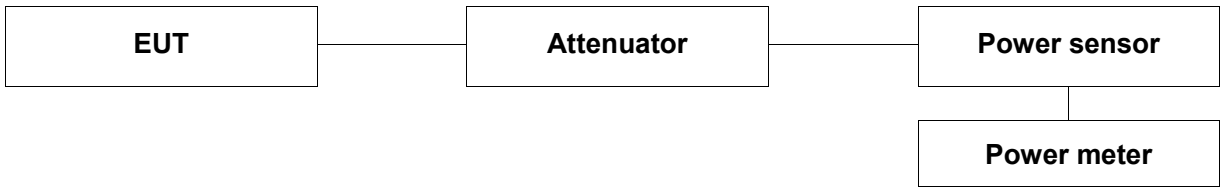
4. Output power

4.1. Test setup



4.2. Limit

4.2.1. FCC 15.407

(a)(1)

For the 5.15-5.25 ㎓ band, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 ㎽ or 4 ㏈m + 10 log B, where B is the 26-㏈ emission bandwidth in ㎒. If transmitting antennas of directional gain greater than 6 ㏈i are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in ㏈ that the directional gain of the antenna exceeds 6 ㏈i.

(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 peak 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 peak power spectral density shall be reduced by the amount in ㏈ that the directional gain of the antenna exceeds 6 ㏈i.

4.3. Test procedure

1. This measurement settings are specified in clause 3) of section E of KDB 789033.
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 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 ㏈m 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 percent).

4.4. Test result

Ambient temperature : (24 ± 2) ℃
Relative humidity : 49 % R.H.

4.4.1. Limit

-11a

Mode	Frequency (㎒)	Data Rate (Mbps)	Fixed Limit (dB m)	26 dB BW (㎒)	4+10LogB (dB m)	Antenna gain (dB i)	Limit (dB)
11a	5 180	6	17	22.42	17.51	1.00	17
	5 220	6	17	22.28	17.48	1.00	17
	5 240	6	17	22.15	17.45	1.00	17
Mode	**Frequency (㎒)**	**Data Rate (Mbps)**	**Fixed Limit (dB m)**	**26 dB BW (㎒)**	**11+10LogB (dB m)**	**Antenna gain (dB i)**	**Limit (dB)**
11a	5 260	6	24	22.52	24.53	1.00	24
	5 300	6	24	22.02	24.43	1.00	24
	5 320	6	24	22.77	24.57	1.00	24
	5 500	6	24	22.88	24.59	-1.50	24
	5 580	6	24	22.73	24.57	-1.50	24
	5 700	6	24	22.64	24.55	-1.50	24

-11n_HT20

Mode	Frequency (㎒)	Data Rate (Mbps)	Fixed Limit (dB m)	26 dB BW (㎒)	4+10LogB (dB m)	Antenna gain (dB i)	Limit (dB)
11n_HT20	5 180	MCS0	17	23.40	17.69	1.00	17
	5 220	MCS0	17	23.02	17.62	1.00	17
	5 240	MCS0	17	23.30	17.67	1.00	17
Mode	**Frequency (㎒)**	**Data Rate (Mbps)**	**Fixed Limit (dB m)**	**26 dB BW (㎒)**	**11+10LogB (dB m)**	**Antenna gain (dB i)**	**Limit (dB)**
11n_HT20	5 260	MCS0	24	23.41	24.69	1.00	24
	5 300	MCS0	24	23.29	24.67	1.00	24
	5 320	MCS0	24	23.17	24.65	1.00	24
	5 500	MCS0	24	24.01	24.80	-1.50	24
	5 580	MCS0	24	24.42	24.88	-1.50	24
	5 700	MCS0	24	23.45	24.70	-1.50	24

-11n_HT40

Mode	Frequency (㎒)	Data Rate (Mbps)	Fixed Limit (dB m)	26 dB BW (㎒)	4+10LogB (dB m)	Antenna gain (dB i)	Limit (dB)
11n_HT40	5 190	MCS0	17	49.31	20.93	1.00	17
	5 230	MCS0	17	48.82	20.89	1.00	17
Mode	**Frequency (㎒)**	**Data Rate (Mbps)**	**Fixed Limit (dB m)**	**26 dB BW (㎒)**	**11+10LogB (dB m)**	**Antenna gain (dB i)**	**Limit (dB)**
11n_HT40	5 270	MCS0	24	49.14	27.91	1.00	24
	5 310	MCS0	24	48.46	27.85	1.00	24
	5 510	MCS0	24	49.31	27.93	-1.50	24
	5 550	MCS0	24	49.79	27.97	-1.50	24
	5 670	MCS0	24	49.94	27.98	-1.50	24

4.4.1. Result

-11a

Operation Mode	Channel	Data rate	Channel Frequency (㎒)	Reading (dB m)	Duty factor (dB)	Result (dB m)	Limit (dB m)
Non DFS 11a	Low	6	5 180	11.81	0.23	12.04	17
		9		11.69	0.34	12.03	17
		12		11.51	0.44	11.95	17
		18		11.32	0.61	11.93	17
		24		11.02	0.81	11.83	17
		36		10.75	1.16	11.91	17
		48		10.54	1.46	12.00	17
		54		10.28	1.61	11.89	17
	Middle	6	5 220	12.07	0.23	12.30	17
		9		11.84	0.34	12.18	17
		12		11.61	0.44	12.05	17
		18		11.52	0.61	12.13	17
		24		11.21	0.81	12.02	17
		36		10.98	1.16	12.14	17
		48		10.84	1.46	12.30	17
		54		10.65	1.61	12.26	17
	High	6	5 240	12.18	0.23	12.41	17
		9		12.05	0.34	12.39	17
		12		11.98	0.44	12.42	17
		18		11.67	0.61	12.28	17
		24		11.54	0.81	12.35	17
		36		11.21	1.16	12.37	17
		48		10.88	1.46	12.34	17
		54		10.75	1.61	12.36	17

Operation Mode	Channel	Data rate	Channel Frequency (㎒)	Reading (dB m)	Duty factor (dB)	Result (dB m)	Limit (dB m)
DFS 11a	Lower Band	6	5 260	11.25	0.23	11.48	24
		9		11.02	0.34	11.36	24
		12		10.94	0.44	11.38	24
		18		10.75	0.61	11.36	24
		24		10.61	0.81	11.42	24
		36		10.25	1.16	11.41	24
		48		10.01	1.46	11.47	24
		54		9.85	1.61	11.46	24
		6	5 300	11.48	0.23	11.71	24
		9		11.36	0.34	11.70	24
		12		11.18	0.44	11.62	24
		18		11.05	0.61	11.66	24
		24		10.86	0.81	11.67	24
		36		10.56	1.16	11.72	24
		48		10.39	1.46	11.85	24
		54		10.41	1.61	12.02	24
		6	5 320	11.61	0.23	11.84	24
		9		11.36	0.34	11.70	24
		12		11.25	0.44	11.69	24
		18		11.06	0.61	11.67	24
		24		10.78	0.81	11.59	24
		36		10.57	1.16	11.73	24
		48		10.36	1.46	11.82	24
		54		10.25	1.61	11.86	24

Operation Mode	Channel	Data rate	Channel Frequency (㎒)	Reading (dB m)	Duty factor (dB)	Result (dB m)	Limit (dB m)
DFS 11a	Upper Band	6	5 500	13.08	0.23	13.31	24
		9		12.94	0.34	13.28	24
		12		12.85	0.44	13.29	24
		18		12.67	0.61	13.28	24
		24		12.54	0.81	13.35	24
		36		12.38	1.16	13.54	24
		48		12.05	1.46	13.51	24
		54		11.85	1.61	13.46	24
		6	5 580	13.23	0.23	13.46	24
		9		13.11	0.34	13.45	24
		12		12.98	0.44	13.42	24
		18		12.76	0.61	13.37	24
		24		12.62	0.81	13.43	24
		36		12.38	1.16	13.54	24
		48		12.14	1.46	13.60	24
		54		12.01	1.61	13.62	24
		6	5 700	11.15	0.23	11.38	24
		9		11.06	0.34	11.40	24
		12		10.85	0.44	11.29	24
		18		10.64	0.61	11.25	24
		24		10.48	0.81	11.29	24
		36		10.24	1.16	11.40	24
		48		9.97	1.46	11.43	24
		54		9.76	1.61	11.37	24

-11n_HT20

Operation Mode	Channel	Data rate	Channel Frequency (㎒)	Reading (dB m)	Duty factor (dB)	Result (dB m)	Limit (dB m)
Non DFS 11n_HT20	Low	MCS0	5 180	10.96	0.24	11.20	17
		MCS1		10.85	0.46	11.31	17
		MCS2		10.52	0.68	11.20	17
		MCS3		10.31	0.86	11.17	17
		MCS4		10.05	1.18	11.23	17
		MCS5		9.85	1.49	11.34	17
		MCS6		9.64	1.60	11.24	17
		MCS7		9.43	1.72	11.15	17
	Middle	MCS0	5 220	11.38	0.24	11.62	17
		MCS1		11.21	0.46	11.67	17
		MCS2		11.05	0.68	11.73	17
		MCS3		10.88	0.86	11.74	17
		MCS4		10.57	1.18	11.75	17
		MCS5		10.31	1.49	11.80	17
		MCS6		10.18	1.60	11.78	17
		MCS7		10.02	1.72	11.74	17
	High	MCS0	5 240	11.74	0.24	11.98	17
		MCS1		11.58	0.46	12.04	17
		MCS2		11.32	0.68	12.00	17
		MCS3		11.05	0.86	11.91	17
		MCS4		10.82	1.18	12.00	17
		MCS5		10.52	1.49	12.01	17
		MCS6		10.42	1.60	12.02	17
		MCS7		10.33	1.72	12.05	17

Operation Mode	Channel	Data rate	Channel Frequency (㎒)	Reading (dB m)	Duty factor (dB)	Result (dB m)	Limit (dB m)
DFS 11n_HT20	Lower Band	MCS0	5 260	10.75	0.24	10.99	24
		MCS1		10.61	0.46	11.07	24
		MCS2		10.34	0.68	11.02	24
		MCS3		10.21	0.86	11.07	24
		MCS4		9.88	1.18	11.06	24
		MCS5		9.61	1.49	11.10	24
		MCS6		9.38	1.60	10.98	24
		MCS7		9.29	1.72	11.01	24
		MCS0	5 300	10.68	0.24	10.92	24
		MCS1		10.51	0.46	10.97	24
		MCS2		10.29	0.68	10.97	24
		MCS3		10.11	0.86	10.97	24
		MCS4		9.94	1.18	11.12	24
		MCS5		9.62	1.49	11.11	24
		MCS6		9.53	1.60	11.13	24
		MCS7		9.47	1.72	11.19	24
		MCS0	5 320	10.99	0.24	11.23	24
		MCS1		10.81	0.46	11.27	24
		MCS2		10.58	0.68	11.26	24
		MCS3		10.31	0.86	11.17	24
		MCS4		10.05	1.18	11.23	24
		MCS5		9.72	1.49	11.21	24
		MCS6		9.65	1.60	11.25	24
		MCS7		9.51	1.72	11.23	24

Operation Mode	Channel	Data rate	Channel Frequency (㎒)	Reading (dB m)	Duty factor (dB)	Result (dB m)	Limit (dB m)
DFS 11n_HT20	Upper Band	MCS0	5 500	12.61	0.24	12.85	24
		MCS1		12.42	0.46	12.88	24
		MCS2		12.18	0.68	12.86	24
		MCS3		11.96	0.86	12.82	24
		MCS4		11.78	1.18	12.96	24
		MCS5		11.42	1.49	12.91	24
		MCS6		11.38	1.60	12.98	24
		MCS7		11.22	1.72	12.94	24
		MCS0	5 580	12.65	0.24	12.89	24
		MCS1		12.34	0.46	12.80	24
		MCS2		12.05	0.68	12.73	24
		MCS3		11.79	0.86	12.65	24
		MCS4		11.61	1.18	12.79	24
		MCS5		11.37	1.49	12.86	24
		MCS6		11.28	1.60	12.88	24
		MCS7		11.19	1.72	12.91	24
		MCS0	5 700	10.78	0.24	11.02	24
		MCS1		10.61	0.46	11.07	24
		MCS2		10.37	0.68	11.05	24
		MCS3		10.12	0.86	10.98	24
		MCS4		9.89	1.18	11.07	24
		MCS5		9.65	1.49	11.14	24
		MCS6		9.34	1.60	10.94	24
		MCS7		9.07	1.72	10.79	24

-11n_HT40

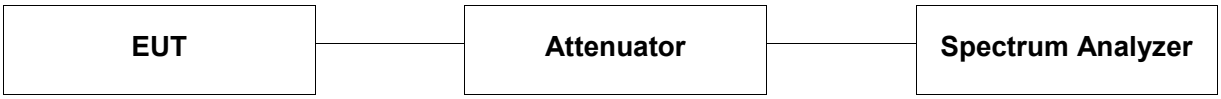
Operation Mode	Channel	Data rate	Channel Frequency (㎒)	Reading (dB m)	Duty factor (dB)	Result (dB m)	Limit (dB m)
Non DFS 11n_HT40	Low	MCS0	5 190	9.53	0.43	9.96	17
		MCS1		9.19	0.79	9.98	17
		MCS2		8.82	1.10	9.92	17
		MCS3		8.55	1.35	9.90	17
		MCS4		8.12	1.80	9.92	17
		MCS5		7.77	2.12	9.89	17
		MCS6		7.64	2.26	9.90	17
		MCS7		7.42	2.41	9.83	17
	High	MCS0	5 230	10.36	0.43	10.79	17
		MCS1		10.11	0.79	10.90	17
		MCS2		9.82	1.10	10.92	17
		MCS3		9.54	1.35	10.89	17
		MCS4		9.12	1.80	10.92	17
		MCS5		8.81	2.12	10.93	17
		MCS6		8.65	2.26	10.91	17
		MCS7		8.49	2.41	10.90	17

Operation Mode	Channel	Data rate	Channel Frequency (㎒)	Reading (dB m)	Duty factor (dB)	Result (dB m)	Limit (dB m)
DFS 11n_HT40	Lower Band	MCS0	5 270	10.17	0.43	10.60	24
		MCS1		10.05	0.79	10.84	24
		MCS2		9.82	1.10	10.92	24
		MCS3		9.54	1.35	10.89	24
		MCS4		9.12	1.80	10.92	24
		MCS5		8.82	2.12	10.94	24
		MCS6		8.64	2.26	10.90	24
		MCS7		8.54	2.41	10.95	24
		MCS0	5 310	10.19	0.43	10.62	24
		MCS1		9.82	0.79	10.61	24
		MCS2		9.61	1.10	10.71	24
		MCS3		9.45	1.35	10.80	24
		MCS4		9.12	1.80	10.92	24
		MCS5		8.82	2.12	10.94	24
		MCS6		8.65	2.26	10.91	24
		MCS7		8.54	2.41	10.95	24

Operation Mode	Channel	Data rate	Channel Frequency (㎒)	Reading (dB m)	Duty factor (dB)	Result (dB m)	Limit (dB m)
DFS 11n_HT40	Upper Band	MCS0	5 510	12.39	0.43	12.82	24
		MCS1		12.05	0.79	12.84	24
		MCS2		11.75	1.10	12.85	24
		MCS3		11.51	1.35	12.86	24
		MCS4		11.05	1.80	12.85	24
		MCS5		10.71	2.12	12.83	24
		MCS6		10.59	2.26	12.85	24
		MCS7		10.42	2.41	12.83	24
		MCS0	5 550	11.71	0.43	12.14	24
		MCS1		11.35	0.79	12.14	24
		MCS2		11.17	1.10	12.27	24
		MCS3		10.86	1.35	12.21	24
		MCS4		10.45	1.80	12.25	24
		MCS5		10.11	2.12	12.23	24
		MCS6		10.01	2.26	12.27	24
		MCS7		9.82	2.41	12.23	24
		MCS0	5 670	11.32	0.43	11.75	24
		MCS1		11.02	0.79	11.81	24
		MCS2		10.74	1.10	11.84	24
		MCS3		10.45	1.35	11.80	24
		MCS4		10.05	1.80	11.85	24
		MCS5		9.75	2.12	11.87	24
		MCS6		9.55	2.26	11.81	24
		MCS7		9.45	2.41	11.86	24

5. Peak power spectral density

5.1. Test setup



5.2. Limit

5.2.1. FCC 15.407

(a)(1)

For the band 5.15-5.25 ㎓ band, the peak power spectral density shall not exceed 4 ㏈m in any 1 ㎒ band. If transmitting antennas of directional gain greater than 6 ㏈i are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in ㏈ that the directional gain of the antenna exceeds 6 ㏈i.

(a)(2)

For the band 5.25–5.35 ㎓ and 5.47–5.725 ㎓ bands, the peak 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 peak power spectral density shall be reduced by the amount in ㏈ that the directional gain of the antenna exceeds 6 ㏈i.

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 clause d) Method SA-2 of section E of KDB 789033.
2. Set span to encompass the 26 ㏈ EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
3. Set RBW = 1 ㎒
4. Set VBW ≥ 3 ㎒
5. Number of points in sweep ≥ 2 Span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
6. Sweep time = auto.
7. Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
8. Do not use sweep triggering. Allow the sweep to “free run”.
9. Trace average at least 100 traces in power averaging (i.e., RMS) mode; however, the number of traces to be averaged shall be increased above 100 as needed to ensure that the average accurately represents the true average over the on and off periods of the transmitter.
10. Use the peak search function on the spectrum analyzer to find the peak of the spectrum.
11. Make the following adjustments to the peak value of the spectrum, add 10 log(1/x), where x is the duty cycle, to the peak of the spectrum.
11. The result is the PPSD.

5.4. Test result

Ambient temperature : (24 ± 2) ℃
Relative humidity : 49 % R.H.

5.4.1. Non-DFS Band

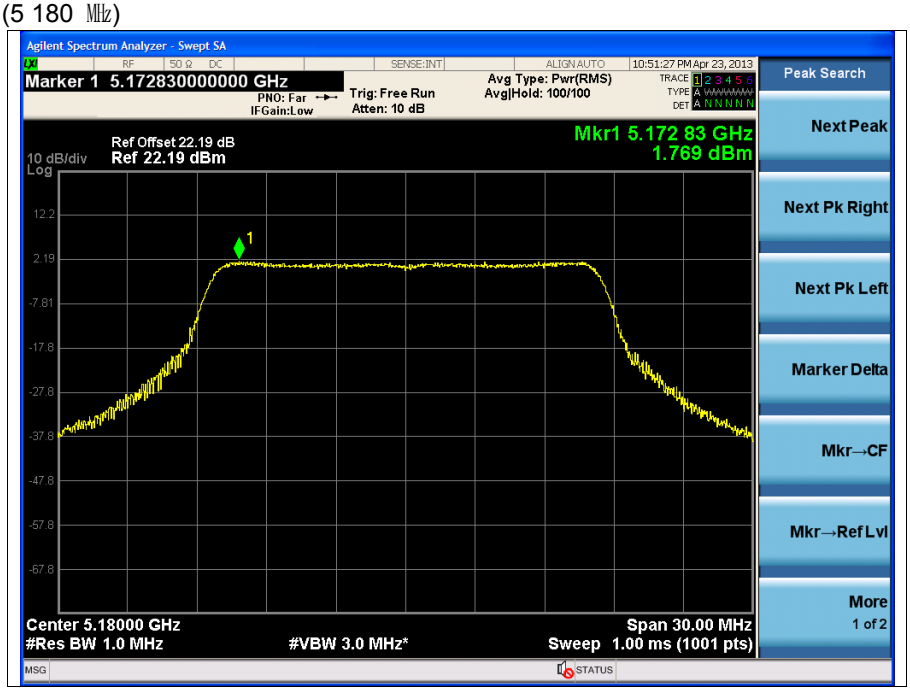
Operation Mode	Channel	Data Rate (Mbps)	Channel Frequency (㎒)	Peak power spectral density (㏈m)			Limit (㏈m)
				Reading	Duty factor	Result	
11a	Low	6	5 180	1.769	0.23	1.999	4
	Middle	6	5 220	2.058	0.23	2.288	
	High	6	5 240	2.374	0.23	2.604	
11n_HT20	Low	MCS0	5 180	1.369	0.24	1.609	
	Middle	MCS0	5 220	1.453	0.24	1.693	
	High	MCS0	5 240	1.786	0.24	2.026	
11n_HT40	Low	MCS0	5 190	-3.183	0.43	-2.753	
	High	MCS0	5 230	-2.691	0.43	-2.261	

5.4.2. DFS Band

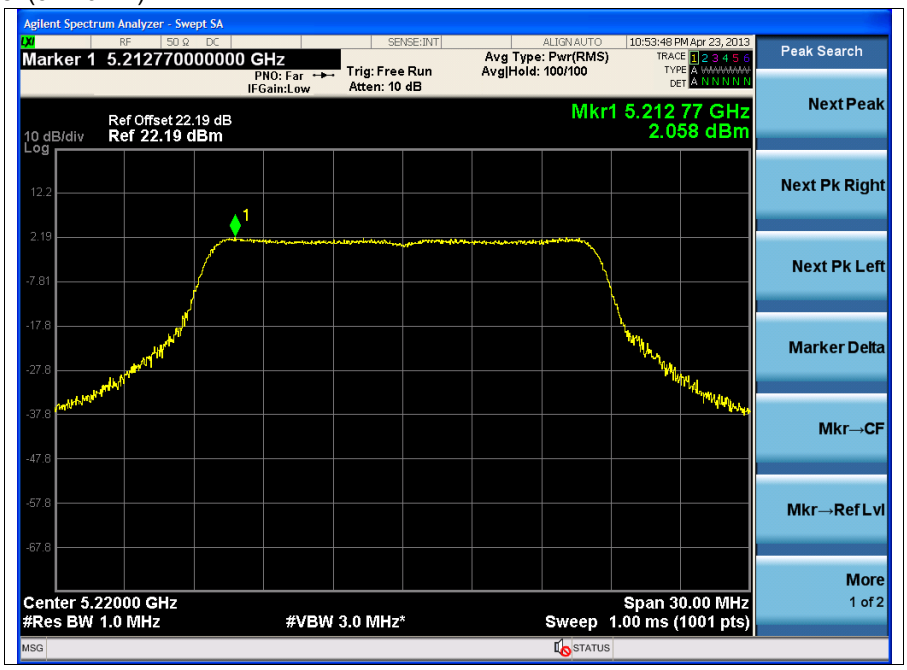
Operation Mode	Channel	Data Rate (Mbps)	Channel Frequency (㎒)	Peak power spectral density (㏈m)			Limit (㏈m)
				Reading	Duty factor	Result	
11a	Lower Band	6	5 260	2.397	0.23	2.627	11
		6	5 300	2.140	0.23	2.370	
		6	5 320	2.820	0.23	3.050	
	Upper Band	6	5 500	3.208	0.23	3.438	
		6	5 580	3.991	0.23	4.221	
		6	5 700	3.096	0.23	3.326	
11n_HT20	Lower Band	MCS0	5 260	1.969	0.24	2.209	
		MCS0	5 300	1.229	0.24	1.469	
		MCS0	5 320	2.001	0.24	2.241	
	Upper Band	MCS0	5 500	2.528	0.24	2.768	
		MCS0	5 580	3.230	0.24	3.470	
		MCS0	5 700	2.142	0.24	2.382	
11n_HT40	Lower Band	MCS0	5 270	-2.310	0.43	-1.880	
		MCS0	5 310	-1.096	0.43	-0.666	
	Upper Band	MCS0	5 510	0.223	0.43	0.653	
		MCS0	5 550	-0.079	0.43	0.351	
		MCS0	5 670	-0.302	0.43	0.128	

802.11a (Non-DFS)

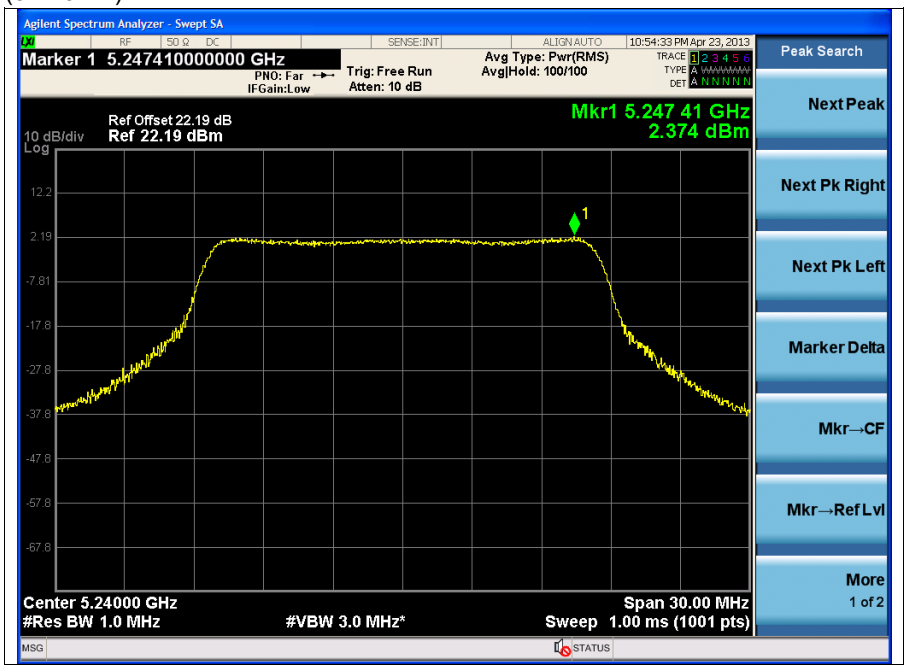
Low Channel (5 180 ㎒)



Middle Channel (5 220 ㎒)

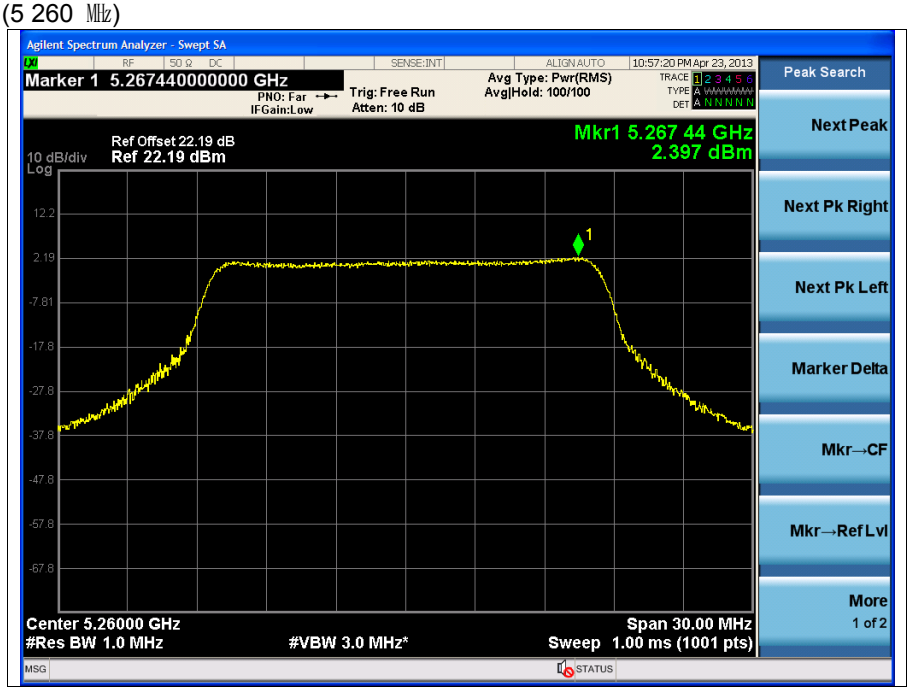


High Channel (5 240 ㎒)

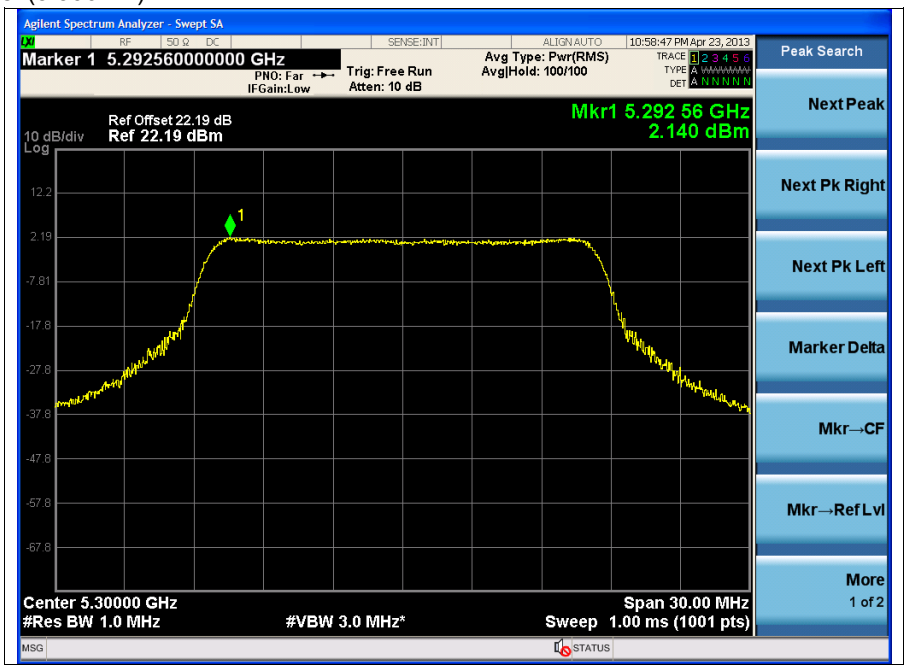


802.11a (DFS)

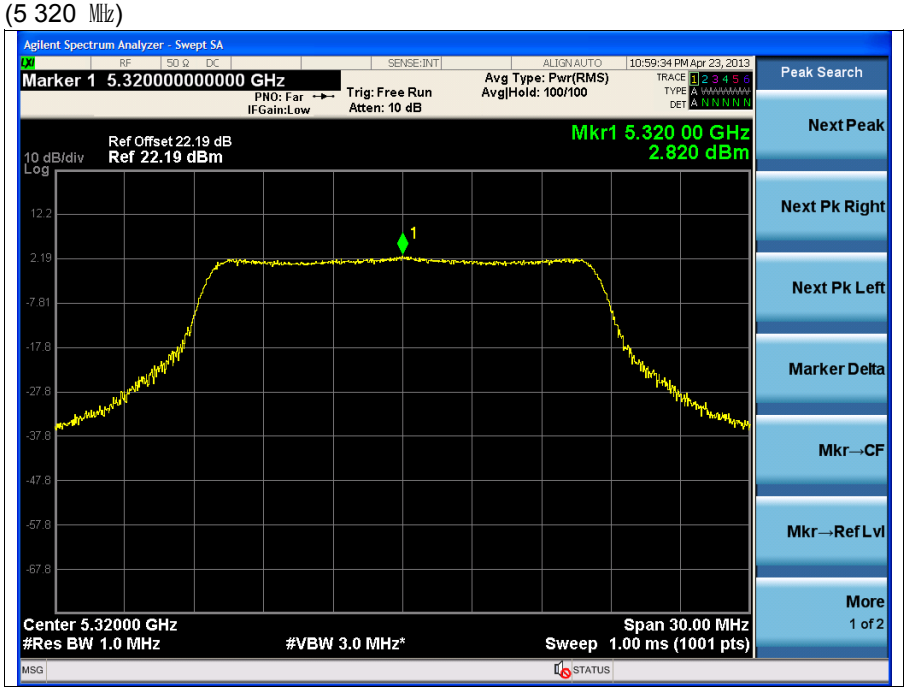
Low Channel (5 260 ㎒)



Middle Channel (5 300 ㎒)

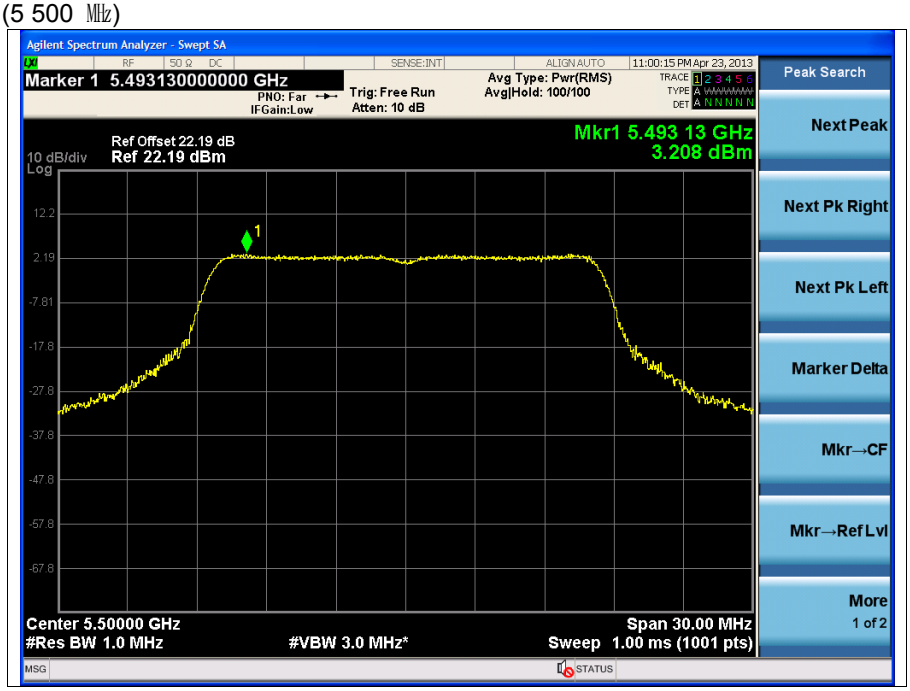


High Channel (5 320 ㎒)

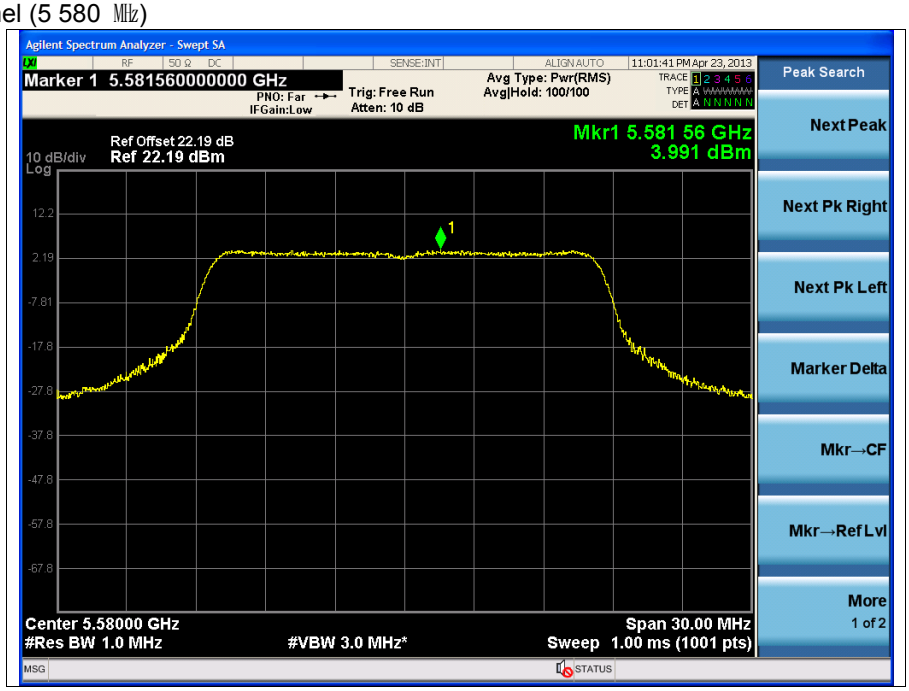


802.11a (DFS)

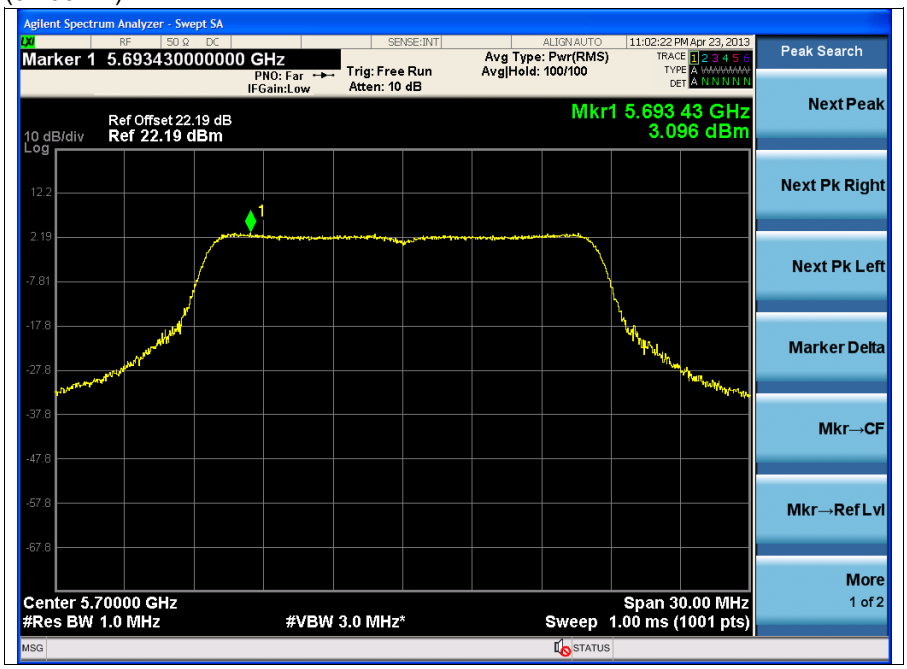
Low Channel (5 500 ㎒)



Middle Channel (5 580 ㎒)

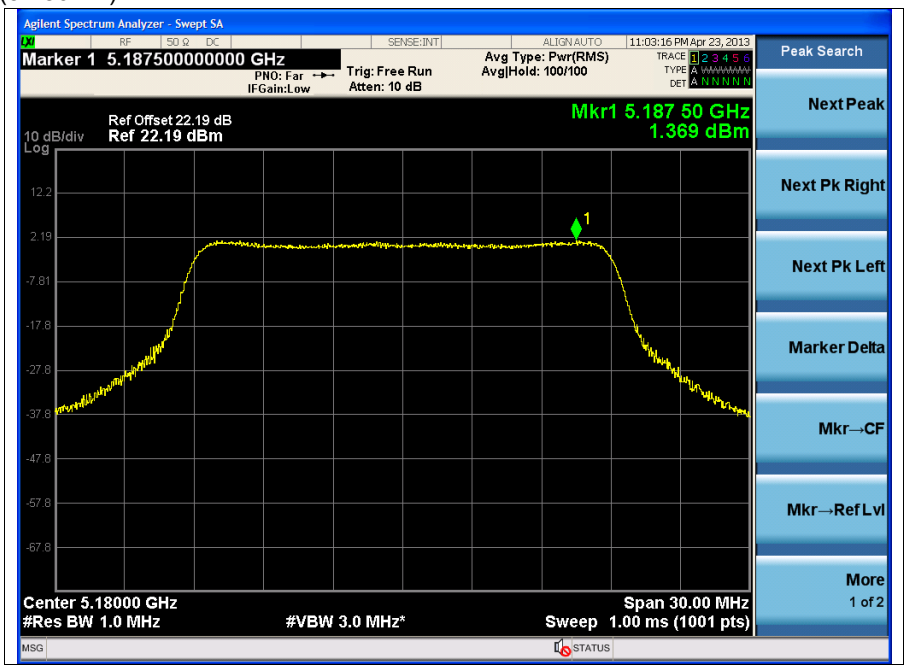


High Channel (5 700 ㎒)

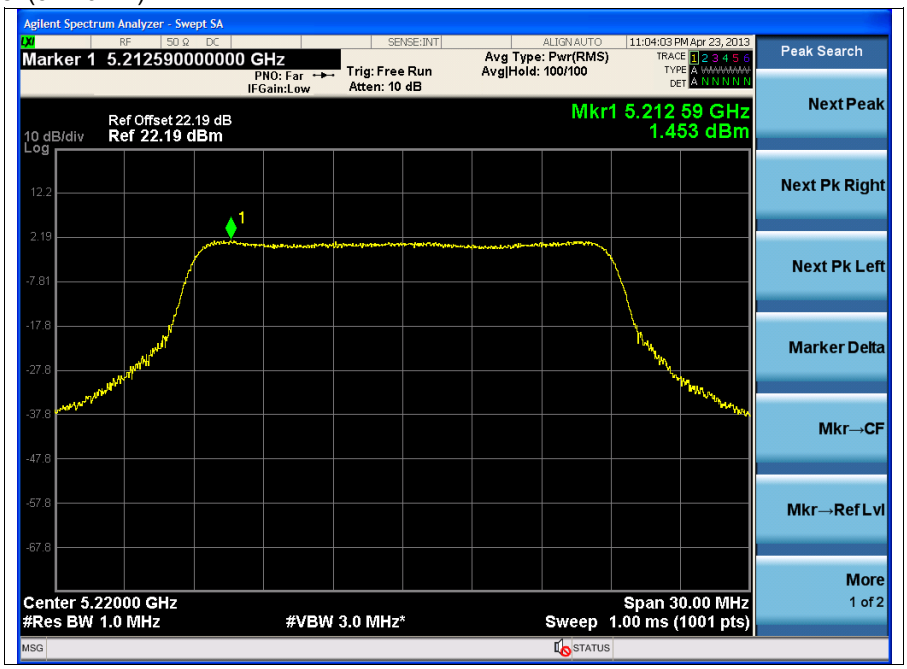


802.11n-HT20 (Non-DFS)

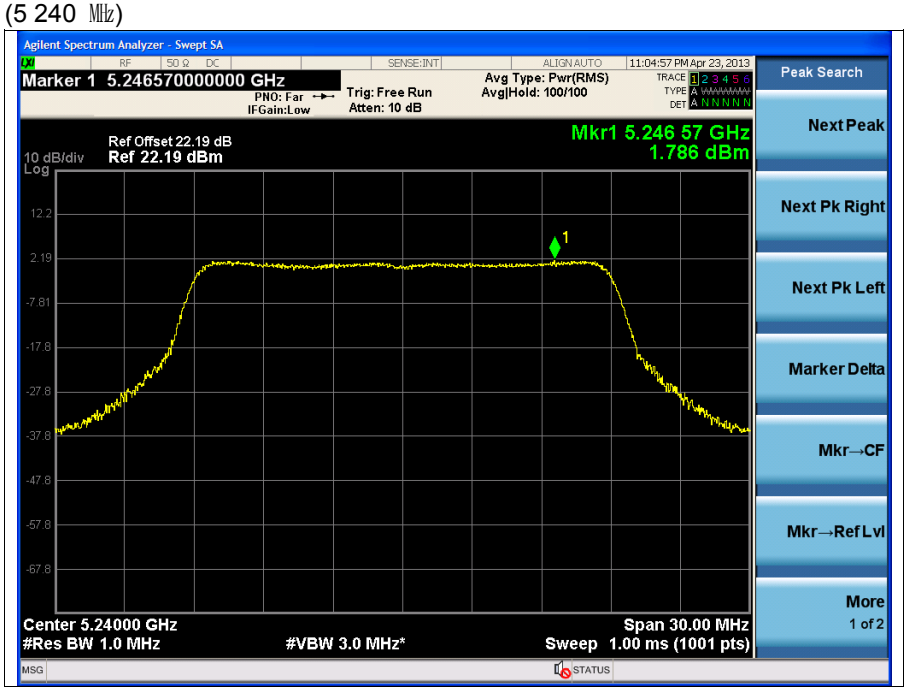
Low Channel (5 180 ㎒)



Middle Channel (5 220 ㎒)

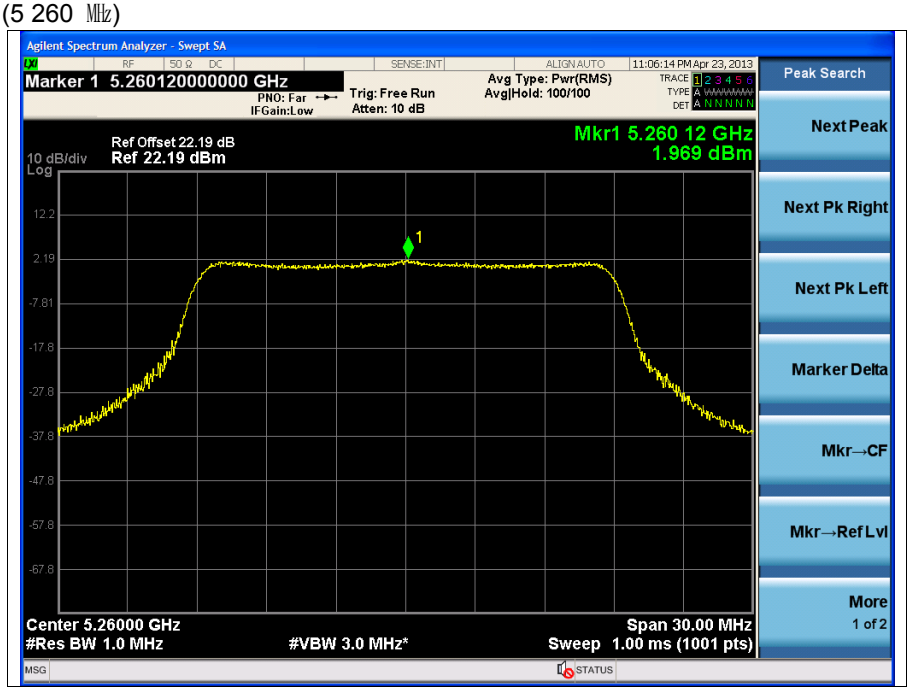


High Channel (5 240 ㎒)

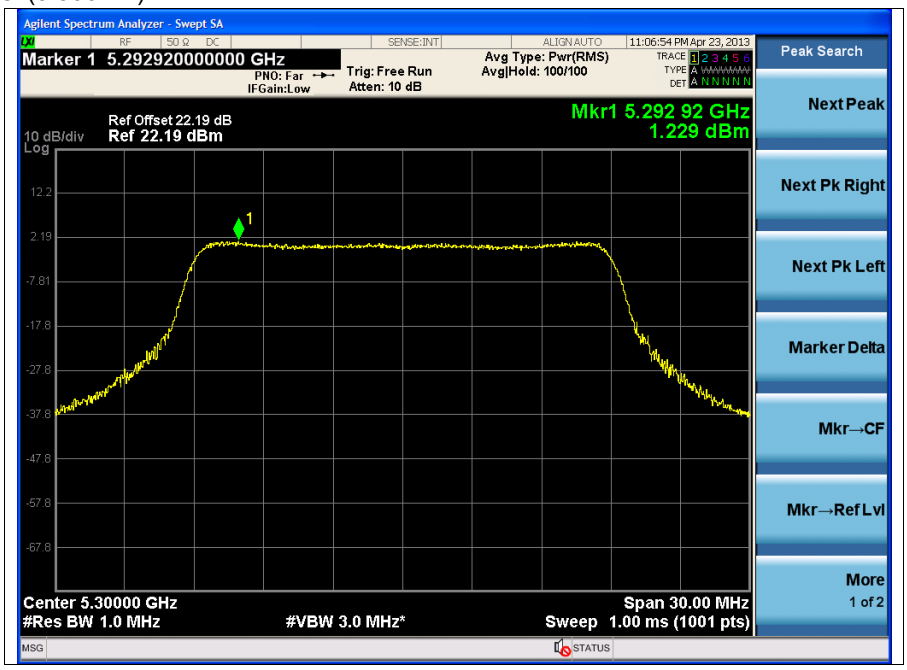


802.11-HT20 (DFS)

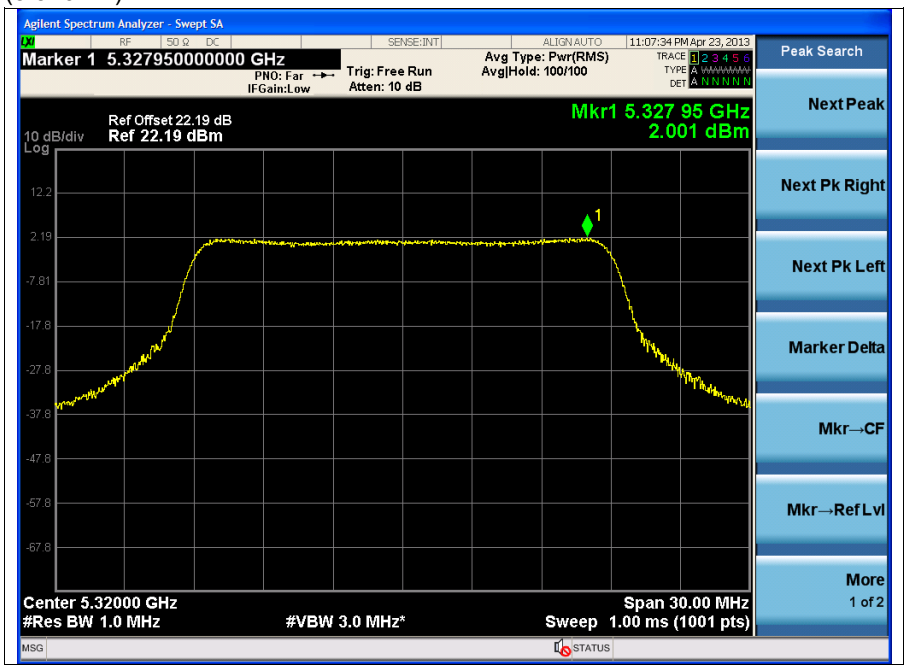
Low Channel (5 260 ㎒)



Middle Channel (5 300 ㎒)

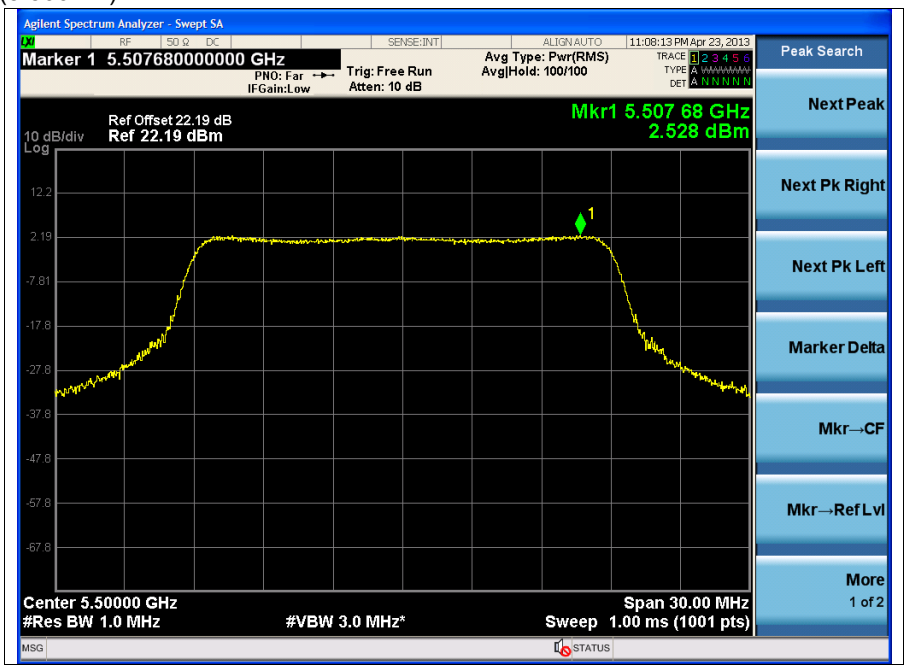


High Channel (5 320 ㎒)

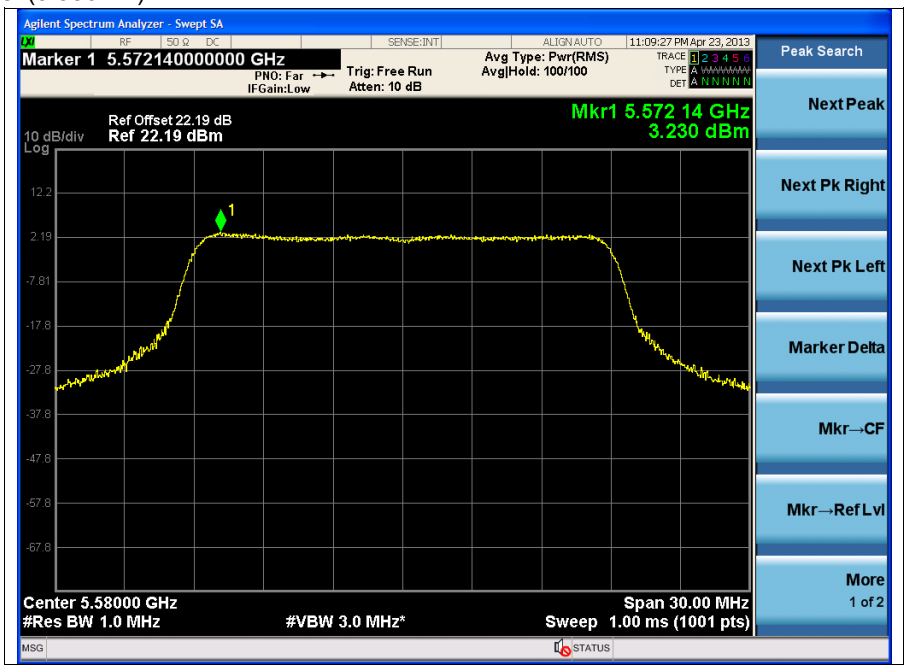


802.11-HT20 (DFS)

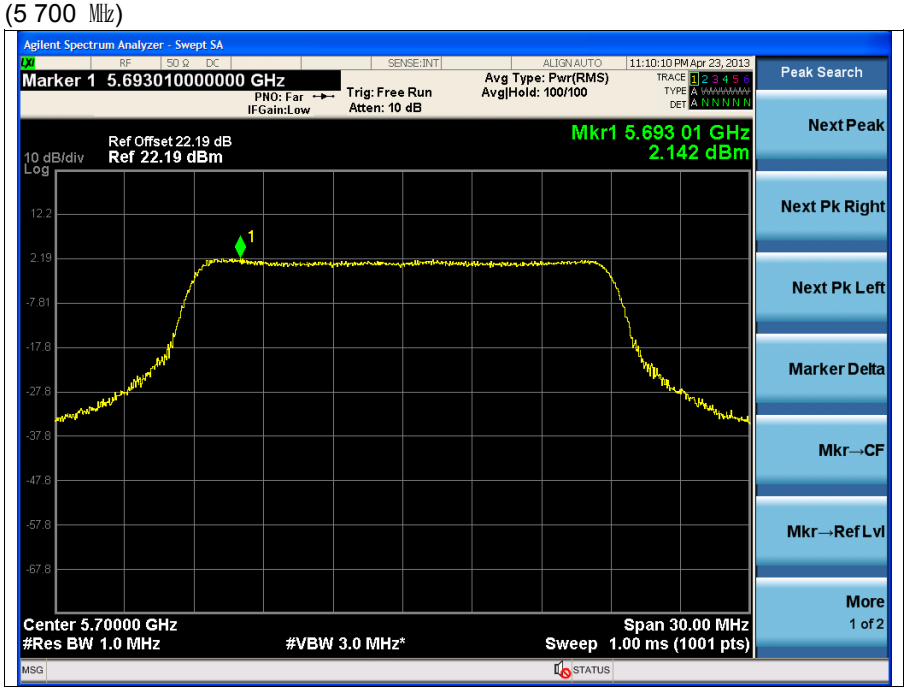
Low Channel (5 500 ㎒)



Middle Channel (5 580 ㎒)



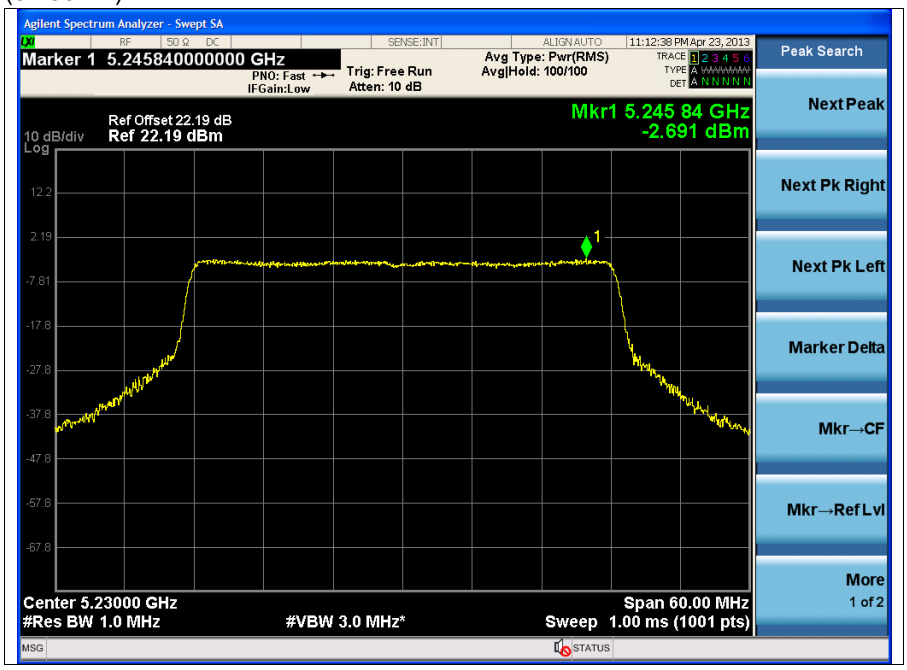
High Channel (5 700 ㎒)



802.11n-HT40 (Non-DFS)

Low Channel (5 190 ㎒)

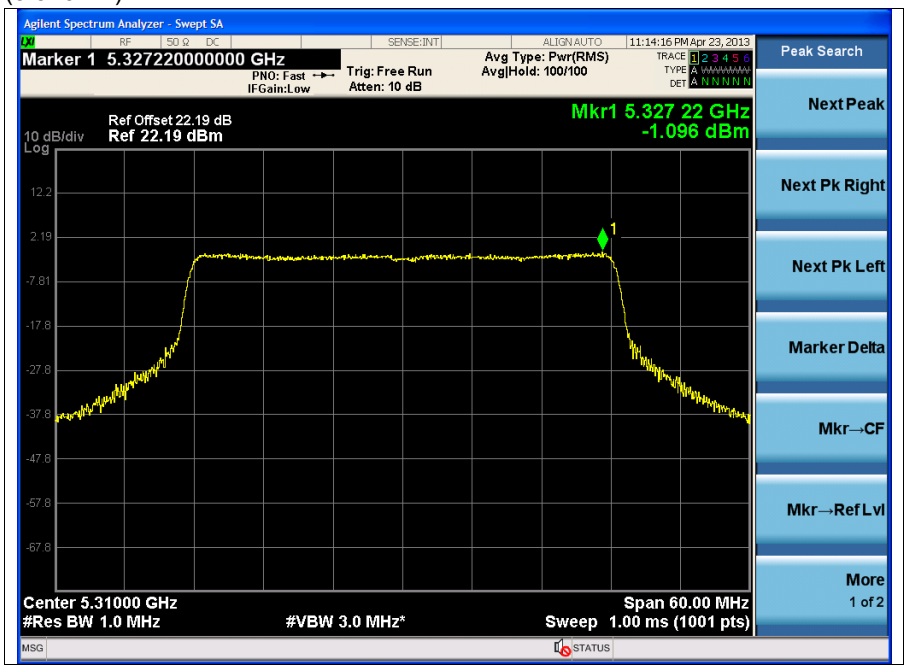
High Channel (5 230 ㎒)



802.11-HT40 (DFS)

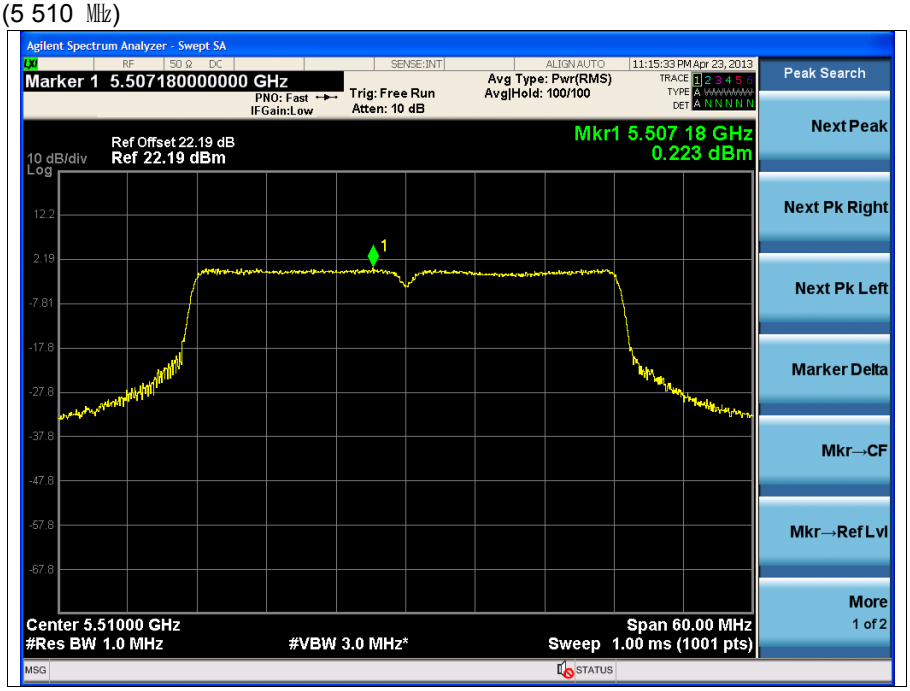
Low Channel (5 270 ㎒)

High Channel (5 310 ㎒)

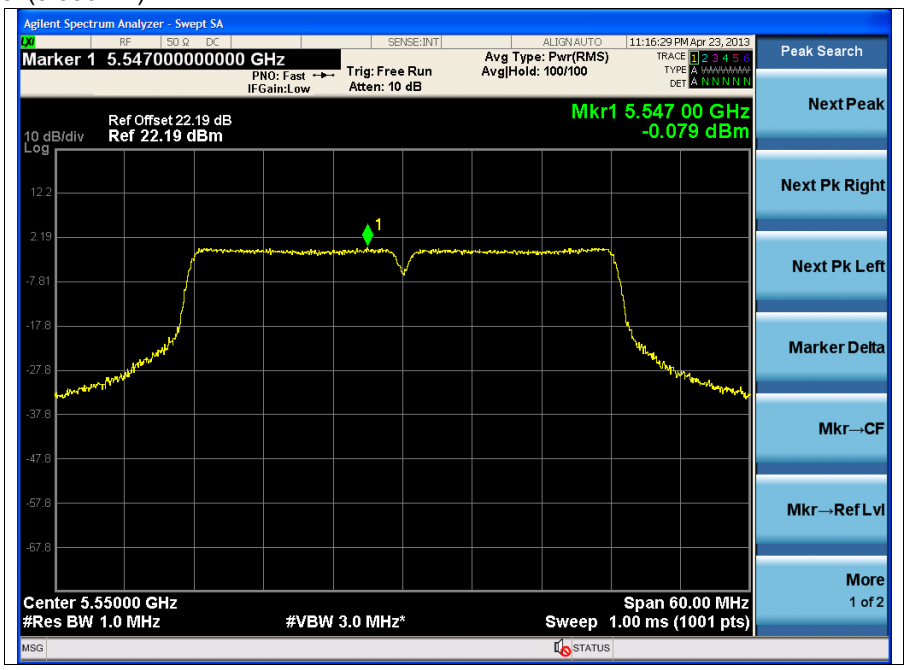


802.11-HT40 (DFS)

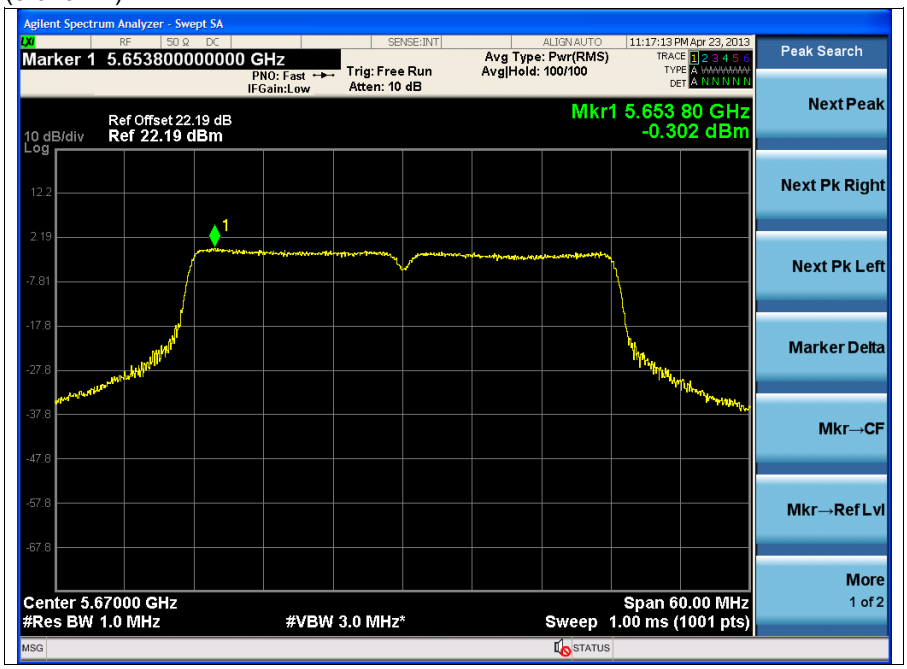
Low Channel (5 510 ㎒)



Middle Channel (5 550 ㎒)

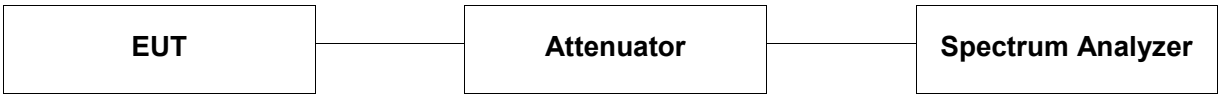


High Channel (5 670 ㎒)



6. Peak excursion

6.1. Test setup



6.2. Limit

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 ㏈ across any 1 ㎒ bandwidth or the emission bandwidth whichever is less.

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 G of KDB 789033.
2. Set the spectrum analyzer or EMI receiver span to view the entire emission bandwidth.
3. Find the maximum of the peak-max-hold spectrum.
4. Set RBW = 1 ㎒.
5. Set VBW ≥ 3 ㎒.
6. Detector = Peak.
7. Trace mode = max-hold.
8. Allow the sweeps to continue until the trace stabilizes.
9. Use the peak search function to find the peak of the spectrum.
10. Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.
    - Testing each modulation mode on a single channel in a single operating band is sufficient to demonstrate compliance with the peak excursion requirement.
    - Tests performed all signal types, all modulation types, all bandwidth modes, all variations in signal parameters.

6.4. Test result

Ambient temperature : (24 ± 2) ℃
Relative humidity : 49 % R.H.

- 11a

Channel No.	Frequency (㎒)	Data Rate (Mbps)	Peak excursion (dB)	Limit (dB)
36	5 180	6	7.705	13
		9	7.598	
		12	8.682	
		18	8.491	
		24	9.443	
		36	9.752	
		48	9.419	
		54	9.879	

- 11n_HT20

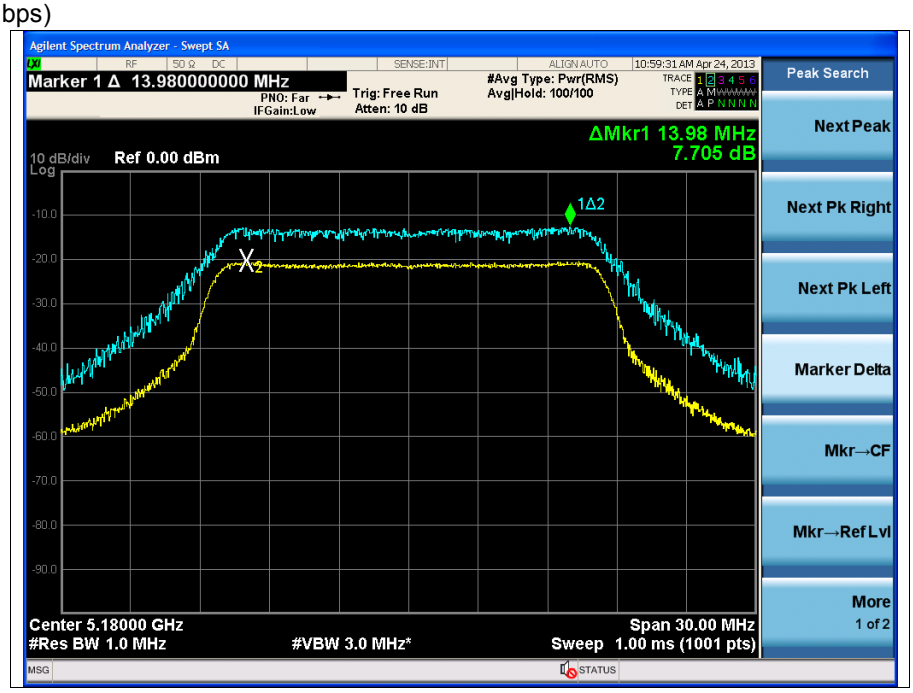
Channel No.	Frequency (㎒)	Data Rate (Mbps)	Peak excursion (dB)	Limit (dB)
36	5 180	MCS0	7.727	13
		MCS1	8.908	
		MCS2	8.127	
		MCS3	8.985	
		MCS4	9.409	
		MCS5	9.401	
		MCS6	9.511	
		MCS7	9.765	

- 11n_HT40

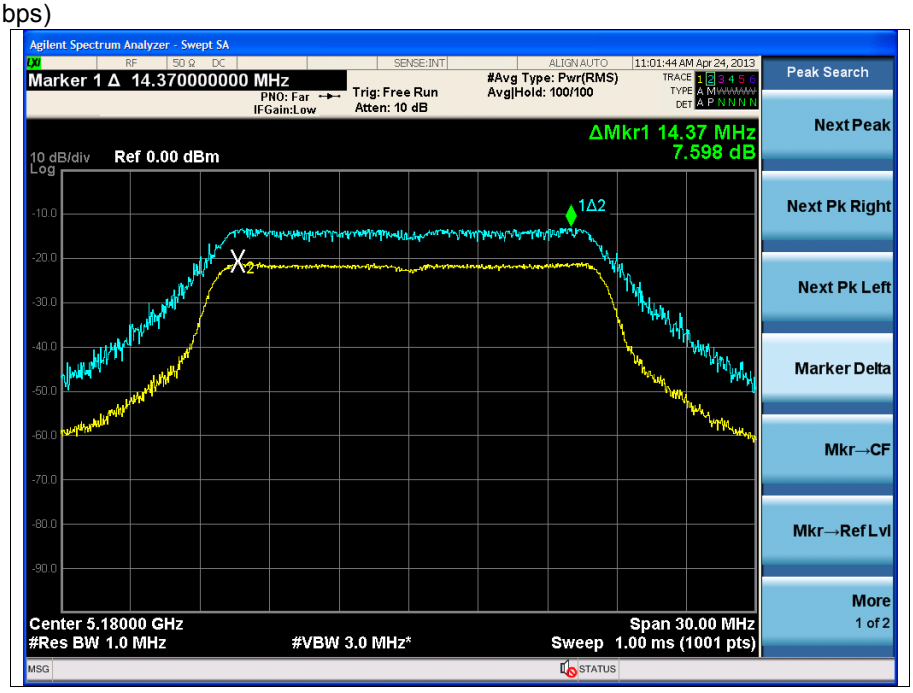
Channel No.	Frequency (㎒)	Data Rate (Mbps)	Peak excursion (dB)	Limit (dB)
36	5 190	MCS0	8.084	13
		MCS1	8.736	
		MCS2	9.985	
		MCS3	9.952	
		MCS4	10.150	
		MCS5	10.149	
		MCS6	10.534	
		MCS7	10.965	

- 11a

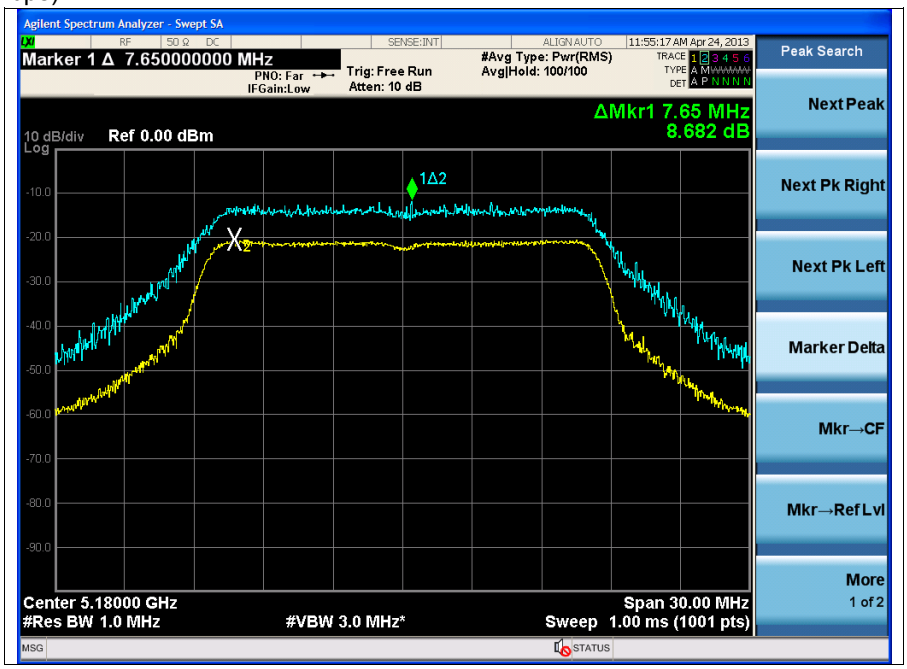
5 180 ㎒(6 Mbps)



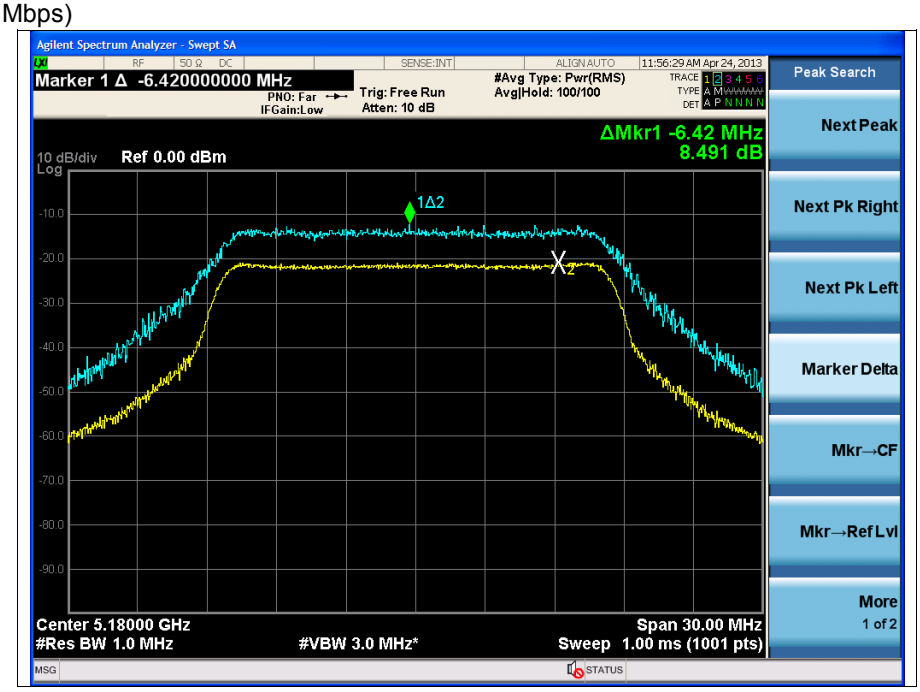
5 180 ㎒(9 Mbps)



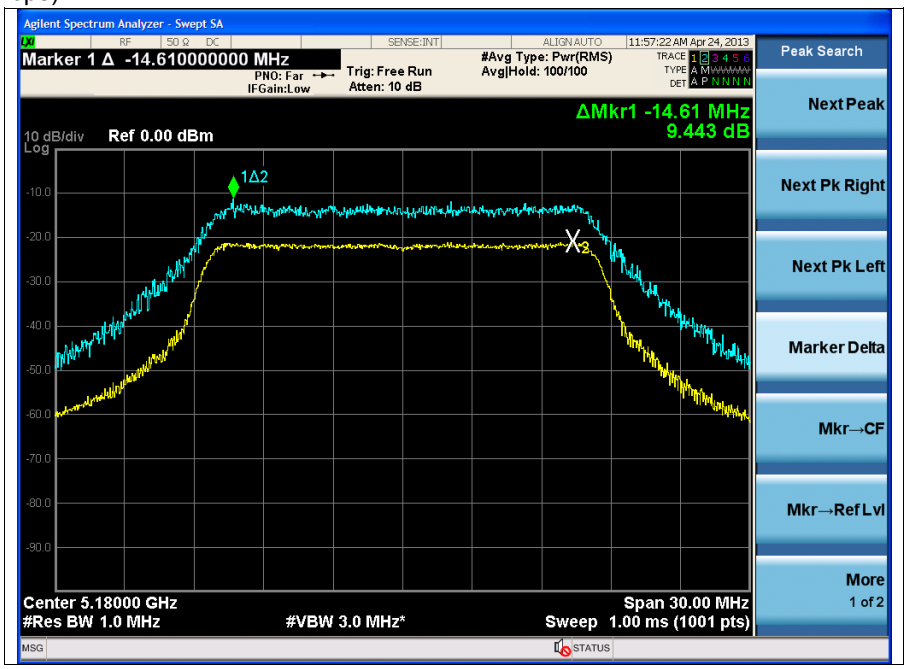
5 180 ㎒(12 Mbps)



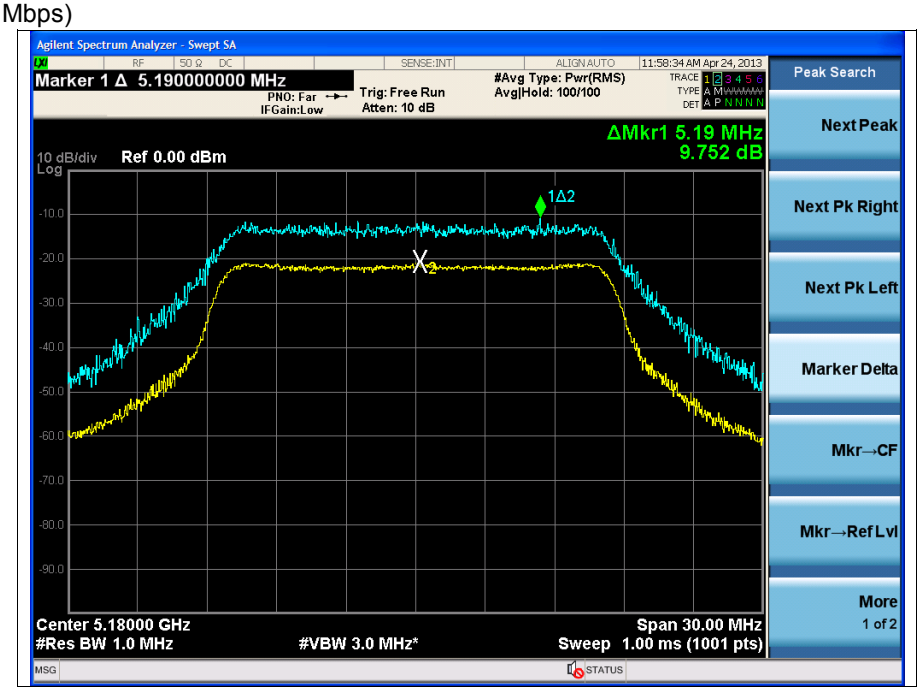
5 180 ㎒(18 Mbps)



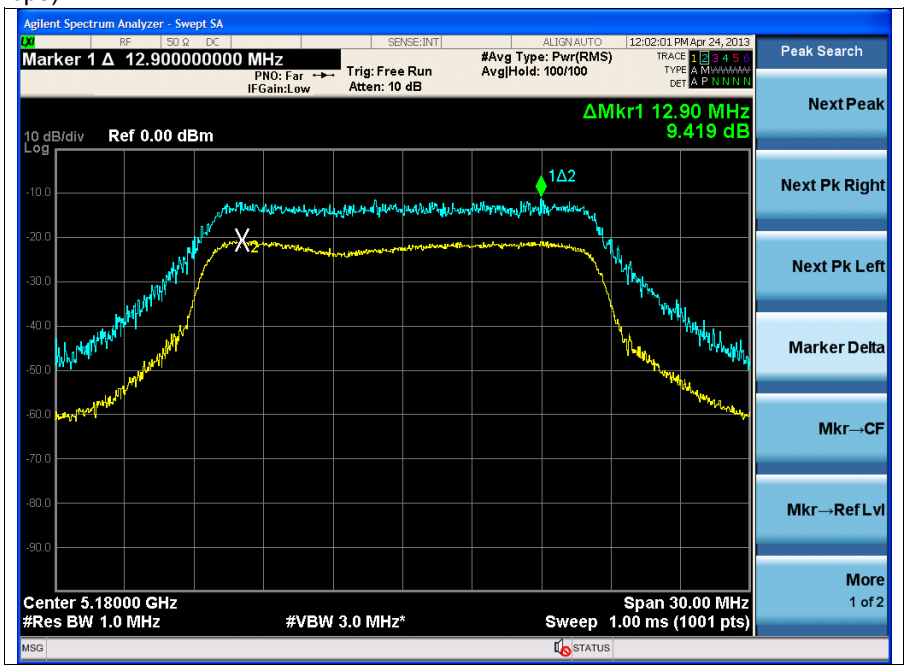
5 180 ㎒(24 Mbps)



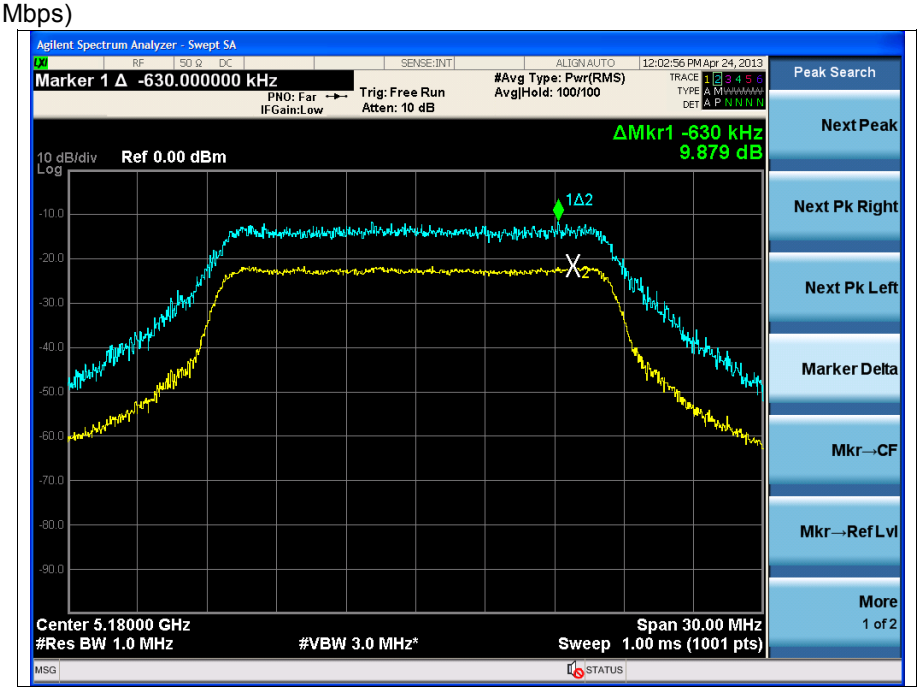
5 180 ㎒(36 Mbps)



5 180 ㎒(48 Mbps)

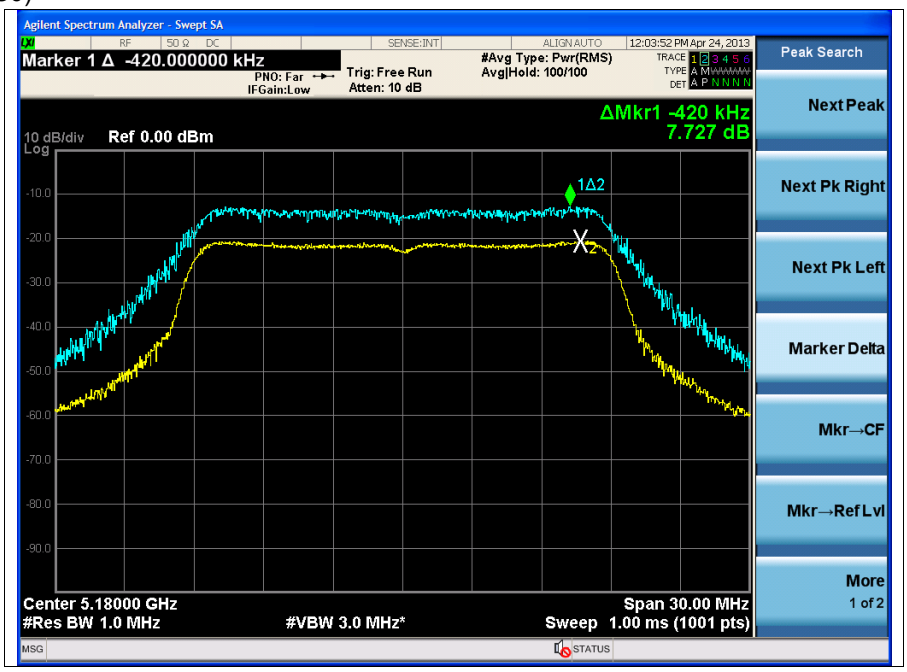


5 180 ㎒(54 Mbps)

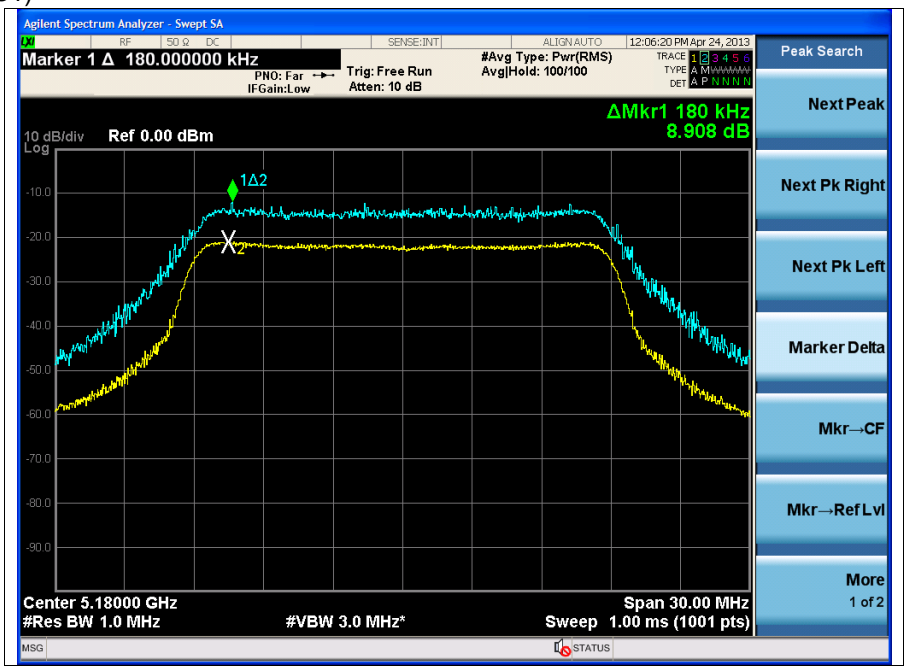


- 11n_HT20

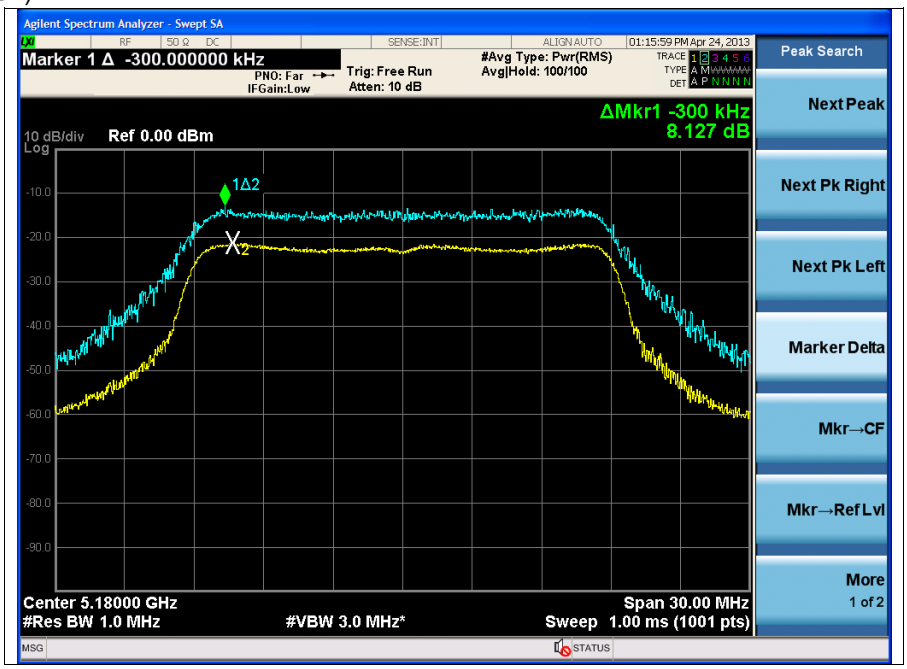
5 180 ㎒(MCS0)



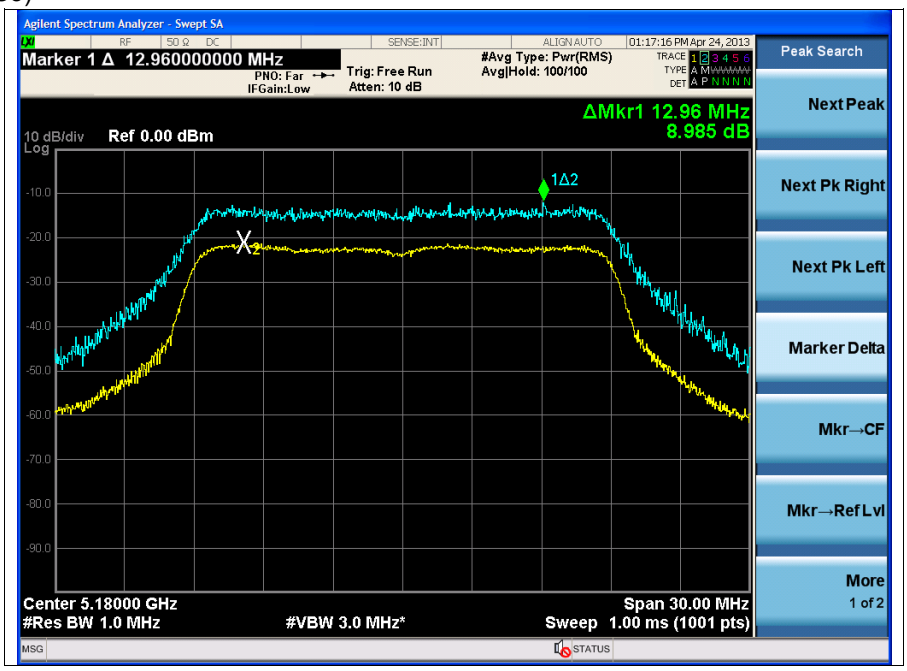
5 180 ㎒(MCS1)



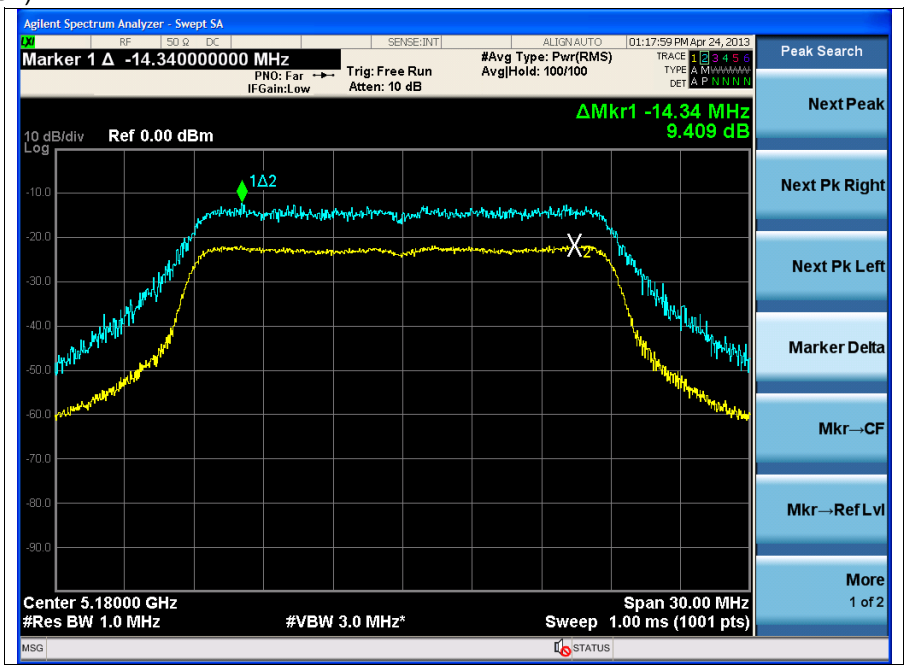
5 180 ㎒(MCS2)



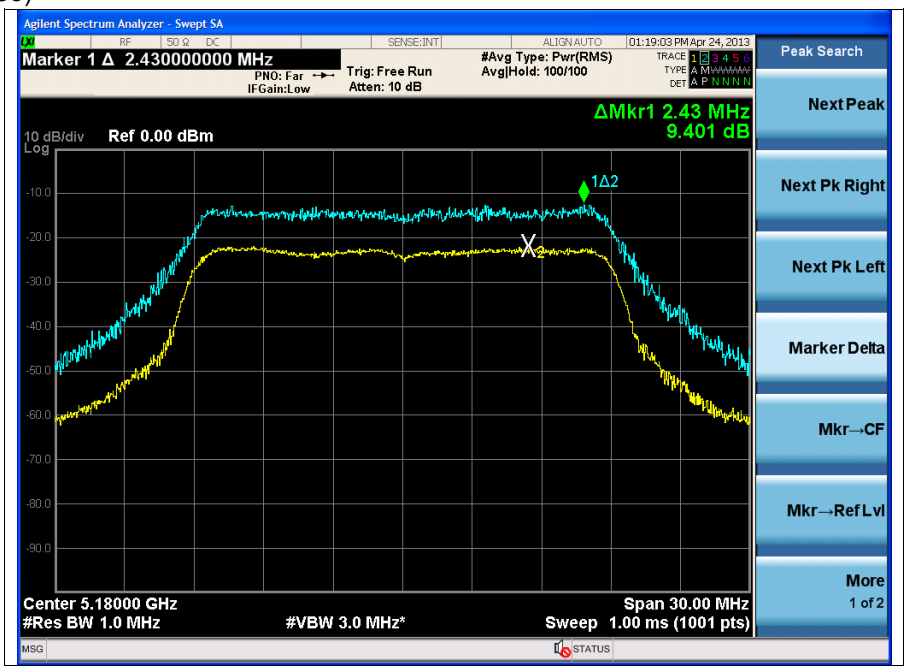
5 180 ㎒(MCS3)



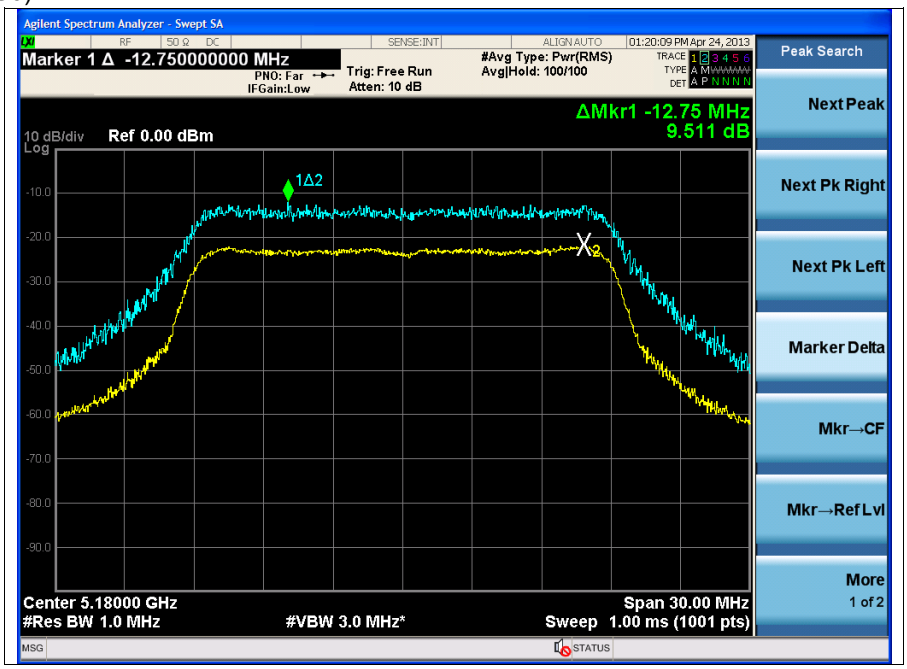
5 180 ㎒(MCS4)



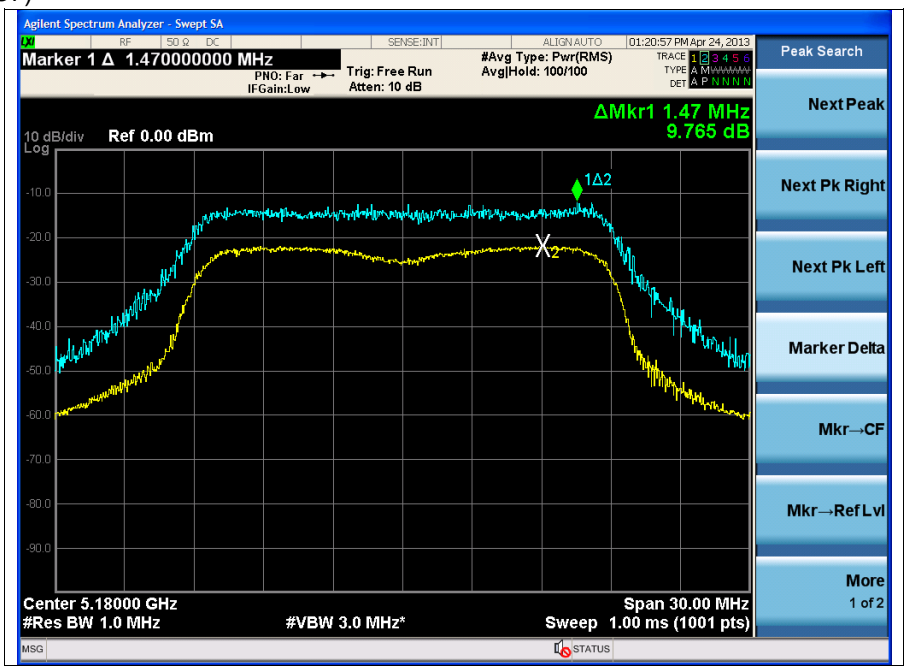
5 180 ㎒(MCS5)



5 180 ㎒(MCS6)

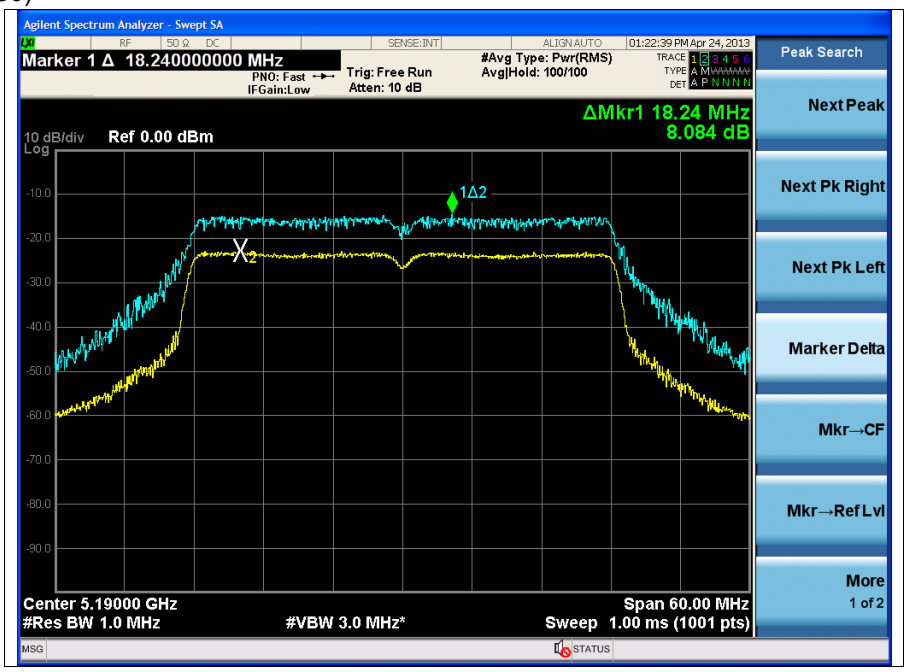


5 180 ㎒(MCS7)

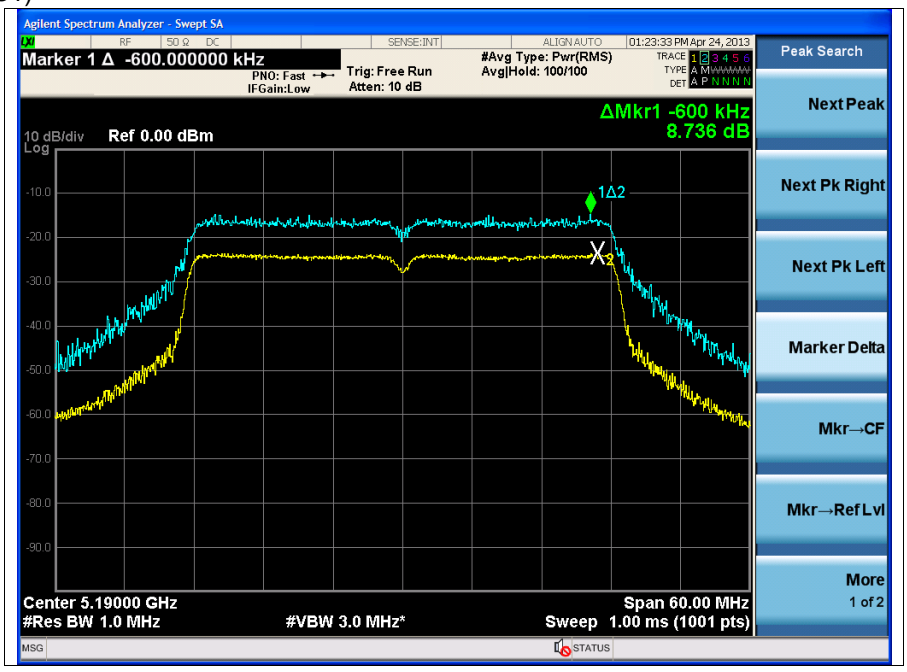


- 11n_HT20

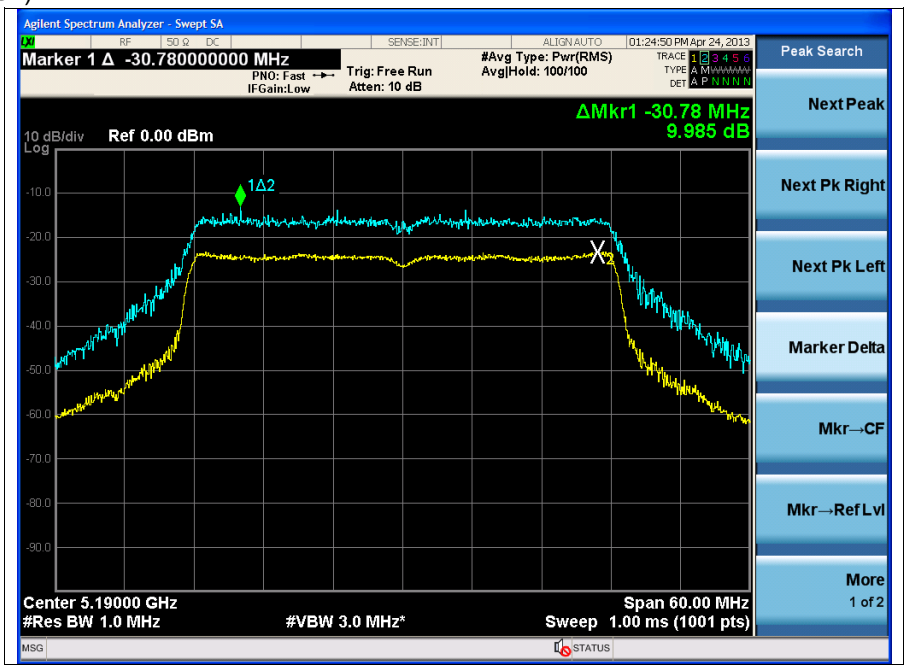
5 190 ㎒(MCS0)



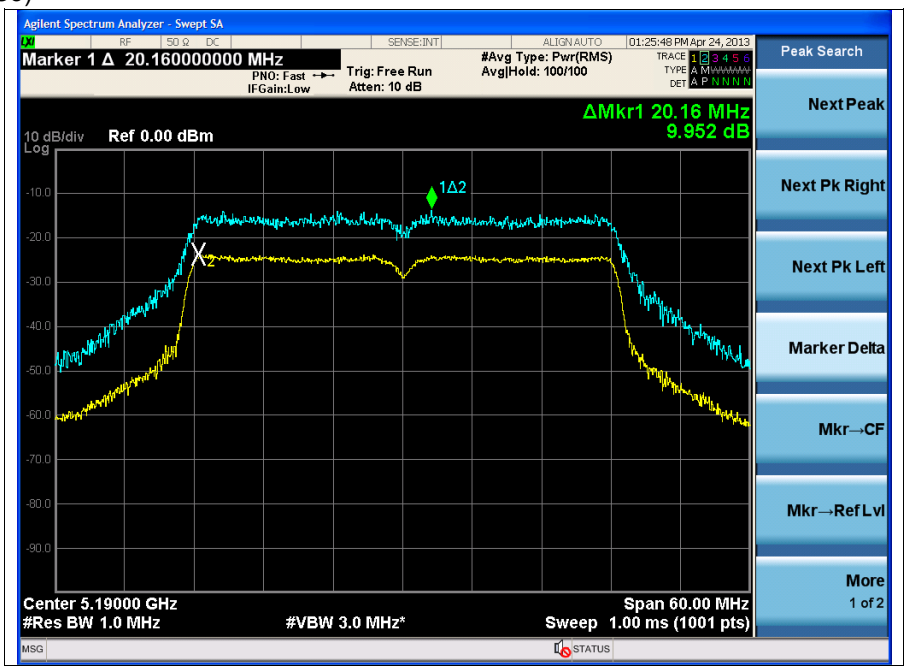
5 190 ㎒(MCS1)



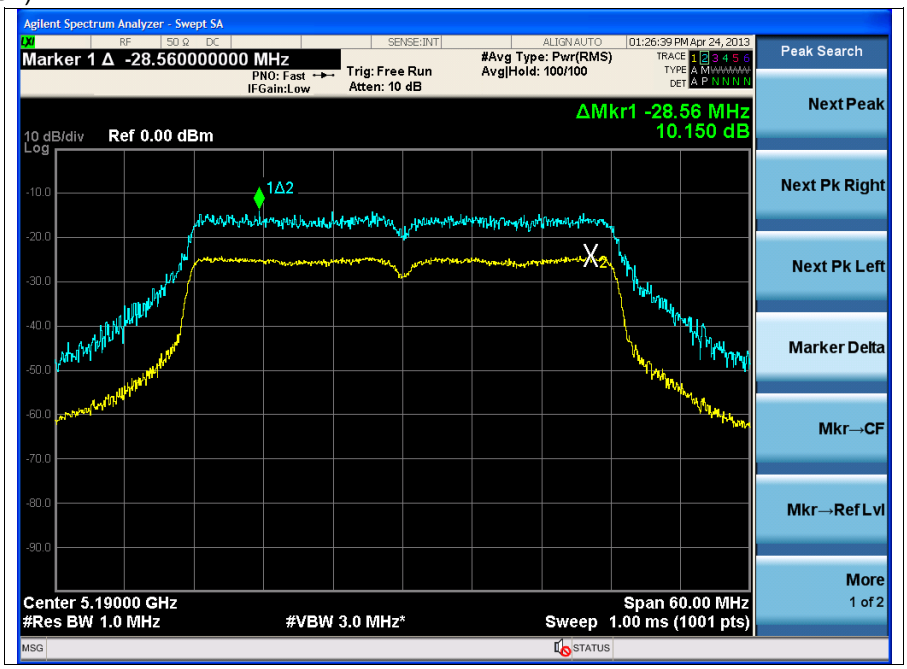
5 190 ㎒(MCS2)



5 190 ㎒(MCS3)

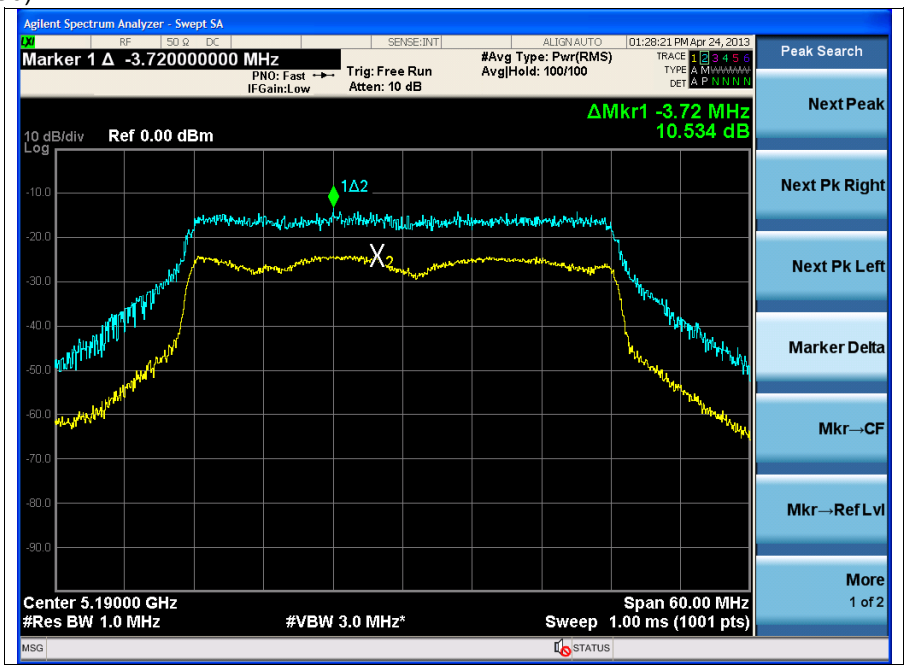


5 190 ㎒(MCS4)

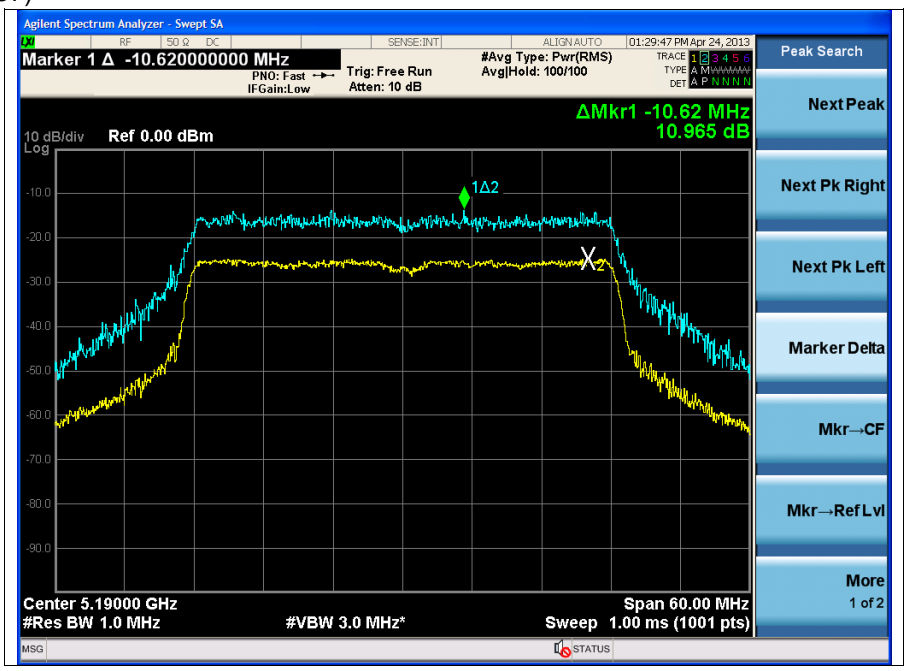


5 190 ㎒(MCS5)

5 190 ㎒(MCS6)

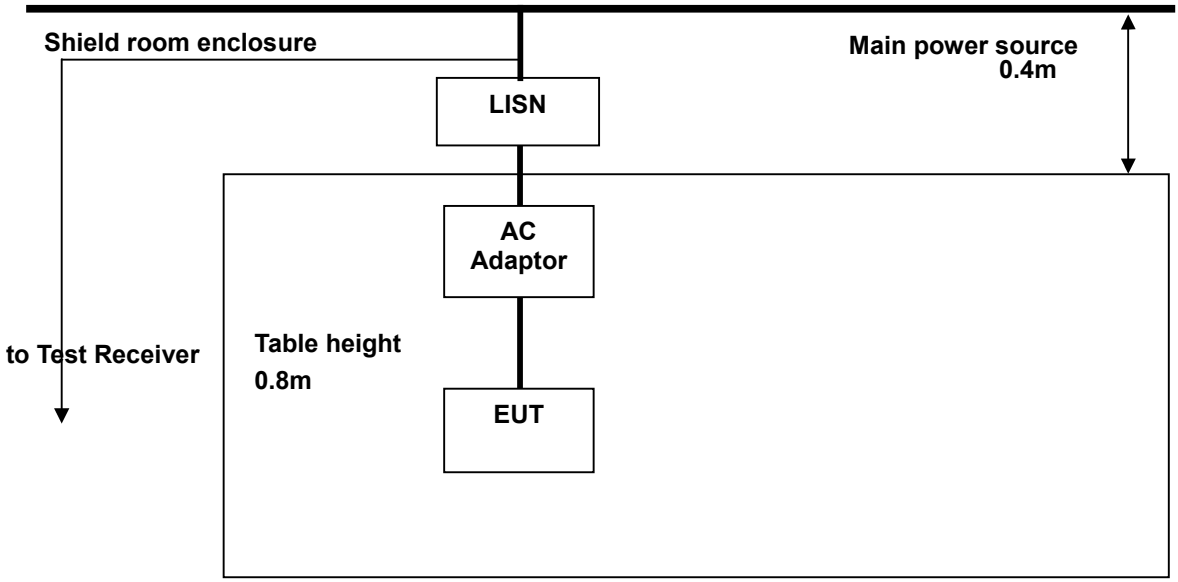


5 190 ㎒(MCS7)



7. Transmitter AC Power Line Conducted Emission

7.1. Test Setup



7.2. Limit

According to §15.207(a) for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 ㎑ to 30 ㎒, shall not exceed the limits in the following table, as measured using a 50 uH/50 ohm line impedance stabilization network(LISN).
Compliance with the provision of this paragraph shall on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower applies at the boundary between the frequency ranges.

Frequency of Emission (㎒)	Conducted limit (dB㎶)	
	Quasi-peak	Average
0.15 – 0.50	66 - 56*	56 - 46*
0.50 – 5.00	56	46
5.00 – 30.0	60	50

* Decreases with the logarithm of the frequency.

7.3. Test Procedures

All data rates and modes were investigated for this test. The full data for the worst case data rate are reported in this section.
AC line conducted emissions from the EUT were measured according to the dictates of ANSI C63.4-2003

1. The test procedure is performed in a 6.5m × 3.6m× 3.6m (L × W × H) shielded room. The EUT along with its peripherals were placed on a 1.0 m(W)× 1.5 m(L) and 0.8 m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.
2. The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room.
3. The excess power cable between the EUT and the LISN was bundled. All connecting cables of EUT were moved to find the maximum emission.

7.4. Test Results (Worst case configuration_ 11n_HT40 mode, MCS0)

The following table shows the highest levels of conducted emissions on both phase of Hot and Neutral line.

Ambient temperature : (24 ± 2) ℃
Relative humidity : 47 % R.H.

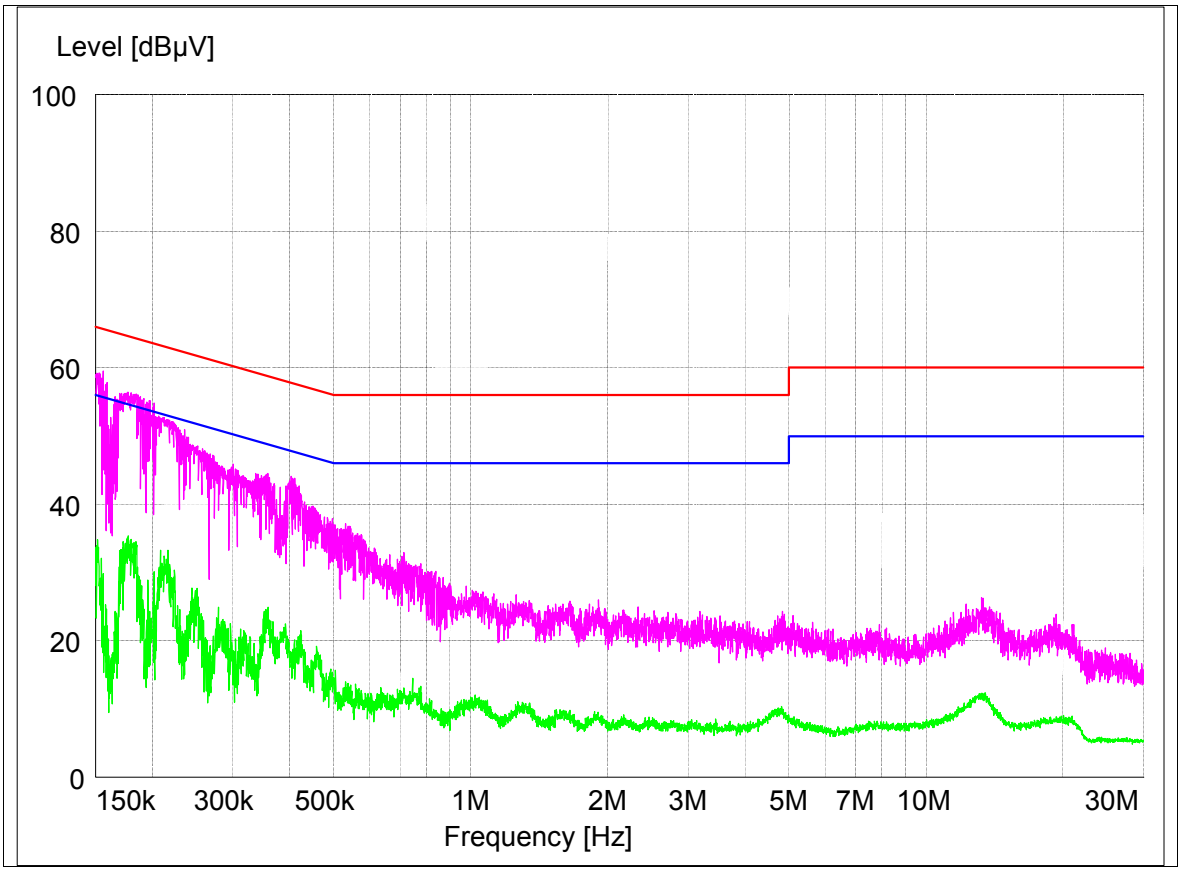
Frequency range : 0.15 ㎒ – 30 ㎒
Measured Bandwidth : 9 ㎑

FREQ.	LEVEL(dB㎶)		LINE	LIMIT(dB㎶)		MARGIN(dB)	
(㎒)	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average
0.16	51.26	34.86	N	65.73	55.73	14.47	20.87
0.18	52.70	35.90	N	64.67	54.67	11.97	18.77
0.21	48.36	32.66	N	63.37	53.37	15.01	20.71
0.23	45.88	26.18	N	62.52	52.52	16.64	26.34
0.36	39.86	25.16	N	58.80	48.80	18.94	23.64
0.40	28.14	20.44	N	57.79	47.79	29.65	27.35
0.16	54.48	30.38	H	65.62	55.62	11.14	25.24
0.18	54.74	39.74	H	64.35	54.35	9.61	14.61
0.21	50.18	33.48	H	63.41	53.41	13.23	19.93
0.22	50.29	34.59	H	62.86	52.86	12.57	18.27
0.35	41.87	25.67	H	59.01	49.01	17.14	23.34
0.41	39.15	22.55	H	57.69	47.69	18.54	25.14

Note ;

1. Line (H): Hot, Line (N): Neutral
2. All modes of operation were investigated and the worst-case emissions are reported using 11n_HT40 MCS0
3. The limit for Class B device(s) from 150 ㎑ to 30 ㎒ are specified in Section of the Title 47 CFR.
4. Traces shown in plot mad using a peak detector and average detector
5. Deviations to the Specifications: None.

Plot of Conducted Power line
Test mode : (Neutral)



Test mode : (Hot)