		0.923	22.46	10.39	32.85	46.00	13.15
		1.819	22.67	10.42	33.09	46.00	12.91
		2.384	25.14	10.43	35.57	46.00	10.43

TEST ENGINEER: KALSI CHEN

EUT : LED LCD TV Temperature : 22°C  
 Model No. : LC-50N8002U Humidity : 48%RH  
 Test Mode : HDMI 1080P Date of Test : Jun 29, 2017

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.183	40.96	10.55	51.51	64.33	12.82	QP
	0.452	35.47	10.40	45.87	56.85	10.98	
	0.694	36.67	10.38	47.05	56.00	8.95	
	0.914	35.06	10.39	45.45	56.00	10.55	
	1.839	35.01	10.41	45.42	56.00	10.58	
	2.554	37.20	10.42	47.62	56.00	8.38	
	0.183	27.96	10.55	38.51	54.33	15.82	AV
	0.452	21.47	10.40	31.87	46.85	14.98	
	0.694	22.67	10.38	33.05	46.00	12.95	
	0.914	22.06	10.39	32.45	46.00	13.55	
	1.839	21.01	10.41	31.42	46.00	14.58	
	2.554	25.20	10.42	35.62	46.00	10.38	
Neutral	0.183	40.21	10.49	50.70	64.33	13.63	QP
	0.440	35.92	10.39	46.31	57.07	10.76	
	0.694	36.74	10.39	47.13	56.00	8.87	
	1.117	35.37	10.39	45.76	56.00	10.24	
	1.839	35.19	10.42	45.61	56.00	10.39	
	<b>2.422</b>	<b>38.79</b>	<b>10.43</b>	<b>49.22</b>	<b>56.00</b>	<b>6.78</b>	
	0.183	27.21	10.49	37.70	54.33	16.63	AV
	0.440	20.92	10.39	31.31	47.07	15.76	
	0.694	20.74	10.39	31.13	46.00	14.87	
	1.117	22.37	10.39	32.76	46.00	13.24	
	1.839	21.19	10.42	31.61	46.00	14.39	
	2.422	26.79	10.43	37.22	46.00	8.78	

TEST ENGINEER: KALSI CHEN

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 48%RH

Test Mode : USB Play Date of Test : Jun 29, 2017

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.182	40.85	10.56	51.41	64.42	13.01	QP
	0.456	35.05	10.40	45.45	56.76	11.31	
	0.694	36.59	10.38	46.97	56.00	9.03	
	1.129	35.79	10.39	46.18	56.00	9.82	
	1.949	35.56	10.41	45.97	56.00	10.03	
	2.554	38.62	10.42	49.04	56.00	6.96	
	0.182	28.85	10.56	39.41	54.42	15.01	AV
	0.456	20.05	10.40	30.45	46.76	16.31	
	0.694	21.59	10.38	31.97	46.00	14.03	
	1.129	23.79	10.39	34.18	46.00	11.82	
	1.949	21.56	10.41	31.97	46.00	14.03	
	2.554	25.62	10.42	36.04	46.00	9.96	
Neutral	0.183	40.46	10.49	50.95	64.33	13.38	QP
	0.447	35.23	10.39	45.62	56.93	11.31	
	0.694	36.62	10.39	47.01	56.00	8.99	
	1.117	35.73	10.39	46.12	56.00	9.88	
	1.839	35.92	10.42	46.34	56.00	9.66	
	<b>2.554</b>	<b>38.84</b>	<b>10.43</b>	<b>49.27</b>	<b>56.00</b>	<b>6.73</b>	
	0.183	28.46	10.49	38.95	54.33	15.38	AV
	0.447	21.23	10.39	31.62	46.93	15.31	
	0.694	21.62	10.39	32.01	46.00	13.99	
	1.117	22.73	10.39	33.12	46.00	12.88	
	1.839	22.92	10.42	33.34	46.00	12.66	
	2.554	25.84	10.43	36.27	46.00	9.73	

TEST ENGINEER: KALSI CHEN

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 48%RH

Test Mode : LAN Play Date of Test : Jun 29, 2017

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark
Line	0.182	40.87	10.56	51.43	64.42	12.99	QP
	0.452	35.17	10.40	45.57	56.85	11.28	
	0.694	36.72	10.38	47.10	56.00	8.90	
	1.117	35.88	10.39	46.27	56.00	9.73	
	1.698	35.19	10.41	45.60	56.00	10.40	
	2.384	38.79	10.42	49.21	56.00	6.79	
	0.182	27.87	10.56	38.43	54.42	15.99	AV
	0.452	21.17	10.40	31.57	46.85	15.28	
	0.694	20.72	10.38	31.10	46.00	14.90	
	1.117	22.88	10.39	33.27	46.00	12.73	
1.698	21.19	10.41	31.60	46.00	14.40		
2.384	25.79	10.42	36.21	46.00	9.79		
Neutral	0.182	40.23	10.50	50.73	64.42	13.69	QP
	0.461	35.02	10.39	45.41	56.67	11.26	
	0.694	36.49	10.39	46.88	56.00	9.12	
	0.923	35.42	10.39	45.81	56.00	10.19	
	1.781	35.08	10.42	45.50	56.00	10.50	
	<b>2.178</b>	<b>38.87</b>	<b>10.42</b>	<b>49.29</b>	<b>56.00</b>	<b>6.71</b>	
	0.182	28.23	10.50	38.73	54.42	15.69	AV
	0.461	21.02	10.39	31.41	46.67	15.26	
	0.694	20.49	10.39	30.88	46.00	15.12	
	0.923	22.42	10.39	32.81	46.00	13.19	
1.781	22.08	10.42	32.50	46.00	13.50		
2.178	25.87	10.42	36.29	46.00	9.71		

TEST ENGINEER: KALSI CHEN

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 48%RH

Test Mode : WIFI Date of Test : Jun 29, 2017

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark
Line	0.183	40.02	10.55	50.57	64.33	13.76	QP
	0.452	35.19	10.40	45.59	56.85	11.26	
	0.694	36.84	10.38	47.22	56.00	8.78	
	0.914	35.65	10.39	46.04	56.00	9.96	
	1.602	35.42	10.40	45.82	56.00	10.18	
	<b>2.448</b>	<b>38.38</b>	<b>10.42</b>	<b>48.80</b>	<b>56.00</b>	<b>7.20</b>	
	0.183	27.02	10.55	37.57	54.33	16.76	AV
	0.452	20.19	10.40	30.59	46.85	16.26	
	0.694	20.84	10.38	31.22	46.00	14.78	
	0.914	22.65	10.39	33.04	46.00	12.96	
	1.602	21.42	10.40	31.82	46.00	14.18	
	2.448	25.38	10.42	35.80	46.00	10.20	
Neutral	0.183	40.26	10.49	50.75	64.33	13.58	QP
	0.456	35.86	10.39	46.25	56.76	10.51	
	0.694	36.57	10.39	46.96	56.00	9.04	
	1.324	36.40	10.40	46.80	56.00	9.20	
	1.949	35.35	10.42	45.77	56.00	10.23	
	2.422	36.84	10.43	47.27	56.00	8.73	
	0.183	27.26	10.49	37.75	54.33	16.58	AV
	0.456	20.86	10.39	31.25	46.76	15.51	
	0.694	20.57	10.39	30.96	46.00	15.04	
	1.324	22.40	10.40	32.80	46.00	13.20	
	1.949	22.35	10.42	32.77	46.00	13.23	
	2.422	25.84	10.43	36.27	46.00	9.73	

TEST ENGINEER: KALSI CHEN



EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 48%RH

Test Mode : MHL Date of Test : Jun 29, 2017

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.182	39.35	10.56	49.91	64.42	14.51	QP
	0.452	35.92	10.40	46.32	56.85	10.53	
	0.694	35.76	10.38	46.14	56.00	9.86	
	1.117	35.18	10.39	45.57	56.00	10.43	
	1.819	35.28	10.41	45.69	56.00	10.31	
	2.554	38.62	10.42	49.04	56.00	6.96	
	AV	0.182	27.35	10.56	37.91	54.42	16.51
		0.452	20.92	10.40	31.32	46.85	15.53
		0.694	20.76	10.38	31.14	46.00	14.86
		1.117	22.18	10.39	32.57	46.00	13.43
		1.819	21.28	10.41	31.69	46.00	14.31
		2.554	25.62	10.42	36.04	46.00	9.96
Neutral	0.183	39.20	10.49	49.69	64.33	14.64	QP
	0.447	35.19	10.39	45.58	56.93	11.35	
	0.694	36.70	10.39	47.09	56.00	8.91	
	1.129	35.75	10.39	46.14	56.00	9.86	
	1.949	35.28	10.42	45.70	56.00	10.30	
	<b>2.334</b>	<b>38.66</b>	<b>10.43</b>	<b>49.09</b>	<b>56.00</b>	<b>6.91</b>	
	AV	0.183	28.20	10.49	38.69	54.33	15.64
		0.447	20.19	10.39	30.58	46.93	16.35
		0.694	20.70	10.39	31.09	46.00	14.91
		1.129	22.75	10.39	33.14	46.00	12.86
		1.949	22.28	10.42	32.70	46.00	13.30
		2.334	25.66	10.43	36.09	46.00	9.91

TEST ENGINEER: KALSI CHEN

## 4 RADIATED EMISSION TEST

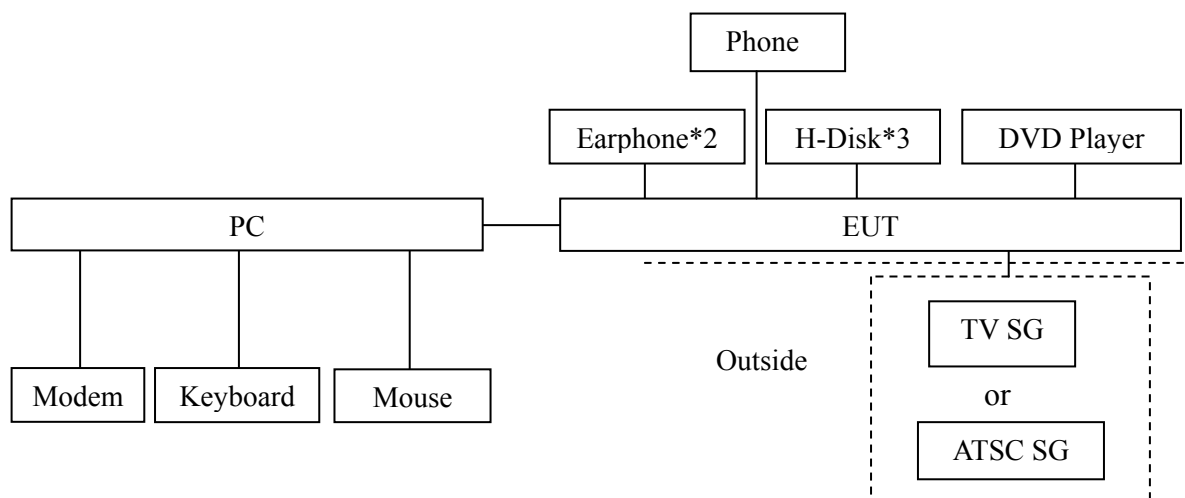
### 4.1 Test Equipment

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, 2017	May 06, 2018
2.	Preamplifier	Agilent	8447D	2944A06664	Apr 27, 2017	Apr 26, 2018
3.	Preamplifier	HP	8449B	3008A00864	Mar 20, 2017	Mar 19, 2018
4.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 15, 2017	May 14, 2018
5.	Horn Antenna	EMCO	3115	9607-4878	Jun 03, 2017	Jun 02, 2018
6.	Spectrum	Agilent	E7405A	MY45106600	Apr 26, 2017	Apr 25, 2018
7.	Software	Audix	e3	6.2007-9-10	--	--

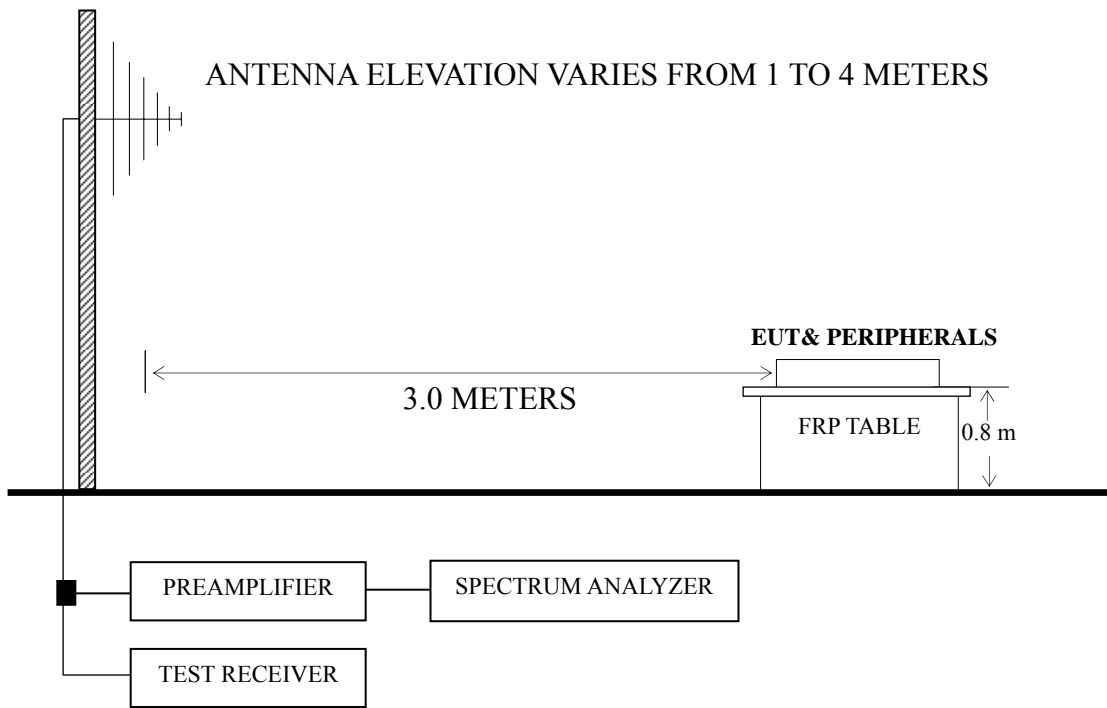
### 4.2 Block Diagram of Test Setup

#### 4.2.1 EUT & Peripherals



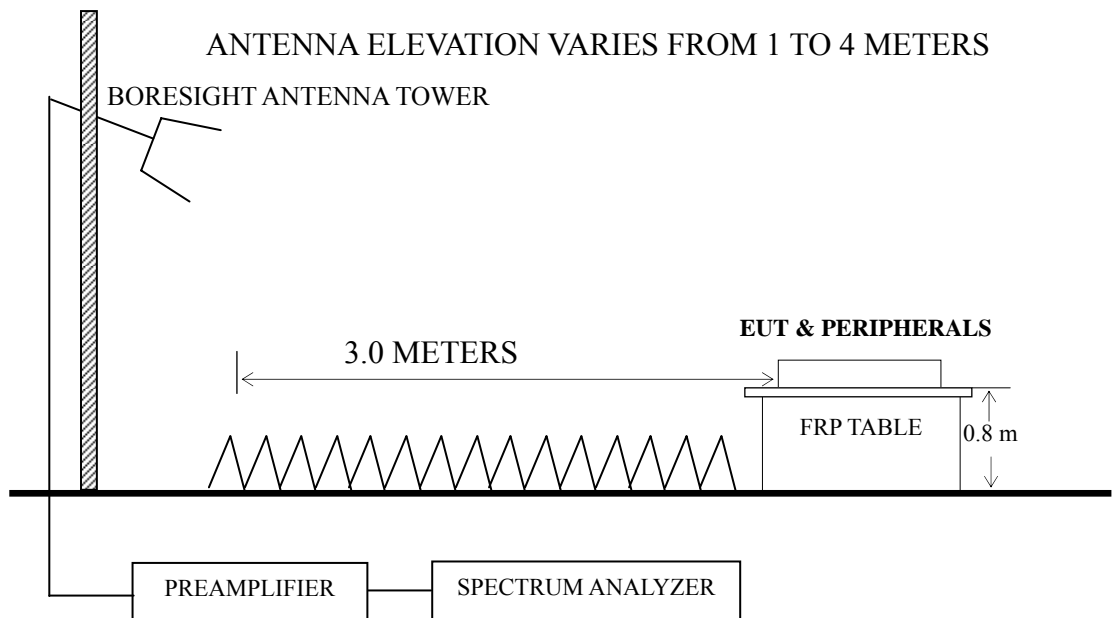
### 4.2.2 Radiated emission test setup

#### 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 5 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
<b>HDMI1 3840*2160@60Hz &amp; 1kHz playing</b>	<b>P30-P31</b>
HDMI1 1920*1080@60Hz & 1kHz playing	P32
HDMI1 1280*1024@60Hz & 1kHz playing	P33
HDMI1 640*480@60Hz & 1kHz playing	P34
HDMI2 3840*2160@60Hz & 1kHz playing	P35
HDMI3 3840*2160@30Hz & 1kHz playing	P36
HDMI4 3840*2160@30Hz & 1kHz playing	P37
HDMI1080P	P38
USB Play	P39
LAN Play	P40
WIFI	P41
MHL	P42

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.

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 60%RH

Test Mode : HDMI1 3840\*2160@60Hz & 1kHz playing Date of Test : Jul 01, 2017

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	75.977	20.92	8.59	0.84	0.00	30.35	40.00	9.65	QP
	140.835	20.18	12.43	1.24	0.00	33.85	43.50	9.65	
	164.908	23.09	10.30	1.35	0.00	34.74	43.50	8.76	
	238.310	29.03	11.88	1.61	0.00	42.52	46.00	3.48	
	<b>731.920</b>	<b>19.70</b>	<b>20.43</b>	<b>2.74</b>	<b>0.00</b>	<b>42.87</b>	<b>46.00</b>	<b>3.13</b>	
	890.728	17.93	21.00	3.03	0.00	41.96	46.00	4.04	PK
	1485.838	49.86	25.56	3.86	35.76	43.52	74.00	30.48	
	1899.233	44.16	27.16	4.31	35.30	40.33	74.00	33.67	
	2640.937	55.30	29.03	5.18	35.20	54.31	74.00	19.69	AV
	1485.838	33.33	25.56	3.86	35.76	26.99	54.00	27.01	
	1899.233	30.83	27.16	4.31	35.30	27.00	54.00	27.00	
2640.937	40.67	29.03	5.18	35.20	39.68	54.00	14.32		

TEST ENGINEER: LEON YUN

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 60%RH

Test Mode : HDMI1 3840\*2160@60Hz & 1kHz playing Date of Test : Jul 01, 2017

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	57.999	25.45	6.90	0.77	0.00	33.12	40.00	6.88	QP
	85.598	22.43	10.37	0.90	0.00	33.70	40.00	6.30	
	140.835	19.67	12.43	1.24	0.00	33.34	43.50	10.16	
	245.090	27.92	12.60	1.63	0.00	42.15	46.00	3.85	
	<b>714.173</b>	<b>19.85</b>	<b>20.45</b>	<b>2.73</b>	<b>0.00</b>	<b>43.03</b>	<b>46.00</b>	<b>2.97</b>	
	896.997	18.90	20.93	3.03	0.00	42.86	46.00	3.14	PK
	1189.818	56.58	24.40	3.52	36.17	48.33	74.00	25.67	
	1748.973	58.97	26.61	4.11	35.45	54.24	74.00	19.76	
	2664.703	52.53	29.13	5.18	35.20	51.64	74.00	22.36	AV
	1189.818	40.82	24.40	3.52	36.17	32.57	54.00	21.43	
	1748.973	34.72	26.61	4.11	35.45	29.99	54.00	24.01	
2664.703	38.63	29.13	5.18	35.20	37.74	54.00	16.26		

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 60%RH

Test Mode : HDMI1 1920\*1080@60Hz Date of Test : Jul 01, 2017  
& 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	87.112	20.15	10.51	0.92	31.58	40.00	8.42
	140.835	16.19	12.43	1.24	29.86	43.50	13.64
	219.075	25.61	10.84	1.55	38.00	46.00	8.00
	238.310	29.14	11.88	1.61	42.63	46.00	3.37
	731.920	19.22	20.43	2.74	42.39	46.00	3.61
	890.728	17.06	21.00	3.03	41.09	46.00	4.91
Vertical	85.898	22.78	10.37	0.91	34.06	40.00	5.94
	148.963	21.84	11.64	1.28	34.76	43.50	8.74
	222.170	23.87	10.95	1.56	36.38	46.00	9.62
	<b>241.676</b>	<b>28.98</b>	<b>12.24</b>	<b>1.62</b>	<b>42.84</b>	<b>46.00</b>	<b>3.16</b>
	472.176	15.25	17.84	2.23	35.32	46.00	10.68
	711.674	19.38	20.42	2.71	42.51	46.00	3.49

TEST ENGINEER: LEON YUN



EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 60%RH

Test Mode : HDMI1 1280\*1024@60Hz & 1kHz Playing Date of Test : Jul 01, 2017

Polarization	Frequency (MHz)	Meter Reading dB ( $\mu$ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB ( $\mu$ V/m)	Limits dB ( $\mu$ V/m)	Margin (dB)
Horizontal	88.033	20.04	10.59	0.92	31.55	43.50	11.95
	119.856	21.82	13.20	1.13	36.15	43.50	7.35
	219.845	24.84	10.80	1.55	37.19	46.00	8.81
	238.310	28.89	11.88	1.61	42.38	46.00	3.62
	731.920	18.87	20.43	2.74	42.04	46.00	3.96
	890.728	16.53	21.00	3.03	40.56	46.00	5.44
Vertical	86.503	23.05	10.44	0.91	34.40	40.00	5.60
	146.888	20.73	11.79	1.27	33.79	43.50	9.71
	219.845	23.89	10.80	1.55	36.24	46.00	9.76
	241.676	28.37	12.24	1.62	42.23	46.00	3.77
	711.674	19.34	20.42	2.71	42.47	46.00	3.53
	<b>776.878</b>	<b>19.29</b>	<b>20.67</b>	<b>2.82</b>	<b>42.78</b>	<b>46.00</b>	<b>3.22</b>

TEST ENGINEER: LEON YUN

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 60%RH

Test Mode : HDMI1 640\*480@60Hz & 1kHz Playing Date of Test : Jul 01, 2017

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	87.112	20.27	10.51	0.92	31.70	40.00	8.30
	125.007	15.61	12.90	1.15	29.66	43.50	13.84
	222.170	26.37	10.95	1.56	38.88	46.00	7.12
	235.816	28.99	11.76	1.60	42.35	46.00	3.65
	731.920	18.31	20.43	2.74	41.48	46.00	4.52
	896.997	17.42	20.93	3.03	41.38	46.00	4.62
Vertical	87.418	22.30	10.55	0.92	33.77	40.00	6.23
	146.888	19.64	11.79	1.27	32.70	43.50	10.80
	241.676	28.20	12.24	1.62	42.06	46.00	3.94
	478.846	15.24	18.00	2.25	35.49	46.00	10.51
	711.674	19.33	20.42	2.71	42.46	46.00	3.54
	<b>896.997</b>	<b>18.60</b>	<b>20.93</b>	<b>3.03</b>	<b>42.56</b>	<b>46.00</b>	<b>3.44</b>

TEST ENGINEER: LEON YUN

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 60%RH

Test Mode : HDMI2 3840\*2160@60Hz & 1kHz Playing Date of Test : Jul 01, 2017

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	87.112	20.67	10.51	0.92	32.10	40.00	7.90
	140.835	17.38	12.43	1.24	31.05	43.50	12.45
	<b>235.816</b>	<b>29.45</b>	<b>11.76</b>	<b>1.60</b>	<b>42.81</b>	<b>46.00</b>	<b>3.19</b>
	446.414	13.65	17.53	2.17	33.35	46.00	12.65
	729.358	19.56	20.40	2.74	42.70	46.00	3.30
	900.147	17.14	20.90	3.05	41.09	46.00	4.91
Vertical	85.898	23.22	10.37	0.91	34.50	40.00	5.50
	141.826	18.81	12.27	1.24	32.32	43.50	11.18
	239.987	28.50	12.00	1.61	42.11	46.00	3.89
	467.235	18.07	17.78	2.22	38.07	46.00	7.93
	731.920	19.51	20.43	2.74	42.68	46.00	3.32
	776.878	19.20	20.67	2.82	42.69	46.00	3.31

TEST ENGINEER: LEON YUN

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 60%RH

Test Mode : HDMI3 3840\*2160@30Hz & 1kHz playing Date of Test : Jul 01, 2017

Polarization	Frequency (MHz)	Meter Reading dB ( $\mu$ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB ( $\mu$ V/m)	Limits dB ( $\mu$ V/m)	Margin (dB)
Horizontal	87.112	20.76	10.51	0.92	32.19	40.00	7.81
	222.170	24.16	10.95	1.56	36.67	46.00	9.33
	235.816	29.08	11.76	1.60	42.44	46.00	3.56
	446.414	12.70	17.53	2.17	32.40	46.00	13.60
	<b>731.920</b>	<b>19.67</b>	<b>20.43</b>	<b>2.74</b>	<b>42.84</b>	<b>46.00</b>	<b>3.16</b>
	900.147	17.42	20.90	3.05	41.37	46.00	4.63
Vertical	87.112	23.83	10.51	0.92	35.26	40.00	4.74
	136.939	17.29	12.22	1.22	30.73	43.50	12.77
	241.676	26.44	12.24	1.62	40.30	46.00	5.70
	475.499	15.76	17.92	2.25	35.93	46.00	10.07
	711.674	19.01	20.42	2.71	42.14	46.00	3.86
	776.878	18.72	20.67	2.82	42.21	46.00	3.79

TEST ENGINEER: LEON YUN

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 60%RH

Test Mode : HDMI4 3840\*2160@30Hz Date of Test : Jul 01, 2017  
& 1kHz playing

Polarization	Frequency (MHz)	Meter Reading dB ( $\mu$ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB ( $\mu$ V/m)	Limits dB ( $\mu$ V/m)	Margin (dB)
Horizontal	84.999	21.51	10.30	0.90	32.71	40.00	7.29
	138.874	17.47	12.39	1.23	31.09	43.50	12.41
	235.816	29.19	11.76	1.60	42.55	46.00	3.45
	449.556	13.87	17.60	2.19	33.66	46.00	12.34
	734.491	19.62	20.43	2.76	42.81	46.00	3.19
	<b>893.857</b>	<b>18.85</b>	<b>20.97</b>	<b>3.03</b>	<b>42.85</b>	<b>46.00</b>	<b>3.15</b>
Vertical	40.988	15.61	12.86	0.66	29.13	40.00	10.87
	87.112	21.93	10.51	0.92	33.36	40.00	6.64
	216.024	23.09	10.96	1.54	35.59	46.00	10.41
	241.676	26.38	12.24	1.62	40.24	46.00	5.76
	729.358	19.00	20.40	2.74	42.14	46.00	3.86
	896.997	18.05	20.93	3.03	42.01	46.00	3.99

TEST ENGINEER: LEON YUN

EUT : LED LCD TV Temperature : 22°C  
 Model No. : LC-50N8002U Humidity : 60%RH  
 Test Mode : HDMI1080P Date of Test : Jul 01, 2017

Polarization	Frequency (MHz)	Meter Reading dB ( $\mu$ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB ( $\mu$ V/m)	Limits dB ( $\mu$ V/m)	Margin (dB)
Horizontal	84.702	21.08	10.24	0.90	32.22	40.00	7.78
	127.218	18.94	12.72	1.17	32.83	43.50	10.67
	<b>229.293</b>	<b>29.60</b>	<b>11.26</b>	<b>1.58</b>	<b>42.44</b>	<b>46.00</b>	<b>3.56</b>
	401.839	13.57	16.40	2.07	32.04	46.00	13.96
	716.682	17.25	20.48	2.73	40.46	46.00	5.54
	824.597	13.34	20.97	2.89	37.20	46.00	8.80
Vertical	57.392	24.15	7.01	0.76	31.92	40.00	8.08
	98.142	20.55	12.45	0.99	33.99	43.50	9.51
	207.850	22.48	10.26	1.52	34.26	43.50	9.24
	248.552	27.22	12.78	1.64	41.64	46.00	4.36
	465.599	13.58	17.76	2.22	33.56	46.00	12.44
	716.682	18.72	20.48	2.73	41.93	46.00	4.07

TEST ENGINEER: LEON YUN

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 60%RH

Test Mode : USB Play Date of Test : Jul 01, 2017

Polarization	Frequency (MHz)	Meter Reading dB ( $\mu$ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB ( $\mu$ V/m)	Limits dB ( $\mu$ V/m)	Margin (dB)
Horizontal	83.522	21.48	10.04	0.89	32.41	40.00	7.59
	123.266	18.00	13.02	1.14	32.16	43.50	11.34
	<b>230.099</b>	<b>29.56</b>	<b>11.30</b>	<b>1.59</b>	<b>42.45</b>	<b>46.00</b>	<b>3.55</b>
	411.824	15.50	16.94	2.10	34.54	46.00	11.46
	716.682	15.25	20.48	2.73	38.46	46.00	7.54
	821.710	12.98	20.90	2.89	36.77	46.00	9.23
Vertical	57.796	24.41	6.94	0.76	32.11	40.00	7.89
	97.115	20.60	12.32	0.98	33.90	43.50	9.60
	214.514	22.11	10.92	1.54	34.57	43.50	8.93
	480.528	13.47	18.00	2.25	33.72	46.00	12.28
	721.726	15.93	20.50	2.73	39.16	46.00	6.84
	787.851	17.20	20.77	2.83	40.80	46.00	5.20

TEST ENGINEER: LEON YUN

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 60%RH

Test Mode : LAN Play Date of Test : Jul 01, 2017

Polarization	Frequency (MHz)	Meter Reading dB ( $\mu$ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB ( $\mu$ V/m)	Limits dB ( $\mu$ V/m)	Margin (dB)
Horizontal	83.816	20.83	10.11	0.89	31.83	40.00	8.17
	145.861	19.74	11.82	1.26	32.82	43.50	10.68
	230.099	24.68	11.30	1.59	37.57	46.00	8.43
	414.722	15.90	16.98	2.10	34.98	46.00	11.02
	574.626	11.13	19.10	2.46	32.69	46.00	13.31
	758.041	12.28	20.70	2.80	35.78	46.00	10.22
Vertical	52.945	23.14	7.57	0.74	31.45	40.00	8.55
	<b>83.230</b>	<b>22.15</b>	<b>9.98</b>	<b>0.88</b>	<b>33.01</b>	<b>40.00</b>	<b>6.99</b>
	143.830	19.73	12.05	1.25	33.03	43.50	10.47
	247.682	23.00	12.78	1.64	37.42	46.00	8.58
	454.310	16.47	17.64	2.19	36.30	46.00	9.70
	742.259	15.54	20.57	2.76	38.87	46.00	7.13

TEST ENGINEER: LEON YUN



EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 60%RH

Test Mode : WIFI Date of Test : Jul 01, 2017

Polarization	Frequency (MHz)	Meter Reading dB ( $\mu$ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB ( $\mu$ V/m)	Limits dB ( $\mu$ V/m)	Margin (dB)
Horizontal	81.497	20.39	9.66	0.87	30.92	40.00	9.08
	144.842	18.84	11.90	1.26	32.00	43.50	11.50
	<b>232.532</b>	<b>27.41</b>	<b>11.54</b>	<b>1.59</b>	<b>40.54</b>	<b>46.00</b>	<b>5.46</b>
	410.383	15.09	16.90	2.08	34.07	46.00	11.93
	572.614	12.24	19.00	2.45	33.69	46.00	12.31
	737.071	15.15	20.47	2.76	38.38	46.00	7.62
Vertical	84.405	21.24	10.17	0.89	32.30	40.00	7.70
	213.015	21.79	10.83	1.53	34.15	43.50	9.35
	244.232	25.21	12.48	1.63	39.32	46.00	6.68
	457.507	14.40	17.68	2.20	34.28	46.00	11.72
	570.610	13.53	18.90	2.45	34.88	46.00	11.12
	742.259	13.63	20.57	2.76	36.96	46.00	9.04

TEST ENGINEER: LEON YUN

EUT : LED LCD TV Temperature : 22°C

Model No. : LC-50N8002U Humidity : 60%RH

Test Mode : MHL Date of Test : Jul 01, 2017

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	82.938	20.20	9.91	0.88	30.99	40.00	9.01
	228.490	23.80	11.22	1.58	36.60	46.00	9.40
	408.946	14.18	16.80	2.08	33.06	46.00	12.94
	578.670	11.84	19.30	2.46	33.60	46.00	12.40
	747.483	14.74	20.70	2.78	38.22	46.00	7.78
	935.546	10.31	21.30	3.10	34.71	46.00	11.29
Vertical	48.163	19.29	9.20	0.71	29.20	40.00	10.80
	72.847	22.48	8.09	0.83	31.40	40.00	8.60
	148.441	18.77	11.68	1.27	31.72	43.50	11.78
	234.168	24.64	11.62	1.60	37.86	46.00	8.14
	462.346	16.32	17.72	2.22	36.26	46.00	9.74
	<b>750.108</b>	<b>15.21</b>	<b>20.70</b>	<b>2.78</b>	<b>38.69</b>	<b>46.00</b>	<b>7.31</b>

TEST ENGINEER: LEON YUN

## **5 DEVIATION TO TEST SPECIFICATIONS**

None.

## 6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Manufacturer	Location
SM Contact	SMR-TSL-4-3.5-5R	Qingdao Joinset	See Appendix Figure 22

Note: We had required the applicant and manufacturer that all electrical and mechanical devices employed for spurious radiation suppression, including any modifications made during testing, must be incorporated in each unit marked

TEST ENGINEER:



(BYRON WU)