



# TEST REPORT

No.I23N00642-WLAN 5GHz

for

**Spectralink Corporation**

**Wifi/BT Phone**

**Model Name: Versity 9753**

with

**Hardware Version: DVT**

**Software Version: vSL25**

**FCC ID: IYG97XX**

**IC:2128B-97XX**

**Issued Date: 2023-07-26**

**Designation Number: CN1210**

**ISED Assigned Code: 23289**

**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.

**Test Laboratory:**

**SAICT, Shenzhen Academy of Information and Communications Technology**

Building G, Shenzhen International Innovation Center, No.1006 Shennan Road, Futian District, Shenzhen, Guangdong, P. R. China 518000.

Tel: +86(0)755-33322000, Fax: +86(0)755-33322001

Email: yewu@caict.ac.cn, website: [www.saict.ac.cn](http://www.saict.ac.cn)



## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Description</b>	<b>Issue Date</b>
I23N00642-WLAN 5GHz	Rev.0	1st edition	2023-07-26

Note: the latest revision of the test report supersedes all previous versions.



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## 1. Summary of Test Report

### 1.1. Test Items

Description	Wifi/BT Phone
Model Name	Versity 9753
Applicant's name	Spectralink Corporation
Manufacturer's Name	Spectralink Corporation

### 1.2. Test Standards

FCC Part15-2021; ANSI C63.10-2013; RSS-247 Issue 2; RSS-Gen Issue 5 A2; KDB789033-V02r01; KDB 662911-V02r01.

### 1.3. Test Result

**Pass**

Please refer to 5.2 Test Results.

### 1.4. Testing Location

Address: Building G, Shenzhen International Innovation Center, No.1006 Shennan Road, Futian District, Shenzhen, Guangdong, P. R. China 518000

### 1.5. Project data

Testing Start Date:	2023-04-21
Testing End Date:	2023-06-14

### 1.6. Signature

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Lin Kanfeng  
(Prepared this test report)

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An Ran  
(Reviewed this test report)

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Zhang Bojun  
(Approved this test report)



## **2. Client Information**

### **2.1. Applicant Information**

Company Name: Spectralink Corporation  
Address: 2560 55th Street Boulder CO 80301 USA  
Contact Person Andrew Jackson  
E-Mail andrew.jackson@spectralink.com  
Telephone: /  
Fax: +1 (303) 441-7618

### **2.2. Manufacturer Information**

Company Name: Spectralink Corporation  
Address: 2560 55th Street Boulder CO 80301 USA  
Contact Person Andrew Jackson  
E-Mail andrew.jackson@spectralink.com  
Telephone: /  
Fax: +1 (303) 441-7618



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

#### 3.1. About EUT

Description	Wifi/BT Phone
Model Name	Versity 9753
RF Protocol	IEEE 802.11a, 802.11n-HT20/40, 802.11ac-VHT20/40/80/160, 802.11ax-HE20/40/80/160
WLAN Frequency Range	FCC Band: 5150~5250MHz;5250~5350MHz; 5470~5725MHz; 5725~5825MH ISED Band: 5150~5250MHz;5250~5350MHz; 5470~5600MHz;5650~5725 MHz; 5725~5825MH (Note 3)
Type of modulation	OFDM/OFDMA
Antenna Type	Integrated
Antenna Gain	Antenna 0 = 0.68 dBi; Antenna 1 =0.76 dBi Directional Gain: 0.72dBi (see Note1)
Power Supply	3.85V DC by Battery
FCC ID	IYG97XX
IC	2128B-97XX
Condition of EUT as received	No abnormality in appearance

Note1: After confirmation with the customer, the Directional gain =  $10\log [(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10})/NANT]$ dBi =  $10\log [(10^{0.68/10} + 10^{0.76/10})/2]$ dBi  $\approx 0.72$ dBi.

Note2: 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.

Note3: For some frequency, such as ch114 5570MHz, ch118 5590MHz, ch120 5600MHz, ch122 5610MHz, ch124 5620MHz, ch126 5630MHz, ch128 5640MHz are not permit for ISED.

#### 3.2. Internal Identification of EUT

EUT ID*	SN or IMEI	HW Version	SW Version	Date of Receipt
UT01aa	MHNE03BQKGG000E	DVT	vSL25	2023-04-21
UT14aa	MHNE04BBHHG000S	DVT	vSL25	2023-05-05

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

\*UT01aa is used for Conduction test; UT14aa is used for radiation test and AC Power line Conducted Emission test.

#### 3.3. Internal Identification of AE

AE No.	Description	AE ID*
AE1	Battery	/
AE2	Charger	Aa01
AE3	USB Cable	Ca01a
AE1-1		
Model	BLI0000100	



Manufacturer	Ningbo Veken Battery Co. , Ltd.
Capacity	3020mAh
Nominal Voltage	3.85V
AE1-2	
Model	351038P
Manufacturer	Chongqing VDL Electronics Co., Ltd.
Capacity	95mAh
Nominal Voltage	3.7V
AE2	
Model	IN-CA-310Q
Manufacturer	Shenzhen Inno Vision Industrial 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 Versity 9753 with integrated antenna and battery. It consists of normal options: Lithium Battery and Charger. 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.

<b>Reference</b>	<b>Title</b>	<b>Version</b>
FCC Part15	FCC CFR 47,Part 15,Subpart C FCC CFR 47,Part 15,Subpart E	2021
ANSI C63.10	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices	2013
RSS-247	Spectrum Management and Telecommunications Radio Standards Specification Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices	Issue 2 February, 2017
RSS-Gen	Spectrum Management and Telecommunications Radio Standards Specification General Requirements for Compliance of Radio Apparatus	Issue 5 A2 February, 2021
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 (e.g., MIMO, Smart Antenna, etc)	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	Sub-clause of IC	Verdict
1	Maximum Output Power	15.407	RSS-247 section 5.4	<b>P</b>
2	Power Spectral Density	15.407	RSS-247 section 5.2	<b>P</b>
3	Occupied 26dB Bandwidth	15.403	RSS-247 section 5.2	<b>P</b>
4	Occupied 6dB Bandwidth	15.407	RSS-247 section 5.2	<b>P</b>
5	99% Occupied Bandwidth	15.403	RSS-Gen section 6.7	<b>P</b>
6	Band edge compliance	15.209	RSS-247 section 5.5	<b>P</b>
7	Transmitter Spurious Emissions	15.407, 15.205	RSS-247 section 5.5/ RSS-Gen section 6.13	<b>P</b>
8	AC Power line Conducted	15.107, 15.207	RSS-Gen section 8.8	<b>P</b>
9	Transmit Power Control	15.407	/	<b>NA</b>

Please refer to **ANNEX A** for detail.

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/manufacture 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.

Disclaimer:

A. After confirmation with the customer, the sample information provided by the customer may affect the validity of the measurement results in this report, and the impact and consequences arising therefrom shall be borne by the customer.

B. The samples in this report are provided by the customer, and the test results are only applicable to the samples received.

## 6. Test Equipments Utilized

### Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due Date	Calibration Period
1	Vector Signal Analyzer	FSV40	100903	Rohde & Schwarz	2023-12-28	1 year
2	Power Sensor	U2021XA	MY55430013	Keysight	2023-12-28	1 year
3	Data Acquisiton	U2531A	TW55443507	Keysight	/	/
4	Shielding Room	S81	CT000986-13 44	ETS-Lindgren	2026-09-12	5 years

### Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1	Test Receiver	ESR7	101676	Rohde & Schwarz	2023-11-23	1 year
2	Spectrum Analyzer	FSV40	101192	Rohde & Schwarz	2024-01-11	1 year
3	BiLog Antenna	3142E	0224831	ETS-Lindgren	2024-05-27	3 years
4	Horn Antenna	3117	00066577	ETS-Lindgren	2025-04-17	3 years
5	Horn Antenna	QSH-SL-1 8-26-S-20	17013	Q-par	2026-02-01	3 years
6	Horn Antenna	QSH-SL-2 6-40-K-20	17014	Q-par	2026-01-31	3 years
7	Anechoic Chamber	FACT3-2.0	1285	ETS-Lindgren	2025-05-28	2 years
8	Loop Antenna	HLA6120	35779	TESEQ	2025-05-12	3 years
9	Test Receiver	ESCI	100702	Rohde & Schwarz	2024-01-11	1 year
10	LISN	ENV216	102067	Rohde & Schwarz	2023-09-06	1 year

### Test software

No.	Equipment	Manufacturer	Version
1	TechMgr Software	CAICT	2.1.1
2	EMC32	Rohde & Schwarz	10.50.40

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

## 7. Laboratory Environment

### Shielded room

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz> 60 dB; 1MHz-18000MHz>90 dB
Electrical insulation	> 2 MΩ
Ground system resistance	< 4 Ω

### Anechoic chamber

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz> 60 dB; 1MHz-18000MHz>90 dB
Electrical insulation	> 2 MΩ
Ground system resistance	< 4 Ω
Normalised site attenuation (NSA)	< ± 4 dB, 3 m distance, from 30 to 1000 MHz
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

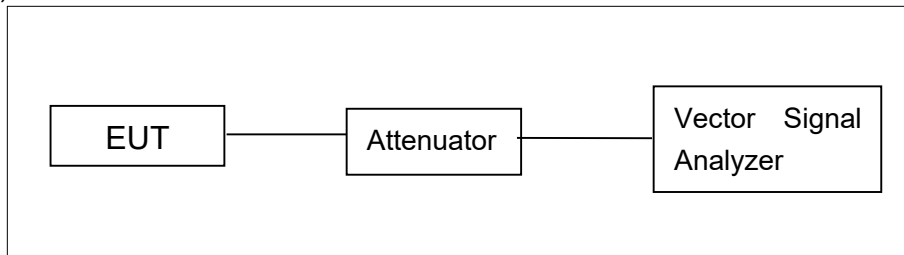
Test Name	Uncertainty ( $k=2$ )	
1. RF Output Power - Conducted	1.36dB	
2. Power Spectral Density - Conducted	1.36dBm/MHz	
3. Occupied channel bandwidth - Conducted	4.56kHz	
4. Transmitter Spurious Emission - Radiated	$9\text{kHz} \leq f < 30\text{MHz}$	1.70dB
	$30\text{MHz} \leq f < 1\text{GHz}$	4.80dB
	$1\text{GHz} \leq f < 18\text{GHz}$	4.62dB
	$18\text{GHz} \leq f \leq 40\text{GHz}$	2.36dB
5. AC Power line Conducted Emission	$150\text{kHz} \leq f \leq 30\text{MHz}$	2.68dB

## **ANNEX A: MEASUREMENT 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.



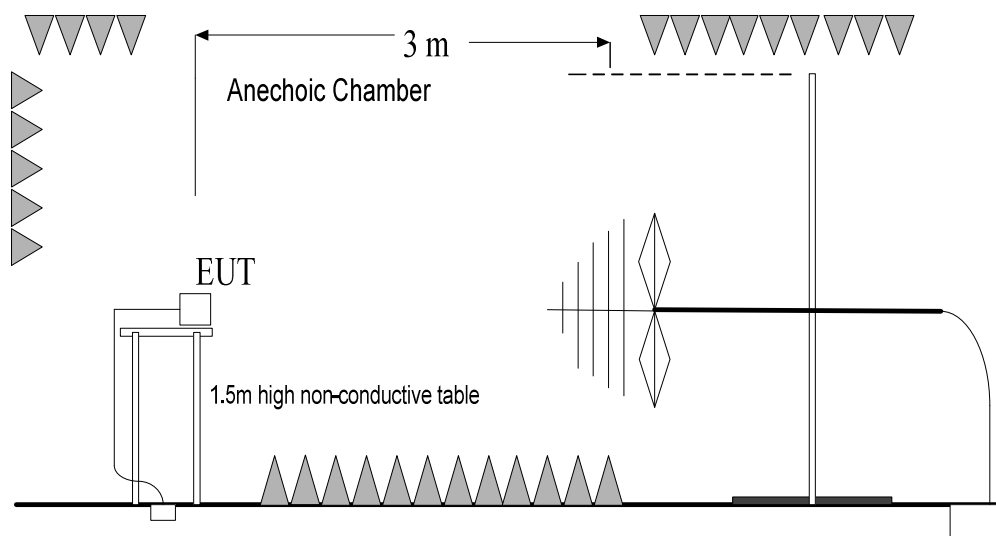
#### **Radiated Emission Measurements**

##### **Test setup:**

##### **9kHz-30MHz:**

The EUT are measured in a anechoic chamber. The EUT is placed on a non-conductive stand of 80cm high, and at a measurement distance of 3m from the receiving antenna. The center of the receiving loop antenna is 1.0 meter above the ground. The test setup refers to figure below.

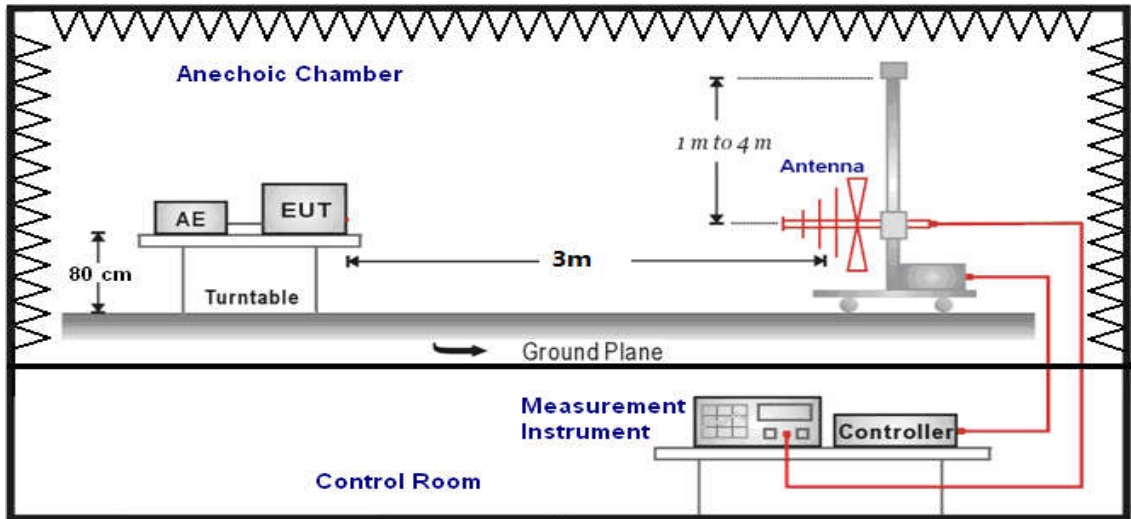
Detected emissions were maximized at each frequency by rotating the EUT and adjusting the receiver antenna polarization.



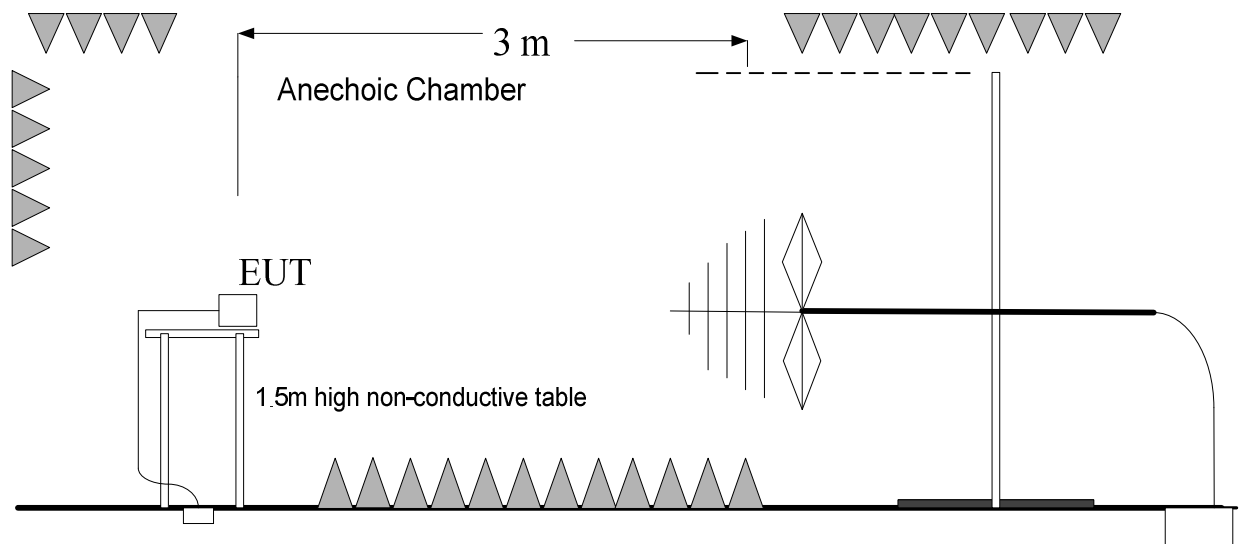
##### **30MHz-40GHz:**

The EUT are measured in a anechoic chamber. The EUT is placed on a non-conductive stand of 80cm high, and at a measurement distance of 3m from the receiving antenna. The center of the receiving antenna is 1.0 meter to 4.0 meter above the ground. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT and adjusting the receiver antenna polarization.

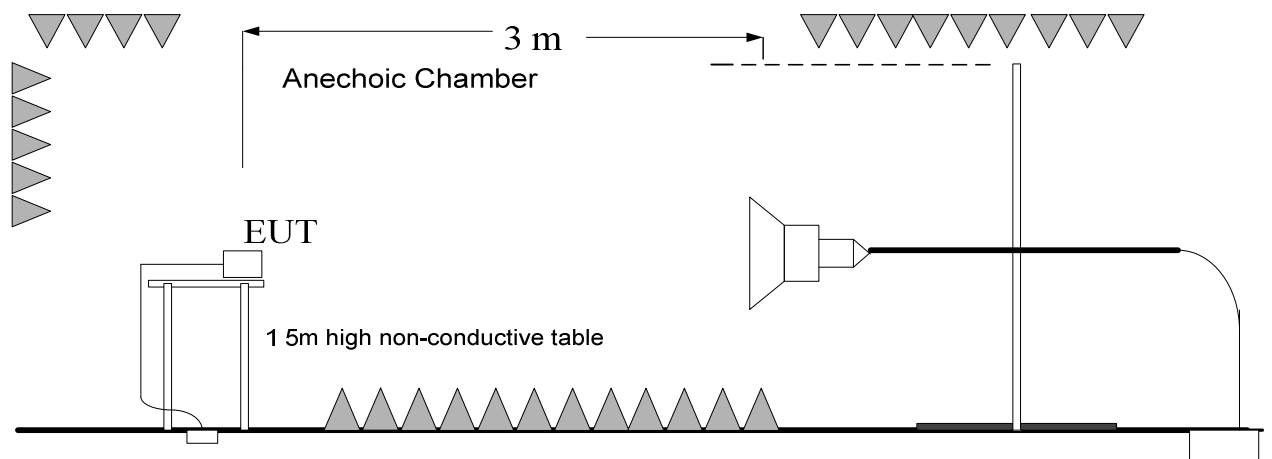
**30MHz-1GHz:**



**1GHz-3GHz:**

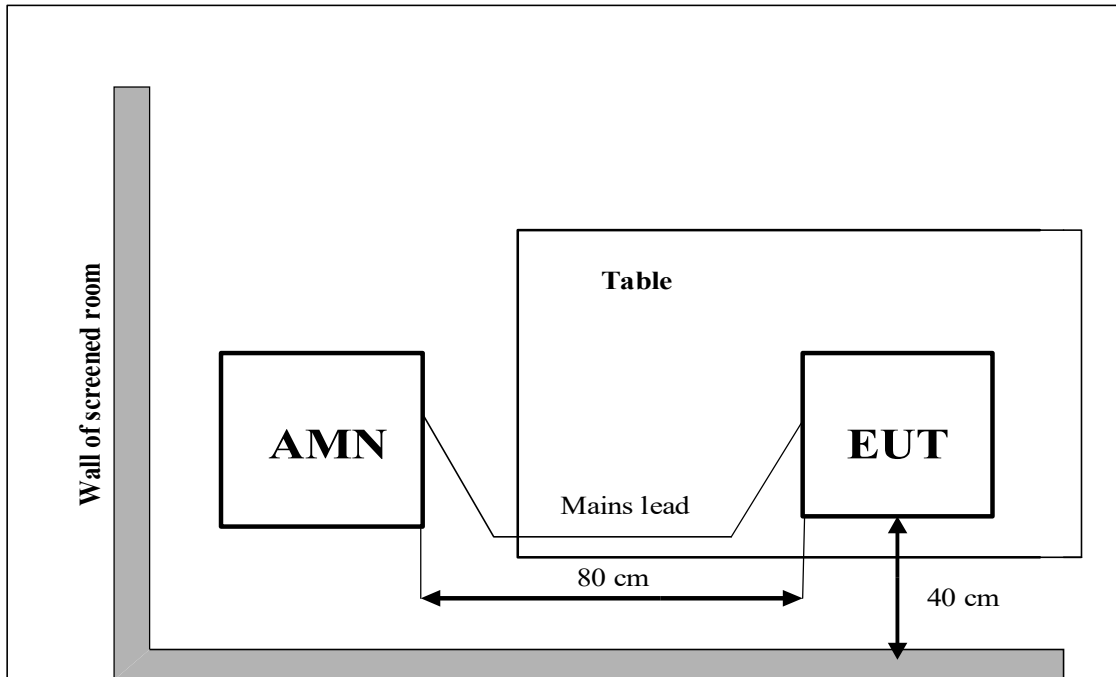


**3GHz-40GHz:**



### AC Power line Conducted Emission Measurement

For WLAN, the EUT is working under test mode. The EUT is commanded to operate at maximum transmitting power.



**A.2. Maximum Output Power**

**Measurement Limit and Method:**

Standard	Frequency (MHz)	Limit (dBm)
FCC CRF Part 15.407 & RSS-247 section 5.4	5150MHz~5250MHz	24
	5250MHz~5350MHz	24 or 11+10logB
	5470MHz~5725MHz	24 or 11+10logB
	5725MHz~5850MHz	30

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

Standard	Frequency (MHz)	Limit (dBm)
RSS-247 6.2	5150MHz~5250MHz	23 (EIRP) or 10+10logB(EIRP)
	5250MHz~5350MHz	24 or 11+10logB; 30 (EIRP) or 17+10logB(EIRP)
	5470MHz~5600MHz	
	5650MHz~5725MHz	
	5725MHz~5850MHz	30

Limit use the less value, and B is the 99% bandwidth.

**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:**

**Antenna 0 (SISO)**

**802.11a mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 36	5180 MHz	17.38
	CH 40	5200 MHz	17.31
	CH 48	5240 MHz	17.44
5.3GHz Band (UNII-2A)	CH 52	5260 MHz	17.64
	CH 56	5280 MHz	17.62
	CH 64	5320 MHz	16.61
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	18.16
	CH 116	5580 MHz	17.59
	CH 140	5700 MHz	17.87
5.8GHz Band (UNII-3)	CH 149	5745 MHz	16.75
	CH 157	5785 MHz	17.66
	CH 165	5825 MHz	17.98



**802.11n-HT20 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 36	5180 MHz	16.23
	CH 40	5200 MHz	16.21
	CH 48	5240 MHz	16.15
5.3GHz Band (UNII-2A)	CH 52	5260 MHz	16.09
	CH 56	5280 MHz	15.96
	CH 64	5320 MHz	15.26
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	16.77
	CH 116	5580 MHz	16.10
	CH 140	5700 MHz	16.33
5.8GHz Band (UNII-3)	CH 149	5745 MHz	15.08
	CH 157	5785 MHz	15.88
	CH 165	5825 MHz	16.34

**802.11n-HT40 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 38	5190 MHz	15.75
	CH 46	5230 MHz	15.79
5.3GHz Band (UNII-2A)	CH 54	5270 MHz	15.49
	CH 62	5310 MHz	14.83
5.5GHz Band (UNII-2C)	CH 102	5510 MHz	16.13
	CH 134	5670 MHz	15.51
5.8GHz Band (UNII-3)	CH 151	5755 MHz	15.43
	CH 159	5795 MHz	16.01

**802.11ac-VHT20 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 36	5180 MHz	14.57
	CH 40	5200 MHz	14.59
	CH 48	5240 MHz	14.62
5.3GHz Band (UNII-2A)	CH 52	5260 MHz	14.47
	CH 56	5280 MHz	14.38
	CH 64	5320 MHz	13.64
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	14.99
	CH 116	5580 MHz	14.40
	CH 140	5700 MHz	14.78
5.8GHz Band (UNII-3)	CH 149	5745 MHz	13.24
	CH 157	5785 MHz	14.42
	CH 165	5825 MHz	14.90

**802.11ac-VHT40 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 38	5190 MHz	14.83
	CH 46	5230 MHz	14.90
5.3GHz Band (UNII-2A)	CH 54	5270 MHz	14.53
	CH 62	5310 MHz	13.84
5.5GHz Band (UNII-2C)	CH 102	5510 MHz	15.09
	CH 134	5670 MHz	14.26
5.8GHz Band (UNII-3)	CH 151	5755 MHz	14.50
	CH 159	5795 MHz	14.90

**802.11ac-VHT80 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 42	5210 MHz	14.18
5.3GHz Band (UNII-2A)	CH 58	5290 MHz	13.76
5.5GHz Band (UNII-2C)	CH 122	5610 MHz	13.54
5.8GHz Band (UNII-3)	CH 155	5775 MHz	13.72

**802.11ac-VHT160 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 50	5250 MHz	12.96
5.5GHz Band (UNII-2C)	CH 114	5570 MHz	12.78

**802.11ax-HE20 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 36	5180 MHz	14.66
	CH 40	5200 MHz	14.65
	CH 48	5240 MHz	14.56
5.3GHz Band (UNII-2A)	CH 52	5260 MHz	14.57
	CH 56	5280 MHz	14.43
	CH 64	5320 MHz	13.65
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	15.10
	CH 116	5580 MHz	14.46



	CH 140	5700 MHz	14.87
5.8GHz Band (UNII-3)	CH 149	5745 MHz	13.27
	CH 157	5785 MHz	14.46
	CH 165	5825 MHz	14.91

**802.11ax-HE40 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 38	5190 MHz	14.54
	CH 46	5230 MHz	14.75
5.3GHz Band (UNII-2A)	CH 54	5270 MHz	14.33
	CH 62	5310 MHz	13.63
5.5GHz Band (UNII-2C)	CH 102	5510 MHz	15.00
	CH 134	5670 MHz	14.17
5.8GHz Band (UNII-3)	CH 151	5755 MHz	14.27
	CH 159	5795 MHz	14.72

**802.11ax-HE80 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 42	5210 MHz	14.28
5.3GHz Band (UNII-2A)	CH 58	5290 MHz	13.82
5.5GHz Band (UNII-2C)	CH 122	5610 MHz	13.59
5.8GHz Band (UNII-3)	CH 155	5775 MHz	13.77

**802.11ax-HE160 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 50	5250 MHz	13.04
5.5GHz Band (UNII-2C)	CH 114	5570 MHz	12.79

**Antenna 1 (SISO)****802.11a mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 36	5180 MHz	17.09
	CH 40	5200 MHz	17.11
	CH 48	5240 MHz	16.68
5.3GHz Band (UNII-2A)	CH 52	5260 MHz	17.23
	CH 56	5280 MHz	17.17
	CH 64	5320 MHz	16.74
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	17.62
	CH 116	5580 MHz	17.32
	CH 140	5700 MHz	17.12
5.8GHz Band (UNII-3)	CH 149	5745 MHz	16.37
	CH 157	5785 MHz	16.77
	CH 165	5825 MHz	16.79

**802.11n-HT20 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 36	5180 MHz	15.46
	CH 40	5200 MHz	15.57
	CH 48	5240 MHz	15.03
5.3GHz Band (UNII-2A)	CH 52	5260 MHz	15.54
	CH 56	5280 MHz	15.55
	CH 64	5320 MHz	15.22
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	16.03
	CH 116	5580 MHz	15.70
	CH 140	5700 MHz	15.46
5.8GHz Band (UNII-3)	CH 149	5745 MHz	14.74
	CH 157	5785 MHz	15.07
	CH 165	5825 MHz	15.13

**802.11n-HT40 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 38	5190 MHz	15.01
	CH 46	5230 MHz	14.94
5.3GHz Band (UNII-2A)	CH 54	5270 MHz	15.14
	CH 62	5310 MHz	14.83
5.5GHz Band (UNII-2C)	CH 102	5510 MHz	15.62
	CH 134	5670 MHz	15.24



5.8GHz Band (UNII-3)	CH 151	5755 MHz	14.63
	CH 159	5795 MHz	14.94

**802.11ac-VHT20 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 36	5180 MHz	13.89
	CH 40	5200 MHz	13.96
	CH 48	5240 MHz	13.46
5.3GHz Band (UNII-2A)	CH 52	5260 MHz	13.96
	CH 56	5280 MHz	13.92
	CH 64	5320 MHz	13.63
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	14.43
	CH 116	5580 MHz	14.12
	CH 140	5700 MHz	14.03
5.8GHz Band (UNII-3)	CH 149	5745 MHz	13.30
	CH 157	5785 MHz	13.70
	CH 165	5825 MHz	13.73

**802.11ac-VHT40 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 38	5190 MHz	14.09
	CH 46	5230 MHz	13.84
5.3GHz Band (UNII-2A)	CH 54	5270 MHz	14.09
	CH 62	5310 MHz	13.86
5.5GHz Band (UNII-2C)	CH 102	5510 MHz	14.48
	CH 134	5670 MHz	14.26
5.8GHz Band (UNII-3)	CH 151	5755 MHz	13.68
	CH 159	5795 MHz	13.95

**802.11ac-VHT80 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 42	5210 MHz	13.17
5.3GHz Band (UNII-2A)	CH 58	5290 MHz	13.42
5.5GHz Band (UNII-2C)	CH 122	5610 MHz	13.30
5.8GHz Band (UNII-3)	CH 155	5775 MHz	12.93

**802.11ac-VHT160 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 50	5250 MHz	12.40
5.5GHz Band (UNII-2C)	CH 114	5570 MHz	12.69

**802.11ax-HE20 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 36	5180 MHz	13.92
	CH 40	5200 MHz	13.99
	CH 48	5240 MHz	13.48
5.3GHz Band (UNII-2A)	CH 52	5260 MHz	14.02
	CH 56	5280 MHz	13.93
	CH 64	5320 MHz	13.64
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	14.49
	CH 116	5580 MHz	14.11
	CH 140	5700 MHz	14.09
5.8GHz Band (UNII-3)	CH 149	5745 MHz	13.33
	CH 157	5785 MHz	13.75
	CH 165	5825 MHz	13.77

**802.11ax-HE40 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 38	5190 MHz	13.89
	CH 46	5230 MHz	13.74
5.3GHz Band (UNII-2A)	CH 54	5270 MHz	13.93
	CH 62	5310 MHz	13.64
5.5GHz Band (UNII-2C)	CH 102	5510 MHz	14.36
	CH 134	5670 MHz	14.13
5.8GHz Band (UNII-3)	CH 151	5755 MHz	13.56
	CH 159	5795 MHz	13.79

**802.11ax-HE80 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 42	5210 MHz	13.26
5.3GHz Band (UNII-2A)	CH 58	5290 MHz	13.52



5.5GHz Band (UNII-2C)	CH 122	5610 MHz	13.41
5.8GHz Band (UNII-3)	CH 155	5775 MHz	12.99

**802.11ax-HE160 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 50	5250 MHz	12.45
5.5GHz Band (UNII-2C)	CH 114	5570 MHz	12.74

**Antenna 01 (MIMO)**

**802.11n-HT20 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 36	5180 MHz	18.69
	CH 40	5200 MHz	18.79
	CH 48	5240 MHz	18.43
5.3GHz Band (UNII-2A)	CH 52	5260 MHz	18.64
	CH 56	5280 MHz	18.56
	CH 64	5320 MHz	18.02
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	19.23
	CH 116	5580 MHz	18.71
	CH 140	5700 MHz	18.76
5.8GHz Band (UNII-3)	CH 149	5745 MHz	17.74
	CH 157	5785 MHz	18.32
	CH 165	5825 MHz	18.57

**802.11n-HT40 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 38	5190 MHz	18.19
	CH 46	5230 MHz	18.17
5.3GHz Band (UNII-2A)	CH 54	5270 MHz	18.10
	CH 62	5310 MHz	17.63
5.5GHz Band (UNII-2C)	CH 102	5510 MHz	18.76
	CH 134	5670 MHz	18.15
5.8GHz Band (UNII-3)	CH 151	5755 MHz	17.93
	CH 159	5795 MHz	18.26

**802.11ac-VHT20 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 36	5180 MHz	17.03
	CH 40	5200 MHz	17.09
	CH 48	5240 MHz	16.85
5.3GHz Band (UNII-2A)	CH 52	5260 MHz	17.05
	CH 56	5280 MHz	16.99
	CH 64	5320 MHz	16.44
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	19.23
	CH 116	5580 MHz	17.05
	CH 140	5700 MHz	17.28
5.8GHz Band (UNII-3)	CH 149	5745 MHz	16.08
	CH 157	5785 MHz	16.92
	CH 165	5825 MHz	17.10

**802.11ac-VHT40 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 38	5190 MHz	17.17
	CH 46	5230 MHz	17.24
5.3GHz Band (UNII-2A)	CH 54	5270 MHz	17.16
	CH 62	5310 MHz	16.61
5.5GHz Band (UNII-2C)	CH 102	5510 MHz	17.71
	CH 134	5670 MHz	17.12
5.8GHz Band (UNII-3)	CH 151	5755 MHz	16.85
	CH 159	5795 MHz	17.20

**802.11ac-VHT80 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 42	5210 MHz	16.63
5.3GHz Band (UNII-2A)	CH 58	5290 MHz	16.53
5.5GHz Band (UNII-2C)	CH 122	5610 MHz	16.30
5.8GHz Band (UNII-3)	CH 155	5775 MHz	16.23

**802.11ac-VHT160 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
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5.2GHz Band (UNII-1)	CH 50	5250 MHz	15.66
5.5GHz Band (UNII-2C)	CH 114	5570 MHz	15.60

**802.11ax-HE20 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 36	5180 MHz	17.17
	CH 40	5200 MHz	17.14
	CH 48	5240 MHz	16.8
5.3GHz Band (UNII-2A)	CH 52	5260 MHz	17.13
	CH 56	5280 MHz	17.05
	CH 64	5320 MHz	16.50
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	17.60
	CH 116	5580 MHz	17.10
	CH 140	5700 MHz	17.30
5.8GHz Band (UNII-3)	CH 149	5745 MHz	16.11
	CH 157	5785 MHz	16.93
	CH 165	5825 MHz	17.16

**802.11ax-HE40 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 38	5190 MHz	17.10
	CH 46	5230 MHz	17.10
5.3GHz Band (UNII-2A)	CH 54	5270 MHz	17.00
	CH 62	5310 MHz	16.52
5.5GHz Band (UNII-2C)	CH 102	5510 MHz	17.47
	CH 134	5670 MHz	17.03
5.8GHz Band (UNII-3)	CH 151	5755 MHz	16.78
	CH 159	5795 MHz	17.10

**802.11ax-HE80 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 42	5210 MHz	16.69
5.3GHz Band (UNII-2A)	CH 58	5290 MHz	16.58
5.5GHz Band (UNII-2C)	CH 122	5610 MHz	16.43
5.8GHz Band	CH 155	5775 MHz	16.30



(UNII-3)			
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**802.11ax-HE160 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 50	5250 MHz	15.73
5.5GHz Band (UNII-2C)	CH 114	5570 MHz	15.65

**Note:**

Worst-case data rates as provided by the client were: 6Mbps (802.11a), MCS0 (802.11n), MCS0 (802.11ac), MCS0 (802.11ax). 802.11a, 802.11n-HT40, 802.11ax-HE80 and 802.11ax-HE160 modes (SISO-Antenna 0) are selected as the worst case. 802.11n-HT20, 802.11n-HT40, 802.11ax-HE80 and 802.11ax-HE160 modes (MIMO) as the maximum power is got with these full RU, are selected as the worst case. 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%.

**Conclusion: PASS**

The E.I.R.P Results are listed below:

**SISO (Antenna 0):**

**802.11a mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 36	5180 MHz	18.06
	CH 40	5200 MHz	17.99
	CH 48	5240 MHz	18.12
5.3GHz Band (UNII-2A)	CH 52	5260 MHz	18.32
	CH 56	5280 MHz	18.30
	CH 64	5320 MHz	17.29
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	18.84
	CH 116	5580 MHz	18.27
	CH 140	5700 MHz	18.55
5.8GHz Band (UNII-3)	CH 149	5745 MHz	17.43
	CH 157	5785 MHz	18.34
	CH 165	5825 MHz	18.66

**802.11n-HT20 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 36	5180 MHz	16.91
	CH 40	5200 MHz	16.89
	CH 48	5240 MHz	16.83



5.3GHz Band (UNII-2A)	CH 52	5260 MHz	16.77
	CH 56	5280 MHz	16.64
	CH 64	5320 MHz	15.94
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	17.45
	CH 116	5580 MHz	16.78
	CH 140	5700 MHz	17.01
5.8GHz Band (UNII-3)	CH 149	5745 MHz	15.76
	CH 157	5785 MHz	16.56
	CH 165	5825 MHz	17.02

**802.11n-HT40 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 38	5190 MHz	16.43
	CH 46	5230 MHz	16.47
5.3GHz Band (UNII-2A)	CH 54	5270 MHz	16.17
	CH 62	5310 MHz	15.51
5.5GHz Band (UNII-2C)	CH 102	5510 MHz	16.81
	CH 134	5670 MHz	16.19
5.8GHz Band (UNII-3)	CH 151	5755 MHz	16.11
	CH 159	5795 MHz	16.69

**802.11ac-VHT20 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 36	5180 MHz	15.25
	CH 40	5200 MHz	15.27
	CH 48	5240 MHz	15.30
5.3GHz Band (UNII-2A)	CH 52	5260 MHz	15.15
	CH 56	5280 MHz	15.06
	CH 64	5320 MHz	14.32
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	15.67
	CH 116	5580 MHz	15.08
	CH 140	5700 MHz	15.46
5.8GHz Band (UNII-3)	CH 149	5745 MHz	13.92
	CH 157	5785 MHz	15.10
	CH 165	5825 MHz	15.58

**802.11ac-VHT40 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 38	5190 MHz	15.51
	CH 46	5230 MHz	15.58
5.3GHz Band (UNII-2A)	CH 54	5270 MHz	15.21
	CH 62	5310 MHz	14.52
5.5GHz Band (UNII-2C)	CH 102	5510 MHz	15.77
	CH 134	5670 MHz	14.94
5.8GHz Band (UNII-3)	CH 151	5755 MHz	15.18
	CH 159	5795 MHz	15.58

**802.11ac-VHT80 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 42	5210 MHz	14.86
5.3GHz Band (UNII-2A)	CH 58	5290 MHz	14.44
5.5GHz Band (UNII-2C)	CH 122	5610 MHz	14.22
5.8GHz Band (UNII-3)	CH 155	5775 MHz	14.40

**802.11ac-VHT160 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 50	5250 MHz	13.64
5.5GHz Band (UNII-2C)	CH 114	5570 MHz	13.46

**802.11ax-HE20 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 36	5180 MHz	15.34
	CH 40	5200 MHz	15.33
	CH 48	5240 MHz	15.24
5.3GHz Band (UNII-2A)	CH 52	5260 MHz	15.25
	CH 56	5280 MHz	15.11
	CH 64	5320 MHz	14.33
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	15.78
	CH 116	5580 MHz	15.14



	CH 140	5700 MHz	15.55
5.8GHz Band (UNII-3)	CH 149	5745 MHz	13.95
	CH 157	5785 MHz	15.14
	CH 165	5825 MHz	15.59

**802.11ax-HE40 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 38	5190 MHz	15.22
	CH 46	5230 MHz	15.43
5.3GHz Band (UNII-2A)	CH 54	5270 MHz	15.01
	CH 62	5310 MHz	14.31
5.5GHz Band (UNII-2C)	CH 102	5510 MHz	15.68
	CH 134	5670 MHz	14.85
5.8GHz Band (UNII-3)	CH 151	5755 MHz	14.95
	CH 159	5795 MHz	15.40

**802.11ax-HE80 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 42	5210 MHz	14.96
5.3GHz Band (UNII-2A)	CH 58	5290 MHz	14.50
5.5GHz Band (UNII-2C)	CH 122	5610 MHz	14.27
5.8GHz Band (UNII-3)	CH 155	5775 MHz	14.45

**802.11ax-HE160 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 50	5250 MHz	13.72
5.5GHz Band (UNII-2C)	CH 114	5570 MHz	13.47

**Antenna 01 (MIMO)**

**802.11n-HT20 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band	CH 36	5180 MHz	19.41



(UNII-1)	CH 40	5200 MHz	19.51
	CH 48	5240 MHz	19.15
5.3GHz Band (UNII-2A)	CH 52	5260 MHz	19.36
	CH 56	5280 MHz	19.28
	CH 64	5320 MHz	18.74
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	19.95
	CH 116	5580 MHz	19.43
	CH 140	5700 MHz	19.48
5.8GHz Band (UNII-3)	CH 149	5745 MHz	18.46
	CH 157	5785 MHz	19.04
	CH 165	5825 MHz	19.29

**802.11n-HT40 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 38	5190 MHz	18.91
	CH 46	5230 MHz	18.89
5.3GHz Band (UNII-2A)	CH 54	5270 MHz	18.82
	CH 62	5310 MHz	18.35
5.5GHz Band (UNII-2C)	CH 102	5510 MHz	19.48
	CH 134	5670 MHz	18.87
5.8GHz Band (UNII-3)	CH 151	5755 MHz	18.65
	CH 159	5795 MHz	18.98

**802.11ac-VHT20 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 36	5180 MHz	17.75
	CH 40	5200 MHz	17.81
	CH 48	5240 MHz	17.57
5.3GHz Band (UNII-2A)	CH 52	5260 MHz	17.77
	CH 56	5280 MHz	17.71
	CH 64	5320 MHz	17.16
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	19.95
	CH 116	5580 MHz	17.77
	CH 140	5700 MHz	18.00
5.8GHz Band (UNII-3)	CH 149	5745 MHz	16.80
	CH 157	5785 MHz	17.64
	CH 165	5825 MHz	17.82

**802.11ac-VHT40 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
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5.2GHz Band (UNII-1)	CH 38	5190 MHz	17.89
	CH 46	5230 MHz	17.96
5.3GHz Band (UNII-2A)	CH 54	5270 MHz	17.88
	CH 62	5310 MHz	17.33
5.5GHz Band (UNII-2C)	CH 102	5510 MHz	18.43
	CH 134	5670 MHz	17.84
5.8GHz Band (UNII-3)	CH 151	5755 MHz	17.57
	CH 159	5795 MHz	17.92

**802.11ac-VHT80 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 42	5210 MHz	17.35
5.3GHz Band (UNII-2A)	CH 58	5290 MHz	17.25
5.5GHz Band (UNII-2C)	CH 122	5610 MHz	17.02
5.8GHz Band (UNII-3)	CH 155	5775 MHz	16.95

**802.11ac-VHT160 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 50	5250 MHz	16.38
5.5GHz Band (UNII-2C)	CH 114	5570 MHz	16.32

**802.11ax-HE20 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 36	5180 MHz	17.89
	CH 40	5200 MHz	17.86
	CH 48	5240 MHz	17.52
5.3GHz Band (UNII-2A)	CH 52	5260 MHz	17.85
	CH 56	5280 MHz	17.77
	CH 64	5320 MHz	17.22
5.5GHz Band (UNII-2C)	CH 100	5500 MHz	18.32
	CH 116	5580 MHz	17.82
	CH 140	5700 MHz	18.02
5.8GHz Band (UNII-3)	CH 149	5745 MHz	16.83
	CH 157	5785 MHz	17.65



	CH 165	5825 MHz	17.88
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**802.11ax-HE40 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 38	5190 MHz	17.82
	CH 46	5230 MHz	17.82
5.3GHz Band (UNII-2A)	CH 54	5270 MHz	17.72
	CH 62	5310 MHz	17.24
5.5GHz Band (UNII-2C)	CH 102	5510 MHz	18.19
	CH 134	5670 MHz	17.75
5.8GHz Band (UNII-3)	CH 151	5755 MHz	17.50
	CH 159	5795 MHz	17.82

**802.11ax-HE80 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 42	5210 MHz	17.41
5.3GHz Band (UNII-2A)	CH 58	5290 MHz	17.30
5.5GHz Band (UNII-2C)	CH 122	5610 MHz	17.15
5.8GHz Band (UNII-3)	CH 155	5775 MHz	17.02

**802.11ax-HE160 mode**

U-NII Band	Channel	Frequency (MHz)	Test Result (dBm)
5.2GHz Band (UNII-1)	CH 50	5250 MHz	16.45
5.5GHz Band (UNII-2C)	CH 114	5570 MHz	16.37

E.I.R.P value = Conducted values (with conducted samples) + Antenna Gain.

**Conclusion: PASS**





**A.3. Peak Power Spectral Density**

Measurement of method: See KDB 789033 D02 v02r01, Section F.

Measurement Limit:

Standard	Frequency (MHz)	Limit
FCC CRF Part 15.407(a) & RSS-247 5.2	5150MHz~5250MHz	11dBm/MHz(FCC)
		10dBm/MHz EIRP(IC)
	5250MHz~5350MHz	11dBm/MHz
	5470MHz~5725MHz	11dBm/MHz
	5725MHz~5850MHz	30dBm/500kHz

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

**Measurement Results:**

**SISO**

U-NII Band	Mode	Channel	Frequency (MHz)	Test Results (dBm/MHz)	
5.2GHz Band (UNII-1)	802.11a	CH 36	5180	5.64	
		CH 40	5200	5.11	
		CH 48	5240	5.39	
	802.11n-HT40	CH 38	5190	0.86	
		CH 46	5230	0.95	
		CH 42	5210	-3.87	
	802.11ax-HE160	CH 50	5250	-8.46	
5.3GHz Band (UNII-2A)	802.11a	CH 52	5260	4.31	
		CH 56	5280	4.64	
		CH 64	5320	3.68	
	802.11n-HT40	CH 54	5270	-0.50	
		CH 62	5310	-1.64	
		802.11ax-HE80	CH 58	5290	-4.81
5.5GHz Band (UNII-2C)	802.11a	CH 100	5500	4.99	
		CH 116	5580	4.27	
		CH 140	5700	4.84	
	802.11n-HT40	CH 102	5510	0.21	
		CH 134	5670	-0.68	
		802.11ax-HE80	CH 122	5610	-5.42
		802.11ax-HE160	CH 114	5570	-9.11
5.8GHz Band (UNII-3)	802.11a	CH 149	5745	0.44	
		CH 157	5785	1.03	
		CH 165	5825	1.06	
	802.11n-HT40	CH 151	5755	-3.04	
		CH 159	5795	-2.55	
		802.11ax-HE80	CH 155	5775	-8.69



**MIMO**

U-NII Band	Mode	Channel	Frequency (MHz)	Test Results (dBm/MHz)
5.2GHz Band (UNII-1)	802.11n-HT20	CH 36	5180	6.28
		CH 40	5200	5.53
		CH 48	5240	5.69
	802.11n-HT40	CH 38	5190	2.38
		CH 46	5230	2.62
	802.11ax-HE80	CH 42	5210	-2.46
802.11ax-HE160	CH 50	5250	-5.50	
5.3GHz Band (UNII-2A)	802.11n-HT20	CH 52	5260	4.79
		CH 56	5280	4.80
		CH 64	5320	4.10
	802.11n-HT40	CH 54	5270	1.28
		CH 62	5310	1.10
	802.11ax-HE80	CH 58	5290	-2.82
5.5GHz Band (UNII-2C)	802.11n-HT20	CH 100	5500	5.37
		CH 116	5580	4.94
		CH 140	5700	5.51
	802.11n-HT40	CH 102	5510	1.79
		CH 134	5670	1.39
	802.11ax-HE80	CH 122	5610	-3.23
	802.11ax-HE160	CH 114	5570	-5.90
5.8GHz Band (UNII-3)	802.11n-HT20	CH 149	5745	1.07
		CH 157	5785	1.99
		CH 165	5825	2.00
	802.11n-HT40	CH 151	5755	-1.62
		CH 159	5795	-1.31
	802.11ax-HE80	CH 155	5775	-6.07

**Conclusion: PASS**



**A.4. Occupied 26dB Bandwidth**

Measurement of method: See KDB 789033 D02 v02r01, Section C.1.

Measurement Limit:

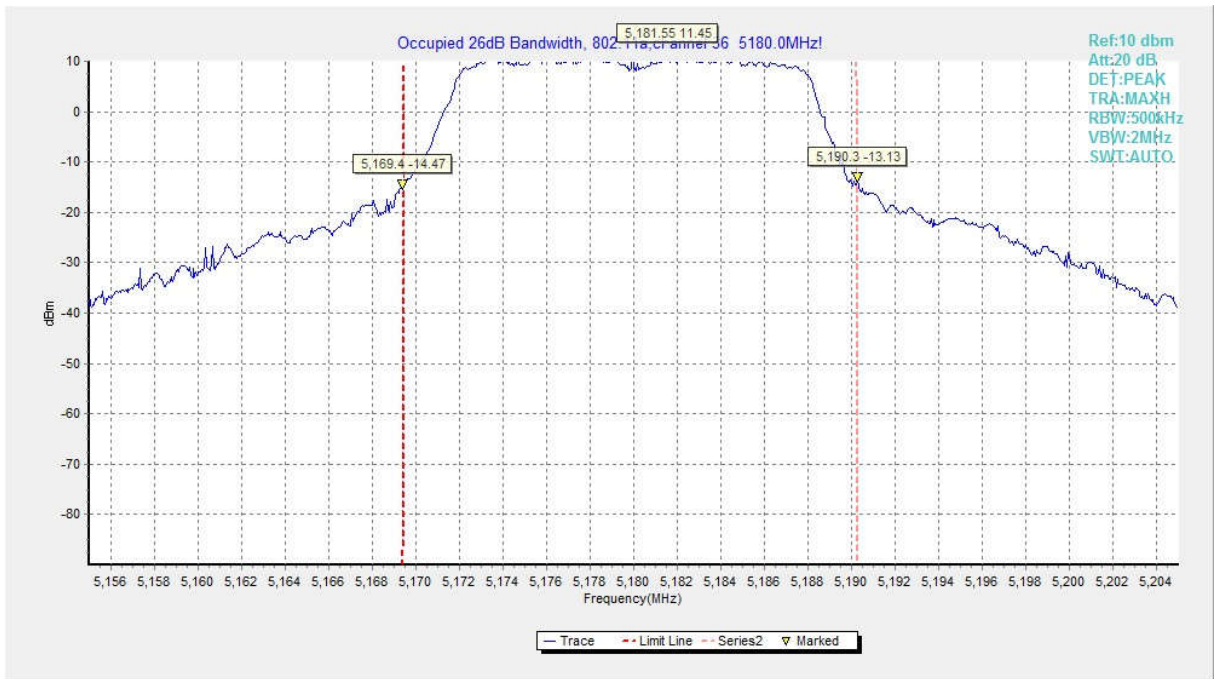
Standard	Limit (MHz)
FCC 47 CFR Part 15.403 & RSS-247 section 5.2	/

Measurement Result:

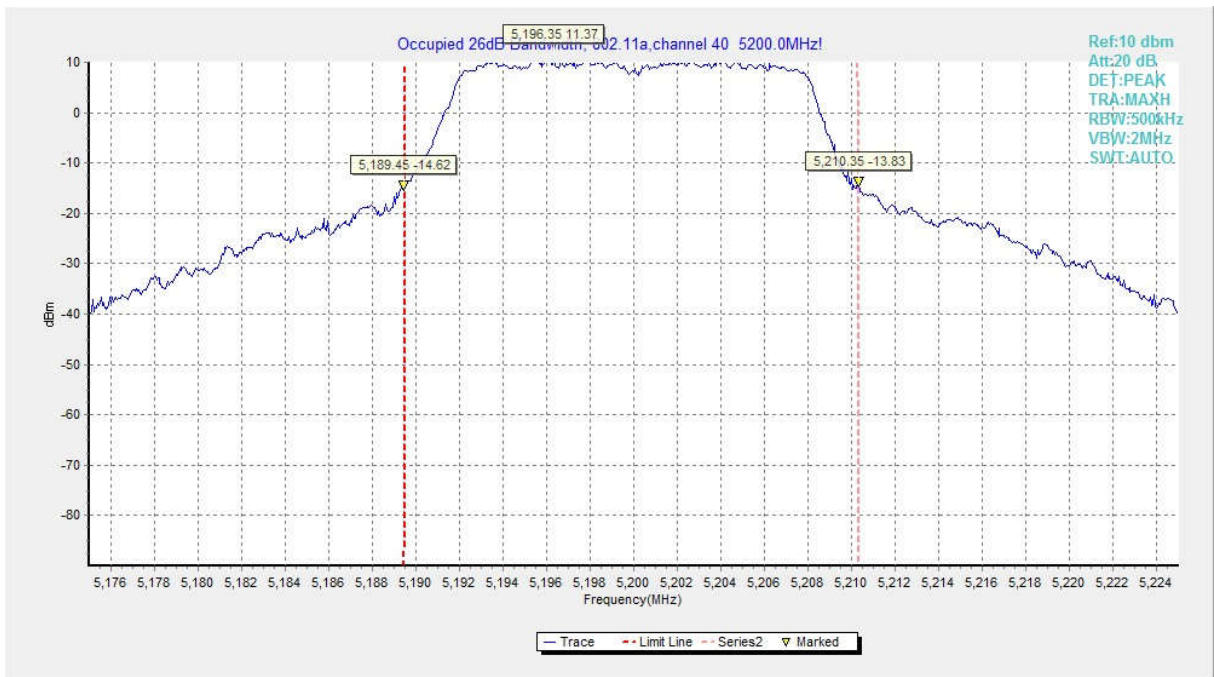
Mode	Channel	Occupied 26dB Bandwidth (MHz)		Conclusion
		Fig.	Value	
802.11a	5180MHz (Ch36)	Fig.1	20.90	P
	5200MHz (Ch40)	Fig.2	20.90	P
	5240MHz (Ch48)	Fig.3	21.05	P
	5260MHz (Ch52)	Fig.4	20.95	P
	5280MHz (Ch56)	Fig.5	20.40	P
	5320MHz (Ch64)	Fig.6	20.25	P
	5500MHz (Ch100)	Fig.7	20.85	P
	5580MHz (Ch116)	Fig.8	20.80	P
	5700MHz (Ch140)	Fig.9	20.65	P
802.11n-HT40	5190MHz (Ch38)	Fig.10	40.40	P
	5230MHz (Ch46)	Fig.11	40.48	P
	5270MHz (Ch54)	Fig.12	40.72	P
	5310MHz (Ch62)	Fig.13	40.48	P
	5510MHz (Ch102)	Fig.14	40.64	P
	5670MHz (Ch134)	Fig.15	40.40	P
802.11ax-HE80	5210MHz (Ch42)	Fig.16	83.04	P
	5290MHz (Ch58)	Fig.17	83.04	P
	5610MHz (Ch122)	Fig.18	83.36	P
802.11ax-HE160	5250MHz (Ch50)	Fig.19	166.40	P
	5570MHz (Ch114)	Fig.20	166.72	P

**Conclusion: PASS**

Test graphs as below:



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



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

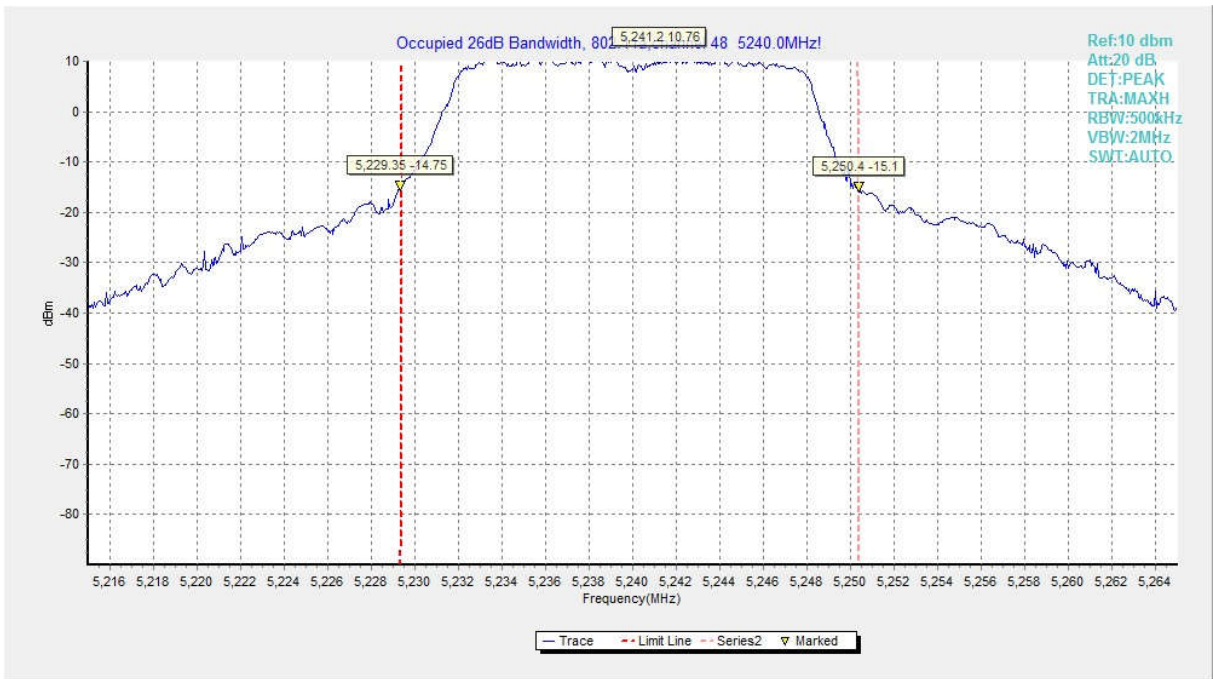


Fig. 3 Occupied 26dB Bandwidth (802.11a, 5240MHz)

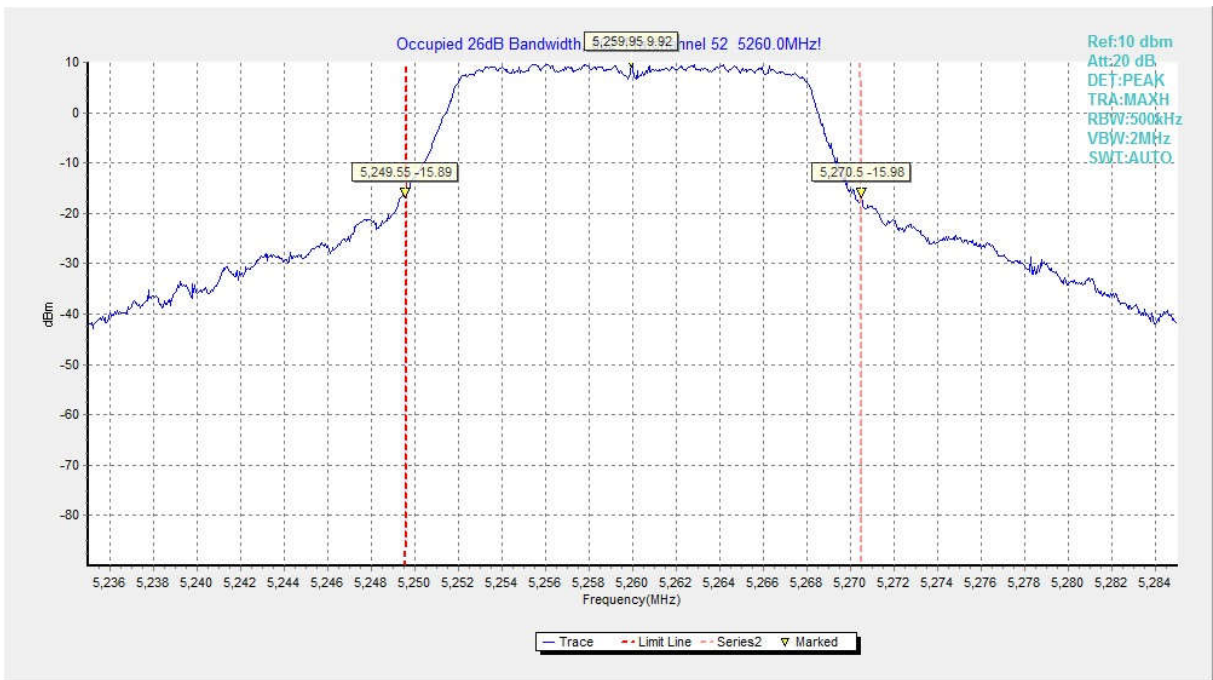


Fig. 4 Occupied 26dB Bandwidth (802.11a, 5260MHz)

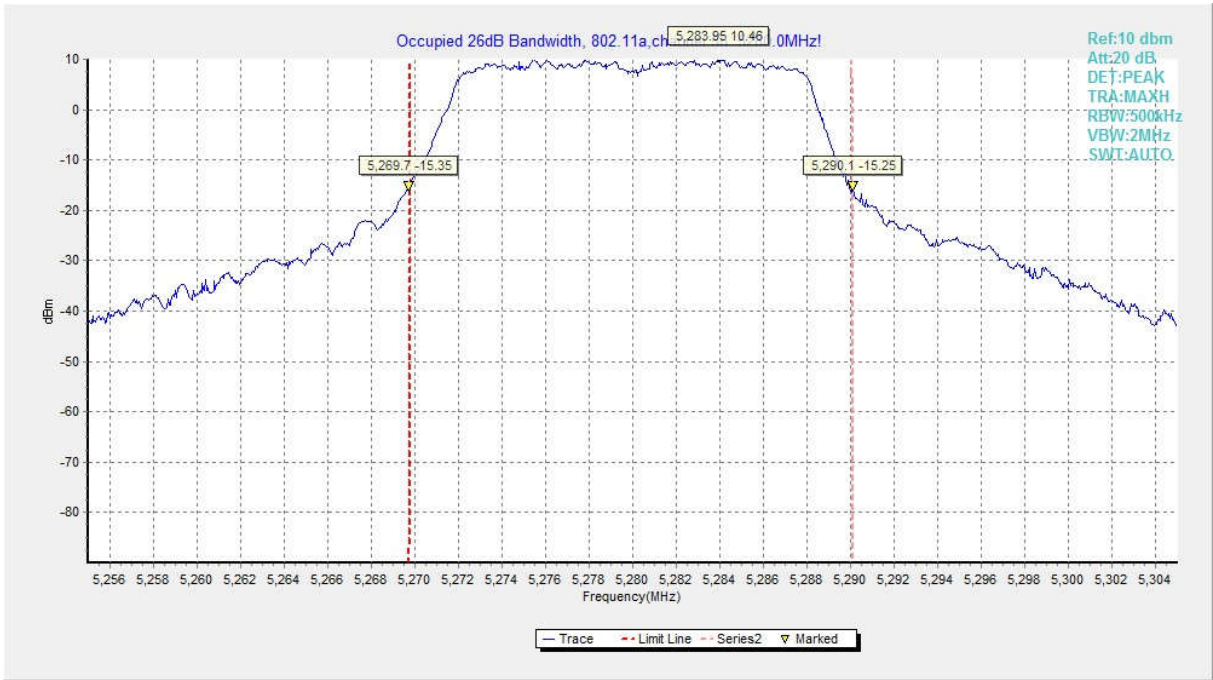


Fig. 5 Occupied 26dB Bandwidth (802.11a, 5280MHz)

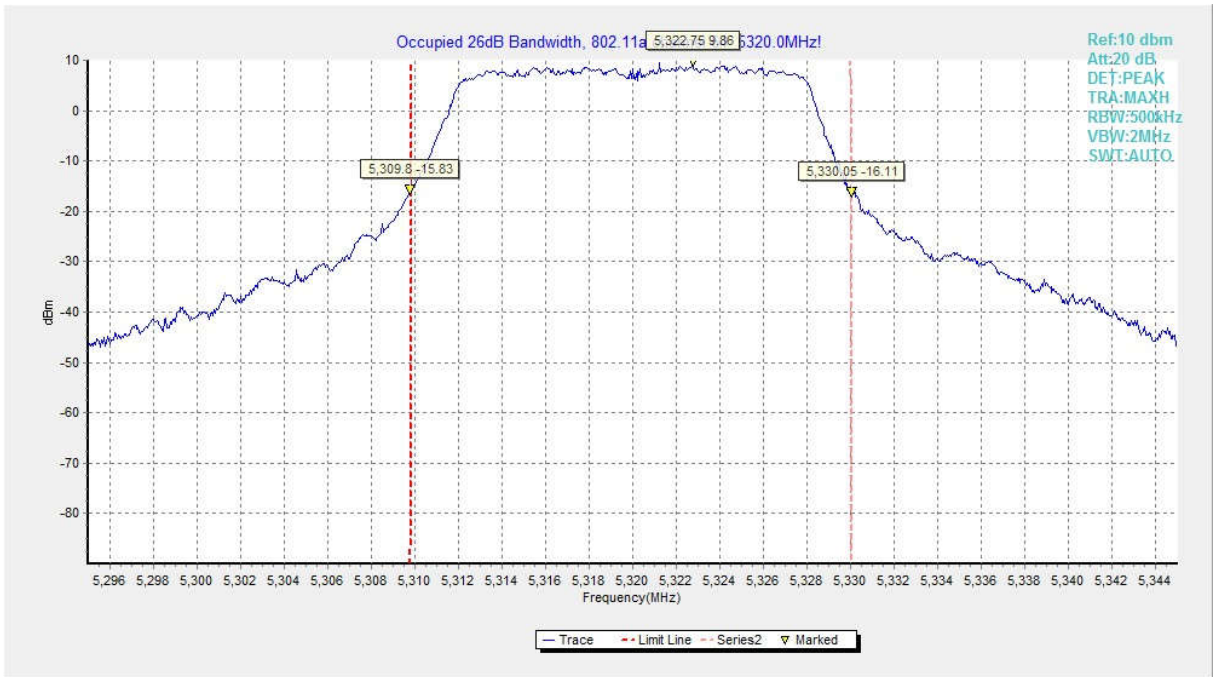


Fig. 6 Occupied 26dB Bandwidth (802.11a, 5320MHz)

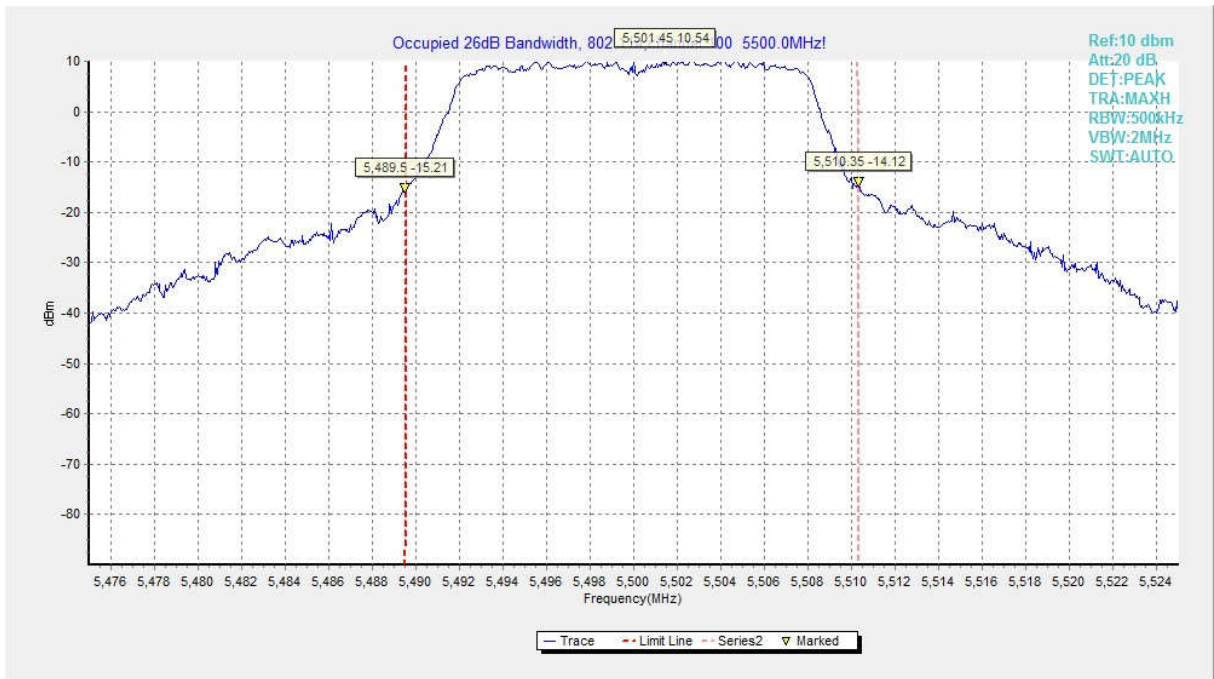


Fig. 7 Occupied 26dB Bandwidth (802.11a, 5500MHz)

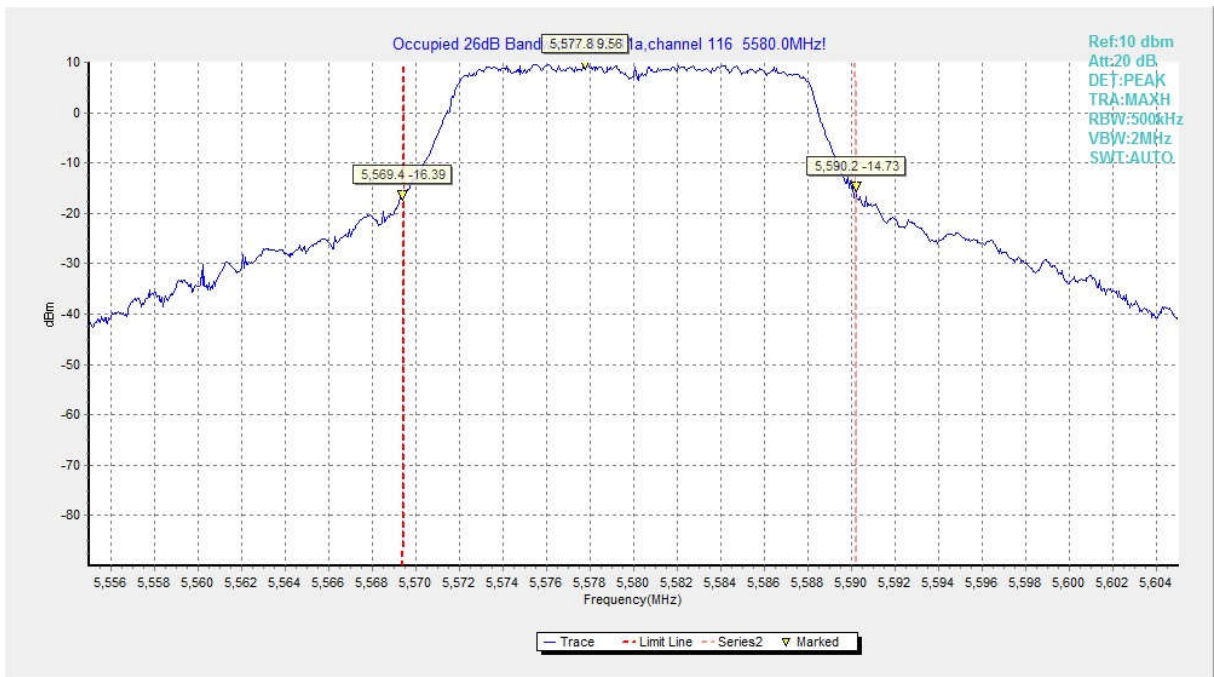


Fig. 8 Occupied 26dB Bandwidth (802.11a, 5580MHz)

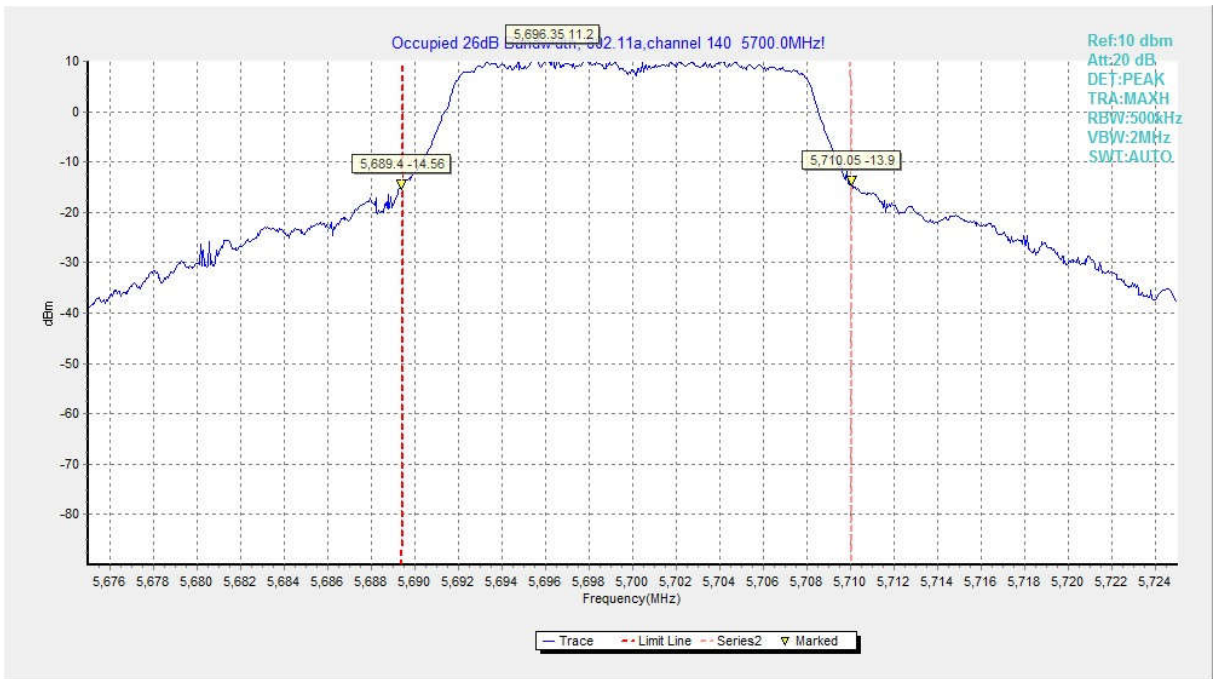


Fig. 9 Occupied 26dB Bandwidth (802.11a, 5700MHz)

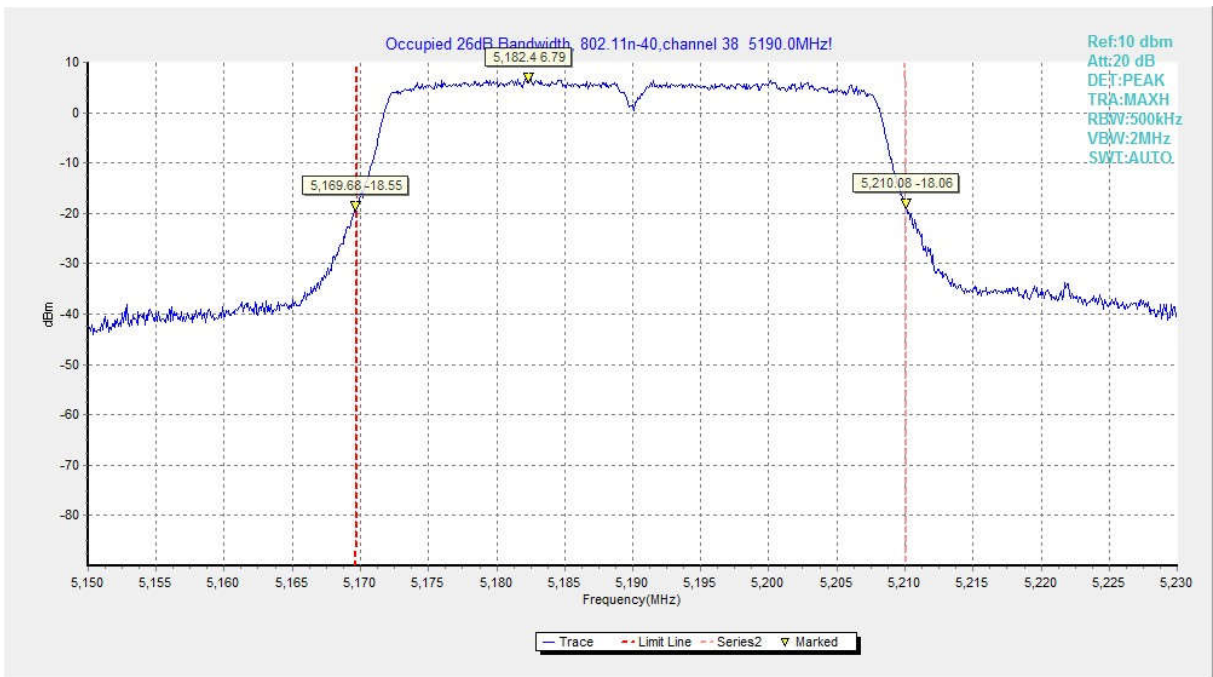


Fig. 10 Occupied 26dB Bandwidth (802.11n-HT40, 5190MHz)



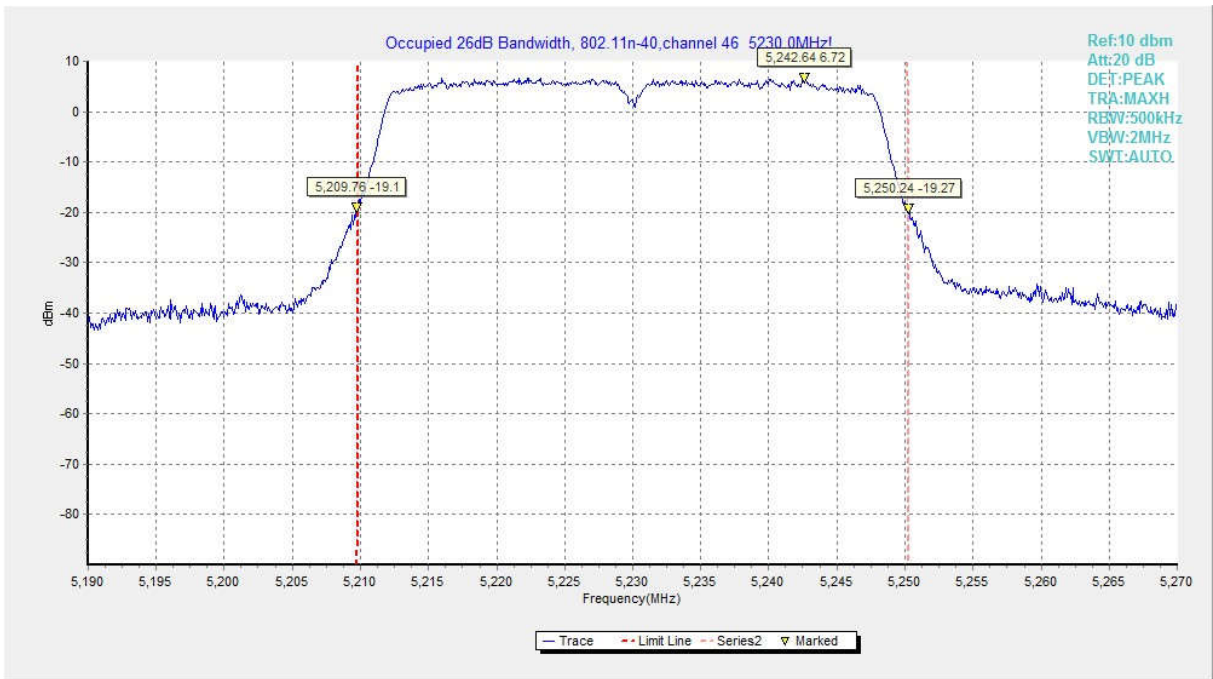


Fig. 11 Occupied 26dB Bandwidth (802.11n-HT40, 5230MHz)

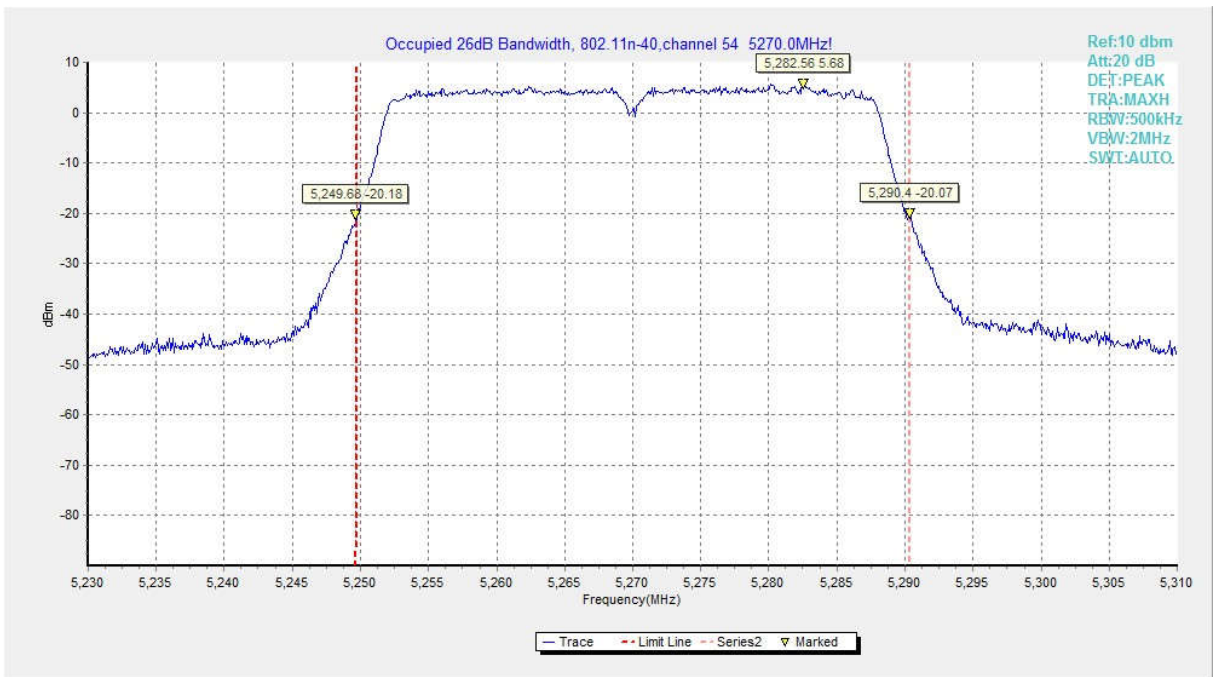


Fig. 12 Occupied 26dB Bandwidth (802.11n-HT40, 5270MHz)

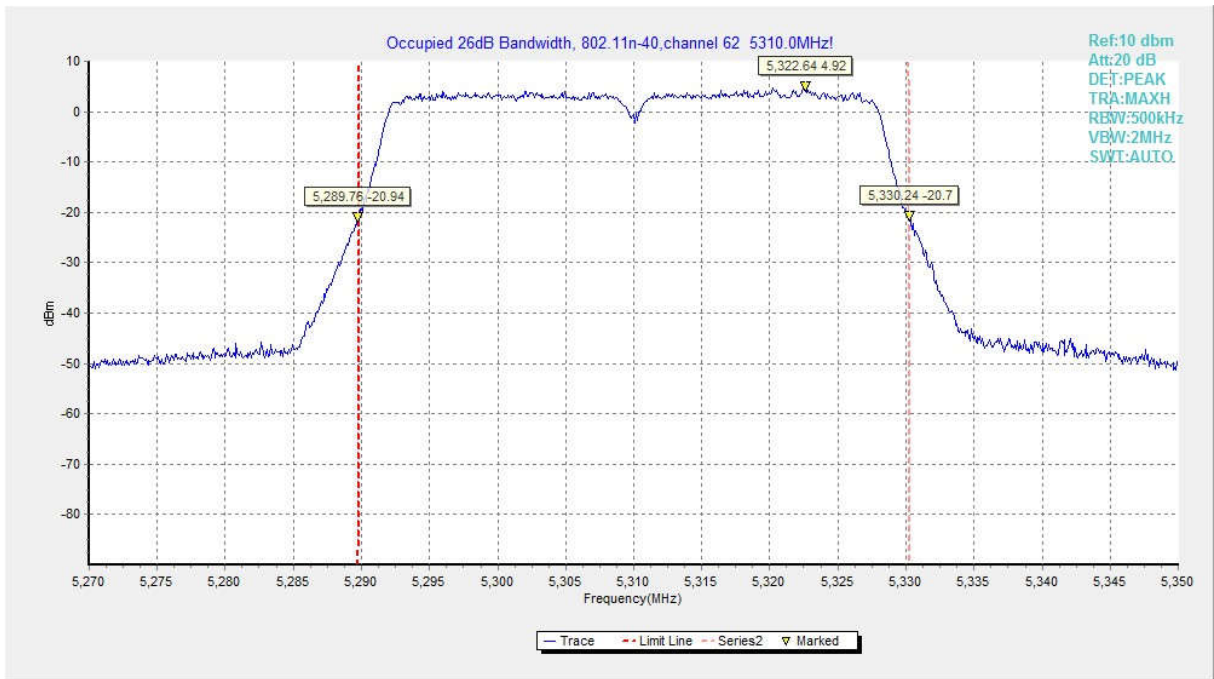


Fig. 13 Occupied 26dB Bandwidth (802.11n-HT40, 5310MHz)

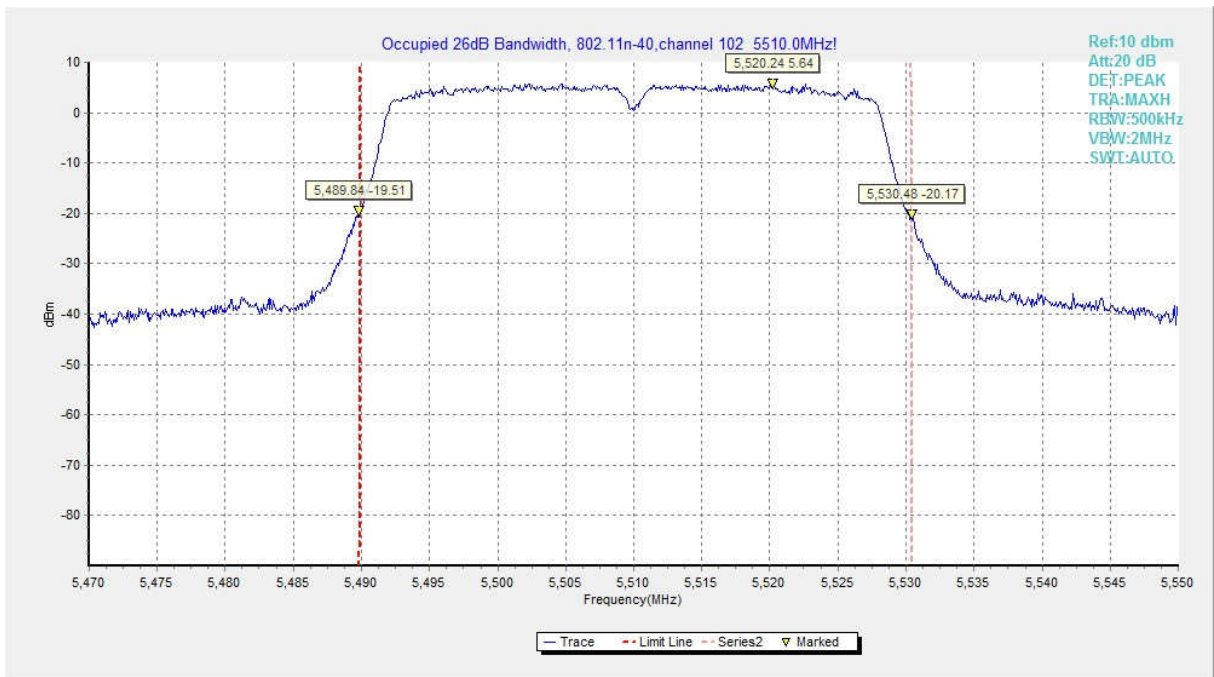


Fig. 14 Occupied 26dB Bandwidth (802.11n-HT40, 5510MHz)

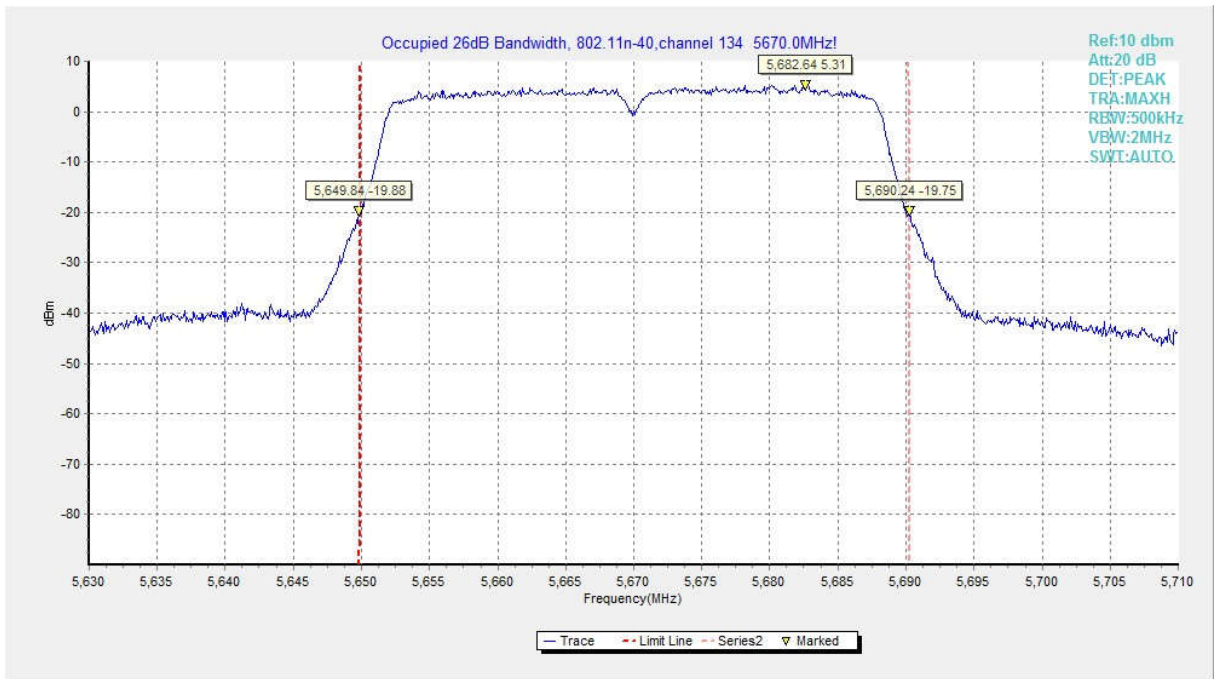


Fig. 15 Occupied 26dB Bandwidth (802.11n-HT40, 5670MHz)

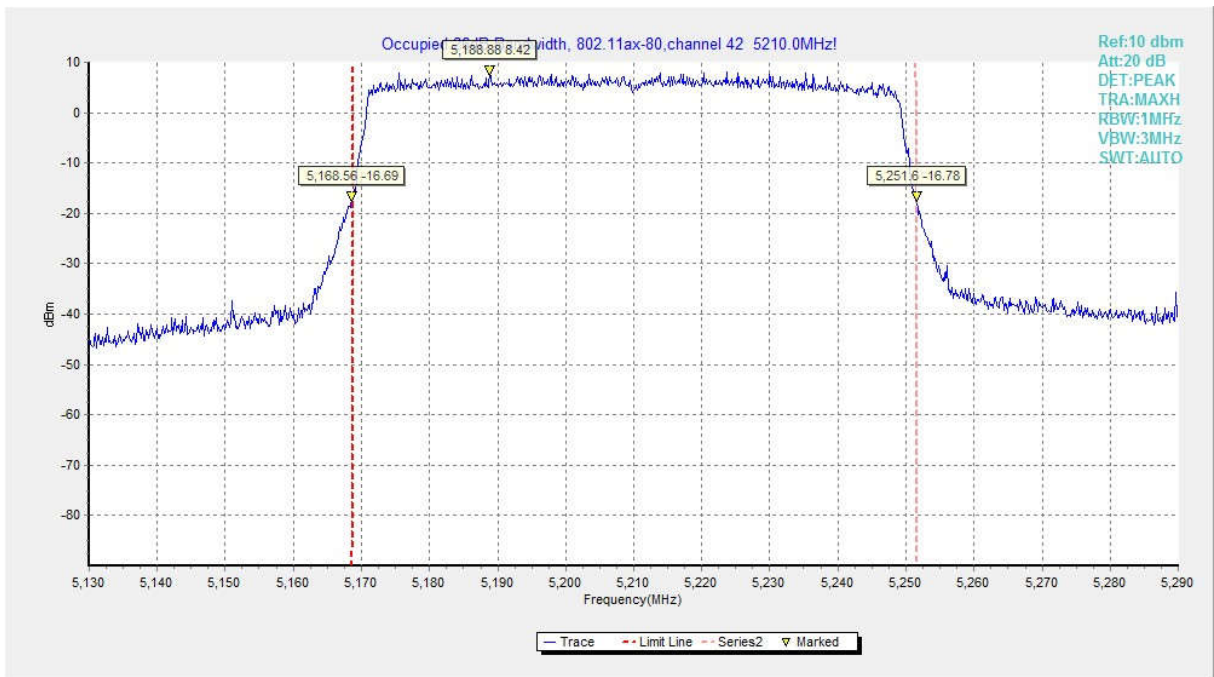


Fig. 16 Occupied 26dB Bandwidth (802.11ax-HE80, 5210MHz)

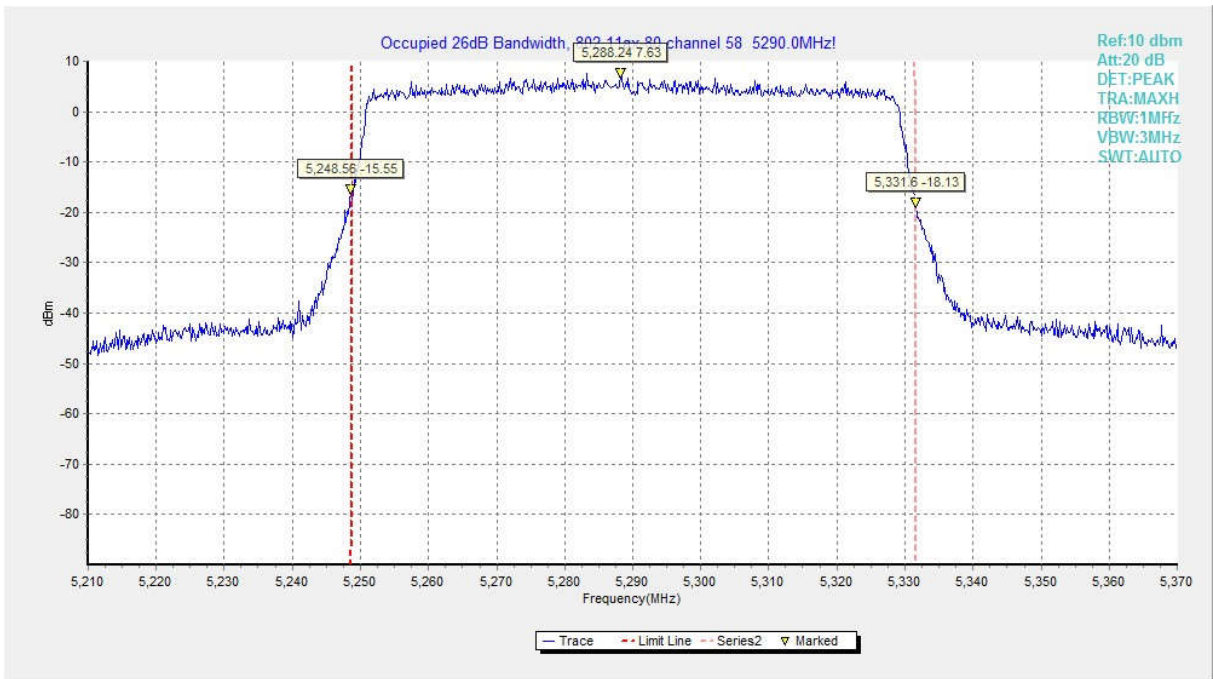


Fig. 17 Occupied 26dB Bandwidth (802.11ax-HE80, 5290MHz)

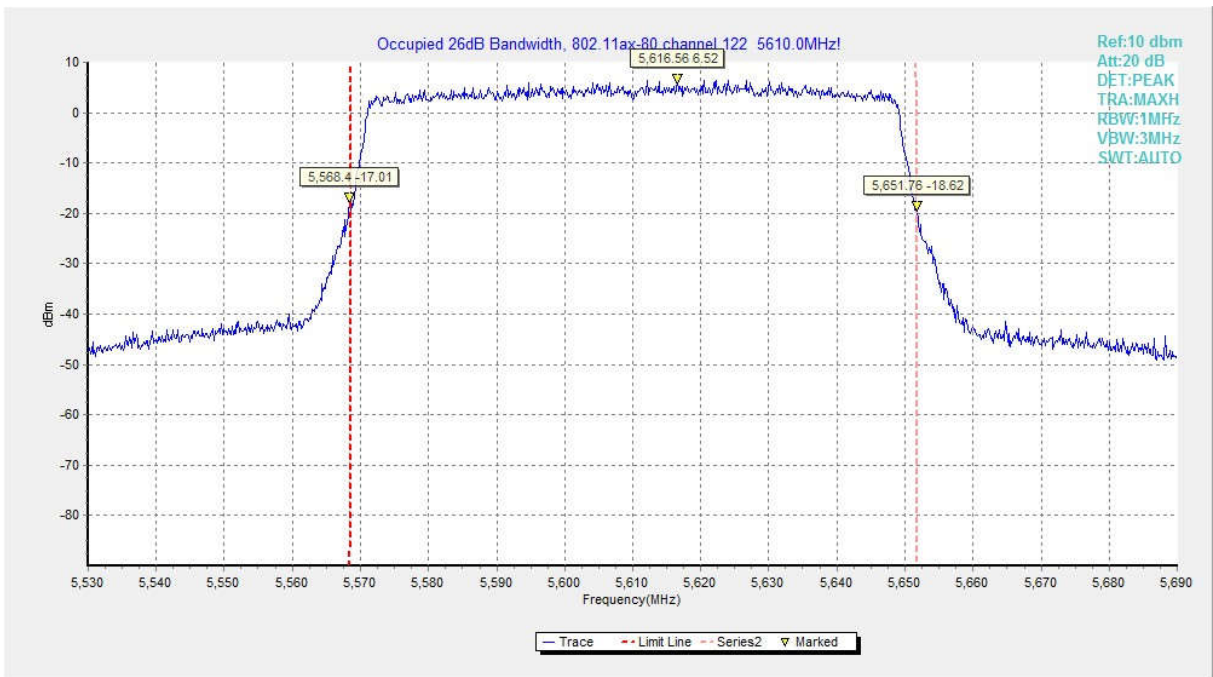


Fig. 18 Occupied 26dB Bandwidth (802.11ax-HE80, 5610MHz)

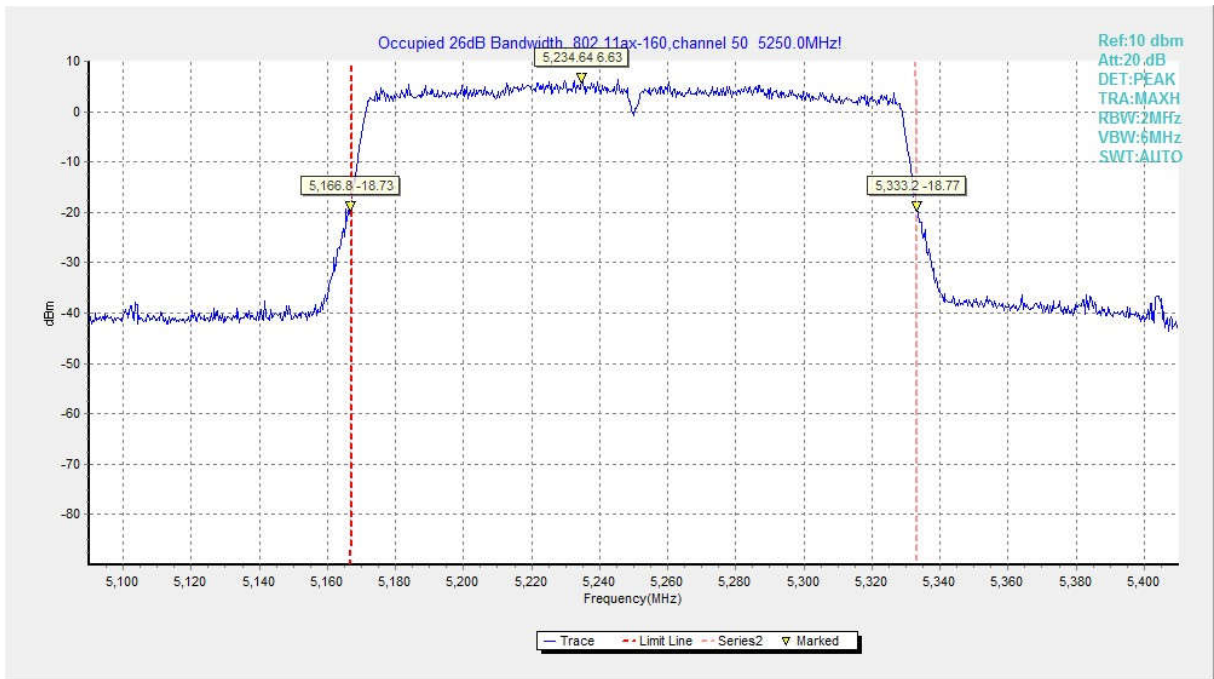


Fig. 19 Occupied 26dB Bandwidth (802.11ax-HE160, 5250MHz)

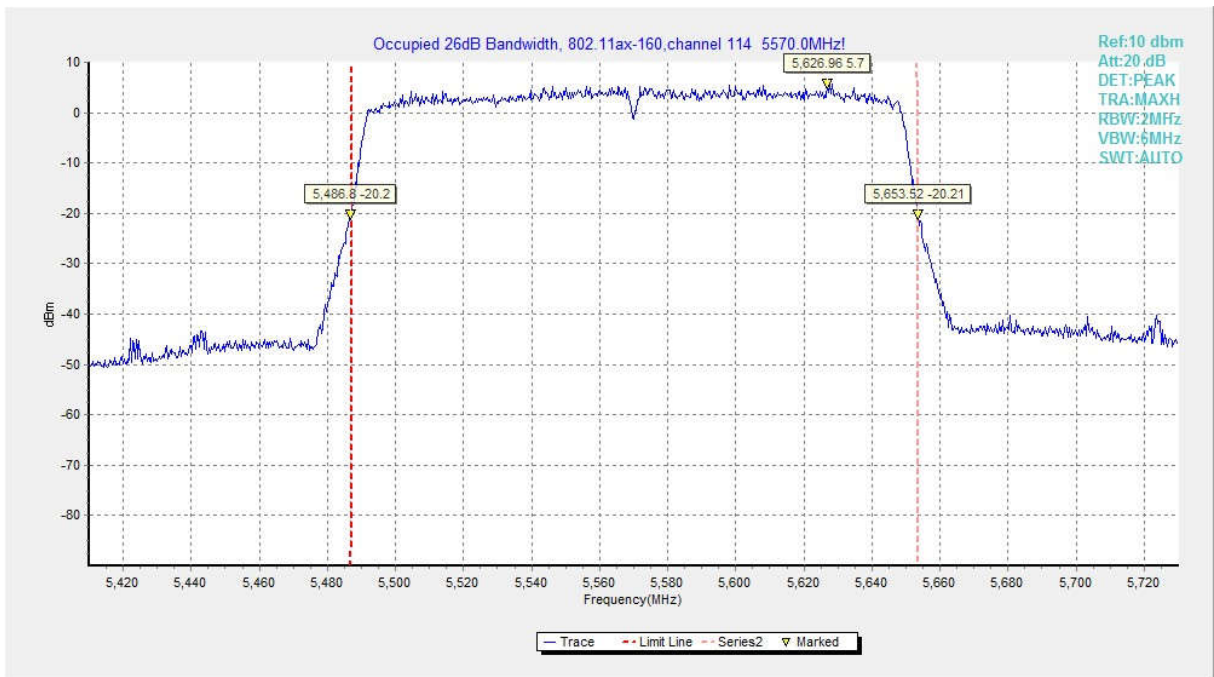


Fig. 20 Occupied 26dB Bandwidth (802.11ax-HE160, 5570MHz)

### A.5. Occupied 6dB Bandwidth

Measurement of method: See KDB 789033 D02 v02r01, Section C.2.

Measurement Limit:

Standard	Limit (MHz)
FCC 47 CFR Part 15.407 & RSS-247 section 5.2	$\geq 0.5$

Measurement Result:

Mode	Channel	Occupied 6dB Bandwidth (MHz)		Conclusion
802.11a	5745MHz (Ch149)	Fig.1	16.30	P
	5785MHz (Ch157)	Fig.2	16.05	P
	5825MHz (Ch165)	Fig.3	16.30	P
802.11n-HT40	5755MHz (Ch151)	Fig.4	36.08	P
	5795MHz (Ch159)	Fig.5	36.32	P
802.11ax-HE80	5775MHz (Ch155)	Fig.6	77.92	P

Test graphs as below:

Conclusion: PASS

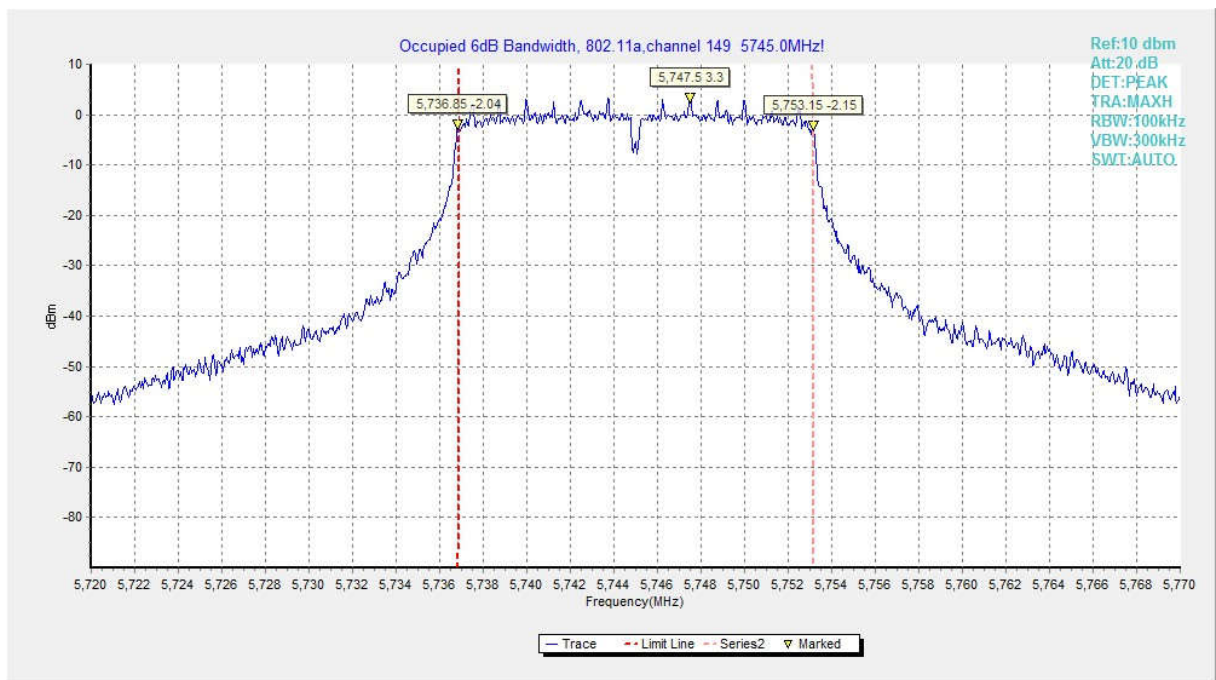


Fig. 1 Occupied 6dB Bandwidth (802.11a, 5745MHz)

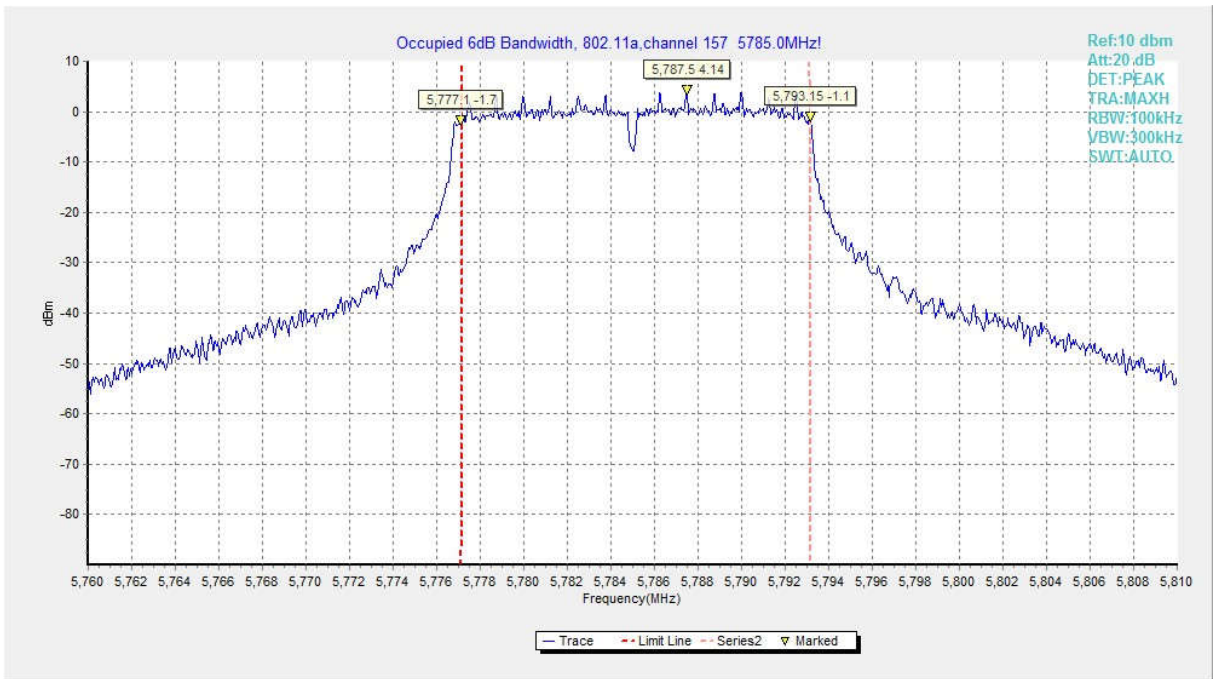


Fig. 2 Occupied 6dB Bandwidth (802.11a, 5785MHz)

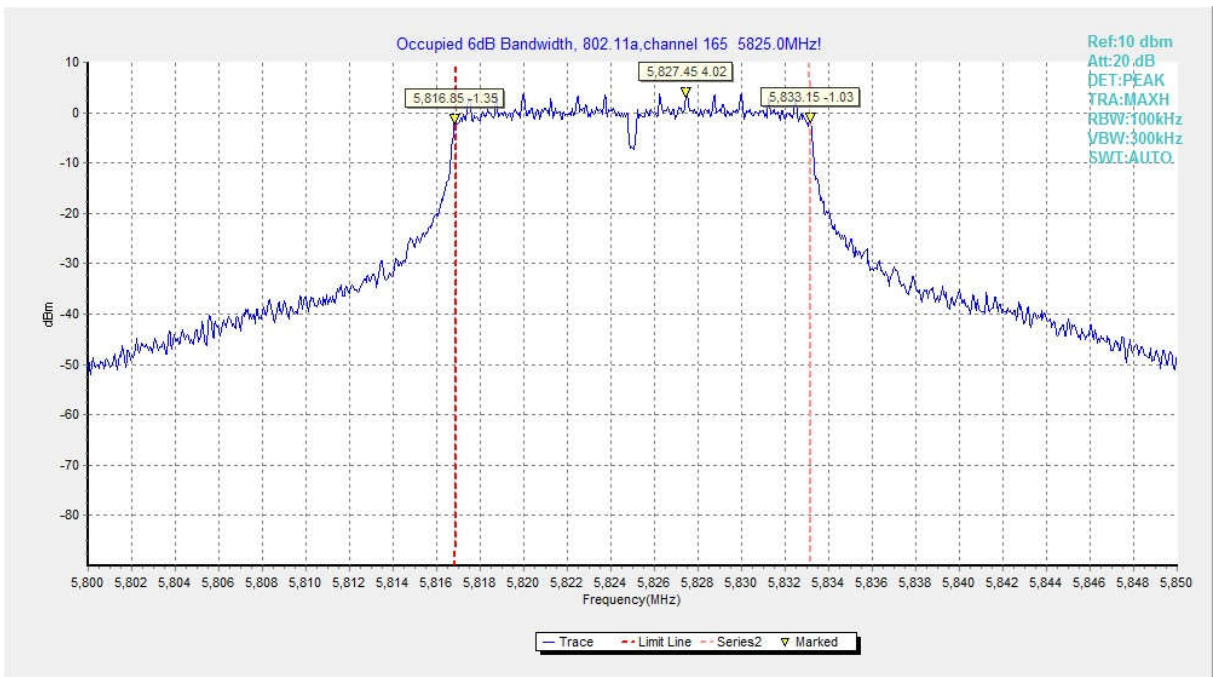


Fig. 3 Occupied 6dB Bandwidth (802.11a, 5825MHz)

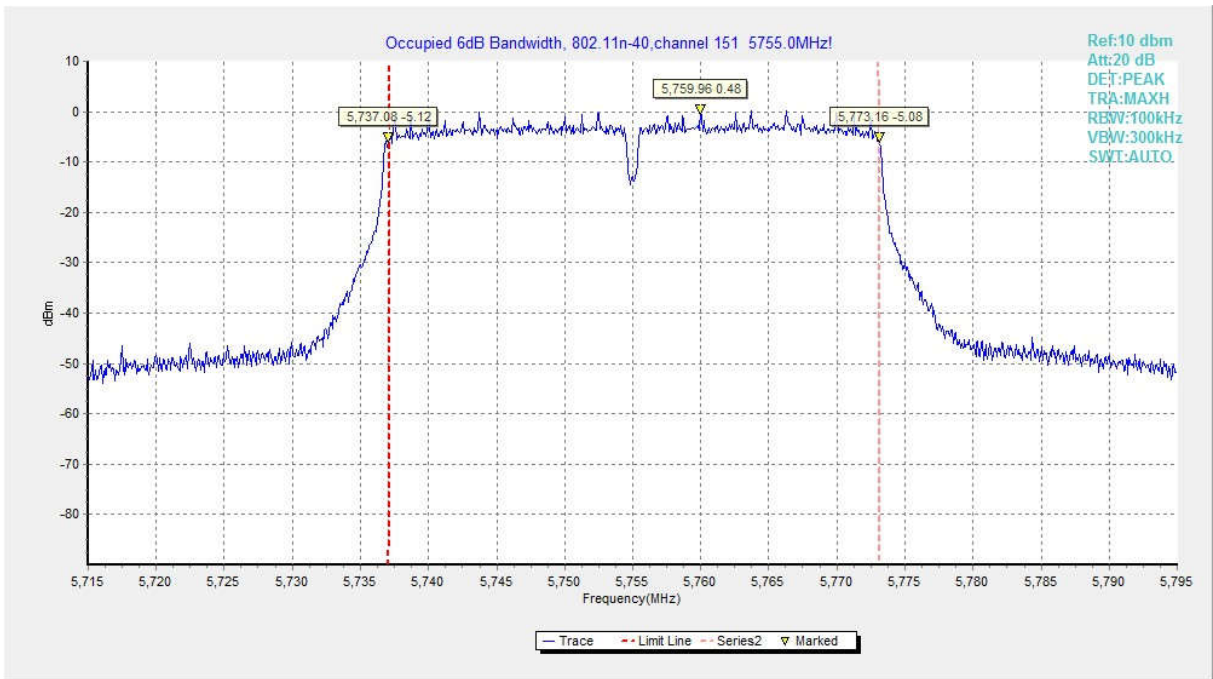


Fig. 4 Occupied 6dB Bandwidth (802.11n-HT40, 5755MHz)

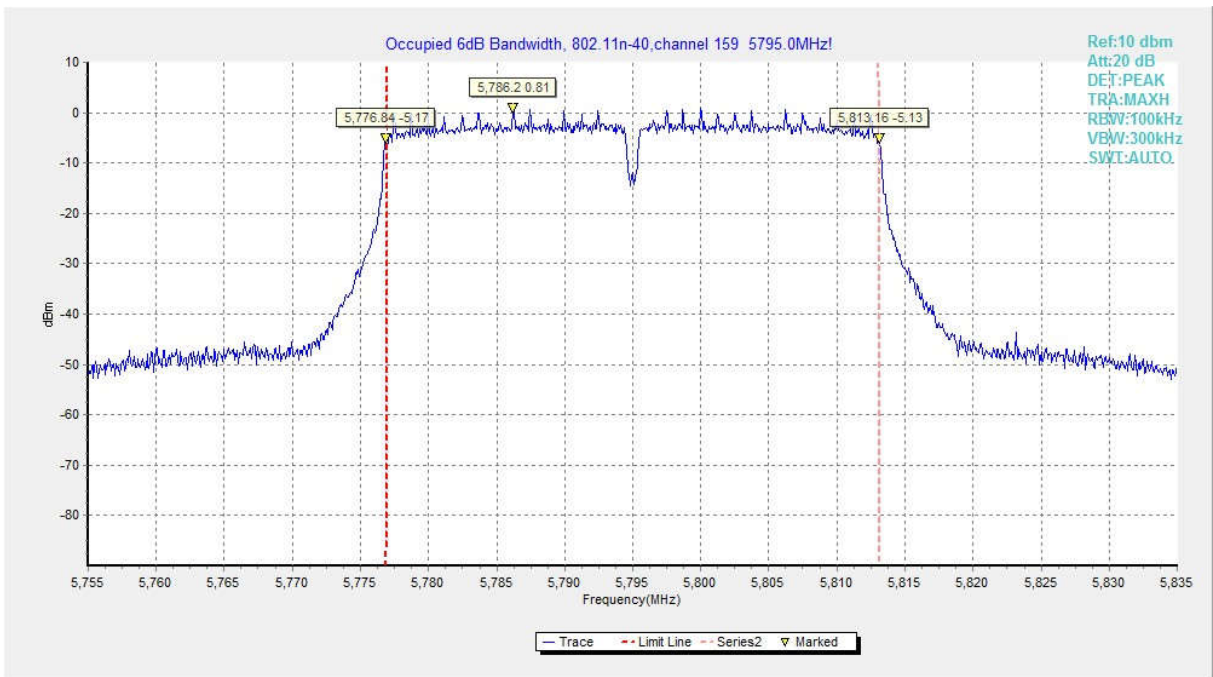


Fig. 5 Occupied 6dB Bandwidth (802.11n-HT40, 5795MHz)



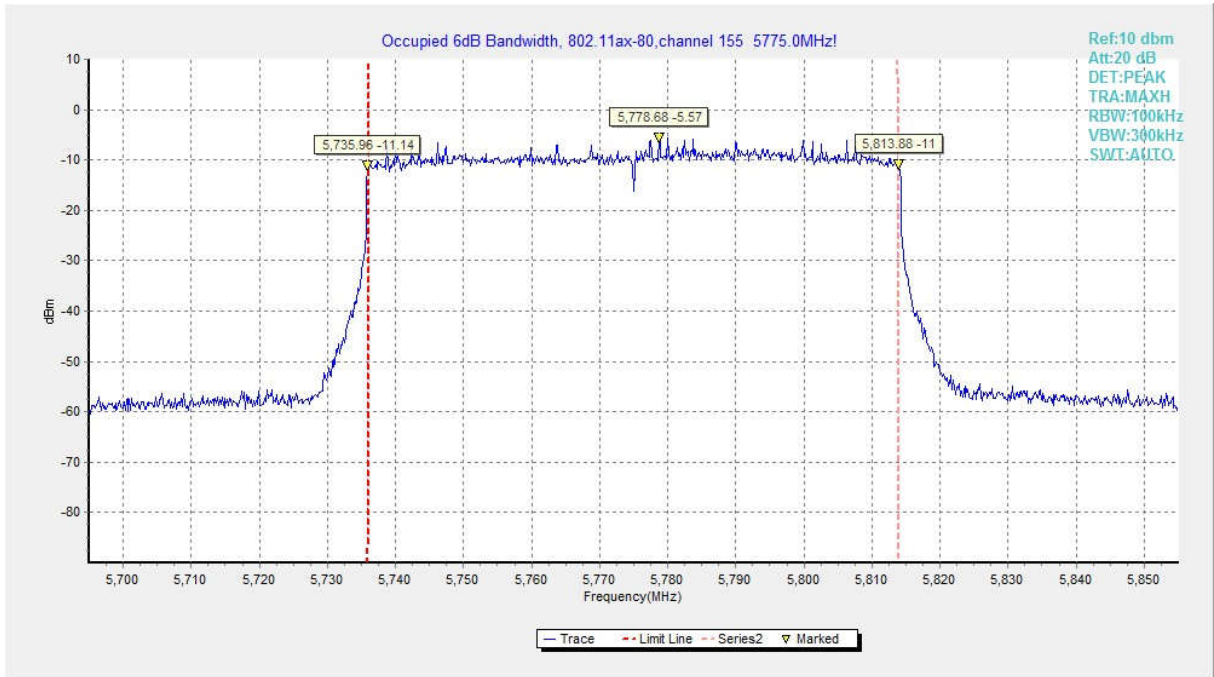


Fig. 6 Occupied 6dB Bandwidth (802.11ax-HE80, 5775MHz)



**A.6. 99% Occupied Bandwidth**

Measurement of method: See KDB 789033 D02 v02r01, Section D.

Measurement Limit:

Standard	Limit (MHz)
FCC 47 CFR Part 15.403 & RSS-Gen section 6.7	/

Measurement Result:

Mode	Channel	99% Occupied Bandwidth (MHz)		Conclusion
		Fig.	Value	
802.11a	5180MHz (Ch36)	Fig.1	16.84	P
	5200MHz (Ch40)	Fig.2	16.88	P
	5240MHz (Ch48)	Fig.3	16.88	P
	5260MHz (Ch52)	Fig.4	16.84	P
	5280MHz (Ch56)	Fig.5	16.80	P
	5320MHz (Ch64)	Fig.6	16.76	P
	5500MHz (Ch100)	Fig.7	16.80	P
	5580MHz (Ch116)	Fig.8	16.84	P
	5700MHz (Ch140)	Fig.9	16.84	P
	5745MHz (Ch149)	Fig.10	16.76	P
	5785MHz (Ch157)	Fig.11	16.76	P
	5825MHz (Ch165)	Fig.12	16.80	P
802.11n-HT40	5190MHz (Ch38)	Fig.13	36.08	P
	5230MHz (Ch46)	Fig.14	36.08	P
	5270MHz (Ch54)	Fig.15	36.16	P
	5310MHz (Ch62)	Fig.16	36.16	P
	5510MHz (Ch102)	Fig.17	36.00	P
	5670MHz (Ch134)	Fig.18	36.08	P
	5755MHz (Ch151)	Fig.19	36.16	P
	5795MHz (Ch159)	Fig.20	36.16	P
802.11ax-HE80	5210MHz (Ch42)	Fig.21	77.28	P
	5290MHz (Ch58)	Fig.22	77.44	P
	5610MHz (Ch122)	Fig.23	77.28	P
	5775MHz (Ch155)	Fig.24	77.28	P
802.11ax-HE160	5250MHz (Ch50)	Fig.25	156.48	P
	5570MHz (Ch114)	Fig.26	156.16	P

**Conclusion: PASS**

Test graphs as below:

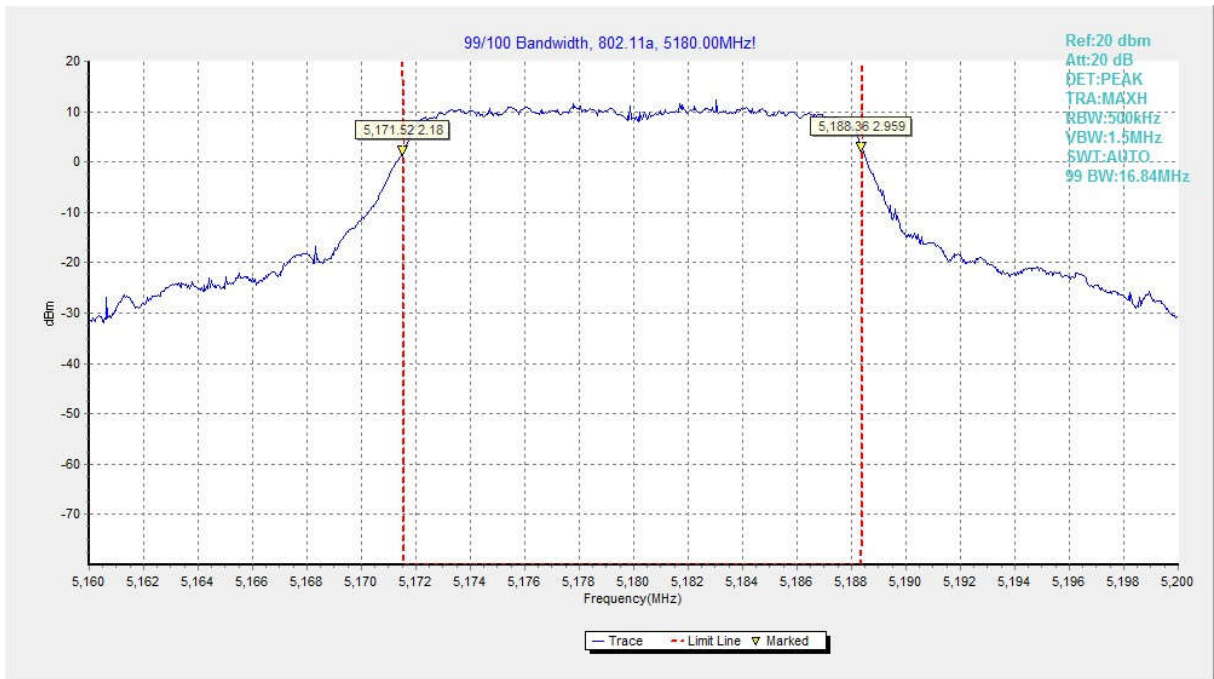


Fig. 1 99% Occupied Bandwidth (802.11a, 5180MHz)

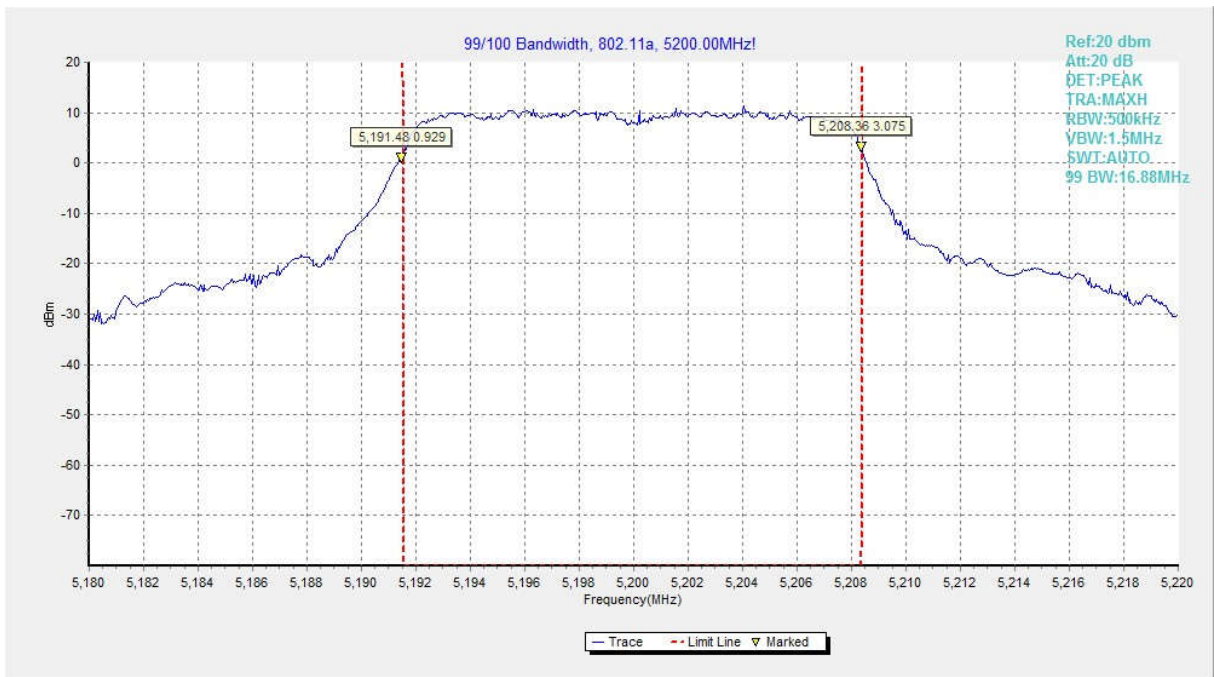


Fig. 2 99% Occupied Bandwidth (802.11a, 5200MHz)

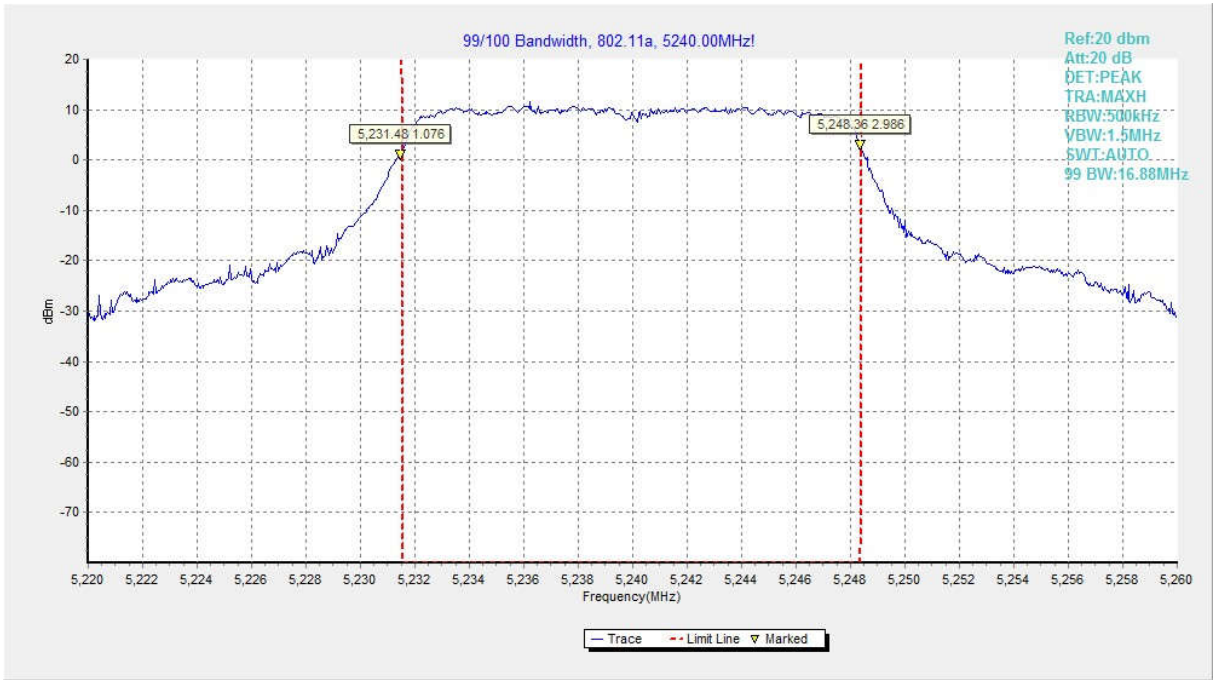


Fig. 3 99% Occupied Bandwidth (802.11a, 5240MHz)

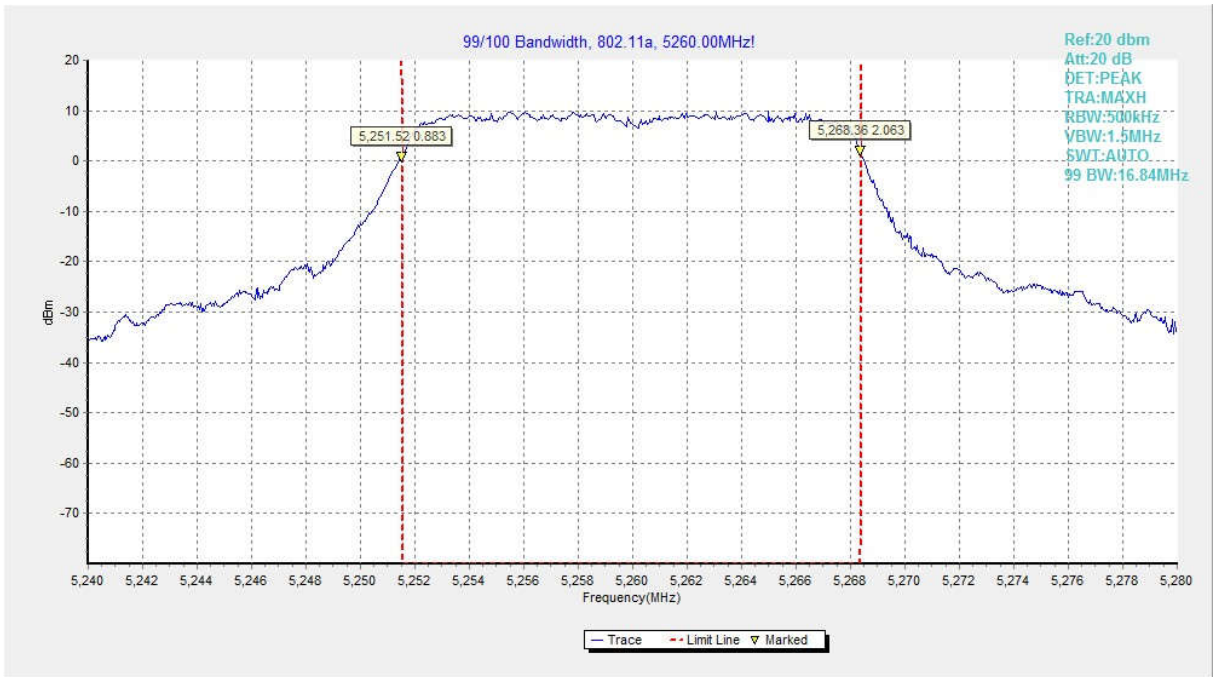


Fig. 4 99% Occupied Bandwidth (802.11a, 5260MHz)

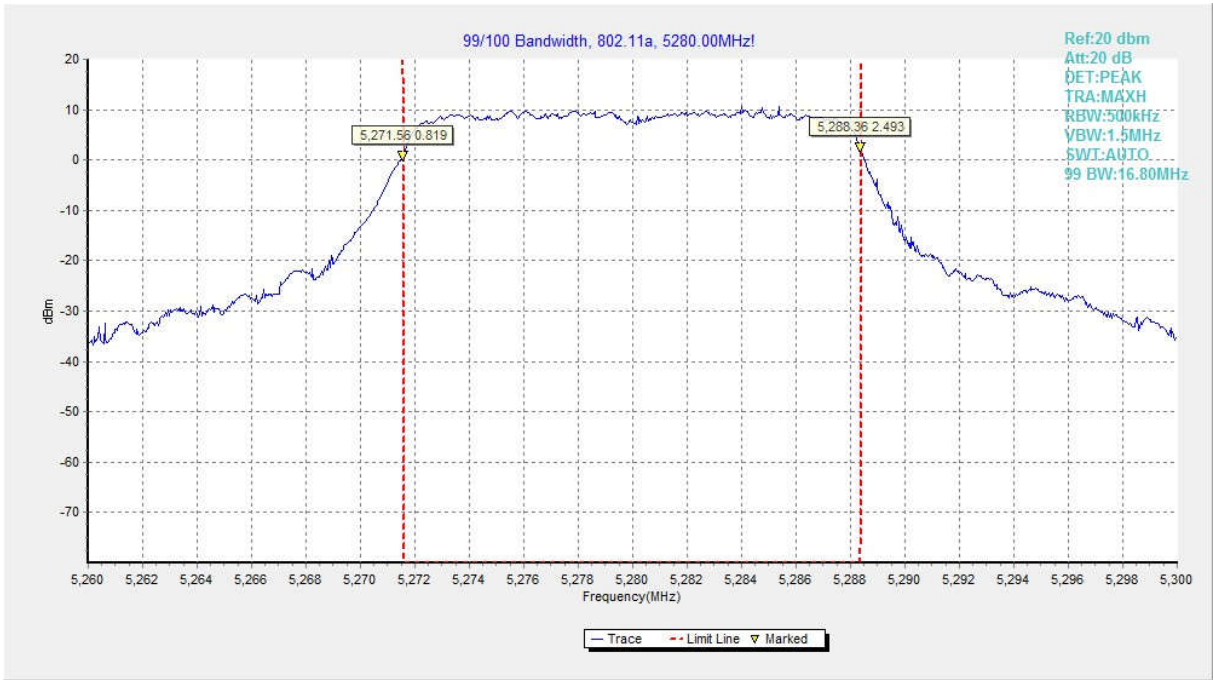


Fig. 5 99% Occupied Bandwidth (802.11a, 5280MHz)

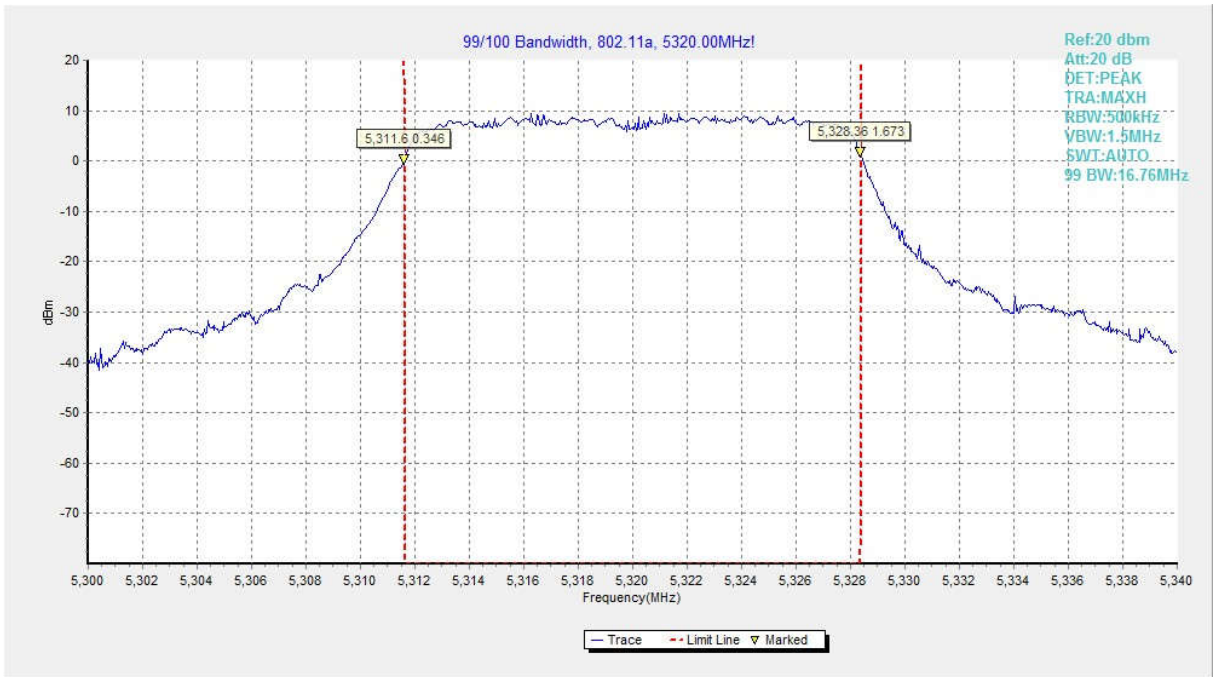


Fig. 6 99% Occupied Bandwidth (802.11a, 5320MHz)

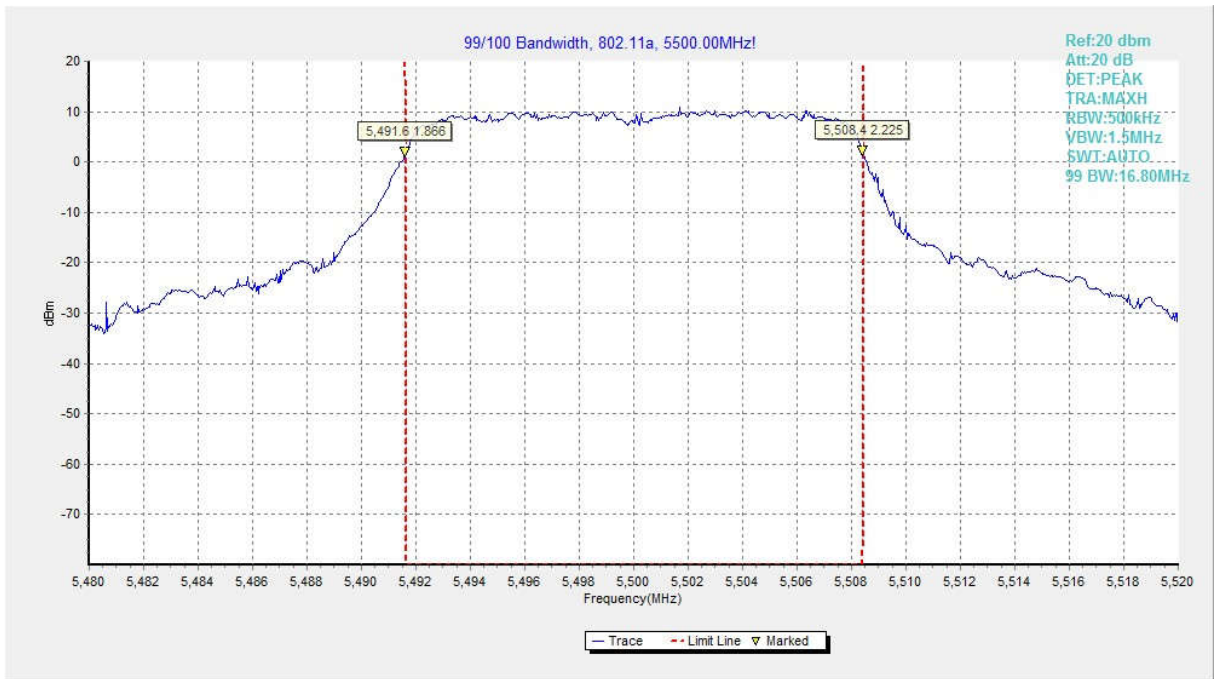


Fig. 7 99% Occupied Bandwidth (802.11a, 5500MHz)

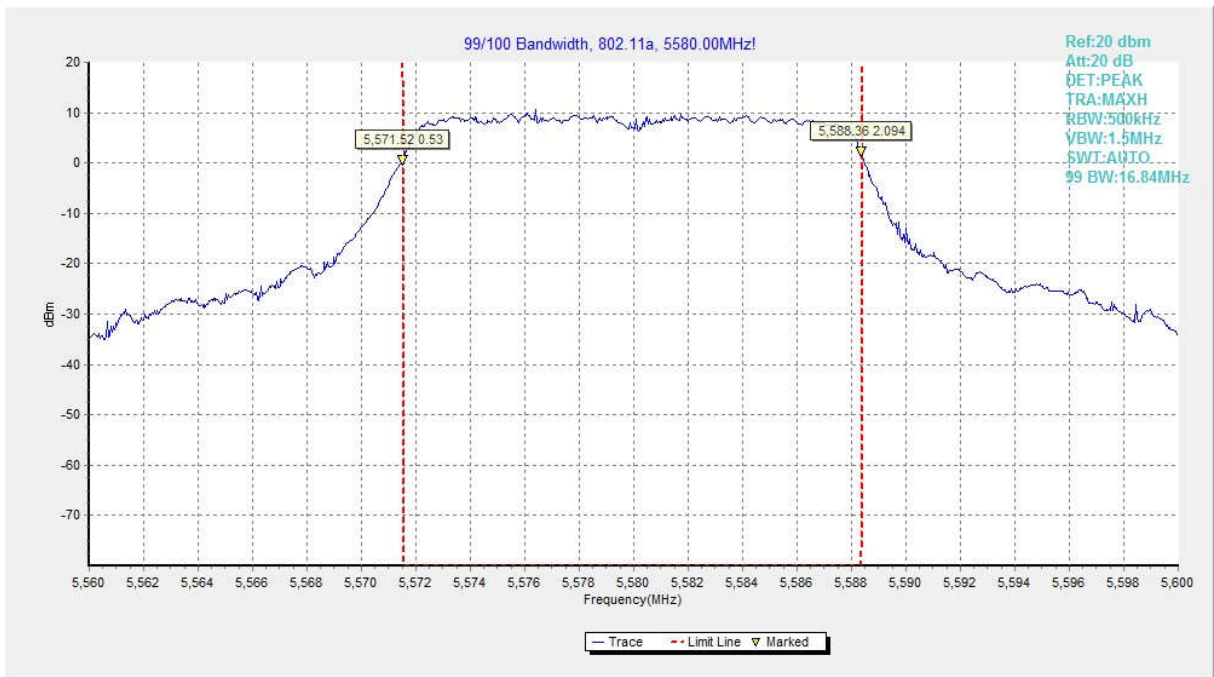


Fig. 8 99% Occupied Bandwidth (802.11a, 5580MHz)

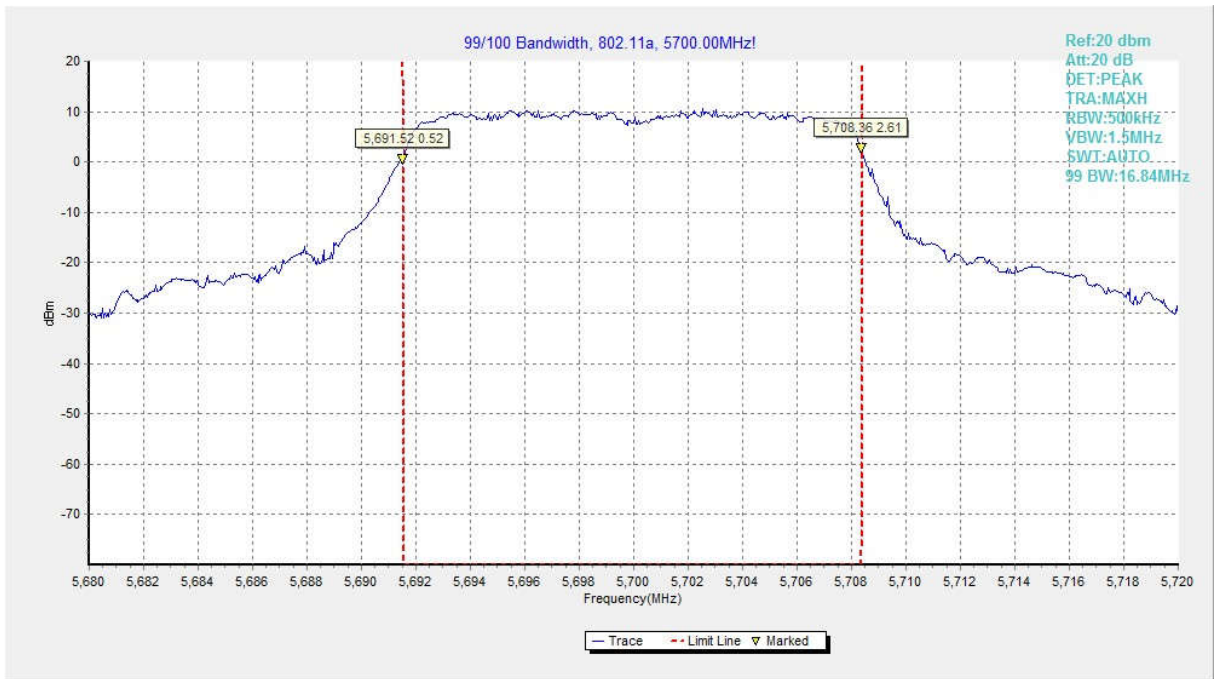


Fig. 9 99% Occupied Bandwidth (802.11a, 5700MHz)

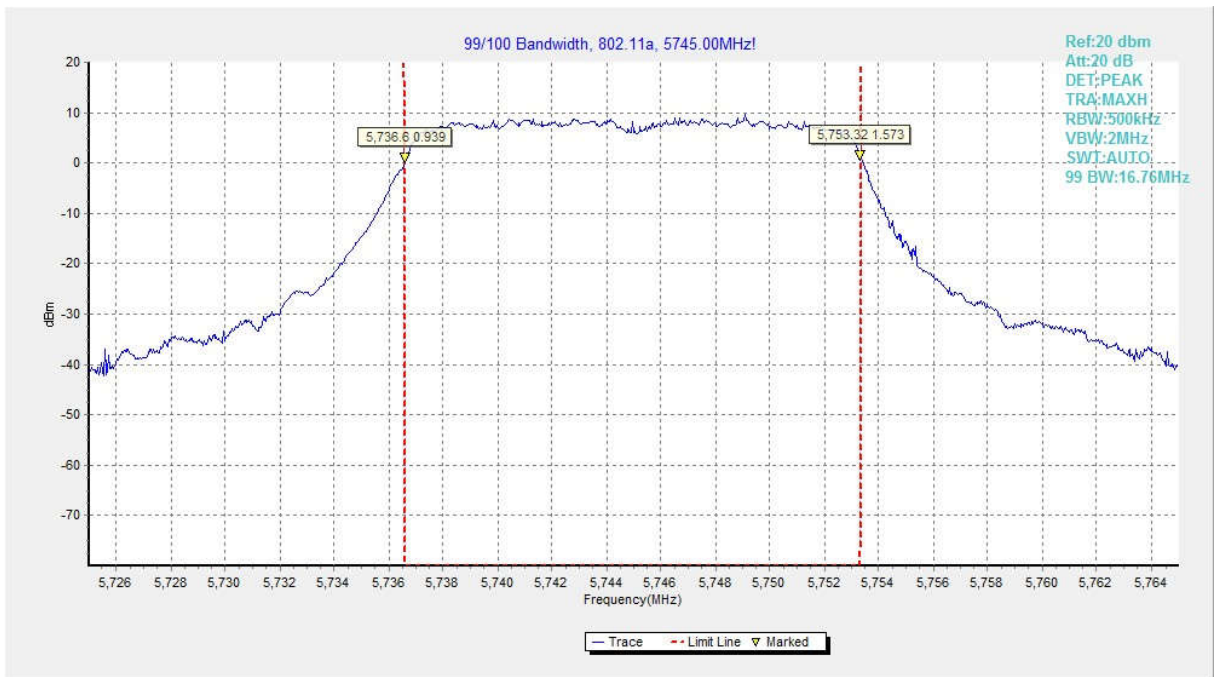


Fig. 10 99% Occupied Bandwidth (802.11a, 5745MHz)

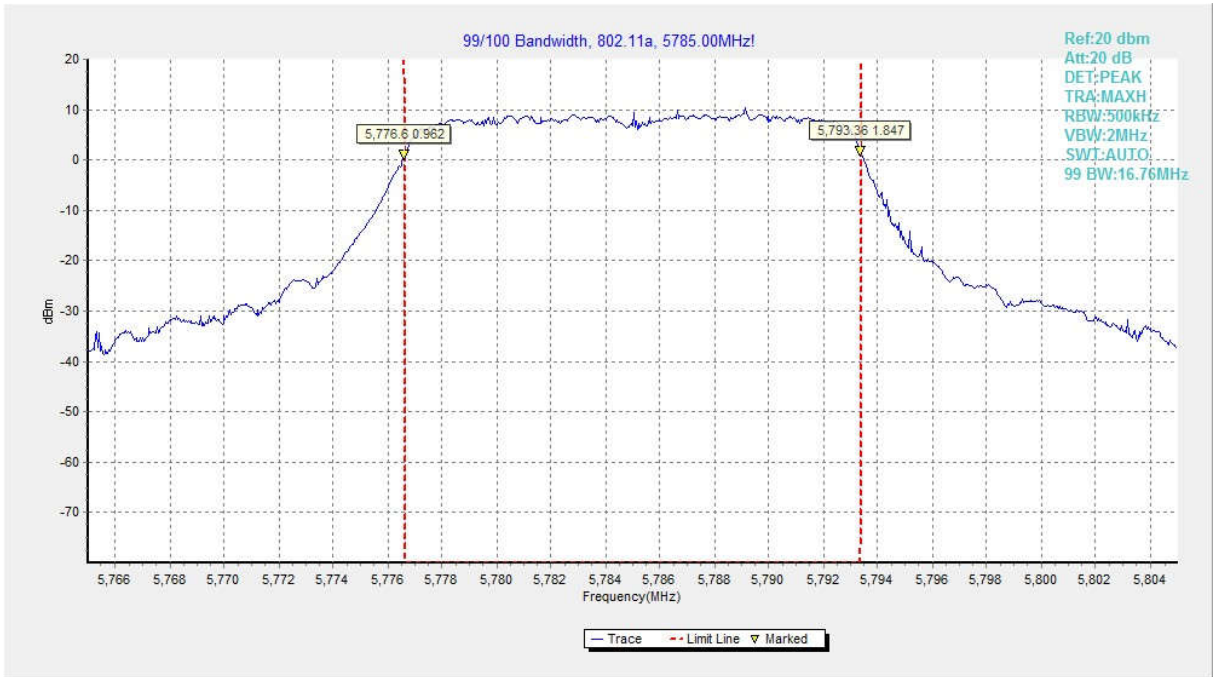


Fig. 11 99% Occupied Bandwidth (802.11a, 5785MHz)

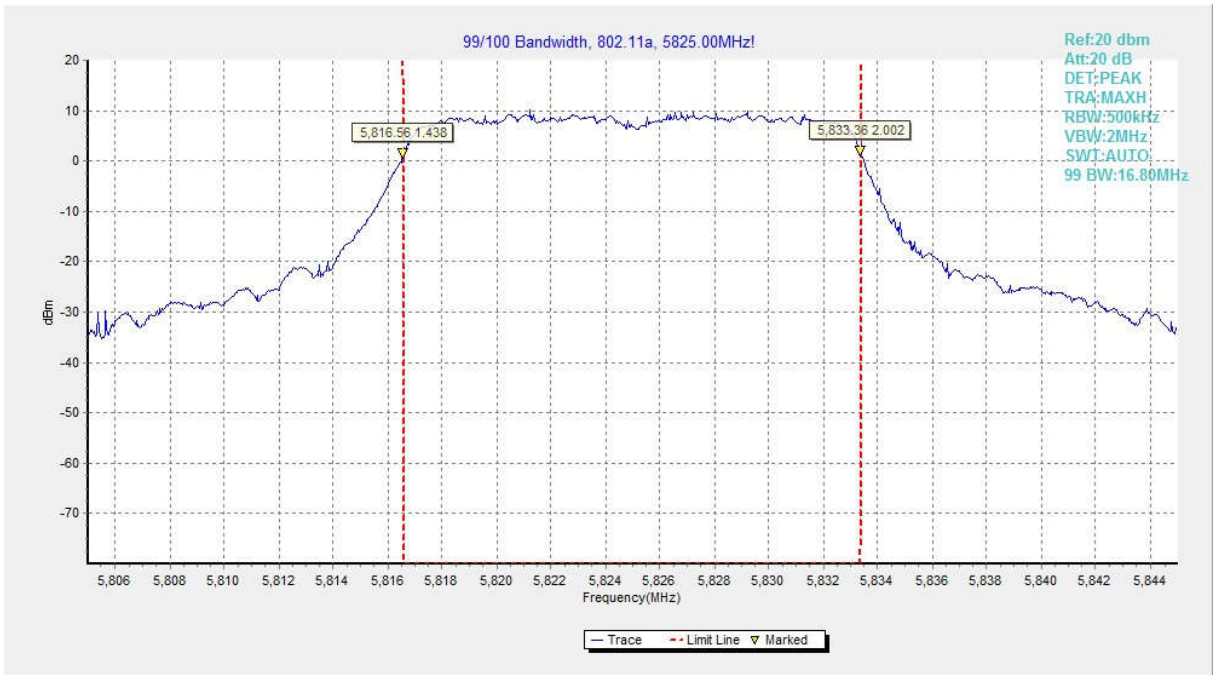


Fig. 12 99% Occupied Bandwidth (802.11a, 5825MHz)



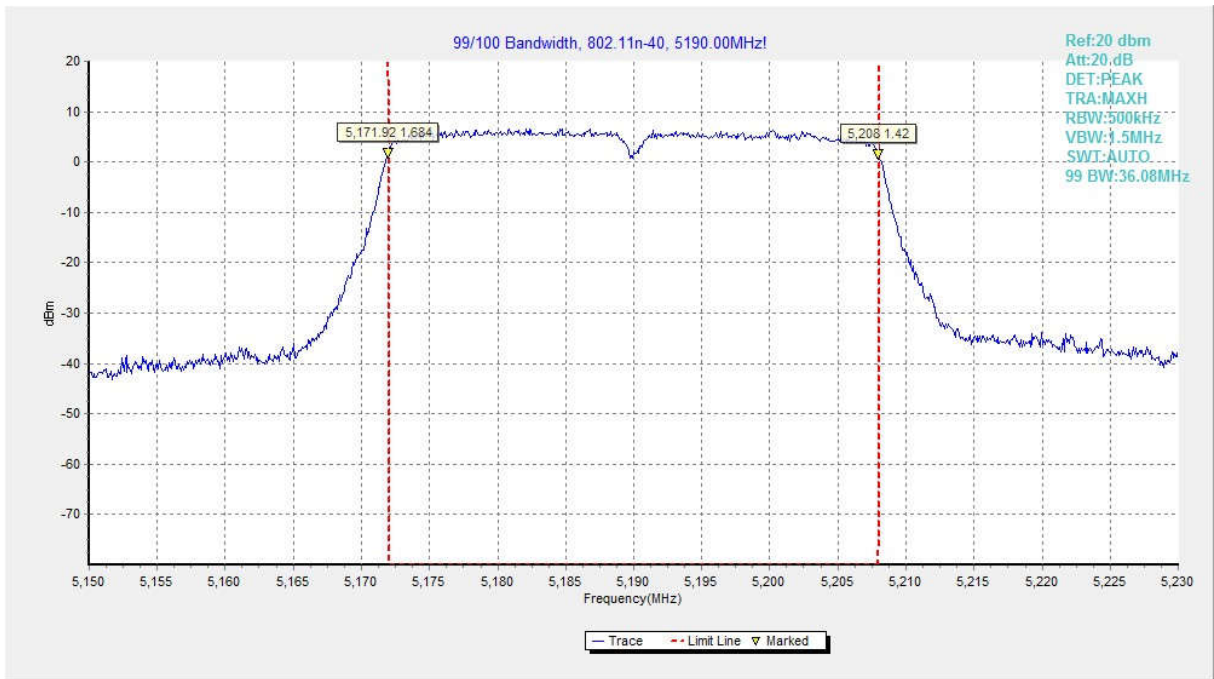


Fig. 13 99% Occupied Bandwidth (802.11n-HT40, 5190MHz)

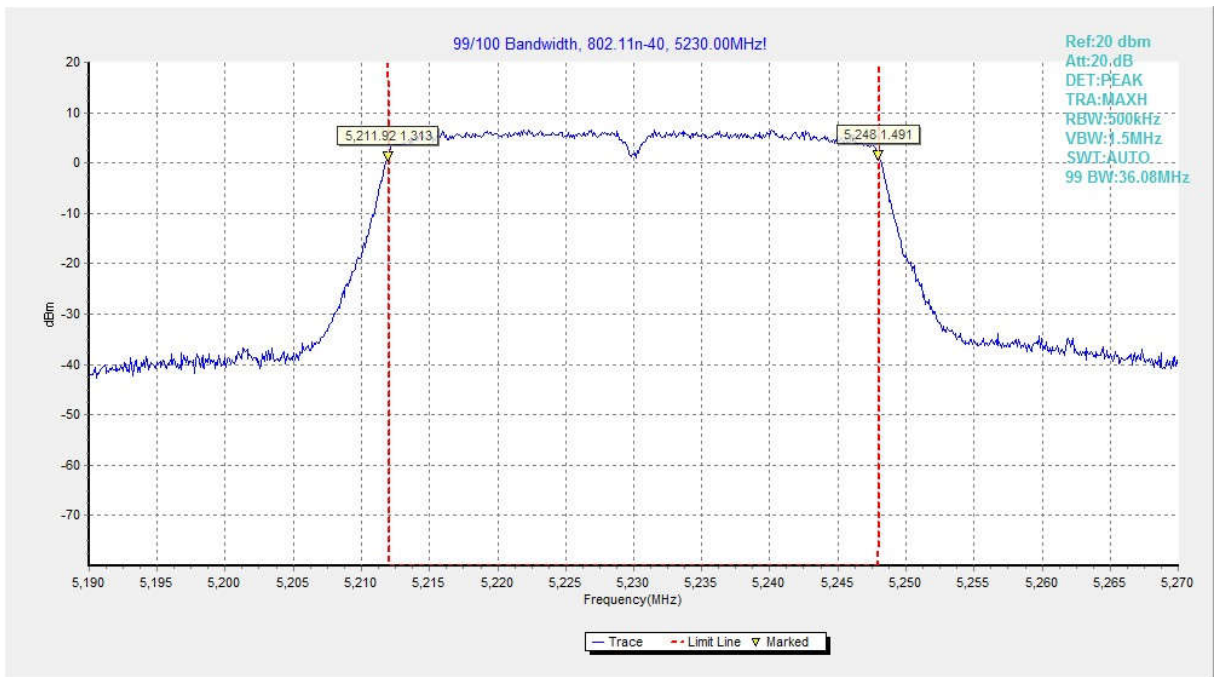


Fig. 14 99% Occupied Bandwidth (802.11n-HT40, 5230MHz)

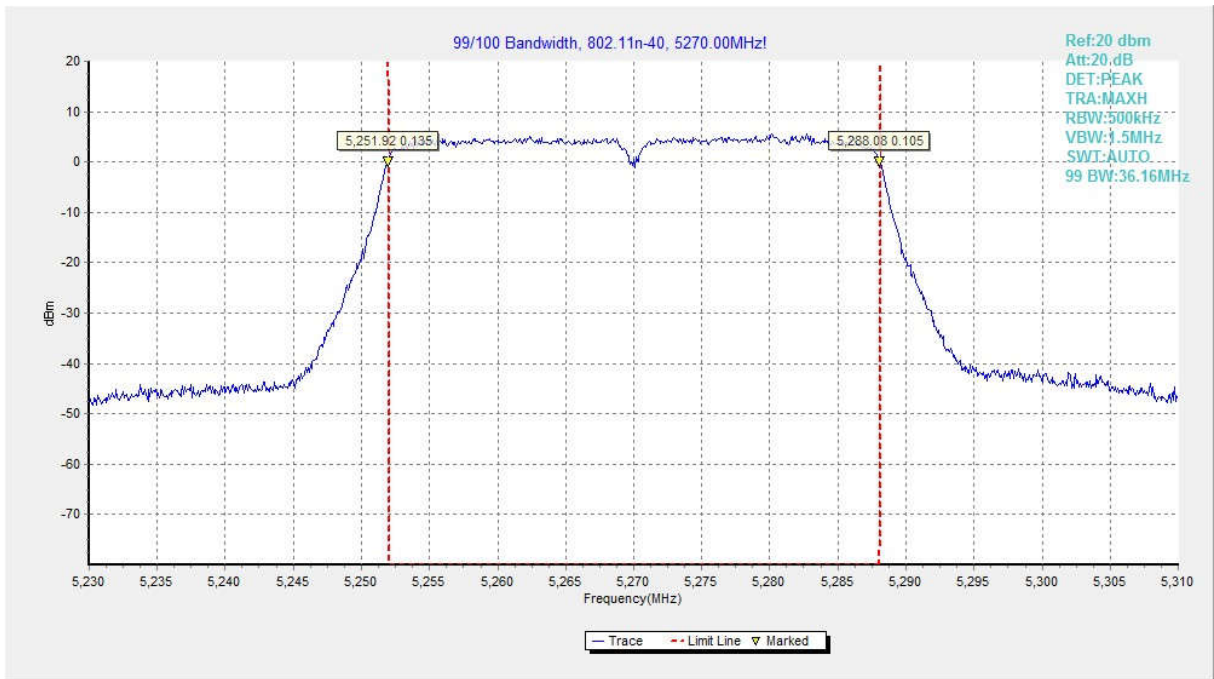


Fig. 15 99% Occupied Bandwidth (802.11n-HT40, 5270MHz)

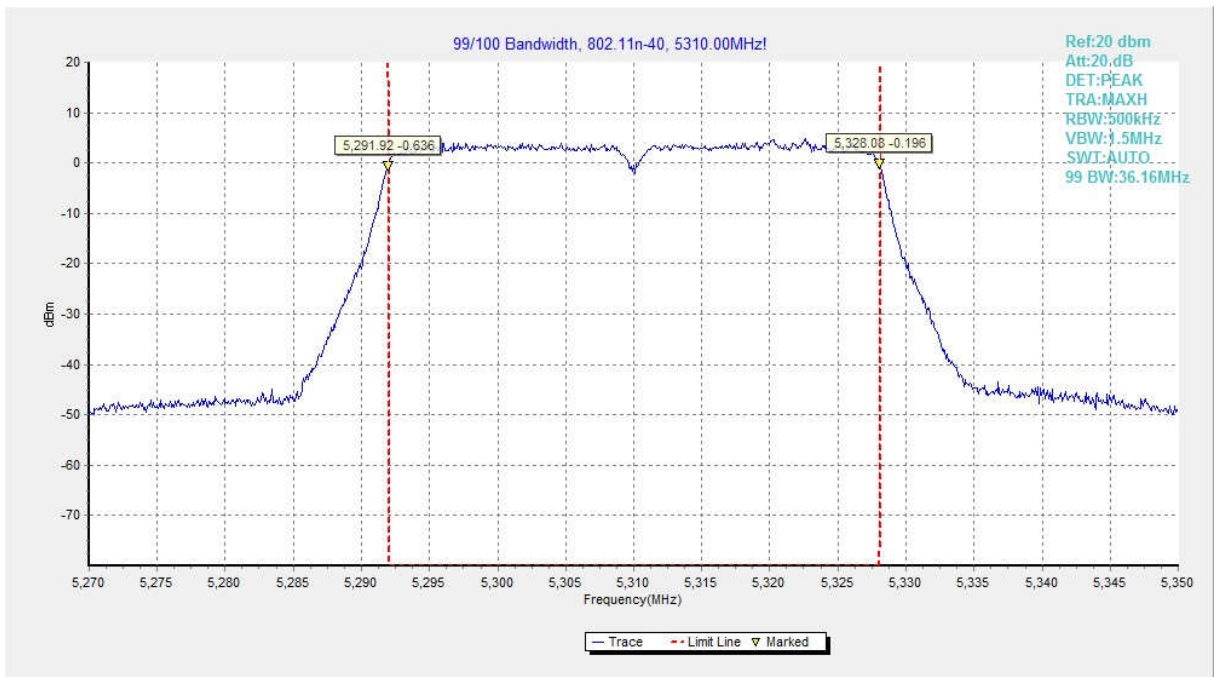
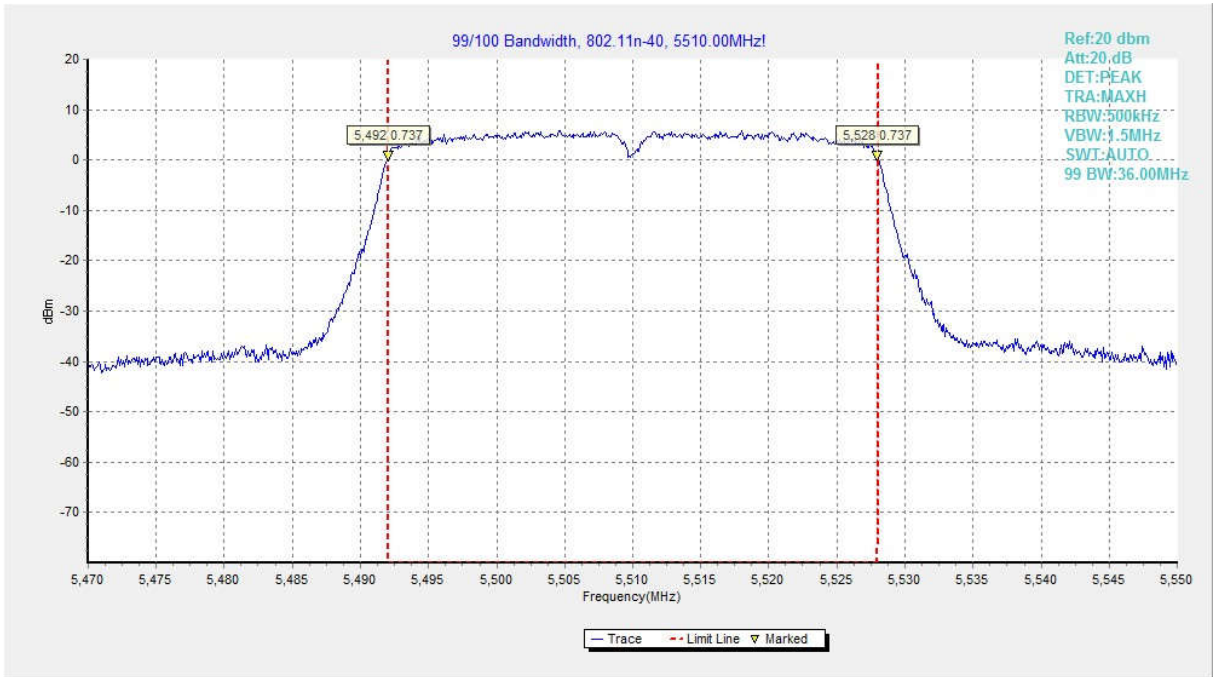
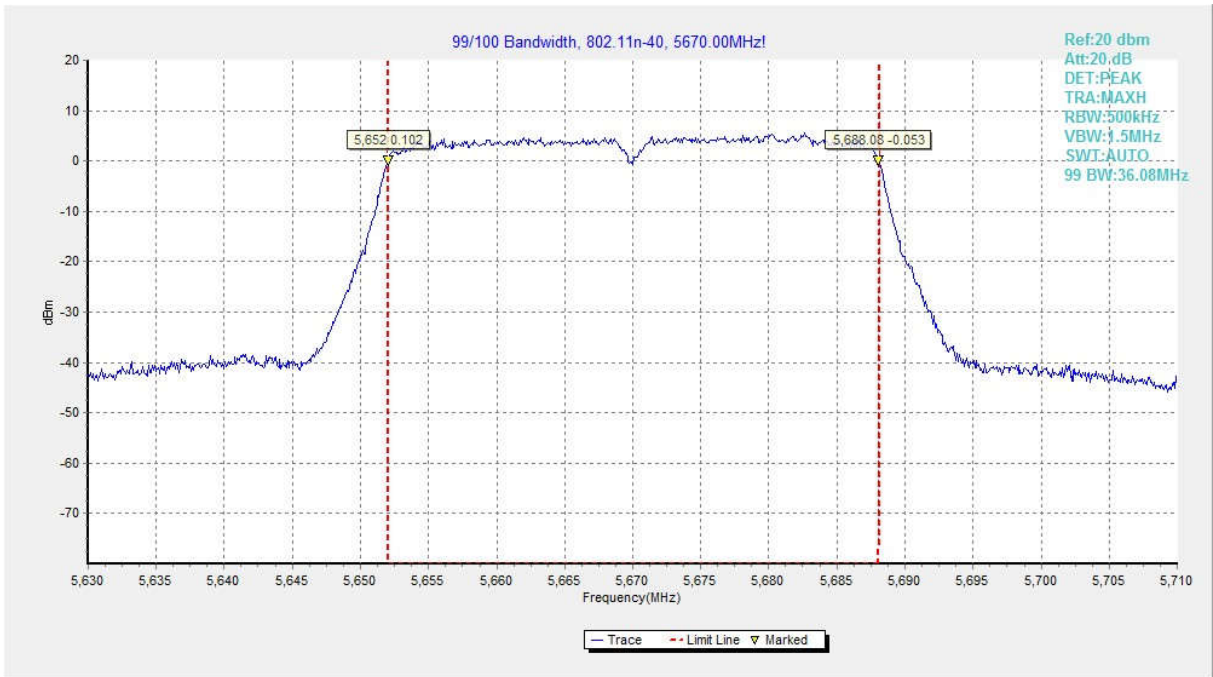


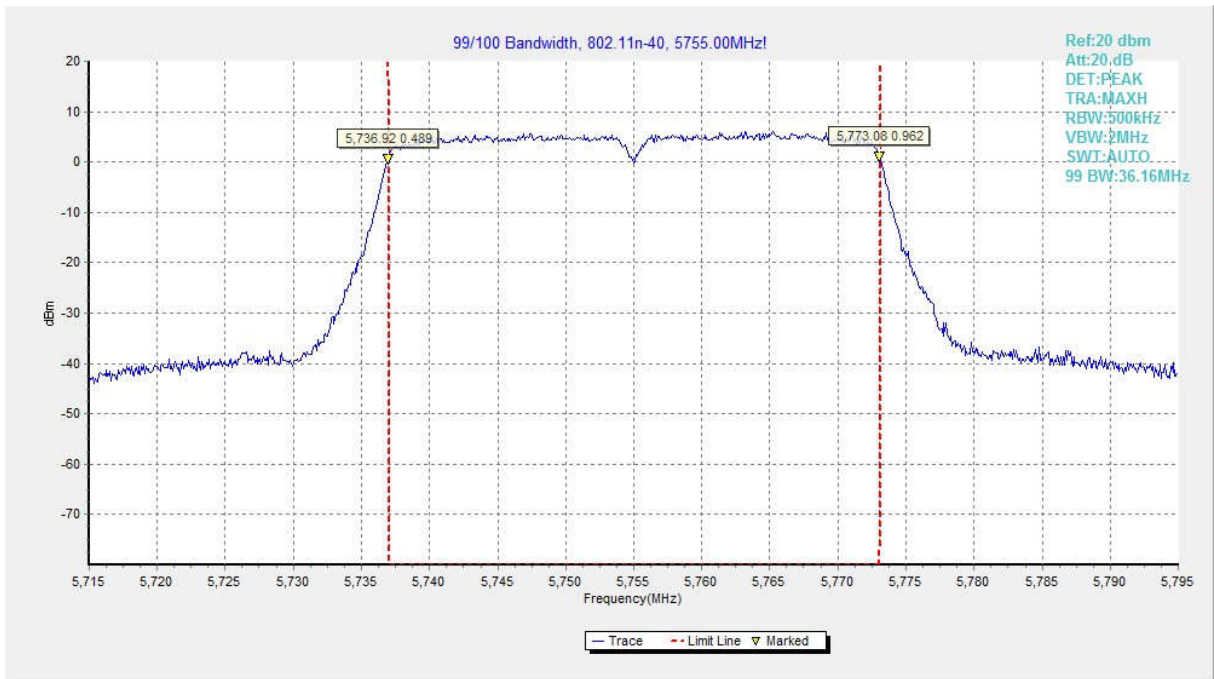
Fig. 16 99% Occupied Bandwidth (802.11n-HT40, 5310MHz)



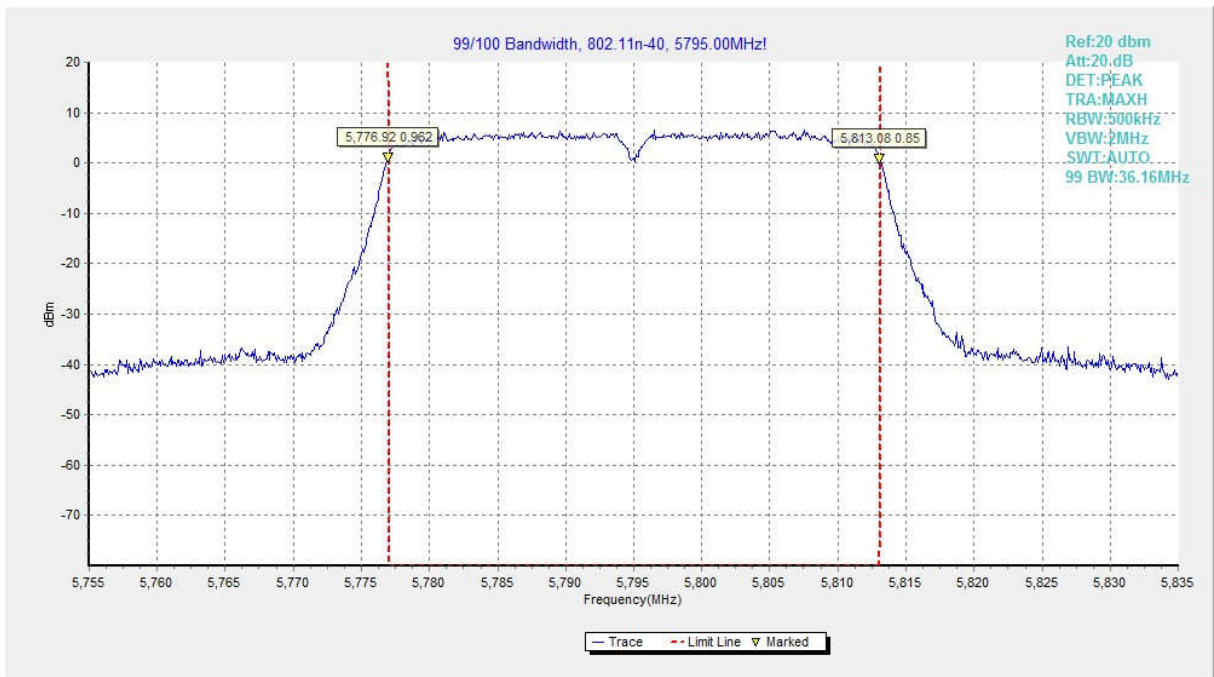
**Fig. 17 99% Occupied Bandwidth (802.11n-HT40, 5510MHz)**



**Fig. 18 99% Occupied Bandwidth (802.11n-HT40, 5670MHz)**



**Fig. 19 99% Occupied Bandwidth (802.11n-HT40, 5755MHz)**



**Fig. 20 99% Occupied Bandwidth (802.11n-HT40, 5795MHz)**

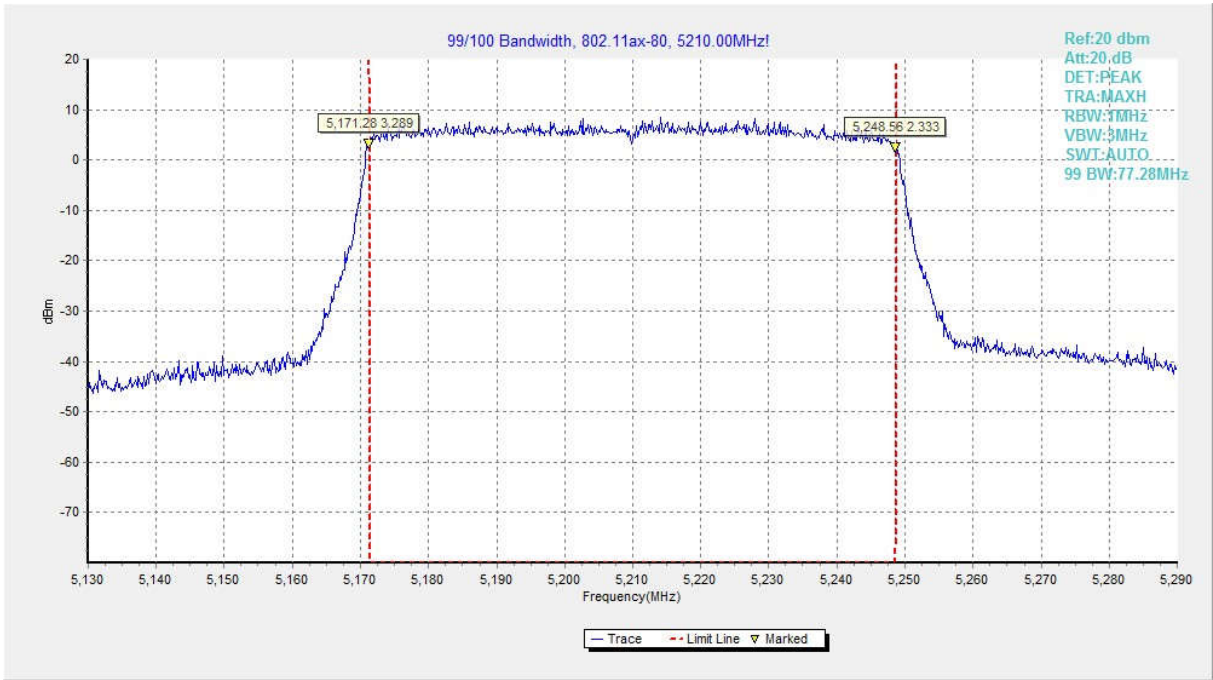


Fig. 21 99% Occupied Bandwidth (802. 11ax-HE80, 5210MHz)

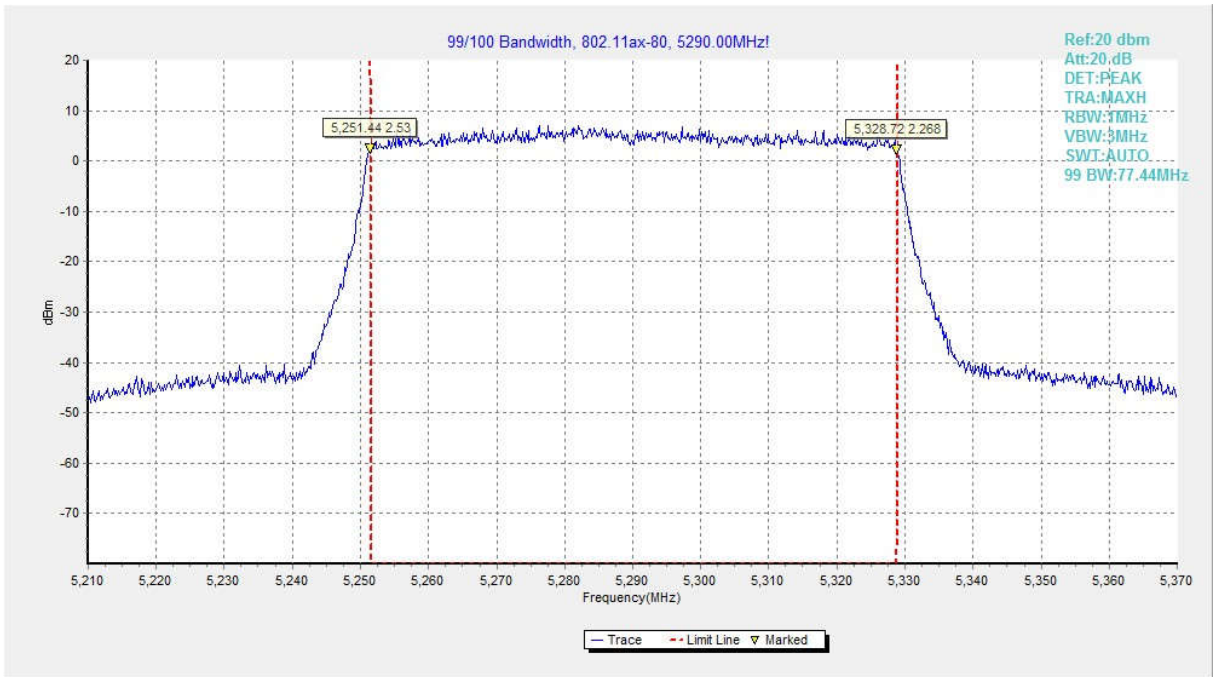


Fig. 22 99% Occupied Bandwidth (802. 11ax-HE80, 5290MHz)

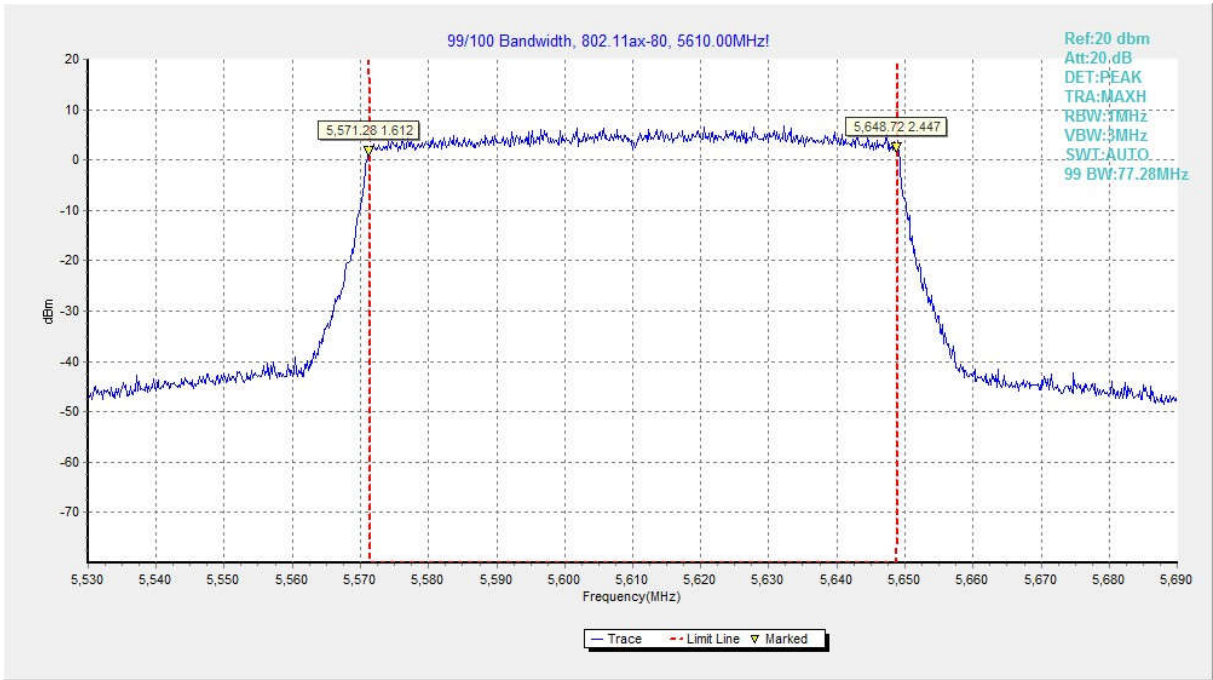


Fig. 23 99% Occupied Bandwidth (802. 11ax-HE80, 5610MHz)

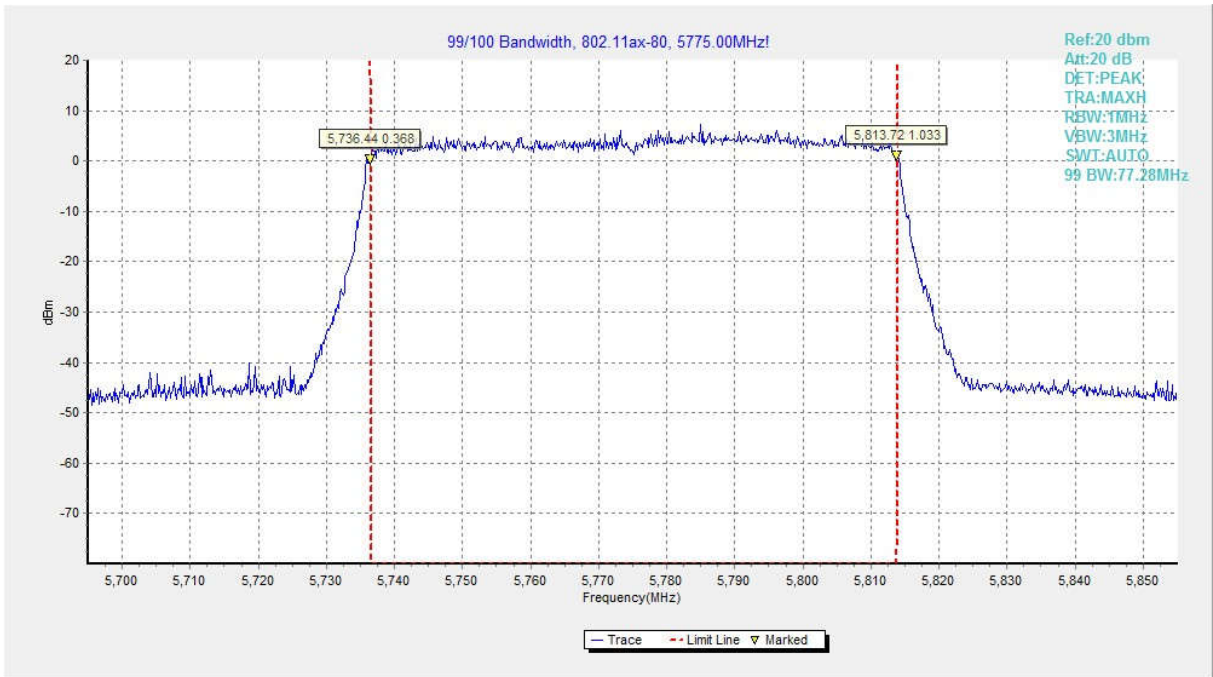


Fig. 24 99% Occupied Bandwidth (802. 11ax-HE80, 5775MHz)

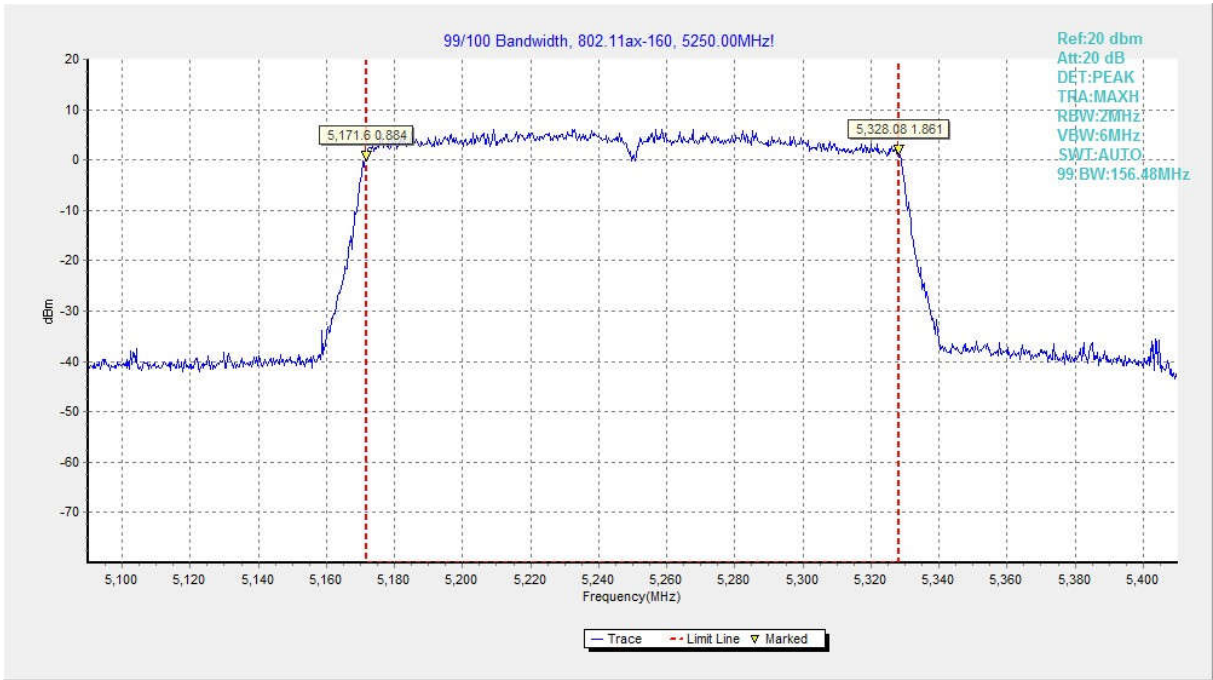


Fig. 25 99% Occupied Bandwidth (802.11ax-HE160, 5250MHz)

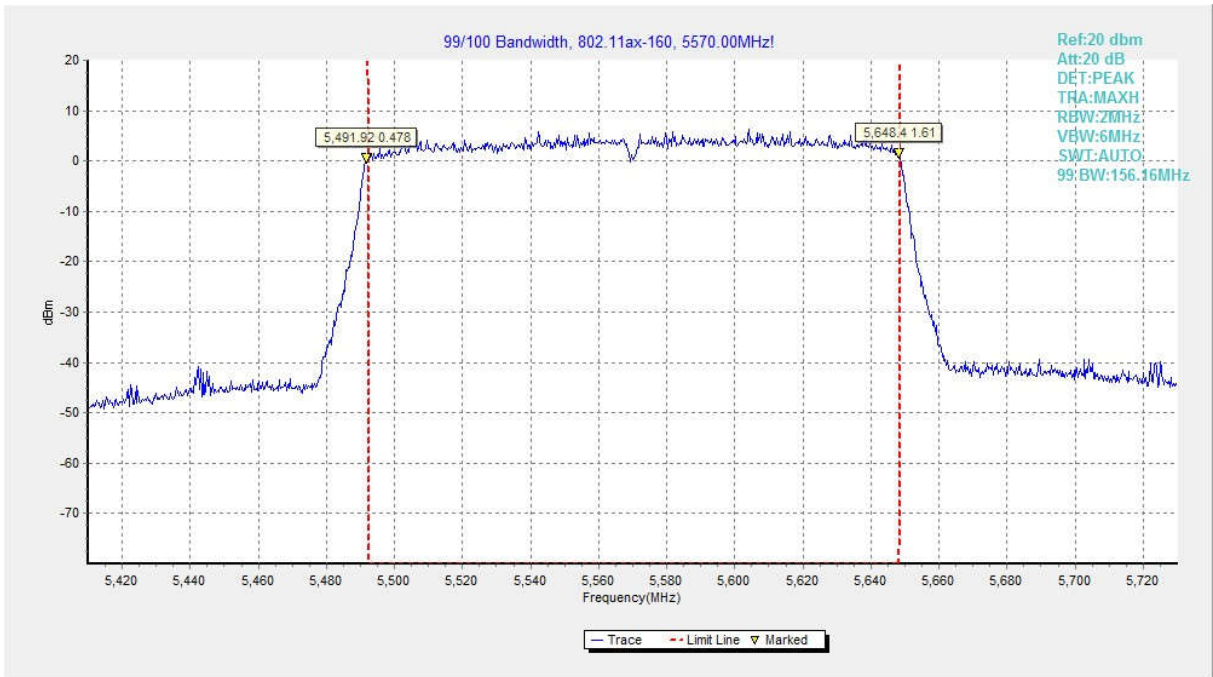


Fig. 26 99% Occupied Bandwidth (802.11ax-HE160, 5570MHz)



**A.7. Band Edges Compliance**

**Method of Measurement: See ANSI C63.10-clause 6.10.**

**Measurement Limit:**

Standard	Limit (dBUV/m)	
FCC 47 CFR Part 15.209 & RSS-247 section 5.5	Peak	74
	Average	54

**Measurement Result:**

**SISO:**

Mode	Channel	Test Results	Conclusion
802.11a	5180MHz (CH36)	Fig.1	P
	5320MHz (CH64)	Fig.2	P
	5500MHz (CH100)	Fig.3	P
	5700MHz (CH140)	Fig.4	P
	5745MHz (CH149)	Fig.5	P
	5825MHz (CH165)	Fig.6	P
802.11n-HT40	5190MHz (CH38)	Fig.7	P
	5310MHz (CH62)	Fig.8	P
	5510MHz (CH102)	Fig.9	P
	5670MHz (CH134)	Fig.10	P
	5755MHz (CH151)	Fig.11	P
	5795MHz (CH159)	Fig.12	P
802.11ax-HE80	5210MHz (CH42)	Fig.13	P
	5290MHz (CH58)	Fig.14	P
	5610MHz (Ch122)	Fig.15	P
	5775MHz (CH155)	Fig.16	P
802.11ax-HE160	5250MHz (Ch50)	Fig.17	P
	5570MHz (CH114)	Fig.18	P

**MIMO:**

Mode	Channel	Test Results	Conclusion
802.11n-HT20	5180MHz (CH36)	Fig.19	P
	5320MHz (CH64)	Fig.20	P
	5500MHz (CH100)	Fig.21	P
	5700MHz (CH140)	Fig.22	P
	5745MHz (CH149)	Fig.23	P
	5825MHz (CH165)	Fig.24	P
802.11n-HT40	5190MHz (CH38)	Fig.25	P
	5310MHz (CH62)	Fig.26	P
	5510MHz (CH102)	Fig.27	P





	5670MHz (CH134)	Fig.28	<b>P</b>
	5755MHz (CH151)	Fig.29	<b>P</b>
	5795MHz (CH159)	Fig.30	<b>P</b>
802.11ax-HE80	5210MHz (CH42)	Fig.31	<b>P</b>
	5290MHz (CH58)	Fig.32	<b>P</b>
	5610MHz (Ch122)	Fig.33	<b>P</b>
	5775MHz (CH155)	Fig.34	<b>P</b>
802.11ax-HE160	5250MHz (Ch50)	Fig.35	<b>P</b>
	5570MHz (CH114)	Fig.36	<b>P</b>

**Conclusion: PASS**

**Test graphs as below:**

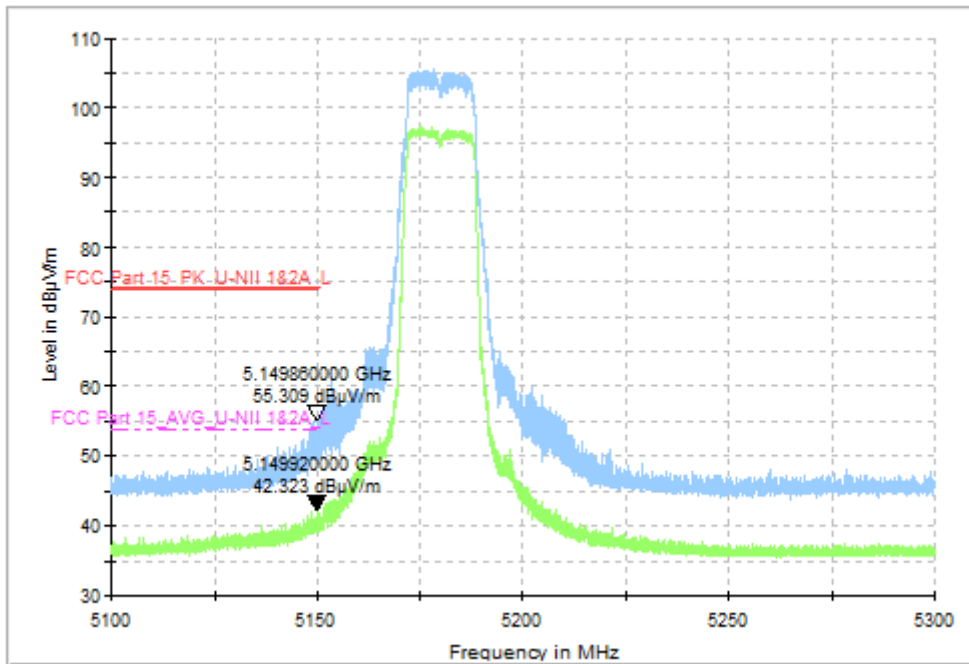


Fig. 1 Band Edges (802.11a, CH36 5180MHz)

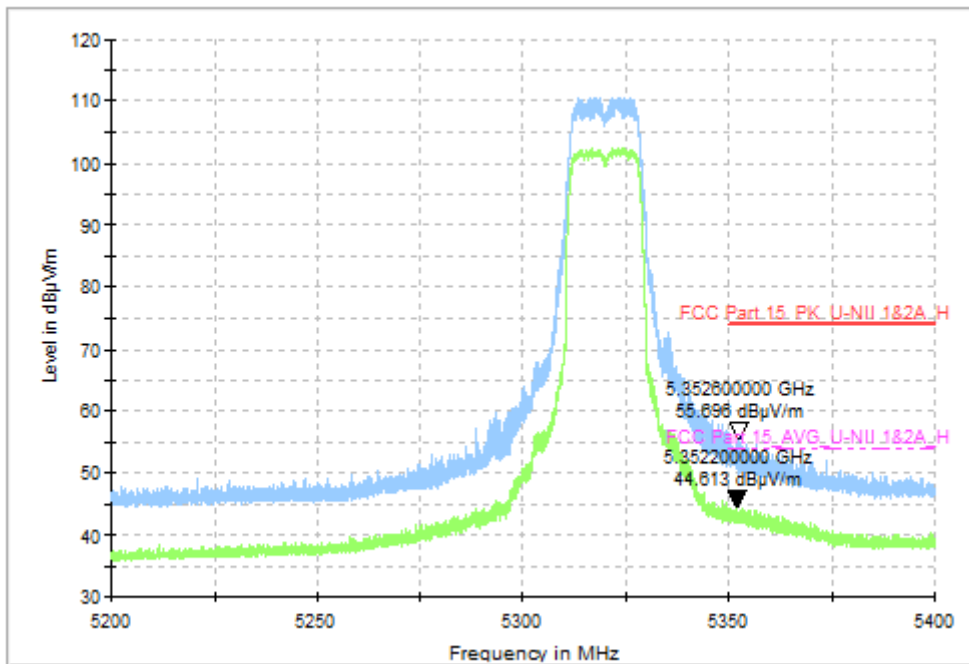


Fig. 2 Band Edges (802.11a, CH64 5320MHz)

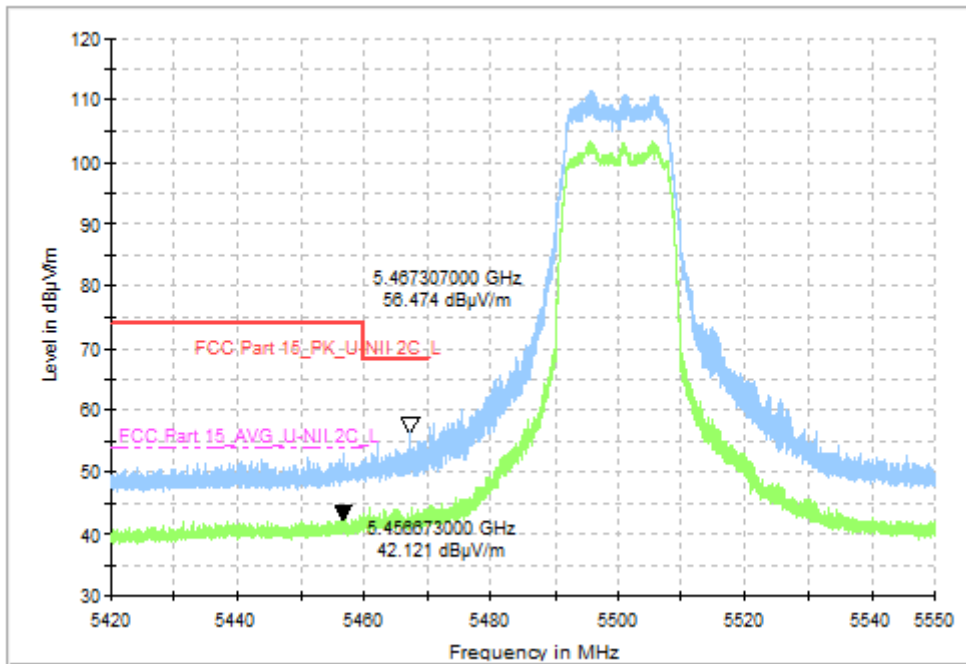


Fig. 3 Band Edges (802.11a, CH100 5500MHz)

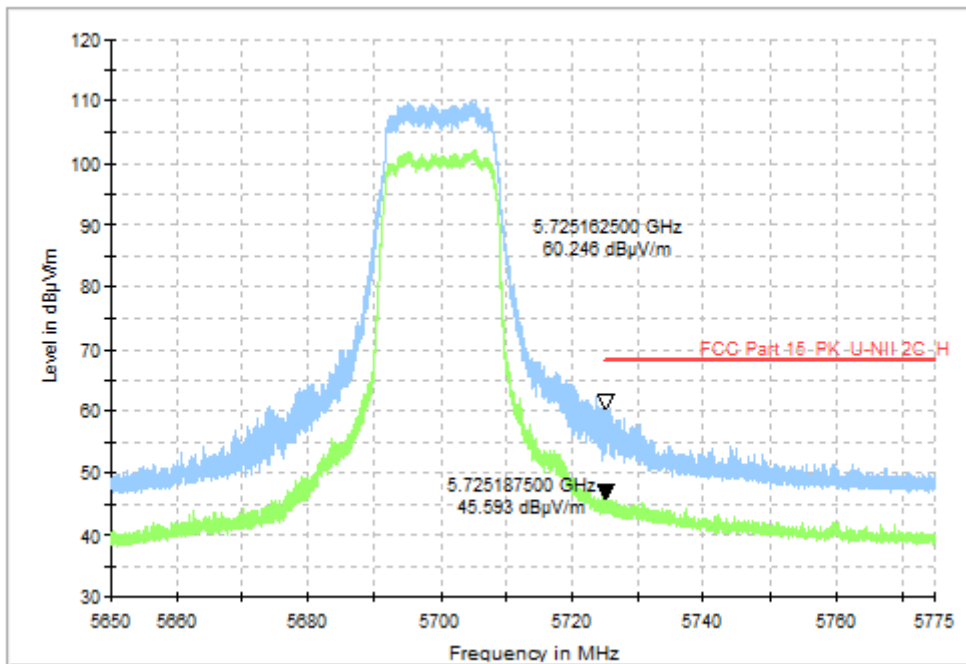
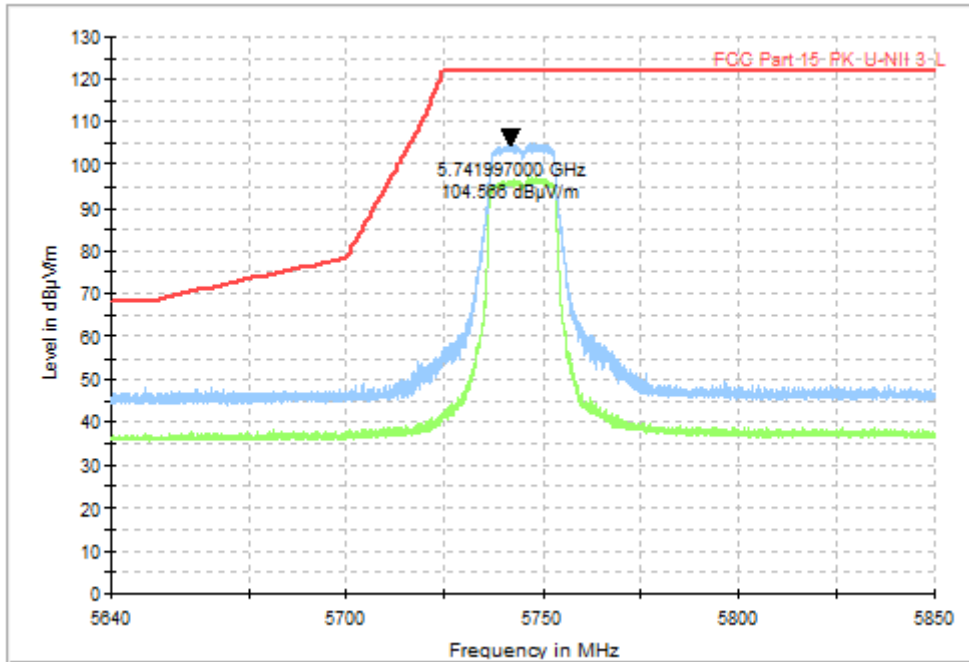
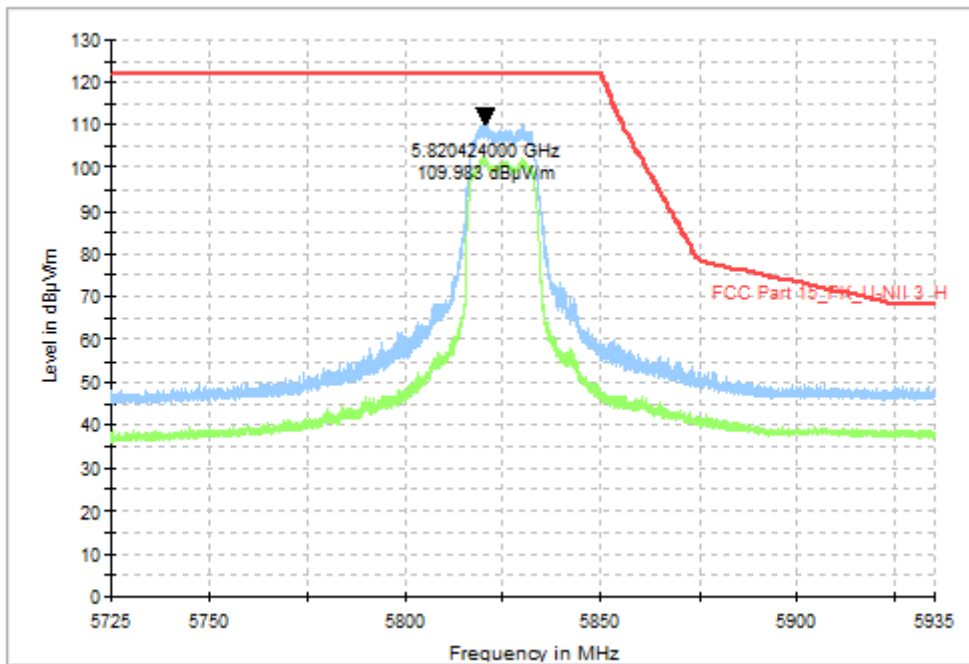


Fig. 4 Band Edges (802.11a, CH140 5700MHz)



**Fig. 5 Band Edges (802.11a, CH149 5745MHz)**



**Fig. 6 Band Edges (802.11a, CH165 5825MHz)**

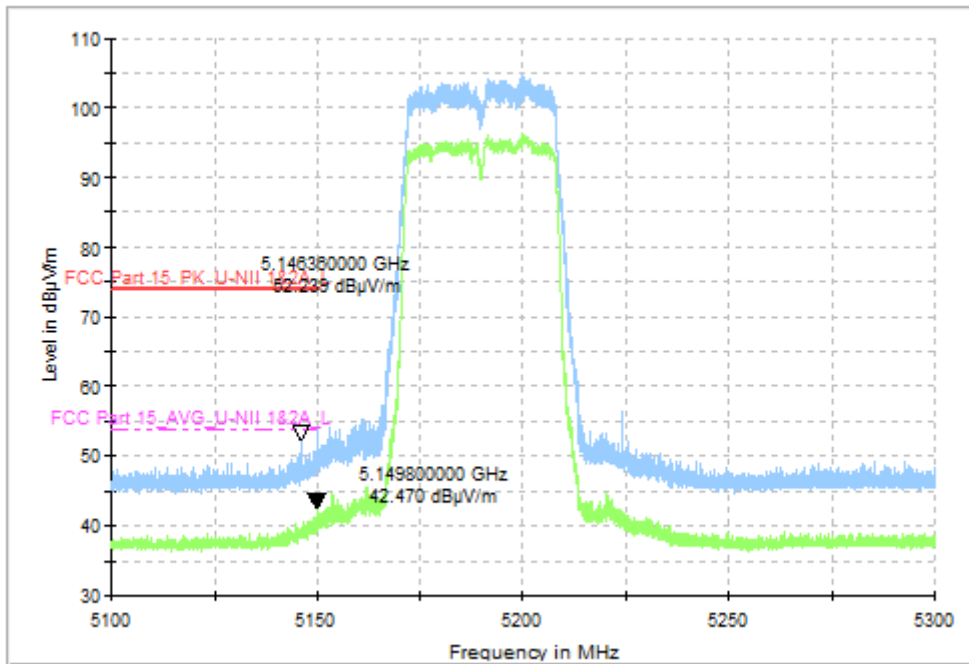


Fig. 7 Band Edges (802.11n-HT40, CH38 5190MHz)

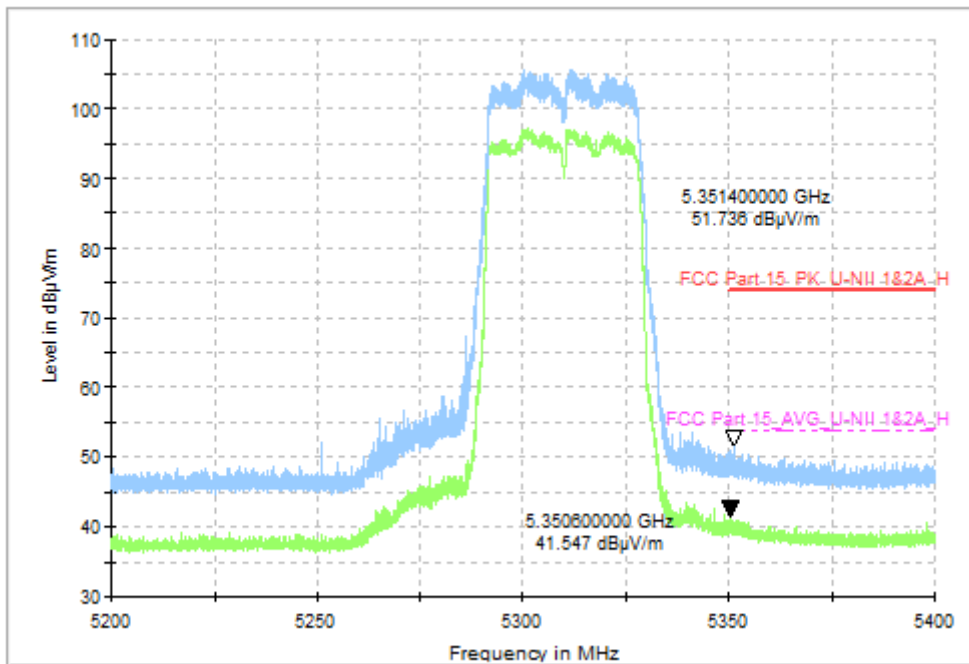


Fig. 8 Band Edges (802.11n-HT40, CH62 5310MHz)

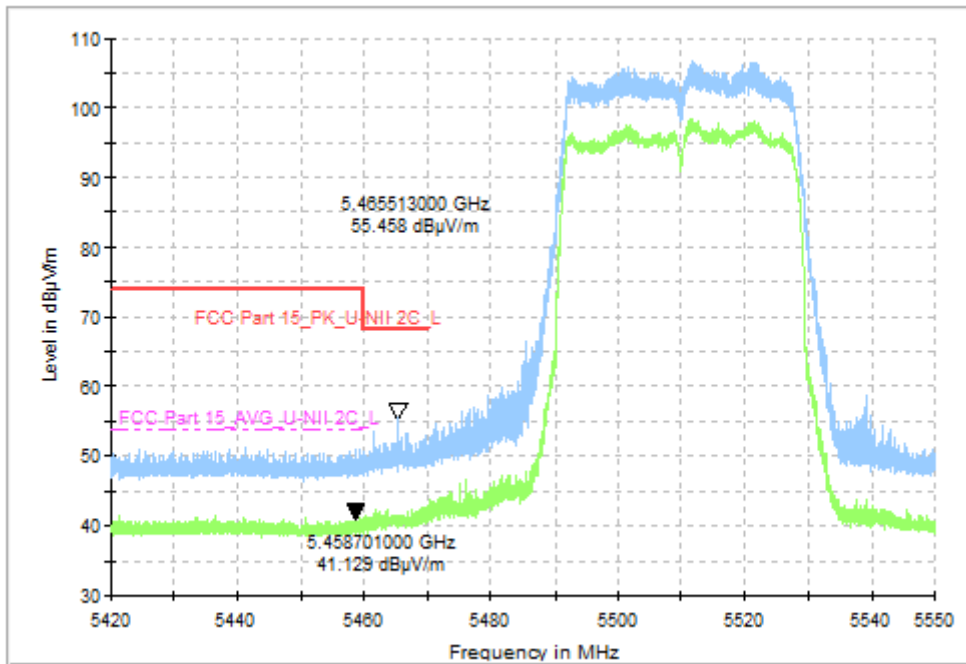


Fig. 9 Band Edges (802.11n-HT40, CH102 5510MHz)

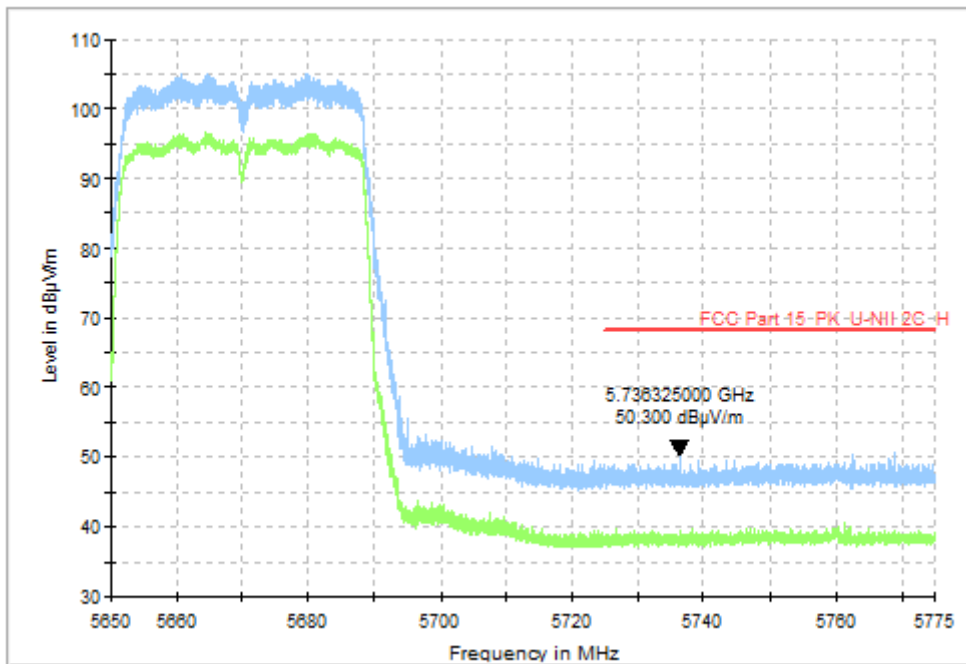


Fig. 10 Band Edges (802.11n-HT40, CH134 5670MHz)

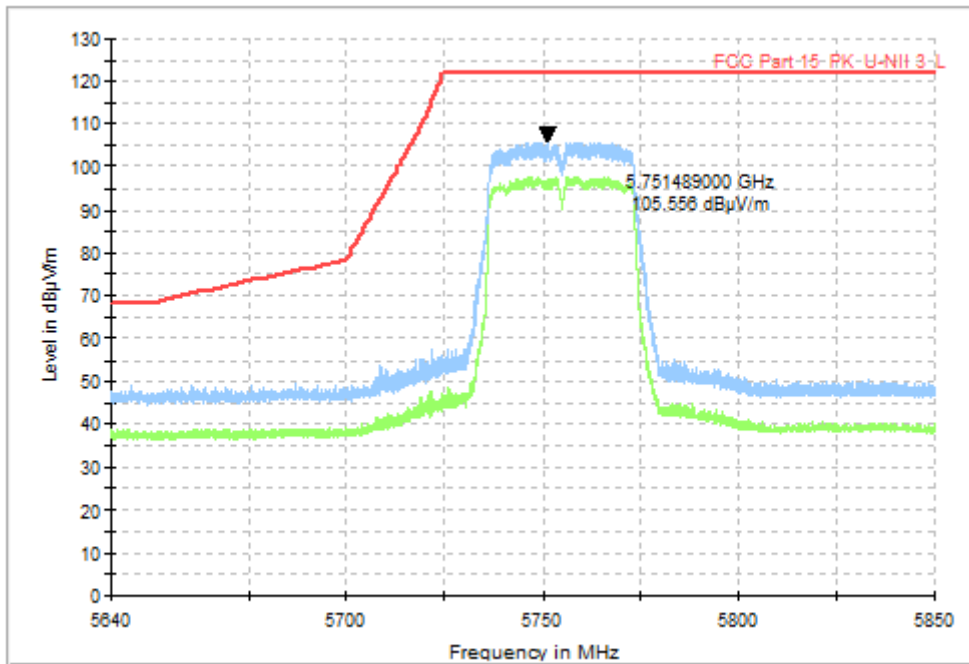


Fig. 11 Band Edges (802.11n-HT40, CH151 5755MHz)

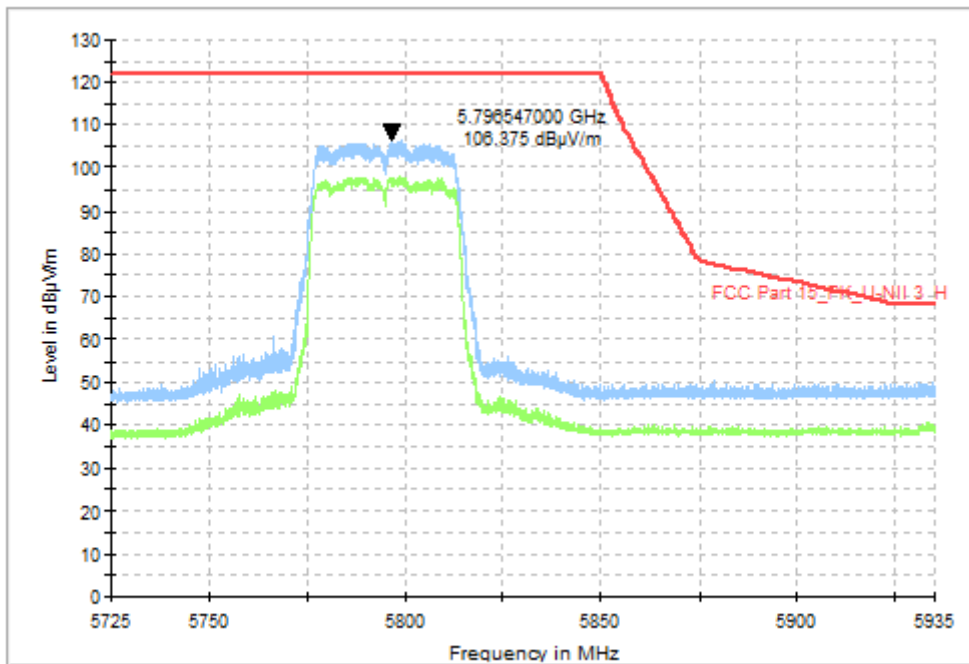


Fig. 12 Band Edges (802.11n-HT40, CH159 5795MHz)

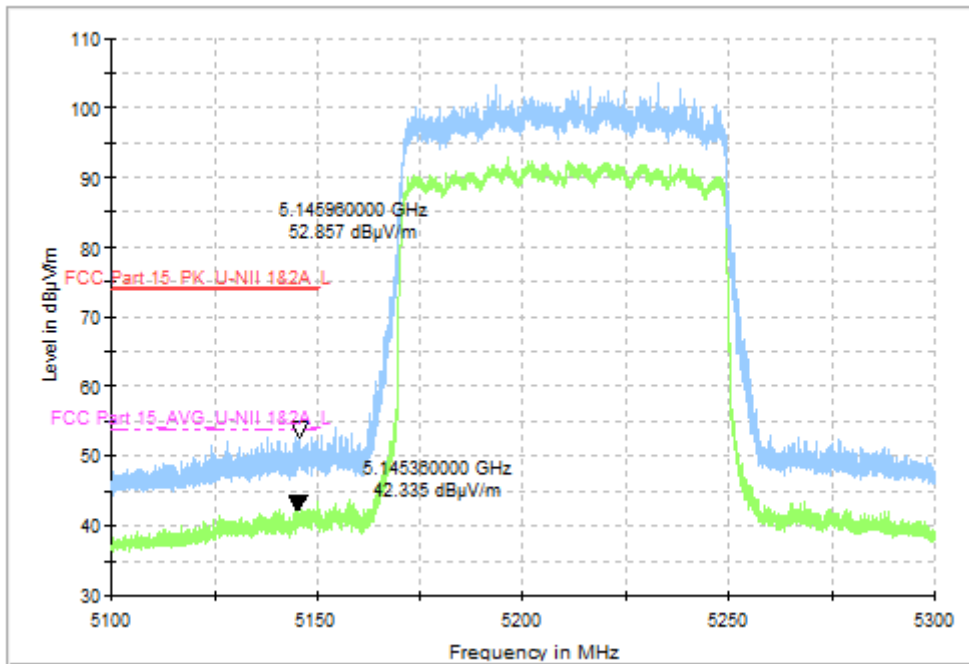


Fig. 13 Band Edges (802.11ax-HE80, CH42 5210MHz)

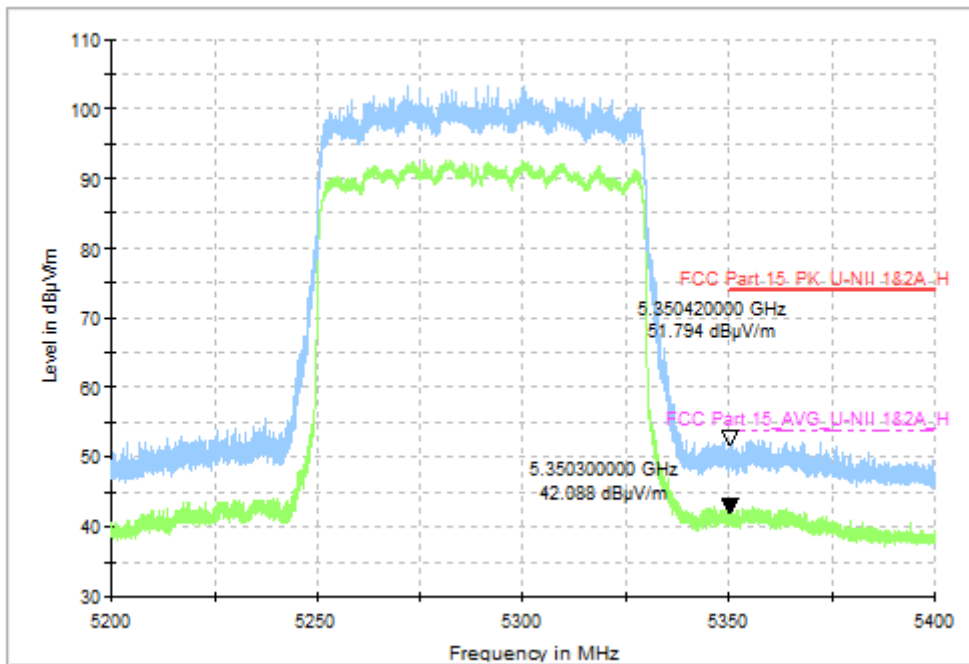


Fig. 14 Band Edges (802.11ax-HE80, CH58 5290MHz)



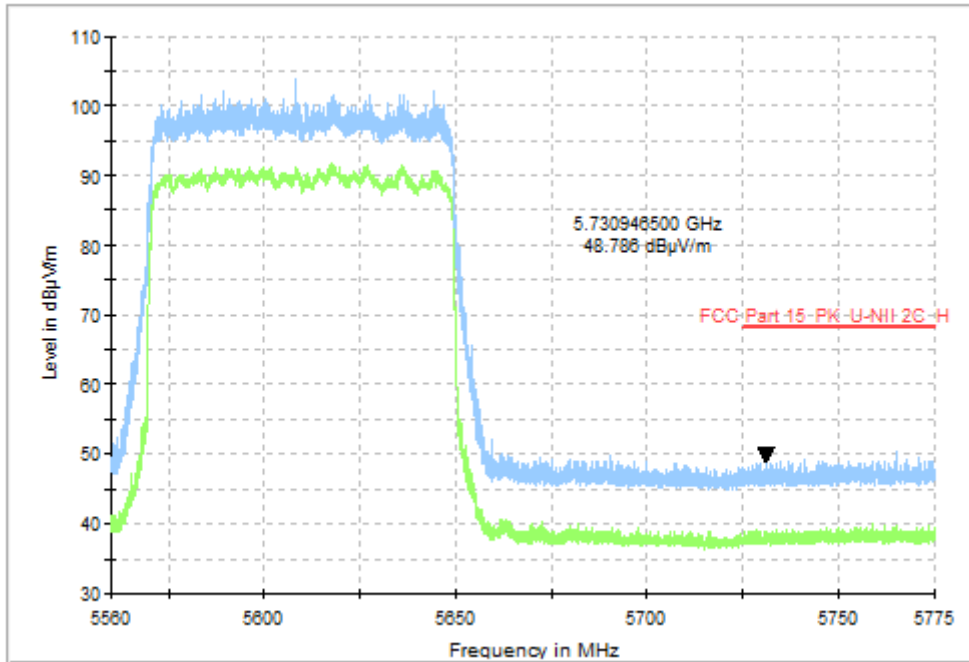


Fig. 15 Band Edges (802.11ax-HE80, CH122 5610MHz)

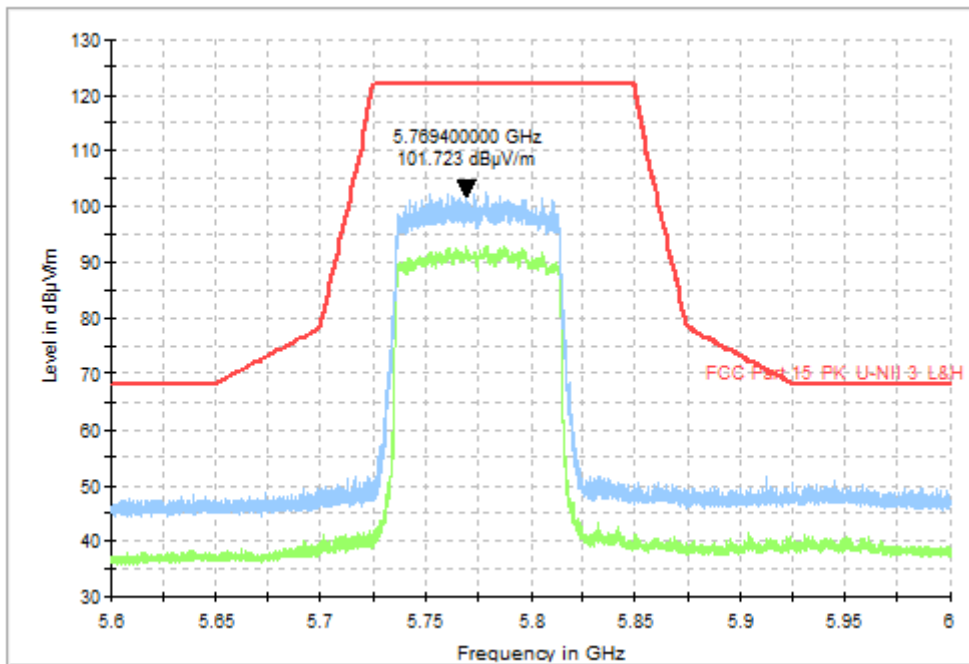


Fig. 16 Band Edges (802.11ax-HE80, CH155 5775MHz)

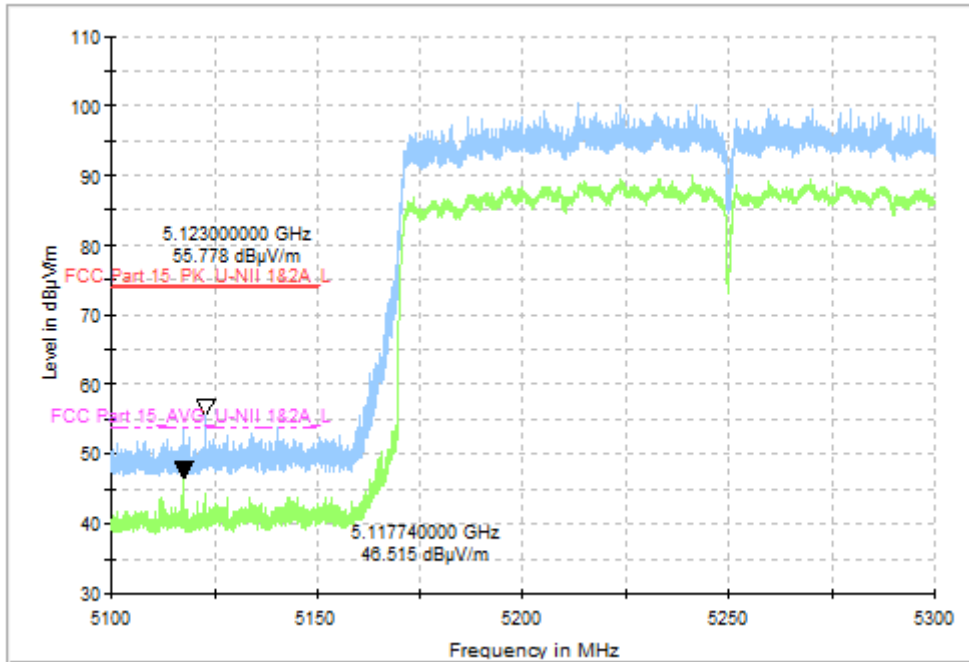


Fig. 17 Band Edges (802.11ax-HE160, CH50 5250MHz)

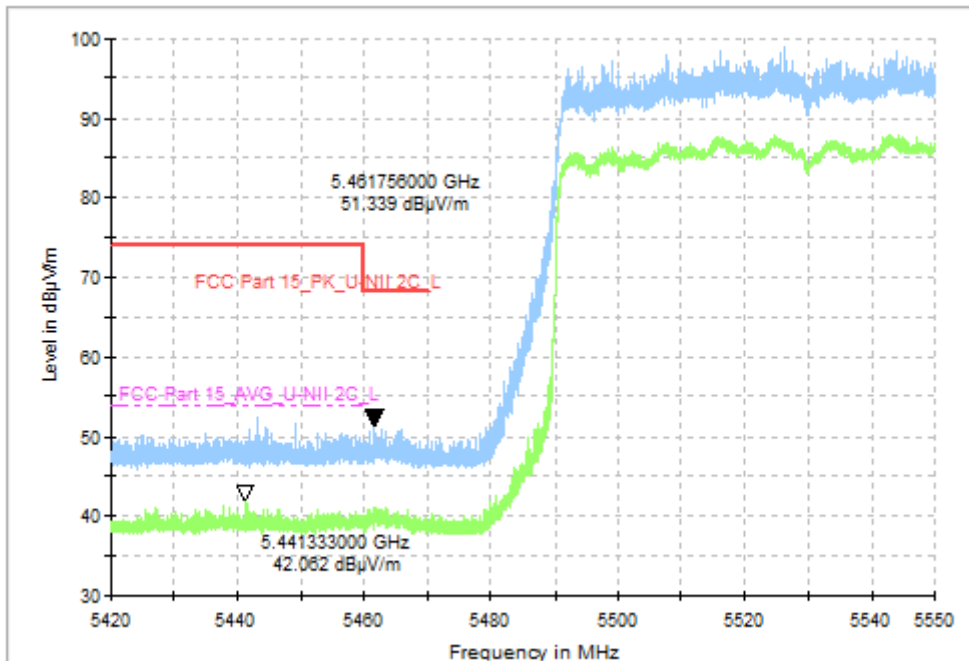


Fig. 18 Band Edges (802.11ax-HE160, CH114 5570MHz)

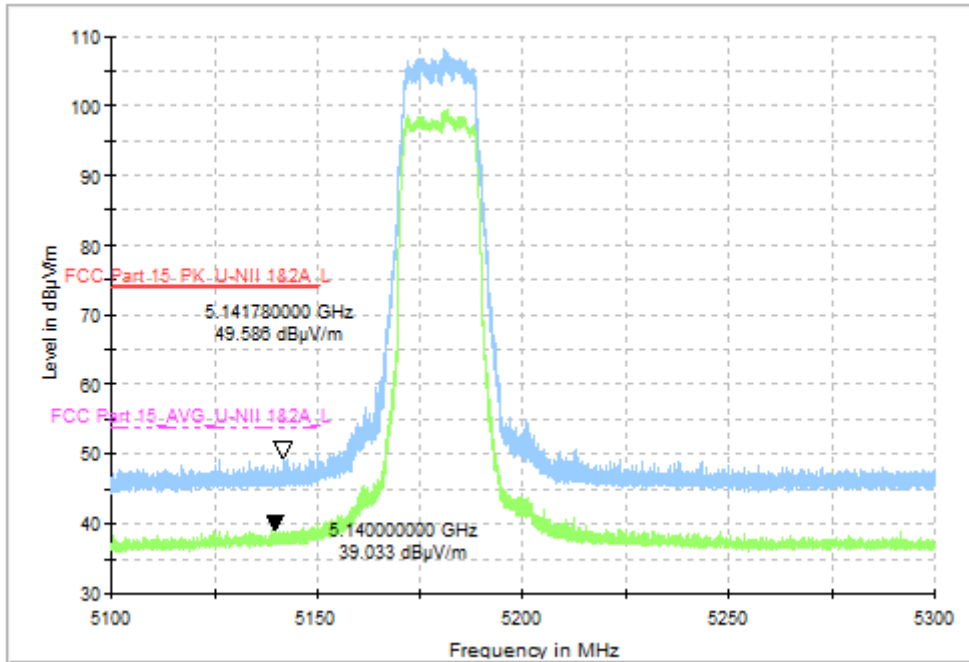


Fig. 19 Band Edges (802.11n-HT20, CH36 5180MHz)

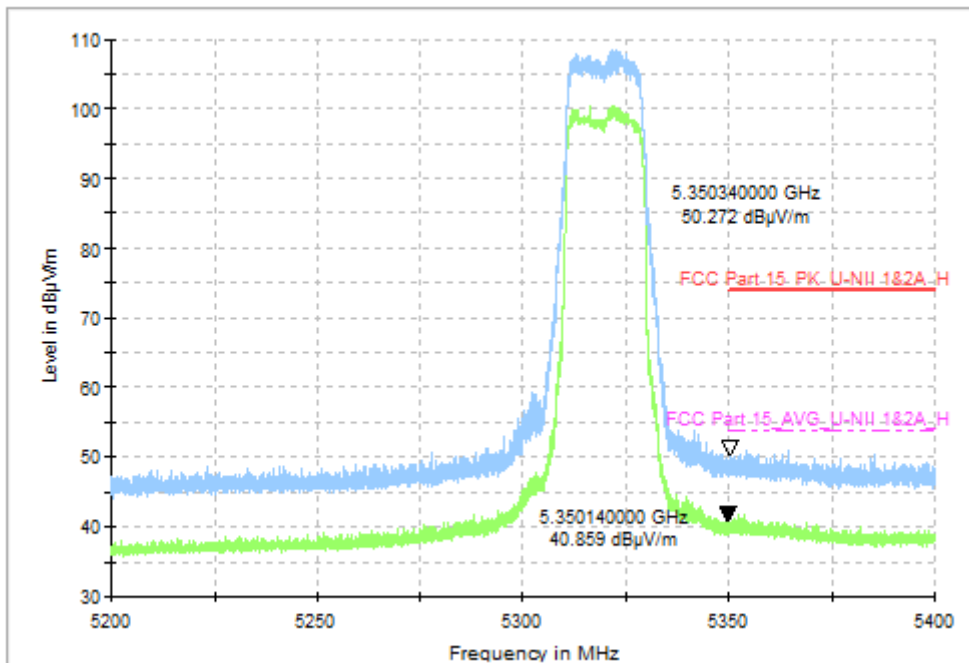


Fig. 20 Band Edges (802.11n-HT20, CH64 5320MHz)

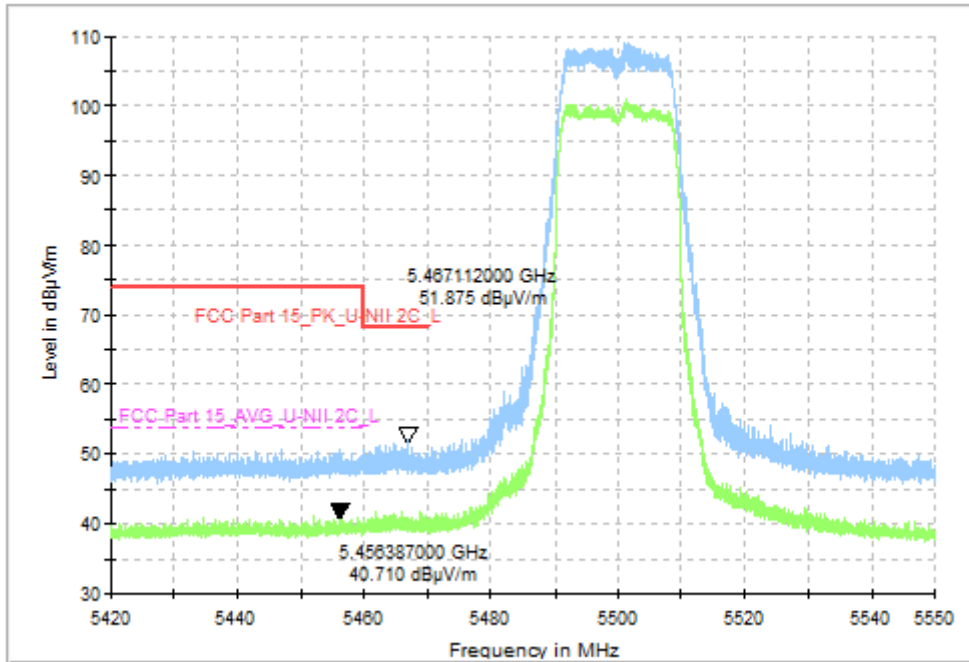


Fig. 21 Band Edges (802.11n-HT20, CH100 5500MHz)

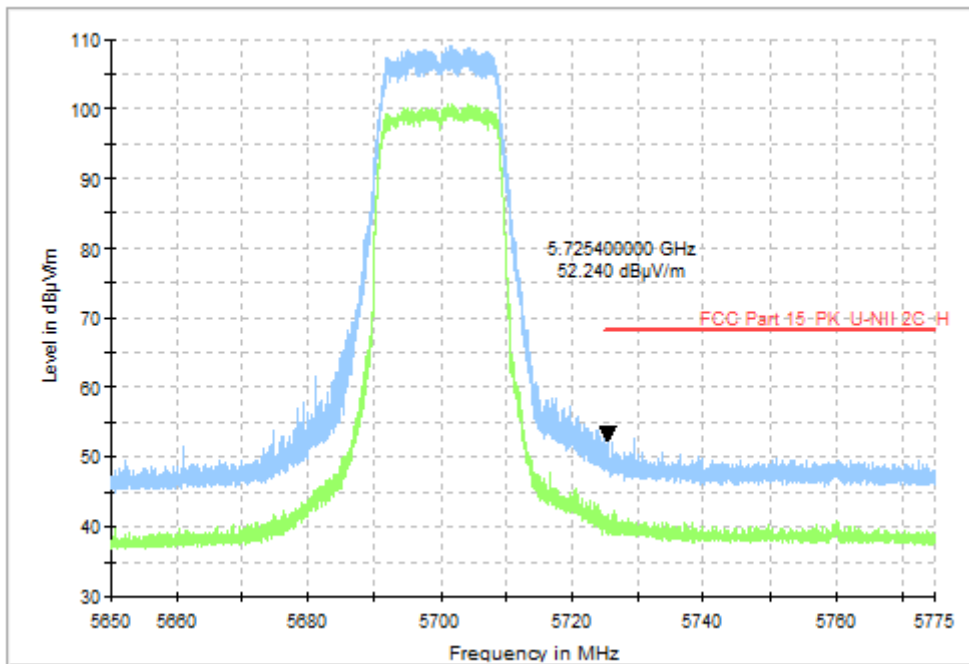


Fig. 22 Band Edges (802.11n-HT20, CH140 5700MHz)

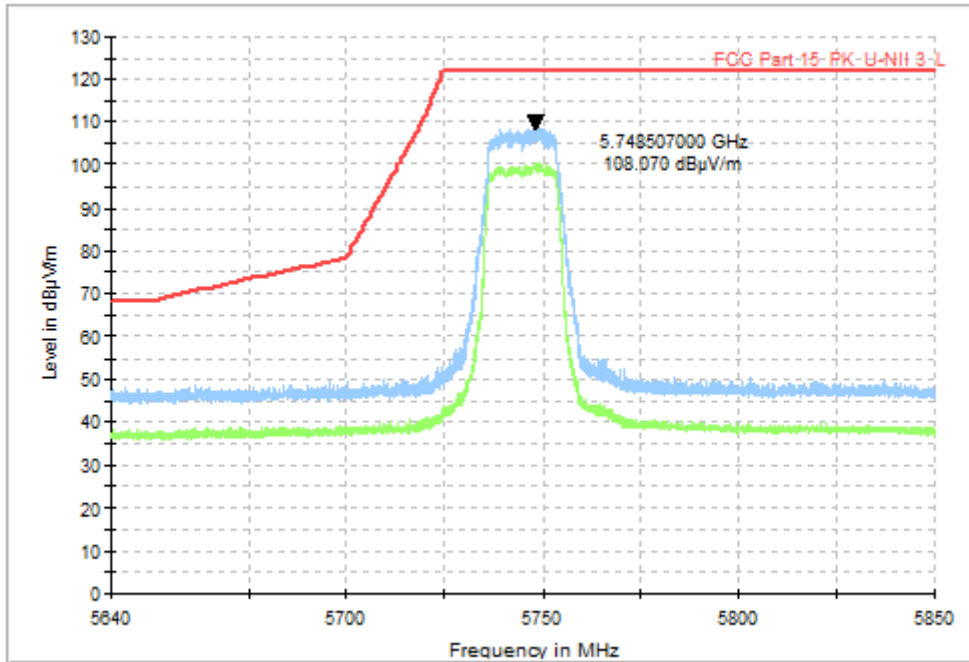


Fig. 23 Band Edges (802.11n-HT20, CH149 5745MHz)

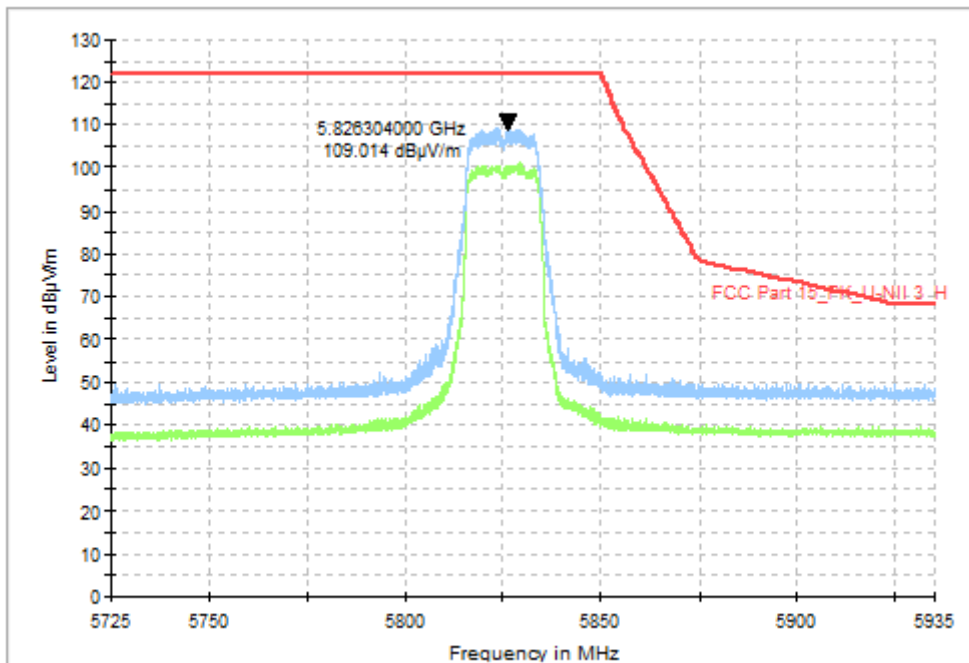


Fig. 24 Band Edges (802.11n-HT20, CH165 5825MHz)

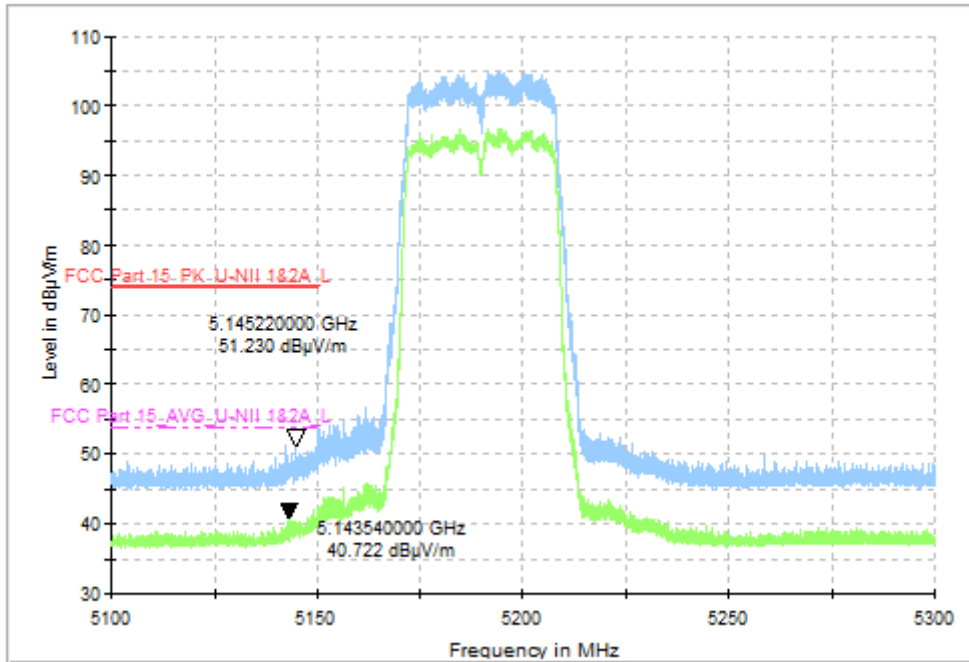


Fig. 25 Band Edges (802.11n-HT40, CH38 5190MHz)

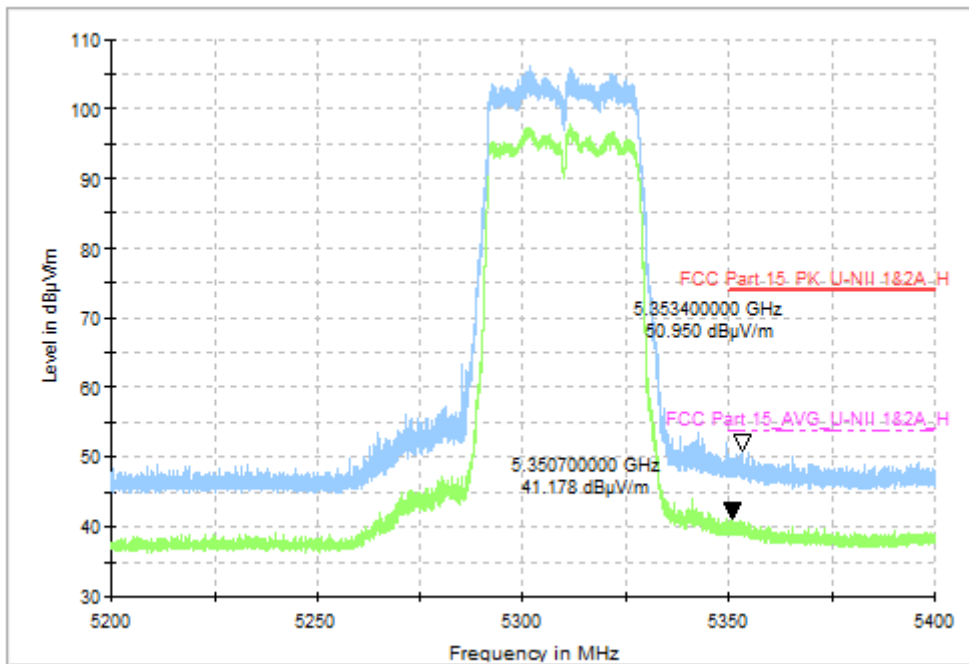


Fig. 26 Band Edges (802.11n-HT40, CH62 5310MHz)

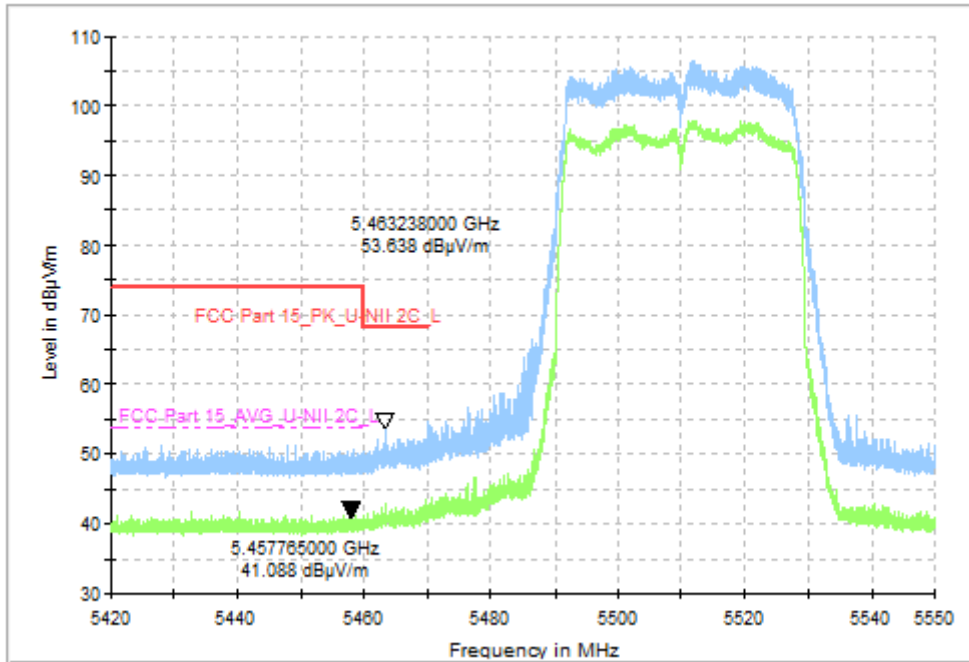


Fig. 27 Band Edges (802.11n-HT40, CH102 5510MHz)

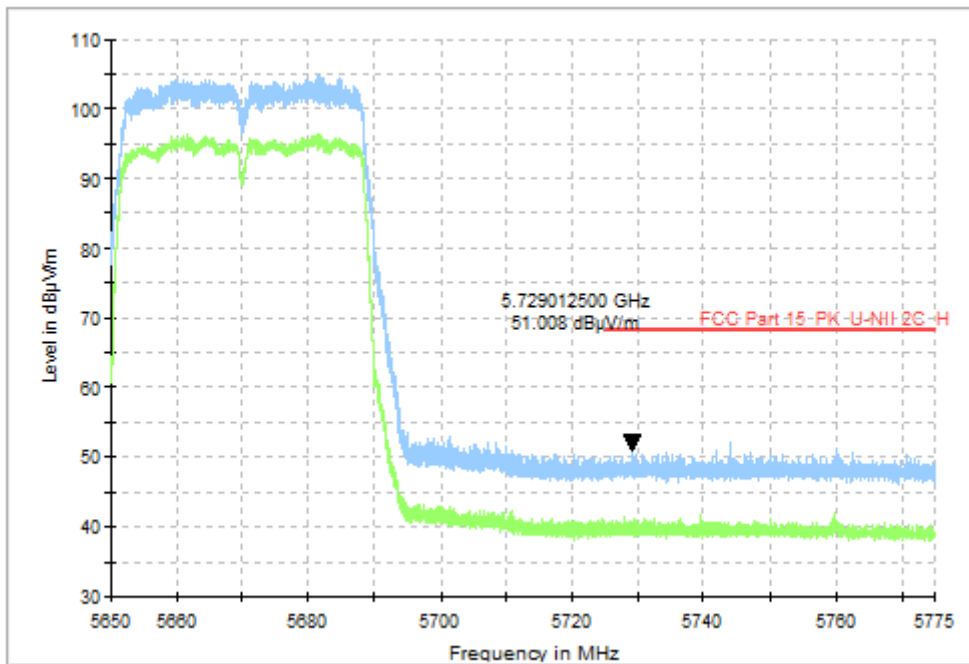


Fig. 28 Band Edges (802.11n-HT40, CH134 5670MHz)

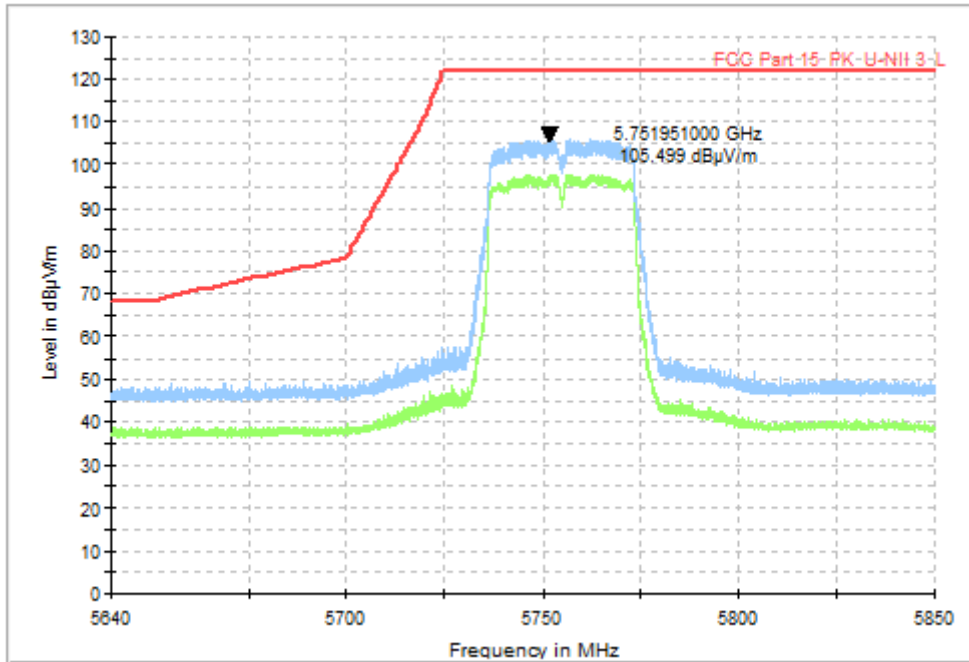


Fig. 29 Band Edges (802.11n-HT40, CH151 5755MHz)

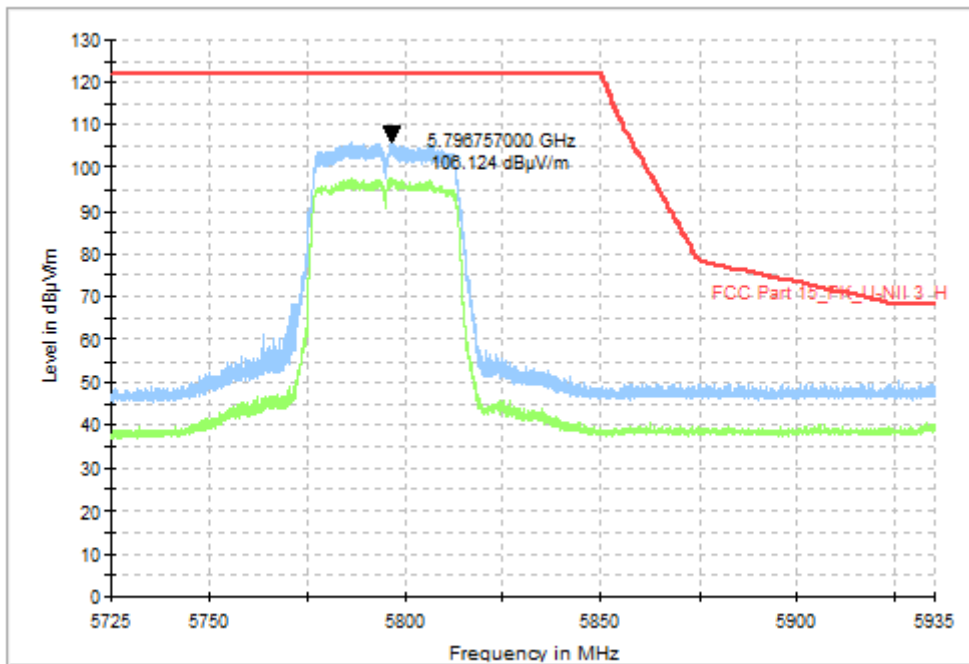


Fig. 30 Band Edges (802.11n-HT40, CH159 5795MHz)



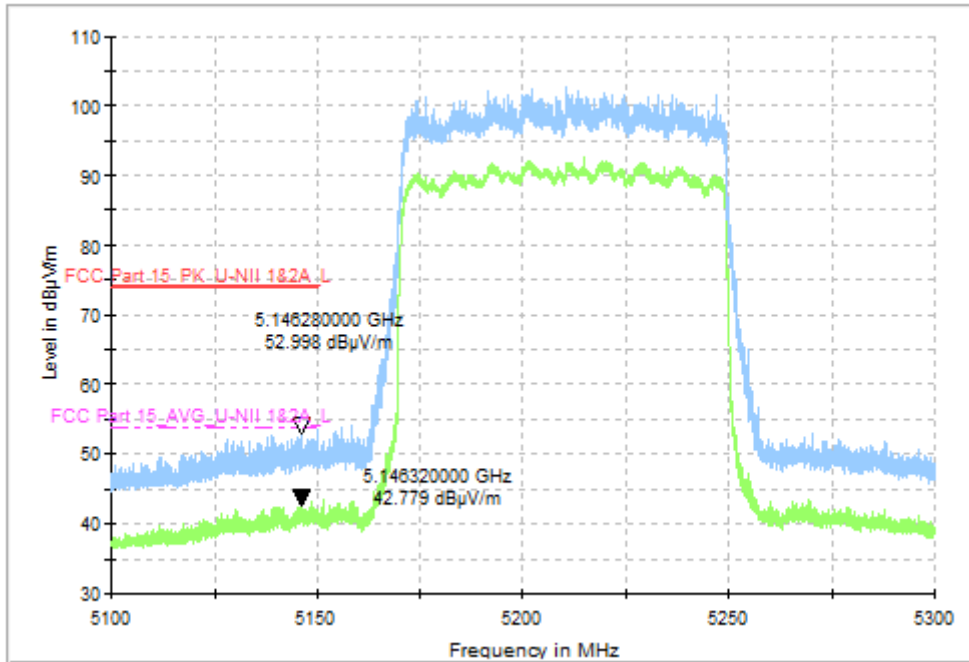


Fig. 31 Band Edges (802.11ax-HE80, CH42 5210MHz)

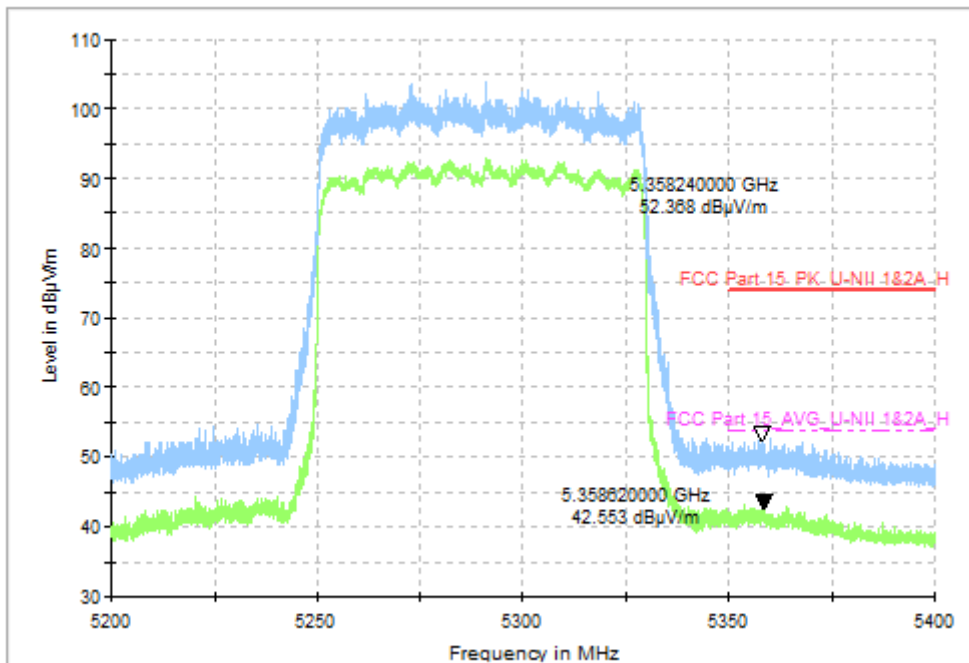


Fig. 32 Band Edges (802.11ax-HE80, CH58 5290MHz)

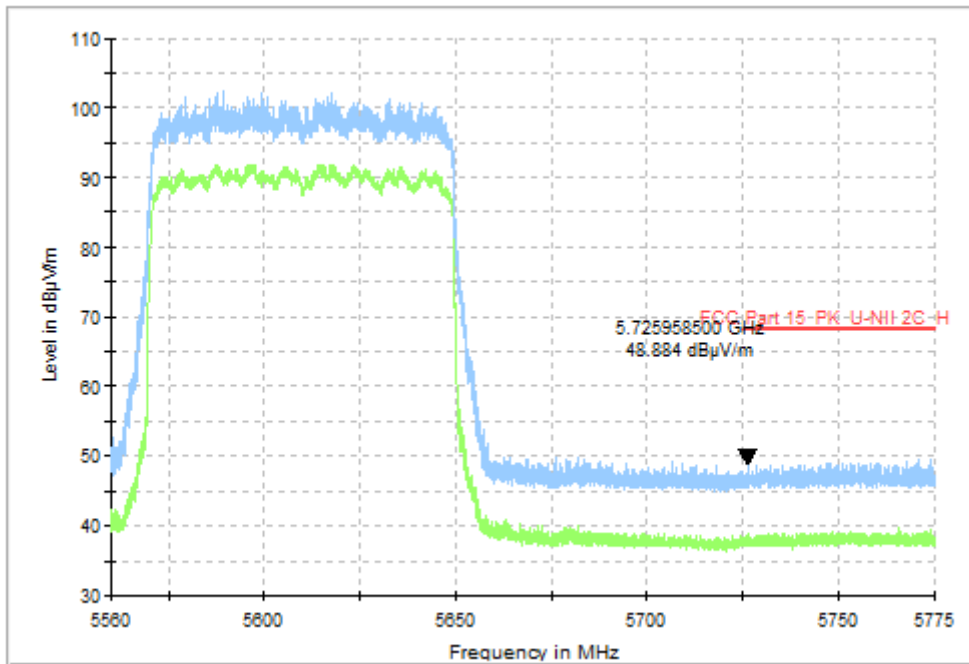


Fig. 33 Band Edges (802.11ax-HE80, CH122 5610MHz)

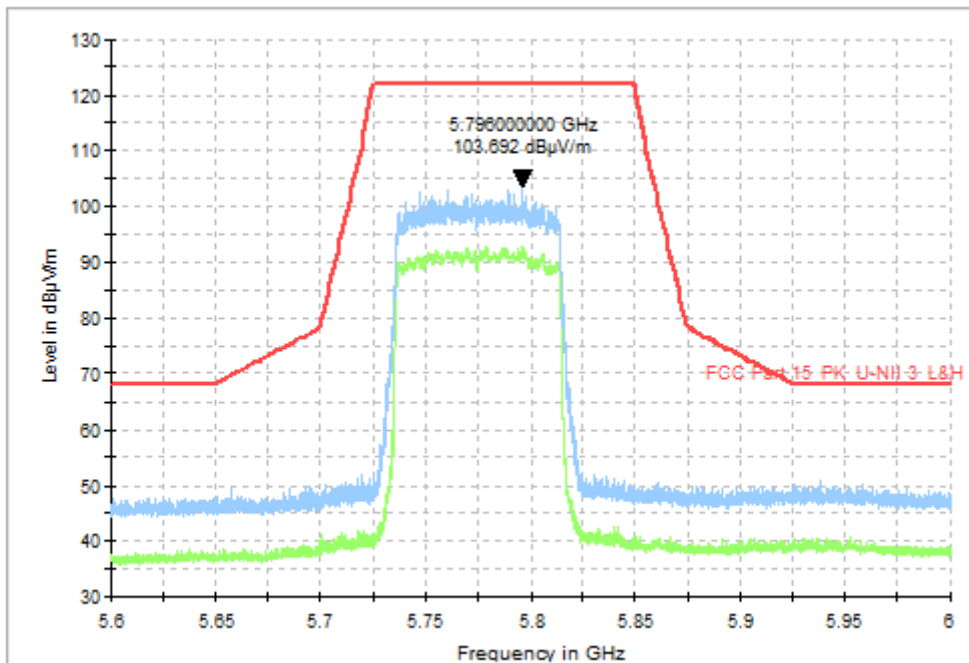


Fig. 34 Band Edges (802.11ax-HE80, CH155 5775MHz)

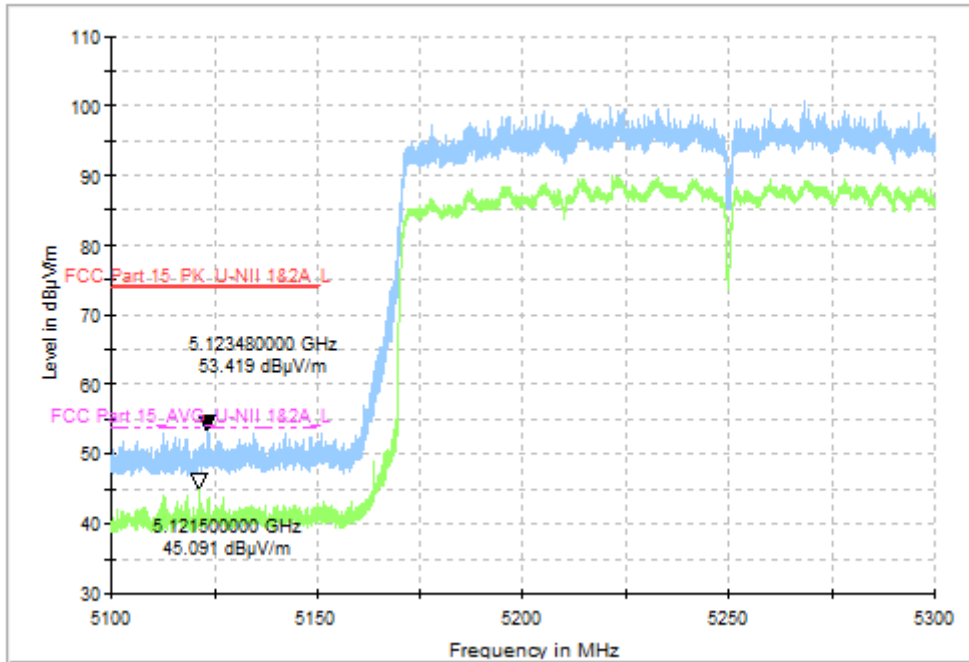


Fig. 35 Band Edges (802.11ax-HE160, CH50 5250MHz)

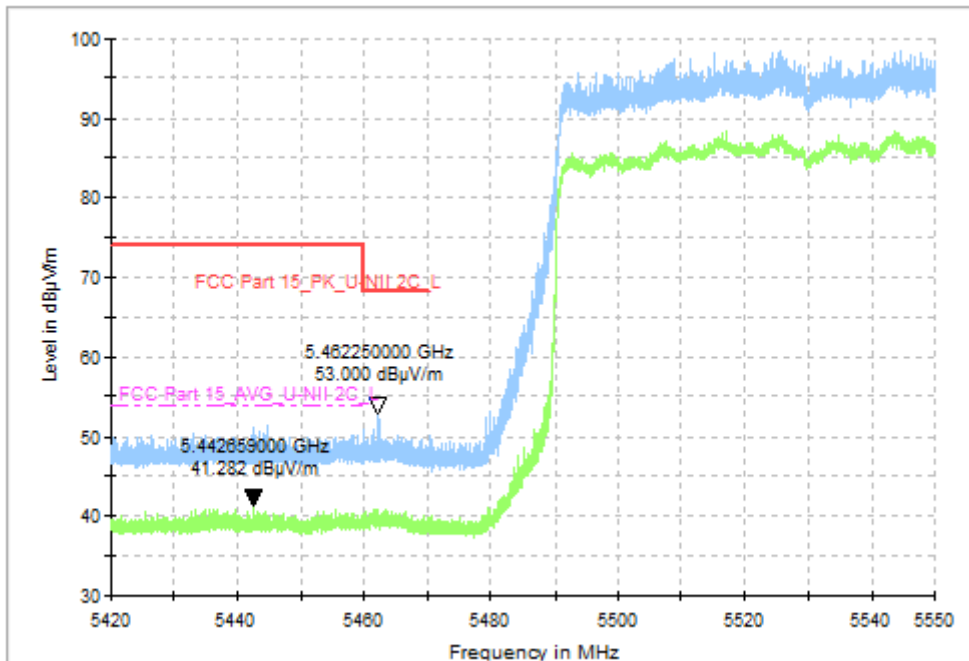


Fig. 36 Band Edges (802.11ax-HE160, CH114 5570MHz)

### A.8. Transmitter Spurious Emission

Measurement of method: See KDB 789033 D02 v02r01, Section G.3, G.4, G.5 and G.6.

**Measurement Limit:**

Standard	Limit (dBm/MHz)
FCC 47 CFR Part 15.407, 15.205 & RSS-247 section 5.5/RSS-Gen section 6.13	< -27

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.

The measurement results include the horizontal polarization and vertical polarization measurements. For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.

**Measurement Result:**

**SISO:**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11a	5180MHz (Ch36)	1 GHz ~ 18 GHz	Fig.1	P
	5200MHz (Ch40)	1 GHz ~ 18 GHz	Fig.2	P
	5240MHz (Ch48)	1 GHz ~ 18 GHz	Fig.3	P
	5260MHz (Ch52)	1 GHz ~ 18 GHz	Fig.4	P
	5280MHz (Ch56)	1 GHz ~ 18 GHz	Fig.5	P
	5320MHz (Ch64)	1 GHz ~ 18 GHz	Fig.6	P
	5500MHz (Ch100)	1 GHz ~ 18 GHz	Fig.7	P
	5600MHz(Ch120)	1 GHz ~ 18 GHz	Fig.8	P
	5700MHz (Ch140)	1 GHz ~ 18 GHz	Fig.9	P
	5745MHz (Ch149)	1 GHz ~ 18 GHz	Fig.10	P
	5785MHz (Ch157)	1 GHz ~ 18 GHz	Fig.11	P
	5825MHz (Ch165)	1 GHz ~ 18 GHz	Fig.12	P
802.11n -HT40	5190MHz (Ch38)	1 GHz ~ 18 GHz	Fig.13	P
	5230MHz (Ch46)	1 GHz ~ 18 GHz	Fig.14	P
	5270MHz (Ch54)	1 GHz ~ 18 GHz	Fig.15	P
	5310MHz (Ch62)	1 GHz ~ 18 GHz	Fig.16	P
	5510MHz (Ch102)	1 GHz ~ 18 GHz	Fig.17	P

	5670MHz (Ch134)	1 GHz ~ 18 GHz	Fig.18	<b>P</b>
	5755MHz (Ch151)	1 GHz ~ 18 GHz	Fig.19	<b>P</b>
	5795MHz (Ch159)	1 GHz ~ 18 GHz	Fig.20	<b>P</b>
802.11ax-VHT80	5210MHz (Ch42)	1 GHz ~ 18 GHz	Fig.21	<b>P</b>
	5290MHz (Ch58)	1 GHz ~ 18 GHz	Fig.22	<b>P</b>
	5610MHz (Ch122)	1 GHz ~ 18 GHz	Fig.23	<b>P</b>
	5775MHz (Ch155)	1 GHz ~ 18 GHz	Fig.24	<b>P</b>
802.11ax-HE80	5250MHz (Ch50)	1 GHz ~ 18 GHz	Fig.25	<b>P</b>
	5570MHz (Ch114)	1 GHz ~ 18 GHz	Fig.26	<b>P</b>
All channels		30MHz ~ 1GHz	Fig.27	<b>P</b>
		18GHz ~ 26.5GHz	Fig.28	<b>P</b>
		26.5GHz ~ 40GHz	Fig.29	<b>P</b>

**MIMO:**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n-HT20	5180MHz (Ch36)	1 GHz ~ 18 GHz	Fig.30	<b>P</b>
	5200MHz (Ch40)	1 GHz ~ 18 GHz	Fig.31	<b>P</b>
	5240MHz (Ch48)	1 GHz ~ 18 GHz	Fig.32	<b>P</b>
	5260MHz (Ch52)	1 GHz ~ 18 GHz	Fig.33	<b>P</b>
	5280MHz (Ch56)	1 GHz ~ 18 GHz	Fig.34	<b>P</b>
	5320MHz (Ch64)	1 GHz ~ 18 GHz	Fig.35	<b>P</b>
	5500MHz (Ch100)	1 GHz ~ 18 GHz	Fig.36	<b>P</b>
	5600MHz(Ch120)	1 GHz ~ 18 GHz	Fig.37	<b>P</b>
	5700MHz (Ch140)	1 GHz ~ 18 GHz	Fig.38	<b>P</b>
	5745MHz (Ch149)	1 GHz ~ 18 GHz	Fig.39	<b>P</b>
	5785MHz (Ch157)	1 GHz ~ 18 GHz	Fig.40	<b>P</b>
	5825MHz (Ch165)	1 GHz ~ 18 GHz	Fig.41	<b>P</b>
802.11n-HT40	5190MHz (Ch38)	1 GHz ~ 18 GHz	Fig.42	<b>P</b>
	5230MHz (Ch46)	1 GHz ~ 18 GHz	Fig.43	<b>P</b>
	5270MHz (Ch54)	1 GHz ~ 18 GHz	Fig.44	<b>P</b>
	5310MHz (Ch62)	1 GHz ~ 18 GHz	Fig.45	<b>P</b>
	5510MHz (Ch102)	1 GHz ~ 18 GHz	Fig.46	<b>P</b>
	5670MHz (Ch134)	1 GHz ~ 18 GHz	Fig.47	<b>P</b>
	5755MHz (Ch151)	1 GHz ~ 18 GHz	Fig.48	<b>P</b>
	5795MHz (Ch159)	1 GHz ~ 18 GHz	Fig.49	<b>P</b>
802.11ax-VHT80	5210MHz (Ch42)	1 GHz ~ 18 GHz	Fig.50	<b>P</b>
	5290MHz (Ch58)	1 GHz ~ 18 GHz	Fig.51	<b>P</b>
	5610MHz (Ch122)	1 GHz ~ 18 GHz	Fig.52	<b>P</b>
	5775MHz (Ch155)	1 GHz ~ 18 GHz	Fig.53	<b>P</b>
802.11ax-HE80	5250MHz (Ch50)	1 GHz ~ 18 GHz	Fig.54	<b>P</b>
	5570MHz (Ch114)	1 GHz ~ 18 GHz	Fig.55	<b>P</b>
All channels		30MHz ~ 1GHz	Fig.56	<b>P</b>
		18GHz ~ 26.5GHz	Fig.57	<b>P</b>
		26.5GHz ~ 40GHz	Fig.58	<b>P</b>



Require of RSS-247 Issue 2 clause 6.2.1.2:

Any unwanted emissions that fall into the band 5250-5350MHz shall be attenuated below the channel power by at least 26 dB, when measured using a resolution bandwidth between 1-5%of the OBW above 5250MHz.

**MIMO:**

Mode	Channel	Frequency Range	Test Results	Limit	Conclusion
802.11n-HT20	5240MHz(Ch48)	5250 MHz-5350 MHz	Fig.59	-6.85dBm	<b>P</b>
802.11n-HT40	5230MHz(Ch46)	5250 MHz-5350 MHz	Fig.60	-7.11dBm	<b>P</b>
802.11ax-HE80	5210MHz(Ch42)	5250 MHz-5350 MHz	Fig.61	-8.59dBm	<b>P</b>

Note: In the test, resolution bandwidth is set to 500 kHz. The limit is EIRP-26dB, EIRP is showed in A.2. All modes have been tested, and the above data is the worst data of the selected mode.

**Worst Case Result:**

**SISO:**

**802.11a CH100**

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
7500.923077	43.44	74.00	30.56	V	5.7
8284.153846	43.99	74.00	30.01	H	6.0
11634.461539	46.81	74.00	27.19	V	9.9
12273.692308	47.35	74.00	26.65	V	11.0
15870.923077	50.68	74.00	23.32	H	14.0
17886.000000	52.40	74.00	21.60	H	18.8

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
7500.923077	33.08	54.00	20.92	V	5.7
8284.153846	33.52	54.00	20.48	H	6.0
11634.461539	36.05	54.00	17.95	V	9.9
12273.692308	35.94	54.00	18.06	V	11.0
15870.923077	40.06	54.00	13.94	H	14.0
17886.000000	42.33	54.00	11.67	H	18.8



## 802.11n-HT40 CH102

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
7606.615385	44.36	74.00	29.64	H	5.7
8274.461539	43.99	74.00	30.01	H	6.0
11106.461539	47.11	74.00	26.89	V	9.7
12156.000000	46.38	74.00	27.62	H	10.7
15860.307692	50.82	74.00	23.18	V	14.0
17913.230769	54.37	74.00	19.63	H	18.9

Frequency (MHz)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
7606.615385	33.18	54.00	20.82	H	5.7
8274.461539	33.56	54.00	20.44	H	6.0
11106.461539	35.48	54.00	18.52	V	9.7
12156.000000	35.88	54.00	18.12	H	10.7
15860.307692	40.08	54.00	13.92	V	14.0
17913.230769	43.24	54.00	10.76	H	18.9

## 802.11ax-HE80 CH106

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
7510.153846	42.72	74.00	31.28	V	5.7
8280.000000	43.70	74.00	30.30	H	6.0
10889.076923	46.39	74.00	27.61	V	9.3
11875.846154	45.20	74.00	28.80	V	10.1
15859.846154	51.18	74.00	22.82	V	14.0
17942.307692	53.33	74.00	20.67	V	19.0

Frequency (MHz)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
7510.153846	32.43	54.00	21.57	V	5.7
8280.000000	33.18	54.00	20.82	H	6.0
10889.076923	35.79	54.00	18.21	V	9.3
11875.846154	34.73	54.00	19.27	V	10.1
15859.846154	40.19	54.00	13.81	V	14.0
17942.307692	43.07	54.00	10.93	V	19.0



**802.11ax-HE160 CH50**

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
7590.923077	43.06	74.00	30.94	H	5.7
10878.000000	46.33	74.00	27.67	V	9.3
12316.153846	47.52	74.00	26.48	V	11.1
13335.230769	47.27	74.00	26.73	H	11.3
15868.615385	51.67	74.00	22.33	V	14.0
17914.615385	54.13	74.00	19.87	H	18.9

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
7590.923077	32.67	54.00	21.33	H	5.7
10878.000000	35.69	54.00	18.31	V	9.3
12316.153846	36.20	54.00	17.80	V	11.1
13335.230769	36.15	54.00	17.85	H	11.3
15868.615385	40.23	54.00	13.77	V	14.0
17914.615385	43.22	54.00	10.78	H	18.9

**MIMO:**

**802.11n-HT20 CH100**

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
7416.461539	45.56	74.00	28.44	V	5.7
8216.769231	43.52	74.00	30.48	H	5.9
10848.923077	45.88	74.00	28.12	H	9.2
12234.923077	46.60	74.00	27.40	H	10.9
15876.000000	50.62	74.00	23.38	H	14.0
17928.923077	53.56	74.00	20.44	V	18.9

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
7416.461539	34.82	54.00	19.18	V	5.7
8216.769231	32.94	54.00	21.06	H	5.9
10848.923077	35.13	54.00	18.87	H	9.2
12234.923077	36.14	54.00	17.86	H	10.9
15876.000000	40.00	54.00	14.00	H	14.0
17928.923077	42.65	54.00	11.35	V	18.9





## 802.11n-HT40 CH102

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
7590.923077	43.48	74.00	30.52	H	5.7
8261.538462	44.57	74.00	29.43	H	5.9
11123.076923	46.07	74.00	27.93	V	9.7
12206.307692	46.03	74.00	27.97	H	10.8
15931.846154	49.99	74.00	24.01	V	14.1
17928.923077	53.28	74.00	20.72	H	18.9

Frequency (MHz)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
7590.923077	32.87	54.00	21.13	H	5.7
8261.538462	33.54	54.00	20.46	H	5.9
11123.076923	35.11	54.00	18.90	V	9.7
12206.307692	35.31	54.00	18.69	H	10.8
15931.846154	40.29	54.00	13.71	V	14.1
17928.923077	43.03	54.00	10.97	H	18.9

## 802.11ax-HE80 CH106

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
7456.153846	44.01	74.00	29.99	V	5.7
8255.538462	43.66	74.00	30.34	H	5.9
10849.846154	45.59	74.00	28.41	V	9.2
12246.461539	46.24	74.00	27.76	H	10.9
15926.769231	49.94	74.00	24.06	V	14.1
17916.461539	53.68	74.00	20.32	V	18.9

Frequency (MHz)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
7456.153846	33.52	54.00	20.48	V	5.7
8255.538462	33.40	54.00	20.60	H	5.9
10849.846154	35.53	54.00	18.47	V	9.2
12246.461539	35.98	54.00	18.02	H	10.9
15926.769231	40.26	54.00	13.74	V	14.1
17916.461539	43.20	54.00	10.80	V	18.9



## 802.11ax-HE160 CH50

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
8228.307692	43.56	74.00	30.44	V	5.9
11156.769231	46.76	74.00	27.24	V	9.7
12389.076923	46.67	74.00	27.33	H	11.3
13382.769231	47.04	74.00	26.96	H	11.4
15888.000000	50.05	74.00	23.95	H	14.0
17984.769231	54.16	74.00	19.84	H	19.2

Frequency (MHz)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
8228.307692	32.69	54.00	21.31	V	5.9
11156.769231	35.58	54.00	18.42	V	9.7
12389.076923	36.67	54.00	17.33	H	11.3
13382.769231	36.18	54.00	17.82	H	11.4
15888.000000	39.94	54.00	14.06	H	14.0
17984.769231	43.24	54.00	10.76	H	19.2

**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:  $Result = P_{Mea} + A_{Rpl} = P_{Mea} + Cable Loss + Antenna Factor$

**See below for test graphs.**

**Conclusion: PASS**

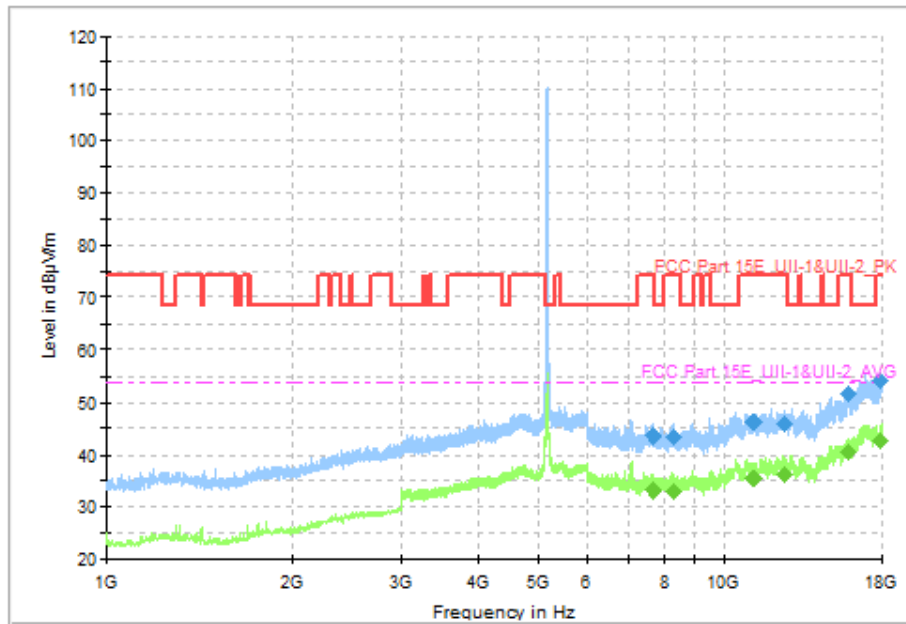


Fig. 1 Transmitter Spurious Emission (802.11a, CH36 5180MHz)

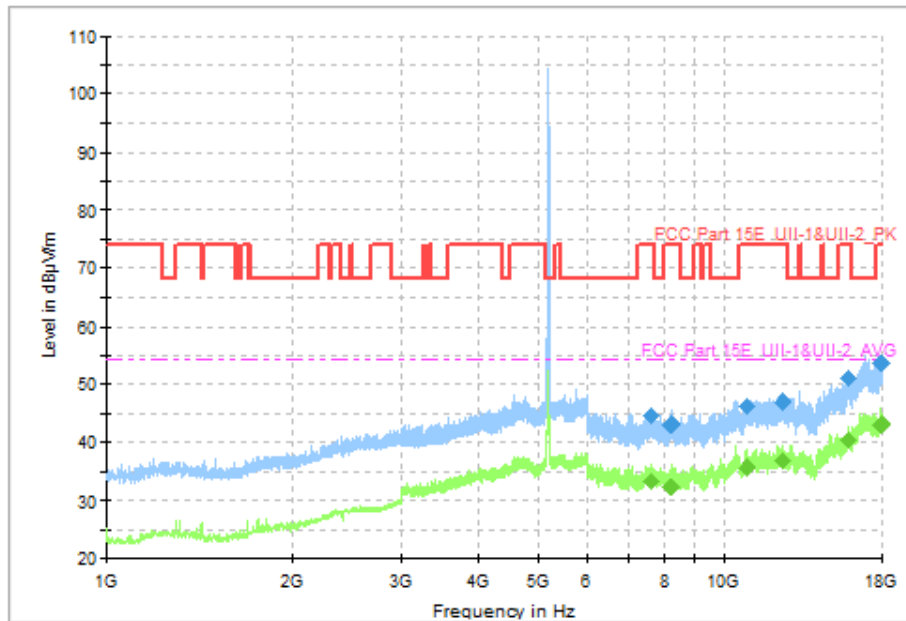


Fig. 2 Transmitter Spurious Emission (802.11a, CH40 5200MHz)

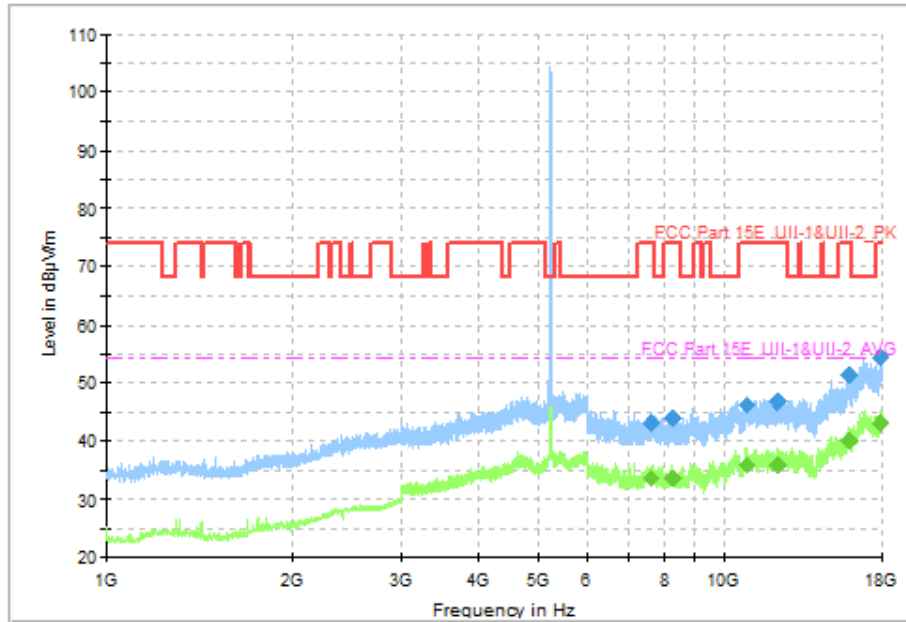


Fig. 3 Transmitter Spurious Emission (802.11a, CH48 5240MHz)

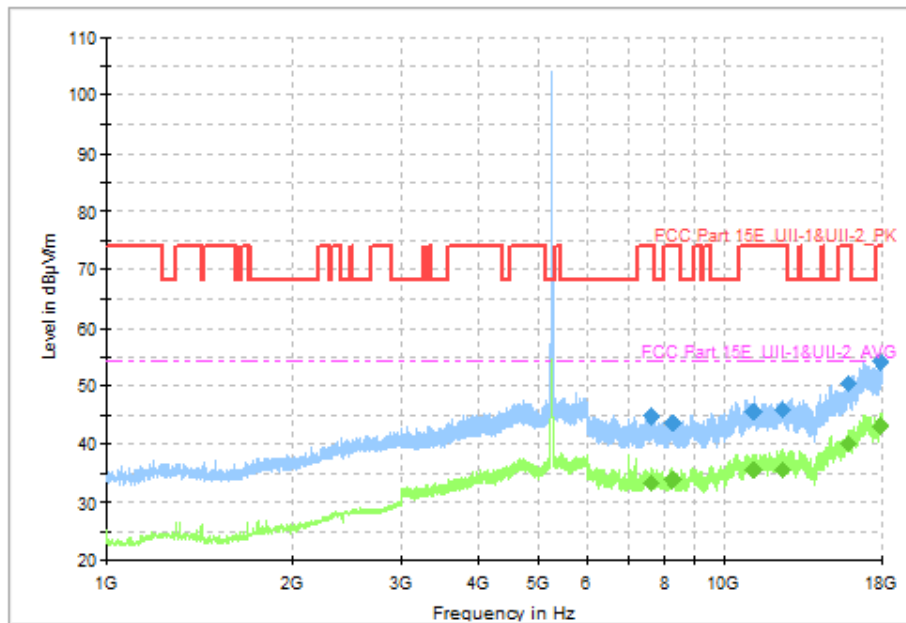


Fig. 4 Transmitter Spurious Emission (802.11a, CH52 5260MHz)

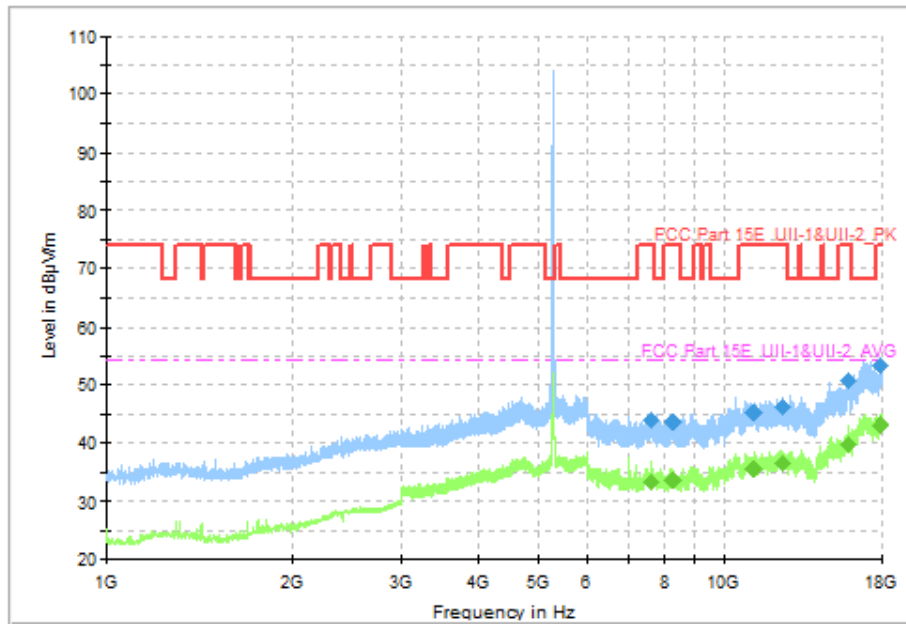


Fig. 5 Transmitter Spurious Emission (802.11a, CH56 5280MHz)

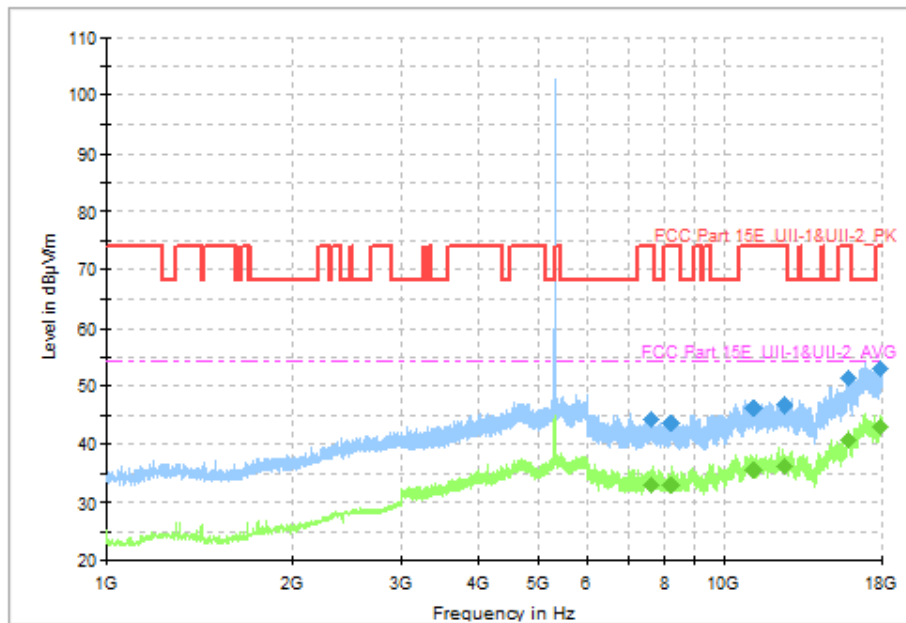


Fig. 6 Transmitter Spurious Emission (802.11a, CH64 5320MHz)

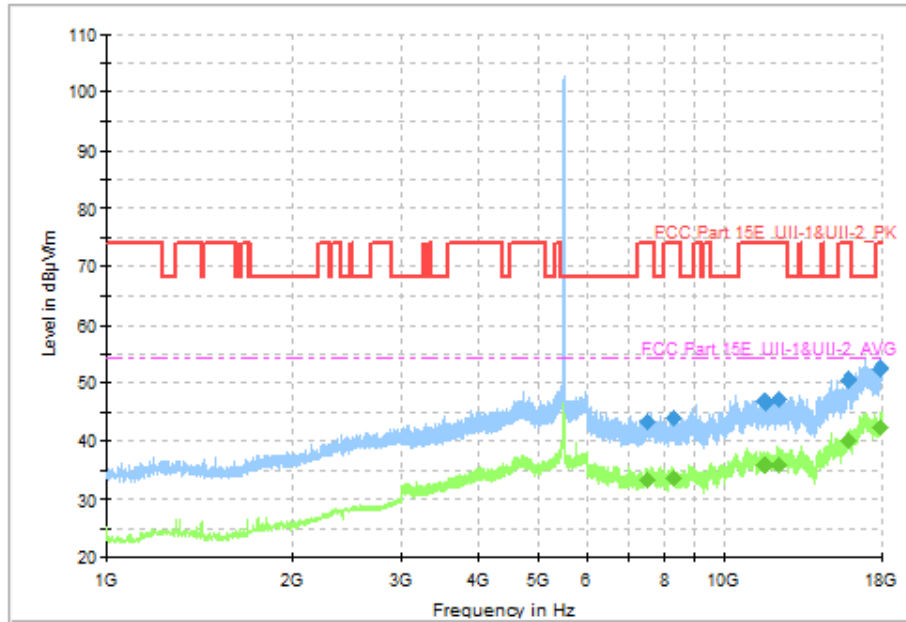


Fig. 7 Transmitter Spurious Emission (802.11a, CH100 5500MHz)

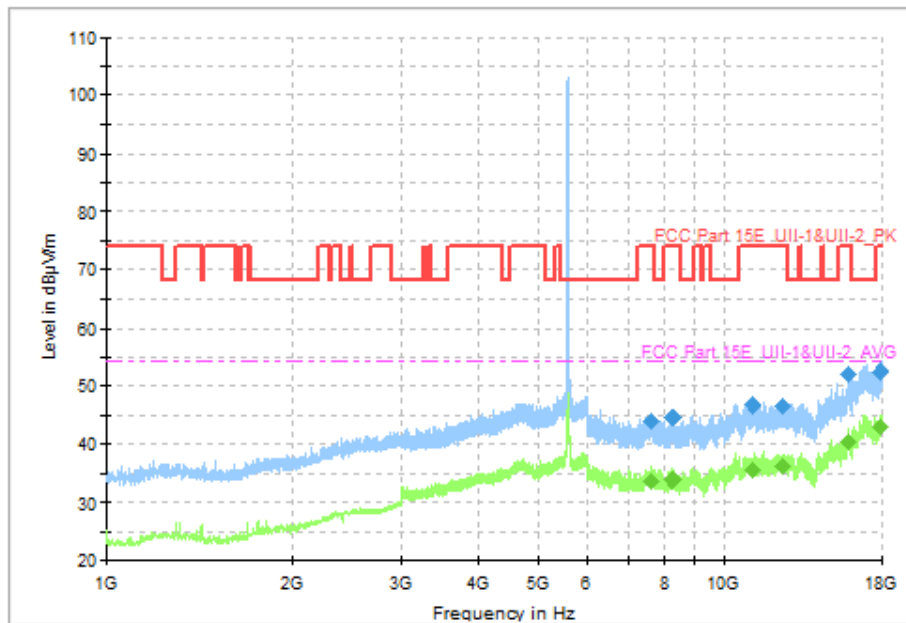


Fig. 8 Transmitter Spurious Emission (802.11a, CH120 5600MHz)

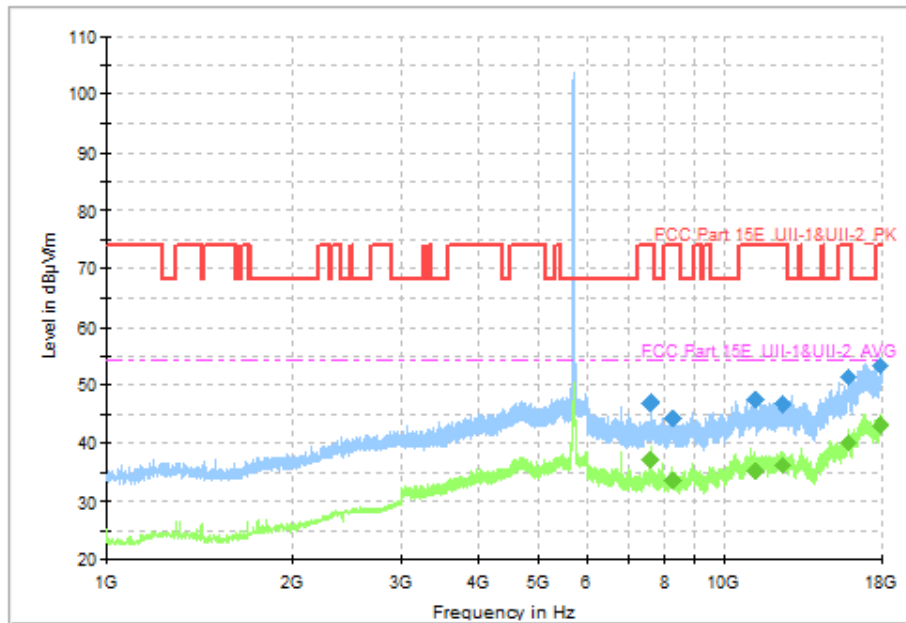


Fig. 9 Transmitter Spurious Emission (802.11a, CH140 5700MHz)

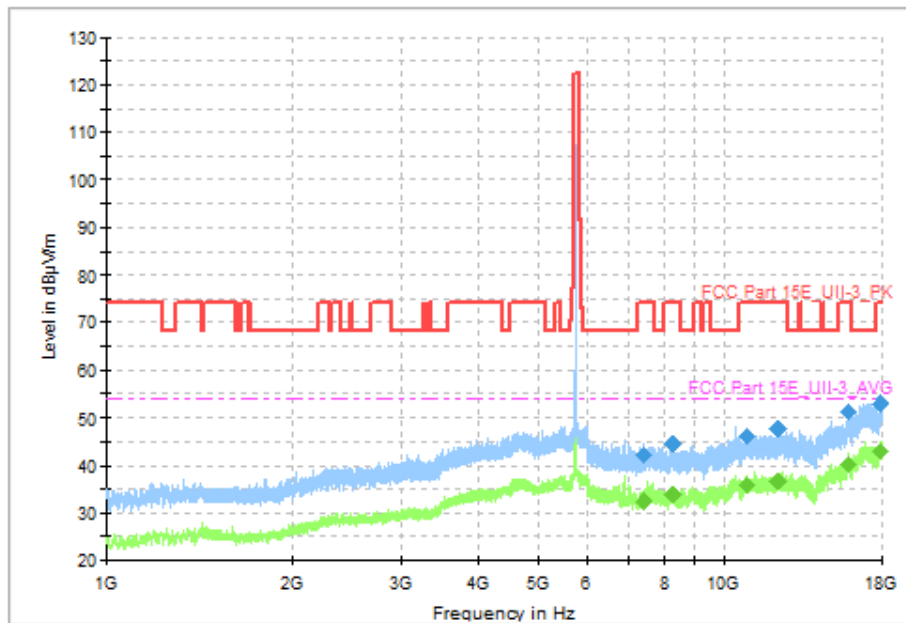


Fig. 10 Transmitter Spurious Emission (802. 11a, CH149 5745MHz)

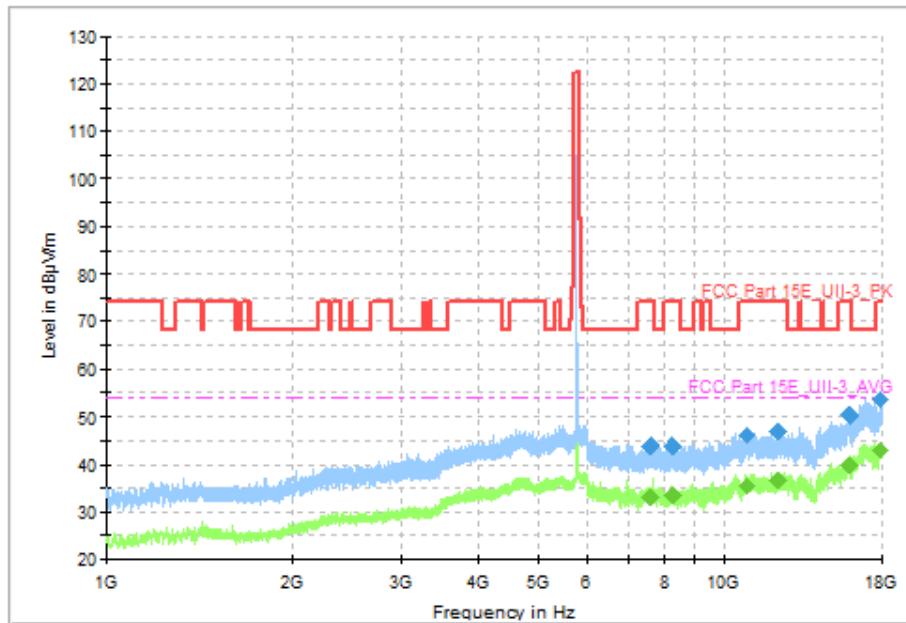


Fig. 11 Transmitter Spurious Emission (802. 11a, CH157 5785MHz)

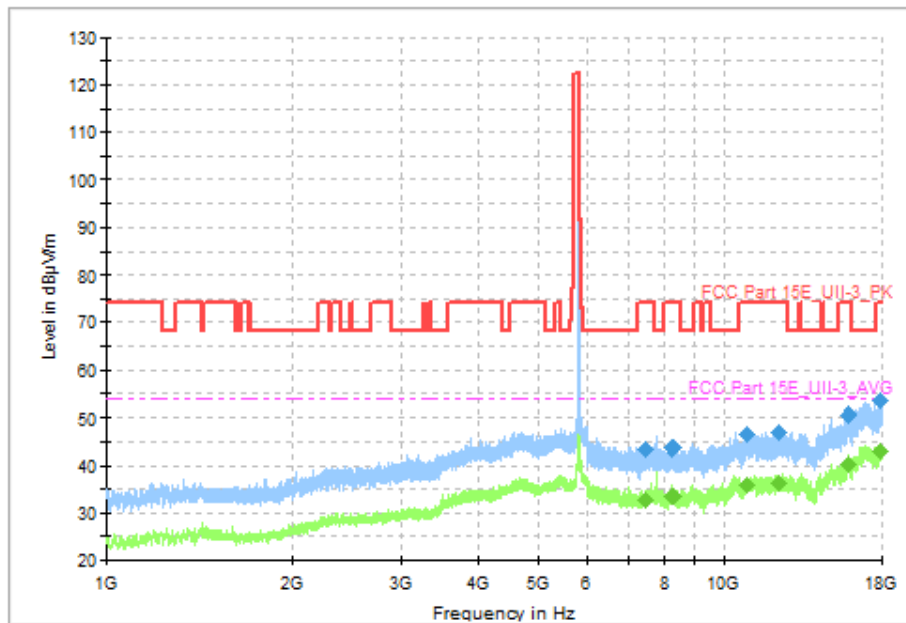


Fig. 12 Transmitter Spurious Emission (802. 11a, CH165 5825MHz)



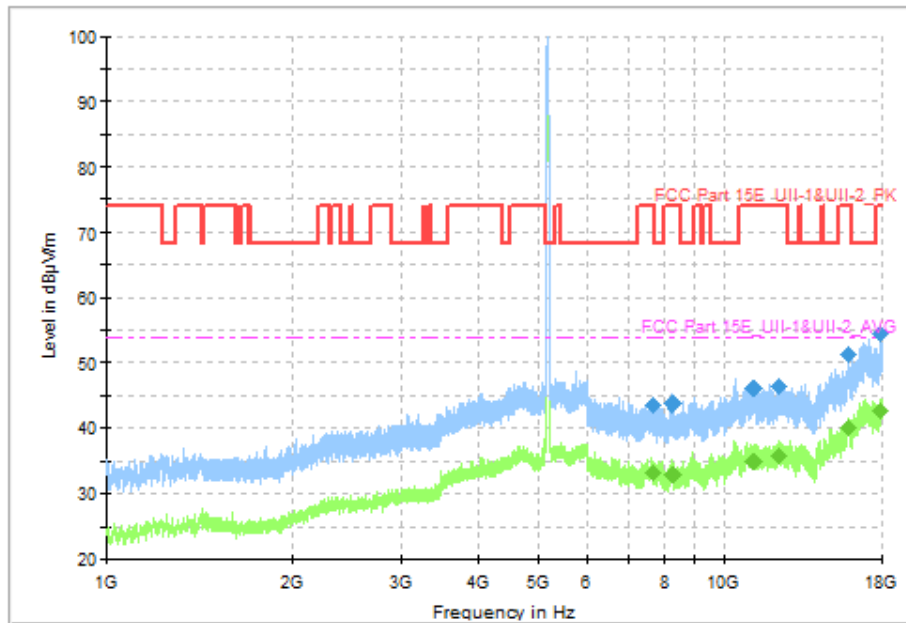


Fig. 13 Transmitter Spurious Emission (802.11n-HT40, CH38 5190MHz)

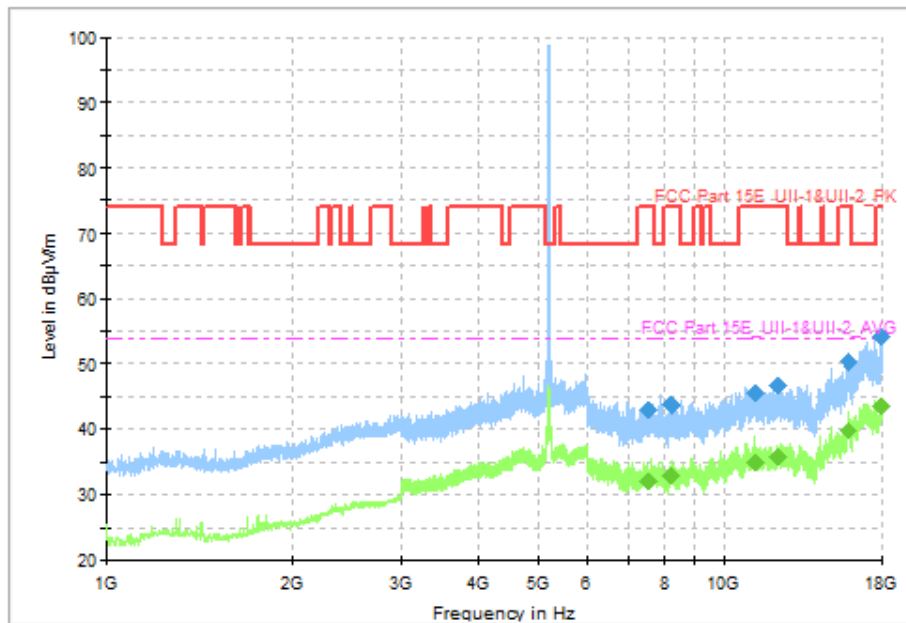


Fig. 14 Transmitter Spurious Emission (802.11n-HT40, CH46 5230MHz)

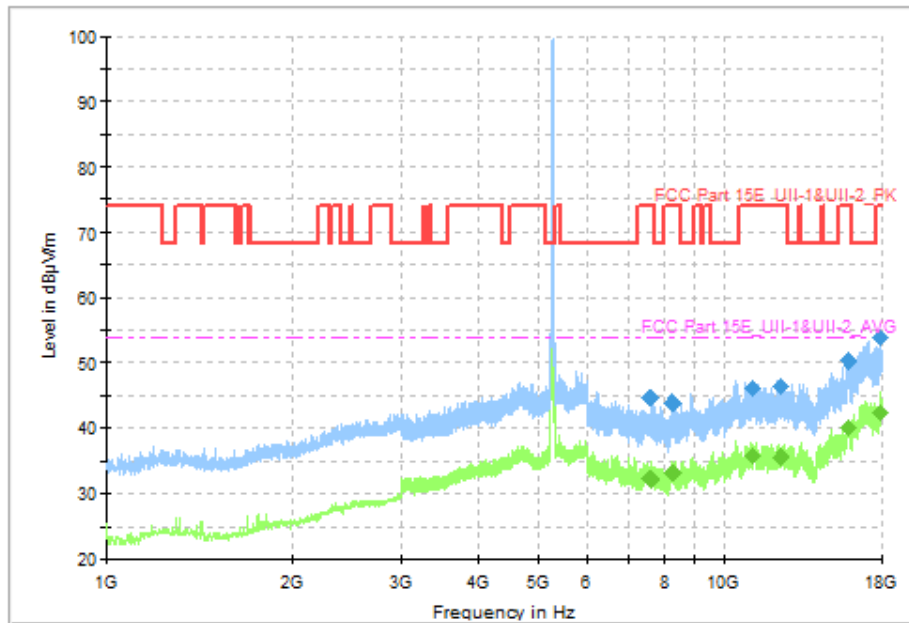


Fig. 15 Transmitter Spurious Emission (802.11n-HT40, CH54 5270MHz)

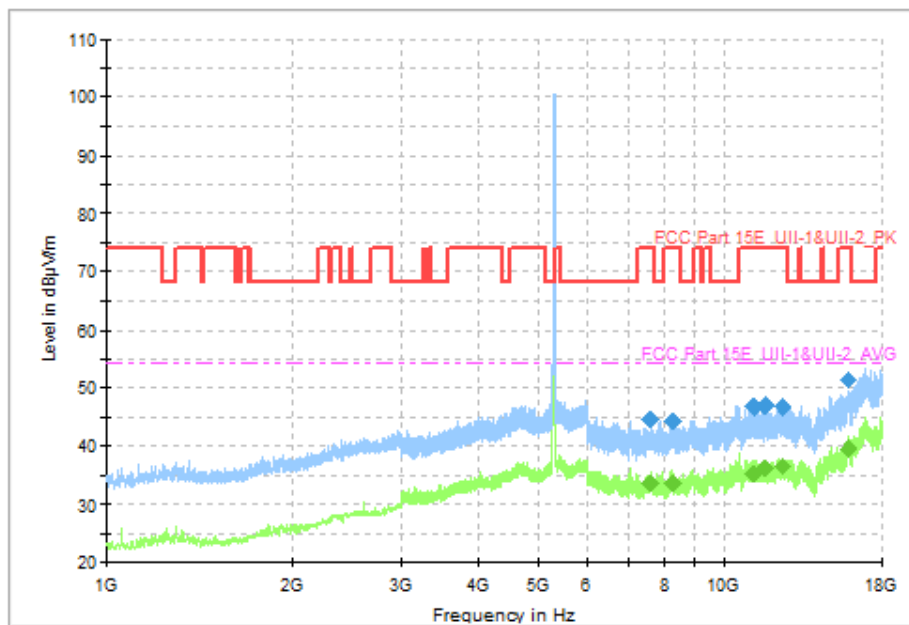


Fig. 16 Transmitter Spurious Emission (802.11n-HT40, CH62 5310MHz)

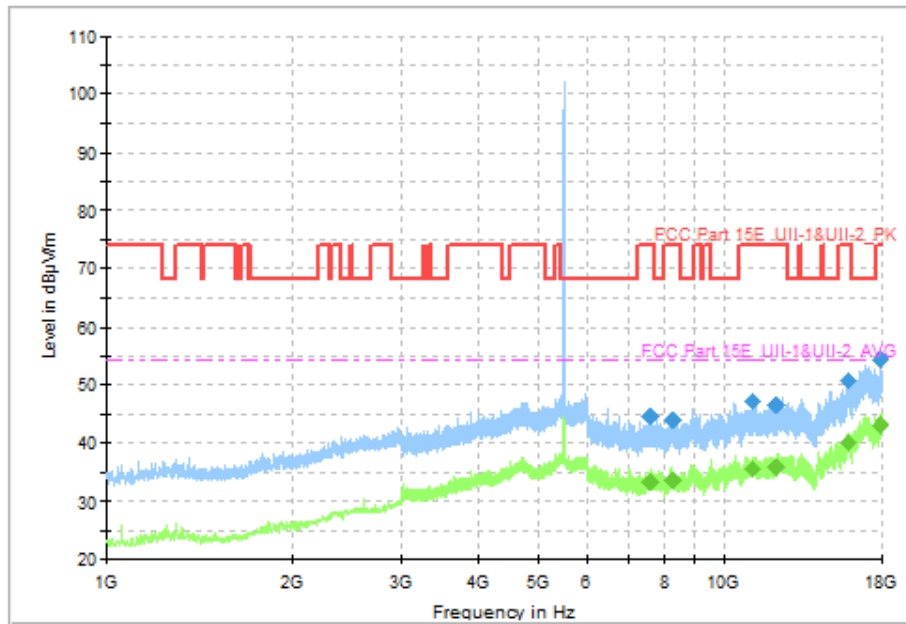


Fig. 17 Transmitter Spurious Emission (802.11n-HT40, CH102 5510MHz)

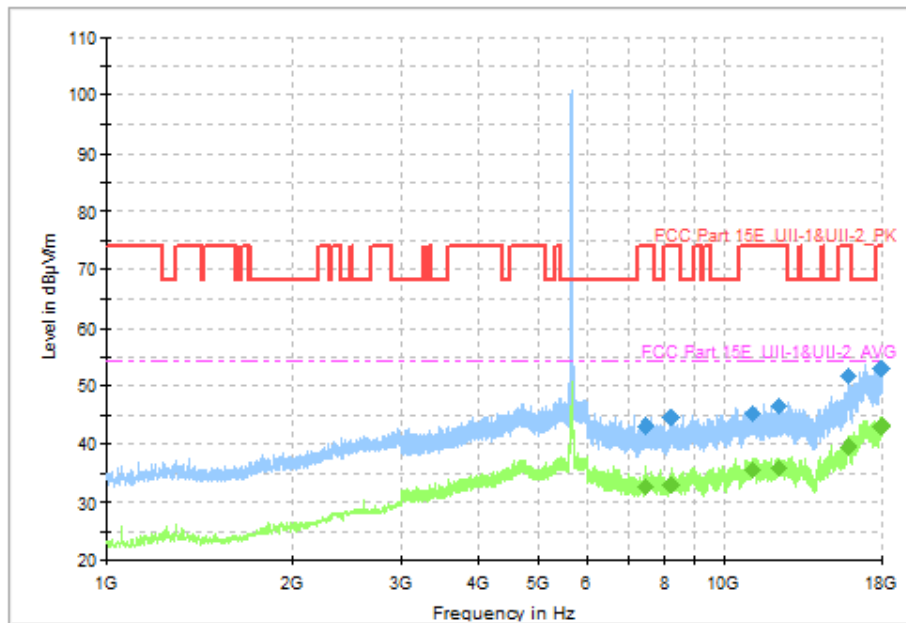


Fig. 18 Transmitter Spurious Emission (802.11n-HT40, CH134 5670MHz)

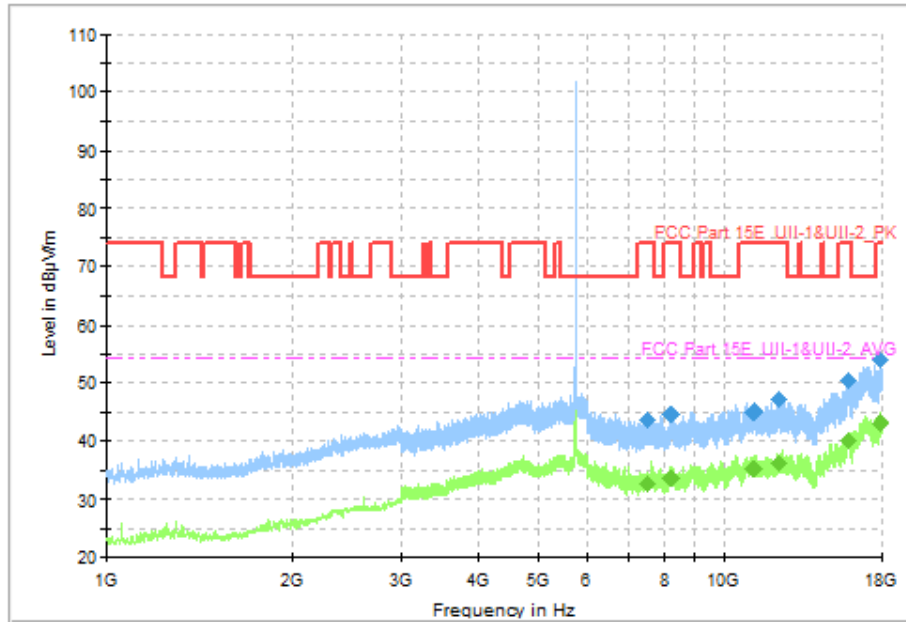


Fig. 19 Transmitter Spurious Emission (802.11n-HT40, CH151 5755MHz)

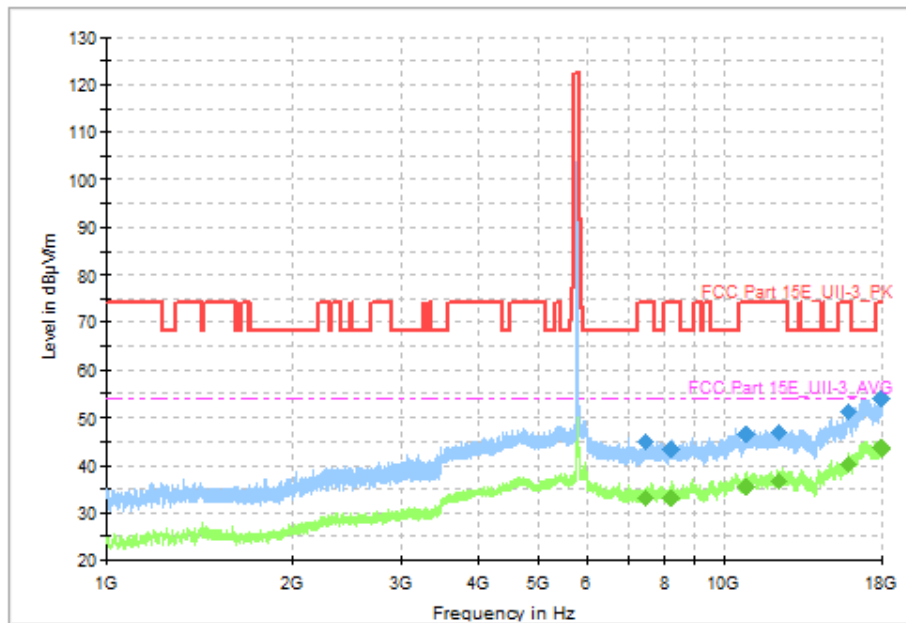


Fig. 20 Transmitter Spurious Emission (802.11n-HT40, CH159 5795MHz)

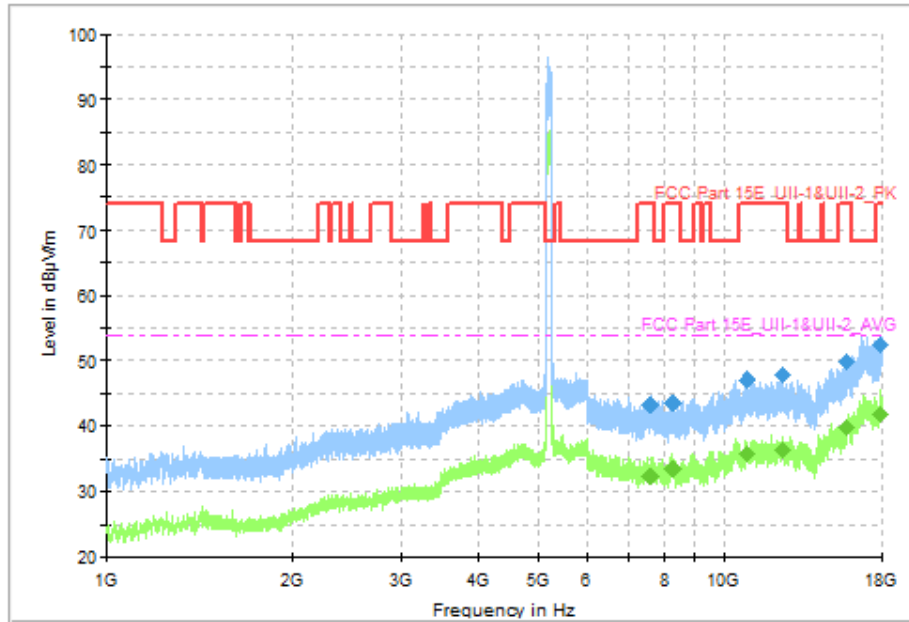


Fig. 21 Transmitter Spurious Emission (802.11ax-HE80, CH42 5210MHz)

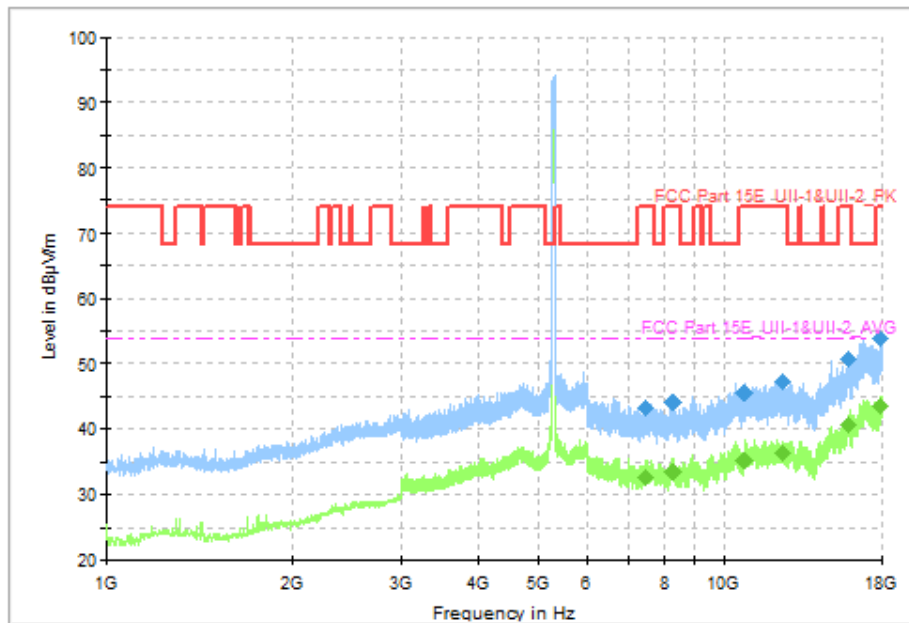


Fig. 22 Transmitter Spurious Emission (802.11ax-HE80, CH58 5290MHz)

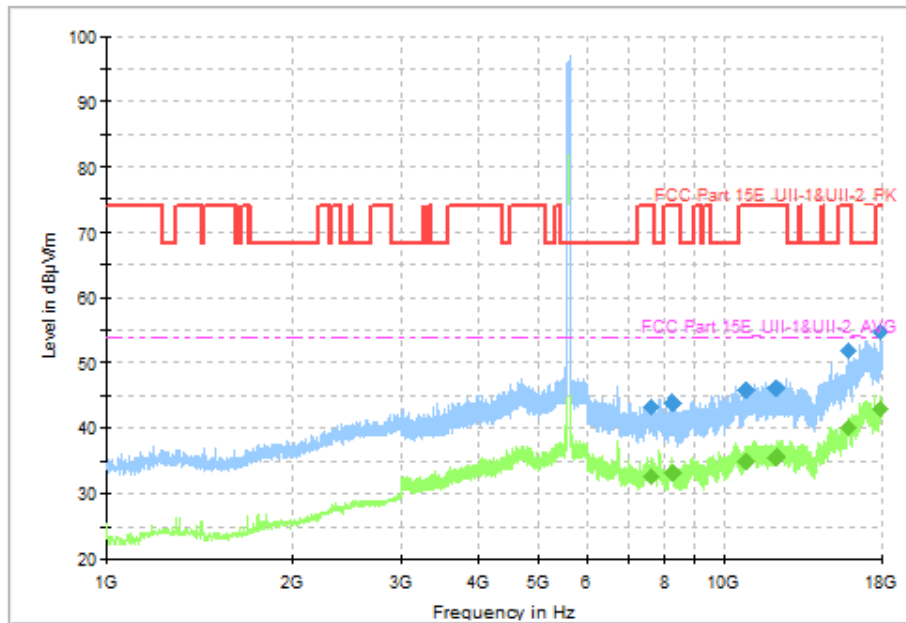


Fig. 23 Transmitter Spurious Emission (802. 11ax-HE80, CH122 5610MHz)

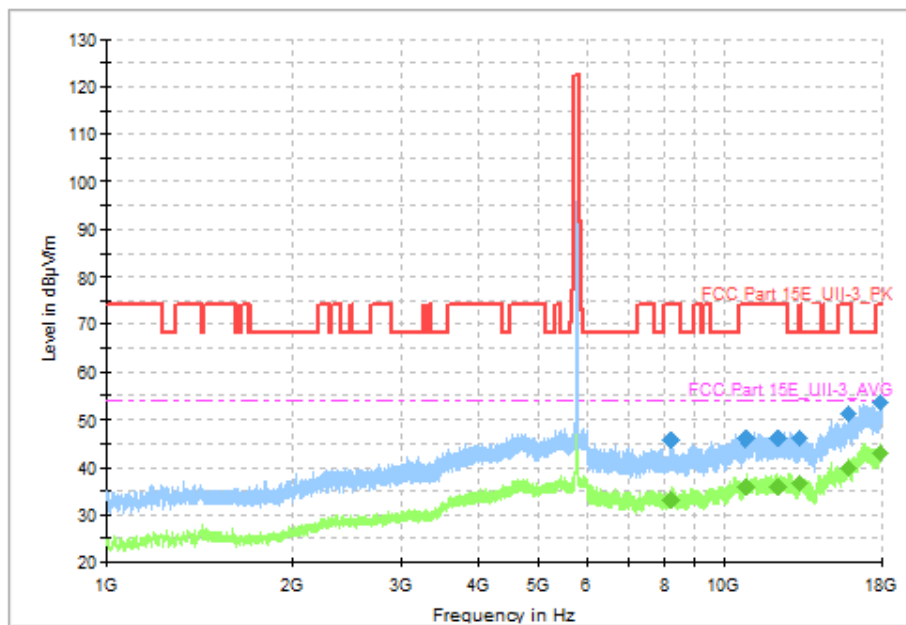


Fig. 24 Transmitter Spurious Emission (802. 11ax-HE80, CH155 5775MHz)

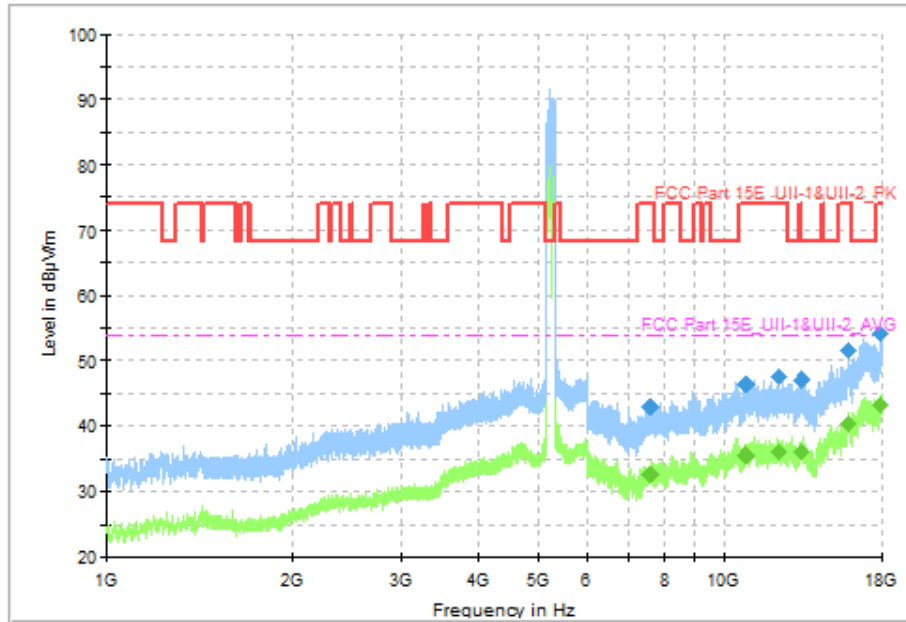


Fig. 25 Transmitter Spurious Emission (802. 11ax-HE160, CH50 5250MHz)

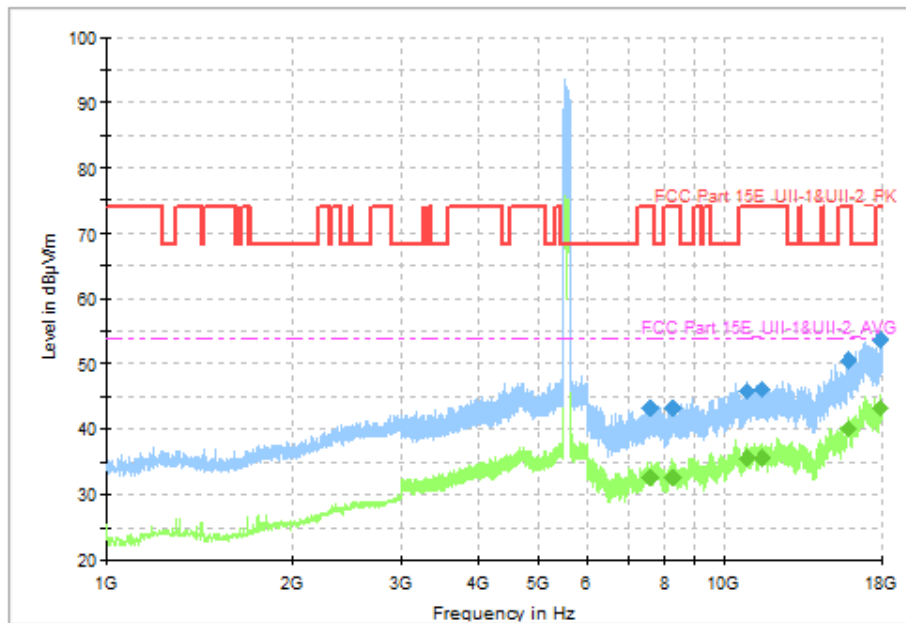


Fig. 26 Transmitter Spurious Emission (802. 11ax-HE160, CH114 5570MHz)

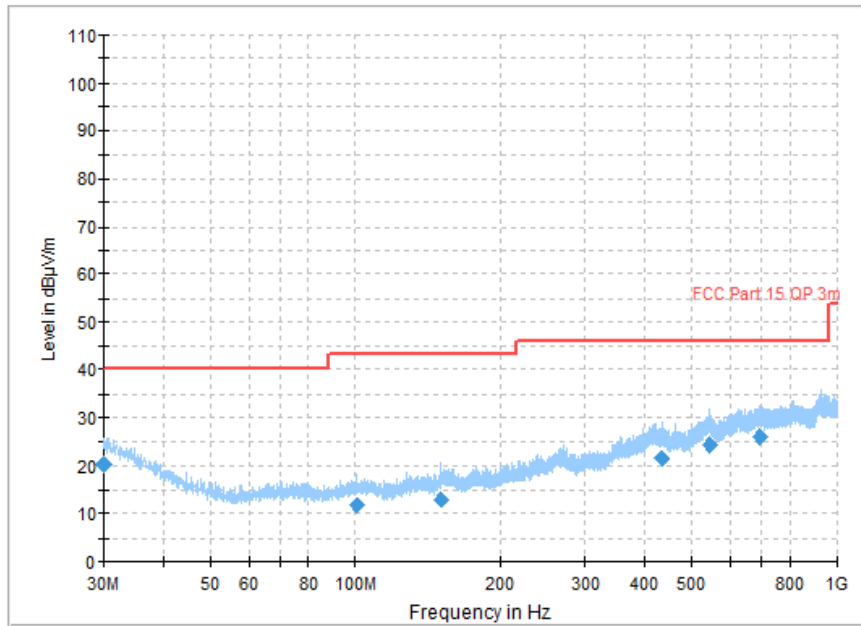


Fig. 27 Transmitter Spurious Emission (All channel, 30MHz~1GHz)

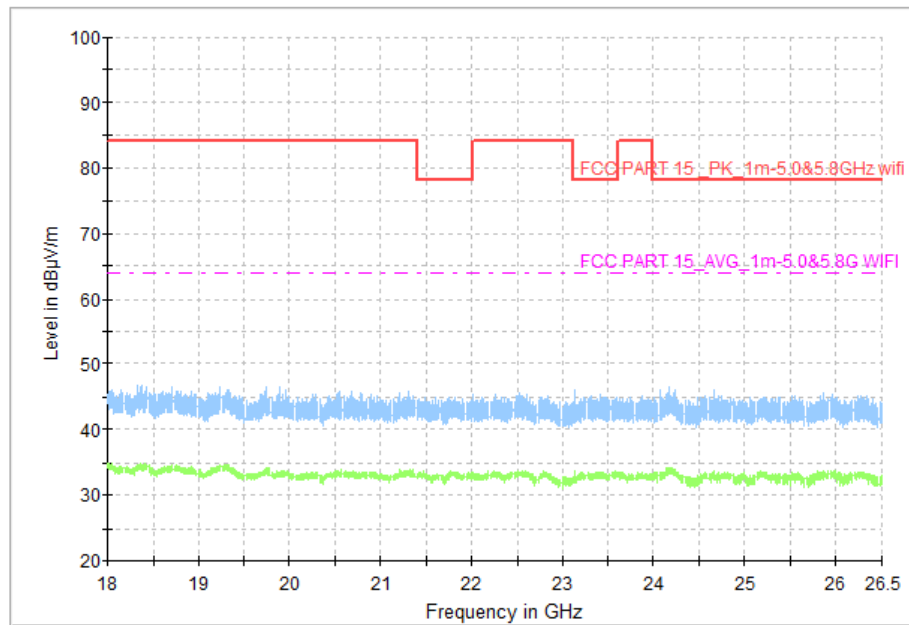


Fig. 28 Transmitter Spurious Emission (All channel, 18GHz~26.5GHz)



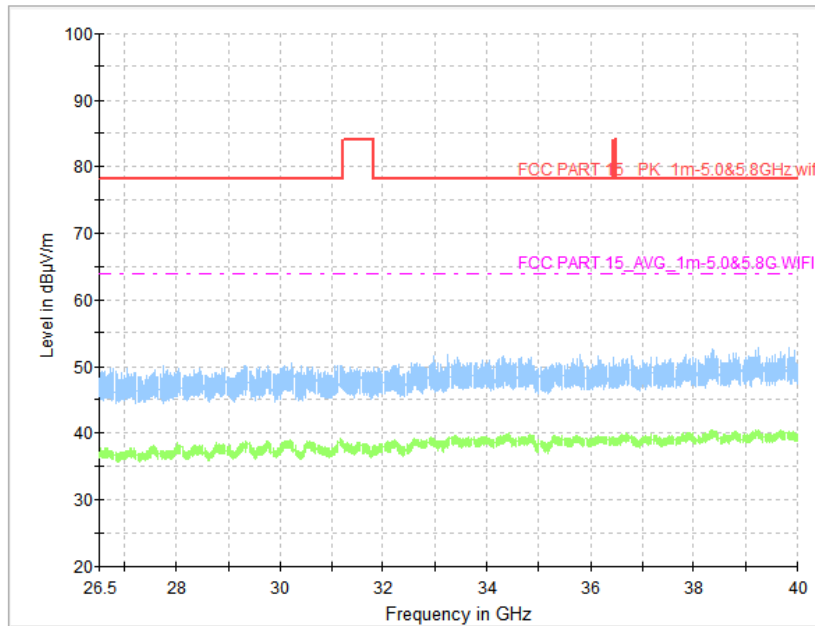


Fig. 29 Transmitter Spurious Emission (All channel, 26.5GHz~40GHz)

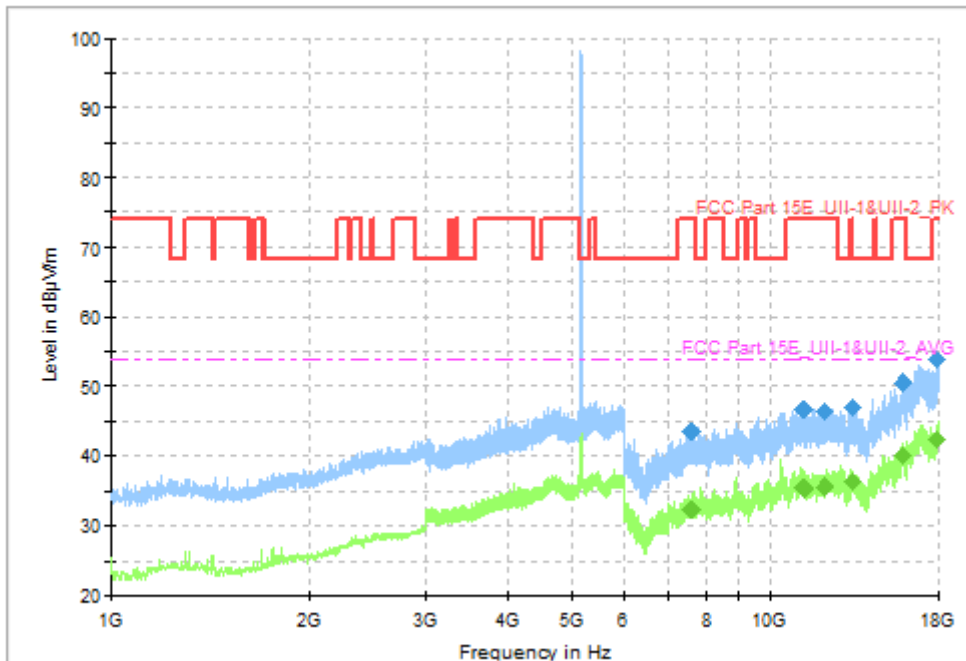


Fig. 30 Transmitter Spurious Emission (802.11n-HT20, CH36 5180MHz)

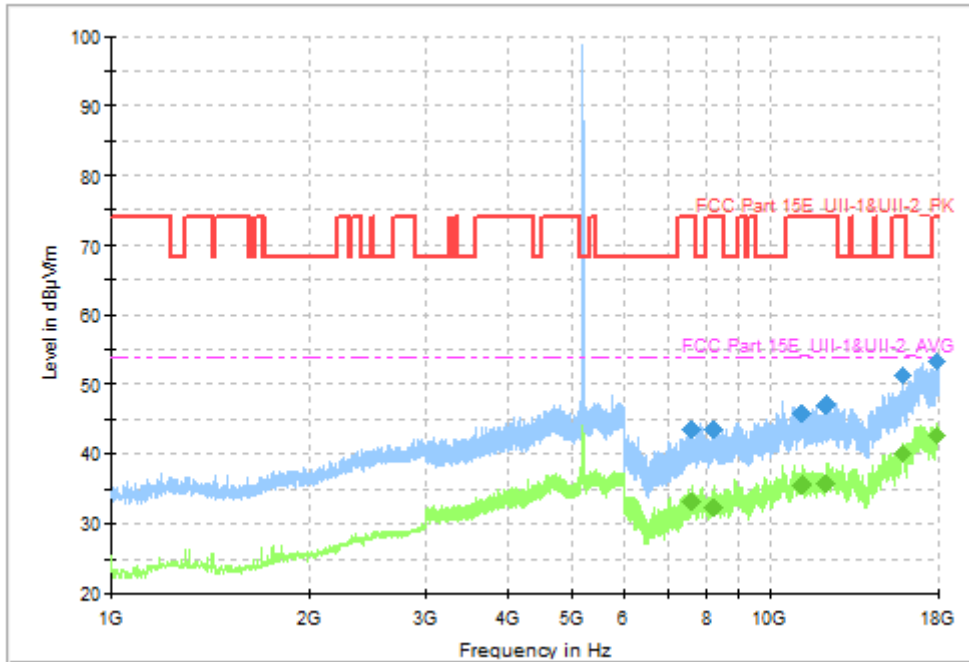


Fig. 31 Transmitter Spurious Emission (802.11n-HT20, CH40 5200MHz)

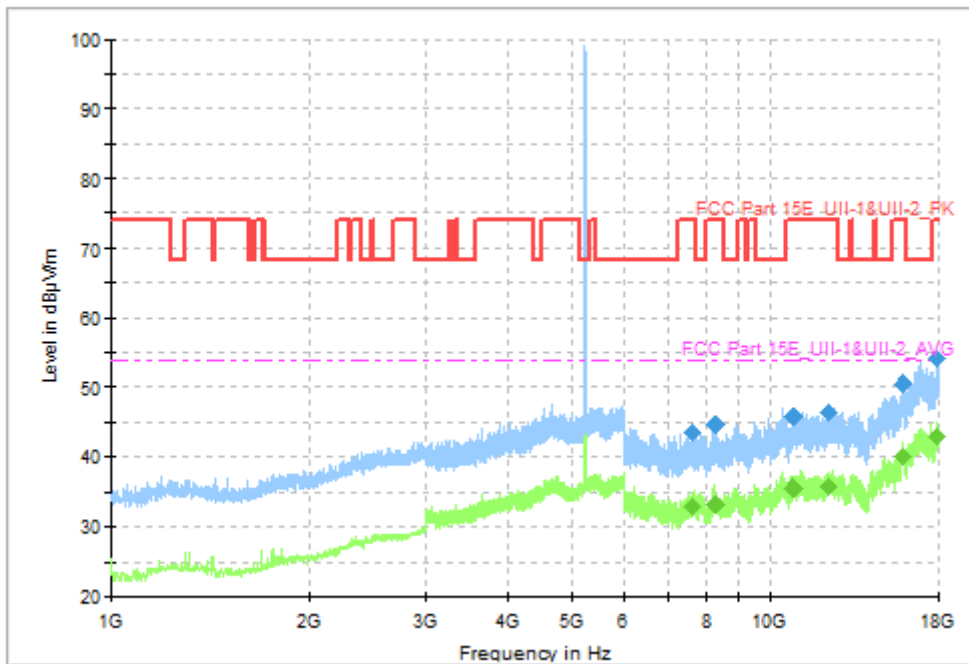


Fig. 32 Transmitter Spurious Emission (802.11n-HT20, CH48 5240MHz)

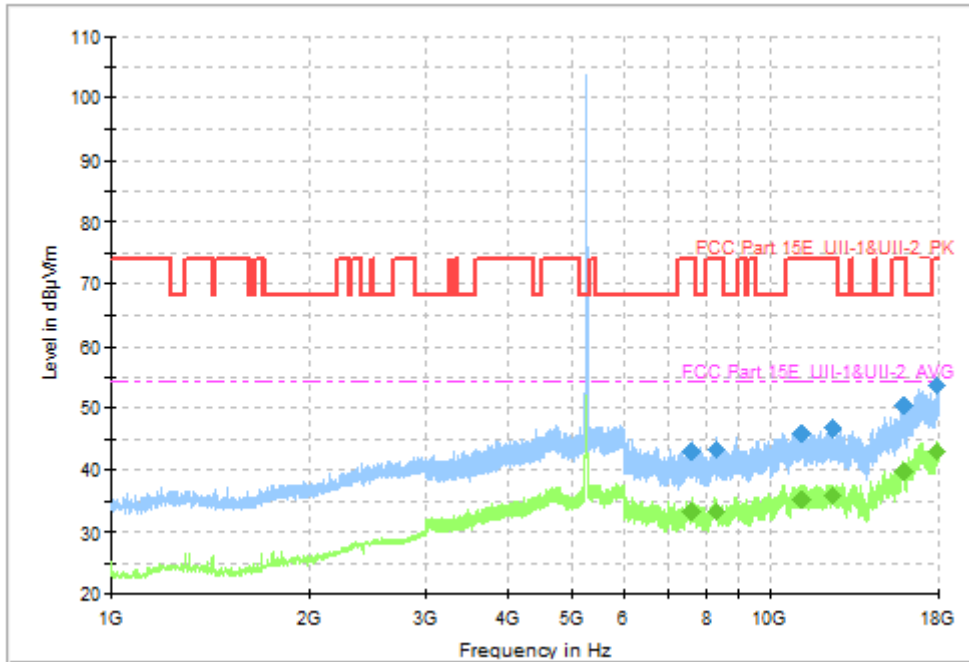


Fig. 33 Transmitter Spurious Emission (802.11n-HT20, CH52 5260MHz)

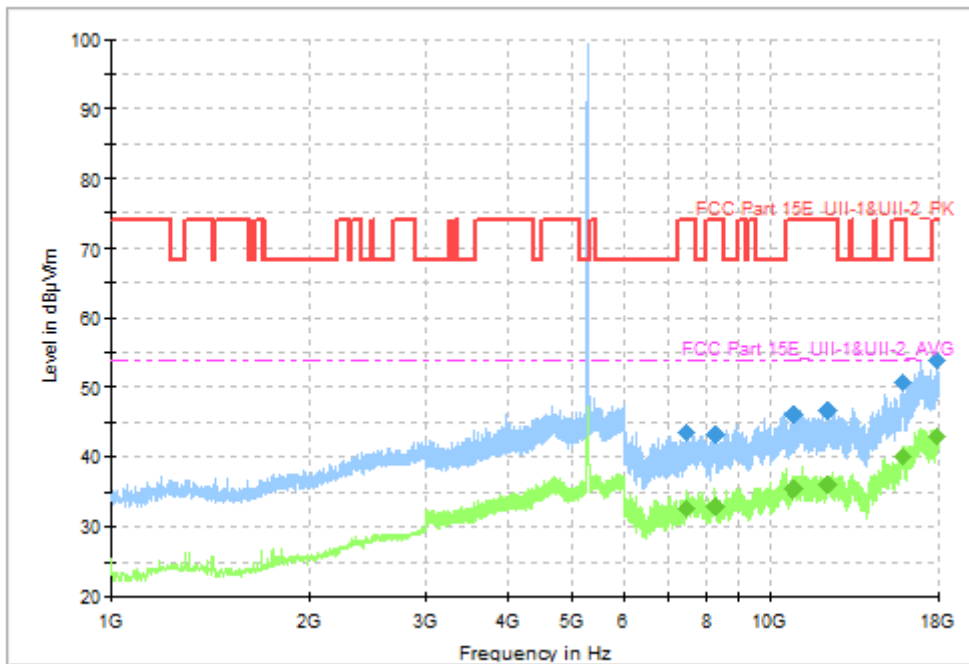


Fig. 34 Transmitter Spurious Emission (802.11n-HT20, CH56 5280MHz)

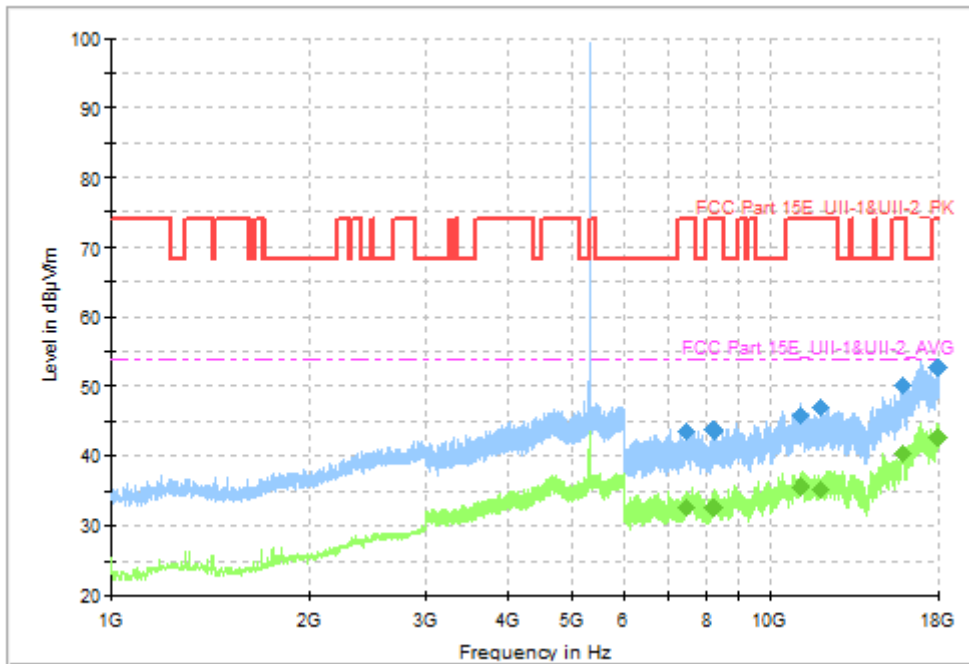


Fig. 35 Transmitter Spurious Emission (802.11n-HT20, CH64 5320MHz)

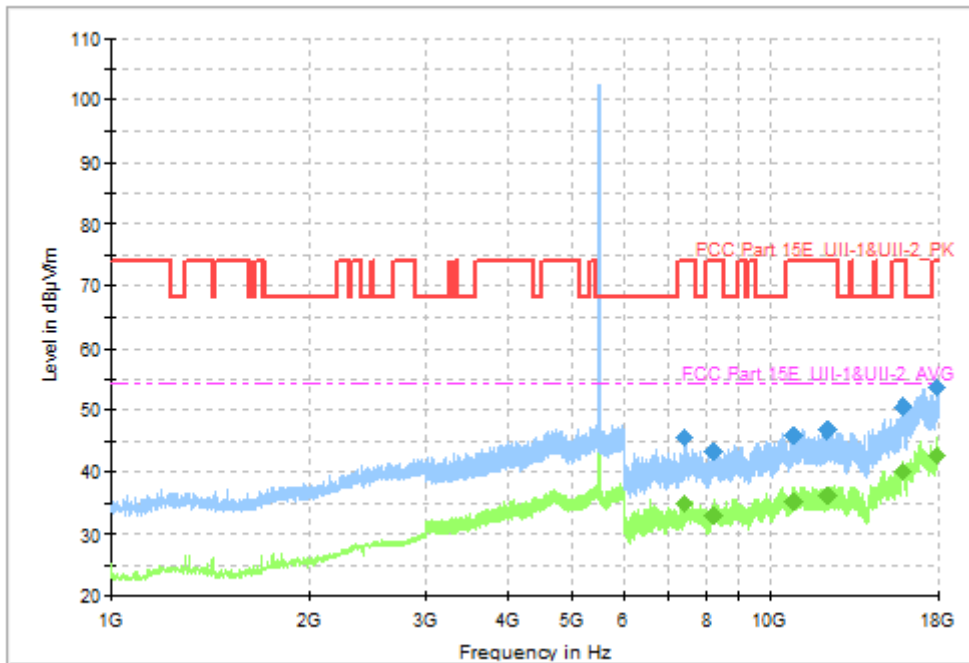


Fig. 36 Transmitter Spurious Emission (802.11n-HT20, CH100 5500MHz)

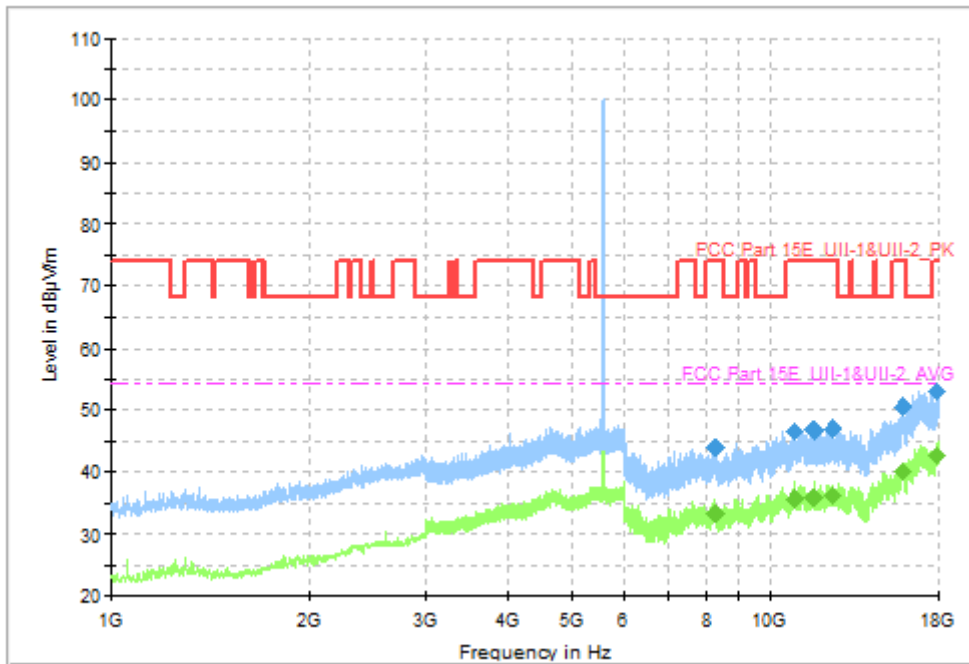


Fig. 37 Transmitter Spurious Emission (802.11n-HT20, CH120 5600MHz)

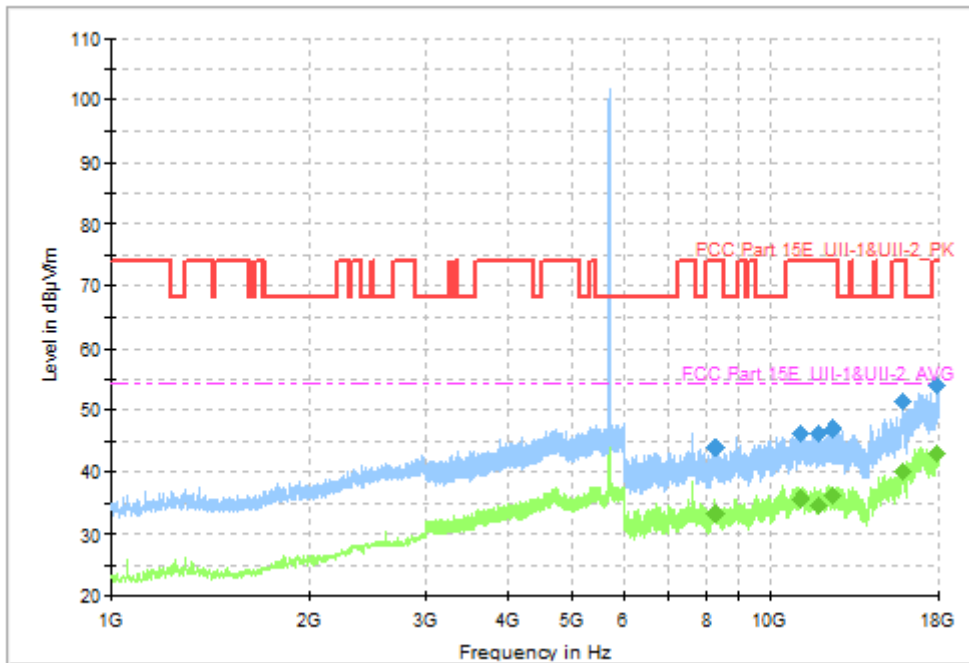


Fig. 38 Transmitter Spurious Emission (802.11n-HT20, CH140 5700MHz)

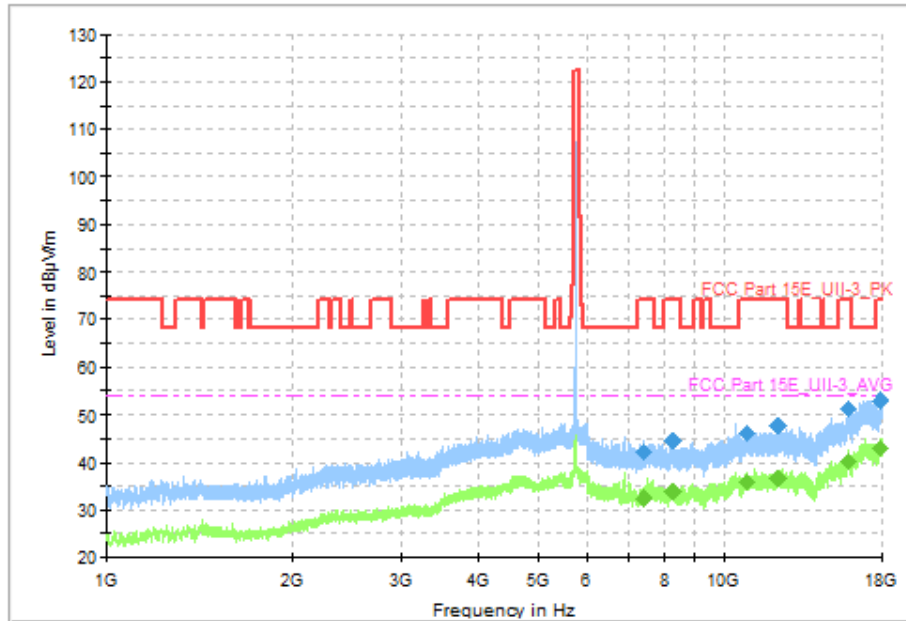


Fig. 39 Transmitter Spurious Emission (802.11n-HT20, CH149 5745MHz)

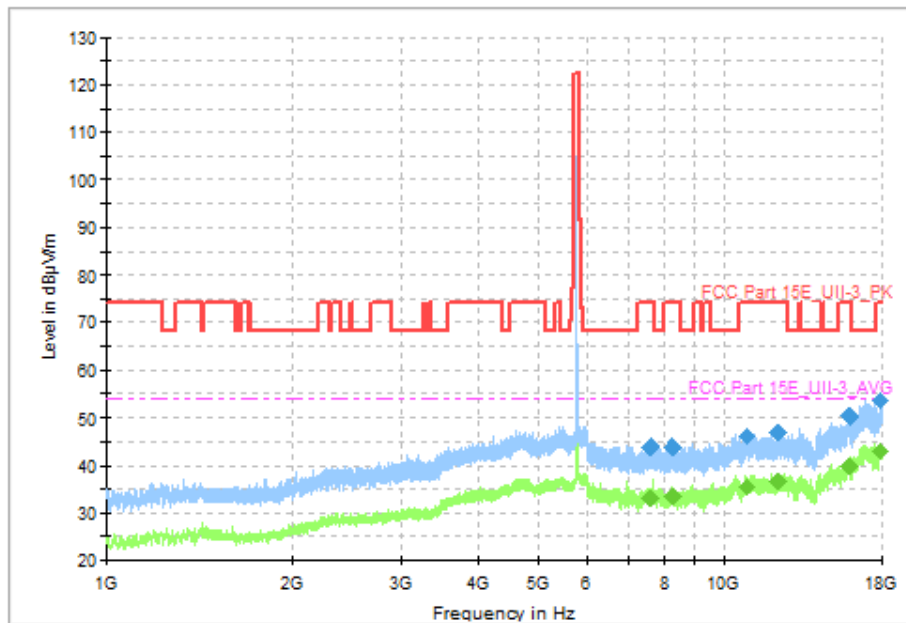


Fig. 40 Transmitter Spurious Emission (802.11n-HT20, CH157 5785MHz)

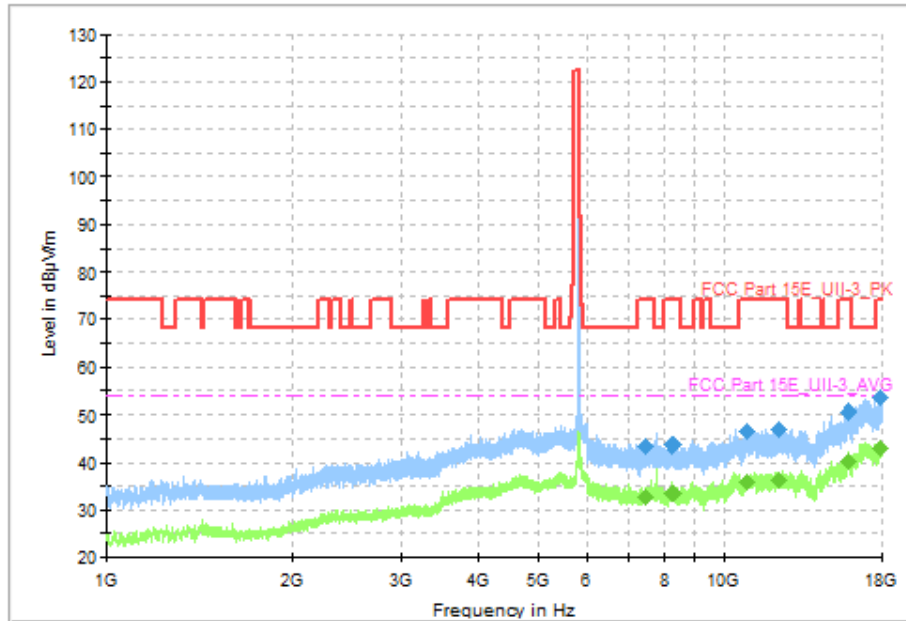


Fig. 41 Transmitter Spurious Emission (802.11n-HT20, CH165 5825MHz)

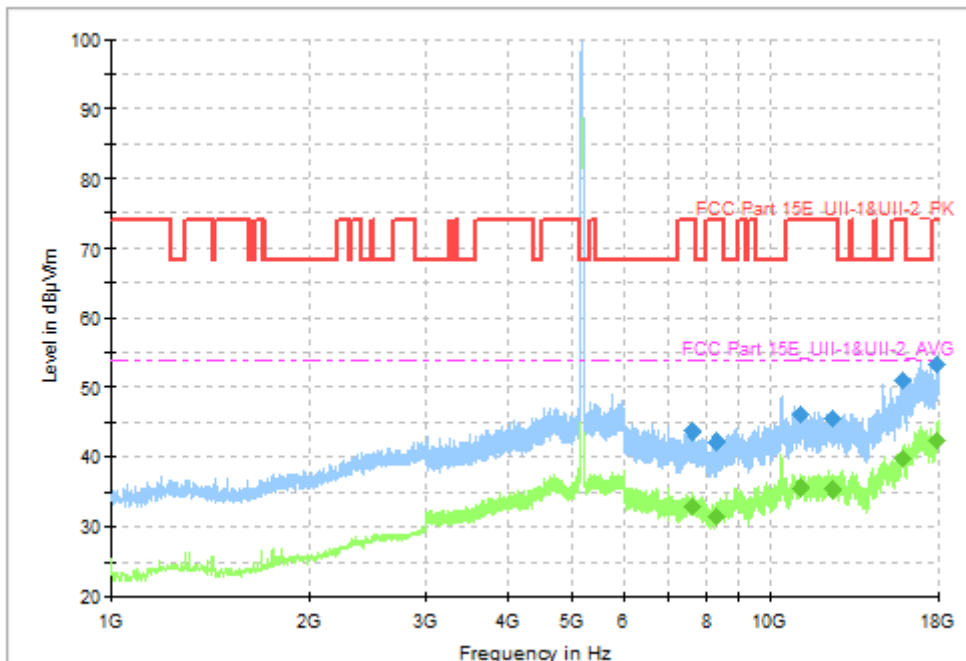


Fig. 42 Transmitter Spurious Emission (802.11n-HT40, CH38 5190MHz)

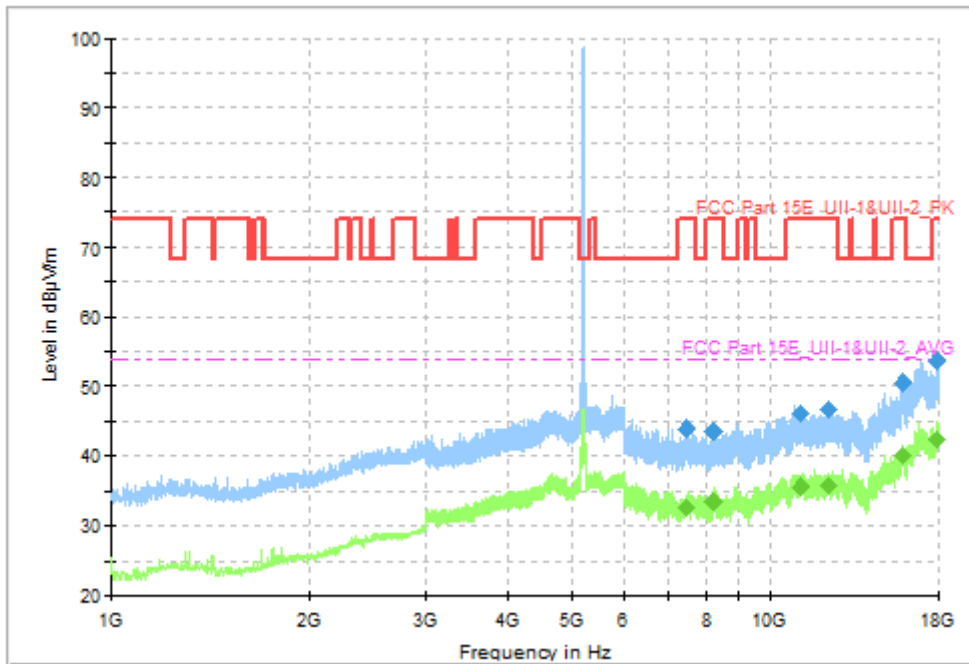


Fig. 43 Transmitter Spurious Emission (802.11n-HT40, CH46 5230MHz)

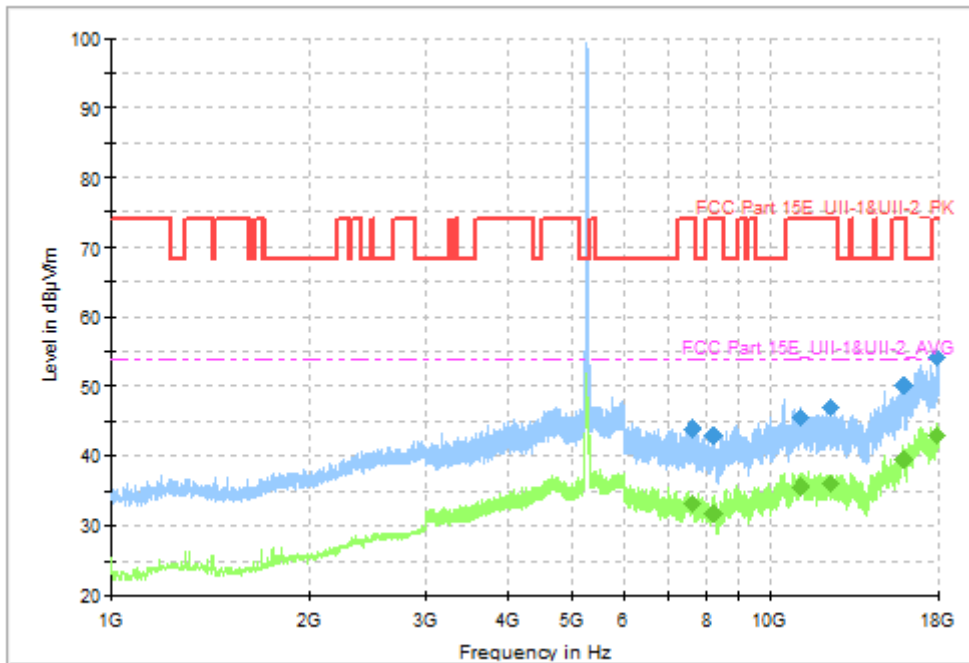


Fig. 44 Transmitter Spurious Emission (802.11n-HT40, CH54 5270MHz)



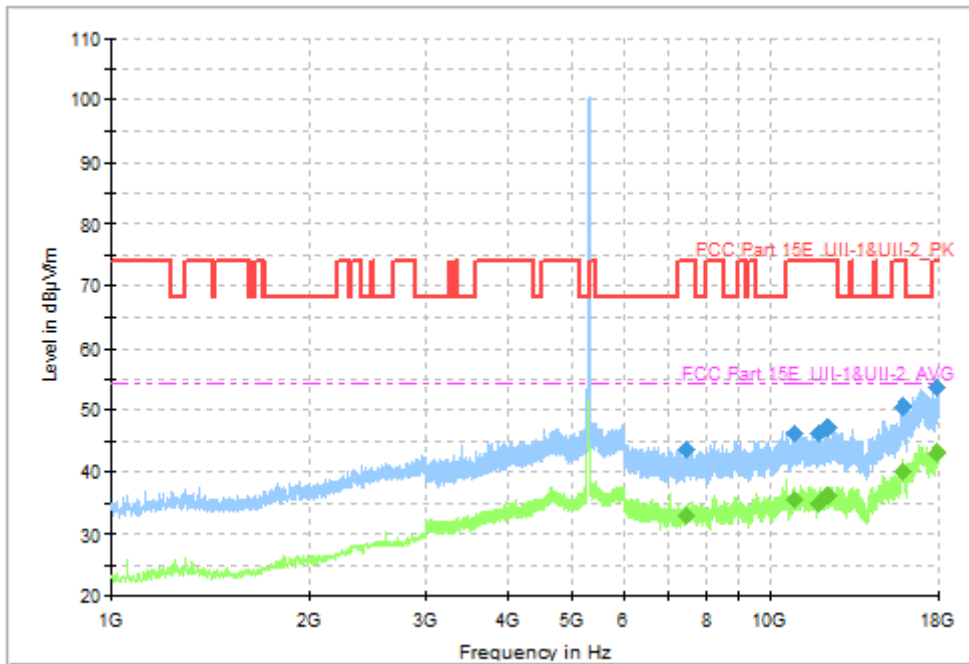


Fig. 45 Transmitter Spurious Emission (802.11n-HT40, CH62 5310MHz)

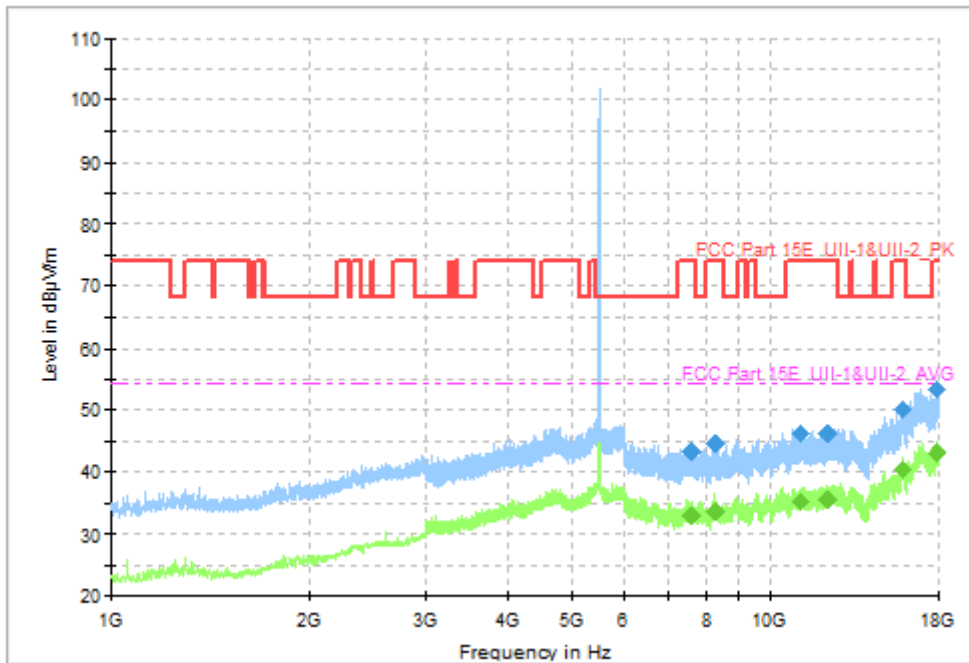


Fig. 46 Transmitter Spurious Emission (802.11n-HT40, CH102 5510MHz)

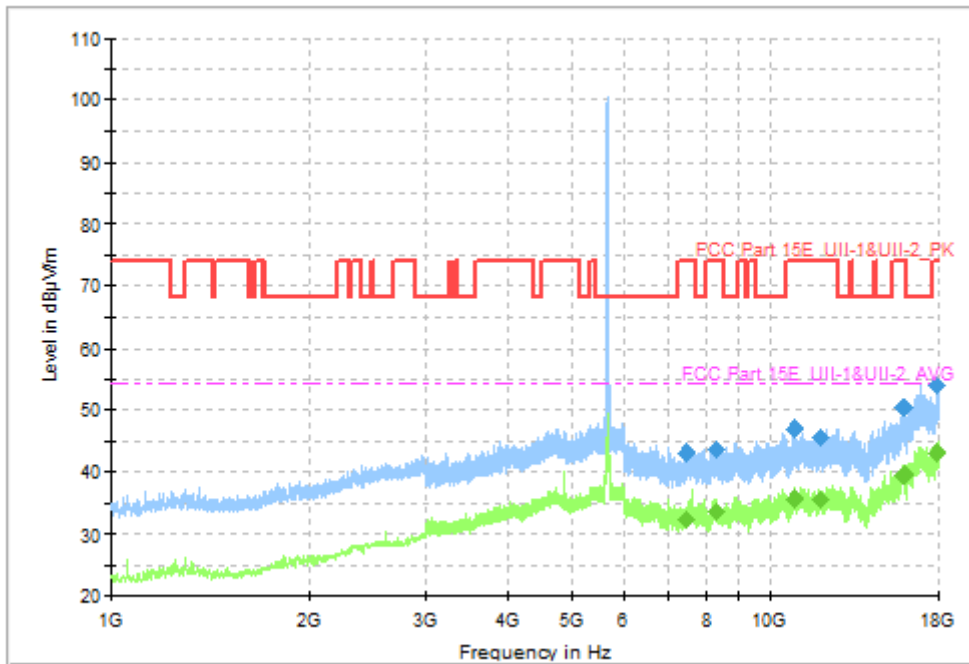


Fig. 47 Transmitter Spurious Emission (802.11n-HT40, CH134 5670MHz)

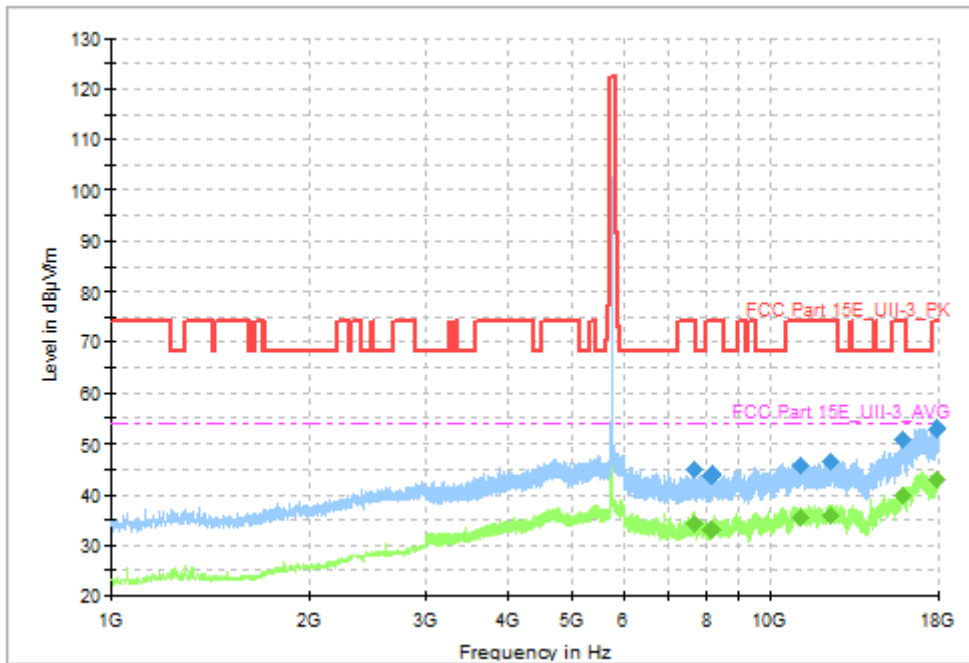


Fig. 48 Transmitter Spurious Emission (802.11n-HT40, CH151 5755MHz)

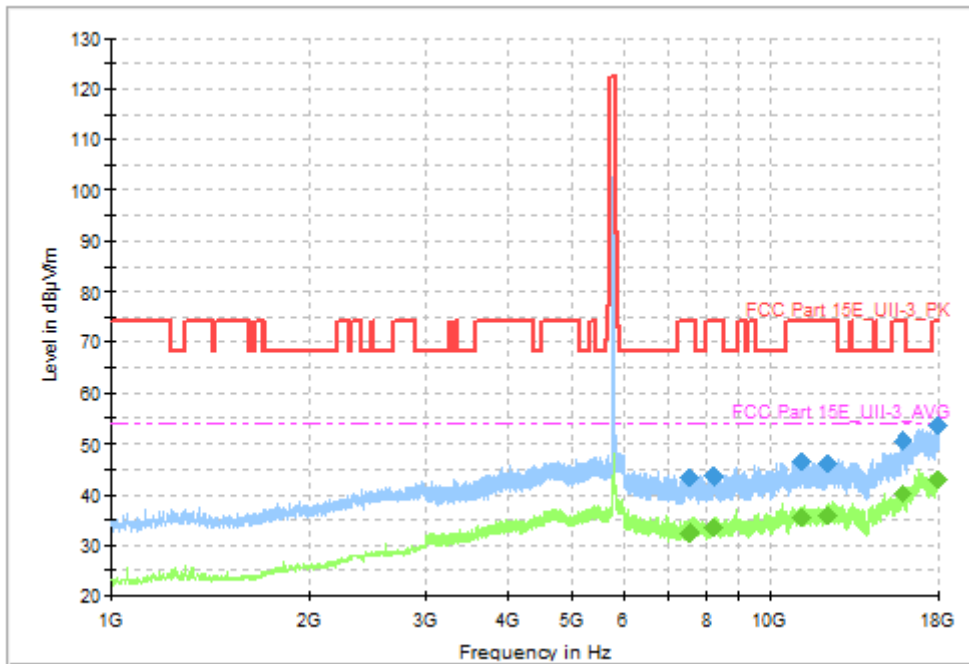


Fig. 49 Transmitter Spurious Emission (802. 11n-HT40, CH159 5795MHz)

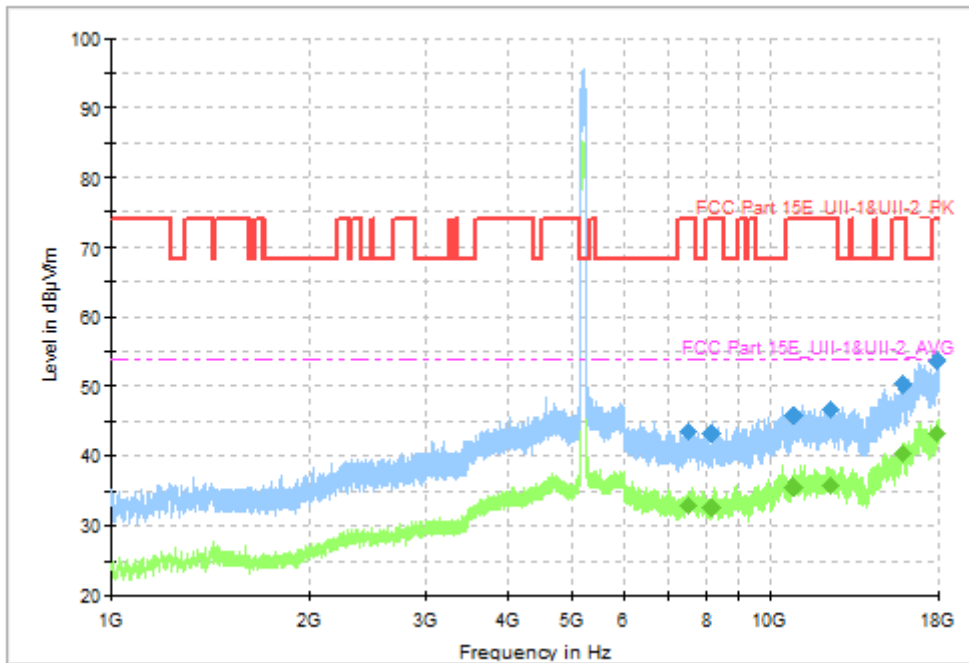


Fig. 50 Transmitter Spurious Emission (802. 11ax-HE80, CH42 5210MHz)

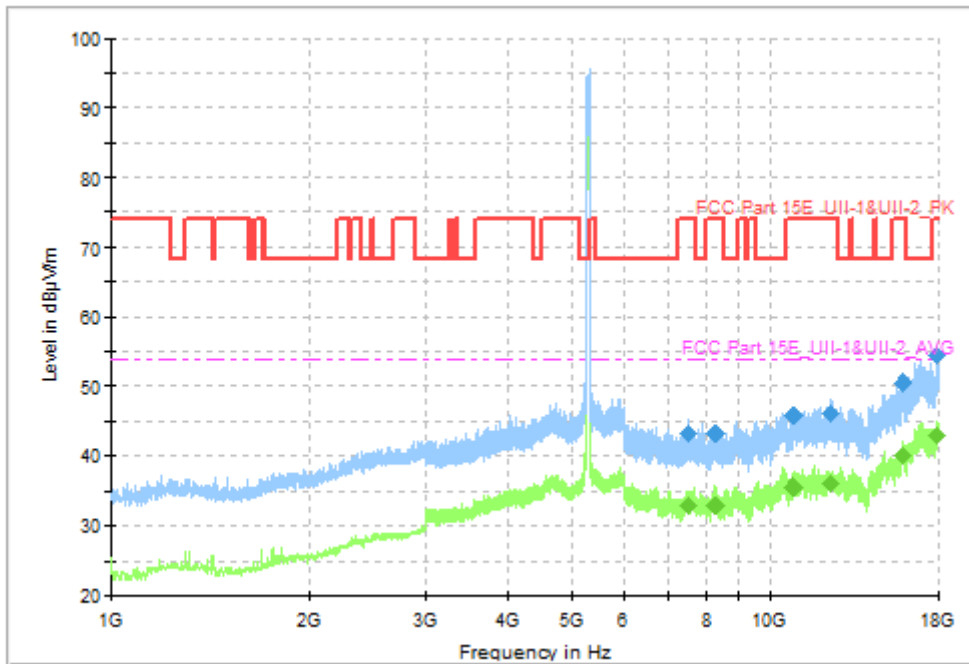


Fig. 51 Transmitter Spurious Emission (802. 11ax-HE80, CH58 5290MHz)

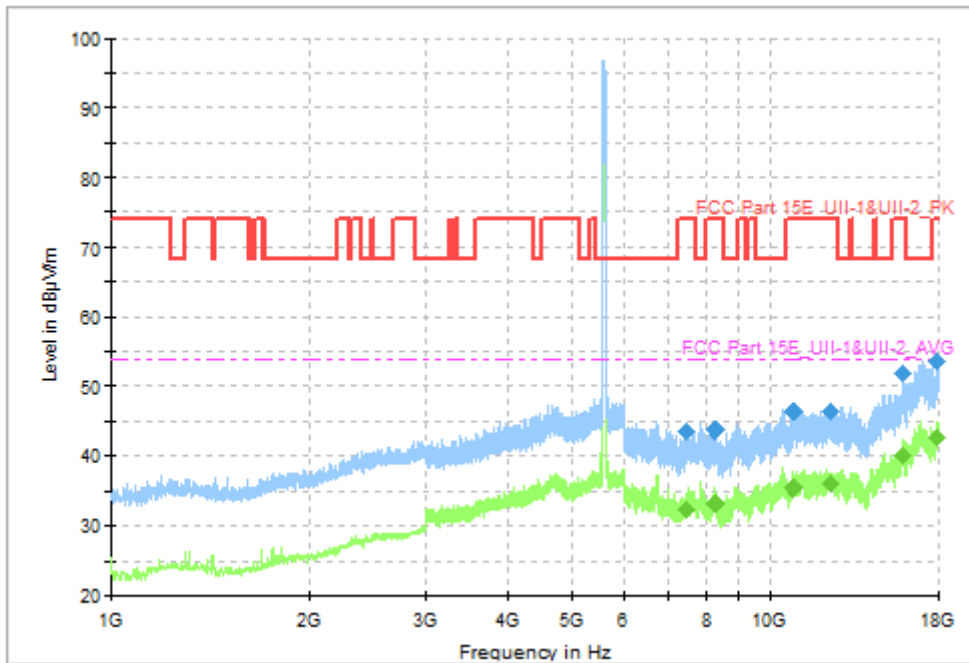


Fig. 52 Transmitter Spurious Emission (802. 11ax-HE80, CH122 5610MHz)

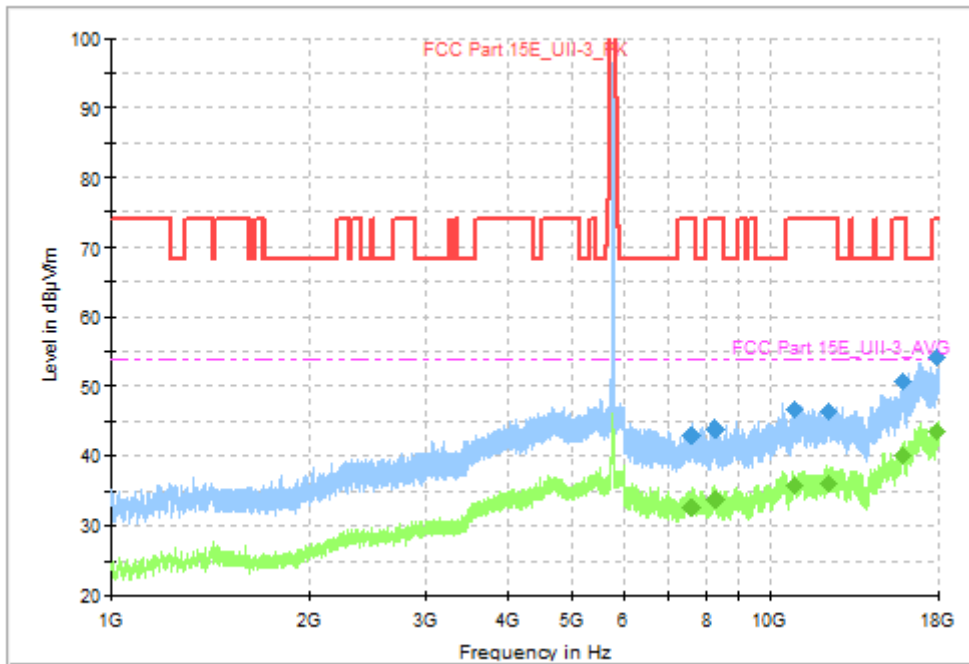


Fig. 53 Transmitter Spurious Emission (802. 11ax-HE80, CH155 5775MHz)

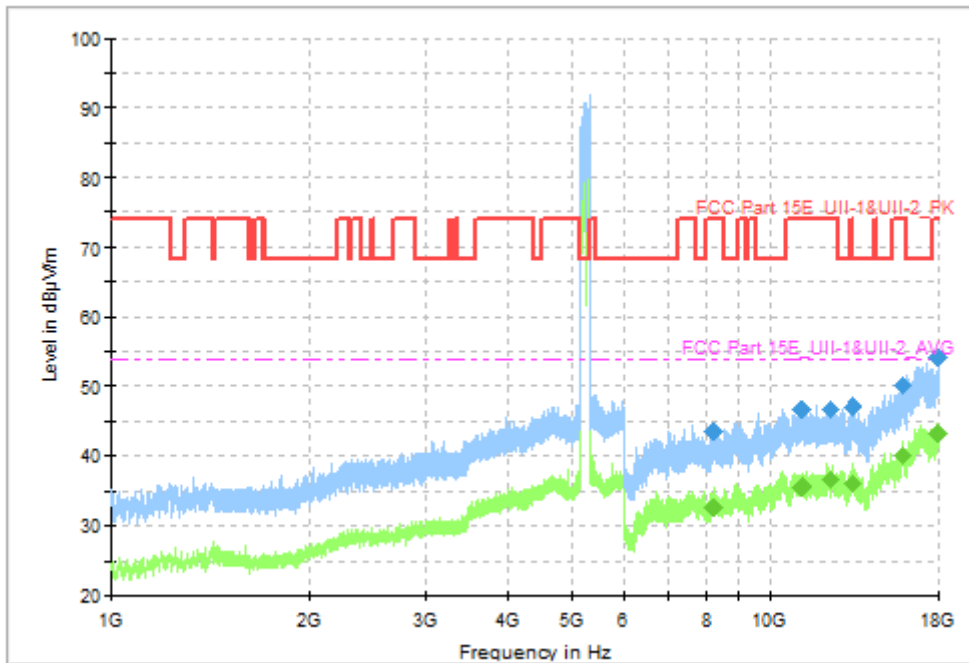


Fig. 54 Transmitter Spurious Emission (802. 11ax-HE160, CH50 5250MHz)

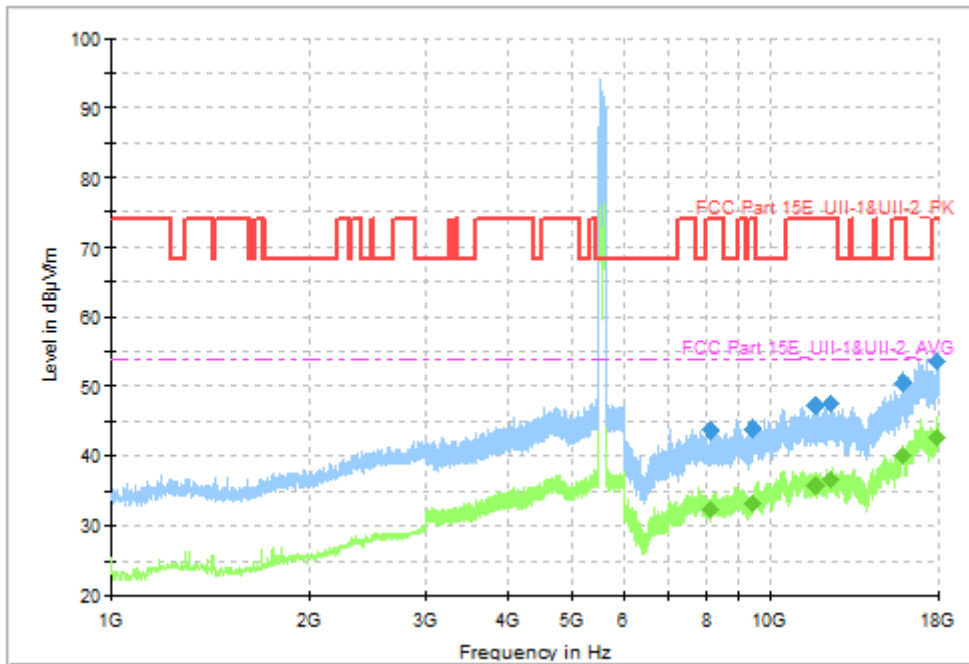


Fig. 55 Transmitter Spurious Emission (802. 11ax-HE160, CH114 5570MHz)

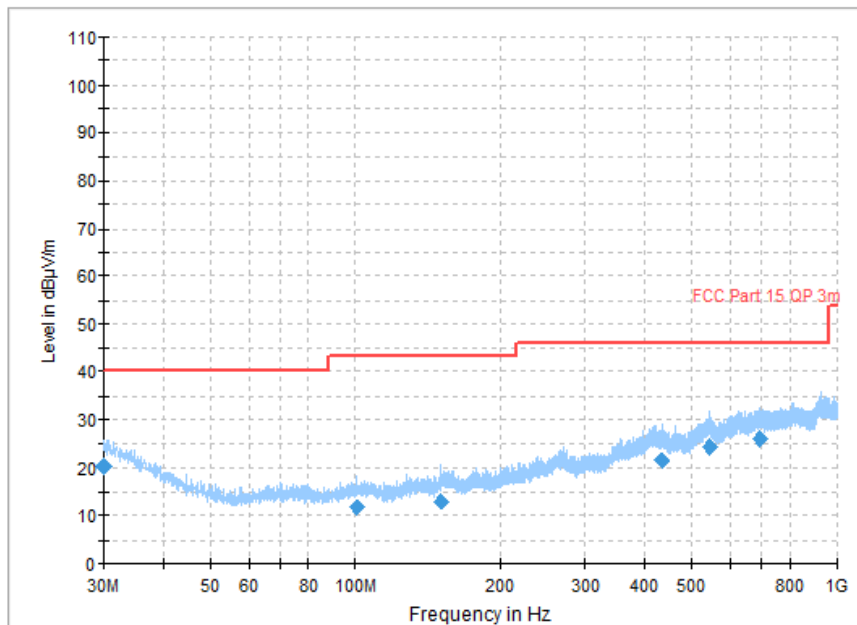
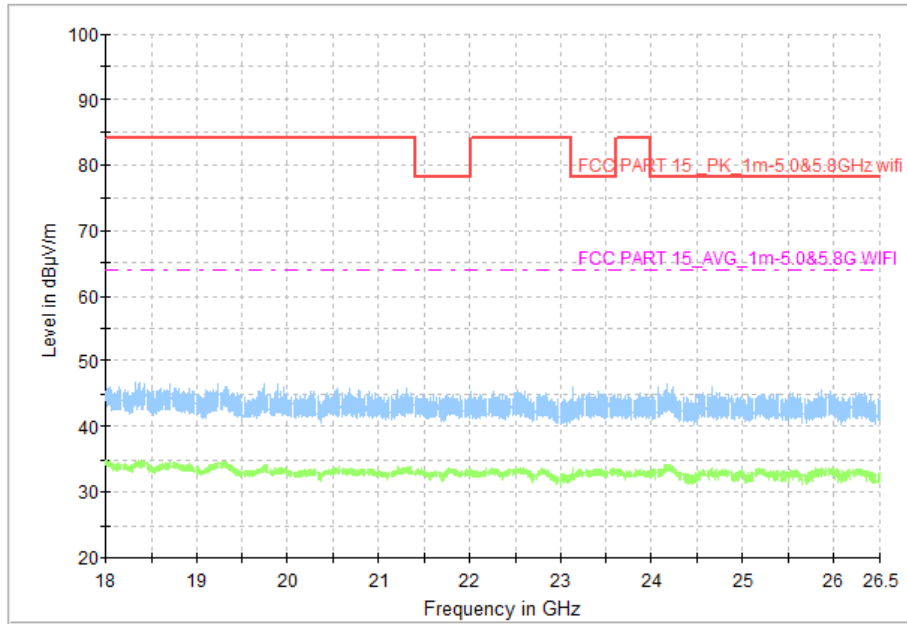
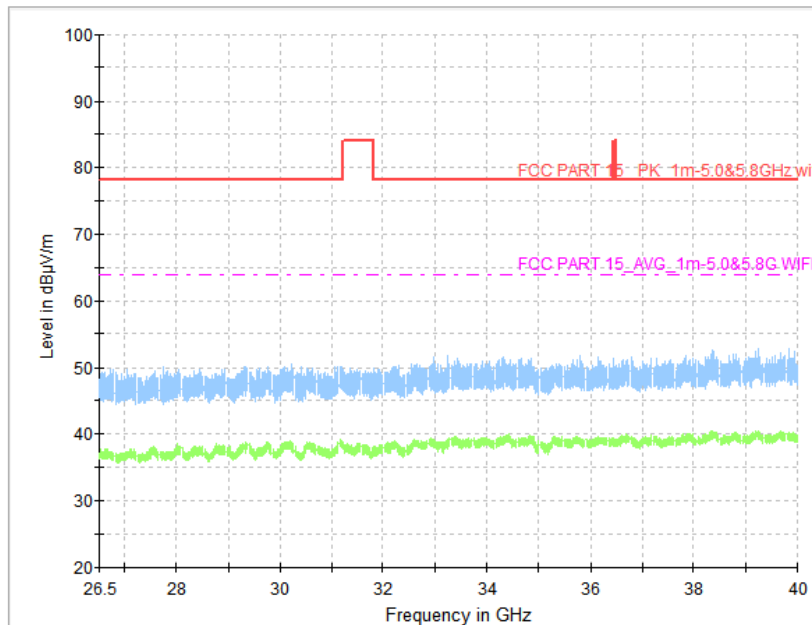


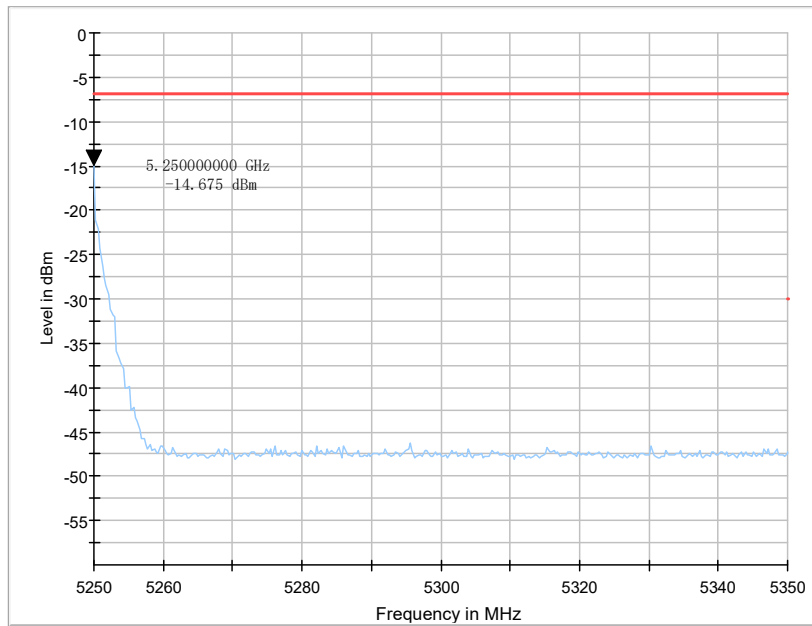
Fig. 56 Transmitter Spurious Emission (All channel, 30MHz~1GHz)



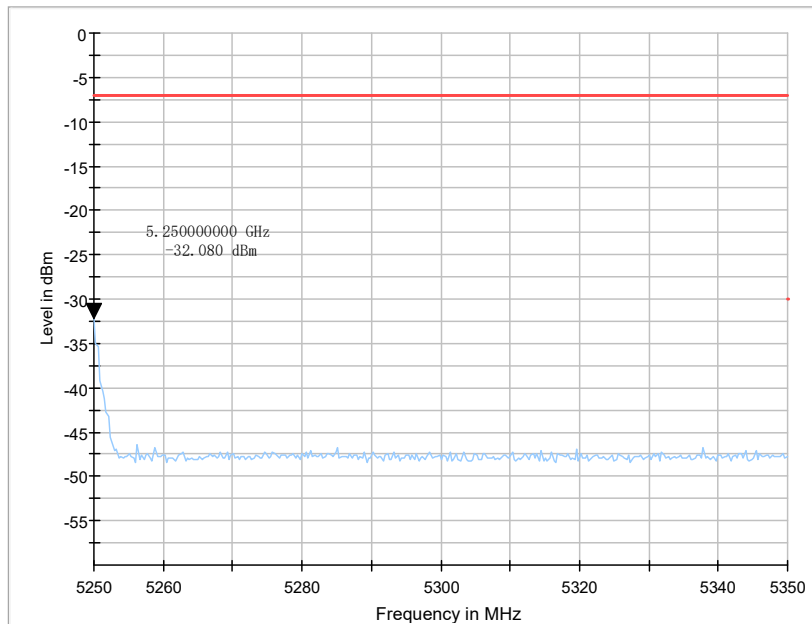
**Fig. 57 Transmitter Spurious Emission (All channel, 18GHz~26.5GHz)**



**Fig. 58 Transmitter Spurious Emission (All channel, 26.5GHz~40GHz)**

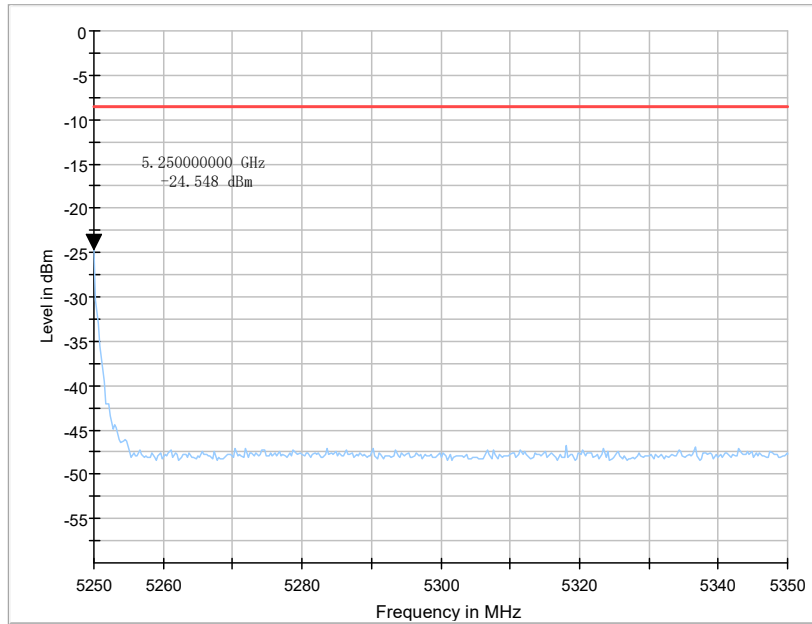


**Fig. 59 Transmitter Spurious Emission (802.11n-HT20, CH48 5240MHz, 5250 MHz -5350 MHz)**



**Fig. 60 Transmitter Spurious Emission (802.11n-HT40, CH46 5230MHz, 5250 MHz -5350 MHz)**





**Fig. 61 Transmitter Spurious Emission (802.11ax-HE80, CH42 5210MHz, 5250 MHz -5350 MHz)**

### A.9. Radiated Spurious Emissions < 30MHz

Method of Measurement: See ANSI C63.10-clause 6.4.

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

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:

##### SISO:

Channel	Frequency Range	Test Results	Conclusion
All Channel	9kHz ~ 30MHz	Fig.1	<b>P</b>

##### MIMO:

Channel	Frequency Range	Test Results	Conclusion
All Channel	9kHz ~ 30MHz	Fig.2	<b>P</b>

Conclusion: **PASS**

Test graphs as below:

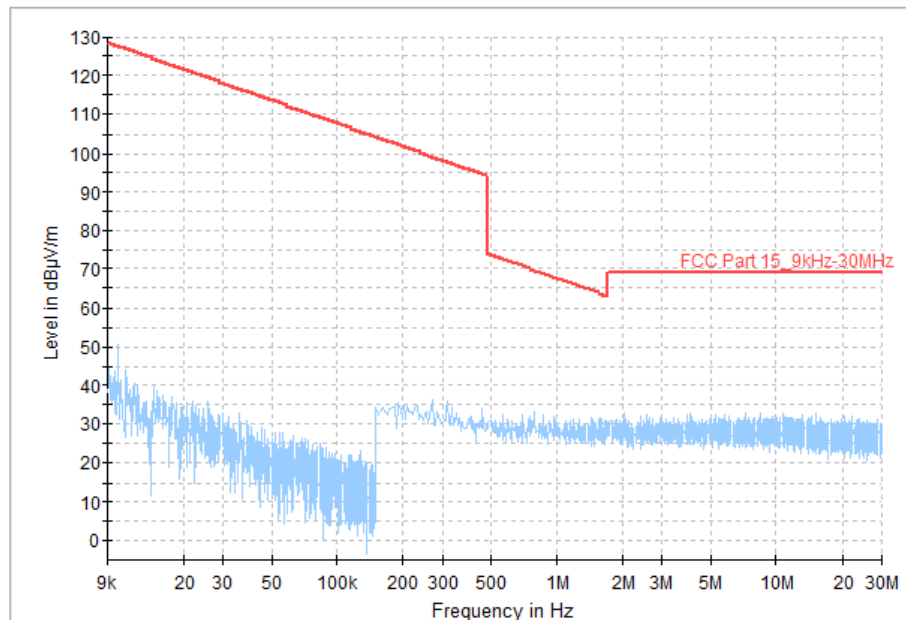
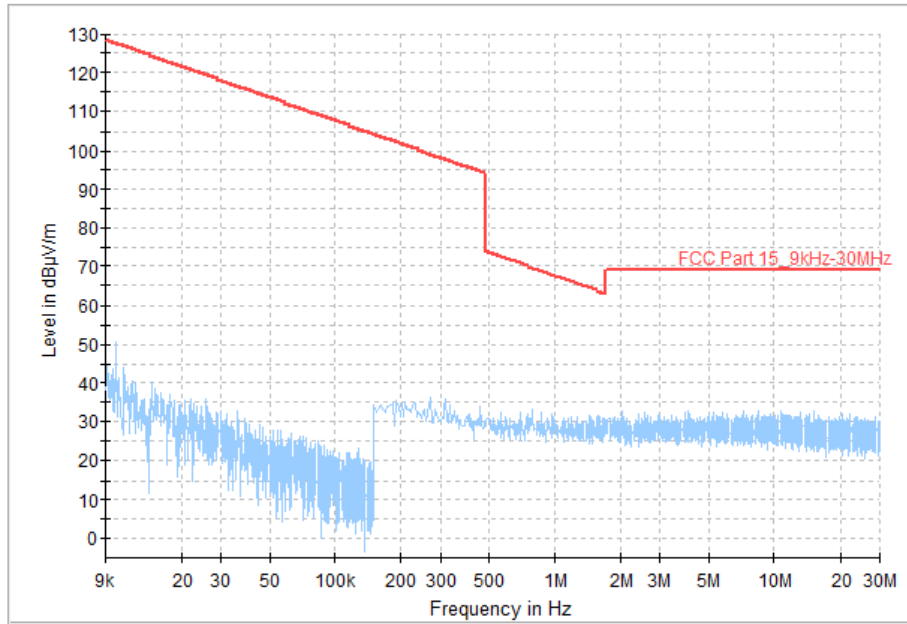


Fig. 1 Radiated Spurious Emission (All Channel, 9kHz ~ 30MHz)



**Fig. 2 Radiated Spurious Emission (All Channel, 9kHz ~ 30MHz)**



**A.10. AC Power Line Conducted Emission**

Method of Measurement: See ANSI C63.10-clause 6.2.

Test Condition:

Voltage(V)	Frequency (Hz)
120	60

Measurement Result and limit:

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Average-peak Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
			Traffic	Idle	
0.15 to 0.5	66 to 56	56 to 46	Fig.1	Fig.2	<b>P</b>
0.5 to 5	56	46			
5 to 30	60	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:

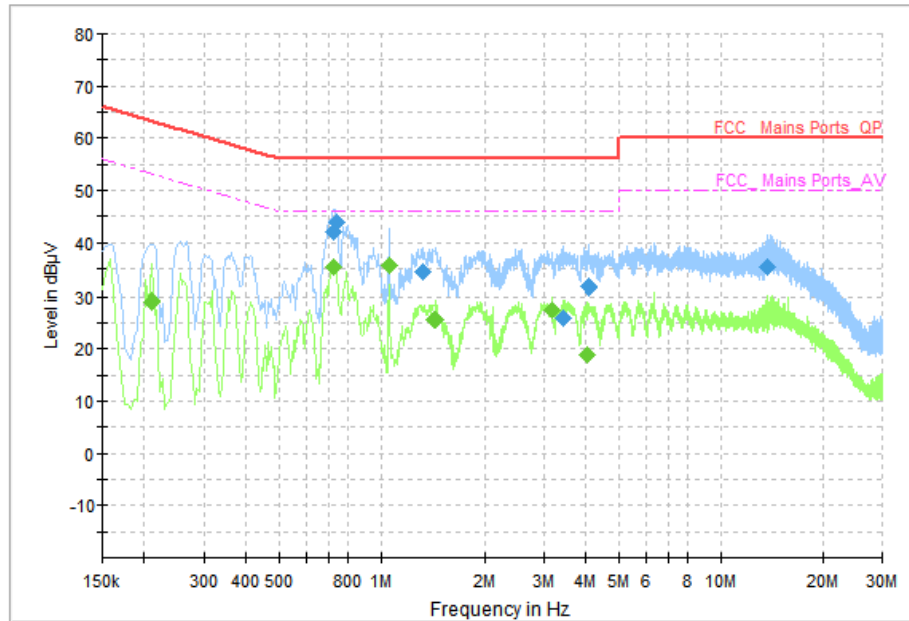


Fig. 1 AC Power line Conducted Emission (Traffic)

Measurement Result: Quasi Peak

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.726000	42.01	56.00	13.99	L1	ON	10
0.738000	43.80	56.00	12.20	N	ON	10
1.326000	34.30	56.00	21.70	N	ON	10
3.418000	25.79	56.00	30.21	N	ON	10
4.050000	31.60	56.00	24.40	N	ON	10
13.770000	35.36	60.00	24.64	N	ON	11

Measurement Result: Average

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.210000	28.92	53.21	24.28	N	ON	10
0.722000	35.32	46.00	10.68	L1	ON	10
1.058000	35.66	46.00	10.34	N	ON	10
1.442000	25.52	46.00	20.48	L1	ON	10
3.166000	27.34	46.00	18.66	L1	ON	10
4.026000	18.83	46.00	27.17	N	ON	10

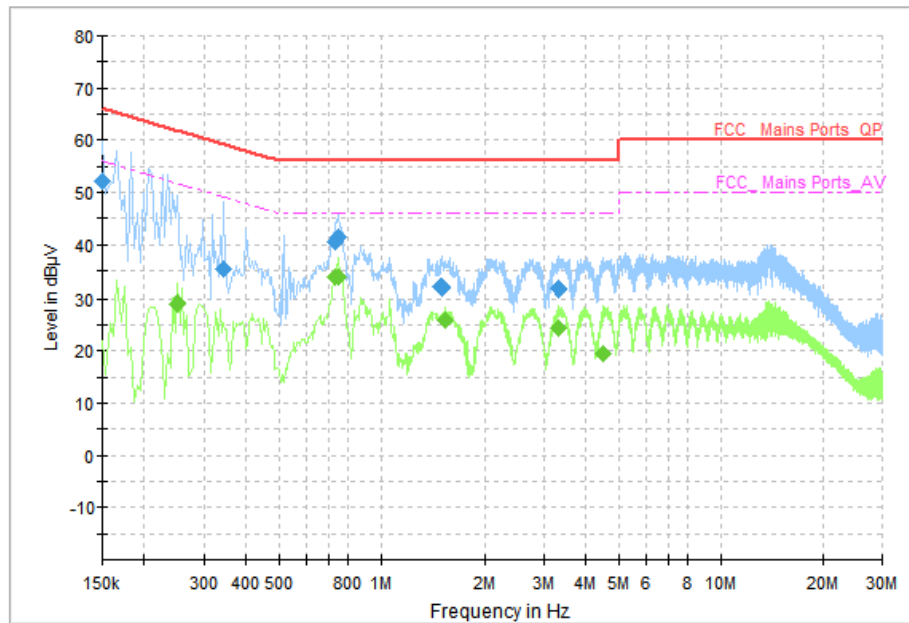


Fig. 2 AC Power line Conducted Emission (Idle)

Measurement Result: Quasi Peak

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.150000	52.27	66.00	13.73	L1	ON	10
0.342000	35.40	59.16	23.75	L1	ON	10
0.734000	40.69	56.00	15.31	L1	ON	10
0.746000	41.32	56.00	14.68	N	ON	10
1.494000	31.92	56.00	24.08	N	ON	10
3.318000	31.76	56.00	24.24	N	ON	10

Measurement Result: Average

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.250000	28.96	51.76	22.80	L1	ON	10
0.734000	33.77	46.00	12.23	L1	ON	10
0.746000	33.96	46.00	12.04	N	ON	10
1.534000	25.98	46.00	20.02	N	ON	10
3.326000	24.45	46.00	21.55	N	ON	10
4.502000	19.49	46.00	26.51	N	ON	10



### **A.11. 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 \*\*\***