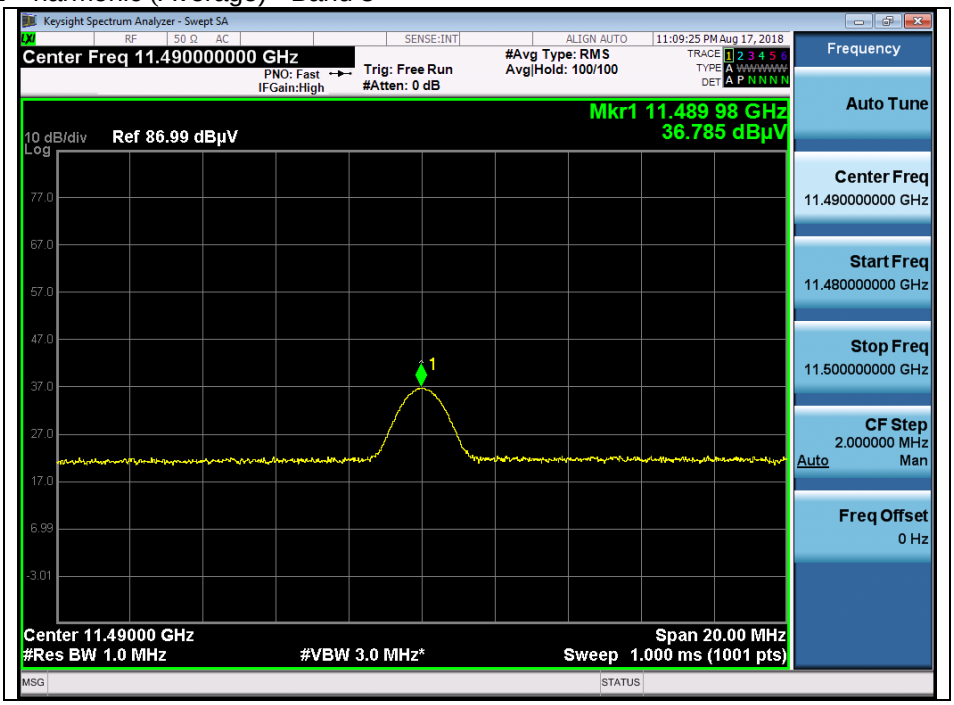
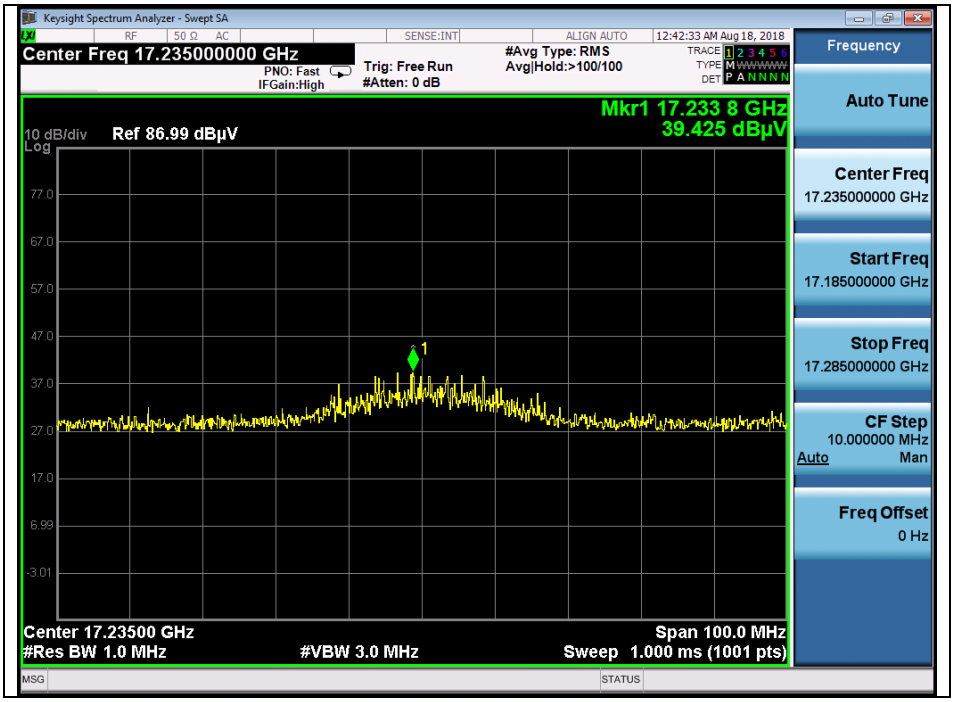
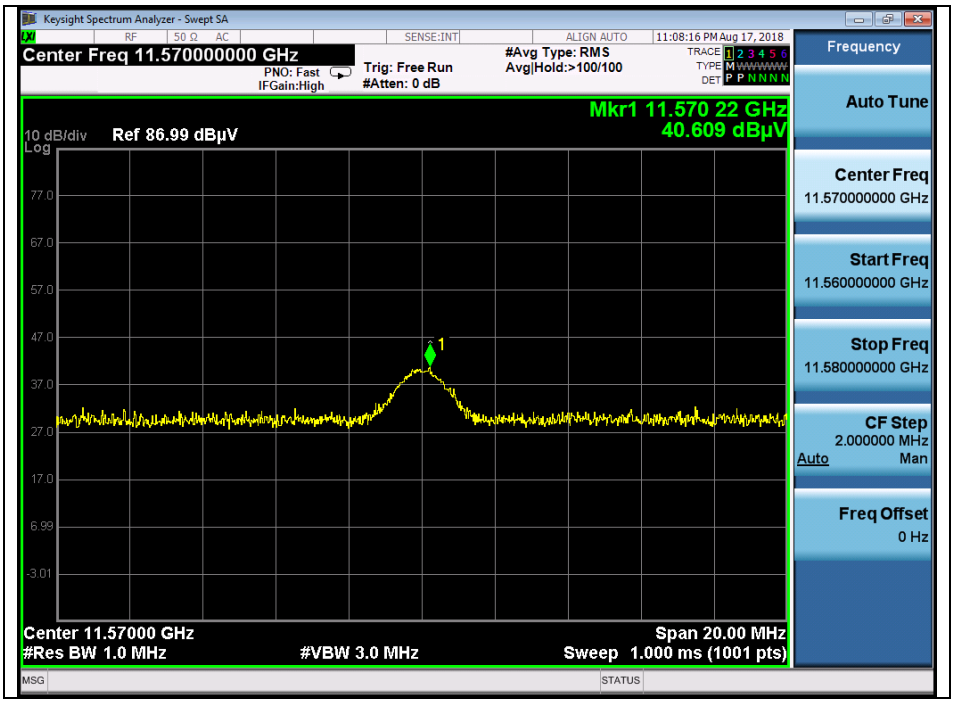
Low channel 2nd harmonic (Average) - Band 3



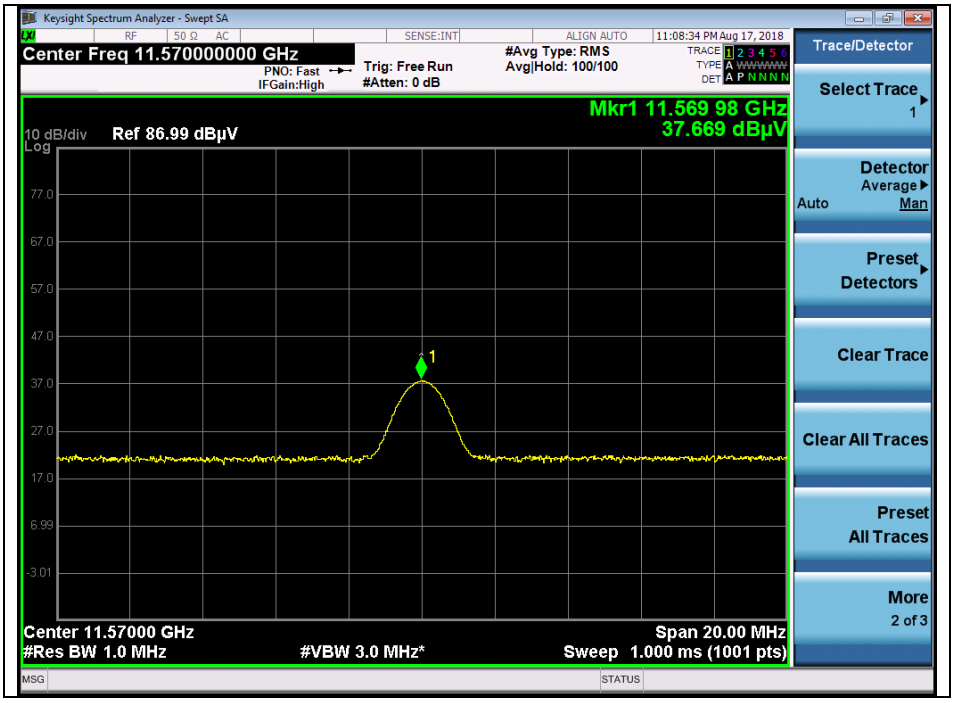
Low channel 3rd harmonic (Peak) - Band 3



Middle channel 2nd harmonic (Peak) - Band 3

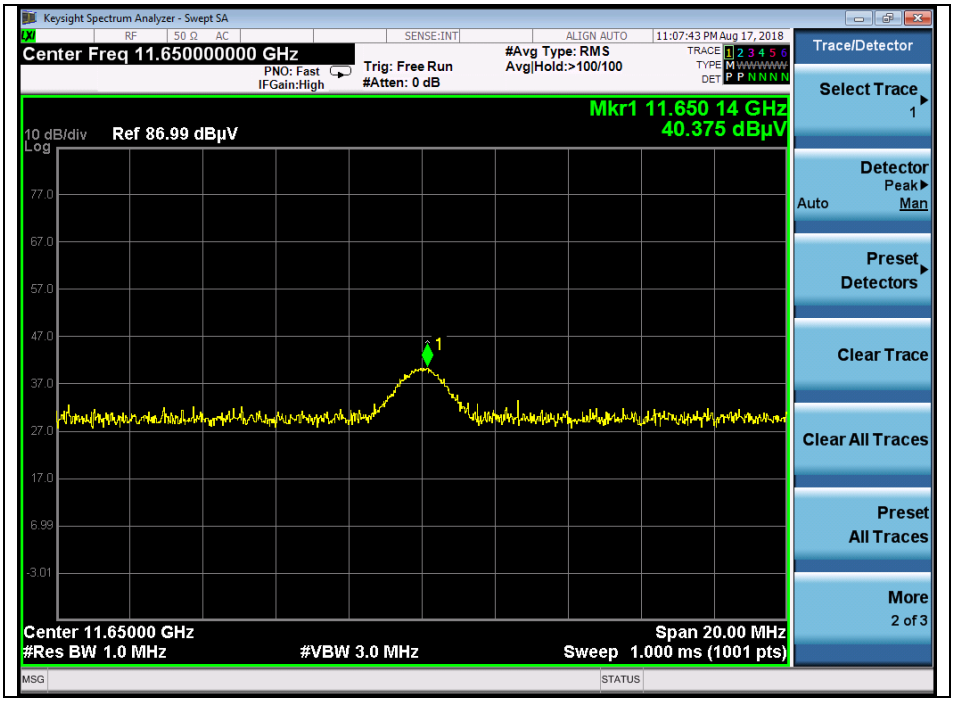


Middle channel 2nd harmonic (Average) - Band 3

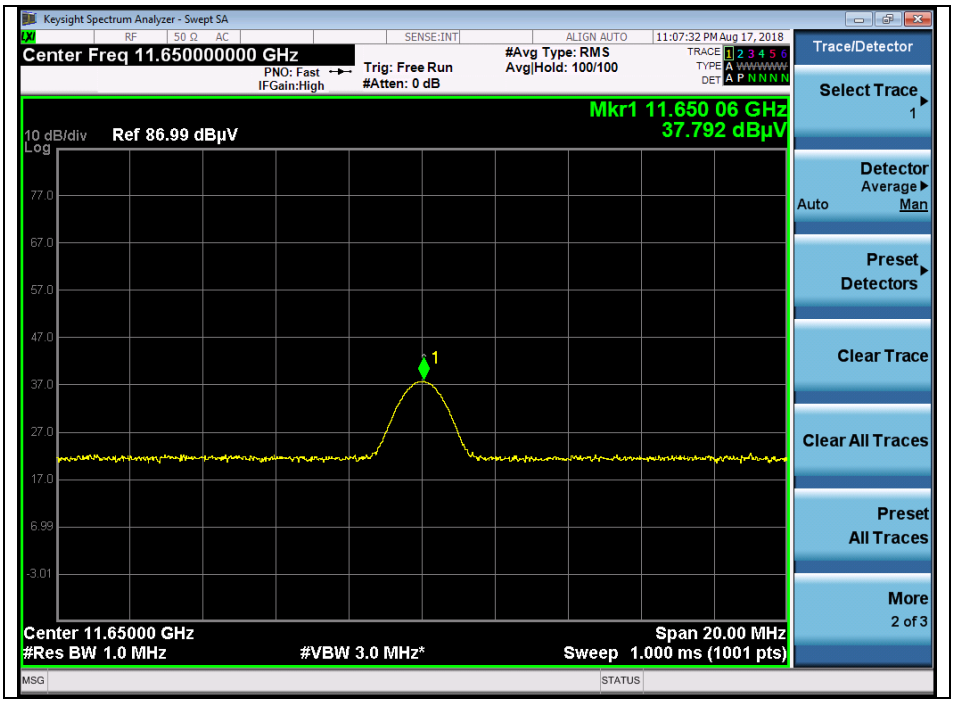


Middle channel 3rd harmonic (Peak) - Band 3

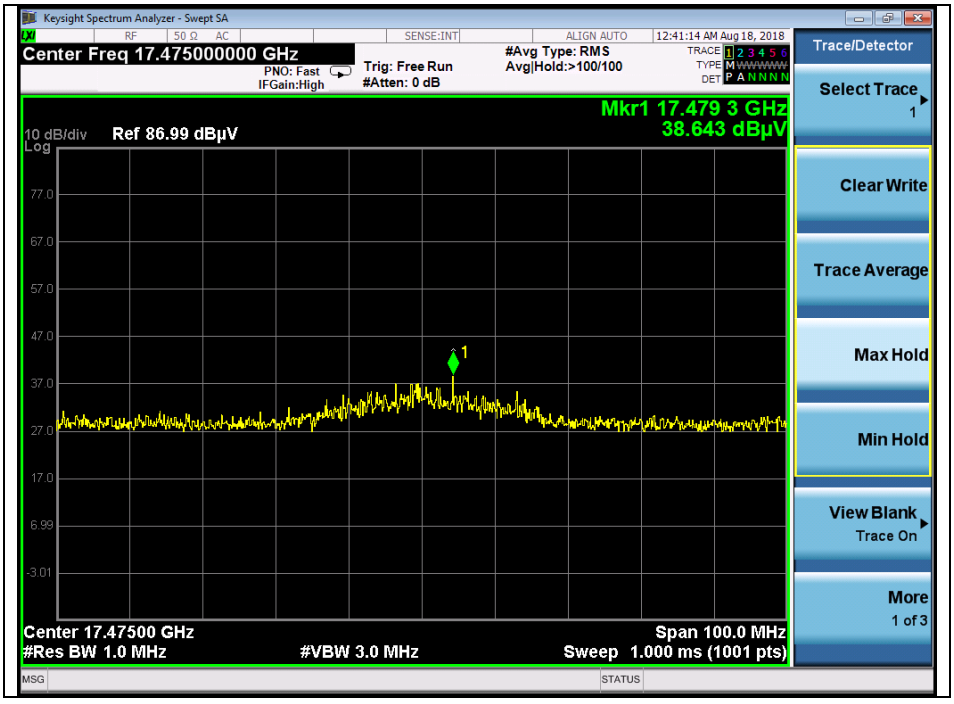
High channel 2nd harmonic (Peak) - Band 3



High channel 2nd harmonic (Average) - Band 3

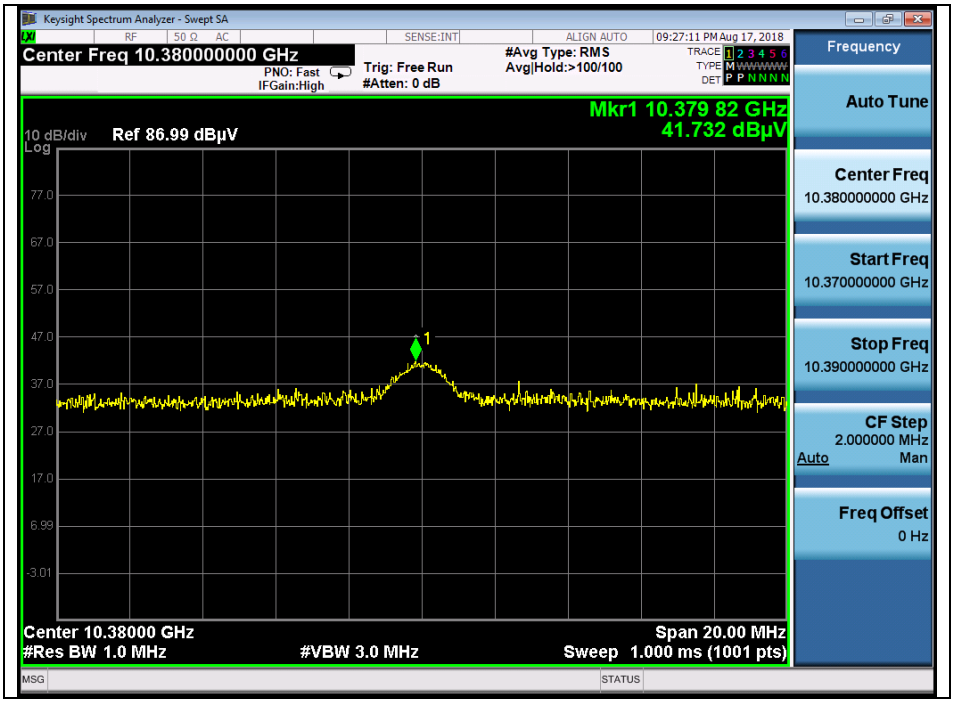


High channel 3rd harmonic (Peak) - Band 3

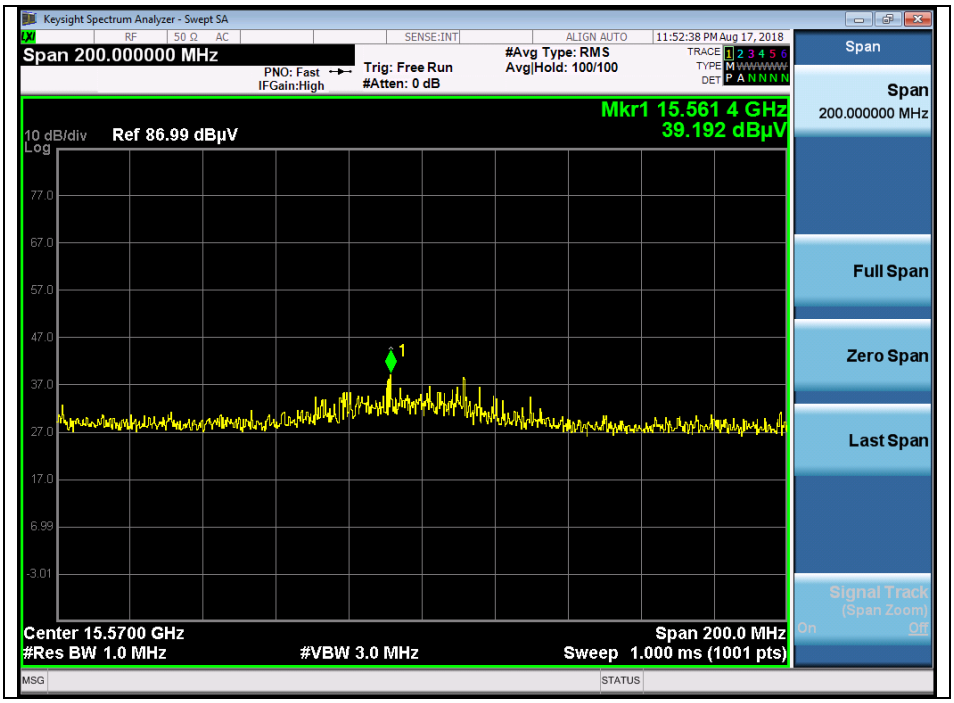


OFDM: 802.11n_HT40(MCS0)

Low channel 2nd harmonic (Peak) - Band 1

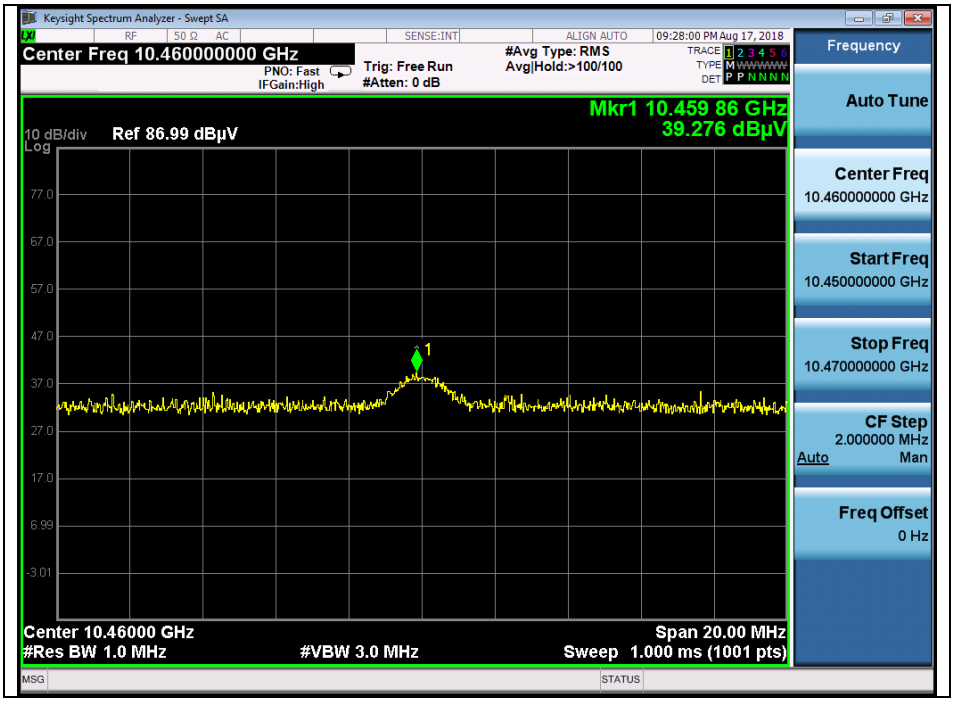


Low channel 3rd harmonic (Peak) - Band 1

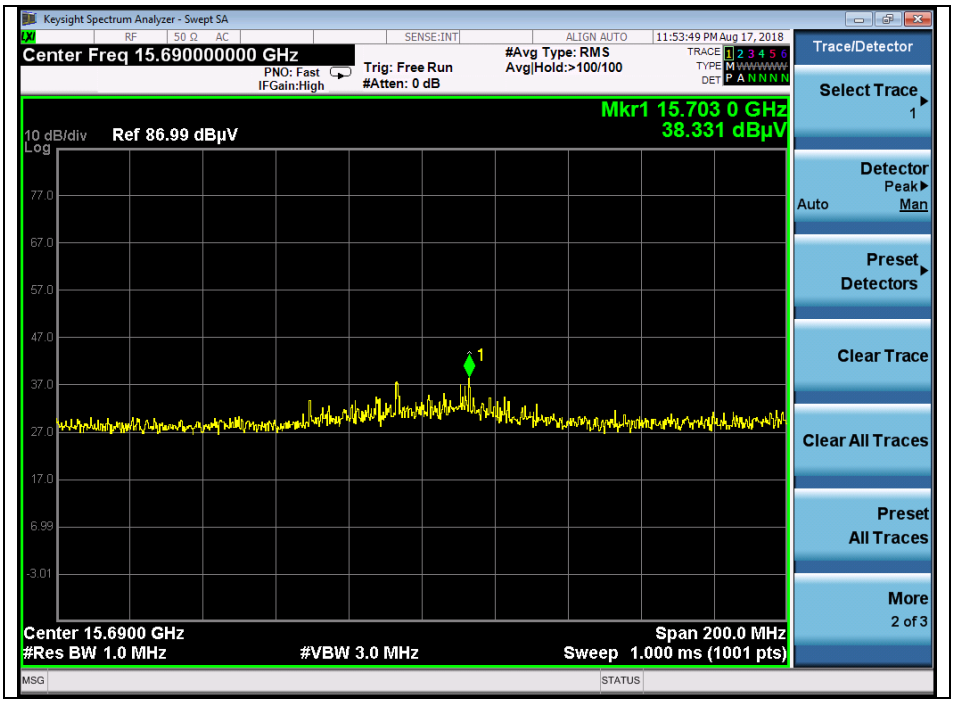


Low channel 3rd harmonic (Average) - Band 1

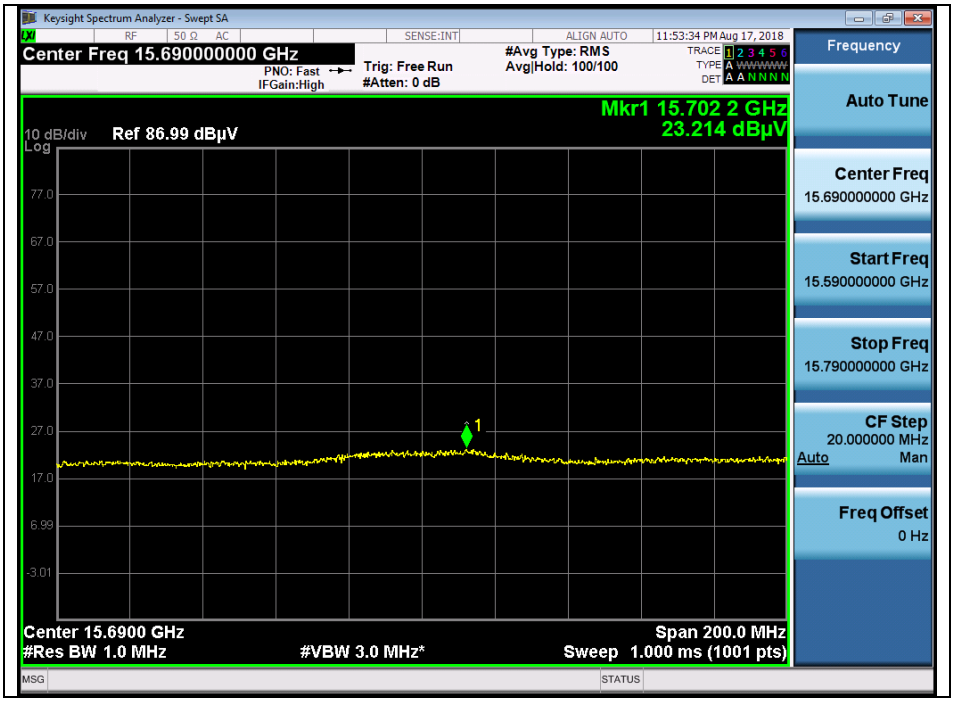
High channel 2nd harmonic (Peak) - Band 1



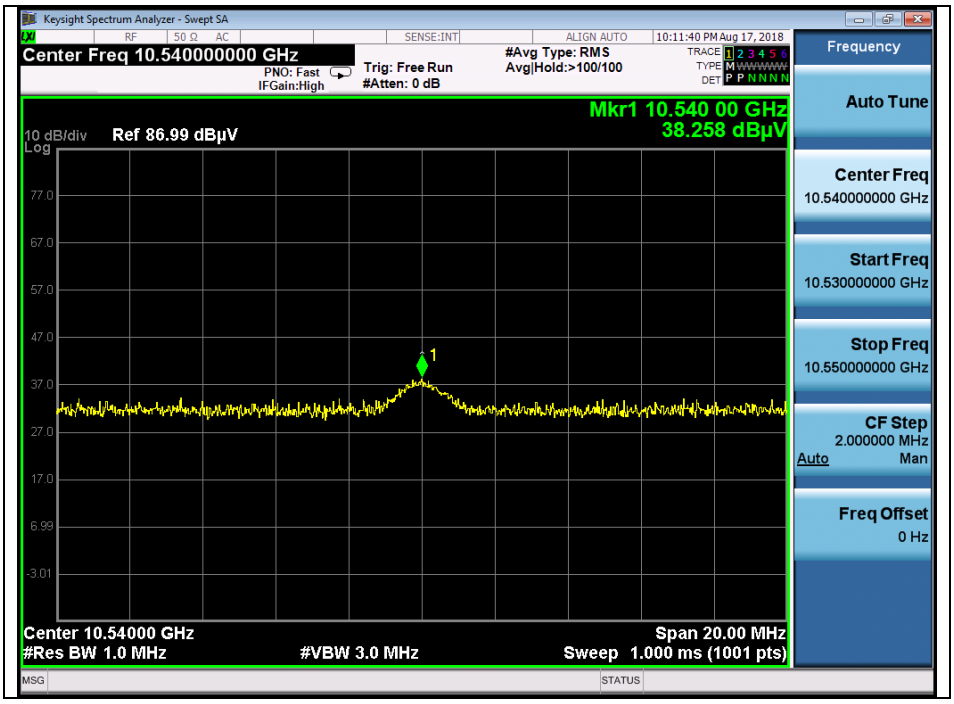
High channel 3rd harmonic (Peak) - Band 1



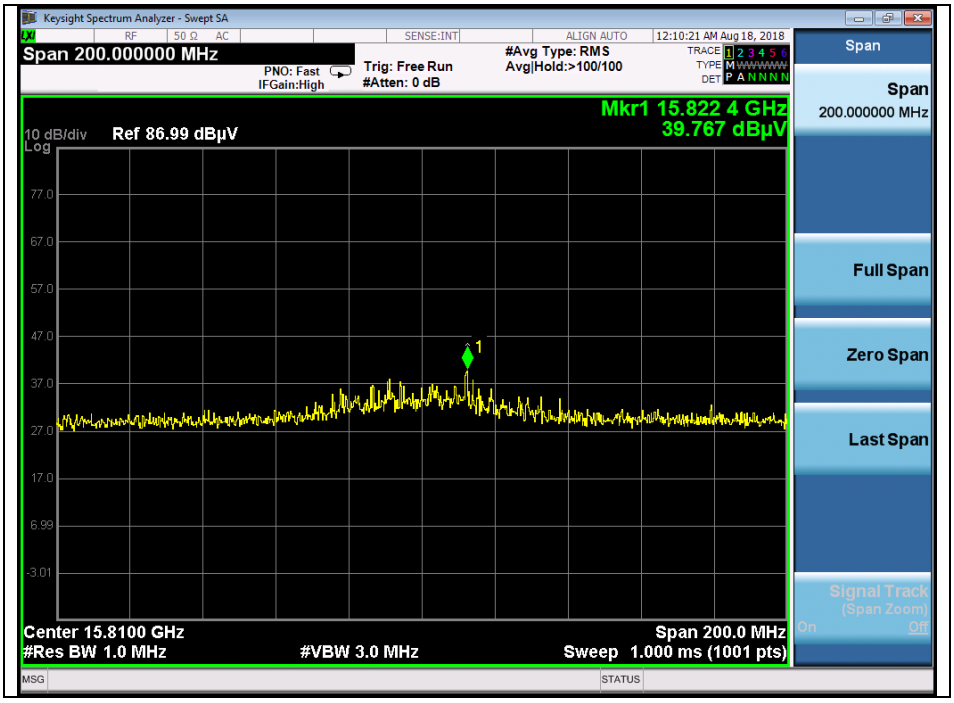
High channel 3rd harmonic (Average) - Band 1



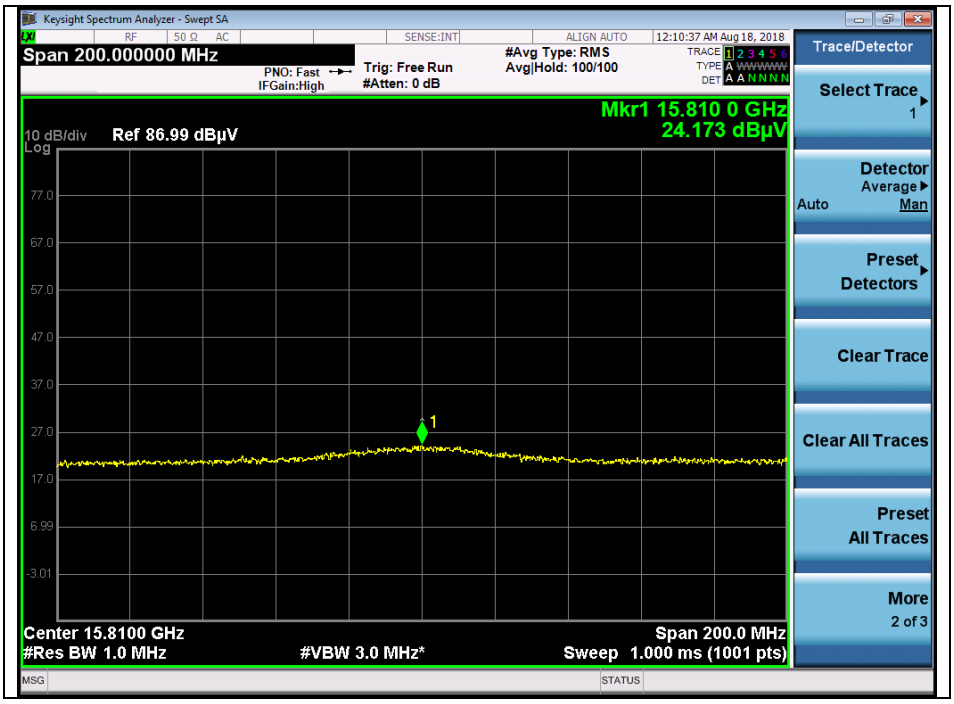
Low channel 2nd harmonic (Peak) - Band 2A



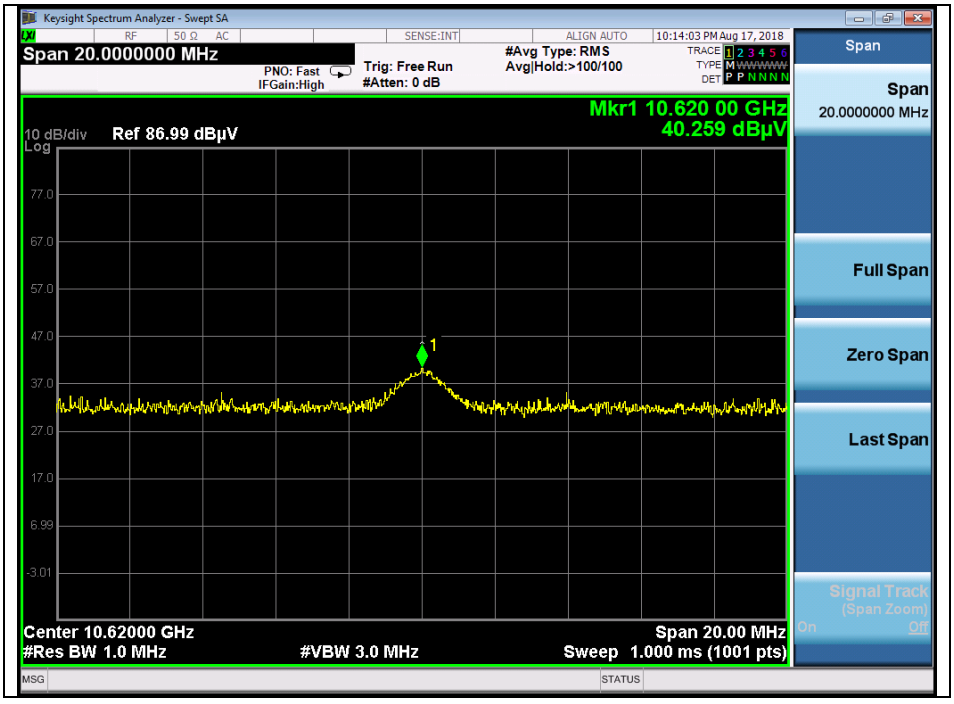
Low channel 3rd harmonic (Peak) - Band 2A



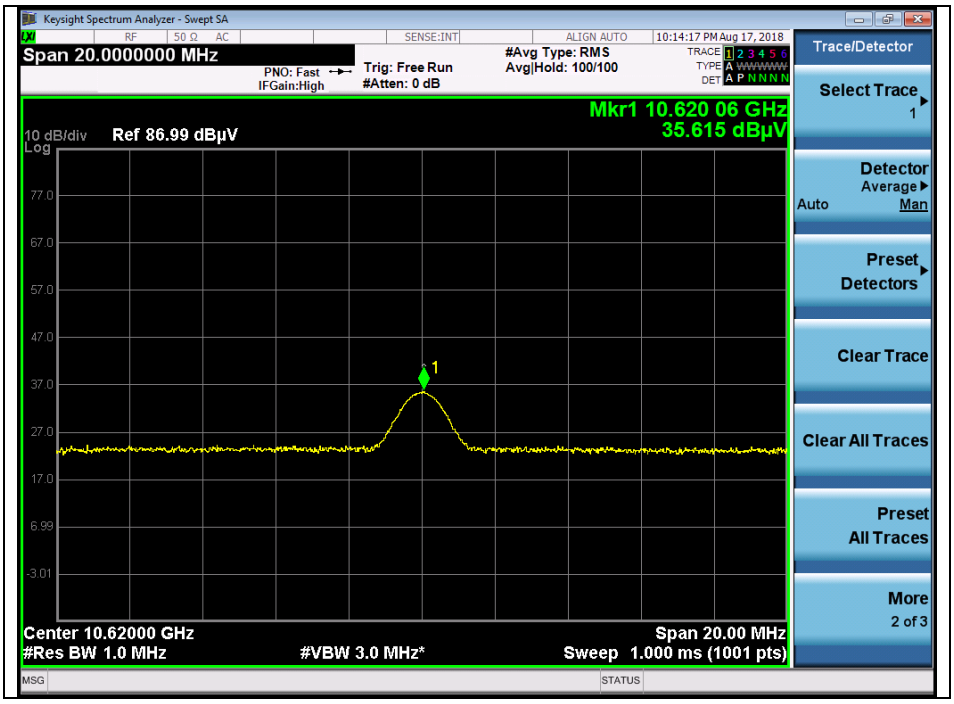
Low channel 3rd harmonic (Average) - Band 2A



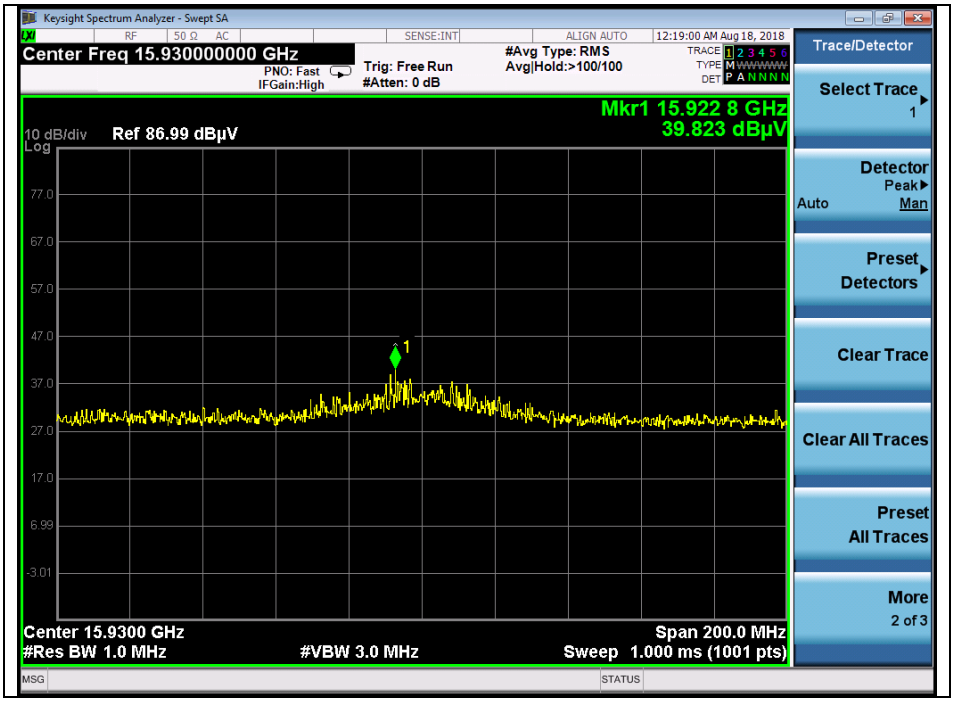
High channel 2nd harmonic (Peak) - Band 2A



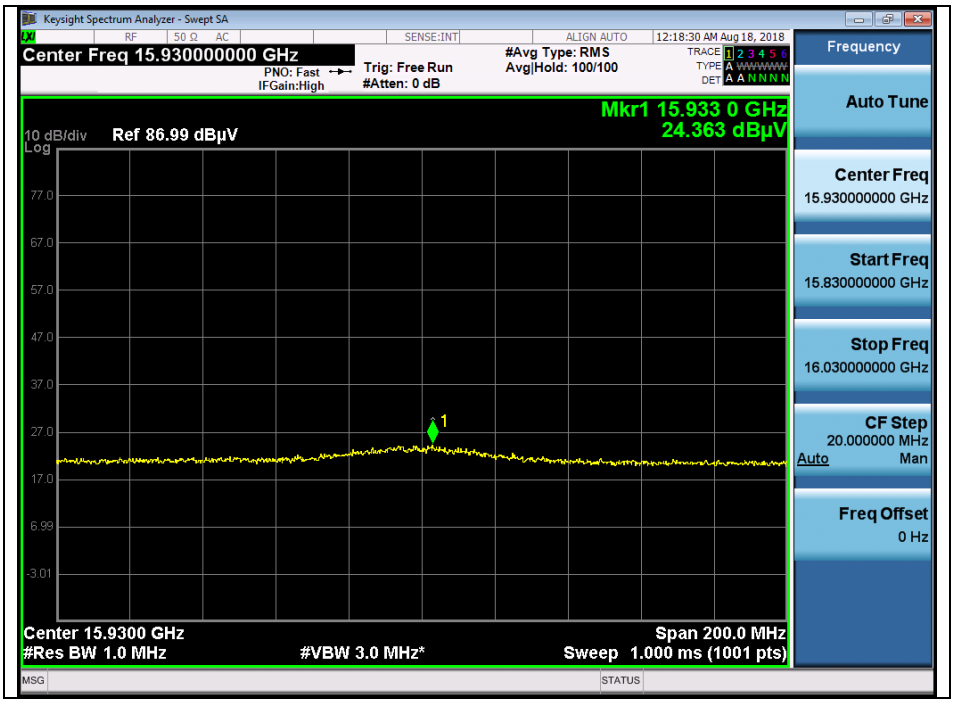
High channel 2nd harmonic (Average) - Band 2A



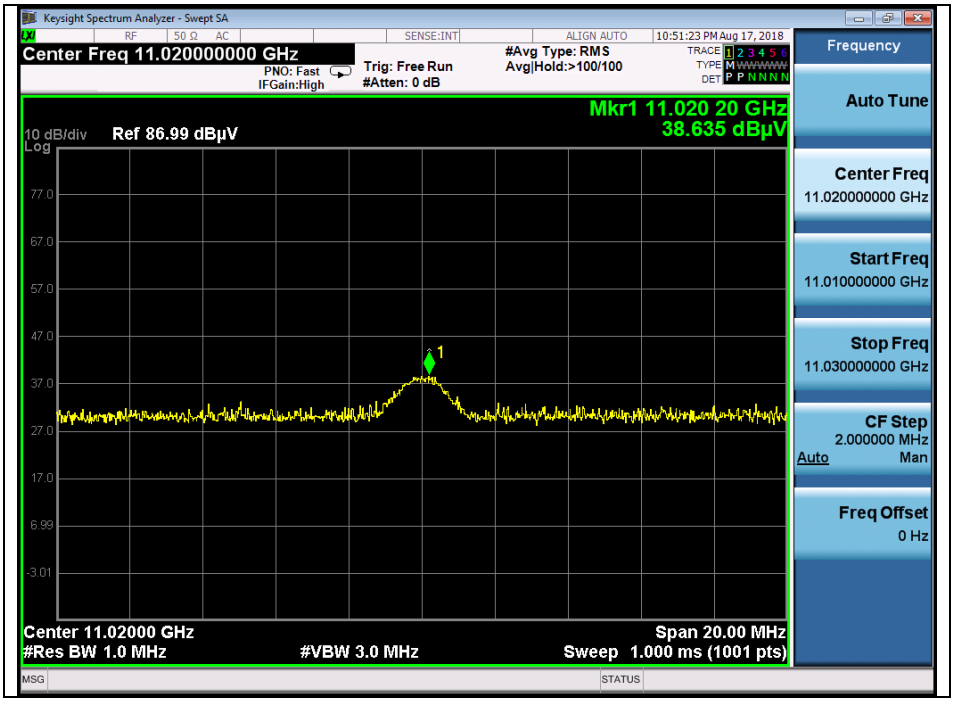
High channel 3rd harmonic (Peak) - Band 2A



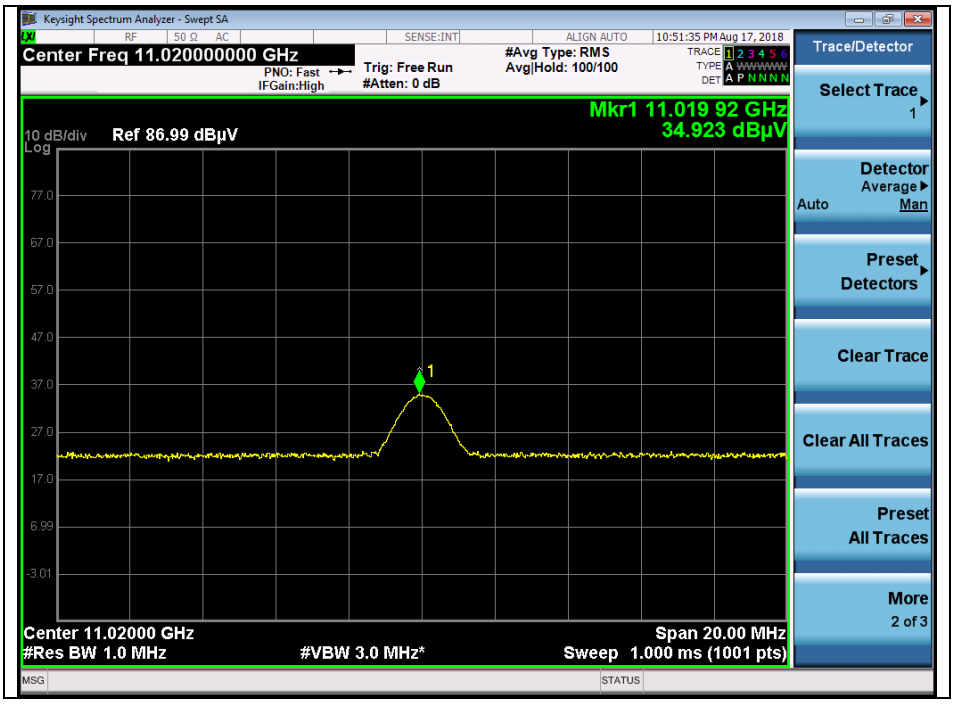
High channel 3rd harmonic (Average) - Band 2A



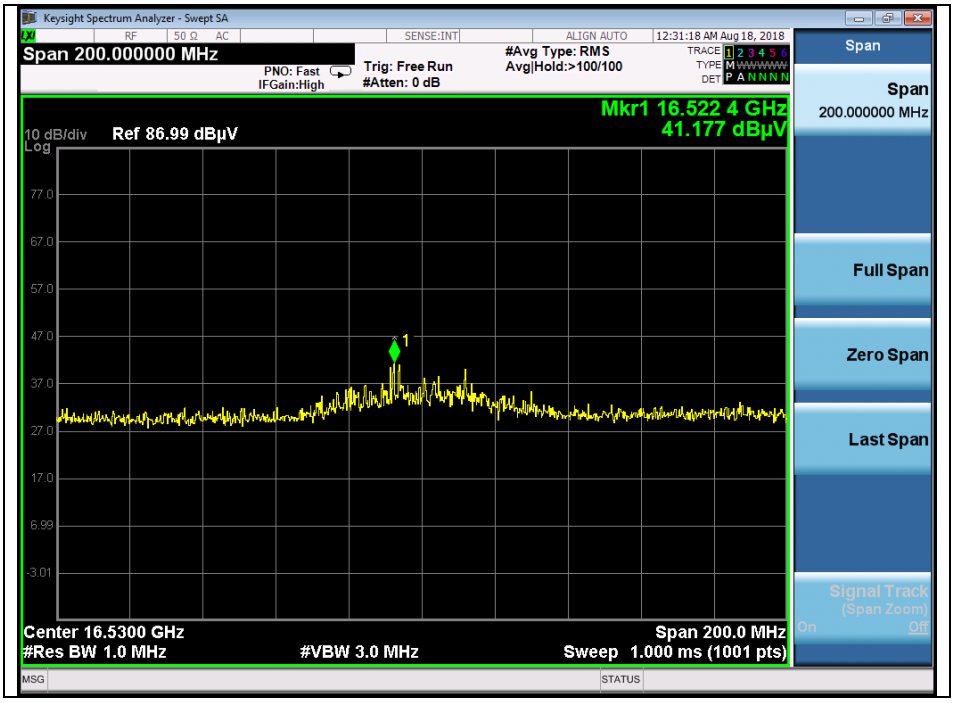
Low channel 2nd harmonic (Peak) - Band 2C



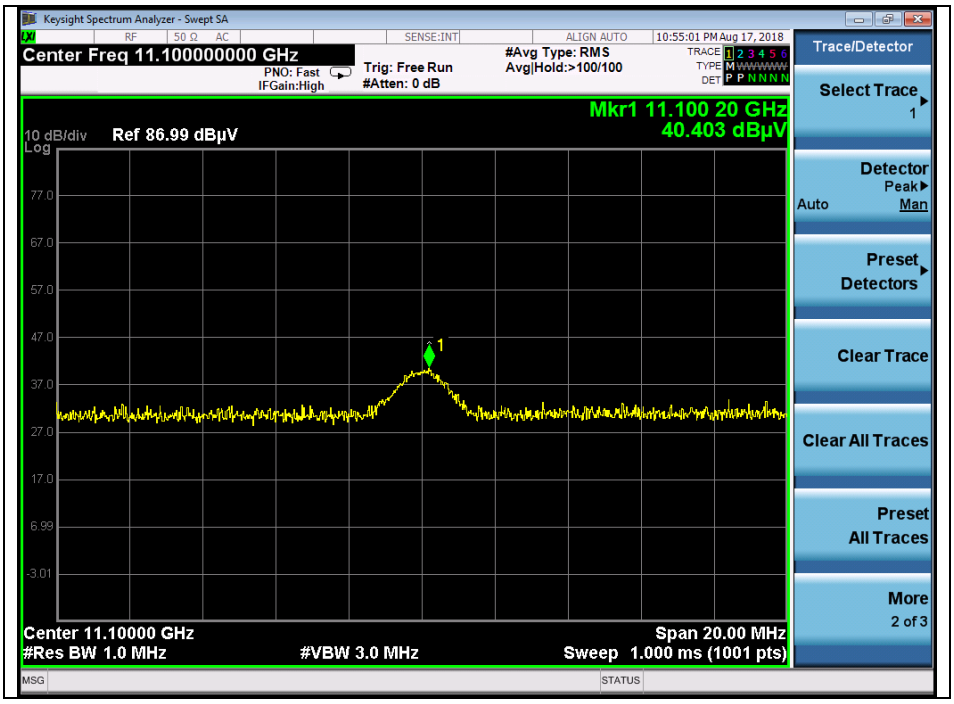
Low channel 2nd harmonic (Average) - Band 2C



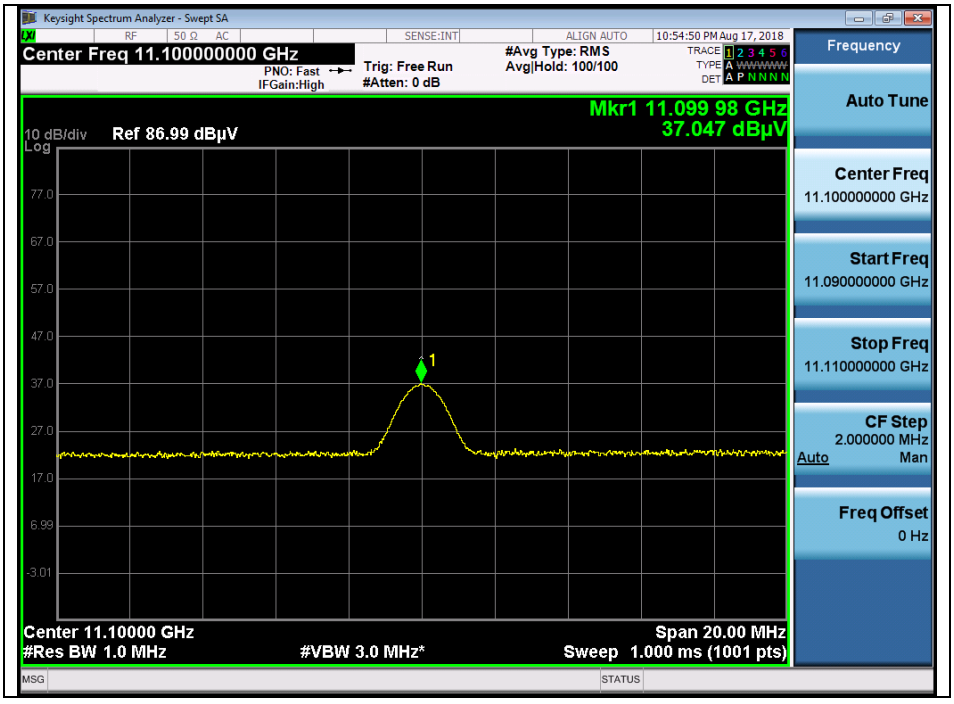
Low channel 3rd harmonic (Peak) - Band 2C



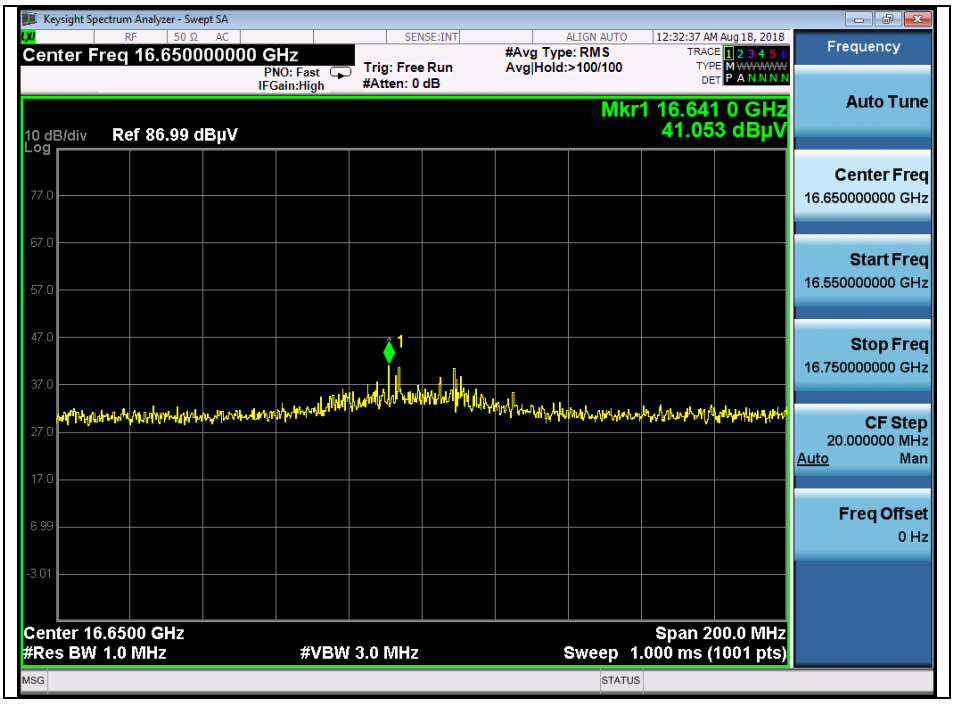
Middle channel 2nd harmonic (Peak) - Band 2C



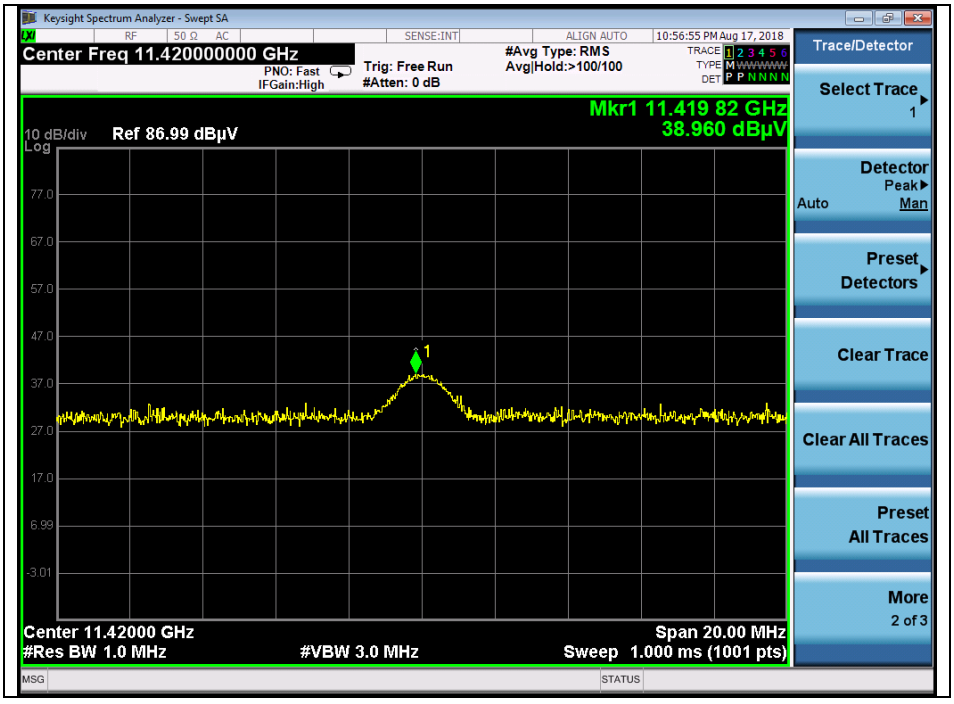
Middle channel 2nd harmonic (Average) - Band 2C



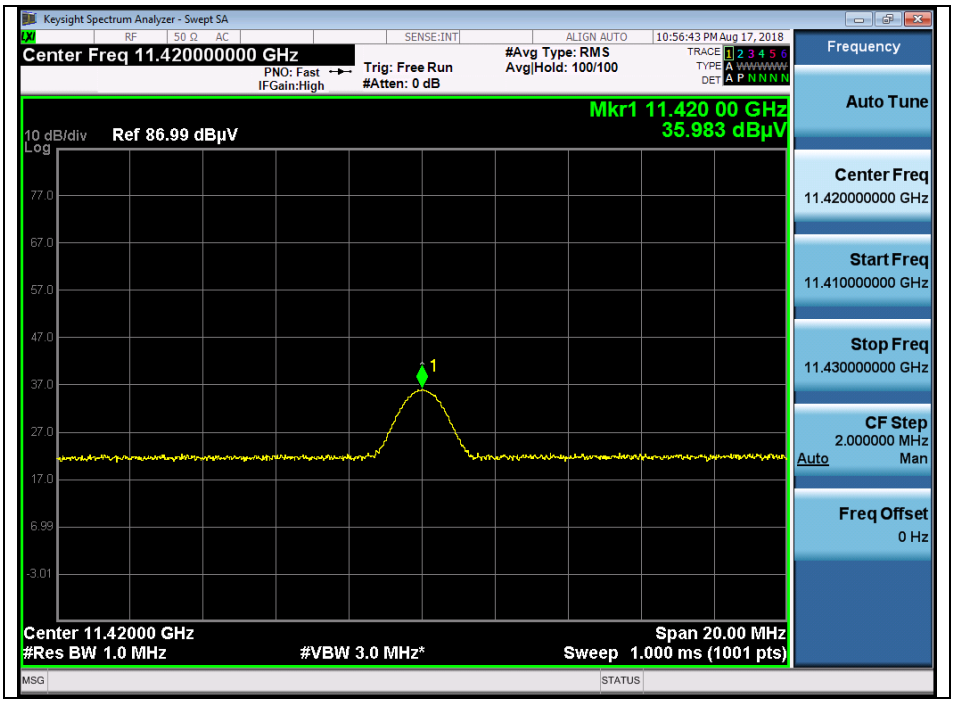
Middle channel 3rd harmonic (Peak) - Band 2C



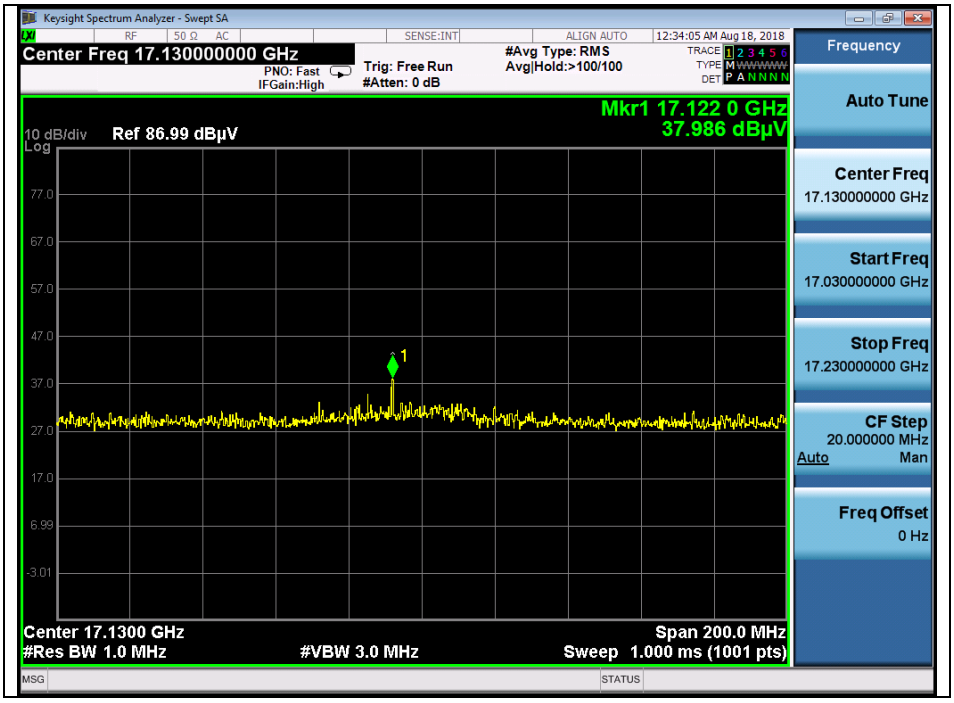
High channel 2nd harmonic (Peak) - Band 2C



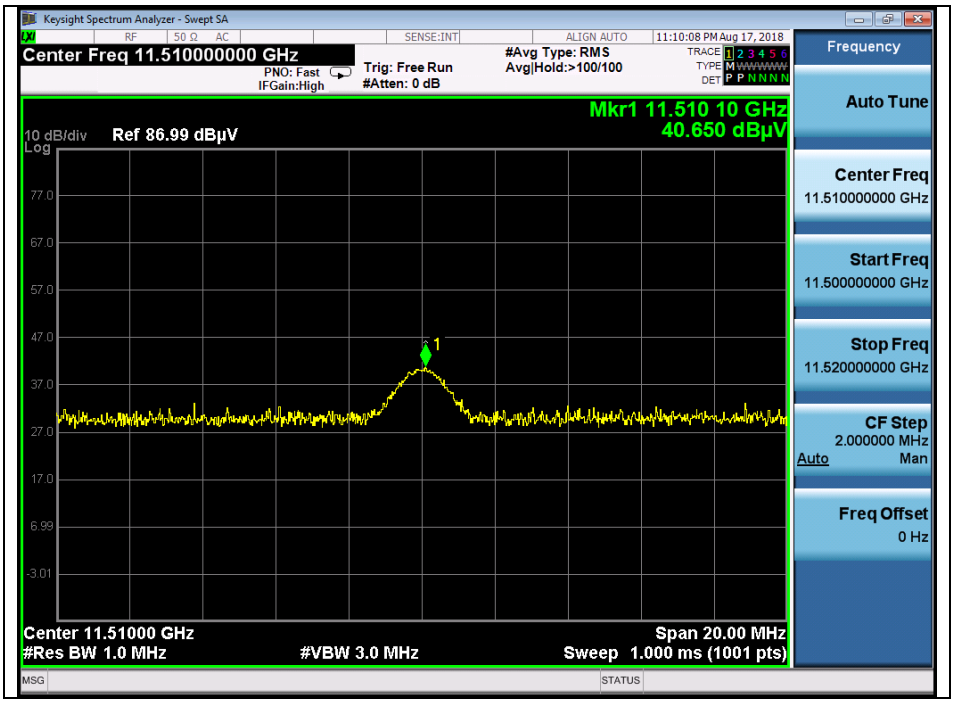
High channel 2nd harmonic (Average) - Band 2C



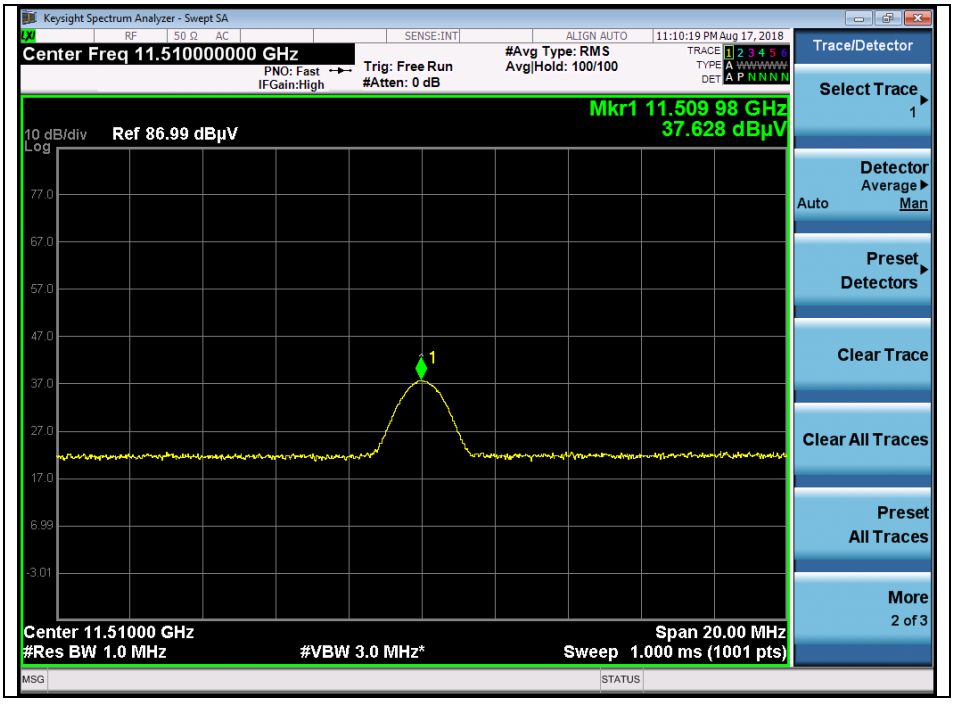
High channel 3rd harmonic (Peak) - Band 2C



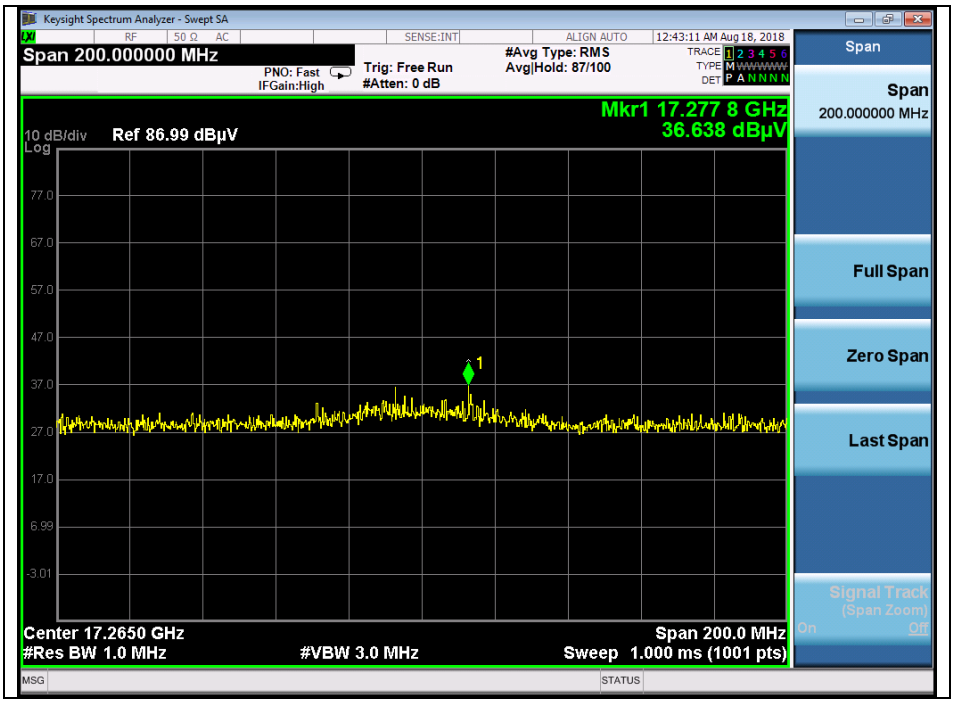
Low channel 2nd harmonic (Peak) - Band 3



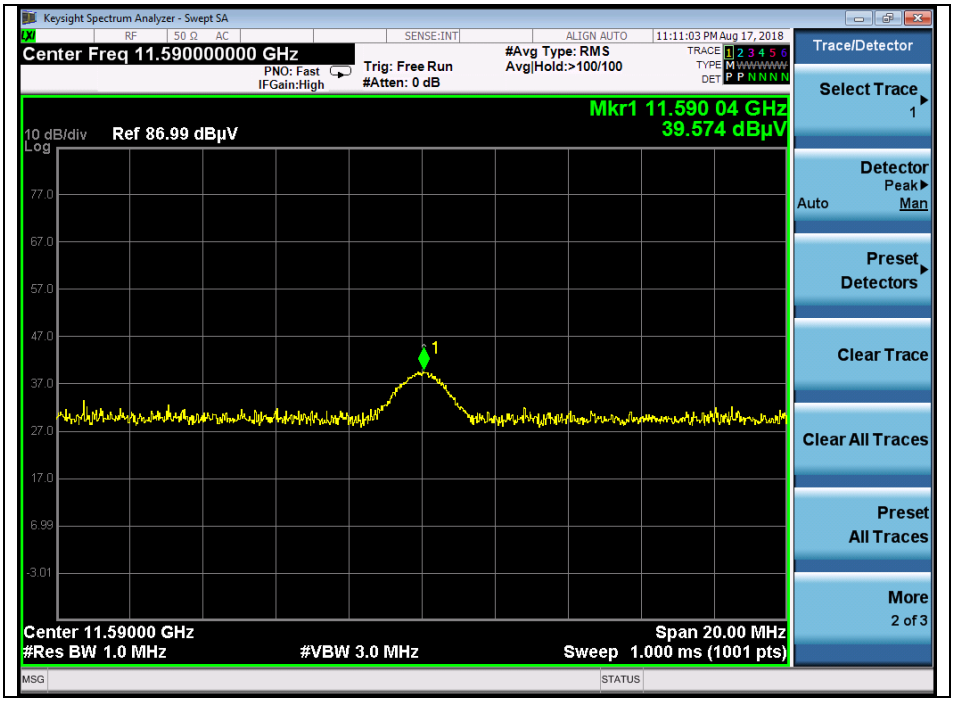
Low channel 2nd harmonic (Average) - Band 3



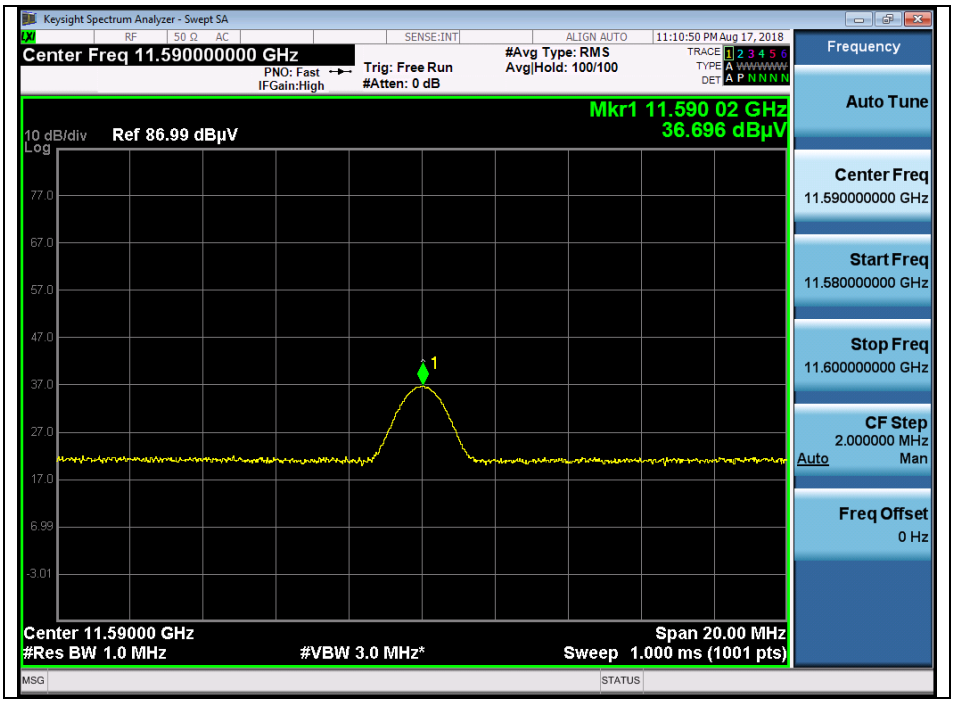
Low channel 3rd harmonic (Peak) - Band 3



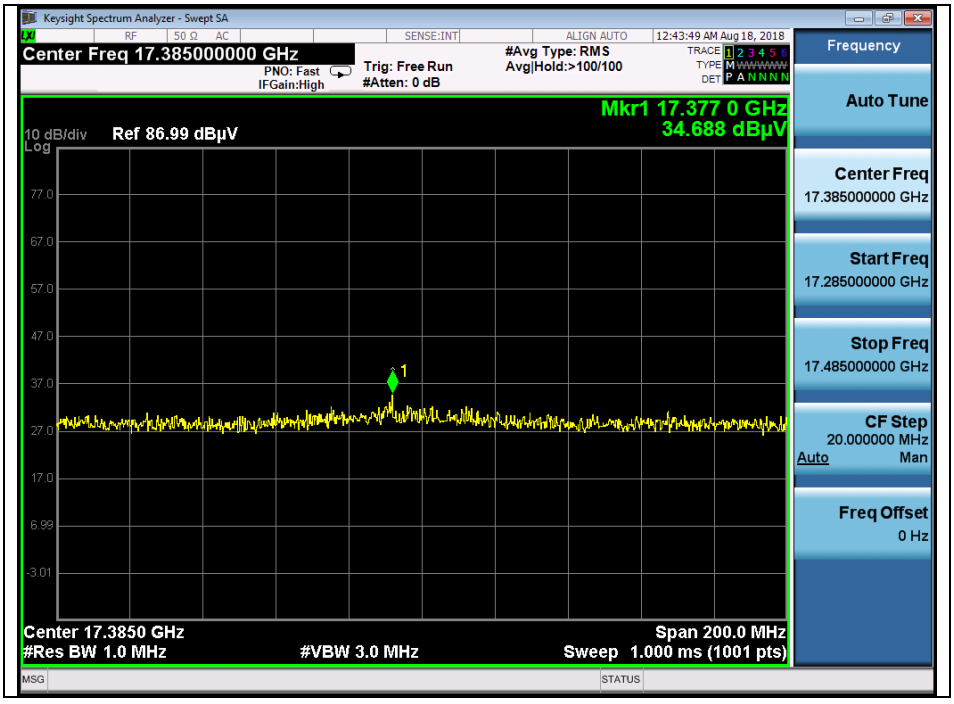
High channel 2nd harmonic (Peak) - Band 3



High channel 2nd harmonic (Average) - Band 3

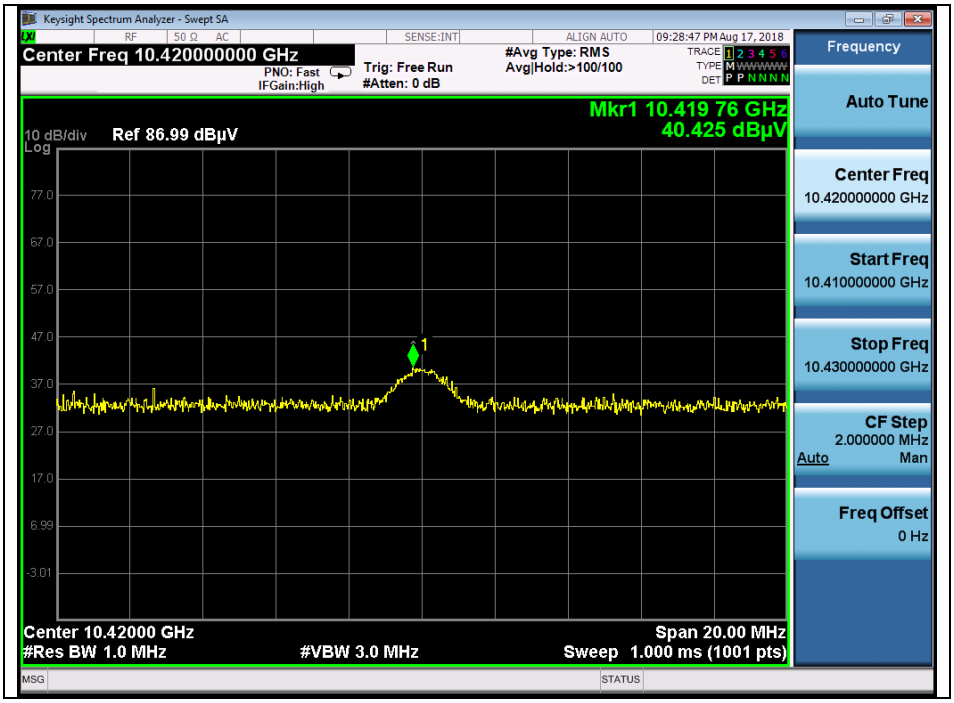


High channel 3rd harmonic (Peak) - Band 3

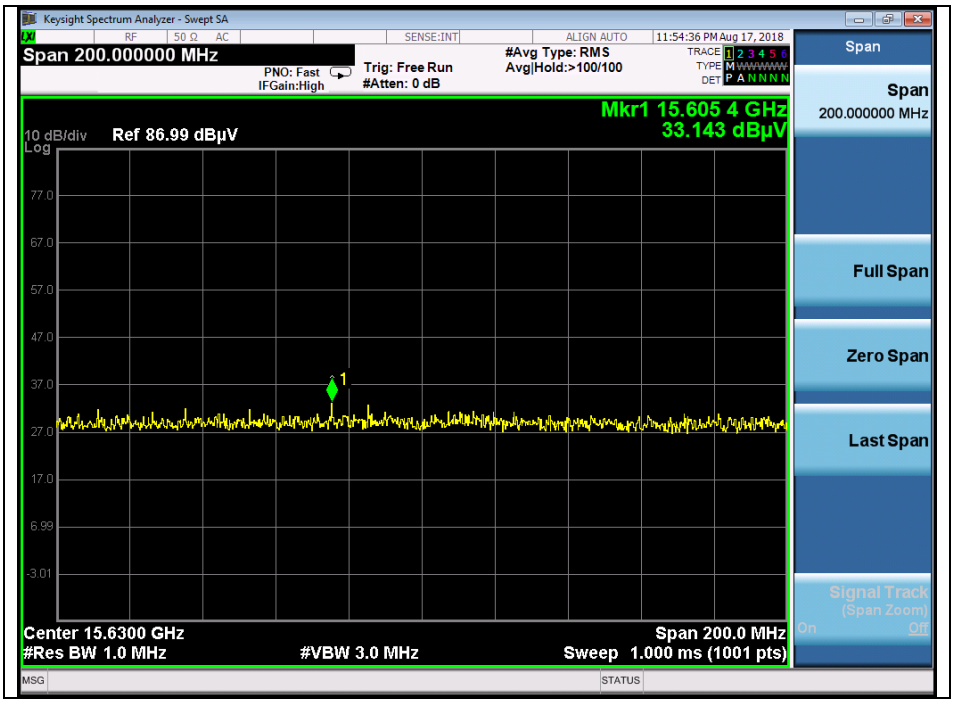


OFDM: 802.11ac_VHT80(MCS0)

Low channel 2nd harmonic (Peak) - Band 1

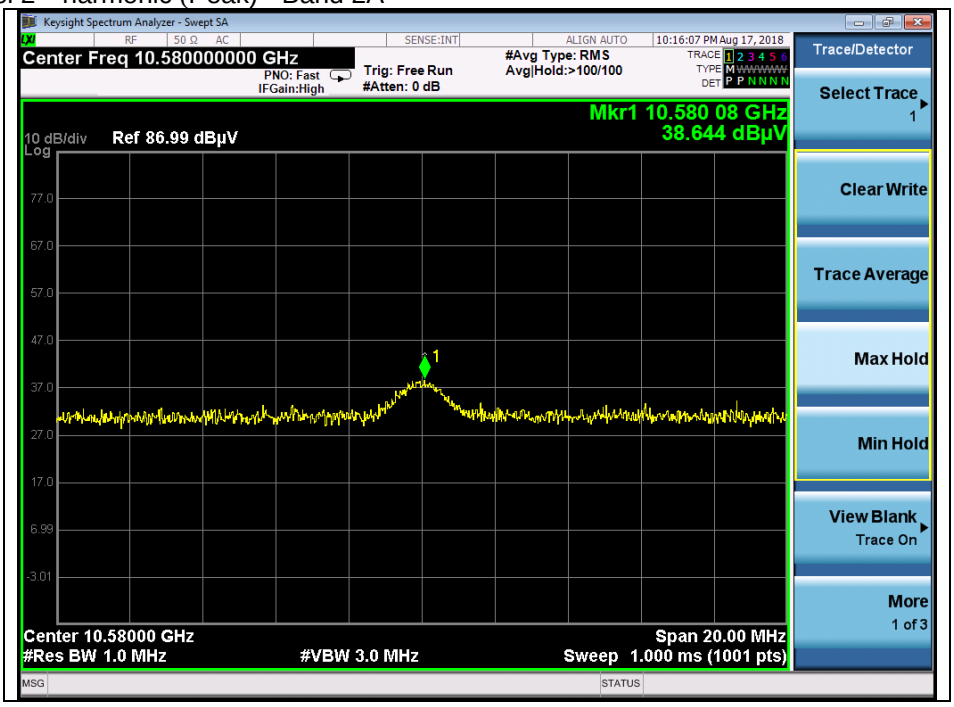


Low channel 3rd harmonic (Peak) - Band 1

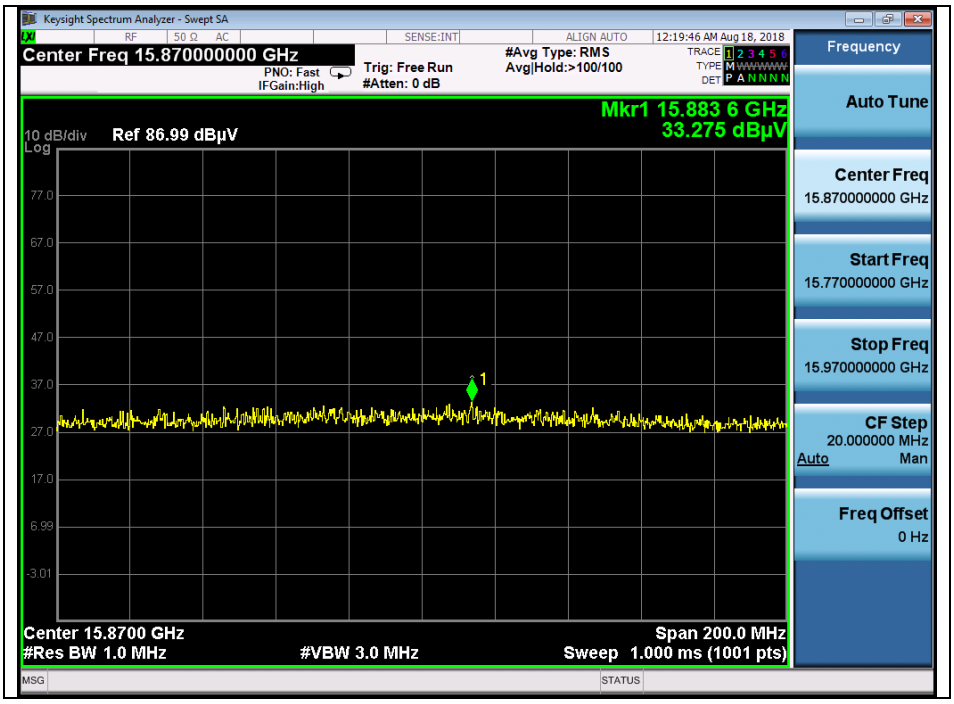


Low channel 3rd harmonic (Average) - Band 1

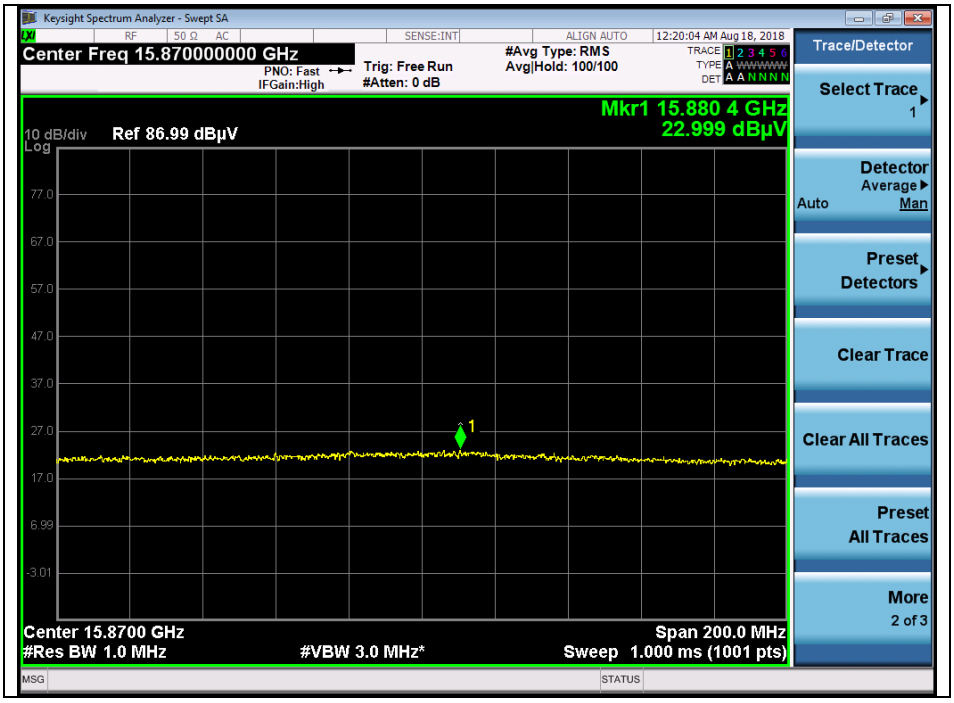
Middle channel 2nd harmonic (Peak) - Band 2A



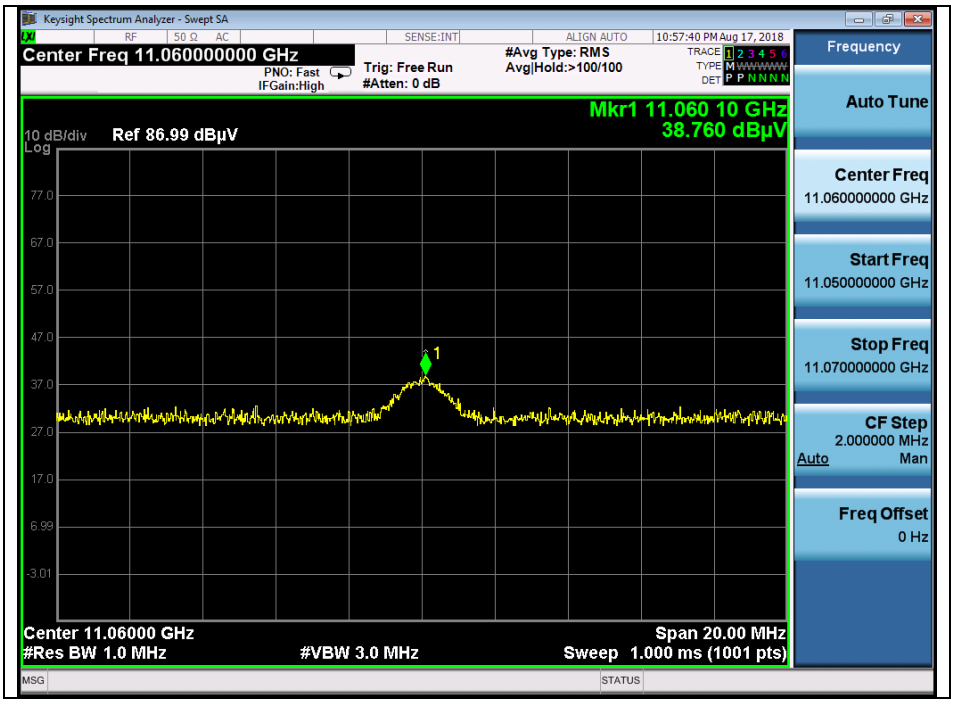
Middle channel 3rd harmonic (Peak) - Band 2A



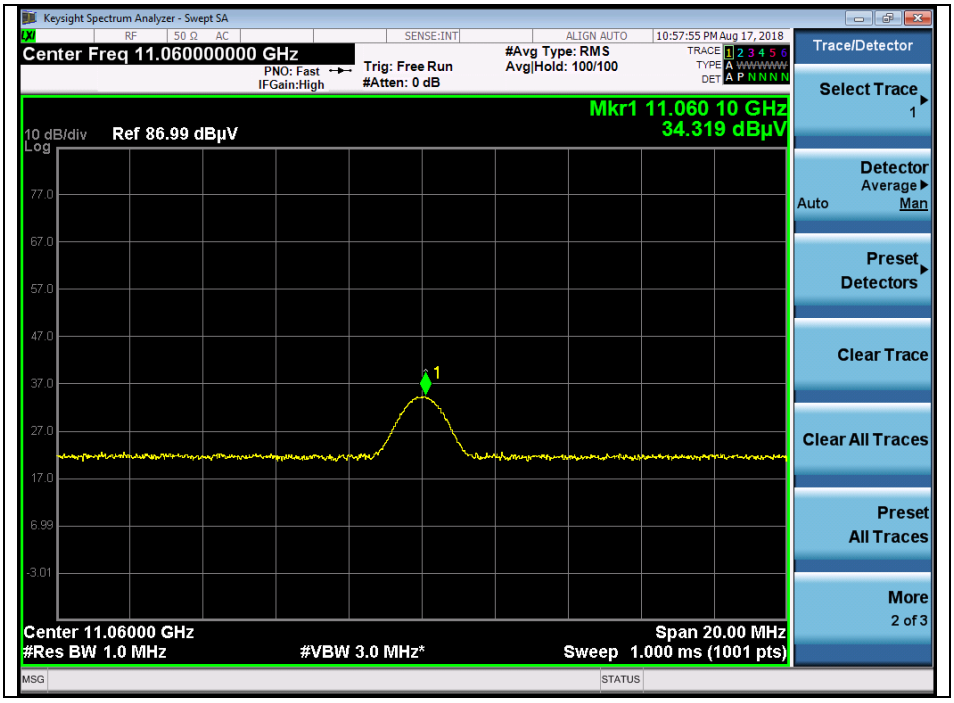
Middle channel 3rd harmonic (Average) - Band 2A



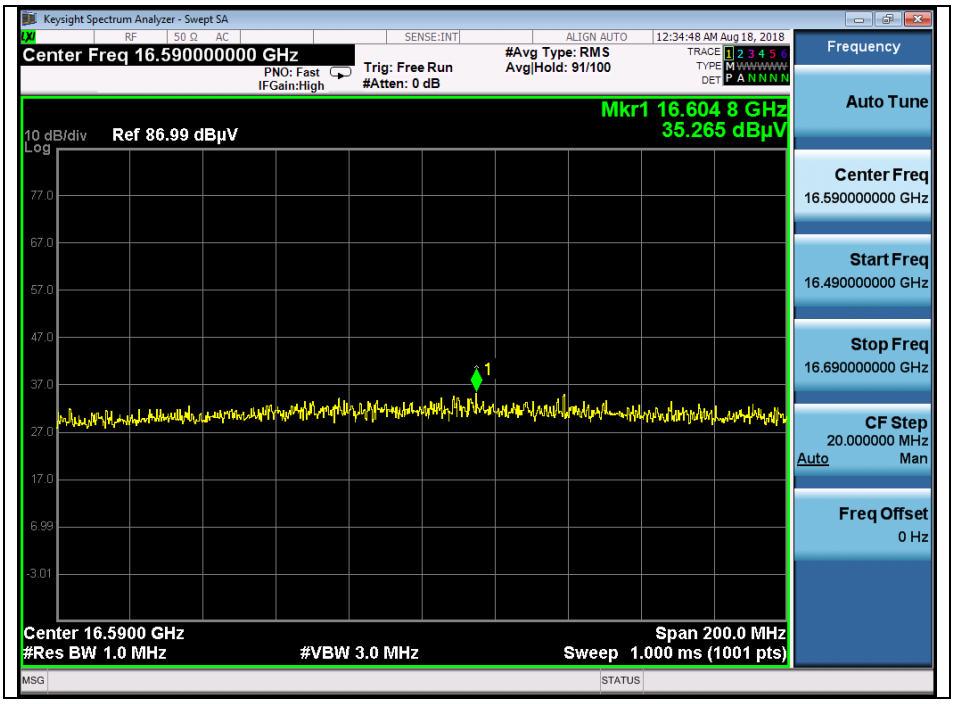
Low channel 2nd harmonic (Peak) - Band 2C



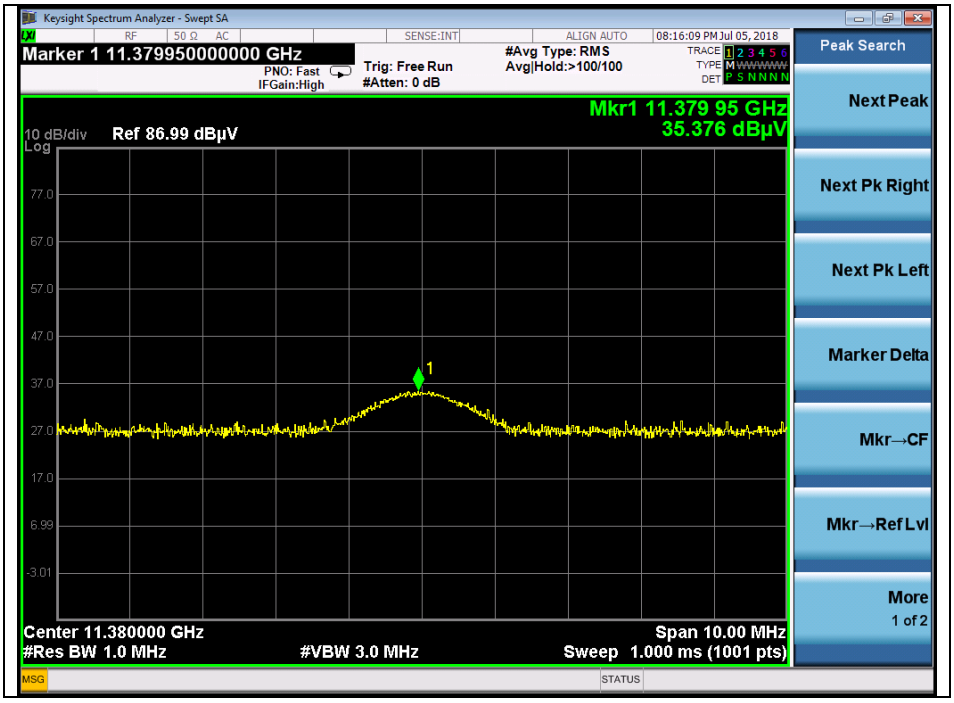
Low channel 2nd harmonic (Average) - Band 2C



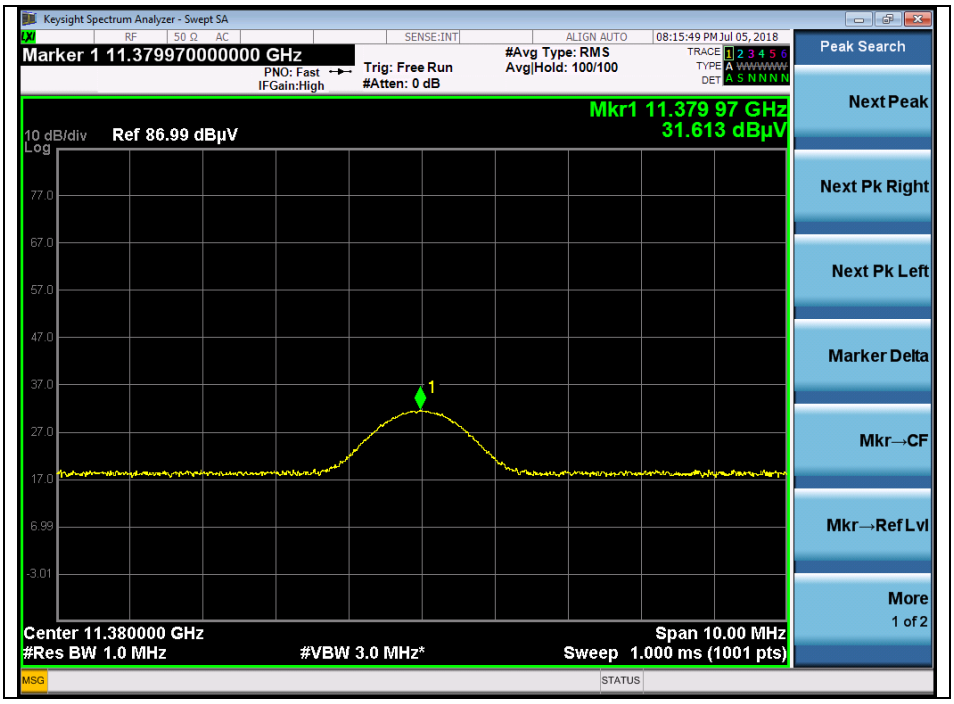
Low channel 3rd harmonic (Peak) - Band 2C



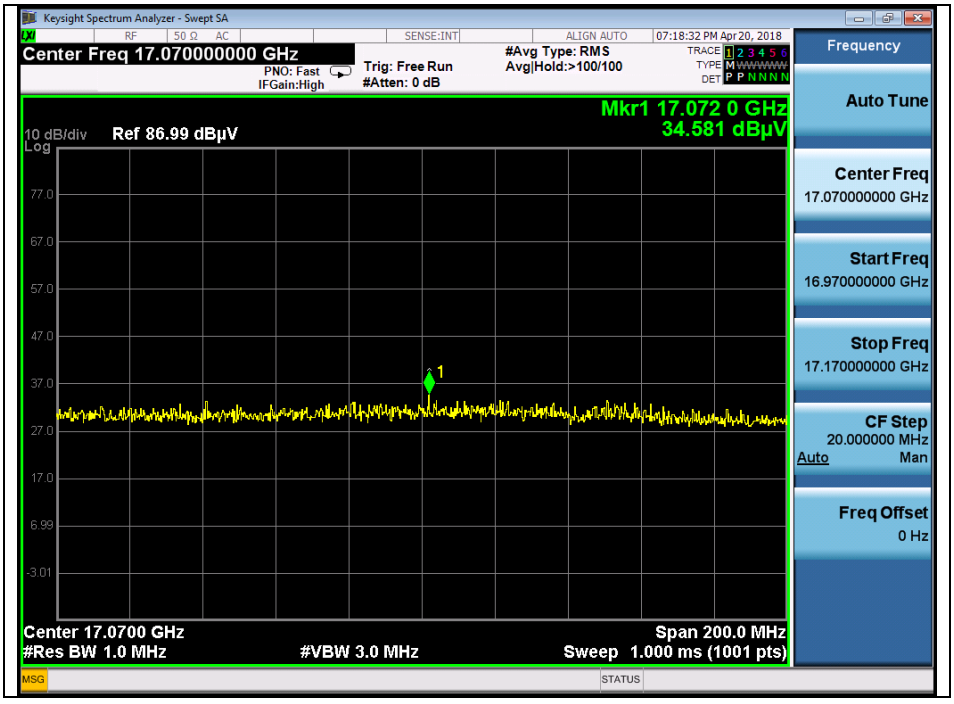
High channel 2nd harmonic (Peak) - Band 2C



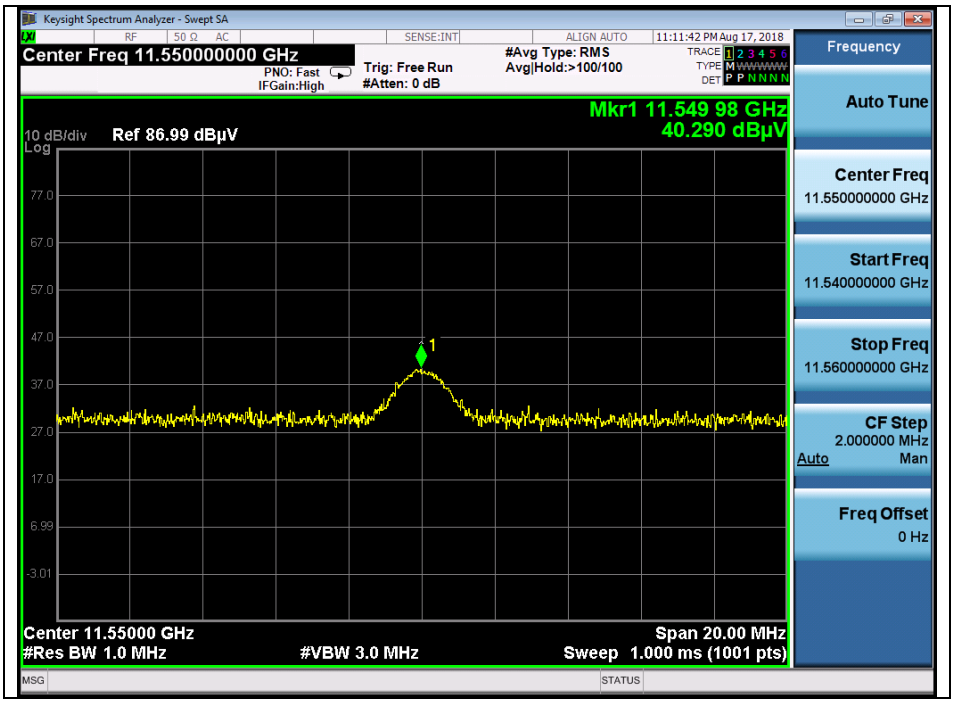
High channel 2nd harmonic (Average) - Band 2C



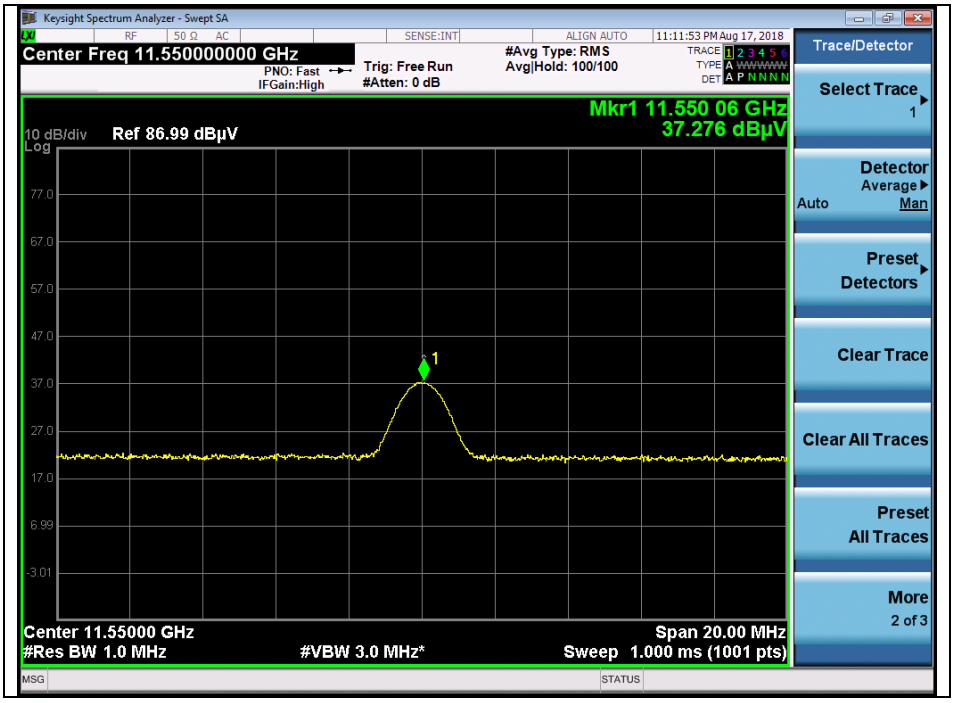
High channel 3rd harmonic (Peak) - Band 2C



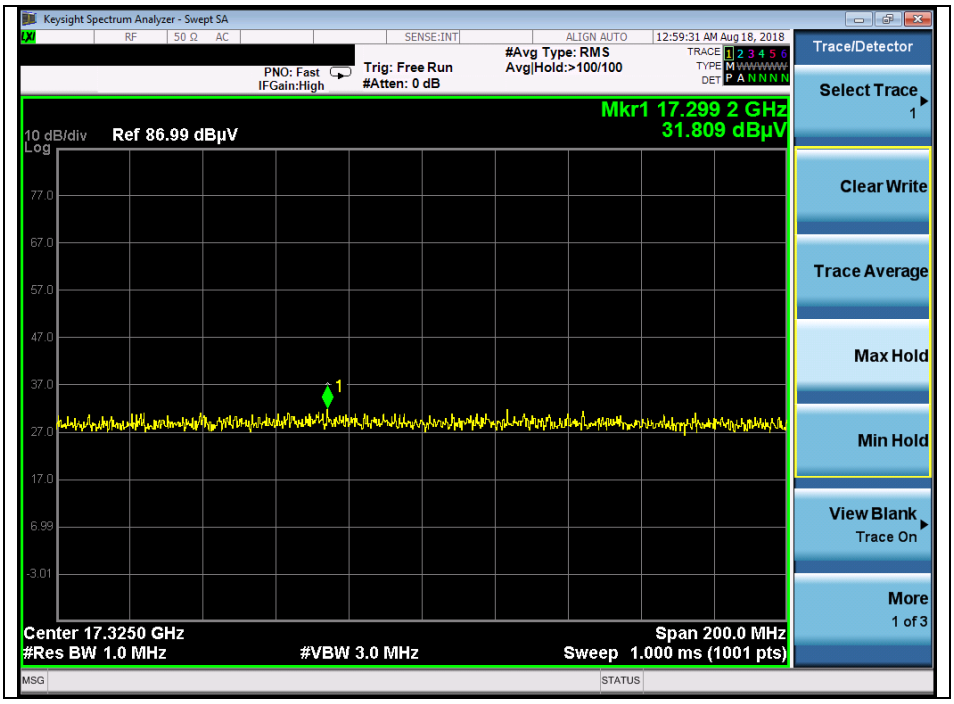
Middle channel 2nd harmonic (Peak) - Band 3



Middle channel 2nd harmonic (Average) - Band 3

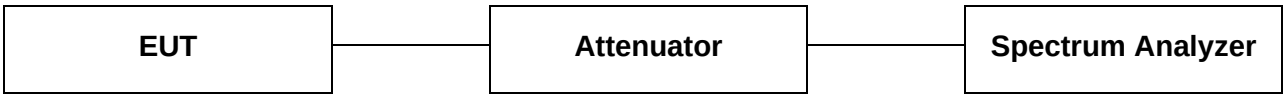


Middle channel 3rd harmonic (Peak) - Band 3



3. 26 dB Bandwidth & 99 % Bandwidth

3.1. Test Setup



3.2. Limit

None; for reporting purpose only.

3.3. Test Procedure

All data rates and modes were investigated for this test. The full data for the worst case data rate are reported in this section.

3.3.1. 26 dB Bandwidth

1. This measurement settings are specified in section C.1 of KDB 789033 D02 v02r01.
2. Set RBW: approximately 1 % of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1 %.

3.2.2. 99 % Bandwidth

3.2.2.1 FCC

1. This measurement settings are specified in section D of KDB 789033 D02 v02r01.
2. Set center frequency to the nominal EUT channel center frequency.
3. Set span = 1.5 times to 5.0 times the OBW.
4. Set RBW = 1 % to 5 % of the OBW.
5. Set VBW ≥ 3 x RBW.
6. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
7. Use the 99 % power bandwidth function of the instrument (if available).
8. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99 % occupied bandwidth is the difference between these two frequencies.

In the result,

- DFS requirements are not applicable in the 5 150 ㎒ ~ 5 250 ㎒.

Remark;

In case of band crossing channels 138, 142 and 144, the measurement is complied with section Ⅲ.A of KDB 789033 D02 v02r01.

3.2.2.2 IC

● The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span.

● The detector of the spectrum analyzer shall be set to “Sample”. However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or “Max Hold”) may be necessary to determine the occupied / x dB bandwidth if the device is not transmitting continuously.

● The resolution bandwidth (RBW) shall be in the range of 1 % to 5 % of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted.

3.4. Test result

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

Mode	Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	26 ㏈ Bandwidth (㎒)	99 % Bandwidth (㎒)
11a	U-NII 1	5 180	36	6	21.201	16.961
		5 220	44		21.129	17.019
		5 240	48		21.201	17.019
	U-NII 2A	5 260	52		21.245	16.961
		5 300	60		21.056	17.019
		5 320	64		21.172	16.961
	U-NII 2C	5 500	100		21.201	16.961
		5 580	116		21.013	16.961
		5 700	140		21.129	17.019
	U-NII 3	5 745	149		21.107	16.961
		5 785	157		21.129	16.961
		5 825	165		21.129	16.961

Mode	Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	26 ㏈ Bandwidth (㎒)	99 % Bandwidth (㎒)
11n_HT20	U-NII 1	5 180	36	MCS0	21.563	18.061
		5 220	44		21.708	18.061
		5 240	48		21.563	18.061
	U-NII 2A	5 260	52		21.606	18.119
		5 300	60		21.635	18.119
		5 320	64		21.534	18.061
	U-NII 2C	5 500	100		21.635	18.119
		5 580	116		21.534	18.119
		5 700	140		21.592	18.003
	U-NII 3	5 745	149		21.512	18.177
		5 785	157		21.534	18.061
		5 825	165		21.534	18.119

Mode	Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	26 ㏈ Bandwidth (㎒)	99 % Bandwidth (㎒)
11n_HT40	U-NII 1	5 190	38	MCS0	40.290	36.585
		5 230	46		40.430	36.353
	U-NII 2A	5 270	54		40.140	36.469
		5 310	62		40.200	36.469
	U-NII 2C	5 510	102		40.410	36.700
		5 550	110		40.240	36.469
		5 670	134		40.520	36.353
	U-NII 3	5 755	151		40.150	36.469
		5 795	159		40.410	36.469

Mode	Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	26 ㏈ Bandwidth (㎒)	99 % Bandwidth (㎒)
11ac_VHT80	**U-NII 1**	5 210	42	MCS0	82.430	75.485
	U-NII 2A	5 290	58		82.430	75.485
	U-NII 2C	5 530	106		82.430	75.716
		5 690	138		82.660	75.485
	U-NII 3	5 775	155		82.200	75.485

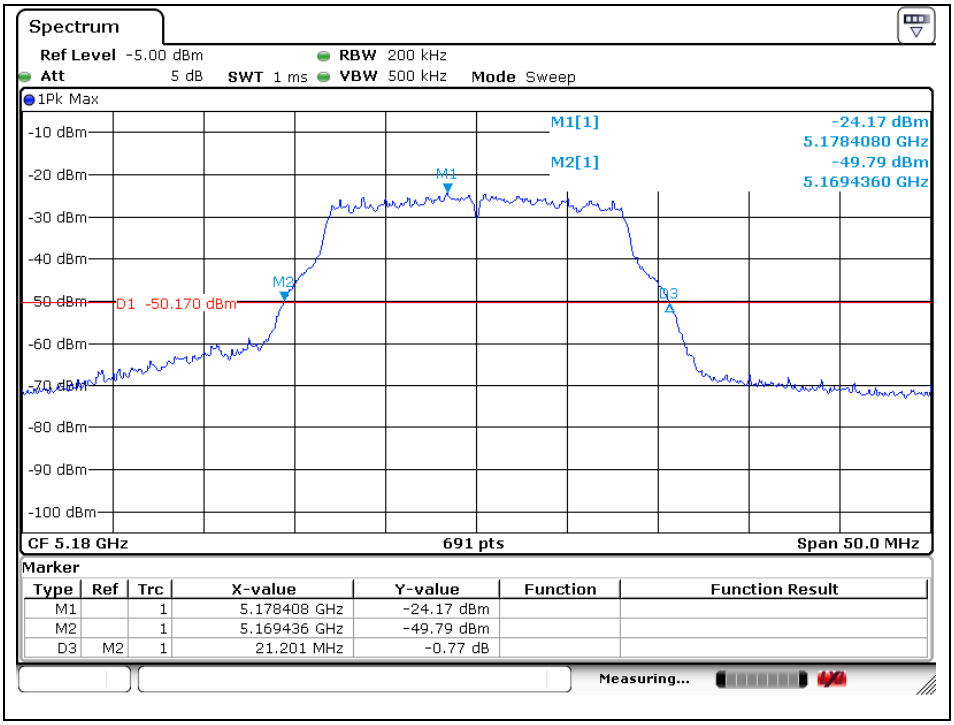
Band	Mode	Frequency (㎒)	Ch.	Data Rate (Mbps)	26 ㏈ Bandwidth (㎒)
U-NII 2C (Band-crossing channel)	11a	5 720	144	6	15.535
	11n_HT20	5 720	144	MCS0	15.709
	11n_HT40	5 710	142	MCS0	35.030
	11ac_VHT80	5 690	138	MCS0	75.780

- Test plots

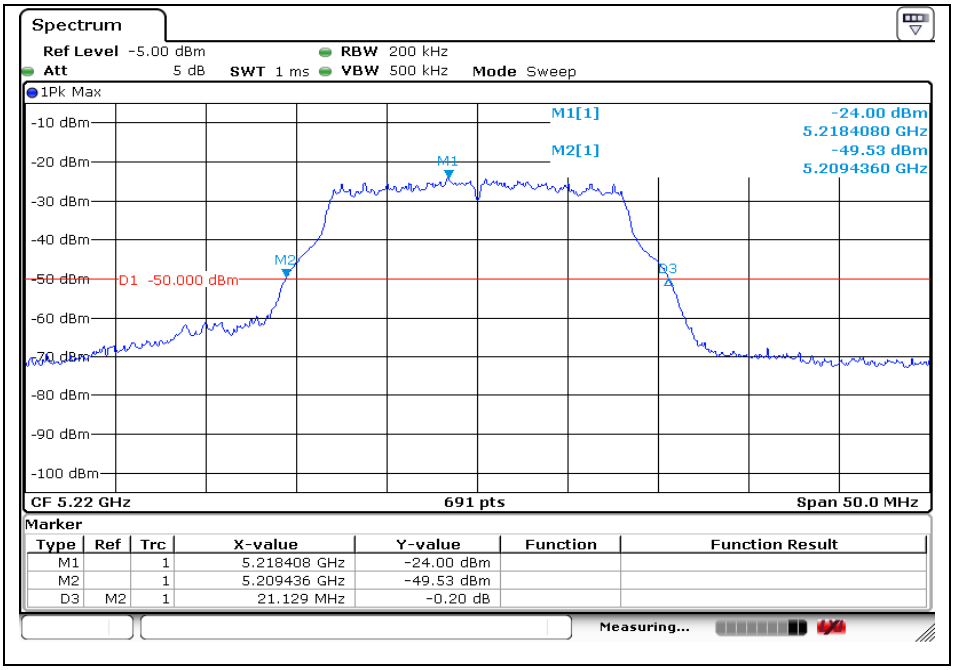
26 dB Bandwidth

802.11a (Band 1)

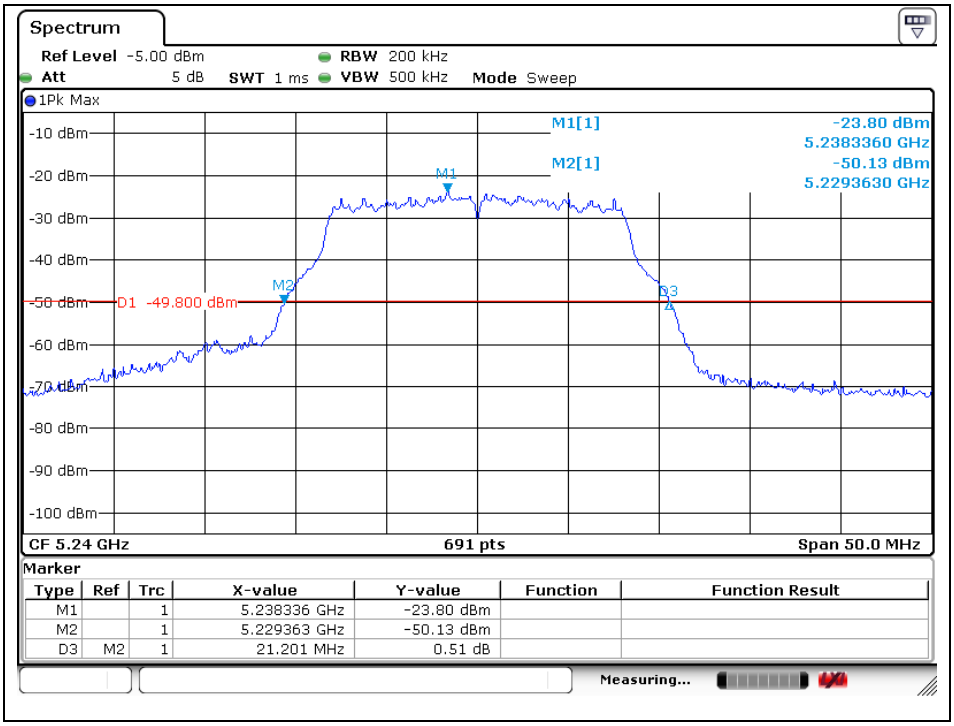
Low Channel (5 180 ㎒)



Middle Channel (5 220 ㎒)

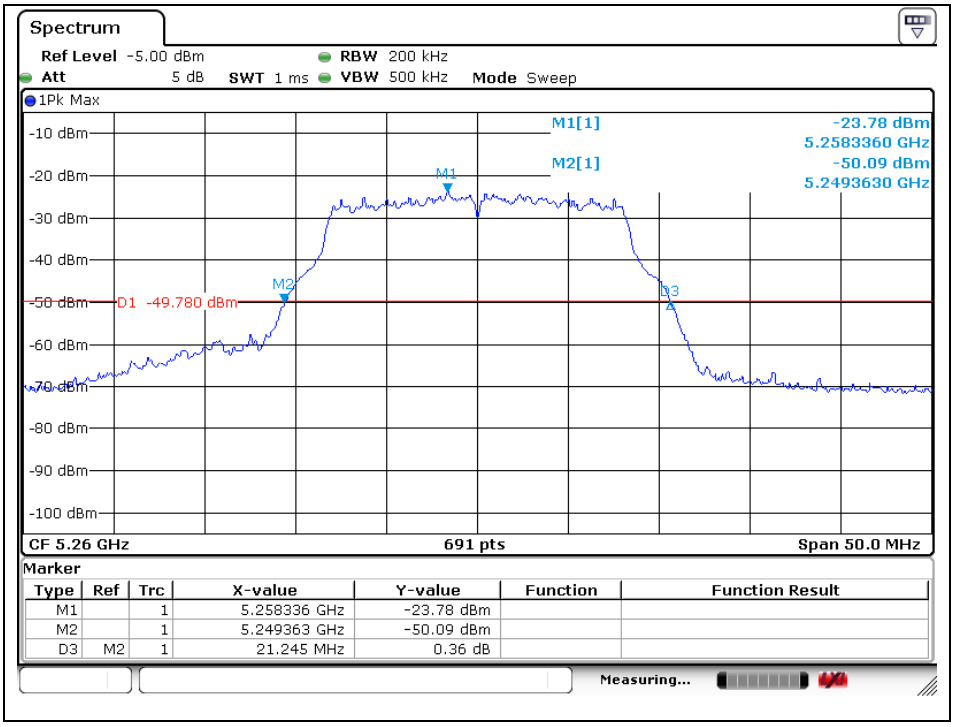


High Channel (5 240 ㎒)

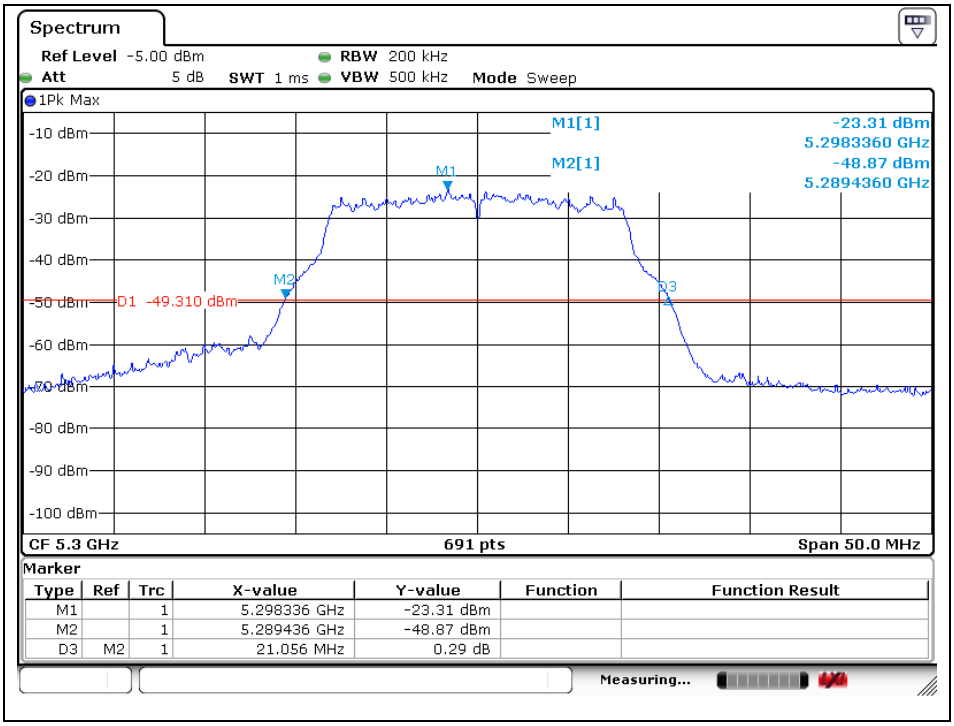


802.11a (Band 2A)

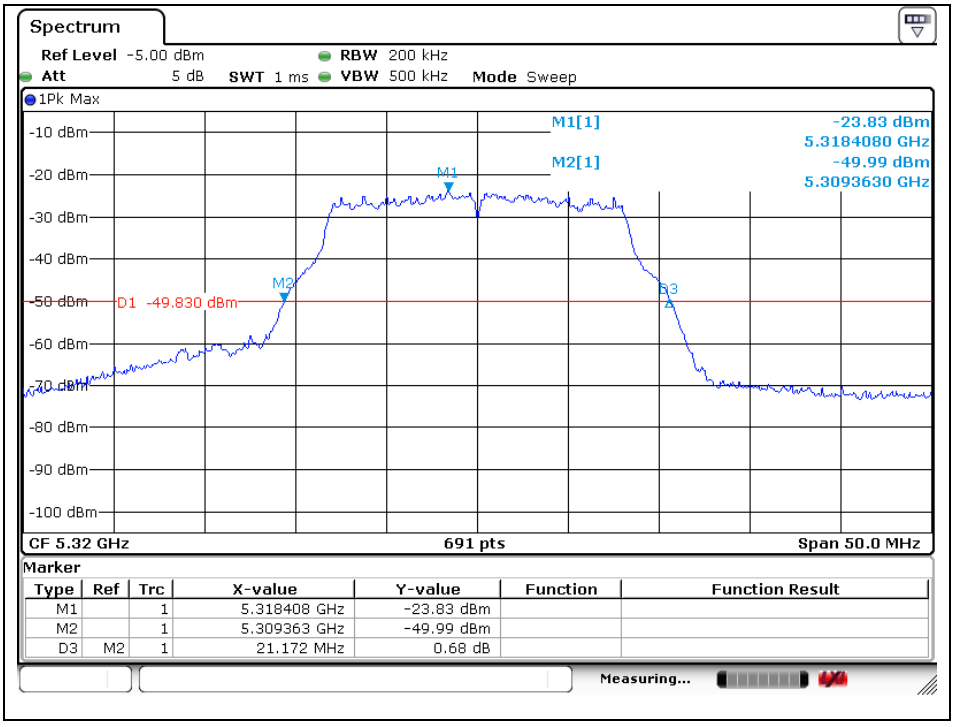
Low Channel (5 260 ㎒)



Middle Channel (5 300 ㎒)

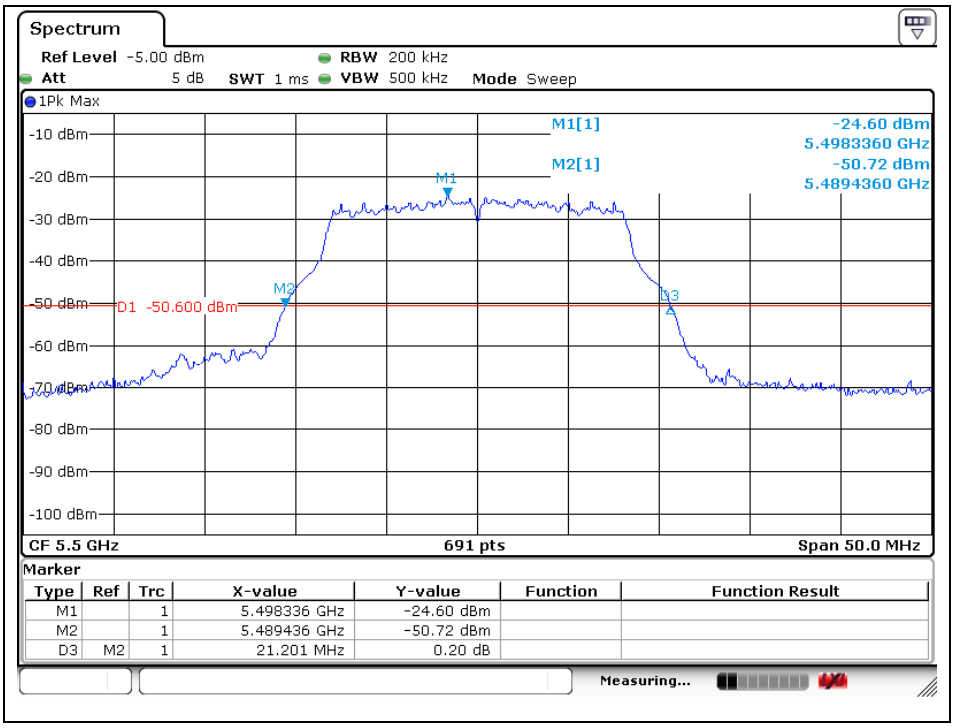


High Channel (5 320 ㎒)

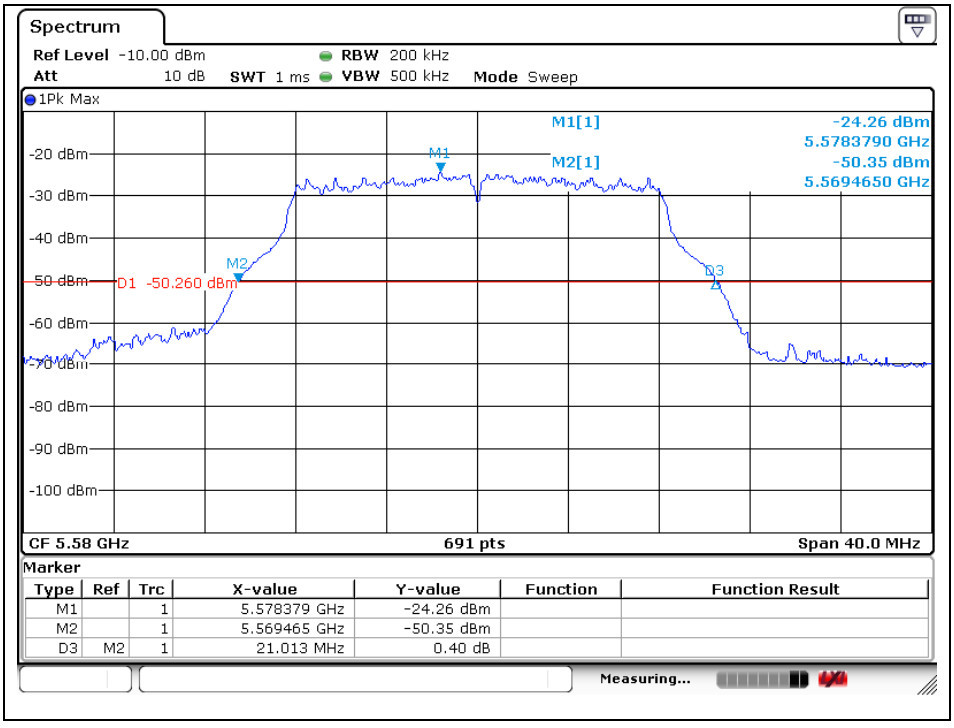


802.11a (Band 2C)

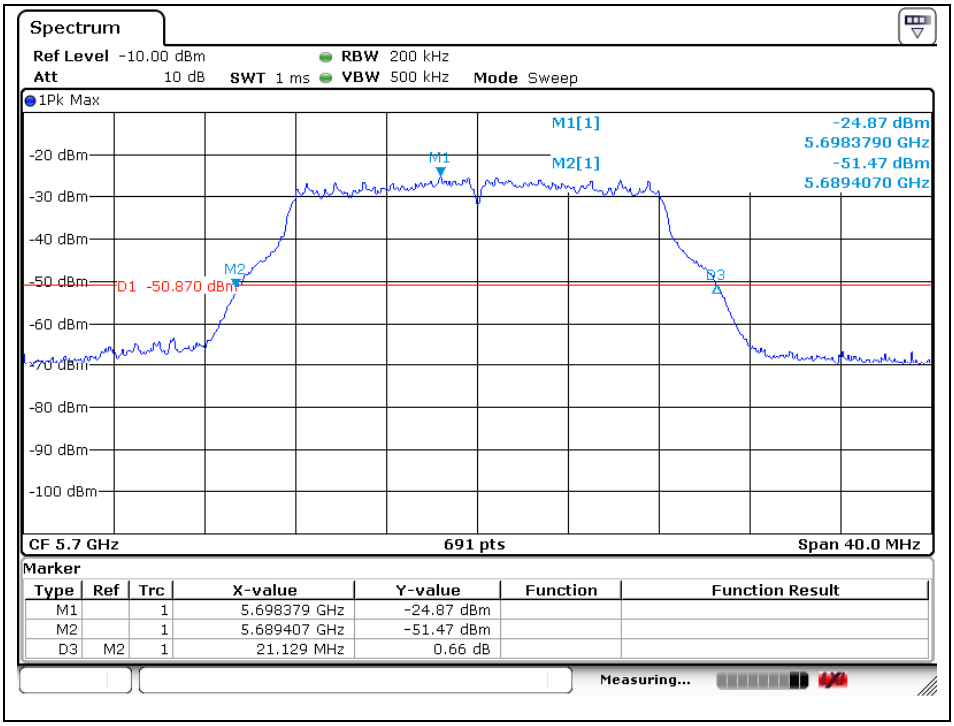
Low Channel (5 500 ㎒)



Middle Channel (5 580 ㎒)

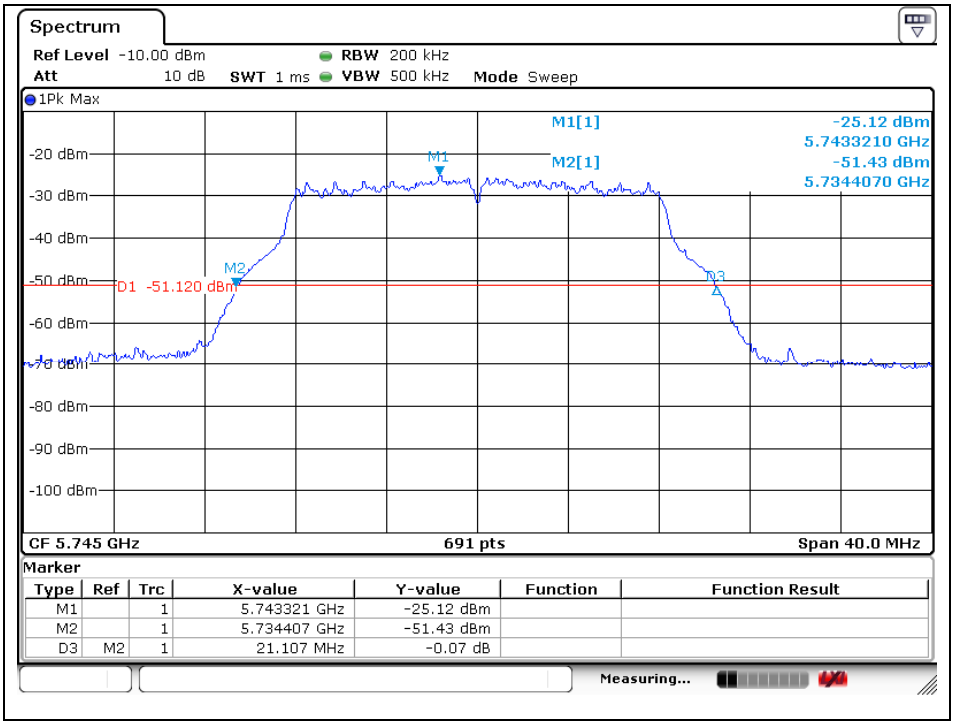


High Channel (5 700 ㎒)

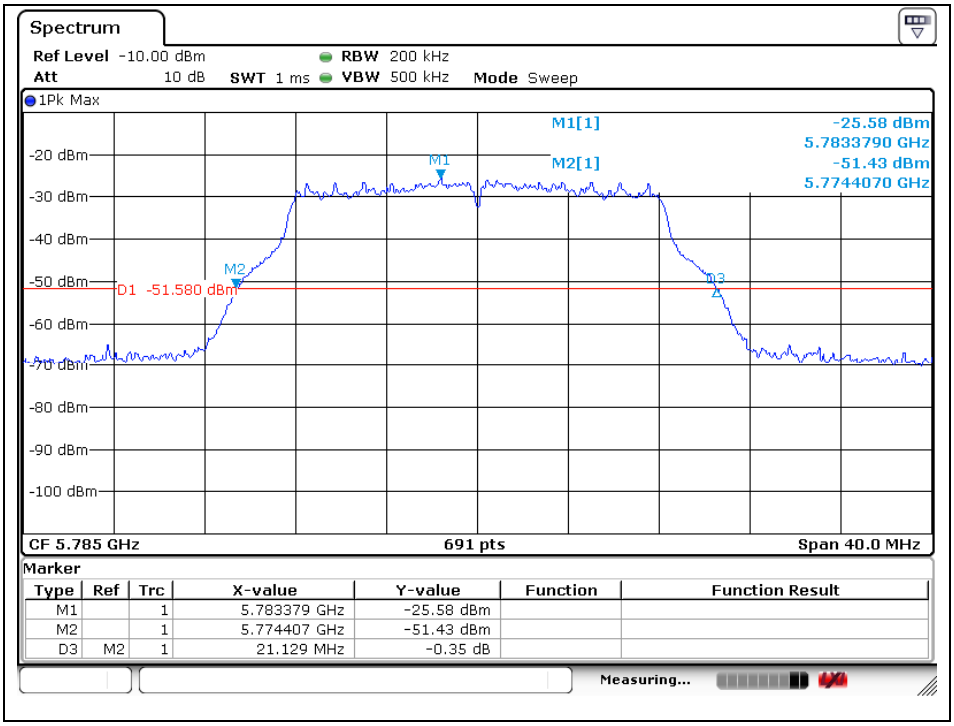


802.11a (Band 3)

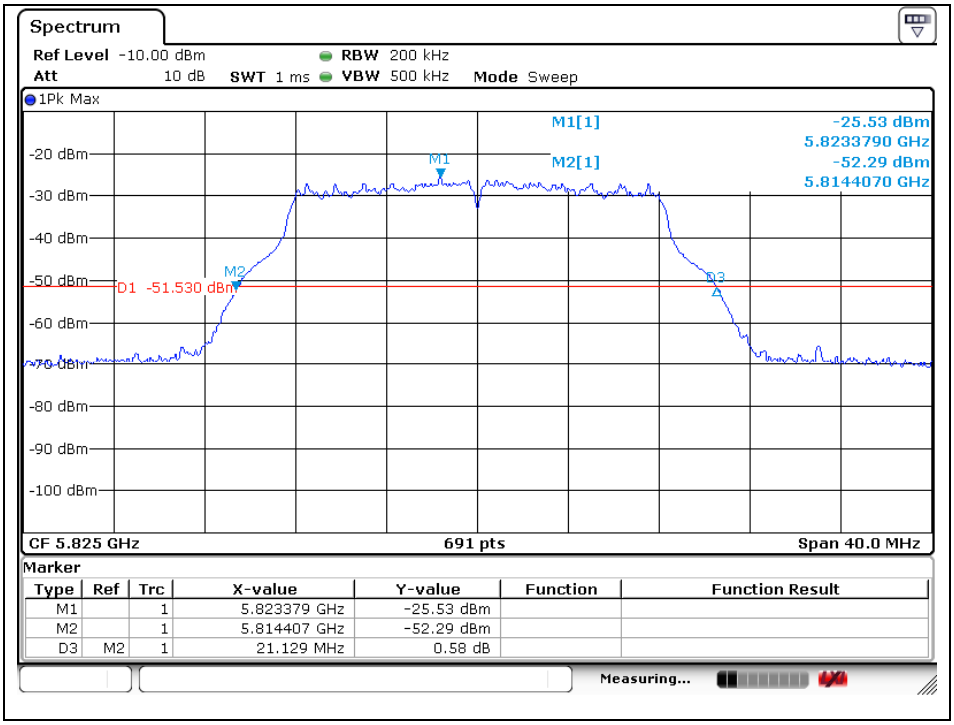
Low Channel (5 745 ㎒)



Middle Channel (5 785 ㎒)

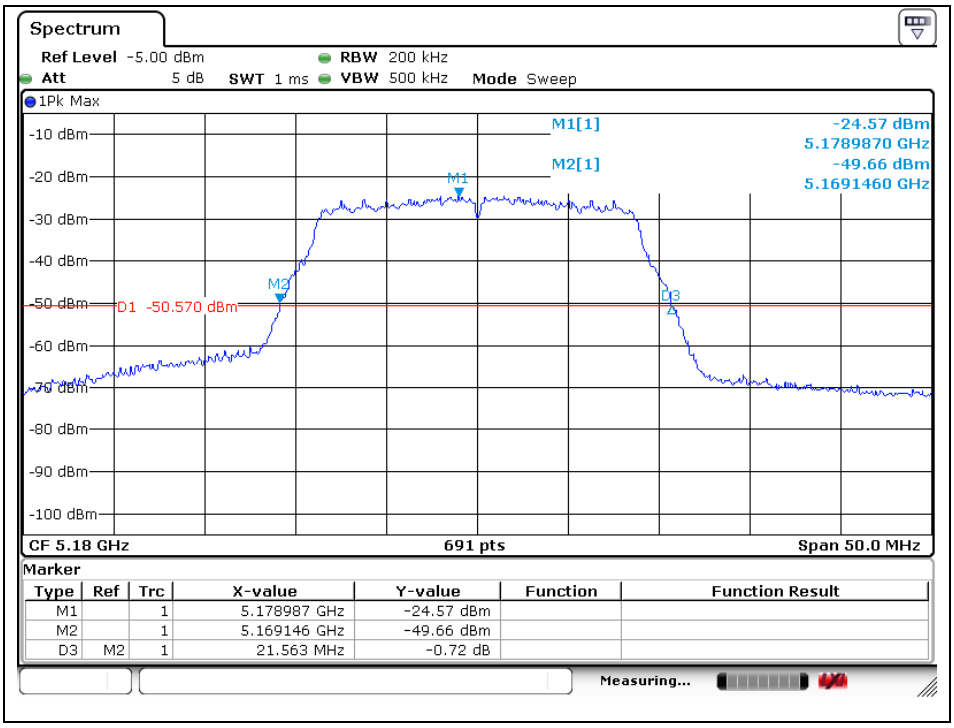


High Channel (5 825 ㎒)

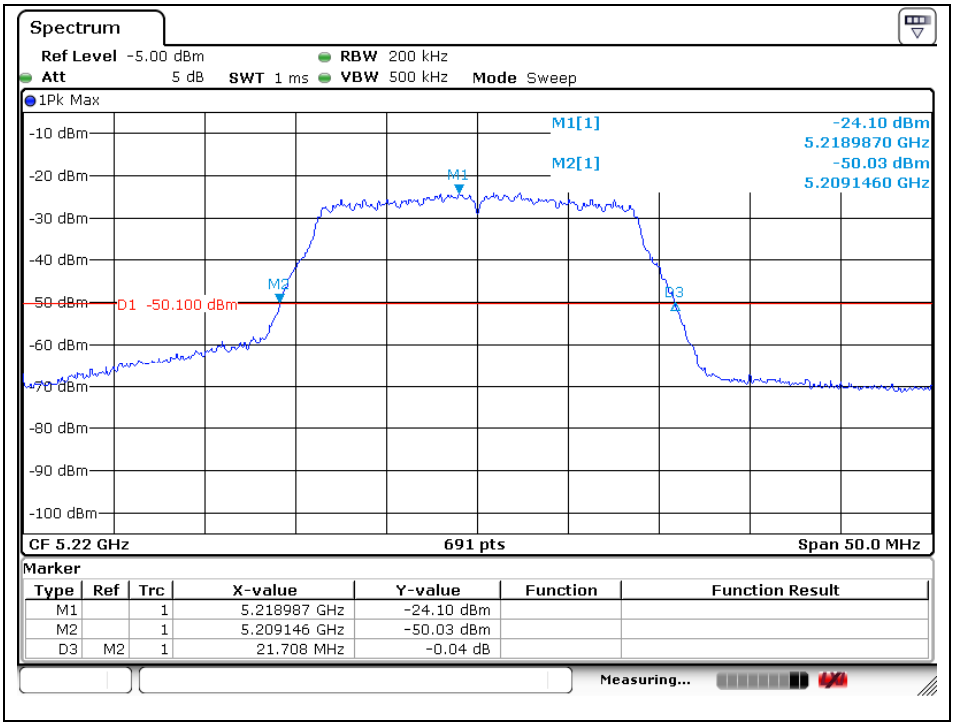


802.11n_HT20 (Band 1)

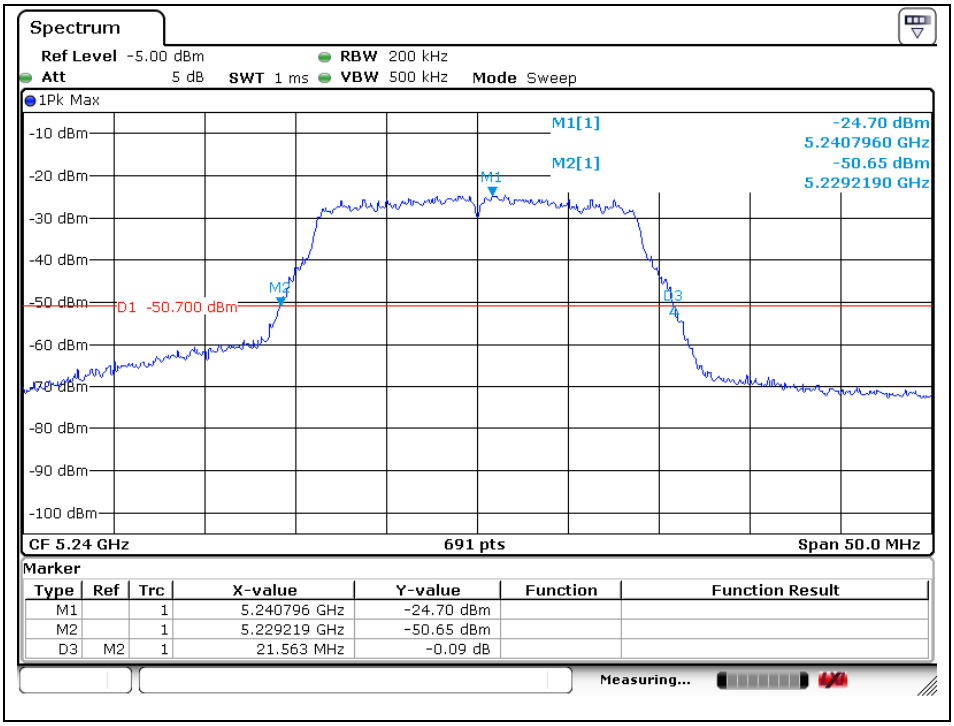
Low Channel (5 180 ㎒)



Middle Channel (5 220 ㎒)

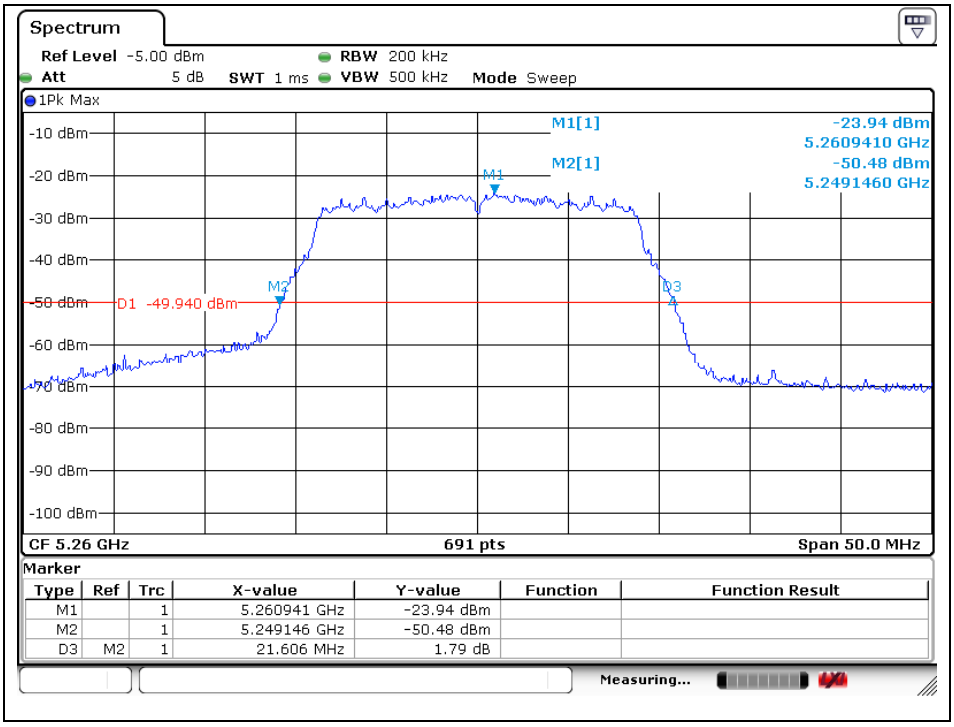


High Channel (5 240 ㎒)

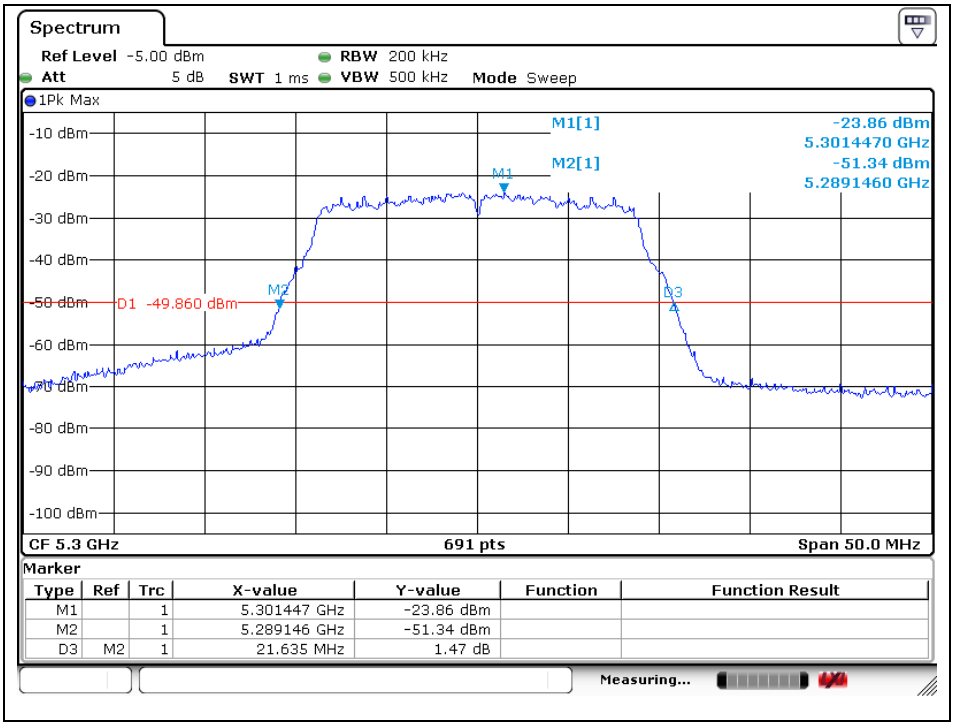


802.11n_HT20 (Band 2A)

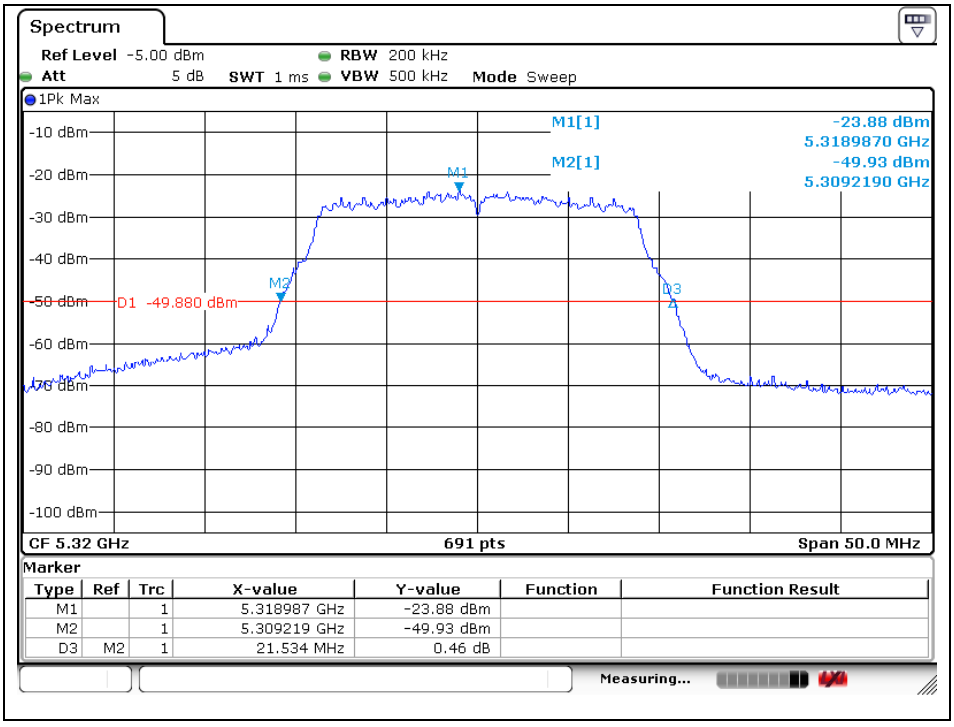
Low Channel (5 260 ㎒)



Middle Channel (5 300 ㎒)

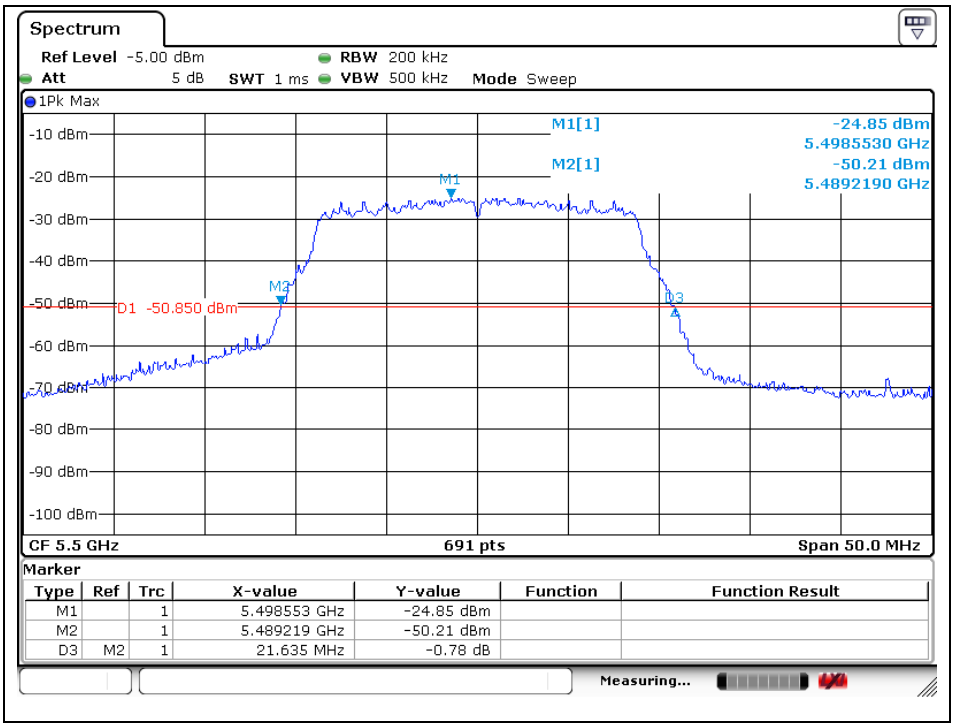


High Channel (5 320 ㎒)

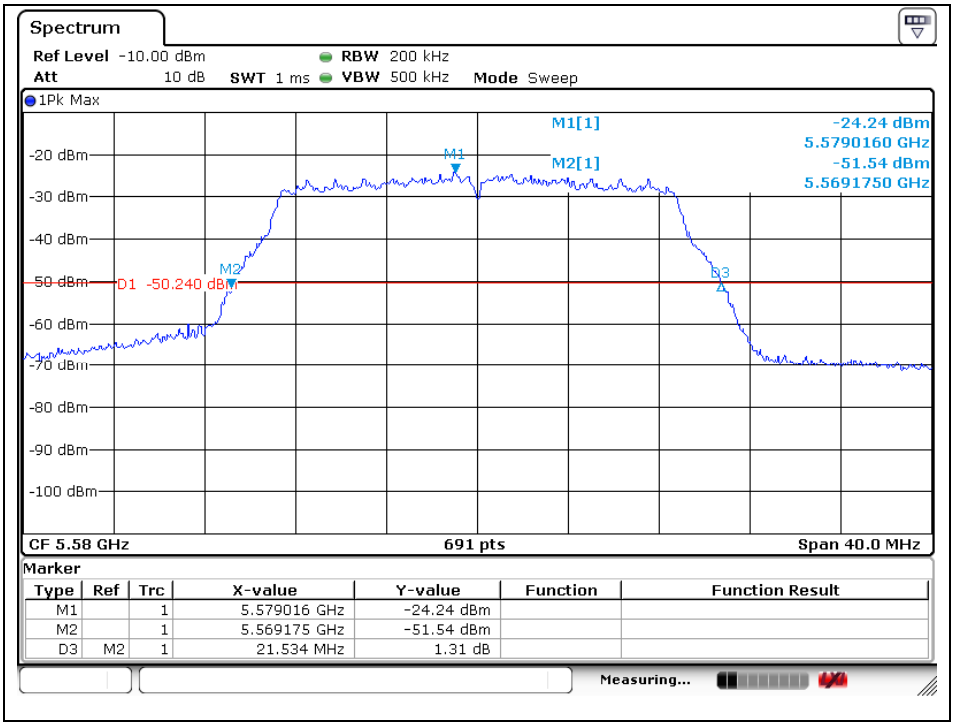


802.11n_HT20 (Band 2C)

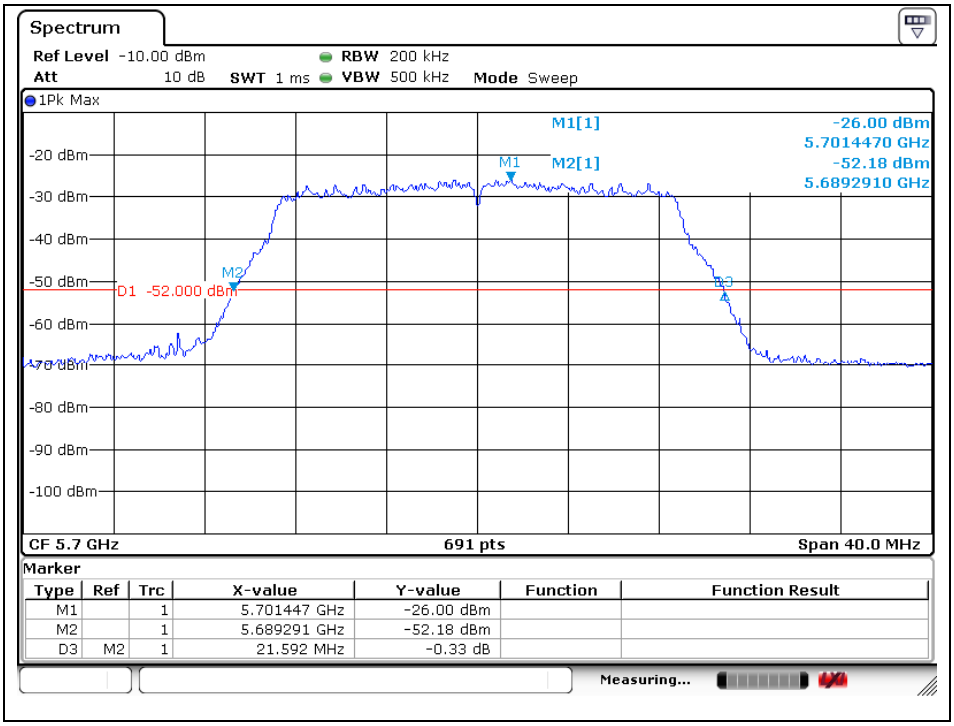
Low Channel (5 500 ㎒)



Middle Channel (5 580 ㎒)

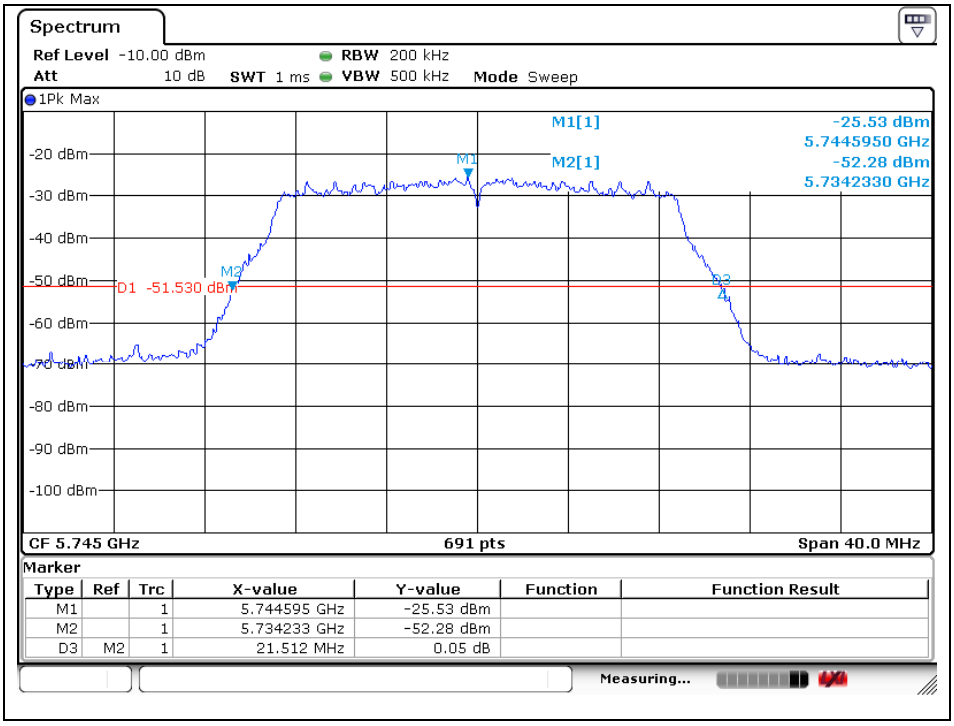


High Channel (5 700 ㎒)

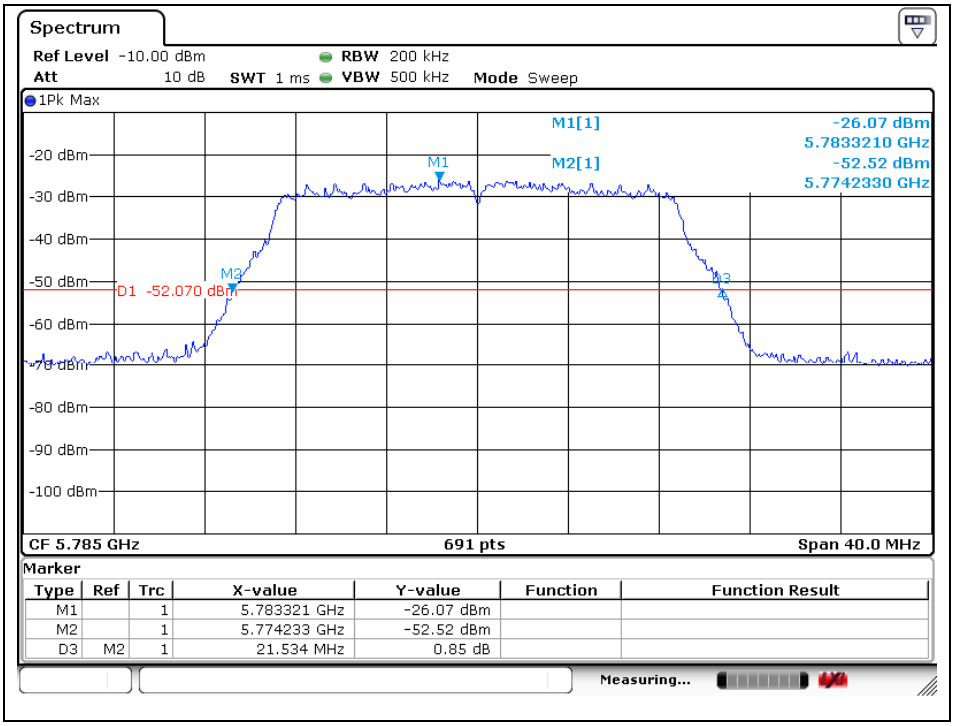


802.11n_HT20 (Band 3)

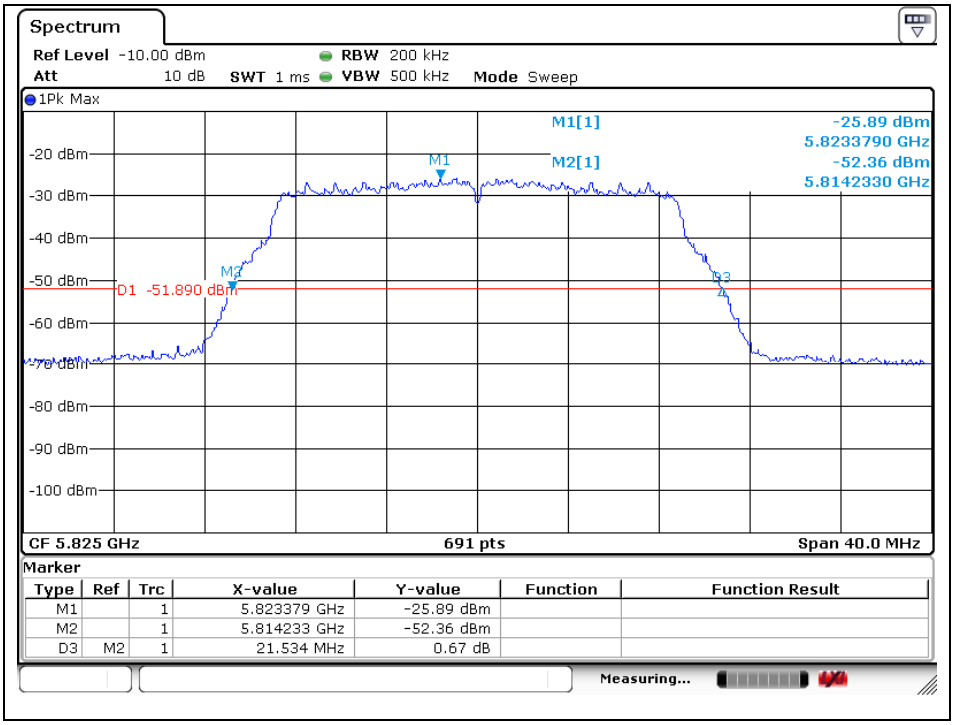
Low Channel (5 745 ㎒)



Middle Channel (5 785 ㎒)

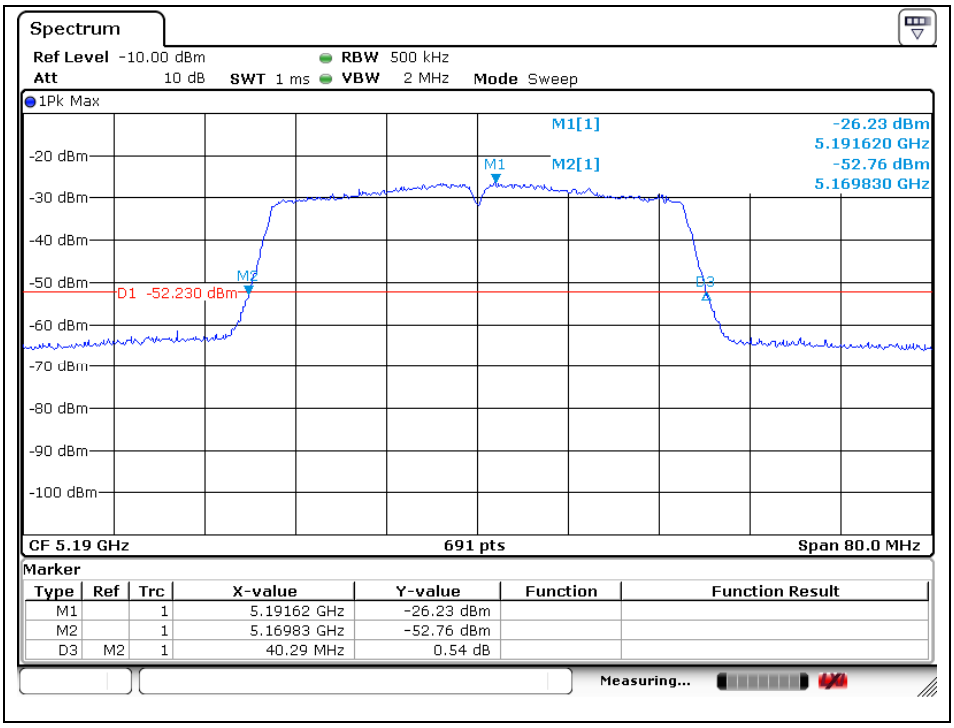


High Channel (5 825 ㎒)

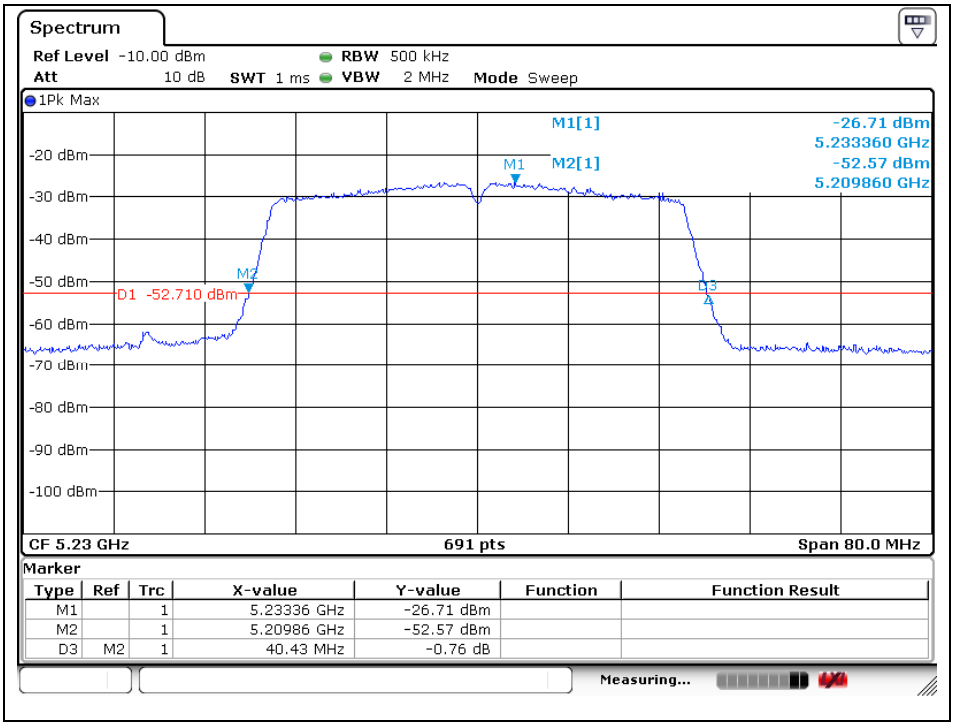


802.11n_HT40 (Band 1)

Low Channel (5 190 ㎒)

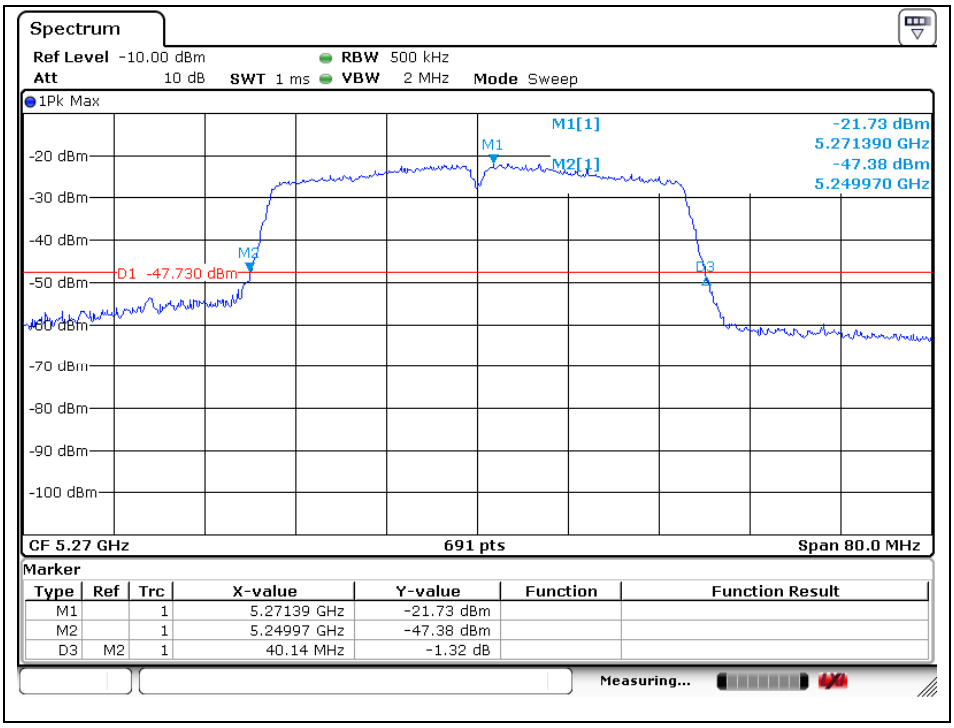


High Channel (5 230 ㎒)

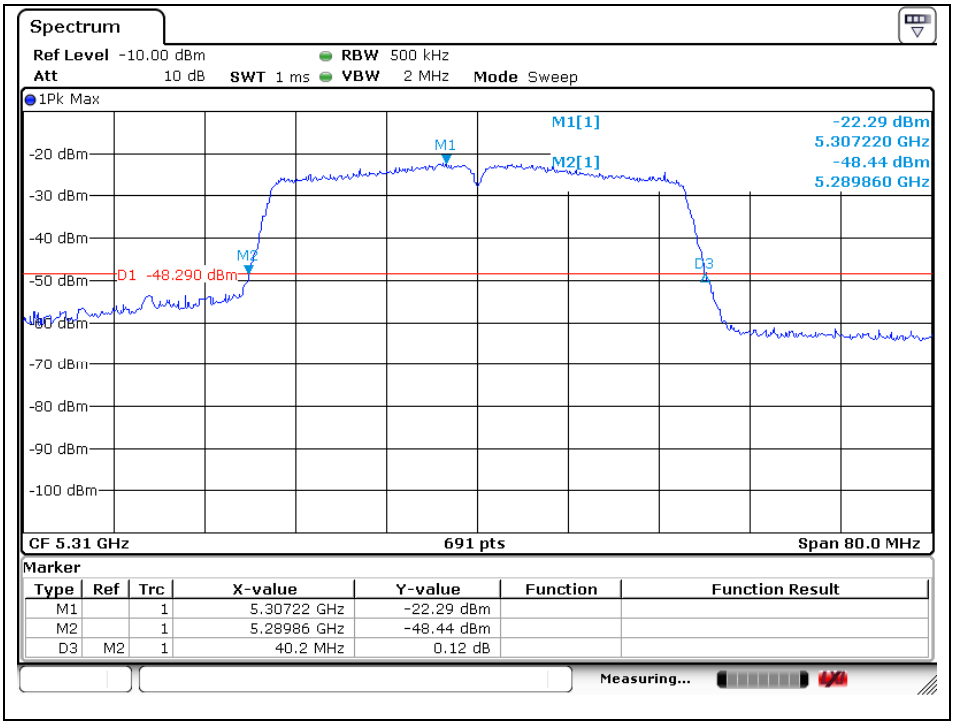


802.11n_HT40 (Band 2A)

Low Channel (5 270 ㎒)

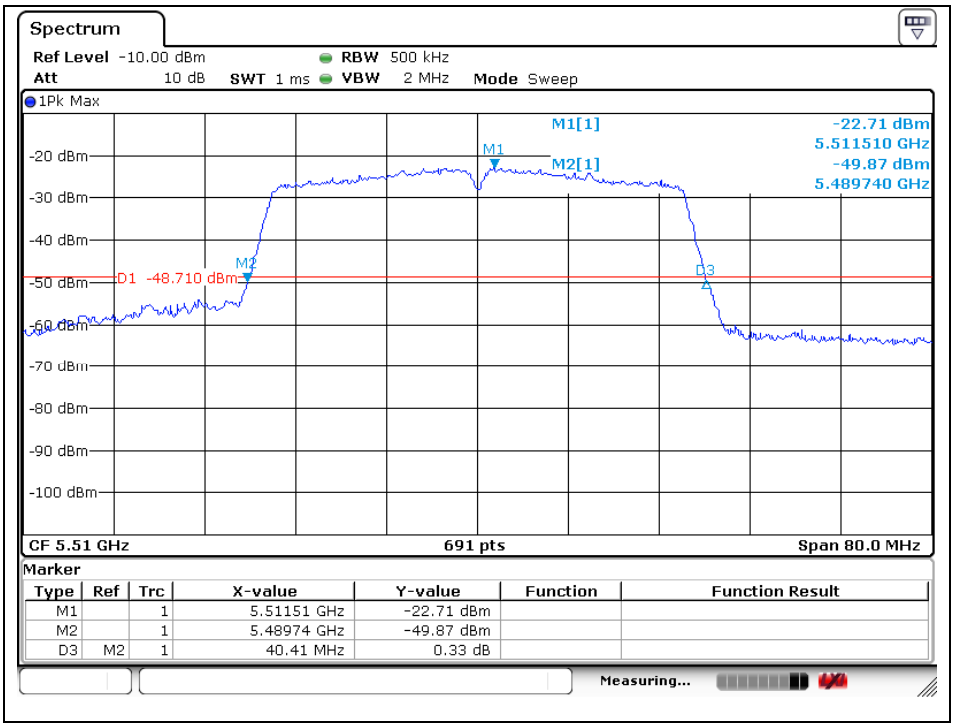


High Channel (5 310 ㎒)

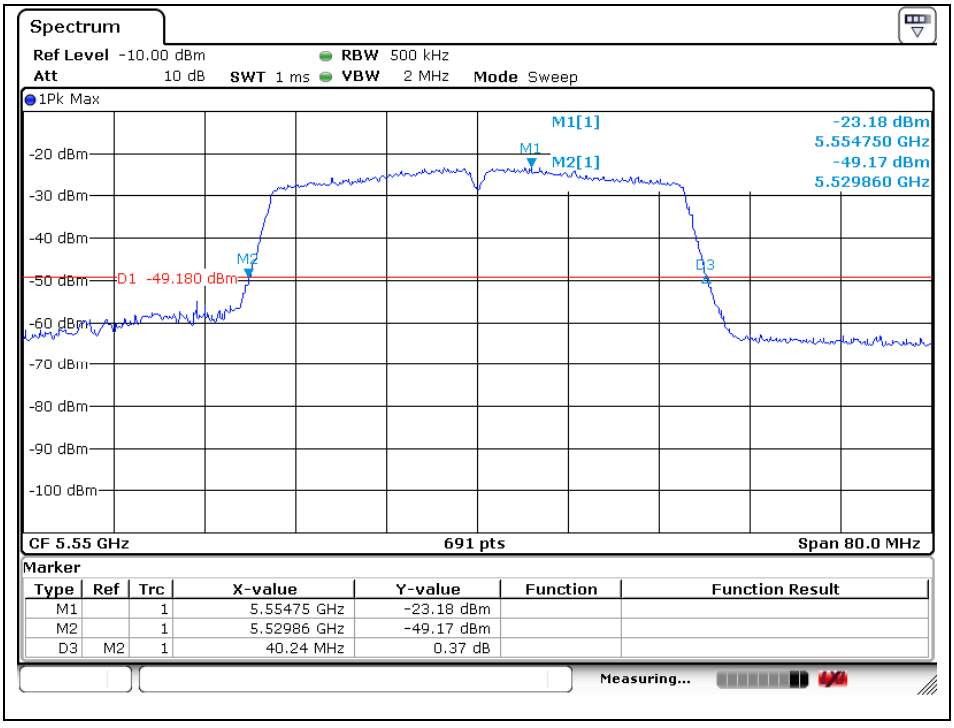


802.11n_HT40 (Band 2C)

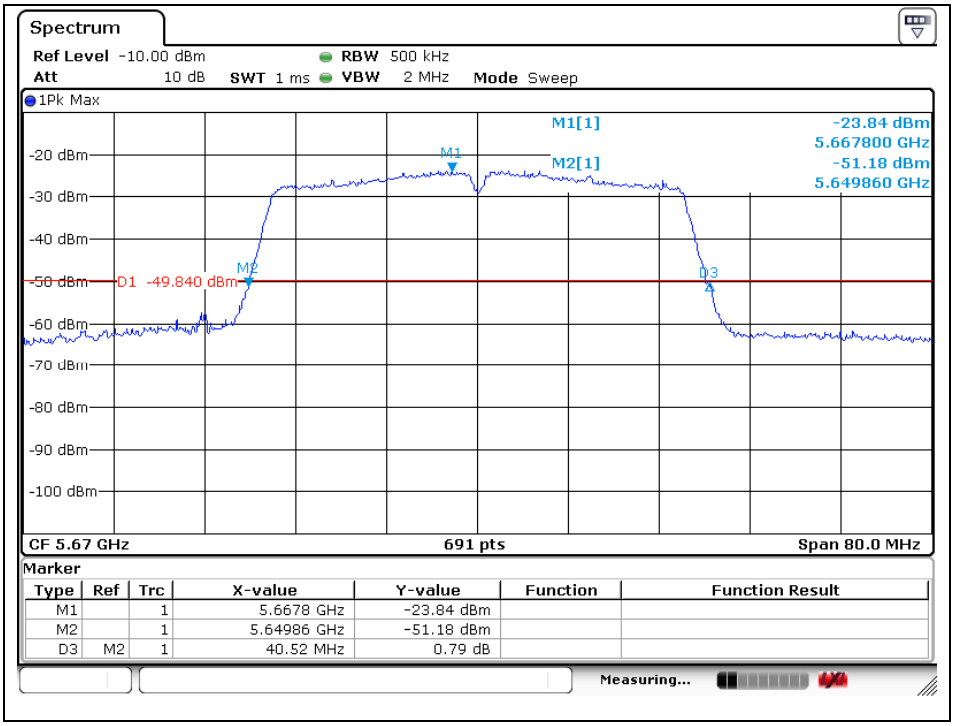
Low Channel (5 510 ㎒)



Middle Channel (5 550 ㎒)

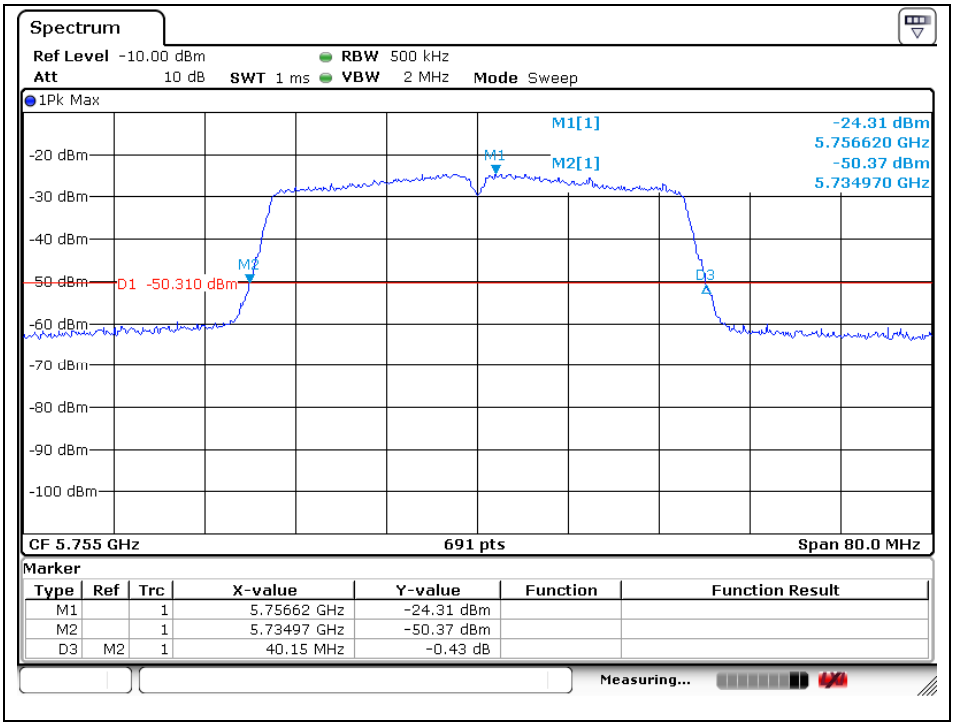


High Channel (5 670 ㎒)

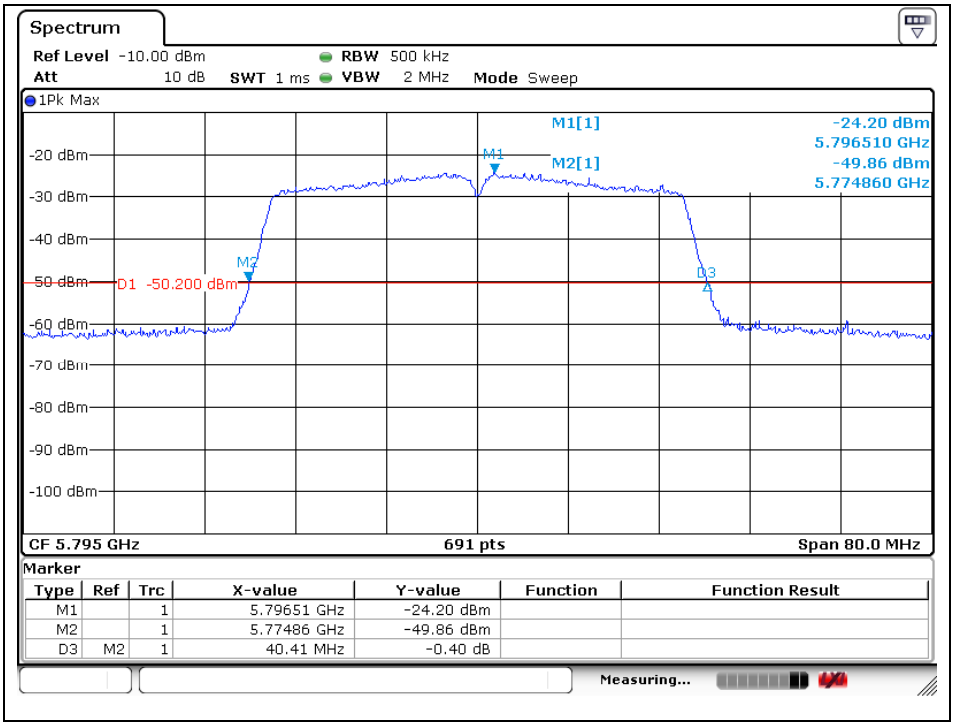


802.11n_HT40 (Band 3)

Low Channel (5 755 ㎒)

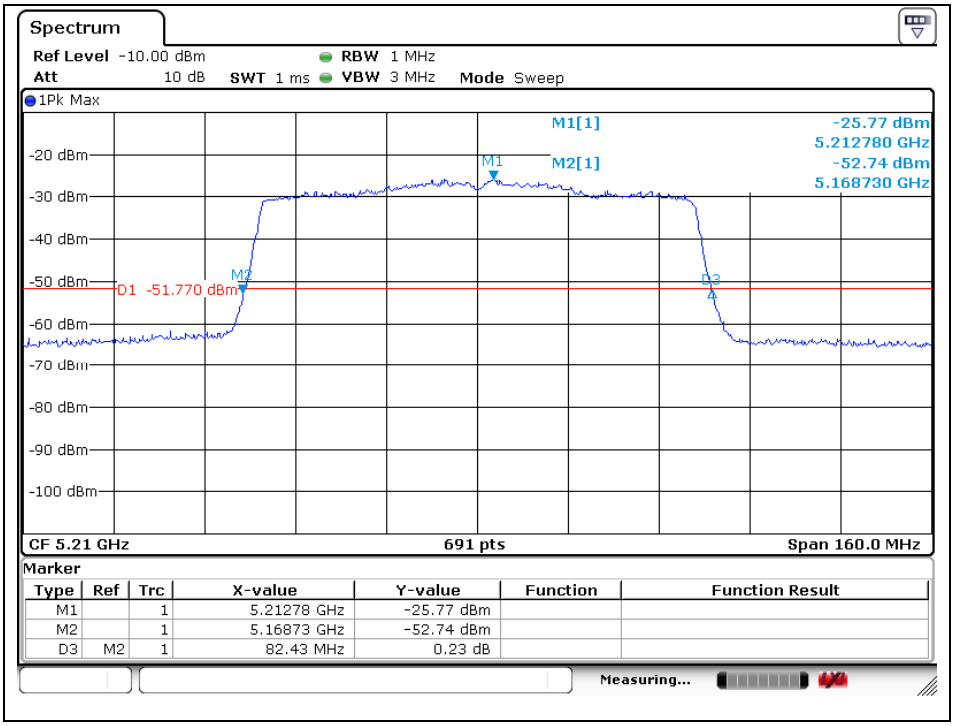


High Channel (5 795 ㎒)



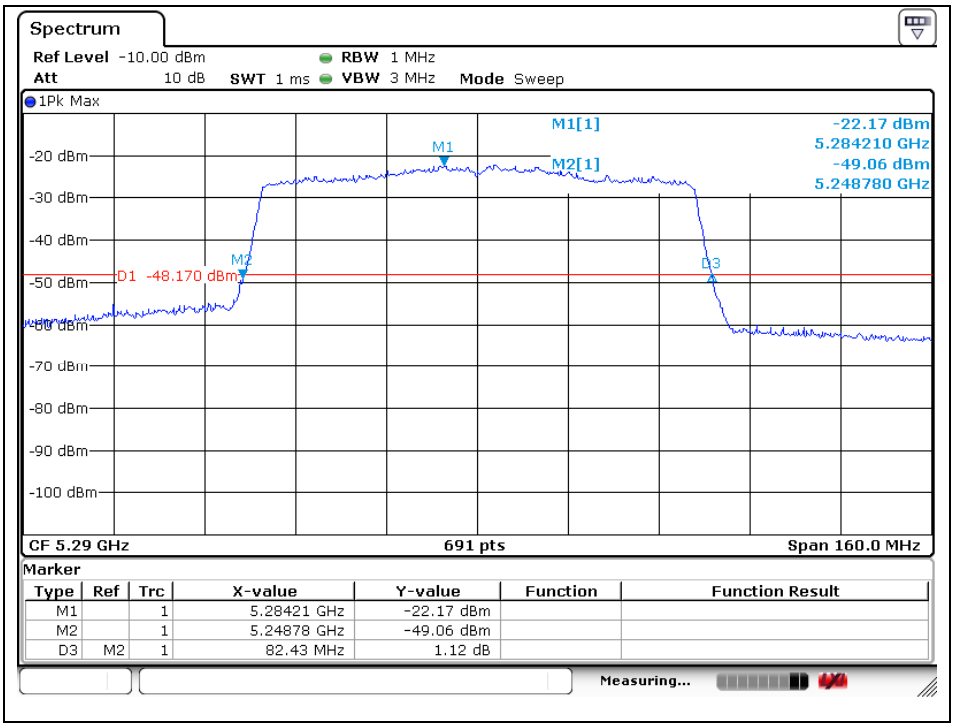
802.11ac_VHT80 (Band 1)

Middle Channel (5 210 ㎒)



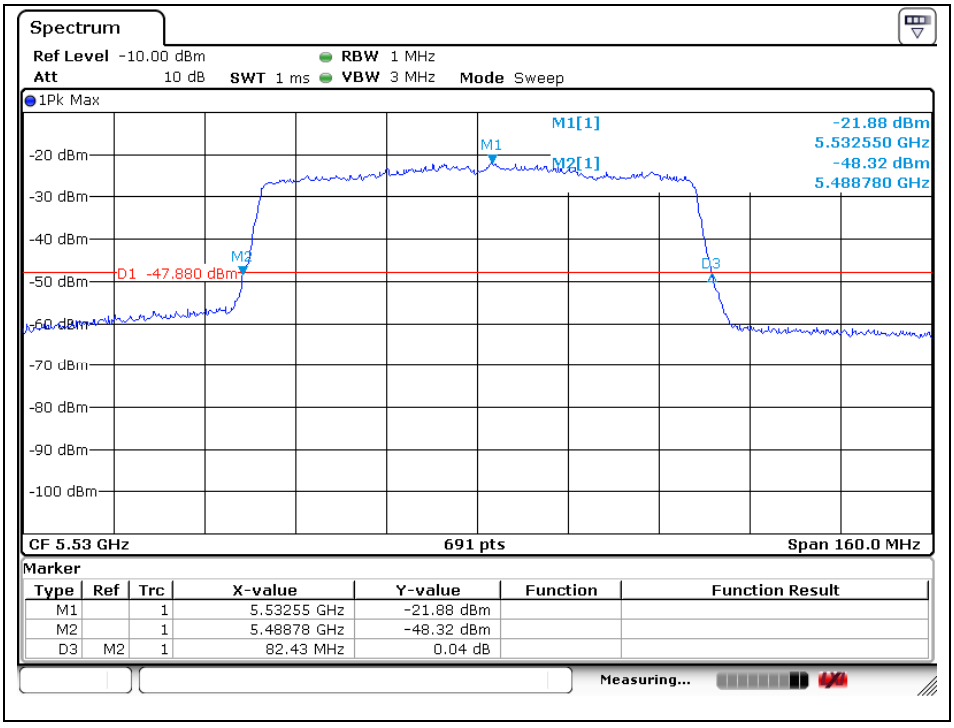
802.11ac_VHT80 (Band 2A)

Middle Channel (5 290 ㎒)

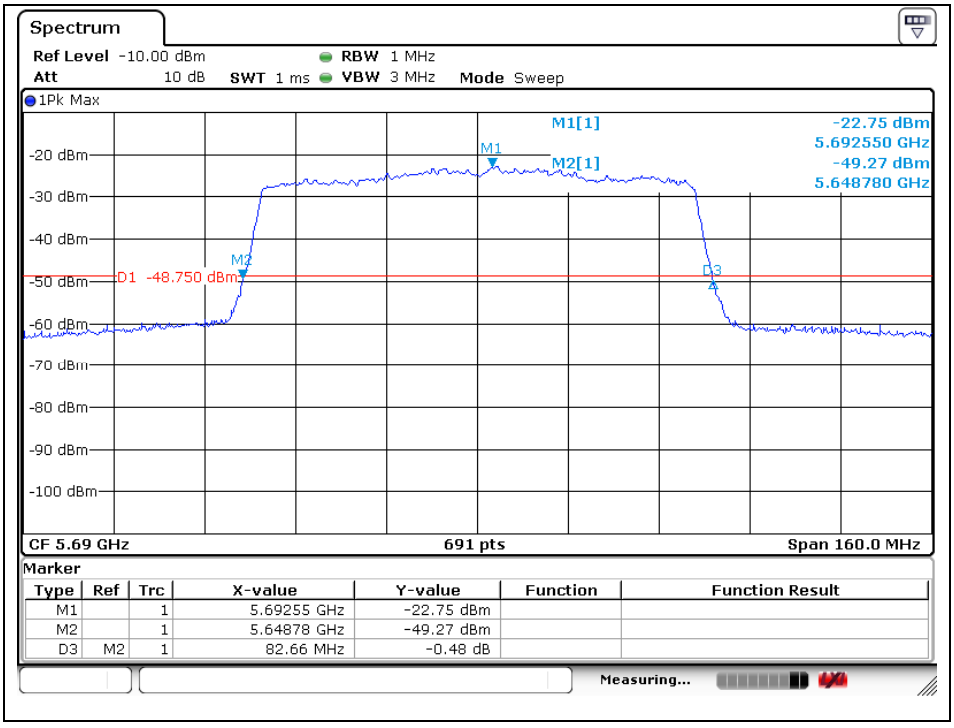


802.11ac_VHT80 (Band 2C)

Low Channel (5 530 ㎒)

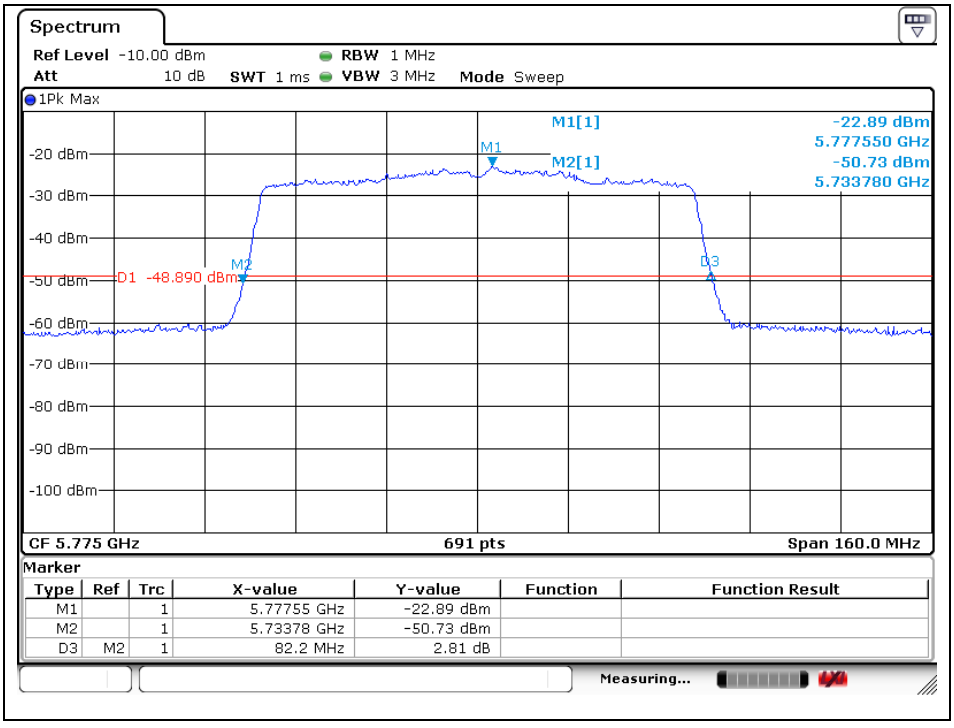


High Channel (5 690 ㎒)



802. 11ac_VHT80 (Band 3)

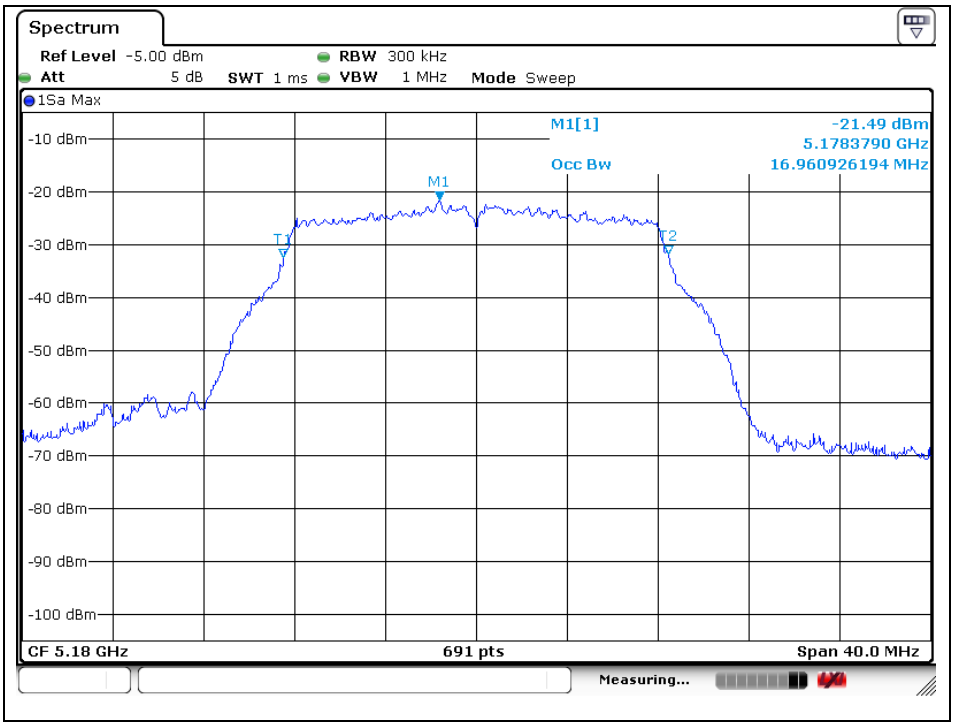
Middle Channel (5 775 ㎒)



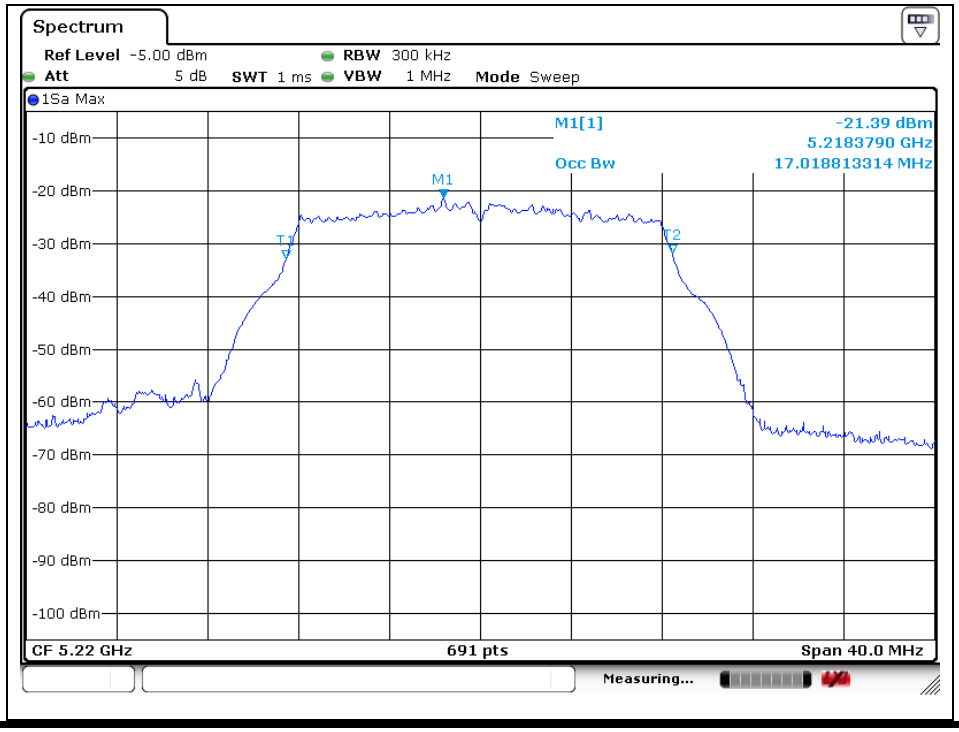
99 % Bandwidth

802.11a (Band 1)

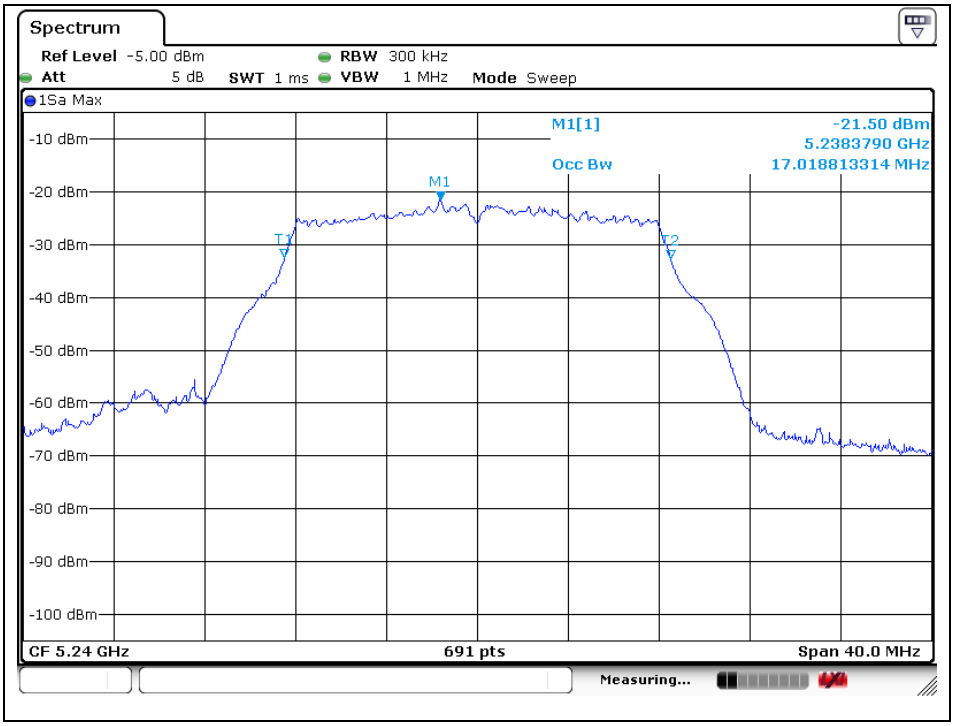
Low Channel (5 180 ㎒)



Middle Channel (5 220 ㎒)

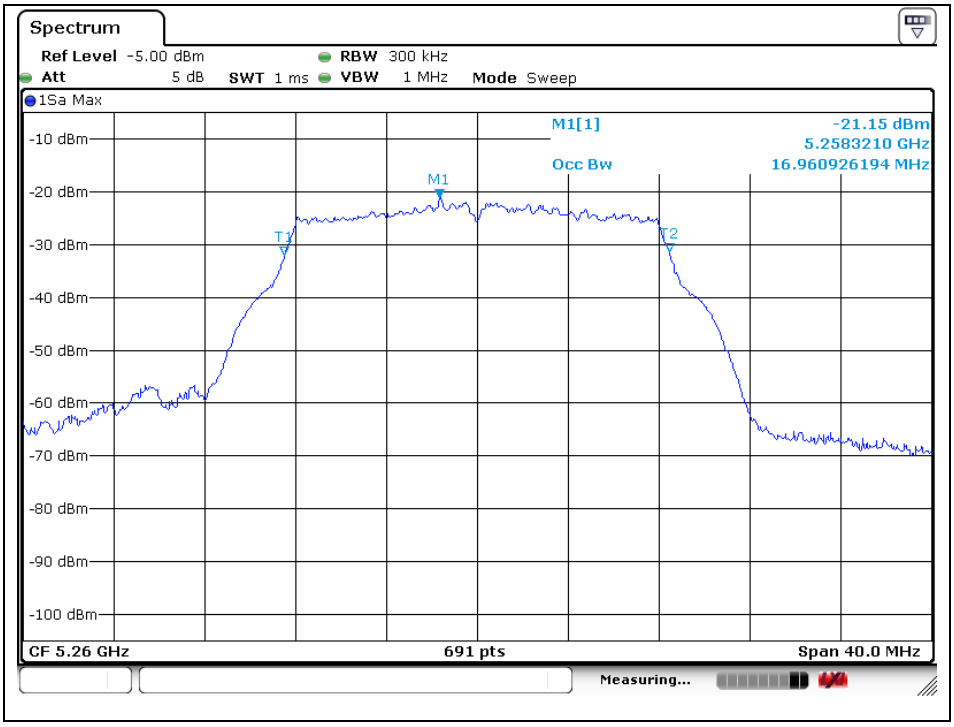


High Channel (5 240 ㎒)

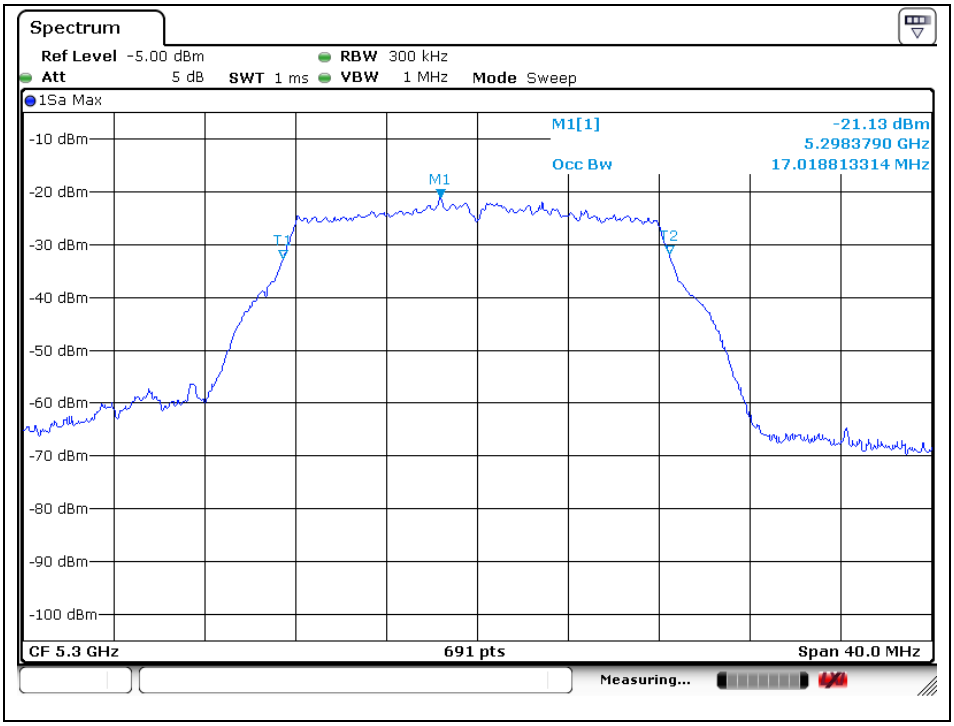


802.11a (Band 2A)

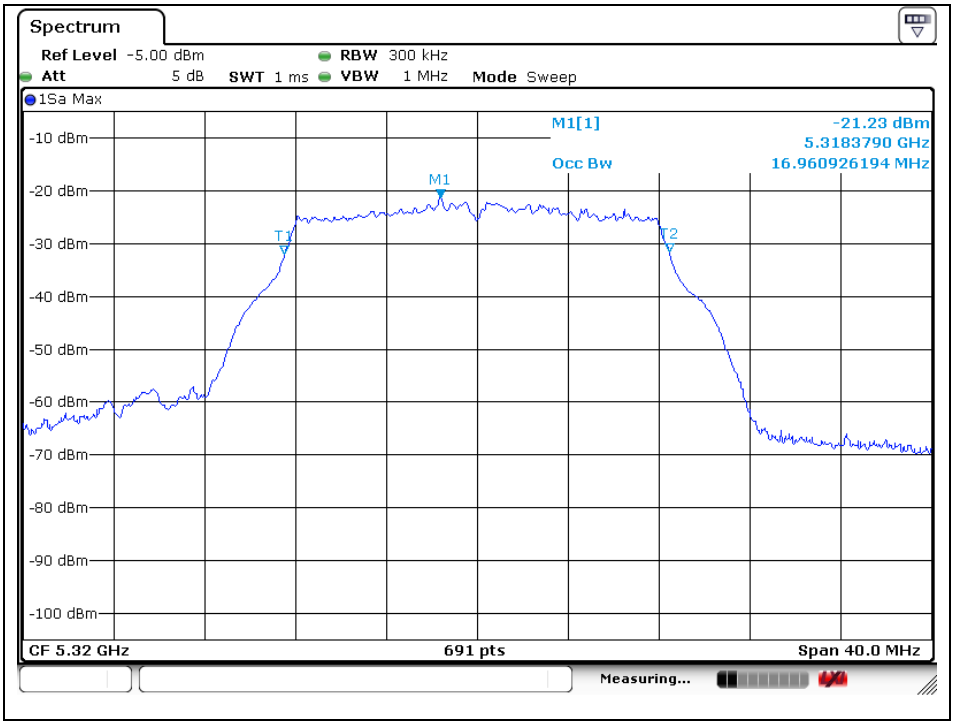
Low Channel (5 260 ㎒)



Middle Channel (5 300 ㎒)

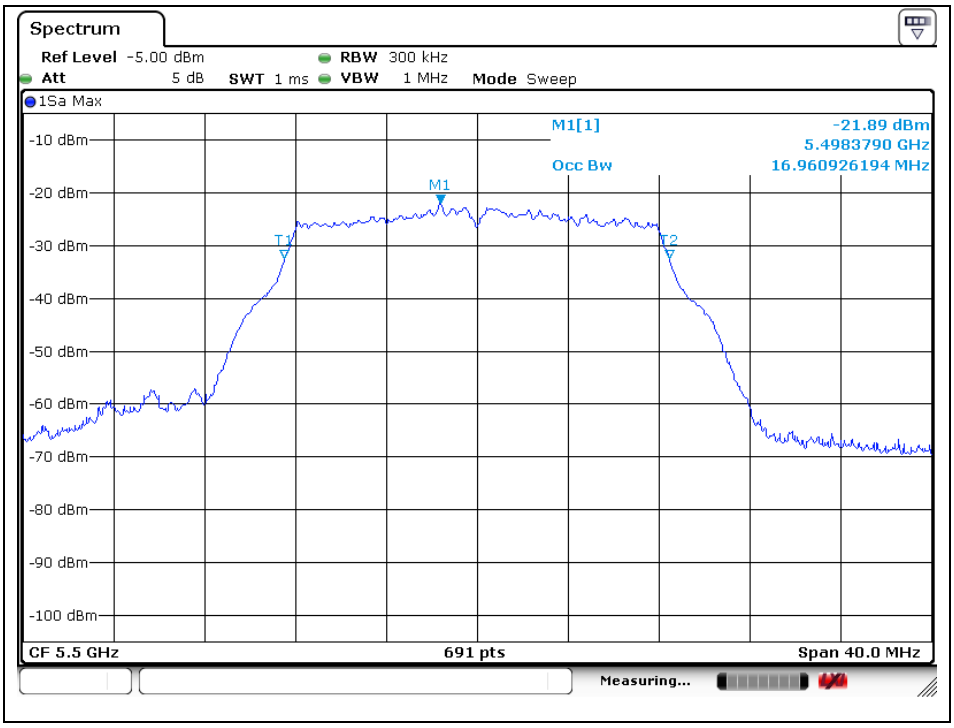


High Channel (5 320 ㎒)

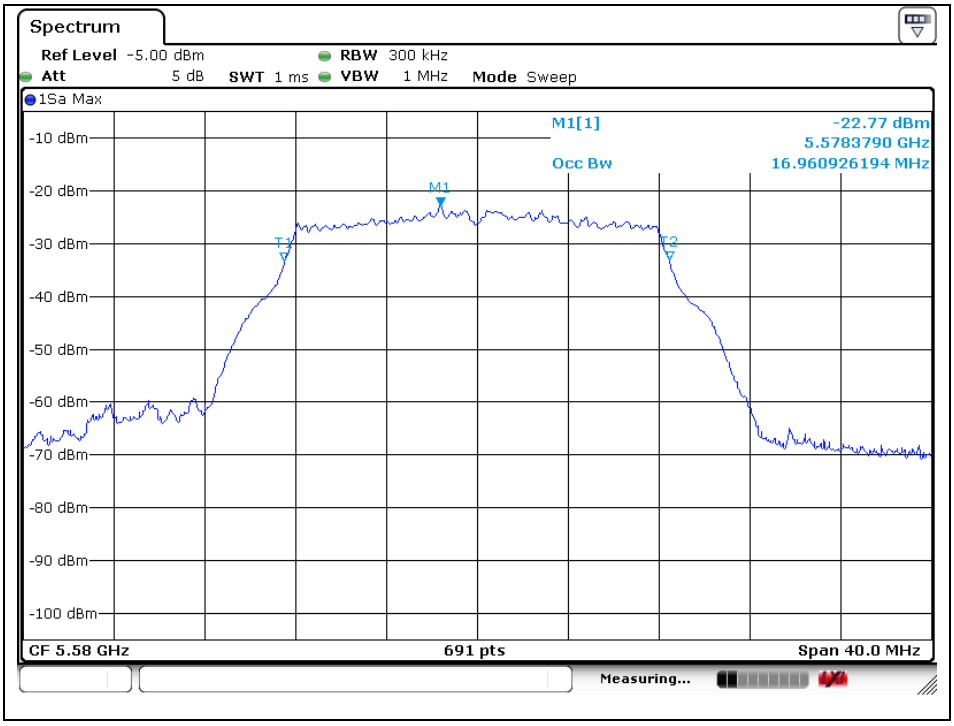


802.11a (Band 2C)

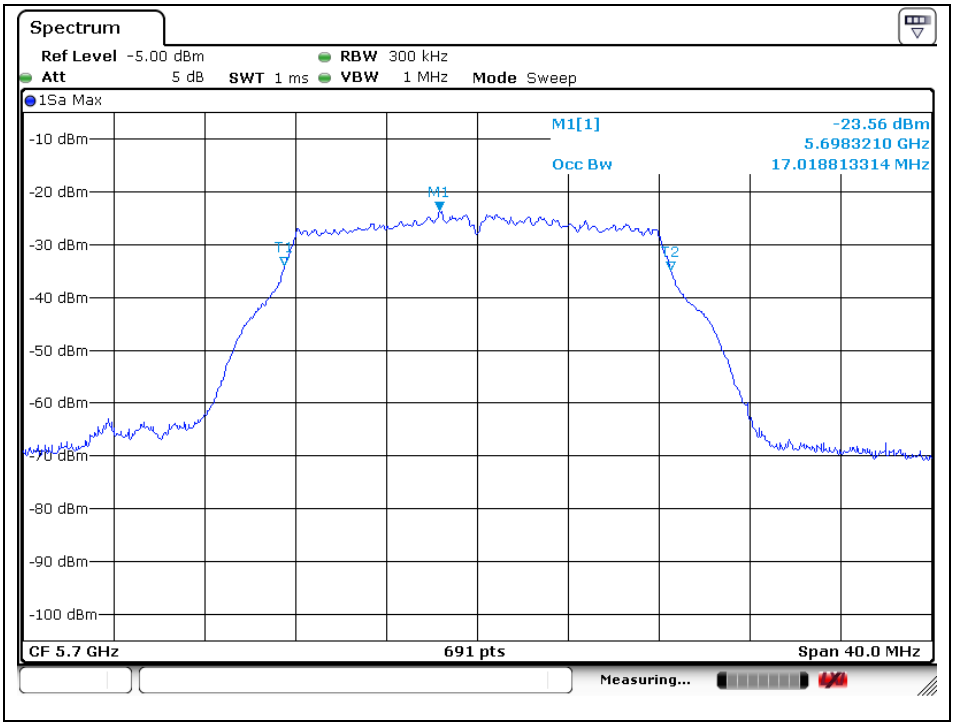
Low Channel (5 500 ㎒)



Middle Channel (5 580 ㎒)

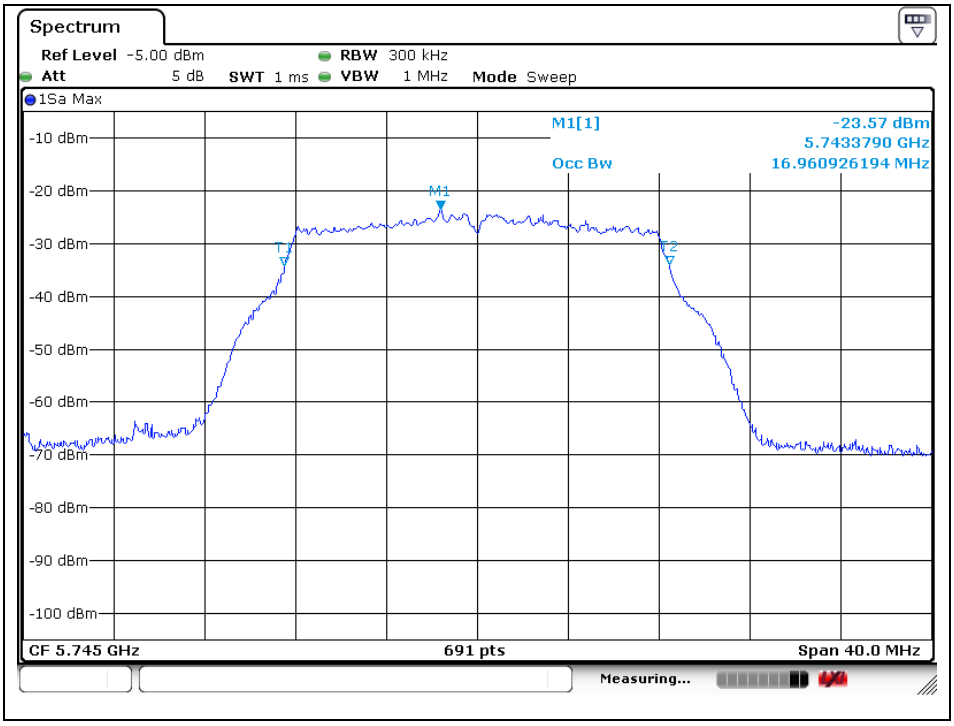


High Channel (5 700 ㎒)

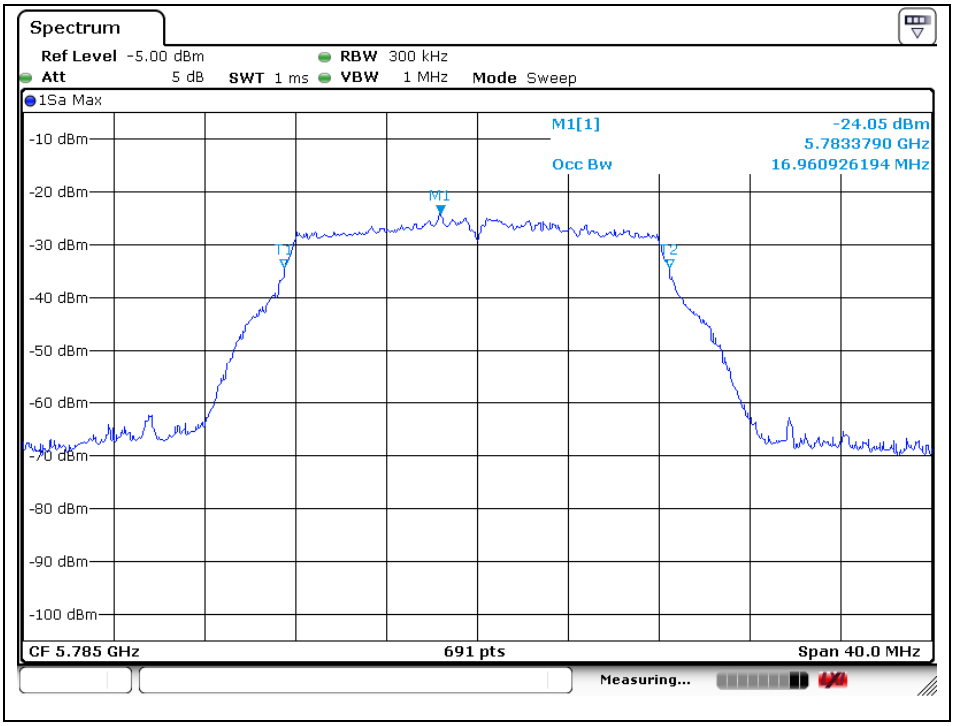


802.11a (Band 3)

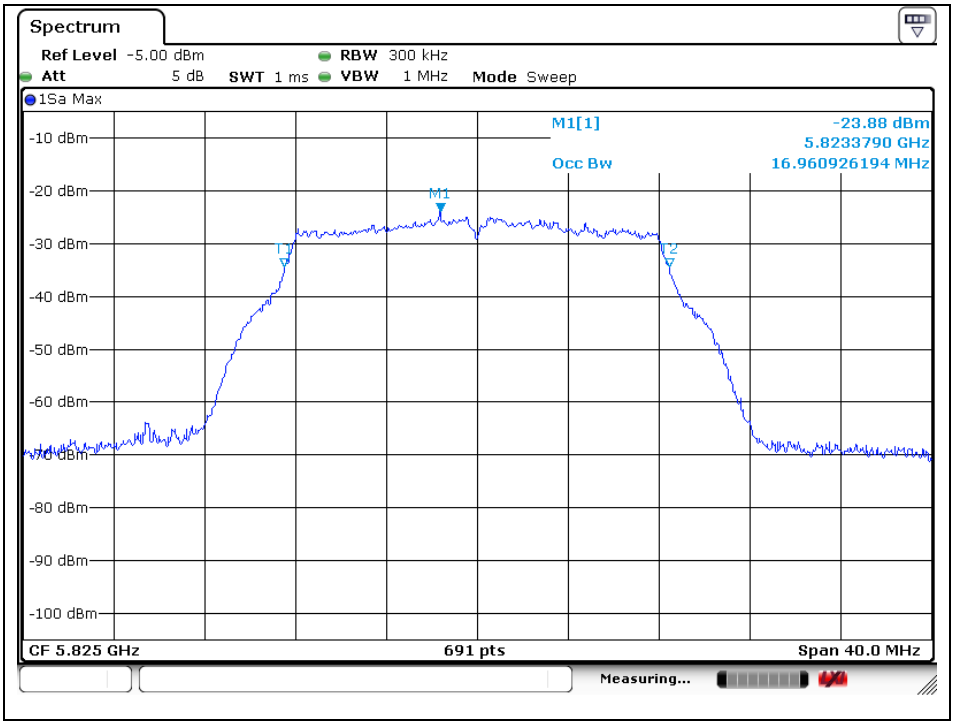
Low Channel (5 745 ㎒)



Middle Channel (5 785 ㎒)

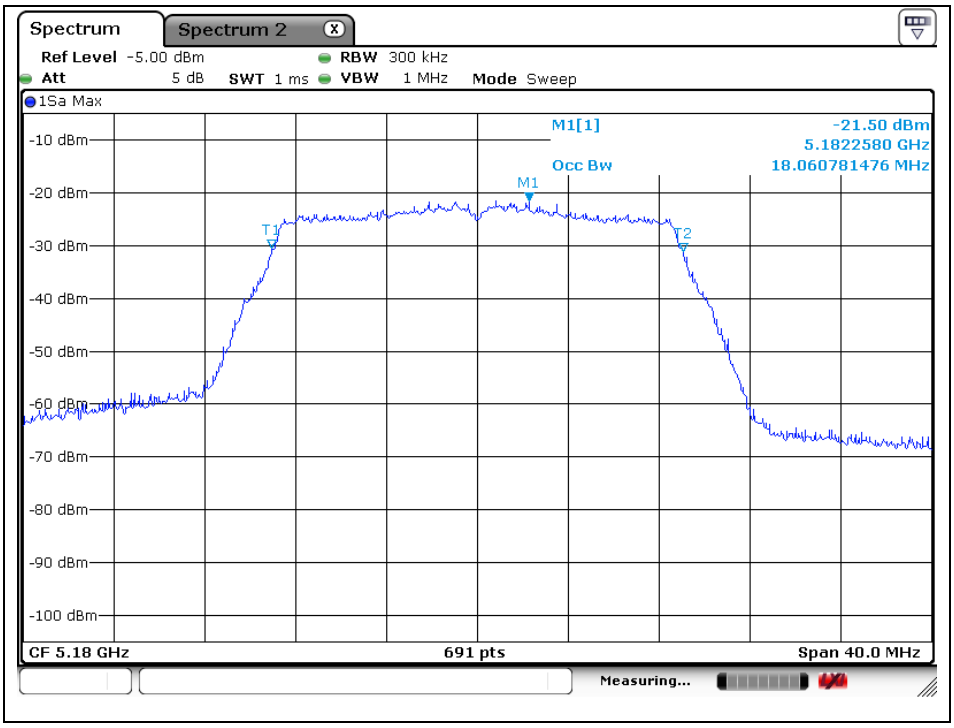


High Channel (5 825 ㎒)

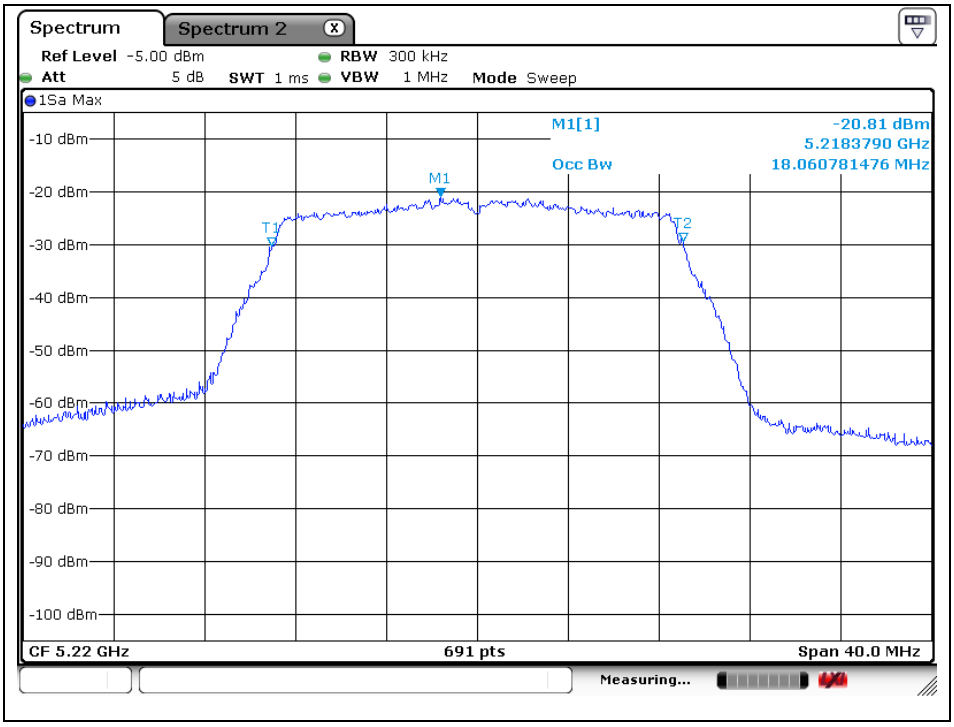


802.11n_HT20 (Band 1)

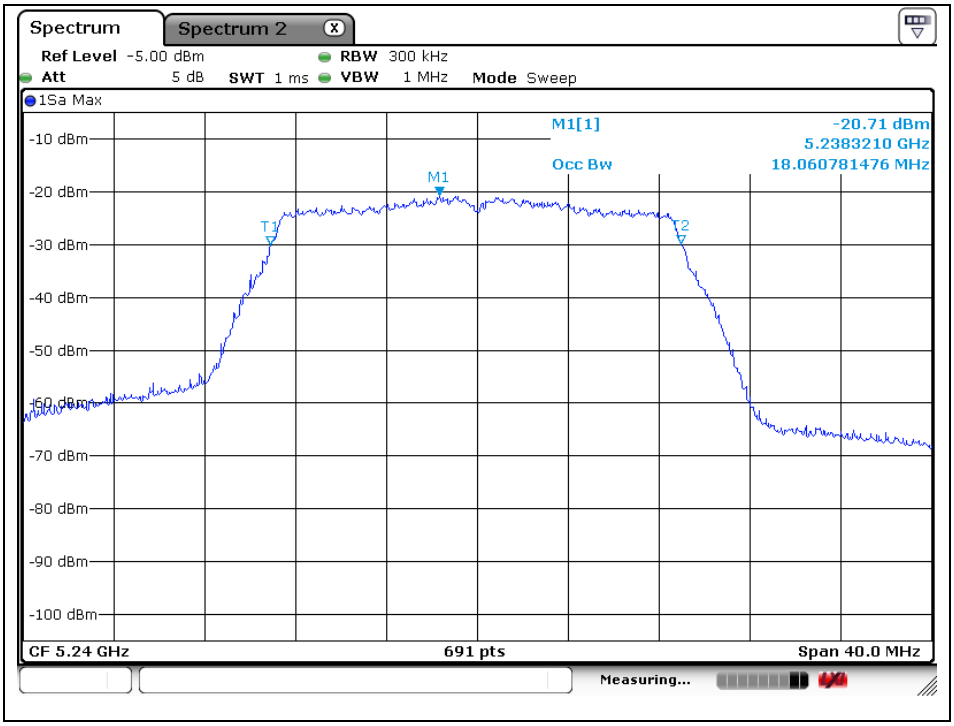
Low Channel (5 180 ㎒)



Middle Channel (5 220 ㎒)

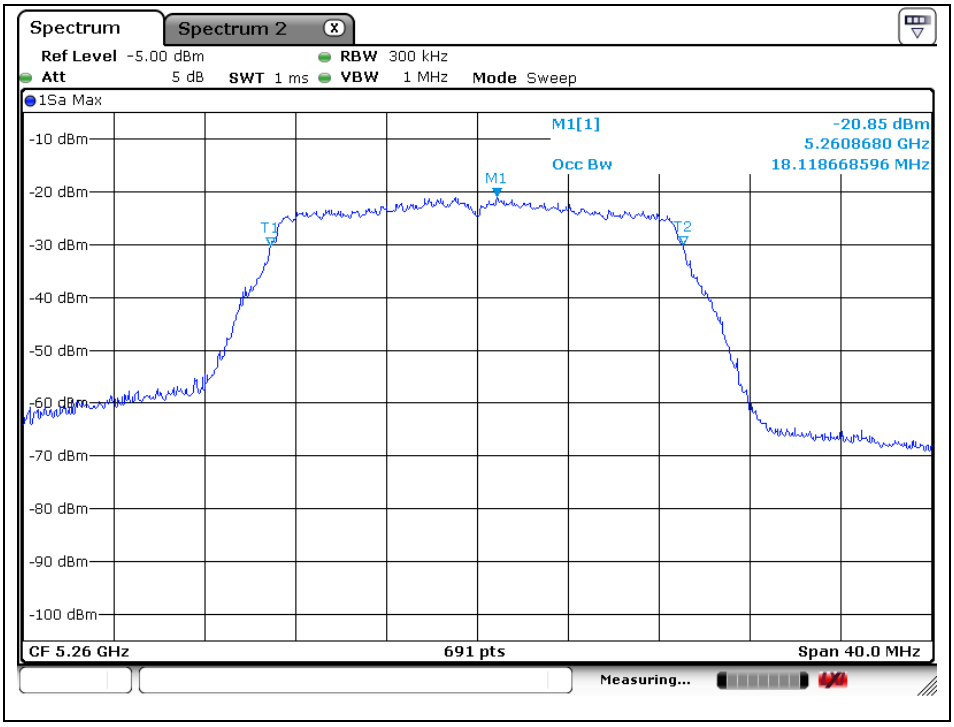


High Channel (5 240 ㎒)

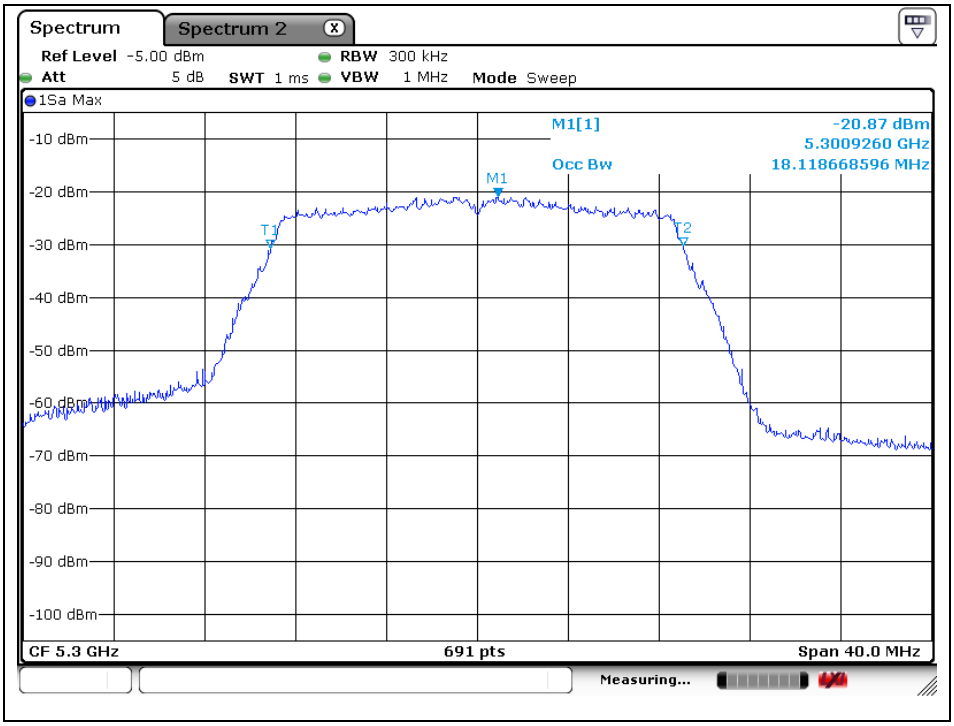


802.11n_HT20 (Band 2A)

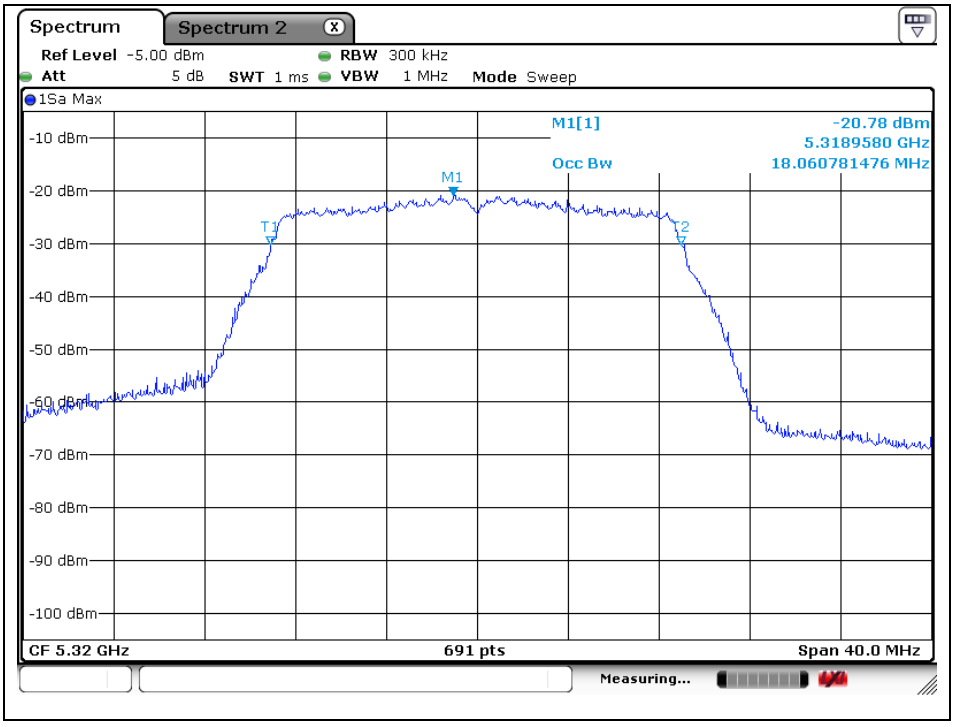
Low Channel (5 260 ㎒)



Middle Channel (5 300 ㎒)

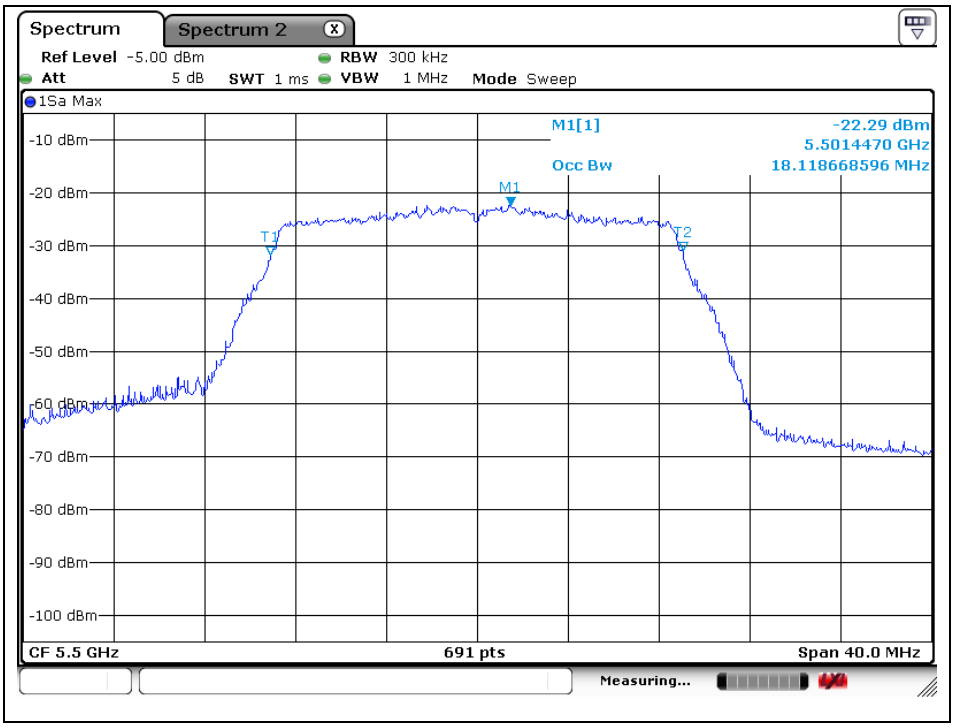


High Channel (5 320 ㎒)

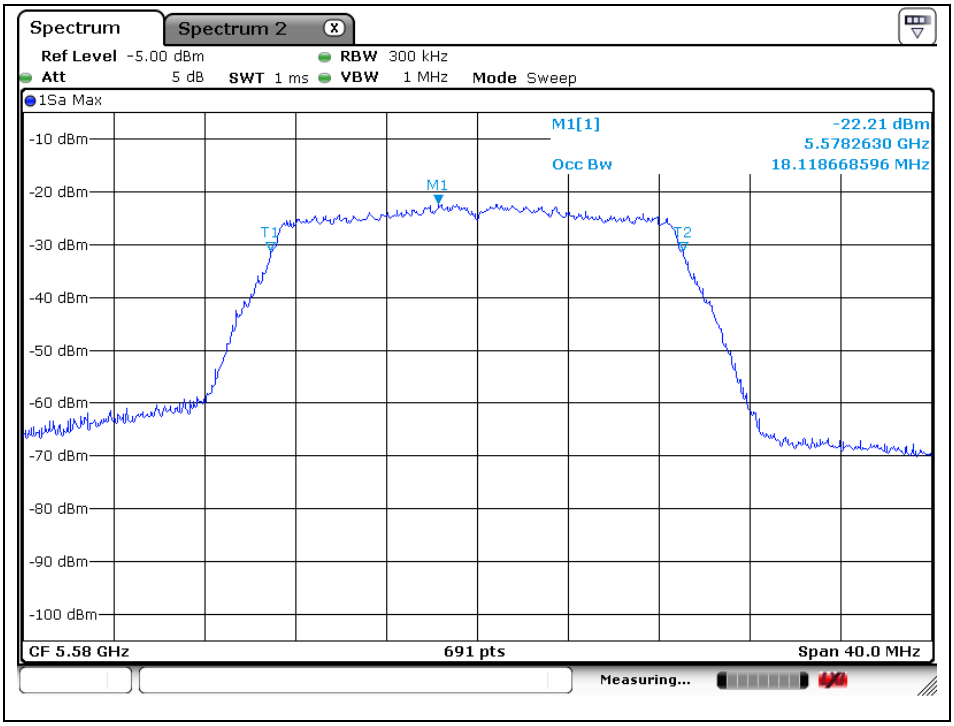


802.11n_HT20 (Band 2C)

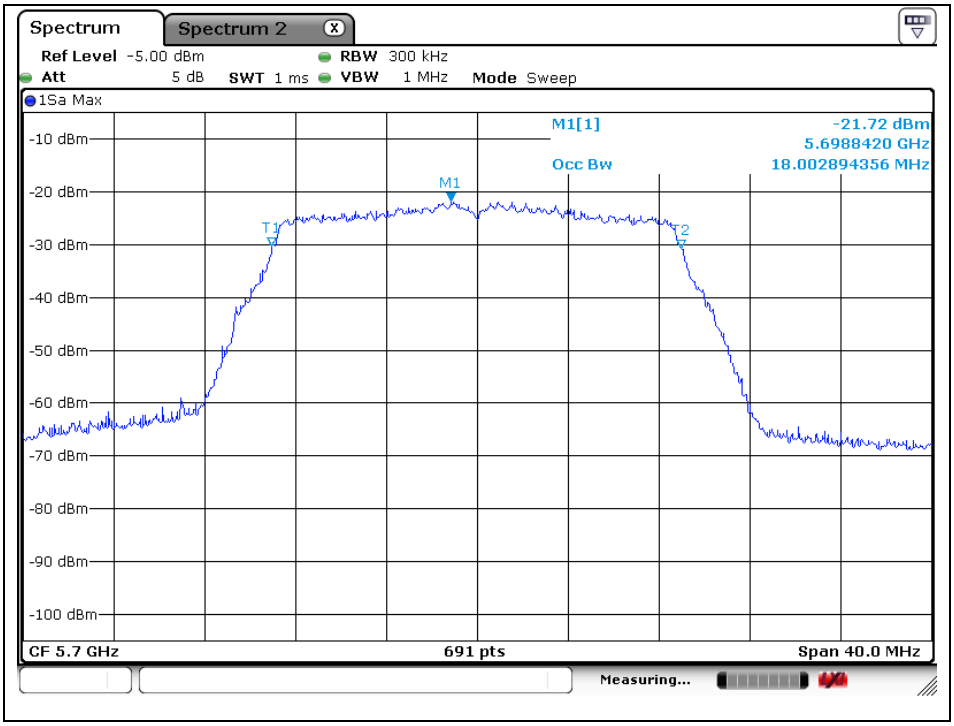
Low Channel (5 500 ㎒)



Middle Channel (5 580 ㎒)

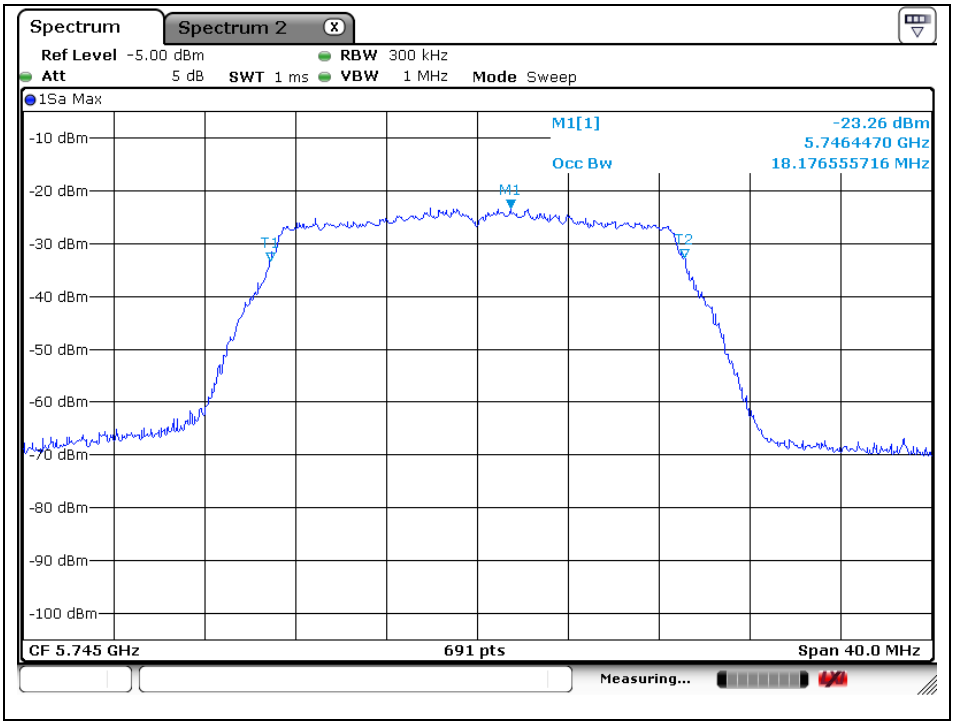


High Channel (5 700 ㎒)

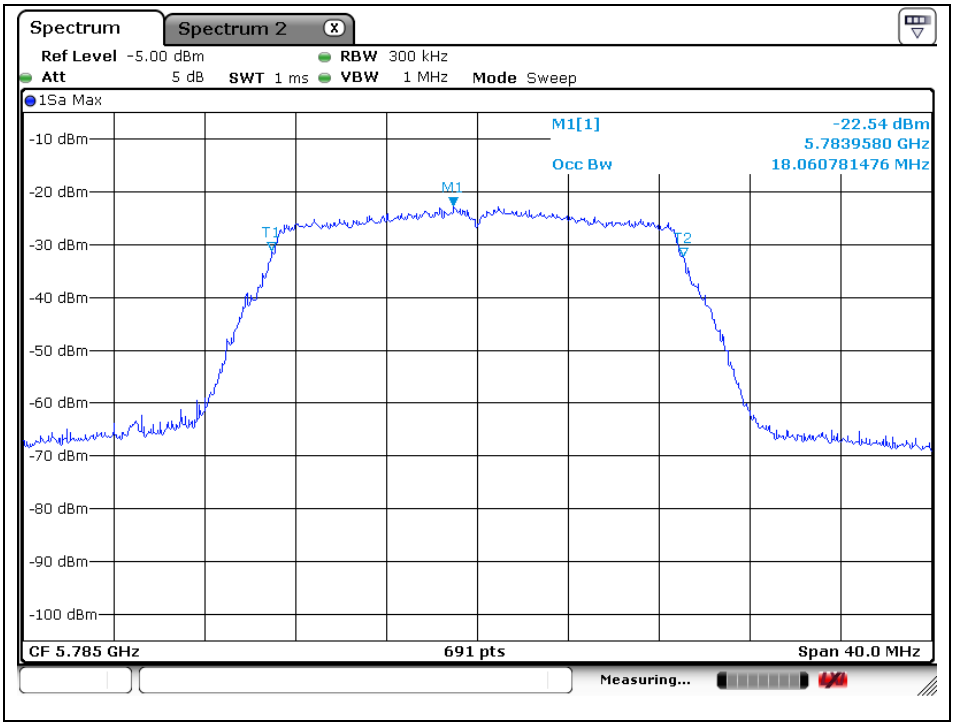


802.11n_HT20 (Band 3)

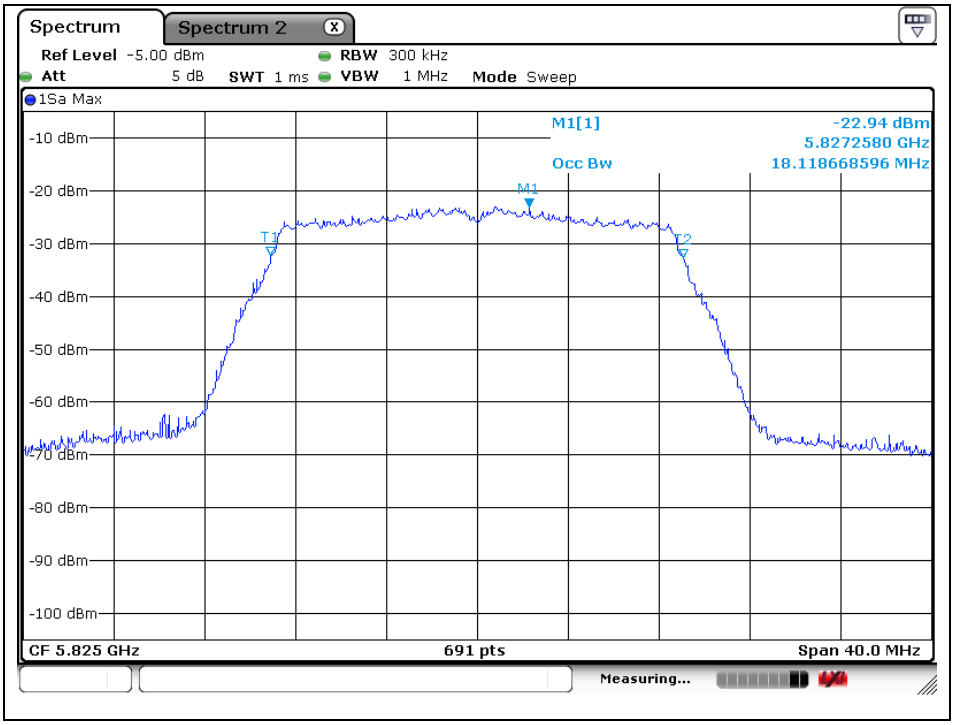
Low Channel (5 745 ㎒)



Middle Channel (5 785 ㎒)

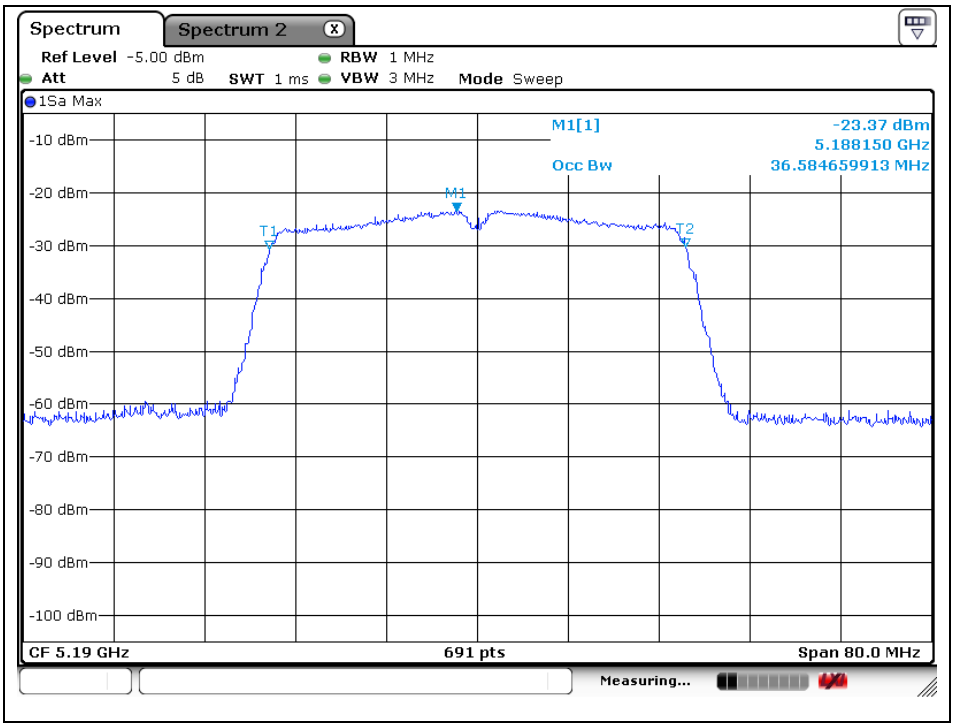


High Channel (5 825 ㎒)

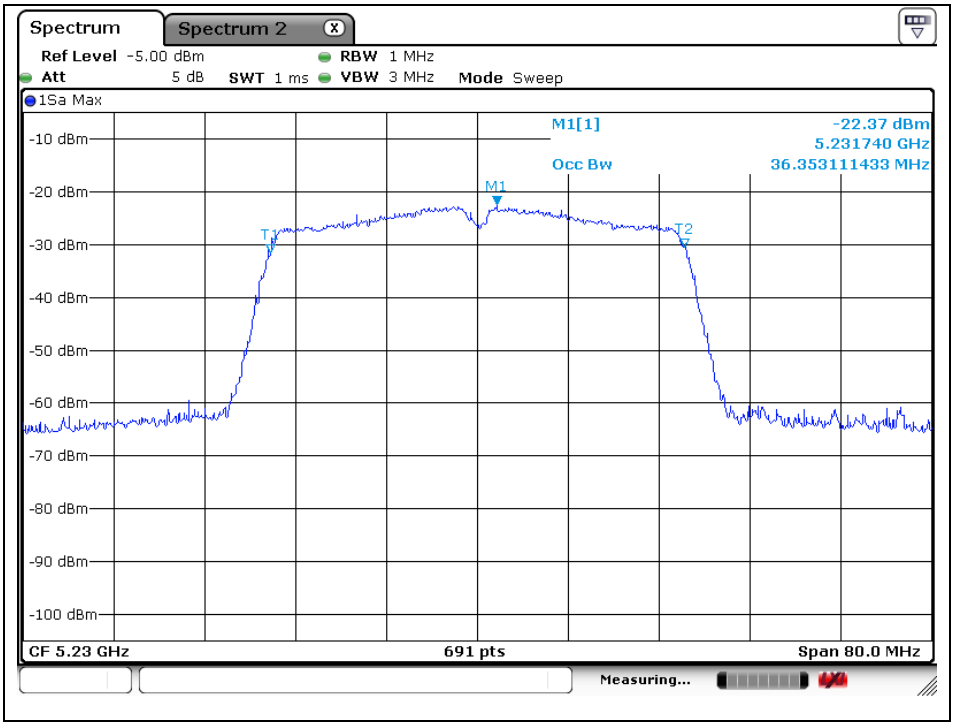


802.11n_HT40 (Band 1)

Low Channel (5 190 ㎒)

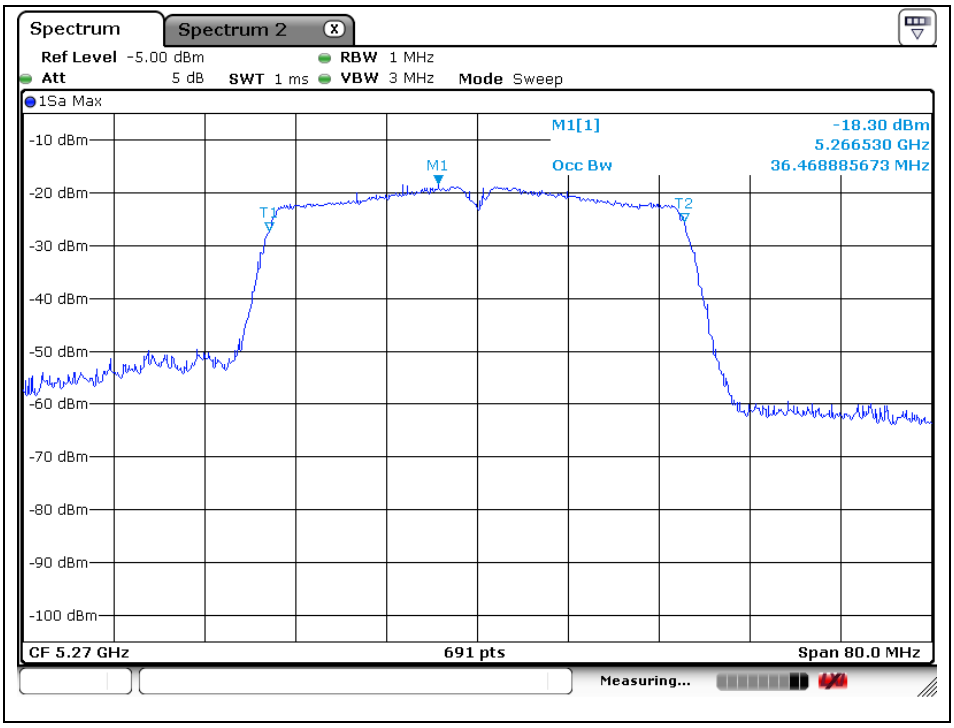


High Channel (5 230 ㎒)

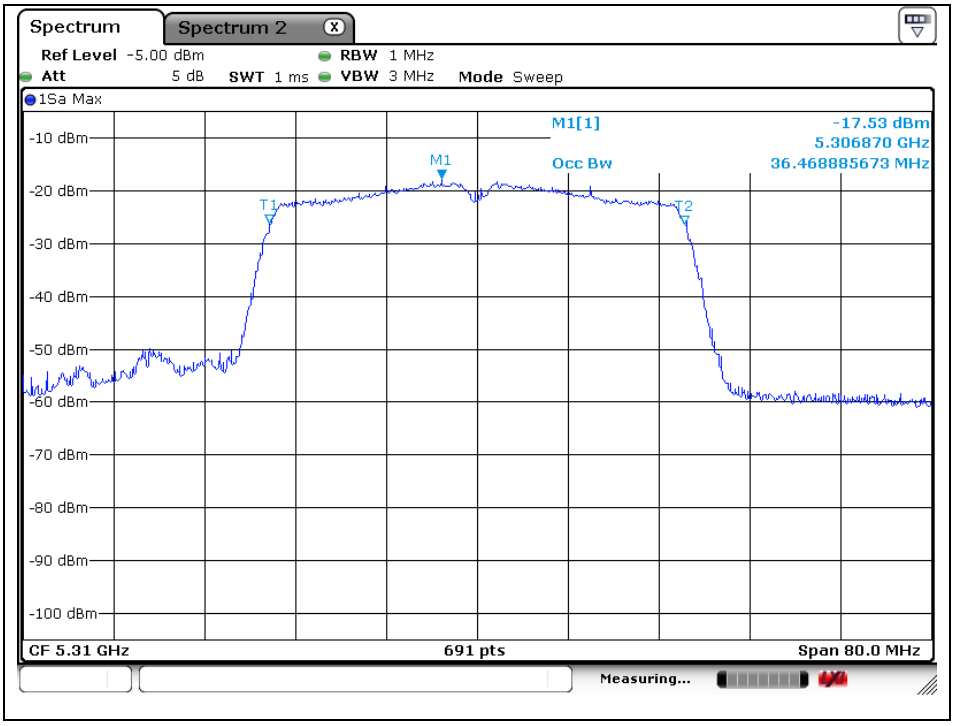


802.11n_HT40 (Band 2A)

Low Channel (5 270 ㎒)

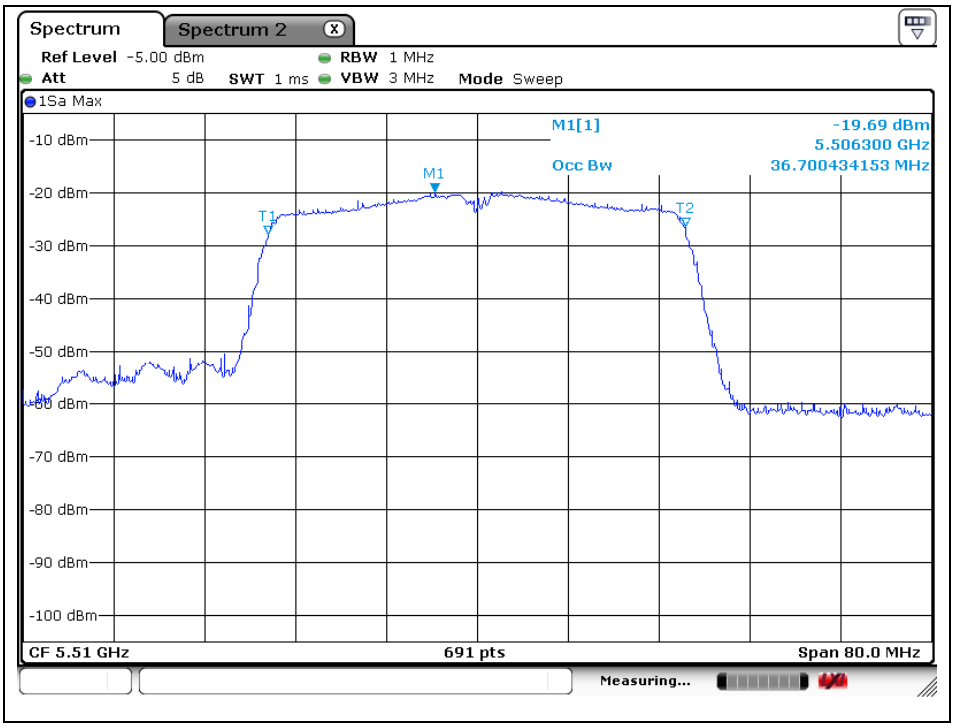


High Channel (5 310 ㎒)

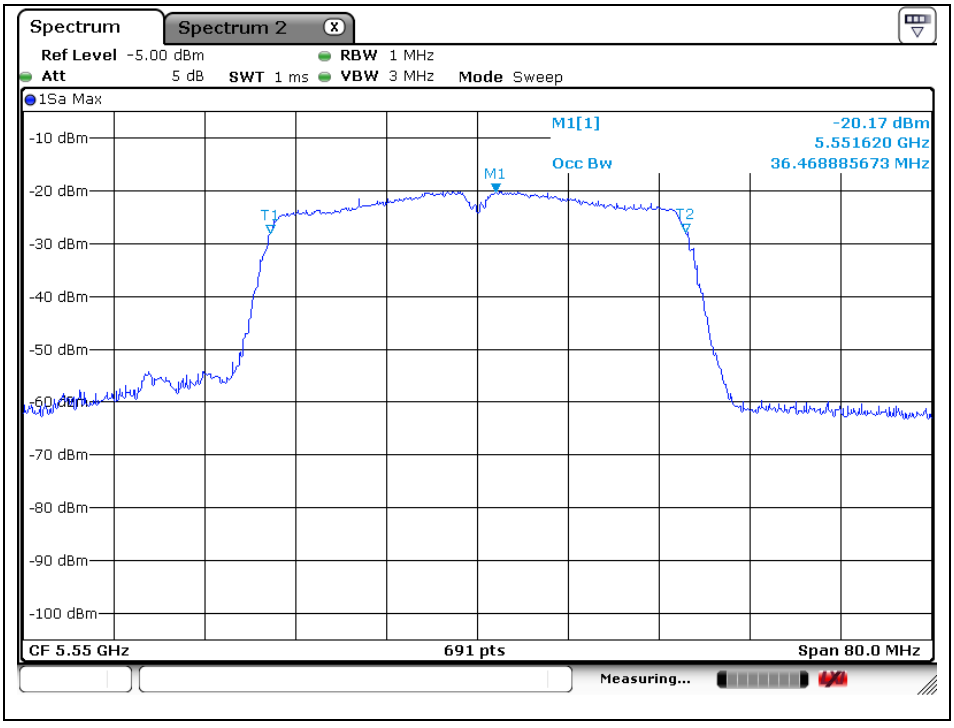


802.11n_HT40 (Band 2C)

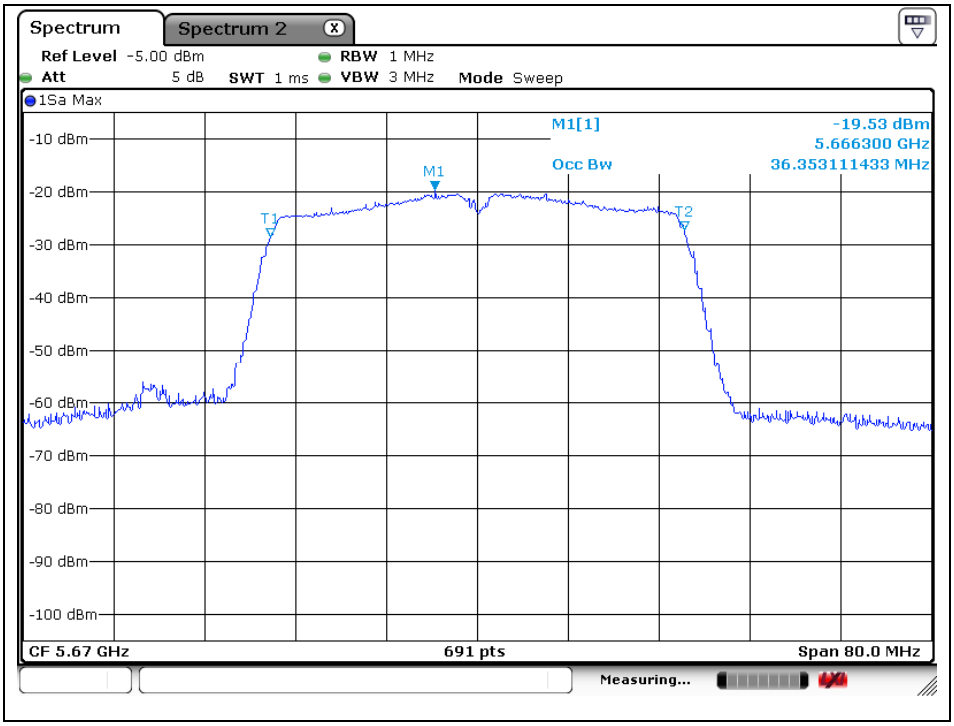
Low Channel (5 510 ㎒)



Middle Channel (5 550 ㎒)

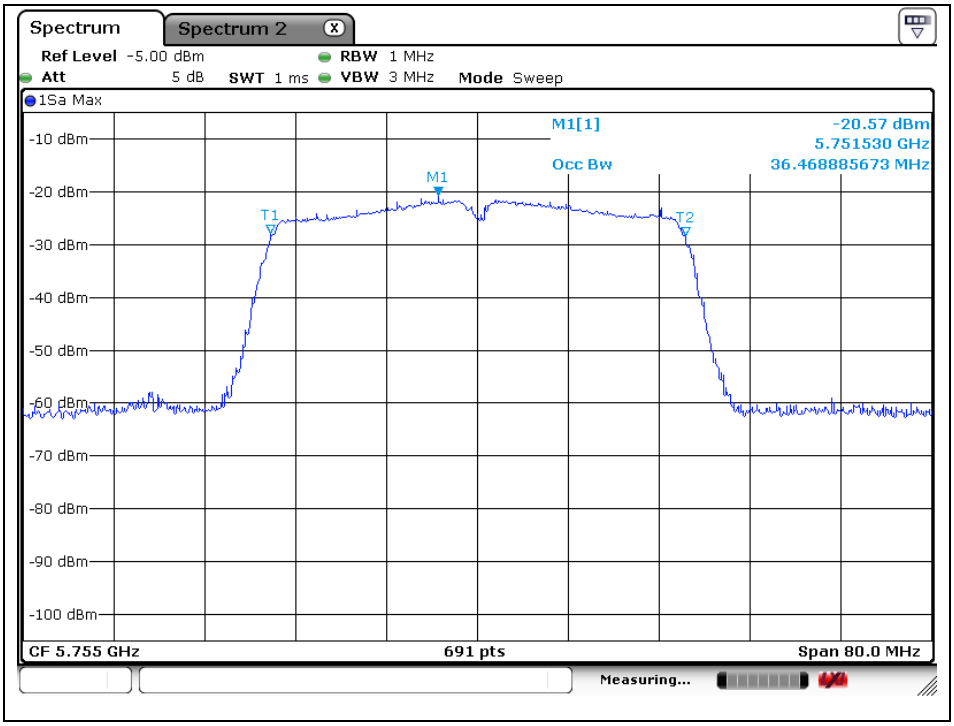


High Channel (5 670 ㎒)

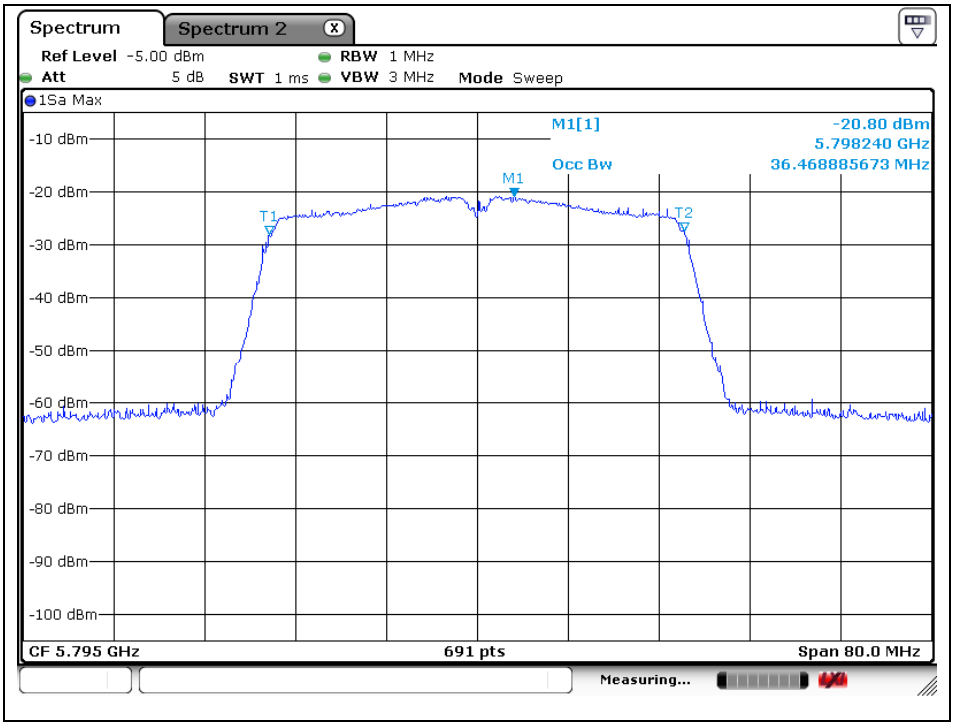


802.11n_HT40 (Band 3)

Low Channel (5 755 ㎒)

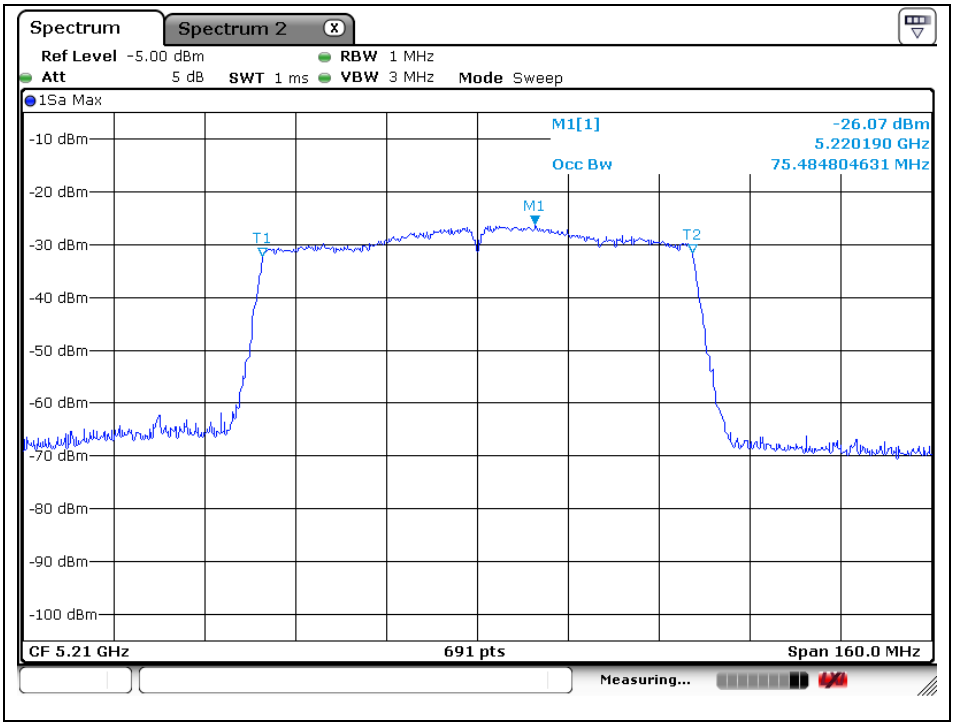


High Channel (5 795 ㎒)



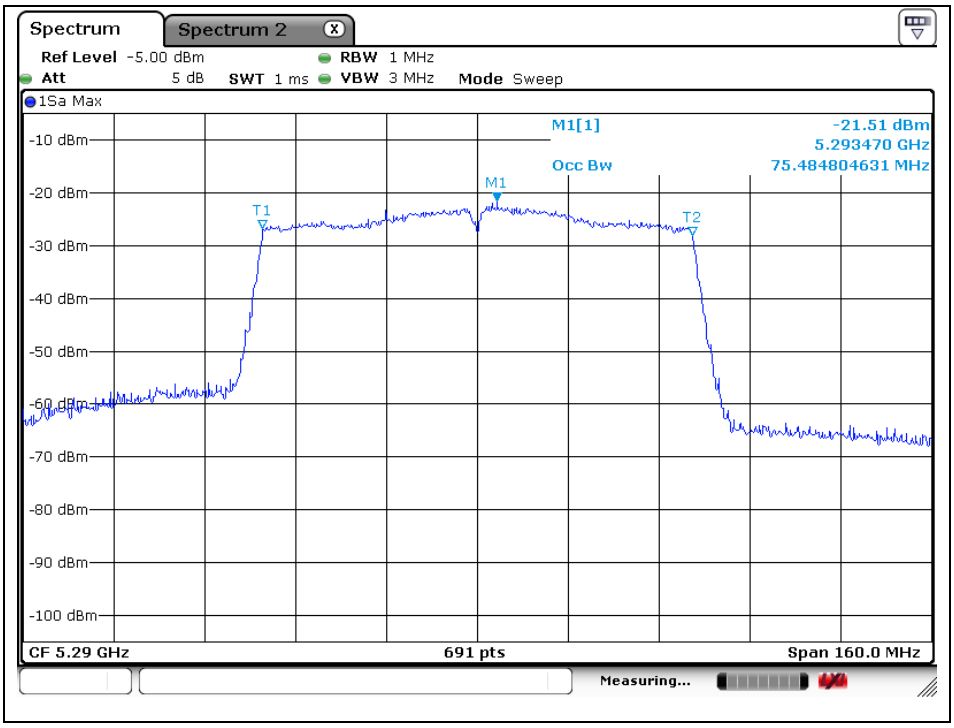
802.11ac_VHT80 (Band 1)

Middle Channel (5 210 ㎒)



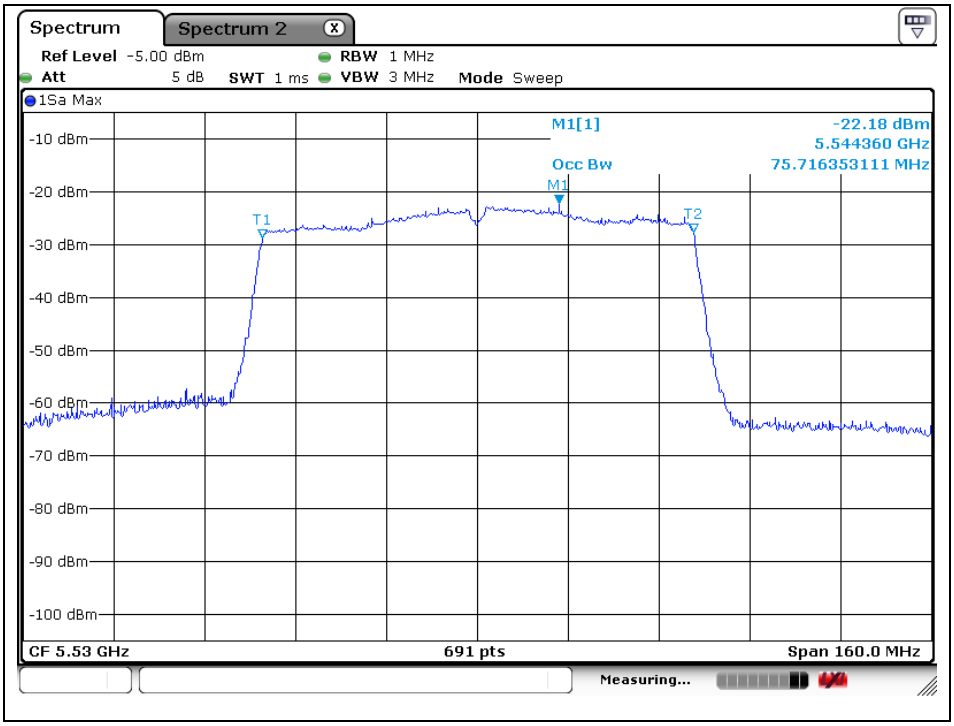
802.11ac_VHT80 (Band 2A)

Middle Channel (5 290 ㎒)

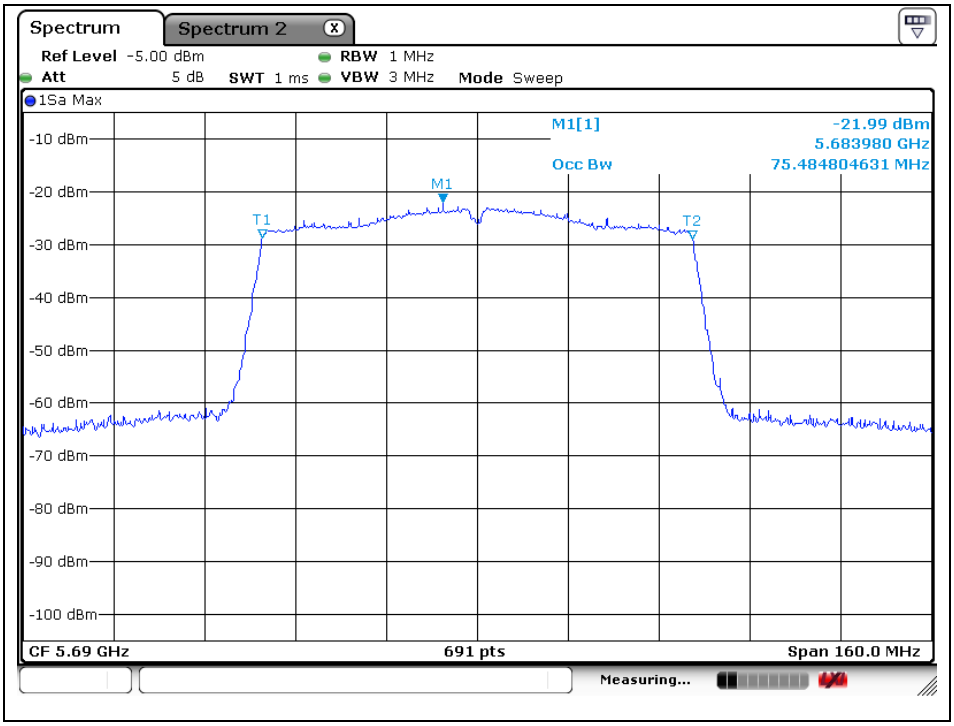


802.11ac_VHT80 (Band 2C)

Low Channel (5 530 ㎒)

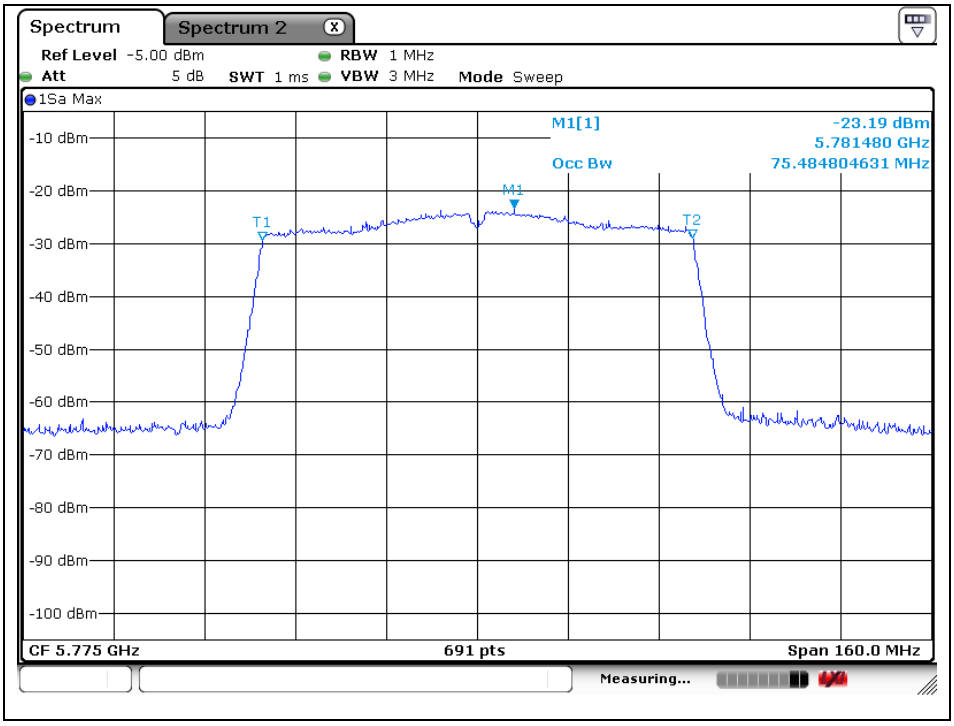


High Channel (5 690 ㎒)



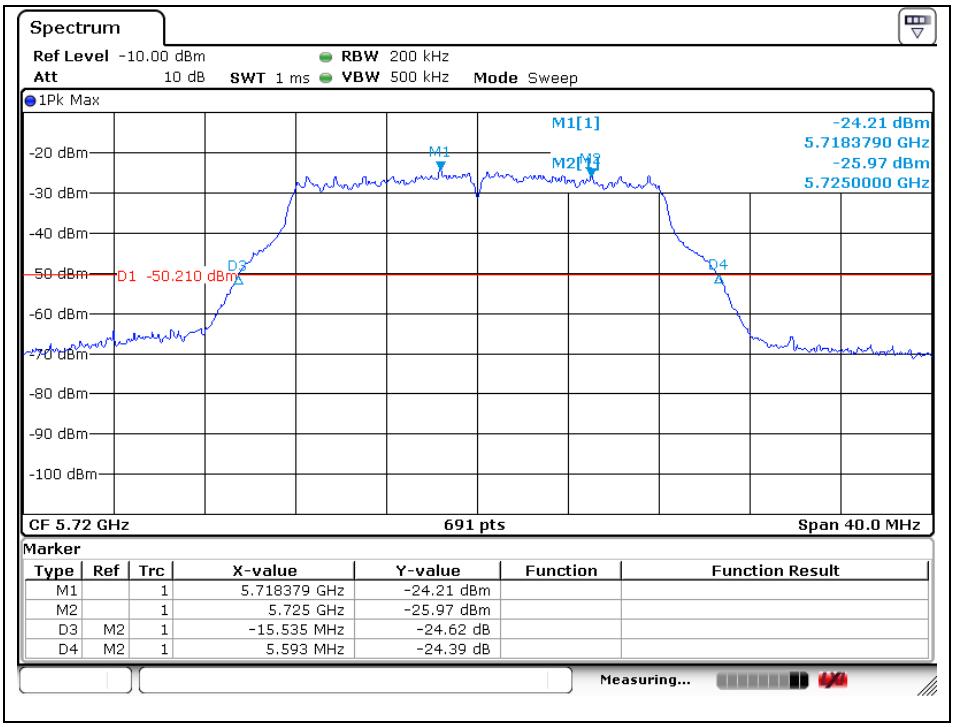
802. 11ac_VHT80 (Band 3)

Middle Channel (5 775 ㎒)

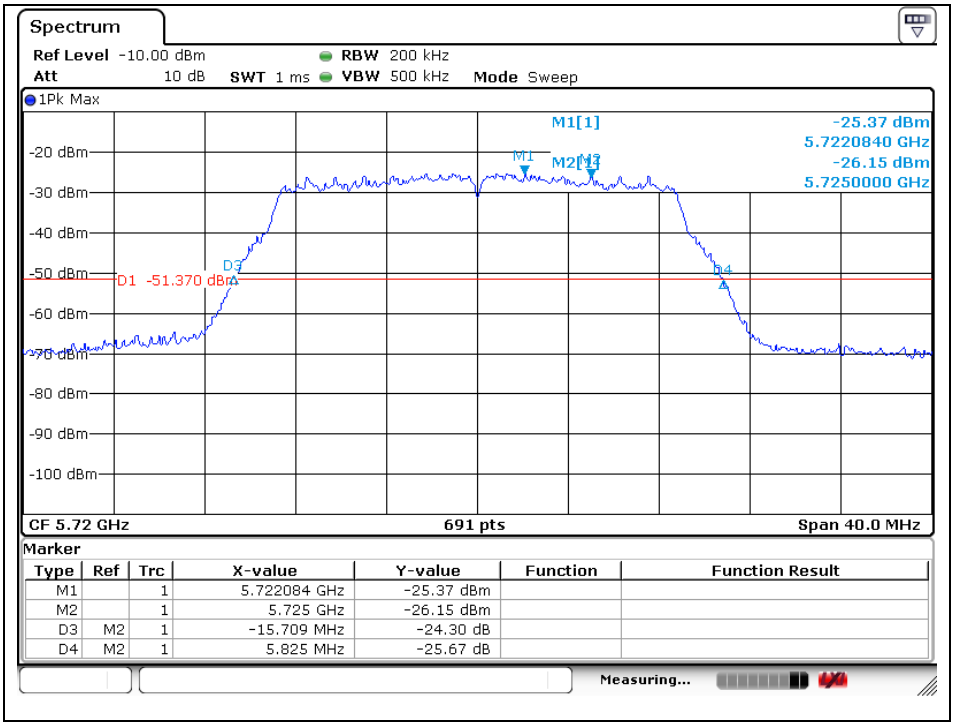


Band-crossing channels

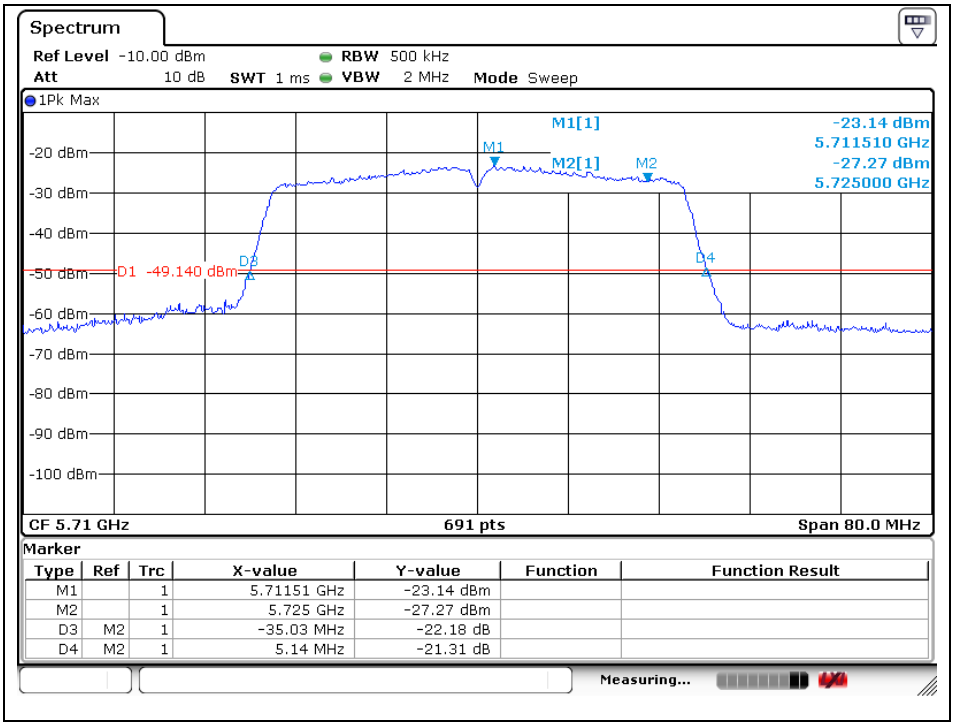
802.11a (5 720 ㎒)



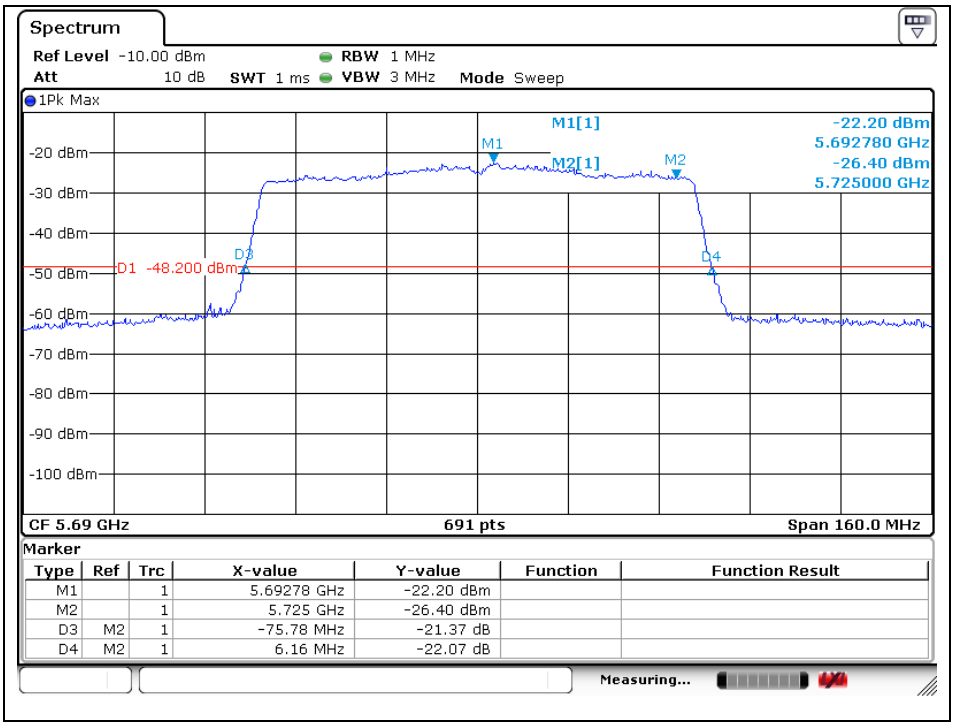
802.11n_HT20 (5 720 ㎒)



802.11n_HT40 (5 710 ㎒)

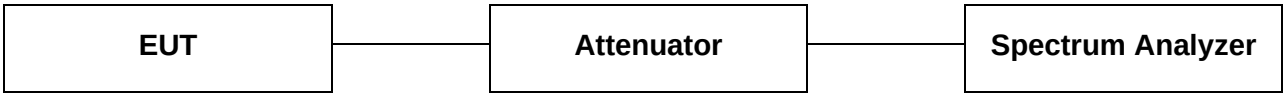


802.11ac_VHT80 (5 690 ㎒)



4. 6 dB Bandwidth

4.1. Test Setup



4.2. Limit

4.2.1. FCC

According to §15.407(e), within the 5.725-5.85 ㎓ band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 ㎑.

4.2.2. IC

According to RSS-247 Issue 2, 6.2.4.1, the minimum -6 dB Bandwidth shall be at least 500 ㎑.

4.3. Test Procedure

All data rates and modes were investigated for this test. The full data for the worst case data rate are reported in this section.

1. This measurement settings are specified in section C.2 of KDB 789033 D02 v02r01.
2. Set RBW = 100 ㎑.
3. Set the video bandwidth (VBW) ≥ 3 x RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Sweep = auto couple.
7. Allow the trace to stabilize.
8. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Remark;

In case of band crossing channels 138, 142 and 144, the measurement is complied with section Ⅲ.A of KDB 789033 D02 v02r01.

4.4. Test result

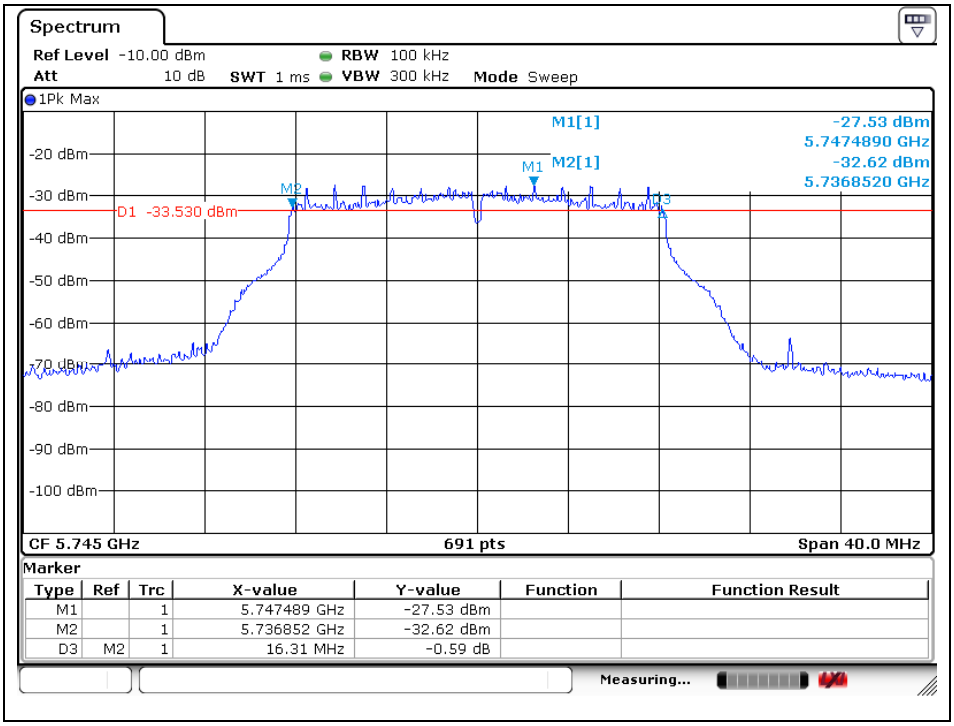
Ambient temperature : (23 ± 1) ℃
Relative humidity : 47 % R.H.

Band	Mode	Frequency (㎒)	Ch.	Data Rate (Mbps)	6 ㏈ Bandwidth (㎒)	Minimum Bandwidth (㎑)
U-NII 3	11a	5 745	149	6	16.310	500
		5 785	157		16.324	
		5 825	165		16.324	
	11n_HT20	5 745	149	MCS0	17.583	
		5 785	157		17.598	
		5 825	165		17.598	
	11n_HT40	5 755	151	MCS0	36.010	
		5 795	159		36.180	
	11ac_VHT80	5 775	155	MCS0	75.540	
U-NII 3 (Band-crossing channels)	11a	5 720	144	6	3.162	
	11n_HT20	5 720	144	MCS0	3.799	
	11n_HT40	5 710	142	MCS0	3.220	
	11ac_VHT80	5 690	138	MCS0	3.220	

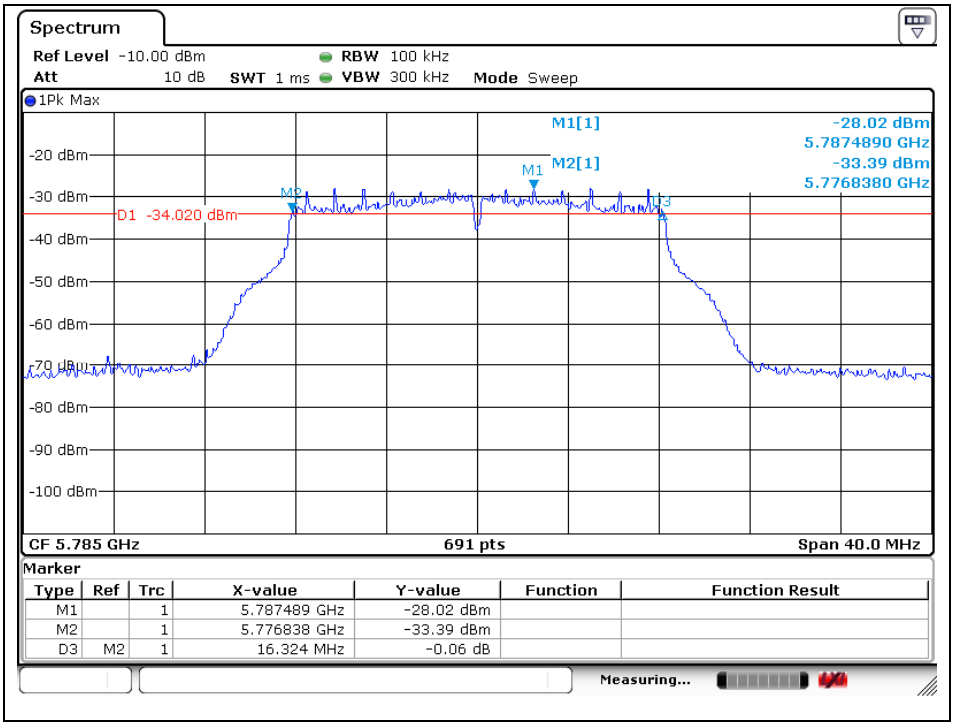
- Test plots

802.11a (Band 3)

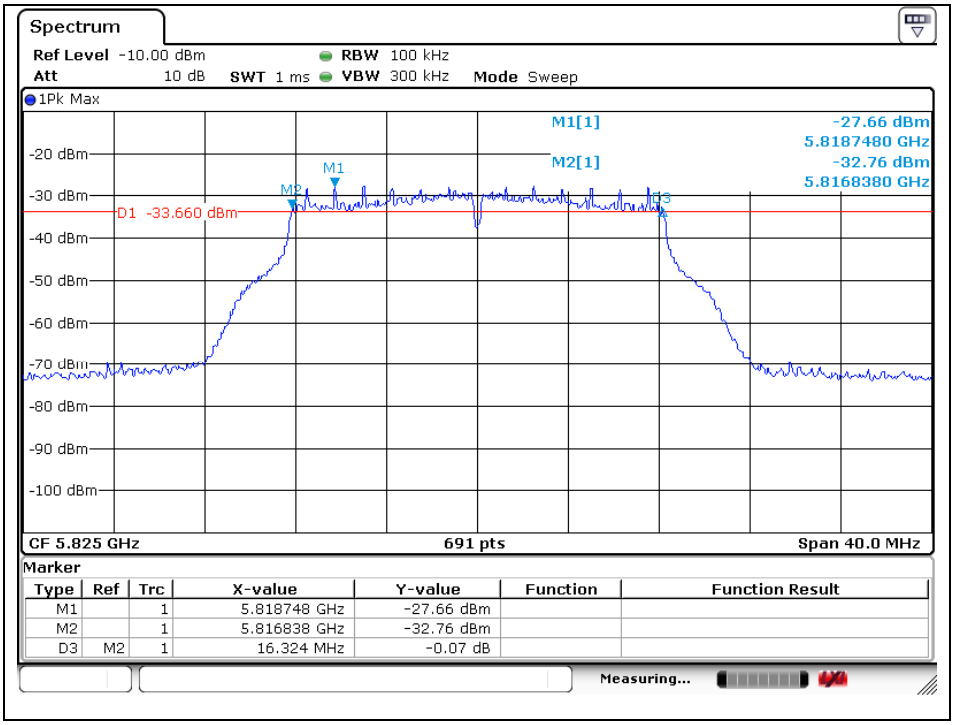
Low Channel (5 745 ㎒)



Middle Channel (5 785 ㎒)

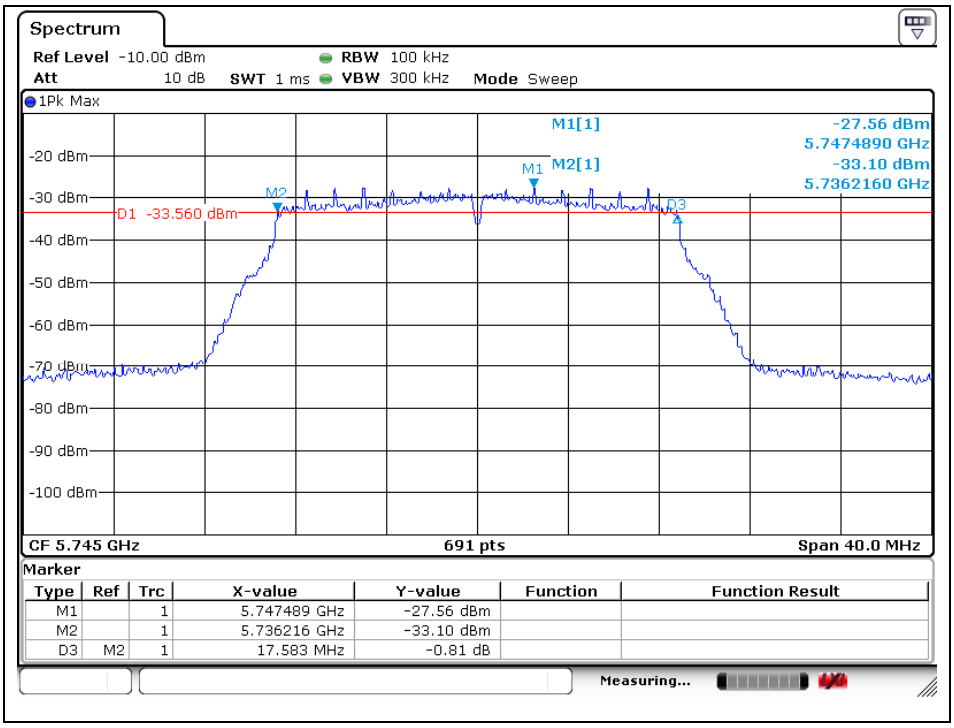


High Channel (5 825 ㎒)

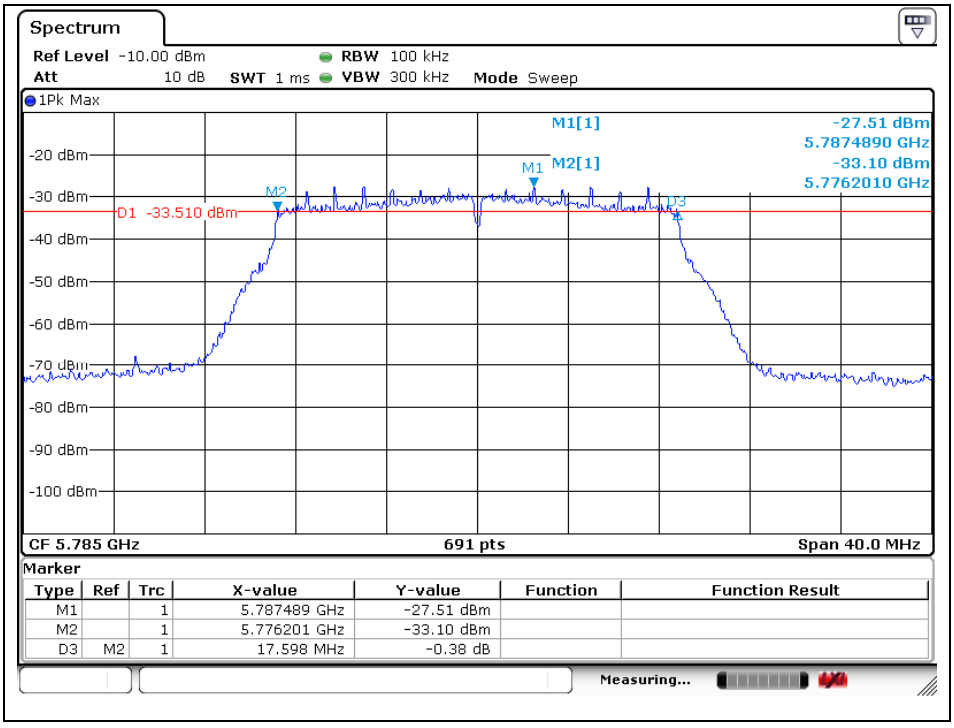


802.11n_HT20 (Band 3)

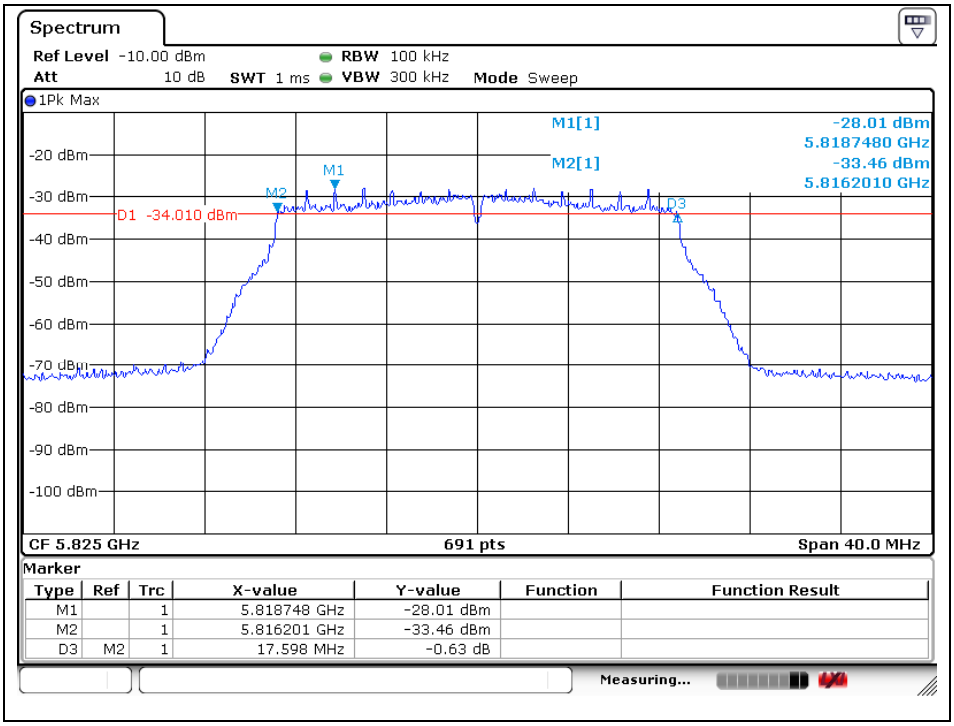
Low Channel (5 745 ㎒)



Middle Channel (5 785 ㎒)

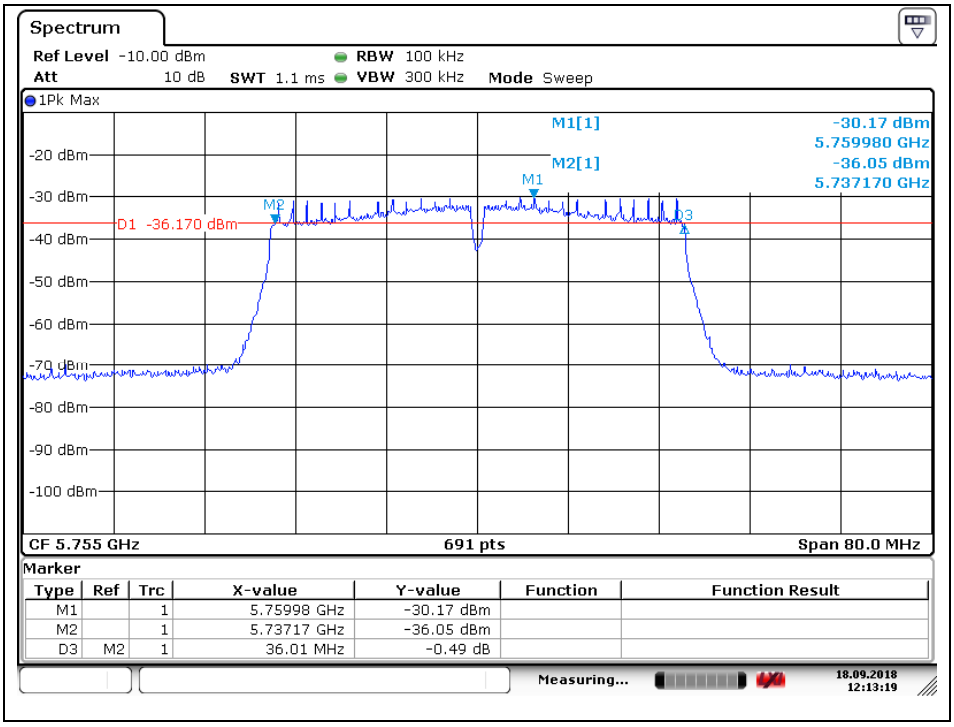


High Channel (5 825 ㎒)

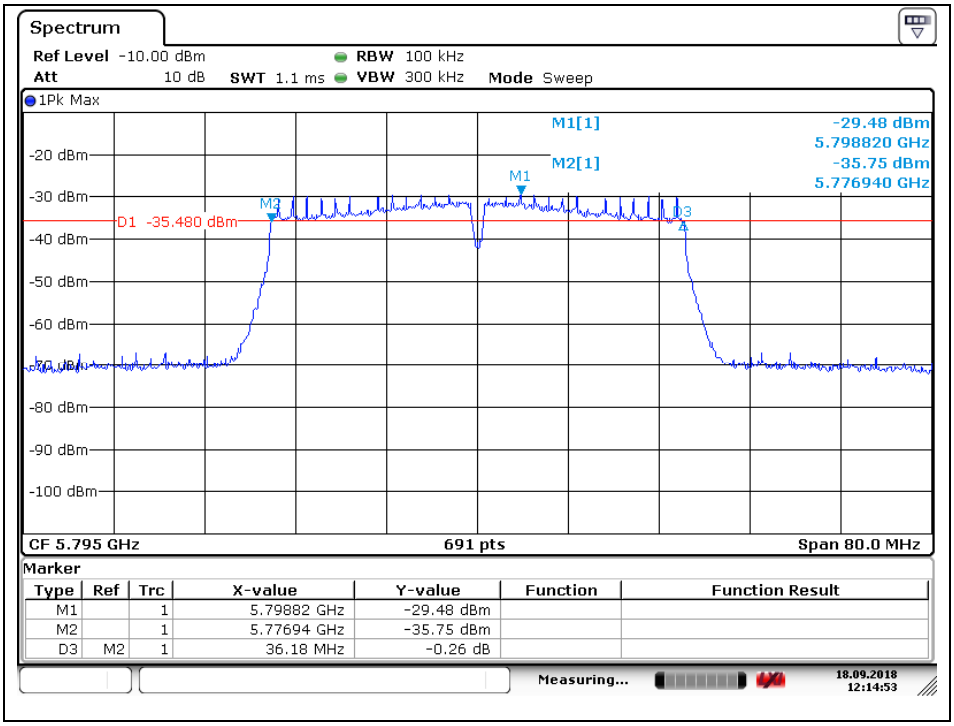


802.11n_HT40 (Band 3)

Low Channel (5 755 ㎒)

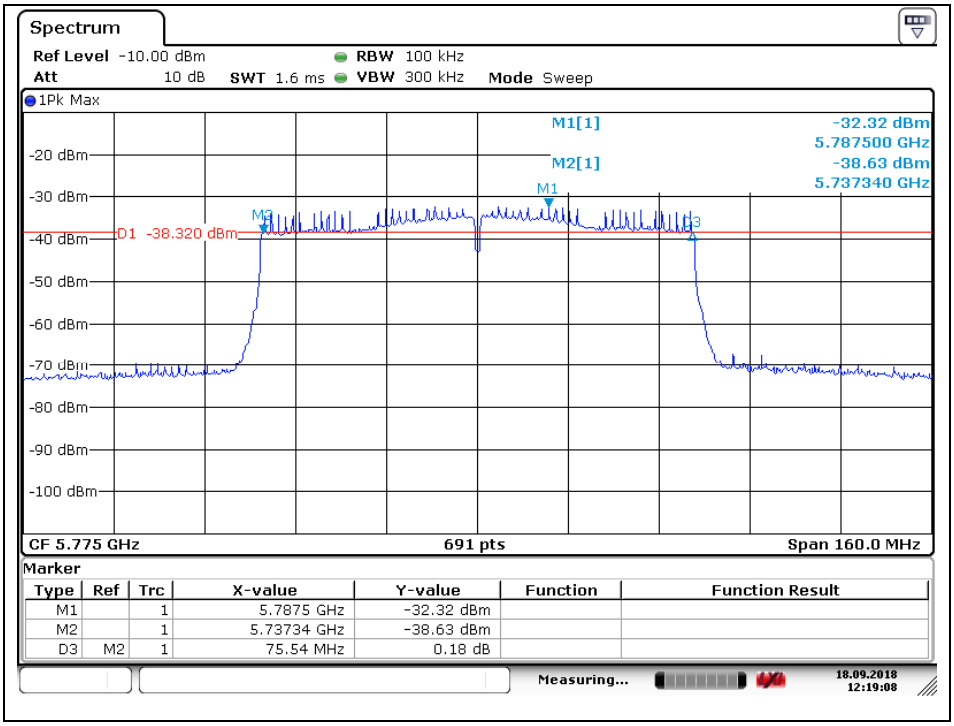


High Channel (5 795 ㎒)



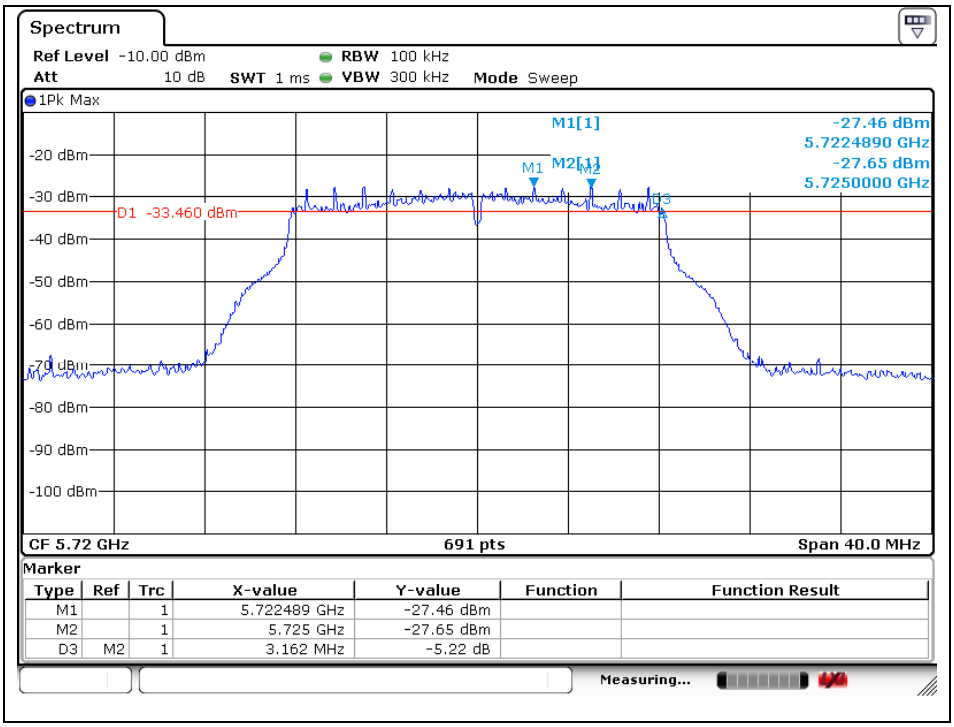
802.11ac_VHT80 (Band 3)

Middle Channel (5 775 ㎒)

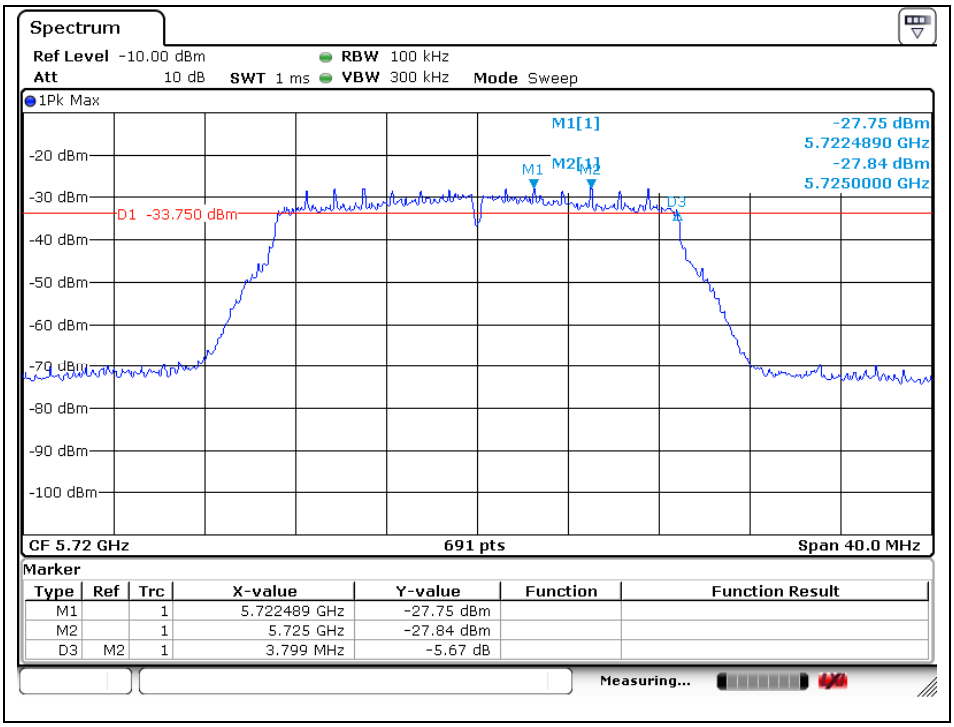


Band-crossing channels

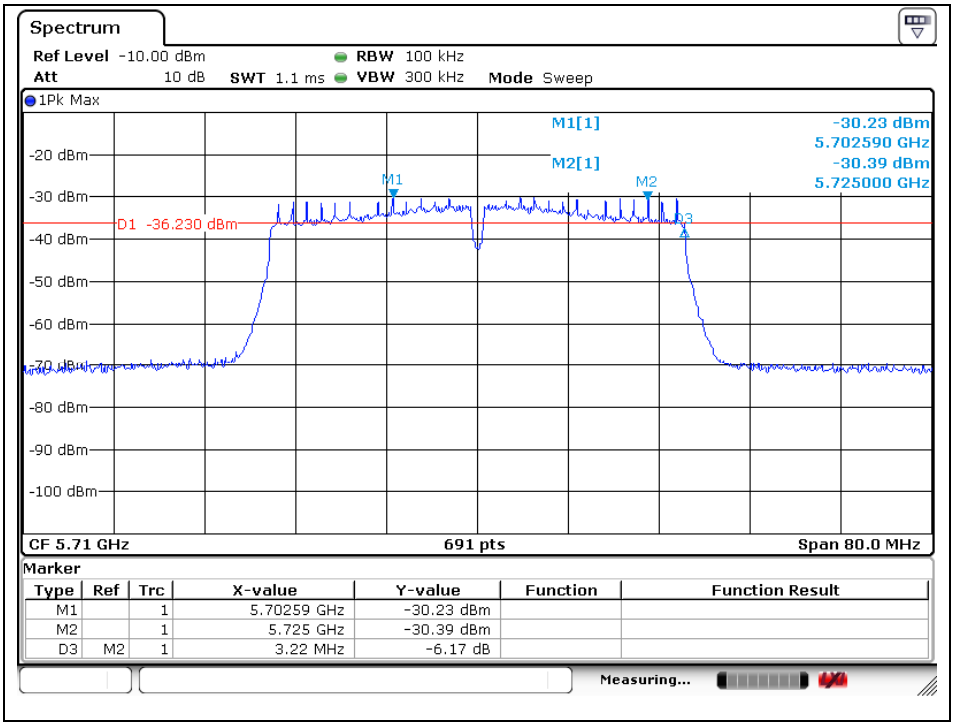
802.11a (5 720 ㎒)



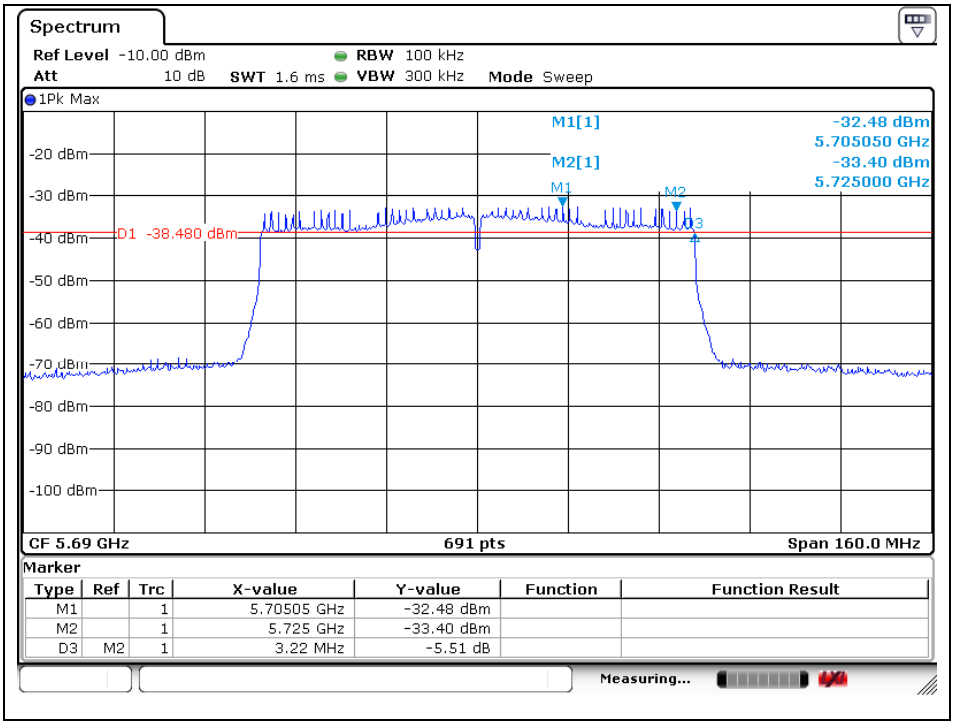
802.11n_HT20 (5 720 ㎒)



802.11n_HT40 (5 710 ㎒)

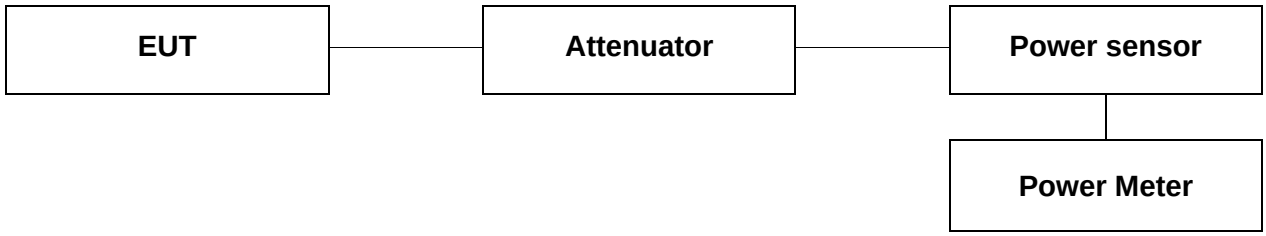


802.11ac_VHT80 (5 690 ㎒)



5. Maximum Conducted Output Power

5.1. Test Setup



5.2. Limit

5.2.1. 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.

5.2.2. IC

According to RSS-247 issue2,

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 + 10log$_{10}$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 + 10log$_{10}$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 + 10log$_{10}$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 + 10log$_{10}$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 + 10log$_{10}$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 + 10log$_{10}$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 + 10log$_{10}$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.

5.3. Test Procedure

All data rates and modes were investigated for this test. The full data for the worst case data rate are reported in this section.

1. This measurement settings are specified in section E.3.a of KDB 789033 D02 v02r01.
2. Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied:
   - The EUT is configured to transmit continuously or to transmit with a consistent duty cycle.
   - At all times when the EUT is transmitting, it must be transmitting at its maximum power control level.
   - The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
3. If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal as described in section II.B.
4. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
5. Adjust the measurement in dBm by adding 10 log (1/x) where x is the duty cycle (e.g., 10 log(1/0.25) if the duty cycle is 25 %).
6. In case of band crossing channels 138, 142 and 144, the measurement is complied with section Ⅲ.A of KDB 789033 D02 v02r01.

5.4. Test result

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

Mode	Band	Frequency (㎒)	Conducted Power				
			Data Rate (Mbps)	Average Power (㏈m)	Duty Correction Factor (㏈)	Average Power Result (㏈m)	EIRP (㏈m)
11a	U-NII 1	5 180	6	8.19	0.32	8.51	12.02
		5 220		8.75	0.32	9.07	12.58
		5 240		8.71	0.32	9.03	12.54
	U-NII 2A	5 260		8.49	0.32	8.71	11.83
		5 300		8.98	0.32	9.30	12.42
		5 320		8.92	0.32	9.24	12.36
	U-NII 2C	5 500		7.75	0.32	8.07	10.35
		5 580		7.78	0.32	8.10	10.38
		5 700		7.76	0.32	7.40	9.68
	U-NII 3	5 745		6.30	0.32	6.62	
		5 785		6.79	0.32	7.11	
		5 825		7.05	0.32	7.37	

Band	FCC Limit					
	Frequency (㎒)	Fixed Limit (㏈m)	26 ㏈ BW (㎒)	11+10LogB (㏈m)	Antenna gain (㏈i)	Limit (㏈m)
U-NII 1	5 180	23.98			3.51	23.98
	5 220					
	5 240					
U-NII 2A	5 260	23.98	21.245	24.27	3.12	23.98
	5 300		21.056	24.23		
	5 320		21.172	24.26		
U-NII 2C	5 500	23.98	21.201	24.26	2.28	23.98
	5 580		21.013	24.22		
	5 700		21.129	24.25		
U-NII 3	5 745	30			-0.84	30
	5 785					
	5 825					

Band	IC Limit					
	Frequency (㎒)	Fixed Limit (㏈m)	99 % BW (㎒)	1.76+10Log$_{10}$B (㏈m)	Antenna gain (㏈i)	Limit (㏈m)
U-NII 1	5 180	14.77	16.961	14.05	3.51	14.05
	5 220		17.019	14.07		14.07
	5 240		17.019	14.07		14.07
U-NII 2A	5 260	14.77	16.961	14.05	3.12	14.05
	5 300		17.019	14.07		14.07
	5 320		16.961	14.05		14.05

Band	IC Limit					
	Frequency (㎒)	Fixed Limit (㏈m)	99 % BW (㎒)	11+10Log$_{10}$B (㏈m)	Antenna gain (㏈i)	Limit (㏈m)
U-NII 2C	5 500	23.98	16.961	23.29	2.28	23.29
	5 580		16.961	23.29		23.29
	5 700		17.019	23.31		23.31
U-NII 3	5 745	30			-0.84	30
	5 785					30
	5 825					30

Remark;

1. Average Power Result (㏈m) = Average Power (㏈m) + Duty Correction Factor (㏈)
2 EIRP (㏈m) = Average Power Result (㏈m) + Antenna gain(㏈i)

Mode	Band	Frequency (㎒)	Conducted Power				
			Data Rate (Mbps)	Average Power (㏈m)	Duty Correction Factor (㏈)	Average Power Result (㏈m)	EIRP (㏈m)
11n_HT20	U-NII 1	5 180	MCS0	8.14	0.32	8.46	11.97
		5 220		8.86	0.32	9.18	12.69
		5 240		8.83	0.32	9.15	12.66
	U-NII 2A	5 260		8.38	0.32	8.70	11.82
		5 300		9.04	0.32	9.36	12.48
		5 320		8.86	0.32	9.18	12.30
	U-NII 2C	5 500		7.45	0.32	7.77	10.05
		5 580		7.30	0.32	7.62	9.90
		5 700		7.16	0.32	7.48	9.76
	U-NII 3	5 745		6.54	0.32	6.86	
		5 785		6.65	0.32	6.97	
		5 825		6.83	0.32	7.15	

Band	FCC Limit					
	Frequency (㎒)	Fixed Limit (㏈m)	26 ㏈ BW (㎒)	11+10LogB (㏈m)	Antenna gain (㏈i)	Limit (㏈m)
U-NII 1	5 180	23.98			3.51	23.98
	5 220					
	5 240					
U-NII 2A	5 260	23.98	21.606	24.35	3.12	23.98
	5 300		21.635	24.35		
	5 320		21.534	24.33		
U-NII 2C	5 500	23.98	21.635	24.35	2.28	23.98
	5 580		21.534	24.33		
	5 700		21.592	24.34		
U-NII 3	5 745	30			-0.84	30
	5 785					
	5 825					

Band	IC Limit					
	Frequency (㎒)	Fixed Limit (㏈m)	99 % BW (㎒)	1.76+10Log$_{10}$B (㏈m)	Antenna gain (㏈i)	Limit (㏈m)
U-NII 1	5 180	14.77	18.061	14.33	3.51	14.33
	5 220		18.061	14.33		14.33
	5 240		18.061	14.33		14.33
U-NII 2A	5 260	14.77	18.119	14.34	3.12	14.34
	5 300		18.119	14.34		14.34
	5 320		18.061	14.33		14.33

Band	IC Limit					
	Frequency (㎒)	Fixed Limit (㏈m)	99 % BW (㎒)	11+10Log$_{10}$B (㏈m)	Antenna gain (㏈i)	Limit (㏈m)
U-NII 2C	5 500	23.98	18.119	23.58	2.28	23.58
	5 580		18.119	23.58		23.58
	5 700		18.003	23.55		23.55
U-NII 3	5 745	30			-0.84	30
	5 785					30
	5 825					30

Remark;

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

Mode	Band	Frequency (㎒)	Conducted Power				
			Data Rate (Mbps)	Average Power (㏈m)	Duty Correction Factor (㏈)	Average Power Result (㏈m)	EIRP (㏈m)
11n_HT40	U-NII 1	5 190	MCS0	3.67	0.60	4.27	7.78
		5 230		4.50	0.60	5.10	8.61
	U-NII 2A	5 270		8.31	0.60	8.91	12.03
		5 310		8.30	0.60	8.90	12.02
	U-NII 2C	5 510		7.04	0.60	7.64	9.92
		5 550		7.14	0.60	7.74	10.02
		5 670		6.86	0.60	7.46	9.74
	U-NII 3	5 755		5.90	0.60	6.50	
		5 795		6.42	0.60	7.02	

Band	FCC Limit					
	Frequency (㎒)	Fixed Limit (㏈m)	26 ㏈ BW (㎒)	11+10LogB (㏈m)	Antenna gain (㏈i)	Limit (㏈m)
U-NII 1	5 190	23.98			3.51	23.98
	5 230					
U-NII 2A	5 270	23.98	40.140	27.04	3.12	23.98
	5 310		40.200	27.04		
U-NII 2C	5 510	23.98	40.410	27.06	2.28	23.98
	5 550		40.240	27.05		
	5 670		40.520	27.08		
U-NII 3	5 755	30			-0.84	30
	5 795					

Band	IC Limit					
	Frequency (㎒)	Fixed Limit (㏈m)	99 % BW (㎒)	1.76+10Log$_{10}$B (㏈m)	Antenna gain (㏈i)	Limit (㏈m)
U-NII 1	5 190	14.77	36.585	17.39	3.51	14.77
	5 230		36.353	17.37		
U-NII 2A	5 270	14.77	36.469	17.38	3.12	14.77
	5 310		36.469	17.38		

Band	IC Limit					
	Frequency (㎒)	Fixed Limit (㏈m)	99 % BW (㎒)	11+10Log$_{10}$B (㏈m)	Antenna gain (㏈i)	Limit (㏈m)
U-NII 2C	5 510	23.98	36.700	26.65	2.28	23.98
	5 550		36.469	26.62		
	5 670		36.353	26.61		
U-NII 3	5 755	30			-0.84	30
	5 795					

Remark;

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

Mode	Band	Frequency (㎒)	Conducted Power				
			Data Rate (Mbps)	Average Power (㏈m)	Duty Correction Factor (㏈)	Average Power Result (㏈m)	EIRP (㏈m)
11ac_VHT80	U-NII 1	5 210	MCS0	3.41	1.14	4.55	8.06
	U-NII 2A	5 290		7.59	1.14	8.73	11.85
	U-NII 2C	5 530		7.42	1.14	8.56	10.84
		5 690		6.95	1.14	8.04	10.32
	U-NII 3	5 775		6.18	1.14	7.32	

Band	FCC Limit					
	Frequency (㎒)	Fixed Limit (㏈m)	26 ㏈ BW (㎒)	11+10LogB (㏈m)	Antenna gain (㏈i)	Limit (㏈m)
U-NII 1	5 210	23.98			3.51	23.98
U-NII 2A	5 290	23.98	82.430	30.16	3.12	23.98
U-NII 2C	5 530	23.98	82.430	30.16	2.28	23.98
	5 690		82.660	30.17		
U-NII 3	5 775	30			-0.84	30

Band	IC Limit					
	Frequency (㎒)	Fixed Limit (㏈m)	99 % BW (㎒)	1.76+10Log$_{10}$B (㏈m)	Antenna gain (㏈i)	Limit (㏈m)
U-NII 1	5 210	14.77	75.485	20.54	3.51	14.77
U-NII 2A	5 290	14.77	75.485	20.54	3.12	14.77

Band	IC Limit					
	Frequency (㎒)	Fixed Limit (㏈m)	99 % BW (㎒)	11+10Log$_{10}$B (㏈m)	Antenna gain (㏈i)	Limit (㏈m)
U-NII 2C	5 530	23.98	75.716	29.79	2.28	23.98
	5 690		75.485	29.78		
U-NII 3	5 775	30			-0.84	30

Remark;

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

- Band-crossing channels

Band	Mode	Frequency (㎒)	Conducted Power			
			Data Rate (Mbps)	Average Power (㏈m)	Duty Correction Factor (㏈)	Average Power Result (㏈m)
U-NII 2C	11a	5 720	6	4.47	0.32	4.79
U-NII 3				-2.66	0.32	-2.34
U-NII 2C	11n_HT20	5 720	MCS0	4.41	0.32	4.73
U-NII 3				-2.27	0.32	-1.95
U-NII 2C	11n_HT40	5 710	MCS0	4.30	0.60	4.90
U-NII 3				-7.16	0.60	-6.56
U-NII 2C	11ac_VHT80	5 690	MCS0	4.21	1.14	5.35
U-NII 3				-10.20	1.14	-9.06

Band	Mode	Limit					
		Frequency (㎒)	Fixed Limit (㏈m)	26 ㏈ BW (㎒)	11+10LogB (㏈m)	Antenna gain (㏈i)	Limit (㏈m)
U-NII 2C	11a	5 720	23.98	15.535	22.91	2.28	22.91
U-NII 3						-0.84	30
U-NII 2C	11n_HT20	5 720	23.98	15.709	22.96	2.28	22.96
U-NII 3						-0.84	30
U-NII 2C	11n_HT40	5 710	23.98	35.030	26.44	2.28	23.98
U-NII 3						-0.84	30
U-NII 2C	11ac_VHT80	5 690	23.98	75.780	29.80	2.28	23.98
U-NII 3						-0.84	30

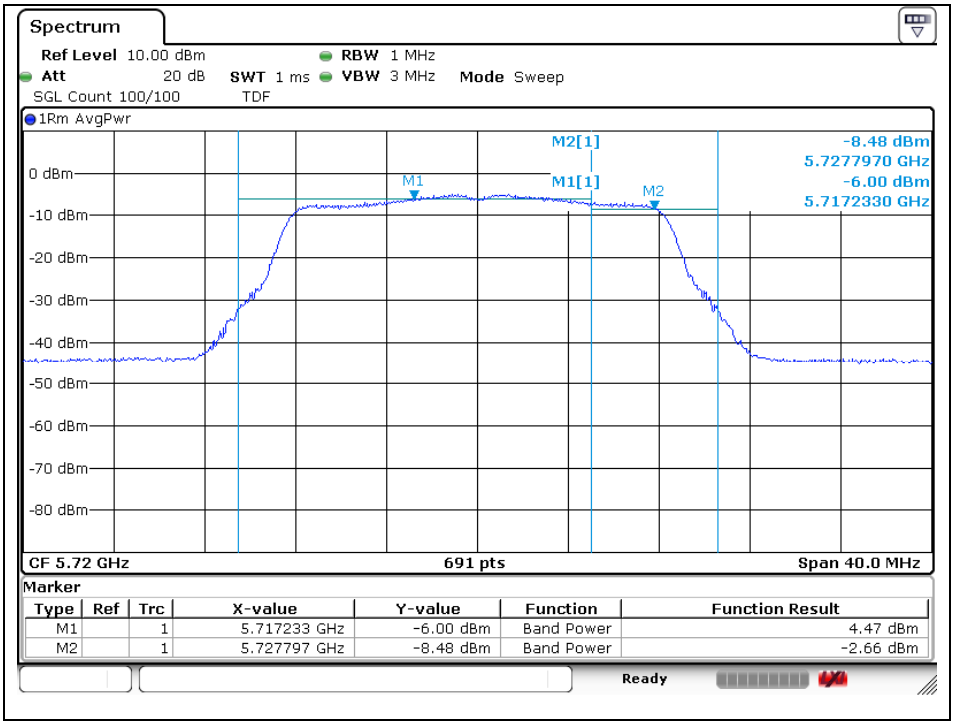
Remark;

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

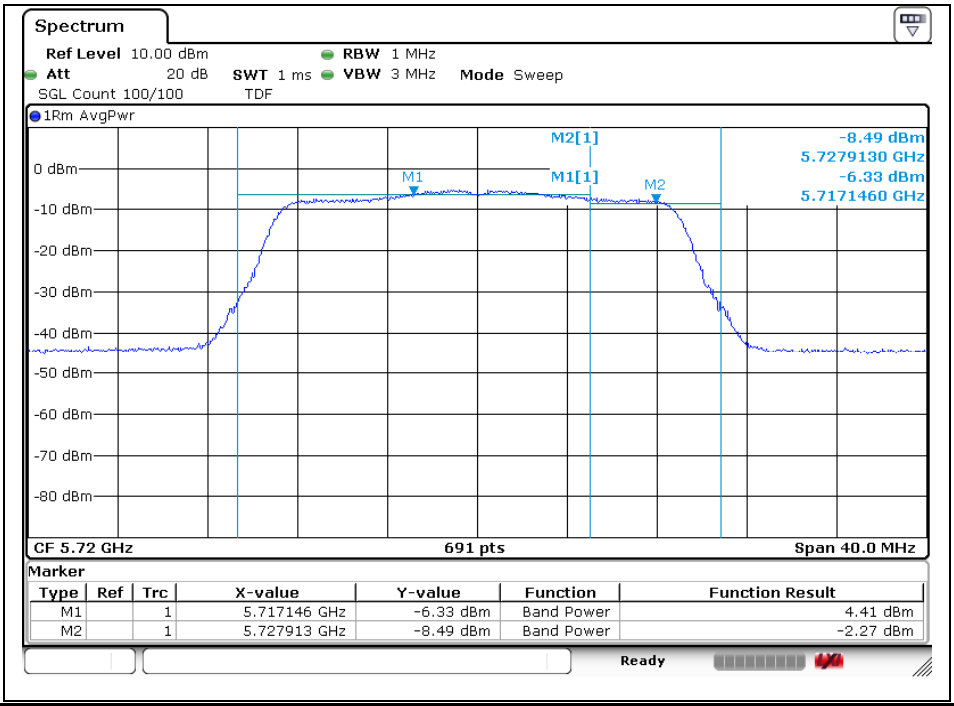
- Test plots

Band-crossing channels

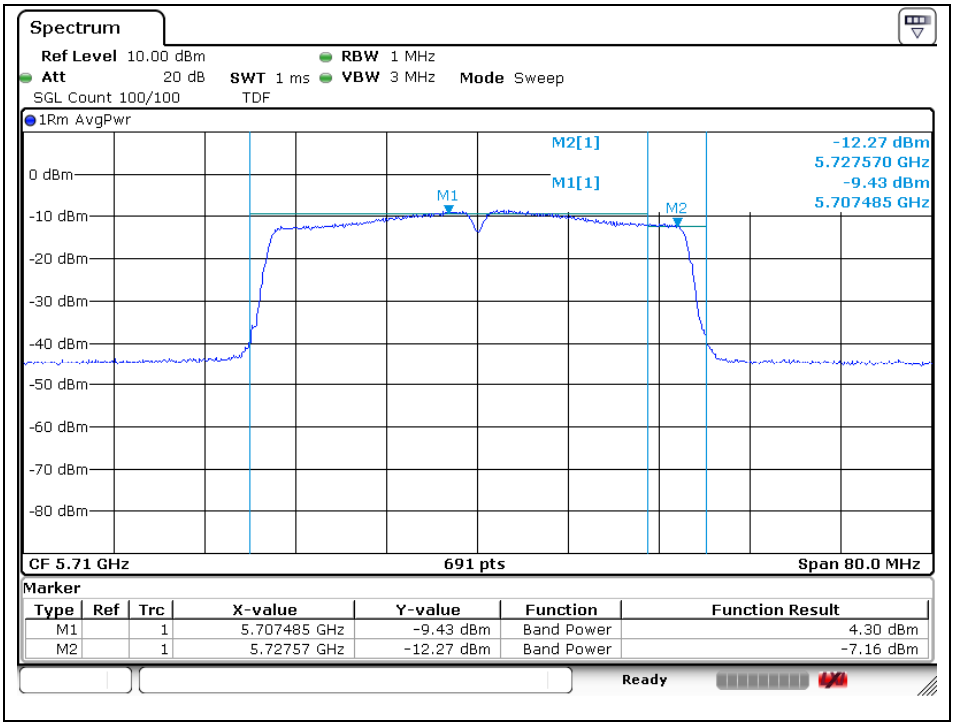
802.11a (5 720 ㎒)



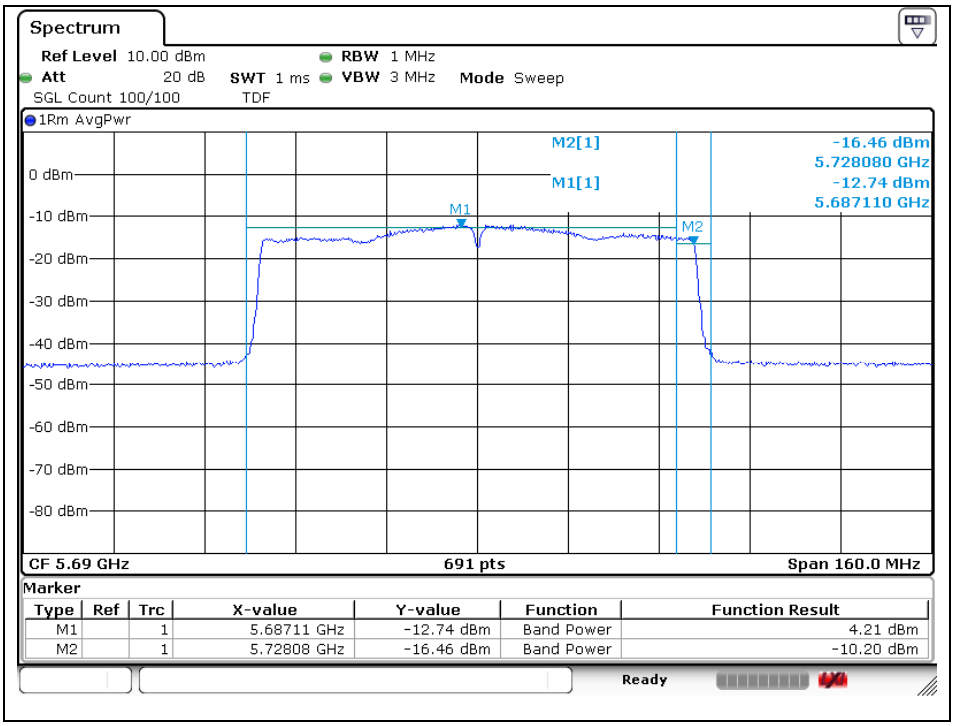
802.11n_HT20 (5 720 ㎒)



802.11n_HT40 (5 710 ㎒)

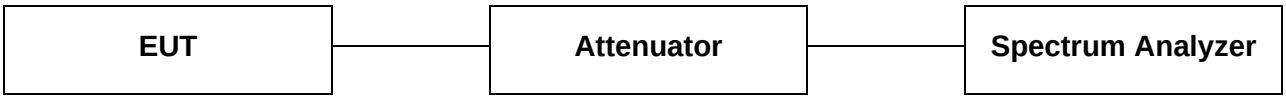


802.11ac_VHT80 (5 690 ㎒)



6. Peak Power Spectral Density

6.1. Test Setup



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 issue2,

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 + 10log$_{10}$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 + 10log$_{10}$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 + 10log$_{10}$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 + 10log$_{10}$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 + 10log$_{10}$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 + 10log$_{10}$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 + 10log$_{10}$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

All data rates and modes were investigated for this test. The full data for the worst case data rate are reported in this section.

1. This measurement settings are specified in section F of KDB 789033 D02 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 measured power in order to compute the average power during the actual transmission times.**
   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 10log(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 10log(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 v02r01.

6.4. Test result

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

Mode	Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Measured PPSD (dB m)	Duty Correction Factor (dB)	Final PPSD (dB m)	Limit (dB m/1 ㎒)
11a	U-NII 1	5 180	36	6	-3.59	0.32	-3.27	10
		5 220	44		-3.68	0.32	-3.36	
		5 240	48		-3.69	0.32	-3.37	
	U-NII 2A	5 260	52		-3.18	0.32	-2.86	11
		5 300	60		-3.05	0.32	-2.73	
		5 320	64		-3.27	0.32	-2.95	
	U-NII 2C	5 500	100		-3.99	0.32	-3.67	
		5 580	116		-4.36	0.32	-4.04	
		5 700	140		-5.06	0.32	-4.74	
	Band	**Frequency (㎒)**	**Ch.**	**Data Rate (Mbps)**	**Measured PPSD (dB m)**	**Duty Factor (dB)**	**Final PPSD (dB m)**	**Limit (dB m/500 ㎑)**
	U-NII 3	5 745	149	6	-8.05	0.32	-7.73	30
		5 785	157		-8.26	0.32	-7.94	
		5 825	165		-8.17	0.32	-7.85	

Mode	Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Measured PPSD (dB m)	Duty Correction Factor (dB)	Final PPSD (dB m)	Limit (dB m/1 ㎒)
11n_HT20	U-NII 1	5 180	36	MCS0	-3.78	0.32	-3.46	10
		5 220	44		-3.54	0.32	-3.22	
		5 240	48		-3.60	0.32	-3.28	
	U-NII 2A	5 260	52		-3.48	0.32	-3.16	11
		5 300	60		-3.75	0.32	-3.43	
		5 320	64		-3.56	0.32	-3.24	
	U-NII 2C	5 500	100		-4.24	0.32	-3.92	
		5 580	116		-4.68	0.32	-4.36	
		5 700	140		-5.05	0.32	-4.73	
	Band	**Frequency (㎒)**	**Ch.**	**Data Rate (Mbps)**	**Measured PPSD (dB m)**	**Duty Correction Factor (dB)**	**Final PPSD (dB m)**	**Limit (dB m/500 ㎑)**
	U-NII 3	5 745	149	MCS0	-8.29	0.32	-7.97	30
		5 785	157		-8.39	0.32	-8.07	
		5 825	165		-8.64	0.32	-8.32	

Mode	Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Measured PPSD (㏈ m)	Duty Correction Factor (㏈)	Final PPSD (㏈ m)	Limit (㏈ m/1 ㎒)
11n_HT40	U-NII 1	5 190	38	MCS0	-6.61	0.60	-6.01	10
		5 230	46		-6.63	0.60	-6.03	
	U-NII 2A	5 270	54		-6.58	0.60	-5.98	11
		5 310	62		-6.75	0.60	-6.15	
	U-NII 2C	5 510	102		-7.62	0.60	-7.02	
		5 550	110		-8.29	0.60	-7.69	
		5 670	134		-8.46	0.60	-7.86	
	Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Measured PPSD (㏈ m)	Duty Correction Factor (㏈)	Final PPSD (㏈ m)	Limit (㏈ m/500 ㎑)
	U-NII 3	5 755	151	MCS0	-11.56	0.60	-10.96	30
		5 795	159		-11.81	0.60	-11.21	

Mode	Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Measured PPSD (㏈ m)	Duty Correction Factor (㏈)	Final PPSD (㏈ m)	Limit (㏈ m/1 ㎒)
11ac_VHT80	U-NII 1	5 210	42	MCS0	-11.02	1.14	-9.88	10
	U-NII 2A	5 290	58		-10.82	1.14	-9.68	11
	U-NII 2C	5 530	106		-11.07	1.14	-9.93	
		5 690	138		-12.71	1.14	-11.57	
	Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Measured PPSD (㏈ m)	Duty Correction Factor (㏈)	Final PPSD (㏈ m)	Limit (㏈ m/500 ㎑)
	U-NII 3	5 775	155	MCS0	-14.94	1.14	-13.80	30

Band-crossing channels

Mode	Band	Frequency (㎒)	Ch.	Data Rate (Mbps)	Measured PPSD (㏈ m)	Duty Correction Factor (㏈)	Final PPSD (㏈ m)	Limit (㏈ m/1 ㎒ or ㏈ m/500 ㎑)
11a	U-NII 2C	5 720	144	6	-5.04	0.32	-4.72	11
	U-NII 3	5 720	144		-9.81	0.32	-9.49	30
11n_HT20	U-NII 2C	5 720	144	MCS0	-5.62	0.32	-5.30	11
	U-NII 3	5 720	144		-10.65	0.32	-10.33	30
11n_HT40	U-NII 2C	5 710	142	MCS0	-8.68	0.60	-8.08	11
	U-NII 3	5 710	142		-14.68	0.60	-14.08	30
11ac_VHT80	U-NII 2C	5 690	138	MCS0	-12.21	1.14	-11.07	11
	U-NII 3	5 690	138		-17.54	1.14	-16.40	30

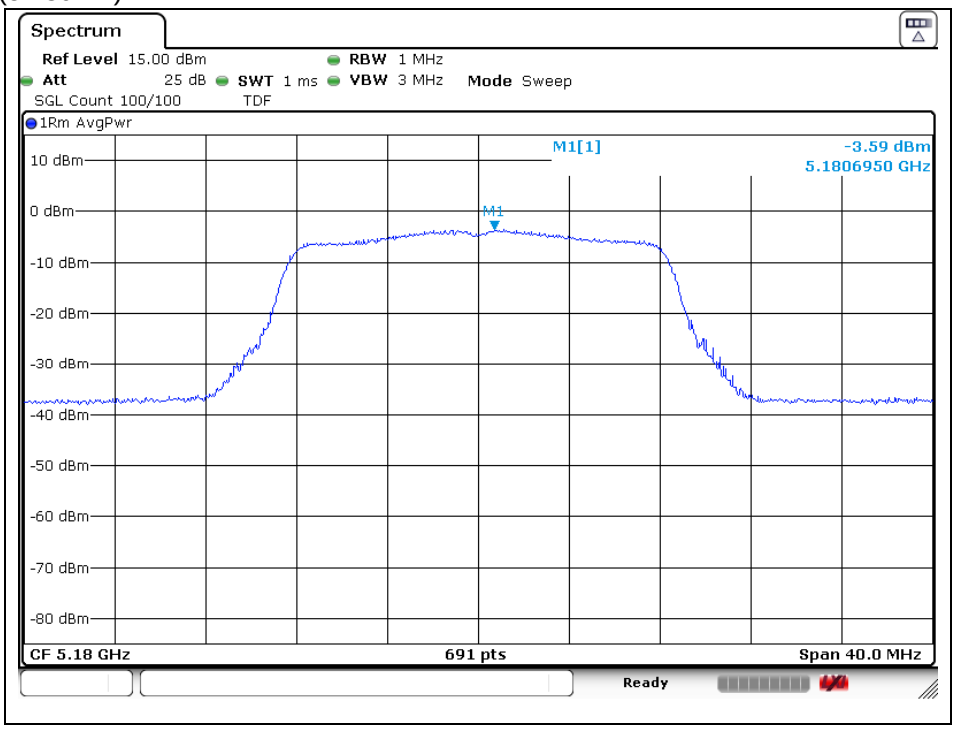
Remark;

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

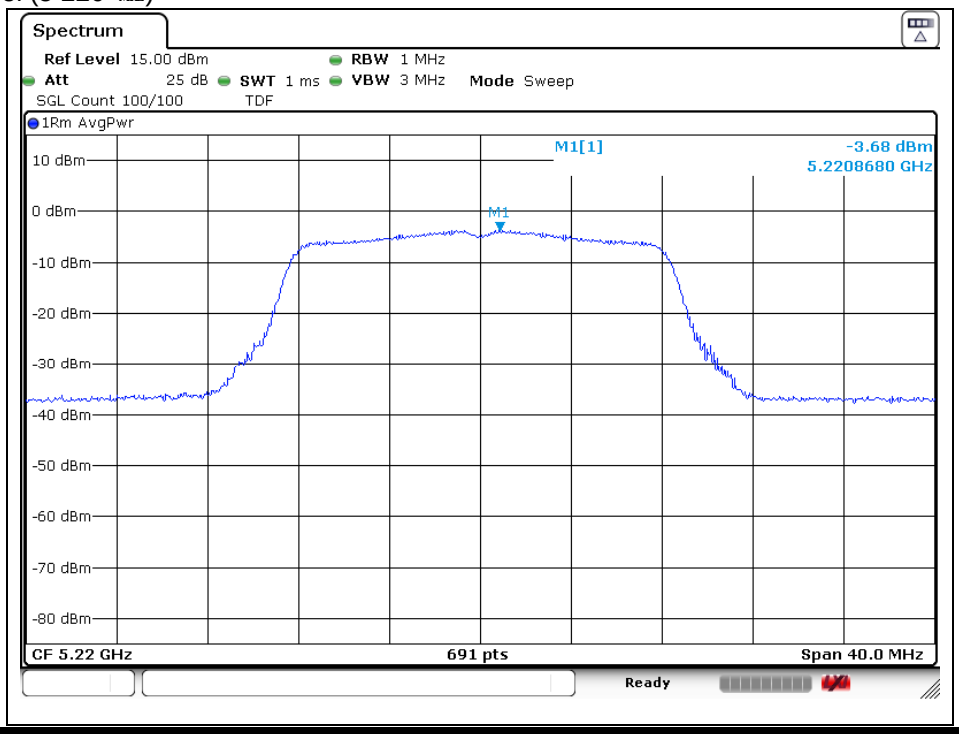
- Test plots

802.11a (Band 1)

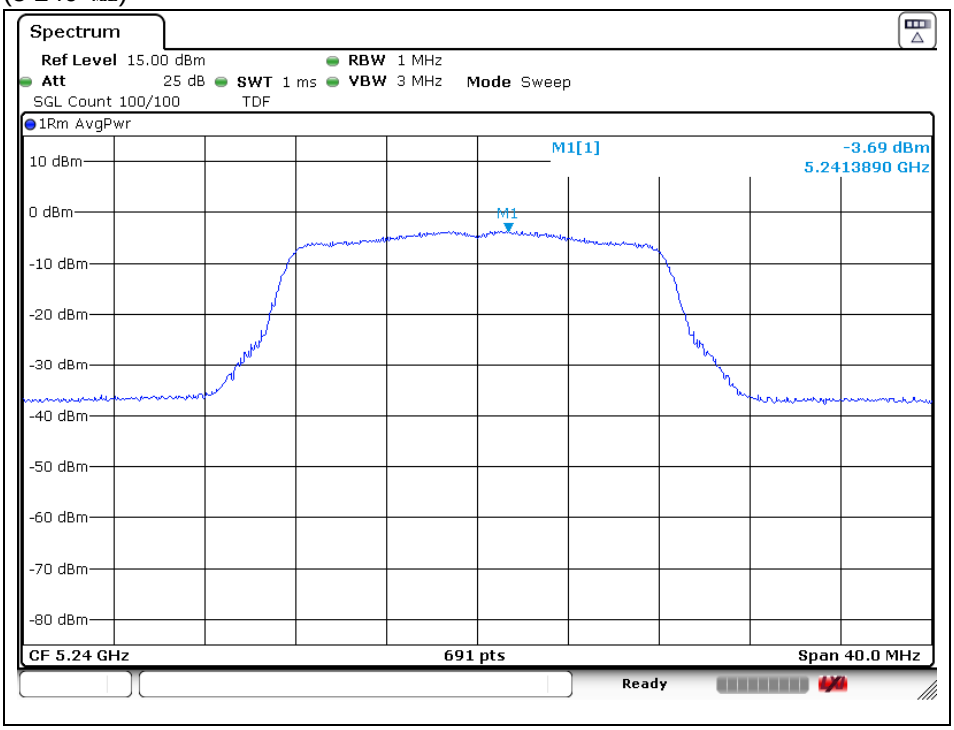
Low Channel (5 180 ㎒)



Middle Channel (5 220 ㎒)

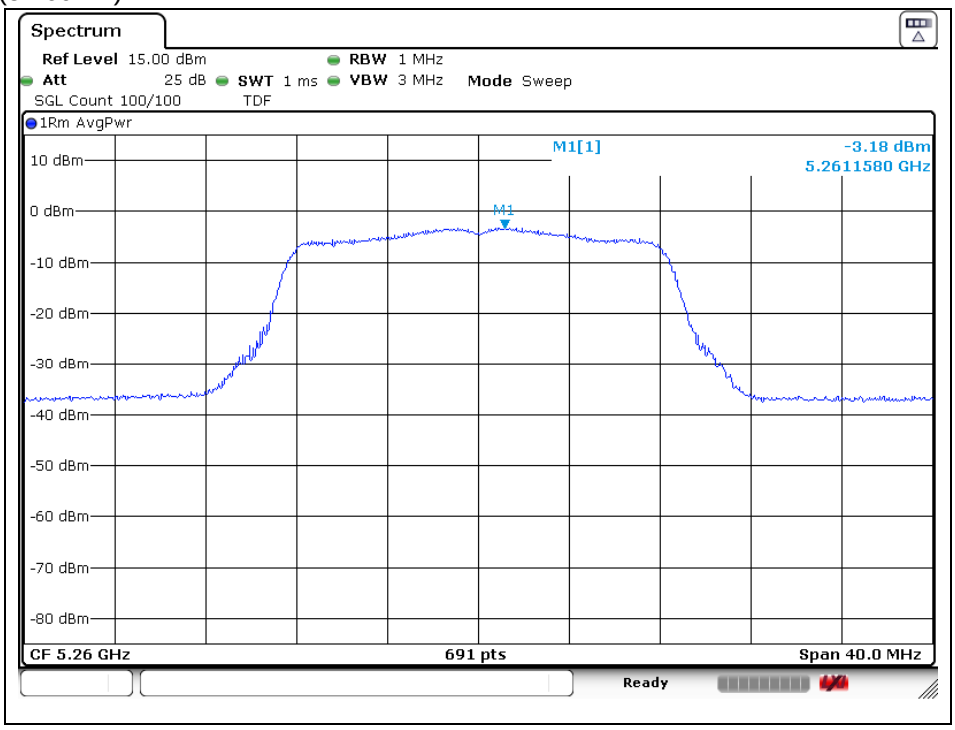


High Channel (5 240 ㎒)

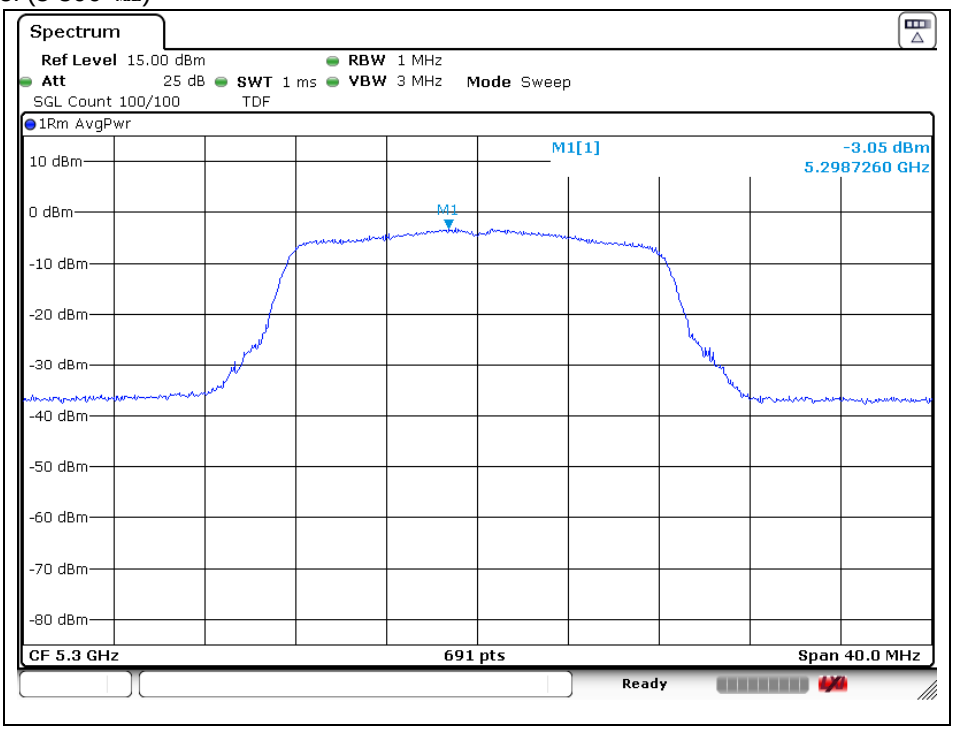


802.11a (Band 2A)

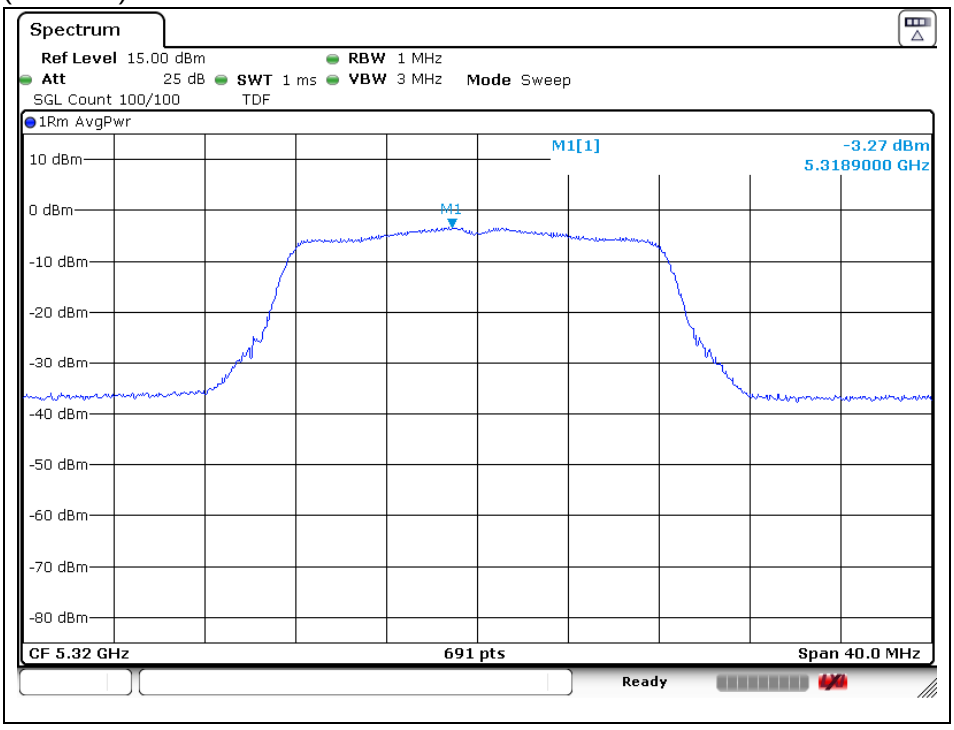
Low Channel (5 260 ㎒)



Middle Channel (5 300 ㎒)

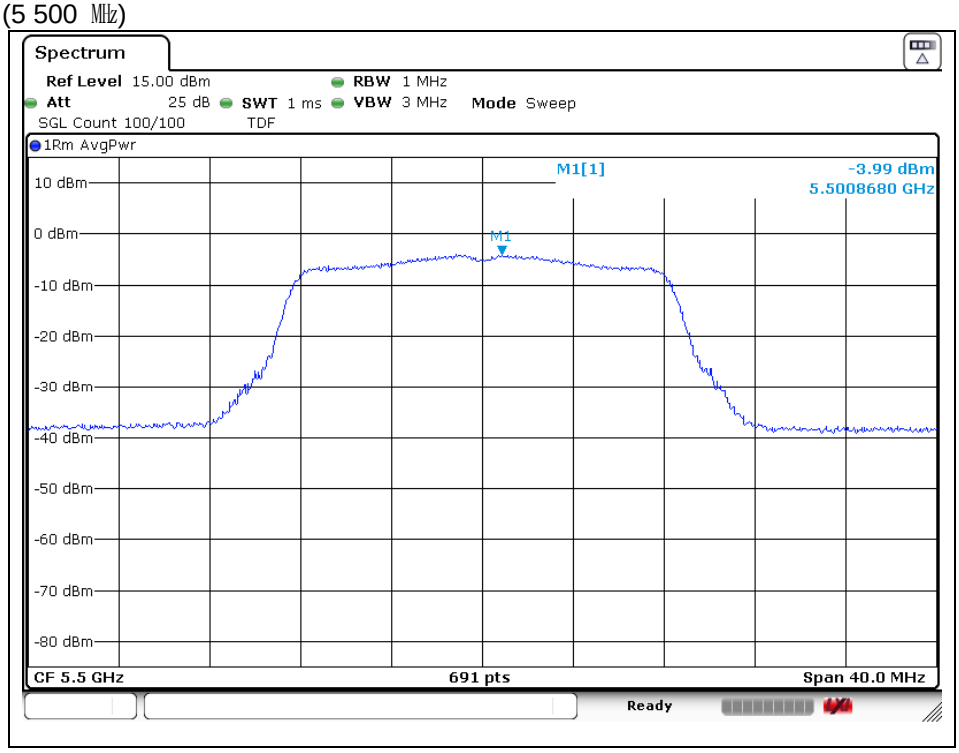


High Channel (5 320 ㎒)

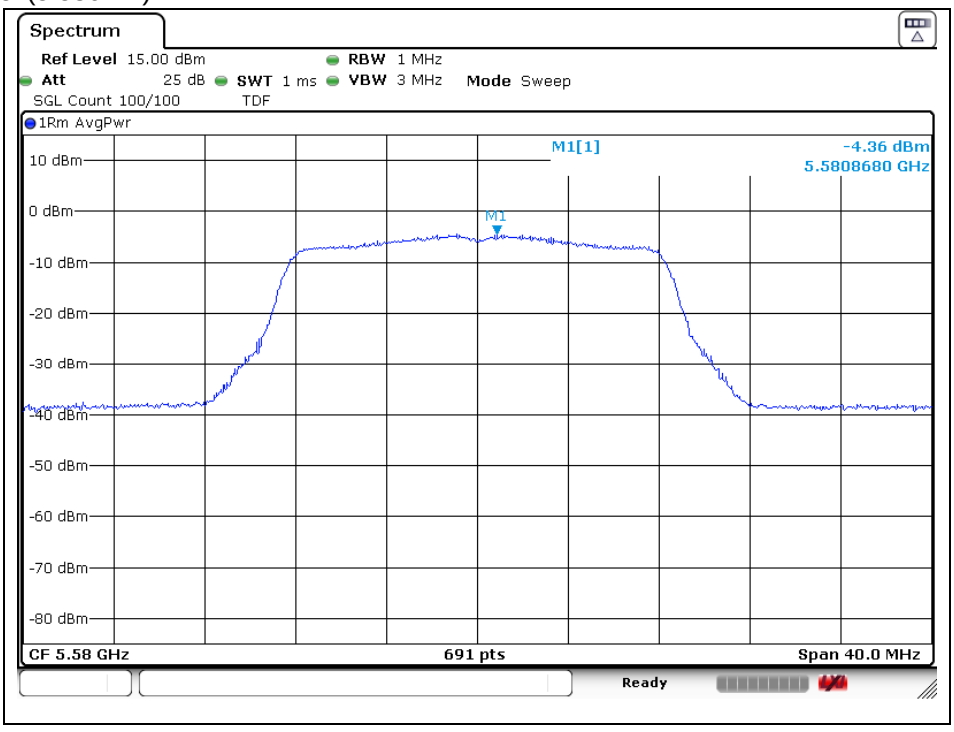


802.11a (Band 2C)

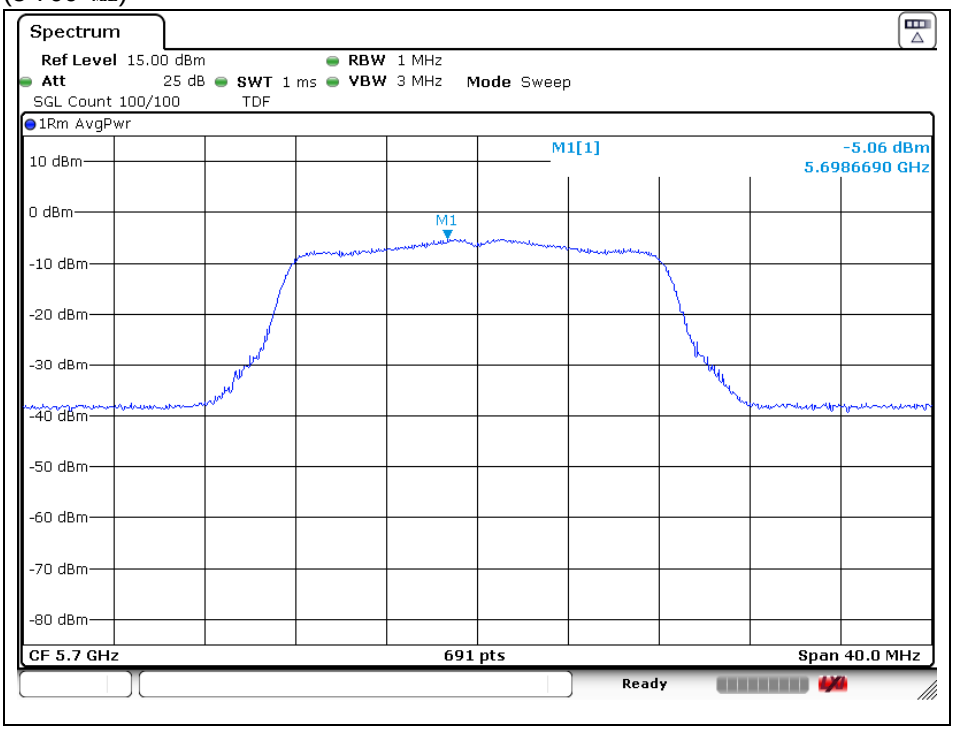
Low Channel (5 500 ㎒)



Middle Channel (5 580 ㎒)

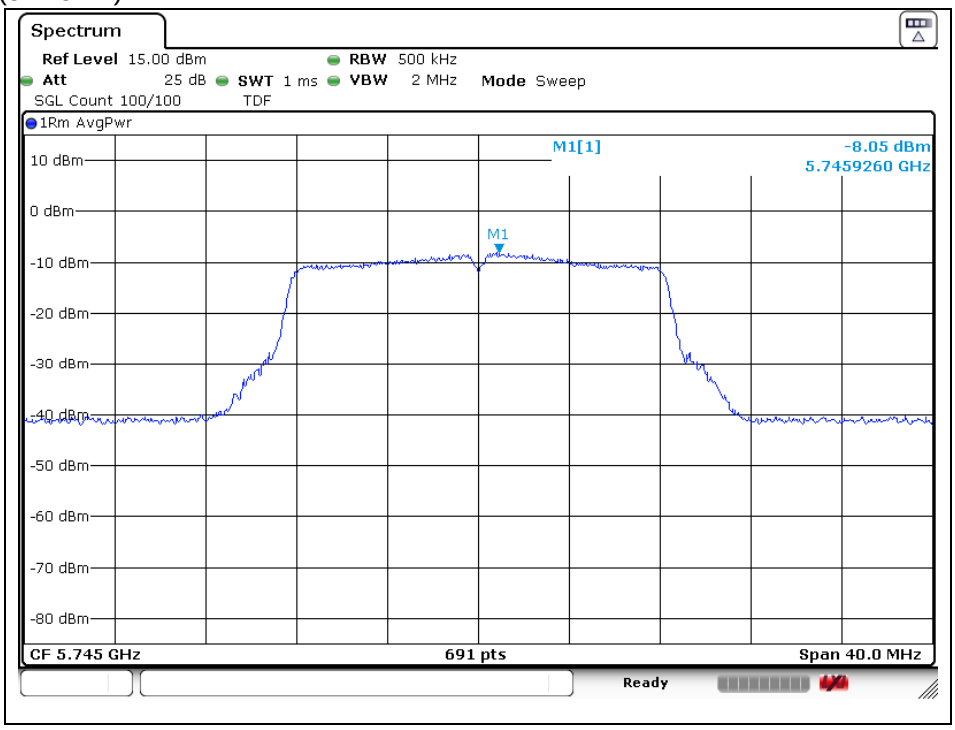


High Channel (5 700 ㎒)

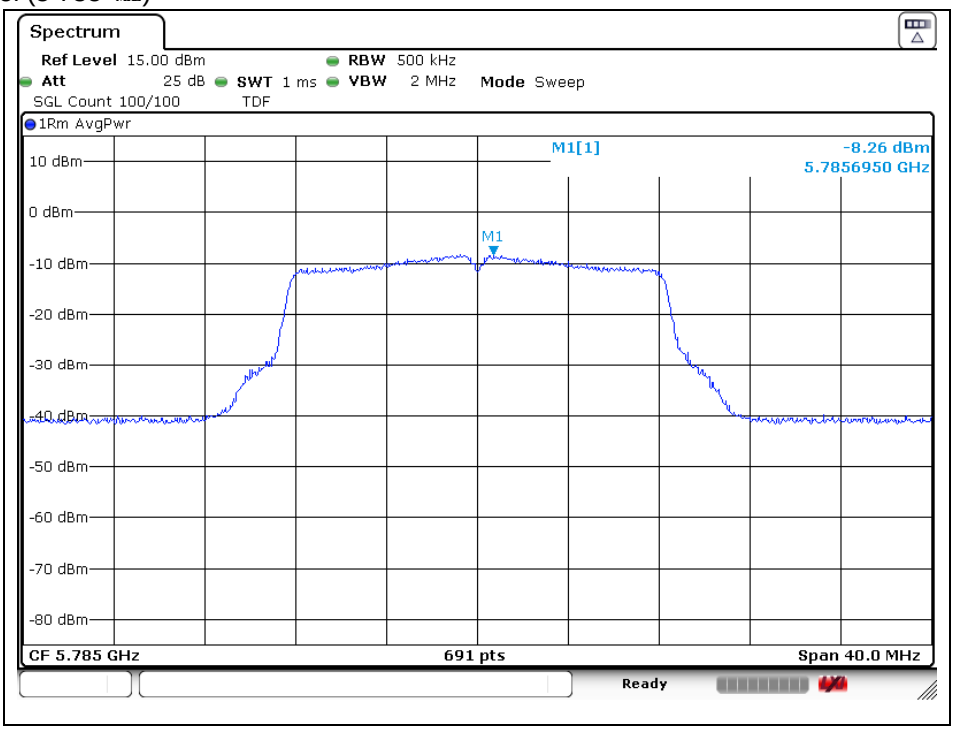


802.11a (Band 3)

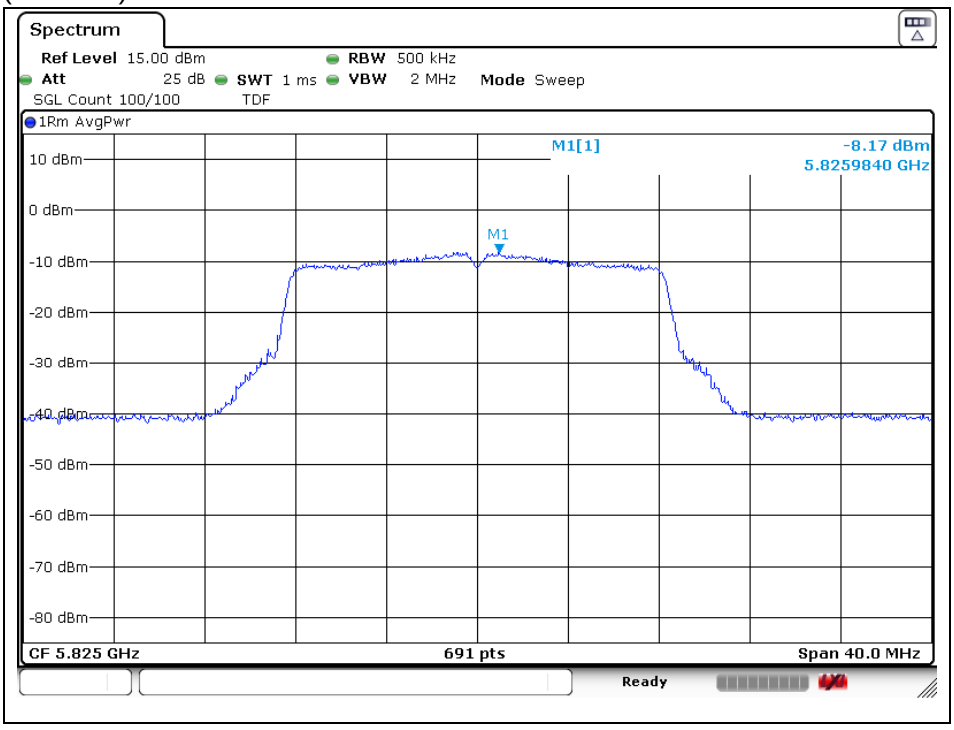
Low Channel (5 745 ㎒)



Middle Channel (5 785 ㎒)

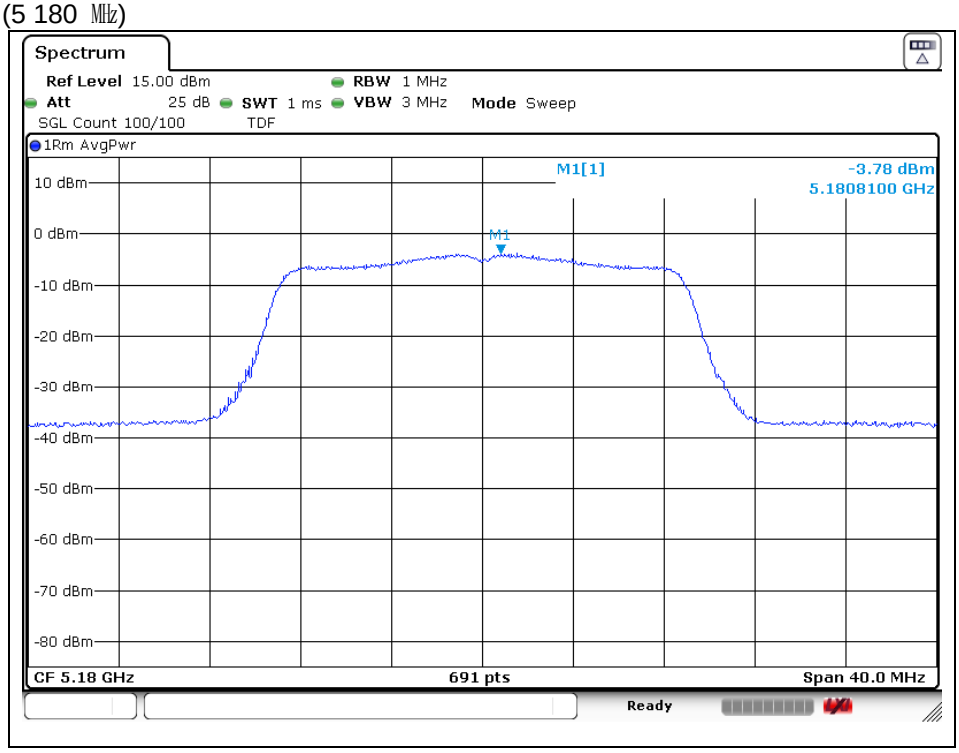


High Channel (5 825 ㎒)

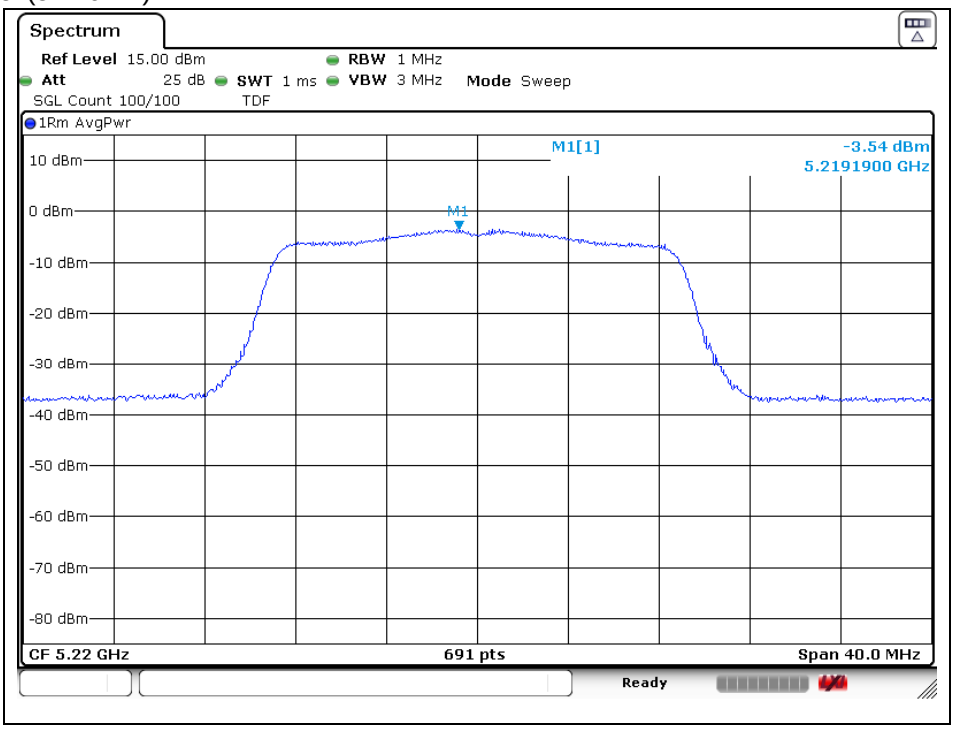


802.11n_HT20 (Band 1)

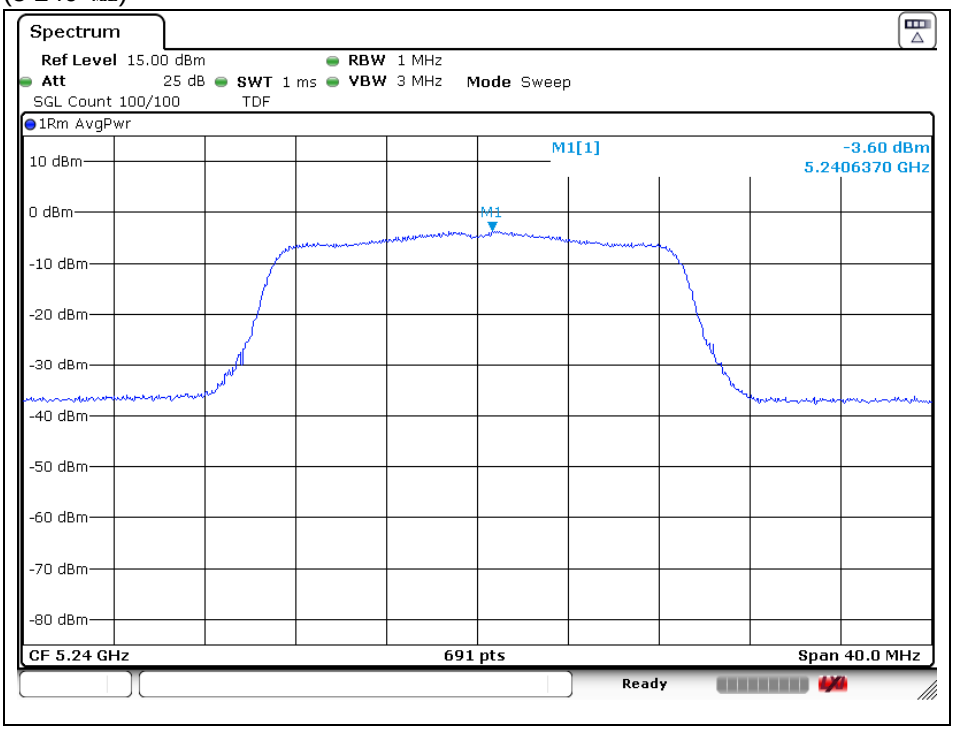
Low Channel (5 180 ㎒)



Middle Channel (5 220 ㎒)

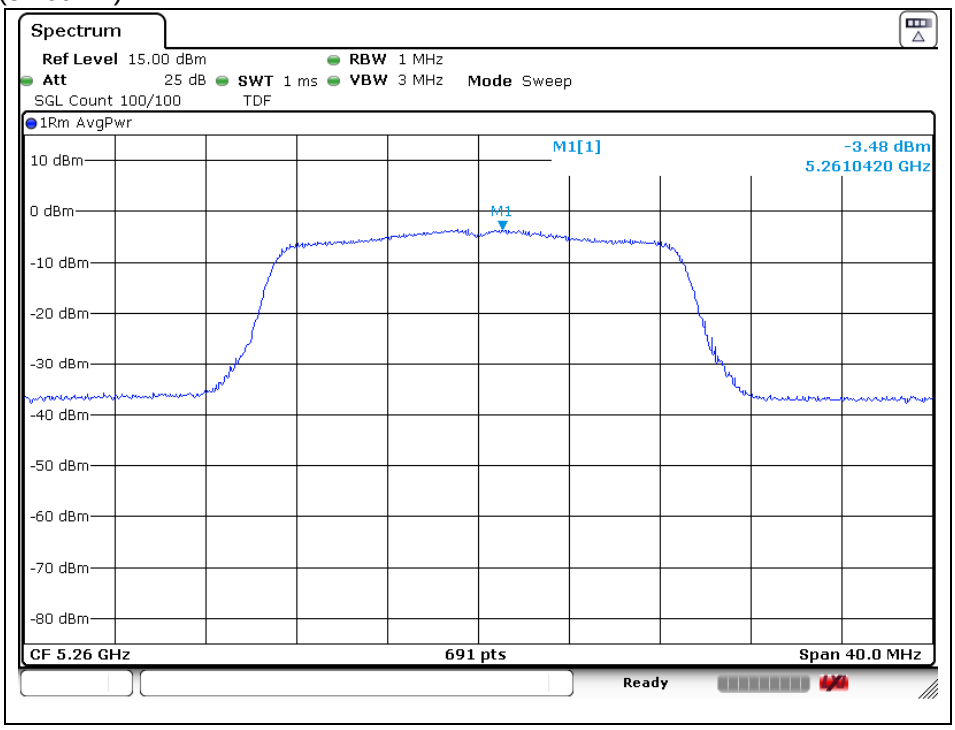


High Channel (5 240 ㎒)

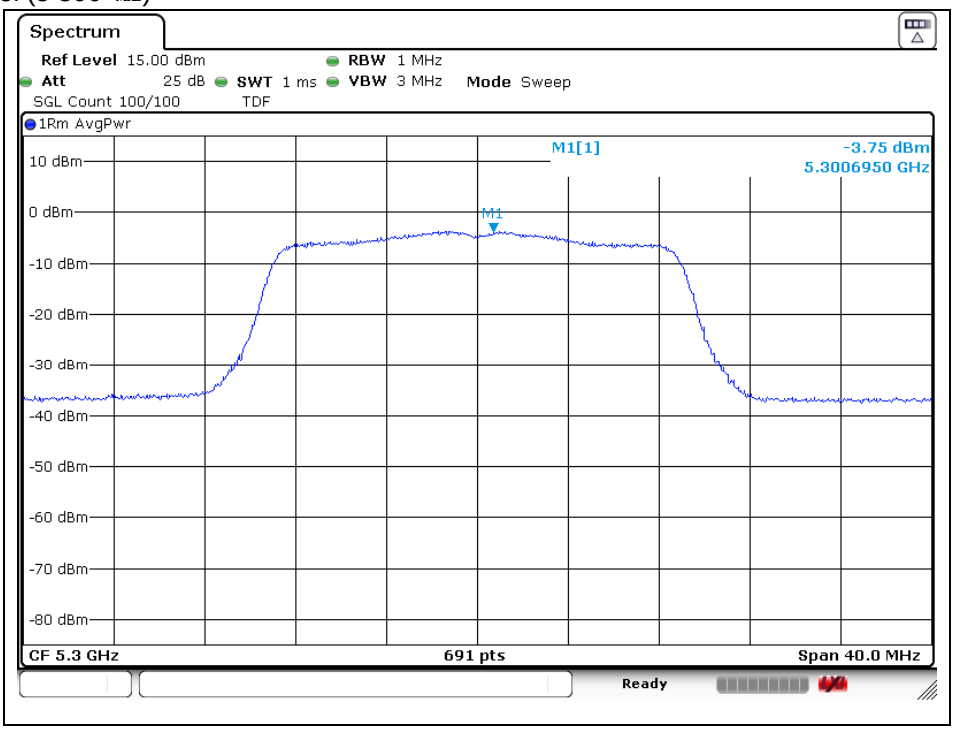


802.11n_HT20 (Band 2A)

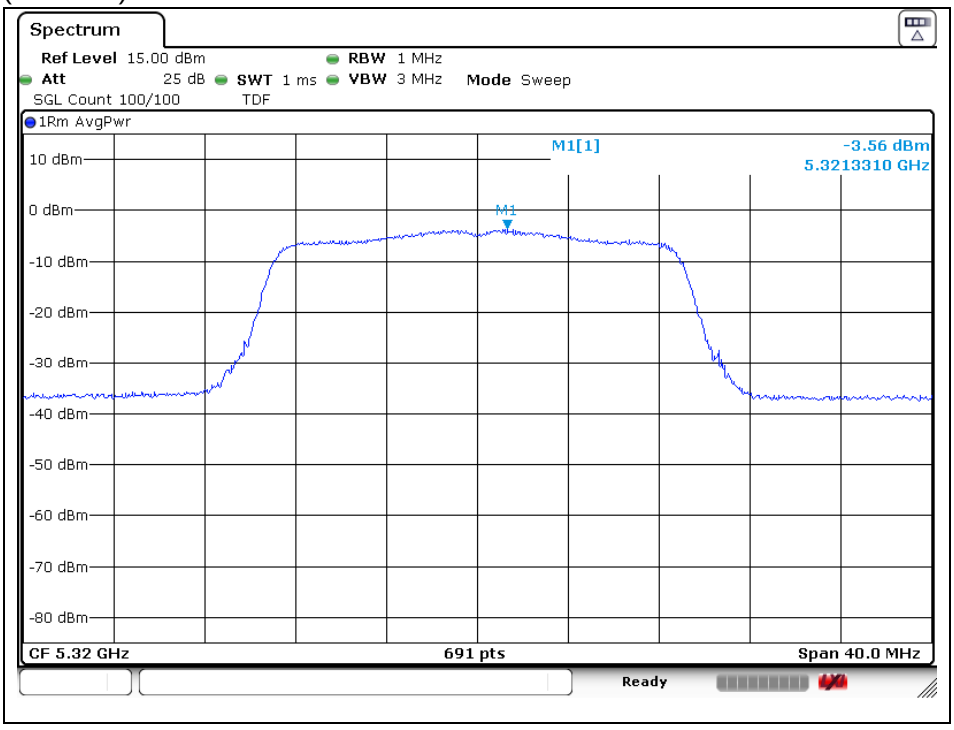
Low Channel (5 260 ㎒)



Middle Channel (5 300 ㎒)

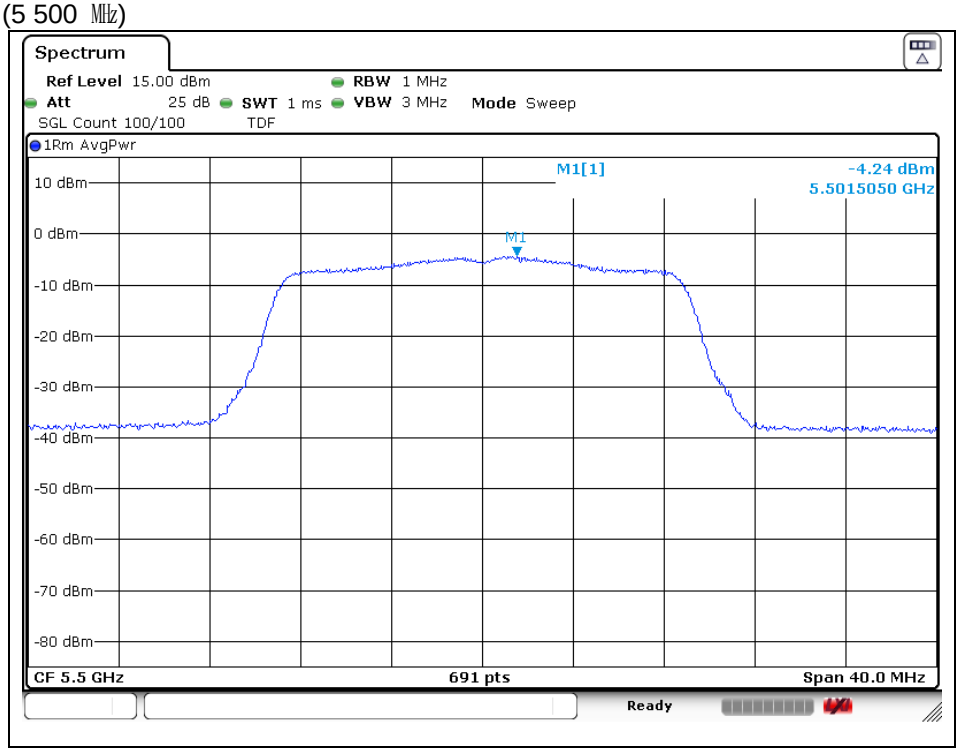


High Channel (5 320 ㎒)

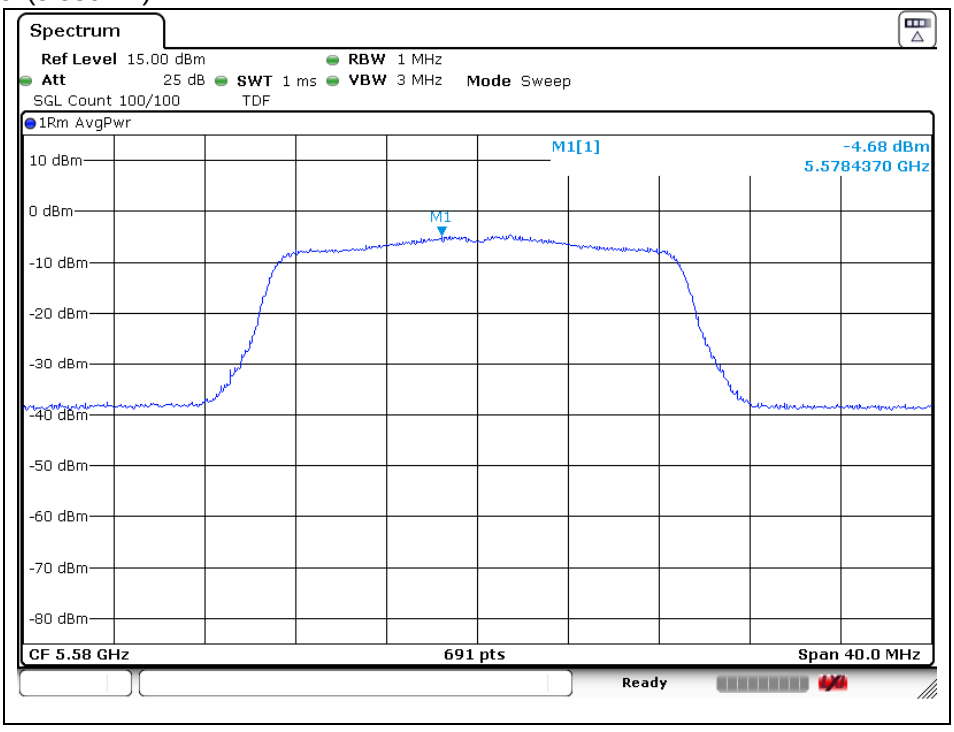


802.11n_HT20 (Band 2C)

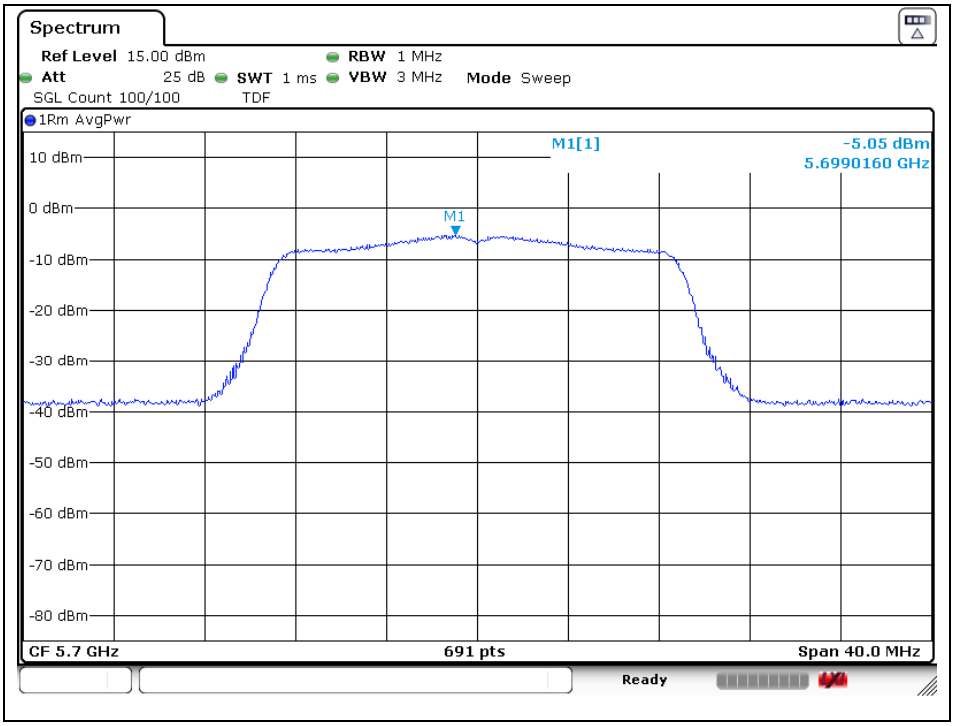
Low Channel (5 500 ㎒)



Middle Channel (5 580 ㎒)

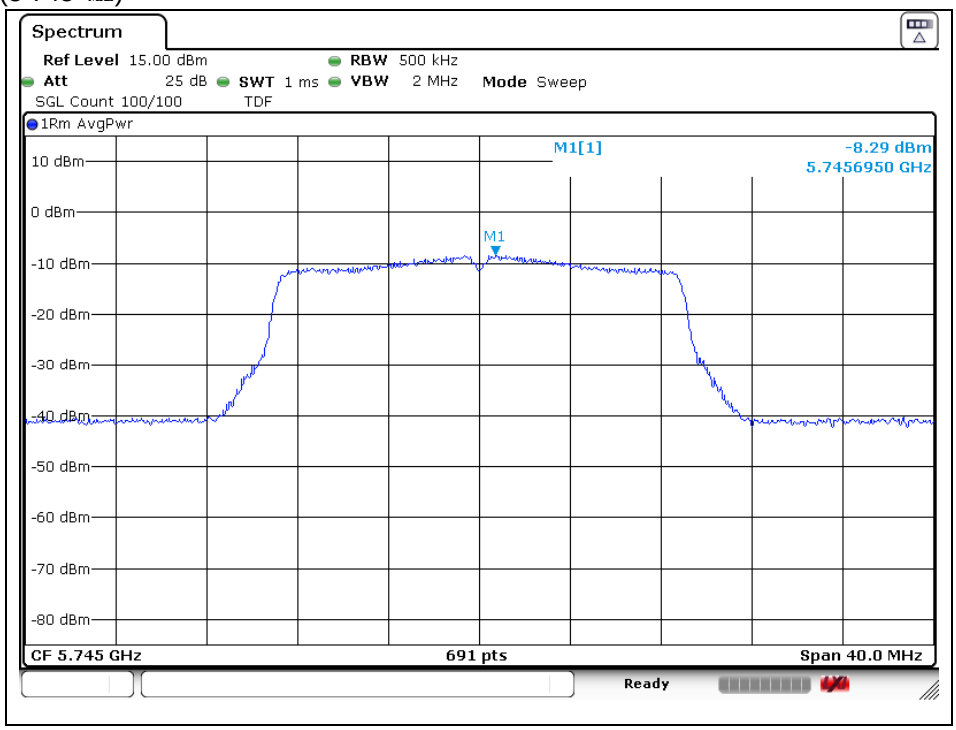


High Channel (5 700 ㎒)

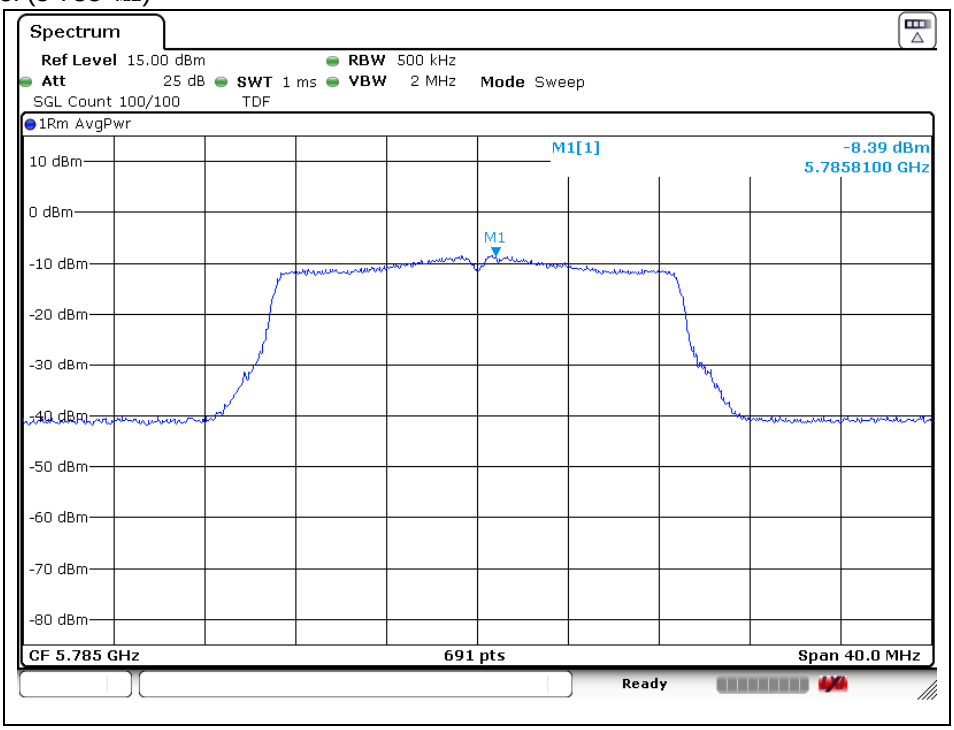


802.11n_HT20 (Band 3)

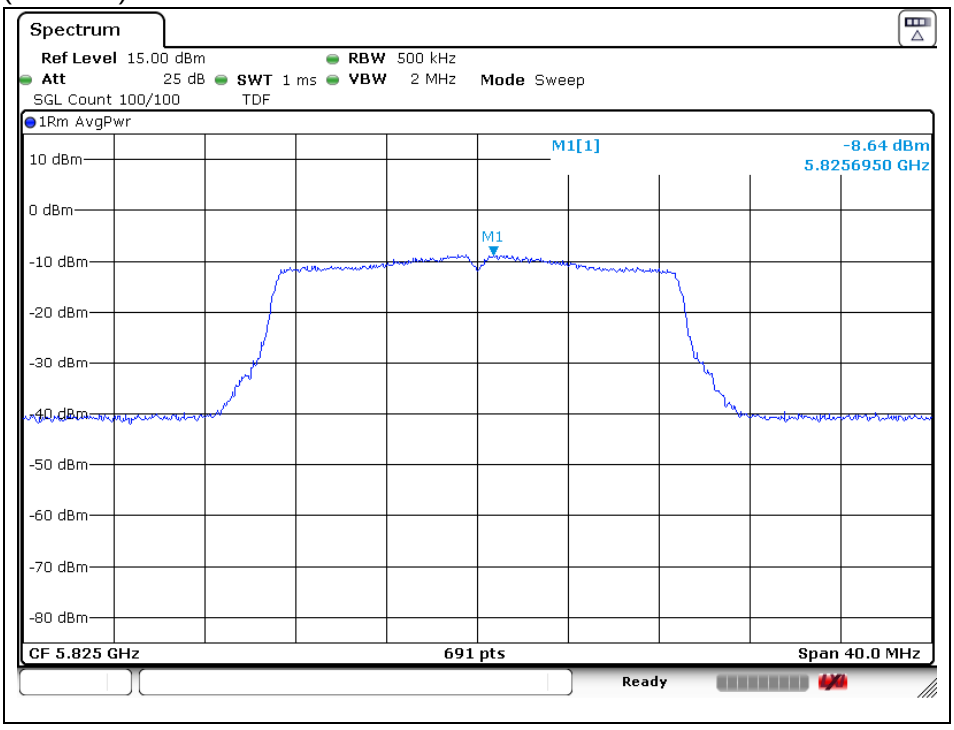
Low Channel (5 745 ㎒)



Middle Channel (5 785 ㎒)

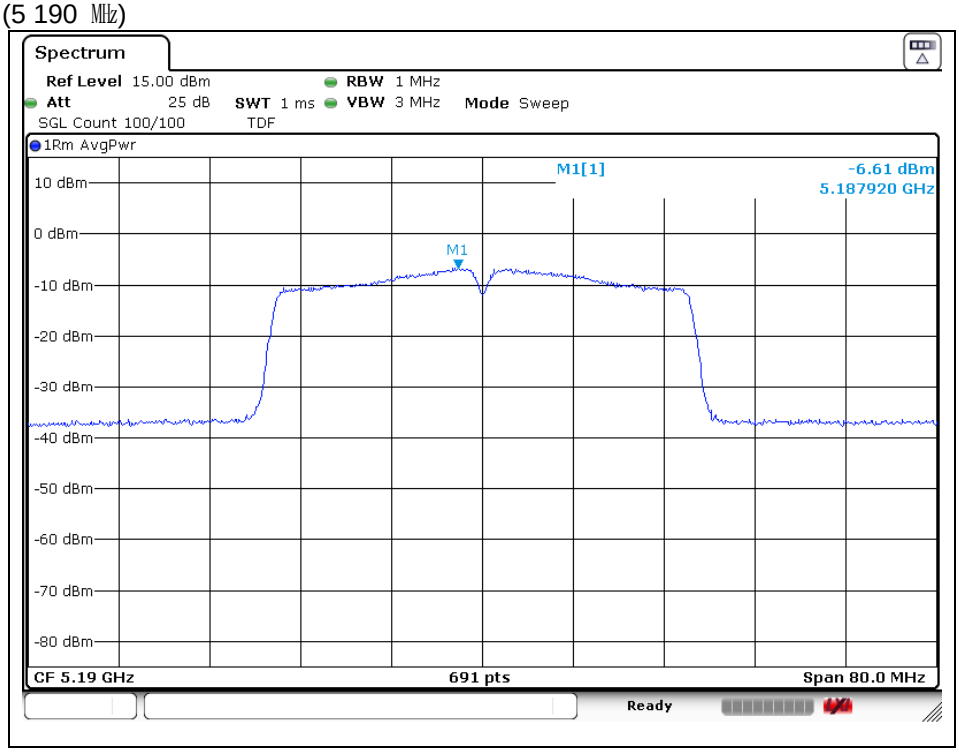


High Channel (5 825 ㎒)

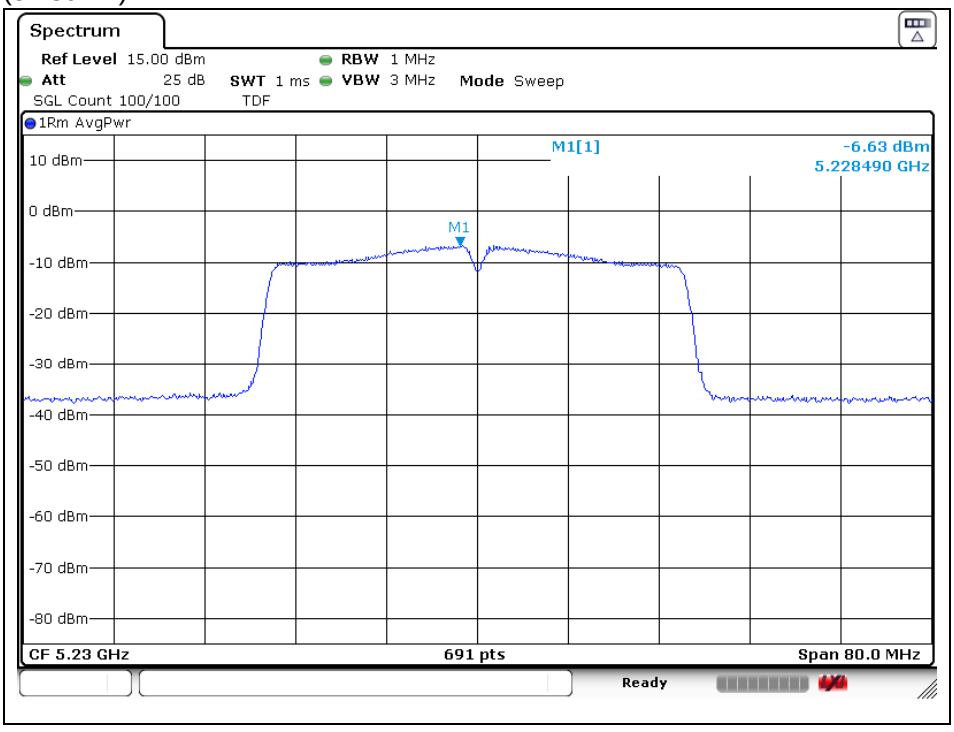


802.11n_HT40 (Band 1)

Low Channel (5 190 ㎒)

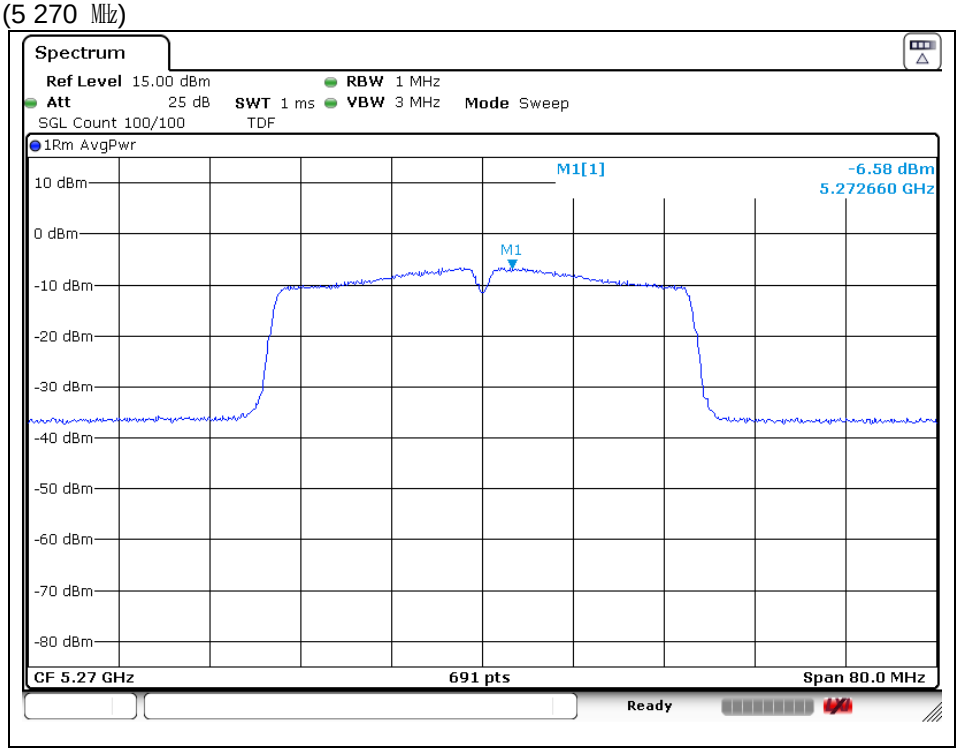


High Channel (5 230 ㎒)

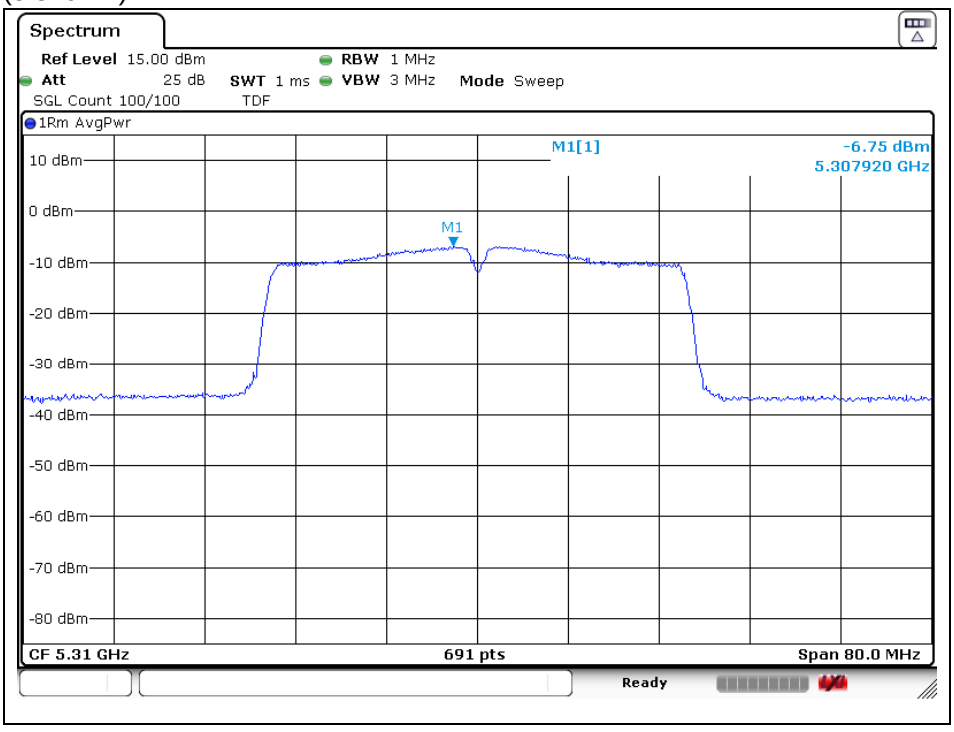


802.11n_HT40 (Band 2A)

Low Channel (5 270 ㎒)

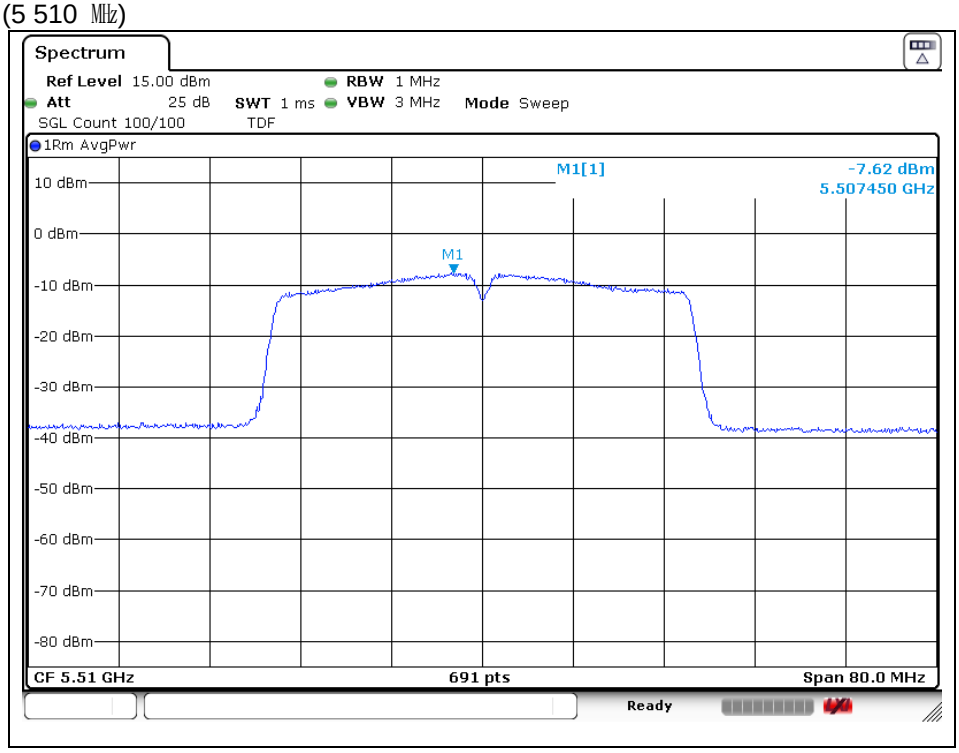


High Channel (5 310 ㎒)

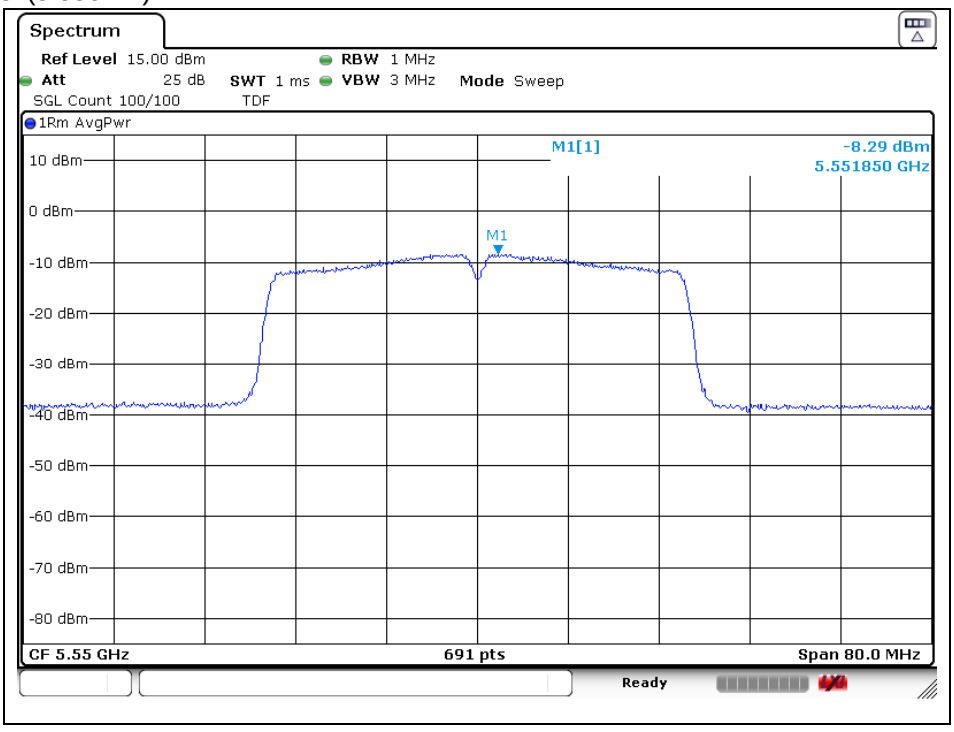


802.11n_HT40 (Band 2C)

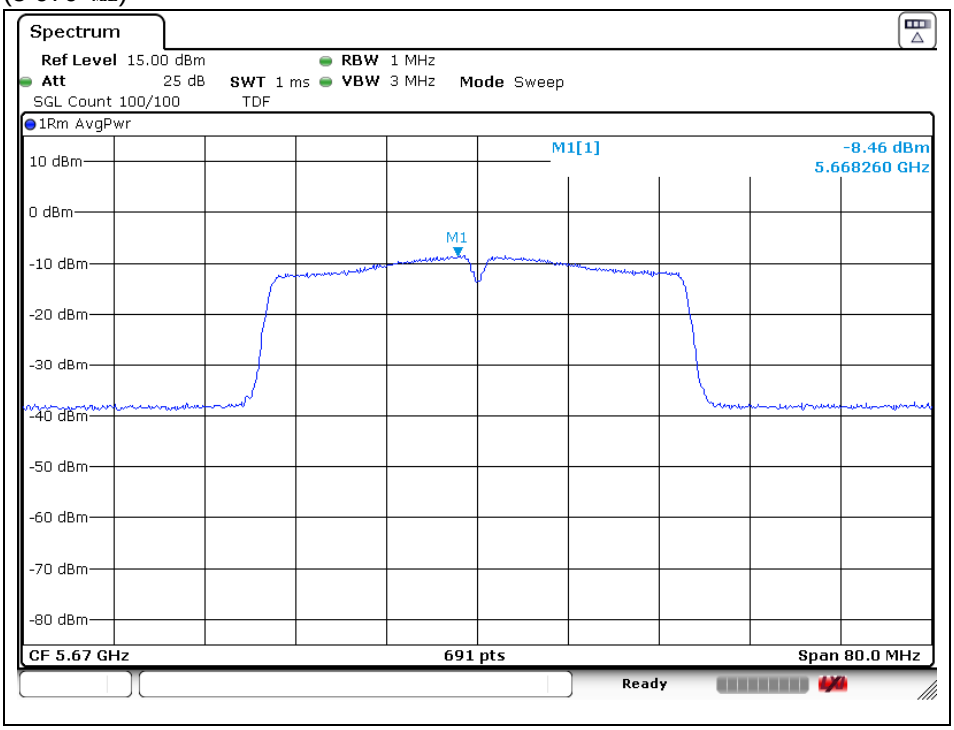
Low Channel (5 510 ㎒)



Middle Channel (5 550 ㎒)

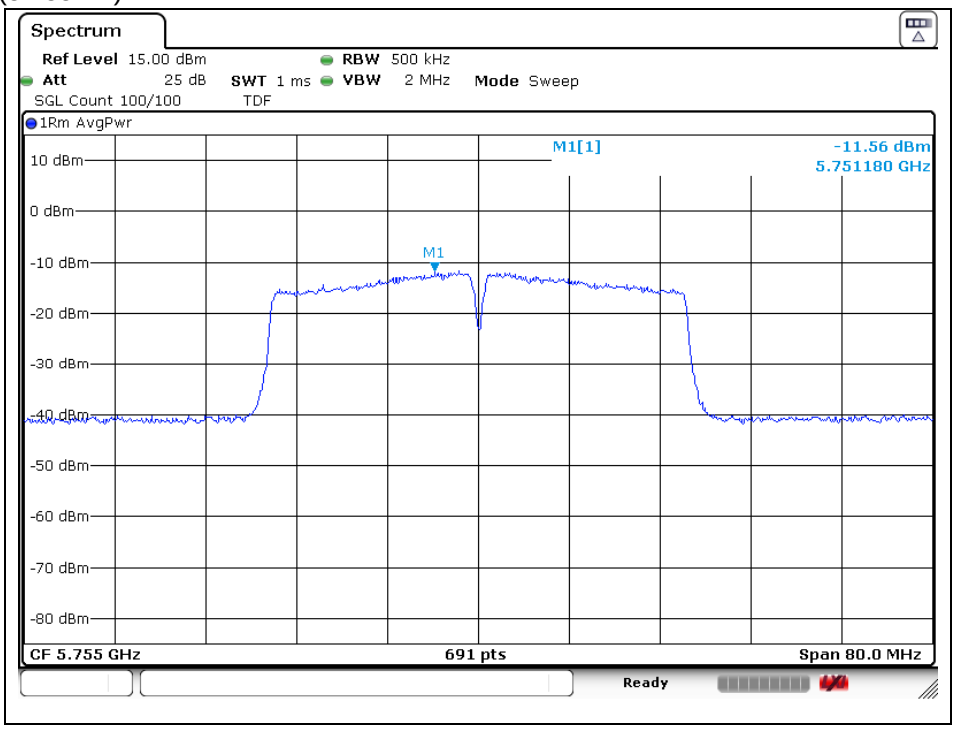


High Channel (5 670 ㎒)

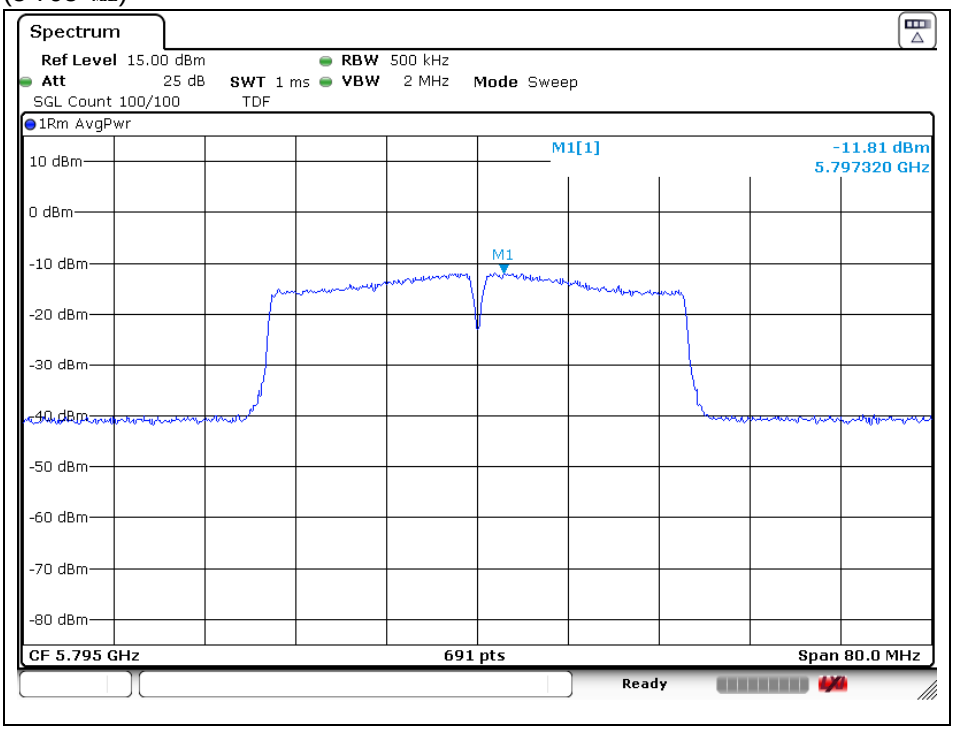


802.11n_HT40 (Band 3)

Low Channel (5 755 ㎒)

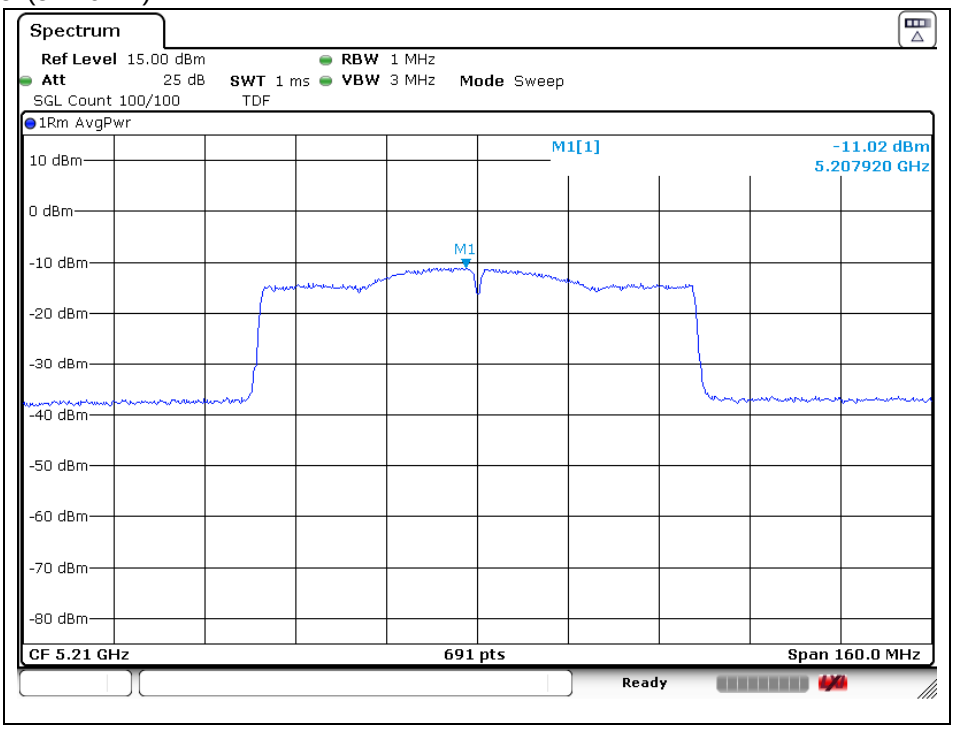


High Channel (5 795 ㎒)



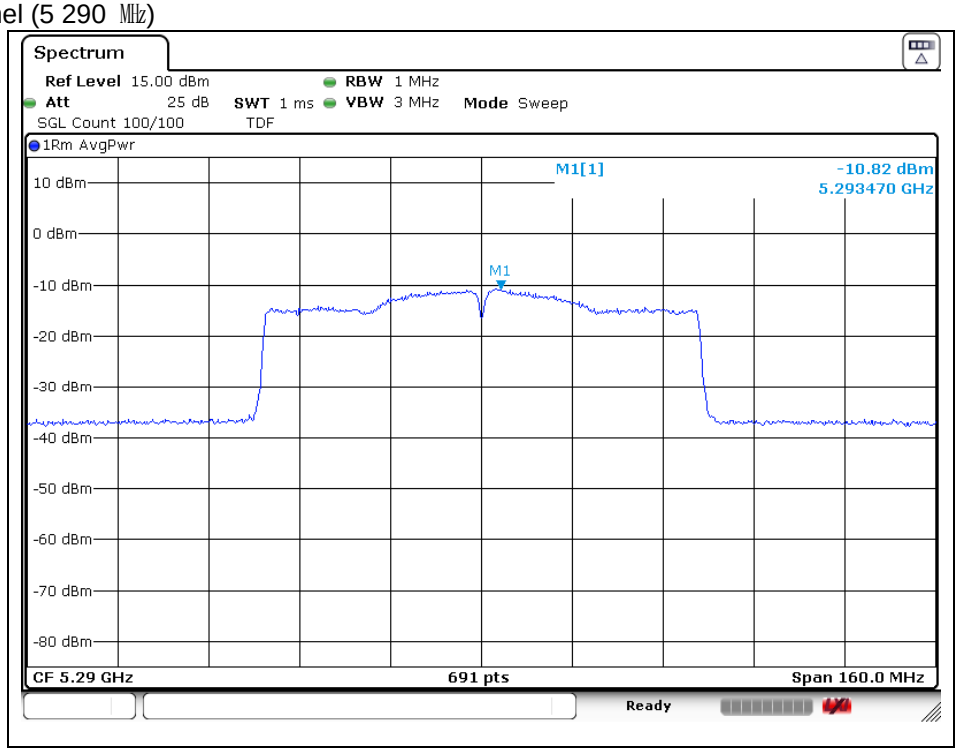
802.11ac_VHT80 (Band 1)

Middle Channel (5 210 ㎒)



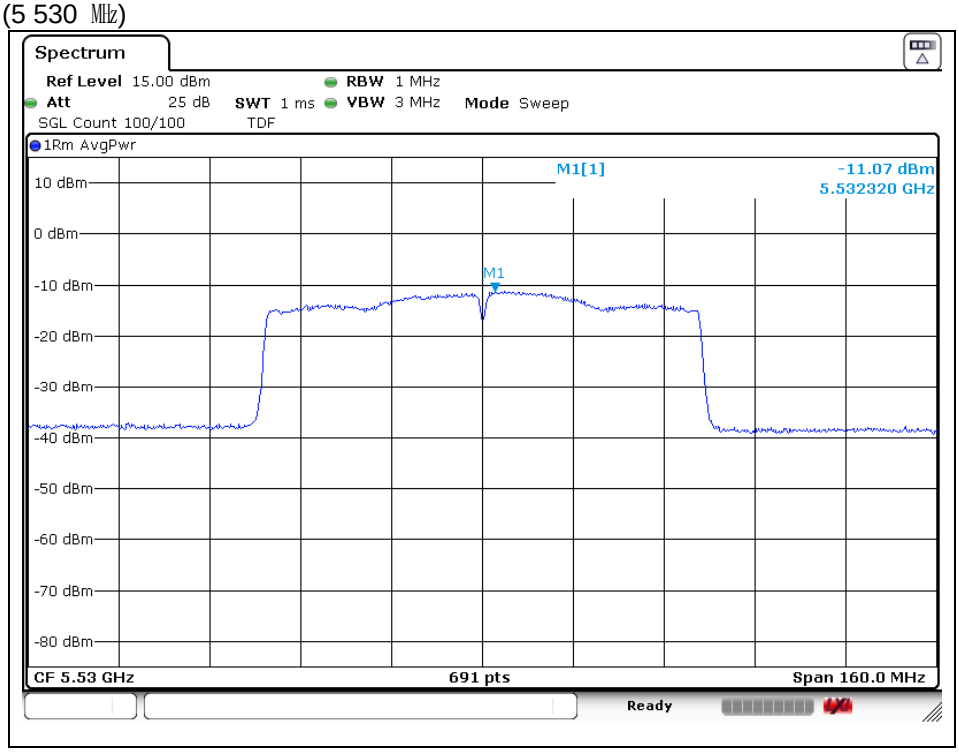
802.11ac_VHT80 (Band 2A)

Middle Channel (5 290 ㎒)

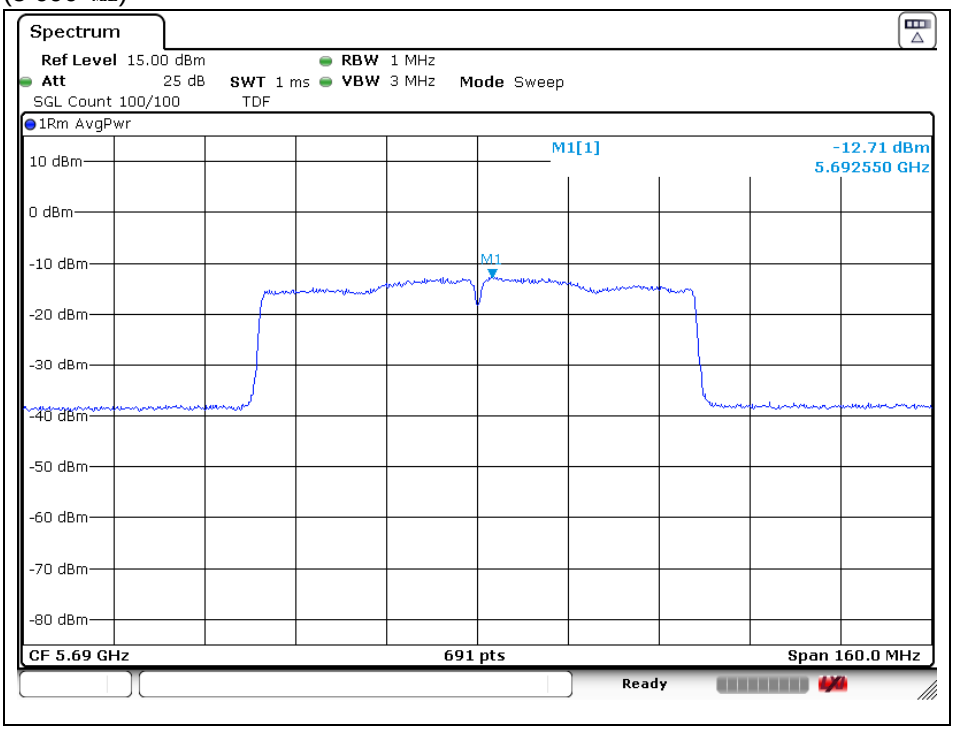


802.11ac_VHT80 (Band 2C)

Low Channel (5 530 ㎒)

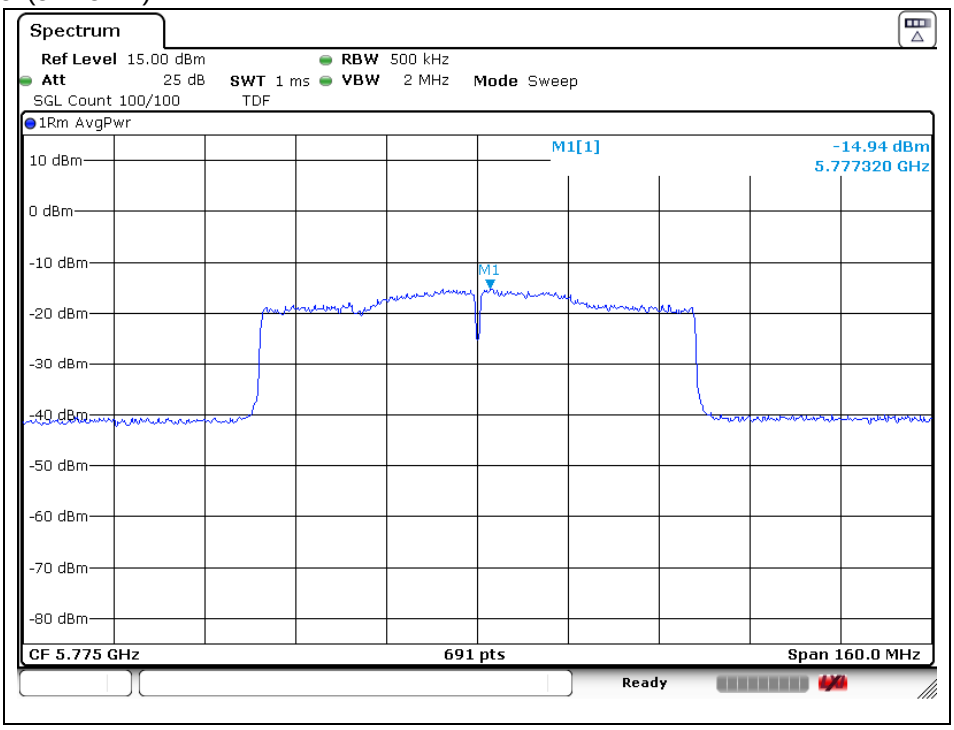


High Channel (5 690 ㎒)



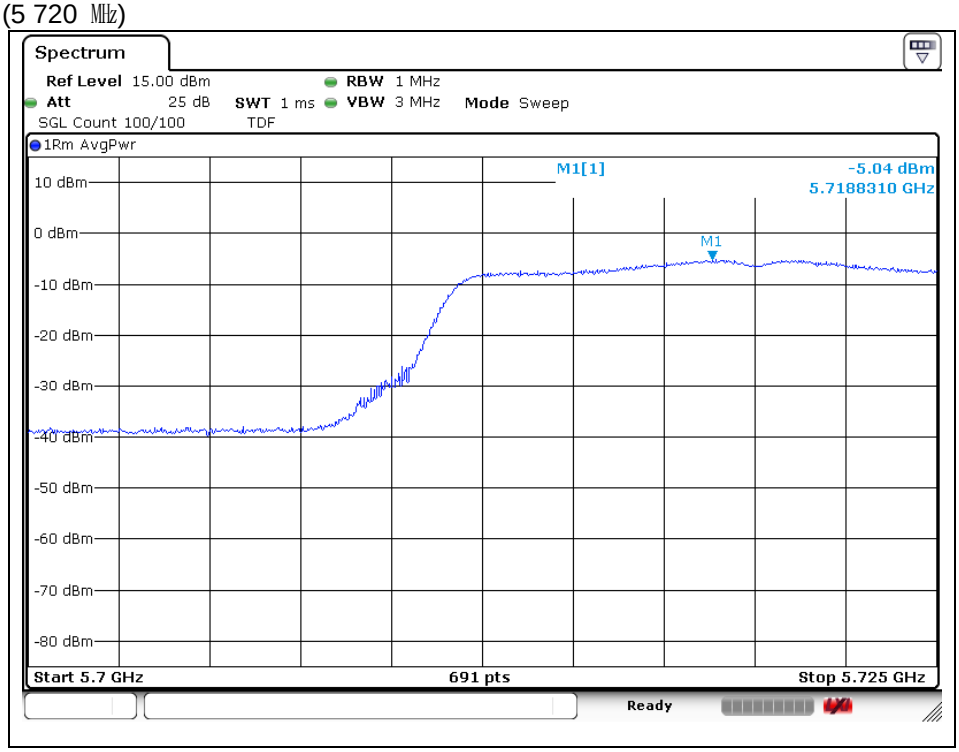
802.11ac_VHT80 (Band 3)

Middle Channel (5 775 ㎒)

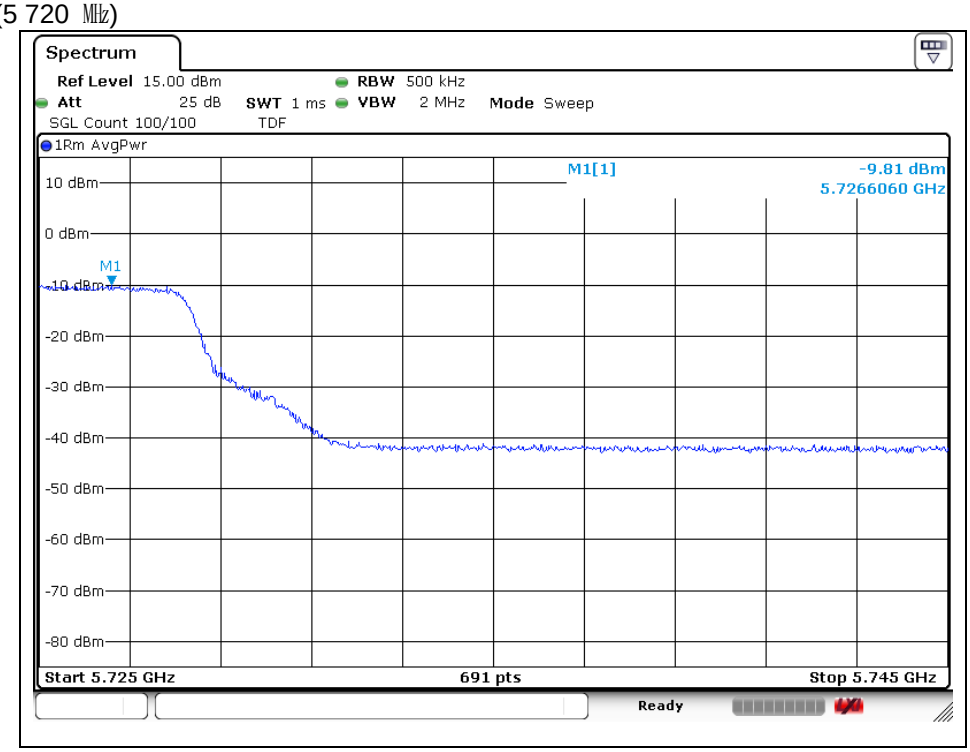


Band-crossing channels

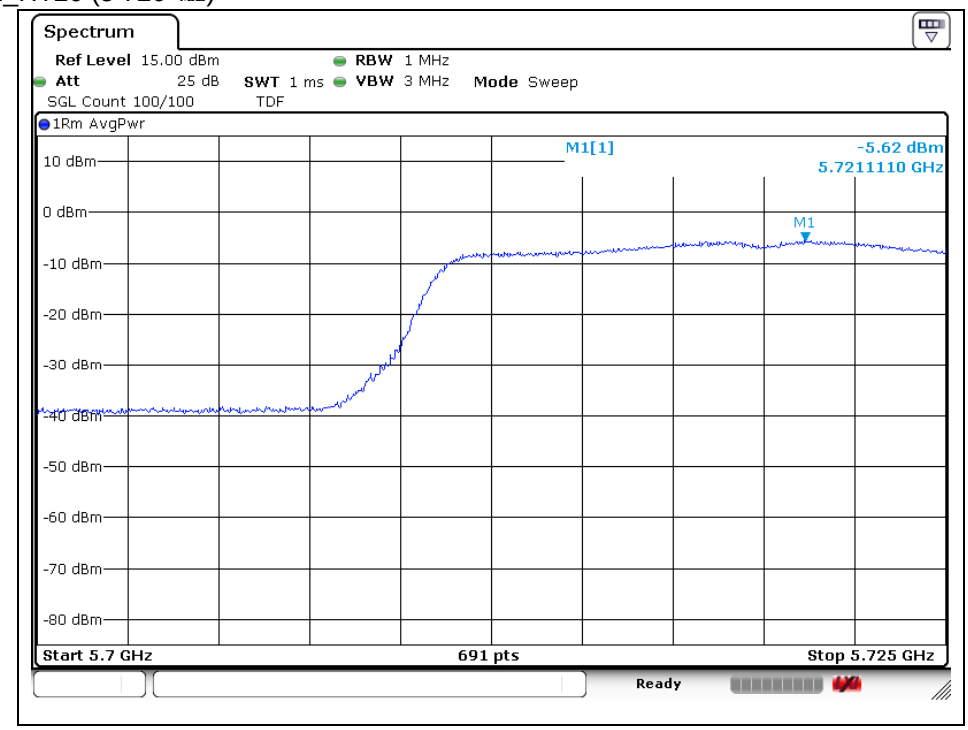
U-NII 2C 11a (5 720 ㎒)



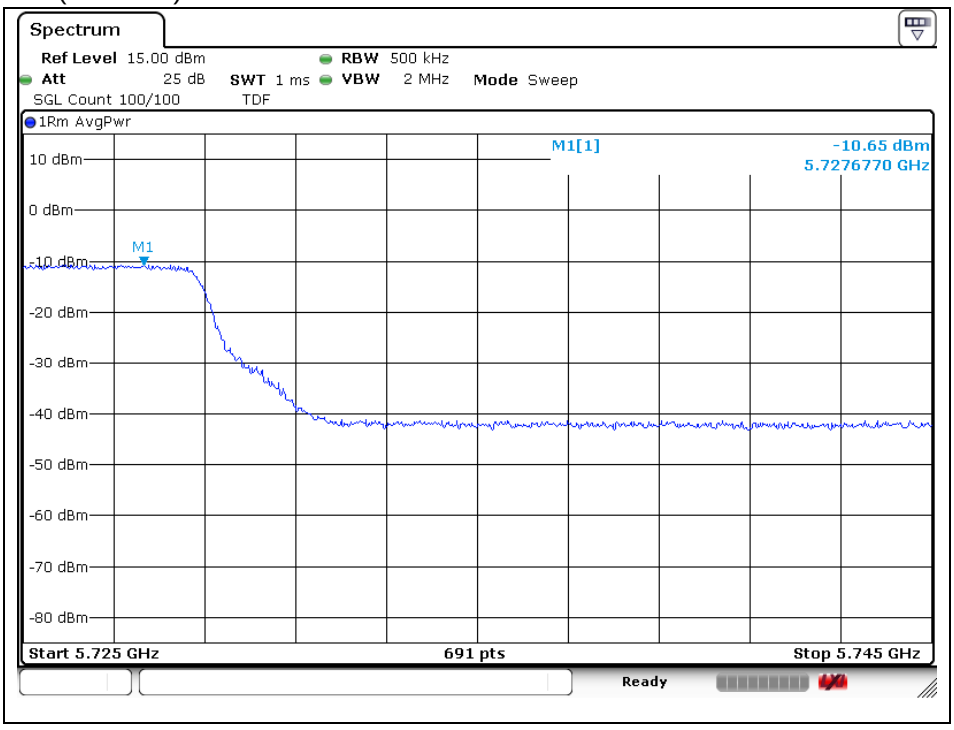
U-NII 3 11a (5 720 ㎒)



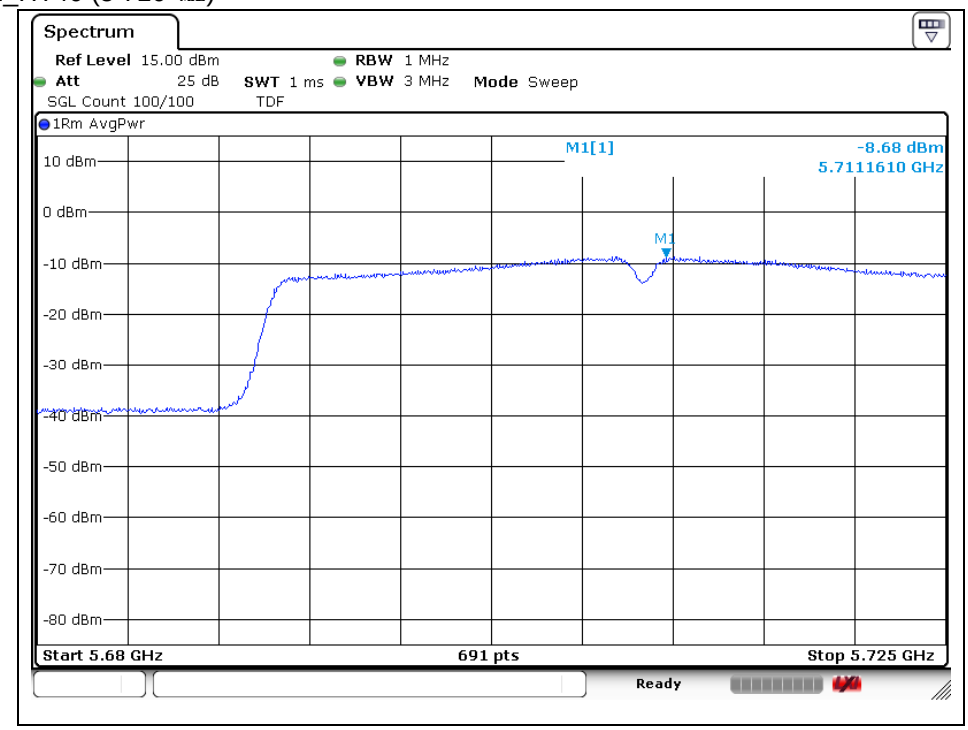
U-NII 2C 11n_HT20 (5 720 ㎒)



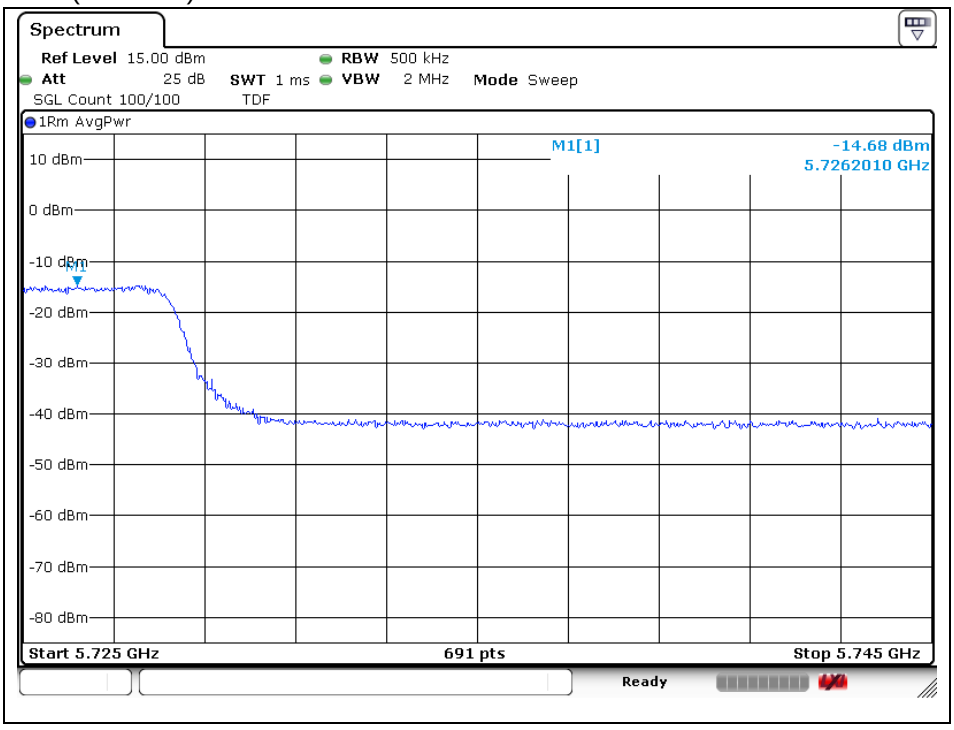
U-NII 3 11n_HT20 (5 720 ㎒)



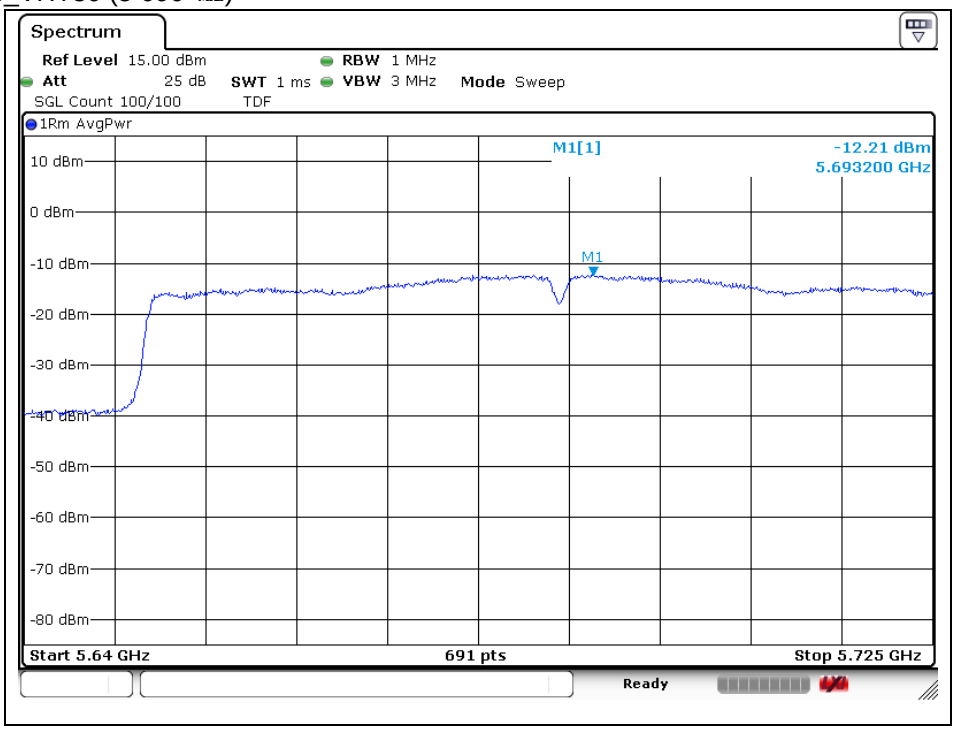
U-NII 2C 11n_HT40 (5 710 ㎒)



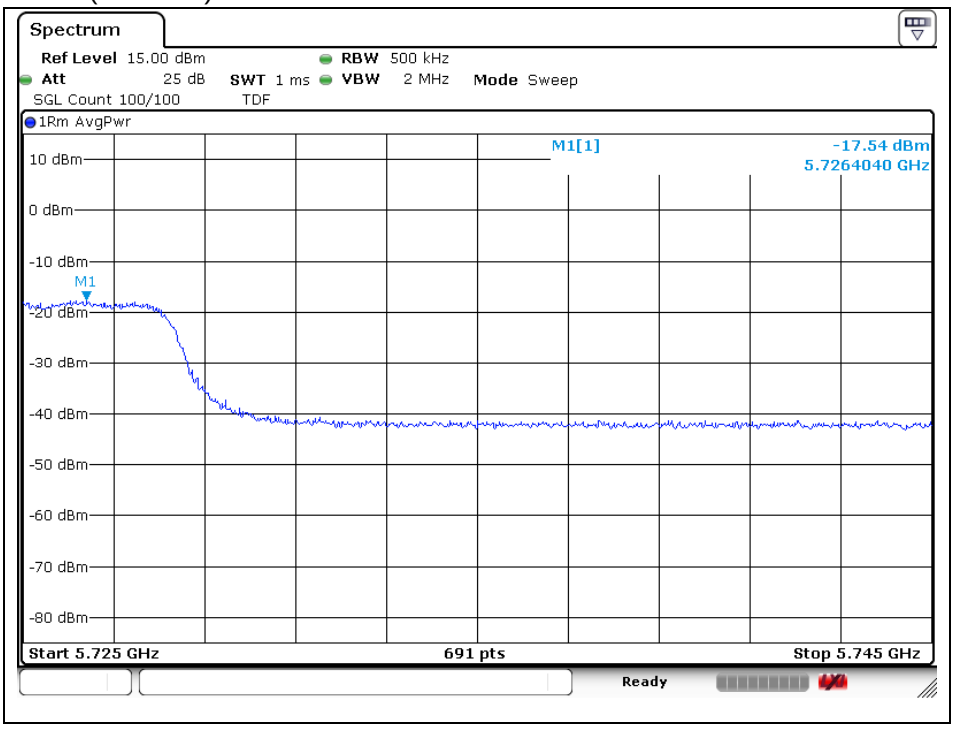
U-NII 3 11n_HT40 (5 710 ㎒)



U-NII 2C 11ac_VHT80 (5 690 ㎒)



U-NII 3 11ac_VHT80 (5 690 ㎒)



7. Antenna Requirement

7.1. Standard Applicable

For intentional device, according to FCC 47 CFR Section §15.203, 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. And according to FCC 47 CFR Section §15.407 (a) if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the gain of the antenna exceeds 6 dBi.

7.2. Antenna Connected Construction

Antenna used in this product is PCB pattern antenna and peak max gain of antenna as below.

Band	5 150 ㎒ ~ 5 250 ㎒	5 250 ㎒ ~ 5 350 ㎒	5 470 ㎒ ~ 5 725 ㎒	5 725 ㎒ ~ 5 850 ㎒
Mode	11a/n_HT20, HT40, 11ac_VHT20, VHT40, VHT80			
Gain	3.51 dBi	3.12 dBi	2.28 dBi	-0.84 dBi

- End of the Test Report -