

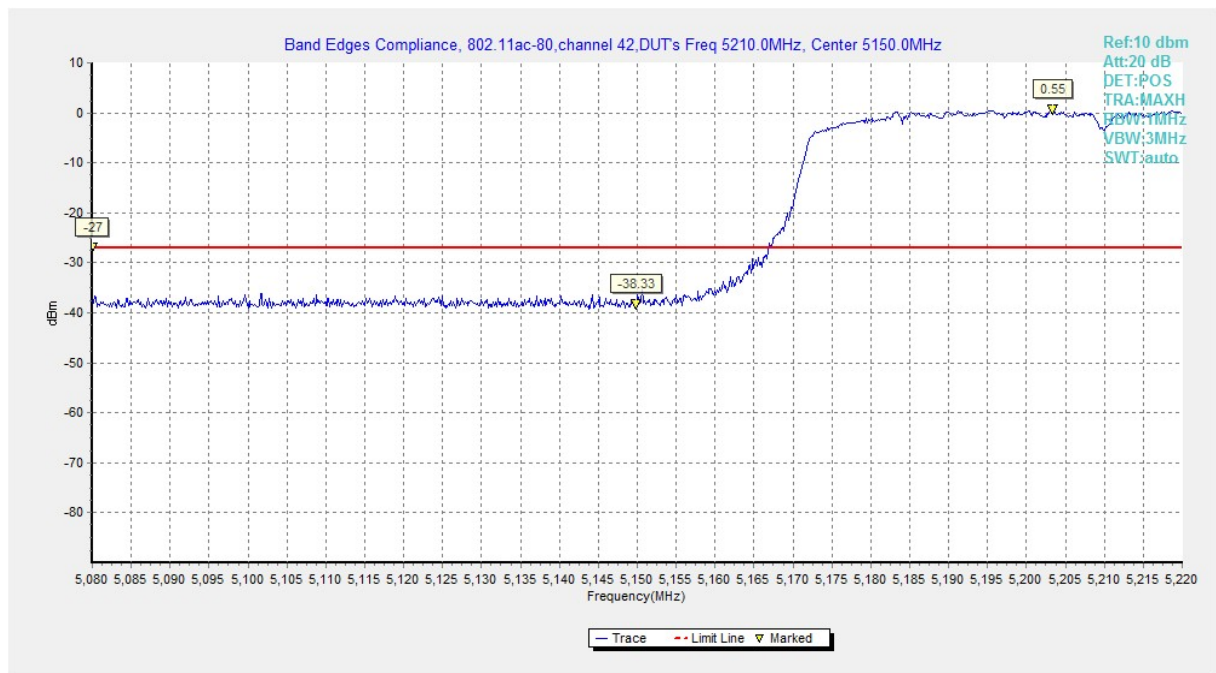


Fig. 42 Band Edges (802.11ac-HT80, 5210MHz)

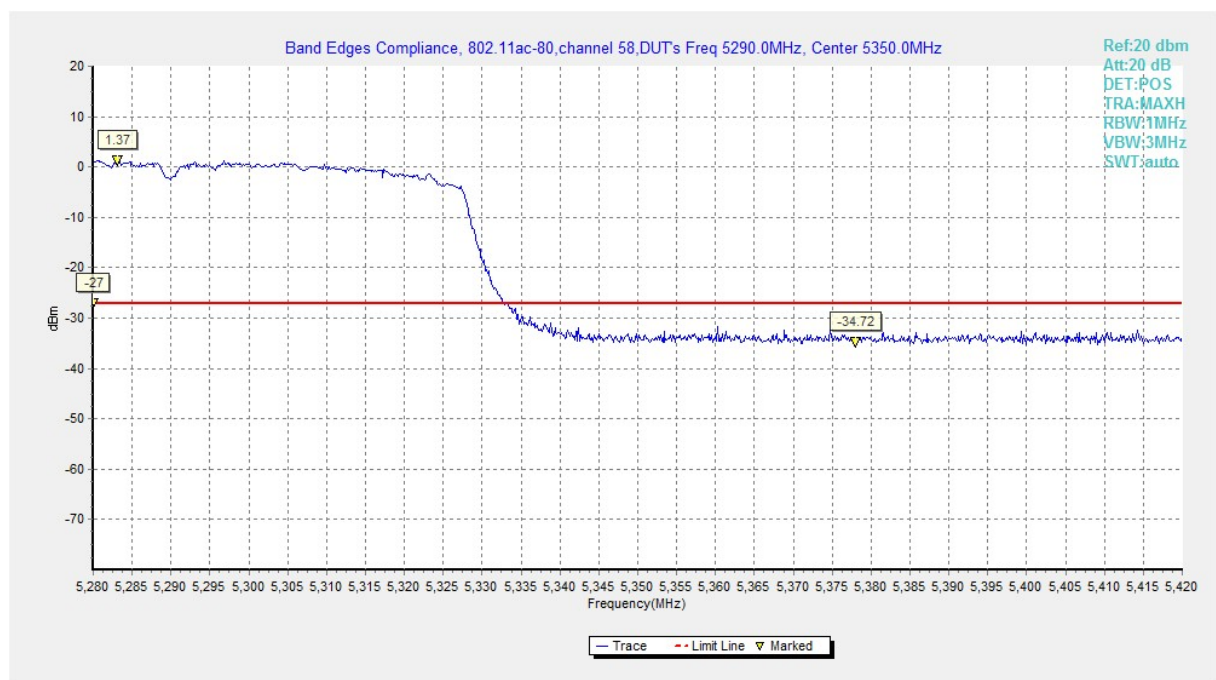


Fig. 43 Band Edges (802.11ac-HT80, 5290MHz)

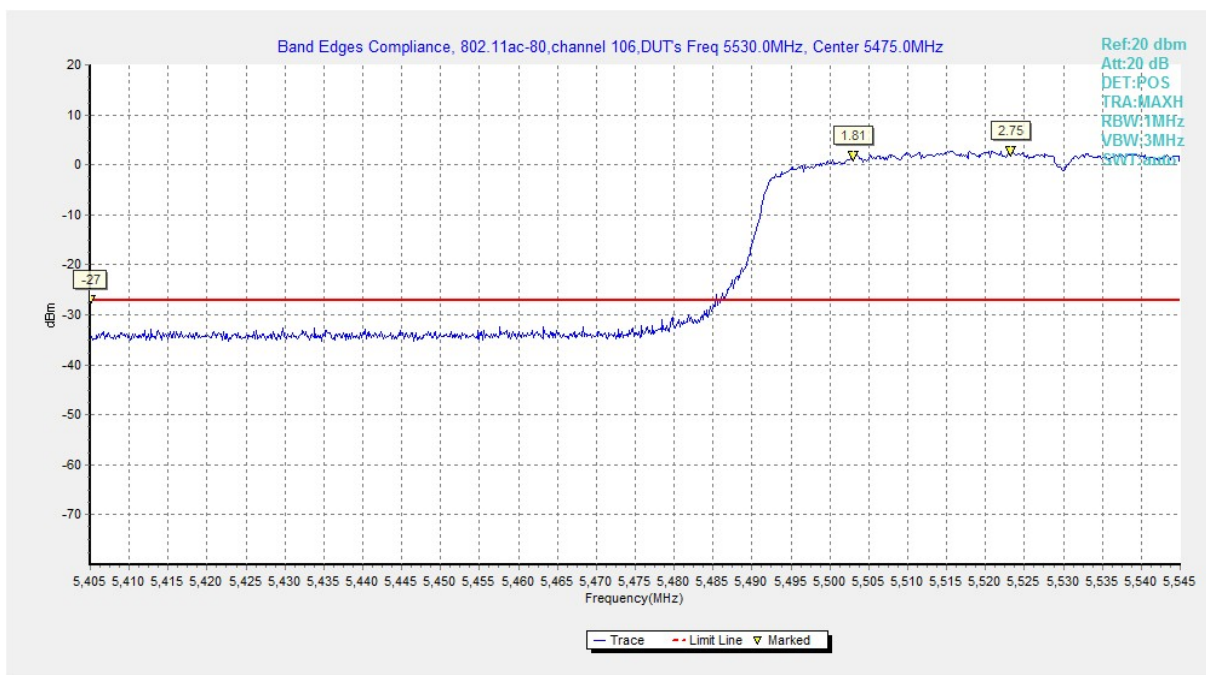
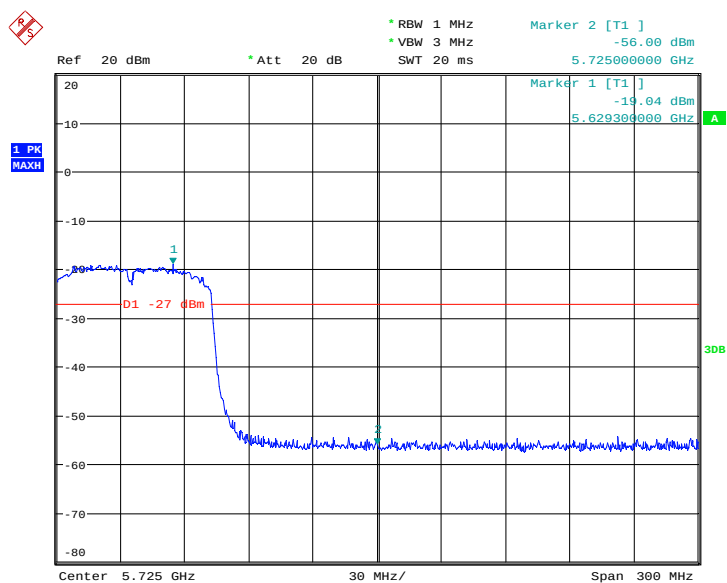


Fig. 44 Band Edges (802.11ac-HT80, 5530MHz)



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Fig. 45 Band Edges (802.11ac-HT80, 5610MHz)

A5.2 Band Edges - Radiated

Measurement Limit:

Standard	Limit (dB μ V/m)	
FCC 47 CFR Part 15.209	Peak	74
	Average	54

The measurement is made according to KDB 789033

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Measurement Uncertainty:

Measurement Uncertainty	0.75dB
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Measurement Result:

Mode	Channel	Test Results	Conclusion
802.11a	5180 MHz	Fig.46	P
	5320 MHz	Fig.47	P
	5500 MHz	Fig.48	P
	5700 MHz	Fig.49	P
802.11n HT20	5180 MHz	Fig.50	P
	5320 MHz	Fig.51	P
	5500 MHz	Fig.52	P
	5700 MHz	Fig.53	P
802.11n HT40	5190 MHz	Fig.54	P
	5310 MHz	Fig.55	P
	5510 MHz	Fig.56	P
	5670 MHz	Fig.57	P
802.11ac HT80	5210MHz	Fig.58	P
	5290MHz	Fig.59	P
	5530MHz	Fig.60	P

Conclusion: PASS

Test graphs as below:

RE - Power-5.125GHz-5.175GHz

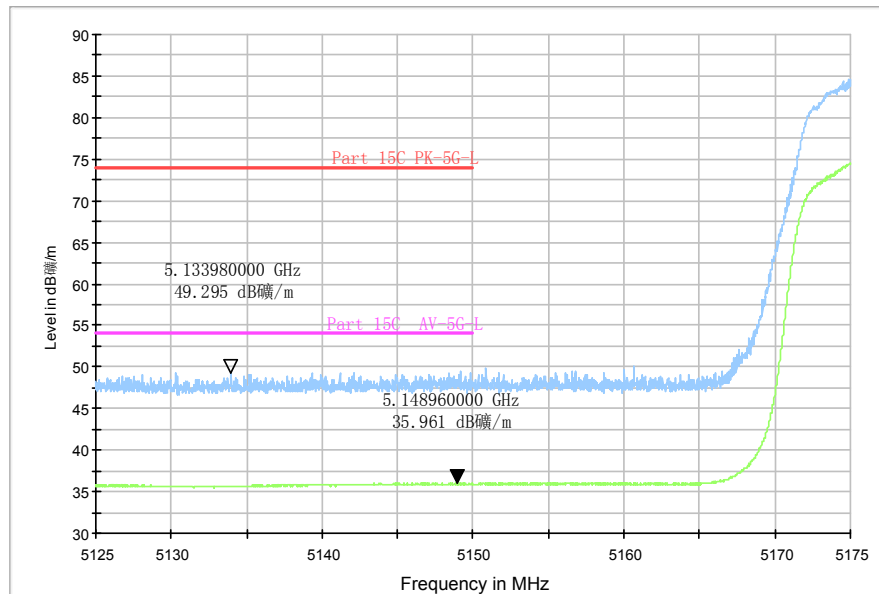


Fig. 46 Band Edges (802.11a, 5180MHz)

RE - Power-5.325GHz-5.375GHz

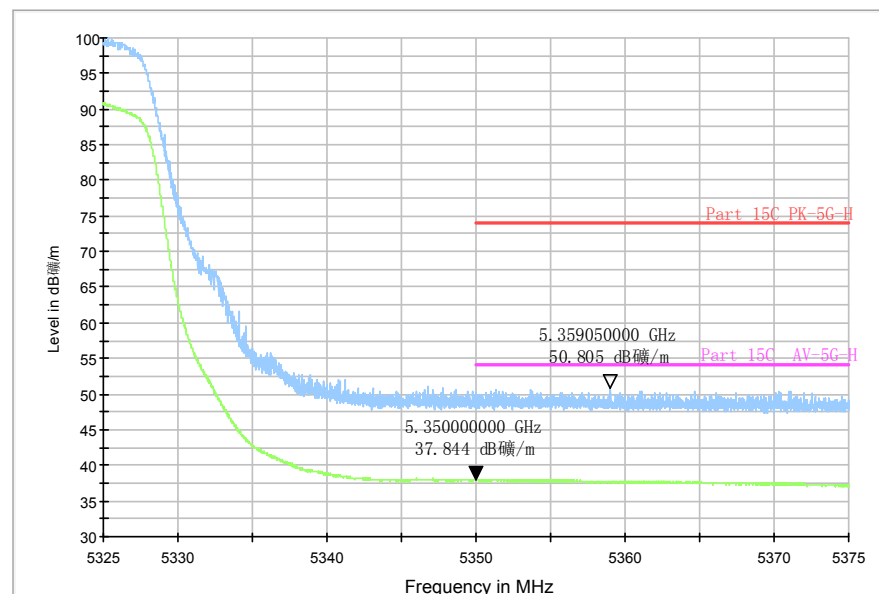


Fig. 47 Band Edges (802.11a, 5320MHz)

RE - Power-5.45GHz-5.50GHz

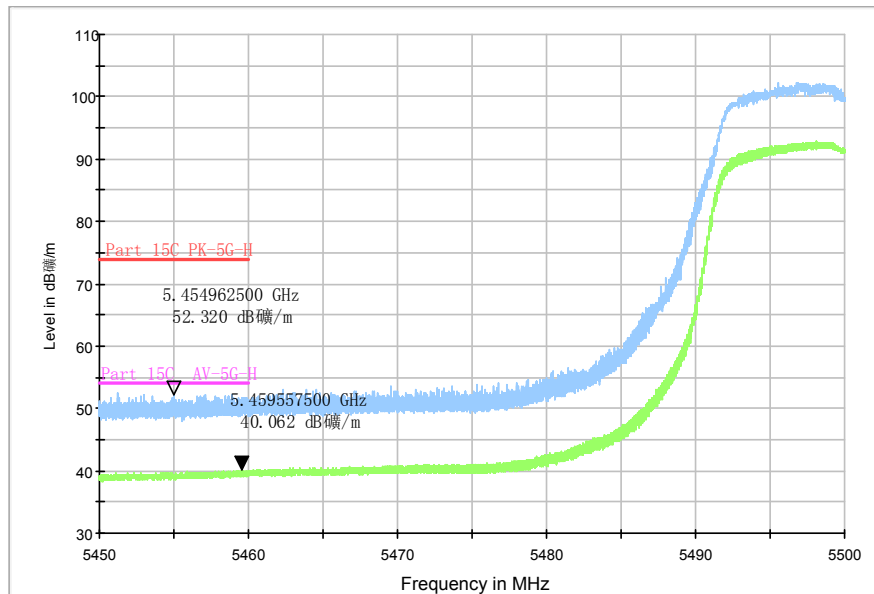


Fig. 48 Band Edges (802.11a, 5500MHz)

RE - Power-5.70GHz-5.75GHz

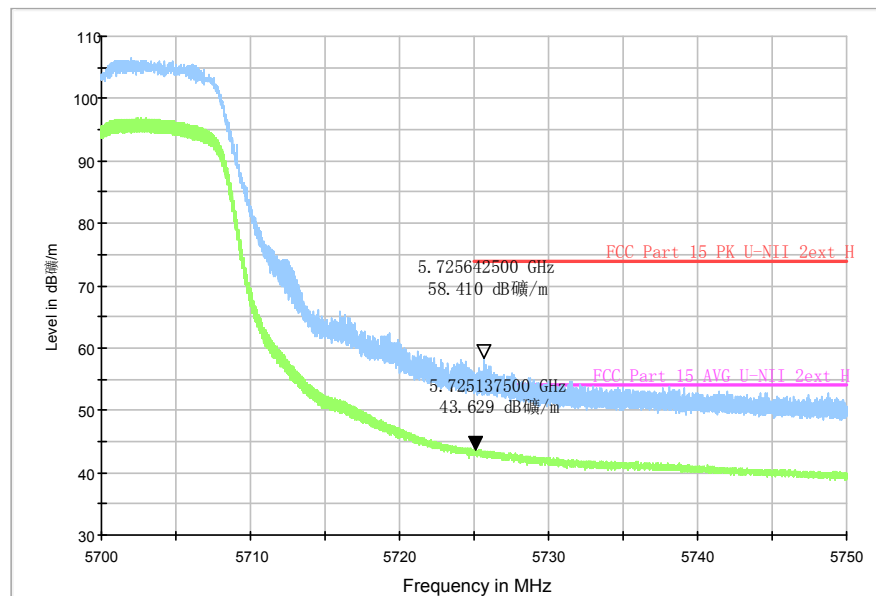


Fig. 49 Band Edges (802.11a, 5700MHz)

RE - Power-5.125GHz-5.175GHz

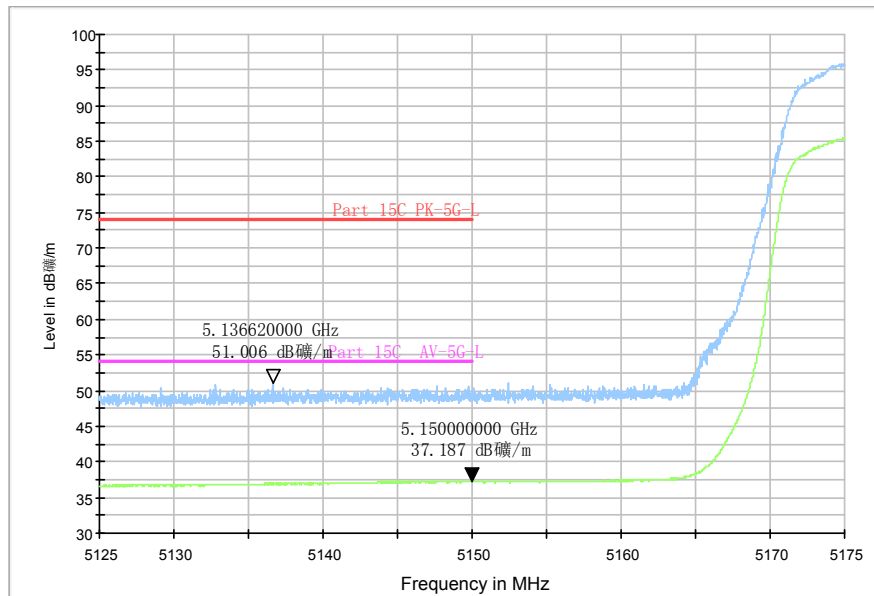


Fig. 50 Band Edges (802.11n-HT20, 5180MHz)

RE - Power-5.325GHz-5.375GHz

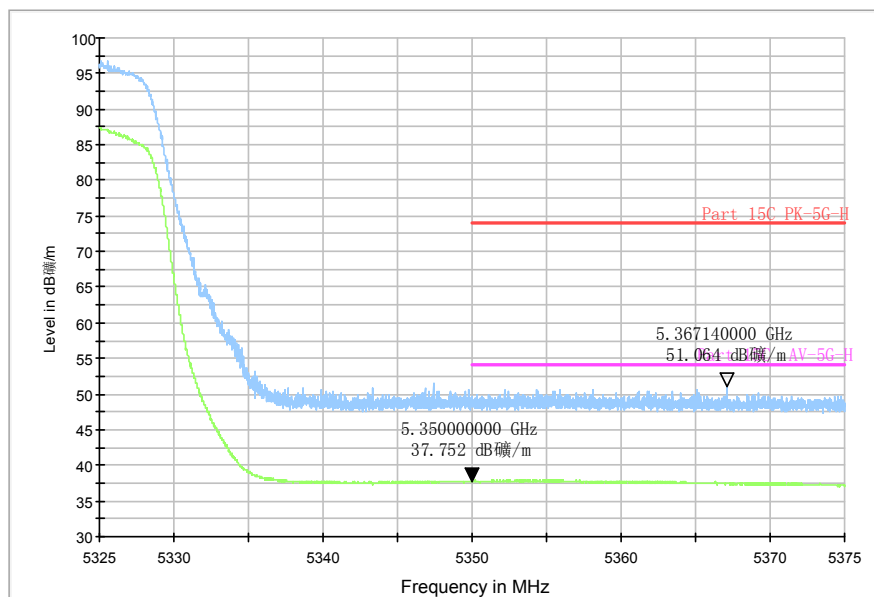


Fig. 51 Band Edges (802.11n-HT20, 5320MHz)

RE - Power-5.45GHz-5.50GHz

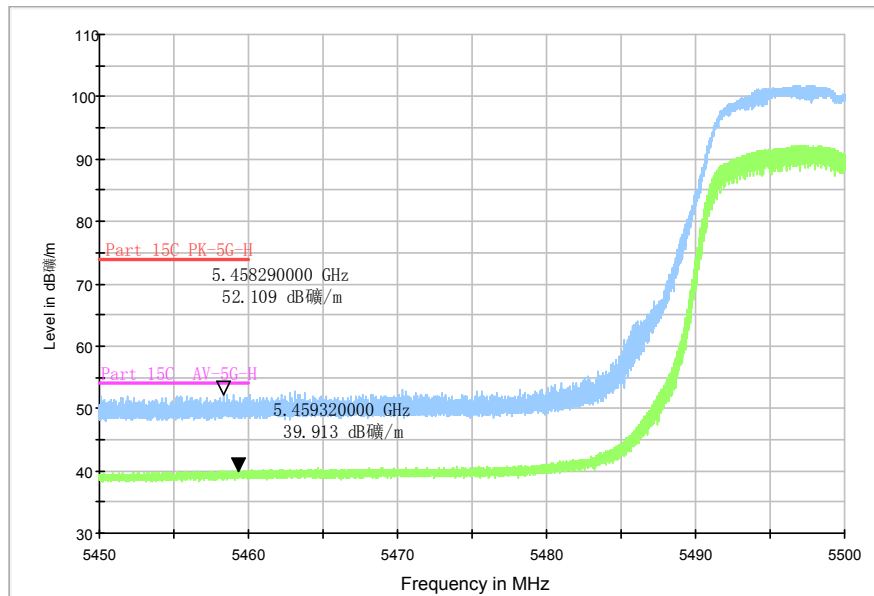


Fig. 52 Band Edges (802.11n-HT20, 5500MHz)

RE - Power-5.70GHz-5.75GHz

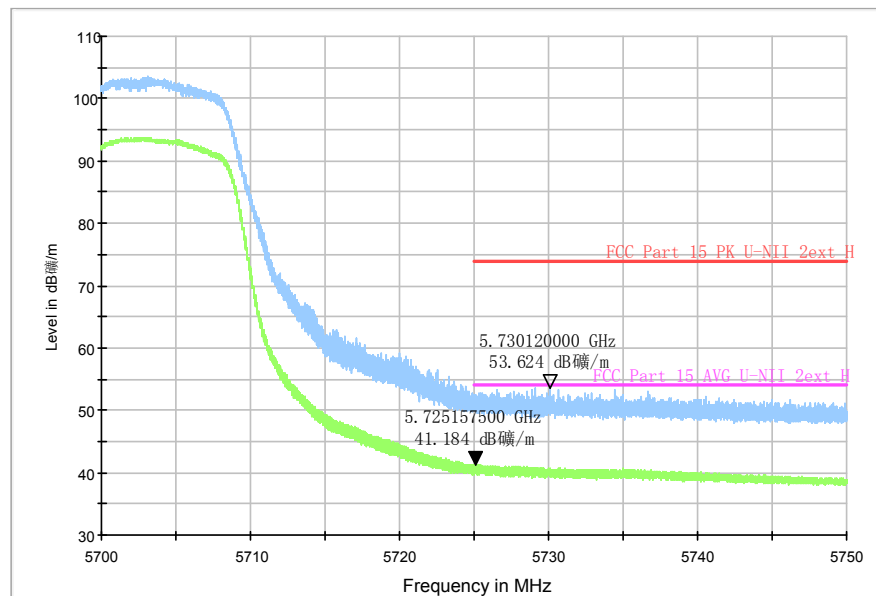


Fig. 53 Band Edges (802.11n-HT20, 5700MHz)

RE - Power-5.125GHz-5.175GHz

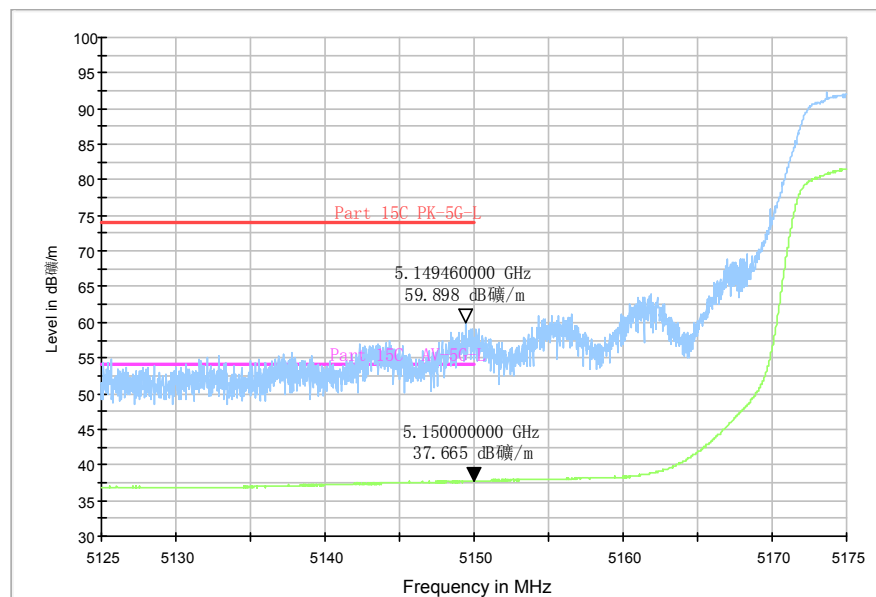


Fig. 54 Band Edges (802.11n-HT40, 5190MHz)

RE - Power-5.325GHz-5.375GHz

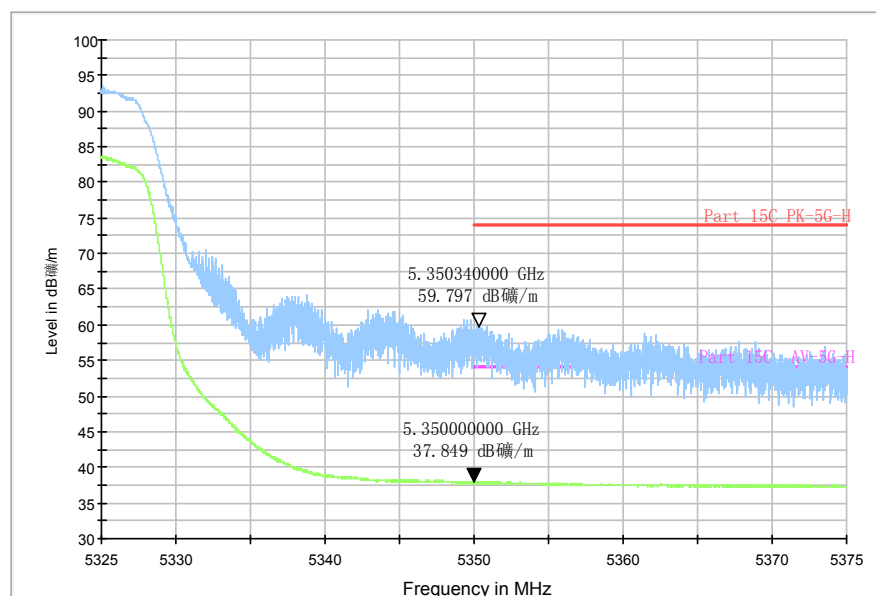


Fig. 55 Band Edges (802.11n-HT40, 5310MHz)

RE - Power-5.45GHz-5.50GHz

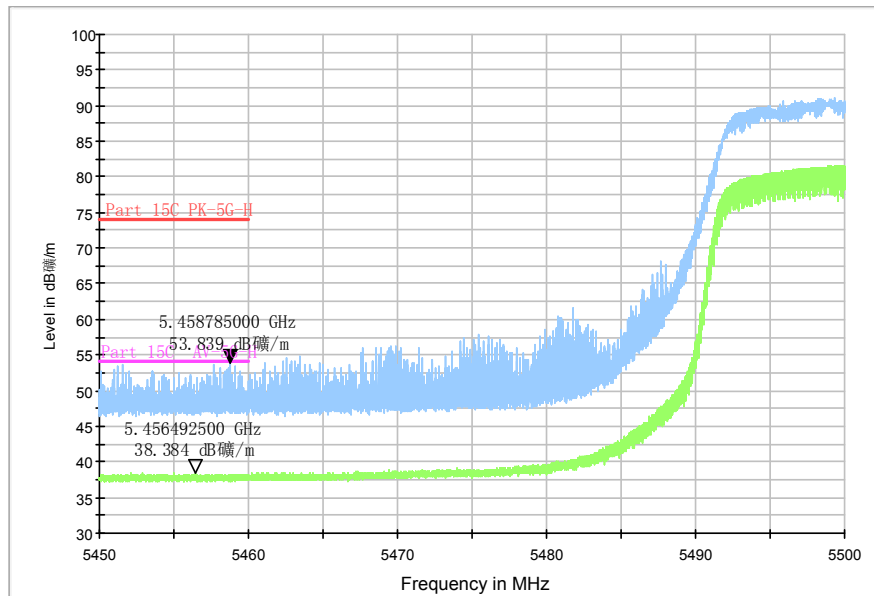


Fig. 56 Band Edges (802.11n-HT40, 5510MHz)

RE - Power-5.65GHz-5.75GHz

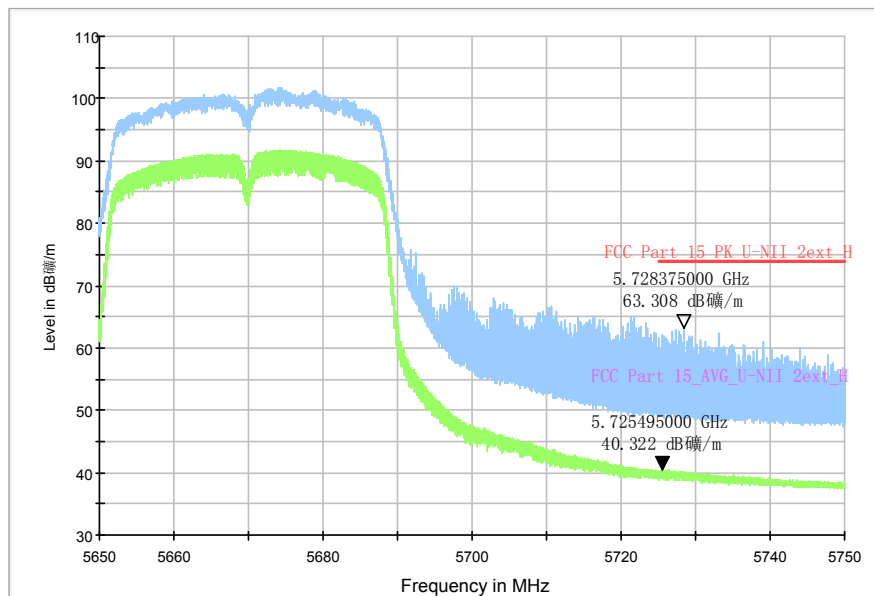


Fig. 57 Band Edges (802.11n-HT40, 5670MHz)

RE - Power-5.125GHz-5.175GHz

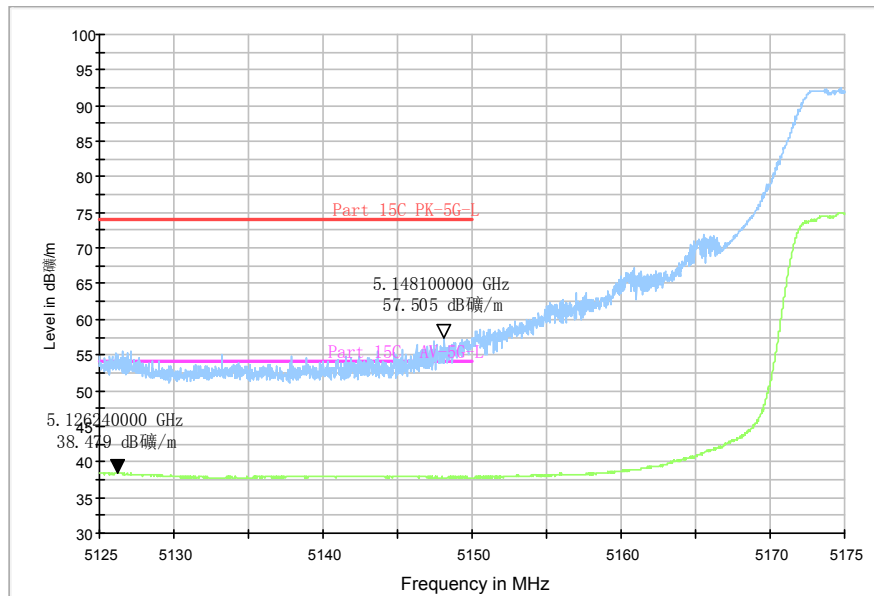


Fig. 58 Band Edges (802.11ac-HT80, 5210MHz)

RE - Power-5.325GHz-5.375GHz

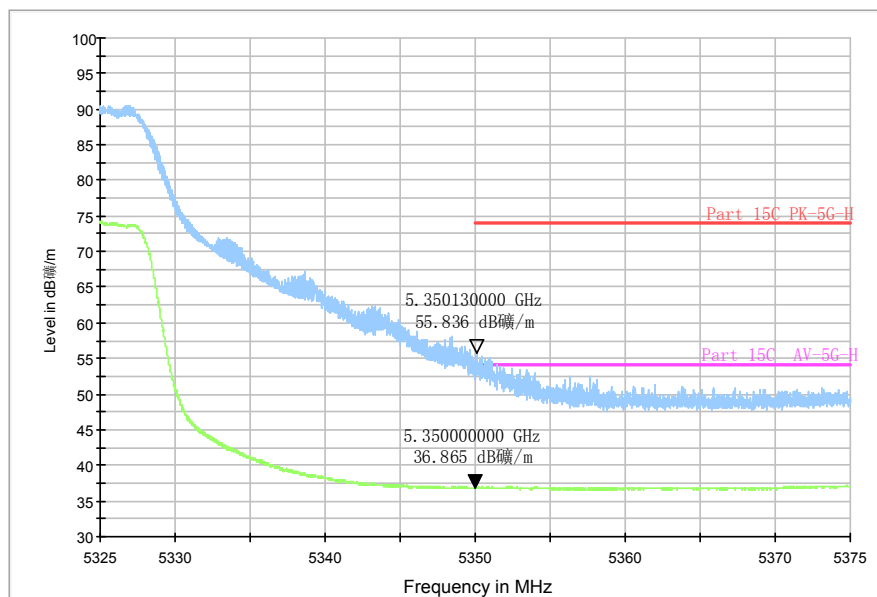


Fig. 59 Band Edges (802.11ac-HT80, 5290MHz)

RE - Power-5.45GHz-5.50GHz

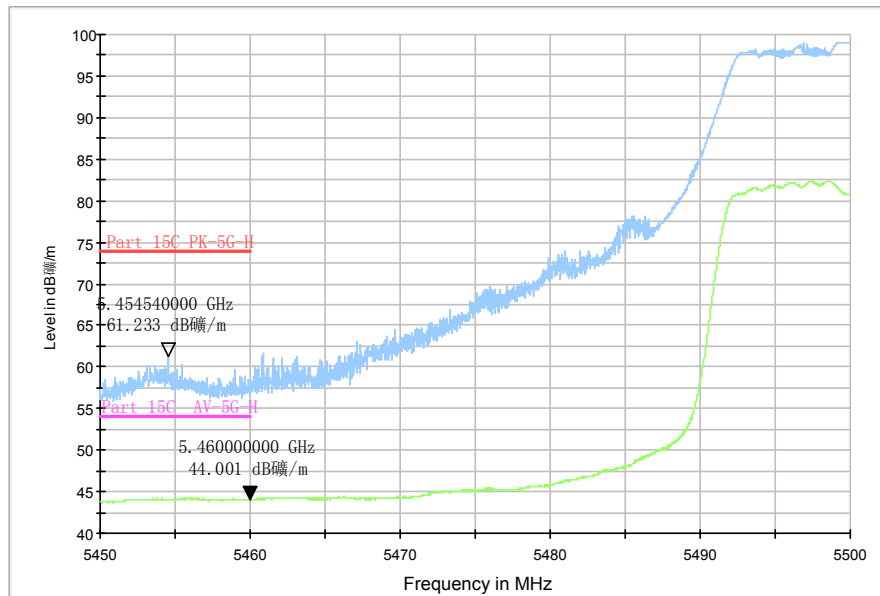


Fig. 60 Band Edges (802.11ac-HT80, 5530MHz)

A.6. Transmitter Spurious Emission

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.407	-27 dBm/MHz

The measurement is made according to KDB 789033

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Limit in restricted band:

Frequency of emission (MHz)	Field strength(dBμV/m)	Measurement distance(m)
30-88	40.0	3
88-216	43.5	3
216-960	46.0	3
Above 960	54.0	3

Note: for frequency range below 960MHz, the limit in 15.209 is defined in 10m test distance. The limit used above is calculated from 10m to 3m

Measurement uncertainty:

Expanded measurement uncertainty for this test item is U =3.9 dB, k=2.

Measurement Results:

802.11a mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11a	36(5180MHz)	1 GHz ~ 3 GHz	Fig.61	P
		3GHz ~ 6 GHz	Fig.62	P
		6 GHz ~ 18 GHz	Fig.63	P
	40(5200MHz)	30 MHz ~1 GHz	Fig.64	P
		1 GHz ~ 3 GHz	Fig.65	P
		3GHz ~ 6 GHz	Fig.66	P
		6 GHz ~ 18 GHz	Fig.67	P
		18 GHz ~ 40 GHz	Fig.68	P
	48(5240MHz)	1 GHz ~ 3 GHz	Fig.69	P
		3GHz ~ 6 GHz	Fig.70	P
		6 GHz ~ 18 GHz	Fig.71	P
	52(5260MHz)	1 GHz ~ 3 GHz	Fig.72	P
		3GHz ~ 6 GHz	Fig.73	P
		6 GHz ~ 18 GHz	Fig.74	P
	56(5280MHz)	30 MHz ~1 GHz	Fig.75	P
		1 GHz ~ 3 GHz	Fig.76	P
		3GHz ~ 6 GHz	Fig.77	P
		6 GHz ~ 18 GHz	Fig.78	P
		18 GHz ~ 40 GHz	Fig.79	P
	64(5320MHz)	1 GHz ~ 3 GHz	Fig.80	P
		3GHz ~ 6 GHz	Fig.81	P
		6 GHz ~ 18 GHz	Fig.82	P
	100(5500MHz)	1 GHz ~ 3 GHz	Fig.83	P
		3GHz ~ 6 GHz	Fig.84	P
		6 GHz ~ 18 GHz	Fig.85	P
	116(5580MHz)	30 MHz ~1 GHz	Fig.86	P
		6 GHz ~ 18 GHz	Fig.87	P
		18 GHz ~ 40 GHz	Fig.88	P
	140(5700MHz)	1 GHz ~ 3 GHz	Fig.89	P
		3GHz ~ 6 GHz	Fig.90	P
		6 GHz ~ 18 GHz	Fig.91	P

802.11n-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n -HT20	36(5180MHz)	1 GHz ~ 3 GHz	Fig.92	P
		3 GHz ~ 6 GHz	Fig.93	P
		6 GHz ~ 18 GHz	Fig.94	P
	40(5200MHz)	30 MHz ~1 GHz	Fig.95	P
		1 GHz ~ 3 GHz	Fig.96	P
		3 GHz ~ 6 GHz	Fig.97	P
		6 GHz ~ 18 GHz	Fig.98	P
		18 GHz ~ 40 GHz	Fig.99	P
	48(5240MHz)	1 GHz ~ 3 GHz	Fig.100	P
		3 GHz ~ 6 GHz	Fig.101	P
		6 GHz ~ 18 GHz	Fig.102	P
	52(5260MHz)	1 GHz ~ 3 GHz	Fig.103	P
		3 GHz ~ 6 GHz	Fig.104	P
		6 GHz ~ 18 GHz	Fig.105	P
	56(5280MHz)	30 MHz ~1 GHz	Fig.106	P
		1 GHz ~ 3 GHz	Fig.107	P
		3 GHz ~ 6 GHz	Fig.108	P
		6 GHz ~ 18 GHz	Fig.109	P
		18 GHz ~ 40 GHz	Fig.110	P
	64(5320MHz)	1 GHz ~ 3 GHz	Fig.111	P
		3 GHz ~ 6 GHz	Fig.112	P
		6 GHz ~ 18 GHz	Fig.113	P
	100(5500MHz)	1 GHz ~ 3 GHz	Fig.114	P
		3 GHz ~ 6 GHz	Fig.115	P
		6 GHz ~ 18 GHz	Fig.116	P
	116(5580MHz)	30 MHz ~1 GHz	Fig.117	P
		1 GHz ~ 3 GHz	Fig.118	P
		3 GHz ~ 6 GHz	Fig.119	P
		6 GHz ~ 18 GHz	Fig.120	P
		18 GHz ~ 40 GHz	Fig.121	P
	140(5700MHz)	1 GHz ~ 3 GHz	Fig.122	P
		3 GHz ~ 6 GHz	Fig.123	P
		6 GHz ~ 18 GHz	Fig.124	P

802.11n-HT40 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n HT40	38(5190MHz)	30 MHz ~1 GHz	Fig.125	P
		1 GHz ~ 3 GHz	Fig.126	P
		3 GHz ~ 6 GHz	Fig.127	P
		6 GHz ~ 18 GHz	Fig.128	P
		18 GHz ~ 40 GHz	Fig.129	P
	46(5230MHz)	1 GHz ~ 3 GHz	Fig.130	P
		3 GHz ~ 6 GHz	Fig.131	P
		6 GHz ~ 18 GHz	Fig.132	P
		1 GHz ~ 3 GHz	Fig.133	P
		3 GHz ~ 6 GHz	Fig.134	P
		6 GHz ~ 18 GHz	Fig.135	P
	62(5310MHz)	30 MHz ~1 GHz	Fig.136	P
		1 GHz ~ 3 GHz	Fig.137	P
		3 GHz ~ 6 GHz	Fig.138	P
		6 GHz ~ 18 GHz	Fig.139	P
		18 GHz ~ 40 GHz	Fig.140	P
	102(5510MHz)	1 GHz ~ 3 GHz	Fig.141	P
		3 GHz ~ 6 GHz	Fig.142	P
		6 GHz ~ 18 GHz	Fig.143	P
	110(5550MHz)	30 MHz ~1 GHz	Fig.144	P
		1 GHz ~ 3 GHz	Fig.145	P
		3 GHz ~ 6 GHz	Fig.146	P
		6 GHz ~ 18 GHz	Fig.147	P
		18 GHz ~ 40 GHz	Fig.148	P
	134(5670MHz)	1 GHz ~ 3 GHz	Fig.149	P
		3 GHz ~ 6 GHz	Fig.150	P
		6 GHz ~ 18 GHz	Fig.151	P

802.11ac-HT80 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
	5210MHz	1 GHz ~ 3 GHz	Fig.152	P
		3 GHz ~ 6 GHz	Fig.153	P
		6 GHz ~ 18 GHz	Fig.154	P
	5290MHz	30 MHz ~1 GHz	Fig.155	
		1 GHz ~ 3 GHz	Fig.156	P
		3 GHz ~ 6 GHz	Fig.157	P
		6 GHz ~ 18 GHz	Fig.158	P
		18 GHz ~ 40 GHz	Fig.159	P
	5530MHz	1 GHz ~ 3 GHz	Fig.160	P
		3 GHz ~ 6 GHz	Fig.161	P
		6 GHz ~ 18 GHz	Fig.162	P

Conclusion: PASS

Note:

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

P_{Mea} is the field strength recorded from the instrument.

The measurement results are obtained as described below:

Result= $P_{Mea}+A_{Rpl}= P_{Mea}+Cable\ Loss+Antenna\ Factor$

802.11a

Channel 36

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5133.980	49.3	-34.4	34.5	49.173	V
17721.000	59.3	-23.4	41.2	41.472	H
17967.750	58.7	-23.4	41.0	41.072	H
17519.250	58.6	-23.4	41.2	40.772	H
17988.750	58.3	-23.4	41.0	40.672	V
17621.250	58.2	-24.2	41.2	41.185	H

Channel 40

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
17602.800	58.7	-23.9	41.2	41.353	H
17721.000	58.5	-24.2	41.4	41.285	H
17967.750	58.1	-23.9	41.2	40.753	H
17519.250	58.0	-23.9	41.2	40.653	H
17988.750	58.0	-23.9	41.2	40.653	H
17621.250	58.0	-23.4	41.0	40.372	V

Channel 48

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
17781.000	59.5	-23.4	41.0	41.872	H
17721.000	59.3	-24.2	41.2	42.285	H
17967.750	58.4	-23.4	41.2	40.572	H
17519.250	58.3	-23.3	41.0	40.633	V
17988.750	58.2	-23.3	41.0	40.533	H
17621.250	58.2	-24.2	41.2	41.185	V

Channel 52

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
17728.800	59.0	-23.4	41.2	41.172	V
17721.000	58.8	-23.4	41.2	40.972	H
17967.750	58.6	-23.4	41.0	40.972	H
17519.250	58.2	-23.3	41.0	40.533	V
17988.750	58.2	-23.4	41.2	40.372	H
17621.250	58.2	-23.4	41.2	40.372	V

Channel 56

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
17967.600	58.5	-23.3	41.0	40.833	V
17721.000	58.4	-23.4	41.2	40.572	H
17967.750	58.1	-23.4	41.2	40.272	H
17519.250	58.0	-24.2	41.2	40.985	V
17988.750	57.9	-23.4	41.0	40.272	V
17621.250	57.9	-23.9	41.2	40.553	V

Channel 64

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5359.050	50.8	-33.9	34.4	50.272	V
17721.000	58.8	-23.9	41.2	41.453	H
17967.750	58.1	-23.4	41.0	40.472	H
17519.250	58.1	-23.4	41.2	40.272	V
17988.750	58.0	-23.4	41.2	40.172	H
17621.250	58.0	-24.2	41.4	40.785	V

Channel 100

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5459.558	40.1	-16.9	34.4	22.615	H
17641.800	46.3	-13.0	41.2	18.105	H
17651.400	46.3	-13.0	41.2	18.105	H
17723.400	46.2	-13.0	41.2	18.005	V
17704.800	46.2	-13.0	41.2	18.005	V
17717.400	46.2	-13.0	41.2	18.005	H

Channel 120

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
17632.800	46.3	-14.9	41.2	20.018	V
17701.800	46.3	-13.0	41.2	18.105	V
17704.800	46.3	-13.0	41.2	18.105	V
17763.600	46.2	-13.0	41.0	18.205	H
17667.000	46.2	-13.0	41.2	18.005	V
17677.200	46.2	-13.0	41.2	18.005	H

Channel 140

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5725.138	43.6	-18.2	34.8	26.964	V
17636.400	46.7	-13.0	41.2	18.505	H
17658.000	46.4	-13.0	41.2	18.205	V
17658.600	46.3	-13.0	41.2	18.105	H
17626.200	46.3	-14.9	41.2	20.018	H
17625.000	46.3	-14.9	41.2	20.018	V

802.11n-HT20

Channel 36

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5136.620	51.0	-34.3	34.5	50.766	V
17721.000	58.5	-23.4	41.2	40.672	V
17967.750	58.4	-23.9	41.2	41.053	V
17519.250	58.4	-23.4	41.2	40.572	H
17988.750	58.3	-23.4	41.2	40.472	H
17621.250	58.3	-23.9	41.2	40.953	V

Channel 40

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
17685.600	59.2	-23.4	41.2	41.372	V
17721.000	58.7	-23.3	41.0	41.033	V
17967.750	58.5	-23.9	41.2	41.153	H
17519.250	58.2	-24.2	41.2	41.185	H
17988.750	58.1	-23.9	41.2	40.753	H
17621.250	58.1	-23.9	41.2	40.753	V

Channel 48

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
17830.200	59.0	-23.3	41.0	41.333	V
17721.000	58.6	-23.4	41.2	40.772	V
17967.750	58.5	-24.2	41.4	41.285	H
17519.250	58.5	-23.4	41.0	40.872	V
17988.750	58.4	-24.2	41.4	41.185	V
17621.250	58.3	-23.4	41.0	40.672	H

Channel 52

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
17656.200	58.5	-23.4	41.2	40.672	H
17721.000	58.5	-23.3	41.0	40.833	V
17967.750	58.1	-23.3	41.0	40.433	V
17519.250	58.0	-23.4	41.2	40.172	H
17988.750	57.9	-23.9	41.2	40.553	V
17621.250	57.9	-23.9	41.2	40.553	H

Channel 56

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
17657.400	58.7	-23.4	41.2	40.872	H
17721.000	58.4	-23.4	41.2	40.572	H
17967.750	58.2	-23.4	41.2	40.372	V
17519.250	57.9	-23.4	41.2	40.072	H
17988.750	57.9	-23.4	41.2	40.072	V
17621.250	57.9	-24.2	41.4	40.685	V

Channel 64

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5367.140	51.1	-33.9	34.4	50.572	V
17721.000	59.9	-23.4	41.2	42.072	V
17967.750	58.7	-23.4	41.2	40.872	V
17519.250	58.6	-23.3	41.0	40.933	V
17988.750	58.2	-23.9	41.2	40.853	V
17621.250	58.2	-23.4	41.2	40.372	V

Channel 100

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5459.320	39.9	-16.9	34.4	22.415	V
17713.200	46.3	-13.0	41.2	18.105	H
17687.400	46.3	-13.0	41.2	18.105	H
17669.400	46.2	-13.0	41.2	18.005	V
17658.000	46.2	-13.0	41.2	18.005	V
17690.400	46.2	-13.0	41.2	18.005	H

Channel 120

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
17736.000	46.3	-13.0	41.2	18.105	H
17660.400	46.3	-13.0	41.2	18.105	H
17657.400	46.3	-13.0	41.2	18.105	H
17722.800	46.2	-13.0	41.2	18.005	H
17699.400	46.2	-13.0	41.2	18.005	H
17730.600	46.2	-13.0	41.2	18.005	H

Channel 140

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5725.158	41.2	-18.2	34.8	24.564	H
17736.000	46.3	-13.0	41.2	18.105	H
17698.800	46.2	-13.0	41.2	18.005	V
17726.400	46.2	-13.0	41.2	18.005	V
17704.800	46.2	-13.0	41.2	18.005	V
17727.000	46.2	-13.0	41.2	18.005	V

802.11n-HT40

Channel 38

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5149.460	59.9	-34.3	34.5	59.666	V
17721.000	58.7	-23.4	41.2	40.872	V
17967.750	58.5	-23.4	41.2	40.672	H
17519.250	58.3	-23.3	41.0	40.633	V
17988.750	58.3	-23.9	41.2	40.953	V
17621.250	58.2	-24.2	41.2	41.185	V

Channel 46

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
17659.800	46.5	-23.4	41.2	28.672	H
17721.000	46.5	-23.4	41.2	28.672	V
17967.750	46.4	-23.4	41.2	28.572	H
17519.250	46.3	-23.4	41.2	28.472	H
17988.750	46.3	-23.4	41.2	28.472	H
17621.250	46.3	-23.4	41.2	28.472	V

Channel 54

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
17604.600	58.7	-23.9	41.2	41.353	H
17721.000	58.4	-23.4	41.2	40.572	V
17967.750	58.4	-24.3	41.2	41.469	V
17519.250	58.3	-24.2	41.2	41.285	V
17988.750	58.0	-23.3	41.0	40.333	H
17621.250	57.9	-23.4	41.2	40.072	V

Channel 62

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5350.340	59.8	-33.9	34.4	59.272	H
17721.000	58.7	-23.9	41.2	41.353	H
17967.750	58.4	-23.4	41.2	40.572	H
17519.250	58.4	-23.4	41.2	40.572	V
17988.750	58.2	-23.4	41.2	40.372	V
17621.250	58.2	-23.3	41.0	40.533	H

Channel 102

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5456.493	38.4	-16.9	34.4	20.915	V
17683.200	46.3	-13.0	41.2	18.105	V
17679.000	46.3	-13.0	41.2	18.105	H
17655.000	46.2	-13.0	41.2	18.005	V
17727.000	46.2	-13.0	41.2	18.005	V
17709.600	46.2	-13.0	41.2	18.005	V

Channel 118

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
17709.600	46.4	-13.0	41.2	18.205	V
17730.000	46.3	-13.0	41.2	18.105	V
17638.200	46.3	-13.0	41.2	18.105	V
17650.800	46.2	-13.0	41.2	18.005	H
17673.600	46.2	-13.0	41.2	18.005	V
17655.600	46.2	-13.0	41.2	18.005	H

Channel 134

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5728.375	63.3	-17.9	34.8	46.380	V
17637.000	46.3	-13.0	41.2	18.105	V
17626.800	46.3	-14.9	41.2	20.018	H
17728.800	46.3	-13.0	41.2	18.105	H
17716.800	46.2	-13.0	41.2	18.005	V
17638.200	46.2	-13.0	41.2	18.005	V

802.11ac-HT80

Channel 42

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5148.100	57.5	-19.5	34.5	42.547	H
17238.600	58.5	-15.1	41.4	32.193	H
17684.400	58.4	-13.0	41.2	30.205	V
17778.600	58.3	-13.0	41.0	30.305	V
17706.000	58.1	-13.0	41.2	29.905	H
17577.600	58.0	-14.9	41.2	31.718	H

Channel 58

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5350.130	55.8	-19.6	34.4	40.970	H
17747.400	58.3	-13.0	41.2	30.105	H
17248.200	58.2	-15.1	41.4	31.893	H
17743.800	58.1	-13.0	41.2	29.905	V
17281.200	58.1	-15.1	41.2	31.993	V
17665.800	58.1	-13.0	41.2	29.905	V

Channel 106

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5460.000	44.0	-16.9	34.4	26.515	V
17701.200	46.5	-13.0	41.2	18.305	H
17634.000	46.3	-13.0	41.2	18.105	V
17707.800	46.3	-13.0	41.2	18.105	V
17661.600	46.2	-13.0	41.2	18.005	V
17632.800	46.2	-14.9	41.2	19.918	H

Test graphs as below:

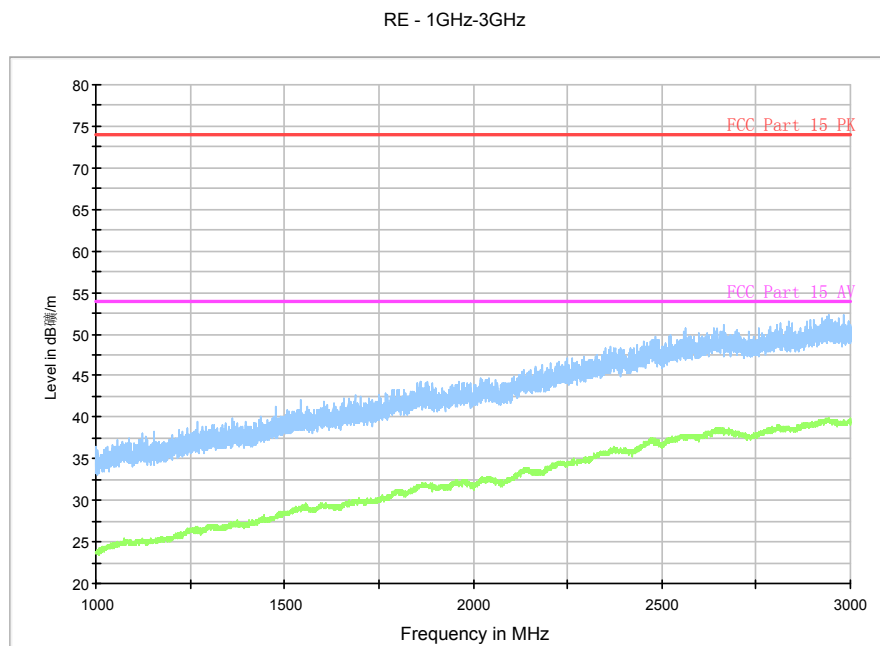


Fig. 61 Radiated Spurious Emission (802.11a, ch36, 1 GHz-3GHz)

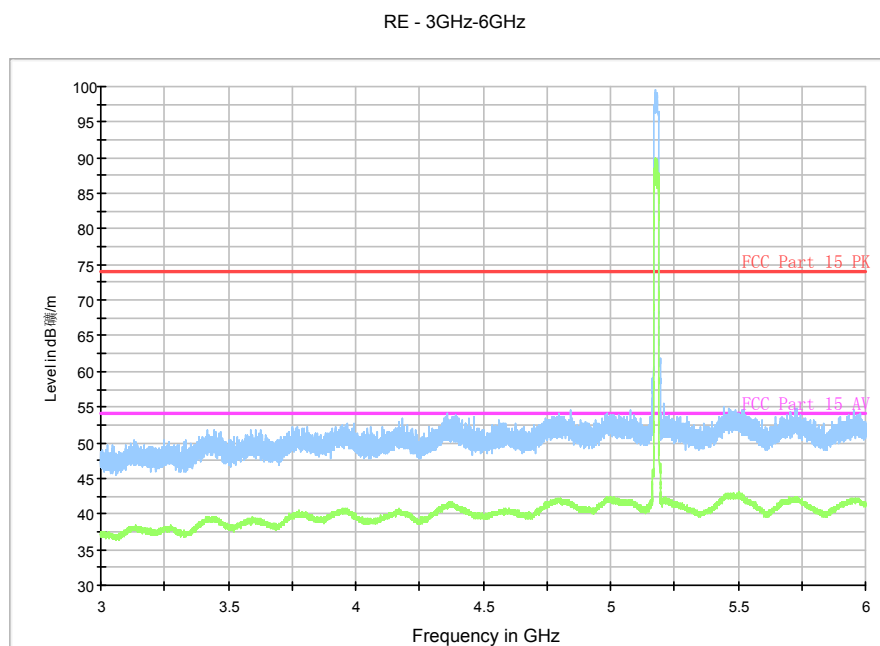


Fig. 62 Radiated Spurious Emission (802.11a, ch36, 3GHz-6 GHz)

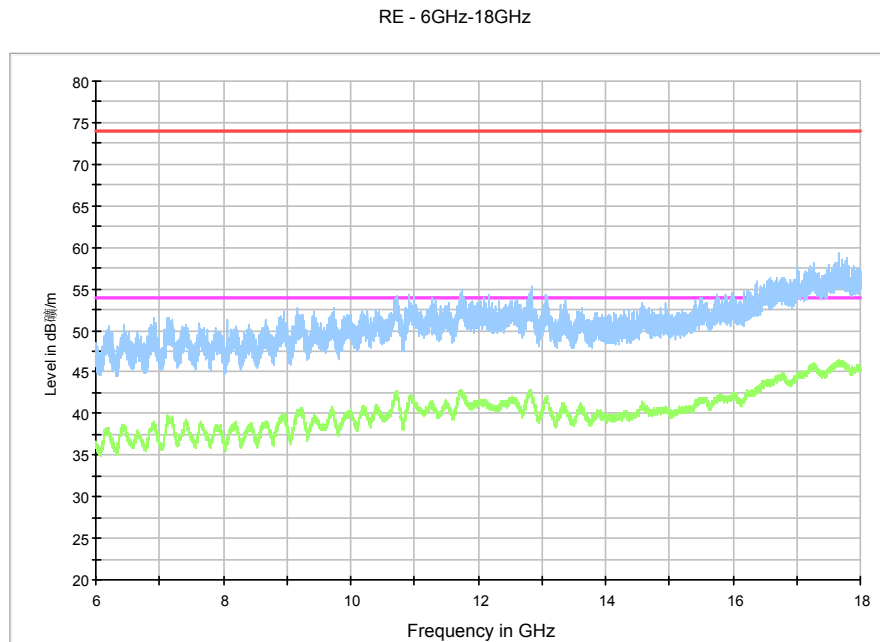


Fig. 63 Radiated Spurious Emission (802.11a, ch36, 6 GHz-18 GHz)

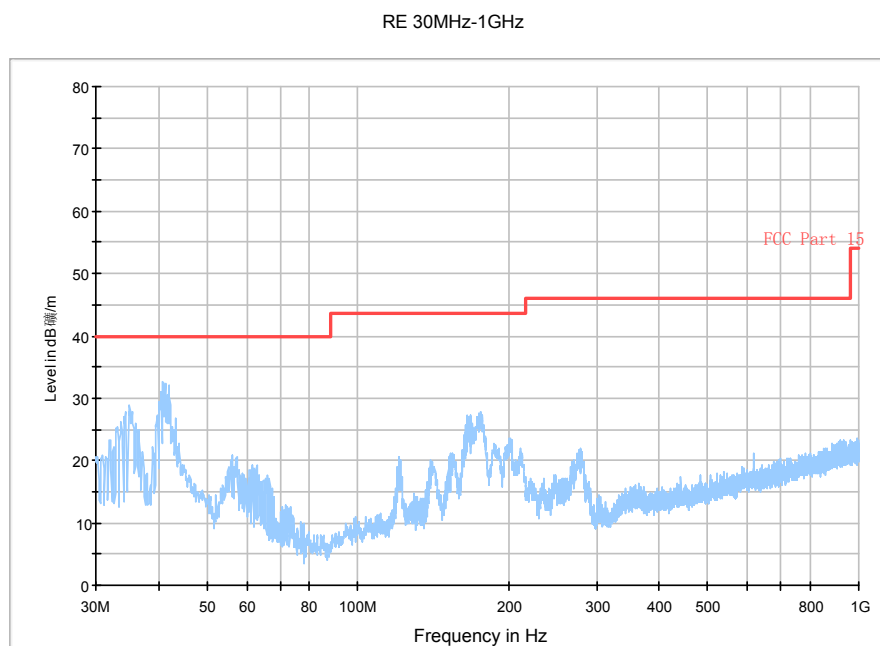


Fig. 64 Radiated Spurious Emission (802.11a, ch40, 30 MHz-1 GHz)

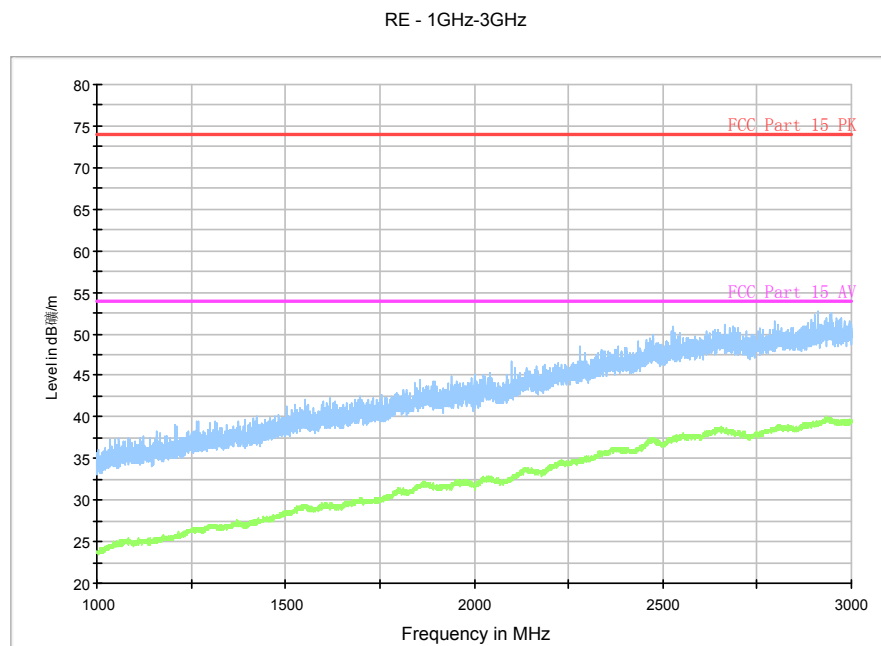


Fig. 65 Radiated Spurious Emission (802.11a, ch40, 1 GHz-3 GHz)

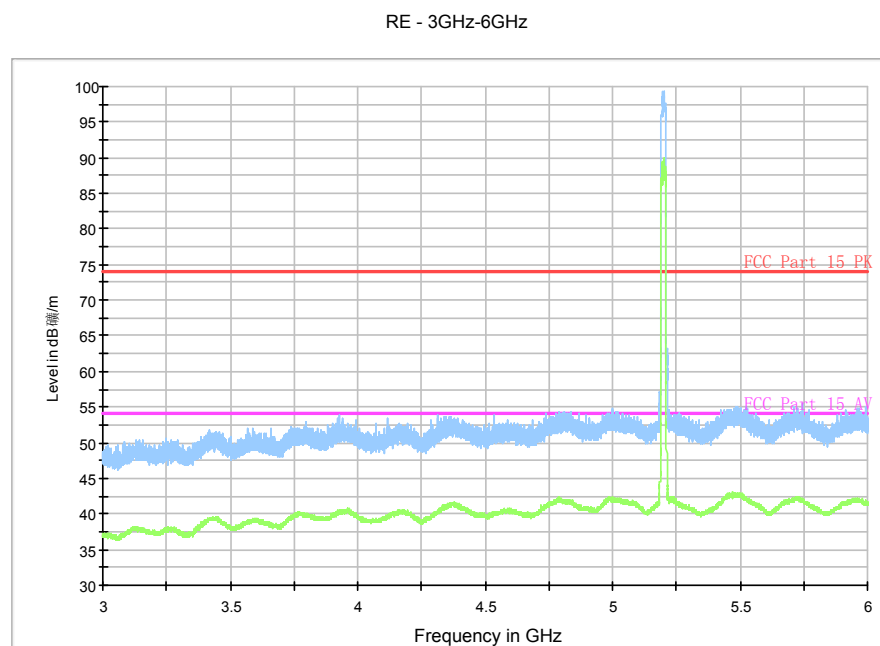


Fig. 66 Radiated Spurious Emission (802.11a, ch40, 3 GHz-6 GHz)

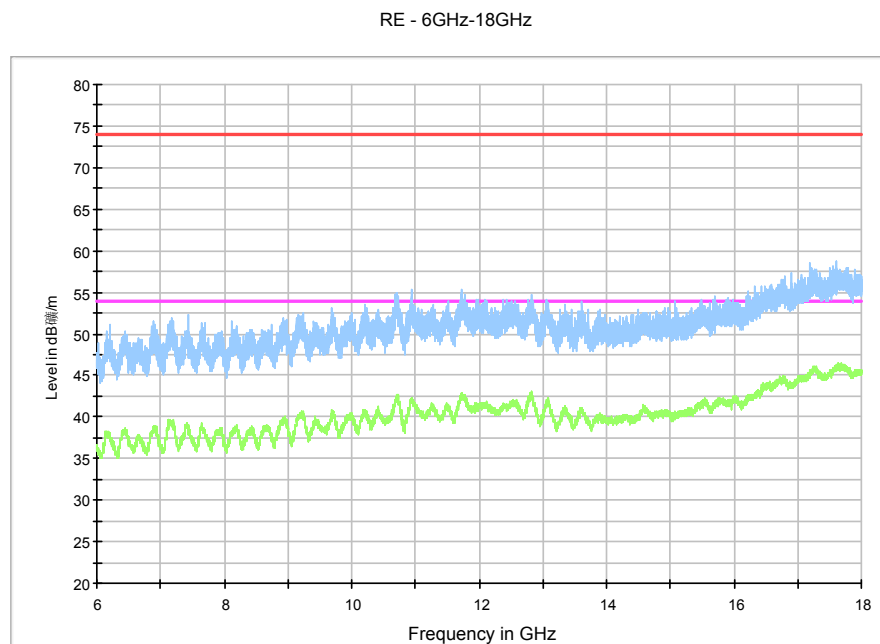


Fig. 67 Radiated Spurious Emission (802.11a, ch40, 6 GHz-18 GHz)

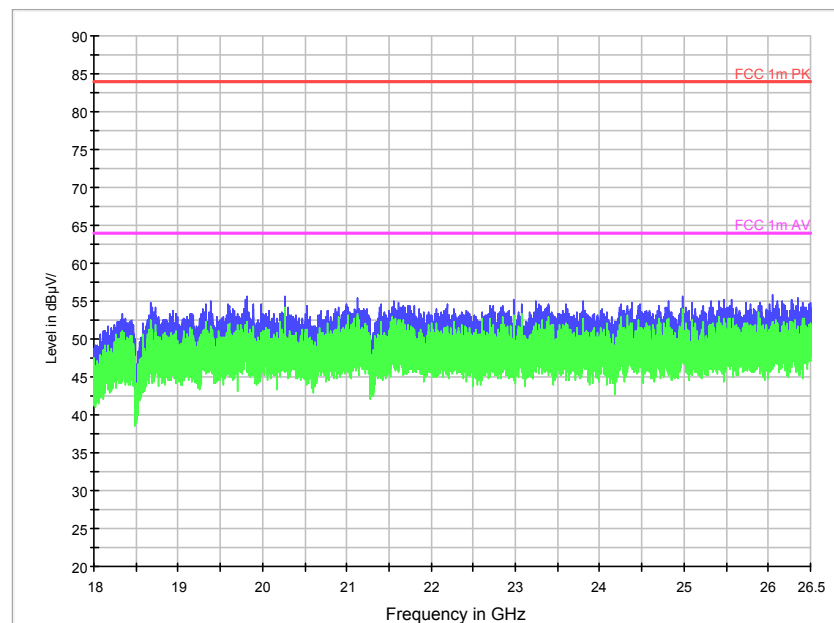


Fig. 68 Radiated Spurious Emission (802.11a, ch40, 18 GHz-40 GHz)

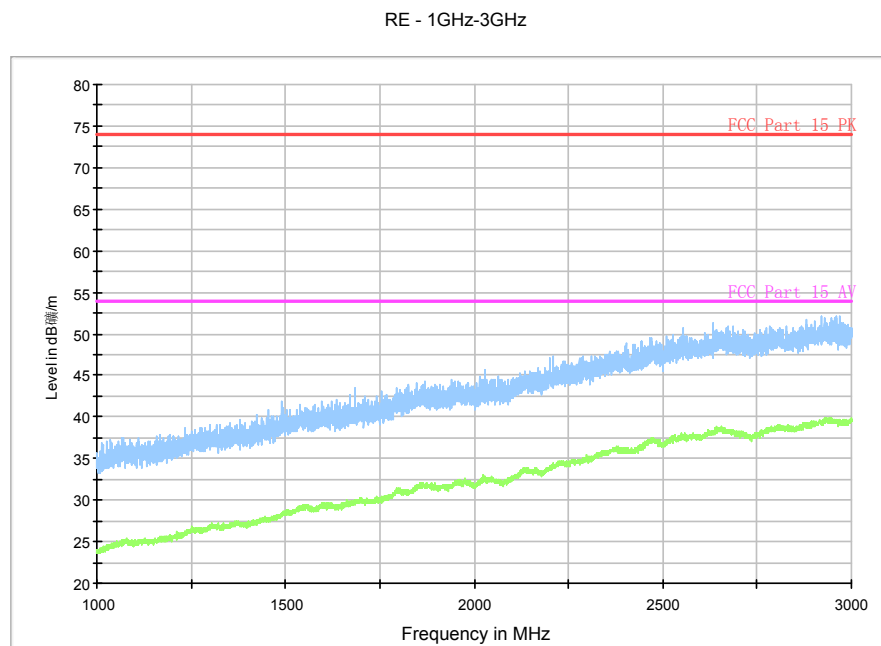


Fig. 69 Radiated Spurious Emission (802.11a, ch48, 1 GHz-3 GHz)

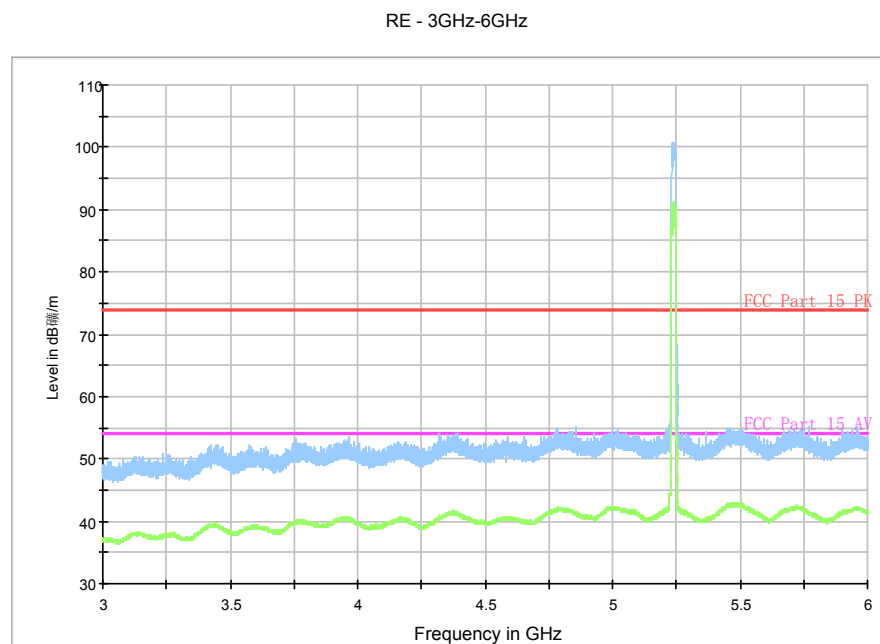


Fig. 70 Radiated Spurious Emission (802.11a, ch48, 3 GHz-6 GHz)

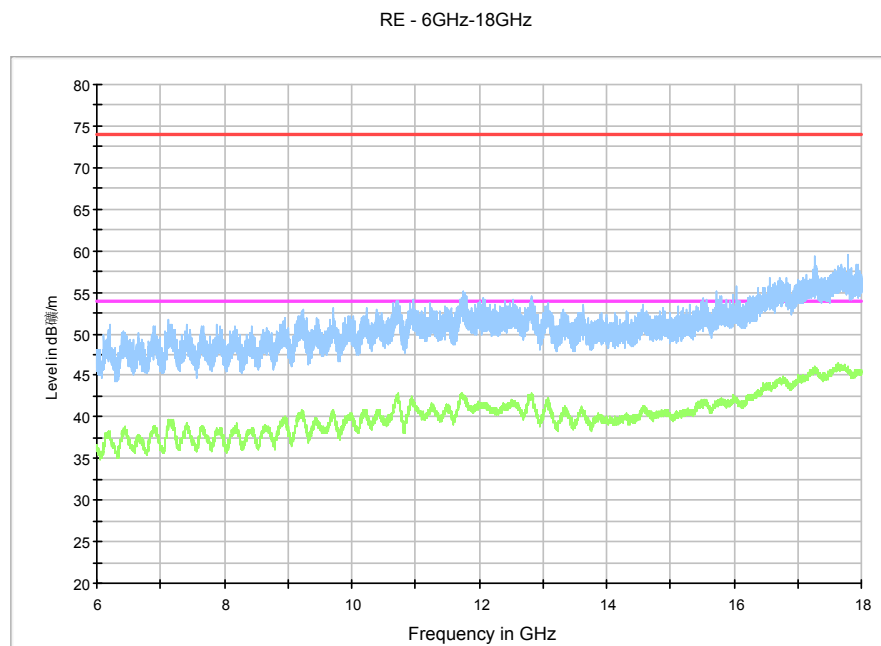


Fig. 71 Radiated Spurious Emission (802.11a, ch48, 6 GHz-18 GHz)

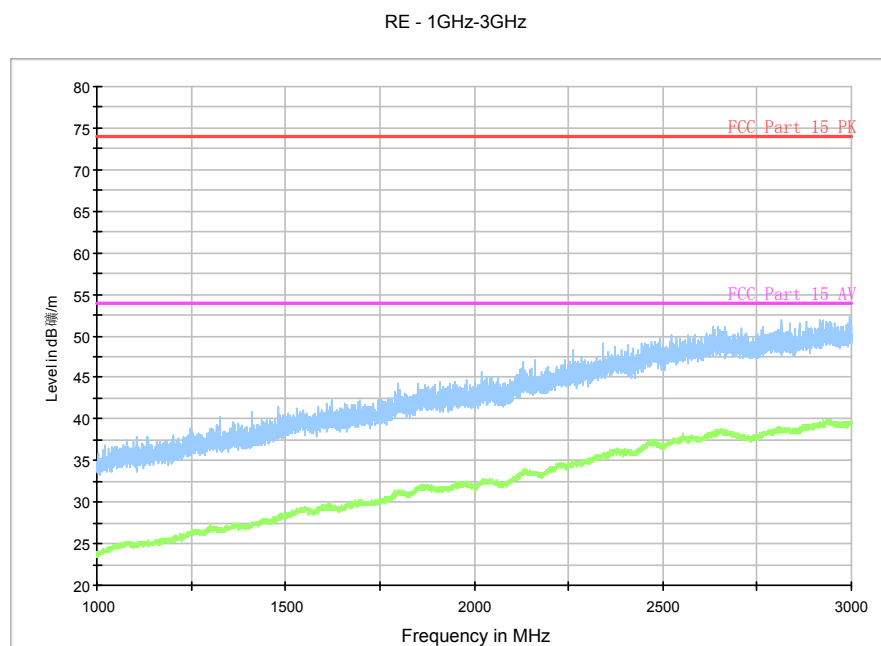


Fig. 72 Radiated Spurious Emission (802.11a, ch52, 1 GHz-3 GHz)

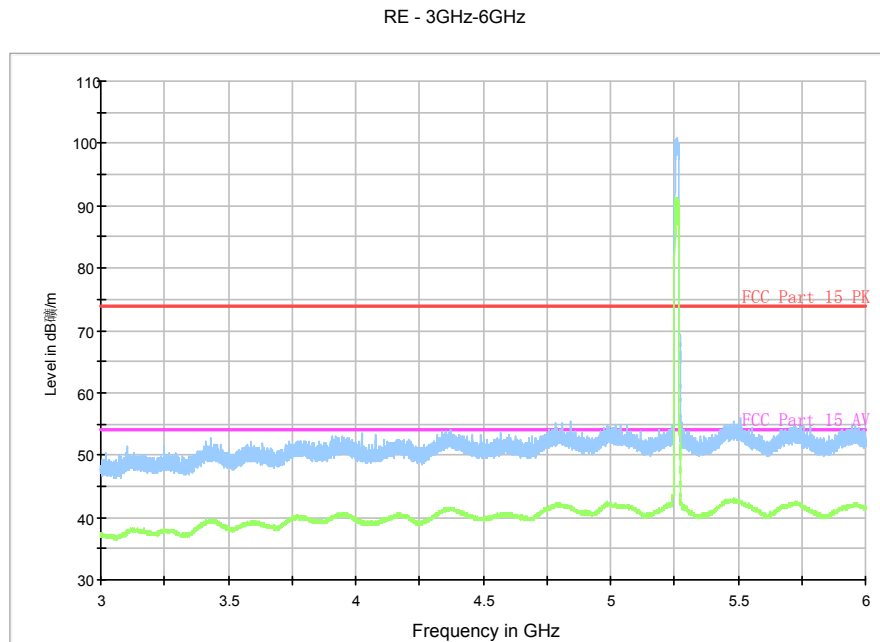


Fig. 73 Radiated Spurious Emission (802.11a, ch52, 3 GHz-6 GHz)

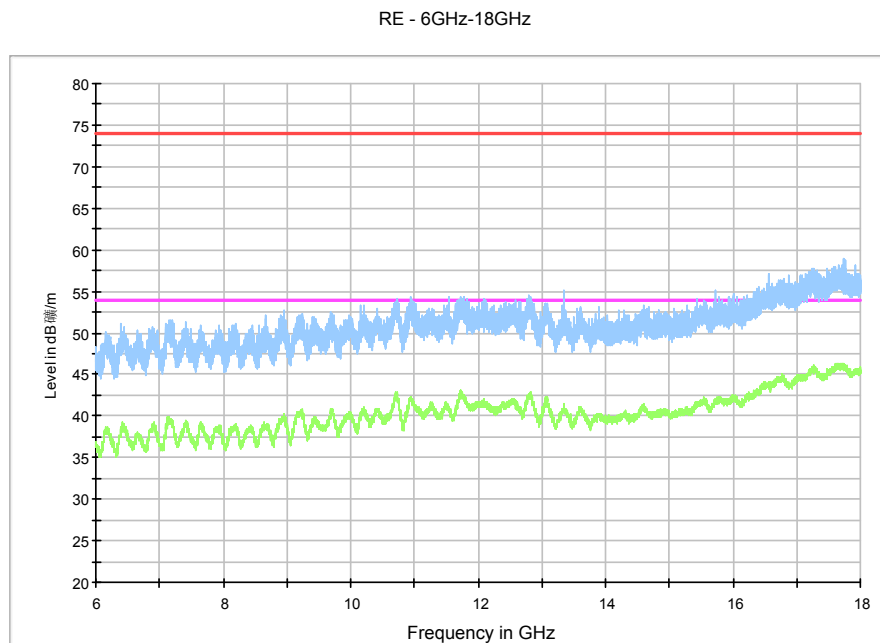


Fig. 74 Radiated Spurious Emission (802.11a, ch52, 6 GHz-18 GHz)

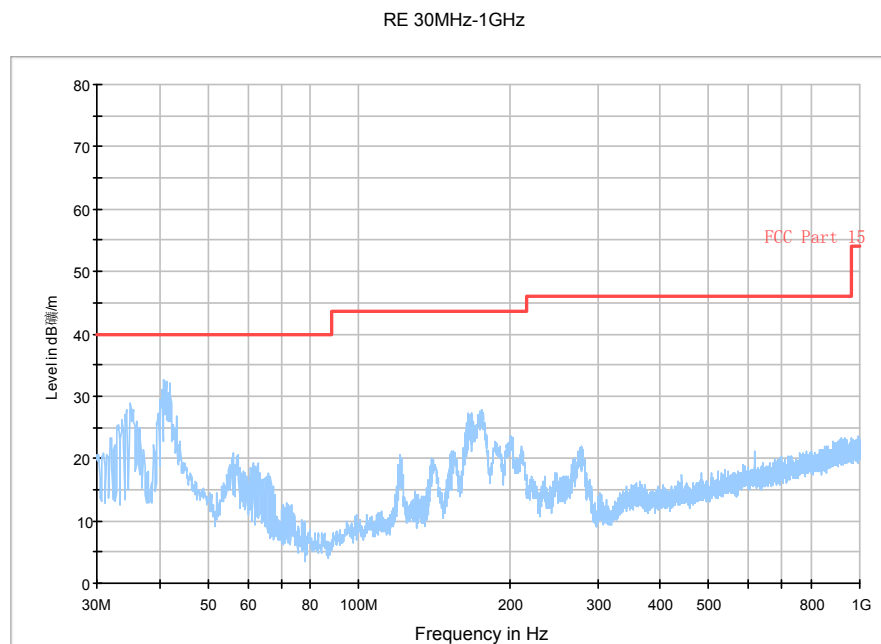


Fig. 75 Radiated Spurious Emission (802.11a, ch56, 30 MHz-1 GHz)

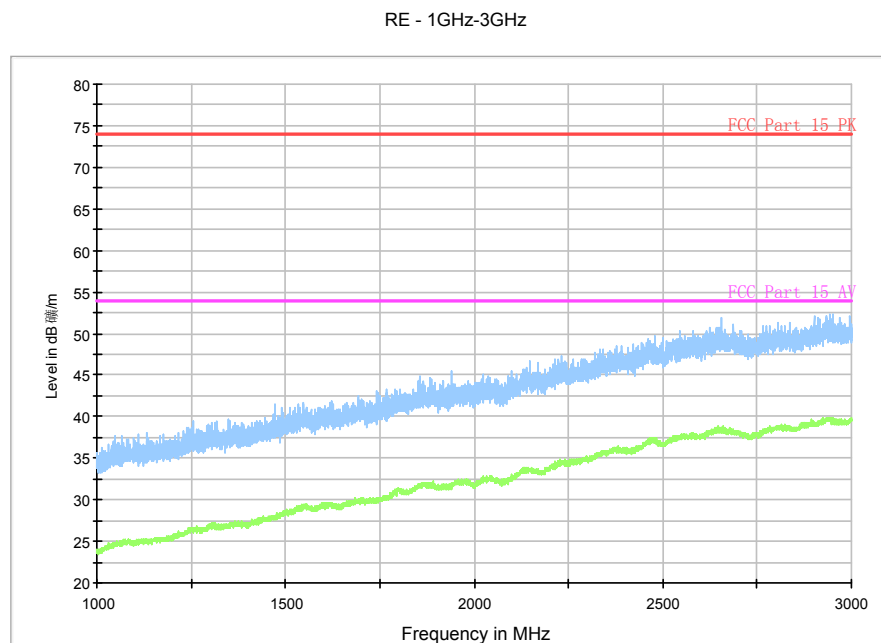


Fig. 76 Radiated Spurious Emission (802.11a, ch56, 1 GHz-3 GHz)

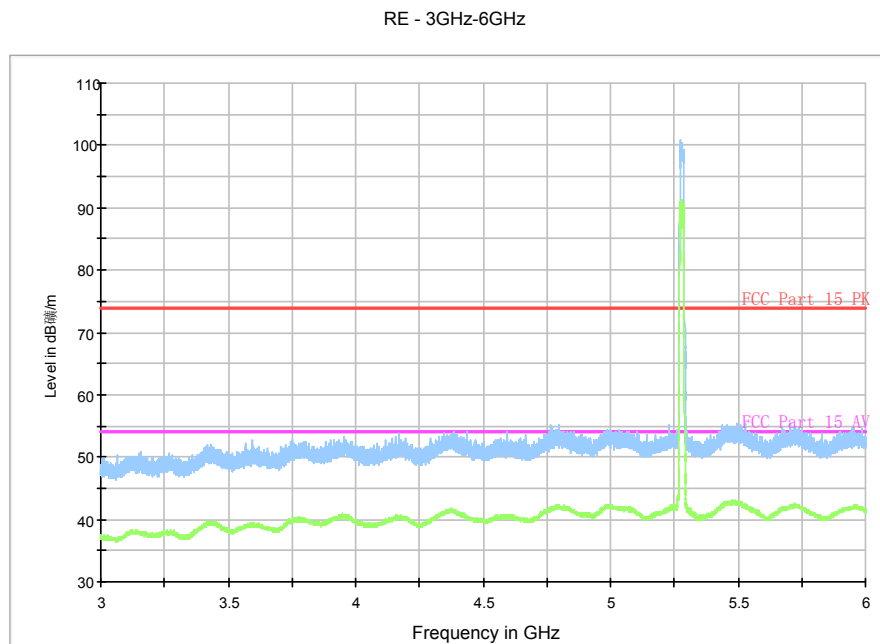


Fig. 77 Radiated Spurious Emission (802.11a, ch56, 3 GHz-6 GHz)

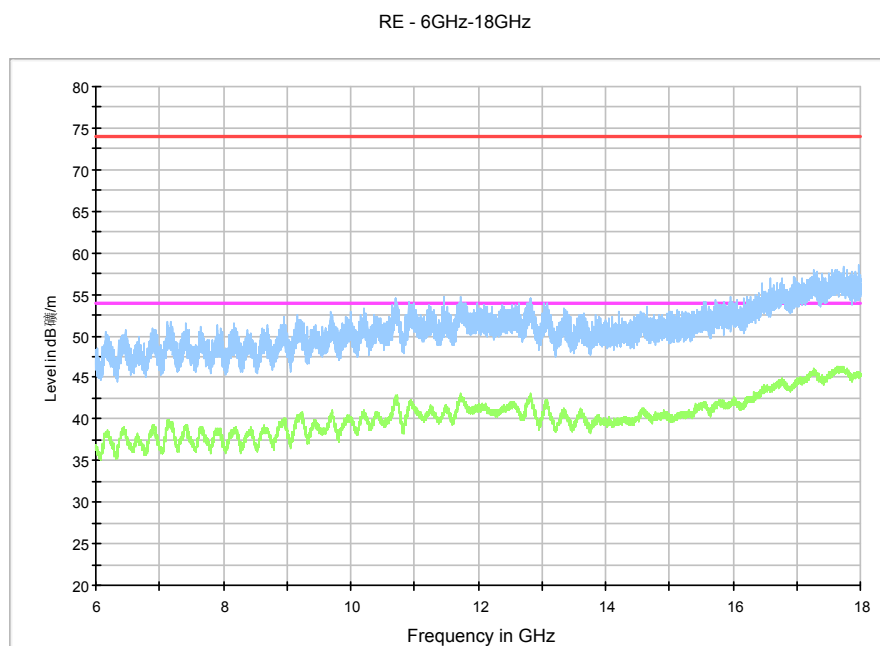


Fig. 78 Radiated Spurious Emission (802.11a, ch56, 6 GHz-18 GHz)

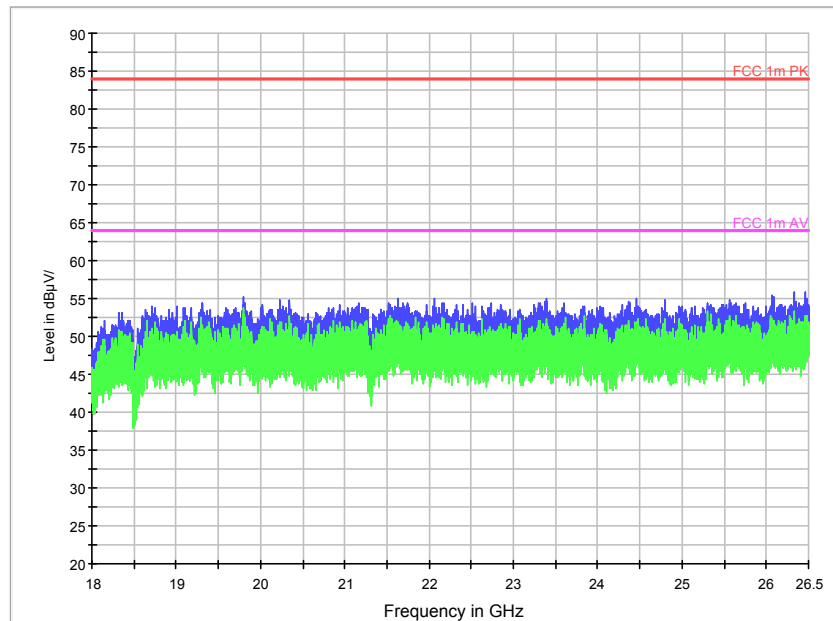


Fig. 79 Radiated Spurious Emission (802.11a, ch56, 18 GHz-40 GHz)

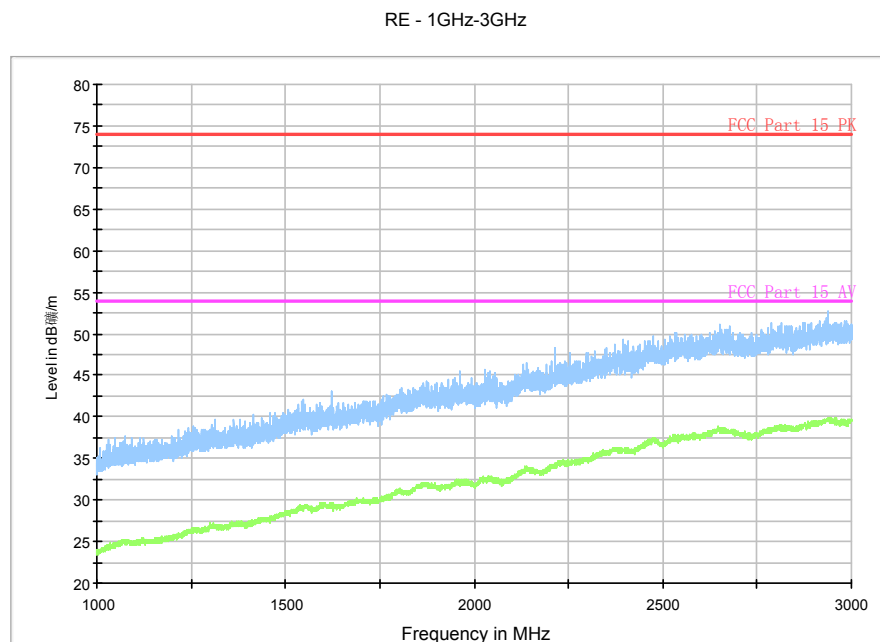


Fig. 80 Radiated Spurious Emission (802.11a, ch64, 1 GHz-3 GHz)

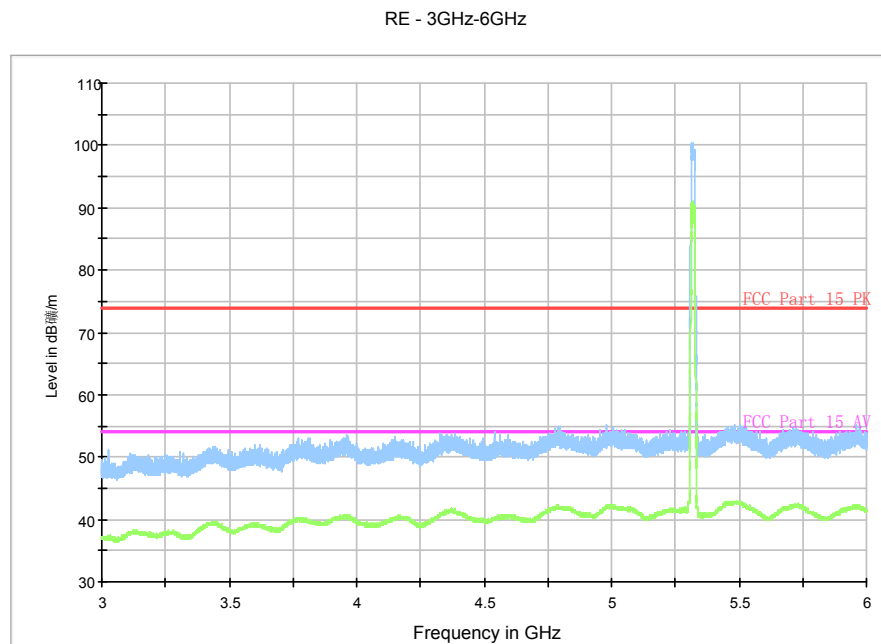


Fig. 81 Radiated Spurious Emission (802.11a, ch64, 3 GHz-6 GHz)

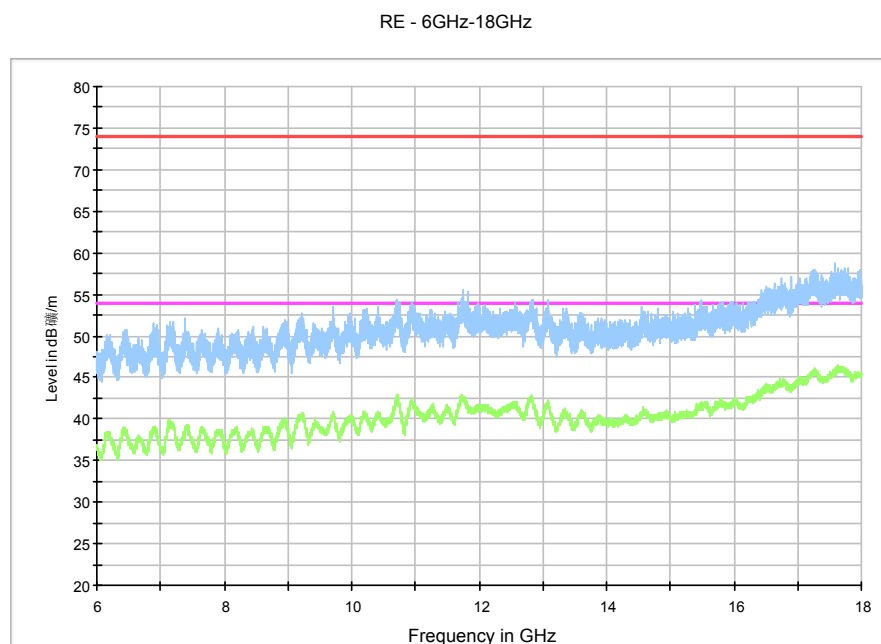


Fig. 82 Radiated Spurious Emission (802.11a, ch64, 6 GHz-18 GHz)

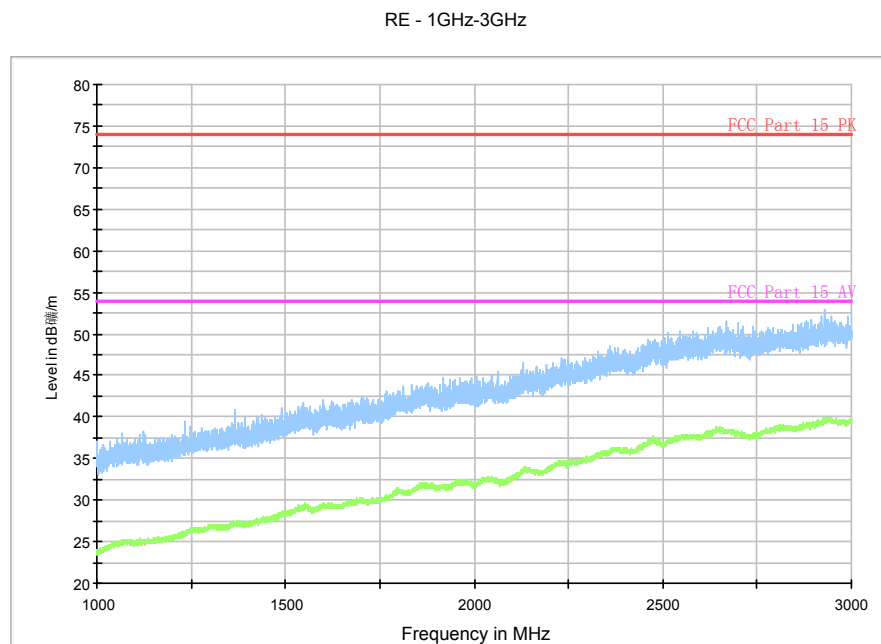


Fig. 83 Radiated Spurious Emission (802.11a, ch100, 1 GHz-3 GHz)

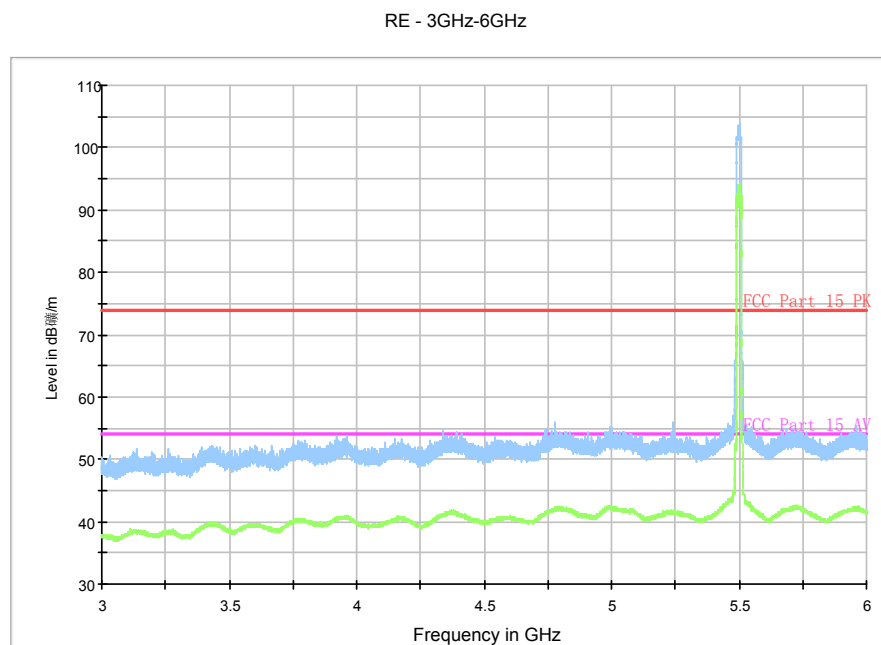


Fig. 84 Radiated Spurious Emission (802.11a, ch100, 3 GHz-6 GHz)

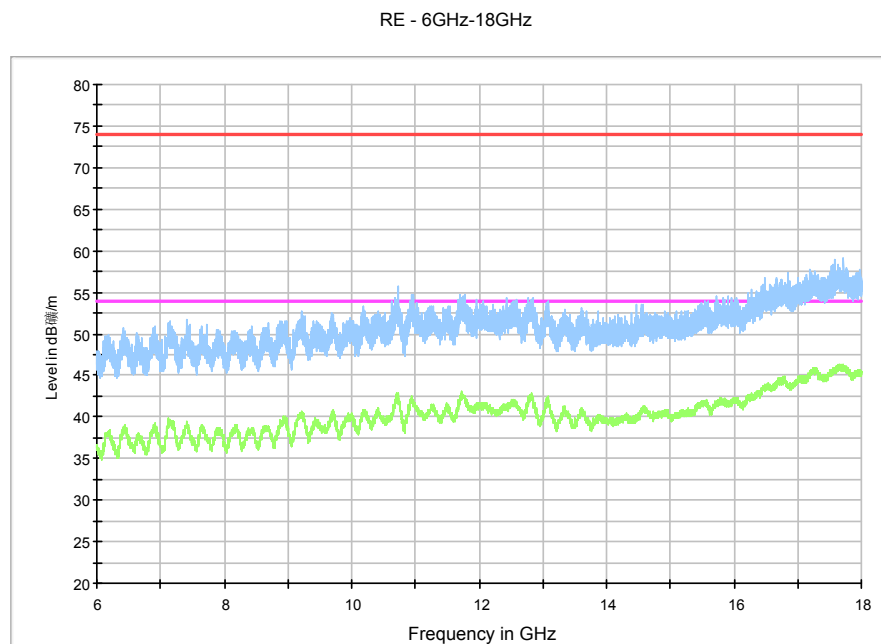


Fig. 85 Radiated Spurious Emission (802.11a, ch100, 6 GHz-18 GHz)

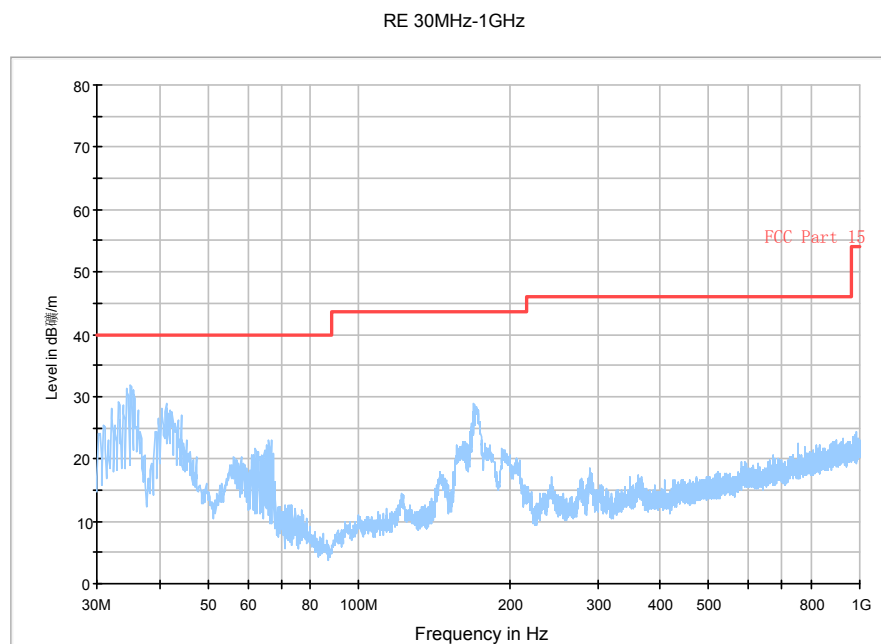


Fig. 86 Radiated Spurious Emission (802.11a, ch116, 30 MHz-1 GHz)

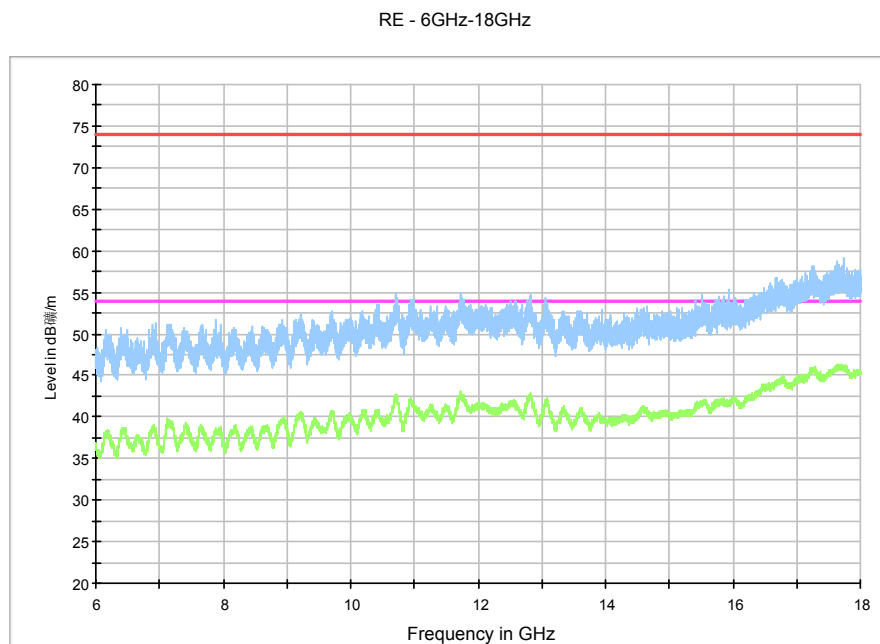


Fig. 87 Radiated Spurious Emission (802.11a, ch116, 6 GHz-18 GHz)

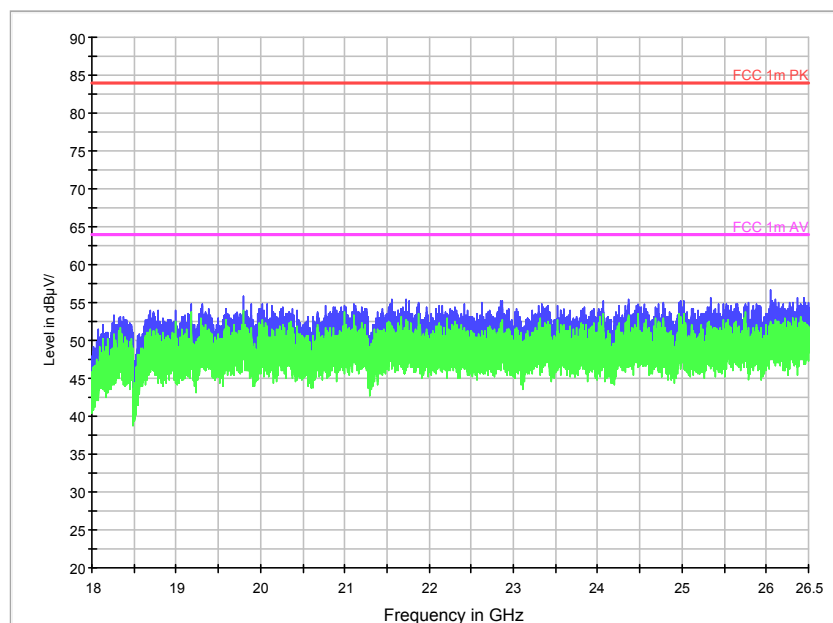


Fig. 88 Radiated Spurious Emission (802.11a, ch116, 18 GHz-40 GHz)

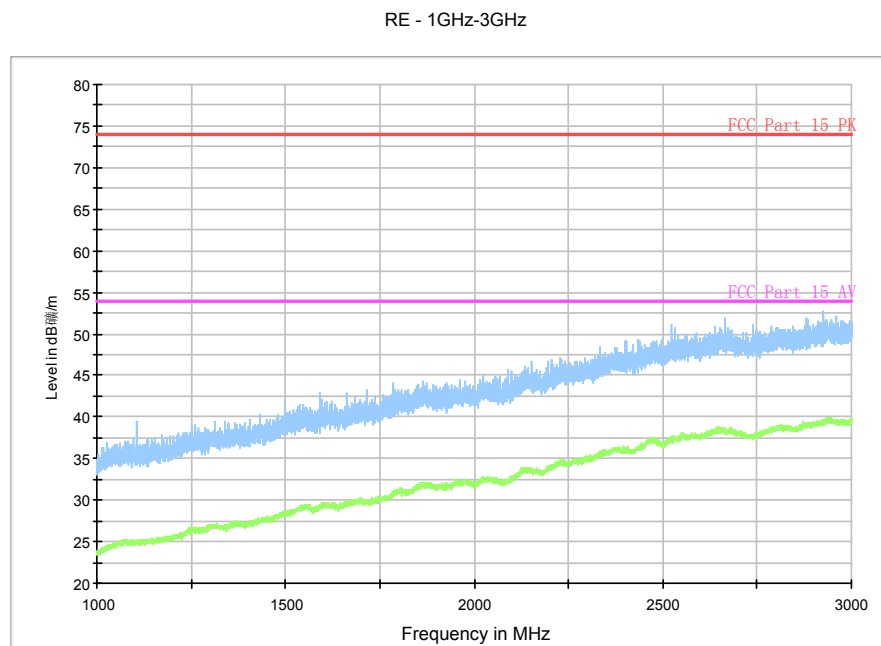


Fig. 89 Radiated Spurious Emission (802.11a, ch140, 1 GHz-3 GHz)

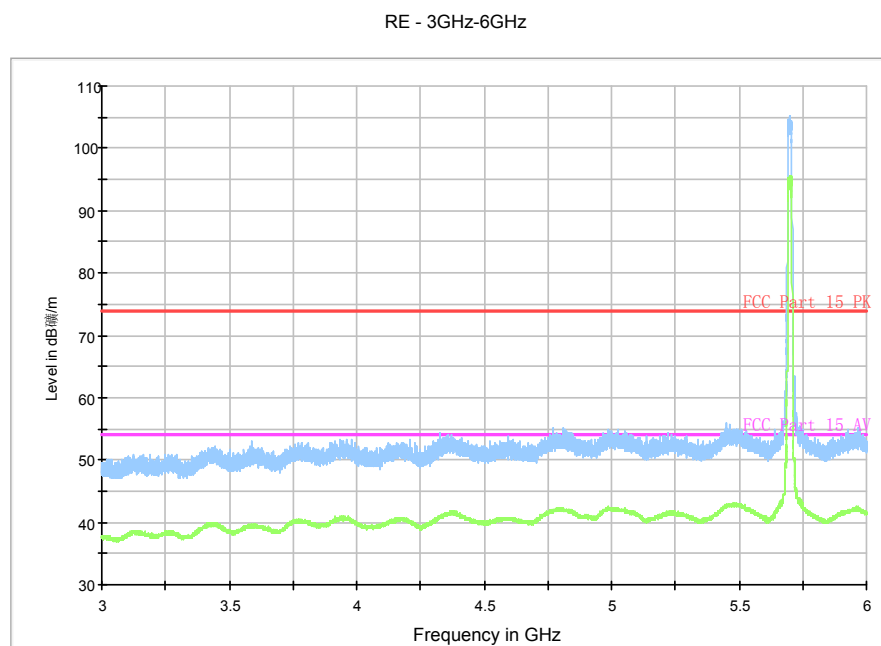


Fig. 90 Radiated Spurious Emission (802.11a, ch140, 3 GHz-6 GHz)

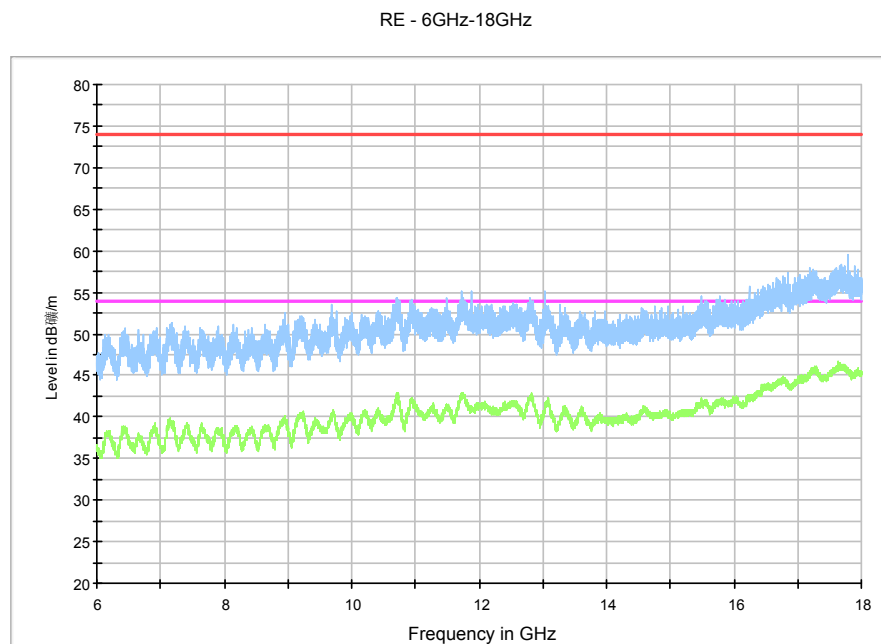


Fig. 91 Radiated Spurious Emission (802.11a, ch140, 6 GHz-18 GHz)

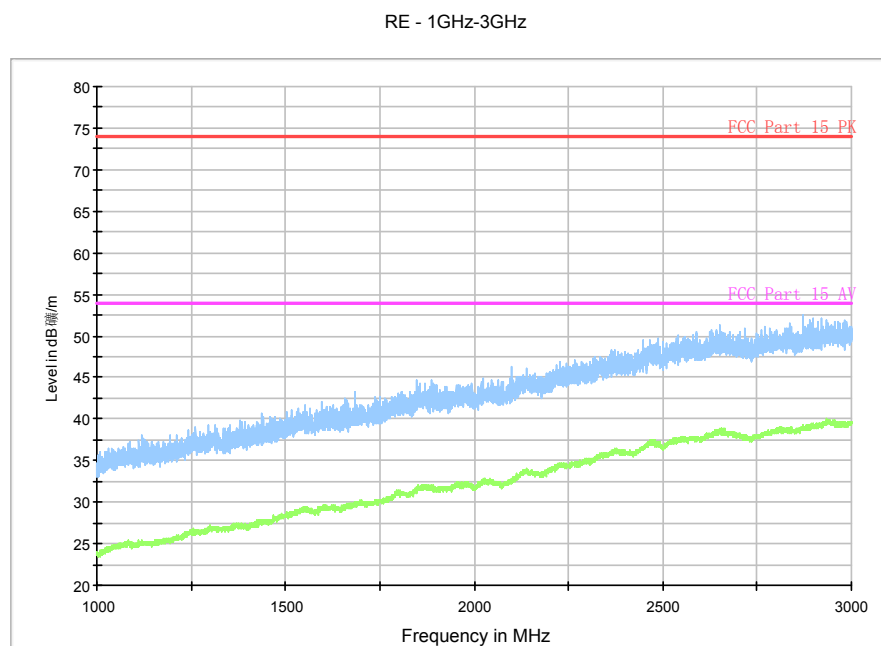


Fig. 92 Radiated Spurious Emission (802.11n-HT20, ch36, 1 GHz-3 GHz)

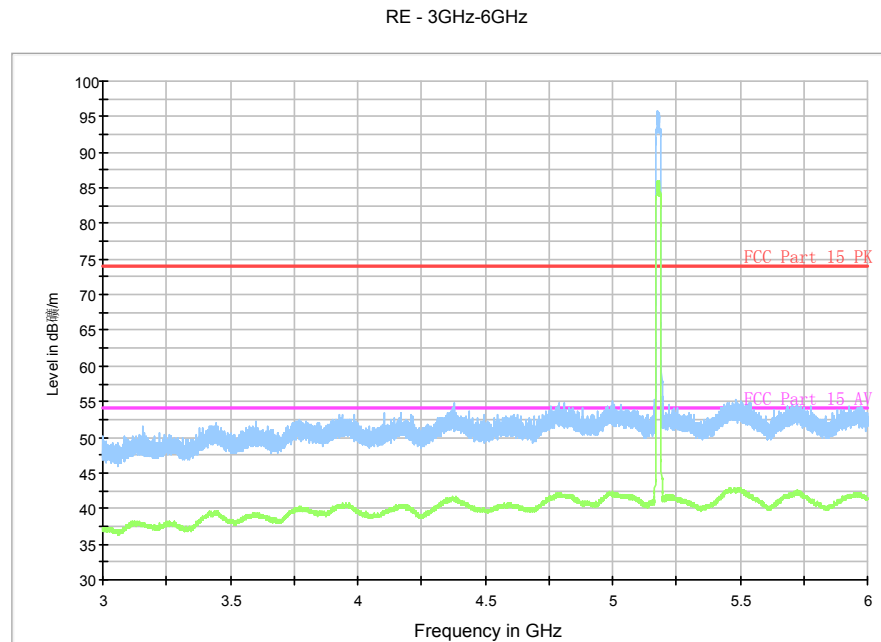


Fig. 93 Radiated Spurious Emission (802.11n-HT20, ch36, 3GHz-6 GHz)

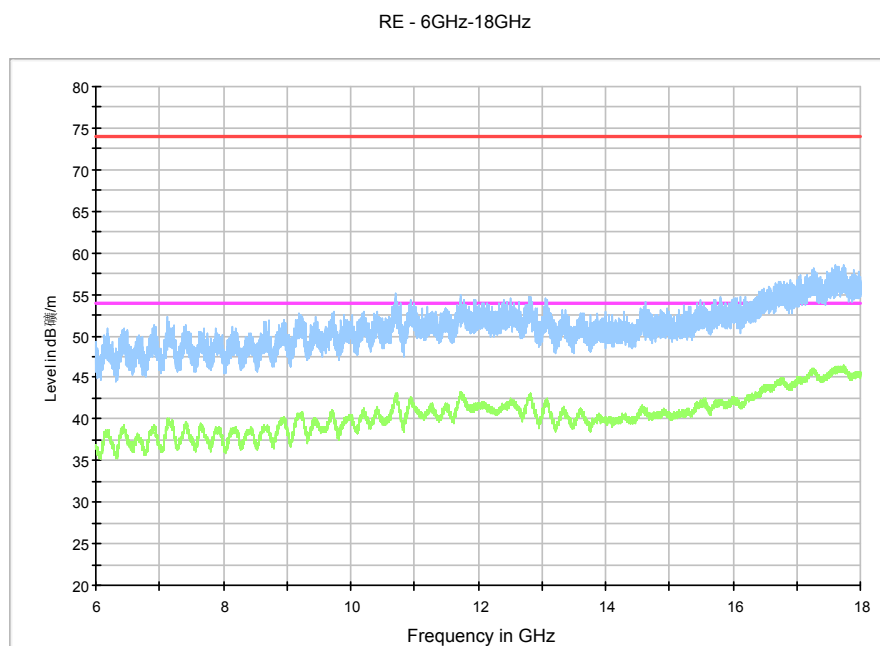


Fig. 94 Radiated Spurious Emission (802.11n-HT20, ch36, 6 GHz-18 GHz)

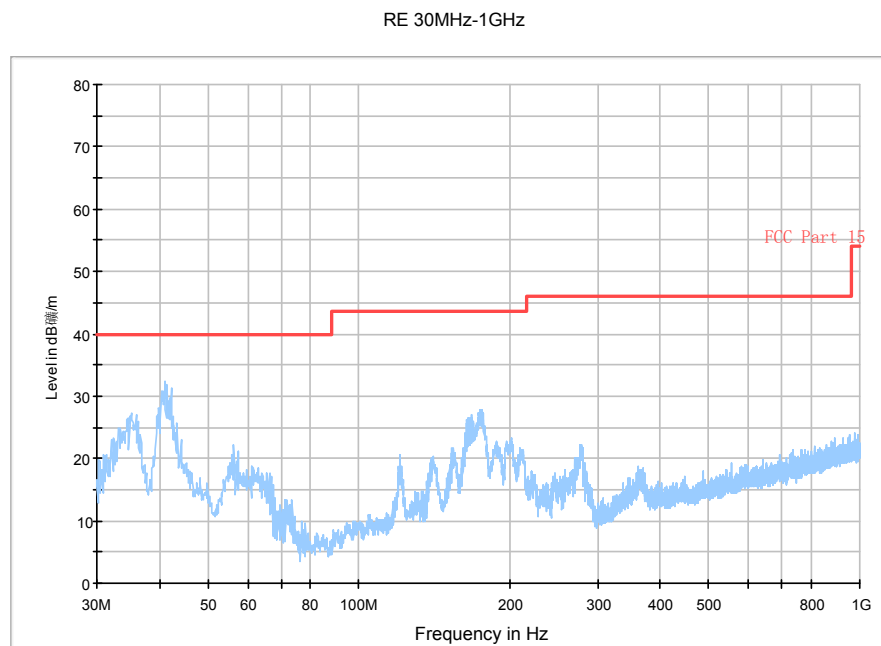


Fig. 95 Radiated Spurious Emission (802.11n-HT20, ch40, 30 MHz-1 GHz)

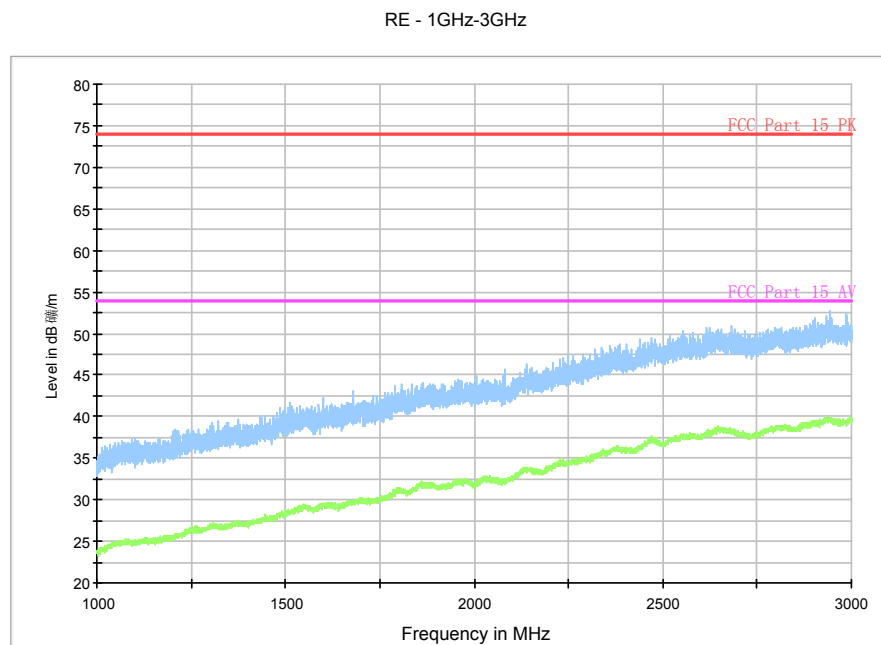


Fig. 96 Radiated Spurious Emission (802.11n-HT20, ch40, 1 GHz-3 GHz)

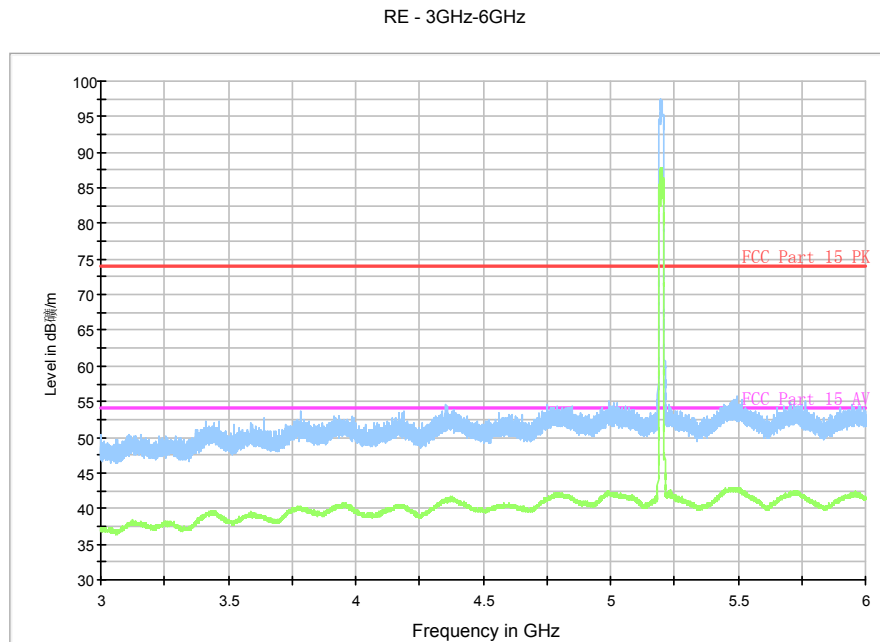


Fig. 97 Radiated Spurious Emission (802.11n-HT20, ch40, 3 GHz-6 GHz)

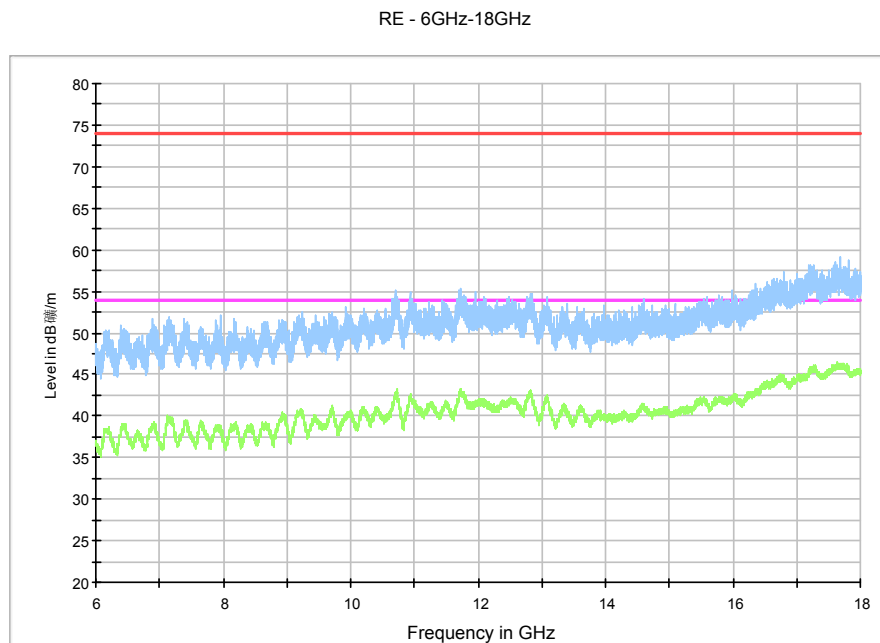


Fig. 98 Radiated Spurious Emission (802.11n-HT20, ch40, 6 GHz-18 GHz)

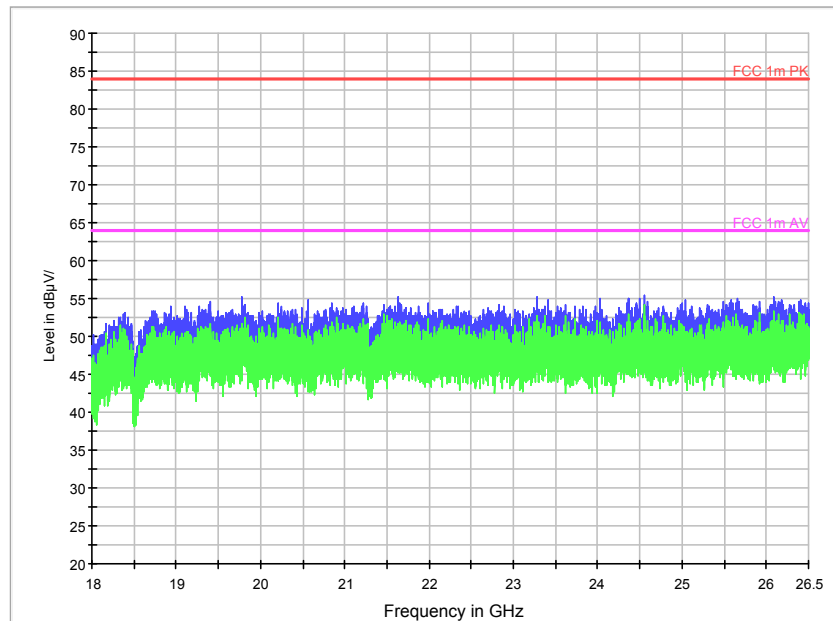


Fig. 99 Radiated Spurious Emission (802.11n-HT20, ch40, 18 GHz-40 GHz)

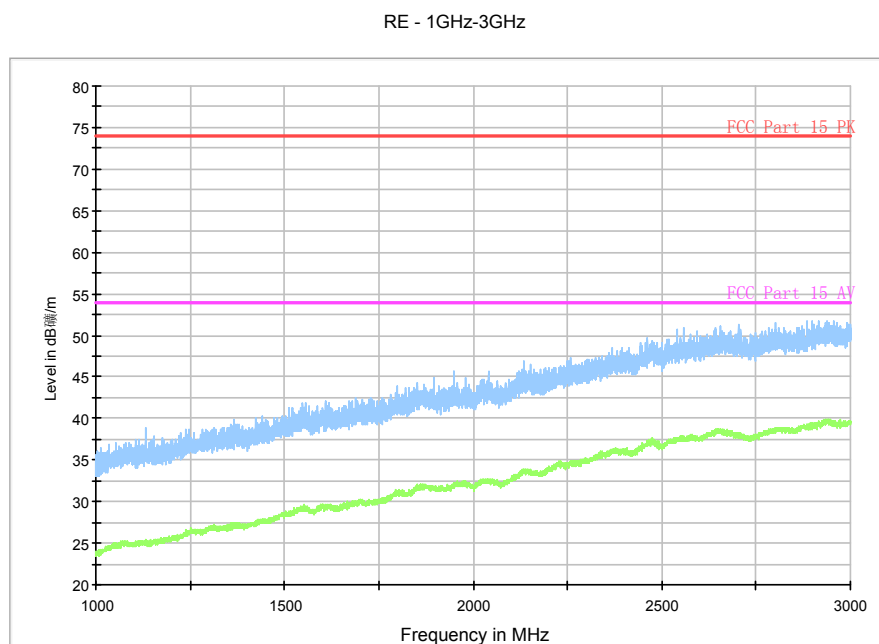


Fig. 100 Radiated Spurious Emission (802.11n-HT20, ch48, 1 GHz-3 GHz)

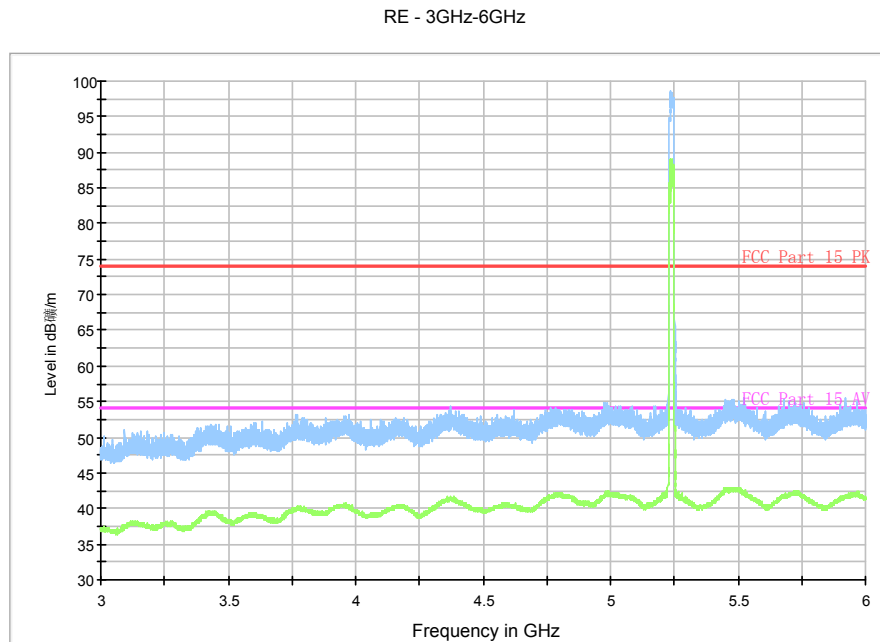


Fig. 101 Radiated Spurious Emission (802.11n-HT20, ch48, 3 GHz-6 GHz)

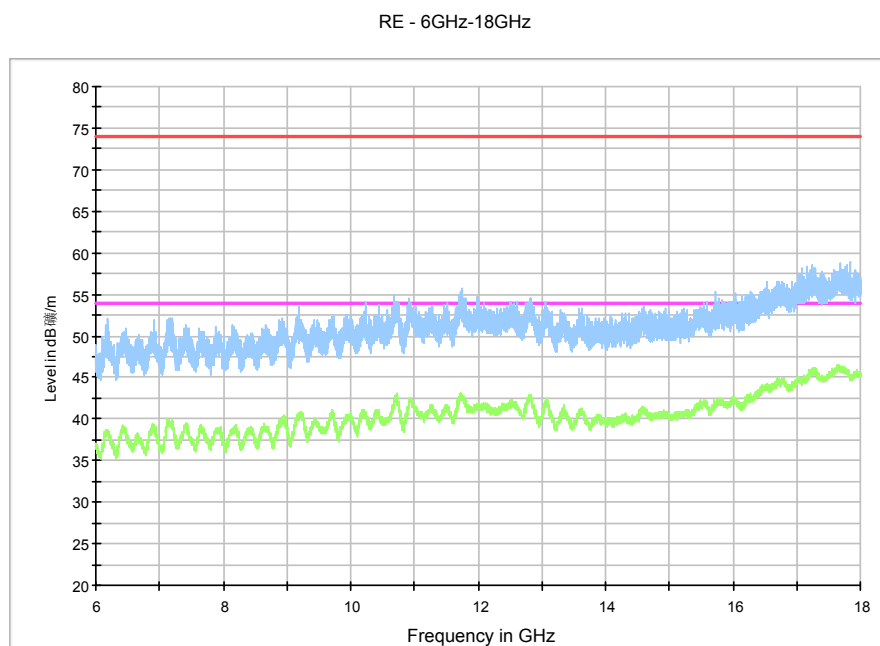


Fig. 102 Radiated Spurious Emission (802.11n-HT20, ch48, 6 GHz-18 GHz)

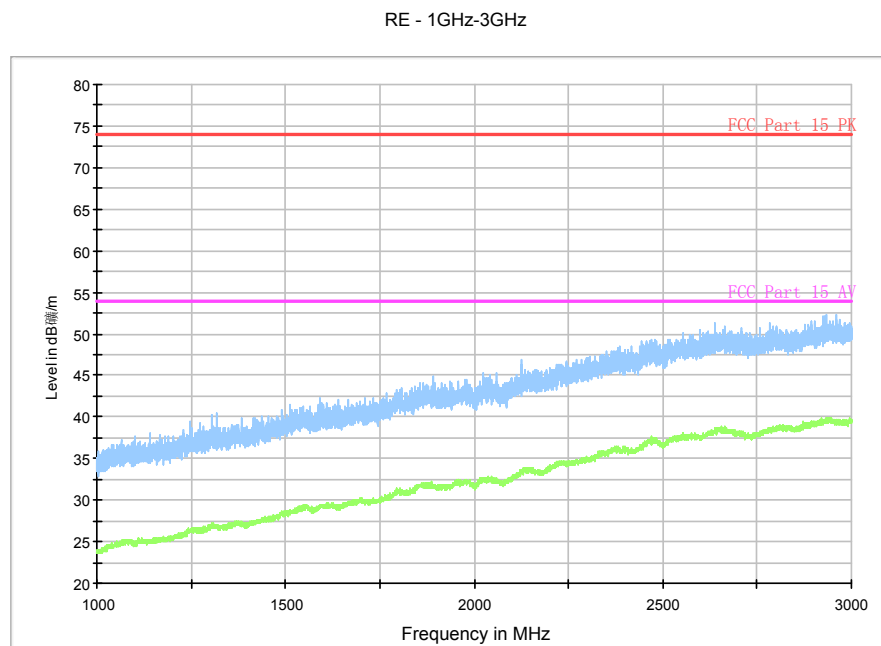


Fig. 103 Radiated Spurious Emission (802.11n-HT20, ch52, 1 GHz-3 GHz)

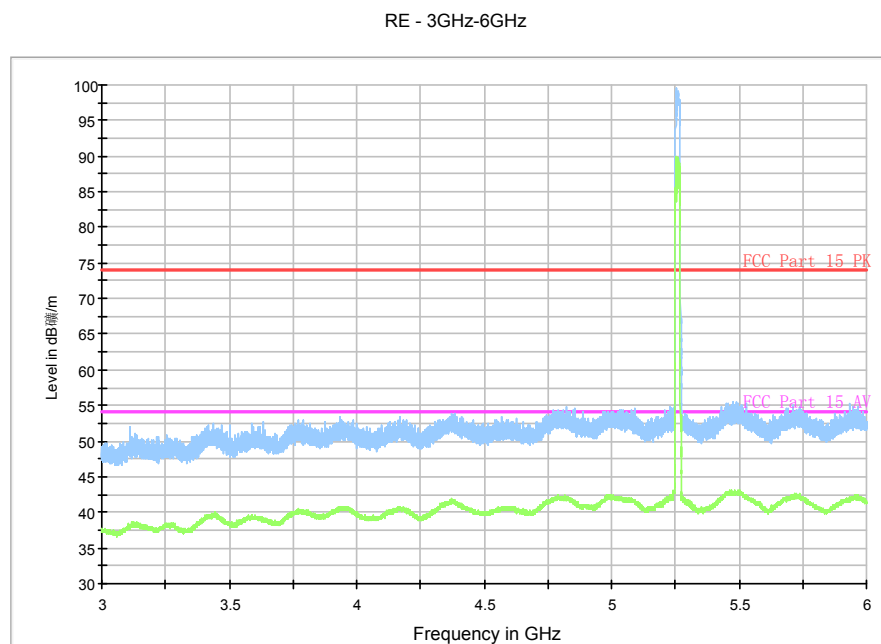


Fig. 104 Radiated Spurious Emission (802.11n-HT20, ch52, 3 GHz-6 GHz)

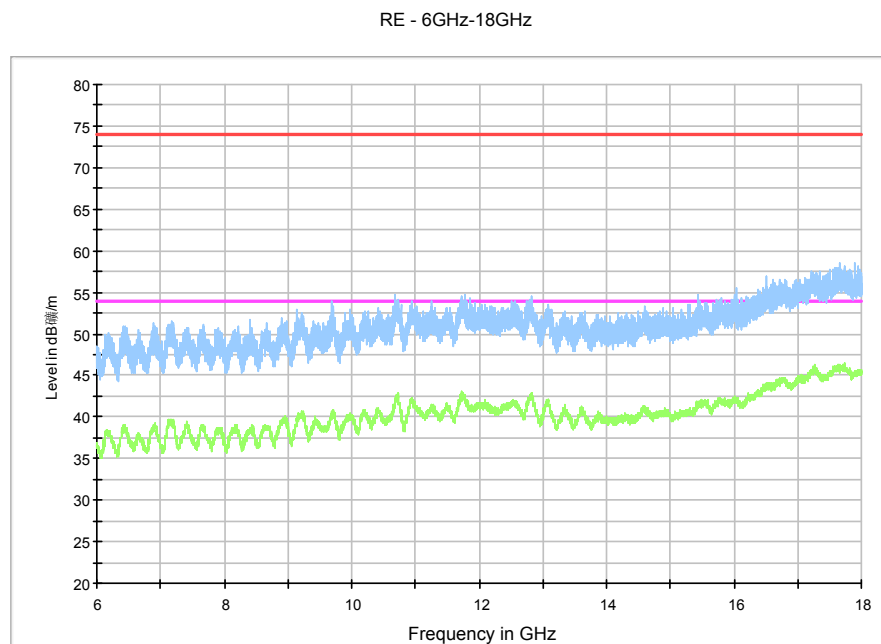


Fig. 105 Radiated Spurious Emission (802.11n-HT20, ch52, 6 GHz-18 GHz)

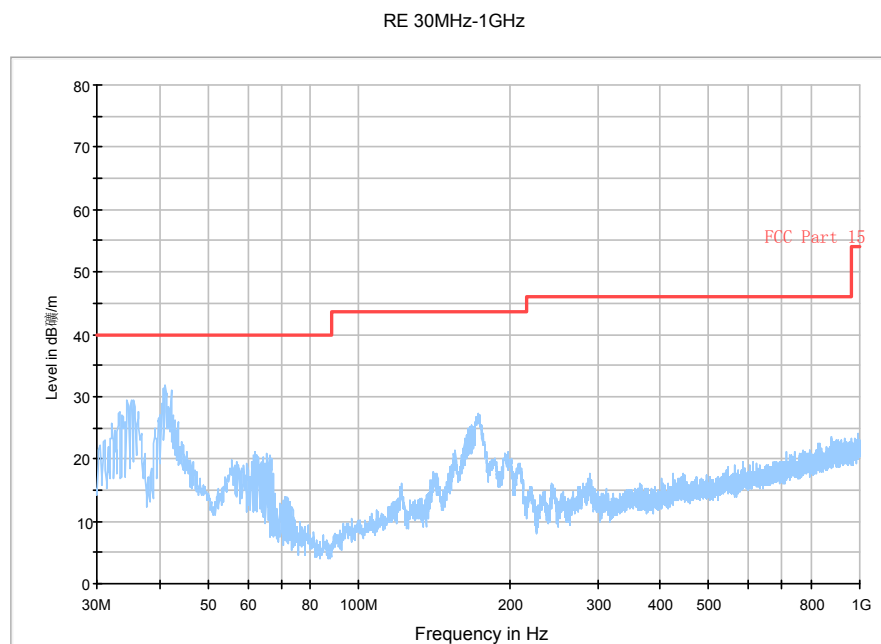


Fig. 106 Radiated Spurious Emission (802.11n-HT20, ch56, 30 MHz-1 GHz)

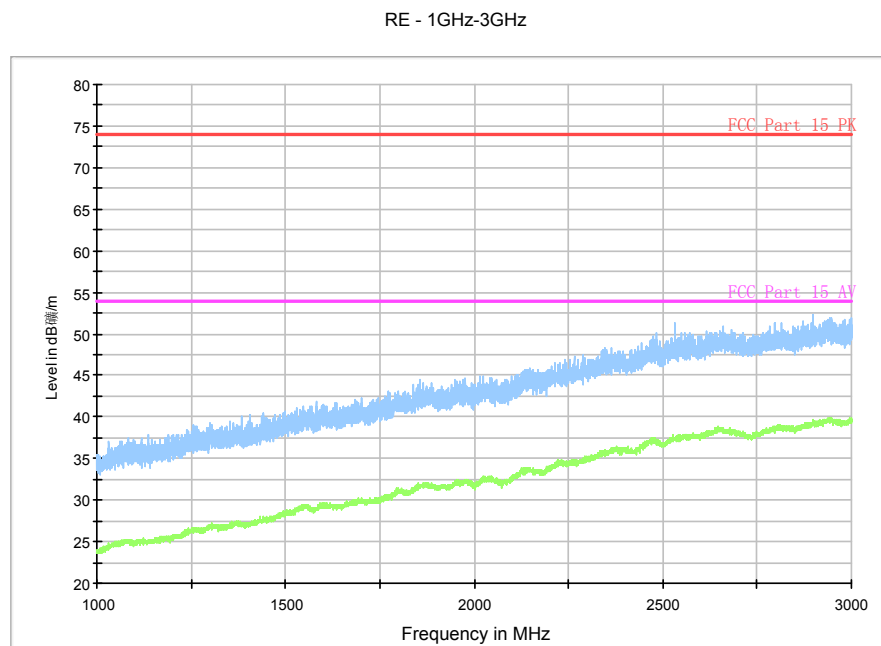


Fig. 107 Radiated Spurious Emission (802.11n-HT20, ch56, 1 GHz-3 GHz)

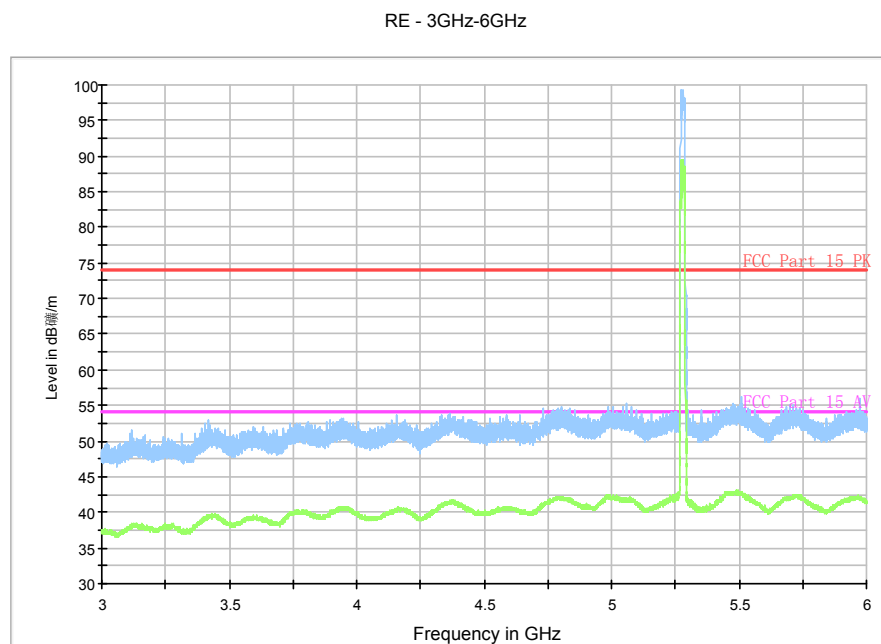


Fig. 108 Radiated Spurious Emission (802.11n-HT20, ch56, 3 GHz-6 GHz)

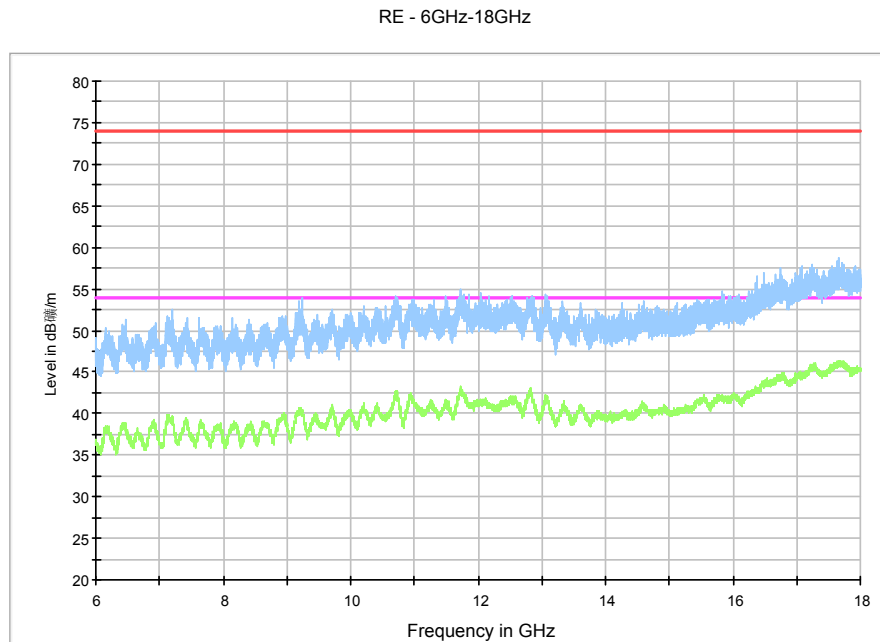


Fig. 109 Radiated Spurious Emission (802.11n-HT20, ch56, 6 GHz-18 GHz)

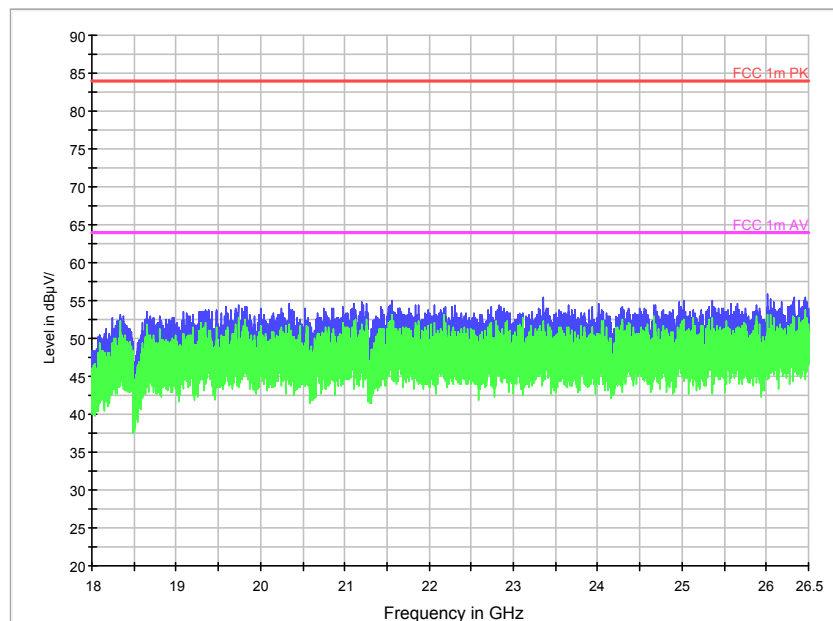


Fig. 110 Radiated Spurious Emission (802.11n-HT20, ch56, 18 GHz-40 GHz)

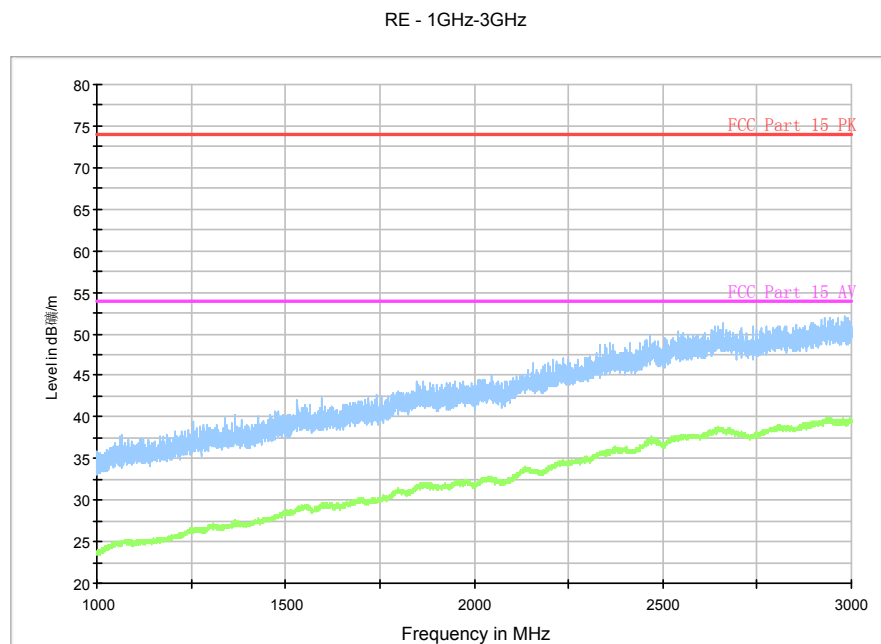


Fig. 111 Radiated Spurious Emission (802.11n-HT20, ch64, 1 GHz-3 GHz)

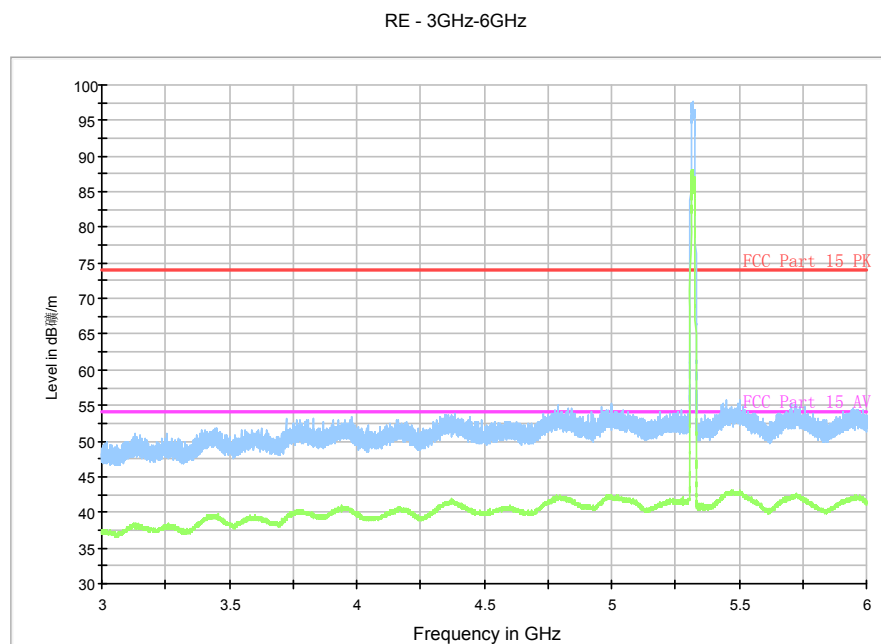


Fig. 112 Radiated Spurious Emission (802.11n-HT20, ch64, 3 GHz-6 GHz)

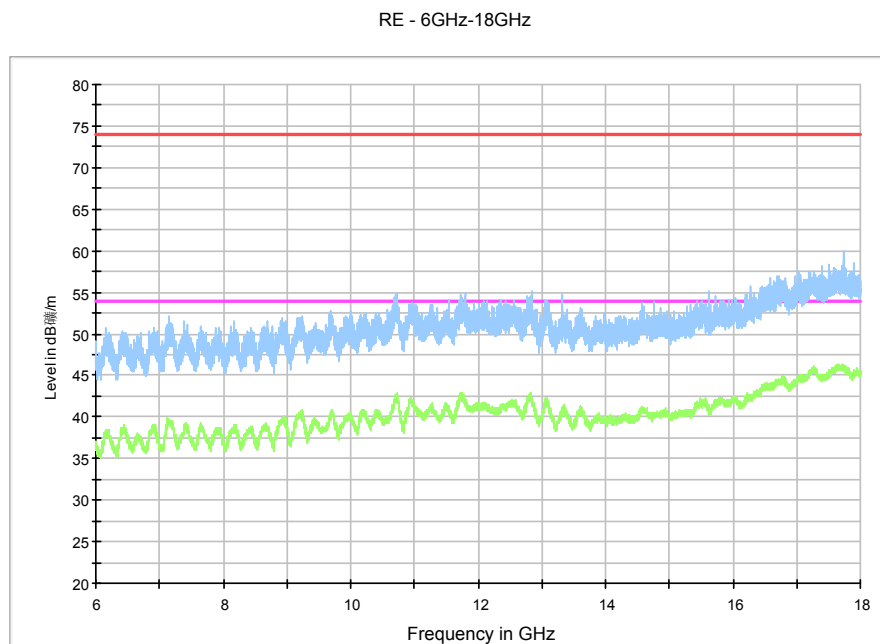


Fig. 113 Radiated Spurious Emission (802.11n-HT20, ch64, 6 GHz-18 GHz)

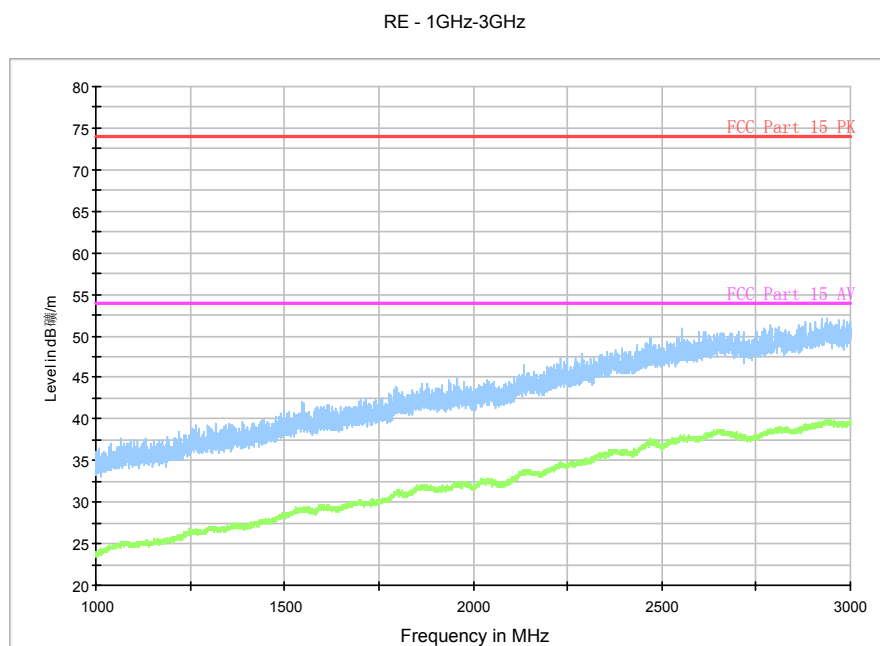


Fig. 114 Radiated Spurious Emission (802.11n-HT20, ch100, 1 GHz-3 GHz)

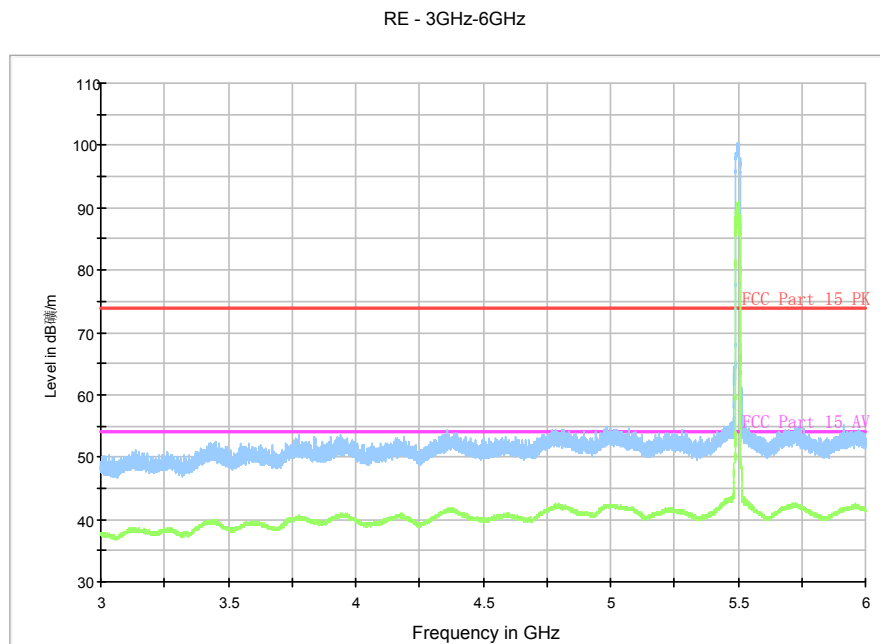


Fig. 115 Radiated Spurious Emission (802.11n-HT20, ch100, 3 GHz-6 GHz)

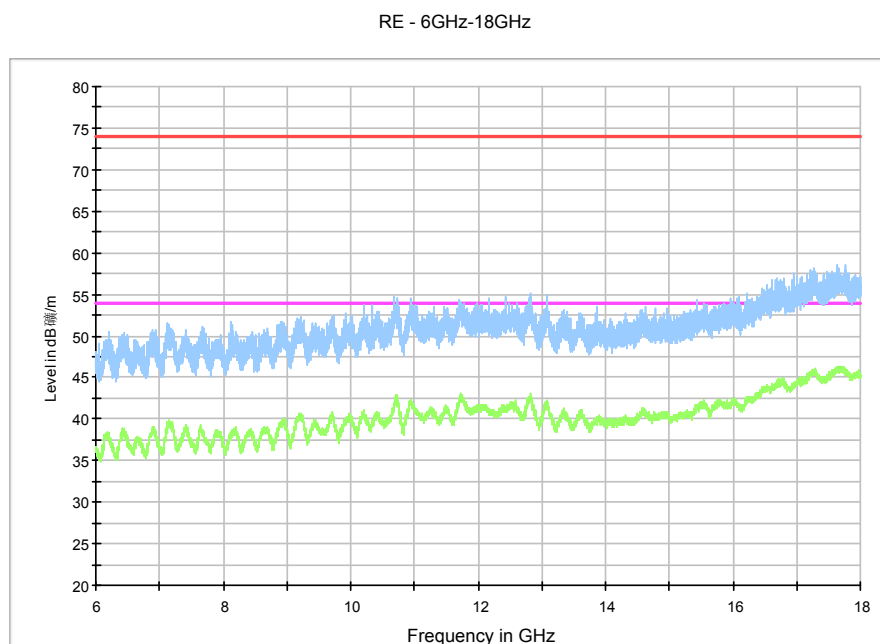


Fig. 116 Radiated Spurious Emission (802.11n-HT20, ch100, 6 GHz-18 GHz)

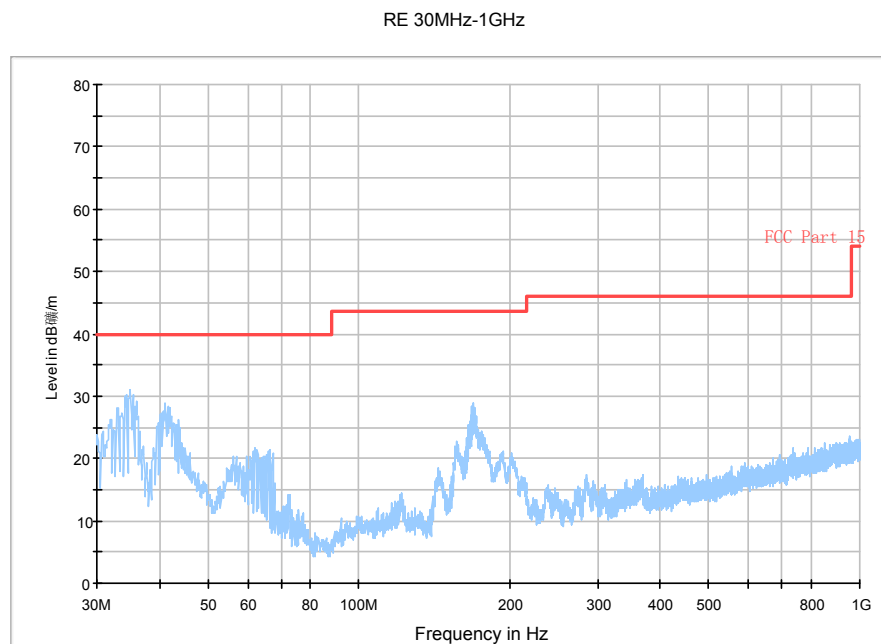


Fig. 117 Radiated Spurious Emission (802.11n-HT20, ch116, 30 MHz-1 GHz)

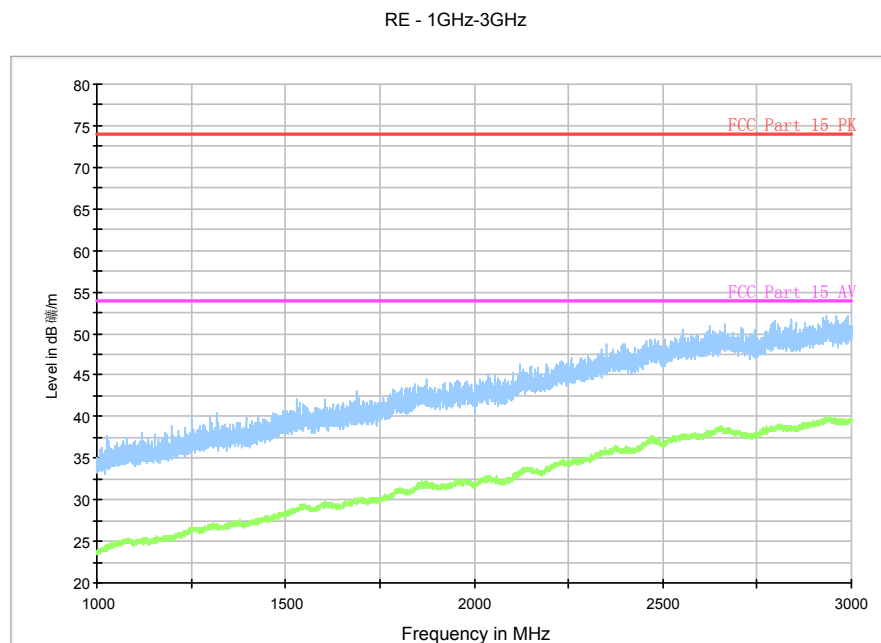


Fig. 118 Radiated Spurious Emission (802.11n-HT20, ch116, 1 GHz-3GHz)

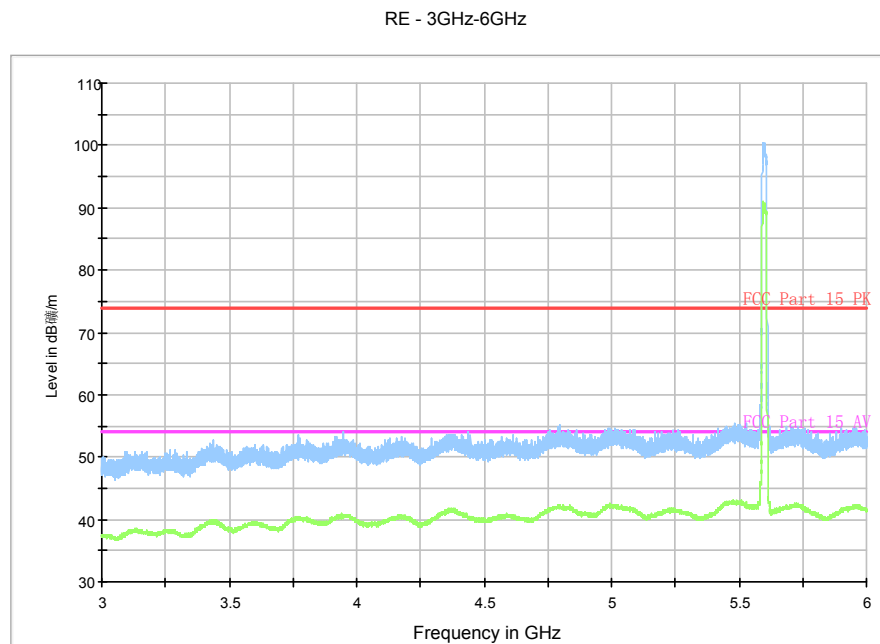


Fig. 119 Radiated Spurious Emission (802.11n-HT20, ch116, 3 GHz-6 GHz)

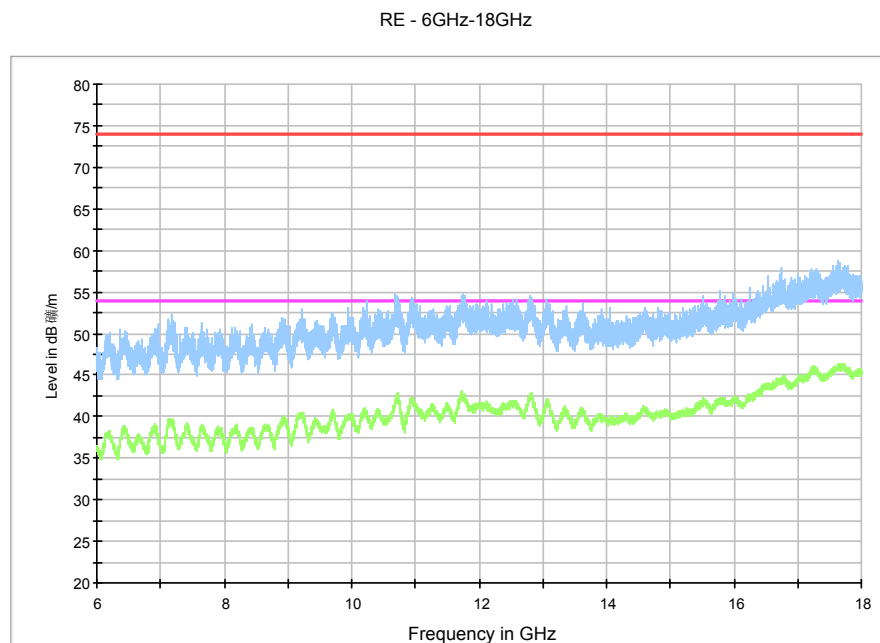


Fig. 120 Radiated Spurious Emission (802.11n-HT20, ch116, 6 GHz-18 GHz)

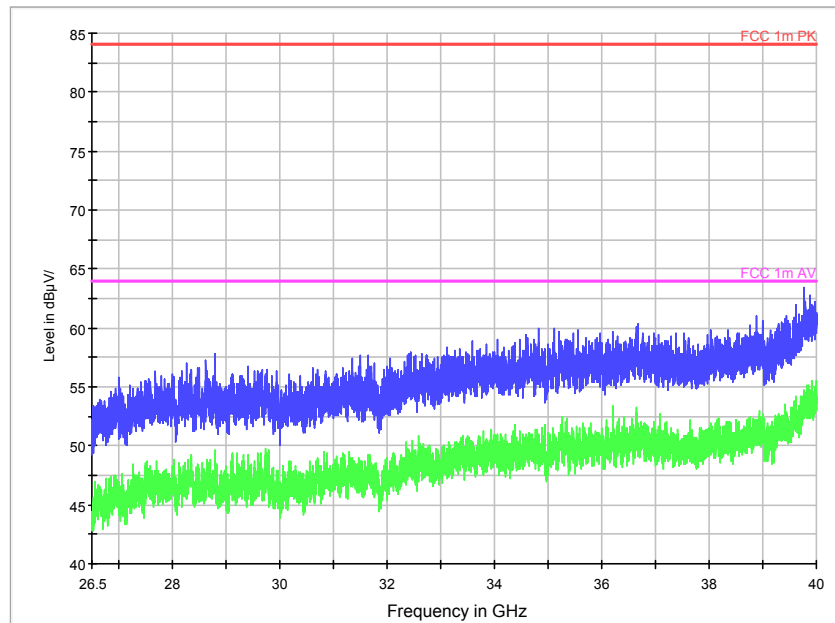


Fig. 121 Radiated Spurious Emission (802.11n-HT20, ch116, 18 GHz-40 GHz)

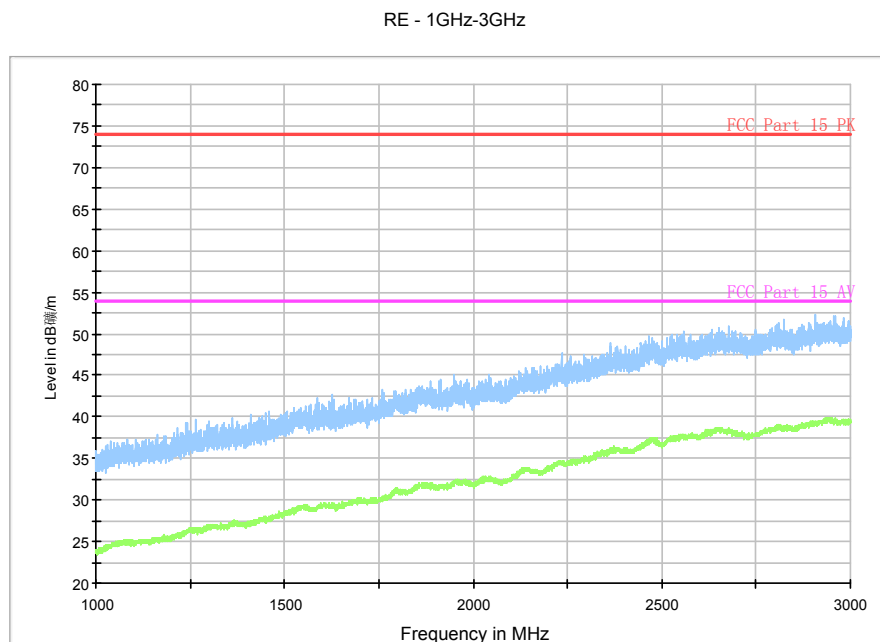


Fig. 122 Radiated Spurious Emission (802.11n-HT20, ch140, 1 GHz-3 GHz)

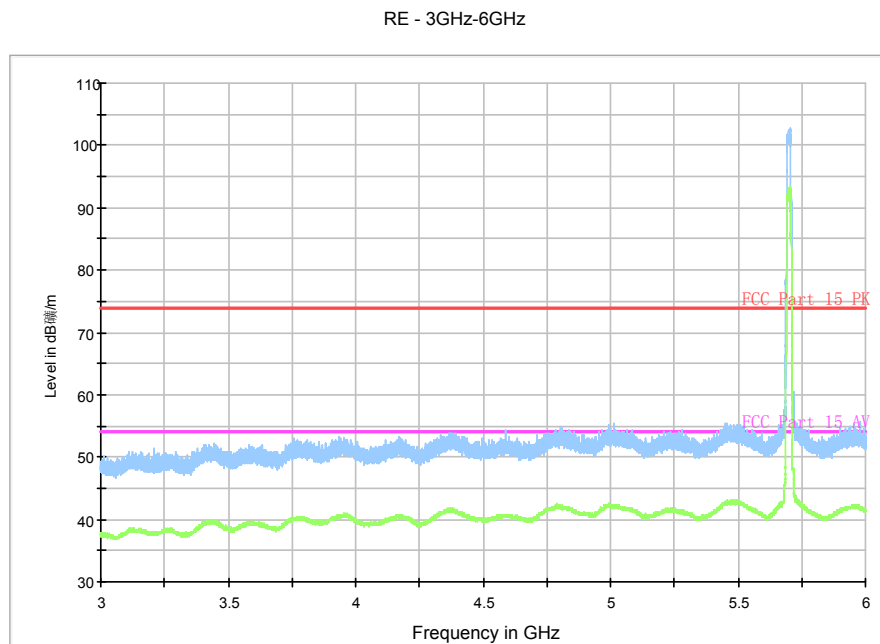


Fig. 123 Radiated Spurious Emission (802.11n-HT20, ch140, 3 GHz-6 GHz)

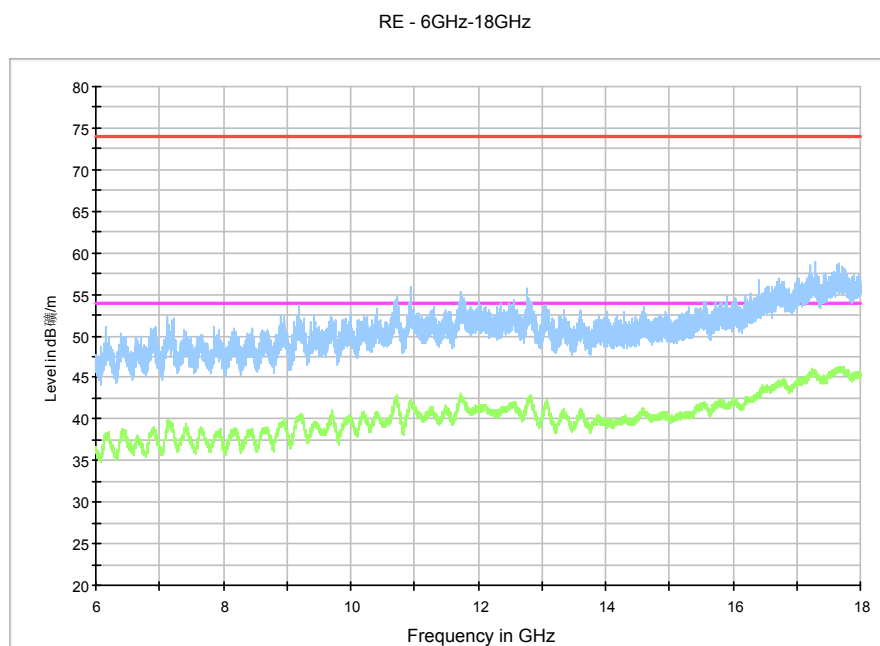


Fig. 124 Radiated Spurious Emission (802.11n-HT20, ch140, 6 GHz-18 GHz)

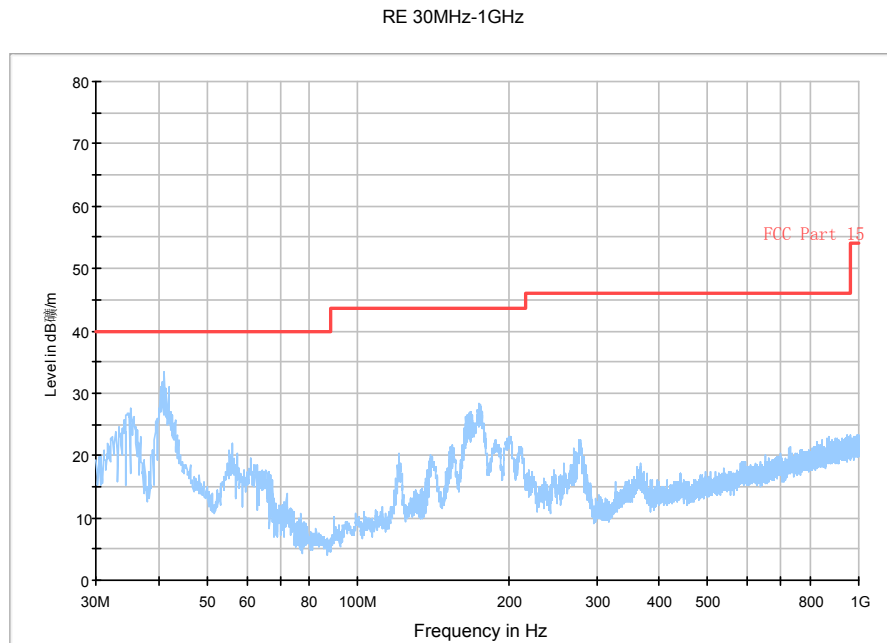


Fig. 125 Radiated Spurious Emission (802.11n-HT40, ch38, 30 MHz-1 GHz)

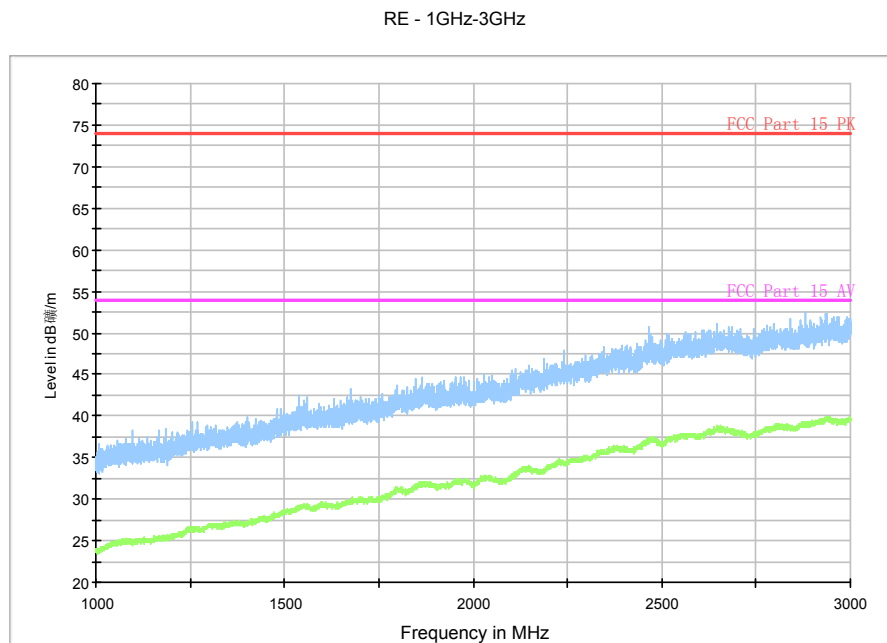


Fig. 126 Radiated Spurious Emission (802.11n-HT40, ch38, 1 GHz-3GHz)

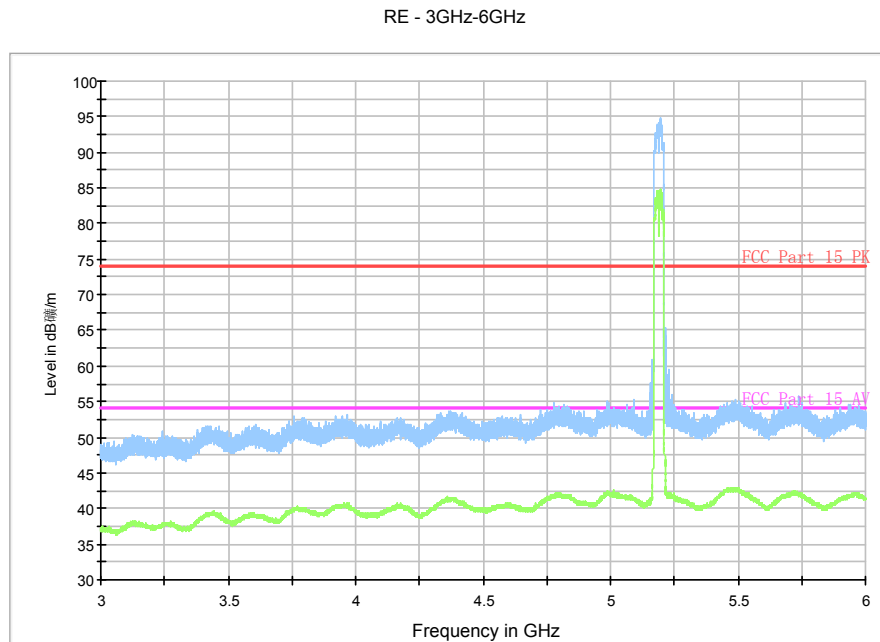


Fig. 127 Radiated Spurious Emission (802.11n-HT40, ch38, 3 GHz-6 GHz)

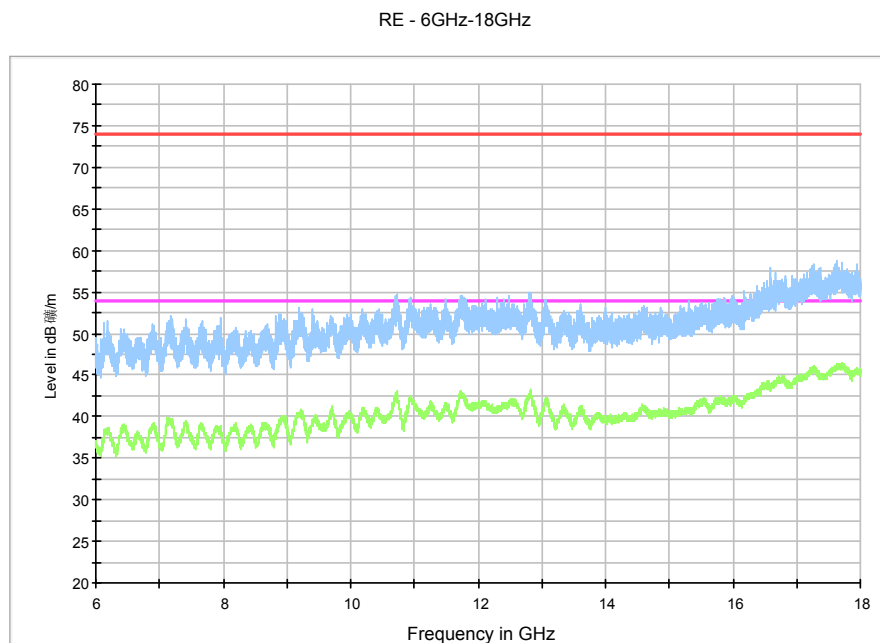


Fig. 128 Radiated Spurious Emission (802.11n-HT40, ch38, 6 GHz-18 GHz)

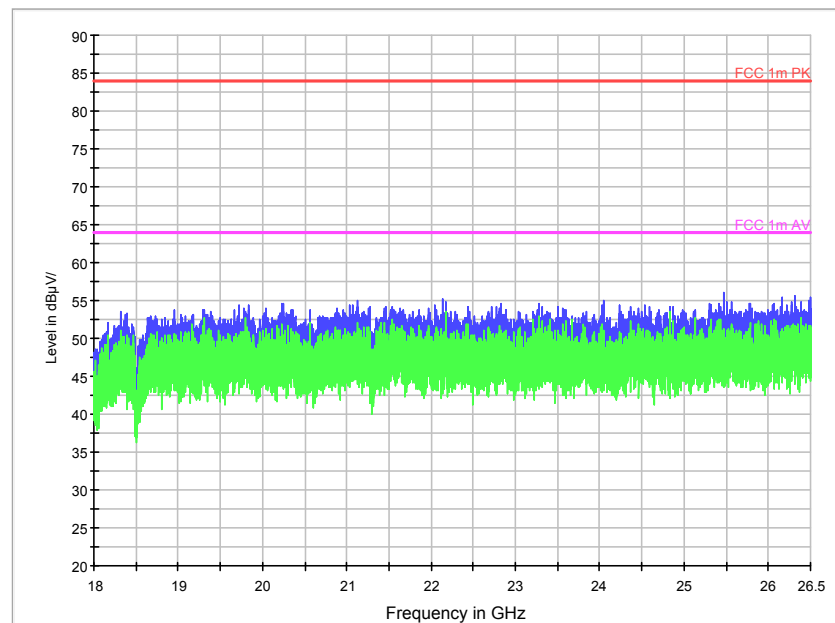


Fig. 129 Radiated Spurious Emission (802.11n-HT40, ch38, 18 GHz-40 GHz)

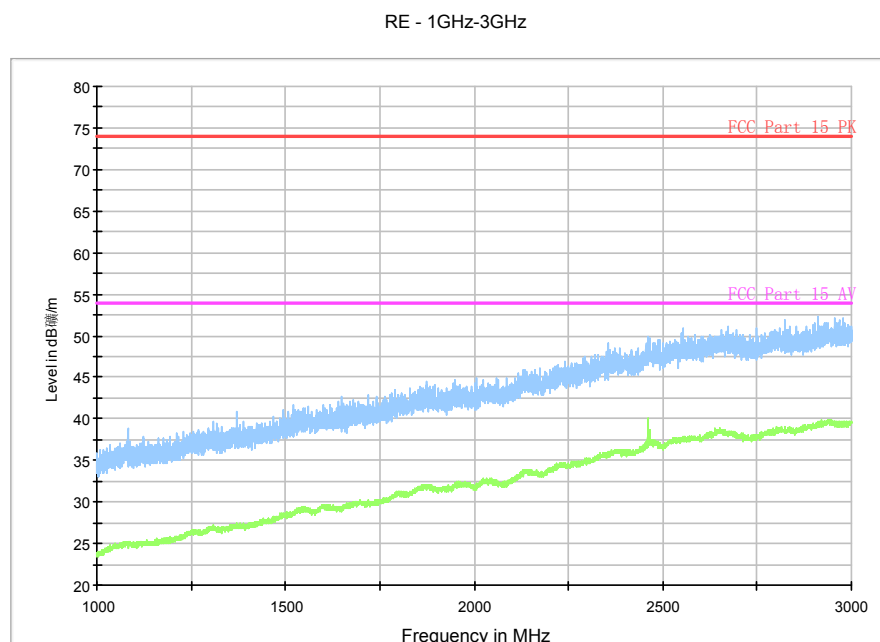


Fig. 130 Radiated Spurious Emission (802.11n-HT40, ch46, 1 GHz-3 GHz)

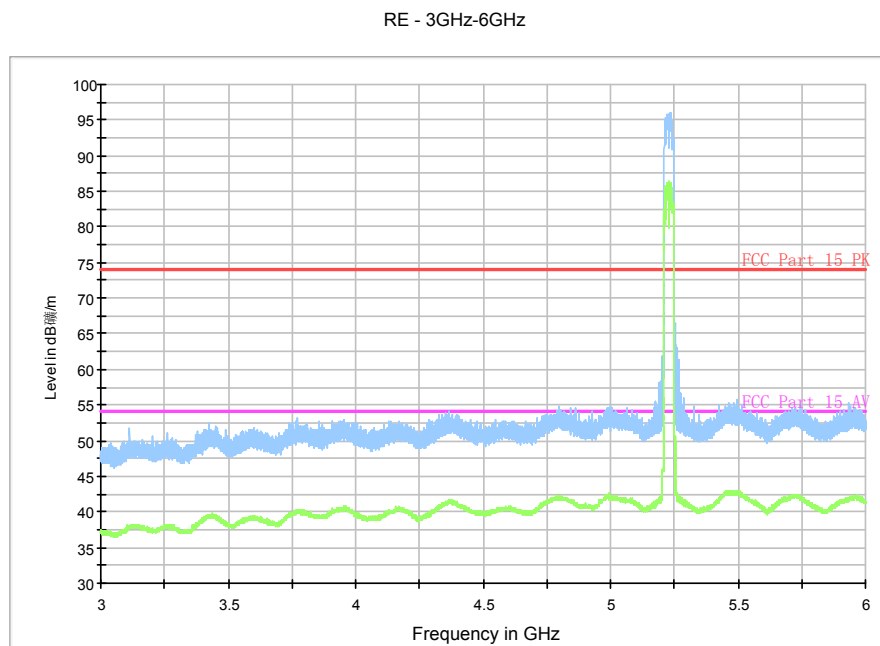


Fig. 131 Radiated Spurious Emission (802.11n-HT40, ch46, 3 GHz-6 GHz)

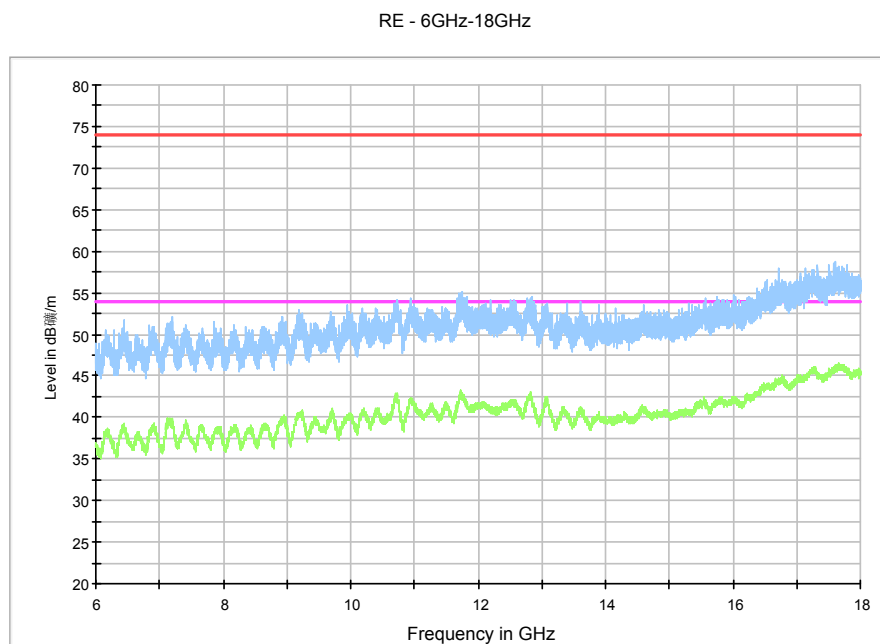


Fig. 132 Radiated Spurious Emission (802.11n-HT40, ch46, 6 GHz-18 GHz)

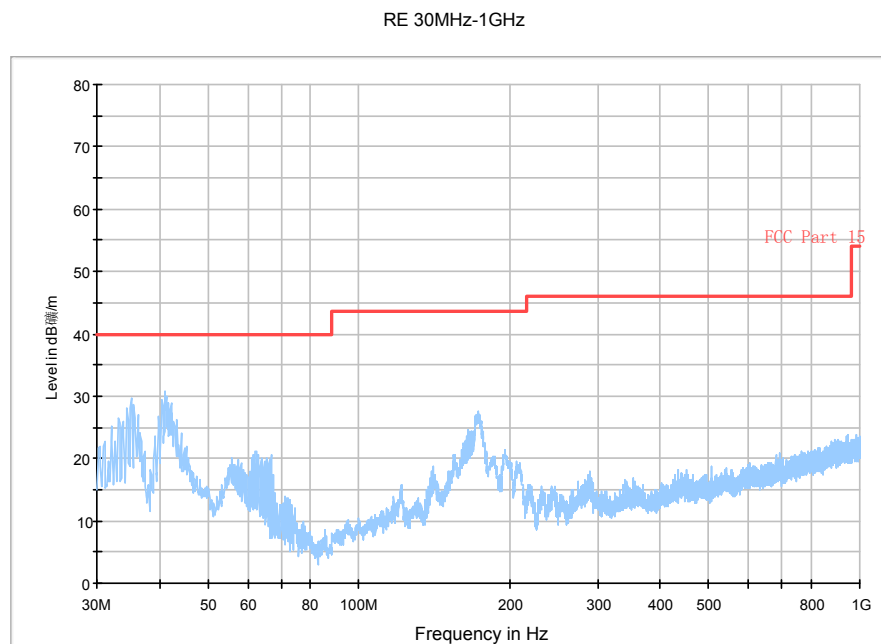


Fig. 133 Radiated Spurious Emission (802.11n-HT40, ch54, 30 MHz-1 GHz)

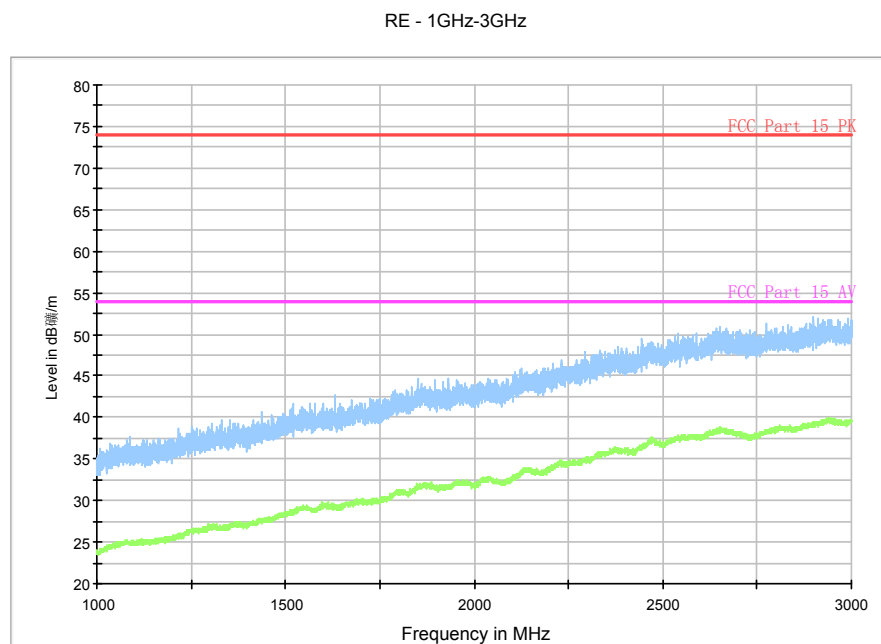


Fig. 134 Radiated Spurious Emission (802.11n-HT40, ch54, 1 GHz-3 GHz)

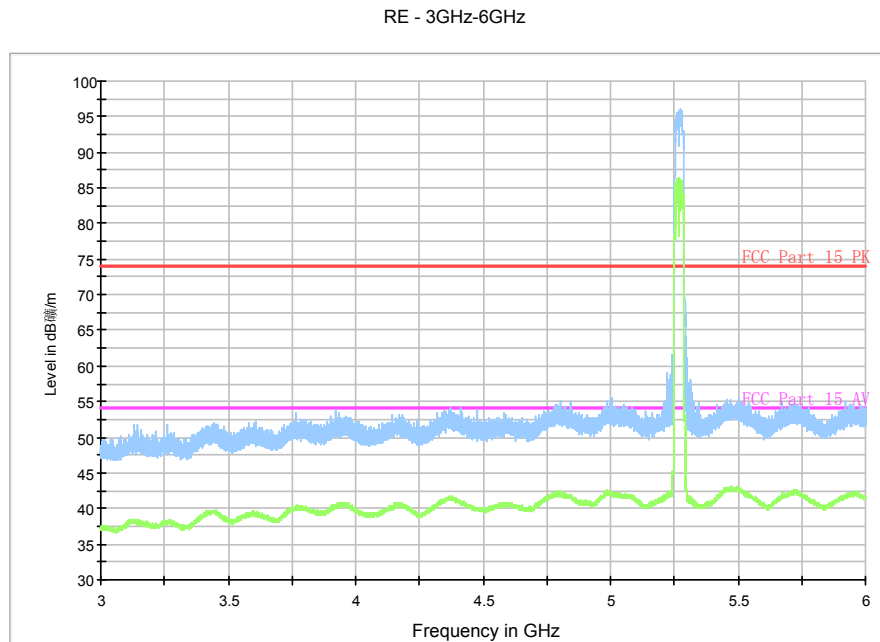


Fig. 135 Radiated Spurious Emission (802.11n-HT40, ch54, 3 GHz-6 GHz)

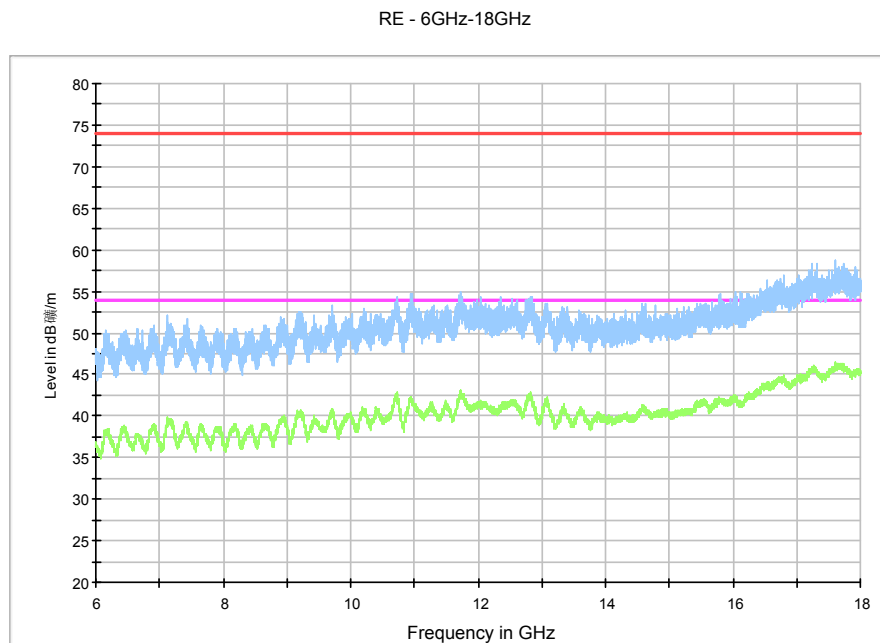


Fig. 136 Radiated Spurious Emission (802.11n-HT40, ch54, 6 GHz-18 GHz)

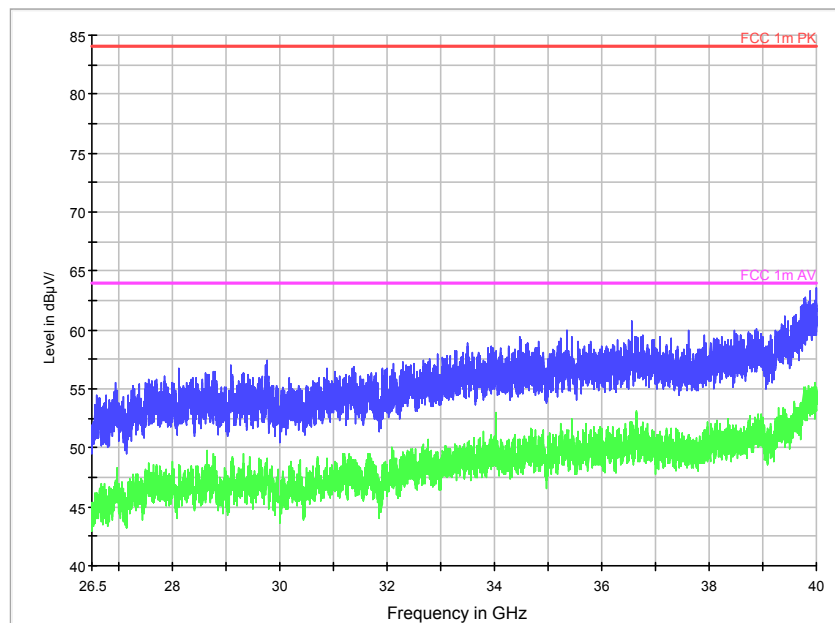


Fig. 137 Radiated Spurious Emission (802.11n-HT40, ch54, 18 GHz-40 GHz)

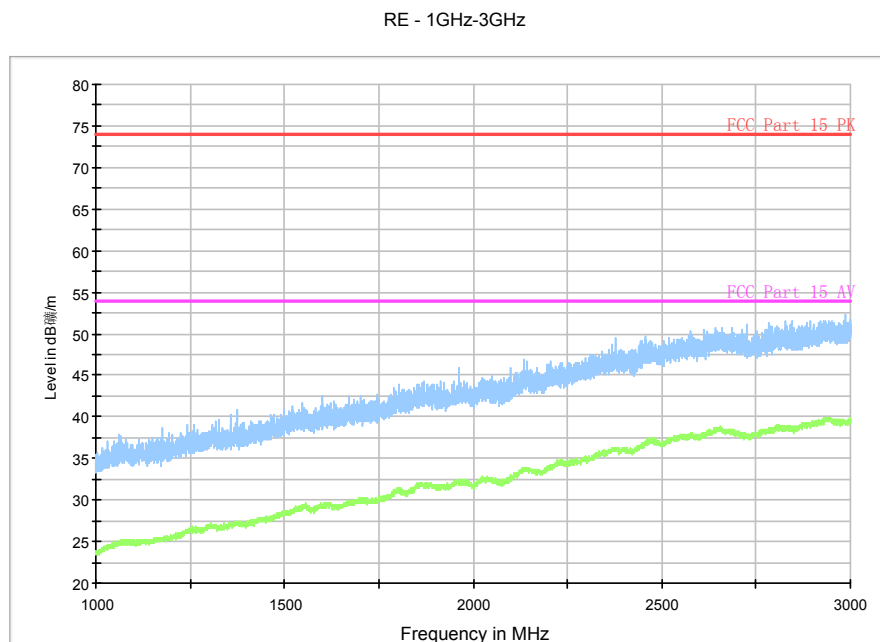


Fig. 138 Radiated Spurious Emission (802.11n-HT40, ch62, 1 GHz-3GHz)

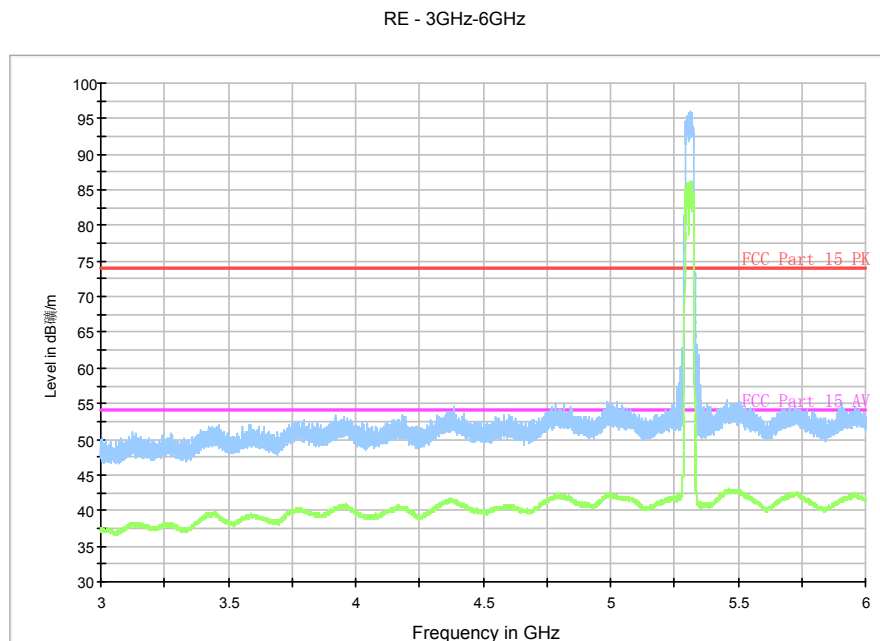


Fig. 139 Radiated Spurious Emission (802.11n-HT40, ch62, 3 GHz-6 GHz)

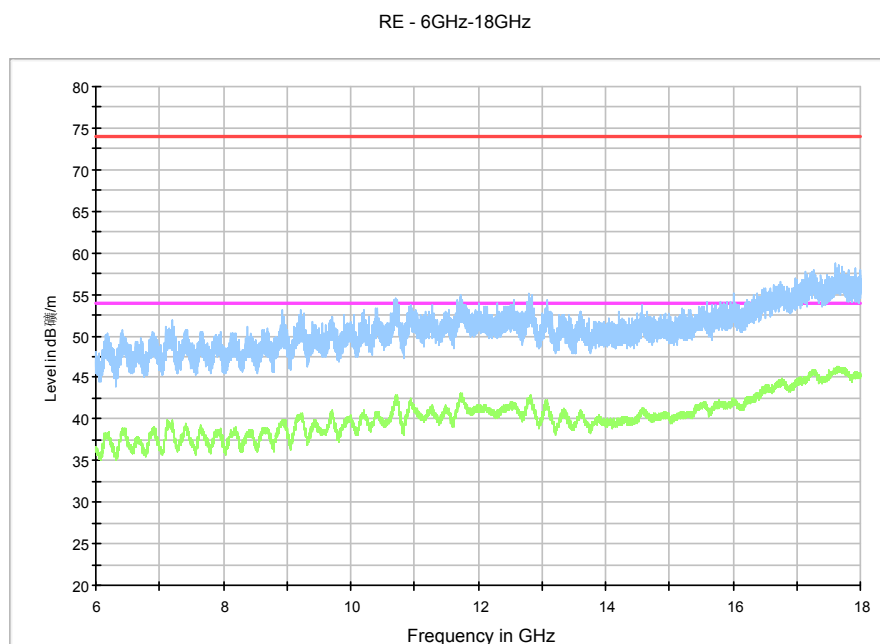


Fig. 140 Radiated Spurious Emission (802.11n-HT40, ch62, 6 GHz-18 GHz)

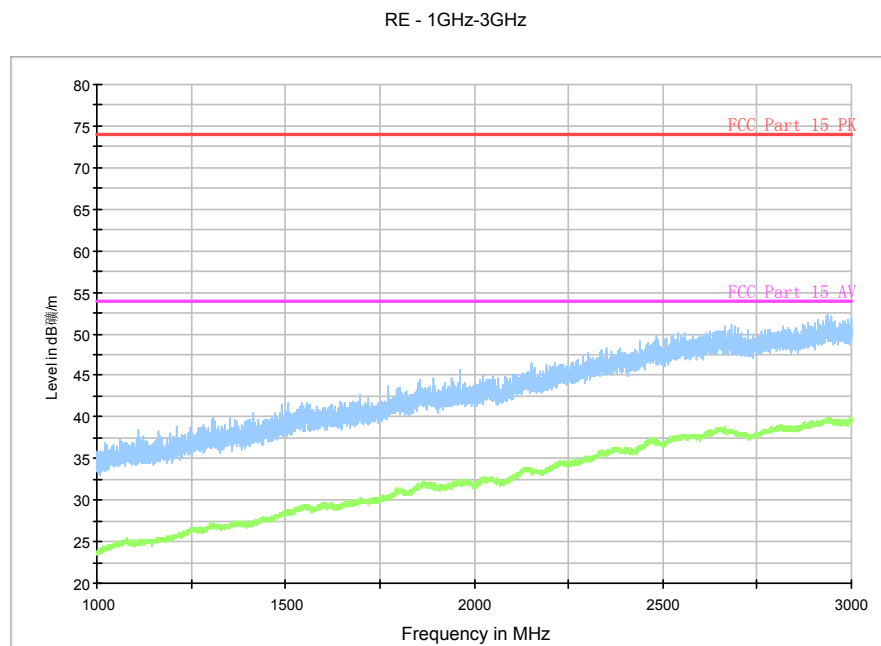


Fig. 141 Radiated Spurious Emission (802.11n-HT40, ch102, 1 GHz-3 GHz)

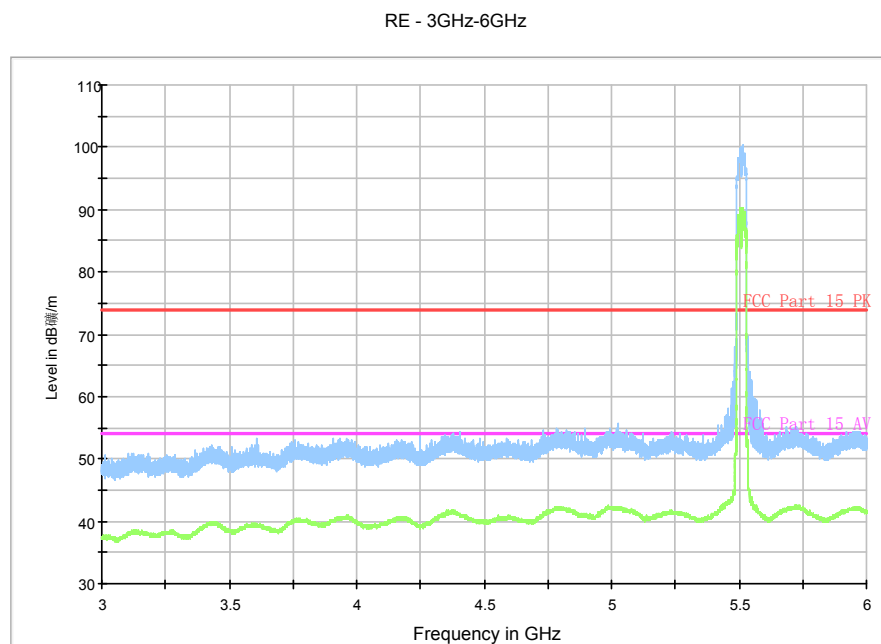


Fig. 142 Radiated Spurious Emission (802.11n-HT40, ch102, 3 GHz-6 GHz)

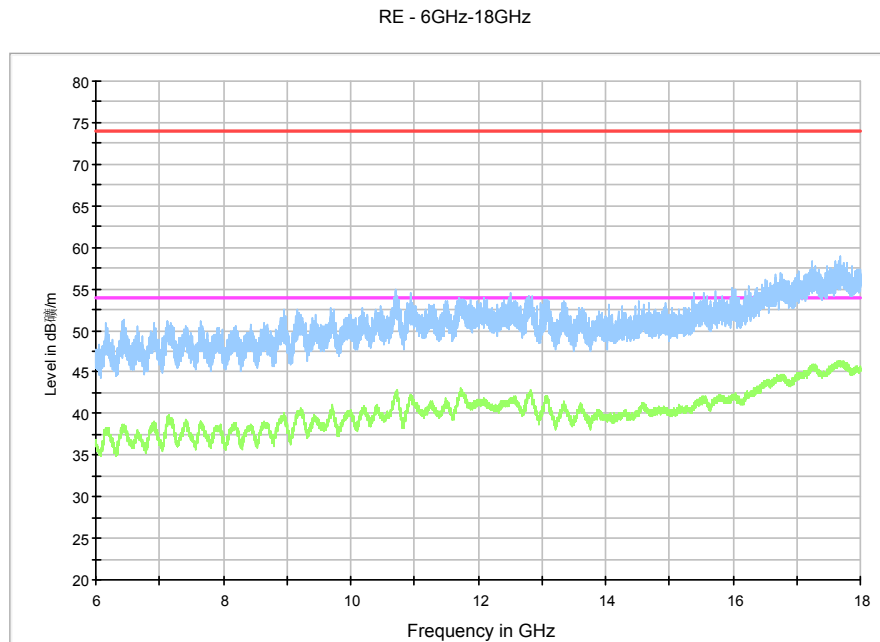


Fig. 143 Radiated Spurious Emission (802.11n-HT40, ch102, 6 GHz-18 GHz)

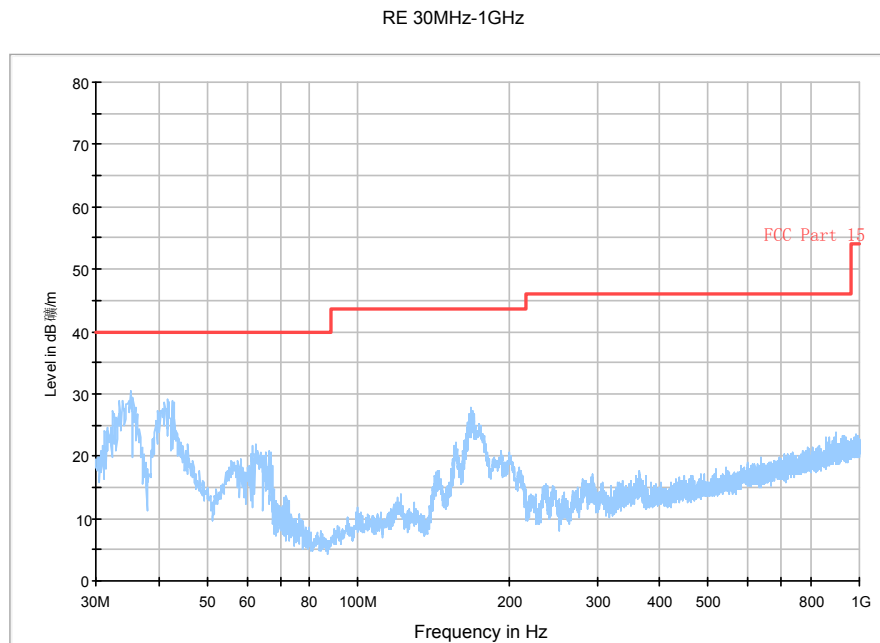


Fig. 144 Radiated Spurious Emission (802.11n-HT40, ch110, 30 MHz-1 GHz)

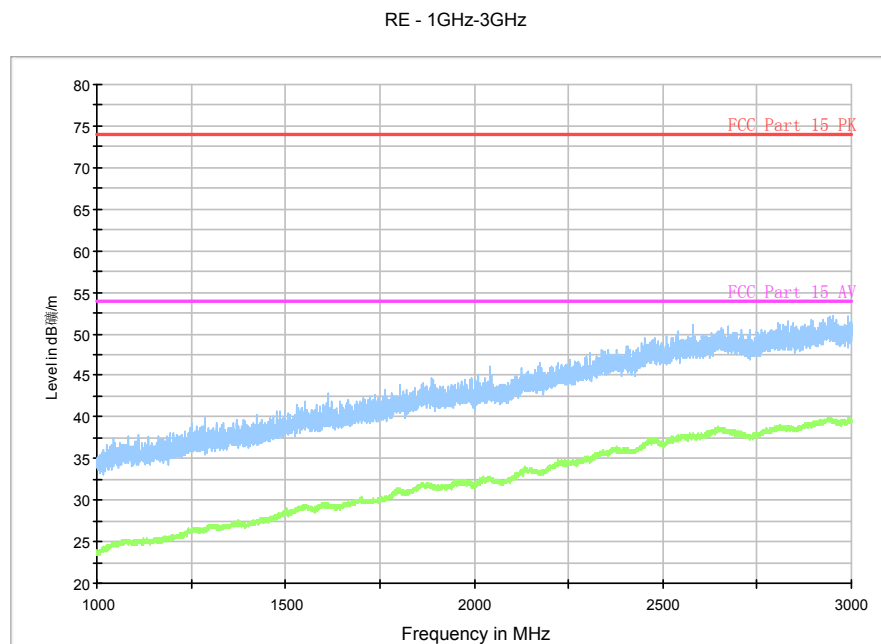


Fig. 145 Radiated Spurious Emission (802.11n-HT40, ch110, 1 GHz-3 GHz)

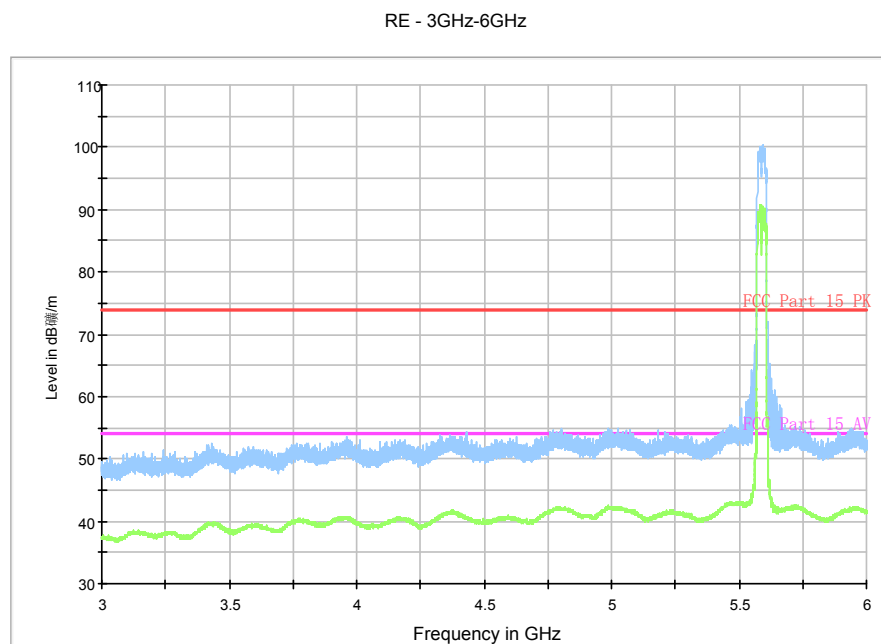


Fig. 146 Radiated Spurious Emission (802.11n-HT40, ch110, 3 GHz-6 GHz)

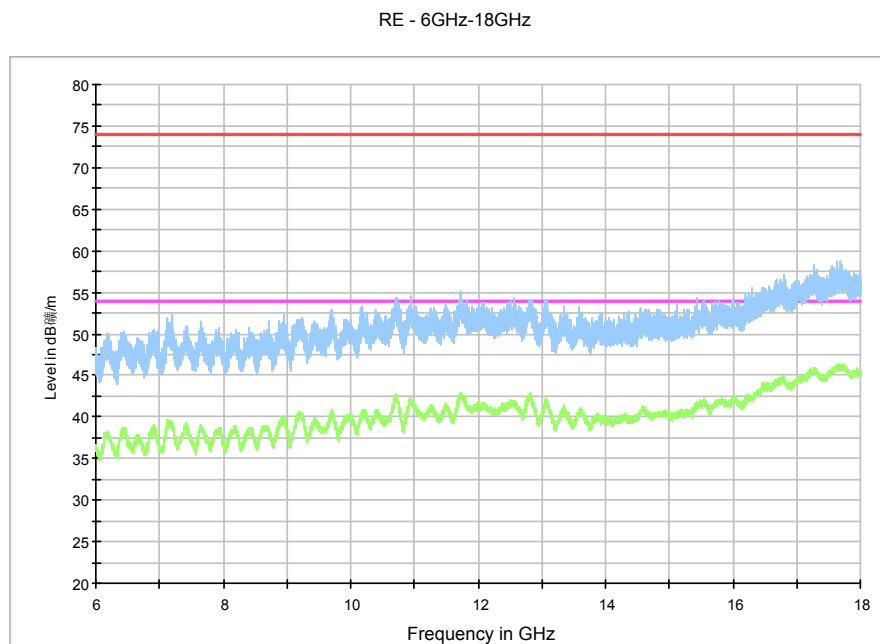


Fig. 147 Radiated Spurious Emission (802.11n-HT40, ch110, 6 GHz-18 GHz)

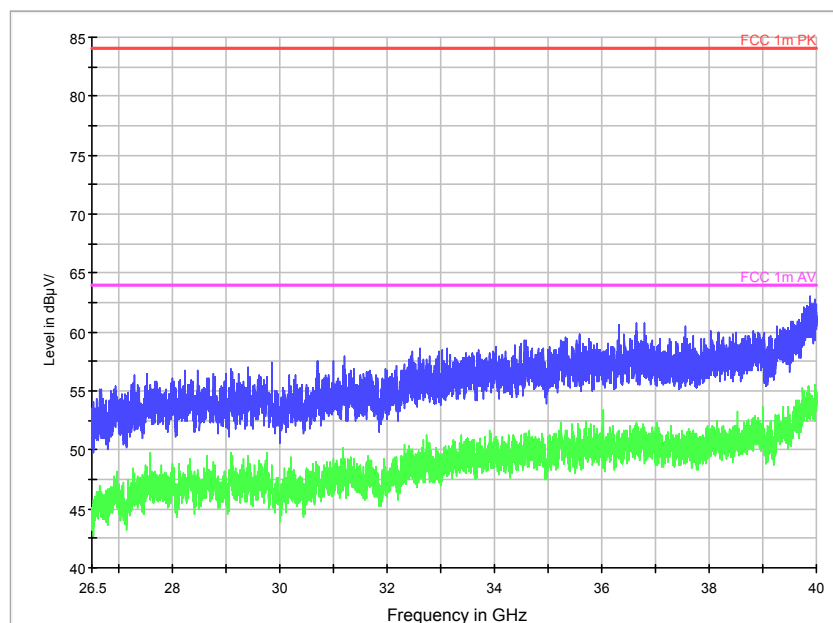


Fig. 148 Radiated Spurious Emission (802.11n-HT40, ch110 18 GHz-40 GHz)

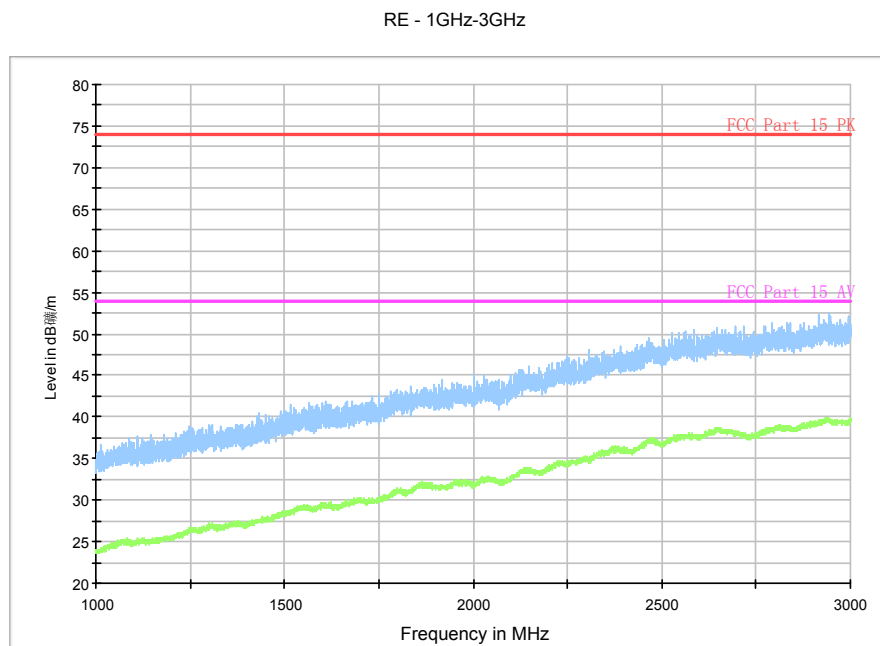


Fig. 149 Radiated Spurious Emission (802.11n-HT40, ch134, 1 GHz-3 GHz)

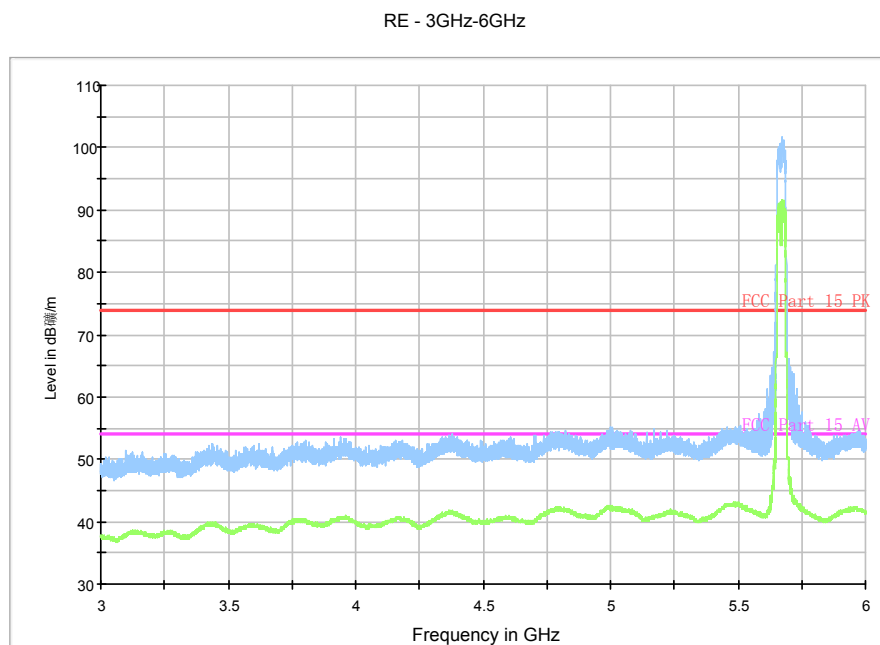


Fig. 150 Radiated Spurious Emission (802.11n-HT40, ch134, 3 GHz-6 GHz)

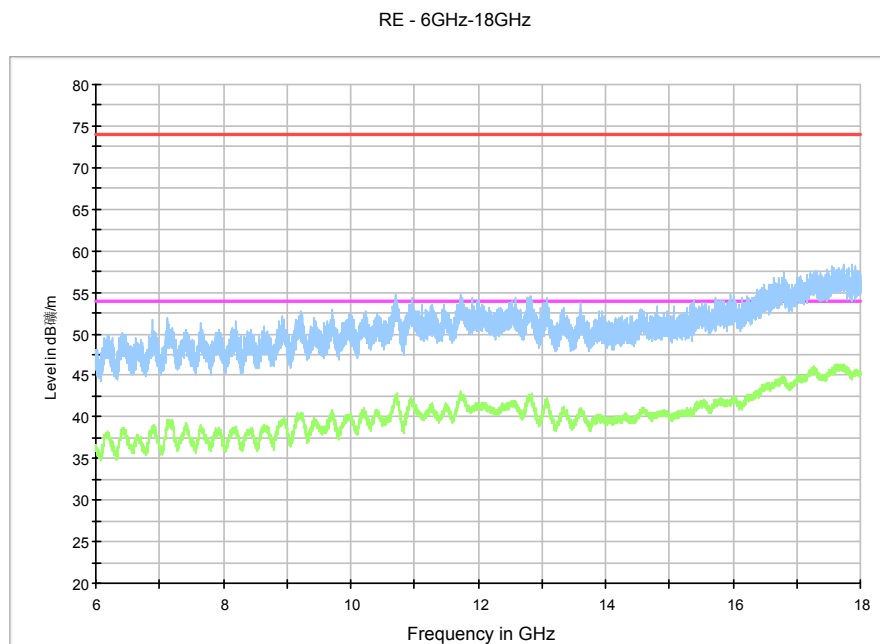


Fig. 151 Radiated Spurious Emission (802.11n-HT40, ch134, 6 GHz-18 GHz)

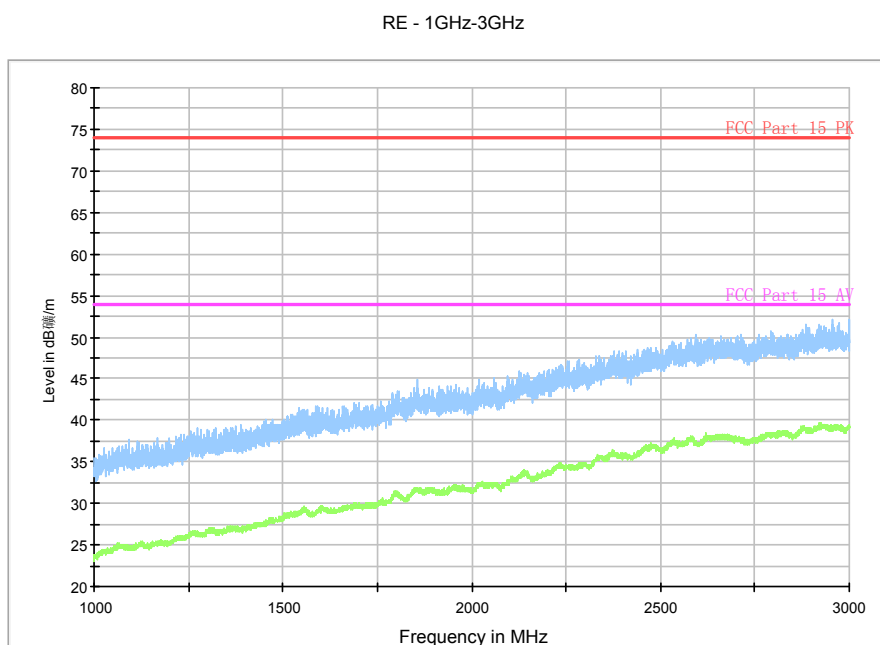


Fig. 152 Radiated Spurious Emission (802.11ac-HT80, ch42, 1 GHz-3 GHz)

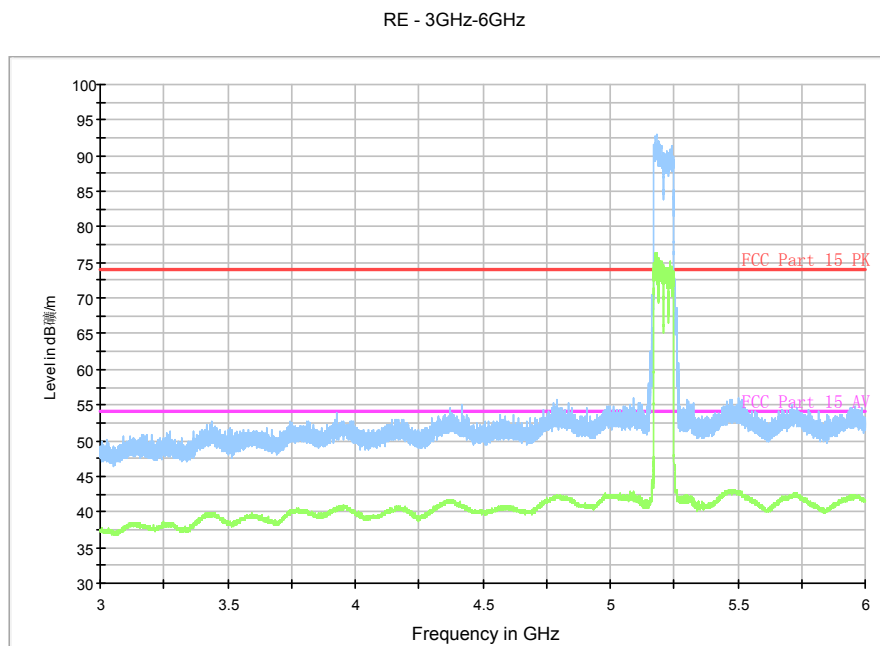


Fig. 153 Radiated Spurious Emission (802.11ac-HT80, ch42, 3 GHz-6 GHz)

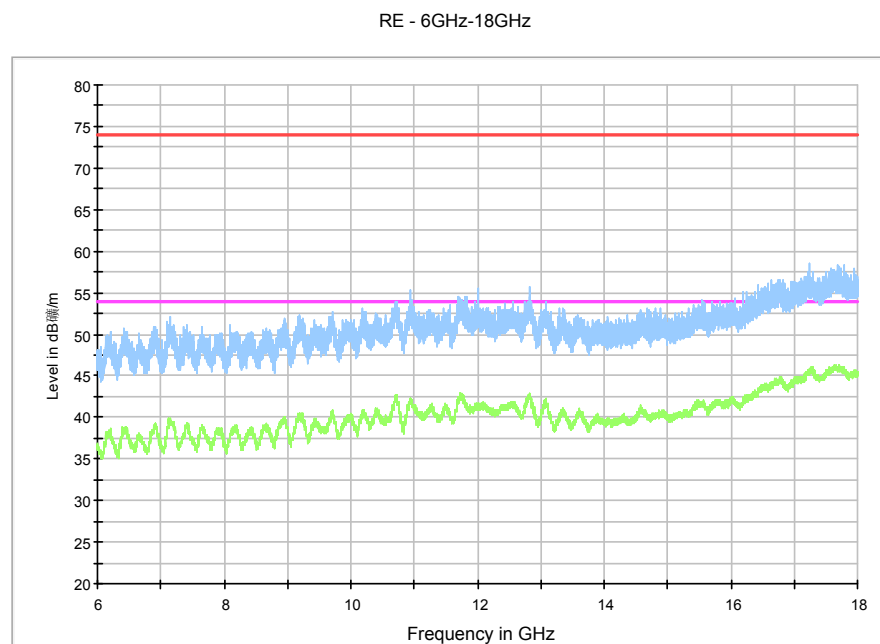


Fig. 154 Radiated Spurious Emission (802.11ac-HT80, ch42, 6 GHz-18 GHz)

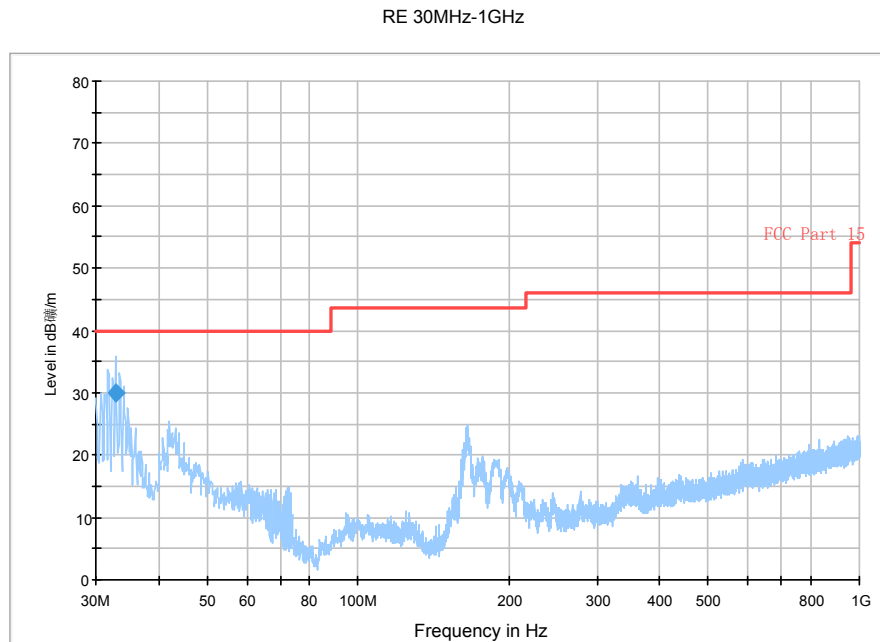


Fig. 155 Radiated Spurious Emission (802.11ac-HT80, ch58, 30MHz-1 GHz)

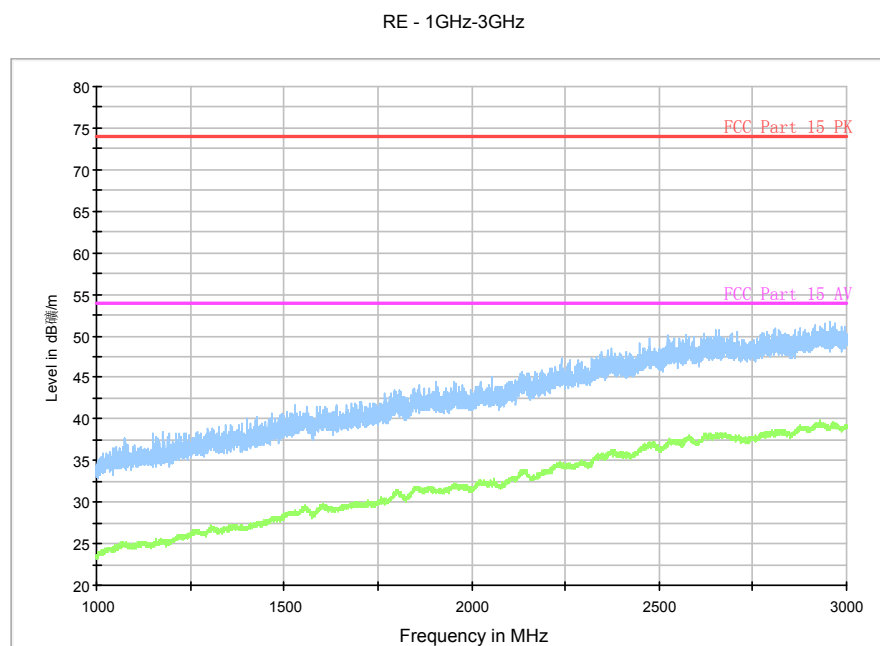


Fig. 156 Radiated Spurious Emission (802.11ac-HT80, ch58, 1 GHz-3 GHz)

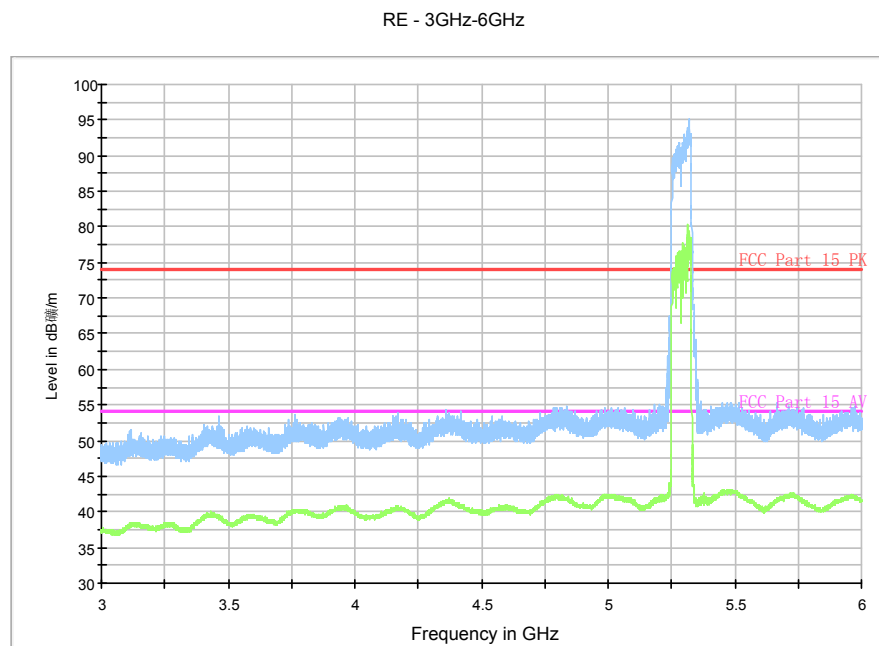


Fig. 157 Radiated Spurious Emission (802.11ac-HT80, ch58, 3 GHz-6 GHz)

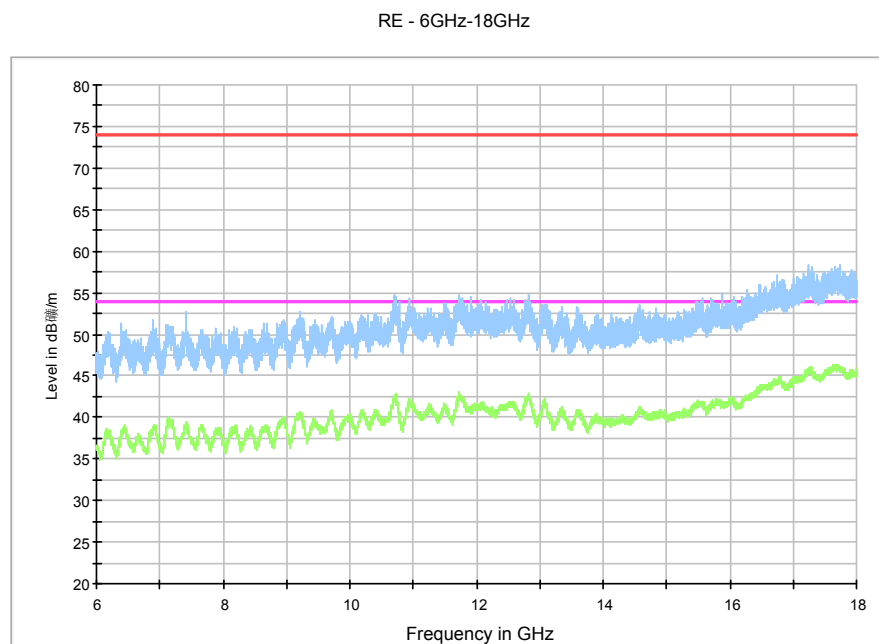


Fig. 158 Radiated Spurious Emission (802.11ac-HT80, ch58, 6 GHz-18 GHz)

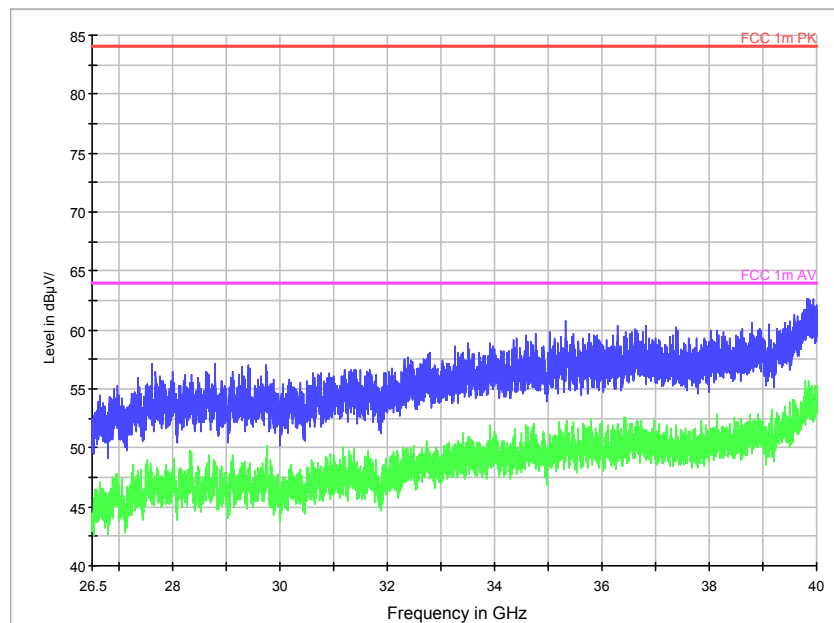


Fig. 159 Radiated Spurious Emission (802.11ac-HT80, ch58, 18 GHz-40GHz)

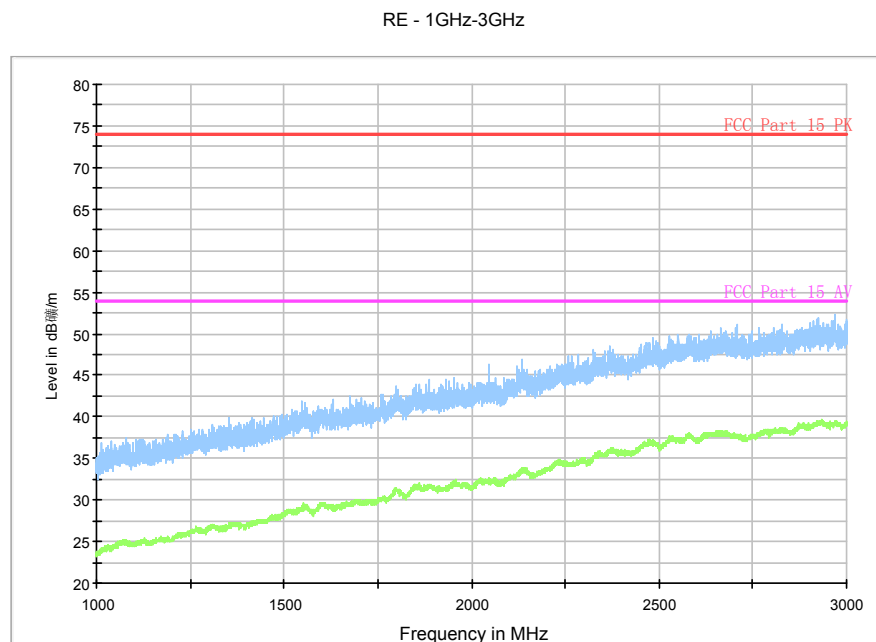


Fig. 160 Radiated Spurious Emission (802.11ac-HT80, ch106, 1 GHz-3GHz)

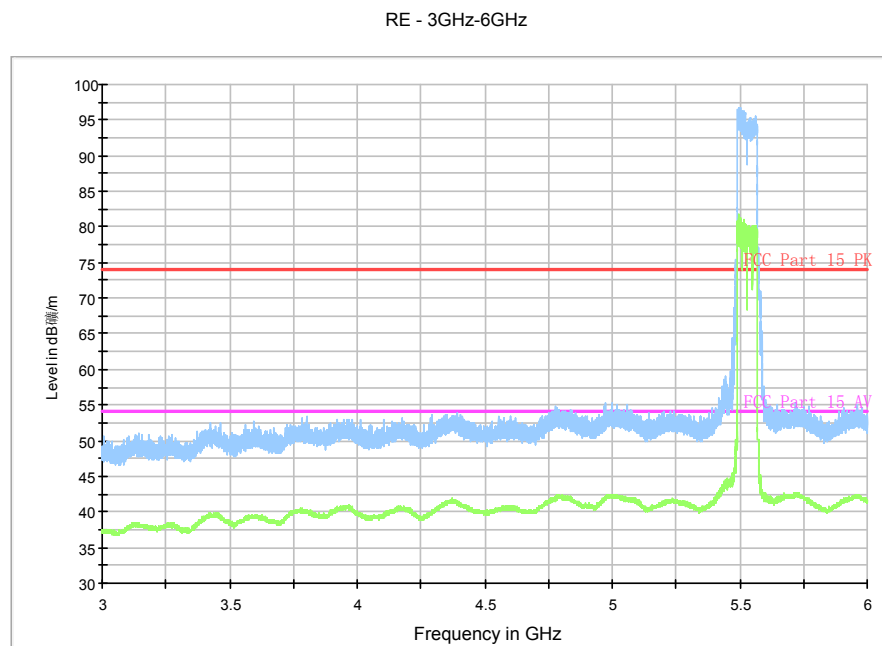


Fig. 161 Radiated Spurious Emission (802.11ac-HT80, ch106,3 GHz-6 GHz)

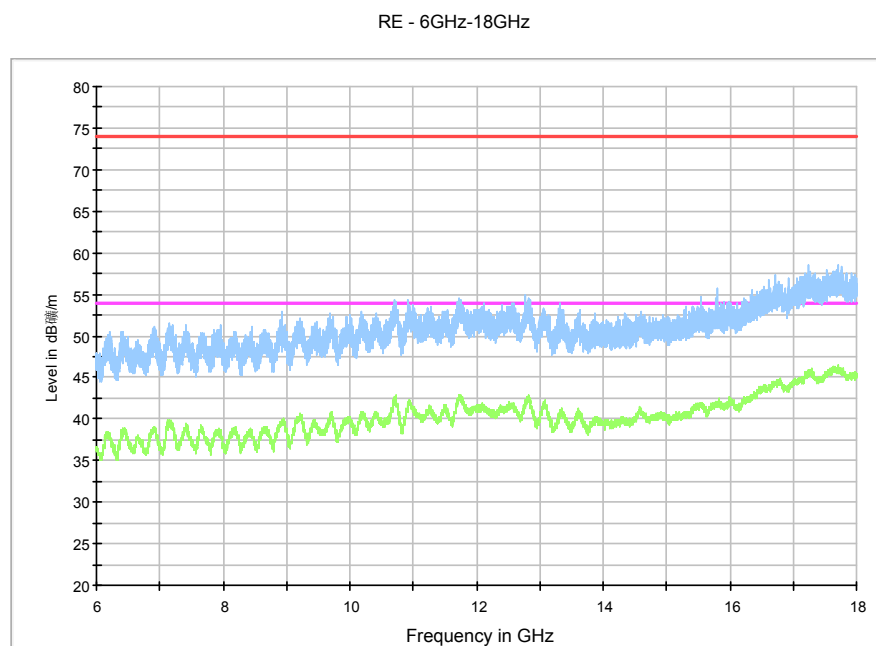


Fig. 162 Radiated Spurious Emission (802.11ac-HT80, ch106, 6 GHz-18 GHz)

A.7. Spurious Emissions Radiated < 30MHz

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

Frequency (MHz)	Field strength($\mu\text{V/m}$)	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.163	P

Conclusion: PASS

Test graphs as below:

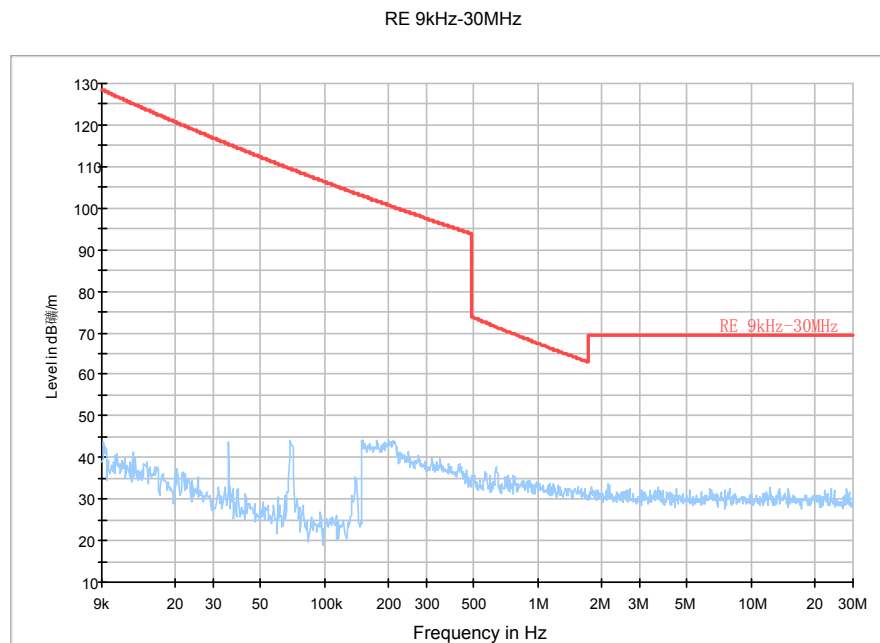


Fig. 163 Radiated Spurious Emission (802.11a, ch40, 9 kHz ~30 MHz)

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 (dBμV)	Result (dBμV)		Conclusion
		With charger		
		11a mode	Idle	
0.15 to 0.5	66 to 56	Fig. 127	Fig. 128	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 (dBμV)	Result (dBμV)		Conclusion
		With charger		
		11a mode	Idle	
0.15 to 0.5	56 to 46	Fig.164	Fig.165	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:

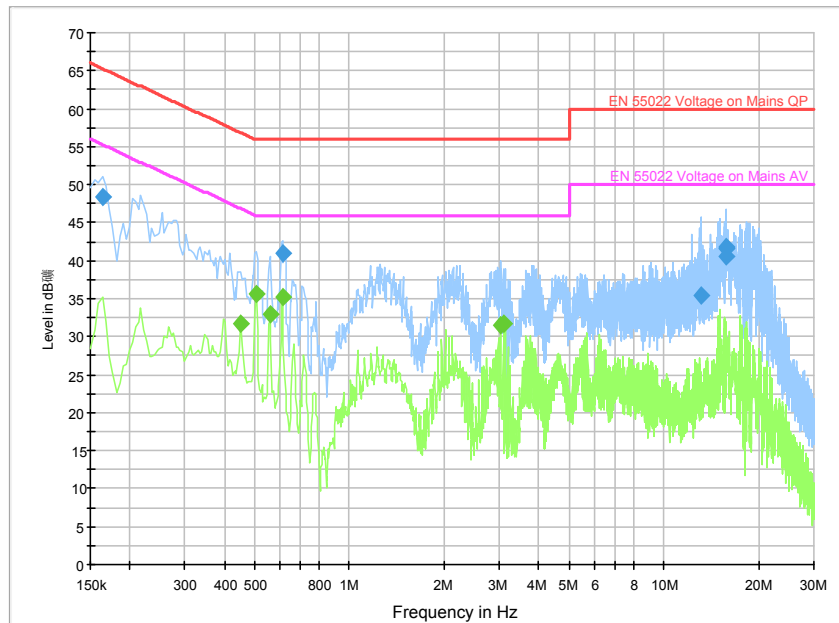


Fig. 164 Conducted Emission(802.11a, Ch40, TX)

Measurement Result:

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.163501	48.4	GND	N	10.3	16.8	65.3
0.613501	41.0	GND	L1	10.3	15.0	56.0
13.083001	35.4	GND	L1	10.7	24.6	60.0
15.738001	41.9	GND	L1	10.8	18.1	60.0
15.783001	41.7	GND	L1	10.8	18.3	60.0
15.841501	40.5	GND	L1	10.8	19.5	60.0

Measurement Result:

Frequency (MHz)	Average (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.451501	31.7	GND	L1	10.3	15.1	46.8
0.505501	35.5	GND	L1	10.3	10.5	46.0
0.559501	33.0	GND	L1	10.3	13.0	46.0
0.613501	35.1	GND	L1	10.3	10.9	46.0
3.030001	31.6	GND	L1	10.4	14.4	46.0
3.084001	31.8	GND	L1	10.4	14.2	46.0

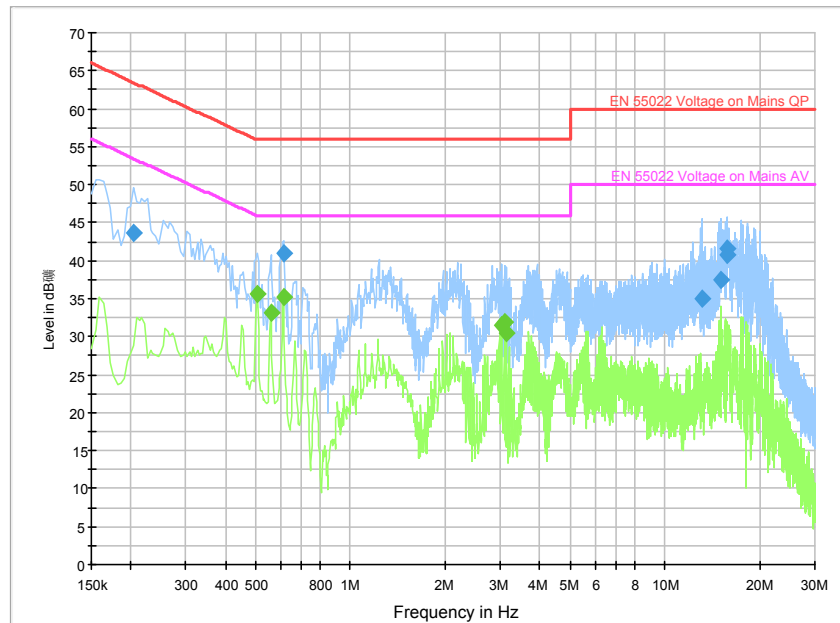


Fig. 165 Conducted Emission(802.11a, IDLE)

Measurement Result:

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.204001	43.6	GND	N	10.3	19.9	63.4
0.613501	41.1	GND	L1	10.3	14.9	56.0
13.078501	35.0	GND	L1	10.7	25.0	60.0
15.139501	37.4	GND	L1	10.7	22.6	60.0
15.742501	40.7	GND	L1	10.8	19.3	60.0
15.783001	41.7	GND	L1	10.8	18.3	60.0

Measurement Result:

Frequency (MHz)	Average (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.505501	35.6	GND	L1	10.3	10.4	46.0
0.559501	33.1	GND	L1	10.3	12.9	46.0
0.613501	35.3	GND	L1	10.3	10.7	46.0
3.030001	31.5	GND	L1	10.4	14.5	46.0
3.084001	31.8	GND	L1	10.4	14.2	46.0
3.138001	30.5	GND	L1	10.4	15.5	46.0

A.8. 99% Occupied bandwidth

Measurement Limit:

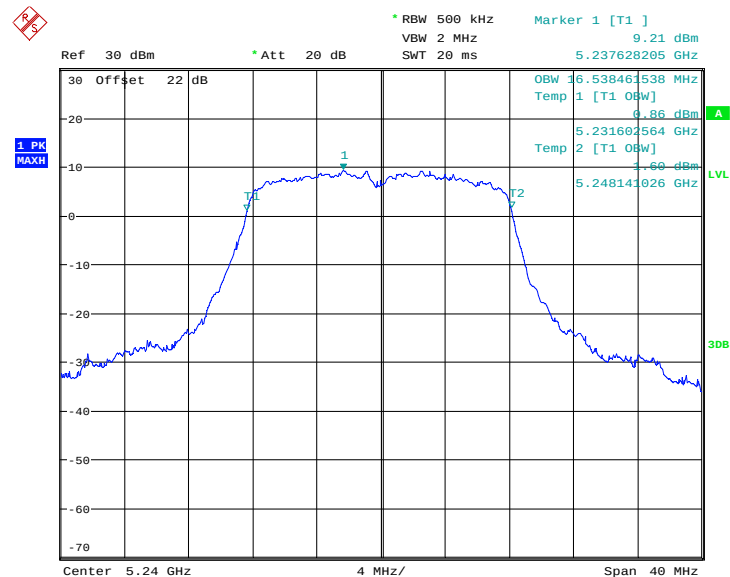
Standard	Limit (kHz)
FCC 47 CFR Part 15.407	/

The measurement is made according to KDB 789033

Mode	Channel	99% Occupied bandwidth (MHz)		conclusion
802.11a	5240 MHz	Fig.166	16.54	P
802.11n-20	5240 MHz	Fig.167	17.56	P
802.11n-40	5230 MHz	Fig.168	36.03	P
802.11ac-80	5210 MHz	Fig.169	75.13	

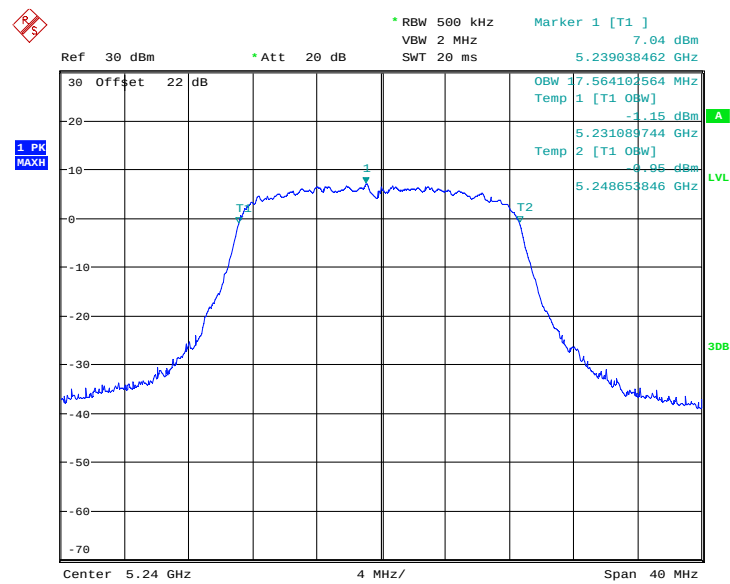
Conclusion: PASS

Test graphs as below:



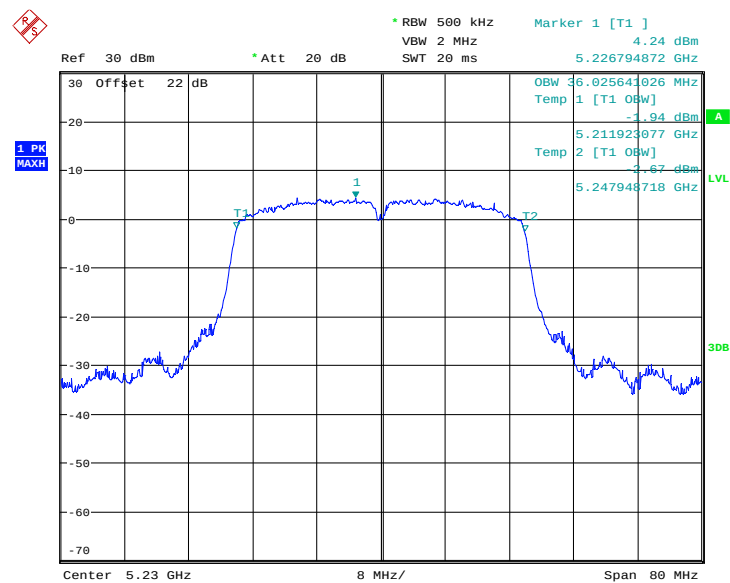
Date: 30.MAY.2016 15:29:12

Fig. 166 99% Occupied bandwidth (802.11a,ch48)



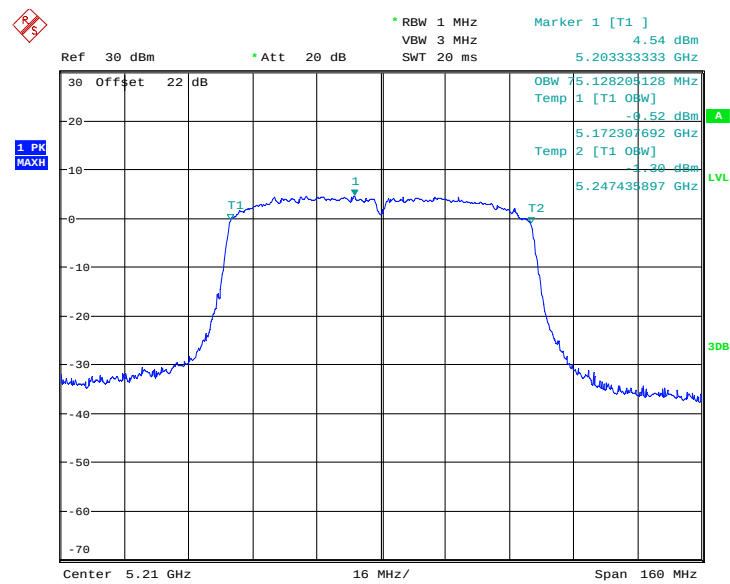
Date: 30.MAY.2016 15:30:12

Fig. 167 99% Occupied bandwidth (802.11n-20,ch48)



Date: 30.MAY.2016 15:35:26

Fig. 168 99% Occupied bandwidth (802.11n-40,ch46)



Date: 30.MAY.2016 15:38:12

Fig. 169 99% Occupied bandwidth (802.11ac-80,ch42)

A.9. Frequency Stability

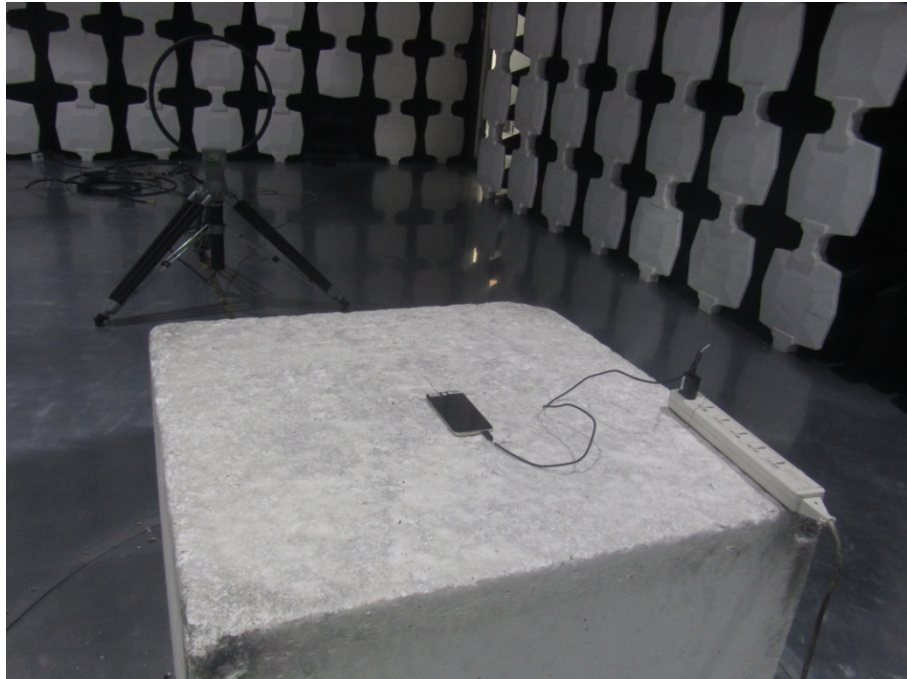
Manufacturers ensured the EUT meet the requirement of frequency stability, such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

A.10. Power control

A Transmission Power Control mechanism is not required for systems with an e.i.r.p. of less than 27dBm (500 mW).

ANNEX B: PHOTOGRAPHS OF THE TEST SET-UP

Layout of Radiated Spurious Emission Test



ANNEX C: Accreditation Certificate

 China National Accreditation Service for Conformity Assessment LABORATORY ACCREDITATION CERTIFICATE (No. CNAS L0570) Telecommunication Technology Labs, Academy of Telecommunication Research, MIIT <u>No.52, Huayuan North Road, Haidian District, Beijing, China</u> <u>No.51, Xueyuan Road, Haidian District, Beijing, China</u> <i>to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing and calibration.</i> <i>The scope of accreditation is detailed in the attached schedule bearing the same accreditation number as above. The schedule forms an integral part of this certificate.</i> Date of Issue: 2014-10-29 Date of Expiry: 2017-06-19 Date of Initial Accreditation: 1998-07-03  Signed on behalf of China National Accreditation Service for Conformity Assessment China National Accreditation Service for Conformity Assessment (CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China (CNCA) to operate the national accreditation schemes for conformity assessment. CNAS is the signatory to International Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (ILAC MRA) and Asia Pacific Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (APLAC MRA). No.CNAS AL 2 0011149
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