

Fig. 87 Radiated Spurious Emission (802.11n-HT20, ch56, 30 MHz-1 GHz)

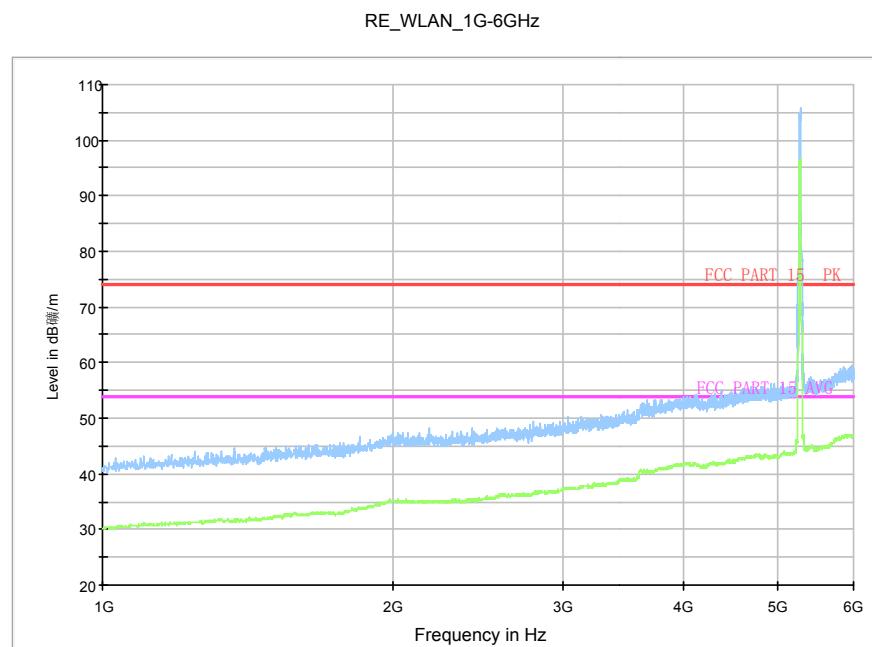


Fig. 88 Radiated Spurious Emission (802.11n-HT20, ch56, 1 GHz-6 GHz)

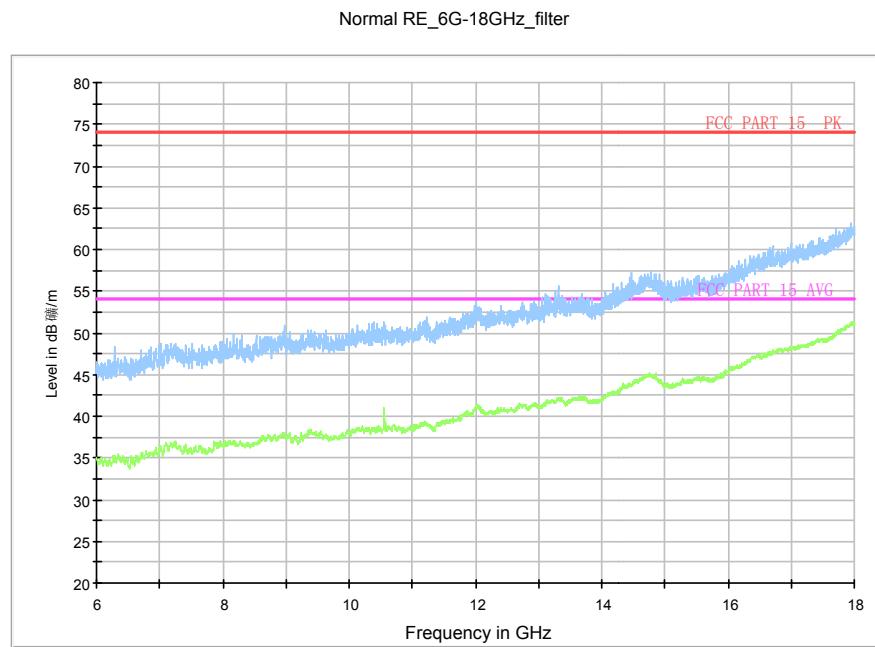


Fig. 89 Radiated Spurious Emission (802.11n-HT20, ch56, 6 GHz-18 GHz)

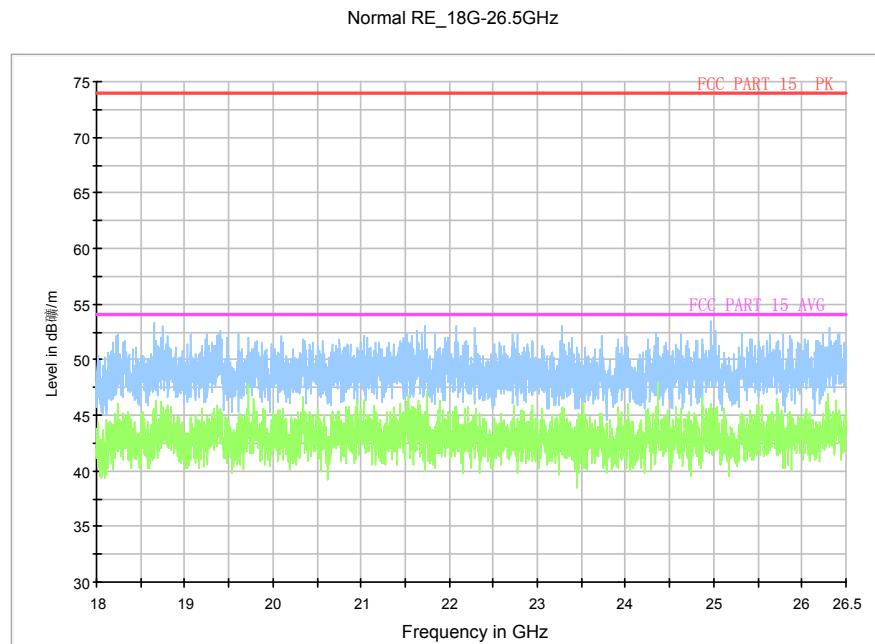


Fig. 90 Radiated Spurious Emission (802.11n-HT20, ch56, 18 GHz-26.5 GHz)

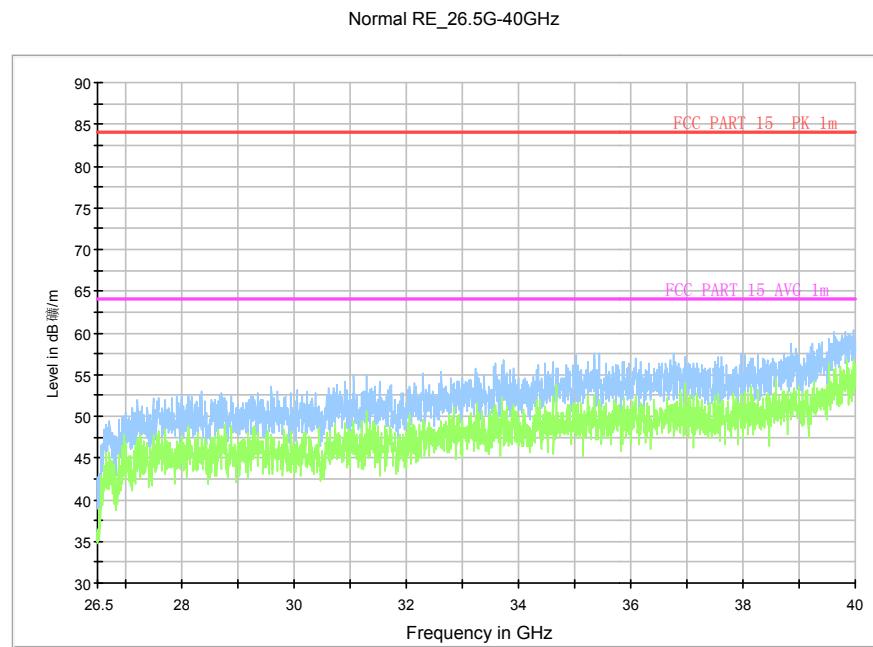


Fig. 91 Radiated Spurious Emission (802.11n-HT20, ch56, 26.5 GHz-40 GHz)

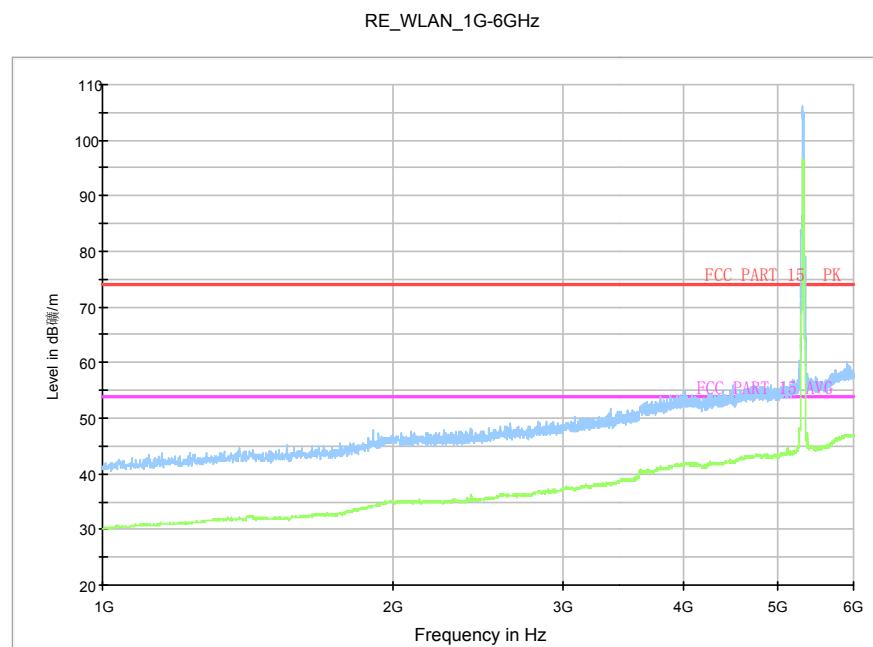


Fig. 92 Radiated Spurious Emission (802.11n-HT20, ch64, 1 GHz-6 GHz)

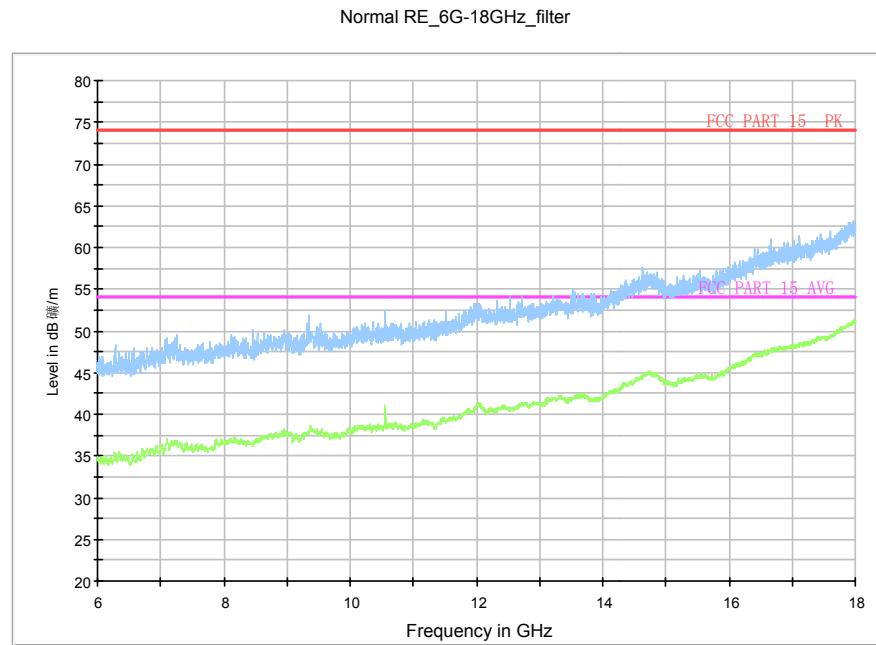


Fig. 93 Radiated Spurious Emission (802.11n-HT20, ch64, 6 GHz-18 GHz)

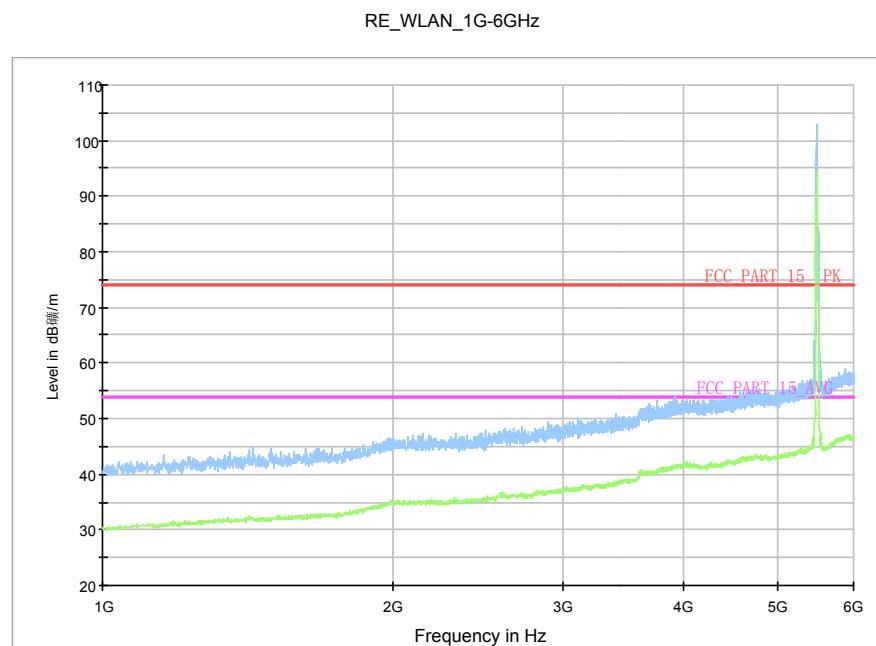


Fig. 94 Radiated Spurious Emission (802.11n-HT20, ch100, 1 GHz-6 GHz)

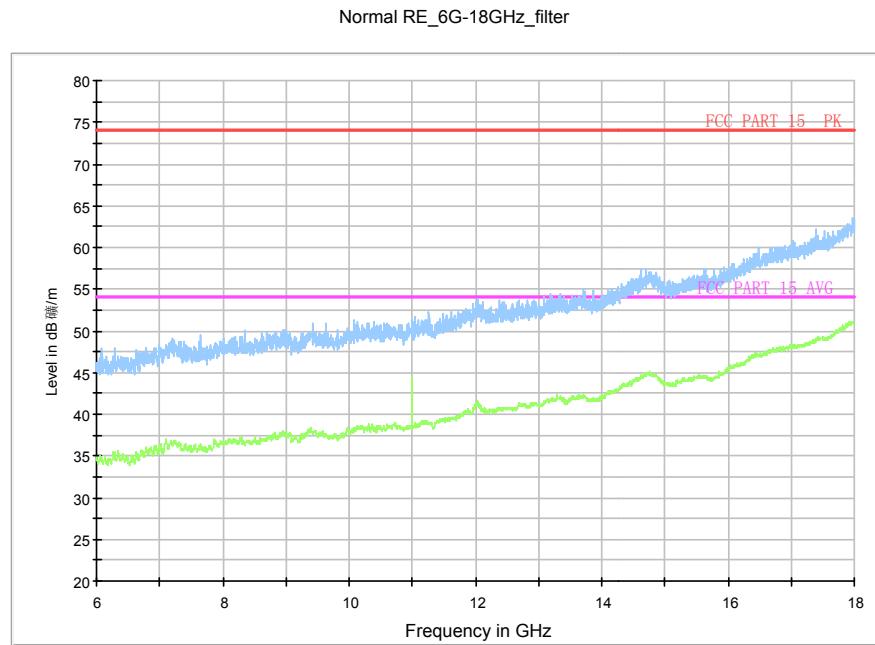


Fig. 95 Radiated Spurious Emission (802.11n-HT20, ch100, 6 GHz-18 GHz)

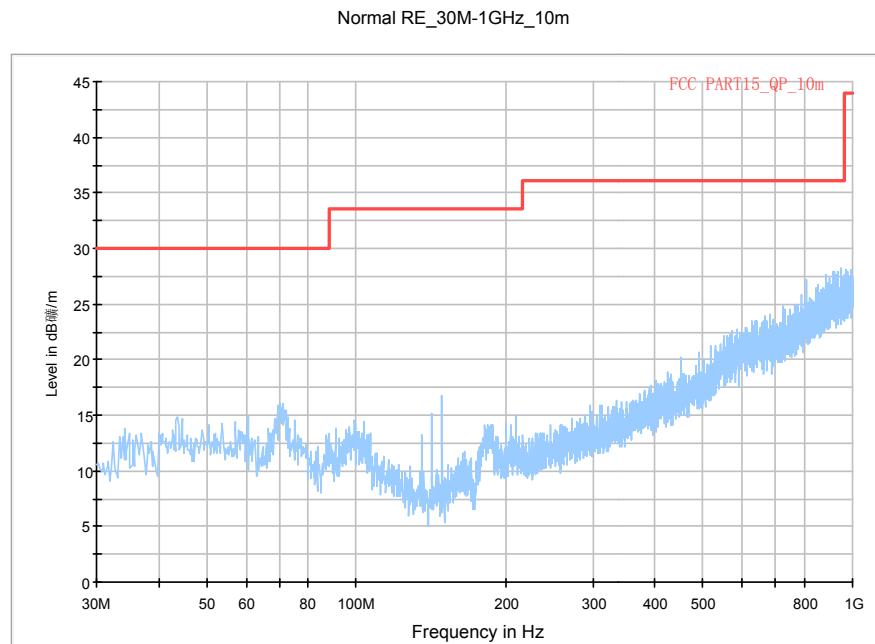


Fig. 96 Radiated Spurious Emission (802.11n-HT20, ch120, 30 MHz-1 GHz)

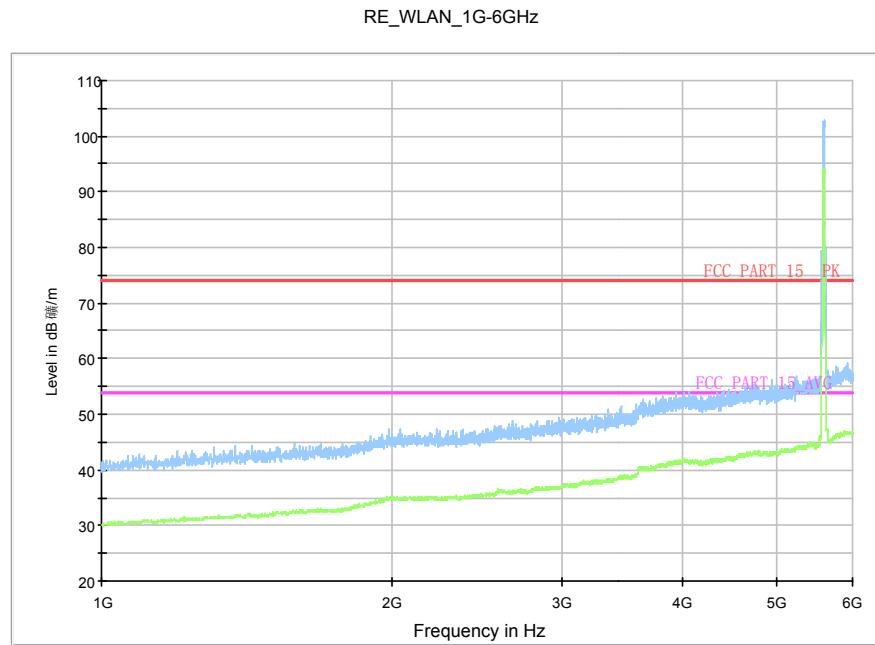


Fig. 97 Radiated Spurious Emission (802.11n-HT20, ch120, 1 GHz-6 GHz)

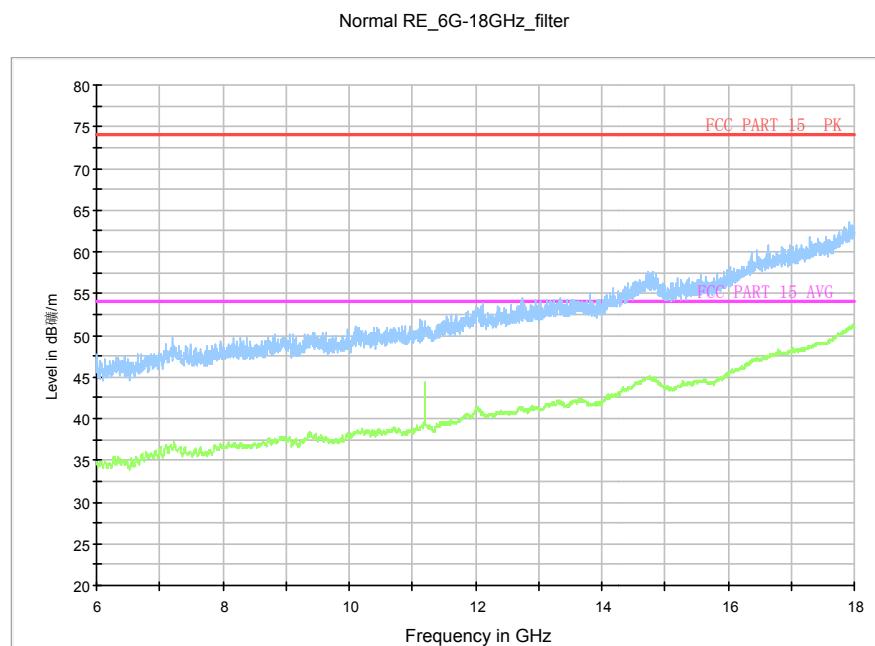


Fig. 98 Radiated Spurious Emission (802.11n-HT20, ch120, 6 GHz-18 GHz)

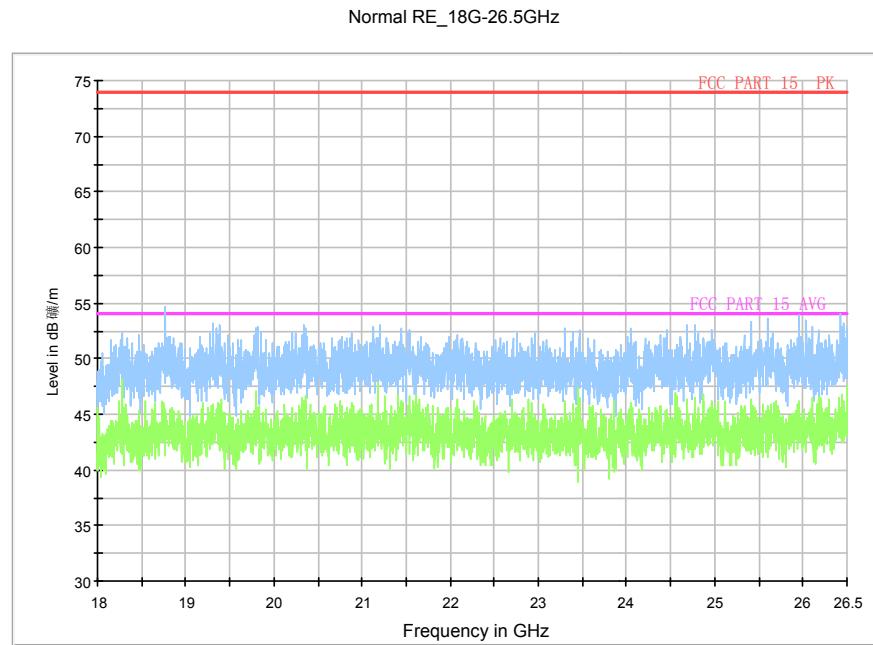


Fig. 99 Radiated Spurious Emission (802.11n-HT20, ch120, 18 GHz-26.5 GHz)

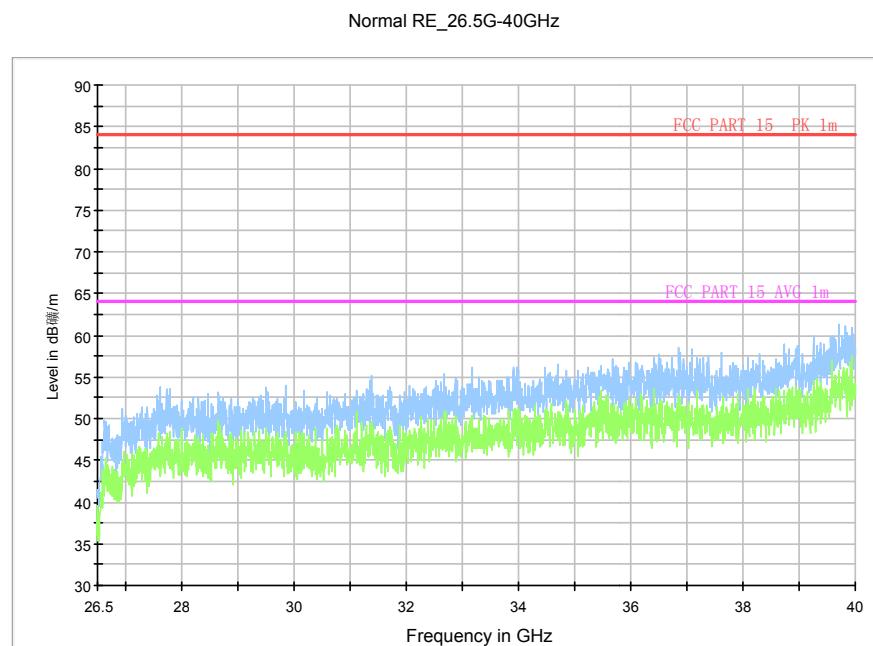


Fig. 100 Radiated Spurious Emission (802.11n-HT20, ch120, 26.5 GHz-40 GHz)

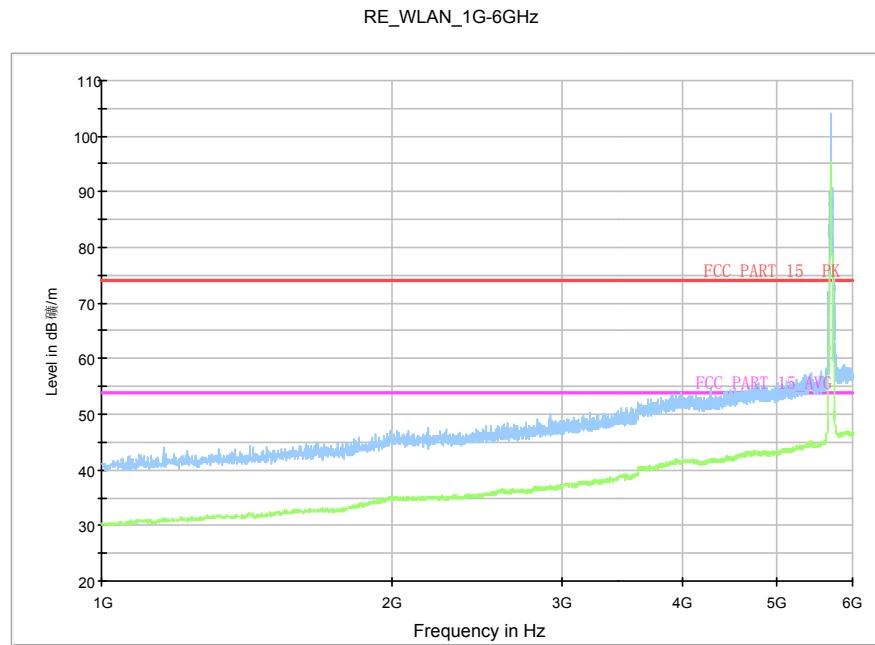


Fig. 101 Radiated Spurious Emission (802.11n-HT20, ch140, 1 GHz-6 GHz)

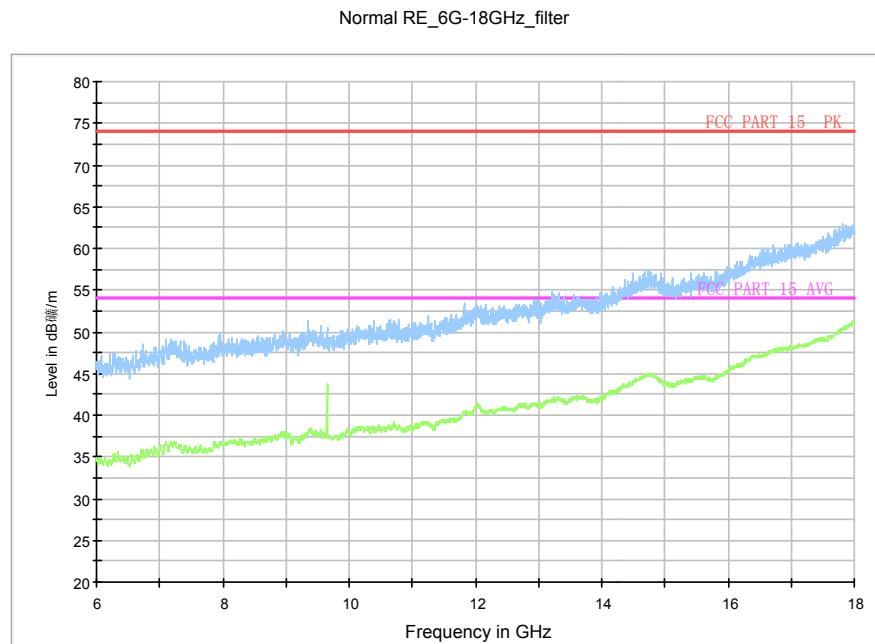


Fig. 102 Radiated Spurious Emission (802.11n-HT20, ch140, 6 GHz-18 GHz)

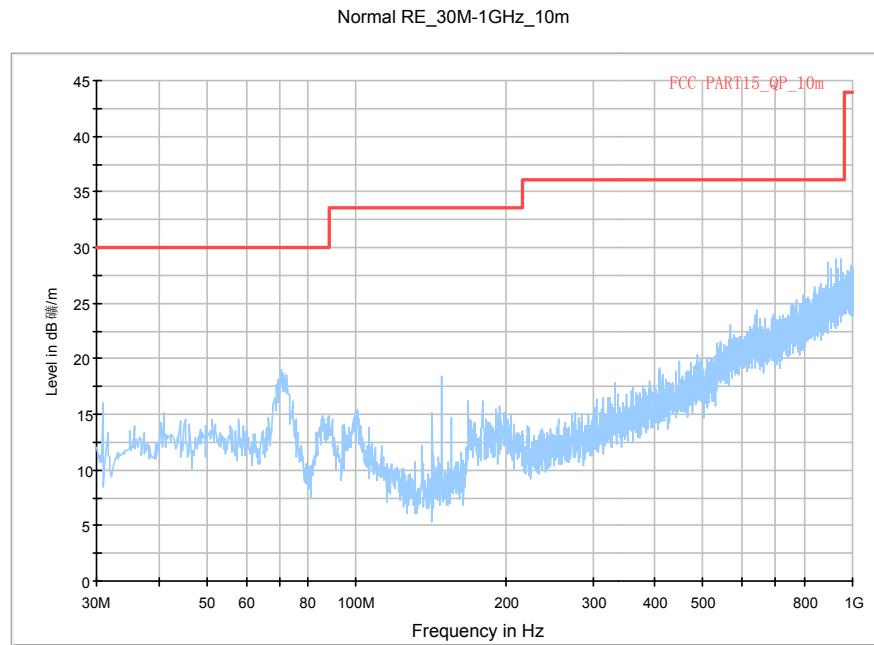


Fig. 103 Radiated Spurious Emission (802.11n-HT40, ch38, 30 MHz-1 GHz)

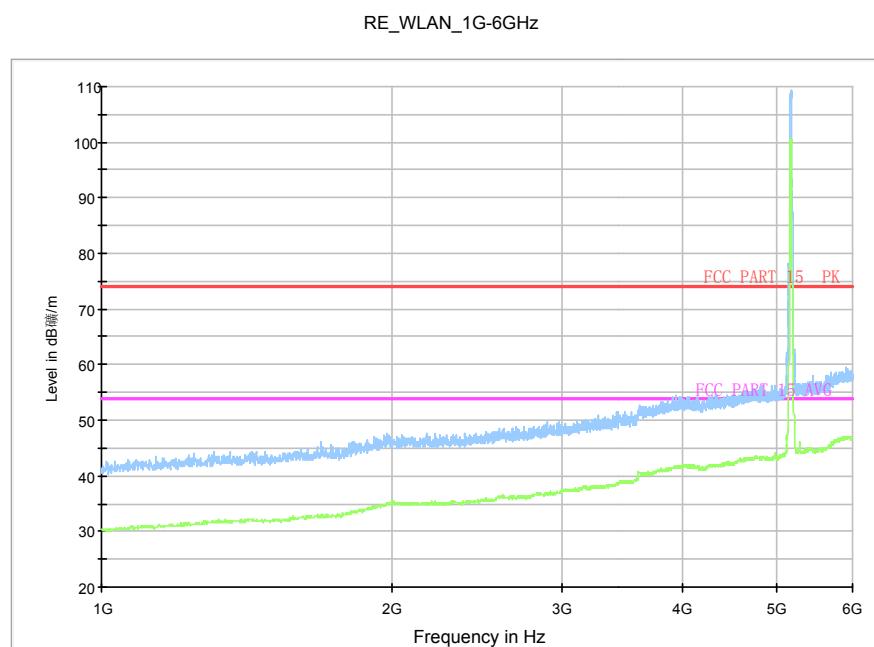


Fig. 104 Radiated Spurious Emission (802.11n-HT40, ch38, 1 GHz-6 GHz)

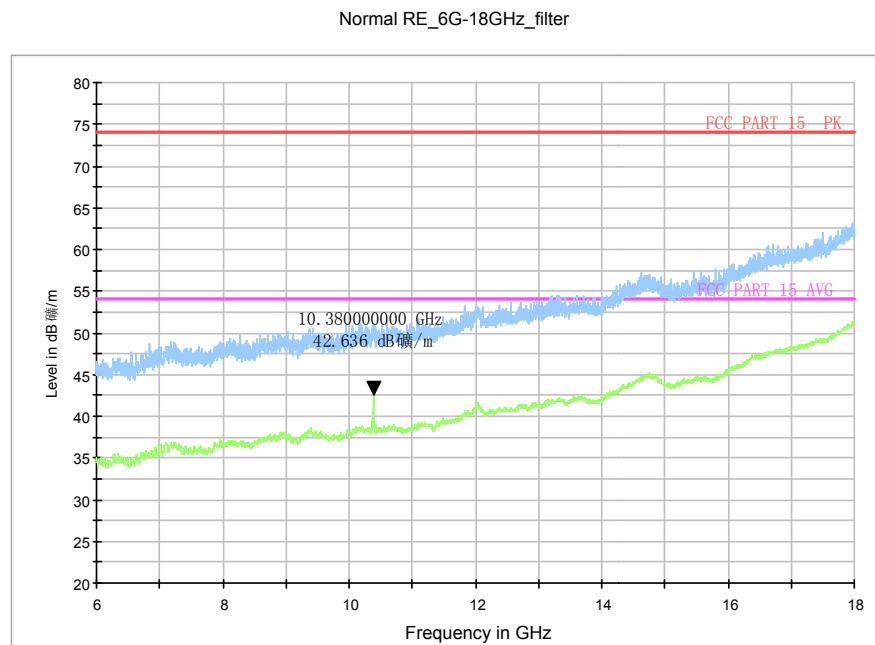


Fig. 105 Radiated Spurious Emission (802.11n-HT40, ch38, 6 GHz-18 GHz)

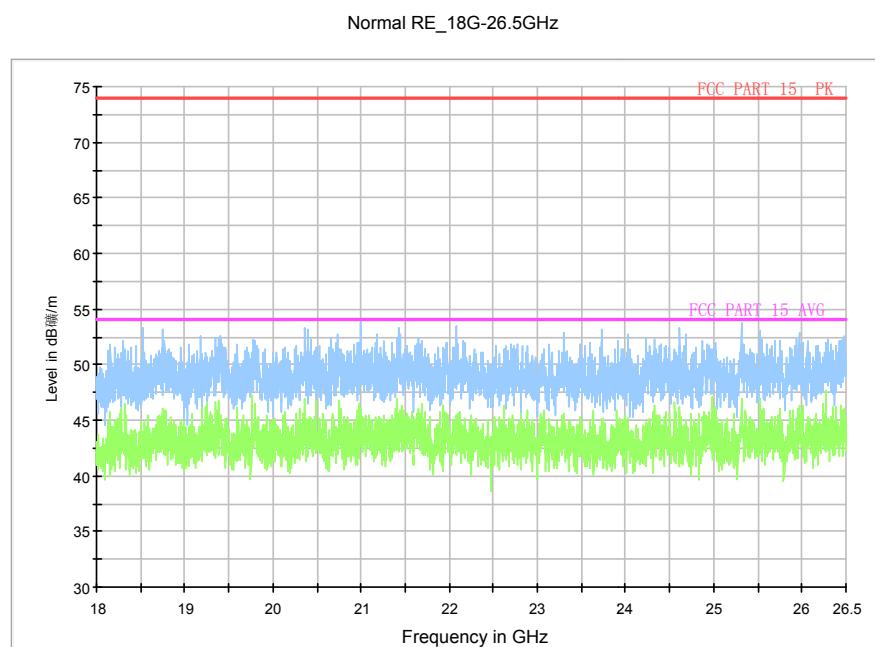


Fig. 106 Radiated Spurious Emission (802.11n-HT40, ch38, 18 GHz-26.5 GHz)

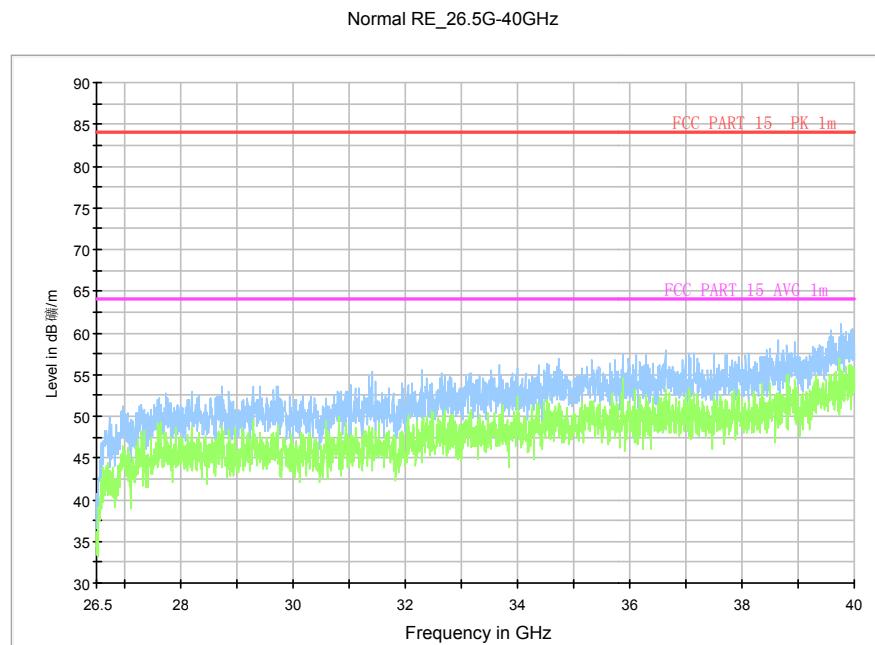


Fig. 107 Radiated Spurious Emission (802.11n-HT40, ch38, 26.5 GHz-40 GHz)

Fig. 108 Radiated Spurious Emission (802.11n-HT40, ch46, 1 GHz-6 GHz)

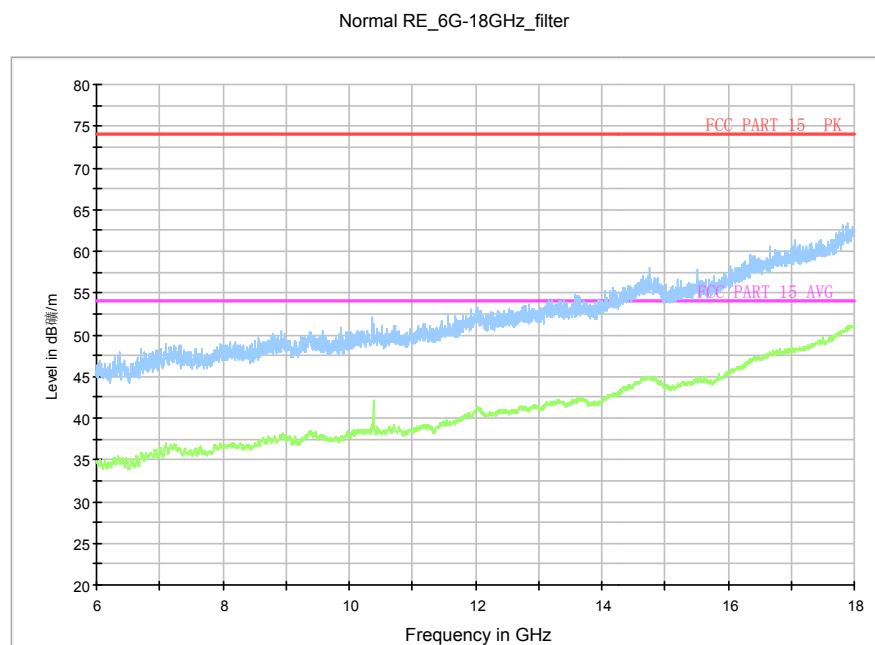
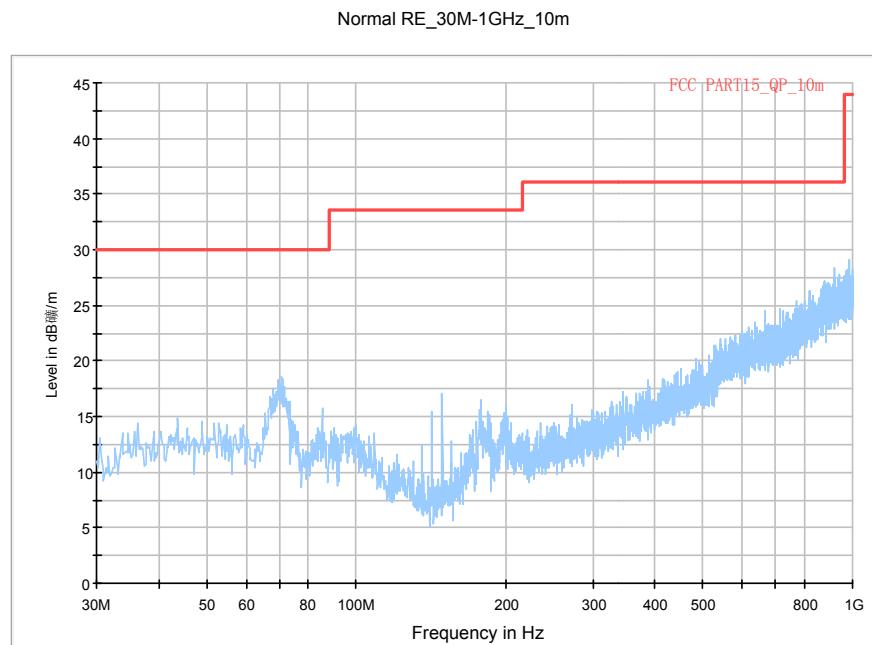
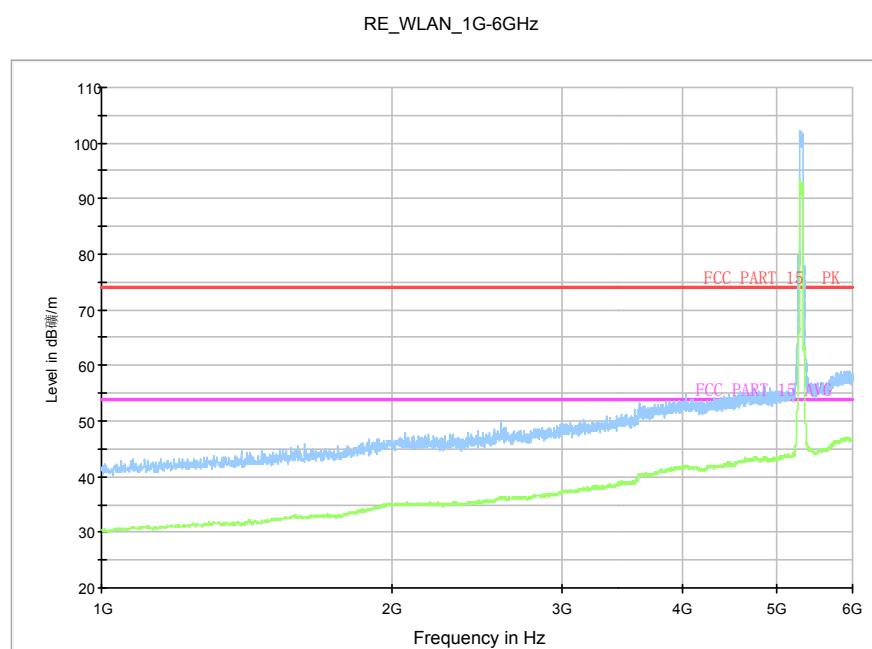


Fig. 109 Radiated Spurious Emission (802.11n-HT40, ch46, 6 GHz-18 GHz)**Fig. 110 Radiated Spurious Emission (802.11n-HT40, ch62, 30 MHz-1 GHz)****Fig. 111 Radiated Spurious Emission (802.11n-HT40, ch62, 1 GHz-6 GHz)**

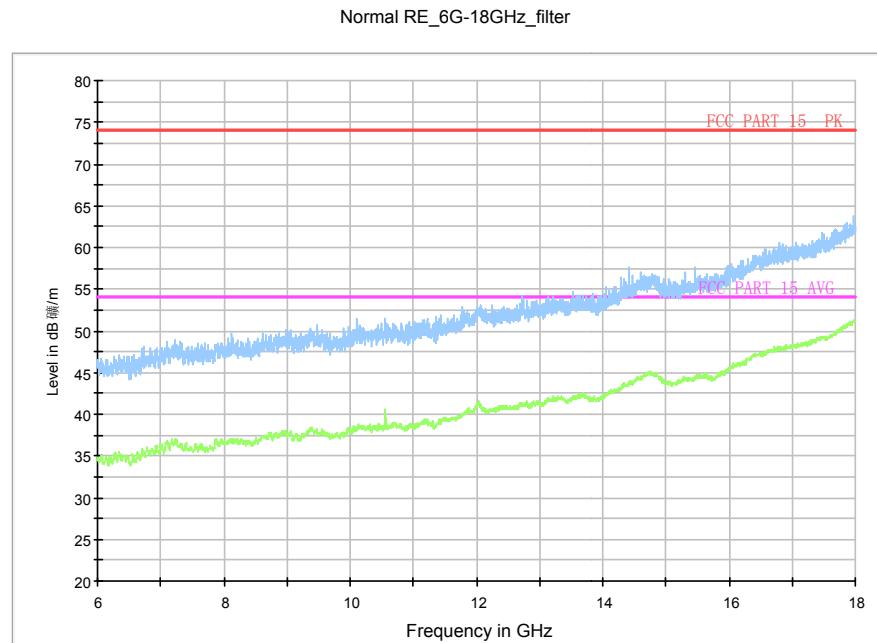


Fig. 112 Radiated Spurious Emission (802.11n-HT40, ch62, 6 GHz-18 GHz)

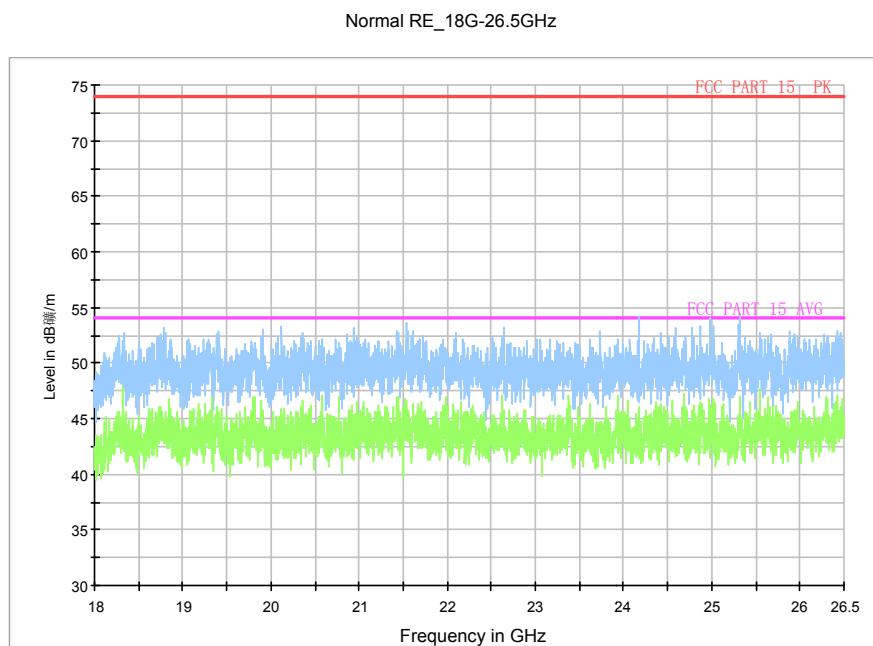


Fig. 113 Radiated Spurious Emission (802.11n-HT40, ch62, 18 GHz-26.5 GHz)

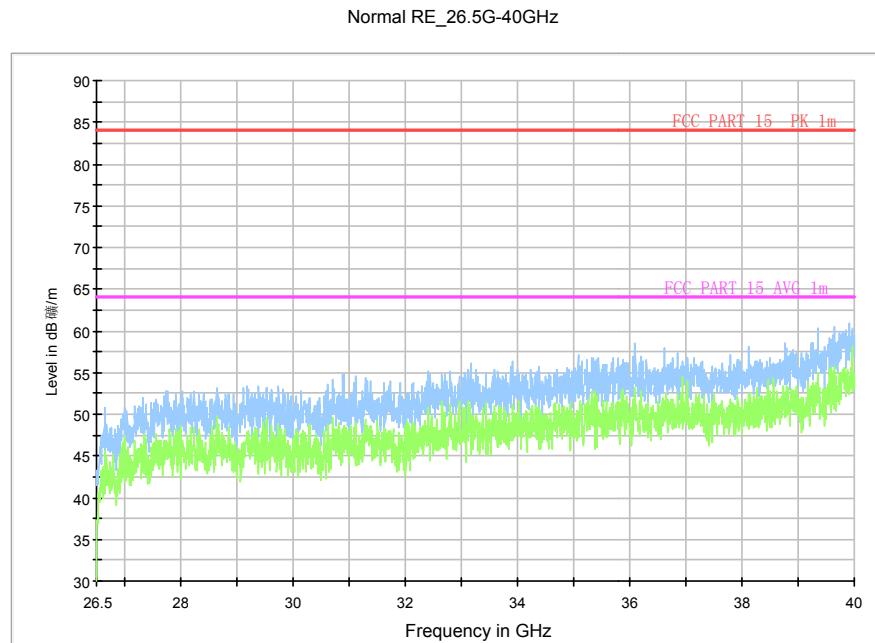


Fig. 114 Radiated Spurious Emission (802.11n-HT40, ch62, 26.5 GHz-40 GHz)

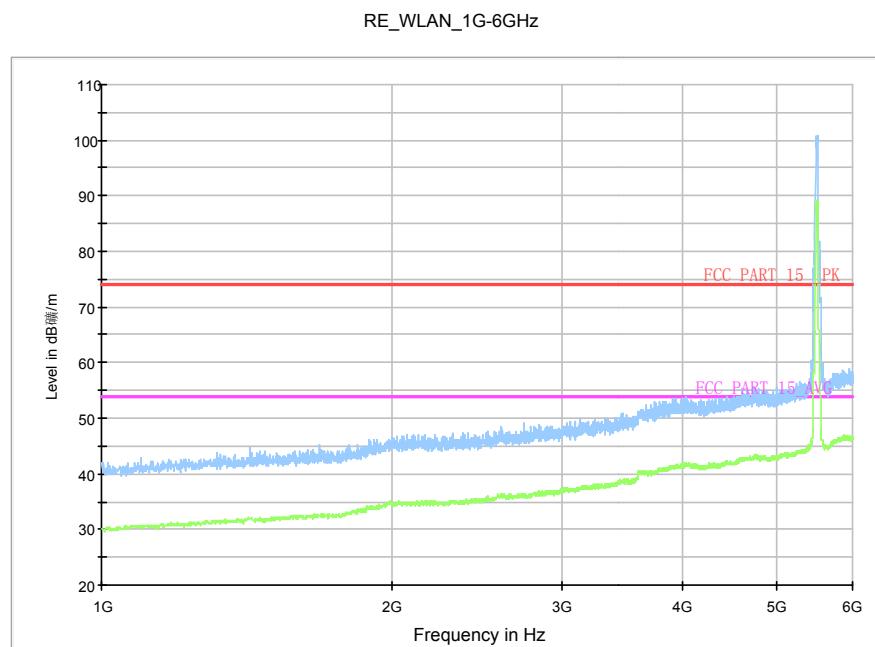


Fig. 115 Radiated Spurious Emission (802.11n-HT40, ch102, 1 GHz-6 GHz)

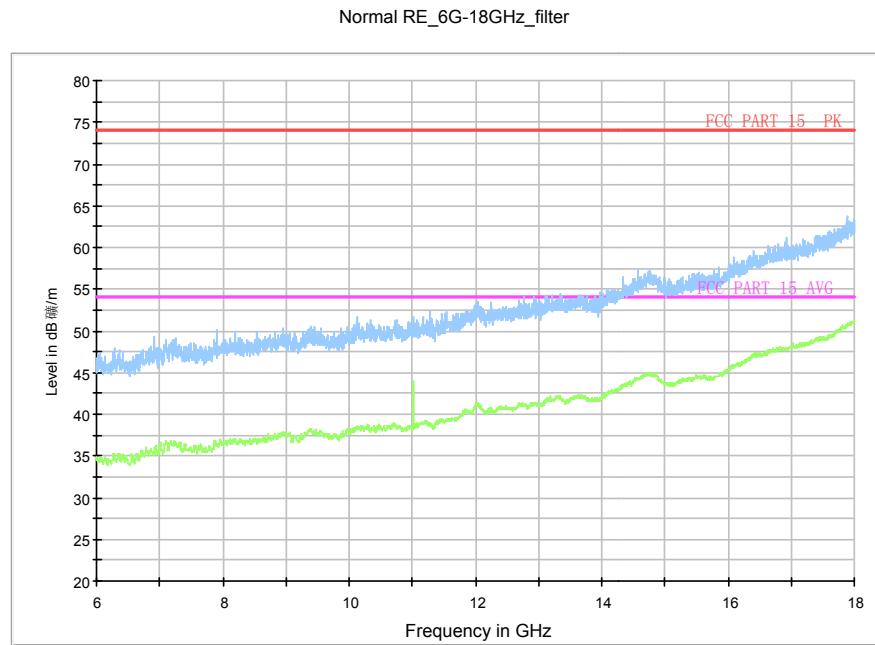


Fig. 116 Radiated Spurious Emission (802.11n-HT40, ch102, 6 GHz-18 GHz)

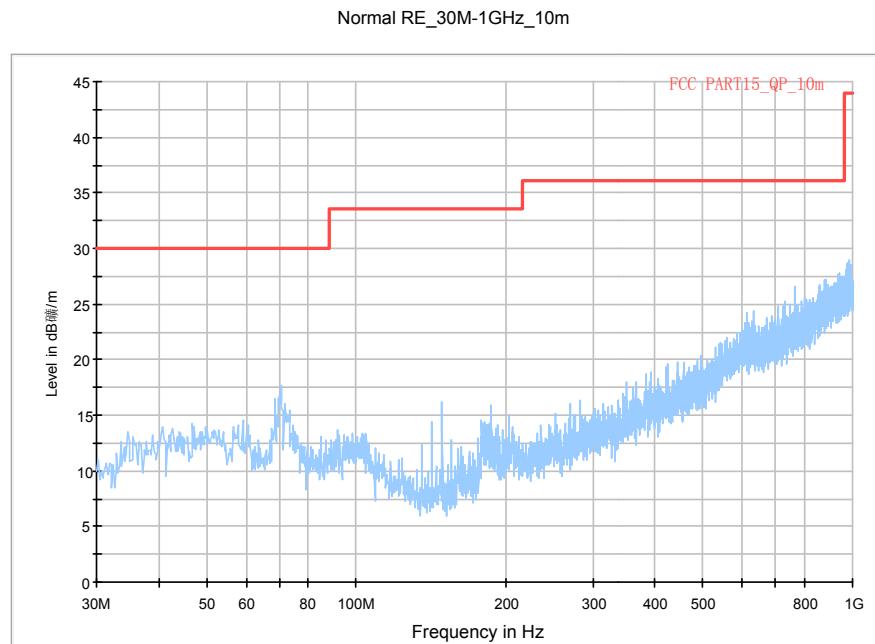


Fig. 117 Radiated Spurious Emission (802.11n-HT40, ch118, 30 MHz-1 GHz)

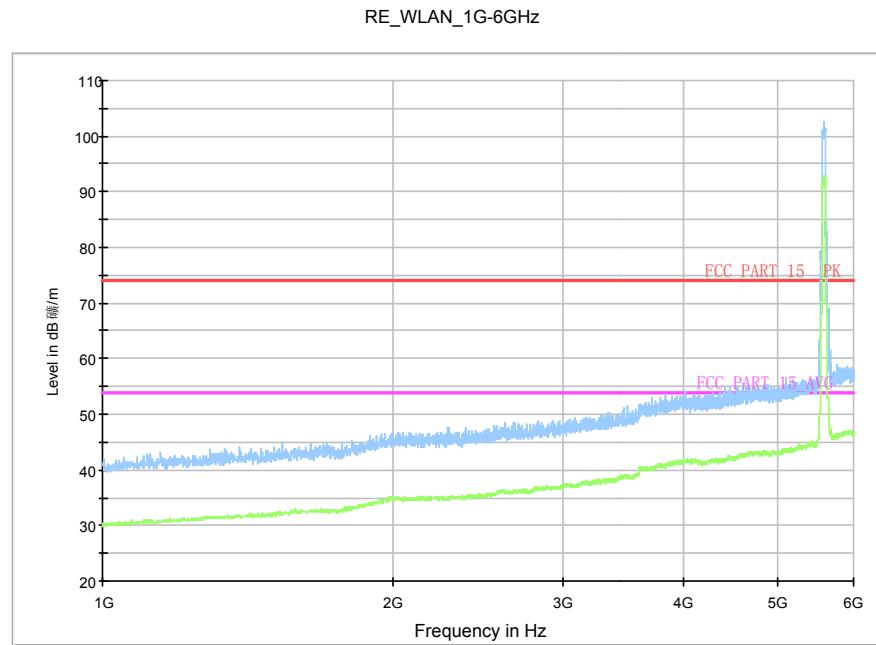


Fig. 118 Radiated Spurious Emission (802.11n-HT40, ch118, 1 GHz-6 GHz)

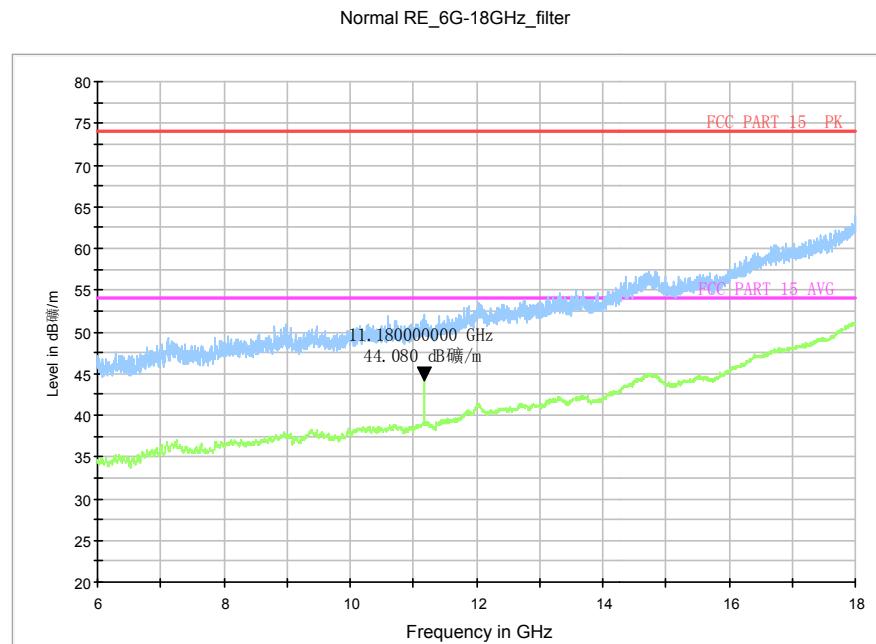


Fig. 119 Radiated Spurious Emission (802.11n-HT40, ch118, 6 GHz-18 GHz)

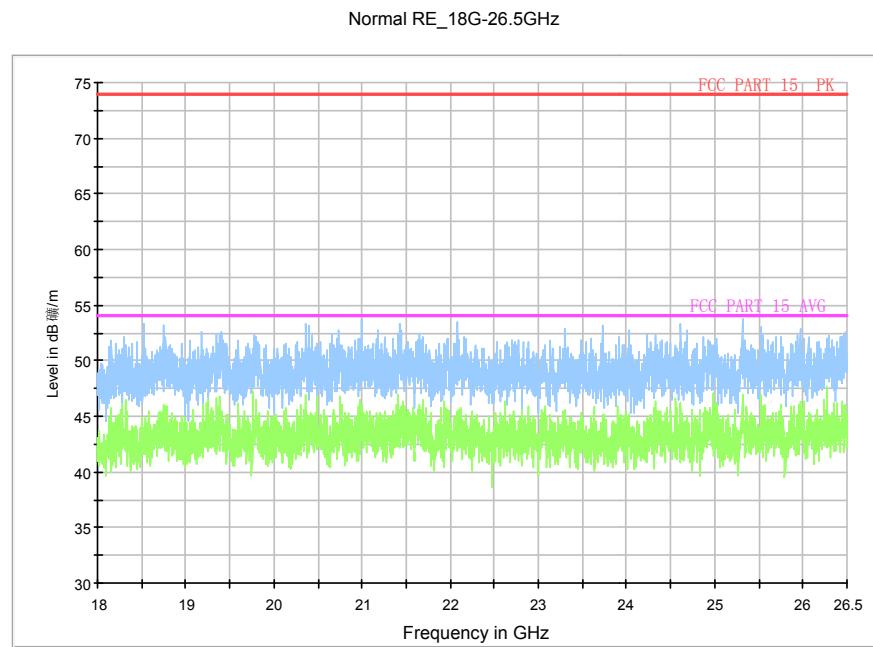


Fig. 120 Radiated Spurious Emission (802.11n-HT40, ch118 18 GHz-26.5 GHz)

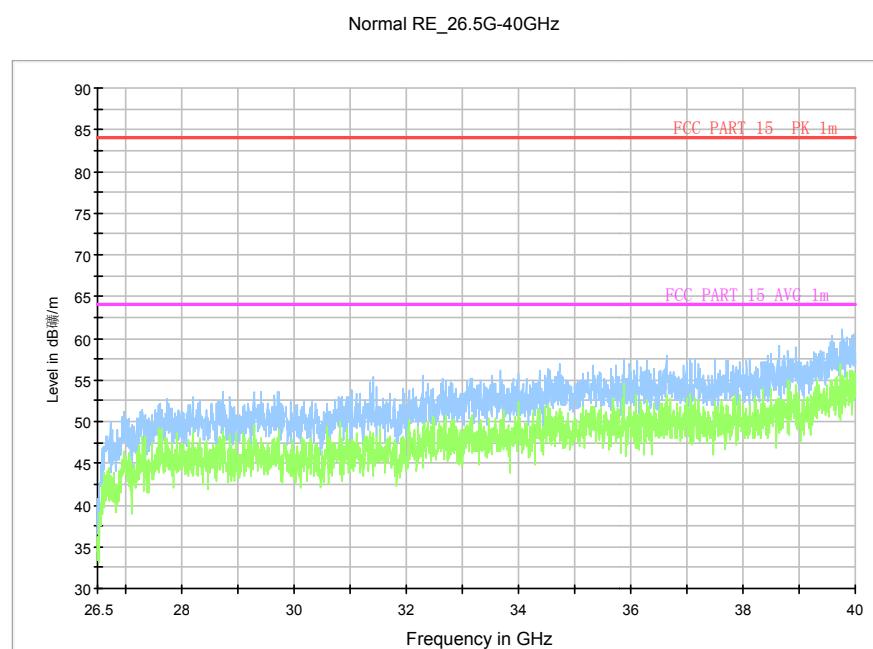


Fig. 121 Radiated Spurious Emission (802.11n-HT40, ch118, 26.5 GHz-40 GHz)

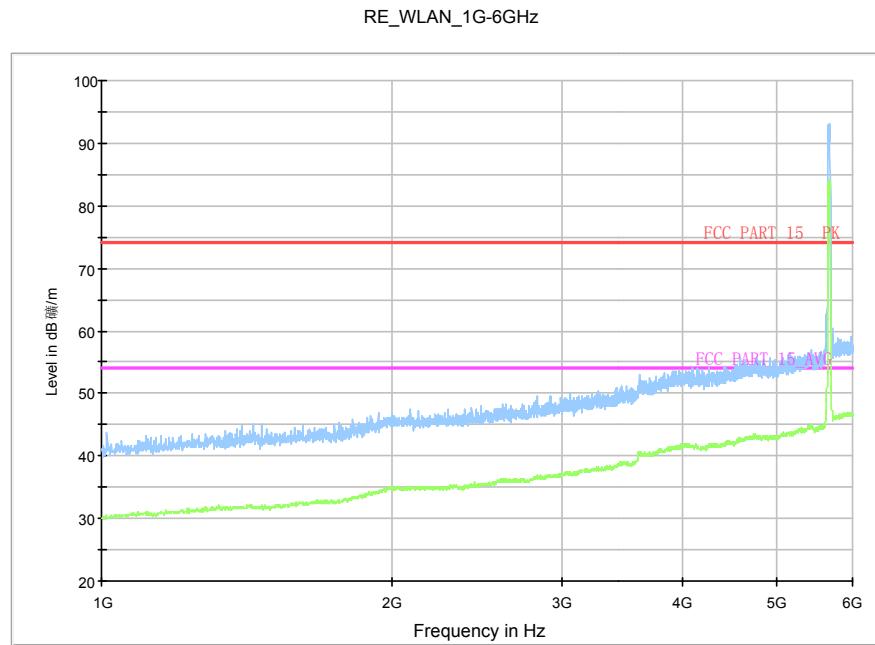


Fig. 122 Radiated Spurious Emission (802.11n-HT40, ch134, 1 GHz-6 GHz)

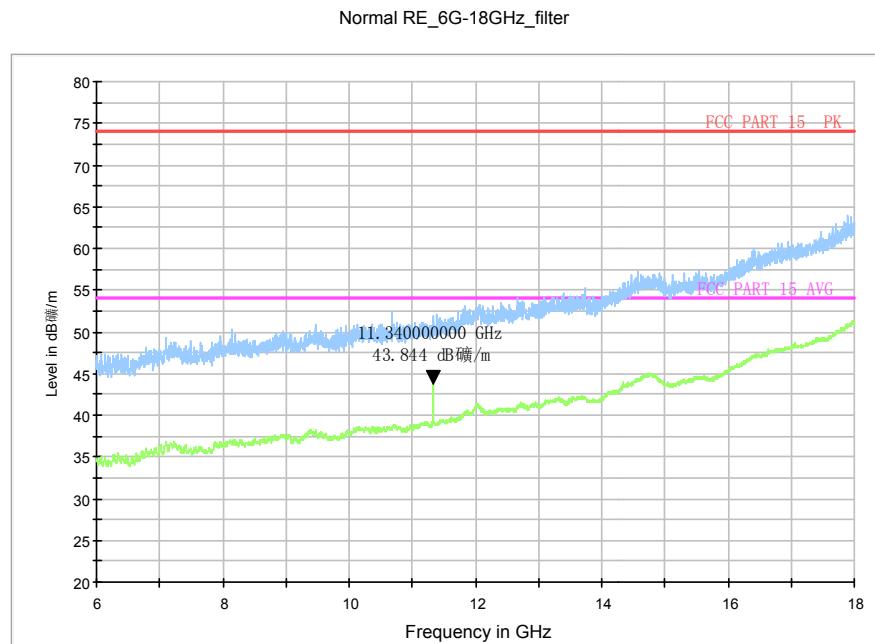


Fig. 123 Radiated Spurious Emission (802.11n-HT40, ch134, 6 GHz-18 GHz)

A.7. Spurious Emissions Radiated < 30MHz

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

Frequency (MHz)	Field strength(μ V/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.126	P

Conclusion: PASS

Test graphs as below:

RE_9kHz-30MHz

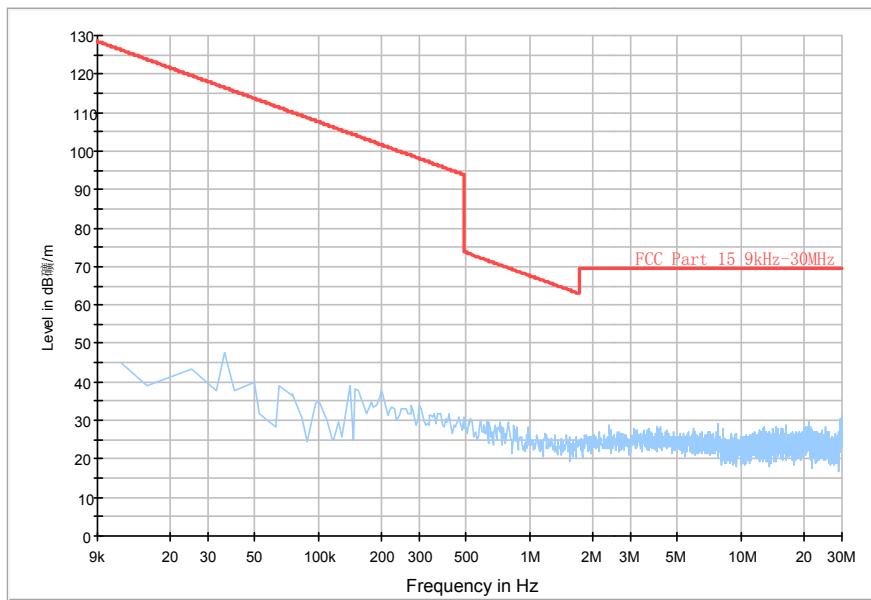


Fig. 124 Radiated Spurious Emission (802.11a, ch40, 9 kHz ~30 MHz)

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

Test Condition:

Voltage (V)	Frequency (Hz)
110	60

Measurement uncertainty:

Expanded measurement uncertainty for this test item is $U = 3.2\text{dB}$, $k=2$.

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				
0.5 to 5	56			P	
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.

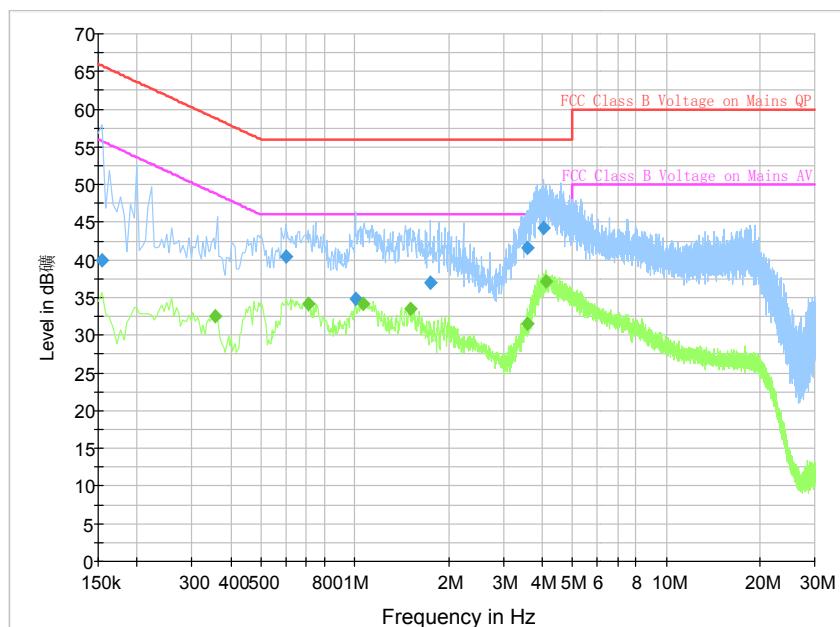
WLAN (Average Limit)

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				
0.5 to 5	46			P	
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:

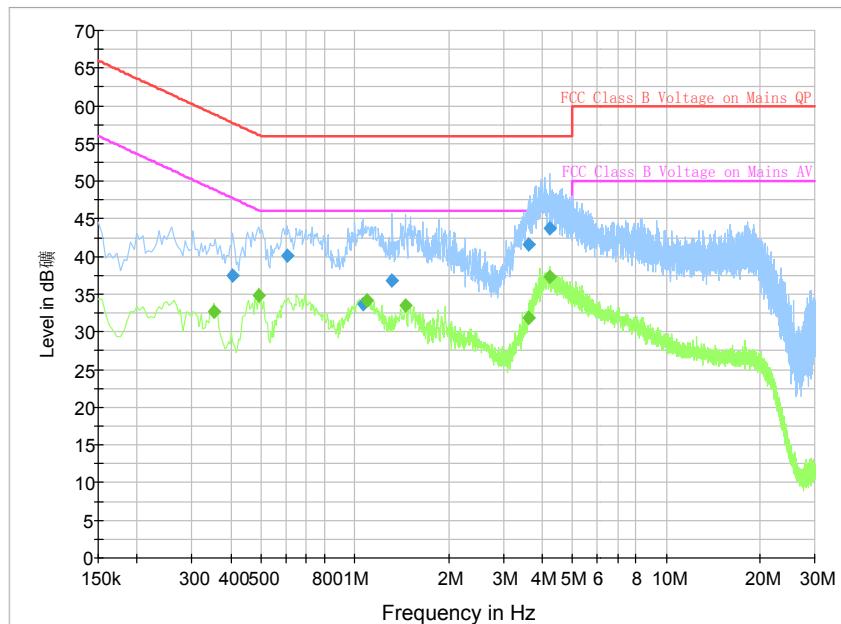

Fig. 125 Conducted Emission(802.11a, Ch40, TX)

Measurement Result:

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.154500	40.0	2000.0	9.000	On	L1	20.0	25.7	65.8
0.600000	40.4	2000.0	9.000	On	L1	19.8	15.6	56.0
1.005000	34.8	2000.0	9.000	On	N	19.7	21.2	56.0
1.752000	37.1	2000.0	9.000	On	N	19.7	18.9	56.0
3.597000	41.7	2000.0	9.000	On	L1	19.5	14.3	56.0
4.029000	44.2	2000.0	9.000	On	L1	19.5	11.8	56.0

Measurement Result:

Frequency (MHz)	CAverage (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.357000	32.4	2000.0	9.000	On	L1	19.8	16.4	48.8
0.708000	34.2	2000.0	9.000	On	L1	19.8	11.8	46.0
1.068000	34.1	2000.0	9.000	On	L1	19.7	11.9	46.0
1.509000	33.5	2000.0	9.000	On	L1	19.7	12.5	46.0
3.588000	31.5	2000.0	9.000	On	L1	19.5	14.5	46.0
4.096500	37.2	2000.0	9.000	On	L1	19.6	8.8	46.0


Fig. 126 Conducted Emission(802.11a, IDLE)

Measurement Result:

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.406500	37.5	2000.0	9.000	On	N	19.9	20.3	57.7
0.604500	40.1	2000.0	9.000	On	L1	19.8	15.9	56.0
1.063500	33.8	2000.0	9.000	On	N	19.7	22.2	56.0
1.320000	36.7	2000.0	9.000	On	N	19.7	19.3	56.0
3.601500	41.6	2000.0	9.000	On	L1	19.5	14.4	56.0
4.236000	43.8	2000.0	9.000	On	L1	19.6	12.2	56.0

Measurement Result:

Frequency (MHz)	CAverage (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.352500	32.6	2000.0	9.000	On	L1	19.8	16.3	48.9
0.492000	34.8	2000.0	9.000	On	L1	19.9	11.3	46.1
1.095000	34.1	2000.0	9.000	On	L1	19.7	11.9	46.0
1.450500	33.6	2000.0	9.000	On	L1	19.7	12.4	46.0
3.601500	31.8	2000.0	9.000	On	L1	19.5	14.2	46.0
4.218000	37.3	2000.0	9.000	On	L1	19.6	8.7	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.129	5.97	Fig.131	6.99	Fig.133	8.01
Average(dBm)	Fig.130	-2.52	Fig.132	-0.97	Fig.134	-0.77
Result (dB)	8.49		7.96		8.78	

Type	Test Result (dBm)					
	5260MHz (Ch52)		5280 MHz (Ch56)		5320 MHz (Ch64)	
Peak (dBm)	Fig.135	9.79	Fig.137	9.16	Fig.139	9.92
Average(dBm)	Fig.136	0.95	Fig.138	0.85	Fig.140	1.68
Result (dB)	8.84		8.31		8.24	

Type	Test Result (dBm)					
	5500MHz (Ch100)		5580MHz (Ch116)		5700MHz (Ch140)	
Peak (dBm)	Fig.141	5.84	Fig.143	6.69	Fig.145	6.90
Average(dBm)	Fig.142	-2.54	Fig.144	-1.63	Fig.146	-1.05
Result (dB)	8.38		8.32		7.95	

11n-HT20 mode

Type	Peak Excursion					
	5180MHz (Ch36)		5200MHz (Ch40)		5240MHz (Ch48)	
Peak (dBm)	Fig.147	5.61	Fig.149	6.65	Fig.151	7.34
Average(dBm)	Fig.148	-3.68	Fig.150	-2.20	Fig.152	-1.82
Result (dB)	9.29		8.85		9.16	

Type	Test Result (dBm)					
	5260MHz (Ch52)		5280 MHz (Ch56)		5320 MHz (Ch64)	
Peak (dBm)	Fig.153	8.07	Fig.155	8.27	Fig.157	8.78
Average(dBm)	Fig.154	-0.16	Fig.156	-0.49	Fig.158	0.71
Result (dB)	8.23		8.76		8.07	

Type	Test Result (dBm)					
	5500MHz (Ch100)		5580MHz (Ch116)		5700MHz (Ch140)	
Peak (dBm)	Fig.159	4.35	Fig.161	5.96	Fig.163	7.33
Average(dBm)	Fig.160	-4.01	Fig.162	-2.72	Fig.164	-1.67
Result (dB)	8.36		8.68		9.00	

11n-HT40 mode

Type	Peak Excursion					
	5190MHz (Ch38)		5230MHz (Ch46)		5270MHz (Ch54)	
5310 MHz (Ch62)						
Peak (dBm)	Fig.165	0.33	Fig.167	3.89	Fig.169	6.32
Average(dBm)	Fig.166	-7.60	Fig.168	-4.38	Fig.170	-2.24
Result (dB)	7.93		8.27		8.56	
						8.20

Type	Test Result (dBm)					
	5510MHz (Ch102)		5550MHz (Ch110)		5670MHz (Ch134)	
Peak (dBm)	Fig.173	0.67	Fig.175	3.43	Fig.177	4.6
Average(dBm)	Fig.174	-7.76	Fig.176	-5.30	Fig.178	-4.09
Result (dB)	8.43		8.73		8.69	

Conclusion: PASS
Test graphs as below:

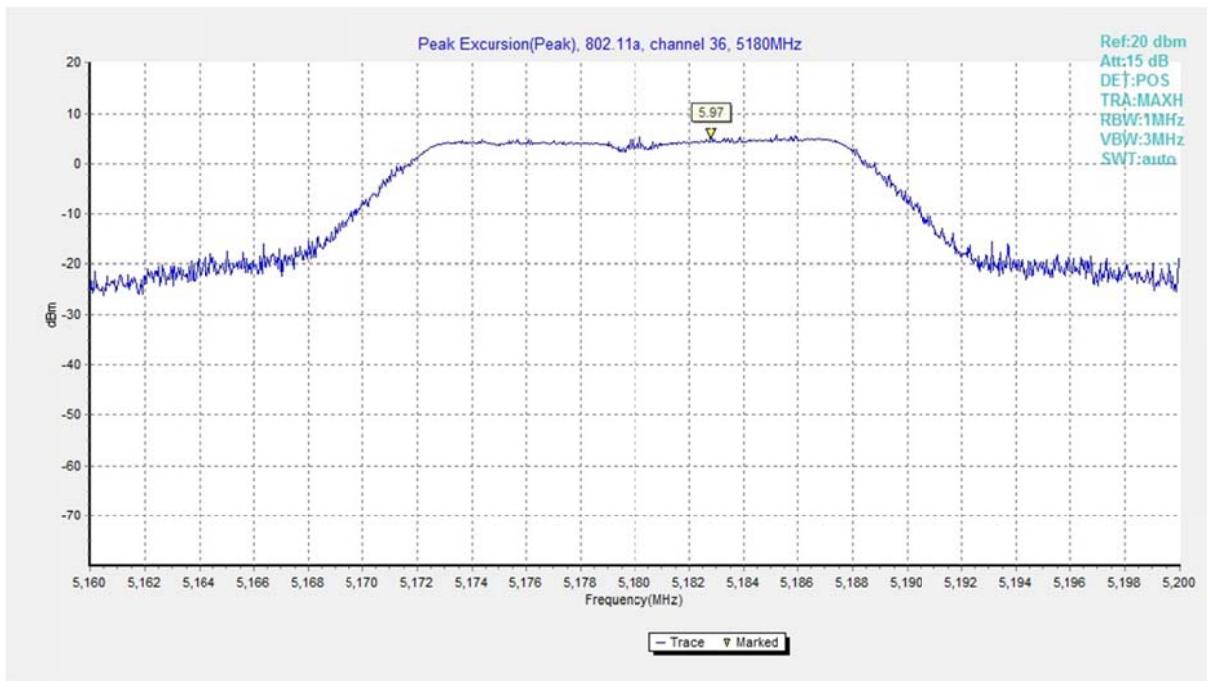


Fig. 127 Peak Excursions (802.11a, ch36, peak)



Fig. 128 Peak Excursions (802.11a, ch36, average)

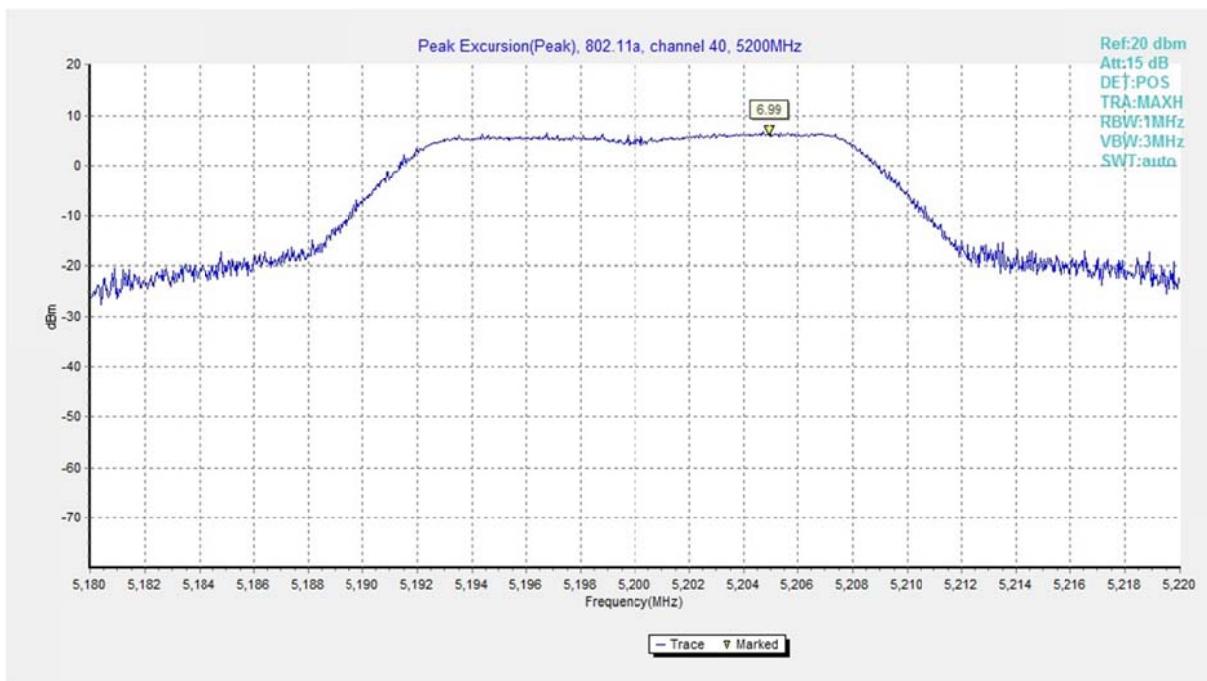


Fig. 129 Peak Excursions (802.11a, ch40, peak)



Fig. 130 Peak Excusions (802.11a, ch40, average)

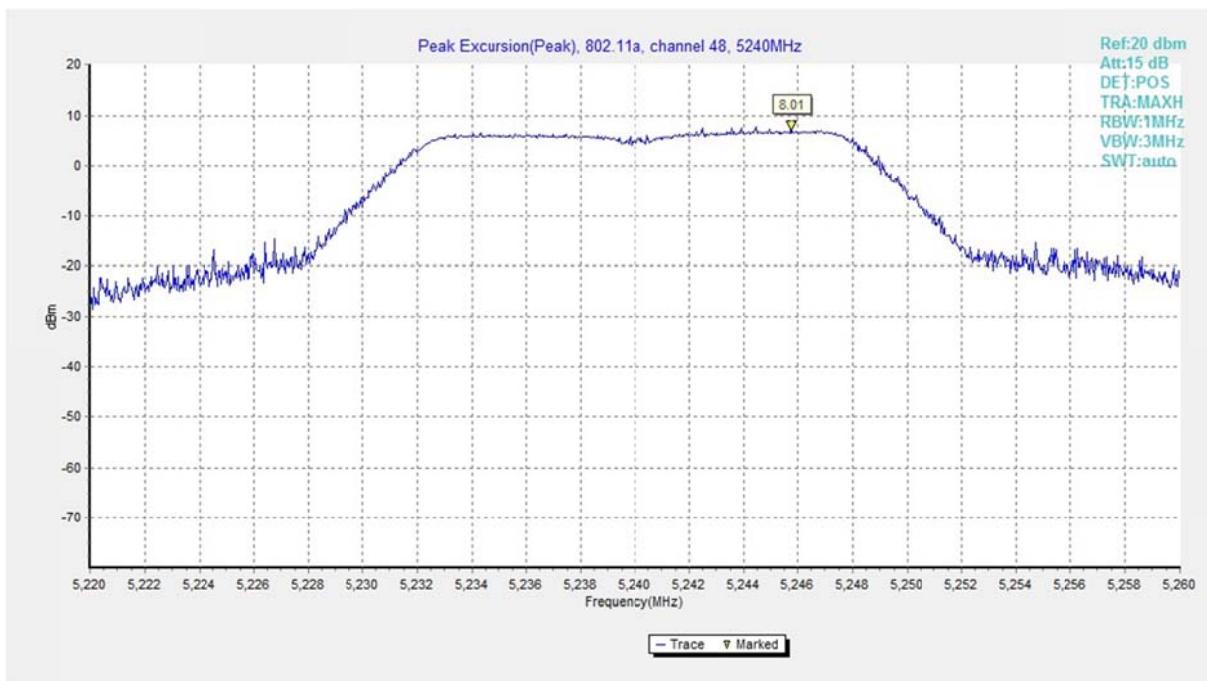


Fig. 131 Peak Excursions (802.11a, ch48, peak)



Fig. 132 Peak Excursions (802.11a, ch48, average)

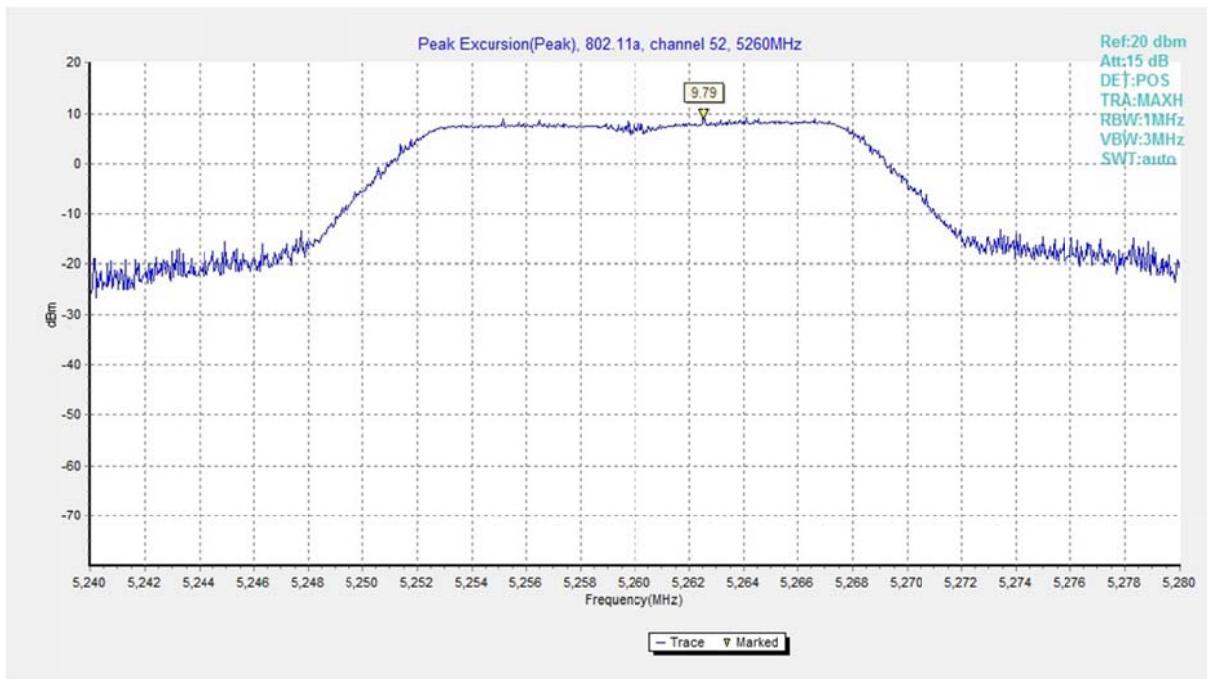


Fig. 133 Peak Excursions (802.11a, ch52, peak)



Fig. 134 Peak Excursions (802.11a, ch52, average)

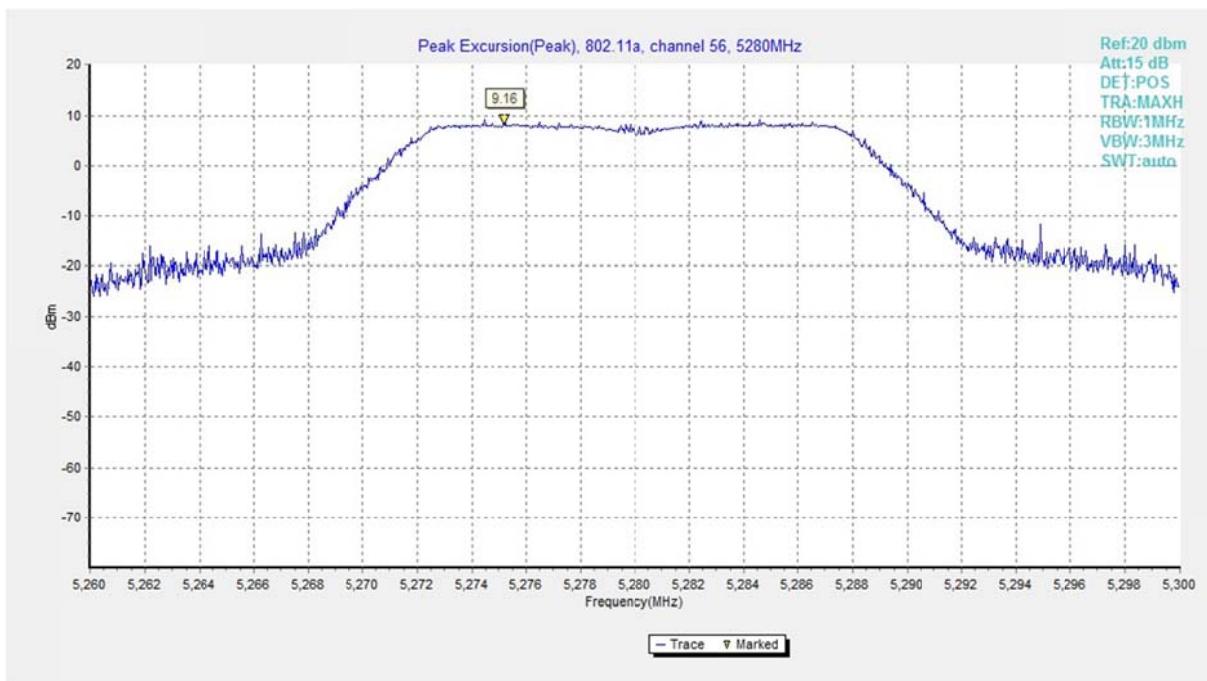


Fig. 135 Peak Excursions (802.11a, ch56, peak)



Fig. 136 Peak Excursions (802.11a, ch56, average)

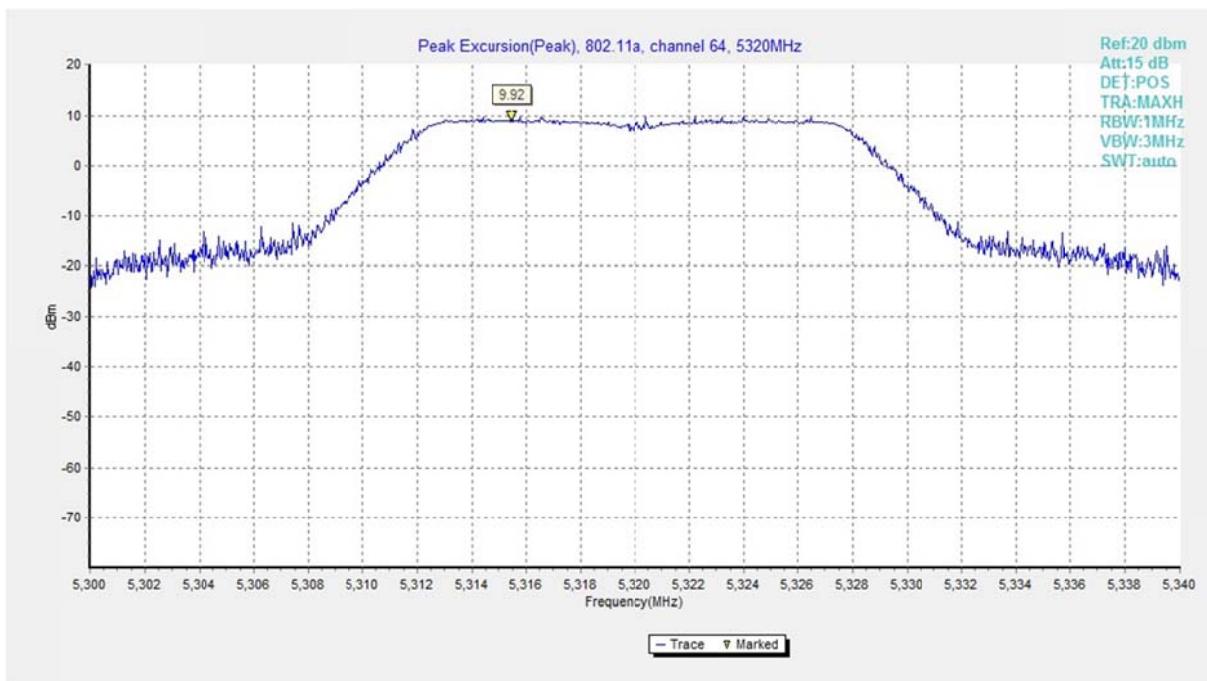


Fig. 137 Peak Excursions (802.11a, ch64, peak)



Fig. 138 Peak Excursions (802.11a, ch64, average)



Fig. 139 Peak Excursions (802.11a, ch100, peak)



Fig. 140 Peak Excursions (802.11a, ch100, average)



Fig. 141 Peak Excursions (802.11a, ch116, peak)



Fig. 142 Peak Excursions (802.11a, ch116, average)



Fig. 143 Peak Excursions (802.11a, ch140, peak)

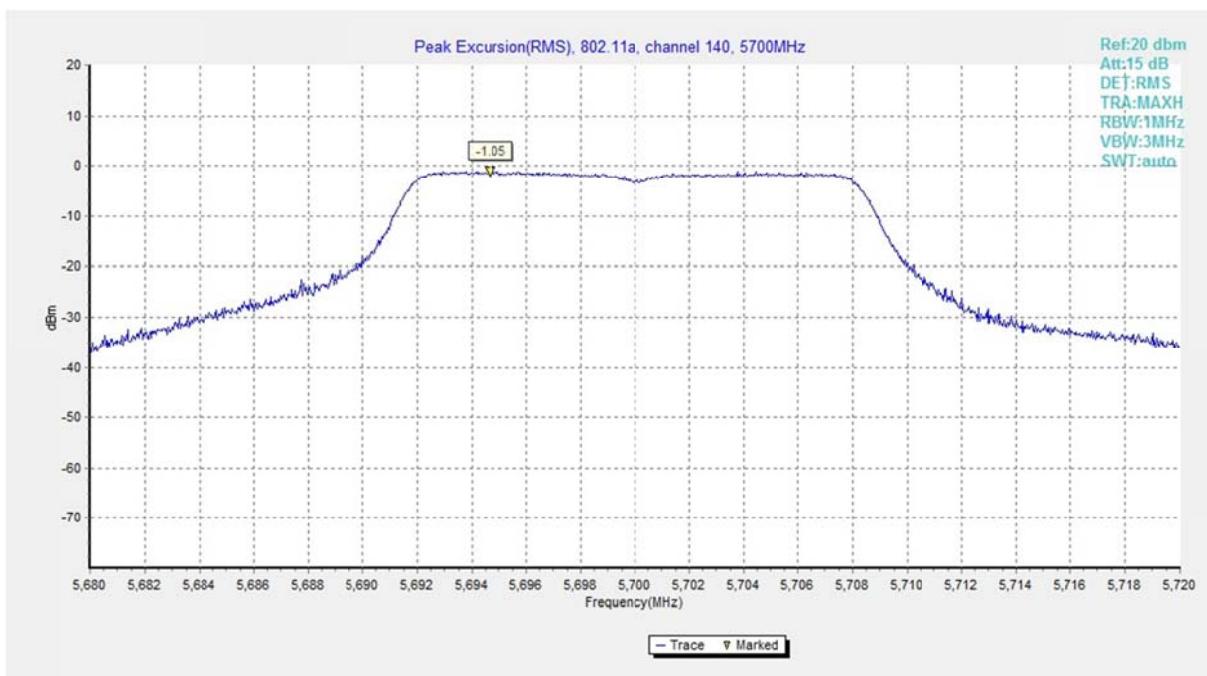


Fig. 144 Peak Excursions (802.11a, ch140, average)

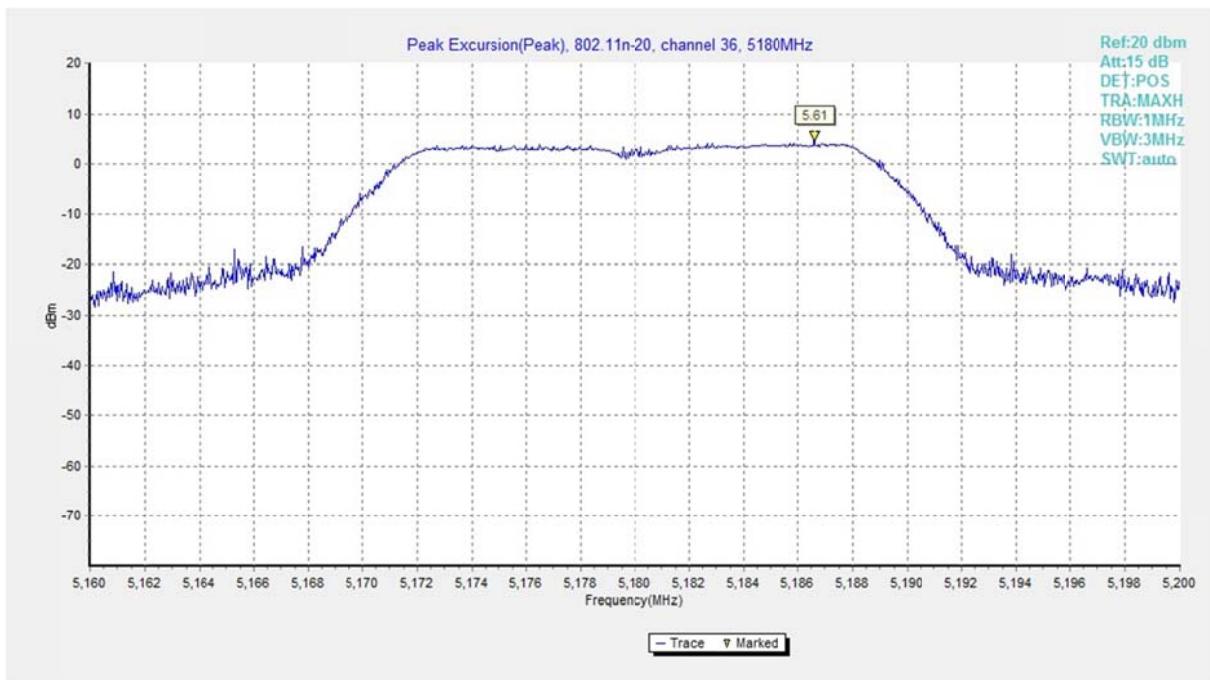


Fig. 145 Peak Excursions (802.11n-HT20, ch36, peak)



Fig. 146 Peak Excursions (802.11n-HT20, ch36, average)



Fig. 147 Peak Excursions (802.11n-HT20, ch40, peak)



Fig. 148 Peak Excursions (802.11n-HT20, ch40, average)



Fig. 149 Peak Excursions (802.11n-HT20, ch48, peak)



Fig. 150 Peak Excursions (802.11n-HT20, ch48, average)



Fig. 151 Peak Excursions (802.11n-HT20, ch52, peak)



Fig. 152 Peak Excusions (802.11n-HT20, ch52, average)



Fig. 153 Peak Excursions (802.11n-HT20, ch56, peak)



Fig. 154 Peak Excursions (802.11n-HT20, ch56, average)



Fig. 155 Peak Excursions (802.11n-HT20, ch64, peak)

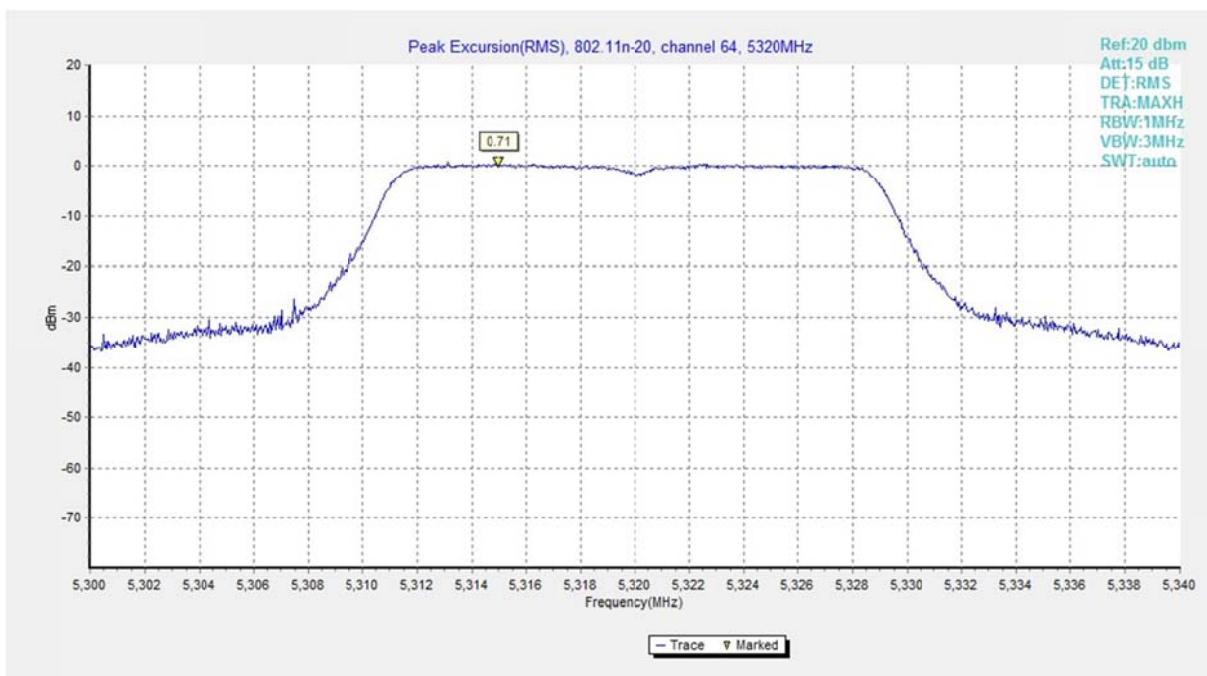


Fig. 156 Peak Excursions (802.11n-HT20, ch64, average)

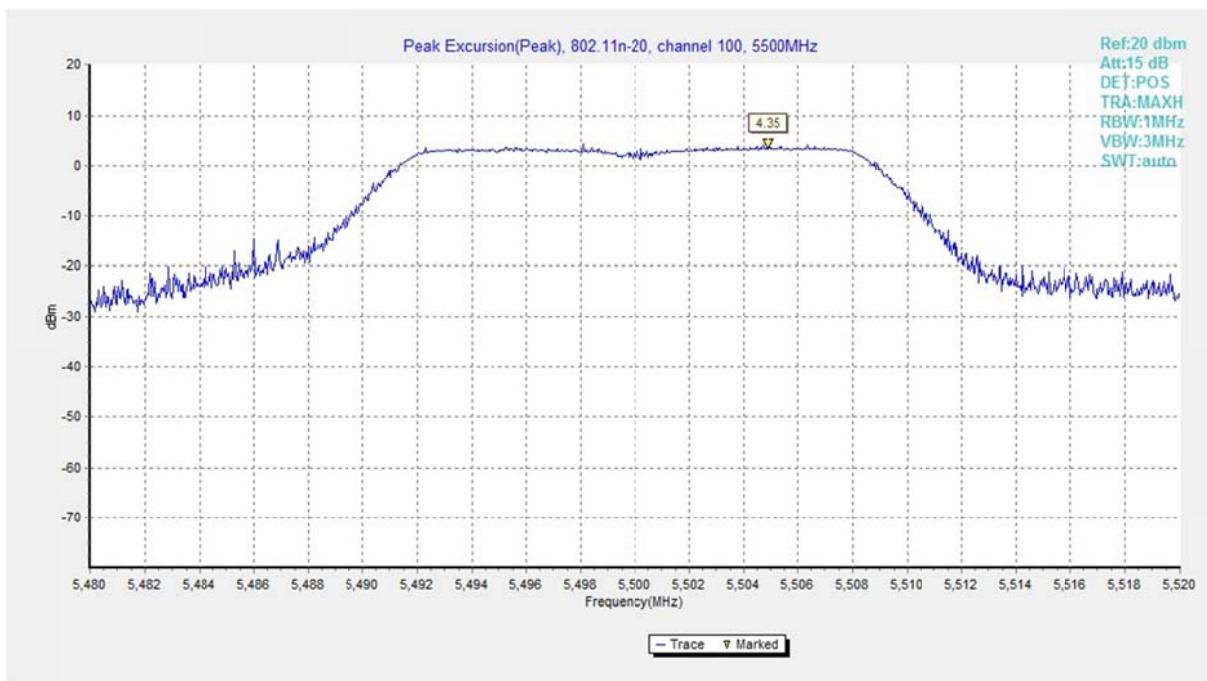


Fig. 157 Peak Excursions (802.11n-HT20, ch100, peak)

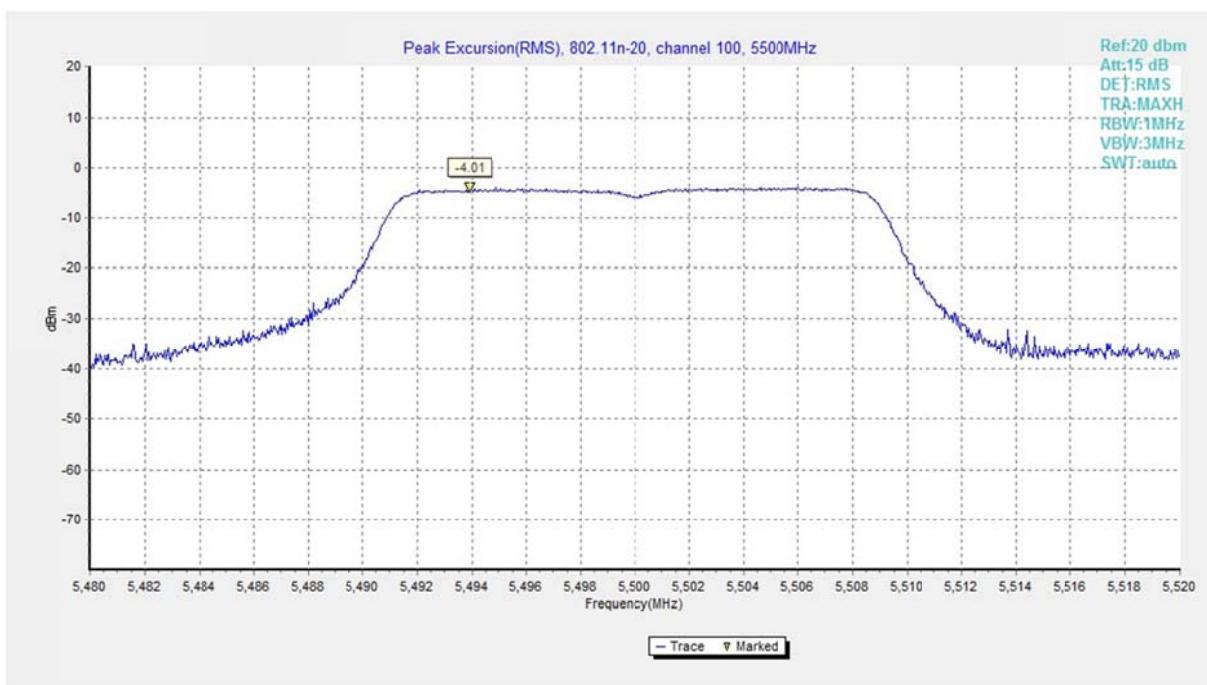


Fig. 158 Peak Excursions (802.11n-HT20, ch100, average)

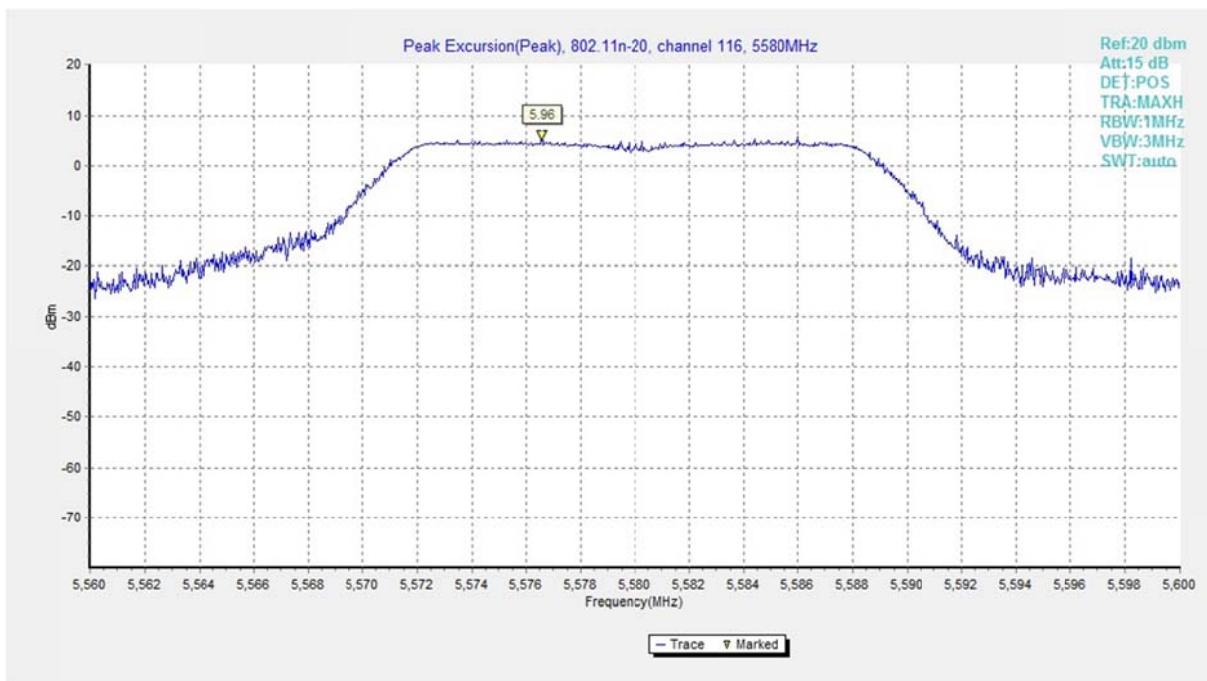

Fig. 159 Peak Excursions (802.11n-HT20, ch116, peak)

Fig. 160 Peak Excusions (802.11n-HT20, ch116, average)

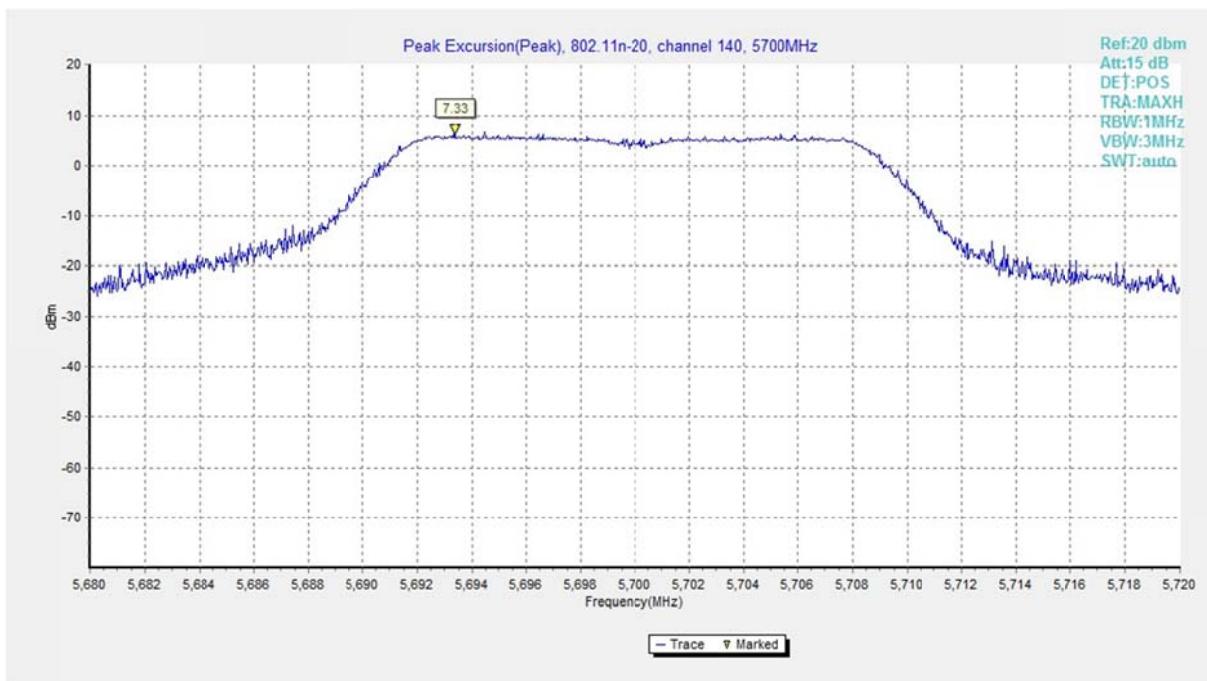


Fig. 161 Peak Excursions (802.11n-HT20, ch140, peak)



Fig. 162 Peak Excursions (802.11n-HT20, ch140, average)



Fig. 163 Peak Excursions (802.11n-HT40, ch38, peak)



Fig. 164 Peak Excursions (802.11n-HT40, ch38, average)

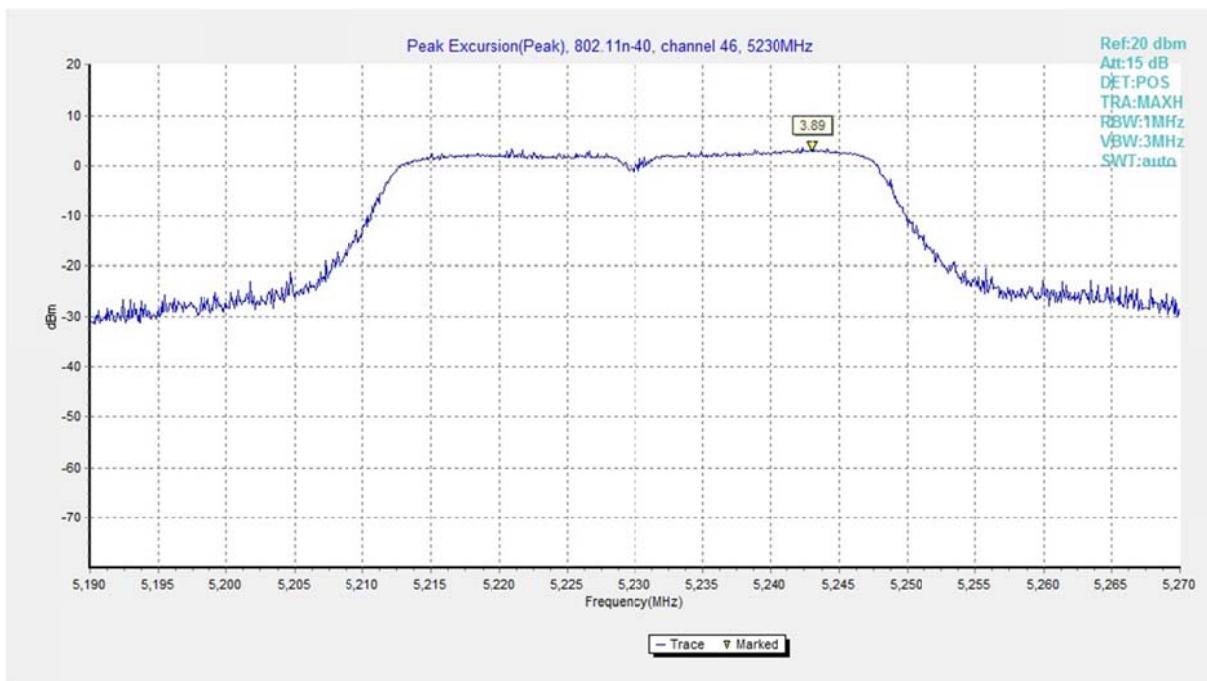


Fig. 165 Peak Excursions (802.11n-HT40, ch46, peak)



Fig. 166 Peak Excursions (802.11n-HT40, ch46, average)

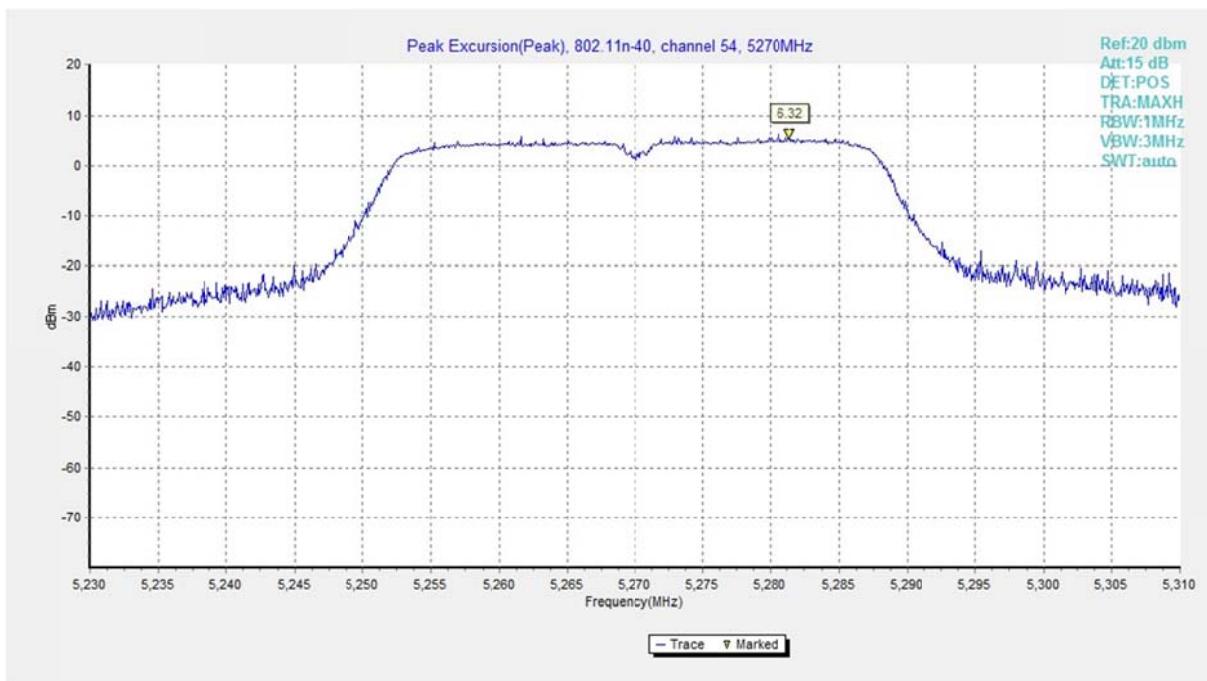


Fig. 167 Peak Excursions (802.11n-HT40, ch54, peak)



Fig. 168 Peak Excursions (802.11n-HT40, ch54, average)



Fig. 169 Peak Excursions (802.11n-HT40, ch62, peak)



Fig. 170 Peak Excursions (802.11n-HT40, ch62, average)



Fig. 171 Peak Excursions (802.11n-HT40, ch102, peak)

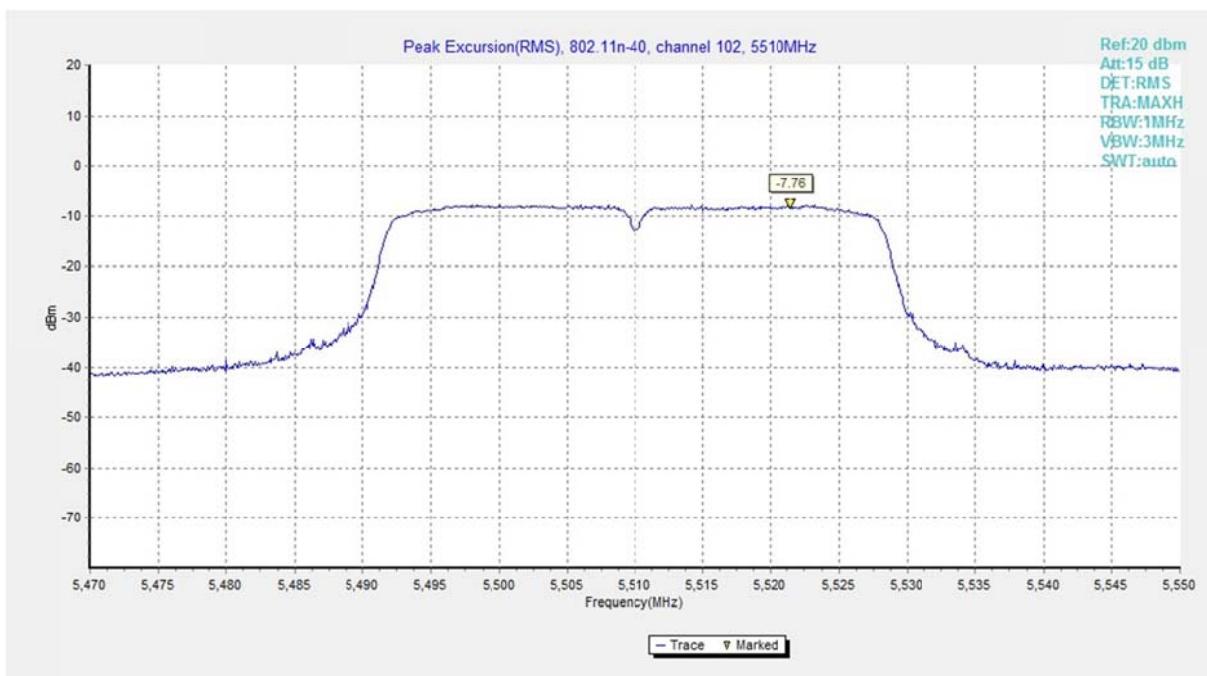


Fig. 172 Peak Excusions (802.11n-HT40, ch102, average)

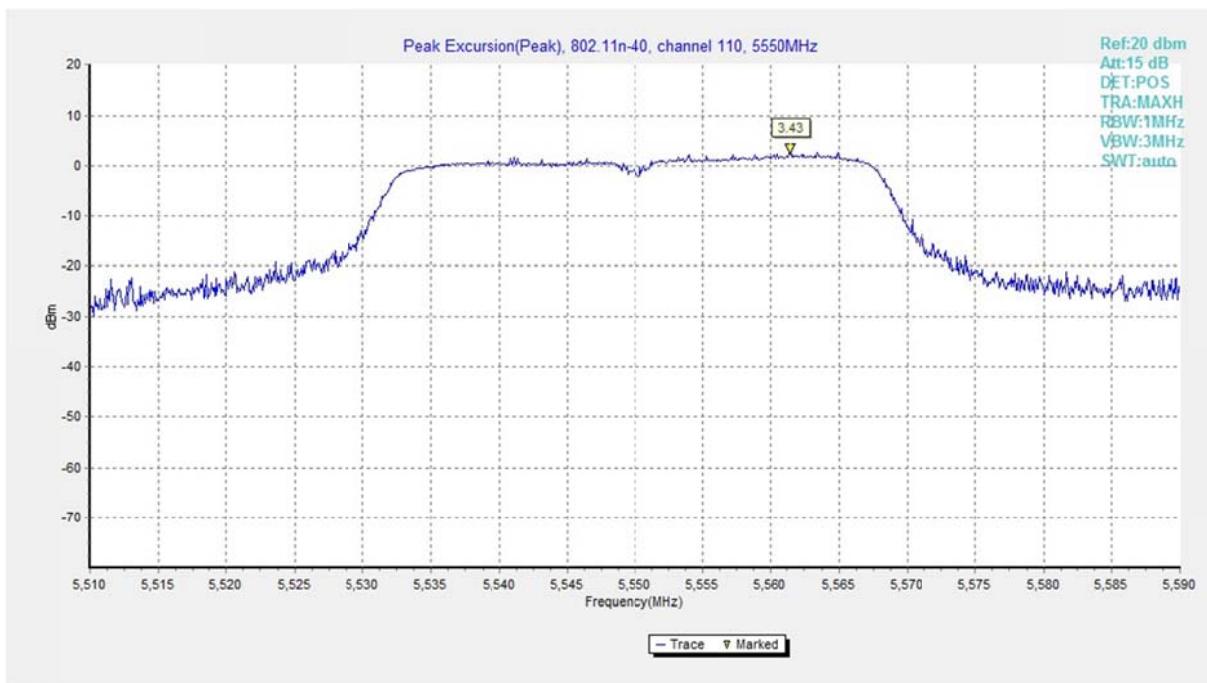


Fig. 173 Peak Excursions (802.11n-HT40, ch110, peak)

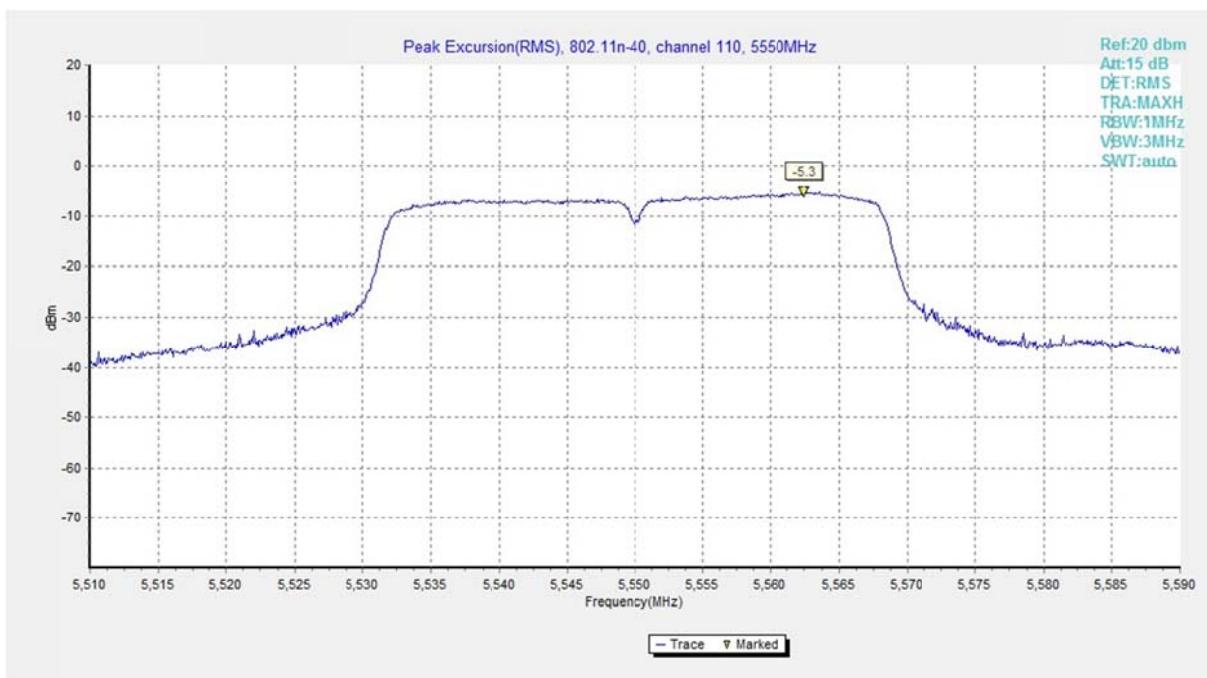


Fig. 174 Peak Excursions (802.11n-HT40, ch110, average)

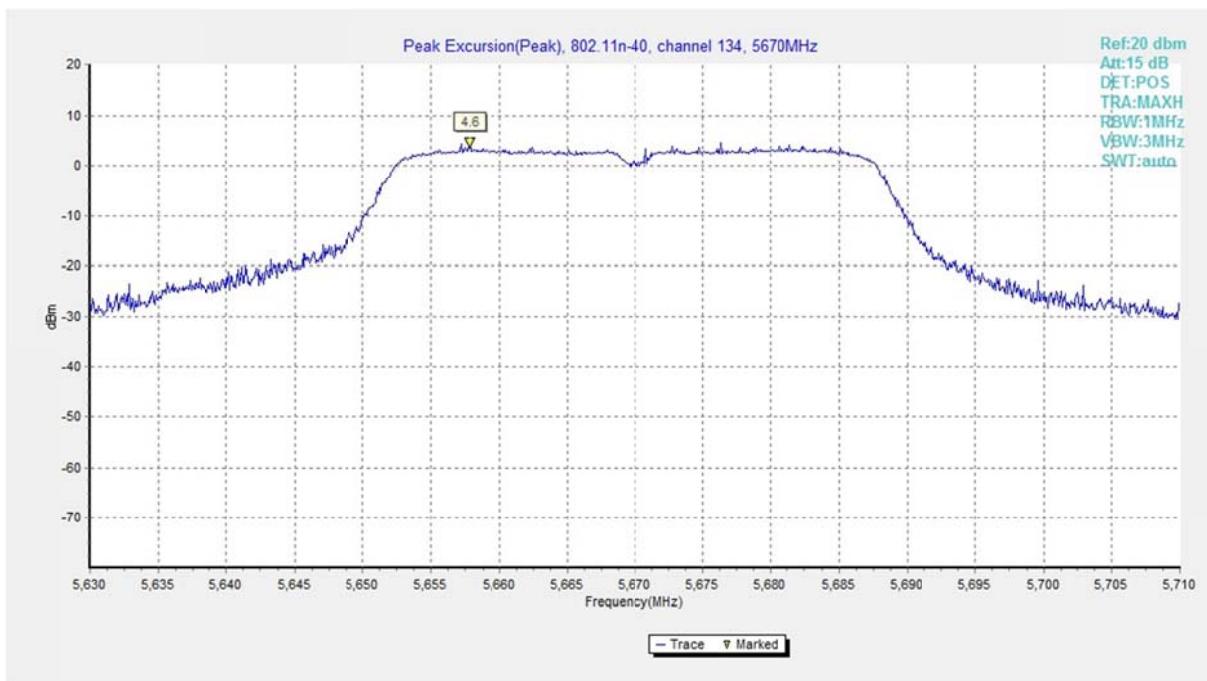


Fig. 175 Peak Excursions (802.11n-HT40, ch134, peak)



Fig. 176 Peak Excursions (802.11n-HT40, ch134, average)

A.10. Occupied 6dB Bandwidth

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.247 (a)	≥ 500

The measurement is made according to KDB558074 D01 .

Measurement Uncertainty:

Measurement Uncertainty	60.80Hz
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Measurement Result:

Mode	Channel	Occupied 6dB Bandwidth (kHz)	Conclusion
802.11a	5180 MHz	Fig.179	16350
	5200 MHz	Fig.180	16300
	5240 MHz	Fig.181	16300
	5260 MHz	Fig.182	16350
	5280 MHz	Fig.183	16350
	5320 MHz	Fig.184	16350
	5500 MHz	Fig.185	16350
	5580 MHz	Fig.186	16350
	5700 MHz	Fig.187	16350
802.11n HT20	5180 MHz	Fig.188	17550
	5200 MHz	Fig.189	17550
	5240 MHz	Fig.190	17500
	5260 MHz	Fig.191	17250
	5280 MHz	Fig.192	17600
	5320 MHz	Fig.193	17550
	5500 MHz	Fig.194	17600
	5580 MHz	Fig.195	17600
	5700 MHz	Fig.196	17600
802.11n HT40	5190 MHz	Fig.197	35360
	5230 MHz	Fig.198	35440
	5270 MHz	Fig.199	35360
	5310 MHz	Fig.200	35120
	5510 MHz	Fig.201	35040
	5550 MHz	Fig.202	35120
	5670 MHz	Fig.203	35120

Conclusion: PASS

Test graphs as below:



Fig. 177 Occupied 6dB Bandwidth (802.11a, Ch 36)

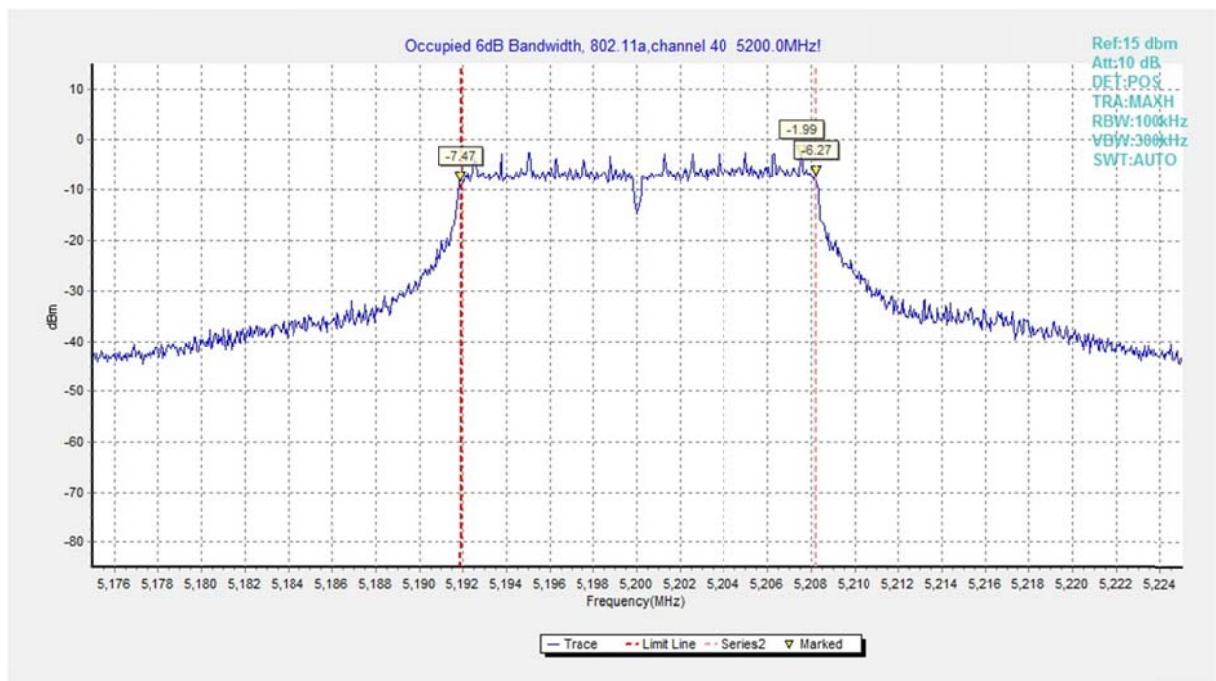


Fig. 178 Occupied 6dB Bandwidth (802.11a, Ch 40)