MEASUREMENT REPORT

FCC PART 15.247 WLAN 802.11b/g/n

FCC ID:	2AO9UBTVI3SE
APPLICANT:	LD Eufonico LLC
Application Type:	Certification
Product:	Smart TV Box
Model No.:	BTVi3S
Serial Model Name:	BTVi3SE (With Clock)
Brand Name:	LD
FCC Classification:	Digital Transmission System (DTS)
FCC Rule Part(s):	Part 15 Subpart C (Section 15.247)
Test Procedure(s):	ANSI C63.10-2013, KDB 558074 D01v04
Test Date:	January 20 ~ March 21, 2018

Reviewed By : (Kevin Guo)

Approved By : (Marlin Chen)

ACCREDITED
TESTING LABORATORY
CERTIFICATE #3628.01

The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in KDB 558074 D01v04. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
1801RSU028-U1	Rev. 01	Initial report	03-21-2018	Valid

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§2.1033 General Information

Applicant:	LD Eufonico LLC
Applicant Address:	1221 E. Dyer Rd. Ste 110, Santa Ana, CA 92705
Manufacturer:	WIATEC INTERNATIONAL LTD.
Manufacturer Address:	Unit 601-605, TaoJinDi Electronic Commercial Plaza B,Tenglong Rd, LongHua, Shenzhen, China 518131
Test Site:	MRT Technology (Suzhou) Co., Ltd
Test Site Address:	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
FCC Registration No.:	893164
Test Device Serial No.:	N/A ☐ Production ☒ Pre-Production ☐ Engineering

Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian'edang Rd., Suzhou, China.

- **MRT facility is a FCC registered (MRT Reg. No. 893164) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules.**
- **MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.**
- **MRT facility is a VCCI registered (R-4179, G-814, C-4664, T-2206) test laboratory with the site description on file at VCCI Council.**
- **MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications and Radio testing for FCC, Industry Canada, EU and TELEC Rules.**

Accredited Laboratory
A2LA has accredited
MRT TECHNOLOGY (SUZHOU) CO., LTD.
Suzhou, Jiangsu, People's Republic of China
for technical competence in the field of
Electrical Testing

1. INTRODUCTION

1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taihu Lake. These measurement tests were conducted at the MRT Technology (Suzhou) Co., Ltd. Facility located at D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4-2009 on September 30, 2013.

2. PRODUCT INFORMATION

2.1. Feature of Equipment under Test

Product Name	Smart TV Box
Model No.	BTVi3S
Serial Model Name	BTVi3SE (With Clock)
Brand Name	LD
Work Voltage	AC 120V/60Hz
WiFi Specification	802.11 b/g/n
Components	
Adapter	M/N: BX-0502000 INPUT: 100-240V ~ 50/60Hz, 0.8A OUTPUT: 5Vdc, 2 A

Note 1: The difference between BTVi3S and BTVi3SE (With Clock) is as below:

BTVi3S: Screensaver does not display time.

BTVi3SE: Screensaver displays time.

Note 2: The test report relate only to the “BTVi3S” tested.

2.2. Product Specification Subjective to this Report

Frequency Range	802.11b/g/n-HT20: 2412 ~ 2462MHz
Channel Number:	802.11b/g/n-HT20: 11
Type of Modulation	802.11b: DSSS 802.11g/n: OFDM
Data Rate:	802.11b: 1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 150Mbps
Maximum Average Output Power	802.11b: 19.13dBm 802.11g: 14.58dBm 802.11n-HT20: 14.65dBm
Antenna type	PIFA Antenna
Antenna Gain	3.83dBi

2.3. Operation Frequency / Channel List

802.11b/g/n-HT20

Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2412 MHz	02	2417 MHz	03	2422 MHz
04	2427 MHz	05	2432 MHz	06	2437 MHz
07	2442 MHz	08	2447 MHz	09	2452 MHz
10	2457 MHz	11	2462 MHz	--	--

2.4. Test Mode

Test Mode	Mode 1: Transmit by 802.11b
	Mode 2: Transmit by 802.11g
	Mode 3: Transmit by 802.11n-HT20

2.5. Description of Test Software

The test utility software used during testing was “SecureCRT”.

Power Parameter Value:

Test Mode	Test Frequency (MHz)	Power Parameter Value
11b	2412	Default
	2437	Default
	2462	Default
11g	2412	Default
	2437	Default
	2462	Default
11n-HT20	2412	Default
	2437	Default
	2462	Default

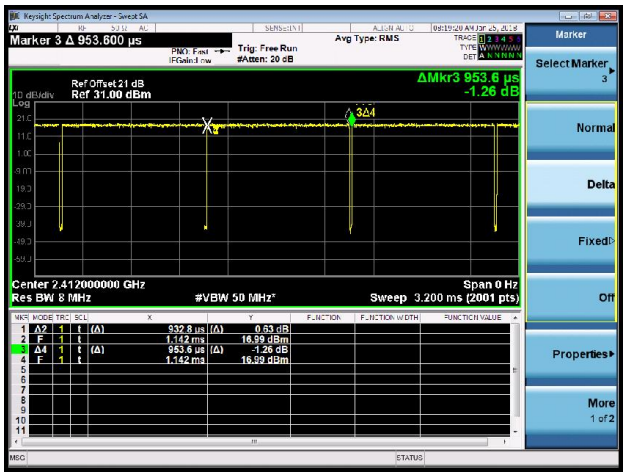
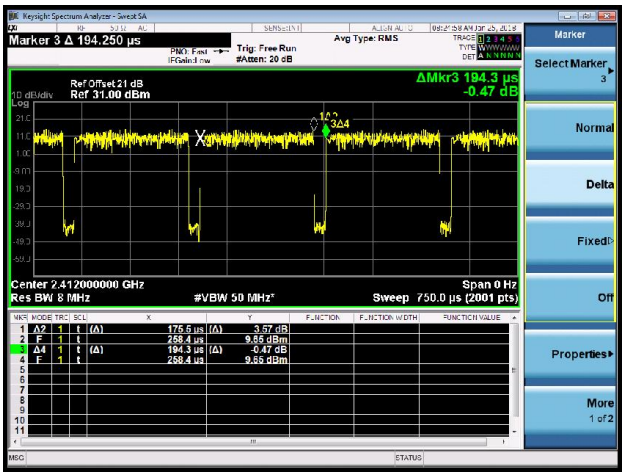
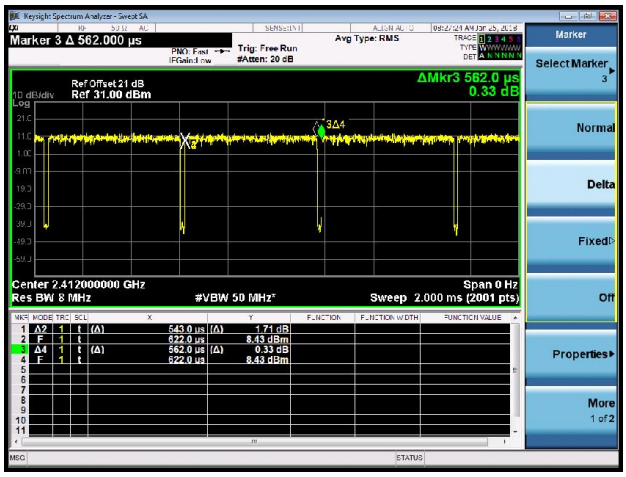
2.6. Device Capabilities

This device contains the following capabilities:

2.4GHz WLAN (DTS)

Note: 2.4GHz WLAN (DTS) operation is possible in 20MHz channel bandwidths. The maximum achievable duty cycle was determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz, and detector = peak or average per the guidance of Section 6.0 b) of KDB 558074 D01v04. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

Test Mode	Duty Cycle
802.11b	97.82%
802.11g	90.32%
802.11n-HT20	96.62%

802.11b (T = 0.933ms)	802.11g (T = 0.176ms)
	
802.11n-HT20 (T = 0.543ms)	--
	--

2.7. Test Configuration

The device was tested per the guidance of KDB 558074 D01v04. ANSI C63.10-2013 was used to reference the appropriate EUT setup for radiated spurious emissions testing and AC line conducted testing.

2.8. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

2.9. Labeling Requirements

Per 2.1074 & 15.19; Docket 95-19

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the FCC ID must be displayed on the device per Section 15.19(a)(5). Please see attachment for FCC ID label and label location.

3. DESCRIPTION OF TEST

3.1. Evaluation Procedure

The measurement procedures described in the American National Standard for Testing Unlicensed Wireless Devices (ANSI C63.10-2013), and the guidance provided in KDB 558074 D01v04 were used in the measurement of the device.

Deviation from measurement procedure…….....None

3.2. AC Line Conducted Emissions

The line-conducted facility is located inside an 8'x4'x4' shielded enclosure. A 1m x 2m wooden table 80cm high is placed 40cm away from the vertical wall and 80cm away from the sidewall of the shielded room. Two 10kHz-30MHz, 50Ω/50uH Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room floor. Power to the LISNs is filtered by external high-current high-insertion loss power line filters. These filters attenuate ambient signal noise from entering the measurement lines. These filters are also bonded to the shielded enclosure.

The EUT is powered from one LISN and the support equipment is powered from the second LISN. All interconnecting cables more than 1 meter were shortened to a 1 meter length by non-inductive bundling (serpentine fashion) and draped over the back edge of the test table. All cables were at least 40cm above the horizontal reference ground-plane. Power cables for support equipment were routed down to the second LISN while ensuring that that cables were not draped over the second LISN.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the receiver and exploratory measurements were made to determine the frequencies producing the maximum emission from the EUT. The receiver was scanned from 150kHz to 30MHz. The detector function was set to peak mode for exploratory measurements while the bandwidth of the analyzer was set to 9kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Each emission was also maximized by varying: power lines, the mode of operation or data exchange speed, or support equipment whichever determined the worst-case emission. Once the worst case emissions have been identified, the one EUT cable configuration/arrangement and mode of operation that produced these emissions are used for final measurements on the same test site. The analyzer is set to CISPR quasi-peak and average detectors with a 9kHz resolution bandwidth for final measurements.

An extension cord was used to connect to a single LISN which powered by EUT. The extension cord was calibrated with LISN, the impedance and insertion loss are compliance with the requirements as stated in ANSI C63.10-2013.

3.3. Radiated Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. For measurements above 1GHz absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1GHz, the absorbers are removed. A MF Model 210SS turntable is used for radiated measurement. It is a continuously rotatable, remote controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm high PVC support structure is placed on top of the turntable.

For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30MHz up to the upper frequency shown in 15.33(b)(1) depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up for frequencies below 1GHz was placed on top of the 0.8 meter high, 1 x 1.5 meter table; and test set-up for frequencies 1-25GHz was placed on top of the 1.5 meter high, 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, clock speed, mode of operation or video resolution, if applicable, turntable azimuth, and receive antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, whichever produced the worst-case emissions. According to 3dB Beam-Width of horn antenna, the horn antenna should be always directed to the EUT when rising height.

4. ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

Conclusion:

The device unit complies with the requirement of §15.203.

5. TEST EQUIPMENT CALIBRATION DATE

Conducted Emissions - SR2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTSUE06185	1 year	2018/04/25
Two-Line V-Network	R&S	ENV216	MRTSUE06002	1 year	2018/06/21
Two-Line V-Network	R&S	ENV216	MRTSUE06003	1 year	2018/06/21
Thermohygrometer	Testo	608-H1	MRTSUE06404	1 year	2018/08/14
Shielding Anechoic Chamber	Mikebang	Chamber-SR2	MRTSUE06214	1 year	2018/05/10

Radiated Emission - AC1

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2018/08/18
PXA Signal Analyzer	Keysight	N9030B	MRTSUE06395	1 year	2018/09/30
Loop Antenna	Schwarzbeck	FMZB1519	MRTSUE06025	1 year	2018/11/20
Bilog Period Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2018/11/18
Horn Antenna	Schwarzbeck	BBHA9120D	MRTSUE06023	1 year	2018/10/21
Broadband Coaxial Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06176	1 year	2018/11/17
Broadband Horn Antenna	Schwarzbeck	BBHA9170	MRTSUE06024	1 year	2018/01/04
Temperature/Humidity Meter	Yuhuaze	HTC-2	MRTSUE06183	1 year	2017/12/22
Anechoic Chamber	TDK	Chamber-AC1	MRTSUE06212	1 year	2018/05/10

Conducted Test Equipment - TR3

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Power Meter	Agilent	U2021XA	MRTSUE06030	1 year	2018/12/06
Temperature Humidity Chamber	BAOYT	BYH-150CL	MRTSUE06051	1 year	2018/12/06
EXA Signal Analyzer	Agilent	N9020A	MRTSUE06106	1 year	2018/04/25
Thermohygrometer	Testo	608-H1	MRTSUE06401	1 year	2018/08/14

Software	**Version**	**Function**
e3	V 8.3.5	EMI Test Software

6. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

AC Conducted Emission Measurement - SR2
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 150kHz~30MHz: 3.46dB
Radiated Emission Measurement - AC1
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 9kHz ~ 1GHz: 4.18dB 1GHz ~ 25GHz: 4.76dB
Spurious Emissions, Conducted - TR3
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 0.78dB
Output Power - TR3
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 1.13dB
Power Spectrum Density - TR3
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 1.15dB
Occupied Bandwidth - TR3
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 0.28%

7. TEST RESULT

7.1. Summary

Company Name: **LD Eufonico LLC**

FCC ID: **2AO9UBTVI3SE**

FCC Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.247(a)(2)	6dB Bandwidth	Refer to 7.2.1	Conducted	Pass	Section 7.2
15.247(b)(3)	Output Power	Refer to 7.3.1		Pass	Section 7.3
15.247(e)	Power Spectral Density	Refer to 7.4.1		Pass	Section 7.4
15.247(d)	Band Edge / Out-of-Band Emissions	Refer to 7.5.1		Pass	Section 7.5
15.205 15.209	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Refer to 7.6.1 & 7.7.1	Radiated	Pass	Section 7.6 & 7.7
15.207	AC Conducted Emissions 150kHz - 30MHz	Refer to 7.8.1	Line Conducted	Pass	Section 7.8

Notes:

1) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
2) All modes of operation and data rates were investigated. For radiated emission test was also verified. The test results shown in the following sections represent the worst case emissions.

7.2. 6dB Bandwidth Measurement

7.2.1.Test Limit

The minimum 6dB bandwidth shall be at least 500 kHz.

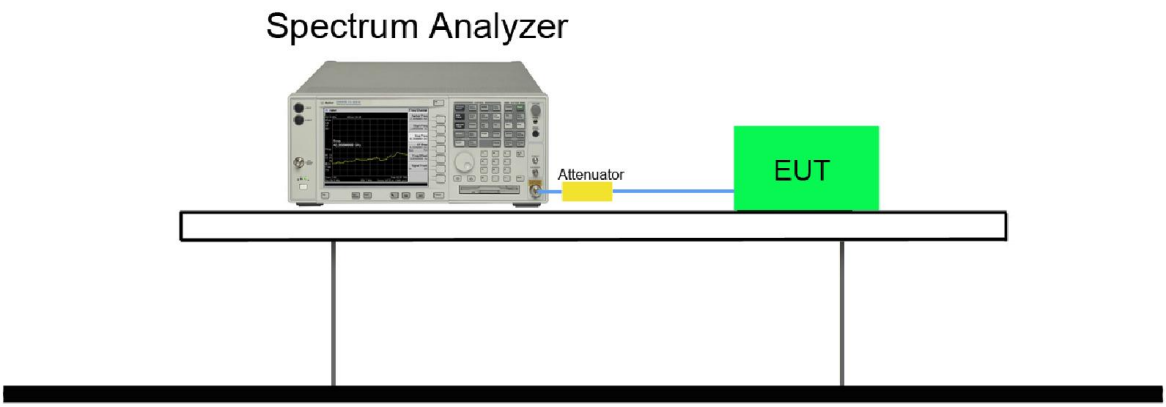
7.2.2.Test Procedure used

KDB 558074 D01v04 – Section 8.2 Option 2

7.2.3.Test Setting

1. The Spectrum's automatic bandwidth measurement capability was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 6. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. Set RBW = 100 kHz
3. VBW ≥ 3 × RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. Allow the trace was allowed to stabilize

7.2.4.Test Setup



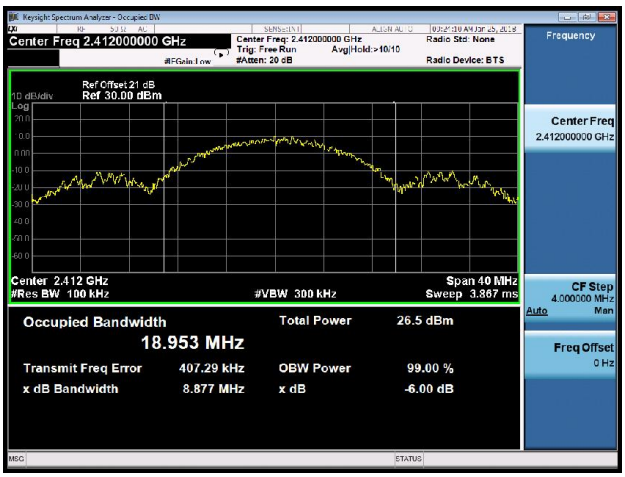
7.2.5.Test Result

Product	Smart TV Box	Temperature	23°C
Test Engineer	Bruce Wang	Relative Humidity	54%
Test Site	TR3	Test Date	2018/01/25
Test Item	6dB Bandwidth		

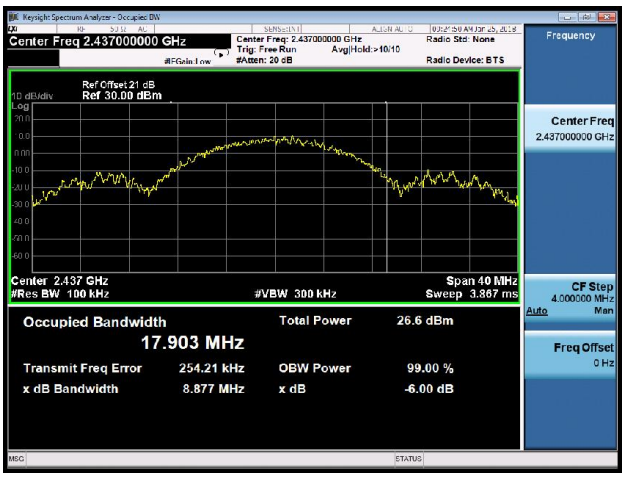
Test Mode	Data Rate / MCS	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
802.11b	1Mbps	01	2412	8.88	≥0.5	Pass
802.11b	1Mbps	06	2437	8.88	≥0.5	Pass
802.11b	1Mbps	11	2462	8.88	≥0.5	Pass
802.11g	6Mbps	01	2412	16.49	≥0.5	Pass
802.11g	6Mbps	06	2437	16.50	≥0.5	Pass
802.11g	6Mbps	11	2462	16.49	≥0.5	Pass
802.11n-HT20	MCS0	01	2412	17.76	≥0.5	Pass
802.11n-HT20	MCS0	06	2437	17.72	≥0.5	Pass
802.11n-HT20	MCS0	11	2462	17.75	≥0.5	Pass

802.11b 6dB Bandwidth

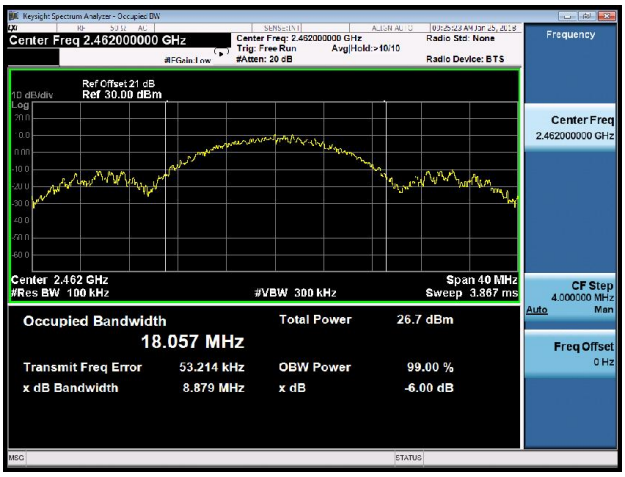
Channel 01 (2412MHz)



Channel 06 (2437MHz)

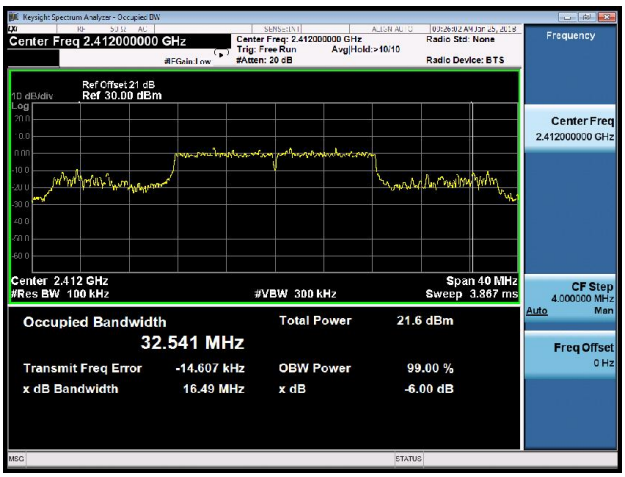


Channel 11 (2462MHz)

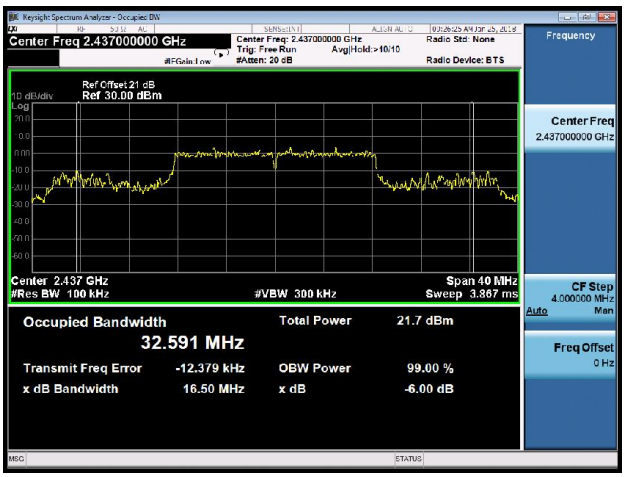


802.11g 6dB Bandwidth

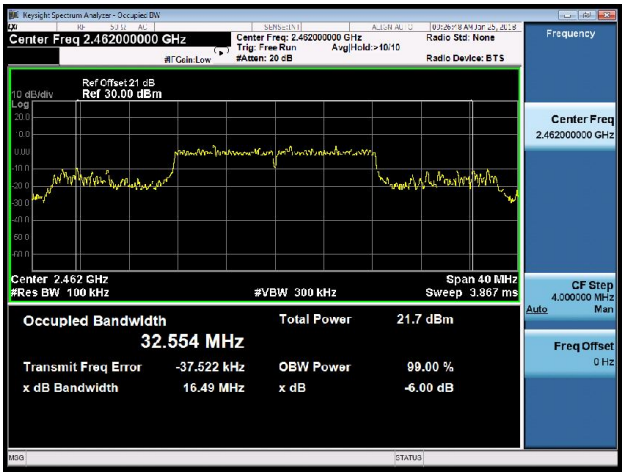
Channel 01 (2412MHz)



Channel 06 (2437MHz)

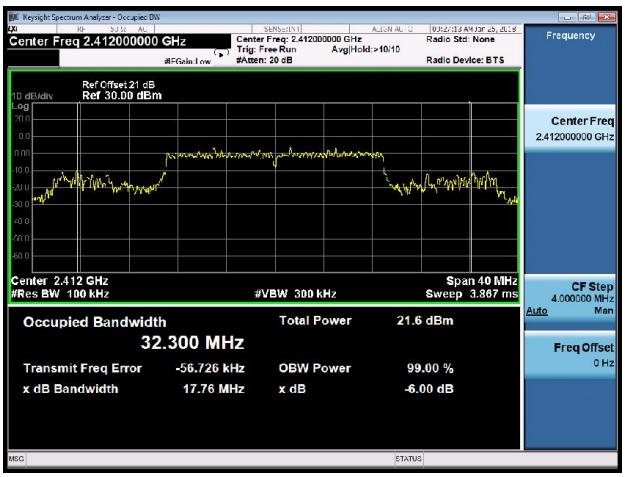


Channel 11 (2462MHz)



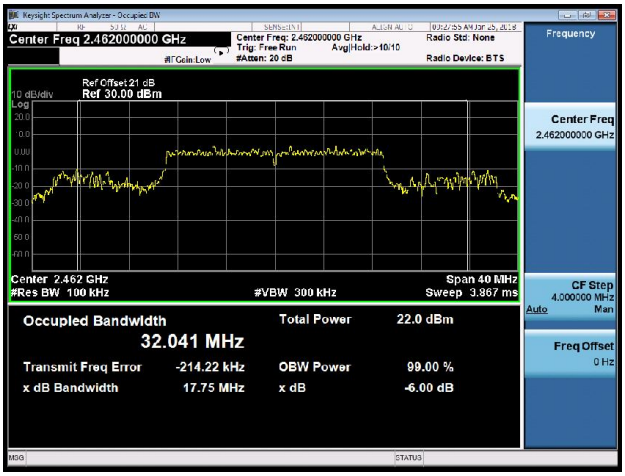
802.11n-HT20 6dB Bandwidth

Channel 01 (2412MHz)



Channel 06 (2437MHz)

Channel 11 (2462MHz)



7.3. Output Power Measurement

7.3.1.Test Limit

The maximum conducted output power shall be exceed 1 Watt (30dBm).

The total conducted output power shall be reduced by 1 dB below the specified limits for each 3 dB that the directional gain of the antenna/antenna array exceeds 6dBi.

7.3.2.Test Procedure Used

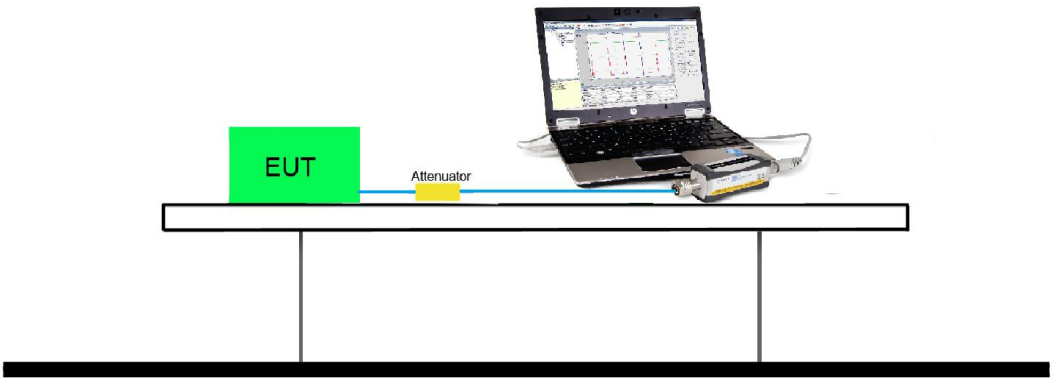
KDB 558074 D01v04 - Section 9.2.3.2 AVGPM-G Average Power Method

7.3.3.Test Setting

Method AVGPM-G (Measurement using a gated RF average-reading power meter)

Average power measurements were perform only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

7.3.4.Test Setup



7.3.5.Test Result of Output Power

Power output test was verified over all data rates of each mode shown as below, and then choose the maximum power output (gray marker) for final test of each channel.

Output power at various data rates:

Test Mode	Bandwidth (MHz)	Channel No.	Frequency (MHz)	Data Rate / MCS	Average Power (dBm)
802.11b	20	6	2437	1Mbps	19.11
				5.5Mbps	18.75
				11Mbps	17.98
802.11g	20	6	2437	6Mbps	14.33
				24Mbps	13.67
				54Mbps	12.79
802.11n	20	6	2437	MCS0	14.51
				MCS3	13.93
				MCS7	13.45

Product	Smart TV Box	Temperature	23°C
Test Engineer	Bruce Wang	Relative Humidity	54%
Test Site	TR3	Test Date	2018/01/25
Test Item	Output Power		

Test Result of Average Output Power

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Average Power (dBm)	Limit (dBm)	Result
11b	1Mbps	1	2412	19.00	≤ 30	Pass
11b	1Mbps	6	2437	19.11	≤ 30	Pass
11b	1Mbps	11	2462	19.13	≤ 30	Pass
11g	6Mbps	1	2412	14.24	≤ 30	Pass
11g	6Mbps	6	2437	14.33	≤ 30	Pass
11g	6Mbps	11	2462	14.58	≤ 30	Pass
11n-HT20	MCS0	1	2412	14.33	≤ 30	Pass
11n-HT20	MCS0	6	2437	14.51	≤ 30	Pass
11n-HT20	MCS0	11	2462	14.65	≤ 30	Pass

7.4. Power Spectral Density Measurement

7.4.1.Test Limit

The maximum permissible power spectral density is 8dBm in any 3 kHz band.

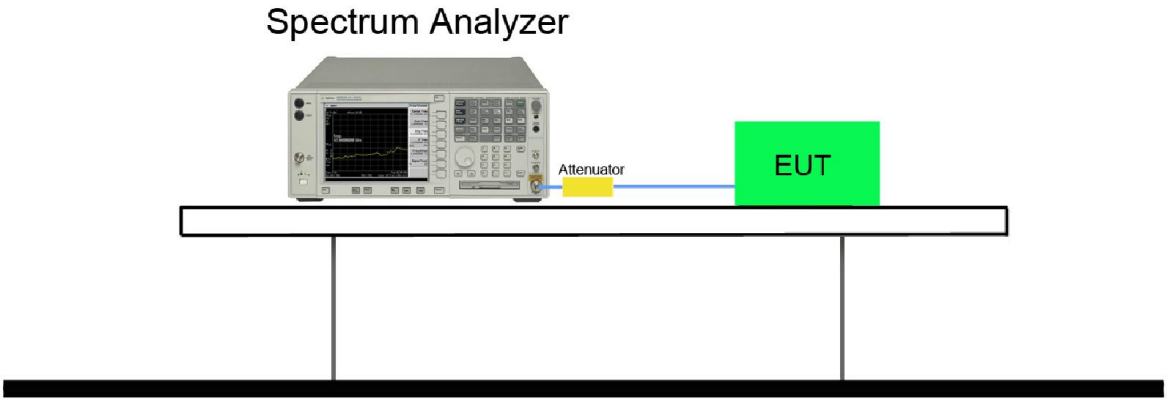
7.4.2.Test Procedure Used

KDB 558074 D01v04 - Section 10.5 Method AVGPSD

7.4.3.Test Setting

1. Measure the duty cycle (x) of the transmitter output signal.
2. Set instrument center frequency to DTS channel center frequency.
3. Set span to at least 1.5 times the OBW.
4. RBW = 10 kHz.
5. VBW = 30 kHz.
6. Detector = RMS.
7. Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
8. Sweep time = auto couple.
9. Don’t use sweep triggering. Allow sweep to “free run”.
10. Employ trace averaging (RMS) mode over a minimum of 100 traces.
11. Use the peak marker function to determine the maximum amplitude level.
12. Add 10 log (1/x), where x is the duty cycle measured in step (a, to the measured PSD to compute the average PSD during the actual transmission time.
13. Add Constant Factor = 10*log (3kHz / 10kHz) = -5.23.

7.4.4.Test Setup



7.4.5.Test Result

Product	Smart TV Box	Temperature	23°C
Test Engineer	Bruce Wang	Relative Humidity	54%
Test Site	TR3	Test Date	2018/01/25

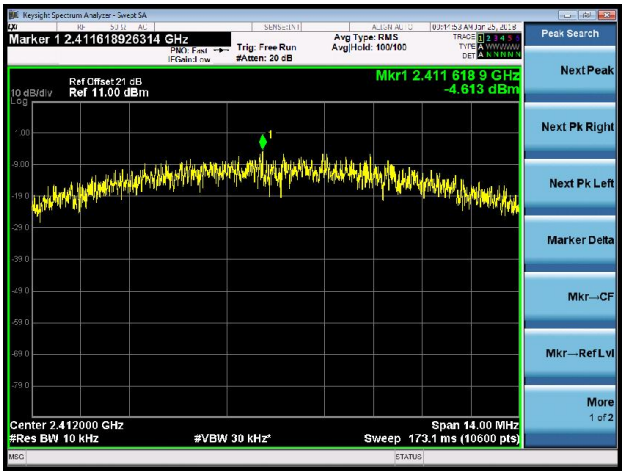
Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	AVGPSD (dBm/ 10kHz)	Duty Cycle (%)	Constant Factor	Final AVGPSD (dBm / 3kHz)	Limit (dBm / 3kHz)	Result
11b	1Mbps	1	2412	-4.61	97.82	-5.23	-9.74	≤ 8.0	Pass
11b	1Mbps	6	2437	-4.48	97.82	-5.23	-9.61	≤ 8.0	Pass
11b	1Mbps	11	2462	-4.28	97.82	-5.23	-9.41	≤ 8.0	Pass
11g	6Mbps	1	2412	-13.67	90.32	-5.23	-18.46	≤ 8.0	Pass
11g	6Mbps	6	2437	-13.28	90.32	-5.23	-18.07	≤ 8.0	Pass
11g	6Mbps	11	2462	-12.84	90.32	-5.23	-17.63	≤ 8.0	Pass
11n-HT20	MCS0	1	2412	-14.34	96.62	-5.23	-19.42	≤ 8.0	Pass
11n-HT20	MCS0	6	2437	-14.41	96.62	-5.23	-19.49	≤ 8.0	Pass
11n-HT20	MCS0	11	2462	-14.29	96.62	-5.23	-19.37	≤ 8.0	Pass

Note 1: When EUT duty cycle ⩾ 98%, Final AVGPSD (dBm/3kHz) = AVGPSD (dBm/10kHz) + Constant Factor.

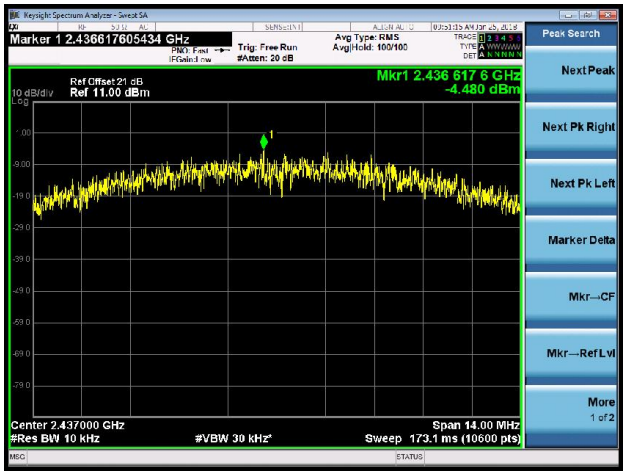
Note 2: When EUT duty cycle < 98%, Final AVGPSD (dBm/3kHz) = AVGPSD (dBm/10kHz) + 10*log (1/Duty cycle) + Constant Factor.

802.11b PSD

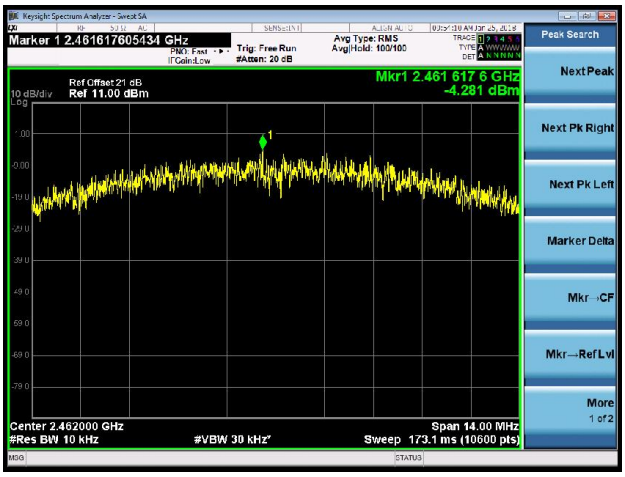
Channel 01 (2412MHz)

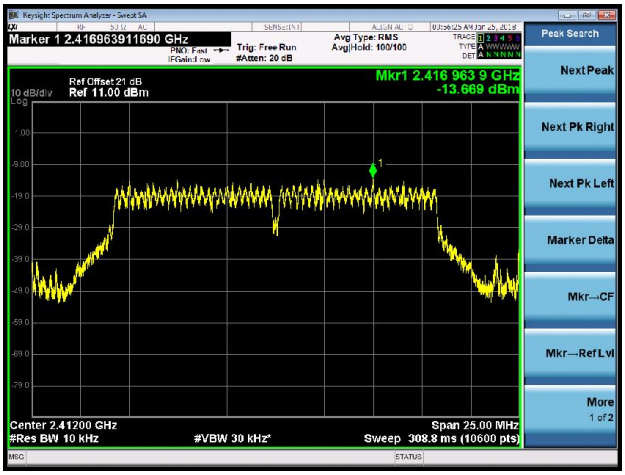
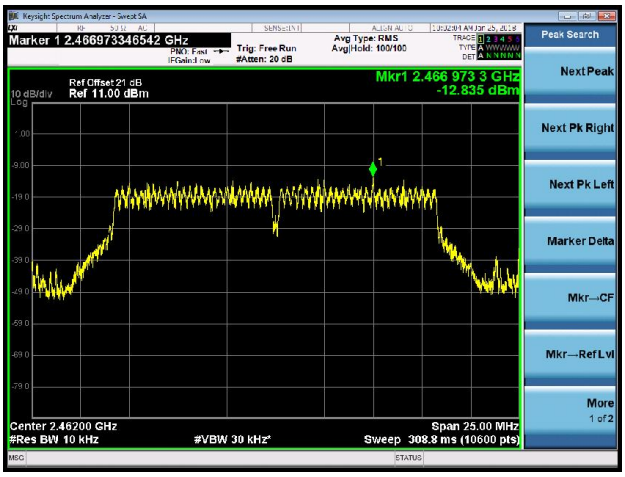


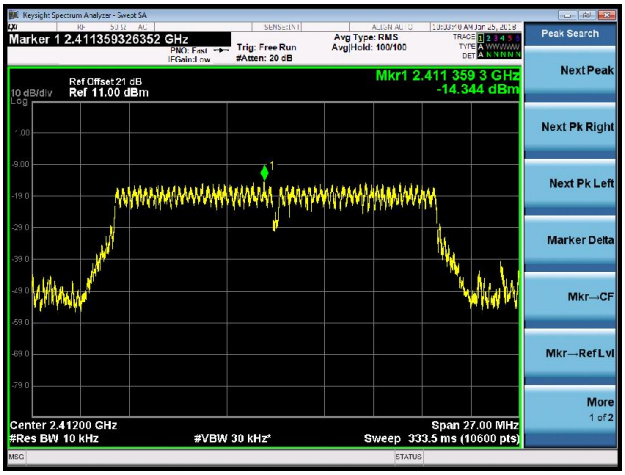
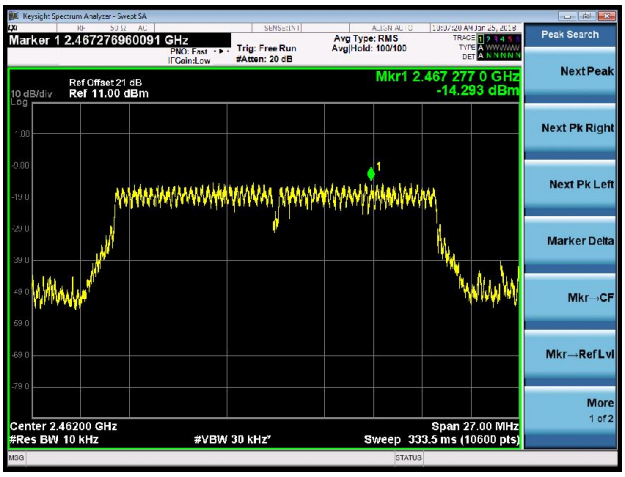
Channel 06 (2437MHz)



Channel 11 (2462MHz)



802.11g PSD	
Channel 01 (2412MHz)	**Channel 06 (2437MHz)**
	
Channel 11 (2462MHz)	
	

802.11n-HT20 PSD	
Channel 01 (2412MHz)	**Channel 06 (2437MHz)**
	
Channel 11 (2462MHz)	
	

7.5. Conducted Band Edge and Out-of-Band Emissions

7.5.1.Test Limit

The limit for out-of-band spurious emissions at the band edge is 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100 kHz bandwidth per the PSD procedure.

7.5.2.Test Procedure Used

KDB 558074 D01v04 - Section 11.2 & Section 11.3

7.5.3.Test Settitng

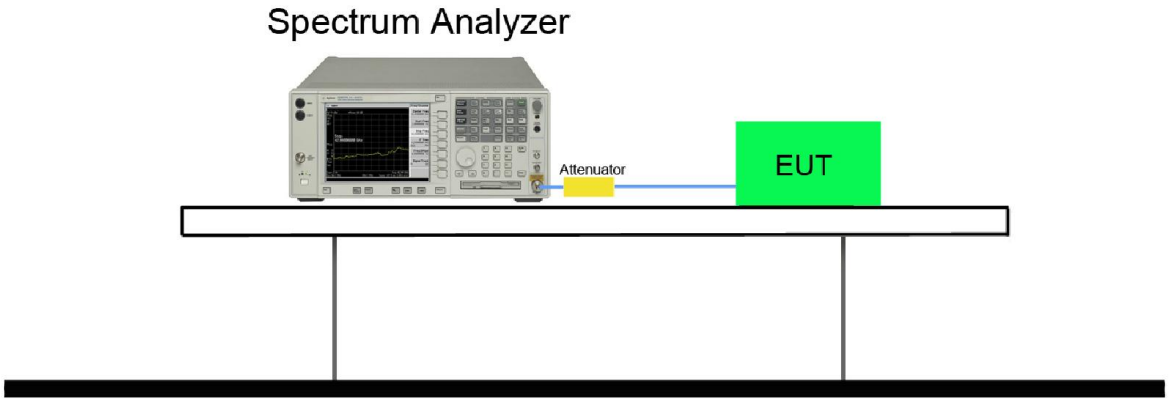
Reference level measurement

1. Set instrument center frequency to DTS channel center frequency
2. Set the span to ≥ 1.5 times the DTS bandwidth
3. Set the RBW = 100 kHz
4. Set the VBW ≥ 3 x RBW
5. Detector = peak
6. Sweep time = auto couple
7. Trace mode = max hold
8. Allow trace to fully stabilize

Emission level measurement

1. Set the center frequency and span to encompass frequency range to be measured
2. RBW = 100kHz
3. VBW = 300kHz
4. Detector = Peak
5. Trace mode = max hold
6. Sweep time = auto couple
7. The trace was allowed to stabilize

7.5.4.Test Setup



7.5.5.Test Result

Product	Smart TV Box	Temperature	23°C
Test Engineer	Hunk Li	Relative Humidity	54%
Test Site	TR3	Test Date	2018/02/24

Test Mode	Data Rate / MCS	Channel No.	Frequency (MHz)	Limit	Result
802.11b	1Mbps	01	2412	30dBc	Pass
802.11b	1Mbps	06	2437	30dBc	Pass
802.11b	1Mbps	11	2462	30dBc	Pass
802.11g	6Mbps	01	2412	30dBc	Pass
802.11g	6Mbps	06	2437	30dBc	Pass
802.11g	6Mbps	11	2462	30dBc	Pass
802.11n-HT20	MCS0	01	2412	30dBc	Pass
802.11n-HT20	MCS0	06	2437	30dBc	Pass
802.11n-HT20	MCS0	11	2462	30dBc	Pass

802.11b Out-of-Band Emissions

Channel 01 (2412MHz)

100kHz PSD Reference Level

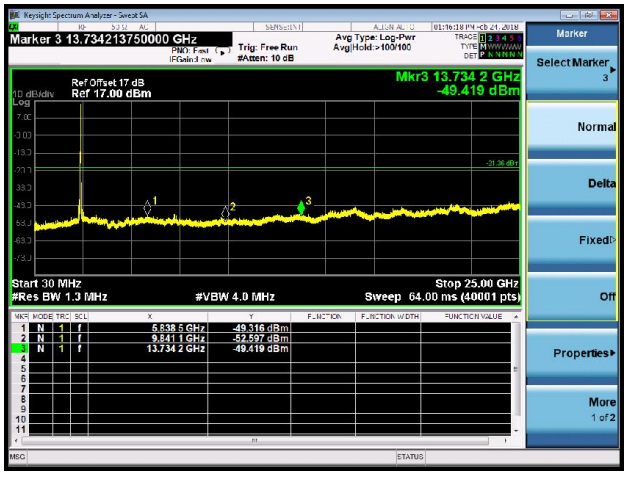
Low Band Edge

Spurious Emission

Channel 06 (2437MHz)

100kHz PSD Reference Level

Spurious Emission



Channel 11 (2462MHz)	
100kHz PSD Reference Level	**High Band Edge**
Spurious Emission	

802.11g Out-of-Band Emissions

Channel 01 (2412MHz)

100kHz PSD Reference Level

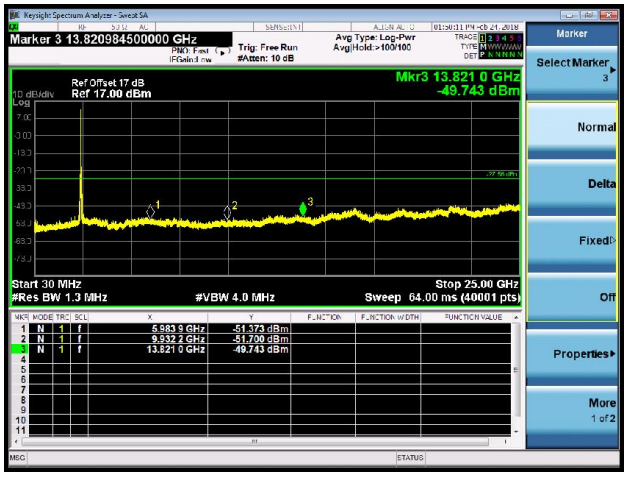
Low Band Edge

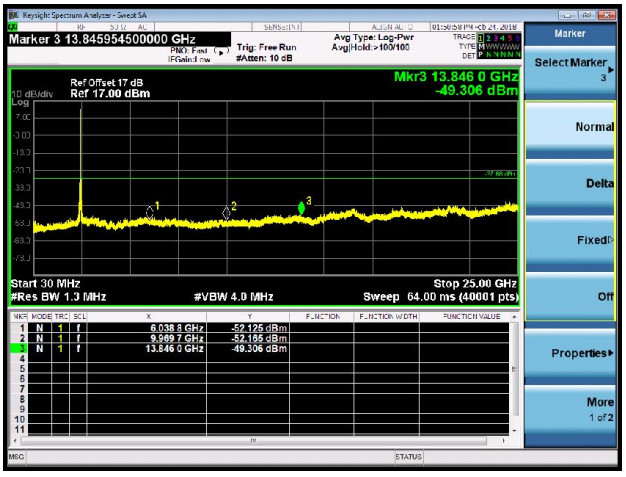
Spurious Emission

Channel 06 (2437MHz)

100kHz PSD Reference Level

Spurious Emission



Channel 11 (2462MHz)	
100kHz PSD Reference Level	**High Band Edge**
Spurious Emission	
	

802.11n-HT20 Out-of-Band Emissions

Channel 01 (2412MHz)

100kHz PSD Reference Level

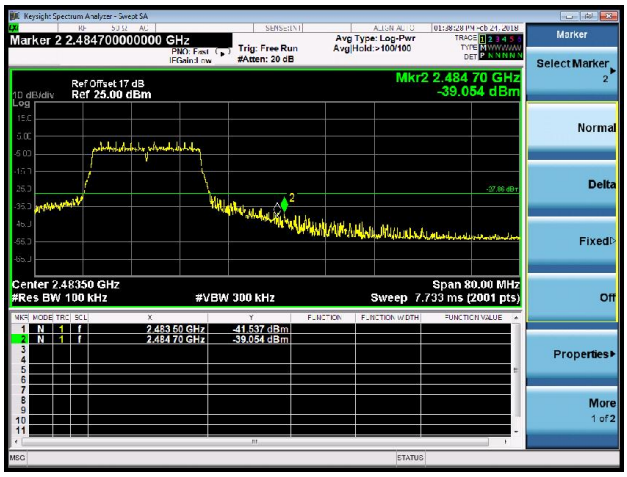
Low Band Edge

Spurious Emission

Channel 06 (2437MHz)

100kHz PSD Reference Level

Spurious Emission

Channel 11 (2462MHz)	
100kHz PSD Reference Level	**High Band Edge**
	
Spurious Emission	

7.6. Radiated Spurious Emission Measurement

7.6.1.Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.6.2.Test Procedure Used

KDB 558074 D01v04 – Section 12.2.3 (quasi-peak measurements)

KDB 558074 D01v04 – Section 12.2.4 (peak power measurements)

KDB 558074 D01v04 – Section 12.2.5 (average power measurements)

7.6.3.Test Setting

Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in Table 1
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Table 1 - RBW as a function of frequency

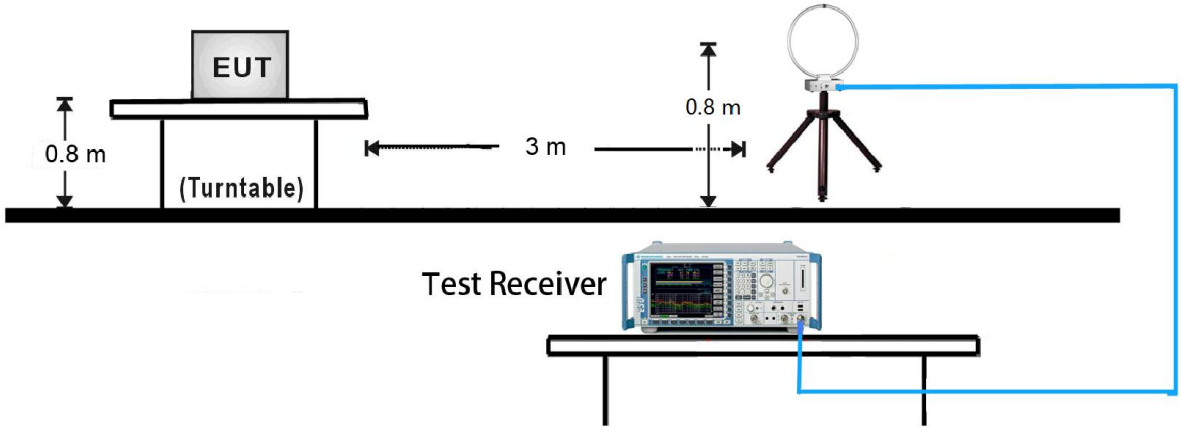
Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Average Field Strength Measurements

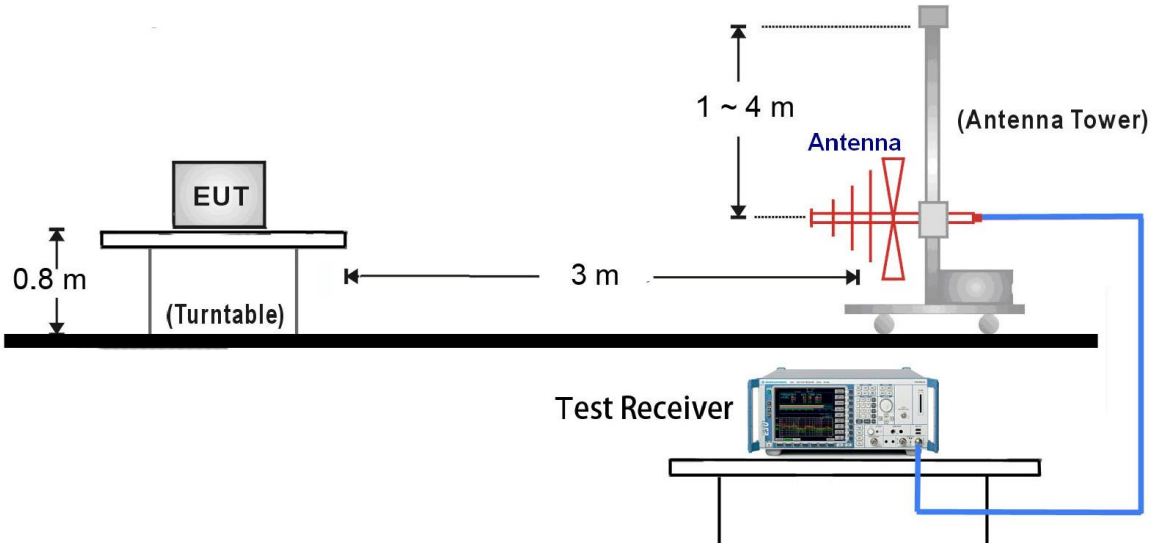
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW ≥ 1/T
4. De As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to “Voltage” regardless of the display mode
5. Detector = Peak
6. Sweep time = auto
7. Trace mode = max hold
8. Allow max hold to run for at least 50 times (1/duty cycle) traces

7.6.4.Test Setup

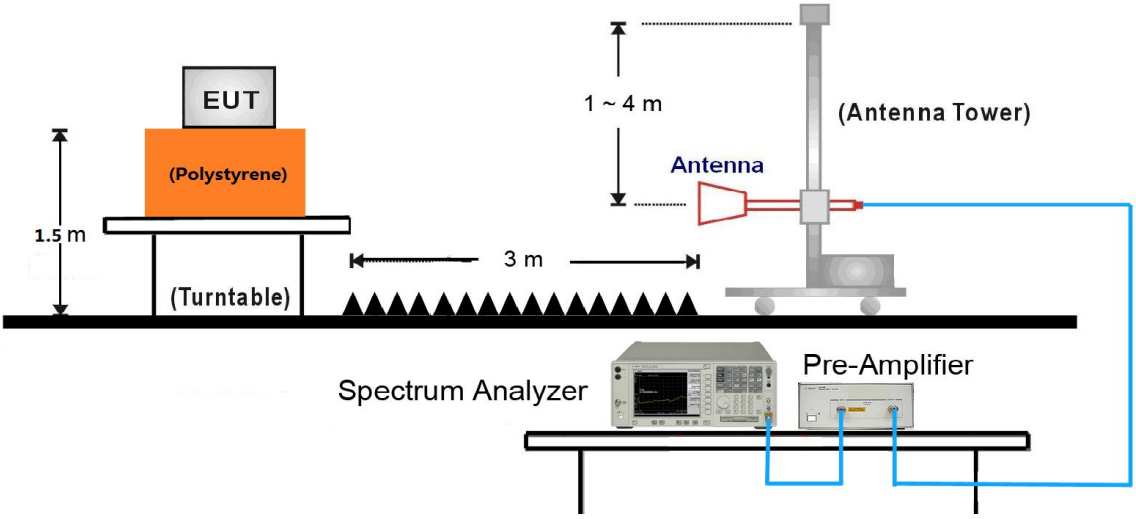
9kHz ~ 30MHz Test Setup:



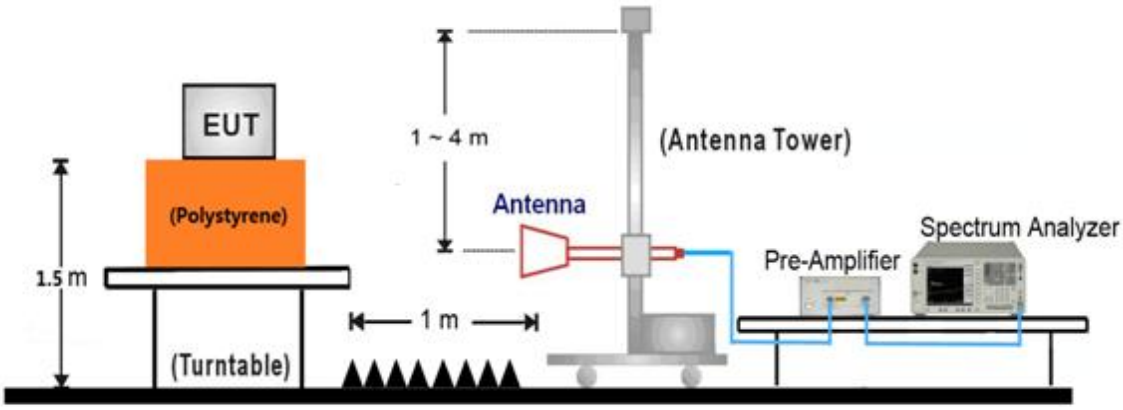
30MHz ~ 1GHz Test Setup:



1GHz ~ 18GHz Test Setup:



18GHz ~25GHz Test Setup:



7.6.5.Test Result

Product	Smart TV Box	Temperature	26°C
Test Engineer	Bruce Wang	Relative Humidity	56%
Test Site	AC1	Test Date	2018/02/09
Test Mode:	802.11b	Test Channel:	01
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	4825.0	50.7	5.9	56.6	74	-17.4	Peak	Horizontal
	4825.0	45.4	5.9	51.3	54	-2.7	Peak	Horizontal
	5054.5	36.2	6.5	42.7	74	-31.3	Average	Horizontal
*	5547.5	45.1	6.9	52.0	76.7	-24.7	Peak	Horizontal
*	9653.0	36.3	15.5	51.8	76.7	-24.9	Peak	Horizontal
	4825.0	50.2	5.9	56.1	74	-17.9	Peak	Vertical
	4825.0	46.9	5.9	52.8	54	-1.2	Peak	Vertical
	5428.5	34.8	6.6	41.4	74	-32.6	Average	Vertical
*	5547.5	41.2	6.9	48.1	76.7	-28.6	Peak	Vertical
*	6831.0	37.6	10.5	48.1	76.7	-28.6	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 30dBc of the fundamental emission level (106.7dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	Smart TV Box	Temperature	26°C
Test Engineer	Will Yan	Relative Humidity	56%
Test Site	AC1	Test Date	2018/02/09
Test Mode:	802.11b	Test Channel:	06
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	4876.0	49.2	6.0	55.2	74	-18.8	Peak	Horizontal
	4876.0	45.5	6.0	51.5	54	-2.5	Peak	Horizontal
	5420.0	35.1	6.6	41.7	74	-32.3	Average	Horizontal
*	5547.5	43.2	6.9	50.1	78.2	-28.1	Peak	Horizontal
*	7919.0	35.8	13.4	49.2	78.2	-29.0	Peak	Horizontal
	4876.0	50.9	6.0	56.9	74	-17.1	Peak	Vertical
	4876.0	45.9	6.0	51.9	54	-2.1	Peak	Vertical
	5403.0	35.8	6.6	42.4	74	-31.6	Average	Vertical
*	5547.5	40.1	6.9	47.0	78.2	-31.2	Peak	Vertical
*	9687.0	34.3	15.5	49.8	78.2	-28.4	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 30dBc of the fundamental emission level (108.2dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	Smart TV Box	Temperature	26°C
Test Engineer	Will Yan	Relative Humidity	56%
Test Site	AC1	Test Date	2018/02/09
Test Mode:	802.11b	Test Channel:	11
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	4927.0	49.2	6.1	55.3	74	-18.7	Peak	Horizontal
	4927.0	44.2	6.1	50.3	54	-3.7	Peak	Horizontal
	5411.5	35.8	6.6	42.4	74	-31.6	Average	Horizontal
*	5547.5	44.0	6.9	50.9	77.9	-27.0	Peak	Horizontal
*	9942.0	34.6	16.8	51.4	77.9	-26.5	Peak	Horizontal
	4927.0	50.6	6.1	56.7	74	-17.3	Peak	Vertical
	4927.0	45.3	6.1	51.4	54	-2.6	Peak	Vertical
	5411.5	36.7	6.6	43.3	74	-30.7	Average	Vertical
*	5547.5	41.2	6.9	48.1	77.9	-29.8	Peak	Vertical
*	10205.5	35.2	17.1	52.3	77.9	-25.6	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 30dBc of the fundamental emission level (107.9dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	Smart TV Box	Temperature	26°C
Test Engineer	Will Yan	Relative Humidity	56%
Test Site	AC1	Test Date	2018/02/09
Test Mode:	802.11g	Test Channel:	01
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	4825.0	41.2	5.9	47.1	74	-26.9	Peak	Horizontal
	5420.0	35.1	6.6	41.7	74	-32.3	Peak	Horizontal
*	5547.5	43.4	6.9	50.3	74	-23.7	Peak	Horizontal
*	8888.0	35.8	13.2	49.0	74	-25.0	Peak	Horizontal
	4825.0	42.4	5.9	48.3	74	-25.7	Peak	Vertical
	5411.5	35.0	6.6	41.6	74	-32.4	Peak	Vertical
*	5547.5	40.2	6.9	47.1	74	-26.9	Peak	Vertical
*	8692.5	36.1	13.0	49.1	74	-24.9	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 30dBc of the fundamental emission level (101.6dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	Smart TV Box	Temperature	26°C
Test Engineer	Will Yan	Relative Humidity	56%
Test Site	AC1	Test Date	2018/02/09
Test Mode:	802.11g	Test Channel:	06
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	4876.0	41.5	6.0	47.5	74	-26.5	Peak	Horizontal
	5420.0	34.9	6.6	41.5	74	-32.5	Peak	Horizontal
*	5547.5	43.4	6.9	50.3	74	-23.7	Peak	Horizontal
*	9976.0	35.2	16.7	51.9	74	-22.1	Peak	Horizontal
	4876.0	42.4	6.0	48.4	74	-25.6	Peak	Vertical
	5394.5	34.0	6.6	40.6	74	-33.4	Peak	Vertical
*	5547.5	39.3	6.9	46.2	74	-27.8	Peak	Vertical
*	8845.5	35.9	13.3	49.2	74	-24.8	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 30dBc of the fundamental emission level (102.2dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	Smart TV Box	Temperature	26°C
Test Engineer	Will Yan	Relative Humidity	56%
Test Site	AC1	Test Date	2018/02/09
Test Mode:	802.11g	Test Channel:	11
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	4927.0	39.5	6.1	45.6	74	-28.4	Peak	Horizontal
	5445.5	34.5	6.7	41.2	74	-32.8	Peak	Horizontal
*	5547.5	44.2	6.9	51.1	74	-22.9	Peak	Horizontal
*	8862.5	36.0	13.3	49.3	74	-24.7	Peak	Horizontal
	4927.0	42.2	6.1	48.3	74	-25.7	Peak	Vertical
	5437.0	34.9	6.6	41.5	74	-32.5	Peak	Vertical
*	5547.5	39.6	6.9	46.5	74	-27.5	Peak	Vertical
*	8811.5	35.2	13.3	48.5	74	-25.5	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 30dBc of the fundamental emission level (103.0dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	Smart TV Box	Temperature	26°C
Test Engineer	Will Yan	Relative Humidity	56%
Test Site	AC1	Test Date	2018/02/09
Test Mode:	802.11n-HT20	Test Channel:	01
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	4833.5	42.0	5.9	47.9	74	-26.1	Peak	Horizontal
	5445.5	35.3	6.7	42.0	74	-32.0	Peak	Horizontal
*	5547.5	43.1	6.9	50.0	74	-24.0	Peak	Horizontal
*	8811.5	35.0	13.3	48.3	74	-25.7	Peak	Horizontal
	4825.0	41.5	5.9	47.4	74	-26.6	Peak	Vertical
	5411.5	36.3	6.6	42.9	74	-31.1	Peak	Vertical
*	5547.5	40.3	6.9	47.2	74	-26.8	Peak	Vertical
*	8845.5	35.0	13.3	48.3	74	-25.7	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 30dBc of the fundamental emission level (100.3dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	Smart TV Box	Temperature	26°C
Test Engineer	Will Yan	Relative Humidity	56%
Test Site	AC1	Test Date	2018/02/09
Test Mode:	802.11n-HT20	Test Channel:	06
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	4876.0	40.0	6.0	46.0	74	-28.0	Peak	Horizontal
	5411.5	34.6	6.6	41.2	74	-32.8	Peak	Horizontal
*	5547.5	43.1	6.9	50.0	74	-24.0	Peak	Horizontal
*	7893.5	36.1	13.4	49.5	74	-24.5	Peak	Horizontal
	4876.0	42.2	6.0	48.2	74	-25.8	Peak	Vertical
	5428.5	34.4	6.6	41.0	74	-33.0	Peak	Vertical
*	5547.5	39.9	6.9	46.8	74	-27.2	Peak	Vertical
*	7927.5	35.7	13.5	49.2	74	-24.8	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 30dBc of the fundamental emission level (101.6dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	Smart TV Box	Temperature	26°C
Test Engineer	Will Yan	Relative Humidity	56%
Test Site	AC1	Test Date	2018/02/09
Test Mode:	802.11n-HT20	Test Channel:	11
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	4927.0	40.2	6.1	46.3	74	-27.7	Peak	Horizontal
	5428.5	35.2	6.6	41.8	74	-32.2	Peak	Horizontal
*	5547.5	43.6	6.9	50.5	74	-23.5	Peak	Horizontal
*	8837.0	35.0	13.2	48.2	74	-25.8	Peak	Horizontal
	4918.5	41.4	6.1	47.5	74	-26.5	Peak	Vertical
	5411.5	35.3	6.6	41.9	74	-32.1	Peak	Vertical
*	5547.5	40.3	6.9	47.2	74	-26.8	Peak	Vertical
*	9687.0	33.5	15.5	49.0	74	-25.0	Peak	Vertical

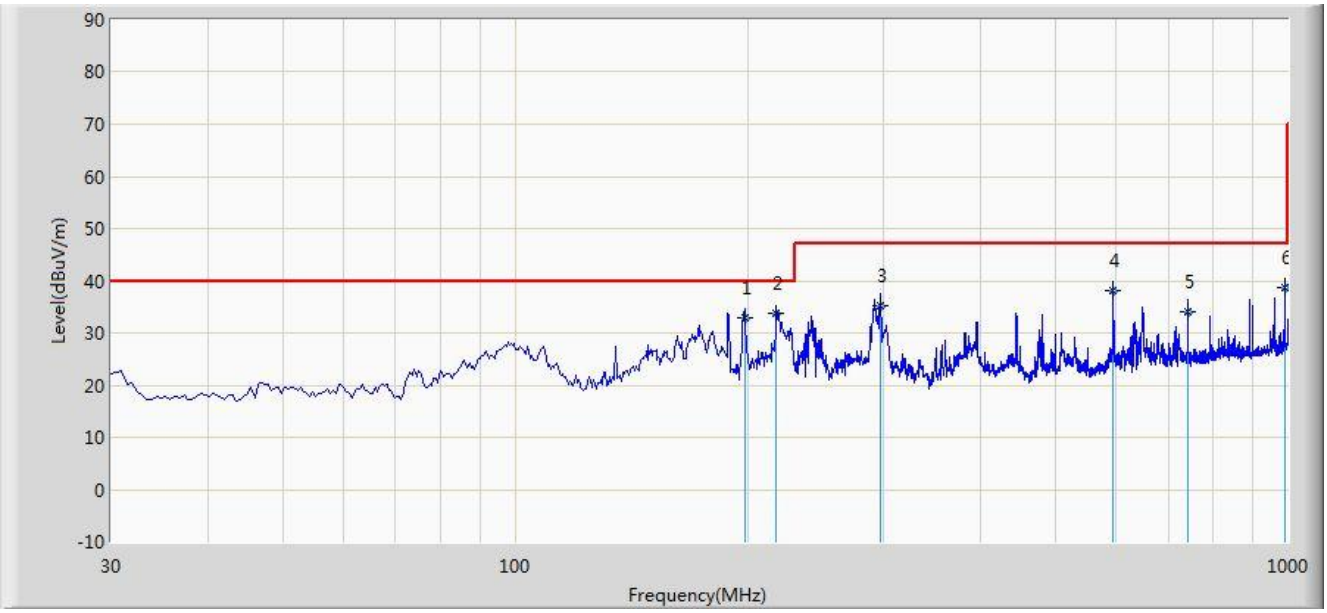
Note 1: "*" is not in restricted band, its limit is 30dBc of the fundamental emission level (102.2dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

The worst case of Radiated Emission below 1GHz:

Site: AC1	Time: 2018/01/30 - 21:14
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: VULB 9168 _20-2000MHz	Polarity: Horizontal
EUT: Smart TV Box	Power: AC 120V/60Hz
Note: There is the worst case within frequency range 30MHz~1GHz.	



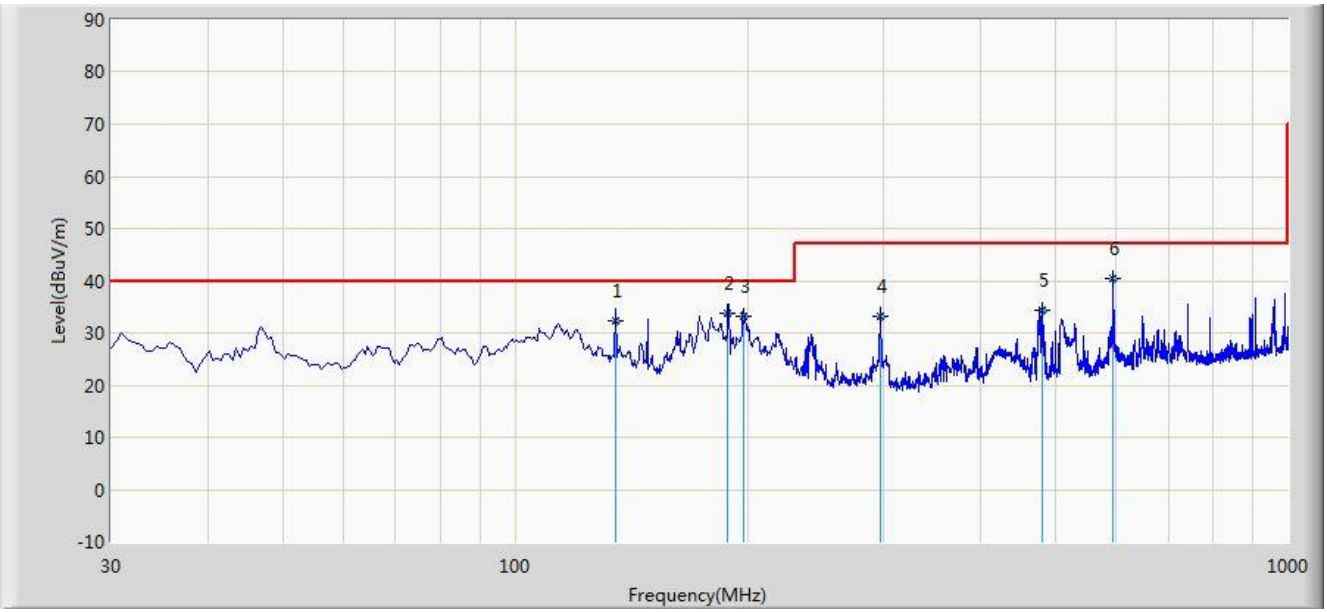
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			198.295	32.905	21.620	-7.095	40.000	11.285	QP
2		*	217.695	33.902	22.040	-6.098	40.000	11.862	QP
3			296.750	35.219	20.900	-11.781	47.000	14.319	QP
4			594.055	38.086	17.630	-8.914	47.000	20.456	QP
5			742.465	34.053	11.360	-12.947	47.000	22.693	QP
6			990.300	38.648	13.510	-8.352	47.000	25.138	QP

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Note 2: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.

Site: AC1	Time: 2018/01/30 - 21:13
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: VULB 9168 _20-2000MHz	Polarity: Vertical
EUT: Smart TV Box	Power: AC 120V/60Hz
Note: There is the worst case within frequency range 30MHz~1GHz.	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			134.760	32.425	18.230	-7.575	40.000	14.195	QP
2		*	188.595	33.860	21.960	-6.140	40.000	11.900	QP
3			197.325	33.258	21.920	-6.742	40.000	11.338	QP
4			296.750	33.269	18.950	-13.731	47.000	14.319	QP
5			480.080	34.333	16.050	-12.667	47.000	18.283	QP
6			594.055	40.576	20.120	-6.424	47.000	20.456	QP

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Note 2: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.

7.7. Radiated Restricted Band Edge Measurement

7.7.1.Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 - 0.110	16.42-16.423	399.9 - 410	4.5-5.15
[1] 0.495 - 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	8.25 - 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	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	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	156.52475-156.525	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	--	--	--

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 – 0.490	2400/F (kHz)	300
0.490 – 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.7.2.Test Procedure Used

KDB 558074 D01v04 - Section 12.2.4 (peak power measurements)

KDB 558074 D01v04 - Section 13.3.3 (average power measurements)

7.7.3.Test Setting

Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in Table 1
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

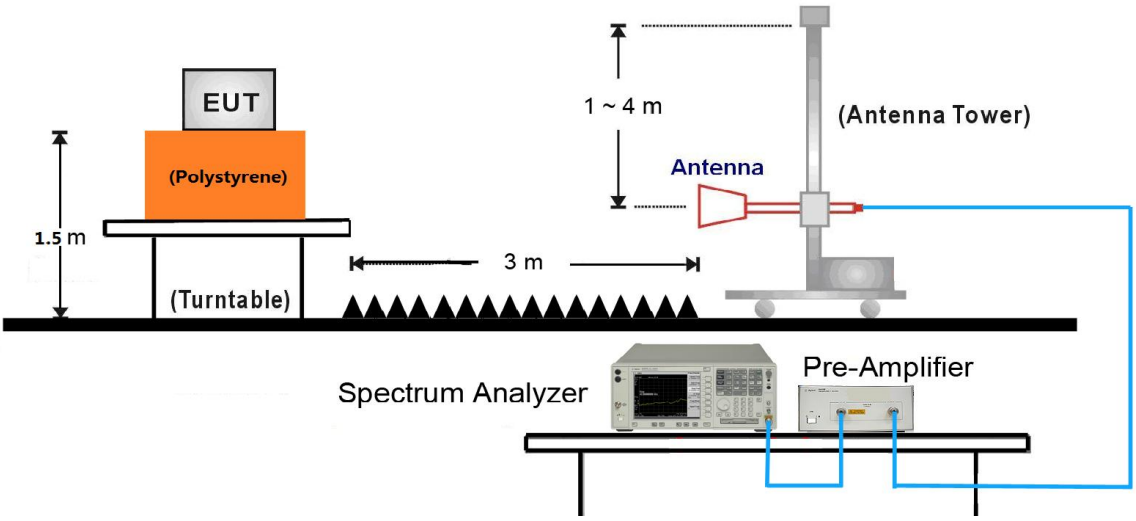
Table 1 - RBW as a function of frequency

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Average Field Strength Measurements

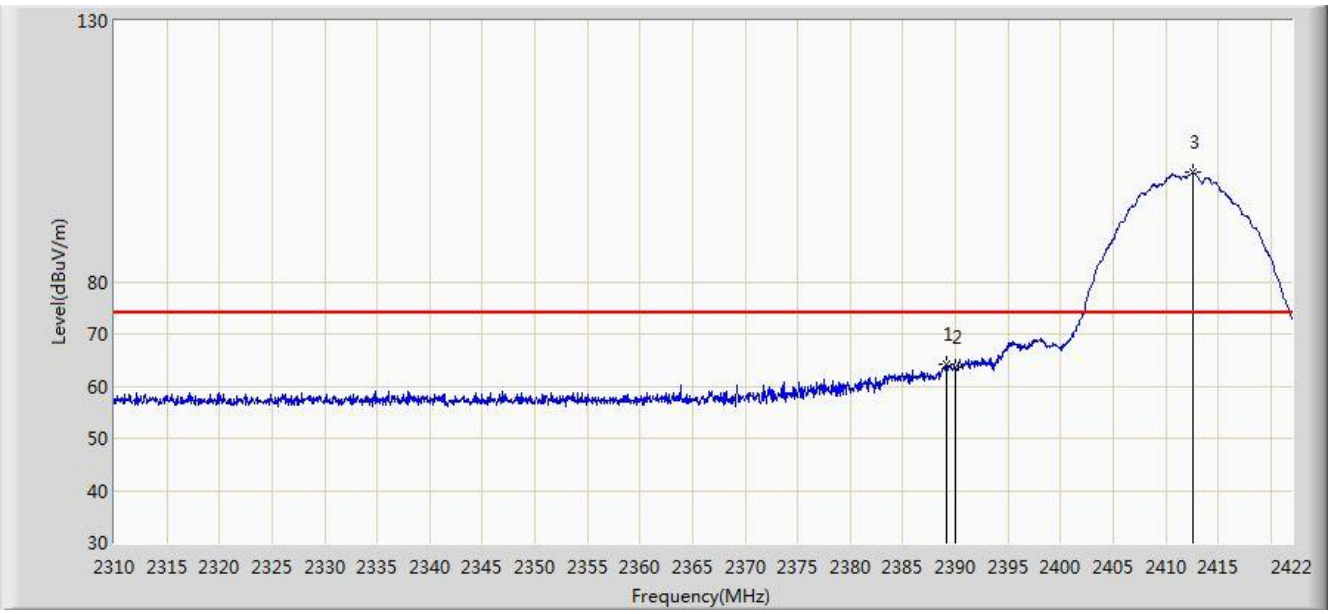
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW ≥ 1/T
4. De As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to “Voltage” regardless of the display mode
5. Detector = Peak
6. Sweep time = auto
7. Trace mode = max hold
8. Allow max hold to run for at least 50 times (1/duty cycle) traces

7.7.4.Test Setup



7.7.5.Test Result

Site: AC1	Time: 2018/02/09 - 03:30
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2412MHz	

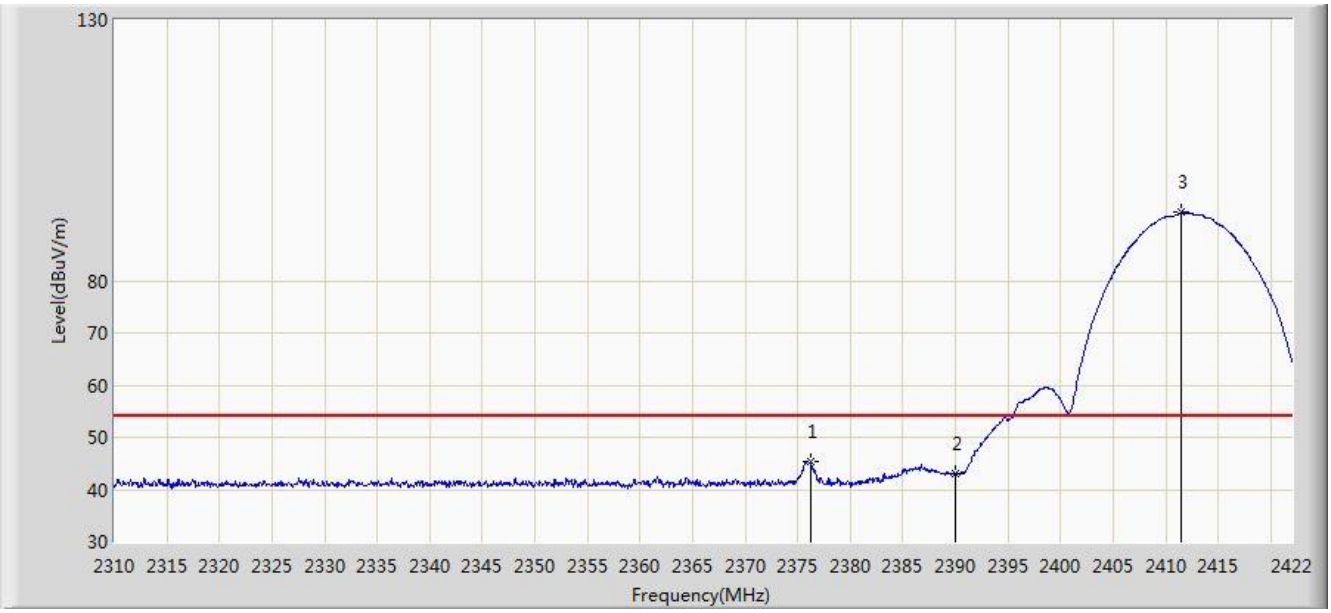


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2389.184	64.208	31.880	-9.792	74.000	32.328	PK
2			2390.000	63.489	31.162	-10.511	74.000	32.327	PK
3		*	2412.592	100.876	68.591	N/A	N/A	32.285	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 03:35
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2412MHz	

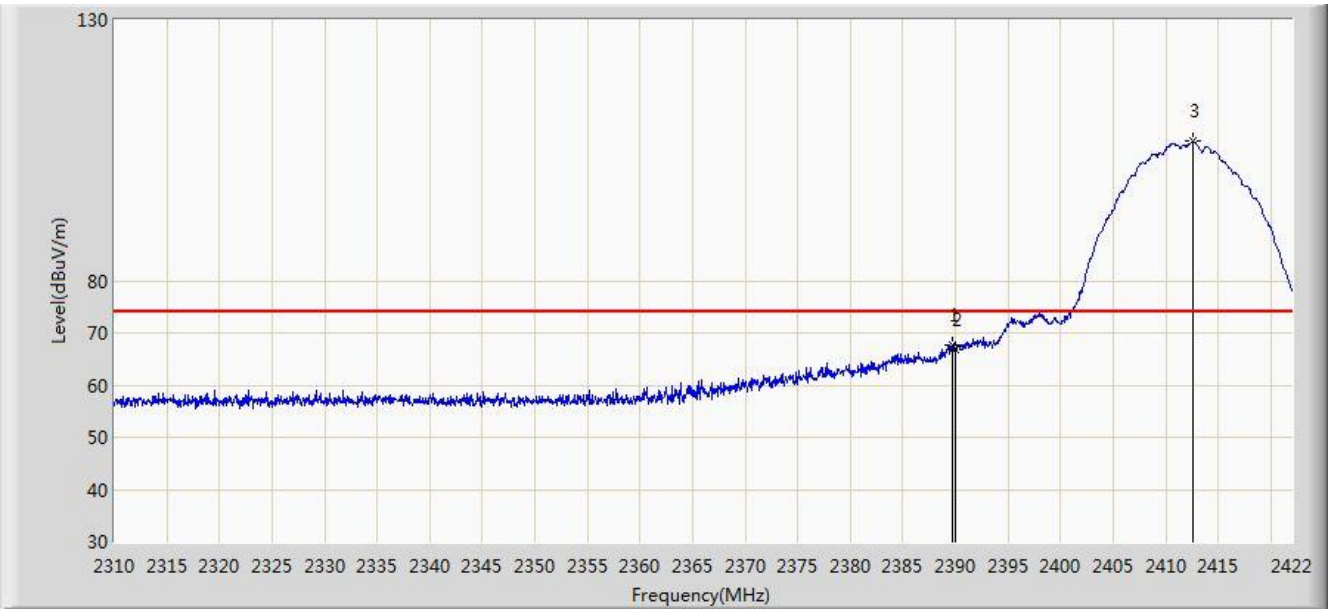


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2376.192	45.395	13.049	-8.605	54.000	32.346	AV
2			2390.000	43.049	10.722	-10.951	54.000	32.327	AV
3		*	2411.528	93.107	60.822	N/A	N/A	32.285	AV

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 03:25
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2412MHz	

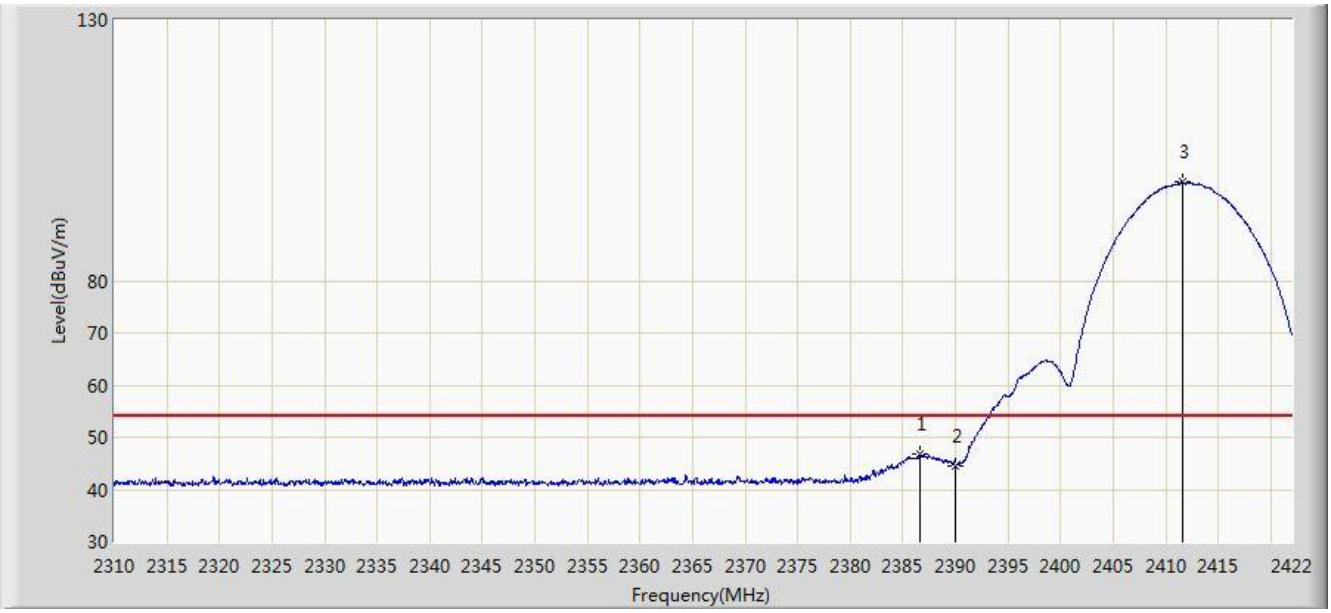


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2389.744	67.761	35.434	-6.239	74.000	32.327	PK
2			2390.000	66.872	34.545	-7.128	74.000	32.327	PK
3		*	2412.592	106.675	74.390	N/A	N/A	32.285	PK

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 03:28
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2412MHz	

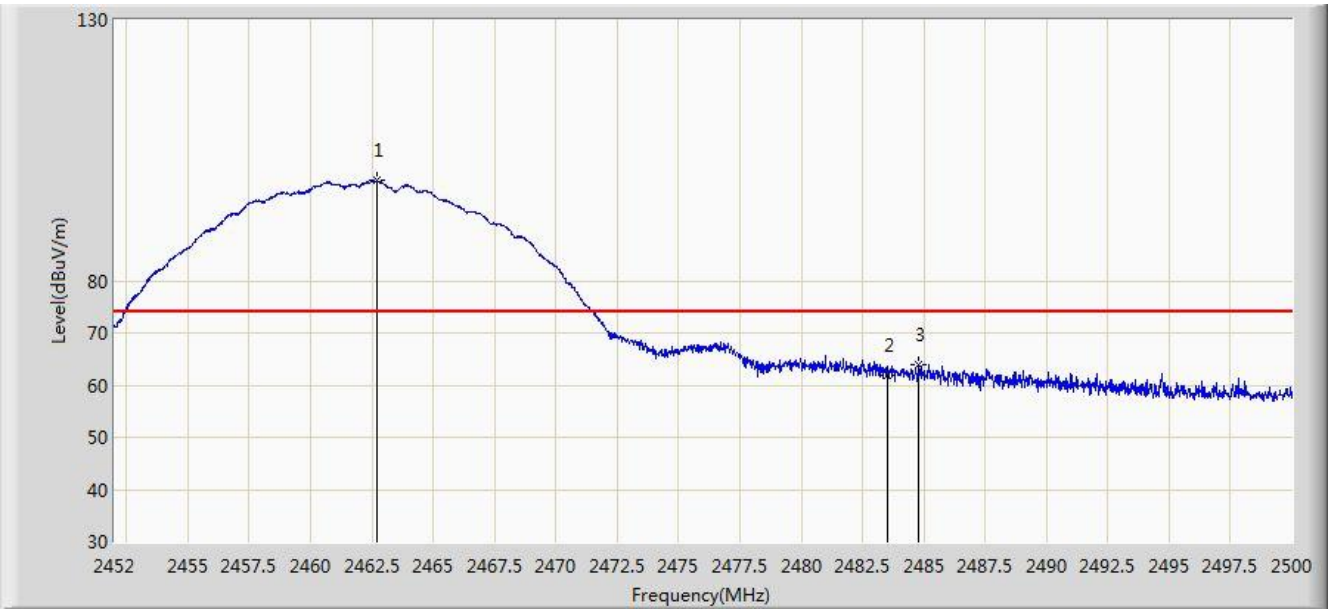


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2386.664	46.712	14.381	-7.288	54.000	32.331	AV
2			2390.000	44.537	12.210	-9.463	54.000	32.327	AV
3		*	2411.584	98.936	66.651	N/A	N/A	32.285	AV

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 03:44
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2462MHz	

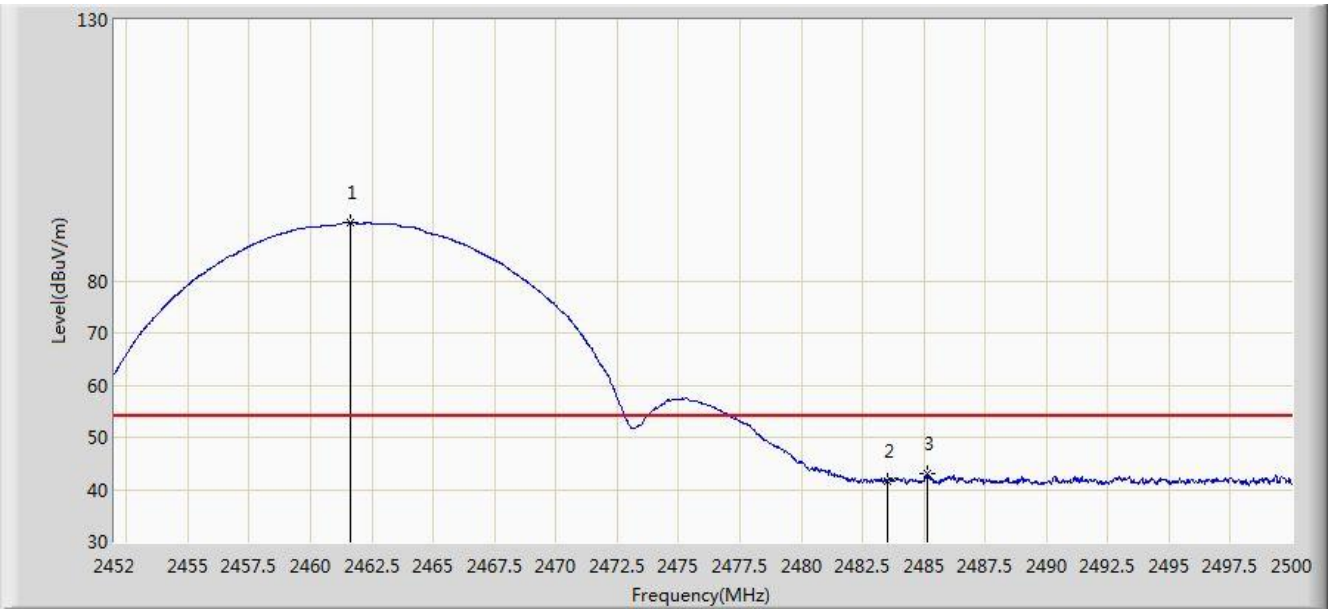


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.680	99.232	66.951	N/A	N/A	32.281	PK
2			2483.500	62.015	29.676	-11.985	74.000	32.340	PK
3			2484.808	63.796	31.452	-10.204	74.000	32.344	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 03:50
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2462MHz	

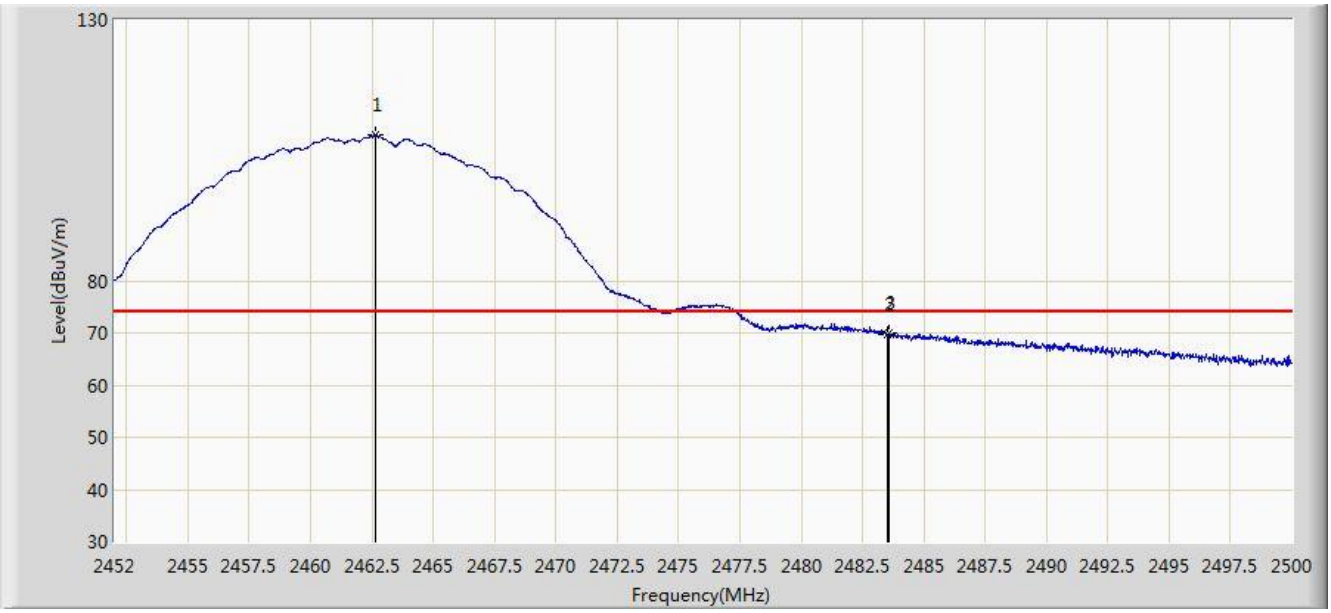


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.648	91.214	58.934	N/A	N/A	32.280	AV
2			2483.500	41.637	9.298	-12.363	54.000	32.340	AV
3			2485.168	42.998	10.652	-11.002	54.000	32.346	AV

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 03:38
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2462MHz	

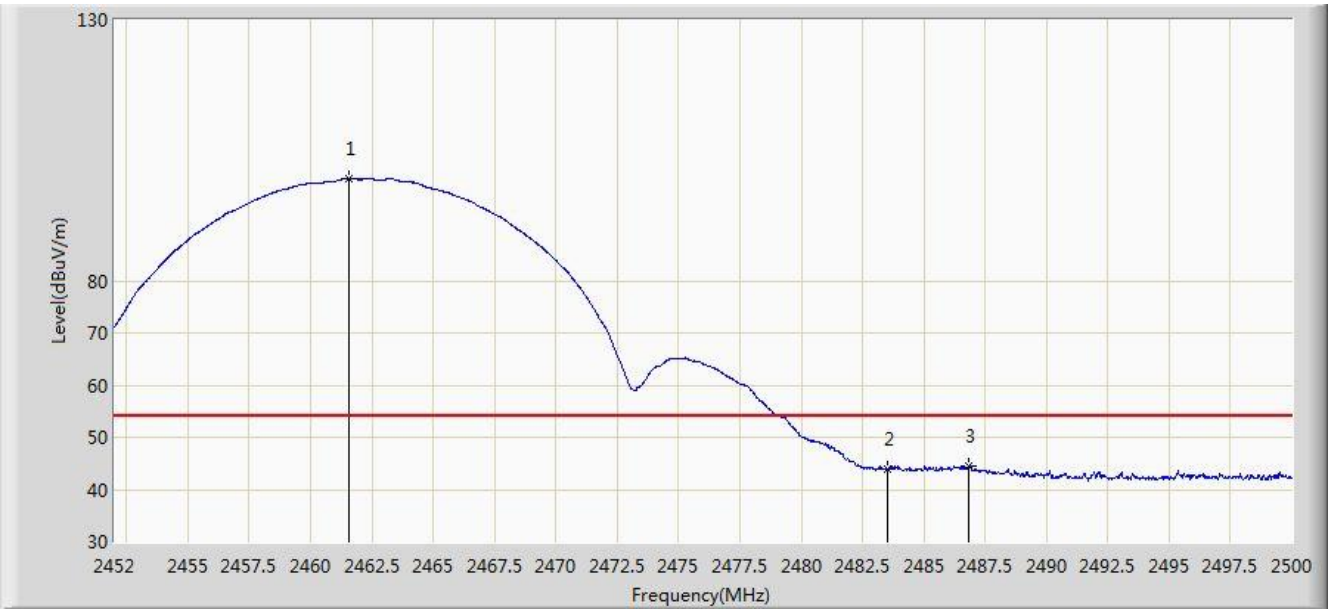


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.656	107.887	75.606	N/A	N/A	32.281	PK
2			2483.500	69.609	37.270	-4.391	74.000	32.340	PK
3			2483.560	69.930	37.591	-4.070	74.000	32.340	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 03:44
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2462MHz	

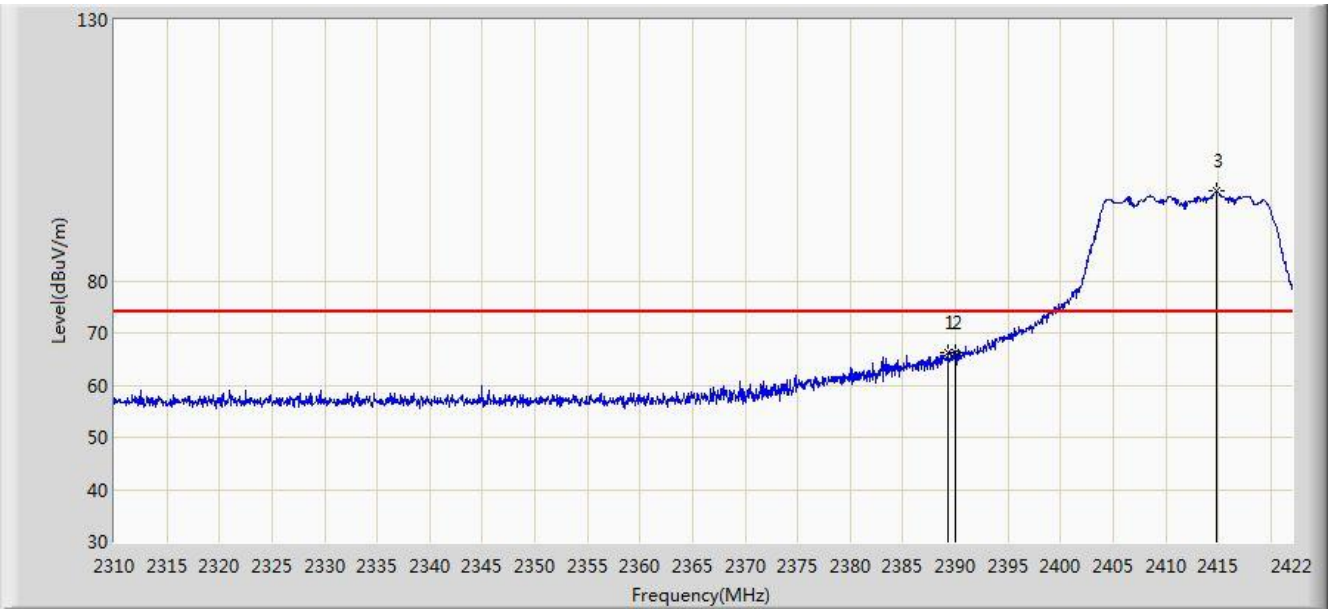


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.576	99.658	67.378	N/A	N/A	32.280	AV
2			2483.500	43.861	11.522	-10.139	54.000	32.340	AV
3			2486.848	44.626	12.274	-9.374	54.000	32.353	AV

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 03:58
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at Channel 2412MHz	

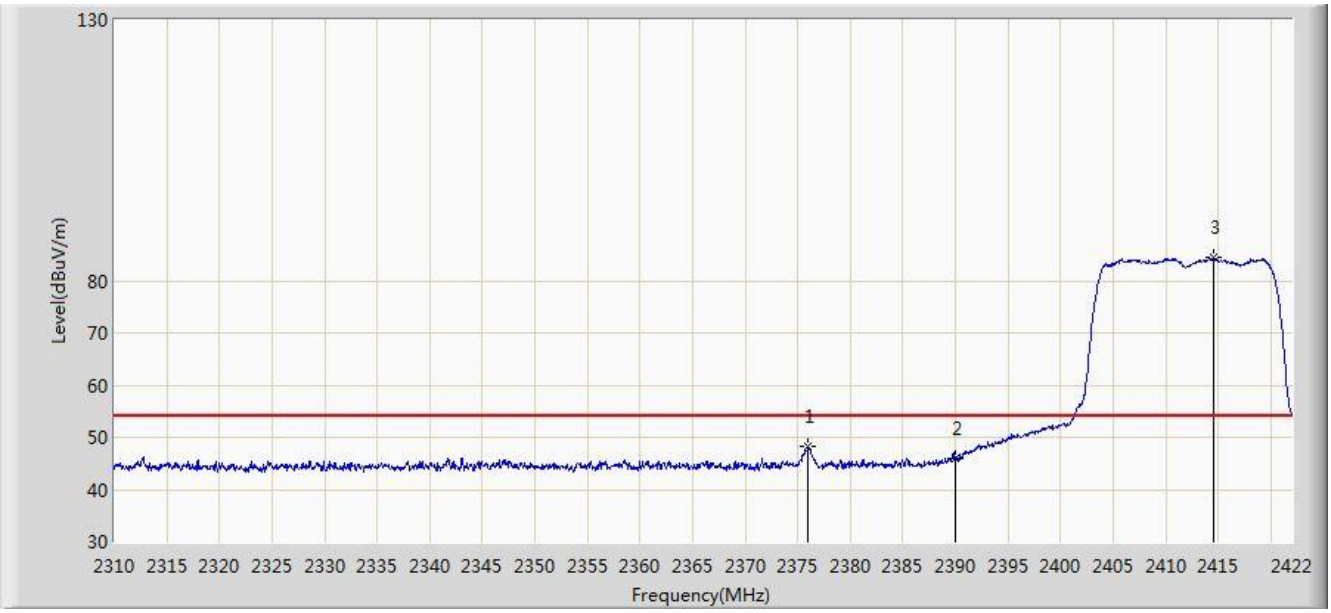


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2389.352	66.333	34.005	-7.667	74.000	32.327	PK
2			2390.000	66.170	33.843	-7.830	74.000	32.327	PK
3		*	2414.832	97.127	64.843	N/A	N/A	32.283	PK

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 04:02
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at Channel 2412MHz	

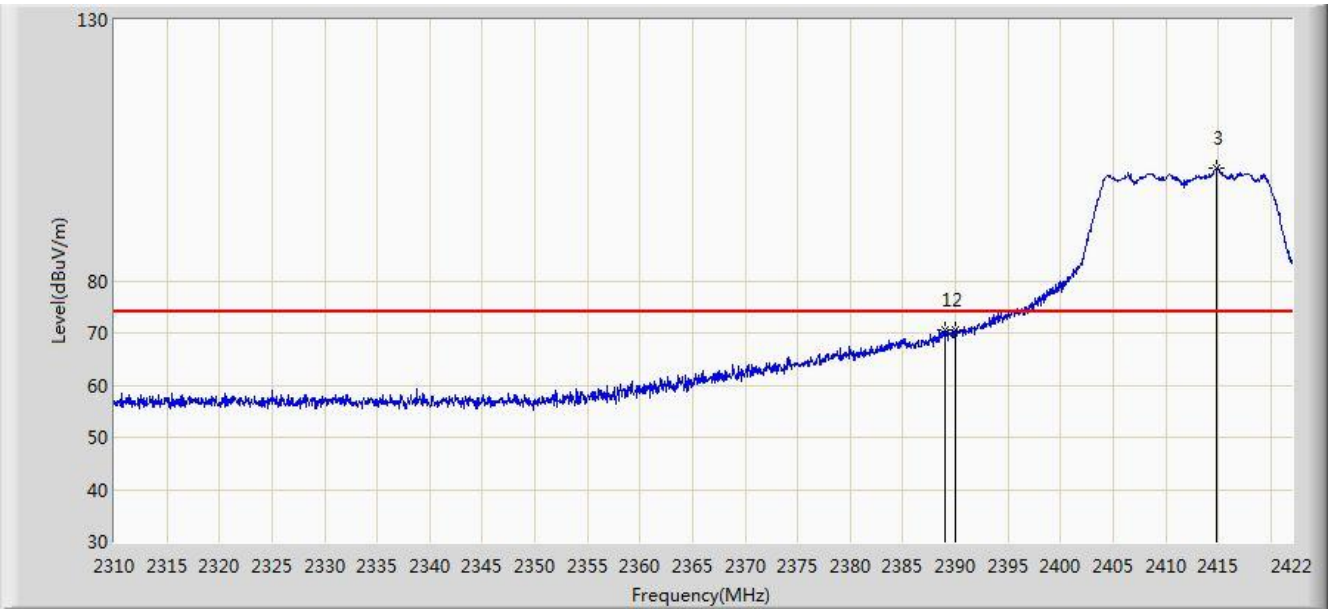


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2375.968	48.191	15.844	-5.809	54.000	32.346	AV
2			2390.000	45.839	13.512	-8.161	54.000	32.327	AV
3		*	2414.552	84.456	52.172	N/A	N/A	32.284	AV

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 03:52
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at Channel 2412MHz	

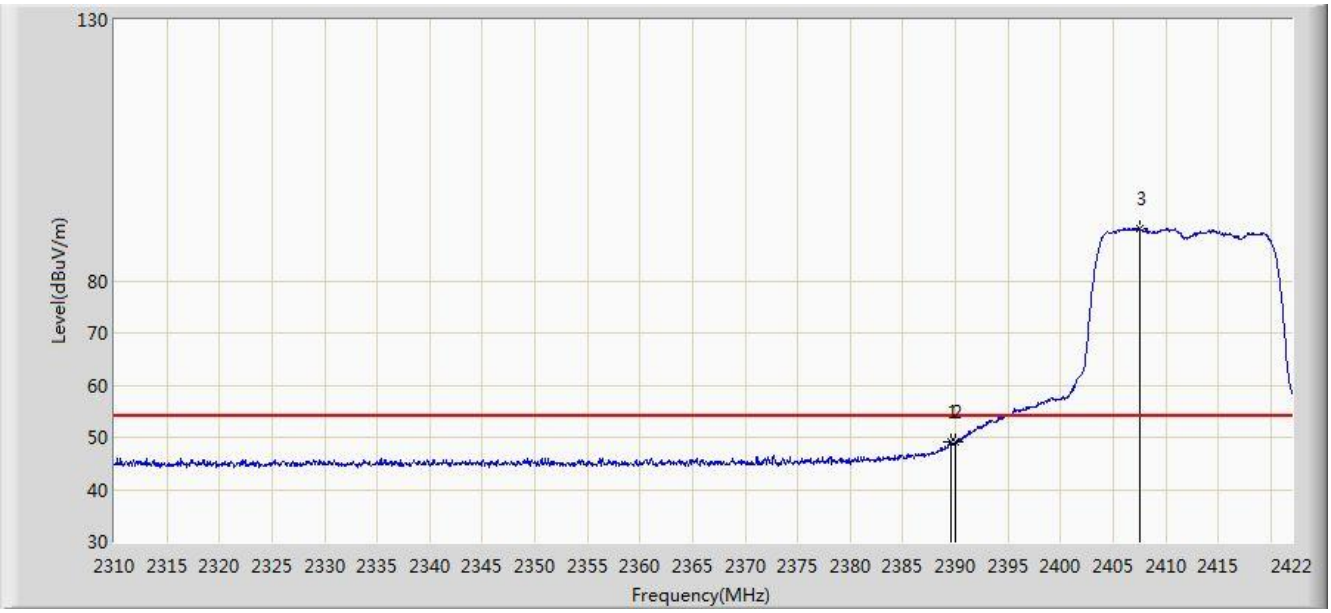


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2388.960	70.654	38.326	-3.346	74.000	32.328	PK
2			2390.000	70.582	38.255	-3.418	74.000	32.327	PK
3		*	2414.832	101.605	69.321	N/A	N/A	32.283	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 03:57
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at Channel 2412MHz, VBW=5.6kHz	

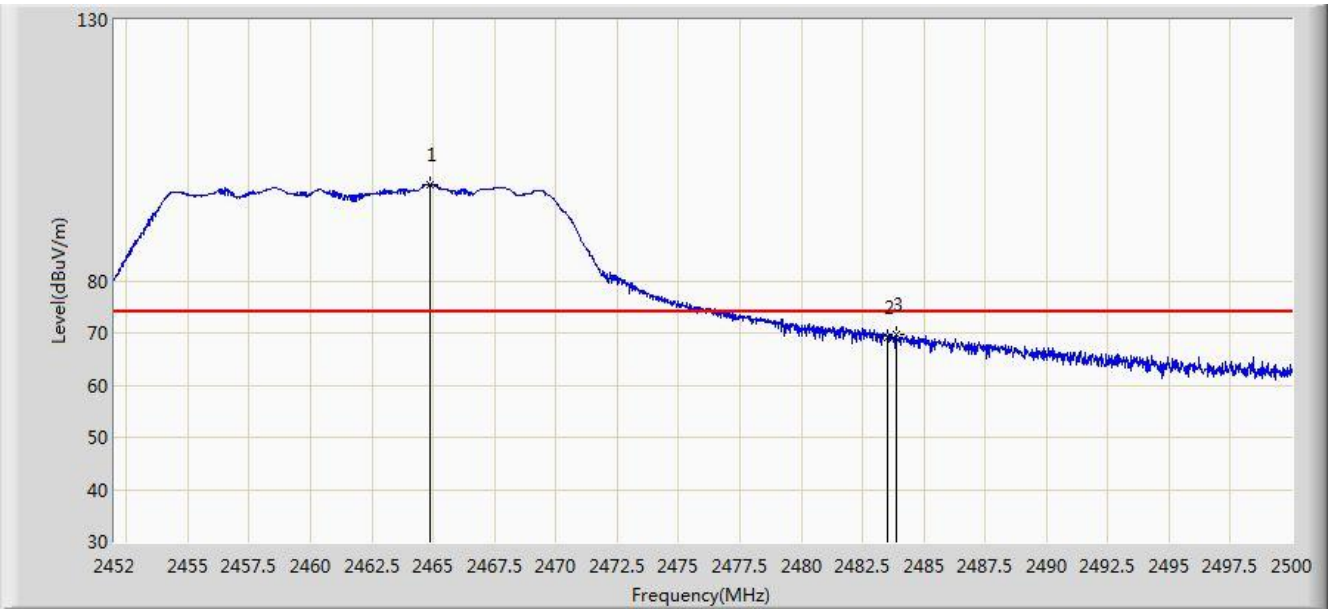


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2389.632	49.176	16.849	-4.824	54.000	32.328	AV
2			2390.000	49.042	16.715	-4.958	54.000	32.327	AV
3		*	2407.496	89.949	57.656	N/A	N/A	32.293	AV

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 04:08
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at Channel 2462MHz	

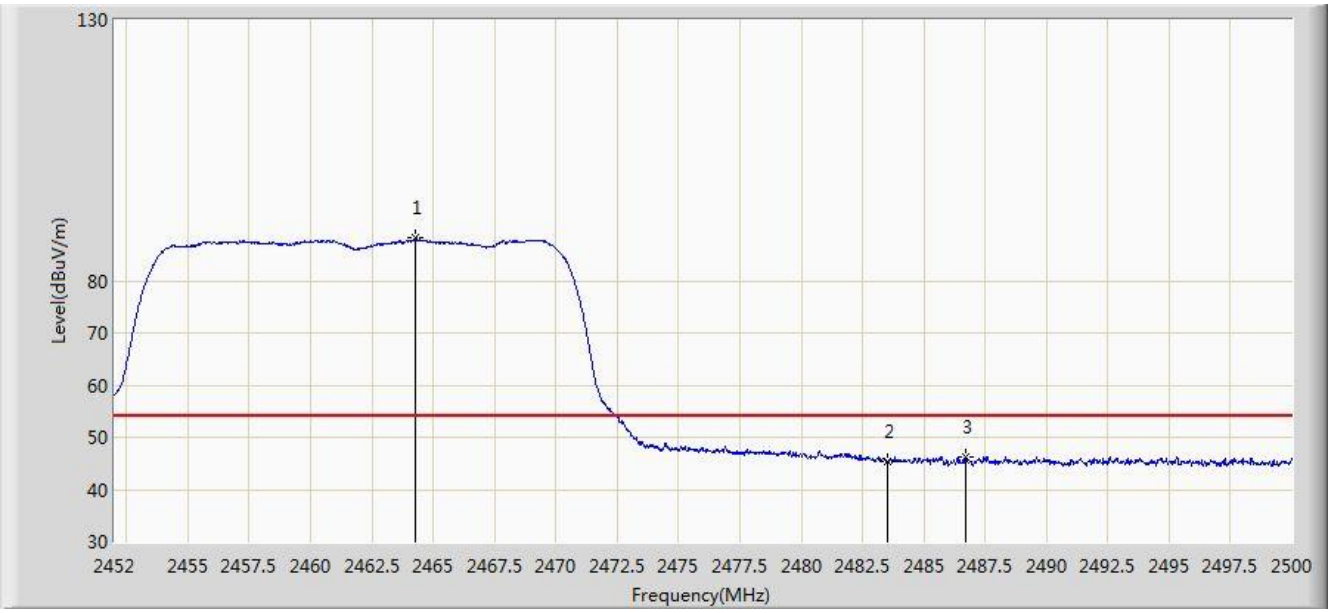


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2464.888	98.532	66.246	N/A	N/A	32.286	PK
2			2483.500	69.160	36.821	-4.840	74.000	32.340	PK
3			2483.872	69.632	37.291	-4.368	74.000	32.340	PK

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 04:11
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at Channel 2462MHz	

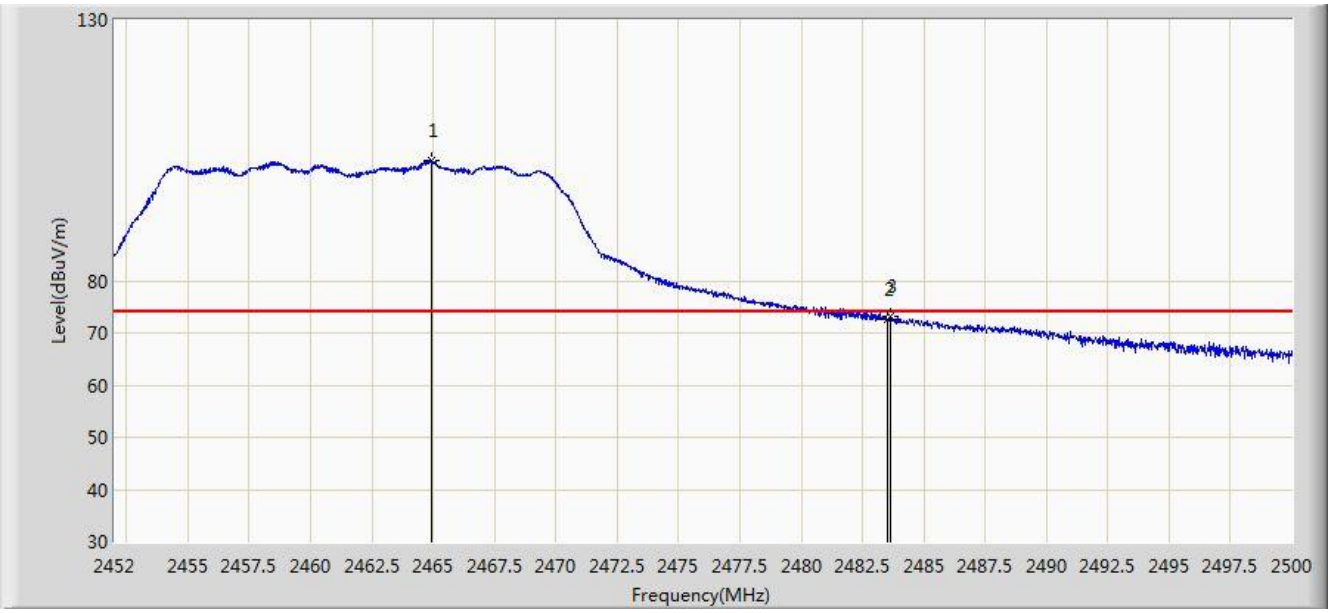


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2464.288	88.181	55.897	N/A	N/A	32.285	AV
2			2483.500	45.421	13.082	-8.579	54.000	32.340	AV
3			2486.680	46.314	13.962	-7.686	54.000	32.351	AV

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 04:03
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at Channel 2462MHz	

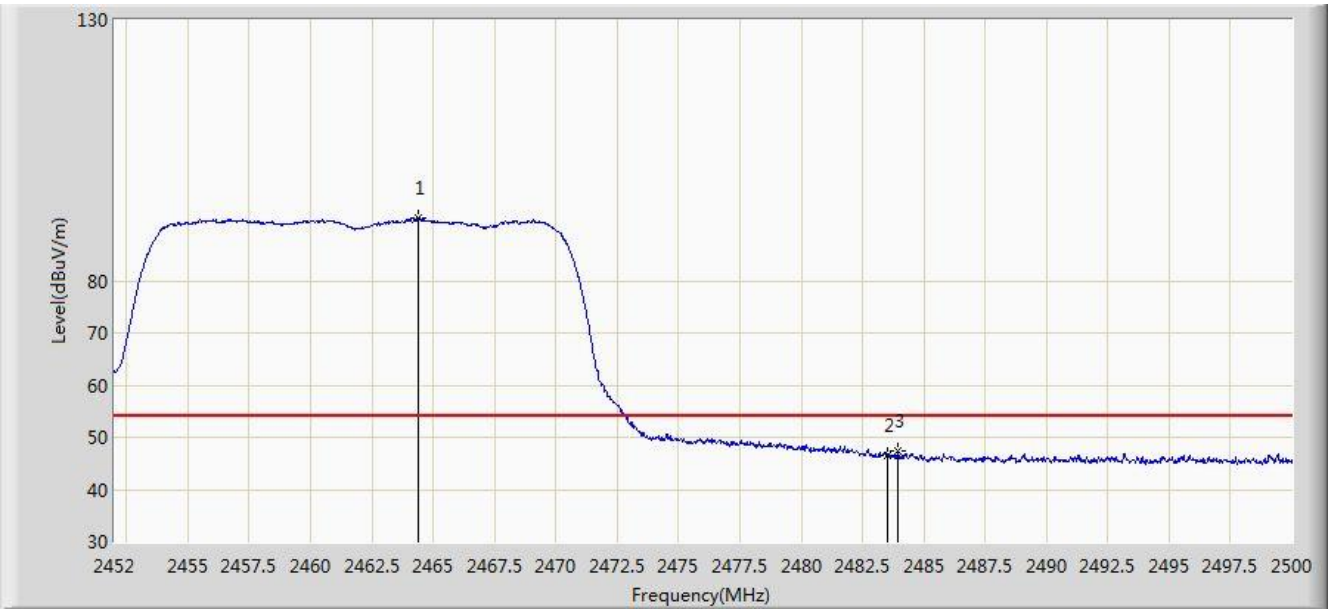


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2464.912	102.958	70.672	N/A	N/A	32.286	PK
2			2483.500	72.510	40.171	-1.490	74.000	32.340	PK
3			2483.632	73.057	40.717	-0.943	74.000	32.340	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 04:07
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at Channel 2462MHz	

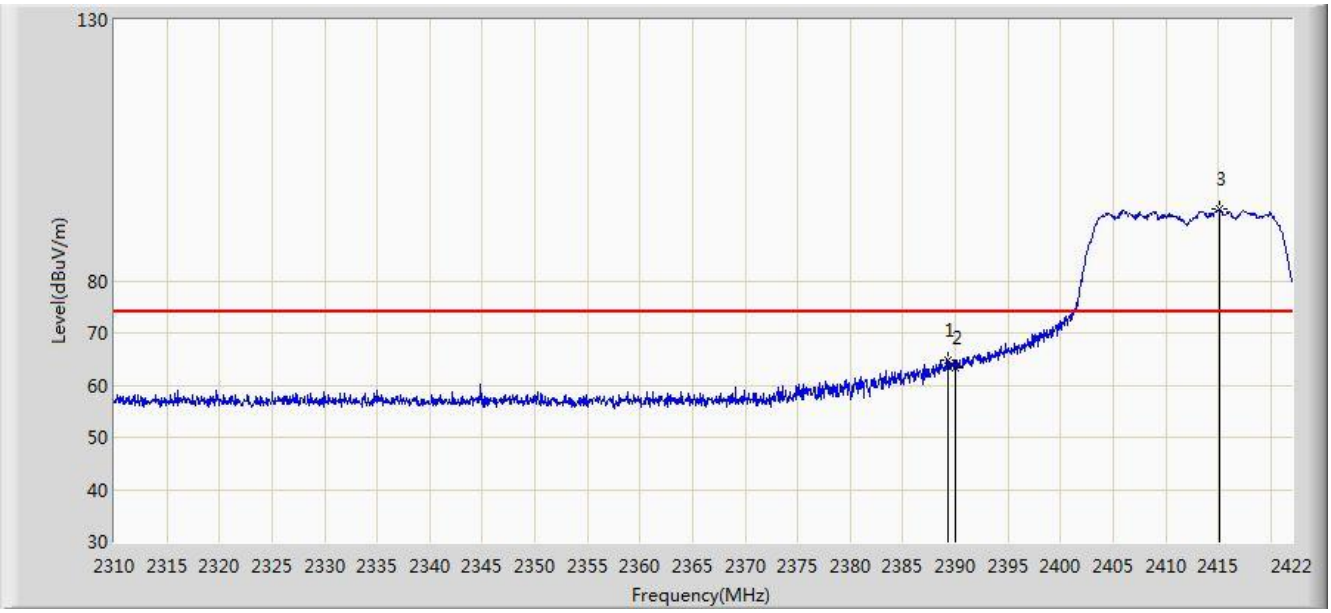


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2464.408	92.114	59.829	N/A	N/A	32.285	AV
2			2483.500	46.484	14.145	-7.516	54.000	32.340	AV
3			2483.944	47.330	14.989	-6.670	54.000	32.340	AV

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 04:18
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at Channel 2412MHz	

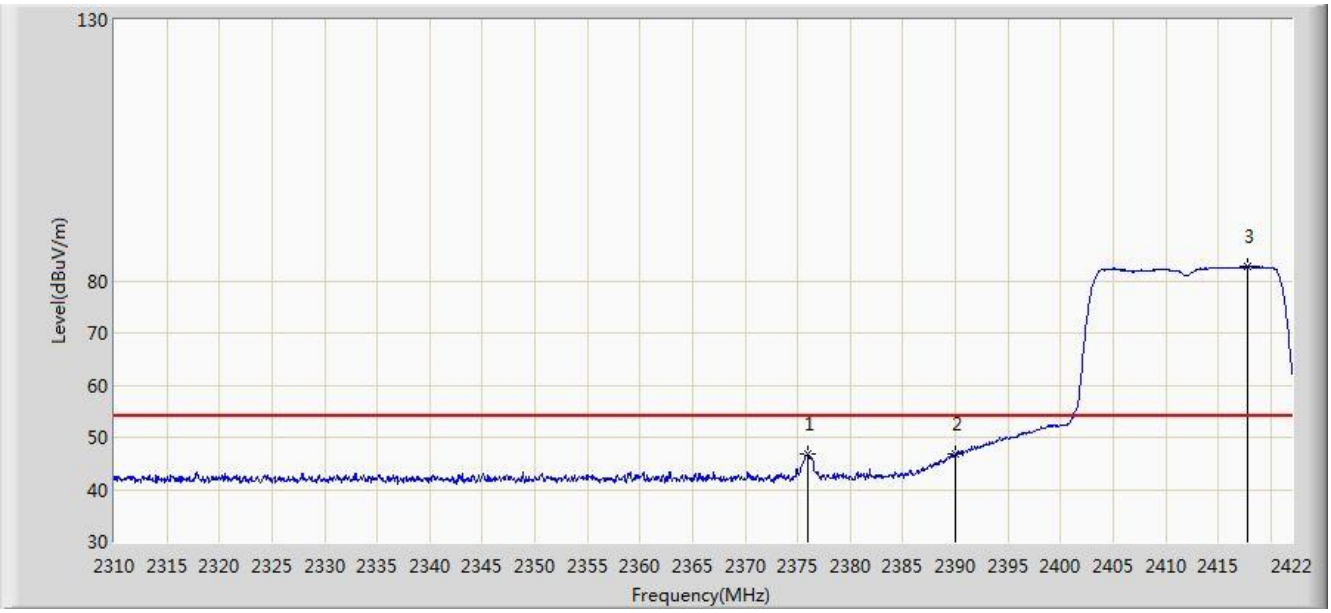


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2389.296	64.845	32.517	-9.155	74.000	32.328	PK
2			2390.000	63.378	31.051	-10.622	74.000	32.327	PK
3		*	2415.056	93.645	61.361	N/A	N/A	32.284	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 04:22
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at Channel 2412MHz	

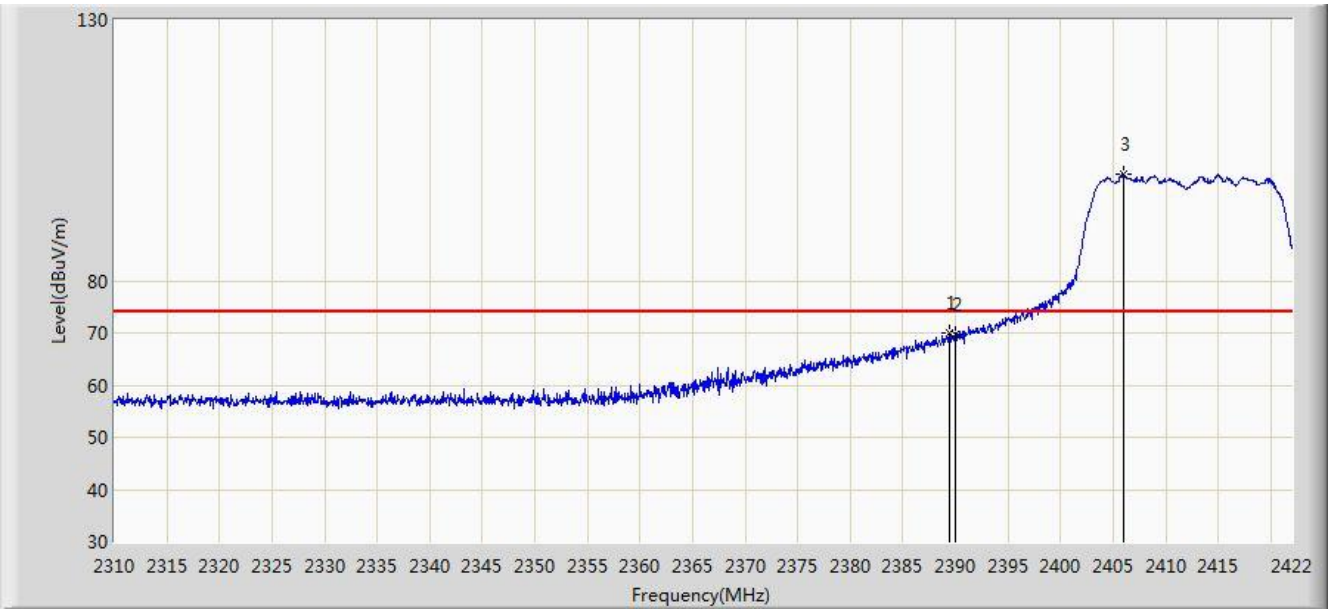


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2375.912	46.877	14.530	-7.123	54.000	32.346	AV
2			2390.000	46.761	14.434	-7.239	54.000	32.327	AV
3		*	2417.800	82.790	50.508	N/A	N/A	32.282	AV

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 04:13
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at Channel 2412MHz	

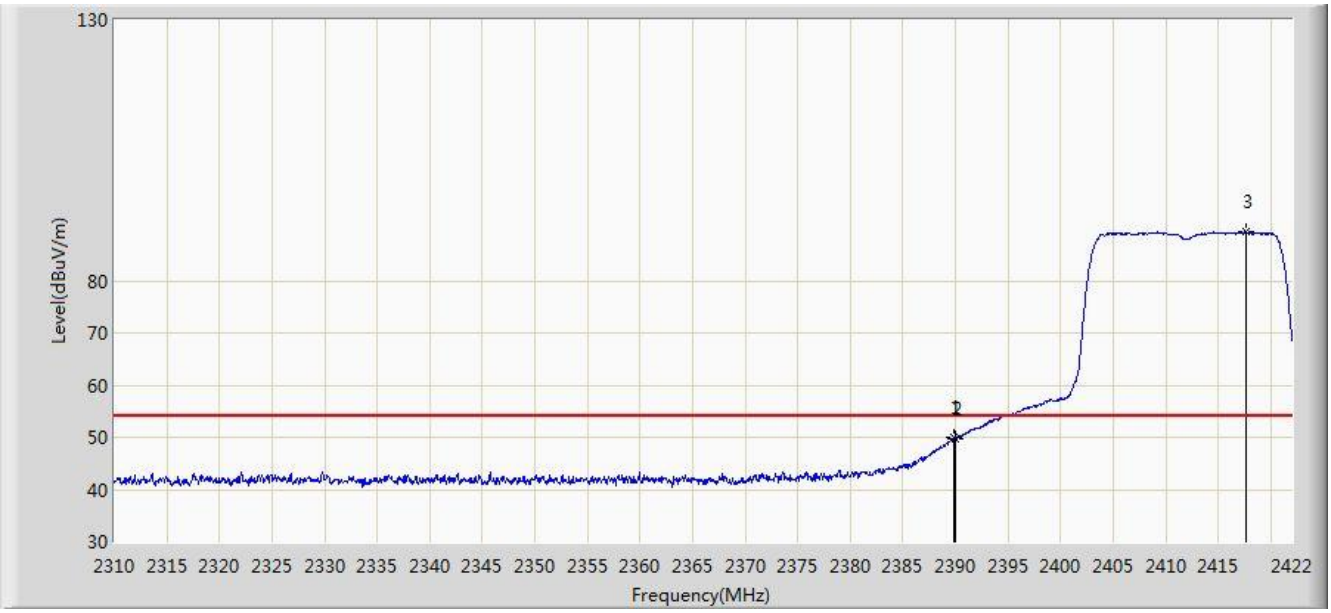


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2389.464	69.963	37.635	-4.037	74.000	32.327	PK
2			2390.000	69.742	37.415	-4.258	74.000	32.327	PK
3		*	2406.040	100.302	68.006	N/A	N/A	32.296	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 04:18
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at Channel 2412MHz, VBW=1.8kHz	

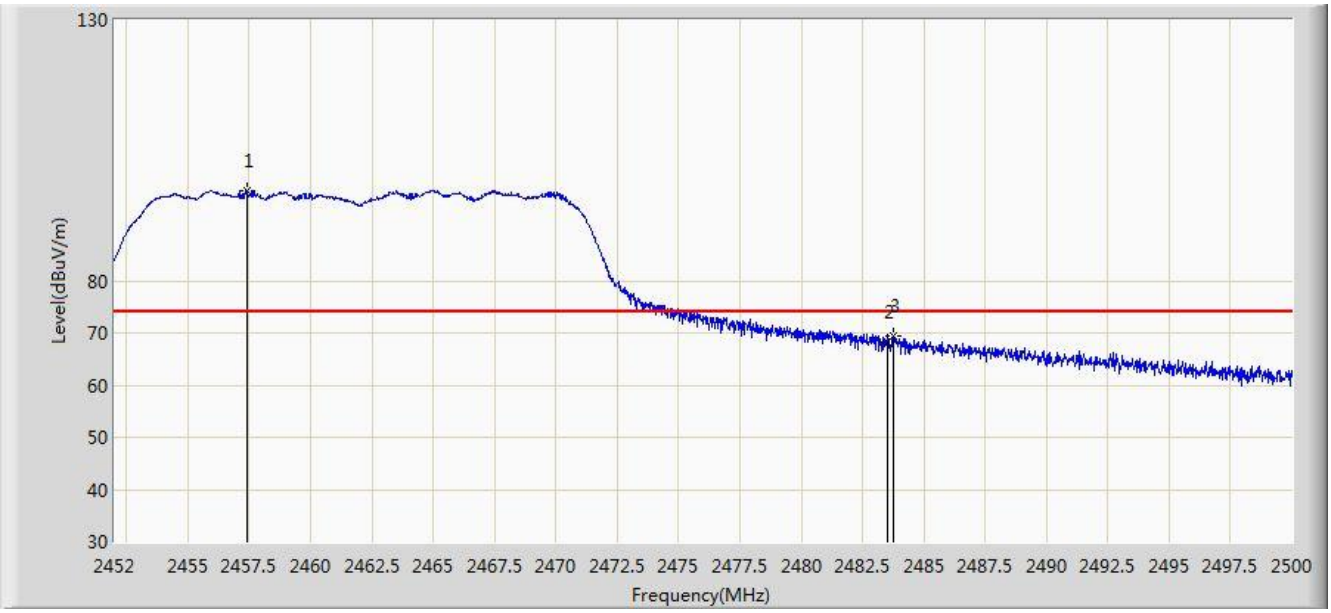


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2389.912	49.867	17.540	-4.133	54.000	32.327	AV
2			2390.000	49.822	17.495	-4.178	54.000	32.327	AV
3		*	2417.632	89.368	57.086	N/A	N/A	32.283	AV

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 04:27
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at Channel 2462MHz	

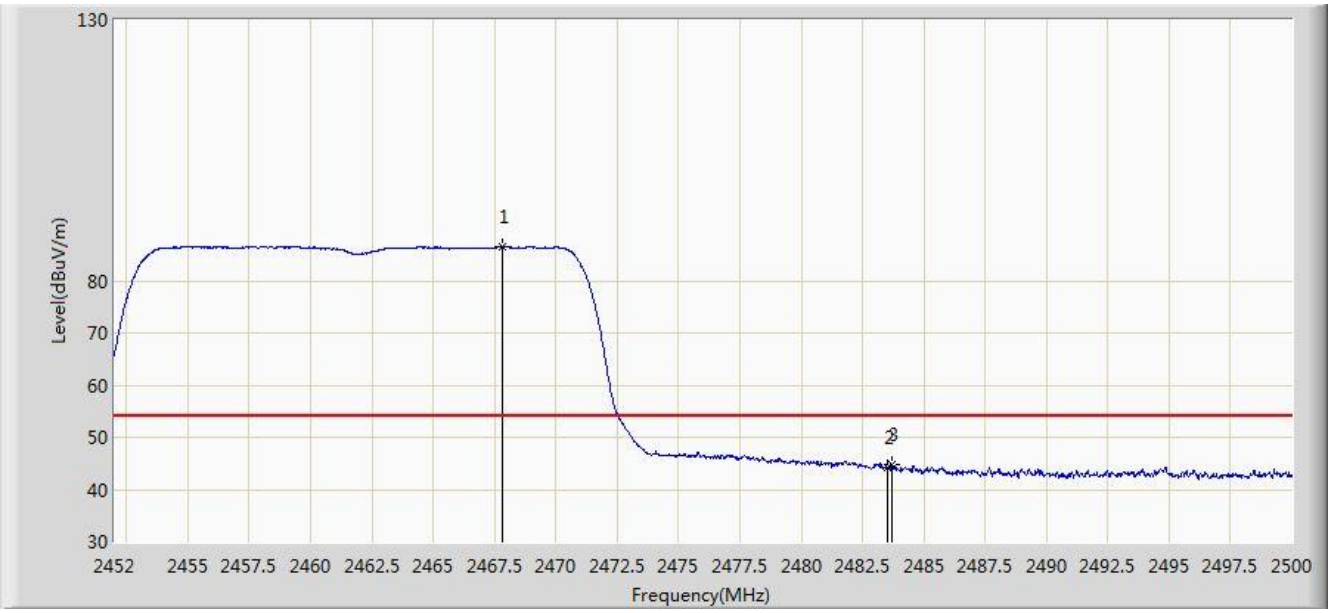


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2457.400	97.387	65.116	N/A	N/A	32.271	PK
2			2483.500	68.238	35.899	-5.762	74.000	32.340	PK
3			2483.752	69.377	37.037	-4.623	74.000	32.340	PK

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 04:31
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at Channel 2462MHz	

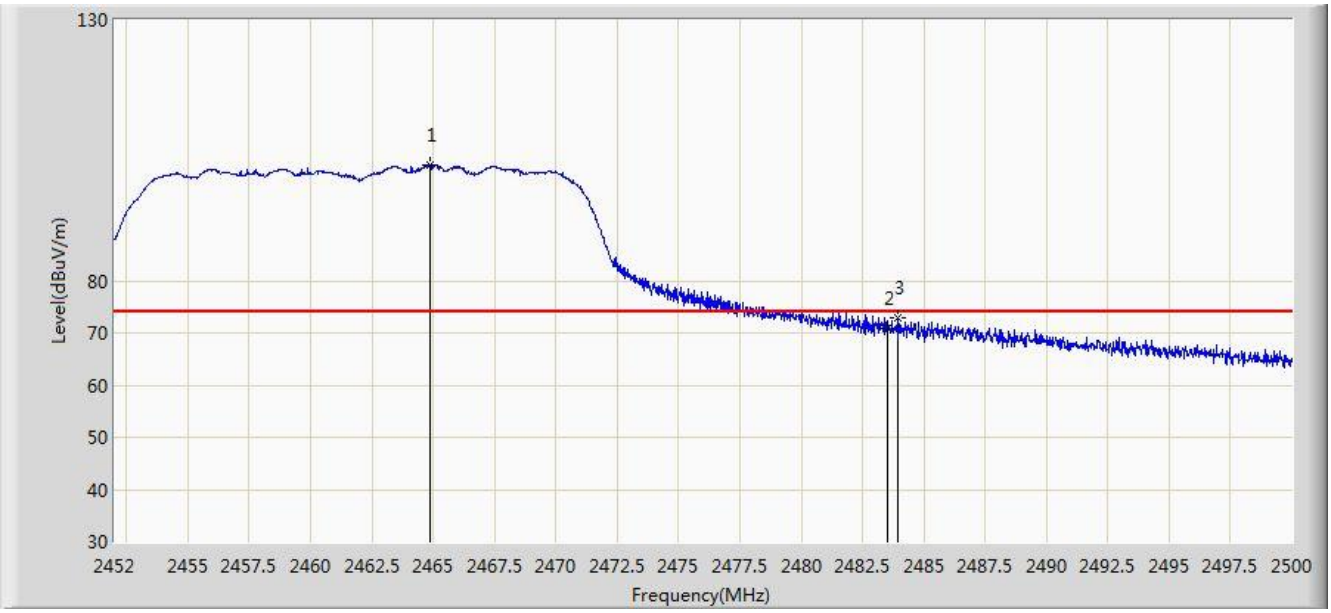


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2467.816	86.591	54.298	N/A	N/A	32.293	AV
2			2483.500	44.296	11.957	-9.704	54.000	32.340	AV
3			2483.704	44.690	12.350	-9.310	54.000	32.340	AV

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 04:23
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at Channel 2462MHz	

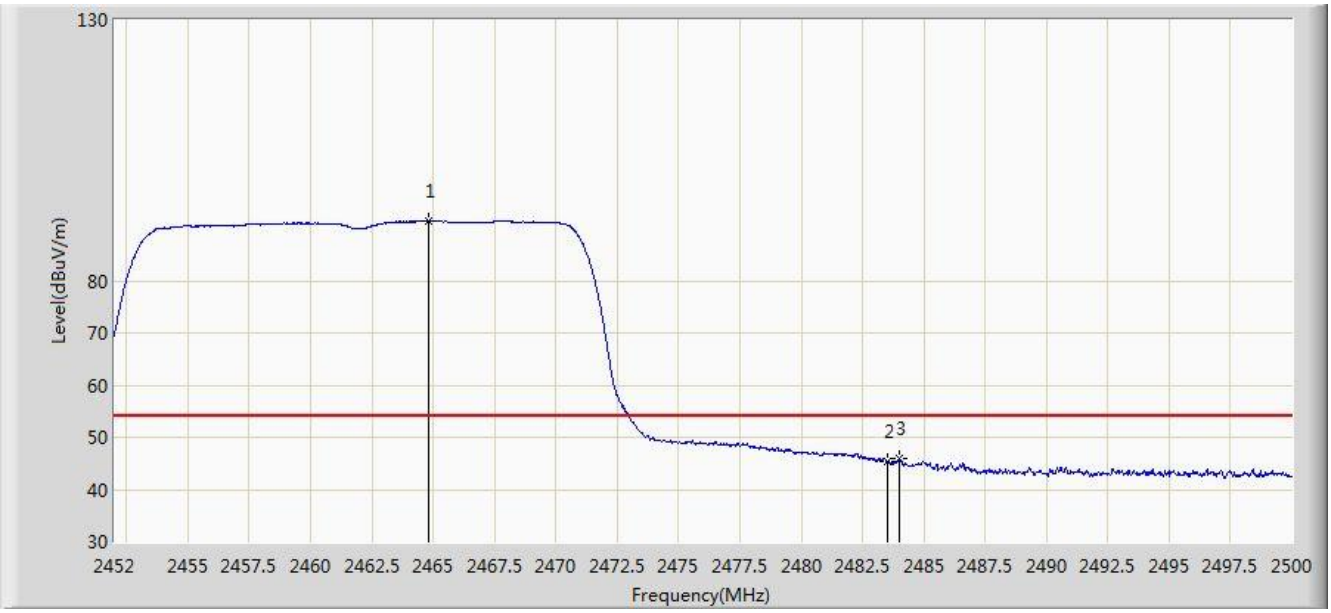


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2464.888	102.193	69.907	N/A	N/A	32.286	PK
2			2483.500	70.800	38.461	-3.200	74.000	32.340	PK
3			2483.968	72.941	40.600	-1.059	74.000	32.341	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2018/02/09 - 04:27
Limit: FCC_Part15.209_RE(3m)	Engineer: Bruce Wang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Smart TV Box	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at Channel 2462MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2464.816	91.455	59.169	N/A	N/A	32.286	AV
2			2483.500	45.349	13.010	-8.651	54.000	32.340	AV
3			2484.016	45.974	13.633	-8.026	54.000	32.342	AV

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

7.8. AC Conducted Emissions Measurement

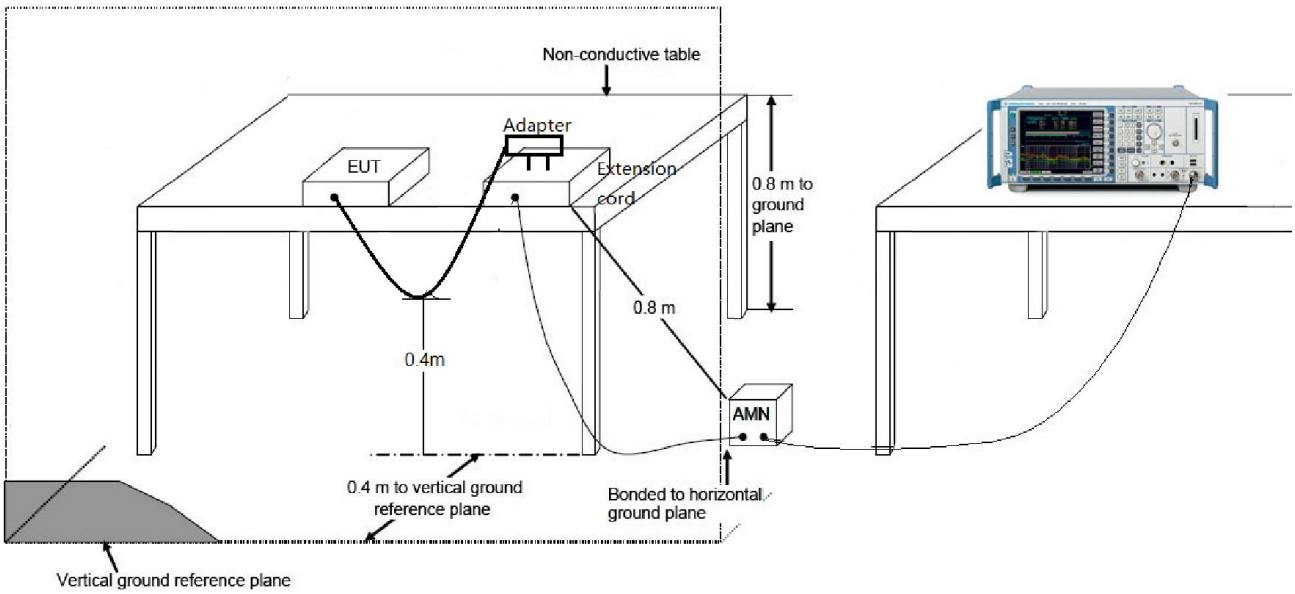
7.8.1.Test Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	66 - 56	56 – 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

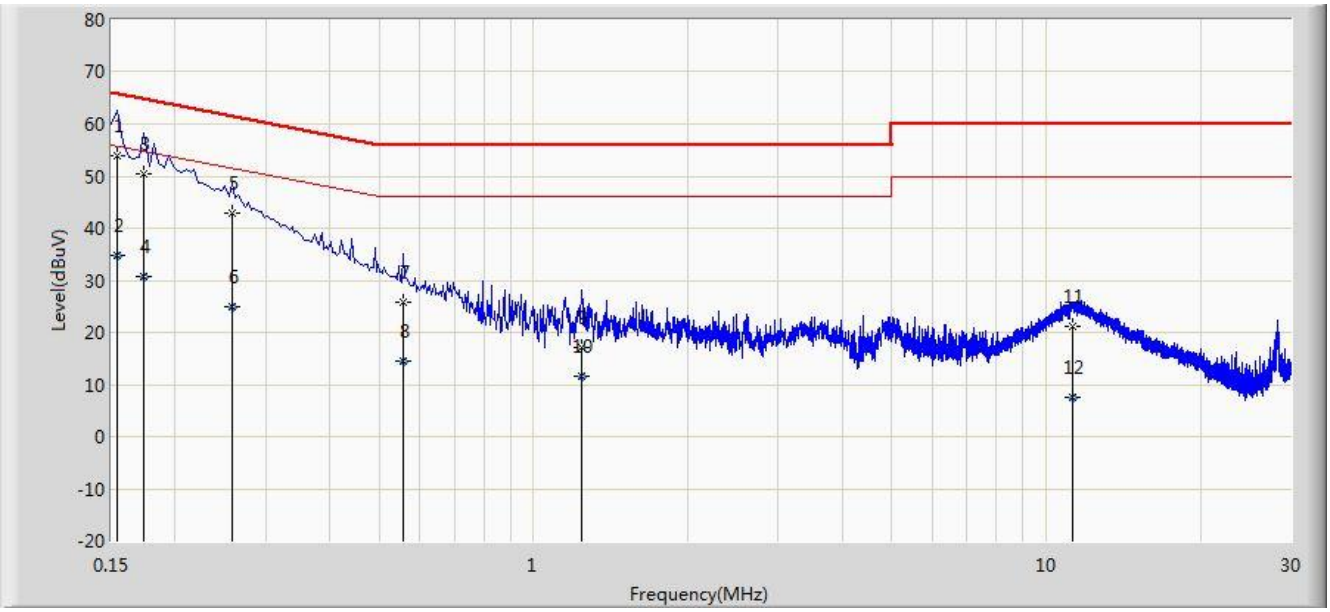
Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

7.8.2.Test Setup



7.8.3.Test Result

Site: SR2	Time: 2018/01/26 - 18:05
Limit: FCC_Part15.207_CE_AC Power	Engineer: Polly Zong
Probe: ENV216_101683_Filter On	Polarity: Line
EUT: Smart TV Box	Power: AC 120V/60Hz
Worst Case Mode: Transmit by 802.11b at Channel 2437MHz	

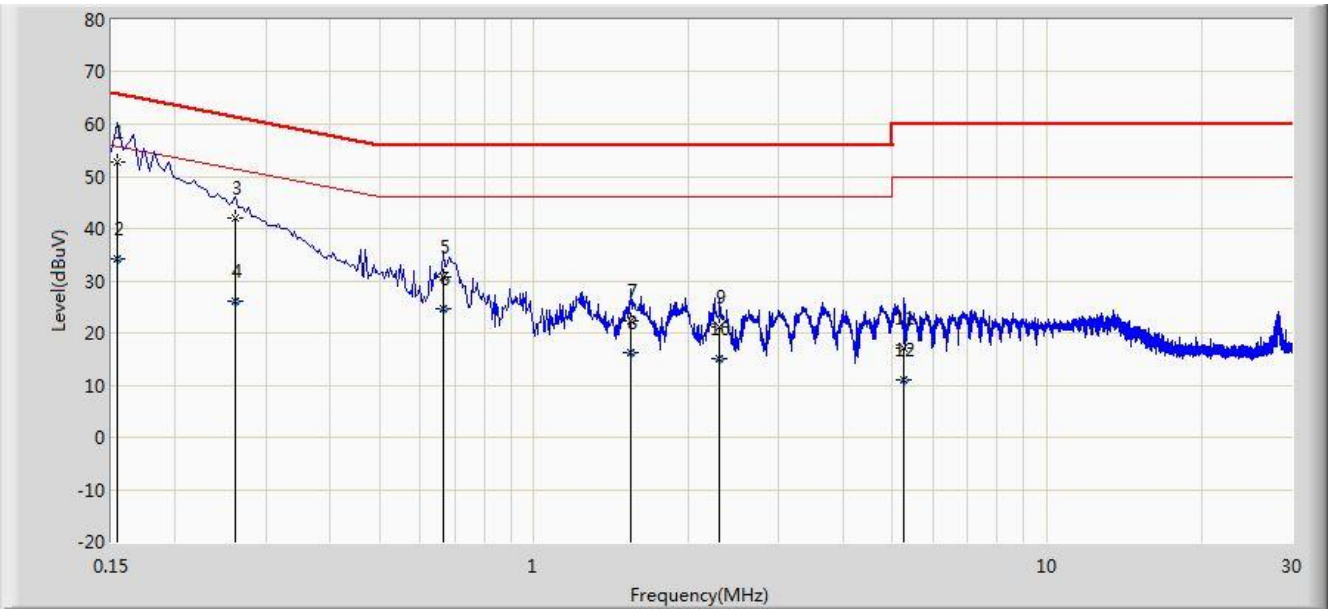


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		*	0.154	53.950	43.210	-11.832	65.781	10.740	QP
2			0.154	34.738	23.998	-21.043	55.781	10.740	AV
3			0.174	50.327	40.259	-14.441	64.767	10.068	QP
4			0.174	30.721	20.653	-24.046	54.767	10.068	AV
5			0.258	42.774	32.803	-18.722	61.496	9.970	QP
6			0.258	24.974	15.003	-26.522	51.496	9.970	AV
7			0.558	25.932	15.796	-30.068	56.000	10.137	QP
8			0.558	14.429	4.292	-31.571	46.000	10.137	AV
9			1.242	17.161	7.261	-38.839	56.000	9.900	QP
10			1.242	11.558	1.658	-34.442	46.000	9.900	AV
11			11.222	21.297	11.197	-38.703	60.000	10.100	QP
12			11.222	7.583	-2.517	-42.417	50.000	10.100	AV

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

Site: SR2	Time: 2018/01/26 - 18:12
Limit: FCC_Part15.207_CE_AC Power	Engineer: Polly Zong
Probe: ENV216_101683_Filter On	Polarity: Neutral
EUT: Smart TV Box	Power: AC 120V/60Hz
Worst Case Mode: Transmit by 802.11b at Channel 2437MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		*	0.154	52.678	41.963	-13.103	65.781	10.716	QP
2			0.154	34.133	23.417	-21.649	55.781	10.716	AV
3			0.262	41.968	31.958	-19.400	61.368	10.010	QP
4			0.262	26.168	16.158	-25.200	51.368	10.010	AV
5			0.666	30.714	20.619	-25.286	56.000	10.094	QP
6			0.666	24.552	14.458	-21.448	46.000	10.094	AV
7			1.546	22.334	12.446	-33.666	56.000	9.888	QP
8			1.546	16.104	6.216	-29.896	46.000	9.888	AV
9			2.298	21.140	11.274	-34.860	56.000	9.866	QP
10			2.298	15.111	5.245	-30.889	46.000	9.866	AV
11			5.266	17.094	7.039	-42.906	60.000	10.055	QP
12			5.266	11.028	0.973	-38.972	50.000	10.055	AV

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

8. CONCLUSION

The data collected relate only the item(s) tested and show that the device is in compliance with Part 15C of the FCC Rules & IC Rules.

The End