10.4 Test Results

Test mode ANT 1	Test Channel (MHz)	26dB Bandwidth (MHz)
802.11a	5180	21.263
	5200	21.593
	5240	21.057
802.11ac20	5180	24.732
	5200	25.671
	5240	21.922
802.11ac40	5190	50.611
	5230	41.776
802.11ac80	5210	89.475
802.11n(HT20)	5180	24.11
	5200	25.368
	5240	21.746
802.11n(HT40)	5190	47.527
	5230	50.025

Test mode ANT 2	Test Channel (MHz)	26dB Bandwidth (MHz)
802.11a	5180	23.887
	5200	21.74
	5240	21.661
802.11ac20	5180	21.452
	5200	24.561
	5240	21.859
802.11ac40	5190	50.309
	5230	41.013
802.11ac80	5210	90.393
802.11n(HT20)	5180	21.292
	5200	22.535
	5240	21.872
802.11n(HT40)	5190	47.569
	5230	43.059

5725-5850 MHz

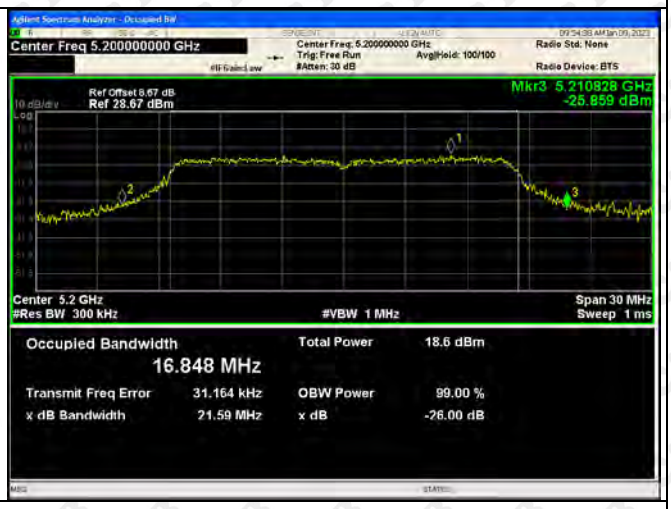
Test mode Ant 1	Test Channel (MHz)	6dB Bandwidth (MHz)	Result
802.11a	5745	16.338	Pass
	5785	16.308	Pass
	5825	16.38	Pass
802.11ac(VH20)	5745	17.546	Pass
	5785	17.074	Pass
	5825	16.635	Pass
802.11ac(VH40)	5755	34.948	Pass
	5795	35.507	Pass
802.11ac(VH80)	5775	75.237	Pass
802.11n(VH20)	5745	17.004	Pass
	5785	17.336	Pass
	5825	16.936	Pass
802.11n(VH40)	5755	34.146	Pass
	5795	35.3	Pass

Test mode Ant 2	Test Channel (MHz)	6dB Bandwidth (MHz)	Result
802.11a	5745	16.342	Pass
	5785	16.391	Pass
	5825	16.338	Pass
802.11ac(VH20)	5745	16.981	Pass
	5785	17.107	Pass
	5825	17.059	Pass
802.11ac(VH40)	5755	35.352	Pass
	5795	34.899	Pass
802.11ac(VH80)	5775	75.225	Pass
802.11n(VH20)	5745	17.326	Pass
	5785	17.109	Pass
	5825	17.561	Pass
802.11n(VH40)	5755	35.206	Pass
	5795	35.461	Pass

Test Graph ANT 1

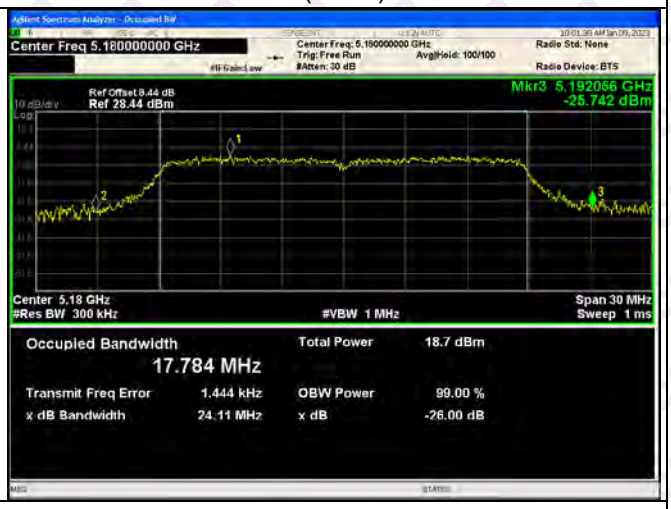
802.11a-5180

802.11a-5200

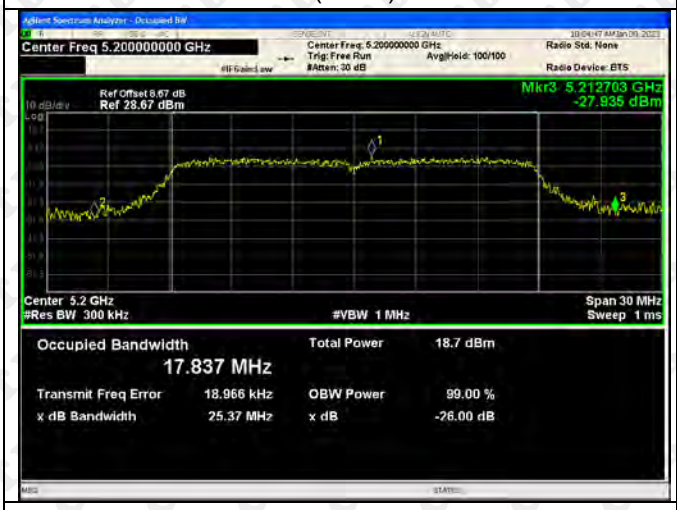


802.11a-5240

802.11n(HT20)-5180



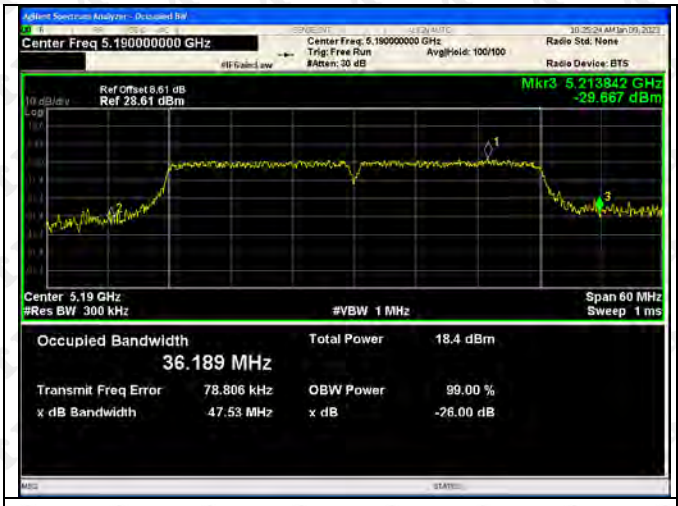
802.11n(HT20)-5200



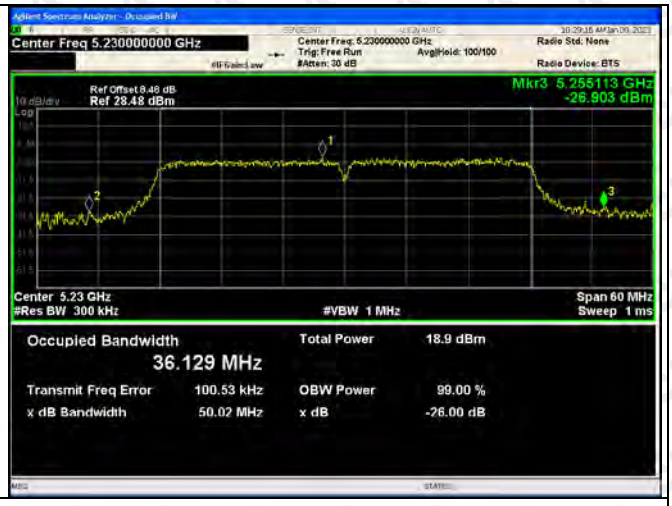
802.11n(HT20)-5240

802.11n(HT40)-5190

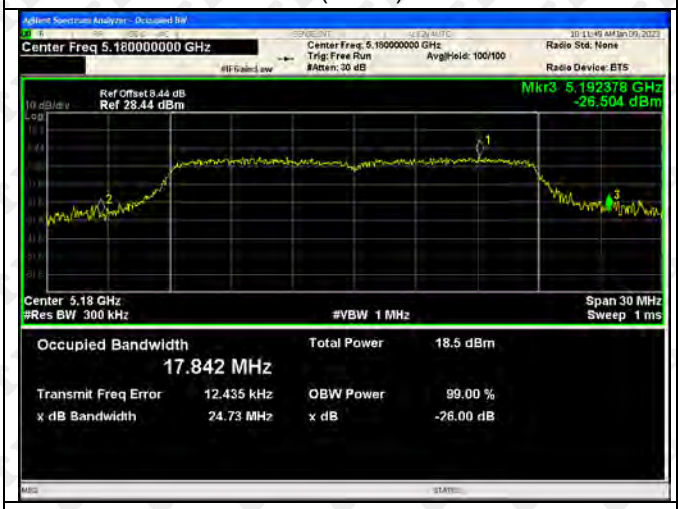
802.11n(HT40)-5230



802.11ac(VH20)-5180



802.11ac(VH20)-5200



802.11ac(VH20)-5240

802.11ac(VH40)-5190

802.11ac(VH40)-5230

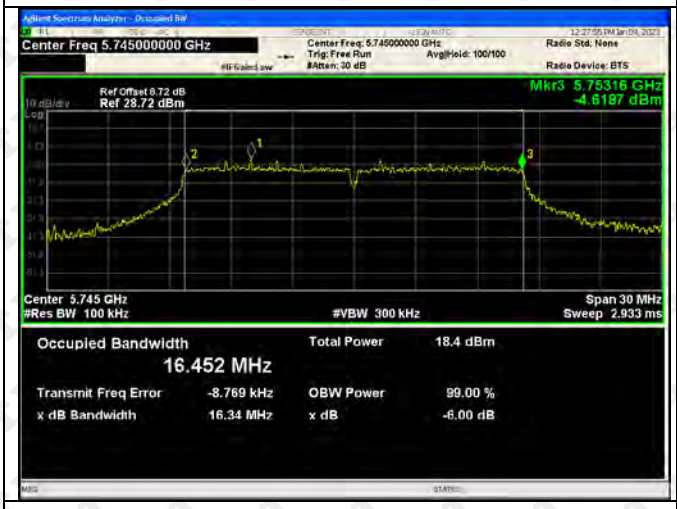
802.11ac(VH80)-5210


Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.230000000 GHz
Center Freq: 5.230000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Ref Offset 8.48 dB
10 dB/div
Ref 28.48 dBm
Mkr3 5.250979 GHz
-28.807 dBm
Center 5.23 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 60 MHz
Sweep 1 ms
Occupied Bandwidth
36.134 MHz
Total Power 18.3 dBm
Transmit Freq Error 91.243 kHz
OBW Power 99.00 %
x dB Bandwidth 41.78 MHz
x dB -26.00 dB


Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.210000000 GHz
Center Freq: 5.210000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Ref Offset 8.52 dB
10 dB/div
Ref 28.52 dBm
Mkr3 5.254979 GHz
-32.029 dBm
Center 5.21 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 120 MHz
Sweep 1.267 ms
Occupied Bandwidth
75.459 MHz
Total Power 18.1 dBm
Transmit Freq Error 241.88 kHz
OBW Power 99.00 %
x dB Bandwidth 89.48 MHz
x dB -26.00 dB

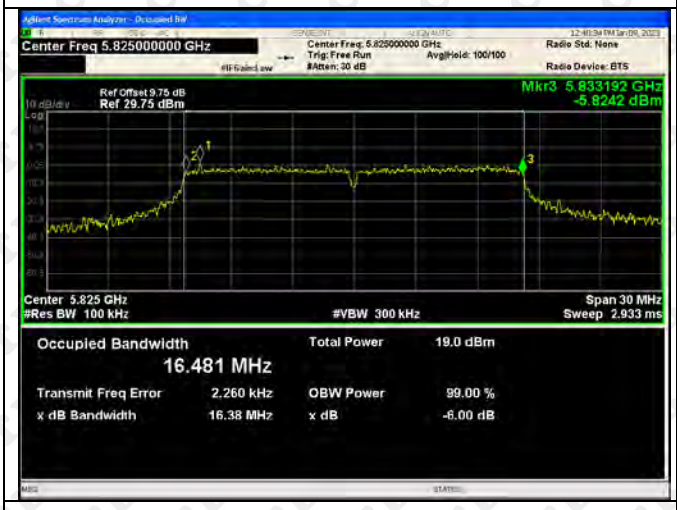
ANT1:
5725-5850MHz

802.11a-5745

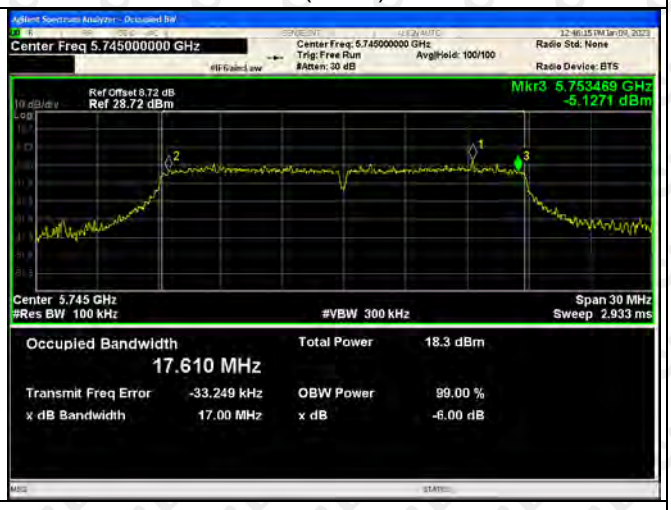


802.11a-5785

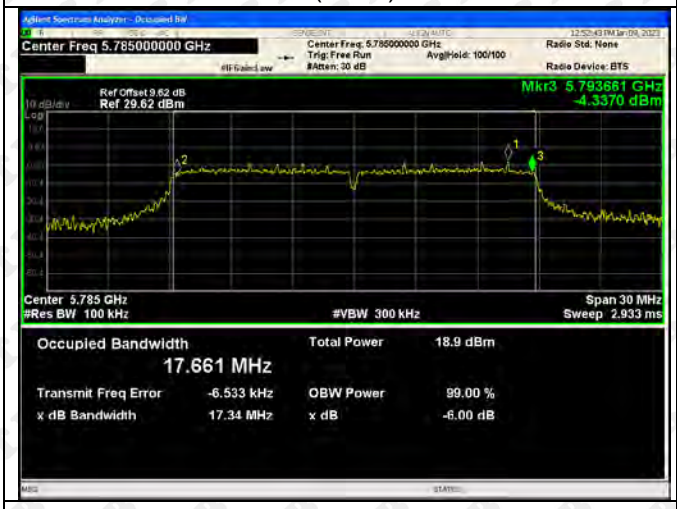
802.11a-5825



802.11n(HT20)-5745



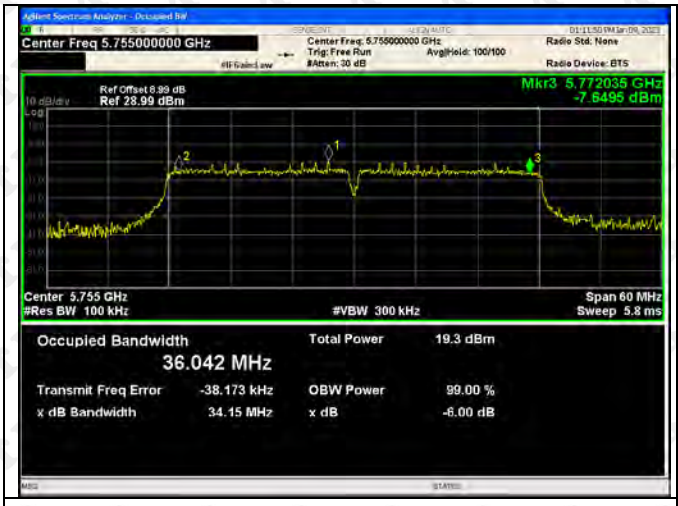
802.11n(HT20)-5785



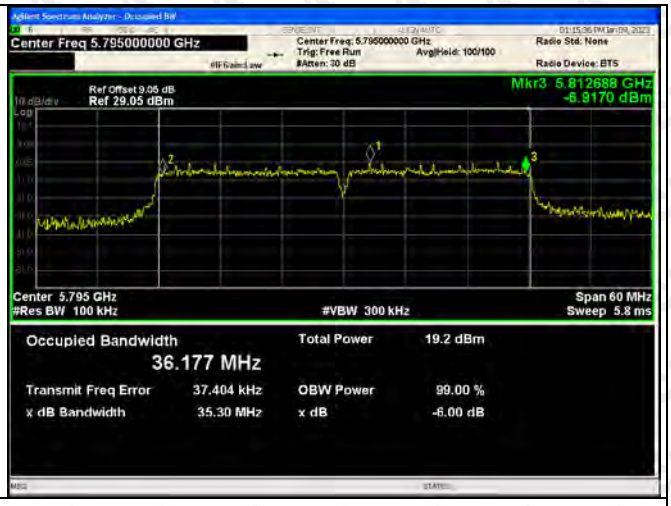
802.11n(HT20)-5825

802.11n(HT40)-5755

802.11n(HT40)-5795



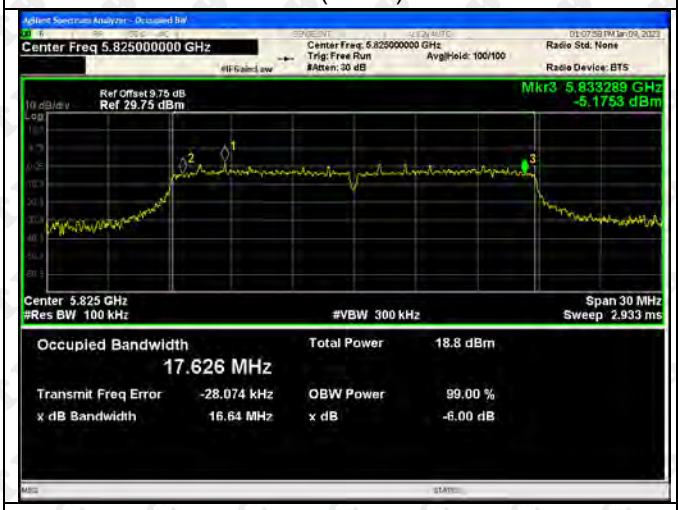
802.11ac(VH20)-5745



802.11ac(VH20)-5785

802.11ac(VH20)-5825

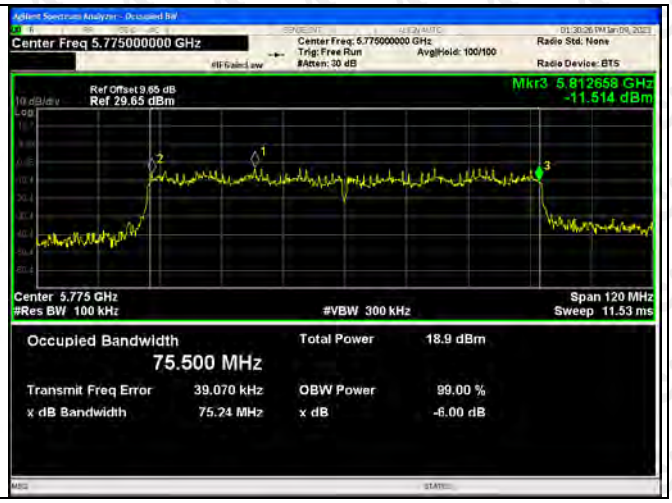
802.11ac(VH40)-5755



802.11ac(VH40)-5795

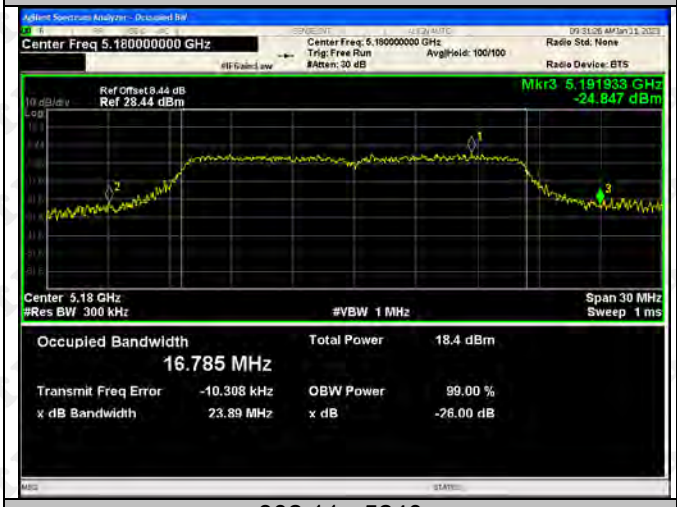
802.11ac(VH80)-5775


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 9.05 dB
10 dB/div
Ref 29.05 dBm
Mkr3 5.812791 GHz
-7.1933 dBm
Center 5.795 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 60 MHz
Sweep 5.8 ms
Occupied Bandwidth
36.165 MHz
Total Power 19.2 dBm
Transmit Freq Error 37.183 kHz
OBW Power 99.00 %
x dB Bandwidth 35.51 MHz
x dB -6.00 dB

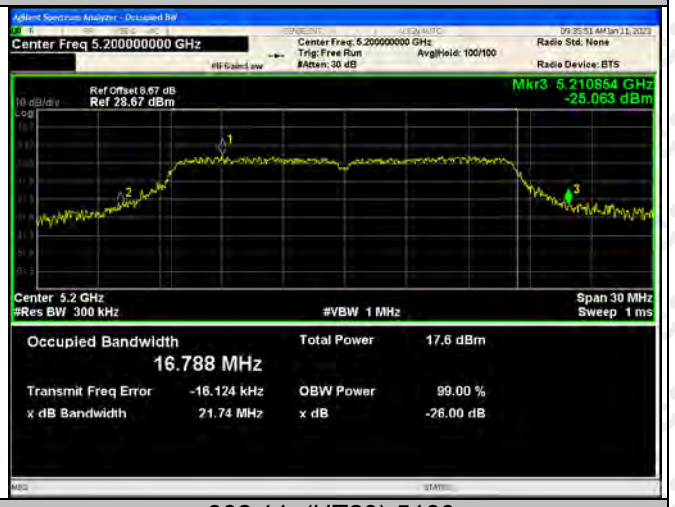

Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.775000000 GHz
Center Freq: 5.775000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Ref Offset 9.65 dB
10 dB/div
Ref 29.65 dBm
Mkr3 5.812658 GHz
-11.514 dBm
Center 5.775 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 120 MHz
Sweep 11.53 ms
Occupied Bandwidth
75.500 MHz
Total Power 18.9 dBm
Transmit Freq Error 39.070 kHz
OBW Power 99.00 %
x dB Bandwidth 75.24 MHz
x dB -6.00 dB

Test Graph ANT 2

802.11a-5180



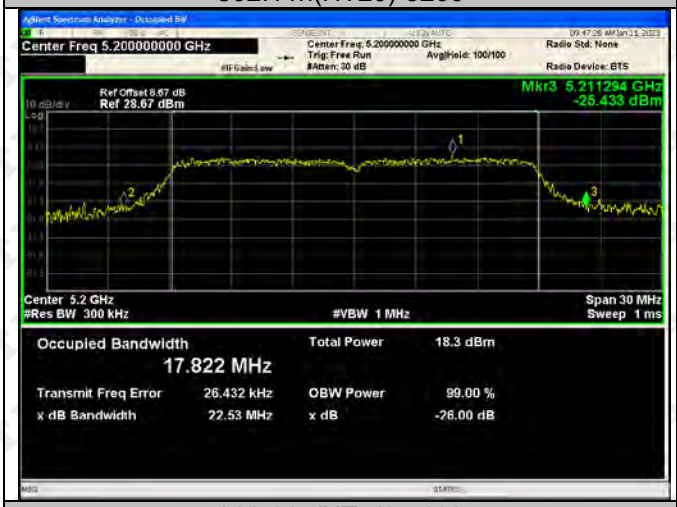
802.11a-5200



802.11a-5240

802.11n(HT20)-5180

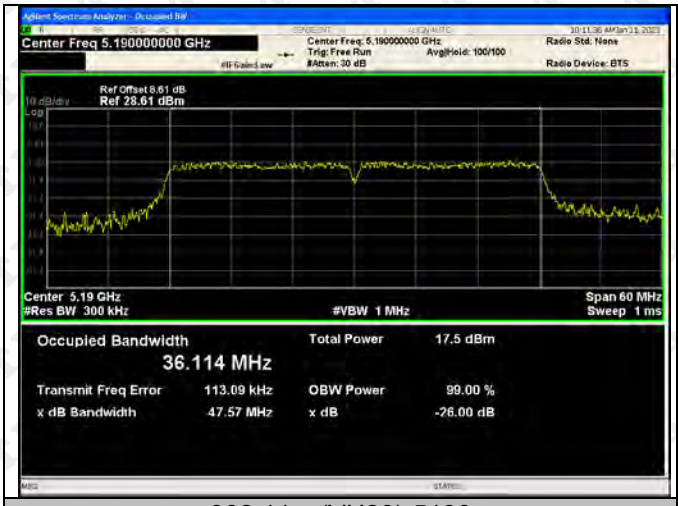
802.11n(HT20)-5200



802.11n(HT20)-5240

802.11n(HT40)-5190

802.11n(HT40)-5230

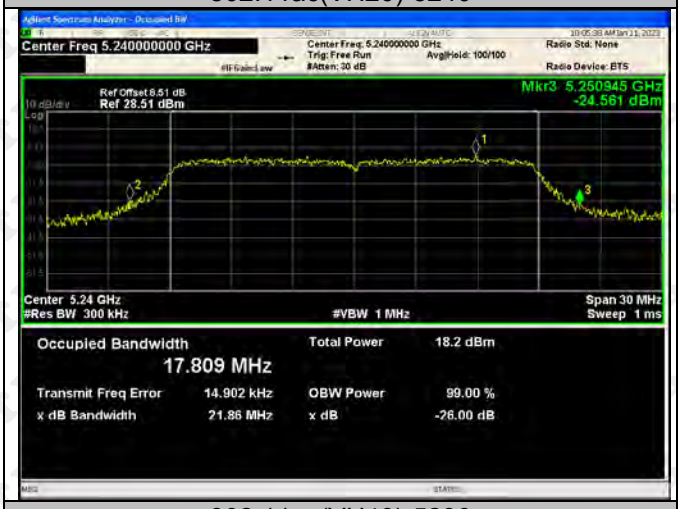


802.11ac(VH20)-5180

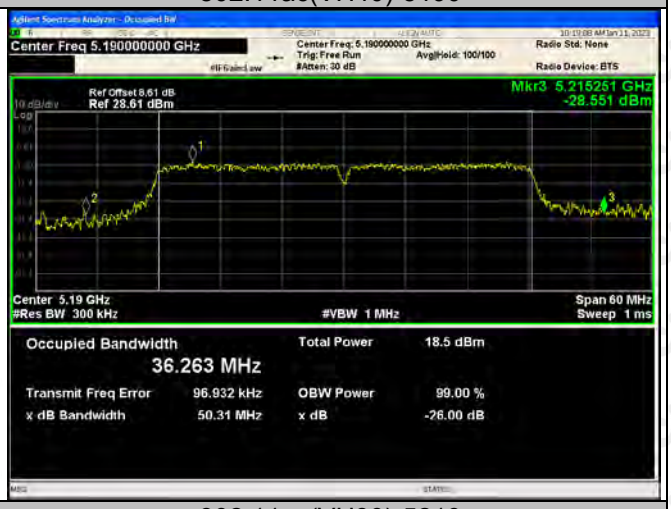
802.11ac(VH20)-5200

802.11ac(VH20)-5240

802.11ac(VH40)-5190



802.11ac(VH40)-5230



802.11ac(VH80)-5210


Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.230000000 GHz
Center Freq: 5.230000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Ref Offset 8.48 dB
10 dB/div
Ref 28.48 dBm
Mkr3 5.250588 GHz
-23.155 dBm
Center 5.23 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 60 MHz
Sweep 1 ms
Occupied Bandwidth
36.152 MHz
Total Power 18.8 dBm
Transmit Freq Error 81.306 kHz
OBW Power 99.00 %
x dB Bandwidth 41.01 MHz
x dB -26.00 dB


Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.210000000 GHz
Center Freq: 5.210000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Ref Offset 8.52 dB
10 dB/div
Ref 28.52 dBm
Mkr3 5.255374 GHz
-34.592 dBm
Center 5.21 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 120 MHz
Sweep 1.267 ms
Occupied Bandwidth
75.439 MHz
Total Power 17.7 dBm
Transmit Freq Error 177.80 kHz
OBW Power 99.00 %
x dB Bandwidth 90.39 MHz
x dB -26.00 dB

ANT2:
5725-5850MHz

802.11a-5745

802.11a-5785

802.11a-5825

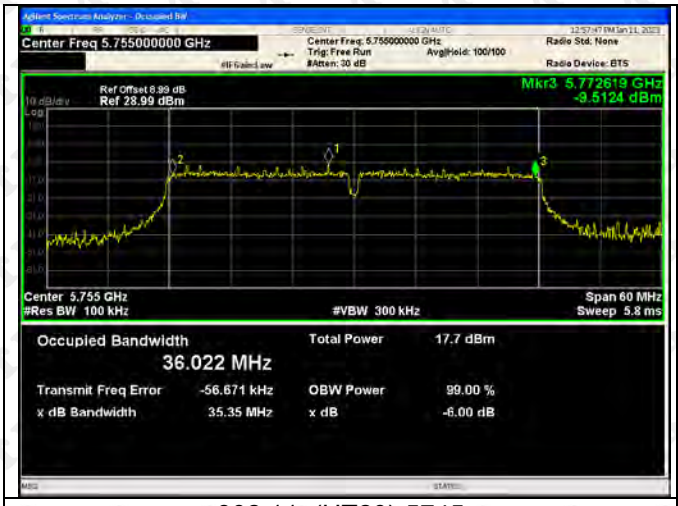
802.11ac(VH20)-5745

802.11ac(VH20)-5785

802.11ac(VH20)-5825

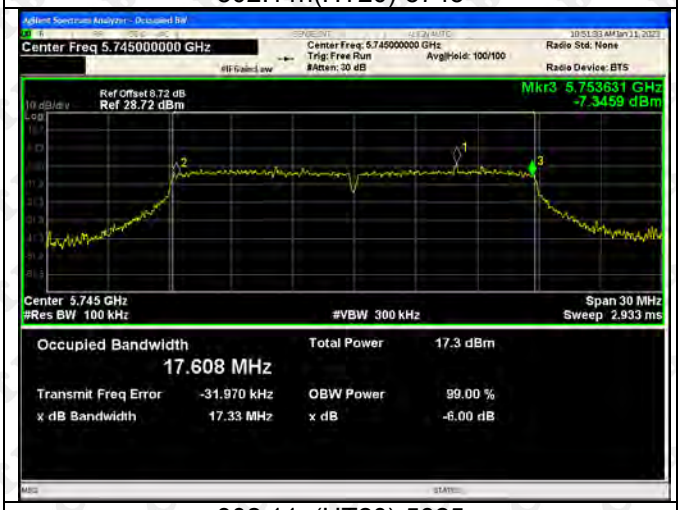
802.11ac(VH40)-5755

802.11ac(VH40)-5795



802.11n(HT20)-5745

802.11n(HT20)-5785



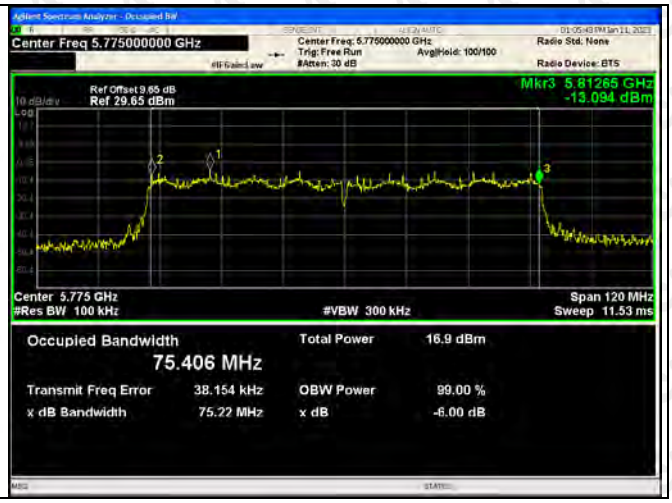
802.11n(HT20)-5825

802.11n(HT40)-5755

802.11n(HT40)-5795

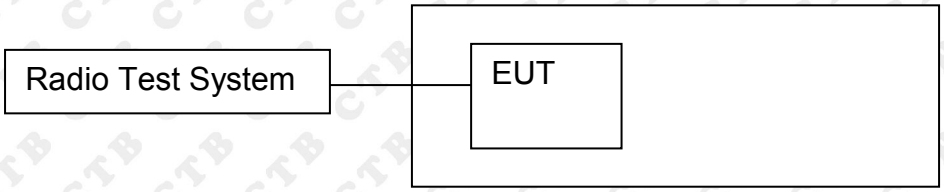
802.11ac(HT80)-5775


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 9.05 dB
10 dB/div
Ref 29.05 dBm
Mkr3 5.812765 GHz
-8.8455 dBm
Center 5.795 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 60 MHz
Sweep 5.8 ms
Occupied Bandwidth
36.108 MHz
Total Power 17.6 dBm
Transmit Freq Error 34.101 kHz
OBW Power 99.00 %
x dB Bandwidth 35.46 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 9.65 dB
10 dB/div
Ref 29.65 dBm
Mkr3 5.81265 GHz
-13.094 dBm
Center 5.775 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 120 MHz
Sweep 11.53 ms
Occupied Bandwidth
75.406 MHz
Total Power 16.9 dBm
Transmit Freq Error 38.154 kHz
OBW Power 99.00 %
x dB Bandwidth 75.22 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.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	6.999	7.061	/	11	Pass
	5200	7.097	6.537	/	11	Pass
	5240	6.787	6.366	/	11	Pass
802.11ac(VH20)	5180	6.685	6.455	9.551	11	Pass
	5200	6.658	6.374	9.688	11	Pass
	5240	6.601	6.514	9.364	11	Pass
802.11ac(VH40)	5190	4.731	4.045	6.374	11	Pass
	5230	3.837	3.99	7.270	11	Pass
802.11n(VH20)	5180	6.874	6.179	9.582	11	Pass
	5200	6.976	6.358	9.529	11	Pass
	5240	6.3	6.407	9.568	11	Pass
802.11n(VH40)	5190	3.544	3.176	7.412	11	Pass
	5230	4.245	4.275	6.924	11	Pass
802.11ac(VH80)	5230	1.844	1.463	4.668	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	3.783	3.431	/	11	Pass
	5785	4.628	3.405	/	11	Pass
	5825	4.52	4.176	/	11	Pass
802.11ac(VH20)	5745	4.373	3.553	7.119	11	Pass
	5785	4.434	3.36	7.046	11	Pass
	5825	4.953	3.741	7.096	11	Pass
802.11ac(VH40)	5755	1.846	0.747	4.848	11	Pass
	5795	1.47	0.705	4.494	11	Pass
802.11n(VH20)	5775	4.851	3.213	6.993	11	Pass
	5745	4.092	3.979	6.940	11	Pass
	5785	4.763	3.283	7.399	11	Pass
802.11n(VH40)	5825	2.324	1.29	4.341	11	Pass
	5755	2.045	0.84	4.115	11	Pass
802.11ac(VH80)	5795	-1.513	-2.068	1.229	11	Pass

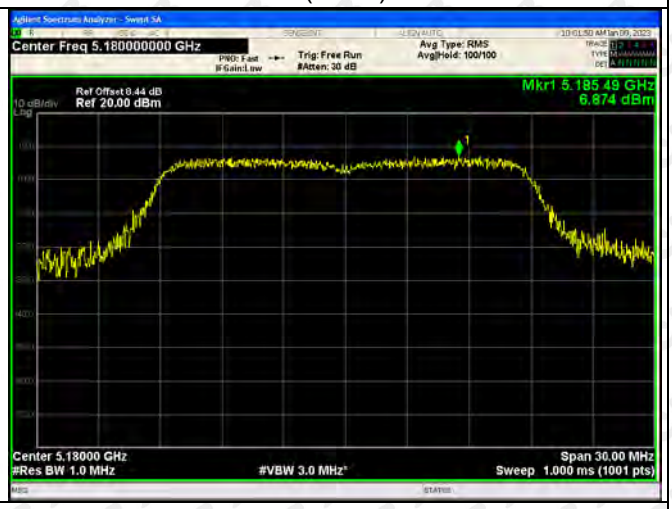
ANT 1

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


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.230000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 100/100
Ref Offset 8.48 dB
10 dB/div
Ref 20.00 dBm
Mkr1 5.243 74 GHz
3.837 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: 20 dB
Avg Type: RMS
Avg|Hold: 100/100
Ref Offset 8.52 dB
10 dB/div
Ref 20.00 dBm
Mkr1 5.236 52 GHz
1.844 dBm
Center 5.21000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Span 120.0 MHz
Sweep 1.000 ms (1001 pts)

ANT1:

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

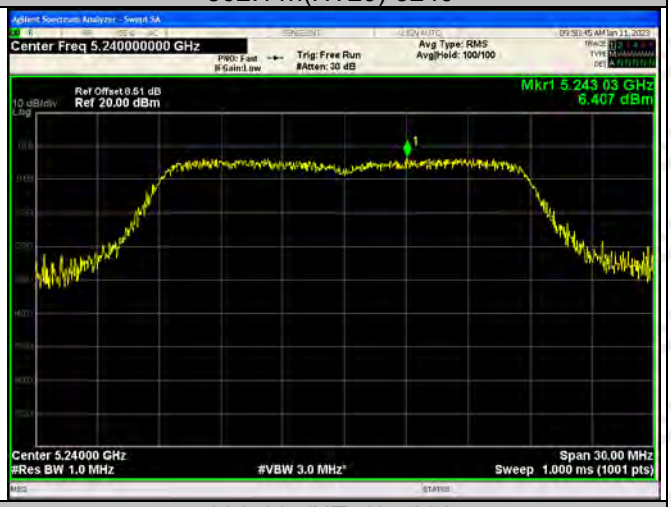
802.11ac(VH40)-5795

802.11ac(VH80)-5775


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.795000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 100/100
Ref Offset 9.06 dB
10 dB/div
Ref 20.00 dBm
Mkr1 5.808 44 GHz
2.045 dBm
Center 5.79500 GHz
#Res BW 510 kHz
#VBW 1.5 MHz*
Span 60.00 MHz
Sweep 1.000 ms (1001 pts)


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.775000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 100/100
Ref Offset 9.06 dB
10 dB/div
Ref 20.00 dBm
Mkr1 5.749 32 GHz
-1.513 dBm
Center 5.77500 GHz
#Res BW 510 kHz
#VBW 1.5 MHz*
Span 120.0 MHz
Sweep 1.000 ms (1001 pts)

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


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.230000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold: 100/100
Ref Offset 8.48 dB
10 dB/div
Ref 20.00 dBm
Mkr1 5.231 56 GHz
3.990 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: RMS
Avg|Hold: 100/100
Ref Offset 8.52 dB
10 dB/div
Ref 20.00 dBm
Mkr1 5.236 04 GHz
1.463 dBm
Center 5.21000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 120.0 MHz
Sweep 1.000 ms (1001 pts)

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)-575

802.11n(HT40)-5795

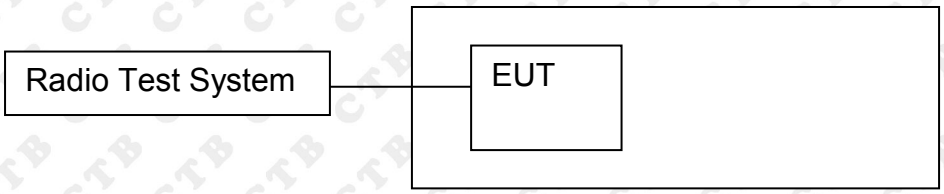
802.11ac(HT80)-5775


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.795000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 100/100
Ref Offset 9.06 dB
10 dB/div
Ref 20.00 dBm
Mkr1 5.809 88 GHz
0.840 dBm
Center 5.79500 GHz
#Res BW 510 kHz
#VBW 1.5 MHz*
Span 60.00 MHz
Sweep 1.000 ms (1001 pts)


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.775000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 100/100
Ref Offset 9.06 dB
10 dB/div
Ref 20.00 dBm
Mkr1 5.766 00 GHz
-2.068 dBm
Center 5.77500 GHz
#Res BW 510 kHz
#VBW 1.5 MHz*
Span 120.0 MHz
Sweep 1.000 ms (1001 pts)

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	5180.0592	5180	0.0592	11.4322
		V max (V)	132	5180.0126	5180	0.0126	2.4242
		V min (V)	108	5180.1003	5180	0.1003	19.3589
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	5180.0444	5180	0.0444	8.5749
		T (°C)	10	5180.0374	5180	0.0374	7.2127
		T (°C)	20	5180.0140	5180	0.0140	2.7102
		T (°C)	30	5180.0389	5180	0.0389	7.5008
		T (°C)	40	5180.0133	5180	0.0133	2.5638
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	5200.0501	5200	0.0501	9.6307
		V max (V)	132	5200.0184	5200	0.0184	3.5323
		V min (V)	108	5200.0045	5200	0.0045	0.8730
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	5200.0127	5200	0.0127	2.4410
		T (°C)	10	5200.0156	5200	0.0156	2.9976
		T (°C)	20	5200.0070	5200	0.0070	1.3397
		T (°C)	30	5200.0226	5200	0.0226	4.3420
		T (°C)	40	5200.0345	5200	0.0345	6.6287
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	5240.0335	5240	0.0335	6.3936
		V max (V)	132	5240.0386	5240	0.0386	7.3620
		V min (V)	108	5240.0515	5240	0.0515	9.8373
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	5240.0239	5240	0.0239	4.5607
		T (°C)	10	5240.0384	5240	0.0384	7.3331
		T (°C)	20	5240.0350	5240	0.0350	6.6852
		T (°C)	30	5240.0037	5240	0.0037	0.7024
		T (°C)	40	5240.0055	5240	0.0055	1.0431
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	5745.0540	5745	0.0540	9.3992
		V max (V)	132	5745.0254	5745	0.0254	4.4171
		V min (V)	108	5745.0540	5745	0.0540	9.3992
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	5745.0675	5745	0.0675	11.7518
		T (°C)	10	5745.0281	5745	0.0281	4.8901
		T (°C)	20	5745.0116	5745	0.0116	2.0257
		T (°C)	30	5745.0253	5745	0.0253	4.3959
		T (°C)	40	5745.0883	5745	0.0883	15.3757
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	5785.0874	5785	0.0874	15.1099
		V max (V)	132	5785.0293	5785	0.0293	5.0684
		V min (V)	108	5785.0730	5785	0.0730	12.6241
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	5785.0836	5785	0.0836	14.4470
		T (°C)	10	5785.0501	5785	0.0501	8.6643
		T (°C)	20	5785.0536	5785	0.0536	9.2702
		T (°C)	30	5785.0094	5785	0.0094	1.6213
		T (°C)	40	5785.0665	5785	0.0665	11.4911
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	5825.0847	5825	0.0847	14.5390
		V max (V)	132	5825.0700	5825	0.0700	12.0089
		V min (V)	108	5825.0919	5825	0.0919	15.7776
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	5825.0129	5825	0.0129	2.2129
		T (°C)	10	5825.0628	5825	0.0628	10.7897
		T (°C)	20	5825.0878	5825	0.0878	15.0681
		T (°C)	30	5825.0727	5825	0.0727	12.4769
		T (°C)	40	5825.0321	5825	0.0321	5.5048
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	5180.0521	5180	0.0521	10.0654
		V max (V)	132	5180.0249	5180	0.0249	4.7975
		V min (V)	108	5180.0099	5180	0.0099	1.9161
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	5180.0565	5180	0.0565	10.9034
		T (°C)	10	5180.0342	5180	0.0342	6.6101
		T (°C)	20	5180.0755	5180	0.0755	14.5711
		T (°C)	30	5180.0383	5180	0.0383	7.3953
		T (°C)	40	5180.0393	5180	0.0393	7.5883
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	5200.0547	5200	0.0547	10.5200
		V max (V)	132	5200.0106	5200	0.0106	2.0448
		V min (V)	108	5200.0775	5200	0.0775	14.8989
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	5200.0935	5200	0.0935	17.9878
		T (°C)	10	5200.0878	5200	0.0878	16.8802
		T (°C)	20	5200.0757	5200	0.0757	14.5599
		T (°C)	30	5200.0405	5200	0.0405	7.7955
		T (°C)	40	5200.0451	5200	0.0451	8.6658
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	5240.0107	5240	0.0107	2.0403
		V max (V)	132	5240.0277	5240	0.0277	5.2857
		V min (V)	108	5240.0093	5240	0.0093	1.7728
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	5240.0846	5240	0.0846	16.1372
		T (°C)	10	5240.0914	5240	0.0914	17.4390
		T (°C)	20	5240.0611	5240	0.0611	11.6547
		T (°C)	30	5240.0111	5240	0.0111	2.1121
		T (°C)	40	5240.0270	5240	0.0270	5.1568
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	5745.0675	5745	0.0675	11.7417
		V max (V)	132	5745.0009	5745	0.0009	0.1580
		V min (V)	108	5745.0145	5745	0.0145	2.5190
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	5745.0505	5745	0.0505	8.7902
		T (°C)	10	5745.0396	5745	0.0396	6.8884
		T (°C)	20	5745.0521	5745	0.0521	9.0739
		T (°C)	30	5745.0499	5745	0.0499	8.6836
		T (°C)	40	5745.0232	5745	0.0232	4.0420
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	5785.0609	5785	0.0609	10.5202
		V max (V)	132	5785.0119	5785	0.0119	2.0572
		V min (V)	108	5785.0277	5785	0.0277	4.7835
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	5785.0790	5785	0.0790	13.6526
		T (°C)	10	5785.0568	5785	0.0568	9.8133
		T (°C)	20	5785.0084	5785	0.0084	1.4487
		T (°C)	30	5785.0614	5785	0.0614	10.6074
		T (°C)	40	5785.0428	5785	0.0428	7.4013
		T (°C)	50	5785.0649	5785	0.0649	11.2112
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	5825.0173	5825	0.0173	2.9649
		V max (V)	132	5825.0201	5825	0.0201	3.4476
		V min (V)	108	5825.0179	5825	0.0179	3.0773
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	5825.0527	5825	0.0527	9.0458
		T (°C)	10	5825.0705	5825	0.0705	12.0995
		T (°C)	20	5825.0294	5825	0.0294	5.0535
		T (°C)	30	5825.0151	5825	0.0151	2.5842
		T (°C)	40	5825.0850	5825	0.0850	14.5882
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 WiFi (5.2G): -0.34dBi, WiFi (5.8G):-0.13dBi.

15. EUT PHOTOGRAPHS

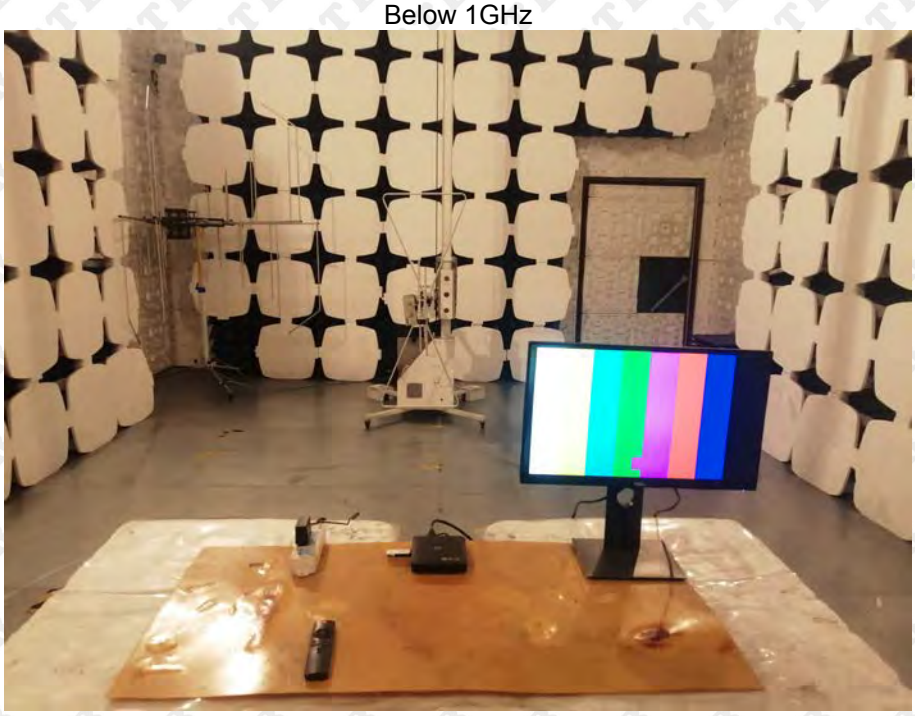
EUT Photo 1

EUT Photo 2

16. EUT TEST SETUP PHOTOGRAPHS

Spurious emissions

Below 1GHz



Above 1GHz

Conducted Emission

※※※※※ **END OF REPORT** ※※※※※