



# TEST REPORT

No. B22N02534-WLAN 5GHz

for

**TCL Communication Ltd.**

**GSM/UMTS/LTE /NR Mobile phone**

**Model Name: T609DL**

with

**Hardware Version: 04**

**Software Version:JSS8**

**FCC ID: 2ACCJH168**

**Issued Date: 2022-12-15**

**Designation Number: CN1210**

**Note:**

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

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No. B22N02534-WLAN 5GHz

## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Description</b>	<b>Issue Date</b>
B22N02534-WLAN 5GHz	Rev.0	1st edition	2022-12-15

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

## CONTENTS

1.	SUMMARY OF TEST REPORT .....	4
1.1.	TEST ITEMS .....	4
1.2.	TEST STANDARDS .....	4
1.3.	TEST RESULT.....	4
1.4.	TESTING LOCATION.....	4
1.5.	PROJECT DATA.....	4
1.6.	SIGNATURE .....	4
2.	CLIENT INFORMATION .....	5
2.1.	APPLICANT INFORMATION.....	5
2.2.	MANUFACTURER INFORMATION.....	5
3.	EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE) .....	6
3.1.	ABOUT EUT .....	6
3.2.	INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST.....	6
3.3.	INTERNAL IDENTIFICATION OF AE USED DURING THE TEST .....	6
3.4.	GENERAL DESCRIPTION.....	7
4.	REFERENCE DOCUMENTS .....	8
4.1.	DOCUMENTS SUPPLIED BY APPLICANT .....	8
4.2.	REFERENCE DOCUMENTS FOR TESTING .....	8
5.	TEST RESULTS.....	9
5.1.	TESTING ENVIRONMENT.....	9
5.2.	TEST RESULTS.....	9
5.3.	STATEMENTS .....	9
7.	LABORATORY ENVIRONMENT .....	11
8.	MEASUREMENT UNCERTAINTY.....	12
	ANNEX A: DETAILED TEST RESULTS.....	13
A.1.	MEASUREMENT METHOD .....	13
A.1.	BAND EDGES COMPLIANCE.....	16
A.2.	TRANSMITTER SPURIOUS EMISSION.....	26
A.3.	RADIATED SPURIOUS EMISSIONS < 30MHZ .....	44
A.4.	AC POWER LINE CONDUCTED EMISSION.....	46



## 1. Summary of Test Report

### 1.1. Test Items

Description GSM/UMTS/LTE /NR Mobile phone  
Model Name T609DL  
Applicant's name TCL Communication Ltd.  
Manufacturer's Name TCL Communication Ltd.

### 1.2. Test Standards

FCC Part15-2021; FCC 06-96-2006; ANSI C63.10-2013; KDB789033-V02r01; KDB 905462-D02.

### 1.3. Test Result

**Pass**

Please refer to "5.2. Test Results"

### 1.4. Testing Location

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

### 1.5. Project data

Testing Start Date: 2022-12-06  
Testing End Date: 2022-12-14

### 1.6. Signature

Huang Kaiyang  
(Prepared this test report)

Huang Yuqing  
(Reviewed this test report)

Cao Junfei  
(Approved this test report)



## **2. Client Information**

### **2.1. Applicant Information**

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### **2.2. Manufacturer Information**

Company Name: TCL Communication Ltd.  
Address: 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong  
Contact Person: Annie Jiang  
E-Mail: nianxiang.jiang@tcl.com  
Telephone: +86 755 3661 1621  
Fax: +86 755 3661 2000-81722



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

#### **3.1. About EUT**

Description	GSM/UMTS/LTE /NR Mobile phone
Model Name	T609DL
RF Protocol	IEEE 802.11a/n-HT20/n-HT40/ac-VHT20/ac-VHT40/ac-VHT80
WLAN Frequency Range	ISM Bands: 5150MHz~5250MHz; 5250MHz~5350MHz; 5470MHz~5725MHz; 5725MHz~5850MHz.
Type of modulation	OFDM
Antenna Type	Integrated antenna
Power Supply	3.85V DC by Battery
FCC ID	2ACCJH168
Device Type (DFS)	Client without radar detection(only support client mode)
Condition of EUT as received	No abnormality in appearance

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

#### **3.2. Internal Identification of EUT used during the test**

EUT ID*	SN or IMEI	HW Version	SW Version	Date of Receipt
UT03aa	016320000014344	04	JSS8	2022-12-05
UT05aa	016320000013742	04	JSS8	2022-12-05

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

UT05aa is used for radiation test, and UT03aa is used for AC Power line Conducted Emission test.

#### **3.3. Internal Identification of AE used during the test**

AE No.	Description
AE1	Battery
AE2	Charger
AE3	USB Cable
AE1-1	
Model	TLp048D7
S/N	CAC4850007C7
Manufacturer	VEKEN
Capacity	5000mAh
Nominal Voltage	3.85 V
AE2-1	
Model	CBA0064BGTC5
Manufacturer	PUAN
AE2-2	



Model CBA0064BGTC1  
Manufacturer BYD

AE3-1

Model CDA0000198C1  
Manufacturer JUWEI

AE3-2

Model CDA0000198C2  
Manufacturer SHENGHUA

AE3-3

Model CDA0000201C2  
Manufacturer SHENGHUA

AE3-4

Model CDA0000202C1  
Manufacturer JUWEI

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

AE: ancillary equipment.

### **3.4. General Description**

The Equipment under Test (EUT) is a model of GSM/UMTS/LTE /NR Mobile phone with integrated antenna and battery.

It consists of normal options: Battery, Charger, and USB Cable.

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

Samples undergoing test were selected by the client.

## 4. REFERENCE DOCUMENTS

### 4.1. Documents supplied by applicant

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

### 4.2. Reference Documents for testing

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

Reference	Title	Version
FCC Part15	FCC CFR 47,Part 15,Subpart C	2021
	FCC CFR 47,Part 15,Subpart E	
FCC 06-96	Revision of Parts 2 and 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) devices in the 5 GHz band	2006
ANSI C63.10	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices	2013
KDB 789033	GUIDELINES FOR COMPLIANCE TESTING OF UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII) DEVICES PART 15, SUBPART E	V02r01
KDB 905462	Compliance Measurement Procedures for Unlicensed-national Information Infrastructure Devices Operating in the 5250-5350 MHz and 5470-5725 MHz Bands Incorporating Dynamic Frequency Selection	D02

## 5. Test Results

### 5.1. Testing Environment

Normal Temperature: 15~35°C

Relative Humidity: 20~75%

### 5.2. Test Results

No.	Test cases	Sub-clause of Part15E	Verdict
1	Band edge compliance	15.209	P
2	Transmitter Spurious Emission - Radiated	15.209	P
3	AC Power line Conducted	15.207	P

See **ANNEX A** for details.

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

### 5.3. Statements

SAICT has evaluated the test cases requested by the applicant/manufacturer 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. Measuring Apparatus Utilized

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1	Test Receiver	ESR7	101676	Rohde & Schwarz	2023-11-23	1 year
2	BiLog Antenna	3142E	0224831	ETS-Lindgren	2024-05-27	3 years
3	Horn Antenna	3117	00066577	ETS-Lindgren	2025-04-17	3 years
4	Horn Antenna	QSH-SL-1 8-26-S-20	17013	Q-par	2023-01-06	3 years
5	Horn Antenna	QSH-SL-1 8-40-K-SG	15979	Q-par	2023-01-06	3 years
6	Anechoic Chamber	FACT3-2.0	1285	ETS-Lindgren	2023-05-29	2 years
7	Spectrum Analyzer	FSV40	101192	Rohde & Schwarz	2023-01-12	1 year
8	Loop Antenna	HLA6120	35779	TESEQ	2025-05-10	3 years
9	Test Receiver	ESCI	100702	Rohde & Schwarz	2023-01-12	1 year
10	LISN	ENV216	102067	Rohde & Schwarz	2023-07-14	1 year

### Test software

No.	Equipment	Manufacturer	Version
1	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** did not exceed following limits along the EMC testing:

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	> 2MΩ
Ground system resistance	< 4Ω

**Anechoic chamber (FACT3-2.0)** did not exceed following limits along the EMC testing:

9.10m×6.10m×5.60m (L×W×H)

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	> 2MΩ
Ground system resistance	< 4Ω
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 ( $k=2$ )	
Band Edges Compliance/ Transmitter Spurious Emission - Radiated	$9\text{kHz} \leq f < 30\text{MHz}$	1.79dB
	$30\text{MHz} \leq f < 1\text{GHz}$	4.86dB
	$1\text{GHz} \leq f < 18\text{GHz}$	4.82dB
	$18\text{GHz} \leq f \leq 40\text{GHz}$	2.90dB
AC Power line Conducted Emission	$150\text{kHz} \leq f \leq 30\text{MHz}$	2.62dB

## **ANNEX A: Detailed Test Results**

### **A.1. Measurement Method**

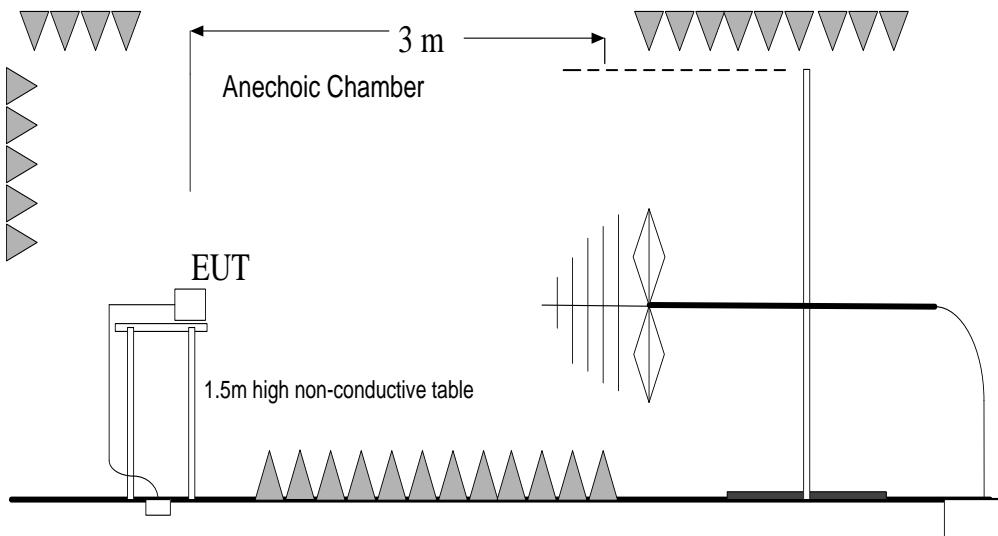
#### **Radiated Emission Measurements**

##### **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.

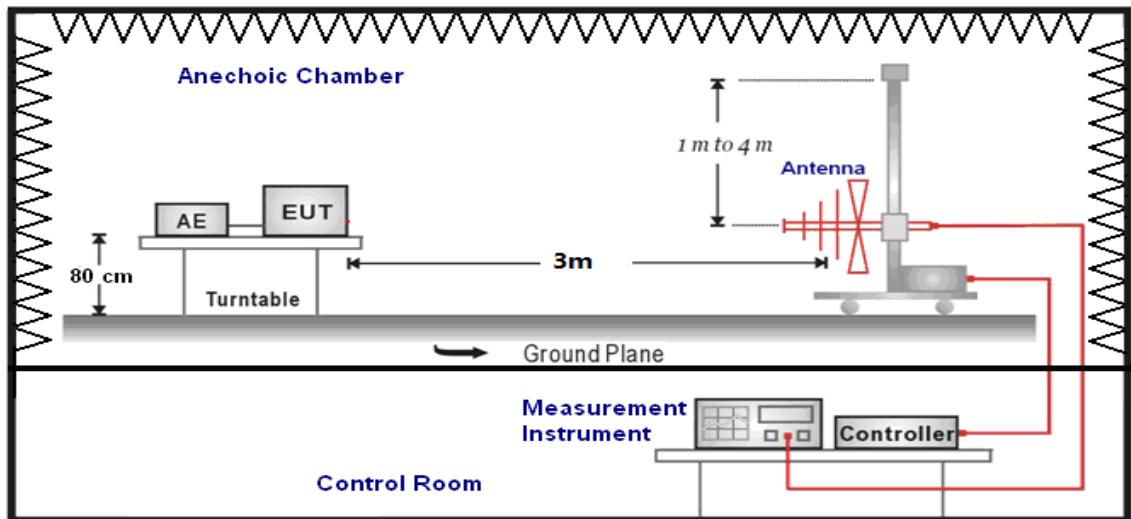
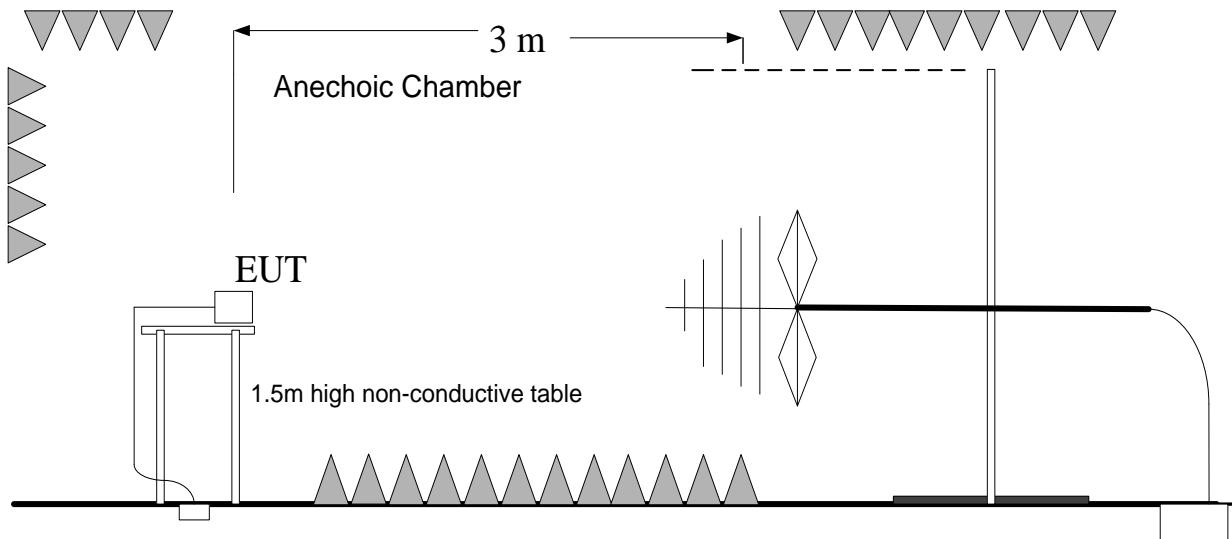
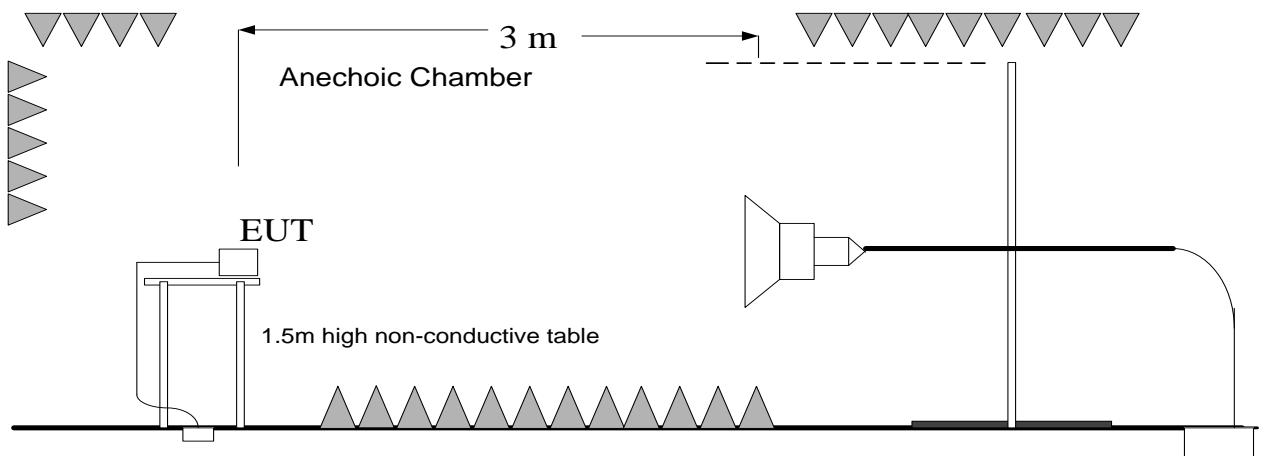
Detected emissions were maximized at each frequency by rotating the EUT and adjusting the receiver antenna polarization.



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

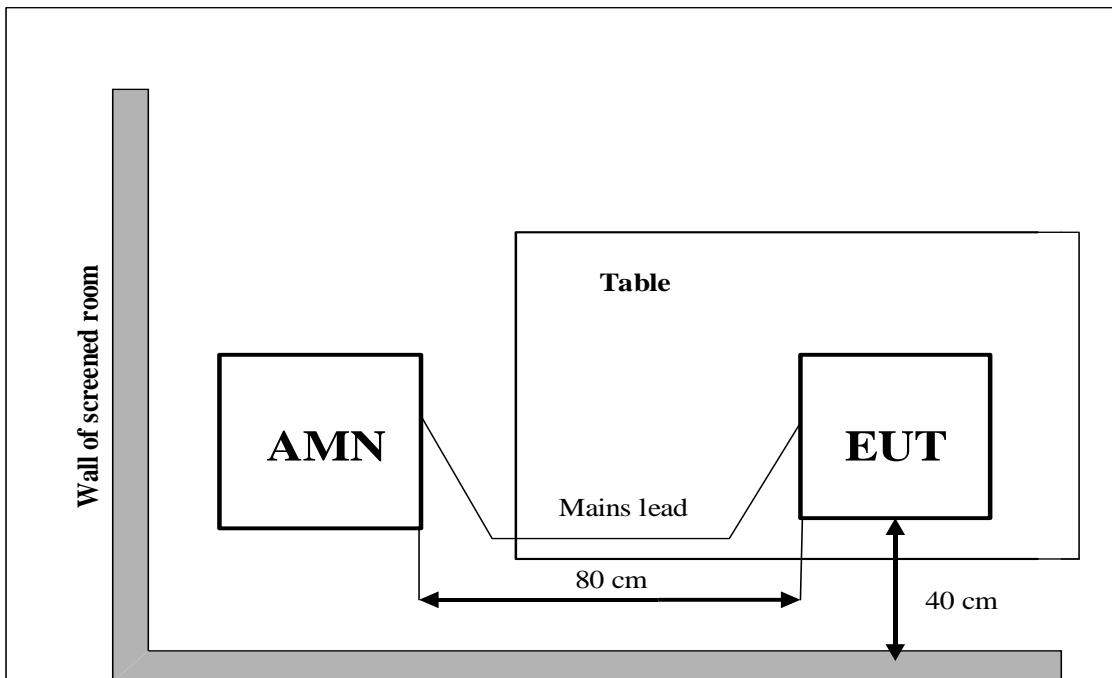
The EUT are measured in a anechoic chamber. The EUT is placed on a non-conductive stand of 80cm high, and at a measurement distance of 3m from the receiving antenna. The center of the receiving antenna is 1.0 meter to 4.0 meter above the ground. The test setup refers to figure below. Detected emissions 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.1. Band Edges Compliance

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

**Measurement Limit:**

Standard	Limit (dB $\mu$ V/m)	
FCC 47 CFR Part 15.209	Peak	74
	Average	54

The measurement is made according to KDB 789033

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)).

**Measurement Result:**

Mode	Frequency (MHz)	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
802.11ac-VHT40	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
802.11ac-VHT80	5210MHz(CH42)	Fig.13	P
	5290MHz(CH58)	Fig.14	P
	5530MHz(CH106)	Fig.15	P
	5610MHz(CH122)	Fig.16	P
	5775MHz(CH155)	Fig.17	P

See below for test graphs.

**Conclusion: PASS**

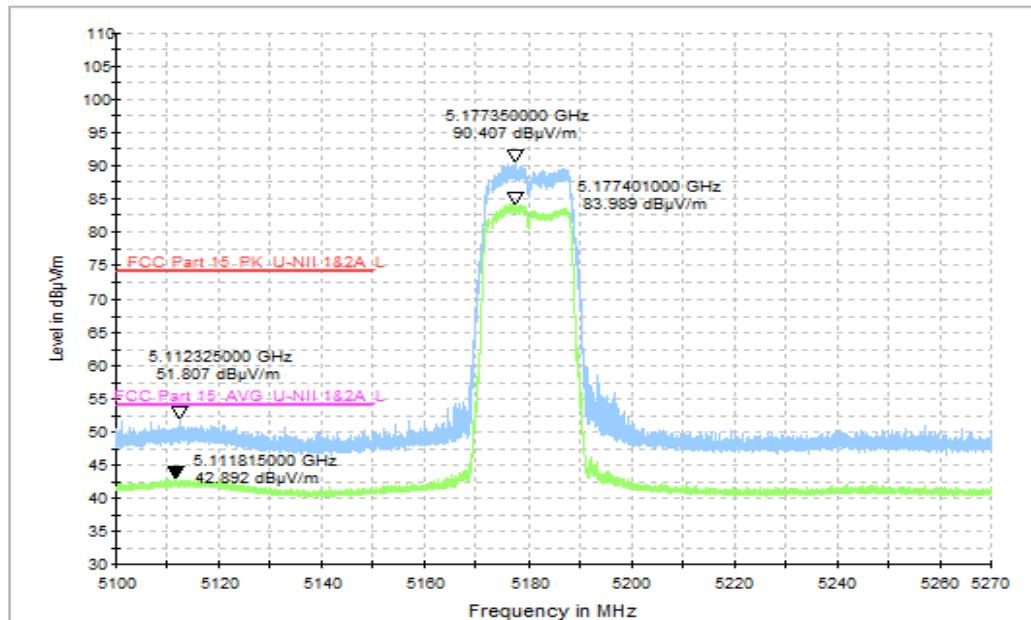


Fig. 1 Band Edges (802.11a, CH36 5180MHz)

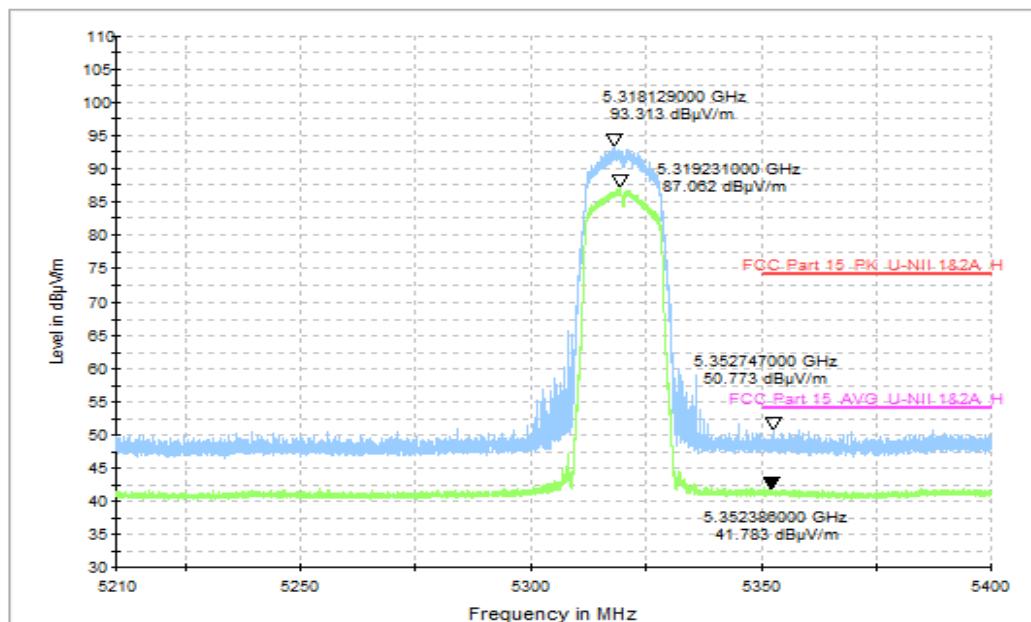


Fig. 2 Band Edges (802.11a, CH64 5320MHz)

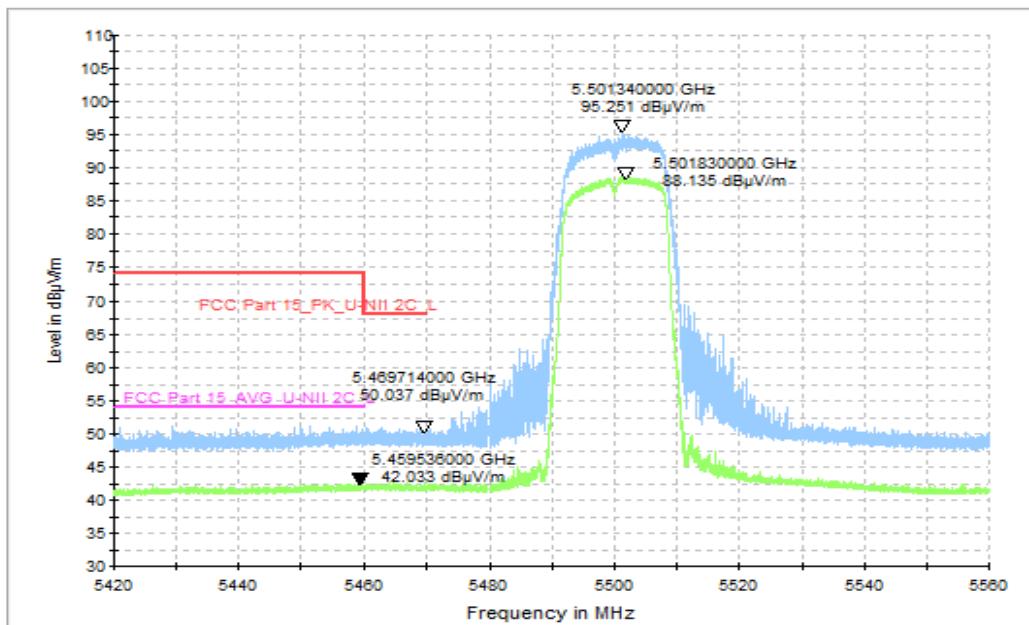


Fig. 3 Band Edges (802.11a, CH100 5500MHz)

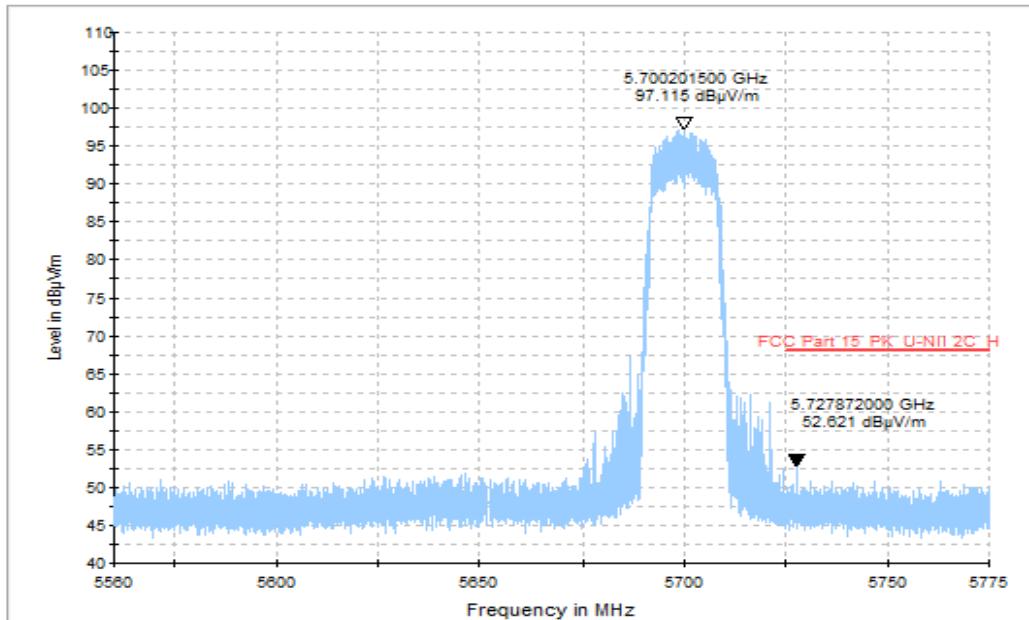


Fig. 4 Band Edges (802.11a, CH140 5700MHz)

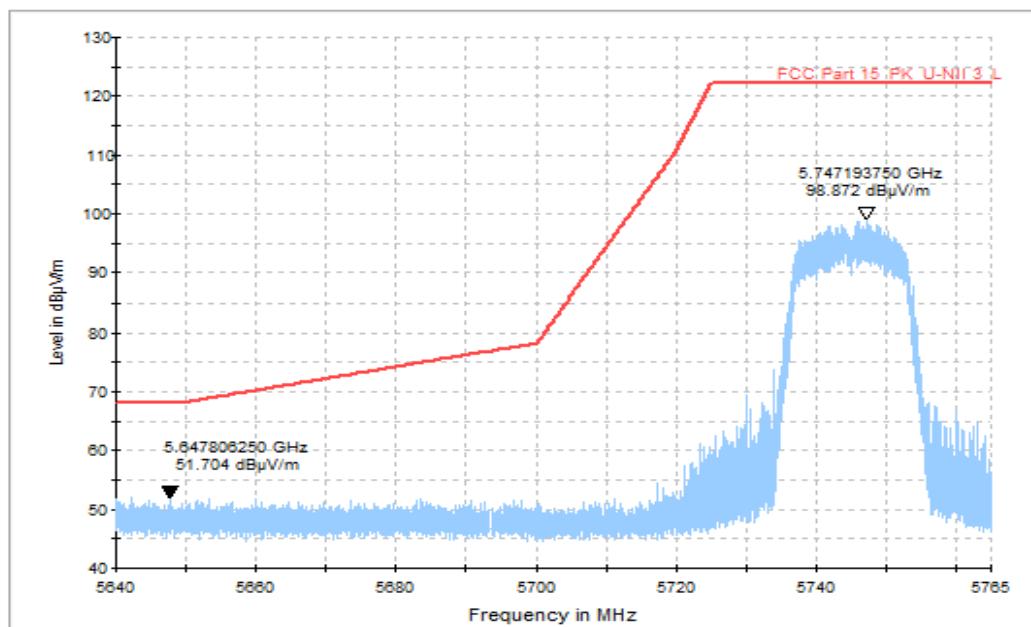


Fig. 5 Band Edges (802.11a, CH149 5745MHz)

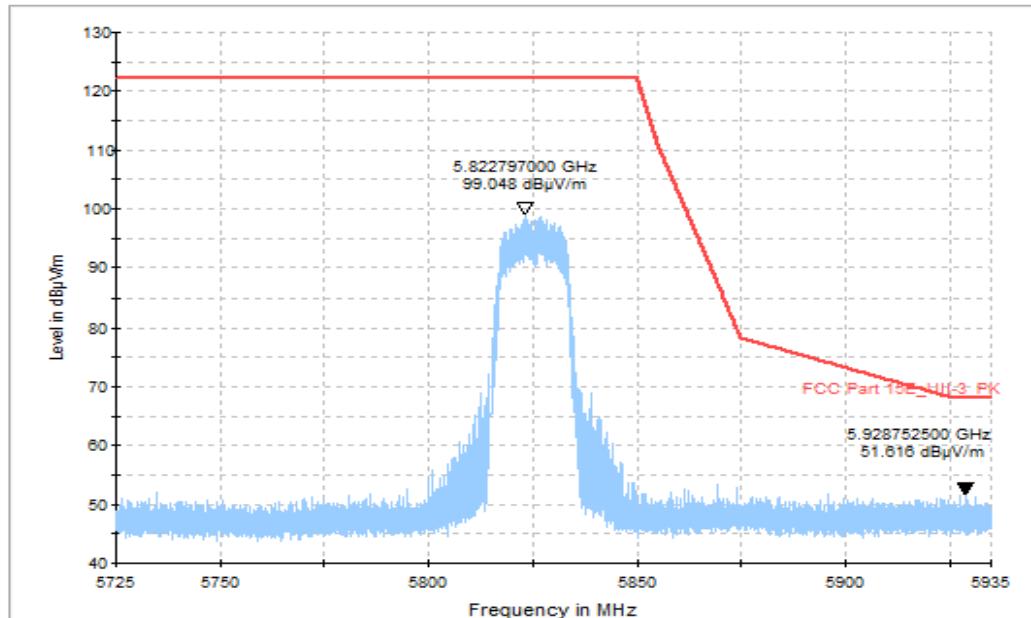


Fig. 6 Band Edges (802.11a, CH165 5825MHz)

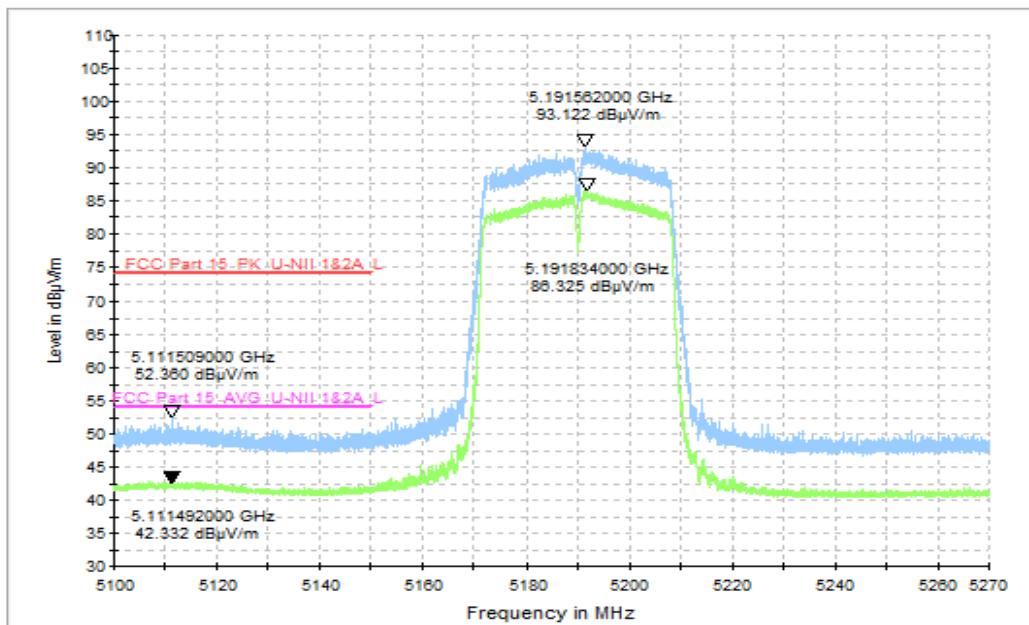


Fig. 7 Band Edges (802.11ac-VHT40, CH38 5190MHz)

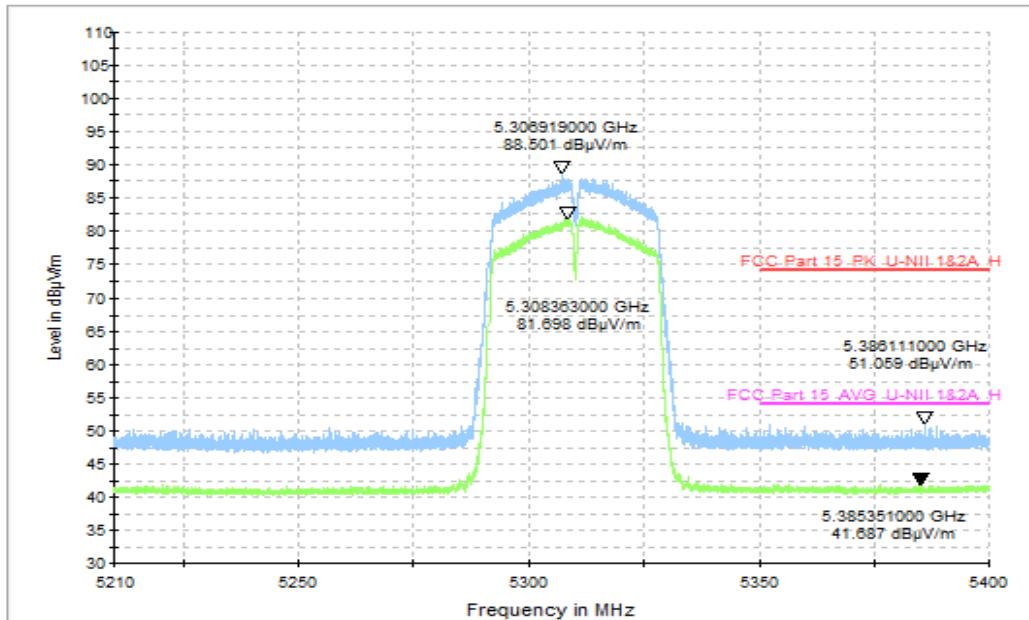


Fig. 8 Band Edges (802.11ac-VHT40, CH62 5310MHz)

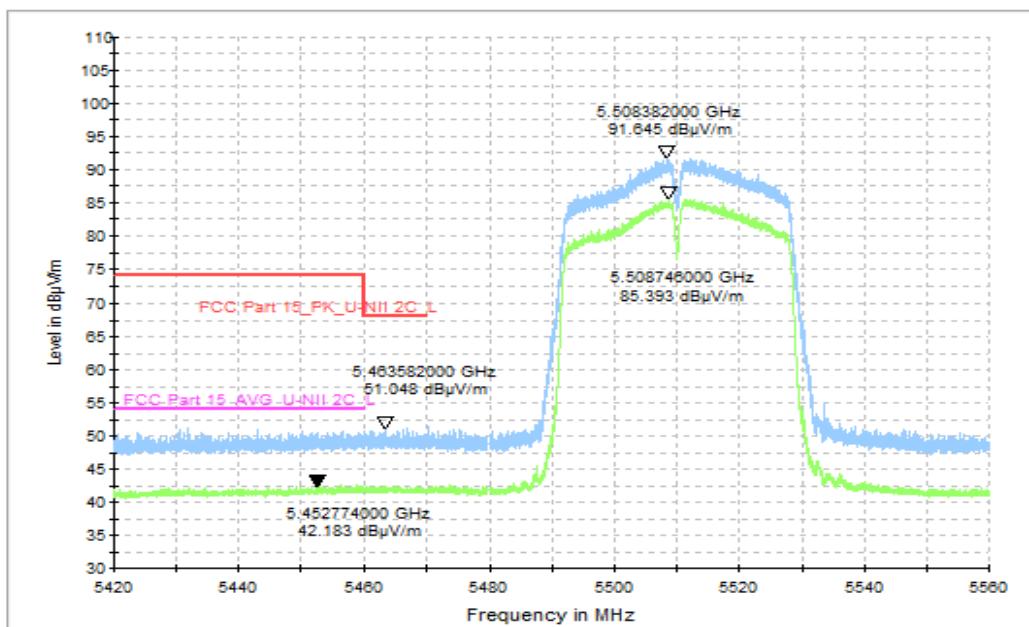


Fig. 9 Band Edges (802.11ac-VHT40, CH102 5510MHz)

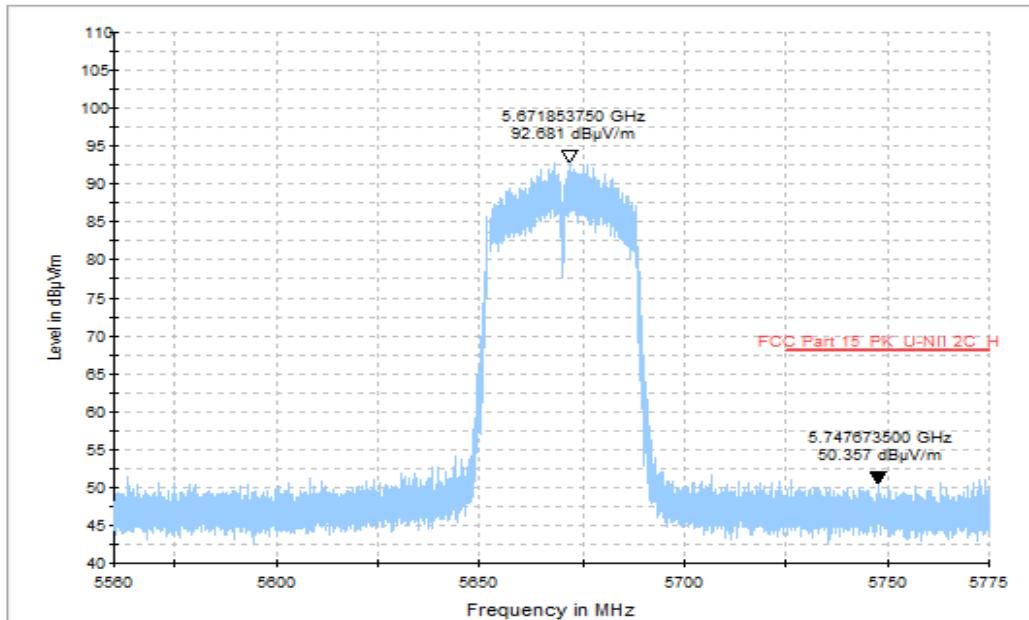


Fig. 10 Band Edges (802.11ac-VHT40, CH134 5670MHz)

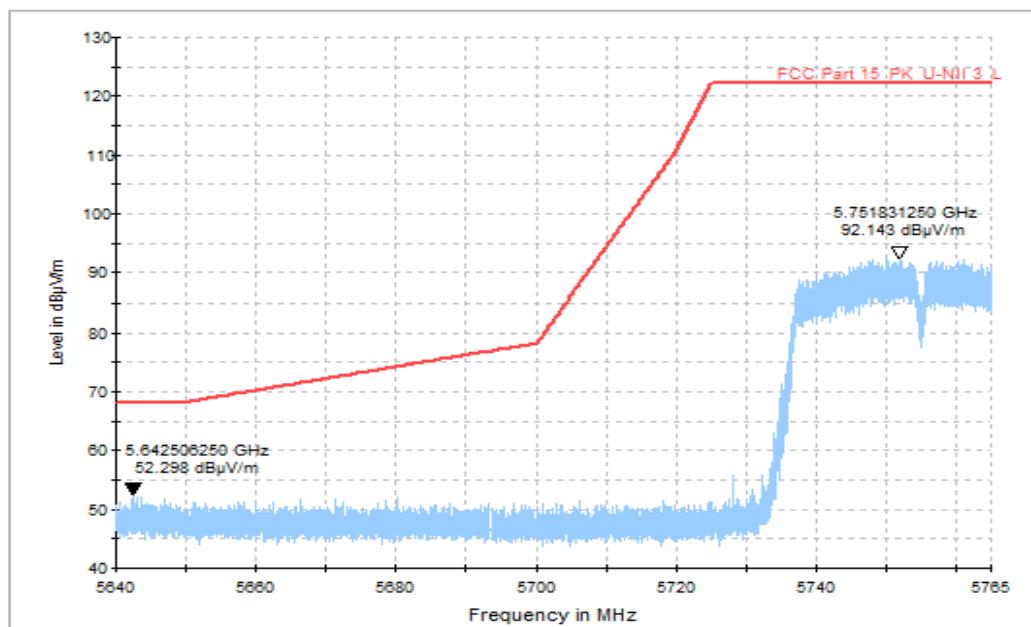


Fig. 11 Band Edges (802.11ac-VHT40, CH151 5755MHz)

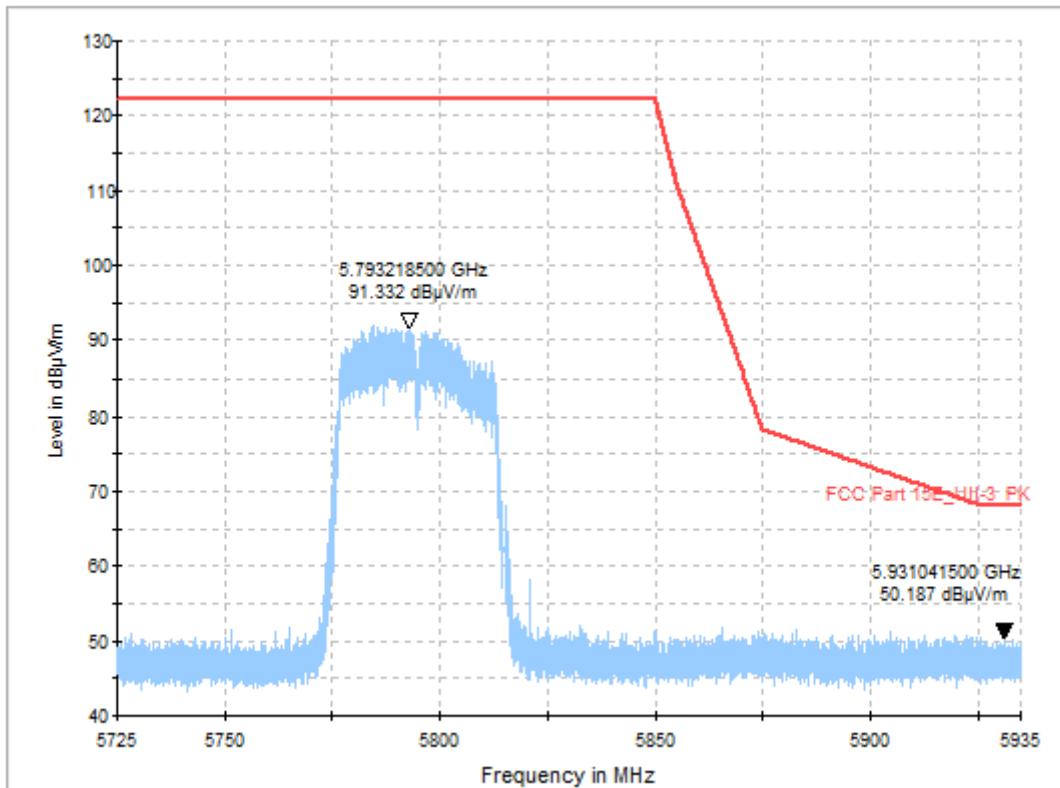


Fig. 12 Band Edges (802.11ac-VHT40, CH159 5795MHz)

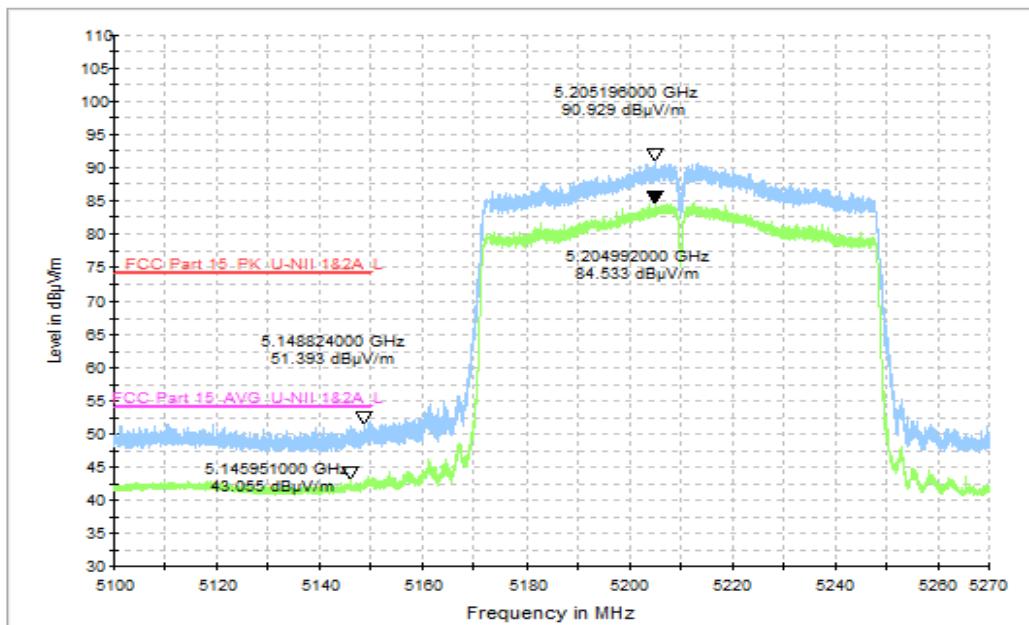


Fig. 13 Band Edges (802.11ac-VHT80, CH42 5210MHz)

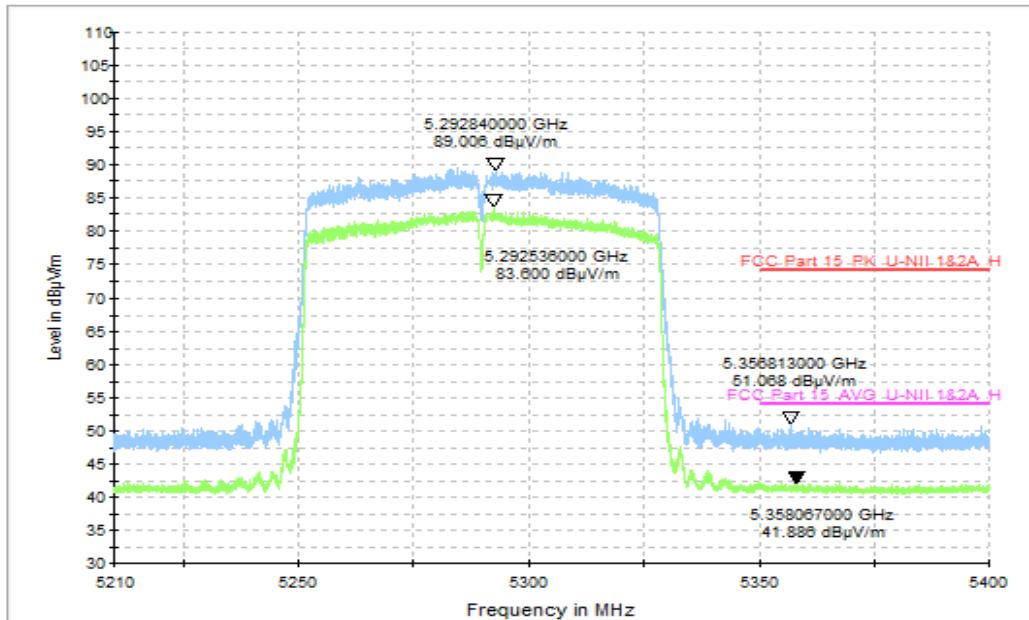


Fig. 14 Band Edges (802.11ac-VHT80, CH58 5290MHz)

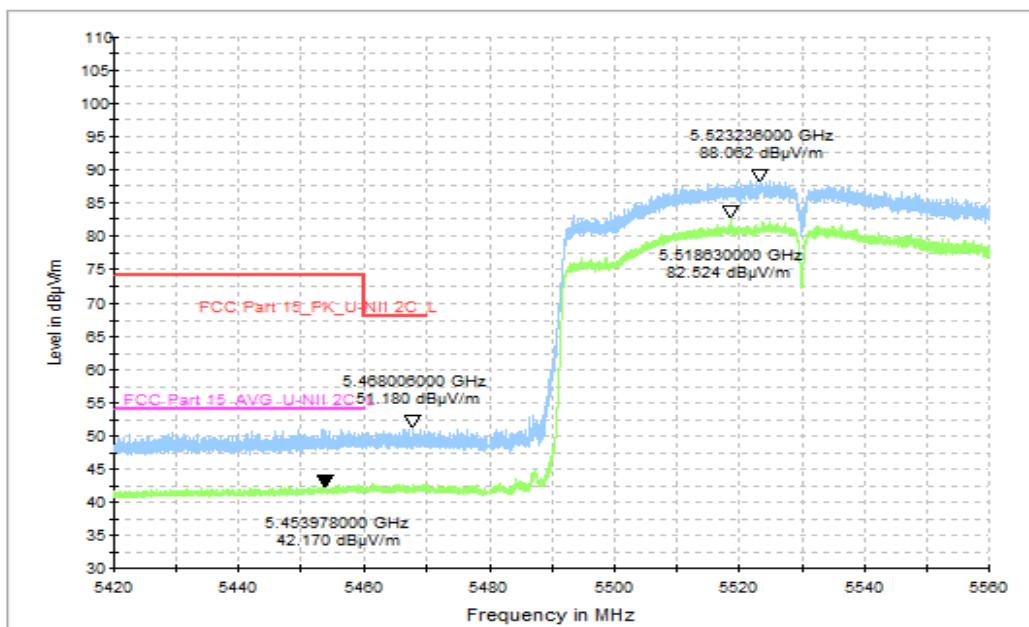


Fig. 15 Band Edges (802.11ac-VHT80, CH106 5530MHz)

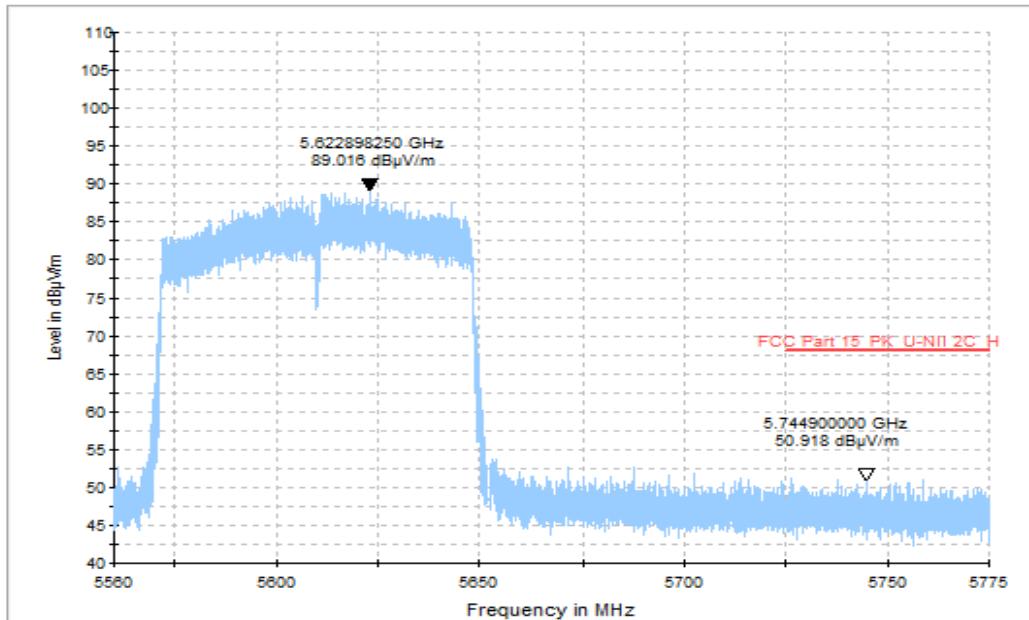


Fig. 16 Band Edges (802.11ac-VHT80, CH122 5610MHz)

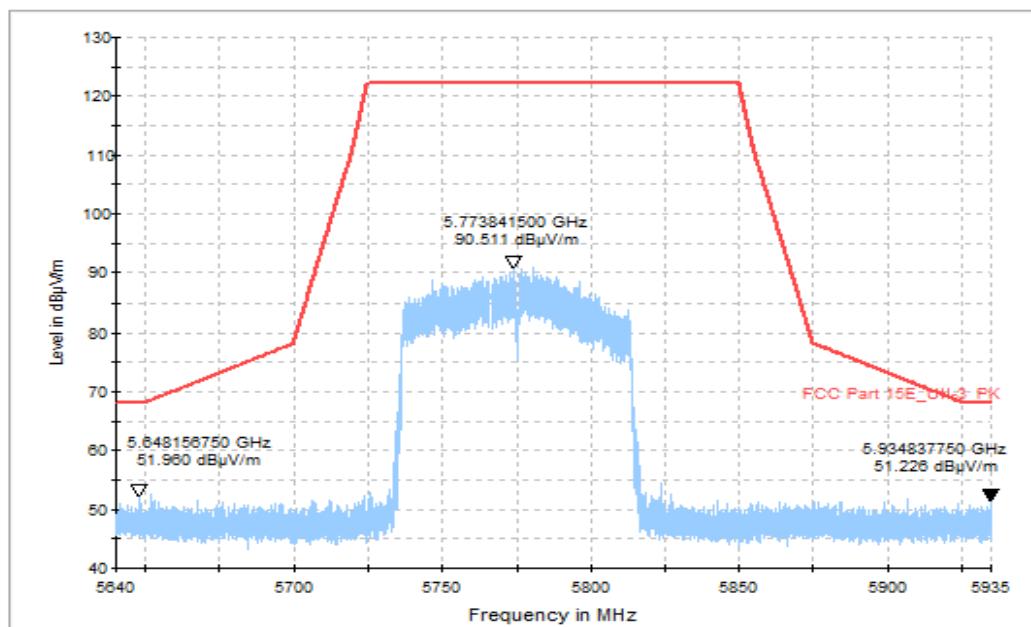


Fig. 17 Band Edges (802.11ac-VHT80, CH155 5775MHz)



## A.2. 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 (dB $\mu$ V/m)	
FCC 47 CFR Part 15.209	Peak	74
	Average	54

The measurement is made according to KDB 789033.

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 (dB $\mu$ V/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:

Mode	Frequency (MHz)	Frequency Range	Test Results	Conclusion
802.11a	5180MHz(Ch36)	1 GHz ~18 GHz	Fig.18	P
	5200MHz(Ch40)	1 GHz ~18 GHz	Fig.19	P
	5240MHz(Ch48)	1 GHz ~18 GHz	Fig.20	P
	5260MHz(Ch52)	1 GHz ~18 GHz	Fig.21	P
	5280MHz(Ch56)	1 GHz ~18 GHz	Fig.22	P
	5320MHz(Ch64)	1 GHz ~18 GHz	Fig.23	P
	5500MHz(Ch100)	1 GHz ~18 GHz	Fig.24	P
	5600MHz(Ch120)	1 GHz ~18 GHz	Fig.25	P
	5700MHz(Ch140)	1 GHz ~18 GHz	Fig.26	P
	5745MHz(Ch149)	1 GHz ~18 GHz	Fig.27	P
	5785MHz(Ch157)	1 GHz ~18 GHz	Fig.28	P
	5825MHz(Ch165)	1 GHz ~18 GHz	Fig.29	P
802.11ac -VHT40	5190MHz(Ch38)	1 GHz ~18 GHz	Fig.30	P
	5230MHz(Ch46)	1 GHz ~18 GHz	Fig.31	P
	5270MHz(Ch54)	1 GHz ~18 GHz	Fig.32	P
	5310MHz(Ch62)	1 GHz ~18 GHz	Fig.33	P

	5510MHz(Ch102)	1 GHz ~18 GHz	Fig.34	P
	5580MHz(Ch118)	1 GHz ~18 GHz	Fig.35	P
	5670MHz(Ch134)	1 GHz ~18 GHz	Fig.36	P
	5755MHz(Ch151)	1 GHz ~18 GHz	Fig.37	P
	5795MHz(Ch159)	1 GHz ~18 GHz	Fig.38	P
802.11ac -VHT80	5210MHz(Ch42)	1 GHz ~18 GHz	Fig.39	P
	5290MHz(Ch58)	1 GHz ~18 GHz	Fig.40	P
	5530MHz(Ch106)	1 GHz ~18 GHz	Fig.41	P
	5610MHz(Ch122)	1 GHz ~18 GHz	Fig.42	P
	5775MHz(Ch155)	1 GHz ~18 GHz	Fig.43	P
All channels	30 MHz ~1 GHz	Fig.44	P	
	18 GHz ~26.5 GHz	Fig.45	P	
	26.5GHz~40GHz	Fig.46	P	

**Worst Case Result:**
**802.11a CH100**

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
6903.700000	56.71	68.20	11.49	V	20.36
7920.700000	42.89	68.20	25.31	H	-1.95
8759.200000	43.21	68.20	24.99	H	-1.58
10255.600000	46.56	68.20	21.64	V	0.73
14273.200000	51.03	68.20	17.17	V	5.65
17978.400000	55.11	74.00	18.89	H	13.24

Frequency (MHz)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
7541.800000	31.18	54.00	22.82	H	-2.18
8299.300000	31.85	54.00	22.15	H	-2.07
9081.400000	32.28	54.00	21.72	H	-1.39
11728.900000	34.64	54.00	19.36	V	1.44
15919.600000	35.88	54.00	18.12	H	2.48
17978.400000	43.19	54.00	10.81	H	13.24

**802.11ac-VHT40 CH38**

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
6975.400000	56.25	68.20	11.95	V	21.11
8699.800000	43.10	68.20	25.10	H	-1.76
10084.900000	43.92	68.20	24.28	V	-0.39
12932.200000	46.49	68.20	21.71	H	2.58
14826.400000	49.62	68.20	18.58	H	5.57
17981.600000	53.86	74.00	20.14	H	13.19



Frequency (MHz)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
7545.100000	31.81	54.00	22.19	H	-2.17
9151.000000	32.30	54.00	21.70	H	-1.47
11852.500000	34.40	54.00	19.60	H	1.24
13340.800000	35.31	54.00	18.69	V	3.28
15915.700000	35.07	54.00	18.93	V	2.43
17981.600000	42.50	54.00	11.50	H	13.19

**802.11ac-VHT80 CH58**

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
6957.100000	56.84	68.20	11.36	V	20.94
7825.000000	43.27	68.20	24.93	V	-2.40
8850.700000	44.81	68.20	23.39	V	-1.67
10303.000000	45.04	68.20	23.16	H	0.14
14656.600000	50.53	68.20	17.67	V	5.30
17986.800000	54.29	74.00	19.71	H	13.12

Frequency (MHz)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
7548.700000	31.81	54.00	22.19	V	-2.16
8316.100000	31.32	54.00	22.68	V	-2.13
9070.900000	32.29	54.00	21.71	H	-1.41
11704.900000	34.33	54.00	19.67	V	1.51
15626.800000	35.32	54.00	18.68	H	3.08
17986.800000	42.10	54.00	11.90	H	13.12

**Note:**

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

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

**See below for test graphs.****Conclusion: PASS**

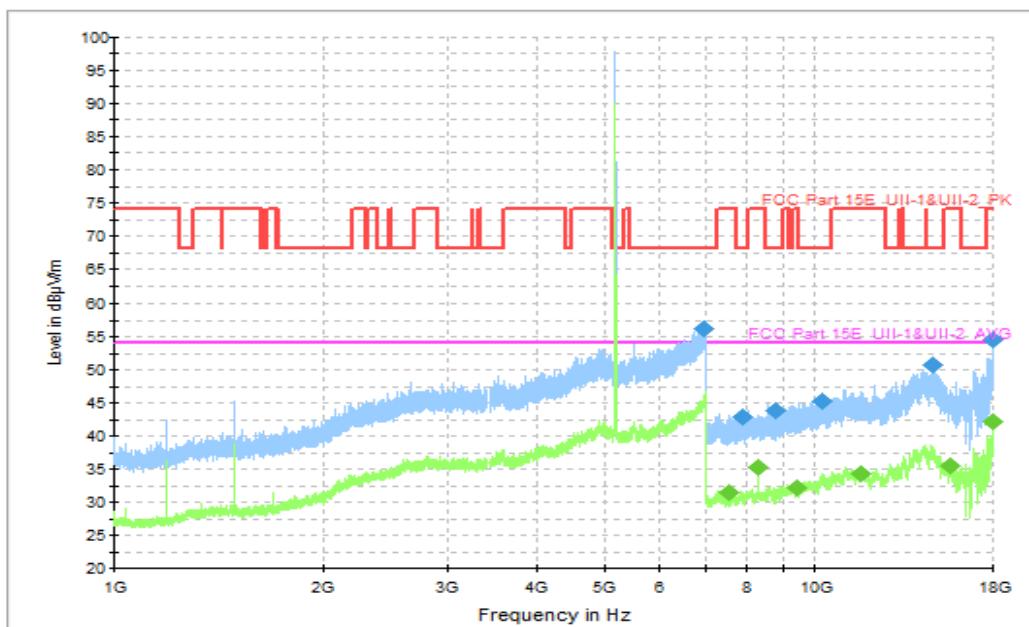


Fig. 18 Transmitter Spurious Emission (802.11a, CH36 5180MHz, 1GHz-18GHz)

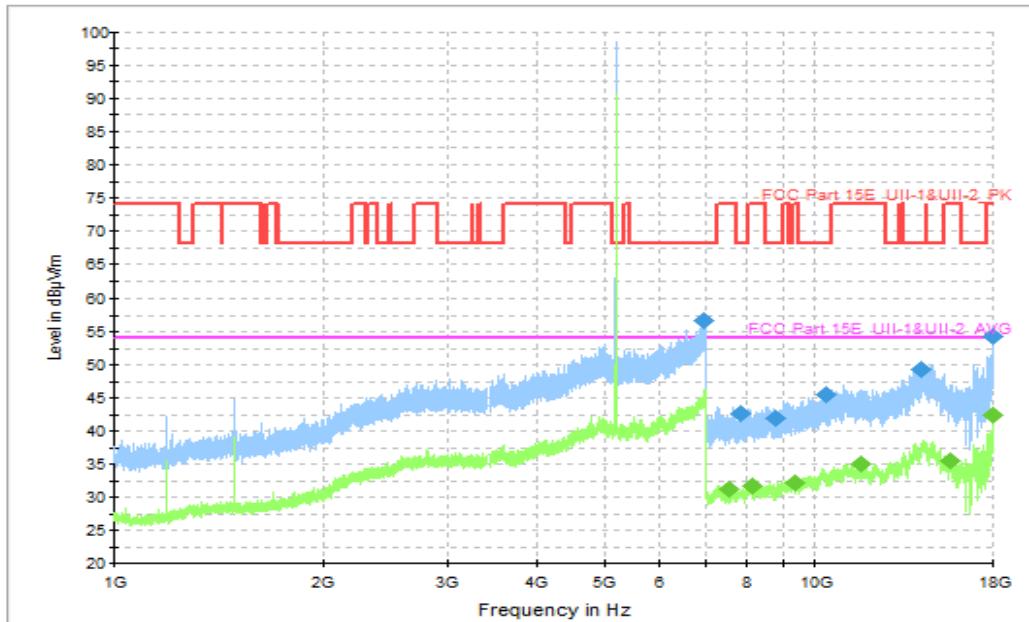


Fig. 19 Transmitter Spurious Emission (802.11a, CH40 5200MHz, 1GHz-18GHz)

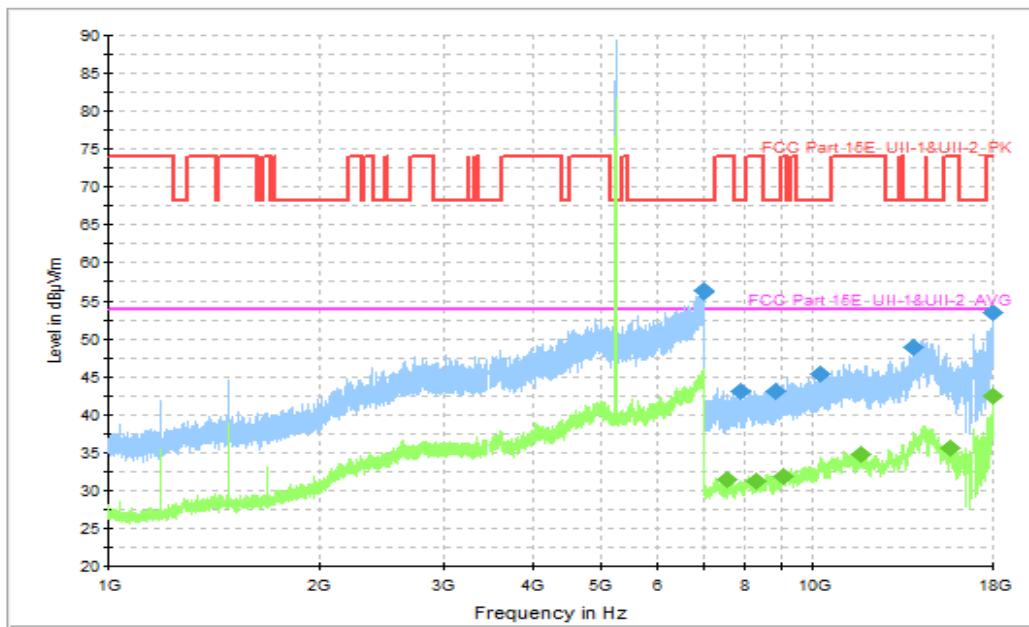


Fig. 20 Transmitter Spurious Emission (802.11a, CH48 5240MHz, 1GHz-18GHz)

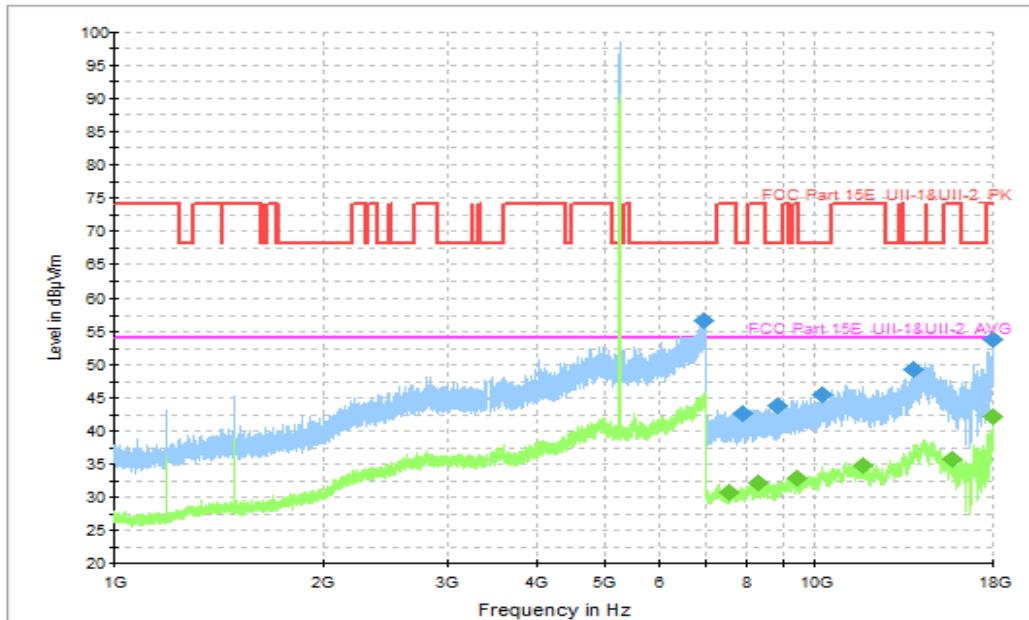


Fig. 21 Transmitter Spurious Emission (802.11a, CH52 5260MHz, 1GHz-18GHz)

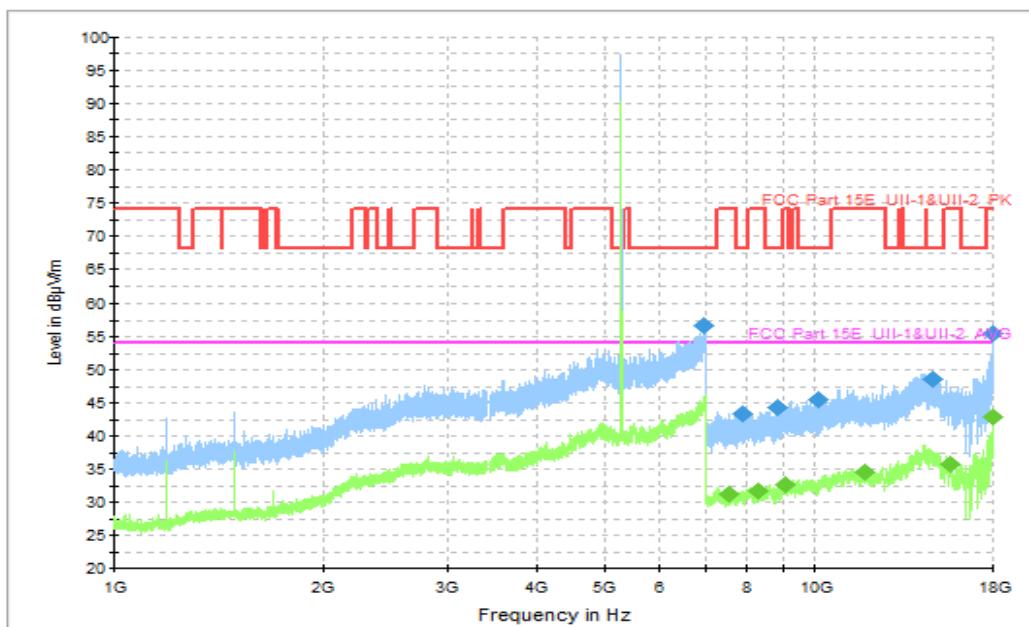


Fig. 22 Transmitter Spurious Emission (802.11a, CH56 5280MHz, 1GHz-18GHz)

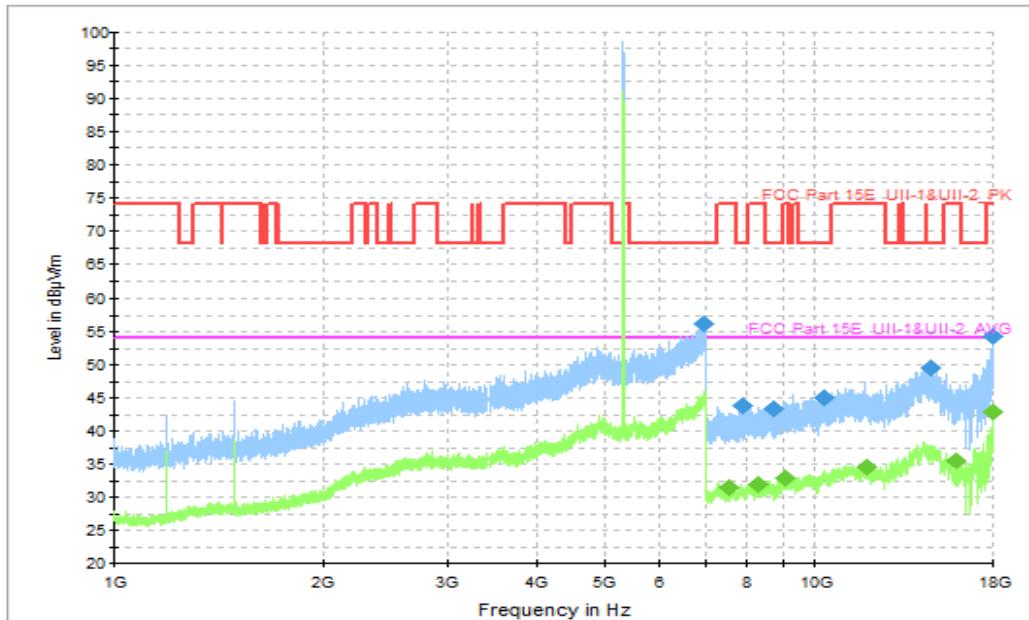


Fig. 23 Transmitter Spurious Emission (802.11a, CH64 5320MHz, 1GHz-18GHz)

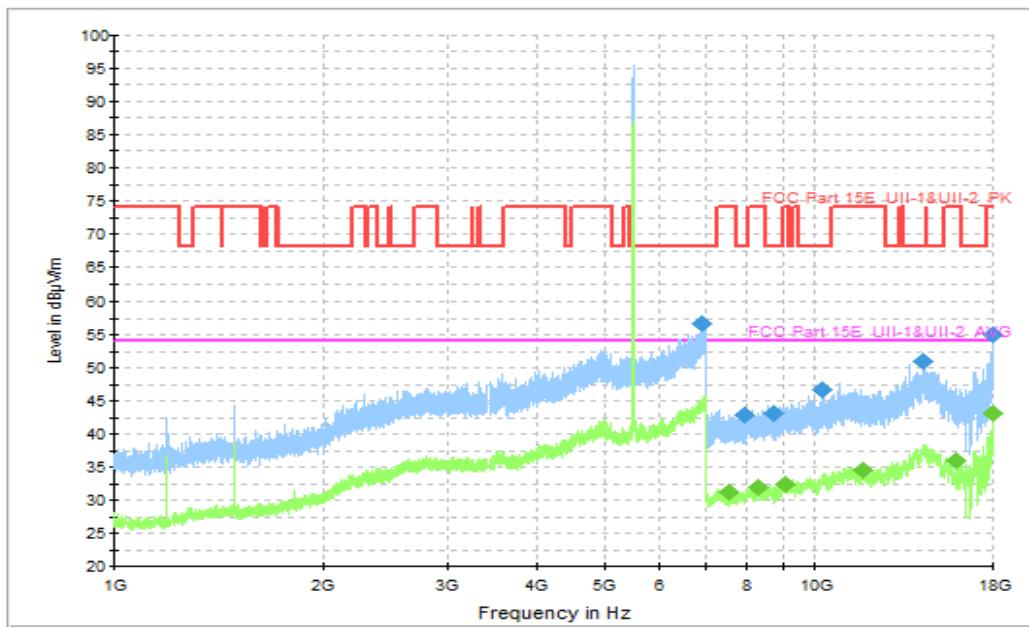


Fig. 24 Transmitter Spurious Emission (802.11a, CH100 5500MHz, 1GHz-18GHz)

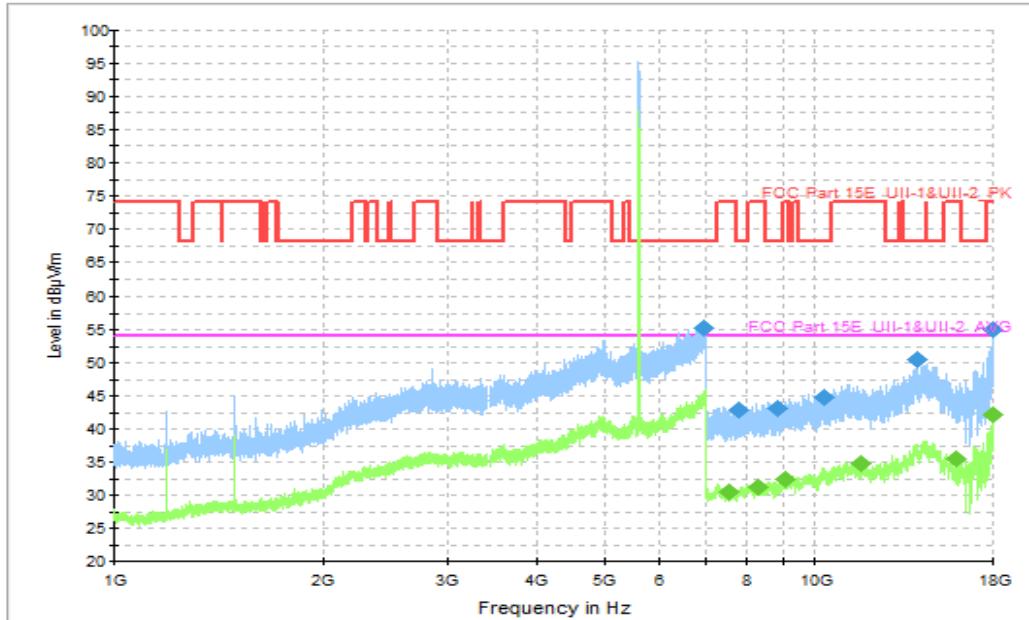


Fig. 25 Transmitter Spurious Emission (802.11a, CH120 5600MHz, 1GHz-18GHz)

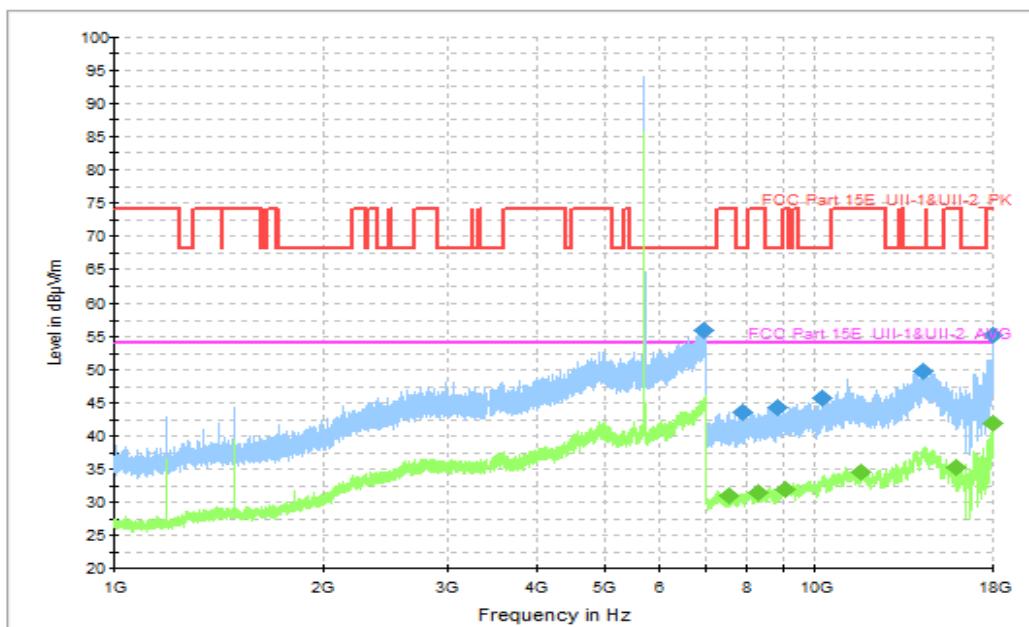


Fig. 26 Transmitter Spurious Emission (802.11a, CH140 5700MHz, 1GHz-18GHz)

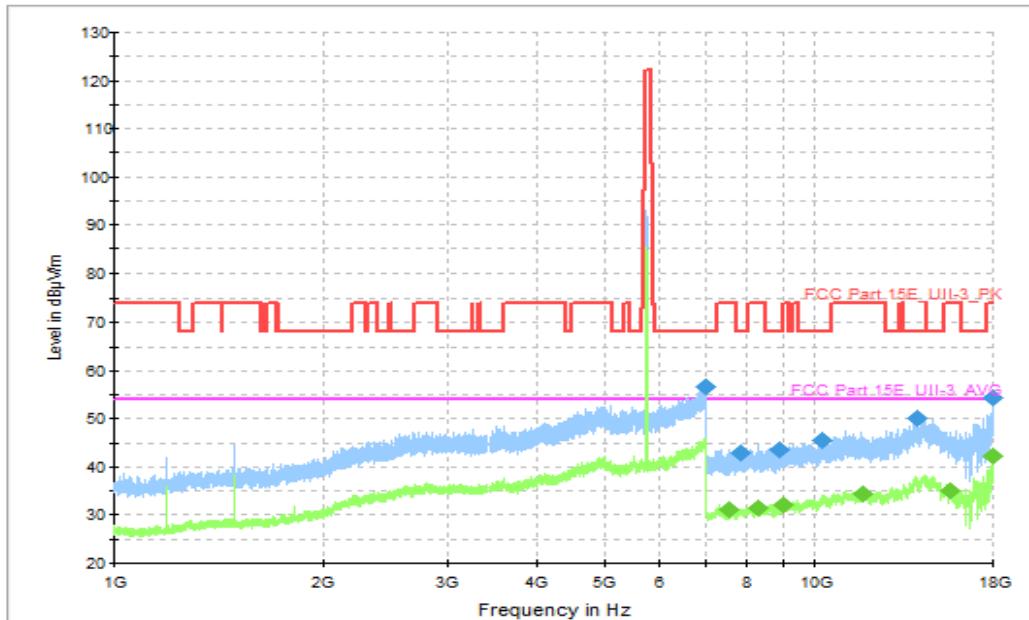


Fig. 27 Transmitter Spurious Emission (802.11a, CH149 5745MHz, 1GHz-18GHz)

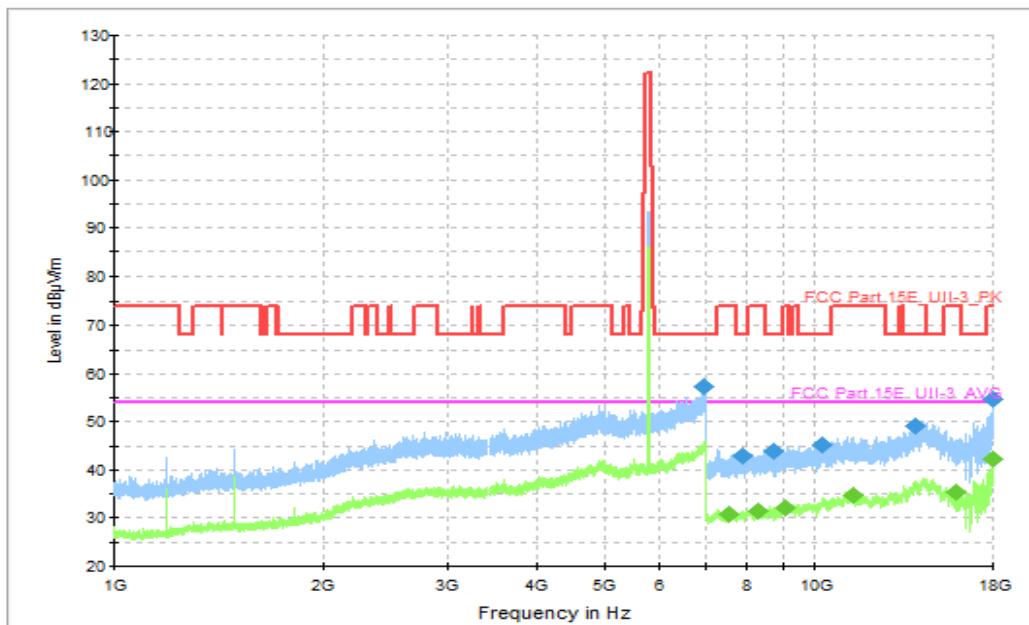


Fig. 28 Transmitter Spurious Emission (802.11a, CH157 5785MHz, 1GHz-18GHz)

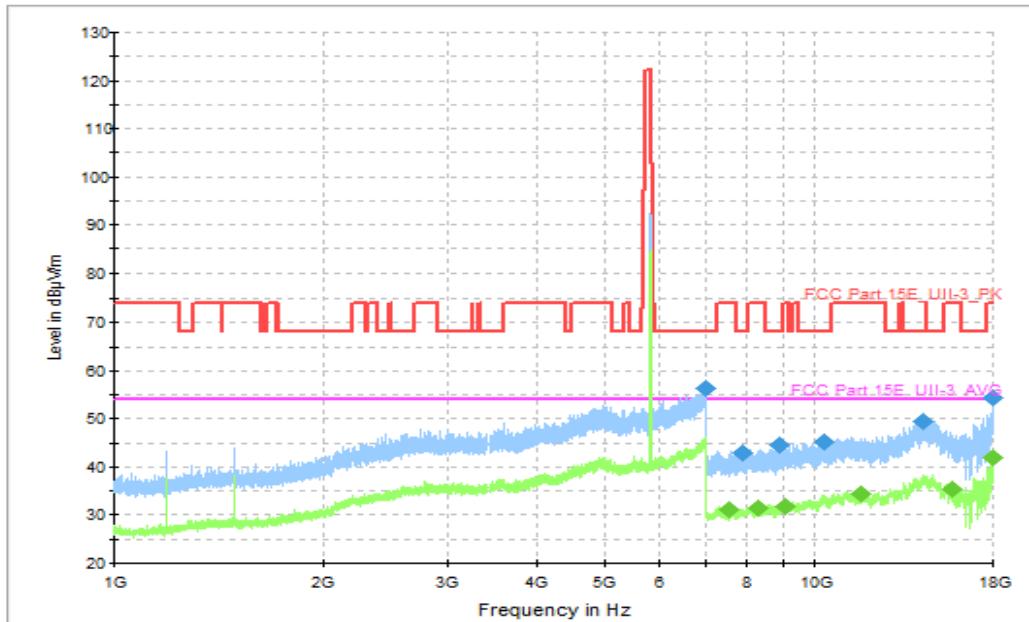


Fig. 29 Transmitter Spurious Emission (802.11a, CH165 5825MHz, 1GHz-18GHz)

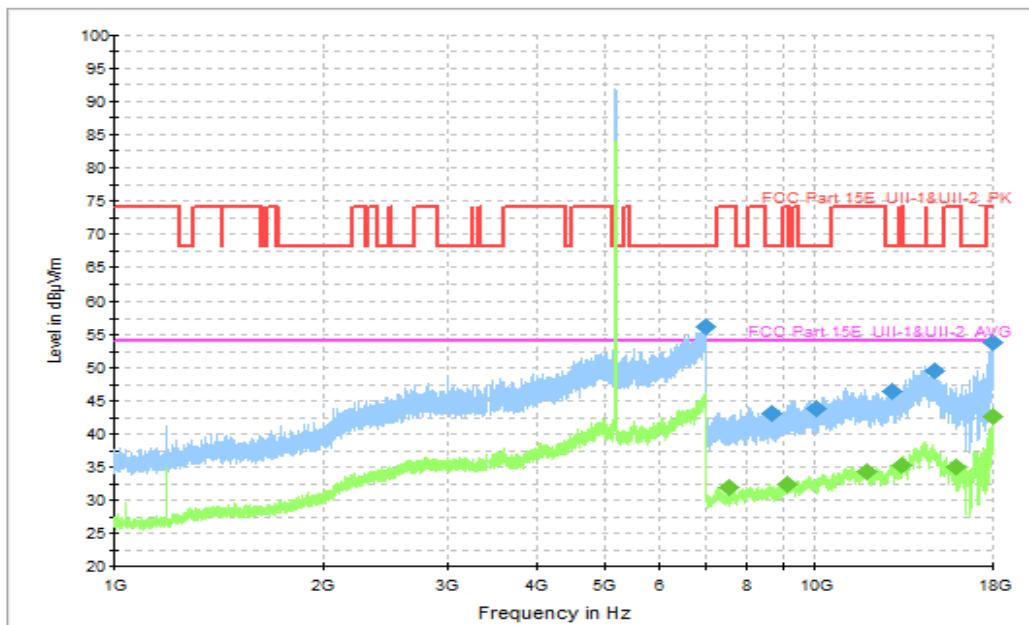


Fig. 30 Transmitter Spurious Emission (802.11ac-VHT40, CH38 5190MHz, 1GHz-18GHz)

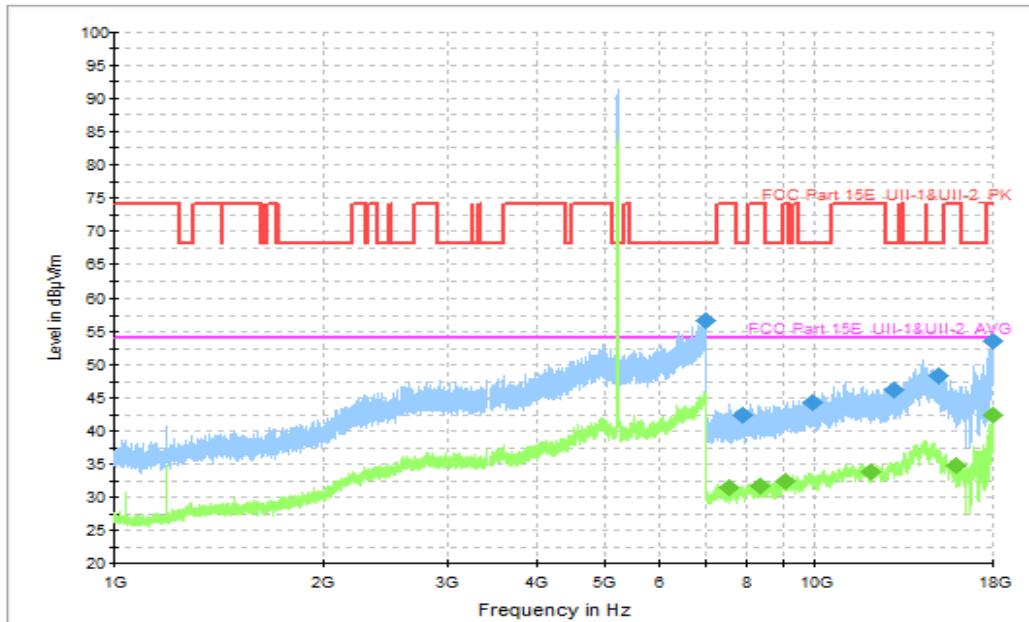


Fig. 31 Transmitter Spurious Emission (802.11ac-VHT40, CH46 5230MHz, 1GHz-18GHz)

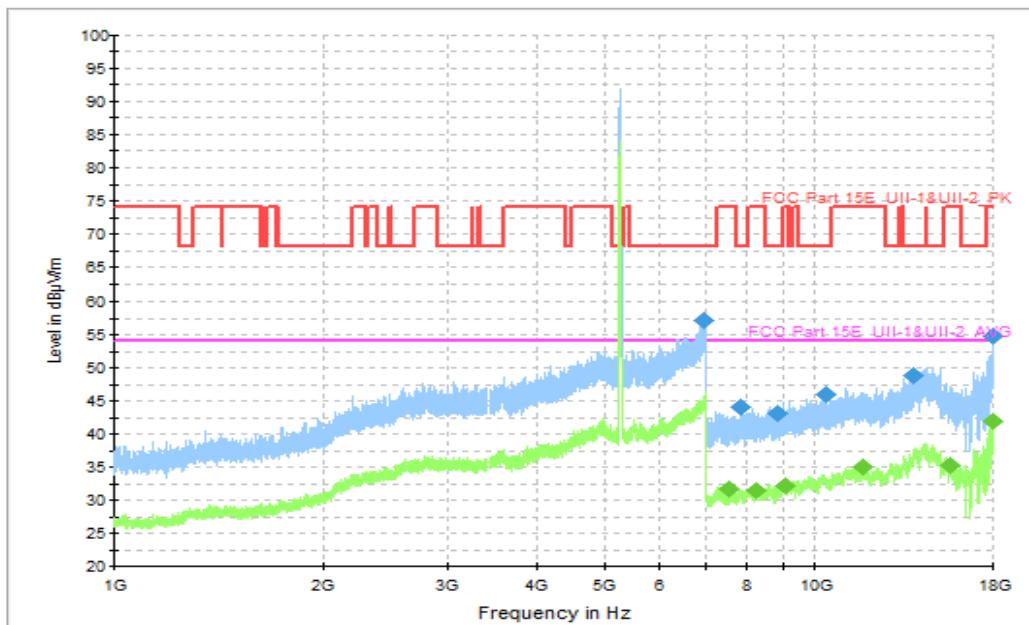


Fig. 32 Transmitter Spurious Emission (802.11ac-VHT40, CH54 5270MHz, 1GHz-18GHz)

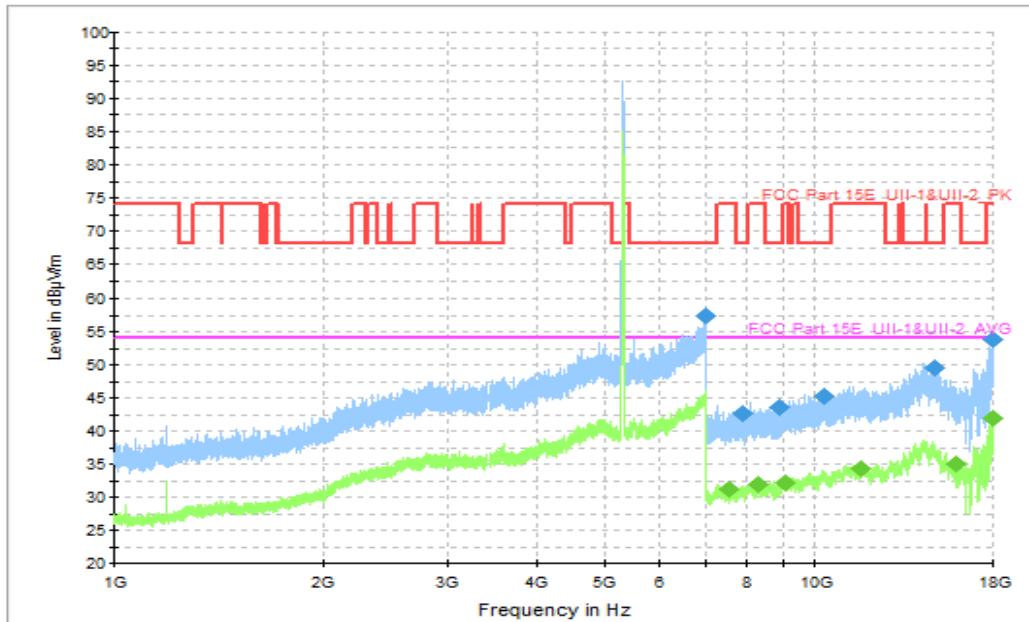


Fig. 33 Transmitter Spurious Emission (802.11ac-VHT40, CH62 5310MHz, 1GHz-18GHz)

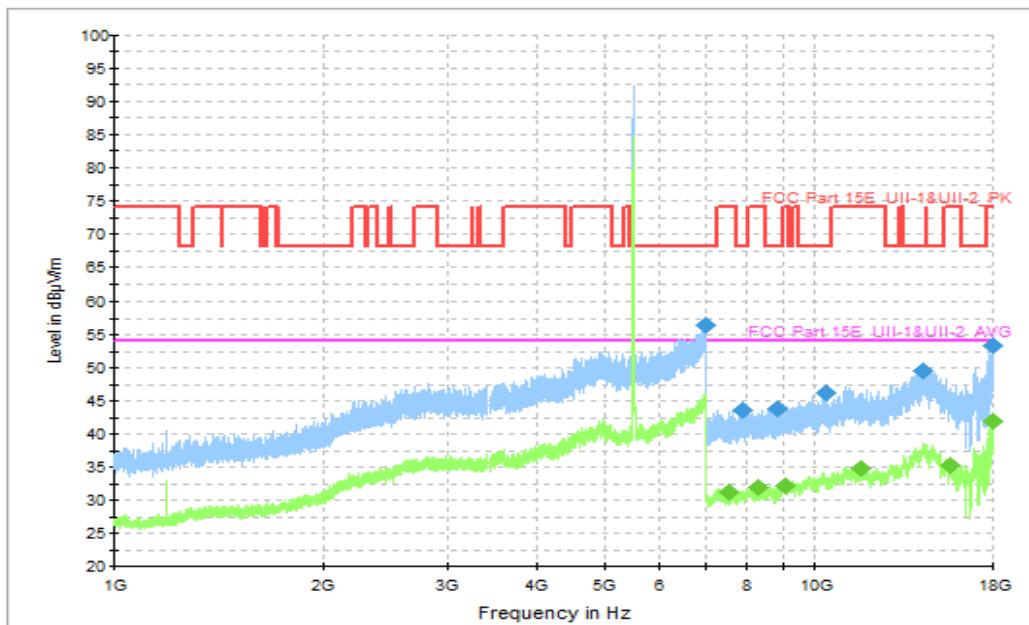


Fig. 34 Transmitter Spurious Emission (802.11ac-VHT40, CH102 5510MHz, 1GHz-18GHz)

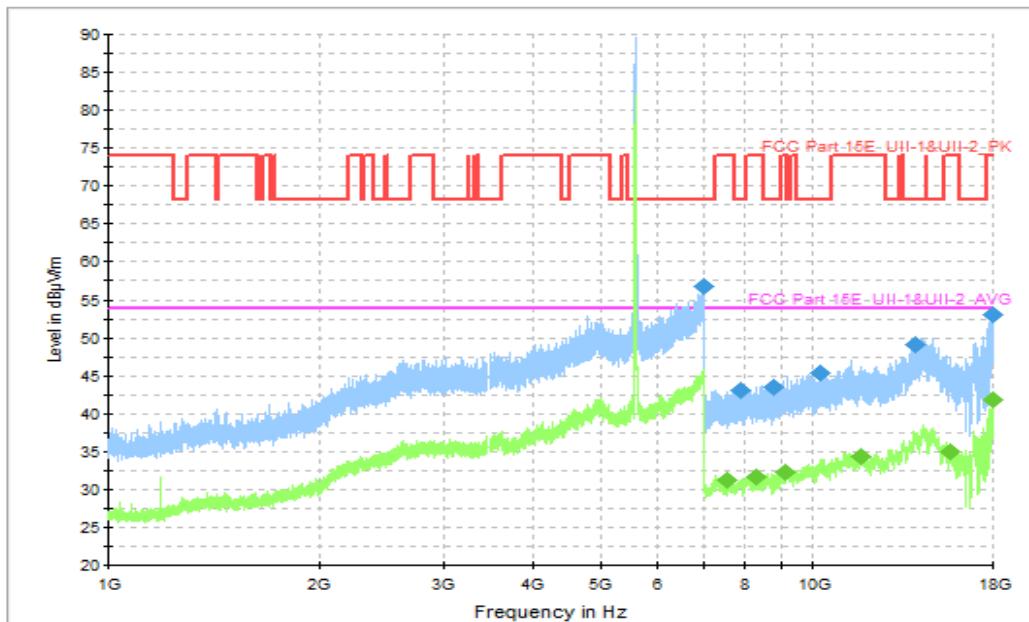


Fig. 35 Transmitter Spurious Emission (802.11ac-VHT40, CH118 5580MHz, 1GHz-18GHz)

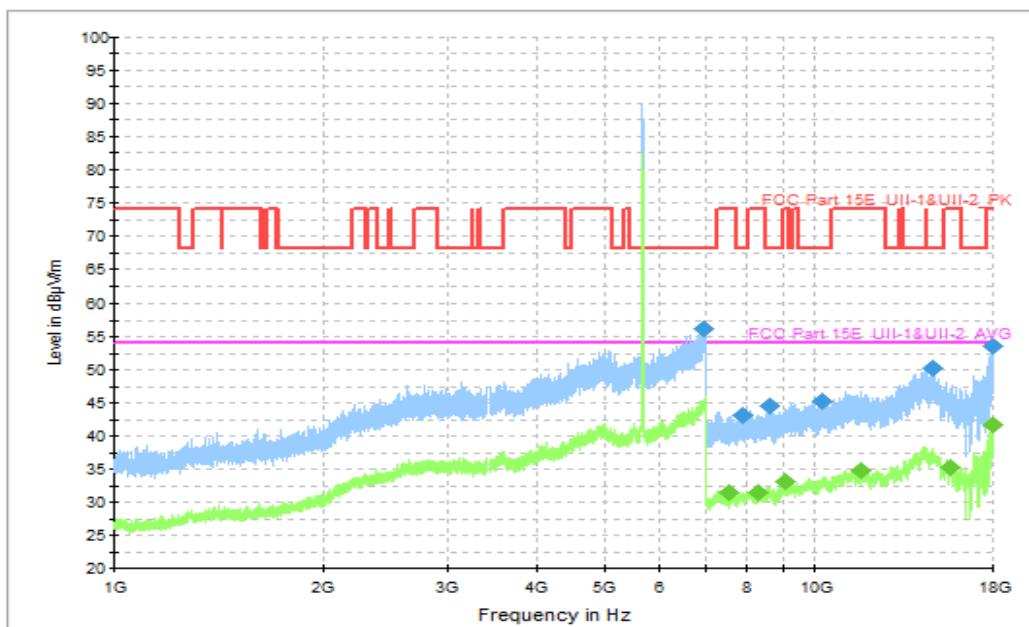


Fig. 36 Transmitter Spurious Emission (802.11ac-VHT40, CH134 5670MHz, 1GHz-18GHz)

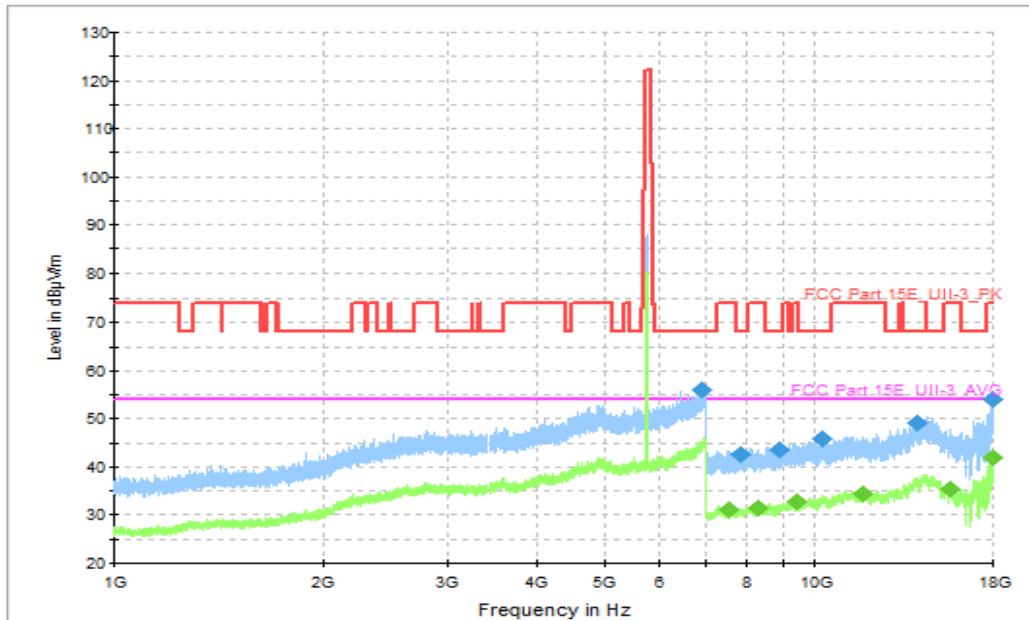


Fig. 37 Transmitter Spurious Emission (802.11ac-VHT40, CH151 5755MHz, 1GHz-18GHz)

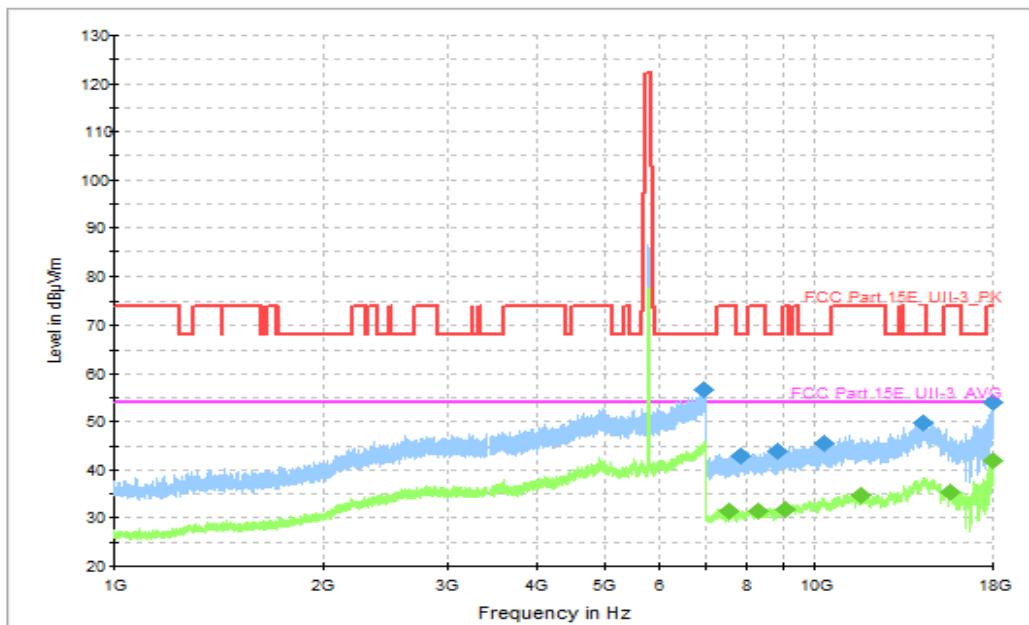


Fig. 38 Transmitter Spurious Emission (802.11ac-VHT40, CH159 5795MHz, 1GHz-18GHz)

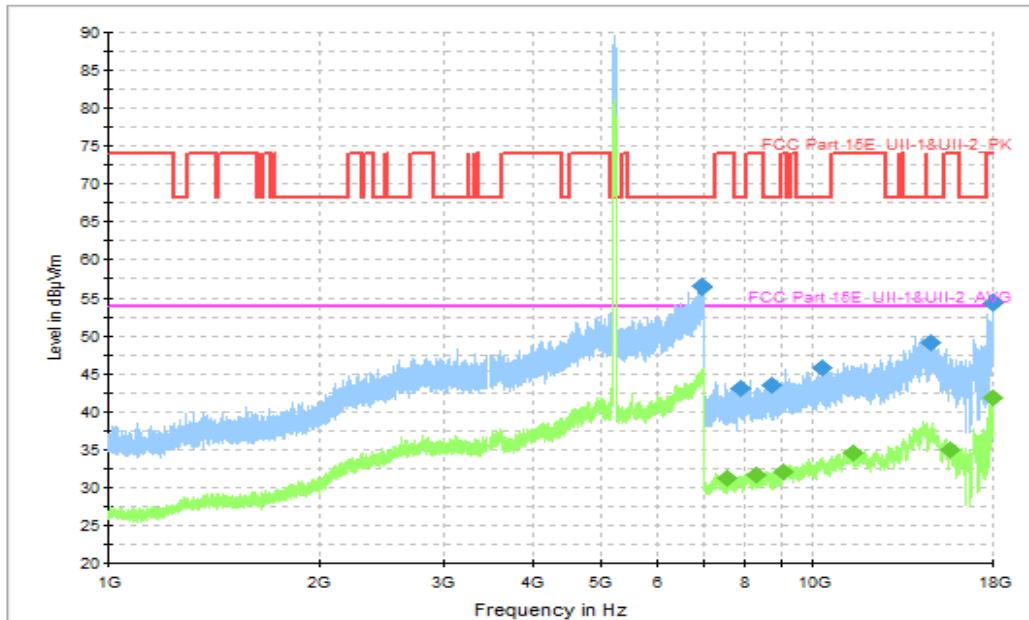


Fig. 39 Transmitter Spurious Emission (802.11ac-VHT80, CH42 5210MHz, 1GHz-18GHz)

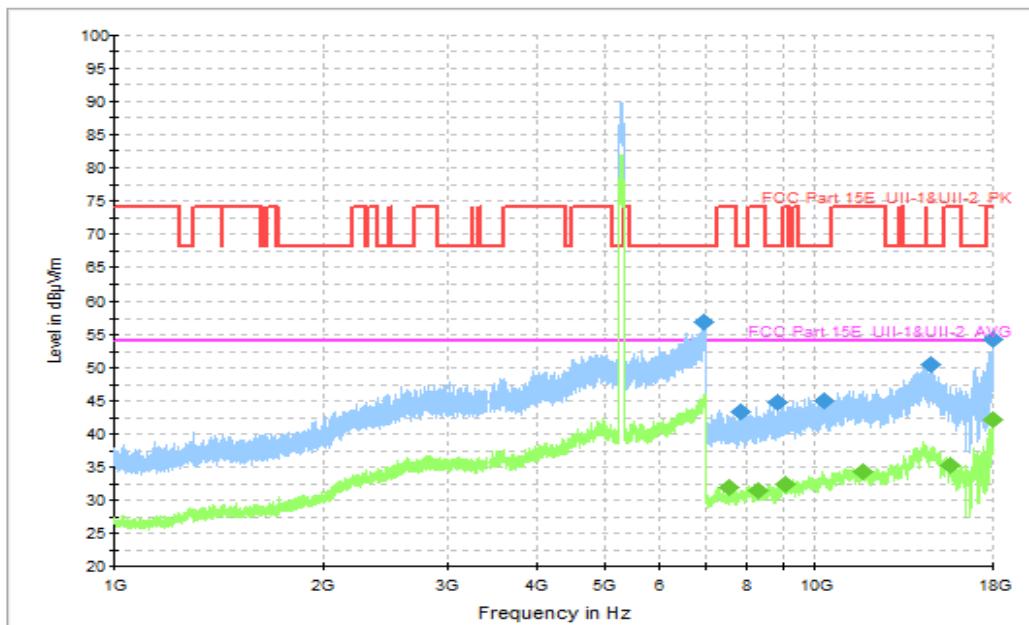


Fig. 40 Transmitter Spurious Emission (802.11ac-VHT80, CH58 5290MHz, 1GHz-18GHz)

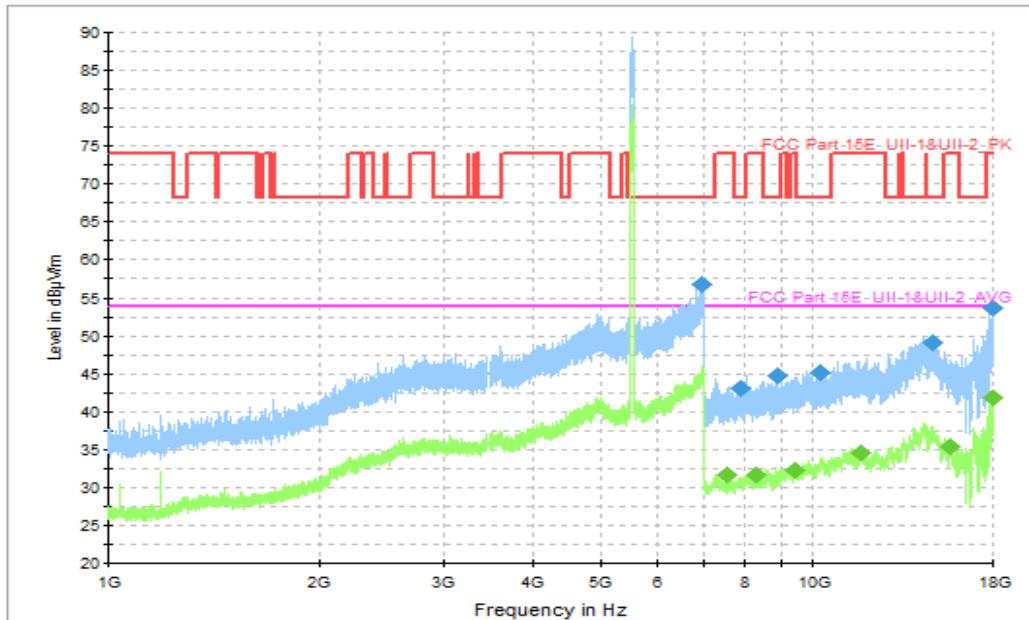


Fig. 41 Transmitter Spurious Emission (802.11ac-VHT80, CH106 5530MHz, 1GHz-18GHz)

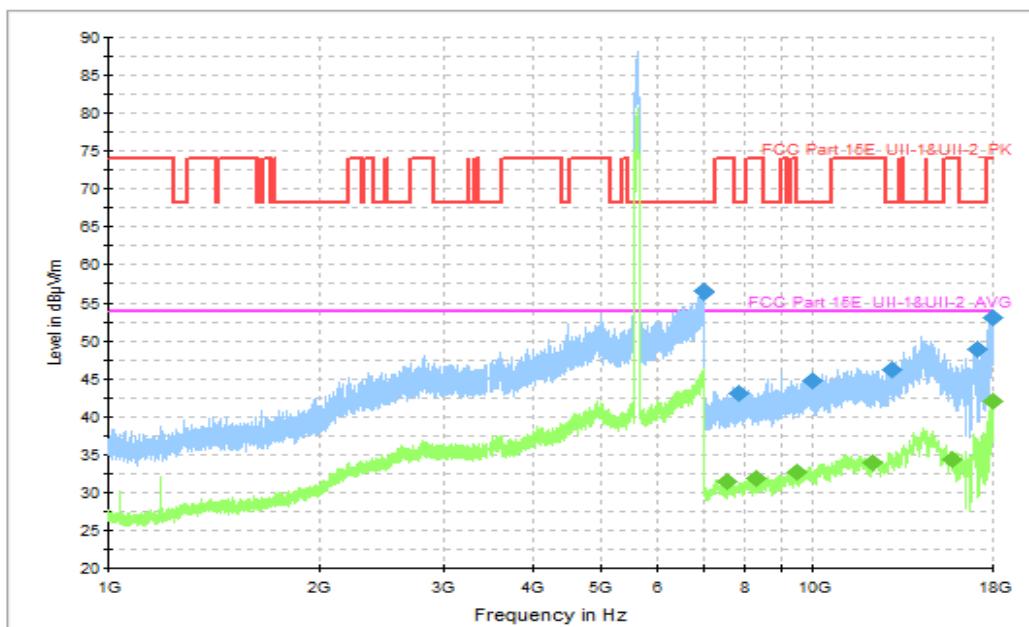


Fig. 42 Transmitter Spurious Emission (802.11ac-VHT80, CH122 5610MHz, 1GHz-18GHz)

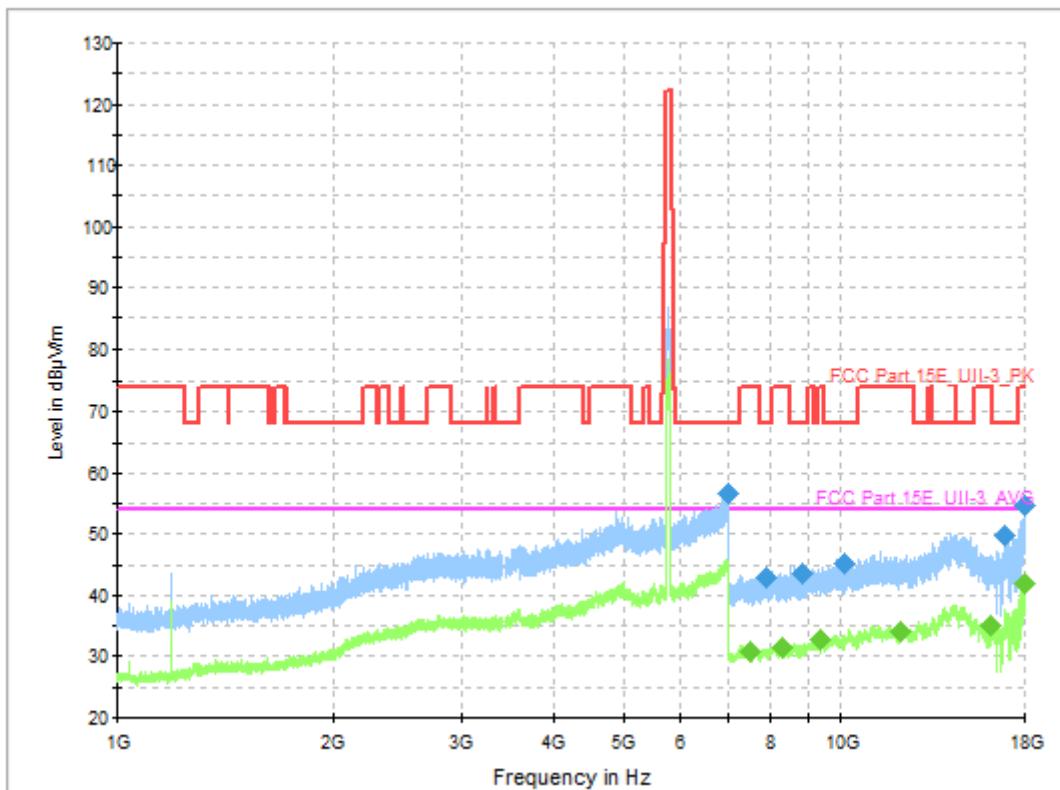


Fig. 43 Transmitter Spurious Emission (802.11ac-VHT80, CH155 5775MHz, 1GHz-18GHz)

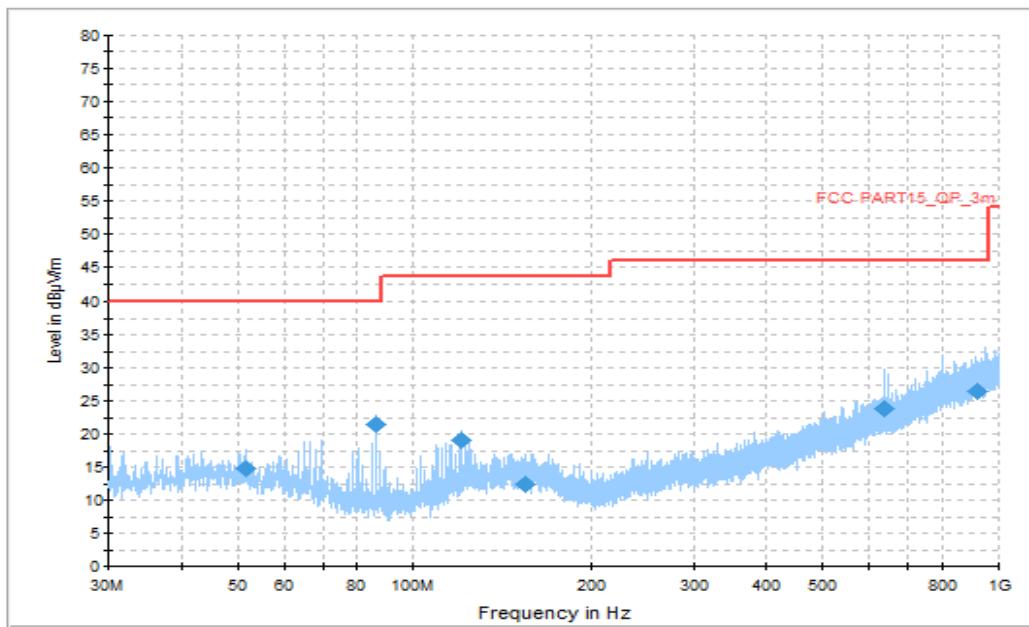


Fig. 44 Transmitter Spurious Emission (All channel, 30MHz~1GHz)

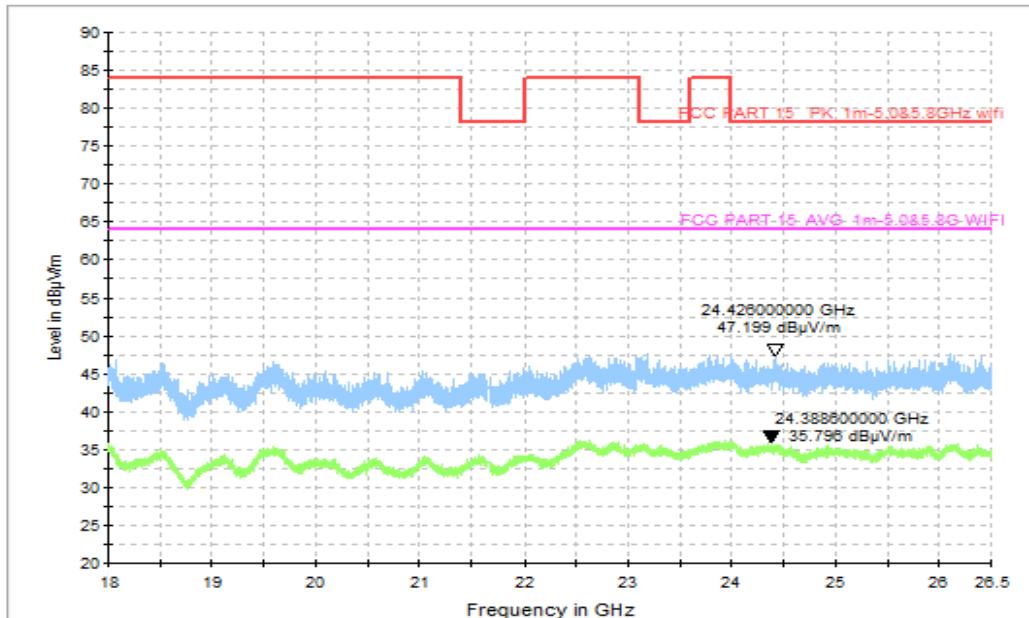


Fig. 45 Transmitter Spurious Emission (All channel, 18GHz~26.5GHz)

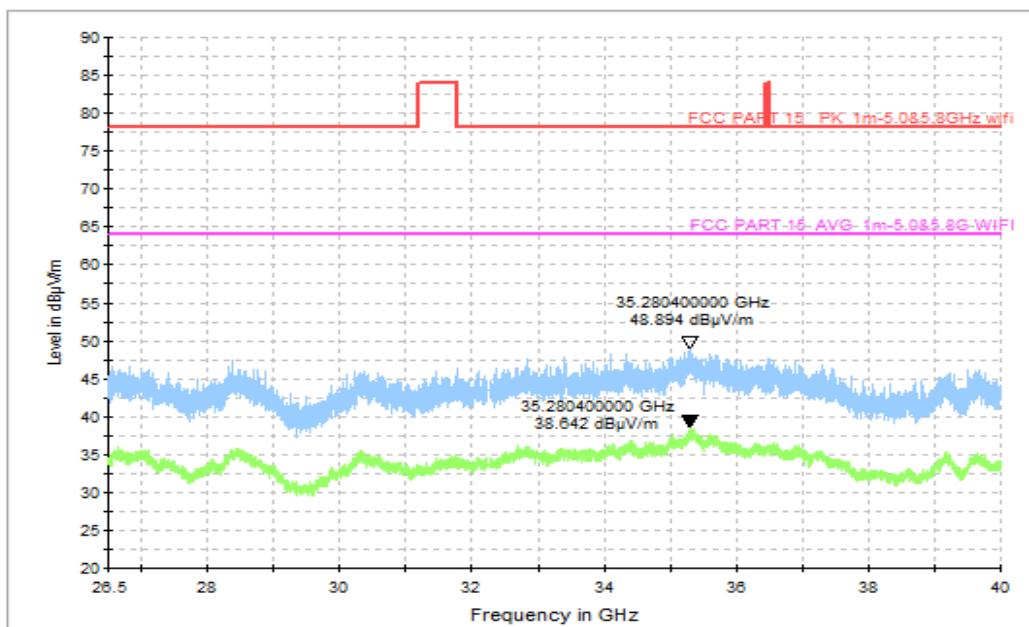


Fig. 46 Transmitter Spurious Emission (All channel, 26.5GHz~40GHz)

### A.3. Radiated Spurious Emissions < 30MHz

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

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

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

The measurement is made according to KDB 789033.

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 (Worst case):

Mode	Frequency Range	Test Results	Conclusion
All Channel	9 kHz ~30 MHz	Fig.47	P

See below for test graphs.

Conclusion: PASS

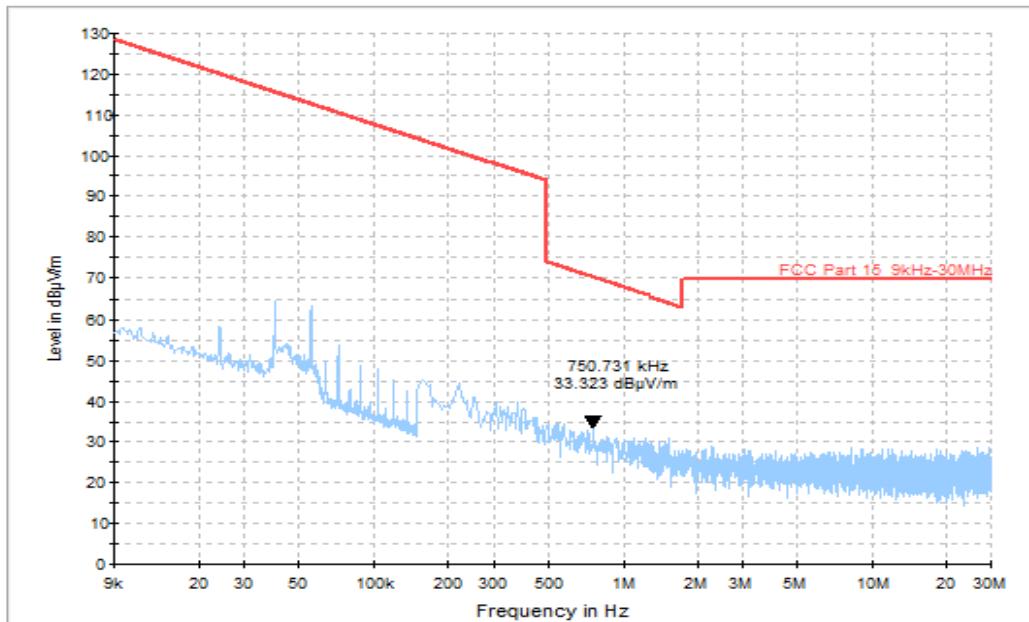


Fig. 47 Radiated Spurious Emission (All Channel, 9 kHz ~30 MHz)

#### A.4. 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:**

**WLAN 5GHz - AE2-1, AE3-1**

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.48	Fig.49	P
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.

**See below for test graphs.**

**Conclusion: PASS**

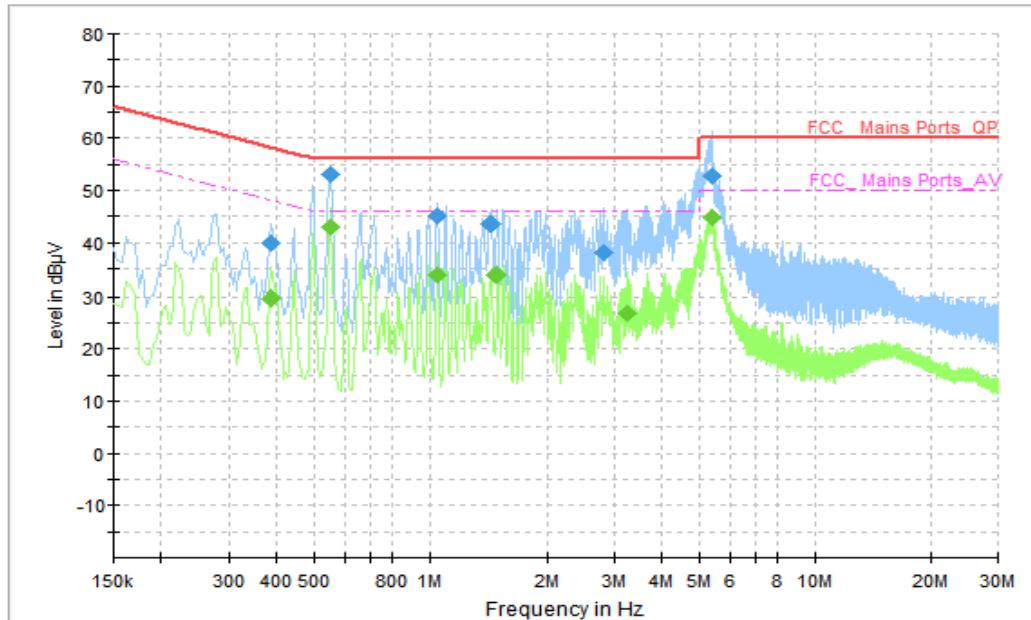


Fig. 48 AC Power line Conducted Emission (Traffic)

**Measurement Result: Quasi Peak**

Frequency (MHz)	Quasi Peak (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.386000	39.88	58.15	18.27	N	ON	10
0.550000	52.94	56.00	3.06	N	ON	10
1.046000	45.00	56.00	11.00	N	ON	10
1.430000	43.49	56.00	12.51	N	ON	10
2.814000	38.05	56.00	17.95	N	ON	11
5.410000	52.77	60.00	7.23	N	ON	11

**Measurement Result: Average**

Frequency (MHz)	Average (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.386000	29.58	48.15	18.57	N	ON	10
0.550000	42.98	46.00	3.02	N	ON	10
1.046000	33.78	46.00	12.22	N	ON	10
1.490000	33.81	46.00	12.19	N	ON	10
3.254000	26.79	46.00	19.21	N	ON	10
5.374000	44.76	50.00	5.24	N	ON	10

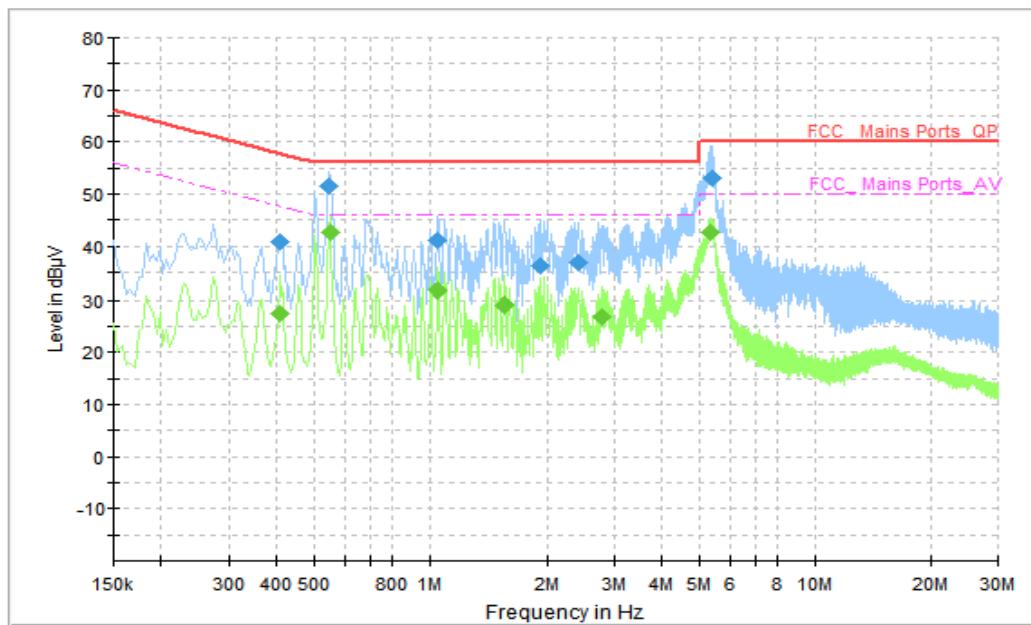


Fig. 49 AC Power line Conducted Emission (Idle)

**Measurement Result: Quasi Peak**

Frequency (MHz)	Quasi Peak (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.406000	40.79	57.73	16.94	N	ON	10
0.546000	51.71	56.00	4.29	N	ON	10
1.050000	41.23	56.00	14.77	N	ON	10
1.914000	36.19	56.00	19.81	N	ON	10
2.418000	36.74	56.00	19.26	N	ON	10
5.374000	52.94	60.00	7.06	N	ON	10

**Measurement Result: Average**

Frequency (MHz)	Average (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.406000	27.33	47.73	20.40	N	ON	10
0.550000	42.55	46.00	3.45	N	ON	10
1.050000	31.81	46.00	14.19	N	ON	10
1.554000	28.90	46.00	17.10	N	ON	10
2.782000	26.92	46.00	19.08	N	ON	11
5.322000	42.61	50.00	7.39	N	ON	10

\*\*\*END OF REPORT\*\*\*