

Application for FCC Certificate
On Behalf of
ZHEJIANG XINGXING ELECTRONIC TECHNOLOGY AND
DEVELOPMENT CO., LTD.

LCD TV

Model No.	ELETT221	T22XXX
Serial No.	E2009123001	--

FCC ID : R95ELETT22101

Prepared For : ZHEJIANG XINGXING ELECTRONIC
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Report No. : ACI-F10013
Date of Test : Jan 06 – 19, 2010
Date of Report : Jan 28, 2010

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TEST REPORT FOR FCC CERTIFICATE

Applicant : ZHEJIANG XINGXING ELECTRONIC TECHNOLOGY AND
DEVELOPMENT CO., LTD.

Manufacturer : ZHEJIANG XINGXING ELECTRONIC TECHNOLOGY AND
DEVELOPMENT CO., LTD.

EUT Description : LCD TV

(A) Model No.	ELETT221	T22XXX
(B) Serial No.	E2009123001	--
(C) 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 Jan 06 – 19, 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 must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

The test results for EUT's TV functions are contained in No.F10014, a Verification report.

Date of Test : Jan 06 – 19, 2010 Date of Report : Jan 28, 2010

Producer : Kathy Wang
KATHY WANG / Assistant

Review : Dio Yang
DIO YANG / Deputy Assistant Manage

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

Signatory : Byron Kwo
Authorized Signature EMC BYRON KWO / Manager

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Description of Test Item	Standard	Limits	Results
EMISSION			
Conducted Disturbance at the Mains Terminal	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 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.	:	ELETT221	T22XXX
Serial No.	:	E2009123001	--

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

Note 2 : The “XXX” in the T22XXX can be indicated by A to Z or a to z. The first “X” in the model means function, the second “X” in the model means clients and the third “X” in the model means color.

Note 3 : The ELETT221 was tested and recorded in this report.

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P.R.China

LED Panel : Manufacturer : PROVIEW TECHNOLOGY COMPANY LIMITED.
M/N : PV220WLEDM

Tuner : Manufacturer : XuGuang Tech. Co. Ltd.
N/N : DVT-8ADC/GW41F2

Adapter : Manufacturer : meikai
M/N : PDN-48-48A
Input : 100-240V~ 1.0A 50~60Hz
Output : 12V $\overline{\text{---}}$ 4.0A
Output Cable : Unshielded, Undetachable, 1.5m
With one core

Max Resolution	:	1366*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:

Back View:

(1)	One component of YPbPr Port	Connected with DVD
(2)	One HDMI Port	Connected with PC
(3)	One VGA Port	Connected with PC
(4)	One VGA Audio Port	Connected with PC
(5)	One Coaxial Port	Connected with DVD
(6)	One Audio In Port	Connected with DVD
(7)	One component of AV Port	Connected with DVD
(8)	One Earphone Port	Connected with Earphone
(9)	One DC In Port	Connected with Adapter
(10)	One USB Port	No function

2.2 Peripherals

2.2.1 PC

Manufacturer	:	HP
Model Number	:	dx7400MT
Serial Number	:	CNG8130K89
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

2.3 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

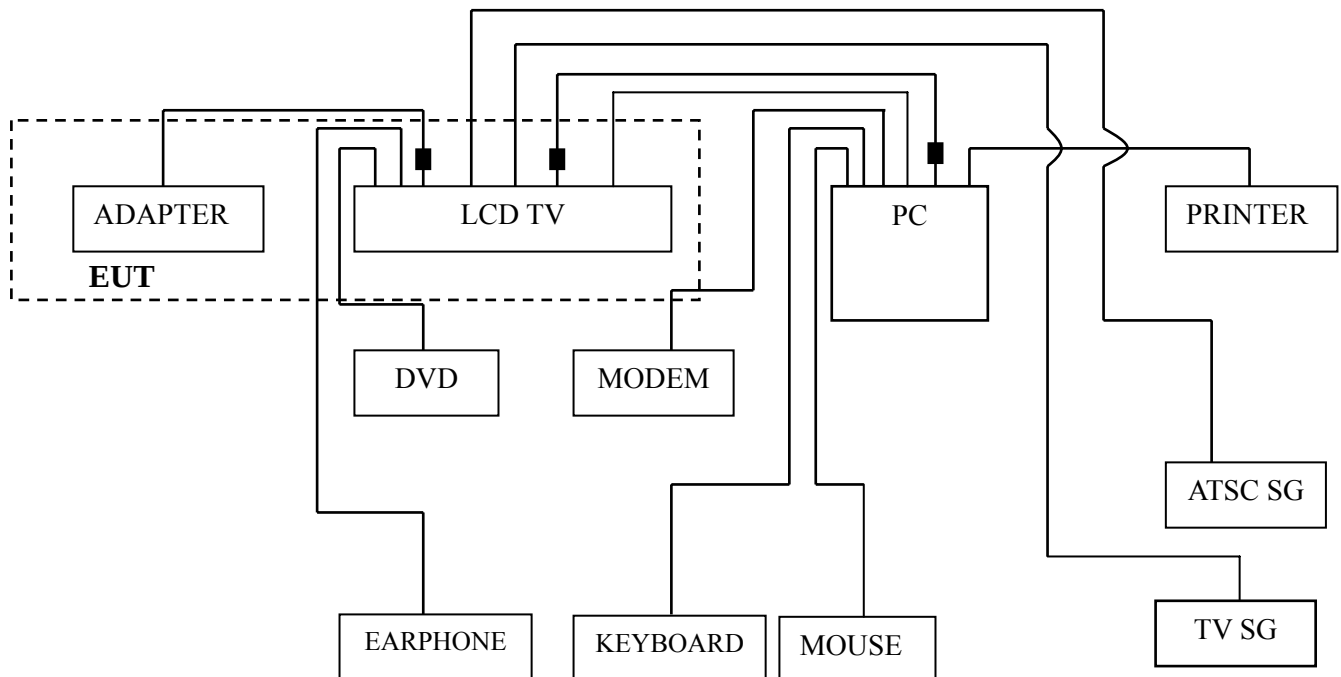
3.1 Test Equipment

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, 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	Sep 19, 2009	Mar 19, 2010
5.	50 Ω Terminator	Anritsu	BNC	001	Apr 02, 2009	Apr 02, 2010
6.	Software	Audix	E3	SET00200 9804M592	--	--

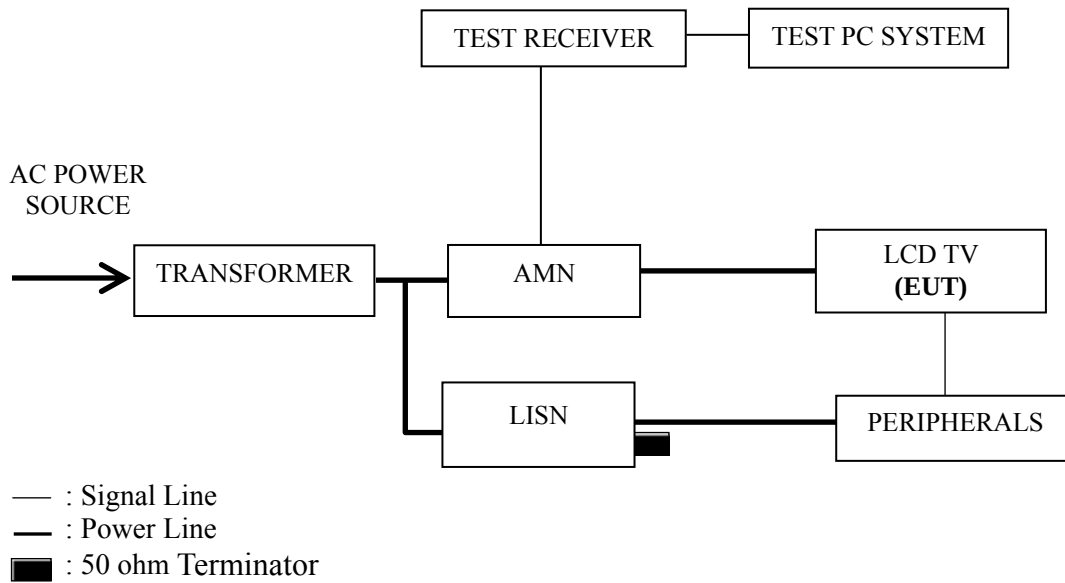
3.2 Block Diagram of Test Setup

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 1024*768@60Hz
D-Sub 1366*768@60Hz
HDMI 640*480@60Hz
HDMI 1024*768@60Hz
HDMI 1366*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 1024*768@60Hz	P14
D-Sub 1366*768@60Hz	P15
HDMI 640*480@60Hz	P16
HDMI 1024*768@60Hz	P17
HDMI 1366*768@60Hz	P18

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 0.186 MHz (Quasi-Peak Value) with corrected signal level of 60.06 dB (μV) (limit is 64.20 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT : LCD TV Temperature : 22°C

Model No. : ELETT221 Humidity : 48%RH

Serial No. : E2009123001 Date of Test : Jan 06, 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	0.189	58.80	0.22	59.02	64.09	5.07	QP
	0.249	48.56	0.24	48.80	61.78	12.98	
	0.313	43.76	0.25	44.01	59.88	15.87	
	3.931	28.30	0.42	28.72	56.00	27.28	
	6.186	34.56	0.45	35.01	60.00	24.99	
	23.888	37.62	0.82	38.44	60.00	21.56	
	0.189	46.11	0.22	46.33	54.09	7.76	AV
	0.249	33.37	0.24	33.61	51.78	18.17	
	0.313	29.31	0.25	29.56	49.88	20.32	
	3.931	15.07	0.42	15.49	46.00	30.51	
	6.186	24.19	0.45	24.64	50.00	25.36	
	23.888	31.43	0.82	32.25	50.00	17.75	
Neutral	0.186	59.86	0.20	60.06	64.20	4.14	QP
	0.249	49.51	0.22	49.73	61.78	12.05	
	0.310	44.25	0.23	44.48	59.97	15.49	
	3.869	30.50	0.43	30.93	56.00	25.07	
	6.186	38.45	0.46	38.91	60.00	21.09	
	23.387	40.13	0.77	40.90	60.00	19.10	
	0.186	47.30	0.20	47.50	54.20	6.70	AV
	0.249	34.08	0.22	34.30	51.78	17.48	
	0.310	26.53	0.23	26.76	49.97	23.21	
	3.869	22.99	0.43	23.42	46.00	22.58	
	6.186	28.30	0.46	28.76	50.00	21.24	
	23.387	34.19	0.77	34.96	50.00	15.04	

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 22°C

Model No. : ELETT221 Humidity : 48%RH

Serial No. : E2009123001 Date of Test : Jan 06, 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	0.184	56.59	0.22	56.81	64.28	7.47	QP
	0.252	47.15	0.24	47.39	61.69	14.30	
	0.505	31.55	0.29	31.84	56.00	24.16	
	6.121	34.56	0.45	35.01	60.00	24.99	
	16.661	24.47	0.77	25.24	60.00	34.76	
	23.140	38.40	0.83	39.23	60.00	20.77	
	0.184	39.66	0.22	39.88	54.28	14.40	AV
	0.252	33.66	0.24	33.90	51.69	17.79	
	0.505	17.86	0.29	18.15	46.00	27.85	
	6.121	24.06	0.45	24.51	50.00	25.49	
	16.661	17.12	0.77	17.89	50.00	32.11	
	23.140	32.19	0.83	33.02	50.00	16.98	
Neutral	0.184	56.24	0.20	56.44	64.28	7.84	QP
	0.247	46.48	0.22	46.70	61.86	15.16	
	0.524	30.23	0.26	30.49	56.00	25.51	
	6.121	38.06	0.46	38.52	60.00	21.48	
	14.364	27.49	0.65	28.14	60.00	31.86	
	23.636	41.34	0.77	42.11	60.00	17.89	
	0.184	39.54	0.20	39.74	54.28	14.54	AV
	0.247	28.64	0.22	28.86	51.86	23.00	
	0.524	16.74	0.26	17.00	46.00	29.00	
	6.121	27.59	0.46	28.05	50.00	21.95	
	14.364	21.34	0.65	21.99	50.00	28.01	
	23.636	35.32	0.77	36.09	50.00	13.91	

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 22°C

Model No. : ELETT221 Humidity : 48%RH

Serial No. : E2009123001 Date of Test : Jan 06, 2010

Test Mode : D-Sub 1366*768@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.186	56.13	0.22	56.35	64.20	7.85	QP
	0.252	45.75	0.24	45.99	61.69	15.70	
	0.505	30.66	0.29	30.95	56.00	25.05	
	5.993	34.50	0.45	34.95	60.00	25.05	
	14.364	25.22	0.69	25.91	60.00	34.09	
	23.888	37.51	0.82	38.33	60.00	21.67	
	0.186	41.31	0.22	41.53	54.20	12.67	AV
	0.252	32.26	0.24	32.50	51.69	19.19	
	0.505	17.60	0.29	17.89	46.00	28.11	
	5.993	25.01	0.45	25.46	50.00	24.54	
	14.364	19.28	0.69	19.97	50.00	30.03	
	23.888	31.70	0.82	32.52	50.00	17.48	
Neutral	0.184	55.99	0.20	56.19	64.28	8.09	QP
	0.247	46.22	0.22	46.44	61.86	15.42	
	0.499	30.99	0.26	31.25	56.01	24.76	
	6.056	38.22	0.46	38.68	60.00	21.32	
	14.364	27.56	0.65	28.21	60.00	31.79	
	23.387	41.46	0.77	42.23	60.00	17.77	
	0.184	39.27	0.20	39.47	54.28	14.81	AV
	0.247	28.54	0.22	28.76	51.86	23.10	
	0.499	17.07	0.26	17.33	46.01	28.68	
	6.056	28.46	0.46	28.92	50.00	21.08	
	14.364	21.26	0.65	21.91	50.00	28.09	
	23.387	35.29	0.77	36.06	50.00	13.94	

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 22°C

Model No. : ELETT221 Humidity : 48%RH

Serial No. : E2009123001 Date of Test : Jan 06, 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	0.186	55.27	0.22	55.49	64.20	8.71	QP
	0.249	45.15	0.24	45.39	61.78	16.39	
	0.499	30.24	0.29	30.53	56.01	25.48	
	6.186	34.58	0.45	35.03	60.00	24.97	
	19.326	30.08	0.87	30.95	60.00	29.05	
	23.140	37.98	0.83	38.81	60.00	21.19	
	0.186	40.57	0.22	40.79	54.20	13.41	AV
	0.249	29.82	0.24	30.06	51.78	21.72	
	0.499	16.83	0.29	17.12	46.01	28.89	
	6.186	23.94	0.45	24.39	50.00	25.61	
	19.326	23.53	0.87	24.40	50.00	25.60	
	23.140	31.79	0.83	32.62	50.00	17.38	
Neutral	0.184	54.19	0.20	54.39	64.28	9.89	QP
	0.247	44.49	0.22	44.71	61.86	17.15	
	0.524	28.97	0.26	29.23	56.00	26.77	
	5.867	37.66	0.46	38.12	60.00	21.88	
	18.426	31.74	0.81	32.55	60.00	27.45	
	23.387	41.40	0.77	42.17	60.00	17.83	
	0.184	37.57	0.20	37.77	54.28	16.51	AV
	0.247	26.91	0.22	27.13	51.86	24.73	
	0.524	16.08	0.26	16.34	46.00	29.66	
	5.867	26.67	0.46	27.13	50.00	22.87	
	18.426	24.20	0.81	25.01	50.00	24.99	
	23.387	35.38	0.77	36.15	50.00	13.85	

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 22°C

Model No. : ELETT221 Humidity : 48%RH

Serial No. : E2009123001 Date of Test : Jan 06, 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	0.186	55.43	0.22	55.65	64.20	8.55	QP
	0.249	45.28	0.24	45.52	61.78	16.26	
	0.524	29.26	0.29	29.55	56.00	26.45	
	6.056	34.66	0.45	35.11	60.00	24.89	
	19.021	29.59	0.86	30.45	60.00	29.55	
	23.387	38.14	0.82	38.96	60.00	21.04	
	0.186	40.57	0.22	40.79	54.20	13.41	AV
	0.249	30.04	0.24	30.28	51.78	21.50	
	0.524	15.41	0.29	15.70	46.00	30.30	
	6.056	24.23	0.45	24.68	50.00	25.32	
	19.021	22.71	0.86	23.57	50.00	26.43	
	23.387	32.06	0.82	32.88	50.00	17.12	
Neutral	0.188	55.51	0.20	55.71	64.11	8.40	QP
	0.252	45.31	0.22	45.53	61.69	16.16	
	0.499	29.96	0.26	30.22	56.01	25.79	
	6.121	38.02	0.46	38.48	60.00	21.52	
	19.532	33.81	0.85	34.66	60.00	25.34	
	23.888	40.63	0.76	41.39	60.00	18.61	
	0.188	43.01	0.20	43.21	54.11	10.90	AV
	0.252	31.87	0.22	32.09	51.69	19.60	
	0.499	16.81	0.26	17.07	46.01	28.94	
	6.121	27.55	0.46	28.01	50.00	21.99	
	19.532	26.17	0.85	27.02	50.00	22.98	
	23.888	34.59	0.76	35.35	50.00	14.65	

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 22°C

Model No. : ELETT221 Humidity : 48%RH

Serial No. : E2009123001 Date of Test : Jan 06, 2010

Test Mode : HDMI 1366*768@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.186	55.85	0.22	56.07	64.20	8.13	QP
	0.247	45.09	0.24	45.33	61.86	16.53	
	0.521	30.35	0.29	30.64	56.00	25.36	
	7.977	23.53	0.48	24.01	60.00	35.99	
	19.740	29.48	0.88	30.36	60.00	29.64	
	23.140	38.47	0.83	39.30	60.00	20.70	
	0.186	41.18	0.22	41.40	54.20	12.80	AV
	0.247	27.35	0.24	27.59	51.86	24.27	
	0.521	17.67	0.29	17.96	46.00	28.04	
	7.977	15.59	0.48	16.07	50.00	33.93	
	19.740	22.70	0.88	23.58	50.00	26.42	
	23.140	32.43	0.83	33.26	50.00	16.74	
Neutral	0.184	54.75	0.20	54.95	64.28	9.33	QP
	0.247	45.03	0.22	45.25	61.86	16.61	
	2.869	26.43	0.41	26.84	56.00	29.16	
	5.993	38.26	0.46	38.72	60.00	21.28	
	18.622	31.67	0.82	32.49	60.00	27.51	
	23.140	41.26	0.77	42.03	60.00	17.97	
	0.184	38.08	0.20	38.28	54.28	16.00	AV
	0.247	27.30	0.22	27.52	51.86	24.34	
	2.869	13.94	0.41	14.35	46.00	31.65	
	5.993	28.29	0.46	28.75	50.00	21.25	
	18.622	24.18	0.82	25.00	50.00	25.00	
	23.140	35.00	0.77	35.77	50.00	14.23	

TEST ENGINEER: HUGH HUANG

4 RADIATED EMISSION TEST

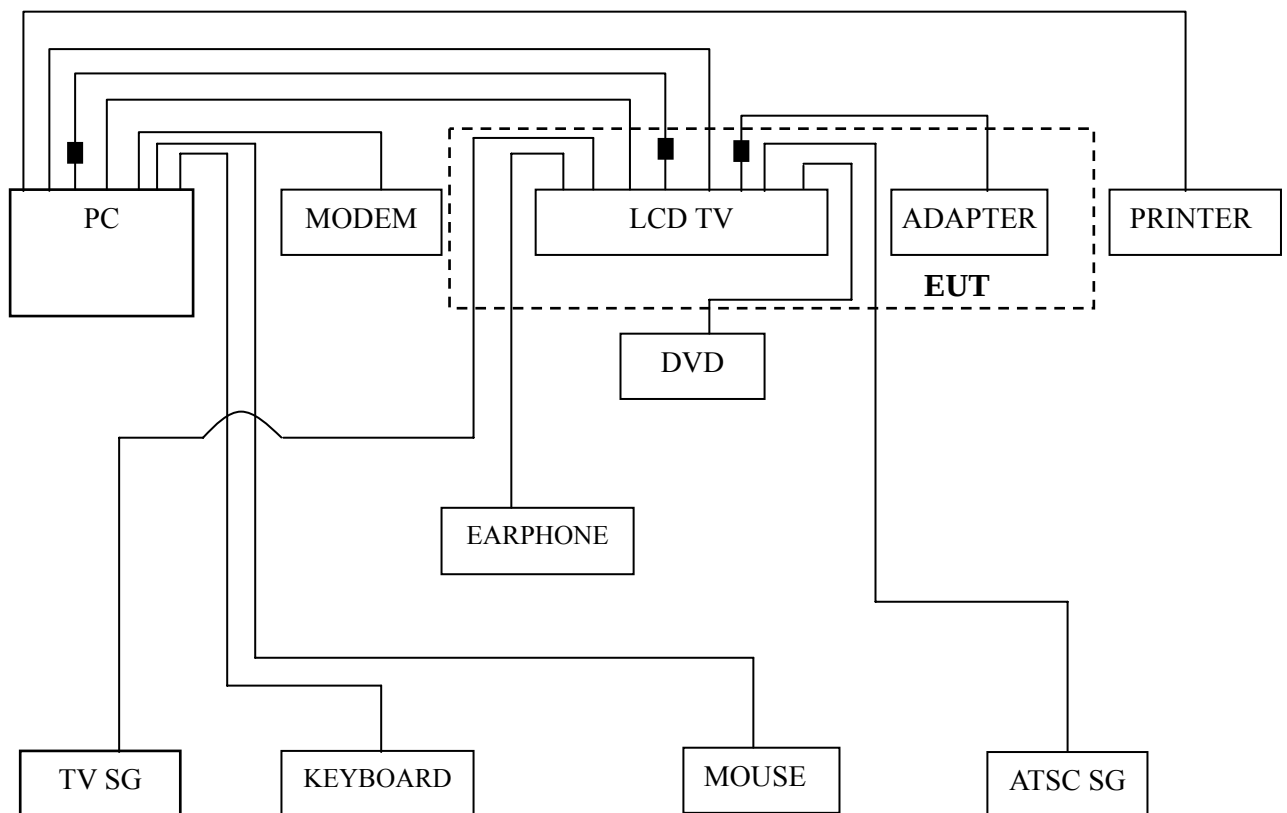
4.1 Test Equipment

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	Sep 19, 2009	Mar 19, 2010
3.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 14, 2008	May 14, 2010
4.	Spectrum Analyzer	Agilent	E7405A	MY45106600	May 19, 2009	May 19, 2010
5.	Software	Audix	E3	SET00200 9912M295-2	--	--

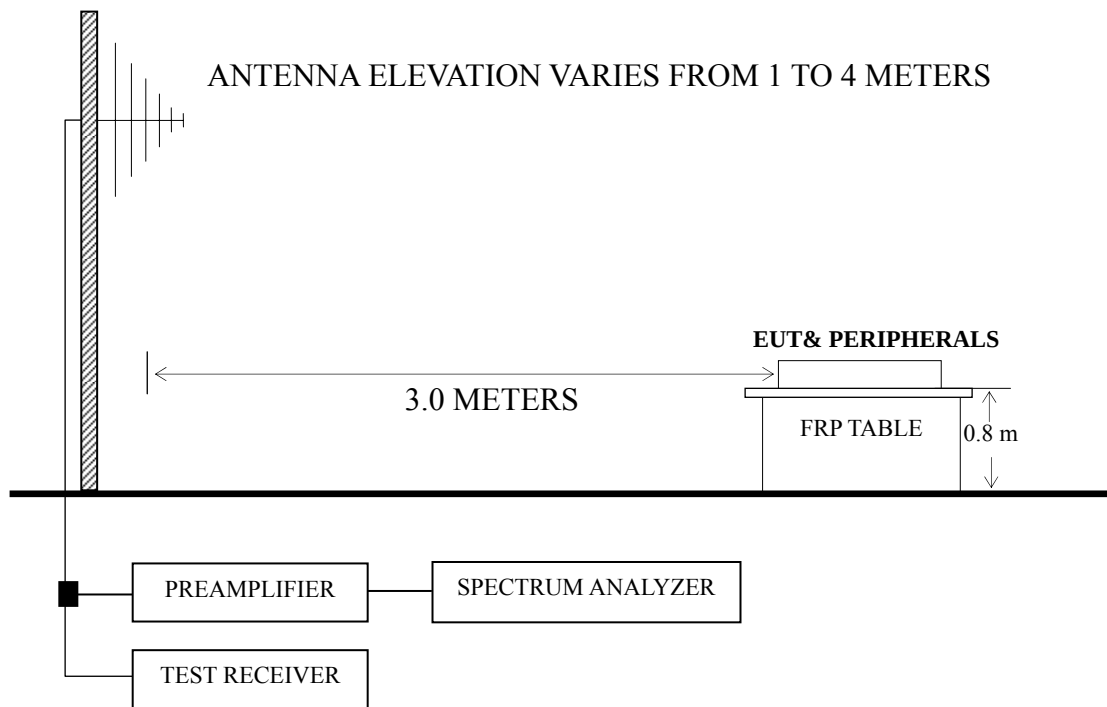
4.2 Block Diagram of Test Setup

4.2.1 EUT and Peripherals



■ : Ferrite core

4.2.2 Radiated emission test setup



■ : 50 ohm Coaxial Switch

4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)]

Frequency (MHz)	Distance (m)	Field strength limits	
		($\mu\text{V/m}$)	dB ($\mu\text{V/m}$)
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0

NOTE 1 - Emission Level dB ($\mu\text{V/m}$) = 20 log Emission Level ($\mu\text{V/m}$)

NOTE 2 - The tighter limit applies at the band edges.

NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

NOTE 4 - The limits shown are based on Quasi-peak value detector.

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	P22
D-Sub 1024*768@60Hz	P23
D-Sub 1366*768@60Hz	P24
HDMI 640*480@60Hz	P25
HDMI 1024*768@60Hz	P26
HDMI 1366*768@60Hz	P27

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 1366*768@60Hz test mode. The worst emission at horizontal polarization was detected at 197.810 MHz with corrected signal level of 30.08dB (μV/m) (limit is 43.50dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 260°. The worst emission at vertical polarization was detected at 31.940 MHz with corrected signal level of 36.53 dB (μV/m) (limit is 40.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 150°.

EUT : LCD TV Temperature : 22°C

Model No. : ELETT221 Humidity : 60%RH

Serial No. : E2009123001 Date of Test : Jan 19, 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	31.940	1.60	18.49	0.63	20.72	40.00	19.28
	122.150	12.27	12.91	1.14	26.32	43.50	17.18
	175.500	17.75	10.02	1.34	29.11	43.50	14.39
	296.750	16.90	13.86	1.75	32.51	46.00	13.49
	742.950	6.61	20.13	2.78	29.52	46.00	16.48
	826.370	8.59	20.98	2.92	32.49	46.00	13.51
Vertical	31.940	16.12	18.49	0.63	35.24	40.00	4.76
	34.850	16.64	16.97	0.66	34.27	40.00	5.73
	100.810	20.57	11.57	1.06	33.20	43.50	10.30
	224.000	22.56	11.85	1.52	35.93	46.00	10.07
	302.570	23.89	13.97	1.76	39.62	46.00	6.38
	379.200	15.94	16.06	1.95	33.95	46.00	12.05

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : ELETT221 Humidity : 60%RH

Serial No. : E2009123001 Date of Test : Jan 19, 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	172.590	21.78	10.11	1.33	33.22	43.50	10.28
	227.880	17.80	12.02	1.53	31.35	46.00	14.65
	302.570	24.97	13.97	1.76	40.70	46.00	5.30
	372.410	14.98	15.92	1.93	32.83	46.00	13.17
	530.520	8.38	18.30	2.33	29.01	46.00	16.99
	816.670	12.23	20.87	2.91	36.01	46.00	9.99
Vertical	31.940	16.50	18.49	0.63	35.62	40.00	4.38
	35.820	17.01	16.45	0.67	34.13	40.00	5.87
	152.220	21.84	11.09	1.24	34.17	43.50	9.33
	223.030	21.21	11.80	1.51	34.52	46.00	11.48
	302.570	26.28	13.97	1.76	42.01	46.00	3.99
	372.410	21.95	15.92	1.93	39.80	46.00	6.20

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : ELETT221 Humidity : 60%RH

Serial No. : E2009123001 Date of Test : Jan 19, 2010

Test Mode : D-Sub 1366*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	121.180	12.07	12.95	1.13	26.15	43.50	17.35
	182.290	18.59	9.99	1.36	29.94	43.50	13.56
	197.810	18.06	10.60	1.42	30.08	43.50	13.42
	379.200	7.18	16.06	1.95	25.19	46.00	20.81
	570.290	8.81	18.84	2.40	30.05	46.00	15.95
	760.410	7.02	20.33	2.82	30.17	46.00	15.83
Vertical	31.940	17.41	18.49	0.63	36.53	40.00	3.47
	35.820	17.74	16.45	0.67	34.86	40.00	5.14
	50.370	22.87	8.85	0.77	32.49	40.00	7.51
	98.870	22.49	11.27	1.04	34.80	43.50	8.70
	248.250	18.83	12.83	1.61	33.27	46.00	12.73
	570.290	15.24	18.84	2.40	36.48	46.00	9.52

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : ELETT221 Humidity : 60%RH

Serial No. : E2009123001 Date of Test : Jan 19, 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	31.940	8.60	18.49	0.63	27.72	40.00	12.28
	68.800	18.37	6.51	0.88	25.76	40.00	14.24
	122.150	18.27	12.91	1.14	32.32	43.50	11.18
	175.500	22.75	10.02	1.34	34.11	43.50	9.39
	296.750	21.90	13.86	1.75	37.51	46.00	8.49
	826.370	13.59	20.98	2.92	37.49	46.00	8.51
Vertical	31.940	14.12	18.49	0.63	33.24	40.00	6.76
	34.850	14.64	16.97	0.66	32.27	40.00	7.73
	116.330	17.64	12.78	1.12	31.54	43.50	11.96
	224.000	22.56	11.85	1.52	35.93	46.00	10.07
	302.570	23.89	13.97	1.76	39.62	46.00	6.38
	379.200	17.94	16.06	1.95	35.95	46.00	10.05

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : ELETT221 Humidity : 60%RH

Serial No. : E2009123001 Date of Test : Jan 19, 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	172.590	21.78	10.11	1.33	33.22	43.50	10.28
	227.880	17.80	12.02	1.53	31.35	46.00	14.65
	302.570	21.97	13.97	1.76	37.70	46.00	8.30
	372.410	13.98	15.92	1.93	31.83	46.00	14.17
	530.520	10.38	18.30	2.33	31.01	46.00	14.99
	816.670	12.23	20.87	2.91	36.01	46.00	9.99
Vertical	31.940	13.50	18.49	0.63	32.62	40.00	7.38
	35.820	14.01	16.45	0.67	31.13	40.00	8.87
	152.220	18.84	11.09	1.24	31.17	43.50	12.33
	223.030	18.21	11.80	1.51	31.52	46.00	14.48
	302.570	23.28	13.97	1.76	39.01	46.00	6.99
	372.410	18.95	15.92	1.93	36.80	46.00	9.20

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : ELETT221 Humidity : 60%RH

Serial No. : E2009123001 Date of Test : Jan 19, 2010

Test Mode : HDMI 1366*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	31.940	9.18	18.49	0.63	28.30	40.00	11.70
	121.180	16.07	12.95	1.13	30.15	43.50	13.35
	197.810	25.06	10.60	1.42	37.08	43.50	6.42
	248.250	19.15	12.83	1.61	33.59	46.00	12.41
	379.200	10.18	16.06	1.95	28.19	46.00	17.81
	570.290	12.81	18.84	2.40	34.05	46.00	11.95
Vertical	31.940	13.41	18.49	0.63	32.53	40.00	7.47
	35.820	15.74	16.45	0.67	32.86	40.00	7.14
	50.370	20.87	8.85	0.77	30.49	40.00	9.51
	69.770	22.08	6.50	0.88	29.46	40.00	10.54
	98.870	20.49	11.27	1.04	32.80	43.50	10.70
	570.290	13.24	18.84	2.40	34.48	46.00	11.52

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.

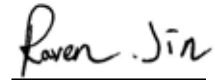
6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	Specification (mm)	Manufacturer	Location
Aluminum foil	55*20	SuZhou YiXiang Electronic Co., Ltd	See Appendix Figure 13
Copper foil	15*30	SuZhou YiXiang Electronic Co., Ltd	See Appendix Figure 13
Copper foil	15*60	SuZhou YiXiang Electronic Co., Ltd	See Appendix Figure 13
Gasket	120*5*7	SUZHOUJINJIE ELECTRON CO.LTD	See Appendix Figure 14
Gasket	240*5*7	SUZHOUJINJIE ELECTRON CO.LTD	See Appendix Figure 14

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)