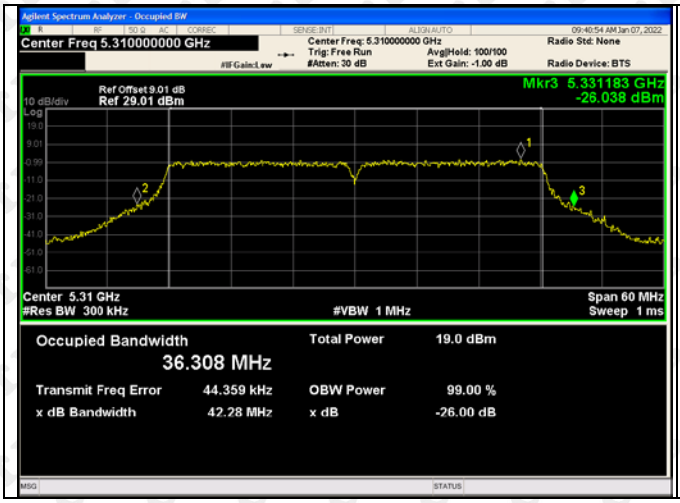
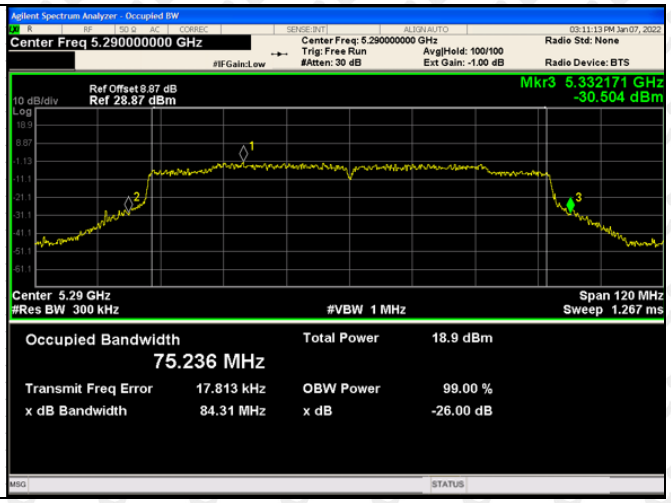
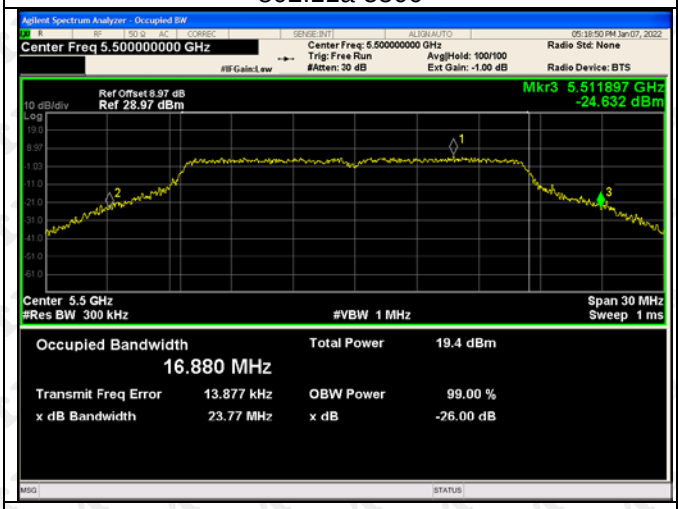

Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.310000000 GHz
Center Freq: 5.310000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Ext Gain: -1.00 dB
Radio Std: None
Radio Device: BTS
Ref Offset 9.01 dB
10 dB/div
Ref 29.01 dBm
Mkr3 5.331183 GHz
-28.038 dBm
Center 5.31 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 60 MHz
Sweep 1 ms
Occupied Bandwidth
36.308 MHz
Total Power 19.0 dBm
Transmit Freq Error 44.359 kHz
OBW Power 99.00 %
x dB Bandwidth 42.28 MHz
x dB -26.00 dB

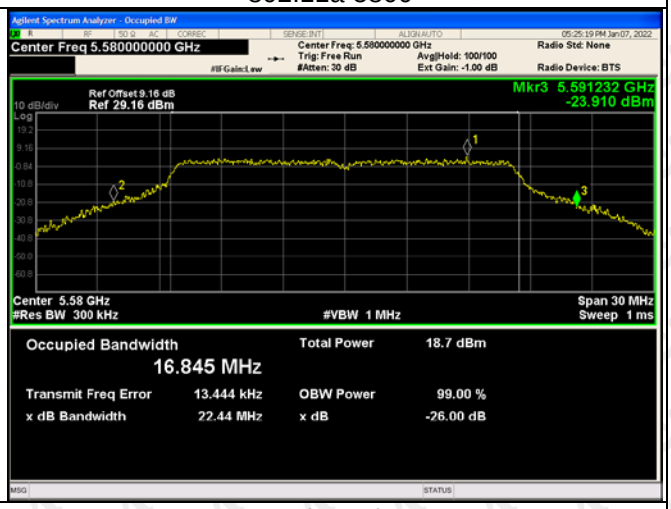

Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.290000000 GHz
Center Freq: 5.290000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Ext Gain: -1.00 dB
Radio Std: None
Radio Device: BTS
Ref Offset 8.87 dB
10 dB/div
Ref 28.87 dBm
Mkr3 5.332171 GHz
-30.504 dBm
Center 5.29 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 120 MHz
Sweep 1.267 ms
Occupied Bandwidth
75.236 MHz
Total Power 18.9 dBm
Transmit Freq Error 17.813 kHz
OBW Power 99.00 %
x dB Bandwidth 84.31 MHz
x dB -26.00 dB

5500-5700MHz

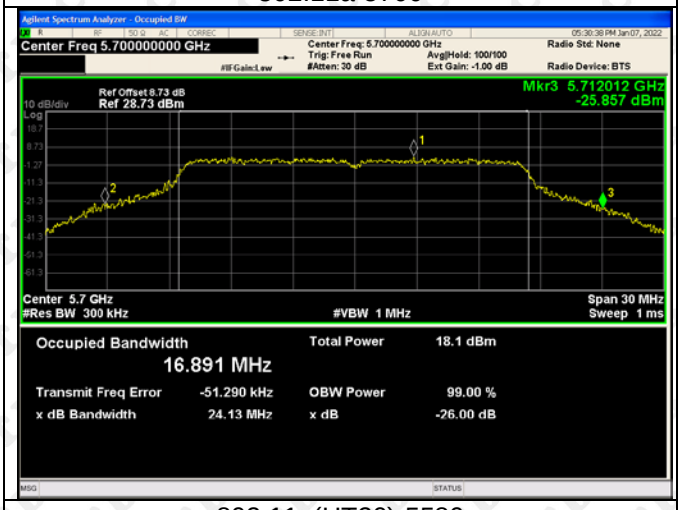
802.11a-5500



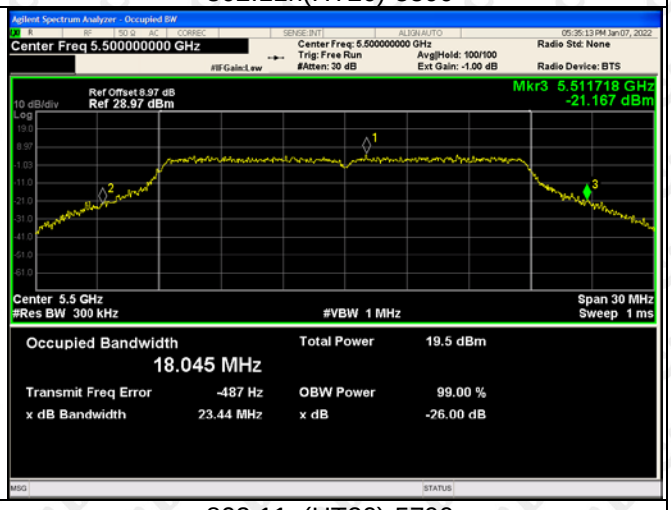
802.11a-5800



802.11a-5700

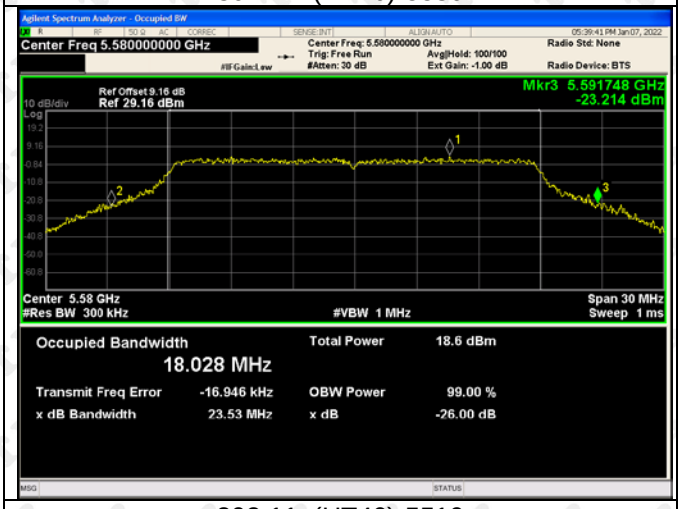


802.11n(HT20)-5500

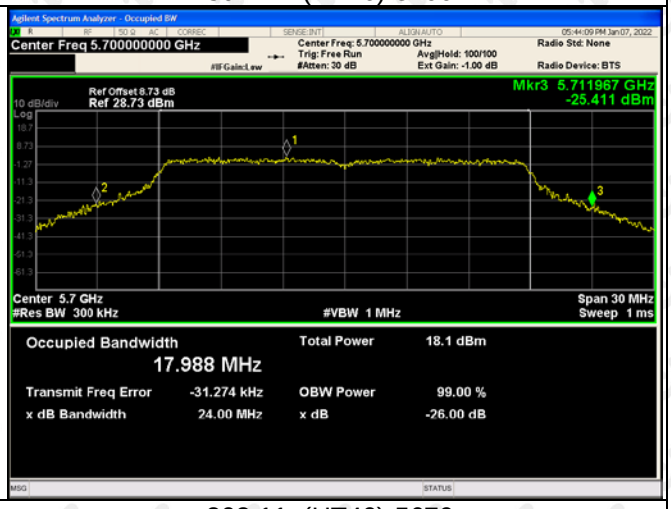


802.11n(HT20)-5580

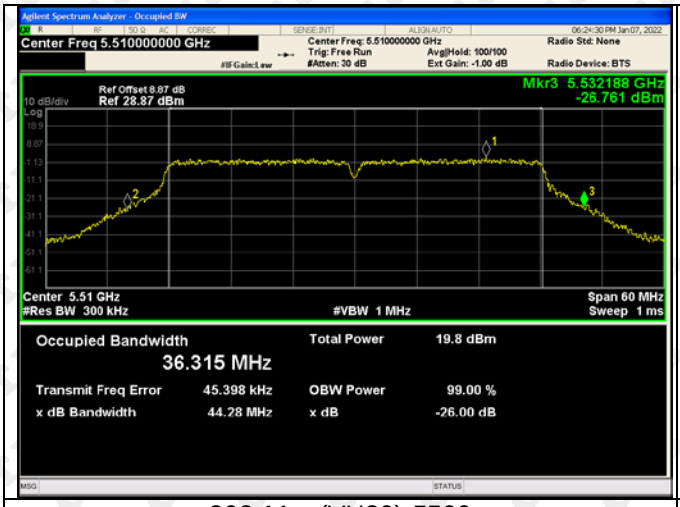
802.11n(HT20)-5700



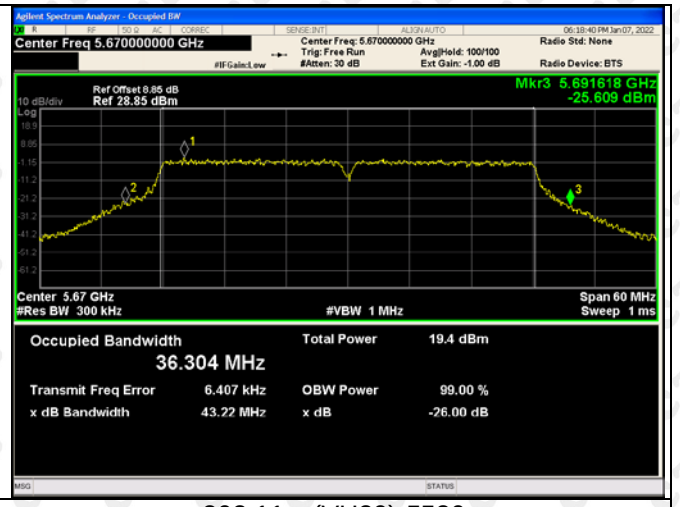
802.11n(HT40)-5510



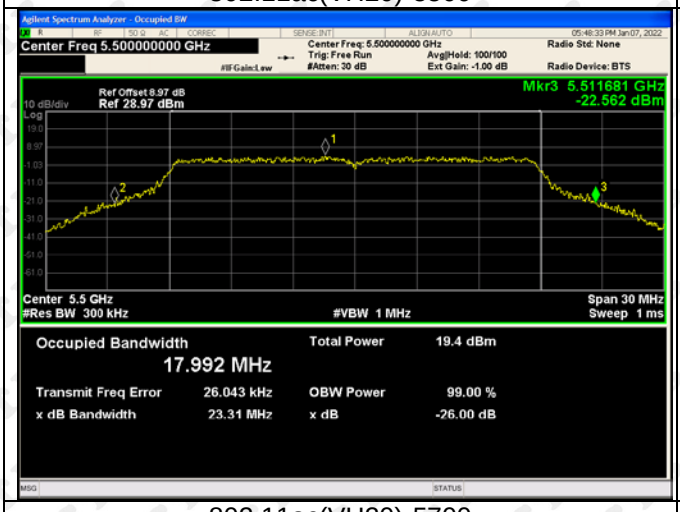
802.11n(HT40)-5670



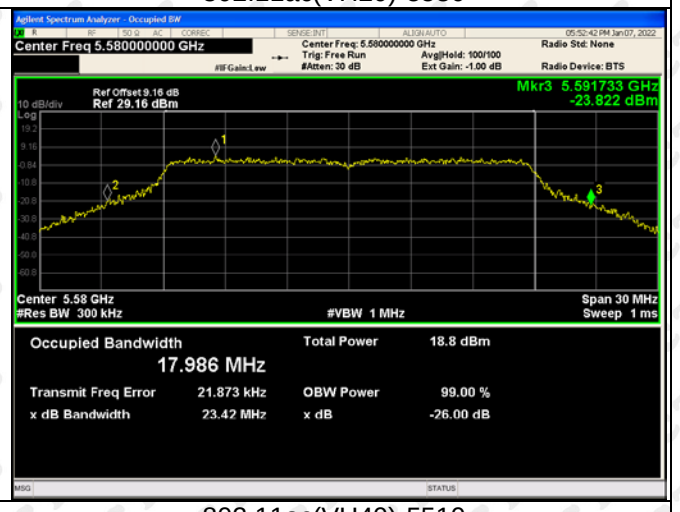
802.11ac(VH20)-5500



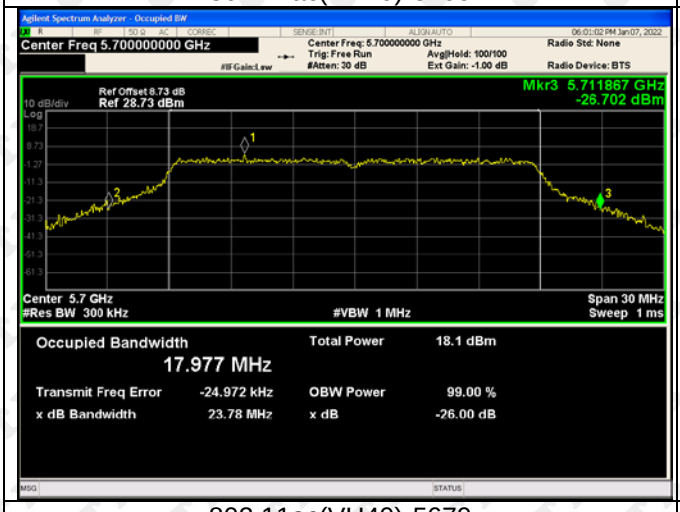
802.11ac(VH20)-5580



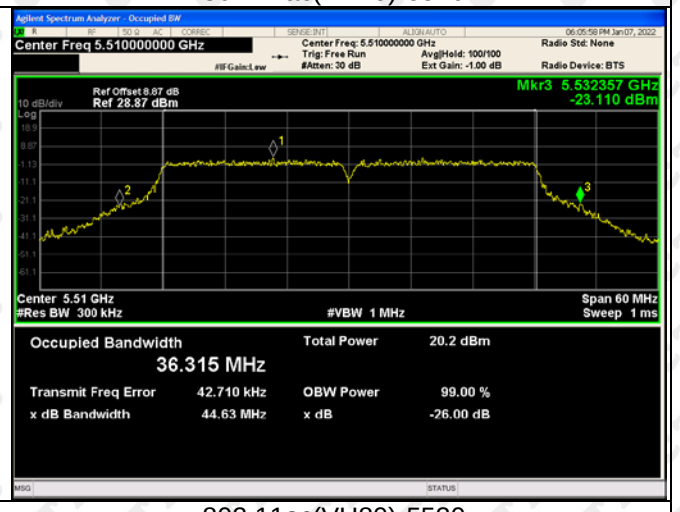
802.11ac(VH20)-5700



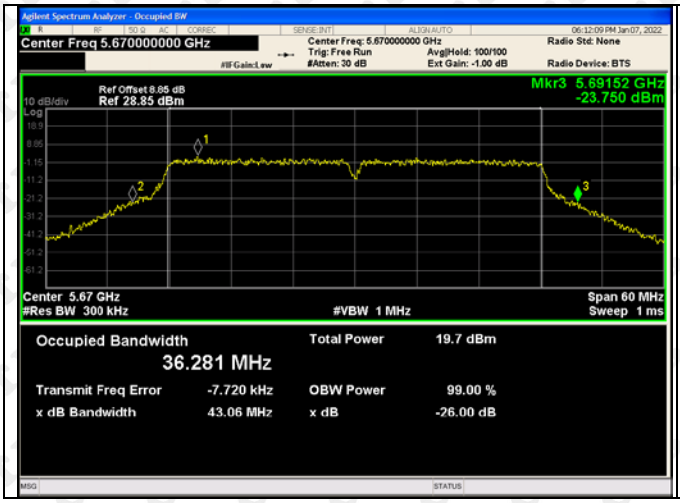
802.11ac(VH40)-5510

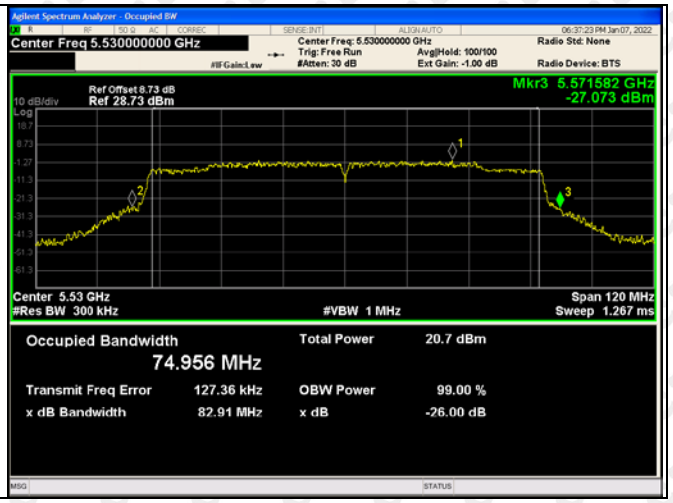


802.11ac(VH40)-5670



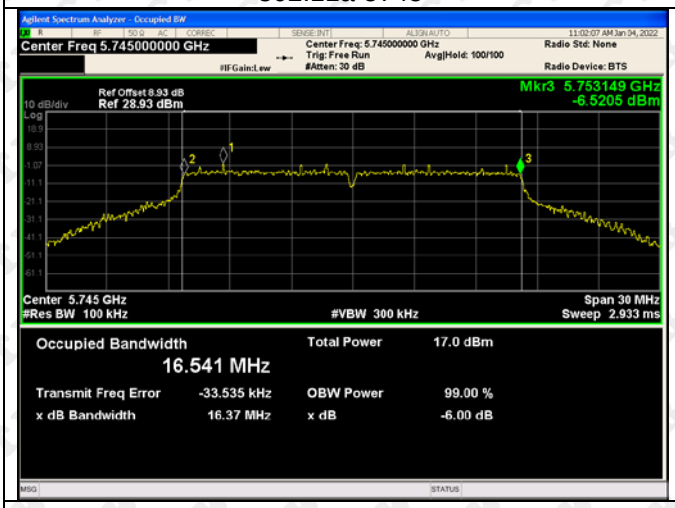
802.11ac(VH80)-5530


Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.670000000 GHz
Center Freq: 5.670000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Ext Gain: -1.00 dB
Radio Std: None
Radio Device: BTS
Ref Offset 8.85 dB
10 dB/div
Ref 28.85 dBm
Mkr3 5.69152 GHz
-23.750 dBm
Center 5.67 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 60 MHz
Sweep 1 ms
Occupied Bandwidth
36.281 MHz
Total Power 19.7 dBm
Transmit Freq Error -7.720 kHz
OBW Power 99.00 %
x dB Bandwidth 43.06 MHz
x dB -26.00 dB

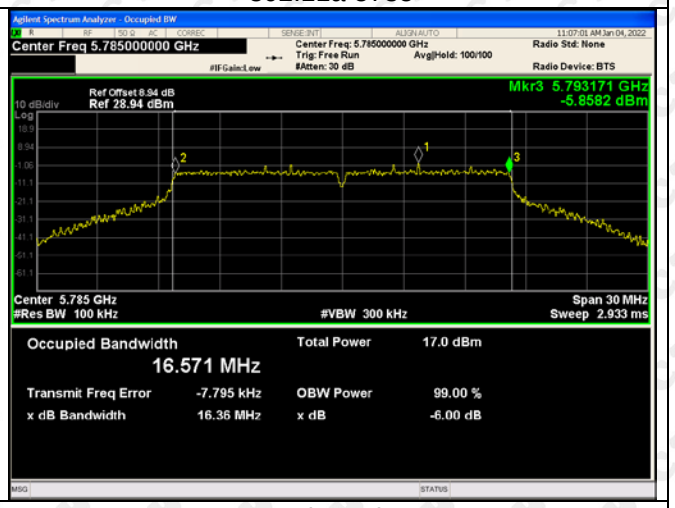

Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.530000000 GHz
Center Freq: 5.530000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Ext Gain: -1.00 dB
Radio Std: None
Radio Device: BTS
Ref Offset 8.73 dB
10 dB/div
Ref 28.73 dBm
Mkr3 5.571582 GHz
-27.073 dBm
Center 5.53 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 120 MHz
Sweep 1.267 ms
Occupied Bandwidth
74.956 MHz
Total Power 20.7 dBm
Transmit Freq Error 127.36 kHz
OBW Power 99.00 %
x dB Bandwidth 82.91 MHz
x dB -26.00 dB

5745-5825MHz

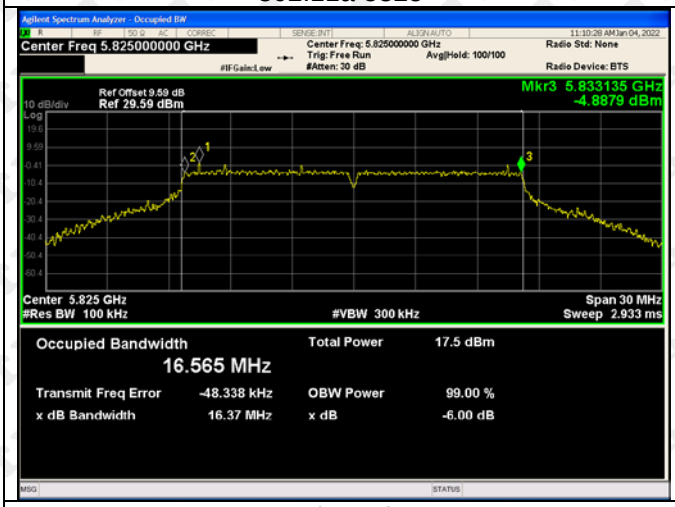
802.11a-5745



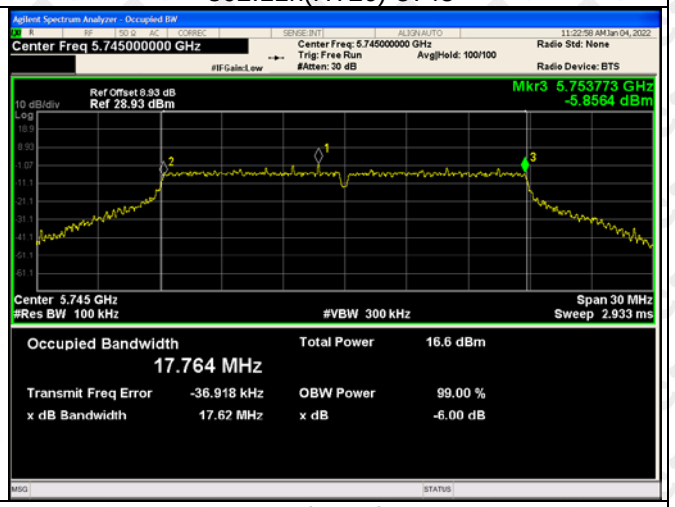
802.11a-5785



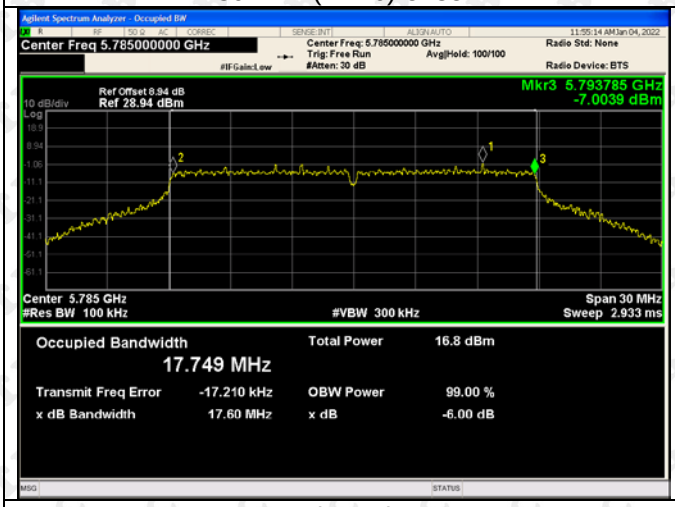
802.11a-5825



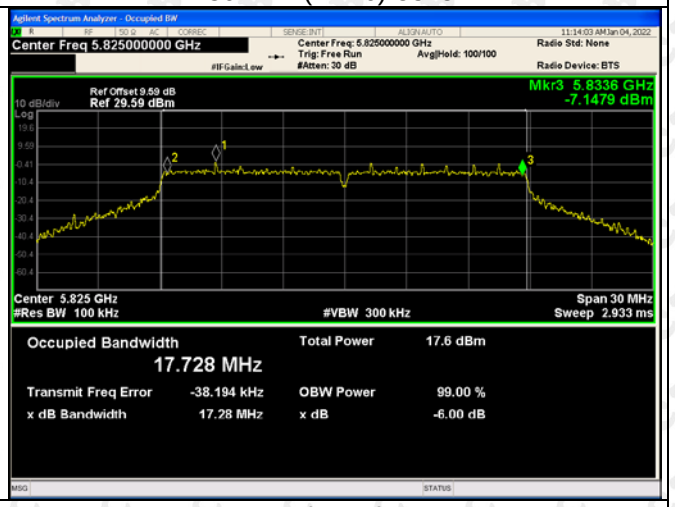
802.11n(HT20)-5745



802.11n(HT20)-5785

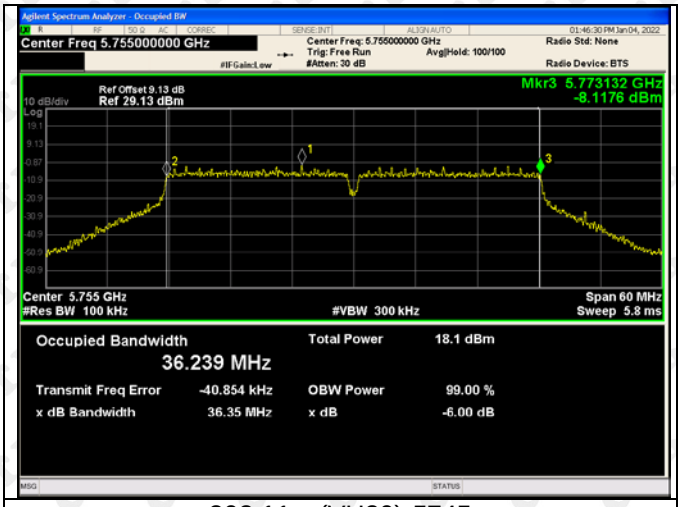


802.11n(HT20)-5825

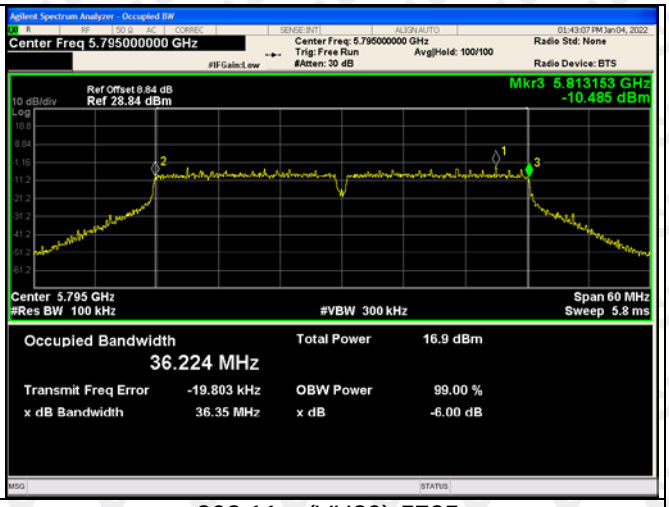


802.11n(HT40)-5755

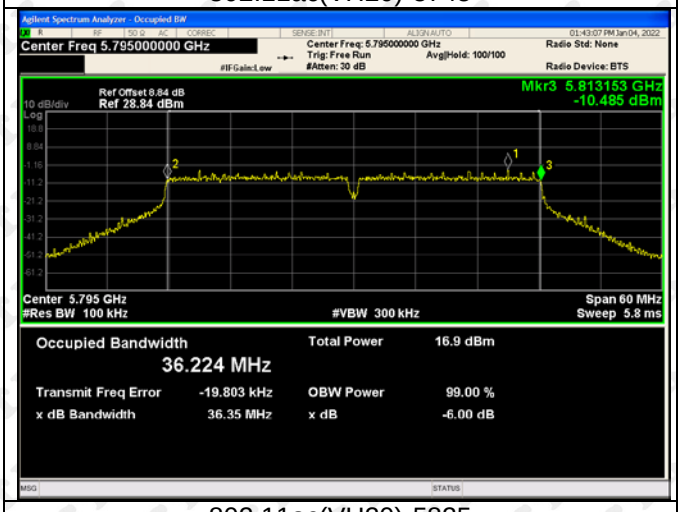
802.11n(HT40)-5795



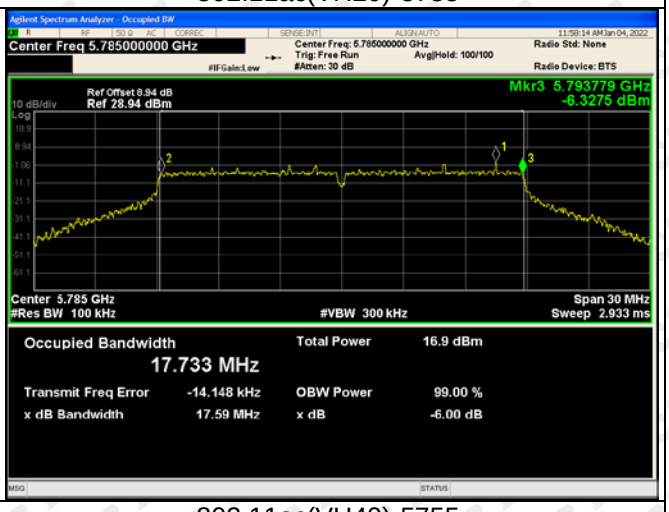
802.11ac(VH20)-5745



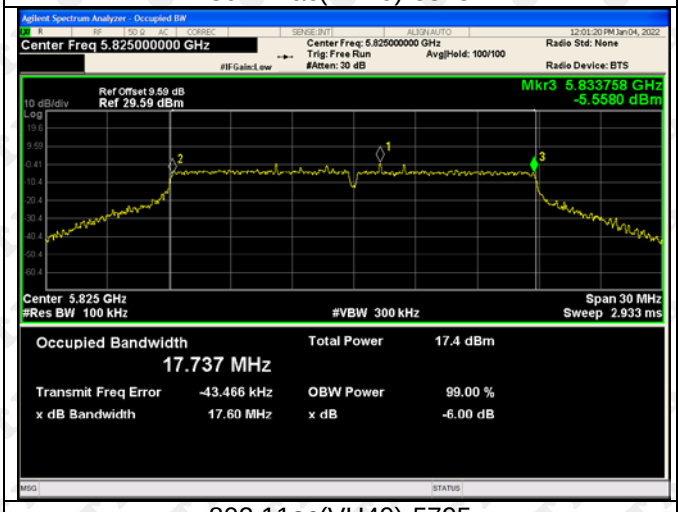
802.11ac(VH20)-5785



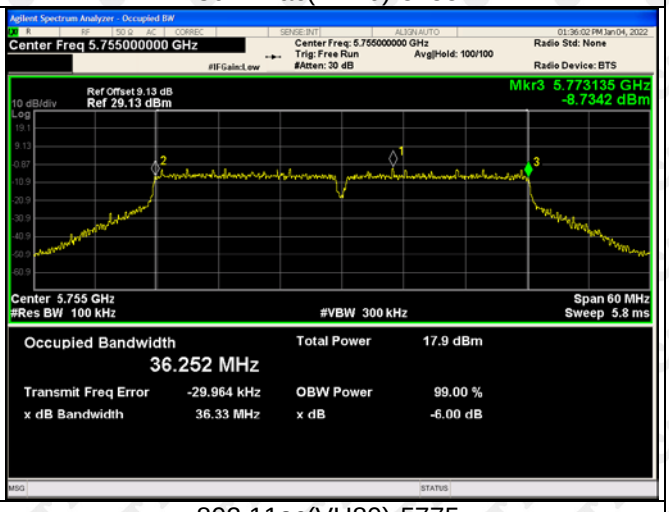
802.11ac(VH20)-5825



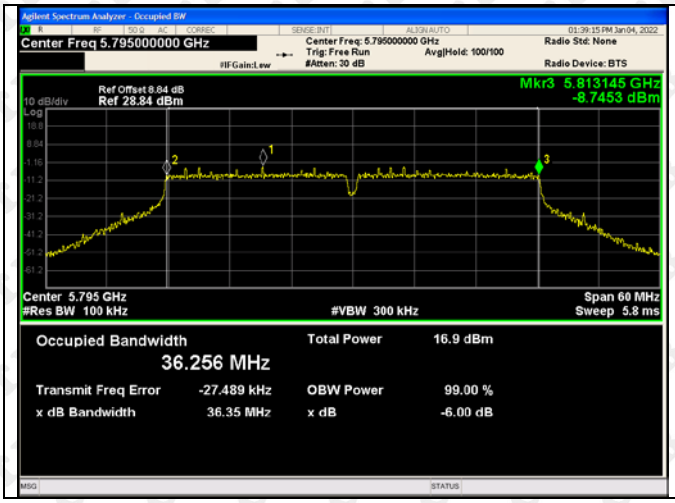
802.11ac(VH40)-5755

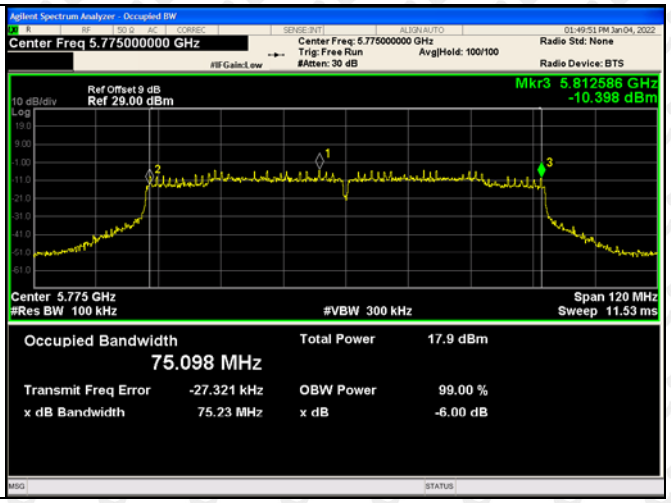


802.11ac(VH40)-5795



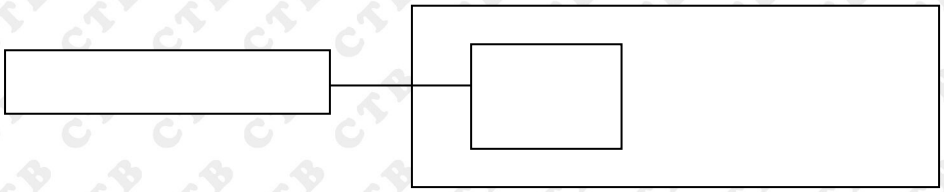
802.11ac(VH80)-5775


Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.795000000 GHz
Center Freq: 5.795000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Ref Offset 8.84 dB
10 dB/div
Ref 28.84 dBm
Mkr3 5.813145 GHz
-8.7453 dBm
Center 5.795 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 60 MHz
Sweep 5.8 ms
Occupied Bandwidth
36.256 MHz
Total Power 16.9 dBm
Transmit Freq Error -27.489 kHz
OBW Power 99.00 %
x dB Bandwidth 36.35 MHz
x dB -6.00 dB


Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.775000000 GHz
Center Freq: 5.775000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Ref Offset 9 dB
10 dB/div
Ref 29.00 dBm
Mkr3 5.812586 GHz
-10.398 dBm
Center 5.775 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 120 MHz
Sweep 11.53 ms
Occupied Bandwidth
75.098 MHz
Total Power 17.9 dBm
Transmit Freq Error -27.321 kHz
OBW Power 99.00 %
x dB Bandwidth 75.23 MHz
x dB -6.00 dB

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.l.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

Test mode	Test Channel (MHz)	PSD [dBm/MHz]	Limit [dBm/MHz]	Result
802.11a	5180	9.149	11	Pass
	5200	9.194	11	Pass
	5240	9.579	11	Pass
802.11ac(VH20)	5180	8.508	11	Pass
	5200	8.662	11	Pass
	5240	9.028	11	Pass
802.11ac(VH40)	5190	6.772	11	Pass
	5230	7.156	11	Pass
802.11ac(VH80)	5210	3.767	11	Pass
802.11n(HT20)	5180	8.769	11	Pass
	5200	9.361	11	Pass
	5240	9.106	11	Pass
802.11n(HT40)	5190	6.961	11	Pass
	5230	-3.042	11	Pass

5250-5350 MHz

Test mode	Test Condition	Test Channel (MHz)	PSD [dBm/MHz]	Result
802.11a	NTNV	5260	-12.43	Pass
	NTNV	5280	-13.33	Pass
	NTNV	5320	-12.661	Pass
802.11n(HT20)	NTNV	5260	-11.199	Pass
	NTNV	5280	-12.178	Pass
	NTNV	5320	-11.799	Pass
802.11n(HT40)	NTNV	5270	-14.164	Pass
	NTNV	5310	-15.203	Pass
802.11ac(VH20)	NTNV	5260	-11.661	Pass
	NTNV	5280	-12.322	Pass
	NTNV	5320	-12.342	Pass
802.11ac(VH40)	NTNV	5270	-14.043	Pass
	NTNV	5310	-15.408	Pass
802.11ac(VH80)	NTNV	5290	-18.691	Pass

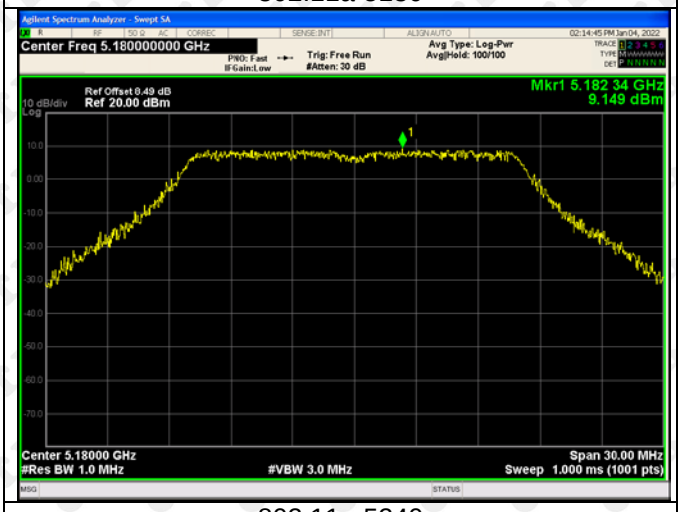
5470-5725 MHz

Test mode	Test Condition	Test Channel (MHz)	PSD [dBm/MHz]	Result
802.11a	NTNV	5500	-12.424	Pass
	NTNV	5580	-12.638	Pass
	NTNV	5700	-13.439	Pass
802.11n(HT20)	NTNV	5500	-11.549	Pass
	NTNV	5580	-12.783	Pass
	NTNV	5700	-13.15	Pass
802.11n(HT40)	NTNV	5510	-14.764	Pass
	NTNV	5670	-15.125	Pass
802.11ac(VH20)	NTNV	5500	-11.657	Pass
	NTNV	5580	-12.164	Pass
	NTNV	5700	-11.989	Pass
802.11ac(VH40)	NTNV	5510	-14.635	Pass
	NTNV	5670	-14.753	Pass
802.11ac(VH80)	NTNV	5530	-16.287	Pass

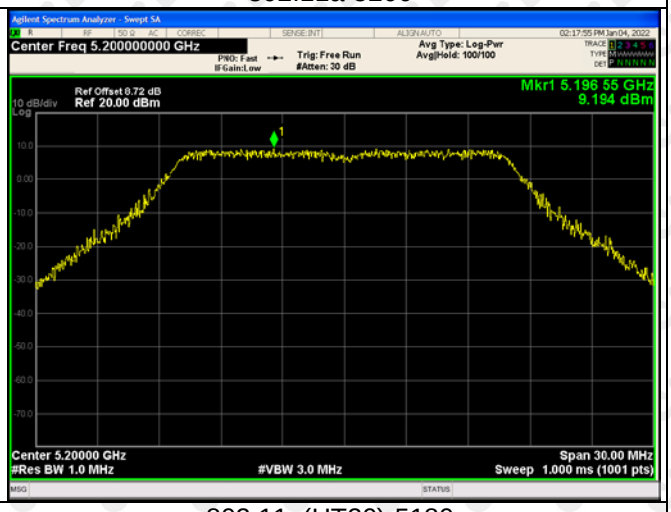
Test mode	Test Channel (MHz)	PSD [dBm/500kHz]	Result
802.11a	5745	4.169	Pass
	5785	3.84	Pass
	5825	4.598	Pass
802.11n(HT20)	5745	3.945	Pass
	5785	3.471	Pass
	5825	4.063	Pass
802.11n(HT40)	5755	1.499	Pass
	5795	0.299	Pass
802.11ac(VH20)	5745	3.746	Pass
	5785	4.732	Pass
	5825	4.407	Pass
802.11ac(VH40)	5755	1.292	Pass
	5795	0.93	Pass
802.11ac(VH80)	5775	-2.121	Pass

5180-5230MHz

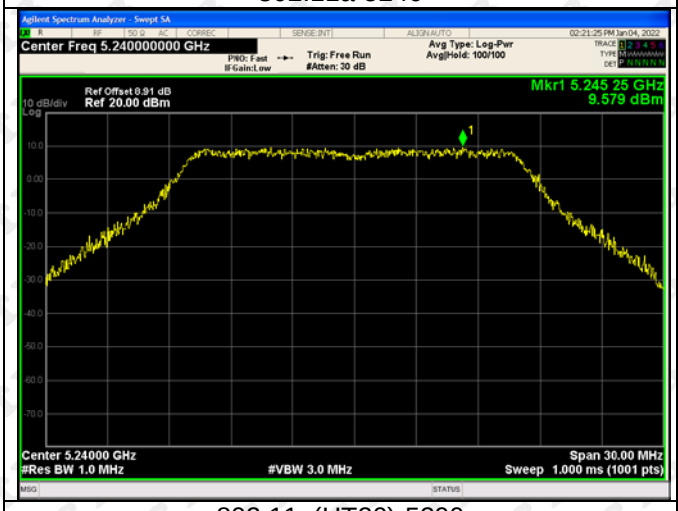
802.11a-5180



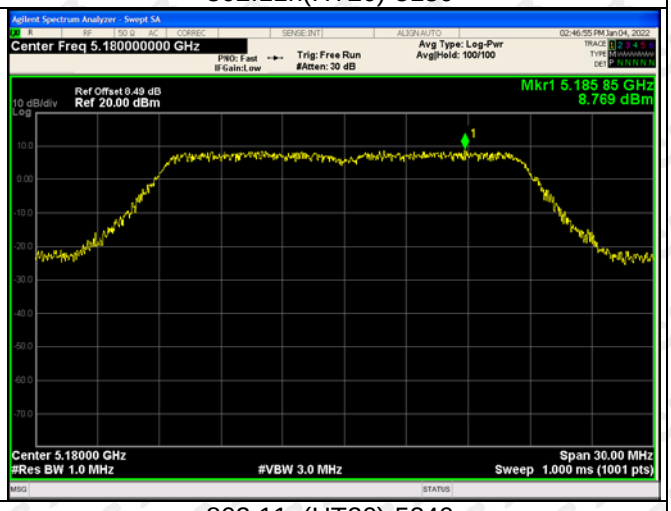
802.11a-5200



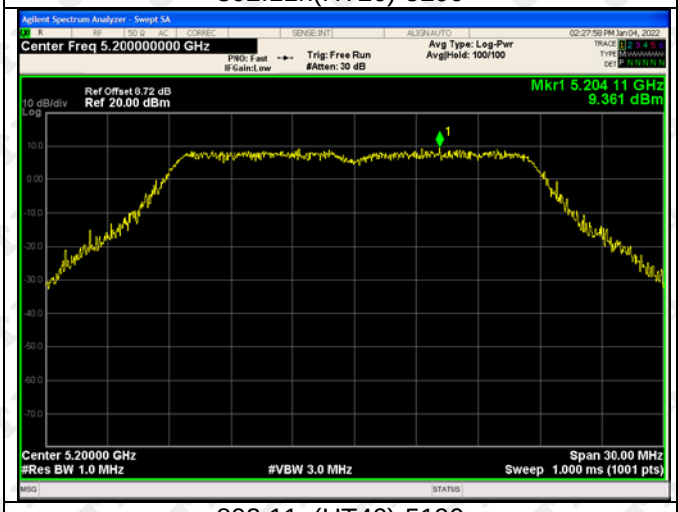
802.11a-5240



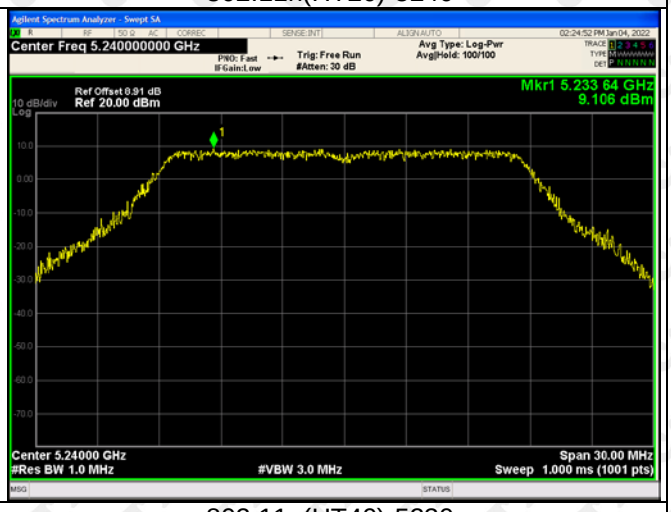
802.11n(HT20)-5180



802.11n(HT20)-5200

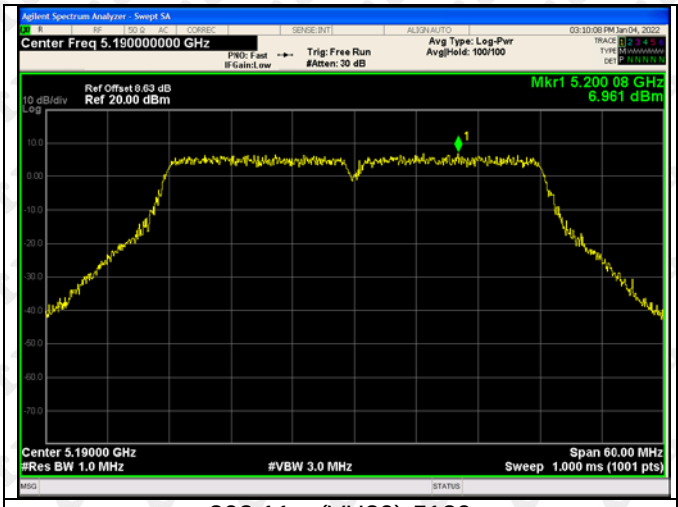


802.11n(HT20)-5240

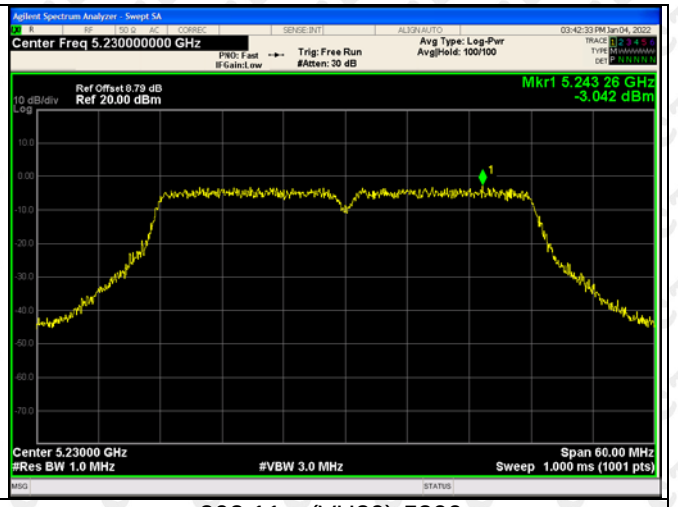


802.11n(HT40)-5190

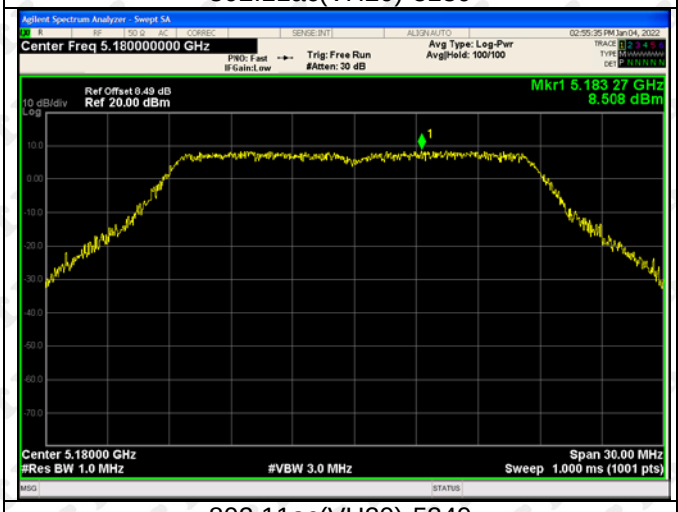
802.11n(HT40)-5230



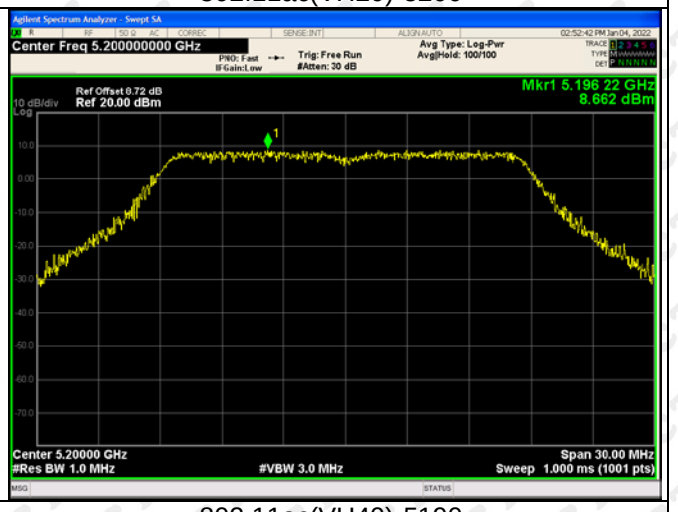
802.11ac(VH20)-5180



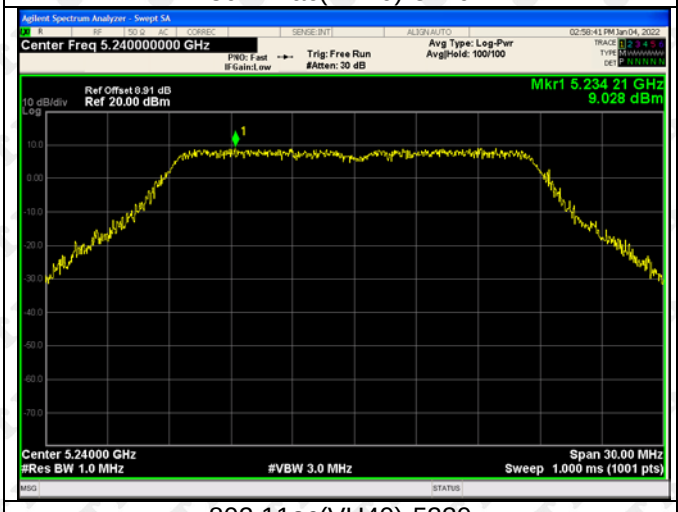
802.11ac(VH20)-5200



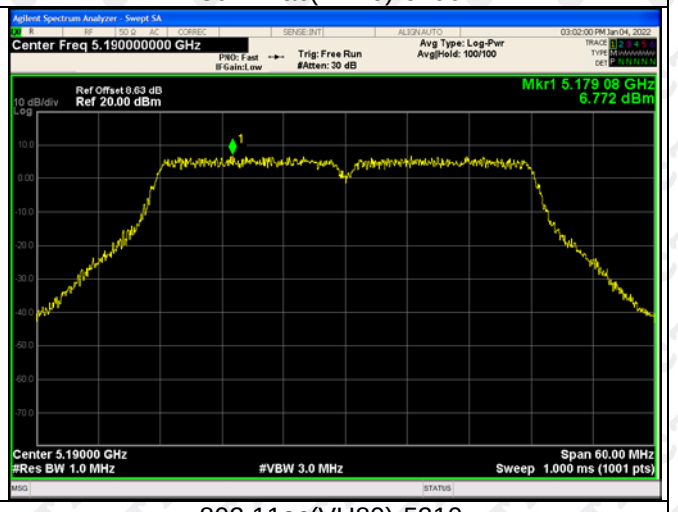
802.11ac(VH20)-5240



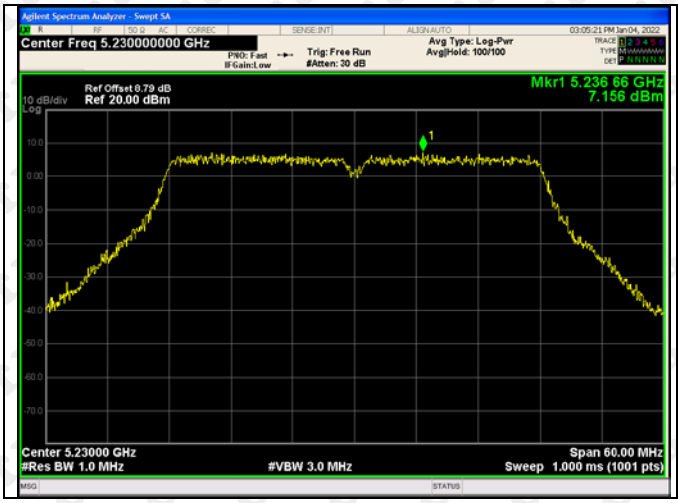
802.11ac(VH40)-5190

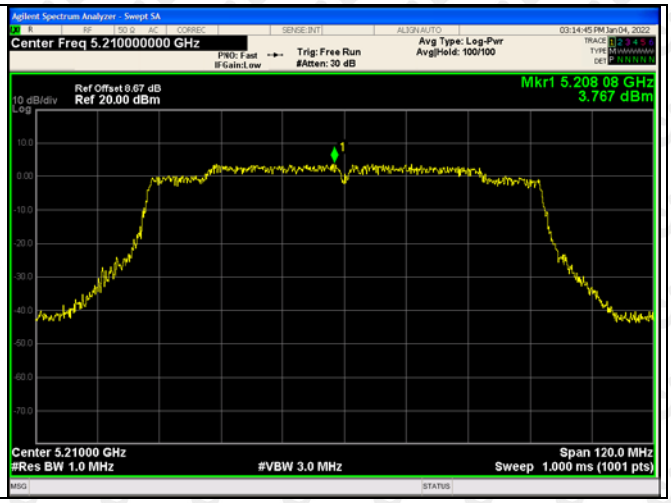


802.11ac(VH40)-5230

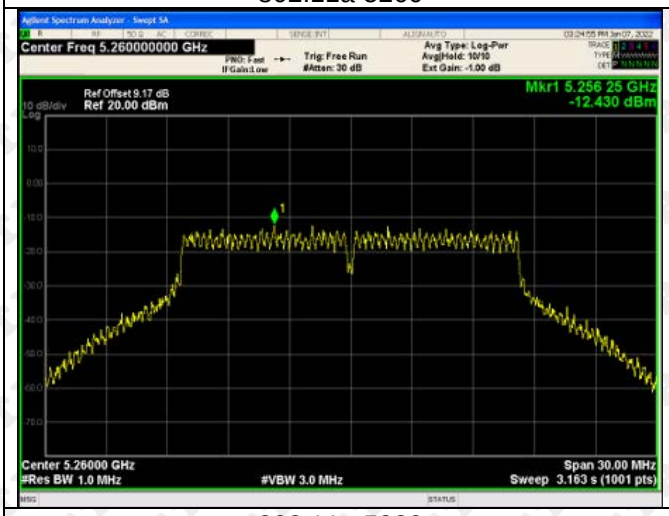
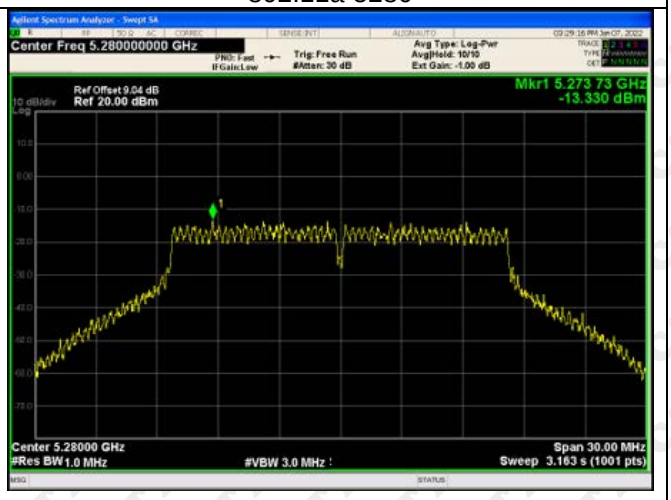
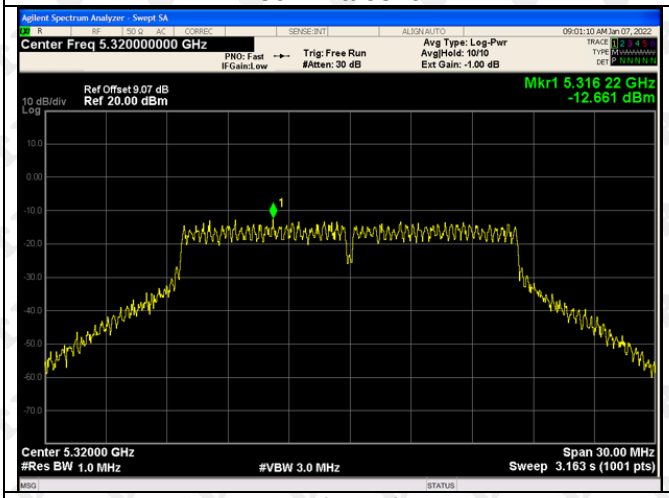
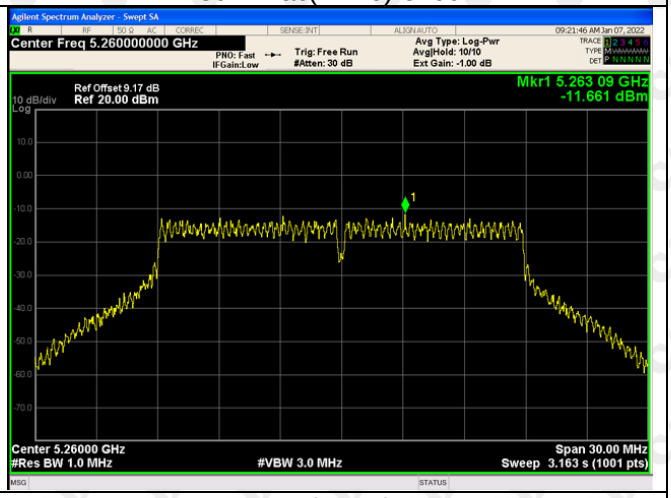
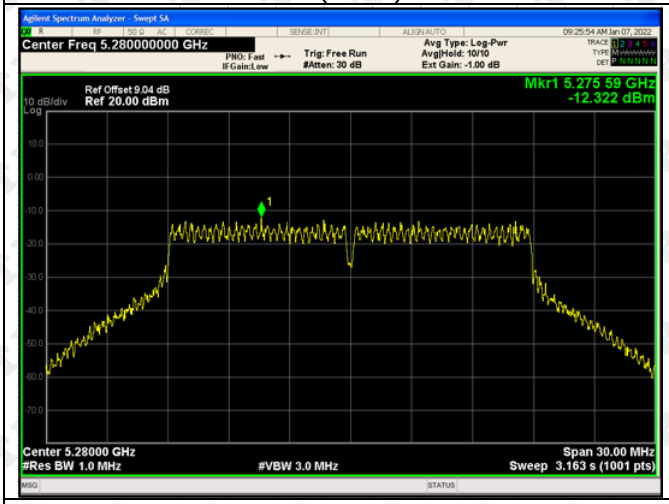
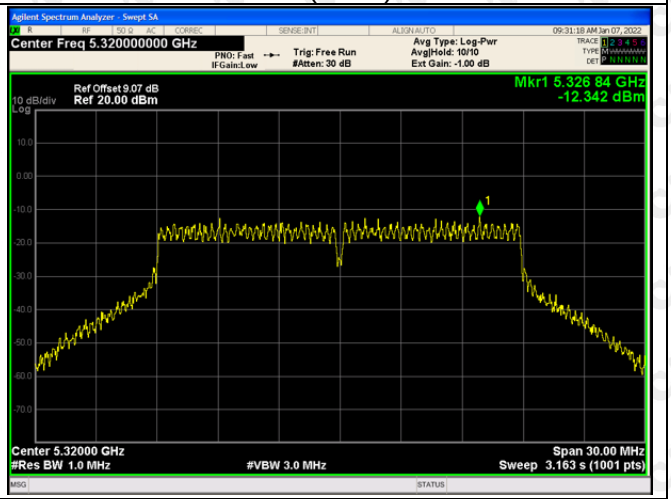


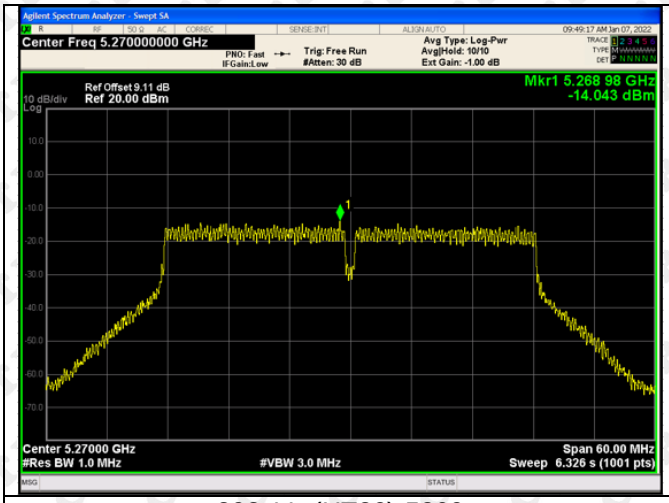
802.11ac(VH80)-5210


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.230000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 100/100
03:05:21 PM Jan 04, 2022
Ref Offset 8.79 dB
10 dB/div
Ref 20.00 dBm
Mkr1 5.236 66 GHz
7.156 dBm
Center 5.23000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 60.00 MHz
Sweep 1.000 ms (1001 pts)

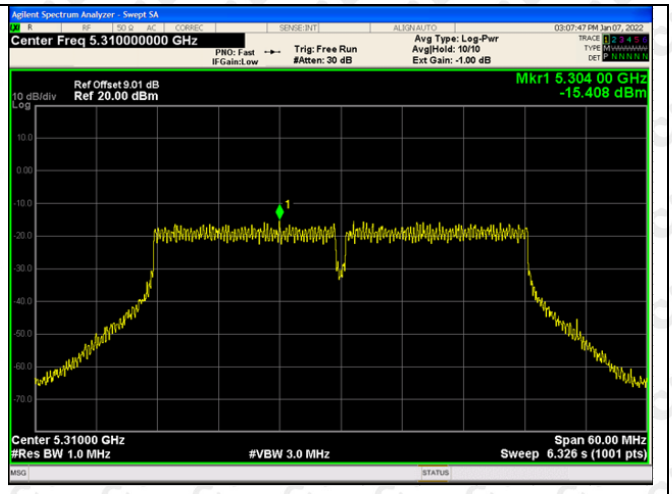

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.210000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 100/100
03:14:45 PM Jan 04, 2022
Ref Offset 8.67 dB
10 dB/div
Ref 20.00 dBm
Mkr1 5.208 08 GHz
3.767 dBm
Center 5.21000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 120.0 MHz
Sweep 1.000 ms (1001 pts)

5260-5310MHz:

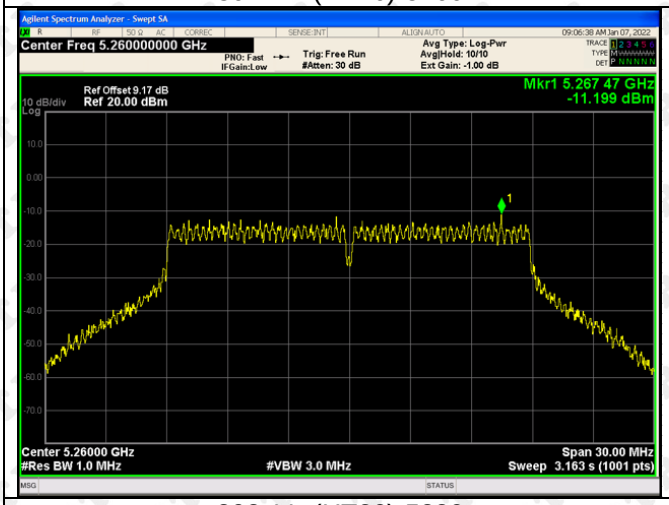
802.11a-5260	802.11a-5280
	
802.11a-5320	802.11ac(VH20)-5260
	
802.11ac(VH20)-5280	802.11ac(VH20)-5320
	
802.11ac(VH40)-5270	802.11ac(VH40)-5310



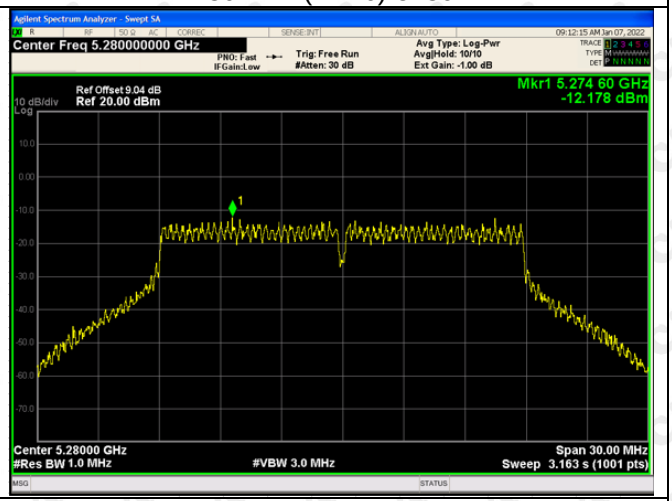
802.11n(HT20)-5260



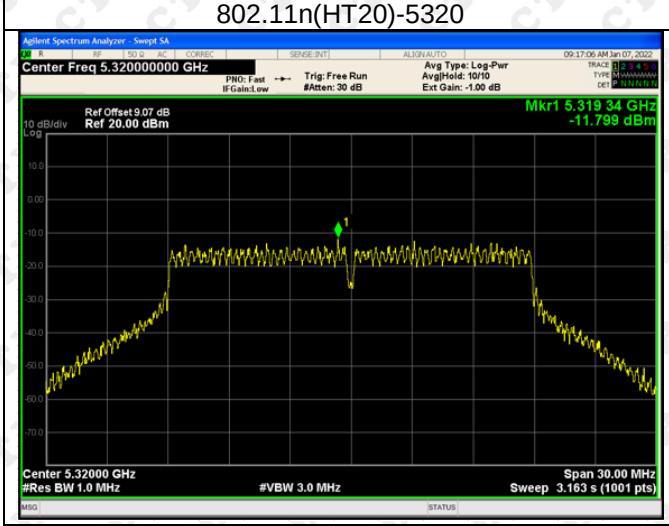
802.11n(HT20)-5280



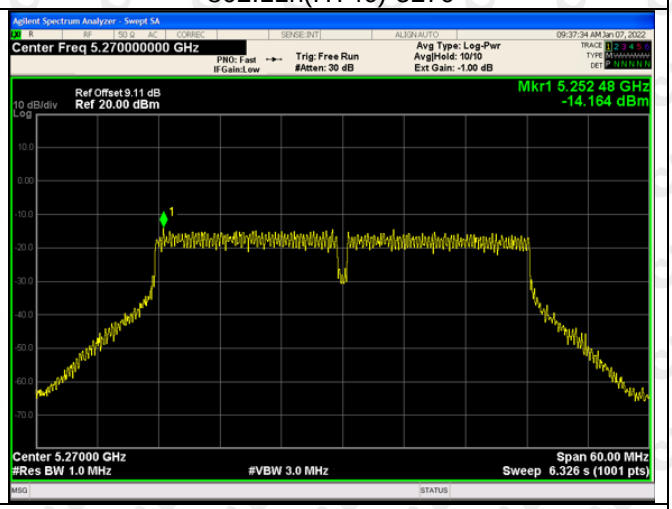
802.11n(HT20)-5320



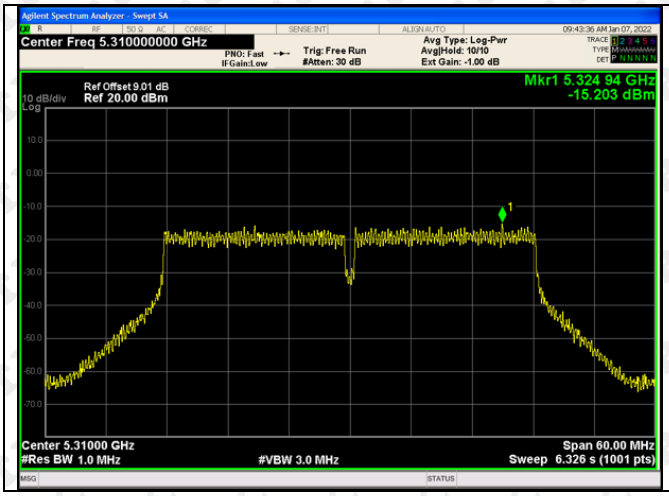
802.11n(HT40)-5270

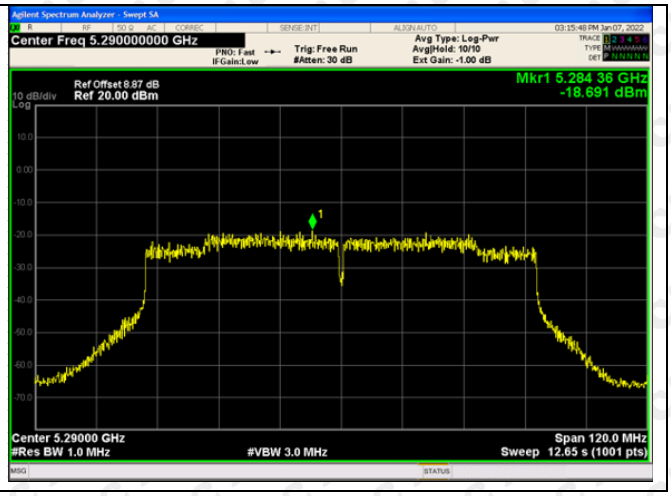


802.11n(HT40)-5310



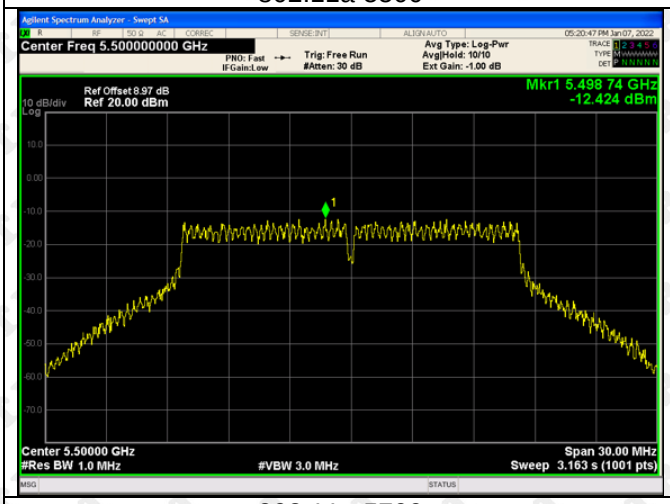
802.11ac(HT80)-5290


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.310000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 10/10
Ext Gain: -1.00 dB
Ref Offset 9.01 dB
10 dB/div
Ref 20.00 dBm
Mkr1 5.324 94 GHz
-15.203 dBm
Center 5.31000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 60.00 MHz
Sweep 6.326 s (1001 pts)

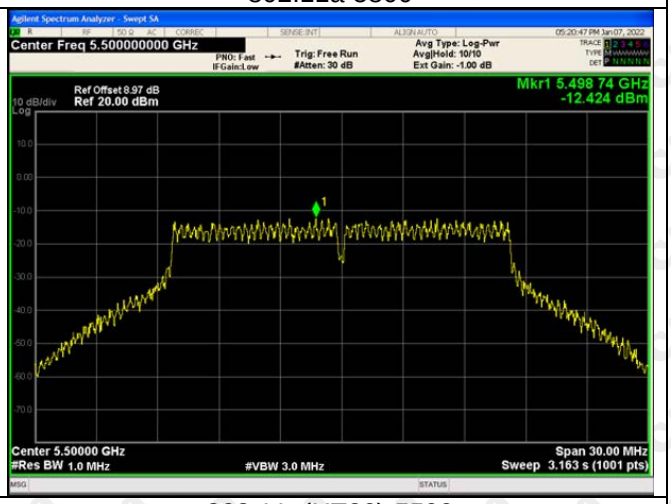

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.290000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 10/10
Ext Gain: -1.00 dB
Ref Offset 8.87 dB
10 dB/div
Ref 20.00 dBm
Mkr1 5.284 36 GHz
-18.691 dBm
Center 5.29000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 120.0 MHz
Sweep 12.65 s (1001 pts)

5500-5700MHz

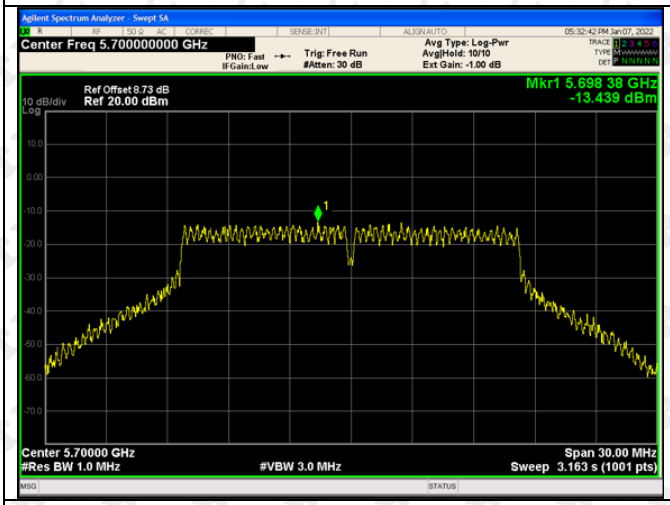
802.11a-5500



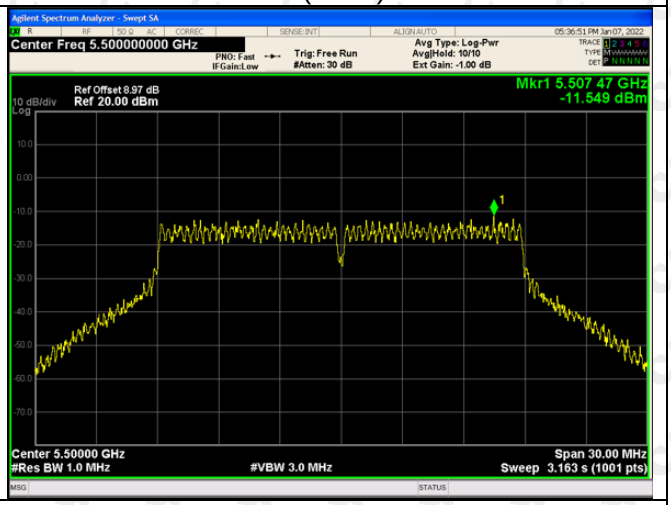
802.11a-5800



802.11a-5700

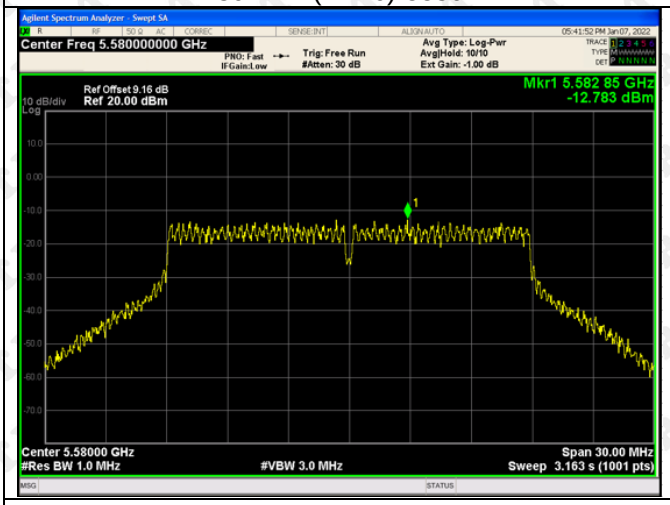


802.11n(HT20)-5500

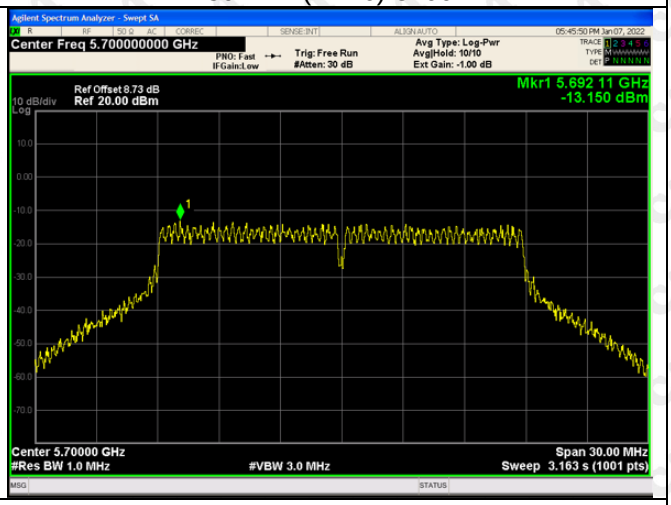


802.11n(HT20)-5580

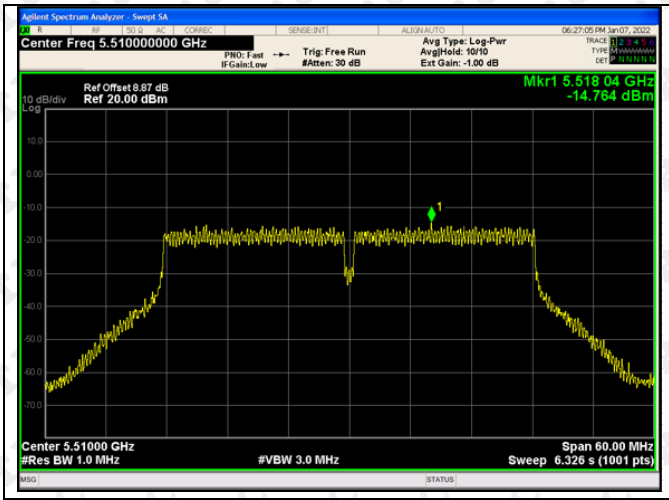
802.11n(HT20)-5700



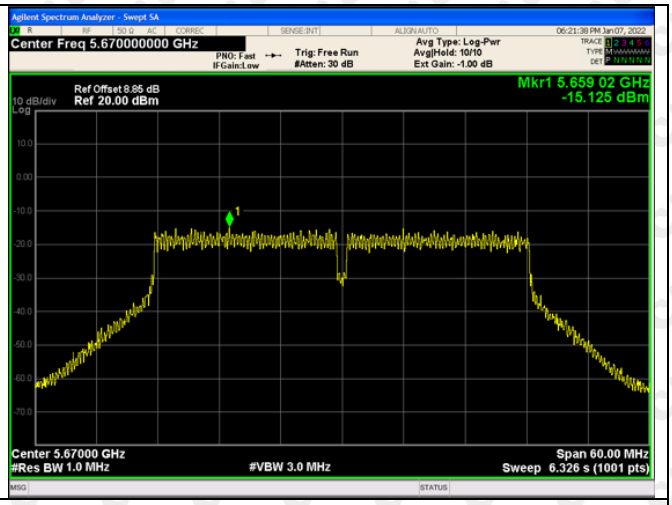
802.11n(HT40)-5510



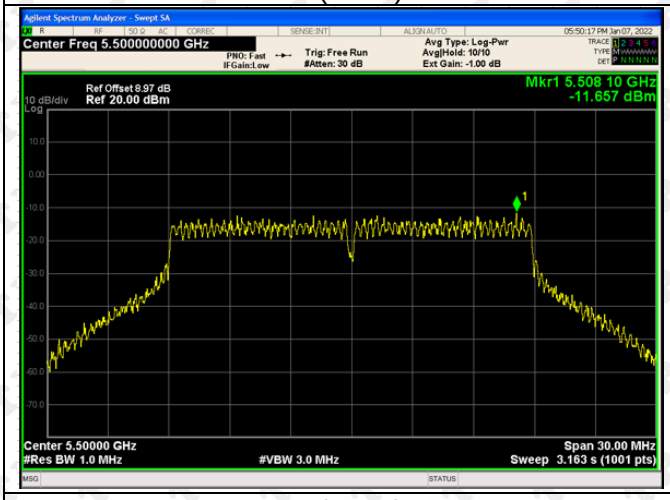
802.11n(HT40)-5670



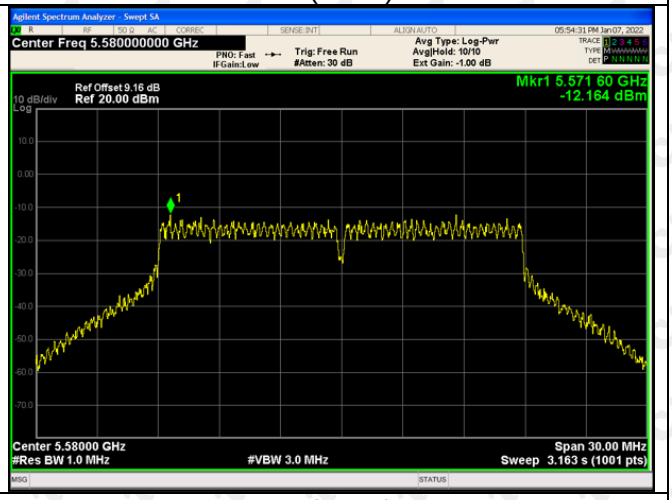
802.11ac(VH20)-5500



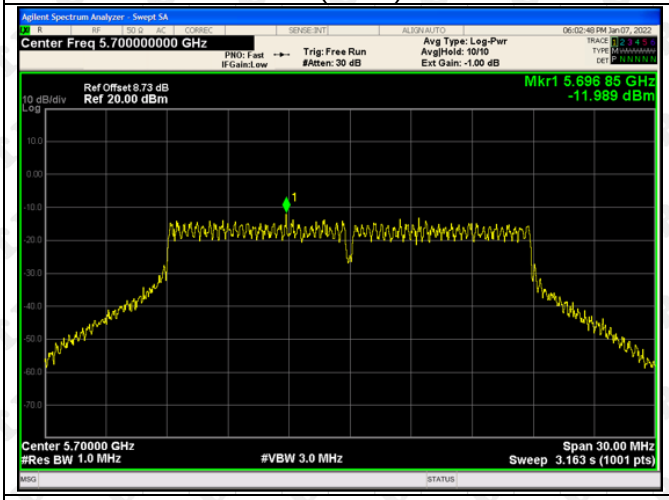
802.11ac(VH20)-5580



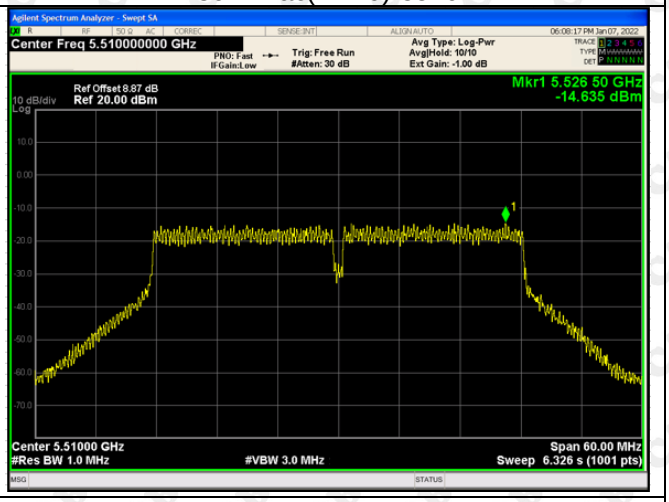
802.11ac(VH20)-5700



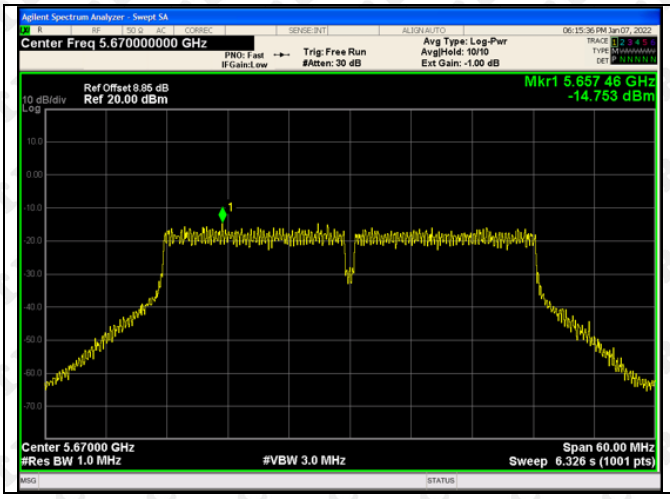
802.11ac(VH40)-5510

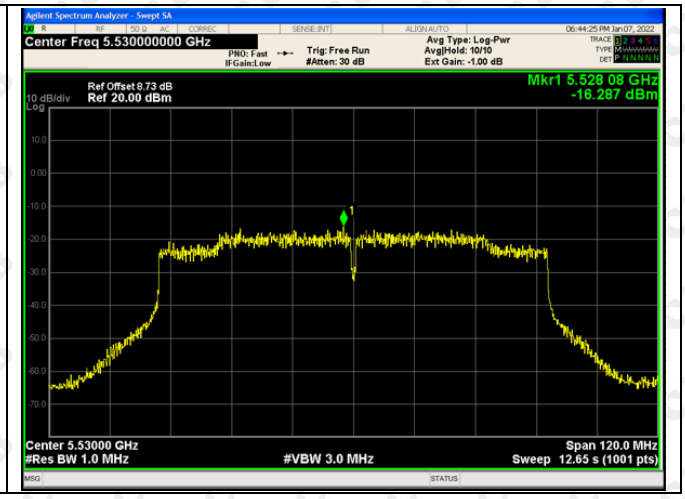


802.11ac(VH40)-5670

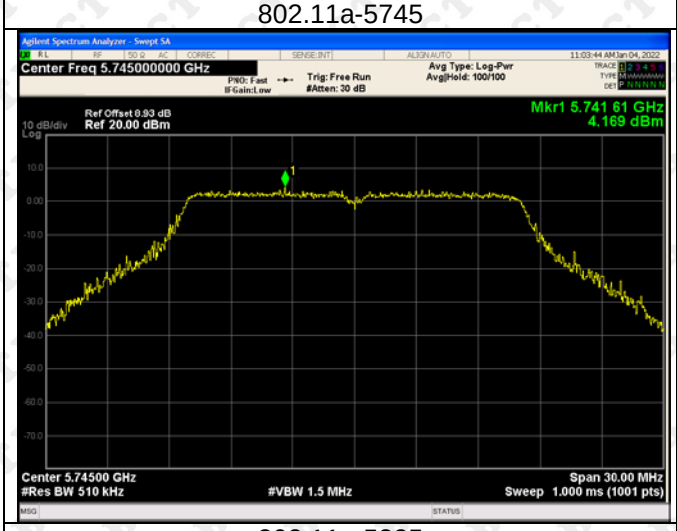
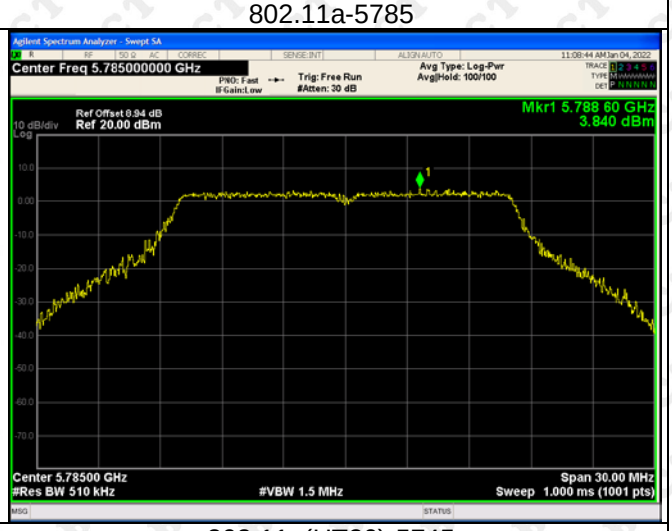
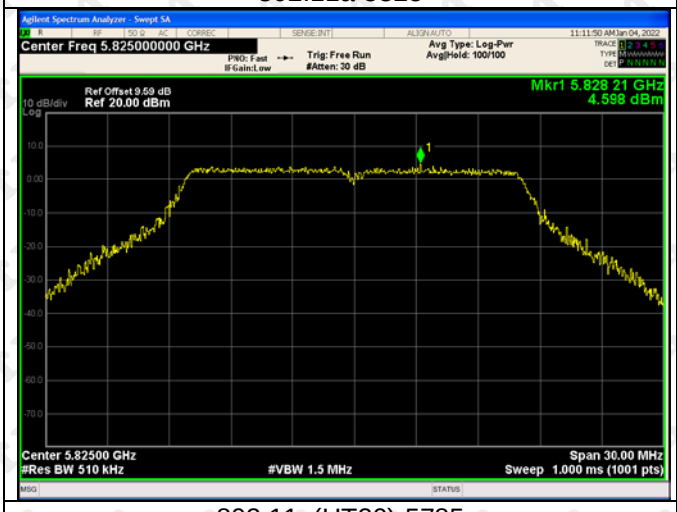
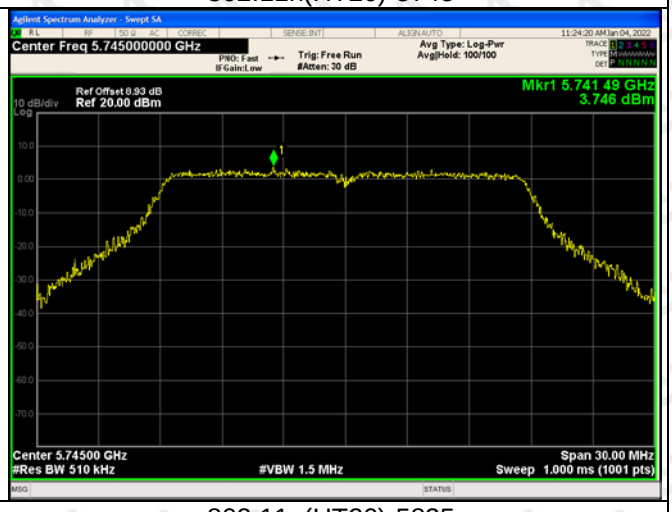


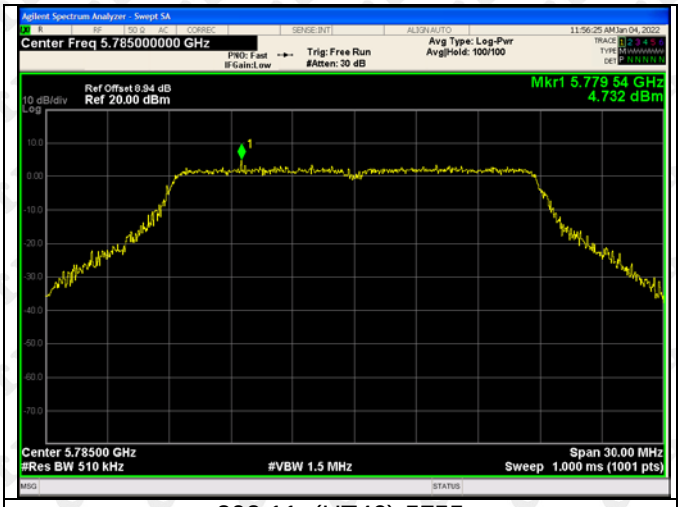
802.11ac(VH80)-5530



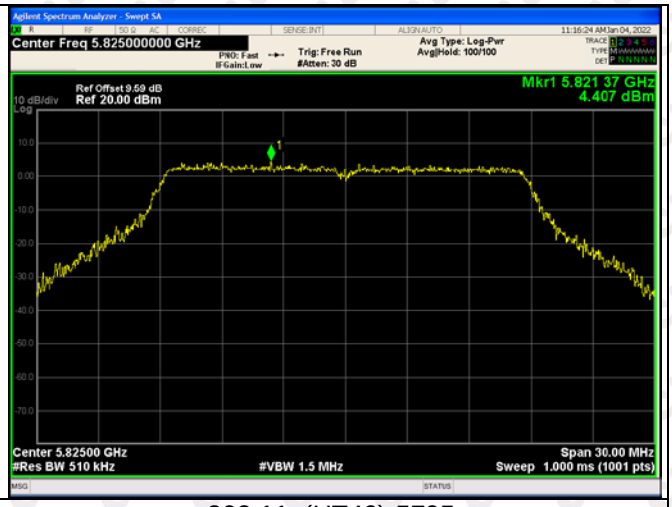


5745-5825MHz

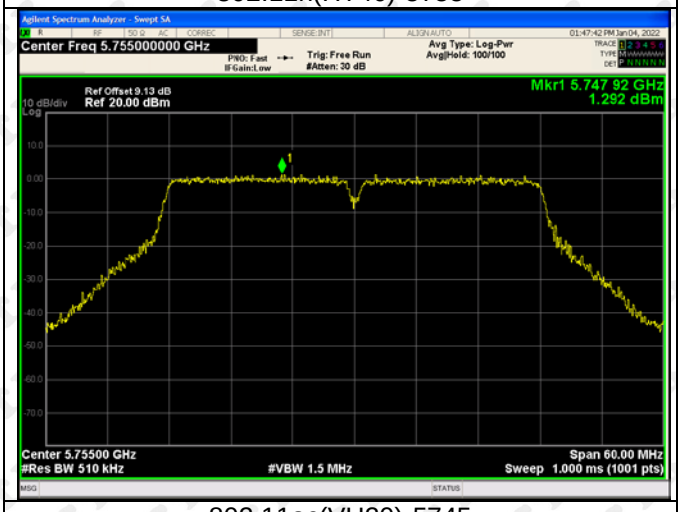
802.11a-5745	802.11a-5785
	
802.11a-5825	802.11n(HT20)-5745
	
802.11n(HT20)-5785	802.11n(HT20)-5825



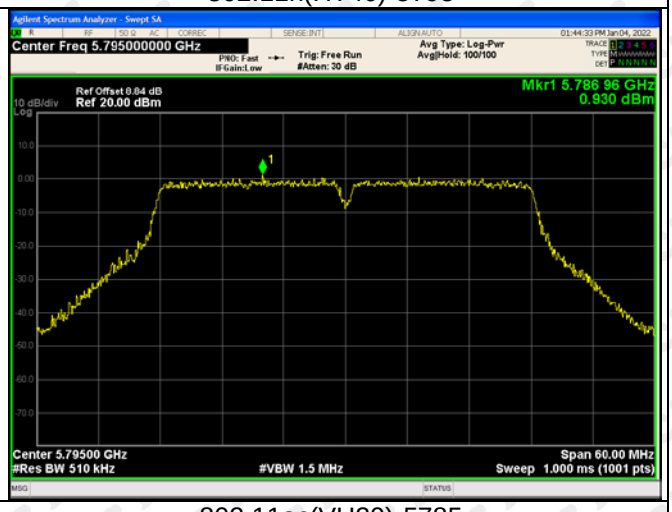
802.11n(HT40)-5755



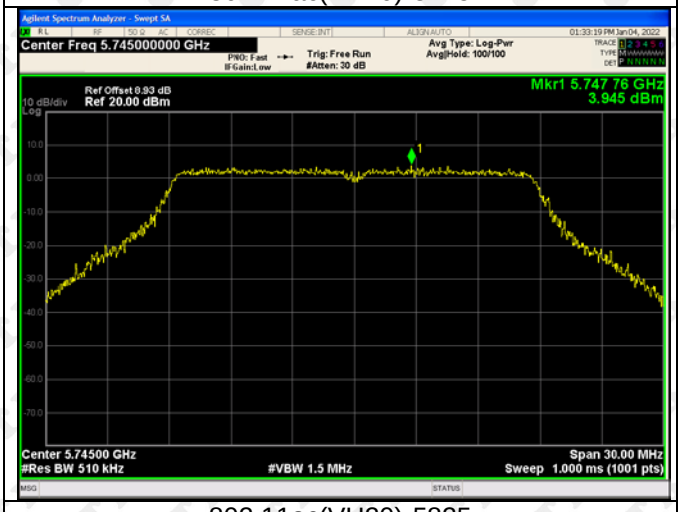
802.11n(HT40)-5795



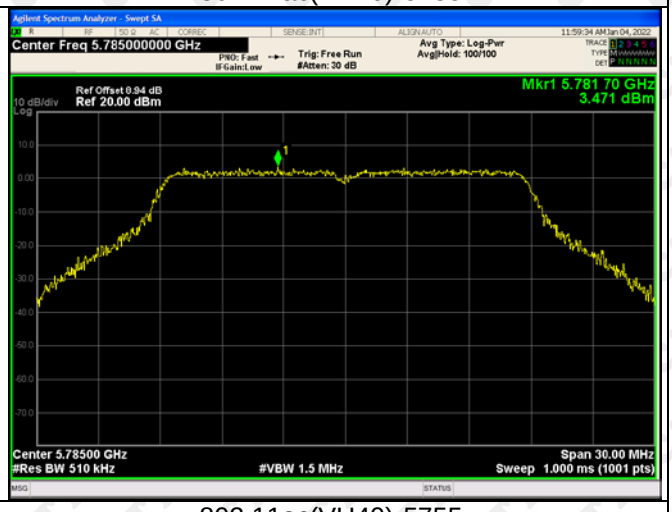
802.11ac(VH20)-5745



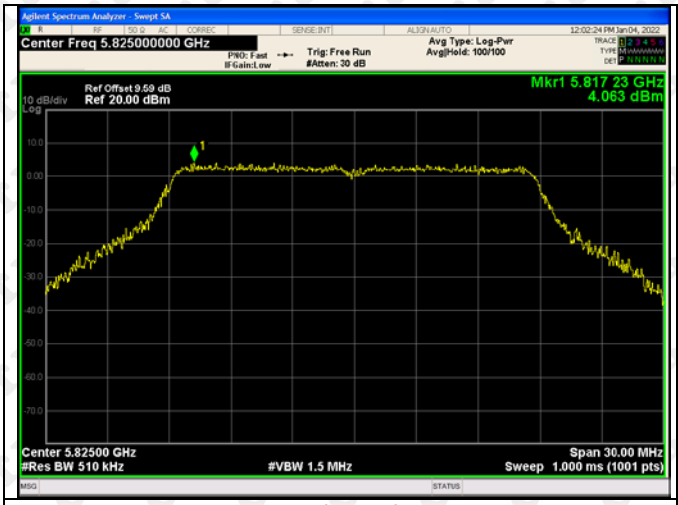
802.11ac(VH20)-5785



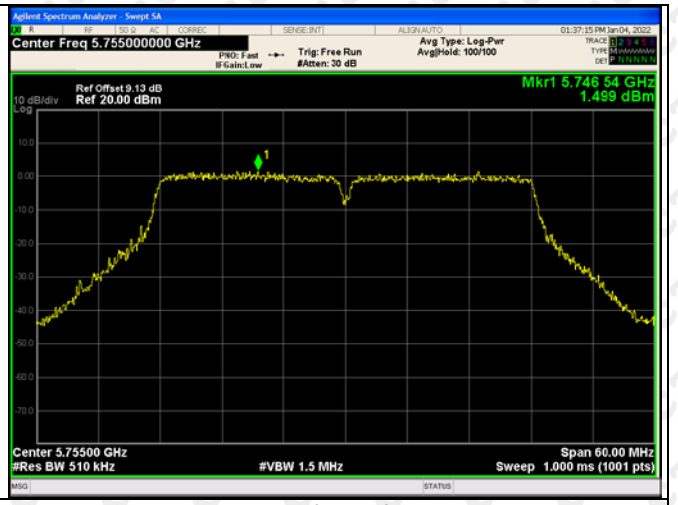
802.11ac(VH20)-5825



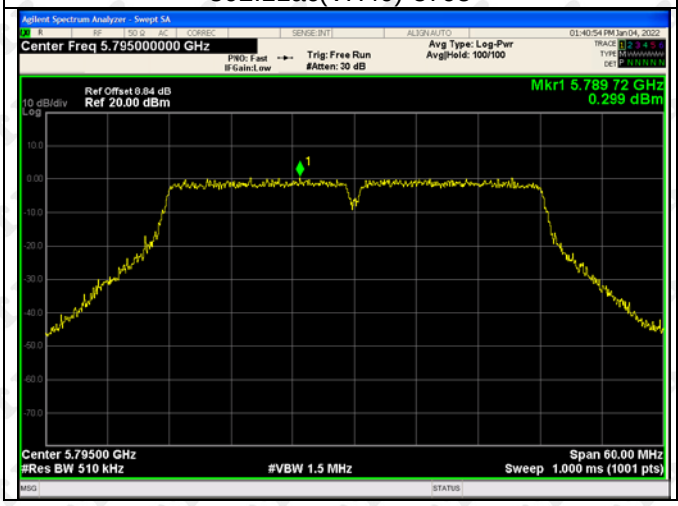
802.11ac(VH40)-5755

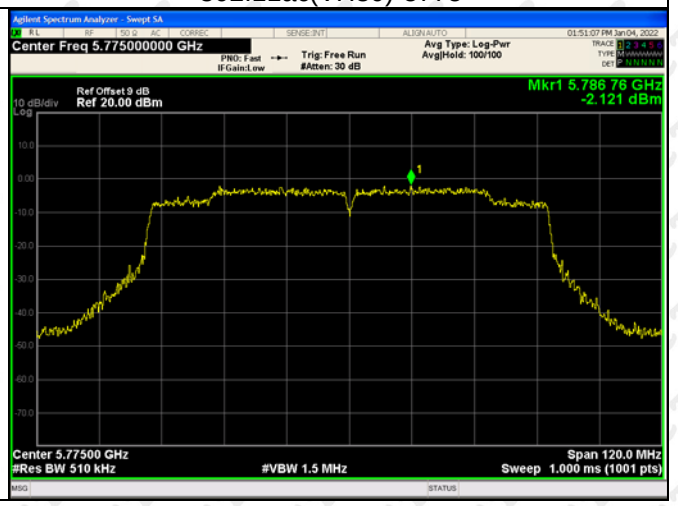


802.11ac(VH40)-5795



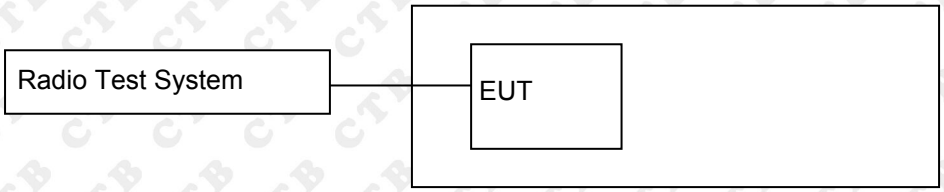
802.11ac(VH80)-5775





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 (5180-5240MHz)

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.00	5180.0556	5180	0.0556	10.7336
		V max (V)	138.00	5180.0323	5180	0.0323	6.2355
		V min (V)	102.00	5180.0246	5180	0.0246	4.7490
Limits				5150-5250 MHz			
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)	-20	5180.0054	5180	0.0054	1.0425
		T (°C)	-10	5180.0105	5180	0.0105	2.0270
		T (°C)	0	5180.0323	5180	0.0323	6.2355
		T (°C)	10	5180.0386	5180	0.0386	7.4517
		T (°C)	20	5180.0293	5180	0.0293	5.6564
		T (°C)	30	5180.0218	5180	0.0218	4.2085
		T (°C)	40	5180.0125	5180	0.0125	2.4131
		T (°C)	50	5180.0097	5180	0.0097	1.8726
		T (°C)	60	5180.0414	5180	0.0414	7.9923
		T (°C)	70	5180.0697	5180	0.0697	13.4556
Limits				5150-5250 MHz			
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)	120.00	5200.0254	5200	0.0254	4.8846
		V max (V)	138.00	5200.0428	5200	0.0428	8.2308
		V min (V)	102.00	5200.0694	5200	0.0694	13.3462
Limits				5150-5250MHz			
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)	-20	5200.0633	5200	0.0633	12.1731
		T (°C)	-10	5200.0526	5200	0.0526	10.1154
		T (°C)	0	5200.0434	5200	0.0434	8.3462
		T (°C)	10	5200.0928	5200	0.0928	17.8462
		T (°C)	20	5200.0635	5200	0.0635	12.2115
		T (°C)	30	5200.0124	5200	0.0124	2.3846
		T (°C)	40	5200.0733	5200	0.0733	14.0962
		T (°C)	50	5200.0416	5200	0.0416	8.0000
		T (°C)	60	5200.0325	5200	0.0325	6.2500
		T (°C)	70	5200.0427	5200	0.0427	8.2115
Limits				5150-5250 MHz			
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)	120.00	5240.0136	5240	0.0136	2.5954
		V max (V)	138.00	5240.0414	5240	0.0414	7.9008
		V min (V)	102.00	5240.0097	5240	0.0097	1.8511
Limits				5150-5250 MHz			
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)	-20	5240.0094	5240	0.0094	1.7939
		T (°C)	-10	5240.0035	5240	0.0035	0.6679
		T (°C)	0	5240.0144	5240	0.0144	2.7481
		T (°C)	10	5240.0856	5240	0.0856	16.3359
		T (°C)	20	5240.0114	5240	0.0114	2.1756
		T (°C)	30	5240.0125	5240	0.0125	2.3855
		T (°C)	40	5240.0063	5240	0.0063	1.2023
		T (°C)	50	5240.0076	5240	0.0076	1.4504
		T (°C)	60	5240.0053	5240	0.0053	1.0115
		T (°C)	70	5240.0105	5240	0.0105	2.0038
Limits				5150-5250 MHz			
Result				Complies			

TX Frequency(5260-5320MHz)

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5260MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.00	5260.00967	5260	0.00967	1.8379
		V max (V)	138.00	5260.00316	5260	0.00316	0.6014
		V min (V)	102.00	5260.00323	5260	0.00323	0.6149
Limits				5260-5320 MHz			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5260MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	-20	5260.00222	5260	0.00222	0.4223
		T (°C)	-10	5260.01069	5260	0.01069	2.0326
		T (°C)	0	5260.00682	5260	0.00682	1.2969
		T (°C)	10	5260.01077	5260	0.01077	2.0473
		T (°C)	20	5260.00935	5260	0.00935	1.7770
		T (°C)	30	5260.00354	5260	0.00354	0.6737
		T (°C)	40	5260.00411	5260	0.00411	0.7816
		T (°C)	50	5260.00475	5260	0.00475	0.9028
		T (°C)	60	5260.01181	5260	0.01181	2.2456
		T (°C)	70	5260.00917	5260	0.00917	1.7431
Limits				5260-5320MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5280MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.00	5280.00970	5280	0.00970	1.8373
		V max (V)	138.00	5280.00966	5280	0.00966	1.8296
		V min (V)	102.00	5280.00272	5280	0.00272	0.5152
Limits				5260-5320 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5280MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	-20	5280.00614	5280	0.00614	1.1634
		T (°C)	-10	5280.00150	5280	0.00150	0.2837
		T (°C)	0	5280.00062	5280	0.00062	0.1179
		T (°C)	10	5280.01157	5280	0.01157	2.1915
		T (°C)	20	5280.00553	5280	0.00553	1.0473
		T (°C)	30	5280.00034	5280	0.00034	0.0648
		T (°C)	40	5280.00577	5280	0.00577	1.0936
		T (°C)	50	5280.00363	5280	0.00363	0.6871
		T (°C)	60	5280.01206	5280	0.01206	2.2840
		T (°C)	70	5280.01050	5280	0.01050	1.9884
Limits				5260-5320 MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5320MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.00	5320.00152	5320	0.00152	0.2859
		V max (V)	138.00	5320.01224	5320	0.01224	2.3012
		V min (V)	102.00	5320.00211	5320	0.00211	0.3960
Limits				5260-5320 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5320MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	-20	5320.01073	5320	0.01073	2.0165
		T (°C)	-10	5320.00749	5320	0.00749	1.4082
		T (°C)	0	5320.00617	5320	0.00617	1.1603
		T (°C)	10	5320.00557	5320	0.00557	1.0468
		T (°C)	20	5320.00225	5320	0.00225	0.4222
		T (°C)	30	5320.00183	5320	0.00183	0.3431
		T (°C)	40	5320.00677	5320	0.00677	1.2735
		T (°C)	50	5320.00982	5320	0.00982	1.8465
		T (°C)	60	5320.01046	5320	0.01046	1.9668
		T (°C)	70	5320.00310	5320	0.00310	0.5824
Limits				5260-5320 MHz			
Result				Complies			

TX Frequency(5500-5700MHz)

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5500MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.00	5500.00404	5500	0.00404	0.7341
		V max (V)	138.00	5500.01102	5500	0.01102	2.0033
		V min (V)	102.00	5500.00922	5500	0.00922	1.6758
Limits				5500-5700 MHz			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5500MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	-20	5500.00829	5500	0.00829	1.5076
		T (°C)	-10	5500.00257	5500	0.00257	0.4681
		T (°C)	0	5500.00861	5500	0.00861	1.5656
		T (°C)	10	5500.00220	5500	0.00220	0.4002
		T (°C)	20	5500.00421	5500	0.00421	0.7657
		T (°C)	30	5500.01288	5500	0.01288	2.3420
		T (°C)	40	5500.00173	5500	0.00173	0.3149
		T (°C)	50	5500.00963	5500	0.00963	1.7506
		T (°C)	60	5500.00611	5500	0.00611	1.1116
		T (°C)	70	5500.00370	5500	0.00370	0.6736
Limits				5500-5700MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5580MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.00	5580.00658	5580	0.00658	1.1801
		V max (V)	138.00	5580.01152	5580	0.01152	2.0639
		V min (V)	102.00	5580.01114	5580	0.01114	1.9968
Limits				5500-5700 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5580MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	-20	5580.01202	5580	0.01202	2.1544
		T (°C)	-10	5580.01195	5580	0.01195	2.1423
		T (°C)	0	5580.01186	5580	0.01186	2.1258
		T (°C)	10	5580.01046	5580	0.01046	1.8749
		T (°C)	20	5580.00078	5580	0.00078	0.1390
		T (°C)	30	5580.00652	5580	0.00652	1.1677
		T (°C)	40	5580.00124	5580	0.00124	0.2219
		T (°C)	50	5580.01243	5580	0.01243	2.2283
		T (°C)	60	5580.00301	5580	0.00301	0.5395
		T (°C)	70	5580.01168	5580	0.01168	2.0932
Limits				5500-5700 MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5700MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (° C)	20	V nom (V)	120.00	5700.00999	5700	0.00999	1.7525
		V max (V)	138.00	5700.00009	5700	0.00009	0.0149
		V min (V)	102.00	5700.00006	5700	0.00006	0.0097
Limits				5500-5700 MHz			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5700MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	-20	5700.01012	5700	0.01012	1.7747
		T (°C)	-10	5700.00841	5700	0.00841	1.4760
		T (°C)	0	5700.00621	5700	0.00621	1.0900
		T (°C)	10	5700.00916	5700	0.00916	1.6078
		T (°C)	20	5700.00241	5700	0.00241	0.4225
		T (°C)	30	5700.00401	5700	0.00401	0.7034
		T (°C)	40	5700.01105	5700	0.01105	1.9384
		T (°C)	50	5700.01230	5700	0.01230	2.1582
		T (°C)	60	5700.00489	5700	0.00489	0.8582
		T (°C)	70	5700.00439	5700	0.00439	0.7696
Limits				5500-5700 MHz			
Result				Complies			

TX Frequency(5745-5825MHz)

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.00	5745.00441	5745	0.00441	0.7684
		V max (V)	138.00	5745.00640	5745	0.00640	1.1146
		V min (V)	102.00	5745.01075	5745	0.01075	1.8716
Limits				5725-5850 MHz			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	-20	5745.01046	5745	0.01046	1.8200
		T (°C)	-10	5745.00022	5745	0.00022	0.0385
		T (°C)	0	5745.00158	5745	0.00158	0.2750
		T (°C)	10	5745.00909	5745	0.00909	1.5825
		T (°C)	20	5745.00980	5745	0.00980	1.7057
		T (°C)	30	5745.00325	5745	0.00325	0.5654
		T (°C)	40	5745.00040	5745	0.00040	0.0701
		T (°C)	50	5745.01152	5745	0.01152	2.0059
		T (°C)	60	5745.00376	5745	0.00376	0.6543
		T (°C)	70	5745.00969	5745	0.00969	1.6865
Limits				5725-5850 MHz			
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)	120.00	5785.01224	5785	0.01224	2.1166
		V max (V)	138.00	5785.00701	5785	0.00701	1.2119
		V min (V)	102.00	5785.00173	5785	0.00173	0.2997
Limits				5725-5850 MHz			
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)	-20	5785.00286	5785	0.00286	0.4942
		T (°C)	-10	5785.00097	5785	0.00097	0.1684
		T (°C)	0	5785.00604	5785	0.00604	1.0445
		T (°C)	10	5785.00207	5785	0.00207	0.3570
		T (°C)	20	5785.00655	5785	0.00655	1.1326
		T (°C)	30	5785.00073	5785	0.00073	0.1258
		T (°C)	40	5785.00536	5785	0.00536	0.9258
		T (°C)	50	5785.00634	5785	0.00634	1.0964
		T (°C)	60	5785.01235	5785	0.01235	2.1352
		T (°C)	70	5785.01327	5785	0.01327	2.2933
Limits				5725-5850 MHz			
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)	120.00	5825.01245	5825	0.01245	2.1374
		V max (V)	138.00	5825.00083	5825	0.00083	0.1425
		V min (V)	102.00	5825.00663	5825	0.00663	1.1386
Limits				5725-5850 MHz			
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)	-20	5825.00739	5825	0.00739	1.2686
		T (°C)	-10	5825.00528	5825	0.00528	0.9067
		T (°C)	0	5825.00386	5825	0.00386	0.6631
		T (°C)	10	5825.00097	5825	0.00097	0.1673
		T (°C)	20	5825.00391	5825	0.00391	0.6717
		T (°C)	30	5825.00170	5825	0.00170	0.2924
		T (°C)	40	5825.01059	5825	0.01059	1.8178
		T (°C)	50	5825.00416	5825	0.00416	0.7148
		T (°C)	60	5825.00912	5825	0.00912	1.5661
		T (°C)	70	5825.00508	5825	0.00508	0.8717
Limits				5725-5850 MHz			
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.

EUT Antenna:

The antenna is External Antenna and no consideration of replacement. The best case gain of the antenna is 4.5dBi.

15. EUT PHOTOGRAPHS

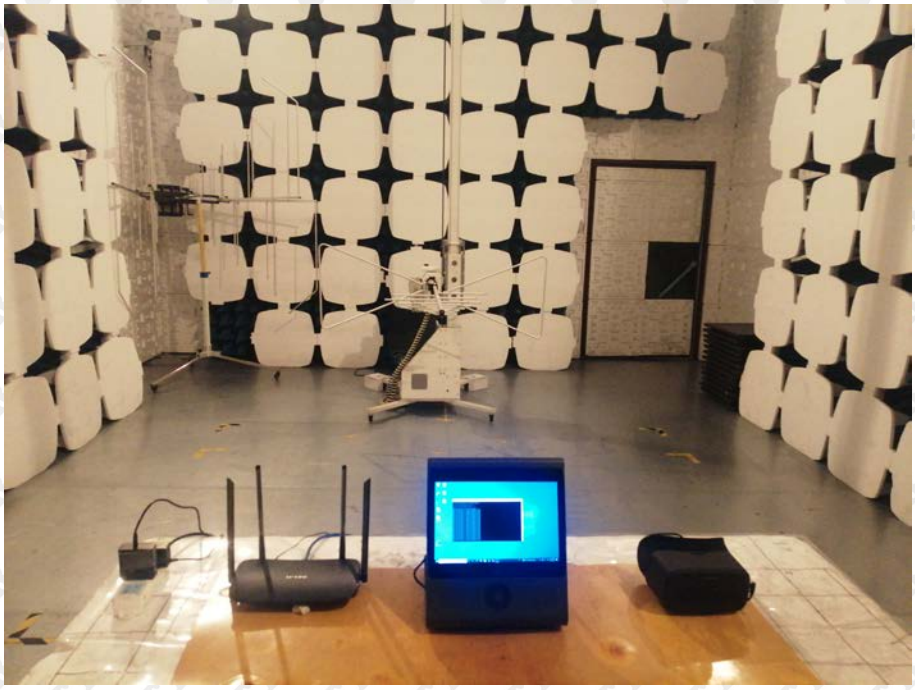
EUT Photo 1

EUT Photo 2

16. EUT TEST SETUP PHOTOGRAPHS

Spurious emissions

Below 1GHz



Above 1G

Conducted Emission

※※※※※ END OF REPORT ※※※※※