TEST REPORT

CTK Co., Ltd.
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Report No.: CTK-2021-03418

1. Client

◦ Name : Samsung Electronics Co Ltd

◦ Address : 19 Chapin Rd, Building D. Pine Brook, New Jersey, United States

◦ Date of Receipt : 2021-06-28

2. Manufacturer

◦ Name : Samsung Electronics Co., Ltd.

◦ Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea

3. Use of Report : For FCC Conformance

4. Test Sample / Model: Wi-Fi/BT Transceiver / WCA942M

5. Date of Test : 2020-11-05 to 2020-11-20, 2021-08-04 to 2021-09-16

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

7. Testing Environment: Temp.: (23 ± 1) ℃, Humidity: (50 ± 3) % R.H

8. Test Results : Compliance

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full.

Affirmation	Tested by Ji-Hye, Kim: (Signature)	Technical Manager Won-Jae, Hwang: (Signature)

2021-09-17

Republic of KOREA **CTK Co., Ltd.**

REPORT REVISION HISTORY

Date	Revision	Page No
2020-11-20	Issued (CTK-2020-04547)	all
2021-09-17	Issued (CTK-2021-03418) Added RU combinations and assignments in 802.11ax	all

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1. General Product Description

1.1 Client Information

Company	Samsung Electronics Co., Ltd.
Contact Point	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea
Contact Person	Name : Youngjoong Noh E-mail : monk.noh@samsung.com Tel : +82-277-0598 Fax : -

1.2 Product Information

FCC ID	A3LWCA942M
ISED	649E-WCA942M
Product Description	Wi-Fi/BT Transceiver
Model name	WCA942M
Variant Model name	-
Operating Frequency	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)
RF Output Power	802.11a : 18.82 dBm (76.16 mW) 802.11n_HT20 : 18.79 dBm (75.60 mW) 802.11n_HT40 : 21.27 dBm (134.04 mW) 802.11ac_VHT20 : 18.60 dBm (72.42 mW) 802.11ac_VHT40 : 21.21 dBm (132.00 mW) 802.11ac_VHT80 : 17.93 dBm (62.15 mW) 802.11ax_HE20 : 18.81 dBm (76.00 mW) 802.11ax_HE40 : 21.51 dBm (141.61 mW) 802.11ax_HE80 : 18.27 dBm (67.15 mW)
Antenna Specification	Antenna type : Chip Antenna Peak Gain : -0.07 dBi (ANT1), 1.65 dBi (ANT2)
Type of Modulation	OFDM, OFDMA
Data Rate	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
Power Source	DC 5 V
Hardware Rev	V4.0
Software Rev	FC2

1.3 Peripheral Devices

Device	Manufacturer	Model No.	Serial No.
Note Computer	HP	15-bs563TU	CND7253QPR
AC/DC Adapter	HP	HSTNN-LA40	-

1.4 Model Differences

Not applicable

2. Facility and Accreditations

2.1 Test Facility

The measurement facility is located at (Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea.

2.2 Laboratory Accreditations and Listings

Country	Agency	Registration Number
USA	FCC	805871
CANADA	ISED	8737A-2
KOREA	NRRA	KR0025

2.3 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.

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	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) < 250 mW (5 250 – 5 350 MHz, 5 470 – 5 725 MHz) < 1 W (5 725 – 5 850 MHz)	C	
15.407(a)(1)	Power Spectral Density	< 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, 5250 – 5350 MHz, 5470 – 5725 MHz) < -17 dBm/MHz EIRP (5715 – 5725 MHz, 5 850 – 5 860 MHz) < -27 dBm/MHz EIRP outside (5 715 – 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
Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable				
Note 2: The data in this test report are traceable to the national or international standards.				
Note 3: The sample was tested according to the following specification: FCC Part 15.247, ANSI C63.10-2013				
Note 4: 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
UNII 1	5 180 MHz	5 200 MHz	5 240 MHz
UNII 2A	5 260 MHz	5 300 MHz	5 320 MHz
UNII 2C	5 500 MHz	5 600 MHz	5 720 MHz
UNII 3	5 745 MHz	5 785 MHz	5 825 MHz

- 802.11n_HT40, 802.11ac_VHT40, 802.11ax_HE40

	Lowest channel	Middle channel	Highest channel
UNII 1	5 190 MHz	-	5 230 MHz
UNII 2A	5 270 MHz	-	5 310 MHz
UNII 2C	5 510 MHz	5 590 MHz	5 710 MHz
UNII 3	5 755 MHz	-	5 795 MHz

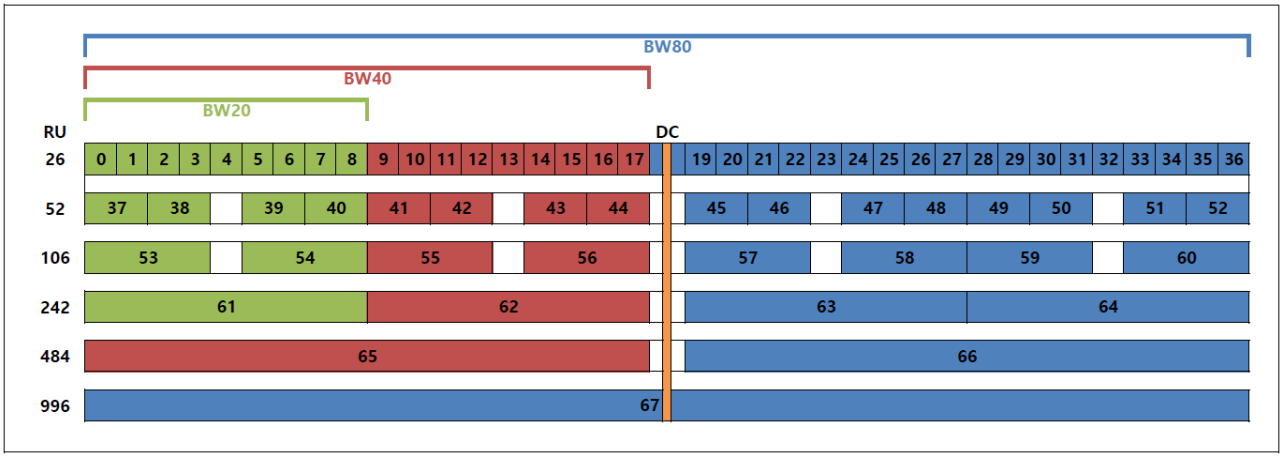
- 802.11ac_VHT80, 802.11ax_HE80

	Lowest channel	Middle channel	Highest channel
UNII 1	5 210 MHz	-	-
UNII 2A	5 290 MHz	-	-
UNII 2C	5 530 MHz	-	5 690 MHz
UNII 3	5 775 MHz	-	-

Test mode

Test mode	Modulation	Data rate	Duty Cycle	Duty Cycle Factor
802.11a	DSSS	1 Mbps	97.1 %	0.13 dB
802.11n_HT20	OFDM	MCS 0	96.9 %	0.14 dB
802.11n_HT40		MCS 0	94.0 %	0.27 dB
802.11ac_VHT20		MNSS 0	94.2 %	0.26 dB
802.11ac_VHT40		MNSS 0	89.4 %	0.49 dB
802.11ac_VHT80		MNSS 0	81.5 %	0.89 dB
802.11ax_HE20 SU	OFDMA	MCS 0	93.2 %	0.31 dB
802.11ax_HE40 SU			88.5 %	0.53 dB
802.11ax_HE80 SU			82.3 %	0.85 dB
802.11ax HE20/40/80 26T			94.7 %	0.24 dB
802.11ax HE20/40/80 52T			94.4 %	0.25 dB
802.11ax HE20/40/80 106T			94.0 %	0.27 dB
802.11ax HE40/80 242T			94.0 %	0.27 dB
802.11ax HE80 484T			93.2 %	0.31 dB

802.11ax RU Locations



Test RU Index for Tones

Mode	Tones	RU Index	
802.11ax_HE20	26T	Low	0
		Mid	4
		High	8
	52T	Low	37
		Mid	39
		High	40
	106T	Low	53
		Mid	-
		High	54
	242T / SU	61 / NA	61 / NA
802.11ax_HE40	26T	Low	0
		Mid	9
		High	17
	52T	Low	37
		Mid	41
		High	44
	106T	Low	53
		Mid	55
		High	56
	242T	Low	61
		Mid	-
		High	62
	484T / SU	65 / NA	65 / NA
802.11ax_HE80	26T	Low	0
		Mid	18
		High	36
	52T	Low	37
		Mid	45
		High	52
	106T	Low	53
		Mid	57
		High	60
	242T	Low	61
		Mid	63
		High	64
	484T	Low	65
		Mid	-
		High	66
	996T / SU	67 / NA	67 / NA

Full RU(Resource Unit) mode and SU(Single Unit) mode have no difference in physical waveform. This Report has been reported the SU(Single 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 (9 kHz to 30 MHz)	1.16 dB (C.L.: Approx. 95 %, k = 2)
Radiated Emissions (f ≤ 1 GHz)	4.54 dB (C.L.: Approx. 95 %, k = 2)
Radiated Emissions (f > 1 GHz)	4.98 dB (C.L.: Approx. 95 %, k = 2)

3.5 Test Software

Conducted Test	Ics Pro Ver. 6.0.3
Radiated Test	TOYO EMI software EP5RE Ver. 6.0.1.0
Line Conducted Test	ESCI7, ESCI3 : EMC32 Ver. 8.50.0 ESR7 : EMC32 Ver. 8.53.0

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 ≥ 3 x 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 / Frequency	802.11a	802.11n_HT20	802.11ac_VHT20	802.11ax_HE20_SU
5 745 MHz	16.35	17.60	17.55	17.43
5 785 MHz	16.32	17.58	17.59	17.53
5 825 MHz	16.38	17.60	17.60	18.27
Measurement uncertainty	0.1 MHz			

Mode		6 dB Bandwidth (MHz)
Frequency	RU Index	802.11ax_HE20_26T
5 745 MHz	Low	2.11
	Mid	2.66
	High	2.14
5 785 MHz	Low	2.09
	Mid	2.64
	High	2.10
5 825 MHz	Low	2.05
	Mid	2.67
	High	2.10
Measurement uncertainty	0.1 MHz	

	6 dB Bandwidth (MHz)		
Mode / Frequency	802.11n_HT40	802.11ac_VHT40	802.11ax_HE40_SU
5 755 MHz	35.07	35.06	35.35
5 795 MHz	35.07	35.08	36.03
Measurement uncertainty	0.1 MHz		

Mode		6 dB Bandwidth (MHz)
Frequency	RU Index	802.11ax_HE40_26T
5 755 MHz	Low	14.06
	Mid	2.00
	High	2.06
5 795 MHz	Low	2.06
	Mid	2.06
	High	2.11
Measurement uncertainty	0.1 MHz	

	6 dB Bandwidth (MHz)	
Mode / Frequency	802.11ac_VHT80	802.11ax_HE80_SU
5 775 MHz	75.11	75.12
Measurement uncertainty	0.1 MHz	

Mode		6 dB Bandwidth (MHz)
Frequency	RU Index	802.11ax_HE80_26T
5 775 MHz	Low	2.20
	Mid	2.77
	High	2.12
Measurement uncertainty	0.1 MHz	

ANT2

	6 dB Bandwidth (MHz)			
Mode / Frequency	802.11a	802.11n_HT20	802.11ac_VHT20	802.11ax_HE20
5 745 MHz	16.30	17.55	17.58	18.28
5 785 MHz	16.31	17.56	17.52	17.74
5 825 MHz	16.35	17.54	17.52	18.22
Measurement uncertainty	0.1 MHz			

Mode		6 dB Bandwidth (MHz)
Frequency	RU Index	802.11ax_HE20_26T
5 745 MHz	Low	2.15
	Mid	2.64
	High	2.10
5 785 MHz	Low	2.10
	Mid	2.67
	High	2.07
5 825 MHz	Low	2.11
	Mid	2.65
	High	2.10
Measurement uncertainty	0.1 MHz	

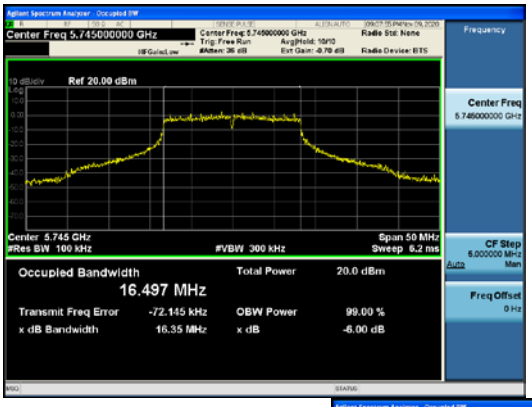
	6 dB Bandwidth (MHz)		
Mode / Frequency	802.11n_HT40	802.11ac_VHT40	802.11ax_HE40
5 755 MHz	33.81	33.81	36.06
5 795 MHz	35.06	35.05	35.11
Measurement uncertainty	0.1 MHz		

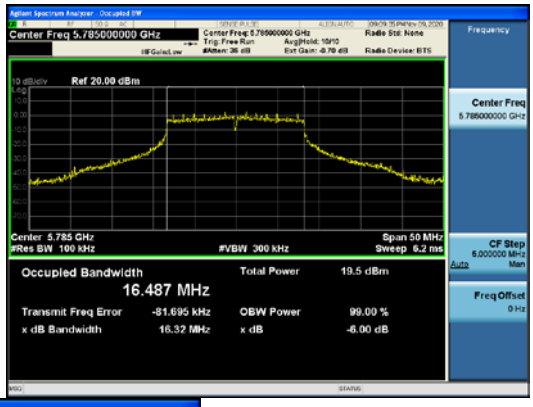
Mode		6 dB Bandwidth (MHz)
Frequency	RU Index	802.11ax_HE40_26T
5 755 MHz	Low	2.15
	Mid	2.10
	High	2.07
5 795 MHz	Low	2.09
	Mid	2.08
	High	2.05
Measurement uncertainty		0.1 MHz

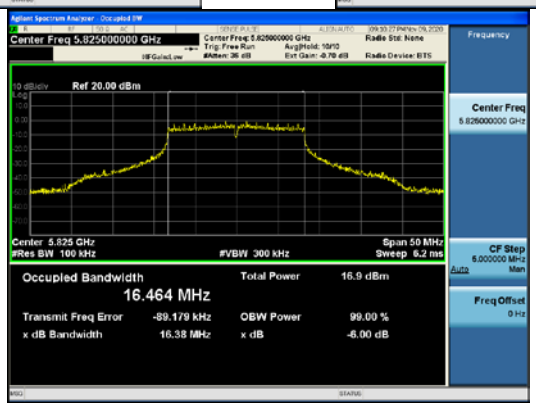
	6 dB Bandwidth (MHz)	
Mode / Frequency	802.11ac_VHT80	802.11ax_HE80
5 775 MHz	75.05	75.11
Measurement uncertainty	0.1 MHz	

Mode		6 dB Bandwidth (MHz)
Frequency	RU Index	802.11ax_HE80_26T
5 775 MHz	Low	2.20
	Mid	2.72
	High	2.12
Measurement uncertainty		0.1 MHz

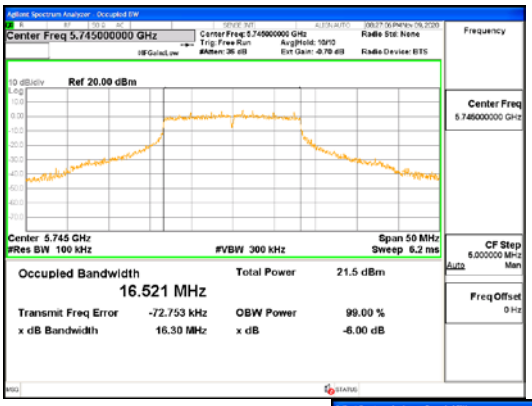
See next pages for actual measured spectrum plots.

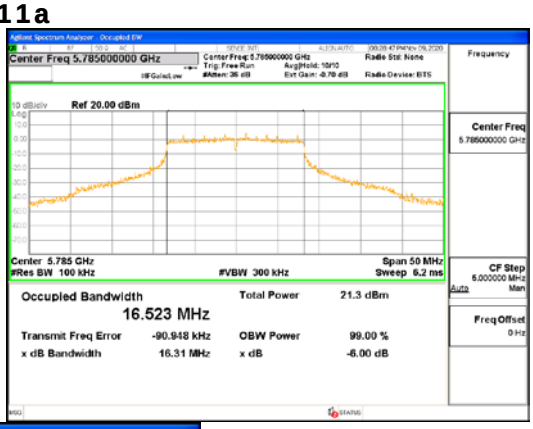


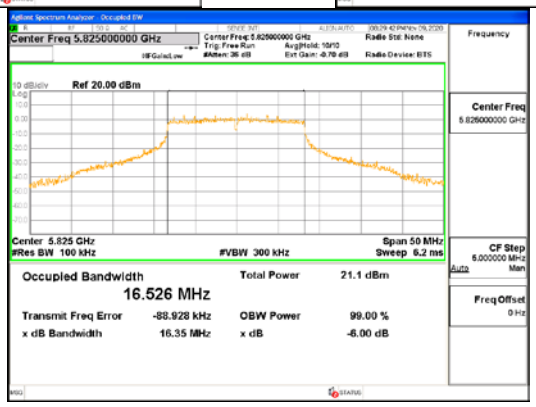




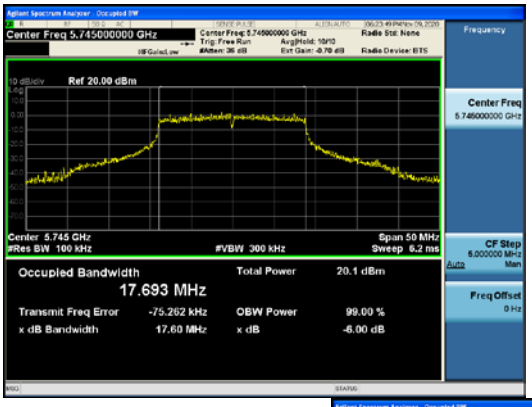
ANT1_802.11a

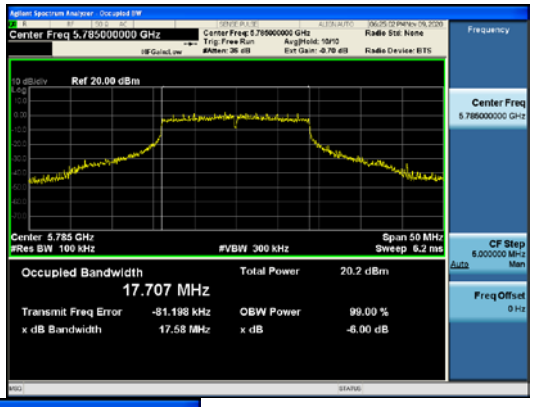


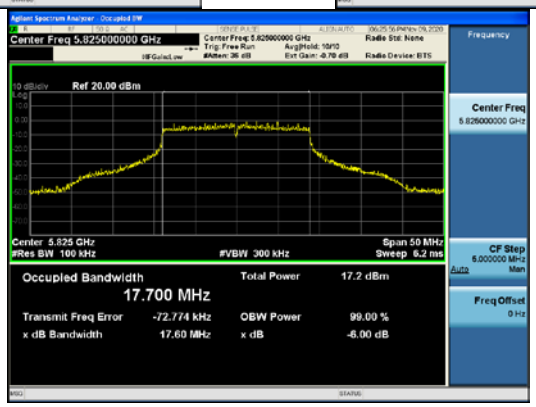




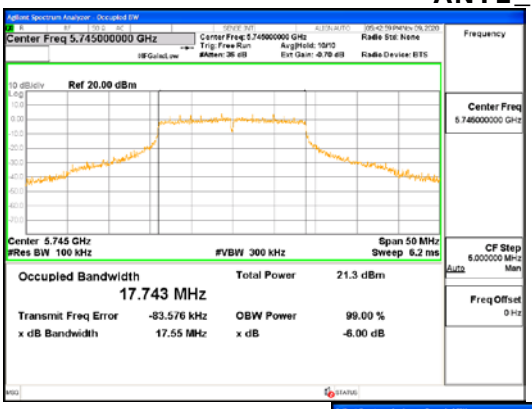
ANT2_802.11a

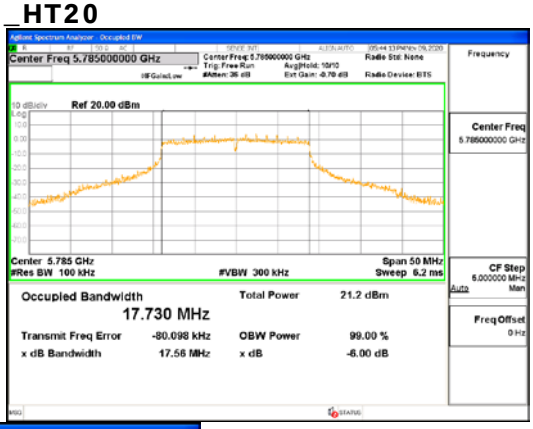


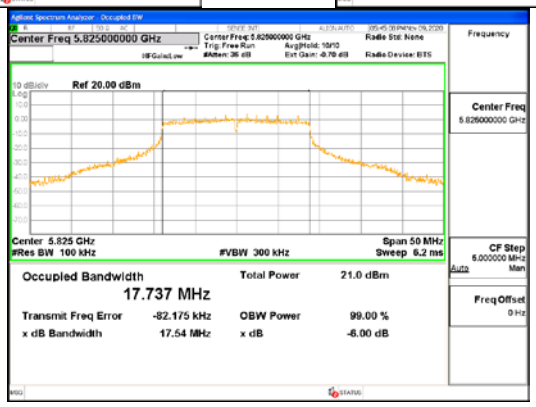




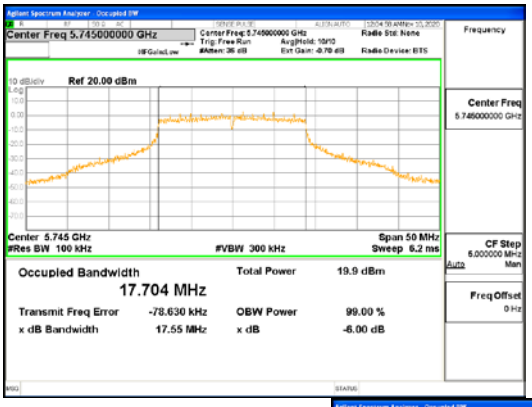
ANT1_802.11n_HT20

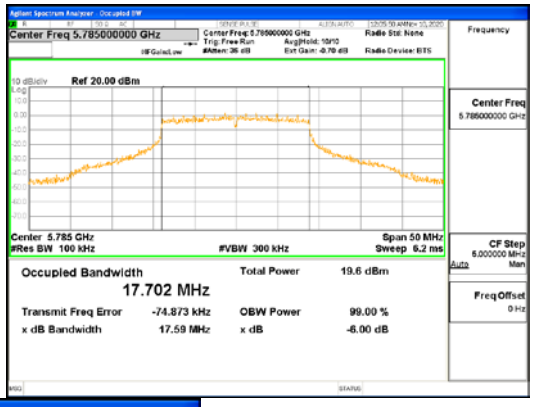


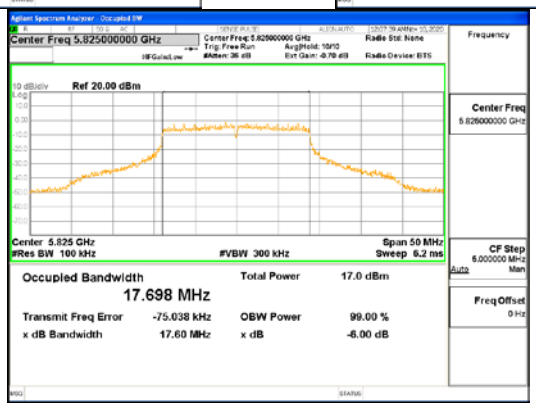




ANT2_802.11n_HT20







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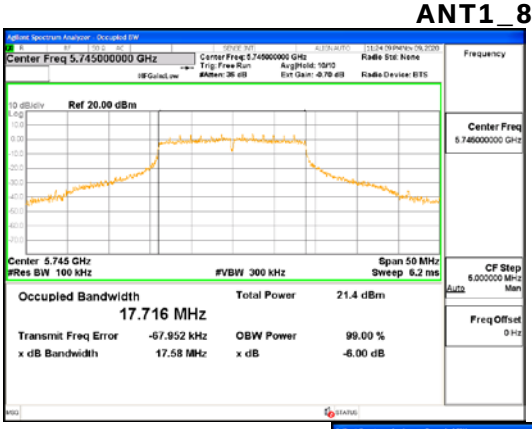

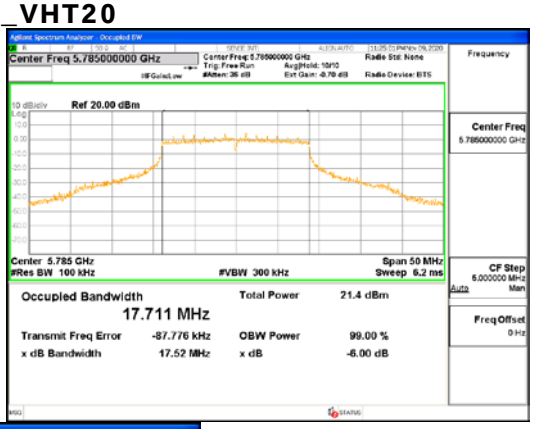

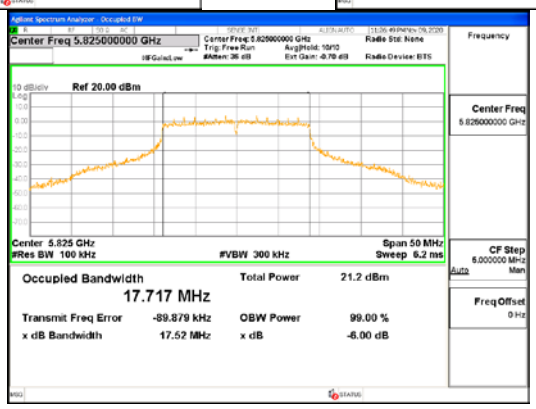

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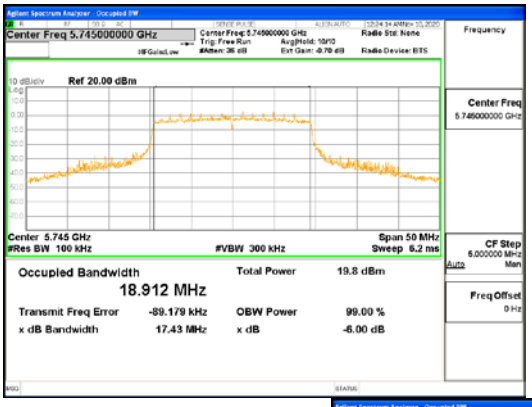
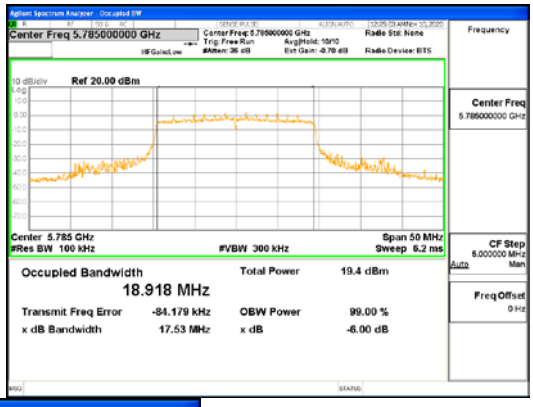
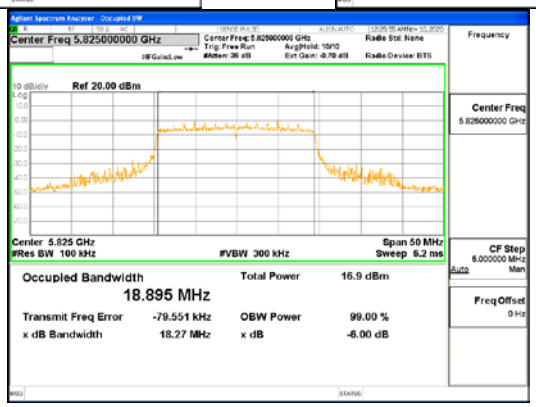
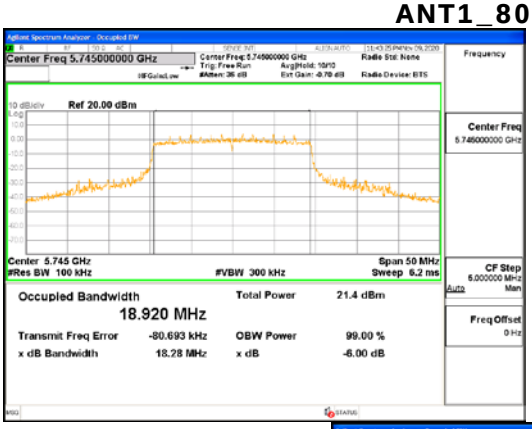
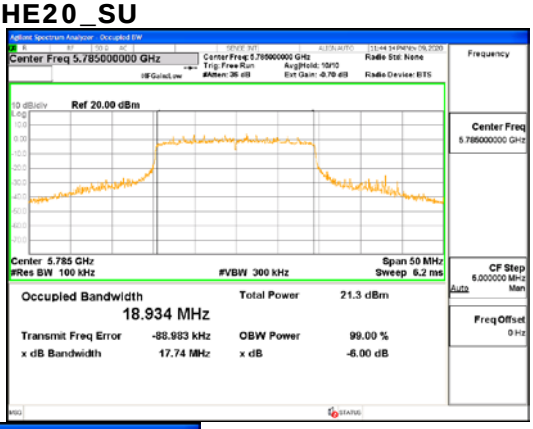


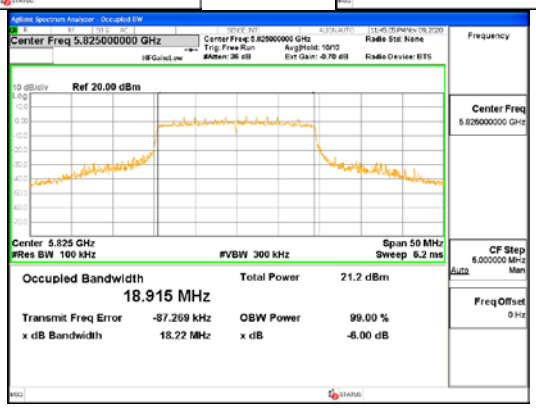




ANT1_802.11ax_HE20_SU







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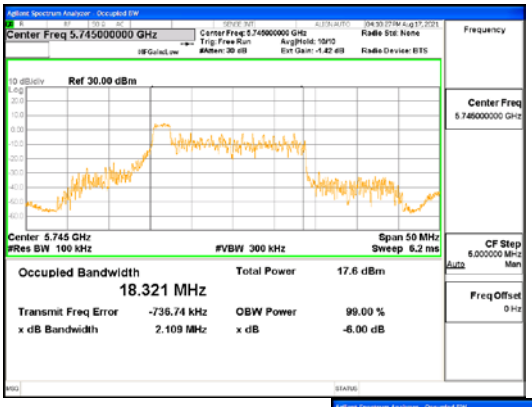
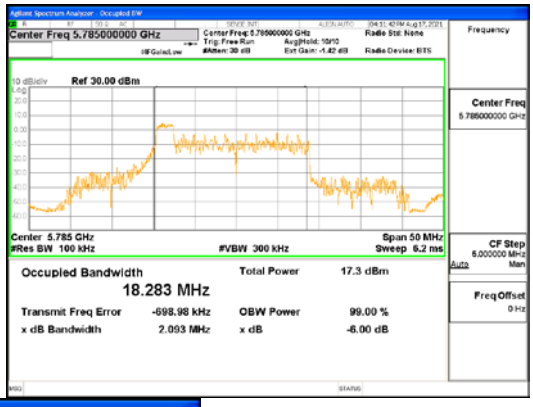
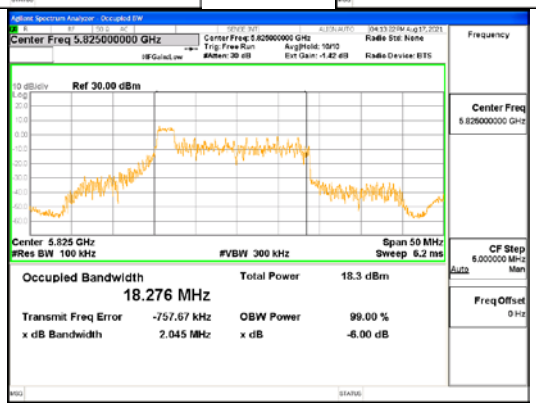
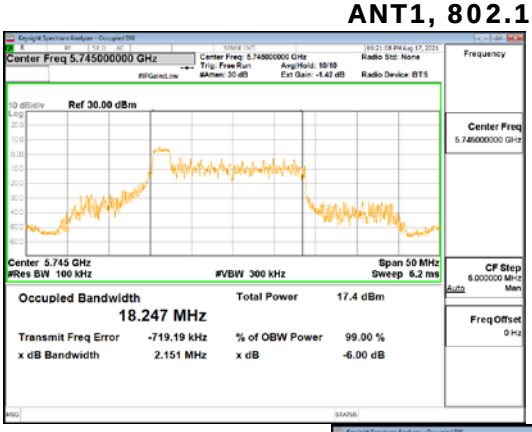
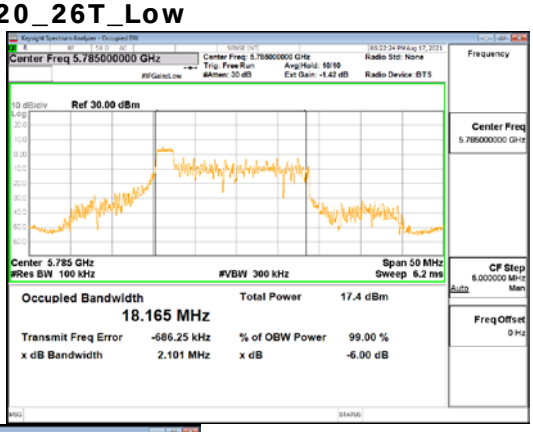


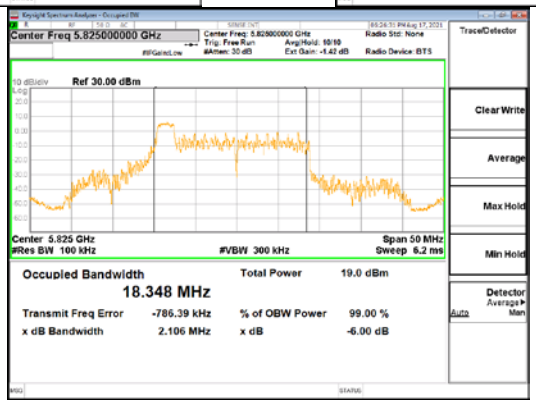




ANT1, 802.11ax_HE20_26T_Low







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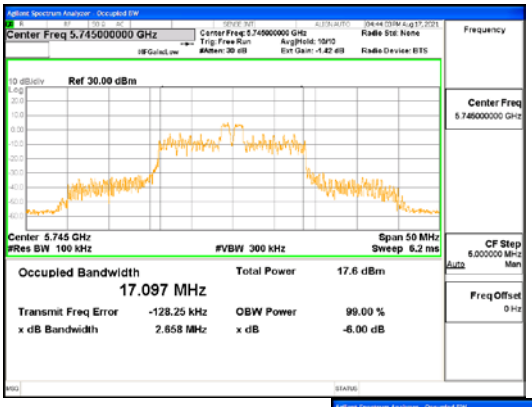

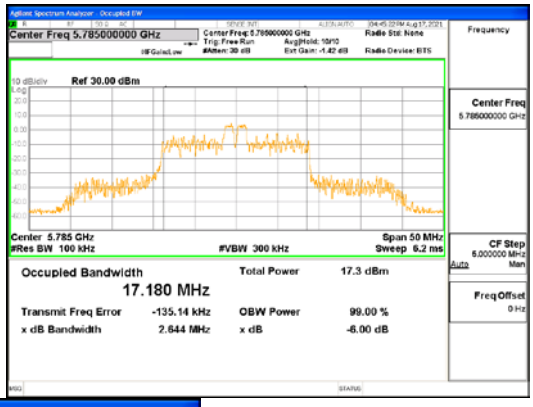

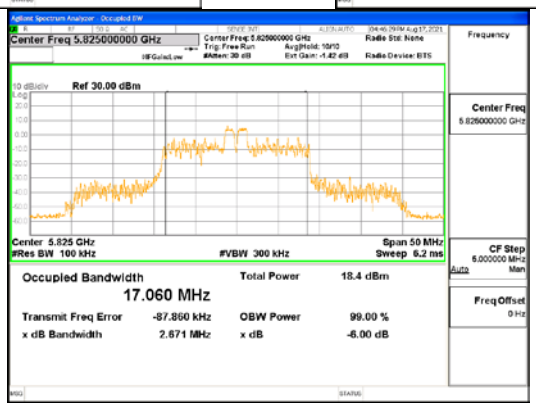

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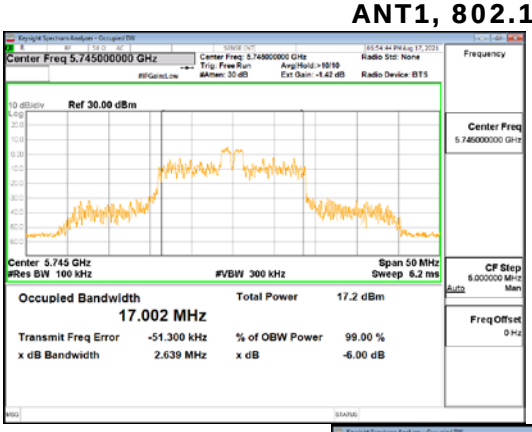

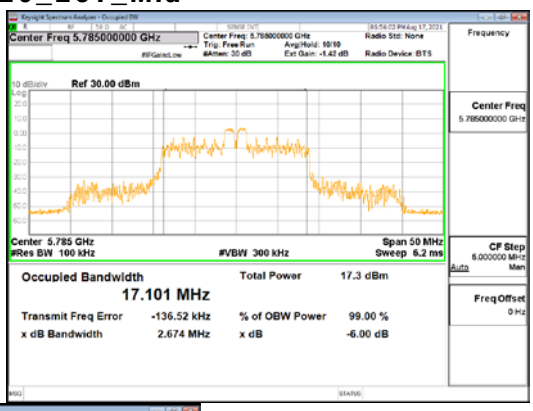

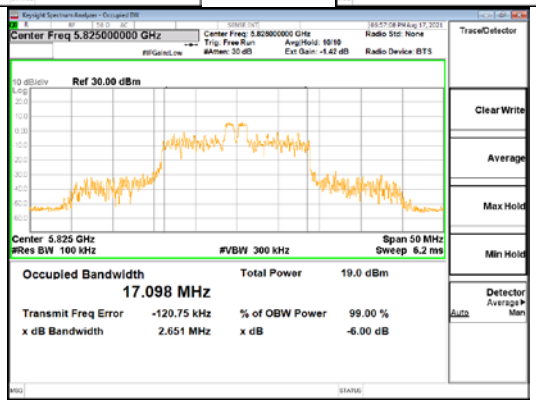

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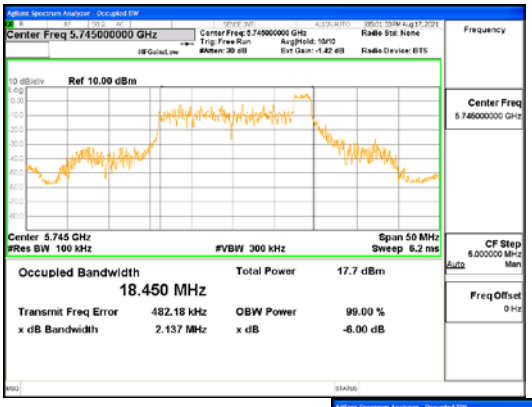
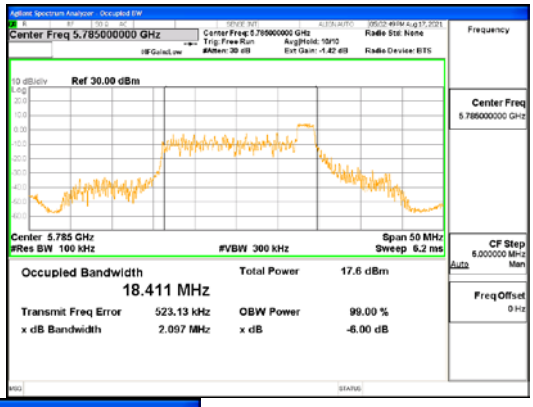
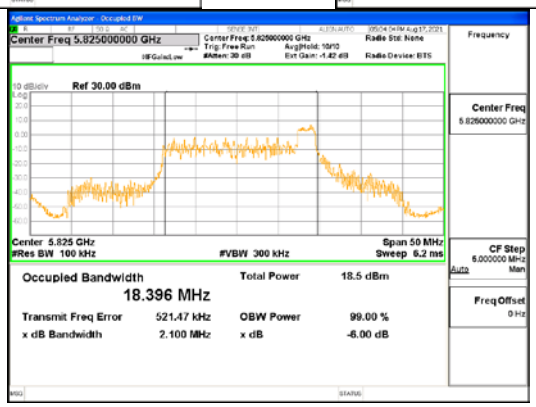
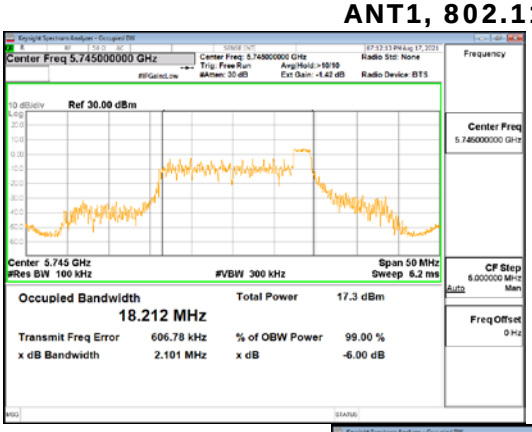
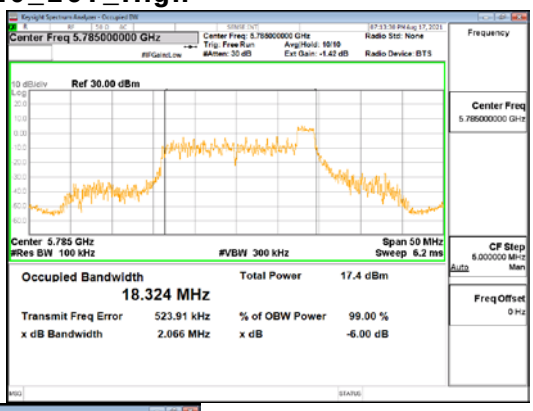


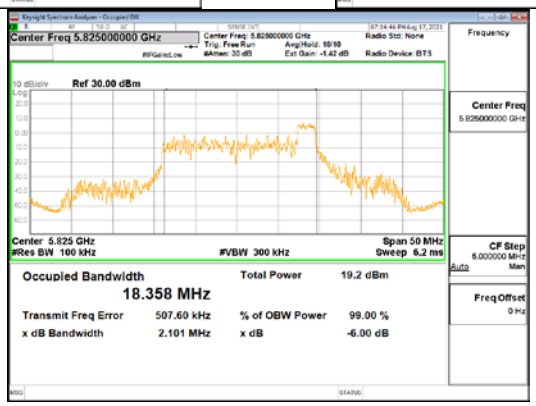




ANT1, 802.11ax_HE20_26T_High







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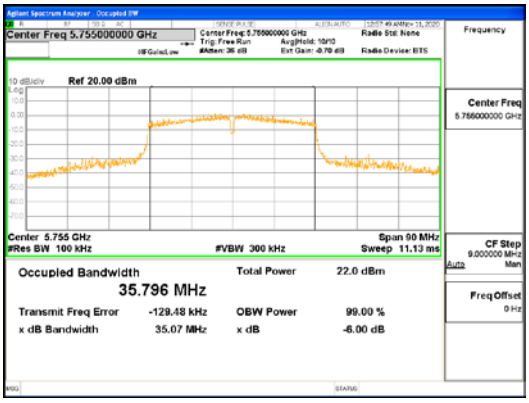
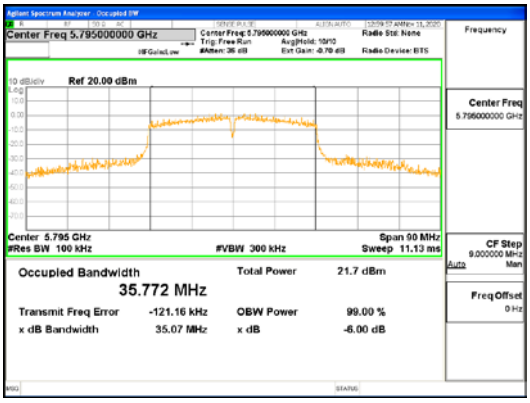
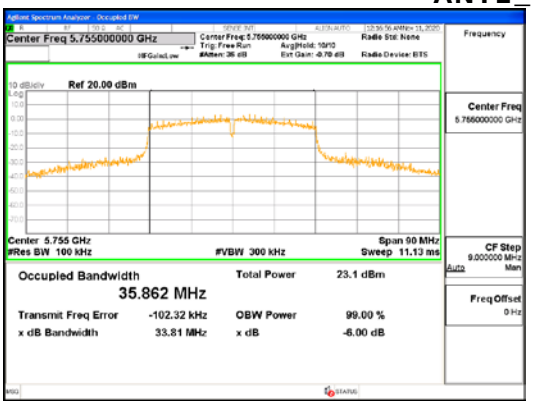
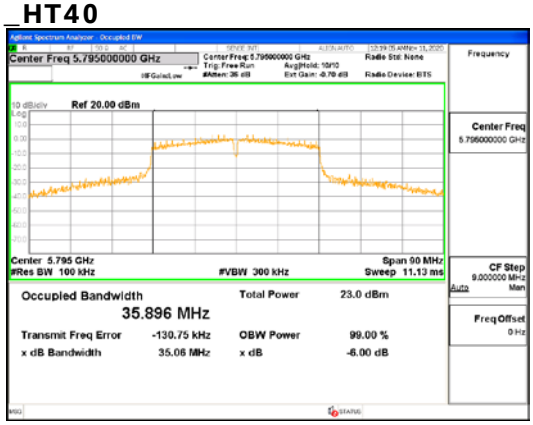




ANT1_802.11n_HT40





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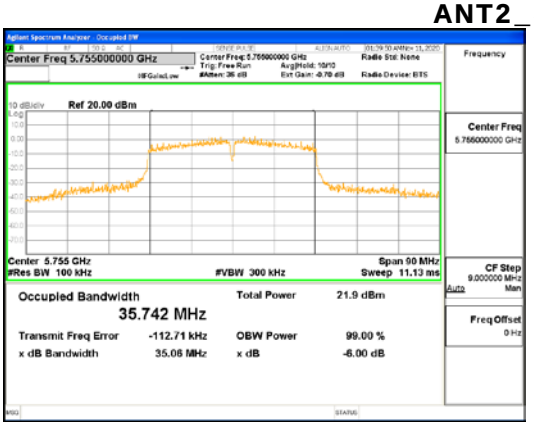
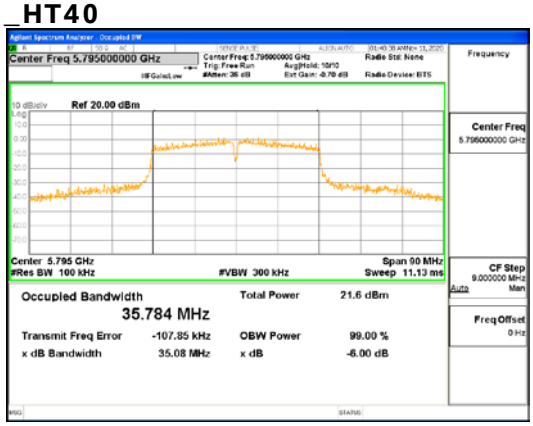
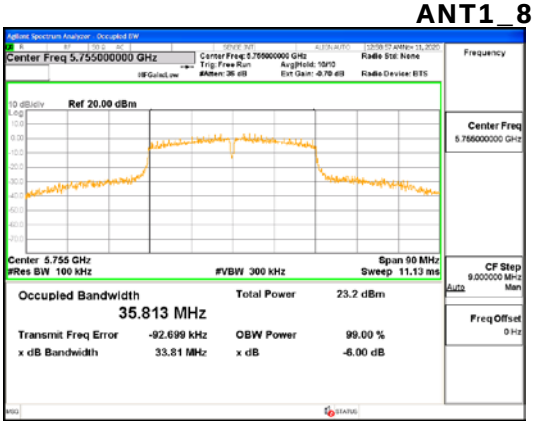
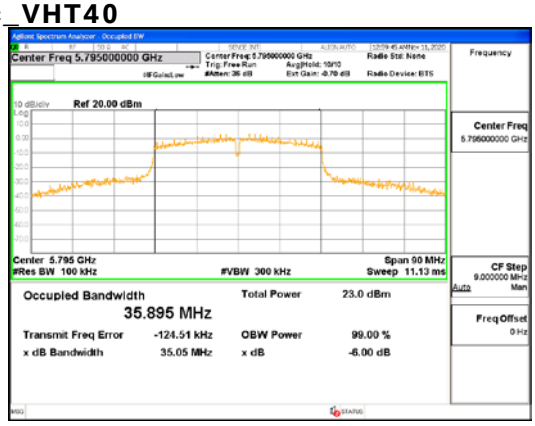




ANT1_802.11ac_VHT40





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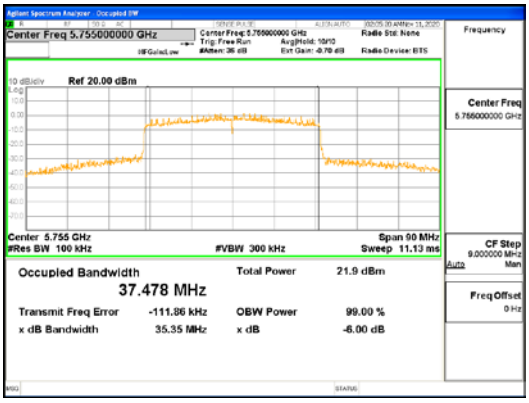
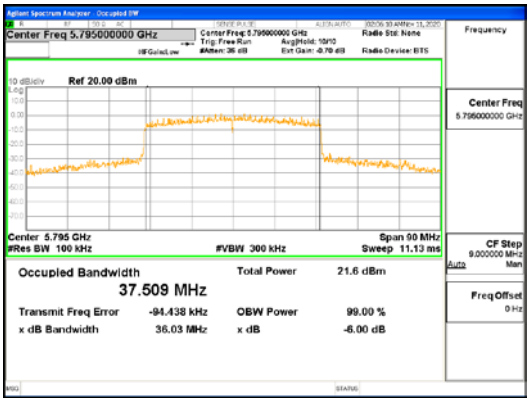
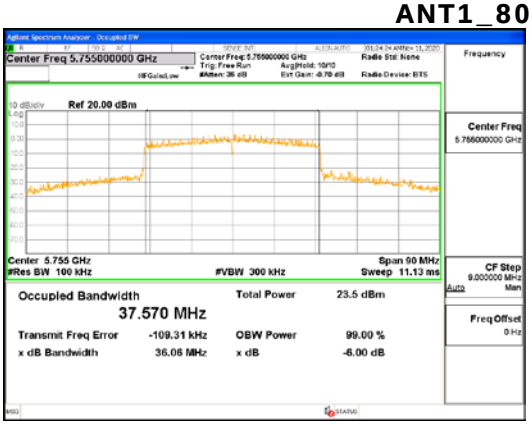
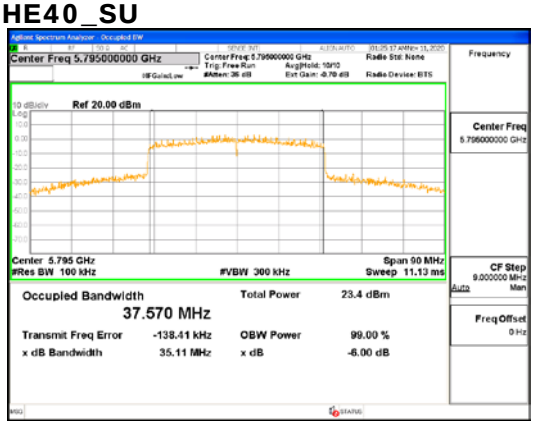




ANT1_802.11ax_HE40_SU





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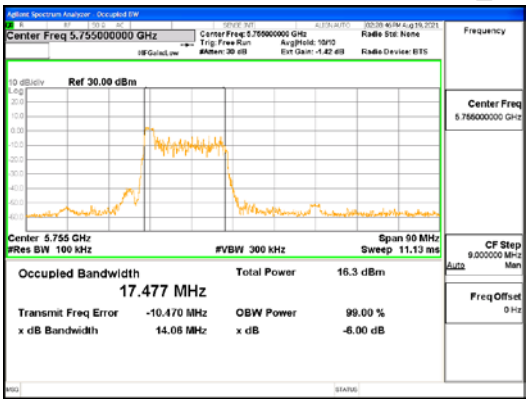

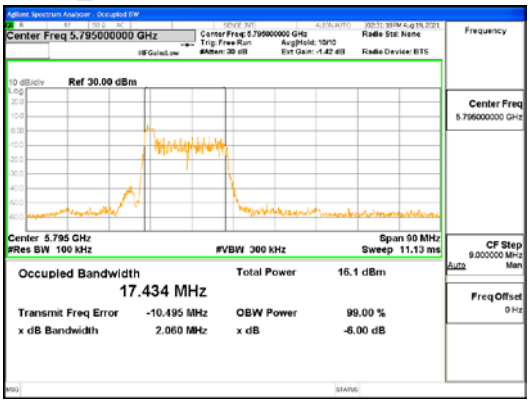

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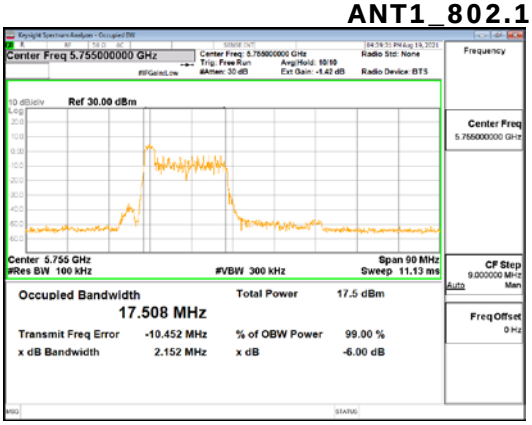

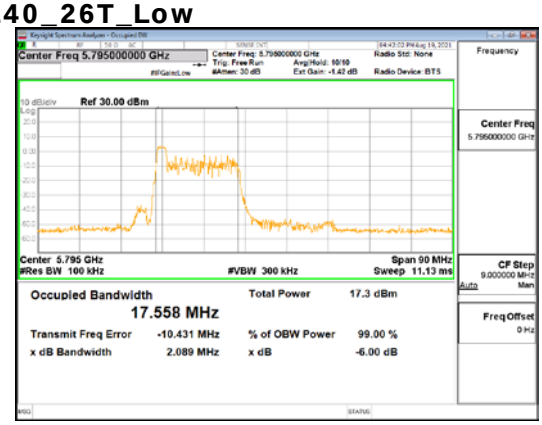

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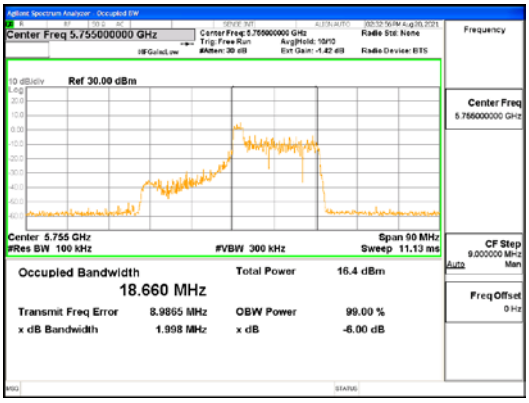

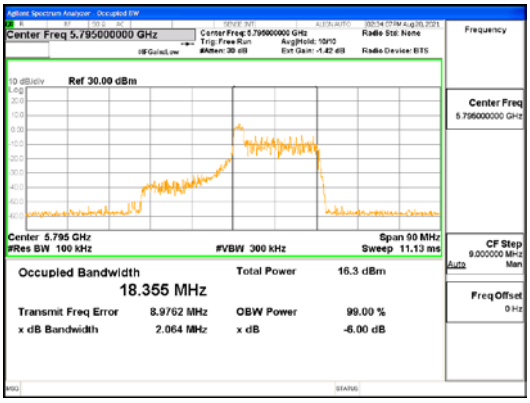

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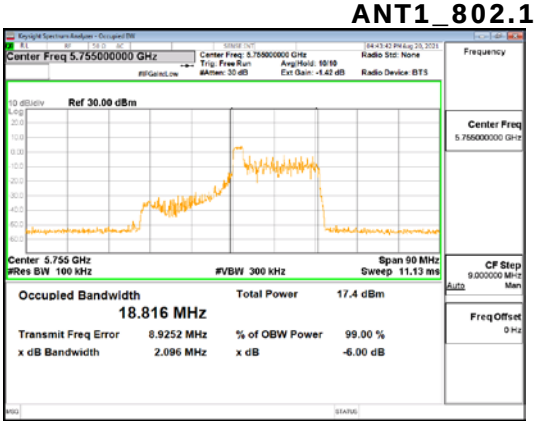

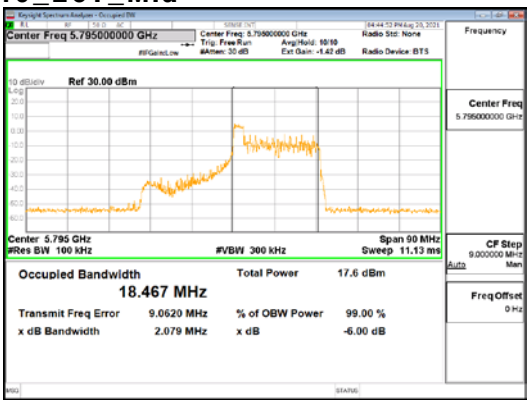

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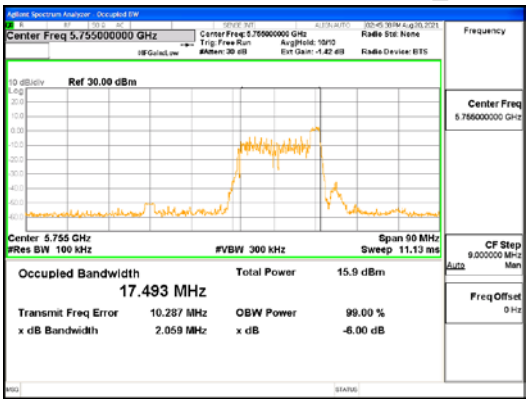

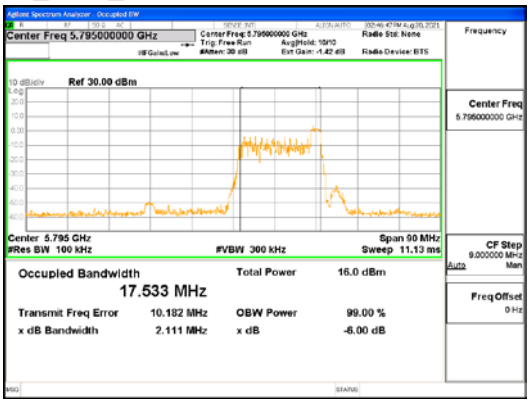

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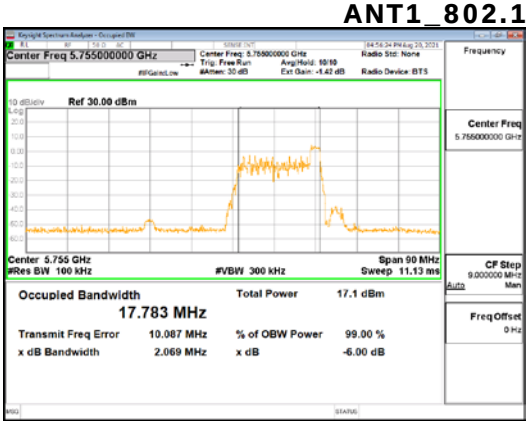

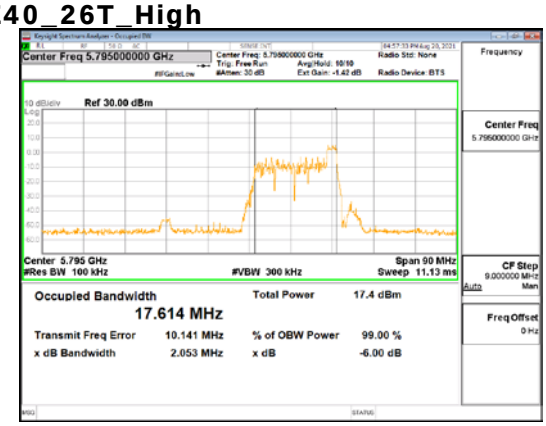

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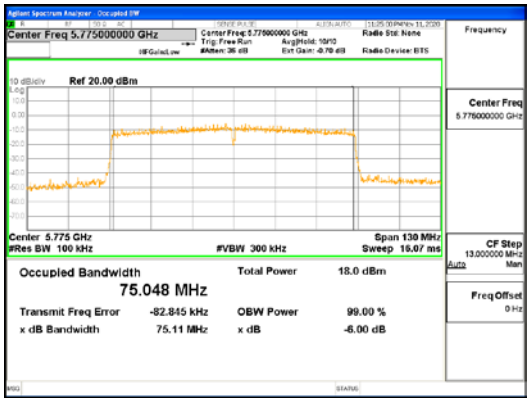
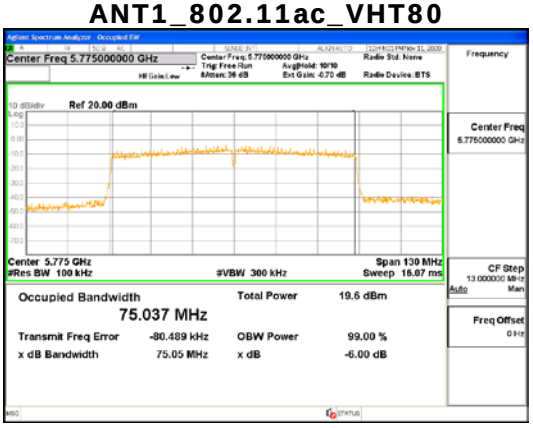
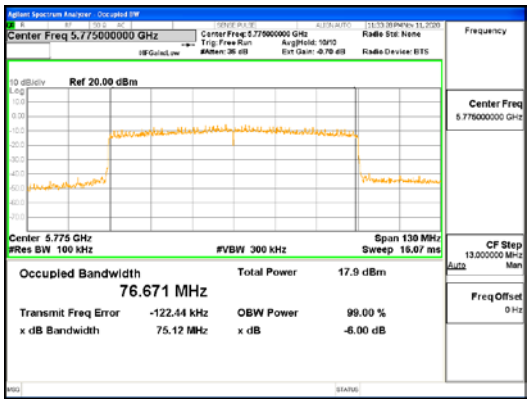


ANT1_802.11ac_VHT80



ANT2_802.11ac_VHT80



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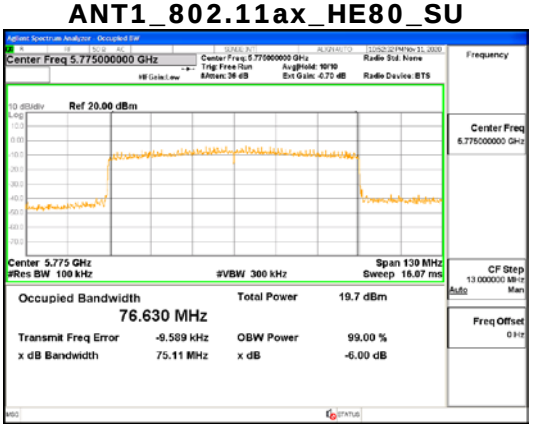

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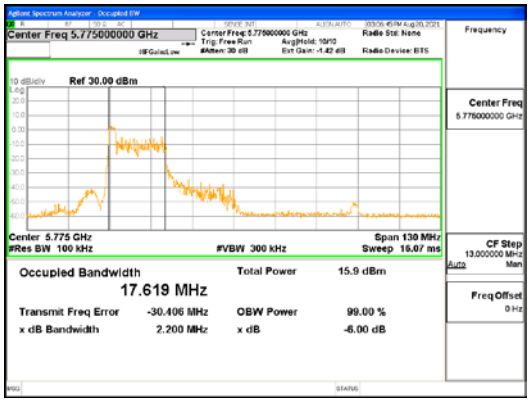

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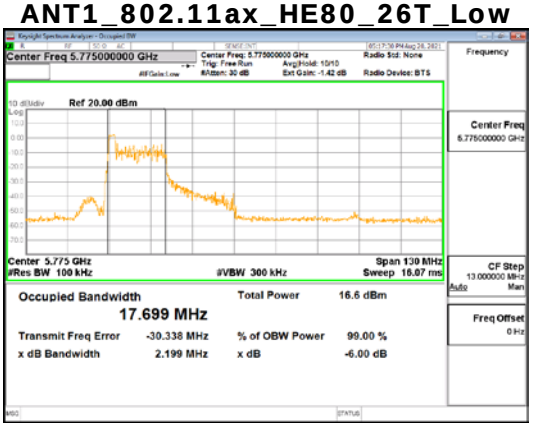
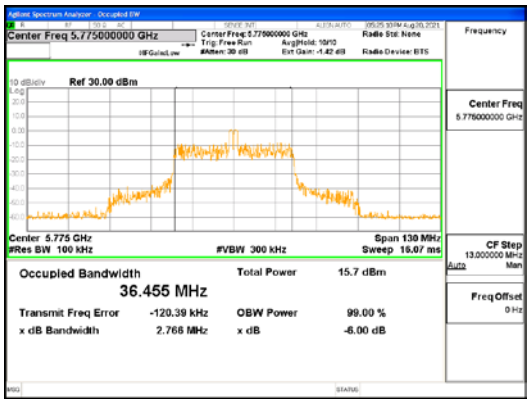
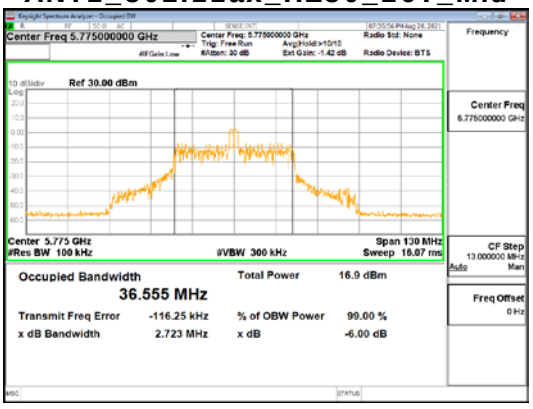


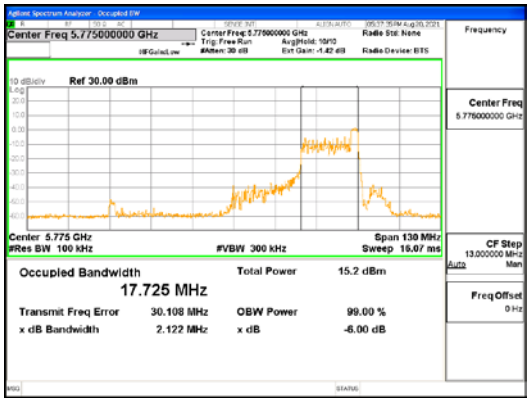
ANT2_802.11ax_HE80_26T_Low



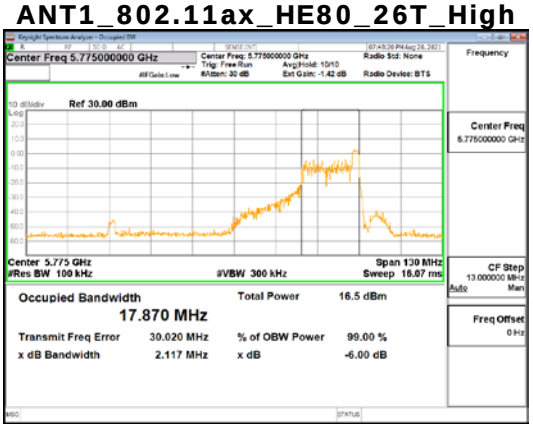
ANT1_802.11ax_HE80_26T_Mid



ANT2_802.11ax_HE80_26T_Mid



ANT1_802.11ax_HE80_26T_High



ANT2_802.11ax_HE80_26T_High

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 ≥ 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:

NA

Test Data:

ANT1

	26 dB Bandwidth and 99 % Bandwidth (MHz)							
Mode	802.11a		802.11n_HT20		802.11ac_VHT20		802.11ax_HE20_SU	
Frequency	26 dB	99 %	26 dB	99 %	26 dB	99 %	26 dB	99 %
5 180 MHz	24.28	16.69	23.59	17.86	22.61	17.81	23.37	18.98
5 200 MHz	22.93	16.62	23.85	17.82	23.15	17.84	22.01	18.98
5 240 MHz	19.51	16.37	19.92	17.57	20.02	17.56	19.83	18.85
5 260 MHz	23.13	16.67	24.23	17.89	23.81	17.85	22.22	18.99
5 300 MHz	22.74	16.69	24.10	17.84	23.25	17.83	23.47	19.02
5 320 MHz	22.49	16.69	23.10	17.85	23.72	17.81	24.04	19.00
5 500 MHz	22.07	16.68	24.57	17.85	23.65	17.84	22.07	19.02
5 600 MHz	22.93	16.68	23.78	17.87	24.03	17.83	24.54	19.04
5 720 MHz	24.16	16.69	23.55	17.86	23.54	17.82	21.56	19.00
5 745 MHz	24.89	17.57	26.59	18.39	27.32	18.36	25.65	19.25
5 785 MHz	25.88	17.45	26.46	18.39	26.17	18.48	23.01	19.23
5 825 MHz	25.63	17.53	26.10	18.42	27.22	18.35	35.28	19.23
Measurement uncertainty	0.1 MHz							

	26 dB Bandwidth and 99 % Bandwidth (MHz)					
Mode	802.11ax_HE20_26T					
RU Index	Low		Mid		High	
Frequency	26 dB	99 %	26 dB	99 %	26 dB	99 %
5 180 MHz	20.53	18.54	18.07	17.07	20.26	18.52
5 200 MHz	20.97	18.47	18.10	17.08	20.42	18.61
5 240 MHz	18.97	18.08	18.10	16.87	19.07	18.04
5 260 MHz	20.43	18.51	18.11	17.12	20.66	18.67
5 300 MHz	20.91	18.54	18.06	17.02	21.02	18.58
5 320 MHz	20.17	18.53	18.07	17.06	20.48	18.58
5 500 MHz	20.13	18.44	18.08	17.12	20.44	18.63
5 600 MHz	20.43	18.48	18.04	17.11	21.39	18.58
5 720 MHz	20.89	18.53	18.09	17.07	20.49	18.58
5 745 MHz	21.49	18.84	18.33	17.13	20.61	18.94
5 785 MHz	20.46	18.93	18.43	17.13	22.20	19.13
5 825 MHz	20.62	19.00	18.40	17.18	20.65	18.98
Measurement uncertainty	0.1 MHz					

	26 dB Bandwidth and 99% Bandwidth (MHz)					
Mode	802.11n_HT40		802.11ac_VHT40		802.11ax_HE40_SU	
Frequency	26 dB	99 %	26 dB	99 %	26 dB	99 %
5 190 MHz	39.58	35.75	39.49	35.80	39.41	37.50
5 230 MHz	39.72	35.82	40.11	35.82	39.44	37.58
5 270 MHz	39.57	35.81	39.48	35.77	39.41	37.53
5 310 MHz	39.43	35.78	39.18	35.88	39.47	37.54
5 510 MHz	39.82	35.89	39.20	35.81	39.34	37.60
5 590 MHz	39.75	35.94	39.81	35.95	39.35	37.57
5 710 MHz	39.93	35.98	39.67	35.95	39.56	37.53
5 755 MHz	39.56	36.02	39.68	35.96	39.36	37.71
5 795 MHz	44.88	36.00	40.44	36.02	41.32	37.66
Measurement uncertainty	0.1 MHz					

	26 dB Bandwidth and 99% Bandwidth (MHz)					
Mode	802.11ax_HE40_26T					
RU Index	Low		Mid		High	
Frequency	26 dB	99 %	26 dB	99 %	26 dB	99 %
5 190 MHz	19.11	17.82	21.68	19.84	19.14	17.84
5 230 MHz	19.23	17.82	22.14	19.73	19.09	17.76
5 270 MHz	19.04	17.87	21.97	19.96	18.99	17.79
5 310 MHz	19.13	17.85	22.58	19.94	19.15	17.85
5 510 MHz	18.96	17.78	21.98	19.83	19.08	17.86
5 590 MHz	19.27	17.93	22.10	19.79	19.03	17.83
5 710 MHz	19.09	17.85	22.12	19.92	19.10	17.77
5 755 MHz	19.23	17.88	22.47	20.23	19.12	17.91
5 795 MHz	19.22	17.96	22.17	20.15	19.09	17.90
Measurement uncertainty	0.1 MHz					

	26 dB Bandwidth and 99% Bandwidth (MHz)			
Mode	802.11ac_VHT80		802.11ax_HE80_SU	
Frequency	26 dB	99 %	26 dB	99 %
5 210 MHz	78.88	75.09	80.03	76.69
5 290 MHz	78.99	75.12	79.98	76.75
5 530 MHz	79.12	75.04	79.92	76.80
5 690 MHz	79.16	75.06	79.95	76.61
5 775 MHz	78.47	75.04	79.59	76.64
Measurement uncertainty	0.1 MHz			

	26 dB Bandwidth and 99% Bandwidth (MHz)					
Mode	802.11ax_HE80_26T					
RU Index	Low		Mid		High	
Frequency	26 dB	99 %	26 dB	99 %	26 dB	99 %
5 210 MHz	20.23	18.31	38.83	36.80	19.53	18.28
5 290 MHz	20.14	17.53	39.07	36.57	20.17	18.35
5 530 MHz	19.89	18.45	38.94	36.40	19.67	18.39
5 690 MHz	19.38	18.30	38.76	36.86	19.58	18.29
5 775 MHz	19.26	18.01	38.56	36.63	19.25	17.99
Measurement uncertainty	0.1 MHz					

ANT2

	26 dB Bandwidth and 99 % Bandwidth (MHz)							
Mode	802.11a		802.11n_HT20		802.11ac_VHT20		802.11ax_HE20_SU	
Frequency	26 dB	99 %	26 dB	99 %	26 dB	99 %	26 dB	99 %
5 180 MHz	23.47	16.75	24.85	17.94	23.65	17.93	22.26	19.00
5 200 MHz	23.83	16.79	23.81	17.92	23.90	17.92	25.01	18.98
5 240 MHz	19.71	16.43	20.19	17.56	20.07	17.54	19.87	18.81
5 260 MHz	23.27	16.79	24.08	17.94	23.79	17.91	23.34	19.01
5 300 MHz	23.21	16.72	24.43	17.96	24.64	17.95	24.41	19.02
5 320 MHz	23.24	16.80	25.62	17.96	24.12	17.93	23.99	18.99
5 500 MHz	23.58	16.78	24.73	17.93	25.08	17.94	25.07	19.04
5 600 MHz	23.29	16.75	24.91	17.93	25.02	17.94	23.41	19.01
5 720 MHz	23.38	16.79	25.30	17.94	24.87	17.94	22.81	19.00
5 745 MHz	26.33	18.13	29.26	19.15	29.21	19.02	30.89	19.29
5 785 MHz	27.78	18.19	29.14	19.08	30.15	19.04	30.67	19.24
5 825 MHz	27.97	18.03	29.22	19.06	29.12	18.98	27.10	19.24
Measurement uncertainty	0.1 MHz							

	26 dB Bandwidth and 99 % Bandwidth (MHz)					
Mode	802.11ax_HE20_26T					
RU Index	Low		Mid		High	
Frequency	26 dB	99 %	26 dB	99 %	26 dB	99 %
5 180 MHz	19.87	18.45	18.11	17.05	20.83	18.48
5 200 MHz	19.96	18.44	18.06	16.91	20.11	18.44
5 240 MHz	18.92	18.03	30.00	16.91	19.04	18.15
5 260 MHz	19.99	18.45	18.04	16.97	20.84	18.47
5 300 MHz	20.00	18.46	18.06	17.02	20.28	18.39
5 320 MHz	20.81	18.51	18.08	16.99	19.93	18.43
5 500 MHz	20.29	18.40	18.10	16.98	20.34	18.55
5 600 MHz	20.25	18.46	18.04	16.98	20.44	18.45
5 720 MHz	20.35	18.51	18.08	16.99	20.72	18.47
5 745 MHz	20.66	18.84	18.37	17.15	20.74	18.86
5 785 MHz	20.69	18.85	18.35	17.12	20.84	18.91
5 825 MHz	20.54	18.84	18.31	17.05	20.82	18.97
Measurement uncertainty	0.1 MHz					

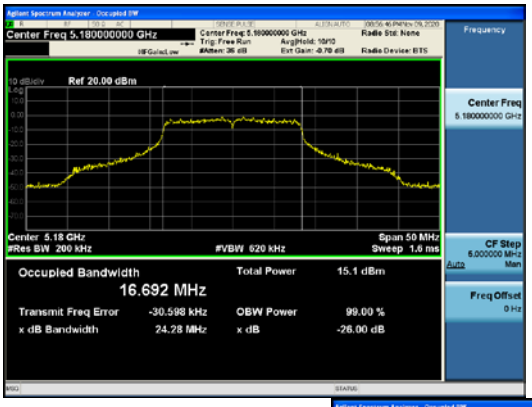
	26 dB Bandwidth and 99% Bandwidth (MHz)					
Mode	802.11n_HT40		802.11ac_VHT40		802.11ax_HE40_SU	
Frequency	26 dB	99 %	26 dB	99 %	26 dB	99 %
5 190 MHz	40.11	35.83	39.80	35.81	39.53	37.50
5 230 MHz	40.12	35.88	39.83	35.82	39.54	37.55
5 270 MHz	39.90	35.83	40.25	35.83	39.44	37.49
5 310 MHz	39.81	35.86	39.91	35.90	39.34	37.47
5 510 MHz	42.26	36.08	40.43	36.03	47.05	37.61
5 590 MHz	53.78	36.18	59.13	36.16	45.34	37.76
5 710 MHz	49.63	36.11	49.00	36.09	39.47	37.70
5 755 MHz	46.75	36.15	48.47	36.19	44.10	37.73
5 795 MHz	53.97	36.24	53.83	36.19	47.83	37.80
Measurement uncertainty	0.1 MHz					

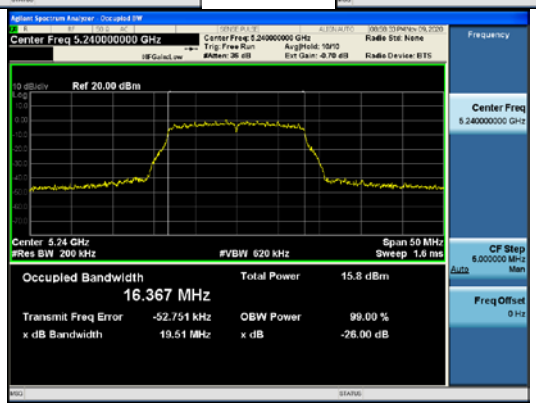
	26 dB Bandwidth and 99% Bandwidth (MHz)					
Mode	802.11ax_HE40_26T					
RU Index	Low		Mid		High	
Frequency	26 dB	99 %	26 dB	99 %	26 dB	99 %
5 190 MHz	19.25	17.89	21.82	19.81	19.19	17.87
5 230 MHz	18.99	17.83	21.55	19.85	19.18	17.91
5 270 MHz	19.21	17.87	22.79	19.94	19.22	18.00
5 310 MHz	19.02	17.85	21.86	19.90	19.30	17.97
5 510 MHz	19.11	17.87	21.20	19.81	19.40	17.97
5 590 MHz	19.17	17.84	22.54	20.06	19.38	17.94
5 710 MHz	19.00	17.88	22.02	19.94	19.26	17.88
5 755 MHz	19.29	17.94	22.19	20.09	19.47	17.98
5 795 MHz	19.12	17.85	22.40	20.26	19.15	17.92
Measurement uncertainty	0.1 MHz					

	26 dB Bandwidth and 99% Bandwidth (MHz)			
Mode	802.11ac_VHT80		802.11ax_HE80_SU	
Frequency	26 dB	99 %	26 dB	99 %
5 210 MHz	79.48	75.21	80.01	76.89
5 290 MHz	79.50	75.24	80.03	76.80
5 530 MHz	79.36	75.29	80.00	76.90
5 690 MHz	79.34	75.21	79.92	76.87
5 775 MHz	79.08	75.09	79.44	76.72
Measurement uncertainty	0.1 MHz			

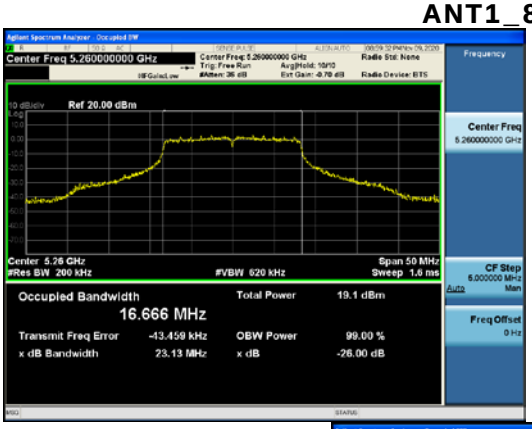
	26 dB Bandwidth and 99% Bandwidth (MHz)					
Mode	802.11ax_HE80_26T					
RU Index	Low		Mid		High	
Frequency	26 dB	99 %	26 dB	99 %	26 dB	99 %
5 210 MHz	19.51	18.35	39.51	37.02	20.40	18.69
5 290 MHz	20.08	18.60	38.98	37.10	19.79	18.48
5 530 MHz	19.85	18.47	39.24	37.02	20.18	18.80
5 690 MHz	20.07	18.49	39.27	37.20	20.35	18.75
5 775 MHz	20.06	18.25	38.93	36.95	19.63	18.35
Measurement uncertainty	0.1 MHz					

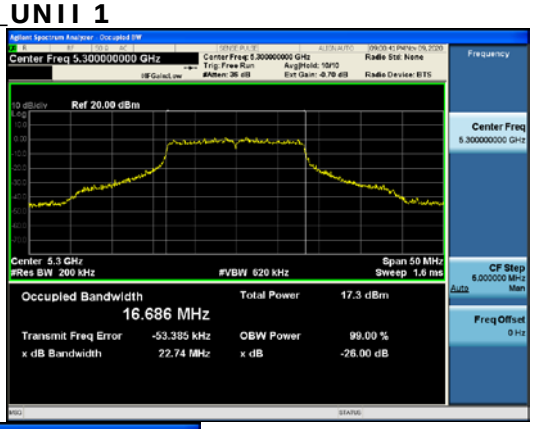
See next pages for actual measured spectrum plots.

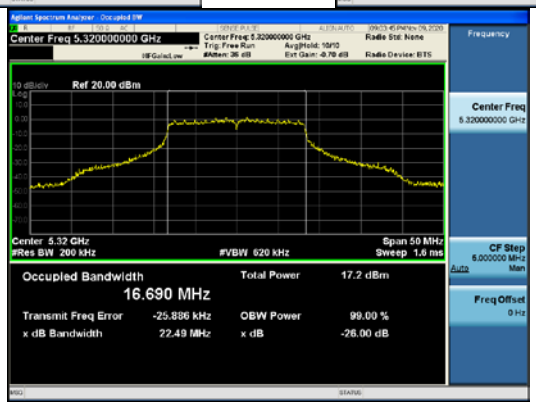




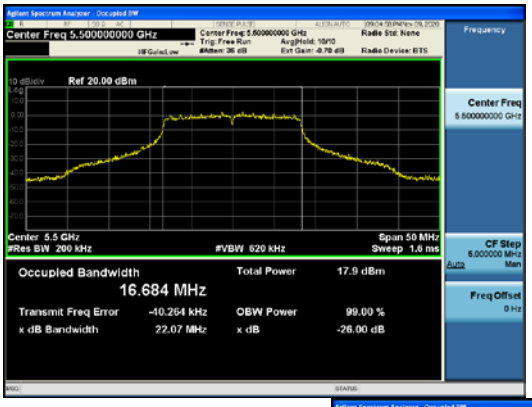
ANT1_802.11a_UNII 1

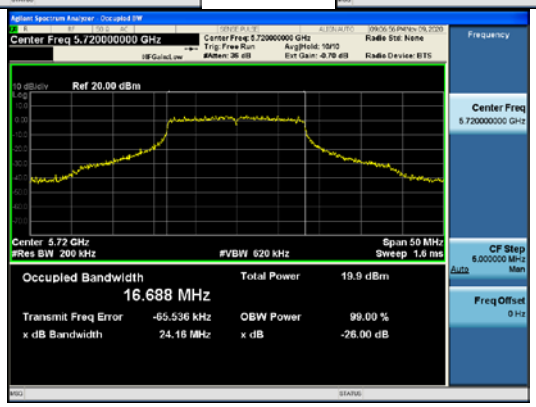




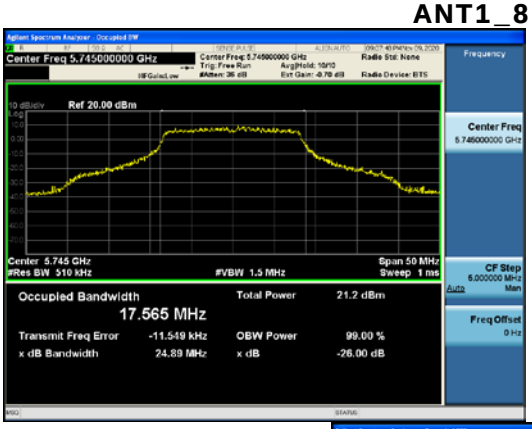


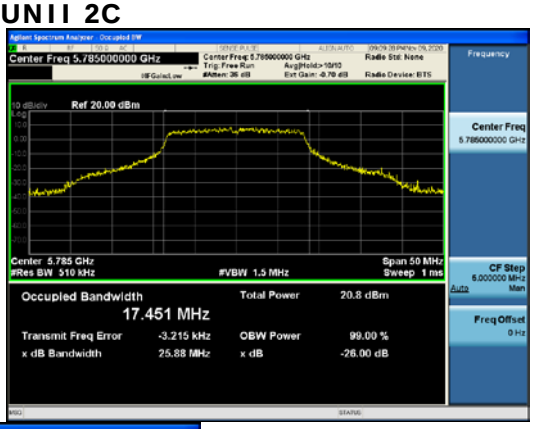
ANT1_802.11a_UNII 2A

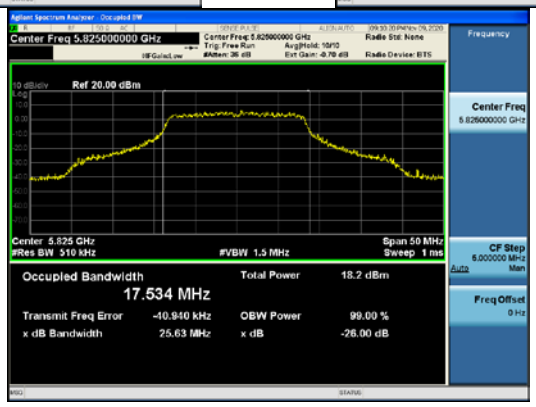




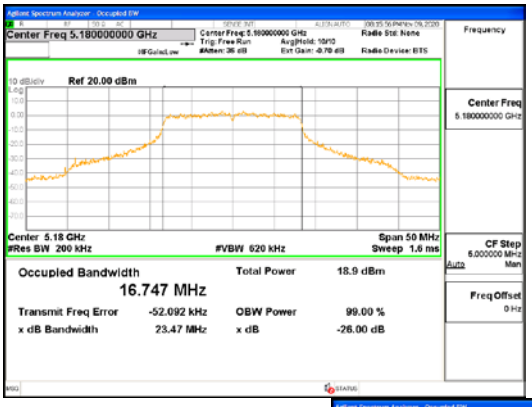
ANT1_802.11a_UNII 2C

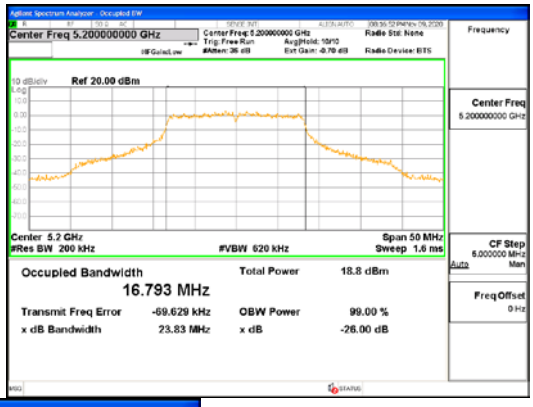


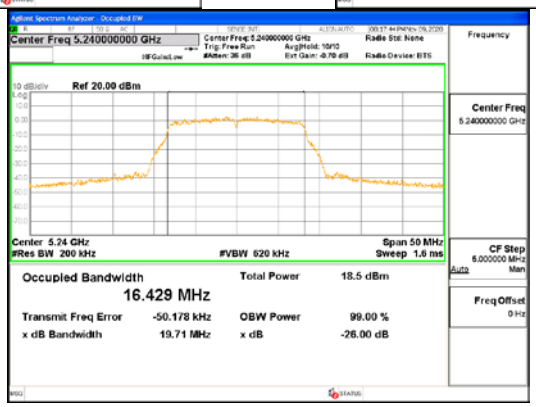




ANT1_802.11a_UNII 3







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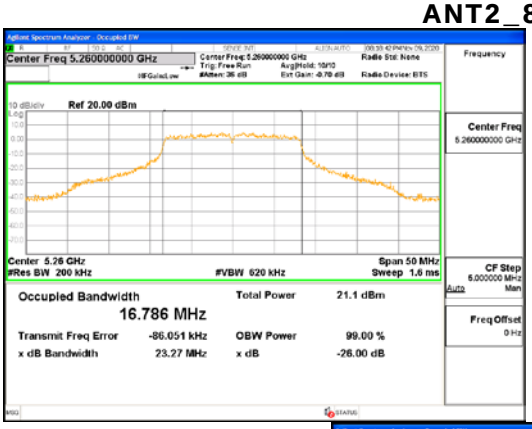
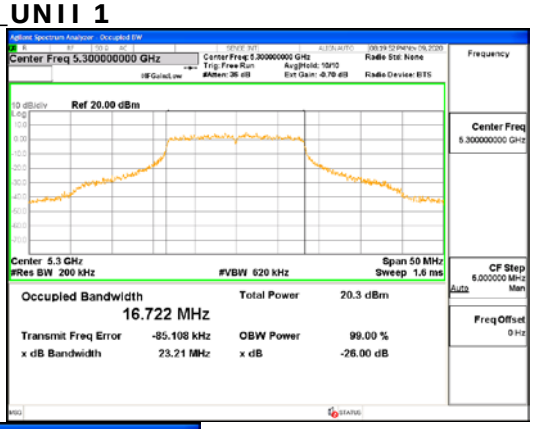
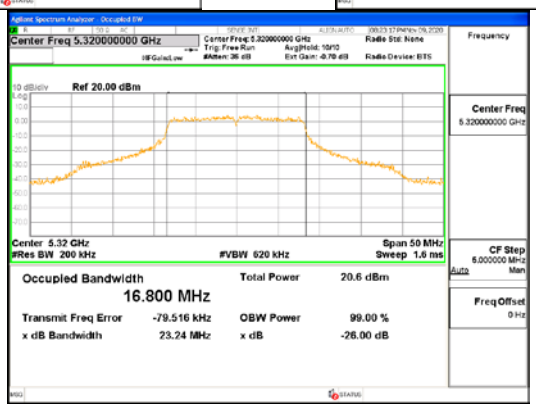
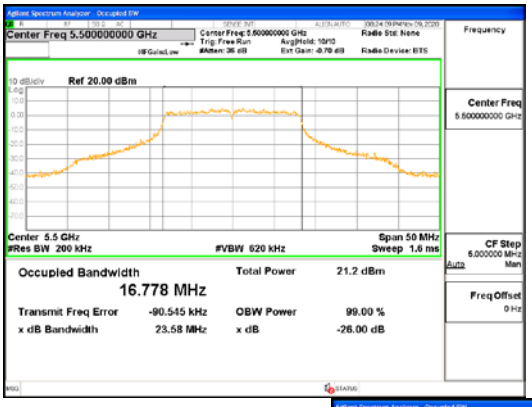
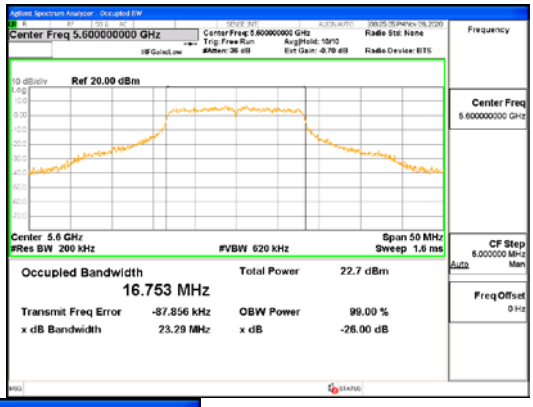


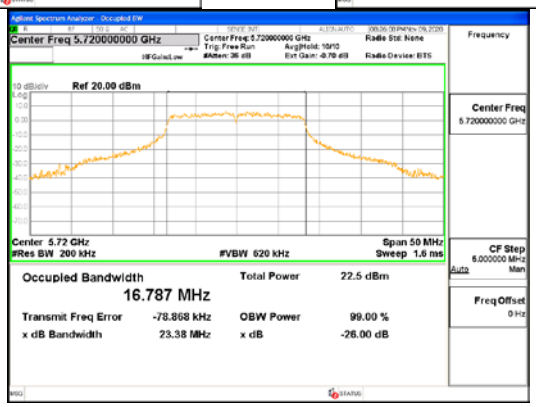




ANT2_802.11a_UNII 2A







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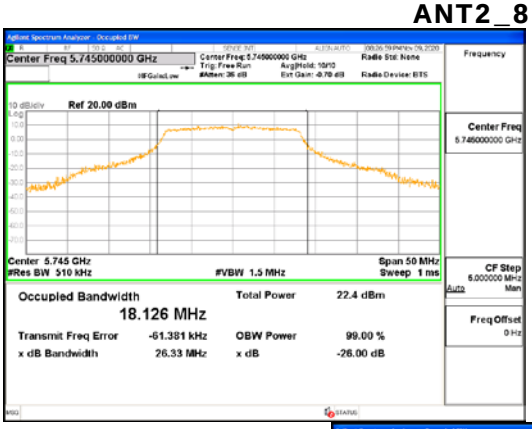

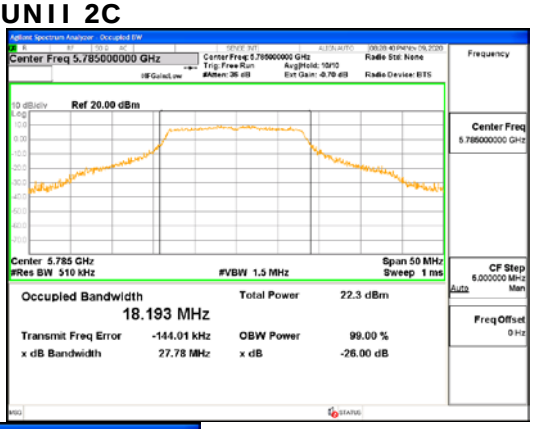

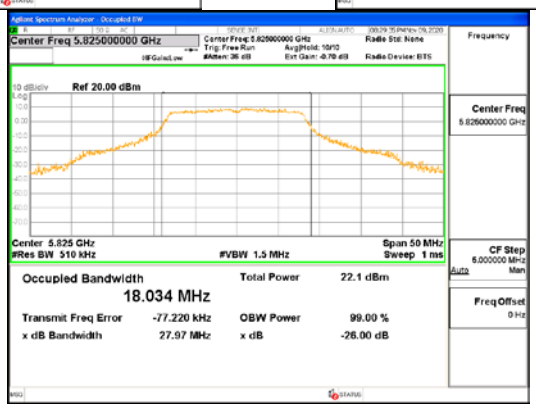

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