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

LCD TV/DVD COMBO

Model No.: LCD19W57DCA

Serial No.: E2010081704

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-F09064A2
Date of Test : Sep 16-29, 2010
Date of Report : Oct 15, 2010

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TEST REPORT FOR FCC CERTIFICATE

Applicant	:	Hisense Electric Co., Ltd.
Manufacturer	:	Hisense Electric Co., Ltd.
EUT Description	:	LCD TV/DVD COMBO
	(A) Model No.	: LCD19W57DCA
	(B) Serial No.	: E2010081704
	(C) Brand	: Hisense
	(D) Power Supply	: 120V/60Hz

Test Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2009 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 Sep 16-29, 2010 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.F09063A2, a Verification report.

Date of Test : Sep 16-29, 2010 Date of Report : Oct 15, 2010

Producer : CANDY XI / Assistant

Review : DIO YANG / Deputy Assistant Manage

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

Signatory : SAMMY CHEN / Deputy Manager
Authorized Signature EMC

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/DVD COMBO

Type of EUT : ☑ Production ☐ Pre-product ☐ Pro-type

Model No. : LCD19W57DCA

Serial No. : E2010081704

Brand : Hisense

Note 1 : The difference list for all models are as follows:

Report No.	Model No.	Rev. Summary	Edition No.	Data of Rev.
ACI-F09064	LCD19W57DCA	Original Report.	0	Jul 22, 2009
ACI-F09064A1		(1) To change LCD panel. (2) To change AC adapter (3) To change label (4) To change EUT name	Rev. A1	Oct 09, 2009
ACI-F09064A2		(1) To add a LCD panel. (2) To add Main Chip	Rev. A2	Oct 15, 2010

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 : LG Display
M/N : LC185WH1 (TL) (G1)

Tuner : Manufacturer : Wuxi Components 6th Factory
M/N : FTDC3Y13MH05/ROH

AC Adapter : Manufacturer : Huizhou Sanhua Industrial Co., Ltd.
M/N : SAWA-07-41612
Input : 100-240V AC, 50/60Hz, 1.5A.
Output : 12V ⎓ 4.16A

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/DVD COMBO which input/output ports as follows:

Bottom View:

(1) One DC Input Port — Connected with Adapter

(2) One Service Port — Do not open to Customer

(3) One HDMI Port — Connected with DVD

(4) One VGA Audio Port — Connected with PC

(5) One VGA Port — Connected with PC

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

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

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

(9) One Earphone Port — Connected with Earphone

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

(11) One COAXIAL Port — Connected with DVD

Side Port:

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

(13) 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
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 (No.3 3m 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

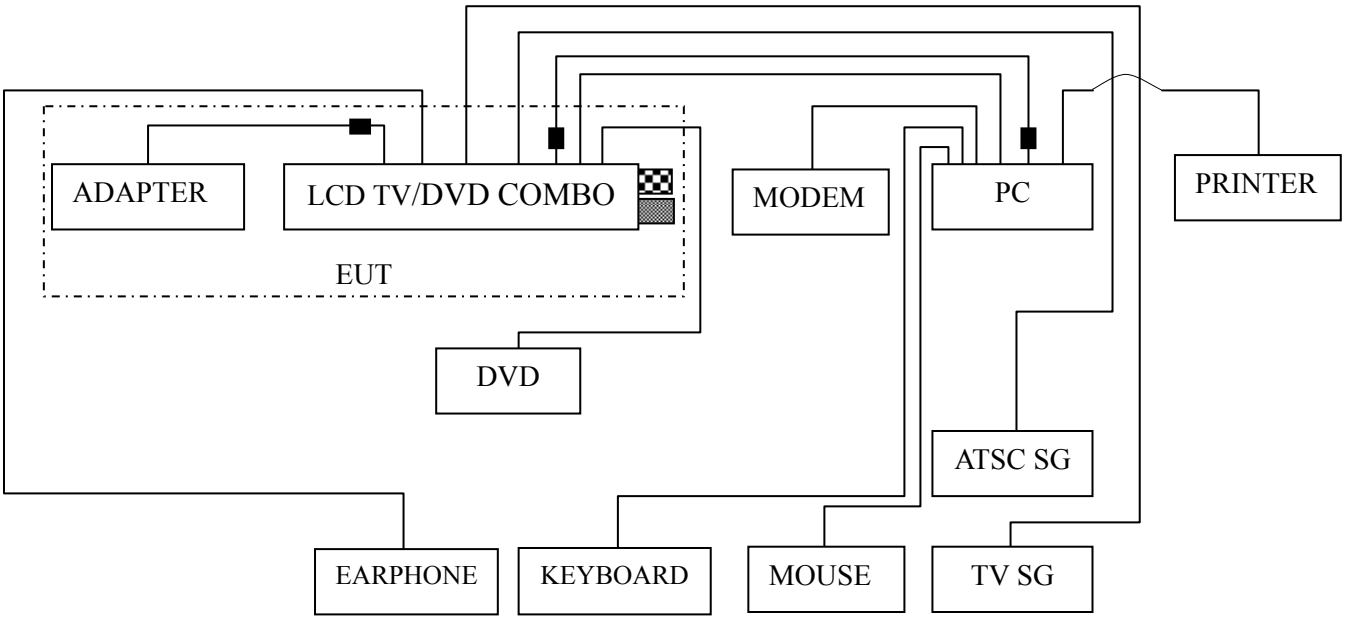
3.1.1 Test Equipment

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	Oct 15, 2009	Oct 15, 2010
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	Apr 02, 2010	Apr 02, 2011
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Apr 02, 2010	Apr 02, 2011
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Sep 19, 2010	Mar 19, 2011
5.	50Ω Terminator	Anritsu	BNC	001	Apr 02, 2010	Apr 02, 2011
6.	Software	Audix	E3	SET00200 9804M592	--	--

3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals

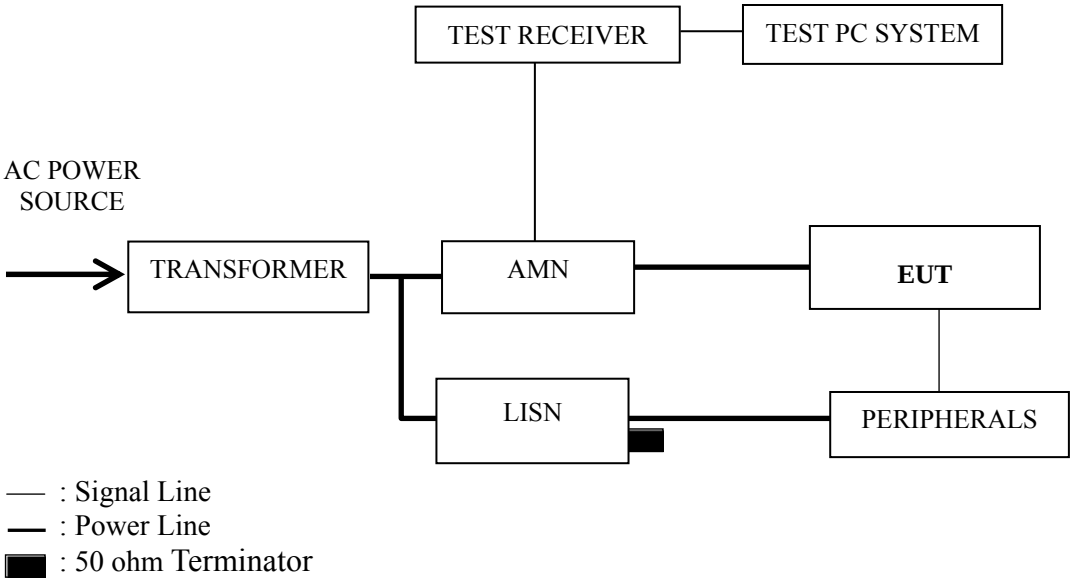


■ : Ferrite core

▩ : U-disk

▨ : SD Card

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 + LISN 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 1024*768@60Hz test mode. The worst emission is detected at 0.186 MHz (Quasi-Peak values) with corrected signal level of 59.11 dB (μV) (limit is 64.20 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT	:	LCD TV/DVD COMBO	Temperature :	22℃	
Model No.	:	LCD19W57DCA	Humidity	:	48%RH
Serial No.	:	E2010081704	Date of Test	:	Sep 29, 2010
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	**0.183**	**54.90**	**0.38**	**55.28**	**64.33**	**9.05**	QP
	0.252	45.99	0.42	46.41	61.69	15.28	
	1.210	36.90	0.55	37.45	56.00	18.55	
	2.594	36.49	0.67	37.16	56.00	18.84	
	9.352	33.42	1.03	34.45	60.00	25.55	
	17.849	36.00	1.47	37.47	60.00	22.53	
	0.183	44.27	0.38	44.65	54.33	9.68	AV
	0.252	32.15	0.42	32.57	51.69	19.12	
	1.210	23.52	0.55	24.07	46.00	21.93	
	2.594	26.51	0.67	27.18	46.00	18.82	
	9.352	23.14	1.03	24.17	50.00	25.83	
	17.849	25.16	1.47	26.63	50.00	23.37	
Neutral	0.184	54.16	0.31	54.47	64.28	9.81	QP
	0.247	46.30	0.34	46.64	61.86	15.22	
	1.352	37.24	0.54	37.78	56.00	18.22	
	2.707	36.41	0.63	37.04	56.00	18.96	
	9.552	31.99	1.01	33.00	60.00	27.00	
	17.849	37.45	1.64	39.09	60.00	20.91	
	0.184	44.26	0.31	44.57	54.28	9.71	AV
	0.247	32.61	0.34	32.95	51.86	18.91	
	1.352	25.15	0.54	25.69	46.00	20.31	
	2.707	23.65	0.63	24.28	46.00	21.72	
	9.552	22.33	1.01	23.34	50.00	26.66	
	17.849	23.55	1.64	25.19	50.00	24.81	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV/DVD COMBO	Temperature :	22℃
Model No.	:	LCD19W57DCA	Humidity :	48%RH
Serial No.	:	E2010081704	Date of Test :	Sep 29, 2010
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	0.190	57.95	0.38	58.33	64.02	5.69	QP
	0.256	48.87	0.42	49.29	61.56	12.27	
	0.313	45.71	0.46	46.17	59.88	13.71	
	1.535	36.75	0.57	37.32	56.00	18.68	
	10.452	33.39	1.08	34.47	60.00	25.53	
	21.830	34.26	1.69	35.95	60.00	24.05	
	0.190	47.00	0.38	47.38	54.02	6.64	AV
	0.256	32.51	0.42	32.93	51.56	18.63	
	0.313	32.50	0.46	32.96	49.88	16.92	
	1.535	24.32	0.57	24.89	46.00	21.11	
	10.452	23.15	1.08	24.23	50.00	25.77	
	21.830	24.58	1.69	26.27	50.00	23.73	
Neutral	**0.186**	**58.81**	**0.30**	**59.11**	**64.20**	**5.09**	QP
	0.247	48.81	0.34	49.15	61.86	12.71	
	0.310	46.35	0.39	46.74	59.97	13.23	
	0.379	40.98	0.43	41.41	58.30	16.89	
	1.160	37.34	0.52	37.86	56.00	18.14	
	9.757	33.36	1.01	34.37	60.00	25.63	
	0.186	46.51	0.30	46.81	54.20	7.39	AV
	0.247	32.26	0.34	32.60	51.86	19.26	
	0.310	32.54	0.39	32.93	49.97	17.04	
	0.379	30.26	0.43	30.69	48.30	17.61	
	1.160	27.14	0.52	27.66	46.00	18.34	
	9.757	23.54	1.01	24.55	50.00	25.45	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV/DVD COMBO	Temperature :	22℃
Model No.	:	LCD19W57DCA	Humidity :	48%RH
Serial No.	:	E2010081704	Date of Test :	Sep 29, 2010
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	**0.183**	**53.36**	**0.38**	**53.74**	**64.33**	**10.59**	QP
	0.247	45.27	0.41	45.68	61.86	16.18	
	0.315	40.06	0.46	40.52	59.84	19.32	
	1.352	36.92	0.57	37.49	56.00	18.51	
	2.736	36.19	0.67	36.86	56.00	19.14	
	9.352	33.86	1.03	34.89	60.00	25.11	
	0.183	42.13	0.38	42.51	54.33	11.82	AV
	0.247	32.25	0.41	32.66	51.86	19.20	
	0.315	30.25	0.46	30.71	49.84	19.13	
	1.352	23.53	0.57	24.10	46.00	21.90	
	2.736	26.35	0.67	27.02	46.00	18.98	
	9.352	23.21	1.03	24.24	50.00	25.76	
Neutral	0.183	52.01	0.31	52.32	64.33	12.01	QP
	0.247	42.71	0.34	43.05	61.86	18.81	
	0.307	40.69	0.39	41.08	60.06	18.98	
	1.310	37.16	0.54	37.70	56.00	18.30	
	2.594	35.43	0.63	36.06	56.00	19.94	
	9.352	34.95	0.99	35.94	60.00	24.06	
	0.183	42.36	0.31	42.67	64.33	21.66	AV
	0.247	32.12	0.34	32.46	61.86	29.40	
	0.307	31.26	0.39	31.65	60.06	28.41	
	1.310	23.13	0.54	23.67	56.00	32.33	
	2.594	25.14	0.63	25.77	56.00	30.23	
	9.352	24.16	0.99	25.15	60.00	34.85	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV/DVD COMBO	Temperature :	22℃
Model No.	:	LCD19W57DCA	Humidity :	48%RH
Serial No.	:	E2010081704	Date of Test :	Sep 29, 2010
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	**0.184**	**51.59**	**0.38**	**51.97**	**64.28**	**12.31**	QP
	0.252	44.50	0.42	44.92	61.69	16.77	
	0.303	41.72	0.45	42.17	60.15	17.98	
	1.338	37.52	0.57	38.09	56.00	17.91	
	2.581	37.46	0.67	38.13	56.00	17.87	
	9.451	35.99	1.03	37.02	60.00	22.98	
	0.184	41.21	0.38	41.59	64.28	22.69	AV
	0.252	32.15	0.42	32.57	61.69	29.12	
	0.303	31.27	0.45	31.72	60.15	28.43	
	1.338	26.33	0.57	26.90	56.00	29.10	
	2.581	23.64	0.67	24.31	56.00	31.69	
	9.451	25.18	1.03	26.21	60.00	33.79	
Neutral	0.183	50.90	0.31	51.21	64.33	13.12	QP
	0.247	46.60	0.34	46.94	61.86	14.92	
	1.153	38.13	0.52	38.65	56.00	17.35	
	1.338	37.30	0.54	37.84	56.00	18.16	
	2.736	36.67	0.63	37.30	56.00	18.70	
	9.352	35.58	0.99	36.57	60.00	23.43	
	0.183	41.27	0.31	41.58	64.33	22.75	AV
	0.247	33.15	0.34	33.49	61.86	28.37	
	1.153	28.14	0.52	28.66	56.00	27.34	
	1.338	27.14	0.54	27.68	56.00	28.32	
	2.736	26.35	0.63	26.98	56.00	29.02	
	9.352	25.16	0.99	26.15	60.00	33.85	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV/DVD COMBO	Temperature :	22℃	
Model No.	:	LCD19W57DCA	Humidity	:	48%RH
Serial No.	:	E2010081704	Date of Test	:	Sep 29, 2010
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	0.183	51.16	0.38	51.54	64.33	12.79	QP
	0.249	45.81	0.42	46.23	61.78	15.55	
	1.433	37.28	0.57	37.85	56.00	18.15	
	2.474	36.73	0.66	37.39	56.00	18.61	
	9.552	34.35	1.04	35.39	60.00	24.61	
	17.849	37.20	1.47	38.67	60.00	21.33	
	0.183	41.26	0.38	41.64	64.33	22.69	AV
	0.249	31.25	0.42	31.67	61.78	30.11	
	1.433	27.14	0.57	27.71	56.00	28.29	
	2.474	26.54	0.66	27.20	56.00	28.80	
	9.552	24.15	1.04	25.19	60.00	34.81	
	17.849	27.15	1.47	28.62	60.00	31.38	
Neutral	**0.184**	**51.52**	**0.31**	**51.83**	**64.28**	**12.45**	QP
	0.242	44.70	0.34	45.04	62.04	17.00	
	0.320	40.16	0.40	40.56	59.71	19.15	
	1.338	37.60	0.54	38.14	56.00	17.86	
	2.678	34.83	0.63	35.46	56.00	20.54	
	9.302	34.29	0.99	35.28	60.00	24.72	
	0.184	41.25	0.31	41.56	64.28	22.72	AV
	0.242	31.24	0.34	31.58	62.04	30.46	
	0.320	31.27	0.40	31.67	59.71	28.04	
	1.338	23.44	0.54	23.98	56.00	32.02	
	2.678	24.57	0.63	25.20	56.00	30.80	
	9.302	24.57	0.99	25.56	60.00	34.44	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV/DVD COMBO	Temperature :	22℃	
Model No.	:	LCD19W57DCA	Humidity	:	48%RH
Serial No.	:	E2010081704	Date of Test	:	Sep 29, 2010
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	**0.183**	**54.47**	**0.38**	**54.85**	**64.33**	**9.48**	QP
	0.247	46.30	0.41	46.71	61.86	15.15	
	0.307	40.37	0.45	40.82	60.06	19.24	
	1.282	38.49	0.56	39.05	56.00	16.95	
	2.650	36.70	0.67	37.37	56.00	18.63	
	10.452	34.63	1.08	35.71	60.00	24.29	
	0.183	44.21	0.38	44.59	54.33	9.74	AV
	0.247	35.12	0.41	35.53	51.86	16.33	
	0.307	30.26	0.45	30.71	50.06	19.35	
	1.282	25.15	0.56	25.71	46.00	20.29	
	2.650	26.35	0.67	27.02	46.00	18.98	
	10.452	24.58	1.08	25.66	50.00	24.34	
Neutral	0.184	51.84	0.31	52.15	64.28	12.13	QP
	0.248	44.87	0.35	45.22	61.82	16.60	
	1.310	39.58	0.54	40.12	56.00	15.88	
	2.650	35.93	0.63	36.56	56.00	19.44	
	9.451	34.40	0.99	35.39	60.00	24.61	
	17.849	37.53	1.64	39.17	60.00	20.83	
	0.184	40.23	0.31	40.54	64.28	23.74	AV
	0.248	32.25	0.35	32.60	61.82	29.22	
	1.310	26.53	0.54	27.07	56.00	28.93	
	2.650	25.31	0.63	25.94	56.00	30.06	
	9.451	24.16	0.99	25.15	60.00	34.85	
	17.849	24.59	1.64	26.23	60.00	33.77	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV/DVD COMBO	Temperature :	22℃	
Model No.	:	LCD19W57DCA	Humidity :	48%RH	
Serial No.	:	E2010081704	Date of Test :	Sep 29, 2010	
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	0.183	51.45	0.38	51.83	64.33	12.50	QP
	0.249	45.18	0.42	45.60	61.78	16.18	
	0.310	42.18	0.45	42.63	59.97	17.34	
	1.352	37.38	0.57	37.95	56.00	18.05	
	2.678	36.99	0.67	37.66	56.00	18.34	
	17.849	37.15	1.47	38.62	60.00	21.38	
	0.183	41.45	0.38	41.83	54.33	12.49	AV
	0.249	35.25	0.42	35.67	51.78	16.11	
	0.310	32.18	0.45	32.63	49.97	17.34	
	1.352	27.58	0.57	28.15	46.00	17.85	
	2.678	26.98	0.67	27.65	46.00	18.35	
	17.849	27.15	1.47	28.62	50.00	21.38	
Neutral	0.183	51.90	0.31	52.21	64.33	12.12	QP
	0.247	45.60	0.34	45.94	61.86	15.92	
	1.153	38.13	0.52	38.65	56.00	17.35	
	2.736	36.67	0.63	37.30	56.00	18.70	
	9.352	34.58	0.99	35.57	60.00	24.43	
	17.849	34.70	1.64	36.34	60.00	23.66	
	0.183	**41.90**	**0.31**	**42.21**	**54.33**	**12.11**	AV
	0.247	35.59	0.34	35.93	51.86	15.93	
	1.153	28.99	0.52	29.51	46.00	16.49	
	2.736	26.69	0.63	27.32	46.00	18.68	
	9.352	24.57	0.99	25.56	50.00	24.44	
	17.849	24.70	1.64	26.34	50.00	23.66	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV/DVD COMBO	Temperature :	22℃	
Model No.	:	LCD19W57DCA	Humidity :	48%RH	
Serial No.	:	E2010081704	Date of Test :	Sep 29, 2010	
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	0.183	51.38	0.38	51.76	64.33	12.57	QP
	0.249	44.94	0.42	45.36	61.78	16.42	
	0.307	40.39	0.45	40.84	60.06	19.22	
	1.535	38.93	0.57	39.50	56.00	16.50	
	2.678	36.38	0.67	37.05	56.00	18.95	
	17.849	36.33	1.47	37.80	60.00	22.20	
	0.183	41.38	0.38	41.76	54.33	12.56	AV
	0.249	34.94	0.42	35.36	51.78	16.42	
	0.307	30.39	0.45	30.84	50.06	19.22	
	1.535	28.93	0.57	29.50	46.00	16.50	
	2.678	26.37	0.67	27.04	46.00	18.96	
	17.849	26.33	1.47	27.80	50.00	22.20	
Neutral	0.183	51.70	0.31	52.01	64.33	12.32	QP
	0.256	40.61	0.35	40.96	61.56	20.60	
	1.338	38.56	0.54	39.10	56.00	16.90	
	2.527	37.04	0.63	37.67	56.00	18.33	
	9.451	33.30	0.99	34.29	60.00	25.71	
	17.849	35.43	1.64	37.07	60.00	22.93	
	0.183	**41.71**	**0.31**	**42.02**	**54.33**	**12.31**	AV
	0.256	30.51	0.35	30.86	51.56	20.70	
	1.338	28.56	0.54	29.10	46.00	16.90	
	2.527	27.06	0.63	27.69	46.00	18.31	
	9.451	23.40	0.99	24.39	50.00	25.61	
	17.849	25.44	1.64	27.08	50.00	22.92	

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

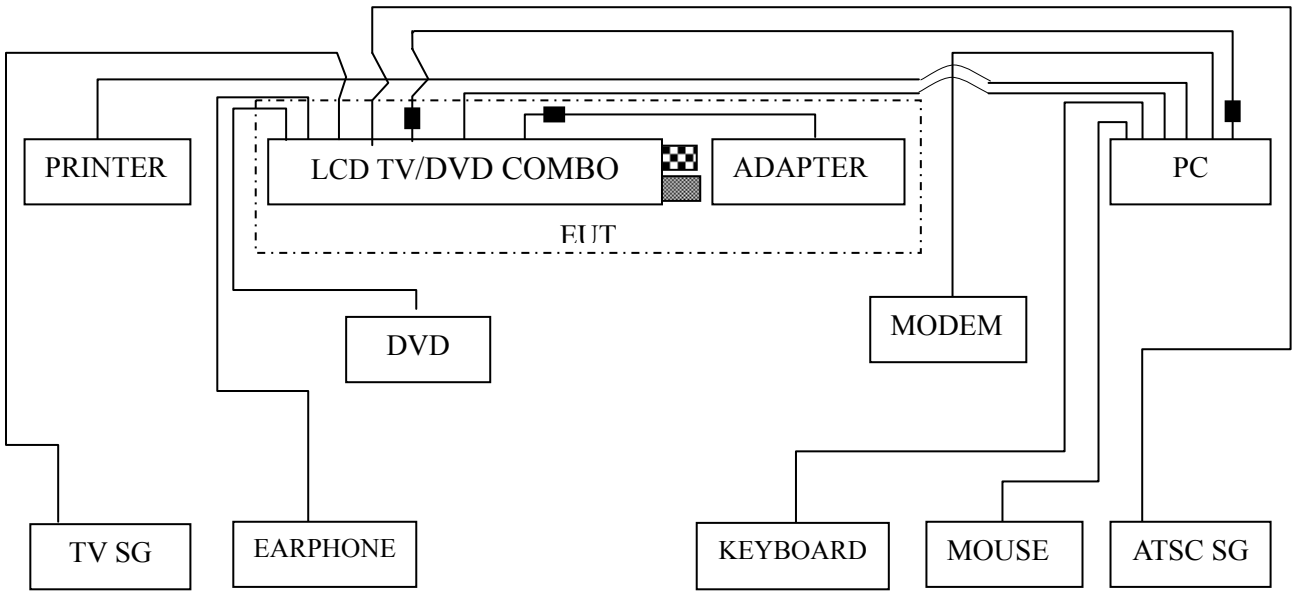
4.1 Test Equipment

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESVS10	844594/001	Mar 07, 2010	Mar 07, 2011
2.	Preamplifier	Agilent	8447D	2944A10548	Sep 19, 2010	Mar 19, 2011
3.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2009	Dec 01, 2010
4.	Spectrum Analyzer	Agilent	E7405A	MY45106600	May 19, 2010	May 19, 2011
5.	Software	Audix	E3	SET00200 9912M295-2	--	--

4.2 Block Diagram of Test Setup

4.2.1 EUT and Peripherals

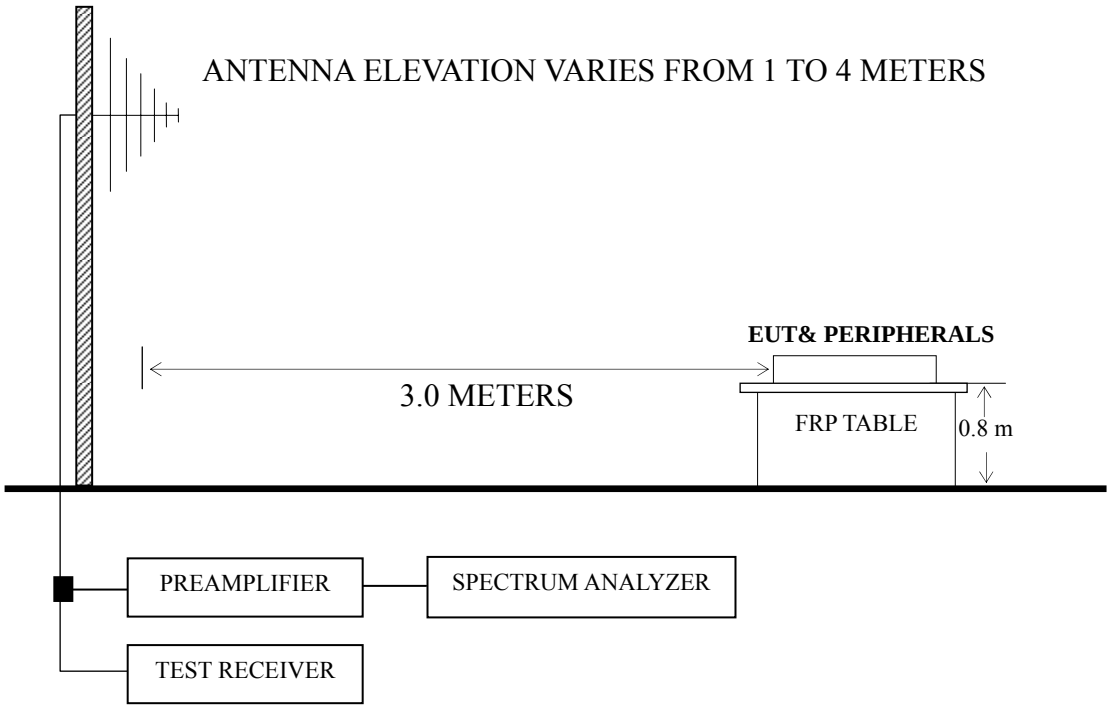


■ : Ferrite core

▩ : U-disk

▨ : SD Card

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 D-Sub 1024*768@60Hz test mode. The worst emission at horizontal polarization was detected at 497.540 MHz with corrected signal level of 43.75 dB (μV/m) (limit is 46.00dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 45°. The worst emission at vertical polarization was detected at 412.180 MHz with corrected signal level of 41.85 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 120°.

EUT	:	LCD TV/DVD COMBO	Temperature :	22℃	
Model No.	:	LCD19W57DCA	Humidity :	60%RH	
Serial No.	:	E2010081704	Date of Test :	Sep 16, 2010	
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	**58.13**	**27.16**	**6.96**	**0.83**	**34.95**	**40.00**	**5.05**
	169.68	18.53	10.20	1.33	30.06	43.50	13.44
	337.49	18.80	14.94	1.88	35.62	46.00	10.38
	407.33	18.45	16.59	2.08	37.12	46.00	8.88
	715.79	14.10	19.85	2.72	36.67	46.00	9.33
	788.54	11.73	20.58	2.87	35.18	46.00	10.82
Vertical	33.88	15.92	17.44	0.67	34.03	40.00	5.97
	155.13	**25.43**	**10.89**	**1.26**	**37.58**	**43.50**	**5.92**
	184.23	25.00	10.05	1.39	36.44	43.50	7.06
	235.64	22.58	12.36	1.56	36.50	46.00	9.50
	395.69	20.37	16.40	2.05	38.82	46.00	7.18
	494.63	18.16	17.83	2.25	38.24	46.00	7.76

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV/DVD COMBO	Temperature :	22℃
Model No.	:	LCD19W57DCA	Humidity :	60%RH
Serial No.	:	E2010081704	Date of Test :	Sep 16, 2010
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	58.13	26.58	6.96	0.83	34.37	40.00	5.63
	87.23	23.11	8.96	0.98	33.05	40.00	6.95
	174.53	25.02	10.07	1.35	36.44	43.50	7.06
	240.49	27.12	12.56	1.58	41.26	46.00	4.74
	497.54	**23.61**	**17.88**	**2.26**	**43.75**	**46.00**	**2.25**
	715.79	18.43	19.85	2.72	41.00	46.00	5.00
Vertical	58.13	26.58	6.96	0.83	34.37	40.00	5.63
	153.19	23.74	11.04	1.25	36.03	43.50	7.47
	174.53	24.74	10.07	1.35	36.16	43.50	7.34
	216.00	23.90	11.43	1.50	36.83	43.50	6.67
	412.18	**23.09**	**16.67**	**2.09**	**41.85**	**46.00**	**4.15**
	715.79	18.43	19.85	2.72	41.00	46.00	5.00

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV/DVD COMBO	Temperature :	22℃
Model No.	:	LCD19W57DCA	Humidity :	60%RH
Serial No.	:	E2010081704	Date of Test :	Sep 16, 2010
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	114.39	17.55	12.64	1.10	31.29	43.50	12.21
	133.79	19.40	12.35	1.18	32.93	43.50	10.57
	227.88	22.57	12.02	1.54	36.13	46.00	9.87
	286.08	22.61	13.66	1.73	38.00	46.00	8.00
	315.18	**24.12**	**14.32**	**1.81**	**40.25**	**46.00**	**5.75**
	715.79	15.47	19.85	2.72	38.04	46.00	7.96
Vertical	58.13	50.79	6.96	0.83	30.65	40.00	9.35
	133.79	45.84	12.35	1.18	31.80	43.50	11.70
	143.49	49.94	11.81	1.22	35.45	43.50	8.05
	227.88	49.82	12.02	1.54	36.43	46.00	9.57
	400.54	**49.83**	**16.50**	**2.06**	**40.86**	**46.00**	**5.14**
	494.63	46.02	17.83	2.25	38.00	46.00	8.00

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV/DVD COMBO	Temperature :	22℃	
Model No.	:	LCD19W57DCA	Humidity :	60%RH	
Serial No.	:	E2010081704	Date of Test :	Sep 16, 2010	
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	114.39	13.91	12.64	1.10	27.65	43.50	15.85
	130.88	17.06	12.47	1.18	30.71	43.50	12.79
	221.09	18.72	11.71	1.52	31.95	46.00	14.05
	407.33	15.05	16.59	2.08	33.72	46.00	12.28
	708.03	**12.84**	**19.79**	**2.70**	**35.33**	**46.00**	**10.67**
	851.59	10.79	21.24	2.97	35.00	46.00	11.00
Vertical	**34.85**	**14.58**	**16.97**	**0.68**	**32.23**	**40.00**	**7.77**
	61.04	23.18	6.59	0.85	30.62	40.00	9.38
	128.94	18.06	12.58	1.17	31.81	43.50	11.69
	164.83	20.02	10.35	1.31	31.68	43.50	11.82
	400.54	16.77	16.50	2.06	35.33	46.00	10.67
	473.29	14.94	17.57	2.21	34.72	46.00	11.28

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV/DVD COMBO	Temperature :	22℃
Model No.	:	LCD19W57DCA	Humidity :	60%RH
Serial No.	:	E2010081704	Date of Test :	Sep 16, 2010
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	140.58	17.46	12.05	1.21	30.72	43.50	12.78
	223.03	21.04	11.80	1.52	34.36	46.00	11.64
	300.63	19.35	13.93	1.77	35.05	46.00	10.95
	407.33	16.29	16.59	2.08	34.96	46.00	11.04
	715.79	13.11	19.85	2.72	35.68	46.00	10.32
	906.88	**15.18**	**21.76**	**3.04**	**39.98**	**46.00**	**6.02**
Vertical	**37.76**	**17.83**	**15.20**	**0.70**	**33.73**	**40.00**	**6.27**
	58.13	23.52	6.96	0.83	31.31	40.00	8.69
	164.83	23.13	10.35	1.31	34.79	43.50	8.71
	402.48	18.27	16.52	2.06	36.85	46.00	9.15
	497.54	17.41	17.88	2.26	37.55	46.00	8.45
	609.09	14.56	19.25	2.48	36.29	46.00	9.71

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV/DVD COMBO	Temperature :	22℃
Model No.	:	LCD19W57DCA	Humidity :	60%RH
Serial No.	:	E2010081704	Date of Test :	Sep 16, 2010
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	58.13	15.61	6.96	0.83	23.40	40.00	16.60
	138.64	16.53	12.17	1.21	29.91	43.50	13.59
	201.69	21.95	10.78	1.45	34.18	43.50	9.32
	300.63	**21.31**	**13.93**	**1.77**	**37.01**	**46.00**	**8.99**
	400.54	15.44	16.50	2.06	34.00	46.00	12.00
	710.94	13.37	19.82	2.70	35.89	46.00	10.11
Vertical	37.76	18.64	15.20	0.70	34.54	40.00	5.46
	128.94	17.88	12.58	1.17	31.63	43.50	11.87
	164.83	22.93	10.35	1.31	34.59	43.50	8.91
	286.08	18.62	13.66	1.73	34.01	46.00	11.99
	400.54	**22.33**	**16.50**	**2.06**	**40.89**	**46.00**	**5.11**
	484.40	22.00	17.70	2.24	41.94	46.00	4.06

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV/DVD COMBO	Temperature :	22℃
Model No.	:	LCD19W57DCA	Humidity :	60%RH
Serial No.	:	E2010081704	Date of Test :	Sep 16, 2010
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	138.64	12.06	12.17	1.21	25.44	43.50	18.06
	201.69	16.95	10.78	1.45	29.18	43.50	14.32
	300.63	**16.31**	**13.93**	**1.77**	**32.01**	**46.00**	**13.99**
	400.54	10.44	16.50	2.06	29.00	46.00	17.00
	499.48	6.33	17.90	2.26	26.49	46.00	19.51
	710.94	8.37	19.82	2.70	30.89	46.00	15.11
Vertical	37.76	13.64	15.20	0.70	29.54	40.00	10.46
	58.13	15.08	6.96	0.83	22.87	40.00	17.13
	128.94	12.88	12.58	1.17	26.63	43.50	16.87
	164.83	17.93	10.35	1.31	29.59	43.50	13.91
	286.08	13.62	13.66	1.73	29.01	46.00	16.99
	400.54	**17.33**	**16.50**	**2.06**	**35.89**	**46.00**	**10.11**

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV/DVD COMBO	Temperature :	22℃
Model No.	:	LCD19W57DCA	Humidity :	60%RH
Serial No.	:	E2010081704	Date of Test :	Sep 16, 2010
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	138.64	12.53	12.17	1.21	25.91	43.50	17.59
	201.69	17.95	10.78	1.45	30.18	43.50	13.32
	300.63	**17.31**	**13.93**	**1.77**	**33.01**	**46.00**	**12.99**
	400.54	11.44	16.50	2.06	30.00	46.00	16.00
	611.03	8.31	19.26	2.48	30.05	46.00	15.95
	710.94	9.37	19.82	2.70	31.89	46.00	14.11
Vertical	37.76	12.64	15.20	0.70	28.54	40.00	11.46
	106.63	10.73	12.02	1.07	23.82	43.50	19.68
	164.83	16.93	10.35	1.31	28.59	43.50	14.91
	286.08	12.62	13.66	1.73	28.01	46.00	17.99
	400.54	16.33	16.50	2.06	34.89	46.00	11.11
	484.93	**17.61**	**17.73**	**2.24**	**37.58**	**46.00**	**8.42**

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	Manufacturer	Location
Ferrite core	ZCAT1519-0830\ROH	FEELUX	See Internal Photos Figure 24, 25
		Rui Feng Electronic Co., Ltd.	
		Hai An Magnetic Material No.2 Factory	
		JIANGSU LETTALL ELECTRONICS CO., LTD.	
Ferrite core	ZCAT2132-1130\ROH	FEELUX	See Internal Photos Figure 26
		Rui Feng Electronic Co., Ltd.	
		Hai An Magnetic Material No.2 Factory	
		JIANGSU LETTALL ELECTRONICS CO., LTD.	

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)