# FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

Shenyang Tongfang Multimedia Technology Co.,Limited

LED TV

Model Number: WD32HBB101

FCC ID: 2ACWIWD32HBB10

| | |
|---|---|
| Prepared for: | Shenyang Tongfang Multimedia Technology Co.,Limited |
| | No. 10 Nanping East Road HunNan New District Shenyang, |
| | LiaoNing, Province P. R. China |
| | |
| Prepared By: | EST Technology Co., Ltd. |
| | Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China |
| Tel: 86-769-83081888-808 | |

| | |
|---|---|
| Report Number: | ESTE-R1804012 |
| Date of Test: | Apr. 14, 2018 |
| Date of Report: | Apr. 16, 2018 |

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# EST Technology Co., Ltd.

| | |
|---|---|
| **Applicant:**<br>**Address:** | Shenyang Tongfang Multimedia Technology Co.,Limited<br>No. 10 Nanping East Road HunNan New District Shenyang, LiaoNing, Province P. R. China |
| **Manufacturer**<br>**Address:** | Shenyang Tongfang Multimedia Technology Co.,Limited<br>No. 10 Nanping East Road HunNan New District Shenyang, LiaoNing, Province P. R. China |
| **E.U.T:** | LED TV |
| **Model Number:** | WD32HBB101 |
| **Power Supply:** | AC 100-240V, 50/60Hz |
| **Test Voltage:** | AC 120V/60Hz, AC 240V/60Hz |
| **Trade Name:** | WESTINGHOUSE |
| **Date of Receipt:** | Apr. 02, 2018 Date of Test: Apr. 02-16, 2018 |
| **Test Specification:** | FCC Rules and Regulations Part 15 Subpart C:2017<br>ANSI C63.10:2013 |
| **Test Result:** | The device described above is tested by EST Technology Co., Ltd.. The measurement results were contained in this test report and EST Technology Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the FCC Rules and Regulations Part 15 Subpart C requirements.<br><br>This report applies to above tested sample only and shall not be reproduced in part without written approval of EST Technology Co., Ltd.<br><br>Date: Apr. 16, 2018 |

| Prepared by: | Reviewed by: | Approved by: |
|---|---|---|
| Ring / Assistant | Tony / Engineer | Iceman Hu / Manager |

**Other Aspects:**
None.

*Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested*

*This test report is based on a single evaluation of one sample of above mentioned products ,It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.*

# 1. GENERAL INFORMATION

## 1.1. Description of Device (EUT)

| | | |
|---|---|---|
| Product Name | : | LED TV |
| | | |
| Model Number | : | WD32HBB101 |
| | | |
| FCC ID | : | 2ACWIWD32HBB10 |
| | | |
| Modulation | : | IEEE 802.11b mode: DSSS(CCK,QPSK, BPSK)<br>IEEE 802.11g mode: OFDM (BPSK/QPSK/16QAM/64QAM)<br>IEEE 802.11n HT20 mode: OFDM (BPSK/QPSK/16QAM/64QAM)<br>IEEE 802.11n HT40 mode: OFDM (BPSK/QPSK/16QAM/64QAM) |
| | | |
| Operation Frequency | : | IEEE 802.11b/g: 2412 ~ 2462 MHz<br>IEEE 802.11n HT20 : 2412 ~ 2462 MHz<br>IEEE 802.11n HT40: 2422 ~ 2452 MHz |
| | | |
| Number of channel | : | IEEE 802.11b 2412 ~ 2462 MHz: 11 Channels<br>IEEE 802.11g 2412 ~ 2462 MHz: 11 Channels<br>IEEE 802.11n HT20 2412 ~ 2462 MHz: 11 Channels<br>IEEE 802.11n HT40 2422 ~ 2452 MHz: 7 Channels |
| | | |
| Antenna | : | Internal antenna, 2dBi Gain |
| | | |
| Sample Type | : | Prototype production |

# 2. SUMMARY OF TEST

## 2.1. Summary of test result

| Description of Test Item | Standard | Results |
|---|---|---|
| Power Line Conducted Emission | FCC Part 15: 15.207<br>ANSI C63.10:2013 | PASS |
| Radiated Emission | FCC Part 15: 15.209<br>ANSI C63.10:2013<br>KDB 558074 | PASS |
| Band Edge Compliance | FCC Part 15: 15.247<br>ANSI C63.10:2013<br>KDB 558074 | PASS |
| Conducted spurious emissions | FCC Part 15: 15.247<br>ANSI C63.10:2013<br>KDB 558074 | PASS |
| 6dB Bandwidth | FCC Part 15: 15.247<br>ANSI C63.10:2013<br>KDB 558074 | PASS |
| Peak Output Power | FCC Part 15: 15.247<br>ANSI C63.10:2013<br>KDB 558074 | PASS |
| Power Spectral Density | FCC Part 15: 15.247<br>ANSI C63.10:2013<br>KDB 558074 | PASS |
| Antenna requirement | FCC Part 15: 15.203 | PASS |
| Note: KDB 558074 D01 DTS Meas Guidance v04 | | |

## 2.2. Test Facilities

| | | |
|---|---|---|
| EMC Lab | : | Certificated by CNAS, CHINA<br>Registration No.: L5288<br>Date of registration: November 13, 2017<br><br>Certificated by A2LA, USA<br>Registration No.: 4366.01<br>Date of registration: November 07, 2017<br><br>Certificated by FCC, USA<br>Designation Number: CN1215<br>Registration No.: 722932<br>Date of registration: November 21, 2017<br><br>Certificated by Industry Canada<br>Registration No.: 9405A<br>Date of registration: December 03, 2015<br><br>Certificated by VCCI, Japan<br>Registration No.: R-13663; C-14103<br>Date of registration: July 25, 2017<br>This Certificate is valid until: July 24, 2020<br><br>Certificated by TUV Rheinland, Germany<br>Registration No.: UA 50195514 0001<br>Date of registration: February 07, 2015<br><br>Certificated by TUV/PS, Shenzhen<br>Registration No.: SCN1017<br>Date of registration: January 27, 2011<br><br>Certificated by Intertek ETL SEMKO<br>Registration No.: 2011-RTL-L2-64<br>Date of registration: April 28, 2011<br><br>Certificated by Nemko, Hong Kong<br>Registration No.: 175193<br>Date of registration: May 4, 2011 |
| Name of Firm | : | EST Technology Co., Ltd. |
| Site Location | : | Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China |

## 2.3. Measurement uncertainty

| Test Item | Uncertainty |
|---|---|
| Uncertainty for Conduction emission test | ±3.48dB |
| Uncertainty for spurious emissions test (30MHz-1GHz) | ±4.60 dB(Polarize: H) |
| | ±4.68 dB(Polarize: V) |
| Uncertainty for spurious emissions test (1GHz to 18GHz) | ±4.96dB |
| Uncertainty for radio frequency | $7\times10^{-8}$ |
| Uncertainty for conducted RF Power | 0.20dB |
| Uncertainty for Power density test | 0.26dB |

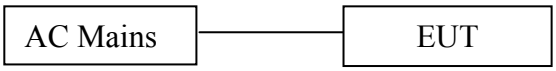
Note：This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

## 2.4. Assistant equipment used for test

2.4.1. N/A

## 2.5. Block Diagram

For radiated emissions test: EUT was placed on a turn table, which is 0.8 or 1.5 meter high above ground. EUT was be set into Wi-Fi test mode by software before test.




(EUT: LED TV)

## 2.6. Test mode

A special test software was used to control EUT work in Continuous TX mode, and select test channel, wireless mode and data rate.

| Test mode | Lower channel | Center channel | Upper channel |
|---|---|---|---|
| IEEE 802.11b;IEEE 802.11g;IEEE 802.11n HT20 Transmitting | 2412MHz | 2437MHz | 2462MHz |
| IEEE 802.11b;IEEE 802.11g;IEEE 802.11n HT20 Receiving | 2412MHz | 2437MHz | 2462MHz |
| IEEE 802.11n HT40 Transmitting | 2422MHz | 2437MHz | 2452MHz |
| IEEE 802.11n HT40 Receiving | 2422MHz | 2437MHz | 2452MHz |

## 2.7. Channel List

| IEEE 802.11b;IEEE 802.11g;IEEE 802.11n HT20 | | | | | |
|---|---|---|---|---|---|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 1 | 2412 | 6 | 2437 | 11 | 2462 |
| 2 | 2417 | 7 | 2442 | | |
| 3 | 2422 | 8 | 2447 | | |
| 4 | 2427 | 9 | 2452 | | |
| 5 | 2432 | 10 | 2457 | | |
| IEEE 802.11n HT40 | | | | | |
| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 3 | 2422 | 6 | 2437 | 9 | 2452 |
| 4 | 2427 | 7 | 2442 | | |
| 5 | 2432 | 8 | 2447 | | |

## 2.8. Test Equipment

### 2.8.1. For conducted emission test

| Equipment | Manufacturer | Model No. | Serial No. | Calibration Body | Last Cal. | Next Cal. |
|---|---|---|---|---|---|---|
| EMI Test Receiver | Rohde & Schwarz | ESHS30 832354 | | CEPREI | June 17,17 | 1 Year |
| Artificial Mains Network | Rohde & Schwarz | ENV216 101260 | | CEPREI | June 17,17 | 1 Year |
| Pulse Limiter | Rohde & Schwarz | ESH3-Z2 101 | 100 | CEPREI | June 17,17 | 1 Year |
| Test Software | Audix | e3-6.111221a | N/A | N/A N/A N/A | | |

### 2.8.2. For radiated emission test(9 kHz-30MHz)

| Equipment | Manufacturer | Model No. | Serial No. | Calibration Body | Last Cal. | Next Cal. |
|---|---|---|---|---|---|---|
| EMI Test Receiver | Rohde & Schwarz | ESR7 101780 | | CEPREI | June 17,17 | 1 Year |
| Active Loop Antenna | SCHWARZBECK | FMZB1519 1519-038 | | CEPREI | October 08,17 | 1 Year |
| Test Software | Audix | e3-6.111221a | N/A | N/A N/A N/A | | |

### 2.8.3. For radiated emissions test (30-1000MHz)

| Equipment | Manufacturer | Model No. | Serial No. | Calibration Body | Last Cal. | Next Cal. |
|---|---|---|---|---|---|---|
| EMI Test Receiver | Rohde & Schwarz | ESR7 101780 | | CEPREI | June 17,17 | 1 Year |
| Bilog Antenna | Teseq | CBL 6111D | 27090 | CEPREI | June 08,17 | 1 Year |
| Test Software | Audix | e3-6.111221a | N/A | N/A N/A N/A | | |

### 2.8.4. For radiated emission test(above 1GHz)

| Equipment | Manufacturer | Model No. | Serial No. | Calibration Body | Last Cal. | Next Cal. |
|---|---|---|---|---|---|---|
| Horn Antenna | SCHWARZBECK | BBHA 9120 D | BBHA9120D1002 | CEPREI June | 08,17 | 1 Year |
| Horn Antenna | SCHWARZBECK | BBHA9170 BBHA9170242 | | CEPREI June | 08,17 | 1Year |
| Signal Amplifier | SCHWARZBECK | BBV9718 9718-212 | | CEPREI | June 08,17 | 1 Year |
| Spectrum Analyzer | Rohde &Schwarz | FSV 103173 | | CEPREI | June 17,17 | 1 Year |
| PSA Series Spertrum Analyzer | Agilent E4447A | | MY50180031 | CEPREI June | 16,17 | 1Year |
| Test Software | Audix | e3-6.111221a | N/A | N/A N/A N/A | | |

### 2.8.5. For connect EUT antenna terminal test

| Equipment | Manufacturer | Model No. | Serial No. | Calibration Body | Last Cal. | Next Cal. |
|---|---|---|---|---|---|---|
| Spectrum Analyzer | Rohde &Schwarz | FSV 103173 | | CEPREI | June 17,17 | 1 Year |
| Spectrum Analyzer | Agilent | E4408B | MY44211139 | CEPREI June | 17,17 | 1 Year |

# 3 POWER LINE CONDUCTED EMISSION TEST

## 3.1. Limit

| Frequency | Maximum RF Line Voltage | |
|---|---|---|
| | Quasi-Peak Level dB(μV) | Average Level 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.

## 3.2. Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#). This 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 ESHS30) is set at 10kHz.

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

## 3.3. Test Result

**PASS.**

## 3.4. Test data

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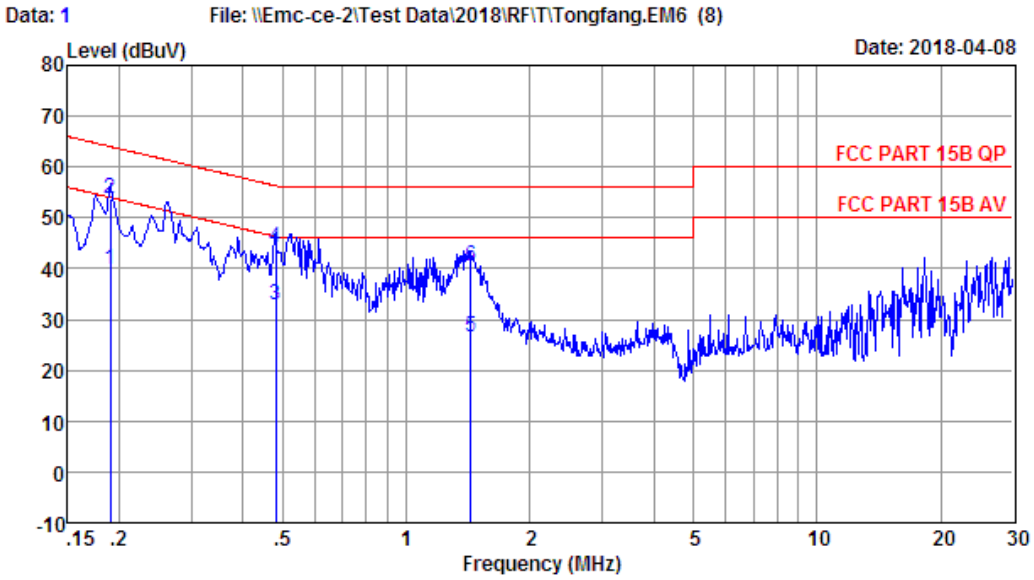


Site no : 2# Conduction Shield Room Data no. : 1
Env. / Ins. : Temp:23.3℃ Humi:38% Press:101.50kPa LINE Phase : NEUTRAL
Limit : FCC PART 15B QP
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : TX Mode

| | Freq. (MHz) | LISN Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuv) | Limits (dBuv) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.190 | 9.66 | 0.04 | 30.13 | 39.83 | 54.02 | 14.19 | Average |
| 2 | 0.190 | 9.66 | 0.04 | 44.13 | 53.83 | 64.02 | 10.19 | QP |
| 3 | 0.481 | 9.75 | 0.05 | 23.20 | 33.00 | 46.32 | 13.32 | Average |
| 4 | 0.481 | 9.75 | 0.05 | 34.20 | 44.00 | 56.32 | 12.32 | QP |
| 5 | 1.433 | 9.84 | 0.06 | 16.66 | 26.56 | 46.00 | 19.44 | Average |
| 6 | 1.433 | 9.84 | 0.06 | 30.66 | 40.56 | 56.00 | 15.44 | QP |

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

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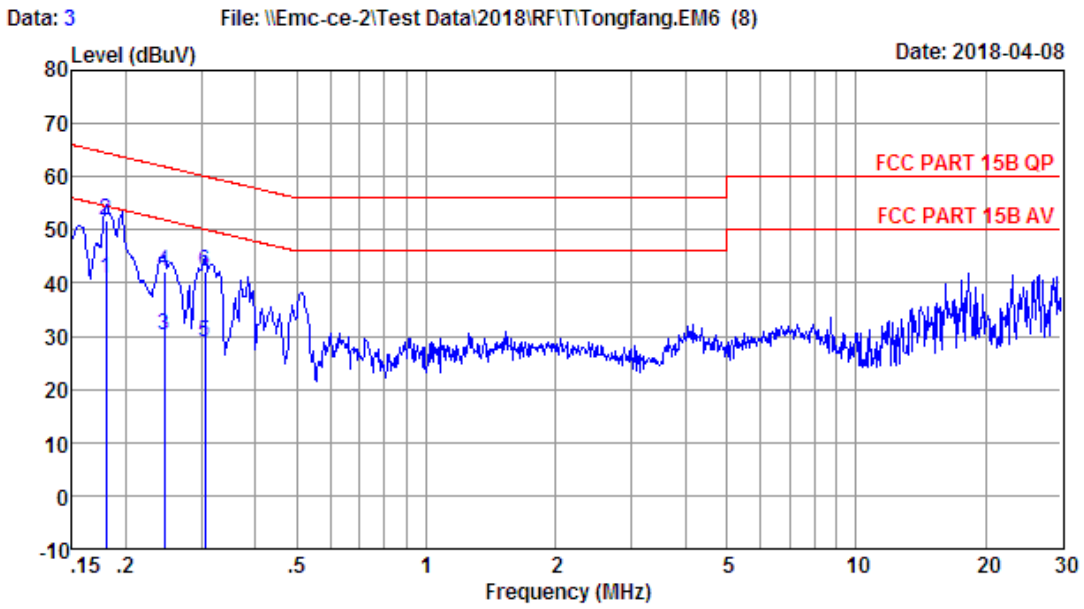


Site no : 2# Conduction Shield Room Data no. : 3
Env. / Ins. : Temp:23.3℃ Humi:38% Press:101.50kPa LINE Phase : LINE
Limit : FCC PART 15B QP
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : TX Mode

| | Freq. (MHz) | LISN Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuv) | Limits (dBuv) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.180 | 9.67 | 0.04 | 31.19 | 40.90 | 54.50 | 13.60 | Average |
| 2 | 0.180 | 9.67 | 0.04 | 42.19 | 51.90 | 64.50 | 12.60 | QP |
| 3 | 0.246 | 9.69 | 0.04 | 20.35 | 30.08 | 51.91 | 21.83 | Average |
| 4 | 0.246 | 9.69 | 0.04 | 32.35 | 42.08 | 61.91 | 19.83 | QP |
| 5 | 0.305 | 9.71 | 0.04 | 19.25 | 29.00 | 50.10 | 21.10 | Average |
| 6 | 0.305 | 9.71 | 0.04 | 32.25 | 42.00 | 60.10 | 18.10 | QP |

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

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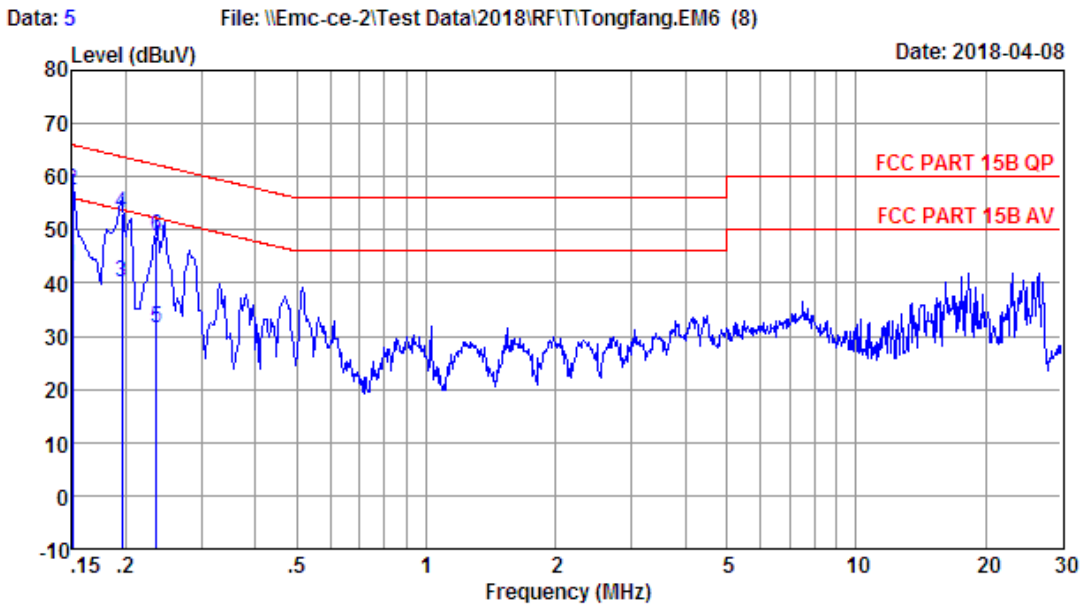


Site no : 2# Conduction Shield Room Data no. : 5
Env. / Ins. : Temp:23.3℃ Humi:38% Press:101.50kPa LINE Phase : LINE
Limit : FCC PART 15B QP
Engineer : Seven
EUT : LED TV
Power : AC 240V/60Hz
M/N : WD32HBB101
Test Mode : TX Mode

| | Freq. (MHz) | LISN Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuv) | Limits (dBuv) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.150 | 9.66 | 0.04 | 33.58 | 43.28 | 56.00 | 12.72 | Average |
| 2 | 0.150 | 9.66 | 0.04 | 47.58 | 57.28 | 66.00 | 8.72 | QP |
| 3 | 0.195 | 9.67 | 0.04 | 30.35 | 40.06 | 53.80 | 13.74 | Average |
| 4 | 0.195 | 9.67 | 0.04 | 43.35 | 53.06 | 63.80 | 10.74 | QP |
| 5 | 0.235 | 9.69 | 0.04 | 21.92 | 31.65 | 52.26 | 20.61 | Average |
| 6 | 0.235 | 9.69 | 0.04 | 38.92 | 48.65 | 62.26 | 13.61 | QP |

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

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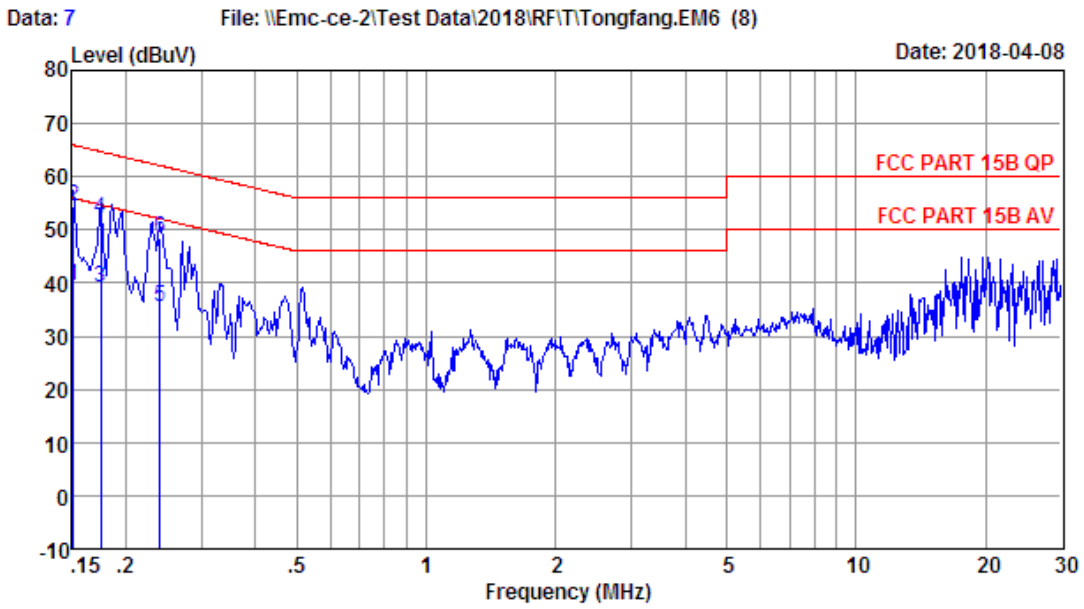



Site no : 2# Conduction Shield Room Data no. : 7
Env. / Ins. : Temp:23.3℃ Humi:38% Press:101.50kPa LINE Phase : NEUTRAL
Limit : FCC PART 15B QP
Engineer : Seven
EUT : LED TV
Power : AC 240V/60Hz
M/N : WD32HBB101
Test Mode : TX Mode

| | Freq. (MHz) | LISN Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuv) | Limits (dBuv) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.151 | 9.64 | 0.04 | 29.85 | 39.53 | 55.96 | 16.43 | Average |
| 2 | 0.151 | 9.64 | 0.04 | 44.85 | 54.53 | 65.96 | 11.43 | QP |
| 3 | 0.175 | 9.66 | 0.04 | 29.38 | 39.08 | 54.72 | 15.64 | Average |
| 4 | 0.175 | 9.66 | 0.04 | 42.38 | 52.08 | 64.72 | 12.64 | QP |
| 5 | 0.240 | 9.68 | 0.04 | 25.83 | 35.55 | 52.08 | 16.53 | Average |
| 6 | 0.240 | 9.68 | 0.04 | 38.83 | 48.55 | 62.08 | 13.53 | QP |

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

# 4 RADIATED EMISSION TEST

## 4.1 Lim it

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.

15.205 Restricted frequency band

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090 - 0.110 | 16.42 - 16.423 | 399.9 - 410 | 4.5 - 5.15 |
| [1]0.495 - 0.505 | 16.69475 - 16.69525 | 608 - 614 | 5.35 - 5.46 |
| 2.1735 - 2.1905 | 16.80425 - 16.80475 | 960 - 1240 | 7.25 - 7.75 |
| 4.125 - 4.128 | 25.5 - 25.67 | 1300 - 1427 | 8.025 - 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 | ([2]) |

15.209 Limit

| Frequency (MHz) | Field Strength(μV/m) | Distance(m ) |
|---|---|---|
| 0.009-0.490 2400/F(kHz) | | 300 |
| 0.490-1.705 24000/F(kHz) | | 30 |
| 1.705-30 30 | | 30 |
| 30-88 100 | | 3 |
| 88-216 150 | | 3 |
| 216-960 200 | | 3 |
| Above 960 | 500 | 3 |

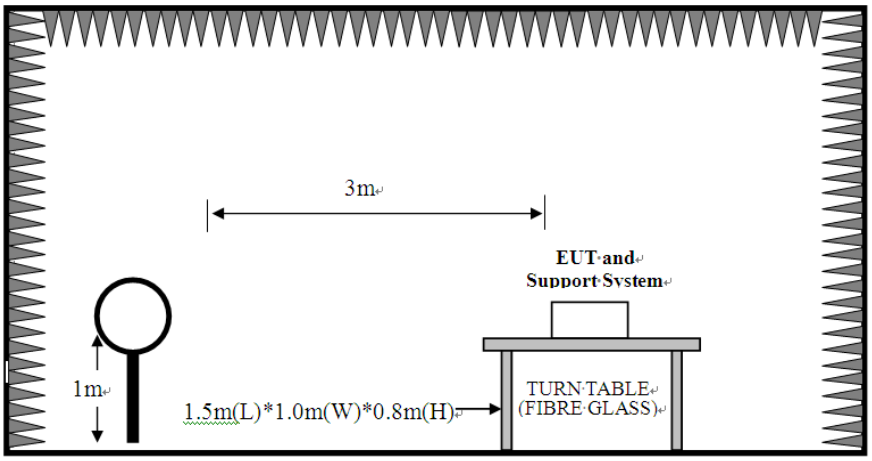
Remark：(1) Emission level dBμV = 20 log Emission level μV/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

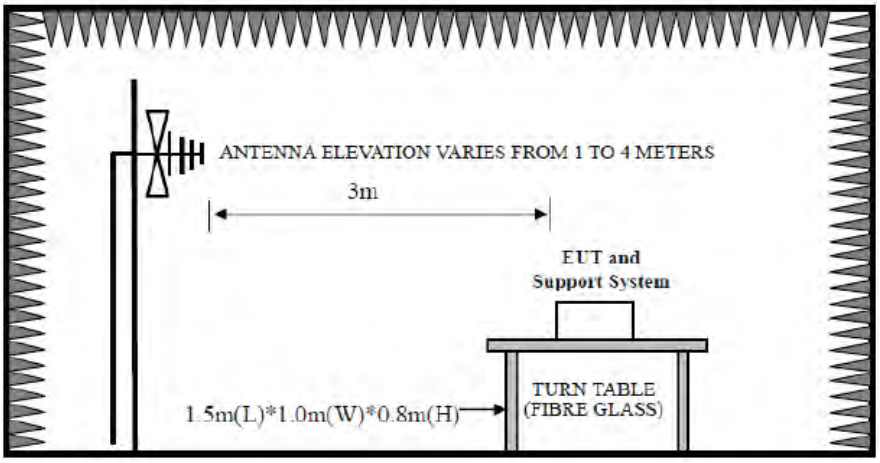
(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

## 4.2. Block Diagram of Test setup

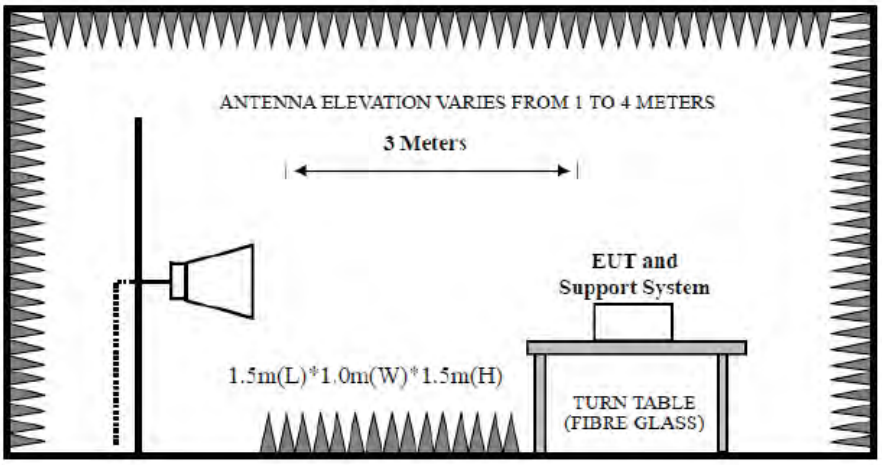
9kHz~30MHz




30~1000MHz




Above 1GHz



## 4.3. Test Procedure

EUT was placed on a turn table, which is 0.8 meter high above ground for 9kHz~1000MHz test, and which is 1.5 meter high above ground for above 1GHz test. 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. Both horizontal and vertical polarization of the antenna are set on test.

The test frequency analyzer system was set to Peak Detect (300Hz RBW in 9kHz to 150kHz and 10kHz RBW in 150kHz to 30MHz) Function and Specified Bandwidth with Maximum Hold Mode.

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 1MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz

PEAK detector, 1MHz/1MHz for PAEK measurement,

PEAK detector, 1MHz/10Hz for Average measurement

The frequency range from 30MHz to 10th harmonic (25GHz) are checked.

## 4.4. Test Result

**PASS.**

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

2、The frequency 2412MHz 、2422MHz、2437 MHz、2452MHz and 2462 MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

## 4.5. Test Data

9 kHz – 30 MHz
Pass
Note: The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

30-1000 MHz

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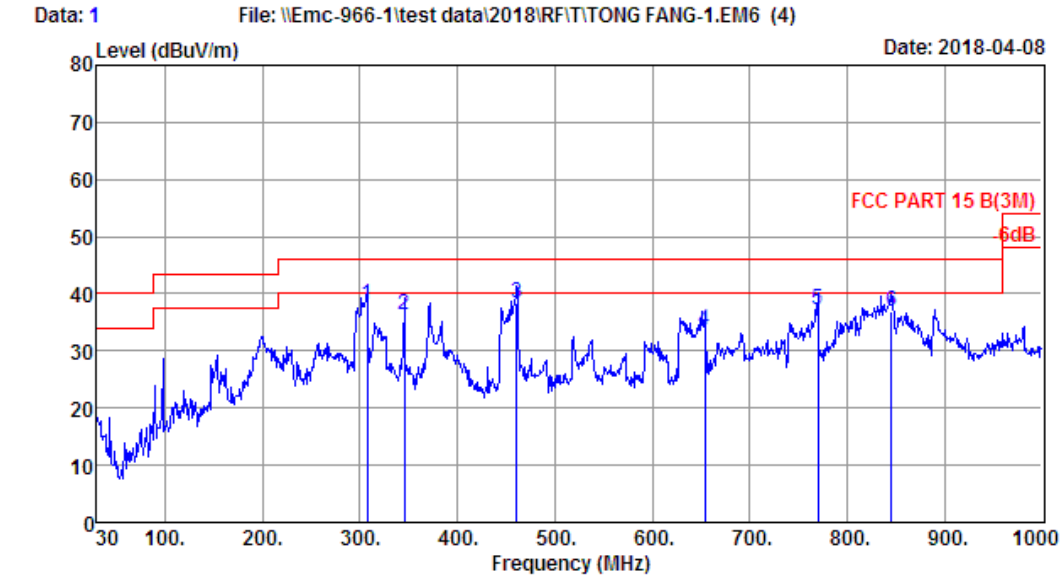


Site no : 1# 966 Chamber Data no. : 1
Env. / Ins. : Temp:27.3';Humi:50%;Press:101.52kPa LINE Phase : HORIZONTAL
Limit : FCC PART 15 B(3M)
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : TX Mode

| | Freq. (MHz) | ANT Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 307.420 | 13.87 | 2.08 | 21.99 | 37.94 | 46.00 | 8.06 | QP |
| 2 | 345.250 | 14.85 | 2.28 | 19.28 | 36.41 | 46.00 | 9.59 | QP |
| 3 | 460.680 | 17.42 | 2.79 | 18.20 | 38.41 | 46.00 | 7.59 | QP |
| 4 | 653.710 | 20.98 | 3.43 | 9.37 | 33.78 | 46.00 | 12.22 | QP |
| 5 | 770.110 | 22.50 | 3.69 | 10.93 | 37.12 | 46.00 | 8.88 | QP |
| 6 | 845.770 | 23.20 | 3.89 | 9.88 | 36.97 | 46.00 | 9.03 | QP |

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

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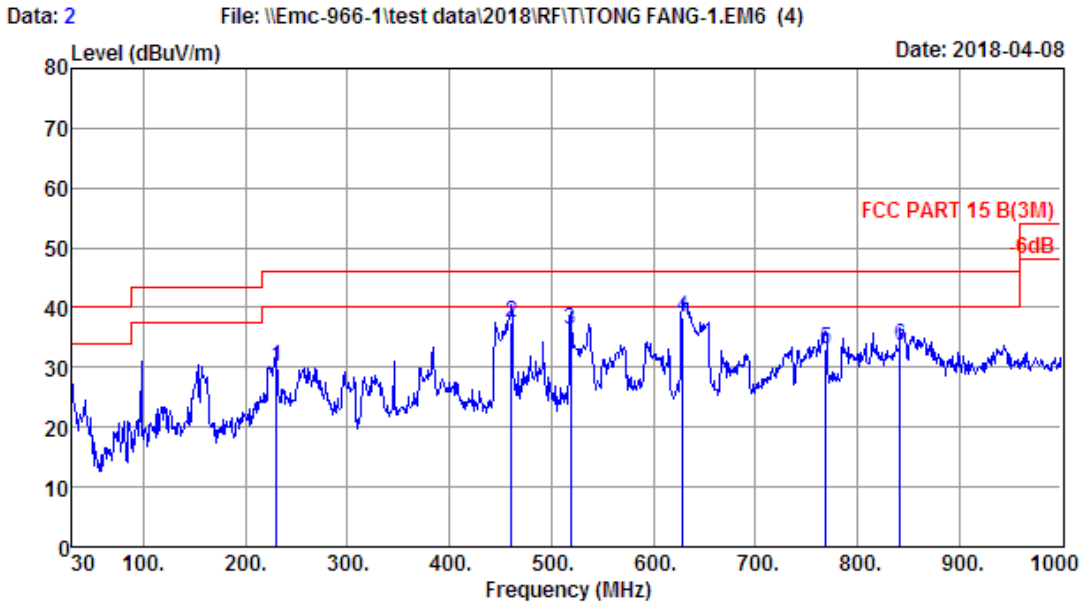


Site no : 1# 966 Chamber Data no. : 2
Env. / Ins. : Temp:27.3';Humi:50%;Press:101.52kPa LINE Phase : VERTICAL
Limit : FCC PART 15 B(3M)
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : TX Mode

| | Freq. (MHz) | ANT Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 230.790 | 10.36 | 1.73 | 18.06 | 30.15 | 46.00 | 15.85 | QP |
| 2 | 460.680 | 17.42 | 2.79 | 17.37 | 37.58 | 46.00 | 8.42 | QP |
| 3 | 518.880 | 18.68 | 2.94 | 14.69 | 36.31 | 46.00 | 9.69 | QP |
| 4 | 628.490 | 20.76 | 3.35 | 14.25 | 38.36 | 46.00 | 7.64 | QP |
| 5 | 769.140 | 22.49 | 3.68 | 6.99 | 33.16 | 46.00 | 12.84 | QP |
| 6 | 841.890 | 23.20 | 3.91 | 6.44 | 33.55 | 46.00 | 12.45 | QP |

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

1000-18000 MHz

EST Technology

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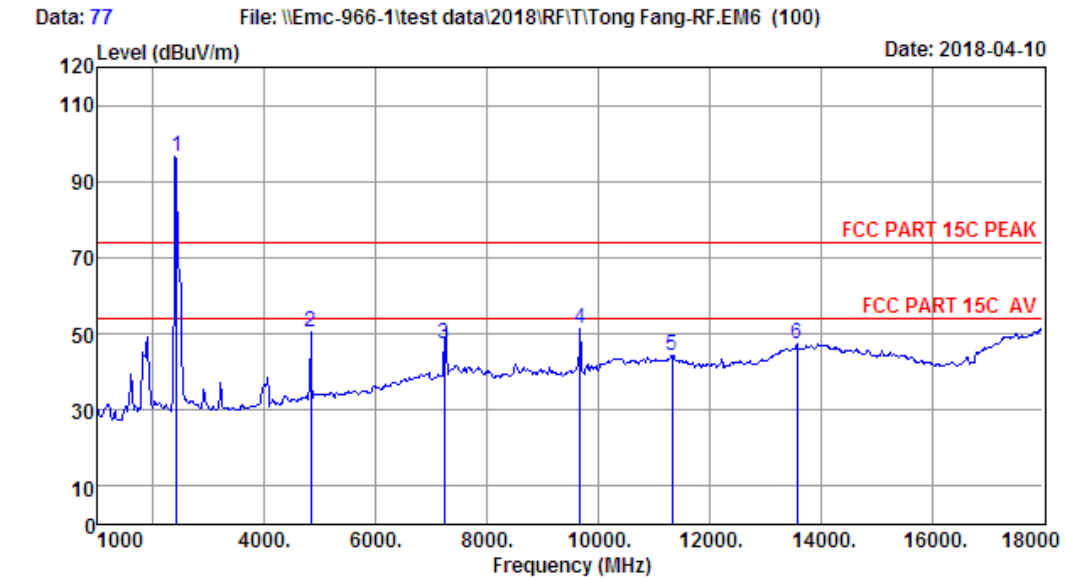


Site no. : 1# 966 Chamber Data no. : 77
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : IEEE 802.11b CH1 2412TX

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2412.00 | 27.39 | 3.23 | 34.94 | 100.76 | 96.44 | 74.00 | -22.44 | Peak |
| 2 | 4824.00 | 32.09 | 4.69 | 35.08 | 48.89 | 50.59 | 74.00 | 23.41 | Peak |
| 3 | 7236.00 | 36.63 | 6.03 | 33.42 | 38.07 | 47.31 | 74.00 | 26.69 | Peak |
| 4 | 9670.00 | 38.90 | 7.78 | 35.31 | 40.04 | 51.41 | 74.00 | 22.59 | Peak |
| 5 | 11336.00 | 40.03 | 8.32 | 32.84 | 28.98 | 44.49 | 74.00 | 29.51 | Peak |
| 6 | 13580.00 | 41.37 | 9.78 | 32.57 | 28.76 | 47.34 | 74.00 | 26.66 | Peak |

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

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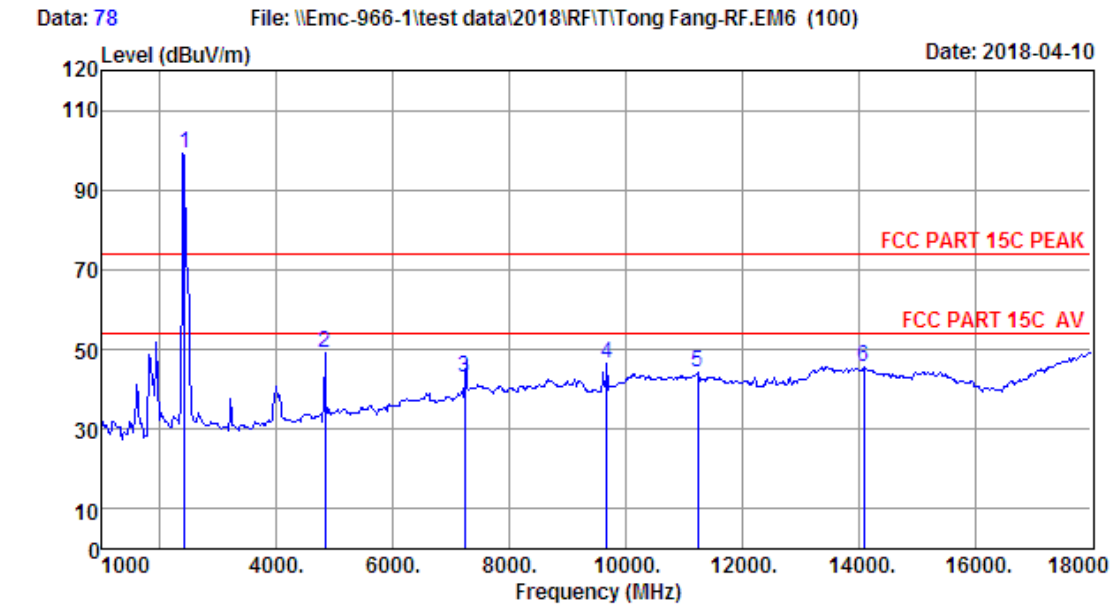


```
Site no.      : 1# 966 Chamber              Data no.  : 78
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11b  CH1 2412TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2412.00 | 27.39 | 3.23 | 34.94 | 103.50 | 99.18 | 74.00 | -25.18 | Peak |
| 2 | 4824.00 | 32.09 | 4.69 | 35.08 | 47.27 | 48.97 | 74.00 | 25.03 | Peak |
| 3 | 7236.00 | 36.63 | 6.03 | 33.42 | 33.63 | 42.87 | 74.00 | 31.13 | Peak |
| 4 | 9670.00 | 38.90 | 7.78 | 35.31 | 35.01 | 46.38 | 74.00 | 27.62 | Peak |
| 5 | 11234.00 | 39.99 | 8.40 | 33.03 | 28.83 | 44.19 | 74.00 | 29.81 | Peak |
| 6 | 14090.00 | 41.61 | 10.14 | 32.99 | 26.83 | 45.59 | 74.00 | 28.41 | Peak |

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

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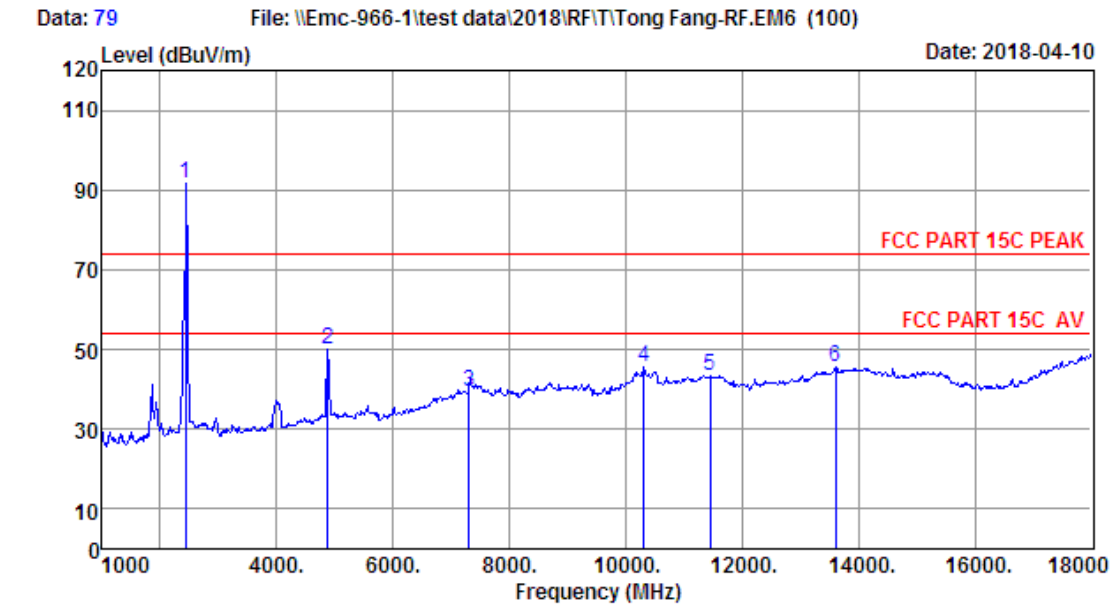


Site no. : 1# 966 Chamber Data no. : 79
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : IEEE 802.11b CH6 2437TX

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2437.00 | 27.48 | 3.26 | 35.07 | 95.95 | 91.62 | 74.00 | -17.62 | Peak |
| 2 | 4874.00 | 32.18 | 4.73 | 35.14 | 48.21 | 49.98 | 74.00 | 24.02 | Peak |
| 3 | 7311.00 | 36.78 | 6.09 | 33.31 | 29.66 | 39.22 | 74.00 | 34.78 | Peak |
| 4 | 10316.00 | 39.23 | 10.20 | 34.34 | 30.67 | 45.76 | 74.00 | 28.24 | Peak |
| 5 | 11455.00 | 40.08 | 8.28 | 32.62 | 27.68 | 43.42 | 74.00 | 30.58 | Peak |
| 6 | 13614.00 | 41.39 | 9.82 | 32.59 | 27.00 | 45.62 | 74.00 | 28.38 | Peak |

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

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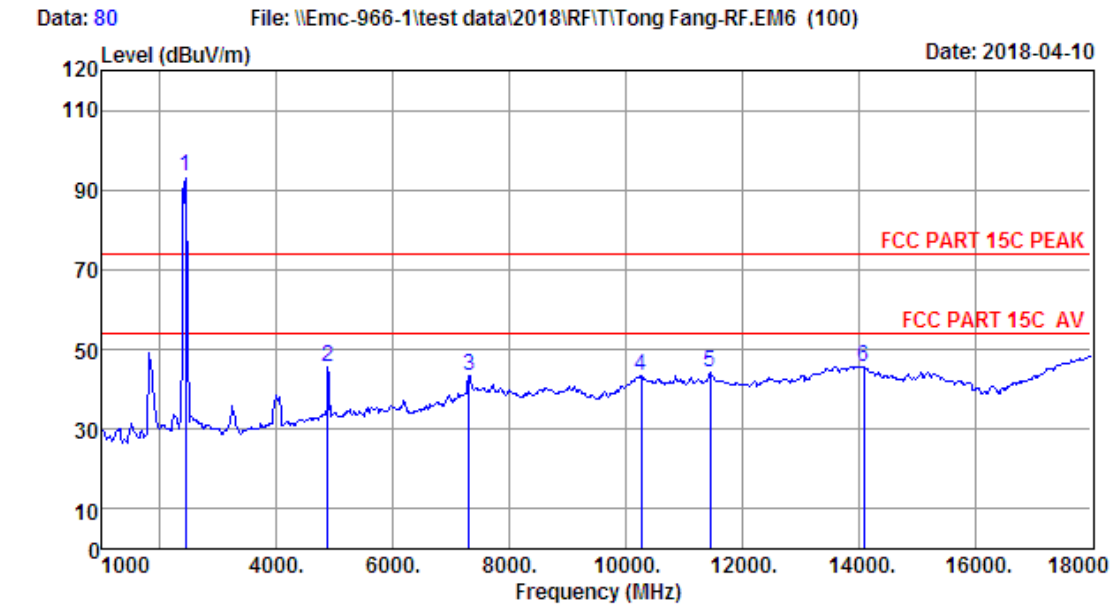


Site no. : 1# 966 Chamber Data no. : 80
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : IEEE 802.11b CH6 2437TX

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2437.00 | 27.48 | 3.26 | 35.07 | 97.58 | 93.25 | 74.00 | -19.25 | Peak |
| 2 | 4874.00 | 32.18 | 4.73 | 35.14 | 43.62 | 45.39 | 74.00 | 28.61 | Peak |
| 3 | 7311.00 | 36.78 | 6.09 | 33.31 | 33.65 | 43.21 | 74.00 | 30.79 | Peak |
| 4 | 10265.00 | 39.21 | 9.98 | 34.39 | 28.49 | 43.29 | 74.00 | 30.71 | Peak |
| 5 | 11455.00 | 40.08 | 8.28 | 32.62 | 28.58 | 44.32 | 74.00 | 29.68 | Peak |
| 6 | 14090.00 | 41.61 | 10.14 | 32.99 | 27.01 | 45.77 | 74.00 | 28.23 | Peak |

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

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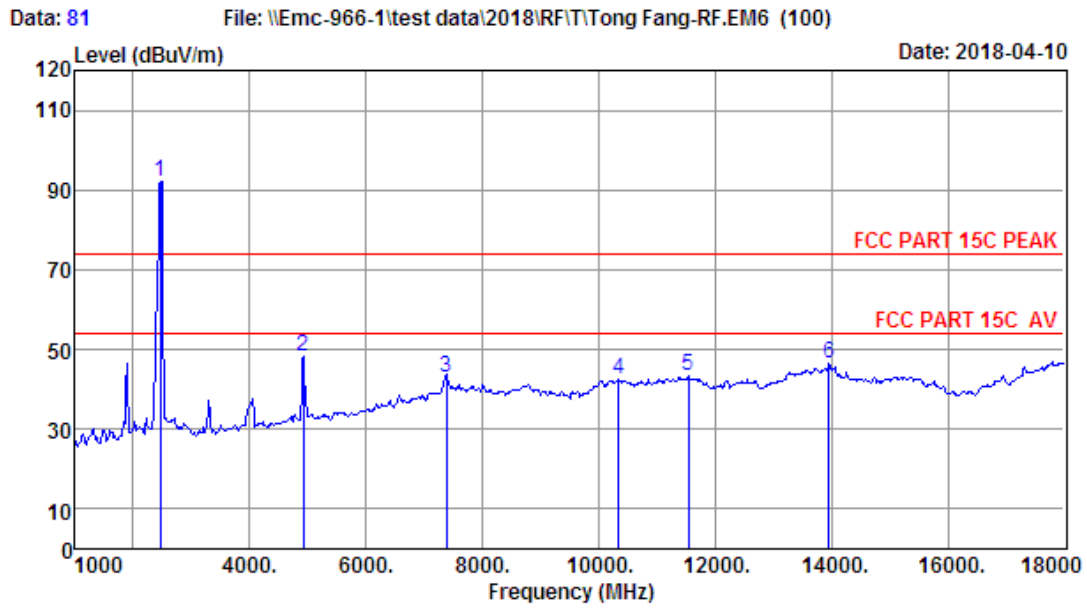


```
Site no.      : 1# 966 Chamber              Data no.  : 81
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11b  CH11 2462TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2462.00 | 27.52 | 3.27 | 35.14 | 96.41 | 92.06 | 74.00 | -18.06 | Peak |
| 2 | 4924.00 | 32.28 | 4.77 | 35.20 | 46.51 | 48.36 | 74.00 | 25.64 | Peak |
| 3 | 7386.00 | 36.97 | 6.12 | 33.17 | 33.09 | 43.01 | 74.00 | 30.99 | Peak |
| 4 | 10350.00 | 39.24 | 10.10 | 34.30 | 27.54 | 42.58 | 74.00 | 31.42 | Peak |
| 5 | 11540.00 | 40.05 | 8.27 | 32.49 | 27.59 | 43.42 | 74.00 | 30.58 | Peak |
| 6 | 13954.00 | 41.66 | 10.12 | 32.84 | 27.64 | 46.58 | 74.00 | 27.42 | Peak |

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

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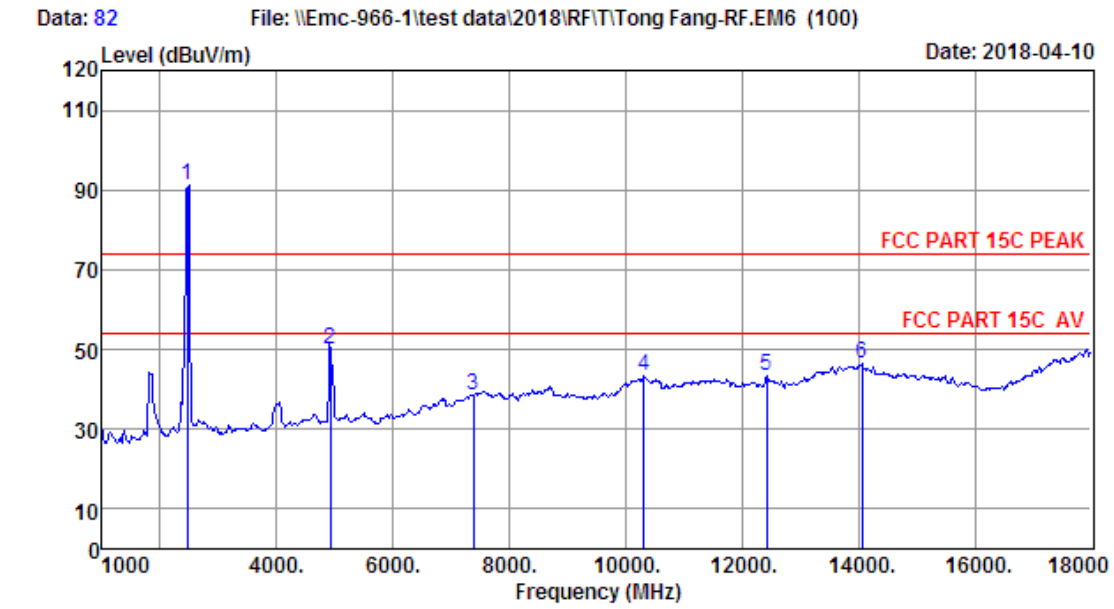


Site no. : 1# 966 Chamber Data no. : 82
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : IEEE 802.11b CH11 2462TX

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2462.00 | 27.52 | 3.27 | 35.14 | 95.42 | 91.07 | 74.00 | -17.07 | Peak |
| 2 | 4924.00 | 32.28 | 4.77 | 35.20 | 48.35 | 50.20 | 74.00 | 23.80 | Peak |
| 3 | 7386.00 | 36.97 | 6.12 | 33.17 | 28.76 | 38.68 | 74.00 | 35.32 | Peak |
| 4 | 10316.00 | 39.23 | 10.20 | 34.34 | 28.16 | 43.25 | 74.00 | 30.75 | Peak |
| 5 | 12424.00 | 39.31 | 8.53 | 32.68 | 28.03 | 43.19 | 74.00 | 30.81 | Peak |
| 6 | 14056.00 | 41.65 | 10.13 | 32.95 | 27.55 | 46.38 | 74.00 | 27.62 | Peak |

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

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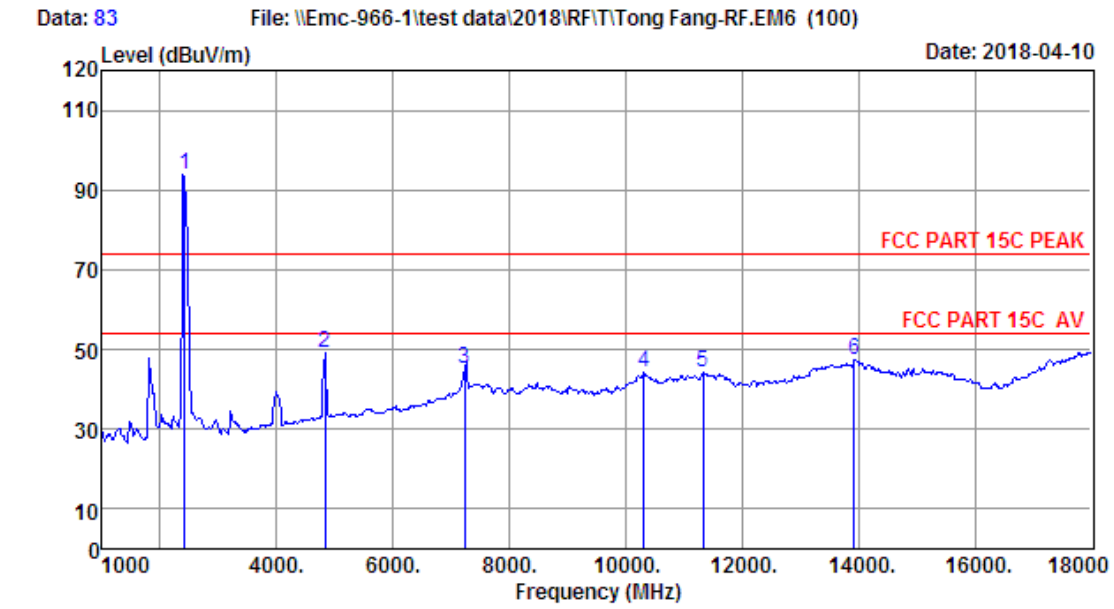


Site no. : 1# 966 Chamber Data no. : 83
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : IEEE 802.11g CH1 2412TX

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2412.00 | 27.39 | 3.23 | 34.94 | 98.15 | 93.83 | 74.00 | -19.83 | Peak |
| 2 | 4824.00 | 32.09 | 4.69 | 35.08 | 47.60 | 49.30 | 74.00 | 24.70 | Peak |
| 3 | 7236.00 | 36.63 | 6.03 | 33.42 | 36.06 | 45.30 | 74.00 | 28.70 | Peak |
| 4 | 10316.00 | 39.23 | 10.20 | 34.34 | 29.04 | 44.13 | 74.00 | 29.87 | Peak |
| 5 | 11336.00 | 40.03 | 8.32 | 32.84 | 28.76 | 44.27 | 74.00 | 29.73 | Peak |
| 6 | 13920.00 | 41.63 | 10.11 | 32.83 | 28.49 | 47.40 | 74.00 | 26.60 | Peak |

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

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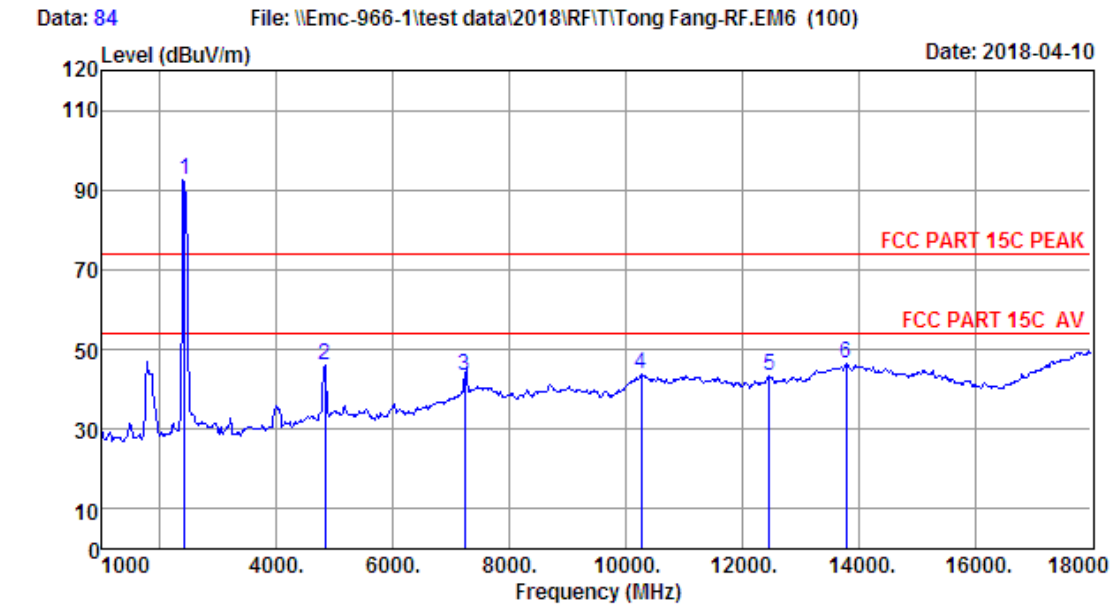


```
Site no.      : 1# 966 Chamber              Data no.  : 84
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11g  CH1 2412TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2412.00 | 27.39 | 3.23 | 34.94 | 96.68 | 92.36 | 74.00 | -18.36 | Peak |
| 2 | 4824.00 | 32.09 | 4.69 | 35.08 | 44.27 | 45.97 | 74.00 | 28.03 | Peak |
| 3 | 7236.00 | 36.63 | 6.03 | 33.42 | 34.26 | 43.50 | 74.00 | 30.50 | Peak |
| 4 | 10265.00 | 39.21 | 9.98 | 34.39 | 28.92 | 43.72 | 74.00 | 30.28 | Peak |
| 5 | 12475.00 | 39.30 | 8.57 | 32.71 | 28.10 | 43.26 | 74.00 | 30.74 | Peak |
| 6 | 13784.00 | 41.53 | 10.05 | 32.72 | 27.83 | 46.69 | 74.00 | 27.31 | Peak |

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

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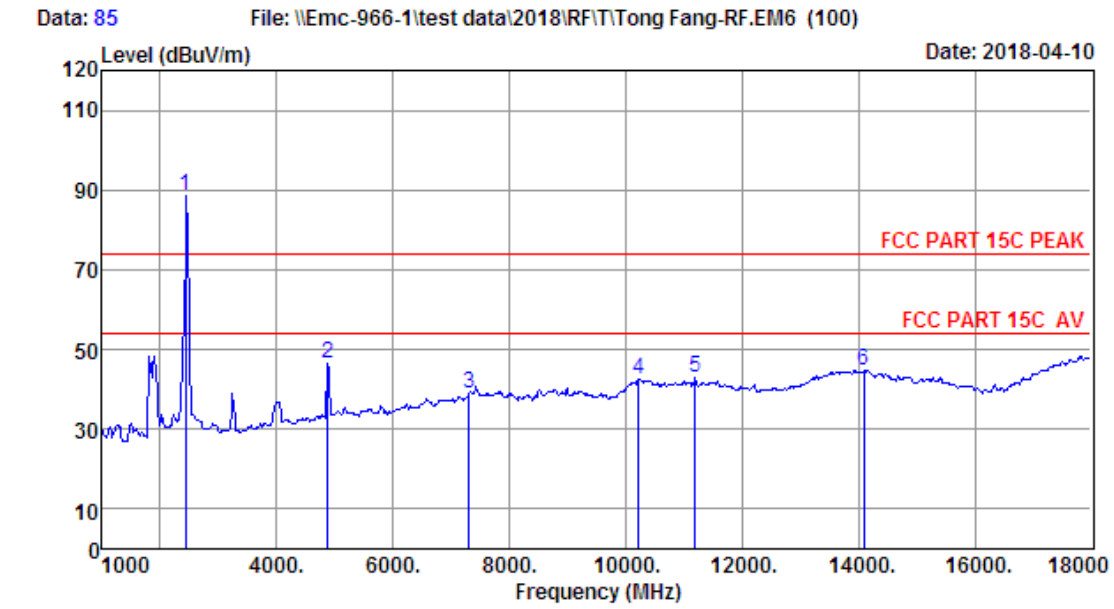


Site no. : 1# 966 Chamber Data no. : 85
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : IEEE 802.11g CH6 2437TX

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2437.00 | 27.48 | 3.26 | 35.07 | 92.97 | 88.64 | 74.00 | -14.64 | Peak |
| 2 | 4874.00 | 32.18 | 4.73 | 35.14 | 44.65 | 46.42 | 74.00 | 27.58 | Peak |
| 3 | 7311.00 | 36.78 | 6.09 | 33.31 | 29.23 | 38.79 | 74.00 | 35.21 | Peak |
| 4 | 10214.00 | 39.19 | 9.77 | 34.43 | 27.84 | 42.37 | 74.00 | 31.63 | Peak |
| 5 | 11200.00 | 39.98 | 8.43 | 33.10 | 27.52 | 42.83 | 74.00 | 31.17 | Peak |
| 6 | 14090.00 | 41.61 | 10.14 | 32.99 | 25.91 | 44.67 | 74.00 | 29.33 | Peak |

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

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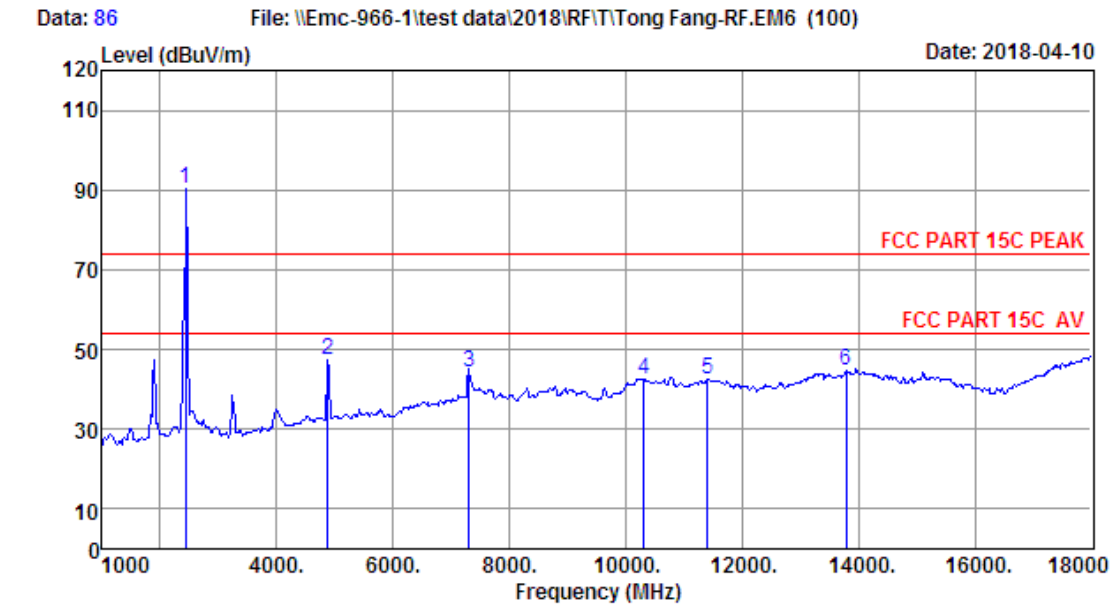


```
Site no.      : 1# 966 Chamber              Data no.  : 86
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11g  CH6 2437TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2437.00 | 27.48 | 3.26 | 35.07 | 94.52 | 90.19 | 74.00 | -16.19 | Peak |
| 2 | 4874.00 | 32.18 | 4.73 | 35.14 | 45.52 | 47.29 | 74.00 | 26.71 | Peak |
| 3 | 7311.00 | 36.78 | 6.09 | 33.31 | 34.71 | 44.27 | 74.00 | 29.73 | Peak |
| 4 | 10316.00 | 39.23 | 10.20 | 34.34 | 27.60 | 42.69 | 74.00 | 31.31 | Peak |
| 5 | 11404.00 | 40.06 | 8.29 | 32.71 | 26.91 | 42.55 | 74.00 | 31.45 | Peak |
| 6 | 13784.00 | 41.53 | 10.05 | 32.72 | 25.65 | 44.51 | 74.00 | 29.49 | Peak |

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

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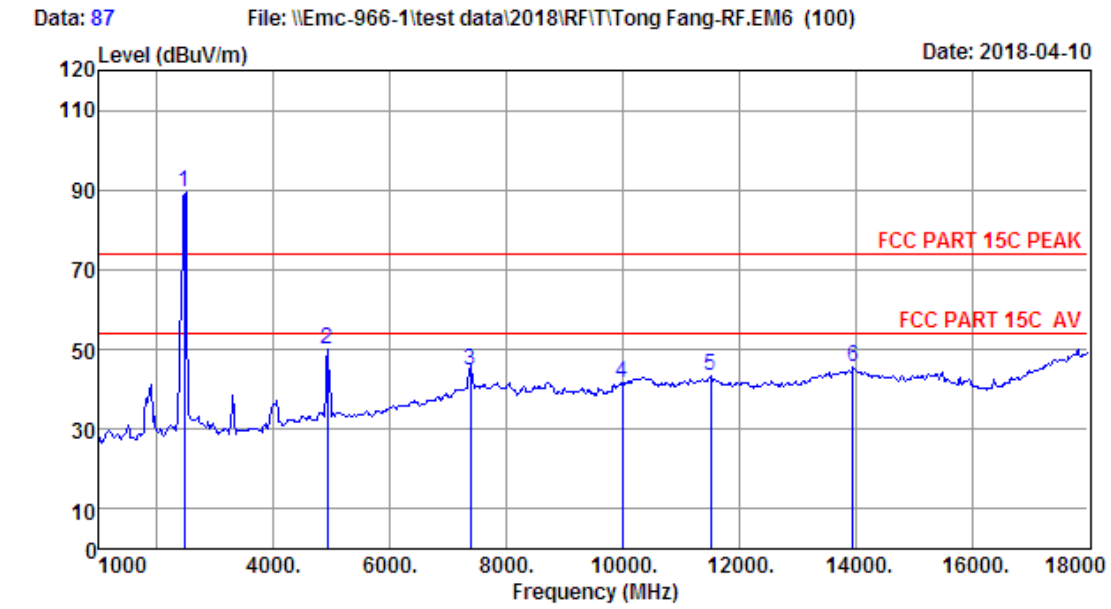


```
Site no.      : 1# 966 Chamber              Data no.  : 87
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11g  CH11 2462TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2462.00 | 27.52 | 3.27 | 35.14 | 93.83 | 89.48 | 74.00 | -15.48 | Peak |
| 2 | 4924.00 | 32.28 | 4.77 | 35.20 | 48.07 | 49.92 | 74.00 | 24.08 | Peak |
| 3 | 7386.00 | 36.97 | 6.12 | 33.17 | 34.71 | 44.63 | 74.00 | 29.37 | Peak |
| 4 | 9993.00 | 39.10 | 8.82 | 34.70 | 28.48 | 41.70 | 74.00 | 32.30 | Peak |
| 5 | 11506.00 | 40.10 | 8.28 | 32.55 | 27.37 | 43.20 | 74.00 | 30.80 | Peak |
| 6 | 13954.00 | 41.66 | 10.12 | 32.84 | 26.54 | 45.48 | 74.00 | 28.52 | Peak |

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

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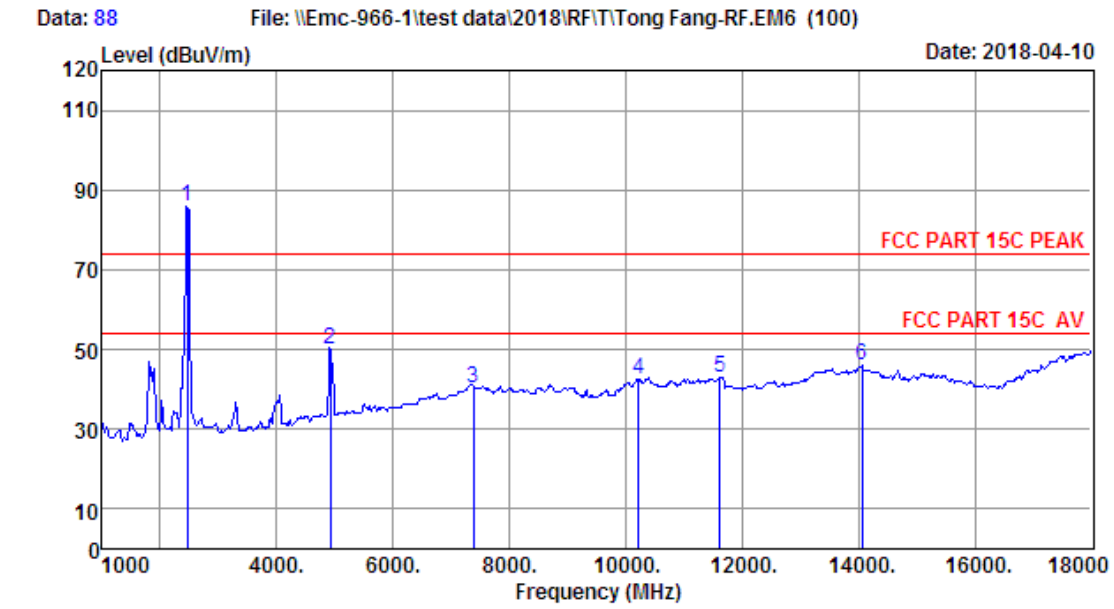


```
Site no.      : 1# 966 Chamber              Data no.  : 88
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11g  CH11 2462TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2462.00 | 27.52 | 3.27 | 35.14 | 90.18 | 85.83 | 74.00 | -11.83 | Peak |
| 2 | 4924.00 | 32.28 | 4.77 | 35.20 | 48.05 | 49.90 | 74.00 | 24.10 | Peak |
| 3 | 7386.00 | 36.97 | 6.12 | 33.17 | 30.16 | 40.08 | 74.00 | 33.92 | Peak |
| 4 | 10214.00 | 39.19 | 9.77 | 34.43 | 27.99 | 42.52 | 74.00 | 31.48 | Peak |
| 5 | 11625.00 | 39.93 | 8.25 | 32.37 | 27.25 | 43.06 | 74.00 | 30.94 | Peak |
| 6 | 14056.00 | 41.65 | 10.13 | 32.95 | 27.04 | 45.87 | 74.00 | 28.13 | Peak |

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

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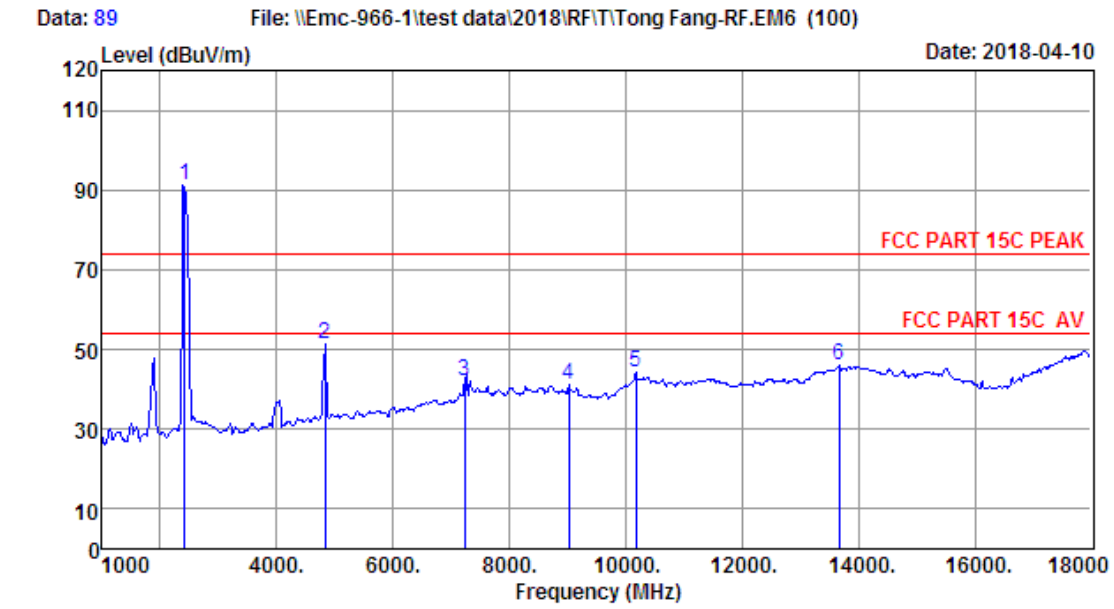


Site no. : 1# 966 Chamber Data no. : 89
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : IEEE 802.11n HT20 CH1 2412TX

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2412.00 | 27.39 | 3.23 | 34.94 | 95.74 | 91.42 | 74.00 | -17.42 | Peak |
| 2 | 4824.00 | 32.09 | 4.69 | 35.08 | 49.65 | 51.35 | 74.00 | 22.65 | Peak |
| 3 | 7236.00 | 36.63 | 6.03 | 33.42 | 32.86 | 42.10 | 74.00 | 31.90 | Peak |
| 4 | 9024.00 | 37.93 | 6.95 | 33.72 | 29.81 | 40.97 | 74.00 | 33.03 | Peak |
| 5 | 10180.00 | 39.17 | 9.62 | 34.47 | 29.81 | 44.13 | 74.00 | 29.87 | Peak |
| 6 | 13665.00 | 41.43 | 9.89 | 32.62 | 27.41 | 46.11 | 74.00 | 27.89 | Peak |

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

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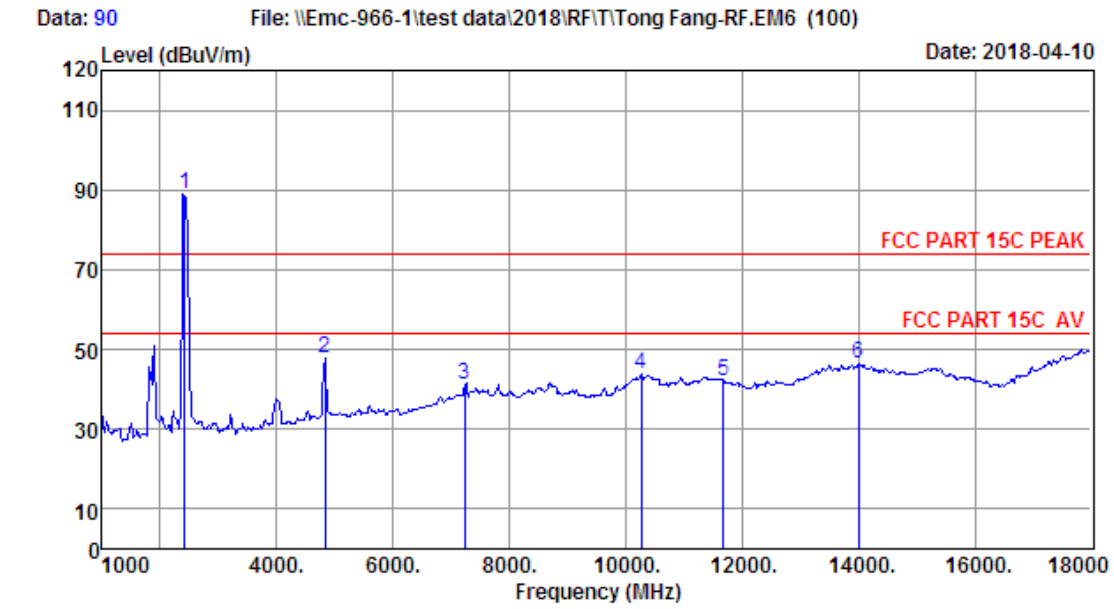


Site no. : 1# 966 Chamber Data no. : 90
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : IEEE 802.11n HT20 CH1 2412TX

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2412.00 | 27.39 | 3.23 | 34.94 | 93.16 | 88.84 | 74.00 | -14.84 | Peak |
| 2 | 4824.00 | 32.09 | 4.69 | 35.08 | 46.34 | 48.04 | 74.00 | 25.96 | Peak |
| 3 | 7236.00 | 36.63 | 6.03 | 33.42 | 32.15 | 41.39 | 74.00 | 32.61 | Peak |
| 4 | 10265.00 | 39.21 | 9.98 | 34.39 | 28.92 | 43.72 | 74.00 | 30.28 | Peak |
| 5 | 11676.00 | 39.86 | 8.25 | 32.39 | 26.52 | 42.24 | 74.00 | 31.76 | Peak |
| 6 | 14005.00 | 41.70 | 10.13 | 32.88 | 27.33 | 46.28 | 74.00 | 27.72 | Peak |

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

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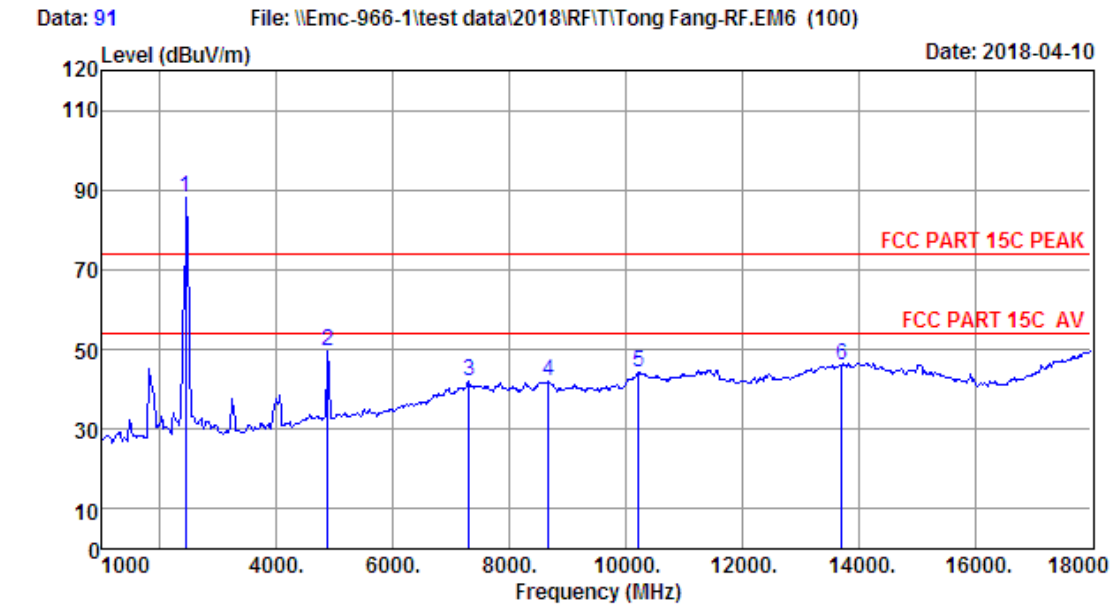


```
Site no.      : 1# 966 Chamber              Data no.  : 91
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11n HT20  CH6 2437TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2437.00 | 27.48 | 3.26 | 35.07 | 92.50 | 88.17 | 74.00 | -14.17 | Peak |
| 2 | 4874.00 | 32.18 | 4.73 | 35.14 | 47.85 | 49.62 | 74.00 | 24.38 | Peak |
| 3 | 7311.00 | 36.78 | 6.09 | 33.31 | 32.29 | 41.85 | 74.00 | 32.15 | Peak |
| 4 | 8667.00 | 37.43 | 6.90 | 33.12 | 30.71 | 41.92 | 74.00 | 32.08 | Peak |
| 5 | 10214.00 | 39.19 | 9.77 | 34.43 | 29.93 | 44.46 | 74.00 | 29.54 | Peak |
| 6 | 13716.00 | 41.47 | 9.96 | 32.66 | 27.28 | 46.05 | 74.00 | 27.95 | Peak |

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

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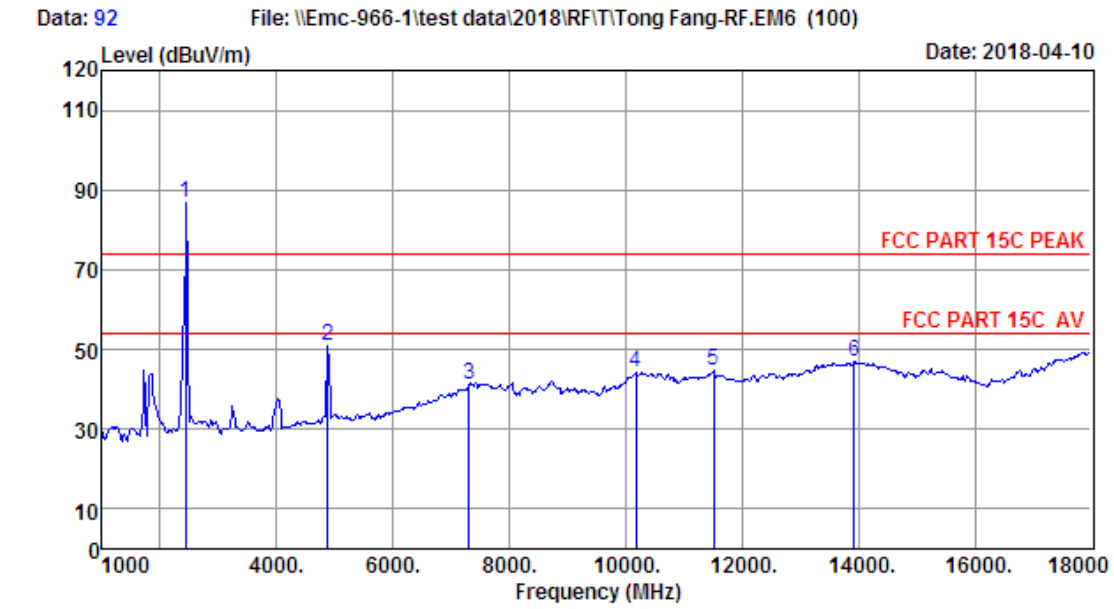


```
Site no.      : 1# 966 Chamber              Data no.  : 92
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11n HT20  CH6 2437TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2437.00 | 27.48 | 3.26 | 35.07 | 91.02 | 86.69 | 74.00 | -12.69 | Peak |
| 2 | 4874.00 | 32.18 | 4.73 | 35.14 | 49.14 | 50.91 | 74.00 | 23.09 | Peak |
| 3 | 7311.00 | 36.78 | 6.09 | 33.31 | 31.41 | 40.97 | 74.00 | 33.03 | Peak |
| 4 | 10180.00 | 39.17 | 9.62 | 34.47 | 29.76 | 44.08 | 74.00 | 29.92 | Peak |
| 5 | 11506.00 | 40.10 | 8.28 | 32.55 | 28.68 | 44.51 | 74.00 | 29.49 | Peak |
| 6 | 13920.00 | 41.63 | 10.11 | 32.83 | 28.23 | 47.14 | 74.00 | 26.86 | Peak |

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

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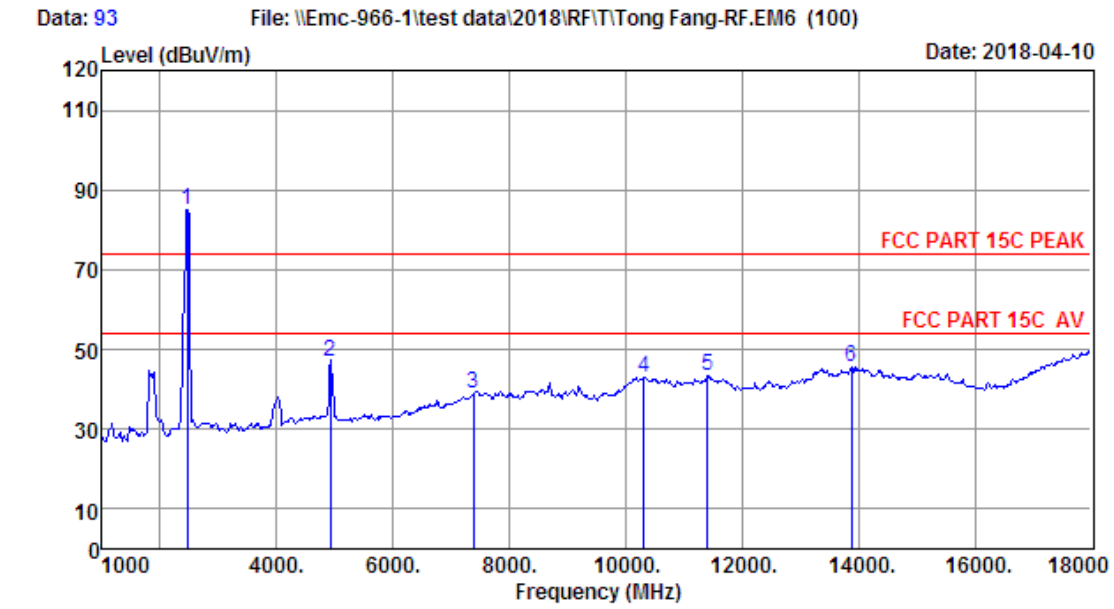


```
Site no.      : 1# 966 Chamber              Data no.  : 93
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11n HT20  CH11 2462TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2462.00 | 27.52 | 3.27 | 35.14 | 89.53 | 85.18 | 74.00 | -11.18 | Peak |
| 2 | 4924.00 | 32.28 | 4.77 | 35.20 | 45.29 | 47.14 | 74.00 | 26.86 | Peak |
| 3 | 7386.00 | 36.97 | 6.12 | 33.17 | 29.15 | 39.07 | 74.00 | 34.93 | Peak |
| 4 | 10316.00 | 39.23 | 10.20 | 34.34 | 27.81 | 42.90 | 74.00 | 31.10 | Peak |
| 5 | 11404.00 | 40.06 | 8.29 | 32.71 | 27.83 | 43.47 | 74.00 | 30.53 | Peak |
| 6 | 13886.00 | 41.61 | 10.11 | 32.80 | 26.72 | 45.64 | 74.00 | 28.36 | Peak |

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

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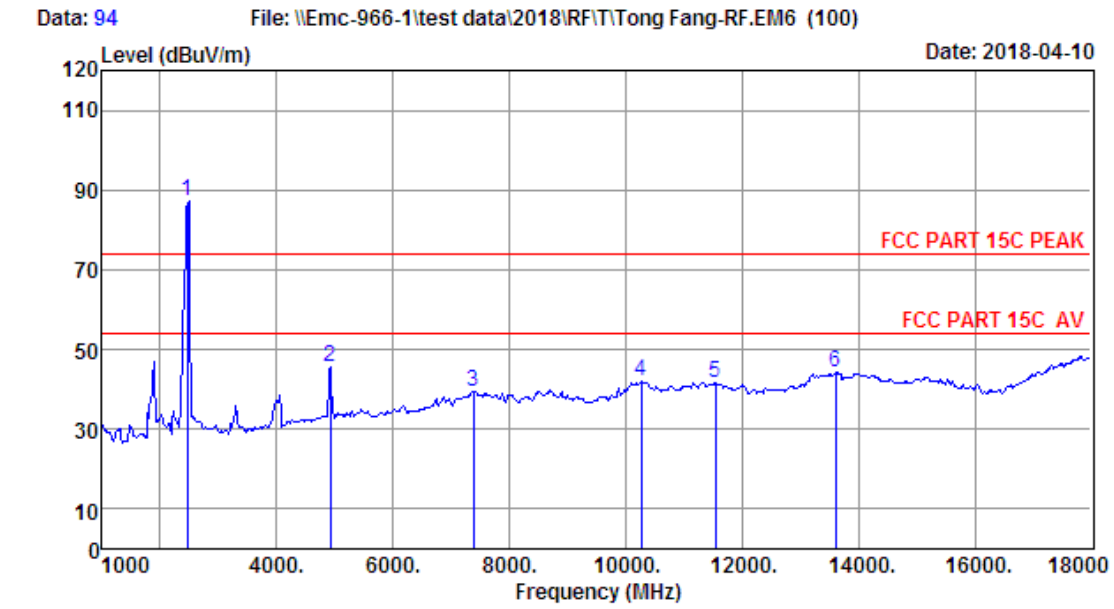


```
Site no.      : 1# 966 Chamber              Data no.  : 94
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11n HT20  CH11 2462TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2462.00 | 27.52 | 3.27 | 35.14 | 91.65 | 87.30 | 74.00 | -13.30 | Peak |
| 2 | 4924.00 | 32.28 | 4.77 | 35.20 | 43.70 | 45.55 | 74.00 | 28.45 | Peak |
| 3 | 7386.00 | 36.97 | 6.12 | 33.17 | 29.52 | 39.44 | 74.00 | 34.56 | Peak |
| 4 | 10265.00 | 39.21 | 9.98 | 34.39 | 27.28 | 42.08 | 74.00 | 31.92 | Peak |
| 5 | 11540.00 | 40.05 | 8.27 | 32.49 | 25.85 | 41.68 | 74.00 | 32.32 | Peak |
| 6 | 13614.00 | 41.39 | 9.82 | 32.59 | 25.65 | 44.27 | 74.00 | 29.73 | Peak |

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

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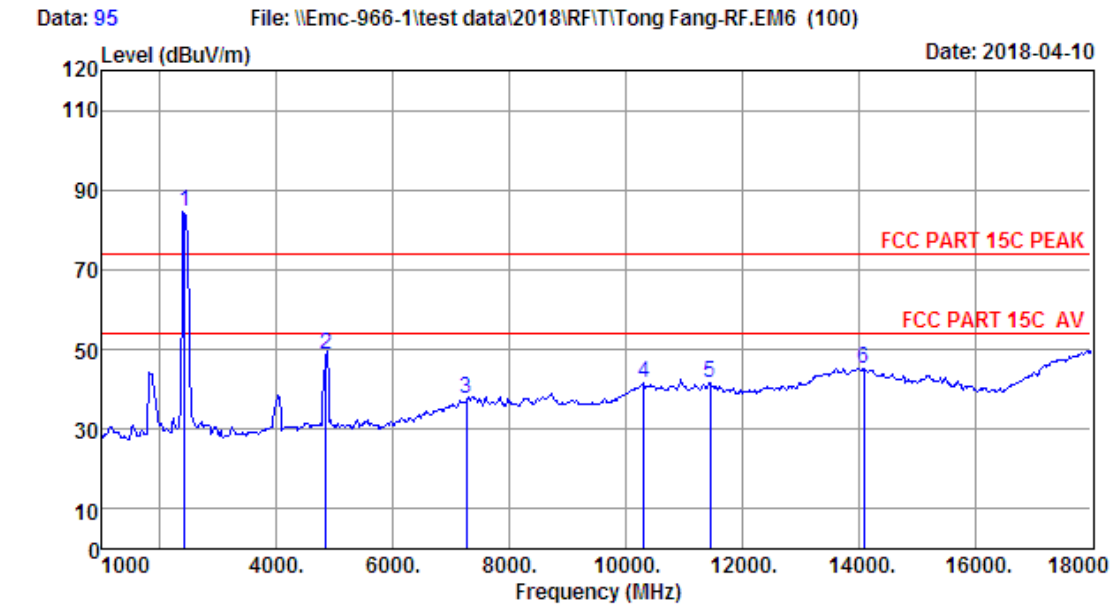


```
Site no.      : 1# 966 Chamber              Data no.  : 95
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11n HT40  CH3 2422TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2422.00 | 27.43 | 3.24 | 35.00 | 88.83 | 84.50 | 74.00 | -10.50 | Peak |
| 2 | 4844.00 | 32.12 | 4.70 | 35.10 | 46.80 | 48.52 | 74.00 | 25.48 | Peak |
| 3 | 7266.00 | 36.71 | 6.05 | 33.36 | 28.07 | 37.47 | 74.00 | 36.53 | Peak |
| 4 | 10316.00 | 39.23 | 10.20 | 34.34 | 26.34 | 41.43 | 74.00 | 32.57 | Peak |
| 5 | 11455.00 | 40.08 | 8.28 | 32.62 | 26.08 | 41.82 | 74.00 | 32.18 | Peak |
| 6 | 14090.00 | 41.61 | 10.14 | 32.99 | 26.42 | 45.18 | 74.00 | 28.82 | Peak |

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

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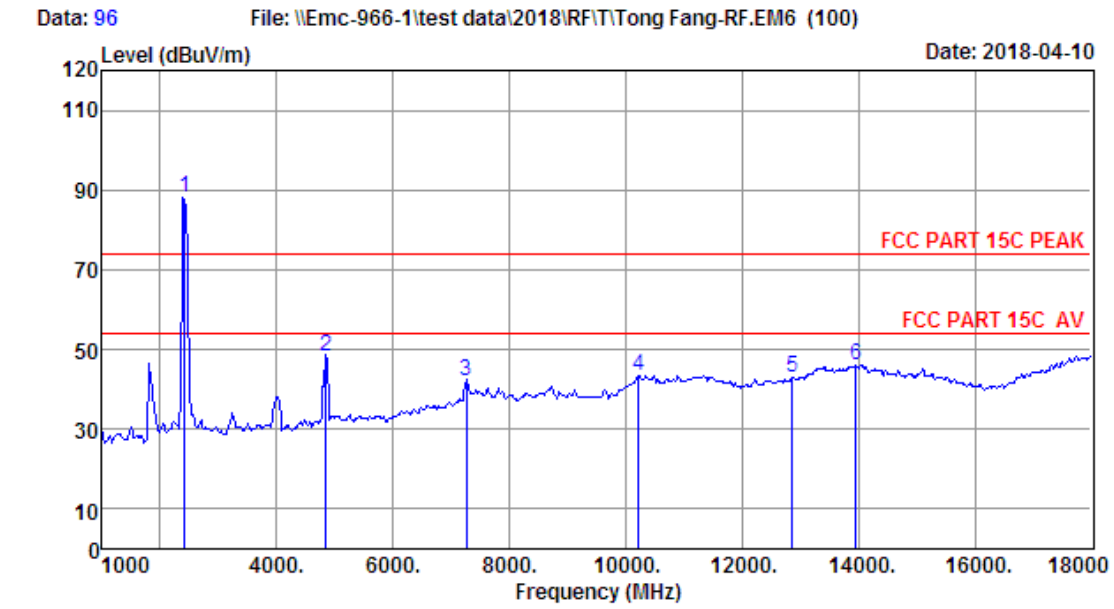


```
Site no.      : 1# 966 Chamber              Data no.  : 96
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11n HT40  CH3 2422TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2422.00 | 27.43 | 3.24 | 35.00 | 92.51 | 88.18 | 74.00 | -14.18 | Peak |
| 2 | 4844.00 | 32.12 | 4.70 | 35.10 | 46.41 | 48.13 | 74.00 | 25.87 | Peak |
| 3 | 7266.00 | 36.71 | 6.05 | 33.36 | 32.56 | 41.96 | 74.00 | 32.04 | Peak |
| 4 | 10214.00 | 39.19 | 9.77 | 34.43 | 29.07 | 43.60 | 74.00 | 30.40 | Peak |
| 5 | 12866.00 | 39.89 | 8.92 | 32.87 | 26.99 | 42.93 | 74.00 | 31.07 | Peak |
| 6 | 13954.00 | 41.66 | 10.12 | 32.84 | 26.93 | 45.87 | 74.00 | 28.13 | Peak |

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

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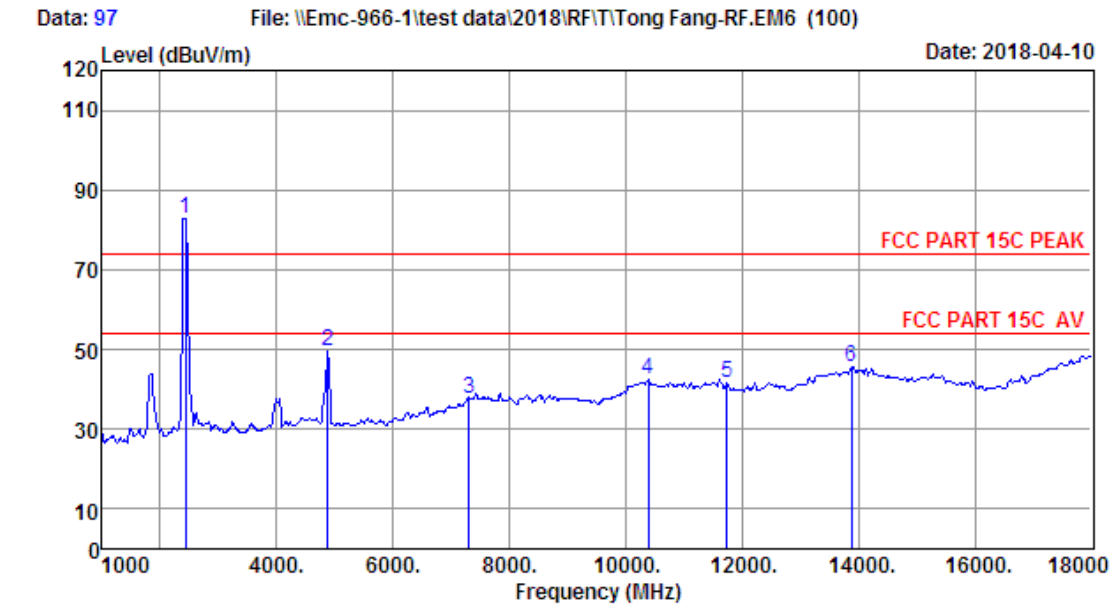


```
Site no.      : 1# 966 Chamber              Data no.  : 97
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11n HT40  CH6 2437TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2437.00 | 27.48 | 3.26 | 35.07 | 87.25 | 82.92 | 74.00 | -8.92 | Peak |
| 2 | 4874.00 | 32.18 | 4.73 | 35.14 | 47.65 | 49.42 | 74.00 | 24.58 | Peak |
| 3 | 7311.00 | 36.78 | 6.09 | 33.31 | 28.25 | 37.81 | 74.00 | 36.19 | Peak |
| 4 | 10384.00 | 39.25 | 10.00 | 34.26 | 27.71 | 42.70 | 74.00 | 31.30 | Peak |
| 5 | 11744.00 | 39.76 | 8.23 | 32.42 | 26.11 | 41.68 | 74.00 | 32.32 | Peak |
| 6 | 13886.00 | 41.61 | 10.11 | 32.80 | 26.86 | 45.78 | 74.00 | 28.22 | Peak |

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

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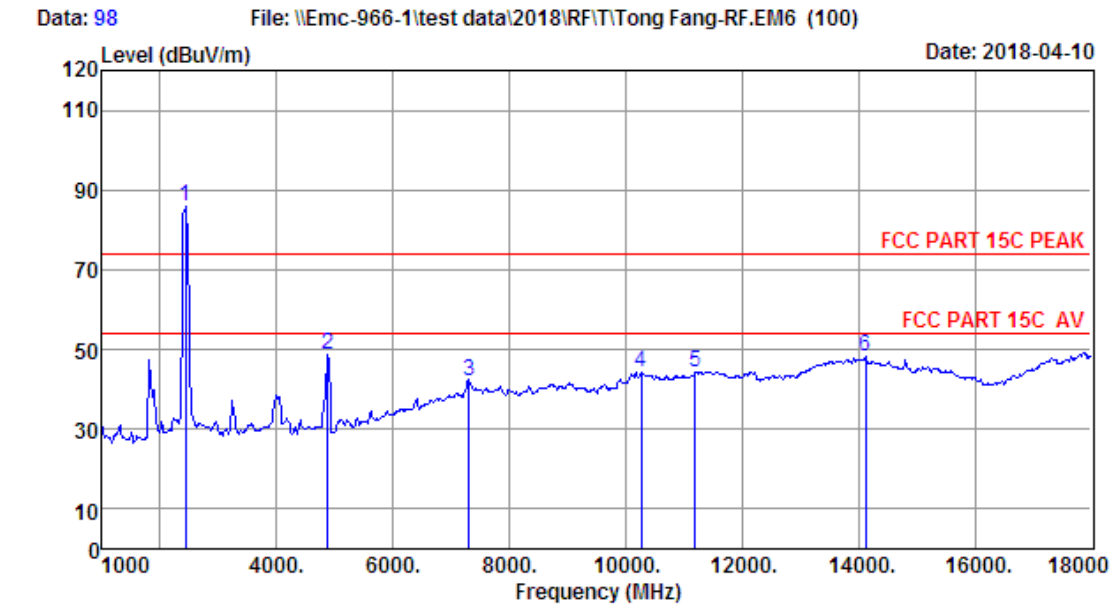


```
Site no.      : 1# 966 Chamber              Data no.  : 98
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11n HT40  CH6 2437TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2437.00 | 27.48 | 3.26 | 35.07 | 90.17 | 85.84 | 74.00 | -11.84 | Peak |
| 2 | 4874.00 | 32.18 | 4.73 | 35.14 | 46.87 | 48.64 | 74.00 | 25.36 | Peak |
| 3 | 7311.00 | 36.78 | 6.09 | 33.31 | 32.56 | 42.12 | 74.00 | 31.88 | Peak |
| 4 | 10265.00 | 39.21 | 9.98 | 34.39 | 29.31 | 44.11 | 74.00 | 29.89 | Peak |
| 5 | 11200.00 | 39.98 | 8.43 | 33.10 | 29.17 | 44.48 | 74.00 | 29.52 | Peak |
| 6 | 14124.00 | 41.58 | 10.14 | 33.04 | 29.45 | 48.13 | 74.00 | 25.87 | Peak |

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

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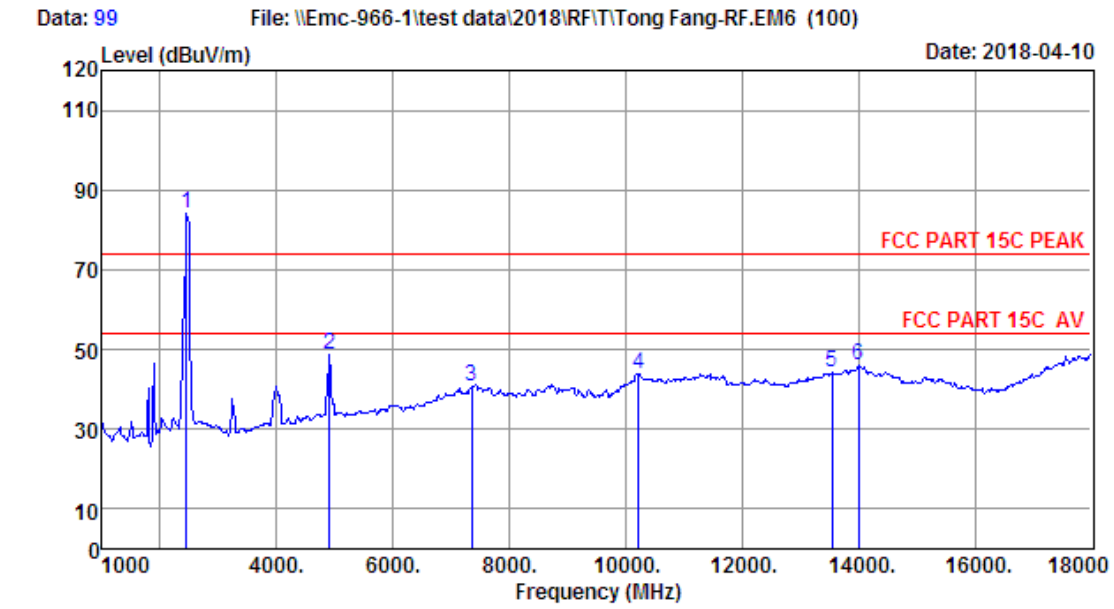


```
Site no.      : 1# 966 Chamber              Data no.  : 99
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11n HT40  CH9 2452TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2452.00 | 27.48 | 3.26 | 35.07 | 88.41 | 84.08 | 74.00 | -10.08 | Peak |
| 2 | 4904.00 | 32.24 | 4.76 | 35.18 | 46.96 | 48.78 | 74.00 | 25.22 | Peak |
| 3 | 7356.00 | 36.90 | 6.11 | 33.22 | 30.74 | 40.53 | 74.00 | 33.47 | Peak |
| 4 | 10214.00 | 39.19 | 9.77 | 34.43 | 29.49 | 44.02 | 74.00 | 29.98 | Peak |
| 5 | 13546.00 | 41.34 | 9.73 | 32.54 | 25.54 | 44.07 | 74.00 | 29.93 | Peak |
| 6 | 14005.00 | 41.70 | 10.13 | 32.88 | 27.10 | 46.05 | 74.00 | 27.95 | Peak |

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

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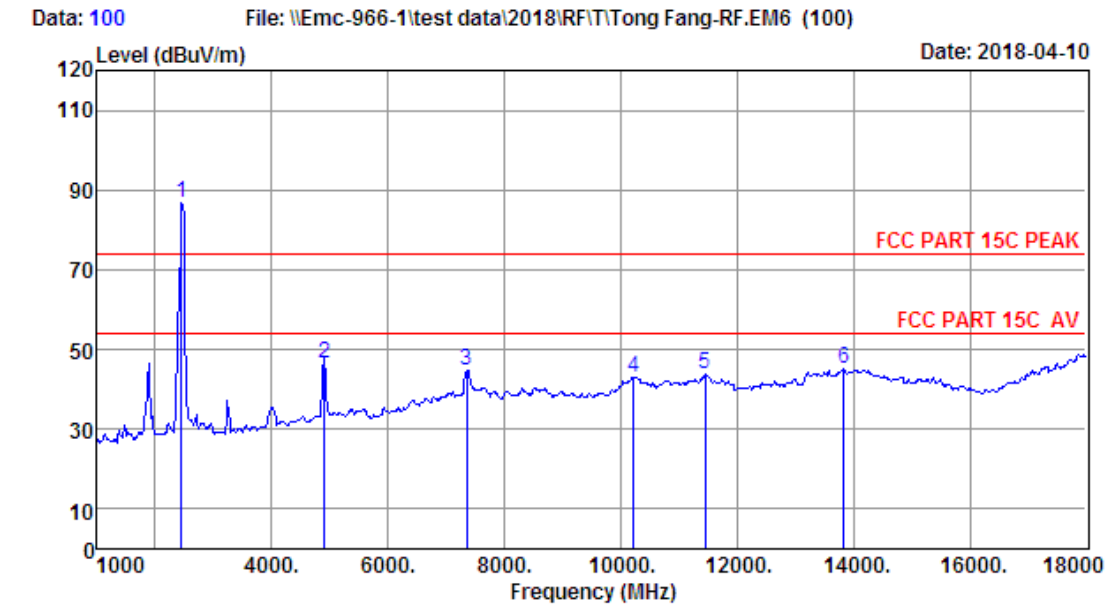



Site no. : 1# 966 Chamber Data no. : 100
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : IEEE 802.11n HT40 CH9 2452TX

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2452.00 | 27.48 | 3.26 | 35.07 | 91.32 | 86.99 | 74.00 | -12.99 | Peak |
| 2 | 4904.00 | 32.24 | 4.76 | 35.18 | 44.70 | 46.52 | 74.00 | 27.48 | Peak |
| 3 | 7356.00 | 36.90 | 6.11 | 33.22 | 34.72 | 44.51 | 74.00 | 29.49 | Peak |
| 4 | 10214.00 | 39.19 | 9.77 | 34.43 | 28.63 | 43.16 | 74.00 | 30.84 | Peak |
| 5 | 11455.00 | 40.08 | 8.28 | 32.62 | 28.03 | 43.77 | 74.00 | 30.23 | Peak |
| 6 | 13835.00 | 41.57 | 10.10 | 32.76 | 26.18 | 45.09 | 74.00 | 28.91 | Peak |

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

**18000MHz – 25000MHz**

Pass

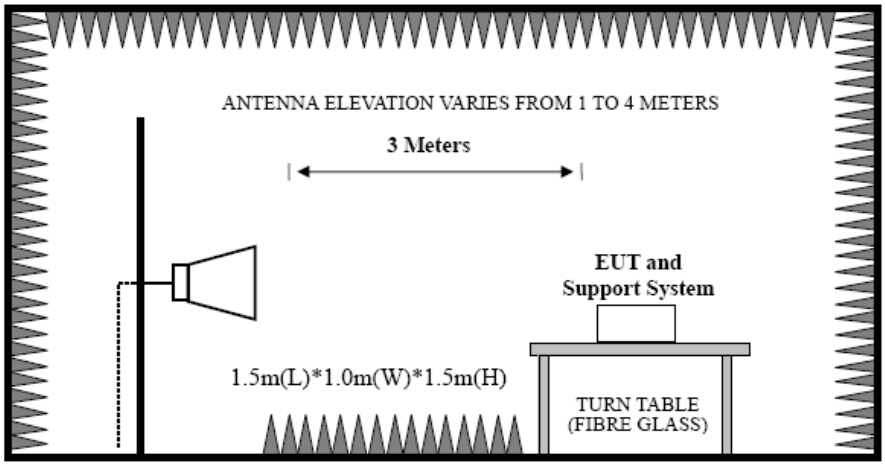
Note: The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

# 5 BAND EDGE COMPLIANCE TEST

## 5.1 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

## 5.2 Block Diagram of Test setup




## 5.3 Test Procedure

EUT was placed on a turn tab le, which is 1.5 m high above ground. The turn table can rotate 360 degrees to determ ine the position of the m aximum em ission level. P ower on the EUT and let it working in test m ode, then tes t it. EUT is set 3 meters aw ay f rom the rece iving a ntenna, 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 m aximum emission level. Both horizontal and vertical po larization of the antenna are set on test.

Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of emissions
Peak : RBW = 1MHz, VBW = 1MHz, Detector=PEAK detector, Sweep time = auto.
AV : RBW = 1MHz, VBW = 10Hz, Detector=PEAK detector, Sweep time = auto.

## 5.4 Test Result

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

Note: 1、For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.
2、The frequency 2412 MHz 、2422MHz、2452MHz and 2462 MHz is fundamental frequency which no lim it, the lim it on plots is automatically generated by the sof tware, it' s not fundamental limit, we can't remove it.

## 5.5 Test Data

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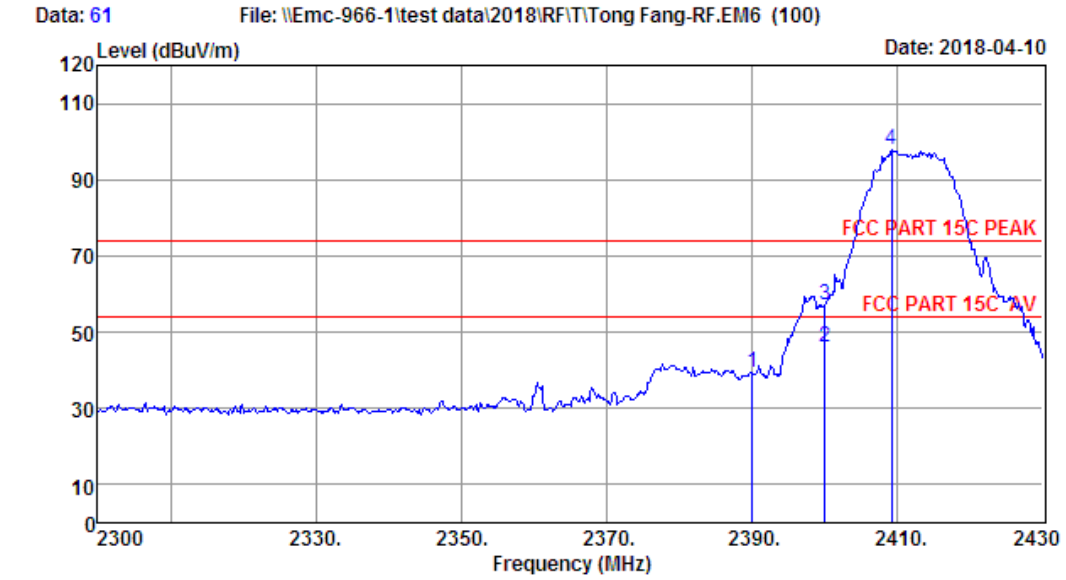


```
Site no.      : 1# 966 Chamber              Data no.  : 61
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11b  CH1 2412TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | 27.35 | 3.21 | 34.87 | 43.64 | 39.33 | 74.00 | 34.67 | Peak |
| 2 | 2400.00 | 27.35 | 3.21 | 34.94 | 50.33 | 45.95 | 54.00 | 8.05 | Average |
| 3 | 2400.00 | 27.35 | 3.21 | 34.94 | 61.33 | 56.95 | 74.00 | 17.05 | Peak |
| 4 | 2409.20 | 27.39 | 3.23 | 34.94 | 102.25 | 97.93 | 74.00 | -23.93 | Peak |

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

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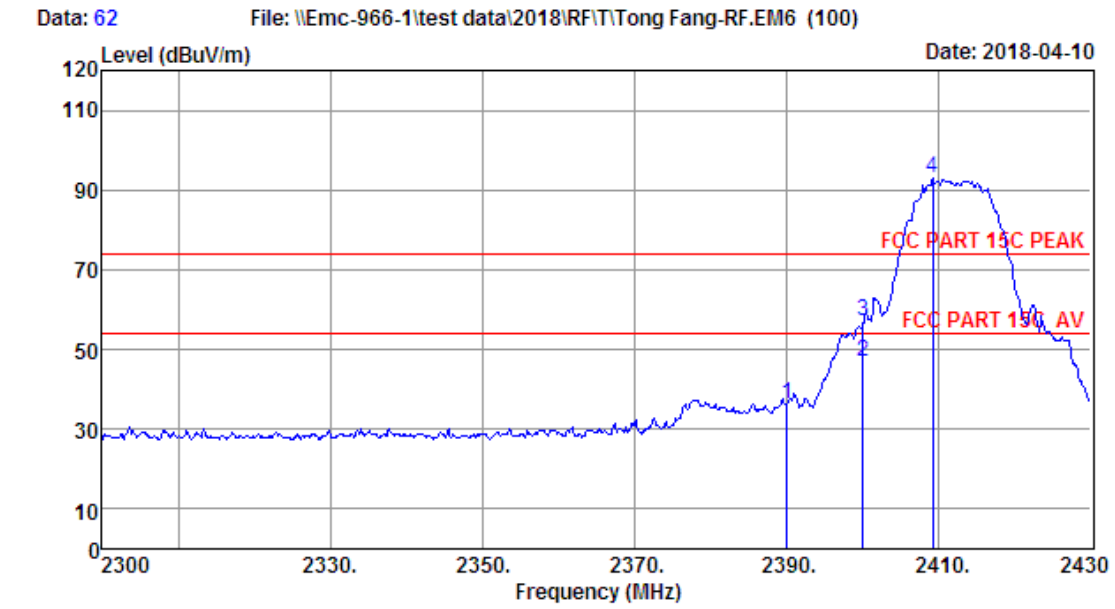


```
Site no.      : 1# 966 Chamber              Data no.  : 62
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11b  CH1 2412TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | 27.35 | 3.21 | 34.87 | 40.73 | 36.42 | 74.00 | 37.58 | Peak |
| 2 | 2400.00 | 27.35 | 3.21 | 34.94 | 51.41 | 47.03 | 54.00 | 6.97 | Average |
| 3 | 2400.00 | 27.35 | 3.21 | 34.94 | 61.41 | 57.03 | 74.00 | 16.97 | Peak |
| 4 | 2409.20 | 27.39 | 3.23 | 34.94 | 97.19 | 92.87 | 74.00 | -18.87 | Peak |

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

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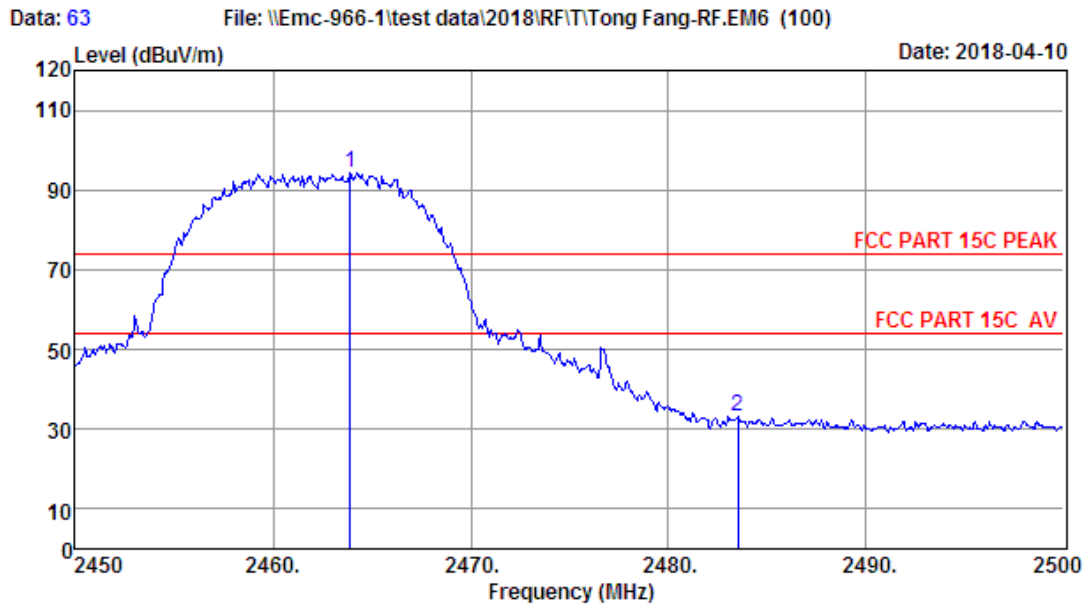


Site no. : 1# 966 Chamber Data no. : 63
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : IEEE 802.11b CH11 2462TX

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2463.90 | 27.52 | 3.27 | 35.14 | 98.79 | 94.44 | 74.00 | -20.44 | Peak |
| 2 | 2483.50 | 27.56 | 3.29 | 35.21 | 37.46 | 33.10 | 74.00 | 40.90 | Peak |

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

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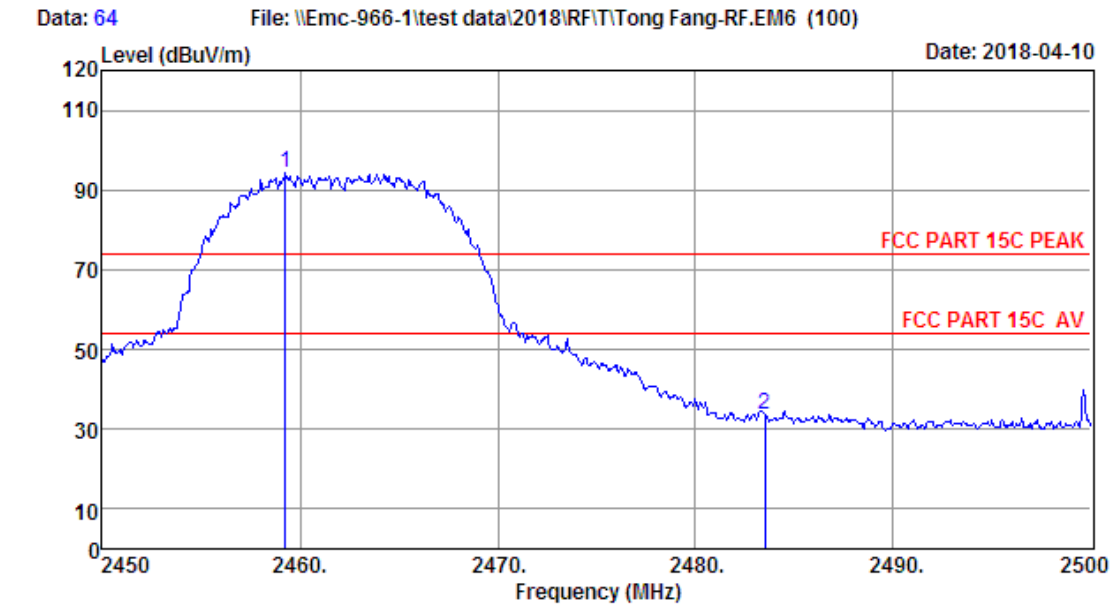


Site no. : 1# 966 Chamber Data no. : 64
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : IEEE 802.11b CH11 2462TX

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2459.25 | 27.52 | 3.27 | 35.14 | 98.52 | 94.17 | 74.00 | -20.17 | Peak |
| 2 | 2483.50 | 27.56 | 3.29 | 35.21 | 38.17 | 33.81 | 74.00 | 40.19 | Peak |

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

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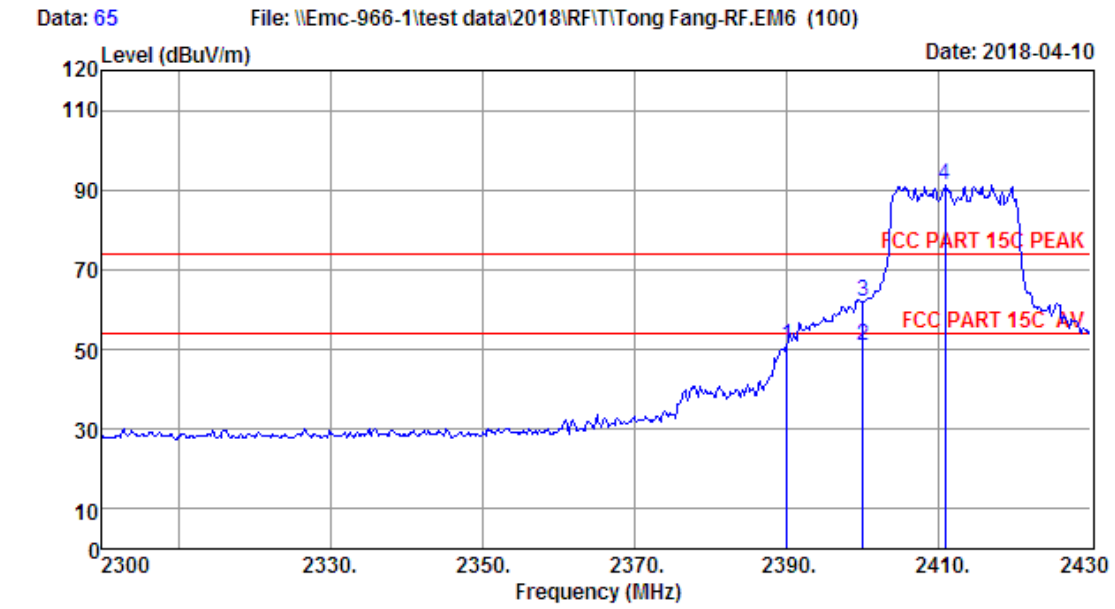


```
Site no.      : 1# 966 Chamber              Data no.  : 65
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11g  CH1 2412TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | 27.35 | 3.21 | 34.87 | 55.28 | 50.97 | 74.00 | 23.03 | Peak |
| 2 | 2400.00 | 27.35 | 3.21 | 34.94 | 55.17 | 50.79 | 54.00 | 3.21 | Average |
| 3 | 2400.00 | 27.35 | 3.21 | 34.94 | 66.17 | 61.79 | 74.00 | 12.21 | Peak |
| 4 | 2410.76 | 27.39 | 3.23 | 34.94 | 95.63 | 91.31 | 74.00 | -17.31 | Peak |

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

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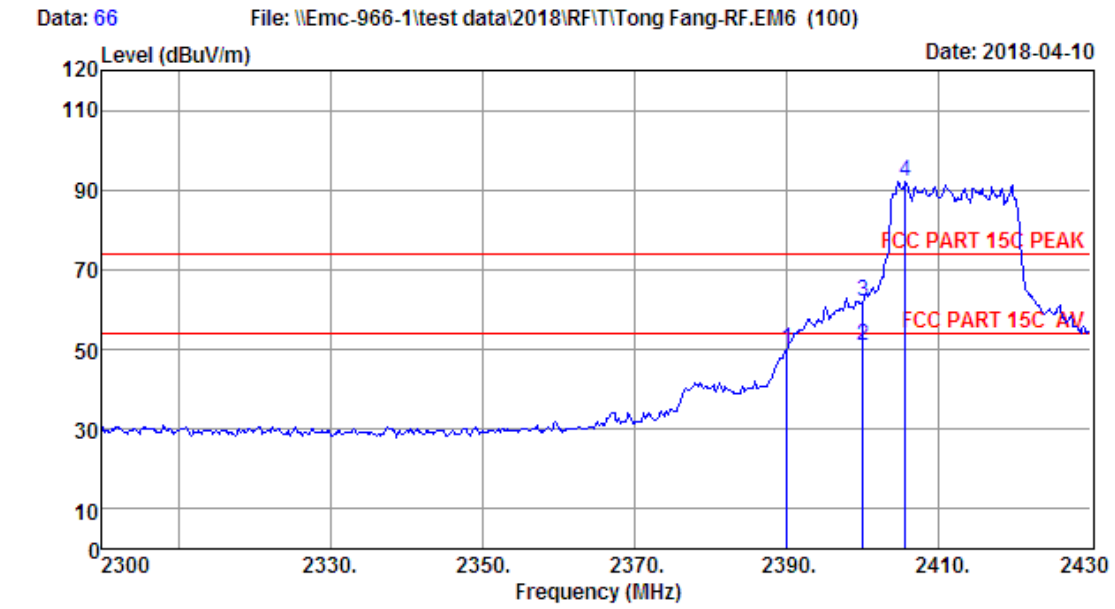


```
Site no.      : 1# 966 Chamber              Data no.  : 66
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11g  CH1 2412TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | 27.35 | 3.21 | 34.87 | 54.46 | 50.15 | 74.00 | 23.85 | Peak |
| 2 | 2400.00 | 27.35 | 3.21 | 34.94 | 55.27 | 50.89 | 54.00 | 3.11 | Average |
| 3 | 2400.00 | 27.35 | 3.21 | 34.94 | 66.27 | 61.89 | 74.00 | 12.11 | Peak |
| 4 | 2405.56 | 27.39 | 3.23 | 34.94 | 96.58 | 92.26 | 74.00 | -18.26 | Peak |

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

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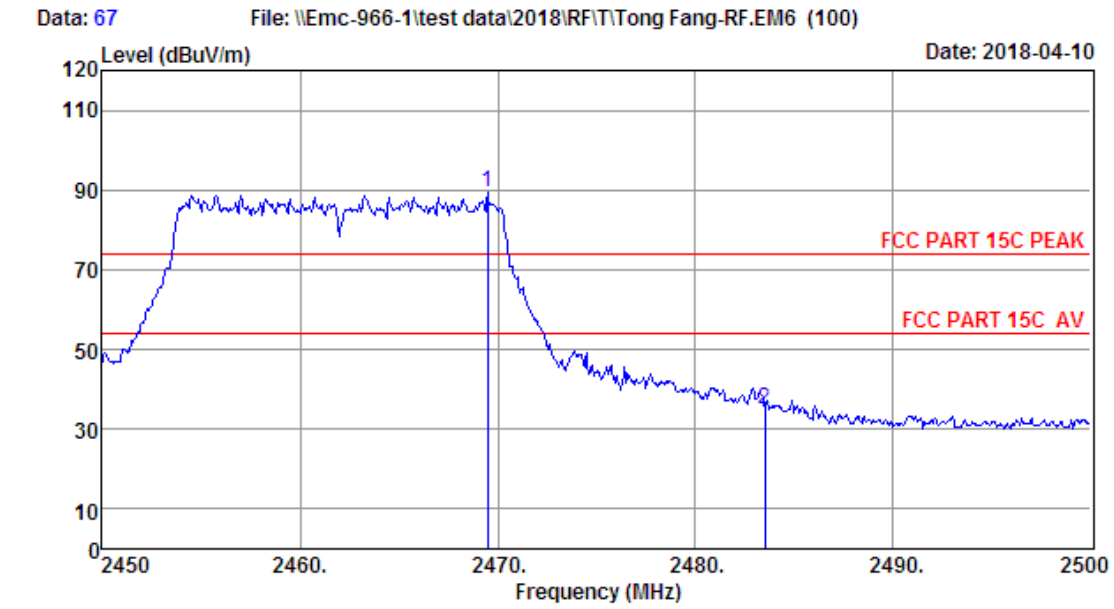


```
Site no.      : 1# 966 Chamber              Data no.  : 67
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11g  CH11 2462TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2469.50 | 27.52 | 3.27 | 35.14 | 93.64 | 89.29 | 74.00 | -15.29 | Peak |
| 2 | 2483.50 | 27.56 | 3.29 | 35.21 | 39.53 | 35.17 | 74.00 | 38.83 | Peak |

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

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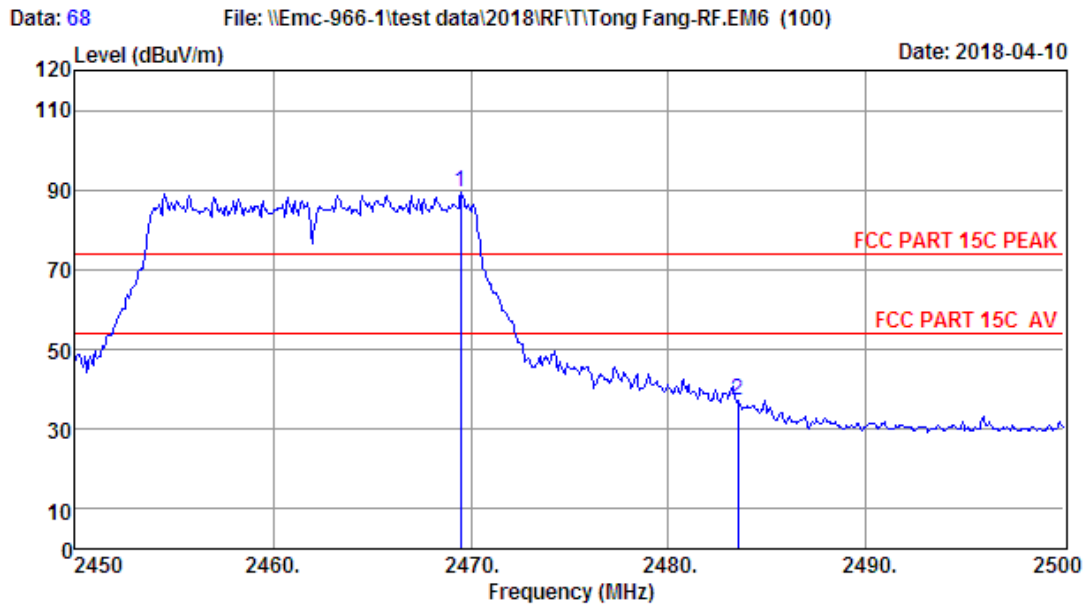


Site no. : 1# 966 Chamber Data no. : 68
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : IEEE 802.11g CH11 2462TX

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2469.50 | 27.52 | 3.27 | 35.14 | 93.99 | 89.64 | 74.00 | -15.64 | Peak |
| 2 | 2483.50 | 27.56 | 3.29 | 35.21 | 41.38 | 37.02 | 74.00 | 36.98 | Peak |

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

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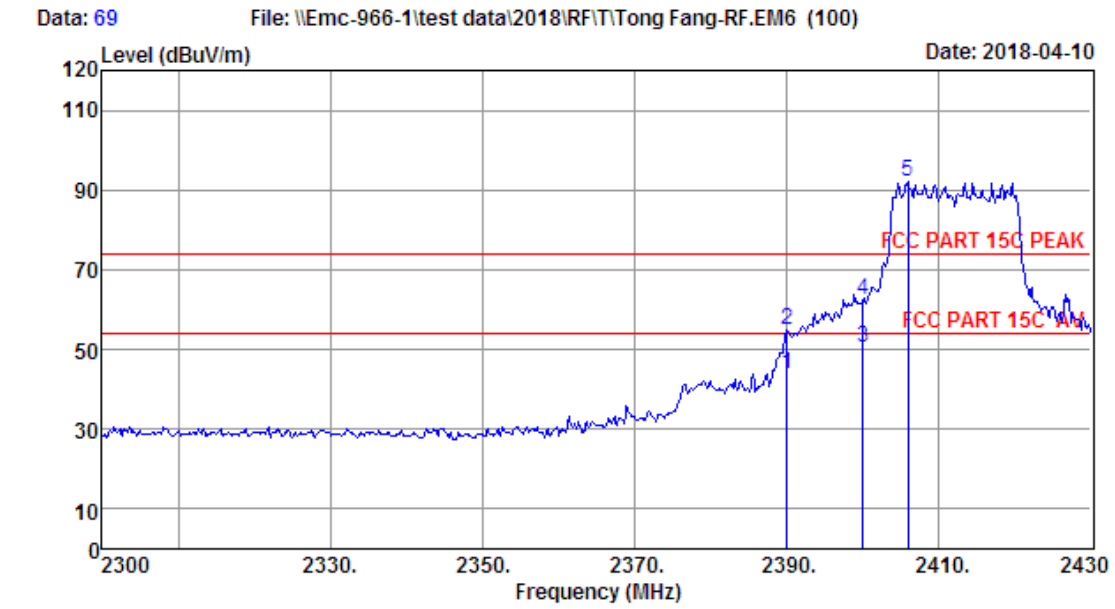


```
Site no.      : 1# 966 Chamber              Data no.  : 69
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11n HT20  CH1 2412TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | 27.35 | 3.21 | 34.87 | 48.21 | 43.90 | 54.00 | 10.10 | Average |
| 2 | 2390.00 | 27.35 | 3.21 | 34.87 | 59.21 | 54.90 | 74.00 | 19.10 | Peak |
| 3 | 2400.00 | 27.35 | 3.21 | 34.94 | 54.67 | 50.29 | 54.00 | 3.71 | Average |
| 4 | 2400.00 | 27.35 | 3.21 | 34.94 | 66.67 | 62.29 | 74.00 | 11.71 | Peak |
| 5 | 2405.95 | 27.39 | 3.23 | 34.94 | 96.51 | 92.19 | 74.00 | -18.19 | Peak |

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

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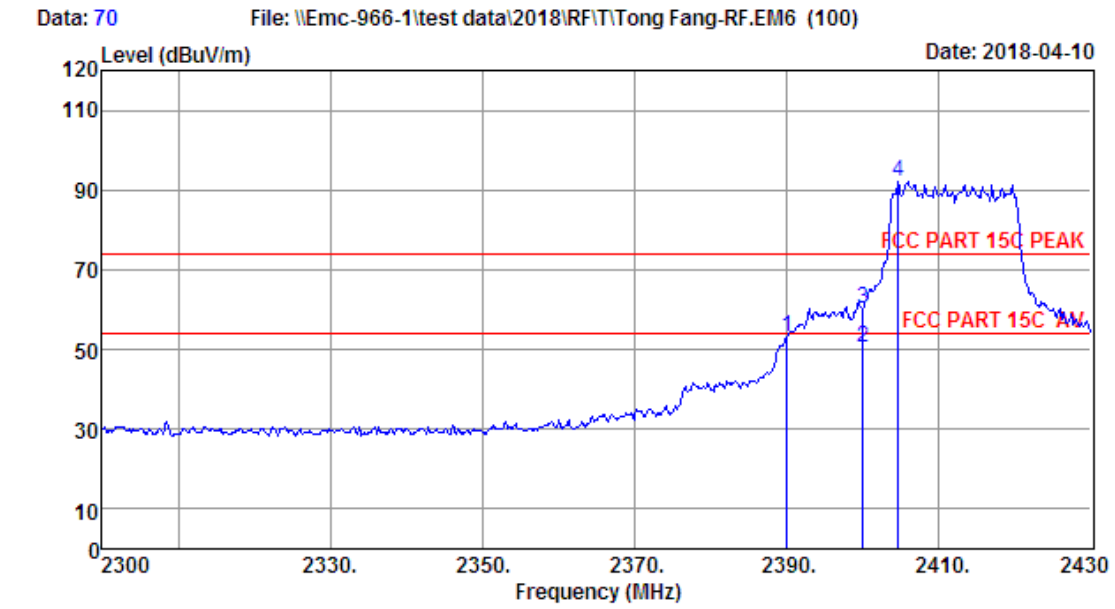


```
Site no.      : 1# 966 Chamber              Data no.  : 70
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11n HT20  CH1 2412TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | 27.35 | 3.21 | 34.87 | 57.31 | 53.00 | 74.00 | 21.00 | Peak |
| 2 | 2400.00 | 27.35 | 3.21 | 34.94 | 54.78 | 50.40 | 54.00 | 3.60 | Average |
| 3 | 2400.00 | 27.35 | 3.21 | 34.94 | 64.78 | 60.40 | 74.00 | 13.60 | Peak |
| 4 | 2404.65 | 27.39 | 3.23 | 34.94 | 96.50 | 92.18 | 74.00 | -18.18 | Peak |

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

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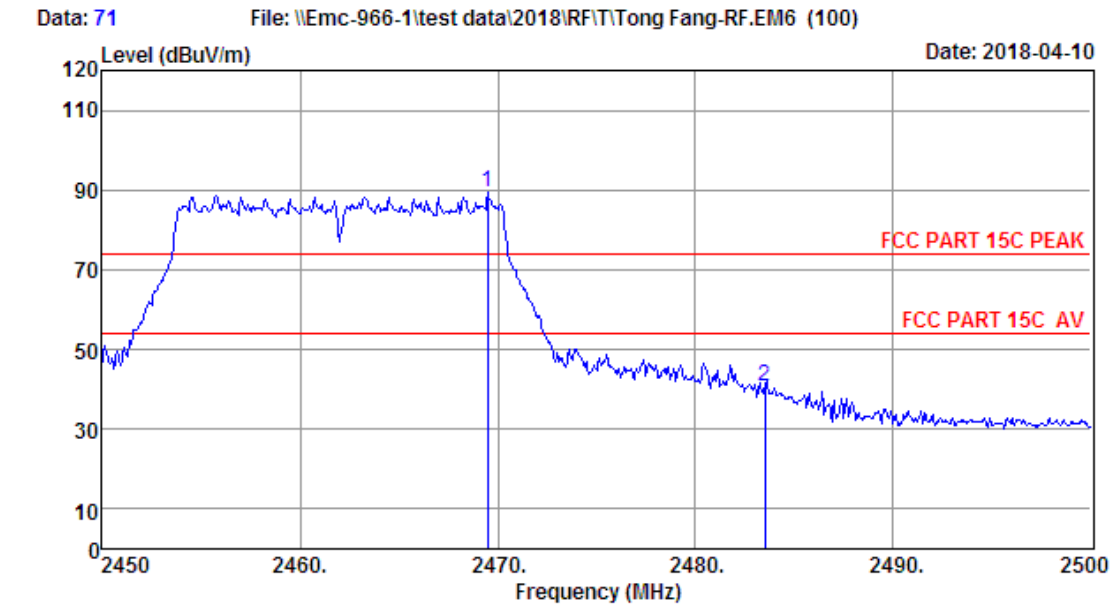


```
Site no.      : 1# 966 Chamber              Data no.  : 71
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11n HT20  CH11 2462TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2469.50 | 27.52 | 3.27 | 35.14 | 93.68 | 89.33 | 74.00 | -15.33 | Peak |
| 2 | 2483.50 | 27.56 | 3.29 | 35.21 | 45.27 | 40.91 | 74.00 | 33.09 | Peak |

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

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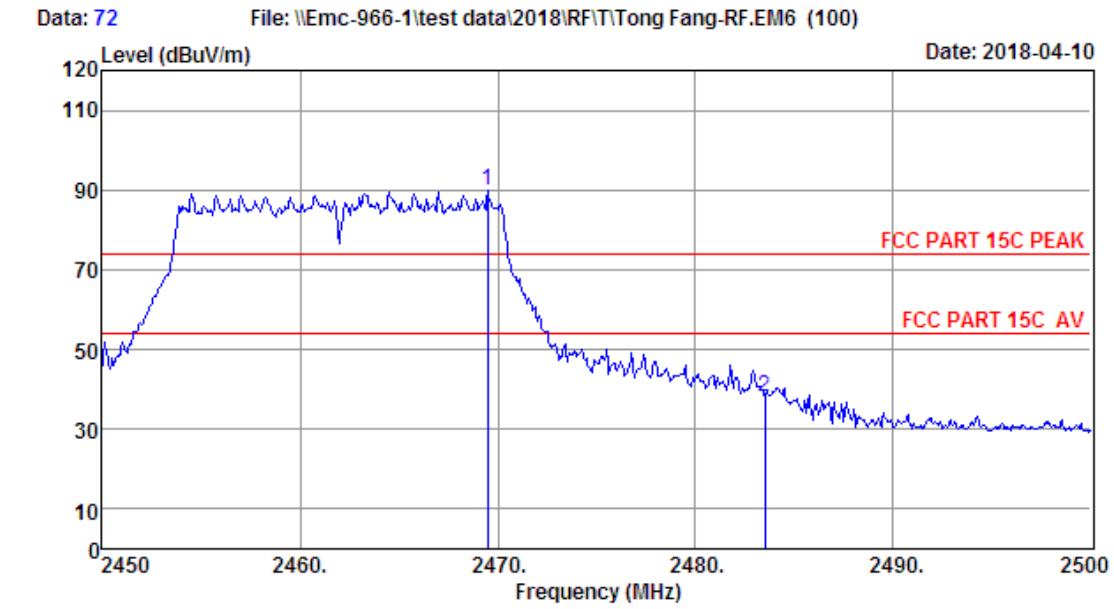


Site no. : 1# 966 Chamber Data no. : 72
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : IEEE 802.11n HT20 CH11 2462TX

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2469.50 | 27.52 | 3.27 | 35.14 | 94.24 | 89.89 | 74.00 | -15.89 | Peak |
| 2 | 2483.50 | 27.56 | 3.29 | 35.21 | 42.36 | 38.00 | 74.00 | 36.00 | Peak |

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

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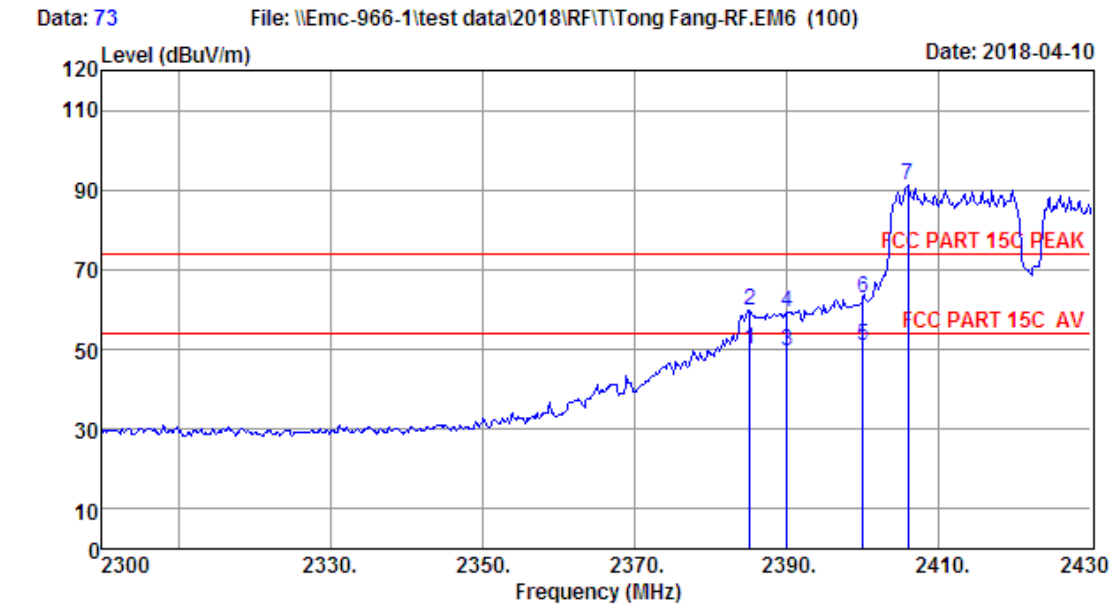


Site no. : 1# 966 Chamber Data no. : 73
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : IEEE 802.11n HT40 CH3 2422TX

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2385.15 | 27.31 | 3.20 | 34.87 | 54.18 | 49.82 | 54.00 | 4.18 | Average |
| 2 | 2385.15 | 27.31 | 3.20 | 34.87 | 64.18 | 59.82 | 74.00 | 14.18 | Peak |
| 3 | 2390.00 | 27.35 | 3.21 | 34.87 | 53.71 | 49.40 | 54.00 | 4.60 | Average |
| 4 | 2390.00 | 27.35 | 3.21 | 34.87 | 63.71 | 59.40 | 74.00 | 14.60 | Peak |
| 5 | 2400.00 | 27.35 | 3.21 | 34.94 | 55.37 | 50.99 | 54.00 | 3.01 | Average |
| 6 | 2400.00 | 27.35 | 3.21 | 34.94 | 67.37 | 62.99 | 74.00 | 11.01 | Peak |
| 7 | 2405.95 | 27.39 | 3.23 | 34.94 | 95.47 | 91.15 | 74.00 | -17.15 | Peak |

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

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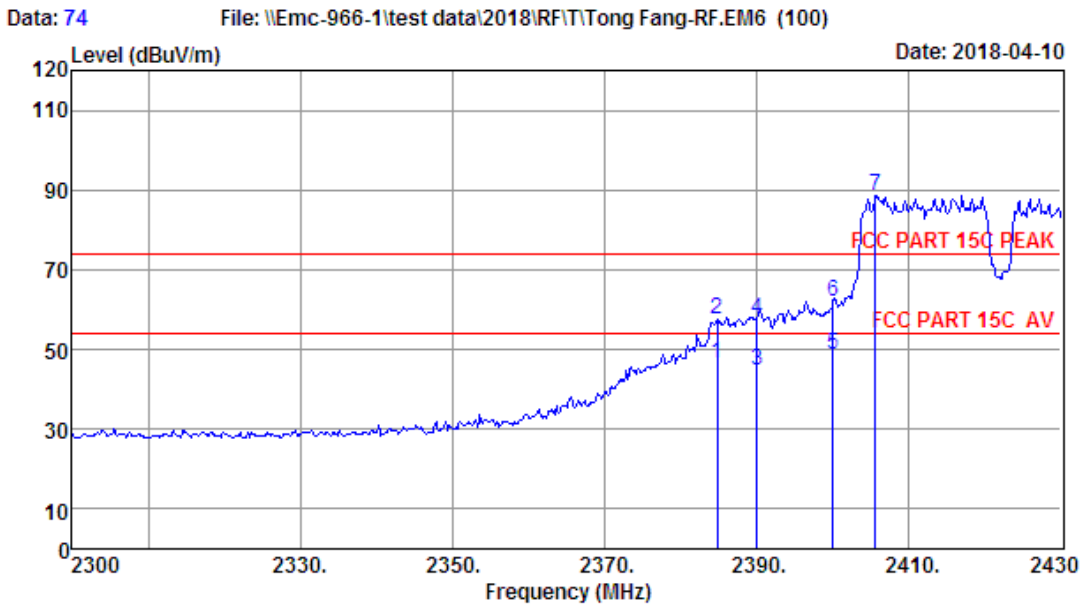


```
Site no.      : 1# 966 Chamber              Data no.  : 74
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer      : Seven
EUT           : LED TV
Power         : AC 120V/60Hz
M/N           : WD32HBB101
Test Mode     : IEEE 802.11n HT40  CH3 2422TX
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2384.76 | 27.31 | 3.20 | 34.87 | 50.91 | 46.55 | 54.00 | 7.45 | Average |
| 2 | 2384.76 | 27.31 | 3.20 | 34.87 | 61.91 | 57.55 | 74.00 | 16.45 | Peak |
| 3 | 2390.00 | 27.35 | 3.21 | 34.87 | 49.00 | 44.69 | 54.00 | 9.31 | Average |
| 4 | 2390.00 | 27.35 | 3.21 | 34.87 | 62.00 | 57.69 | 74.00 | 16.31 | Peak |
| 5 | 2400.00 | 27.35 | 3.21 | 34.94 | 53.23 | 48.85 | 54.00 | 5.15 | Average |
| 6 | 2400.00 | 27.35 | 3.21 | 34.94 | 66.23 | 61.85 | 74.00 | 12.15 | Peak |
| 7 | 2405.56 | 27.39 | 3.23 | 34.94 | 93.08 | 88.76 | 74.00 | -14.76 | Peak |

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

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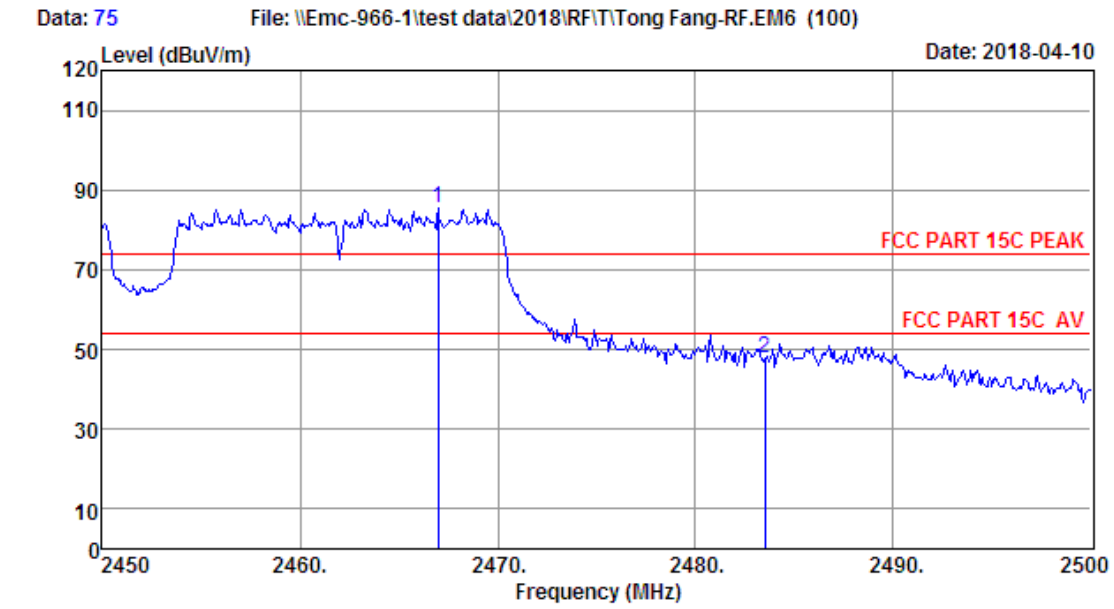


Site no. : 1# 966 Chamber Data no. : 75
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : IEEE 802.11n HT40 CH9 2452TX

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2467.00 | 27.52 | 3.27 | 35.14 | 89.76 | 85.41 | 74.00 | -11.41 | Peak |
| 2 | 2483.50 | 27.56 | 3.29 | 35.21 | 52.17 | 47.81 | 74.00 | 26.19 | Peak |

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

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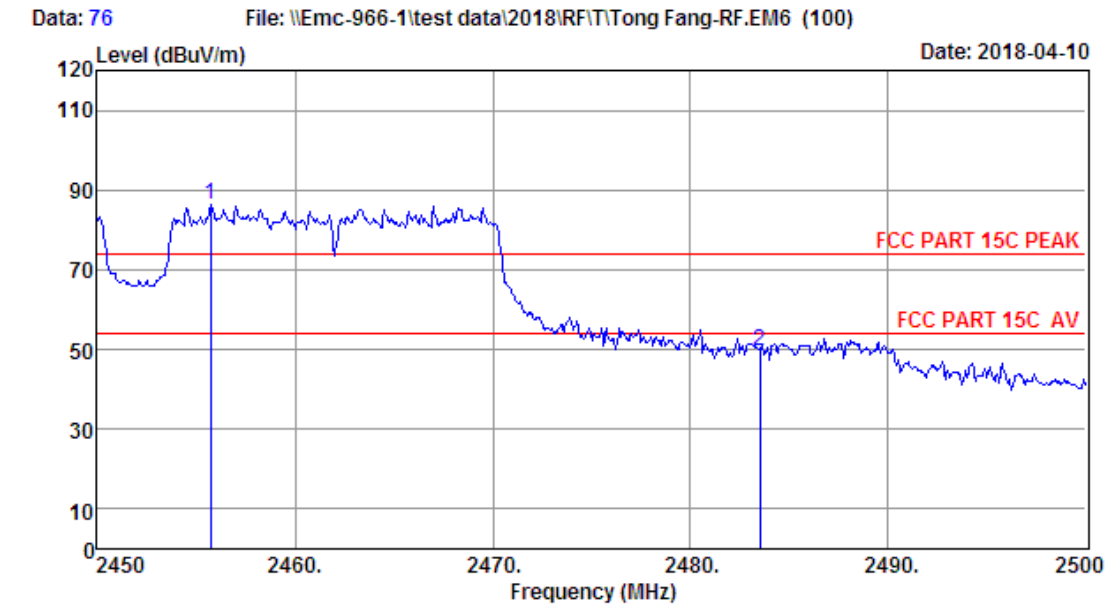



Site no. : 1# 966 Chamber Data no. : 76
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.5';Humi:57%;Press:101.52kPa
Engineer : Seven
EUT : LED TV
Power : AC 120V/60Hz
M/N : WD32HBB101
Test Mode : IEEE 802.11n HT40 CH9 2452TX

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2455.75 | 27.52 | 3.27 | 35.14 | 90.49 | 86.14 | 74.00 | -12.14 | Peak |
| 2 | 2483.50 | 27.56 | 3.29 | 35.21 | 54.09 | 49.73 | 74.00 | 24.27 | Peak |

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

# 6 6dB & 20dB Bandwidth Test

## 6.1 Limit

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

## 6.2 Test Procedure for 6dB

1, The transmitter output (antenna port) was connected to the spectrum analyzer. Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable.

2, Follow the test procedure as described in KDB 558074

(1). Set resolution bandwidth (RBW) = 100 kHz.

(2). Set the video bandwidth (VBW) ≥ 3 x RBW.

(3). Detector = Peak.

(4). Trace mode = max hold.

(5). Sweep = auto couple.

(6). Allow the trace to stabilize.

(7). Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

## 6.3 Test Procedure for 20dB

1, The transmitter output (antenna port) was connected to the spectrum analyzer. Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable.

2, Follow the test procedure as described in C63.10

(1). The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW.

(2). The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW andvideo bandwidth (VBW) shall be approximately three times RBW, unless otherwise specified by the applicable requirement.

(3). Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.

(4). Steps a) through c) might require iteration to adjust within the specified tolerances.

(5). The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target “−xx dB down” requirement; that is, if the requirement calls for measuring the −20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value.

(6). Set detection mode to peak and trace mode to max hold.

(7). Determine the reference value: Set the EUT to transmit an unmodulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).

(8). Determine the “−xx dB down amplitude” using [(reference value) − xx]. Alternatively, this calculation may be made by using the marker-delta function of the instrument.

(9). If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall be used for step j).

(10). Place two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the “_xx dB down amplitude” determined in step h). If a marker is below this “−xx dB down amplitude” value,

then it shall be as close as possible to this value. The occupied bandwidth is the frequency difference between the two markers. Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the “_xx dB down amplitude” determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth.

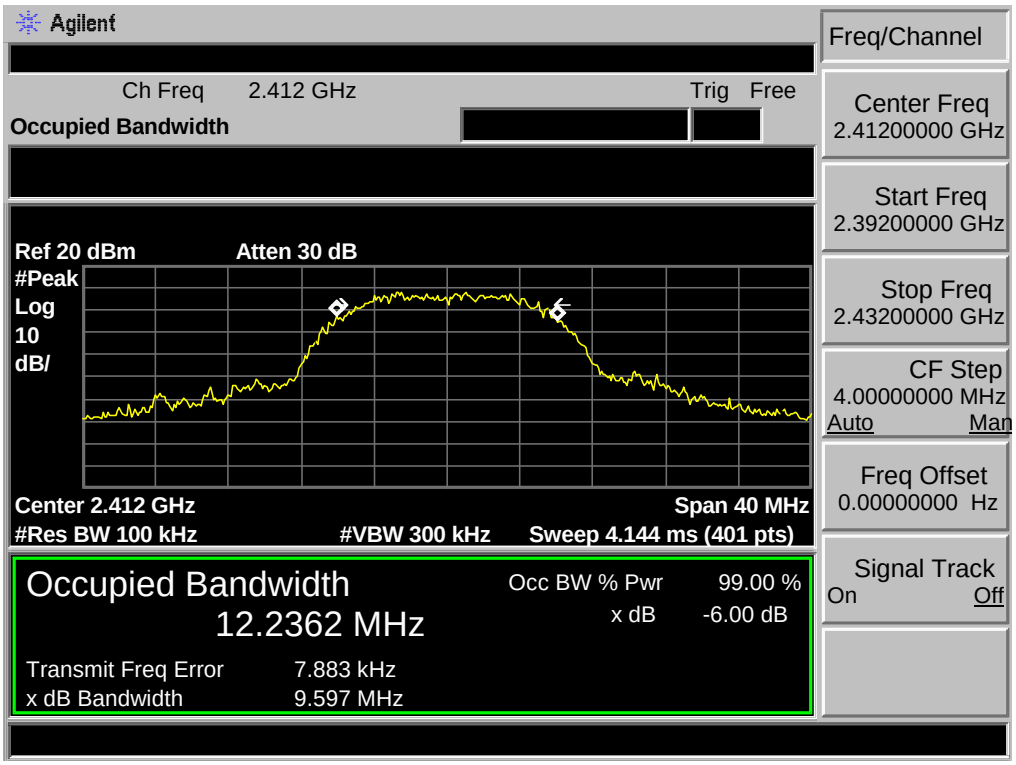
(11). The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

## 6.4 Test Result

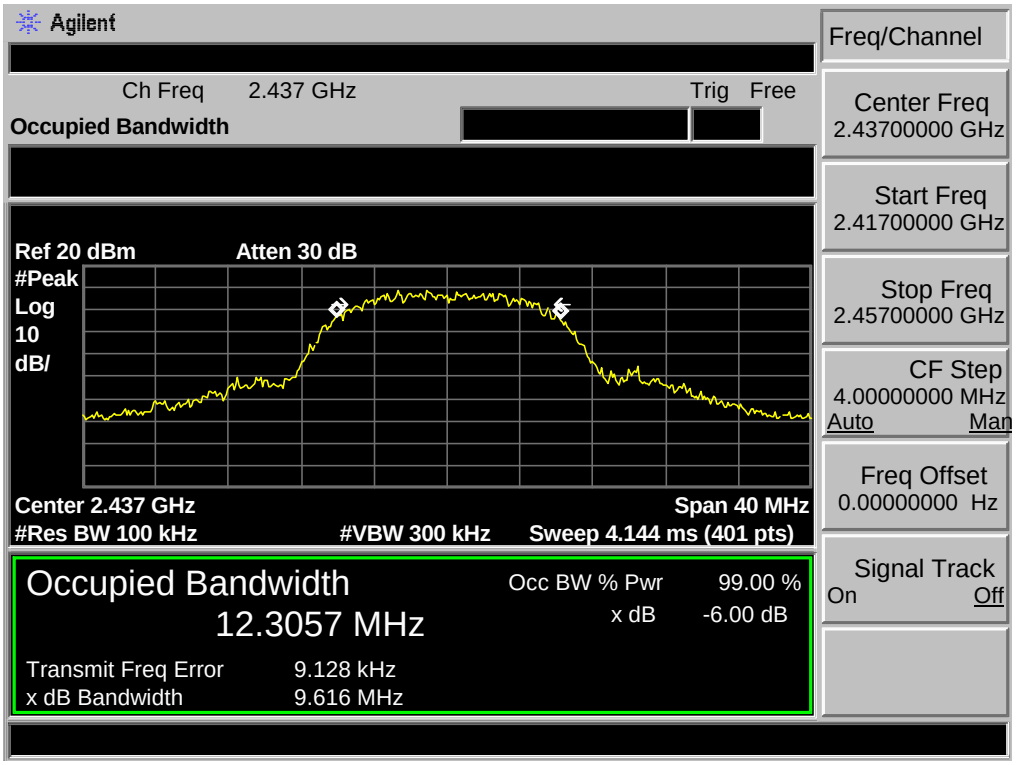
| EUT: LED TV | | | | | |
|---|---|---|---|---|---|
| M/N: WD32HBB101 | | | | | |
| Test date: 2018-04-10 | | Test site: RF Site | | Tested by: Seven | |
| Test Mode | CH | 6dB bandwidth（MHz） | 20dB bandwidth（MHz） | Limit | |
| | | | | 6dB BW (KHz) | 20dB BW |
| IEEE 802.11 b | CH1 9.597 | | 14.099 | >500 | / |
| | CH6 9.616 | | 14.252 | >500 | / |
| | CH11 10.033 | | 14.084 | >500 | / |
| IEEE 802.11 g | CH1 16.539 | | 18.384 | >500 | / |
| | CH6 16.390 | | 18.439 | >500 | / |
| | CH11 16.462 | | 18.319 | >500 | / |
| IEEE 802.11 n HT 20 | CH1 16.453 | | 18.957 | >500 | / |
| | CH6 16.528 | | 18.924 | >500 | / |
| | CH11 16.713 | | 18.826 | >500 | / |
| IEEE 802.11 n HT 40 | CH3 36.419 | | 40.273 | >500 | / |
| | CH6 36.339 | | 40.300 | >500 | / |
| | CH9 36.386 | | 40.786 | >500 | / |
| Conclusion：PASS | | | | | |

## 6.5 6dB Test Data

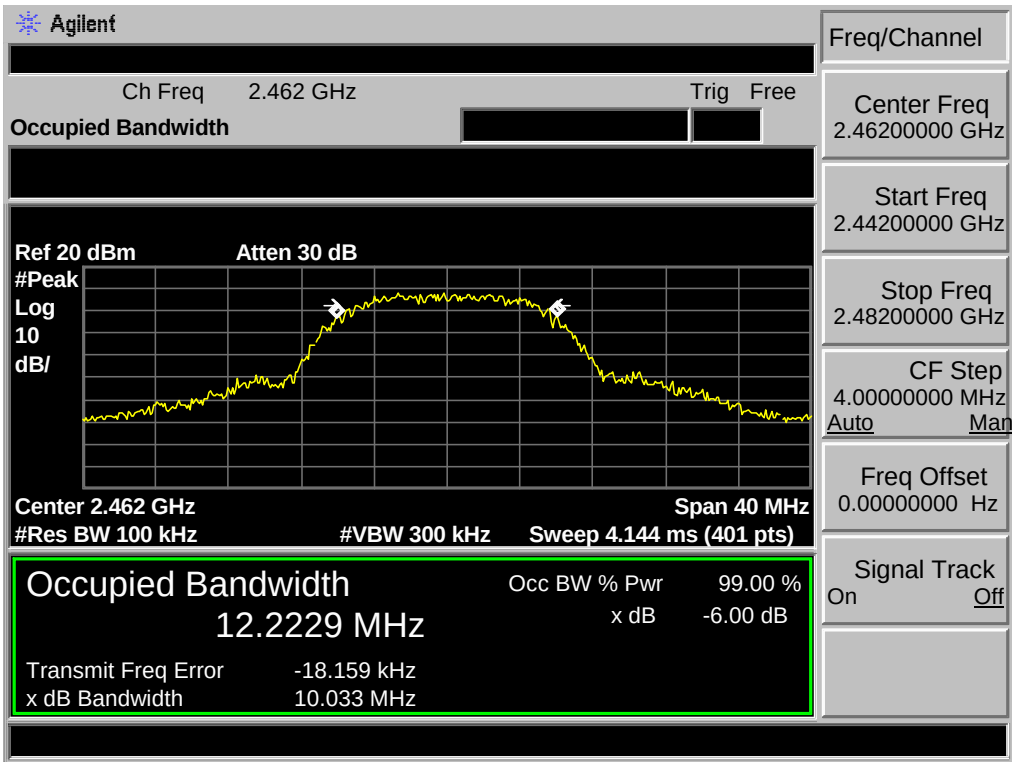
Test Mode: IEEE 802.11b 2412MHz



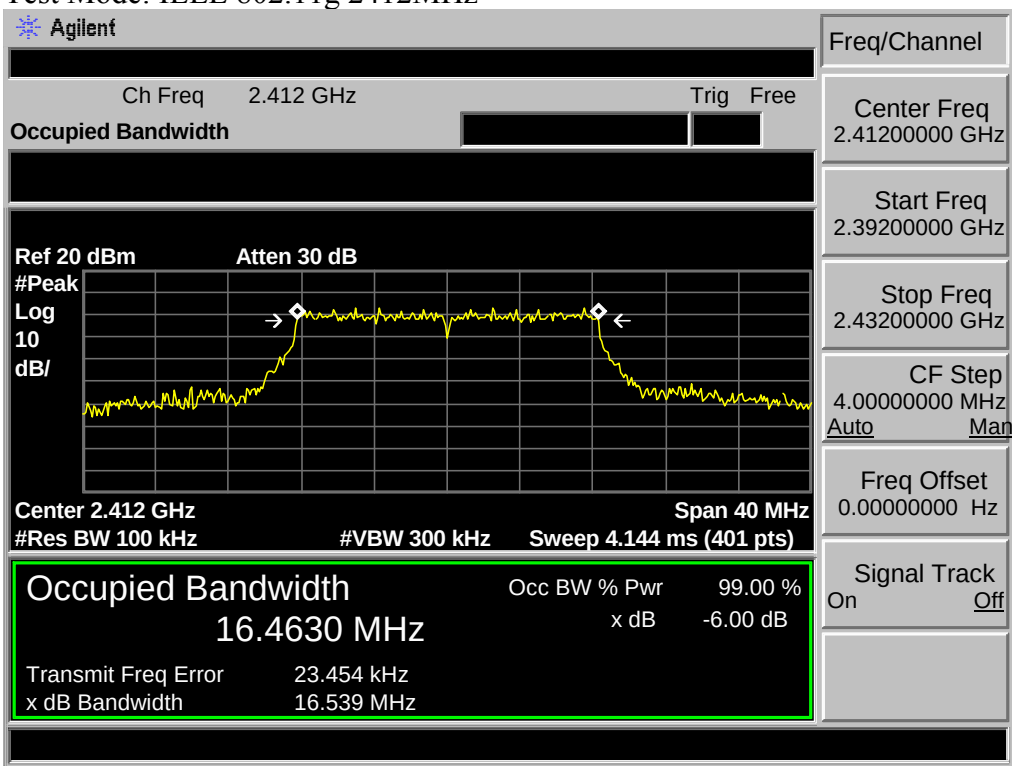

Test Mode: IEEE 802.11b 2437MHz



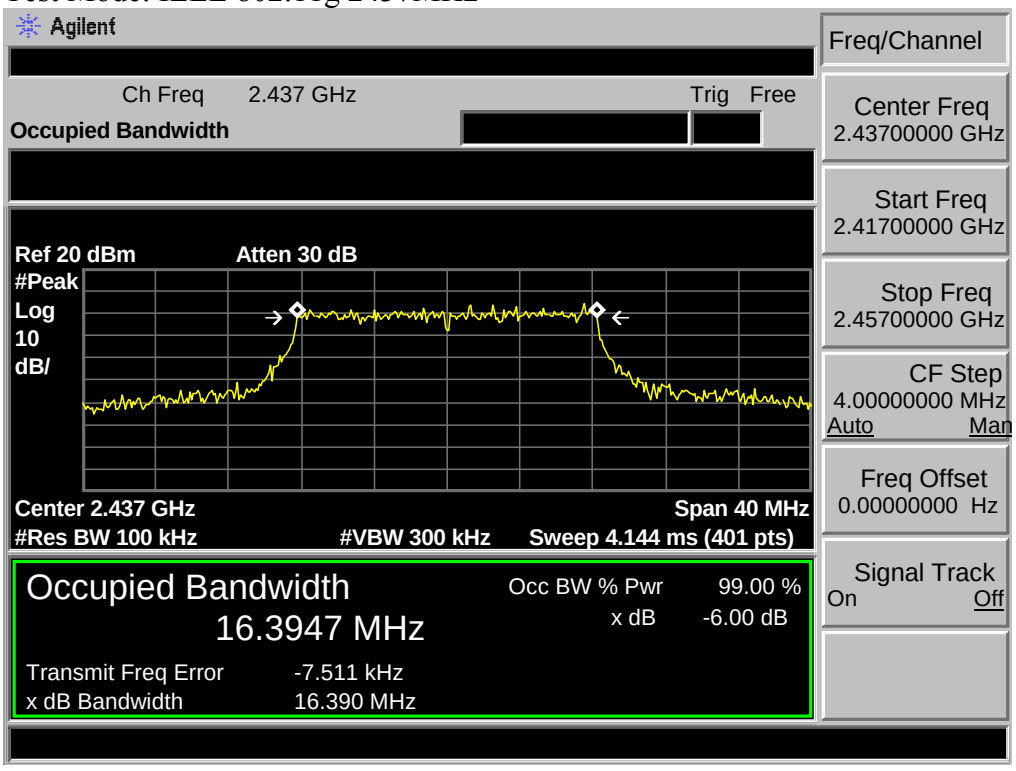
Test Mode: IEEE 802.11b 2462MHz



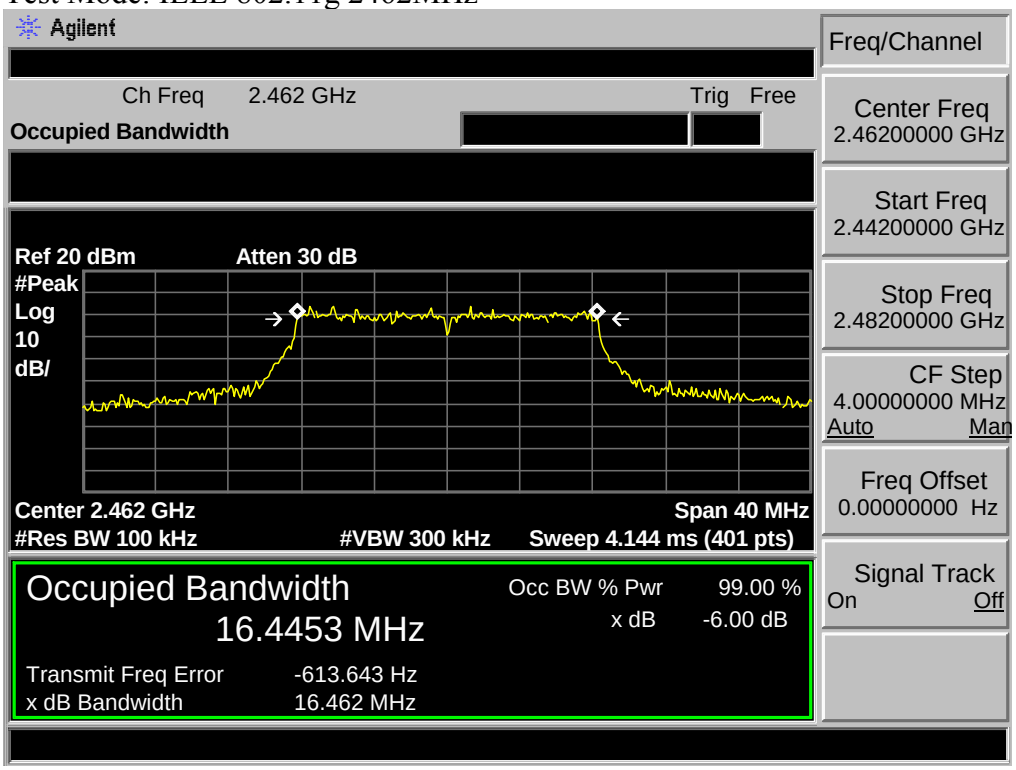
Test Mode: IEEE 802.11g 2412MHz



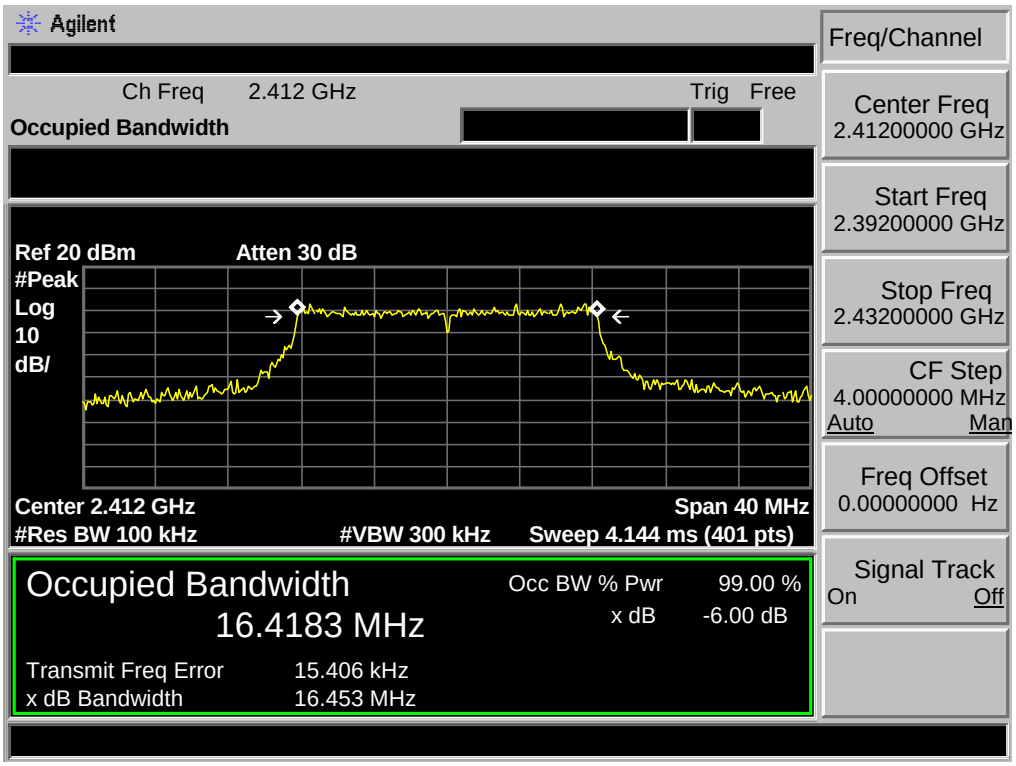

Test Mode: IEEE 802.11g 2437MHz



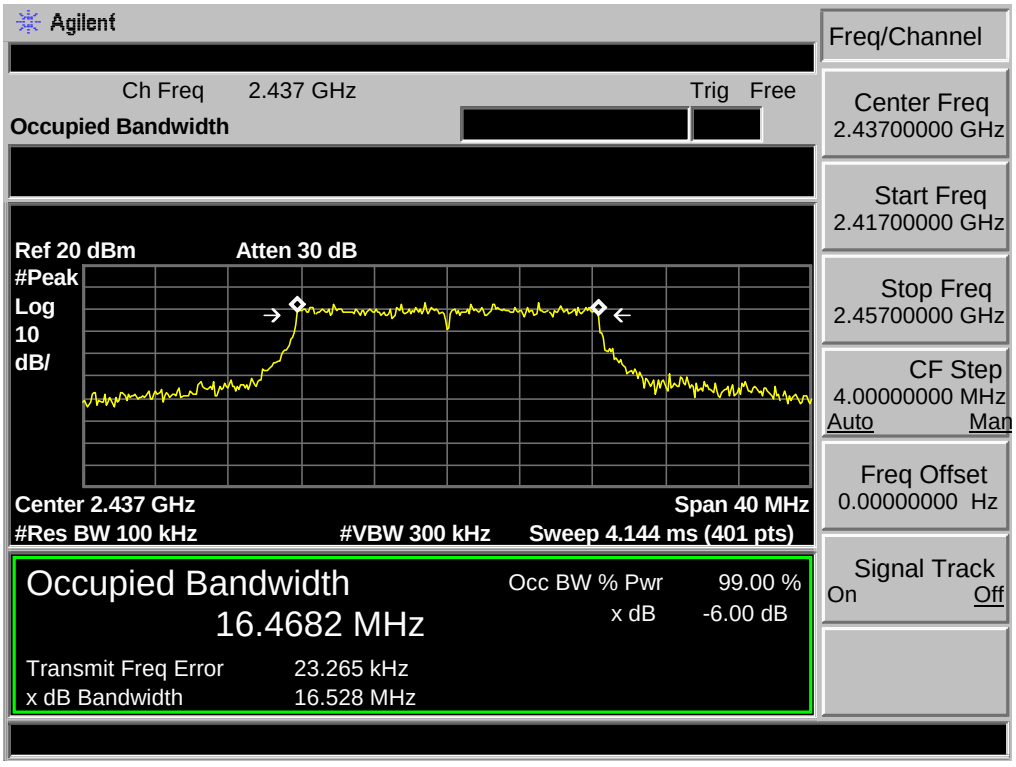
Test Mode: IEEE 802.11g 2462MHz



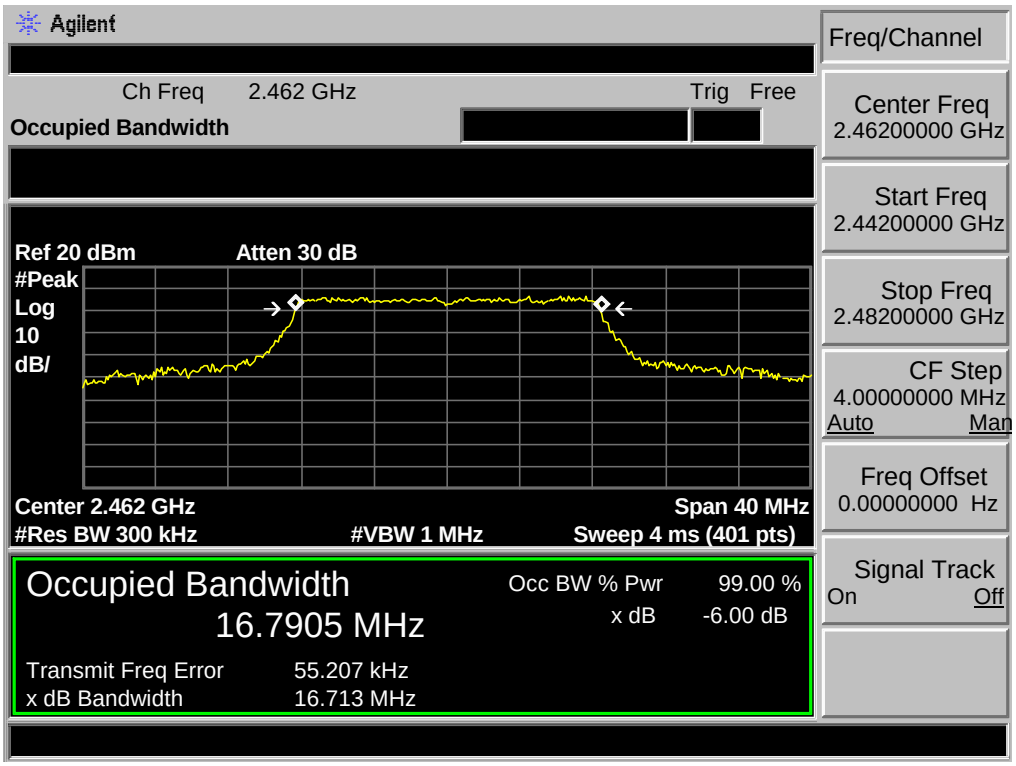
Test Mode: IEEE 802.11n HT20 2412MHz



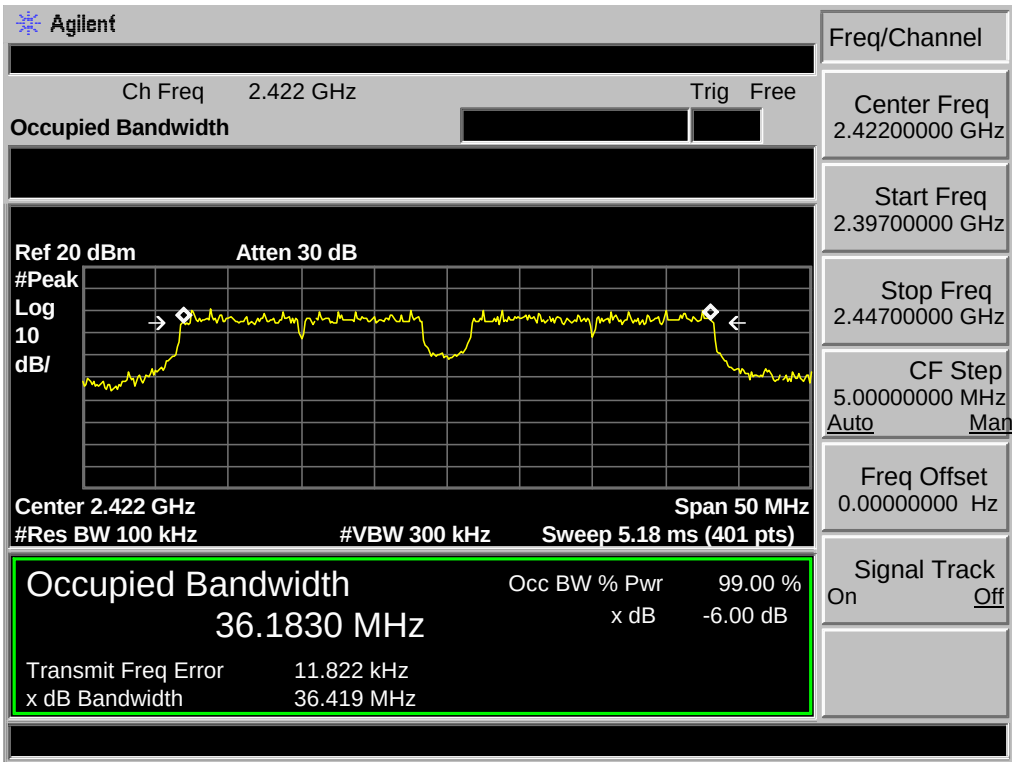

Test Mode: IEEE 802.11n HT20 2437MHz



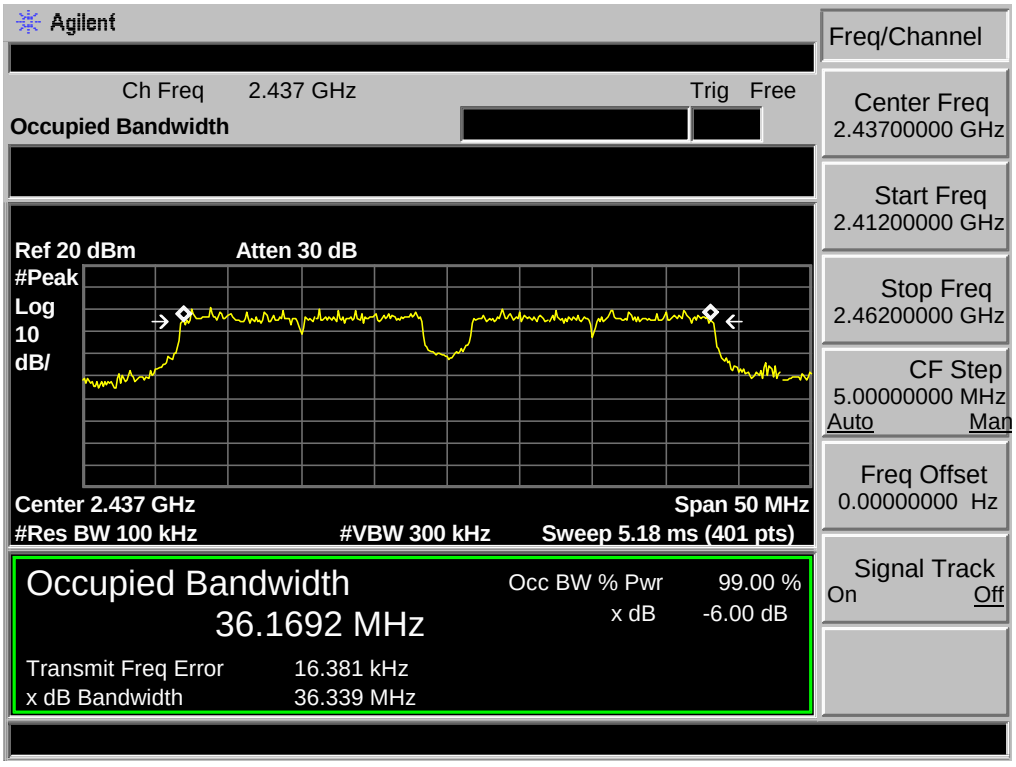
Test Mode: IEEE 802.11n HT20 2462MHz



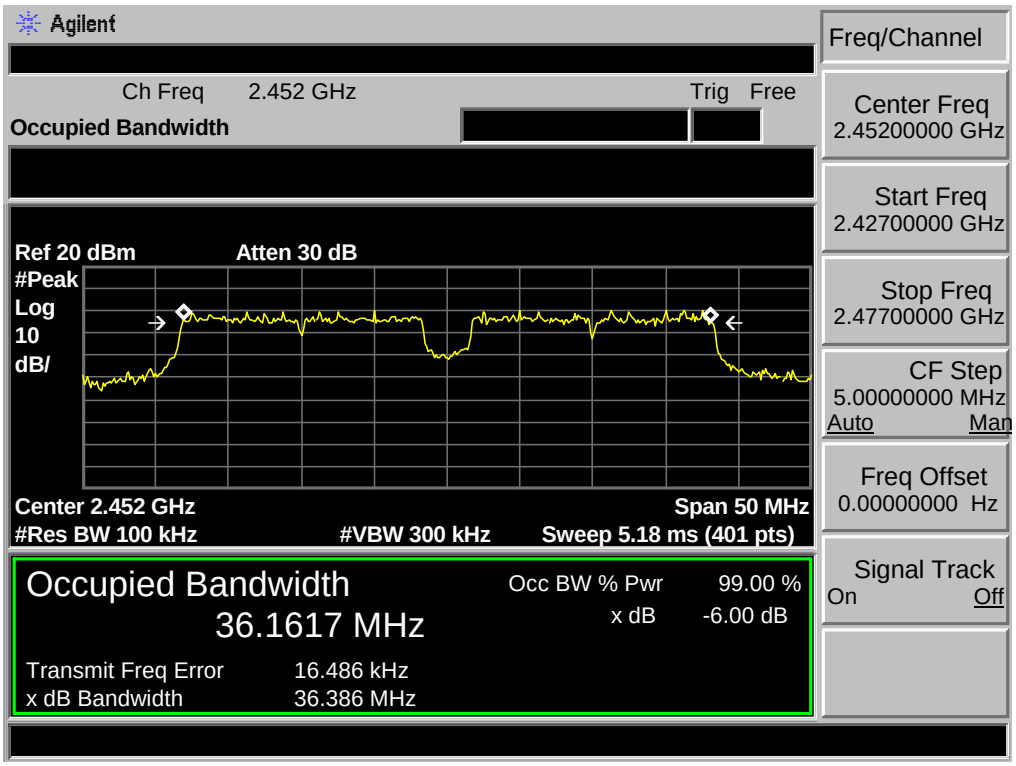
Test Mode: IEEE 802.11n HT40 2422MHz




Test Mode: IEEE 802.11n HT40 2437MHz

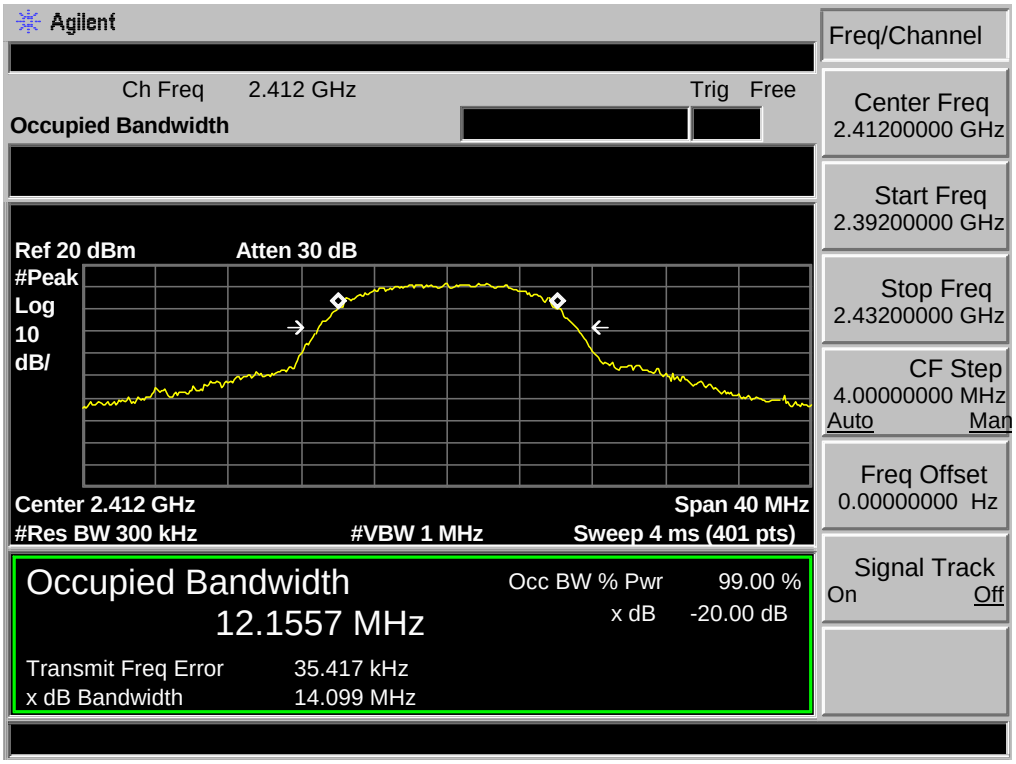


Test Mode: IEEE 802.11n HT40 2452MHz

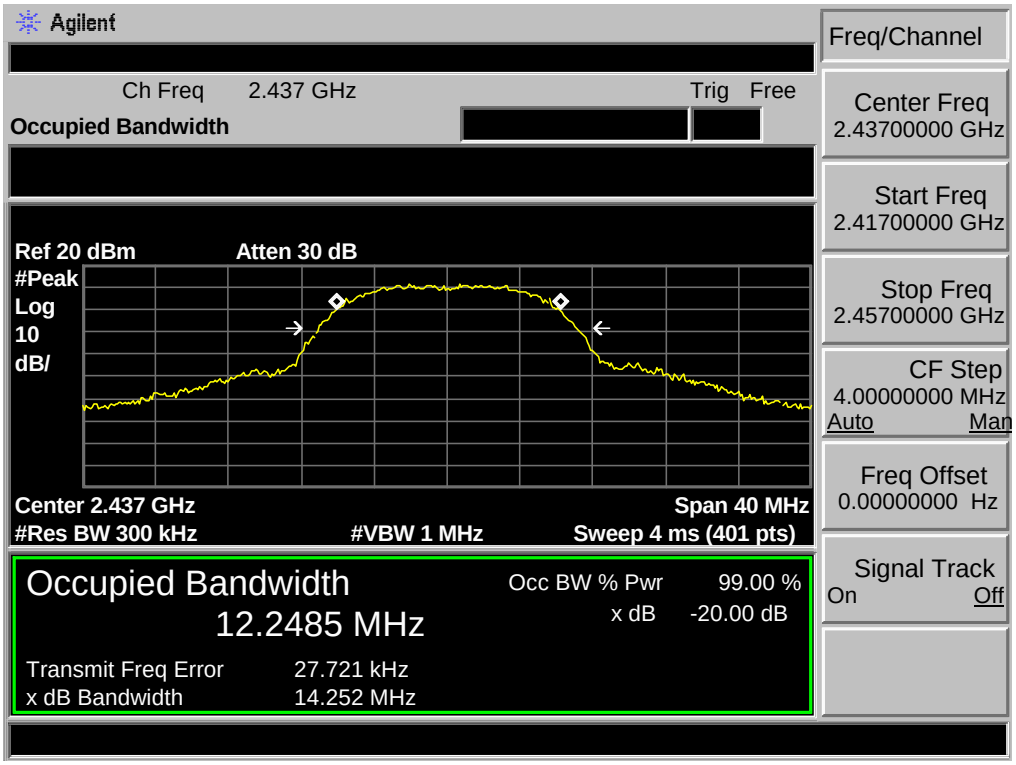


## 6.6 20dB Test Data

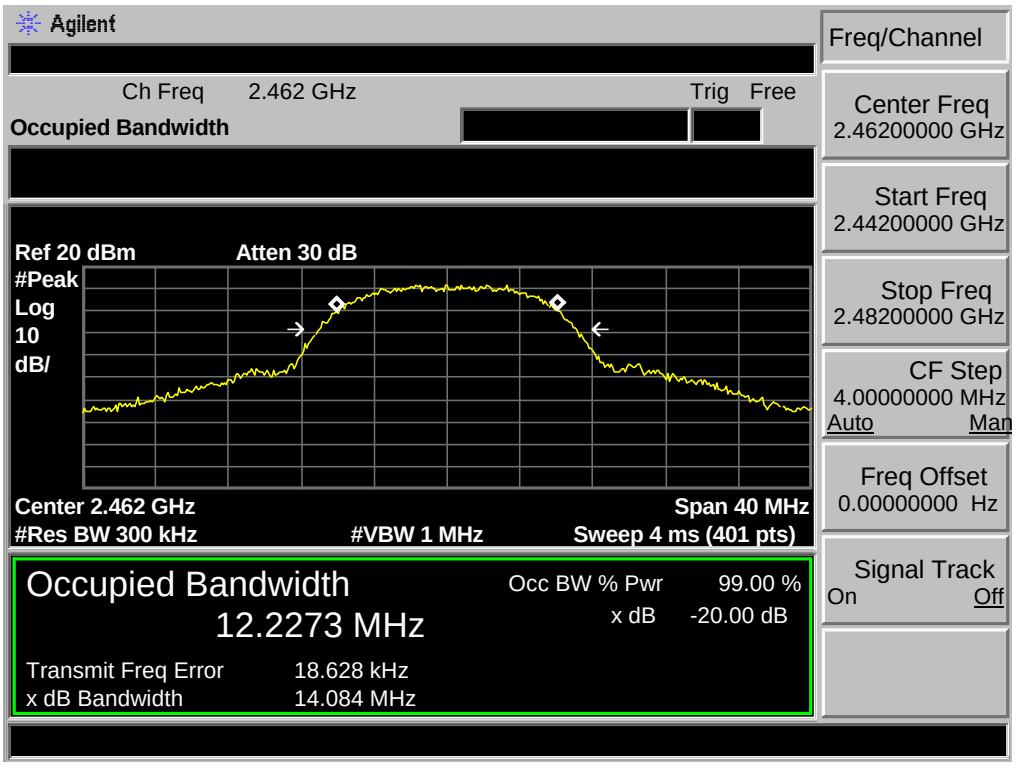
Test Mode: IEEE 802.11b 2412MHz



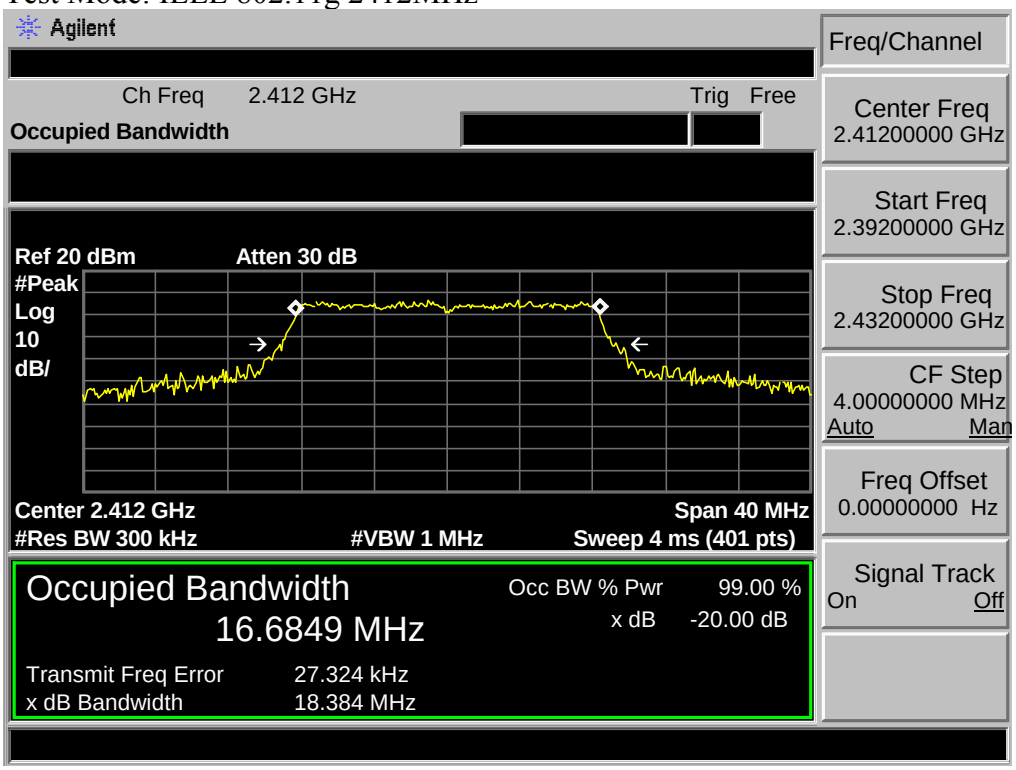

Test Mode: IEEE 802.11b 2437MHz



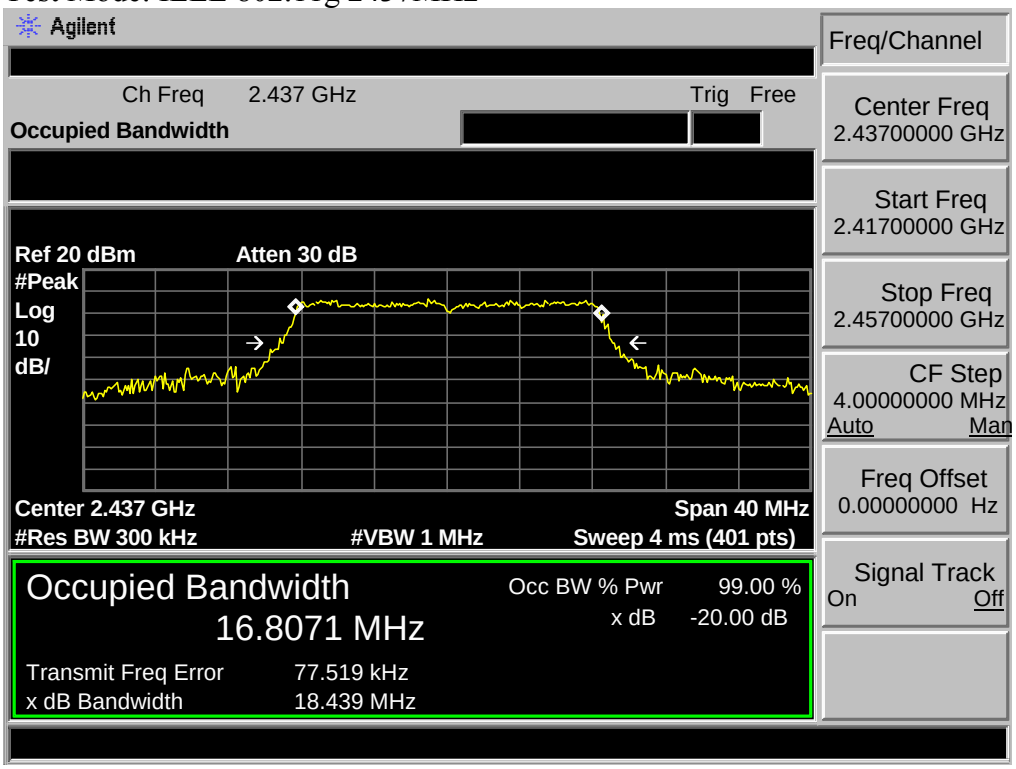
Test Mode: IEEE 802.11b 2462MHz



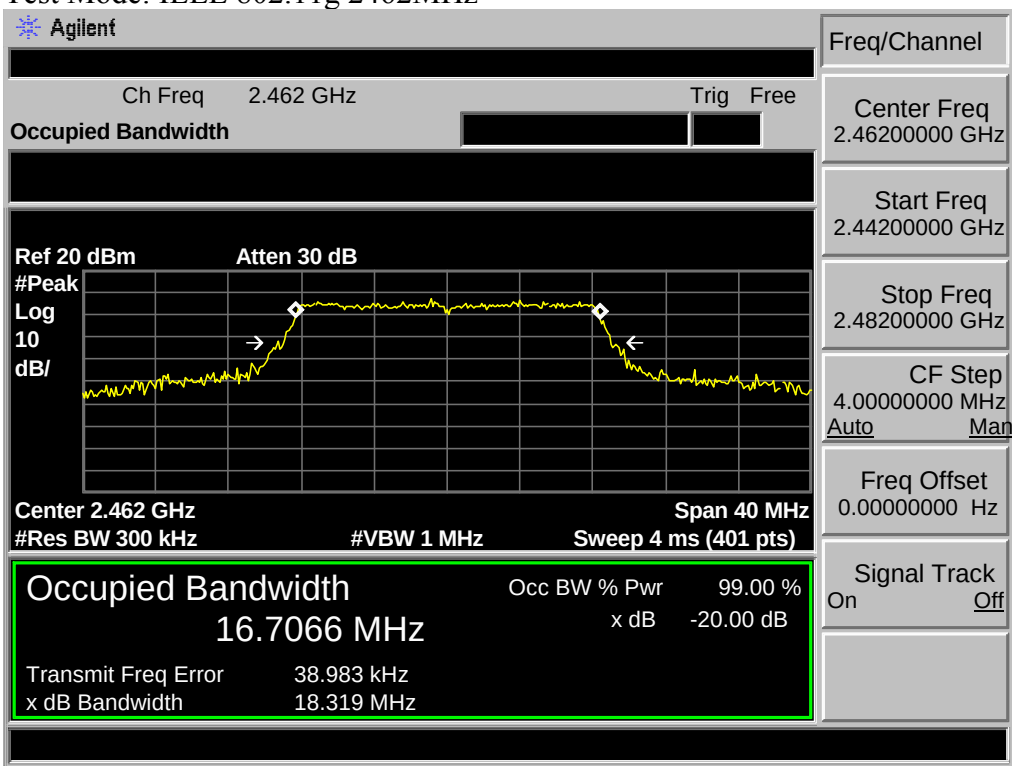
Test Mode: IEEE 802.11g 2412MHz



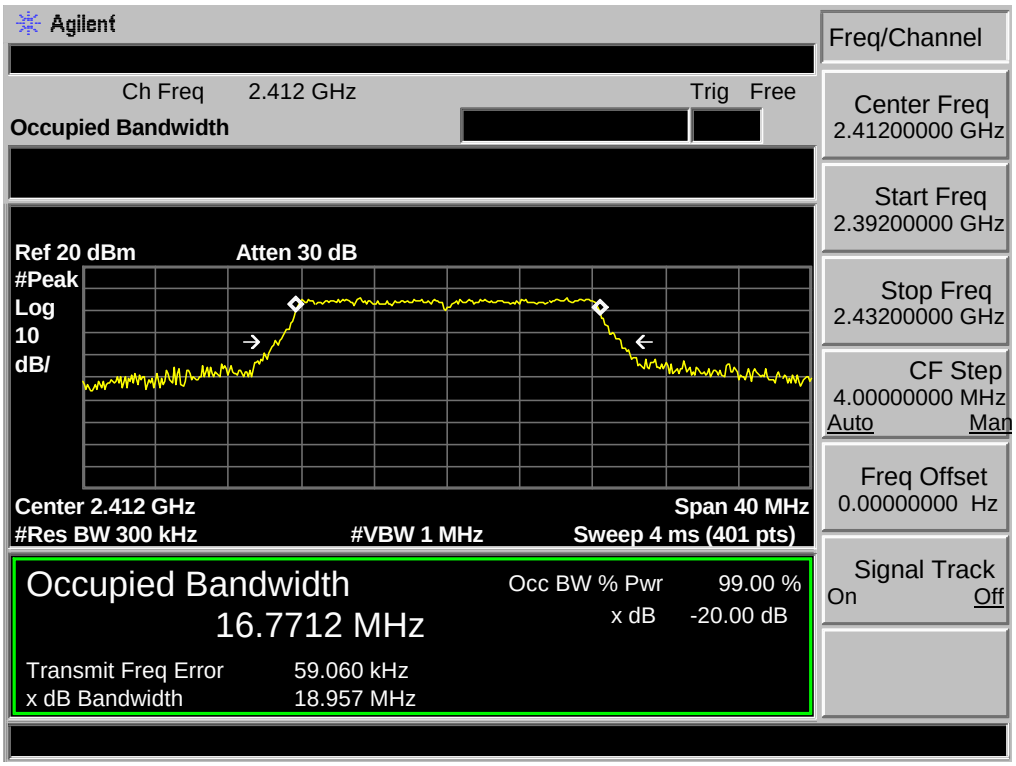

Test Mode: IEEE 802.11g 2437MHz



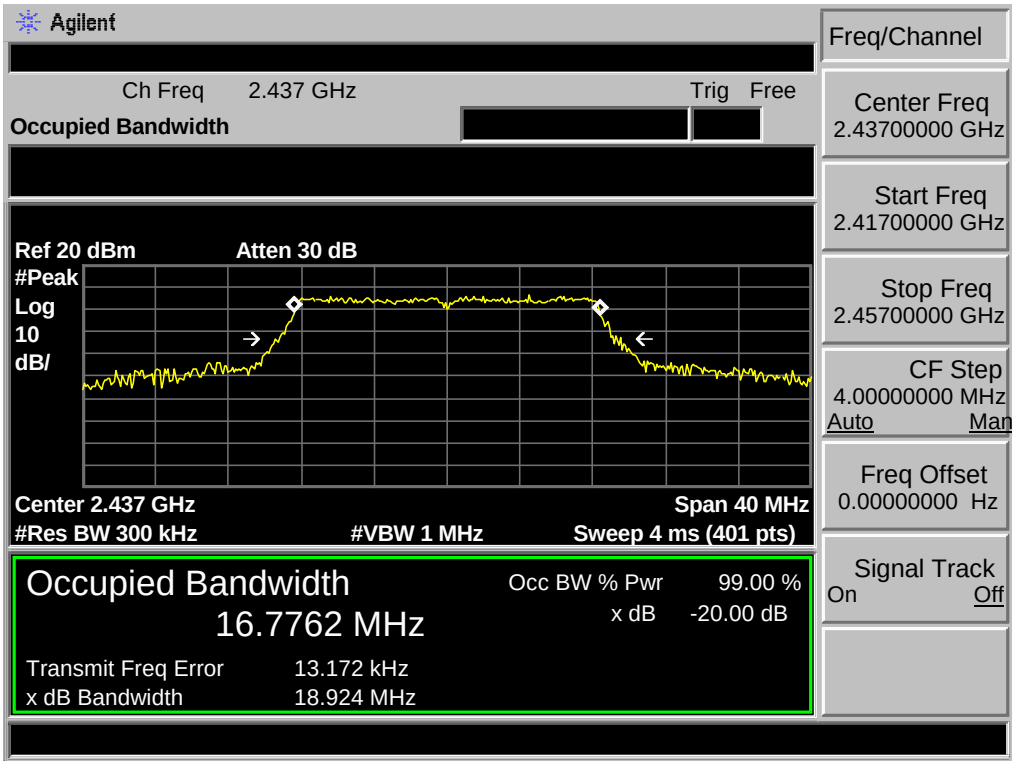
Test Mode: IEEE 802.11g 2462MHz



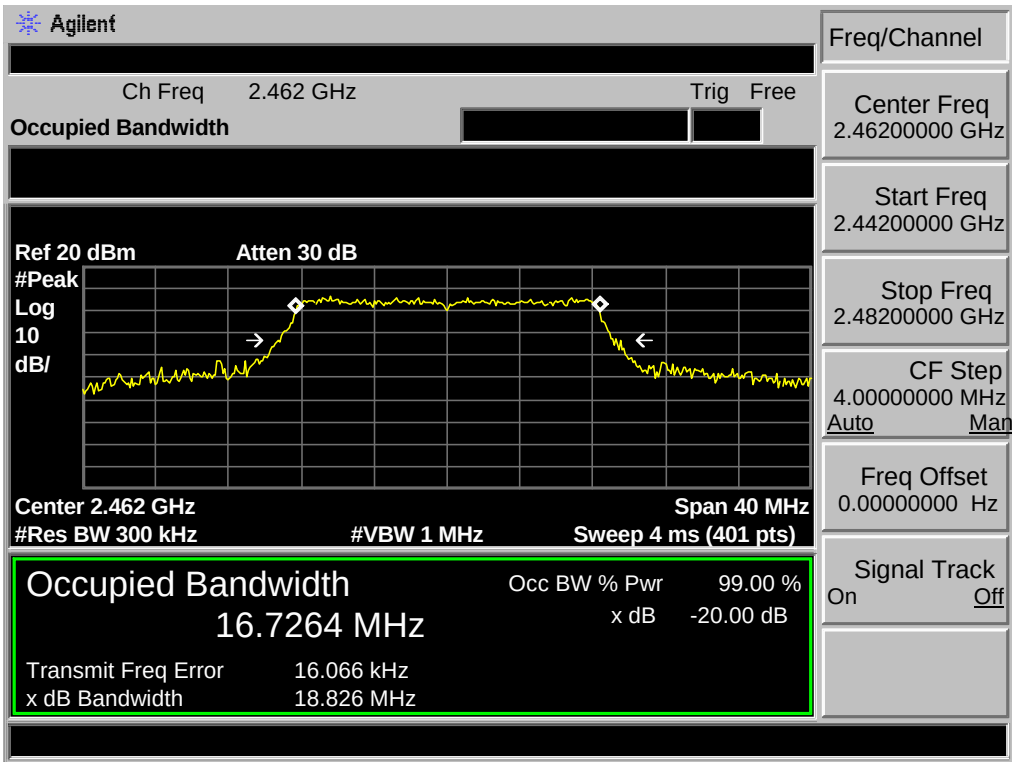
Test Mode: IEEE 802.11n HT20 2412MHz



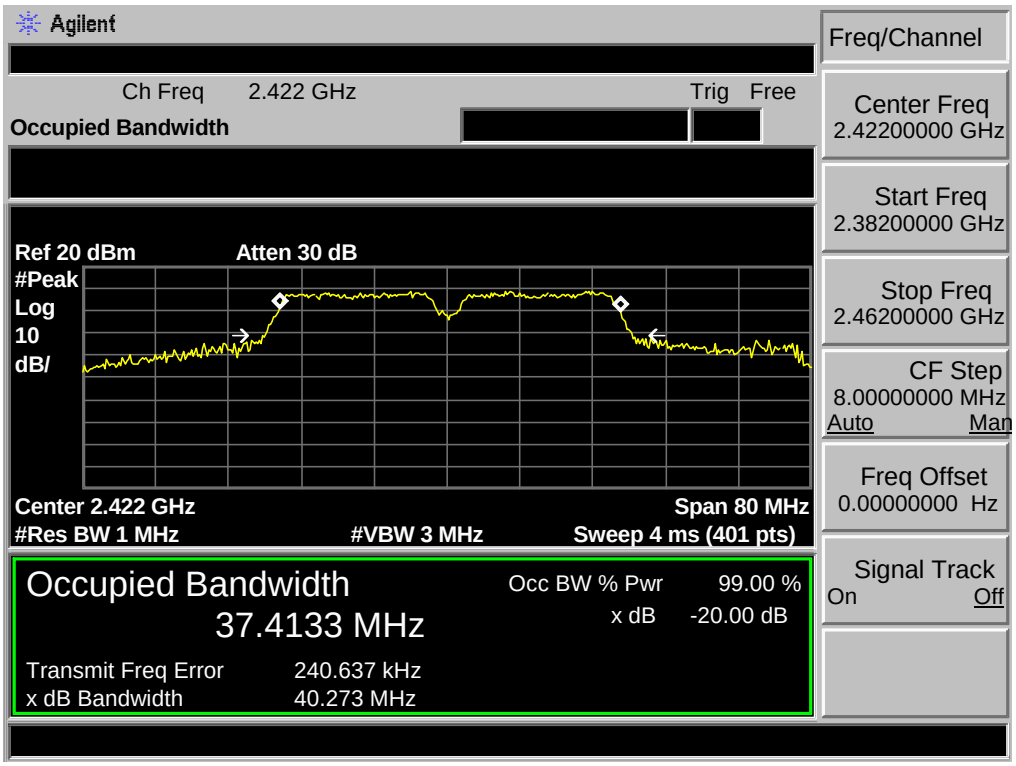

Test Mode: IEEE 802.11n HT20 2437MHz



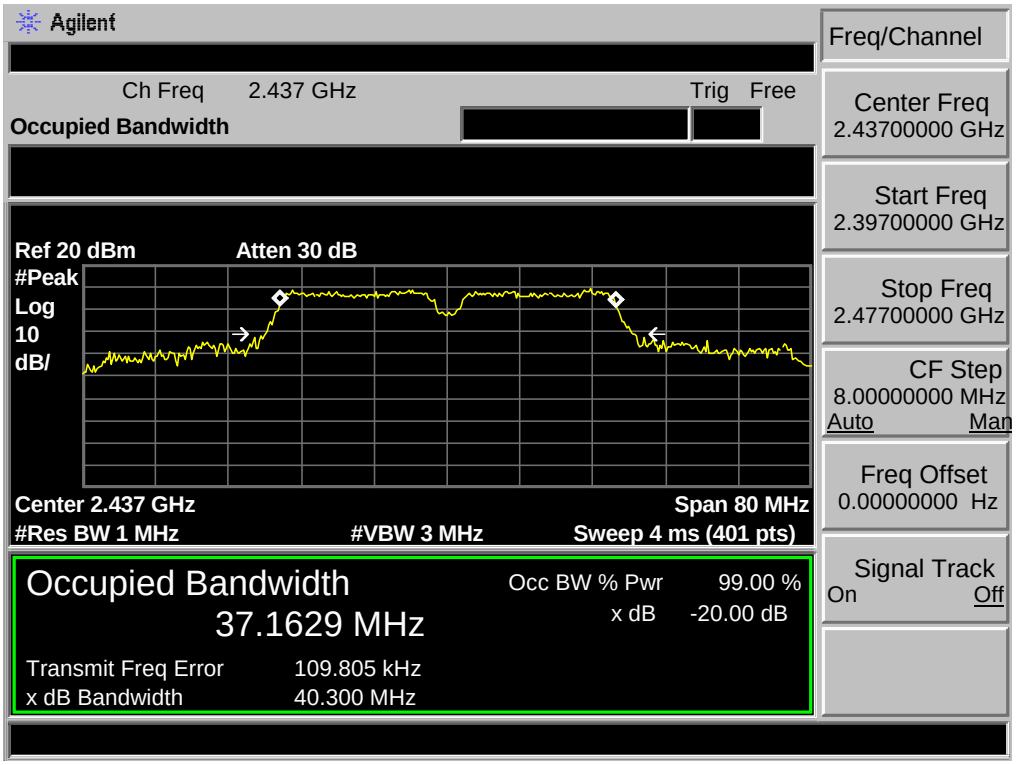
Test Mode: IEEE 802.11n HT20 2462MHz



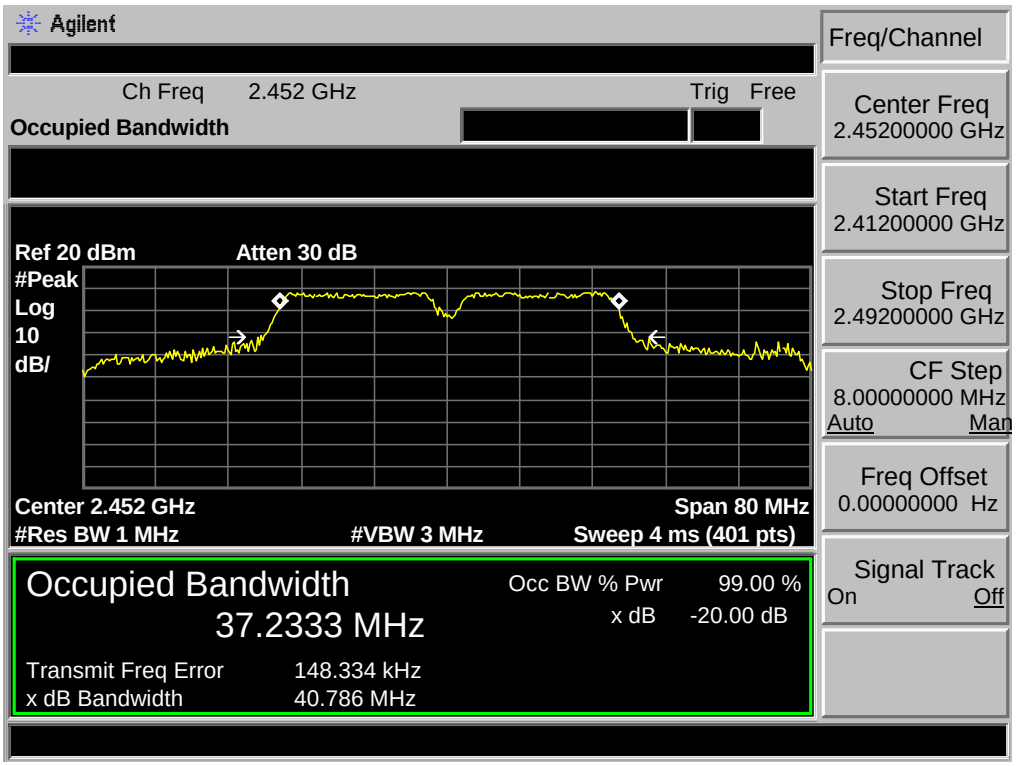
Test Mode: IEEE 802.11n HT40 2422MHz




Test Mode: IEEE 802.11n HT40 2437MHz



Test Mode: IEEE 802.11n HT40 2452MHz



# 7 OUTPUT POWER TEST

## 7.1 Limit

For systems using digital m odulation in the 2400—2483.5MHz, The Peak out put Power shall not exceed 1W(30dBm)

## 7.2 Test Procedure

1, The transmitter output (antenna port) was connected to the spectrum analyzer. Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable.

2, Follow the test procedure as described in KDB 558074

(1)Set span to at least 1.5 times the OBW.

(2)Set RBW = 1-5% of the OBW, not to exceed 1 MHz.

(3)Set VBW ≥ 3 x RBW.

(4)Number of points in sweep ≥ 2 × span / RBW . (This gives bin-to-bin spacing ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)

(4)Sweep time = auto.

(5)Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.

(6)If transmit duty cycle < 98 %, use a sweep trigger with the level set to enable trig gering only on full power pulses. The tr ansmitter sh all oper ate at m aximum power contr ol level f or the entire duration of every sweep. If the EU T transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 %, and if each transm ission is entirely at the m aximum power contro l level, then th e trigger shall be set to “free run”.

(7)Trace average at least 100 traces in power averaging (i.e., RMS) mode.

(8)Compute power by integrating the spectrum across the OBW of the signal using the instrument’s band power m easurement function, with band lim its set eq ual to the OBW band edges. If the instrument does not have a band power function, sum the spectru m levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

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

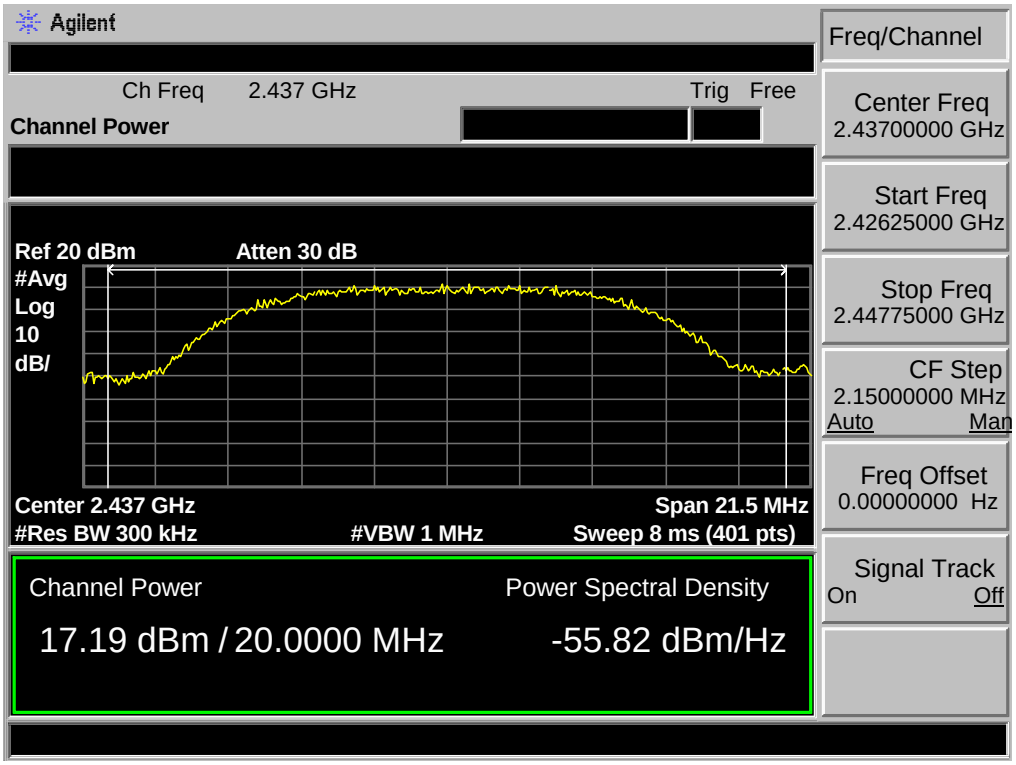
## 7.3 Test Result

| EUT: LED TV | | | |
|---|---|---|---|
| M/N: WD32HBB101 | | | |
| Test date: 2018-04-10 | | Test site: 3m Chamber | Tested by: Seven |
| Pass | | | |
| Test Mode | CH | Conducted Power （dBm） | Lim it (dBm ) |
| IEEE 802.11 b | CH1 17.45 | | 30 |
| | CH6 17.19 | | 30 |
| | CH11 16.97 | | 30 |
| IEEE 802.11 g | CH1 1 | 1.53 | 30 |
| | CH6 12.19 | | 30 |
| | CH11 1 | 1.39 | 30 |
| IEEE 802.11 n HT 20 | CH1 1 | 1.11 | 30 |
| | CH6 1 | 1.80 | 30 |
| | CH11 1 | 1.34 | 30 |
| IEEE 802.11 n HT 40 | CH3 9.88 | | 30 |
| | CH6 10.76 | | 30 |
| | CH9 9.88 | | 30 |
| Conclusion：PASS | | | |

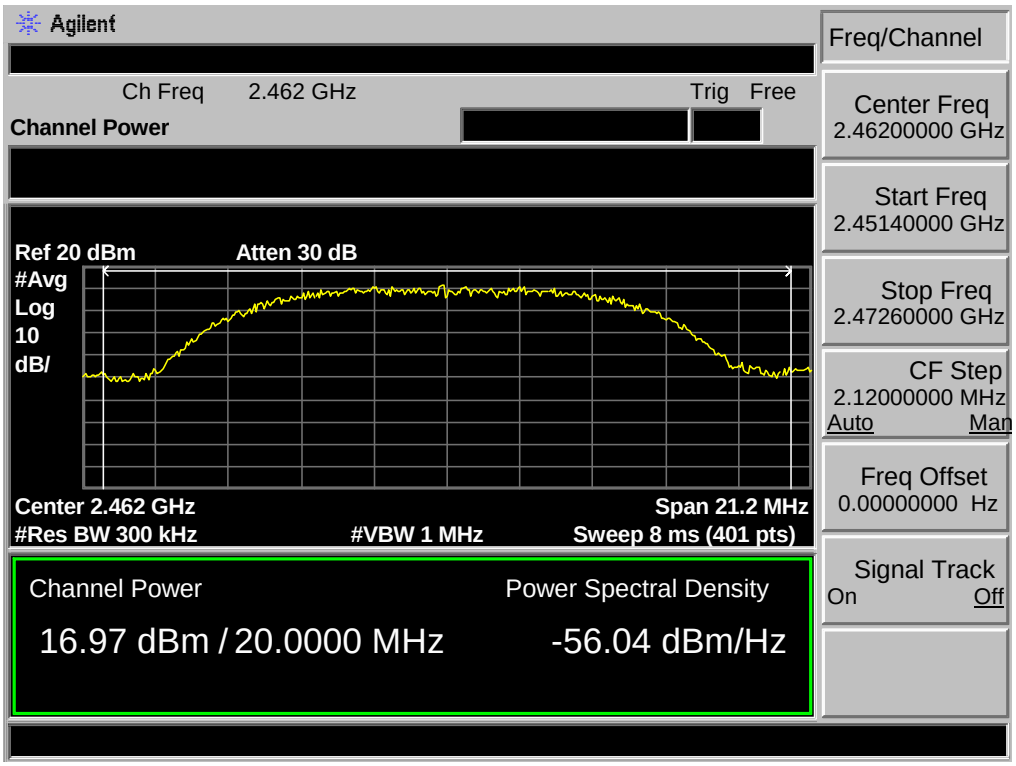
## 7.4 Test Data

Test Mode: IEEE 802.11b 2412MHz

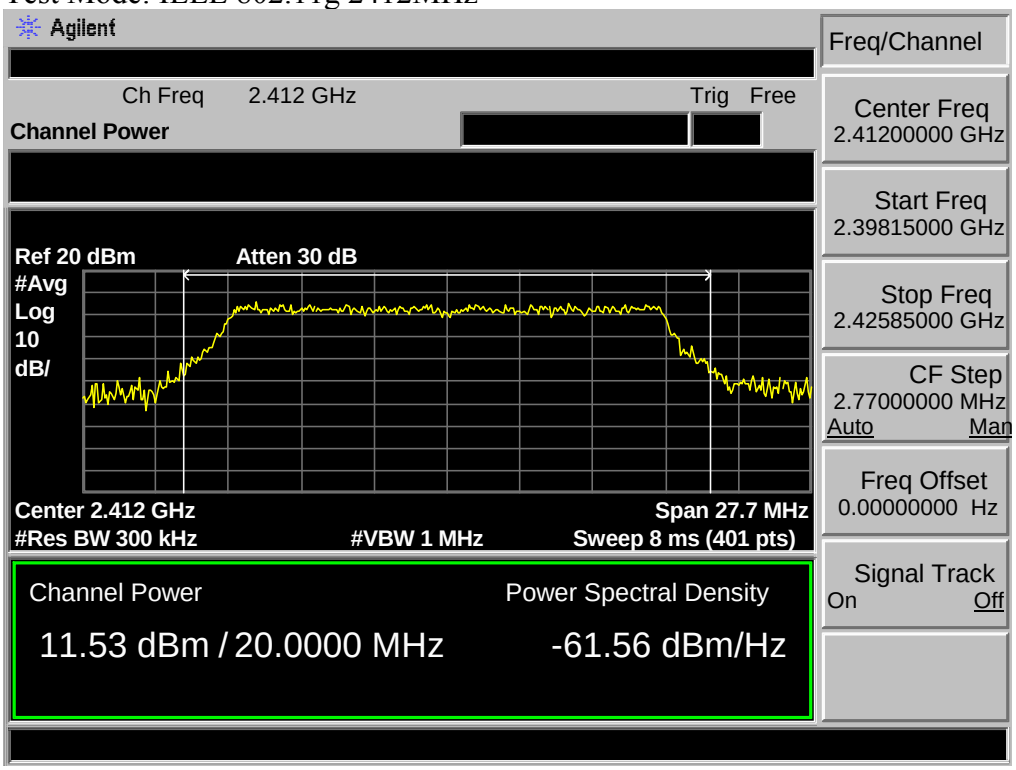

Test Mode: IEEE 802.11b 2437MHz



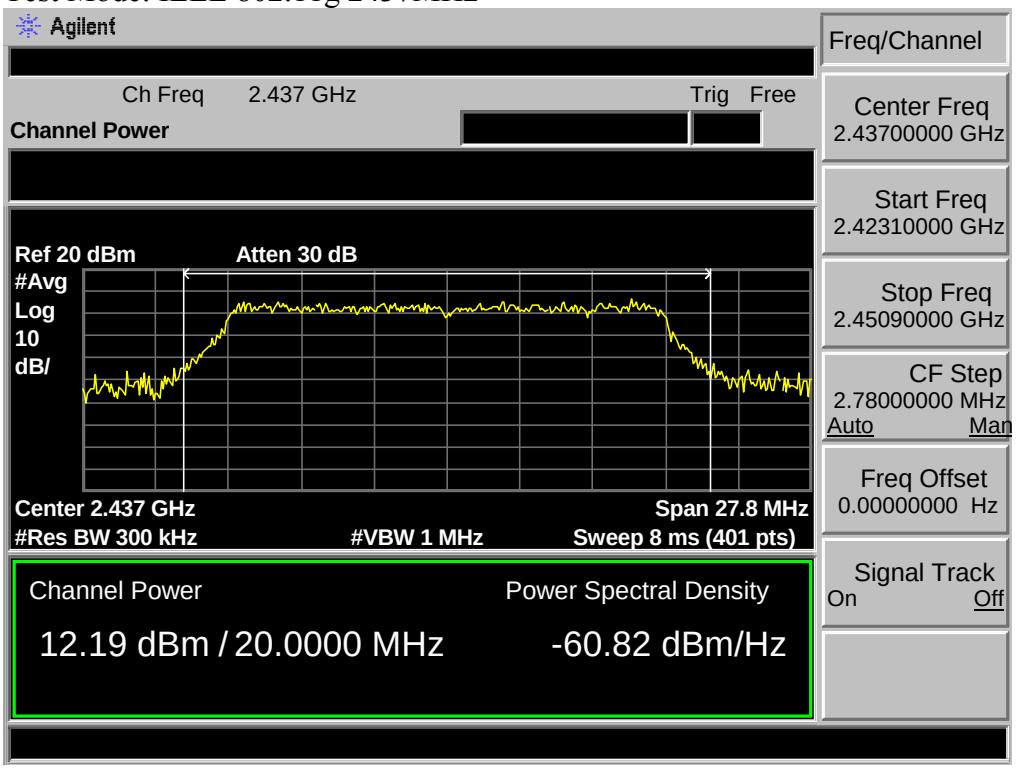
Test Mode: IEEE 802.11b 2462MHz



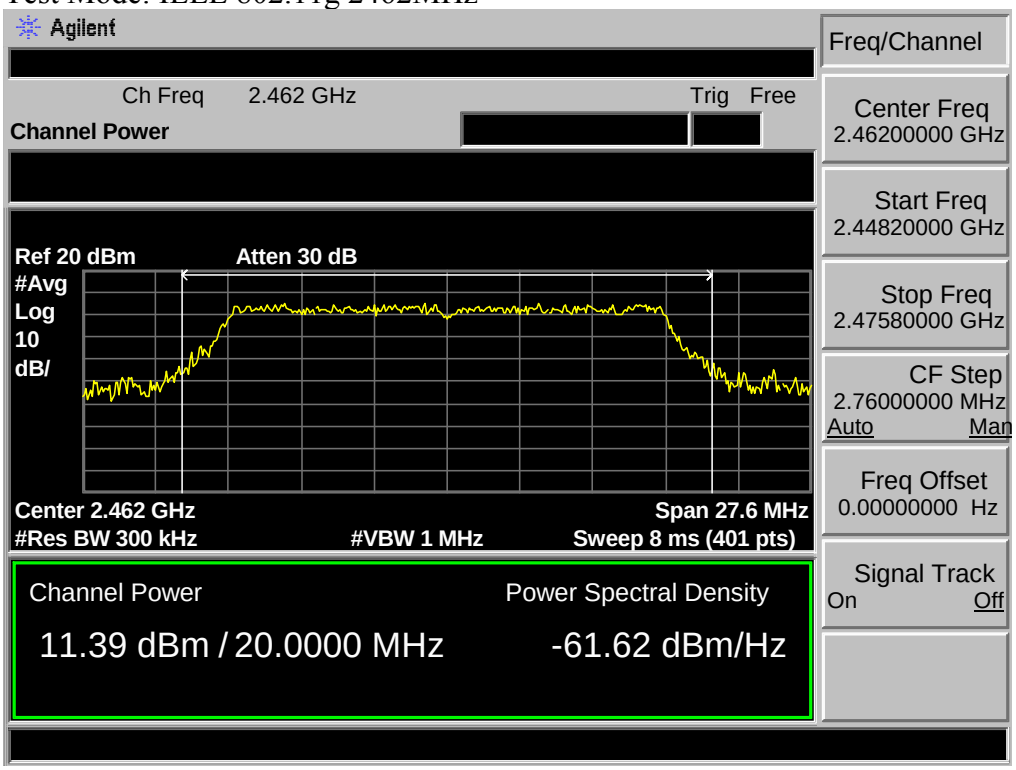
Test Mode: IEEE 802.11g 2412MHz



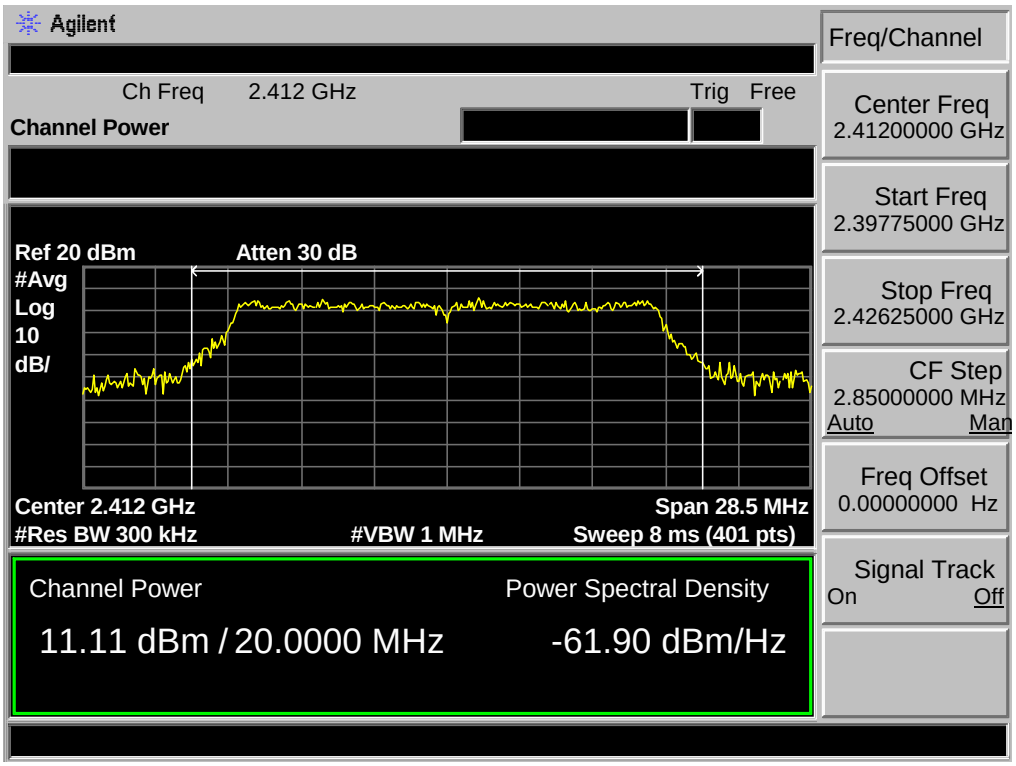

Test Mode: IEEE 802.11g 2437MHz



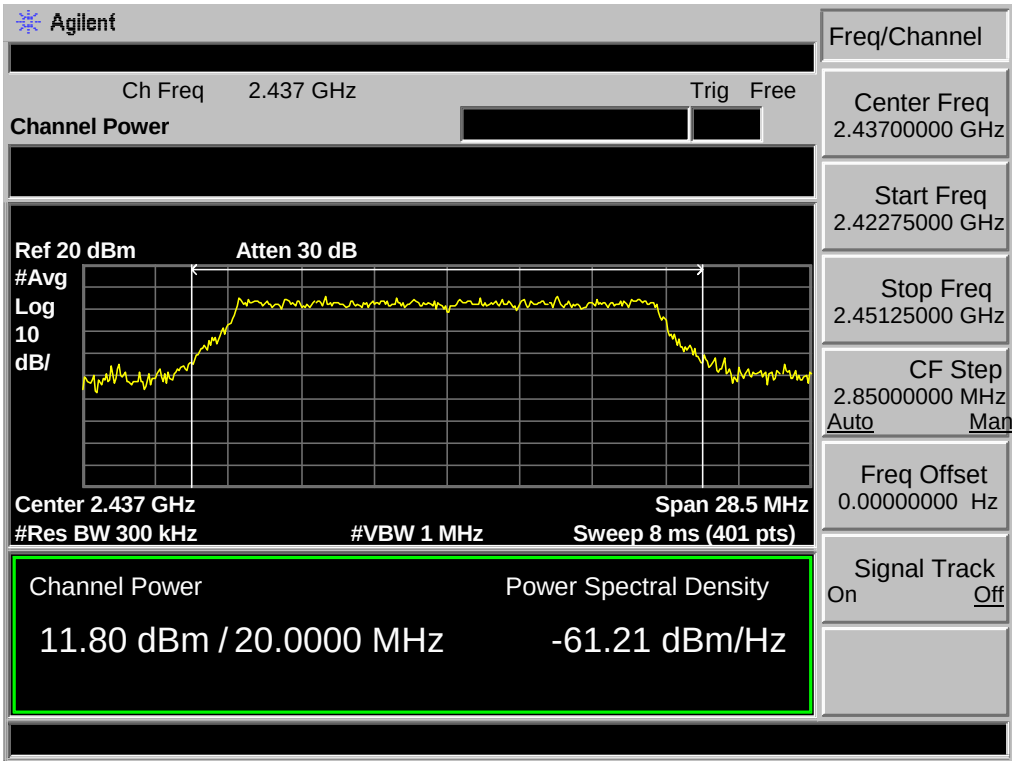
Test Mode: IEEE 802.11g 2462MHz



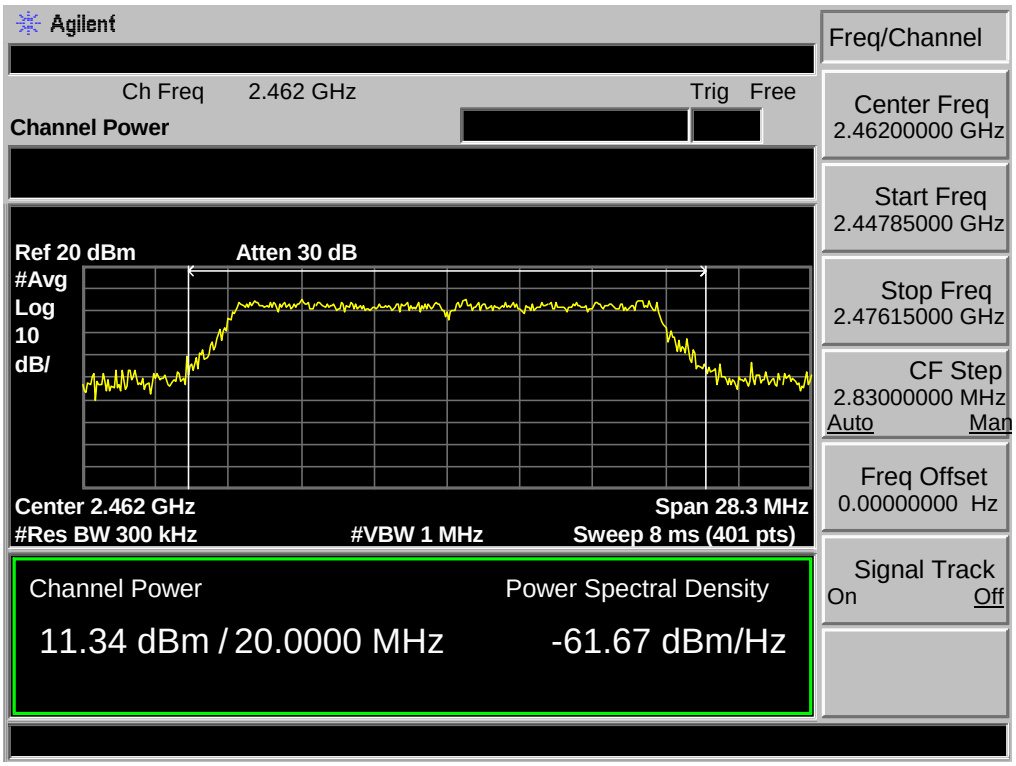
Test Mode: IEEE 802.11n HT20 2412MHz



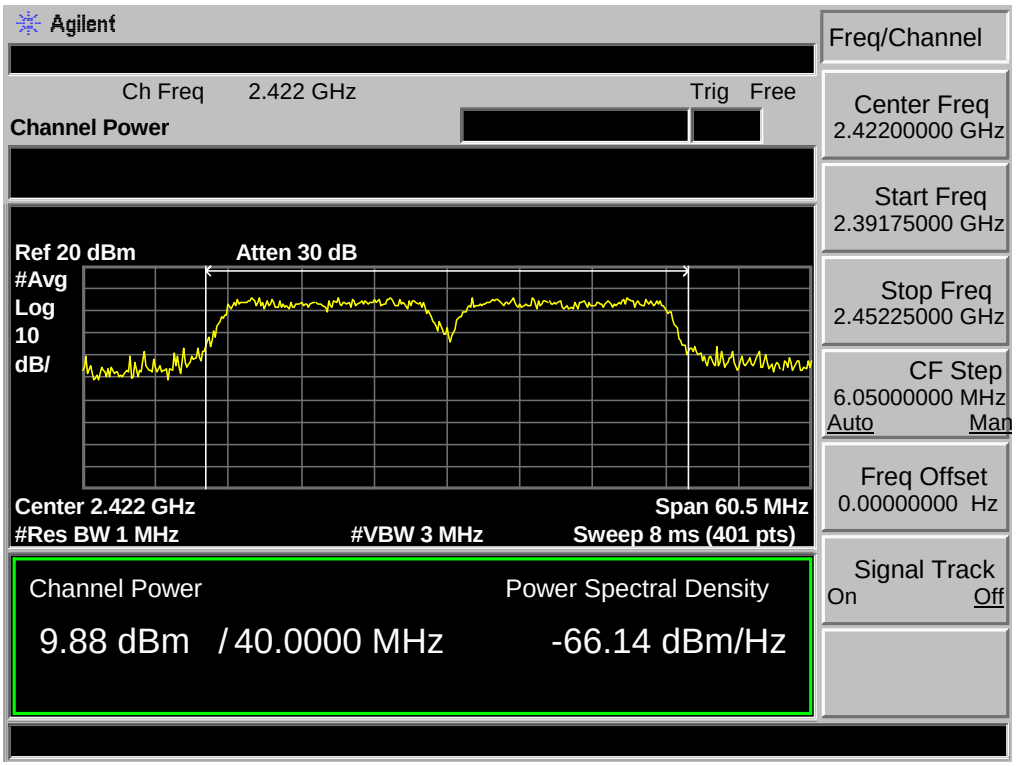

Test Mode: IEEE 802.11n HT20 2437MHz



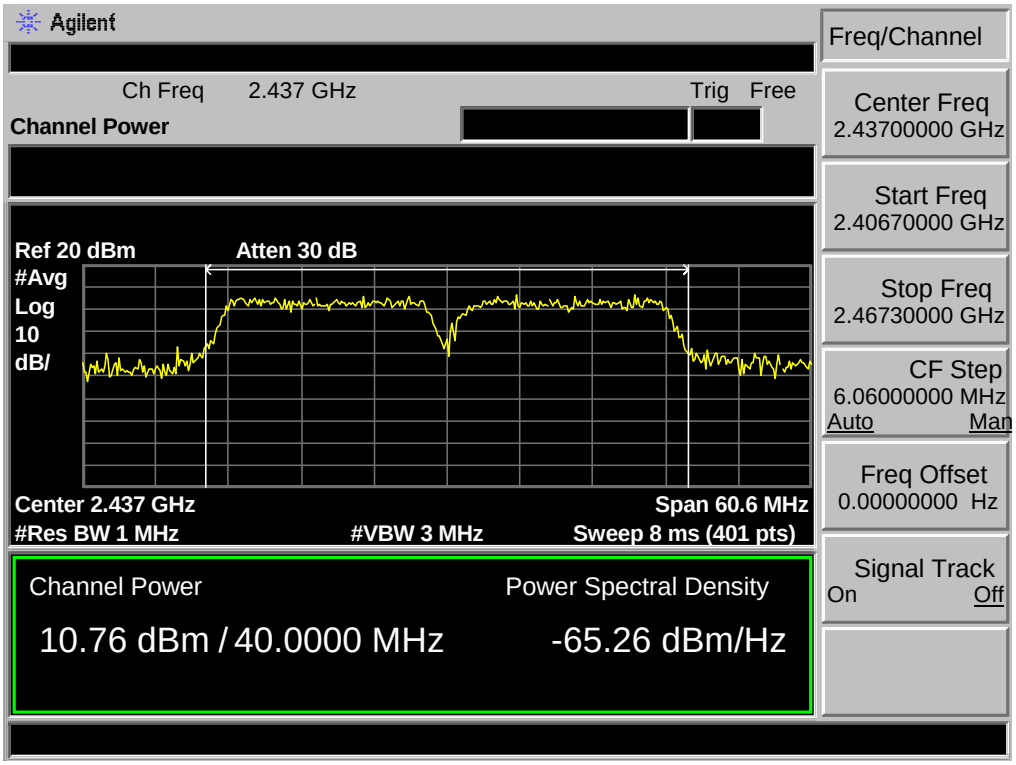
Test Mode: IEEE 802.11n HT20 2462MHz



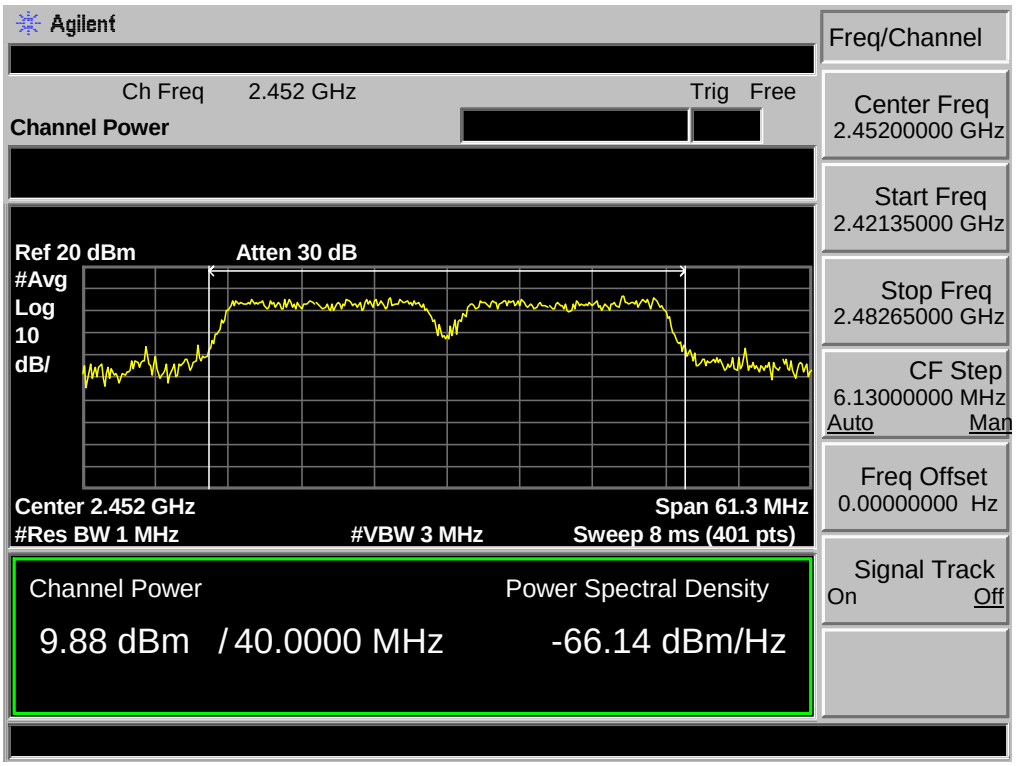
Test Mode: IEEE 802.11n HT40 2422MHz




Test Mode: IEEE 802.11n HT40 2437MHz



Test Mode: IEEE 802.11n HT40 2452MHz



# 8 POWER SPECTRAL DENSITY TEST

## 8.1 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.

## 8.2 Test Procedure

1, The transmitter output (antenna port) was connected to the spectrum analyzer . Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable.

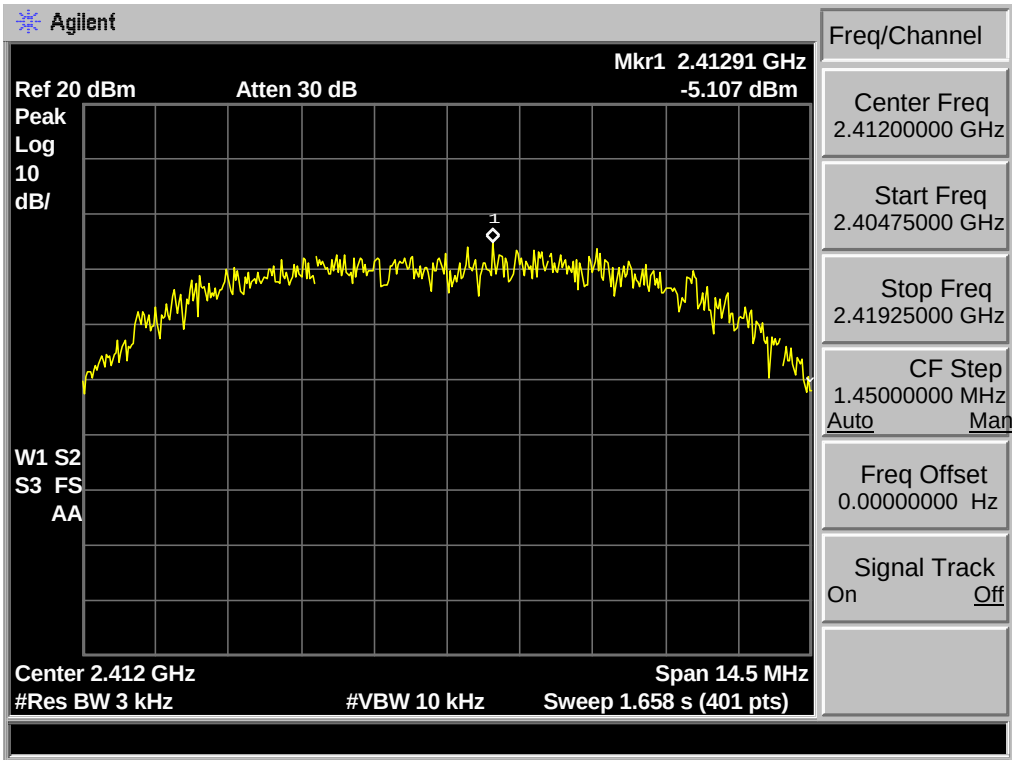
2, Follow the test procedure as described in KDB 558074
(1). Set analyzer center frequency to DTS channel center frequency.
(2). Set the span to 1.5 times the DTS bandwidth.
(3). Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
(4). Set the VBW ≥ 3 RBW.
(5). Detector = peak.
(6). Sweep time = auto couple.
(7). Trace mode = max hold.
(8). Allow trace to fully stabilize.
(9). Use the peak marker function to determine the maximum amplitude level.
(10). If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

## 8.3 Test Result

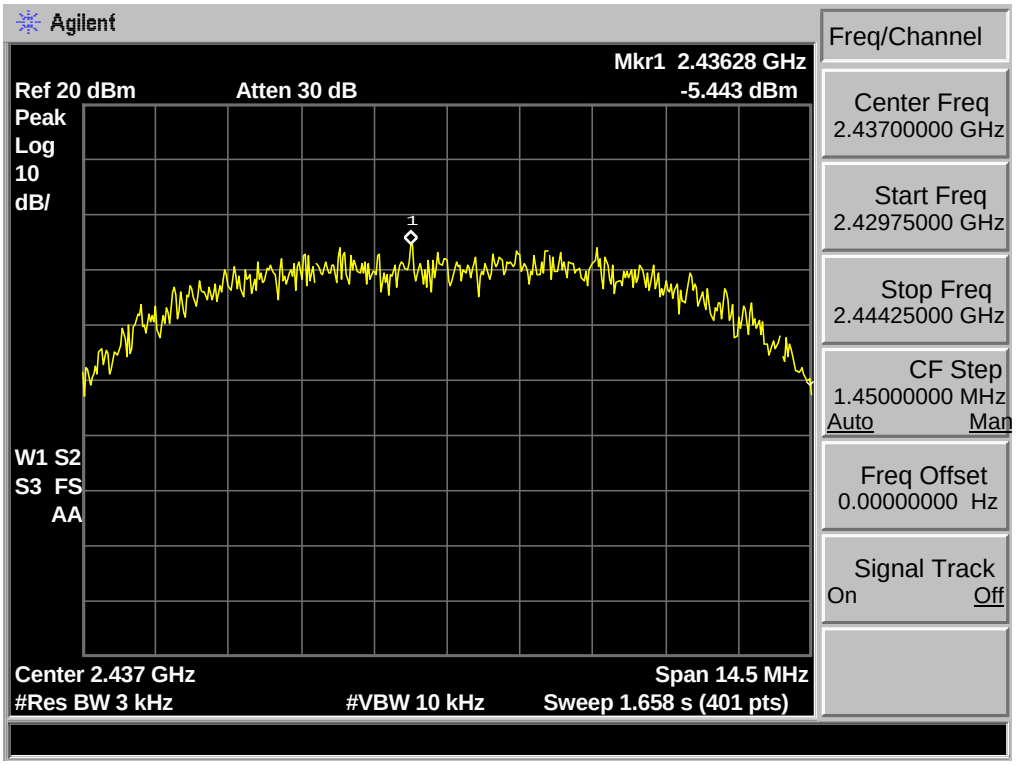
| EUT: LED TV | | | |
|---|---|---|---|
| M/N: WD32HBB101 | | | |
| Test date: 2018-04-10 | | Test site: 3m Chamber | Tested by: Seven |
| Pass | | | |
| Test Mode | CH | Power density（dBm/3kHz） | Lim it (dBm /3kHz) |
| IEEE 802.11 b | CH1 -5.107 | | 8 |
| | CH6 -5.443 | | 8 |
| | CH11 -5.241 | | 8 |
| IEEE 802.11 g | CH1 -12.840 | | 8 |
| | CH6 -12.690 | | 8 |
| | CH11 -1 | 1.900 | 8 |
| IEEE 802.11 n HT 20 | CH1 -12.1 | 10 | 8 |
| | CH6 -12.170 | | 8 |
| | CH11 -12.210 | | 8 |
| IEEE 802.11 n HT 40 | CH3 -15.930 | | 8 |
| | CH6 -15.790 | | 8 |
| | CH9 -15.370 | | 8 |
| Conclusion：PASS | | | |

## 8.4 Test Data

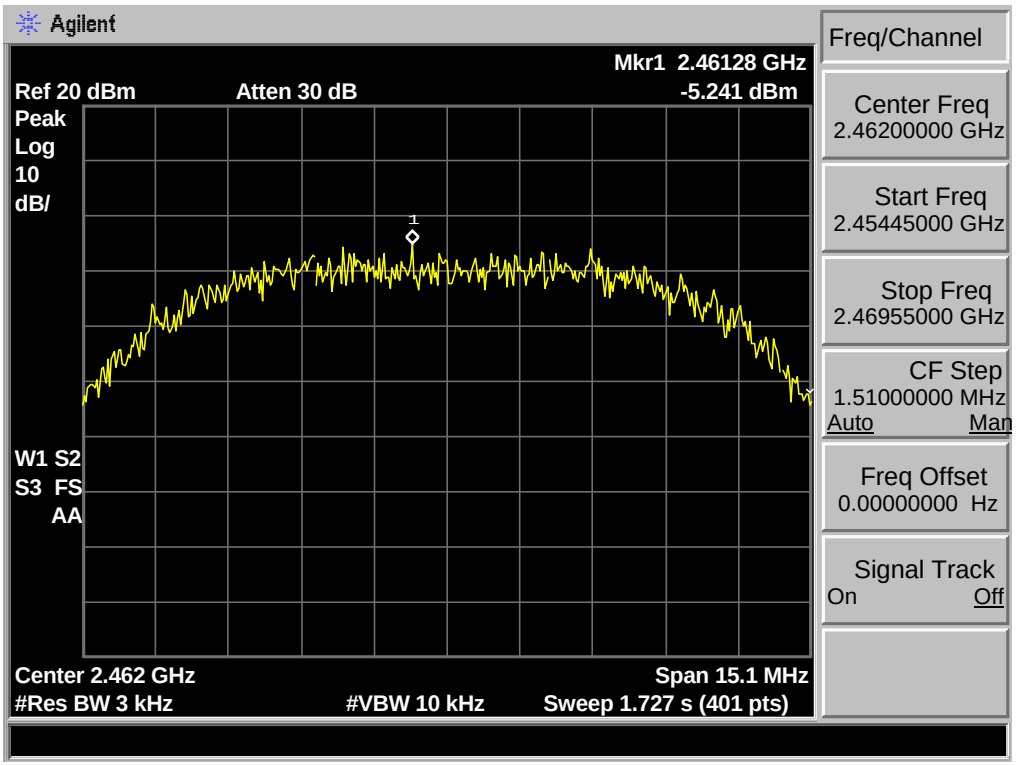
Test Mode: IEEE 802.11b 2412MHz



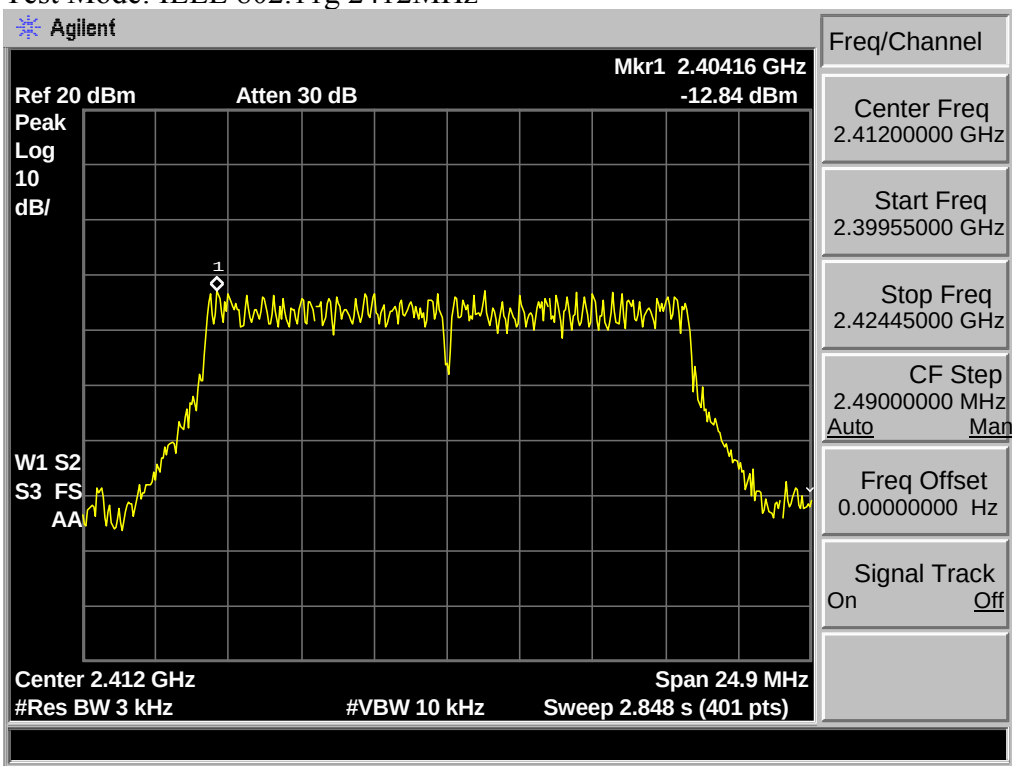

Test Mode: IEEE 802.11b 2437MHz



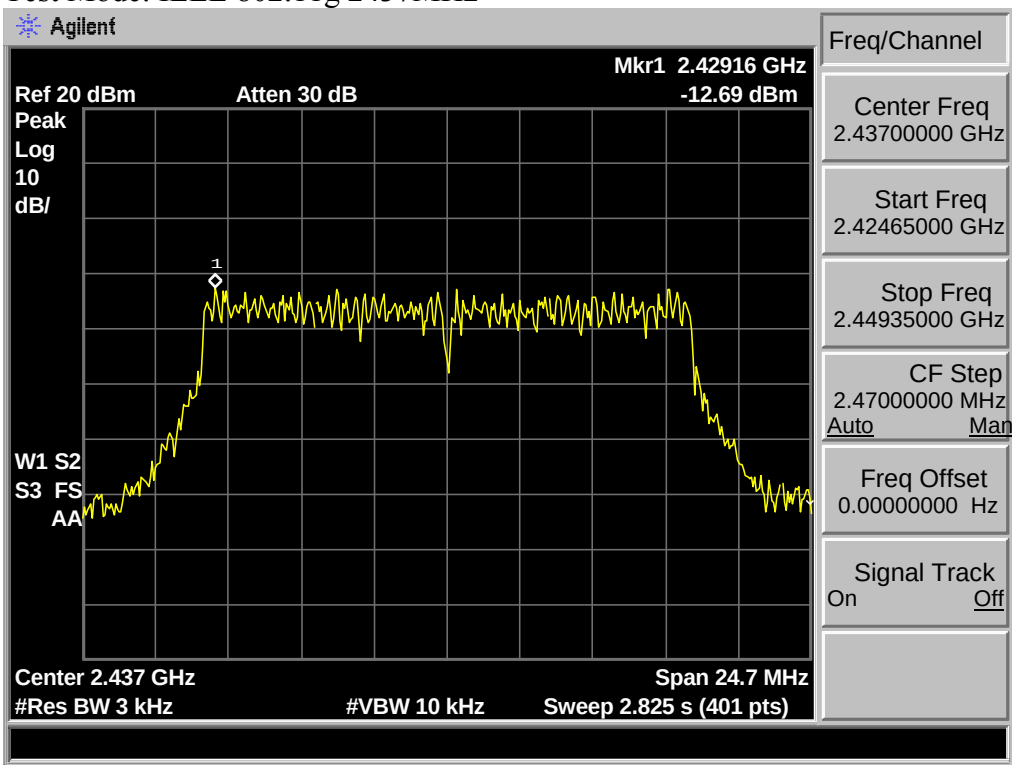
Test Mode: IEEE 802.11b 2462MHz



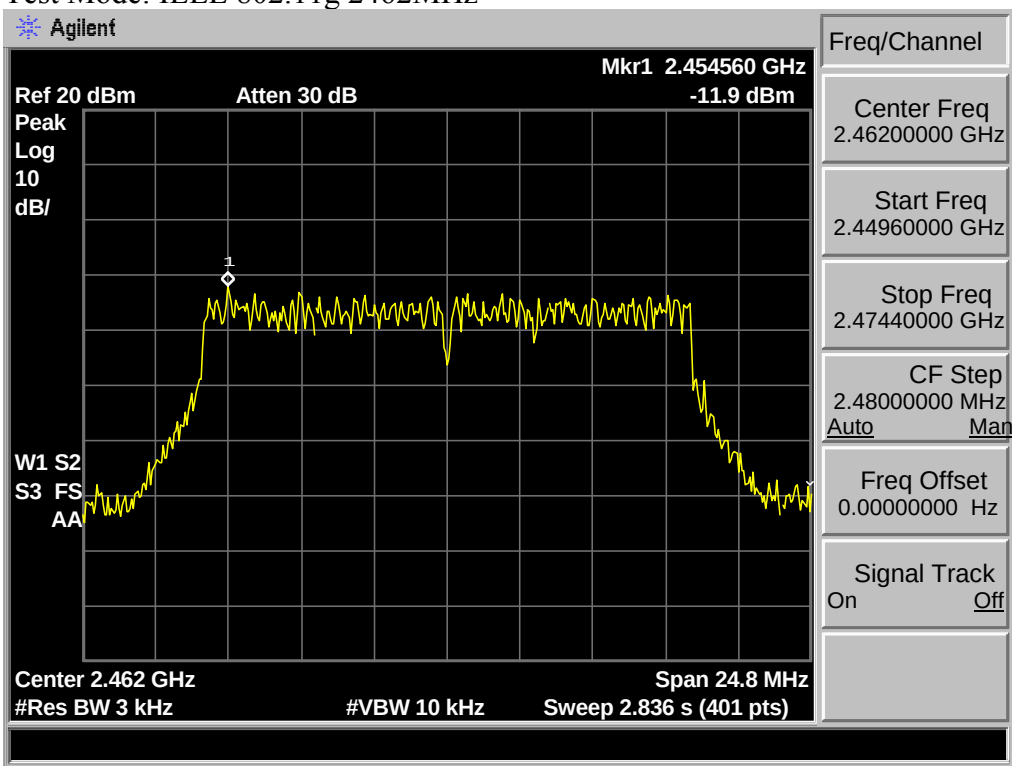
Test Mode: IEEE 802.11g 2412MHz



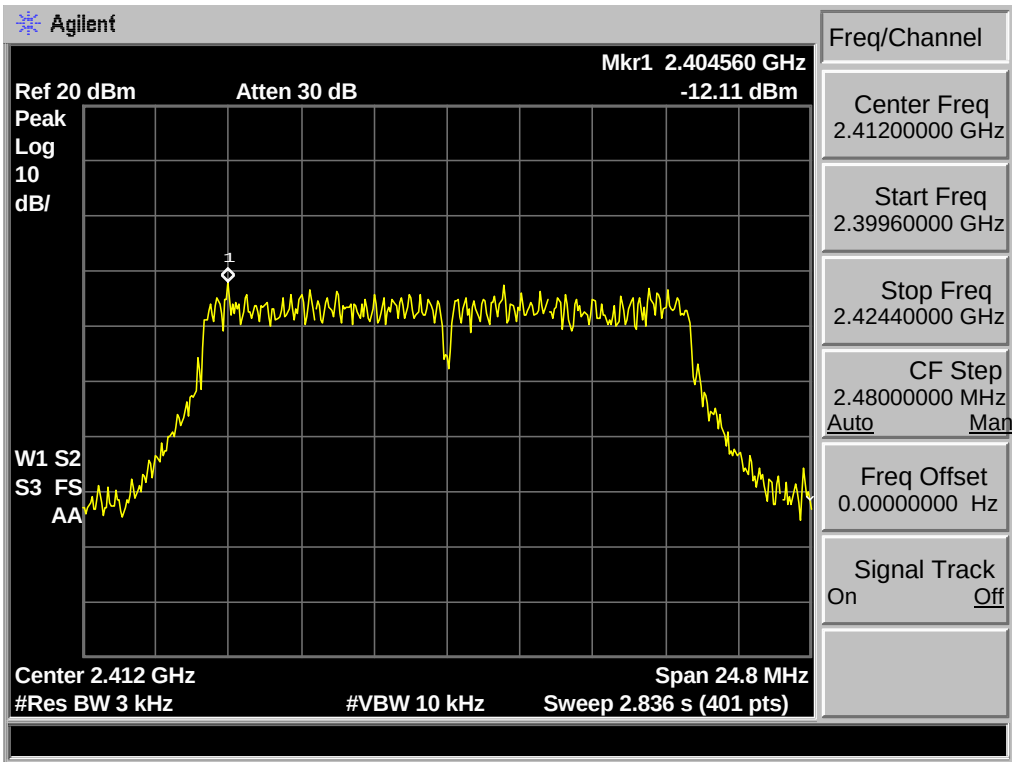

Test Mode: IEEE 802.11g 2437MHz



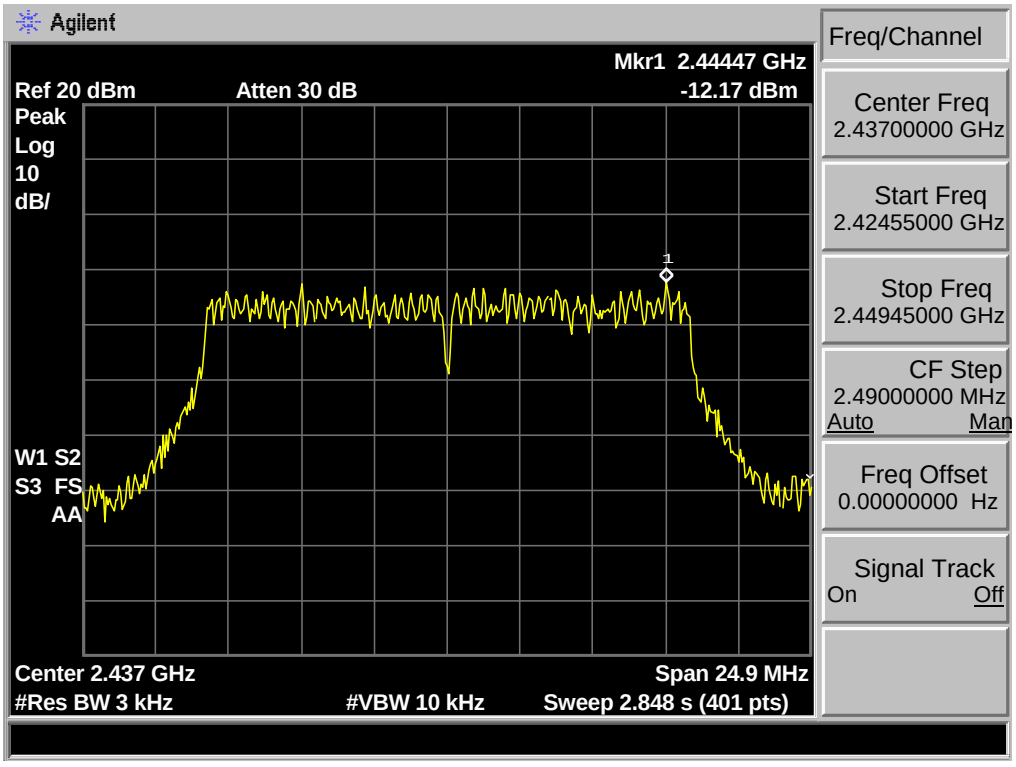
Test Mode: IEEE 802.11g 2462MHz



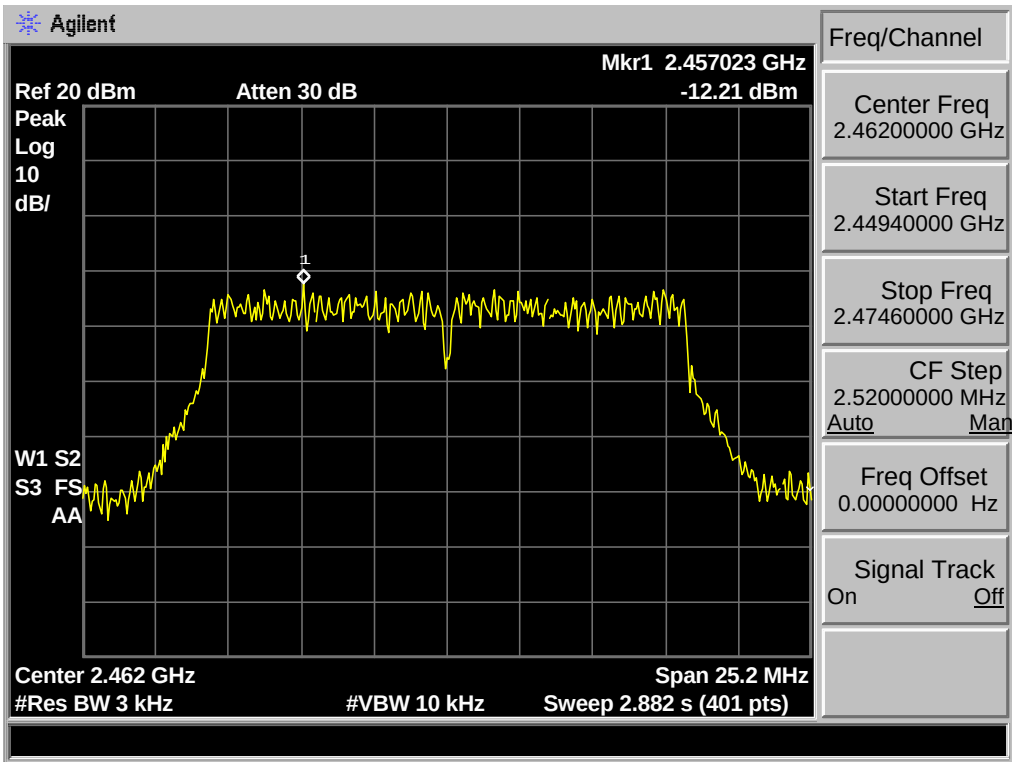
Test Mode: IEEE 802.11n HT20 2412MHz



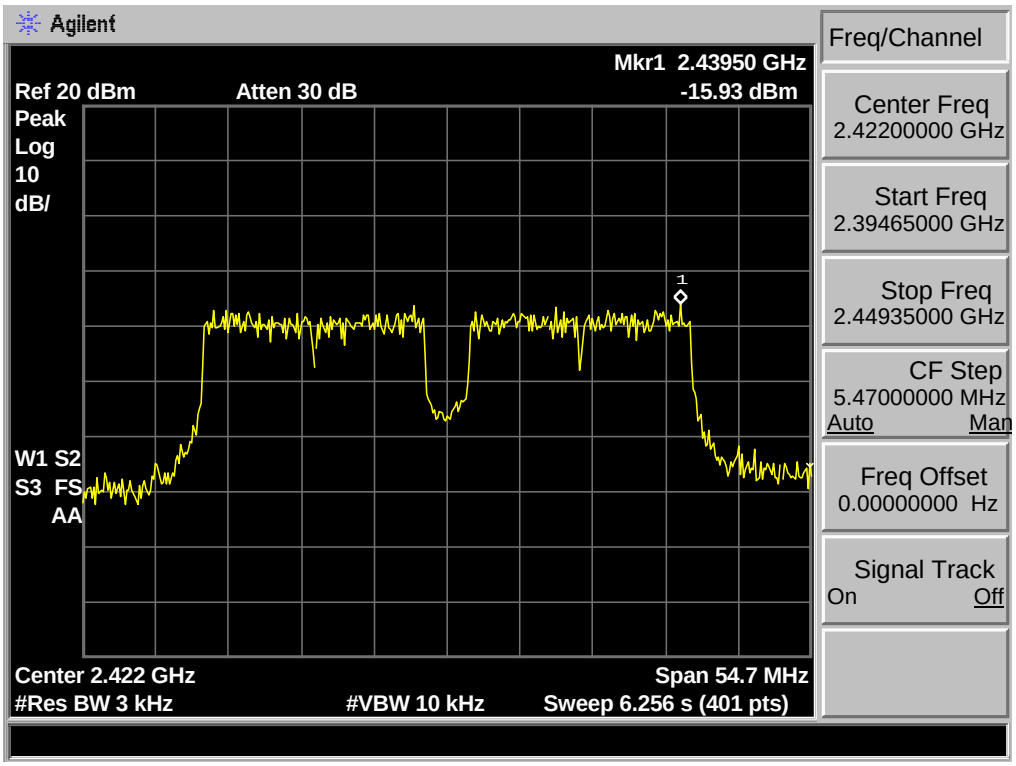

Test Mode: IEEE 802.11n HT20 2437MHz



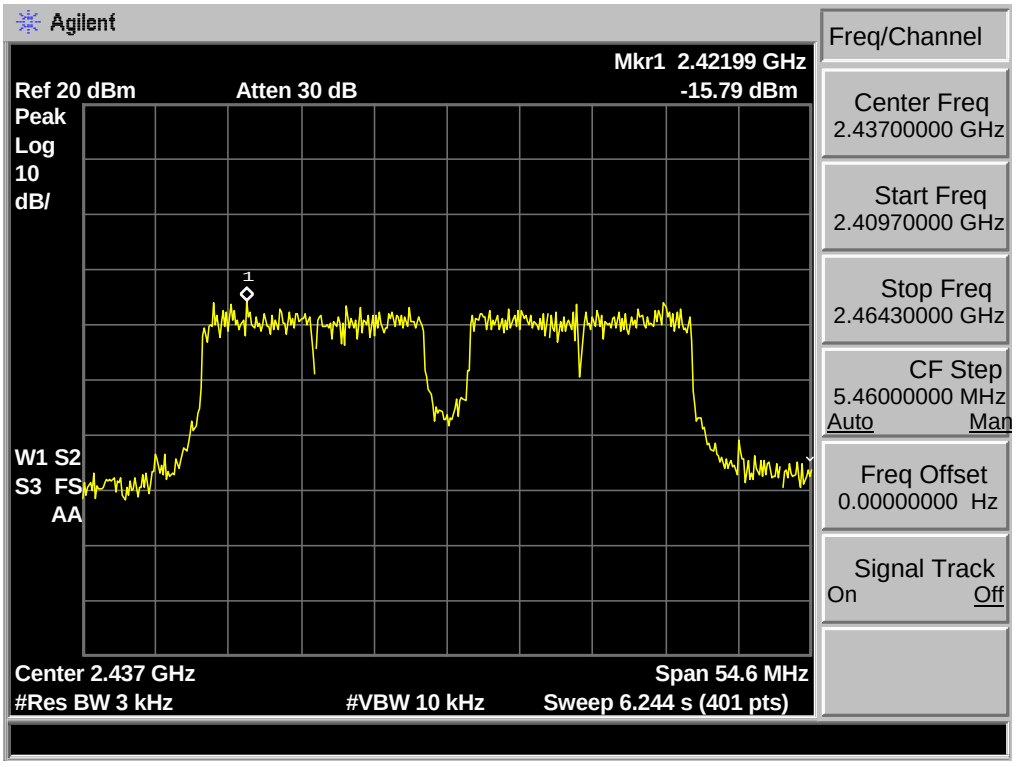
Test Mode: IEEE 802.11n HT20 2462MHz



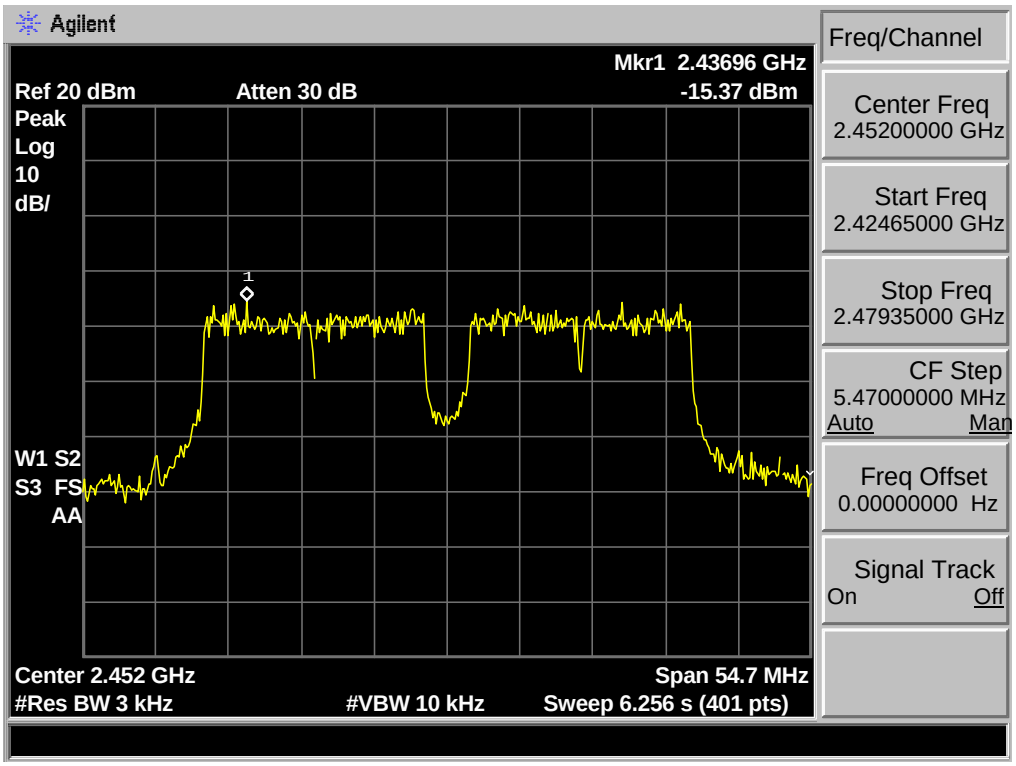
Test Mode: IEEE 802.11n HT40 2422MHz




Test Mode: IEEE 802.11n HT40 2437MHz



Test Mode: IEEE 802.11n HT40 2452MHz



# 9 ANTENNA REQUIREMENTS

## 9.1 Limit

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.

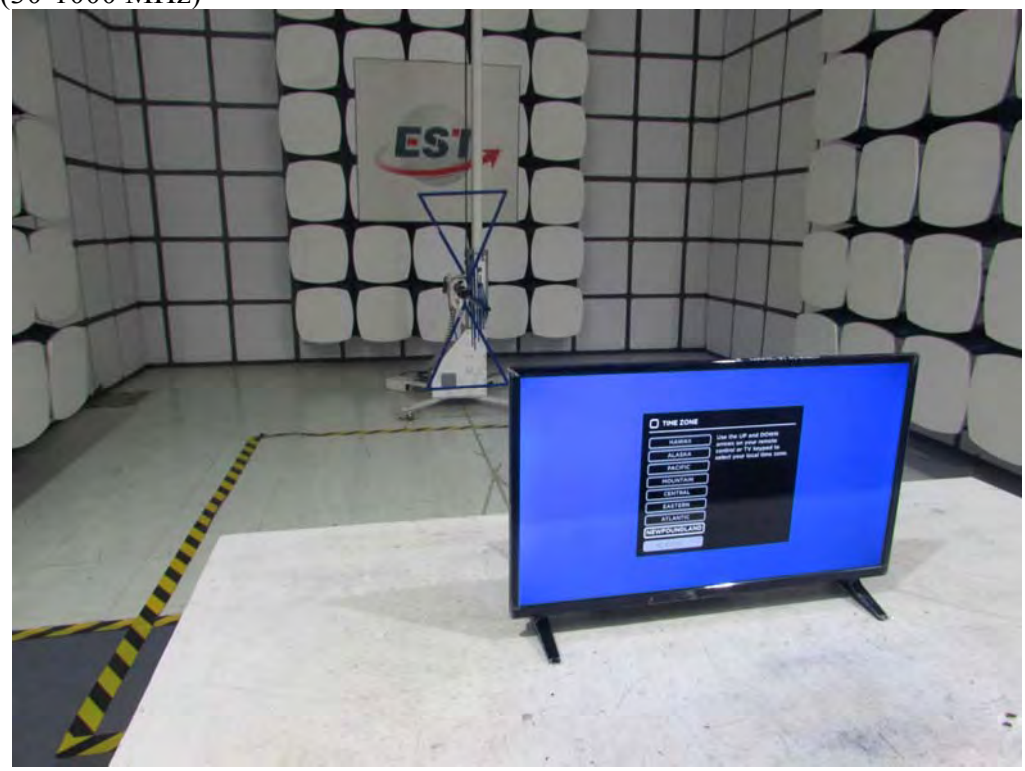
## 9.2 Result

The antennas used for this product are Internal antenna and 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 only 2 dBi.

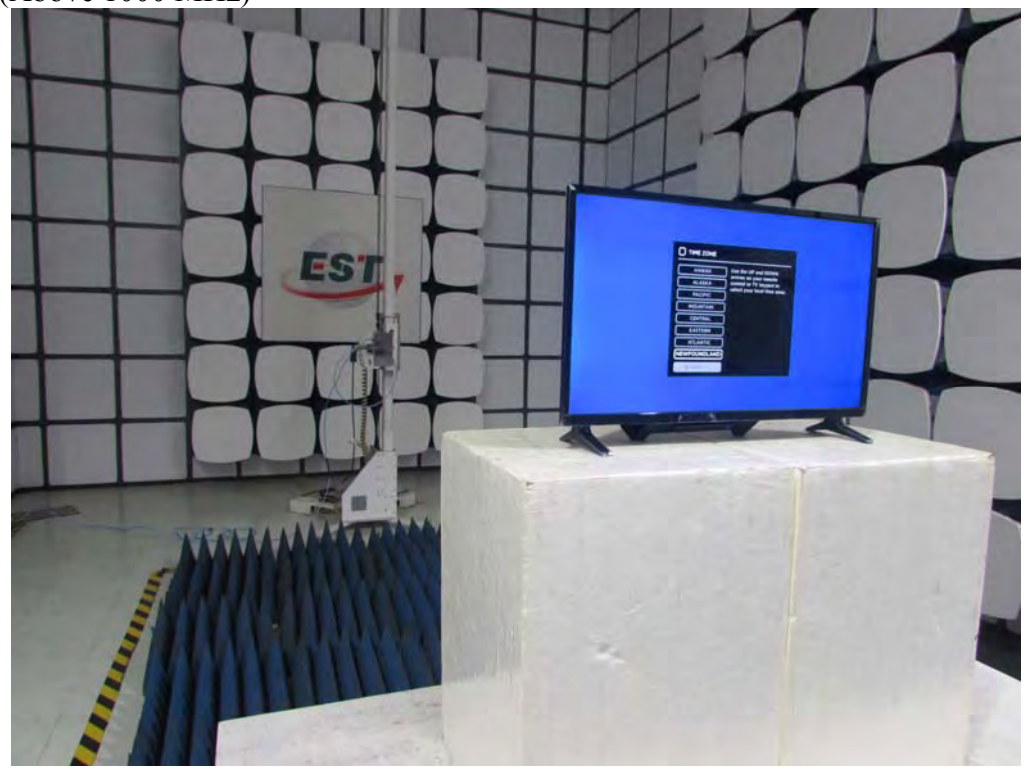
# 10 TEST SETUP PHOTO

Conducted Test

Radiated Test (30-1000 MHz)



Radiated Test (Above 1000 MHz)



# 11 PHOTOS OF EUT

**External Photos**

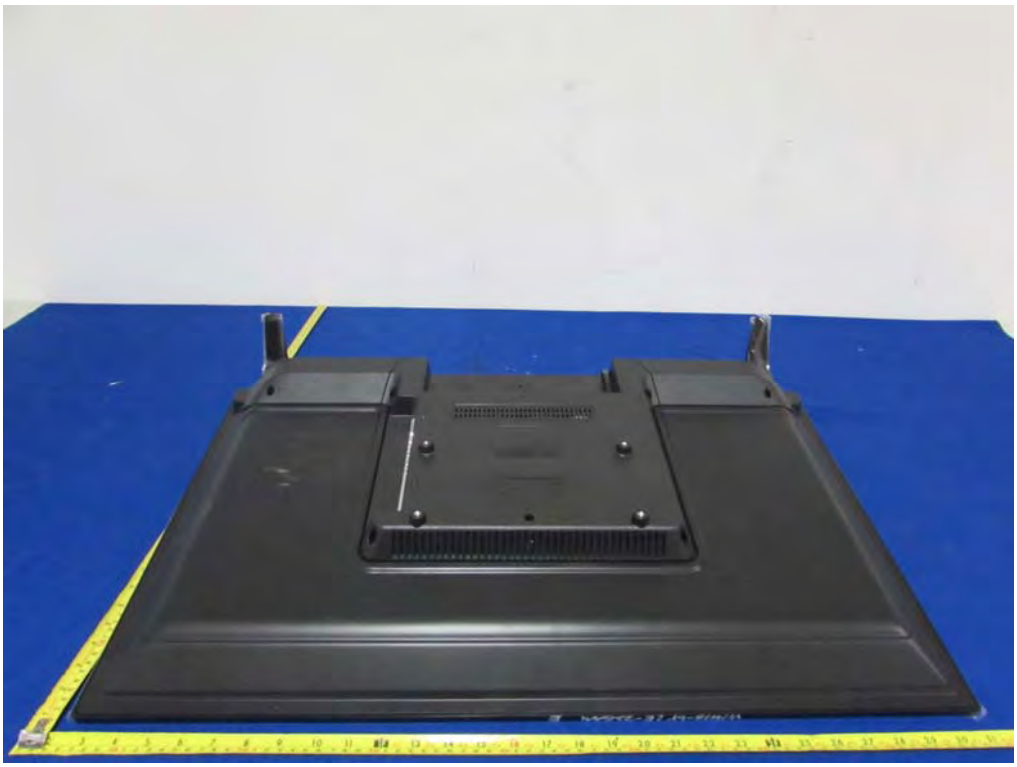
M/N: WD32HBB101

**External Photos**

M/N: WD32HBB101

**External Photos**

M/N: WD32HBB101



**External Photos**

M/N: WD32HBB101

**Internal Photos**

M/N: WD32HBB101

**Internal Photos**

M/N: WD32HBB101


**Internal Photos**

M/N: WD32HBB101