

FCC ID:W8ULE24FHDD20

APPLICATION OF CERTIFICATION For

TTE Technology Inc.

LED TV

Brand Name	Model Number
TCL	LE24FHDD20

FCC ID: W8ULE24FHDD20

Prepared for: TTE Technology Inc.

255 Graphite Drive, Corona, CA 92881

Prepared By: Audix Technology (Shenzhen) Co., Ltd.

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Report Number : ACS- F11039
Date of Test : Jan.14~20, 2011
Date of Report : Feb.22, 2011



 $FCC\ ID:W8ULE24FHDD20$

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REPORT CERTIFICATION TEST

Applicant

TTE Technology Inc.

Manufacturer

TCL King Electrical Appliances (Huizhou) Co., Ltd.

EUT Description

LED TV

FCC ID

W8ULE24FHDD20

(A) MODEL NO.& Brand

Brand Name Model Number TCL LE24FHDD20

Name (B) SERIAL NO.

(C) TEST VOLTAGE : AC 120V/60Hz

Measurement Standard Used:

FCC Rules and Regulations Part 15 Subpart B Class B 2008, ANSI C63.4-2003 ICES-003 Issue 4 February 2004.

The device described above is tested by AUDIX TECHNOLOGY (SHENZHEN) 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 conducted and radiated emissions. The test results are contained in this test report and AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. is assumed of full responsibility for the accuracy and completeness of these tests.

After the test, our opinion is that EUT compliance with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

Date of Test: Jan. 14~20, 2011 Report of date: Feb. 22, 2011

Prepared by: Vicky Huang

Reviewer by:

Richzhy Zhong / Assistant Manager

AUDI)

③ 信華科技 (深圳) 有限公司

Audix Technology (Shenzhen) Co., Ltd.

EMC部門報告專用章

Stamp only for EMC Dedt. Report

Signature:

Approved & Authorized Signer:

Ken Lu / Manager



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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.

EMISSION							
Description of Test Item	Standard	Results	Remarks				
Power Line Conducted Emission Test	FCC Part 15: 2008 ANSI C63.4: 2003	PASS	Meets Class B Limit Minimum passing margin is 15.03dB at 0.62760MHz				
Radiated Emission Test	FCC Part 15: 2008 ANSI C63.4: 2003	PASS	Meets Class B Limit Minimum passing margin is 3.04dB at 214.300MHz				



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2. GENERAL INFORMATION

2.1.Description of Device (EUT)

Description : LED TV

Model Number : Brand Name

Brand Name Model Number
TCL LE24FHDD20

FCC ID : W8ULE24FHDD20

Applicant : TTE Technology Inc.

255 Graphite Drive, Corona, CA 92881

Manufacturer : TCL King Electrical Appliances (Huizhou) Co., Ltd.

Section 19, Zhongkai Development Zone for New & High-Level Tech Industries, Huizhou, Guangdong Province, China, 516006.

FREQUENCIES USED AND GENERATED WITHIN DEVICE						
X54M1	45-OSC54M-0Y1CR	54MHz				
LVDS CLOCK	80MHZ					
IF	45.75MHz					
DC-DC	U302->385KHz	U303->1MHz				
DDR	440MHz					
AMP	384KHz					

Power Adapter : Manufacturer: SAN HUA, M/N: SAWA-12-35012

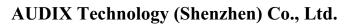
AC Cable : Unshielded, Detachable, 1.5m

DC Cable : Unshielded, Undetachable, 0.95m

Date of Test : Jan. 14~20, 2011

Date of Receipt : Jan.13, 2011

Sample Type : Prototype production





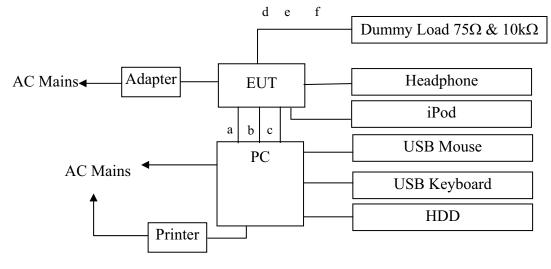
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2.2.Tested Supporting System Details

	Description	ACS No.	Manufacturer	Model	Serial Number	Approved type			
1.	PC	Test PC P	DELL	Studio 540	124XK2X	☑FCC DoC ☑BSMI ID:R33002			
		Power Cord: Unshiel Display Card: HD34		*					
2.	USB Mouse	ACS-EMC-M02R	DELL	M056UO	512024264	☑ FCC DoC ☑BSMI ID: R41108			
		Data Cable: shielded	, Undetachable,	1.8m		•			
		ACS-EMC-PT04	НР	C9079A	N/A	☑FCC DoC ☑BSMI ID: R33001			
3.	Printer	USB Cable: Shielded, Detachabled, 1.8m Power Cord: Unshielded, Detachabled, 1.8m Power Adapter: SAN HUA, M/N: SAWA-12-35012 DC Cable: Unshielded, Undetachabled, 0.95m							
4.	USB Keyboard	ACS-EMC- K02R	DELL	SK-8115	CN-ORH656-65 890-686-007J	☑ FCC DoC ☑BSMI ID: T3A002			
		Data Cable: shielded	, Undetachable,	2.0m					
5.	Headphone	ACS-EMC-EP01	OVANN	OV880V	-	□FCC DoC □BSMI ID			
	-	Cable: shielded, De	etachable, 4.0m	ı					
6.	iPod	ACS-EMC-IP01	APPLE	A1199	YM706MLDVQ 5	☑FCC DoC ☑BSMI ID: R33057			
		Data Cable: Shielded	l, Detachabled, 1	1.0m					
7.	HDD	ACS-EMC-HDD01	Terasys	F12-UF	A0100215-53900 31	☑FCC DoC ☑BSMI ID:			
		USB Cable: Shielded	d, Detachable, 1.	8m					
8.	Dummy Load $(10 \mathrm{K}\Omega~\&75\Omega~)$	L+R+V Cable: Unshielded, Detachabled, 1.2m Pb/Pr/Y Cable: Unshielded, Detachabled, 1.2m Coaxial Cable: Unshielded, Detachable, 1.2m							
9.	SG #1	-	Philips	PM5418	-	□FCC ID □BSMI ID			
10.	SG #2	-	R & S	DVG & SFQ	-	□FCC ID □BSMI ID			

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2.3.Block diagram of connection between the EUT and simulators



- a: VGA Cable
- b: HDMI Cable
- c: Audio In Cable
- d: Y/Pb/Pr Cable
- e: L+R+V Cable
- f: Coaxial Cable

(EUT: LED TV)



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2.4.Test Facility

Site Description

Name of Firm : Audix Technology (Shenzhen) Co., Ltd.

No. 6, Ke Feng Rd., 52 Block, Shenzhen

Science & Industrial Park, Nantou, Shenzhen, Guangdong, China

3m Anechoic Chamber : Mar. 31, 2009 File on Federal

Communication Commission Registration Number: 90454

3m & 10m Anechoic Chamber : Dec.30, 2009 File on Federal

Communication Commission Registration Number: 794232

EMC Lab. : Accredited by DATech, German

Registration Number: DAT-P-091/99-01

Feb,02, 2009

Accredited by NVLAP, USA NVLAP Code: 200372-0

Apr. 01, 2010

2.5. Measurement Uncertainty (95% confidence levels, k=2)

Test Item	Uncertainty		
Uncertainty for Conduction emission test	3.64 dB (9kHz to 150kHz		
in No. 1 Conduction	3.22 dB(150kHz to 30MHz)		
Uncertainty for Radiation Emission test	4.20 dB (Polarize: V)		
in 3m chamber	4.66 dB (Polarize: H)		
Uncertainty for test site temperature and	0.3℃		
humidity	2%		



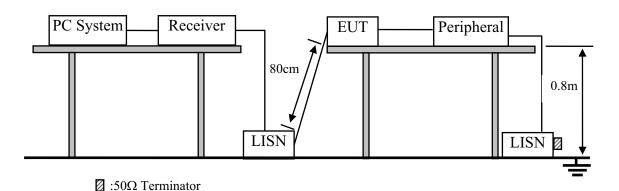
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3. POWER LINE CONDUCTED EMISSION TEST

3.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS10	838693/001	Nov.05, 10	1 Year
2.	L.I.S.N.#1	Rohde & Schwarz	ESH2-Z5	834066/011	Mar.30, 10	1 Year
3.	L.I.S.N.#3	Kyoritsu	KNW-242C	8-1920-1	May.08, 10	1 Year
4.	Terminator	Hubersuhner	50Ω	No. 1	May.08, 10	1 Year
5.	RF Cable	Fujikura	3D-2W	LISN Cable 1#	May.08, 10	1Year
6.	Coaxial Switch	Anritsu	MP59B	M55367	May.08, 10	1 Year
7.	Passive Probe	Rohde & Schwarz	ESH2-Z3	299.7810.52	May.08, 10	1 Year
8.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100341	May.08, 10	1 Year

3.2.Block Diagram of Test Setup



3.3. Power Line Conducted Emission Test Limits

	Maximum RF Line Voltage				
Frequency	Quasi-Peak Level	Average Level			
	dB(µV)	$dB(\mu V)$			
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*			
500kHz ~ 5MHz	56	46			
5MHz ~ 30MHz	60	50			

Notes: 1. * Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.



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3.4. Configuration of EUT on Test

The following equipment are installed on Power Line Conducted Emission Test to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

3.4.1. LED TV (EUT)

Model Number : LE24FHDD20

Serial Number : N/A

3.4.2. Support Equipment: As Tested Supporting System Detail, in Section 2.2.

3.5. Operating Condition of EUT

- 3.5.1. Setup the EUT and simulator as shown as Section 4.2.
- 3.5.2. Turn on the power of all equipment.
- 3.5.3.PC system ran the Self-test program "EMC Test. exe" by windows XP and sent "H" Character to LED TV (EUT), the Screen of EUT displayed and filled with "H" pattern, use white letters on a blackground, set the contrast control to maximum, set the brightness control to maximum and measure it.
- 3.5.4. The PC system was running the program "1kHz signal Playing" and sending sound to EUT.
- 3.5.5. The other peripheral devices were driven and operated in turn during all testing.

3.6.Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#). This provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#3). Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4-2003 on conducted Emission test.

The bandwidth of test receiver (R&S TEST RECEIVER ESHS10) is set at 10kHz.

The frequency range from 150kHz to 30MHz is checked. The test result are reported on Section 3.7.

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3.7. Conducted Disturbance at Mains Terminals Test Results

PASS. (All emissions not reported below are too low against the prescribed limits.)

The EUT with the following test modes were tested and selected to read Q.P values and Average values, all the test results are listed in next pages.

EUT: LED TV Model No. : LE24FHDD20

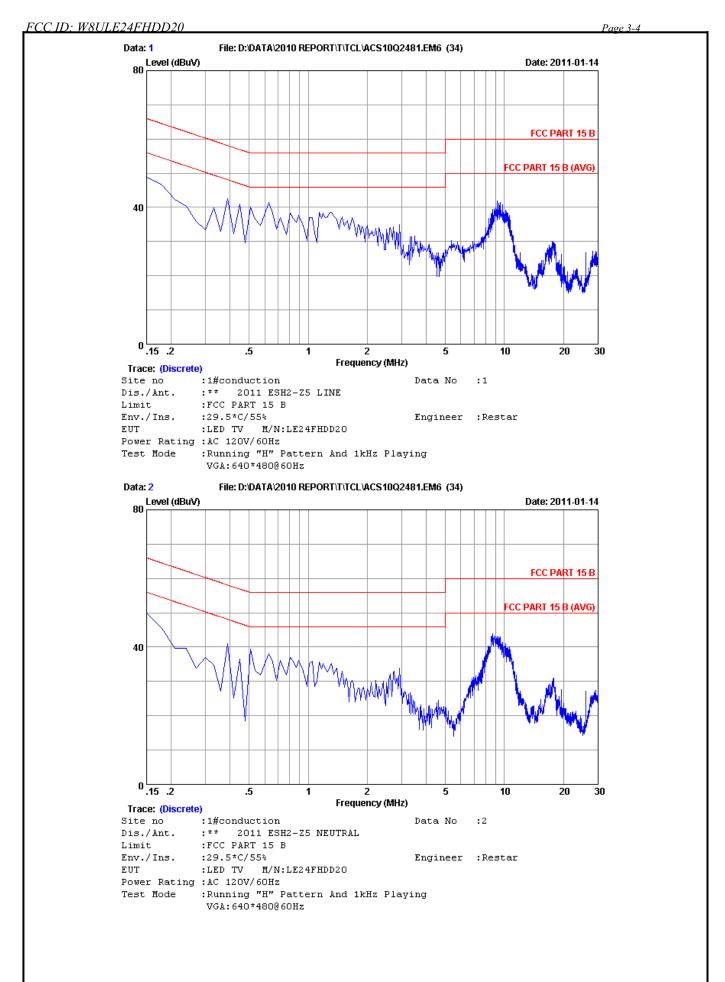
Test Date: Jan.14, 2011 Temperature: 23 °C Humidity: 54%

The details of test modes are as follows:

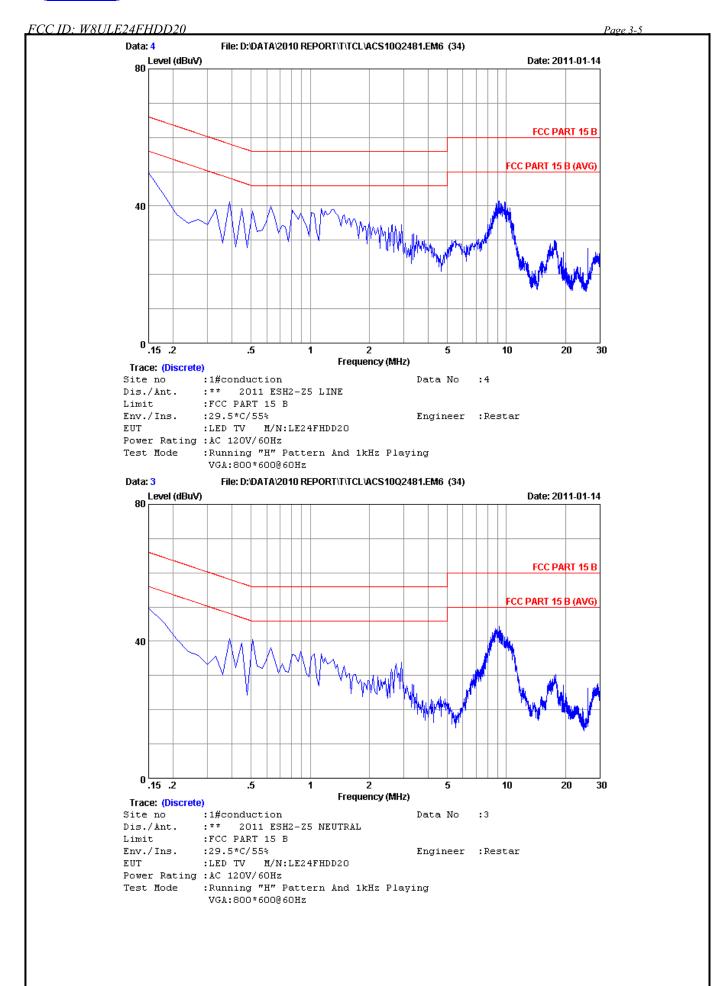
NO.	Test Mode	Toot Made Desclution & Frequency		Reference Test Data No.		
NO.	Test Mode	Resolution & Frequency	LINE	NEUTRAL		
1.		640*480 @60Hz	#1	#2		
2.	VGA	800*600 @ 60Hz	#4	#3		
3. ※		1024*768 @60Hz		#6		
4.	HDMI	1080P	#8	#7		

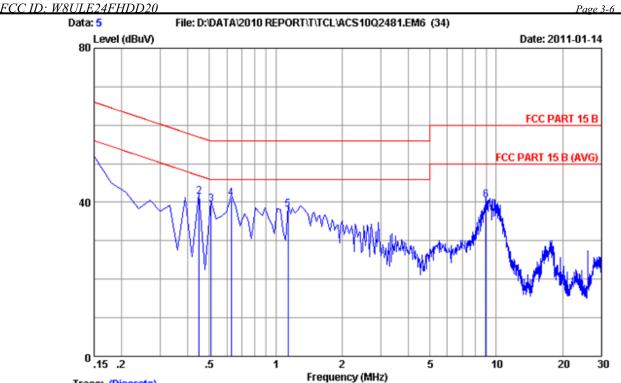
(* Worst test mode)











Trace: (Discrete)

Site no :1#conduction Data No :5

Dis./Ant. :** 2011 ESH2-Z5 LINE

Limit :FCC PART 15 B

Env./Ins. :29.5*C/55% Engineer :Restar

EUT :LED TV M/N:LE24FHDD20

Power Rating :AC 120V/60Hz

Test Mode : Running "H" Pattern And 1kHz Playing

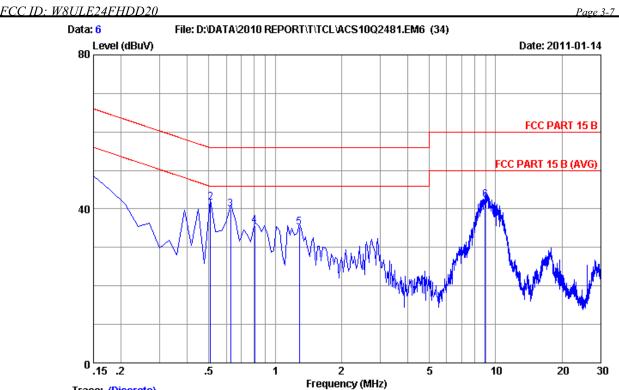
VGA: 1024*768@60Hz

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emissio Level (dBuV)	n Limits (dBuV)	Margin (dB)	Remark
				40.00				
1	0.15000	0.17	9.88	40.88	50.93	66.00	15.07	QP
2	0.44850	0.19	9.88	31.31	41.38	56.90	15.52	QP
3	0.50820	0.19	9.88	29.29	39.36	56.00	16.64	QP
4	0.62760	0.19	9.88	30.90	40.97	56.00	15.03	QP
5	1.135	0.24	9.89	28.08	38.21	56.00	17.79	QP
6	8.956	0.59	9.99	29.87	40.45	60.00	19.55	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit) +Reading.

2.If the average limit is met when useing a quasi-peak detector. the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.





Trace: (Discrete)

Site no :1#conduction Data No :6

Dis./Ant. :** 2011 ESH2-Z5 NEUTRAL

Limit :FCC PART 15 B

Env./Ins. :29.5*C/55% Engineer :Restar

EUT :LED TV M/N:LE24FHDD20

Power Rating :AC 120V/60Hz

Test Mode :Running "H" Pattern And 1kHz Playing

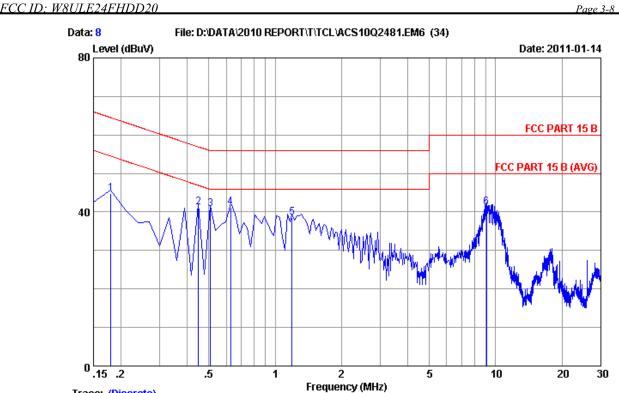
VGA:1024*768@60Hz

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emissio Level (dBuV)	n Limits (dBuV)	Margin (dB)	Remark
1	0.15000	0.21	9.88	37.60	47.69	66.00	18.31	QP
2	0.50820	0.22	9.88	31.55	41.65	56.00	14.35	QP
3	0.62760	0.23	9.88	29.79	39.90	56.00	16.10	QP
4	0.80670	0.23	9.89	25.47	35.59	56.00	20.41	QP
5	1.284	0.25	9.89	24.96	35.10	56.00	20.90	QP
6	8.956	0.43	9.99	32.01	42.43	60.00	17.57	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit) +Reading.

2.If the average limit is met when useing a quasi-peak detector. the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.





Trace: (Discrete)

Site no :1#conduction Data No :8

Dis./Ant. :** 2011 ESH2-Z5 LINE

Limit :FCC PART 15 B

Env./Ins. :29.5*C/55% Engineer :Restar

EUT :LED TV M/N:LE24FHDD20

Power Rating :AC 120V/60Hz

Test Mode : Running "H" Pattern And 1kHz Playing

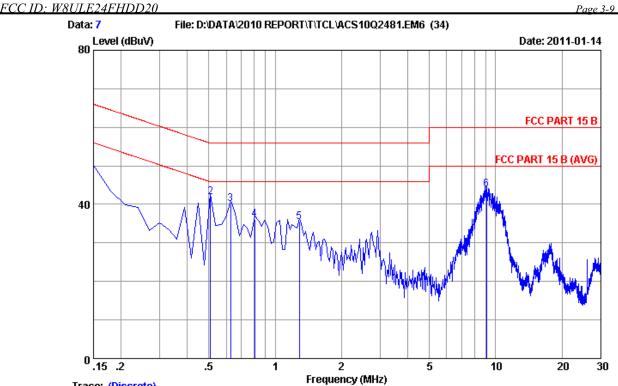
HDMI:1080P

		LISN	Cable		Emissio	n		
No	Freq	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dB)	
1	0.17985	0.17	9.88	34.69	44.74	64.49	19.75	QP
2	0.44850	0.19	9.88	31.08	41.15	56.90	15.75	QP
3	0.50820	0.19	9.88	30.68	40.75	56.00	15.25	QP
4	0.62760	0.19	9.88	31.25	41.32	56.00	14.68	QP
5	1.195	0.25	9.89	28.35	38.49	56.00	17.51	QP
6	9.075	0.60	9.99	30.74	41.33	60.00	18.67	QP
4	0.62760 1.195	0.19 0.25	9.88 9.89	31.25 28.35	41.32 38.49	56.00 56.00	14.68 17.51	QP QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit) +Reading.

2.If the average limit is met when useing a quasi-peak detector. the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.





Trace: (Discrete)

Site no :1#conduction Data No

Dis./Ant. :** 2011 ESH2-Z5 NEUTRAL

:FCC PART 15 B Limit

Env./Ins. :29.5*C/55% Engineer : Restar

EUT :LED TV M/N:LE24FHDD20

Power Rating :AC 120V/60Hz

:Running "H" Pattern And 1kHz Playing Test Mode

HDMI:1080P

No 	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emissio Level (dBuV)	n Limits (dBuV)	Margin (dB)	Remark
1	0.15000	0.21	9.88	37.99	48.08	66.00	17.92	QP
2	0.50820	0.22	9.88	31.71	41.81	56.00	14.19	QP
3	0.62760	0.23	9.88	29.89	40.00	56.00	16.00	QP
4	0.80670	0.23	9.89	25.95	36.07	56.00	19.93	QP
5	1.284	0.25	9.89	25.28	35.42	56.00	20.58	QP
6	9.075	0.43	9.99	33.40	43.82	60.00	16.18	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit) +Reading.

> 2. If the average limit is met when useing a quasi-peak detector. the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



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4. RADIATED EMISSION TEST

4.1.Test Equipment

4.1.1.For frequency range 30MHz~1000MHz

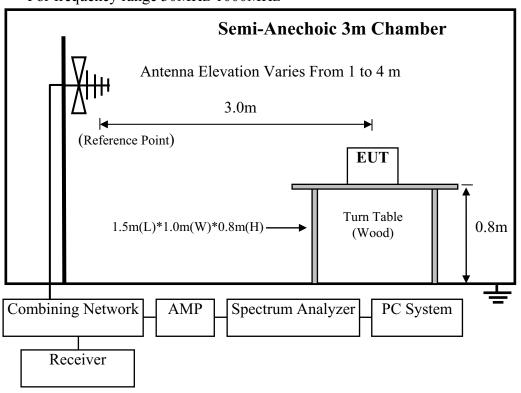
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	3#Chamber	AUDIX	N/A	N/A	Dec.05,10	1 Year
2	EMI Spectrum	Agilent	E4407B	MY41440292	May.08, 10	1 Year
3	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.08, 10	1 Year
4	Amplifier	HP	8447D	2648A04738	May.08, 10	1 Year
5	Bilog Antenna	Schaffner	CBL6111C	2598	Mar.27, 10	1 Year
6	RF Cable	MIYAZAKI	8D-FB	3# Chamber No.1	May.08, 10	1 Year
7	Coaxial Switch	Anritsu	MP59B	M73989	May.08, 10	1 Year

4.1.2.For frequency range 1GHz~6GHz

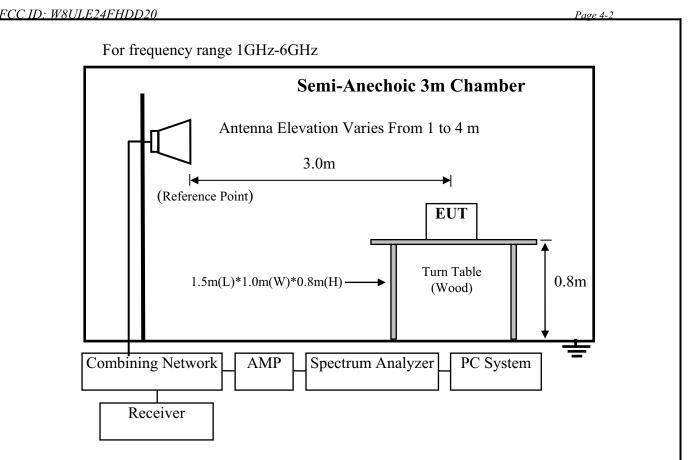
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E7405A	MY45116588	May.08, 10	1 Year
2	Horn Antenna	EMCO	3115	9607-4877	Nov.25, 09	1.5 Year
3	Amplifier	Agilent	8449B	3008A00863	May.08, 10	1 Year
4	RF Cable	Hubersuhner	SUCOFLEX102	28620/2	May.08, 10	1 Year
5	RF Cable	Hubersuhner	SUCOFLEX102	29091/2	May.08, 10	1 Year

4.2.Block Diagram of Test Setup

For frequency range 30MHz-1000MHz







4.3. Radiated Emission Limit

Frequency	Distance	Field Strengths Limits
MHz	(Meters)	dB(μV)/m
30 ~ 88	3	40.0
88 ~ 216	3	43.5
216 ~ 960	3	46.0
960 ~ 1000	3	54.0
Above 6000	3	74(Peak)54(Average)

Remark: (1) Emission level = Antenna Factor + Cable Loss + Reading Emission level = Antenna Factor - Amp Factor + Cable Loss + Reading (above 1000MHz)

- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

4.4.EUT Configuration on Test

The configurations of EUT are listed in Section 3.4

4.5. Operating Condition of EUT

Same as Conducted Emission test that is listed in Section 3.5. except the test set up replaced by Section 4.2.



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4.6.Test Procedure

The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. An antenna was located 3m from the EUT on an adjustable mast. A pre-scan was first performed in order to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4-2003 on Radiated Emission test.

The bandwidth of the EMI test receiver (R&S ESVS10) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's RBW is set at 1MHz and VBW is set at 3MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz.

The frequency range from 30MHz to 6000MHz is checked. The test result are reported on Section 4.7.

4.7. Radiated Disturbance Test Results

PASS. (All emissions not reported below are too low against the prescribed limits.)

The EUT with the following test modes were tested and selected to read Q.P values, all the test results are listed in next pages.

EUT: LED TV Model No. : LE24FHDD20

Test Date: Jan.20, 2011 Temperature: 24°C Humidity: 56%

The details of test modes are as follows:

NO.	Test Mode	Resolution & Frequency	Reference Test Data No.			
NO.	Test Mode	Resolution & Frequency	Horizontal	Vertical		
1.		640*480 @60Hz	#33	#34		
2.	VGA	800*600 @ 60Hz	#32	#31		
3. 💥		1024*768 @60Hz	#29	#30		
4.	HDMI	1080P	#28	#27		

(* Worst test mode)



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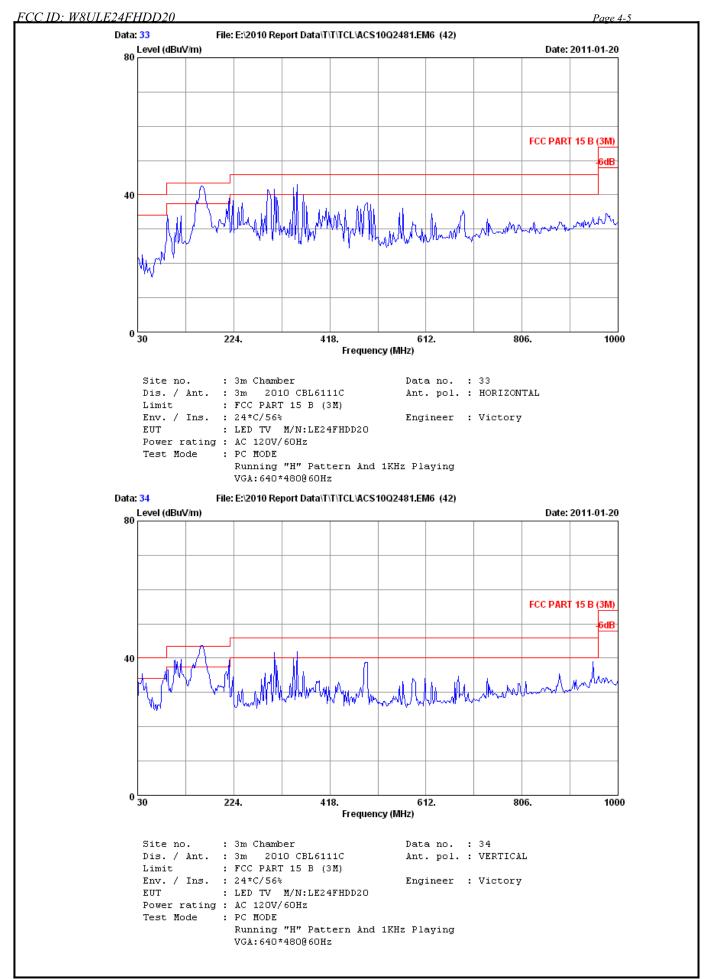
For frequency range 1GHz~6GHz

The EUT with below test modes ere measured within Anechoic Chamber and the test results listed in next pages

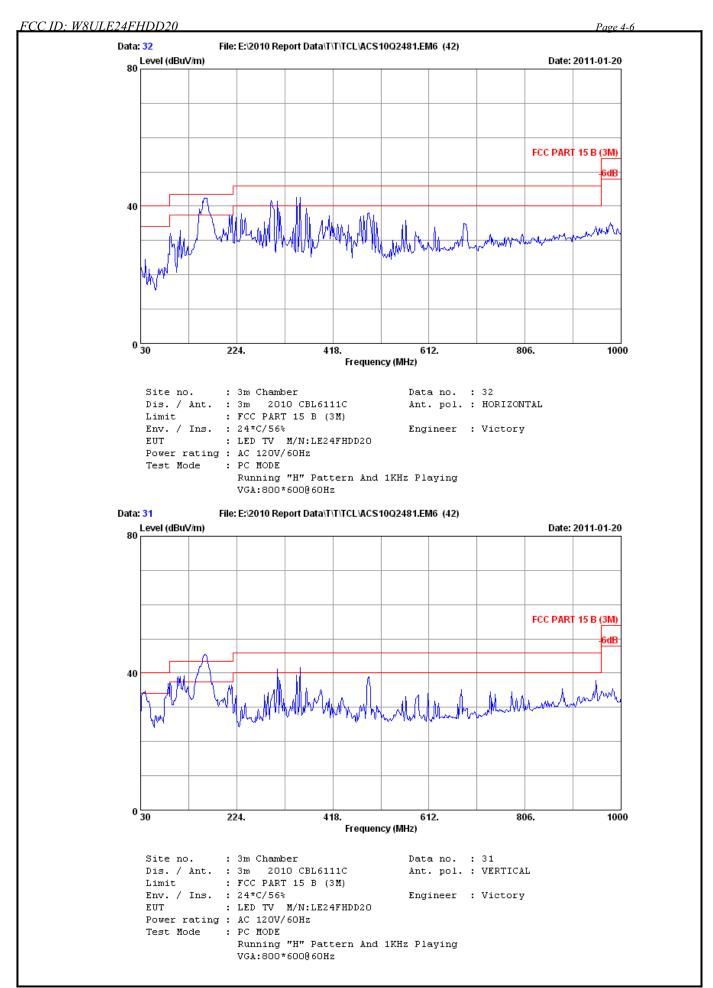
Test Date: Jan.20, 2011 Temperature: 24°C Humidity: 56%

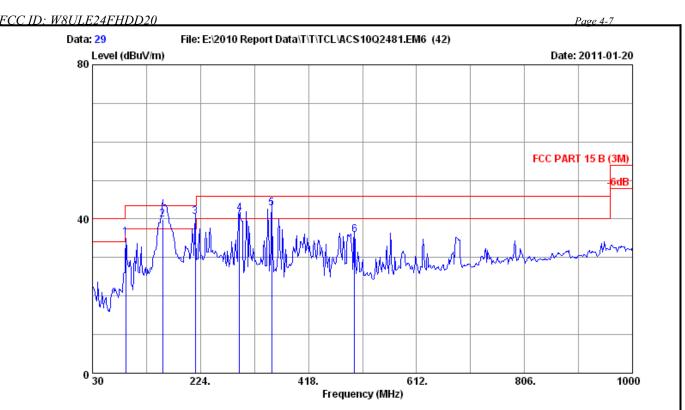
NO.	Test Mode	Desclution & Eraguanay	Reference Test Data No.		
NO.	1 est Wiode	Resolution & Frequency	Horizontal	Vertical	
1.	VGA	1024*768 @60Hz	#35 #36	#37 #38	
2.	HDMI	1080P	#41 #42	#39 #40	











Site no. : 3m Chamber Data no. : 29

Dis. / Ant. : 3m 2010 CBL6111C Ant. pol. : HORIZONTAL

Limit : FCC PART 15 B (3M)

Env. / Ins. : 24*C/56% Engineer : Victory

EUT : LED TV M/N:LE24FHDD20

Power rating : AC 120V/60Hz

Test Mode : PC MODE

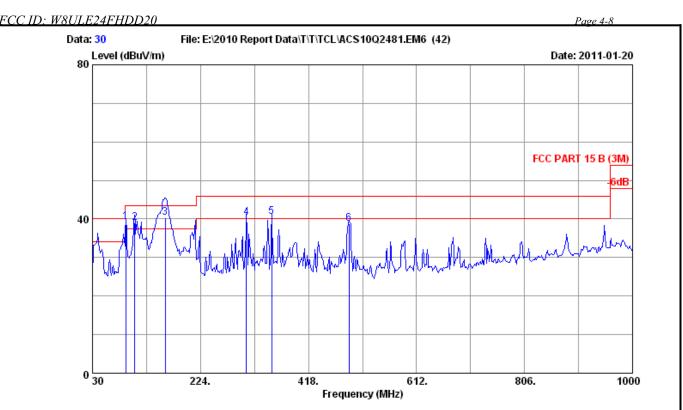
Running "H" Pattern And 1KHz Playing

VGA:1024*768@60Hz

No.	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark	_
1	90.140	9.10	1.06	25.11	35.27	43.50	8.23	QP	
2	156.100	11.26	1.21	27.45	39.92	43.50	3.58	QP	
3	214.300	10.02	1.85	28.59	40.46	43.50	3.04	QP	
4	293.840	13.68	2.44	25.27	41.39	46.00	4.61	QP	
5	352.040	15.20	2.71	24.88	42.79	46.00	3.21	QP	
6	500.450	18.30	3.55	13.98	35.83	46.00	10.17	QP	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

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



Site no. : 3m Chamber Data no. : 30
Dis. / Ant. : 3m 2010 CBL6111C Ant. pol. : VERTICAL

Limit : FCC PART 15 B (3M)

Env. / Ins. : 24*C/56% Engineer : Victory

EUT : LED TV M/N:LE24FHDD20

Power rating : AC 120V/60Hz

Test Mode : PC MODE

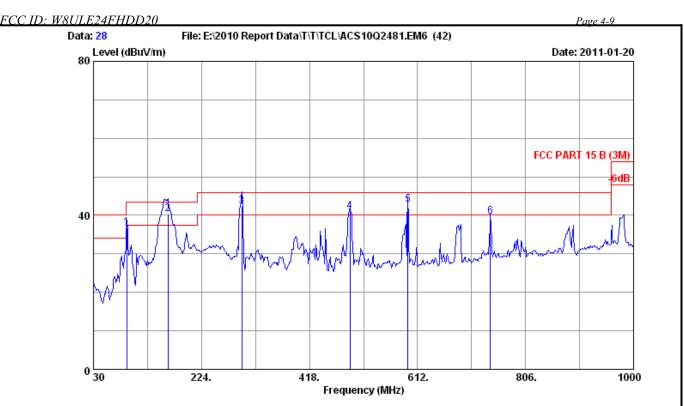
Running "H" Pattern And 1KHz Playing

VGA:1024*768@60Hz

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark	
1	90.140	9.10	1.06	29.06	39.22	43.50	4.28	QP	
2	105.660	11.00	1.12	26.87	38.99	43.50	4.51	QP	
3	160.950	11.02	1.27	28.10	40.39	43.50	3.11	QP	
4	306.450	13.89	2.51	23.91	40.31	46.00	5.69	QP	
5	352.040	15.20	2.71	22.58	40.49	46.00	5.51	QP	
6	490.750	18.21	3.49	16.96	38.66	46.00	7.34	QP	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

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



Site no. : 3m Chamber Data no. : 28

Dis. / Ant. : 3m 2010 CBL6111C Ant. pol. : HORIZONTAL

Engineer : Victory

Limit : FCC PART 15 B (3M)

Env. / Ins. : 24*C/56%

EUT : LED TV M/N:LE24FHDD20

Power rating : AC 120V/60Hz

Test Mode : PC MODE

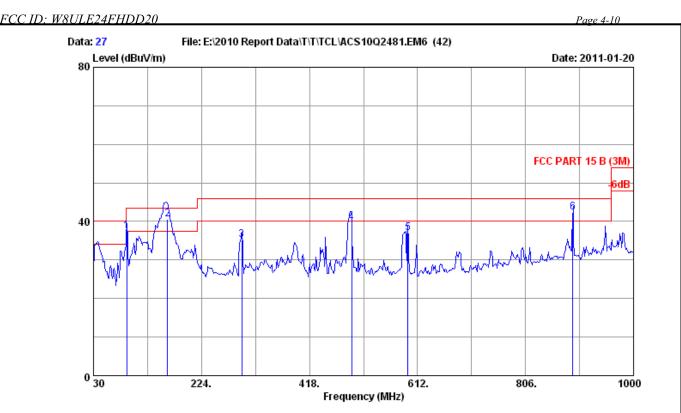
Running "H" Pattern And 1KHz Playing

HDMI:1080P

No.	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	90.140	9.10	1.06	26.69	36.85	43.50	6.65	QP
2	163.860	10.78	1.30	28.25	40.33	43.50	3.17	QP
3	296.750	13.70	2.46	26.20	42.36	46.00	3.64	QP
4	490.750	18.21	3.49	19.22	40.92	46.00	5.08	QP
5	594.540	19.85	4.09	18.74	42.68	46.00	3.32	QP
6	742.950	21.86	4.67	13.12	39.65	46.00	6.35	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

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



Limit : FCC PART 15 B (3M)

Env. / Ins. : 24*C/56% Engineer : Victory

EUT : LED TV M/N:LE24FHDD20

Power rating : AC 120V/60Hz Test Mode : PC MODE

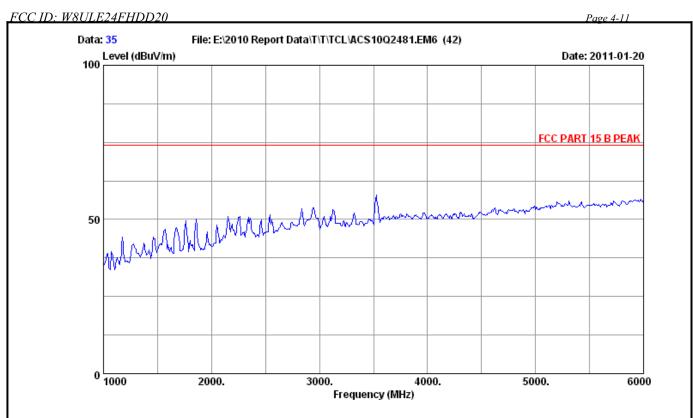
Running "H" Pattern And 1KHz Playing

HDMI:1080P

_	No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark	
	1	90.140	9.10	1.06	27.21	37.37	43.50	6.13	QP	
	2	163.230	10.86	1.29	28.30	40.45	43.50	3.05	QP	
	3	296.750	13.70	2.46	19.10	35.26	46.00	10.74	QP	
	4	493.660	18.24	3.51	17.86	39.61	46.00	6.39	QP	
	5	594.540	19.85	4.09	13.08	37.02	46.00	8.98	QP	
	6	891.000	22.89	5.17	14.20	42.26	46.00	3.74	QP	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

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



Site no. : 3m Chamber Data no. : 35

Dis. / Ant. : 3m 2009 3115 Ant. pol. : HORIZONTAL

Limit : FCC PART 15 B PEAK

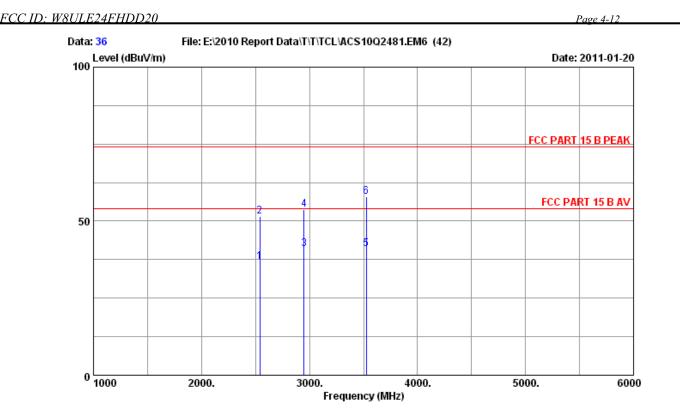
Env. / Ins. : 24*C/56% Engineer : Victory

EUT : LED TV M/N:LE24FHDD20

Power Rating : AC 120V/60Hz Test Mode : PC MODE

Running "H" Pattern And 1KHz Playing

VGA:1024*768@60Hz



Site no. : 3m Chamber Data no. : 36

Dis. / Ant. : 3m 2009 3115 Ant. pol. : HORIZONTAL

Limit : FCC PART 15 B PEAK

Env. / Ins. : 24*C/56% Engineer : Victory

EUT : LED TV M/N:LE24FHDD20

Power Rating : AC 120V/60Hz Test Mode : PC MODE

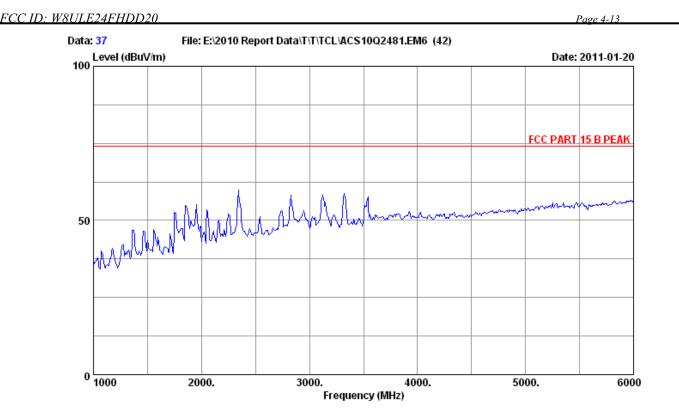
Running "H" Pattern And 1KHz Playing

VGA:1024*768@60Hz

		Ant.	Cable	AMP		Emission			
No.	Freq.	Factor	Loss	factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	
1	2540.000	29.46	6.07	33.82	34.94	36.65	54.00	17.35	Average
2	2540.000	29.46	6.07	33.82	49.94	51.65	74.00	22.35	Peak
3	2950.000	30.74	6.62	33.62	37.07	40.81	54.00	13.19	Average
4	2950.000	30.74	6.62	33.62	50.07	53.81	74.00	20.19	Peak
5	3525.000	31.44	7.11	33.34	35.62	40.83	54.00	13.17	Average
6	3525.000	31.44	7.11	33.34	52.62	57.83	74.00	16.17	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp Factor

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



Site no. : 3m Chamber Data no. : 37
Dis. / Ant. : 3m 2009 3115 Ant. pol. : VERTICAL

Limit : FCC PART 15 B PEAK

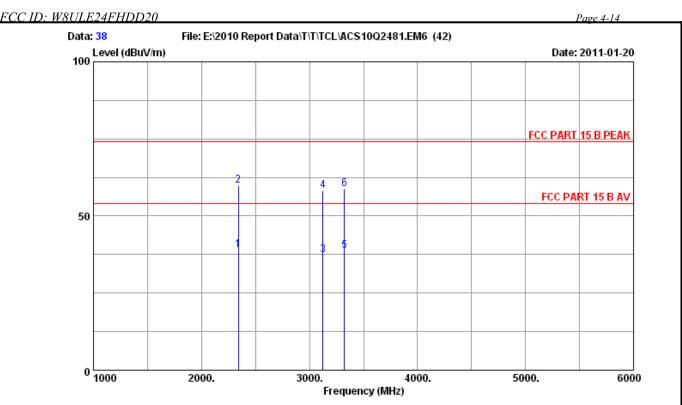
Env. / Ins. : 24*C/56% Engineer : Victory

EUT : LED TV M/N:LE24FHDD20

Power Rating : AC 120V/60Hz Test Mode : PC MODE

Running "H" Pattern And 1KHz Playing

VGA:1024*768@60Hz



Site no. : 3m Chamber Data no. : 38
Dis. / Ant. : 3m 2009 3115 Ant. pol. : VERTICAL

Limit : FCC PART 15 B PEAK

Env. / Ins. : 24*C/56% Engineer : Victory

EUT : LED TV M/N:LE24FHDD20

Power Rating : AC 120V/60Hz

Test Mode : PC MODE

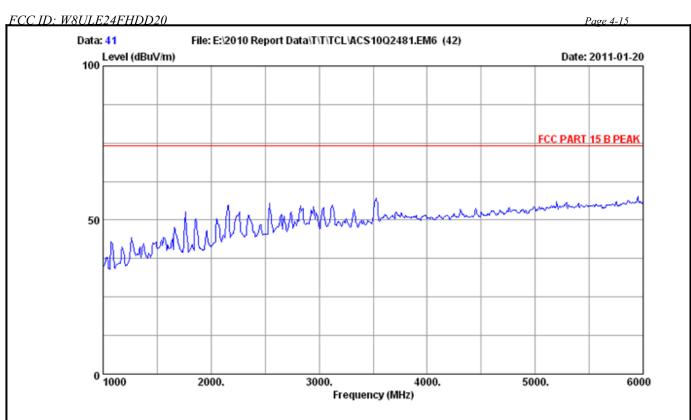
Running "H" Pattern And 1KHz Playing

VGA:1024*768@60Hz

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dBuV)	Reading (dBuV/m)	Emission Level (dBuV/m)	Limits (dB)	Margin (dB)	Remark
1 2	2340.000 2340.000	28.37 28.37	5.79 5.79	33.92 33.92	38.68 59.68	38.92 59.92	54.00 74.00	15.08 14.08	Average Peak
3	3125.000	31.00	6.78	33.54	33.11	37.35	54.00	16.65	Average
4	3125.000	31.00	6.78	33.54	54.11	58.35	74.00	15.65	Peak
5	3325.000	31.16	6.94	33.44	34.04	38.70	54.00	15.30	Average
6	3325.000	31.16	6.94	33.44	54.04	58.70	74.00	15.30	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp Factor

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



Site no. : 3m Chamber Data no. : 41

Dis. / Ant. : 3m 2009 3115 Ant. pol. : HORIZONTAL

Limit : FCC PART 15 B PEAK

Env. / Ins. : 24*C/56% Engineer : Victory

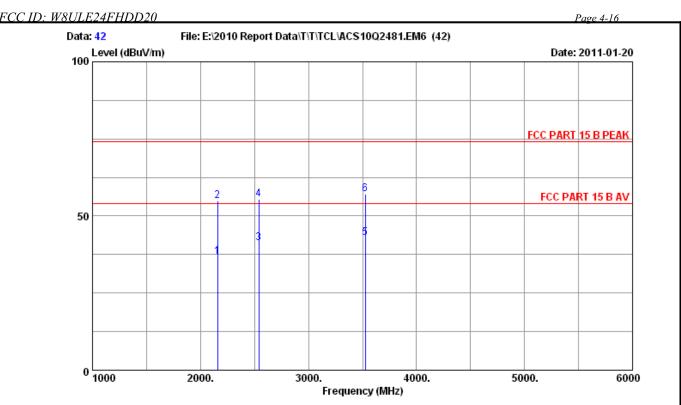
EUT : LED TV M/N:LE24FHDD20

Power Rating : AC 120V/60Hz

Test Mode : PC MODE

Running "H" Pattern And 1KHz Playing

HDMI:1080P



Site no. : 3m Chamber

Data no. : 42 Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 2009 3115

: FCC PART 15 B PEAK Limit

Env. / Ins. : 24*C/56% Engineer : Victory

: LED TV M/N:LE24FHDD20

Power Rating : AC 120V/60Hz Test Mode : PC MODE

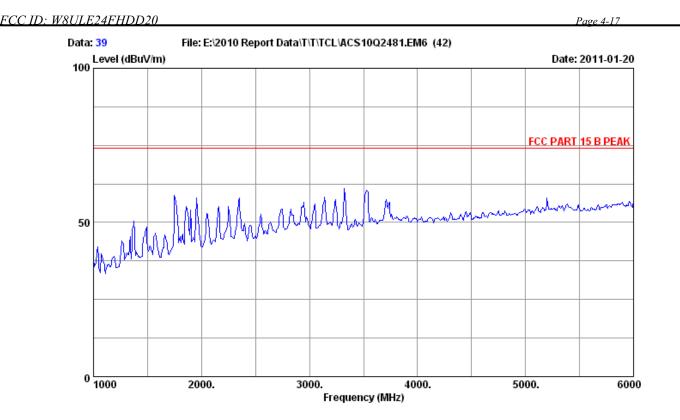
Running "H" Pattern And 1KHz Playing

HDMI:1080P

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dBuV)	Reading (dBuV/m)	Emission Level (dBuV/m)	Limits (dB)	Margin (dB)	Remark
1	2160.000	27.23	5.53	34.02	38.16	36.90	54.00	17.10	Average
2	2160.000	27.23	5.53	34.02	56.16	54.90	74.00	19.10	Peak
3	2540.000	29.46	6.07	33.82	39.60	41.31	54.00	12.69	Average
4	2540.000	29.46	6.07	33.82	53.60	55.31	74.00	18.69	Peak
5	3525.000	31.44	7.11	33.34	37.77	42.98	54.00	11.02	Average
6	3525.000	31.44	7.11	33.34	51.77	56.98	74.00	17.02	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp Factor

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



Site no. : 3m Chamber Data no. : 39
Dis. / Ant. : 3m 2009 3115 Ant. pol. : VERTICAL

Limit : FCC PART 15 B PEAK

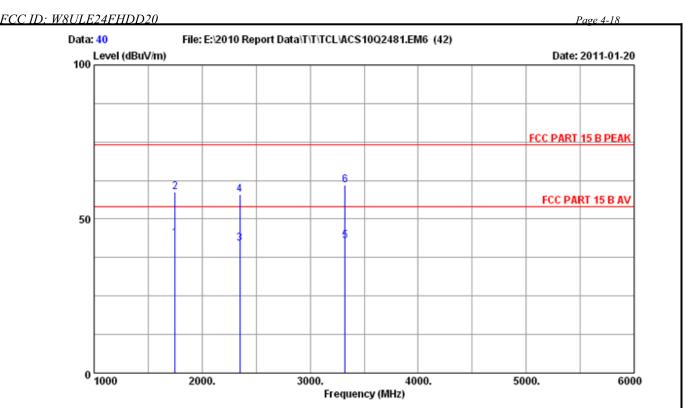
Env. / Ins. : 24*C/56% Engineer : Victory

EUT : LED TV M/N:LE24FHDD20

Power Rating : AC 120V/60Hz Test Mode : PC MODE

Running "H" Pattern And 1KHz Playing

HDMI:1080P



Site no. : 3m Chamber Data no. : 40
Dis. / Ant. : 3m 2009 3115 Ant. pol. : VERTICAL

Limit : FCC PART 15 B PEAK

Env. / Ins. : 24*C/56% Engineer : Victory

EUT : LED TV M/N:LE24FHDD20

Power Rating : AC 120V/60Hz Test Mode : PC MODE

Running "H" Pattern And 1KHz Playing

HDMI:1080P

		Ant.	Cable	AMP	Emission						
No.	Freq. (MHz)	Factor (dB/m)	Loss (dB)	factor (dBuV)	Reading (dBuV/m)	Level (dBuV/m)	Limits (dB)	Margin (dB)	Remark		
1	1750.000	25.75	4.98	34.75	47.79	43.77	54.00	10.23	Average		
2	1750.000	25.75	4.98	34.75	62.79	58.77	74.00	15.23	Peak		
3	2350.000	28.37	5.79	33.92	41.82	42.06	54.00	11.94	Average		
4	2350.000	28.37	5.79	33.92	57.82	58.06	74.00	15.94	Peak		
5	3325.000	31.16	6.94	33.44	38.24	42.90	54.00	11.10	Average		
6	3325.000	31.16	6.94	33.44	56.24	60.90	74.00	13.10	Peak		

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp Factor

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