FCC 47 CFR PART 15 SUBPART B

CERTIFICATION TEST REPORT

Product name: LED LCD TV

MODEL No.: LC-43N5002U, LC-43P5000U, LC-43P5000U1, LC-43P5000U2, LC-43P5000U3, LC-43P5060U, LC-43P5050U, LC-43P5030U, LC-43P5020U, LC-43P5060U1, LC-43P5050U1, LC-43P5030U1, LC-43P5020U1, LC-43P5060U2, LC-43P5050U2, LC-43P5030U2, LC-43P5020U2

FCC ID: W9HLCDD0073

REPORT NO: ES170204020E

ISSUE DATE: February 27, 2017

Prepared for

Hisense Electric Co., Ltd.
No. 218 Qianwangang Road, Economy&Technology DevelopmentZone, Qingdao 266071

Prepared by

EMTEK (SHENZHEN) CO., LTD.

Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China
TEL: 86-755-26954280
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TABLE OF CONTENT

TEST REPORT DESCRIPTION

Applicant	:	Hisense Electric Co., Ltd. No. 218 Qianwangang Road, Economy&Technology DevelopmentZone, Qingdao 266071
Manufacturer	:	Hisense Electric Co., Ltd. No. 218 Qianwangang Road, Economy&Technology DevelopmentZone, Qingdao 266071
Factory 1	:	Guangdong Hisense Electronics Co., Ltd. Zone B, No. 8 Hisense Road, Advanced Manufacturing Jiangsha Demonstration Park, Jiangmen City, Guangdong Province, PRC
Factory 2	:	HISENSE ELECTRONICA MEXICO, S.A. DE C.V. Blvd. Sharp #3510 Parque Industrial Rosarito, C.P. 22710 Playas de Rosarito, Baja California, Mexico
Trademark	:	SHARP
EUT	:	LED LCD TV
Model No.	:	LC-43N5002U, LC-43P5000U, LC-43P5000U1, LC-43P5000U2, LC-43P5000U3, LC-43P5060U, LC-43P5050U, LC-43P5030U, LC-43P5020U, LC-43P5060U1, LC-43P5050U1, LC-43P5030U1, LC-43P5020U1, LC-43P5060U2, LC-43P5050U2, LC-43P5030U2, LC-43P5020U2
Power Supply	:	AC 120V, 75W, 60Hz

Measurement Procedure Used:

FCC Rules and Regulations Part 15: 2016 Subpart B Class B & FCC / ANSI C63.4-2014

The device described above is tested by EMTEK (SHENZHEN) CO., LTD. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and EMTEK (SHENZHEN) CO., LTD. is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC requirements.

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

Date of Test	:	February 04, 2017 to February 15, 2017
Prepared by	:	Sevin Li/Editor
Reviewer	:	Joe Xia/Supervisor
Approved & Authorized Signer	:	Lisa Wang/Manager

Modified Information

Version	Report No.	Revision Date	Summary
Ver.1.0	ES170204020E	/	Original Report

1. SUMMARY OF TEST RESULT

EMISSION		
Description of Test Item	Standard & Limits	Results
Conducted Disturbance at Mains Terminals	FCC Part 15, Subpart B, Class B ANSI C63.4: 2014	Pass
Radiated Disturbance	FCC Part 15, Subpart B, Class B ANSI C63.4: 2014	Pass
Radiated Spurious Emission	15.247(d) 15.209 ANSI C63.10: 2013	Pass
Note: N/A is an abbreviation for Not Applicable.		

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT	:	LED LCD TV
Model Number	:	LC-43N5002U, LC-43P5000U, LC-43P5000U1, LC-43P5000U2, LC-43P5000U3, LC-43P5060U, LC-43P5050U, LC-43P5030U, LC-43P5020U, LC-43P5060U1, LC-43P5050U1, LC-43P5030U1, LC-43P5020U1, LC-43P5060U2, LC-43P5050U2, LC-43P5030U2, LC-43P5020U2 (Note: These models are identical in circuitry and electrical, mechanical and physical construction; the only difference is the model number. for trading purpose. We prepare LC-43N5002U for all test.)
Test Voltage	:	AC 120V/60Hz
Applicant	:	Hisense Electric Co., Ltd.
Address	:	No. 218 Qianwangang Road, Economy&Technology DevelopmentZone, Qingdao 266071
Manufacturer	:	Hisense Electric Co., Ltd.
Address	:	No. 218 Qianwangang Road, Economy&Technology DevelopmentZone, Qingdao 266071
Factory 1	:	Guangdong Hisense Electronics Co., Ltd.
Address	:	Zone B, No. 8 Hisense Road, Advanced Manufacturing Jiangsha Demonstration Park, Jiangmen City, Guangdong Province, PRC
Factory 2	:	HISENSE ELECTRONICA MEXICO, S.A. DE C.V.
Address	:	Blvd. Sharp #3510 Parque Industrial Rosarito, C.P. 22710 Playas de Rosarito, Baja California, Mexico
Date of Received	:	February 03, 2017
Date of Test	:	February 04, 2017 to February 15, 2017

2.2. Description of Test Facility

Site Description

EMC Lab. : Accredited by CNAS, 2016.10.24
The certificate is valid until 2022.10.28
The Laboratory has been assessed and proved to be in compliance with CNAS-CL01:2006 (identical to ISO/IEC 17025:2005)
The Certificate Registration Number is L2291.
Accredited by TUV Rheinland Shenzhen 2010.5.25
The Laboratory has been assessed according to the requirements ISO/IEC 17025.

Accredited by FCC, July 13, 2016
The Certificate Registration Number is 709623.

Accredited by Industry Canada, November 15, 2015
The Certificate Registration Number is 4480A-2.

Name of Firm : EMTEK (SHENZHEN) CO., LTD.

Site Location : Bldg 69, Majialong Industry Zone,
Nanshan District, Shenzhen, Guangdong, China

2.3. Description of Support Device

PC : Manufacturer: LENOVO
M/N: 9702
S/N: L3C4410
CE, FCC: DOC

Keyboard : Manufacturer: LENOVO
M/N: KU-0225
S/N:0585494
CE, FCC: DOC

Mouse : Manufacturer: LENOVO
M/N: MO28UOL
S/N:44G7862 068
CE, FCC: DOC

Dummy load : Manufacturer: Cultraview
M/N: CVNS1200

2.4. Description of Cable

Cables			
No.	Type	Length	Remark
1.	Power Cable	1.5 m	Unshielded
2.	HDMI Cable*3	0.8 m	Unshielded
3.	AV Cable	1.0 m	Unshielded

2.5. Measurement Uncertainty

Test Item Uncertainty

Conducted Emission Uncertainty : 2.96dB(9k~150kHz Conduction 1#)
2.74dB(150k-30MHz Conduction 1#)

Radiated Emission Uncertainty : 3.78dB (30M~1GHz Polarize: H)
(3m Chamber) 4.27dB (30M~1GHz Polarize: V)
4.46dB (1~6GHz)

3. MEASURING DEVICE AND TEST EQUIPMENT

3.1.1. Conducted Emission Test Equipment

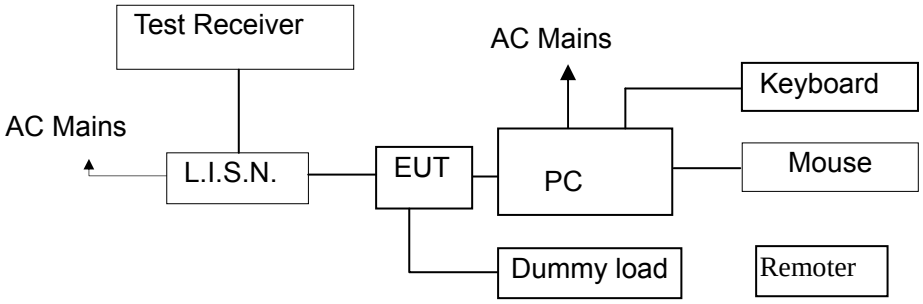
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.
Test Receiver	Rohde & Schwarz	ESCS30	828985/018	May 29, 2016
L.I.S.N.	Schwarzbeck	NNLK8129	8129203	May 28, 2016
50Ω Coaxial Switch	Anritsu	MP59B	M20531	May 29, 2016
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100006	May 28, 2016
Voltage Probe	Rohde & Schwarz	TK9416	N/A	May 28, 2016

3.1.2. Radiated Emission Test Equipment

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.
EMI Test Receiver	Rohde & Schwarz	ESU	1302.6005.26	May 29, 2016
Pre-Amplifier	HP	8447D	2944A07999	May 28, 2016
Bilog Antenna	Schwarzbeck	VULB9163	142	May 28, 2016
Loop Antenna	ARA	PLA-1030/B	1029	May 28, 2016
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170399	May 28, 2016
Horn Antenna	Schwarzbeck	BBHA 9120	D143	May 28, 2016
Cable	Schwarzbeck	AK9513	ACRX1	May 29, 2016
Cable	Rosenberger	N/A	FP2RX2	May 29, 2016
Cable	Schwarzbeck	AK9513	CRPX1	May 29, 2016
Cable	Schwarzbeck	AK9513	CRRX2	May 29, 2016

4. CONDUCTED EMISSION MEASUREMENT

4.1. Block Diagram of Test Setup



(EUT: LED LCD TV)

4.2. Measuring Standard

FCC Part 15, Subpart B, Class BANSI C63.4: 2014

4.3. Power Line Conducted Emission Limits (Class B)

Frequency (MHz)	Limit (dBμV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0
NOTE1-The lower limit shall apply at the transition frequencies. NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.		

4.4. EUT Configuration on Measurement

The following equipments are installed on Conducted Emission Measurement to meet FCC requirements and operating in a manner which tends to maximize its emission characteristics in a normal application.

EUT : LED LCD TV
Model Number : LC-43N5002U

4.5. Operating Condition of EUT

4.5.1.Setup the EUT as shown on Section 4.1.

4.5.2.Turn on the power of all equipments.

4.5.3.Let the EUT work in measuring mode (HDMI 1 IN, HDMI 2 ARC, HDMI 3 IN, LAN Ping) and measure it.

4.6. Test Procedure

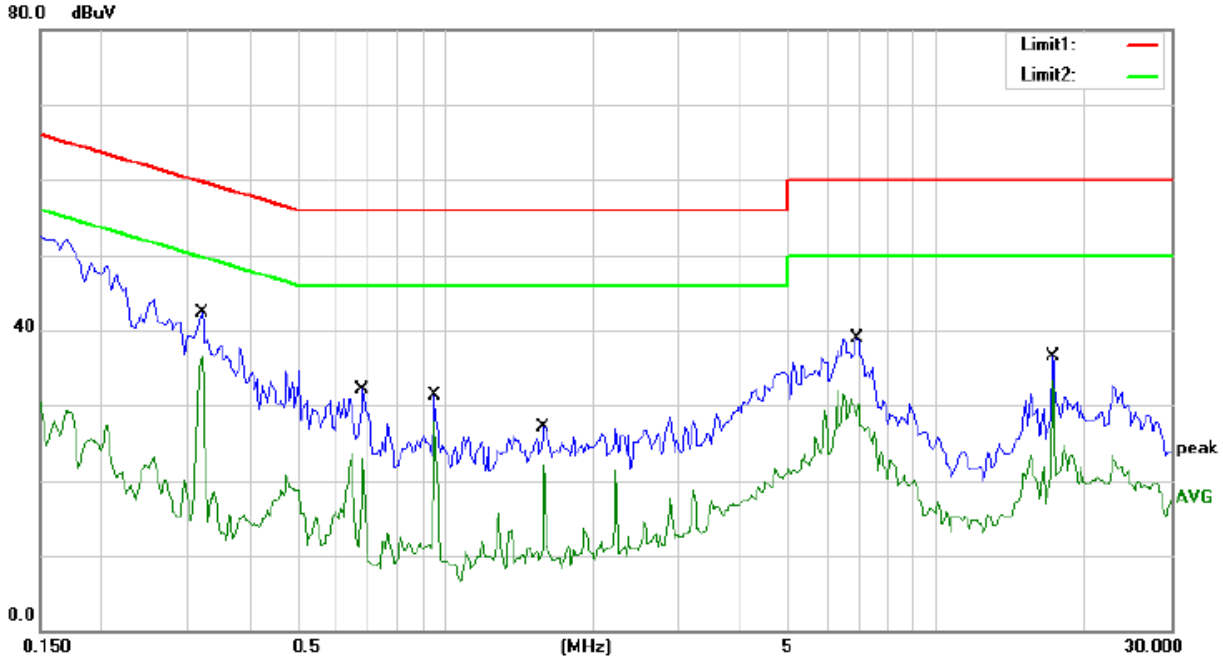
The EUT is put on the plane 0.8m high above the ground by insulating support and connected to the AC mains through Line Impedance Stability Network (L.I.S.N). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are investigated to find out the maximum conducted emission according to the FCC regulations during conducted emission measurement.
The bandwidth of the field strength meter (R&S Test Receiver ESCS30) is set at 9kHz in 150kHz~30MHz and 200Hz in 9kHz~150kHz.
The frequency range from 150kHz to 30MHz is investigated.

4.7. Measuring Results

PASS.

The worst mode is HDMI 1 IN, and the mode is the LED LCD TV connected to PC. Please refer to the following pages.

Please refer to the following pages.



Site Conduction #1 Phase: N Temperature: 22

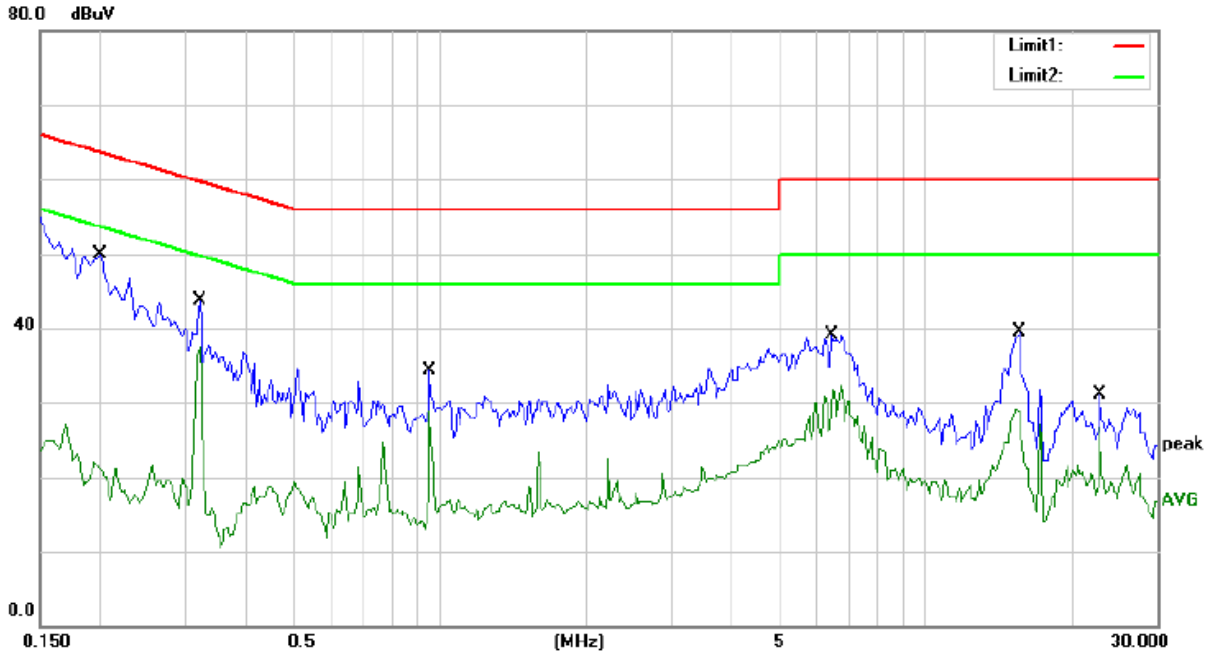
Limit: (CE)FCC PART 15 class B_QP Power: AC 120V/60Hz Humidity: 55 %

Mode: HDMI 1 IN PUT

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3200	42.25	0.00	42.25	59.71	-17.46	QP	
2	*	0.3200	36.42	0.00	36.42	49.71	-13.29	AVG	
3		0.6800	32.12	0.00	32.12	56.00	-23.88	QP	
4		0.6800	23.51	0.00	23.51	46.00	-22.49	AVG	
5		0.9550	31.29	0.00	31.29	56.00	-24.71	QP	
6		0.9550	27.92	0.00	27.92	46.00	-18.08	AVG	
7		1.5900	27.03	0.00	27.03	56.00	-28.97	QP	
8		1.5900	22.01	0.00	22.01	46.00	-23.99	AVG	
9		6.8900	38.98	0.00	38.98	60.00	-21.02	QP	
10		6.8900	31.82	0.00	31.82	50.00	-18.18	AVG	
11		17.2500	36.59	0.00	36.59	60.00	-23.41	QP	
12		17.2500	33.35	0.00	33.35	50.00	-16.65	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: Stan



Site Conduction #1 Phase: *L1* Temperature: 22

Limit: (CE)FCC PART 15 class B_QP Power: AC 120V/60Hz Humidity: 55 %

Mode: HDMI 1 IN INPUT

Note:

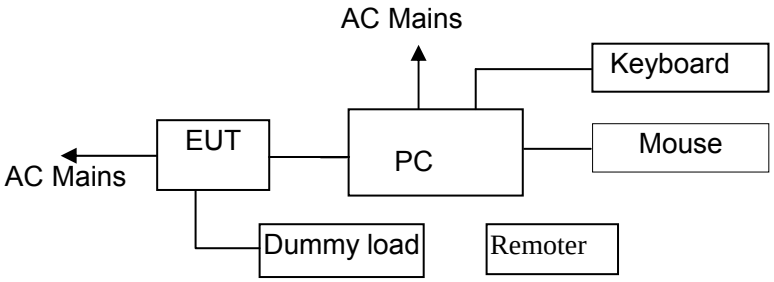
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2000	49.97	0.00	49.97	63.61	-13.64	QP	
2		0.2000	25.86	0.00	25.86	53.61	-27.75	AVG	
3		0.3200	43.71	0.00	43.71	59.71	-16.00	QP	
4	*	0.3200	37.50	0.00	37.50	49.71	-12.21	AVG	
5		0.9550	34.34	0.00	34.34	56.00	-21.66	QP	
6		0.9550	28.80	0.00	28.80	46.00	-17.20	AVG	
7		6.4100	39.19	0.00	39.19	60.00	-20.81	QP	
8		6.4100	32.25	0.00	32.25	50.00	-17.75	AVG	
9		15.6500	39.44	0.00	39.44	60.00	-20.56	QP	
10		15.6500	29.13	0.00	29.13	50.00	-20.87	AVG	
11		23.0000	31.04	0.00	31.04	60.00	-28.96	QP	
12		23.0000	26.60	0.00	26.60	50.00	-23.40	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: Stan

5. RADIATED EMISSION MEASUREMENT

5.1. Block Diagram of Test Setup

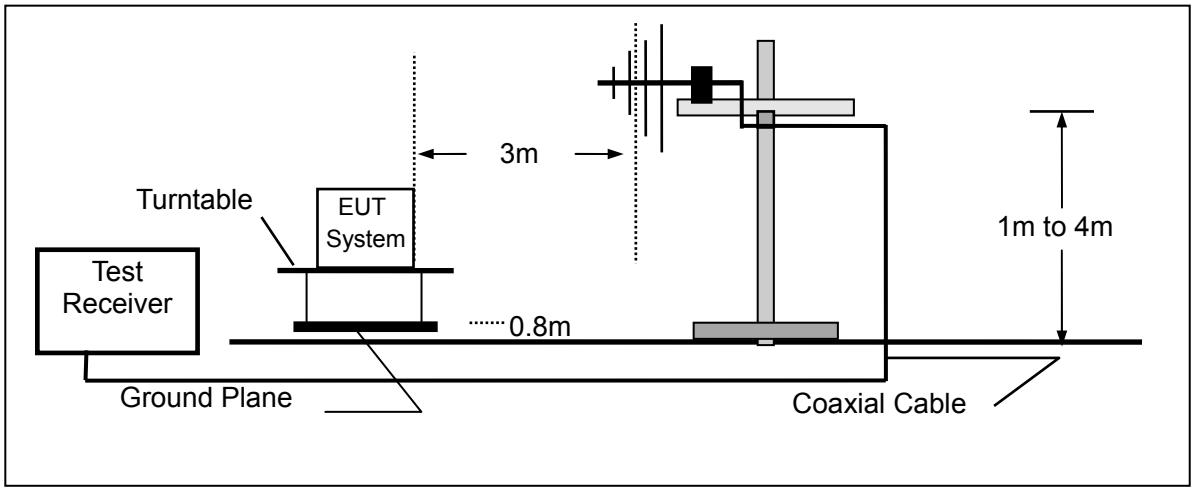
5.1.1. Block diagram of EUT System



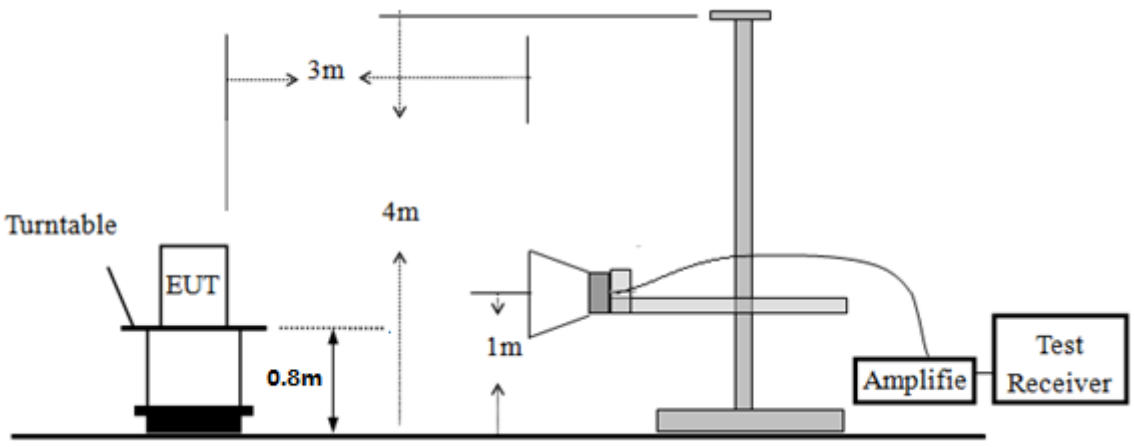
(EUT: LED LCD TV)

5.1.2.Block diagram of test setup (In chamber)

30MHz-1GHz:



1GHz-6GHz:



(EUT: LED LCD TV)

5.2. Measuring Standard

FCC Part 15, Subpart B, Class B ANSI C63.4: 2014

5.3. Radiated Emission Limits (Class B)

Frequency MHz	Distance Meters	Field Strengths Limit	
		μV/m	dB(μV)/m@3M
30 ~ 88	10	100	40
88 ~ 216	10	150	43.5
216 ~ 960	10	200	46
960 ~ 1000	10	500	54

Frequency (GHz)	Distance (Meters)	Field Strengths Limit	
		Average (dBμV/m)	Peak (dBμV/m)
1~6	3	54	74

Remark：(1) Emission level (dB)μV = 20 log Emission level μV/m
(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.

5.4. EUT Configuration on Measurement

The FCC Class B regulations test method must be used to find the maximum emission during radiated emission measurement.

EUT : LED LCD TV
Model Number : LC-43N5002U

5.5. Operating Condition of EUT

5.5.1.Setup the EUT as shown on Section 5.1.

5.5.2.Turn on the power of all equipments.

5.5.3.Let the EUT work in measuring mode (HDMI 1 IN, HDMI 2 ARC, HDMI 3 IN, LAN Ping) and measure it.

5.6. Test Procedure

The EUT is placed on a turn table which is 0.8 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Bilog antenna (calibrated by Dipole Antenna) is used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on test.

The bandwidth of the Receiver (ESU26) is set at 120kHz.

All the modes were tested and the data of the worst modes (HDMI 1 IN) are attached the following pages.

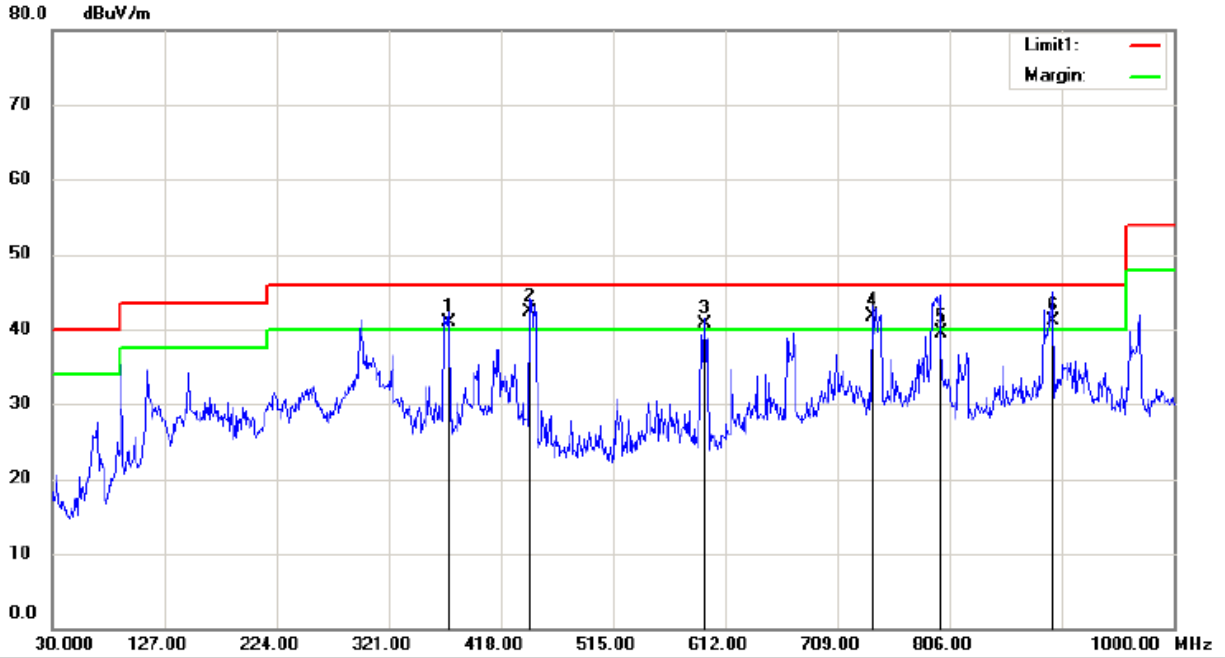
5.7. Measuring Results

PASS.

The frequency range from 30MHz to 6000MHz is investigated.

The worst mode is HDMI 1 IN, and the mode is the LED LCD TV connected to PC. Please refer to the following pages.

Please refer to the following pages.



Site 3m Chamber #1 Polarization: *Horizontal* Temperature: 22 C

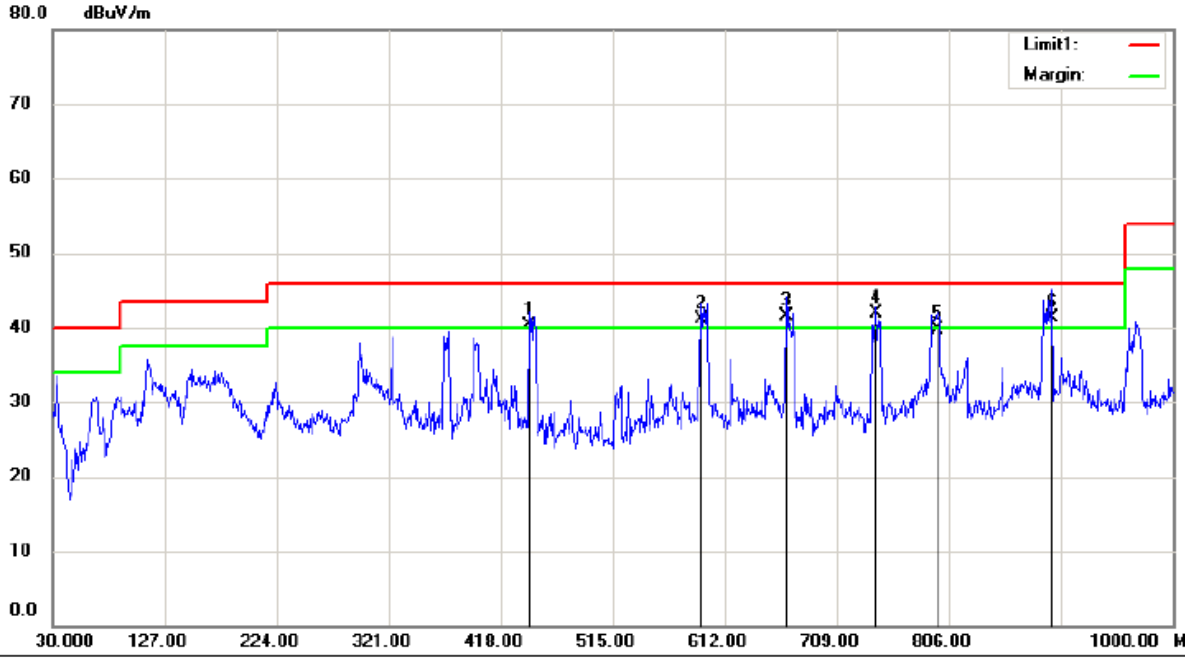
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 50 %

Mode:HDMI 1 Input

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	!	373.3800	49.76	-8.86	40.90	46.00	-5.10	QP			
2	*	443.2200	50.04	-7.74	42.30	46.00	-3.70	QP			
3	!	594.5400	45.83	-5.03	40.80	46.00	-5.20	QP			
4	!	739.0700	44.93	-3.13	41.80	46.00	-4.20	QP			
5		798.2400	41.87	-2.27	39.60	46.00	-6.40	QP			
6	!	896.2100	42.06	-0.96	41.10	46.00	-4.90	QP			

*:Maximum data x:Over limit !:over margin Operator: KK



Site 3m Chamber #1 Polarization: *Vertical* Temperature: 22 C

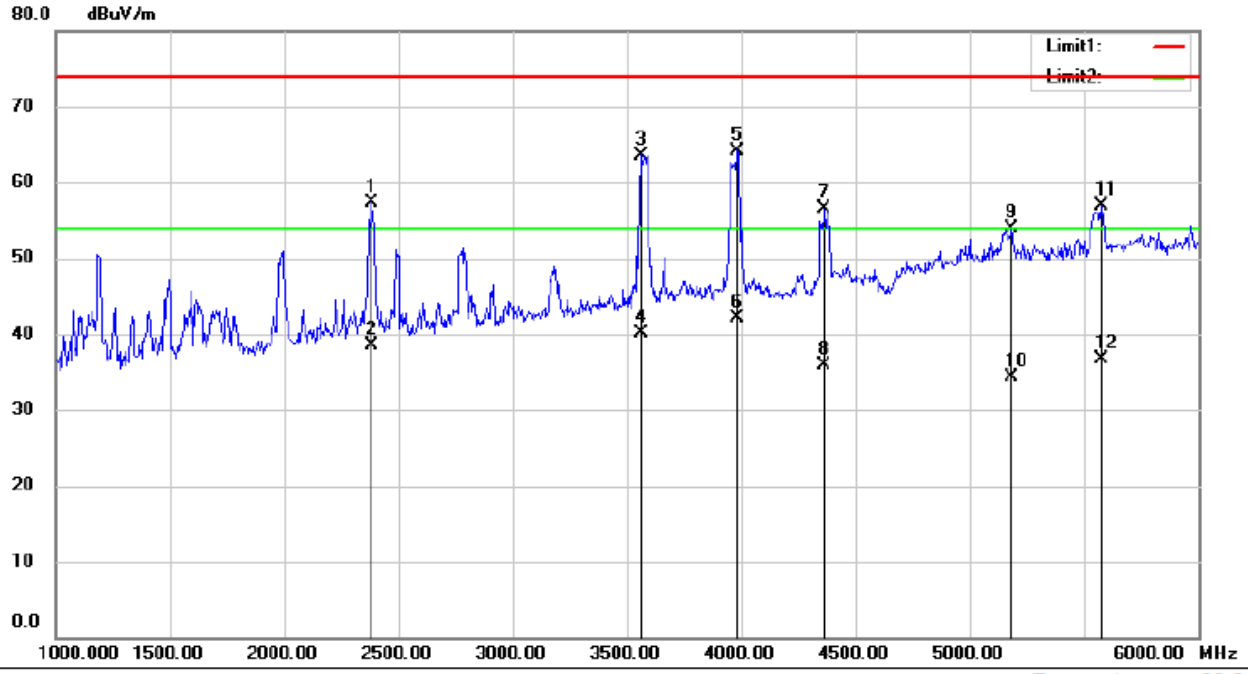
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 50 %

Mode:HDMI 1 Input

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	!	443.2200	48.14	-7.74	40.40	46.00	-5.60	QP			
2	!	591.6300	46.35	-5.25	41.10	46.00	-4.90	QP			
3	!	665.3500	45.38	-3.78	41.60	46.00	-4.40	QP			
4	*	742.9500	44.92	-3.02	41.90	46.00	-4.10	QP			
5		796.3000	42.15	-2.35	39.80	46.00	-6.20	QP			
6	!	896.2100	42.26	-0.96	41.30	46.00	-4.70	QP			

*:Maximum data x:Over limit !:over margin Operator: KK



Site 3m Chamber #1 Polarization: *Vertical* Temperature: 22 C

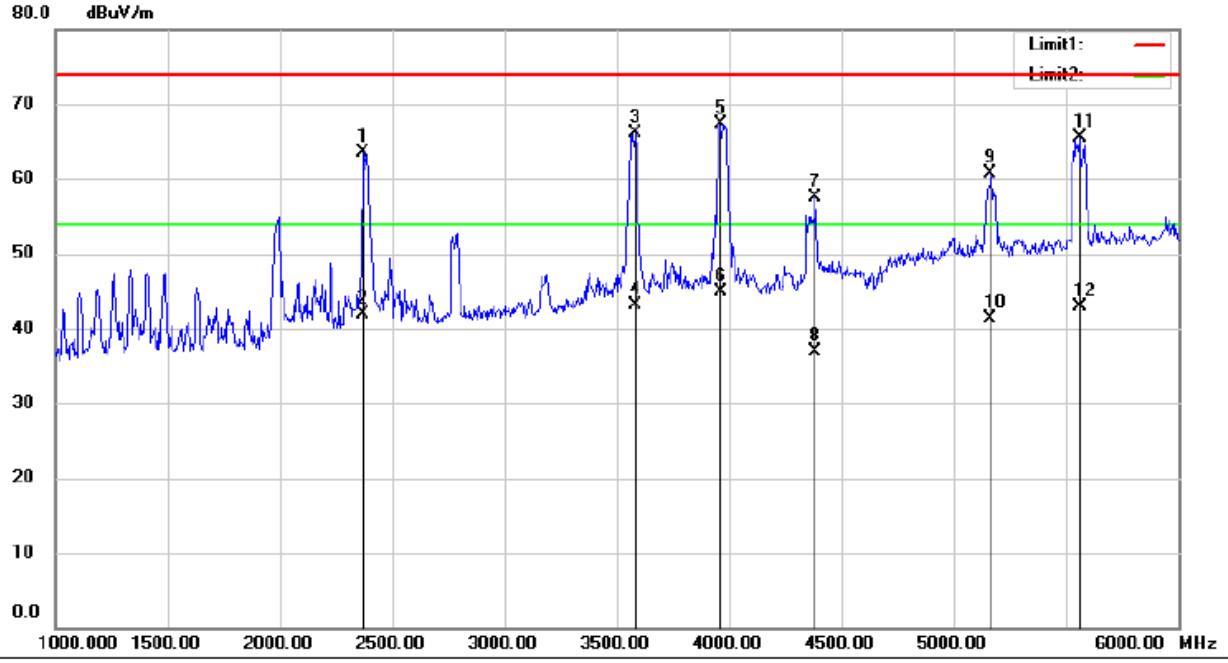
Limit: (RE)FCC PART 15 CLASS B PEAK Power: AC 120V/60Hz Humidity: 50 %

Mode:HDMI 1 Input

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2385.000	65.17	-7.88	57.29	74.00	-16.71	peak			
2		2385.000	46.45	-7.88	38.57	54.00	-15.43	AVG			
3		3565.000	67.36	-3.76	63.60	74.00	-10.40	peak			
4		3565.000	43.80	-3.76	40.04	54.00	-13.96	AVG			
5	*	3985.000	66.45	-2.25	64.20	74.00	-9.80	peak			
6		3985.000	44.28	-2.25	42.03	54.00	-11.97	AVG			
7		4365.000	57.68	-1.20	56.48	74.00	-17.52	peak			
8		4365.000	37.09	-1.20	35.89	54.00	-18.11	AVG			
9		5185.000	53.09	0.88	53.97	74.00	-20.03	peak			
10		5185.000	33.44	0.88	34.32	54.00	-19.68	AVG			
11		5575.000	55.35	1.63	56.98	74.00	-17.02	peak			
12		5575.000	35.14	1.63	36.77	54.00	-17.23	AVG			

*:Maximum data x:Over limit !:over margin Operator: KK



Site 3m Chamber #1 Polarization: *Horizontal* Temperature: 22 C

Limit: (RE)FCC PART 15 CLASS B PEAK Power: AC 120V/60Hz Humidity: 50 %

Mode:HDMI 1 Input

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2370.000	71.48	-7.94	63.54	74.00	-10.46	peak			
2		2370.000	49.91	-7.94	41.97	54.00	-12.03	AVG			
3		3580.000	69.89	-3.71	66.18	74.00	-7.82	peak			
4		3580.000	46.87	-3.71	43.16	54.00	-10.84	AVG			
5	*	3960.000	69.71	-2.34	67.37	74.00	-6.63	peak			
6		3960.000	47.34	-2.34	45.00	54.00	-9.00	AVG			
7		4385.000	58.67	-1.14	57.53	74.00	-16.47	peak			
8		4385.000	38.04	-1.14	36.90	54.00	-17.10	AVG			
9		5165.000	59.83	0.85	60.68	74.00	-13.32	peak			
10		5165.000	40.47	0.85	41.32	54.00	-12.68	AVG			
11		5560.000	63.88	1.60	65.48	74.00	-8.52	peak			
12		5560.000	41.27	1.60	42.87	54.00	-11.13	AVG			

*:Maximum data x:Over limit !:over margin Operator: KK

6. RADIATED SPURIOUS EMISSION FOR WIFI MODULE

WiFi Module FCC ID: PPQ-WN4640R

6.1. Applicable Standard

According to FCC Part 15.247(d) and 15.209 and KDB 558074 DTS 01 Meas. Guidance v03r05

6.2. Conformance Limit

According to FCC Part 15.247(d): radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

According to FCC Part15.205, Restricted bands

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

According to FCC Part15.205, the level of any transmitter spurious emission in Restricted bands shall not exceed the level of the emission specified in the following table

Restricted Frequency(MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance
0.009-0.490	2400/F(KHz)	20 log (uV/m)	300
0.490-1.705	2400/F(KHz)	20 log (uV/m)	30
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

6.3. Test Configuration

Test according to clause 7.2 radio frequency test setup 2

6.4. Test Procedure

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

The EUT was placed on a turn table which is 0.8m above ground plane.
Maximum procedure was performed on the highest emissions to ensure EUT compliance.

Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1 GHz(1GHz to 25GHz), 100 kHz for f < 1 GHz(30MHz to 1GHz), 200Hz for f<150KHz(9KHz to 150KHz), 9KHz for f<30MHz(150KHz to 30KHz)
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

Follow the guidelines in ANSI C63.10-2013 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b). Submit this data.

Now set the VBW to 10 Hz, while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209. If the dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a “duty cycle correction factor”, derived from 20log(dwell time/100 ms), in an effort to demonstrate compliance with the 15.209 limit. Submit this data.
Repeat above procedures until all frequency measured was complete.

6.5. Test Results

- Spurious Emission below 30MHz (9KHz to 30MHz)

Temperature:	24℃	Test Date:	Feb 12, 2017
Humidity:	53 %	Test By:	King Kong
Test mode:	TX Mode		

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
--	--	--	--	--	--	--	--

Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.
Distance extrapolation factor =40log(Specific distance/ test distance)(dB);
Limit line=Specific limits(dBuV) + distance extrapolation factor

■ Spurious Emission Above 1GHz (1GHz to 25GHz)

All modes 802.11b/g/n have been tested, and the worst result 802.11b recorded was report as below:

Temperature :	26℃	Test Date :	Feb 12, 2017
Humidity :	60 %	Test By:	King Kong
Test mode:	802.11b	Frequency:	Channel 1: 2412MHz

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
4824.28	V	54.37	49.37	74.00	54.00	-19.63	-4.63
7237.4	V	52.76	47.13	74.00	54.00	-21.24	-6.87
9649.94	V	47.77	36.96	74.00	54.00	-26.23	-17.04
4824.22	H	55.37	48.65	74.00	54.00	-18.63	-5.35
7236.26	H	50.93	45.49	74.00	54.00	-23.07	-8.51
9648.71	H	49.53	38.51	74.00	54.00	-24.47	-15.49

Temperature :	26℃	Test Date :	Feb 12, 2017
Humidity :	60 %	Test By:	King Kong
Test mode:	802.11b	Frequency:	Channel 6: 2437MHz

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
4874.8	V	55.2	50.01	74.00	54.00	-18.80	-3.99
7312.77	V	53.08	47.06	74.00	54.00	-20.92	-6.94
9749.29	V	47.05	37.82	74.00	54.00	-26.95	-16.18
4874.23	H	55.29	49.43	74.00	54.00	-18.71	-4.57
7311.42	H	50.28	44.98	74.00	54.00	-23.72	-9.02
9748.93	H	50.07	38.91	74.00	54.00	-23.93	-15.09

Temperature :	26℃	Test Date :	Feb 12, 2017
Humidity :	60 %	Test By:	King Kong
Test mode:	802.11b	Frequency:	Channel 11: 2462MHz

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
4925.83	V	54.79	49.41	74.00	54.00	-19.21	-4.59
7387.58	V	52.79	46.51	74.00	54.00	-21.21	-7.49
9849.58	V	46.41	37.99	74.00	54.00	-27.59	-16.01
4924.98	H	55.74	49.06	74.00	54.00	-18.26	-4.94
7387.88	H	49.5	44.59	74.00	54.00	-24.50	-9.41
9849.4	H	49.56	38.45	74.00	54.00	-24.44	-15.55

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3) Data of measurement within this frequency range shown " -- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

■ Spurious Emission in Restricted Band 2310-2390MHz and 2483.5-2500MHz

All modes 2.4G 802.11b/g/n have been tested, and the worst result 802.11n(ht20) recorded was report as below:

Temperature :	26℃	Test Date :	Feb 12, 2017
Humidity :	60 %	Test By:	King Kong
Test mode:	802.11n(ht20	Frequency:	Channel 1: 2412MHz

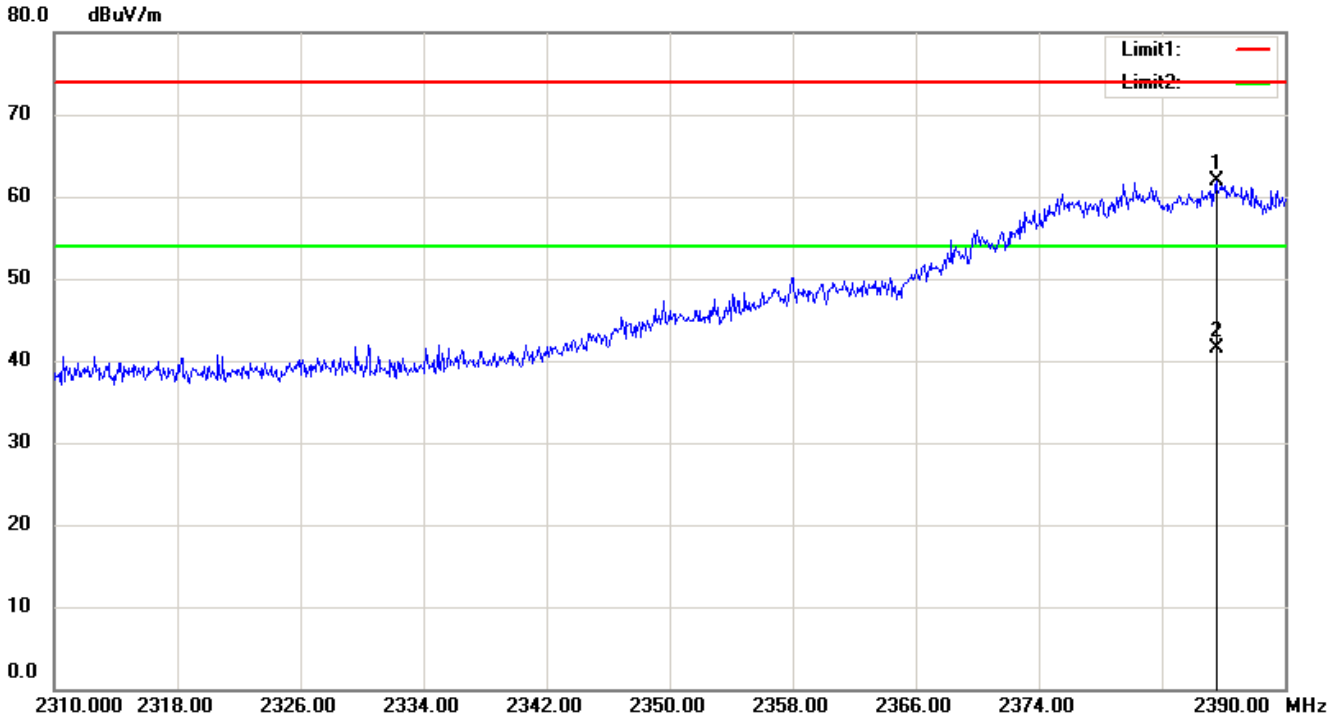
Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Over(dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Over(dB)
2382.16	H	58.15	74.00	-15.85	38.47	54.00	-15.53
2385.52	V	61.87	74.00	-12.13	41.57	54.00	-12.43

Temperature :	26℃	Test Date :	Feb 12, 2017
Humidity :	60 %	Test By:	King Kong
Test mode:	802.11n(ht20	Frequency:	Channel 11: 2462MHz

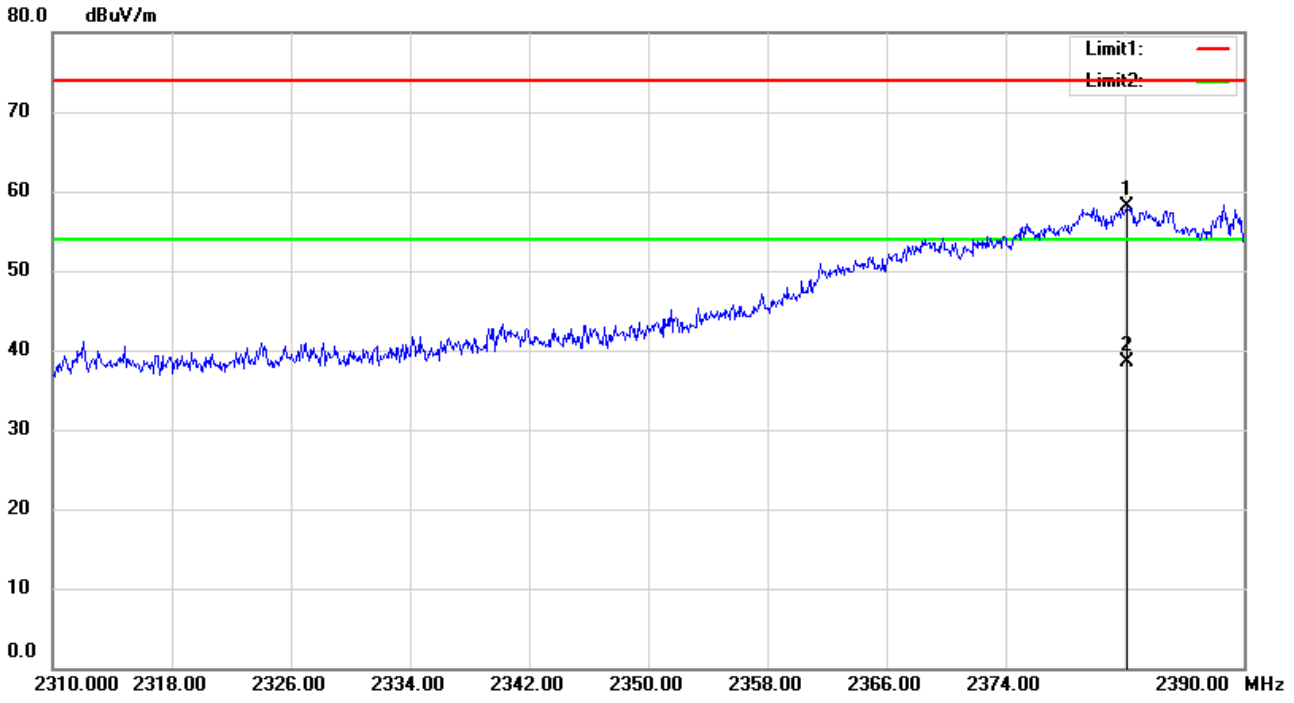
Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Over(dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Over(dB)
2483.85	H	57.93	74.00	-16.07	37.61	54.00	-16.39
2484.29	V	61.18	74.00	-12.82	41.58	54.00	-12.42

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3) Data of measurement within this frequency range shown " -- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

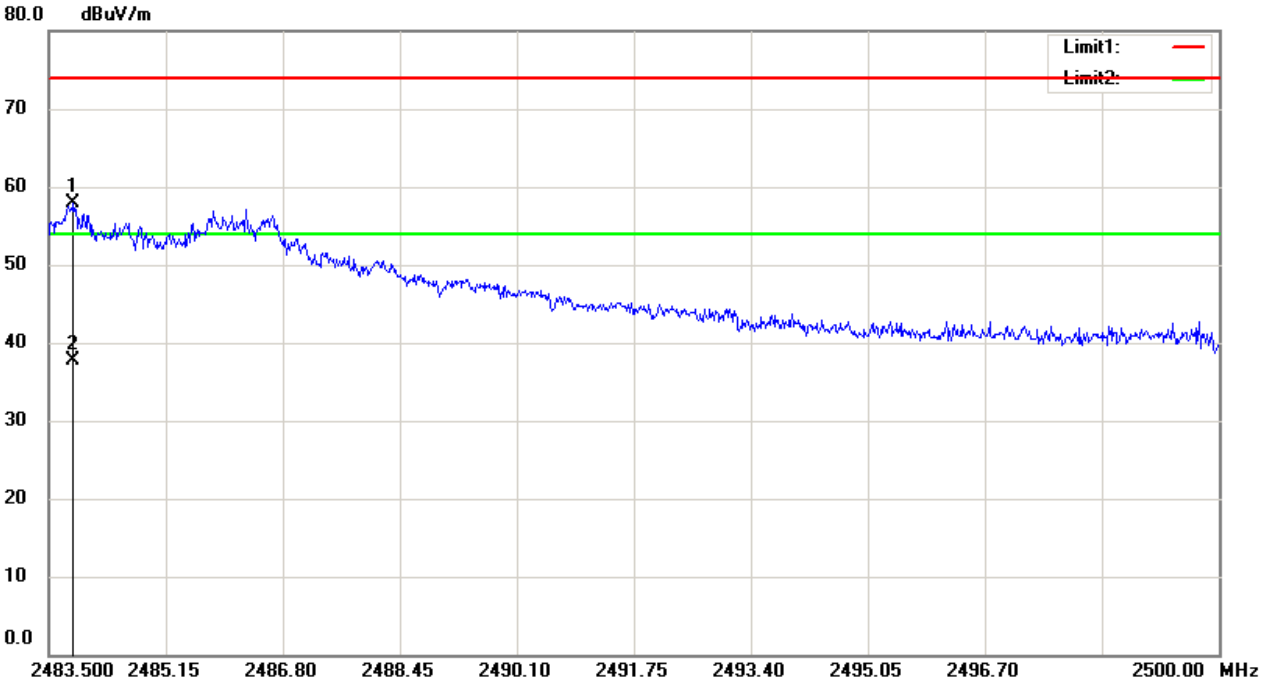
Test Model	Spurious Emission in Restricted Band 2310-2390MHz ☐802.11b ☐802.11g ☒802.11n(HT20) ☐802.11n(HT40) ☒Channel 1: 2412MHz ☐Channel 3: 2422MHz Polarity: H VBW=3MHz Test By: King Kong



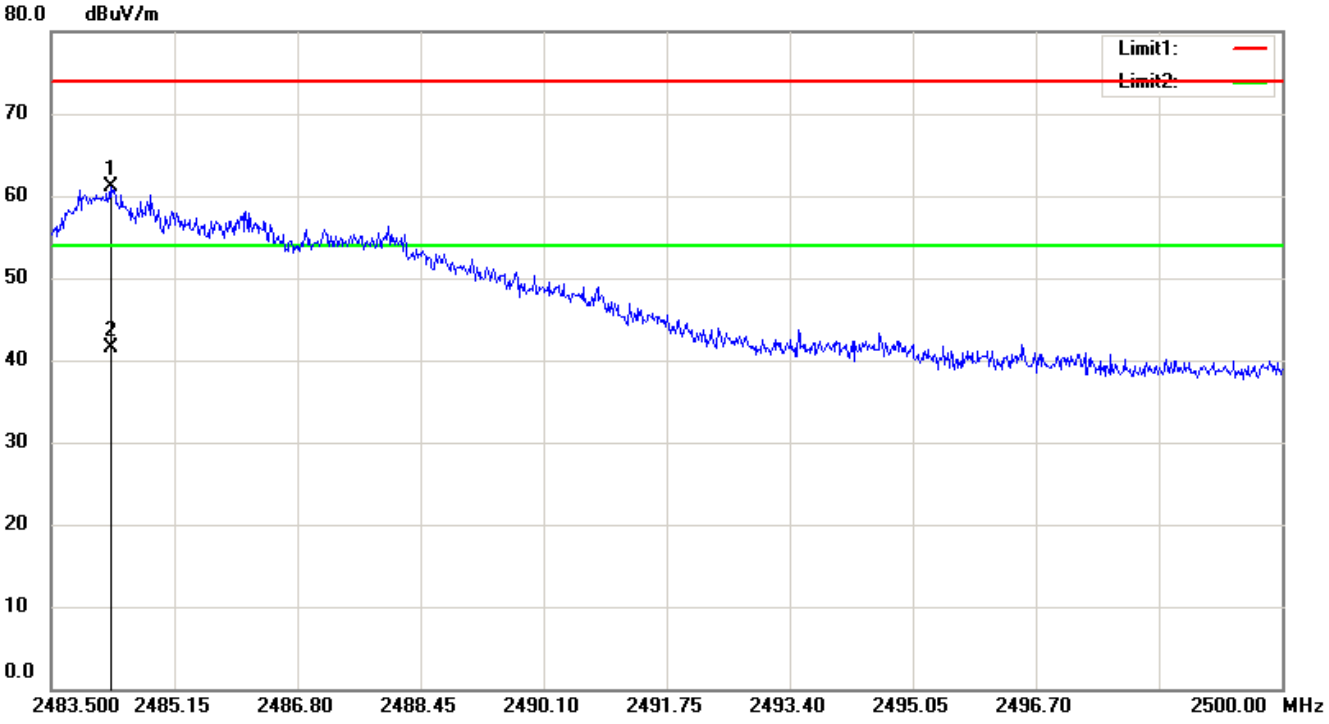
Test Model	Spurious Emission in Restricted Band 2310-2390MHz ☐802.11b ☐802.11g ☒802.11n(HT20) ☐802.11n(HT40) ☒Channel 1: 2412MHz ☐Channel 3: 2422MHz Polarity: V VBW=3MHz Test By: King Kong



Test Model	Spurious Emission in Restricted Band 2483.5-2500MHz ☐802.11b ☐802.11g ☒802.11n(HT20) ☐802.11n(HT40) ☒Channel 11: 2462MHz ☐Channel 9: 2452MHz Polarity: H VBW=3MHz Test By: King Kong

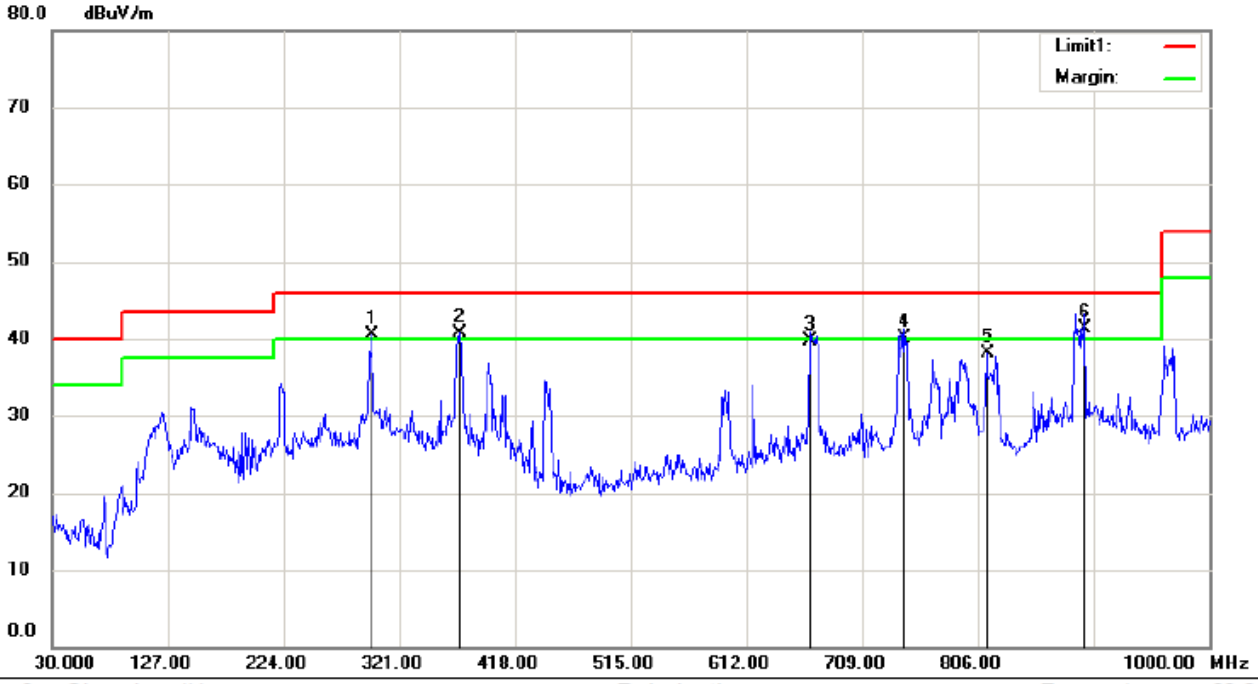


Test Model	Spurious Emission in Restricted Band 2483.5-2500MHz ☐802.11b ☐802.11g ☒802.11n(HT20) ☐802.11n(HT40) ☒Channel 11: 2462MHz ☐Channel 9: 2452MHz Polarity: V VBW=3MHz Test By: King Kong



■ Spurious Emission below 1GHz (30MHz to 1GHz)

All modes 2.4G 802.11b/g/n have been tested, and the worst result 802.11b recorded was report as below:



Site 3m Chamber #1 Polarization: *Horizontal* Temperature: 22 C

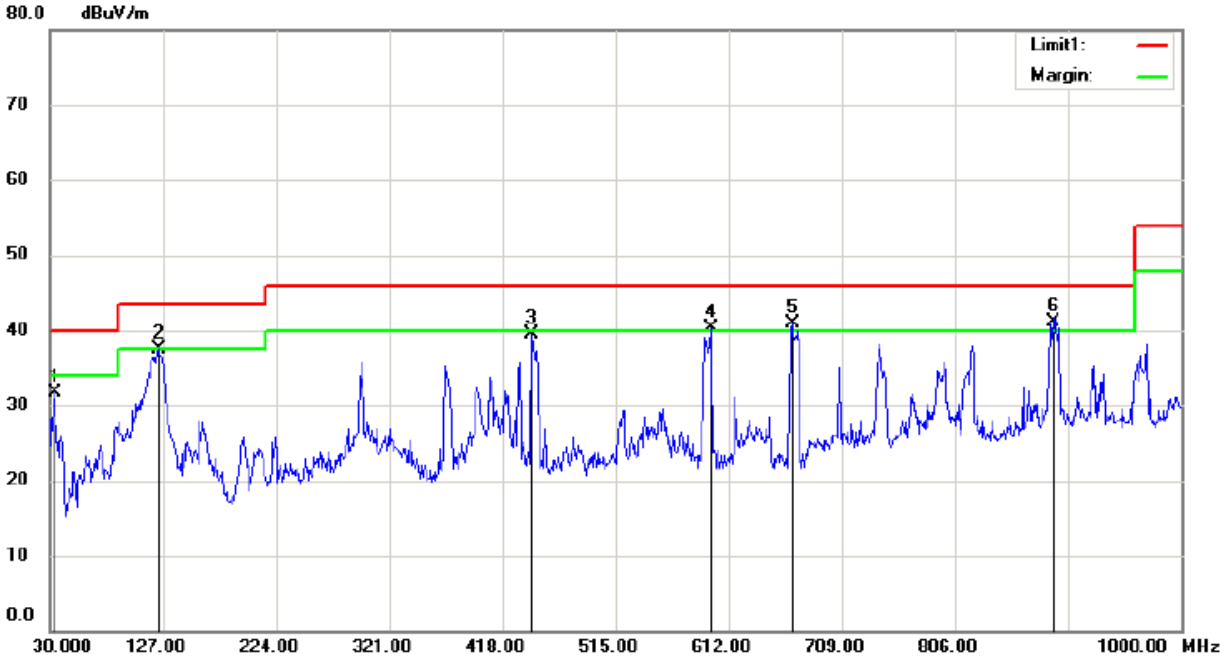
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 50 %

Mode:Low Channel

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	!	298.6900	50.56	-10.03	40.53	46.00	-5.47	QP			
2	!	371.4400	49.51	-8.86	40.65	46.00	-5.35	QP			
3		665.3500	43.58	-3.78	39.80	46.00	-6.20	QP			
4	!	743.9200	43.20	-3.00	40.20	46.00	-5.80	QP			
5		813.7600	40.71	-2.57	38.14	46.00	-7.86	QP			
6	*	896.2100	42.26	-0.96	41.30	46.00	-4.70	QP			

*:Maximum data x:Over limit !:over margin Operator: KK



Site 3m Chamber #1 Polarization: *Vertical* Temperature: 22 C

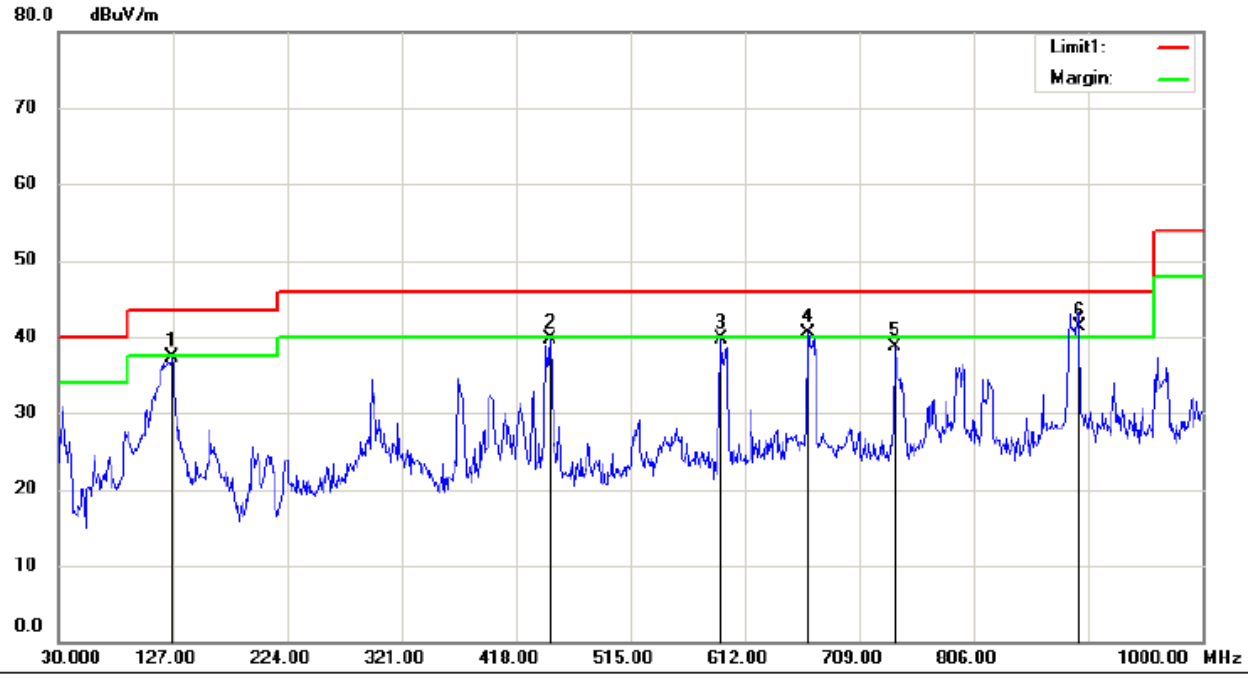
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 50 %

Mode:Low Channel

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		33.8800	45.61	-13.86	31.75	40.00	-8.25	QP			
2	!	123.1200	53.28	-15.75	37.53	43.50	-5.97	QP			
3		443.2200	47.23	-7.74	39.49	46.00	-6.51	QP			
4	!	596.4800	45.18	-4.90	40.28	46.00	-5.72	QP			
5	!	666.3200	44.71	-3.81	40.90	46.00	-5.10	QP			
6	*	890.3900	42.27	-1.17	41.10	46.00	-4.90	QP			

*:Maximum data x:Over limit !:over margin Operator: KK



Site 3m Chamber #1 Polarization: *Vertical* Temperature: 22 C

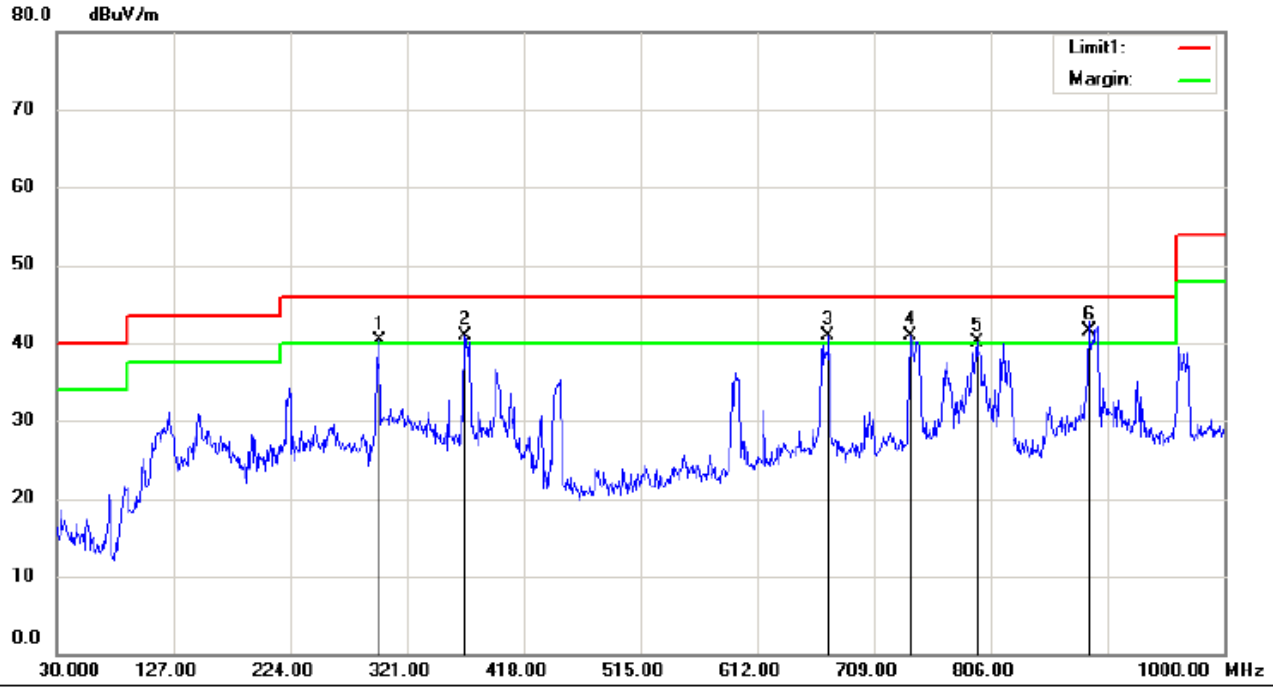
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 50 %

Mode: Mid Channel

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		126.0300	53.60	-16.29	37.31	43.50	-6.19	QP			
2		447.1000	47.44	-7.83	39.61	46.00	-6.39	QP			
3		591.6300	45.00	-5.25	39.75	46.00	-6.25	QP			
4	!	665.3500	44.23	-3.78	40.45	46.00	-5.55	QP			
5		739.0700	41.82	-3.13	38.69	46.00	-7.31	QP			
6	*	895.2400	42.39	-0.99	41.40	46.00	-4.60	QP			

*:Maximum data x:Over limit !:over margin Operator: KK



Site 3m Chamber #1 Polarization: *Horizontal* Temperature: 22 C

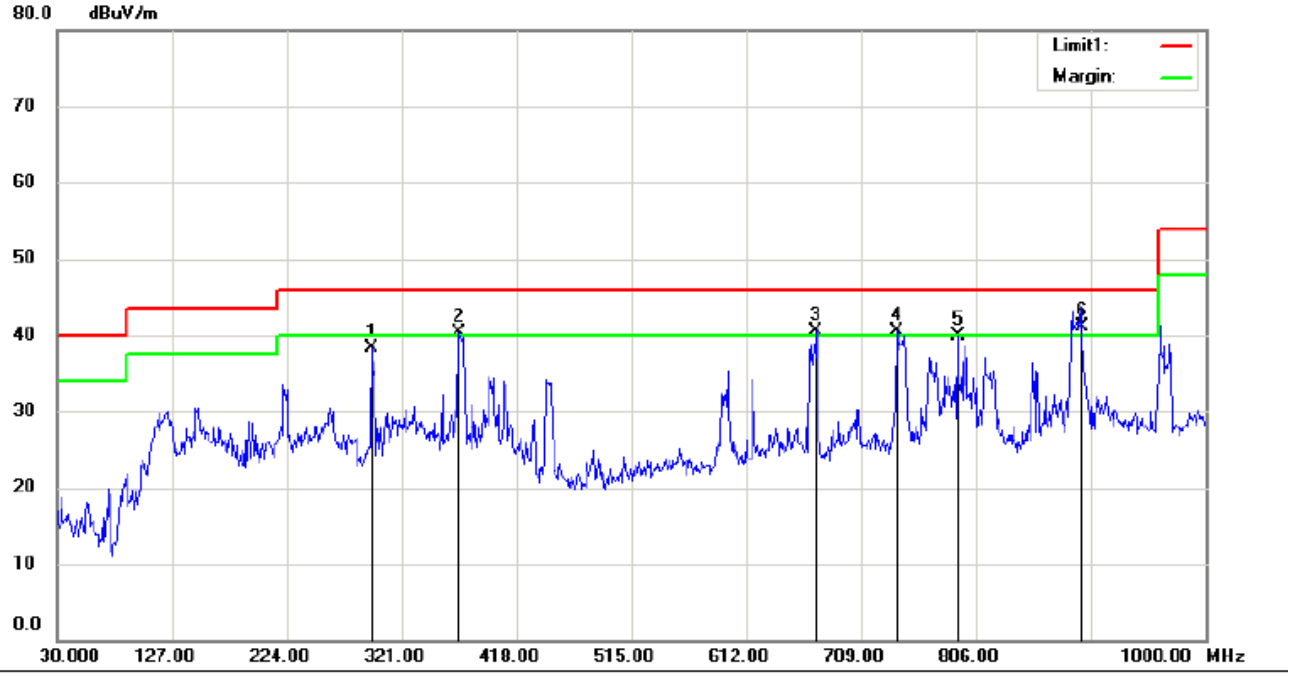
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 50 %

Mode:Mid Channel

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	!	298.6900	50.39	-10.03	40.36	46.00	-5.64	QP			
2	!	369.5000	49.70	-8.87	40.83	46.00	-5.17	QP			
3	!	671.1700	44.95	-4.00	40.95	46.00	-5.05	QP			
4	!	739.0700	44.08	-3.13	40.95	46.00	-5.05	QP			
5	!	794.3600	42.63	-2.44	40.19	46.00	-5.81	QP			
6	*	887.4800	42.72	-1.12	41.60	46.00	-4.40	QP			

*:Maximum data x:Over limit !:over margin Operator: KK



Site 3m Chamber #1 Polarization: *Horizontal* Temperature: 22 C

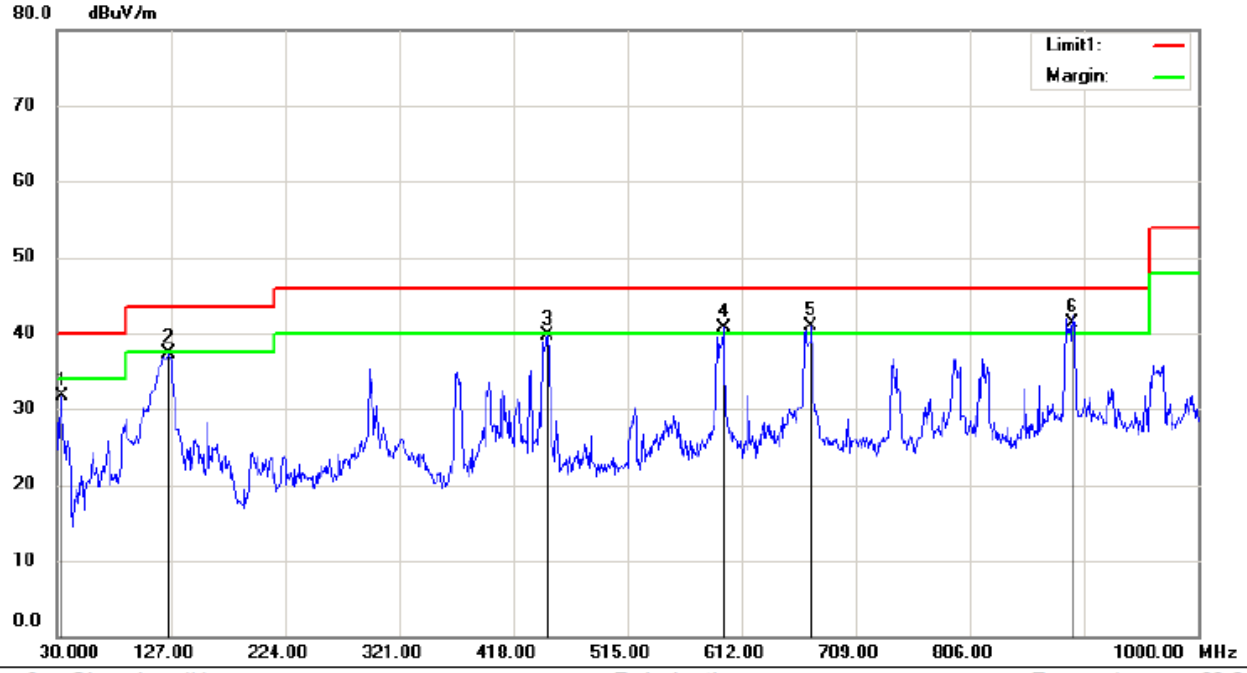
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 50 %

Mode: High Channel

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		295.7800	48.09	-9.81	38.28	46.00	-7.72	QP			
2	!	369.5000	49.25	-8.87	40.38	46.00	-5.62	QP			
3	!	671.1700	44.54	-4.00	40.54	46.00	-5.46	QP			
4	!	739.0700	43.62	-3.13	40.49	46.00	-5.51	QP			
5		790.4800	42.47	-2.60	39.87	46.00	-6.13	QP			
6	*	895.2400	42.09	-0.99	41.10	46.00	-4.90	QP			

*:Maximum data x:Over limit !:over margin Operator: KK



Site 3m Chamber #1 Polarization: *Vertical* Temperature: 22 C

Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 50 %

Mode: High Channel

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		33.8800	45.63	-13.86	31.77	40.00	-8.23	QP			
2		125.0600	53.52	-16.22	37.30	43.50	-6.20	QP			
3		447.1000	47.46	-7.83	39.63	46.00	-6.37	QP			
4	!	596.4800	45.69	-4.90	40.79	46.00	-5.21	QP			
5	!	671.1700	44.85	-4.00	40.85	46.00	-5.15	QP			
6	*	893.3000	42.37	-1.07	41.30	46.00	-4.70	QP			

*:Maximum data x:Over limit !:over margin Operator: KK

----------The end----------