Band	FCC Limit					
	Frequency (㎒)	Fixed Limit (㏈m)	26 ㏈ BW (㎒)	11+10LogB (㏈m)	Antenna Gain (㏈i)	Limit (㏈m)
U-NII 1	5 180	23.98			4.50	23.98
	5 220					
	5 240					
U-NII 2A	5 260		21.303	24.28	5.03	
	5 300		21.187	24.26		
	5 320		21.245	24.27		
U-NII 2C	5 500		21.187	24.26	5.41	
	5 580		21.245	24.27		
	5 700		21.303	24.28		
U-NII 3	5 745	30			5.59	30
	5 785					
	5 825					

Band	IC Limit					
	Frequency (㎒)	Fixed Limit (㏈m)	99 % BW (㎒)	1.76+10LogB (㏈m)	Antenna Gain (㏈i)	Limit (㏈m)
U-NII 1	5 180	14.77	17.945	14.30	4.50	14.30
	5 220		17.945	14.30		14.30
	5 240		17.945	14.30		14.30
U-NII 2A	5 260		17.887	14.29	5.03	14.29
	5 300		17.945	14.30		14.30
	5 320		17.945	14.30		14.30

Band	IC Limit					
	Frequency (㎒)	Fixed Limit (㏈m)	99 % BW (㎒)	11+10LogB (㏈m)	Antenna Gain (㏈i)	Limit (㏈m)
U-NII 2C	5 500	23.98	17.945	23.54	5.41	23.54
	5 580		18.003	23.55		23.55
	5 700		18.003	23.55		23.55
U-NII 3	5 745	30			5.59	30
	5 785					
	5 825					

Remark;

1. Attenuator and cable offset was compensated in test program (R&S Power Viewer) before measuring.

2. According to KDB 662911 D01 v02r01, average power of each port (Ant. 1+Ant. 2) and antenna gain was combined by using below calculation.

3. Average power: 10 log {10^(Ant. 1 power / 10)+10^(Ant. 2 power / 10)}
   Antenna gain: 10 log [{10^(Ant. 1 gain / 20)+10^(Ant. 2 gain / 20)}^2 / 2]

4. Average Power Result (㏈m) = Average Power (㏈m) + Duty Cycle Correction Factor (㏈)

5. E.I.R.P. (㏈m) = Average Power Result (㏈m) + Antenna Gain (㏈i)

Test mode: 11n_HT40

Band	Frequency (MHz)	Data Rate (Mbps)	Ant. 1 Average Power (dBm)	Ant. 2 Average Power (dBm)	Ant. 1+Ant. 2 Average Power (dBm)
U-NII 1	5 190	MCS8	3.24	3.14	6.20
	5 230		3.14	3.19	6.18
U-NII 2A	5 270		3.07	3.26	6.18
	5 310		3.26	3.47	6.38
U-NII 2C	5 510		3.12	2.71	5.93
	5 550		3.25	2.64	5.97
	5 670		3.44	2.76	6.12
U-NII 3	5 755		2.72	2.04	5.40
	5 795		2.72	2.48	5.61

Band	Frequency (MHz)	Data Rate (Mbps)	Ant. 1+Ant. 2 Average Power (dBm)	Duty Cycle Correction Factor (dB)	Ant. 1 + Ant. 2 Average Power Result (dBm)
U-NII 1	5 190	MCS8	6.20	0.31	6.51
	5 230		6.18		6.49
U-NII 2A	5 270		6.18		6.49
	5 310		6.38		6.69
U-NII 2C	5 510		5.93		6.24
	5 550		5.97		6.28
	5 670		6.12		6.43
U-NII 3	5 755		5.40		5.71
	5 795		5.61		5.92

Band	Frequency (MHz)	Data Rate (Mbps)	Ant. 1 + Ant. 2 Average Power Result (dBm)	Antenna Gain (dBi)	Ant. 1 + Ant. 2 E.I.R.P. (dBm)
U-NII 1	5 190	MCS8	6.51	4.50	11.01
	5 230		6.49		10.99
U-NII 2A	5 270		6.49	5.03	11.52
	5 310		6.69		11.72

Band	FCC Limit					
	Frequency (㎒)	Fixed Limit (㏈ m)	26 ㏈ BW (㎒)	11+10LogB (㏈ m)	Antenna Gain (㏈ i)	Limit (㏈ m)
U-NII 1	5 190	23.98			4.50	23.98
	5 230					
U-NII 2A	5 270		40.289	27.05	5.03	
	5 310		40.174	27.04		
U-NII 2C	5 510		40.174	27.04	5.41	
	5 550		40.405	27.06		
	5 670		40.174	27.04		
U-NII 3	5 755	30			5.59	30
	5 795					

Band	IC Limit					
	Frequency (㎒)	Fixed Limit (㏈ m)	99 % BW (㎒)	1.76+10LogB (㏈ m)	Antenna Gain (㏈ i)	Limit (㏈ m)
U-NII 1	5 190	14.77	36.469	17.38	4.50	14.77
	5 230		36.469	17.38		
U-NII 2A	5 270		36.469	17.38	5.03	
	5 310		36.469	17.38		

Band	IC Limit					
	Frequency (㎒)	Fixed Limit (㏈ m)	99 % BW (㎒)	11+10LogB (㏈ m)	Antenna Gain (㏈ i)	Limit (㏈ m)
U-NII 2C	5 510	23.98	36.469	26.62	5.41	23.98
	5 550		36.585	26.63		
	5 670		36.585	26.63		
U-NII 3	5 755	30			5.59	30
	5 795					

Remark;

1. Attenuator and cable offset was compensated in test program (R&S Power Viewer) before measuring.

2. According to KDB 662911 D01 v02r01, average power of each port (Ant. 1+Ant. 2) and antenna gain was combined by using below calculation.

3. Average power: 10 log {10^(Ant. 1 power / 10)+10^(Ant. 2 power / 10)}
   Antenna gain: 10 log [{10^(Ant. 1 gain / 20)+10^(Ant. 2 gain / 20)}^2 / 2]

4. Average Power Result (㏈ m) = Average Power (㏈ m) + Duty Cycle Correction Factor (㏈)

5. E.I.R.P. (㏈ m) = Average Power Result (㏈ m) + Antenna Gain (㏈ i)

Test mode: 11ac_VHT80

Band	Frequency (MHz)	Data Rate (Mbps)	Ant. 1 Average Power (dBm)	Ant. 2 Average Power (dBm)	Ant. 1+Ant. 2 Average Power (dBm)
U-NII 1	5 210	MCS0	2.68	2.79	5.75
U-NII 2A	5 290		2.66	2.68	5.68
U-NII 2C	5 530		2.30	2.19	5.26
U-NII 3	5 775		1.85	1.41	4.65

Band	Frequency (MHz)	Data Rate (Mbps)	Ant. 1+Ant. 2 Average Power (dBm)	Duty Cycle Correction Factor (dB)	Ant.1 + Ant. 2 Average Power Result (dBm)
U-NII 1	5 210	MCS0	5.75	0.63	6.38
U-NII 2A	5 290		5.68		6.31
U-NII 2C	5 530		5.26		5.89
U-NII 3	5 775		4.65		5.28

Band	Frequency (MHz)	Data Rate (Mbps)	Ant. 1 + Ant. 2 Average Power Result (dBm)	Antenna Gain (dBi)	Ant. 1 + Ant. 2 E.I.R.P. (dBm)
U-NII 1	5 210	MCS0	6.38	4.50	10.88
U-NII 2A	5 290		6.31	5.03	11.34

Band	FCC Limit					
	Frequency (MHz)	Fixed Limit (dBm)	26 dB BW (MHz)	11+10LogB (dBm)	Antenna Gain (dBi)	Limit (dBm)
U-NII 1	5 210	23.98			4.50	23.98
U-NII 2A	5 290		81.505	30.11	5.03	
U-NII 2C	5 530		81.274	30.10	5.41	
U-NII 3	5 775	30			5.59	30

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dBm)	99 % BW (MHz)	1.76+10LogB (dBm)	Antenna Gain (dBi)	Limit (dBm)
U-NII 1	5 210	14.77	75.716	20.55	4.50	14.77
U-NII 2A	5 290		75.948	20.57	5.03	

Band	IC Limit					
	Frequency (MHz)	Fixed Limit (dBm)	99 % BW (MHz)	11+10LogB (dBm)	Antenna Gain (dBi)	Limit (dBm)
U-NII 2C	5 530	23.98	75.716	29.79	5.41	23.98
U-NII 3	5 775	30			5.59	30

Remark;

1. Attenuator and cable offset was compensated in test program (R&S Power Viewer) before measuring.

2. According to KDB 662911 D01 v02r01, average power of each port (Ant. 1+Ant. 2) and antenna gain was combined by using below calculation.

3. Average power: 10 log {10^(Ant. 1 power / 10)+10^(Ant. 2 power / 10)}
   Antenna gain: 10 log [{10^(Ant. 1 gain / 20)+10^(Ant. 2 gain / 20)}^2 / 2]

4. Average Power Result (dBm) = Average Power (dBm) + Duty Cycle Correction Factor (dB)

5. E.I.R.P. (dBm) = Average Power Result (dBm) + Antenna Gain (dBi)

- Band-crossing channels

Mode	Band	Frequency (㎒)	Data Rate (Mbps)	Average Power (㏈m)		
				Ant.1	Ant.2	Ant.1 + Ant.2
11ac_VHT20	U-NII 2C	5 720	MCS1	2.43	0.45	4.56
	U-NII 3			-4.14	-6.14	-2.02
11n_HT40	U-NII 2C	5 710	MCS8	0.62	-0.69	3.02
	U-NII 3			-9.67	-10.25	-6.94
11ac_VHT80	U-NII 2C	5 690	MCS0	1.54	-0.26	3.74
	U-NII 3			-13.01	-14.50	-10.68

Mode	Band	Limit					
		Frequency (㎒)	Fixed Limit (㏈m)	26 ㏈ BW (㎒)	11+10LogB (㏈m)	Antenna Gain (㏈i)	Limit (㏈m)
11ac_VHT20	U-NII 2C	5 720	23.98	15.593	22.93	5.41	22.93
	U-NII 3		30			5.59	30
11n_HT40	U-NII 2C	5 710	23.98	35.029	26.44	5.41	23.98
	U-NII 3		30			5.59	30
11ac_VHT80	U-NII 2C	5 690	23.98	76.216	29.82	5.41	23.98
	U-NII 3		30			5.59	30

Remark;

1. According to KDB 662911, average power of each port and antenna gain was combined by using below calculation.

   - Average power: 10 log {10^(Ant.1 power / 10)+10^(Ant.2 power / 10)}

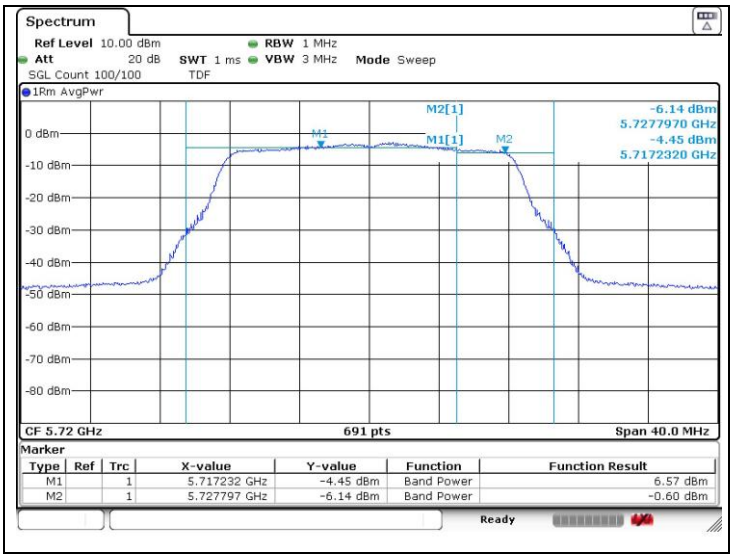
   - Unequal antenna gains, with equal transmit powers. For antenna gains given by G_1, G_2, …, G_N ㏈i
   (i) If transmit signals are correlated, then
   Directional gain = 10 log[$(10^{G_1/20} + 10^{G_2/20} + \ldots + 10^{G_N/20})^2/N_{ANT}$] ㏈i [Note the “20”s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

- Test plots

- SISO_Ant. 1

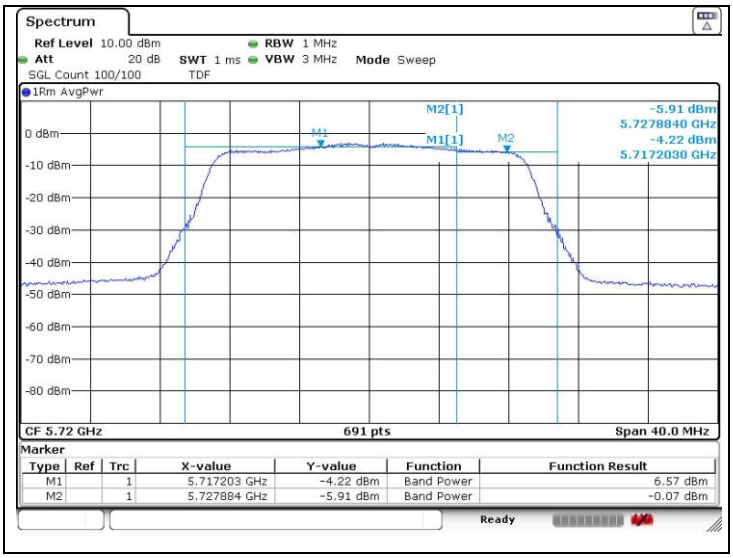
Band-crossing channels
802.11a (Band 2C&3)

High Channel
(5 720 ㎒)



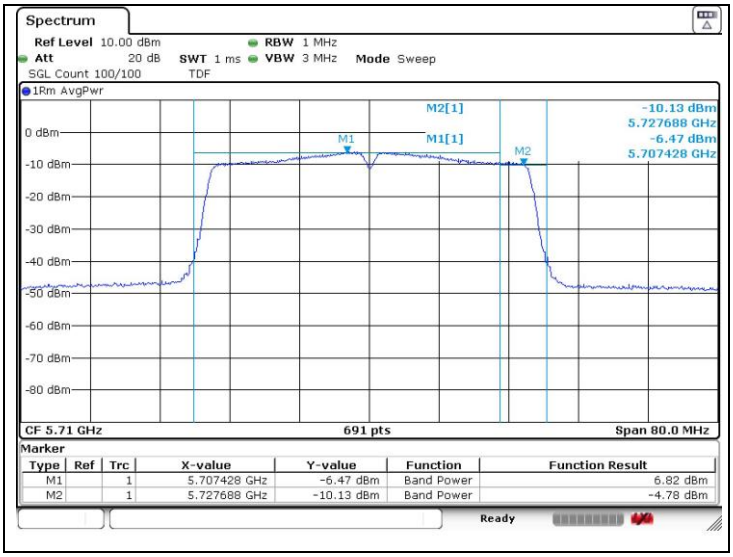
802.11n_HT20 (Band 2C&3)

High Channel
(5 720 ㎒)



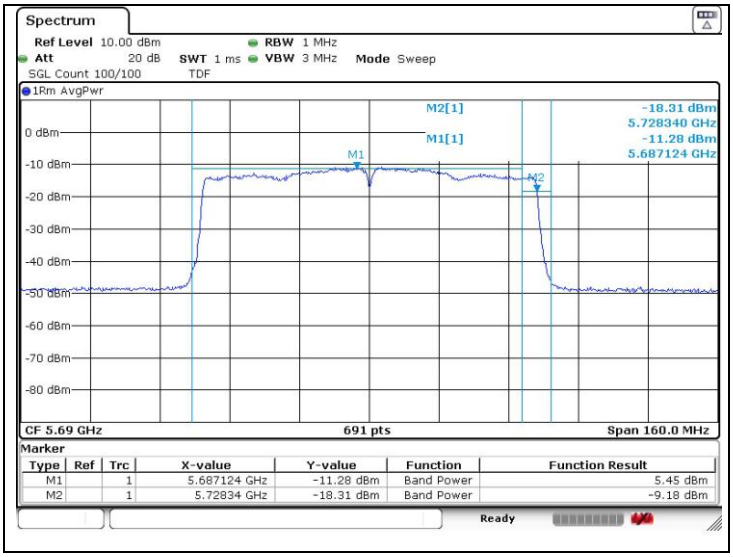
802.11ac_VHT40 (Band 2C&3)

High Channel
(5 710 ㎒)



802.11ac_VHT80 (Band 2C&3)

Middle Channel
(5 690 ㎒)

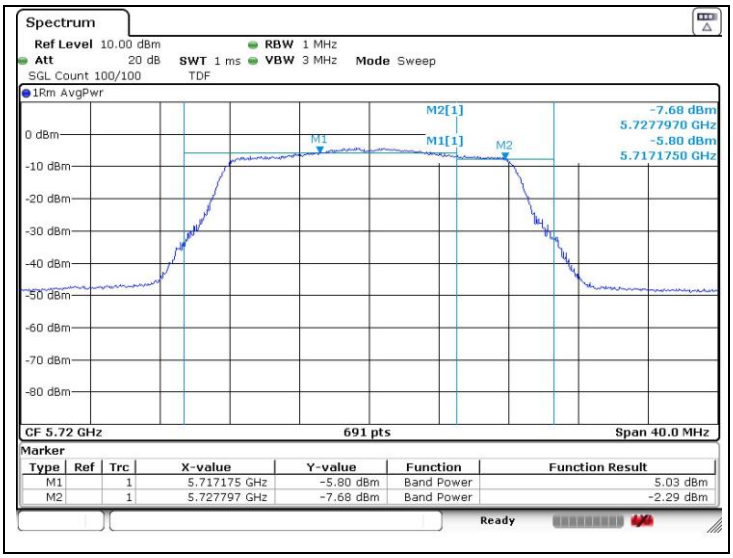


- SISO_Ant. 2

Band-crossing channels

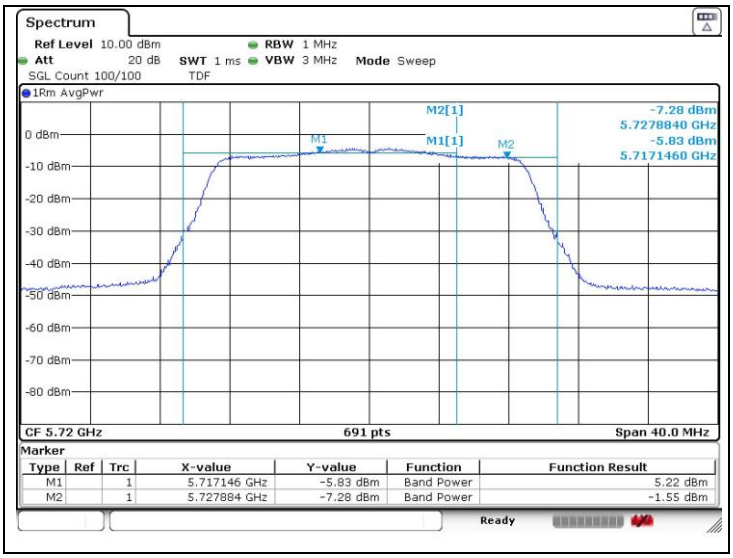
802.11a (Band 2C&3)

High Channel
(5 720 ㎒)



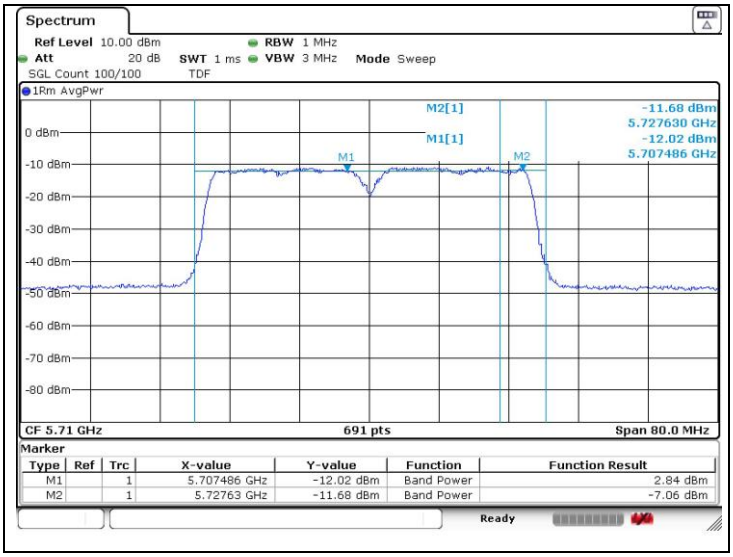
802.11ac_VHT20 (Band 2C&3)

High Channel
(5 720 ㎒)



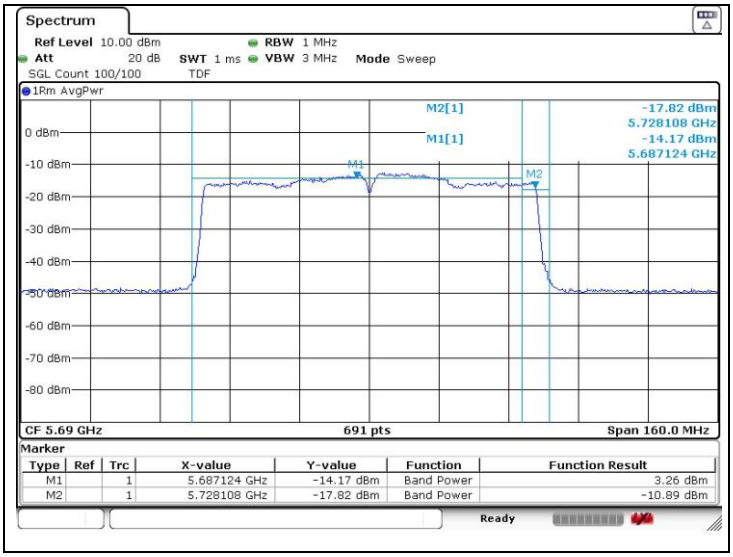
802.11n_HT40 (Band 2C&3)

High Channel
(5 710 ㎒)



802.11ac_VHT80 (Band 2C&3)

Middle Channel
(5 690 ㎒)

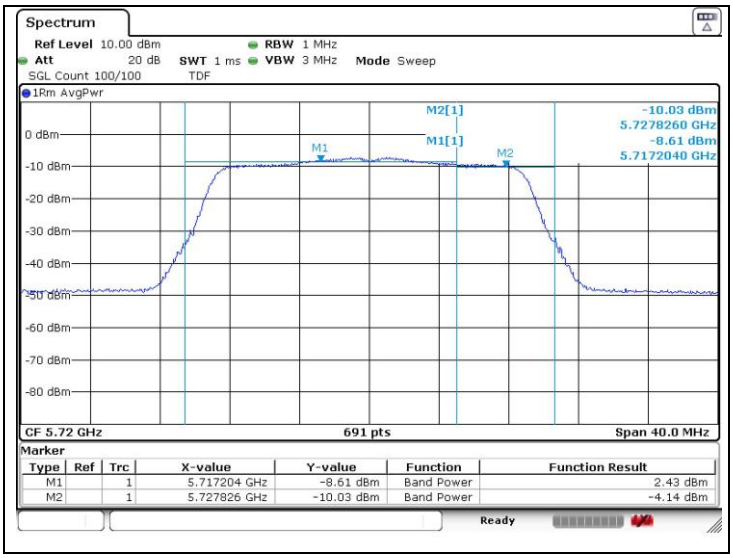


- MIMO_Ant. 1

Band-crossing channels

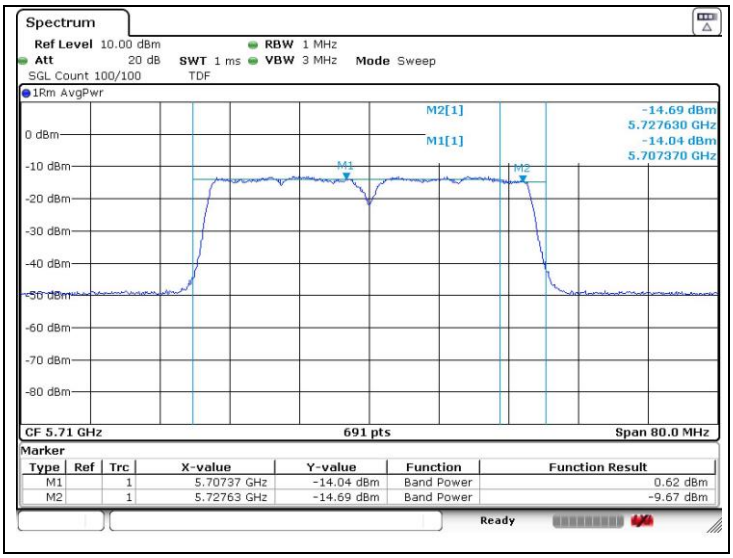
802.11ac_VHT20 (Band 2C&3)

High Channel
(5 720 ㎒)



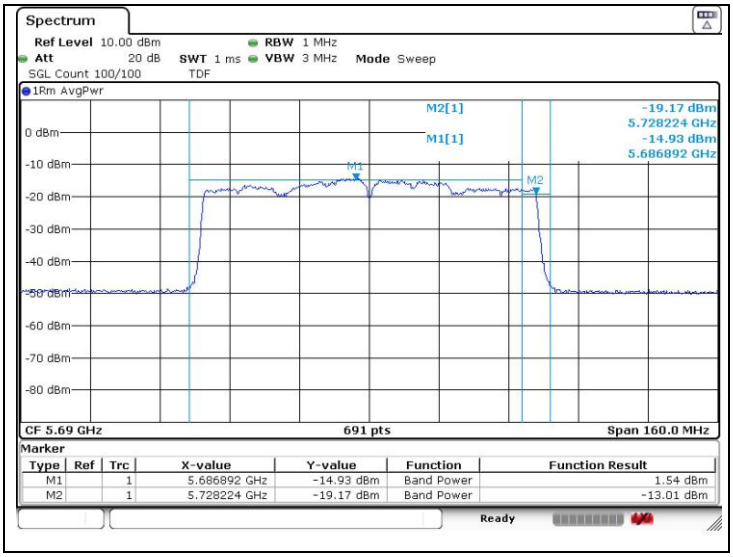
802.11n_HT40 (Band 2C&3)

High Channel
(5 710 ㎒)



802.11ac_VHT80 (Band 2C&3)

High Channel
(5 690 ㎒)

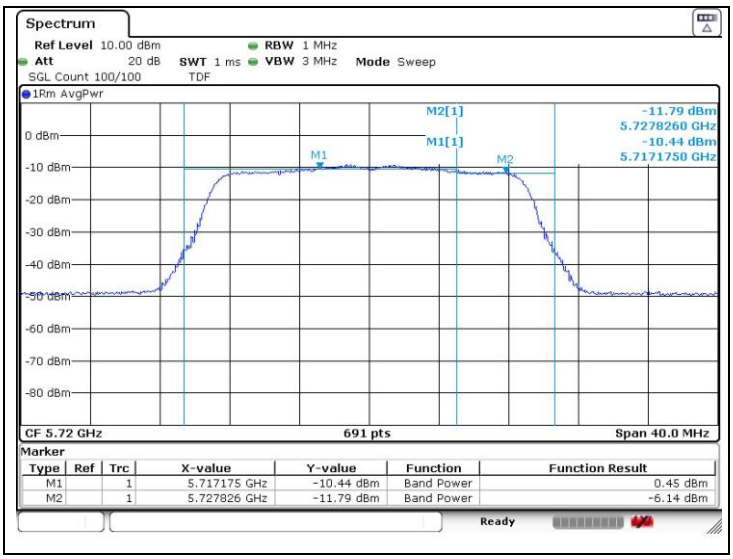


- MIMO_Ant. 2

Band-crossing channels

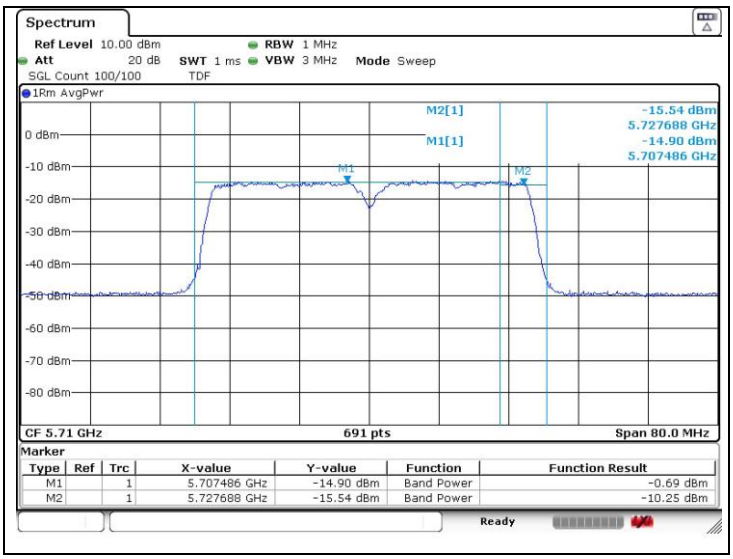
802.11ac_VHT20 (Band 2C&3)

High Channel
(5 720 ㎒)



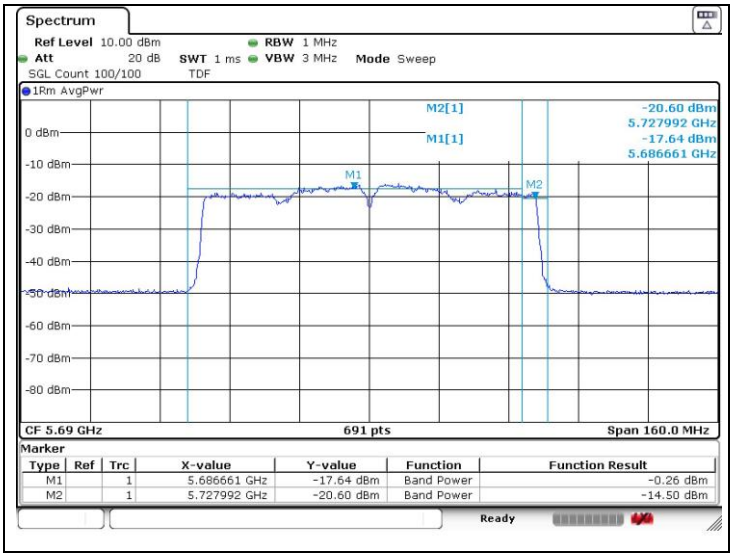
802.11n_HT40 (Band 2C&3)

High Channel
(5 710 ㎒)



802.11ac_VHT80 (Band 2C&3)

High Channel
(5 690 ㎒)



6. Peak Power Spectral Density

6.1. Test Setup

EUT	—	Attenuator	—	Spectrum Analyzer

6.2. Limit

6.2.1. FCC

According to 15.407(a)(1)(iv)

For client devices in the 5.15-5.25 ㎓ band, the maximum conducted output power over the frequency band of operation shall not exceed 250 ㎽ provided the maximum antenna gain does not exceed 6 ㏈i. In addition, the maximum power spectral density shall not exceed 11 ㏈m in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 ㏈i are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in ㏈ that the directional gain of the antenna exceeds 6 ㏈i.

According to 15.407(a)(2)

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

According to 15.407(a)(3)

For the band 5.725-5.85 ㎓, 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 ㏈m in any 500-㎑ band. If transmitting antennas of directional gain greater than 6 ㏈i are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in ㏈ that the directional gain of the antenna exceeds 6 ㏈i. However, fixed point-to point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 ㏈i 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.

6.2.2. IC

According to RSS-247 Issue 2,

6.2.1.1 Frequency band 5 150-5 250 ㎒

For OEM devices installed in vehicles, the maximum e.i.r.p. shall not exceed 30 ㎽ or 1.76 + 10 $\log_{10}$B, ㏈m, whichever is less. Devices shall implement transmitter power control (TPC) in order to have the capability to operate at least 3 ㏈ below the maximum permitted e.i.r.p. of 30 ㎽.

For other devices, the maximum e.i.r.p. shall not exceed 200 ㎽ or 10 + 10 $\log_{10}$B, ㏈m, whichever power is less. B is the 99 % emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 ㏈m in any 1.0 ㎒ band.

6.2.2.1 Frequency band 5 250-5 350 ㎒

For OEM devices installed in vehicles, the maximum e.i.r.p. shall not exceed 30 ㎽ or 1.76 + 10 $\log_{10}$B, ㏈m, whichever is less. Devices shall implement TPC in order to have the capability to operate at least 3 ㏈ below the maximum permitted e.i.r.p. of 30 ㎽.

Devices, other than devices installed in vehicles, shall comply with the following:

a) The maximum conducted output power shall not exceed 250 ㎽ or 11 + 10 $\log_{10}$B, ㏈m, whichever is less. The power spectral density shall not exceed 11 ㏈m in any 1.0 ㎒ band;

b) The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 $\log_{10}$B, ㏈m, whichever is less. B is the 99 % emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 ㎽ shall implement TPC in order to have the capability to operate at least 6 ㏈ below the maximum permitted e.i.r.p. of 1 W.

6.2.3.1 Frequency band 5 470-5 600 ㎒ and 5 650-5 725 ㎒

The maximum conducted output power shall not exceed 250 ㎽ or 11 + 10 $\log_{10}$B, ㏈m, whichever is less. The power spectral density shall not exceed 11 ㏈m in any 1.0 ㎒ band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 $\log_{10}$B, ㏈m, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than
500 ㎽ shall implement TPC in order to have the capability to operate at least 6 ㏈ below the maximum permitted e.i.r.p. of 1 W.

6.2.4.1 Frequency band 5 725-5 850 ㎒

For equipment operating in the band 5 725-5 850 ㎒, the minimum 6 ㏈ bandwidth shall be at least 500 ㎑. The maximum conducted output power shall not exceed 1 W. The output power spectral density shall not exceed 30 ㏈m in any 500 ㎑ band. If transmitting antennas of directional gain greater than 6 ㏈i are used, both the maximum conducted output power and the output power spectral density shall be reduced by the amount in ㏈ that the directional gain of the antenna exceeds 6 ㏈i. However, fixed point-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 ㏈i without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint[3] systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

6.3. Test Procedure

1. This measurement settings are specified in section Ⅱ.F of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

2. Create an average power spectrum for the EUT operating mode being tested by following the instructions in section II.E.2. for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, “Compute power…”. (This procedure is required even if the maximum conducted output power measurement was performed using a power meter, method PM.)

3. Use the peak search function on the instrument to find the peak of the spectrum and record its value.

4. Make the following adjustments to the peak value of the spectrum, if applicable:

   a) **If Method SA-2 or SA-2 Alternative was used, add 10 log(1/x), where x is the duty cycle, to the peak of the spectrum.**
   b) If Method SA-3 Alternative was used and the linear mode was used in step II.E.2.g)(viii), add 1 ㏈ to the final result to compensate for the difference between linear averaging and power averaging.

5. The result is the Maximum PSD over 1 ㎒ reference bandwidth.

6. For devices operating in the bands 5.15-5.25 ㎓, 5.25-5.35 ㎓, and 5.47-5.725 ㎓, the above procedures make use of 1 ㎒ RBW to satisfy directly the 1 ㎒ reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 ㎓, the rules specify a measurement bandwidth of 500 ㎑. Many spectrum analyzers do not have 500 ㎑ RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 ㎒, or 500 ㎑, “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 ㎒, or 500 ㎑). If measurements are performed using a reduced resolution bandwidth (< 1 ㎒, or < 500 ㎑) and integrated over 1 ㎒, or 500 ㎑ bandwidth, the following adjustments to the procedures apply:

   a) Set RBW ≥ 1/*T*, where *T* is defined in section II.B.1.a).
   b) Set VBW ≥ 3 RBW.
   c) If measurement bandwidth of Maximum PSD is specified in 500 ㎑, add 10 log(500 ㎑/RBW) to the measured result, whereas RBW (< 500 ㎑) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
   d) If measurement bandwidth of Maximum PSD is specified in 1 ㎒, add 10 log(1 ㎒/RBW) to the measured result, whereas RBW (< 1 ㎒) 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.

7. In case of band crossing channels 138, 142 and 144, the measurement is complied with section Ⅲ.A of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

6.4. Test Result

Ambient temperature : (23 ± 1) ℃
Relative humidity : 47 % R.H.

- SISO_Ant.1

Test mode: 11a

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Measured PPSD (㏈ m)	Duty Cycle Correction Factor (㏈)	Final PPSD (㏈ m)	Limit (㏈ m/1 ㎒)
U-NII 1	5 180	36	12	-2.99	0.61	-2.38	11
	5 220	44		-2.96		-2.35	
	5 240	48		-2.71		-2.10	
U-NII 2A	5 260	52		-3.14		-2.53	
	5 300	60		-3.05		-2.44	
	5 320	64		-2.85		-2.24	
U-NII 2C	5 500	100		-2.92		-2.31	
	5 580	116		-2.62		-2.01	
	5 700	140		-2.41		-1.80	
Band	**Frequency (㎒)**	**Ch.**	**Data Rate (Mbps)**	**Measured PPSD (㏈ m)**	**Duty Cycle Correction Factor (㏈)**	**Final PPSD (㏈ m)**	**Limit (㏈ m/500 ㎑)**
U-NII 3	5 745	149	12	-5.51	0.61	-4.90	30
	5 785	157		-5.67		-5.06	
	5 825	165		-5.67		-5.06	

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Final PPSD (㏈ m)	Antenna Gain (㏈ i)	E.I.R.P. PPSD (㏈ m)	IC Limit (㏈ m/1 ㎒)
U-NII 1	5 180	36	12	-2.38	2.15	-0.23	10
	5 220	44		-2.35		-0.20	
	5 240	48		-2.10		0.05	

Remark;

1. Final PPSD (㏈ m) = Measured PPSD (㏈ m) + Duty Cycle Correction Factor (㏈)
2. E.I.R.P. PPSD (㏈ m) = Final PPSD (㏈ m) + Antenna Gain (㏈ i)

Test mode: 11n_HT20

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Measured PPSD (㏈ m)	Duty Cycle Correction Factor (㏈)	Final PPSD (㏈ m)	Limit (㏈ m/1 ㎒)
U-NII 1	5 180	36	MCS0	-2.73	0.37	-2.36	11
	5 220	44		-2.76		-2.39	
	5 240	48		-2.95		-2.58	
U-NII 2A	5 260	52		-3.39		-3.02	
	5 300	60		-3.02		-2.65	
	5 320	64		-3.52		-3.15	
U-NII 2C	5 500	100		-2.99		-2.62	
	5 580	116		-2.89		-2.52	
	5 700	140		-2.66		-2.29	
Band	**Frequency (㎒)**	**Ch.**	**Data Rate (Mbps)**	**Measured PPSD (㏈ m)**	**Duty Cycle Correction Factor (㏈)**	**Final PPSD (㏈ m)**	**Limit (㏈ m/500 ㎑)**
U-NII 3	5 745	149	MCS0	-5.57	0.37	-5.20	30
	5 785	157		-5.72		-5.35	
	5 825	165		-5.76		-5.39	

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Final PPSD (㏈ m)	Antenna Gain (㏈ i)	E.I.R.P. PPSD (㏈ m)	IC Limit (㏈ m/1 ㎒)
U-NII 1	5 180	36	MCS0	-2.36	2.15	-0.21	10
	5 220	44		-2.39		-0.24	
	5 240	48		-2.58		-0.43	

Remark;

1. Final PPSD (㏈ m) = Measured PPSD (㏈ m) + Duty Cycle Correction Factor (㏈)
2. E.I.R.P. PPSD (㏈ m) = Final PPSD (㏈ m) + Antenna Gain (㏈ i)

Test mode: 11ac_VHT40

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Measured PPSD (㏈ m)	Duty Cycle Correction Factor (㏈)	Final PPSD (㏈ m)	Limit (㏈ m/1 ㎒)
U-NII 1	5 190	38	MCS0	-6.18	0.66	-5.52	11
	5 230	46		-6.02		-5.36	
U-NII 2A	5 270	54		-6.49		-5.83	
	5 310	62		-6.24		-5.58	
U-NII 2C	5 510	102		-6.24		-5.58	
	5 550	110		-5.95		-5.29	
	5 670	134		-5.68		-5.02	
Band	**Frequency (㎒)**	**Ch.**	**Data Rate (Mbps)**	**Measured PPSD (㏈ m)**	**Duty Cycle Correction Factor (㏈)**	**Final PPSD (㏈ m)**	**Limit (㏈ m/500 ㎑)**
U-NII 3	5 755	151	MCS0	-8.79	0.66	-8.13	30
	5 795	159		-9.03		-8.37	

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Final PPSD (㏈ m)	Antenna Gain (㏈ i)	E.I.R.P. PPSD (㏈ m)	IC Limit (㏈ m/1 ㎒)
U-NII 1	5 190	38	MCS0	-5.52	2.15	-3.37	10
	5 230	46		-5.36		-3.21	

Remark;

1. Final PPSD (㏈ m) = Measured PPSD (㏈ m) + Duty Cycle Correction Factor (㏈)
2. E.I.R.P. PPSD (㏈ m) = Final PPSD (㏈ m) + Antenna Gain (㏈ i)

Test mode: 11ac_VHT80

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Measured PPSD (㏈ m)	Duty Cycle Correction Factor (㏈)	Final PPSD (㏈ m)	Limit (㏈ m/1 ㎒)
U-NII 1	5 210	42	MCS0	-10.11	1.16	-8.95	11
U-NII 2A	5 290	58		-10.54		-9.38	
U-NII 2C	5 530	106		-10.78		-9.62	
Band	**Frequency (㎒)**	**Ch.**	**Data Rate (Mbps)**	**Measured PPSD (㏈ m)**	**Duty Cycle Correction Factor (㏈)**	**Final PPSD (㏈ m)**	**Limit (㏈ m/500 ㎑)**
U-NII 3	5 775	155	MCS0	-13.04	1.16	-11.88	30

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Final PPSD (㏈ m)	Antenna Gain (㏈ i)	E.I.R.P. PPSD (㏈ m)	IC Limit (㏈ m/1 ㎒)
U-NII 1	5 210	42	MCS0	-8.95	2.15	-6.80	10

Remark;

1. Final PPSD (㏈ m) = Measured PPSD (㏈ m) + Duty Cycle Correction Factor (㏈)
2. E.I.R.P. PPSD (㏈ m) = Final PPSD (㏈ m) + Antenna Gain (㏈ i)

Band-crossing channels

Mode	Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Measured PPSD (㏈m)	Duty Cycle Correction Factor (㏈)	Final PPSD (㏈m)	Limit (㏈m/1㎒ or ㏈m/500㎑)
11a	U-NII 2C	5 720	144	12	-2.68	0.61	-2.07	11
	U-NII 3				-7.45		-6.84	30
11n_HT20	U-NII 2C	5 720	144	MCS0	-2.52	0.37	-2.15	11
	U-NII 3				-7.97		-7.60	30
11ac_VHT40	U-NII 2C	5 710	142	MCS0	-5.44	0.66	-4.78	11
	U-NII 3				-11.78		-11.12	30
11ac_VHT80	U-NII 2C	5 690	138	MCS0	-10.33	1.16	-9.17	11
	U-NII 3				-15.74		-14.58	30

Remark;

1. Final PPSD (㏈m) = Measured PPSD (㏈m) + Duty Cycle Correction Factor (㏈)

- SISO_Ant.2

Test mode: 11a

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Measured PPSD (㏈m)	Duty Cycle Correction Factor (㏈)	Final PPSD (㏈m)	Limit (㏈m/1 ㎒)
U-NII 1	5 180	36	12	-4.53	0.61	-3.92	11
	5 220	44		-4.85		-4.24	
	5 240	48		-4.57		-3.96	
U-NII 2A	5 260	52		-5.04		-4.43	
	5 300	60		-5.01		-4.40	
	5 320	64		-5.24		-4.63	
U-NII 2C	5 500	100		-5.20		-4.59	
	5 580	116		-4.75		-4.14	
	5 700	140		-4.55		-3.94	
Band	**Frequency (㎒)**	**Ch.**	**Data Rate (Mbps)**	**Measured PPSD (㏈m)**	**Duty Cycle Correction Factor (㏈)**	**Final PPSD (㏈m)**	**Limit (㏈m/500 ㎑)**
U-NII 3	5 745	149	12	-7.29	0.61	-6.68	30
	5 785	157		-7.46		-6.85	
	5 825	165		-7.20		-6.59	

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Final PPSD (㏈m)	Antenna Gain (㏈i)	E.I.R.P. PPSD (㏈m)	IC Limit (㏈m/1 ㎒)
U-NII 1	5 180	36	12	-3.92	0.77	-3.15	10
	5 220	44		-4.24		-3.47	
	5 240	48		-3.96		-3.19	

Remark;

1. Final PPSD (㏈m) = Measured PPSD (㏈m) + Duty Cycle Correction Factor (㏈)
2. E.I.R.P. PPSD (㏈m) = Final PPSD (㏈m) + Antenna Gain (㏈i)

Test mode: 11ac_VHT20

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Measured PPSD (㏈ m)	Duty Cycle Correction Factor (㏈)	Final PPSD (㏈ m)	Limit (㏈ m/1 ㎒)
U-NII 1	5 180	36	MCS0	-4.49	0.37	-4.12	11
	5 220	44		-4.63		-4.26	
	5 240	48		-4.56		-4.19	
U-NII 2A	5 260	52		-5.30		-4.93	
	5 300	60		-5.07		-4.70	
	5 320	64		-5.06		-4.69	
U-NII 2C	5 500	100		-5.18		-4.81	
	5 580	116		-5.01		-4.64	
	5 700	140		-4.54		-4.17	
Band	**Frequency (㎒)**	**Ch.**	**Data Rate (Mbps)**	**Measured PPSD (㏈ m)**	**Duty Cycle Correction Factor (㏈)**	**Final PPSD (㏈ m)**	**Limit (㏈ m/500 ㎑)**
U-NII 3	5 745	149	MCS0	-7.82	0.37	-7.45	30
	5 785	157		-7.25		-6.88	
	5 825	165		-7.48		-7.11	

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Final PPSD (㏈ m)	Antenna Gain (㏈ i)	E.I.R.P. PPSD (㏈ m)	IC Limit (㏈ m/1 ㎒)
U-NII 1	5 180	36	MCS0	-4.12	0.77	-3.35	10
	5 220	44		-4.26		-3.49	
	5 240	48		-4.19		-3.42	

Remark;

1. Final PPSD (㏈ m) = Measured PPSD (㏈ m) + Duty Cycle Correction Factor (㏈)
2. E.I.R.P. PPSD (㏈ m) = Final PPSD (㏈ m) + Antenna Gain (㏈ i)

Test mode: 11n_HT40

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Measured PPSD (㏈ m)	Duty Cycle Correction Factor (㏈)	Final PPSD (㏈ m)	Limit (㏈ m/1 ㎒)
U-NII 1	5 190	38	MCS0	-10.73	0.64	-10.09	11
	5 230	46		-10.61		-9.97	
U-NII 2A	5 270	54		-11.54		-10.90	
	5 310	62		-11.17		-10.53	
U-NII 2C	5 510	102		-10.54		-9.90	
	5 550	110		-11.53		-10.89	
	5 670	134		-10.29		-9.65	
Band	**Frequency (㎒)**	**Ch.**	**Data Rate (Mbps)**	**Measured PPSD (㏈ m)**	**Duty Cycle Correction Factor (㏈)**	**Final PPSD (㏈ m)**	**Limit (㏈ m/500 ㎑)**
U-NII 3	5 755	151	MCS0	-13.12	0.64	-12.48	30
	5 795	159		-12.80		-12.16	

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Final PPSD (㏈ m)	Antenna Gain (㏈ i)	E.I.R.P. PPSD (㏈ m)	IC Limit (㏈ m/1 ㎒)
U-NII 1	5 190	38	MCS0	-10.09	0.77	-9.32	10
	5 230	46		-9.97		-9.20	

Remark;

1. Final PPSD (㏈ m) = Measured PPSD (㏈ m) + Duty Cycle Correction Factor (㏈)
2. E.I.R.P. PPSD (㏈ m) = Final PPSD (㏈ m) + Antenna Gain (㏈ i)

Test mode: 11ac_VHT80

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Measured PPSD (㏈ m)	Duty Cycle Correction Factor (㏈)	Final PPSD (㏈ m)	Limit (㏈ m/1 ㎒)
U-NII 1	5 210	42	MCS0	-12.75	1.16	-11.59	11
U-NII 2A	5 290	58		-13.06		-11.90	
U-NII 2C	5 530	106		-13.35		-12.19	
Band	**Frequency (㎒)**	**Ch.**	**Data Rate (Mbps)**	**Measured PPSD (㏈ m)**	**Duty Cycle Correction Factor (㏈)**	**Final PPSD (㏈ m)**	**Limit (㏈ m/500 ㎑)**
U-NII 3	5 775	155	MCS0	-15.52	1.16	-14.36	30

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Final PPSD (㏈ m)	Antenna Gain (㏈ i)	E.I.R.P. PPSD (㏈ m)	IC Limit (㏈ m/1 ㎒)
U-NII 1	5 210	42	MCS0	-11.59	0.77	-10.82	10

Remark;

1. Final PPSD (㏈ m) = Measured PPSD (㏈ m) + Duty Cycle Correction Factor (㏈)
2. E.I.R.P. PPSD (㏈ m) = Final PPSD (㏈ m) + Antenna Gain (㏈ i)

Band-crossing channels

Mode	Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Measured PPSD (㏈m)	Duty Cycle Correction Factor (㏈)	Final PPSD (㏈m)	Limit (㏈m/1㎒ or ㏈m/500㎑)
11a	U-NII 2C	5 720	144	12	-4.10	0.61	-3.49	11
	U-NII 3				-9.36		-8.75	30
11ac_VHT20	U-NII 2C	5 720	144	MCS0	-4.04	0.37	-3.67	11
	U-NII 3				-9.33		-8.96	30
11n_HT40	U-NII 2C	5 710	142	MCS0	-10.52	0.64	-9.88	11
	U-NII 3				-13.52		-12.88	30
11ac_VHT80	U-NII 2C	5 690	138	MCS0	-12.97	1.16	-11.81	11
	U-NII 3				-18.01		-16.85	30

Remark;

1. Final PPSD (㏈m) = Measured PPSD (㏈m) + Duty Cycle Correction Factor (㏈)

- MIMO

Test mode: 11ac_VHT20

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Ant. 1 Measured PPSD (㏈ m)	Ant. 2 Measured PPSD (㏈ m)	Ant. 1+Ant. 2 PPSD (㏈ m)
U-NII 1	5 180	36	MCS1	-6.92	-9.44	-4.99
	5 220	44		-6.92	-9.49	-5.01
	5 240	48		-7.32	-9.45	-5.25
U-NII 2A	5 260	52		-7.28	-9.51	-5.24
	5 300	60		-7.15	-9.19	-5.04
	5 320	64		-7.54	-9.44	-5.38
U-NII 2C	5 500	100		-7.42	-9.92	-5.48
	5 580	116		-7.03	-9.69	-5.15
	5 700	140		-7.29	-9.23	-5.14
U-NII 3	5 745	149		-10.47	-12.61	-8.40
	5 785	157		-10.64	-12.66	-8.52
	5 825	165		-10.53	-12.60	-8.43

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Ant. 1+Ant. 2 PPSD (㏈ m)	Duty Cycle Correction Factor (㏈)	Ant. 1+Ant. 2 Final PPSD (㏈ m)	Limit (㏈ m/1 ㎒)
U-NII 1	5 180	36	MCS1	-4.99	0.22	-4.77	11
	5 220	44		-5.01		-4.79	
	5 240	48		-5.25		-5.03	
U-NII 2A	5 260	52		-5.24		-5.02	
	5 300	60		-5.04		-4.82	
	5 320	64		-5.38		-5.16	
U-NII 2C	5 500	100		-5.48		-5.26	
	5 580	116		-5.15		-4.93	
	5 700	140		-5.14		-4.92	
Band	**Frequency (㎒)**	**Ch.**	**Data Rate (Mbps)**	**Ant. 1+Ant. 2 PPSD (㏈ m)**	**Duty Cycle Correction Factor (㏈)**	**Ant. 1+Ant. 2 Final PPSD (㏈ m)**	**Limit (㏈ m/1 ㎒)**
U-NII 3	5 745	149	MCS1	-8.40	0.22	-8.18	30
	5 785	157		-8.52		-8.30	
	5 825	165		-8.43		-8.21	

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Ant. 1+Ant. 2 Final PPSD (㏈ m)	Antenna Gain (㏈ i)	Ant. 1+Ant. 2 E.I.R.P. PPSD (㏈ m)	IC Limit (㏈ m/1 ㎒)
U-NII 1	5 180	36	MCS1	-4.77	4.50	-0.27	10
	5 220	44		-4.79		-0.29	
	5 240	48		-5.03		-0.53	

Remark;

1. According to KDB 662911 D01 v02r01, power spectral density of each port (Ant. 1+Ant. 2) was combined by using below calculation.

2. PPSD: 10 log {10^(Ant. 1 PSD / 10)+10^(Ant. 2 PSD / 10)}

3. Antenna Gain: 10 log [{10^(Ant. 1 gain / 20)+10^(Ant. 2 gain / 20)}^2 / 2]

4. Final PPSD (㏈m) = PPSD (㏈m) + Duty Correction Correction Factor (㏈)

5. E.I.R.P. PPSD (㏈m) = Final PPSD (㏈m) + Antenna Gain (㏈i)

Test mode: 11n_HT40

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Ant. 1 Measured PPSD (㏈m)	Ant. 2 Measured PPSD (㏈m)	Ant. 1+Ant. 2 PPSD (㏈m)
U-NII 1	5 190	38	MCS8	-12.56	-15.08	-10.63
	5 230	46		-12.70	-14.91	-10.66
U-NII 2A	5 270	54		-12.67	-14.55	-10.50
	5 310	62		-12.09	-14.42	-10.09
U-NII 2C	5 510	102		-12.19	-15.00	-10.36
	5 550	110		-12.65	-14.38	-10.42
	5 670	134		-12.51	-14.08	-10.21
U-NII 3	5 755	151		-15.59	-16.97	-13.22
	5 795	159		-15.36	-16.99	-13.09

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Ant. 1+Ant. 2 PPSD (㏈m)	Duty Cycle Correction Factor (㏈)	Ant. 1+Ant. 2 Final PPSD (㏈m)	Limit (㏈m/1 ㎒)
U-NII 1	5 190	38	MCS8	-10.63	0.31	-10.32	11
	5 230	46		-10.66		-10.35	
U-NII 2A	5 270	54		-10.50		-10.19	
	5 310	62		-10.09		-9.78	
U-NII 2C	5 510	102		-10.36		-10.05	
	5 550	110		-10.42		-10.11	
	5 670	134		-10.21		-9.90	
Band	**Frequency (㎒)**	**Ch.**	**Data Rate (Mbps)**	**Ant. 1+Ant. 2 PPSD (㏈m)**	**Duty Cycle Correction Factor (㏈)**	**Ant. 1+Ant. 2 Final PPSD (㏈m)**	**Limit (㏈m/1 ㎒)**
U-NII 3	5 755	151	MC8	-13.22	0.31	-12.91	30
	5 795	159		-13.09		-12.78	

Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Ant. 1+Ant. 2 Final PPSD (㏈m)	Antenna Gain (㏈i)	Ant.1+Ant. 2 E.I.R.P. PPSD (㏈m)	IC Limit (㏈m/1 ㎒)
U-NII 1	5 190	38	MCS8	-10.32	4.50	-5.82	10
	5 230	46		-10.35		-5.85	

Remark;

1. According to KDB 662911 D01 v02r01, power spectral density of each port (Ant. 1+Ant. 2) was combined by using below calculation.

2. PPSD: 10 log {10^(Ant. 1 PSD / 10)+10^(Ant. 2 PSD / 10)}

3. Antenna Gain: 10 log [{10^(Ant. 1 gain / 20)+10^(Ant. 2 gain / 20)}^2 / 2]

4. Final PPSD (㏈m) = PPSD (㏈m) + Duty Correction Correction Factor (㏈)

5. E.I.R.P. PPSD (㏈m) = Final PPSD (㏈m) + Antenna Gain (㏈i)

Test mode: 11ac_VHT80

Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Ant. 1 Measured PPSD (dBm)	Ant. 2 Measured PPSD (dBm)	Ant. 1+Ant. 2 PPSD (dBm)
U-NII 1	5 210	42	MCS0	-14.71	-16.59	-12.54
U-NII 2A	5 290	58		-14.60	-16.23	-12.33
U-NII 2C	5 530	106		-14.69	-16.36	-12.43
U-NII 3	5 775	155		-17.60	-18.93	-15.20

Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Ant. 1+Ant. 2 PPSD (dBm)	Duty Cycle Correction Factor (dB)	Ant. 1+Ant. 2 Final PPSD (dBm)	Limit (dBm/1 MHz)
U-NII 1	5 210	42	MCS0	-12.54	0.63	-11.91	11
U-NII 2A	5 290	58		-12.33		-11.70	
U-NII 2C	5 530	106		-12.43		-11.80	
Band	**Frequency (MHz)**	**Ch.**	**Data Rate (Mbps)**	**Ant. 1+Ant. 2 PPSD (dBm)**	**Duty Cycle Correction Factor (dB)**	**Ant. 1+Ant. 2 Final PPSD (dBm)**	**Limit (dBm/500 kHz)**
U-NII 3	5 775	155	MCS0	-15.20	0.63	-14.57	30

Band	Frequency (MHz)	Ch.	Data Rate (Mbps)	Ant. 1+Ant. 2 Final PPSD (dBm)	Antenna Gain (dBi)	Ant. 1+Ant. 2 E.I.R.P. PPSD (dBm)	IC Limit (dBm/1 MHz)
U-NII 1	5 210	42	MCS0	-11.91	4.50	-7.41	10

Remark;

1. According to KDB 662911 D01 v02r01, power spectral density of each port (Ant. 1+Ant. 2) was combined by using below calculation.
2. PPSD: 10 log {10^(Ant. 1 PSD / 10)+10^(Ant. 2 PSD / 10)}
3. Antenna Gain: 10 log [{10^(Ant. 1 gain / 20)+10^(Ant. 2 gain / 20)}^2 / 2]
4. Final PPSD (dBm) = PPSD (dBm) + Duty Correction Correction Factor (dB)
5. E.I.R.P. PPSD (dBm) = Final PPSD (dBm) + Antenna Gain (dBi)

Band-crossing channels

Mode	Band	Frequency (㎒)	Data Rate (Mbps)	PPSD (㏈m)			Limit (㏈m/1㎒ or ㏈m/500㎑)
				Ant.1	Ant.2	Ant.1 + Ant.2	
11ac_VHT20	U-NII 2C	5 720	MCS1	-7.19	-9.20	-5.07	11
	U-NII 3			-11.97	-13.88	-9.81	30
11n_HT40	U-NII 2C	5 710	MCS0	-12.07	-14.21	-10.00	11
	U-NII 3			-14.91	-16.97	-12.81	30
11ac_VHT80	U-NII 2C	5 690	MCS0	-14.17	-16.23	-12.07	11
	U-NII 3			-18.91	-20.67	-16.69	30

Remark;

1. According to KDB 662911 D01 v02r01, power spectral density of each port (Ant. 1+Ant. 2) was combined by using below calculation.

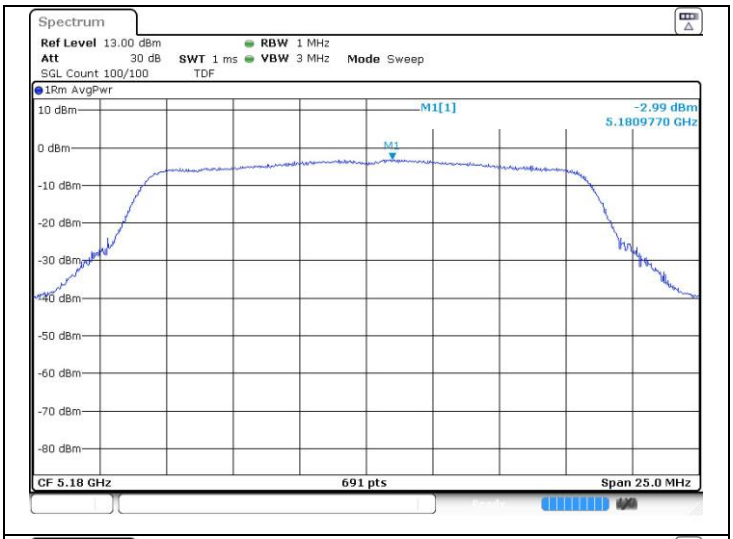
2. PPSD: 10 log {10^(Ant. 1 PSD / 10)+10^(Ant. 2 PSD / 10)}

- Test plots

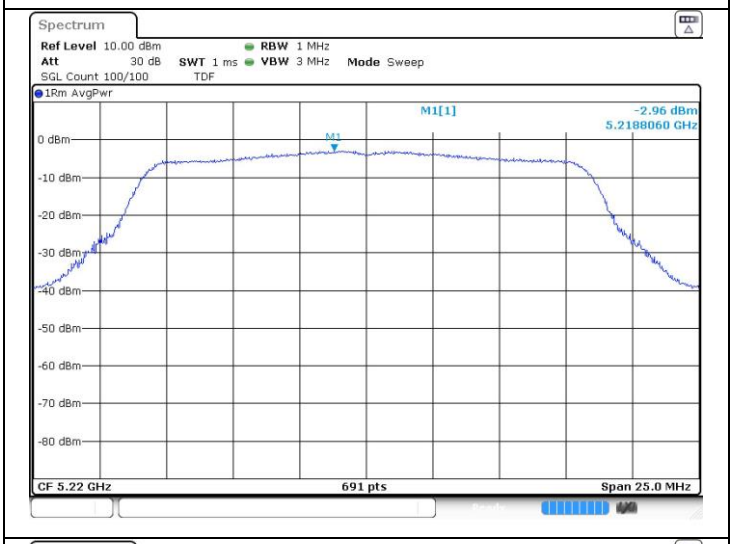
- SISO_Ant.1

802.11a (Band 1)

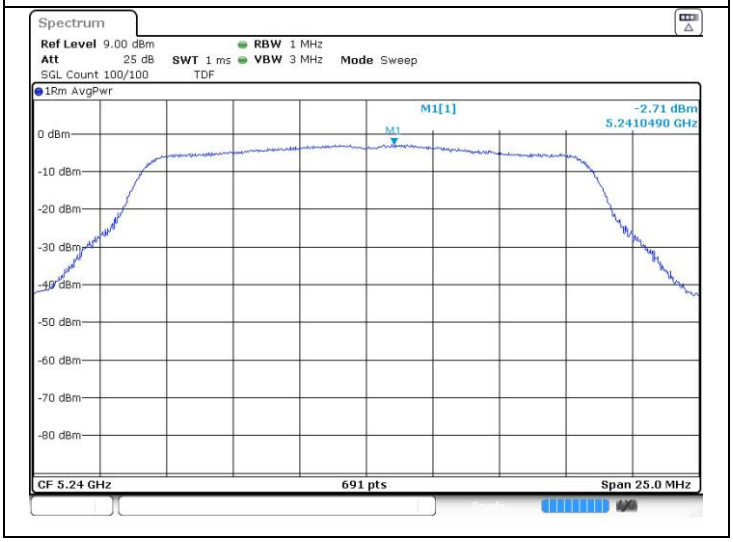
Low Channel
(5 180 ㎒)



Middle Channel
(5 220 ㎒)

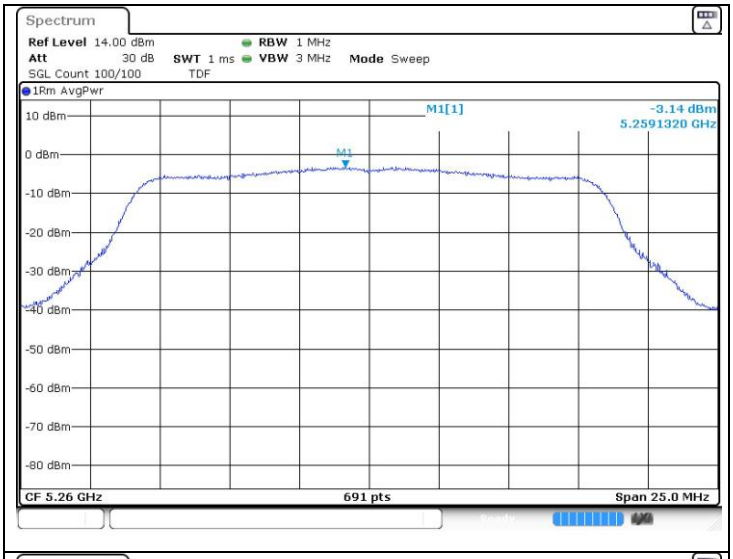


High Channel
(5 240 ㎒)

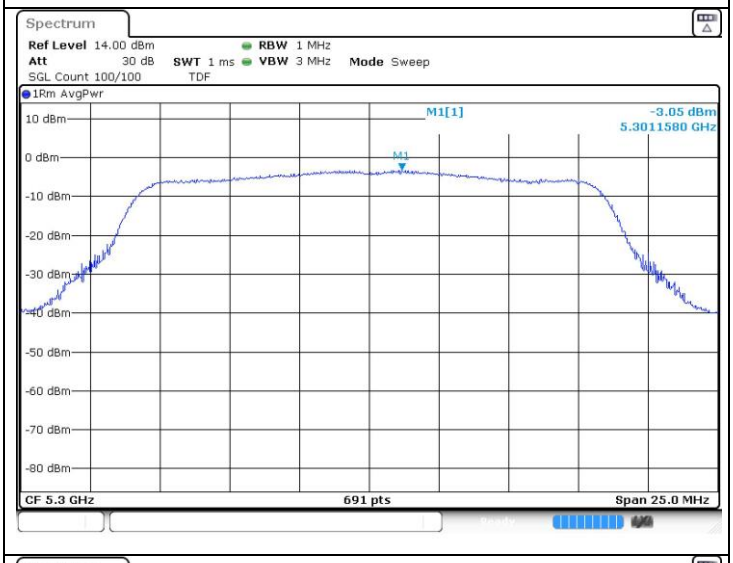


802.11a (Band 2A)

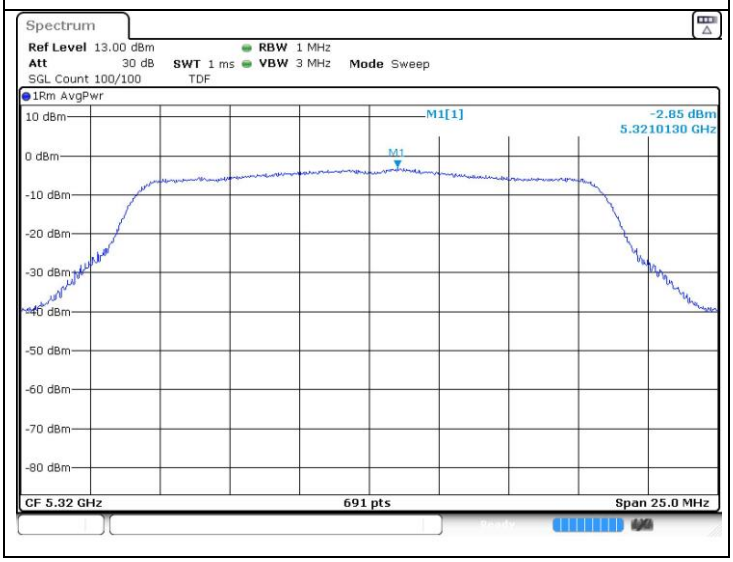
Low Channel
(5 260 ㎒)



Middle Channel
(5 300 ㎒)

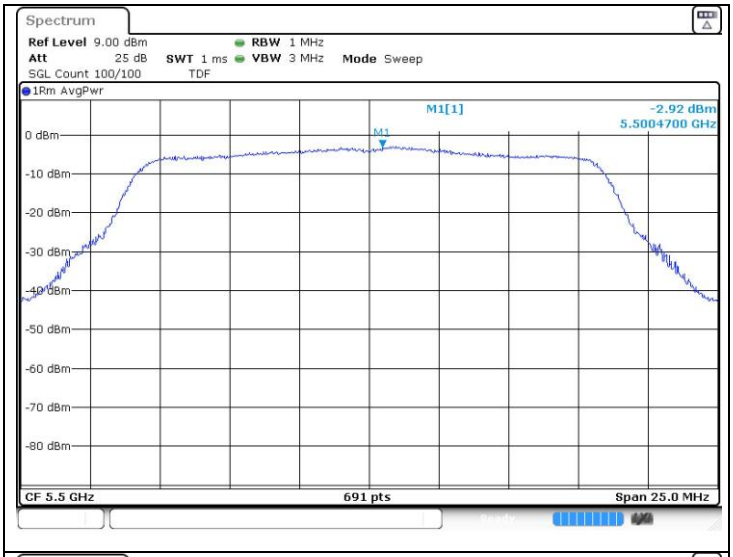


High Channel
(5 320 ㎒)

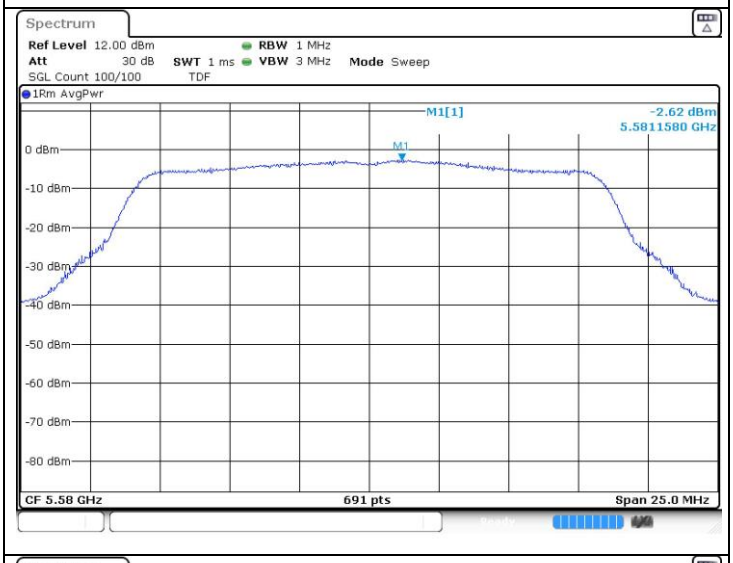


802.11a (Band 2C)

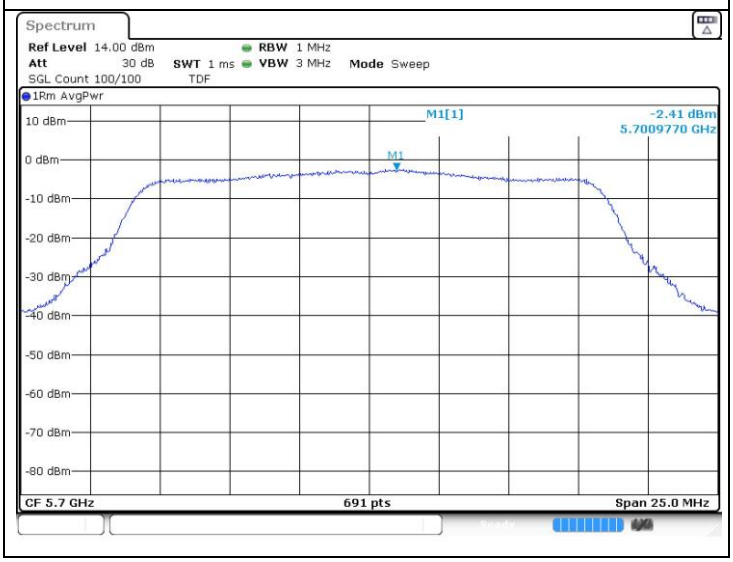
Low Channel
(5 500 ㎒)



Middle Channel
(5 580 ㎒)

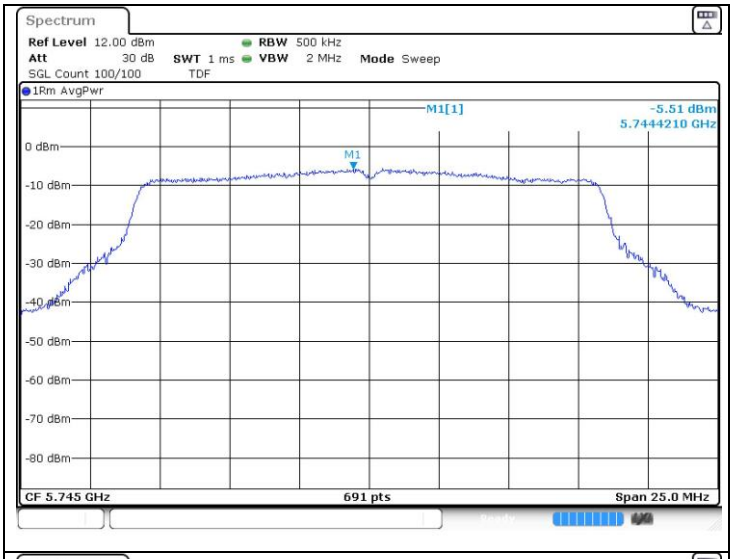


High Channel
(5 700 ㎒)

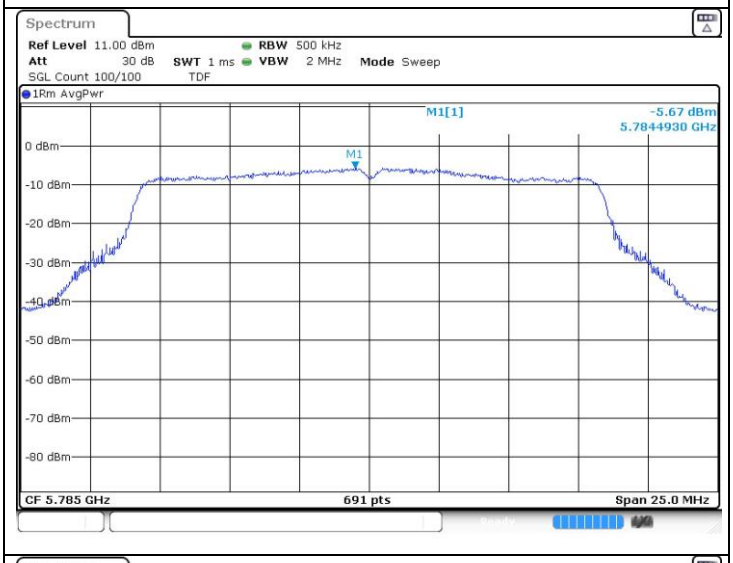


802.11a (Band 3)

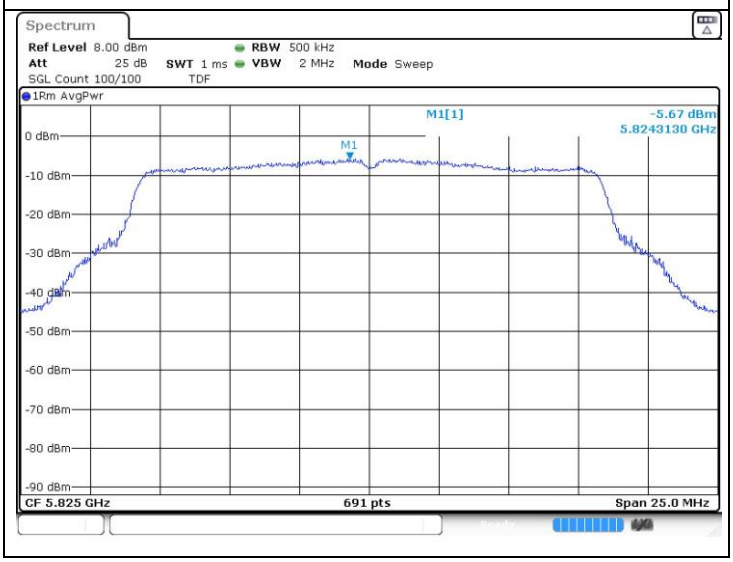
Low Channel
(5 745 ㎒)



Middle Channel
(5 785 ㎒)

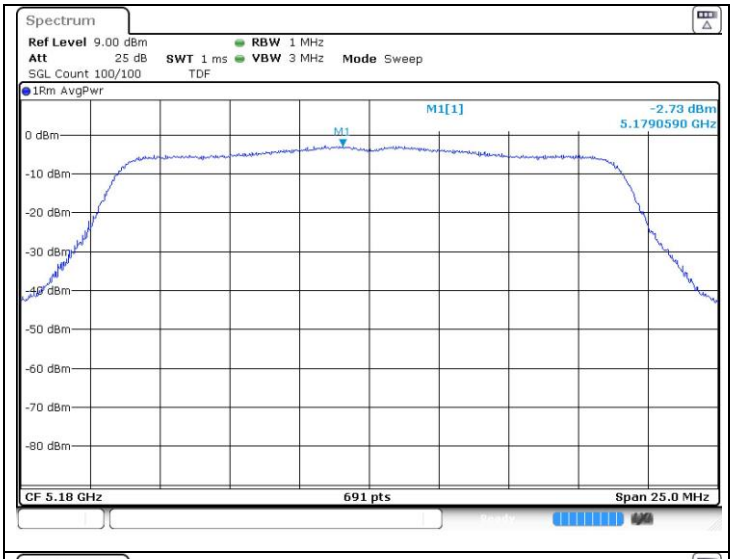


High Channel
(5 825 ㎒)

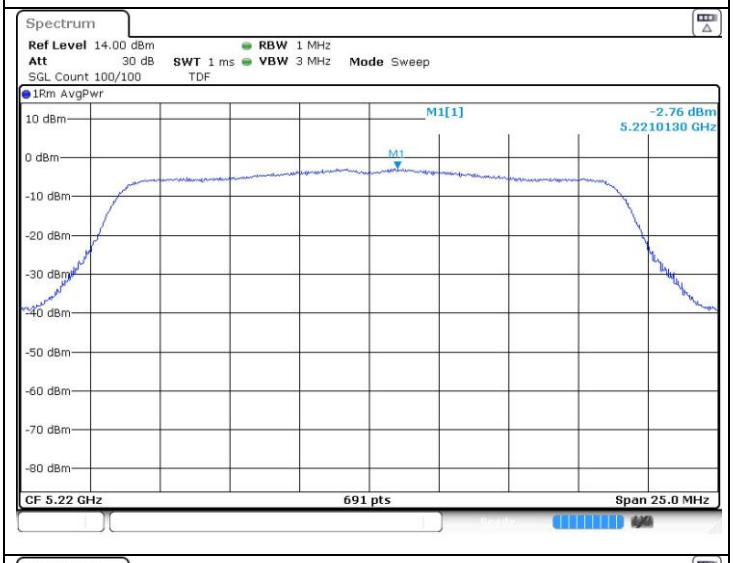


802.11n_HT20 (Band 1)

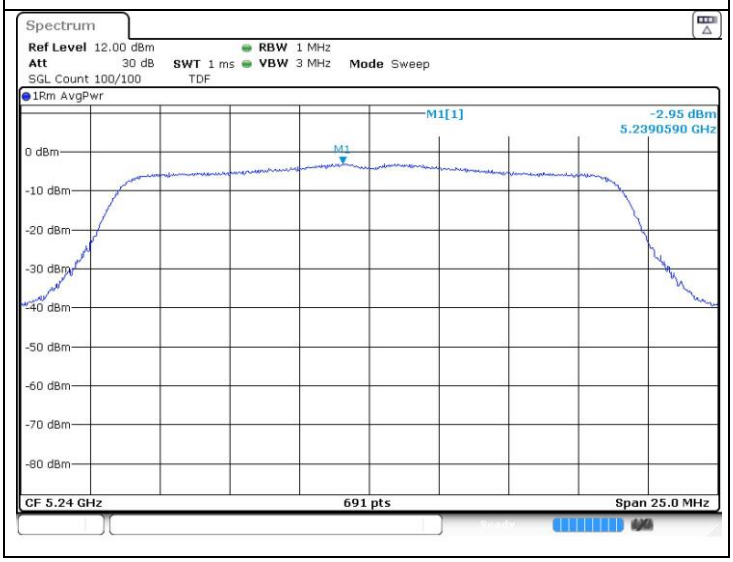
Low Channel
(5 180 ㎒)



Middle Channel
(5 220 ㎒)

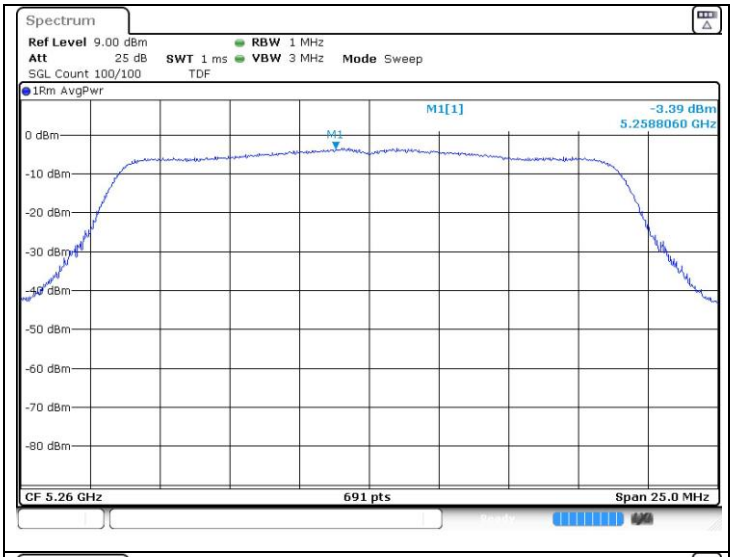


High Channel
(5 240 ㎒)

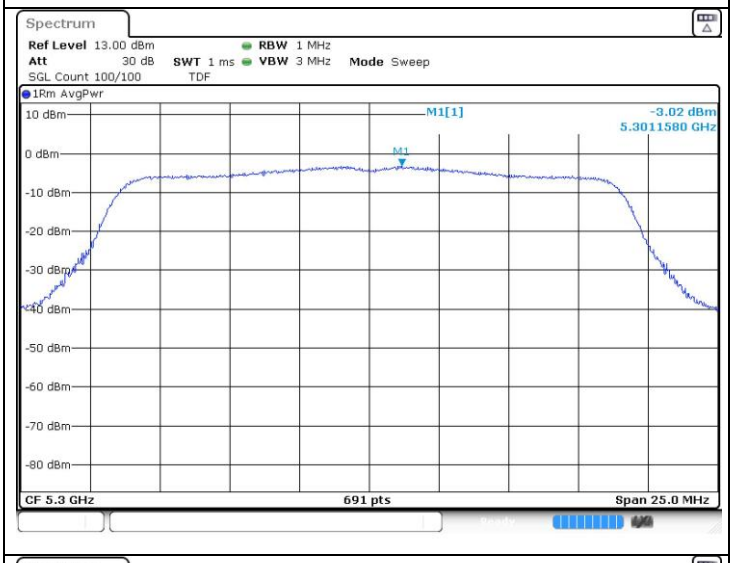


802.11n_HT20 (Band 2A)

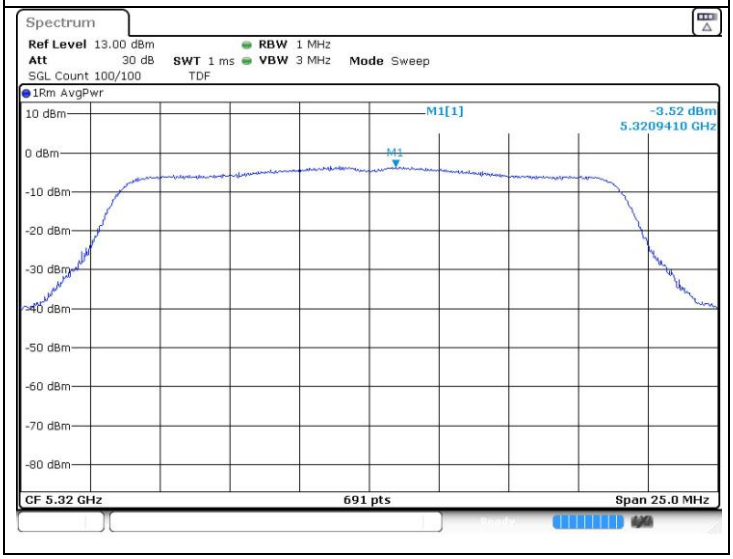
Low Channel
(5 260 ㎒)



Middle Channel
(5 300 ㎒)

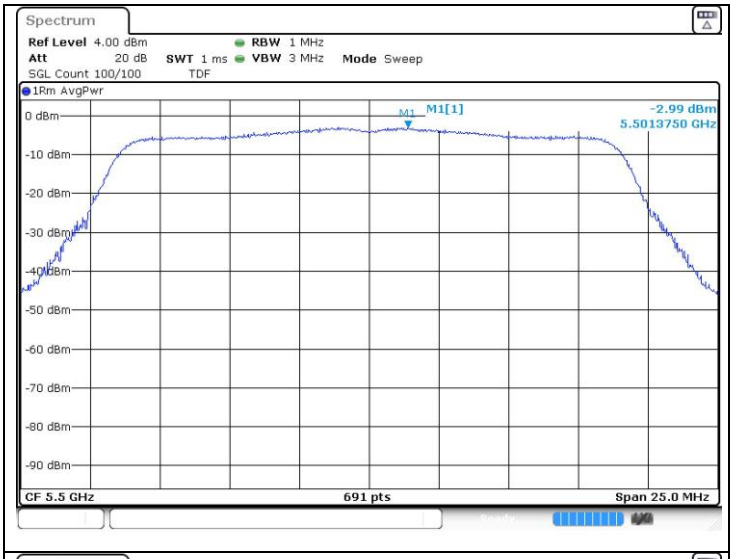


High Channel
(5 320 ㎒)

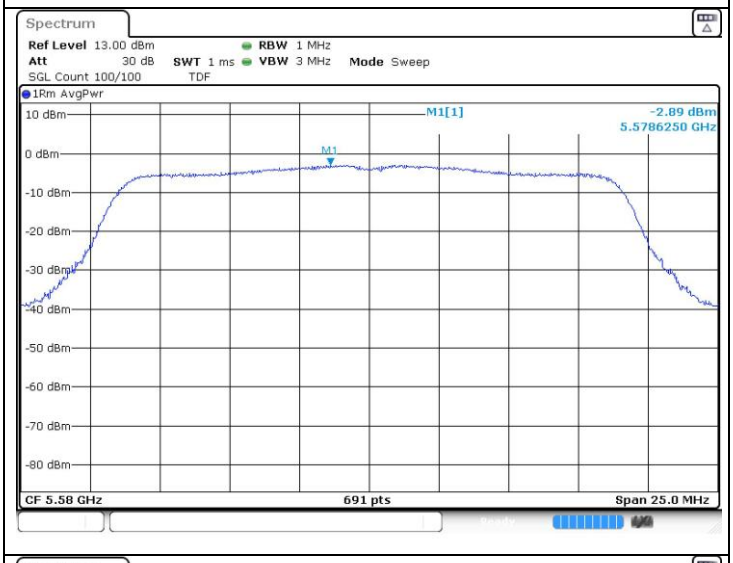


802.11n_HT20 (Band 2C)

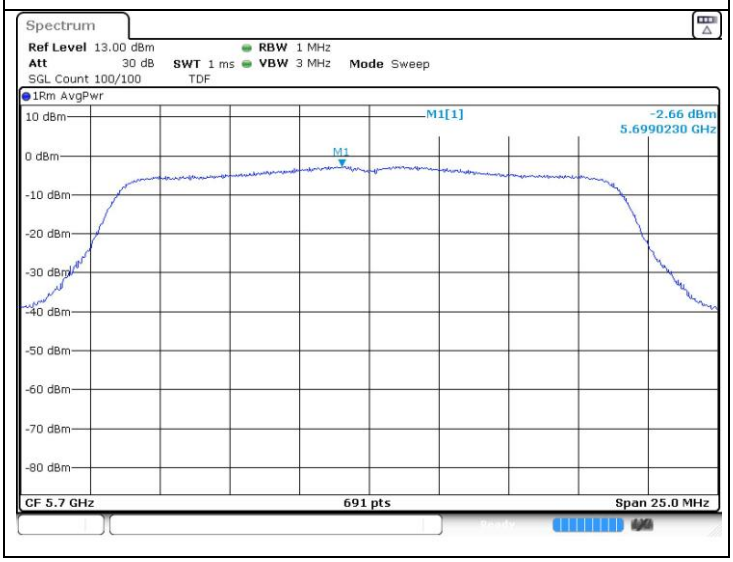
Low Channel
(5 500 ㎒)



Middle Channel
(5 580 ㎒)

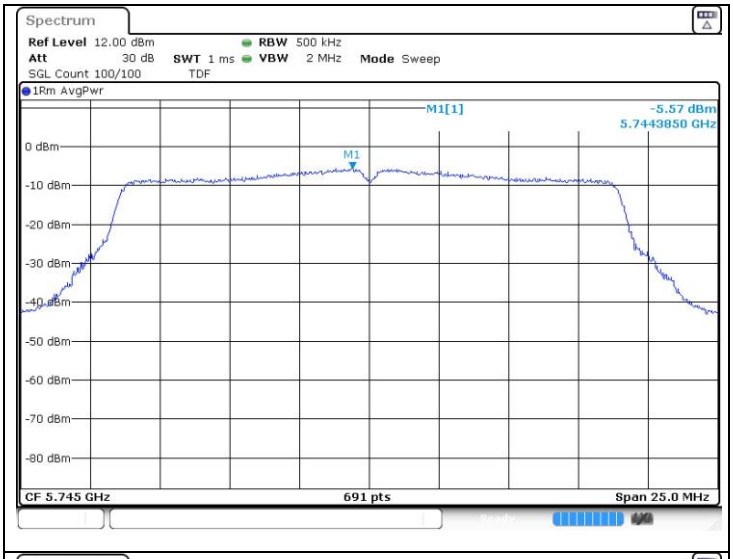


High Channel
(5 700 ㎒)

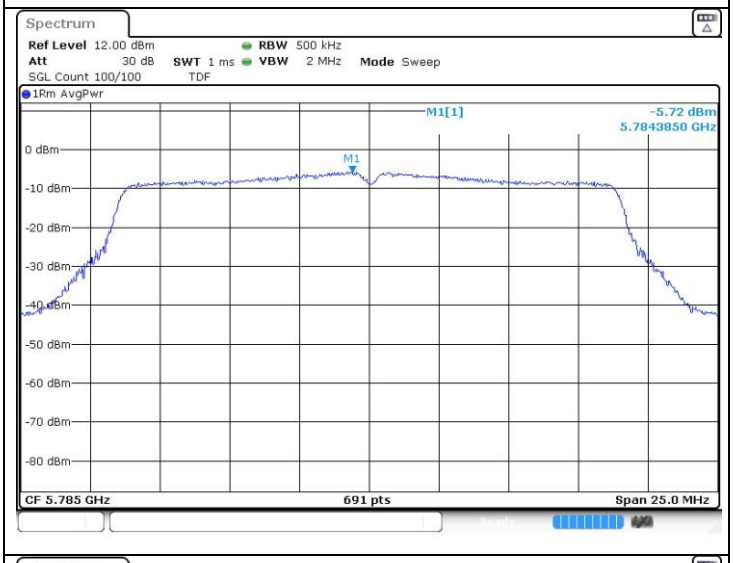


802.11n_HT20 (Band 3)

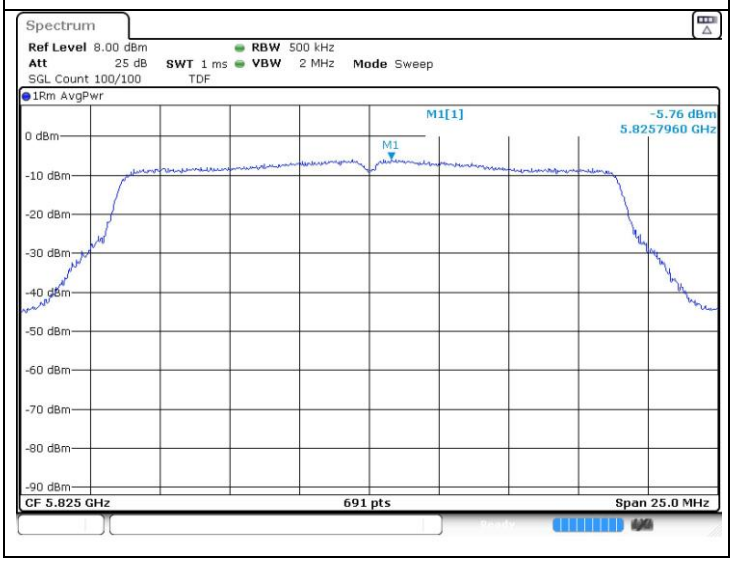
Low Channel
(5 745 ㎒)



Middle Channel
(5 785 ㎒)

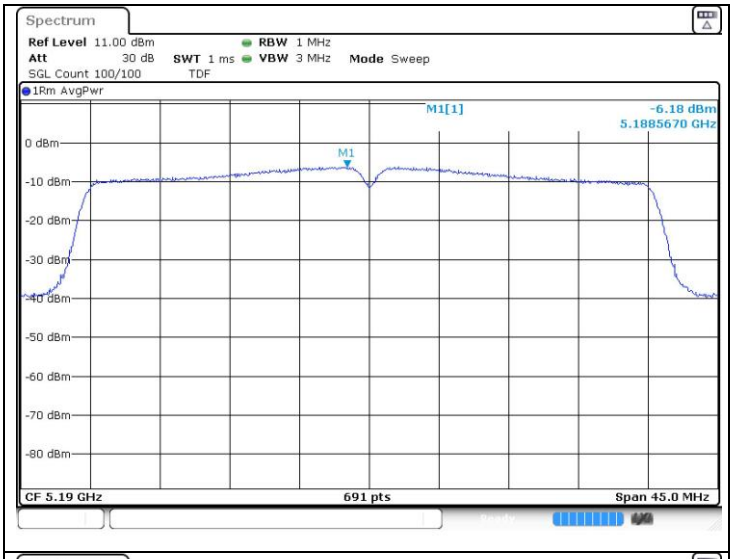


High Channel
(5 825 ㎒)

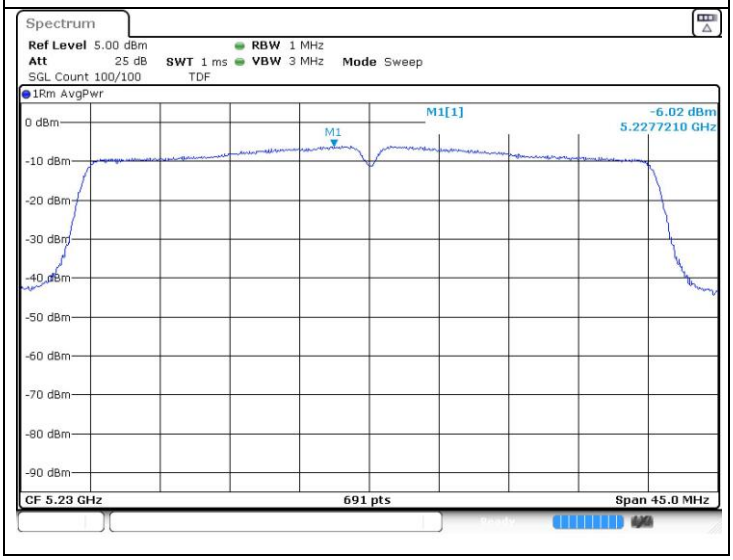


802.11ac_VHT40 (Band 1)

Low Channel
(5 190 ㎒)

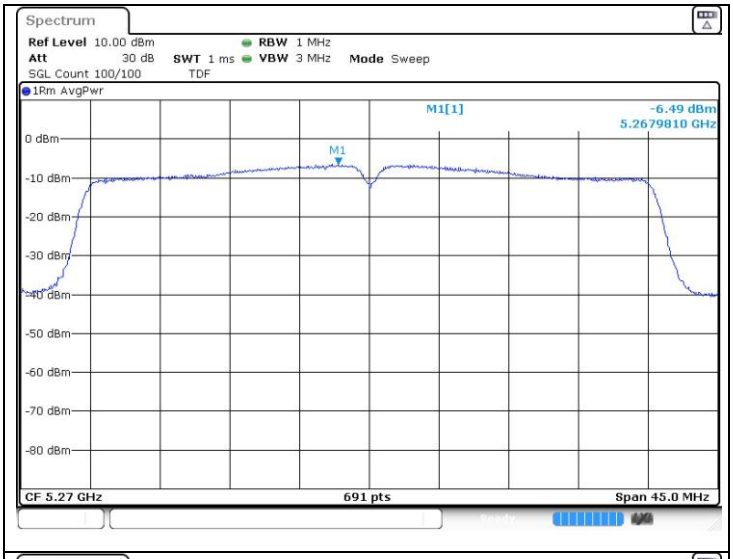


High Channel
(5 230 ㎒)

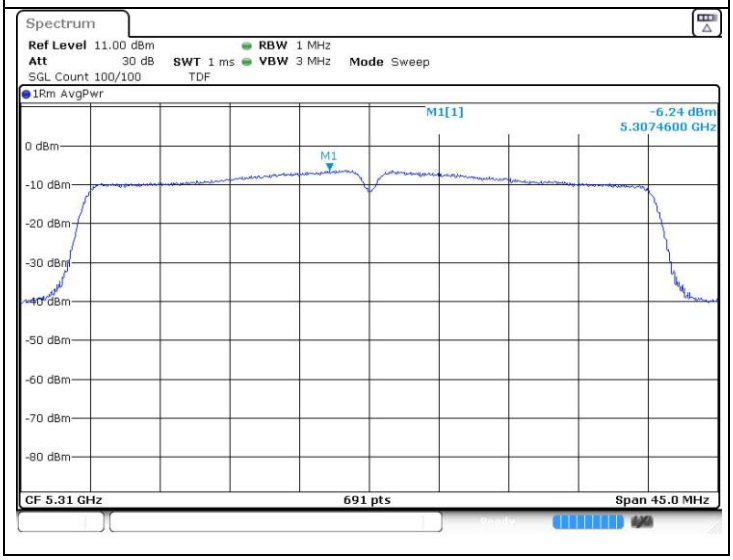


802.11ac_VHT40 (Band 2A)

Low Channel
(5 270 ㎒)

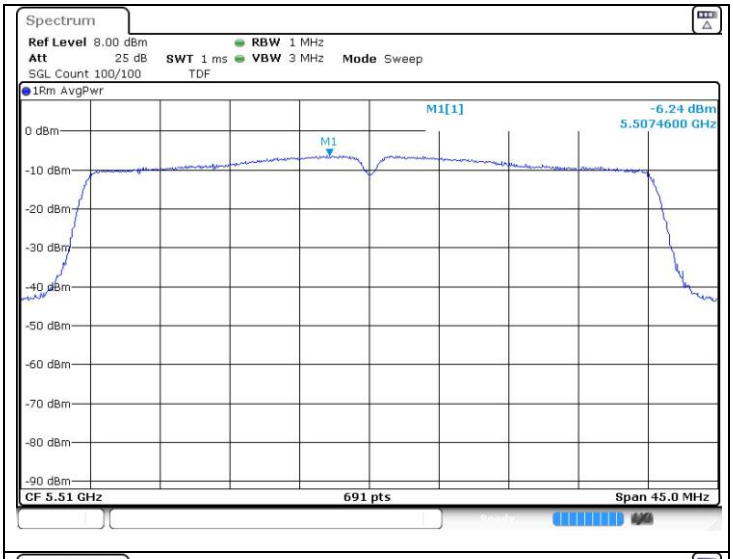


High Channel
(5 310 ㎒)

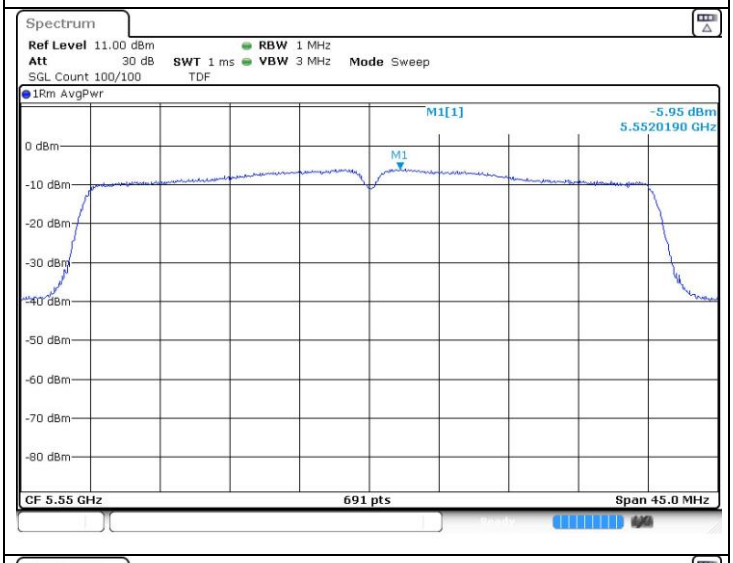


802.11ac_VHT40 (Band 2C)

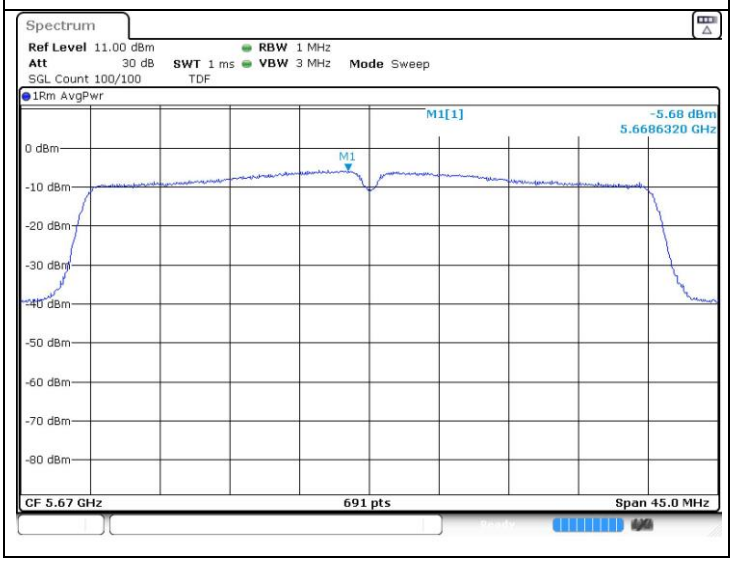
Low Channel
(5 510 ㎒)



Middle Channel
(5 550 ㎒)

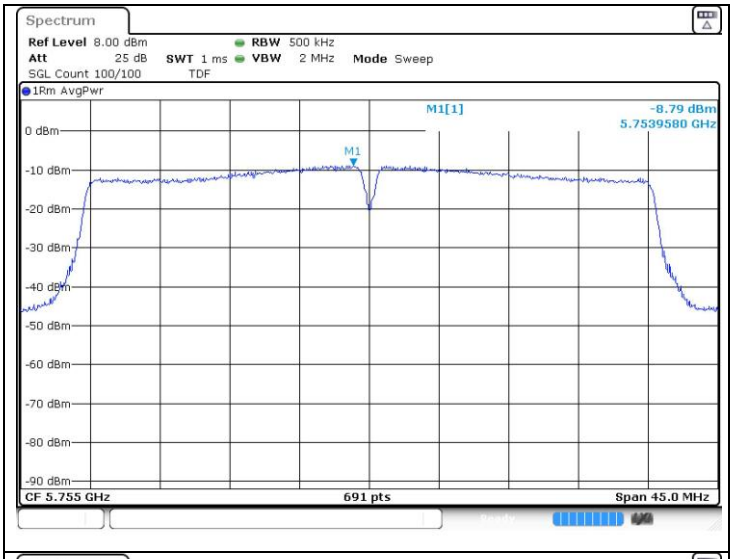


High Channel
(5 670 ㎒)

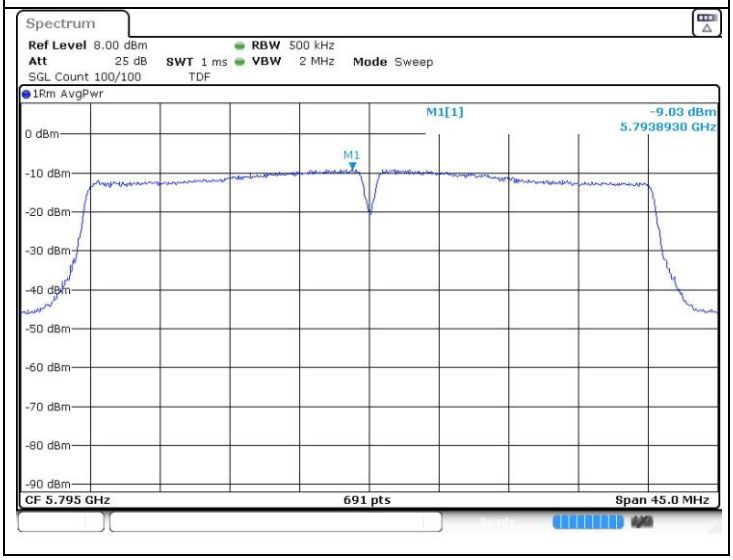


802.11ac_VHT40 (Band 3)

Low Channel
(5 755 ㎒)

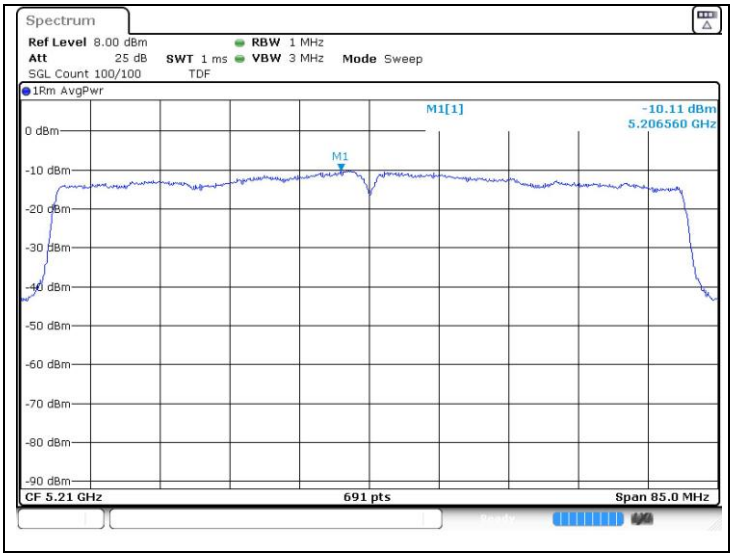


High Channel
(5 795 ㎒)



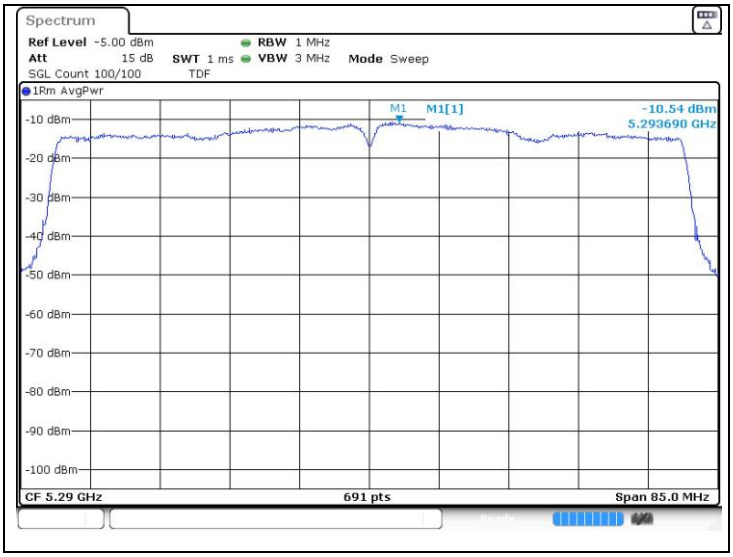
802.11ac_VHT80 (Band 1)

Middle Channel
(5 210 ㎒)



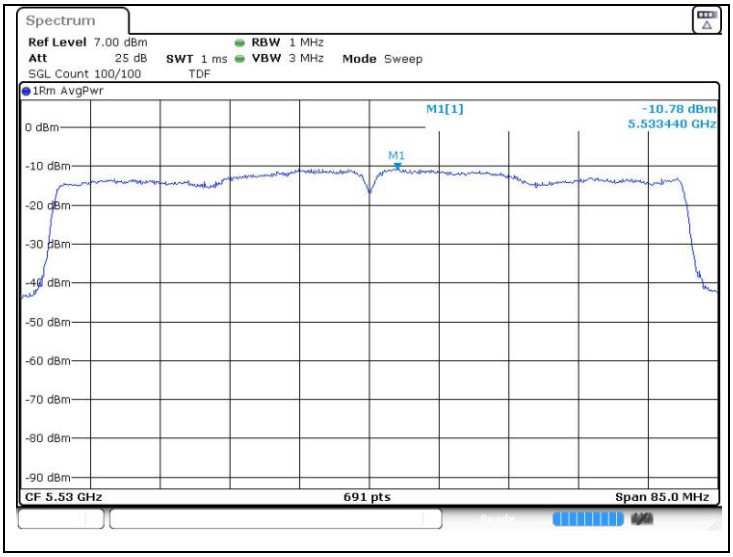
802.11ac_VHT80 (Band 2A)

Middle Channel
(5 290 ㎒)



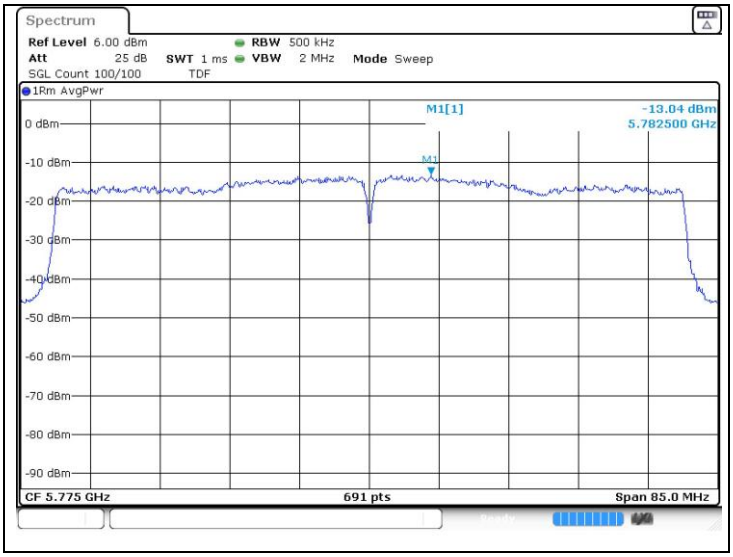
802.11ac_VHT80 (Band 2C)

Low Channel
(5 530 ㎒)



802.11ac_VHT80 (Band 3)

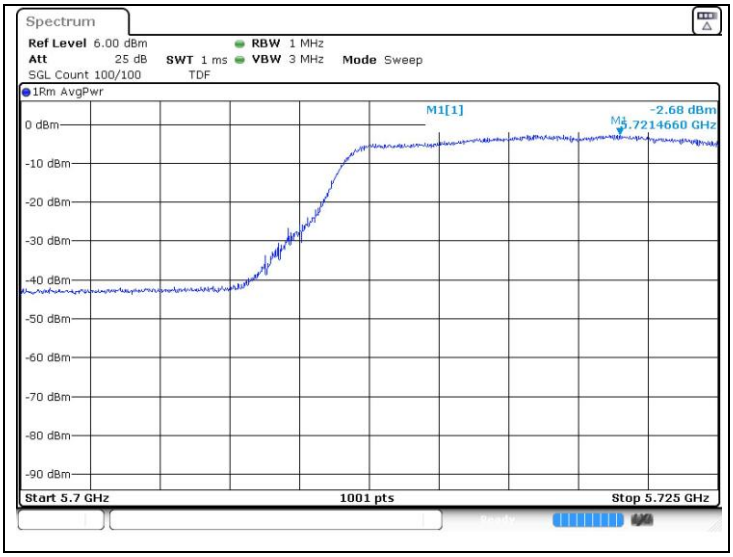
Middle Channel
(5 775 ㎒)



Band-crossing channels

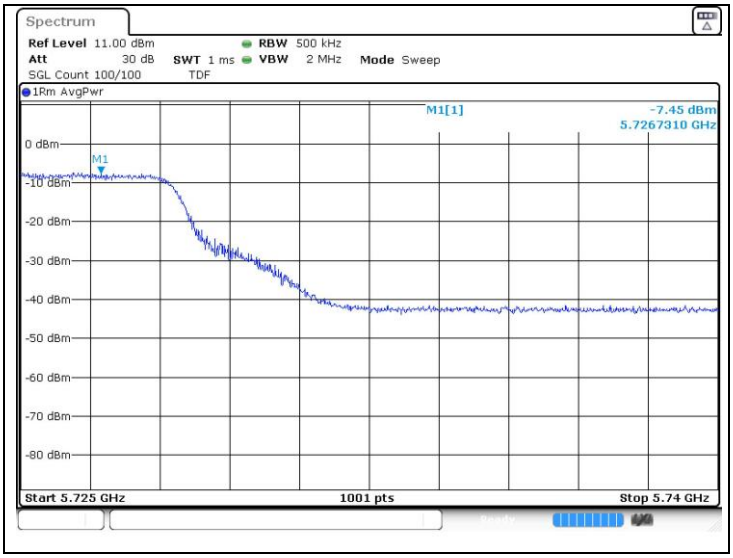
802.11a (Band 2C)

High Channel
(5 720 ㎒)



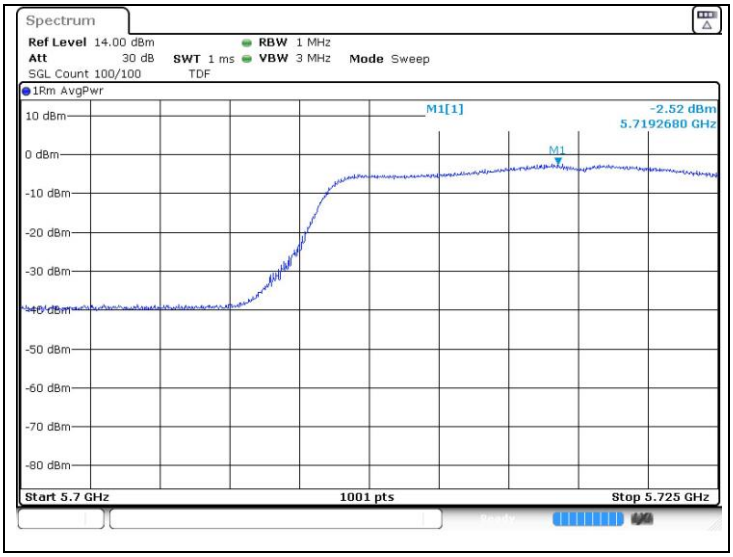
802.11a (Band 3)

High Channel
(5 720 ㎒)



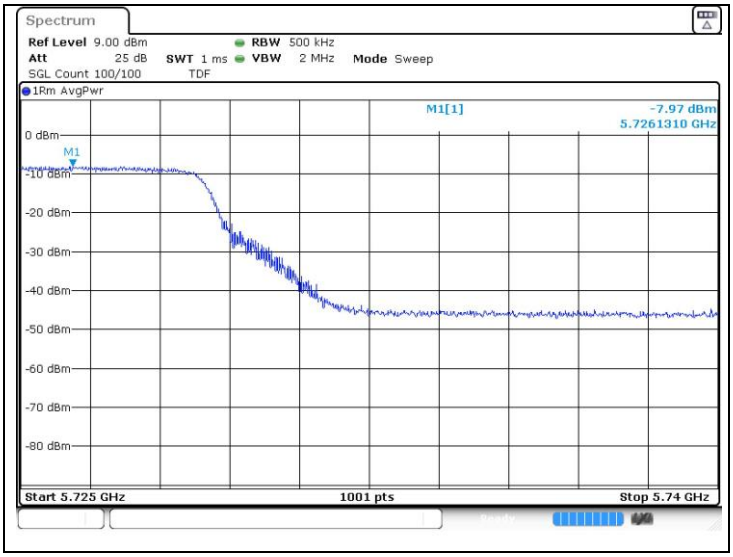
802.11n_HT20 (Band 2C)

High Channel
(5 720 ㎒)



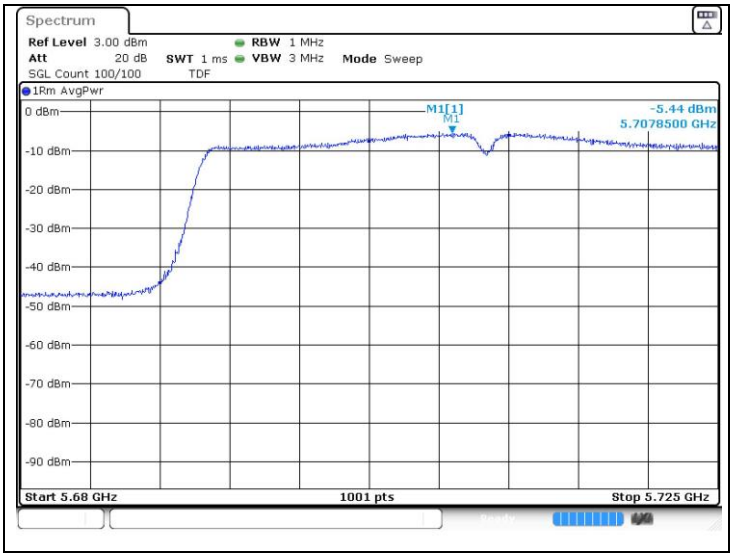
802.11n_HT20 (Band 3)

High Channel
(5 720 ㎒)



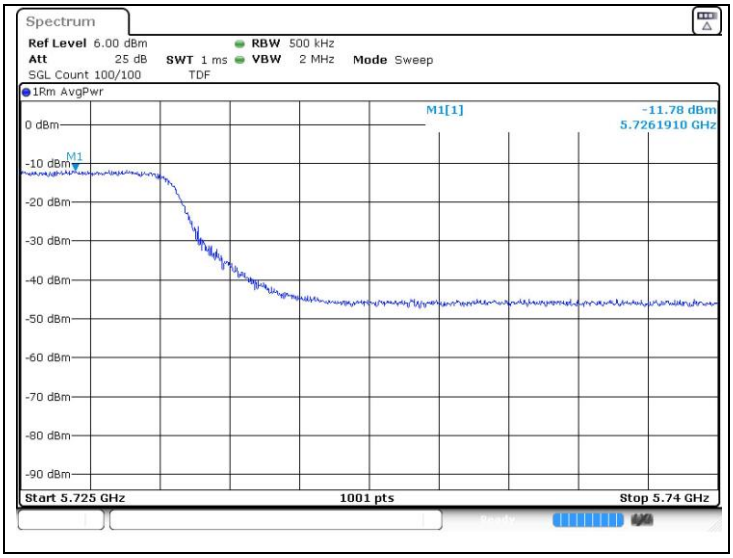
802.11ac_VHT40 (Band 2C)

High Channel
(5 710 ㎒)



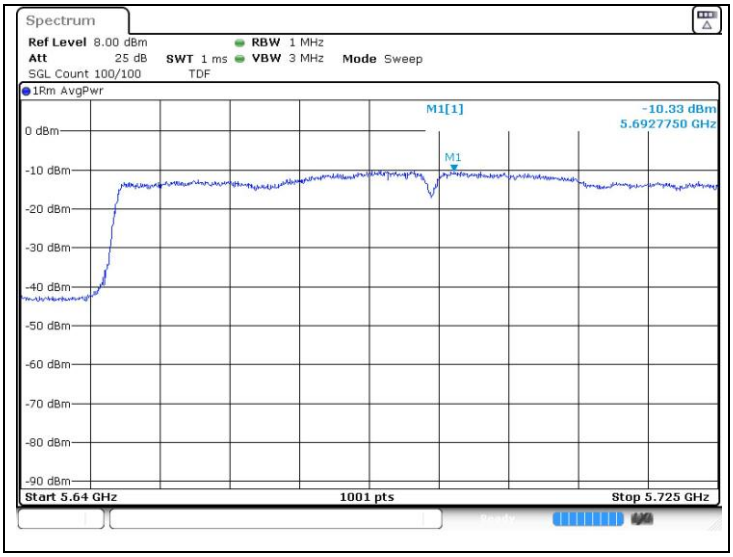
802.11ac_VHT40 (Band 3)

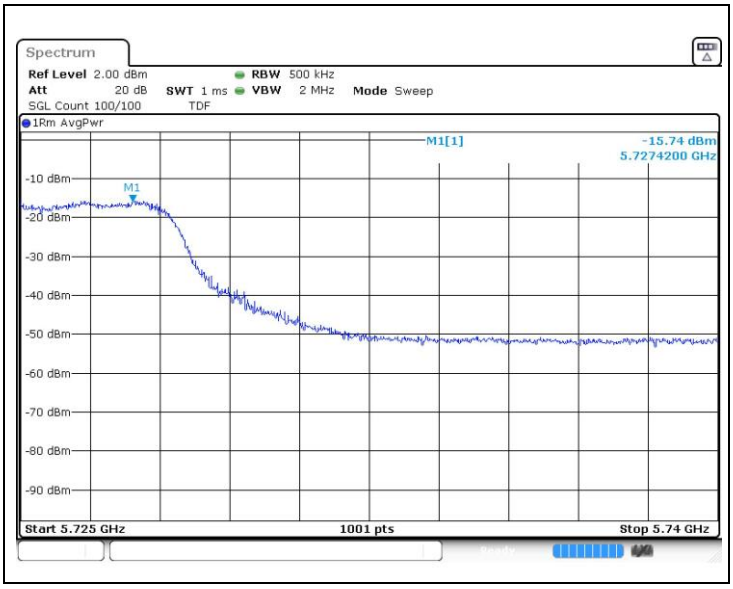
High Channel
(5 710 ㎒)



802.11ac_VHT80 (Band 2C)

Middle Channel
(5 690 ㎒)



802.11ac_VHT80 (Band 3)

Middle Channel
(5 690 ㎒)