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

LCD TV

Model No.: LCD19W57DCA

Serial No.: E2009070601

Brand: Hisense

FCC ID : W9HLCDX0001

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

Prepared By : Audix Technology (Shanghai) Co., Ltd.
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Report No. : ACI-F09064
Date of Test : Jul 07-15, 2009
Date of Report : Jul 22, 2009

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TEST REPORT FOR FCC CERTIFICATE

Applicant	:	Hisense Electric Co., Ltd.
Manufacturer	:	Hisense Electric Co., Ltd.
EUT Description	:	LCD TV
	(A) Model No.	: LCD19W57DCA
	(B) Serial No.	: E2009070601
	(C) Brand	: Hisense
	(D) Power Supply	: 120V/60Hz

Test Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2008 AND ANSI C63.4-2003

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B (Class B) limits both radiated and conducted emissions.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report shows that the EUT (M/N: Refer to Sec.2.1; S/N: Refer to Sec.2.1) which was tested in 3m anechoic chamber Jul 07-15, 2009 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 function are contained in No.F09063, a Verification report.

Date of Test : Jul 07-15, 2009 Date of Report : Jul 22, 2009

Producer : Alan He
ALAN HE / Assistant

Review : Byron Wu
BYRON WU / Supervisor

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

Signatory : Dio Yang
Authorized Signature EMC DIO YANG / Supervisor

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 2008 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2008 AND ANSI C63.4-2003	15.109(a) Class B	Pass

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description	:	LCD TV
Type of EUT	:	☑ Production ☐ Pre-product ☐ Pro-type
Model No.	:	LCD19W57DCA
Serial No.	:	E2009070601
Brand	:	Hisense
Applicant	:	Hisense Electric Co., Ltd. No.218 Qianwangang Road, Economy & Technology Development Zone, Qingdao, China
Manufacturer	:	Hisense Electric Co., Ltd. No.218 Qianwangang Road, Economy & Technology Development Zone, Qingdao, China
LCD Panel	:	Manufacturer : BOE M/N : HT185WX1-100
Tuner	:	Manufacturer : Wuxi Components 6th Factory M/N : FTDC3Y13MH05/ROH
AC Adapter	:	Manufacturer : Huizhou Sanhua Industrial Co., Ltd. M/N : SAWA-01-483 Input : 100-240V AC, 50/60Hz, 1.5A. Output : 12V ⎓ 5.0A
Max Resolution	:	1360*768@60Hz
D-Sub Cable	:	Shielded, Detachable, 1.85m, with two cores on cable
HDMI Cable	:	Shielded, Detachable, 1.85m, without core on cable
Power Cord	:	Unshielded, Detachable, 1.80m

Remark:

The EUT is a LCD TV which input/output ports as follows:

Bottom View:

(1) One DC Input Port — Connected with Adapter

(2) One component of YPbPr Port — Connected with DVD

(3) One HDMI Port — Connected with DVD

(4) One VGA Port — Connected with PC

(5) One VGA Audio Port — Connected with PC

(6) One COAXIAL Port — Connected with DVD

(7) One Component of AV Port — Connected with DVD

(8) One S-Video Port — Connected with TV SG

(9) One ANT Port — Connected with TV SG / ATSC SG

(10) One Earphone Port — Connected with Earphone

Side Port:

(11) One USB Slot — Insert with U-Disk

(12) One SD/MS/MMC Card Slot — Insert with SD Card

2.2 Peripherals

2.2.1 PC

Manufacturer	:	HP
Model Number	:	dx7200MT
Serial Number	:	CNG622017W
Power Cord	:	Unshielded, Detachable, 1.8m
Certificate	:	FCC DoC; CE/EMC; VCCI; C-Tick; UL BSMI (R33001) 3C (A000111) MIC (E-A011-04-2659(B)

2.2.2 Printer

Manufacturer	:	HP
Model Number	:	C3990A
Serial Number	:	JPZX020487
Data Cable	:	Shielded, detachable, 1.5m
Certificate	:	GS, CE/EMC, C-Tick, FCC DoC

2.2.3 Keyboard

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

2.2.4 Mouse

Manufacturer	:	Microsoft
Model Number	:	RT2300
Serial Number	:	6965712071551
Data Cable	:	Shielded, undetachable, 1.8m.
Certificate	:	CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

2.2.5 Modem

Manufacturer	:	TP-LINK
Model Number	:	TM-EC5658V
Serial Number	:	07123301053
Data Cable	:	Shielded, Detachable, 1.8m
Certificate	:	FCC DoC, CE/EMC, CCC

2.2.6 Earphone

Manufacturer	:	SONY
Model Number	:	MDR-E808
Serial Number	:	1808030805305506

2.2.7 TV Signal Generator

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

2.2.8 ATSC Signal Generator

Manufacturer	:	SENCORE
Model Number	:	ATSC997
Serial Number	:	6790071

2.2.9 DVD

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

2.2.10 U-DISK

Manufacturer	:	LG
Model Number	:	1GB
Serial Number	:	N/A

2.2.11 SD Card

Manufacturer	:	Transcend
Model Number	:	MM8GF01GWMCE-PA
Serial Number	:	BF35700653

2.3 Description of Test Facility

Site Description (Semi-Anechoic Chamber)	:	Sept. 17, 1998 file on Apr 29, 2009 Renewed Federal Communications Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046, USA
Name of Firm	:	Audix Technology (Shanghai) Co., Ltd.
Site Location	:	3F 34Bldg 680 Guiping Rd, Caohejing Hi-Tech Park, Shanghai 200233, China
NVLAP Lab Code	:	200371-0

2.4 Measurement Uncertainty

Conducted Emission Expanded Uncertainty:		U = 1.26 dB
Radiated Emission Expanded Uncertainty	:	U = 3.02 dB

3 CONDUCTED EMISSION TEST

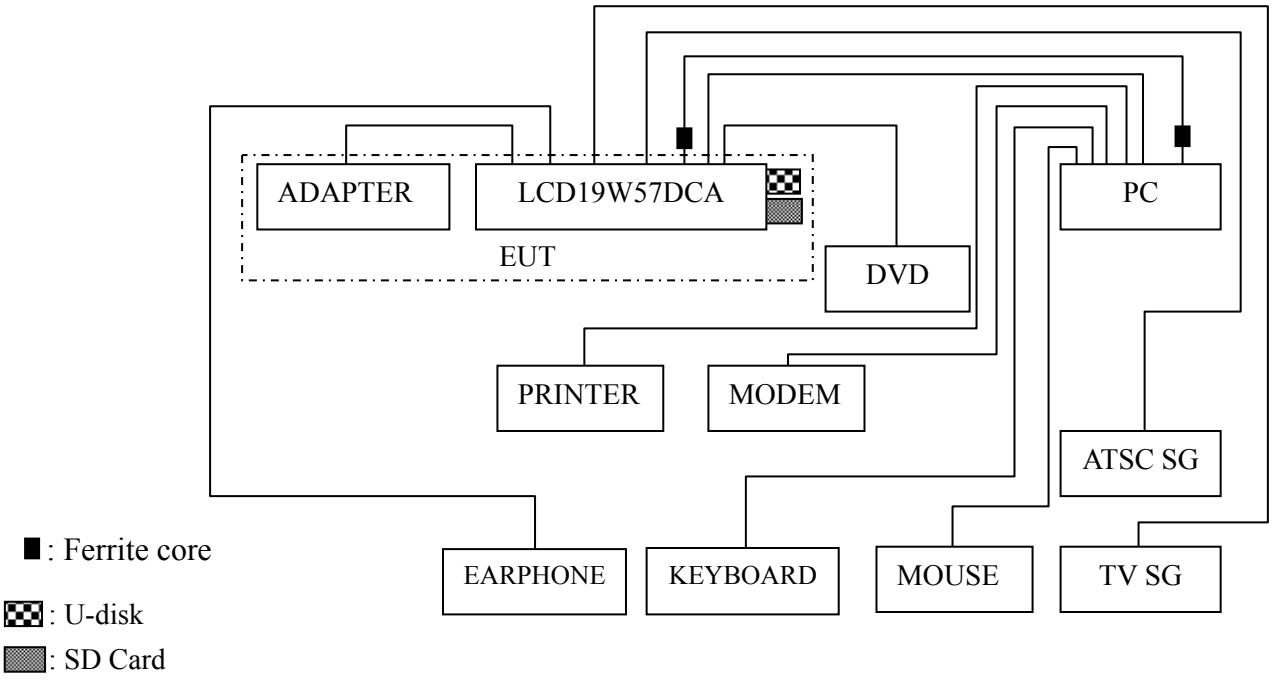
3.1.1 Test Equipment

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

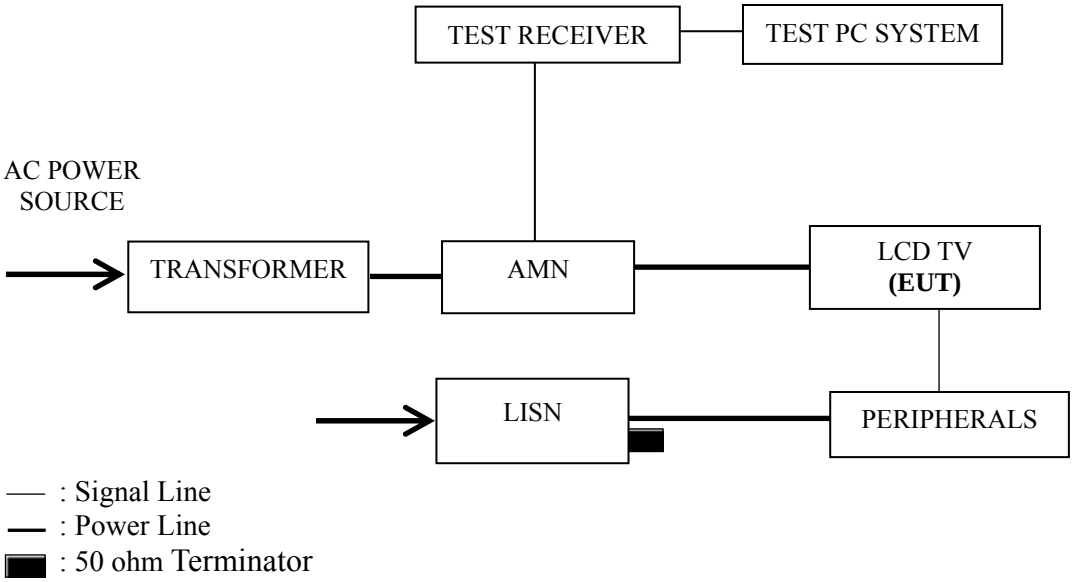
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	100841	Nov 21, 2008	Nov 21, 2009
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	Apr 02, 2009	Apr 02, 2010
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Apr 02, 2009	Apr 02, 2010
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 19, 2009	Sep 19, 2009
5.	50Ω Terminator	Anritsu	BNC	001	Apr 02, 2009	Apr 02, 2010
6.	Software	Audix	E3	SET00200 9804M592	--	--

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 D-Sub & HDMI Input).

3.5.5 Repeat above procedure from 3.5.3 to 3.5.4 for difference test mode.

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

3.5.7 The test modes are as follows:

Test Mode
D-Sub 640*480@60Hz
D-Sub 1024*768@60Hz
D-Sub 1360*768@60Hz
HDMI 640*480@60Hz
HDMI 1024*768@60Hz
HDMI 1360*768@60Hz
USB Play
SD Card Play

3.6 Test Procedures

The EUT and peripherals were connected to the power mains through an Artificial Mains Network (AMN). This provided a 50 ohm coupling impedance for the measuring equipment.

Both sides of AC line (Line & Neutral) were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed or manipulated according to ANSI C63.4:2003 during conducted emission test.

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

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

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

3.7 Test Results

< PASS >

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

Test Mode	Data Page
D-Sub 640*480@60Hz	P14
D-Sub 1024*768@60Hz	P15
D-Sub 1360*768@60Hz	P16
HDMI 640*480@60Hz	P17
HDMI 1024*768@60Hz	P18
HDMI 1360*768@60Hz	P19
USB Play	P20
SD Card Play	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 D-Sub 640*480@60Hz test mode. The worst emission is detected at 18.260 MHz (Average value) with corrected signal level of 41.54 dB (μV) (limit is 50.00 dB (μV)), when the Line of the EUT is connected to AMN.

EUT	:	LCD TV	Temperature :	20℃	
Model No.	:	LCD19W57DCA	Humidity :	46%RH	
Serial No.	:	E2009070601	Date of Test :	Jul 07, 2009	
Test Mode	:	D-Sub 640*480@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.187	50.70	0.22	50.92	64.16	13.24	QP
	0.251	39.50	0.24	39.74	61.72	21.98	
	1.895	27.10	0.36	27.46	56.00	28.54	
	3.412	29.40	0.41	29.81	56.00	26.19	
	18.260	44.90	0.84	45.74	60.00	14.26	
	24.690	32.88	0.81	33.69	60.00	26.31	
	0.187	45.20	0.22	45.42	54.16	8.74	AV
	0.251	35.20	0.24	35.44	51.72	16.28	
	1.895	27.00	0.36	27.36	46.00	18.64	
	3.412	27.94	0.41	28.35	46.00	17.65	
	18.260	**40.70**	**0.84**	**41.54**	**50.00**	**8.46**	
	24.690	25.85	0.81	26.66	50.00	23.34	
Neutral	0.191	47.40	0.20	47.60	64.01	16.41	QP
	0.253	38.70	0.22	38.92	61.67	22.75	
	2.713	29.08	0.39	29.47	56.00	26.53	
	3.409	30.51	0.41	30.92	56.00	25.08	
	21.520	33.76	0.82	34.58	60.00	25.42	
	22.720	36.61	0.78	37.39	60.00	22.61	
	0.191	42.70	0.20	42.90	54.01	11.11	AV
	0.253	33.80	0.22	34.02	51.67	17.65	
	2.713	29.03	0.39	29.42	46.00	16.58	
	3.409	30.31	0.41	30.72	46.00	15.28	
	21.520	31.40	0.82	32.22	50.00	17.78	
	22.720	31.10	0.78	31.88	50.00	18.12	

TEST ENGINEER: HUGH HUANG

EUT	:	LCD TV	Temperature :	20℃	
Model No.	:	LCD19W57DCA	Humidity :	46%RH	
Serial No.	:	E2009070601	Date of Test :	Jul 07, 2009	
Test Mode	:	D-Sub 1024*768@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.188	48.19	0.22	48.41	64.11	15.70	QP
	0.317	36.64	0.26	36.90	59.80	22.90	
	2.335	28.00	0.37	28.37	56.00	27.63	
	3.348	26.86	0.41	27.27	56.00	28.73	
	17.800	42.19	0.83	43.02	60.00	16.98	
	22.530	34.61	0.84	35.45	60.00	24.55	
	0.188	42.64	0.22	42.86	54.11	11.25	AV
	0.317	29.09	0.26	29.35	49.80	20.45	
	2.335	28.08	0.37	28.45	46.00	17.55	
	3.348	25.81	0.41	26.22	46.00	19.78	
	17.800	**38.07**	**0.83**	**38.90**	**50.00**	**11.10**	
	22.530	30.80	0.84	31.64	50.00	18.36	
Neutral	0.188	47.23	0.20	47.43	64.11	16.68	QP
	0.317	37.44	0.23	37.67	59.80	22.13	
	1.324	27.07	0.32	27.39	56.00	28.61	
	3.399	30.57	0.41	30.98	56.00	25.02	
	17.730	32.35	0.79	33.14	60.00	26.86	
	22.535	35.08	0.79	35.87	60.00	24.13	
	0.188	41.70	0.20	41.90	54.11	12.21	AV
	0.317	34.80	0.23	35.03	49.80	14.77	
	1.324	26.94	0.32	27.26	46.00	18.74	
	3.399	27.07	0.41	27.48	46.00	18.52	
	17.730	27.21	0.79	28.00	50.00	22.00	
	22.535	29.54	0.79	30.33	50.00	19.67	

TEST ENGINEER: HUGH HUANG

EUT	:	LCD TV	Temperature :	20℃	
Model No.	:	LCD19W57DCA	Humidity :	46%RH	
Serial No.	:	E2009070601	Date of Test :	Jul 07, 2009	
Test Mode	:	D-Sub 1360*768@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.188	48.08	0.22	48.30	64.11	15.81	QP
	0.317	36.61	0.26	36.87	59.80	22.93	
	2.335	28.05	0.37	28.42	56.00	27.58	
	3.345	28.45	0.41	28.86	56.00	27.14	
	17.860	41.52	0.83	42.35	60.00	17.65	
	18.870	43.20	0.86	44.06	60.00	15.94	
	0.188	39.81	0.22	40.03	54.11	14.08	AV
	0.317	29.78	0.26	30.04	49.80	19.76	
	2.335	28.29	0.37	28.66	46.00	17.34	
	3.345	27.93	0.41	28.34	46.00	17.66	
	17.860	**37.63**	**0.83**	**38.46**	**50.00**	**11.54**	
	18.870	36.90	0.86	37.76	50.00	12.24	
Neutral	0.188	47.13	0.20	47.33	64.11	16.78	QP
	0.317	37.45	0.23	37.68	59.80	22.12	
	1.326	27.66	0.32	27.98	56.00	28.02	
	3.345	29.69	0.41	30.10	56.00	25.90	
	17.870	31.92	0.79	32.71	60.00	27.29	
	26.770	34.19	0.76	34.95	60.00	25.05	
	0.188	40.17	0.20	40.37	54.11	13.74	AV
	0.317	34.01	0.23	34.24	49.80	15.56	
	1.326	27.80	0.32	28.12	46.00	17.88	
	3.345	29.90	0.41	30.31	46.00	15.69	
	17.870	25.53	0.79	26.32	50.00	23.68	
	26.770	25.94	0.76	26.70	50.00	23.30	

TEST ENGINEER: HUGH HUANG

EUT	:	LCD TV	Temperature :	20℃	
Model No.	:	LCD19W57DCA	Humidity :	46%RH	
Serial No.	:	E2009070601	Date of Test :	Jul 07, 2009	
Test Mode	:	HDMI 640*480@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.188	48.98	0.22	49.20	64.11	14.91	QP
	0.317	37.66	0.26	37.92	59.80	21.88	
	2.707	28.94	0.39	29.33	56.00	26.67	
	3.328	29.22	0.41	29.63	56.00	26.37	
	17.755	44.53	0.82	45.35	60.00	14.65	
	22.896	39.24	0.83	40.07	60.00	19.93	
	0.188	39.89	0.22	40.11	54.11	14.00	AV
	0.317	31.80	0.26	32.06	49.80	17.74	
	2.707	23.75	0.39	24.14	46.00	21.86	
	3.328	20.64	0.41	21.05	46.00	24.95	
	17.755	34.48	0.82	35.30	50.00	14.70	
	22.896	33.86	0.83	34.69	50.00	15.31	
Neutral	0.188	47.92	0.20	48.12	64.11	15.99	QP
	0.317	38.50	0.23	38.73	59.80	21.07	
	1.197	29.75	0.32	30.07	56.00	25.93	
	3.328	31.45	0.41	31.86	56.00	24.14	
	17.755	35.68	0.79	36.47	60.00	23.53	
	22.535	38.96	0.79	39.75	60.00	20.25	
	0.188	**39.97**	**0.20**	**40.17**	**54.11**	**13.94**	AV
	0.317	34.45	0.23	34.68	49.80	15.12	
	1.199	28.04	0.32	28.36	46.00	17.64	
	3.347	28.96	0.41	29.37	46.00	16.63	
	17.800	30.42	0.79	31.21	50.00	18.79	
	22.535	30.51	0.79	31.30	50.00	18.70	

TEST ENGINEER: HUGH HUANG

EUT	:	LCD TV	Temperature	:	20℃
Model No.	:	LCD19W57DCA	Humidity	:	46%RH
Serial No.	:	E2009070601	Date of Test	:	Jul 07, 2009
Test Mode	:	HDMI 1024*768@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.188	49.01	0.22	49.23	64.11	14.88	QP
	0.317	37.69	0.26	37.95	59.80	21.85	
	2.334	28.88	0.37	29.25	56.00	26.75	
	3.328	29.32	0.41	29.73	56.00	26.27	
	17.755	45.24	0.82	46.06	60.00	13.94	
	22.535	39.11	0.84	39.95	60.00	20.05	
	0.188	39.83	0.22	40.05	54.11	14.06	AV
	0.317	28.87	0.26	29.13	49.80	20.67	
	2.335	28.05	0.37	28.42	46.00	17.58	
	3.344	27.37	0.41	27.78	46.00	18.22	
	17.860	**35.49**	**0.83**	**36.32**	**50.00**	**13.68**	
	22.535	30.49	0.84	31.33	50.00	18.67	
Neutral	0.188	47.96	0.20	48.16	64.11	15.95	QP
	0.317	38.44	0.23	38.67	59.80	21.13	
	1.762	29.57	0.36	29.93	56.00	26.07	
	3.328	31.64	0.41	32.05	56.00	23.95	
	12.516	29.45	0.59	30.04	60.00	29.96	
	22.535	38.99	0.79	39.78	60.00	20.22	
	0.188	37.58	0.20	37.78	54.11	16.33	AV
	0.317	28.69	0.23	28.92	49.80	20.88	
	1.762	19.67	0.36	20.03	46.00	25.97	
	3.347	27.23	0.41	27.64	46.00	18.36	
	12.516	23.04	0.59	23.63	50.00	26.37	
	22.535	32.13	0.79	32.92	50.00	17.08	

TEST ENGINEER: HUGH HUANG

EUT	:	LCD TV	Temperature :	20℃	
Model No.	:	LCD19W57DCA	Humidity :	46%RH	
Serial No.	:	E2009070601	Date of Test :	Jul 07, 2009	
Test Mode	:	HDMI 1360*768@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.188	49.02	0.22	49.24	64.11	14.87	QP
	0.317	37.69	0.26	37.95	59.80	21.85	
	2.334	28.88	0.37	29.25	56.00	26.75	
	3.328	29.27	0.41	29.68	56.00	26.32	
	17.755	44.88	0.82	45.70	60.00	14.30	
	18.820	41.15	0.86	42.01	60.00	17.99	
	0.188	**39.77**	**0.22**	**39.99**	**54.11**	**14.12**	AV
	0.317	31.69	0.26	31.95	49.80	17.85	
	2.334	27.01	0.37	27.38	46.00	18.62	
	3.347	27.08	0.41	27.49	46.00	18.51	
	17.755	34.58	0.82	35.40	50.00	14.60	
	18.820	31.36	0.86	32.22	50.00	17.78	
Neutral	0.188	47.94	0.20	48.14	64.11	15.97	QP
	0.252	38.94	0.22	39.16	61.69	22.53	
	1.324	29.86	0.32	30.18	56.00	25.82	
	3.399	31.75	0.41	32.16	56.00	23.84	
	17.755	36.04	0.79	36.83	60.00	23.17	
	22.535	39.50	0.79	40.29	60.00	19.71	
	0.188	39.18	0.20	39.38	54.11	14.73	AV
	0.252	30.06	0.22	30.28	51.69	21.41	
	1.324	26.80	0.32	27.12	46.00	18.88	
	3.399	28.69	0.41	29.10	46.00	16.90	
	17.930	28.69	0.80	29.49	50.00	20.51	
	22.535	30.27	0.79	31.06	50.00	18.94	

TEST ENGINEER: HUGH HUANG

EUT	:	LCD TV	Temperature :	20℃	
Model No.	:	LCD19W57DCA	Humidity :	46%RH	
Serial No.	:	E2009070601	Date of Test :	Jul 07, 2009	
Test Mode	:	USB Play			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.188	48.58	0.22	48.80	64.11	15.31	QP
	0.253	40.72	0.24	40.96	61.64	20.68	
	2.334	29.13	0.37	29.50	56.00	26.50	
	3.328	30.19	0.41	30.60	56.00	25.40	
	17.755	46.24	0.82	47.06	60.00	12.94	
	22.535	39.39	0.84	40.23	60.00	19.77	
	0.188	41.75	0.22	41.97	54.11	12.14	AV
	0.253	34.57	0.24	34.81	51.64	16.83	
	2.334	27.98	0.37	28.35	46.00	17.65	
	3.328	24.13	0.41	24.54	46.00	21.46	
	17.755	36.79	0.82	37.61	50.00	12.39	
	22.535	29.16	0.84	30.00	50.00	20.00	
Neutral	0.188	47.71	0.20	47.91	64.11	16.20	QP
	0.317	38.50	0.23	38.73	59.80	21.07	
	1.324	30.61	0.32	30.93	56.00	25.07	
	3.328	32.13	0.41	32.54	56.00	23.46	
	12.516	29.39	0.59	29.98	60.00	30.02	
	21.600	39.58	0.82	40.40	60.00	19.60	
	0.188	**41.87**	**0.20**	**42.07**	**54.11**	**12.04**	AV
	0.317	32.78	0.23	33.01	49.80	16.79	
	1.324	28.68	0.32	29.00	46.00	17.00	
	3.328	27.36	0.41	27.77	46.00	18.23	
	12.516	25.96	0.59	26.55	50.00	23.45	
	21.600	33.24	0.82	34.06	50.00	15.94	

TEST ENGINEER: HUGH HUANG

EUT	:	LCD TV	Temperature :	20℃	
Model No.	:	LCD19W57DCA	Humidity :	46%RH	
Serial No.	:	E2009070601	Date of Test :	Jul 07, 2009	
Test Mode	:	SD Card Play			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.188	48.63	0.22	48.85	64.11	15.26	QP
	0.252	40.08	0.24	40.32	61.69	21.37	
	2.707	29.48	0.39	29.87	56.00	26.13	
	3.328	30.32	0.41	30.73	56.00	25.27	
	17.755	45.99	0.82	46.81	60.00	13.19	
	18.820	41.15	0.86	42.01	60.00	17.99	
	0.188	39.43	0.22	39.65	54.11	14.46	AV
	0.252	33.75	0.24	33.99	51.69	17.70	
	2.707	27.70	0.39	28.09	46.00	17.91	
	3.328	23.06	0.41	23.47	46.00	22.53	
	17.755	**37.82**	**0.82**	**38.64**	**50.00**	**11.36**	
	18.820	32.83	0.86	33.69	50.00	16.31	
Neutral	0.188	47.81	0.20	48.01	64.11	16.10	QP
	0.317	38.76	0.23	38.99	59.80	20.81	
	1.324	30.36	0.32	30.68	56.00	25.32	
	3.328	32.27	0.41	32.68	56.00	23.32	
	17.755	37.49	0.79	38.28	60.00	21.72	
	20.162	39.83	0.85	40.68	60.00	19.32	
	0.188	39.77	0.20	39.97	54.11	14.14	AV
	0.317	34.32	0.23	34.55	49.80	15.25	
	1.324	28.18	0.32	28.50	46.00	17.50	
	3.328	24.88	0.41	25.29	46.00	20.71	
	17.755	31.39	0.79	32.18	50.00	17.82	
	20.162	36.14	0.85	36.99	50.00	13.01	

TEST ENGINEER: HUGH HUANG

4 RADIATED EMISSION TEST

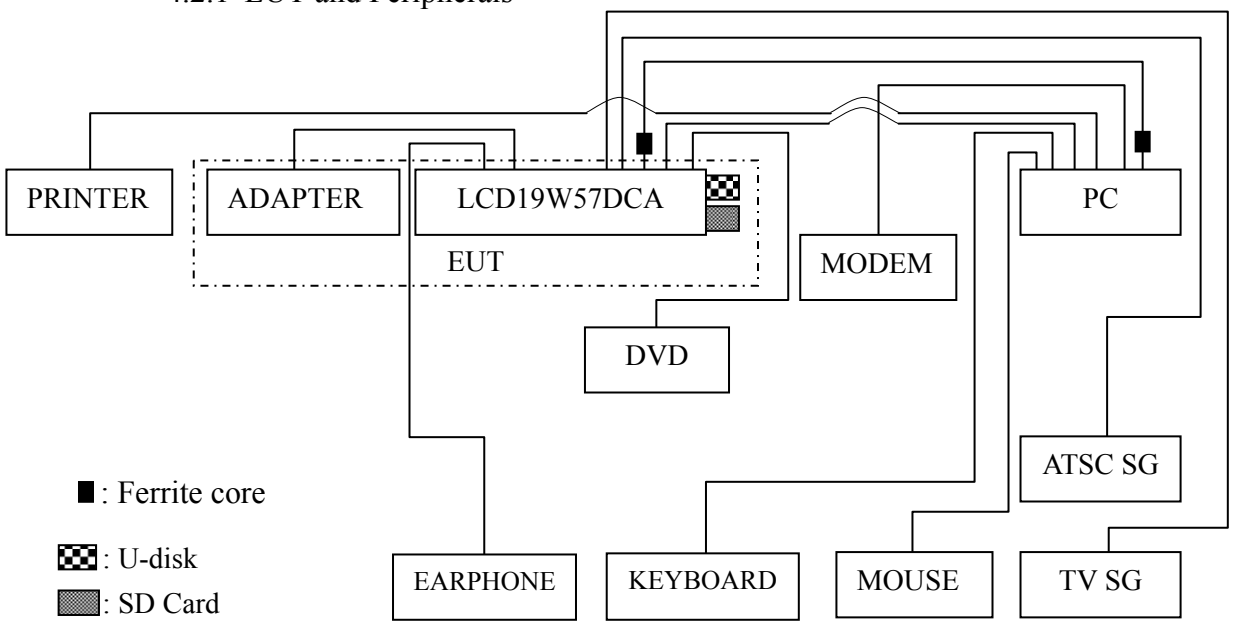
4.1 Test Equipment

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

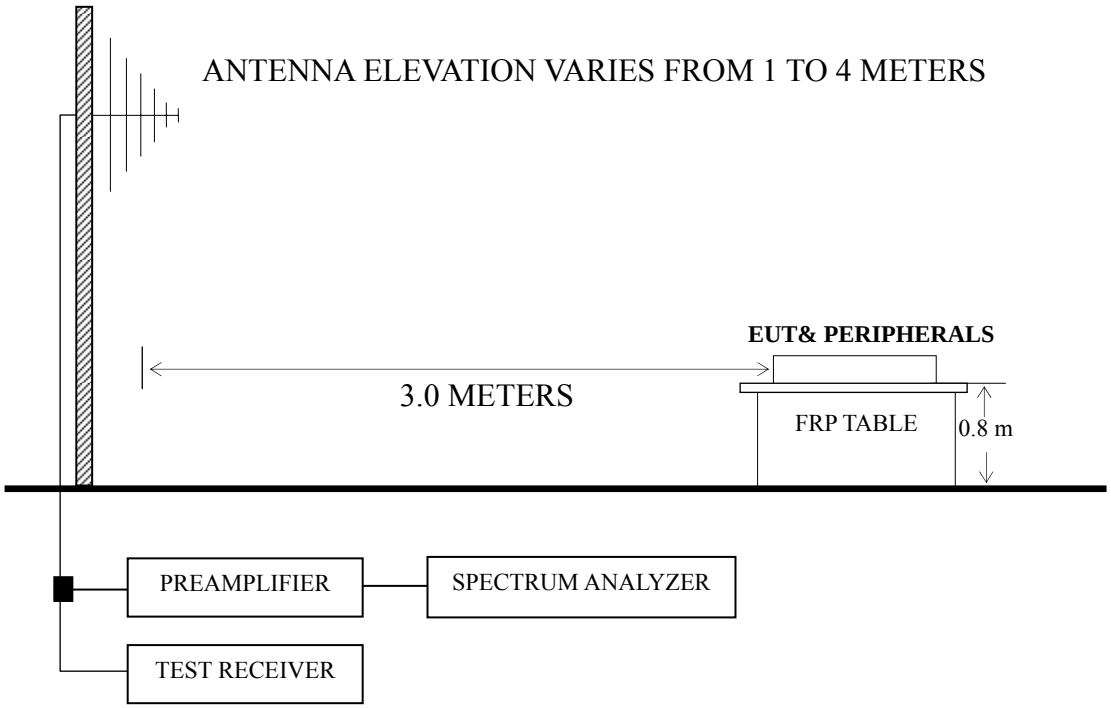
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESVS10	844594/001	Mar 07, 2009	Mar 07, 2010
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 19, 2009	Sep 19, 2009
3.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 14, 2008	May 14, 2010
4.	Spectrum	Agilent	E7405A	MY45106600	May 19, 2009	May 19, 2010
5.	Software	Audix	E3	SET00200 9912M295-2	--	--

4.2 Block Diagram of Test Setup

4.2.1 EUT and 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	
		(μV/m)	dB (μV/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 (μV/m) = 20 log Emission Level (μV/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 below or equal to 1GHz.

4.4 Test Configuration

The configuration of the EUT and peripherals are same as those used in conducted emission test.

Please refer to Sec.3.4.

4.5 Operating Condition of EUT

Same as conducted emission test which is listed in Sec.3.5, except for the test setup replaced by Sec.4.2.

4.6 Test Procedures

The EUT and peripherals were placed on a FRP turntable that is 0.8 meter above ground. The FRP turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. Broadband antenna (Calibrated Bilog Antenna) was used as receiving antenna. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.4:2003 requirements during radiated emission test.

The bandwidth of Test Receiver R&S ESVS10 was set at 120 kHz.

The frequency range from 30 MHz to 1000MHz was checked for all test modes.

The test modes were done on radiated disturbance test and all the test results are listed in Sec.4.7.

4.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Test Mode	Data Page
D-Sub 640*480@60Hz	P26
D-Sub 1024*768@60Hz	P27
D-Sub 1360*768@60Hz	P28
HDMI 640*480@60Hz	P29
HDMI 1024*768@60Hz	P30
HDMI 1360*768@60Hz	P31
USB Play	P32
SD Card Play	P33

NOTE 1 – Emission Level = Antenna Factor + Cable Loss + Meter Reading.

NOTE 2 – The emission levels that are 20dB below the official limit are not reported.

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 640*480@60Hz @60Hz test mode. The worst emission at horizontal polarization was detected at 715.790 MHz with corrected signal level of 43.00 dB (μV/m) (limit is 46.00dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 330°. The worst emission at vertical polarization was detected at 559.620 MHz with corrected signal level of 43.93 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 135°.

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LCD19W57DCA	Humidity :	60%RH
Serial No.	:	E2009070601	Date of Test :	Jul 15, 2009
Test Mode	:	D-Sub 640*480@60Hz		

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	95.960	15.04	10.70	1.05	26.79	43.50	16.71
	121.180	20.10	12.95	1.15	34.20	43.50	9.30
	275.410	20.10	13.45	1.79	35.34	46.00	10.66
	383.080	19.29	16.13	2.15	37.57	46.00	8.43
	429.640	**22.75**	**16.92**	**2.27**	**41.94**	**46.00**	**4.06**
	787.570	18.03	20.58	3.17	41.78	46.00	4.22
Vertical	30.000	12.75	19.60	0.63	32.98	40.00	7.02
	30.000	12.69	19.60	0.63	32.92	40.00	7.08
	274.440	19.64	13.43	1.79	34.86	46.00	11.14
	381.140	18.36	16.10	2.15	36.61	46.00	9.39
	537.200	21.60	18.39	2.56	42.55	46.00	3.45
	675.050	**20.39**	**19.58**	**2.89**	**42.86**	**46.00**	**3.14**

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LCD19W57DCA	Humidity :	60%RH
Serial No.	:	E2009070601	Date of Test :	Jul 15, 2009
Test Mode	:	D-Sub 1024*768@60Hz		

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	30.000	2.18	19.60	0.63	22.41	40.00	17.59
	152.220	18.70	11.09	1.25	31.04	43.50	12.46
	238.550	22.59	12.48	1.67	36.74	46.00	9.26
	385.020	17.58	16.20	2.16	35.94	46.00	10.06
	429.640	**22.49**	**16.92**	**2.27**	**41.68**	**46.00**	**4.32**
	715.790	17.16	19.85	2.99	40.00	46.00	6.00
Vertical	30.000	13.10	19.60	0.63	33.33	40.00	6.67
	152.220	20.29	11.09	1.25	32.63	43.50	10.87
	275.410	20.82	13.45	1.79	36.06	46.00	9.94
	396.660	17.76	16.44	2.19	36.39	46.00	9.61
	559.798	**22.40**	**18.72**	**2.62**	**43.74**	**46.00**	**2.26**
	998.060	18.62	22.37	3.62	44.61	54.00	9.39

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LCD19W57DCA	Humidity :	60%RH
Serial No.	:	E2009070601	Date of Test :	Jul 15, 2009
Test Mode	:	D-Sub 1360*768@60Hz		

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	83.350	15.97	8.30	0.97	25.24	40.00	14.76
	198.780	21.52	10.64	1.54	33.70	43.50	9.80
	238.550	24.59	12.48	1.67	38.74	46.00	7.26
	369.500	17.77	15.84	2.12	35.73	46.00	10.27
	429.640	**21.49**	**16.92**	**2.27**	**40.68**	**46.00**	**5.32**
	715.790	16.16	19.85	2.99	39.00	46.00	7.00
Vertical	30.000	13.10	19.60	0.63	33.33	40.00	6.67
	152.220	22.29	11.09	1.25	34.63	43.50	8.87
	275.410	19.82	13.45	1.79	35.06	46.00	10.94
	429.640	22.72	16.92	2.27	41.91	46.00	4.09
	559.620	**22.59**	**17.72**	**2.62**	**42.93**	**46.00**	**3.07**
	694.450	20.31	19.67	2.92	42.90	46.00	3.10

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LCD19W57DCA	Humidity :	60%RH
Serial No.	:	E2009070601	Date of Test :	Jul 15, 2009
Test Mode	:	HDMI 640*480@60Hz		

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	82.380	16.11	8.19	0.96	25.26	40.00	14.74
	125.060	15.71	12.76	1.16	29.63	43.50	13.87
	278.320	25.19	13.50	1.80	40.49	46.00	5.51
	369.500	20.77	15.84	2.12	38.73	46.00	7.27
	429.640	21.49	16.92	2.27	40.68	46.00	5.32
	715.790	**20.16**	**19.85**	**2.99**	**43.00**	**46.00**	**3.00**
Vertical	30.000	12.10	19.60	0.63	32.33	40.00	7.67
	152.220	22.29	11.09	1.25	34.63	43.50	8.87
	275.410	23.82	13.45	1.79	39.06	46.00	6.94
	396.660	20.76	16.44	2.19	39.39	46.00	6.61
	559.620	**22.59**	**18.72**	**2.62**	**43.93**	**46.00**	**2.07**
	846.740	16.59	21.16	3.32	41.07	46.00	4.93

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LCD19W57DCA	Humidity :	60%RH
Serial No.	:	E2009070601	Date of Test :	Jul 15, 2009
Test Mode	:	HDMI 1024*768@60Hz		

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	95.960	17.04	10.70	1.05	28.79	43.50	14.71
	121.180	22.10	12.95	1.15	36.20	43.50	7.30
	275.410	23.10	13.45	1.79	38.34	46.00	7.66
	383.080	21.29	16.13	2.15	39.57	46.00	6.43
	429.640	21.75	16.92	2.27	40.94	46.00	5.06
	787.570	**19.03**	**20.58**	**3.17**	**42.78**	**46.00**	**3.22**
Vertical	39.700	18.90	14.08	0.67	33.65	40.00	6.35
	142.520	20.99	11.91	1.20	34.10	43.50	9.40
	274.440	21.64	13.43	1.79	36.86	46.00	9.14
	308.390	16.60	14.14	1.90	32.64	46.00	13.36
	537.310	**22.62**	**18.39**	**2.56**	**43.57**	**46.00**	**2.43**
	668.260	20.16	19.55	2.87	42.58	46.00	3.42

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LCD19W57DCA	Humidity :	60%RH
Serial No.	:	E2009070601	Date of Test :	Jul 15, 2009
Test Mode	:	HDMI 1360*768@60Hz		

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	58.130	21.74	6.96	0.77	29.47	40.00	10.53
	182.290	25.76	9.99	1.44	37.19	43.50	6.31
	275.410	22.10	13.45	1.79	37.34	46.00	8.66
	383.080	21.29	16.13	2.15	39.57	46.00	6.43
	429.640	21.75	16.92	2.27	40.94	46.00	5.06
	667.290	**19.00**	**19.55**	**2.87**	**41.42**	**46.00**	**4.58**
Vertical	30.000	10.69	19.60	0.63	30.92	40.00	9.08
	199.750	18.71	10.67	1.54	30.92	43.50	12.58
	277.350	23.01	13.50	1.80	38.31	46.00	7.69
	308.390	24.60	14.14	1.90	40.64	46.00	5.36
	537.310	**22.62**	**18.39**	**2.56**	**43.57**	**46.00**	**2.43**
	675.050	18.39	19.58	2.89	40.86	46.00	5.14

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LCD19W57DCA	Humidity :	60%RH
Serial No.	:	E2009070601	Date of Test :	Jul 15, 2009
Test Mode	:	USB Play		

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	94.020	24.95	10.27	1.05	36.27	43.50	7.23
	112.450	15.72	12.51	1.12	29.35	43.50	14.15
	279.290	19.36	13.52	1.80	34.68	46.00	11.32
	389.870	15.27	16.30	2.18	33.75	46.00	12.25
	519.850	17.94	18.15	2.49	38.58	46.00	7.42
	738.100	**15.95**	**20.10**	**3.04**	**39.09**	**46.00**	**6.91**
Vertical	30.000	14.22	19.60	0.63	34.45	40.00	5.55
	158.040	24.49	10.64	1.28	36.41	43.50	7.09
	279.290	19.71	13.52	1.80	35.03	46.00	10.97
	389.870	14.17	16.30	2.18	32.65	46.00	13.35
	519.850	16.10	18.15	2.49	36.74	46.00	9.26
	812.790	**16.48**	**20.84**	**3.24**	**40.56**	**46.00**	**5.44**

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LCD19W57DCA	Humidity :	60%RH
Serial No.	:	E2009070601	Date of Test :	Jul 15, 2009
Test Mode	:	SD Card Play		

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	30.000	10.94	19.60	0.63	31.17	40.00	8.83
	116.330	22.35	12.78	1.13	36.26	43.50	7.24
	279.290	20.44	13.52	1.80	35.76	46.00	10.24
	389.870	13.19	16.30	2.18	31.67	46.00	14.33
	519.850	16.71	18.15	2.49	37.35	46.00	8.65
	608.120	**17.43**	**19.25**	**2.76**	**39.44**	**46.00**	**6.56**
Vertical	30.000	13.14	19.60	0.63	33.37	40.00	6.63
	166.770	25.82	10.31	1.34	37.47	43.50	6.03
	279.290	19.08	13.52	1.80	34.40	46.00	11.60
	321.970	21.38	14.50	1.96	37.84	46.00	8.16
	519.850	19.62	18.15	2.49	40.26	46.00	5.74
	842.860	**17.18**	**21.12**	**3.32**	**41.62**	**46.00**	**4.38**

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.

6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Specifications (mm)	Manufacturer	Location
Ferrite Core	ZCAT2132-1130	21*32*11	ROH	See Internal Photo Figure 24, 25

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: Raven Jin

(RAVEN JIN)