

# TEST REPORT

**Applicant:** FS.COM Inc

**Address of Applicant:** 380 Centerpoint Blvd, New Castle, DE 19720, United States

**Manufacturer/Factory:** FS.COM Limited

**Address of Manufacturer/Factory:** 24F, Infore Center, No.19, Haitian 2nd Rd, Binhai Community, Yuehai Street, Nanshan District, Shenzhen City

## Equipment Under Test (EUT)

**Product Name:** Dual Band Gigabit Wi-Fi 6 Router

**Model No.:** WR-AX1800

**Trade Mark:** FS

**FCC ID:** 2A2PW134041

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart E Section 15.407

**Date of sample receipt:** August 30,2021

**Date of Test:** September 06,2021-October 01,2021

**Date of report issue:** October 08,2021

**Test Result :** PASS \*

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



**Robinson Luo**

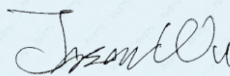
**Laboratory Manager**

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

## 2 Version

Version No.	Date	Description
00	October 08,2021	Original

Prepared By:

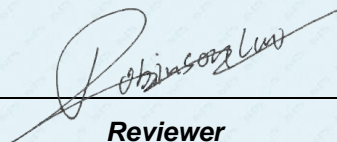


Date:

October 08,2021

Project Engineer

Check By:



Date:

October 08,2021

Reviewer

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## 4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	PASS
AC Power Line Conducted Emission	15.207	PASS
Peak Transmit Power	15.407(a)(1)	PASS
Power Spectral Density	15.407(a)(1)	PASS
Undesirable Emission	15.407(b)(6), 15.205/15.209	PASS
Radiated Emission	15.205/15.209	PASS
Band Edge	15.407(b)(1)	PASS
Frequency Stability	15.407(g)	PASS

Remark:

Pass: The EUT complies with the essential requirements in the standard.

### 4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	30MHz-200MHz	3.8039dB	(1)
Radiated Emission	200MHz-1GHz	3.9679dB	(1)
Radiated Emission	1GHz-18GHz	4.29dB	(1)
Radiated Emission	18GHz-40GHz	3.30dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	3.44dB	(1)

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

## 5 General Information

### 5.1 General Description of EUT

Product Name:	Dual Band Gigabit Wi-Fi 6 Router			
Model No.:	WR-AX1800			
Serial No.:	N/A			
Hardware Version:	V1.0			
Software Version:	V0.0.1			
Test sample(s) ID:	GTSL202110000012-1			
Sample(s) Status:	Engineer sample			
Operation Frequency:	Band	Mode	Frequency Range(MHz)	Number of channels
	U-NII Band I	IEEE 802.11a IEEE 802.11n/ 20MHz IEEE 802.11ac/ 20MHz IEEE 802.11ax/ 20MHz	5150-5250	4
		IEEE 802.11n/ 40MHz IEEE 802.11ac/ 40MHz IEEE 802.11ax/ 40MHz	5190-5230	2
		IEEE 802.11ac/ 80MHz IEEE 802.11ax/ 80MHz	5210	1
Modulation technology:	IEEE 802.11a/n/ac: OFDM IEEE 802.11ax: OFDMA			
Antenna Type:	External Antenna			
Antenna gain:	ANTA:5.0dBi ANTB:5.0dBi MIMO technology Directional gain=8.01dBi			
Power supply:	DC 12V(Powered by AC/DC adaptor)			
Adaptor Information:	Model: BN073-A12012U Input: 100-240V ~50/60Hz 0.4A    Output: 12V/1A			

Channel list for IEEE 802.11a/ IEEE 802.11n (HT20)/ IEEE 802.11ac(VHT20)/ IEEE 802.11ax(HE20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180MHz	40	5200MHz	44	5220MHz	48	5240MHz
Channel list for IEEE 802.11n (HT40)/ IEEE 802.11ac(VHT40)/ IEEE 802.11ax(HE40)							
38	5190MHz	46	5230MHz	/	/	/	/
Channel list for IEEE 802.11ac(VHT80)/ IEEE 802.11ax(HE80)							
42	5210	/	/	/	/	/	/

## 5.2 Test mode

Transmitting mode	Keep the EUT in transmitting with modulation..
<i>Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.</i>	
We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:	
Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.	
Mode	Data rate
802.11a	6 Mbps
802.11n(HT20)	MCS 0
802.11n(HT40)	MCS 0
802.11ax(HE20)	MCS 0NSS2
802.11ax(HE40)	MCS 0NSS2
802.11ax(HE80)	MCS 0NSS2
802.11ac(VHT20)	MCS 0
802.11ac(VHT40)	MCS 0
802.11ac(VHT80)	MCS 0

## 5.3 Test Facility

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> <li>● <b>FCC—Registration No.: 381383</b> Designation Number: CN5029 Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files.</li> <li>● <b>IC —Registration No.: 9079A</b> CAB identifier: CN0091 The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing</li> <li>● <b>NVLAP (LAB CODE:600179-0)</b> Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).</li> </ul>
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## 5.4 Test Location

All tests were performed at:
Global United Technology Services Co., Ltd. Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, sBaoan District, Shenzhen, Guangdong, China 518102 Tel: 0755-27798480 Fax: 0755-27798960

## 5.5 Description of Support Unit

Notebook M/N: Latitude 3400
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## 5.6 Deviation from Standards

None.
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## 5.7 Abnormalities from Standard Conditions

None.
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## 5.8 Additional Instructions

Test Software	accessMTool V3_1_0_6
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## 6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 02 2020	July. 01 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 24 2021	June. 23 2022
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 24 2021	June. 23 2022
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 24 2021	June. 23 2022
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 24 2021	June. 23 2022
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 24 2021	June. 23 2022
9	Coaxial Cable	GTS	N/A	GTS211	June. 24 2021	June. 23 2022
10	Coaxial cable	GTS	N/A	GTS210	June. 24 2021	June. 23 2022
11	Coaxial Cable	GTS	N/A	GTS212	June. 24 2021	June. 23 2022
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 24 2021	June. 23 2022
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 24 2021	June. 23 2022
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 24 2021	June. 23 2022
15	Band filter	Amindeon	82346	GTS219	June. 24 2021	June. 23 2022
16	Power Meter	Anritsu	ML2495A	GTS540	June. 24 2021	June. 23 2022
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 24 2021	June. 23 2022
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 24 2021	June. 23 2022
19	Splitter	Agilent	11636B	GTS237	June. 24 2021	June. 23 2022
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 24 2021	June. 23 2022
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 18 2020	Oct. 17 2021
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 18 2020	Oct. 17 2021
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 18 2020	Oct. 17 2021
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 24 2021	June. 23 2022



Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.15 2019	May.14 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 24 2021	June. 23 2022
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 24 2021	June. 23 2022
4	ENV216 2-L-V-NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	GTS226	June. 24 2021	June. 23 2022
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	R&S	ESK1	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 24 2021	June. 23 2022
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 24 2021	June. 23 2022
9	ISN	SCHWARZBECK	NTFM 8158	GTS565	June. 24 2021	June. 23 2022
10	High voltage probe	SCHWARZBECK	TK9420	GTS537	July. 09 2021	July. 08 2022

RF Conducted Test:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 24 2021	June. 23 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 24 2021	June. 23 2022
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 24 2021	June. 23 2022
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 24 2021	June. 23 2022
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 24 2021	June. 23 2022
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 24 2021	June. 23 2022
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 24 2021	June. 23 2022
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 24 2021	June. 23 2022

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 24 2021	June. 23 2022
2	Barometer	ChangChun	DYM3	GTS255	June. 24 2021	June. 23 2022

## 7 Test results and Measurement Data

### 7.1 Antenna requirement:

<b>Standard requirement:</b>	FCC Part15 C Section 15.203
<i>15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</i>	
<b>E.U.T Antenna:</b>	
<i>The antennas are External Antenna (2T2R), the best case gain of the antennas are 5.0dBi, reference to the appendix II for details</i>	

## 7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207					
Test Method:	ANSI C63.10:2013					
Test Frequency Range:	150KHz to 30MHz					
Class / Severity:	Class B					
Receiver setup:	RBW=9KHz, VBW=30KHz					
Limit:	Frequency range (MHz)	Limit (dBuV)				
		Quasi-peak	Average			
	0.15-0.5	66 to 56*	56 to 46*			
	0.5-5	56	46			
	5-30	60	50			
* Decreases with the logarithm of the frequency.						
Test procedure	<p>The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.</p>					
Test setup:	<p><i>Remark</i>  E.U.T: Equipment Under Test  LISN: Line Impedance Stabilization Network  Test table height=0.8m</p>					
Test Instruments:	Refer to section 6 for details					
Test mode:	Refer to section 5.2 for details					
Test environment:	Temp.:	25 °C	Humid.:	57%	Press.:	1012mbar
Test voltage:	AC 120V, 60Hz					
Test results:	Pass					

Remark: Both high and low voltages have been tested to show only the worst low voltage test data.

**Measurement data:**

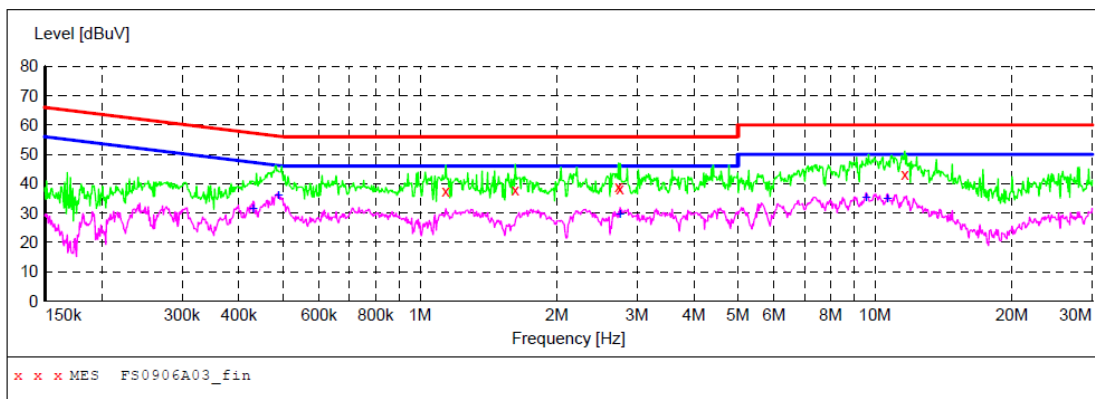
**Line:**

**Voltage Mains Test:FCC PART 15 B**

EUT: Dual Band Gigabit Wi-Fi 6 Router M/N: WR-AX1800  
 Manufacturer: FS.COM  
 Operating Condition: ON WITH WIFI(5GHz)  
 Test Site: Shielding Room  
 Operator: Jason  
 Test Specification: AC 120V/60Hz  
 Comment: L LINE

**SCAN TABLE: "Voltage (9K-30M)FIN"**

Short Description: 150K-30M Voltage



**MEASUREMENT RESULT: "FS0906A03\_fin"**

2021-9-6 10:42

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
1.139770	37.40	10.4	56	18.6	QP	L1	GND
1.619512	37.90	10.3	56	18.1	QP	L1	GND
2.732124	38.90	10.3	56	17.1	QP	L1	GND
2.754025	38.20	10.3	56	17.8	QP	L1	GND
11.636925	43.40	10.6	60	16.6	QP	L1	GND

**MEASUREMENT RESULT: "FS0906A03\_fin2"**

2021-9-6 10:42

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.430320	31.60	10.3	47	15.6	AV	L1	GND
0.488957	36.00	10.4	46	10.2	AV	L1	GND
2.754025	29.70	10.3	46	16.3	AV	L1	GND
9.569435	35.20	10.6	50	14.8	AV	L1	GND
10.658511	34.70	10.6	50	15.3	AV	L1	GND

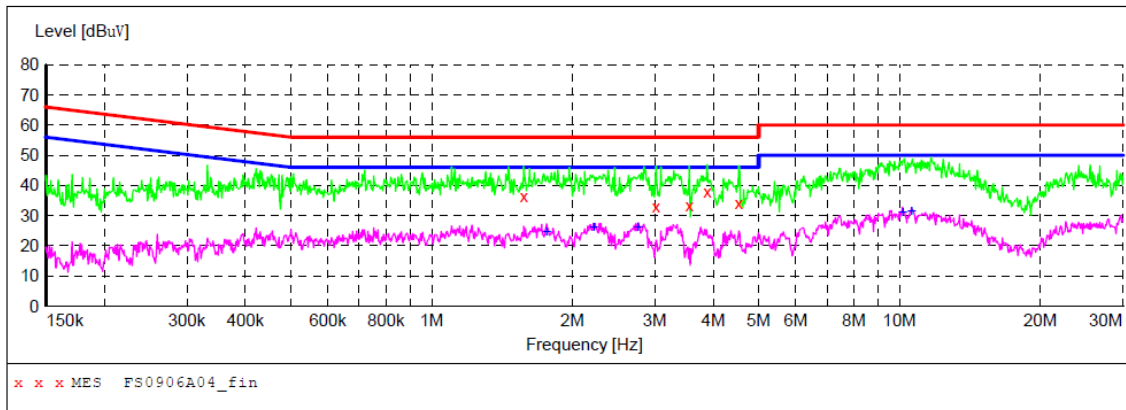
**Neutral:**

**Voltage Mains Test:FCC PART 15 B**

EUT: Dual Band Gigabit Wi-Fi 6 Router M/N: WR-AX1800  
 Manufacturer: FS.COM  
 Operating Condition: ON WITH WIFI(5GHz)  
 Test Site: Shielding Room  
 Operator: Jason  
 Test Specification: AC 120V/60Hz  
 Comment: N LINE

**SCAN TABLE: "Voltage (9K-30M) FIN"**

Short Description: 150K-30M Voltage



**MEASUREMENT RESULT: "FS0906A04\_fin"**

2021-9-6 10:45

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
1.574882	36.60	10.3	56	19.4	QP	N	GND
3.018862	33.00	10.4	56	23.0	QP	N	GND
3.555703	33.20	10.4	56	22.8	QP	N	GND
3.882104	37.90	10.4	56	18.1	QP	N	GND
4.536094	34.20	10.4	56	21.8	QP	N	GND

**MEASUREMENT RESULT: "FS0906A04\_fin2"**

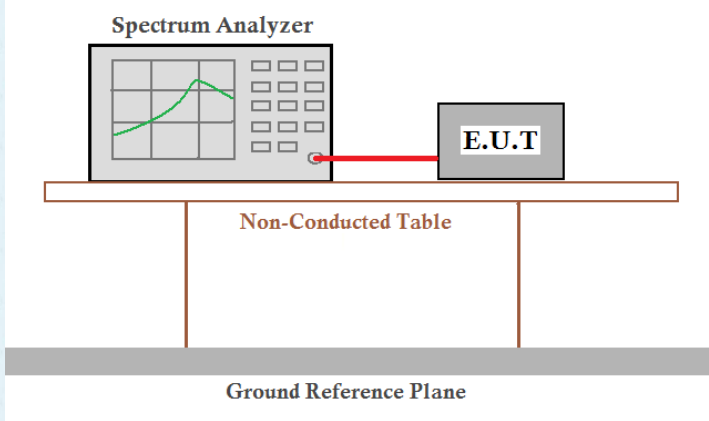
2021-9-6 10:45

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
1.761133	24.70	10.3	46	21.3	AV	N	GND
2.219972	26.00	10.3	46	20.0	AV	N	GND
2.765041	26.30	10.3	46	19.7	AV	N	GND
10.159960	30.90	10.6	50	19.1	AV	N	GND
10.616047	31.40	10.6	50	18.6	AV	N	GND

Notes:

1. *An initial pre-scan was performed on the line and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Cable Loss*

## 7.3 Emission Bandwidth and 99% Occupied Bandwidth

Test Requirement:	FCC Part15 E Section 15.407
Test Method:	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Limit:	N/A
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p>
Test procedure:	According to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

**Measurement Data:**

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)				26dB Occupied Bandwidth (MHz)			
		802.11a		802.11ax(HE20)		802.11a		802.11ax(HE20)	
		ANT-A	ANT-B	ANT-A	ANT-B	ANT-A	ANT-B	ANT-A	ANT-B
36	5180	16.706	16.700	19.073	19.017	25.17	26.71	25.02	24.65
48	5240	16.874	16.685	19.012	25.00	23.74	25.78	25.00	24.63

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)				26dB Occupied Bandwidth (MHz)			
		802.11n(HT20)		802.11ac(VHT20)		802.11n(HT20)		802.11ac(VHT20)	
		ANT-A	ANT-B	ANT-A	ANT-B	ANT-A	ANT-B	ANT-A	ANT-B
36	5180	17.937	17.867	17.829	17.798	22.11	22.36	24.18	22.37
48	5240	17.982	17.901	17.859	17.796	25.77	24.06	25.61	21.67

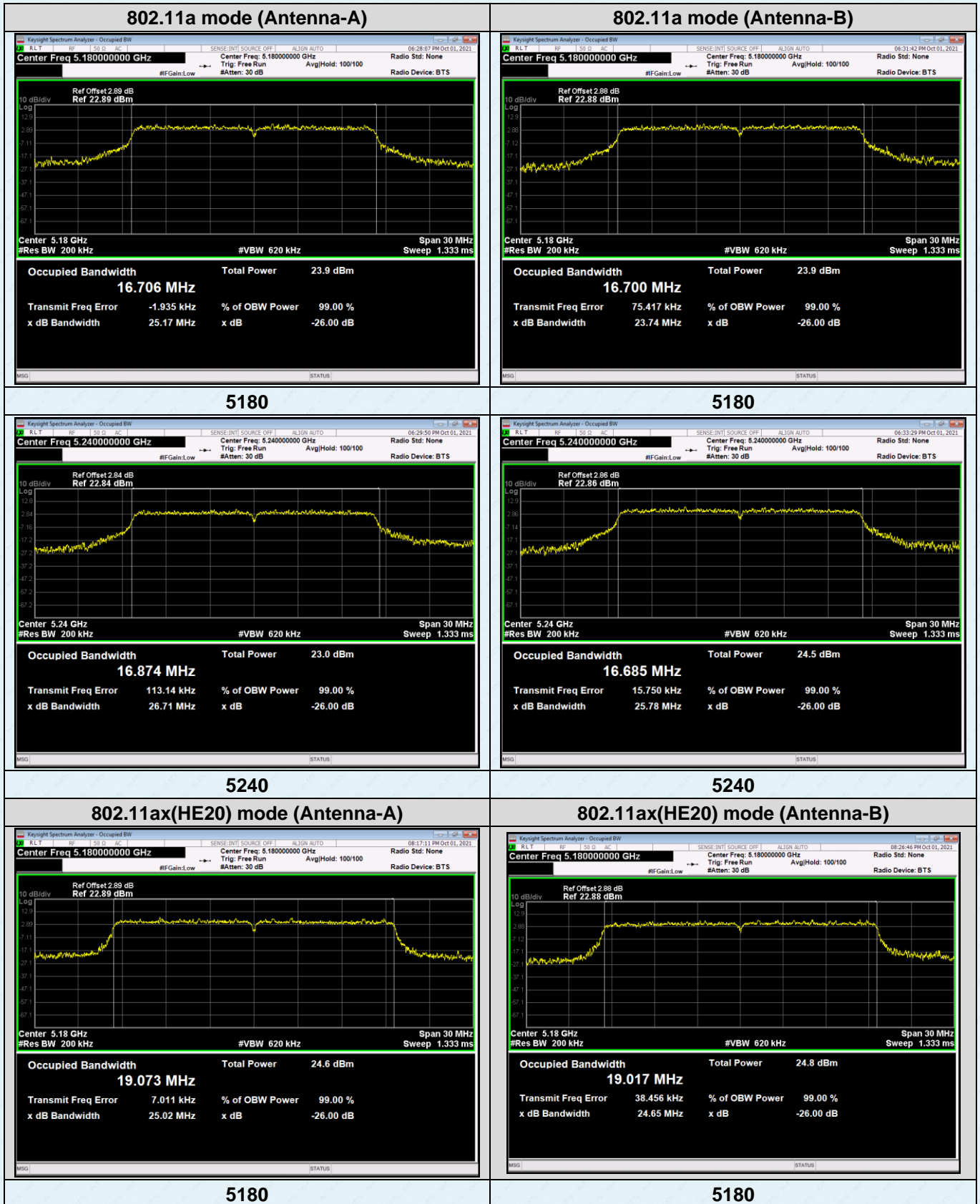
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)				26dB Occupied Bandwidth (MHz)			
		802.11ax(HE40)		802.11n(HT40)		802.11ax(n40)		802.11n(HT40)	
		ANT-A	ANT-B	ANT-A	ANT-B	ANT-A	ANT-B	ANT-A	ANT-B
38	5190	37.6665	37.597	36.422	36.316	55.99	46.96	57.57	49.39
46	5230	37.686	37.591	36.548	36.313	49.36	46.20	54.49	51.22

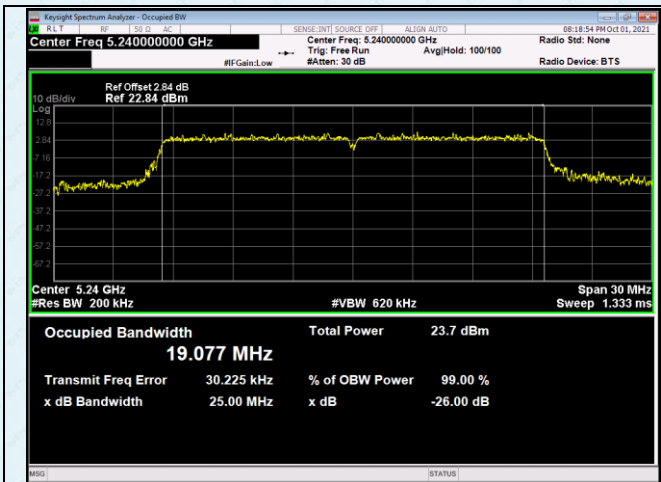
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)				26dB Occupied Bandwidth (MHz)			
		802.11ac(VHT40)		/		802.11ac(VHT40)		/	
		ANT-A	ANT-B	ANT-A	ANT-B	ANT-A	ANT-B	ANT-A	ANT-B
38	5190	36.422	36.360	/	/	57.33	49.83	/	/
46	5230	36.476	36.310	/	/	57.63	47.70	/	/

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)				26dB Occupied Bandwidth (MHz)			
		802.11ax(HE80)		802.11ac(VHT80)		802.11ax(HE80)		802.11ac(VHT80)	
		ANT-A	ANT-B	ANT-A	ANT-B	ANT-A	ANT-B	ANT-A	ANT-B
42	5190	77.139	76.946	75.970	75.799	93.31	98.33	116.20	116.60



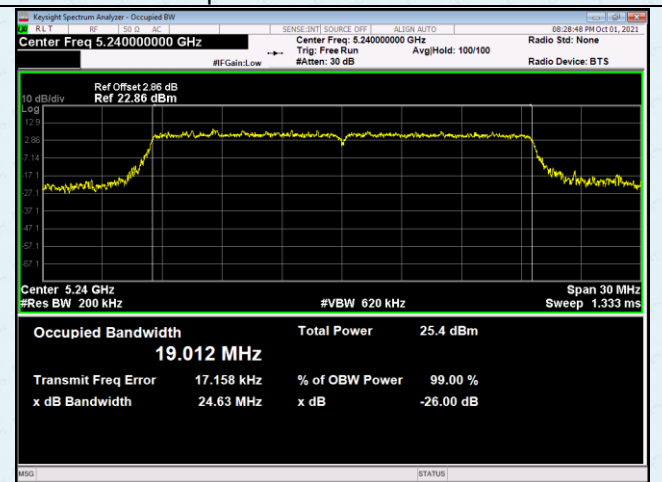
Test plots as followed:





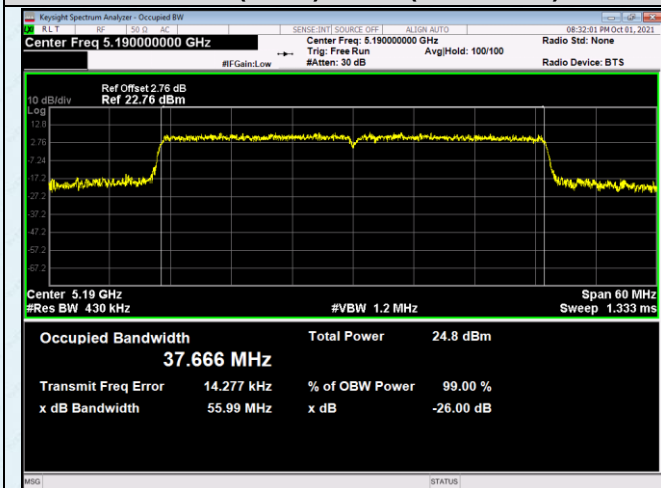
5240

802.11ax(HE40) mode (Antenna-A)

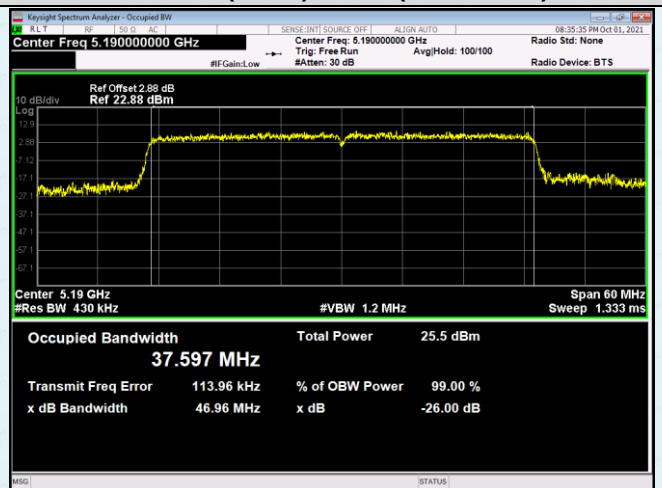


5240

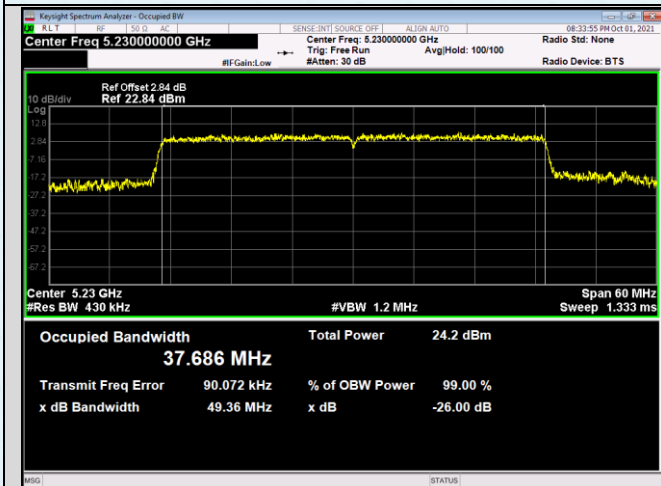
802.11ax(HE40) mode (Antenna-B)



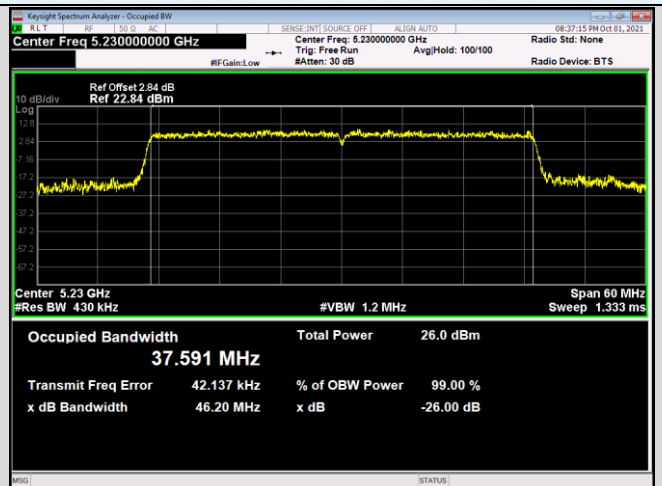
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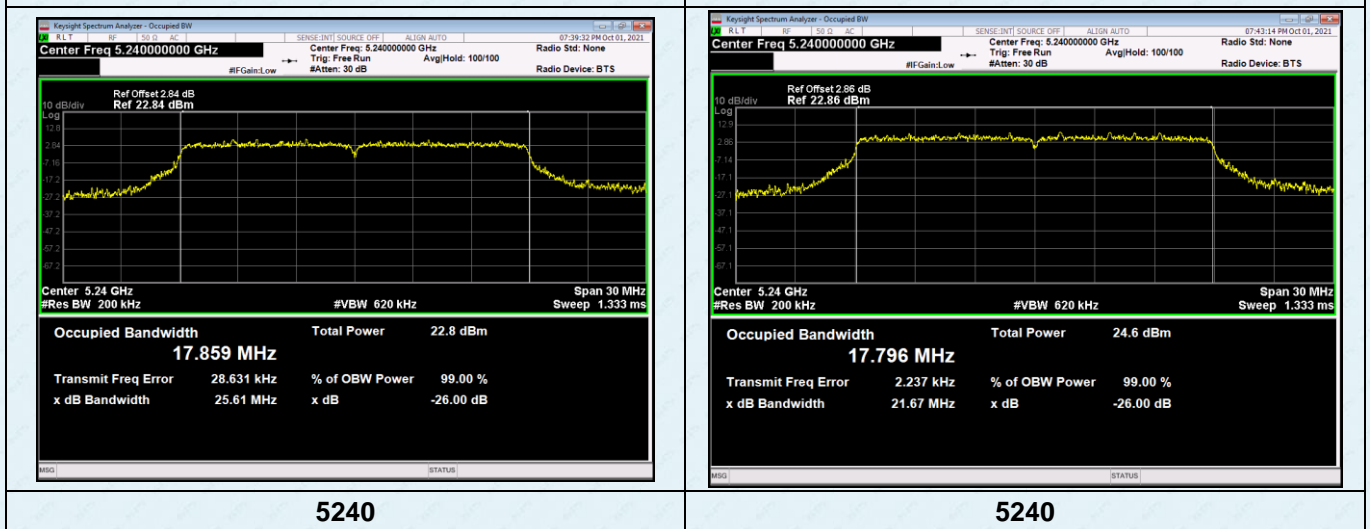
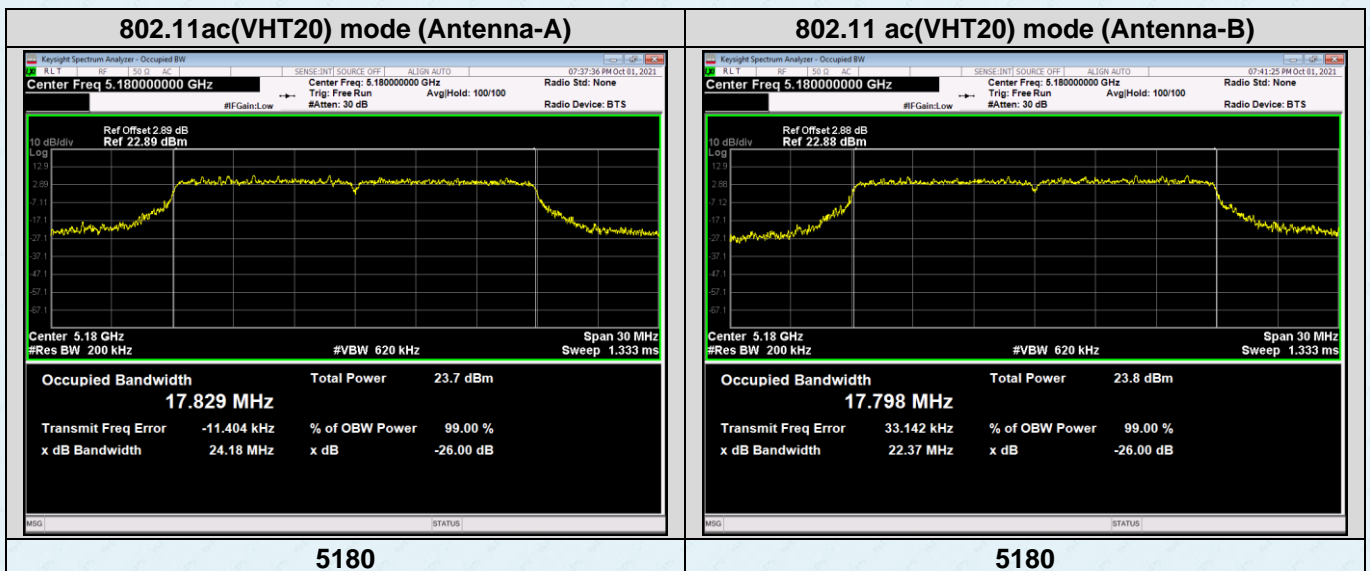
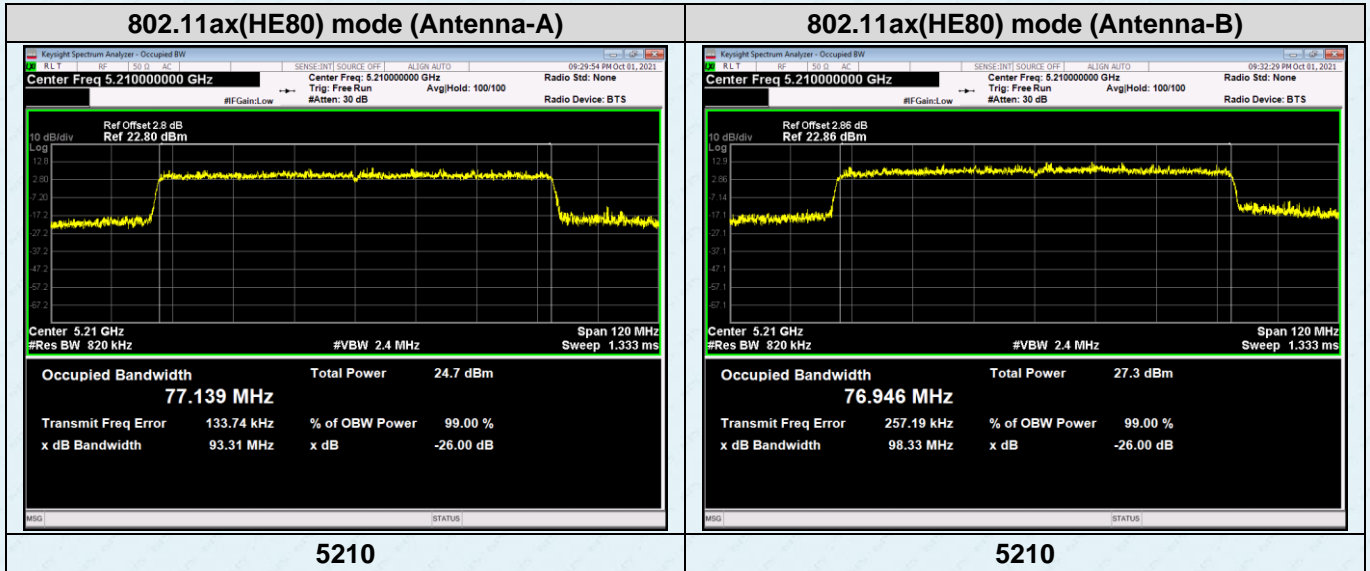
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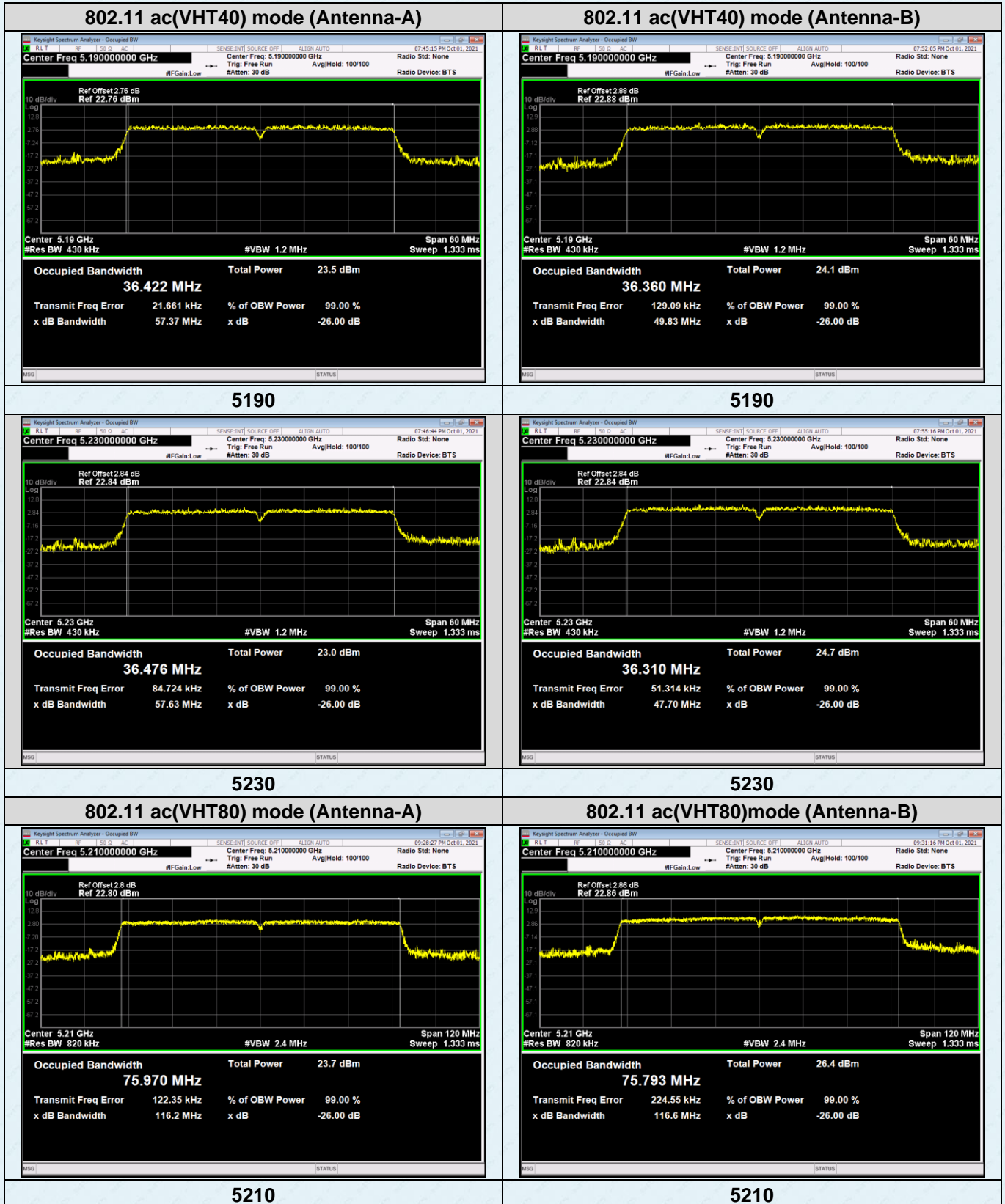


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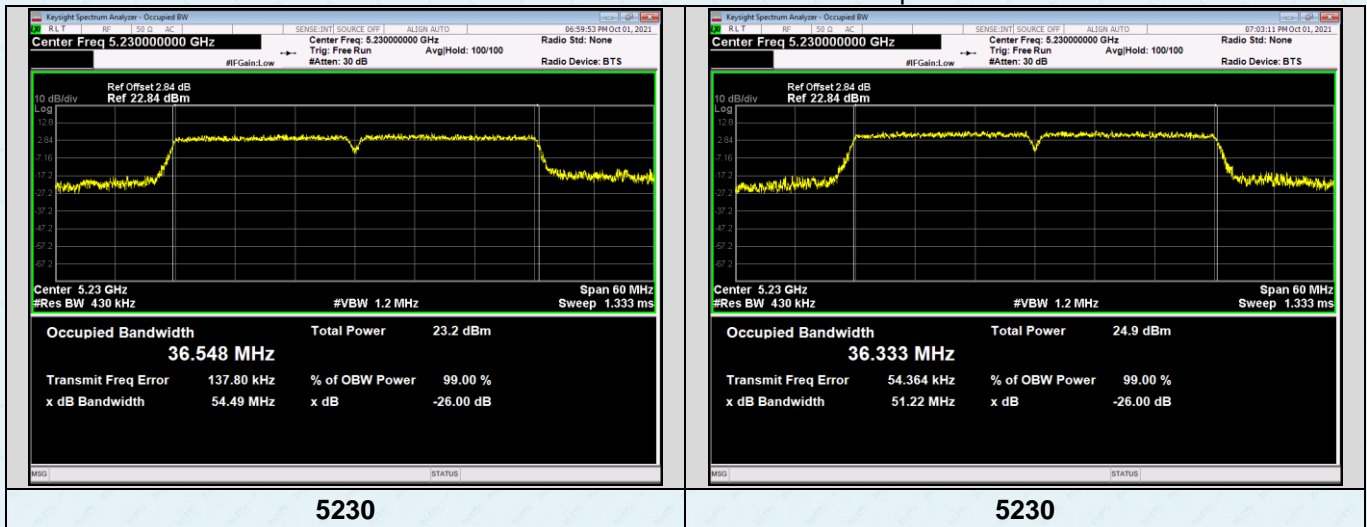


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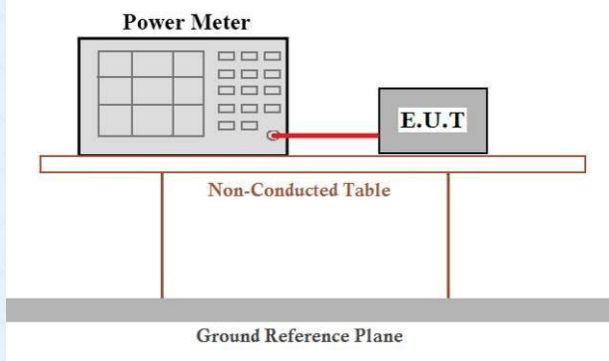






**Note: We tested 802.11a/n /ac/ax mode the all data rate and recorded the worst case data.**

## 7.4 Peak Transmit Power

Test Requirement:	FCC Part15 E Section 15.407									
Test Method:	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01									
Limit:	<table border="1"> <thead> <tr> <th>Frequency band (MHz)</th> <th>Limit</th> </tr> </thead> <tbody> <tr> <td rowspan="2">5150-5250</td> <td>≤1W(30dBm) for master device</td> </tr> <tr> <td>≤250mW(24dBm) for client device</td> </tr> <tr> <td>5250-5350</td> <td>≤250mW(24dBm) for client device or 11dBm+10logB*</td> </tr> <tr> <td>5470-5725</td> <td>≤250mW(24dBm) for client device or 11dBm+10logB*</td> </tr> </tbody> </table>	Frequency band (MHz)	Limit	5150-5250	≤1W(30dBm) for master device	≤250mW(24dBm) for client device	5250-5350	≤250mW(24dBm) for client device or 11dBm+10logB*	5470-5725	≤250mW(24dBm) for client device or 11dBm+10logB*
	Frequency band (MHz)	Limit								
	5150-5250	≤1W(30dBm) for master device								
		≤250mW(24dBm) for client device								
	5250-5350	≤250mW(24dBm) for client device or 11dBm+10logB*								
5470-5725	≤250mW(24dBm) for client device or 11dBm+10logB*									
<p>Remark: *Where B is the 26dB emission bandwidth in MHz. The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.</p>										
Test setup:										
Test procedure:	<p><b>Measurement using an RF average power meter</b></p> <ul style="list-style-type: none"> <li>(i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied <ul style="list-style-type: none"> <li>a) The EUT is configured to transmit continuously or to transmit with a constant duty cycle.</li> <li>b) At all times when the EUT is transmitting, it must be transmitting at its maximum power control level.</li> <li>c) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.</li> </ul> </li> <li>(ii) If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal as described in section B).</li> <li>(iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.</li> </ul> <p>Adjust the measurement in dBm by adding <math>10 \log(1/x)</math> where x is the duty cycle (e.g., <math>10 \log(1/0.25)</math> if the duty cycle is 25 percent).</p>									
Test Instruments:	Refer to section 6 for details									
Test mode:	Refer to section 5.2 for details									
Test results:	Pass									

### Measurement Data

Modulation	Frequency (MHz)	Duty cycle(%)		Duty Factor	
		Antenna-A	Antenna-B	Antenna-A	Antenna-B
802.11a	5180	95.63	95.63	0.19	0.19
	5240	95.62	95.62	0.19	0.19
802.11n(HT20)	5180	92.92	92.94	0.32	0.32
	5240	92.84	92.83	0.32	0.32
802.11n(HT40)	5190	89.19	89.21	0.5	0.5
	5230	89.20	89.25	0.5	0.5
802.11ac(VHT20)	5180	95.55	95.53	0.2	0.2
	5240	95.41	95.45	0.2	0.2
802.11ac(VHT40)	5190	90.86	90.85	0.42	0.42
	5230	90.88	90.87	0.42	0.42
802.11ac(VHT80)	5210	87.94	87.96	0.56	0.56
802.11ax(HE20)	5180	86.96	86.95	0.61	0.61
	5240	86.97	86.98	0.61	0.61
802.11ax(HE40)	5190	89.17	89.15	0.5	0.5
	5230	89.10	89.11	0.5	0.5
802.11ax(HE80)	5210	84.93	84.92	0.71	0.71

802.11a mode										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT A	ANT B	ANT A+B		ANT A	ANT B	ANT A+B		
36	5180	18.199	18.256	--	0.19	18.389	18.446	--	30	Pass
48	5240	17.292	18.882	--	0.19	17.482	19.072	--		
802.11n(HT20) mode										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT A	ANT B	ANT A+B		ANT A	ANT B	ANT A+B		
36	5180	17.437	17.52	20.489	0.32	17.757	17.84	20.809	27.99	Pass
48	5240	16.598	18.231	20.501	0.32	16.918	18.551	20.821		
802.11n(HT40) mode										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT A	ANT B	ANT A+B		ANT A	ANT B	ANT A+B		



38	5190	16.932	17.558	20.267	0.5	17.432	18.058	20.767	27.99	Pass
46	5230	16.505	18.076	20.371	0.5	17.0505	18.576	20.871		
<b>802.11ax(HE20) mode</b>										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT A	ANT B	ANT A+B		ANT A	ANT B	ANT A+B		
36	5180	17.741	17.90	20.832	0.61	18.351	18.51	21.442	27.99	Pass
48	5240	16.665	18.152	20.482	0.61	17.275	18.762	21.092		
<b>802.11ax(HE40) mode</b>										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT A	ANT B	ANT A+B		ANT A	ANT B	ANT A+B		
38	5190	17.465	18.011	20.757	0.5	17.965	18.511	21.257	27.99	Pass
46	5230	16.798	18.619	20.814	0.5	17.298	19.119	21.314		
<b>802.11ax(HE80) mode</b>										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT A	ANT B	ANT A+B		ANT A	ANT B	ANT A+B		
42	5210	16.684	19.154	21.103	0.71	17.394	19.864	21.813	27.99	Pass
<b>802.11ac(VHT20) mode</b>										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT A	ANT B	ANT A+B		ANT A	ANT B	ANT A+B		
36	5180	17.787	17.859	20.833	0.2	17.987	18.059	21.033	27.99	Pass
48	5240	17.126	18.546	20.904	0.2	17.326	18.746	21.104		
<b>802.11ac(VHT40) mode</b>										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT A	ANT B	ANT A+B		ANT A	ANT B	ANT A+B		
38	5190	17.28	17.908	20.616	0.42	17.7	18.328	21.036	27.99	Pass
46	5230	16.703	18.39	20.638	0.42	17.123	18.81	21.059		

802.11ac(VHT80) mode										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT A	ANT B	ANT A+B		ANT A	ANT B	ANT A+B		
42	5210	16.634	19.185	21.104	0.56	17.194	19.745	21.664	27.99	Pass

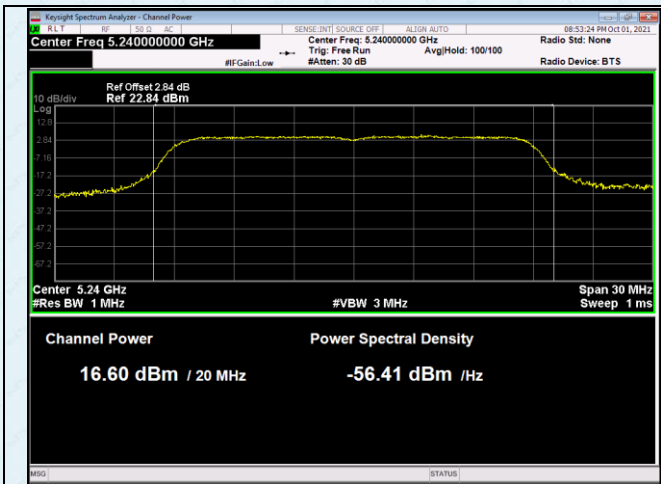
Note: Output Power = Measured Power + Duty Factor

Duty Factor =  $10 \log (1/\text{Duty Cycle})$

Note: For MIMO mode, the Power Limit =  $30 - 2.01 = 27.99 \text{ dBm}$

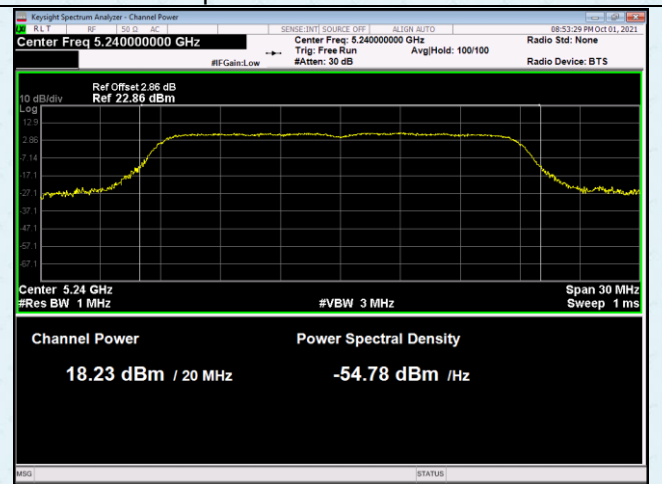
Test plots as followed:





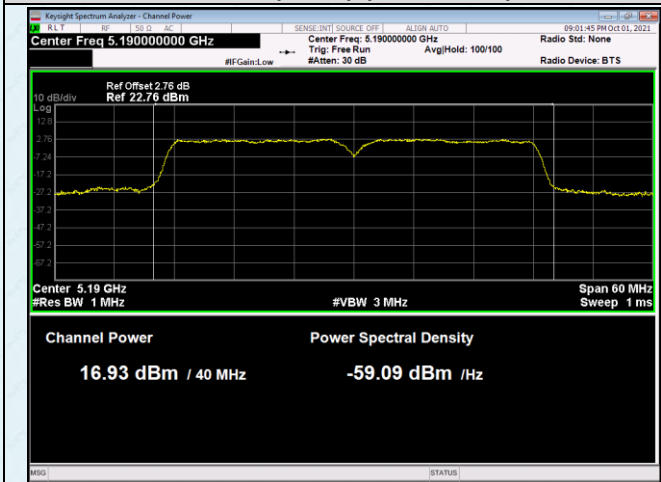
5240

802.11n(HT40) (Antenna A)

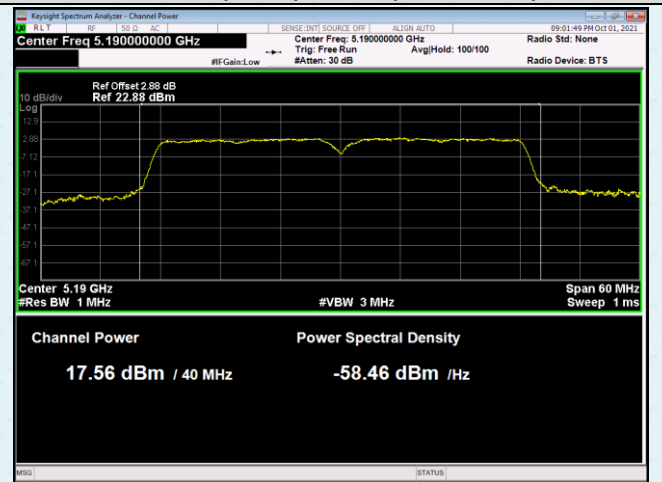


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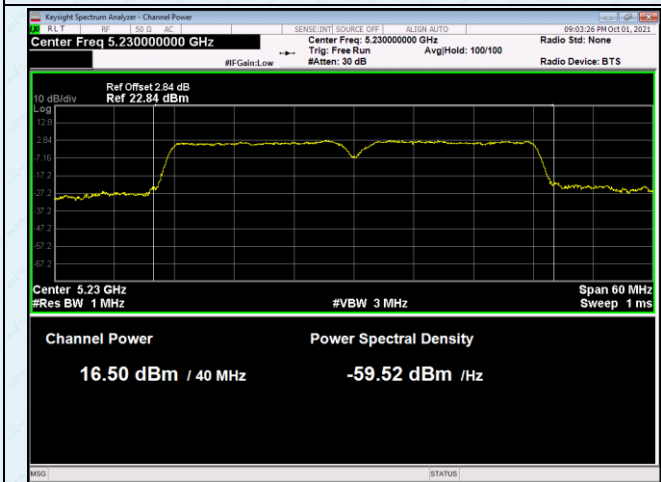
802.11n(HT40) mode (Antenna B)



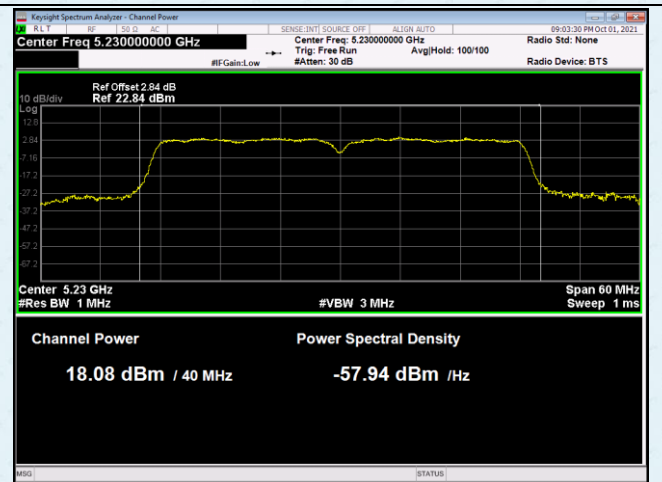
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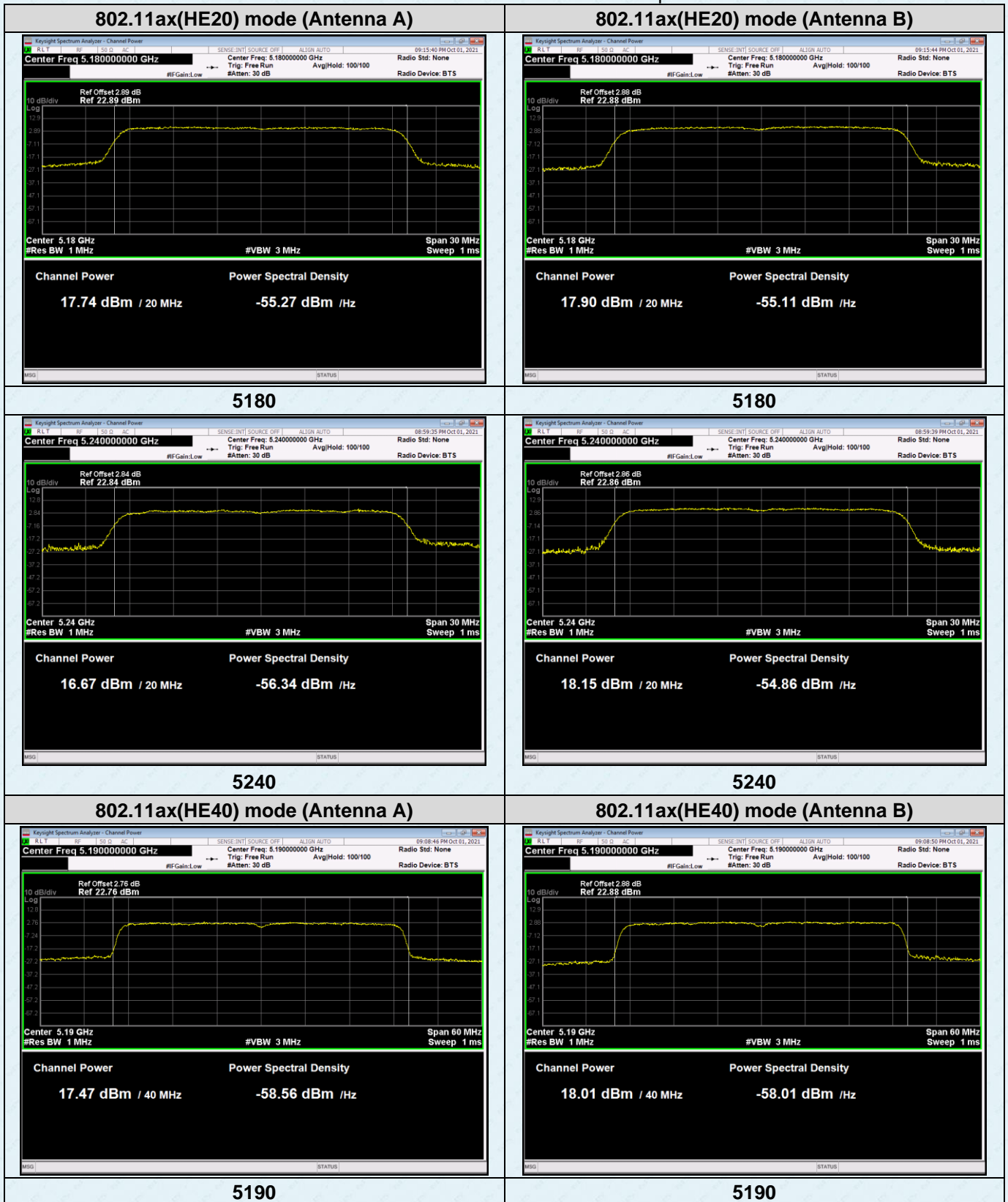
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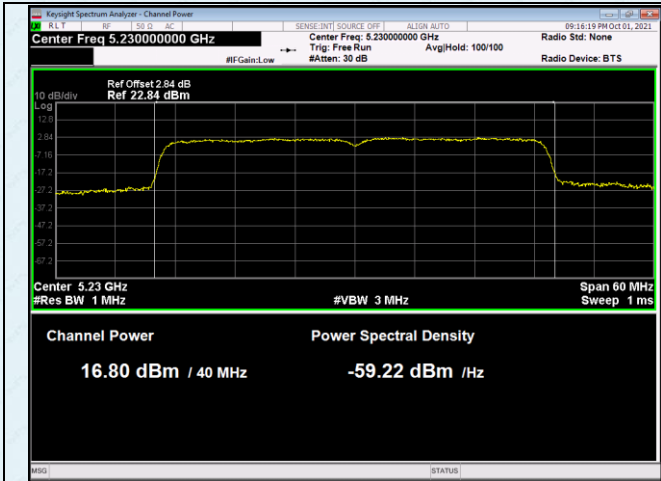


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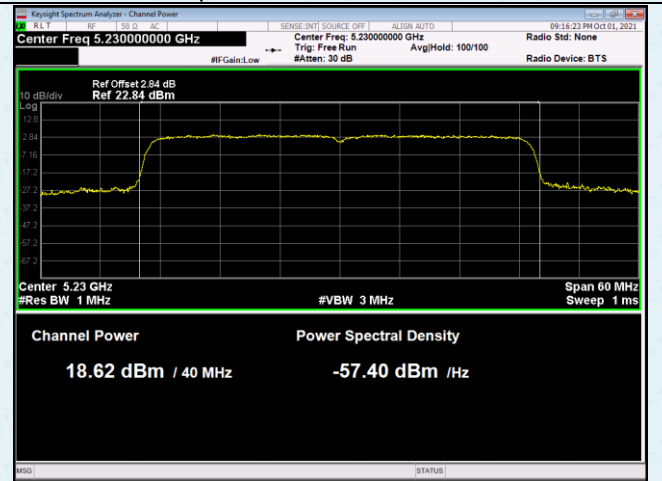
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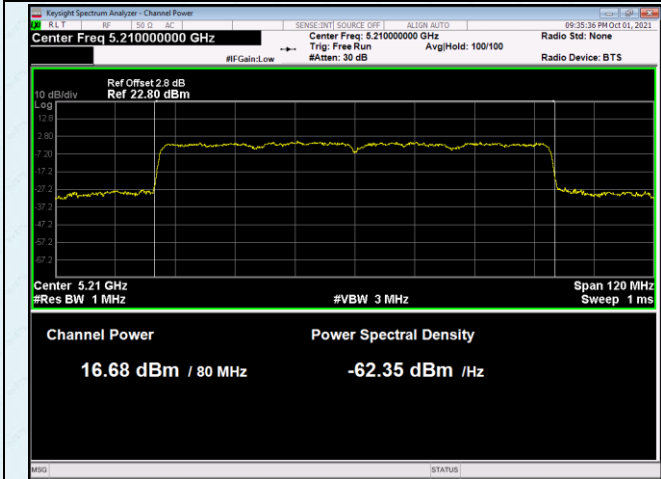
5230

802.11ax(HE80) mode (Antenna A)



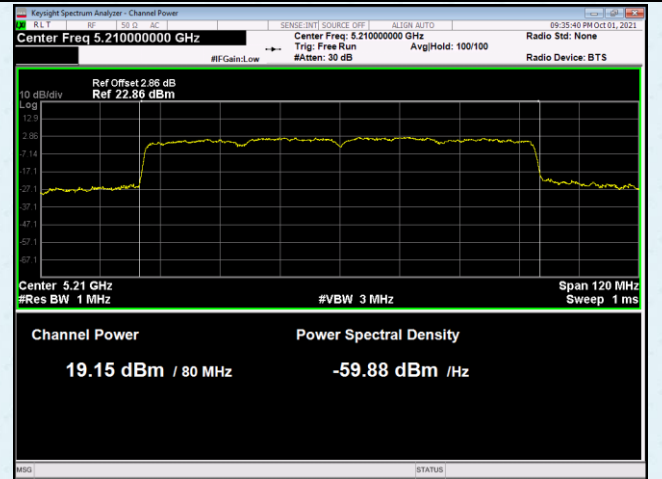
5230

802.11ax(HE80) mode (Antenna B)



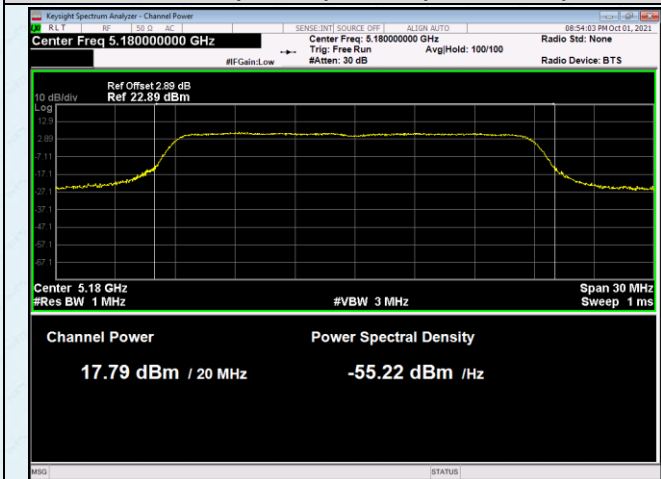
5210

802.11ac(VHT20) mode (Antenna A)

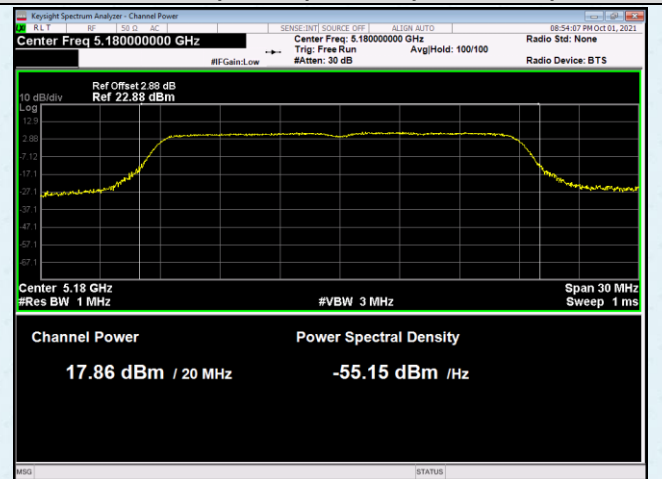


5210

802.11ac(VHT20) mode (Antenna B)



5180



5180