e) Sweep = auto couple.
f) Allow the trace to 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.
Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described in this section. For devices that use channel aggregation refer to III.A and III.C for determining emission bandwidth.

D. 99% Occupied Bandwidth

The 99% 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. Measurement of the 99% occupied bandwidth is *required* only as a condition for using the optional band-edge measurement techniques described in II.G.3.d). Measurements of 99% occupied bandwidth may also optionally be used in lieu of the EBW to define the minimum frequency range over which the 789033 D02 General UNII Test Procedures New Rules v02r01 Page 4 spectrum is integrated when measuring maximum conducted output power as described in II.E. However, the EBW must be measured to determine bandwidth dependent limits on maximum conducted output power in accordance with Section 15.407(a).
The following procedure shall be used for measuring (99%) power bandwidth:
1. Set center frequency to the nominal EUT channel center frequency.

2. Set span = 1.5 times to 5.0 times the OBW.

3. Set RBW = 1% to 5% of the OBW

4. Set VBW ≥ 3 * RBW

5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.

6. Use the 99% power bandwidth function of the instrument (if available).

7. If the instrument does not have a 99% power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

10.4 Test Results

Test mode ANT 1	Test Channel (MHz)	26dB Bandwidth (MHz)
802.11a	5180	23.962
	5200	25.454
	5240	21.981
802.11ac20	5180	26.162
	5200	25.288
	5240	22.573
802.11ac40	5190	50.361
	5230	50.639
802.11ac80	5210	81.64
802.11n(HT20)	5180	24.316
	5200	26.338
	5240	25.28
802.11n(HT40)	5190	49.456
	5230	49.146

Test mode ANT 2	Test Channel (MHz)	26dB Bandwidth (MHz)
802.11a	5180	25.27
	5200	24.183
	5240	22.254
802.11ac20	5180	26.662
	5200	26.03
	5240	21.73
802.11ac40	5190	50.183
	5230	50.181
802.11ac80	5210	93.459
802.11n(HT20)	5180	25.071
	5200	22.431
	5240	25.24
802.11n(HT40)	5190	53.524
	5230	51.082

5725-5850 MHz

Test mode Ant 1	Test Channel (MHz)	6dB Bandwidth (MHz)	Result
802.11a	5745	16.553	Pass
	5785	16.547	Pass
	5825	16.525	Pass
802.11ac(VH20)	5745	17.733	Pass
	5785	17.768	Pass
	5825	17.735	Pass
802.11ac(VH40)	5755	36.43	Pass
	5795	36.463	Pass
802.11ac(VH80)	5775	76.398	Pass
802.11n(VH20)	5745	17.676	Pass
	5785	17.76	Pass
	5825	17.742	Pass
802.11n(VH40)	5755	36.473	Pass
	5795	36.465	Pass

Test mode Ant 2	Test Channel (MHz)	6dB Bandwidth (MHz)	Result
802.11a	5745	16.514	Pass
	5785	16.559	Pass
	5825	16.501	Pass
802.11ac(VH20)	5745	17.685	Pass
	5785	17.721	Pass
	5825	17.756	Pass
802.11ac(VH40)	5755	36.467	Pass
	5795	36.445	Pass
802.11ac(VH80)	5775	76.429	Pass
802.11n(VH20)	5745	17.694	Pass
	5785	17.743	Pass
	5825	17.727	Pass
802.11n(VH40)	5755	36.471	Pass
	5795	36.451	Pass

Test Graph ANT 1

802.11a-5180

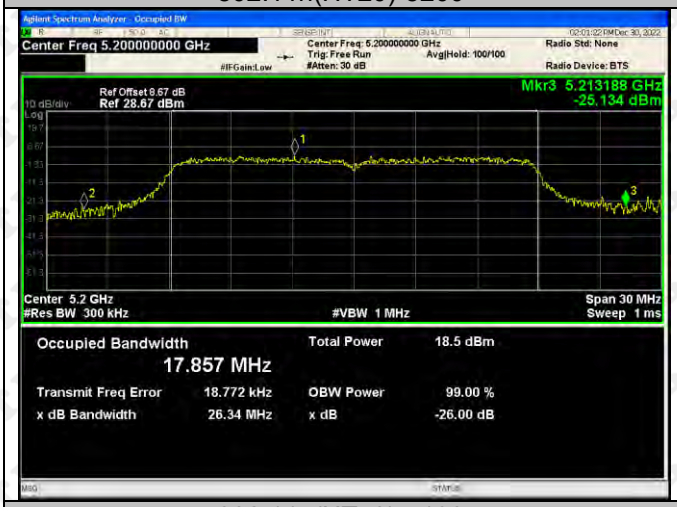
802.11a-5200

802.11a-5240

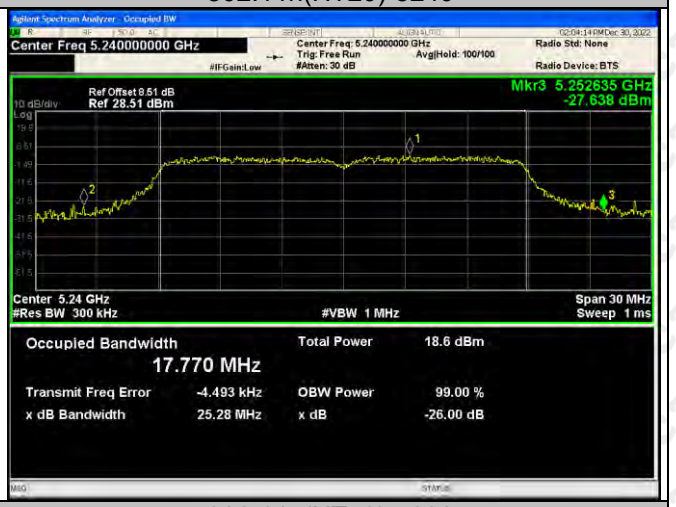
802.11n(HT20)-5180

802.11n(HT20)-5200

802.11n(HT20)-5240



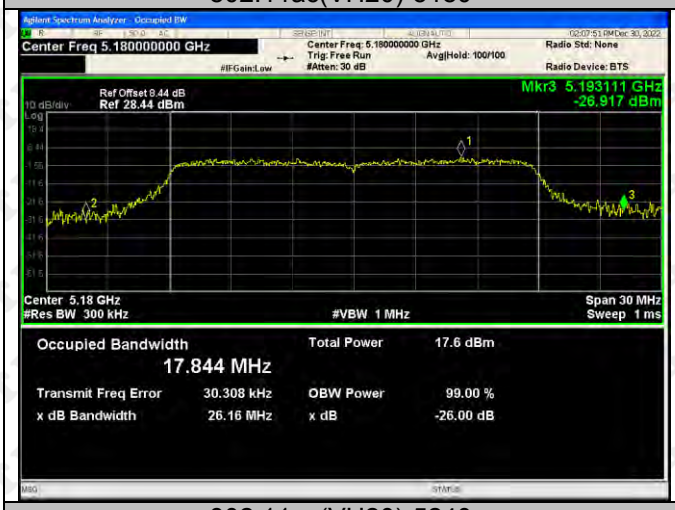
802.11n(HT40)-5190



802.11n(HT40)-5230

802.11ac(VH20)-5180

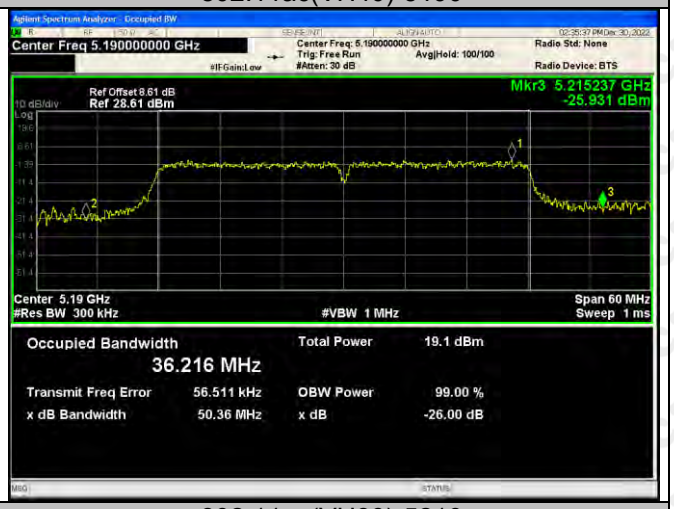
802.11ac(VH20)-5200



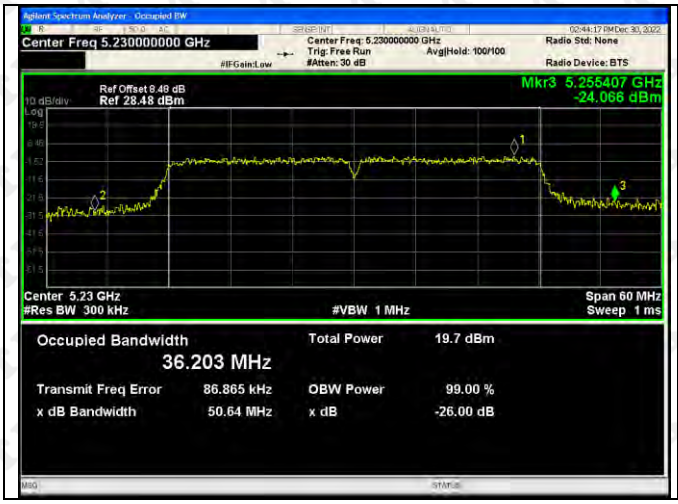
802.11ac(VH20)-5240

802.11ac(VH40)-5190

802.11ac(VH40)-5230

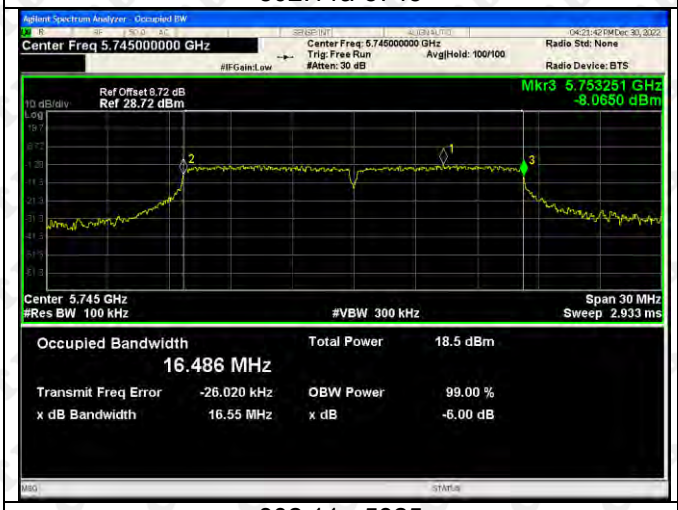


802.11ac(VH80)-5210



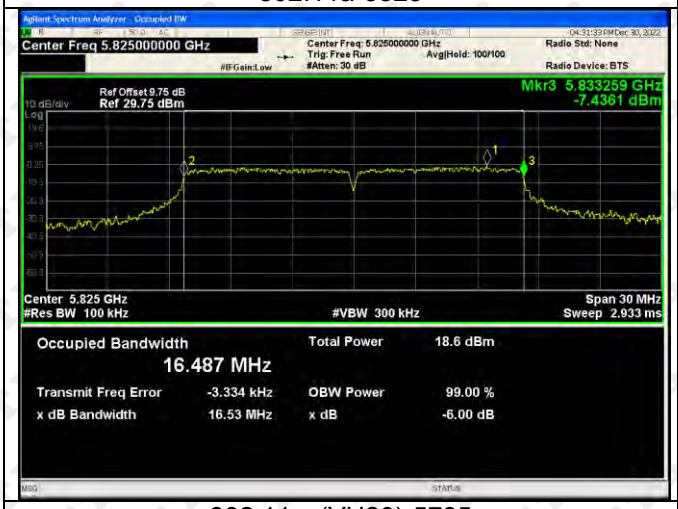
ANT1:
5725-5850MHz

802.11a-5745



802.11a-5785

802.11a-5825



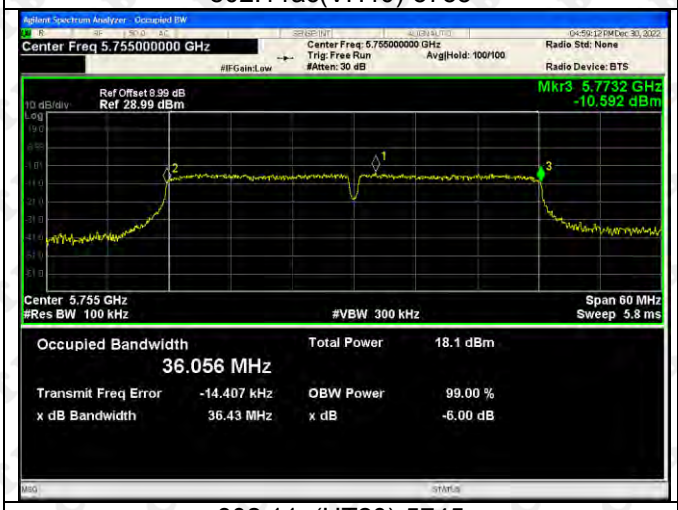
802.11ac(VH20)-5745

802.11ac(VH20)-5785

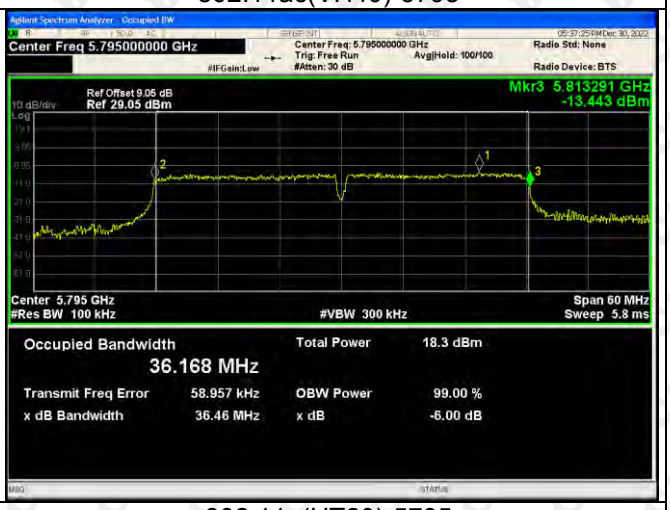
802.11ac(VH20)-5825

802.11ac(VH40)-5755

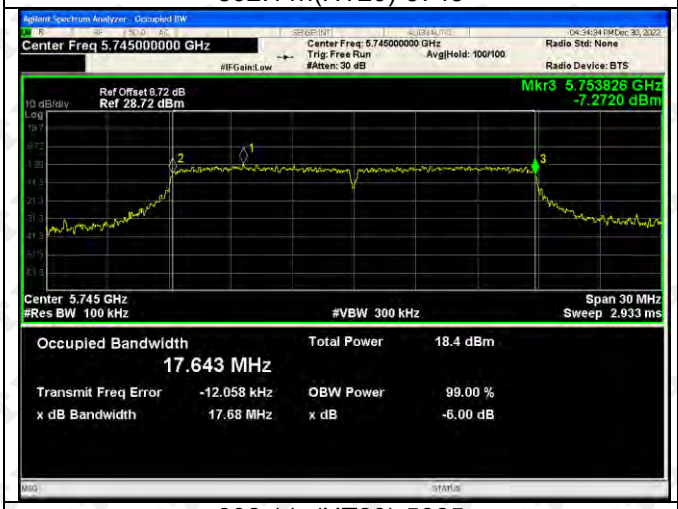
802.11ac(VH40)-5795



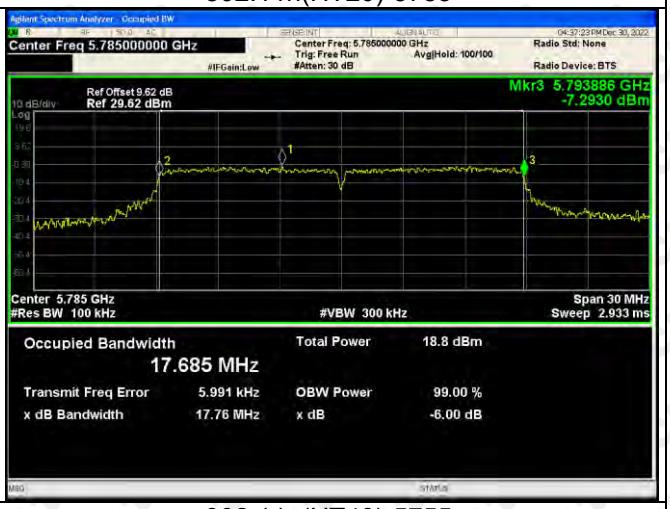
802.11n(HT20)-5745



802.11n(HT20)-5785



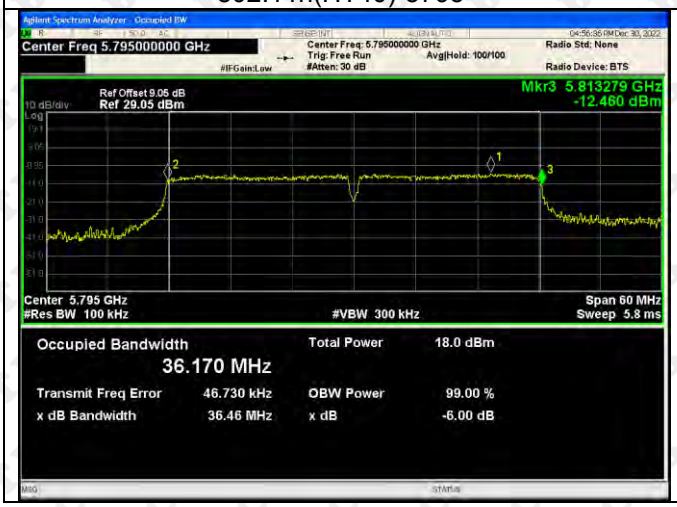
802.11n(HT20)-5825

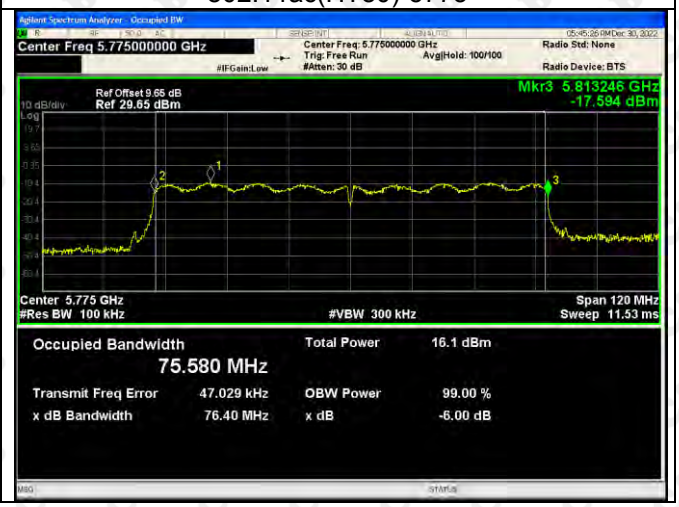


802.11n(HT40)-5755

802.11n(HT40)-5795

802.11ac(HT80)-5775

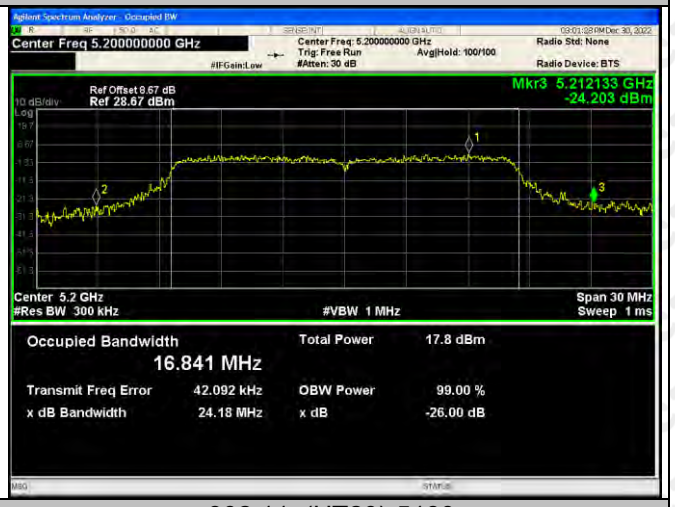




Test Graph ANT 2

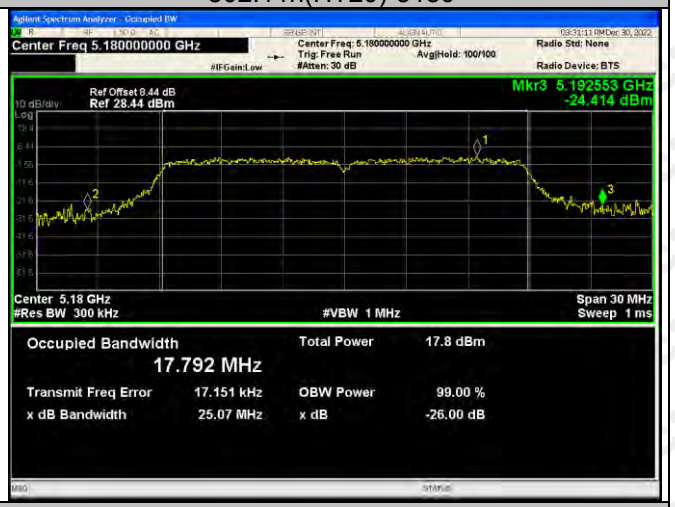
802.11a-5180

802.11a-5200



802.11a-5240

802.11n(HT20)-5180

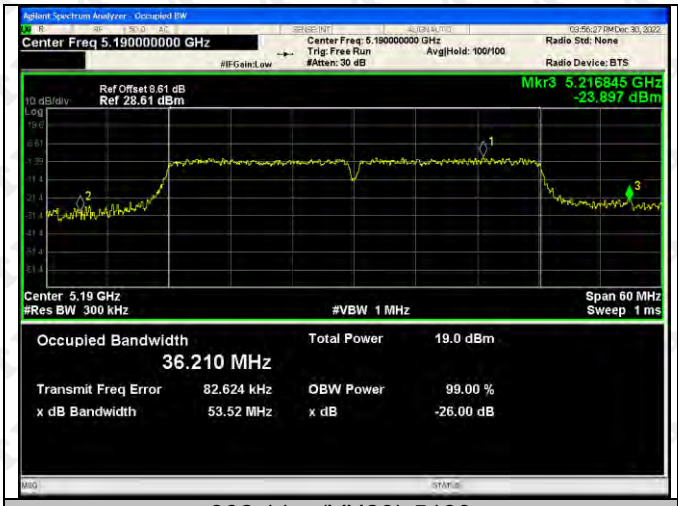


802.11n(HT20)-5200

802.11n(HT20)-5240

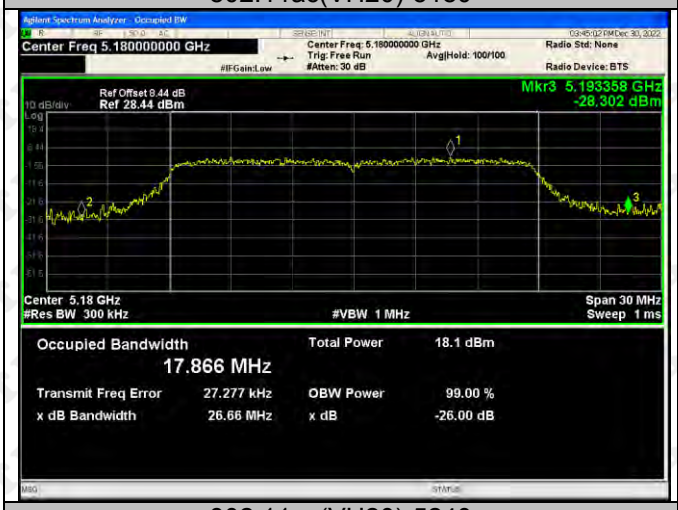
802.11n(HT40)-5190

802.11n(HT40)-5230

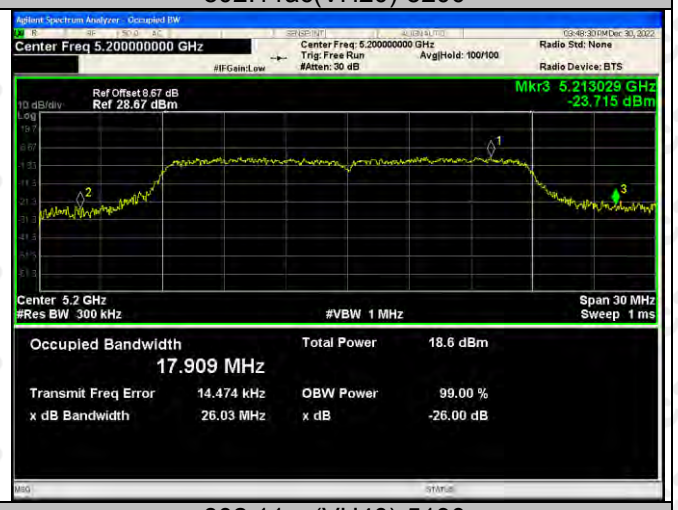


802.11ac(VH20)-5180

802.11ac(VH20)-5200

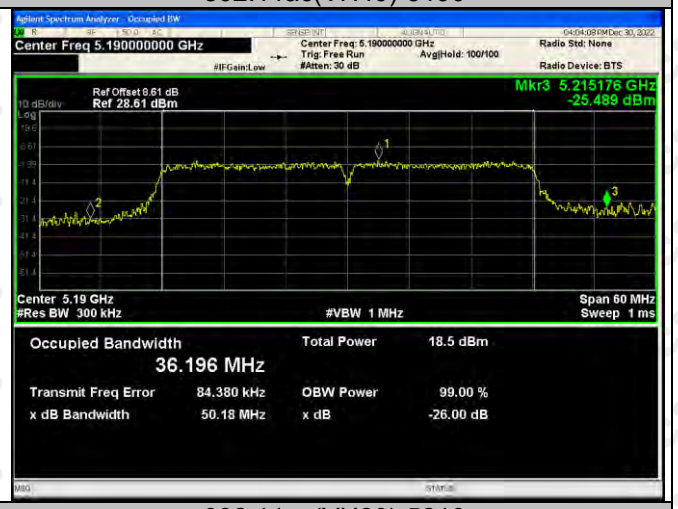


802.11ac(VH20)-5240

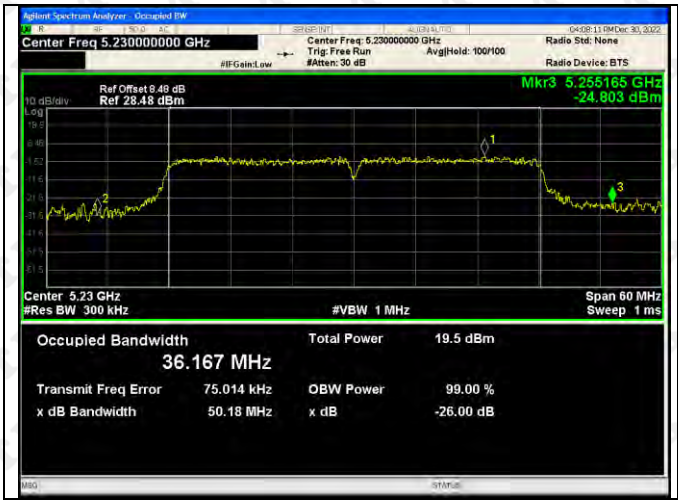


802.11ac(VH40)-5190

802.11ac(VH40)-5230



802.11ac(VH80)-5210



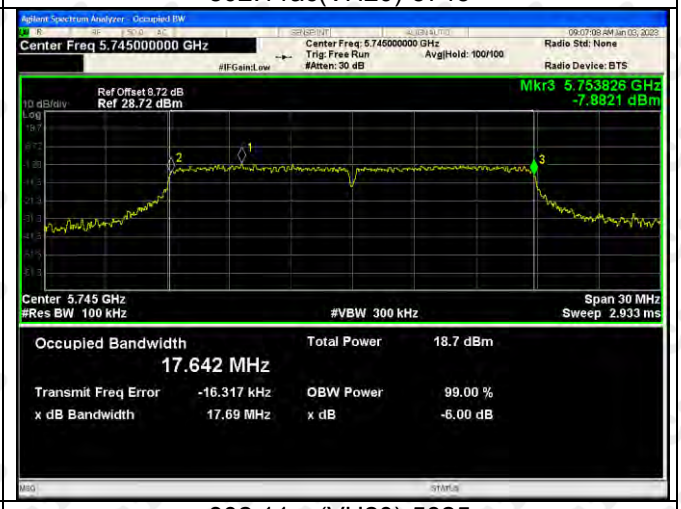
ANT2:
5725-5850MHz

802.11a-5745

802.11a-5785

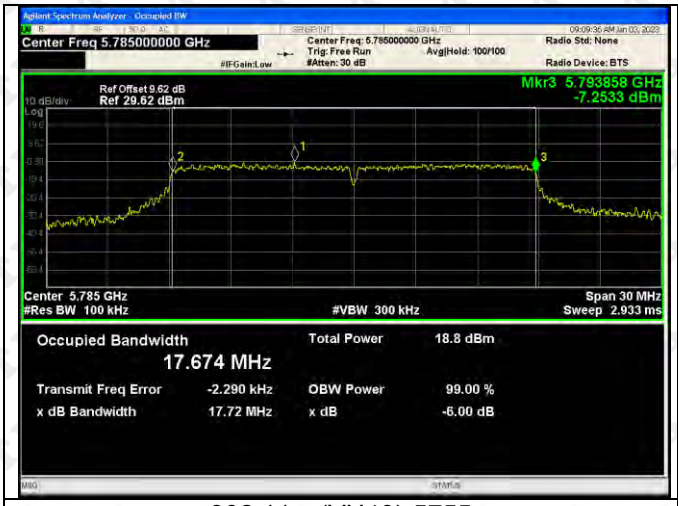
802.11a-5825

802.11ac(VH20)-5745



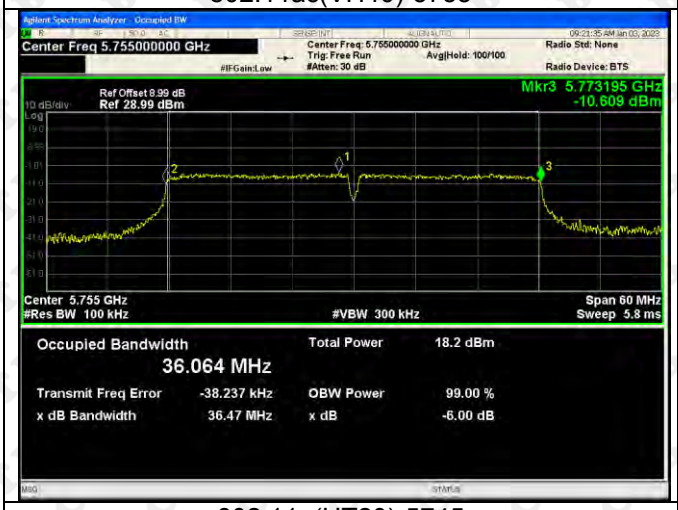
802.11ac(VH20)-5785

802.11ac(VH20)-5825

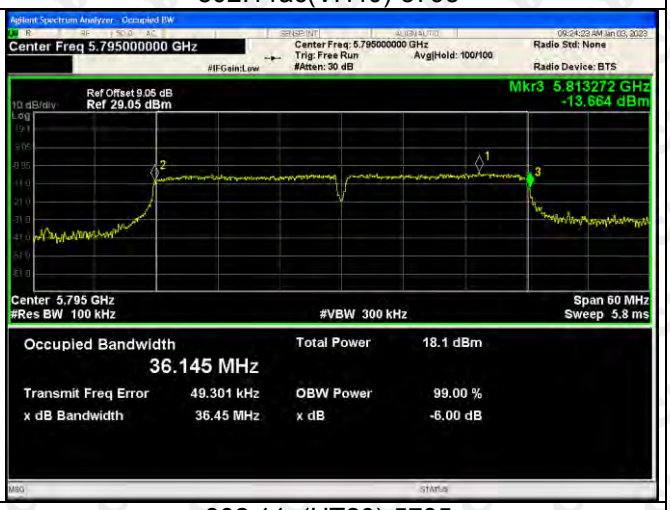


802.11ac(VH40)-5755

802.11ac(VH40)-5795

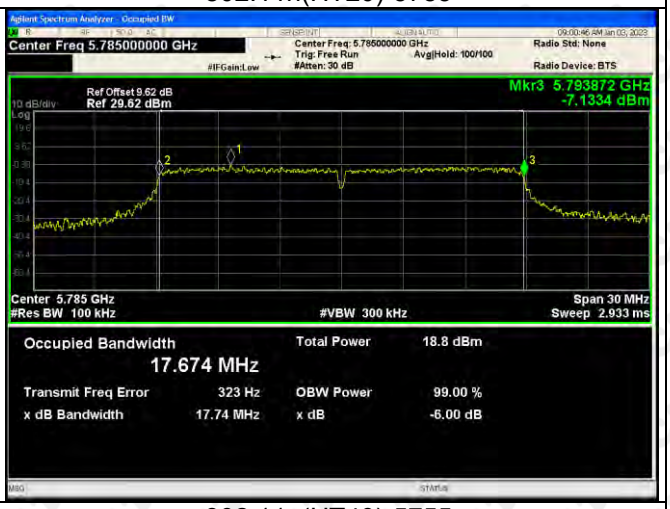


802.11n(HT20)-5745



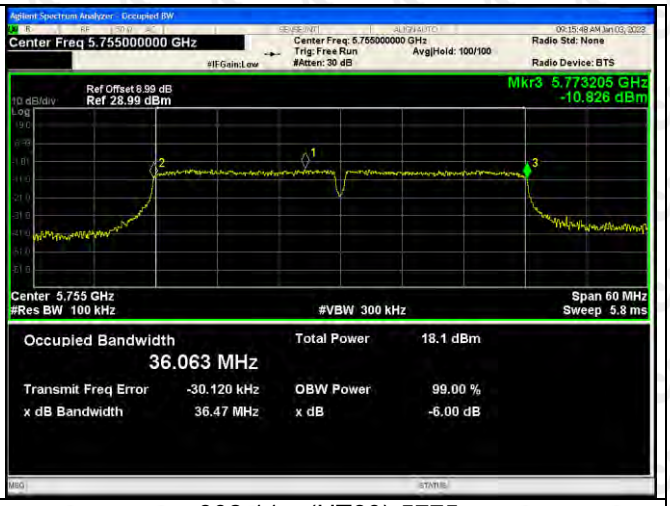
802.11n(HT20)-5785

802.11n(HT20)-5825



802.11n(HT40)-5755

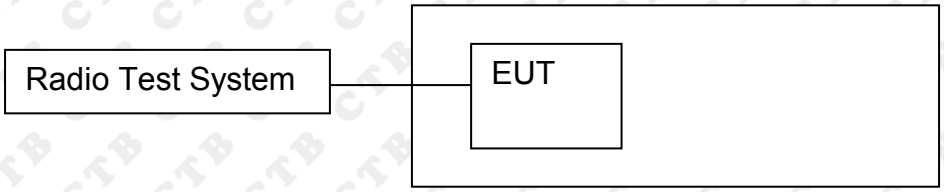
802.11n(HT40)-5795



802.11ac(HT80)-5775

11. POWER SPECTRAL DENSITY

11.1 Block Diagram Of Test Setup



11.2 Limit

(1) For the band 5.15-5.25 GHz.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

11.3 Test procedure

According to KDB789033 D02v02r01 sectionE, the following is the measurement procedure.

For devices operating in the bands 5.15−5.25 GHz, 5.25−5.35 GHz, and 5.47−5.725 GHz, the preceding procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in Section 15.407(a)(5). For devices operating in the band 5.725−5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 kHz bandwidth, the following adjustments to the procedures apply:
a) Set RBW ≥ 1/*T*, where *T* is defined in II.B.I.a).

b) Set VBW ≥ 3 RBW.

c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10 log (500 kHz/RBW) to the measured result, whereas RBW (<500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10 log (1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.

e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.
Note: As a practical matter, it is recommended to use reduced RBW of 100 kHz for the II.F.5.c) and II.F.5.d), since RBW=100 kHz is available on nearly all spectrum analyzers.

11.4 Test Result

ANT 1+ANT2

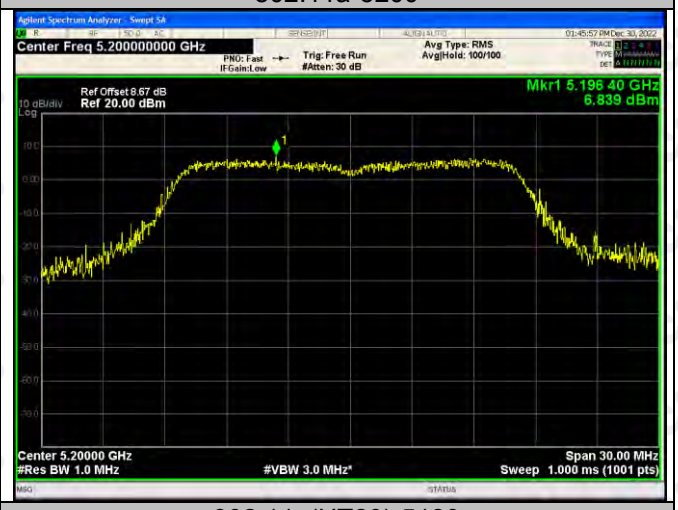
Test mode	Test Channel (MHz)	PSD [dBm/MHz] ANT 1	PSD [dBm/MHz] ANT 2	PSD [dBm/MHz] Total	Limit (dBm/MHz)	Result
802.11a	5180	6.207	6.884	/	11	Pass
	5200	6.839	6.623	/	11	Pass
	5240	7.726	7.498	/	11	Pass
802.11ac(VH20)	5180	6.163	6.512	9.351	11	Pass
	5200	6.766	6.75	9.768	11	Pass
	5240	6.637	6.445	9.552	11	Pass
802.11ac(VH40)	5190	4.745	4.495	7.632	11	Pass
	5230	5.103	5.069	8.096	11	Pass
802.11n(VH20)	5180	5.782	6.583	9.211	11	Pass
	5200	6.718	6.627	9.683	11	Pass
	5240	6.392	6.583	9.499	11	Pass
802.11n(VH40)	5190	3.851	4.328	7.106	11	Pass
	5230	4.548	5.378	7.993	11	Pass
802.11ac(VH80)	5230	1.852	2.183	5.031	11	Pass

Test mode	Test Channel (MHz)	PSD [dBm/MHz] ANT 1	PSD [dBm/MHz] ANT 2	PSD [dBm/MHz] Total	Limit (dBm)	Result
802.11a	5745	4.939	5.098	/	11	Pass
	5785	5.455	5.58	/	11	Pass
	5825	5.003	5.207	/	11	Pass
802.11ac(VH20)	5745	4.302	4.588	7.458	11	Pass
	5785	4.342	4.732	7.552	11	Pass
	5825	4.125	4.829	7.502	11	Pass
802.11ac(VH40)	5755	1.014	1.126	4.081	11	Pass
	5795	1.446	0.858	4.172	11	Pass
802.11n(VH20)	5775	4.482	4.841	7.676	11	Pass
	5745	5.22	5.697	8.475	11	Pass
	5785	4.567	5.112	7.858	11	Pass
802.11n(VH40)	5825	0.751	0.916	3.845	11	Pass
	5755	1.255	1.376	4.326	11	Pass
802.11ac(VH80)	5795	-3.033	-2.905	0.042	11	Pass

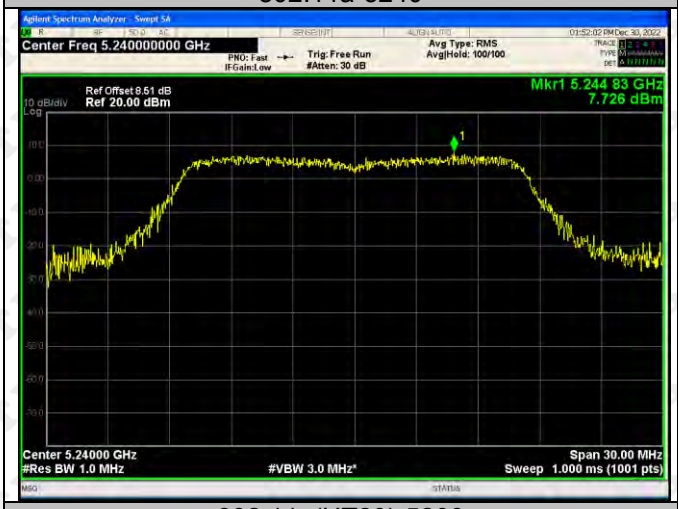
ANT 1

802.11a-5180

802.11a-5200



802.11a-5240



802.11n(HT20)-5180

802.11n(HT20)-5200

802.11n(HT20)-5240

802.11n(HT40)-5190

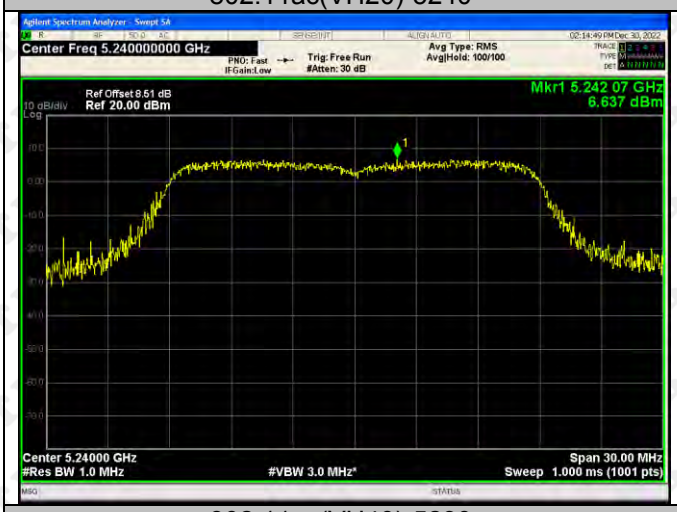
802.11n(HT40)-5230

802.11ac(VH20)-5180

802.11ac(VH20)-5200

802.11ac(VH20)-5240

802.11ac(VH40)-5190



802.11ac(VH40)-5230

802.11ac(VH80)-5210

ANT1:

802.11a-5745

802.11a-5785

802.11a-5825

802.11ac(VH20)-5745

802.11ac(VH20)-5785

802.11ac(VH20)-5825

802.11ac(VH40)-5755

802.11ac(VH40)-5795

802.11n(HT20)-5745

802.11n(HT20)-5785

802.11n(HT20)-5825

802.11n(HT40)-5755

802.11n(HT40)-5795

802.11ac(HT80)-5775

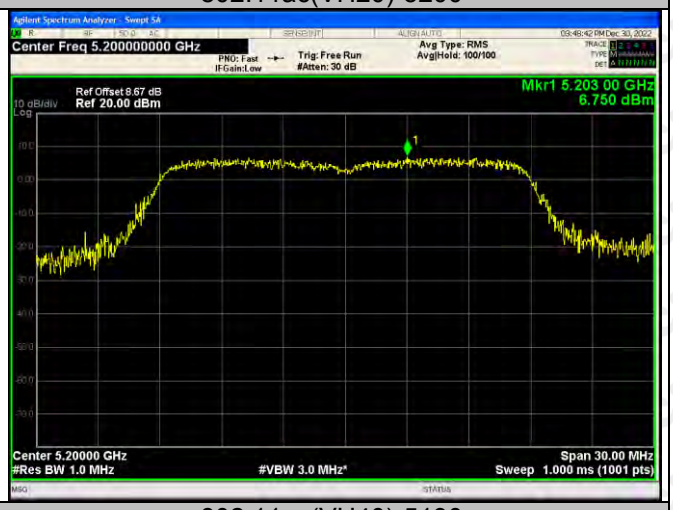
ANT 2

802.11a-5180	802.11a-5200
	
802.11a-5240	802.11n(HT20)-5180
	
802.11n(HT20)-5200	802.11n(HT20)-5240
	
802.11n(HT40)-5190	802.11n(HT40)-5230

802.11ac(VH20)-5180

802.11ac(VH20)-5200

802.11ac(VH20)-5240



802.11ac(VH40)-5190

802.11ac(VH40)-5230

802.11ac(VH80)-5210

ANT2:

802.11a-5745	802.11a-5785
	
802.11a-5825	802.11ac(VH20)-5745
	
802.11ac(VH20)-5785	802.11ac(VH20)-5825

802.11ac(VH40)-5755

802.11ac(VH40)-5795

802.11n(HT20)-5745

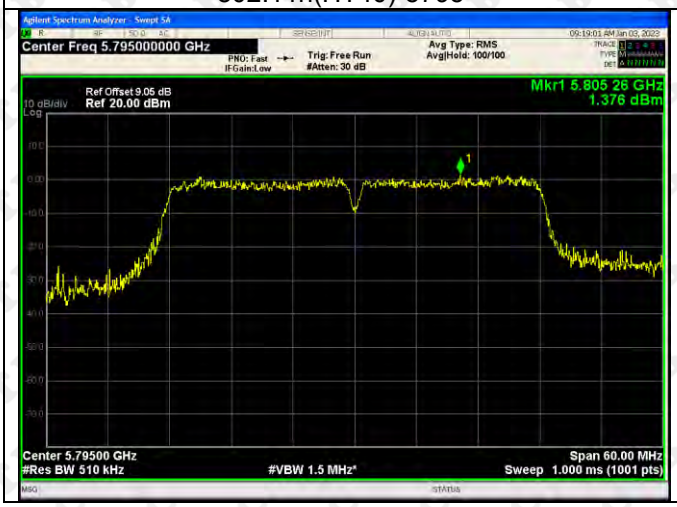
802.11n(HT20)-5785

802.11n(HT20)-5825

802.11n(HT40)-5755

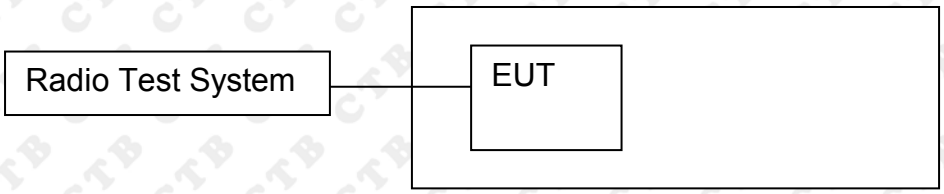
802.11n(HT40)-5795

802.11ac(HT80)-5775



12. FREQUENCY STABILITY

12.1 Block Diagram Of Test Setup



12.2 Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

12.3 Test procedure

1. The EUT was placed inside temperature chamber and powered and powered by nominal DC voltage.

2. Set EUT as normal operation.

3. Turn the EUT on and couple its output to spectrum.

4. Turn the EUT off and set the chamber to the highest temperature specified.

5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT and measure the operating frequency.

6. Repeat step with the temperature chamber set to the lowest temperature.

12.4 Test Result

TX Frequency (5150-5250MHz)
ANT1
Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5180.0953	5180	0.0953	18.3930
		V max (V)	132	5180.0795	5180	0.0795	15.3512
		V min (V)	108	5180.0921	5180	0.0921	17.7730
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5180.0045	5180	0.0045	0.8635
		T (°C)	10	5180.0510	5180	0.0510	9.8378
		T (°C)	20	5180.0343	5180	0.0343	6.6290
		T (°C)	30	5180.0296	5180	0.0296	5.7208
		T (°C)	40	5180.0324	5180	0.0324	6.2529
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5200.0115	5200	0.0115	2.2179
		V max (V)	132	5200.0056	5200	0.0056	1.0769
		V min (V)	108	5200.0002	5200	0.0002	0.0317
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5200.0273	5200	0.0273	5.2498
		T (°C)	10	5200.0001	5200	0.0001	0.0190
		T (°C)	20	5200.0185	5200	0.0185	3.5501
		T (°C)	30	5200.0369	5200	0.0369	7.1016
		T (°C)	40	5200.0376	5200	0.0376	7.2293
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5240.0258	5240	0.0258	4.9220
		V max (V)	132	5240.0270	5240	0.0270	5.1565
		V min (V)	108	5240.0344	5240	0.0344	6.5629
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5240.0523	5240	0.0523	9.9853
		T (°C)	10	5240.0523	5240	0.0523	9.9764
		T (°C)	20	5240.0352	5240	0.0352	6.7194
		T (°C)	30	5240.0355	5240	0.0355	6.7798
		T (°C)	40	5240.0461	5240	0.0461	8.8052
Limits				±20ppm			
Result				Complies			

TX Frequency (5725-5850MHz)

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5745.0009	5745	0.0009	0.1523
		V max (V)	132	5745.0916	5745	0.0916	15.9447
		V min (V)	108	5745.0009	5745	0.0009	0.1523
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5745.0121	5745	0.0121	2.1010
		T (°C)	10	5745.0344	5745	0.0344	5.9882
		T (°C)	20	5745.0664	5745	0.0664	11.5537
		T (°C)	30	5745.0487	5745	0.0487	8.4751
		T (°C)	40	5745.0391	5745	0.0391	6.8129
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5785.0446	5785	0.0446	7.7115
		V max (V)	132	5785.0776	5785	0.0776	13.4096
		V min (V)	108	5785.0054	5785	0.0054	0.9260
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5785.0064	5785	0.0064	1.0995
		T (°C)	10	5785.0351	5785	0.0351	6.0640
		T (°C)	20	5785.0437	5785	0.0437	7.5525
		T (°C)	30	5785.0024	5785	0.0024	0.4190
		T (°C)	40	5785.0021	5785	0.0021	0.3674
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5825.0284	5825	0.0284	4.8756
		V max (V)	132	5825.0171	5825	0.0171	2.9360
		V min (V)	108	5825.0504	5825	0.0504	8.6561
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5825.0325	5825	0.0325	5.5809
		T (°C)	10	5825.0236	5825	0.0236	4.0498
		T (°C)	20	5825.0501	5825	0.0501	8.5992
		T (°C)	30	5825.0114	5825	0.0114	1.9600
		T (°C)	40	5825.0658	5825	0.0658	11.2956
Limits				±20ppm			
Result				Complies			

ANT2:
TX Frequency (5150-5250MHz)
Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5180.0831	5180	0.0831	16.0354
		V max (V)	132	5180.0851	5180	0.0851	16.4221
		V min (V)	108	5180.0823	5180	0.0823	15.8816
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5180.0210	5180	0.0210	4.0558
		T (°C)	10	5180.0737	5180	0.0737	14.2185
		T (°C)	20	5180.0186	5180	0.0186	3.5901
		T (°C)	30	5180.0653	5180	0.0653	12.5987
		T (°C)	40	5180.0196	5180	0.0196	3.7861
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5200.0314	5200	0.0314	6.0388
		V max (V)	132	5200.0703	5200	0.0703	13.5134
		V min (V)	108	5200.0051	5200	0.0051	0.9771
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5200.0922	5200	0.0922	17.7266
		T (°C)	10	5200.0713	5200	0.0713	13.7078
		T (°C)	20	5200.0522	5200	0.0522	10.0441
		T (°C)	30	5200.0884	5200	0.0884	16.9997
		T (°C)	40	5200.0141	5200	0.0141	2.7114
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5240.0311	5240	0.0311	5.9407
		V max (V)	132	5240.0299	5240	0.0299	5.7064
		V min (V)	108	5240.0292	5240	0.0292	5.5694
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5240.0310	5240	0.0310	5.9131
		T (°C)	10	5240.0459	5240	0.0459	8.7626
		T (°C)	20	5240.0933	5240	0.0933	17.7992
		T (°C)	30	5240.0850	5240	0.0850	16.2182
		T (°C)	40	5240.0319	5240	0.0319	6.0879
Limits				±20ppm			
Result				Complies			

TX Frequency (5725-5850MHz)
Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5745.0382	5745	0.0382	6.6516
		V max (V)	132	5745.0520	5745	0.0520	9.0560
		V min (V)	108	5745.0632	5745	0.0632	11.0040
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5745.0097	5745	0.0097	1.6867
		T (°C)	10	5745.0764	5745	0.0764	13.2983
		T (°C)	20	5745.0644	5745	0.0644	11.2052
		T (°C)	30	5745.0709	5745	0.0709	12.3449
		T (°C)	40	5745.0359	5745	0.0359	6.2526
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5785.0788	5785	0.0788	13.6190
		V max (V)	132	5785.0264	5785	0.0264	4.5582
		V min (V)	108	5785.0522	5785	0.0522	9.0234
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5785.0053	5785	0.0053	0.9135
		T (°C)	10	5785.0593	5785	0.0593	10.2441
		T (°C)	20	5785.0170	5785	0.0170	2.9471
		T (°C)	30	5785.0503	5785	0.0503	8.7010
		T (°C)	40	5785.0718	5785	0.0718	12.4144
		T (°C)	50	5785.0529	5785	0.0529	9.1405
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5825.0431	5825	0.0431	7.4009
		V max (V)	132	5825.0517	5825	0.0517	8.8768
		V min (V)	108	5825.0730	5825	0.0730	12.5242
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5825.0817	5825	0.0817	14.0174
		T (°C)	10	5825.0555	5825	0.0555	9.5270
		T (°C)	20	5825.0300	5825	0.0300	5.1534
		T (°C)	30	5825.0583	5825	0.0583	10.0073
		T (°C)	40	5825.0391	5825	0.0391	6.7117
Limits				±20ppm			
Result				Complies			

13. OPERATION IN THE ABSENCE OF INFORMATION TO THE TRANSMIT

13.1 Requirement

15.407(c) requirement:
The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signal ling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

13.2 Test Results

Operation in the absence of information to the transmit:

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling
signal of ASK message transmitting from remote device and verify whether it shall resend or
discontinue transmission. (manufacturer declare)

14. ANTENNA REQUIREMENT

15.203 requirement:
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
15.247(b) (4) requirement:
The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

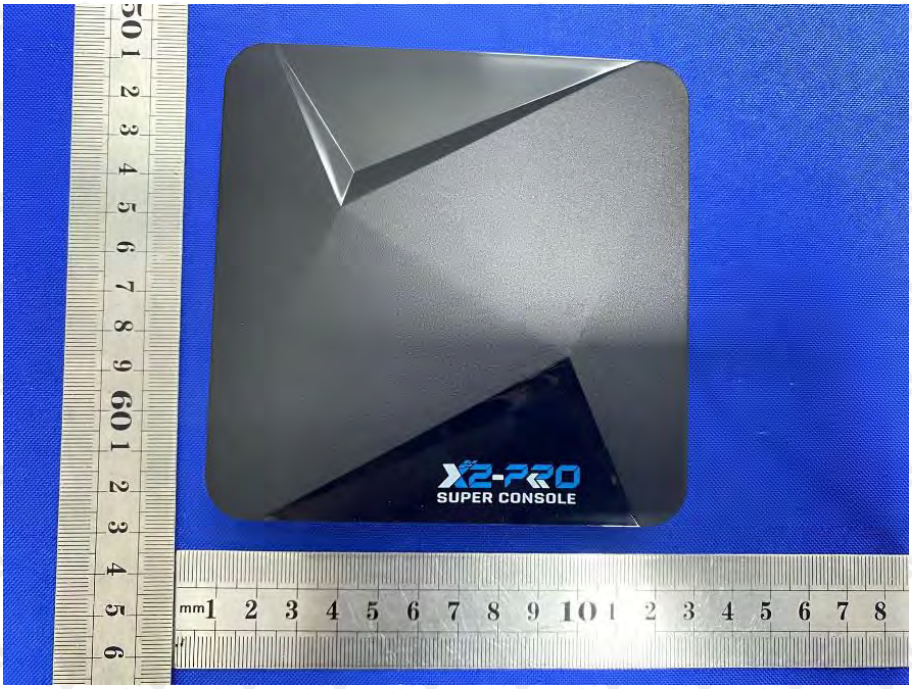
EUT Antenna:

The antenna is Internal antenna and no consideration of replacement. The best case gain of the antenna is -1.15dBi.

15. EUT PHOTOGRAPHS

EUT Photo 1

EUT Photo 2



16. EUT TEST SETUP PHOTOGRAPHS

Radiated Emission

Below 1G

Above 1G

Conducted Emission

※※※※※ **END OF REPORT** ※※※※※