



AUDIX Technology (Shenzhen) Co., Ltd.

FCC ID:2AGUO-A312

FCC PART 15C TEST REPORT FOR CERTIFICATION  
On Behalf of

Guangdong Hybroad Vision Electronics Technology Company Ltd.

IP Set-top Box

A312

FCC ID: 2AGUQ-A312

Prepared for :Guangdong Hybroad Vision Electronics Technology  
Company Ltd.

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Date of Test : Sep.20~26, 2016  
Date of Report : Oct.11, 2016

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AUDIX Technology (Shenzhen) Co., Ltd.

FCC ID: 2AGUQ-A312

## TEST REPORT CERTIFICATION

Applicant : Guangdong Hybroad Vision Electronics Technology Company Ltd.  
Product : IP Set-top Box  
FCC ID : 2AGUQ-A312  
(A) Model No. : A312  
(B) Power Supply : DC 12V  
(C) Test Voltage : DC 12V From Adapter Input AC 120V/60Hz

Tested for comply with:

FCC CFR 47 Part 15 Subpart C: 2016

Test procedure used:

ANSI C63.10: 2013

KDB558074 D01 v03r05

The device described above is tested by AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. to confirm comply with all the FCC Part 15 Subpart C requirements. The test results are contained in this test report and AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. is assumed full responsibility for the accuracy and completeness of these tests. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC and IC requirements. This report contains data that are not covered by the NVLAP accreditation.

This Report is made under FCC Part 2.1075. No modifications were required during testing to bring this product into compliance.

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

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test : Sep.20~26, 2016 Report of date: Oct.11, 2016

Prepared by : Cindy Zhu Reviewed by : Sunny Lu  
Cindy Zhu / Assistant Deputy Manager



Approved & Authorized Signer:

## 1. SUMMARY OF STANDARDS AND RESULTS

### 1.1. Description of Standards and Results

The EUT has been tested according to the applicable standards as referenced below.

| EMISSION                                   |                     |         |
|--|---------------------|---------|
| Description of Test Item                   | Standard            | Results |
| Power Line Conducted Emission              | FCC Part 15: 15.207 | PASS    |
| Radiated Emission                          | FCC Part 15: 15.209 | PASS    |
| Band Edge Compliance                       | FCC Part 15: 15.247 | PASS    |
| Conducted spurious emissions               | FCC Part 15: 15.247 | PASS    |
| 6dB&99% Bandwidth                          | FCC Part 15: 15.247 | PASS    |
| Peak Output Power                          | FCC Part 15: 15.247 | PASS    |
| Power Spectral Density                     | FCC Part 15: 15.247 | PASS    |
| Antenna requirement                        | FCC Part 15: 15.203 | PASS    |
| N/A is an abbreviation for Not Applicable. |                     |         |

## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

Product : IP Set-top Box

Model No. : A312

FCC ID : 2AGUQ-A312

Radio : IEEE802.11 b/g/n

Operation Frequency : IEEE 802.11b: 2412MHz—2462MHz  
IEEE 802.11g: 2412MHz—2462MHz  
IEEE802.11n HT20: 2412MHz—2462MHz  
IEEE802.11n HT40: 2422MHz—2452MHz

Modulation Technology : IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK)  
IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK)  
IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)

Antenna Assembly : Dipole Antenna,  
Gain 2.4GHz Peak Gain: 3dBi

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Ranjiangdongsi Road, Torch Hi-Tech Industrial Development Zone,  
Zhongshan, Guangdong China

Adapter : Manufacture: MASS  
M/N: EEF1200100E1BA  
INPUT: AC 100V-240V~50/60Hz 0.3A  
OUTPUT: 12V; 1.0A  
DC Cable: Unshielded, Undetectable, 1.6m

AV Cable : Unshielded, Detachable, 1.5m

Date of Test : Sep.20~26, 2016

Date of Receipt : Sep.18, 2016

## 2.2. Test Information

A special test software was used to control EUT work in Continuous TX mode(nearly 100% duty cycle), and select test channel, wireless mode and data rate.

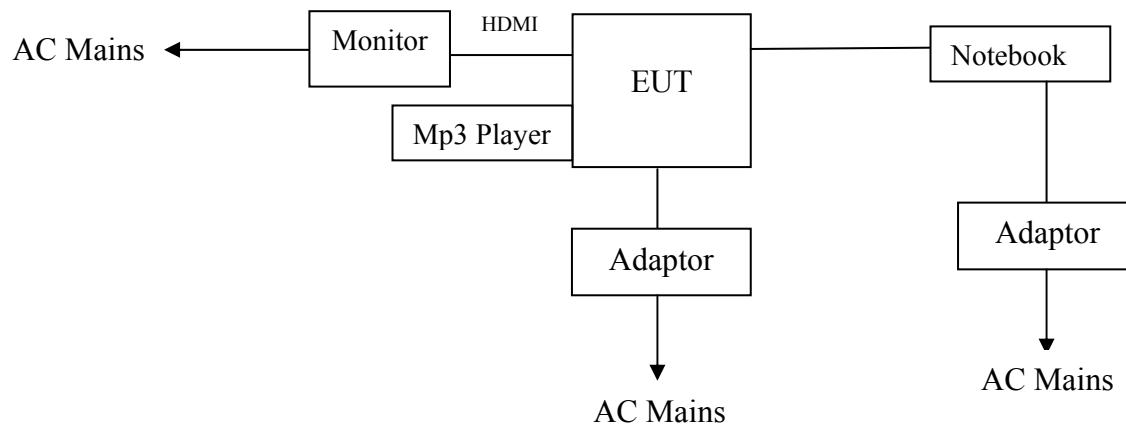
| Tested mode, channel, and data rate information |                               |             |                    |
|---|-------------------------------|-------------|--------------------|
| Mode  | data rate<br>(Mbps)(see Note) | Channel     | Frequency<br>(MHz) |
| IEEE 802.11b                                    | 1                             | Low :CH1    | 2412               |
|   | 1                             | Middle: CH6 | 2437               |
|   | 1                             | High: CH11  | 2462               |
| IEEE 802.11g                                    | 6                             | Low :CH1    | 2412               |
|   | 6                             | Middle: CH6 | 2437               |
|   | 6                             | High: CH11  | 2462               |
| IEEE 802.11n HT20                               | MCS0                          | Low :CH1    | 2412               |
|   | MCS0                          | Middle: CH6 | 2437               |
|   | MCS0                          | High: CH11  | 2462               |
| IEEE 802.11n HT40                               | MCS0                          | Low :CH3    | 2422               |
|   | MCS0                          | Middle: CH6 | 2437               |
|   | MCS0                          | High: CH9   | 2452               |

Note: 1. According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.

## 2.1. Tested Supporting System Details

| No. | Description | ACS No.   | Manufacturer | Model         | Serial Number |
|-----|-------------|---|--------------|---------------|---------------|
| 1.  | Notebook    | N/A   | acer         | ZOW           | NVX7C         |
|     |             | Power Adapter: Manufacturer: LITEON, Model: PA-1900-32<br>Input: 100-240V~, 1.5A, 50/60Hz<br>Output: 19V----4.74A<br>Power Cord: Unshielded, Undetachable, 1.8m |              |               |               |
| 2.  | Monitor     | ACS-EMC-LM01R   | ViewSonic    | VLCDS26064-2W | A210521A0131  |
|     |             | Power Cord: Unshielded, Detachable, 1.8m<br>HDMI Cable: Shielded, Detachable, 1.8m  |              |               |               |
| 3.  | Mp3 Player  | SONY  | BNP-1        | N/A           | N/A           |

## 2.2. Block diagram of connection between the EUT and simulators



(EUT: IP Set-top Box)

**2.3. Test Facility****Site Description**

Name of Firm

Audix Technology (Shenzhen) Co., Ltd.  
No. 6, Kefeng Road, Science & Technology  
Park, Nanshan District , Shenzhen, Guangdong,  
China

3m Anechoic Chamber

Certificated by FCC, USA  
Registration Number: 90454  
Valid Date: Jul.12, 2017

3m &amp; 10m Anechoic Chamber

Certificated by FCC, USA  
Registration Number: 794232  
Valid Date: Jul.12, 2017

EMC Lab.

Certificated by Industry Canada  
Registration Number: IC 5183A-1  
Valid Date: May.14, 2017

Certificated by DAkkS, Germany  
Registration No: D-PL-12151-01-00  
Valid Date: Dec.15, 2016

Accredited by NVLAP, USA  
NVLAP Code: 200372-0  
Valid Date: Mar.31, 2017

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

| Test Item  | Uncertainty                       |
|--|-----------------------------------|
| Uncertainty for Conduction emission test in No. 1 Conduction       | 3.2dB(150kHz to 30MHz)            |
| Uncertainty for Radiation Emission test in 3m chamber              | 2.8dB(30~200MHz, Polarization: H) |
|  | 2.8dB(30~200MHz, Polarization: V) |
|  | 2.8dB(200M~1GHz, Polarization: H) |
|  | 2.8dB(200M~1GHz, Polarization: V) |
| Uncertainty for Radiation Emission test in 3m chamber (1GHz-18GHz) | 5.8dB(1~6GHz, Distance: 3m)       |
|  | 5.8dB(6~18GHz, Distance: 3m)      |
| Uncertainty for Radiated Spurious Emission test in RF chamber      | 3.6dB                             |
| Uncertainty for Conduction Spurious emission test                  | 2.0dB                             |
| Uncertainty for Output power test                                  | 0.8dB                             |
| Uncertainty for Bandwidth test                                     | 83kHz                             |
| Uncertainty for DC power test                                      | 0.1 %                             |
| Uncertainty for test site temperature and humidity                 | 0.6°C                             |
|  | 3%                                |

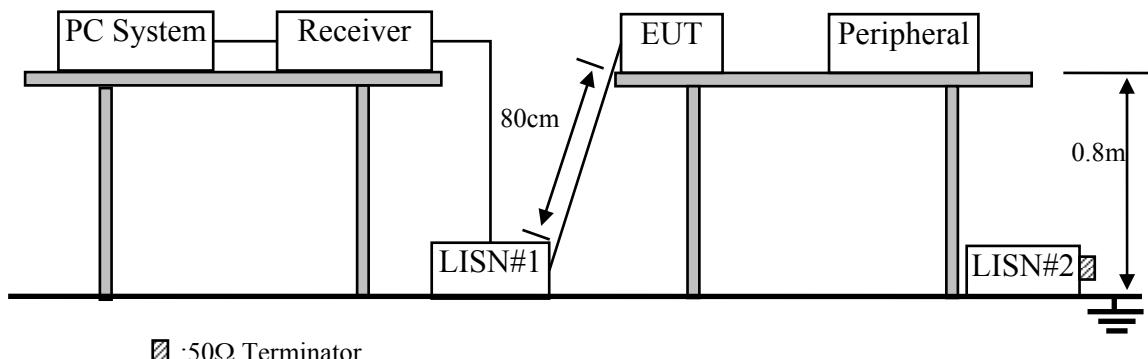
### 3. POWER LINE CONDUCTED EMISSION TEST

#### 3.1. Test Equipments

| Item | Equipment         | Manufacturer    | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|-------------------|-----------------|-----------|------------|-----------|---------------|
| 1.   | 1# Shielding Room | AUDIX           | N/A       | N/A        | Apr.17,16 | 1 Year        |
| 2.   | Test Receiver     | Rohde & Schwarz | ESCI      | 100842     | Apr.24,16 | 1 Year        |
| 3.   | L.I.S.N.#1        | Rohde & Schwarz | ESH2-Z5   | 100429     | Oct.18,15 | 1 Year        |
| 4.   | L.I.S.N.#2        | Kyoritsu        | K NW-403D | 8-1750-2   | Apr.24,16 | 1 Year        |
| 5.   | Terminator        | Hubersuhner     | 50Ω       | No.1       | May.05,16 | 1 Year        |
| 6.   | Terminator        | Hubersuhner     | 50Ω       | No.2       | May.05,16 | 1 Year        |
| 7.   | RF Cable          | MIYAZAKI        | 3D-2W     | No.1       | Apr.24,16 | 1 Year        |
| 8.   | Coaxial Switch    | Anritsu         | MP59B     | 6200766906 | Apr.23,16 | 1 Year        |
| 9.   | Test Software     | AUDIX           | e3        | 6.100913a  | N/A       | N/A           |

Note: N/A means Not applicable.

#### 3.2. Block Diagram of Test Setup



#### 3.3. Power Line Conducted Emission Test Limits

| Frequency       | Maximum RF Line Voltage    |                         |
|-----------------|----------------------------|-------------------------|
|                 | Quasi-Peak Level<br>dB(µV) | Average Level<br>dB(µV) |
| 150kHz ~ 500kHz | 66 ~ 56*                   | 56 ~ 46*                |
| 500kHz ~ 5MHz   | 56                         | 46                      |
| 5MHz ~ 30MHz    | 60                         | 50                      |

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

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

### 3.4.Configuration of EUT on Test

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

#### 3.4.1. IP Set-top Box (EUT)

Model Number : A312  
Serial Number : N/A

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

### 3.5.Operating Condition of EUT

3.5.1. Setup the EUT and simulator as shown as Section 3.2.

3.5.2. Turn on the power of all equipments.

3.5.3. PC run test software to control EUT work in Tx (WiFi 2.4GHz) mode.

### 3.6.Test Procedure

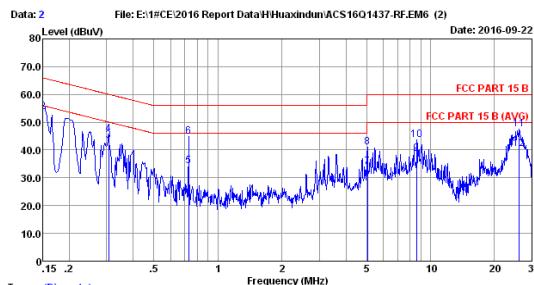
The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power Via PC connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#). This provides a 50 ohm coupling impedance for the EUT (Please refer the block diagram of the test setup and photographs). The AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2013 on Conducted Emission Test.

The bandwidth of test receiver (R & S ESCI) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

### 3.7.Power Line Conducted Emission Test Results

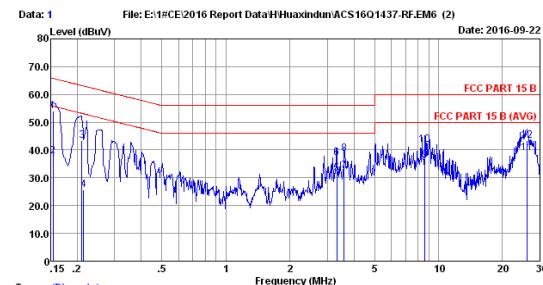
**PASS.** (All emissions not reported below are too low against the prescribed limits.)



Trace: (Discrete) Data No : 2  
Site no :1# Conduction Dis./Lisin :2015 ESH2-Z5 LINE  
Limit :FCC PART 15 B Env./Ins. :23.8°C/43.6%  
EUT :IP Set-top Box M/N:A312 Power Rating :DC 12V From Adapter Input AC 120V/60Hz  
Test Mode :Tx Mode

| No | Freq<br>(MHz) | LISN<br>(dB) | Cable<br>(dB) | Emission |       |                   | Margin<br>(dB)  | Remark           |
|----|---------------|--------------|---------------|----------|-------|-------------------|-----------------|------------------|
|    |               |              |               | Factor   | Loss  | Reading<br>(dBuV) | Level<br>(dBuV) | Limits<br>(dBuV) |
| 1  | 0.150         | 0.12         | 0.02          | 38.81    | 39.95 | 56.00             | 17.05           | Average          |
| 2  | 0.150         | 0.12         | 0.02          | 53.50    | 53.64 | 66.00             | 12.36           | QP               |
| 3  | 0.307         | 0.13         | 0.02          | 43.17    | 43.32 | 50.06             | 6.74            | Average          |
| 4  | 0.307         | 0.13         | 0.02          | 45.61    | 45.76 | 60.06             | 14.30           | QP               |
| 5  | 0.727         | 0.15         | 0.05          | 34.16    | 34.36 | 46.00             | 11.64           | Average          |
| 6  | 0.727         | 0.15         | 0.05          | 44.67    | 44.87 | 56.00             | 11.13           | QP               |
| 7  | 5.058         | 0.25         | 0.09          | 33.64    | 33.98 | 50.00             | 16.02           | Average          |
| 8  | 5.058         | 0.25         | 0.09          | 40.74    | 41.08 | 60.00             | 18.92           | QP               |
| 9  | 8.614         | 0.34         | 0.13          | 38.16    | 38.63 | 50.00             | 11.37           | Average          |
| 10 | 8.637         | 0.34         | 0.13          | 43.16    | 43.63 | 60.00             | 16.37           | QP               |
| 11 | 26.139        | 0.98         | 0.23          | 46.46    | 47.67 | 60.00             | 12.33           | QP               |
| 12 | 26.150        | 0.98         | 0.23          | 39.16    | 40.37 | 50.00             | 9.63            | Average          |

Remarks: 1. Emission Level=LISN Factor+Cable Loss+Reading.  
2. If the average limit is met when using a quasi-peak detector,  
the EUT shall be deemed to meet both limits and measurement  
with average detector is unnecessary.  
3.13.560MHz & 27.120MHz are the signal from fundament and harmonics  
frequency. No need to comply with the limit.



Trace: (Discrete) Data No : 1  
Site no :1# Conduction Dis./Lisin :2015 ESH2-Z5 NEUTRAL  
Limit :FCC PART 15 B Env./Ins. :23.8°C/43.6%  
EUT :IP Set-top Box M/N:A312 Power Rating :DC 12V From Adapter Input AC 120V/60Hz  
Test Mode :Tx Mode

| No | Freq<br>(MHz) | LISN<br>(dB) | Cable<br>(dB) | Emission |       |                   | Margin<br>(dB)  | Remark           |
|----|---------------|--------------|---------------|----------|-------|-------------------|-----------------|------------------|
|    |               |              |               | Factor   | Loss  | Reading<br>(dBuV) | Level<br>(dBuV) | Limits<br>(dBuV) |
| 1  | 0.154         | 0.12         | 0.02          | 53.90    | 54.04 | 65.78             | 11.74           | QP               |
| 2  | 0.154         | 0.12         | 0.02          | 37.69    | 37.83 | 55.78             | 17.95           | Average          |
| 3  | 0.210         | 0.12         | 0.02          | 43.32    | 43.46 | 63.19             | 19.73           | QP               |
| 4  | 0.214         | 0.12         | 0.02          | 25.40    | 25.54 | 53.05             | 27.51           | Average          |
| 5  | 3.322         | 0.23         | 0.08          | 31.21    | 31.52 | 46.00             | 14.48           | Average          |
| 6  | 3.322         | 0.23         | 0.08          | 37.00    | 37.31 | 56.00             | 18.69           | QP               |
| 7  | 3.606         | 0.24         | 0.08          | 32.17    | 32.49 | 46.00             | 13.51           | Average          |
| 8  | 3.606         | 0.24         | 0.08          | 38.30    | 38.62 | 56.00             | 17.38           | QP               |
| 9  | 8.654         | 0.39         | 0.13          | 35.71    | 36.23 | 50.00             | 13.77           | Average          |
| 10 | 8.654         | 0.39         | 0.13          | 41.30    | 41.82 | 60.00             | 18.18           | QP               |
| 11 | 26.098        | 1.13         | 0.23          | 37.59    | 38.98 | 50.00             | 11.05           | Average          |
| 12 | 26.098        | 1.13         | 0.23          | 42.10    | 43.46 | 60.00             | 16.54           | QP               |

Remarks: 1. Emission Level=LISN Factor+Cable Loss+Reading.  
2. If the average limit is met when using a quasi-peak detector,  
the EUT shall be deemed to meet both limits and measurement  
with average detector is unnecessary.  
3.13.560MHz & 27.120MHz are the signal from fundament and harmonics  
frequency. No need to comply with the limit.

## 4. RADIATED EMISSION TEST

### 4.1. Test Equipment

#### 4.1.1. For frequency range 30MHz~1000MHz (In 3m Anechoic Chamber)

| Item | Equipment                 | Manufacturer    | Model No.        | Serial No.      | Last Cal. | Cal. Interval |
|------|---------------------------|-----------------|------------------|-----------------|-----------|---------------|
| 1.   | 3#Chamber                 | AUDIX           | N/A              | N/A             | Mar.28,16 | 1 Year        |
| 2.   | EMI Spectrum              | Agilent         | E4407B           | MY41440292      | Apr.24,16 | 1 Year        |
| 3.   | Test Receiver             | Rohde & Schwarz | ESVS10           | 834468/011      | Apr.24,16 | 1 Year        |
| 4.   | Amplifier                 | HP              | 8447D            | 2648A04738      | Apr.24,16 | 1 Year        |
| 5.   | Tri-log-Broadband Antenna | SCHWARZBECK     | VULB 9168        | 9168-710        | Jul.20,16 | 1 Year        |
| 6.   | RF Cable                  | MIYAZAKI        | CFD400-N W(3.5M) | No.3            | Apr.24,16 | 1 Year        |
| 7.   | RF Cable                  | MIYAZAKI        | CFD400-L W(22M)  | No.7            | Apr.24,16 | 1 Year        |
| 8.   | Coaxial Switch            | Anritsu         | MP59B            | 6201397222      | Apr.23,16 | 1 Year        |
| 9.   | Test Software             | AUDIX           | e3               | 6.2009-5-21a(n) | N/A       | N/A           |

Note: N/A means Not applicable.

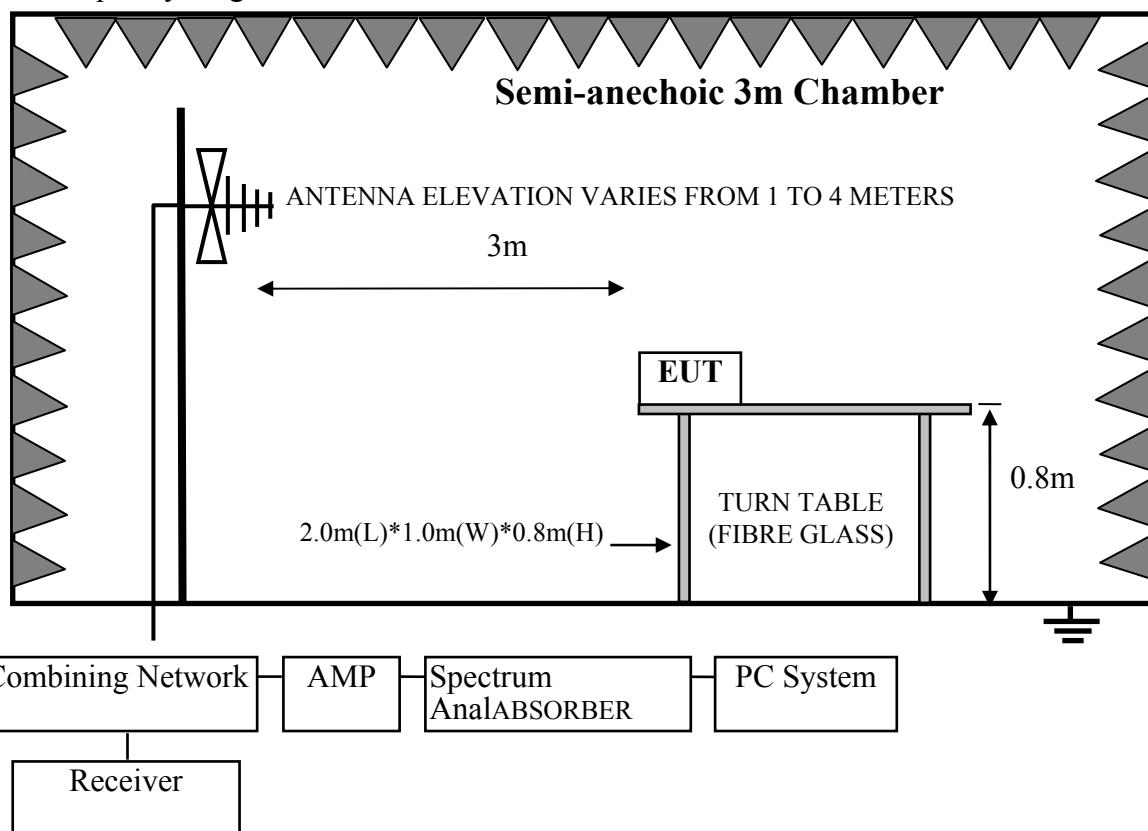
#### 4.1.2. For frequency range 1GHz~40GHz (In 3m Anechoic Chamber)

| Item | Equipment         | Manufacturer | Model No.   | Serial No.      | Last Cal. | Cal. Interval |
|------|-------------------|--------------|-------------|-----------------|-----------|---------------|
| 1.   | Spectrum Analyzer | Agilent      | E4446A      | US44300459      | Apr.24,16 | 1 Year        |
| 2.   | Horn Antenna      | ETS          | 3115        | 9510-4877       | Oct.15,15 | 1 Year        |
| 3.   | Amplifier         | Agilent      | 8449B       | 3008A02495      | Apr.24,16 | 1 Year        |
| 4.   | RF Cable          | Hubersuhner  | SUCOFLEX104 | 274094/4        | Apr.24,16 | 1 Year        |
| 5.   | Horn Antenna      | ETS          | 3116        | 00060089        | Oct.15,15 | 1 Year        |
| 6.   | Test Software     | AUDIX        | e3          | 6.2009-5-21a(n) | N/A       | N/A           |

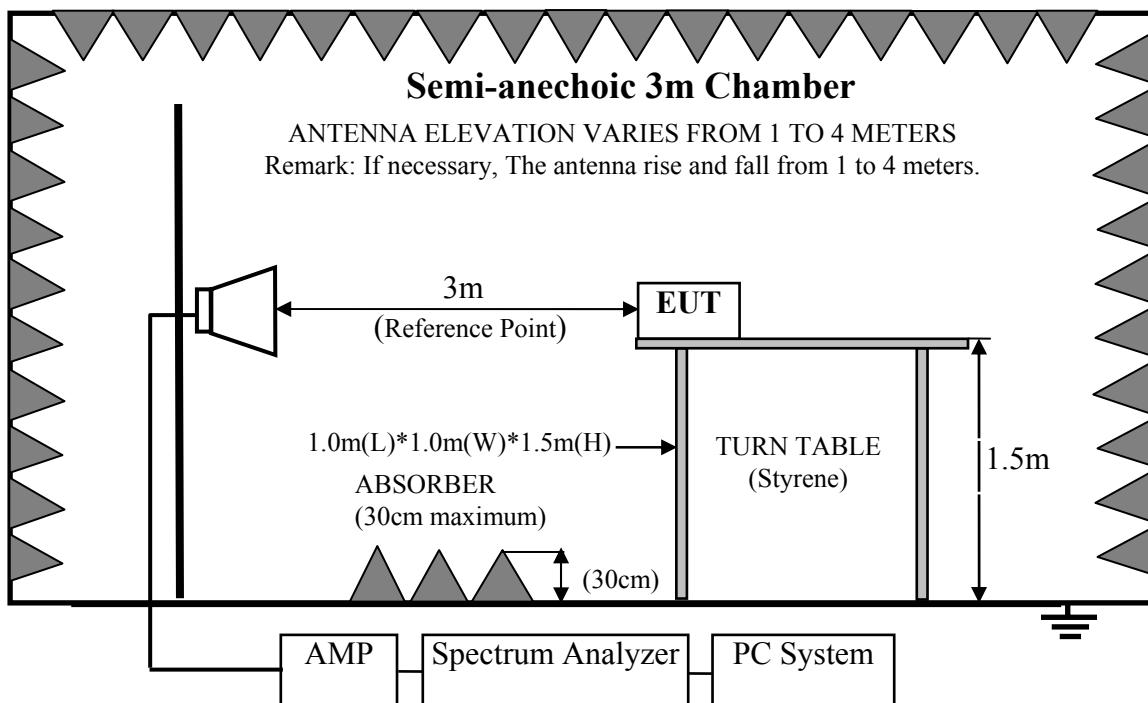
Note: N/A means Not applicable.

#### 4.2. Block Diagram of Test Setup

For frequency range 30MHz-1000MHz



For frequency range 1GHz-25GHz



### 4.3.Radiated Emission Limit

#### 4.3.1. 15.247&209 limits

| FREQUENCY<br>MHz | DISTANCE<br>Meters | FIELD STRENGTHS LIMIT                           |          |
|------------------|--------------------|---|----------|
|                  |                    | µV/m  | dB(µV)/m |
| 30 ~ 88          | 3                  | 100   | 40.0     |
| 88 ~ 216         | 3                  | 150   | 43.5     |
| 216 ~ 960        | 3                  | 200   | 46.0     |
| 960 ~ 1000       | 3                  | 500   | 54.0     |
| Above 1000       | 3                  | 74.0 dB(µV)/m (Peak)<br>54.0 dB(µV)/m (Average) |          |

Remark : (1) Emission level dB $\mu$ V = 20 log Emission level  $\mu$ V/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.

#### 4.3.2. 15.205 Restricted bands of operation

| MHz                        | MHz                   | MHz             | GHz              |
|----------------------------|-----------------------|-----------------|------------------|
| 0.090 - 0.110              | 16.42 - 16.423        | 399.9 - 410     | 4.5 - 5.15       |
| <sup>1</sup> 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     | 8.025 - 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          | 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 - 156.52525 | 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     | ( <sup>2</sup> ) |

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

### 4.4.EUT Configuration on Test

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

#### 4.4.1. IP Set-top Box (EUT)

Model Number : A312

Serial Number : N/A

4.4.2. Support Equipment: As Tested Supporting System Details, in Section 2.2.

#### 4.5. Operating Condition of EUT

- 4.5.1. Setup the EUT and simulator as shown as Section 4.2.
- 4.5.2. Turn on the power of all equipments.
- 4.5.3. Let EUT work in Tx(WiFi 2.4GHz) mode

#### 4.6. Test Procedure

EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground for frequency 30MHz~1000MHz, 1.5 meter high above ground for frequency above 1GHz and put the absorbing with 2.4m(L)\*2.4m(W)\*0.3m(H) on the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. 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 between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna for frequency 30MHz~1000MHz, and the Horm antenna is used as receiving antenna for frequency above 1GHz. Both horizontal and vertical polarization of the antenna are set on test.

This test was performed with EUT in X, Y, Z position, and the worse case was found when EUT in X position as test photo indicated.

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

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

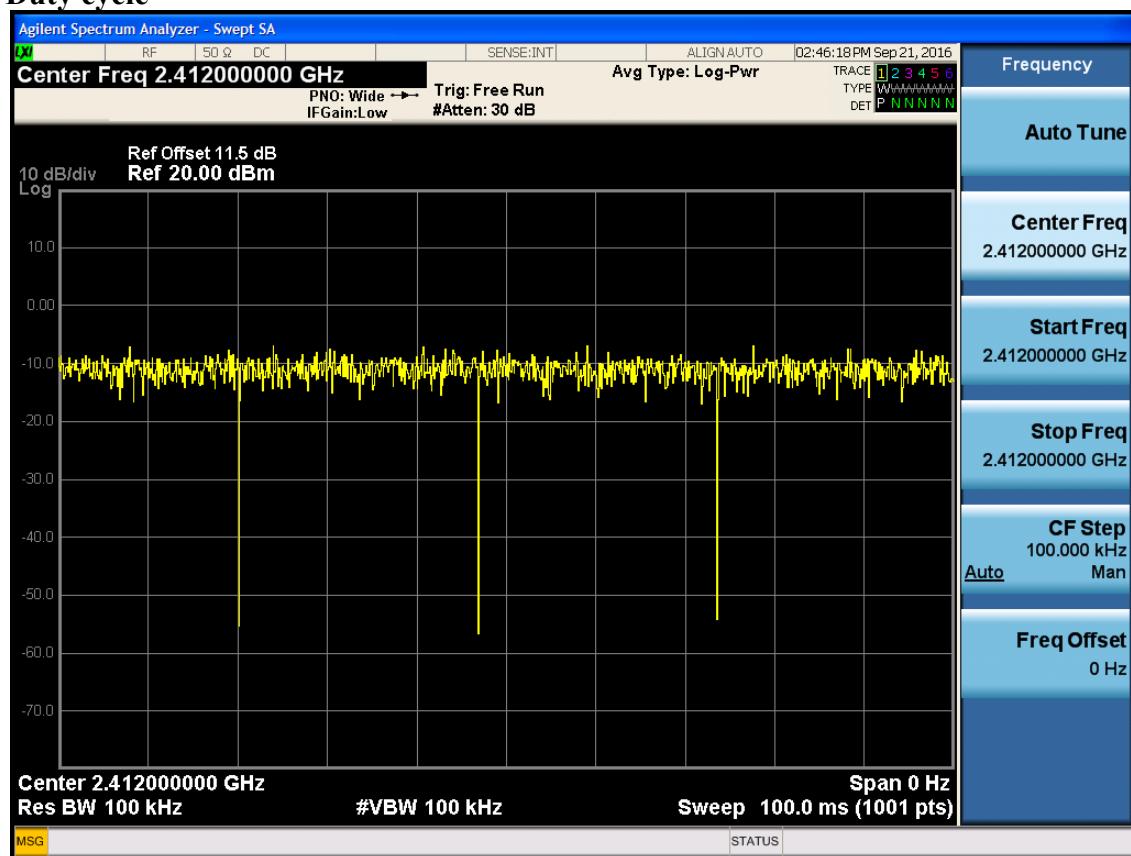
The frequency range from 30MHz to 10<sup>th</sup> harmonic (25GHz) are checked. and no any emissions were found from 18GHz to 25GHz, So the radiated emissions from 18GHz to 25GHz were not record.

#### 4.7. Radiated Emission Test Results

**PASS.**

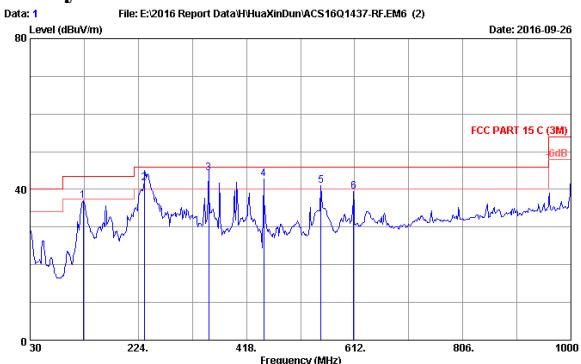
All the emissions from 30MHz to 25 GHz were comply with 15.209 limits.

Note: For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.

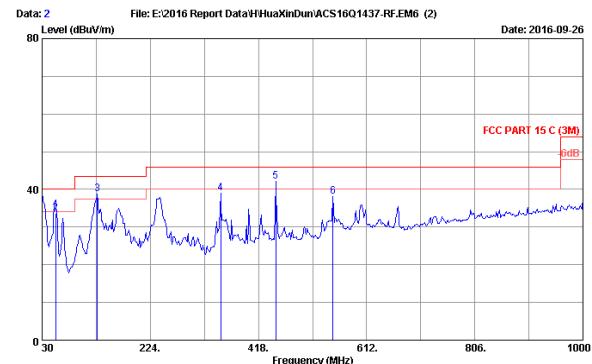
**Duty cycle**

**Note:** The Duty Cycle is close to 100%.

## Frequency: 30MHz~1GHz



Site no. : 3m Chamber Data no. : 1  
Dis. / Ant. : 3m ANT 2016 9168 710 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15 C (3M)  
Env. / Ins. : 23.2°C/51.2% Engineer : Frank  
EUT : IP Set-top Box M/N:A312  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : Tx Mode



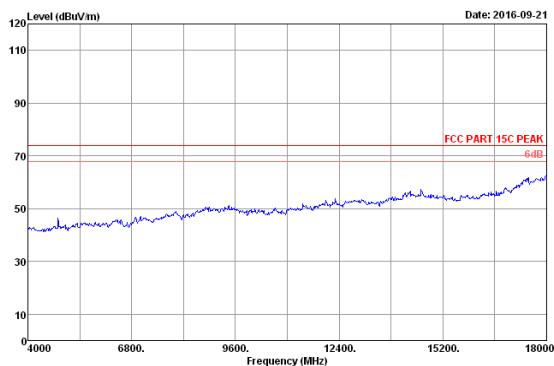
Site no. : 3m Chamber Data no. : 2  
Dis. / Ant. : 3m ANT 2016 9168 710 Ant. pol. : VERTICAL  
Limit : FCC PART 15 C (3M)  
Env. / Ins. : 23.2°C/51.2% Engineer : Frank  
EUT : IP Set-top Box M/N:A312  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : Tx Mode

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Emission          |                   |                    | Margin<br>(dB) | Remark |
|-----|----------------|--------------------------|-----------------------|-------------------|-------------------|--------------------|----------------|--------|
|     |                |                          |                       | Reading<br>(dBuV) | Level<br>(dBuV/m) | Limits<br>(dBuV/m) |                |        |
| 1   | 125.060        | 0.00                     | 0.00                  | 37.05             | 37.05             | 43.50              | 6.45           | QP     |
| 2   | 234.945        | 0.00                     | 0.00                  | 41.74             | 41.74             | 46.00              | 4.26           | QP     |
| 3   | 349.999        | 0.00                     | 0.00                  | 44.41             | 44.41             | 46.00              | 1.59           | QP     |
| 4   | 449.040        | 0.00                     | 0.00                  | 42.74             | 42.74             | 46.00              | 3.26           | QP     |
| 5   | 551.860        | 0.00                     | 0.00                  | 40.93             | 40.93             | 46.00              | 5.07           | QP     |
| 6   | 610.060        | 0.00                     | 0.00                  | 39.55             | 39.55             | 46.00              | 6.45           | QP     |

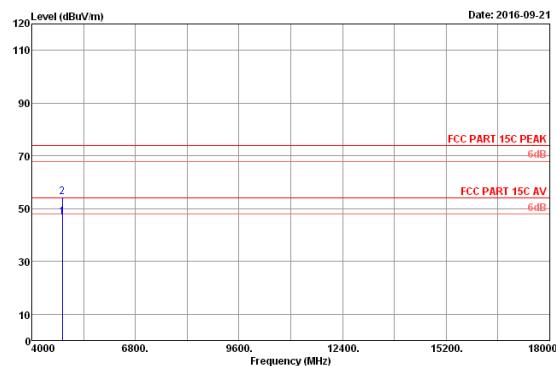
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Emission          |                   |                    | Margin<br>(dB) | Remark |
|-----|----------------|--------------------------|-----------------------|-------------------|-------------------|--------------------|----------------|--------|
|     |                |                          |                       | Reading<br>(dBuV) | Level<br>(dBuV/m) | Limits<br>(dBuV/m) |                |        |
| 1   | 30.166         | 0.00                     | 0.00                  | 35.21             | 35.21             | 40.00              | 4.79           | QP     |
| 2   | 54.250         | 0.00                     | 0.00                  | 33.57             | 33.57             | 40.00              | 6.43           | QP     |
| 3   | 128.940        | 0.00                     | 0.00                  | 38.82             | 38.82             | 43.50              | 4.68           | QP     |
| 4   | 350.100        | 0.00                     | 0.00                  | 39.07             | 39.07             | 46.00              | 6.93           | QP     |
| 5   | 449.040        | 0.00                     | 0.00                  | 42.14             | 42.14             | 46.00              | 3.85           | QP     |
| 6   | 551.860        | 0.00                     | 0.00                  | 38.19             | 38.19             | 46.00              | 7.81           | QP     |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.

**Frequency: 1GHz~18GHz**


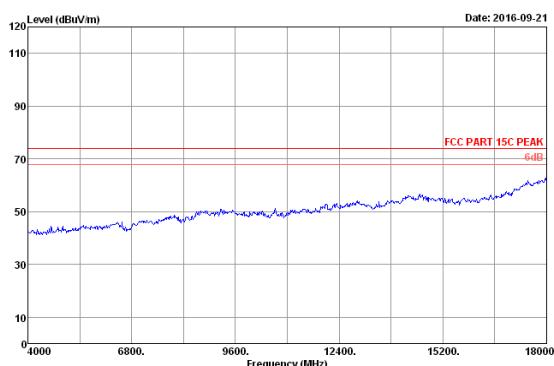
Site no. : RF Chamber Data no. : 1  
 Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
 Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
 EUT : IP Set-top Box  
 Power rating : DC 12V From Adapter Input AC 120V/60Hz  
 Test Mode : IEEE802.11b 2412MHz Tx



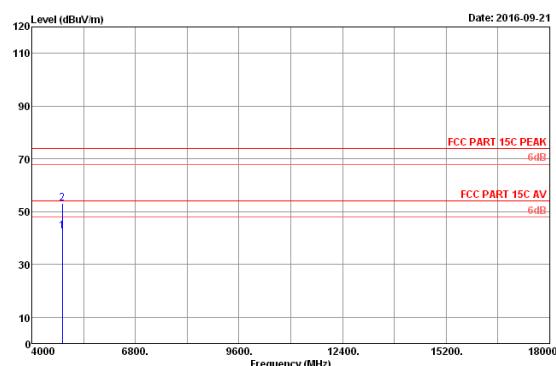
Site no. : RF Chamber Data no. : 2  
 Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
 Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
 EUT : IP Set-top Box  
 Power rating : DC 12V From Adapter Input AC 120V/60Hz  
 Test Mode : IEEE802.11b 2412MHz Tx

| No. | Freq. (MHz) | Ant. Factor | Cable Loss | Reading | factor | AMP   | Emission Level | Limits | Margin  | Remark |
|-----|-------------|-------------|------------|---------|--------|-------|----------------|--------|---------|--------|
| 1   | 4824.00     | 33.15       | 11.77      | 37.48   | 35.68  | 46.72 | 54.00          | 7.28   | Average |        |
| 2   | 4824.00     | 33.15       | 11.77      | 45.13   | 35.68  | 64.37 | 74.00          | 19.63  | Peak    |        |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Ant Factor  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



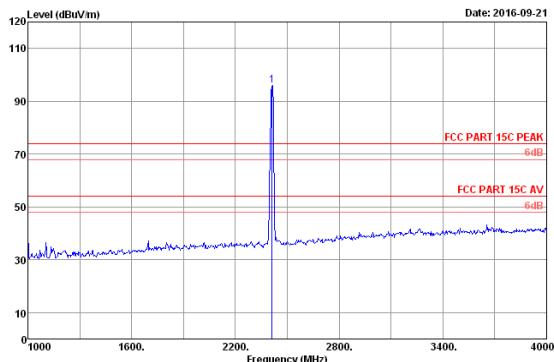
Site no. : RF Chamber Data no. : 3  
 Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
 Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
 EUT : IP Set-top Box  
 Power rating : DC 12V From Adapter Input AC 120V/60Hz  
 Test Mode : IEEE802.11b 2412MHz Tx



Site no. : RF Chamber Data no. : 4  
 Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
 Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
 EUT : IP Set-top Box  
 Power rating : DC 12V From Adapter Input AC 120V/60Hz  
 Test Mode : IEEE802.11b 2412MHz Tx

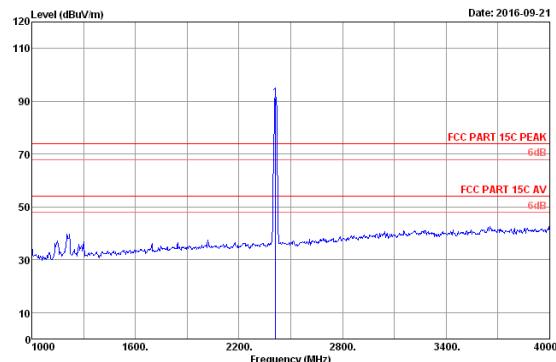
| No. | Freq. (MHz) | Ant. Factor | Cable Loss | Reading | factor | AMP   | Emission Level | Limits | Margin  | Remark |
|-----|-------------|-------------|------------|---------|--------|-------|----------------|--------|---------|--------|
| 1   | 4824.00     | 33.15       | 11.77      | 33.22   | 35.68  | 42.46 | 54.00          | 11.54  | Average |        |
| 2   | 4824.00     | 33.15       | 11.77      | 43.77   | 35.68  | 53.01 | 74.00          | 20.99  | Peak    |        |

Remarks: 1. Emission Levels= Antenna Factor + Cable Loss + Reading  
 -Ant Factor  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



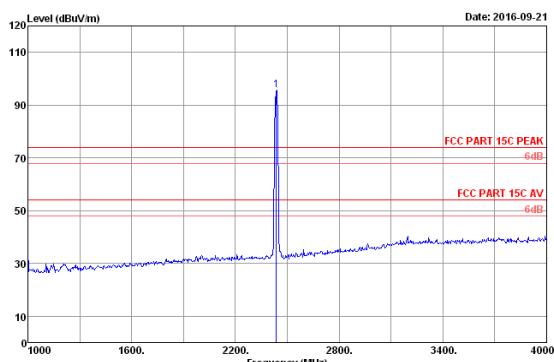
Site no. : RF Chamber Data no. : 5  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11b 2412MHz Tx

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Ant Factor  
2. The emission levels that are 20dB below the official limit are not reported.



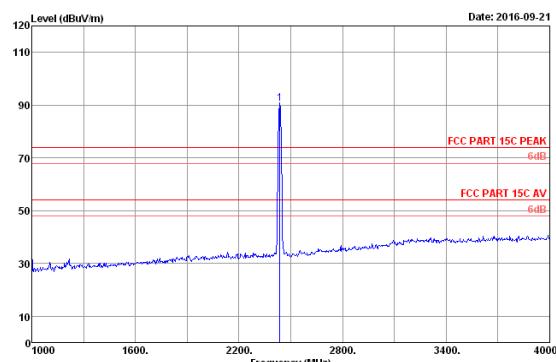
Site no. : RF Chamber Data no. : 6  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11b 2412MHz Tx

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Ant Factor  
2. The emission levels that are 20dB below the official limit are not reported.



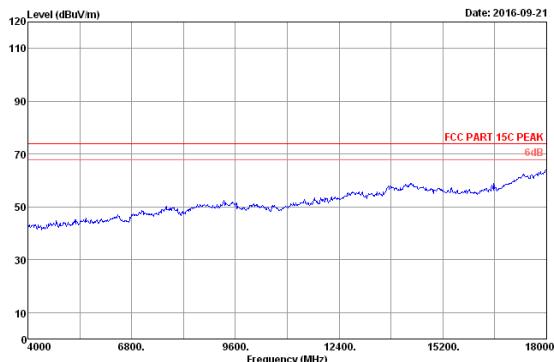
Site no. : RF Chamber Data no. : 11  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11b 2437MHz Tx

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Ant Factor  
2. The emission levels that are 20dB below the official limit are not reported.

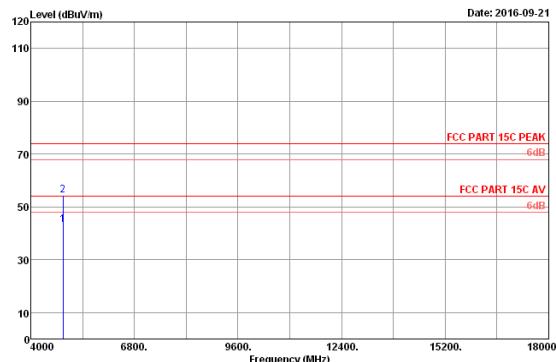


Site no. : RF Chamber Data no. : 12  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11b 2437MHz Tx

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Ant Factor  
2. The emission levels that are 20dB below the official limit are not reported.



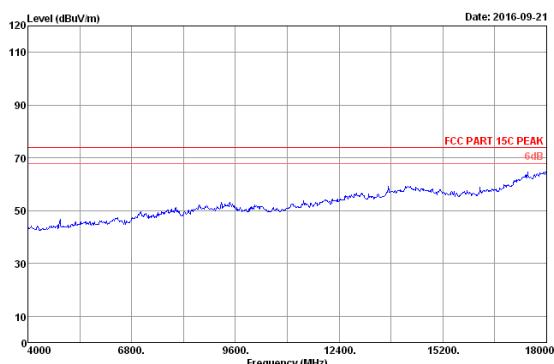
Site no. : RF Chamber Data no. : 13  
 Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
 Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
 EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
 Test Mode : IEEE802.11b 2437MHz Tx



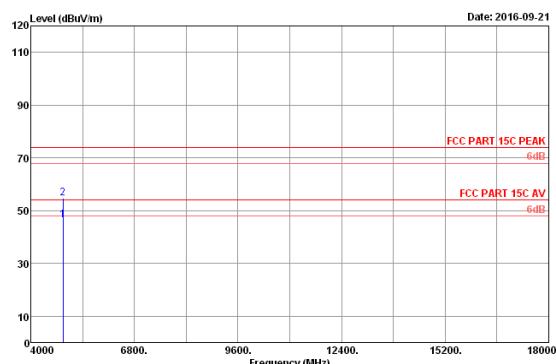
Site no. : RF Chamber Data no. : 14  
 Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
 Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
 EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
 Test Mode : IEEE802.11b 2437MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/n) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark  |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|---------|
| 1   | 4874.00     | 33.25              | 11.80           | 33.85          | 35.69           | 43.21                   | 54.00           | 10.79       | Average |
| 2   | 4874.00     | 33.25              | 11.80           | 45.19          | 35.69           | 54.55                   | 74.00           | 19.45       | Peak    |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -AMP Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



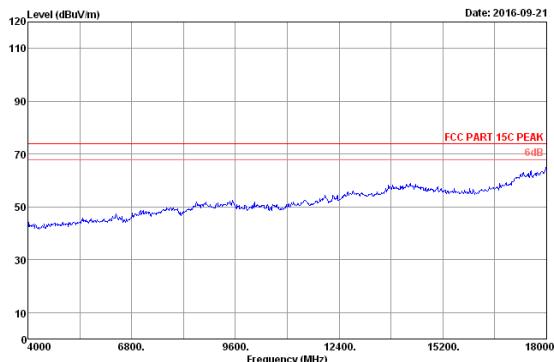
Site no. : RF Chamber Data no. : 15  
 Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
 Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
 EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
 Test Mode : IEEE802.11b 2437MHz Tx



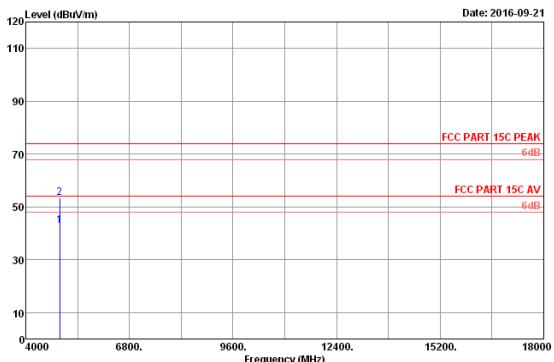
Site no. : RF Chamber Data no. : 16  
 Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
 Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
 EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
 Test Mode : IEEE802.11b 2437MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/n) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark  |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|---------|
| 1   | 4874.00     | 33.25              | 11.80           | 36.98          | 35.69           | 46.34                   | 54.00           | 7.66        | Average |
| 2   | 4874.00     | 33.25              | 11.80           | 45.43          | 35.69           | 54.79                   | 74.00           | 19.21       | Peak    |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -AMP Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



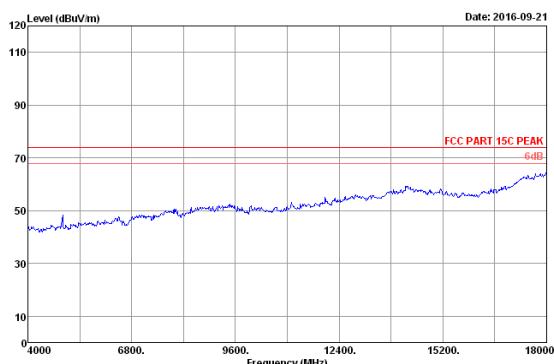
Site no. : RF Chamber Data no. : 17  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11b 2462MHz Tx



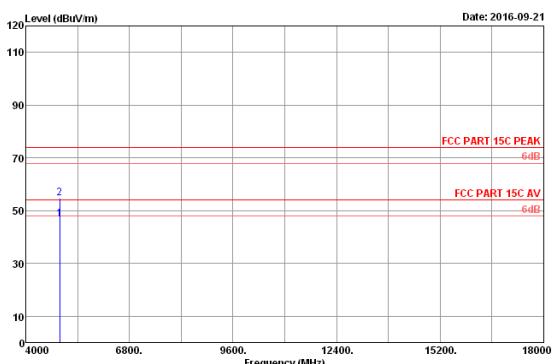
Site no. : RF Chamber Data no. : 18  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11b 2462MHz Tx

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/n) | Cable<br>Loss<br>(dB) | Reading<br>(dBmV) | AMP<br>factor<br>(dB) | Emission<br>Level<br>(dBmV/m) | Limits<br>(dBmV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-------------------|-----------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 4924.00        | 33.35                    | 11.83                 | 33.34             | 35.70                 | 42.82                         | 54.00              | 11.18          | Average |
| 2   | 4924.00        | 33.35                    | 11.83                 | 43.89             | 35.70                 | 53.37                         | 74.00              | 20.63          | Peak    |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -AMP Factor  
2. The emission levels that are 20dB below the official limit are not reported.



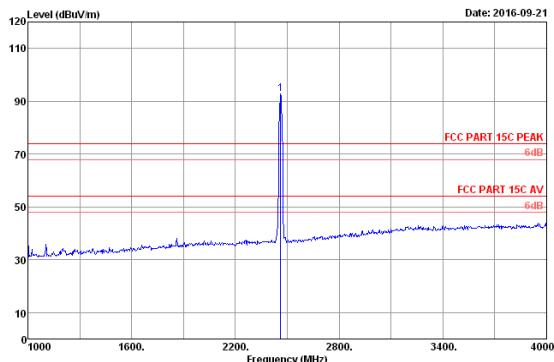
Site no. : RF Chamber Data no. : 19  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11b 2462MHz Tx



Site no. : RF Chamber Data no. : 20  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11b 2462MHz Tx

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/n) | Cable<br>Loss<br>(dB) | Reading<br>(dBmV) | AMP<br>factor<br>(dB) | Emission<br>Level<br>(dBmV/m) | Limits<br>(dBmV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-------------------|-----------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 4924.00        | 33.35                    | 11.83                 | 37.24             | 35.70                 | 46.72                         | 54.00              | 7.28           | Average |
| 2   | 4924.00        | 33.35                    | 11.83                 | 45.09             | 35.70                 | 54.57                         | 74.00              | 19.43          | Peak    |

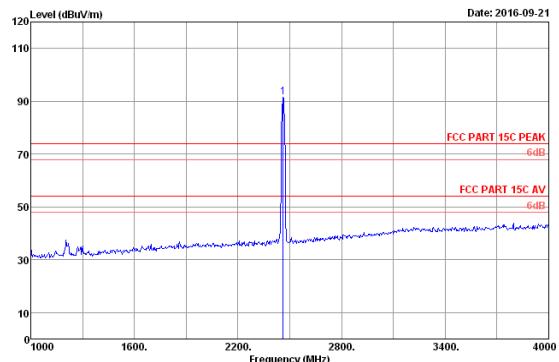
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -AMP Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11b 2462MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2462.00     | 28.35              | 8.40            | 92.48          | 36.38           | 92.85                   | 74.00           | -18.85      | Peak   |

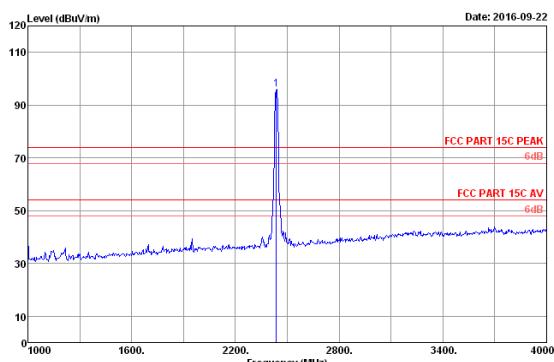
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11b 2462MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2462.00     | 28.35              | 8.40            | 91.04          | 36.38           | 91.41                   | 74.00           | -17.41      | Peak   |

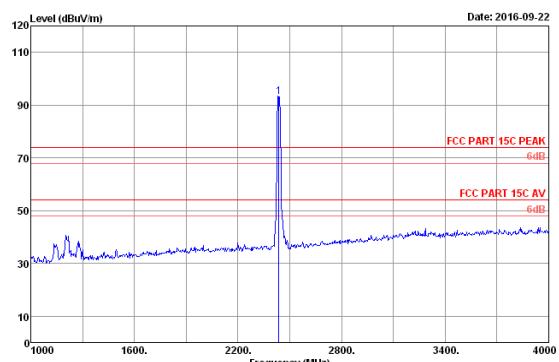
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11g 2437MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2437.00     | 28.32              | 8.38            | 95.58          | 36.38           | 95.90                   | 74.00           | -21.90      | Peak   |

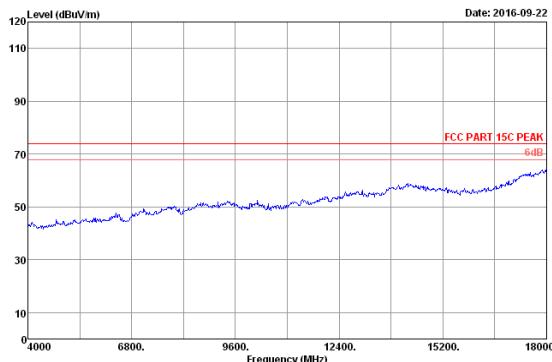
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



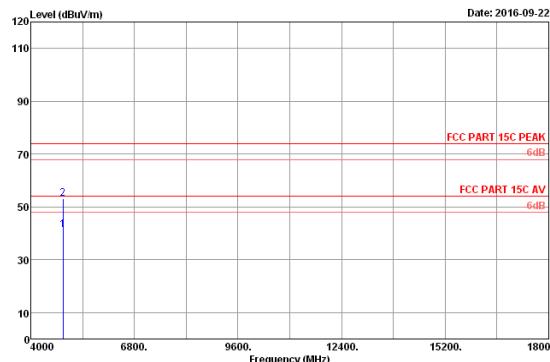
Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11g 2437MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2437.00     | 28.32              | 8.38            | 92.96          | 36.38           | 93.28                   | 74.00           | -19.28      | Peak   |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.

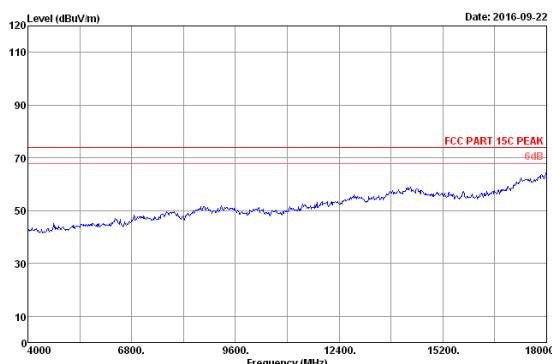


Site no. : RF Chamber Data no. : 29  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11g 2437MHz Tx

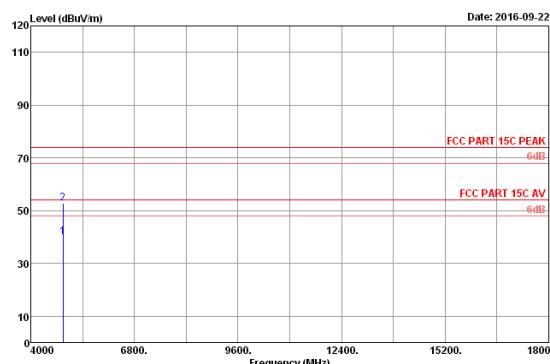


Site no. : RF Chamber Data no. : 30  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11g 2437MHz Tx

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -AMP Factor  
2. The emission levels that are 20dB below the official limit are not reported.

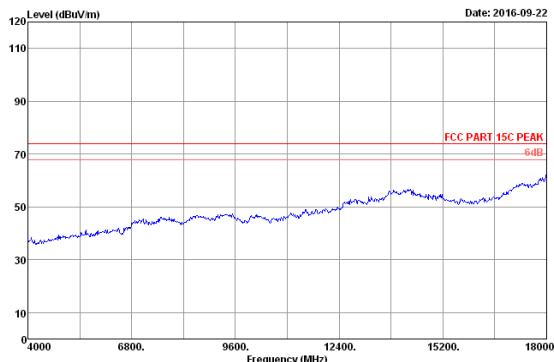


Site no. : RF Chamber Data no. : 31  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11g 2437MHz Tx

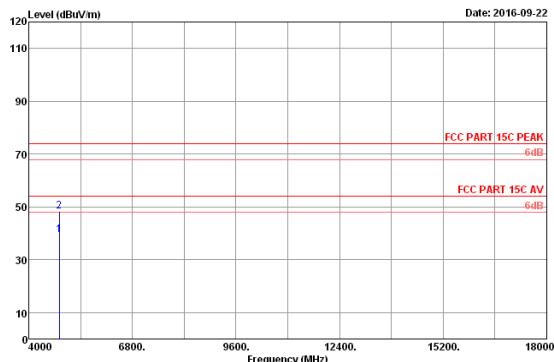


Site no. : RF Chamber Data no. : 32  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11g 2437MHz Tx

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -AMP Factor  
2. The emission levels that are 20dB below the official limit are not reported.



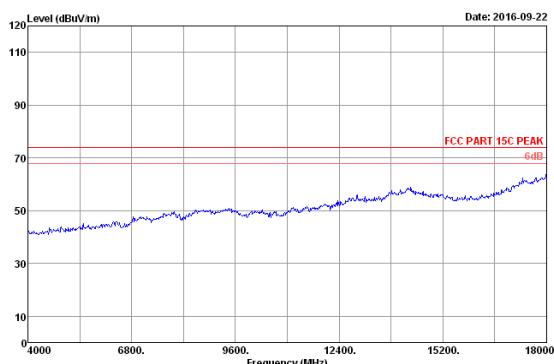
Site no. : RF Chamber Data no. : 35  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11g 2412MHz Tx



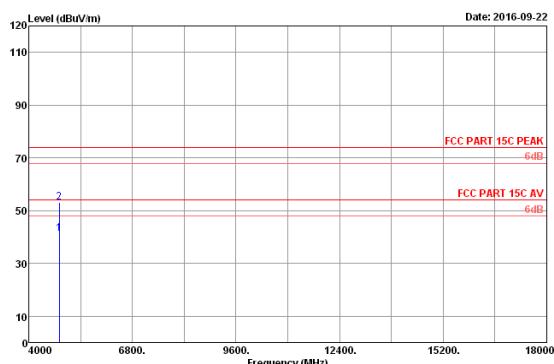
Site no. : RF Chamber Data no. : 34  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11g 2412MHz Tx

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/n) | Cable<br>Loss<br>(dB) | Reading<br>(dBmV) | AMP<br>factor<br>(dB) | Emission<br>Level<br>(dBmV/m) | Limits<br>(dBmV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-------------------|-----------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 4824.00        | 33.15                    | 11.77                 | 30.03             | 35.68                 | 39.27                         | 54.00              | 14.73          | Average |
| 2   | 4824.00        | 33.15                    | 38.97                 | 35.68             | 48.21                 | 74.00                         | 25.79              |                | Peak    |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -AMP Factor  
2. The emission levels that are 20dB below the official limit are not reported.



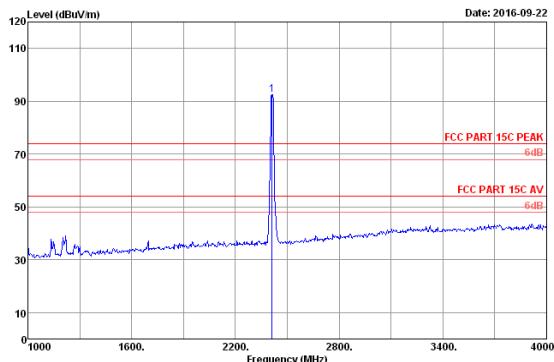
Site no. : RF Chamber Data no. : 35  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11g 2412MHz Tx



Site no. : RF Chamber Data no. : 36  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11g 2412MHz Tx

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/n) | Cable<br>Loss<br>(dB) | Reading<br>(dBmV) | AMP<br>factor<br>(dB) | Emission<br>Level<br>(dBmV/m) | Limits<br>(dBmV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-------------------|-----------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 4824.00        | 33.15                    | 11.77                 | 32.10             | 35.68                 | 41.34                         | 54.00              | 12.66          | Average |
| 2   | 4824.00        | 33.15                    | 11.77                 | 43.78             | 35.68                 | 53.02                         | 74.00              | 20.98          | Peak    |

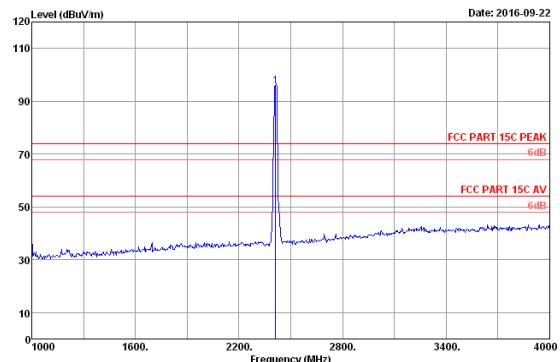
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -AMP Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11g 2412MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2412.00     | 28.29              | 8.35            | 92.29          | 36.39           | 92.64                   | 74.00           | -18.54      | Peak   |

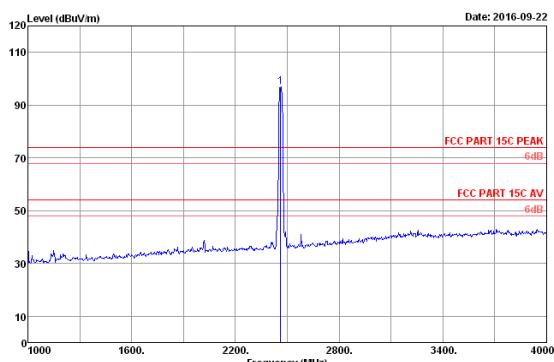
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11g 2412MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2412.00     | 28.29              | 8.35            | 95.34          | 36.39           | 95.59                   | 74.00           | -21.59      | Peak   |

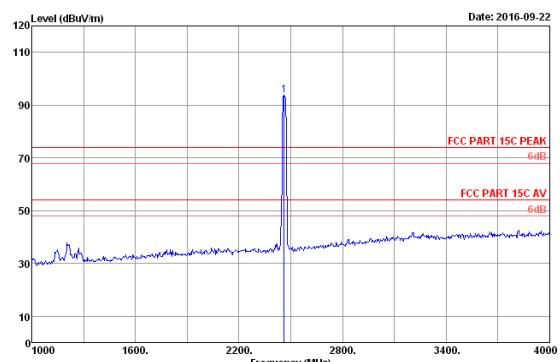
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11g 2462MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2462.00     | 28.35              | 8.40            | 96.61          | 36.38           | 96.98                   | 74.00           | -22.98      | Peak   |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11g 2462MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2462.00     | 28.35              | 8.40            | 93.45          | 36.38           | 93.82                   | 74.00           | -19.82      | Peak   |

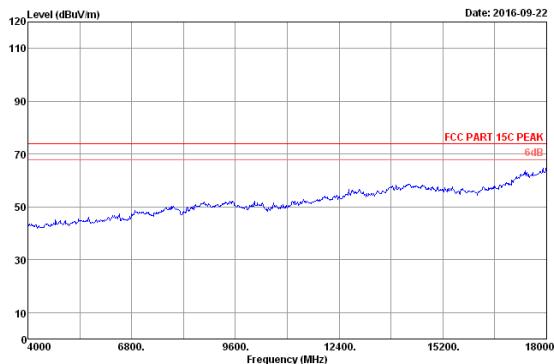
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



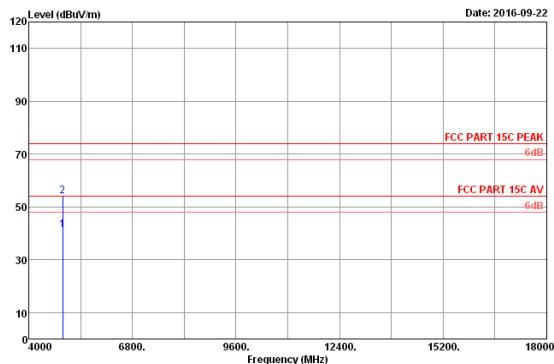
FCC ID: 2AGUQ-A312

AUDIX Technology (Shenzhen) Co., Ltd.

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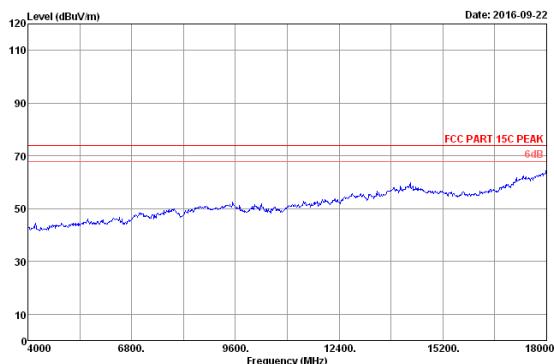
Site no. : RF Chamber Data no. : 49  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11g 2462MHz Tx



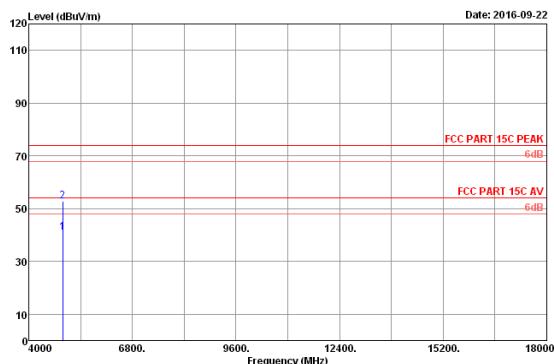
Site no. : RF Chamber Data no. : 50  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11g 2462MHz Tx

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/n) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | AMP<br>factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-------------------|-----------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 4924.00        | 33.35                    | 11.83                 | 31.74             | 35.70                 | 41.22                         | 54.00              | 12.78          | Average |
| 2   | 4924.00        | 33.35                    | 11.83                 | 44.48             | 35.70                 | 53.96                         | 74.00              | 20.04          | Peak    |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-AMP Factor  
2. The emission levels that are 20dB below the official  
limit are not reported.



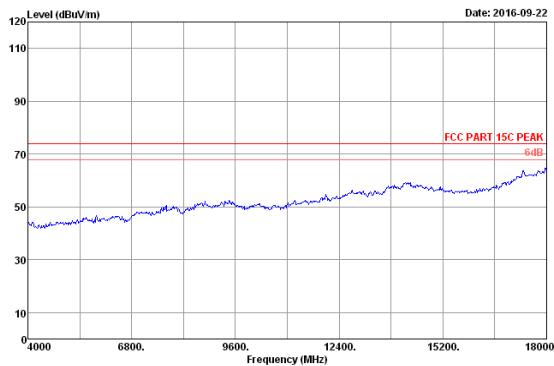
Site no. : RF Chamber Data no. : 51  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11g 2462MHz Tx



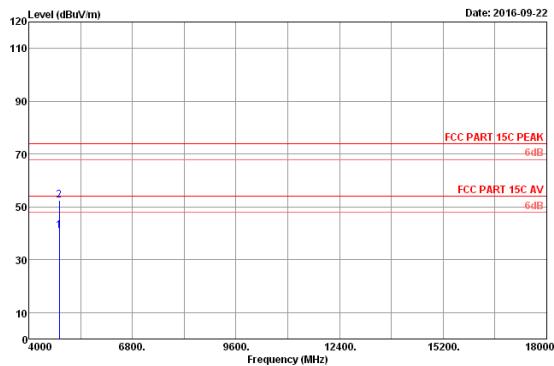
Site no. : RF Chamber Data no. : 52  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11g 2462MHz Tx

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/n) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | AMP<br>factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-------------------|-----------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 4924.00        | 33.35                    | 11.83                 | 31.64             | 35.70                 | 41.12                         | 54.00              | 12.88          | Average |
| 2   | 4924.00        | 33.35                    | 11.83                 | 43.26             | 35.70                 | 52.74                         | 74.00              | 21.26          | Peak    |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-AMP Factor  
2. The emission levels that are 20dB below the official  
limit are not reported.



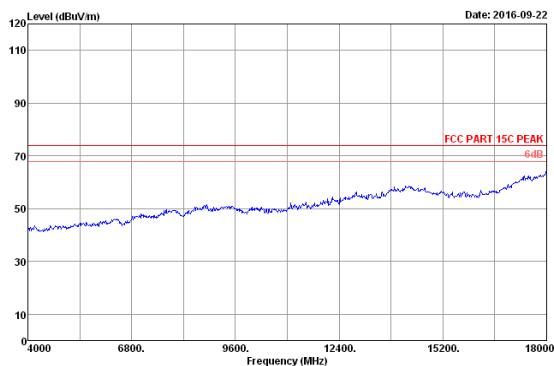
Site no. : RF Chamber Data no. : 53  
Dis. / Ant. : 3m\_2015\_3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT20 2412MHz Tx



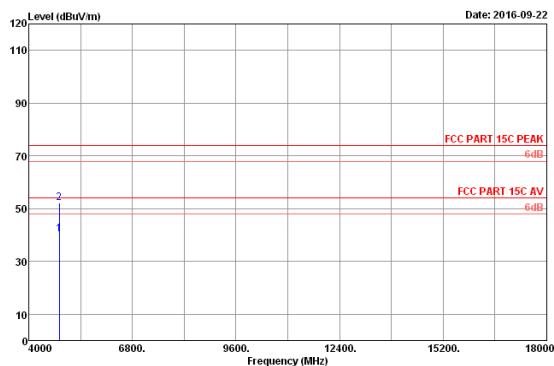
Site no. : RF Chamber Data no. : 54  
Dis. / Ant. : 3m\_2015\_3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT20 2412MHz Tx

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/n) | Cable<br>Loss<br>(dB) | AMP<br>factor<br>(dBmV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark        |
|-----|----------------|--------------------------|-----------------------|-------------------------|-------------------------------|--------------------|----------------|---------------|
| 1   | 4824.00        | 33.15                    | 11.77                 | 31.82                   | 35.68                         | 41.06              | 54.00          | 12.94 Average |
| 2   | 4824.00        | 33.15                    | 11.77                 | 43.36                   | 35.68                         | 52.66              | 74.00          | 21.40 Peak    |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official  
limit are not reported.



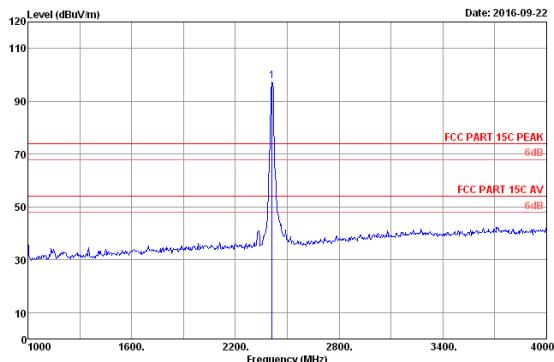
Site no. : RF Chamber Data no. : 55  
Dis. / Ant. : 3m\_2015\_3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT20 2412MHz Tx



Site no. : RF Chamber Data no. : 56  
Dis. / Ant. : 3m\_2015\_3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT20 2412MHz Tx

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/n) | Cable<br>Loss<br>(dB) | Reading<br>factor<br>(dBmV) | AMP<br>factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|----------------|--------------------------|-----------------------|-----------------------------|-----------------------|-------------------------------|--------------------|----------------|--------|
| 1   | 4824.00        | 33.15                    | 11.77                 | 31.00                       | 35.68                 | 40.24                         | 54.00              | 13.76 Average  |        |
| 2   | 4824.00        | 33.15                    | 11.77                 | 42.96                       | 35.68                 | 52.20                         | 74.00              | 21.80 Peak     |        |

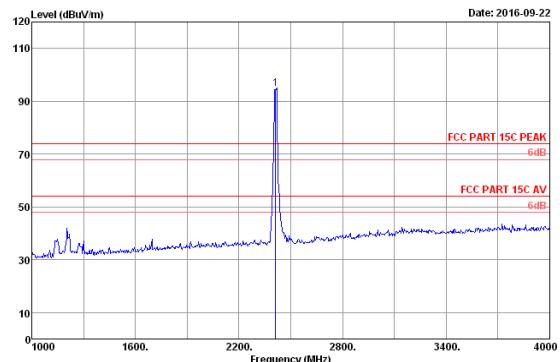
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official  
limit are not reported.



Site no. : RF Chamber  
 Dis. / Ant. : 3m 2015 3115-4877  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 22.6°C/51.2%  
 EUT : IP Set-top Box  
 Power rating : DC 12V From Adapter Input AC 120V/60Hz  
 Test Mode : IEEE802.11nHT20 2412MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2412.00     | 28.29              | 8.35            | 97.32          | 36.39           | 97.57                   | 74.00           | -23.57      | Peak   |

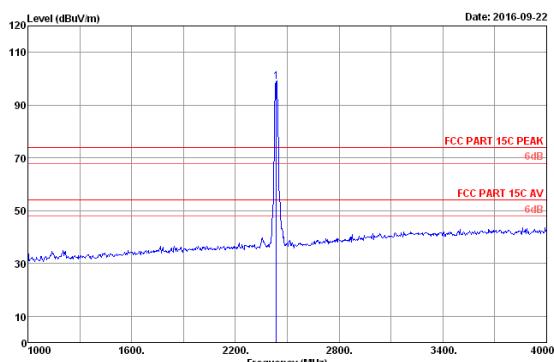
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
 Dis. / Ant. : 3m 2015 3115-4877  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 22.6°C/51.2%  
 EUT : IP Set-top Box  
 Power rating : DC 12V From Adapter Input AC 120V/60Hz  
 Test Mode : IEEE802.11nHT20 2412MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2412.00     | 28.29              | 8.35            | 94.62          | 36.39           | 94.87                   | 74.00           | -20.87      | Peak   |

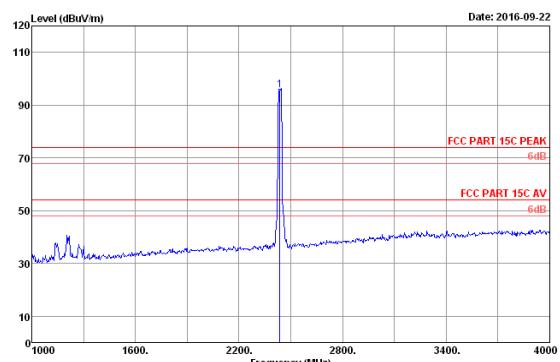
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
 Dis. / Ant. : 3m 2015 3115-4877  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 22.6°C/51.2%  
 EUT : IP Set-top Box  
 Power rating : DC 12V From Adapter Input AC 120V/60Hz  
 Test Mode : IEEE802.11nHT20 2437MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2437.00     | 28.32              | 8.38            | 98.56          | 36.38           | 98.88                   | 74.00           | -24.88      | Peak   |

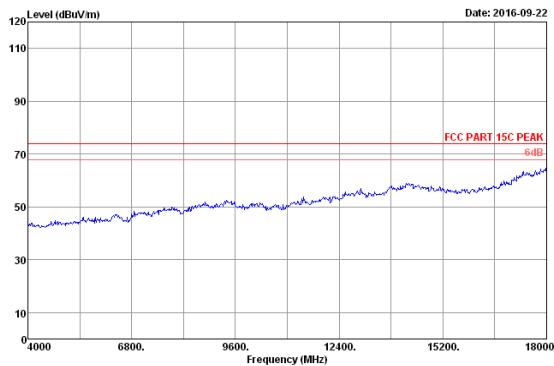
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



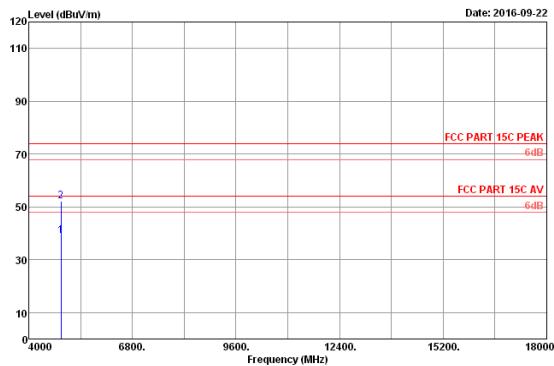
Site no. : RF Chamber  
 Dis. / Ant. : 3m 2015 3115-4877  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 22.6°C/51.2%  
 EUT : IP Set-top Box  
 Power rating : DC 12V From Adapter Input AC 120V/60Hz  
 Test Mode : IEEE802.11nHT20 2437MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2437.00     | 28.32              | 8.38            | 95.40          | 36.38           | 95.72                   | 74.00           | -21.72      | Peak   |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



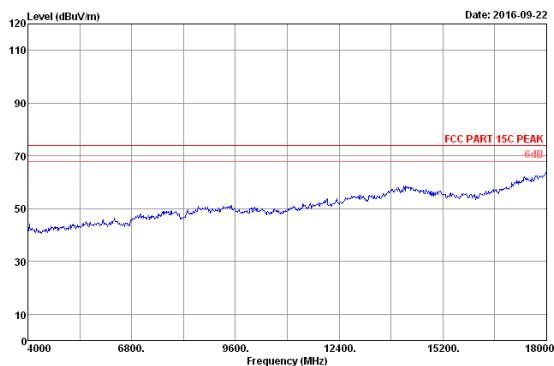
Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT20 2437MHz Tx



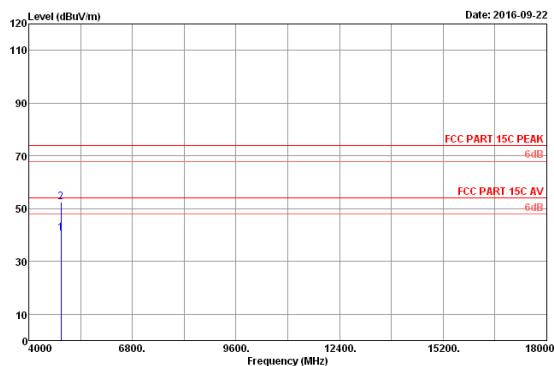
Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT20 2437MHz Tx

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/n) | Cable<br>Loss<br>(dB) | AMP<br>factor<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark        |
|-----|----------------|--------------------------|-----------------------|-------------------------|-------------------------------|--------------------|----------------|---------------|
| 1   | 4874.00        | 33.25                    | 11.80                 | 29.68                   | 35.69                         | 39.04              | 54.00          | 14.96 Average |
| 2   | 4874.00        | 33.25                    | 11.80                 | 42.71                   | 35.69                         | 52.07              | 74.00          | 21.93 Peak    |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-AMP Factor  
2. The emission levels that are 20dB below the official  
limit are not reported.



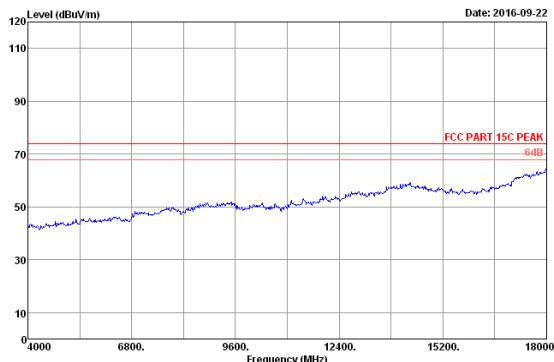
Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT20 2437MHz Tx



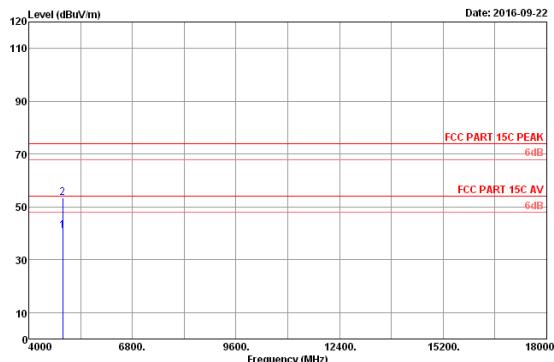
Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT20 2437MHz Tx

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/n) | Cable<br>Loss<br>(dB) | Reading<br>factor<br>(dBuV) | AMP<br>factor<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-----------------------------|-------------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 4874.00        | 33.25                    | 11.80                 | 31.19                       | 35.69                   | 40.55                         | 54.00              | 13.45          | Average |
| 2   | 4874.00        | 33.25                    | 11.80                 | 43.11                       | 35.69                   | 52.47                         | 74.00              | 21.53          | Peak    |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-AMP Factor  
2. The emission levels that are 20dB below the official  
limit are not reported.



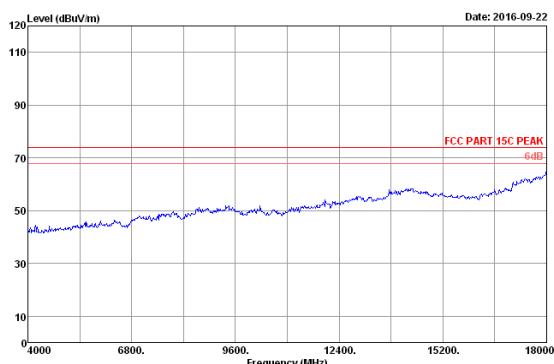
Site no. : RF Chamber Data no. : 69  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT20 2462MHz Tx



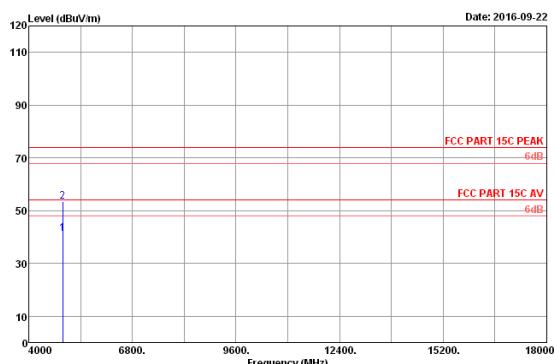
Site no. : RF Chamber Data no. : 70  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT20 2462MHz Tx

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/n) | Cable<br>Loss<br>(dB) | AMP<br>factor<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark        |
|-----|----------------|--------------------------|-----------------------|-------------------------|-------------------------------|--------------------|----------------|---------------|
| 1   | 4924.00        | 33.35                    | 11.83                 | 31.57                   | 35.70                         | 41.05              | 54.00          | 12.95 Average |
| 2   | 4924.00        | 33.35                    | 11.83                 | 43.92                   | 35.70                         | 53.40              | 74.00          | 20.60 Peak    |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official  
limit are not reported.



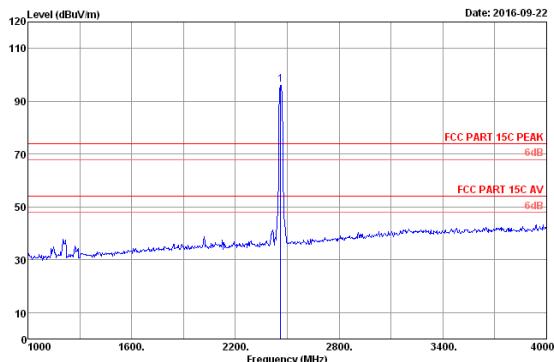
Site no. : RF Chamber Data no. : 71  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT20 2462MHz Tx



Site no. : RF Chamber Data no. : 72  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT20 2462MHz Tx

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/n) | Cable<br>Loss<br>(dB) | Reading<br>factor<br>(dBuV) | AMP<br>factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|----------------|--------------------------|-----------------------|-----------------------------|-----------------------|-------------------------------|--------------------|----------------|--------|
| 1   | 4924.00        | 33.35                    | 11.83                 | 31.85                       | 35.70                 | 41.33                         | 54.00              | 12.67 Average  |        |
| 2   | 4924.00        | 33.35                    | 11.83                 | 43.98                       | 35.70                 | 53.46                         | 74.00              | 20.54 Peak     |        |

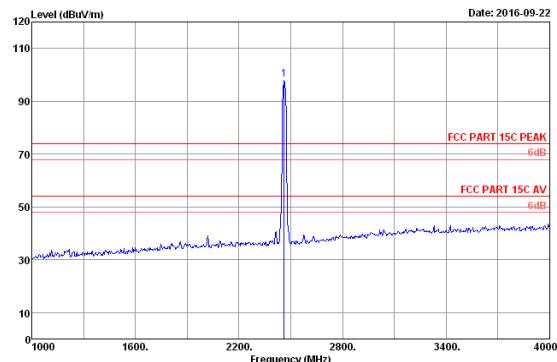
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official  
limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT20 2462MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2462.00     | 28.35              | 8.40            | 96.01          | 36.38           | 96.38                   | 74.00           | -22.38      | Peak   |

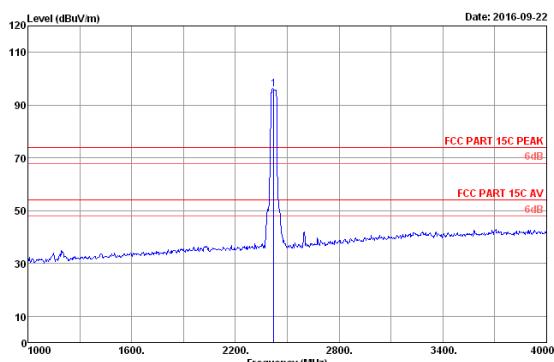
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT20 2462MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2462.00     | 28.35              | 8.40            | 97.86          | 36.38           | 98.23                   | 74.00           | -24.23      | Peak   |

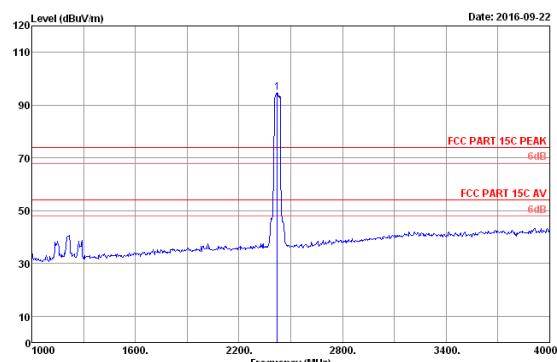
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT40 2422MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2422.00     | 28.31              | 8.36            | 95.86          | 36.38           | 96.15                   | 74.00           | -22.15      | Peak   |

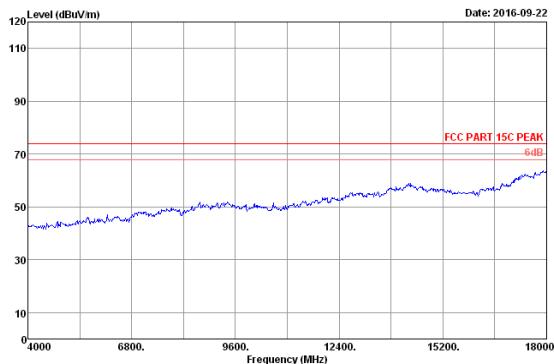
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



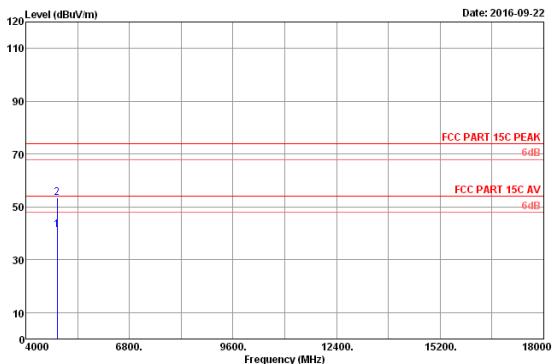
Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT40 2422MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2422.00     | 28.31              | 8.36            | 94.32          | 36.38           | 94.61                   | 74.00           | -20.61      | Peak   |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



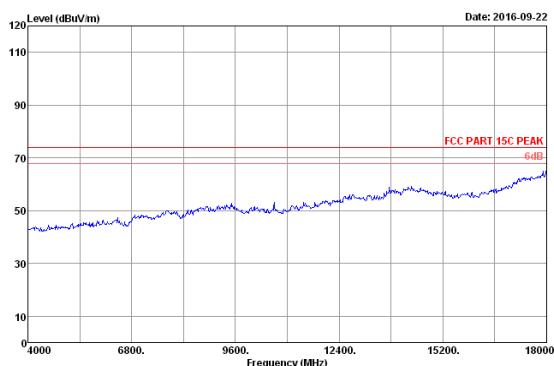
Site no. : RF Chamber Data no. : 85  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT40 2422MHz Tx



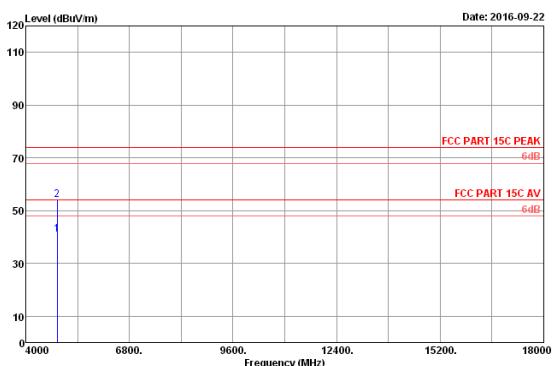
Site no. : RF Chamber Data no. : 86  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT40 2422MHz Tx

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/n) | Cable<br>Loss<br>(dB) | AMP<br>factor<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark        |
|-----|----------------|--------------------------|-----------------------|-------------------------|-------------------------------|--------------------|----------------|---------------|
| 1   | 4844.00        | 33.19                    | 11.78                 | 31.86                   | 35.68                         | 41.15              | 54.00          | 12.85 Average |
| 2   | 4844.00        | 33.19                    | 11.78                 | 44.01                   | 35.68                         | 53.30              | 74.00          | 20.70 Peak    |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-AMP Factor  
2. The emission levels that are 20dB below the official  
limit are not reported.



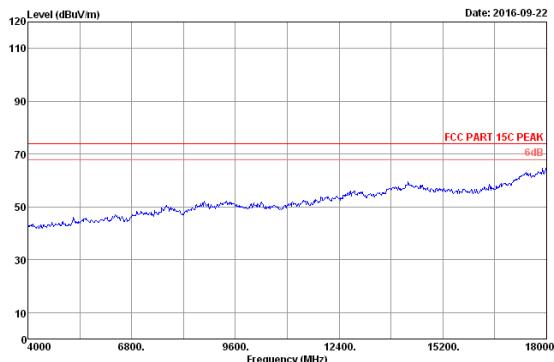
Site no. : RF Chamber Data no. : 87  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT40 2422MHz Tx



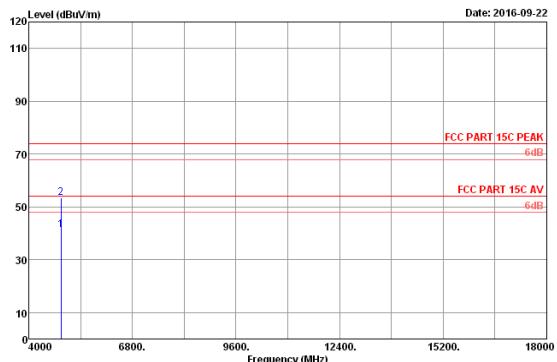
Site no. : RF Chamber Data no. : 88  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT40 2422MHz Tx

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/n) | Cable<br>Loss<br>(dB) | AMP<br>factor<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark        |
|-----|----------------|--------------------------|-----------------------|-------------------------|-------------------------------|--------------------|----------------|---------------|
| 1   | 4844.00        | 33.19                    | 11.78                 | 31.66                   | 35.68                         | 40.95              | 54.00          | 13.05 Average |
| 2   | 4844.00        | 33.19                    | 11.78                 | 44.64                   | 35.68                         | 53.93              | 74.00          | 20.07 Peak    |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-AMP Factor  
2. The emission levels that are 20dB below the official  
limit are not reported.



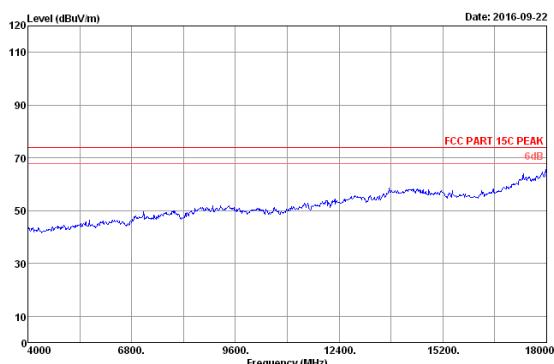
Site no. : RF Chamber Data no. : 89  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT40 2437MHz Tx



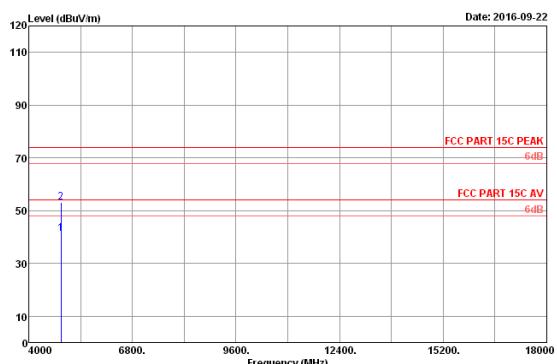
Site no. : RF Chamber Data no. : 90  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT40 2437MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/n) | Cable Loss (dB) | Reading (dBmV) | AMP factor (dB) | Emission Level (dBmV/m) | Limits (dBmV/m) | Margin (dB) | Remark  |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|---------|
| 1   | 4874.00     | 33.25              | 11.80           | 31.80          | 35.69           | 41.16                   | 54.00           | 12.84       | Average |
| 2   | 4874.00     | 33.25              | 11.80           | 44.13          | 35.69           | 53.49                   | 74.00           | 20.51       | Peak    |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -AMP Factor  
2. The emission levels that are 20dB below the official limit are not reported.



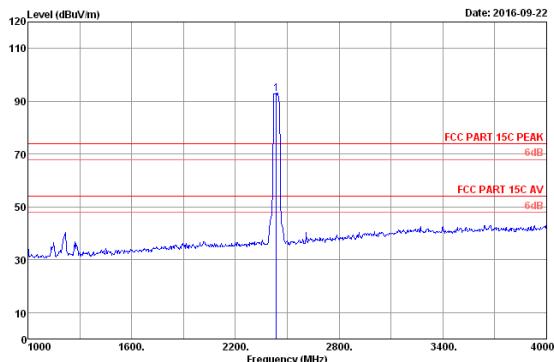
Site no. : RF Chamber Data no. : 91  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT40 2437MHz Tx



Site no. : RF Chamber Data no. : 92  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT40 2437MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/n) | Cable Loss (dB) | Reading (dBmV) | AMP factor (dB) | Emission Level (dBmV/m) | Limits (dBmV/m) | Margin (dB) | Remark  |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|---------|
| 1   | 4874.00     | 33.25              | 11.80           | 31.88          | 35.69           | 41.24                   | 54.00           | 12.76       | Average |
| 2   | 4874.00     | 33.25              | 11.80           | 43.74          | 35.69           | 53.10                   | 74.00           | 20.90       | Peak    |

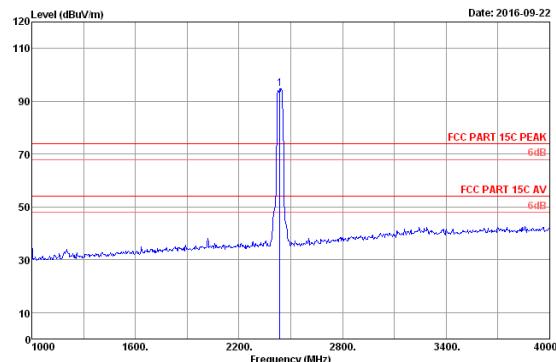
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -AMP Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT40 2437MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBmV) | AMP factor (dB) | Emission Level (dBmV/m) | Limits (dBmV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2437.00     | 28.32              | 8.38            | 92.61          | 36.38           | 92.93                   | 74.00           | -18.93      | Peak   |

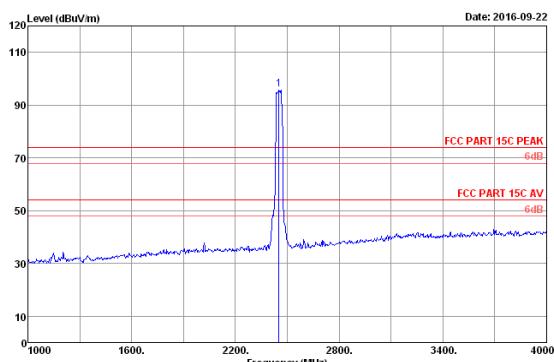
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT40 2437MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBmV) | AMP factor (dB) | Emission Level (dBmV/m) | Limits (dBmV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2437.00     | 28.32              | 8.38            | 94.48          | 36.38           | 94.80                   | 74.00           | -20.80      | Peak   |

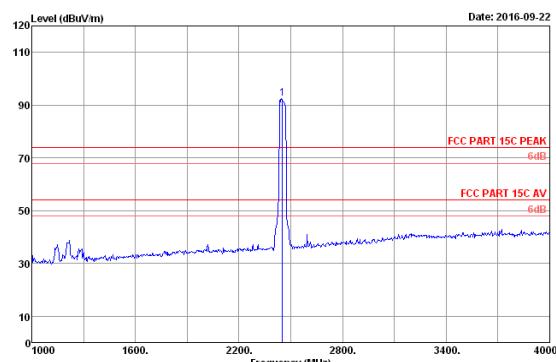
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT40 2452MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBmV) | AMP factor (dB) | Emission Level (dBmV/m) | Limits (dBmV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2452.00     | 28.34              | 8.39            | 95.50          | 36.38           | 95.85                   | 74.00           | -21.85      | Peak   |

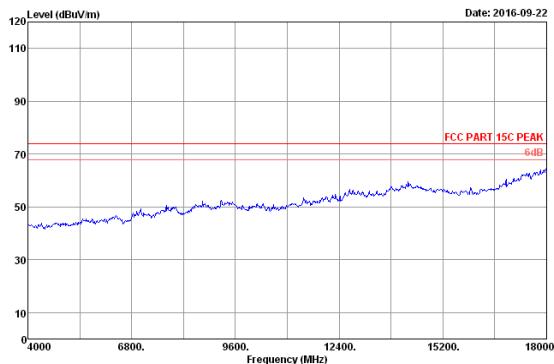
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



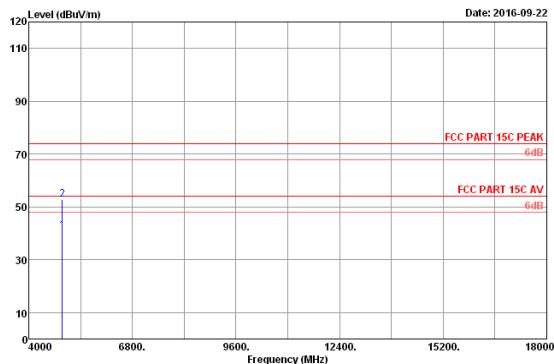
Site no. : RF Chamber  
Dis. / Ant. : 3m 2015 3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHT40 2452MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBmV) | AMP factor (dB) | Emission Level (dBmV/m) | Limits (dBmV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2452.00     | 28.34              | 8.39            | 92.02          | 36.38           | 92.37                   | 74.00           | -18.37      | Peak   |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



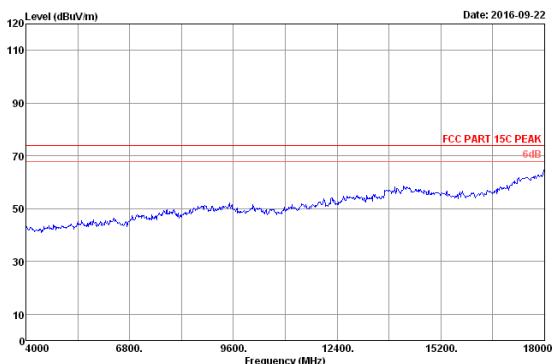
Site no. : RF Chamber Data no. : 101  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEE802.11nHT40 2452MHz Tx



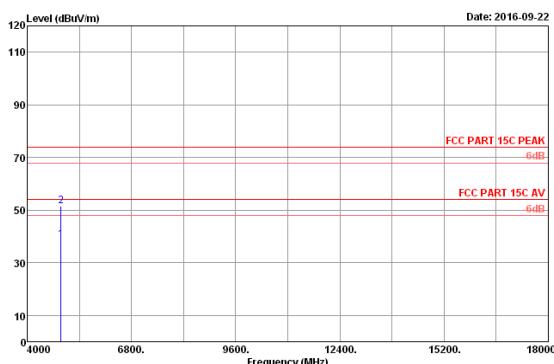
Site no. : RF Chamber Data no. : 102  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEE802.11nHT40 2452MHz Tx

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/n) | Cable<br>Loss<br>(dBuV) | AMP<br>factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark        |
|-----|----------------|--------------------------|-------------------------|-----------------------|-------------------------------|--------------------|----------------|---------------|
| 1   | 4904.00        | 33.31                    | 11.82                   | 31.40                 | 35.70                         | 40.83              | 54.00          | 13.17 Average |
| 2   | 4904.00        | 33.31                    | 11.82                   | 43.48                 | 35.70                         | 52.91              | 74.00          | 21.09 Peak    |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official  
limit are not reported.



Site no. : RF Chamber Data no. : 103  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEE802.11nHT40 2452MHz Tx



Site no. : RF Chamber Data no. : 104  
Dis. / Ant. : 3m 2015 3115-4877 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK Pre. : 101.2kPa  
Env. / Ins. : 22.6°C/51.2% Engineer : zack\_zhu  
EUT : IP Set-top Box Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEE802.11nHT40 2452MHz Tx

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/n) | Cable<br>Loss<br>(dBuV) | AMP<br>factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark        |
|-----|----------------|--------------------------|-------------------------|-----------------------|-------------------------------|--------------------|----------------|---------------|
| 1   | 4904.00        | 33.31                    | 11.82                   | 29.35                 | 35.70                         | 38.78              | 54.00          | 15.22 Average |
| 2   | 4904.00        | 33.31                    | 11.82                   | 42.12                 | 35.70                         | 51.55              | 74.00          | 22.45 Peak    |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official  
limit are not reported.

## 5. CONDUCTED SPURIOUS EMISSIONS

### 5.1. Test Equipment

| Item | Equipment  | Manufacturer            | Model No.     | Serial No. | Last Cal. | Cal. Interval |
|------|------------|-------------------------|---------------|------------|-----------|---------------|
| 1.   | Spectrum   | Agilent                 | N9030A        | MY51380221 | Oct.17,15 | 1 Year        |
| 2.   | Attenuator | Agilent                 | 8491B         | MY39262165 | Apr.23,16 | 1 Year        |
| 3.   | RF Cable   | Marvelous Microwave Inc | SFL402105FLEX | NO.1       | Oct.17,15 | 1 Year        |

### 5.2. Limit

In any 100kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.

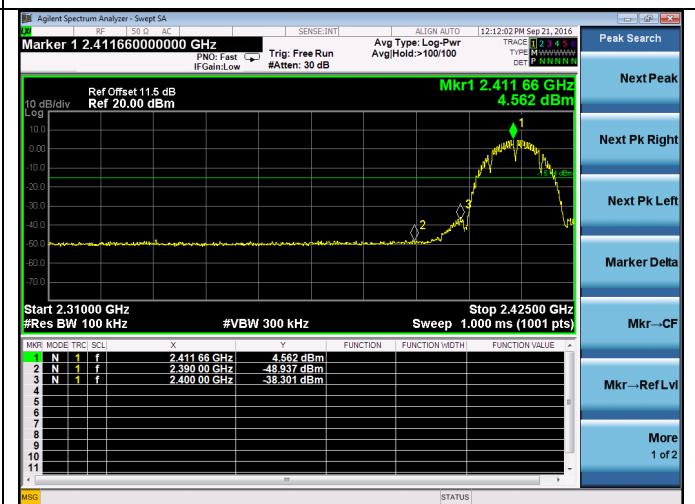
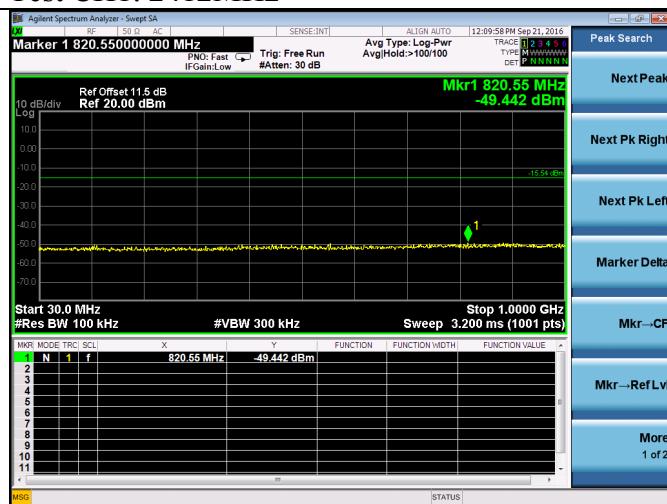
### 5.3. Test Procedure

The transmitter output was connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz, The video bandwidth is set to 300 kHz and measure all the emissions with peak detector.

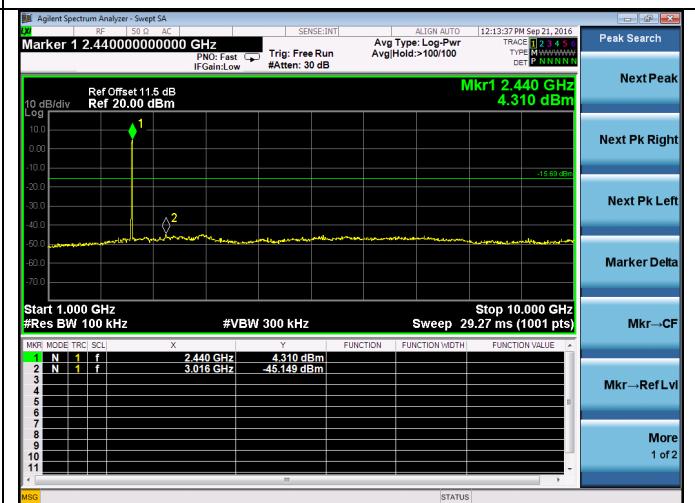
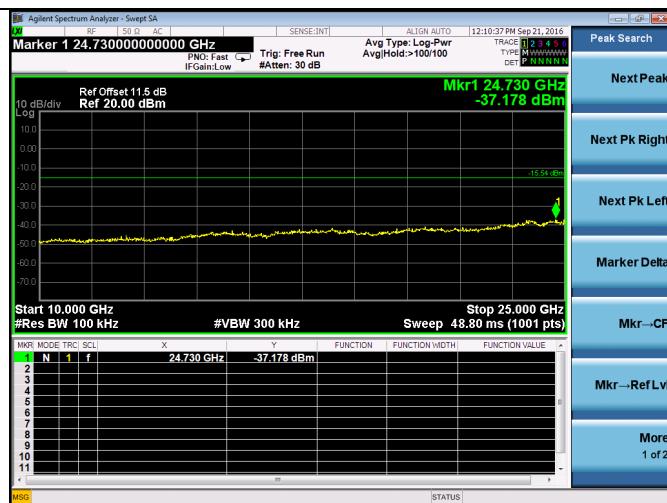
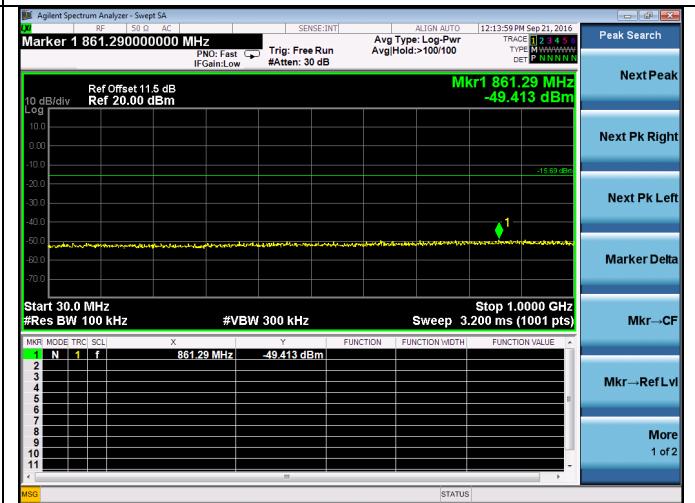
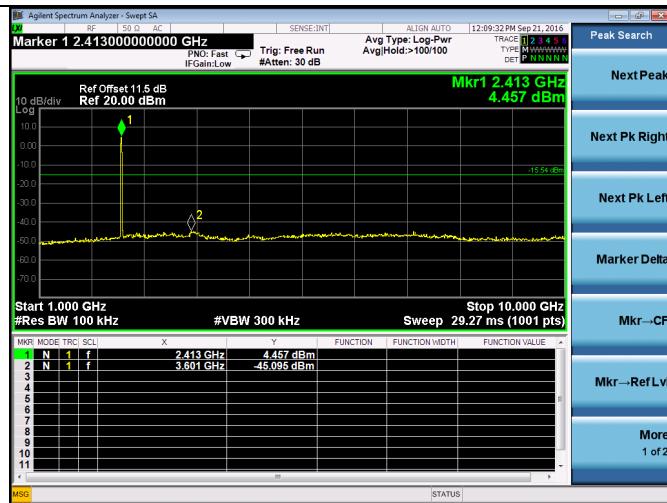
### 5.4. Test result

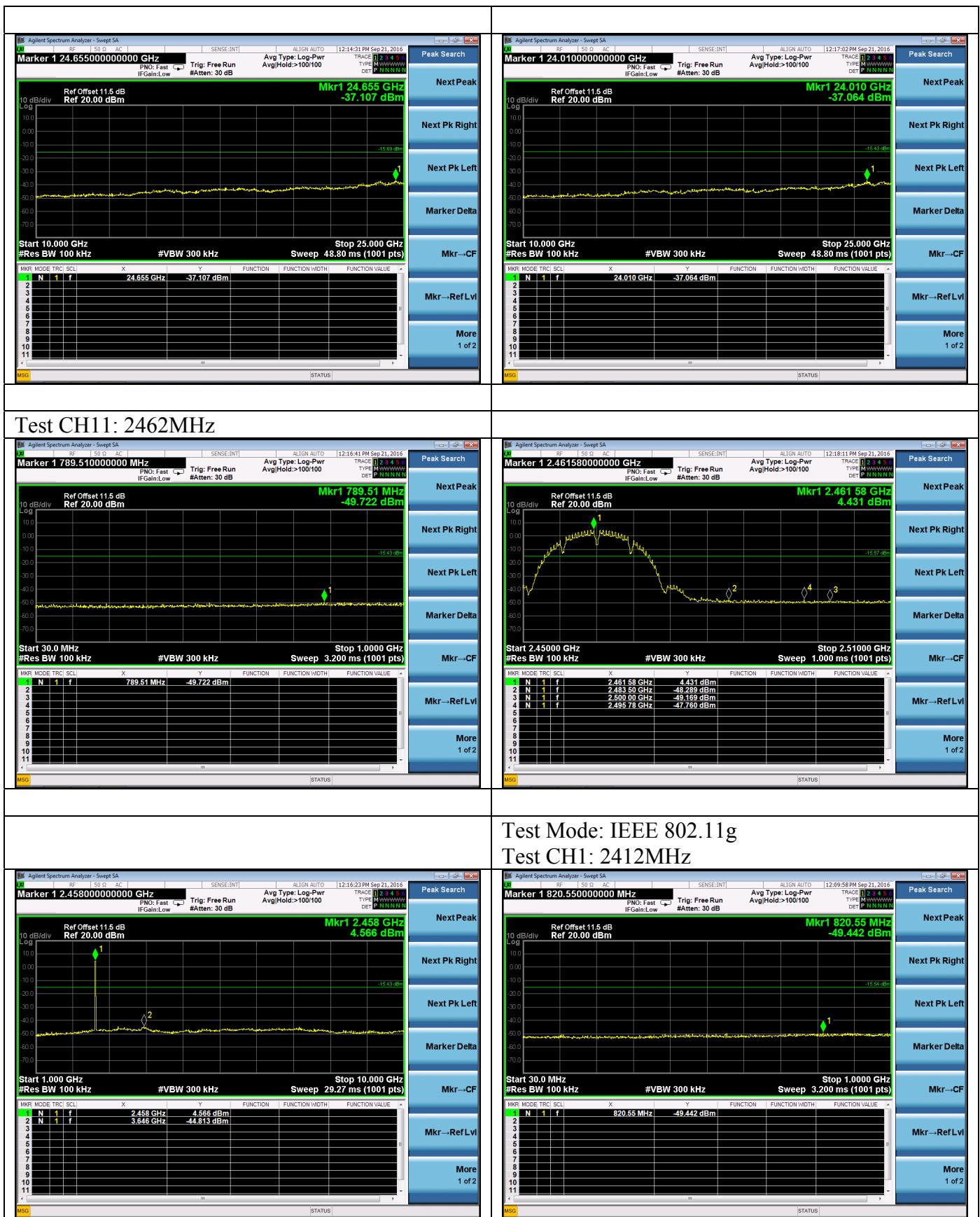
**PASS** (The testing data was attached in the next pages.)

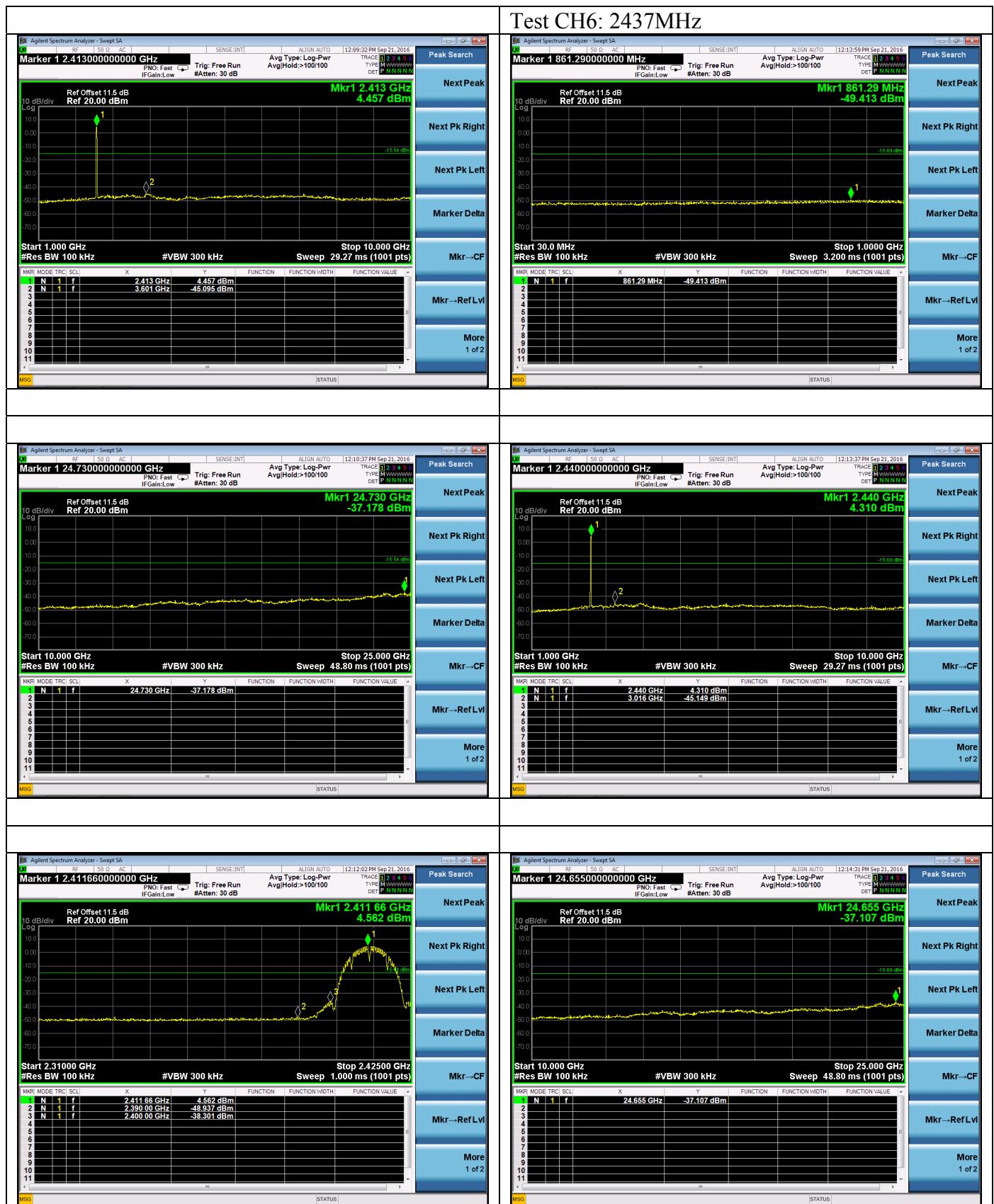
Test Mode: IEEE 802.11b  
Test CH1: 2412MHz



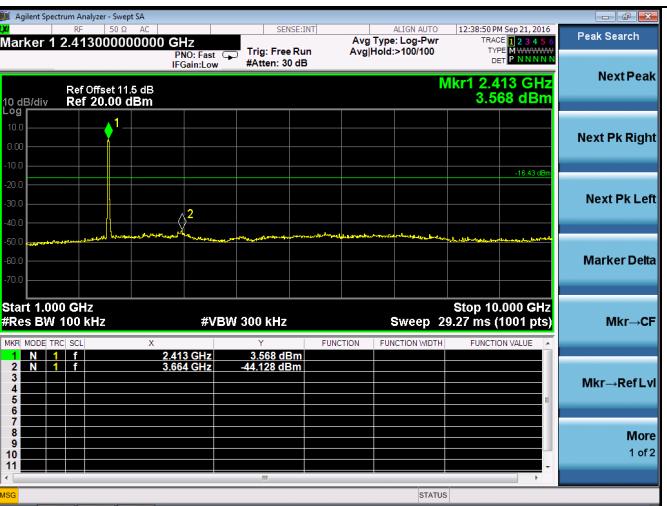
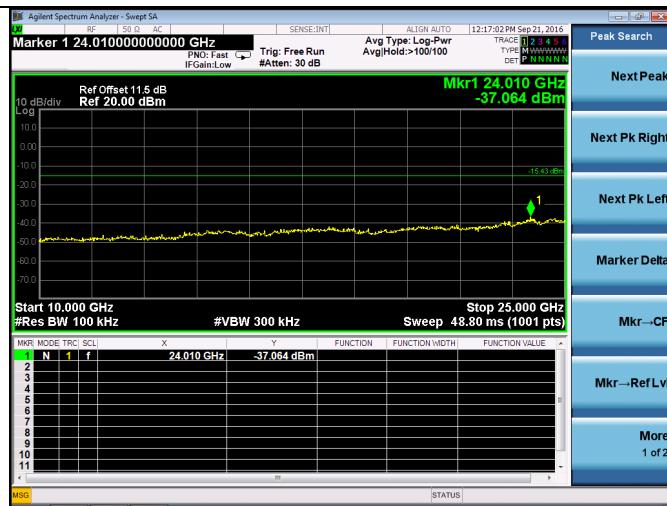
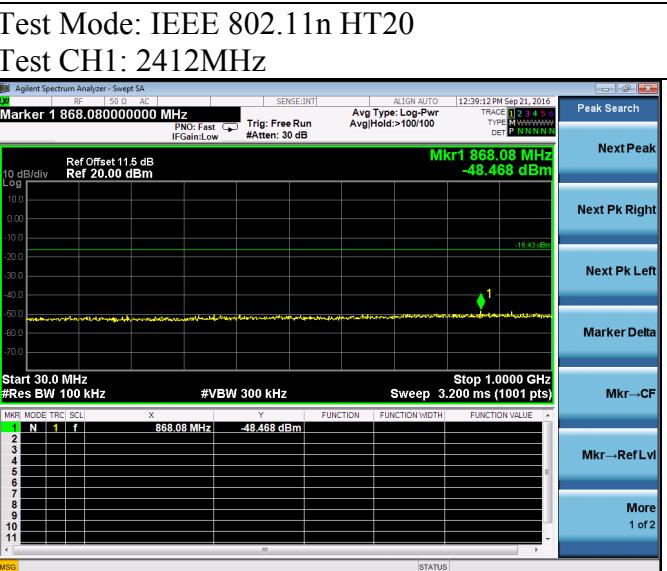
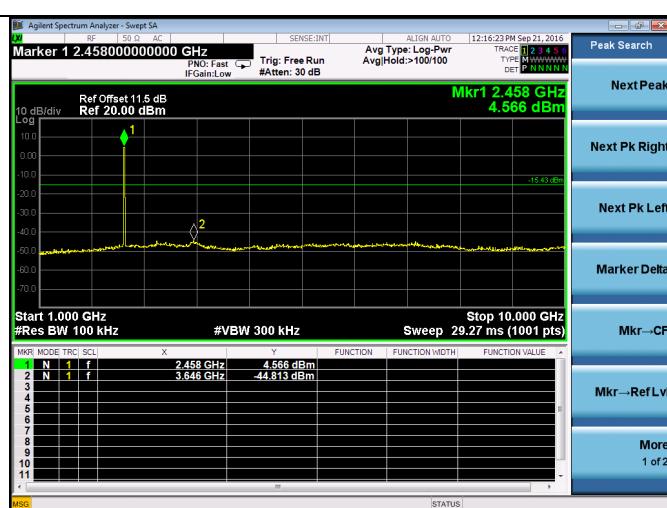
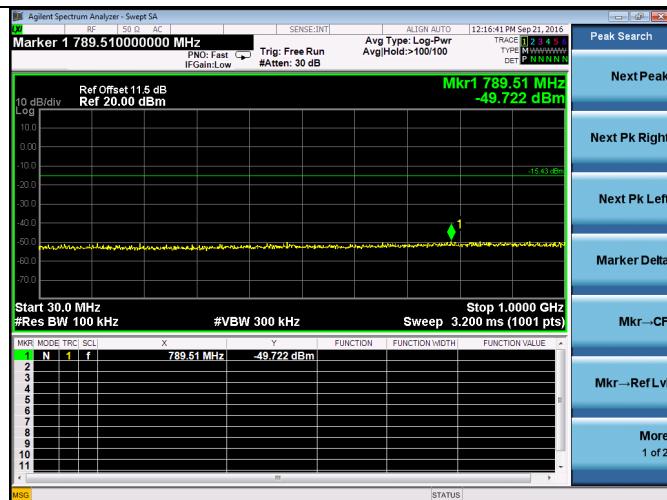
## Test CH6: 2437MHz

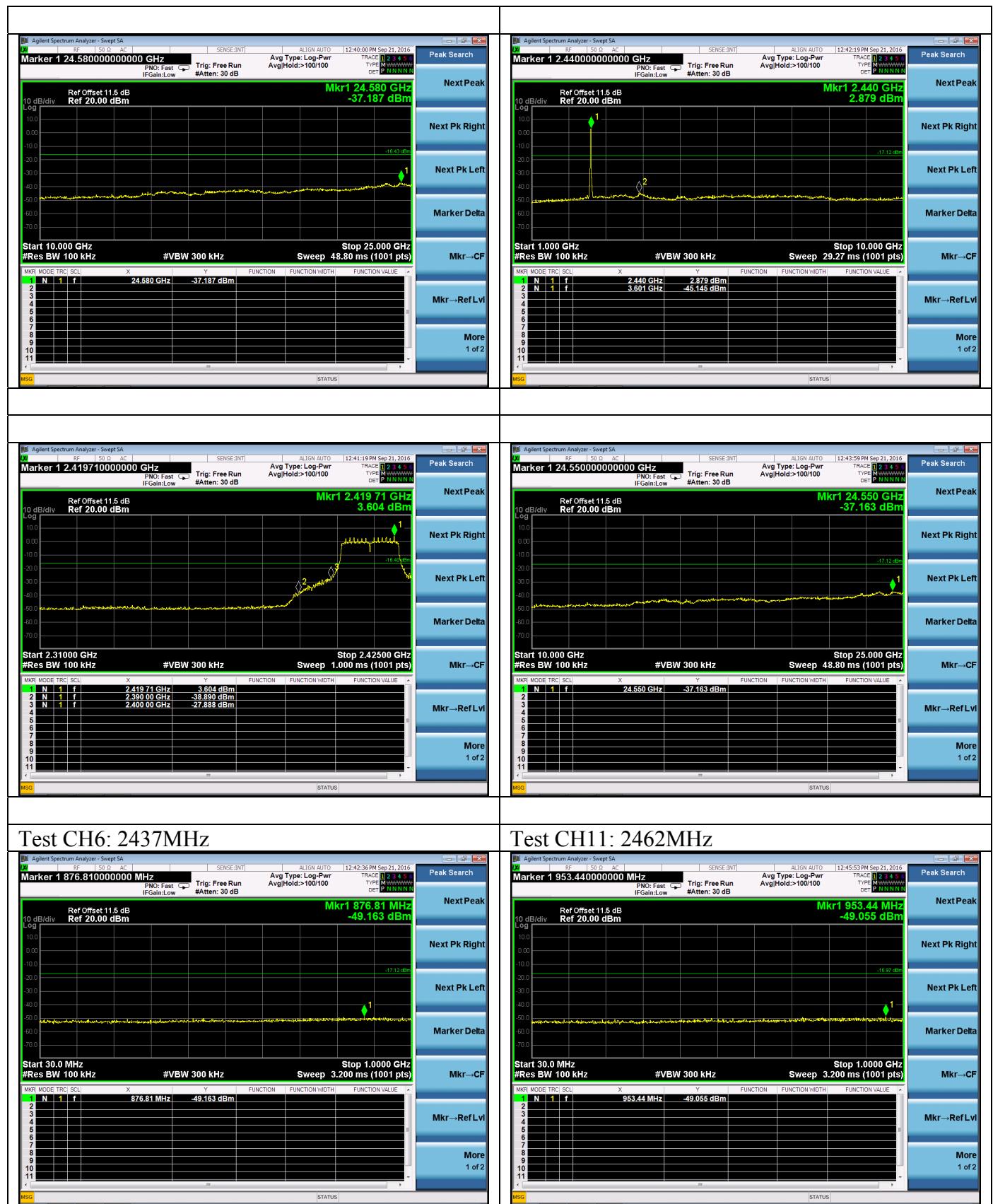


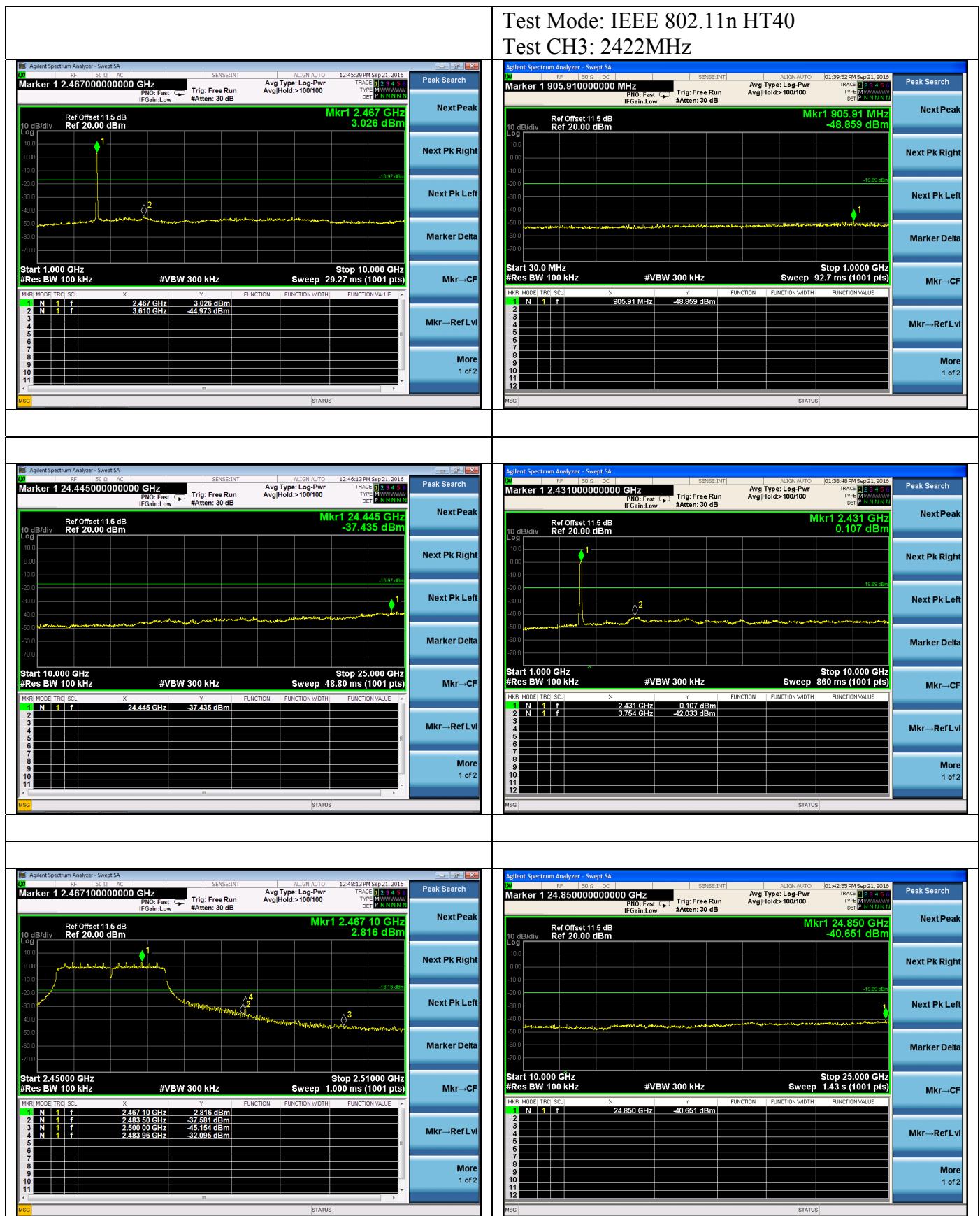




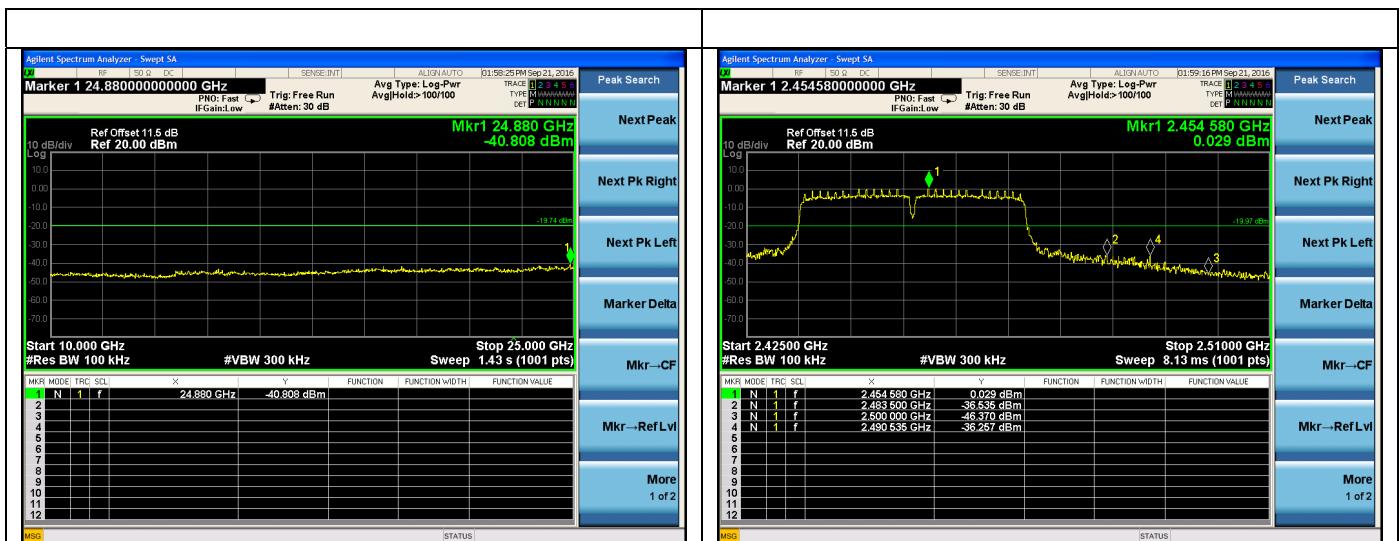
## Test CH11: 2462MHz











## 6. BAND EDGE COMPLIANCE TEST

### 6.1. Test Equipment

| Item | Equipment    | Manufacturer | Model No.   | Serial No. | Last Cal. | Cal. Interval |
|------|--------------|--------------|-------------|------------|-----------|---------------|
| 1.   | Spectrum     | Agilent      | E4446A      | US44300459 | Apr.24,16 | 1 Year        |
| 2.   | Amp          | HP           | 8449B       | 3008A02495 | Apr.24,16 | 1 Year        |
| 3.   | Horn Antenna | ETS          | 3115        | 9510-4877  | Oct.15,15 | 1 Year        |
| 4.   | HF Cable     | Hubersuhner  | Sucoflex104 | 274094/4   | Apr.24,16 | 1 Year        |

### 6.2. Limit

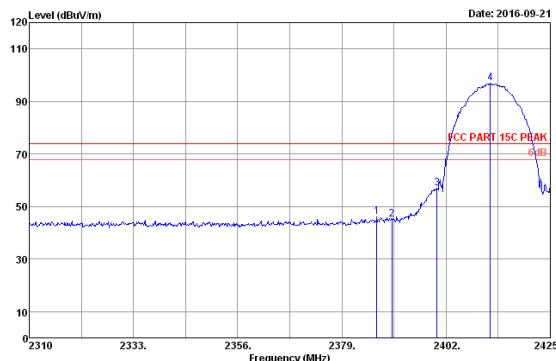
All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

### 6.3. Test Produce

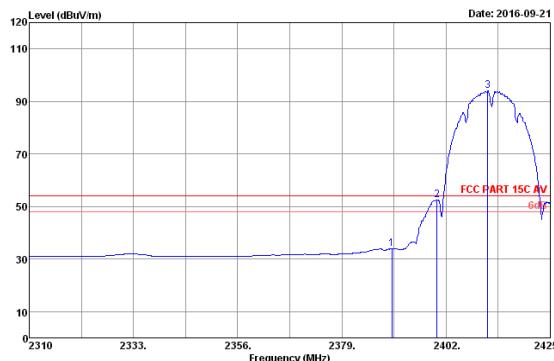
1. The EUT is placed on a turntable, which is 1.5m above the ground plane and worked at highest radiated power.
2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
  - (a) PEAK: RBW=1MHz; VBW=3MHz; Sweep=AUTO
  - (b) AVERAGE: RBW=1MHz; VBW=10Hz; Sweep=AUTO

### 6.4. Test Results

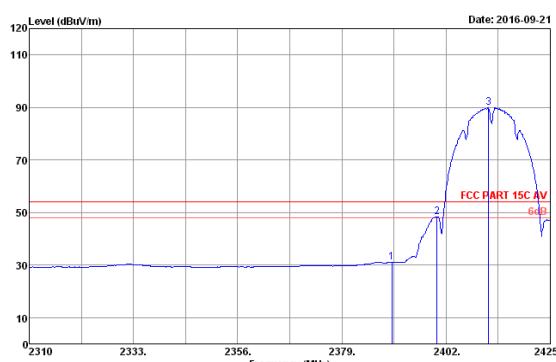
Pass (The testing data was attached in the next pages.)



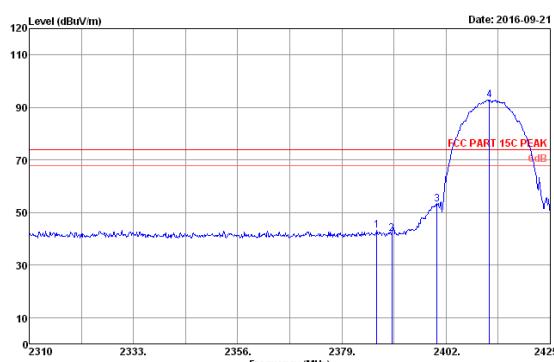
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



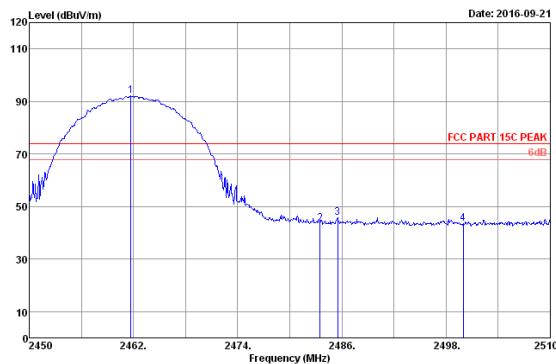
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



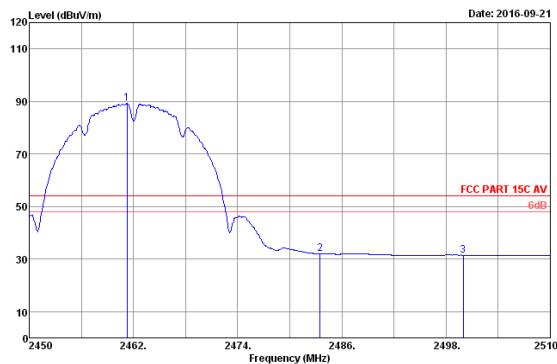
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m\_2015\_3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2K  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11b 2462MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2461.70     | 28.35              | 8.40            | 91.66          | 36.38           | 92.03                   | 74.00           | -15.03      | Peak   |
| 2   | 2483.50     | 28.38              | 8.42            | 43.24          | 36.38           | 43.66                   | 74.00           | 30.34       | Peak   |
| 3   | 2485.52     | 28.38              | 8.43            | 45.36          | 36.38           | 45.79                   | 74.00           | 28.21       | Peak   |
| 4   | 2500.00     | 28.40              | 8.44            | 43.20          | 36.38           | 43.66                   | 74.00           | 30.34       | Peak   |

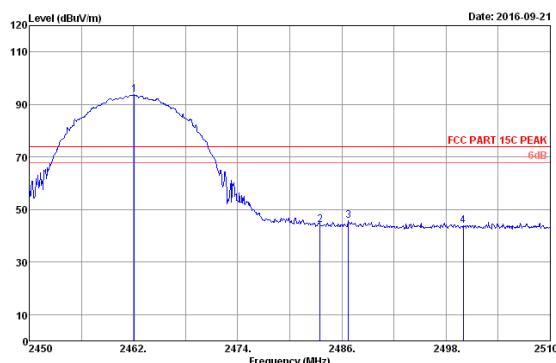
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m\_2015\_3115-4877  
Limit : FCC PART 15C AV  
Env. / Ins. : 22.6°C/51.2K  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11b 2462MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark  |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|---------|
| 1   | 2461.70     | 28.35              | 8.40            | 88.81          | 36.38           | 89.18                   | 54.00           | -35.18      | Average |
| 2   | 2483.50     | 28.38              | 8.42            | 31.57          | 36.38           | 31.99                   | 54.00           | 22.01       | Average |
| 3   | 2500.00     | 28.40              | 8.44            | 30.97          | 36.38           | 31.43                   | 54.00           | 22.57       | Average |

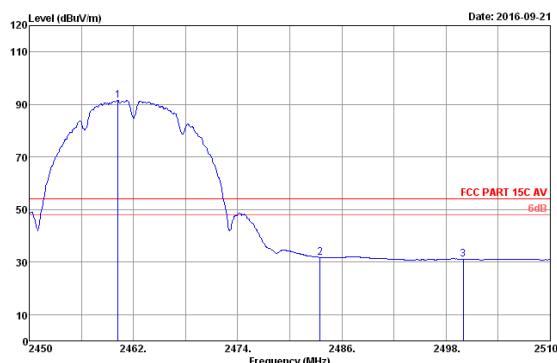
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m\_2015\_3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2K  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11b 2462MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2462.12     | 28.35              | 8.40            | 93.24          | 36.38           | 93.61                   | 74.00           | -19.61      | Peak   |
| 2   | 2483.50     | 28.38              | 8.42            | 43.68          | 36.38           | 44.07                   | 74.00           | 29.93       | Peak   |
| 3   | 2486.78     | 28.38              | 8.42            | 45.23          | 36.38           | 45.61                   | 74.00           | 28.34       | Peak   |
| 4   | 2500.00     | 28.40              | 8.44            | 43.38          | 36.38           | 43.84                   | 74.00           | 30.16       | Peak   |

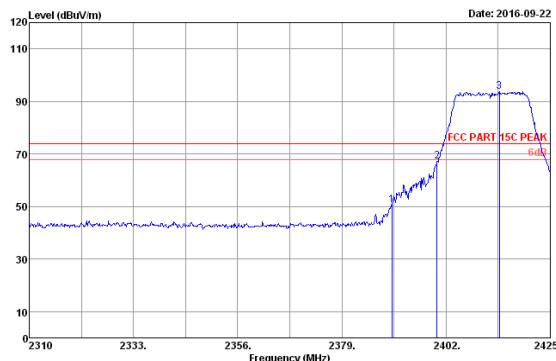
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m\_2015\_3115-4877  
Limit : FCC PART 15C AV  
Env. / Ins. : 22.6°C/51.2K  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11b 2462MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark  |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|---------|
| 1   | 2460.20     | 28.35              | 8.40            | 91.28          | 36.38           | 91.65                   | 54.00           | -37.65      | Average |
| 2   | 2483.50     | 28.38              | 8.42            | 31.34          | 36.38           | 31.76                   | 54.00           | 22.24       | Average |
| 3   | 2500.00     | 28.40              | 8.44            | 30.59          | 36.38           | 31.05                   | 54.00           | 22.95       | Average |

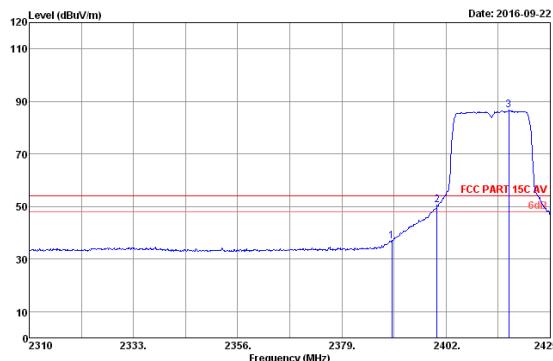
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
 Dis. / Ant. : 3m 2015 3115-4877  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 22.6°C/51.2K  
 EUT : IP Set-top Box  
 Power rating : DC 12V From Adapter Input AC 120V/60Hz  
 Test Mode : IEEE802.11g 2412MHz Tx

| No. | Freq. (MHz) | Ant. Factor | Cable Loss (dB) | Reading (dBmV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|-------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2390.00     | 28.27       | 8.33            | 50.31          | 36.39           | 50.52                   | 74.00           | 23.48       | Peak   |
| 2   | 2400.00     | 28.28       | 8.34            | 67.12          | 36.39           | 67.35                   | 74.00           | 6.65        | Peak   |
| 3   | 2413.73     | 28.38       | 8.35            | 93.52          | 36.39           | 93.78                   | 74.00           | -19.78      | Peak   |

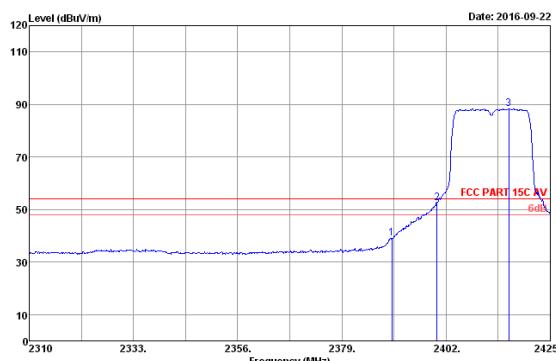
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
 Dis. / Ant. : 3m 2015 3115-4877  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 22.6°C/51.2K  
 EUT : IP Set-top Box  
 Power rating : DC 12V From Adapter Input AC 120V/60Hz  
 Test Mode : IEEE802.11g 2412MHz Tx

| No. | Freq. (MHz) | Ant. Factor | Cable Loss (dB) | Reading (dBmV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark  |
|-----|-------------|-------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|---------|
| 1   | 2390.00     | 28.27       | 8.33            | 36.61          | 36.39           | 36.52                   | 54.00           | 17.48       | Average |
| 2   | 2400.00     | 28.28       | 8.34            | 60.29          | 36.39           | 50.52                   | 54.00           | 3.48        | Average |
| 3   | 2415.80     | 28.30       | 8.35            | 86.55          | 36.39           | 86.81                   | 54.00           | -32.81      | Average |

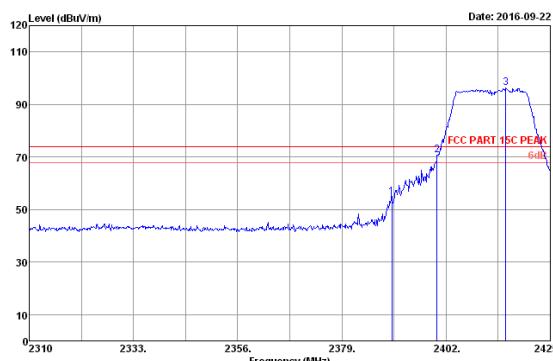
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
 Dis. / Ant. : 3m 2015 3115-4877  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 22.6°C/51.2K  
 EUT : IP Set-top Box  
 Power rating : DC 12V From Adapter Input AC 120V/60Hz  
 Test Mode : IEEE802.11g 2412MHz Tx

| No. | Freq. (MHz) | Ant. Factor | Cable Loss (dB) | Reading (dBmV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark  |
|-----|-------------|-------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|---------|
| 1   | 2390.00     | 28.27       | 8.33            | 38.68          | 36.39           | 38.89                   | 54.00           | 15.11       | Average |
| 2   | 2400.00     | 28.28       | 8.34            | 52.40          | 36.39           | 52.63                   | 54.00           | 1.37        | Average |
| 3   | 2415.80     | 28.30       | 8.35            | 88.10          | 36.39           | 88.36                   | 54.00           | -34.36      | Average |

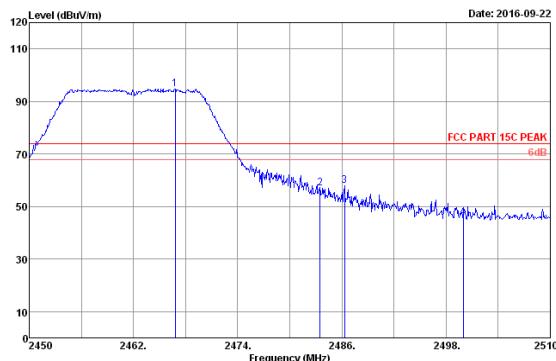
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
 Dis. / Ant. : 3m 2015 3115-4877  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 22.6°C/51.2K  
 EUT : IP Set-top Box  
 Power rating : DC 12V From Adapter Input AC 120V/60Hz  
 Test Mode : IEEE802.11g 2412MHz Tx

| No. | Freq. (MHz) | Ant. Factor | Cable Loss (dB) | Reading (dBmV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|-------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2390.00     | 28.27       | 8.33            | 54.42          | 36.39           | 54.63                   | 74.00           | 19.37       | Peak   |
| 2   | 2400.00     | 28.28       | 8.34            | 70.41          | 36.39           | 70.64                   | 74.00           | 3.36        | Peak   |
| 3   | 2415.23     | 28.30       | 8.35            | 95.98          | 36.39           | 96.24                   | 74.00           | -22.24      | Peak   |

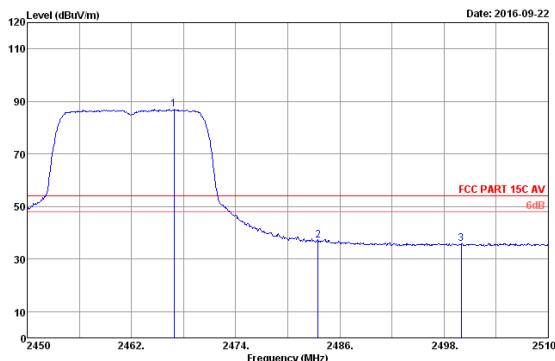
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m\_2015\_3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2K  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11g 2462MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2466.80     | 28.36              | 8.41            | 84.39          | 36.38           | 94.78                   | 74.00           | -20.78      | Peak   |
| 2   | 2483.50     | 28.38              | 8.42            | 56.60          | 36.38           | 57.02                   | 74.00           | 16.98       | Peak   |
| 3   | 2486.30     | 28.38              | 8.43            | 57.39          | 36.38           | 57.82                   | 74.00           | 16.18       | Peak   |
| 4   | 2500.00     | 28.40              | 8.44            | 45.41          | 36.38           | 45.87                   | 74.00           | 28.13       | Peak   |

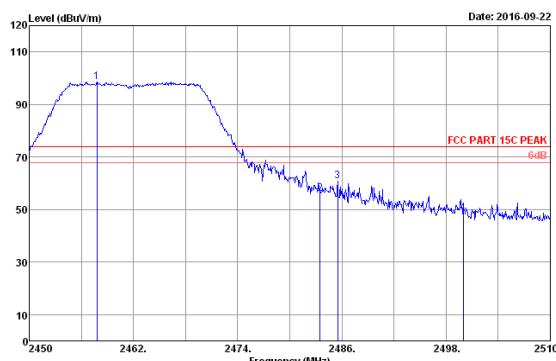
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m\_2015\_3115-4877  
Limit : FCC PART 15C AV  
Env. / Ins. : 22.6°C/51.2K  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11g 2462MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark  |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|---------|
| 1   | 2466.80     | 28.36              | 8.41            | 86.59          | 36.38           | 86.94                   | 54.00           | -32.94      | Average |
| 2   | 2483.50     | 28.38              | 8.42            | 36.71          | 36.38           | 37.13                   | 54.00           | 16.87       | Average |
| 3   | 2500.00     | 28.40              | 8.44            | 35.34          | 36.38           | 35.80                   | 54.00           | 18.20       | Average |

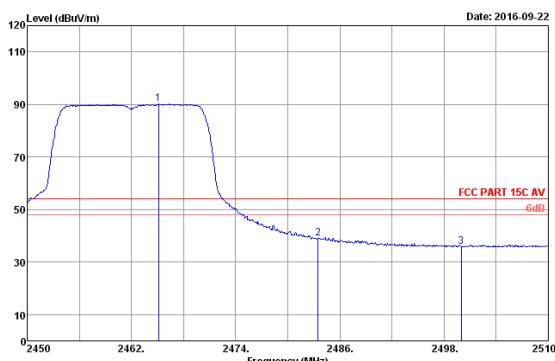
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m\_2015\_3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2K  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11g 2462MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2457.80     | 28.35              | 8.40            | 98.11          | 36.38           | 98.48                   | 74.00           | -24.48      | Peak   |
| 2   | 2483.50     | 28.38              | 8.42            | 55.44          | 36.38           | 55.86                   | 74.00           | 18.14       | Peak   |
| 3   | 2485.52     | 28.38              | 8.42            | 60.21          | 36.38           | 60.64                   | 74.00           | 13.59       | Peak   |
| 4   | 2500.00     | 28.40              | 8.44            | 48.30          | 36.38           | 48.78                   | 74.00           | 25.24       | Peak   |

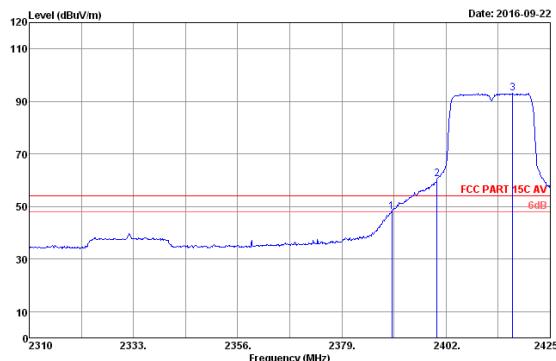
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m\_2015\_3115-4877  
Limit : FCC PART 15C AV  
Env. / Ins. : 22.6°C/51.2K  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11g 2462MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark  |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|---------|
| 1   | 2465.12     | 28.36              | 8.40            | 89.71          | 36.38           | 90.09                   | 54.00           | -36.09      | Average |
| 2   | 2483.50     | 28.38              | 8.42            | 38.73          | 36.38           | 39.15                   | 54.00           | 14.85       | Average |

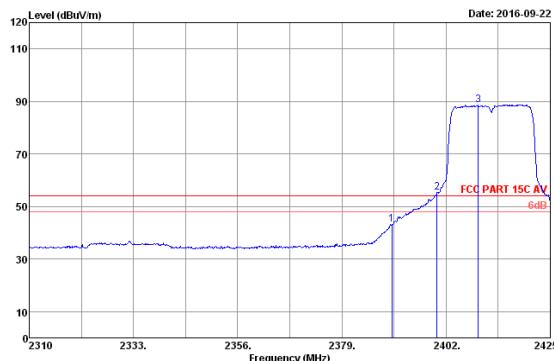
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
 Dis. / Ant. : 3m\_2015\_3115-4877  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 22.6°C/51.2K  
 EUT : IP Set-top Box  
 Power rating : DC 12V From Adapter Input AC 120V/60Hz  
 Test Mode : IEEE802.11nHT20 2412MHz Tx

| No. | Freq. (MHz) | Ant. Factor | Cable (dB) | Loss (dBuV) | Reading (dB) | AMP (dB) | Emission Level (dBuV/m) | limits (dBuV/m) | Margin (dB) | Remark  |
|-----|-------------|-------------|------------|-------------|--------------|----------|-------------------------|-----------------|-------------|---------|
| 1   | 2390.00     | 28.27       | 8.33       | 47.82       | 36.39        | 48.03    | 54.00                   | 54.00           | 5.97        | Average |
| 2   | 2400.00     | 28.28       | 8.34       | 60.25       | 36.39        | 60.48    | 54.00                   | 54.00           | -4.92       | Average |
| 3   | 2418.72     | 28.38       | 8.36       | 92.86       | 36.38        | 93.14    | 54.00                   | 54.00           | -39.14      | Average |

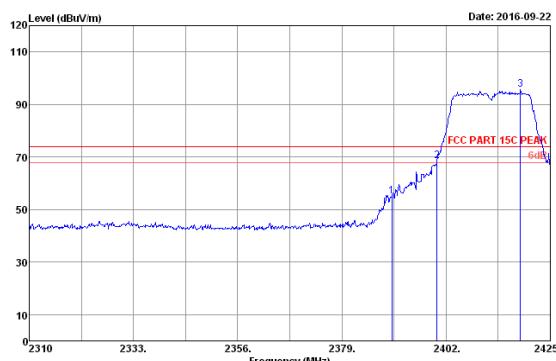
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
 Dis. / Ant. : 3m\_2015\_3115-4877  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 22.6°C/51.2K  
 EUT : IP Set-top Box  
 Power rating : DC 12V From Adapter Input AC 120V/60Hz  
 Test Mode : IEEE802.11nHT20 2412MHz Rx

| No. | Freq. (MHz) | Ant. Factor | Cable (dB) | Loss (dBuV) | Reading (dB) | AMP (dB) | Emission Level (dBuV/m) | limits (dBuV/m) | Margin (dB) | Remark  |
|-----|-------------|-------------|------------|-------------|--------------|----------|-------------------------|-----------------|-------------|---------|
| 1   | 2390.00     | 28.27       | 8.33       | 42.88       | 36.39        | 43.06    | 54.00                   | 54.00           | 10.94       | Average |
| 2   | 2400.00     | 28.28       | 8.34       | 55.14       | 36.39        | 55.37    | 54.00                   | 54.00           | -1.37       | Average |
| 3   | 2409.13     | 28.29       | 8.35       | 88.50       | 36.39        | 88.75    | 54.00                   | 54.00           | -34.75      | Average |

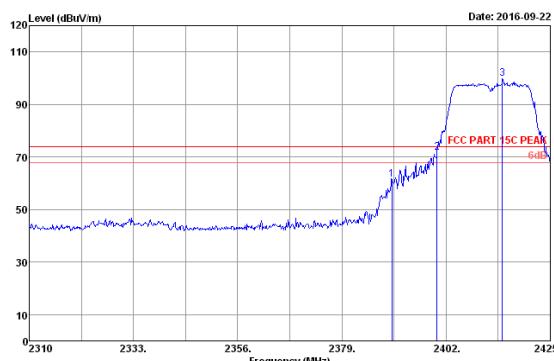
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
 Dis. / Ant. : 3m\_2015\_3115-4877  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 22.6°C/51.2K  
 EUT : IP Set-top Box  
 Power rating : DC 12V From Adapter Input AC 120V/60Hz  
 Test Mode : IEEE802.11nHT20 2412MHz Tx

| No. | Freq. (MHz) | Ant. Factor | Cable (dB) | Loss (dBuV) | Reading (dB) | AMP (dB) | Emission Level (dBuV/m) | limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|-------------|------------|-------------|--------------|----------|-------------------------|-----------------|-------------|--------|
| 1   | 2390.00     | 28.27       | 8.33       | 54.67       | 36.39        | 54.88    | 74.00                   | 74.00           | 19.12       | Peak   |
| 2   | 2400.00     | 28.28       | 8.34       | 68.14       | 36.39        | 68.37    | 74.00                   | 74.00           | 5.63        | Peak   |
| 3   | 2418.45     | 28.30       | 8.36       | 95.44       | 36.38        | 95.72    | 74.00                   | 74.00           | -21.72      | Peak   |

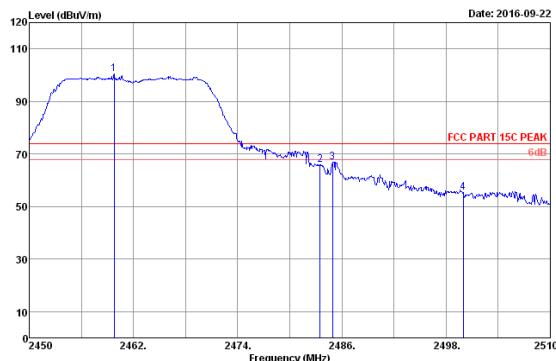
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
 Dis. / Ant. : 3m\_2015\_3115-4877  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 22.6°C/51.2K  
 EUT : IP Set-top Box  
 Power rating : DC 12V From Adapter Input AC 120V/60Hz  
 Test Mode : IEEE802.11nHT20 2412MHz Rx

| No. | Freq. (MHz) | Ant. Factor | Cable (dB) | Loss (dBuV) | Reading (dB) | AMP (dB) | Emission Level (dBuV/m) | limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|-------------|------------|-------------|--------------|----------|-------------------------|-----------------|-------------|--------|
| 1   | 2390.00     | 28.27       | 8.33       | 61.13       | 36.39        | 61.34    | 74.00                   | 74.00           | 12.66       | Peak   |
| 2   | 2400.00     | 28.28       | 8.34       | 71.58       | 36.39        | 71.81    | 74.00                   | 74.00           | 2.19        | Peak   |
| 3   | 2414.42     | 28.30       | 8.35       | 99.42       | 36.39        | 99.68    | 74.00                   | 74.00           | -25.68      | Peak   |

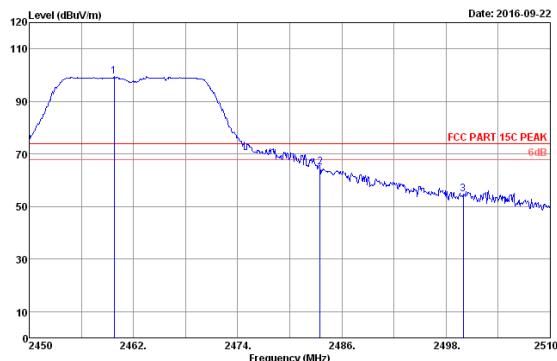
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m\_2015\_3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11nHT20 2462MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|----------|-------------------------|-----------------|-------------|--------|
| 1   | 2459.78     | 28.35              | 8.40            | 100.02         | 36.38    | 100.39                  | 74.00           | -26.39      | Peak   |
| 2   | 2483.50     | 28.38              | 8.42            | 65.57          | 36.38    | 65.99                   | 74.00           | 8.01        | Peak   |
| 3   | 2484.92     | 28.38              | 8.42            | 66.61          | 36.38    | 67.03                   | 74.00           | 6.97        | Peak   |
| 4   | 2500.00     | 28.40              | 8.44            | 55.01          | 36.38    | 55.47                   | 74.00           | 18.53       | Peak   |

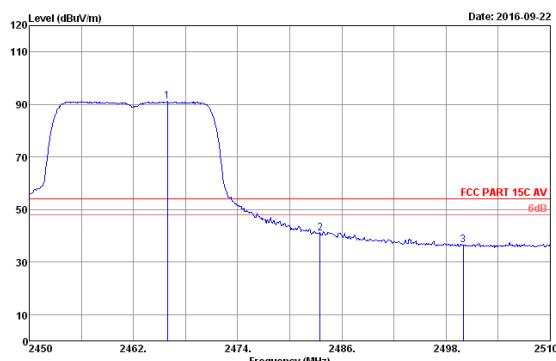
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Ant Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m\_2015\_3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11nHT20 2462MHz Rx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|----------|-------------------------|-----------------|-------------|--------|
| 1   | 2459.78     | 28.35              | 8.40            | 69.00          | 36.38    | 69.37                   | 74.00           | -25.37      | Peak   |
| 2   | 2483.50     | 28.38              | 8.42            | 64.65          | 36.38    | 65.07                   | 74.00           | 8.93        | Peak   |
| 3   | 2500.00     | 28.40              | 8.44            | 54.32          | 36.38    | 54.78                   | 74.00           | 19.22       | Peak   |

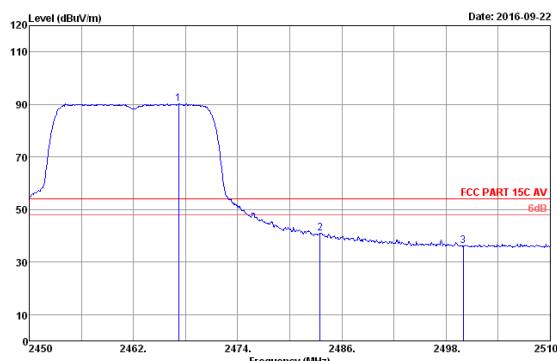
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Ant Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m\_2015\_3115-4877  
Limit : FCC PART 15C AV  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11nHT20 2462MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark  |
|-----|-------------|--------------------|-----------------|----------------|----------|-------------------------|-----------------|-------------|---------|
| 1   | 2465.90     | 28.36              | 8.41            | 90.67          | 36.38    | 91.06                   | 54.00           | -37.06      | Average |
| 2   | 2483.50     | 28.38              | 8.42            | 40.47          | 36.38    | 40.89                   | 54.00           | 13.11       | Average |
| 3   | 2500.00     | 28.40              | 8.44            | 35.87          | 36.38    | 36.33                   | 54.00           | 17.67       | Average |

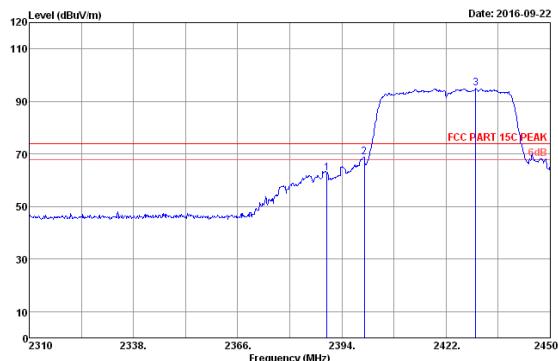
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Ant Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m\_2015\_3115-4877  
Limit : FCC PART 15C AV  
Env. / Ins. : 22.6°C/51.2%  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11nHT20 2462MHz Rx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark  |
|-----|-------------|--------------------|-----------------|----------------|----------|-------------------------|-----------------|-------------|---------|
| 1   | 2465.22     | 28.36              | 8.41            | 89.87          | 36.38    | 90.26                   | 54.00           | -36.26      | Average |
| 2   | 2483.50     | 28.38              | 8.42            | 40.50          | 36.38    | 40.92                   | 54.00           | 13.08       | Average |
| 3   | 2500.00     | 28.40              | 8.44            | 35.69          | 36.38    | 36.15                   | 54.00           | 17.85       | Average |

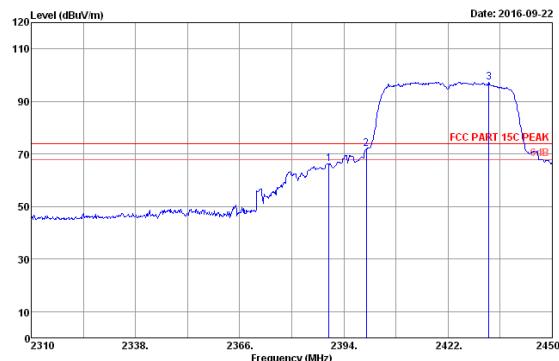
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Ant Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m 2015\_3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2K  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11nHt40 2422MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2390.00     | 28.27              | 8.33            | 62.54          | 36.39           | 62.75                   | 74.00           | 11.25       | Peak   |
| 2   | 2400.00     | 28.28              | 8.34            | 63.52          | 36.39           | 68.75                   | 74.00           | 5.25        | Peak   |
| 3   | 2429.98     | 28.32              | 8.37            | 94.83          | 36.38           | 95.14                   | 74.00           | -21.14      | Peak   |

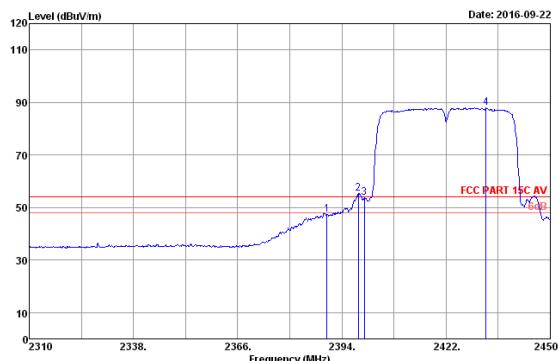
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-3dB Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m 2015\_3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2K  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11nHt40 2422MHz Rx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2390.00     | 28.27              | 8.33            | 66.02          | 36.39           | 66.23                   | 74.00           | 7.77        | Peak   |
| 2   | 2400.00     | 28.28              | 8.34            | 71.78          | 36.39           | 72.01                   | 74.00           | 1.99        | Peak   |
| 3   | 2429.92     | 28.32              | 8.37            | 97.07          | 36.38           | 97.38                   | 74.00           | -23.38      | Peak   |

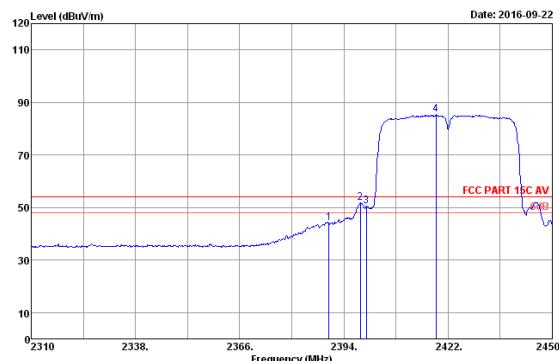
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-3dB Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m 2015\_3115-4877  
Limit : FCC PART 15C AV  
Env. / Ins. : 22.6°C/51.2K  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11nHt40 2422MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark  |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|---------|
| 1   | 2390.00     | 28.27              | 8.33            | 47.06          | 36.39           | 47.27                   | 54.00           | 6.73        | Average |
| 2   | 2398.48     | 28.28              | 8.34            | 55.26          | 36.39           | 55.49                   | 54.00           | -1.49       | Average |
| 3   | 2400.00     | 28.28              | 8.34            | 53.48          | 36.39           | 53.71                   | 54.00           | 0.28        | Average |
| 4   | 2432.78     | 28.32              | 8.37            | 87.81          | 36.38           | 88.12                   | 54.00           | -34.12      | Average |

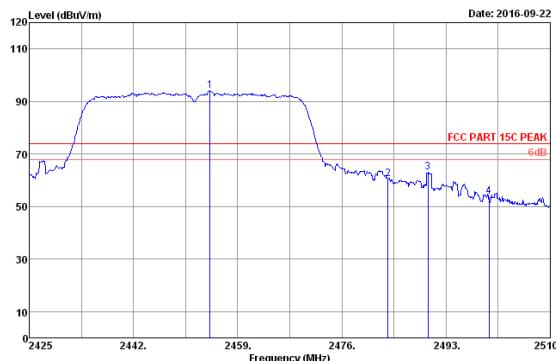
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-3dB Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m 2015\_3115-4877  
Limit : FCC PART 15C AV  
Env. / Ins. : 22.6°C/51.2K  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120W/60Hz  
Test Mode : IEEE802.11nHt40 2422MHz Rx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark  |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|---------|
| 1   | 2390.00     | 28.27              | 8.33            | 43.95          | 36.39           | 44.16                   | 54.00           | 9.84        | Average |
| 2   | 2398.48     | 28.28              | 8.34            | 51.77          | 36.39           | 52.00                   | 54.00           | 2.00        | Average |
| 3   | 2400.00     | 28.28              | 8.34            | 50.38          | 36.39           | 50.61                   | 54.00           | 3.39        | Average |
| 4   | 2432.78     | 28.30              | 8.36            | 85.02          | 36.38           | 85.30                   | 54.00           | -31.30      | Average |

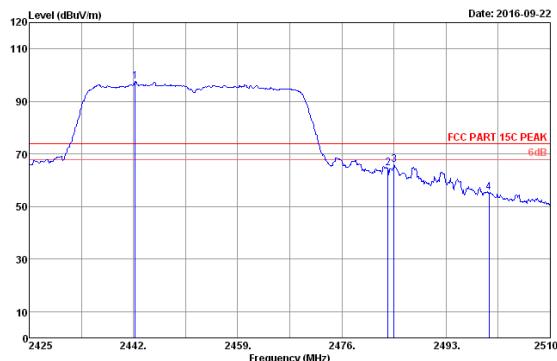
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-3dB Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m\_2015\_3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2K  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHt40 2452MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2454.50     | 28.35              | 8.39            | 93.64          | 36.38           | 94.00                   | 74.00           | -20.00      | Peak   |
| 2   | 2483.50     | 28.38              | 8.42            | 59.91          | 36.38           | 60.33                   | 74.00           | 13.67       | Peak   |
| 3   | 2490.03     | 28.38              | 8.43            | 62.57          | 36.38           | 63.01                   | 74.00           | 10.99       | Peak   |
| 4   | 2500.00     | 28.40              | 8.44            | 53.30          | 36.38           | 53.76                   | 74.00           | 20.24       | Peak   |

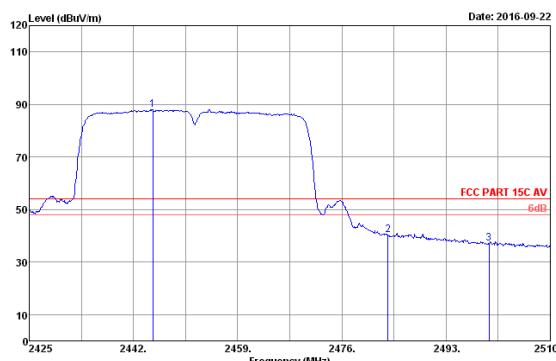
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m\_2015\_3115-4877  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 22.6°C/51.2K  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHt40 2452MHz Rx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|--------|
| 1   | 2442.26     | 28.33              | 8.38            | 87.23          | 36.38           | 97.52                   | 74.00           | -23.62      | Peak   |
| 2   | 2483.50     | 28.38              | 8.42            | 64.33          | 36.38           | 64.75                   | 74.00           | 9.25        | Peak   |
| 3   | 2484.50     | 28.38              | 8.42            | 65.50          | 36.38           | 65.92                   | 74.00           | 8.08        | Peak   |
| 4   | 2500.00     | 28.40              | 8.44            | 54.82          | 36.38           | 55.28                   | 74.00           | 18.72       | Peak   |

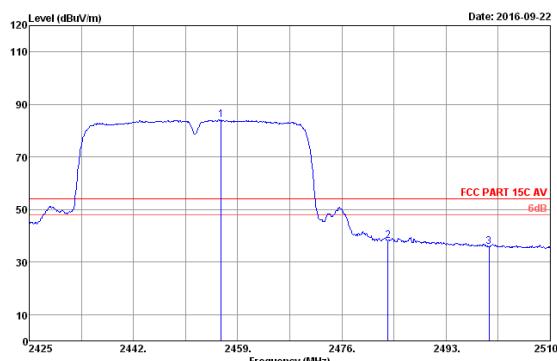
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m\_2015\_3115-4877  
Limit : FCC PART 15C AV  
Env. / Ins. : 22.6°C/51.2K  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHt40 2452MHz Tx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark  |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|---------|
| 1   | 2445.15     | 28.33              | 8.38            | 87.68          | 36.38           | 88.01                   | 54.00           | -34.01      | Average |
| 2   | 2483.50     | 28.38              | 8.42            | 39.77          | 36.38           | 40.19                   | 54.00           | 13.81       | Average |
| 3   | 2500.00     | 28.40              | 8.44            | 36.51          | 36.38           | 36.97                   | 54.00           | 17.03       | Average |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : RF Chamber  
Dis. / Ant. : 3m\_2015\_3115-4877  
Limit : FCC PART 15C AV  
Env. / Ins. : 22.6°C/51.2K  
EUT : IP Set-top Box  
Power rating : DC 12V From Adapter Input AC 120V/60Hz  
Test Mode : IEEE802.11nHt40 2452MHz Rx

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | AMP factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark  |
|-----|-------------|--------------------|-----------------|----------------|-----------------|-------------------------|-----------------|-------------|---------|
| 1   | 2446.26     | 28.33              | 8.40            | 83.68          | 36.38           | 84.05                   | 54.00           | -30.05      | Average |
| 2   | 2483.50     | 28.38              | 8.42            | 37.80          | 36.38           | 38.22                   | 54.00           | 15.78       | Average |
| 3   | 2500.00     | 28.40              | 8.44            | 35.51          | 36.38           | 35.97                   | 54.00           | 18.03       | Average |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
-Amp Factor  
2. The emission levels that are 20dB below the official limit are not reported.

## 7. 6dB Bandwidth Test

### 7.1. Test Equipment

| Item | Equipment         | Manufacturer            | Model No.     | Serial No. | Last Cal. | Cal. Interval |
|------|-------------------|-------------------------|---------------|------------|-----------|---------------|
| 1.   | Spectrum          | Agilent                 | N9030A        | MY51380221 | Oct.18,15 | 1 Year        |
| 2.   | Attenuator (20dB) | Agilent                 | 8491B         | MY39262165 | Apr.23,16 | 1 Year        |
| 3.   | RF Cable          | Marvelous Microwave Inc | SFL402105FLEX | NO.1       | Oct.17.15 | 1 Year        |

### 7.2. Limit

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz

### 7.3. Test Procedure

The transmitter output was connected to a spectrum analyzer. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 300kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

### 7.4. Test Results

|                       |                         |                          |
|-----------------------|-------------------------|--------------------------|
| EUT: IP Set-top Box   |                         |                          |
| M/N: A312             |                         |                          |
| Test date: 2016-09-21 | Pressure: 103.6±1.0 kpa | Humidity: 53.4±3.0%      |
| Tested by: zack_zhu   | Test site: RF site      | Temperature: 24.5±0.6 °C |

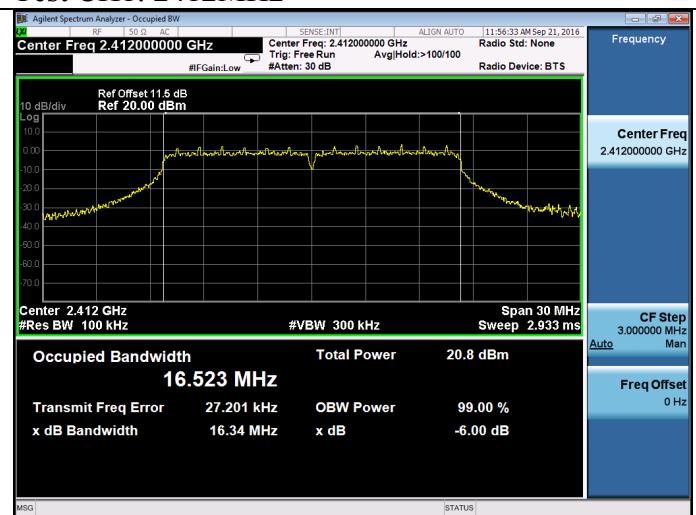
| Test Mode         | CH   | 6dB Bandwidth<br>( MHz ) | Limit<br>( KHz ) |
|-------------------|------|--------------------------|------------------|
| 11b               | CH1  | 10.04                    | ≥ 500            |
|                   | CH6  | 9.59                     | ≥ 500            |
|                   | CH11 | 10.06                    | ≥ 500            |
| 11g               | CH1  | 16.34                    | ≥ 500            |
|                   | CH6  | 16.37                    | ≥ 500            |
|                   | CH11 | 16.37                    | ≥ 500            |
| 11n<br>HT20       | CH1  | 17.58                    | ≥ 500            |
|                   | CH6  | 17.59                    | ≥ 500            |
|                   | CH11 | 17.58                    | ≥ 500            |
| 11n<br>HT40       | CH3  | 35.19                    | ≥ 500            |
|                   | CH6  | 35.20                    | ≥ 500            |
|                   | CH9  | 35.20                    | ≥ 500            |
| Conclusion : PASS |      |                          |                  |

## 6dB Bandwidth

Test Mode: IEEE 802.11b  
Test CH1: 2412MHz



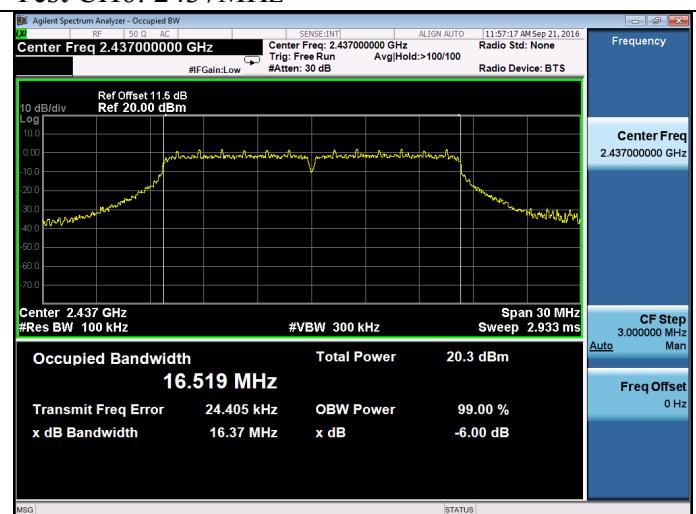
Test Mode: IEEE 802.11g  
Test CH1: 2412MHz



Test CH6: 2437MHz



Test CH6: 2437MHz



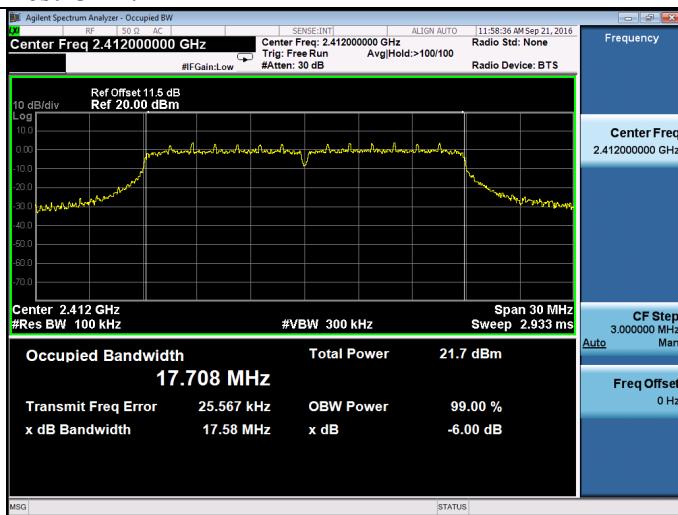
Test CH11: 2462MHz



Test CH11: 2462MHz



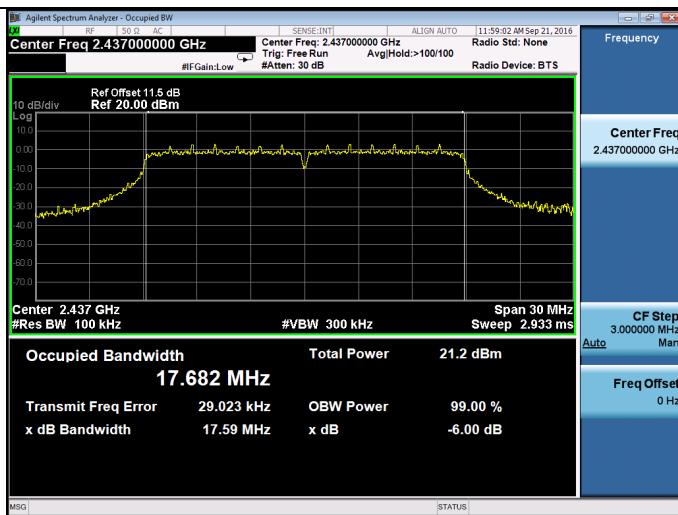
Test Mode: IEEE 802.11n HT20  
Test CH1: 2412MHz



Test Mode: IEEE 802.11n HT40  
Test CH3: 2422MHz



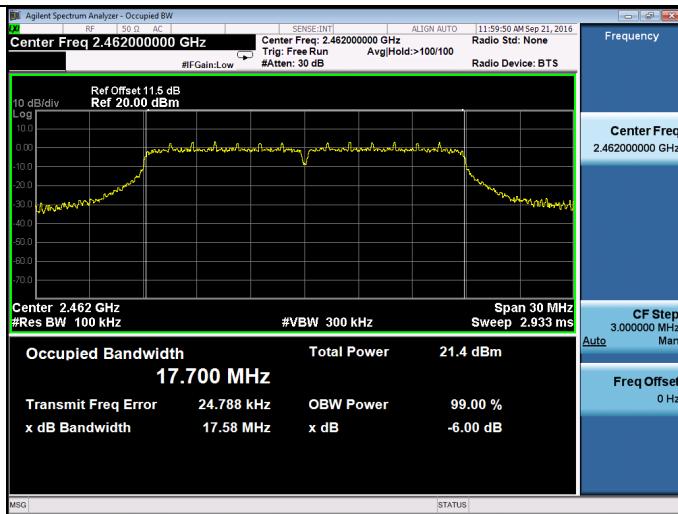
## Test CH6: 2437MHz



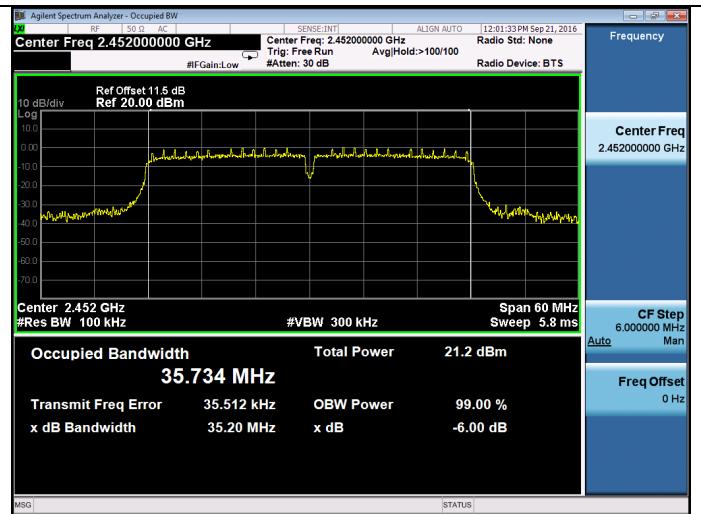
## Test CH6: 2437MHz



## Test CH11: 2462MHz



## Test CH9: 2452MHz



## 8. OUTPUT POWER TEST

### 8.1. Test Equipment

| Item | Equipment            | Manufacturer               | Model No.     | Serial No. | Last Cal. | Cal. Interval |
|------|----------------------|----------------------------|---------------|------------|-----------|---------------|
| 1.   | Spectrum             | Agilent                    | E4446A        | US44300459 | Apr.24,16 | 1 Year        |
| 2.   | Spectrum             | Agilent                    | N9030A        | MY51380221 | Oct.18,15 | 1 Year        |
| 3.   | Power meter          | Anritsu                    | ML2487A       | 6K00002472 | Apr.23,16 | 1 Year        |
| 4.   | Power sensor         | Anritsu                    | MA2491A       | 0033005    | Apr.23,16 | 1 Year        |
| 5.   | Attenuator<br>(20dB) | Agilent                    | 8491B         | MY39262165 | Apr.23,16 | 1 Year        |
| 6.   | RF Cable             | Marvelous<br>Microwave Inc | SFL402105FLEX | NO.1       | Oct.17,15 | 1 Year        |

### 8.2. Limit (FCC Part 15C 15.247 b(3))

For systems using digital modulation in the 2400—2483.5MHz, The Peak output Power shall not exceed 1W(30dBm), As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level.

### 8.3. Test Procedure

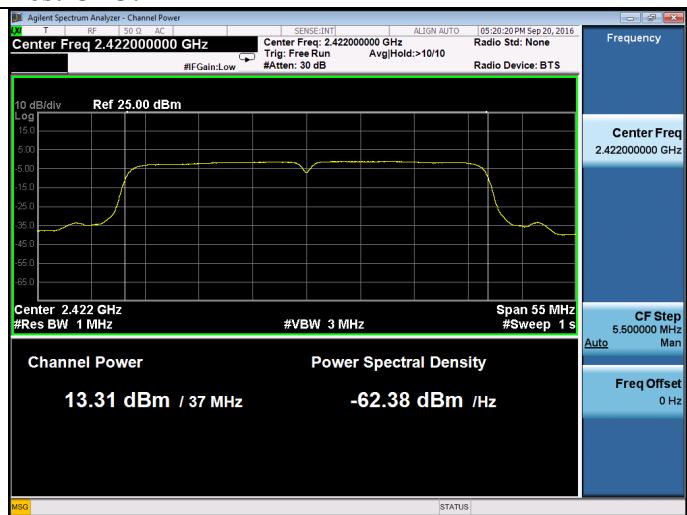
- 1, Connected the EUT's antenna port to measure device by 26dB attenuator.
- 2, For IEEE 802.11b/g and IEEE802.11n HT20 modes, use a power meter which bandwidth is 20MHz, above the bandwidth of signals, to measure out output power in each mode.
- 3, For IEEE802.11n HT40 mode, since the signal bandwidth is nearly 40MHz, which is above 20MHz bandwidth of power sensor of ML2491A. use the test method described in KDB558074 clause 9.2.2.
  - 1) Set the RBW=1MHz and VBW =3MHz
  - 2) Set the span at least 1.5 times the OBW
  - 3) Detector = RMS
  - 4) Sweep time = auto couple
  - 5) allow trace to fully stabilize
  - 6) use the spectrum analyser's integrated band power measurement function with band limits set equal to the EBW band edges.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

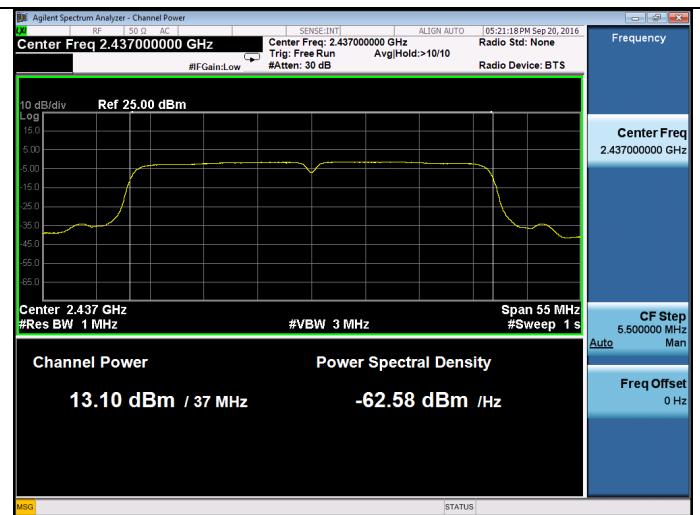
#### 8.4. Test Results

| EUT: IP Set-top Box   |                         |                      |                          |
|-----------------------|-------------------------|----------------------|--------------------------|
| M/N: A312             |                         |                      |                          |
| Test date: 2016-09-20 | Pressure: 103.6±1.0 kpa |                      | Humidity: 53.7±3.0%      |
| Tested by: zack_zhu   | Test site: RF site      |                      | Temperature: 24.2±0.6 °C |
| Test Mode             | CH                      | Output Power ( dBm ) | Limit (dBm)              |
| 11b                   | CH1                     | 13.12                | 30                       |
|                       | CH6                     | 13.18                | 30                       |
|                       | CH11                    | 13.23                | 30                       |
| 11g                   | CH1                     | 12.88                | 30                       |
|                       | CH6                     | 12.75                | 30                       |
|                       | CH11                    | 12.86                | 30                       |
| 11n<br>HT20           | CH1                     | 13.88                | 30                       |
|                       | CH6                     | 13.58                | 30                       |
|                       | CH11                    | 13.67                | 30                       |
| 11n<br>HT40           | CH3                     | 13.31                | 30                       |
|                       | CH6                     | 13.10                | 30                       |
|                       | CH9                     | 13.28                | 30                       |
| Conclusion: PASS      |                         |                      |                          |

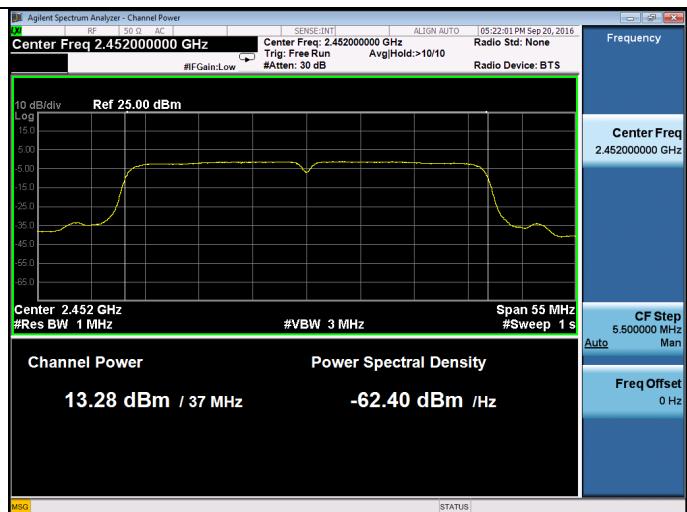
Test Mode: IEEE 802.11n HT40  
 Test CH3: 2422MHz



## Test CH6: 2437MHz



## Test CH9: 2452MHz



## 9. POWER SPECTRAL DENSITY TEST

### 9.1. Test Equipment

| Item | Equipment         | Manufacturer            | Model No.     | Serial No. | Last Cal. | Cal. Interval |
|------|-------------------|-------------------------|---------------|------------|-----------|---------------|
| 1.   | Spectrum          | Agilent                 | N9030A        | MY51380221 | Oct.18,15 | 1 Year        |
| 2.   | Attenuator (20dB) | Agilent                 | 8491B         | MY39262165 | Apr.23,16 | 1 Year        |
| 3.   | RF Cable          | Marvelous Microwave Inc | SFL402105FLEX | NO.1       | Oct.17,15 | 1 Year        |

### 9.2. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

### 9.3. Test Procedure

1. Connected the EUT's antenna port to spectrum analyzer device by 20dB attenuator.
2. Set span to 1.5 times the DTS Bandwidth.
3. Set the RBW=3KHz, VBW=10KHz.
4. Detector=peak, Sweep time=Auto, Trace mode=max Hold
5. All the trace to fully stabilize.
6. Use the peak marker function to determine the maximum amplitude level with in the RBW.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude

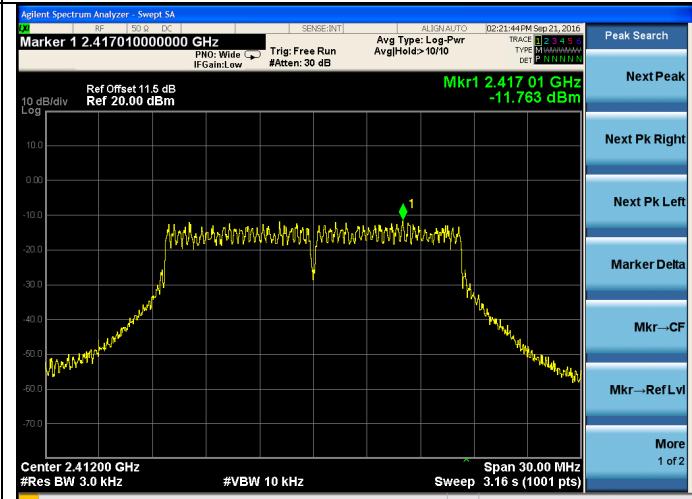
## 9.4. Test Results

| EUT: IP Set-top Box   |      |                               |                         |
|-----------------------|------|-------------------------------|-------------------------|
| M/N: A312             |      |                               |                         |
| Test date: 2016-09-21 |      | Pressure: 103.8±1.0 kpa       | Humidity: 53.1±3.0%     |
| Tested by: zack_zhu   |      | Test site: RF site            | Temperature:24.2±0.6 °C |
| Test Mode             | CH   | Power Density<br>( dBm/3KHz ) | Limit<br>(dBm/3KHz)     |
| 11b                   | CH1  | -8.598                        | 8                       |
|                       | CH6  | -8.743                        | 8                       |
|                       | CH11 | -9.070                        | 8                       |
| 11g                   | CH1  | -11.763                       | 8                       |
|                       | CH6  | -11.981                       | 8                       |
|                       | CH11 | -11.251                       | 8                       |
| 11n<br>HT20           | CH1  | -10.640                       | 8                       |
|                       | CH6  | -11.840                       | 8                       |
|                       | CH11 | -11.026                       | 8                       |
| 11n<br>HT40           | CH3  | -14.238                       | 8                       |
|                       | CH6  | -13.708                       | 8                       |
|                       | CH9  | -13.956                       | 8                       |
| Conclusion: PASS      |      |                               |                         |

Test Mode: IEEE 802.11b  
Test CH1: 2412MHz



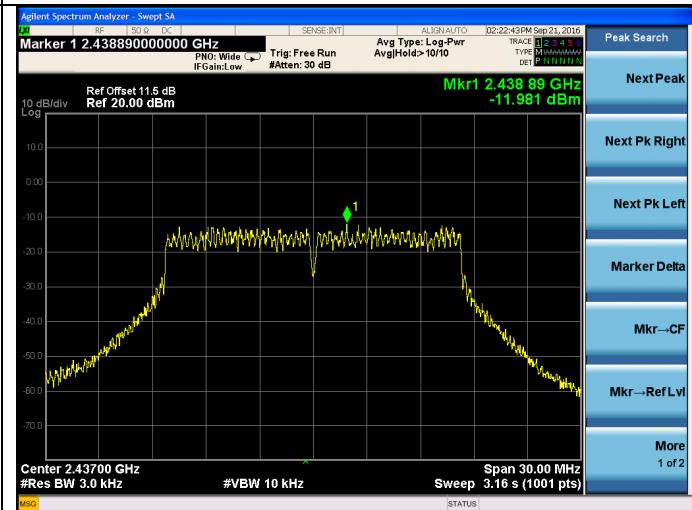
Test Mode: IEEE 802.11g  
Test CH1: 2412MHz



## Test CH6: 2437MHz



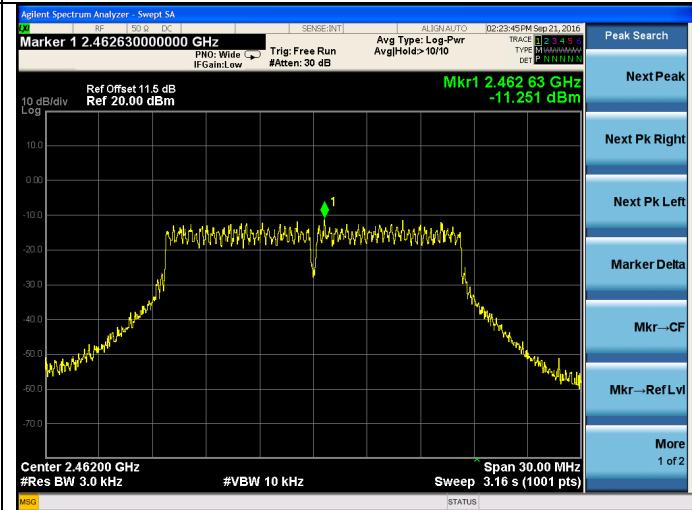
## Test CH6: 2437MHz



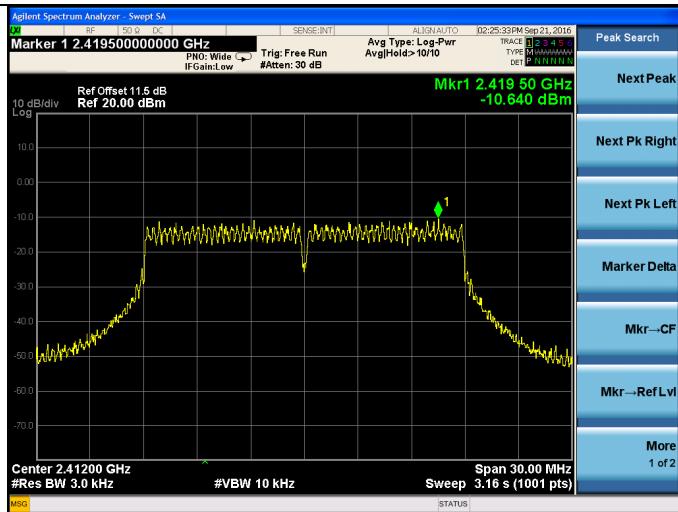
## Test CH11: 2462MHz



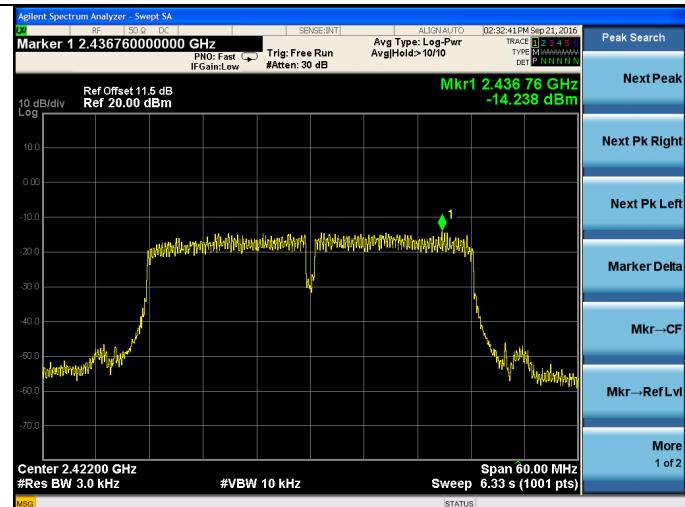
## Test CH11: 2462MHz



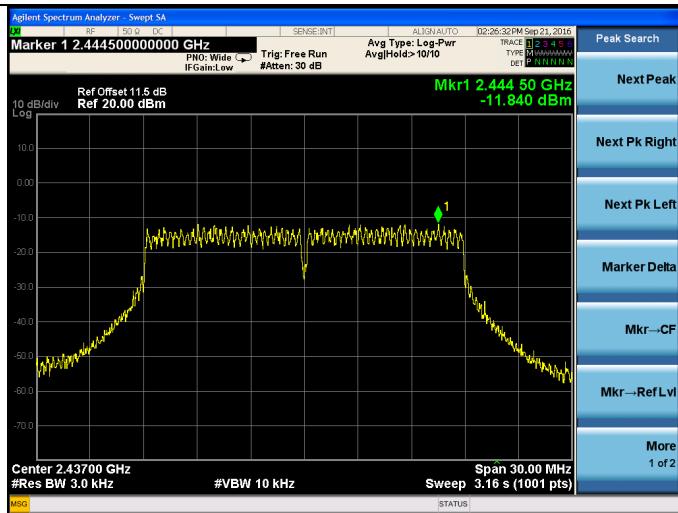
Test Mode: IEEE 802.11n HT20  
Test CH1: 2412MHz



Test Mode: IEEE 802.11n HT40  
Test CH3: 2422MHz



## Test CH6: 2437MHz



## Test CH6: 2437MHz



## Test CH11: 2462MHz



## Test CH9: 2452MHz



## 10.MPE ESTIMATION

### 10.1.Limit for General Population/ Uncontrolled Exposures

| Frequency        | Power density (mW/ cm <sup>2</sup> ) | Averaging time(minutes) |
|------------------|--------------------------------------|-------------------------|
| 300MHz----1.5GHz | F/1500                               | 30                      |
| 1.5GHz---100GHz  | 1.0                                  | 30                      |

| Frequency(MHz) | Power density (mW/ cm <sup>2</sup> ) | Averaging time(minutes) |
|----------------|--------------------------------------|-------------------------|
| 2412           | 1                                    | 30                      |
| 2437           | 1                                    | 30                      |
| 2462           | 1                                    | 30                      |

Note: F= Frequency in MHz

**10.2.Estimation Result**

|                       |  |                         |  |  |                          |  |  |
|-----------------------|--|-------------------------|--|--|--------------------------|--|--|
| EUT: IP Set-top Box   |  |                         |  |  |                          |  |  |
| M/N: A312             |  |                         |  |  |                          |  |  |
| Test date: 2016-09-26 |  | Pressure: 103.5±1.0 kpa |  |  | Humidity: 53.4±3.0%      |  |  |
| Tested by: zack_zhu   |  | Test site: RF site      |  |  | Temperature: 23.9±0.6 °C |  |  |

| Test Mode   | CH   | Frequency ( MHz ) | Peak Output Power (dBm) | Output Power (mW) | Antenna Gain (dBi) | Antenna Gain (Linear) | PSD (mW /cm <sup>2</sup> ) |
|-------------|------|-------------------|-------------------------|-------------------|--------------------|-----------------------|----------------------------|
| 11b         | CH1  | 2412              | 13.12                   | 20.51             | 3                  | 2.00                  | 0.0081                     |
|             | CH6  | 2437              | 13.18                   | 20.80             | 3                  | 2.00                  | 0.0083                     |
|             | CH11 | 2462              | 13.23                   | 21.04             | 3                  | 2.00                  | 0.0084                     |
| 11g         | CH1  | 2412              | 12.88                   | 19.41             | 3                  | 2.00                  | 0.0077                     |
|             | CH6  | 2437              | 12.75                   | 18.84             | 3                  | 2.00                  | 0.0075                     |
|             | CH11 | 2462              | 12.86                   | 19.32             | 3                  | 2.00                  | 0.0077                     |
| 11n<br>HT20 | CH1  | 2412              | 13.88                   | 24.43             | 3                  | 2.00                  | 0.0097                     |
|             | CH6  | 2437              | 13.58                   | 22.80             | 3                  | 2.00                  | 0.0091                     |
|             | CH11 | 2462              | 13.67                   | 23.28             | 3                  | 2.00                  | 0.0092                     |
| 11n<br>HT40 | CH3  | 2422              | 13.31                   | 21.43             | 3                  | 2.00                  | 0.0085                     |
|             | CH6  | 2437              | 13.10                   | 20.42             | 3                  | 2.00                  | 0.0081                     |
|             | CH9  | 2452              | 13.28                   | 21.28             | 3                  | 2.00                  | 0.0085                     |

$$MPE = \frac{PG}{4\pi R^2} \quad (R=20 \text{ cm})$$

## 11. ANTENNA REQUIREMENT

### 11.1. Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### 11.2. Antenna Connected Construction

The antennas used for this product are Dipole antenna that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is 3dBi.



FCC ID: 2AGUQ-A312

AUDIX Technology (Shenzhen) Co., Ltd.

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## 12. DEVIATION TO TEST SPECIFICATIONS

[ NONE]