



# TEST REPORT

No.I22N01654-WLAN 5GHz

for

**Hisense International Co., Ltd.**

**Mobile phone**

**Model Name: HLTE239E**

with

**Hardware Version: FS301-MB-V1.0**

**Software Version: Hisense\_HLTE239E\_01\_S01\_01\_05\_MX05**

**FCC ID: 2ADOBHLTE239E**

**Issued Date: 2022-09-22**

**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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## 1. Summary of Test Report

### 1.1. Test Items

Product Name	Mobile phone
Model Name	HLTE239E
Applicant's name	Hisense International Co., Ltd.
Manufacturer's Name	Hisense Communications Co., Ltd.

### 1.2. Test Standards

FCC Part15-2019; 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: Building G, Shenzhen International Innovation Center, No.1006 Shennan Road,  
Futian District, Shenzhen, Guangdong, P. R. China

### 1.5. Project data

Testing Start Date:	2022-08-12
Testing End Date:	2022-09-21

### 1.6. Signature

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Lin Zechuang  
(Prepared this test report)

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An Ran  
(Reviewed this test report)

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Zhang Bojun  
(Approved this test report)



No.I22N01654-WLAN 5GHz

## **2. Client Information**

### **2.1. Applicant Information**

Company Name: Hisense International Co., Ltd.  
Address: Floor 22, Hisense Tower, 17 Donghai Xi Road, Qingdao, 266071, China  
Contact Person Yu Jingchao  
E-Mail yujingchao@hisense.com  
Telephone: 15311226475  
Fax: /

### **2.2. Manufacturer Information**

Company Name: Hisense Communications Co., Ltd.  
Address: No.218,Qianwangang Road,Economic and Technological Development Zone, Qingdao, Shandong Province,China  
Contact Person Yu Jingchao  
E-Mail yujingchao@hisense.com  
Telephone: 15311226475  
Fax: /



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

#### 3.1. About EUT

Product Name	Mobile phone
Model Name	HLTE239E
RF Protocol	IEEE 802.11a/n-HT20/n-HT40/ac-VHT20/ac-VHT40/ac-VHT80
RLAN Frequency Range	ISM Bands: 5150MHz~5250MHz; 5250MHz~5350MHz; 5470MHz~5725MHz; 5725MHz~5850MHz.
Type of modulation	OFDM
Antenna Type	Integrated antenna
Antenna Gain	-0.41dBi
Power Supply	3.85V DC by Battery
FCC ID	2ADOBHLTE239E
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

EUT ID*	IMEI	HW Version	SW Version	Receive Date
UT07aa	868551060006114	FS301-MB-V1.0	Hisense_HLTE239E_0 1_S01_01_05_MX05	2022-08-04
UT12aa	865269060000358	FS301-MB-V1.0	Hisense_HLTE239E_0 1_S01_01_05_MX05	2022-08-04

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

UT07aa is used for conduction test, UT12aa is used for radiation test and AC Power line Conducted Emission test.

#### 3.3. Internal Identification of AE

AE ID*	Description	AE ID*
AE1	Battery	/
AE2	Charger	/
AE3	USB Cable	/
AE4	Headset	/

#### AE1

Model	LPN385400B
Manufacturer	Shenzhen Aerospac Electronic CO.,Ltd.
Capacity	4000mAh
Nominal Voltage	3.85V



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AE2

Model PA-46050200UU  
Manufacturer SHENZHEN TIANYIN ELECTRONICS CO.,LTD

AE3

Model KS228D  
Manufacturer Dongguan Keling Electronic Technology Co., Ltd.

AE4

Model KS232D  
Manufacturer Dongguan Keling Electronic Technology Co., Ltd.

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

### **3.4. General Description**

The Equipment under Test (EUT) is a model of Mobile Phone with integrated antenna and battery.

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

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	2019
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
0	Maximum Output Power	15.407(a)	<b>P</b>
1	Power Spectral Density	15.407(a)	<b>P</b>
2	Occupied 26dB Bandwidth	15.403(i)	/
3	Occupied 6dB Bandwidth	15.407(e)	<b>P</b>
4	99% Occupied Bandwidth	15.403	/
5	Dynamic Frequency Selection	15.407 (h)	<b>P</b>
6	Band edge compliance	15.209	<b>P</b>
7	Radiated Spurious Emissions	15.209	<b>P</b>
8	AC Power line Conducted	15.207	<b>P</b>
9	Transmit Power Control	15.407	<b>NA</b>

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/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	2022-12-29	1 year
2	Power Sensor	U2021XA	MY55430013	Keysight	2022-12-29	1 year
3	Data Acquisition	U2531A	TW55443507	Keysight	/	/
4	RF Control Unit	JS0806-2	21C8060398	Tonscend	2023-05-08	1 year
5	Vector Signal General	SMU200A	104096	Rohde & Schwarz	2022-12-29	1 year
6	Shielding Room	S81	/	ETS-Lindgren	2022-11-14	3 years
7	Test Receiver	ESCI	100701	Rohde & Schwarz	2023-08-07	1 year
8	LISN	ENV216	102067	Rohde & Schwarz	2023-07-14	1 year
No.	Equipment	Model	FCC ID	Manufacturer	Calibration Due date	Calibration Period
9	Master AP	RT-AX86U	MSQ-RTAXI600	ASUS	/	/

### Radiated test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1	Loop Antenna	HLA6120	35779	TESEQ	2024-03-24	3 years
2	BiLog Antenna	3142E	0224831	ETS-Lindgren	2024-05-27	3 years
3	Horn Antenna	3117	00066577	ETS-Lindgren	2025-03-25	3 years
4	Horn Antenna	QSH-SL-18-26-S-20	17013	Q-par	2023-01-06	3 years
5	Horn Antenna	QSH-SL-8-26-40-K-20	17014	Q-par	2023-01-06	3 years
6	Test Receiver	ESR7	101676	Rohde & Schwarz	2022-11-24	1 year
7	Spectrum Analyser	FSV40	101192	Rohde & Schwarz	2023-01-12	1 year
8	Fully Anechoic Chamber	FACT3-2.0	1285	ETS-Lindgren	2023-05-29	2 years

### Test software

No.	Equipment	Manufacturer	Version
1	JS1120-3	Tonscend	3.2
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.

### Anechoic chamber

Fully anechoic chamber by ETS-Lindgren



## 7. Laboratory Environment

### Semi-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	> 2MΩ
Ground system resistance	< 4 Ω
Normalised site attenuation (NSA)	<±4 dB, 3 m distance, from 30 to 1000 MHz

### Shielded room

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

### Fully-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	> 2MΩ
Ground system resistance	< 4 Ω
Voltage Standing Wave Ratio (VSWR)	≤ 6 dB, from 1 to 18 GHz, 3 m distance
Uniformity of field strength	Between 0 and 6 dB, from 80 to 6000 MHz



**8. Measurement Uncertainty**

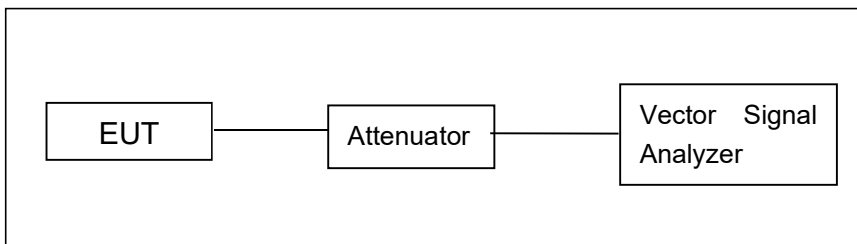
Test Name	Uncertainty ( <i>k</i> =2)	
1. Maximum output Power	1.36dB	
2. Peak Power Spectral Density	1.36dB	
3. Occupied 26dB Bandwidth	4.56kHz	
4. Occupied 6dB Bandwidth	4.56kHz	
5. 99% Occupied Bandwidth	4.56kHz	
6. Band Edges Compliance	4.68dB	
7. Transmitter Spurious Emission - Radiated	9kHz≤f<30MHz	1.79dB
	30MHz≤f<1GHz	4.86dB
	1GHz≤f<18GHz	4.50dB
	18GHz≤f≤40GHz	2.90dB
8. AC Power line Conducted Emission	150kHz≤f≤30MHz	2.62dB

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

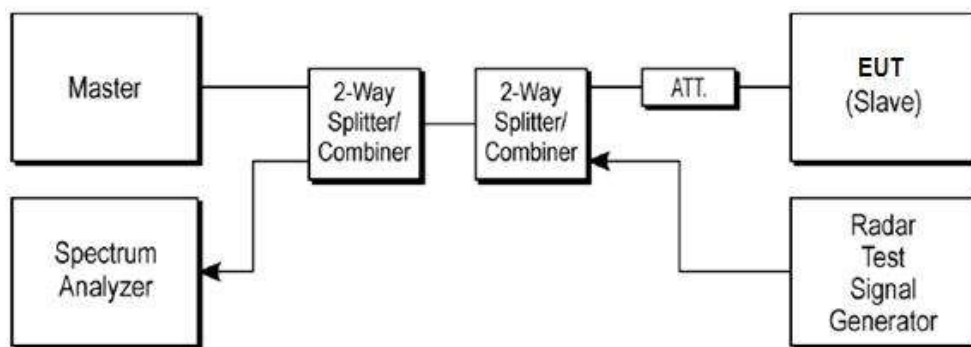
### **A.1. Measurement Method**

#### **Conducted Measurements**

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



6). The below figure shows the DFS setup, where the EUT is a WLAN device operating in slave mode, without Radar Interference Detection function. This setup also contains a device operating in master mode. The radar test signals are injected into the master device. The EUT (slave device) is associated with the master device. WLAN traffic is generated by streaming the mpeg file from the master to the slave in full monitor video mode using the media player.

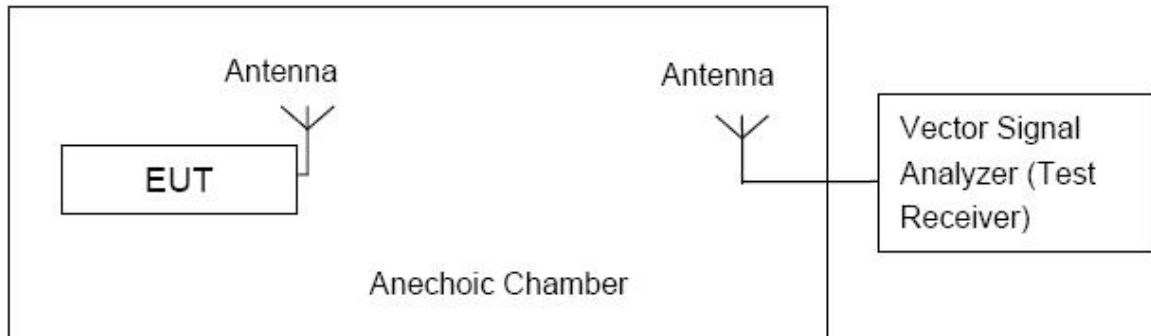


### Radiated Emission Measurements

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

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

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



The measurement is made according to KDB 789033.

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



**A.2. Maximum output Power**

**Measurement Limit and Method:**

Standard	Frequency (MHz)	Limit (dBm)
FCC CRF Part 15.407(a)	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.

**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:**

Mode	Channel	RF output power (dBm)	Conclusion
802.11a	5180MHz (Ch36)	12.90	P
	5200MHz (Ch40)	12.91	P
	5240MHz (Ch48)	12.76	P
	5260MHz (Ch52)	12.85	P
	5280MHz (Ch56)	12.90	P
	5320MHz (Ch64)	12.73	P
	5500MHz (Ch100)	12.84	P
	5580MHz (Ch116)	12.80	P
	5700MHz (Ch140)	11.18	P
	5745MHz (CH149)	10.56	P
	5785MHz (CH157)	9.75	P
	5825MHz (CH165)	9.63	P
802.11n-HT20	5180MHz (Ch36)	12.82	P
	5200MHz (Ch40)	12.87	P
	5240MHz (Ch48)	12.76	P
	5260MHz (Ch52)	12.65	P
	5280MHz (Ch56)	12.88	P
	5320MHz (Ch64)	12.55	P
	5500MHz (Ch100)	12.66	P
	5580MHz (Ch116)	12.63	P
	5700MHz (Ch140)	11.02	P
	5745MHz (CH149)	10.38	P
	5785MHz (CH157)	9.61	P
	5825MHz (CH165)	9.41	P



802.11ac-VHT20	5180MHz (Ch36)	12.80	P
	5200MHz (Ch40)	12.76	P
	5240MHz (Ch48)	12.41	P
	5260MHz (Ch52)	12.76	P
	5280MHz (Ch56)	12.81	P
	5320MHz (Ch64)	12.47	P
	5500MHz (Ch100)	12.72	P
	5580MHz (Ch116)	12.42	P
	5700MHz (Ch140)	11.05	P
	5745MHz (CH149)	10.48	P
	5785MHz (CH157)	9.73	P
	5825MHz (CH165)	9.52	P
802.11n-HT40	5190MHz (Ch38)	12.25	P
	5230MHz (Ch46)	11.88	P
	5270MHz (Ch54)	12.12	P
	5310MHz (Ch62)	12.46	P
	5510MHz (Ch102)	12.14	P
	5550MHz (Ch110)	12.21	P
	5670MHz (Ch134)	11.38	P
	5755MHz (CH151)	10.20	P
5795MHz (CH159)	9.42	P	
802.11ac-VHT40	5190MHz (Ch38)	12.17	P
	5230MHz (Ch46)	11.75	P
	5270MHz (Ch54)	11.96	P
	5310MHz (Ch62)	12.39	P
	5510MHz (Ch102)	12.07	P
	5550MHz (Ch110)	12.14	P
	5670MHz (Ch134)	11.41	P
	5755MHz (CH151)	10.41	P
	5795MHz (CH159)	9.59	P
802.11ac-VHT80	5210MHz (Ch42)	11.98	P
	5290MHz (Ch58)	12.02	P
	5530MHz (Ch106)	11.43	P
	5610MHz (Ch122)	11.12	P
	5775MHz (CH155)	9.46	P

**Note:**

The data rate 6Mbps (11a mode), MCS0 (11n mode) and MCS0 (11ac mode) are selected as the worst case. 802.11a, 802.11n-HT40 and 802.11ac-VHT80 are selected as the worst-case. The following cases and test graphs are mostly 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**



**A.3. Peak Power Spectral Density (conducted)**

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

Measurement Limit:

Standard	Frequency (MHz)	Limit
FCC CRF Part 15.407(a)	5150MHz~5250MHz	11dBm/MHz
	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:

Mode	Channel	Power Spectral Density(dBm/MHz)	Conclusion
802.11a	5180MHz (Ch36)	1.13	P
	5200MHz (Ch40)	-0.15	P
	5240MHz (Ch48)	0.43	P
	5260MHz (Ch52)	0.04	P
	5280MHz (Ch56)	-0.03	P
	5320MHz (Ch64)	-0.40	P
	5500MHz (Ch100)	0.35	P
	5580MHz (Ch116)	-0.31	P
	5700MHz (Ch140)	-2.18	P
802.11n-HT40	5190MHz (Ch38)	-3.08	P
	5230MHz (Ch46)	-3.32	P
	5270MHz (Ch54)	-3.68	P
	5310MHz (Ch62)	-3.48	P
	5510MHz (Ch102)	-2.88	P
	5550MHz (Ch110)	-2.68	P
	5670MHz (Ch134)	-4.83	P
802.11ac-VHT80	5210MHz (Ch42)	-7.01	P
	5290MHz (Ch58)	-6.98	P
	5530MHz (Ch106)	-5.89	P
	5610MHz (Ch122)	-6.90	P
Mode	Channel	Power Spectral Density (dBm/500kHz)	Conclusion
802.11a	5745MHz (CH149)	-5.03	P
	5785MHz (CH157)	-5.41	P
	5825MHz (CH165)	-5.95	P
802.11n-HT40	5755MHz (CH151)	-8.23	P
	5795MHz (CH159)	-8.31	P
802.11ac-VHT80	5775MHz (CH155)	-13.32	P

Conclusion: PASS





**A.4. Occupied 26dB Bandwidth (conducted)**

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

Measurement Limit:

Standard	Limit (MHz)
FCC 47 CFR Part 15.403 (i)	/

The measurement is made according to KDB 789033

Measurement Result:

Mode	Channel	Occupied 26dB Bandwidth (MHz)		Conclusion
		Fig.	Value	
802.11a	5180MHz(Ch36)	Fig.1	24.60	/
	5200MHzs(Ch40)	Fig.2	23.80	/
	5240MHz(Ch48)	Fig.3	22.44	/
	5260MHz(Ch52)	Fig.4	23.48	/
	5280MHz(Ch56)	Fig.5	22.92	/
	5320MHz(Ch64)	Fig.6	27.44	/
	5500MHz(Ch100)	Fig.7	25.04	/
	5580MHz(Ch116)	Fig.8	27.24	/
	5700MHz(Ch140)	Fig.9	22.36	/
	5745MHz(Ch149)	Fig.10	21.40	/
	5785MHz(Ch157)	Fig.11	22.40	/
5825MHz(Ch165)	Fig.12	25.44	/	
802.11n-HT40	5190MHz(Ch38)	Fig.13	70.00	/
	5230MHz(Ch46)	Fig.14	70.00	/
	5270MHz(Ch54)	Fig.15	69.84	/
	5310MHz(Ch62)	Fig.16	70.40	/
	5510MHz(Ch102)	Fig.17	68.40	/
	5550MHz(Ch110)	Fig.18	68.24	/
	5670MHz(Ch134)	Fig.19	68.56	/
	5755MHz(Ch151)	Fig.20	67.84	/
5795MHz(Ch159)	Fig.21	70.32	/	
802.11ac-VHT80	5210MHz(Ch42)	Fig.22	89.12	/
	5290MHz(Ch58)	Fig.23	90.08	/
	5530MHz(Ch106)	Fig.24	92.64	/
	5610MHz(Ch122)	Fig.25	91.20	/
	5775MHz(Ch155)	Fig.26	90.40	/

See below for test graphs.

Conclusion: PASS

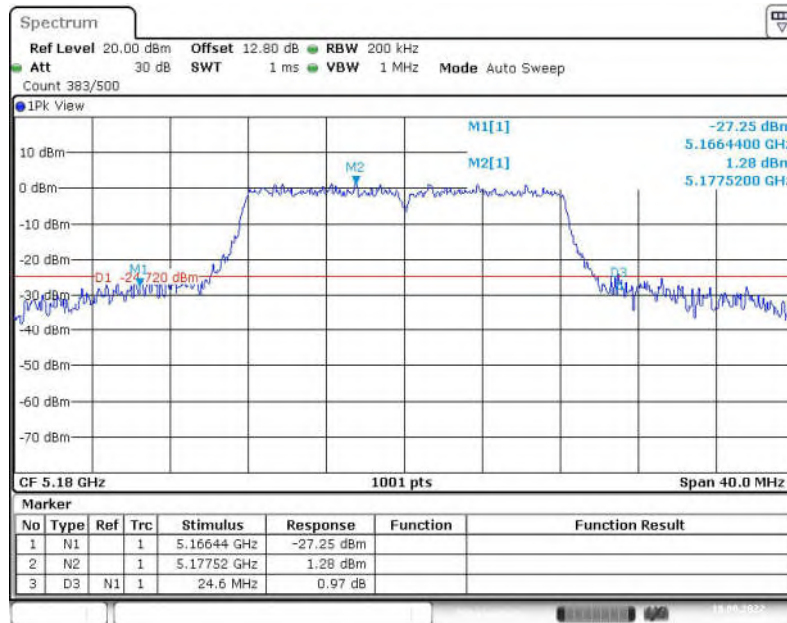


Fig. 1 Occupied 26dB Bandwidth (802.11a, 5180MHz)

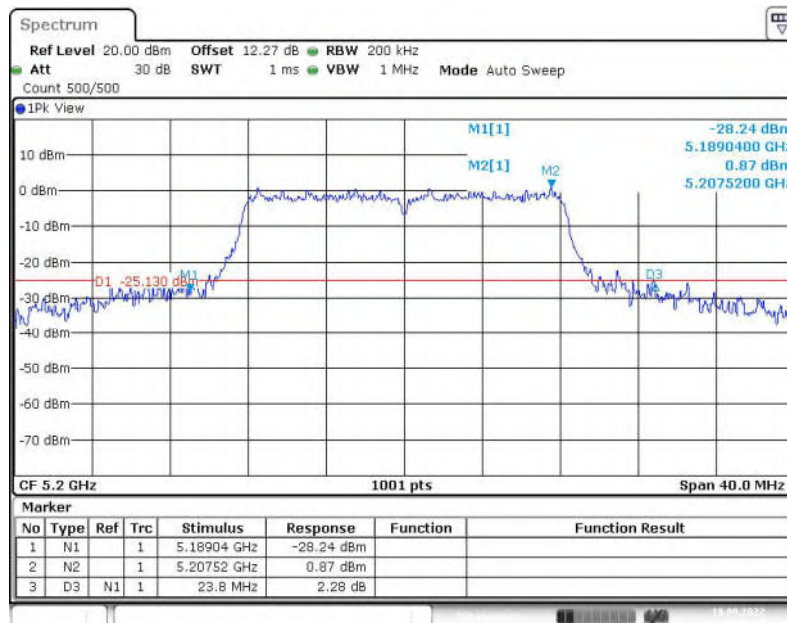


Fig. 2 Occupied 26dB Bandwidth (802.11a, 5200MHz)

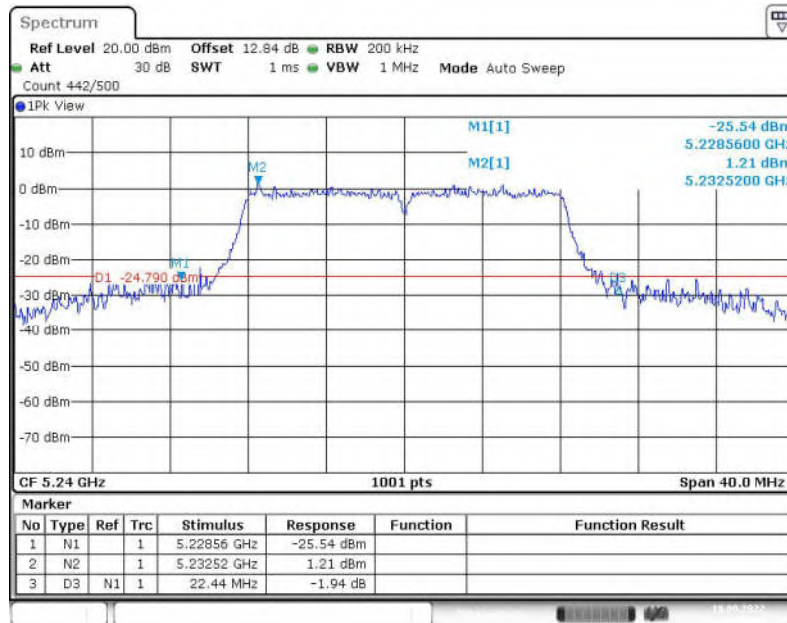


Fig. 3 Occupied 26dB Bandwidth (802.11a, 5240MHz)

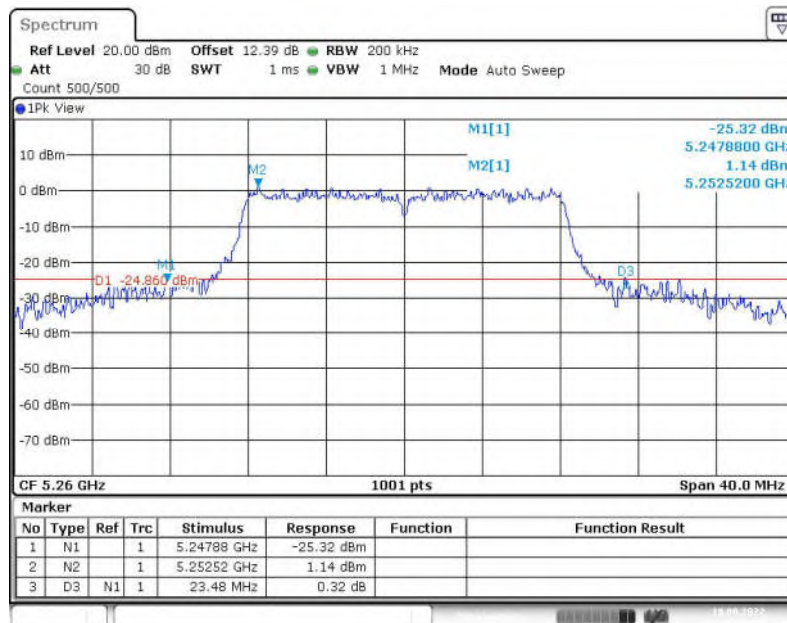


Fig. 4 Occupied 26dB Bandwidth (802.11a, 5260MHz)

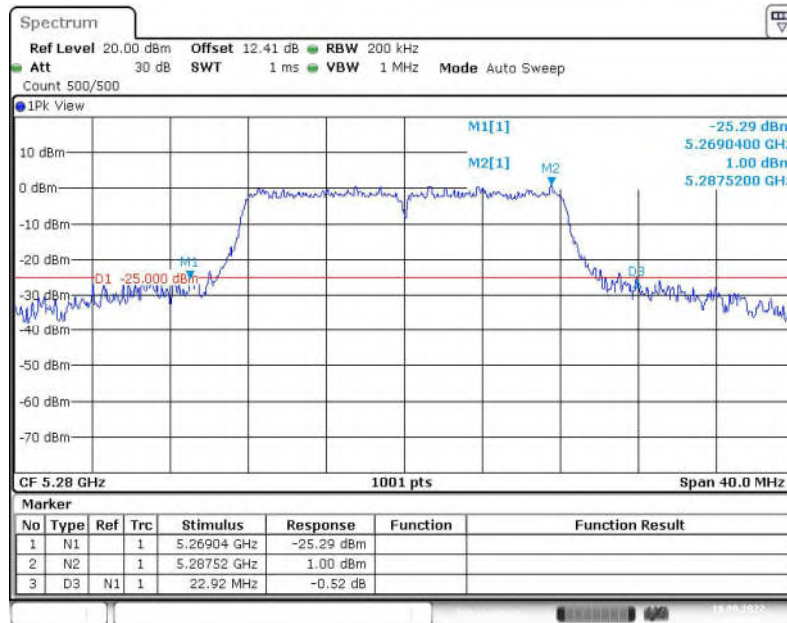


Fig. 5 Occupied 26dB Bandwidth (802.11a, 5280MHz)

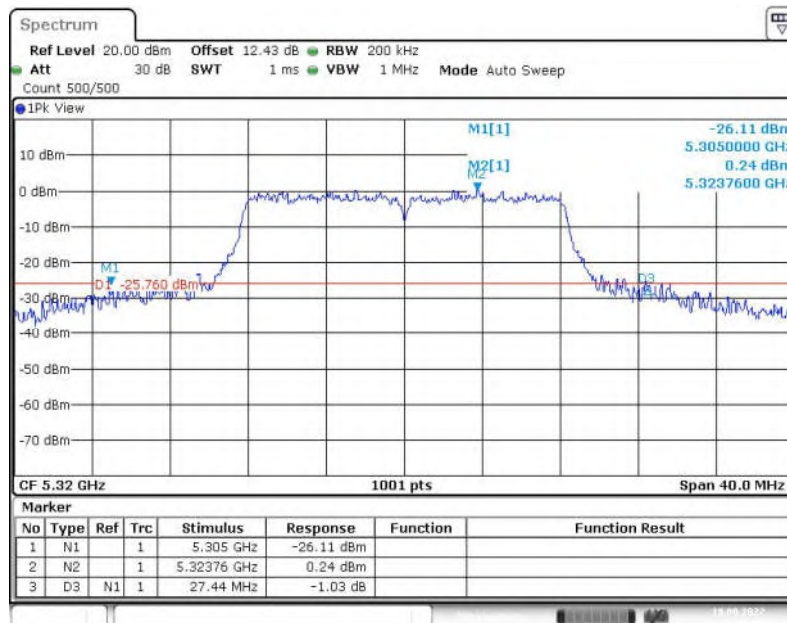


Fig. 6 Occupied 26dB Bandwidth (802.11a, 5320MHz)

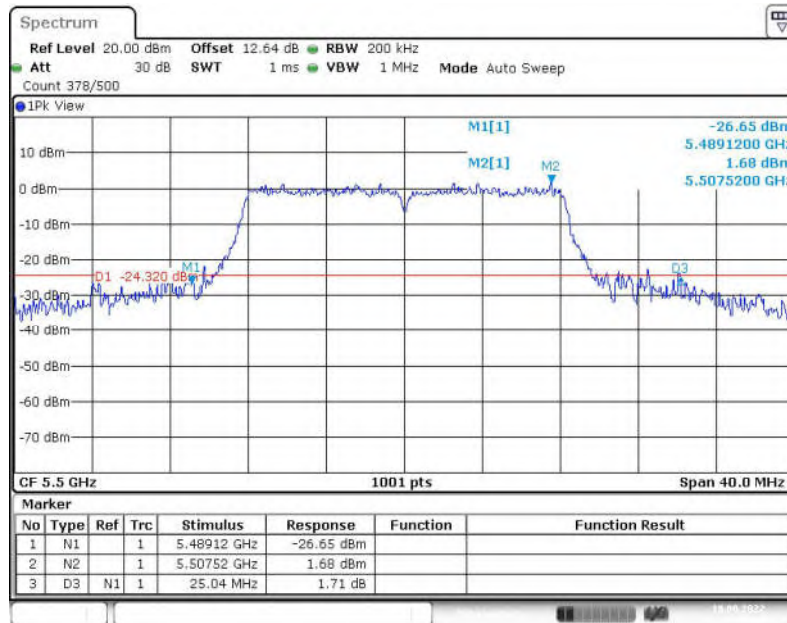


Fig. 7 Occupied 26dB Bandwidth (802.11a, 5500MHz)

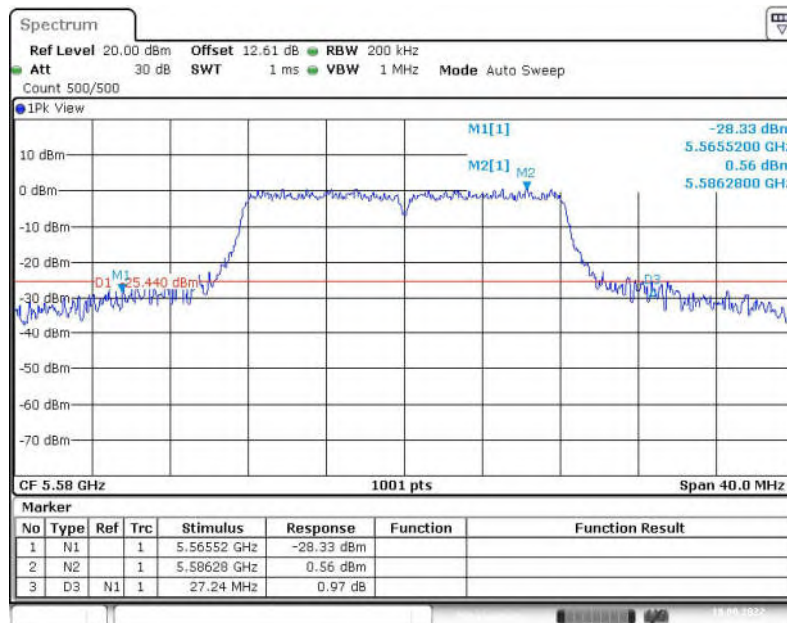


Fig. 8 Occupied 26dB Bandwidth (802.11a, 5580MHz)



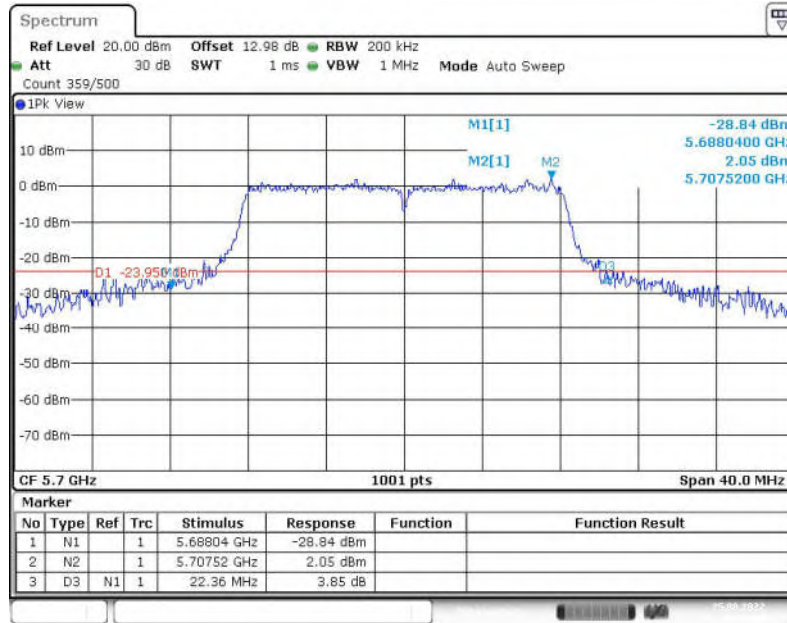


Fig. 9 Occupied 26dB Bandwidth (802.11a, 5700MHz)

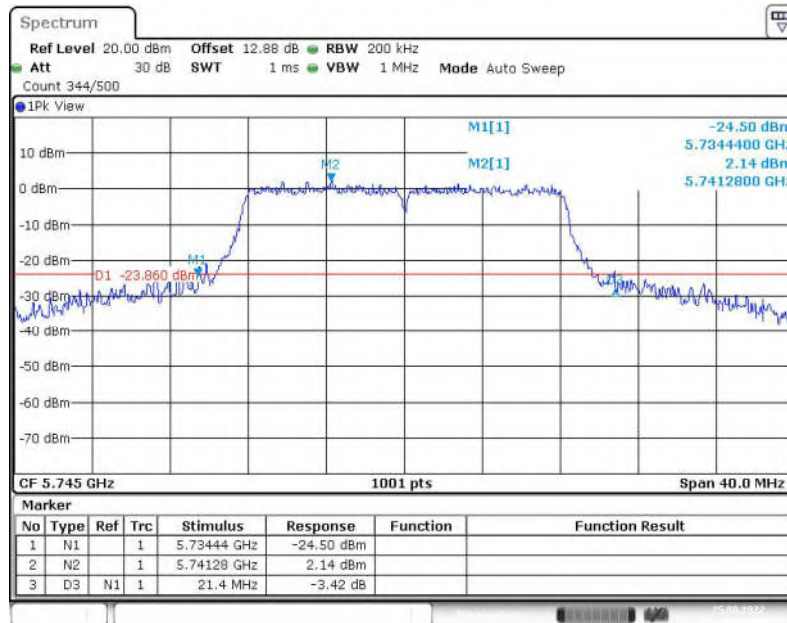


Fig. 10 Occupied 26dB Bandwidth (802.11a, 5745MHz)

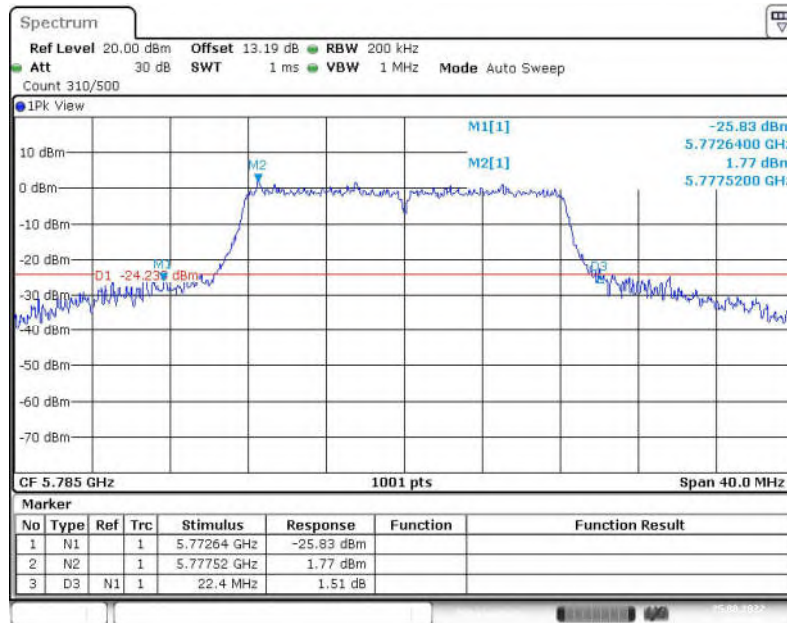


Fig. 11 Occupied 26dB Bandwidth (802.11a, 5785MHz)

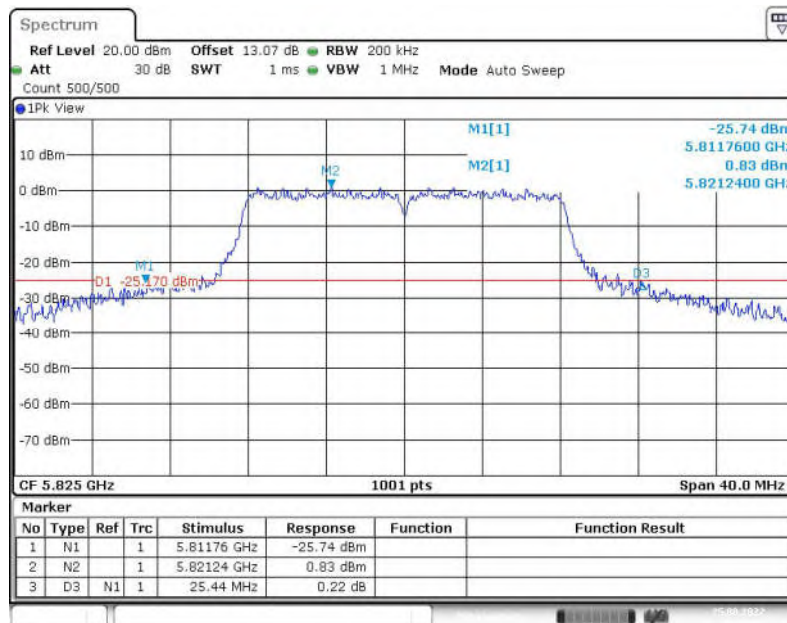


Fig. 12 Occupied 26dB Bandwidth (802.11a, 5825MHz)

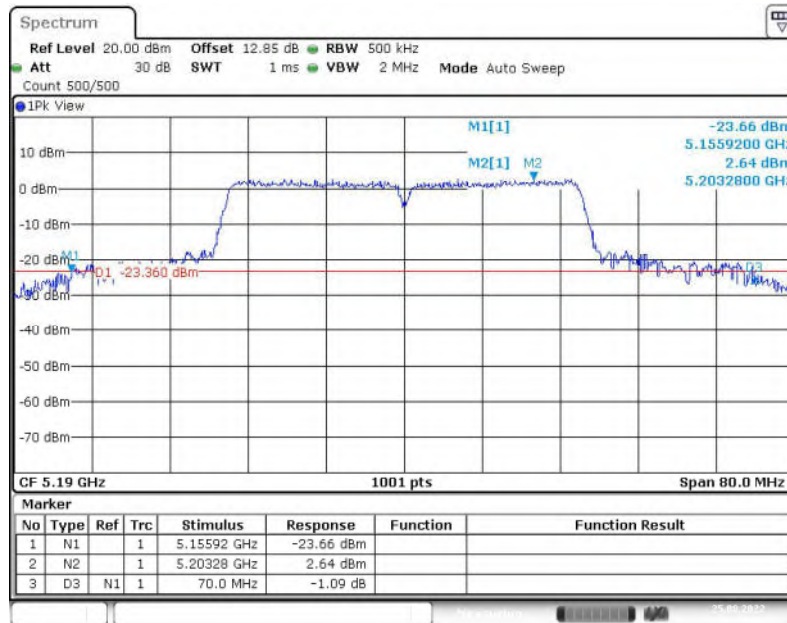


Fig. 13 Occupied 26dB Bandwidth (802.11n-HT40, 5190MHz)

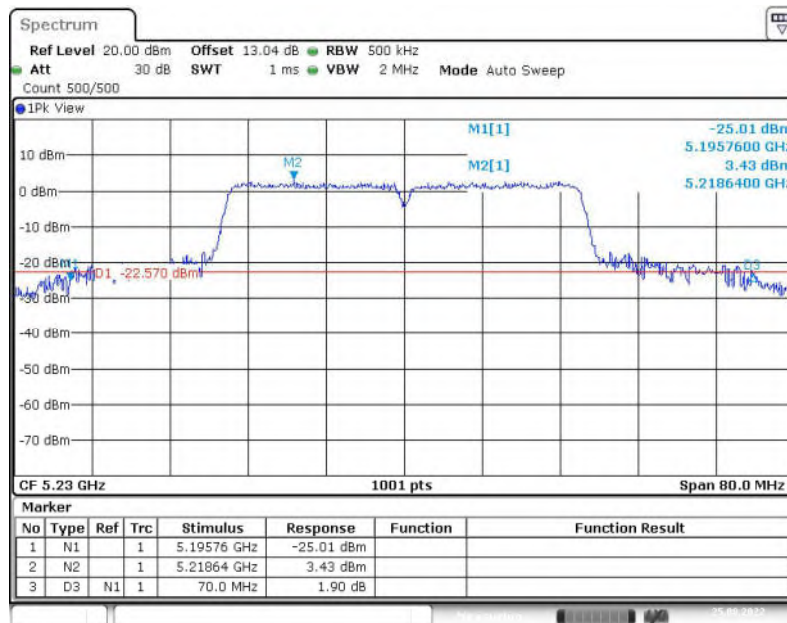


Fig. 14 Occupied 26dB Bandwidth (802.11n-HT40, 5230MHz)



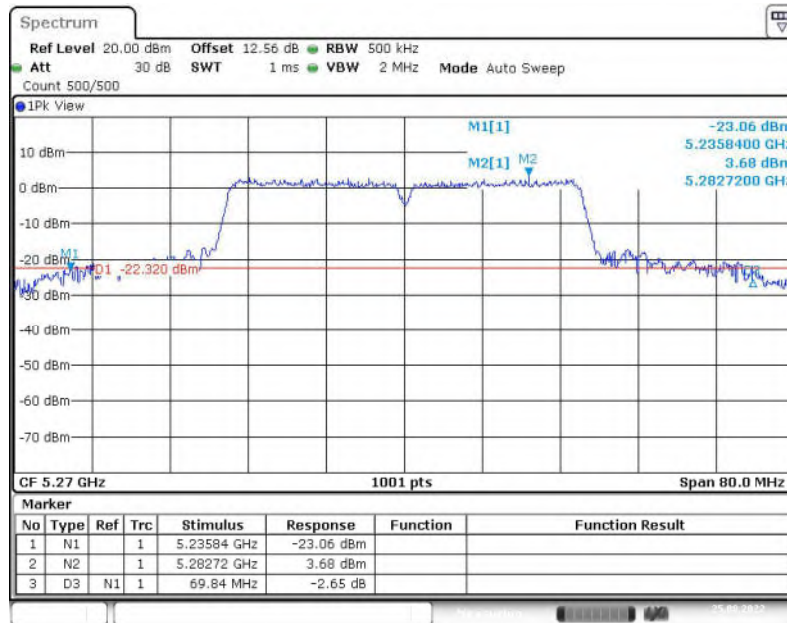


Fig. 15 Occupied 26dB Bandwidth (802.11n-HT40, 5270MHz)

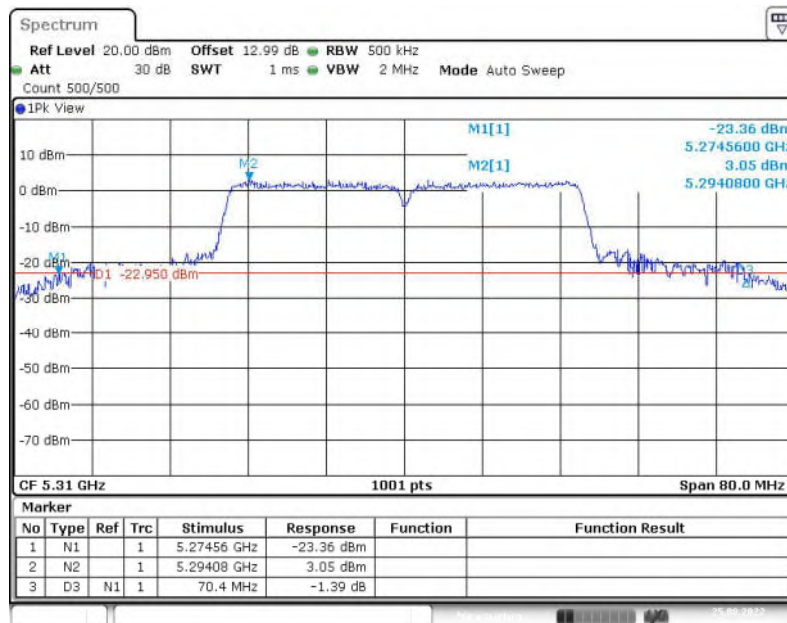


Fig. 16 Occupied 26dB Bandwidth (802.11n-HT40, 5310MHz)

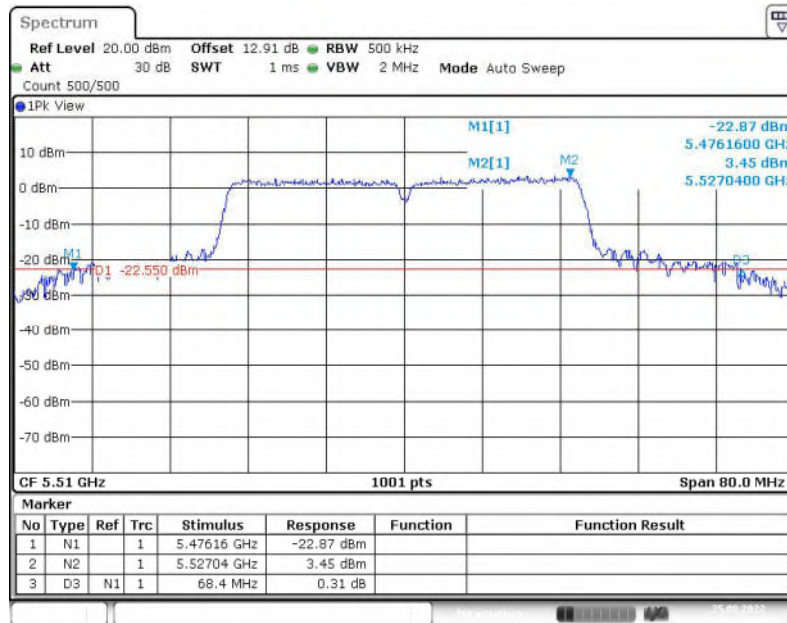


Fig. 17 Occupied 26dB Bandwidth (802.11n-HT40, 5510MHz)

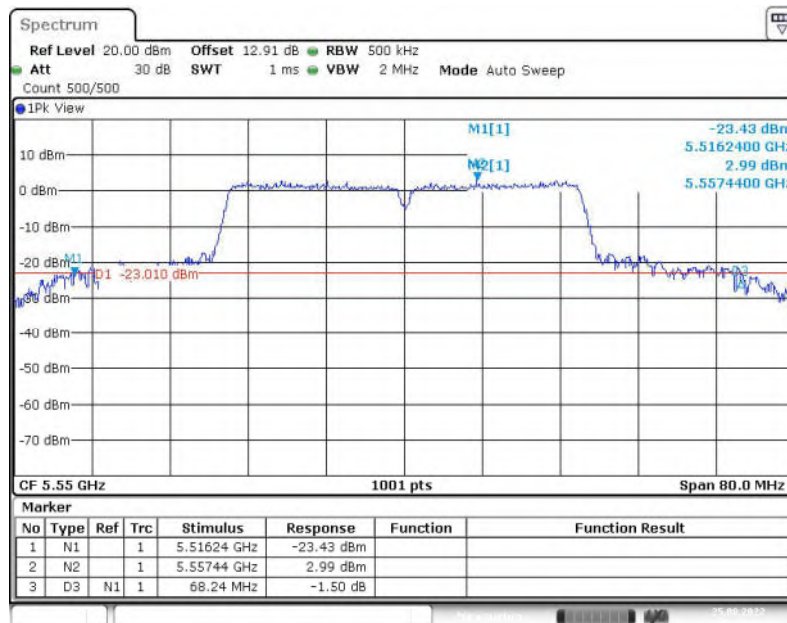


Fig. 18 Occupied 26dB Bandwidth (802.11n-HT40, 5550MHz)

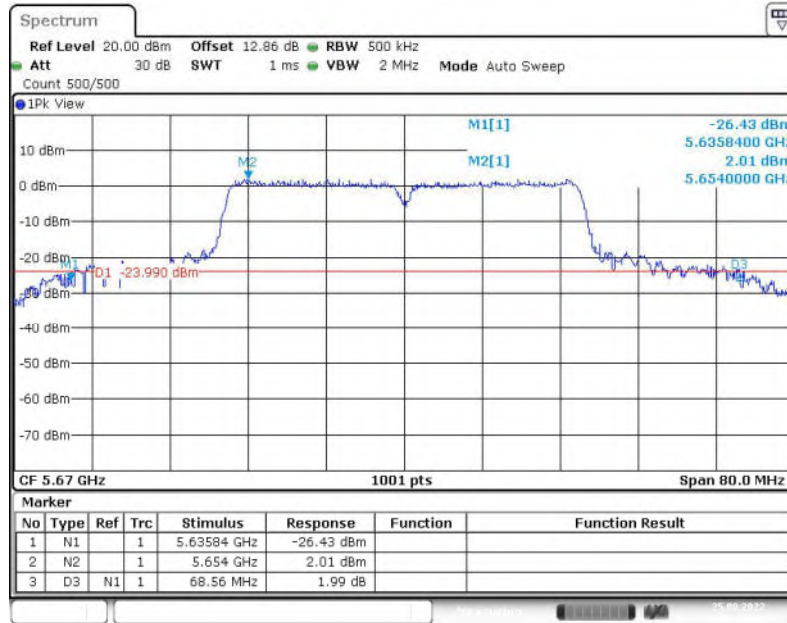


Fig. 19 Occupied 26dB Bandwidth (802.11n-HT40, 5670MHz)

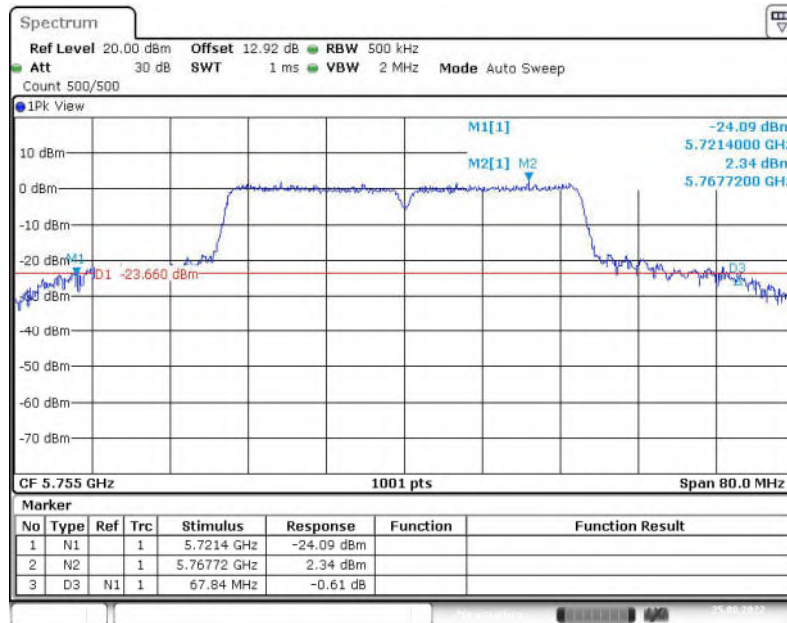


Fig. 20 Occupied 26dB Bandwidth (802.11n-HT40, 5755MHz)

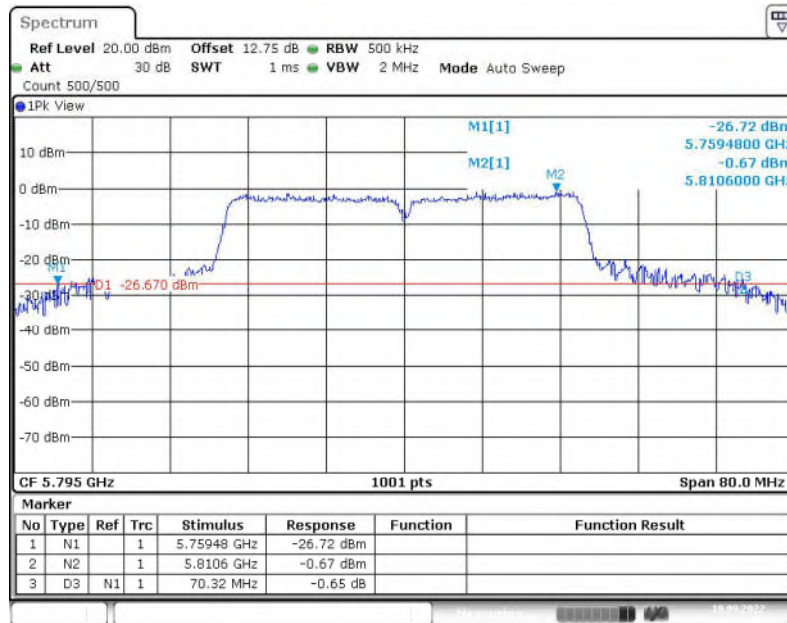


Fig. 21 Occupied 26dB Bandwidth (802.11n-HT40, 5795MHz)

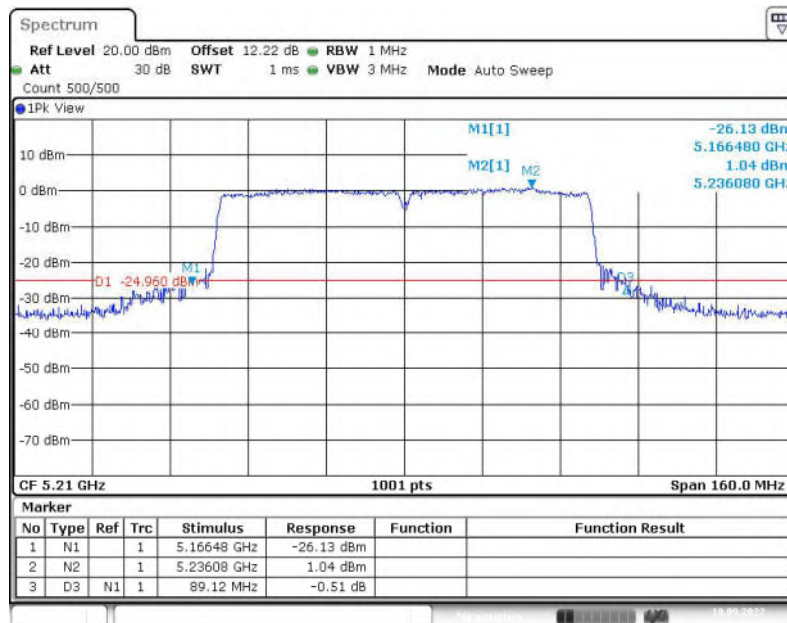


Fig. 22 Occupied 26dB Bandwidth (802.11ac-VHT80, 5210MHz)

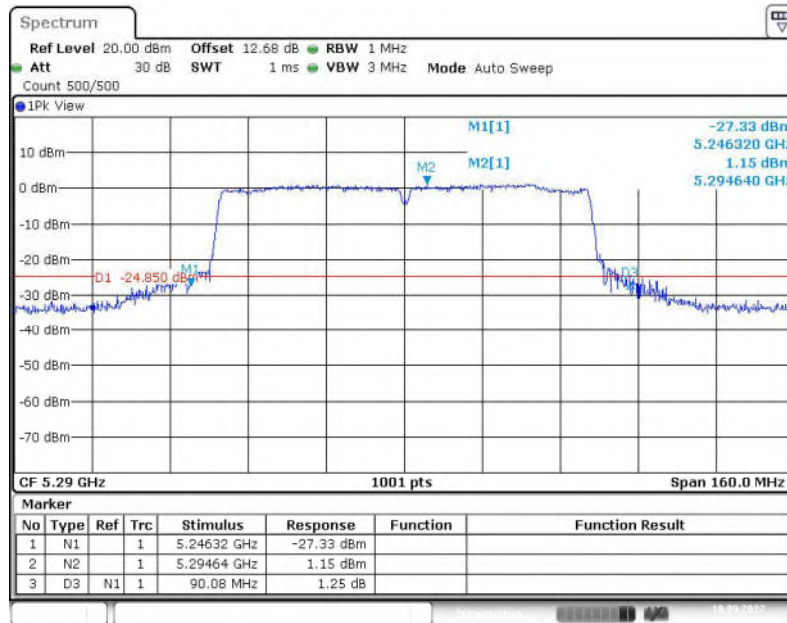


Fig. 23 Occupied 26dB Bandwidth (802.11ac-VHT80, 5290MHz)

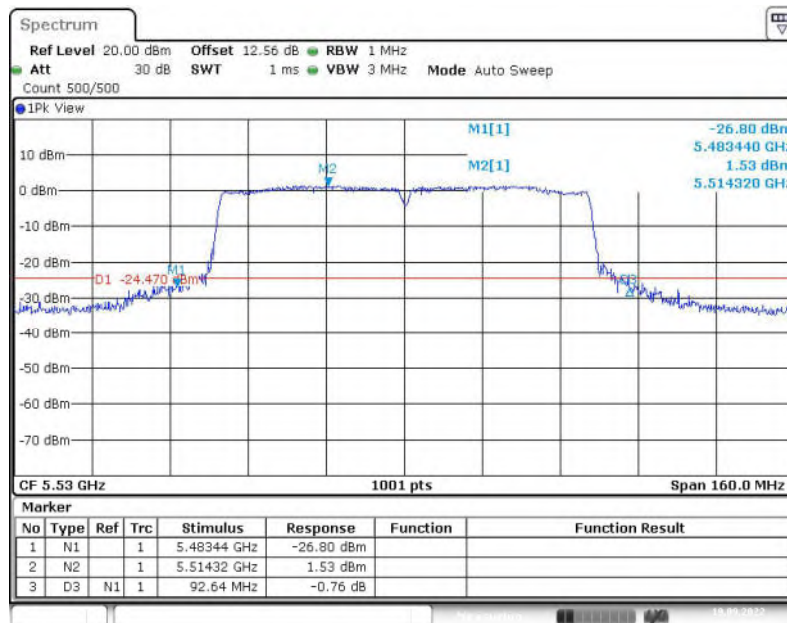


Fig. 24 Occupied 26dB Bandwidth (802.11ac-VHT80, 5530MHz)



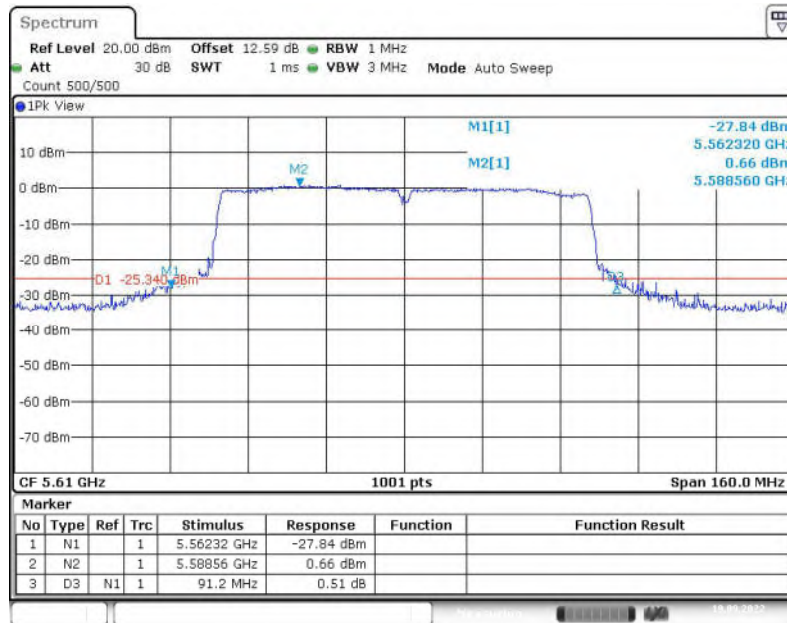


Fig. 25 Occupied 26dB Bandwidth (802.11ac-VHT80, 5610MHz)

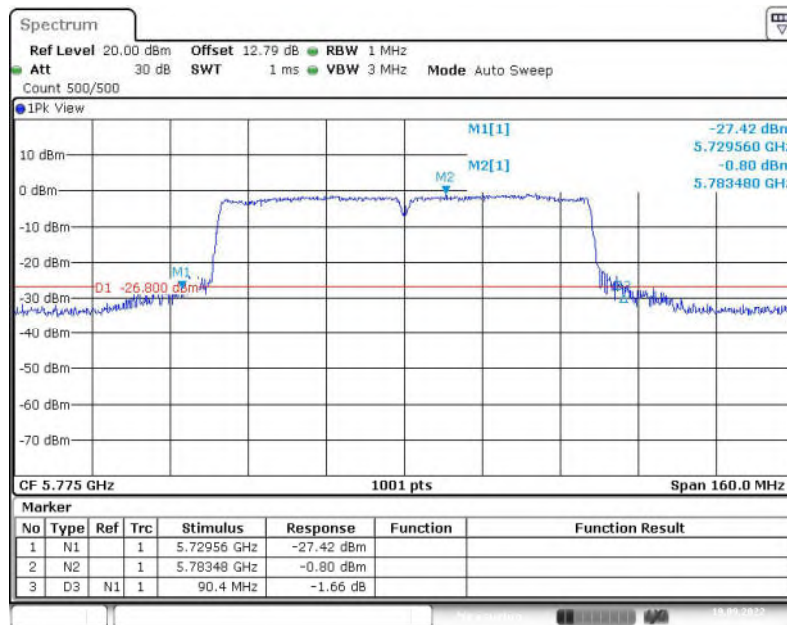


Fig. 26 Occupied 26dB Bandwidth (802.11ac-VHT80, 5775MHz)



**A.5. Occupied 6dB Bandwidth (conducted)**

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

Measurement Limit:

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

The measurement is made according to KDB 789033

Measurement Result:

Mode	Channel	Occupied 6dB Bandwidth(MHz)		Conclusion
802.11a	5745MHz(Ch149)	Fig.27	16.32	P
	5785MHz(Ch157)	Fig.28	16.32	P
	5825MHz(Ch165)	Fig.29	16.32	P
802.11n-HT40	5755MHz(Ch151)	Fig.30	36.32	P
	5795MHz(Ch159)	Fig.31	36.08	P
802.11ac-VHT80	5775MHz(Ch155)	Fig.32	75.68	P

See below for test graphs.

Conclusion: PASS

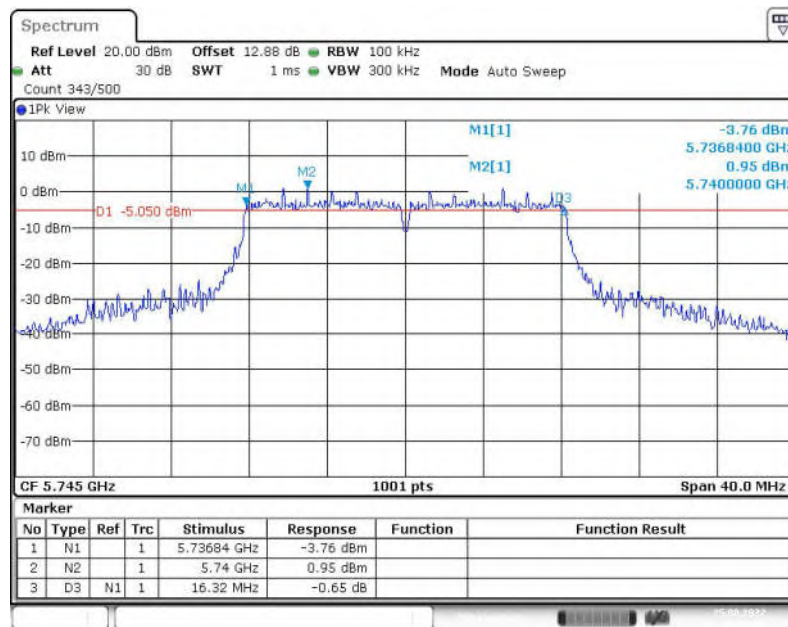


Fig. 27 Occupied 6dB Bandwidth (802.11a, 5745MHz)

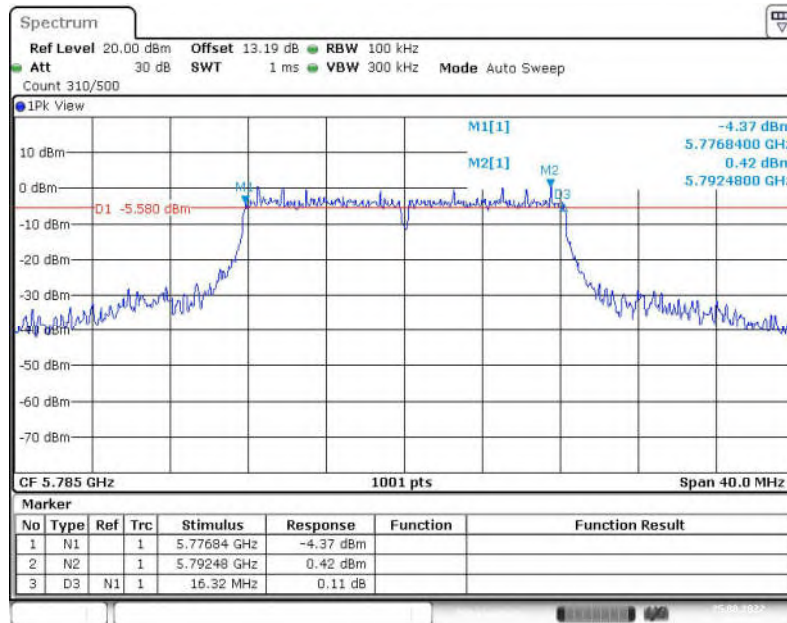


Fig. 28 Occupied 6dB Bandwidth (802.11a, 5785MHz)

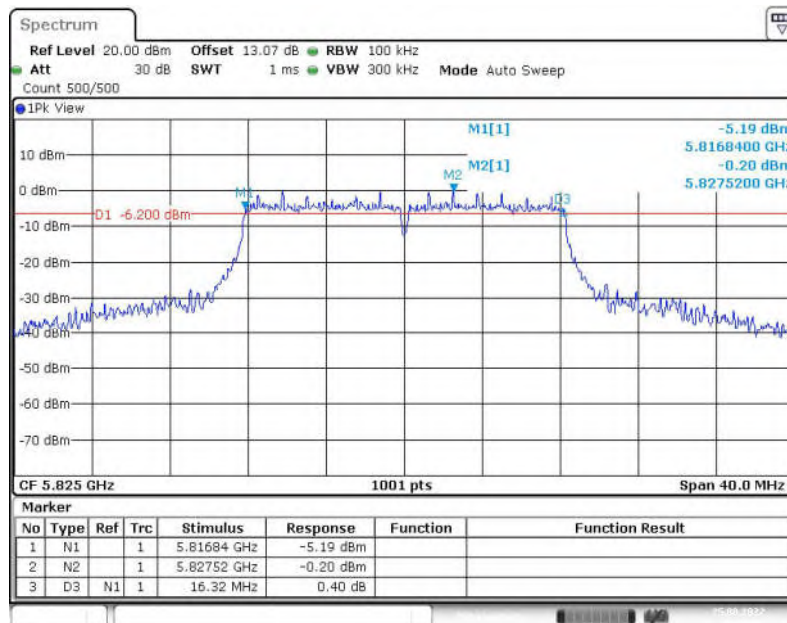


Fig. 29 Occupied 6dB Bandwidth (802.11a, 5825MHz)



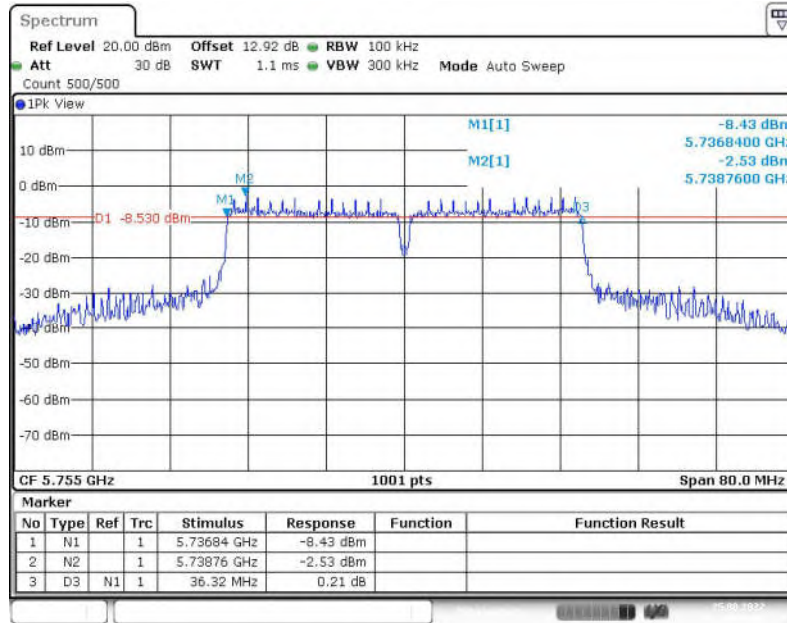


Fig. 30 Occupied 6dB Bandwidth (802.11n-HT40, 5755MHz)

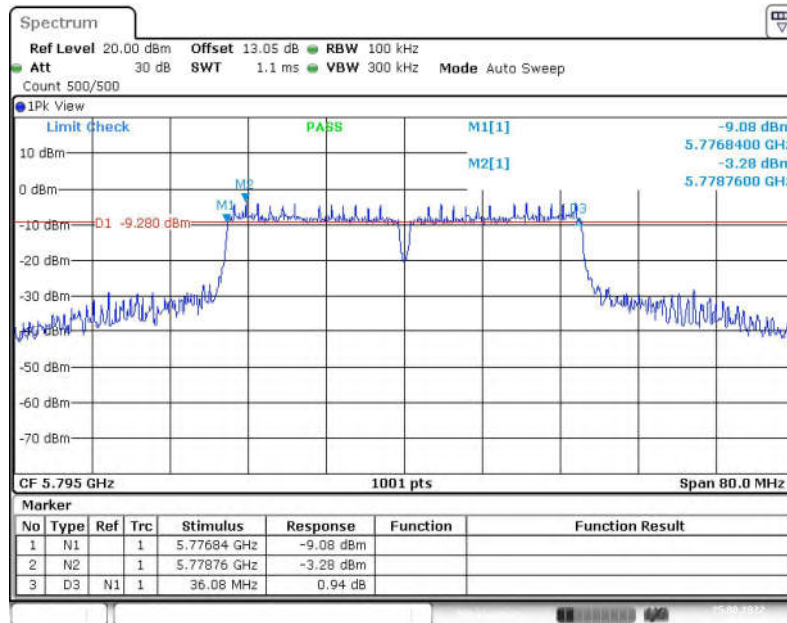


Fig. 31 Occupied 6dB Bandwidth (802.11n-HT40, 5795MHz)

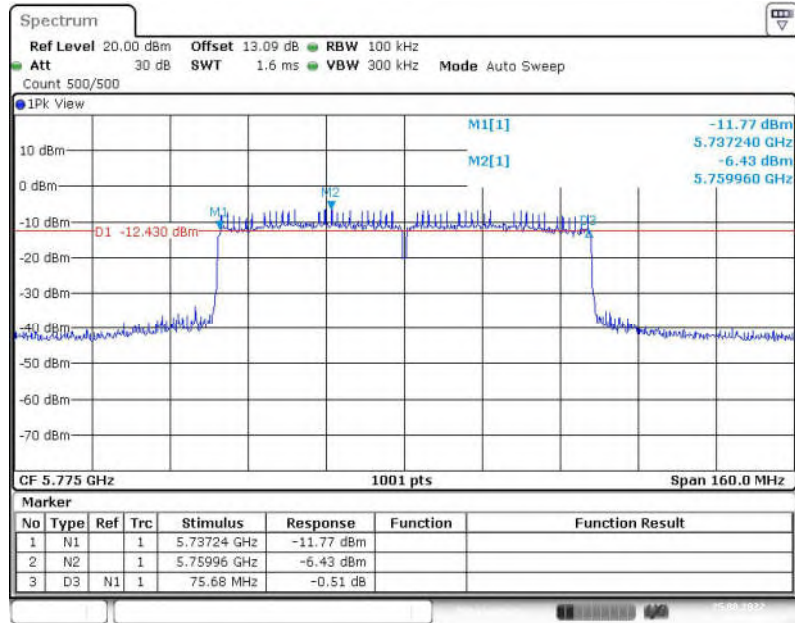


Fig. 32 Occupied 6dB Bandwidth (802.11ac-VHT80, 5775MHz)



**A.6. 99% Occupied Bandwidth (conducted)**

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

**Measurement Limit:**

Standard	Limit (MHz)
FCC 47 CFR Part 15.403	/

The measurement is made according to KDB 789033

**Measurement Result:**

Mode	Channel	99% Occupied Bandwidth(MHz)		Conclusion
		Fig.	Value	
802.11a	5180MHz(Ch36)	Fig.33	17.54	/
	5200MHz(Ch40)	Fig.34	17.58	/
	5240MHz(Ch48)	Fig.35	17.50	/
	5260MHz(Ch52)	Fig.36	17.58	/
	5280MHz(Ch56)	Fig.37	17.58	/
	5320MHz(Ch64)	Fig.38	17.54	/
	5500MHz(Ch100)	Fig.39	17.66	/
	5580MHz(Ch116)	Fig.40	17.50	/
	5700MHz(Ch140)	Fig.41	17.50	/
	5745MHz(Ch149)	Fig.42	17.46	/
	5785MHz(Ch157)	Fig.43	17.46	/
5825MHz(Ch165)	Fig.44	17.46	/	
802.11n-HT40	5190MHz(Ch38)	Fig.45	37.56	/
	5230MHz(Ch46)	Fig.46	37.48	/
	5270MHz(Ch54)	Fig.47	37.96	/
	5310MHz(Ch62)	Fig.48	37.88	/
	5510MHz(Ch102)	Fig.49	37.64	/
	5550MHz(Ch110)	Fig.50	37.80	/
	5670MHz(Ch134)	Fig.51	37.56	/
	5755MHz(Ch151)	Fig.52	37.72	/
5795MHz(Ch159)	Fig.53	37.96	/	
802.11ac-VHT80	5210MHz(Ch42)	Fig.54	76.08	/
	5290MHz(Ch58)	Fig.55	76.24	/
	5530MHz(Ch106)	Fig.56	75.92	/
	5610MHz(Ch122)	Fig.57	75.76	/
	5775MHz(Ch155)	Fig.58	76.08	/

See below for test graphs.

**Conclusion: PASS**

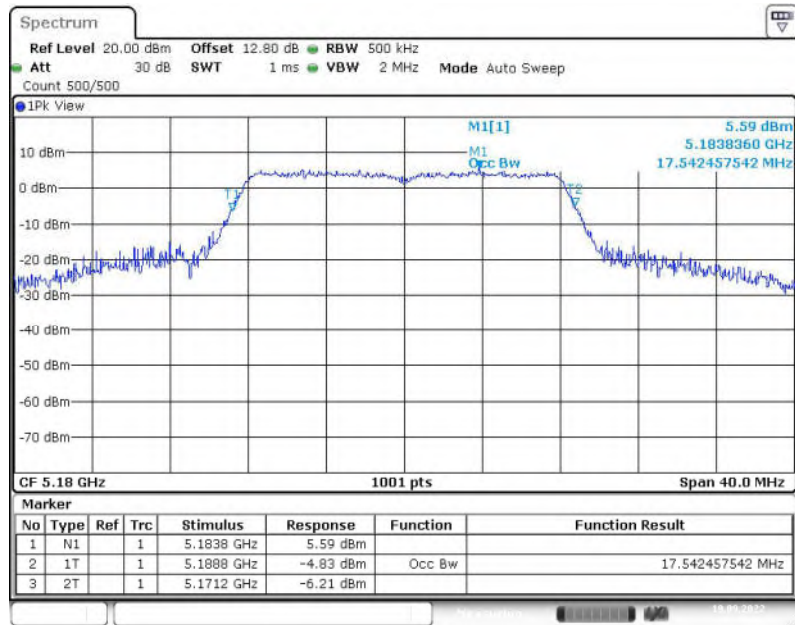


Fig. 33 99% Occupied Bandwidth (802.11a, 5180MHz)

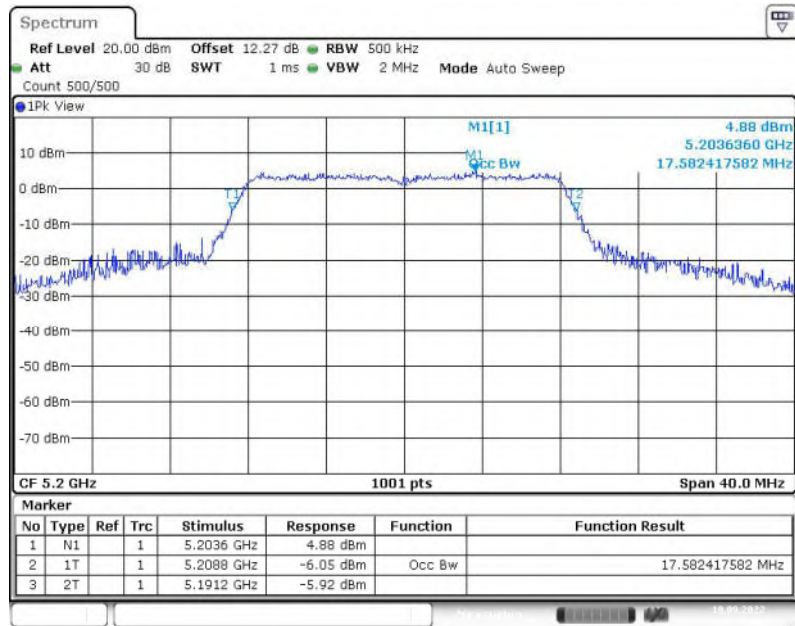


Fig. 34 99% Occupied Bandwidth (802.11a, 5200MHz)

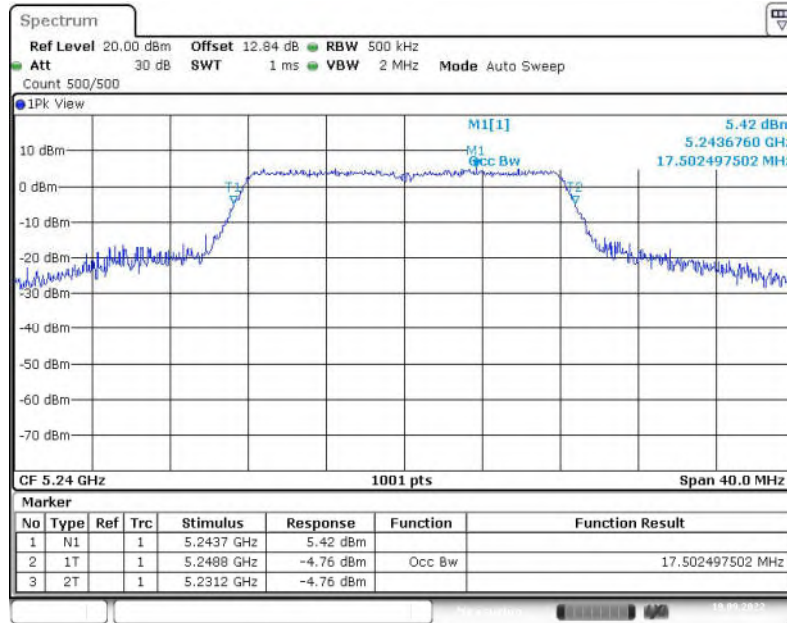


Fig. 35 99% Occupied Bandwidth (802.11a, 5240MHz)

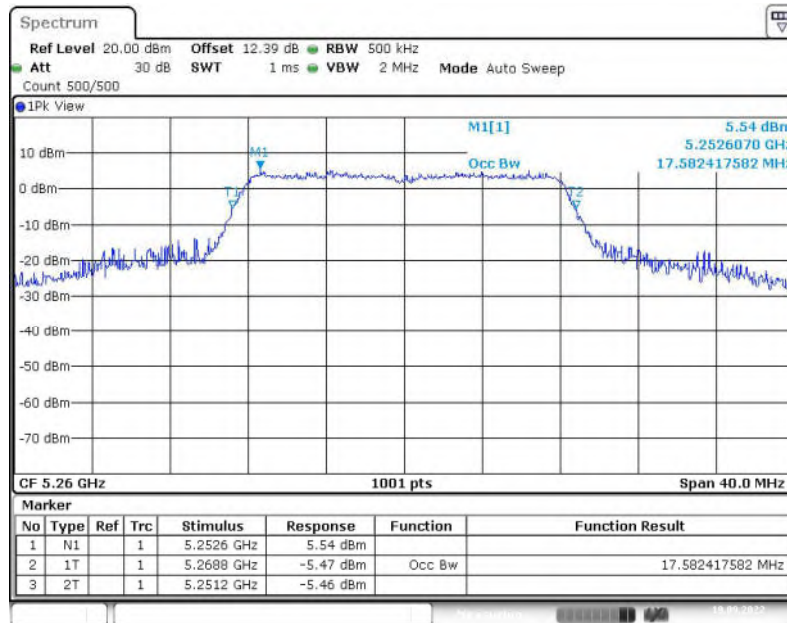


Fig. 36 99% Occupied Bandwidth (802.11a, 5260MHz)

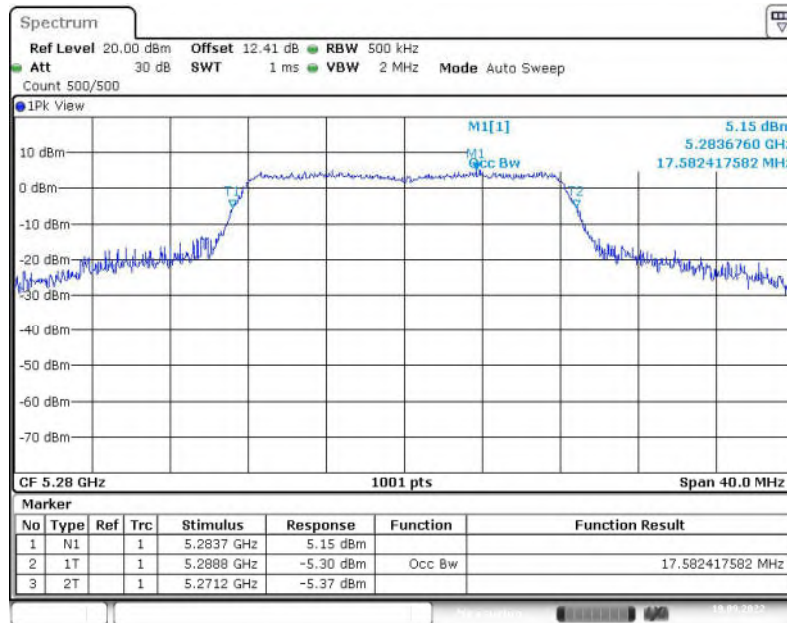


Fig. 37 99% Occupied Bandwidth (802.11a, 5280MHz)

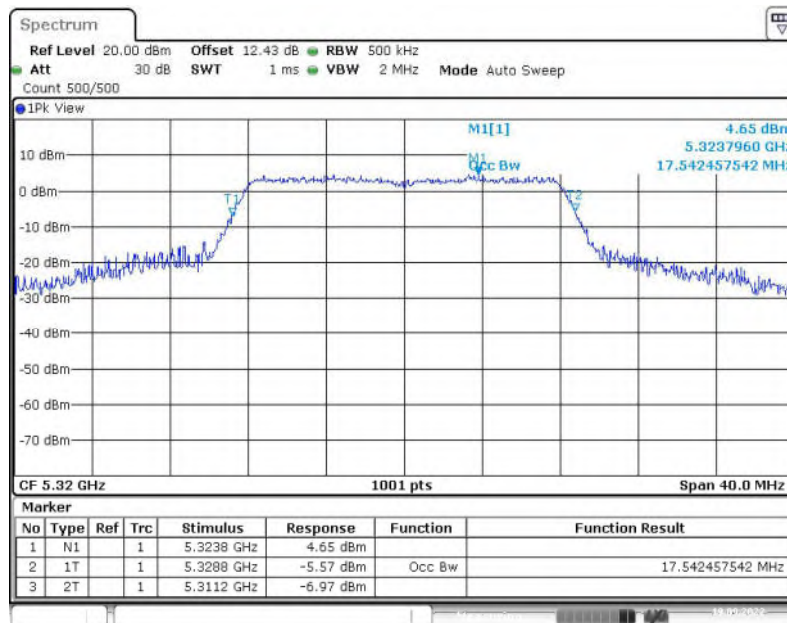


Fig. 38 99% Occupied Bandwidth (802.11a, 5320MHz)



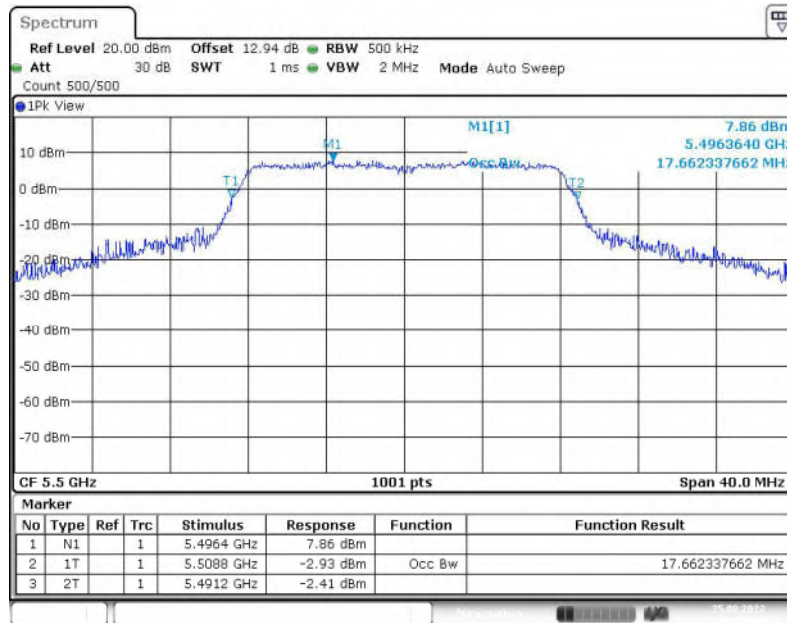


Fig. 39 99% Occupied Bandwidth (802.11a, 5500MHz)

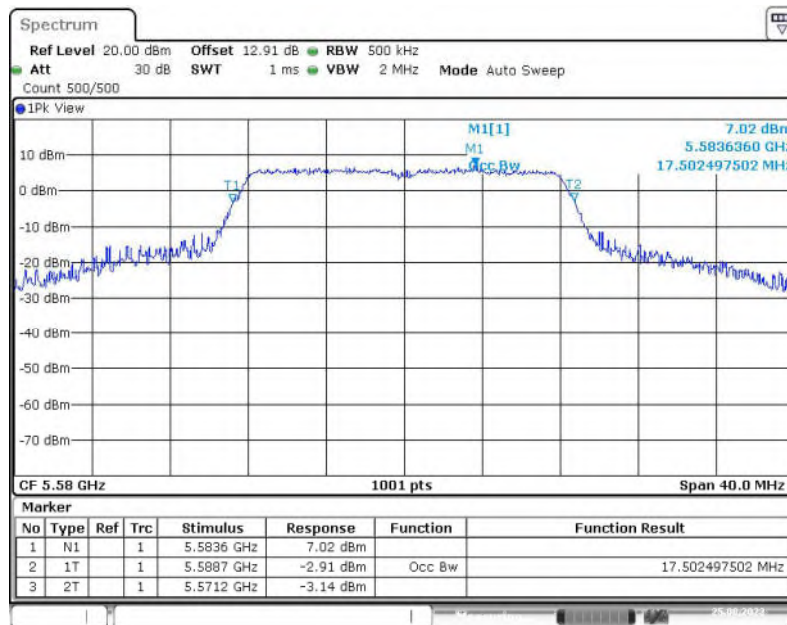


Fig. 40 99% Occupied Bandwidth (802.11a, 5580MHz)

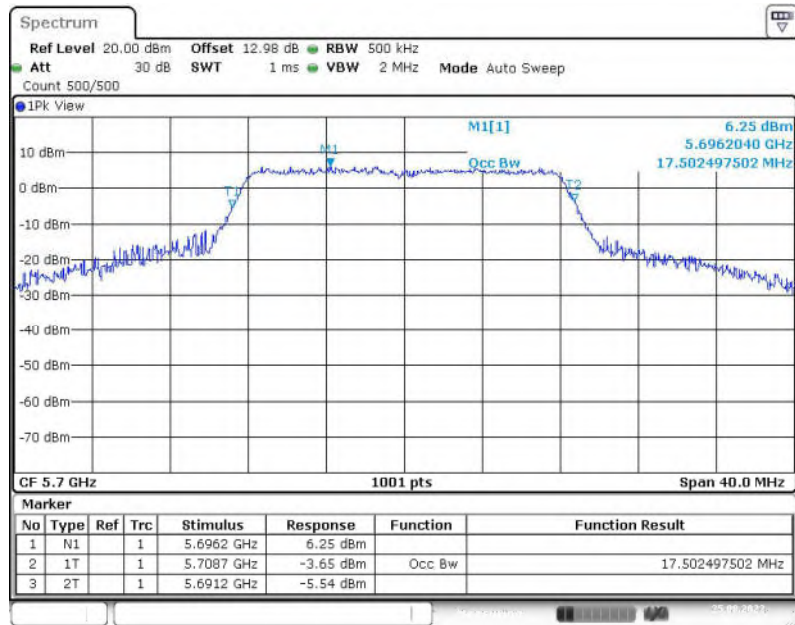


Fig. 41 99% Occupied Bandwidth (802.11a, 5700MHz)

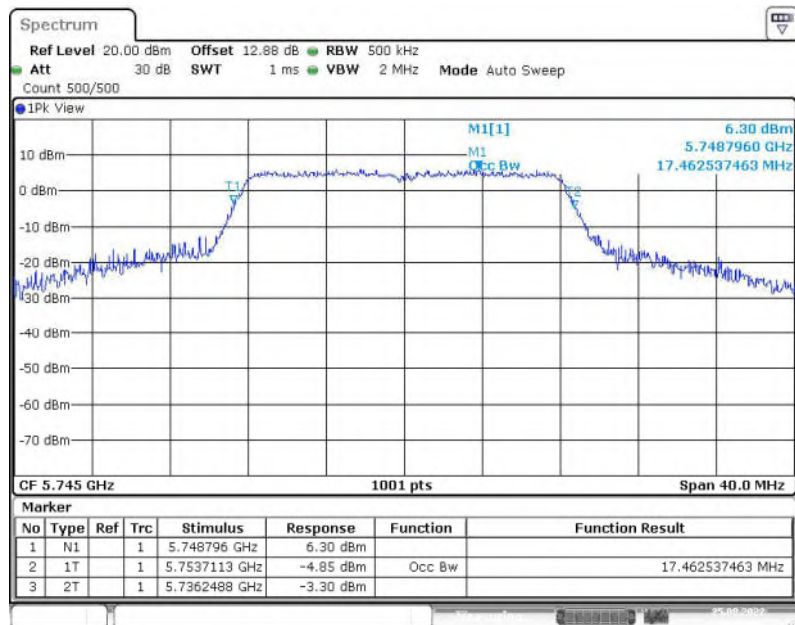


Fig. 42 99% Occupied Bandwidth (802.11a, 5745MHz)



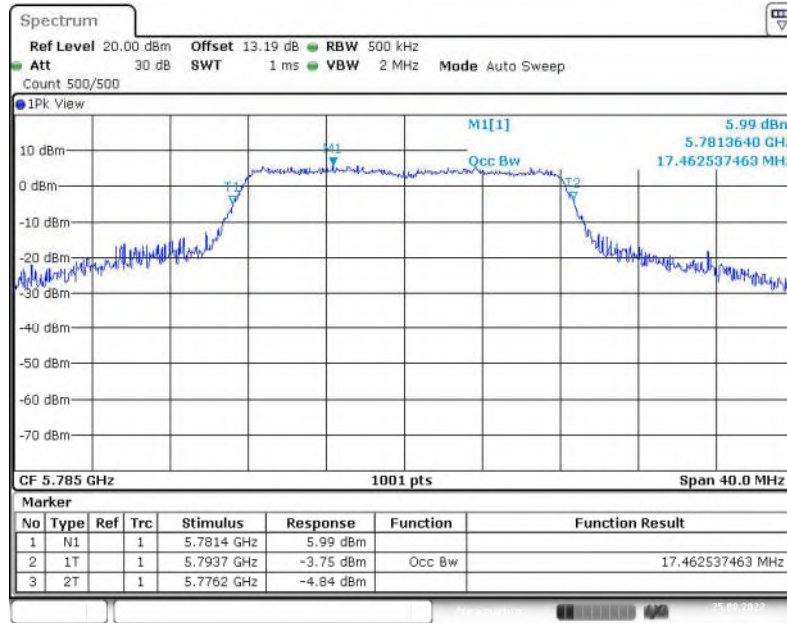


Fig. 43 99% Occupied Bandwidth (802.11a, 5785MHz)

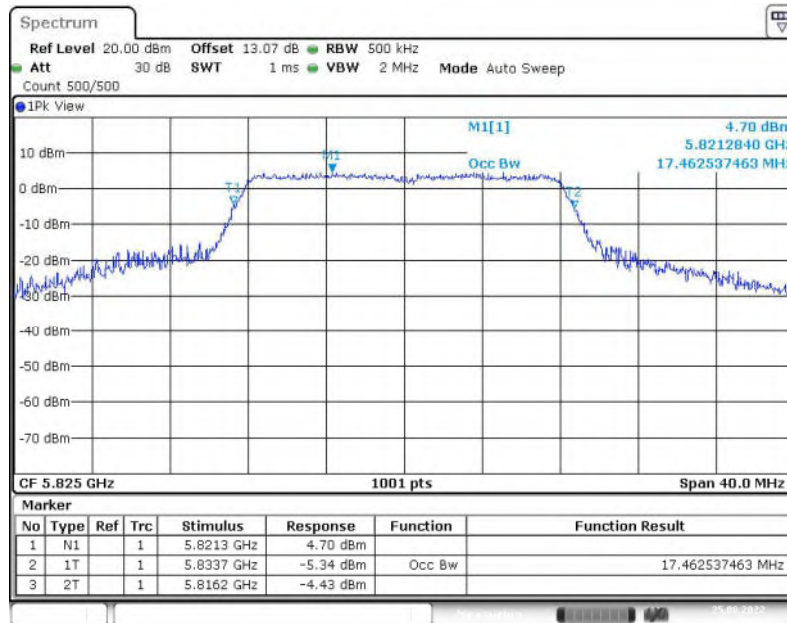


Fig. 44 99% Occupied Bandwidth (802.11a, 5825MHz)

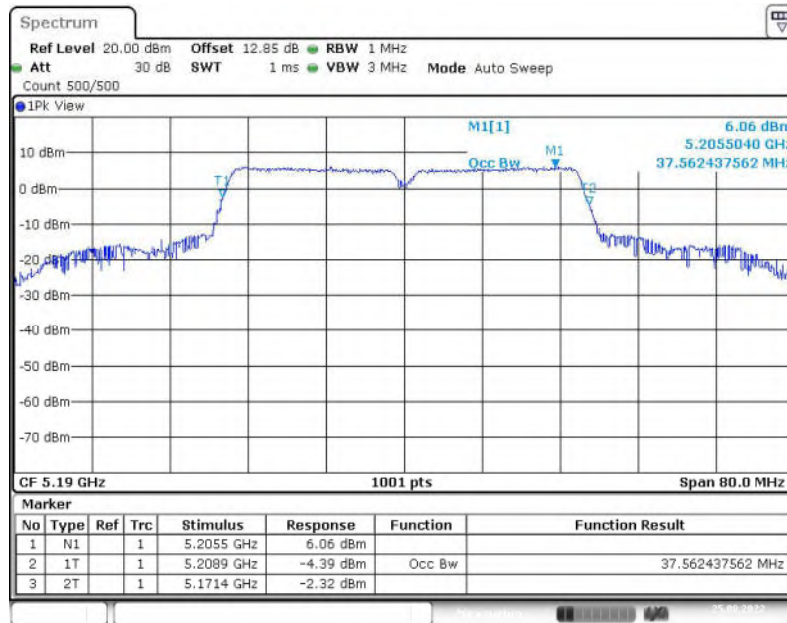


Fig. 45 99% Occupied Bandwidth (802.11n-HT40, 5190MHz)

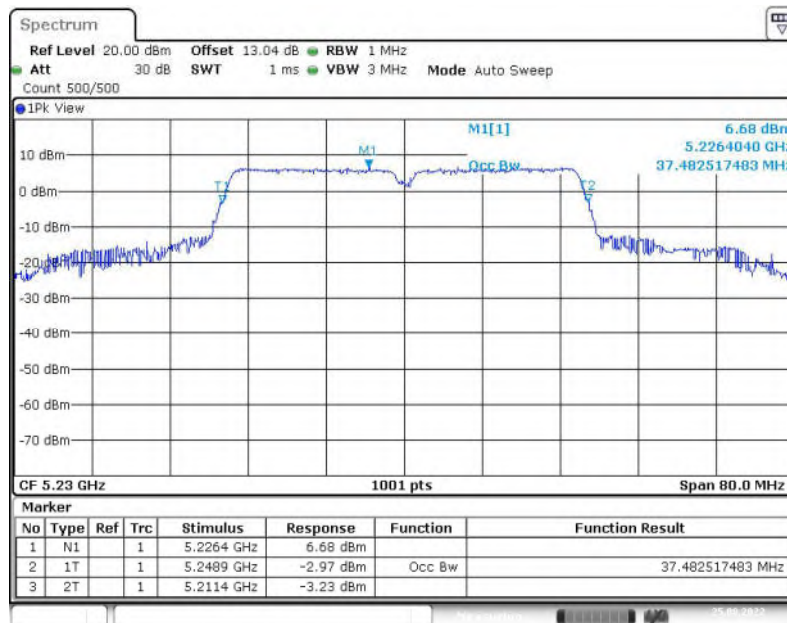


Fig. 46 99% Occupied Bandwidth (802.11n-HT40, 5230MHz)

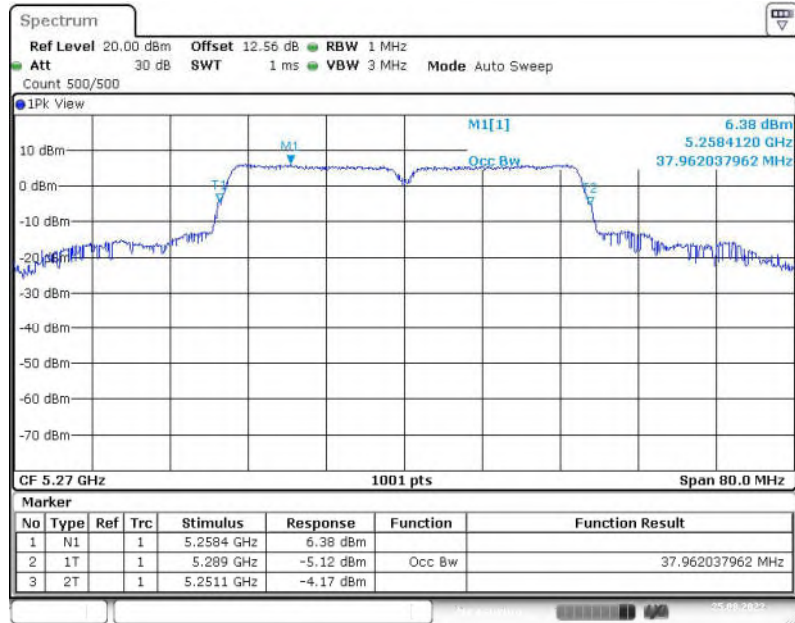


Fig. 47 99% Occupied Bandwidth (802.11n-HT40, 5270MHz)

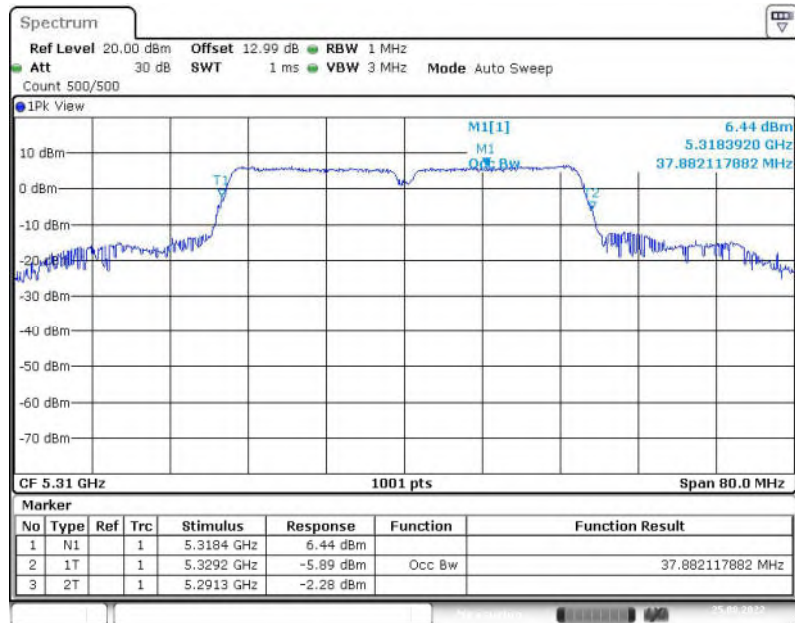


Fig. 48 99% Occupied Bandwidth (802.11n-HT40, 5310MHz)

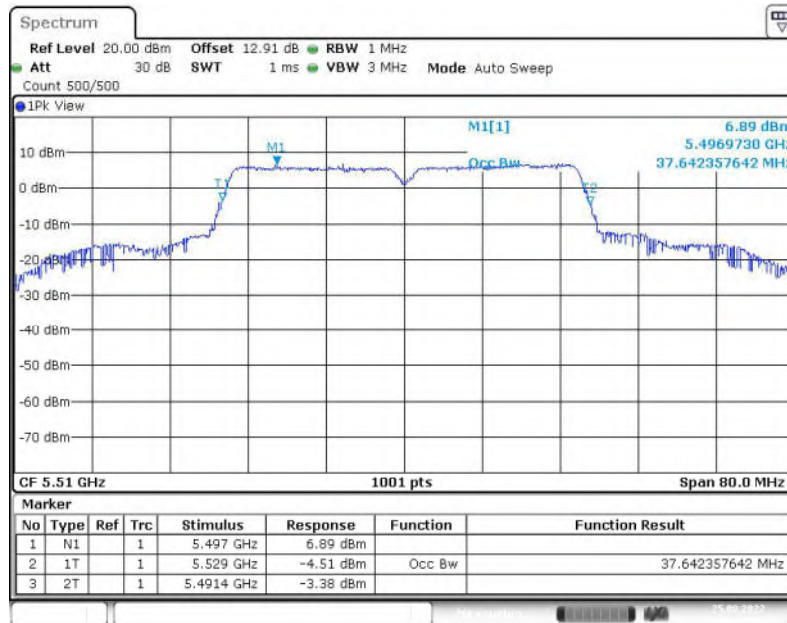


Fig. 49 99% Occupied Bandwidth (802.11n-HT40, 5510MHz)



Fig. 50 99% Occupied Bandwidth (802.11n-HT40, 5550MHz)

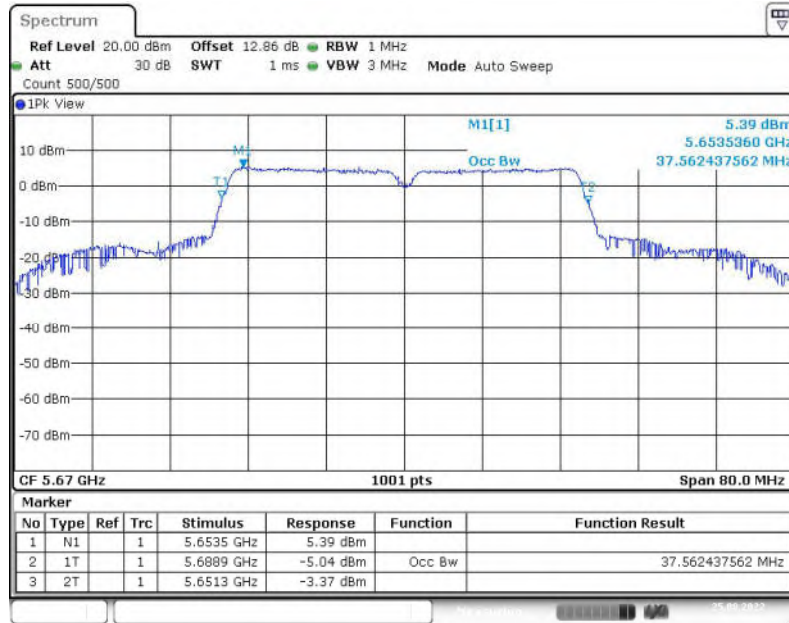


Fig. 51 99% Occupied Bandwidth (802.11n-HT40, 5670MHz)

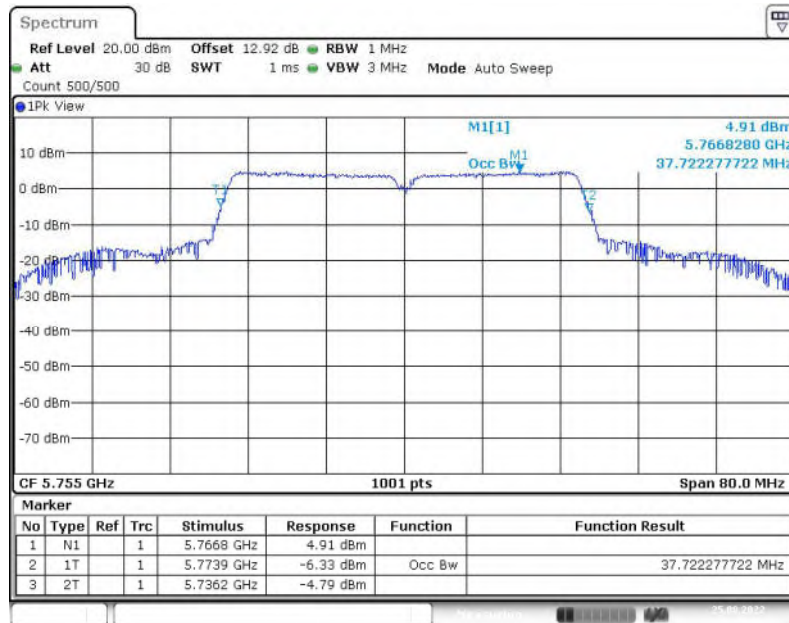


Fig. 52 99% Occupied Bandwidth (802.11n-HT40, 5755MHz)



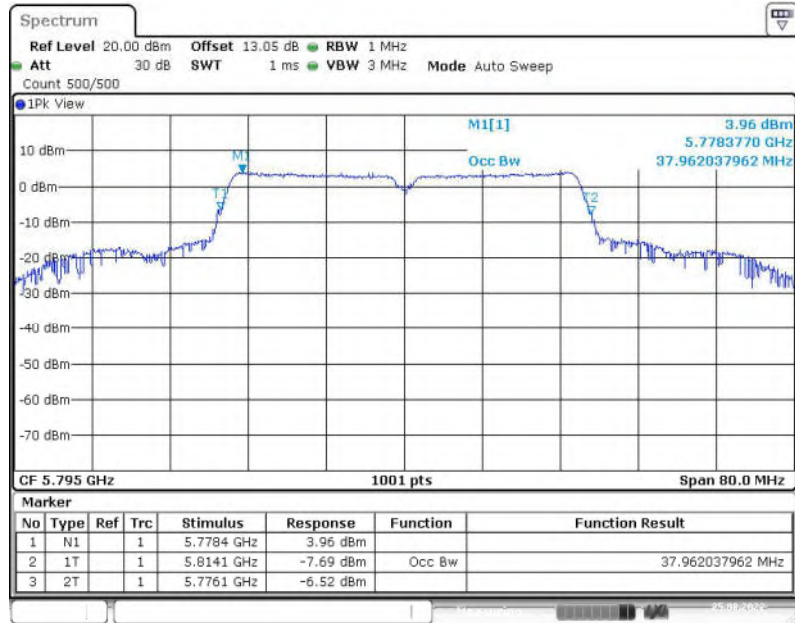


Fig. 53 99% Occupied Bandwidth (802.11n-HT40, 5795MHz)

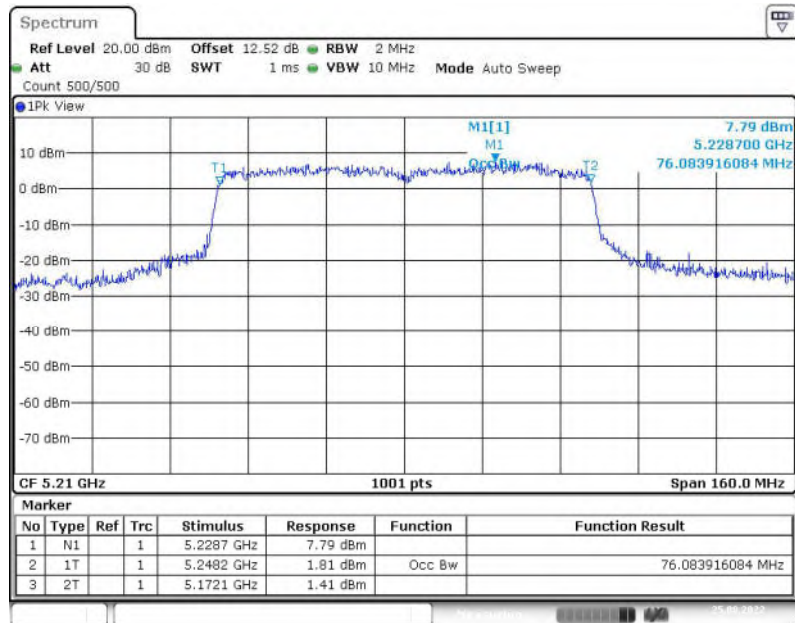


Fig. 54 99% Occupied Bandwidth (802.11ac-VHT80, 5210MHz)

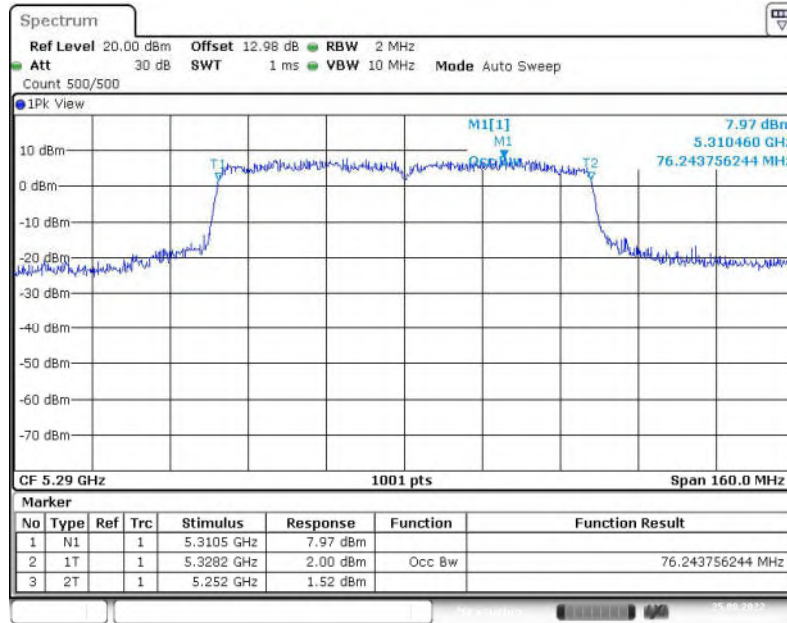


Fig. 55 99% Occupied Bandwidth (802.11ac-VHT80, 5290MHz)

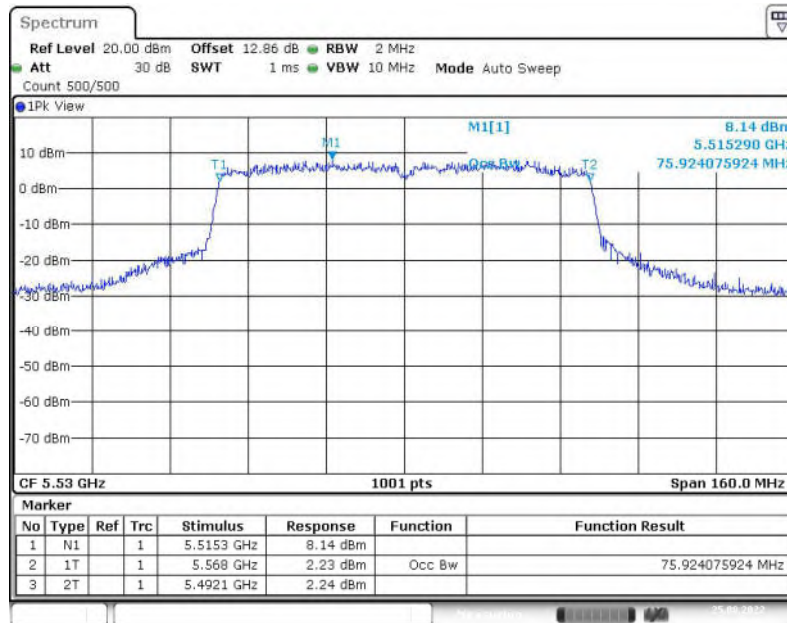


Fig. 56 99% Occupied Bandwidth (802.11ac-VHT80, 5530MHz)



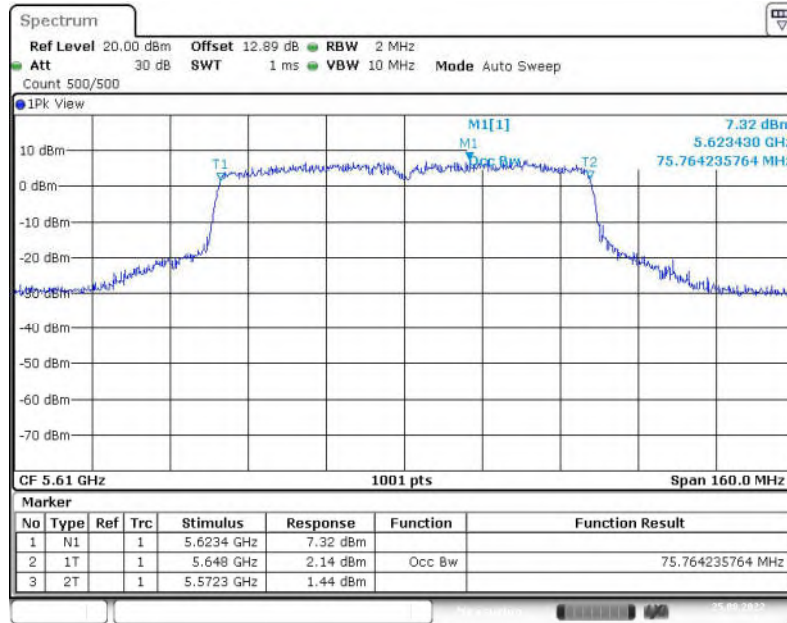


Fig. 57 99% Occupied Bandwidth (802.11ac-VHT80, 5610MHz)

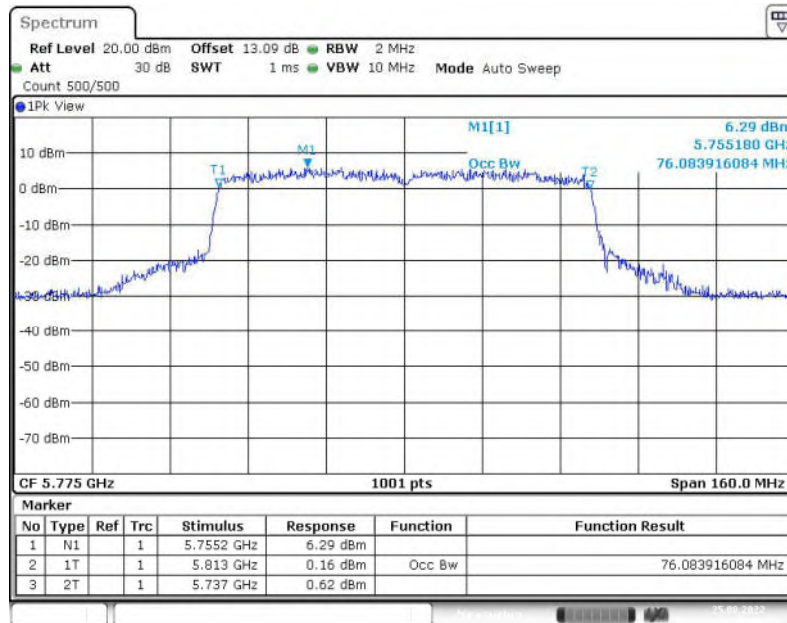


Fig. 58 99% Occupied Bandwidth (802.11ac-VHT80, 5775MHz)



### A.7. Dynamic Frequency Selection

The EUT is Client without radar detection (only support client mode).

Measurement of method: See KDB 905462-D02.

**Measurement Limit:**

Standard	Test Items	Limit
FCC 47 CFR Part 15.407 (h)	Channel Move Time	< 10 s
	Channel Closing Transmission Time	< 200 ms + 60 ms
	Non-Occupancy Period	> 1800 s

The measurement is made according to KDB 905462.

1). Parameters of DFS test signal:

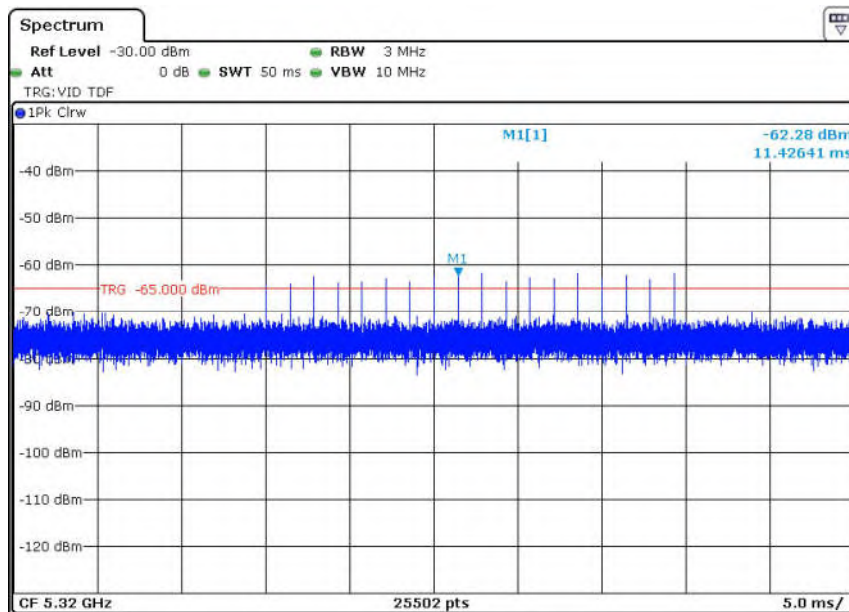
Interference threshold values, master or client incorporation in service monitoring. For device Power less than 23dBm (E.I.R.P.), the threshold level is -62 dBm at the antenna port after Correction for antenna gain and procedural adjustments.

Because of conducted measurement performed, the calibration power from radar signal generator to antenna port of DFS test equipment is -62 dBm.

Maximum Transmit Power	Value
> 200 mW	-64 dBm
< 200 mW	-62 dBm

2). Parameters of the reference DFS test signal:

Pulse width W (µs)	Pulse repetition frequency PRF (PPS)	Pulses per burst (PPB)
1	700	18



**Radar Signal (Type 0)**



**Measurement Results:**

**Channel Move Time & Channel Closing Transmission Time:**

Mode	Channel	Test Results	Conclusion
802.11a	5320MHz(Ch64)	Fig.59	<b>P</b>
802.11ac-VHT80	5530MHz(Ch106)	Fig.60	<b>P</b>

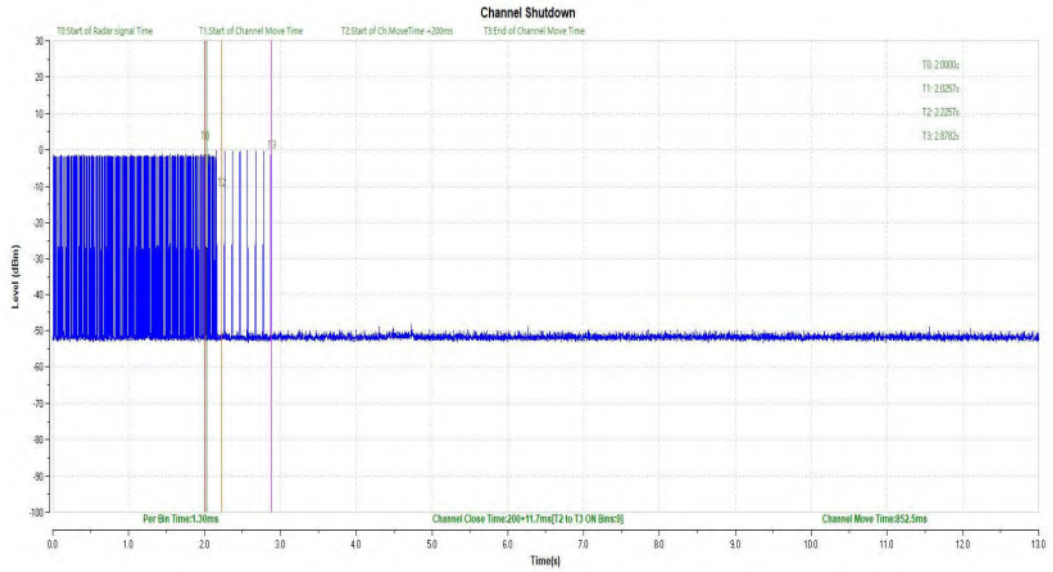
**Non-Occupancy Period:**

Mode	Channel	Test Results	Conclusion
802.11a	5320MHz(Ch64)	Fig.61	<b>P</b>
802.11ac-VHT80	5530MHz(Ch106)	Fig.62	<b>P</b>

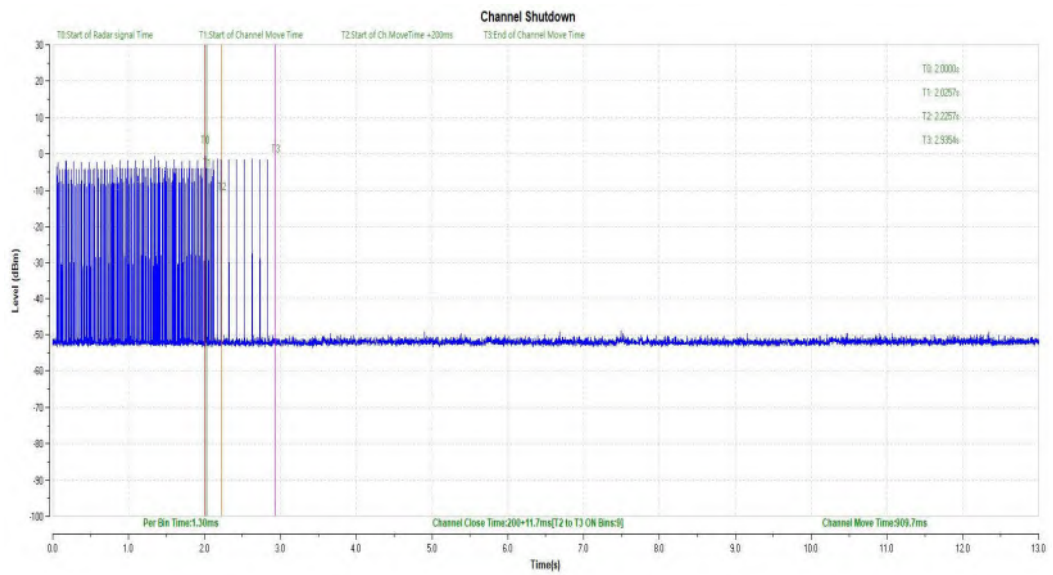
**Note:** The device will automatically discontinue transmission when the transmission of information stops (or operational failure).

**See below for test graphs.**

**Conclusion: PASS**



**Fig. 59 Channel Move Time & Channel Closing Transmission Time (802.11a Frequency Band: 5250MHz ~ 5350MHz)**



**Fig. 60 Channel Move Time & Channel Closing Transmission Time (802.11ac-VHT80 Frequency Band: 5470MHz~5725MHz)**

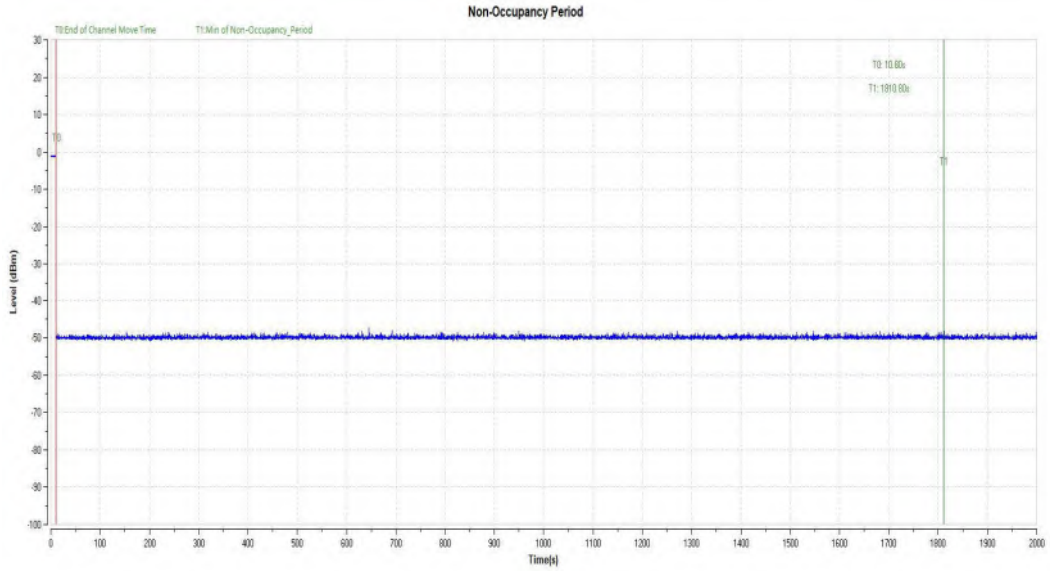


Fig. 61 Non-Occupancy Period (802.11a Frequency Band: 5250MHz ~ 5350MHz)

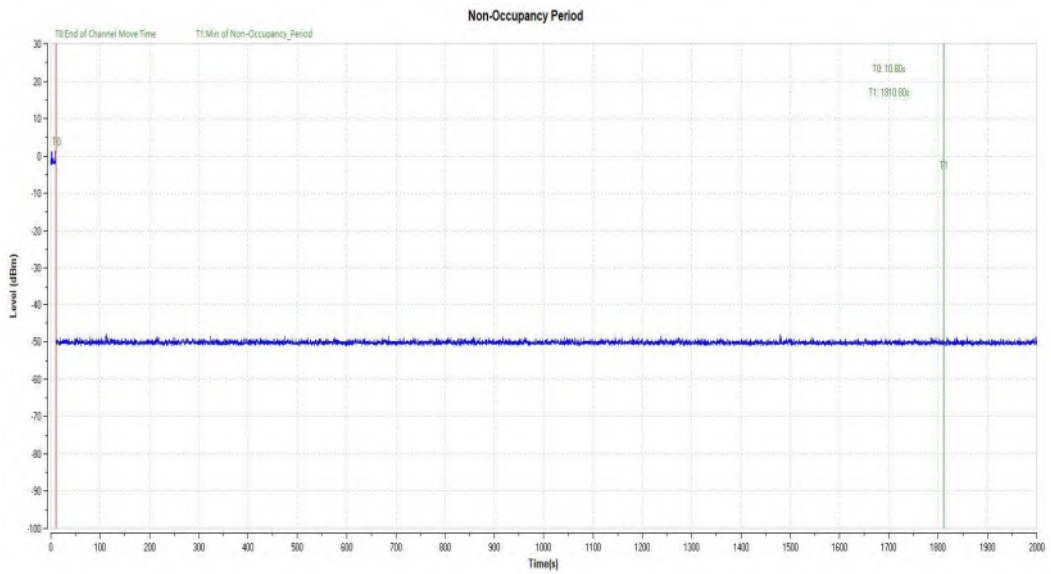


Fig. 62 Non-Occupancy Period (802.11ac-VHT80 Frequency Band: 5470MHz~5725MHz)



**A.8. Band Edges Compliance**

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

**Measurement Limit:**

Standard	Limit (dBµV/m)	
	FCC 47 CFR Part 15.209	Peak
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	Channel	Test Results	Conclusion
802.11a	5180 MHz (CH36)	Fig.63	P
	5320 MHz (CH64)	Fig.64	P
	5500 MHz (CH100)	Fig.65	P
	5700 MHz (CH140)	Fig.66	P
	5745 MHz (CH149)	Fig.67	P
	5825 MHz (CH165)	Fig.68	P
802.11n-HT40	5190 MHz (CH38)	Fig.69	P
	5310 MHz (CH62)	Fig.70	P
	5510 MHz (CH102)	Fig.71	P
	5670 MHz (CH134)	Fig.72	P
	5755 MHz (CH151)	Fig.73	P
	5795 MHz (CH159)	Fig.74	P
802.11ac-VHT80	5210 MHz (CH42)	Fig.75	P
	5290 MHz (CH58)	Fig.76	P
	5530 MHz (CH106)	Fig.77	P
	5610MHz (Ch122)	Fig.78	P
	5775 MHz (CH155)	Fig.79	P

**Note:** For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.

**See below for test graphs.**

**Conclusion: PASS**

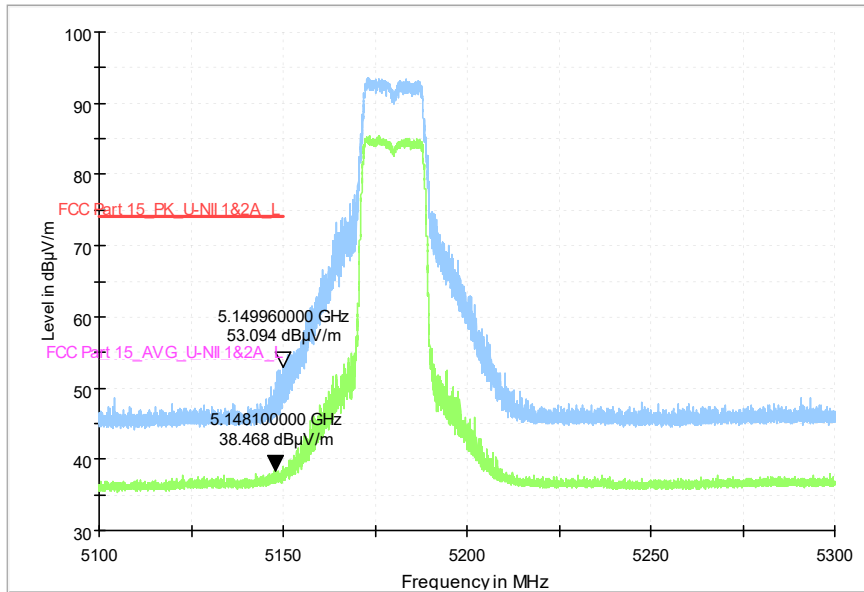


Fig. 63 Band Edges (802.11a, CH36 5180MHz)

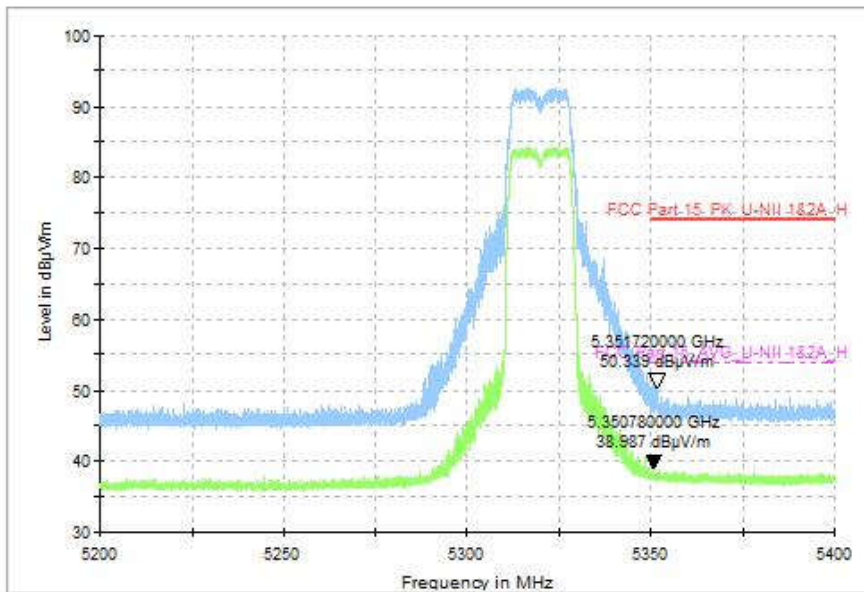


Fig. 64 Band Edges (802.11a, CH64 5320MHz)



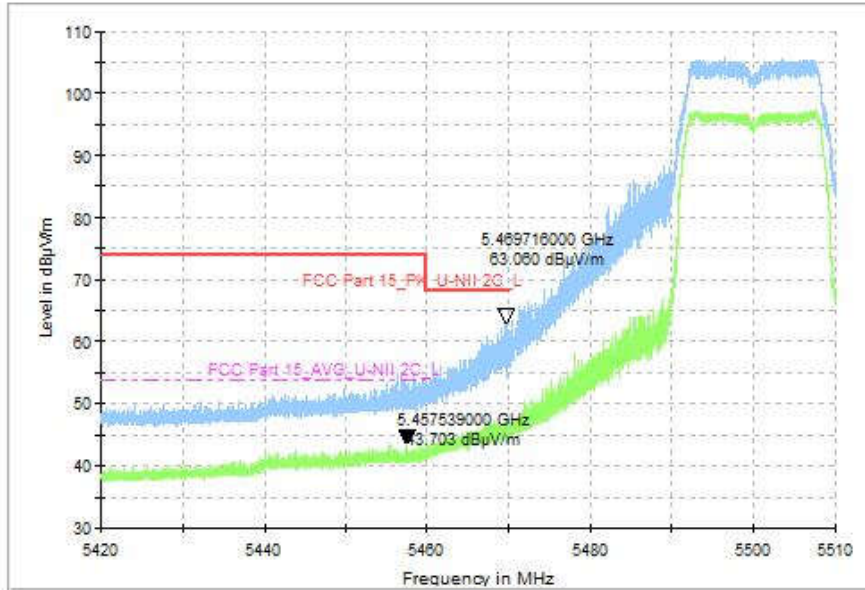


Fig. 65 Band Edges (802.11a, CH100 5500MHz)

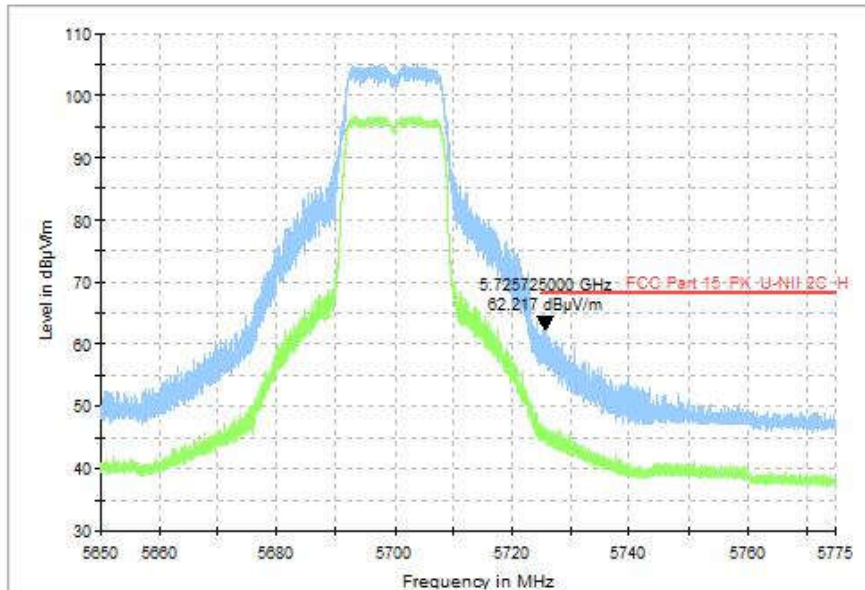


Fig. 66 Band Edges (802.11a, CH140 5700MHz)

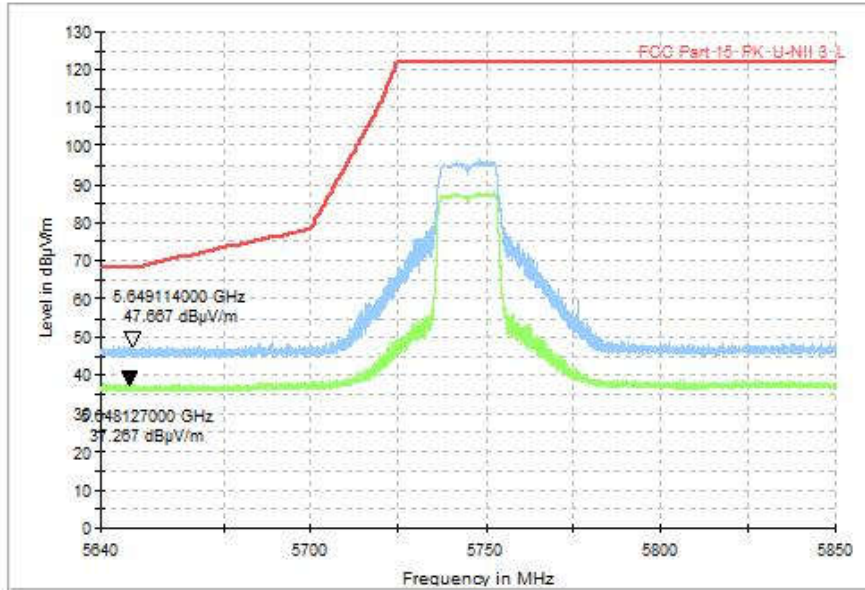


Fig. 67 Band Edges (802.11a, CH149 5745MHz)

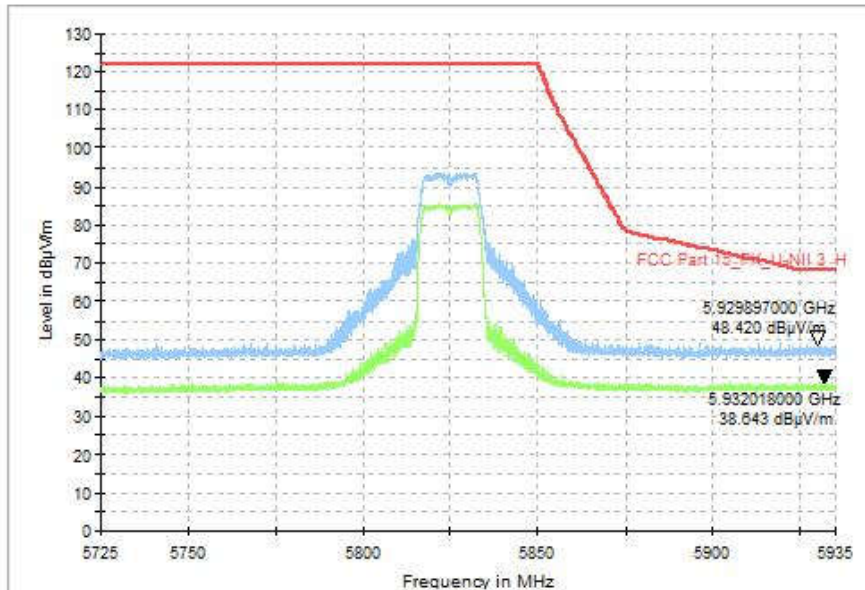


Fig. 68 Band Edges (802.11a, CH165 5825MHz)

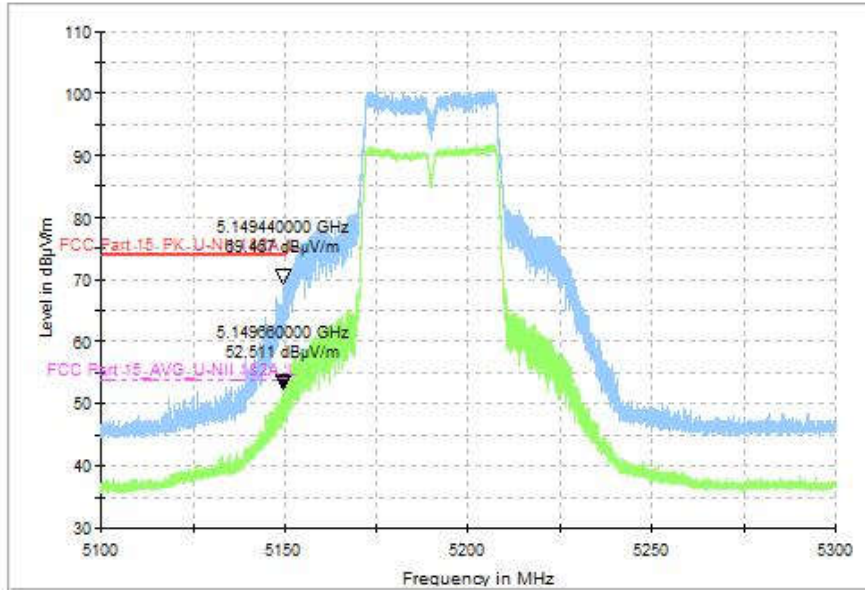


Fig. 69 Band Edges (802.11n-HT40, CH38 5190MHz)

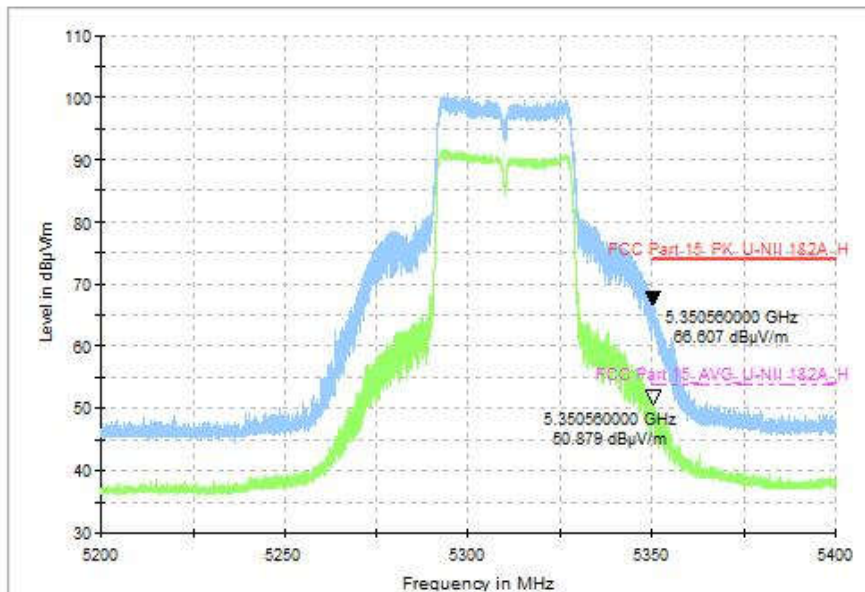


Fig. 70 Band Edges (802.11n-HT40, CH62 5310MHz)

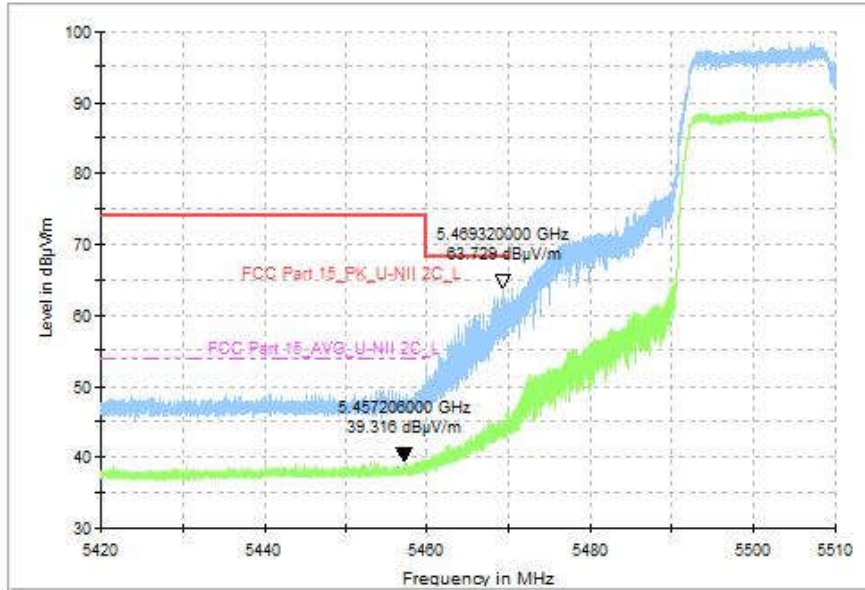


Fig. 71 Band Edges (802.11n-HT40, CH102 5510MHz)

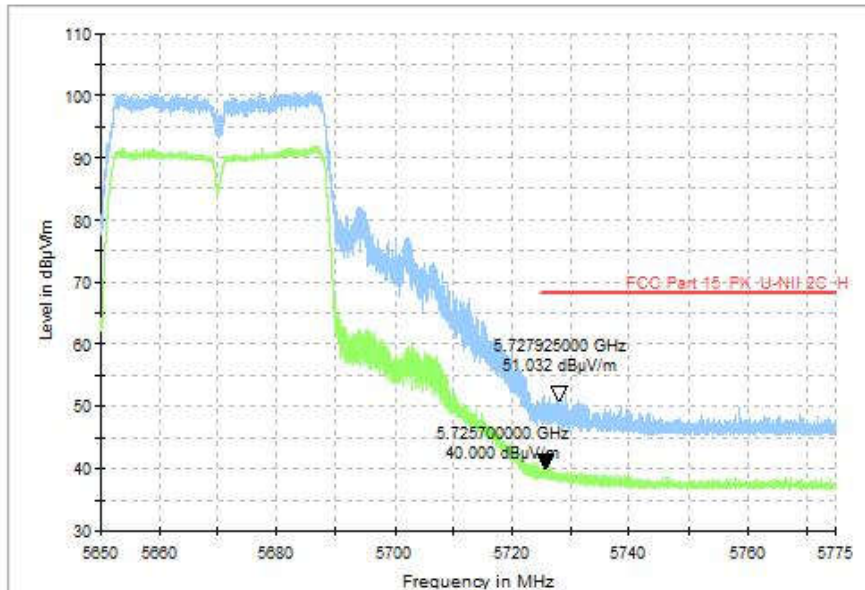


Fig. 72 Band Edges (802.11n-HT40, CH134 5670MHz)



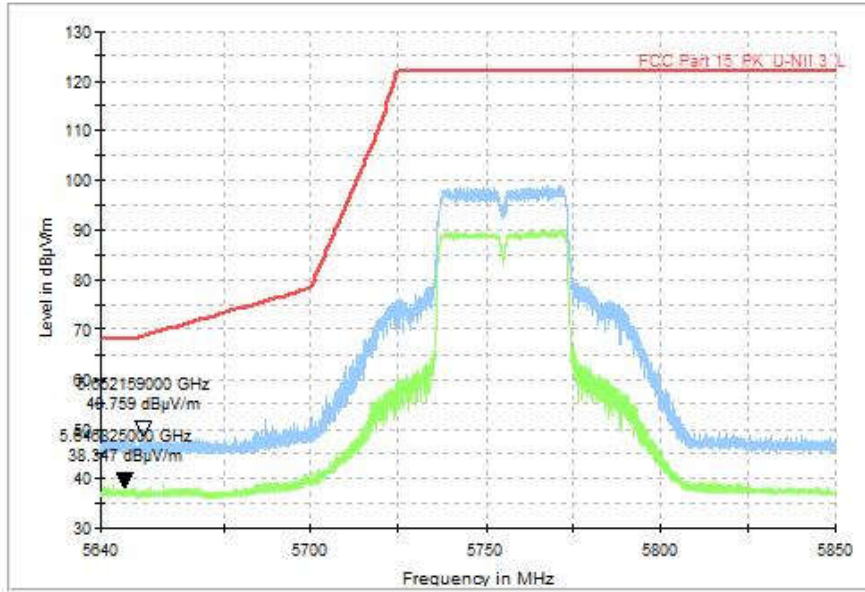


Fig. 73 Band Edges (802.11n-HT40, CH151 5755MHz)

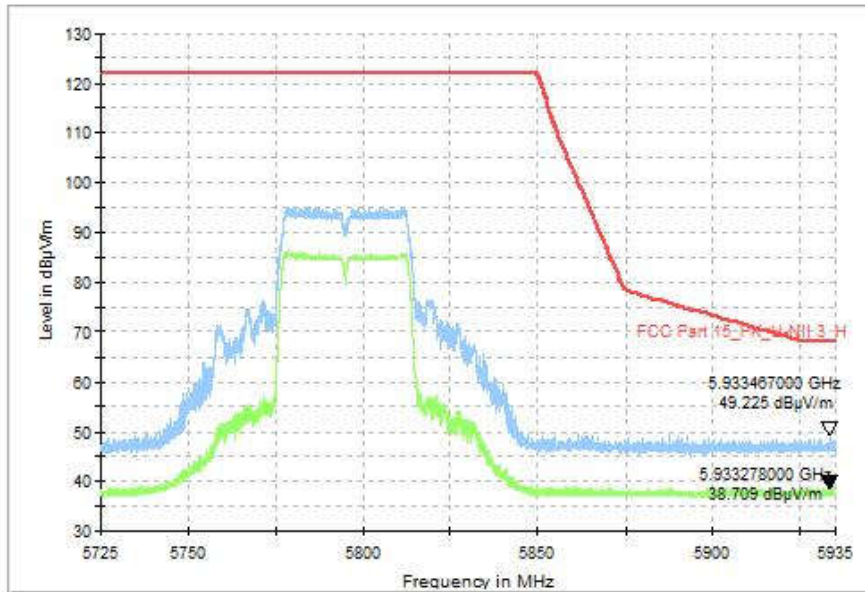


Fig. 74 Band Edges (802.11n-HT40, CH159 5795MHz)

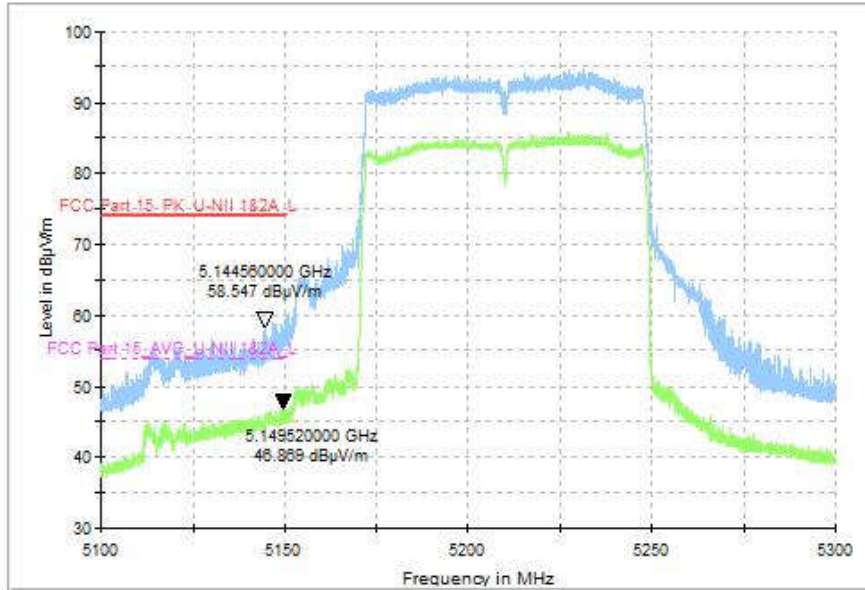


Fig. 75 Band Edges (802.11ac-VHT80, CH42 5210MHz)

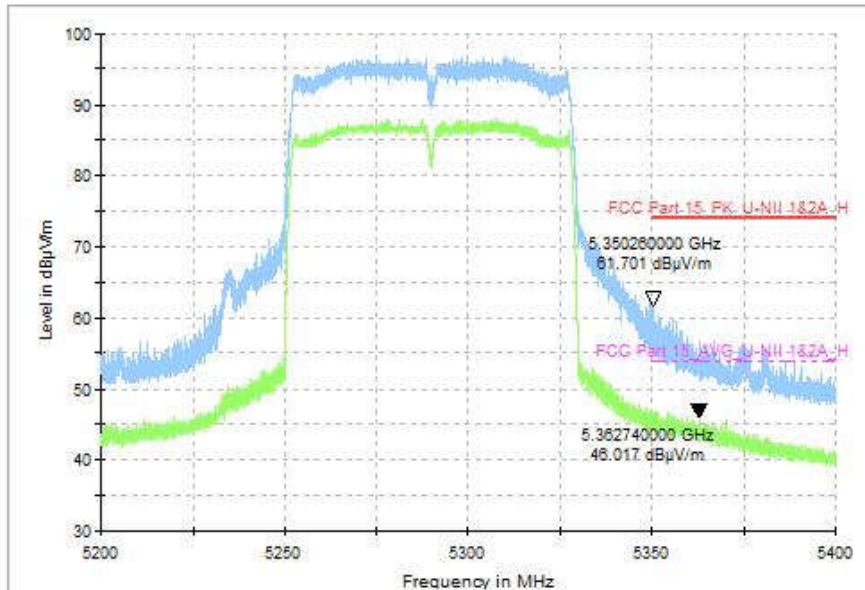


Fig. 76 Band Edges (802.11ac-VHT80, CH58 5290MHz)

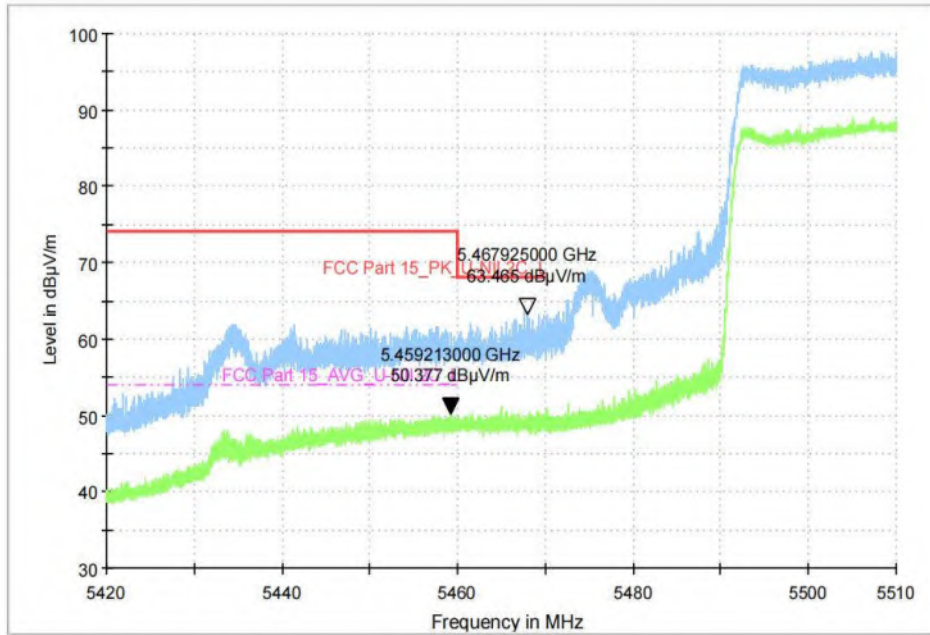


Fig. 77 Band Edges (802.11ac-VHT80, CH106 5530MHz)

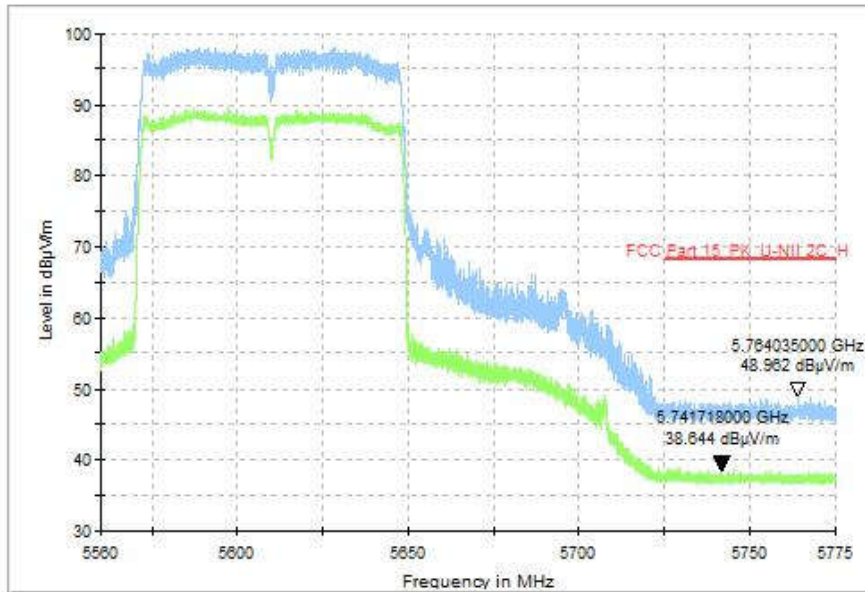


Fig. 78 Band Edges (802.11ac-VHT80, CH122 5610MHz)



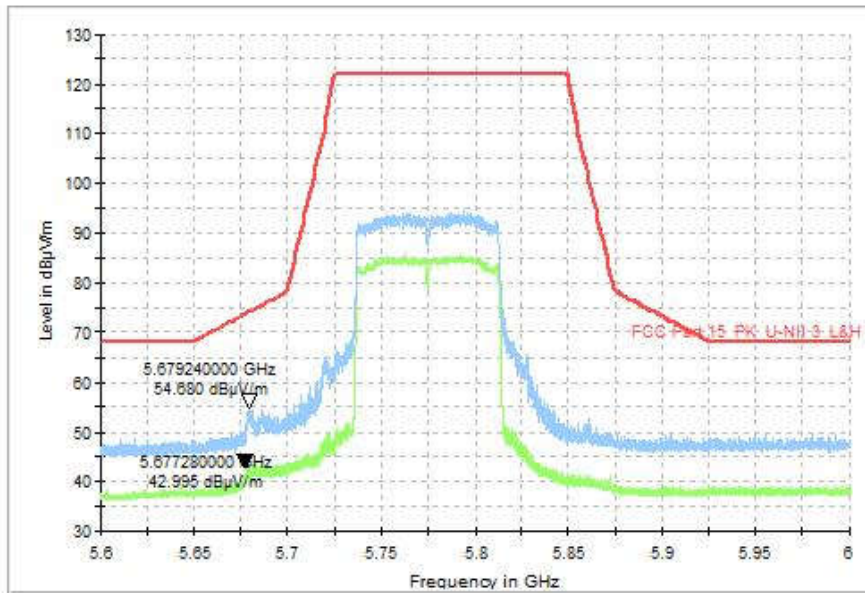


Fig. 79 Band Edges (802.11ac-VHT80, CH155 5775MHz)



**A.9. 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 (dBµV/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 (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:**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11a	5180MHz (Ch36)	1 GHz ~18 GHz	Fig.80	P
	5200MHz (Ch40)	1 GHz ~18 GHz	Fig.81	P
	5240MHz (Ch48)	1 GHz ~18 GHz	Fig.82	P
	5260MHz (Ch52)	1 GHz ~18 GHz	Fig.83	P
	5280MHz (Ch56)	1 GHz ~18 GHz	Fig.84	P
	5320MHz (Ch64)	1 GHz ~18 GHz	Fig.85	P
	5500MHz (Ch100)	1 GHz ~18 GHz	Fig.86	P
	5600MHz (Ch120)	1 GHz ~18 GHz	Fig.87	P
	5700MHz (Ch140)	1 GHz ~18 GHz	Fig.88	P
	5745MHz (Ch149)	1 GHz ~18 GHz	Fig.89	P
	5785MHz (Ch157)	1 GHz ~18 GHz	Fig.90	P
802.11n-HT40	5825MHz (Ch165)	1 GHz ~18 GHz	Fig.91	P
	5190MHz (Ch38)	1 GHz ~18 GHz	Fig.92	P
	5230MHz (Ch46)	1 GHz ~18 GHz	Fig.93	P
	5270MHz (Ch54)	1 GHz ~18 GHz	Fig.94	P



	5310MHz (Ch62)	1 GHz ~18 GHz	Fig.95	<b>P</b>
	5510MHz (Ch102)	1 GHz ~18 GHz	Fig.96	<b>P</b>
	5580MHz (Ch118)	1 GHz ~18 GHz	Fig.97	<b>P</b>
	5670MHz (Ch134)	1 GHz ~18 GHz	Fig.98	<b>P</b>
	5755MHz (Ch151)	1 GHz ~18 GHz	Fig.99	<b>P</b>
	5795MHz (Ch159)	1 GHz ~18 GHz	Fig.100	<b>P</b>
802.11ac -VHT80	5210MHz (Ch42)	1 GHz ~18 GHz	Fig.101	<b>P</b>
	5290MHz (Ch58)	1 GHz ~18 GHz	Fig.102	<b>P</b>
	5530MHz (Ch106)	1 GHz ~18 GHz	Fig.103	<b>P</b>
	5610MHz (Ch122)	1 GHz ~18 GHz	Fig.104	<b>P</b>
	5775MHz (Ch155)	1 GHz ~18 GHz	Fig.105	<b>P</b>
All channels		30 MHz ~1 GHz	Fig.106	<b>P</b>
		18 GHz ~26.5 GHz	Fig.107	<b>P</b>
		26.5GHz~40GHz	Fig.108	<b>P</b>

**Worst Case Result:**

**802.11a CH40**

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
8249.076923	45.17	74.00	28.83	V	5.9
10913.538462	46.19	74.00	27.81	H	9.4
11660.307692	47.49	74.00	26.51	V	9.9
12473.076923	47.44	74.00	26.56	V	11.3
15887.538462	50.57	74.00	23.43	V	14.0
17988.000000	54.79	74.00	19.21	V	19.2

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
8249.076923	34.10	54.00	19.90	V	5.9
10913.538462	35.85	54.00	18.15	H	9.4
11660.307692	37.30	54.00	16.70	V	9.9
12473.076923	36.92	54.00	17.08	V	11.3
15887.538462	40.85	54.00	13.15	V	14.0
17988.000000	43.76	54.00	10.24	V	19.2



**802.11n-HT40 CH62**

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
7600.153846	44.95	74.00	29.05	V	5.7
10914.923077	46.46	74.00	27.54	H	9.4
11633.076923	48.03	74.00	25.97	V	9.9
12424.153846	46.99	74.00	27.01	V	11.4
15916.153846	51.83	74.00	22.17	H	14.1
17964.461539	54.58	74.00	19.42	V	19.1

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
7600.153846	33.86	54.00	20.14	V	5.7
10914.923077	36.17	54.00	17.83	H	9.4
11633.076923	37.09	54.00	16.91	V	9.9
12424.153846	37.15	54.00	16.86	V	11.4
15916.153846	40.98	54.00	13.02	H	14.1
17964.461539	43.41	54.00	10.59	V	19.1

**802.11ac-VHT80 CH58**

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
7485.692308	44.52	74.00	29.48	V	5.7
10881.230769	46.66	74.00	27.34	H	9.3
11601.230769	46.66	74.00	27.34	H	10.0
12454.615385	47.79	74.00	26.21	V	11.4
15787.846154	50.38	74.00	23.62	V	14.0
17955.692308	54.23	74.00	19.77	V	19.0

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
7485.692308	33.38	54.00	20.62	V	5.7
10881.230769	35.86	54.00	18.14	H	9.3
11601.230769	36.87	54.00	17.13	H	10.0
12454.615385	37.19	54.00	16.81	V	11.4
15787.846154	39.99	54.00	14.01	V	14.0
17955.692308	43.36	54.00	10.64	V	19.0

**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**

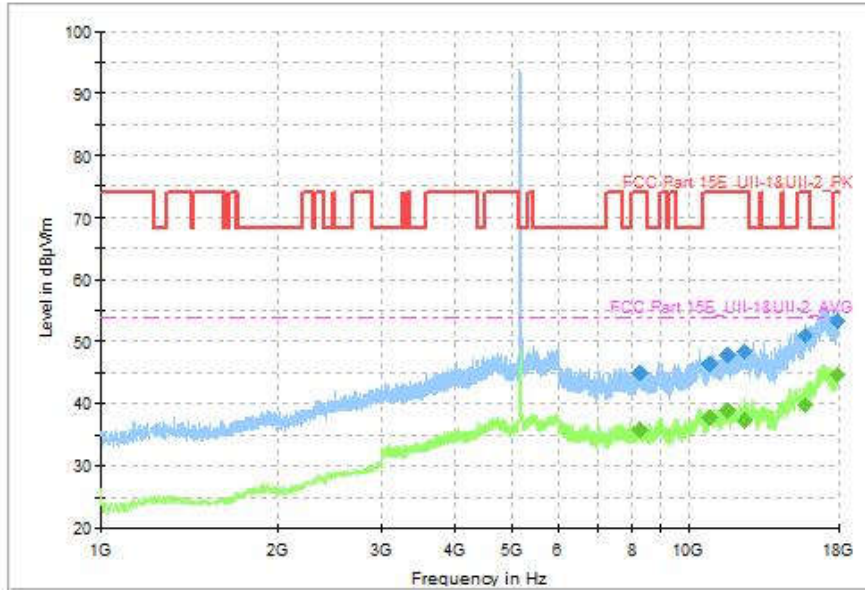


Fig. 80 Transmitter Spurious Emission (802.11a, CH36 5180MHz, 1 GHz-18 GHz)

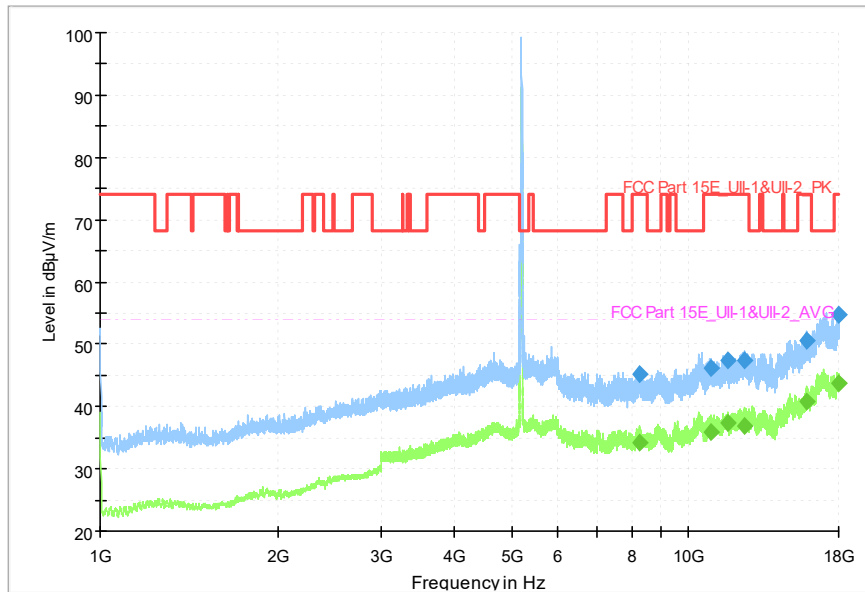


Fig. 81 Transmitter Spurious Emission (802.11a, CH40 5200MHz, 1 GHz-18 GHz)

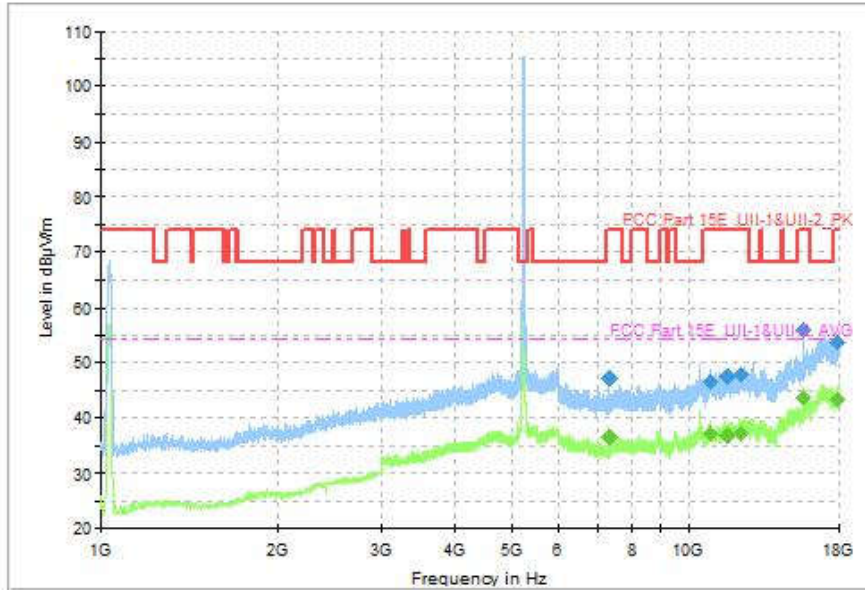


Fig. 82 Transmitter Spurious Emission (802.11a, CH48 5240MHz, 1 GHz-18 GHz)

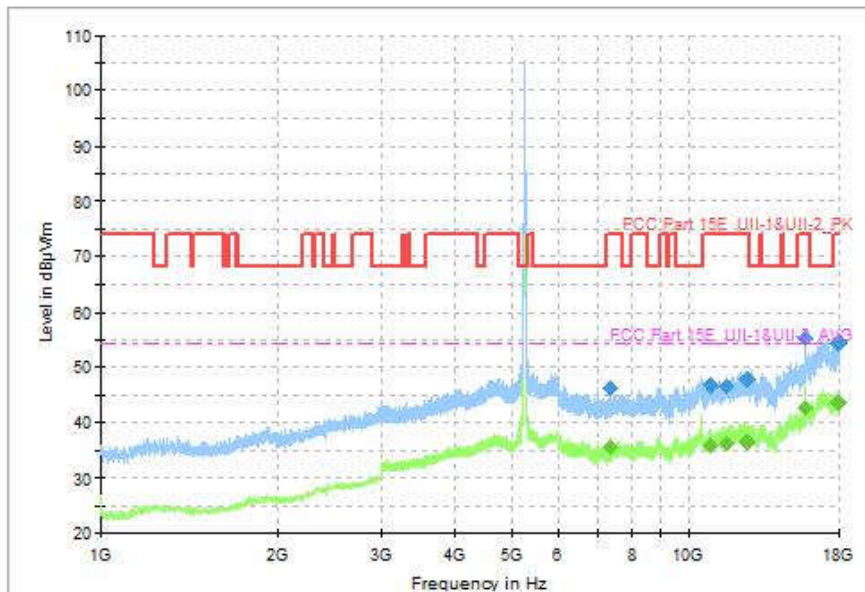
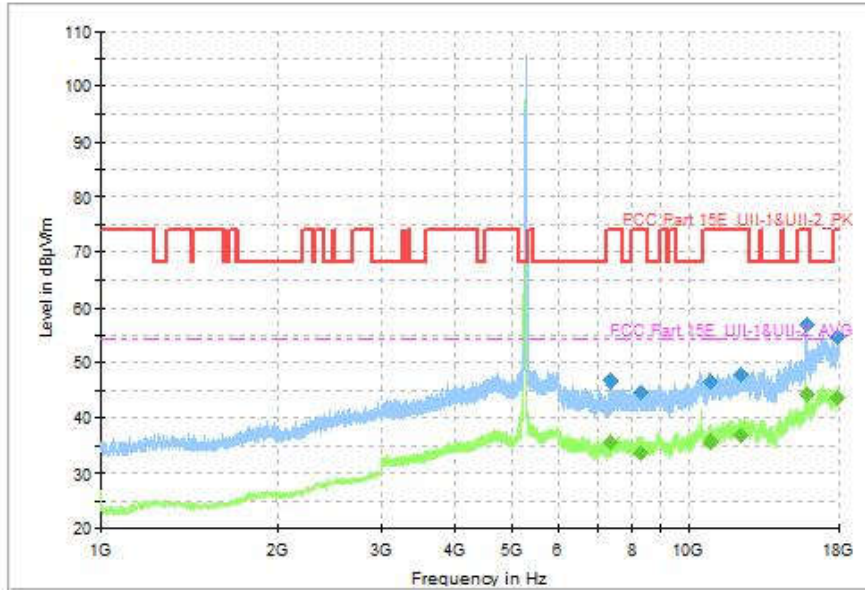
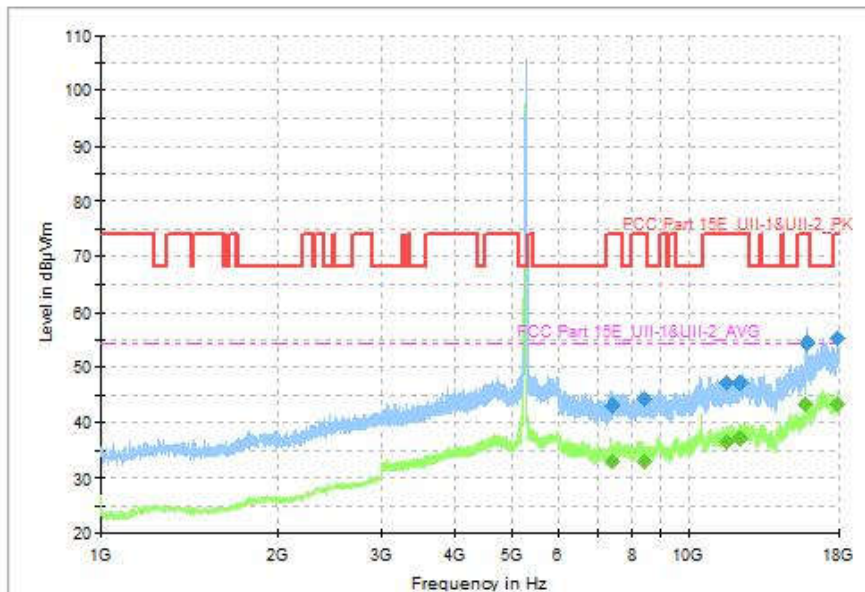


Fig. 83 Transmitter Spurious Emission (802.11a, CH52 5260MHz, 1 GHz-18 GHz)





**Fig. 84 Transmitter Spurious Emission (802.11a, CH56 5280MHz, 1 GHz-18 GHz)**



**Fig. 85 Transmitter Spurious Emission (802.11a, CH64 5320MHz, 1 GHz-18 GHz)**



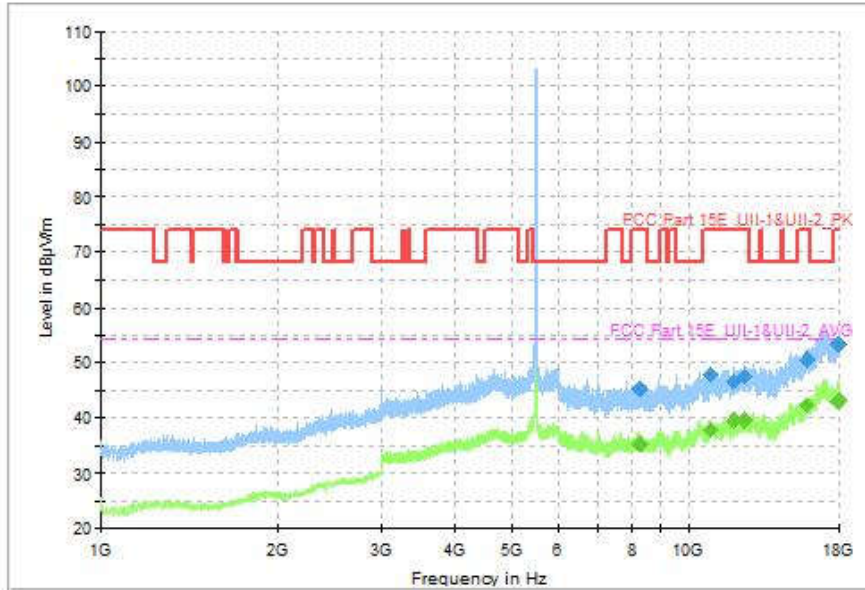


Fig. 86 Transmitter Spurious Emission (802.11a, CH100 5500MHz, 1 GHz-18 GHz)

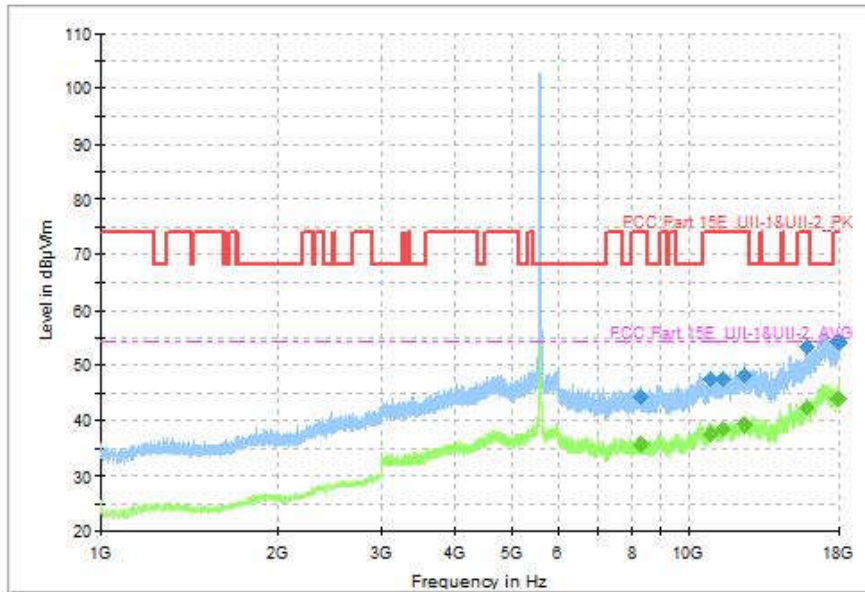


Fig. 87 Transmitter Spurious Emission (802.11a, CH120 5600MHz, 1 GHz-18 GHz)

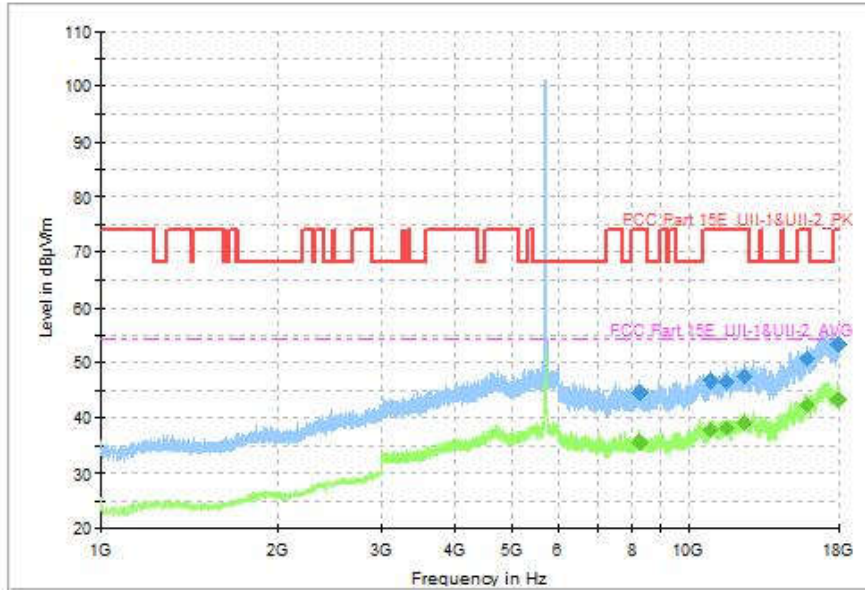


Fig. 88 Transmitter Spurious Emission (802.11a, CH140 5700MHz, 1 GHz-18 GHz)

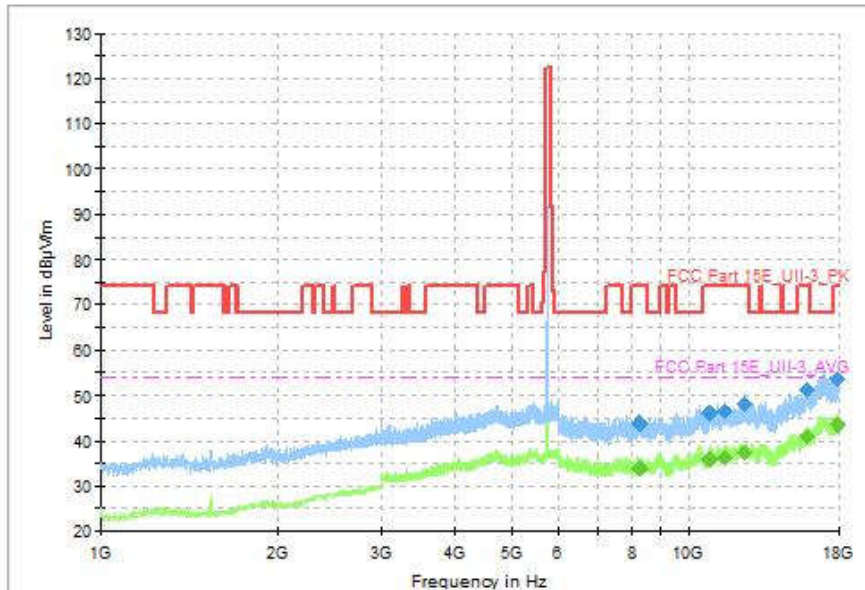


Fig. 89 Transmitter Spurious Emission (802.11a, CH149 5745MHz, 1 GHz-18 GHz)

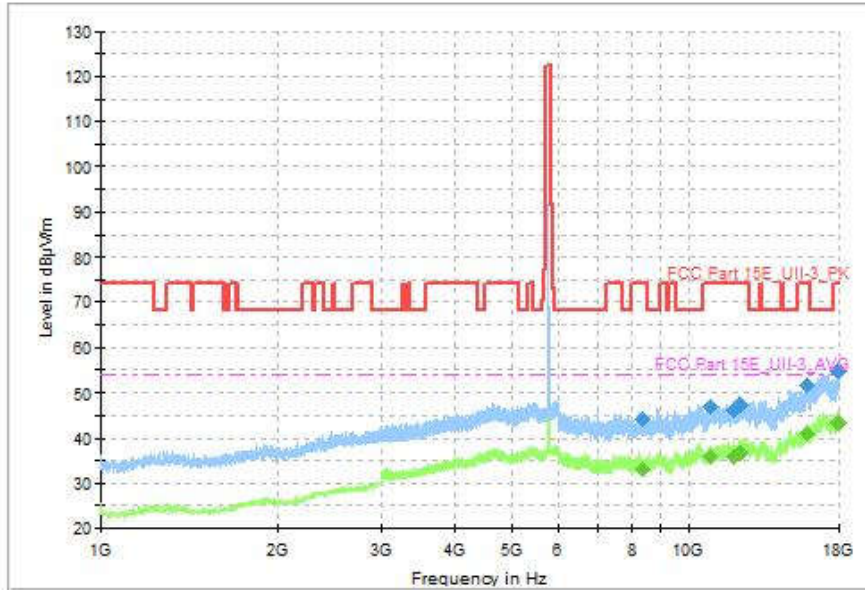


Fig. 90 Transmitter Spurious Emission (802.11a, CH157 5785MHz, 1 GHz-18 GHz)

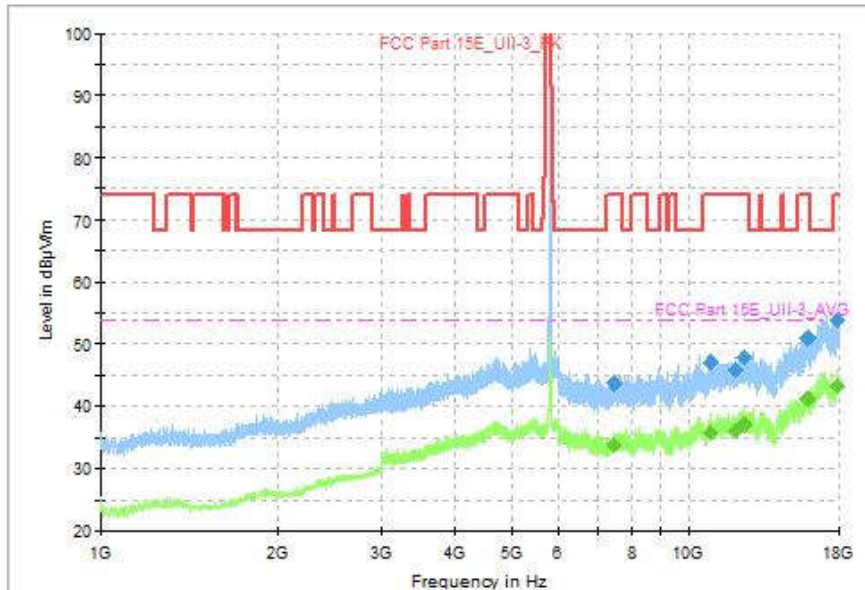


Fig. 91 Transmitter Spurious Emission (802.11a, CH165 5825MHz, 1 GHz-18 GHz)

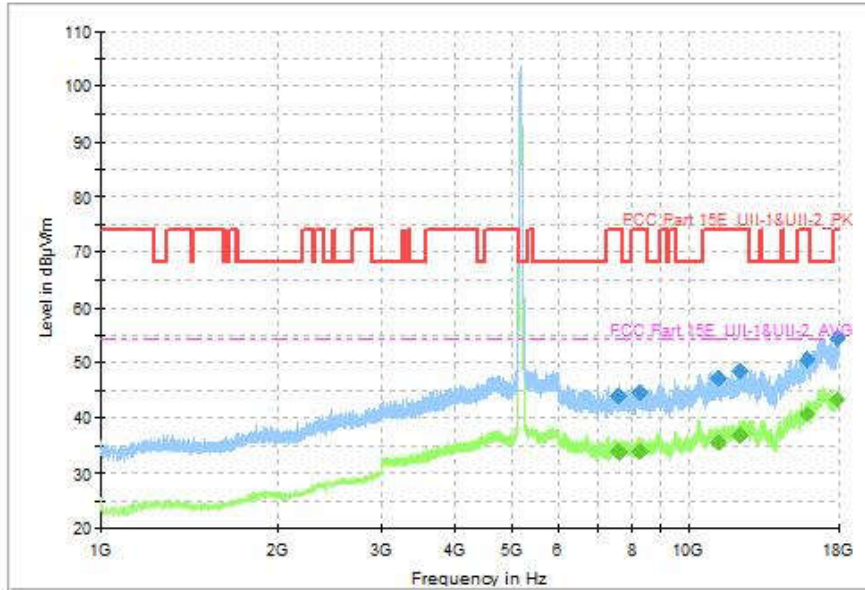


Fig. 92 Transmitter Spurious Emission (802.11n-HT40, CH38 5190MHz, 1 GHz-18 GHz)

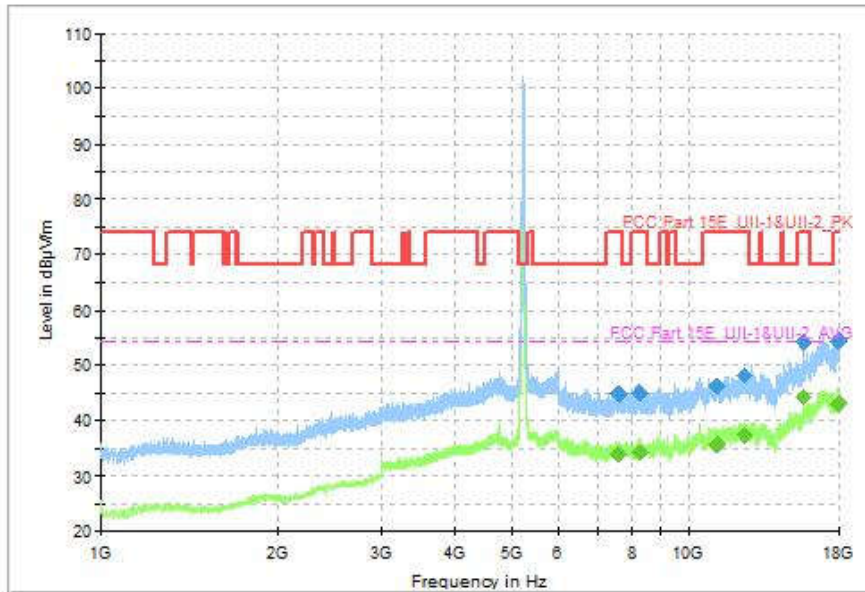


Fig. 93 Transmitter Spurious Emission (802.11n-HT40, CH46 5230MHz, 1 GHz-18 GHz)



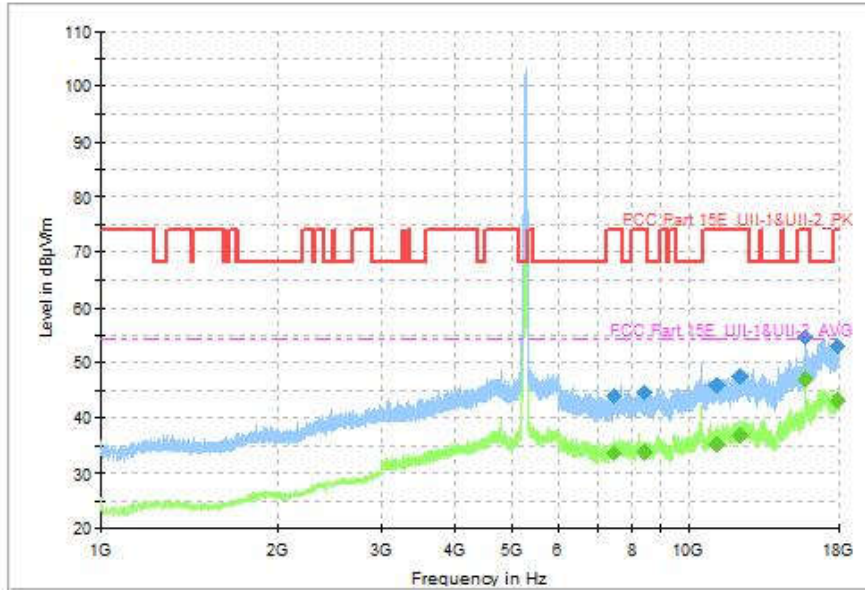


Fig. 94 Transmitter Spurious Emission (802.11n-HT40, CH54 5270MHz, 1 GHz-18 GHz)

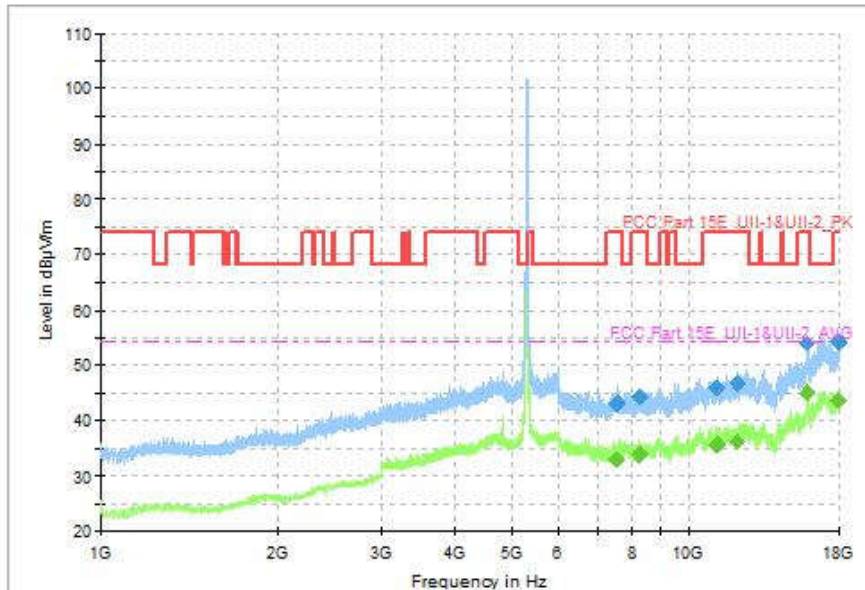


Fig. 95 Transmitter Spurious Emission (802.11n-HT40, CH62 5310MHz, 1 GHz-18 GHz)

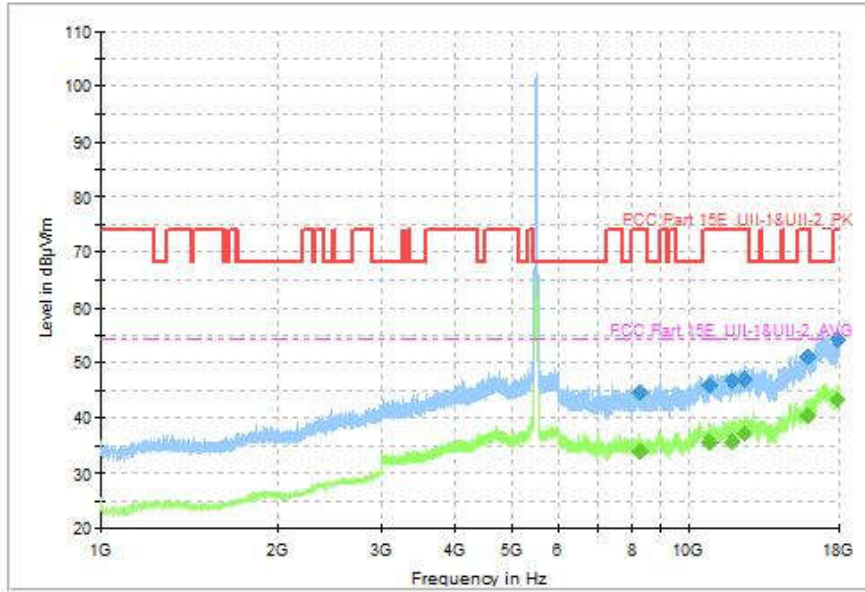


Fig. 96 Transmitter Spurious Emission (802.11n-HT40, CH102 5510MHz, 1 GHz-18 GHz)

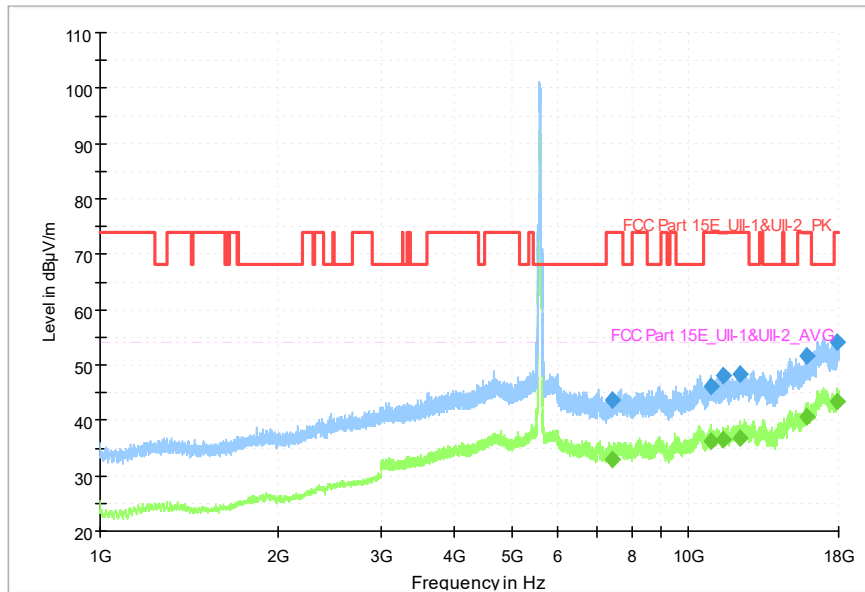


Fig. 97 Transmitter Spurious Emission (802.11n-HT40, CH118 5580MHz, 1 GHz-18 GHz)



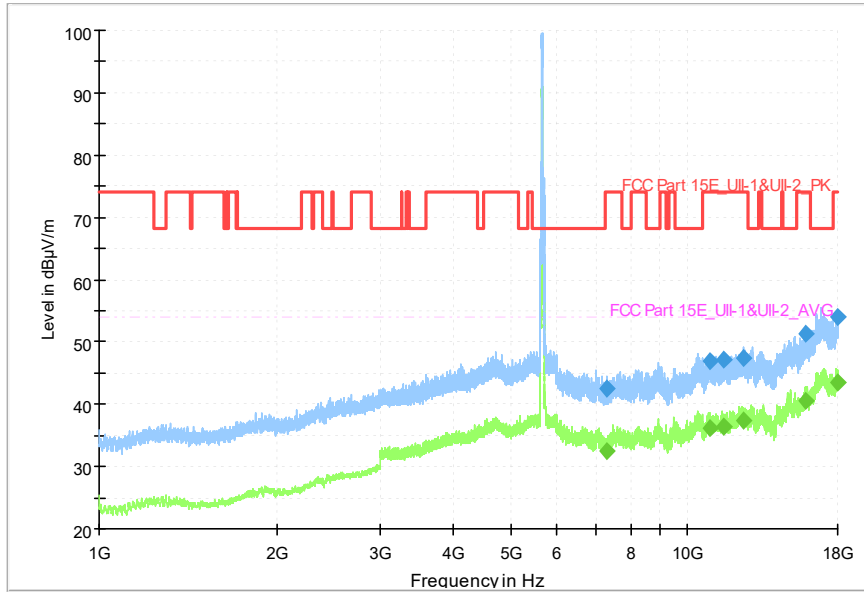


Fig. 98 Transmitter Spurious Emission (802.11n-HT40, CH134 5670MHz, 1 GHz-18 GHz)

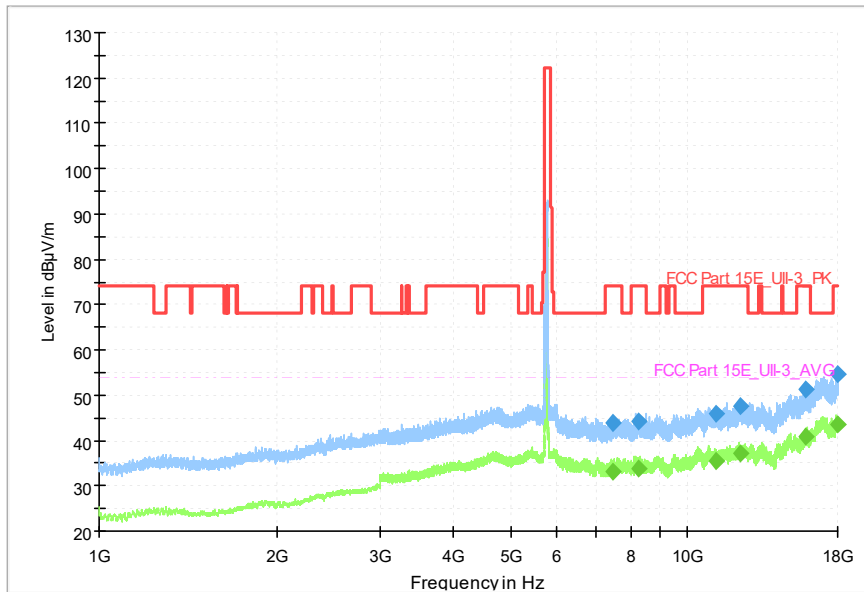


Fig. 99 Transmitter Spurious Emission (802.11n-HT40, CH151 5755MHz, 1 GHz-18 GHz)

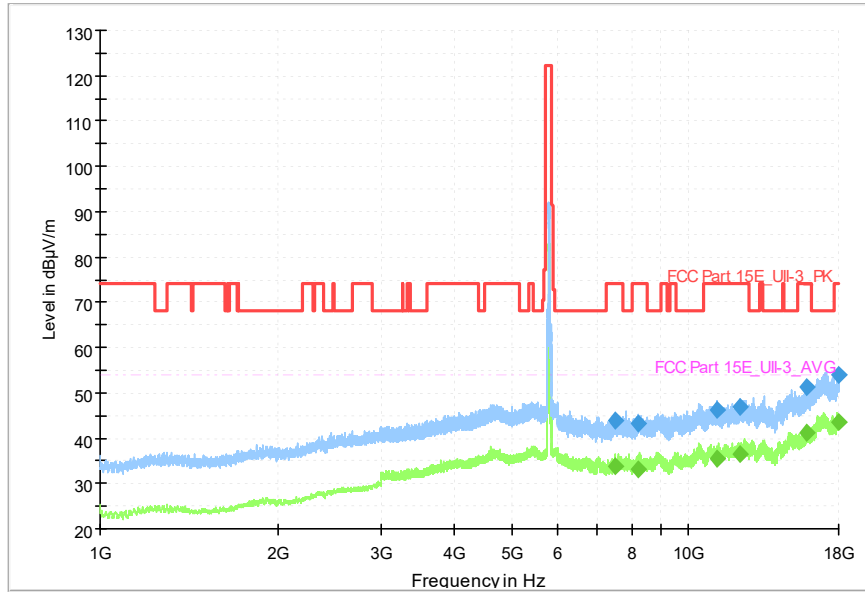


Fig. 100 Transmitter Spurious Emission (802.11n-HT40, CH159 5795MHz, 1 GHz-18 GHz)

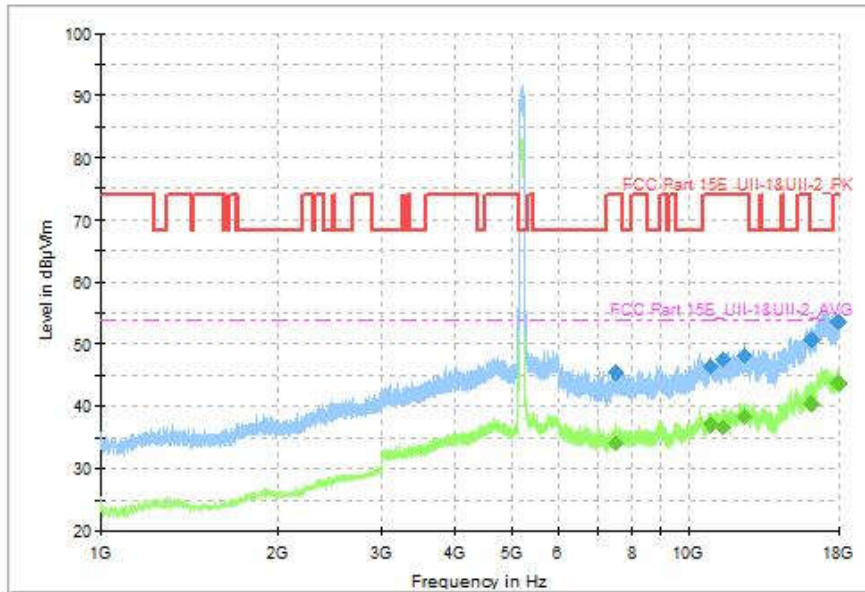


Fig. 101 Transmitter Spurious Emission (802.11ac-VHT80, CH42 5210MHz, 1 GHz-18 GHz)

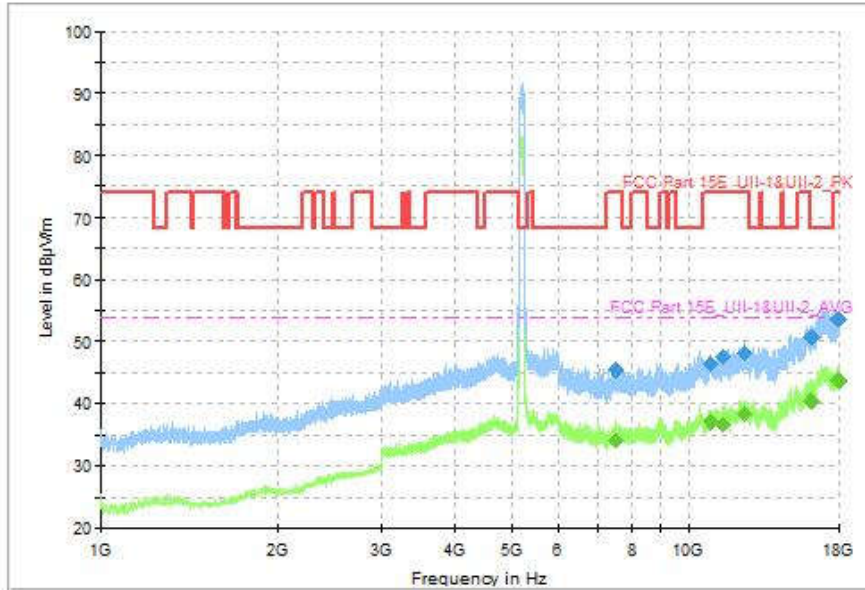


Fig. 102 Transmitter Spurious Emission (802.11ac-VHT80, CH58 5290MHz, 1 GHz-18 GHz)

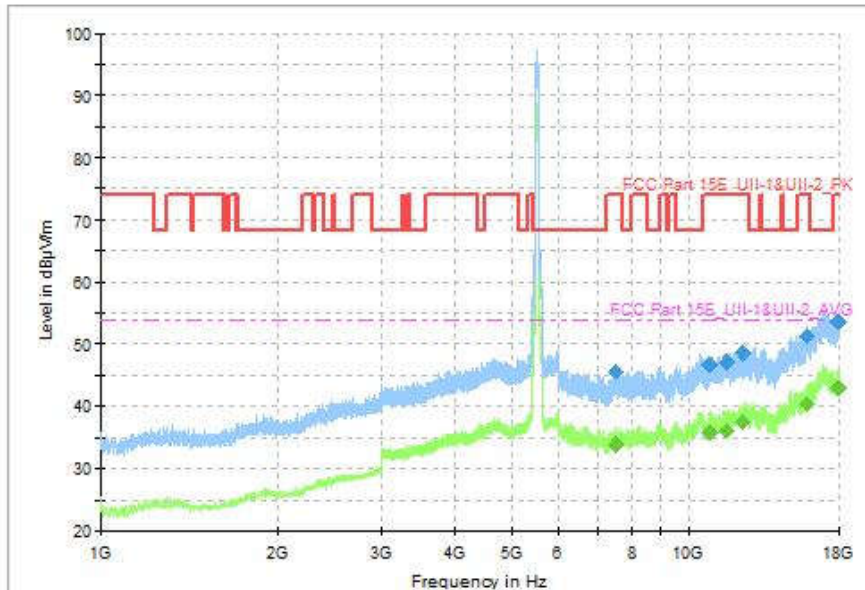


Fig. 103 Transmitter Spurious Emission (802.11ac-VHT80, CH106 5530MHz, 1 GHz-18 GHz)

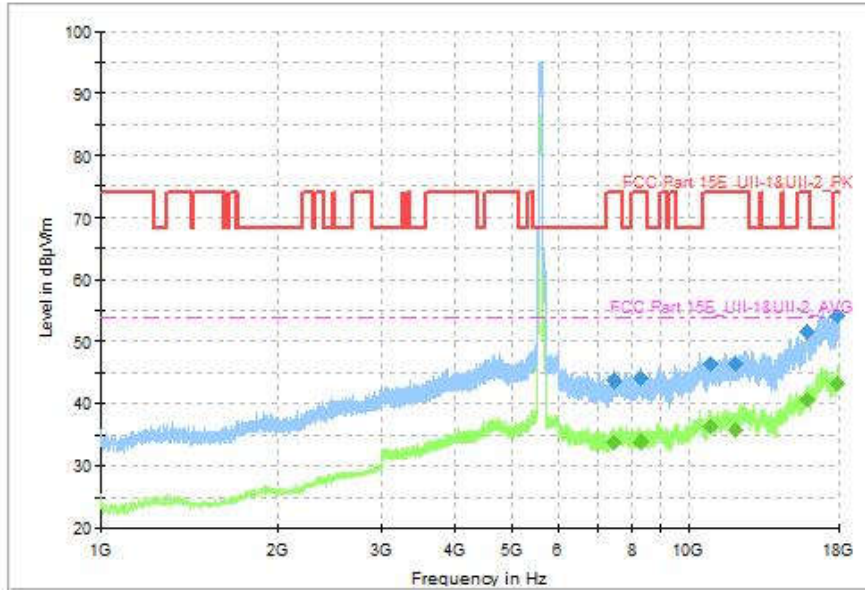


Fig. 104 Transmitter Spurious Emission (802.11ac-VHT80, CH122 5610MHz, 1 GHz-18 GHz)

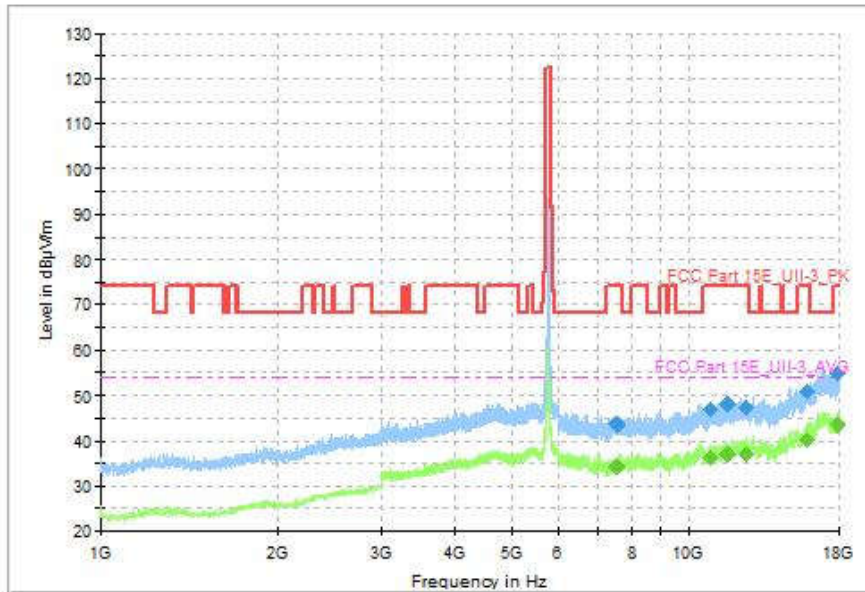


Fig. 105 Transmitter Spurious Emission (802.11ac-VHT80, CH155 5775MHz, 1 GHz-18 GHz)

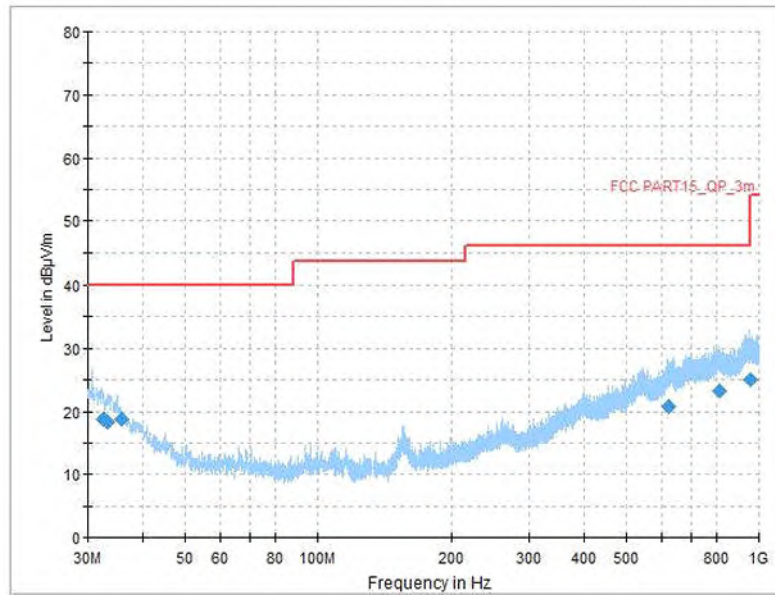


Fig. 106 Transmitter Spurious Emission (All channel, 30MHz~1GHz)

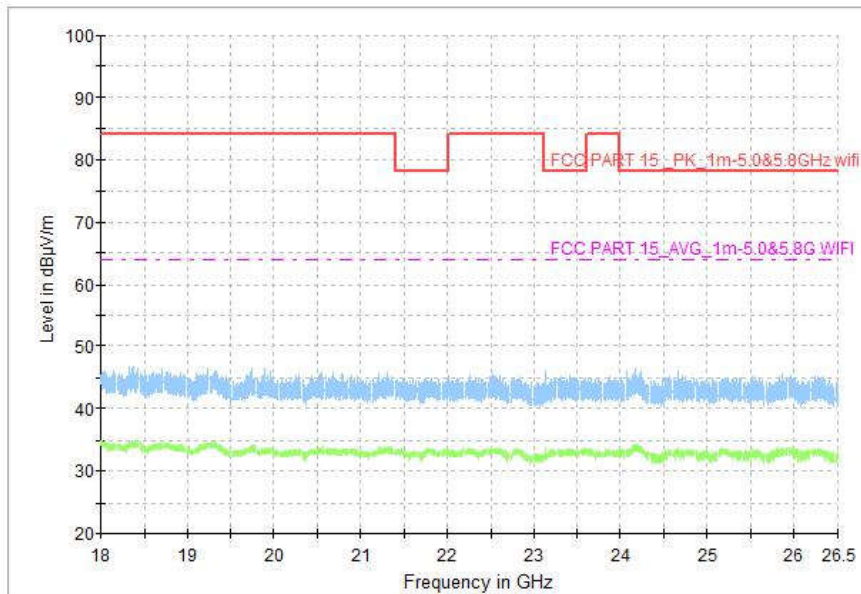


Fig. 107 Transmitter Spurious Emission (All channel, 18GHz~26.5GHz)

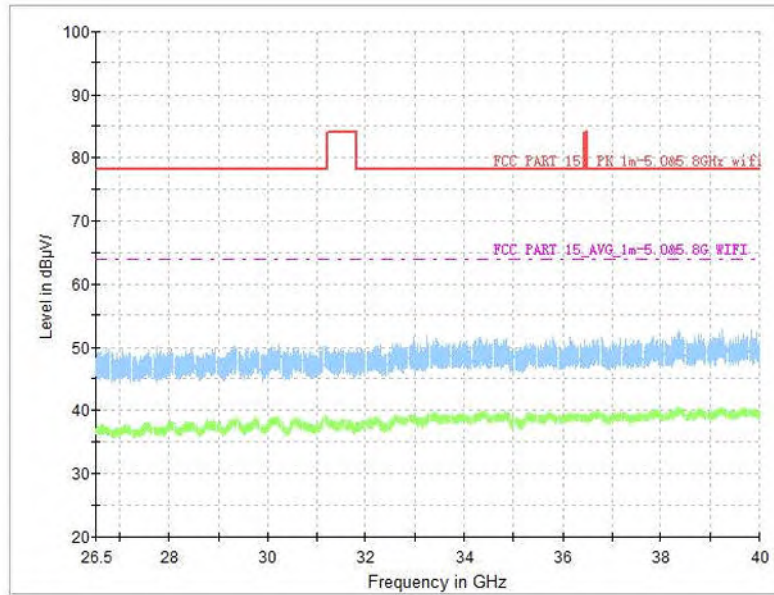


Fig. 108 Transmitter Spurious Emission (All channel, 26.5GHz~40GHz)





**A.10. Radiated Spurious Emissions < 30MHz**

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

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

Frequency (MHz)	Field strength (µV/m)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

The measurement is made according to KDB 789033.

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

The measurement results include the horizontal polarization and vertical polarization measurements.

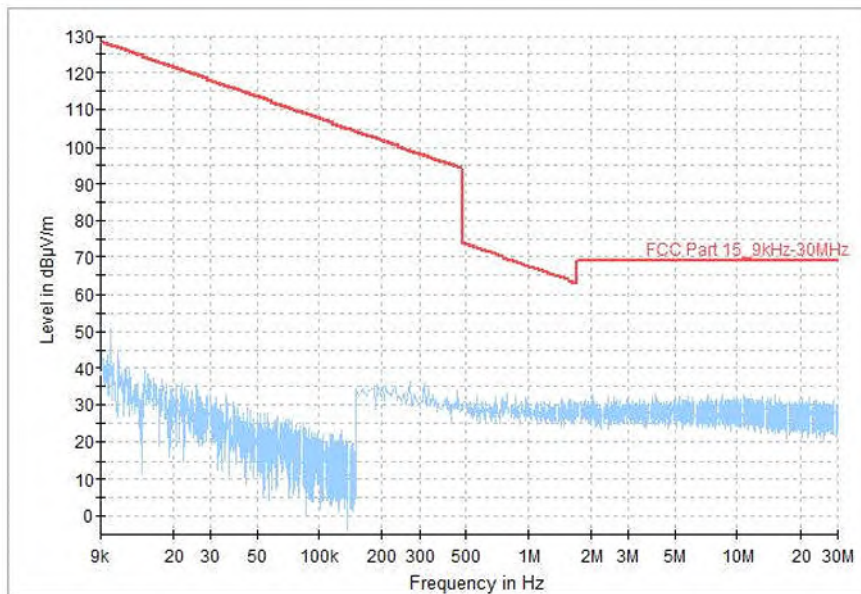
For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.

**Measurement Result (Worst case):**

Mode	Frequency Range	Test Results	Conclusion
All Channel	9 kHz ~30 MHz	Fig.109	<b>P</b>

See below for test graphs.

**Conclusion: PASS**



**Fig. 109 Radiated Spurious Emission (All Channel, 9 kHz ~30 MHz)**



**A.11. 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:**

**RLAN-A2, A3, AE4**

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Average-peak Limit (dBμV)	Result (dBμV)		Conclusion
			Traffic	Idle	
0.15 to 0.5	66 to 56	56 to 46	Fig.110	Fig.111	<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.

**See below for test graphs.**

**Conclusion: PASS**

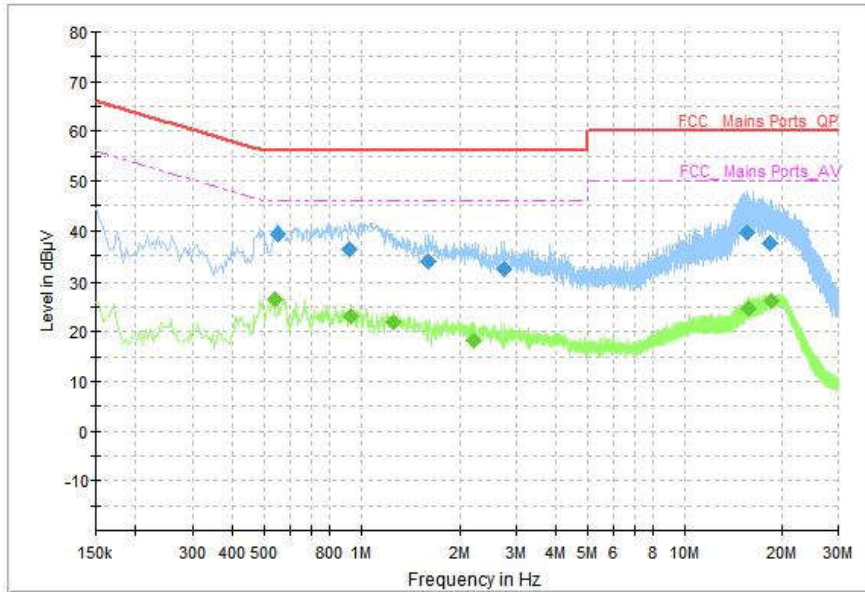


Fig. 110 AC Power line Conducted Emission (Traffic)

Measurement Result: Quasi Peak

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.550000	39.44	56.00	16.56	L1	ON	10
0.922000	36.33	56.00	19.67	L1	ON	10
1.606000	33.75	56.00	22.25	N	ON	10
2.746000	32.15	56.00	23.85	N	ON	10
15.702000	39.60	60.00	20.40	N	ON	11
18.490000	37.51	60.00	22.49	N	ON	10

Measurement Result: Average

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.538000	26.38	46.00	19.62	L1	ON	10
0.926000	23.16	46.00	22.84	L1	ON	10
1.254000	21.98	46.00	24.02	N	ON	10
2.206000	18.12	46.00	27.88	N	ON	10
15.850000	24.78	50.00	25.22	N	ON	11
18.622000	26.07	50.00	23.93	N	ON	10

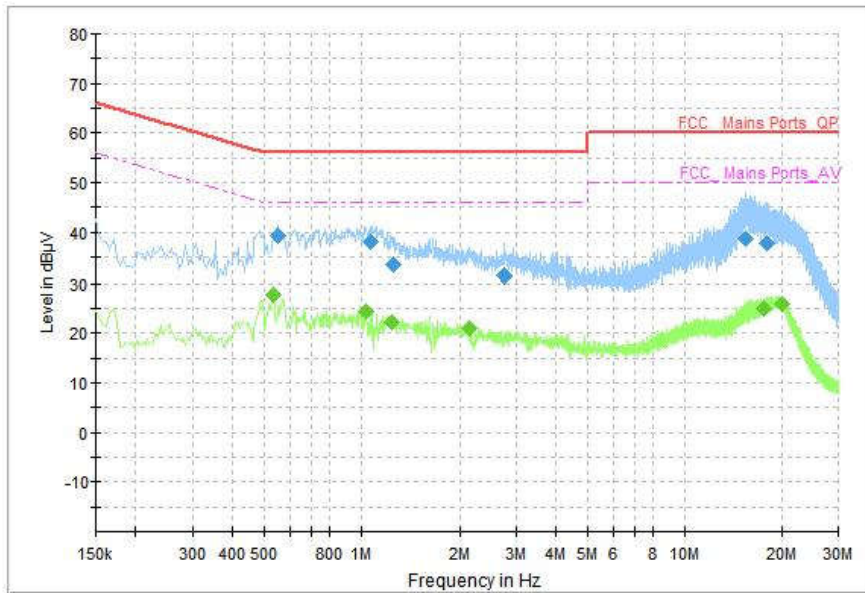


Fig. 111 AC Power line Conducted Emission (Idle)

**Measurement Result: Quasi Peak**

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.550000	39.41	56.00	16.59	L1	ON	10
1.074000	38.23	56.00	17.77	L1	ON	10
1.254000	33.60	56.00	22.40	L1	ON	10
2.746000	31.35	56.00	24.65	N	ON	10
15.490000	38.83	60.00	21.17	N	ON	11
17.934000	37.75	60.00	22.25	N	ON	10

**Measurement Result: Average**

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.534000	27.66	46.00	18.34	L1	ON	10
1.034000	24.34	46.00	21.66	L1	ON	10
1.250000	22.22	46.00	23.78	N	ON	10
2.154000	21.06	46.00	24.94	N	ON	10
17.594000	25.08	50.00	24.92	N	ON	11
20.098000	25.82	50.00	24.18	N	ON	10



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### **A.12. Power control**

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

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