

Fig. 79 Radiated Spurious Emission (802.11n-HT20, ch48, 6 GHz-18 GHz)

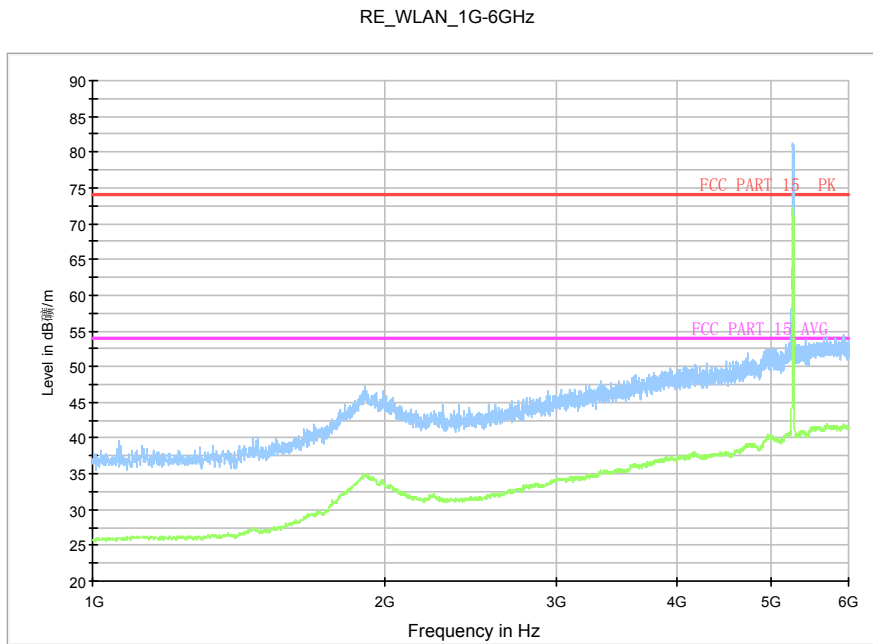


Fig. 80 Radiated Spurious Emission (802.11n-HT20, ch52, 1 GHz-6 GHz)

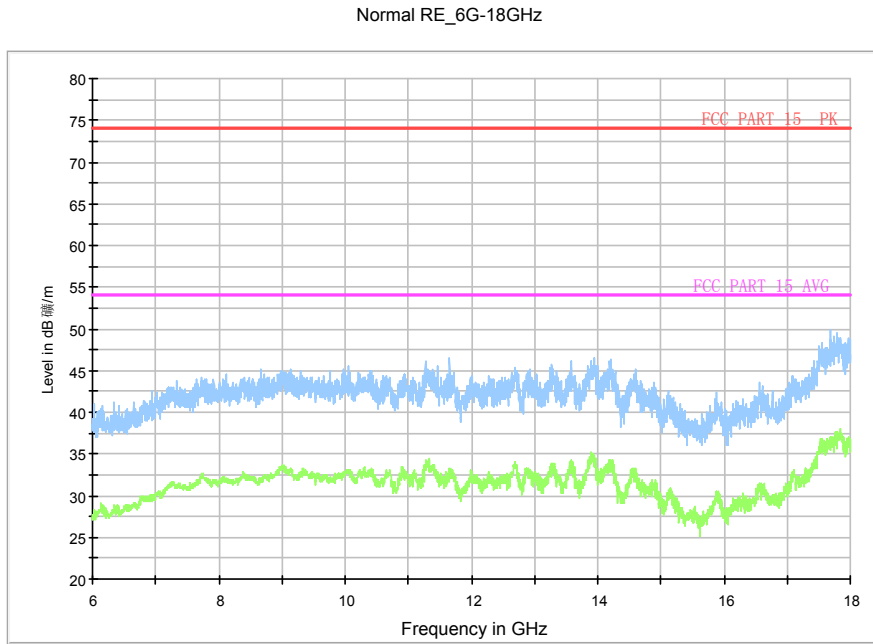


Fig. 81 Radiated Spurious Emission (802.11n-HT20, ch52, 6 GHz-18 GHz)

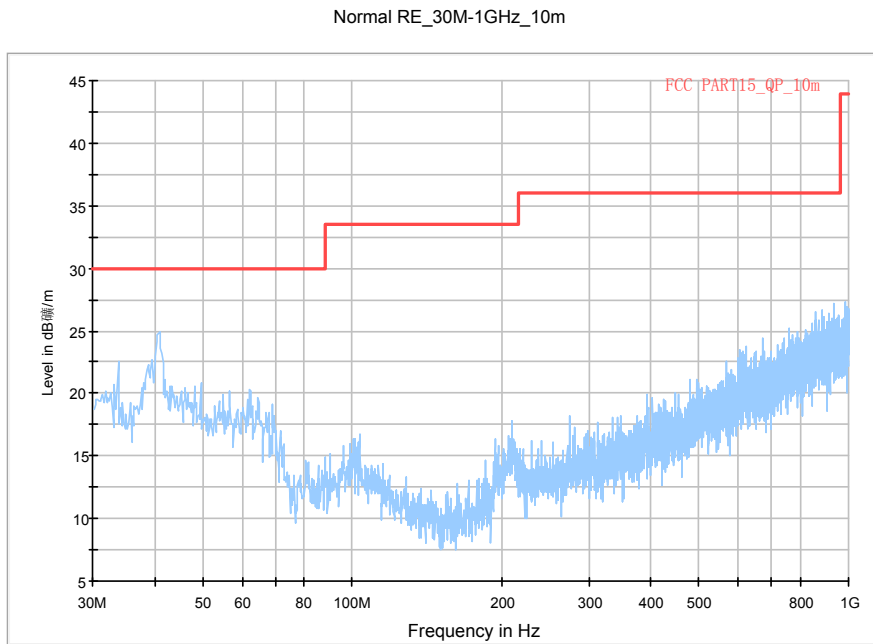


Fig. 82 Radiated Spurious Emission (802.11n-HT20, ch56, 30 MHz-1 GHz)

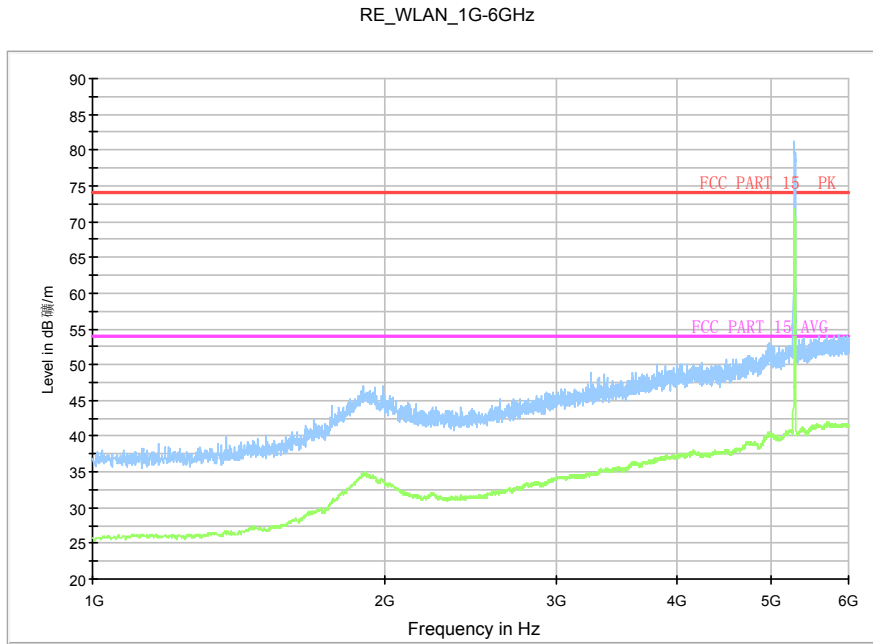


Fig. 83 Radiated Spurious Emission (802.11n-HT20, ch56, 1 GHz-6 GHz)

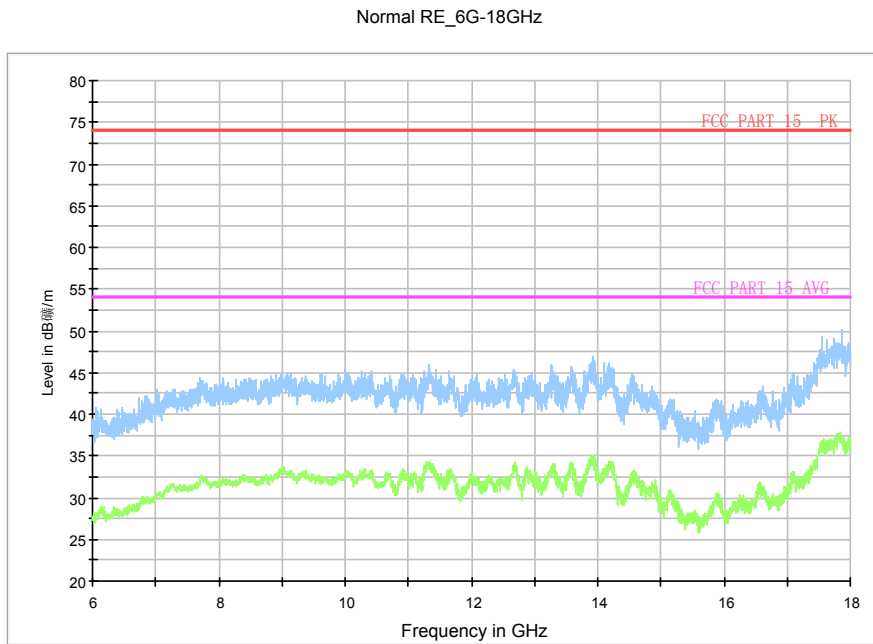


Fig. 84 Radiated Spurious Emission (802.11n-HT20, ch56, 6 GHz-18 GHz)

Normal RE_18G-26.5GHz

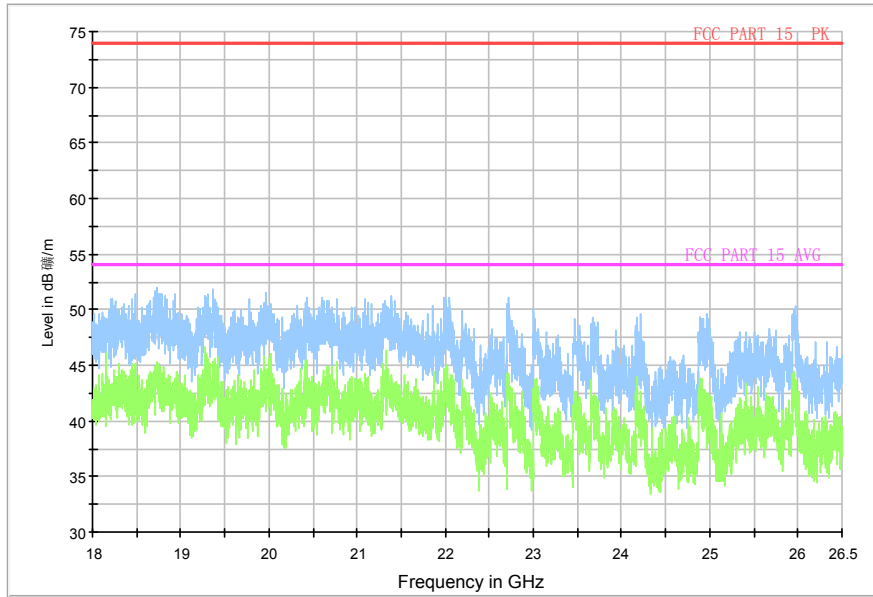


Fig. 85 Radiated Spurious Emission (802.11n-HT20, ch56, 18 GHz-26.5 GHz)

Normal RE_26.5G-40GHz

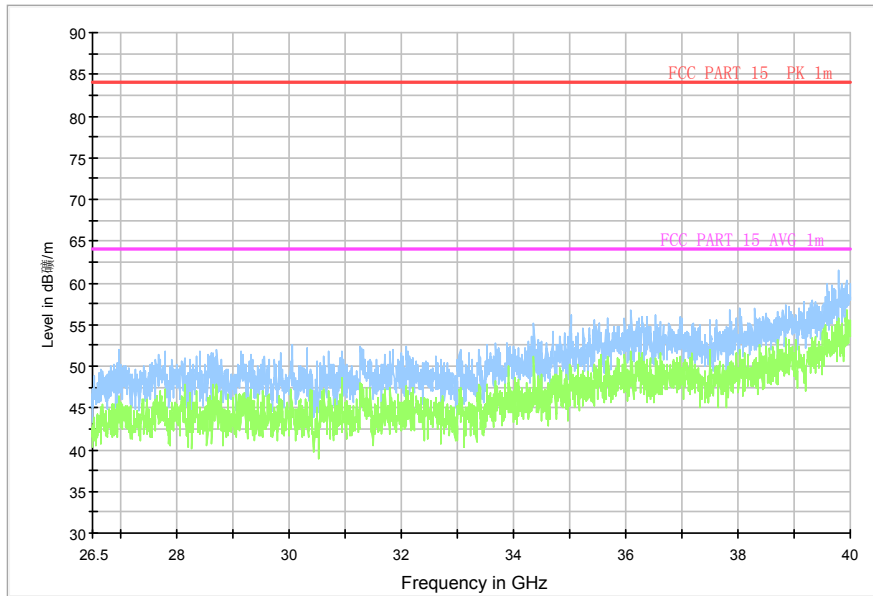


Fig. 86 Radiated Spurious Emission (802.11n-HT20, ch56, 26.5 GHz-40 GHz)

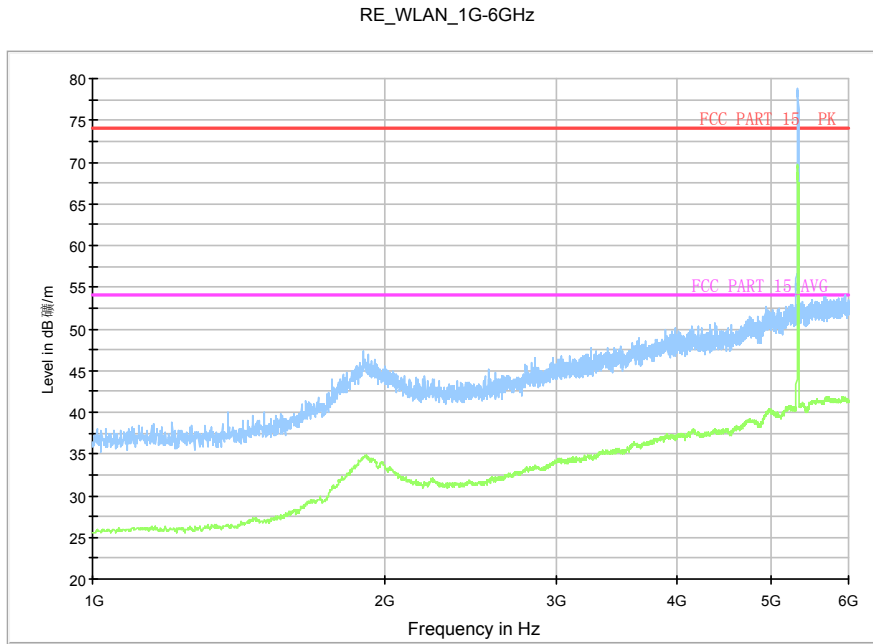


Fig. 87 Radiated Spurious Emission (802.11n-HT20, ch64, 1 GHz-6 GHz)

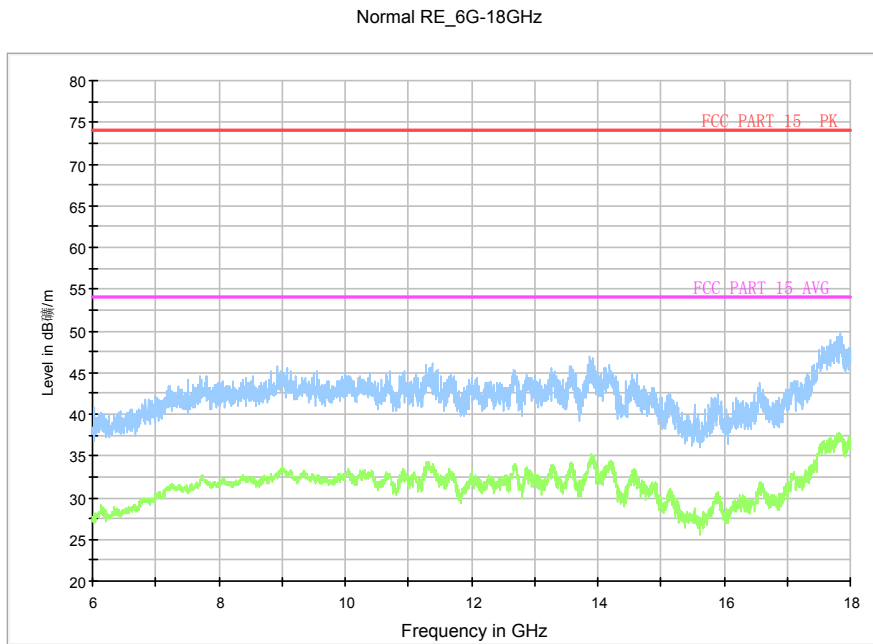


Fig. 88 Radiated Spurious Emission (802.11n-HT20, ch64, 6 GHz-18 GHz)

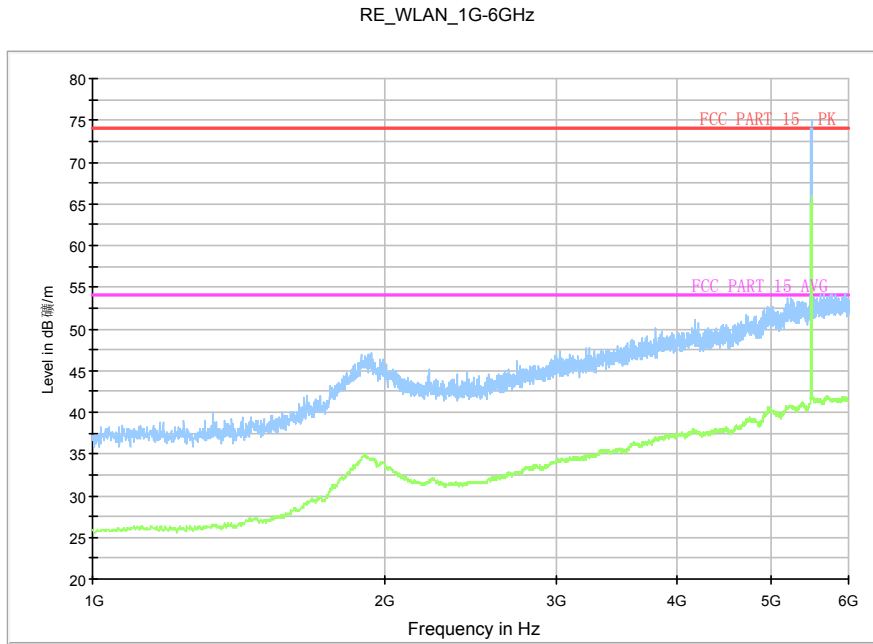


Fig. 89 Radiated Spurious Emission (802.11n-HT20, ch100, 1 GHz-6 GHz)

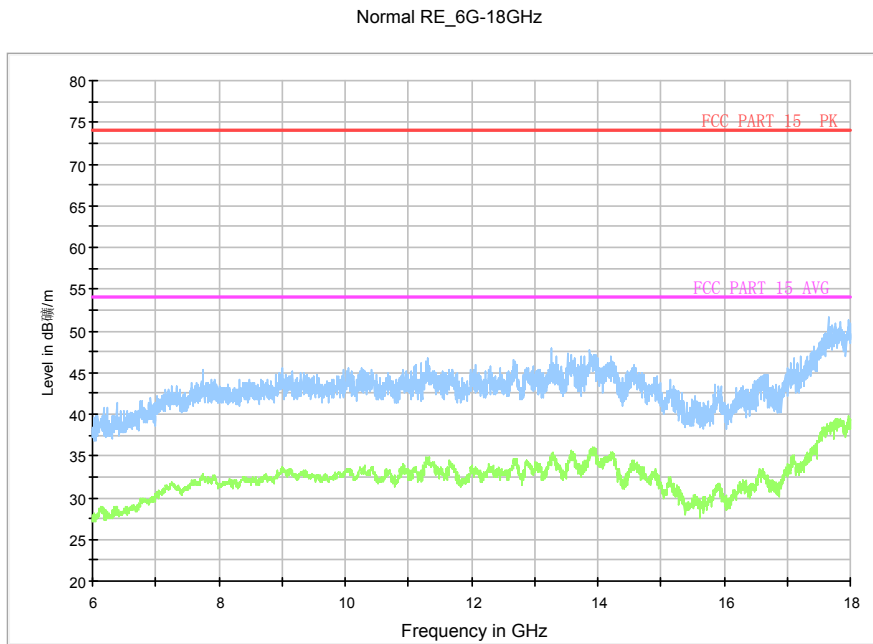


Fig. 90 Radiated Spurious Emission (802.11n-HT20, ch100, 6 GHz-18 GHz)

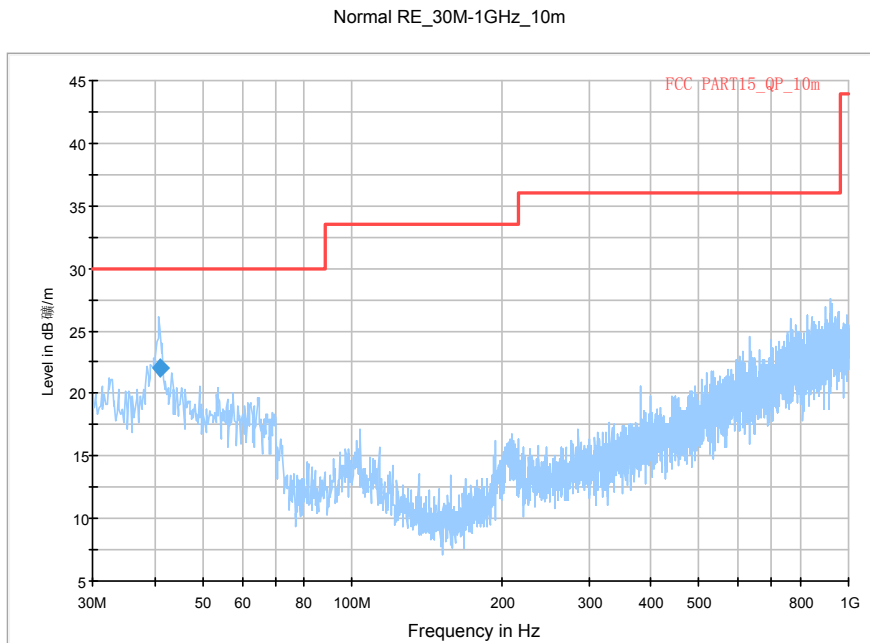


Fig. 91 Radiated Spurious Emission (802.11n-HT20, ch116, 30 MHz-1 GHz)

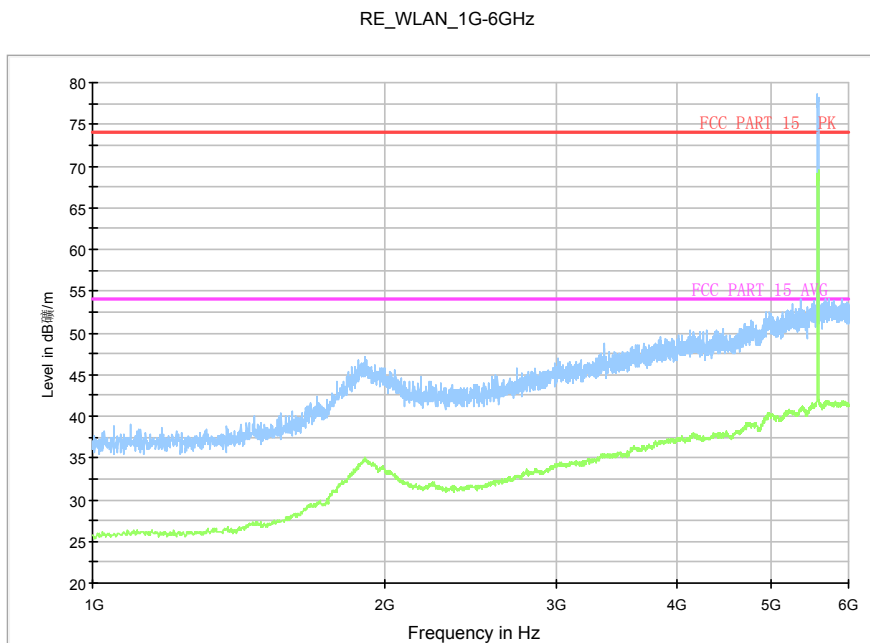


Fig. 92 Radiated Spurious Emission (802.11n-HT20, ch116, 1 GHz-6 GHz)

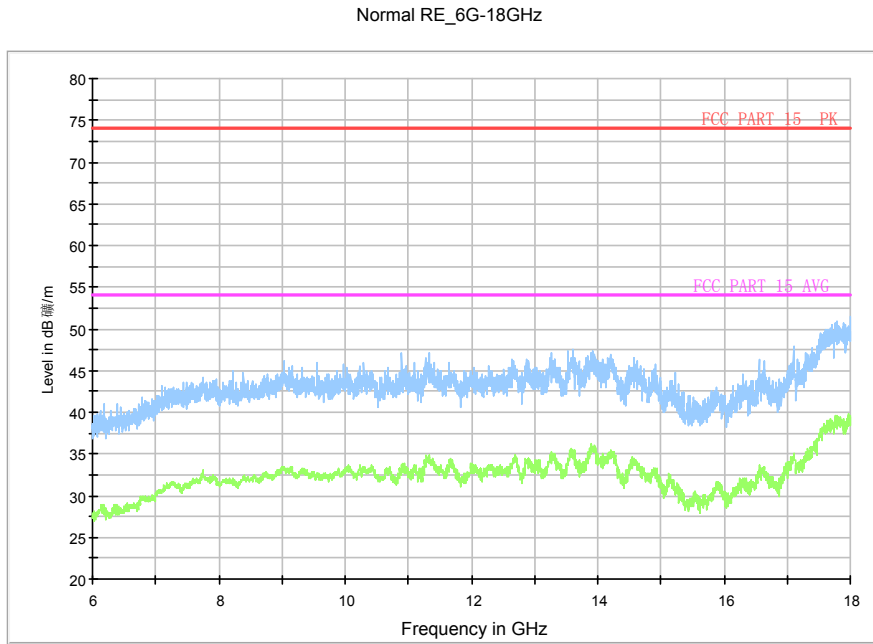


Fig. 93 Radiated Spurious Emission (802.11n-HT20, ch116, 6 GHz-18 GHz)

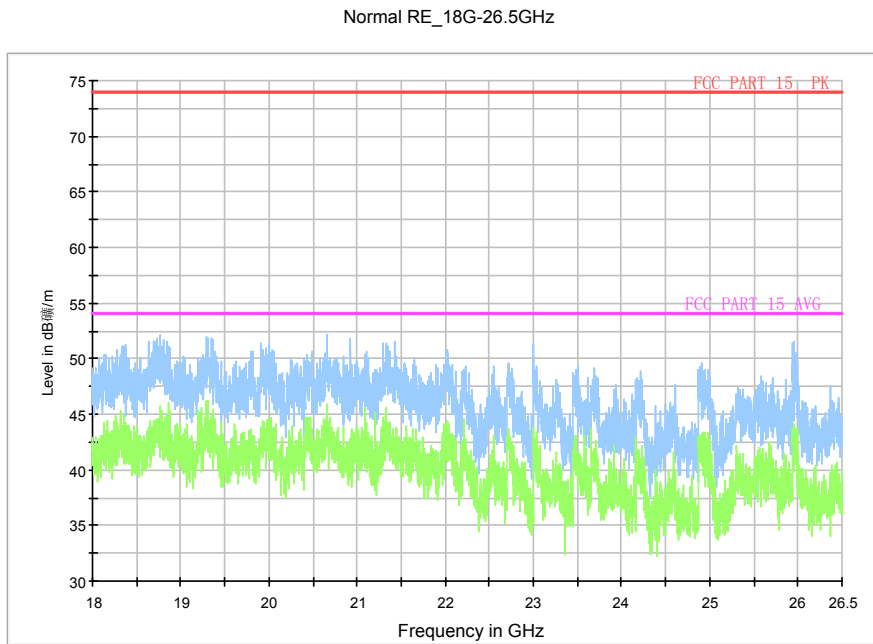


Fig. 94 Radiated Spurious Emission (802.11n-HT20, ch116, 18 GHz-26.5 GHz)

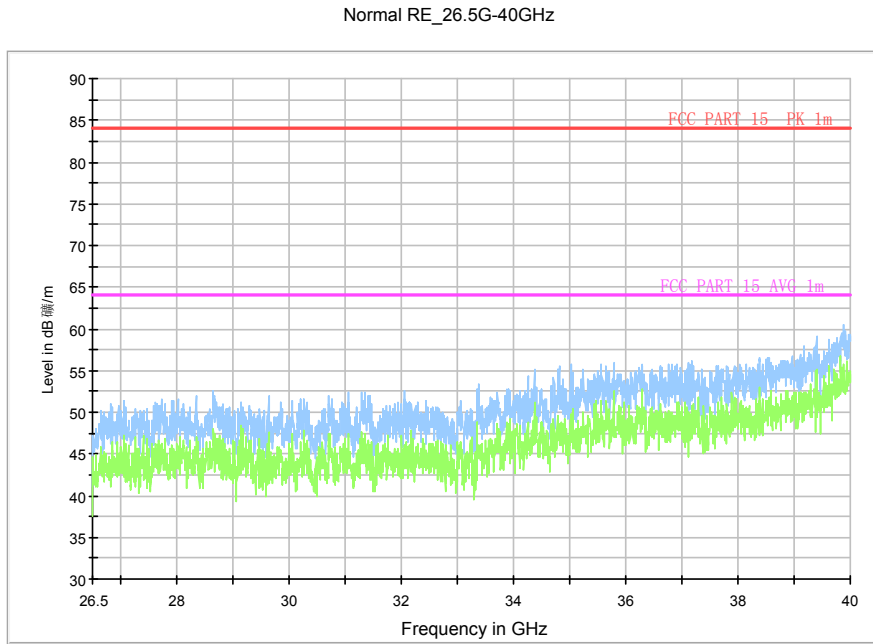


Fig. 95 Radiated Spurious Emission (802.11n-HT20, ch116, 26.5 GHz-40 GHz)

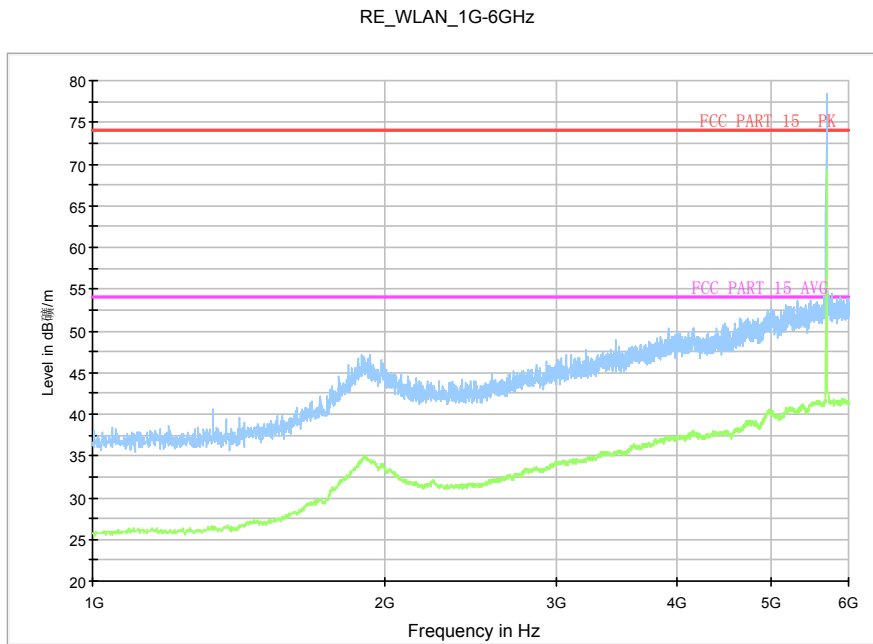


Fig. 96 Radiated Spurious Emission (802.11n-HT20, ch140, 1 GHz-6 GHz)

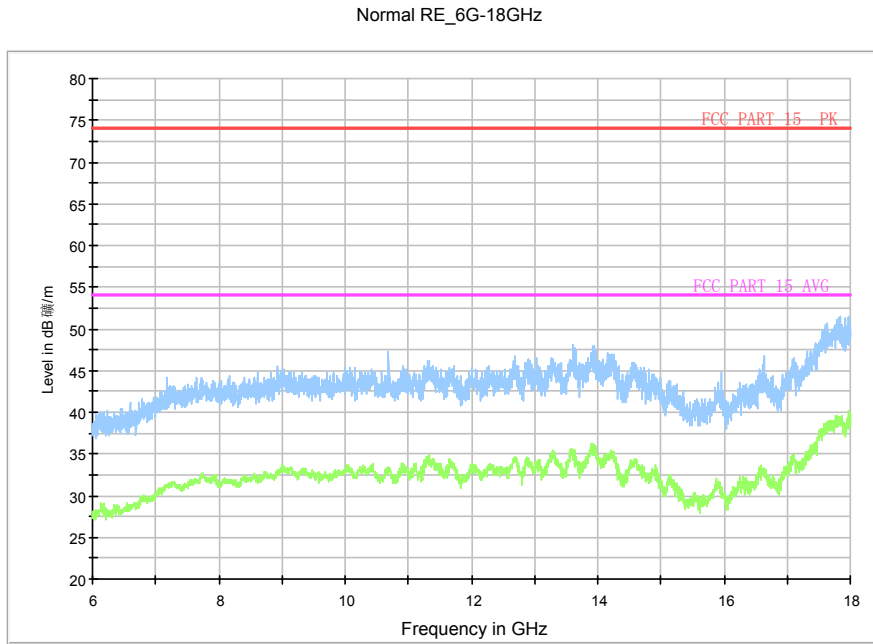


Fig. 97 Radiated Spurious Emission (802.11n-HT20, ch140, 6 GHz-18 GHz)

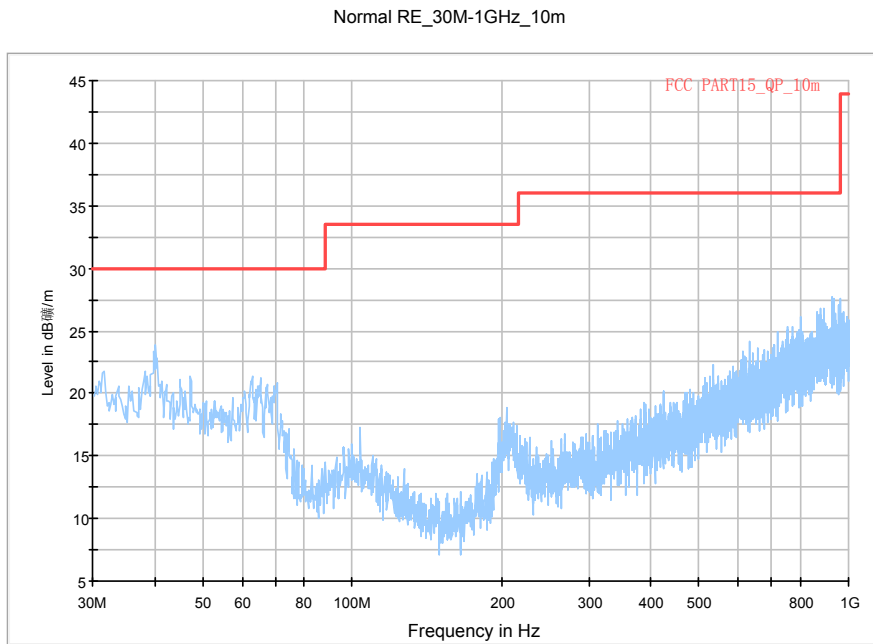


Fig. 98 Radiated Spurious Emission (802.11n-HT40, ch38, 30 MHz-1 GHz)

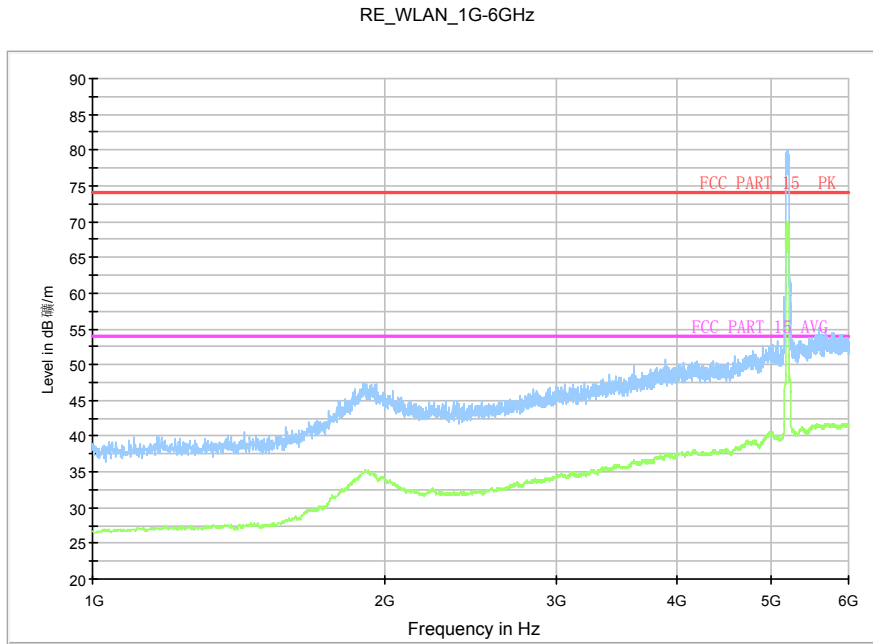


Fig. 99 Radiated Spurious Emission (802.11n-HT40, ch38, 1 GHz-6 GHz)

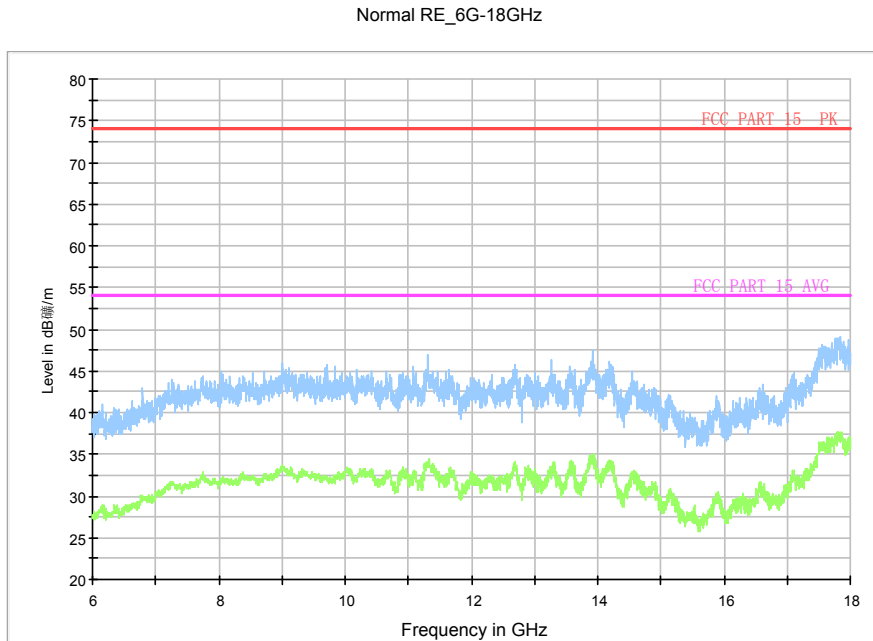


Fig. 100 Radiated Spurious Emission (802.11n-HT40, ch38, 6 GHz-18 GHz)

Normal RE_18G-26.5GHz

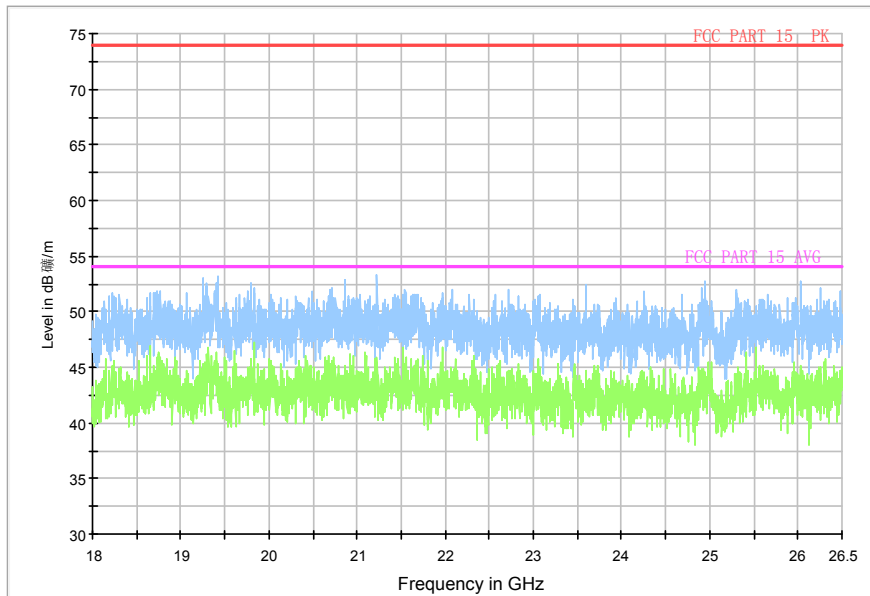


Fig. 101 Radiated Spurious Emission (802.11n-HT40, ch38, 18 GHz-26.5 GHz)

Normal RE_26.5G-40GHz

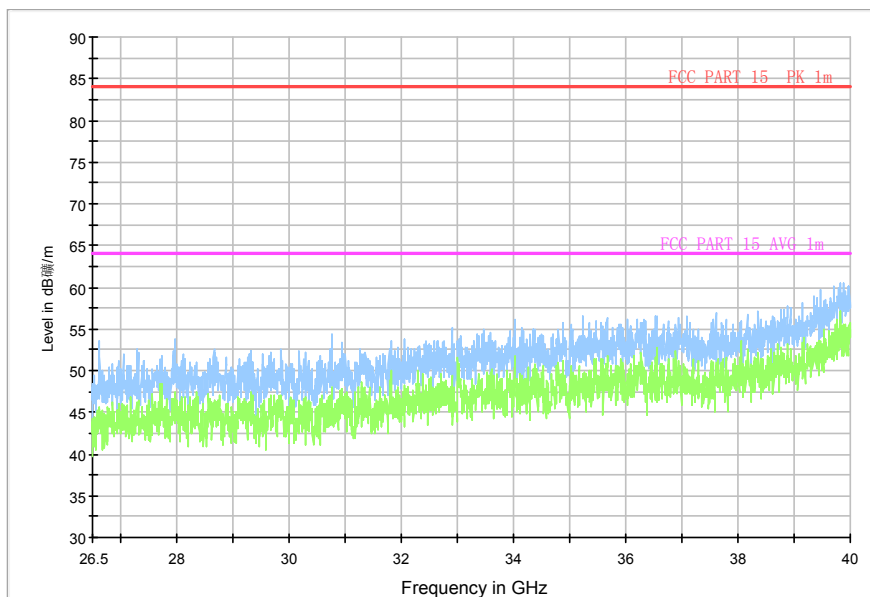


Fig. 102 Radiated Spurious Emission (802.11n-HT40, ch38, 26.5 GHz-40 GHz)

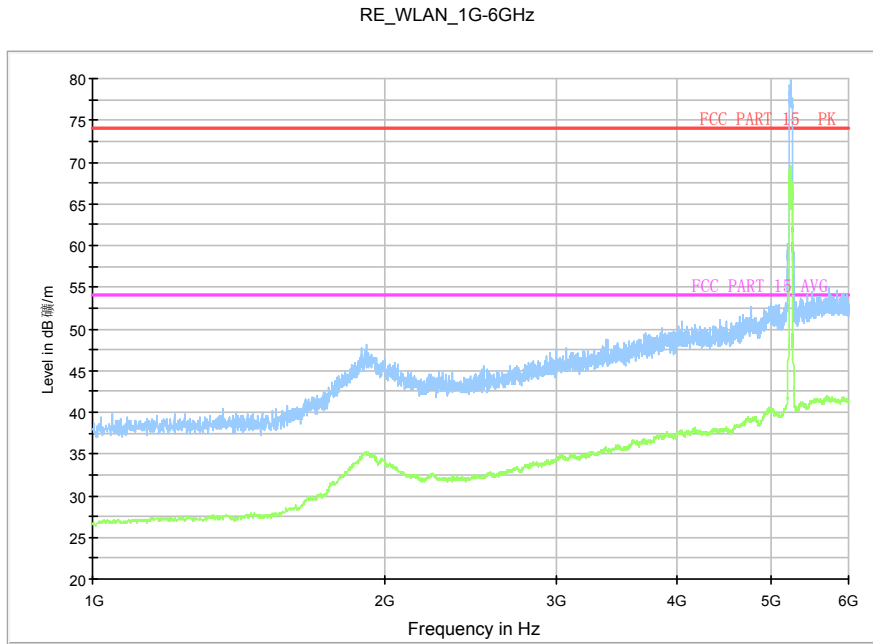


Fig. 103 Radiated Spurious Emission (802.11n-HT40, ch46, 1 GHz-6 GHz)

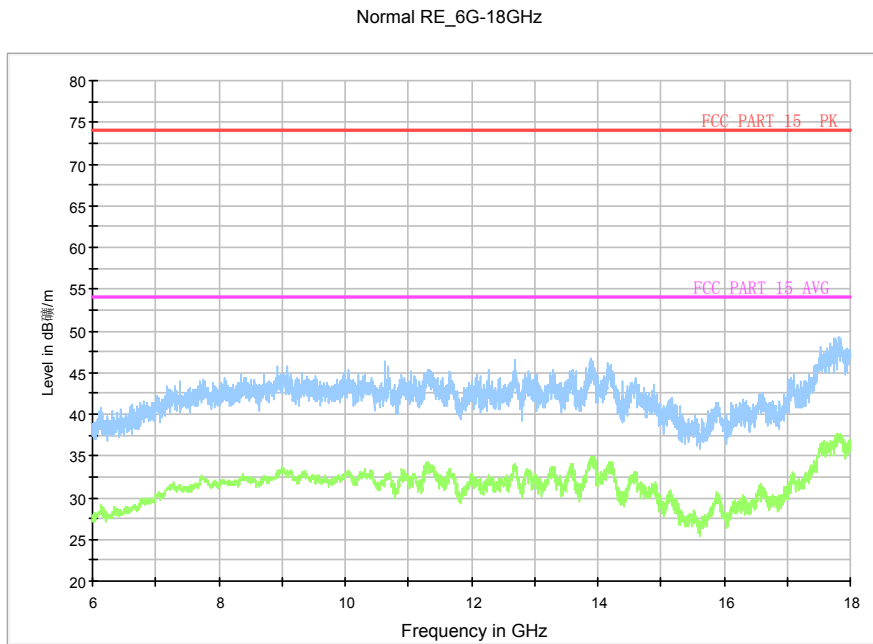


Fig. 104 Radiated Spurious Emission (802.11n-HT40, ch46, 6 GHz-18 GHz)

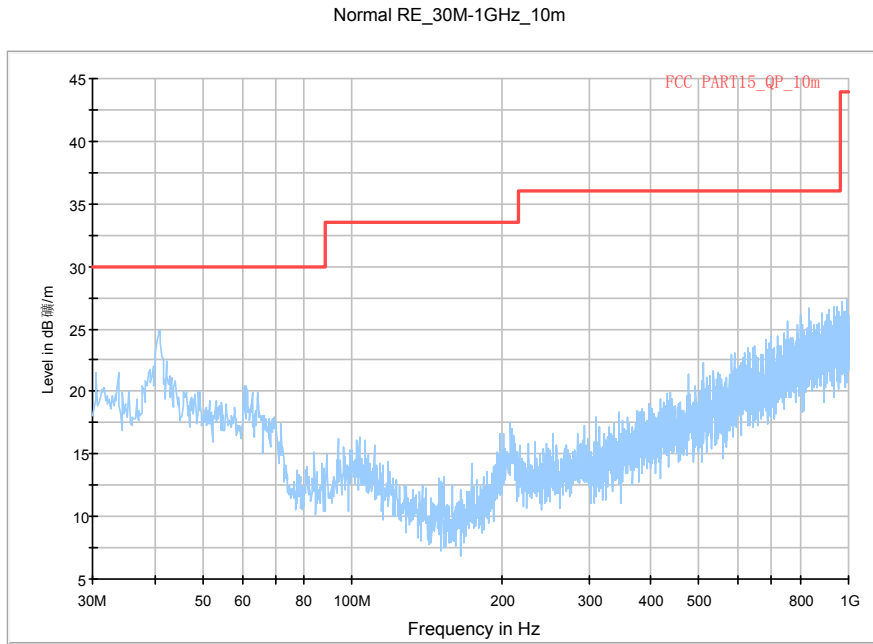


Fig. 105 Radiated Spurious Emission (802.11n-HT40, ch54, 30 MHz-1 GHz)

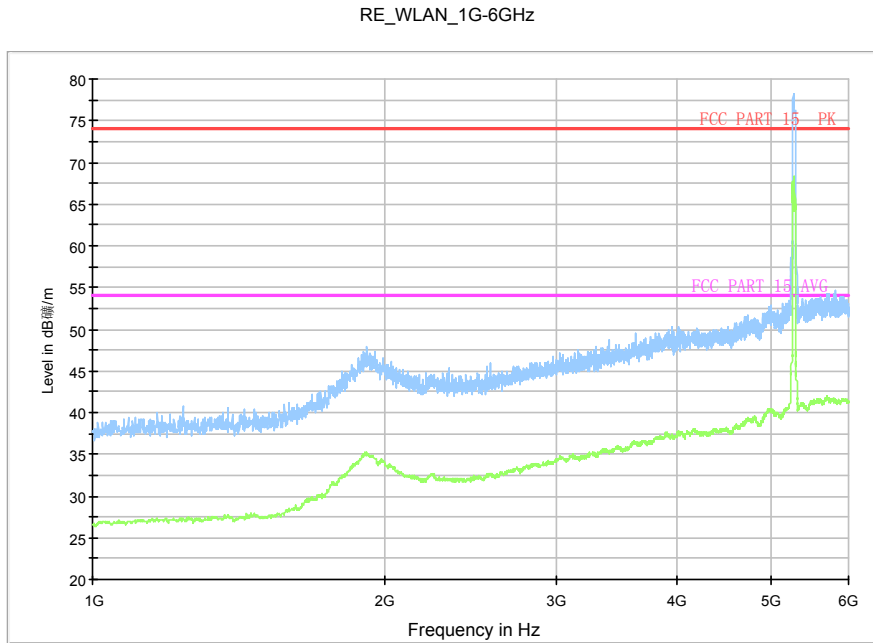


Fig. 106 Radiated Spurious Emission (802.11n-HT40, ch54, 1 GHz-6 GHz)

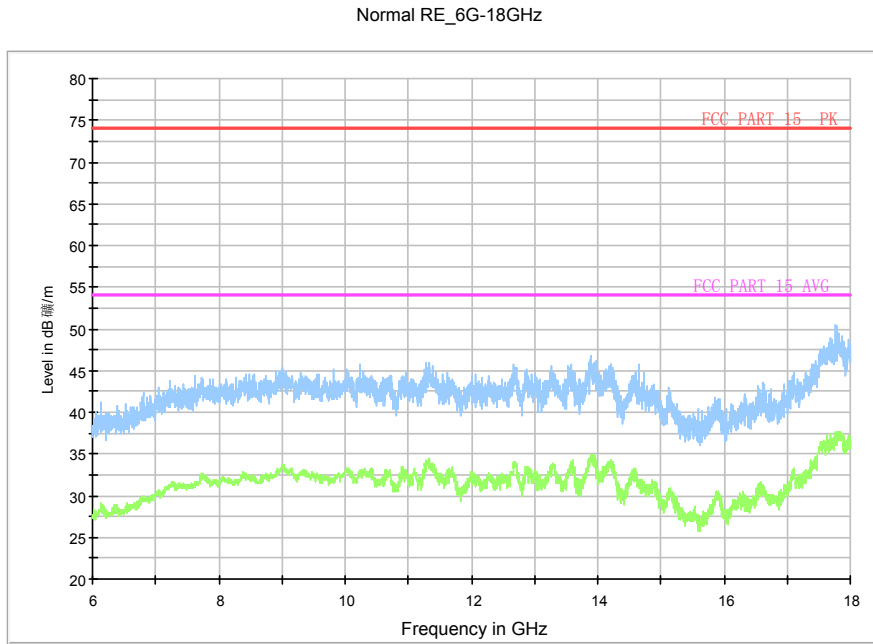


Fig. 107 Radiated Spurious Emission (802.11n-HT40, ch54, 6 GHz-18 GHz)

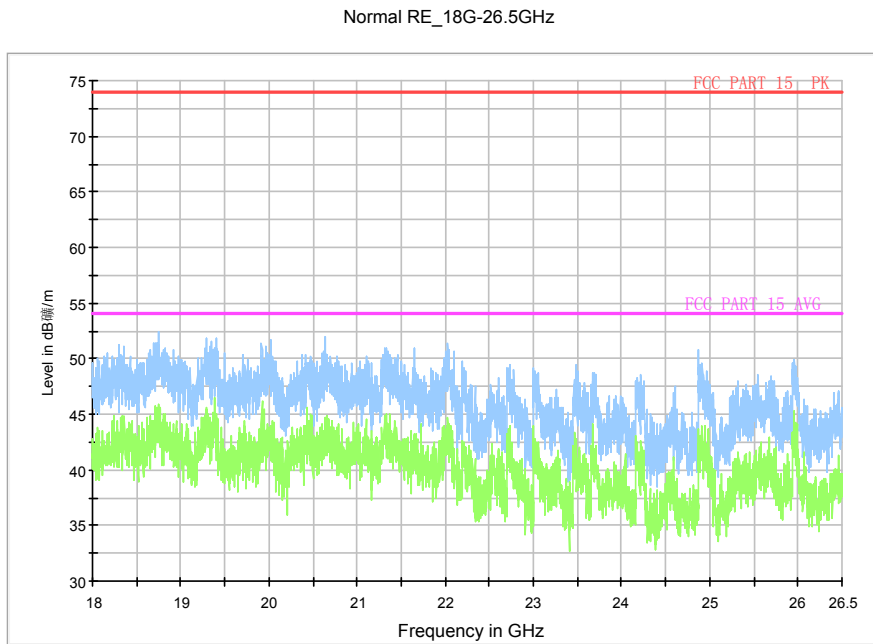


Fig. 108 Radiated Spurious Emission (802.11n-HT40, ch54, 18 GHz-26.5 GHz)

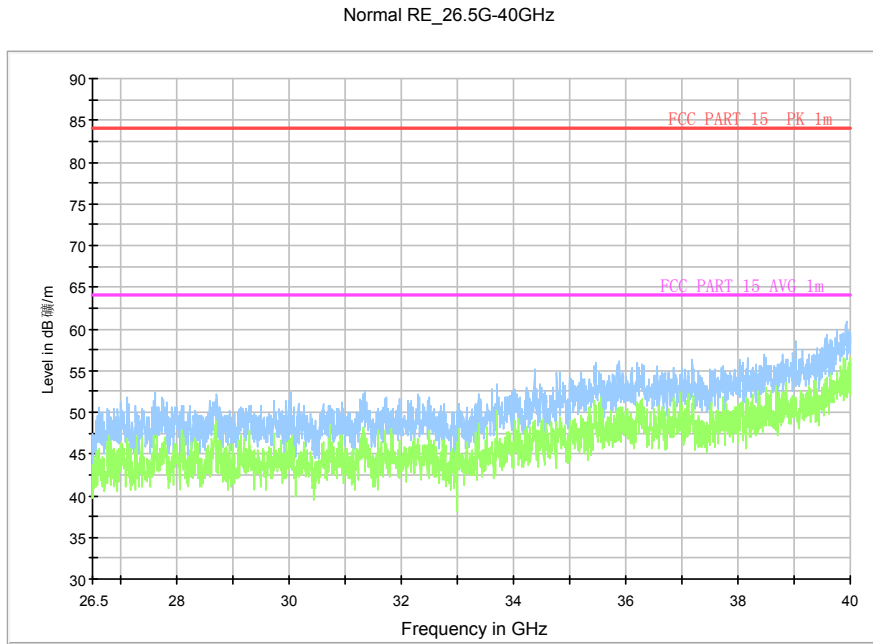


Fig. 109 Radiated Spurious Emission (802.11n-HT40, ch54, 26.5 GHz-40 GHz)

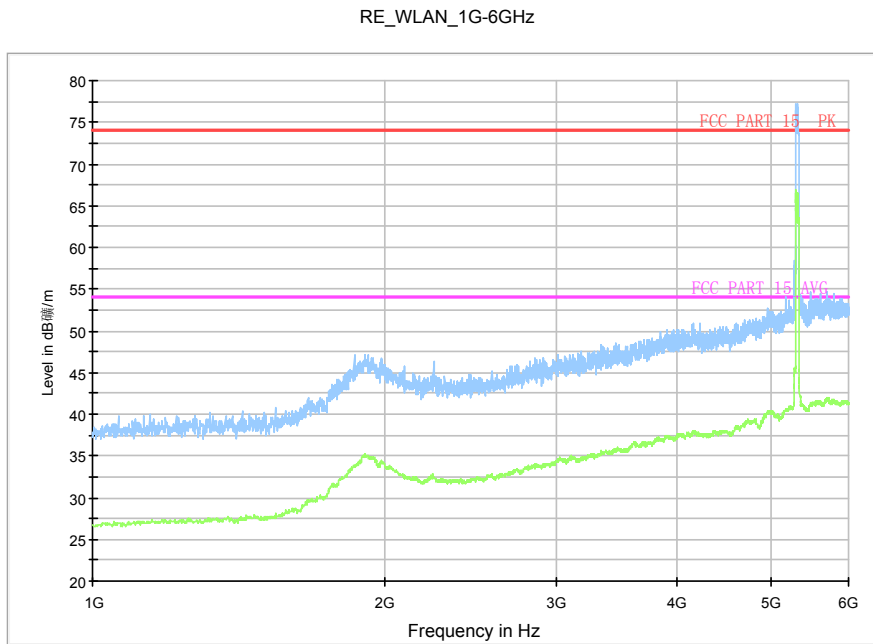


Fig. 110 Radiated Spurious Emission (802.11n-HT40, ch62, 1 GHz-6 GHz)

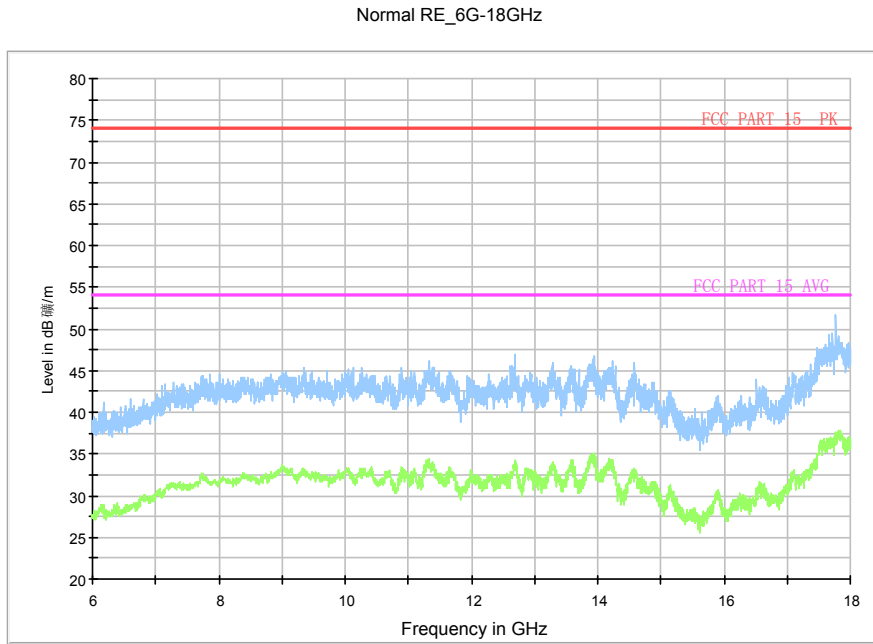


Fig. 111 Radiated Spurious Emission (802.11n-HT40, ch62, 6 GHz-18 GHz)

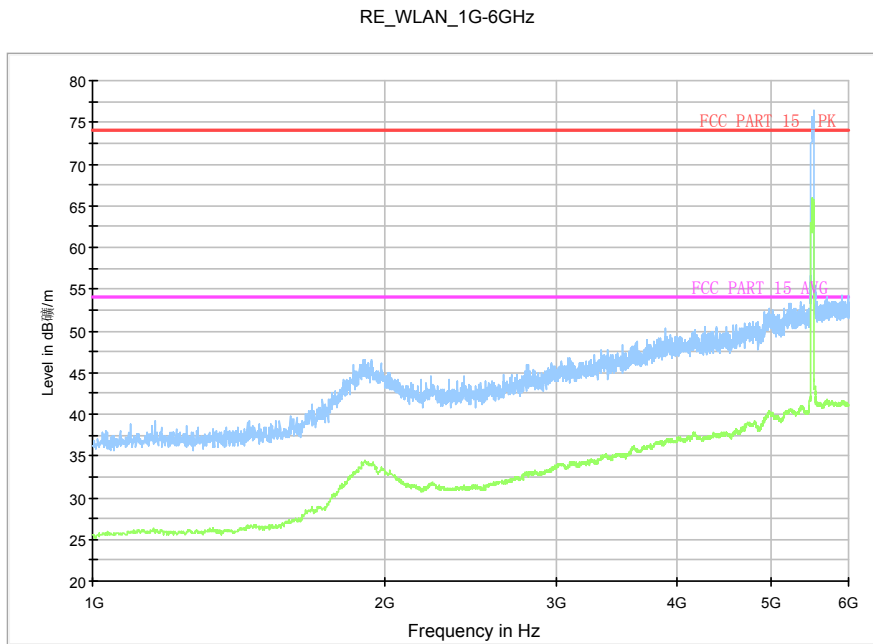


Fig. 112 Radiated Spurious Emission (802.11n-HT40, ch102, 1 GHz-6 GHz)

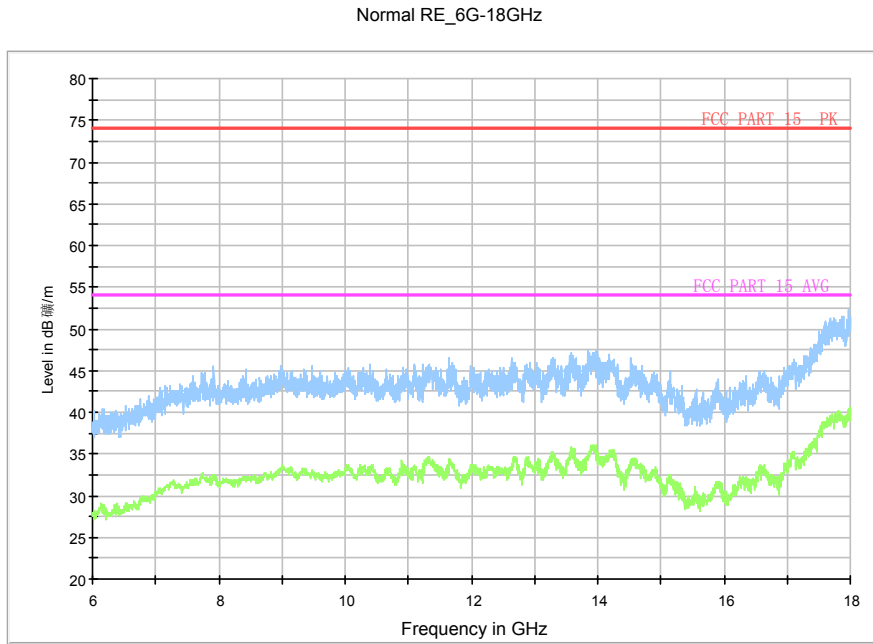


Fig. 113 Radiated Spurious Emission (802.11n-HT40, ch102, 6 GHz-18 GHz)

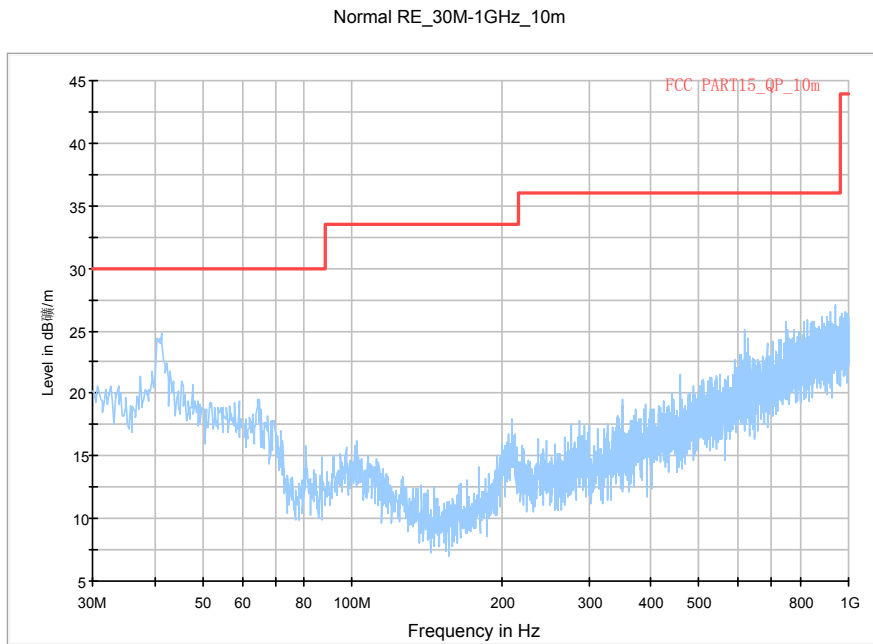


Fig. 114 Radiated Spurious Emission (802.11n-HT40, ch110, 30 MHz-1 GHz)

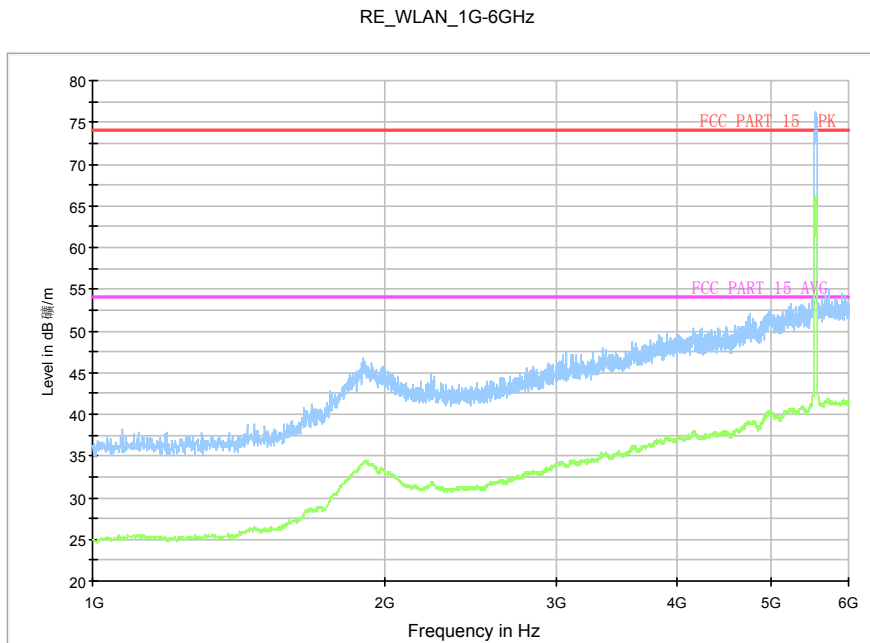


Fig. 115 Radiated Spurious Emission (802.11n-HT40, ch110, 1 GHz-6 GHz)

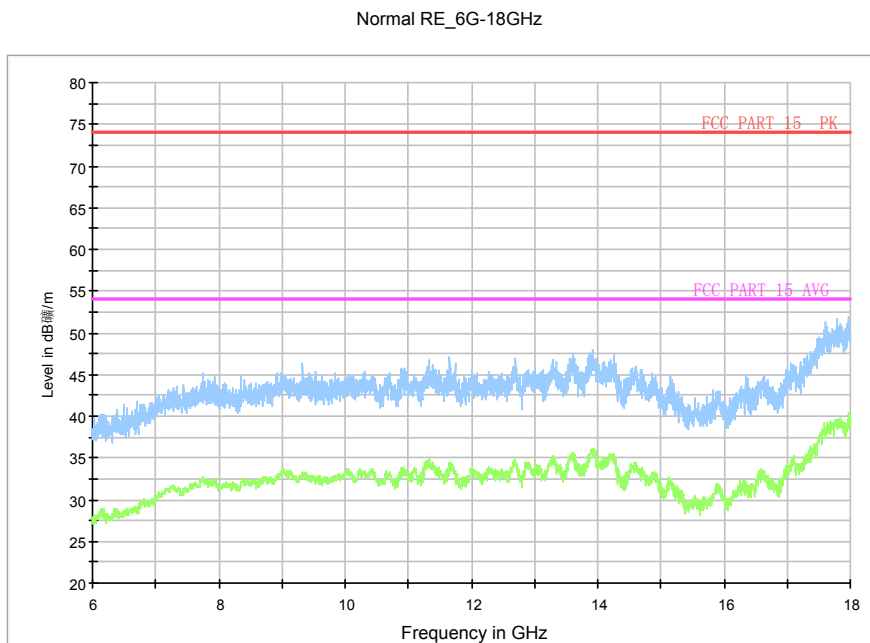


Fig. 116 Radiated Spurious Emission (802.11n-HT40, ch110, 6 GHz-18 GHz)

Normal RE_18G-26.5GHz

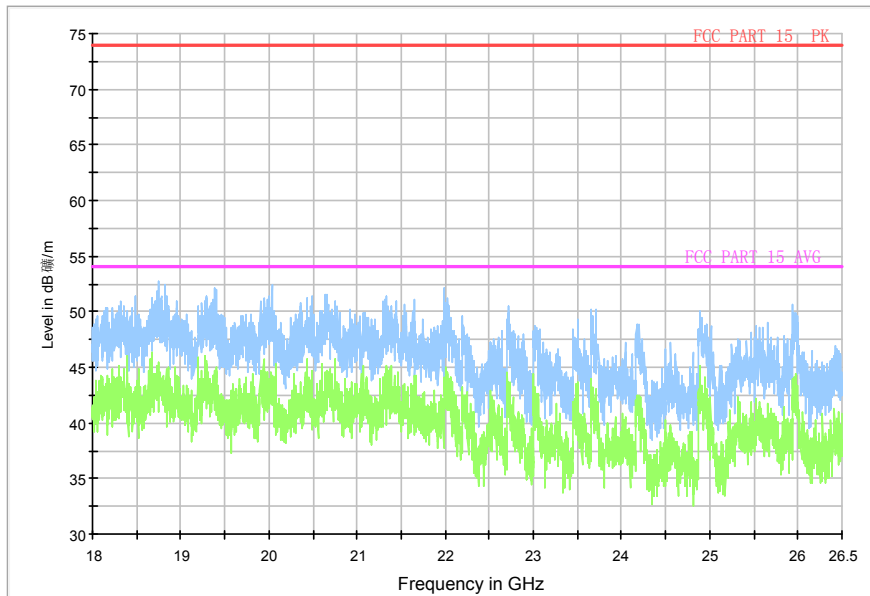


Fig. 117 Radiated Spurious Emission (802.11n-HT40, ch110, 18 GHz-26.5 GHz)

Normal RE_26.5G-40GHz

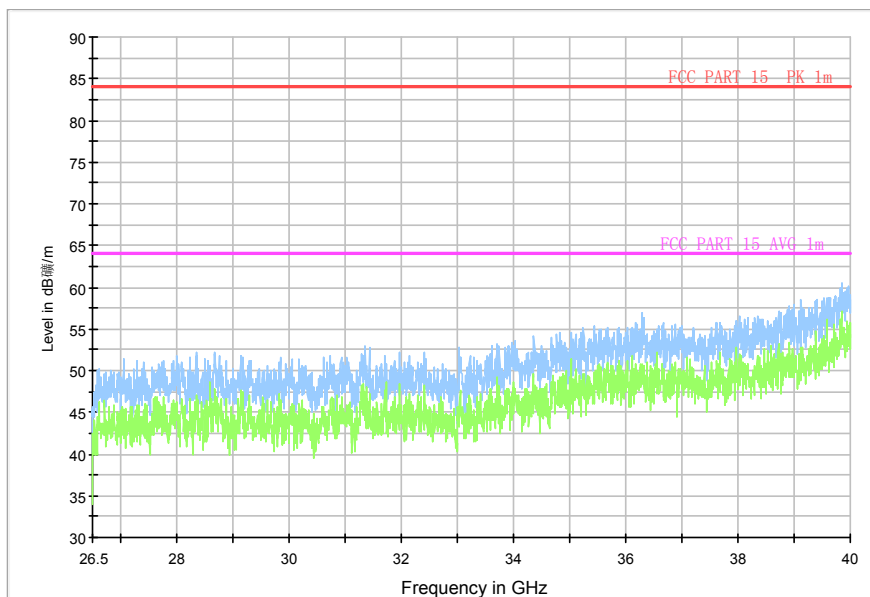


Fig. 118 Radiated Spurious Emission (802.11n-HT40, ch110, 26.5 GHz-40 GHz)

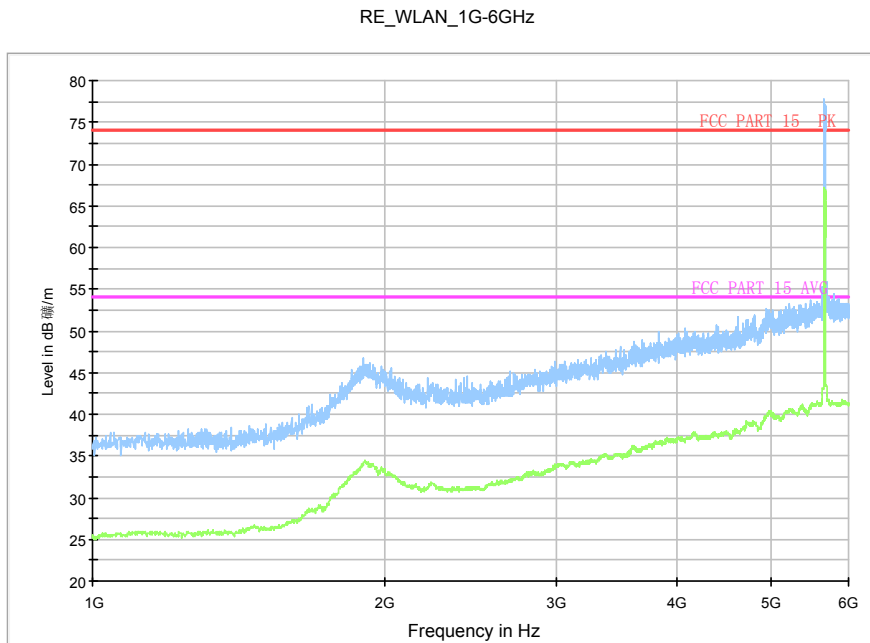


Fig. 119 Radiated Spurious Emission (802.11n-HT40, ch134, 1 GHz-6 GHz)

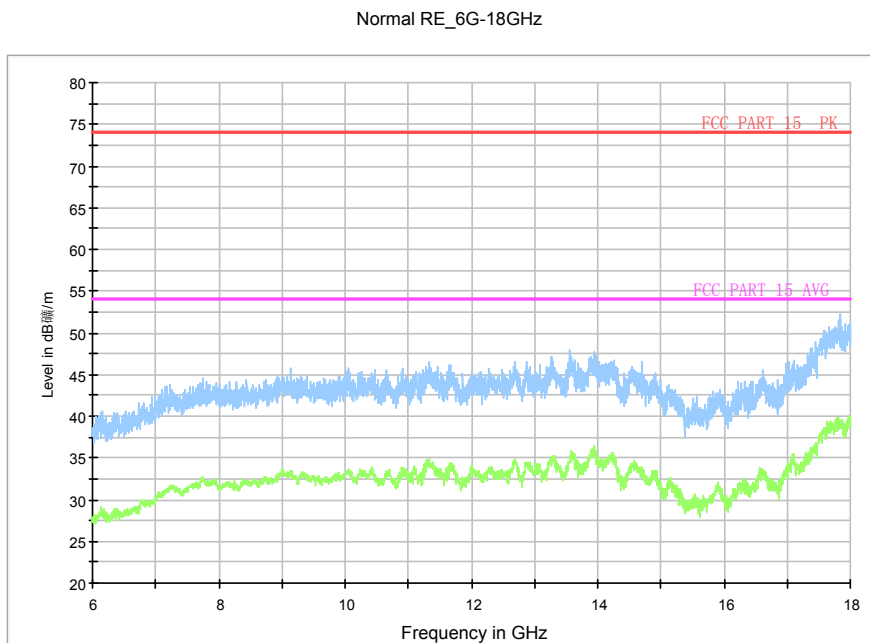


Fig. 120 Radiated Spurious Emission (802.11n-HT40, ch134, 6 GHz-18 GHz)

A.7. Spurious Emissions Radiated < 30MHz

Measurement Limit(15.209, 9kHz-30MHz):

Frequency (MHz)	Field strength($\mu\text{V}/\text{m}$)	Measurement distance(m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

The measurement is made according to KDB 789033

Note: The measurement distance during the test is 3m. The limit used in plots is recalculated based on the extrapolation factor of 40 dB/decade.

Measurement uncertainty:

Expanded measurement uncertainty for this test item is $U = 2.6\text{dB}$, $k=2$.

Measurement Results:

Mode	Frequency Range	Test Results	Conclusion
802.11a	9 kHz ~30 MHz	Fig.121	P

Conclusion: PASS

Test graphs as below:

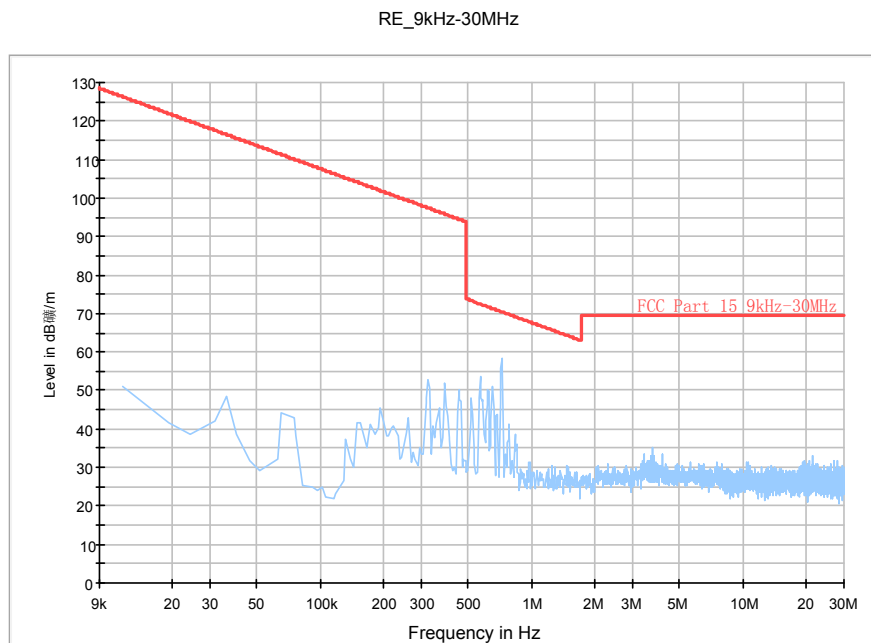


Fig. 121 Radiated Spurious Emission (802.11a, ch40, 9 kHz ~30 MHz)

A.8. Conducted Emission (150kHz- 30MHz)

Test Condition:

Voltage (V)	Frequency (Hz)
110	60

Measurement uncertainty:

Expanded measurement uncertainty for this test item is U =3.2dB, k=2.

Measurement Result and limit:

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Result (dB μ V)		Conclusion
		With charger		
		11a mode	Idle	
0.15 to 0.5	66 to 56	Fig. 122	Fig. 123	P
0.5 to 5	56			
5 to 30	60			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dB μ V)	Result (dB μ V)		Conclusion
		With charger		
		11a mode	Idle	
0.15 to 0.5	56 to 46	Fig.122	Fig.123	P
0.5 to 5	46			
5 to 30	50			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

Conclusion: PASS

Test graphs as below:

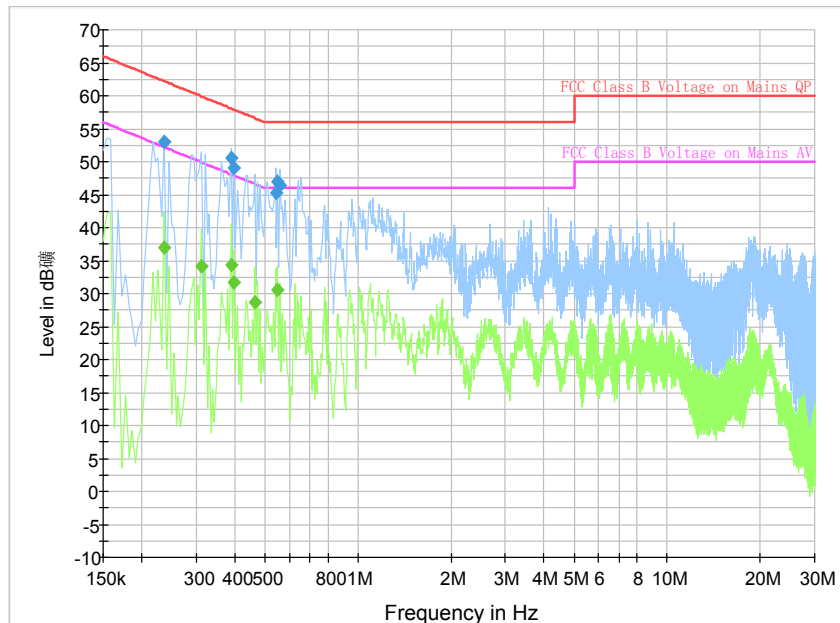


Fig. 122 Conducted Emission(802.11a, Ch40, TX)

Measurement Result:

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.235500	53.0	GND	L1	9.8	9.2	62.3
0.388500	50.6	GND	L1	9.8	7.5	58.1
0.397500	49.0	GND	L1	9.8	8.9	57.9
0.541500	45.3	GND	L1	9.8	10.7	56.0
0.550500	47.0	GND	N	9.8	9.0	56.0
0.559500	46.5	GND	L1	9.8	9.5	56.0

Measurement Result:

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.235500	36.9	GND	L1	9.8	15.4	52.3
0.312000	34.2	GND	N	9.8	15.7	49.9
0.388500	34.4	GND	L1	9.8	13.7	48.1
0.397500	31.7	GND	N	9.8	16.3	47.9
0.465000	28.6	GND	L1	9.8	18.0	46.6
0.550500	30.6	GND	L1	9.8	15.4	46.0

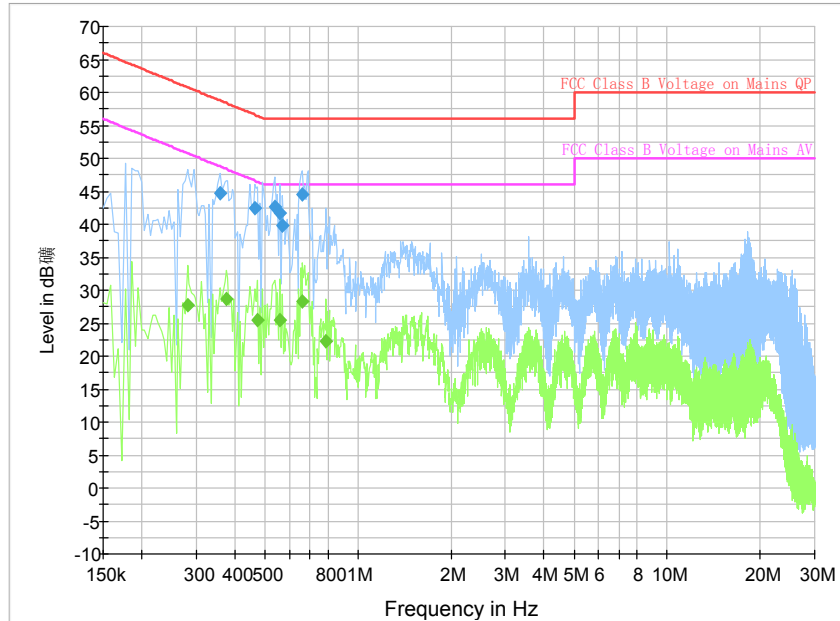


Fig. 123 Conducted Emission(802.11a, IDLE)

Measurement Result:

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.357000	44.7	GND	N	9.8	14.1	58.8
0.465000	42.4	GND	L1	9.8	14.2	56.6
0.537000	42.6	GND	N	9.8	13.4	56.0
0.559500	41.7	GND	L1	9.8	14.3	56.0
0.568500	39.8	GND	L1	9.8	16.2	56.0
0.658500	44.5	GND	L1	9.8	11.5	56.0

Measurement Result:

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.280500	27.8	GND	N	9.8	23.0	50.8
0.375000	28.6	GND	N	9.8	19.8	48.4
0.474000	25.5	GND	L1	9.8	21.0	46.4
0.559500	25.4	GND	L1	9.8	20.6	46.0
0.663000	28.3	GND	N	9.8	17.7	46.0
0.789000	22.3	GND	L1	9.8	23.7	46.0

A.9. Peak Excursion

Measurement Limit:

Standard	Limit (dB)
FCC 47 CFR Part 15.407	13

The measurement is made according to KDB 789033, the method SA-1 is used for PPSD measurement.

Measurement Uncertainty:

Measurement Uncertainty	0.75 dB
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Measurement Result:

11a mode

Type	Peak Excursion					
	5180MHz (Ch36)		5200MHz (Ch40)		5240MHz (Ch48)	
Peak (dBm)	Fig.124	11.27	Fig.125	11.73	Fig.126	11.58
Average(dBm)	Fig.127	3.82	Fig.128	3.95	Fig.129	3.98
Result (dB)	7.45		7.78		7.60	

Type	Test Result (dBm)					
	5260MHz (Ch52)		5280 MHz (Ch56)		5320 MHz (Ch64)	
Peak (dBm)	Fig.130	11.82	Fig.131	11.04	Fig.132	11.51
Average(dBm)	Fig.133	4.07	Fig.134	3.38	Fig.135	3.75
Result (dB)	7.75		7.66		7.76	

Type	Test Result (dBm)					
	5500MHz (Ch100)		5580MHz (Ch116)		5700MHz (Ch140)	
Peak (dBm)	Fig.136	11.56	Fig.137	10.77	Fig.138	11.34
Average(dBm)	Fig.139	3.91	Fig.140	3.20	Fig.141	3.15
Result (dB)	7.65		7.57		7.19	

11n-HT20 mode

Type	Peak Excursion					
	5180MHz (Ch36)		5200MHz (Ch40)		5240MHz (Ch48)	
Peak (dBm)	Fig.142	10.78	Fig.143	10.55	Fig.144	10.76
Average(dBm)	Fig.145	3.24	Fig.146	3.24	Fig.147	2.86
Result (dB)	7.54		7.31		7.90	

Type	Test Result (dBm)					
	5260MHz (Ch52)		5280 MHz (Ch56)		5320 MHz (Ch64)	
Peak (dBm)	Fig.148	10.92	Fig.149	10.44	Fig.150	10.17
Average(dBm)	Fig.151	3.02	Fig.152	2.11	Fig.153	2.60
Result (dB)	7.90		8.33		7.57	

Type	Test Result (dBm)					
	5500MHz (Ch100)		5580MHz (Ch116)		5700MHz (Ch140)	
Peak (dBm)	Fig.154	10.40	Fig.155	9.57	Fig.156	10.51
Average(dBm)	Fig.157	3.06	Fig.158	2.43	Fig.159	3.43
Result (dB)	6.34		7.14		7.08	

11n-HT40 mode

Type	Peak Excursion							
	5190MHz (Ch38)		5230MHz (Ch46)		5270MHz (Ch54)		5310 MHz (Ch62)	
Peak (dBm)	Fig.160	7.98	Fig.161	8.64	Fig.162	7.28	Fig.163	7.43
Average(dBm)	Fig.164	0.25	Fig.165	-0.18	Fig.166	-0.81	Fig.167	-0.27
Result (dB)	7.73		8.82		8.09		7.70	

Type	Test Result (dBm)					
	5510MHz (Ch102)		5550MHz (Ch110)		5670MHz (Ch134)	
Peak (dBm)	Fig.168	7.46	Fig.169	8.00	Fig.170	8.09
Average(dBm)	Fig.171	0.10	Fig.172	0.12	Fig.173	0.33
Result (dB)	7.36		7.88		7.76	

Conclusion: PASS

Test graphs as below:

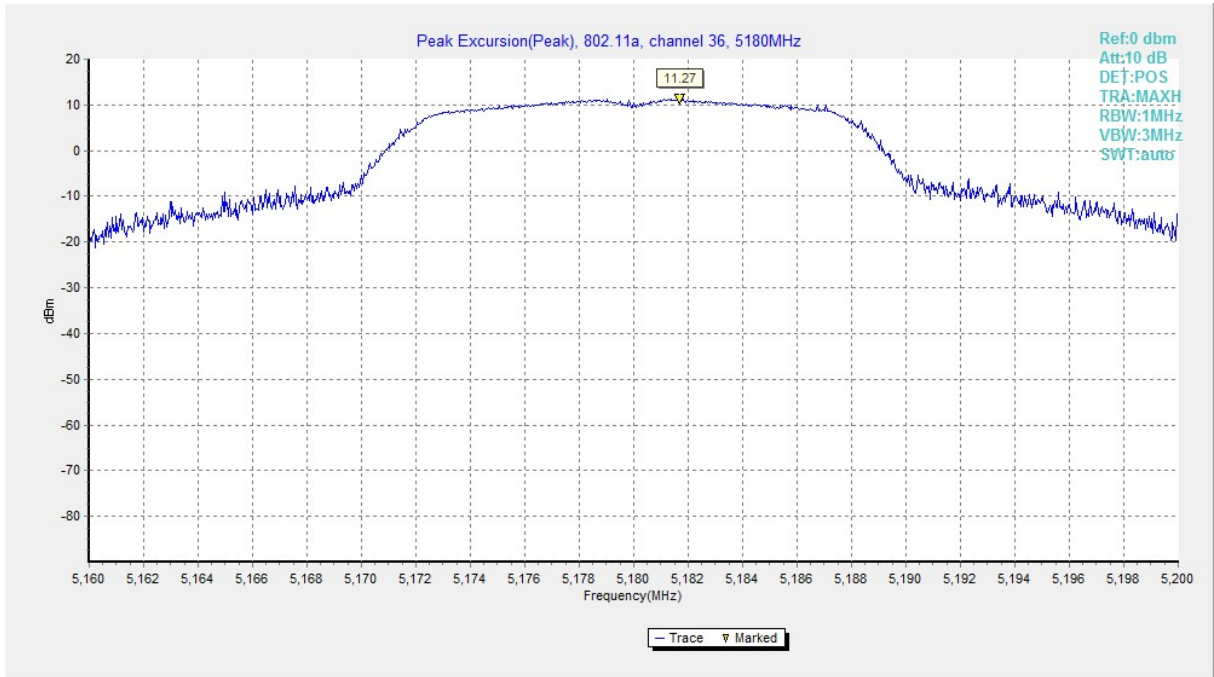


Fig. 124 Peak Excursions (802.11a, ch36, peak)



Fig. 125 Peak Excursions (802.11a, ch40, peak)



Fig. 126 Peak Excursions (802.11a, ch48, peak)

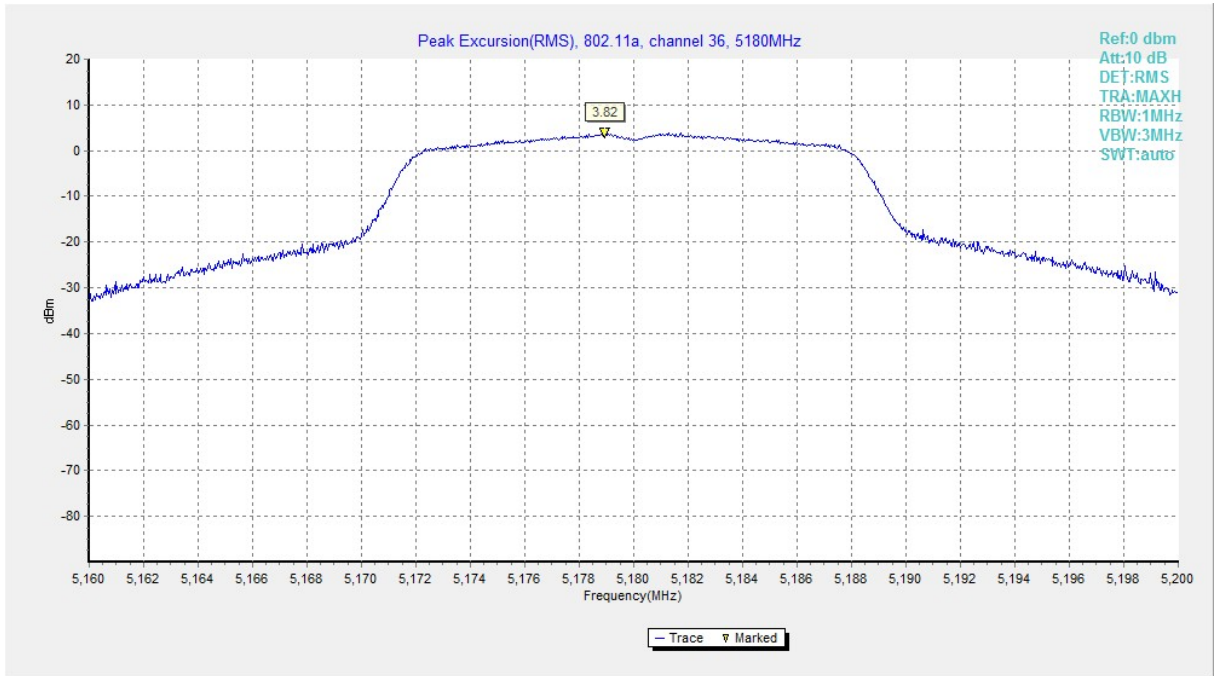


Fig. 127 Peak Excursions (802.11a, ch36, average)

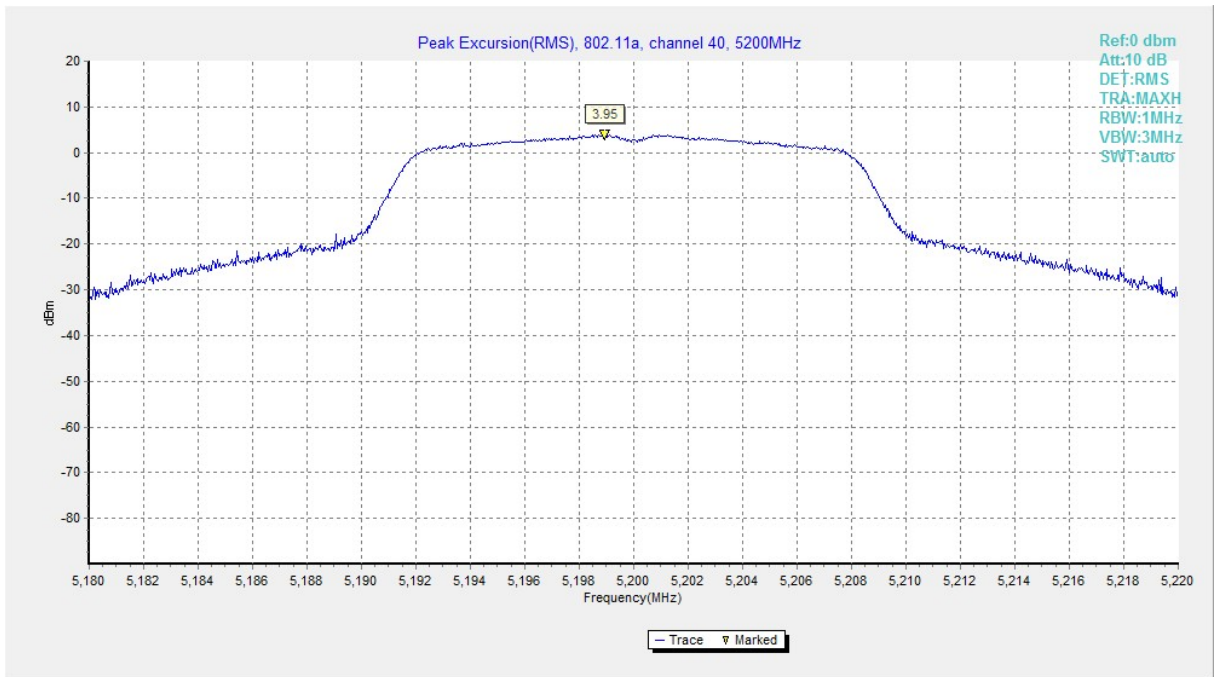


Fig. 128 Peak Excursions (802.11a, ch40, average)

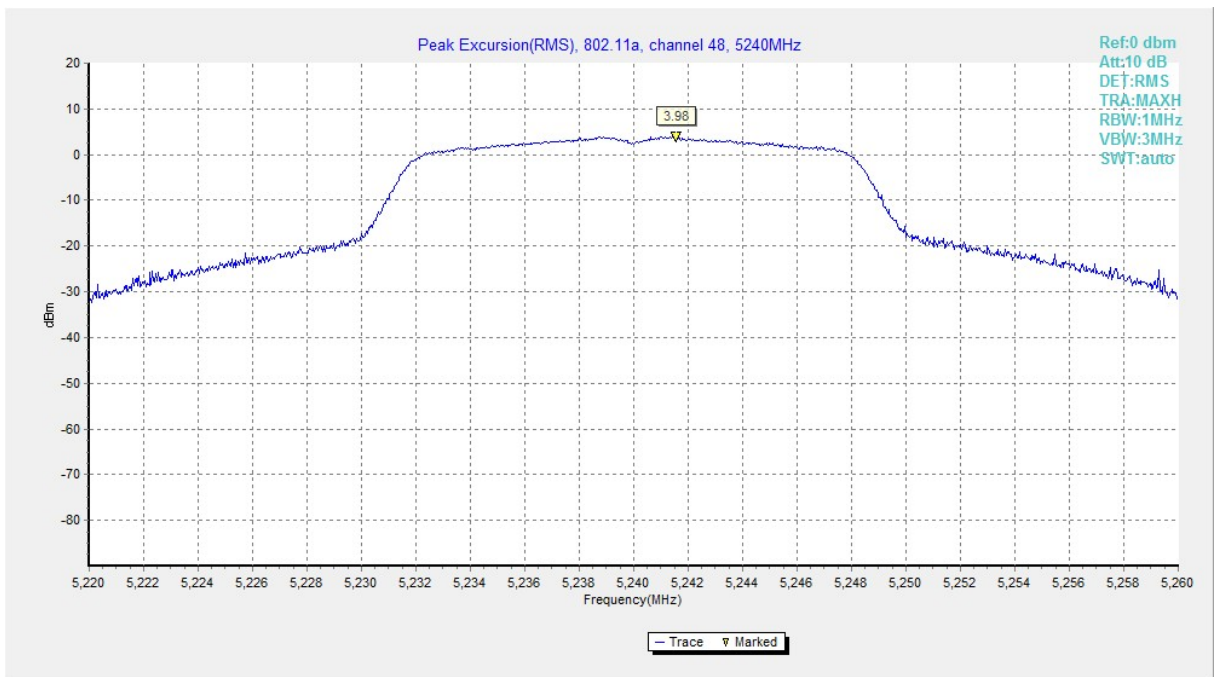


Fig. 129 Peak Excursions (802.11a, ch48, average)