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

LCD TV

Model No.	Serial No.	Brand
37LC30S60	E2009051830	Proscan
LHDN37W60US	--	Hisense
LHDN37W57US	--	

FCC ID : W9H37LCD001

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

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

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

Report No. : ACI-F09042
Date of Test : May 19-26, 2009
Date of Report : May 31, 2009

TABLE OF CONTENTS

Page

TEST REPORT FOR FCC CERTIFICATE

Applicant : Hisense Electric Co., Ltd.

Manufacturer : Hisense Electric Co., Ltd.

EUT Description : LCD TV

Model No.	Serial No.	Brand	Power Supply
37LC30S60	E2009051830	Proscan	120V/60Hz
LHDN37W60US	--	Hisense	
LHDN37W57US	--		

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 May 19-26, 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.F09041, a Verification report.

Date of Test : May 19-26, 2009 Date of Report : May 31, 2009

Producer : Alan He
ALAN HE / Assistant

Review : Byron
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 Number	Serial Number	Brand
37LC30S60	E2009051830	Proscan
LHDN37W60US	--	Hisense
LHDN37W57US	--	

Note 1 : The above models are all the same except for the different model number and brand.

Note 2 : The 37LC30S60 was tested and recorded in this report.

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 : CHI MEI OPTOELECTRONICS
M/N : V370B1 –L01
S/N : K7B341194430020

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:

Side Port:

(1) One ANT Port
Connected with TV SG/ATSC SG

(2) One USB (Service) Port
Connected with U-Disk as Terminator

(3) One Earphone Port
Connected with Earphone

(4) One S-Video Port
Connected with TV SG

(5) One AV in Port
Connected with DVD #2

(6) One Coaxial Port
Connected with DVD #2

Back View:

(7) One HDMI1 Port
Connected with DVD #1

(8) One HDMI2 Port
Connected with DVD #2

(9) One HDMI Audio Port
Connected with DVD #1

(10) One VGA Port
Connected with PC

(11) One VGA Audio Port
Connected with PC

(12) One component of YPbPr1 Port
Connected with DVD #1

(13) One component of YPbPr1 Audio Port
Connected with DVD #1

(14) One component of YPbPr2 Port
Connected with DVD #2

(15) One component of YPbPr2 Audio Port
Connected with DVD #2

2.2 Peripherals

2.2.1 PC

Manufacturer	:	HP
Model Number	:	dx7200MT
Serial Number	:	CNG622017W
Power Cord	:	Unshielded, detachable, 1.8m
Certificate	:	VCCI, FCC DoC, CE/EMC, CCC (A000111) MIC (E-A011-04-2659B)

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#1

Manufacturer	:	PHILIPS
Model Number	:	DVP3986K/93
Serial Number	:	KX1A0902120108
Data Cable	:	Unshielded, Undetachable, 1.2m
Certificate	:	FCC DoC, CE/EMC, CCC

2.2.10 DVD#2

Manufacturer	:	PHILIPS
Model Number	:	DVP3986K/93
Serial Number	:	KX1A0902120082
Data Cable	:	Unshielded, Undetachable, 1.2m
Certificate	:	FCC DoC, CE/EMC, CCC

2.3 Description of Test Facility

Site Description (Semi-Anechoic Chamber)	:	Sept. 17, 1998 file on April 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

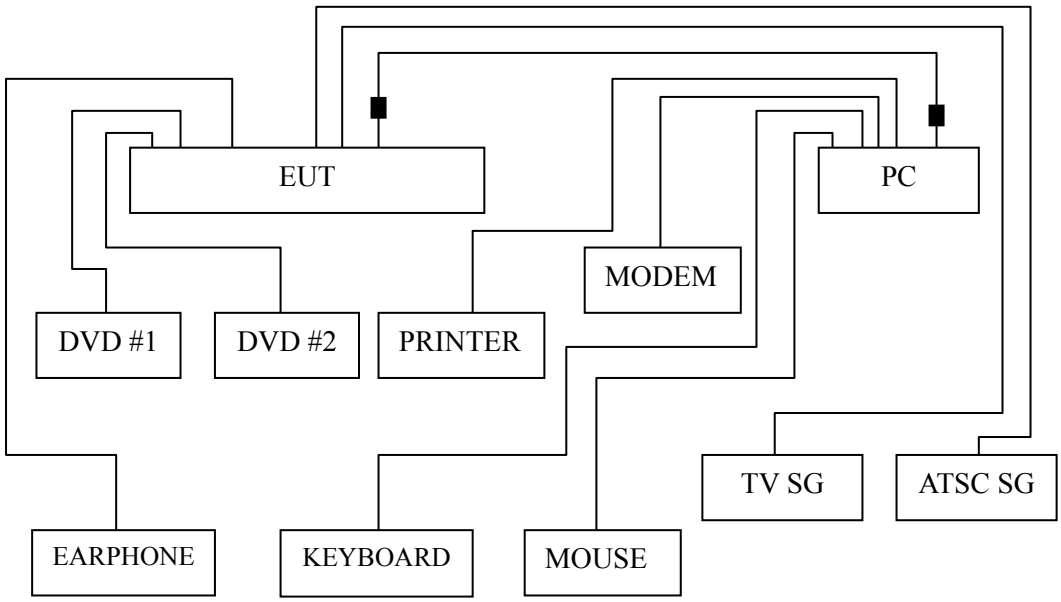
3.1 Test Equipment

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.	50Ω 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	--	--

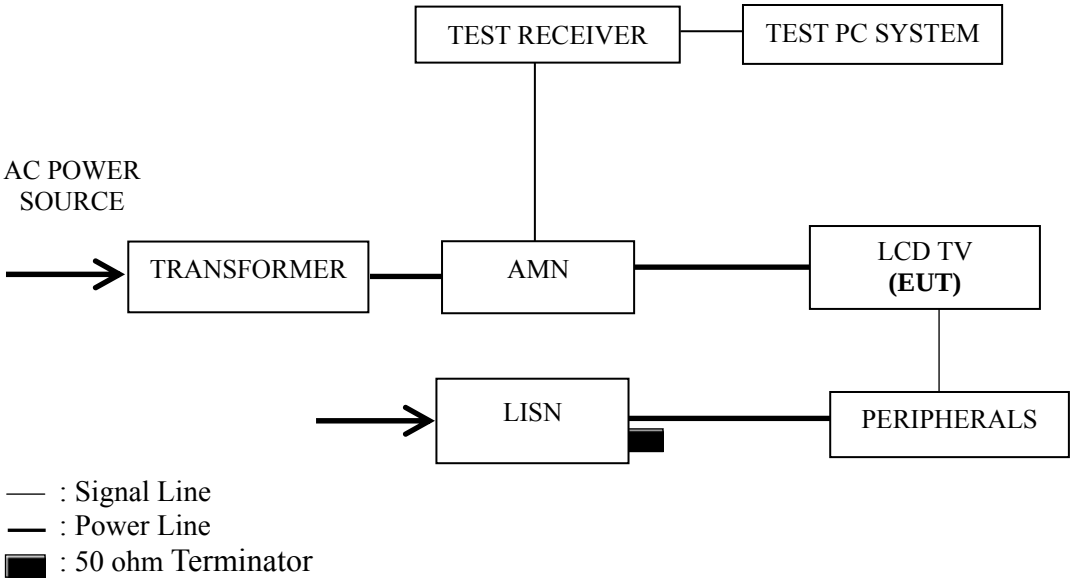
3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals



■ : Ferrite core

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 800*600@60Hz
D-Sub 1024*768@60Hz
D-Sub 1360*768@60Hz
HDMI 640*480@60Hz
HDMI 800*600@60Hz
HDMI 1024*768@60Hz
HDMI 1360*768@60Hz

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	P13
D-Sub 800*600@60Hz	P14
D-Sub 1024*768@60Hz	P15
D-Sub 1360*768@60Hz	P16
HDMI 640*480@60Hz	P17
HDMI 800*600@60Hz	P18
HDMI 1024*768@60Hz	P19
HDMI 1360*768@60Hz	P20

NOTE 1 – Factor = Cable Loss + AMN Factor.
NOTE 2 – Emission Level = Meter Reading + Factor.
NOTE 3 – "QP" means "Quasi-Peak" values, "AV" means "Average" values.
NOTE 4 – The worst case is for HDMI 640*480@60Hz test mode. The worst emission is detected at 9.302 MHz (Quasi-Peak value) with corrected signal level of 43.67 dB (μV) (limit is 60.00 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT	:	LCD TV	Temperature :	20℃	
Model No.	:	37LC30S60	Humidity :	46%RH	
Serial No.	:	E2009051830	Date of Test :	May 19, 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	0.339	28.71	0.60	29.31	59.22	29.91	QP
	0.426	27.56	0.59	28.15	57.33	29.18	
	0.943	30.56	0.49	31.05	56.00	24.95	
	2.622	36.13	0.46	36.59	56.00	19.41	
	7.769	35.49	0.58	36.07	60.00	23.93	
	9.352	39.02	0.57	39.59	60.00	20.41	
	0.339	18.67	0.60	19.27	49.22	29.95	AV
	0.426	17.48	0.59	18.07	47.33	29.26	
	0.943	20.45	0.49	20.94	46.00	25.06	
	2.622	26.37	0.46	26.83	46.00	19.17	
	7.769	25.67	0.58	26.25	50.00	23.75	
	9.352	29.65	0.57	30.22	50.00	19.78	
Neutral	0.270	23.50	0.57	24.07	61.12	37.05	QP
	0.406	22.34	0.57	22.91	57.73	34.82	
	2.622	37.17	0.44	37.61	56.00	18.39	
	4.926	**37.72**	**0.46**	**38.18**	**56.00**	**17.82**	
	8.412	38.08	0.71	38.79	60.00	21.21	
	9.204	39.02	0.70	39.72	60.00	20.28	
	0.270	13.16	0.57	13.73	51.12	37.39	AV
	0.406	12.47	0.57	13.04	47.73	34.69	
	2.622	27.47	0.44	27.91	46.00	18.09	
	4.926	27.49	0.46	27.95	46.00	18.05	
	8.412	28.34	0.71	29.05	50.00	20.95	
	9.204	28.92	0.70	29.62	50.00	20.38	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV	Temperature :	20℃	
Model No.	:	37LC30S60	Humidity :	46%RH	
Serial No.	:	E2009051830	Date of Test :	May 19, 2009	
Test Mode	:	D-Sub 800*600@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.343	28.97	0.60	29.57	59.13	29.56	QP
	0.426	27.48	0.59	28.07	57.33	29.26	
	2.622	35.32	0.46	35.78	56.00	20.22	
	4.926	**37.82**	**0.58**	**38.40**	**56.00**	**17.60**	
	8.592	38.68	0.58	39.26	60.00	20.74	
	9.654	38.41	0.58	38.99	60.00	21.01	
	0.343	18.49	0.60	19.09	49.13	30.04	AV
	0.426	17.48	0.59	18.07	47.33	29.26	
	2.622	24.76	0.46	25.22	46.00	20.78	
	4.926	27.49	0.58	28.07	46.00	17.93	
	8.592	28.59	0.58	29.17	50.00	20.83	
	9.654	28.46	0.58	29.04	50.00	20.96	
Neutral	0.270	24.87	0.57	25.44	61.12	35.68	QP
	0.406	23.70	0.57	24.27	57.73	33.46	
	2.594	36.18	0.44	36.62	56.00	19.38	
	4.454	35.09	0.46	35.55	56.00	20.45	
	5.112	37.80	0.48	38.28	60.00	21.72	
	8.592	40.57	0.70	41.27	60.00	18.73	
	0.270	14.49	0.57	15.06	51.12	36.06	AV
	0.406	12.93	0.57	13.50	47.73	34.23	
	2.594	25.90	0.44	26.34	46.00	19.66	
	4.454	25.79	0.46	26.25	46.00	19.75	
	5.112	27.49	0.48	27.97	50.00	22.03	
	8.592	30.43	0.70	31.13	50.00	18.87	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV	Temperature :	20℃	
Model No.	:	37LC30S60	Humidity :	46%RH	
Serial No.	:	E2009051830	Date of Test :	May 19, 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	0.343	29.76	0.60	30.36	59.13	28.77	QP
	0.431	28.54	0.58	29.12	57.24	28.12	
	0.943	30.42	0.49	30.91	56.00	25.09	
	2.622	35.23	0.46	35.69	56.00	20.31	
	5.653	37.69	0.58	38.27	60.00	21.73	
	8.501	39.30	0.58	39.88	60.00	20.12	
	0.343	19.46	0.60	20.06	49.13	29.07	AV
	0.431	18.76	0.58	19.34	47.24	27.90	
	0.943	20.45	0.49	20.94	46.00	25.06	
	2.622	25.76	0.46	26.22	46.00	19.78	
	5.653	27.26	0.58	27.84	50.00	22.16	
	8.501	29.56	0.58	30.14	50.00	19.86	
Neutral	0.270	23.95	0.57	24.52	61.12	36.60	QP
	0.406	22.67	0.57	23.24	57.73	34.49	
	1.210	30.65	0.46	31.11	56.00	24.89	
	2.736	**36.71**	**0.44**	**37.15**	**56.00**	**18.85**	
	5.653	36.65	0.54	37.19	60.00	22.81	
	9.107	38.07	0.70	38.77	60.00	21.23	
	0.270	13.76	0.57	14.33	51.12	36.79	AV
	0.406	12.45	0.57	13.02	47.73	34.71	
	1.210	20.16	0.46	20.62	46.00	25.38	
	2.736	26.14	0.44	26.58	46.00	19.42	
	5.653	26.46	0.54	27.00	50.00	23.00	
	9.107	28.49	0.70	29.19	50.00	20.81	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV	Temperature :	20℃	
Model No.	:	37LC30S60	Humidity :	46%RH	
Serial No.	:	E2009051830	Date of Test :	May 19, 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	0.348	28.45	0.60	29.05	59.00	29.95	QP
	0.440	27.38	0.58	27.96	57.07	29.11	
	1.744	32.35	0.42	32.77	56.00	23.23	
	2.622	36.11	0.46	36.57	56.00	19.43	
	5.653	35.63	0.58	36.21	60.00	23.79	
	9.204	39.84	0.57	40.41	60.00	19.59	
	0.348	18.46	0.60	19.06	49.00	29.94	AV
	0.440	17.49	0.58	18.07	47.07	29.00	
	1.744	22.46	0.42	22.88	46.00	23.12	
	2.622	26.81	0.46	27.27	46.00	18.73	
	5.653	25.67	0.58	26.25	50.00	23.75	
	9.204	29.64	0.57	30.21	50.00	19.79	
Neutral	0.270	25.49	0.57	26.06	61.12	35.06	QP
	0.406	22.80	0.57	23.37	57.73	34.36	
	1.210	29.79	0.46	30.25	56.00	25.75	
	2.622	37.28	0.44	37.72	56.00	18.28	
	5.112	38.40	0.48	38.88	60.00	21.12	
	9.451	40.15	0.71	40.86	60.00	19.14	
	0.270	15.35	0.57	15.92	51.12	35.20	AV
	0.406	12.34	0.57	12.91	47.73	34.82	
	1.210	19.67	0.46	20.13	46.00	25.87	
	2.622	**27.47**	**0.44**	**27.91**	**46.00**	**18.09**	
	5.112	28.46	0.48	28.94	50.00	21.06	
	9.451	30.35	0.71	31.06	50.00	18.94	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV	Temperature :	20℃	
Model No.	:	37LC30S60	Humidity :	46%RH	
Serial No.	:	E2009051830	Date of Test :	May 19, 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	0.270	28.75	0.62	29.37	61.12	31.75	QP
	0.346	29.20	0.60	29.80	59.05	29.25	
	1.552	32.68	0.43	33.11	56.00	22.89	
	2.622	36.64	0.46	37.10	56.00	18.90	
	5.653	36.81	0.58	37.39	60.00	22.61	
	9.302	40.18	0.57	40.75	60.00	19.25	
	0.270	18.67	0.62	19.29	51.12	31.83	AV
	0.346	19.35	0.60	19.95	49.05	29.10	
	1.552	22.64	0.43	23.07	46.00	22.93	
	2.622	26.48	0.46	26.94	46.00	19.06	
	5.653	26.49	0.58	27.07	50.00	22.93	
	9.302	30.32	0.57	30.89	50.00	19.11	
Neutral	0.270	25.44	0.57	26.01	61.12	35.11	QP
	0.406	22.85	0.57	23.42	57.73	34.31	
	2.622	36.96	0.44	37.40	56.00	18.60	
	4.574	38.86	0.46	39.32	56.00	16.68	
	5.112	37.70	0.48	38.18	60.00	21.82	
	9.302	**42.97**	**0.70**	**43.67**	**60.00**	**16.33**	
	0.270	15.34	0.57	15.91	51.12	35.21	AV
	0.406	12.33	0.57	12.90	47.73	34.83	
	2.622	26.39	0.44	26.83	46.00	19.17	
	4.574	28.56	0.46	29.02	46.00	16.98	
	5.112	27.49	0.48	27.97	50.00	22.03	
	9.302	32.44	0.70	33.14	50.00	16.86	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV	Temperature :	20℃	
Model No.	:	37LC30S60	Humidity :	46%RH	
Serial No.	:	E2009051830	Date of Test :	May 19, 2009	
Test Mode	:	HDMI 800*600@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.270	28.72	0.62	29.34	61.12	31.78	QP
	0.346	29.32	0.60	29.92	59.05	29.13	
	0.963	31.45	0.48	31.93	56.00	24.07	
	2.736	37.37	0.46	37.83	56.00	18.17	
	8.592	38.82	0.58	39.40	60.00	20.60	
	9.552	38.60	0.58	39.18	60.00	20.82	
	0.270	18.49	0.62	19.11	51.12	32.01	AV
	0.346	19.72	0.60	20.32	49.05	28.73	
	0.963	21.49	0.48	21.97	46.00	24.03	
	2.736	**27.29**	**0.46**	**27.75**	**46.00**	**18.25**	
	8.592	28.46	0.58	29.04	50.00	20.96	
	9.552	28.35	0.58	28.93	50.00	21.07	
Neutral	0.270	26.57	0.57	27.14	61.12	33.98	QP
	0.406	22.92	0.57	23.49	57.73	34.24	
	1.210	29.74	0.46	30.20	56.00	25.80	
	2.622	36.42	0.44	36.86	56.00	19.14	
	5.112	37.42	0.48	37.90	60.00	22.10	
	9.757	39.43	0.71	40.14	60.00	19.86	
	0.270	16.59	0.57	17.16	51.12	33.96	AV
	0.406	12.63	0.57	13.20	47.73	34.53	
	1.210	19.76	0.46	20.22	46.00	25.78	
	2.622	26.57	0.44	27.01	46.00	18.99	
	5.112	27.48	0.48	27.96	50.00	22.04	
	9.757	29.48	0.71	30.19	50.00	19.81	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV	Temperature	:	20℃
Model No.	:	37LC30S60	Humidity	:	46%RH
Serial No.	:	E2009051830	Date of Test	:	May 19, 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	0.346	29.13	0.60	29.73	59.05	29.32	QP
	0.440	28.46	0.58	29.04	57.07	28.03	
	1.552	32.21	0.43	32.64	56.00	23.36	
	2.707	34.95	0.46	35.41	56.00	20.59	
	5.112	38.45	0.58	39.03	60.00	20.97	
	9.352	39.33	0.57	39.90	60.00	20.10	
	0.346	19.67	0.60	20.27	49.05	28.78	AV
	0.440	18.67	0.58	19.25	47.07	27.82	
	1.552	22.48	0.43	22.91	46.00	23.09	
	2.707	24.80	0.46	25.26	46.00	20.74	
	5.112	28.48	0.58	29.06	50.00	20.94	
	9.352	29.47	0.57	30.04	50.00	19.96	
Neutral	0.270	23.70	0.57	24.27	61.12	36.85	QP
	0.406	23.81	0.57	24.38	57.73	33.35	
	1.744	30.84	0.44	31.28	56.00	24.72	
	2.622	37.27	0.44	37.71	56.00	18.29	
	5.112	37.20	0.48	37.68	60.00	22.32	
	9.552	39.28	0.71	39.99	60.00	20.01	
	0.270	13.64	0.57	14.21	51.12	36.91	AV
	0.406	13.47	0.57	14.04	47.73	33.69	
	1.744	20.43	0.44	20.87	46.00	25.13	
	2.622	**27.87**	**0.44**	**28.31**	**46.00**	**17.69**	
	5.112	27.95	0.48	28.43	50.00	21.57	
	9.552	29.82	0.71	30.53	50.00	19.47	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV	Temperature :	20℃	
Model No.	:	37LC30S60	Humidity	:	46%RH
Serial No.	:	E2009051830	Date of Test	:	May 19, 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	0.270	28.36	0.62	28.98	61.12	32.14	QP
	0.346	29.24	0.60	29.84	59.05	29.21	
	1.480	31.44	0.44	31.88	56.00	24.12	
	2.809	36.03	0.47	36.50	56.00	19.50	
	8.637	38.92	0.58	39.50	60.00	20.50	
	9.204	40.52	0.57	41.09	60.00	18.91	
	0.270	18.47	0.62	19.09	51.12	32.03	AV
	0.346	18.95	0.60	19.55	49.05	29.50	
	1.480	21.94	0.44	22.38	46.00	23.62	
	2.809	**26.79**	**0.47**	**27.26**	**46.00**	**18.74**	
	8.637	28.79	0.58	29.37	50.00	20.63	
	9.204	30.42	0.57	30.99	50.00	19.01	
Neutral	0.270	26.32	0.57	26.89	61.12	34.23	QP
	0.406	22.52	0.57	23.09	57.73	34.64	
	1.949	34.00	0.43	34.43	56.00	21.57	
	2.622	35.91	0.44	36.35	56.00	19.65	
	5.112	39.31	0.48	39.79	60.00	20.21	
	9.302	40.16	0.70	40.86	60.00	19.14	
	0.270	16.34	0.57	16.91	51.12	34.21	AV
	0.406	12.63	0.57	13.20	47.73	34.53	
	1.949	23.35	0.43	23.78	46.00	22.22	
	2.622	25.77	0.44	26.21	46.00	19.79	
	5.112	29.46	0.48	29.94	50.00	20.06	
	9.302	30.26	0.70	30.96	50.00	19.04	

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:

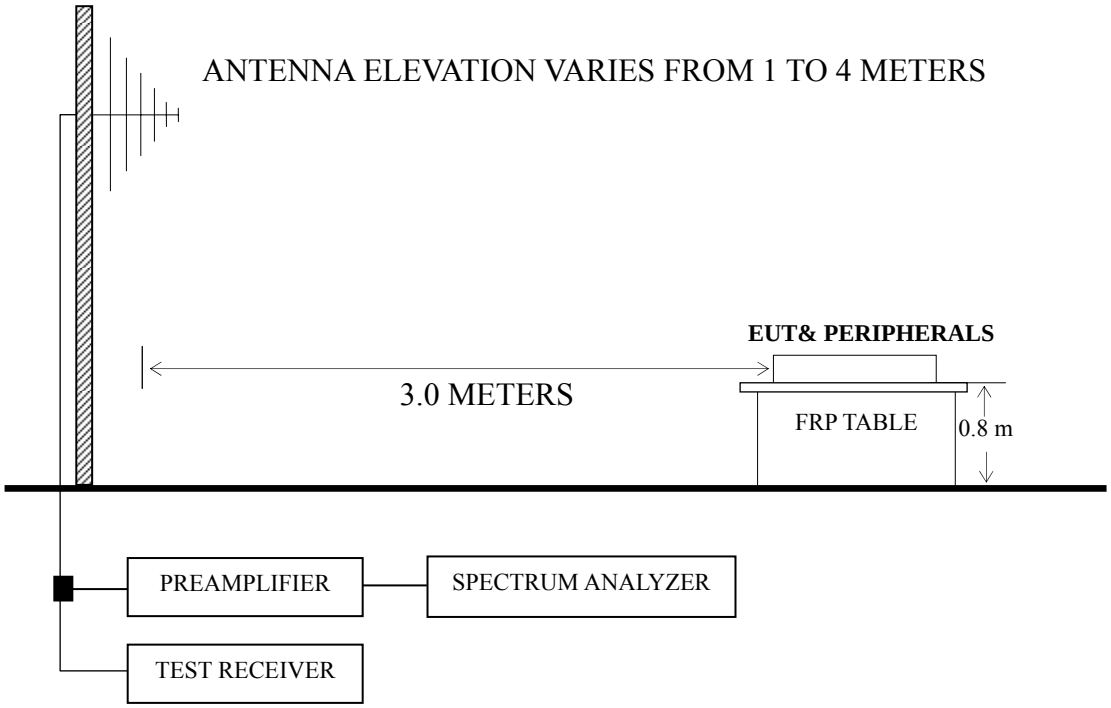
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E7405A	MY45106600	Apr 06, 2009	Apr 06, 2010
2.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 14, 2008	May 14, 2010
3.	Test Receiver	R&S	ESVS10	844594/001	Apr 06, 2009	Apr 06, 2010
4.	Preamplifier	HP	8447D	2944A10548	Mar 19, 2009	Sep 19, 2009
5.	50Ω Coaxial Switch	Anritsu	MP59B	6200426390	Mar 18, 2009	Sep 18, 2009
6.	Software	Audix	E3	SET00200 9912M295-2	--	--

4.2 Block Diagram of Test Setup

4.2.1 EUT and Peripherals

Same as Sec.3.2.1

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	P24
D-Sub 800*600@60Hz	P25
D-Sub 1024*768@60Hz	P26
D-Sub 1360*768@60Hz	P27
HDMI 640*480@60Hz	P28
HDMI 800*600@60Hz	P29
HDMI 1024*768@60Hz	P30
HDMI 1360*768@60Hz	P31

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 152.220 MHz with corrected signal level of 38.06 dB (μV/m) (limit is 43.50dB (μV/m)), when the antenna was 1.50 m height and the turntable was at 250°. The worst emission at vertical polarization was detected at 87.230 MHz with corrected signal level of 36.10 dB (μV/m) (limit is 40.00 dB (μV/m)), when the antenna was 1.50 m height and the turntable was at 330°.

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	37LC30S60	Humidity :	60%RH
Serial No.	:	E2009051830	Date of Test :	May 26, 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	**66.860**	**23.68**	**6.53**	**0.84**	**31.05**	**40.00**	**8.95**
	114.390	18.35	12.64	1.13	32.12	43.50	11.38
	147.370	19.97	11.51	1.22	32.70	43.50	10.80
	194.900	20.96	10.51	1.51	32.98	43.50	10.52
	303.540	16.34	14.00	1.89	32.23	46.00	13.77
	608.120	13.00	19.25	2.76	35.01	46.00	10.99
Vertical	56.190	27.30	7.46	0.75	35.51	40.00	4.49
	66.860	26.34	6.53	0.84	33.71	40.00	6.29
	114.390	**25.36**	**12.64**	**1.13**	**39.13**	**43.50**	**4.37**
	187.140	21.51	10.17	1.47	33.15	43.50	10.35
	281.230	16.97	13.57	1.81	32.35	46.00	13.65
	608.120	13.73	19.25	2.76	35.74	46.00	10.26

TEST ENGINEER: TOM SI

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	37LC30S60	Humidity :	60%RH
Serial No.	:	E2009051830	Date of Test :	May 26, 2009
Test Mode	:	D-Sub 800*600@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	66.860	23.68	6.53	0.84	31.05	40.00	8.95
	114.390	18.35	12.64	1.13	32.12	43.50	11.38
	147.370	19.97	11.51	1.22	32.70	43.50	10.80
	194.900	20.96	10.51	1.51	32.98	43.50	10.52
	303.540	16.34	14.00	1.89	32.23	46.00	13.77
	607.485	**15.49**	**19.24**	**2.76**	**37.49**	**46.00**	**8.51**
Vertical	56.190	27.30	7.46	0.75	35.51	40.00	4.49
	114.390	**25.36**	**12.64**	**1.13**	**39.13**	**43.50**	**4.37**
	187.140	21.51	10.17	1.47	33.15	43.50	10.35
	281.230	16.97	13.57	1.81	32.35	46.00	13.65
	608.120	13.73	19.25	2.76	35.74	46.00	10.26
	928.220	10.50	21.90	3.48	35.88	46.00	10.12

TEST ENGINEER: TOM SI

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	37LC30S60	Humidity :	60%RH
Serial No.	:	E2009051830	Date of Test :	May 26, 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	70.740	22.04	6.58	0.87	29.49	40.00	10.51
	114.390	16.68	12.64	1.13	30.45	43.50	13.05
	152.220	**25.72**	**11.09**	**1.25**	**38.06**	**43.50**	**5.44**
	238.550	20.49	12.48	1.67	34.64	46.00	11.36
	607.506	16.99	19.24	2.76	38.99	46.00	7.01
	809.880	15.72	20.80	3.21	39.73	46.00	6.27
Vertical	56.190	26.88	7.46	0.75	35.09	40.00	4.91
	87.230	**26.14**	**8.96**	**1.00**	**36.10**	**40.00**	**3.90**
	114.390	23.97	12.64	1.13	37.74	43.50	5.76
	152.220	22.75	11.09	1.25	35.09	43.50	8.41
	238.550	20.48	12.48	1.67	34.63	46.00	11.37
	608.120	14.16	19.25	2.76	36.17	46.00	9.83

TEST ENGINEER: TOM SI

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	37LC30S60	Humidity :	60%RH
Serial No.	:	E2009051830	Date of Test :	May 26, 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	**71.710**	**26.28**	**6.69**	**0.87**	**33.84**	**40.00**	**6.16**
	84.320	23.17	8.48	0.98	32.63	40.00	7.37
	144.460	23.50	11.76	1.21	36.47	43.50	7.03
	252.130	22.76	12.94	1.70	37.40	46.00	8.60
	608.120	16.92	19.25	2.76	38.93	46.00	7.07
	809.880	15.82	20.80	3.21	39.83	46.00	6.17
Vertical	43.580	21.74	11.88	0.68	34.30	40.00	5.70
	60.070	26.40	6.60	0.79	33.79	40.00	6.21
	84.320	**25.16**	**8.48**	**0.98**	**34.62**	**40.00**	**5.38**
	112.450	24.06	12.51	1.12	37.69	43.50	5.81
	180.350	26.46	9.90	1.43	37.79	43.50	5.71
	252.130	21.92	12.94	1.70	36.56	46.00	9.44

TEST ENGINEER: TOM SI

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	37LC30S60	Humidity :	60%RH
Serial No.	:	E2009051830	Date of Test :	May 26, 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	**66.860**	**23.68**	**6.53**	**0.84**	**31.05**	**40.00**	**8.95**
	114.390	18.35	12.64	1.13	32.12	43.50	11.38
	147.370	19.97	11.51	1.22	32.70	43.50	10.80
	194.900	20.96	10.51	1.51	32.98	43.50	10.52
	227.880	18.71	12.02	1.63	32.36	46.00	13.64
	608.120	13.00	19.25	2.76	35.01	46.00	10.99
Vertical	56.190	27.30	7.46	0.75	35.51	40.00	4.49
	114.390	**25.36**	**12.64**	**1.13**	**39.13**	**43.50**	**4.37**
	187.140	21.51	10.17	1.47	33.15	43.50	10.35
	281.230	16.97	13.57	1.81	32.35	46.00	13.65
	608.120	13.73	19.25	2.76	35.74	46.00	10.26
	928.220	10.50	21.90	3.48	35.88	46.00	10.12

TEST ENGINEER: TOM SI

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	37LC30S60	Humidity :	60%RH
Serial No.	:	E2009051830	Date of Test :	May 26, 2009
Test Mode	:	HDMI 800*600@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	**66.860**	**23.68**	**6.53**	**0.84**	**31.05**	**40.00**	**8.95**
	114.390	18.35	12.64	1.13	32.12	43.50	11.38
	147.370	19.97	11.51	1.22	32.70	43.50	10.80
	194.900	20.96	10.51	1.51	32.98	43.50	10.52
	405.390	13.02	16.57	2.22	31.81	46.00	14.19
	608.120	14.00	19.25	2.76	36.01	46.00	9.99
Vertical	56.190	27.30	7.46	0.75	35.51	40.00	4.49
	66.860	26.34	6.53	0.84	33.71	40.00	6.29
	114.390	**25.36**	**12.64**	**1.13**	**39.13**	**43.50**	**4.37**
	187.140	21.51	10.17	1.47	33.15	43.50	10.35
	281.230	16.97	13.57	1.81	32.35	46.00	13.65
	608.120	13.73	19.25	2.76	35.74	46.00	10.26

TEST ENGINEER: TOM SI

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	37LC30S60	Humidity :	60%RH
Serial No.	:	E2009051830	Date of Test :	May 26, 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	57.160	19.75	7.18	0.76	27.69	40.00	12.31
	87.230	22.54	8.96	1.00	32.50	40.00	7.50
	114.390	16.68	12.64	1.13	30.45	43.50	13.05
	152.220	25.72	11.09	1.25	38.06	43.50	5.44
	238.550	20.49	12.48	1.67	34.64	46.00	11.36
	607.506	**18.99**	**19.24**	**2.76**	**40.99**	**46.00**	**5.01**
Vertical	**35.820**	**18.21**	**16.45**	**0.65**	**35.31**	**40.00**	**4.69**
	56.190	26.88	7.46	0.75	35.09	40.00	4.91
	114.390	23.97	12.64	1.13	37.74	43.50	5.76
	152.220	22.75	11.09	1.25	35.09	43.50	8.41
	238.550	20.48	12.48	1.67	34.63	46.00	11.37
	608.120	14.16	19.25	2.76	36.17	46.00	9.83

TEST ENGINEER: TOM SI

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	37LC30S60	Humidity :	60%RH
Serial No.	:	E2009051830	Date of Test :	May 26, 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	35.820	10.67	16.45	0.65	27.77	40.00	12.23
	71.710	**26.28**	**6.69**	**0.87**	**33.84**	**40.00**	**6.16**
	144.460	23.50	11.76	1.21	36.47	43.50	7.03
	252.130	22.76	12.94	1.70	37.40	46.00	8.60
	608.120	16.92	19.25	2.76	38.93	46.00	7.07
	809.880	15.82	20.80	3.21	39.83	46.00	6.17
Vertical	**35.820**	**17.84**	**16.45**	**0.65**	**34.94**	**40.00**	**5.06**
	60.070	26.40	6.60	0.79	33.79	40.00	6.21
	112.450	24.06	12.51	1.12	37.69	43.50	5.81
	180.350	26.46	9.90	1.43	37.79	43.50	5.71
	252.130	21.92	12.94	1.70	36.56	46.00	9.44
	608.120	12.40	19.25	2.76	34.41	46.00	11.59

TEST ENGINEER: TOM SI

5 DEVIATION TO TEST SPECIFICATIONS

None.

6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Specification (mm)	Manufacturer	Location
Ferrite Core	ZCAT3035-1330	--	ROH	See Internal Photo Figure 15
Aluminum foil	DBA40	--	ROH	See Internal Photo Figure 16
Ferrite Core	ZCAT2132-1130	--	ROH	See Internal Photo Figure 17

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: Tom Si
(TOM SI)