

# TEST REPORT



**CTK Co., Ltd.**  
(Ho-dong), 113, Yejik-ro, Cheoin-gu,  
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Report No.:  
CTK-2022-03105  
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## 1. Applicant

- Name : KAONMEDIA Co., Ltd.
- Address : KAONMEDIA Building, 884-3 Seongnam-daero, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea
- Date of Receipt : 2022-08-24

## 2. Manufacturer

- Name : KAONMEDIA Co., Ltd.
- Address : KAONMEDIA Building, 884-3 Seongnam-daero, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea

## 3. Use of Report : For FCC Conformance

## 4. Test Sample / Model: IP Set-top-box(OTT STB) / KSTB6200

## 5. Date of Test : 2022-09-26 to 2022-11-16

## 6. Test Standard(method) used : FCC 47 CFR part 15 subpart E 15.407

## 7. Testing Environment: Temp.: (23 ± 1) °C, Humidity: (48 ± 3) % R.H.



## 8. Test Results : Compliance

## 9. Location of Test : Permanent Testing Lab On Site Testing

(Address : 5, Dongbu-ro 221beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea)

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

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Approval	Tested by Ji-Hye, Kim: (Signature) 	Technical Manager Won-Jae, Hwang: (Signature) 
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Remark. This report is not related to KOLAS accreditation and relevant regulation.

2022-12-01

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## REPORT REVISION HISTORY

Date	Revision	Page No
2022-12-01	Issued (CTK-2022-03105)	all

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## 1. General Product Description

### 1.1 Applicant Information

<b>Company</b>	KAONMEDIA Co., Ltd.
<b>Contact Point</b>	KAONMEDIA Building, 884-3 Seongnam-daero, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea
<b>Contact Person</b>	Name : Intae Kim E-mail : intae.kim@kaonmedia.com Tel : +82-31-724-8683 Fax : -

### 1.2 Product Information

<b>FCC ID</b>	WQTKSTB6200
<b>ISED</b>	24567-KSTB6200
<b>Product Description</b>	IP Set-top-box(OTT STB)
<b>Model name</b>	KSTB6200
<b>Variant Model name</b>	-
<b>Operating Frequency</b>	UNII 1 : 5 180 MHz – 5 240 MHz (20 MHz_BW) 5 190 MHz – 5 230 MHz (40 MHz_BW) 5 210 MHz (80 MHz_BW) UNII 2A : 5 260 MHz – 5 320 MHz (20 MHz_BW) 5 270 MHz – 5 310 MHz (40 MHz_BW) 5 290 MHz (80 MHz_BW) UNII 2C : 5 500 MHz – 5 720 MHz (20 MHz_BW) 5 510 MHz – 5 710 MHz (40 MHz_BW) 5 530 MHz – 5 690 MHz (80 MHz_BW) UNII 3 : 5 745 MHz – 5 825 MHz (20 MHz_BW) 5 755 MHz – 5 795 MHz (40 MHz_BW) 5 775 MHz (80 MHz)
<b>RF Output Power</b>	802.11a : 17.04 dBm (50.58 mW) 802.11n_HT20 : 19.57 dBm (90.57 mW) 802.11n_HT40 : 18.92 dBm (77.98 mW) 802.11ac_VHT20 : 20.14 dBm (103.28 mW) 802.11ac_VHT40 : 19.17 dBm (82.60 mW) 802.11ac_VHT80 : 18.74 dBm (74.82 mW) 802.11ax_HE20 : 15.98 dBm (39.63 mW) 802.11ax_HE40 : 17.86 dBm (61.09 mW) 802.11ax_HE80 : 13.73 dBm (23.60 mW)
<b>Antenna Specification</b>	Antenna type : PCB Antenna Peak Gain : 0.82 dBi (ANT1), 0.77 dBi (ANT2)
<b>Antenna Configurations</b>	802.11a : SISO(ANT1, ANT2) 802.11n : MIMO(ANT1+ANT2) 802.11ac : MIMO(ANT1+ANT2) 802.11ax : MIMO(ANT1+ANT2)
<b>Type of Modulation</b>	802.11a/n/ac : OFDM 802.11ax : OFDMA



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<b>Data Rate</b>	802.11a : 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6 Mbps 802.11n : up to 300 Mbps 802.11ac : up to 867 Mbps 802.11ax : up to 1 200 Mbps
<b>Power Source</b>	DC 12 V
<b>Hardware Rev</b>	V1.0
<b>Software Rev</b>	V1.9.8
<b>Dynamic Frequency Selection</b>	Slave without radar detection

### 1.3 Peripheral Devices

Device	Manufacturer	Model No.	Serial No.
Note Computer	HP	15-bs563TU	CND7253QPR
AC/DC Adapter	HP	HSTNN-LA40	-
AC/DC Adapter	SHENZHEN FRECOM ELECTRONICS CO.,LTD.	F12L33- 120100SPAU	-

### 1.4 Model Differences

Not applicable



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## 2. Accreditations

### 2.1 Laboratory Accreditations and Listings

Country	Agency	Registration Number
USA	FCC	805871
CANADA	ISED	8737A
KOREA	NRRA	KR0025

### 2.2 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.



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### 3. Test Specifications

#### 3.1 Standards

FCC Part Section(s)	Requirement(s)	Limit	Status (Note 1)	Test Condition
15.407(e)	6 dB Bandwidth	> 500 kHz (5 725 – 5 850 MHz)	C	Conducted
15.407(a)	26 dB Bandwidth and 99% Bandwidth	NA	C	
15.407(a)(1)	Conducted Output Power	< 250 mW (5 150 – 5 250 MHz)	C	
		< 250 mW (5 250 – 5 350 MHz, 5 470 – 5 725 MHz)		
15.407(a)(1)	Power Spectral Density	< 1 W (5 725 – 5 850 MHz) < 11 dBm/MHz (5 150 – 5 250 MHz) < 11 dBm/MHz (5 250 – 5 350 MHz, 5 470 – 5 725 MHz) < 30 dBm/500 KHz (5 725 – 5 850 MHz)	C	
15.407(g)	Frequency Stability	NA	C	
15.407 (b)	Undesirable emission	< -27 dBm/MHz EIRP (5 150 – 5 250 MHz, 5 250 – 5 350 MHz, 5 470 – 5 725 MHz) < -27 dBm/MHz EIRP < 10 dBm/MHz EIRP < 15.6 dBm/MHz EIRP < 27 dBm/MHz EIRP (5 725 – 5 850 MHz)	C	Radiated
15.205, 15.407 (b)(5),(6)	Radiated Spurious Emission	15.209(a)	C	
15.207	AC Conducted Emissions	15.207(a)	C	Line Conducted
<i>Note 1:</i> C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable				
<i>Note 2:</i> The data in this test report are traceable to the national or international standards.				
<i>Note 3:</i> The sample was tested according to the following specification: FCC Part 15.407, ANSI C63.10-2013				
<i>Note 4:</i> The tests were performed according to the method of measurements prescribed in KDB No.789033.				

### 3.2 Mode of operation during the test

The EUT is operated in a manner representative of the typical of the equipments. During at testing, system components were manipulated within the confines of typical usage to maximize each emission.

For WLAN function, the engineering test program was provided and enabled to make EUT continuous transmit.

All modulation modes were tests. The results are only attached worst cases.

The Output power for the 802.11 ax mode were investigated between all different tones, and we found that the highest tone had the highest output power and lowest tone had the highest PSD readings. Therefore, full testing was performed on both the highest and lowest tones.

#### Test Frequency

- 802.11a, 802.11n\_HT20, 802.11ac\_VHT20, 802.11ax\_HE20

	Lowest channel	Middle channel	Highest channel
<b>UNII 1</b>	5 180 MHz	5 200 MHz	5 240 MHz
<b>UNII 2A</b>	5 260 MHz	5 300 MHz	5 320 MHz
<b>UNII 2C</b>	5 500 MHz	5 600 MHz	5 700 MHz, 5 720 MHz
<b>UNII 3</b>	5 745 MHz	5 785 MHz	5 825 MHz

- 802.11n\_HT40, 802.11ac\_VHT40, 802.11ax\_HE40

	Lowest channel	Middle channel	Highest channel
<b>UNII 1</b>	5 190 MHz	-	5 230 MHz
<b>UNII 2A</b>	5 270 MHz	-	5 310 MHz
<b>UNII 2C</b>	5 510 MHz	5 590 MHz	5 670 MHz, 5 710 MHz
<b>UNII 3</b>	5 755 MHz	-	5 795 MHz

- 802.11ac\_VHT80, 802.11ax\_HE80

	Lowest channel	Middle channel	Highest channel
<b>UNII 1</b>	5 210 MHz	-	-
<b>UNII 2A</b>	5 290 MHz	-	-
<b>UNII 2C</b>	5 530 MHz	5 610 MHz	5 690 MHz
<b>UNII 3</b>	5 775 MHz	-	-





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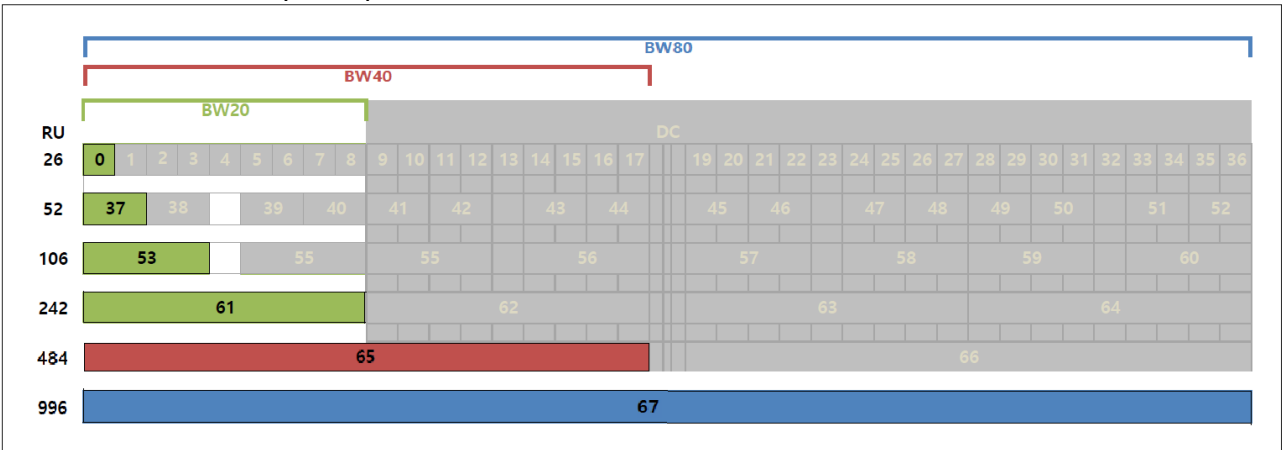
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**Test mode & Worst case**

Test mode	Modulation	Data rate	Duty Cycle	Duty Cycle Factor
802.11a	OFDM	6 Mbps	86.1 %	0.65 dB
802.11n_HT20	OFDM	MCS 0	60.1 %	2.21 dB
802.11n_HT40		MCS 0	55.6 %	2.55 dB
802.11ac_VHT20		MNSS 0	61.4 %	2.12 dB
802.11ac_VHT40		MNSS 0	56.8 %	2.46 dB
802.11ac_VHT80		MNSS 0	58.3 %	2.35 dB
802.11ax HE20/40 26T		OFDMA	MCS 0	97.1 %
802.11ax HE20/40 52T	97.4 %			0.12 dB
802.11ax HE20/40 106T	96.5 %			0.15 dB
802.11ax HE20/40 242T	93.5 %			0.29 dB
802.11ax HE40 484T	89.4 %			0.49 dB
802.11ax HE80 26T	96.8 %			0.14 dB
802.11ax HE80 52T	97.4 %			0.12 dB
802.11ax HE80 106T	95.5 %			0.20 dB
802.11ax HE80 242T	92.4 %			0.34 dB
802.11ax HE80 484T	94.0 %			0.27 dB
802.11ax HE80 996T	83.7 %			0.77 dB

**802.11ax RU Locations**

RU Locations use only one per Tone as shown below.





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**Test RU Index for Tones**

Mode	Tones	RU Index	
802.11ax_HE20	26T	Low	0
	52T	Low	37
	106T	Low	53
	242T	61	61
802.11ax_HE40	26T	Low	0
	52T	Low	37
	106T	Low	53
	242T	Low	61
	484T	65	65
802.11ax_HE80	26T	Low	0
	52T	Low	37
	106T	Low	53
	242T	Low	61
	484T	Low	65
	996T	67	67

Full RU(Resource Unit) mode and SU(Single Unit) mode have no difference in physical waveform. This Report has been reported the Full RU(Resource Unit) mode with worst output power.

### 3.3 Device Modifications

The following modifications were necessary for compliance:

Not applicable

### 3.4 Maximum Measurement Uncertainty

The value of the measurement uncertainty for the measurement of each parameter.  
Coverage factor  $k = 2$ , Confidence levels of 95 %

Description	Uncertainty
Conducted RF Output Power	1.5 dB (C.L.: Approx. 95 %, $k = 2$ )
Power Spectral Density	1.5 dB (C.L.: Approx. 95 %, $k = 2$ )
Occupied Bandwidth	0.1 MHz (C.L.: Approx. 95 %, $k = 2$ )
Unwanted Emission(conducted)	3.0 dB (C.L.: Approx. 95 %, $k = 2$ )
Radiated Emissions ( $f \leq 1$ GHz)	3.88 dB (C.L.: Approx. 95 %, $k = 2$ )
Radiated Emissions ( $f > 1$ GHz)	4.62 dB (C.L.: Approx. 95 %, $k = 2$ )
Line Conducted Emission	1.94 dB (C.L.: Approx. 95 %, $k = 2$ )

### 3.5 Test Software

Conducted Test	Ics Pro Ver. 6.0.3
Radiated Test	EP5RE Ver. 6.0.1.0, ES10 Ver. 10.001
Line Conducted Test	EMC32 Ver. 10.50.00



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## 4. Technical Characteristic Test

### 4.1 6dB Bandwidth

#### Test Procedures

KDB 789033 – Section C.2  
ANSI C63.10-2013 - Section 6.9.2

Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

#### Test Settings :

Center frequency = the highest, middle and the lowest channels

- a) RBW = 100 kHz
- b) VBW  $\geq 3 \times$  RBW
- c) Detector = peak
- d) Trace mode = Max hold
- e) Sweep = auto couple
- f) Allow trace to fully stabilize
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

#### **Minimum Standard:**

---

6 dB Bandwidth > 500 kHz

---



**Test Data:**

**ANT1**

6 dB Bandwidth (MHz)			
Mode	802.11a	802.11n_HT20	802.11ac_VHT20
Frequency			
5 745 MHz	15.18	15.19	15.18
5 785 MHz	15.19	15.18	15.20
5 825 MHz	15.18	15.18	15.19
Measurement uncertainty	± 0.1 MHz		

6 dB Bandwidth (MHz)		
Mode	802.11ax_HE20_26T	802.11ax_HE20_242T
Frequency		
5 745 MHz	2.12	19.02
5 785 MHz	2.02	18.91
5 825 MHz	2.05	19.01
Measurement uncertainty	± 0.1 MHz	

6 dB Bandwidth (MHz)		
Mode	802.11n_HT40	802.11ac_VHT40
Frequency		
5 755 MHz	36.40	36.39
5 795 MHz	36.37	36.34
Measurement uncertainty	± 0.1 MHz	

6 dB Bandwidth (MHz)		
Mode	802.11ax_HE40_26T	802.11ax_HE40_484T
Frequency		
5 755 MHz	2.05	37.46
5 795 MHz	2.06	36.94
Measurement uncertainty	± 0.1 MHz	



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6 dB Bandwidth (MHz)			
Mode	802.11ac_VHT80	802.11ax_HE80 _26T	802.11ax_HE80 _996T
Frequency			
5 775 MHz	76.43	2.11	77.32
Measurement uncertainty	± 0.1 MHz		

**ANT2**

6 dB Bandwidth (MHz)			
Mode	802.11a	802.11n_HT20	802.11ac_VHT20
Frequency			
5 745 MHz	15.18	15.16	15.23
5 785 MHz	15.19	15.17	15.23
5 825 MHz	15.18	15.18	15.24
Measurement uncertainty	± 0.1 MHz		

6 dB Bandwidth (MHz)		
Mode	802.11ax_HE20_26T	802.11ax_HE20_242T
Frequency		
5 745 MHz	2.06	18.87
5 785 MHz	2.06	18.89
5 825 MHz	2.09	18.96
Measurement uncertainty	± 0.1 MHz	

6 dB Bandwidth (MHz)		
Mode	802.11n_HT40	802.11ac_VHT40
Frequency		
5 755 MHz	36.40	36.42
5 795 MHz	36.38	36.39
Measurement uncertainty	± 0.1 MHz	

6 dB Bandwidth (MHz)		
Mode	802.11ax_HE40_26T	802.11ax_HE40_484T
Frequency		
5 755 MHz	14.02	37.33
5 795 MHz	15.30	37.28
Measurement uncertainty	± 0.1 MHz	



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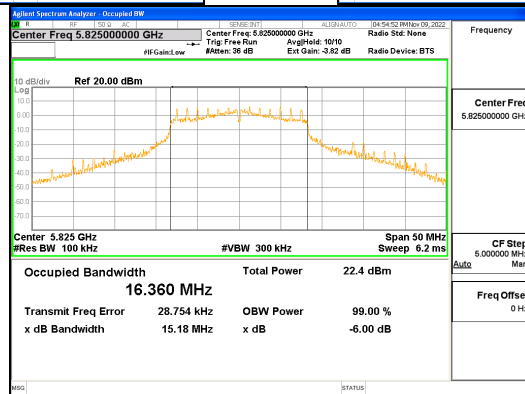
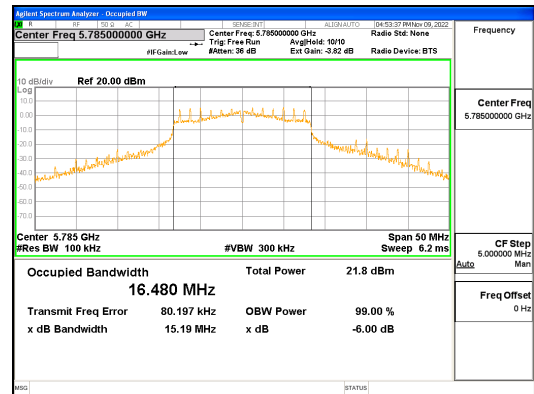
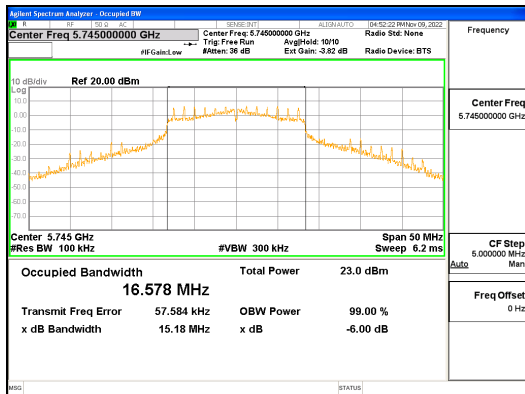
	6 dB Bandwidth (MHz)		
Mode	802.11ac_VHT80	802.11ax_HE80 _26T	802.11ax_HE80 _996T
Frequency			
5 775 MHz	76.44	2.12	77.36
Measurement uncertainty	± 0.1 MHz		

See next pages for actual measured spectrum plots.

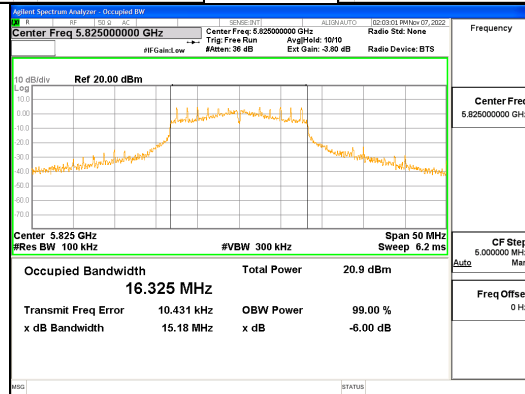
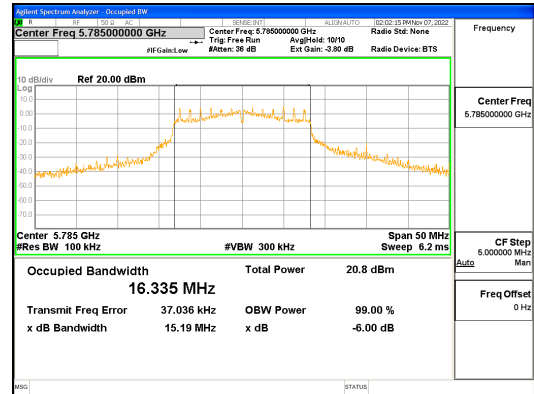
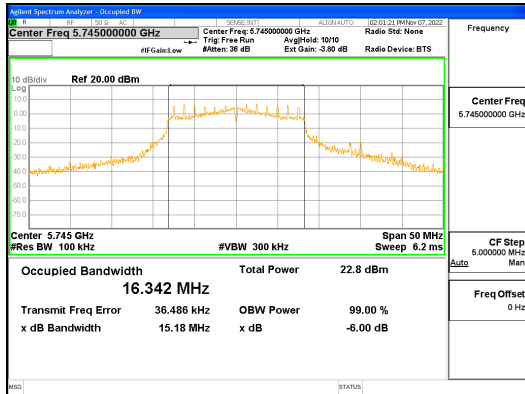


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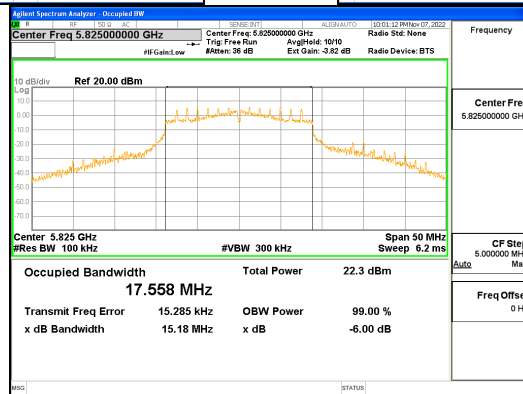
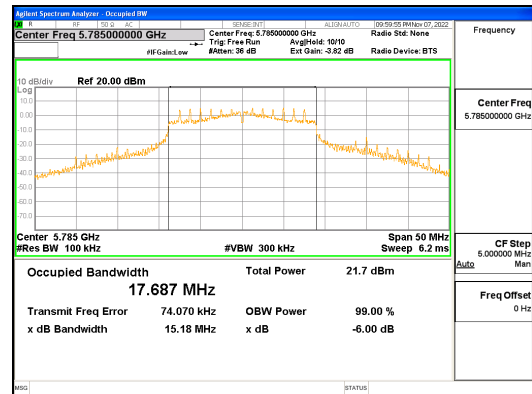
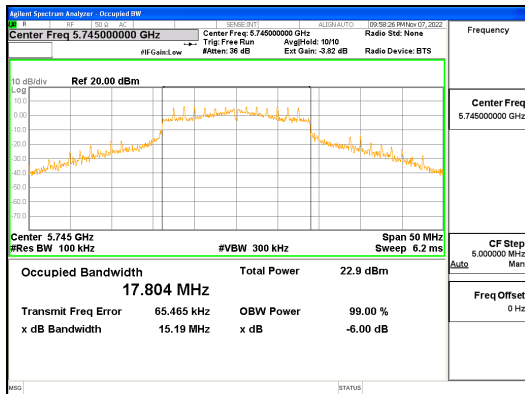


**ANT1\_802.11a**

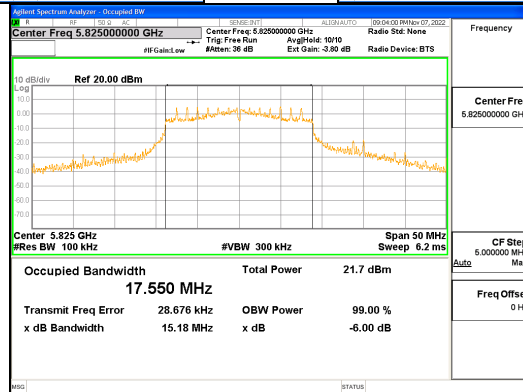
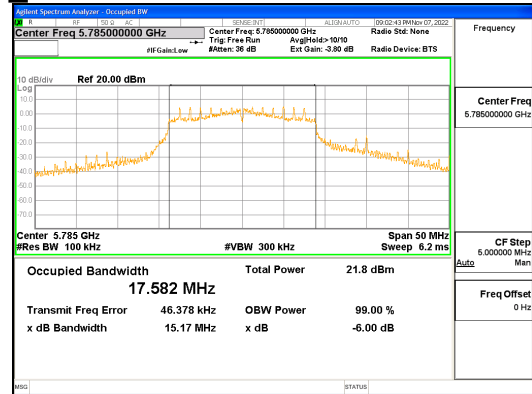
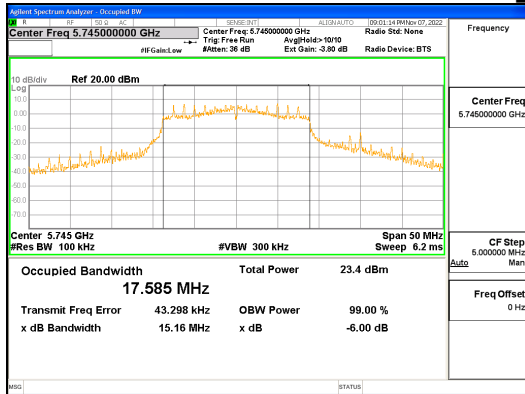


**ANT2\_802.11a**





**ANT1\_802.11n\_HT20**

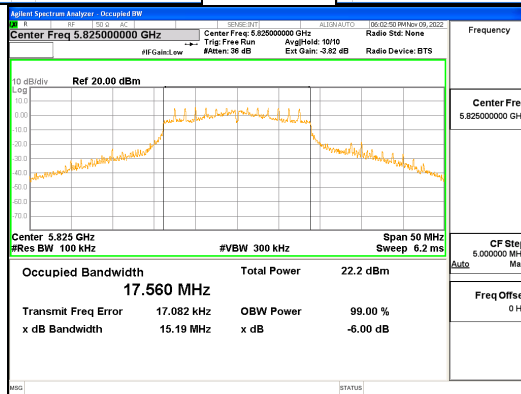
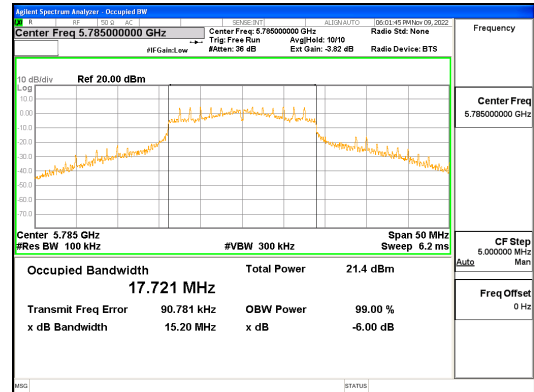
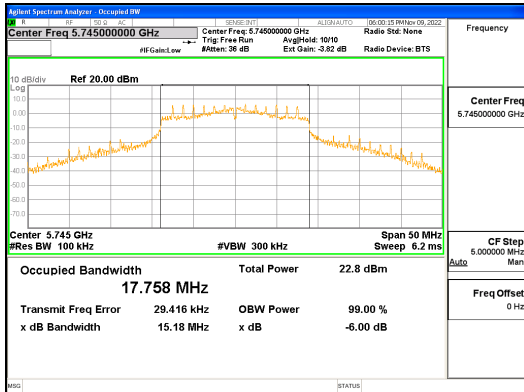


**ANT2\_802.11n\_HT20**

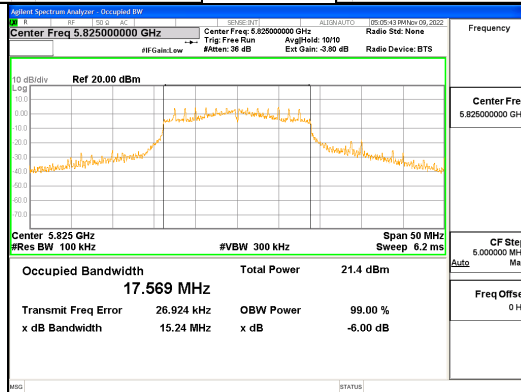
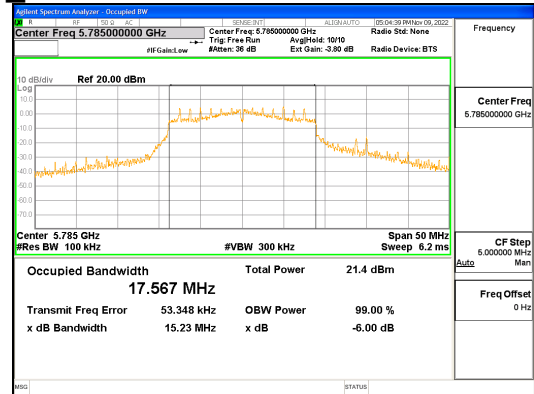
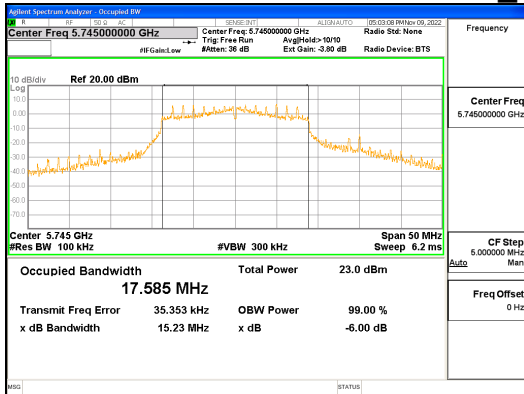


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**ANT1\_802.11ac\_VHT20**

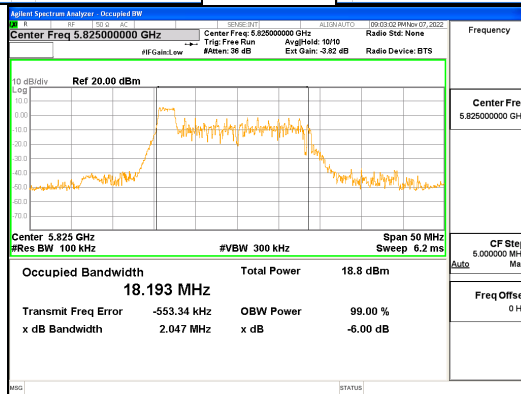
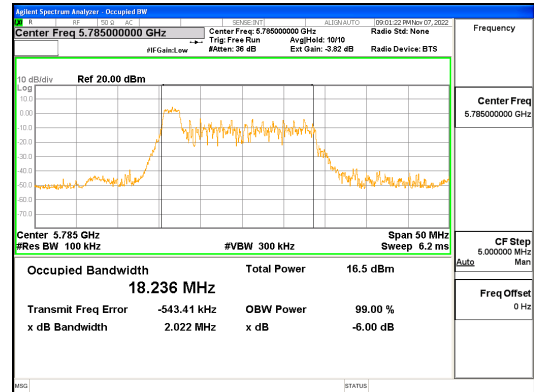
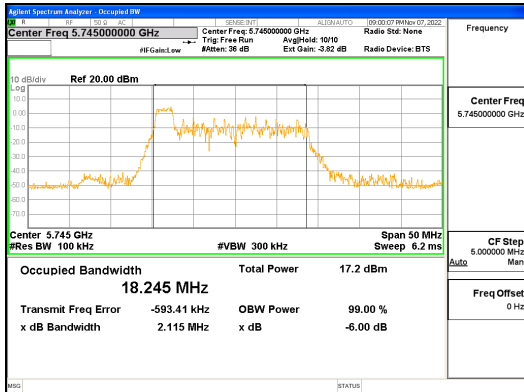


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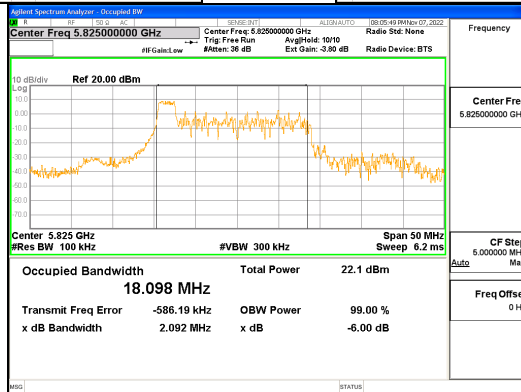
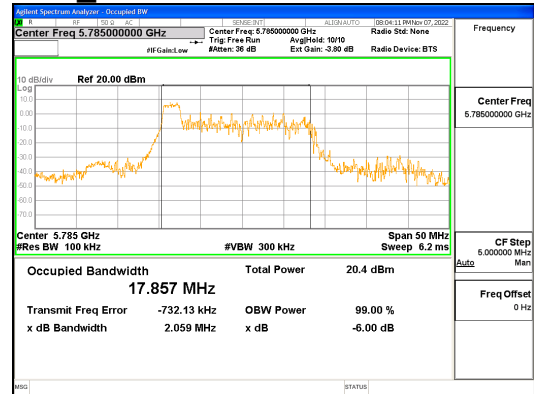
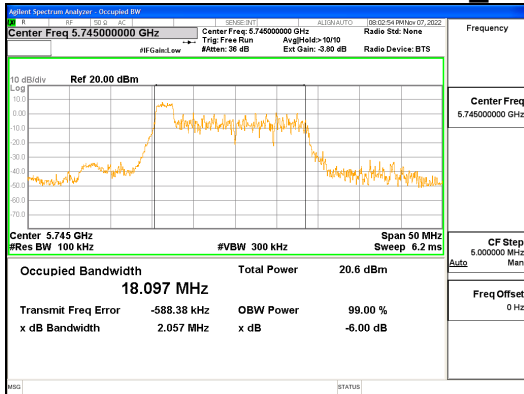


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**ANT1\_802.11ax\_HE20\_26T**

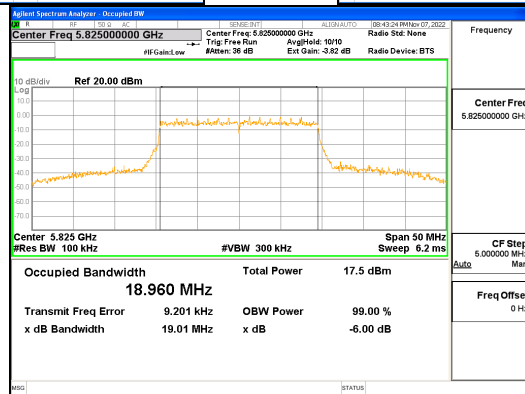
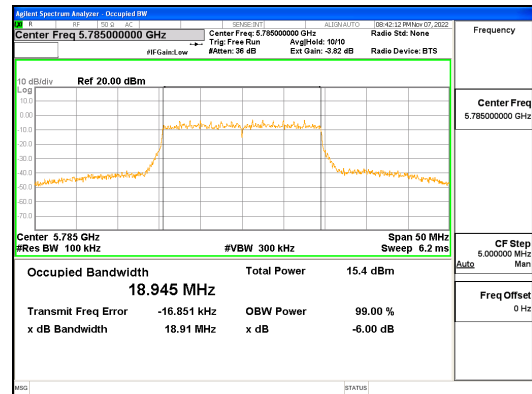
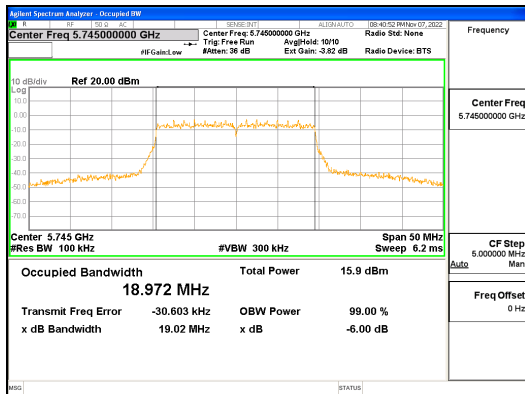


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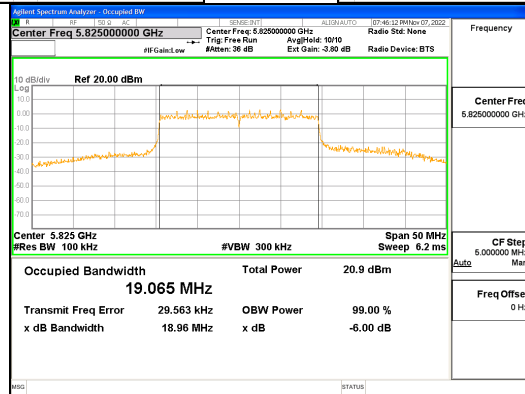
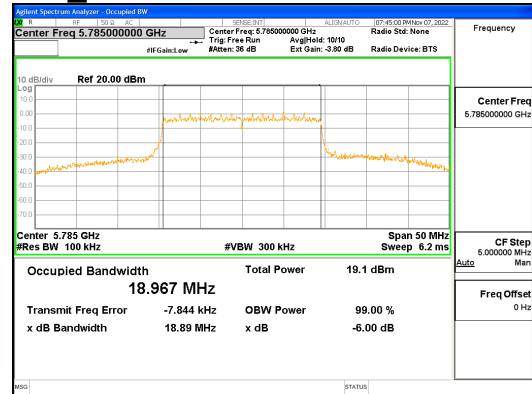
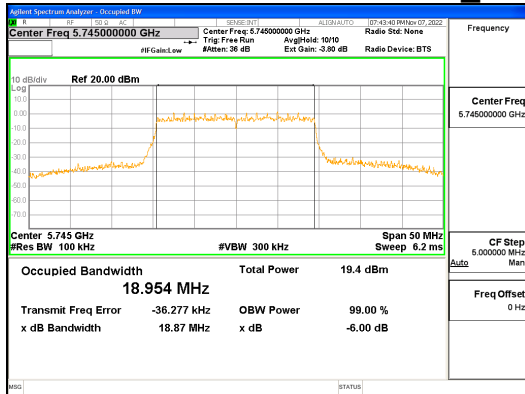


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**ANT1\_802.11ax\_HE20\_242T**

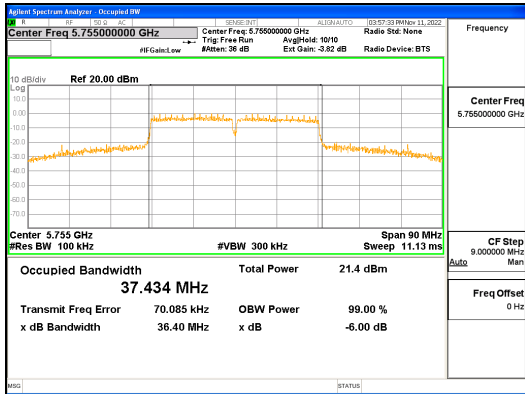


**ANT2\_802.11ax\_HE20\_242T**

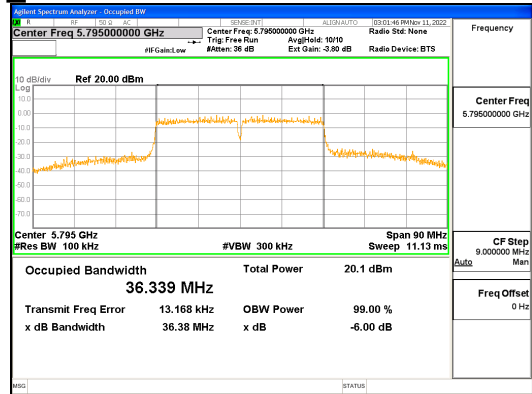
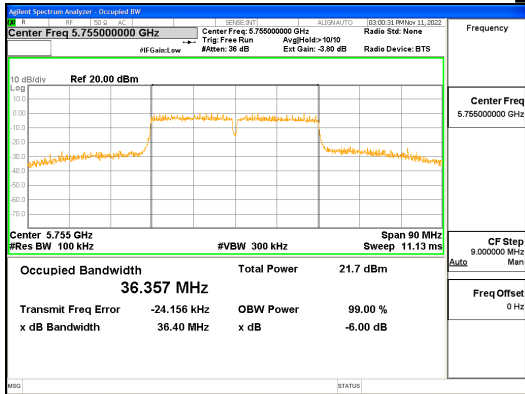
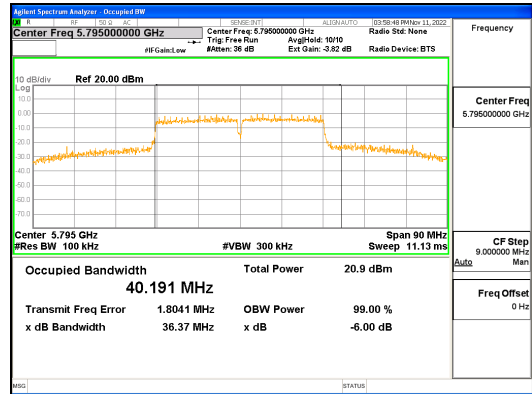


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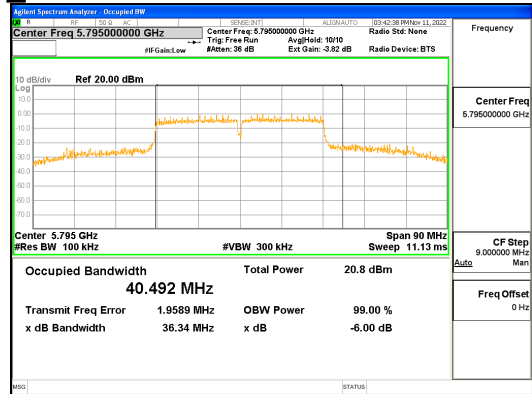
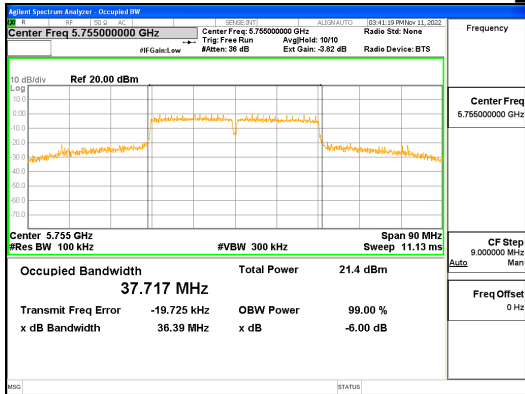
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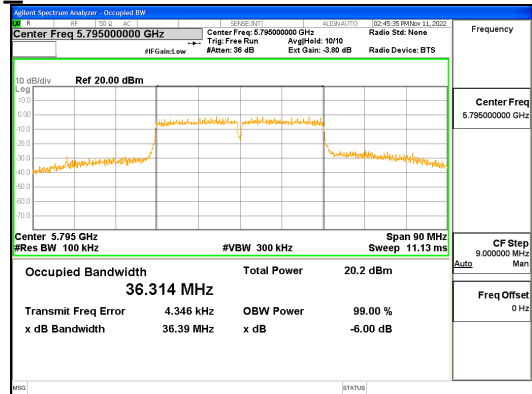
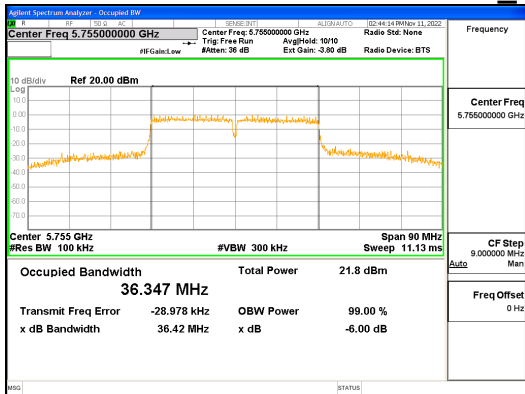
**ANT1 802.11n HT40**



**ANT2 802.11n HT40**



**ANT1 802.11ac VHT40**

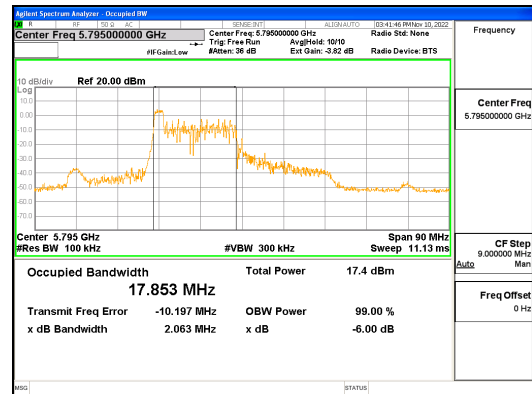
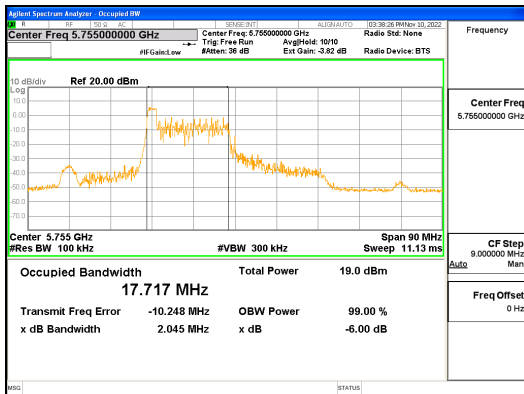


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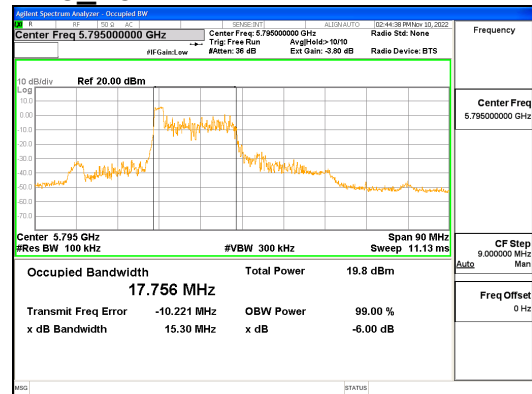
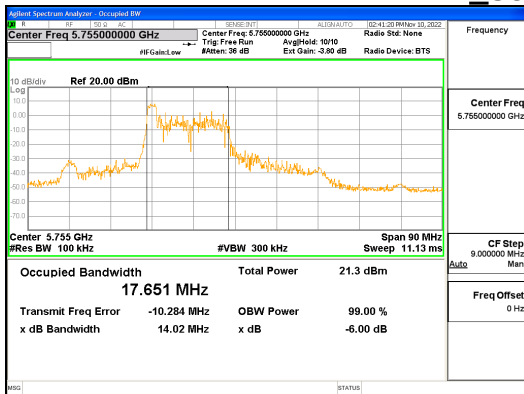


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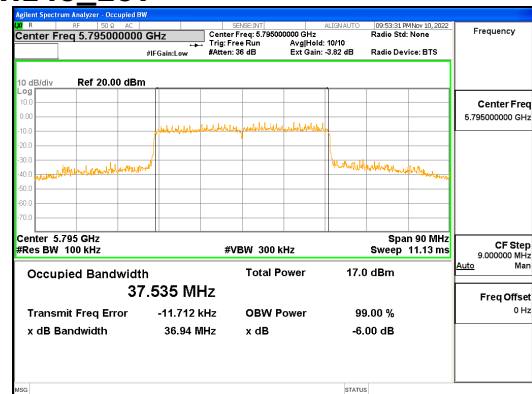
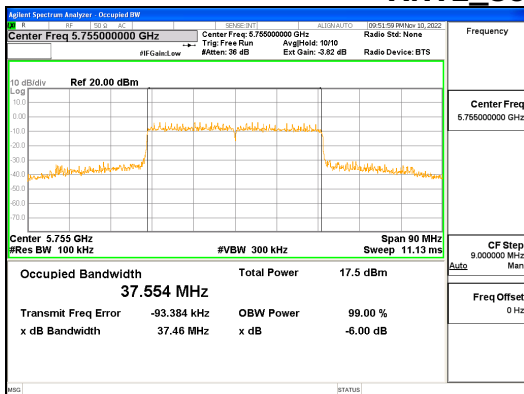
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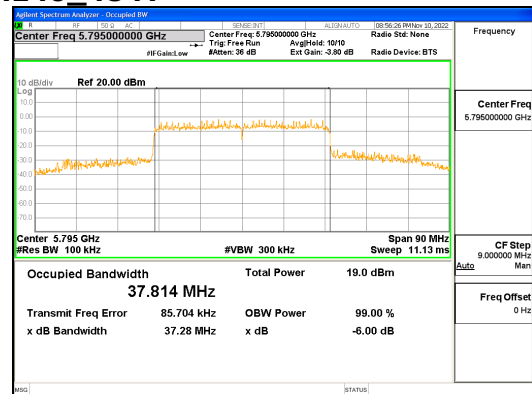
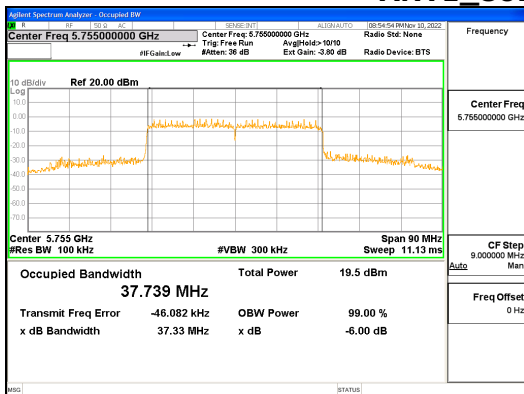
**ANT1\_802.11ax\_HE40\_26T**



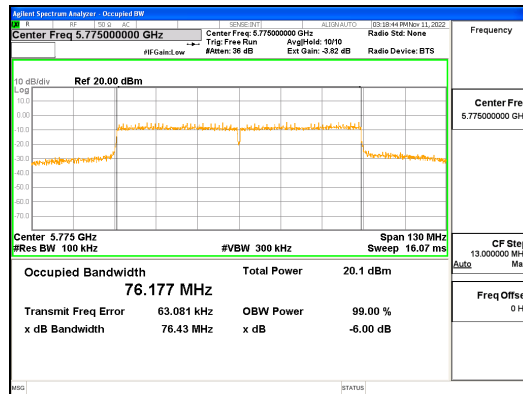
**ANT2\_802.11ax\_HE40\_26T**



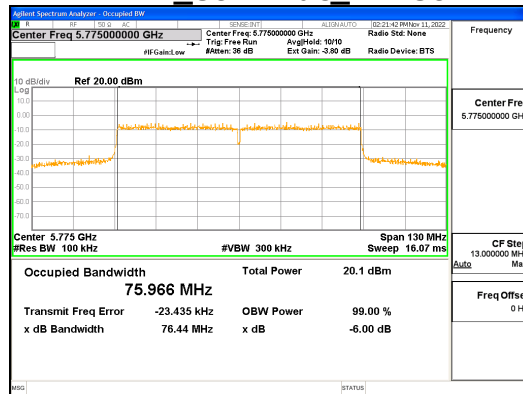
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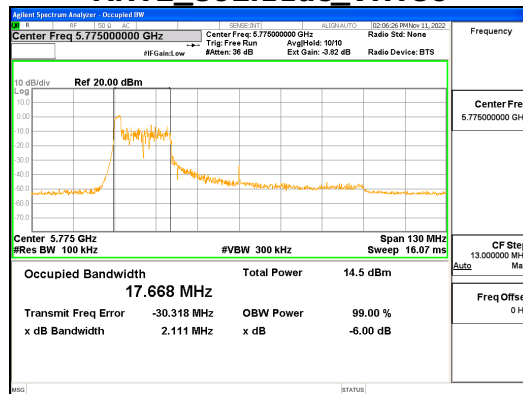
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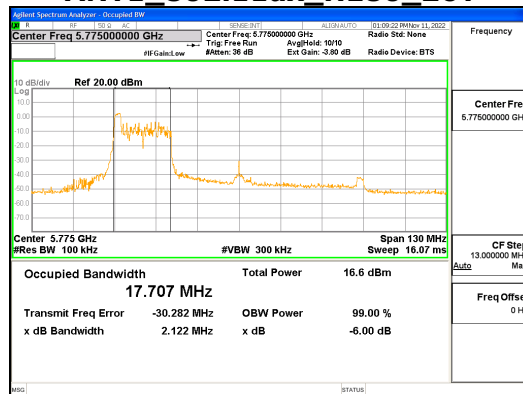
**ANT1 802.11ac VHT80**



**ANT2 802.11ac VHT80**



**ANT1 802.11ax HE80\_26T**

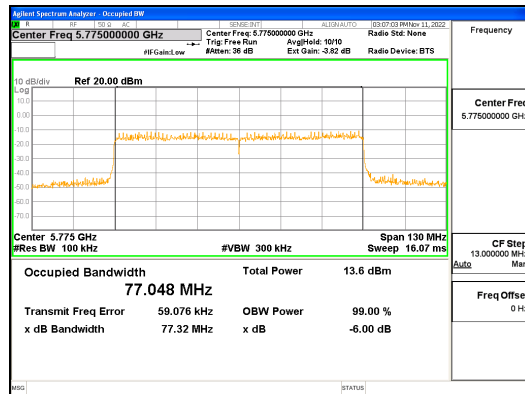


**ANT2 802.11ax HE80\_26T**

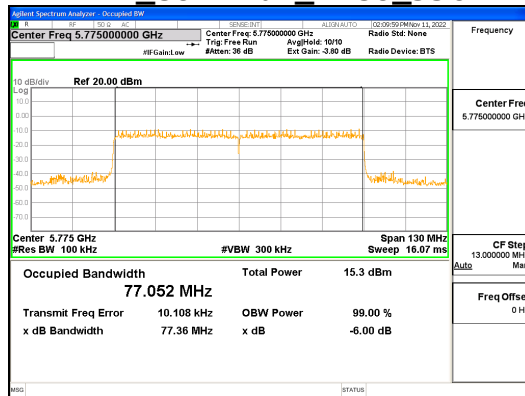


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**ANT1\_802.11ax\_HE80\_996T**



**ANT2\_802.11ax\_HE80\_996T**





## 4.2 26 dB Bandwidth and 99% Bandwidth

### Test Procedures

KDB 789033 – Section C.1  
ANSI C63.10-2013 - Section 6.9.2

Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB relative to the maximum level measured in the fundamental emission.

### Test Procedures

KDB 789033 – Section C.1  
ANSI C63.10-2013 - Section 6.9.3

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.

Use the 99% power bandwidth function of the instrument and report the measured bandwidth.

### Test Settings :

Center frequency = the highest, middle and the lowest channels

- a) RBW = approximately 1 % of the emission bandwidth
- b) VBW  $\geq$  RBW
- c) Detector = peak
- d) Trace mode = Max hold
- e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

### Minimum Standard:

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NA

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**Test Data:**

**ANT1**

Mode	26 dB Bandwidth and 99% Bandwidth (MHz)					
	802.11a		802.11n_HT20		802.11ac_VHT20	
	26 dB	99%	26 dB	99%	26 dB	99%
5 180 MHz	20.48	16.31	20.77	17.47	20.76	17.48
5 200 MHz	20.58	16.31	20.83	17.47	20.68	17.47
5 240 MHz	20.36	16.31	20.64	17.49	20.61	17.49
5 260 MHz	20.83	16.29	20.82	17.47	21.26	17.53
5 300 MHz	25.25	16.41	20.81	17.48	25.29	17.62
5 320 MHz	20.69	16.39	20.50	17.49	24.10	17.58
5 500 MHz	20.56	16.29	20.77	17.49	20.65	17.49
5 600 MHz	20.41	16.29	20.90	17.47	20.74	17.48
5 700 MHz	20.64	16.33	21.02	17.51	20.68	17.50
5 720 MHz	20.54	16.34	20.86	17.53	20.59	17.48
5 745 MHz	28.00	17.77	30.19	18.70	30.84	18.68
5 785 MHz	26.80	17.59	31.28	18.52	29.54	18.57
5 825 MHz	24.50	17.14	27.97	18.20	25.23	18.20
Measurement uncertainty	± 0.1 MHz					

Mode	26 dB Bandwidth and 99% Bandwidth (MHz)			
	802.11ax_HE20_26T		802.11ax_HE20_242T	
	26 dB	99%	26 dB	99%
5 180 MHz	19.75	17.29	21.69	19.10
5 200 MHz	19.95	18.44	21.69	19.03
5 240 MHz	20.08	18.50	21.65	19.08
5 260 MHz	19.75	18.36	21.50	19.00
5 300 MHz	19.75	18.44	21.46	19.03
5 320 MHz	20.03	18.42	21.50	18.99
5 500 MHz	19.73	18.46	21.46	19.01
5 600 MHz	19.81	18.26	21.65	19.04
5 700 MHz	19.89	18.35	21.63	19.04
5 720 MHz	19.83	18.56	21.68	19.05
5 745 MHz	20.19	18.63	21.92	19.31
5 785 MHz	20.31	18.59	21.93	19.20
5 825 MHz	20.33	18.23	22.22	19.30
Measurement uncertainty	± 0.1 MHz			



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Mode	26 dB Bandwidth and 99% Bandwidth (MHz)			
	802.11n_HT40		802.11ac_VHT40	
	26 dB	99 %	26 dB	99 %
5 190 MHz	39.82	36.31	39.99	36.31
5 230 MHz	39.82	36.39	39.94	36.40
5 270 MHz	40.16	36.27	40.09	36.34
5 310 MHz	39.73	36.32	39.66	36.37
5 510 MHz	39.83	36.34	39.89	36.33
5 590 MHz	39.96	36.33	40.05	36.35
5 670 MHz	40.08	36.35	39.96	36.29
5 710 MHz	40.16	36.41	40.41	36.45
5 755 MHz	86.13	40.83	84.78	40.34
5 795 MHz	82.98	43.22	84.82	43.62
Measurement uncertainty	± 0.1 MHz			

Mode	26 dB Bandwidth and 99% Bandwidth (MHz)			
	802.11ax_HE40_26T		802.11ax_HE40_484T	
	26 dB	99 %	26 dB	99 %
5 190 MHz	20.08	17.97	40.14	37.55
5 230 MHz	20.31	18.20	40.23	37.62
5 270 MHz	18.97	17.83	40.07	37.58
5 310 MHz	20.13	18.18	40.09	37.57
5 510 MHz	20.06	18.10	40.44	37.56
5 590 MHz	20.05	17.87	40.46	37.73
5 670 MHz	20.06	18.34	40.22	37.61
5 710 MHz	19.93	18.05	40.35	37.77
5 755 MHz	20.20	18.04	40.06	37.65
5 795 MHz	20.10	18.39	39.92	37.62
Measurement uncertainty	± 0.1 MHz			



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26 dB Bandwidth and 99% Bandwidth (MHz)		
Mode	802.11ac_VHT80	
Frequency	26 dB	99 %
5 210 MHz	81.57	76.00
5 290 MHz	81.75	75.97
5 530 MHz	81.81	75.74
5 610 MHz	81.39	75.84
5 690 MHz	81.88	76.02
5 775 MHz	173.50	80.74
Measurement uncertainty	± 0.1 MHz	

26 dB Bandwidth and 99% Bandwidth (MHz)				
Mode	802.11ax_HE80_26T		802.11ax_HE80_996T	
Frequency	26 dB	99 %	26 dB	99 %
5 210 MHz	19.96	18.20	81.49	77.30
5 290 MHz	20.10	18.32	81.40	77.13
5 530 MHz	20.14	18.71	81.15	77.12
5 610 MHz	19.73	18.22	81.51	77.12
5 690 MHz	19.92	18.65	81.55	77.16
5 775 MHz	19.62	18.24	81.01	77.35
Measurement uncertainty	± 0.1 MHz			



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**ANT2**

Mode	26 dB Bandwidth and 99% Bandwidth (MHz)					
	802.11a		802.11n_HT20		802.11ac_VHT20	
	26 dB	99%	26 dB	99%	26 dB	99%
5 180 MHz	20.56	16.31	20.64	17.46	20.56	17.47
5 200 MHz	20.38	16.29	20.44	17.48	20.60	17.46
5 240 MHz	20.38	16.32	20.53	17.48	20.64	17.48
5 260 MHz	20.69	16.35	20.66	17.46	20.80	17.55
5 300 MHz	21.54	16.42	20.62	17.5	22.27	17.62
5 320 MHz	21.72	16.38	21.00	17.48	25.22	17.56
5 500 MHz	20.57	16.29	20.47	17.45	20.42	17.47
5 600 MHz	20.51	16.31	20.58	17.47	20.60	17.48
5 700 MHz	20.85	16.32	20.62	17.47	20.42	17.47
5 720 MHz	20.68	16.30	20.75	17.46	20.70	17.49
5 745 MHz	23.40	17.16	25.83	18.04	26.31	18.05
5 785 MHz	24.01	17.28	25.92	18.03	25.66	18.03
5 825 MHz	23.35	17.09	25.75	17.94	25.79	17.94
Measurement uncertainty	± 0.1 MHz					

Mode	26 dB Bandwidth and 99% Bandwidth (MHz)			
	802.11ax_HE20_26T		802.11ax_HE20_242T	
	26 dB	99%	26 dB	99%
5 180 MHz	19.65	18.17	21.54	19.04
5 200 MHz	19.60	18.24	21.39	18.95
5 240 MHz	19.50	18.20	21.57	19.05
5 260 MHz	19.69	18.32	21.42	19.03
5 300 MHz	19.71	17.86	21.21	19.05
5 320 MHz	19.56	18.19	21.15	19.03
5 500 MHz	19.68	18.32	21.45	19.05
5 600 MHz	19.62	18.25	21.14	18.97
5 700 MHz	19.53	18.29	21.19	19.02
5 720 MHz	19.71	18.35	21.46	19.08
5 745 MHz	19.95	18.54	21.63	19.28
5 785 MHz	20.10	18.53	27.14	19.27
5 825 MHz	20.08	18.47	30.49	19.50
Measurement uncertainty	± 0.1 MHz			



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Mode	26 dB Bandwidth and 99% Bandwidth (MHz)			
	802.11n_HT40		802.11ac_VHT40	
	26 dB	99 %	26 dB	99 %
5 190 MHz	39.94	36.24	39.75	36.28
5 230 MHz	39.85	36.31	39.99	36.28
5 270 MHz	40.40	36.27	40.20	36.30
5 310 MHz	40.08	36.30	39.92	36.30
5 510 MHz	39.47	36.25	39.72	36.27
5 590 MHz	39.83	36.26	39.87	36.31
5 670 MHz	39.66	36.25	39.91	36.31
5 710 MHz	40.02	36.29	39.98	36.31
5 755 MHz	70.89	36.63	71.92	36.70
5 795 MHz	56.13	36.67	60.27	36.60
Measurement uncertainty	± 0.1 MHz			

Mode	26 dB Bandwidth and 99% Bandwidth (MHz)			
	802.11ax_HE40_26T		802.11ax_HE40_484T	
	26 dB	99 %	26 dB	99 %
5 190 MHz	18.80	17.81	39.92	37.55
5 230 MHz	19.54	18.11	40.51	37.61
5 270 MHz	19.43	18.01	40.11	37.56
5 310 MHz	18.23	17.19	40.35	37.52
5 510 MHz	19.01	17.58	39.88	37.54
5 590 MHz	19.30	17.98	40.27	37.70
5 670 MHz	19.57	17.93	40.24	37.62
5 710 MHz	19.50	17.89	40.12	37.65
5 755 MHz	19.55	18.03	76.67	37.88
5 795 MHz	19.41	18.09	76.61	37.97
Measurement uncertainty	± 0.1 MHz			



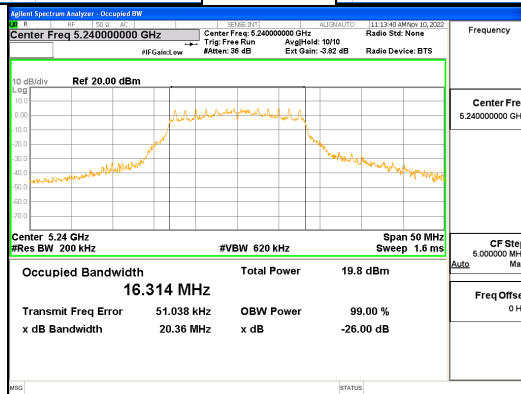
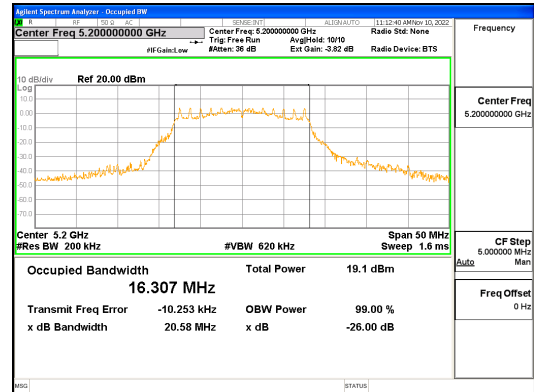
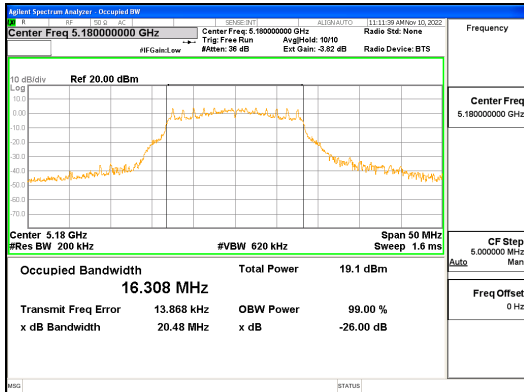
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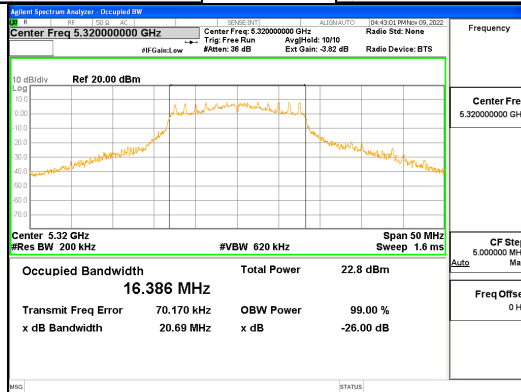
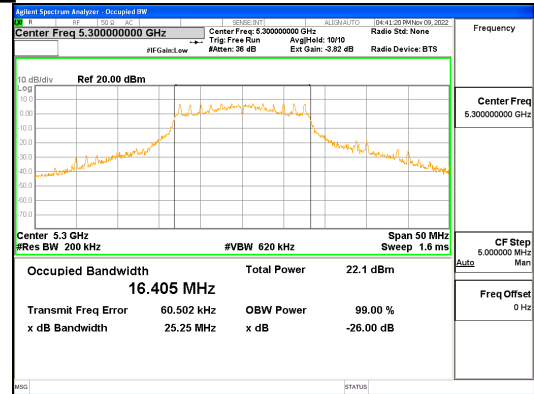
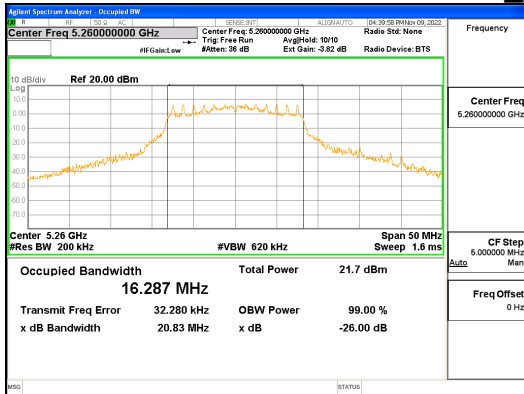
26 dB Bandwidth and 99% Bandwidth (MHz)		
Mode	802.11ac_VHT80	
Frequency	26 dB	99 %
5 210 MHz	80.87	75.90
5 290 MHz	81.42	75.87
5 530 MHz	80.74	75.76
5 610 MHz	80.62	75.79
5 690 MHz	84.37	75.94
5 775 MHz	119.05	76.13
Measurement uncertainty	± 0.1 MHz	

26 dB Bandwidth and 99% Bandwidth (MHz)				
Mode	802.11ax_HE80_26T		802.11ax_HE80_996T	
Frequency	26 dB	99 %	26 dB	99 %
5 210 MHz	19.97	18.41	81.02	77.22
5 290 MHz	19.77	18.21	81.23	77.13
5 530 MHz	19.67	18.40	80.58	77.20
5 610 MHz	19.73	18.34	80.47	76.92
5 690 MHz	19.69	18.39	80.88	77.14
5 775 MHz	19.46	18.09	80.97	77.15
Measurement uncertainty	± 0.1 MHz			

See next pages for actual measured spectrum plots.



**ANT1\_802.11a\_UNII 1**



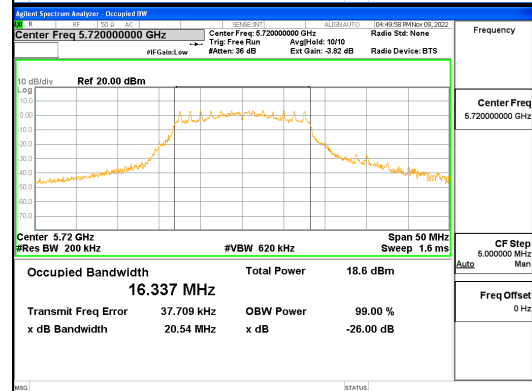
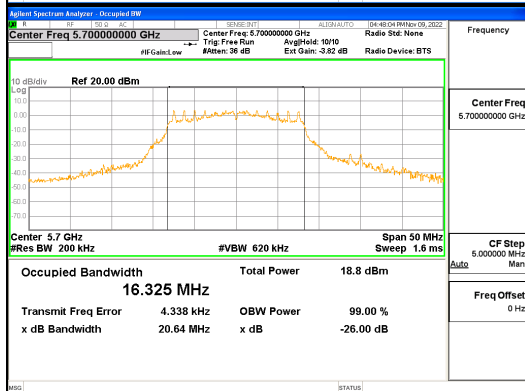
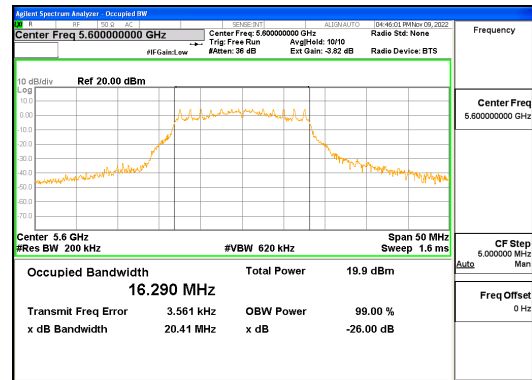
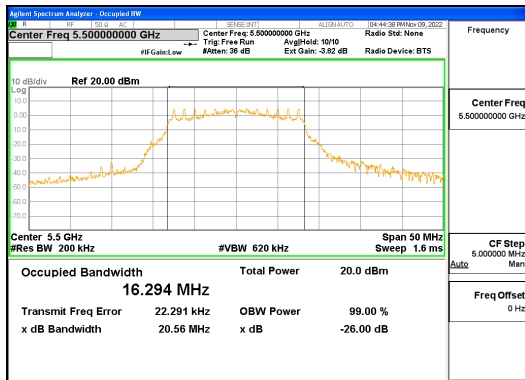
**ANT1\_802.11a\_UNII 2A**



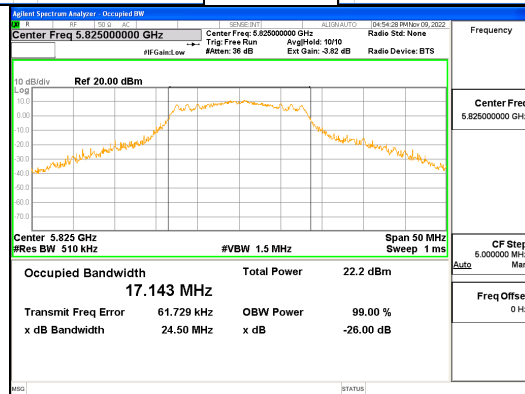
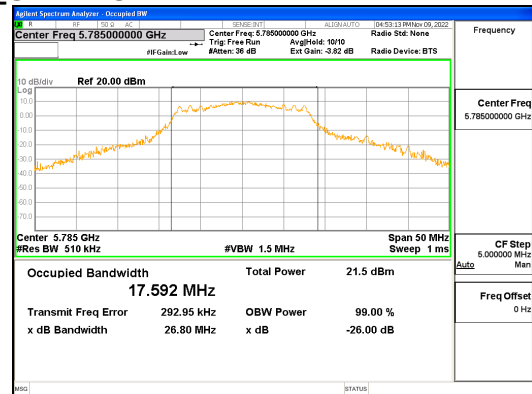
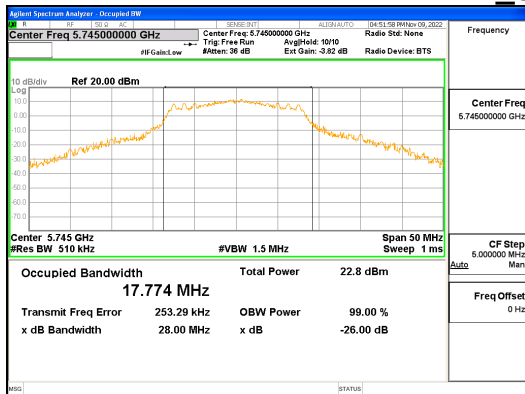


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**ANT1\_802.11a\_UNII 2C**

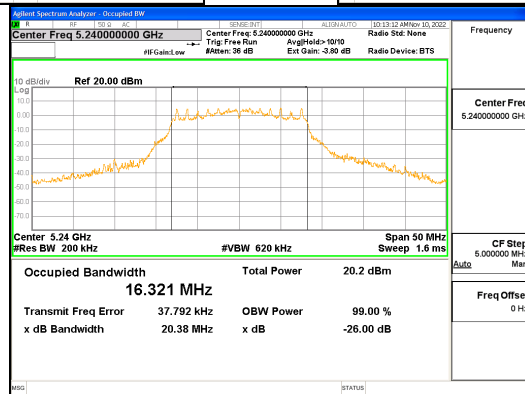
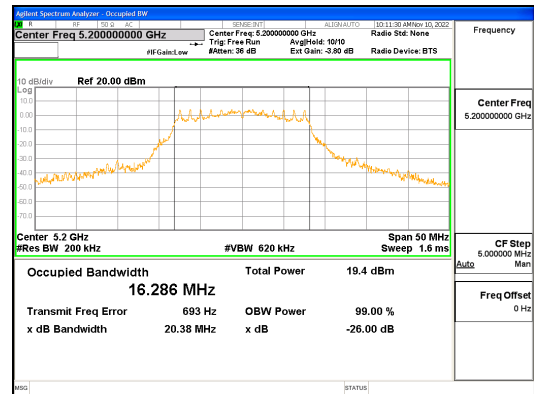
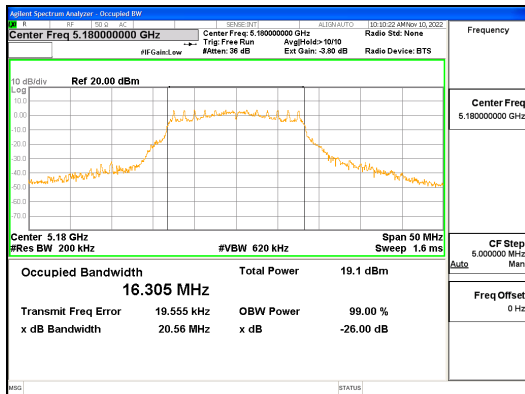


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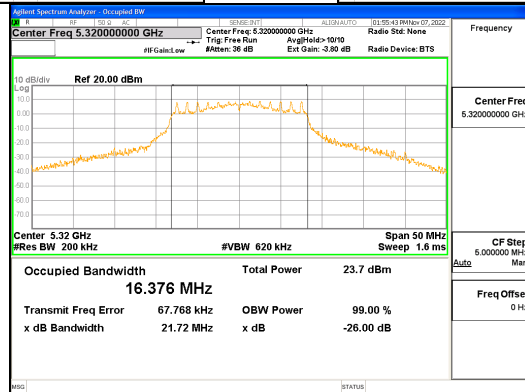
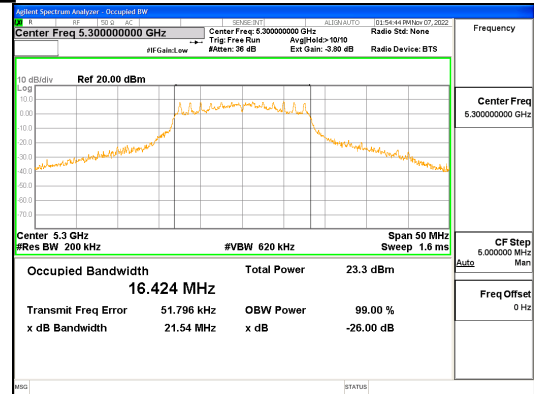
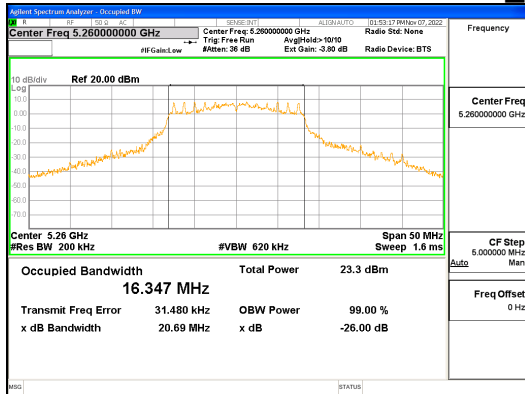


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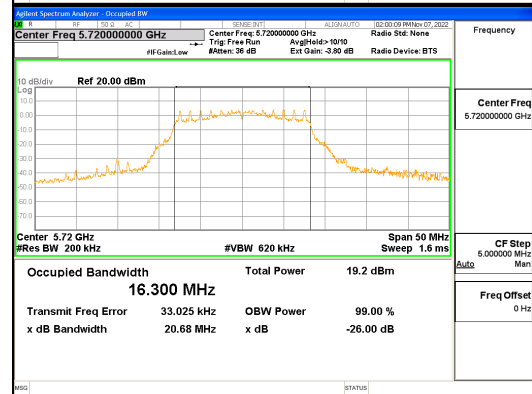
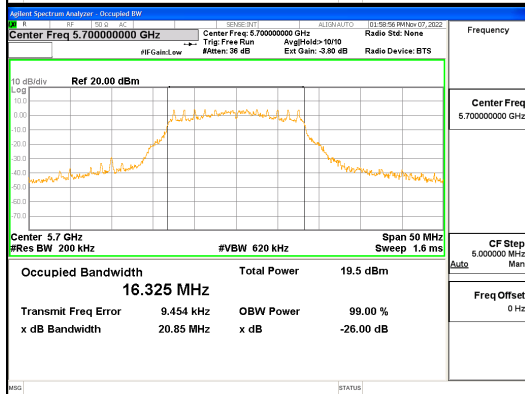
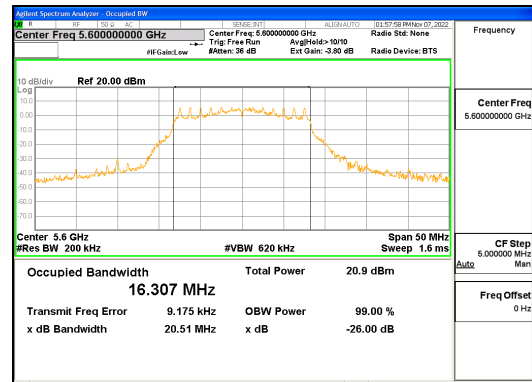
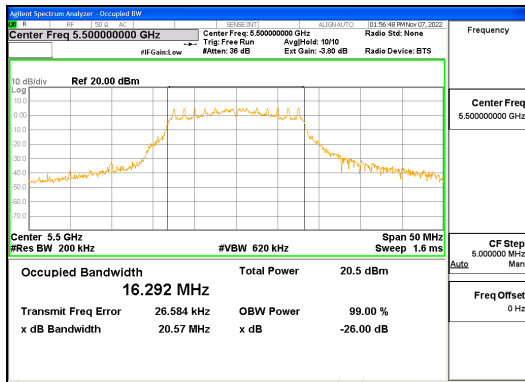
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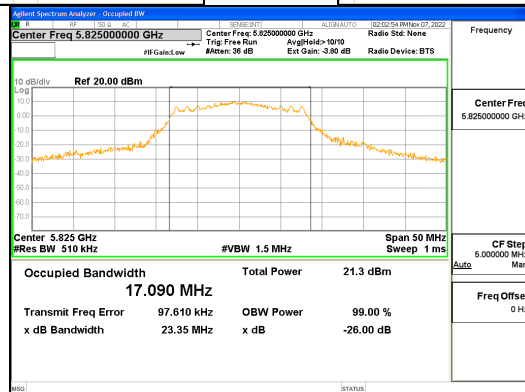
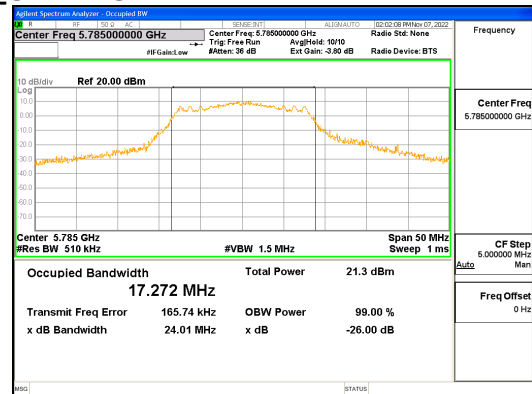
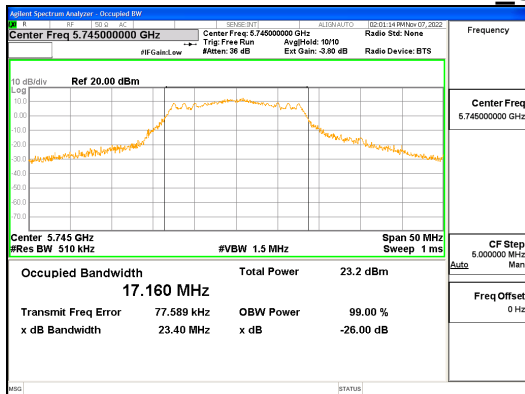
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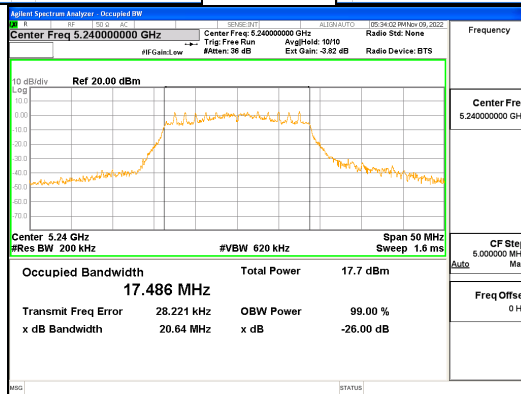
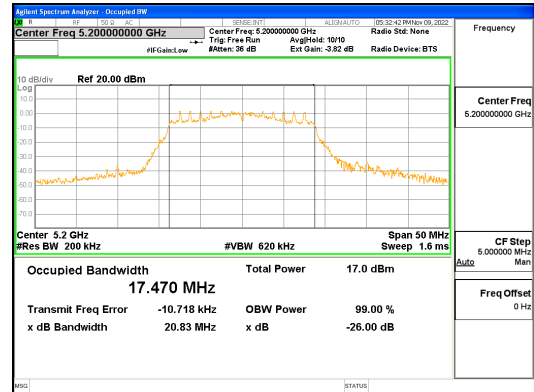
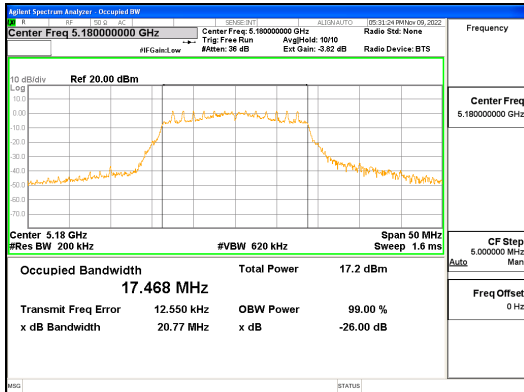
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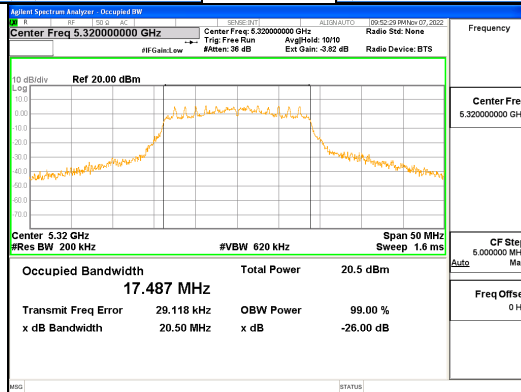
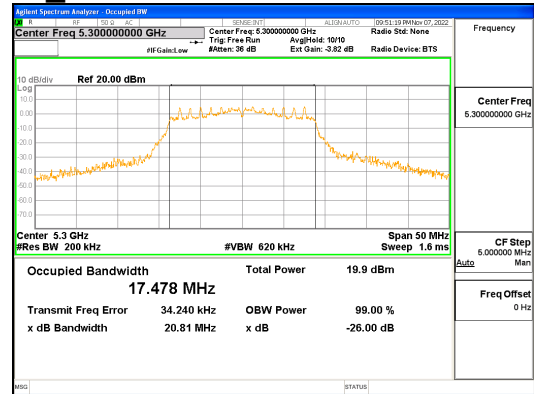
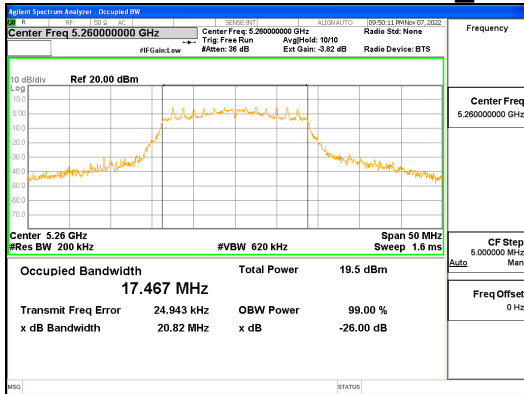
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**ANT2\_802.11a\_UNII 3**



**ANT1\_802.11n\_HT20\_UNII 1**

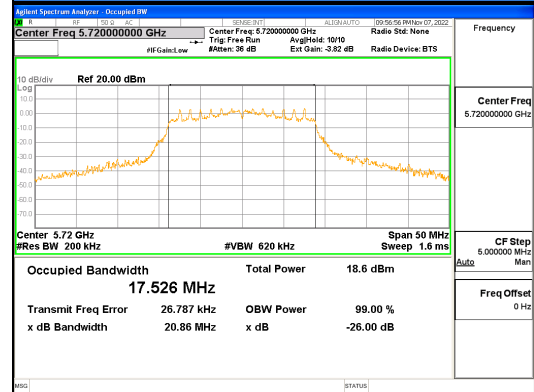
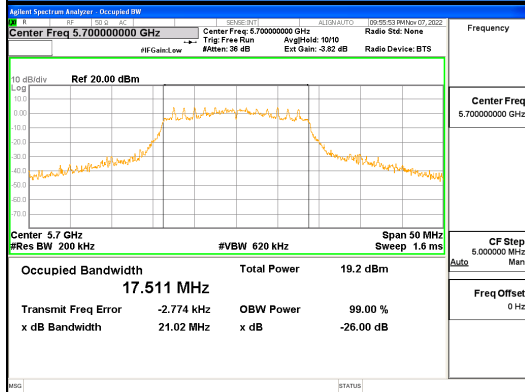
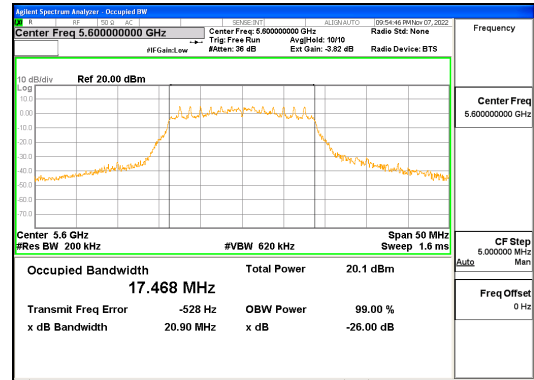
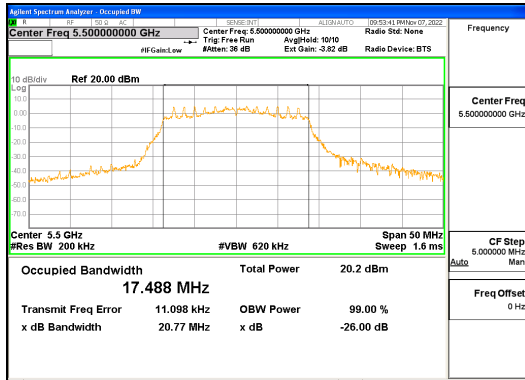


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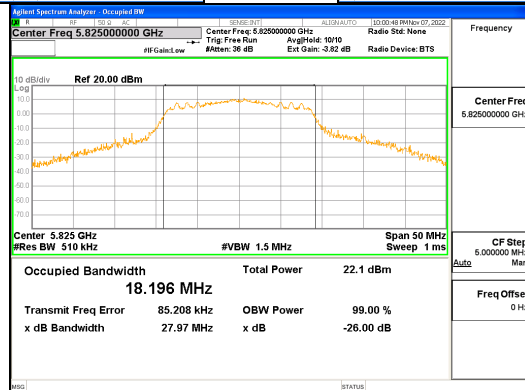
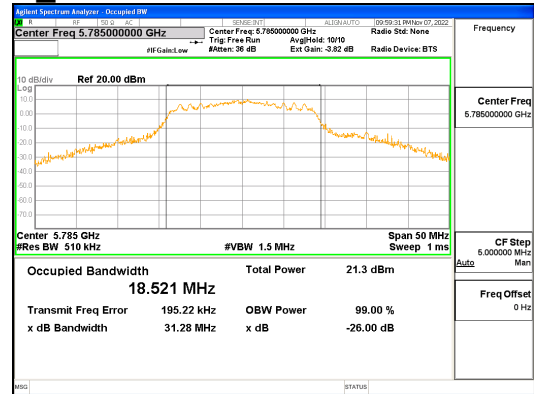
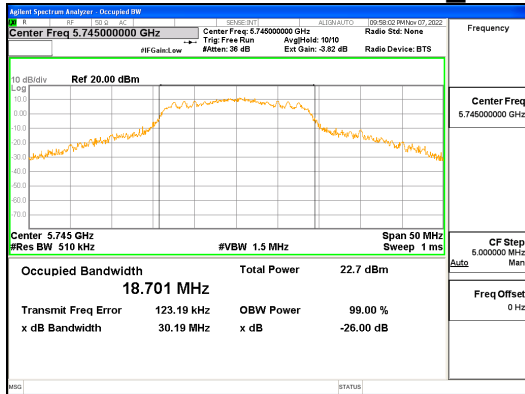


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**ANT1\_802.11n\_HT20\_UNII 2C**

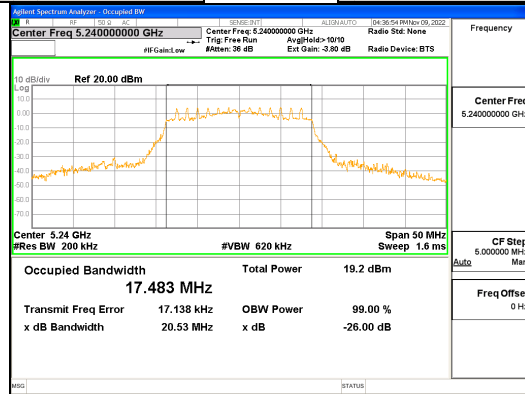
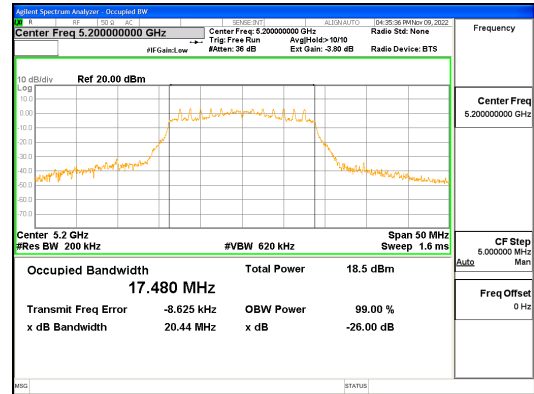
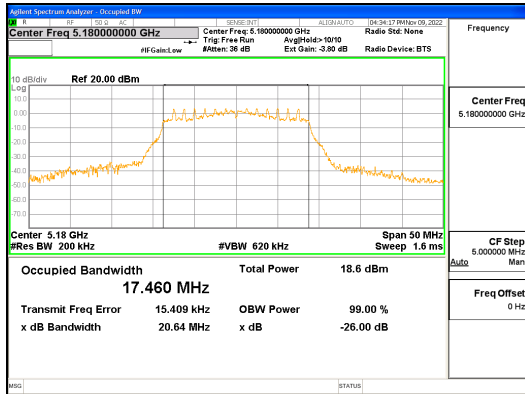


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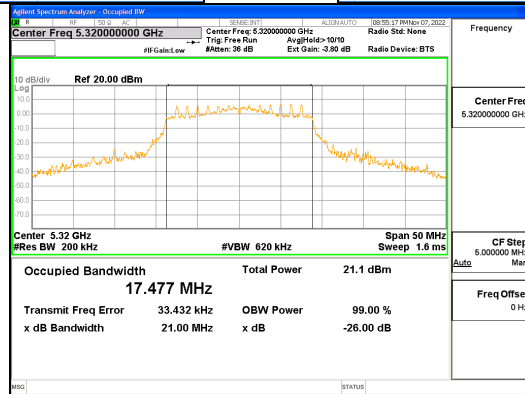
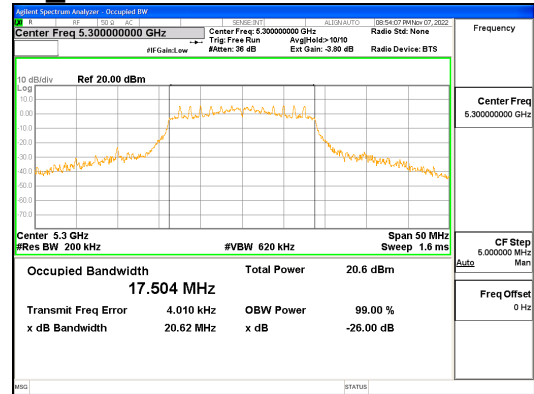
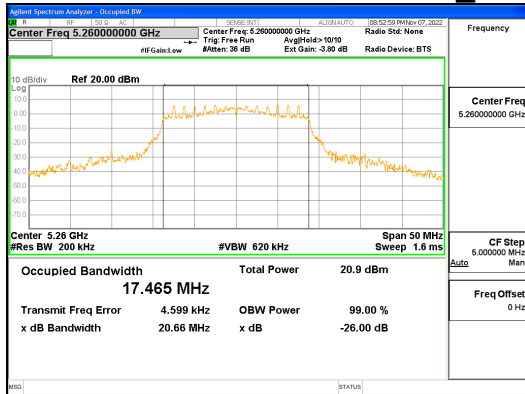


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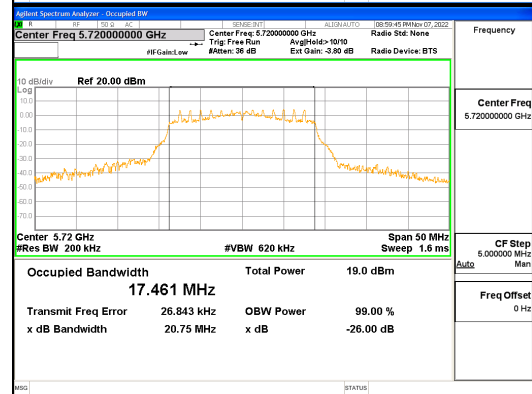
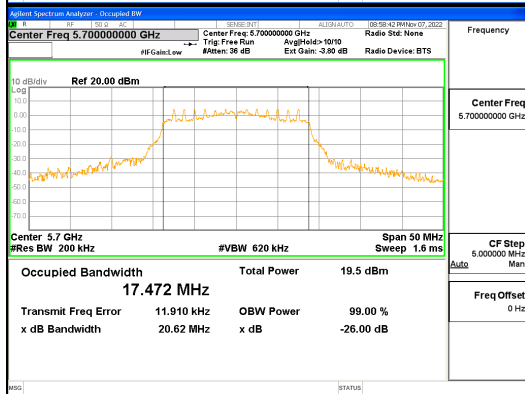
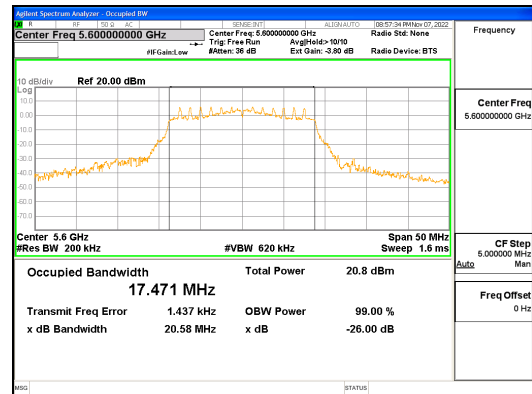
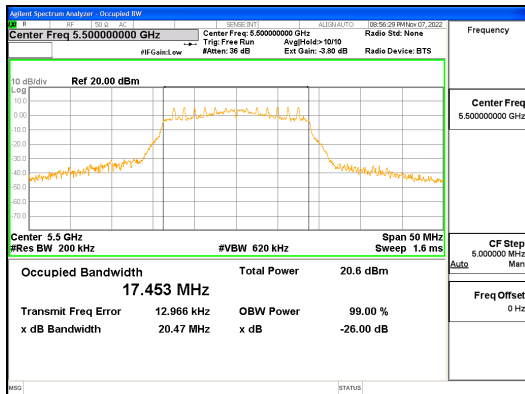
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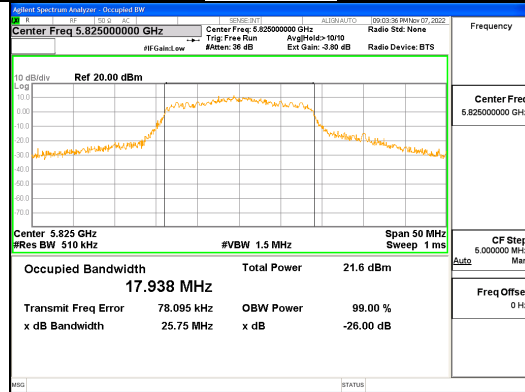
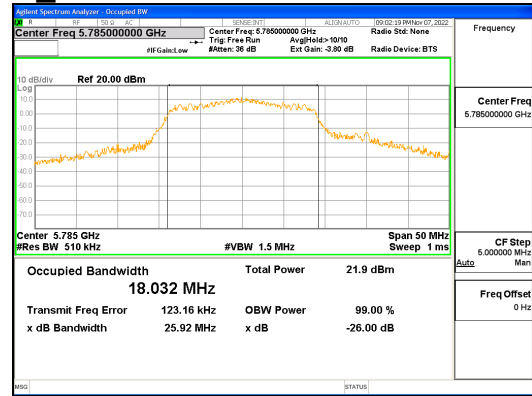
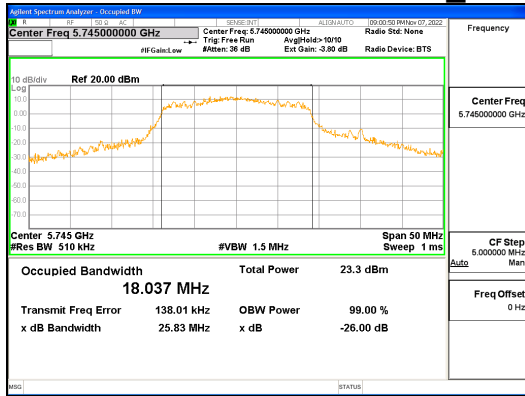
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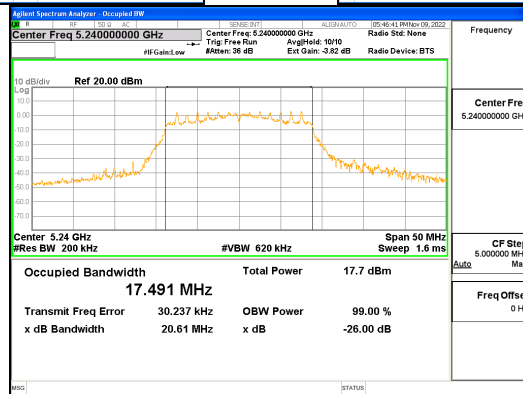
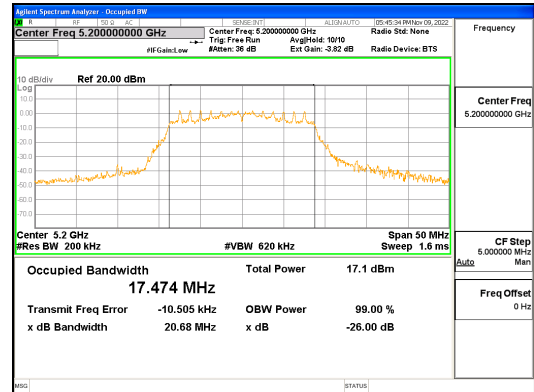
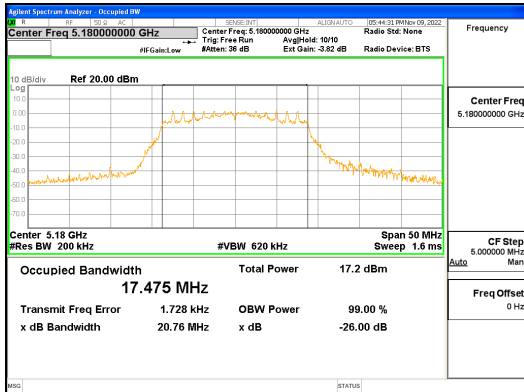
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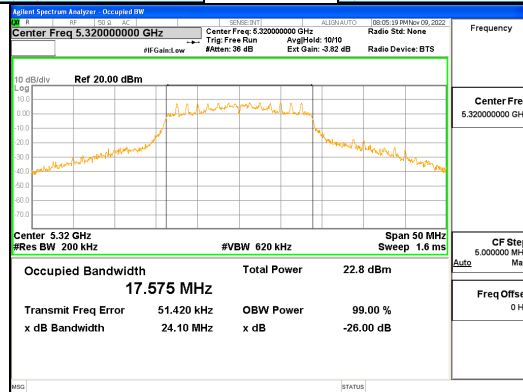
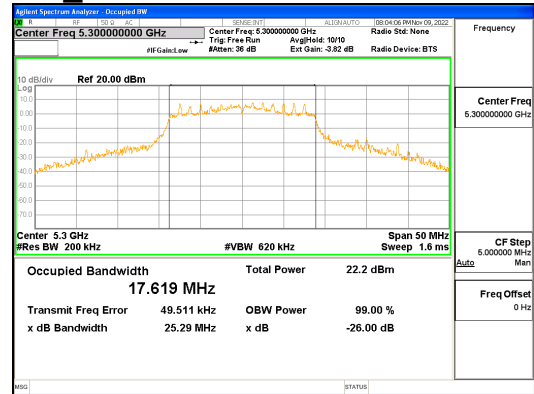
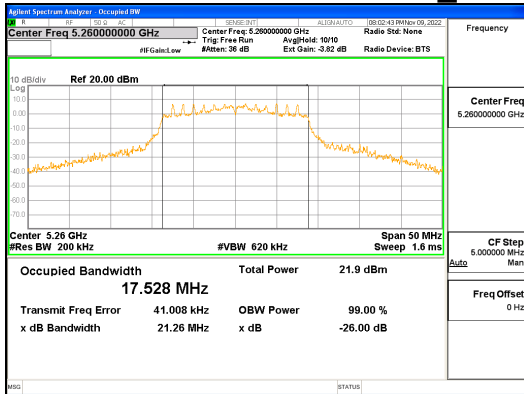
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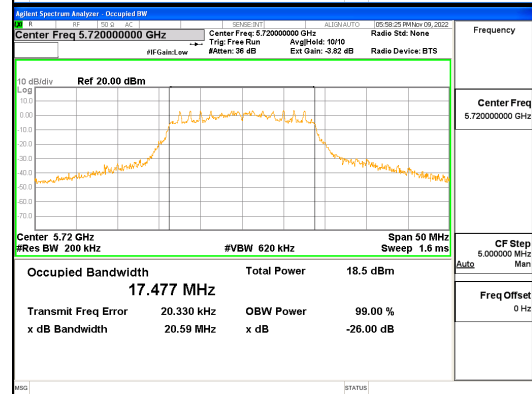
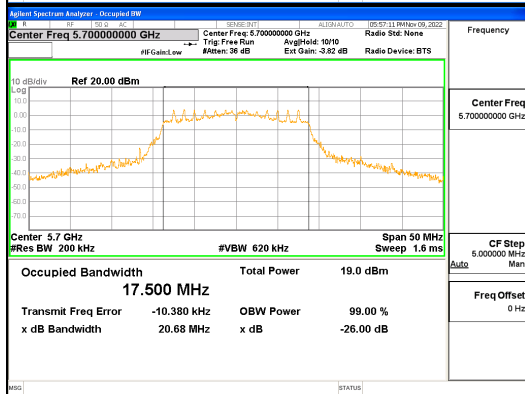
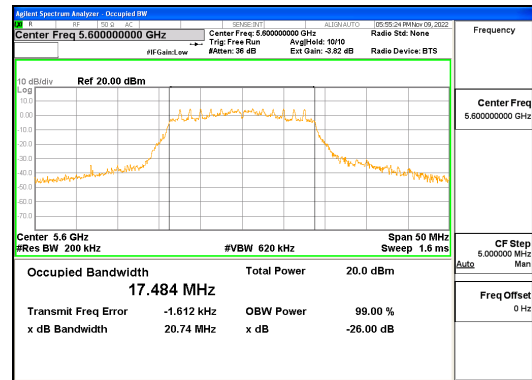
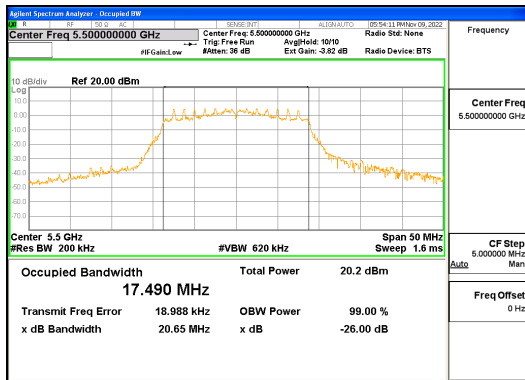


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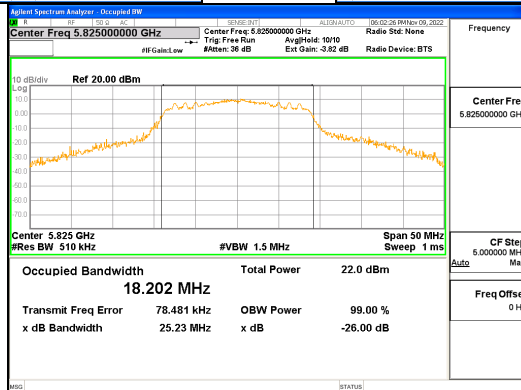
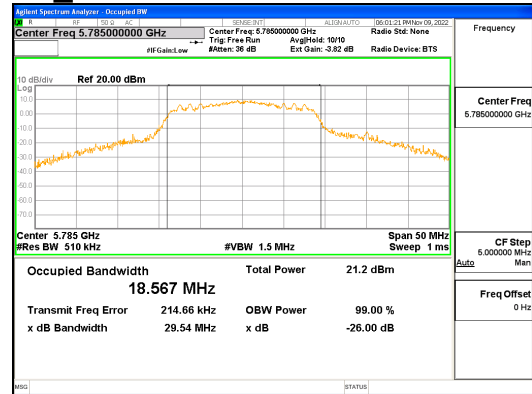
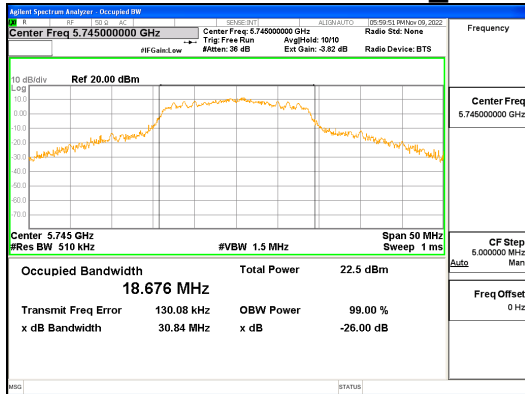


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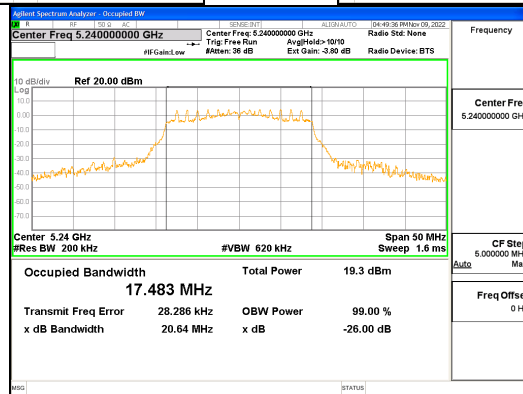
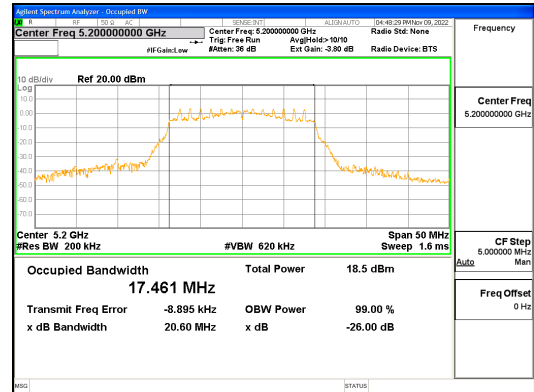
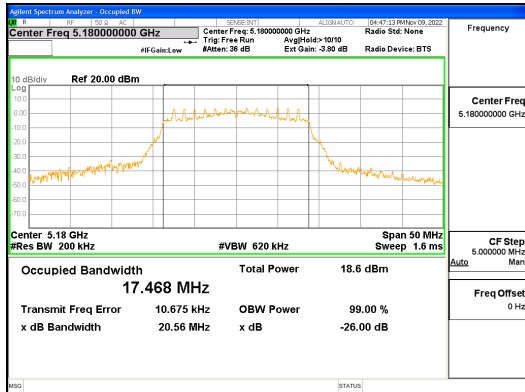




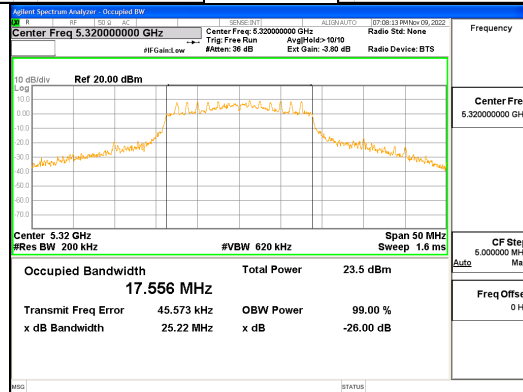
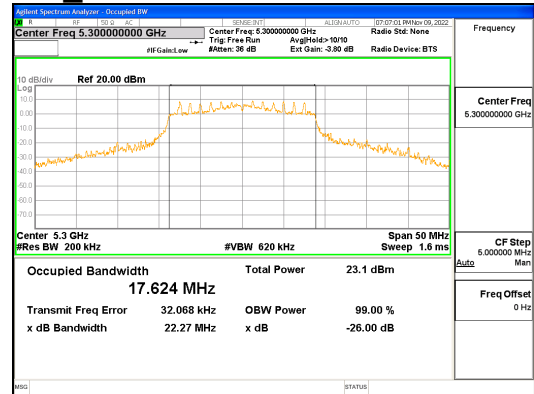
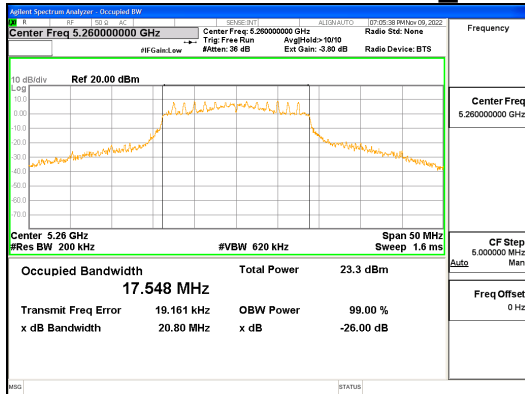
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**ANT1\_802.11ac\_VHT20\_UNII 3**



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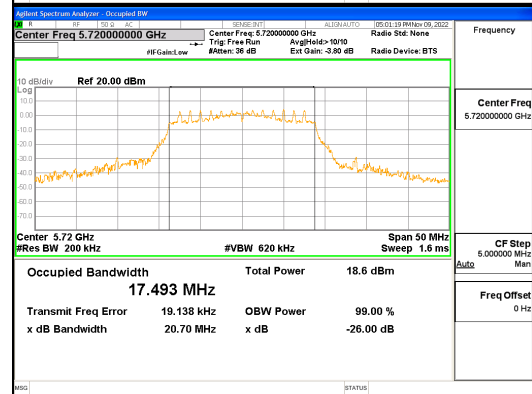
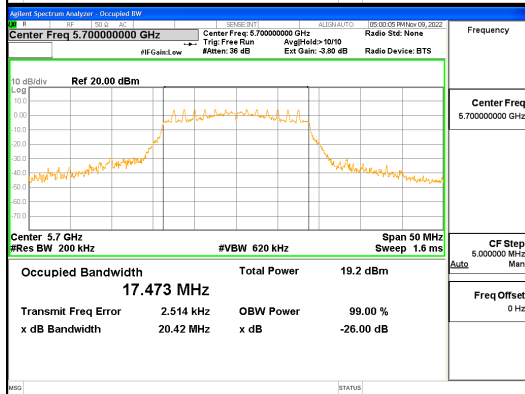
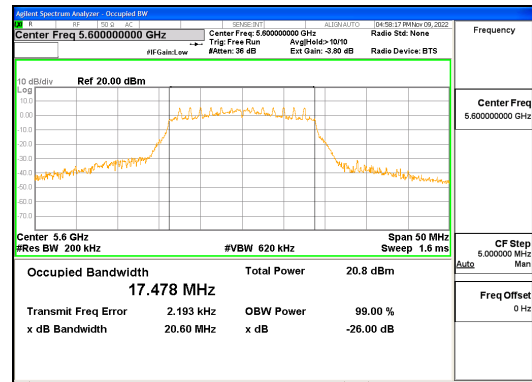
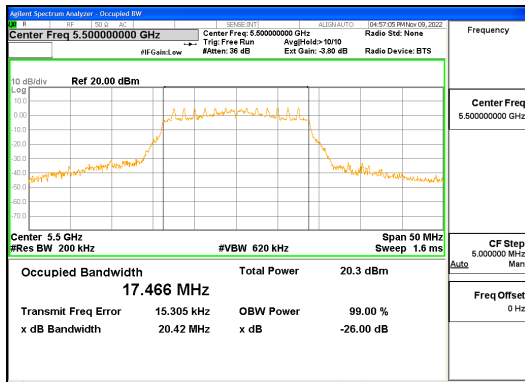


**ANT2\_802.11ac\_VHT20\_UNII 2A**

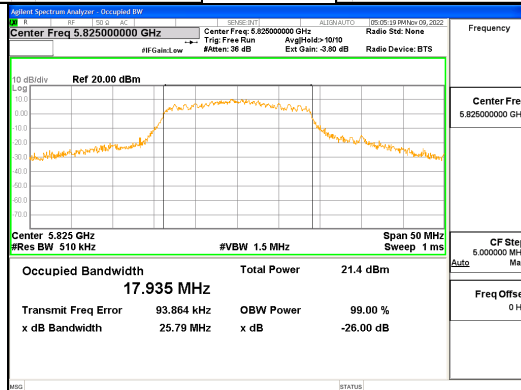
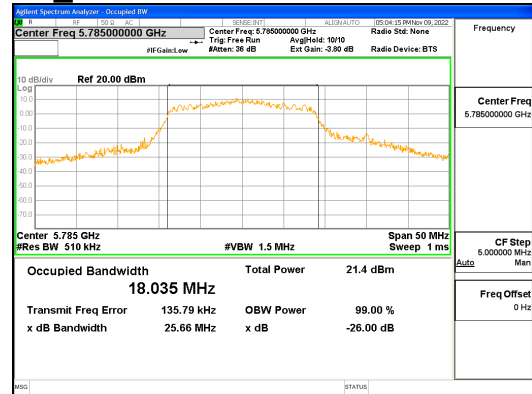
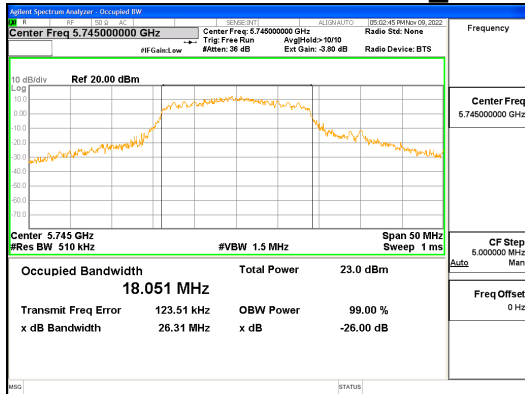


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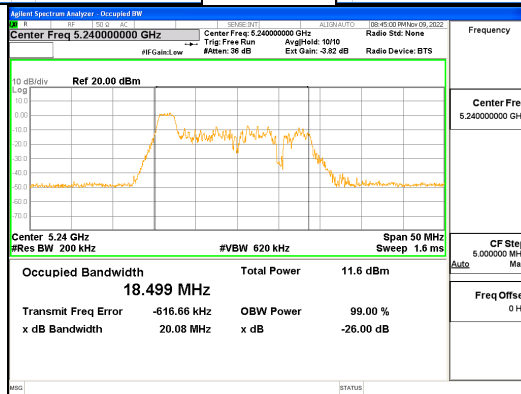
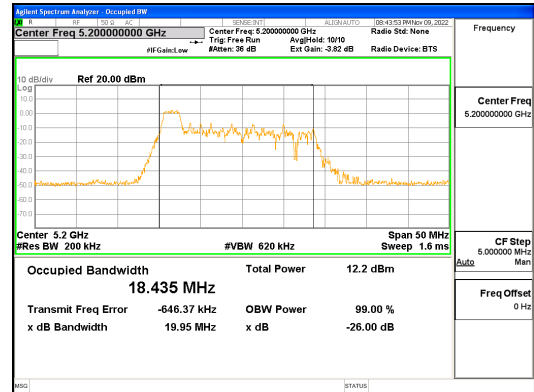
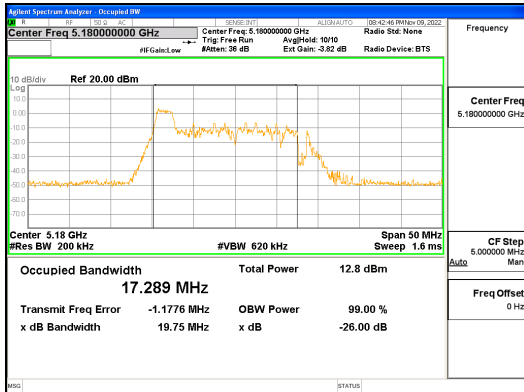
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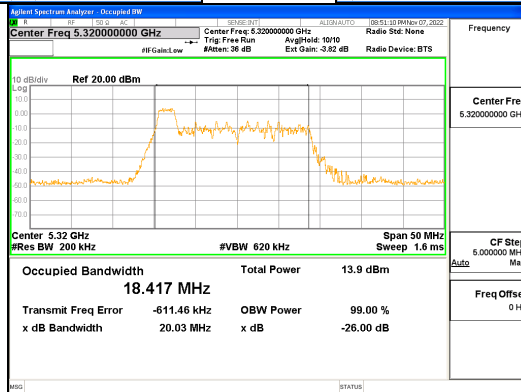
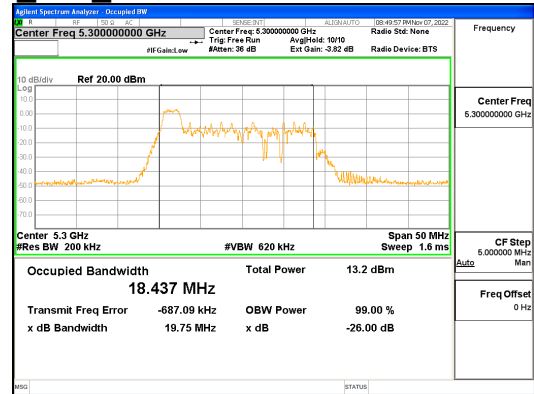
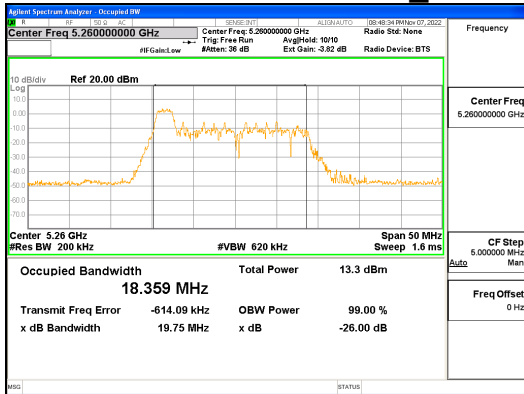
**ANT2\_802.11ac\_VHT20\_UNII 2C**



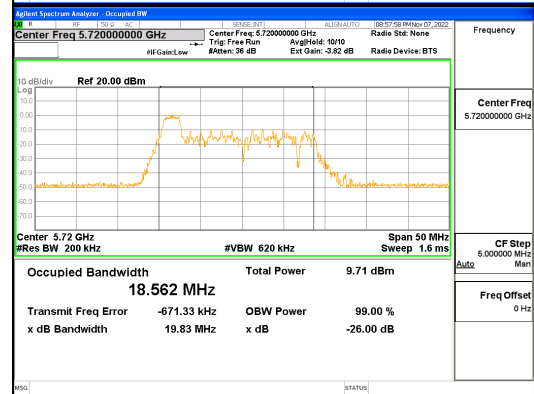
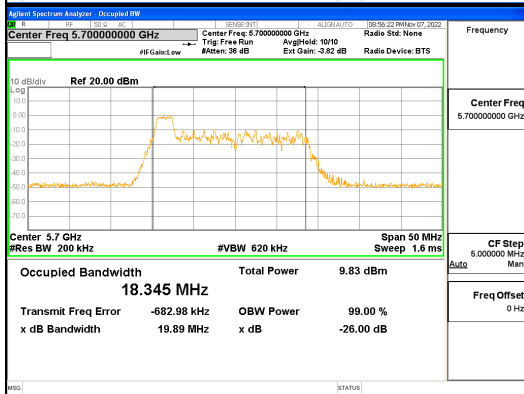
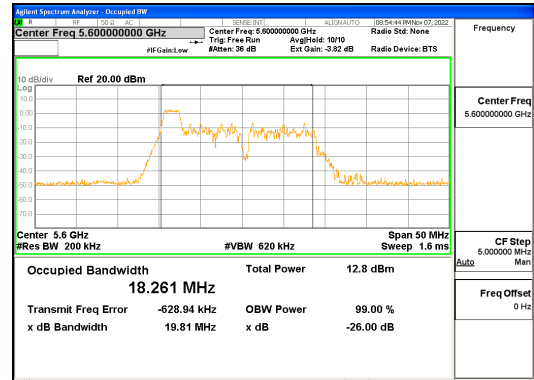
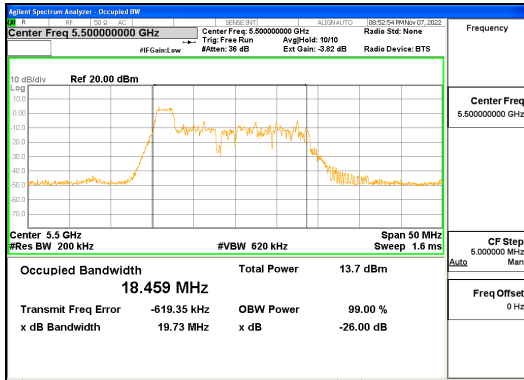
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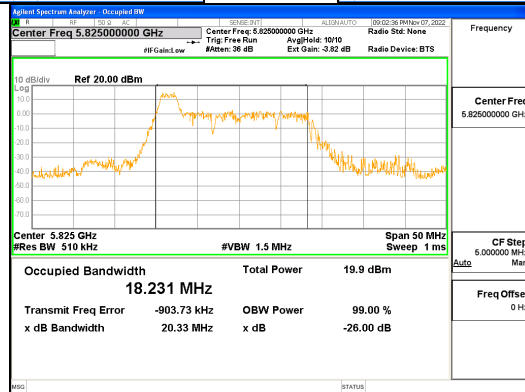
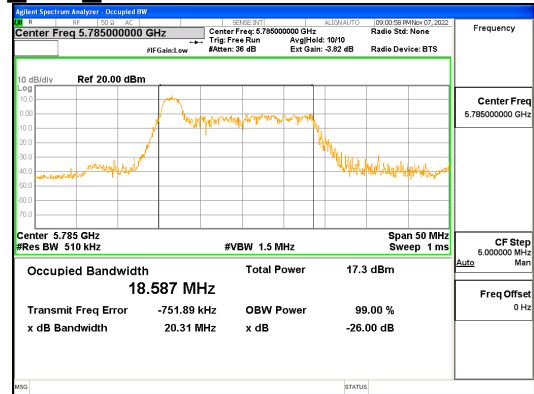
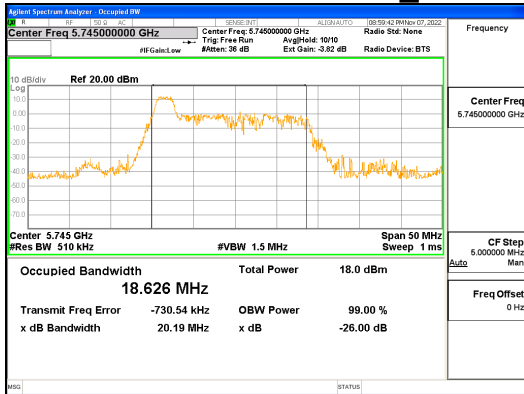
**ANT1\_802.11ax\_HE20\_26T\_UNII 1**



**ANT1\_802.11ax\_HE20\_26T\_UNII 2A**



**ANT1\_802.11ax\_HE20\_26T\_UNII 2C**

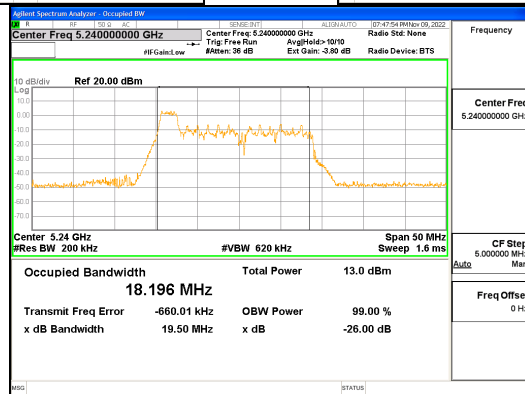
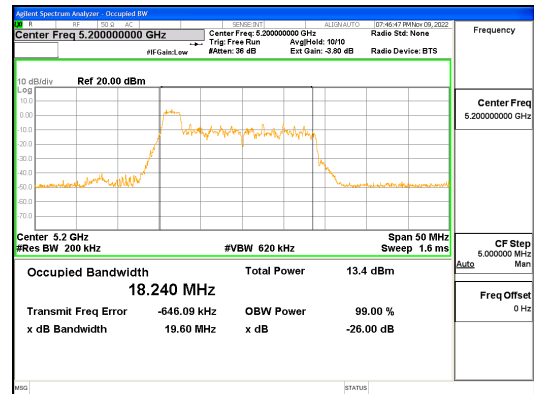
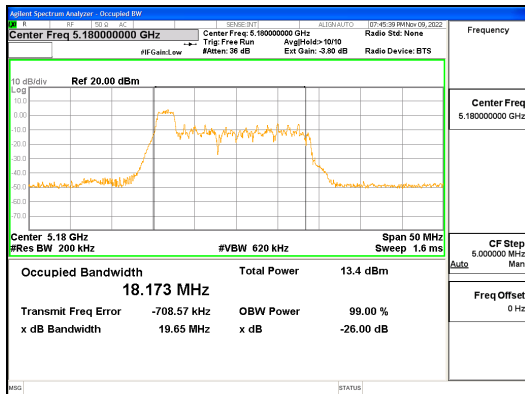


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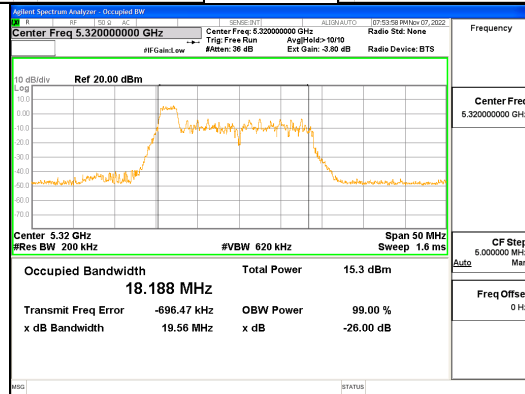
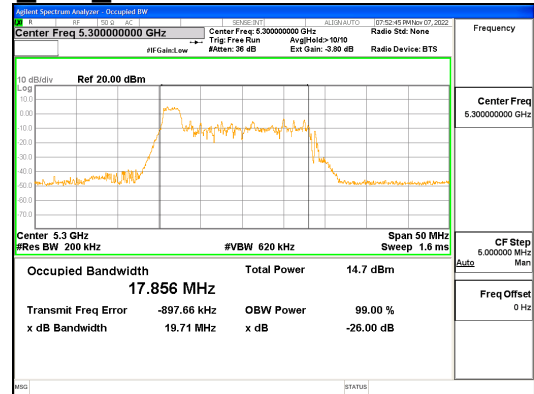
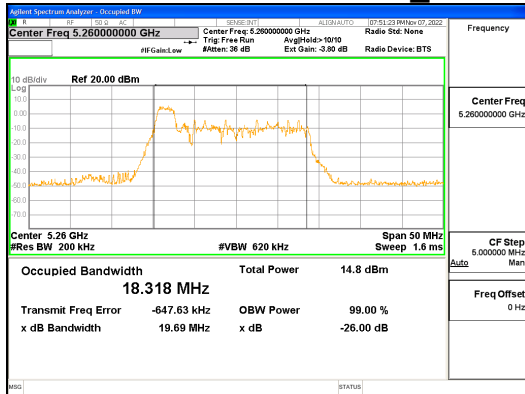


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**ANT2\_802.11ax\_HE20\_26T\_UNII 1**

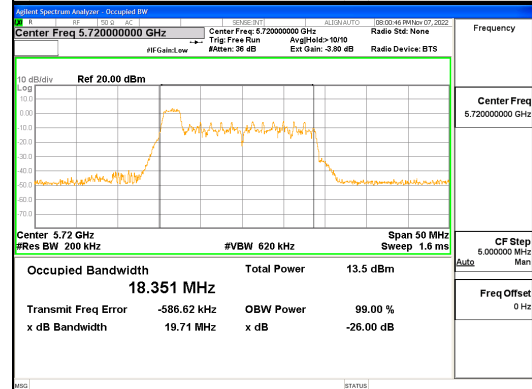
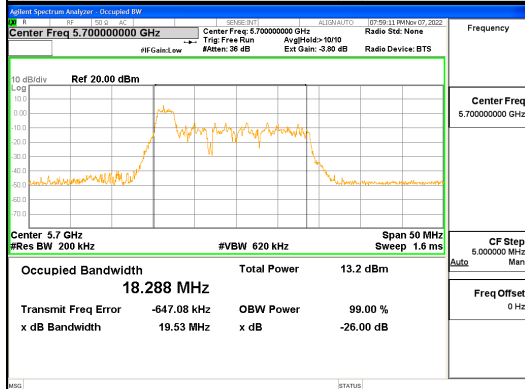
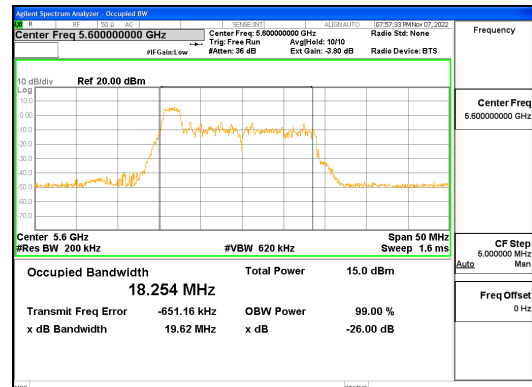
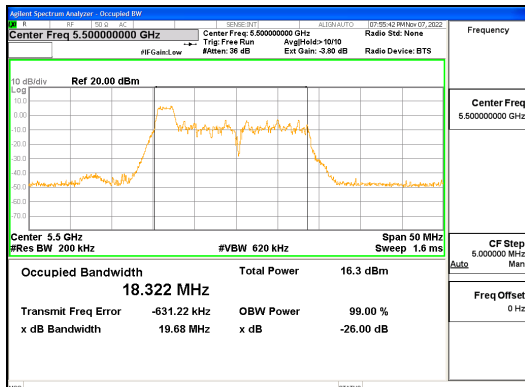


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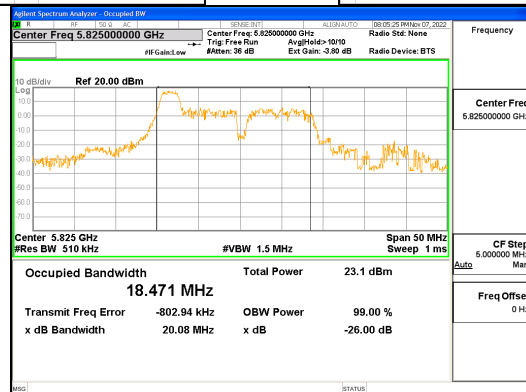
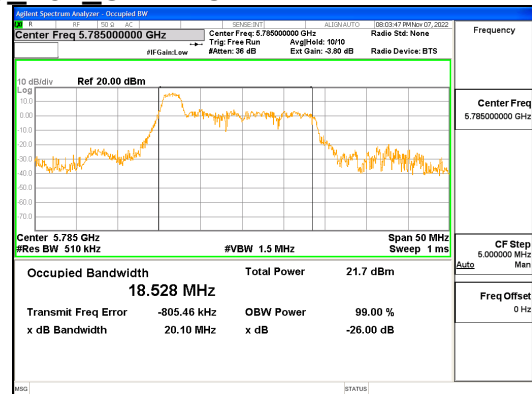
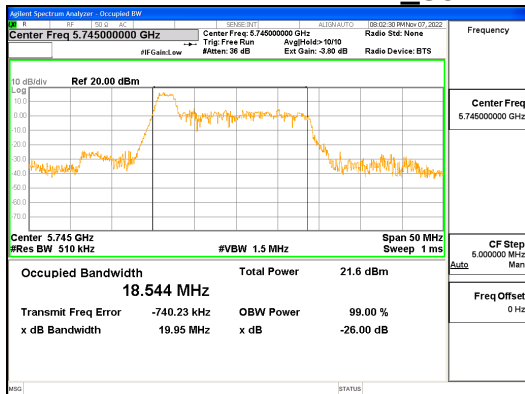


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**ANT2\_802.11ax\_HE20\_26T\_UNII 2C**

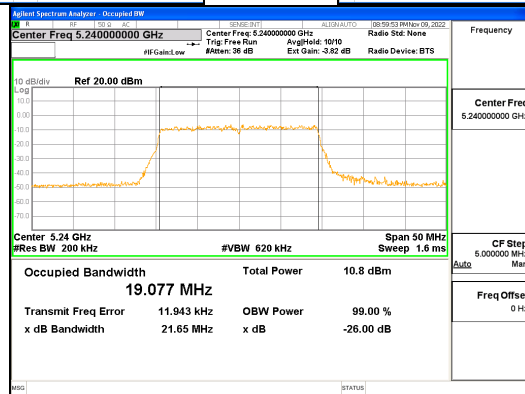
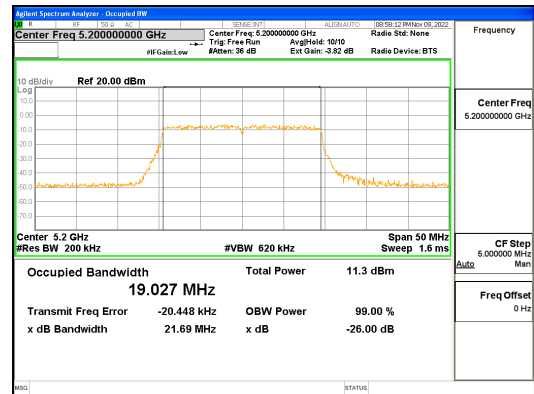
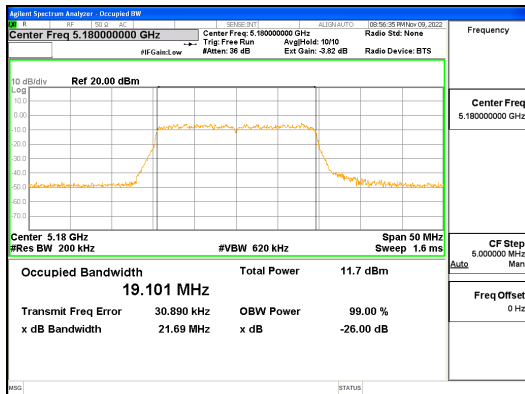


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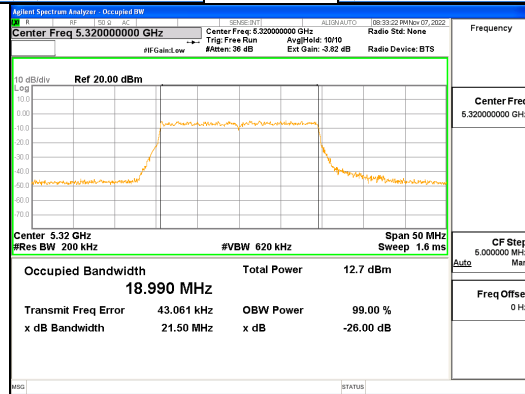
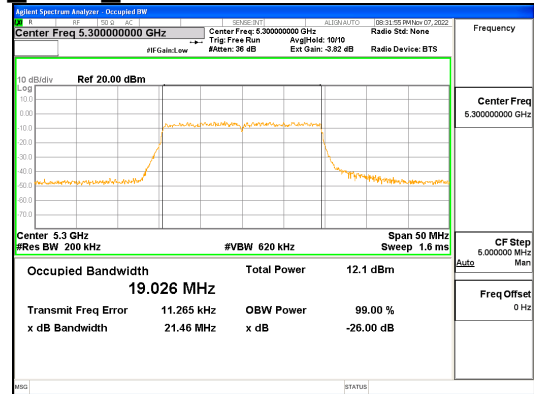
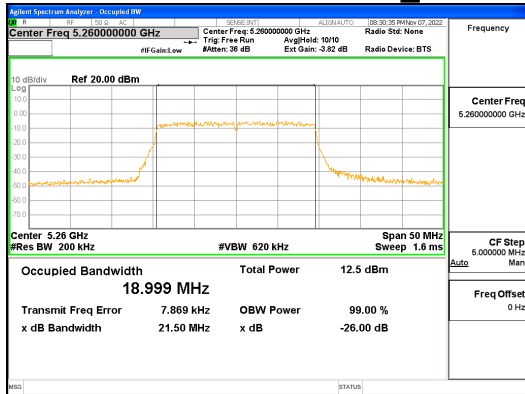


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**ANT1\_802.11ax\_HE20\_242T\_UNII 2A**