



TEST REPORT

No. I20N00568-RLAN

TCL Communication Ltd.

Whole Home WiFi Mesh System

MS1G

with

Hardware Version: 2.0

Software Version: MS1G_00_01_00_01

FCC ID: 2ACCJB123

Issued Date: 2020-06-30

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of SAICT.

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1. Summary of Test Report

1.1. Test Items

| | |
|---------------------|-----------------------------|
| Description | Whole Home WiFi Mesh System |
| Model Name | MS1G |
| Applicant's name | TCL Communication Ltd. |
| Manufacturer's Name | TCL Communication Ltd. |

1.2. Test Standards

FCC Part15-2019; ANSI C63.10-2013; KDB 789033-v02r01; KDB 662911-v02r01

1.3. Test Result

Pass

1.4. Testing Location

Address: Building G, Shenzhen International Innovation Center, No.1006 Shennan Road, Futian District, Shenzhen, Guangdong, P. R. China

1.5. Project data

| | |
|---------------------|------------|
| Testing Start Date: | 2020-04-21 |
| Testing End Date: | 2020-05-12 |

1.6. Signature

Lin Kanfeng
(Prepared this test report)

Tang Weisheng
(Reviewed this test report)

Zhang Bojun
(Approved this test report)



2. Client Information

2.1. Applicant Information

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2.2. Manufacturer Information

Company Name: TCL Communication Ltd.
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Contact Person: Gong Zhizhou
E-Mail: zhizhou.gong@tcl.com
Telephone: 0086-755-36611722
Fax: 0086-755-36612000-81722



3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

| | |
|----------------------|---|
| Description | Whole Home WiFi Mesh System |
| Model Name | MS1G |
| Brand Name | Alcatel |
| RLAN Frequency Range | ISM Bands: 5150MHz~5250MHz 5725MHz~5850MHz |
| RLAN Protocol | IEEE 802.11a/n20/n40/ac20/ac40/ac80 |
| Type of modulation | OFDM |
| Antenna Type | Integrated |
| Antenna Gain | Antenna 1 = 4.2 dBi; Antenna 2 = 4.2 dBi. |
| Power Supply | 12V DC |
| FCC ID | 2ACCJB123 |

Condition of EUT as received No abnormality in appearance

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of Shenzhen Academy of Information and Communications Technology.

3.2. Internal Identification of EUT

| EUT ID* | SN or IMEI | HW Version | SW Version | Receive Date |
|---------|--------------------|------------|------------------|--------------|
| EUT1 | E82520100103000323 | 2.0 | MS1G_00_01_00_01 | 2020-04-20 |
| EUT2 | E82520100103000078 | 2.0 | MS1G_00_01_00_01 | 2020-04-20 |

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE

| AE ID* | Description | AE ID* |
|--------------|--|--------|
| AE1 | Switching Power Supply | / |
| AE2 | Switching Adapter | / |
| AE1 | | |
| Model | S012CDU1200100 | |
| Manufacturer | Ten Pao Industrial Co., Ltd | |
| AE2 | | |
| Model | BN073-A12012U | |
| Manufacturer | SHENZHEN HEWEISHUN NETWORK TECHNOLOGY CO., LTD | |

*AE ID: is used to identify the test sample in the lab internally.

3.4. General Description

The Equipment under Test (EUT) is a model of Whole Home WiFi Mesh System with integrated antenna.

It consists of normal options: Switching Power Supply and Switching Adapter.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the client.



4. REFERENCE DOCUMENTS

4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

| Reference | Title | Version |
|------------------|--|----------------|
| FCC Part15 | FCC CFR 47,Part 15,Subpart C FCC CFR 47,Part 15,Subpart E | 2019 |
| ANSI C63.10 | American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices | 2013 |
| KDB 789033 | GUIDELINES FOR COMPLIANCE TESTING OF UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII) DEVICES PART 15, SUBPART E | v02r01 |
| KDB 662911 | Emissions Testing of Transmitters with Multiple Outputs in the Same Band | v02r01 |



5. Test Results

5.1. Testing Environment

Normal Temperature: 15~35°C

Relative Humidity: 20~75%

5.2. Test Results

| No. | Test cases | Sub-clause of Part15E | Verdict |
|-----|----------------------------------|-----------------------|---------|
| 1 | Maximum Output Power | 15.407 | P |
| 2 | Power Spectral Density | 15.407 | P |
| 3 | Occupied 26dB Bandwidth | 15.403 | P |
| 4 | Occupied 6dB Bandwidth | 15.407 | P |
| 5 | 99% Occupied Bandwidth | 15.403 | P |
| 6 | Band Edge Compliance | 15.209 | P |
| 7 | Transmitter Spurious Emission | 15.407, 15.205 | P |
| 8 | AC Power Line Conducted Emission | 15.107, 15.207 | P |
| 9 | Frequency Stability | 15.407 | P |
| 10 | Transmit Power Control | 15.407 | NA |

See **ANNEX A** for details.

Note: According to the definition of the application description, the device will automatically discontinue transmission in case of either absence of information to transmit or operational failure.

5.3. Statements

SAICT has evaluated the test cases requested by the applicant/matrix as listed in section 5.2 of this report, for the EUT specified in section 3, according to the standards or reference documents listed in section 4.2.

6. Test Equipments Utilized

Conducted test system

| No. | Equipment | Model | Serial Number | Manufacturer | Calibration Date | Calibration Period |
|-----|------------------------|----------|-----------------|-----------------|------------------|--------------------|
| 1 | Vector Signal Analyzer | FSV40 | 100903 | Rohde & Schwarz | 2021-01-15 | 1 year |
| 2 | Power Sensor | U2021XA | MY55430013 | Agilent | 2021-01-15 | 1 year |
| 3 | Data Acquisition | U2531A | TW55443507 | Agilent | / | / |
| 4 | Climate chamber | SU-242 | 93008165 | ESPEC | 2021-03-25 | 1 year |
| 5 | DC Power Supply | ZUP60-14 | 6MY-847Z13-0001 | TDK-Lambda | 2021-02-26 | 1 year |

Radiated emission test system

| No. | Equipment | Model | Serial Number | Manufacturer | Calibration Date | Calibration Period |
|-----|-------------------|-----------------------|---------------|--------------|------------------|--------------------|
| 1 | LISN | ESH2-Z5 | 100196 | R&S | 2021-01-02 | 1 year |
| 2 | Test Receiver | ESCI | 100701 | R&S | 2020-08-06 | 1 year |
| 3 | Loop Antenna | HLA6120 | 35779 | TESEQ | 2022-05-01 | 3 year |
| 4 | BiLog Antenna | VULB9163 | 9163 329 | Schwarzbeck | 2021-02-16 | 3 year |
| 5 | Horn Antenna | 3117 | 00066585 | ETS-Lindgren | 2022-03-04 | 3 year |
| 6 | Test Receiver | ESR7 | 101675 | R&S | 2020-07-18 | 1 year |
| 7 | Spectrum Analyzer | FSP 40 | 100378 | R&S | 2020-12-12 | 1 year |
| 8 | Chamber | FACT5-2.0 | 4166 | ETS-Lindgren | 2021-05-12 | 3 year |
| 9 | Antenna | QSH-SL-1 8-26-S-20 | 17013 | Q-par | 2021-01-14 | 3 year |
| 10 | Antenna | QSH-SL-2 6-40-K-20 | 17014 | Q-par | 2021-01-10 | 3 year |

Test software

| No. | Equipment | Manufacturer | Version |
|-----|------------------|-----------------|----------|
| 1 | TechMgr Software | CAICT | 2.1.1 |
| 2 | EMC32 | Rohde & Schwarz | 8.53.0 |
| 3 | EMC32 | Rohde & Schwarz | 10.01.00 |

EUT is engineering software provided by the customer to control the transmitting signal. The EUT was programmed to be in continuously transmitting mode.

Anechoic chamber

Fully anechoic chamber by ETS-Lindgren

7. Laboratory Environment

Semi-anechoic chambe

| | |
|-----------------------------------|--|
| Temperature | Min. = 15 °C, Max. = 35 °C |
| Relative humidity | Min. = 15 %, Max. = 75 % |
| Shielding effectiveness | 0.014MHz-1MHz> 60 dB; 1MHz-18000MHz>90 dB |
| Electrical insulation | > 2MΩ |
| Ground system resistance | < 4 Ω |
| Normalised site attenuation (NSA) | < ±4 dB, 3 m distance, from 30 to 1000 MHz |

Shielded room

| | |
|--------------------------|--|
| Temperature | Min. = 15 °C, Max. = 35 °C |
| Relative humidity | Min. = 20 %, Max. = 75 % |
| Shielding effectiveness | 0.014MHz-1MHz> 60 dB; 1MHz-1000MHz>90 dB |
| Electrical insulation | > 2MΩ |
| Ground system resistance | < 4 Ω |

Fully-anechoic chamber

| | |
|------------------------------------|---|
| Temperature | Min. = 15 °C, Max. = 35 °C |
| Relative humidity | Min. = 15 %, Max. = 75 % |
| Shielding effectiveness | 0.014MHz-1MHz> 60 dB; 1MHz-18000MHz>90 dB |
| Electrical insulation | > 2MΩ |
| Ground system resistance | < 4 Ω |
| Voltage Standing Wave Ratio (VSWR) | ≤ 6 dB, from 1 to 18 GHz, 3 m distance |
| Uniformity of field strength | Between 0 and 6 dB, from 80 to 6000 MHz |

8. Measurement Uncertainty

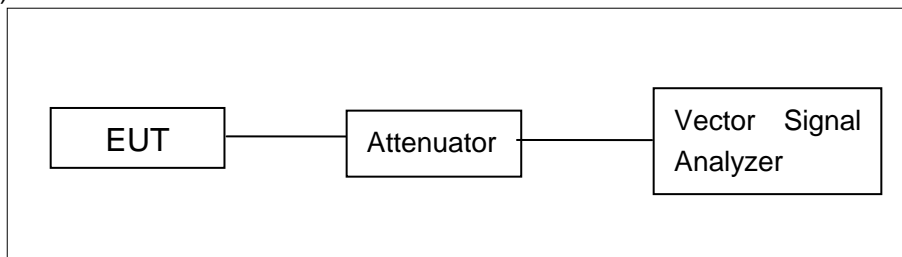
| Test Name | Uncertainty ($k=2$) | |
|--|--|--------|
| 1. RF Output Power - Conducted | 1.32dB | |
| 2. Power Spectral Density - Conducted | 2.32dB | |
| 3. Occupied channel bandwidth - Conducted | 66Hz | |
| 4. Transmitter Spurious Emission - Conducted | $30\text{MHz} \leq f \leq 1\text{GHz}$ | 1.41dB |
| | $1\text{GHz} \leq f \leq 7\text{GHz}$ | 1.92dB |
| | $7\text{GHz} \leq f \leq 13\text{GHz}$ | 2.31dB |
| | $13\text{GHz} \leq f \leq 26\text{GHz}$ | 2.61dB |
| 5. Transmitter Spurious Emission - Radiated | $9\text{kHz} \leq f \leq 30\text{MHz}$ | 1.70dB |
| | $30\text{MHz} \leq f \leq 1\text{GHz}$ | 4.90dB |
| | $1\text{GHz} \leq f \leq 18\text{GHz}$ | 4.60dB |
| | $18\text{GHz} \leq f \leq 40\text{GHz}$ | 4.10dB |
| 6. AC Power line Conducted Emission | $150\text{kHz} \leq f \leq 30\text{MHz}$ | 3.00dB |

ANNEX A: Detailed Test Results

A.1. Measurement Method

Conducted Measurements

- 1). Connect the EUT to the test system correctly.
- 2). Set the EUT to the required work mode.
- 3). Set the EUT to the required channel.
- 4). Set the spectrum analyzer to start measurement.
- 5). Record the values.

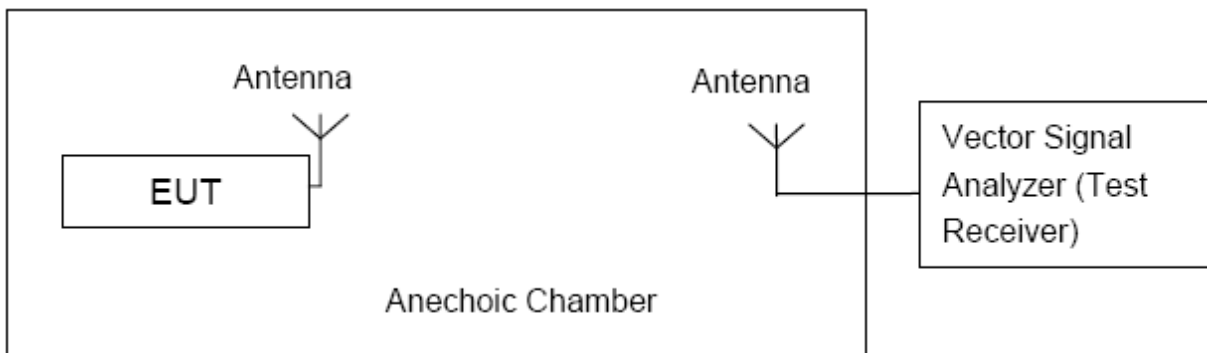


Radiated Emission Measurements

In the case of radiated emission, the used settings are as follows:

Sweep frequency from 30 MHz to 1 GHz, RBW = 100 KHz, VBW = 300 KHz;

Sweep frequency from 1 GHz to 26 GHz, RBW = 1 MHz, VBW = 10 Hz;



The measurement is made according to KDB 789033.

The radiated emission test is performed in semi-anechoic chamber. The distance from the EUT to the reference point of measurement antenna is 3m. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept. During the test, the turntable is rotated 360° and the measurement antenna is moved from 1m to 4m to get the maximization result.

A.2. Maximum Output Power

Measurement Limit and Method:

| Standard | Frequency (MHz) | Limit (dBm) |
|---------------------|-----------------|-------------|
| FCC CRF Part 15.407 | 5150MHz~5250MHz | 24 |
| | 5725MHz~5850MHz | 30 |

Limit use the less value, and B is the 26dB bandwidth.

Note: The device support beamforming mode. According to KDB 662911, Directional gain = $G_{ANT} + 10 \log(N_{ANT})$ dBi = $4.2 + 10 \log(2) = 7.2$ dBi. The power limit was reduce 1.2dBi.

Measurement of method: See ANSI C63.10-2013-Clause 12.3.3.2

Method PM-G is a measurement using a gated RF average power meter.

Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Because the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Measurement Results:

| U-NII Band | Mode | Channel | Frequency (MHz) | Output Power (dBm) | | |
|----------------------|----------------------|---------|-----------------|--------------------|-------|-------|
| | | | | Ant 1 | Ant 2 | |
| 5.2GHz Band (UNII-1) | 802.11a | CH 36 | 5180 | 12.90 | 10.65 | |
| | | CH 40 | 5200 | 12.87 | 10.91 | |
| | | CH 44 | 5220 | 12.98 | 11.18 | |
| | | CH 48 | 5240 | 13.35 | 11.71 | |
| | 802.11n-HT20 | CH 36 | 5180 | 12.31 | 10.49 | |
| | | CH 40 | 5200 | 12.58 | 10.82 | |
| | | CH 44 | 5220 | 12.90 | 11.14 | |
| | | CH 48 | 5240 | 13.26 | 11.65 | |
| | 802.11n-HT40 | CH 38 | 5190 | 11.89 | 10.09 | |
| | | CH 46 | 5230 | 12.55 | 10.74 | |
| | 802.11ac-VHT20 | CH 36 | 5180 | 12.45 | 10.08 | |
| | | CH 40 | 5200 | 12.68 | 10.33 | |
| | | CH 44 | 5220 | 12.87 | 10.72 | |
| | | CH 48 | 5240 | 13.22 | 11.16 | |
| | 802.11ac-VHT40 | CH 38 | 5190 | 12.18 | 10.37 | |
| | | CH 46 | 5230 | 12.70 | 10.98 | |
| | 802.11ac-VHT80 | CH 42 | 5210 | 12.17 | 10.05 | |
| | 5.8GHz Band (UNII-3) | 802.11a | CH 149 | 5745 | 13.68 | 11.38 |
| | | | CH 157 | 5785 | 13.56 | 11.32 |
| | | | CH 165 | 5825 | 13.94 | 11.85 |
| 802.11n-HT20 | | CH 149 | 5745 | 13.56 | 11.25 | |
| | | CH 157 | 5785 | 13.44 | 11.18 | |
| CH 165 | 5825 | 13.88 | 11.76 | | | |

| | | | | |
|----------------|--------|------|-------|-------|
| 802.11n-HT40 | CH 151 | 5755 | 13.36 | 11.30 |
| | CH 159 | 5795 | 13.02 | 11.04 |
| 802.11ac-VHT20 | CH 149 | 5745 | 13.51 | 11.27 |
| | CH 157 | 5785 | 13.45 | 11.20 |
| | CH 165 | 5825 | 13.81 | 11.53 |
| 802.11ac-VHT40 | CH 151 | 5755 | 13.45 | 11.25 |
| | CH 159 | 5795 | 13.11 | 11.40 |
| 802.11ac-VHT80 | CH 155 | 5775 | 13.25 | 11.05 |

MIMO:

| U-NII Band | Mode | Channel | Frequency (MHz) | Output Power (dBm) | | |
|----------------------|----------------|---------|-----------------|--------------------|-------|-------|
| | | | | Ant A | Ant B | Sum |
| 5.2GHz Band (UNII-1) | 802.11n-HT20 | CH 36 | 5180 | 12.10 | 9.68 | 14.07 |
| | | CH 40 | 5200 | 12.26 | 9.98 | 14.28 |
| | | CH 44 | 5220 | 12.53 | 10.33 | 14.58 |
| | | CH 48 | 5240 | 12.85 | 10.72 | 14.92 |
| | 802.11n-HT40 | CH 38 | 5190 | 11.68 | 9.77 | 13.84 |
| | | CH 46 | 5230 | 12.27 | 10.56 | 14.51 |
| | 802.11ac-VHT20 | CH 36 | 5180 | 12.12 | 9.68 | 14.08 |
| | | CH 40 | 5200 | 12.37 | 9.81 | 14.29 |
| | | CH 44 | 5220 | 12.48 | 10.17 | 14.49 |
| | | CH 48 | 5240 | 12.75 | 10.55 | 14.80 |
| | 802.11ac-VHT40 | CH 38 | 5190 | 11.92 | 10.03 | 14.09 |
| | | CH 46 | 5230 | 12.47 | 10.57 | 14.63 |
| 802.11ac-VHT80 | CH 42 | 5210 | 11.90 | 9.80 | 13.99 | |
| 5.8GHz Band (UNII-3) | 802.11n-HT20 | CH 149 | 5745 | 13.16 | 10.73 | 15.12 |
| | | CH 157 | 5785 | 13.04 | 10.66 | 15.02 |
| | | CH 165 | 5825 | 13.40 | 11.15 | 15.43 |
| | 802.11n-HT40 | CH 151 | 5755 | 13.08 | 11.12 | 15.22 |
| | | CH 159 | 5795 | 12.76 | 10.78 | 14.89 |
| | 802.11ac-VHT20 | CH 149 | 5745 | 12.97 | 11.03 | 15.12 |
| | | CH 157 | 5785 | 12.82 | 10.86 | 14.96 |
| | | CH 165 | 5825 | 13.23 | 11.25 | 15.36 |
| | 802.11ac-VHT40 | CH 151 | 5755 | 13.24 | 11.18 | 15.34 |
| | | CH 159 | 5795 | 12.86 | 10.89 | 15.00 |
| 802.11ac-VHT80 | CH 155 | 5775 | 13.12 | 10.85 | 15.14 | |

Conclusion: PASS
Note:

Worst-case data rates as provided by the client were: 6Mbps (802.11a), MCS0 (802.11n), MCS0 (802.11ac). 802.11a, 802.11ac-VHT40 and 802.11ac-VHT80 modes are selected as the worst case. Antenna 1 is selected as the worst condition (SISO). The following cases and test graphs are performed with this condition. The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

A.3. Peak Power Spectral Density

Measurement Limit:

| Standard | Frequency (MHz) | Limit |
|---------------------|-----------------|--------------|
| FCC CRF Part 15.407 | 5150MHz~5250MHz | 11dBm/MHz |
| | 5725MHz~5850MHz | 30dBm/500KHz |

The PPSD measurement method SA-1 is made according to KDB 789033, KDB 662911.

Measurement Results:

| U-NII Band | Mode | Channel | Frequency (MHz) | Power Spectral Density (dBm/MHz) |
|----------------------|----------------|---------|-----------------|----------------------------------|
| 5.2GHz Band (UNII-1) | 802.11a | CH 36 | 5180 | 8.14 |
| | | CH 40 | 5200 | 8.27 |
| | | CH 44 | 5220 | 8.48 |
| | | CH 48 | 5240 | 9.03 |
| | 802.11ac-VHT40 | CH 38 | 5190 | 5.78 |
| | | CH 46 | 5230 | 6.56 |
| | 802.11ac-VHT80 | CH 42 | 5210 | 3.73 |

| U-NII Band | Mode | Channel | Frequency (MHz) | Power Spectral Density (dBm/500kHz) |
|----------------------|----------------|---------|-----------------|-------------------------------------|
| 5.8GHz Band (UNII-3) | 802.11a | CH 149 | 5745 | 7.40 |
| | | CH 157 | 5785 | 7.94 |
| | | CH 165 | 5825 | 7.91 |
| | 802.11ac-VHT40 | CH 151 | 5755 | 4.93 |
| | | CH 159 | 5795 | 5.36 |
| | 802.11ac-VHT80 | CH 155 | 5775 | 4.01 |

Conclusion: PASS

A.4. Occupied 26dB Bandwidth

Measurement Limit:

| Standard | Limit (MHz) |
|------------------------|-------------|
| FCC 47 CFR Part 15.403 | / |

The measurement is made according to KDB 789033, KDB 662911.

Measurement Result:

| Mode | Channel | Occupied 26dB Bandwidth (MHz) | | Conclusion |
|----------------|----------------|-------------------------------|-------|------------|
| 802.11a | 5180MHz (Ch36) | Fig.1 | 21.55 | P |
| | 5200MHz (Ch40) | Fig.2 | 21.65 | P |
| | 5220MHz (Ch44) | Fig.3 | 21.45 | P |
| | 5240MHz (Ch48) | Fig.4 | 21.45 | P |
| 802.11ac-VHT40 | 5190MHz (Ch38) | Fig.5 | 42.40 | P |
| | 5230MHz (Ch46) | Fig.6 | 42.40 | P |
| 802.11ac VHT80 | 5210MHz (Ch42) | Fig.7 | 82.40 | P |

Conclusion: PASS

Test graphs as below:

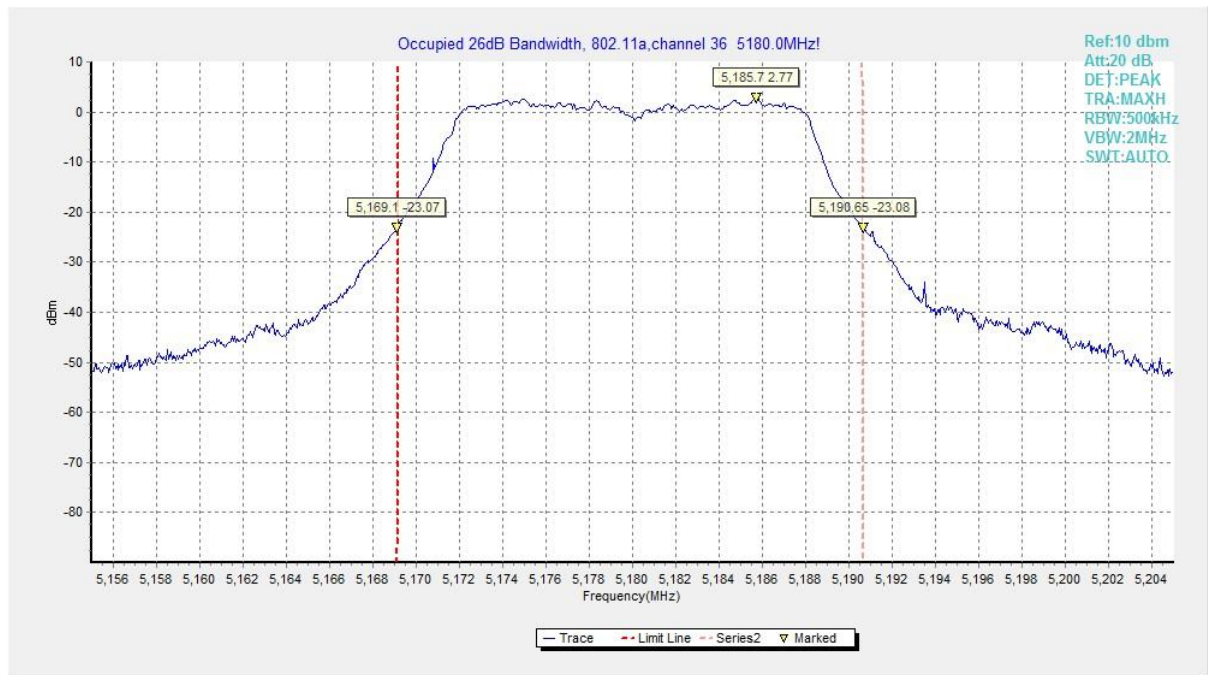


Fig. 1 Occupied 26dB Bandwidth (802.11a, 5180MHz)

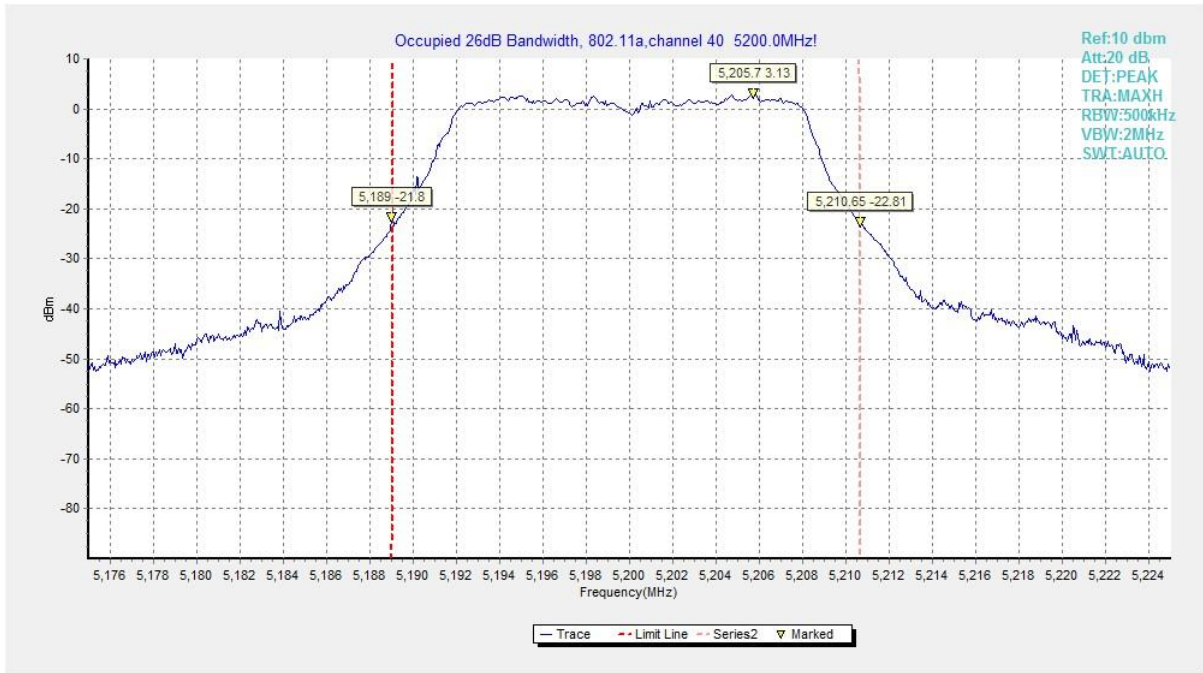


Fig. 2 Occupied 26dB Bandwidth (802.11a, 5200MHz)



Fig. 3 Occupied 26dB Bandwidth (802.11a, 5220MHz)

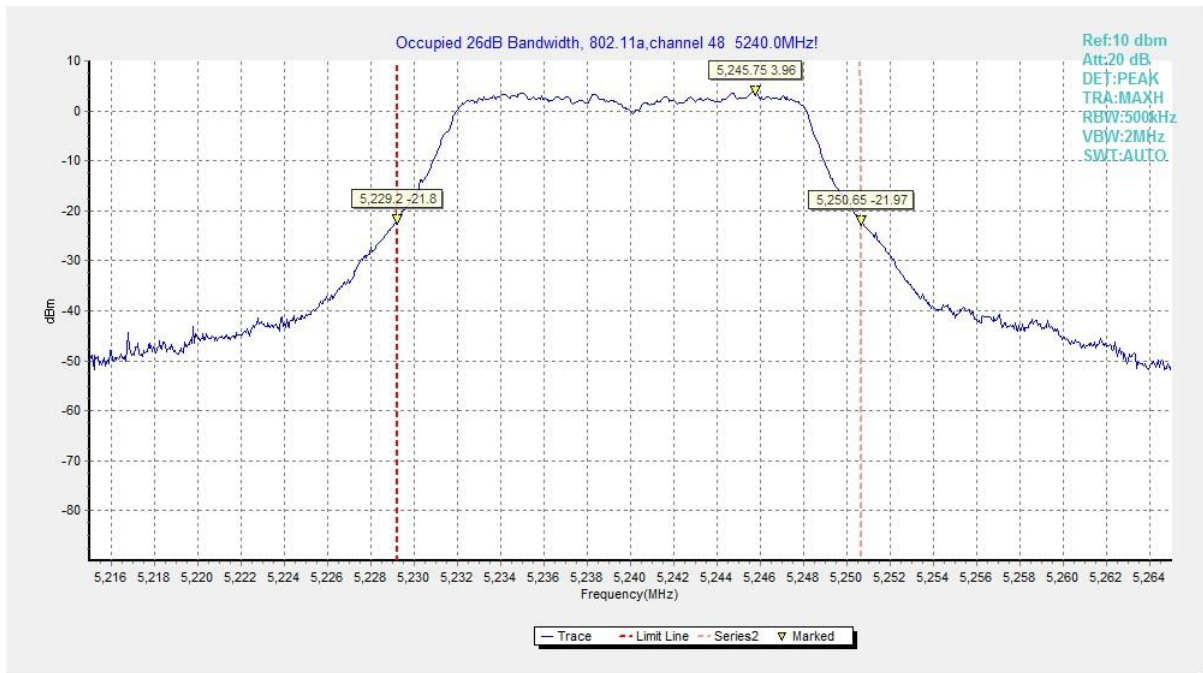


Fig. 4 Occupied 26dB Bandwidth (802.11a, 5240MHz)

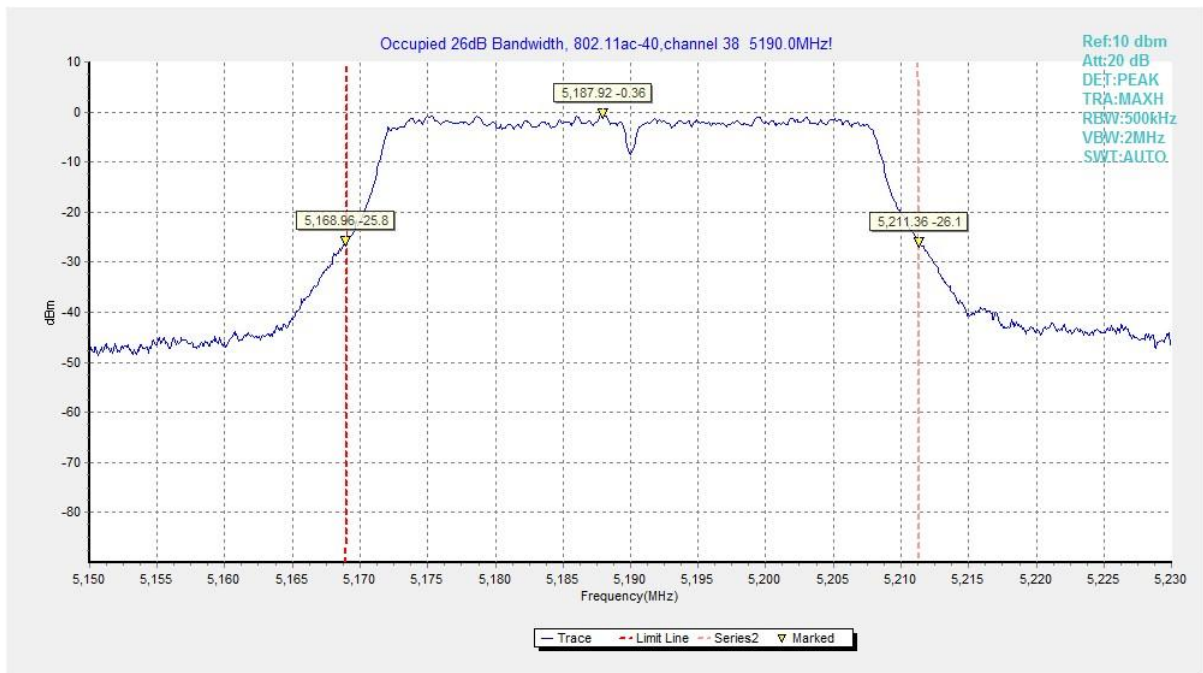


Fig. 5 Occupied 26dB Bandwidth (802.11ac-VHT40, 5190MHz)

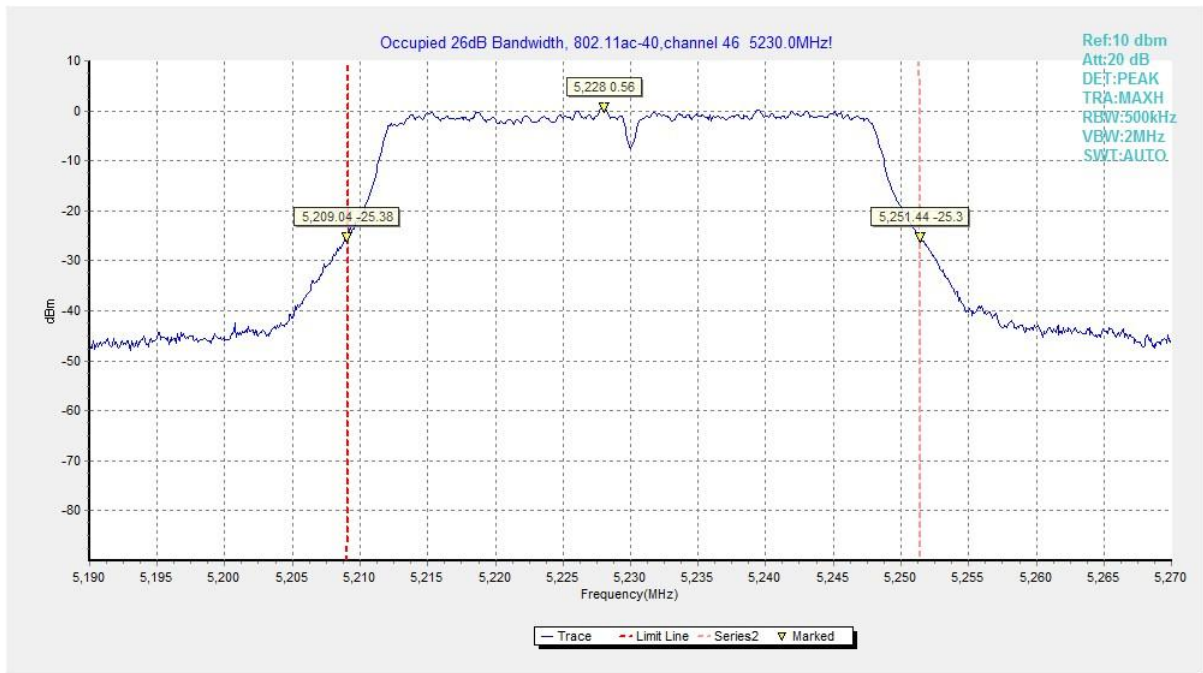


Fig. 6 Occupied 26dB Bandwidth (802.11ac-VHT40, 5230MHz)

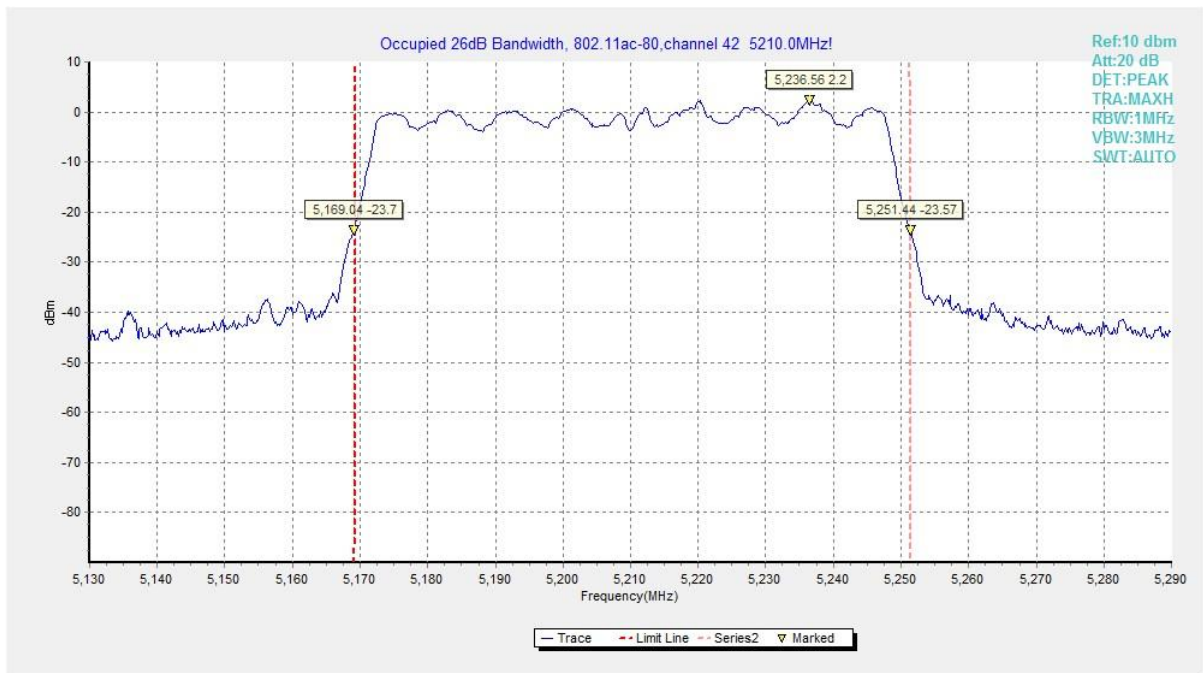


Fig. 7 Occupied 26dB Bandwidth (802.11ac-VHT80, 5210MHz)

A.5. Occupied 6dB Bandwidth

Measurement Limit:

| Standard | Limit (MHz) |
|------------------------|-------------|
| FCC 47 CFR Part 15.407 | ≥0.5 |

The measurement is made according to KDB 789033, KDB 662911.

Measurement Result:

| Mode | Channel | Occupied 6dB Bandwidth (MHz) | | Conclusion |
|----------------|-----------------|------------------------------|-------|------------|
| 802.11a | 5745MHz (Ch149) | Fig.8 | 16.30 | P |
| | 5785MHz (Ch157) | Fig.9 | 16.10 | P |
| | 5825MHz (Ch165) | Fig.10 | 16.30 | P |
| 802.11ac VHT40 | 5755MHz (Ch151) | Fig.11 | 36.08 | P |
| | 5795MHz (Ch159) | Fig.12 | 35.84 | P |
| 802.11ac VHT80 | 5775MHz (Ch155) | Fig.13 | 75.20 | P |

Conclusion: PASS

Test graphs as below:

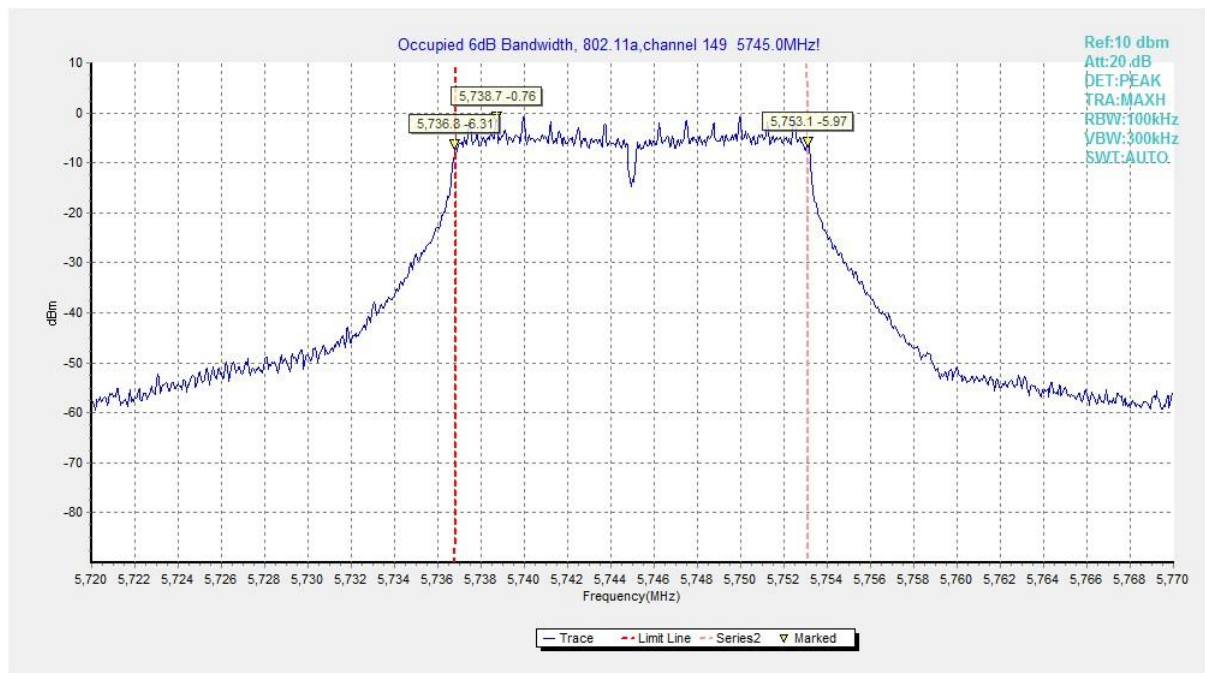


Fig. 8 Occupied 6dB Bandwidth (802.11a, 5745MHz)

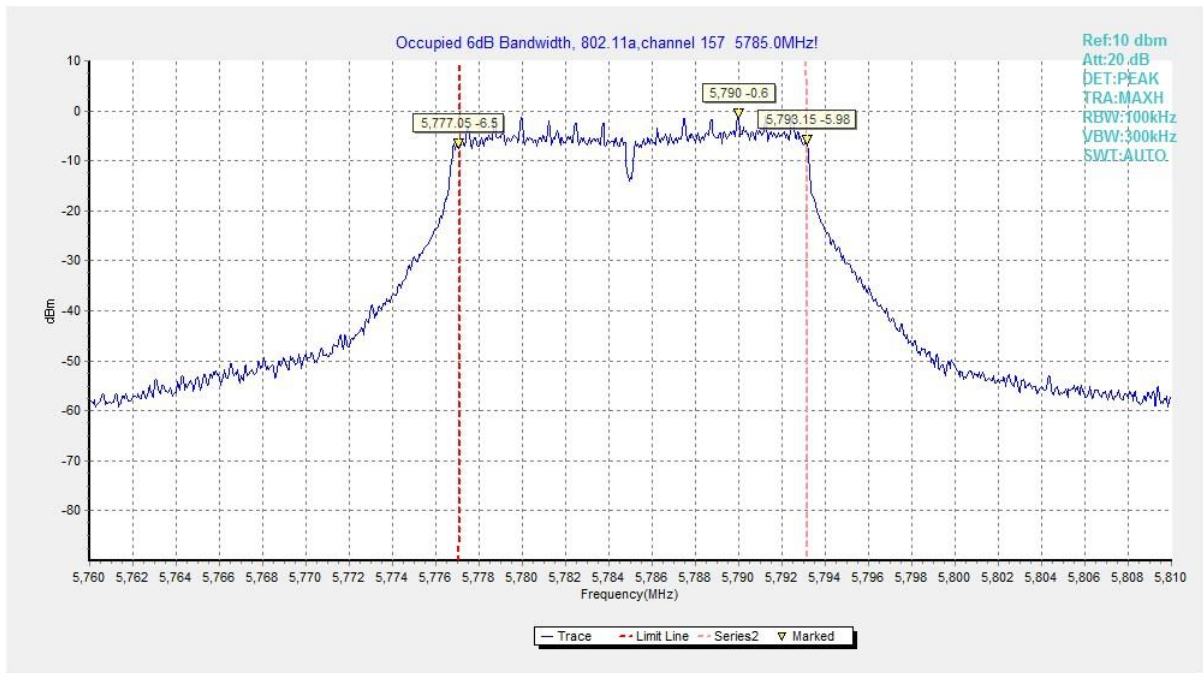


Fig. 9 Occupied 6dB Bandwidth (802.11a, 5785MHz)

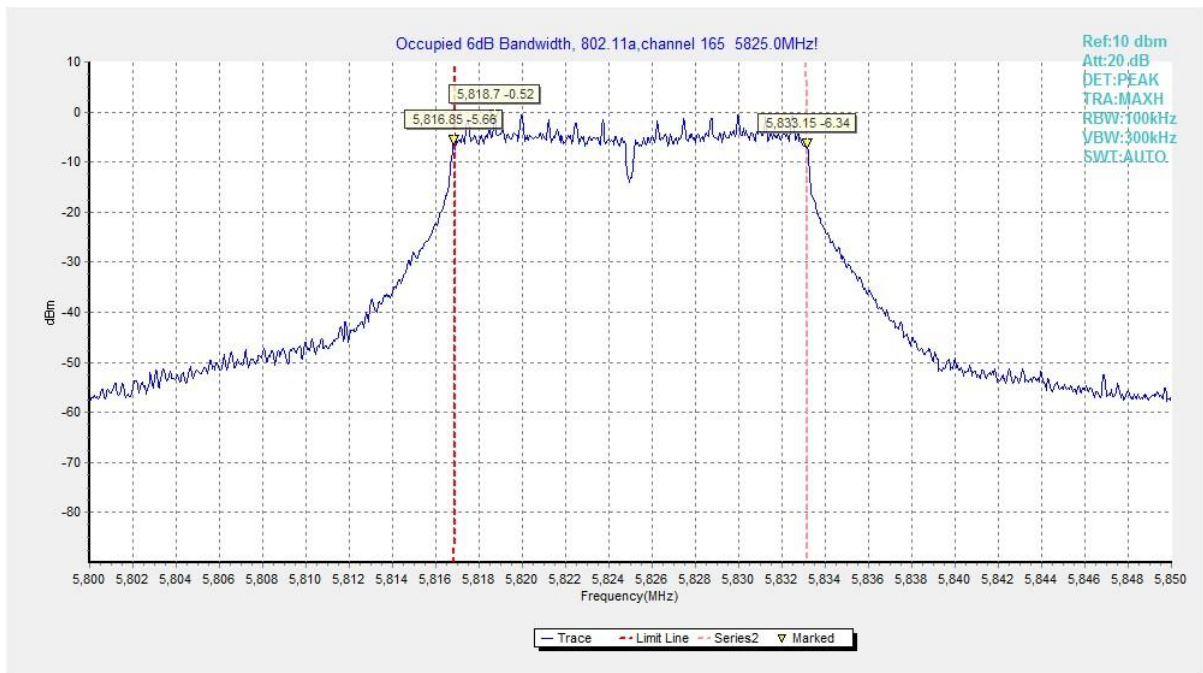


Fig. 10 Occupied 6dB Bandwidth (802.11a, 5825MHz)

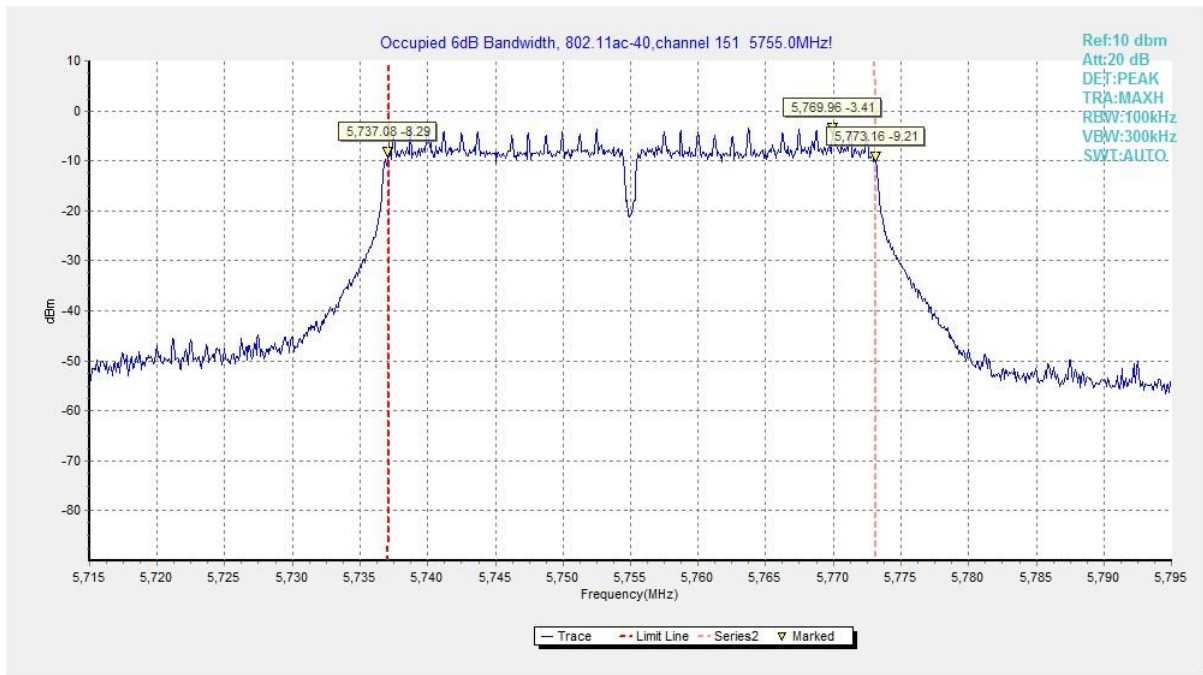


Fig. 11 Occupied 6dB Bandwidth (802.11ac-VHT40, 5755MHz)

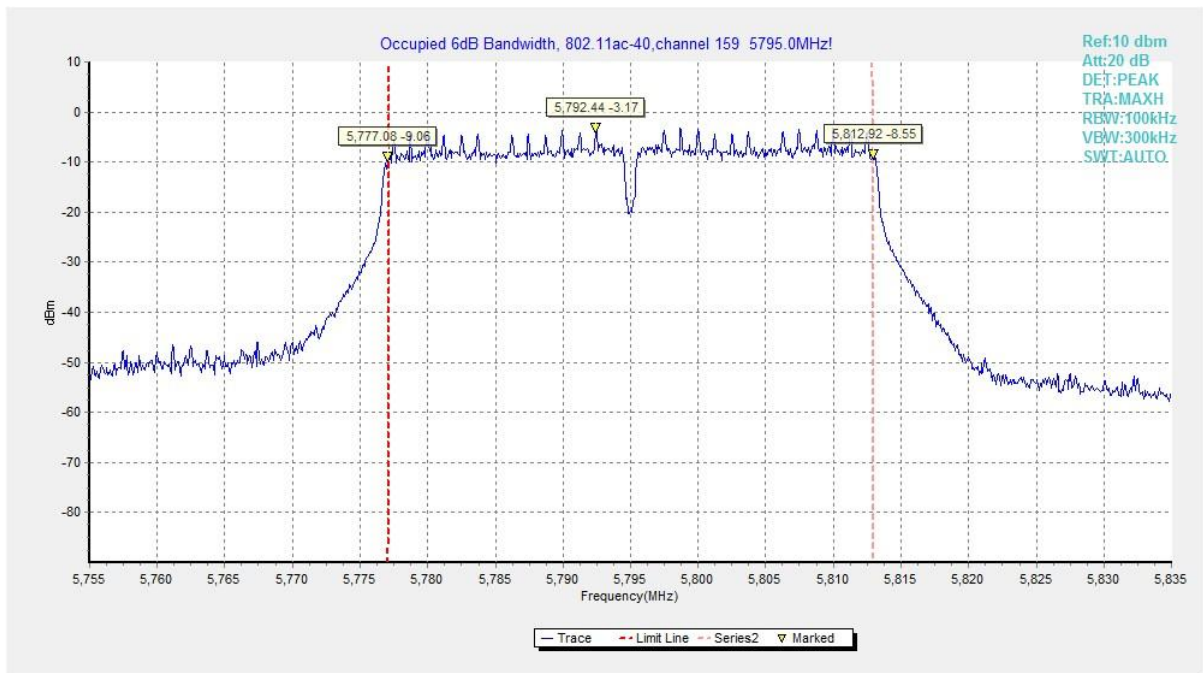


Fig. 12 Occupied 6dB Bandwidth (802.11ac-VHT40, 5795MHz)

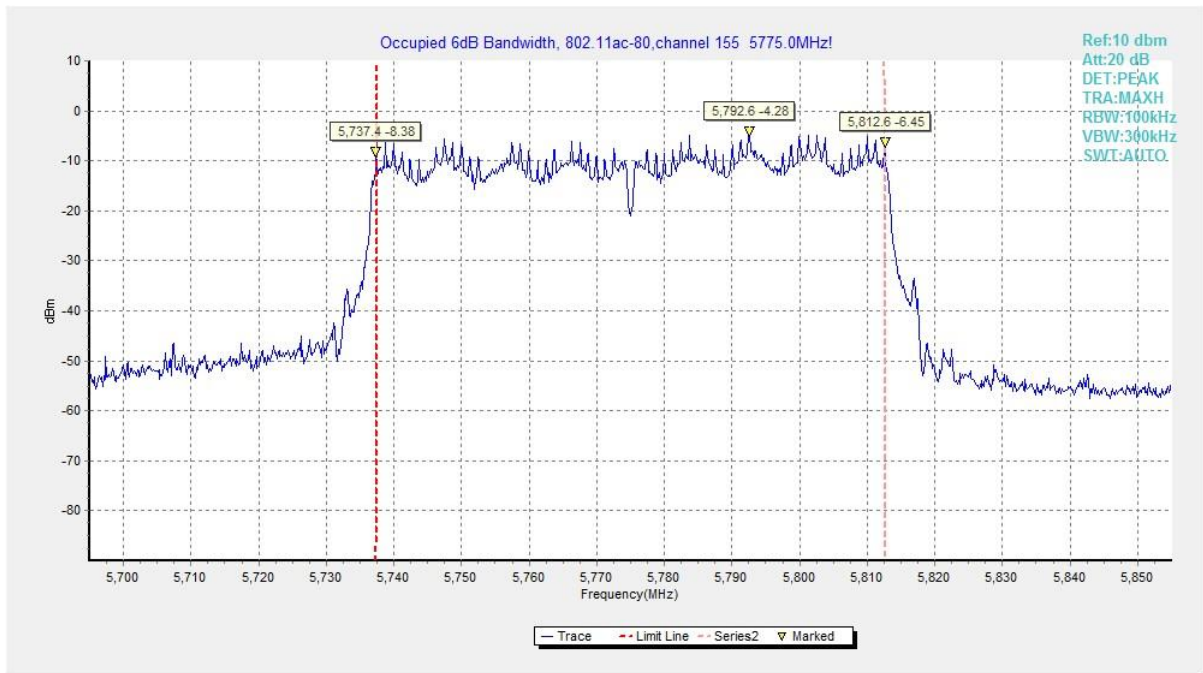


Fig. 13 Occupied 6dB Bandwidth (802.11ac-VHT80, 5775MHz)

A.6. 99% Occupied Bandwidth

Measurement Limit:

| Standard | Limit (MHz) |
|------------------------|-------------|
| FCC 47 CFR Part 15.403 | / |

The measurement is made according to KDB 789033, KDB 662911.

Measurement Result:

| Mode | Channel | 99% Occupied Bandwidth (MHz) | | Conclusion |
|----------------|----------------|------------------------------|-------|------------|
| 802.11a | 5180MHz (Ch36) | Fig.14 | 17.14 | P |
| | 5200MHz (Ch40) | Fig.15 | 17.18 | P |
| | 5220MHz (Ch44) | Fig.16 | 17.18 | P |
| | 5240MHz (Ch48) | Fig.17 | 17.14 | P |
| 802.11ac-VHT40 | 5190MHz (Ch38) | Fig.18 | 36.44 | P |
| | 5230MHz (Ch46) | Fig.19 | 36.36 | P |
| 802.11ac-VHT80 | 5210MHz (Ch42) | Fig.20 | 75.60 | P |

Conclusion: PASS

Test graphs as below:

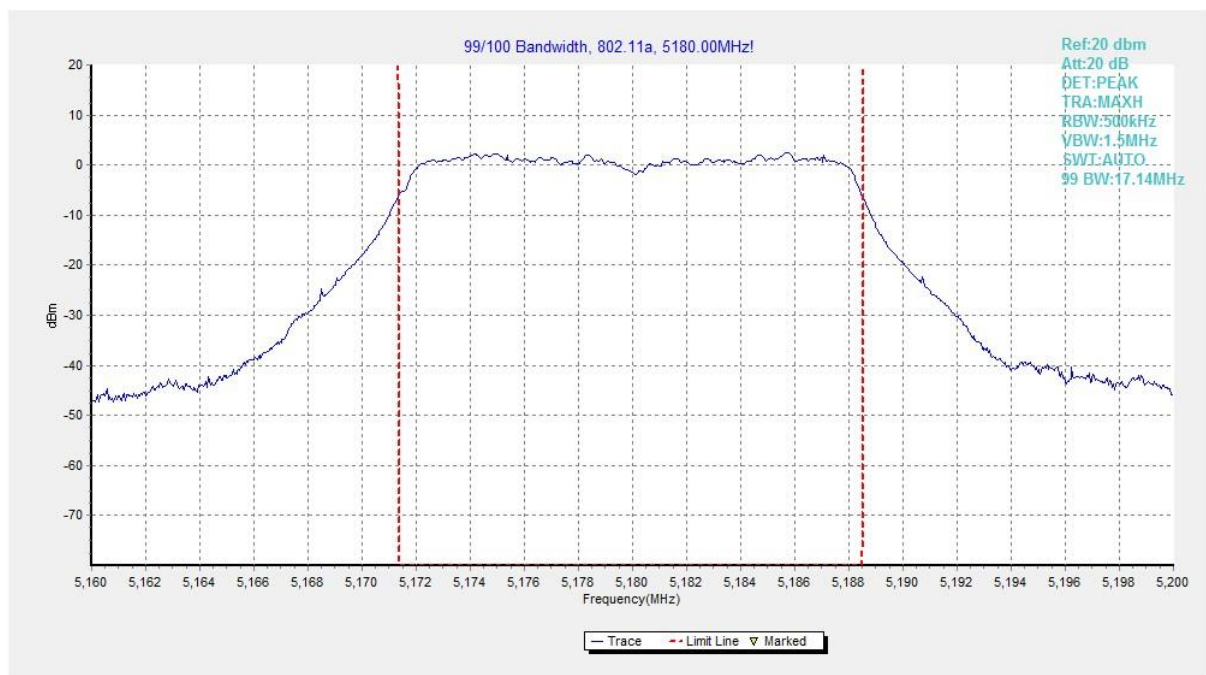


Fig. 14 99% Occupied Bandwidth (802.11a, 5180MHz)

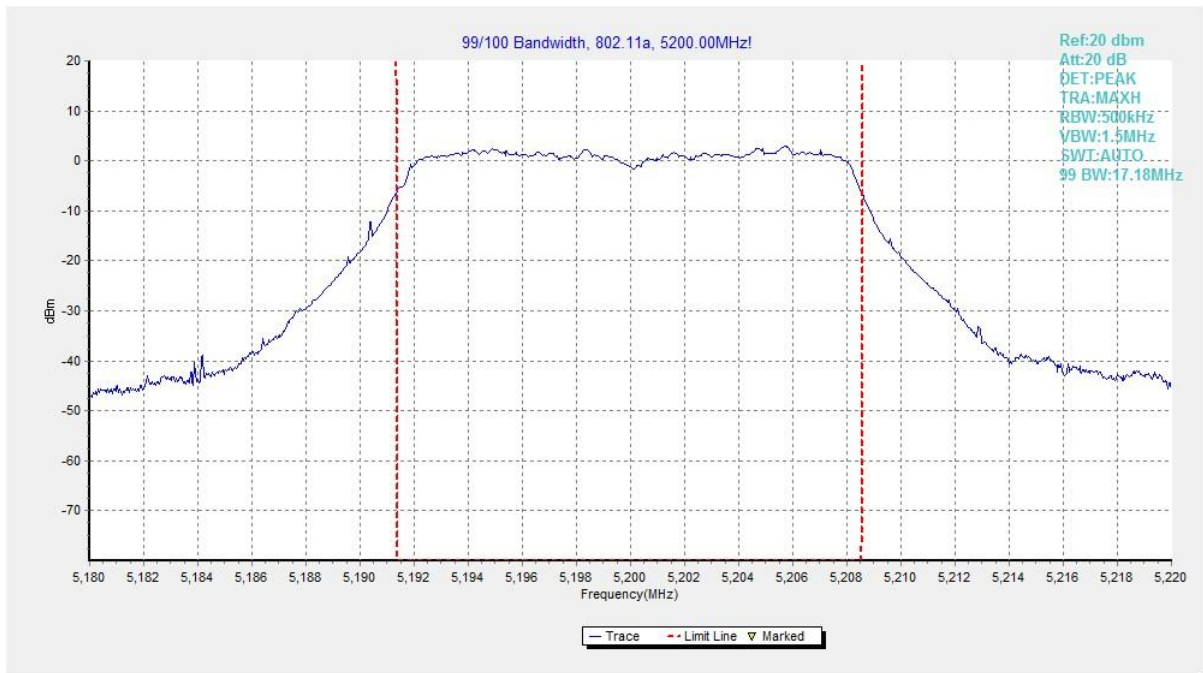


Fig. 15 99% Occupied Bandwidth (802.11a, 5200MHz)

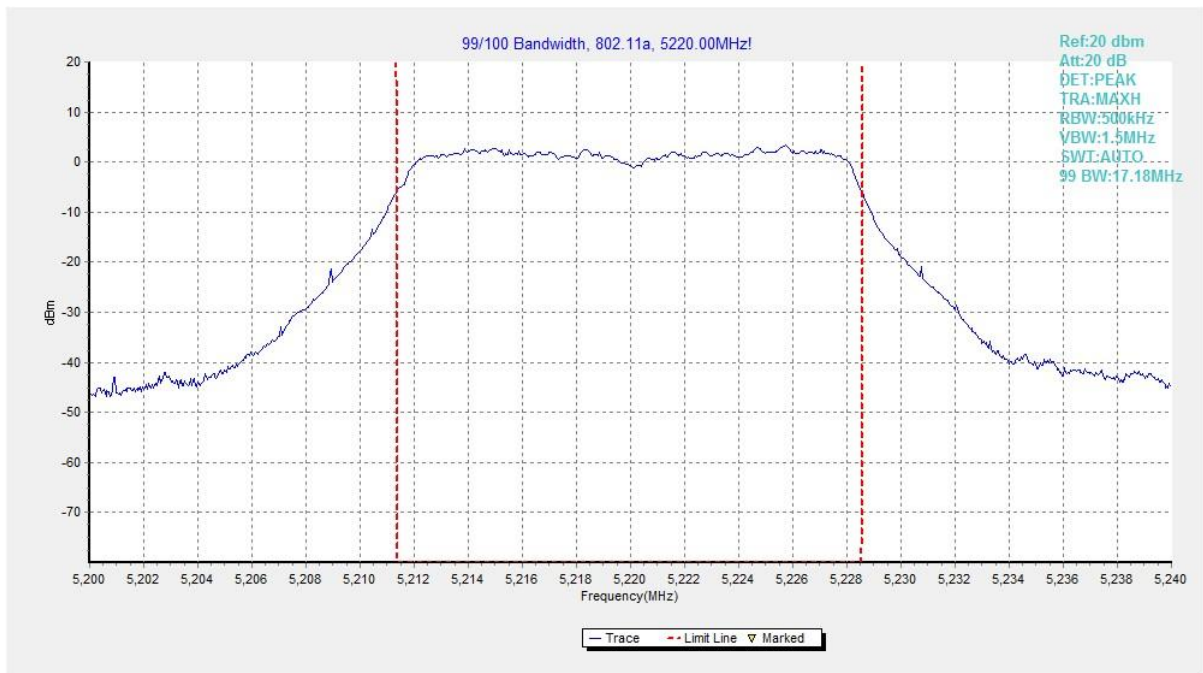


Fig. 16 99% Occupied Bandwidth (802.11a, 5220MHz)

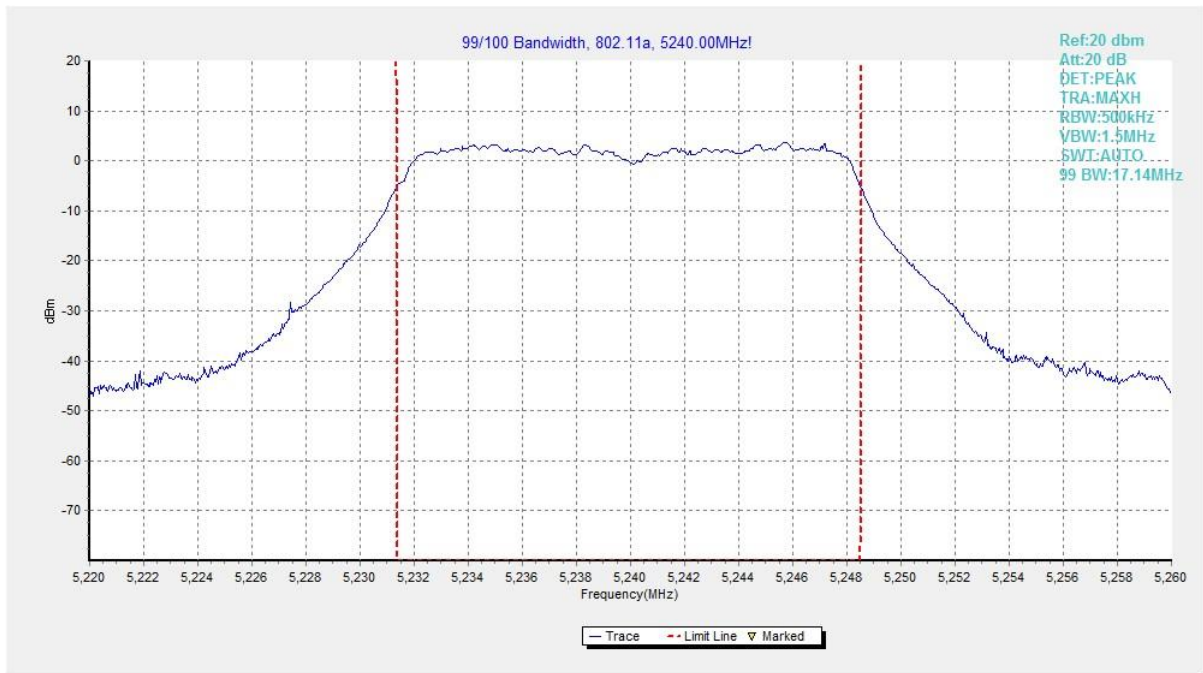


Fig. 17 99% Occupied Bandwidth (802.11a, 5240MHz)

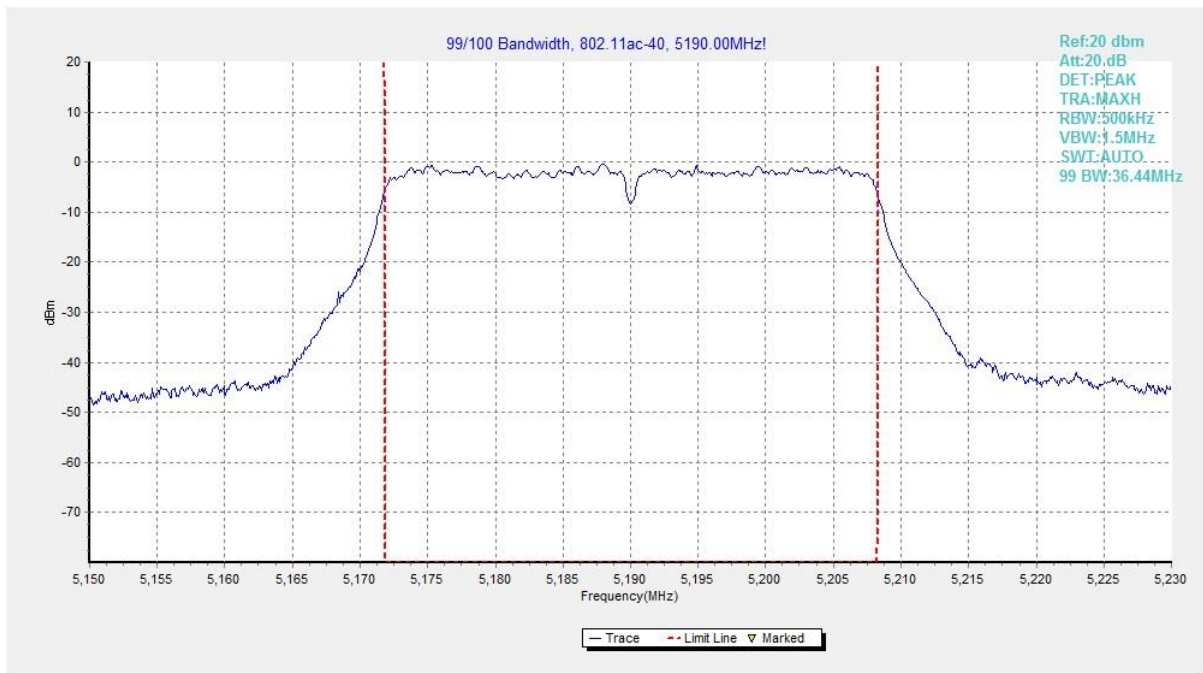


Fig. 18 99% Occupied Bandwidth (802.11ac-VHT40, 5190MHz)

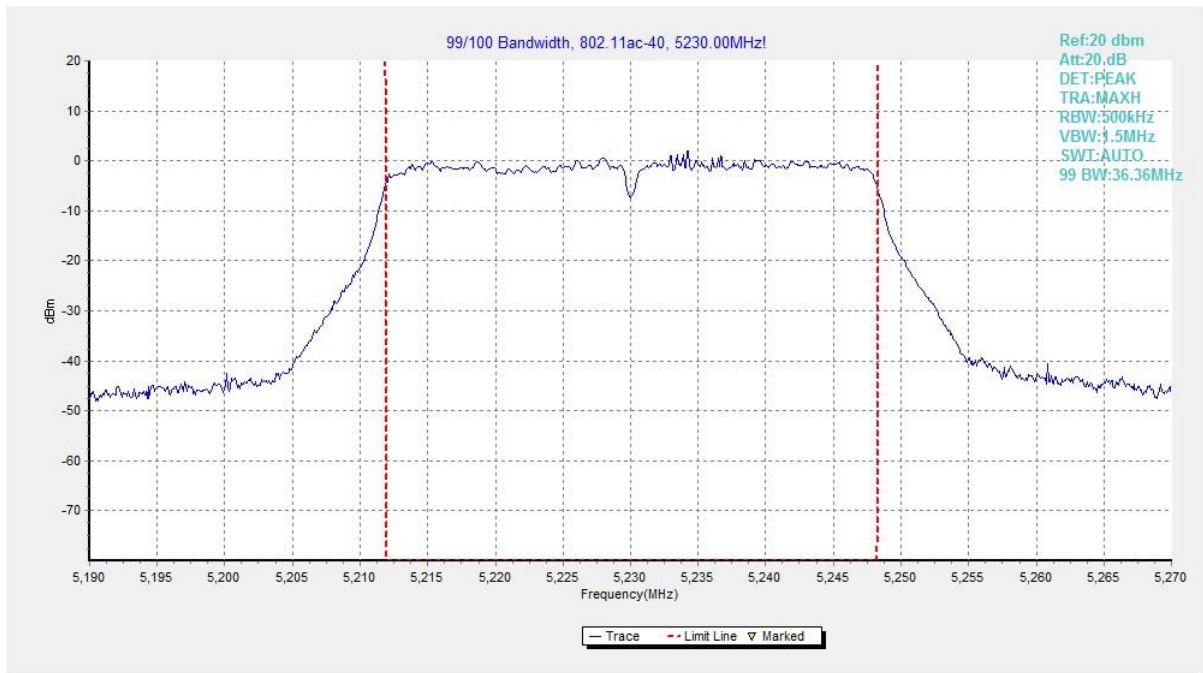


Fig. 19 99% Occupied Bandwidth (802.11ac-VHT40, 5230MHz)

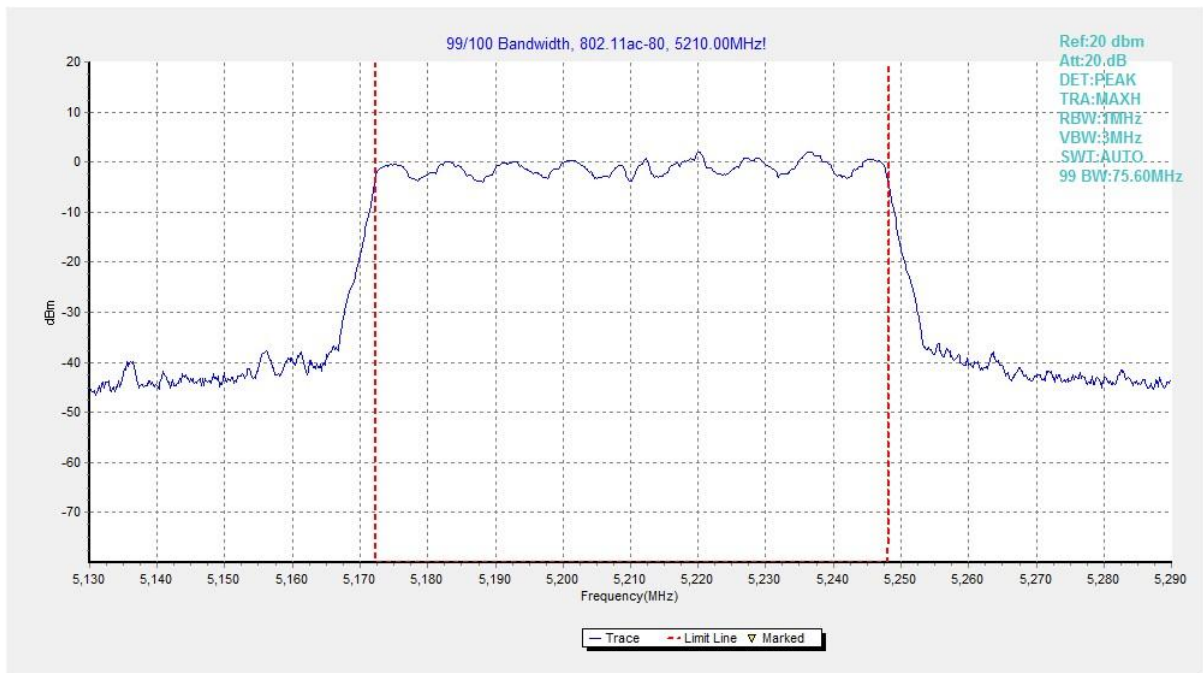


Fig. 20 99% Occupied Bandwidth (802.11ac-VHT80, 5210MHz)



A.7. Band Edge Compliance

Measurement Limit:

| Standard | Limit (dBuV/m) | |
|------------------------|----------------|----|
| | Peak | 74 |
| FCC 47 CFR Part 15.209 | Average | 54 |

The measurement is made according to KDB 789033, KDB 662911.

Measurement Result:

| Mode | Channel | Test Results | Conclusion |
|----------------|------------------|--------------|------------|
| 802.11a | 5180 MHz (CH36) | Fig.21 | P |
| | 5745 MHz (CH149) | Fig.22 | P |
| | 5825 MHz (CH165) | Fig.23 | P |
| 802.11ac-VHT40 | 5190 MHz (CH38) | Fig.24 | P |
| | 5755 MHz (CH151) | Fig.25 | P |
| | 5795 MHz (CH159) | Fig.26 | P |
| 802.11ac-VHT80 | 5210 MHz (CH42) | Fig.27 | P |
| | 5775 MHz (CH155) | Fig.28 | P |

Conclusion: PASS

Test graphs as below:

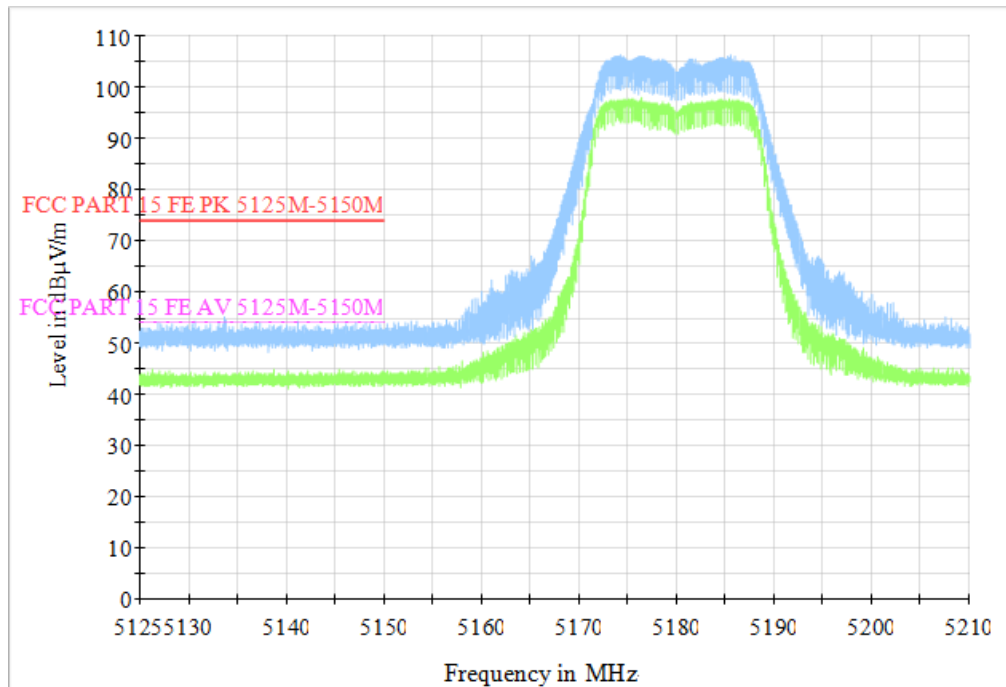


Fig. 21 Band Edges (802.11a, CH36 5180MHz)

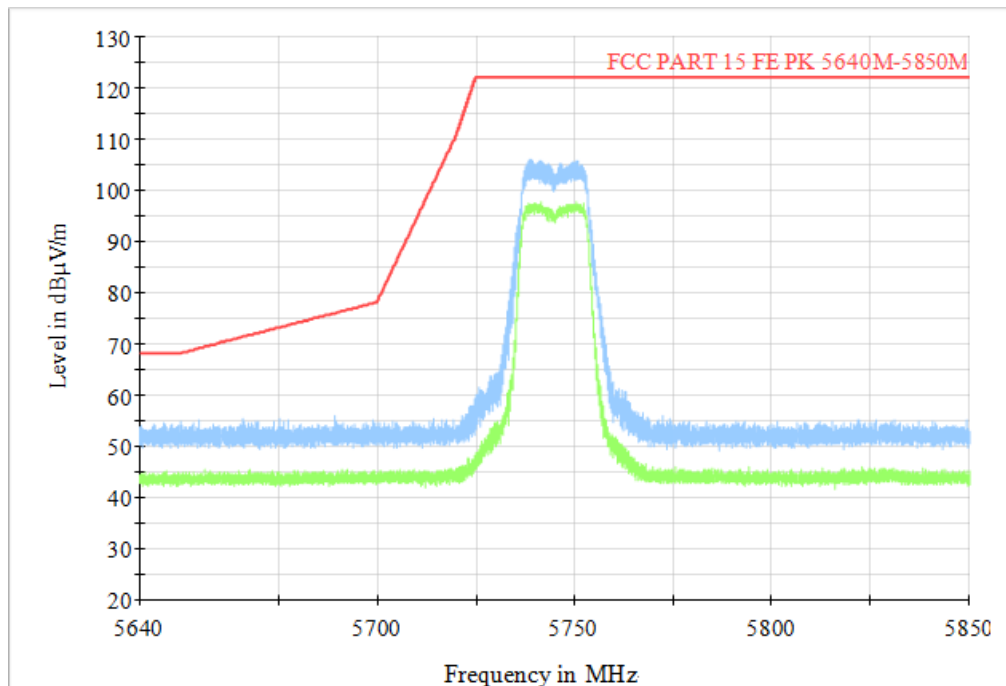


Fig. 22 Band Edges (802.11a, CH149 5745MHz)

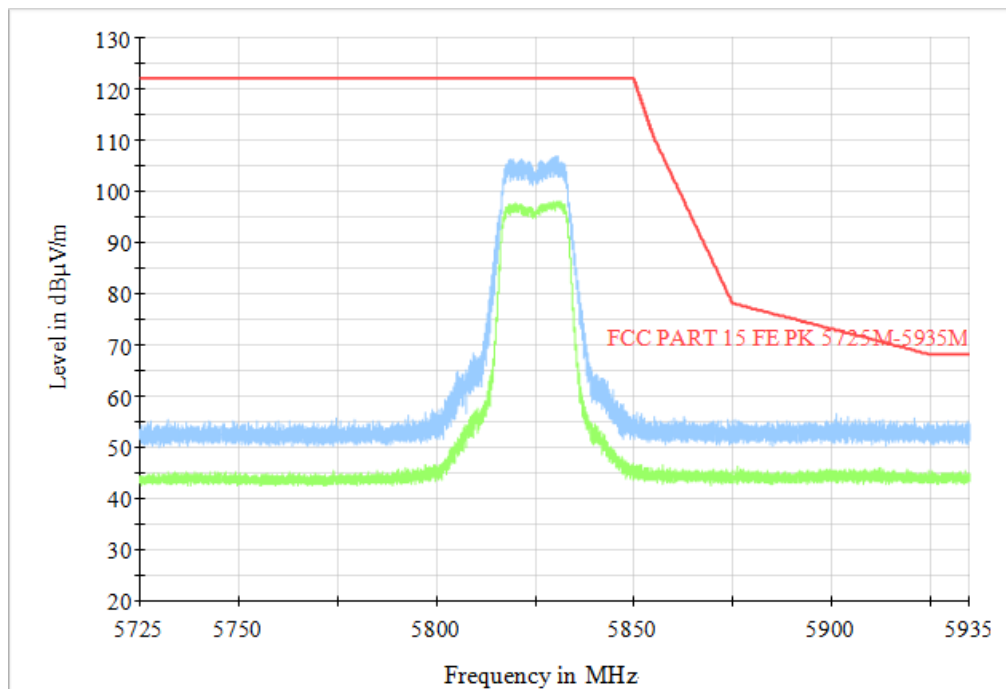


Fig. 23 Band Edges (802.11a, CH165 5825MHz)

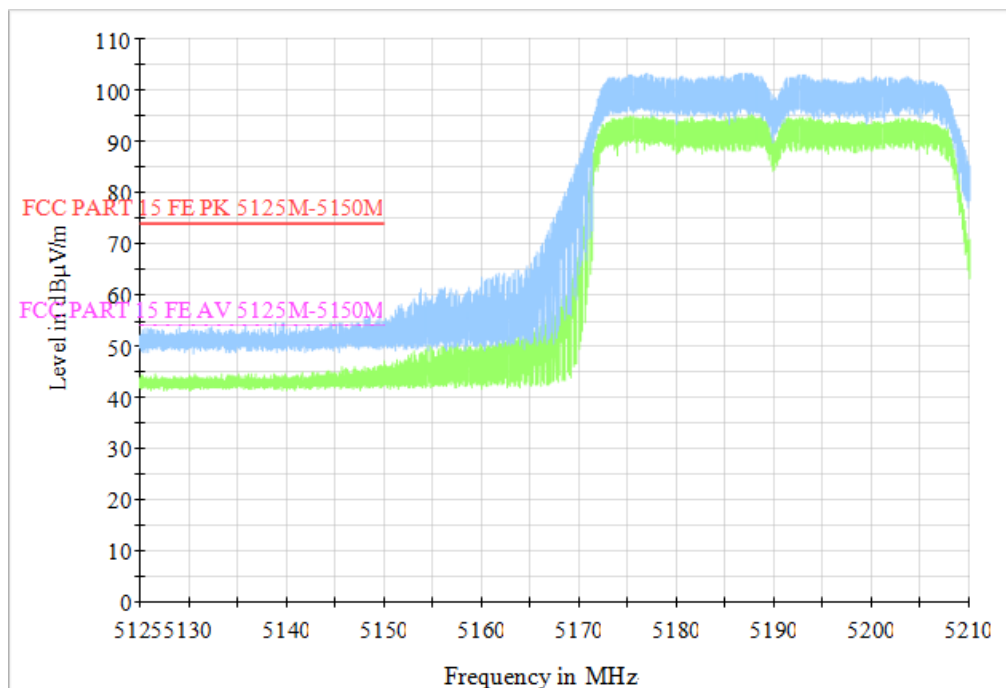


Fig. 24 Band Edges (802.11ac-VHT40, CH38 5190MHz)

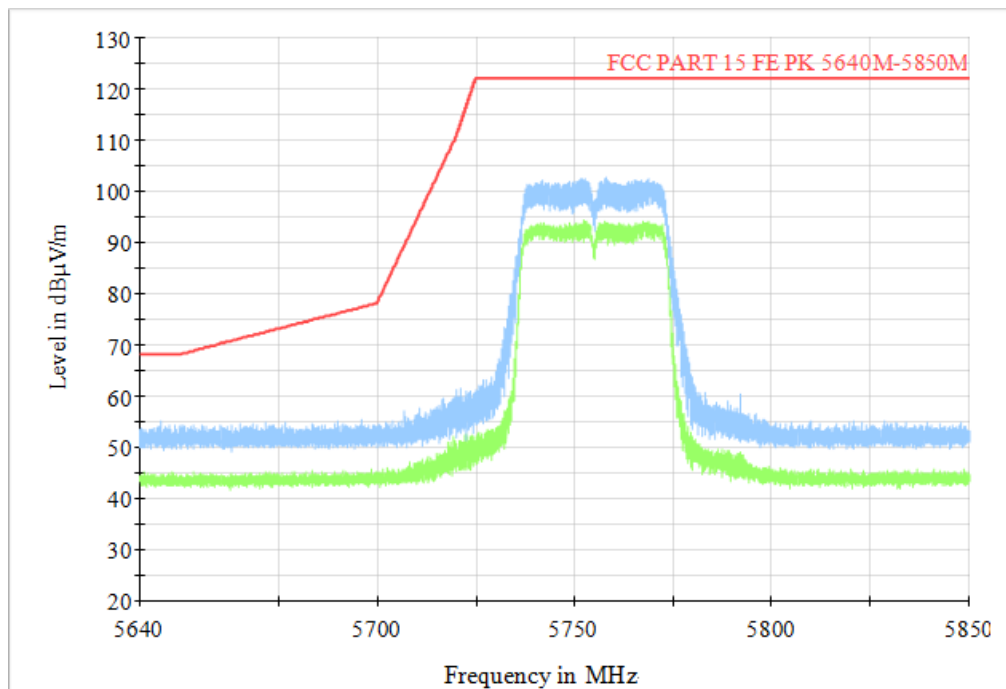


Fig. 25 Band Edges (802.11ac-VHT40, CH151 5755MHz)

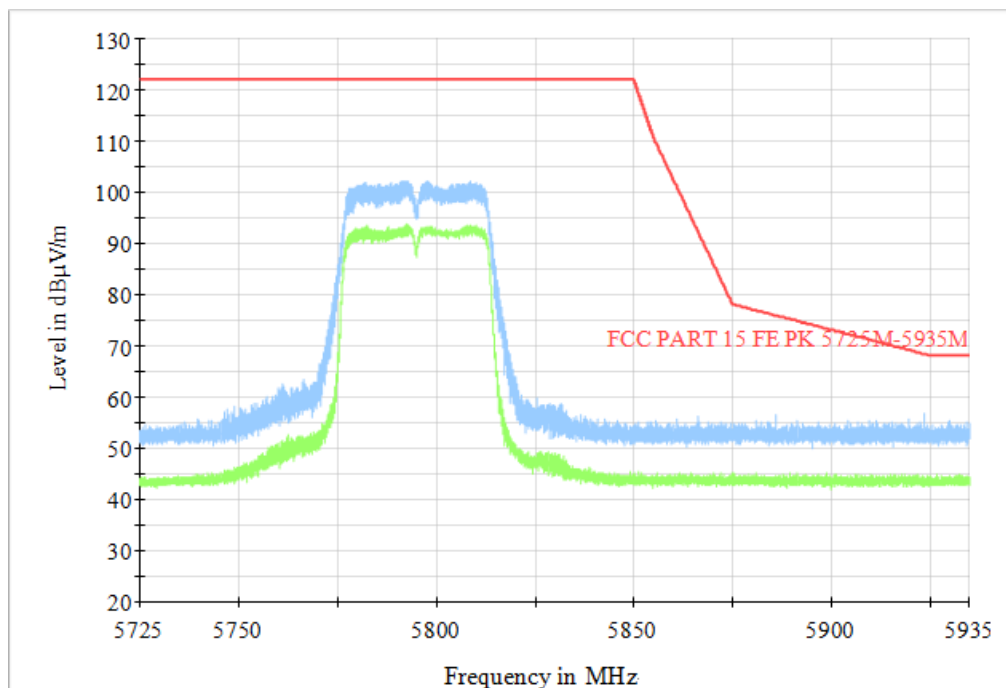


Fig. 26 Band Edges (802.11ac-VHT40, CH159 5795MHz)

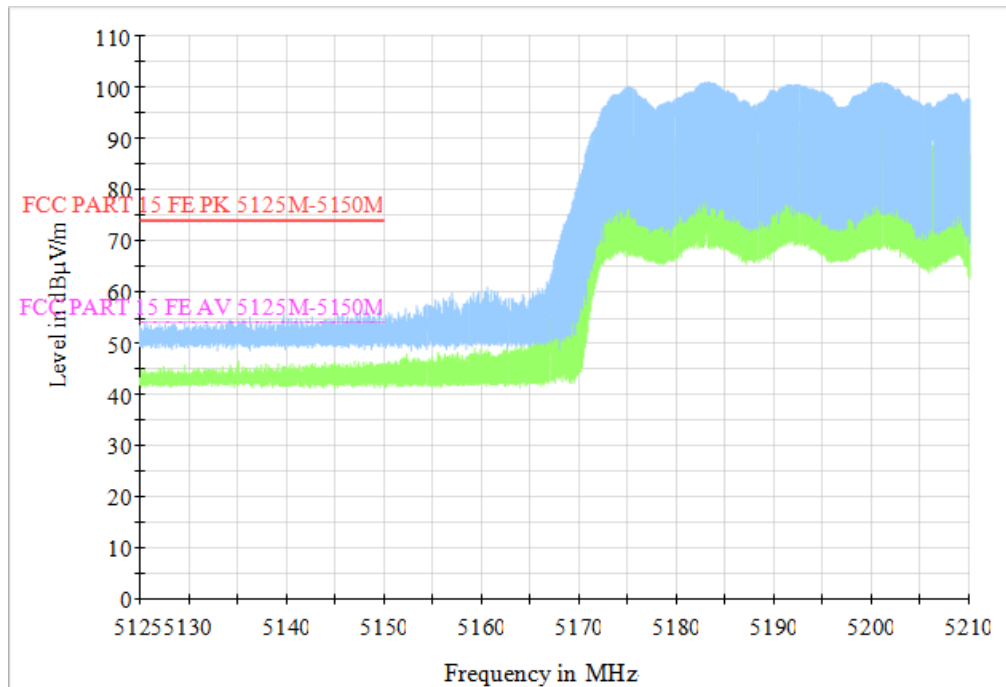


Fig. 27 Band Edges (802.11ac-VHT80, CH42 5210MHz)

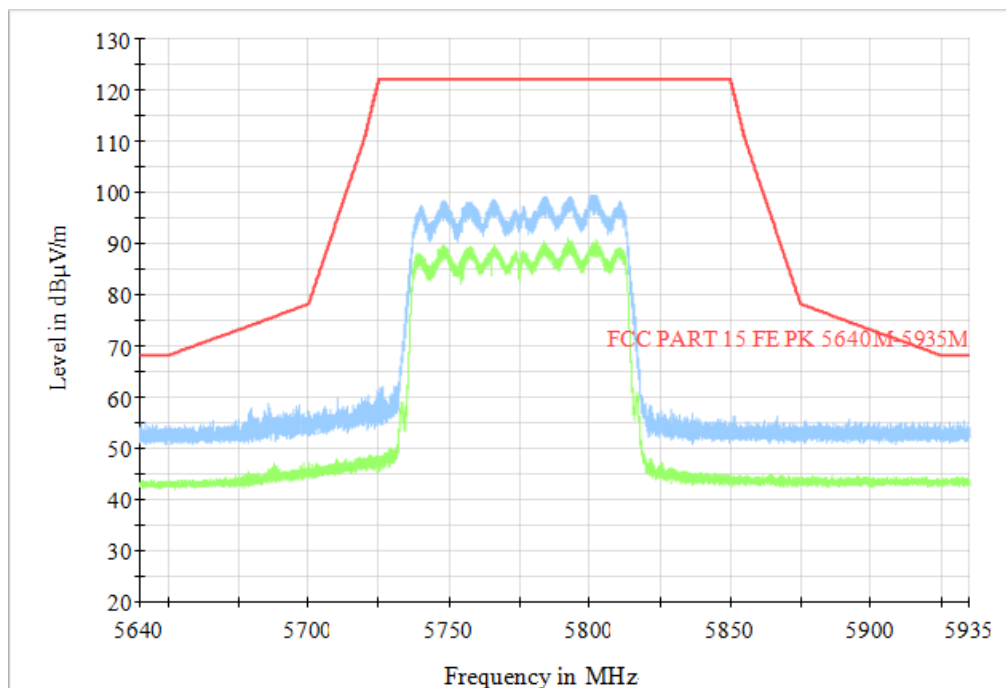


Fig. 28 Band Edges (802.11ac-VHT80, CH155 5775MHz)

A.8. Transmitter Spurious Emission

Measurement Limit:

| Standard | Limit (dBm/MHz) |
|--------------------------------|-----------------|
| FCC 47 CFR Part 15.407, 15.205 | < -27 |

The measurement is made according to KDB 789033, KDB 662911.

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Limit in restricted band:

| Frequency of emission (MHz) | Field strength (dBµV/m) | Measurement distance (m) |
|-----------------------------|-------------------------|--------------------------|
| 30-88 | 40.0 | 3 |
| 88-216 | 43.5 | 3 |
| 216-960 | 46.0 | 3 |
| Above 960 | 54.0 | 3 |

Note: For frequency range below 960MHz, the limit in 15.209 is defined in 10m test distance. The limit used above is calculated from 10m to 3m.

Measurement Result:

| Mode | Channel | Frequency Range | Test Results | Conclusion | |
|-------------------|-------------------|-----------------|----------------|------------|---|
| 802.11a | 5180MHz (Ch36) | 3 GHz ~ 7 GHz | Fig.29 | P | |
| | | 7 GHz ~ 18 GHz | Fig.30 | P | |
| | 5200MHz (Ch40) | 3 GHz ~ 7 GHz | Fig.31 | P | |
| | | 7 GHz ~ 18 GHz | Fig.32 | P | |
| | 5240MHz (Ch48) | 3 GHz ~ 7 GHz | Fig.33 | P | |
| | | 7 GHz ~ 18 GHz | Fig.34 | P | |
| | 5745MHz (Ch149) | 3 GHz ~ 7 GHz | Fig.35 | P | |
| | | 7 GHz ~ 18 GHz | Fig.36 | P | |
| | 5785MHz (Ch157) | 3 GHz ~ 7 GHz | Fig.37 | P | |
| | | 7 GHz ~ 18 GHz | Fig.38 | P | |
| | 5825MHz (Ch165) | 3 GHz ~ 7 GHz | Fig.39 | P | |
| | | 7 GHz ~ 18 GHz | Fig.40 | P | |
| | 802.11ac VHT40 | 5190MHz (Ch38) | 3 GHz ~ 7 GHz | Fig.41 | P |
| | | | 7 GHz ~ 18 GHz | Fig.42 | P |
| 5230MHz (Ch46) | | 3 GHz ~ 7 GHz | Fig.43 | P | |
| | | 7 GHz ~ 18 GHz | Fig.44 | P | |
| 5755MHz (Ch151) | | 3 GHz ~ 7 GHz | Fig.45 | P | |
| | | 7 GHz ~ 18 GHz | Fig.46 | P | |
| 5795MHz (Ch159) | | 3 GHz ~ 7 GHz | Fig.47 | P | |
| | | 7 GHz ~ 18 GHz | Fig.48 | P | |
| 802.11ac VHT80 | 5210MHz (Ch42) | 3 GHz ~ 7 GHz | Fig.49 | P | |
| | | 7 GHz ~ 18 GHz | Fig.50 | P | |

| | | | | |
|--------------|-----------------|-------------------|--------|---|
| | 5775MHz (Ch155) | 3 GHz ~ 7 GHz | Fig.51 | P |
| | | 7 GHz ~ 18 GHz | Fig.52 | P |
| All channels | | 30 MHz ~ 1 GHz | Fig.53 | P |
| | | 1 GHz ~ 3 GHz | Fig.54 | P |
| | | 18 GHz ~ 26.5 GHz | Fig.55 | P |
| | | 26.5 GHz ~ 40 GHz | Fig.56 | P |

Conclusion: PASS

Test graphs as below:

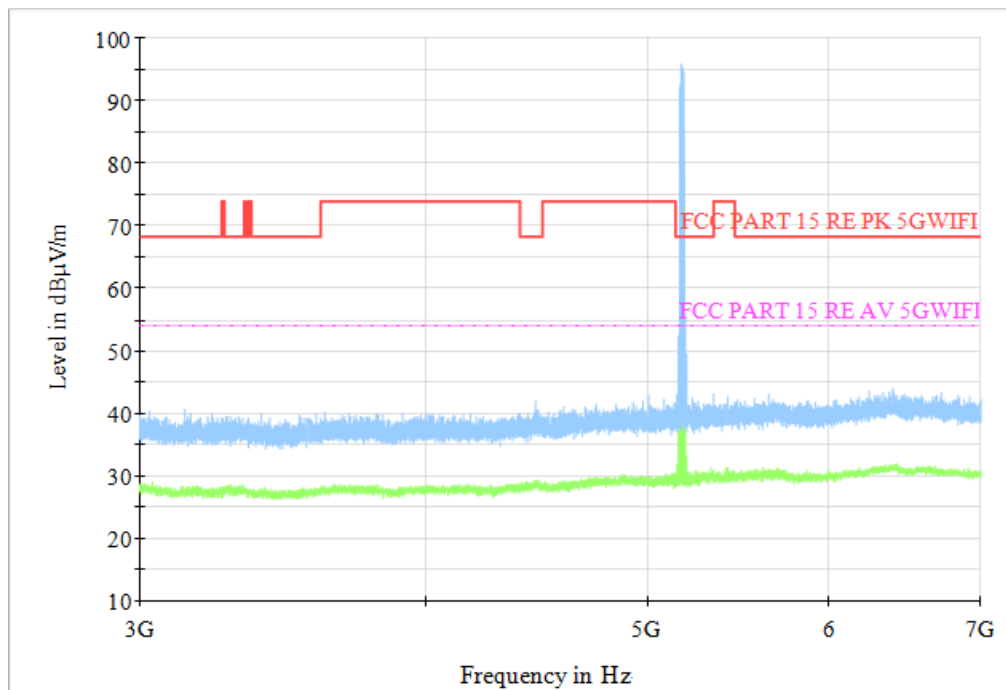


Fig. 29 Transmitter Spurious Emission (802.11a, CH36, 3 GHz ~ 7 GHz)

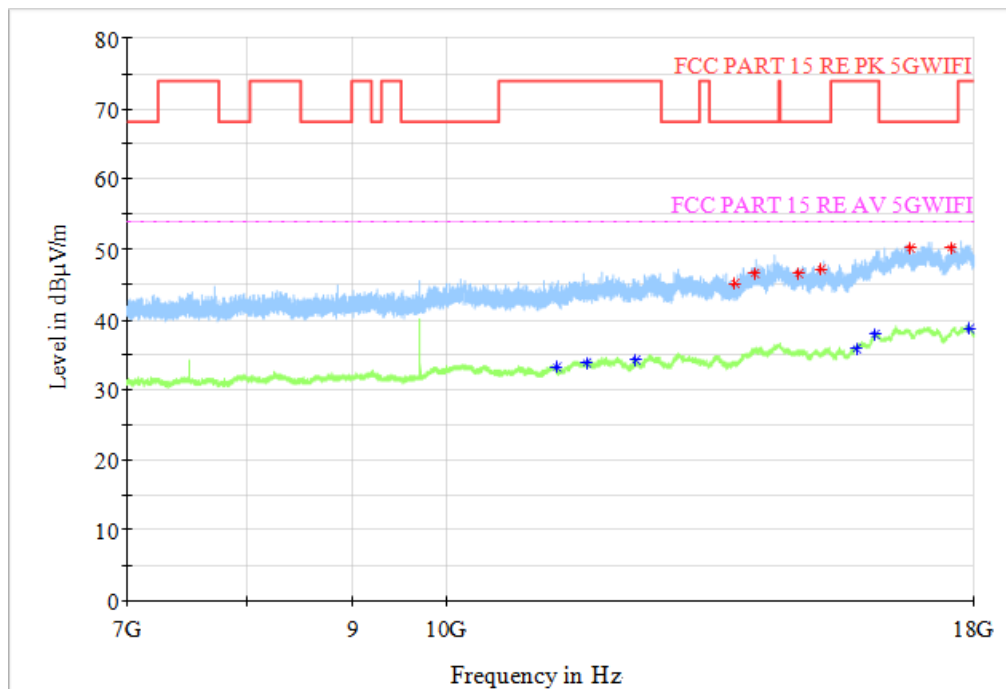


Fig. 30 Transmitter Spurious Emission (802.11a, CH36, 7 GHz ~ 18 GHz)

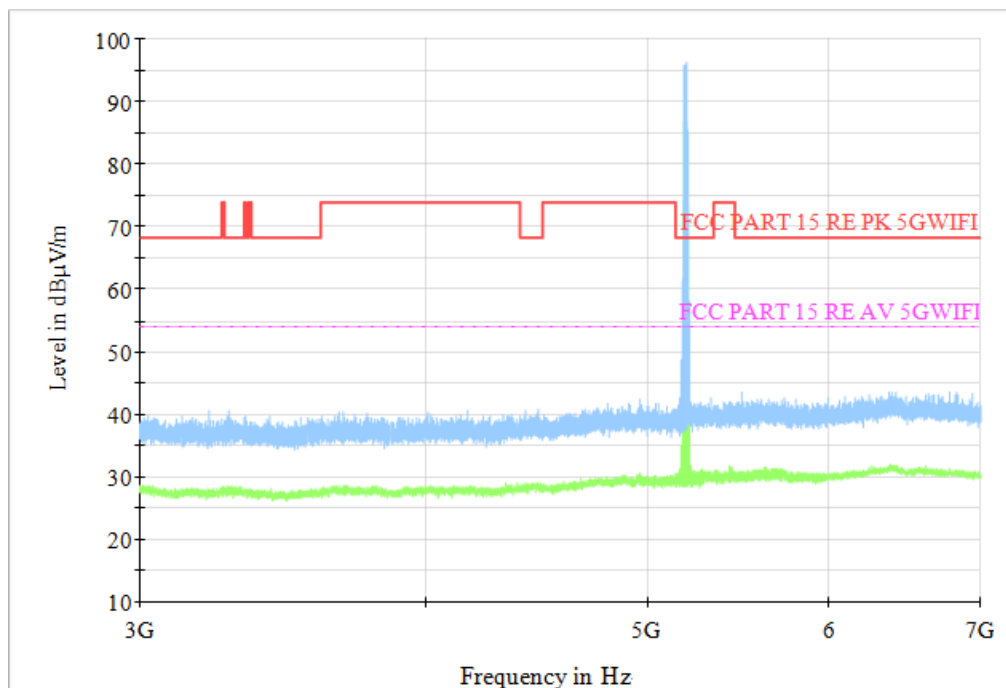


Fig. 31 Transmitter Spurious Emission (802.11a, CH40, 3 GHz ~ 7 GHz)

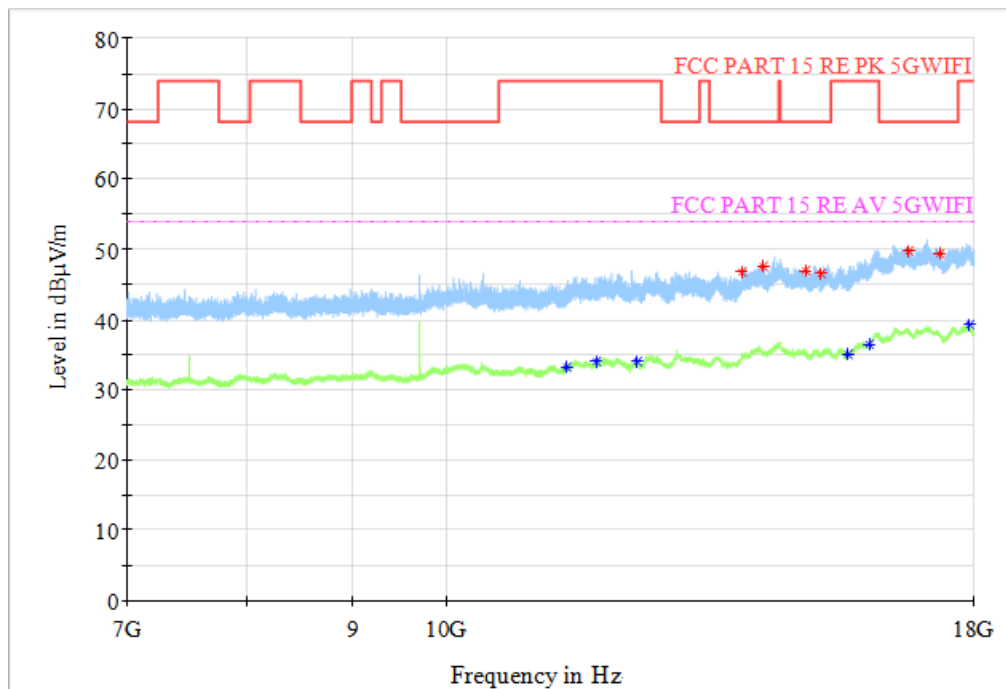


Fig. 32 Transmitter Spurious Emission (802.11a, CH40, 7 GHz ~ 18 GHz)

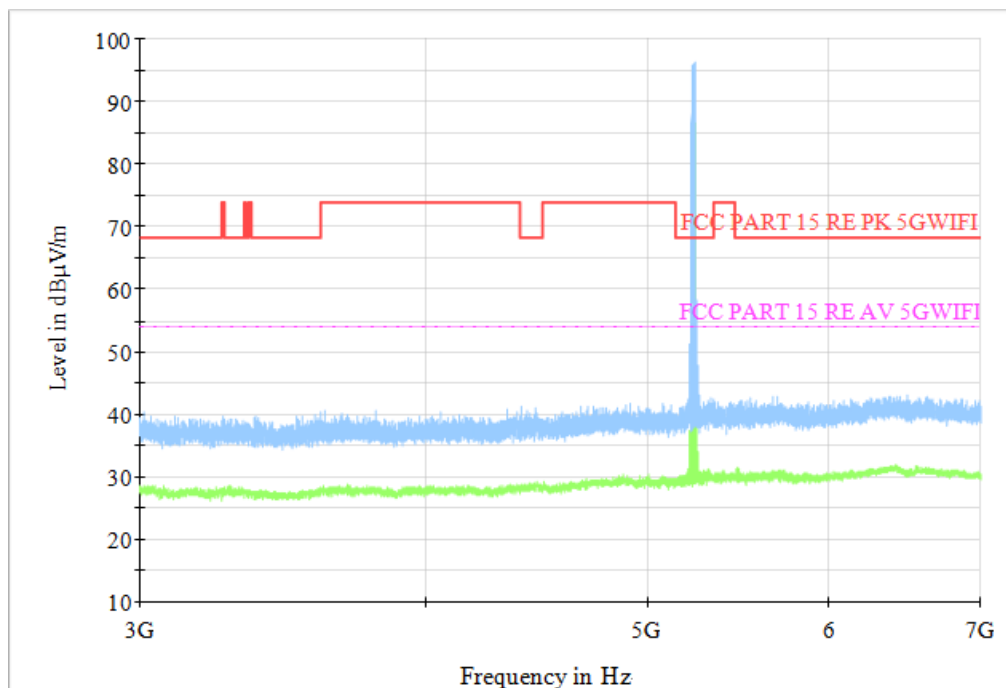


Fig. 33 Transmitter Spurious Emission (802.11a, CH48, 3 GHz ~ 7 GHz)

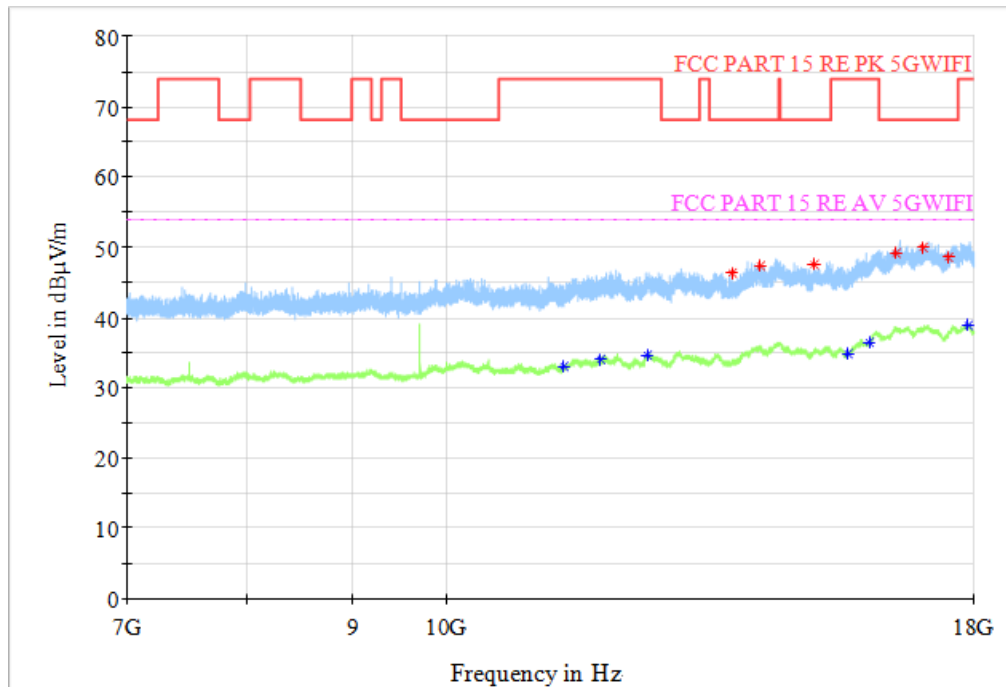


Fig. 34 Transmitter Spurious Emission (802.11a, CH48, 7 GHz ~ 18 GHz)

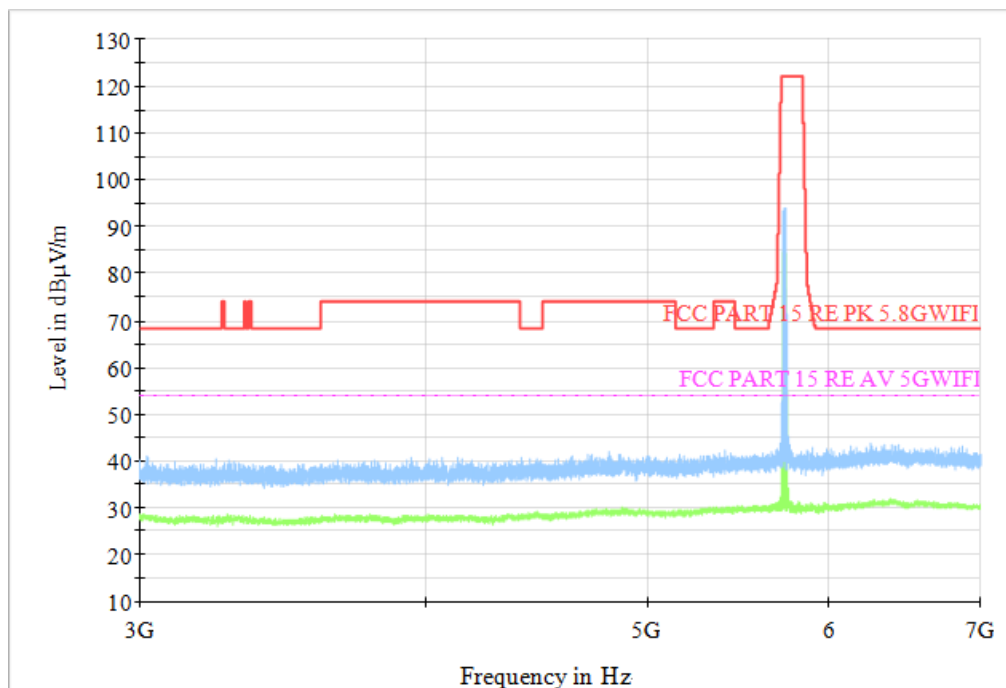


Fig. 35 Transmitter Spurious Emission (802.11a, CH149, 3 GHz ~ 7 GHz)

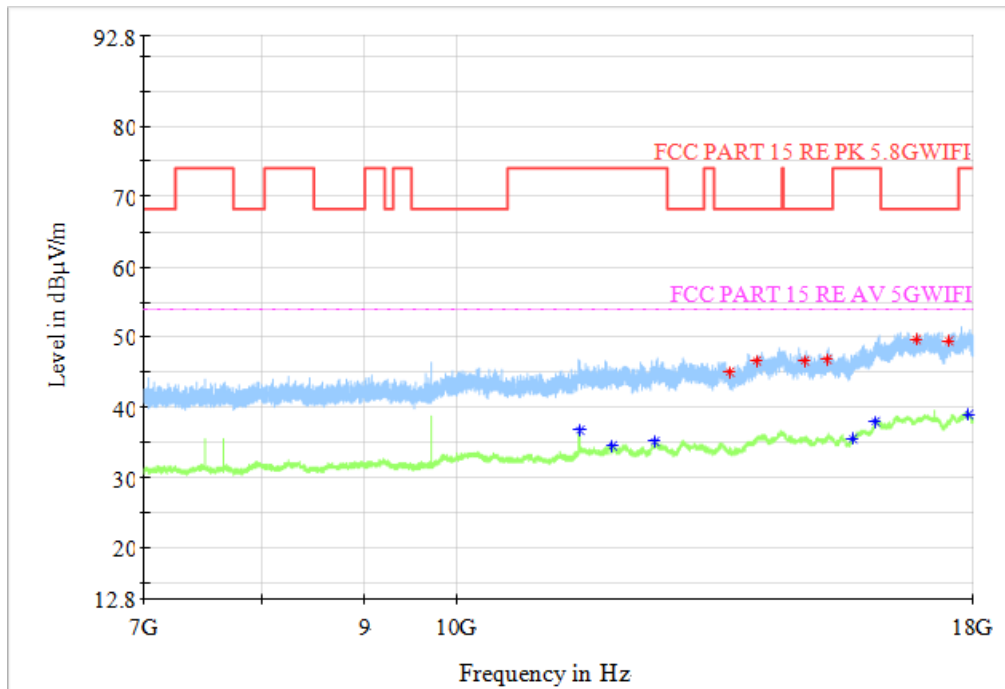


Fig. 36 Transmitter Spurious Emission (802.11a, CH149, 7 GHz ~ 18 GHz)

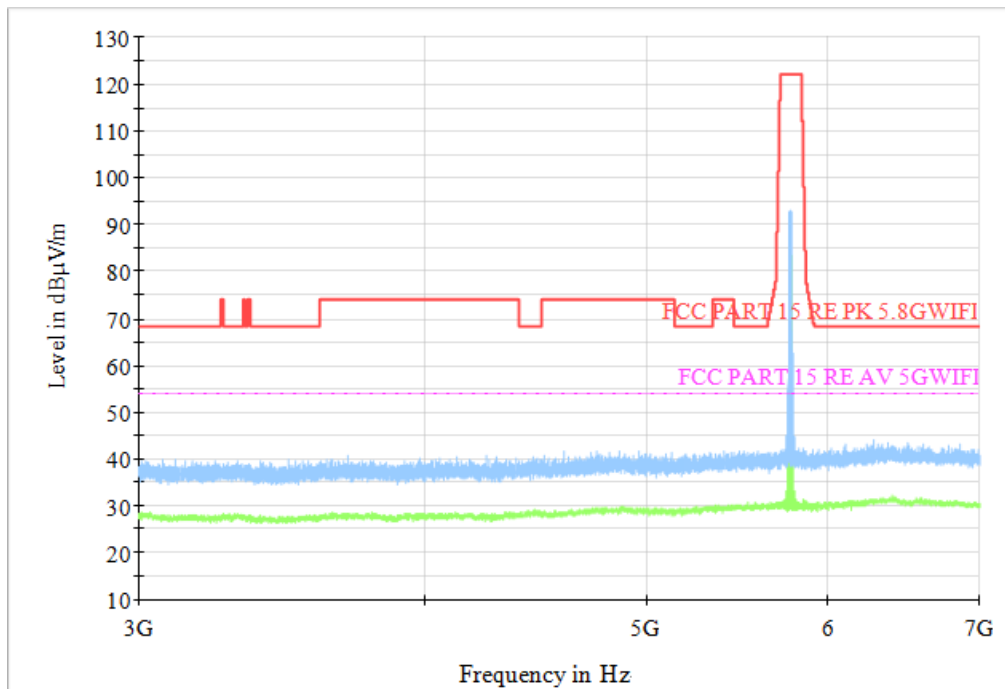


Fig. 37 Transmitter Spurious Emission (802.11a, CH157, 3 GHz ~ 7 GHz)

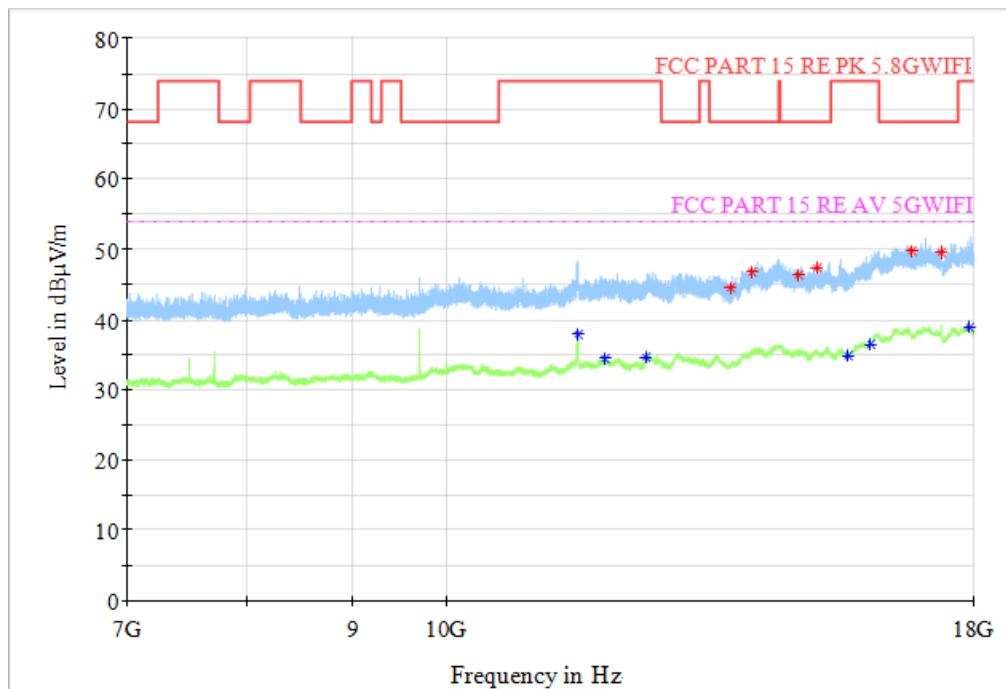


Fig. 38 Transmitter Spurious Emission (802.11a, CH157, 7 GHz ~ 18 GHz)

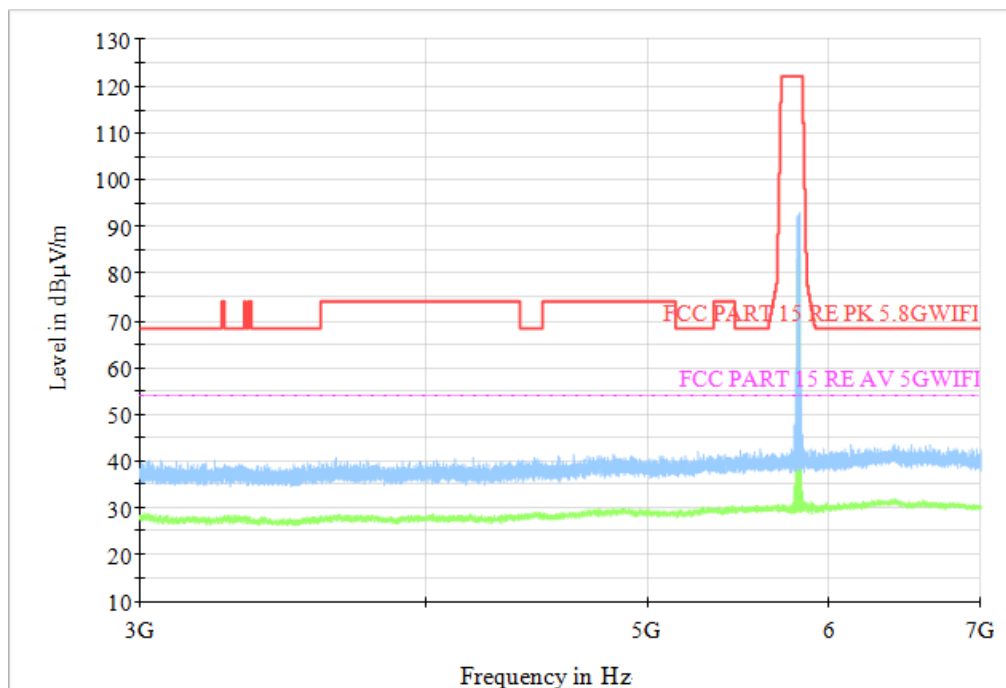


Fig. 39 Transmitter Spurious Emission (802.11a, CH165, 3 GHz ~ 7 GHz)

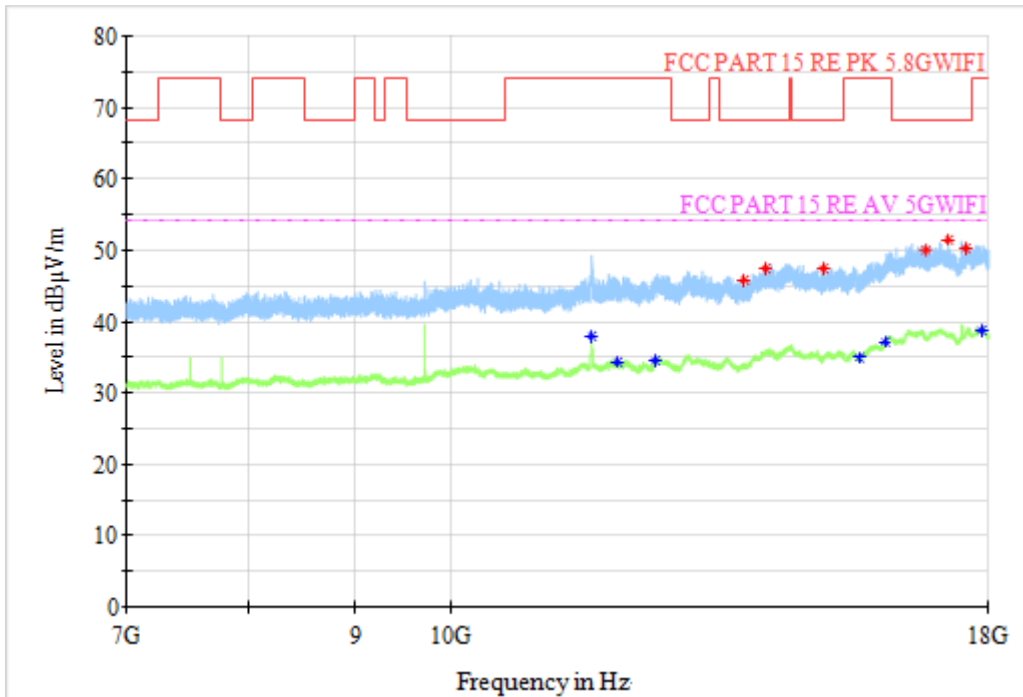


Fig. 40 Transmitter Spurious Emission (802.11a, CH165, 7 GHz ~ 18 GHz)

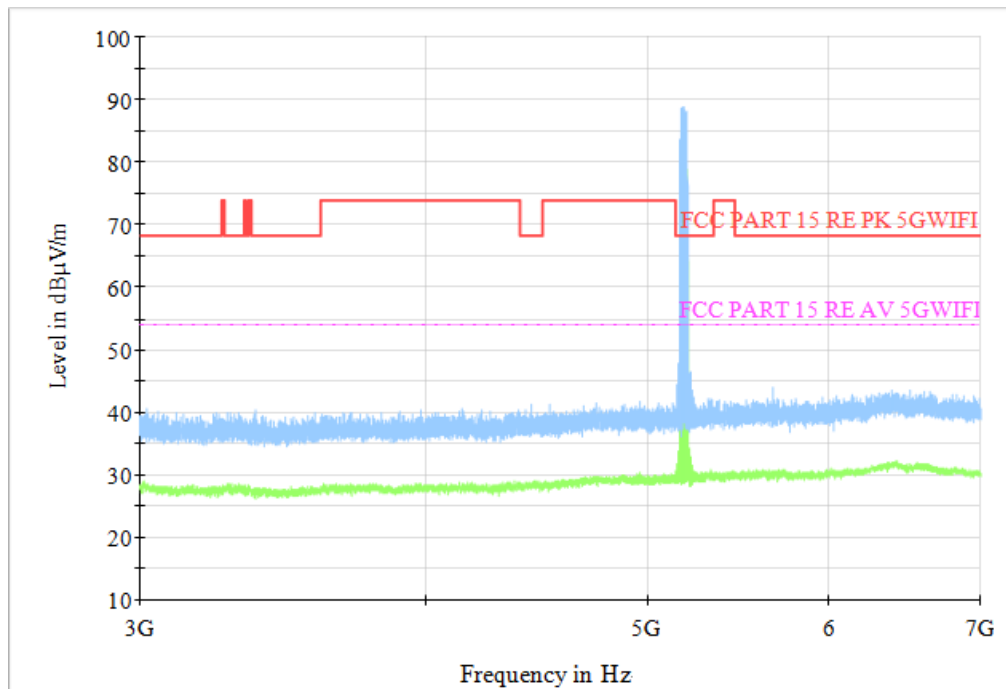


Fig. 41 Transmitter Spurious Emission (802.11ac-VHT40, CH38, 3 GHz ~ 7 GHz)

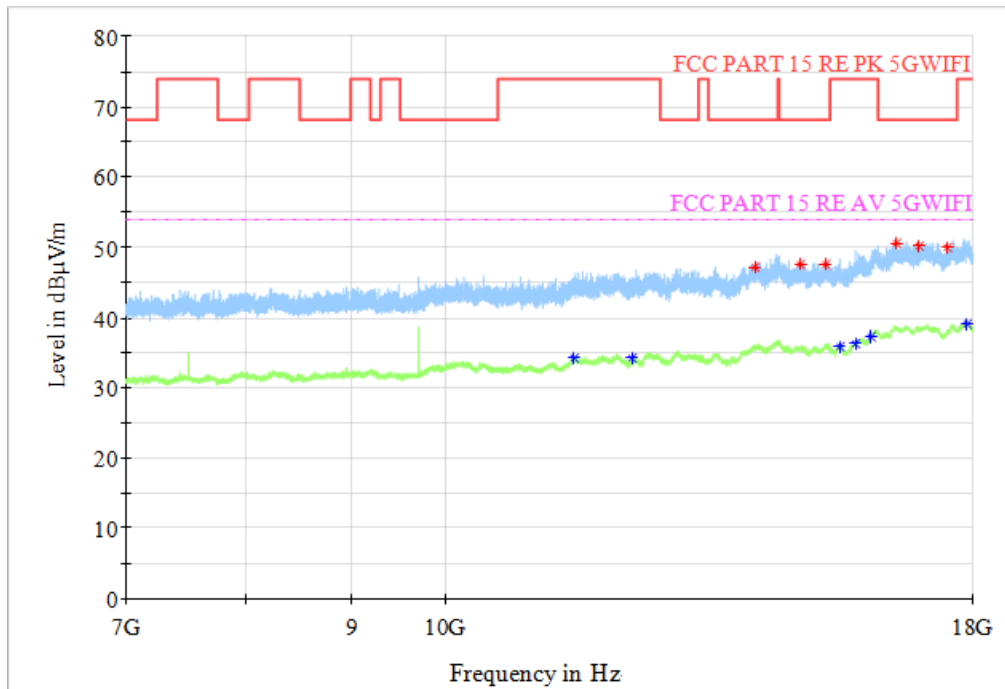


Fig. 42 Transmitter Spurious Emission (802.11ac-VHT40, CH38, 7 GHz ~ 18 GHz)

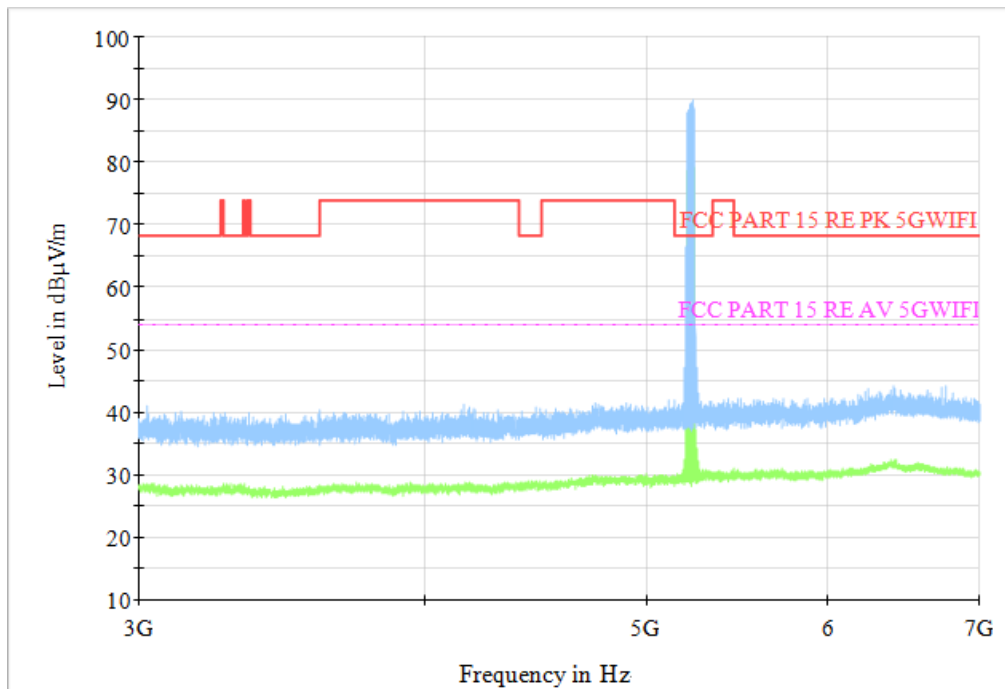


Fig. 43 Transmitter Spurious Emission (802.11ac-VHT40, CH46, 3 GHz ~ 7 GHz)

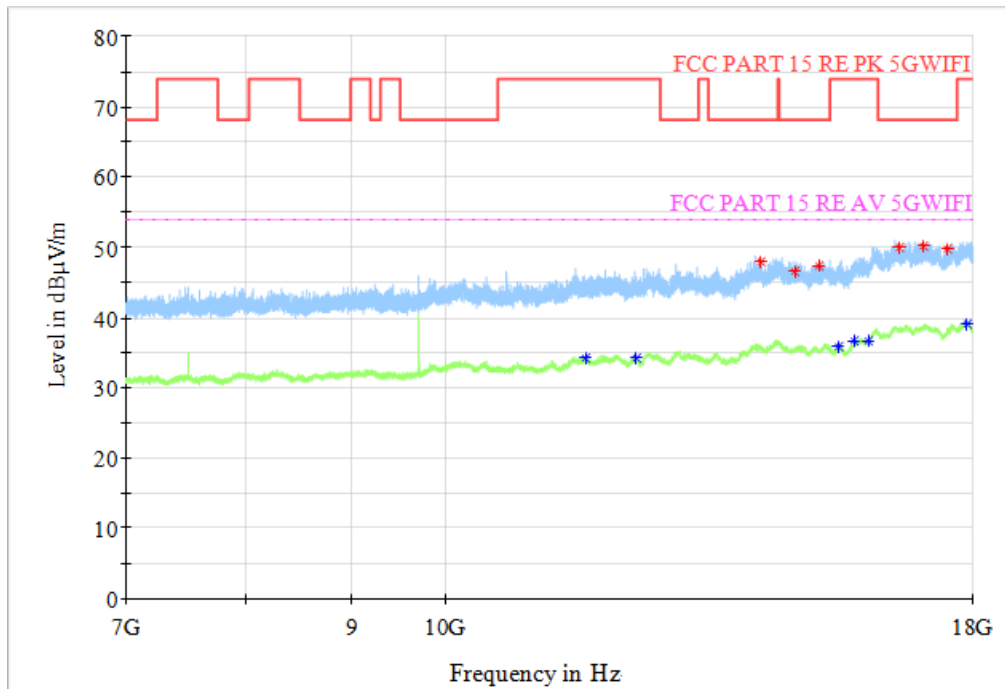


Fig. 44 Transmitter Spurious Emission (802.11ac-VHT40, CH46, 7 GHz ~ 18 GHz)

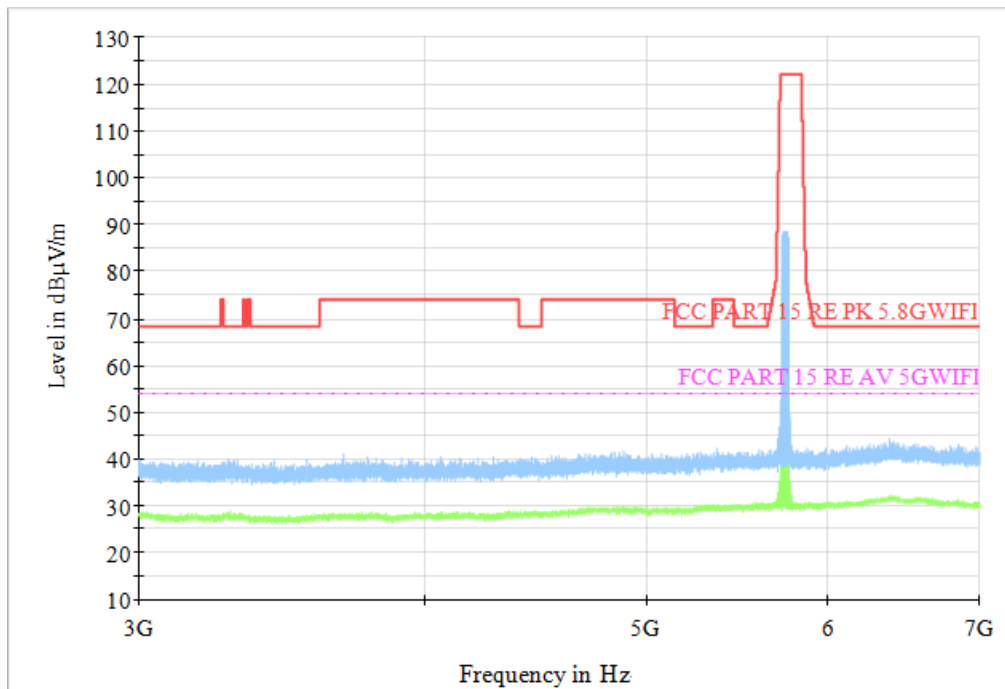


Fig. 45 Transmitter Spurious Emission (802.11ac-VHT40, CH151, 3 GHz ~ 7 GHz)

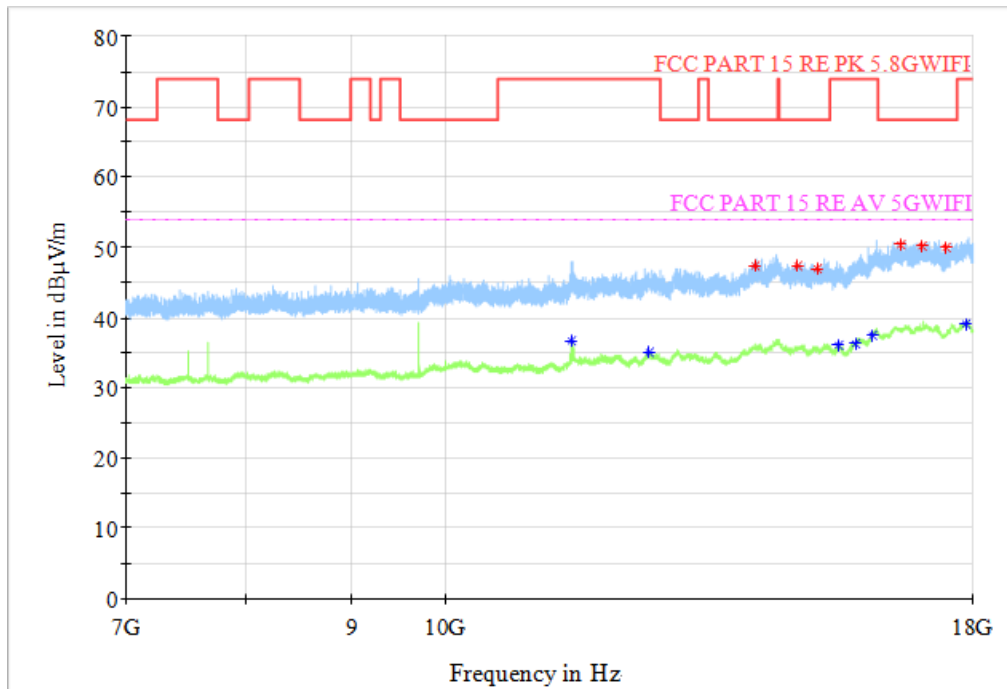


Fig. 46 Transmitter Spurious Emission (802.11ac-VHT40, CH151, 7 GHz ~ 18 GHz)

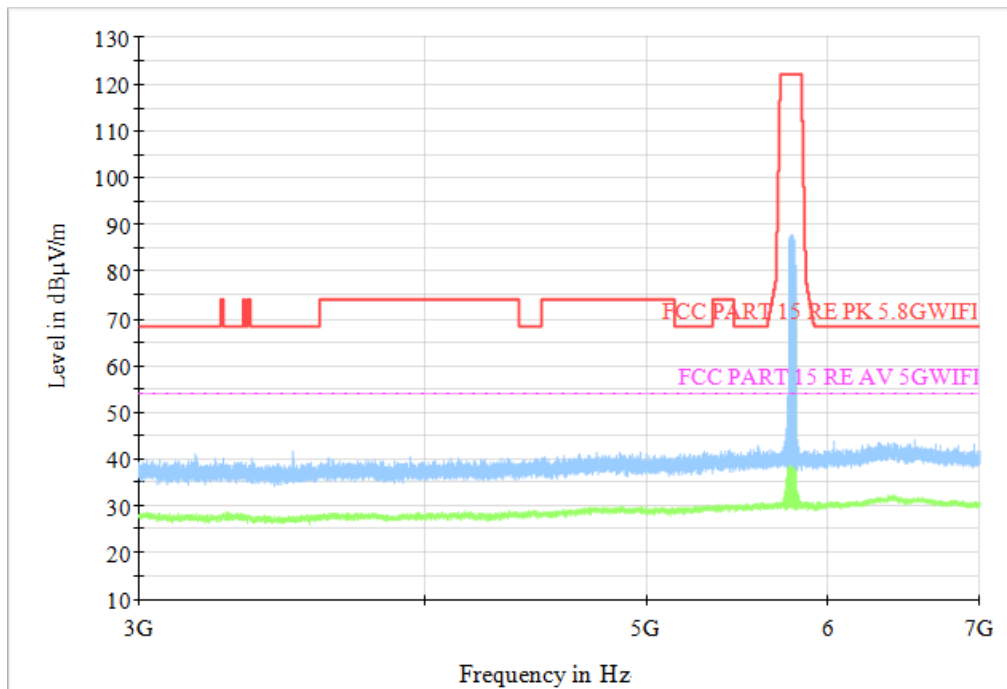


Fig. 47 Transmitter Spurious Emission (802.11ac-VHT40, CH159, 3 GHz ~ 7 GHz)

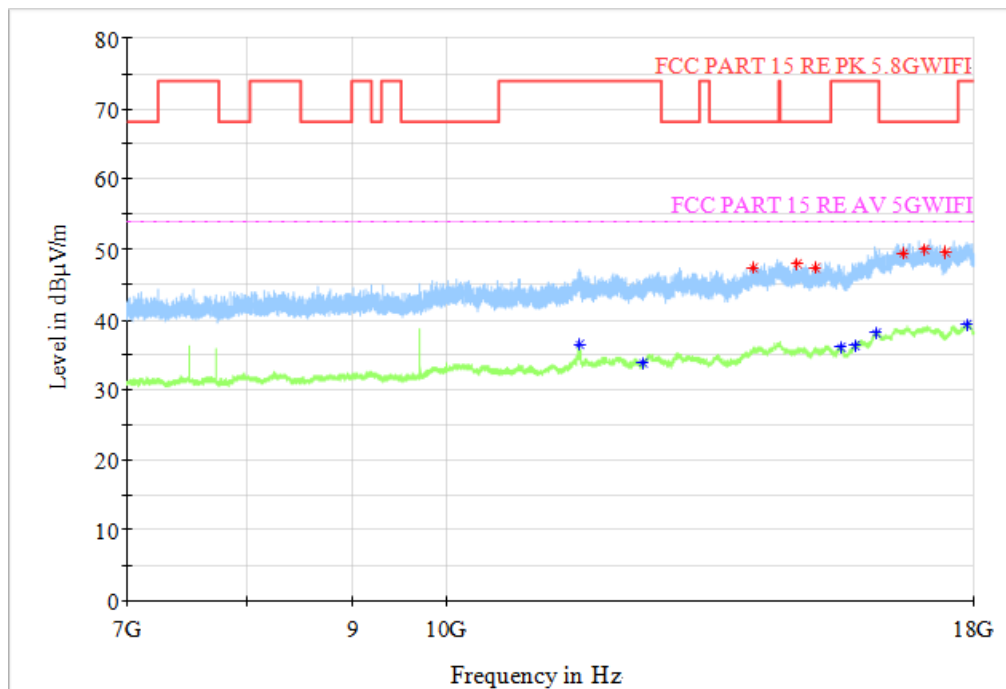


Fig. 48 Transmitter Spurious Emission (802.11ac-VHT40, CH159, 7 GHz ~ 18 GHz)

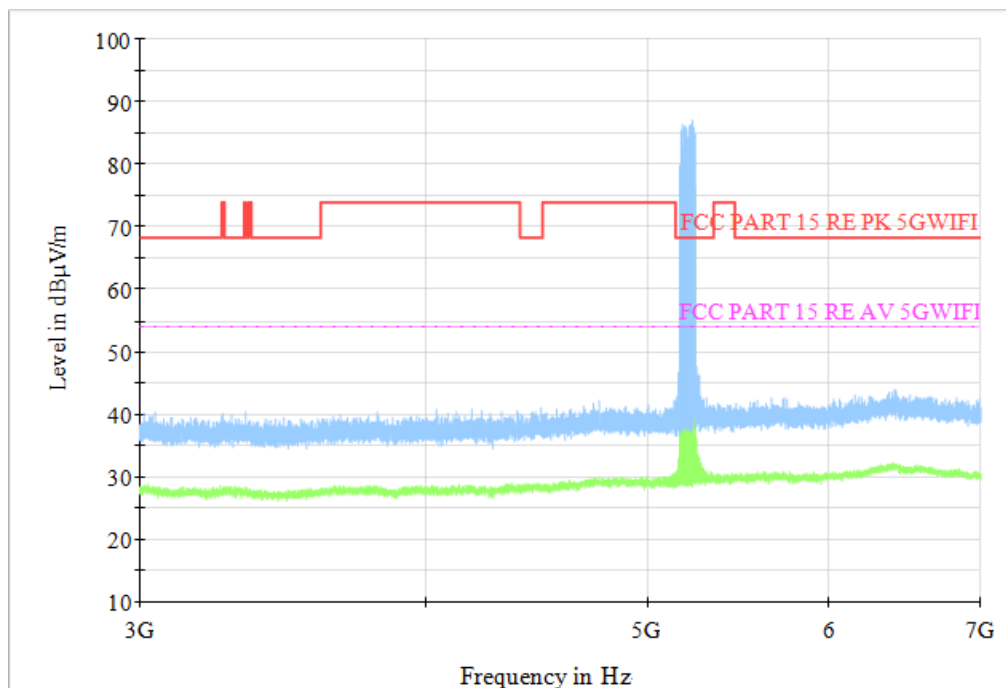


Fig. 49 Transmitter Spurious Emission (802.11ac-VHT80, CH42, 3 GHz ~ 7 GHz)

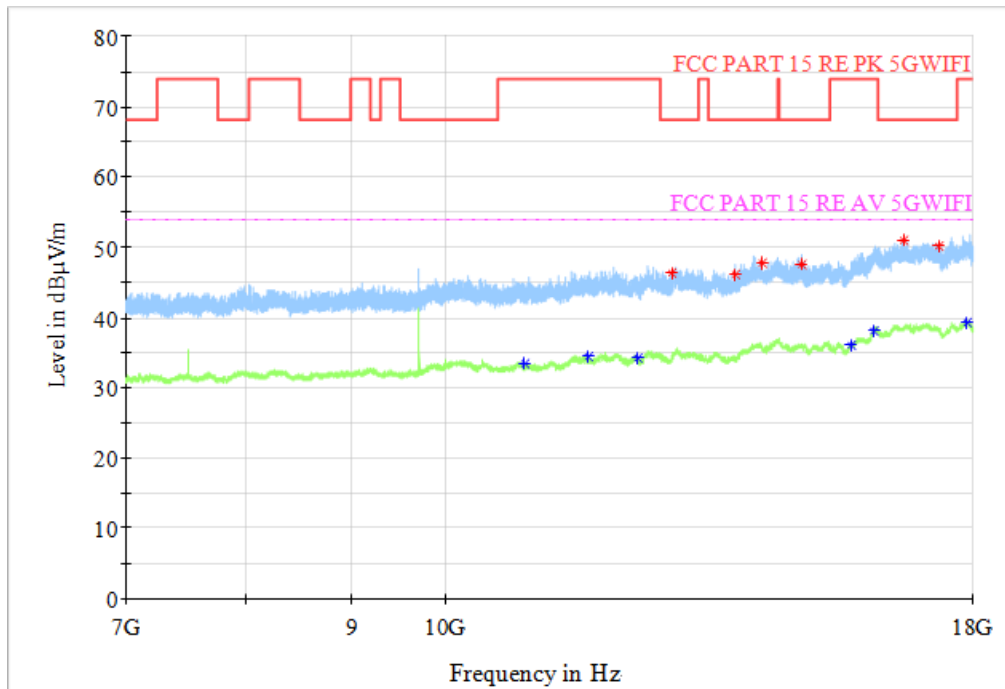


Fig. 50 Transmitter Spurious Emission (802.11ac-VHT80, CH42, 7 GHz ~ 18 GHz)

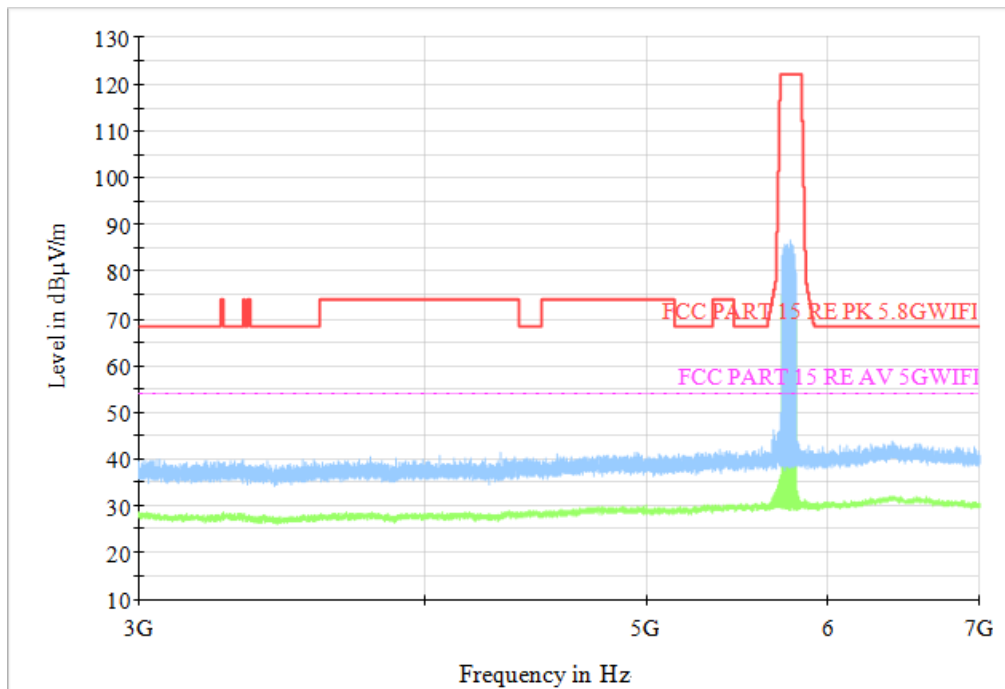


Fig. 51 Transmitter Spurious Emission (802.11ac-VHT80, CH155, 3 GHz ~ 7 GHz)

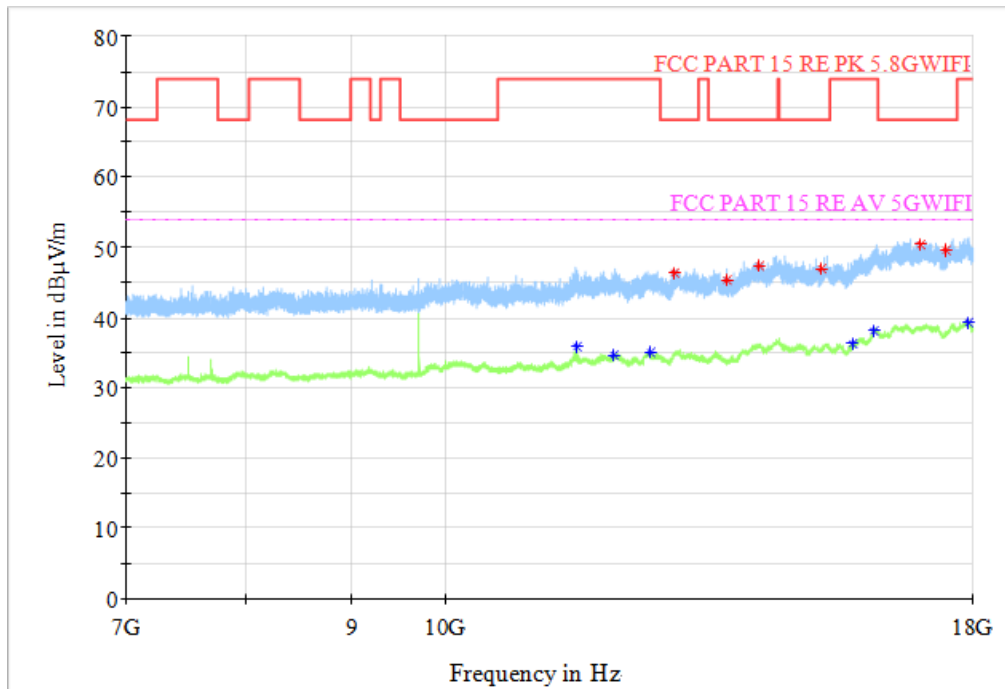


Fig. 52 Transmitter Spurious Emission (802.11ac-VHT80, CH156, 7 GHz ~ 18 GHz)

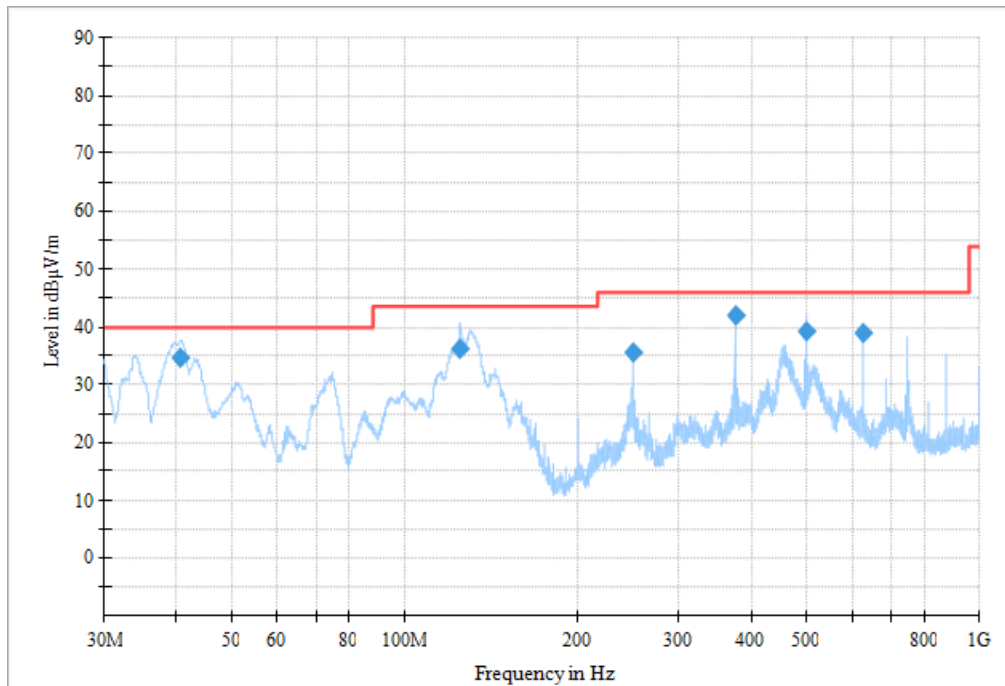


Fig. 53 Transmitter Spurious Emission (All channel, 30 MHz ~ 1 GHz)

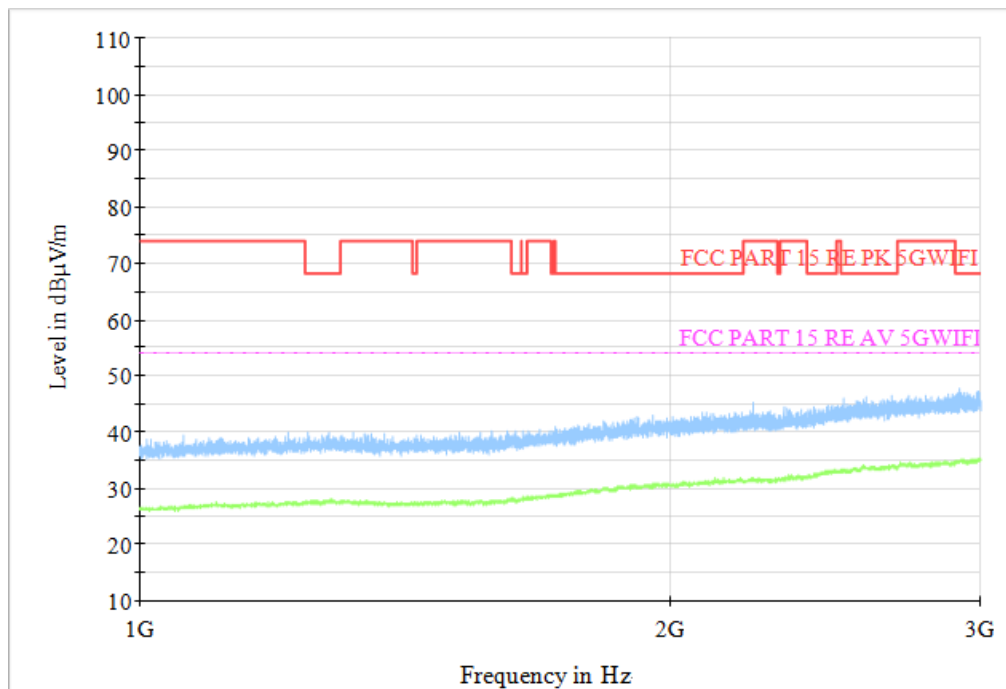


Fig. 54 Transmitter Spurious Emission (All channel, 1 GHz ~ 3 GHz)

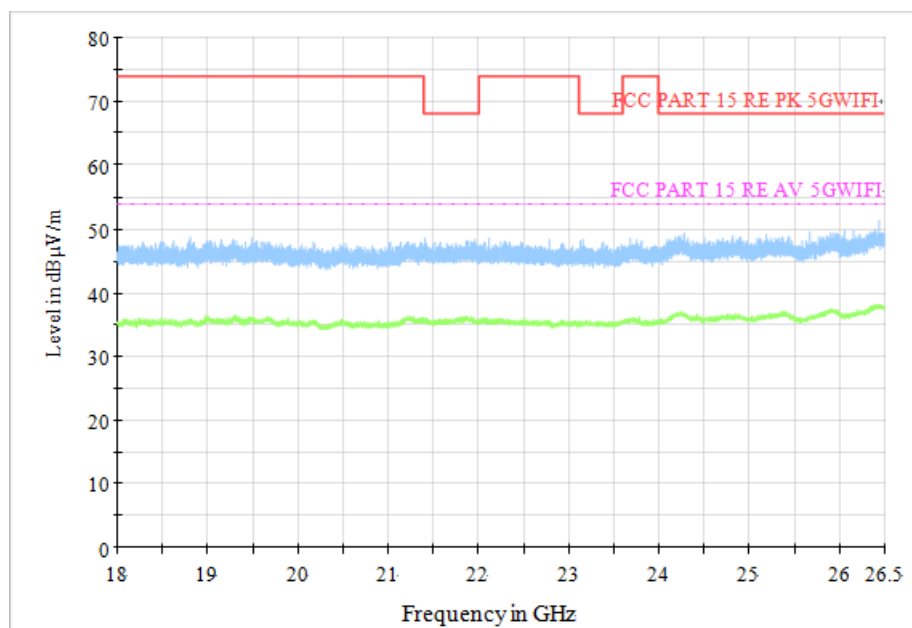


Fig. 55 Transmitter Spurious Emission (All channel, 18 GHz ~ 26.5 GHz)

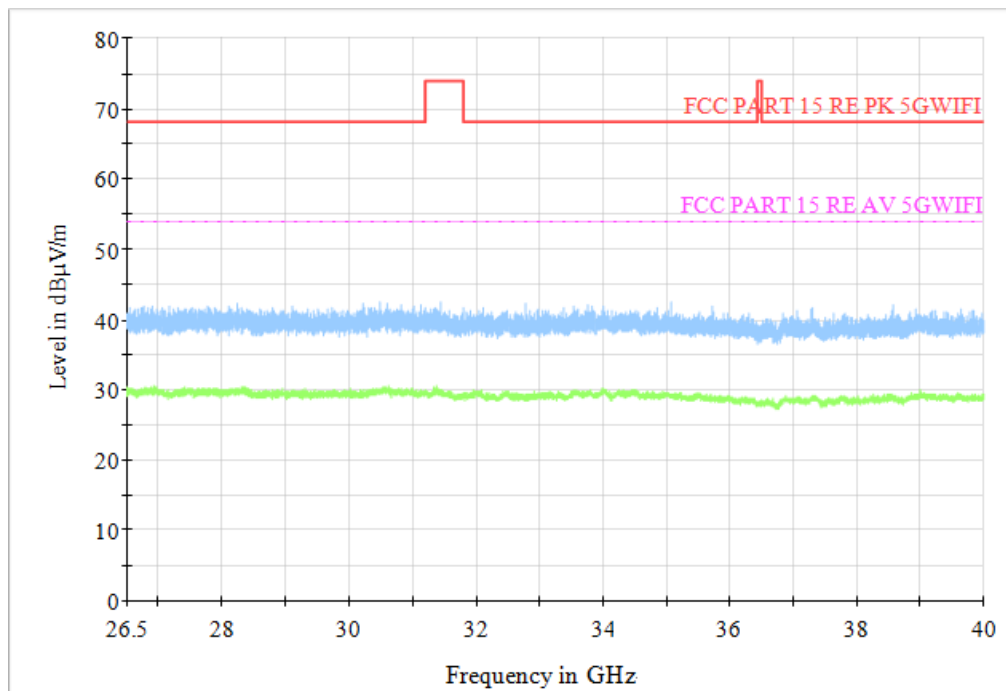


Fig. 56 Transmitter Spurious Emission (All channel, 26.5 GHz ~ 40 GHz)

Worst Case Result
802.11a CH48

| Frequency (MHz) | Max Peak (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Pol | Corr. (dB) |
|-----------------|-------------------------|----------------------|-------------|-----|------------|
| 13735.300000 | 46.40 | 68.20 | 21.80 | H | 8.7 |
| 14180.433333 | 47.44 | 68.20 | 20.76 | H | 10.8 |
| 15064.100000 | 47.52 | 68.20 | 20.68 | V | 11.1 |
| 16511.700000 | 49.20 | 68.20 | 19.00 | V | 14.8 |
| 16994.966667 | 49.95 | 68.20 | 18.25 | V | 14.8 |
| 17499.866667 | 48.54 | 68.20 | 19.66 | H | 14.9 |

| Frequency (MHz) | Average (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Pol | Corr. (dB) |
|-----------------|------------------------|----------------------|-------------|-----|------------|
| 11398.533333 | 33.08 | 54.00 | 20.92 | H | 5.6 |
| 11872.266667 | 34.04 | 54.00 | 19.96 | H | 6.7 |
| 12500.000000 | 34.60 | 54.00 | 19.40 | H | 8.0 |
| 15637.200000 | 34.78 | 54.00 | 19.22 | H | 12.0 |
| 16018.533333 | 36.39 | 54.00 | 17.61 | V | 13.5 |
| 17876.800000 | 38.80 | 54.00 | 15.20 | V | 16.3 |

802.11a CH165

| Frequency (MHz) | Max Peak (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Pol | Corr. (dB) |
|-----------------|-------------------------|----------------------|-------------|-----|------------|
| 13775.266667 | 45.78 | 68.20 | 22.42 | V | 8.6 |
| 14103.066667 | 47.38 | 68.20 | 20.82 | V | 10.2 |
| 15023.033333 | 47.39 | 68.20 | 20.81 | V | 10.9 |
| 16792.566667 | 49.98 | 68.20 | 18.22 | H | 14.7 |
| 17220.100000 | 51.30 | 68.20 | 16.90 | V | 14.8 |
| 17563.666667 | 50.22 | 68.20 | 17.98 | H | 15.3 |

| Frequency (MHz) | Average (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Pol | Corr. (dB) |
|-----------------|------------------------|----------------------|-------------|-----|------------|
| 11649.700000 | 37.97 | 54.00 | 16.03 | V | 6.9 |
| 11986.300000 | 34.18 | 54.00 | 19.82 | V | 7.1 |
| 12478.000000 | 34.42 | 54.00 | 19.58 | H | 7.9 |
| 15621.800000 | 34.81 | 54.00 | 19.19 | V | 11.8 |
| 16063.266667 | 37.03 | 54.00 | 16.97 | H | 13.8 |
| 17860.300000 | 38.71 | 54.00 | 15.29 | H | 16.1 |

802.11ac VHT40 CH46

| Frequency (MHz) | Max Peak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Pol | Corr. (dB) |
|-----------------|-------------------|----------------|-------------|-----|------------|
| 14197.666667 | 47.90 | 68.20 | 20.30 | H | 10.9 |
| 14767.100000 | 46.63 | 68.20 | 21.57 | H | 10.7 |
| 15164.200000 | 47.44 | 68.20 | 20.76 | V | 10.9 |
| 16590.166667 | 49.89 | 68.20 | 18.31 | H | 14.8 |
| 17025.033333 | 50.18 | 68.20 | 18.02 | H | 15.0 |
| 17485.200000 | 49.87 | 68.20 | 18.33 | V | 14.9 |

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Pol | Corr. (dB) |
|-----------------|------------------|----------------|-------------|-----|------------|
| 11687.100000 | 34.20 | 54.00 | 19.80 | V | 7.1 |
| 12363.966667 | 34.22 | 54.00 | 19.78 | V | 7.4 |
| 15499.333333 | 35.92 | 54.00 | 18.08 | V | 11.9 |
| 15769.200000 | 36.72 | 54.00 | 17.28 | V | 12.7 |
| 16014.500000 | 36.59 | 54.00 | 17.41 | V | 13.4 |
| 17877.166667 | 39.12 | 54.00 | 14.88 | H | 16.3 |

802.11ac VHT40 CH151

| Frequency (MHz) | Max Peak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Pol | Corr. (dB) |
|-----------------|-------------------|----------------|-------------|-----|------------|
| 14123.966667 | 47.43 | 68.20 | 20.77 | H | 10.4 |
| 14811.833333 | 47.31 | 68.20 | 20.89 | H | 10.7 |
| 15139.266667 | 46.92 | 68.20 | 21.28 | V | 11.1 |
| 16603.733333 | 50.39 | 68.20 | 17.81 | H | 14.8 |
| 17001.566667 | 50.09 | 68.20 | 18.11 | H | 14.9 |
| 17462.833333 | 50.04 | 68.20 | 18.16 | V | 14.8 |

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Pol | Corr. (dB) |
|-----------------|------------------|----------------|-------------|-----|------------|
| 11510.366667 | 36.72 | 54.00 | 17.28 | V | 6.2 |
| 12539.600000 | 35.12 | 54.00 | 18.88 | H | 8.0 |
| 15498.600000 | 35.98 | 54.00 | 18.02 | H | 11.9 |
| 15788.633333 | 36.35 | 54.00 | 17.65 | H | 12.7 |
| 16086.366667 | 37.40 | 54.00 | 16.60 | V | 13.9 |
| 17861.400000 | 39.02 | 54.00 | 14.98 | V | 16.1 |

802.11ac VHT80 CH42

| Frequency (MHz) | Max Peak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Pol | Corr. (dB) |
|-----------------|-------------------|----------------|-------------|-----|------------|
| 12871.433333 | 46.38 | 68.20 | 21.82 | H | 8.3 |
| 13802.766667 | 46.15 | 68.20 | 22.05 | H | 8.6 |
| 14225.900000 | 47.68 | 68.20 | 20.52 | V | 11.0 |
| 14871.233333 | 47.64 | 68.20 | 20.56 | V | 10.9 |
| 16665.333333 | 50.94 | 68.20 | 17.26 | H | 14.9 |
| 17345.133333 | 50.20 | 68.20 | 18.00 | H | 14.7 |

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Pol | Corr. (dB) |
|-----------------|------------------|----------------|-------------|-----|------------|
| 10924.800000 | 33.37 | 54.00 | 20.63 | H | 5.2 |
| 11716.433333 | 34.46 | 54.00 | 19.54 | H | 6.9 |
| 12390.000000 | 34.27 | 54.00 | 19.73 | V | 7.3 |
| 15706.500000 | 36.14 | 54.00 | 17.86 | V | 12.3 |
| 16117.533333 | 38.11 | 54.00 | 15.89 | H | 14.1 |
| 17876.800000 | 39.27 | 54.00 | 14.73 | V | 16.3 |

802.11ac VHT80 CH155

| Frequency (MHz) | Max Peak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Pol | Corr. (dB) |
|-----------------|-------------------|----------------|-------------|-----|------------|
| 12912.866667 | 46.33 | 68.20 | 21.87 | V | 8.6 |
| 13682.133333 | 45.39 | 68.20 | 22.81 | V | 8.6 |
| 14175.300000 | 47.42 | 68.20 | 20.78 | V | 10.8 |
| 15209.666667 | 46.99 | 68.20 | 21.21 | H | 11.0 |
| 16975.900000 | 50.39 | 68.20 | 17.81 | H | 14.8 |
| 17476.766667 | 49.59 | 68.20 | 18.61 | H | 14.8 |

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Pol | Corr. (dB) |
|-----------------|------------------|----------------|-------------|-----|------------|
| 11566.833333 | 35.80 | 54.00 | 18.20 | V | 6.5 |
| 12062.933333 | 34.68 | 54.00 | 19.32 | V | 7.3 |
| 12563.800000 | 34.99 | 54.00 | 19.01 | H | 7.9 |
| 15736.933333 | 36.19 | 54.00 | 17.81 | H | 12.5 |
| 16110.933333 | 38.00 | 54.00 | 16.00 | H | 14.0 |
| 17921.166667 | 39.24 | 54.00 | 14.76 | V | 16.2 |

Note:

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss. P_{Mea} is the field strength recorded from the instrument. The measurement results are obtained as described below:

$$\text{Result} = P_{Mea} + A_{Rpl} = P_{Mea} + \text{Cable Loss} + \text{Antenna Factor}$$

A.9. Radiated Spurious Emissions < 30MHz

Measurement Limit (15.209, 9kHz-30MHz):

| Frequency (MHz) | Field strength ($\mu\text{V/m}$) | Measurement distance (m) |
|-----------------|------------------------------------|--------------------------|
| 0.009 - 0.490 | 2400/F(kHz) | 300 |
| 0.490 - 1.705 | 24000/F(kHz) | 30 |
| 1.705 - 30.0 | 30 | 30 |

The measurement is made according to KDB 789033, KDB 662911.

Note: The measurement distance during the test is 3m. The limit used in plots recalculated based on the extrapolation factor of 40 dB/decade.

Measurement Result:

| Channel | Frequency Range | Test Results | Conclusion |
|-------------|-----------------|--------------|------------|
| All Channel | 9 kHz ~ 30 MHz | Fig.57 | P |

Conclusion: **PASS**

Test graphs as below:

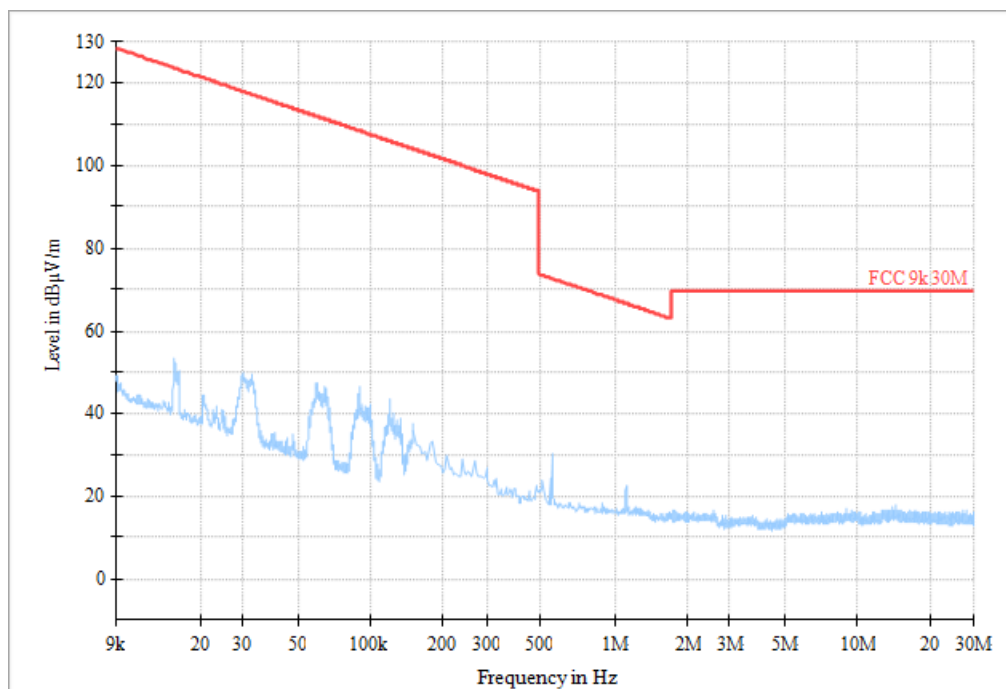


Fig. 57 Radiated Spurious Emission (All Channel, 9 kHz ~30 MHz)

A.10. AC Power Line Conducted Emission

Test Condition:

| Voltage(V) | Frequency(Hz) |
|------------|---------------|
| 120 | 60 |

Measurement Result and limit:

RLAN (Quasi-peak Limit)-AE2

| Frequency range (MHz) | Quasi-peak Limit (dB μ V) | Result (dB μ V) | | Conclusion |
|-----------------------|-------------------------------|---------------------|--------|------------|
| | | Traffic | Idle | |
| 0.15 to 0.5 | 66 to 56 | Fig.58 | Fig.59 | P |
| 0.5 to 5 | 56 | | | |
| 5 to 30 | 60 | | | |

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

RLAN (Average Limit)-AE2

| Frequency range (MHz) | Average-peak Limit (dB μ V) | Result (dB μ V) | | Conclusion |
|-----------------------|---------------------------------|---------------------|--------|------------|
| | | Traffic | Idle | |
| 0.15 to 0.5 | 56 to 46 | Fig.58 | Fig.59 | P |
| 0.5 to 5 | 46 | | | |
| 5 to 30 | 50 | | | |

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

Note: The measurement results include the L1 and N measurements.

Conclusion: PASS

Test graphs as below:

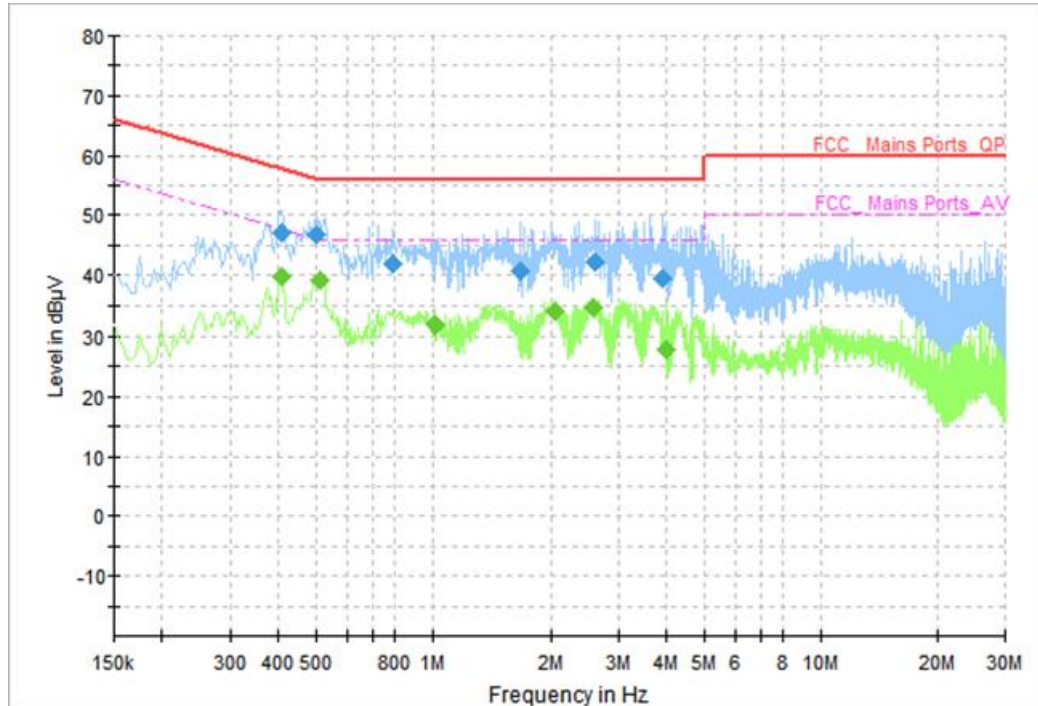


Fig. 58 AC Power line Conducted Emission (Traffic)

Measurement Result: Quasi Peak

| Frequency (MHz) | QuasiPeak (dBµV) | Limit (dBµV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|------------------|--------------|-------------|------|--------|------------|
| 0.406000 | 47.11 | 57.73 | 10.62 | N | ON | 9.7 |
| 0.498000 | 46.62 | 56.03 | 9.41 | N | ON | 9.7 |
| 0.794000 | 41.89 | 56.00 | 14.11 | N | ON | 9.7 |
| 1.666000 | 40.59 | 56.00 | 15.41 | N | ON | 9.7 |
| 2.618000 | 42.18 | 56.00 | 13.82 | N | ON | 9.7 |
| 3.914000 | 39.57 | 56.00 | 16.43 | N | ON | 9.7 |

Measurement Result: Average

| Frequency (MHz) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|----------------|--------------|-------------|------|--------|------------|
| 0.406000 | 39.68 | 47.73 | 8.05 | N | ON | 9.7 |
| 0.510000 | 39.13 | 46.00 | 6.87 | L1 | ON | 9.7 |
| 1.010000 | 31.98 | 46.00 | 14.02 | N | ON | 9.7 |
| 2.046000 | 34.00 | 46.00 | 12.00 | N | ON | 9.7 |
| 2.582000 | 34.58 | 46.00 | 11.42 | N | ON | 9.7 |
| 3.990000 | 27.81 | 46.00 | 18.19 | N | ON | 9.7 |

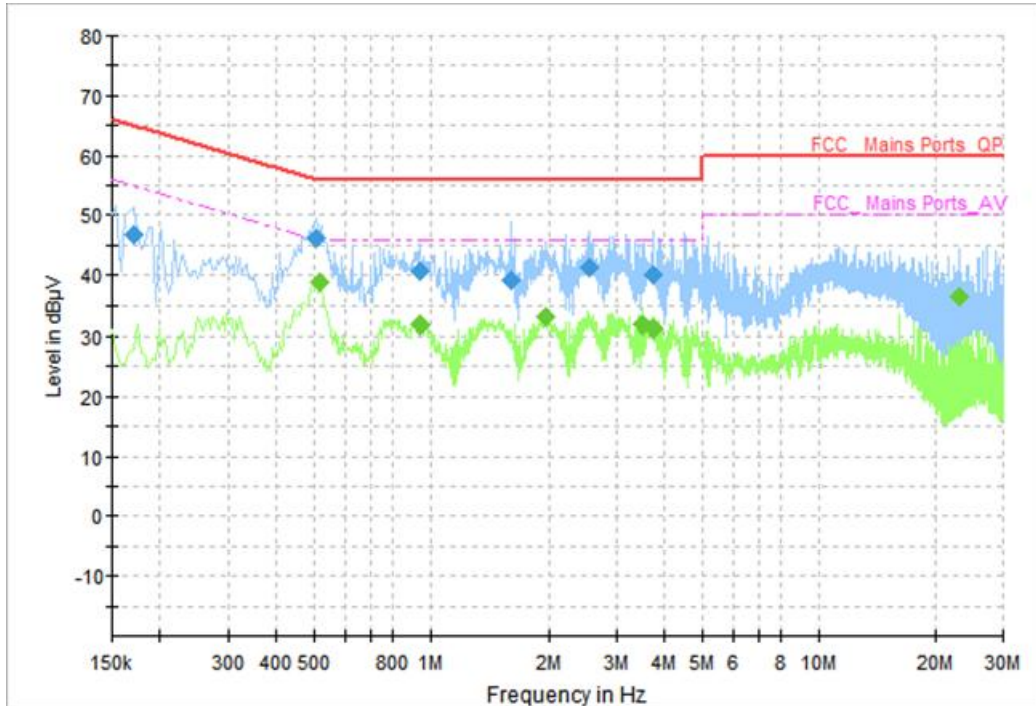


Fig. 59 AC Power line Conducted Emission (Idle)

Measurement Result: Quasi Peak

| Frequency (MHz) | QuasiPeak (dBµV) | Limit (dBµV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|------------------|--------------|-------------|------|--------|------------|
| 0.170000 | 46.77 | 64.96 | 18.19 | L1 | ON | 9.7 |
| 0.506000 | 46.23 | 56.00 | 9.77 | N | ON | 9.7 |
| 0.938000 | 40.54 | 56.00 | 15.46 | N | ON | 9.7 |
| 1.602000 | 39.09 | 56.00 | 16.91 | N | ON | 9.7 |
| 2.558000 | 41.41 | 56.00 | 14.59 | N | ON | 9.7 |
| 3.734000 | 40.13 | 56.00 | 15.87 | N | ON | 9.7 |

Measurement Result: Average

| Frequency (MHz) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|----------------|--------------|-------------|------|--------|------------|
| 0.518000 | 38.70 | 46.00 | 7.30 | L1 | ON | 9.7 |
| 0.942000 | 31.96 | 46.00 | 14.04 | N | ON | 9.7 |
| 1.958000 | 33.14 | 46.00 | 12.86 | N | ON | 9.7 |
| 3.514000 | 31.95 | 46.00 | 14.05 | N | ON | 9.7 |
| 3.734000 | 31.08 | 46.00 | 14.92 | N | ON | 9.7 |
| 23.130000 | 36.25 | 50.00 | 13.75 | N | ON | 10.3 |

A.11. Frequency Stability

Manufacturers ensured the EUT meet the requirement of frequency stability, such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

Measurement Condition:

T min = -10°C T nom = 25°C T max = 45°C
 V min = 5V V nom = 12V V max = 18V

Measurement Result:

| Mode | Channel | Condition | | Frequency | Conclusion |
|-------------------|--------------------|-----------|-------|-----------|------------|
| | | T | V | | |
| 802.11a | 5180 MHz (CH36) | T nom | V nom | 5179.9831 | P |
| | | T max | V nom | 5179.9853 | P |
| | | T min | V nom | 5179.9845 | P |
| | | T nom | V max | 5179.9831 | P |
| | | T nom | V min | 5179.9773 | P |
| 802.11ac VHT40 | 5190 MHz (CH38) | T nom | V nom | 5189.9131 | P |
| | | T max | V nom | 5189.9638 | P |
| | | T min | V nom | 5189.9684 | P |
| | | T nom | V max | 5189.9658 | P |
| | | T nom | V min | 5189.9652 | P |
| 802.11ac VHT80 | 5210 MHz (CH42) | T nom | V nom | 5209.9831 | P |
| | | T max | V nom | 5209.9752 | P |
| | | T min | V nom | 5209.9754 | P |
| | | T nom | V max | 5209.9842 | P |
| | | T nom | V min | 5209.9753 | P |

A.12. Power Control

A Transmission Power Control mechanism is not required for systems with an e.i.r.p. of less than 27dBm (500mW).

*** END OF REPORT BODY ***