

Fig.41 Conducted Spurious Emission (30MHz -1GHz, 802.11g, CH11)

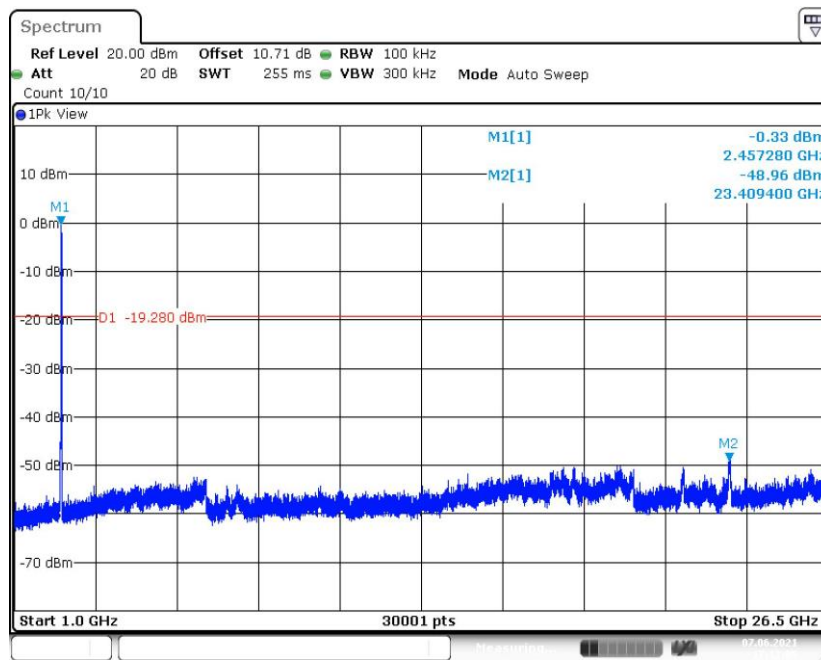


Fig.42 Conducted Spurious Emission (1GHz-26.5GHz, 802.11g, CH11)

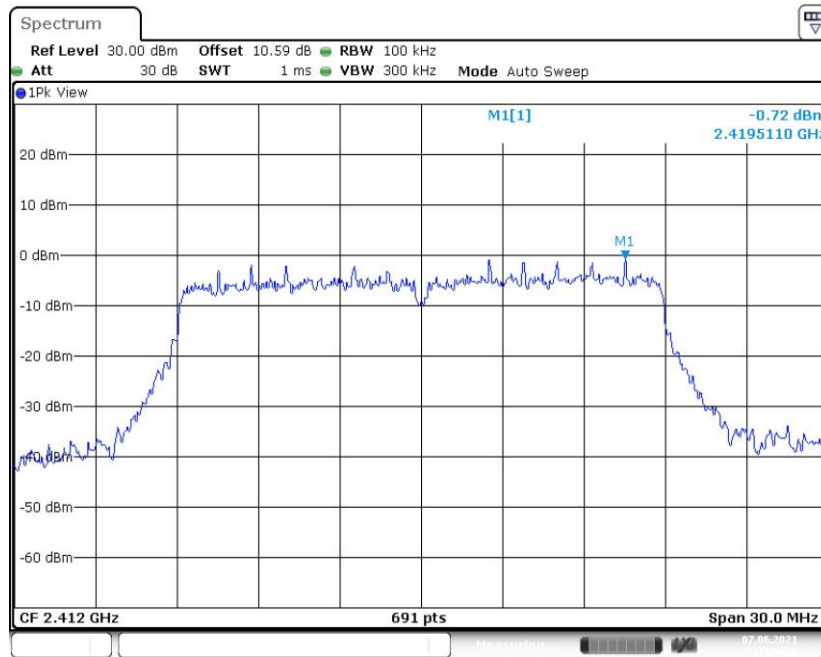


Fig.43 Conducted Spurious Emission (Center Frequency, 802.11n-HT20, CH1)

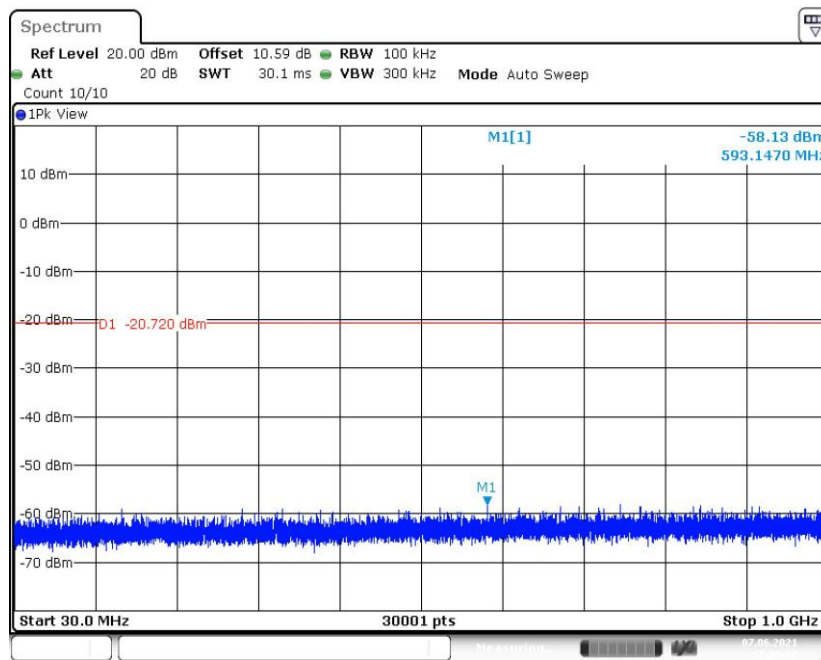


Fig.44 Conducted Spurious Emission (30MHz -1GHz, 802.11n-HT20, CH1)

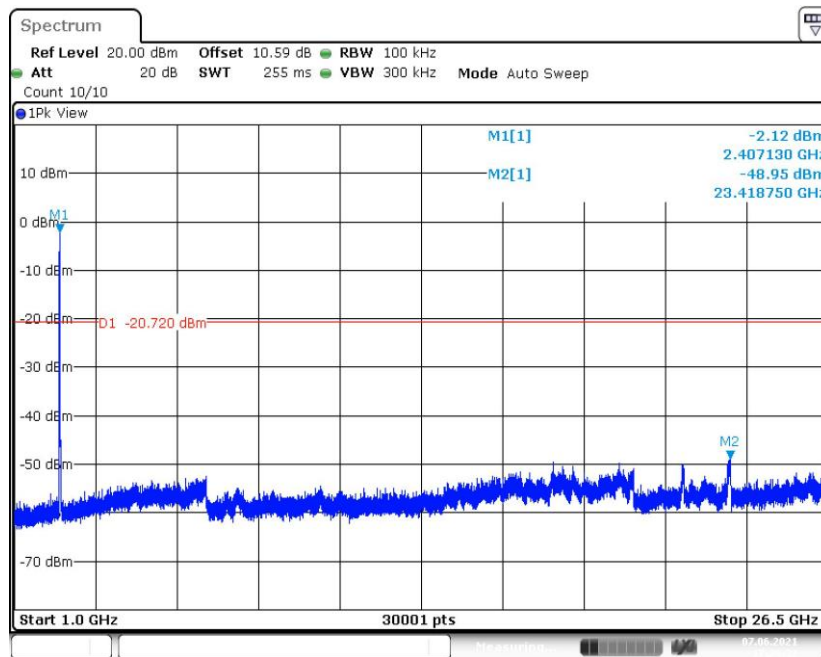


Fig.45 Conducted Spurious Emission (1GHz-26.5GHz, 802.11n-HT20, CH1)

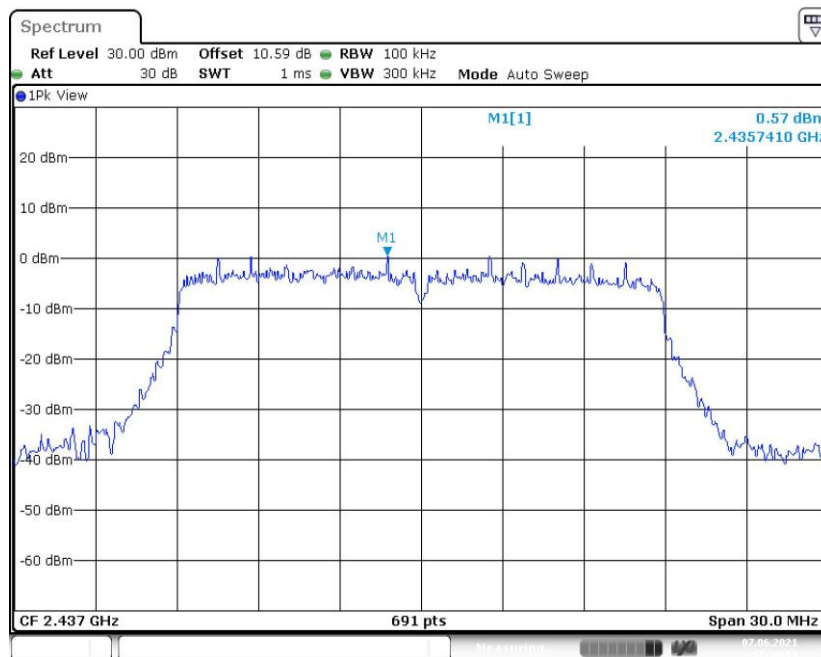


Fig.46 Conducted Spurious Emission (Center Frequency, 802.11n-HT20, CH6)

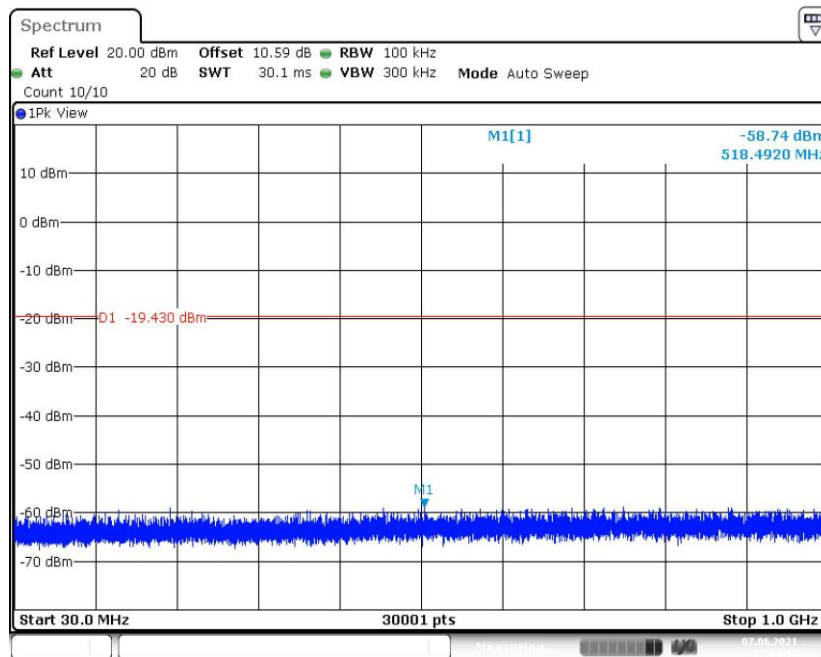


Fig.47 Conducted Spurious Emission (30MHz -1GHz, 802.11n-HT20, CH6)

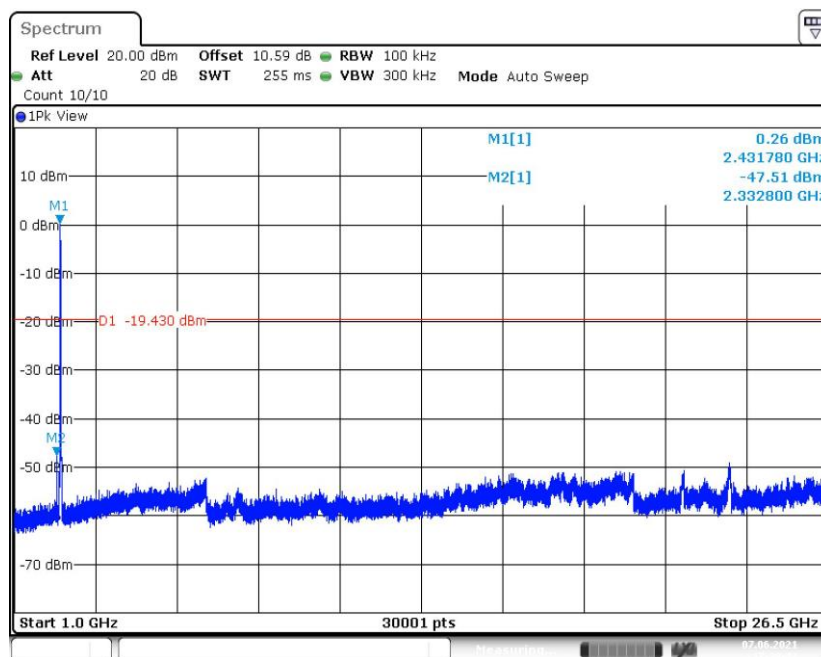


Fig.48 Conducted Spurious Emission (1GHz-26.5GHz, 802.11n-HT20, CH6)

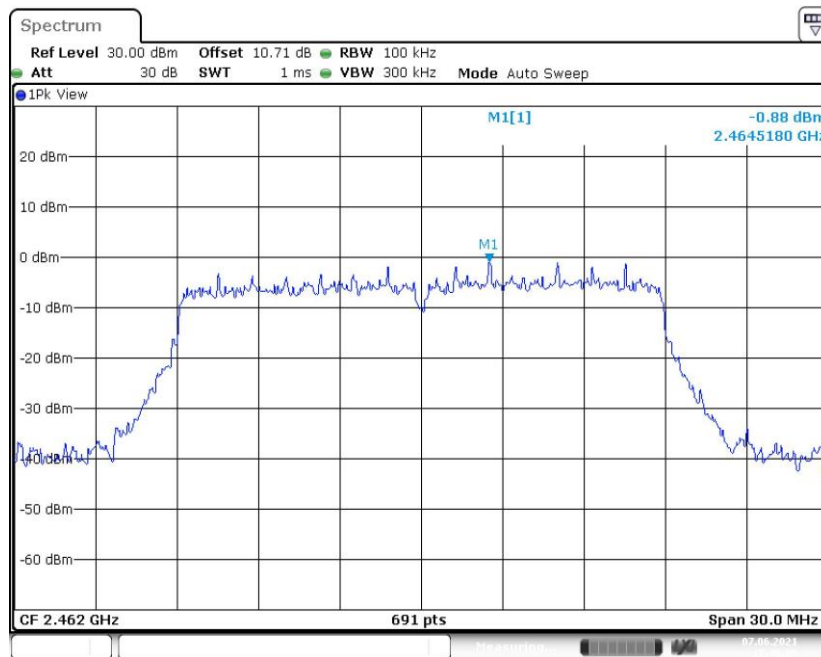


Fig.49 Conducted Spurious Emission (Center Frequency, 802.11n-HT20, CH11)

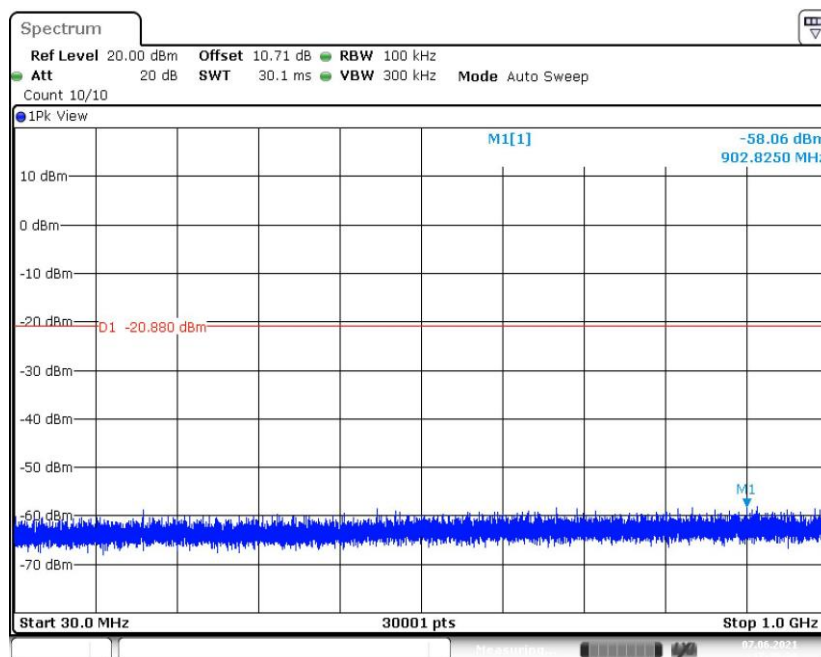


Fig.50 Conducted Spurious Emission (30MHz -1GHz, 802.11n-HT20, CH11)

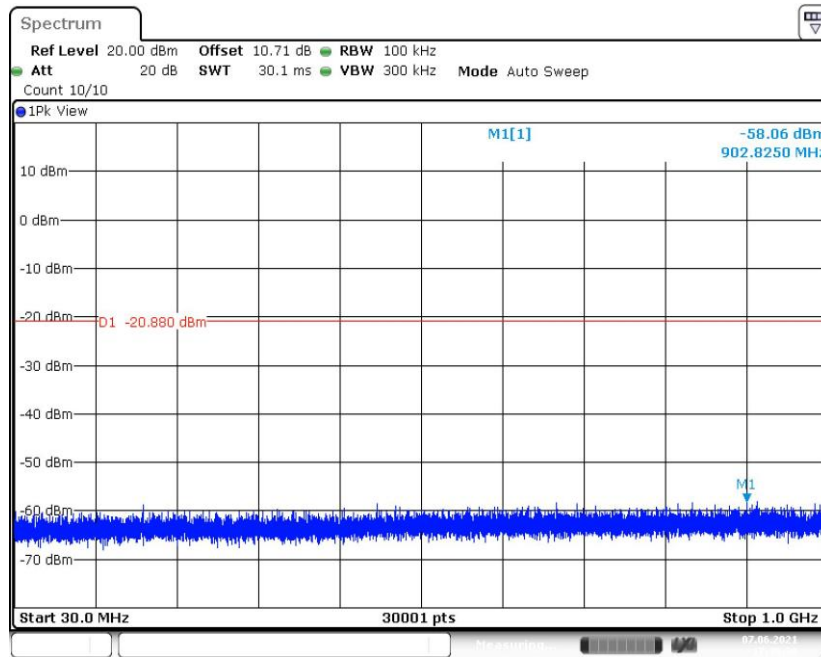


Fig.51 Conducted Spurious Emission (1GHz-26.5GHz, 802.11n-HT20, CH11)

A.6 Radiated Emission

Measurement Limit:

Standard	Limit (dBm)
FCC 47 CFR Part 15.247, 15.205, 15.209	20dBm below peak output power

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($\mu\text{V}/\text{m}$)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Condition:

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	120kHz/300kHz	5
1000-4000	1MHz/3MHz	15
4000-18000	1MHz/3MHz	40
18000-26500	1MHz/3MHz	20

Note:

According to the performance evaluation, the radiated emission margin of EUT is over 20dB in the band below 30MHz. Therefore, the measurement starts from 30MHz to tenth harmonic. The measurement results include the horizontal polarization and vertical polarization measurements.



Measurement Results:

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	CH 1	1 GHz ~18 GHz	Fig.52	P
	CH 6	1 GHz ~18 GHz	Fig.53	P
	CH 11	1 GHz ~18 GHz	Fig.54	P
	Restricted Band (CH1)	2.38 GHz ~ 2.45 GHz	Fig.55	P
	Restricted Band (CH11)	2.45 GHz ~ 2.5 GHz	Fig.56	P
802.11g	CH 1	1 GHz ~18 GHz	Fig.57	P
	CH 6	1 GHz ~18 GHz	Fig.58	P
	CH 11	1 GHz ~18 GHz	Fig.59	P
	Restricted Band (CH1)	2.38 GHz ~ 2.45 GHz	Fig.60	P
	Restricted Band (CH11)	2.45 GHz ~ 2.5 GHz	Fig.61	P
802.11n -HT20	CH 1	1 GHz ~18 GHz	Fig.62	P
	CH 6	1 GHz ~18 GHz	Fig.63	P
	CH 11	1 GHz ~18 GHz	Fig.64	P
	Restricted Band (CH1)	2.38 GHz ~ 2.45 GHz	Fig.65	P
	Restricted Band (CH11)	2.45 GHz ~ 2.5 GHz	Fig.66	P
/	All Channels	9 kHz ~30 MHz	Fig.67	P
		30 MHz ~1 GHz	Fig.68	P
		18 GHz ~26.5 GHz	Fig.69	P

Worst-Case Result:

802.11b CH6 (1-18GHz)

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
4874.100000	47.57	74.00	26.43	H	3.7
7314.428572	45.34	74.00	28.66	V	5.1
9451.714286	46.46	74.00	27.54	V	7.0
12187.285714	49.01	74.00	24.99	V	10.8
14916.428572	51.17	74.00	22.83	V	12.9
17934.857143	55.06	74.00	18.94	V	19.0

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
4874.100000	34.85	54.00	19.15	H	3.7
7314.428572	32.75	54.00	21.25	V	5.1
9451.714286	33.77	54.00	20.23	V	7.0
12187.285714	36.66	54.00	17.34	V	10.8
14916.428572	39.09	54.00	14.91	V	12.9
17934.857143	43.17	54.00	10.83	V	19.0



802.11g CH6 (1GHz-18GHz)

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
4635.600000	47.62	74.00	26.38	H	4.7
7049.142857	45.76	74.00	28.24	H	5.1
8993.142857	46.60	74.00	27.40	H	6.5
10912.714286	46.13	74.00	27.87	H	9.4
14261.142857	46.26	74.00	27.74	H	11.4
16984.714286	52.18	74.00	21.82	H	18.3

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
4635.600000	35.10	54.00	18.90	H	4.7
7049.142857	36.45	54.00	17.55	H	5.1
8993.142857	36.45	54.00	17.55	H	6.5
10912.714286	38.06	54.00	15.94	H	9.4
14261.142857	40.68	54.00	13.32	H	11.4
16984.714286	43.56	54.00	10.44	H	18.3

802.11n-HT20 CH6 (1GHz-18GHz)

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
4806.600000	47.54	74.00	26.46	V	4.0
8263.714286	46.23	74.00	27.77	V	5.9
11205.428572	48.23	74.00	25.77	H	9.7
13347.857143	48.92	74.00	25.08	V	11.3
14899.285714	51.55	74.00	22.45	H	13.0
16932.000000	54.75	74.00	19.25	H	18.2

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
4806.600000	34.76	54.00	19.24	V	4.0
8263.714286	33.93	54.00	20.07	V	5.9
11205.428572	35.62	54.00	18.38	H	9.7
13347.857143	36.78	54.00	17.22	V	11.3
14899.285714	39.27	54.00	14.73	H	13.0
16932.000000	42.60	54.00	11.40	H	18.2

Note:

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss", and Antenna Factor, 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} +Cable Loss +Antenna Factor-Gain of the preamplifier.

See below for test graphs.

Conclusion: PASS

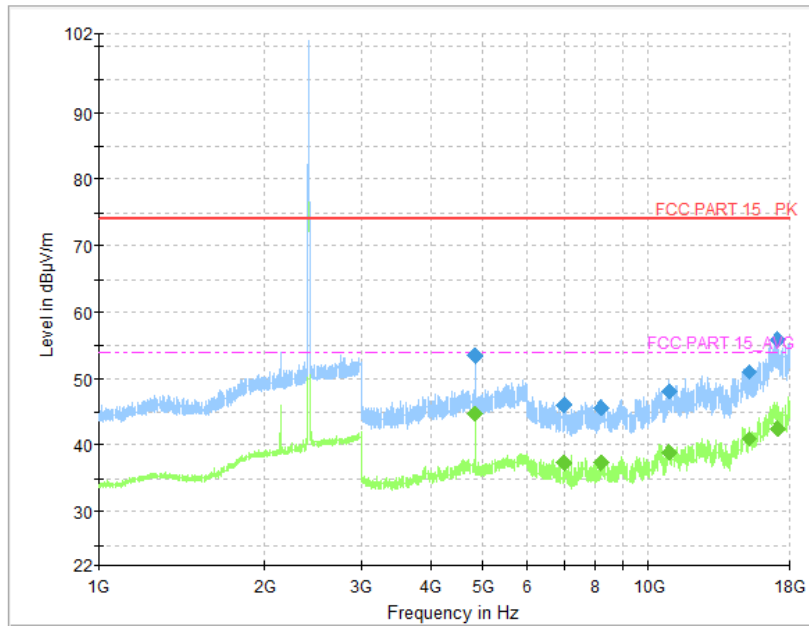


Fig.52 Radiated Spurious Emission (802.11b, CH1, 1 GHz-18GHz)

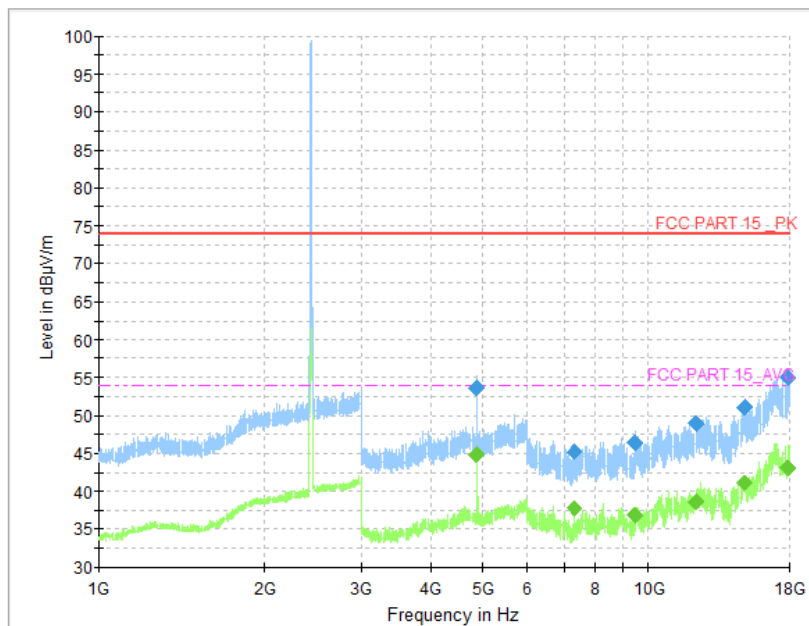


Fig.53 Radiated Spurious Emission (802.11b, CH6, 1 GHz-18GHz)

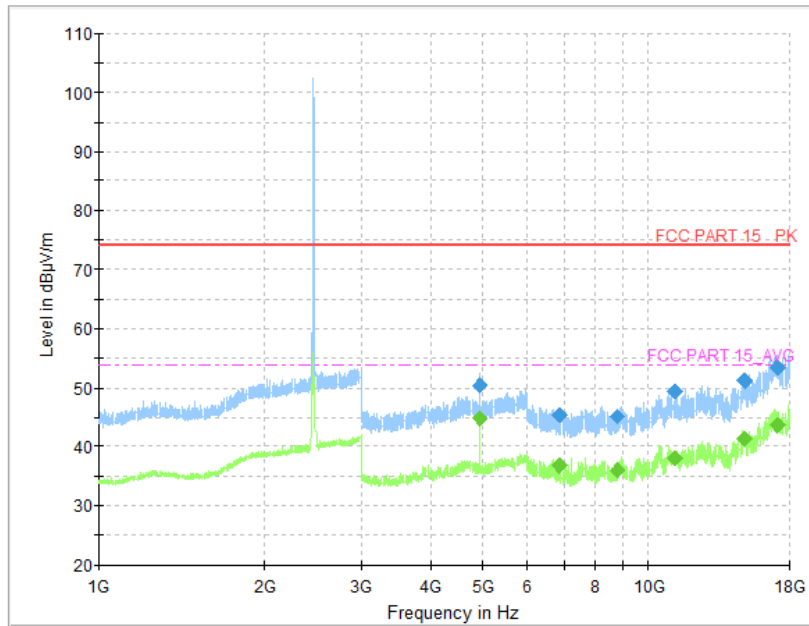


Fig.54 Radiated Spurious Emission (802.11b, CH11, 1 GHz-18GHz)

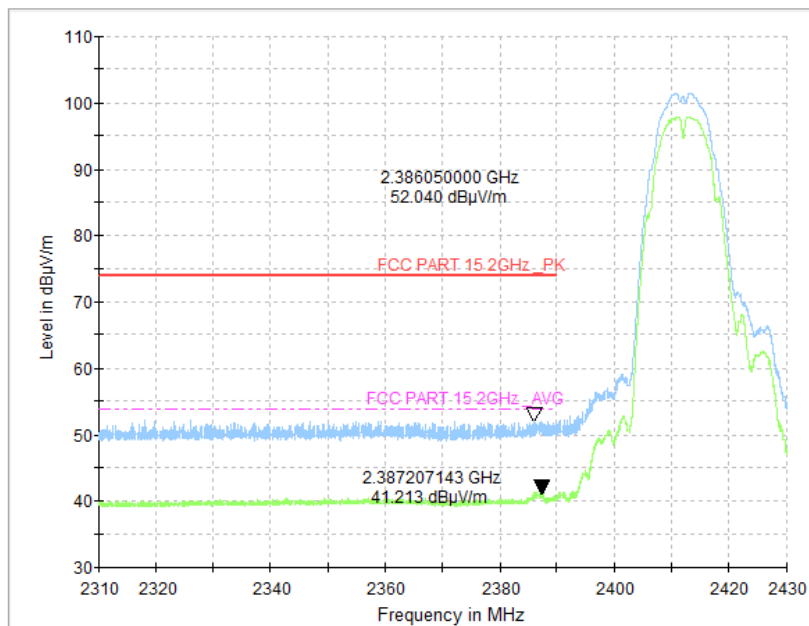


Fig.55 Radiated Restricted Band (802.11b, CH1, 2.38GHz~2.45GHz)

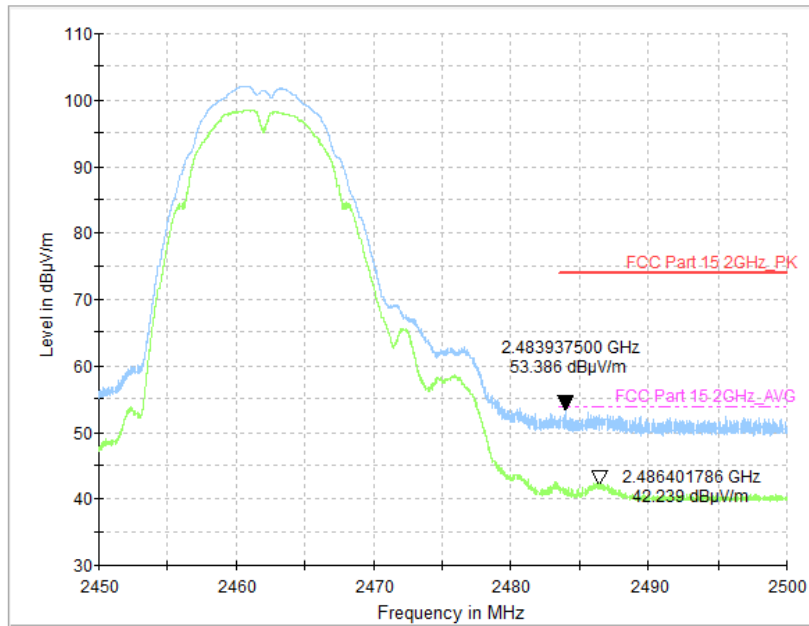


Fig.56 Radiated Restricted Band (802.11b, CH11, 2.45GHz~2.5GHz)

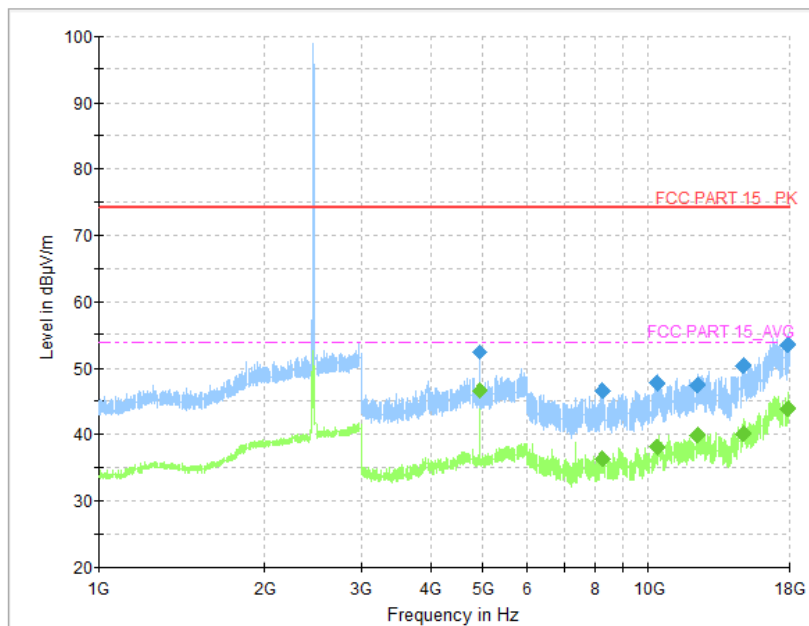


Fig.57 Radiated Spurious Emission (802.11g, CH1, 1 GHz-18 GHz)

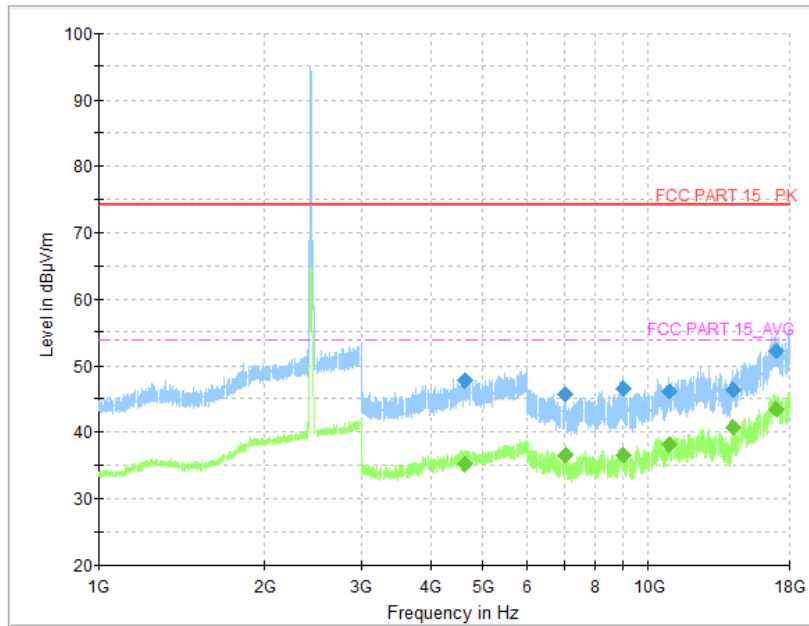


Fig.58 Radiated Spurious Emission (802.11g, CH6, 1 GHz-18 GHz)

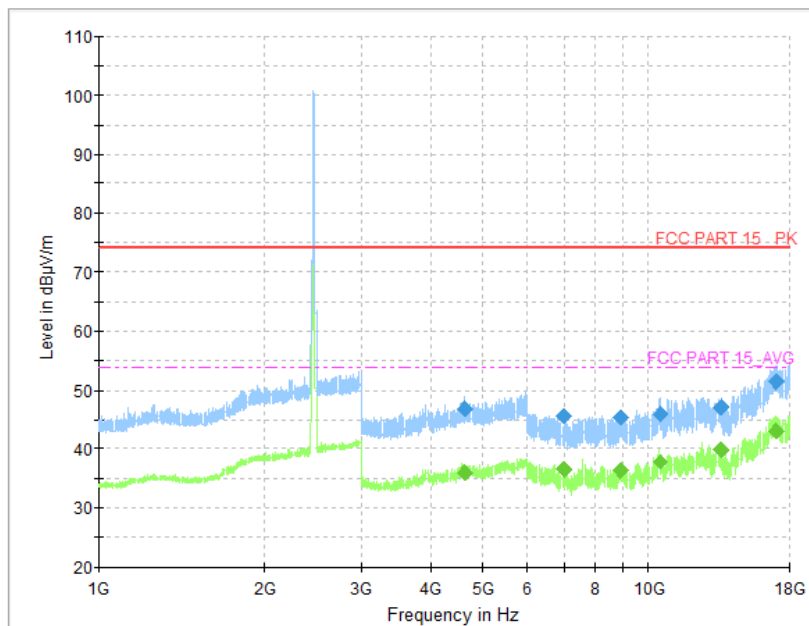


Fig.59 Radiated Spurious Emission (802.11g, CH11, 1 GHz-18 GHz)

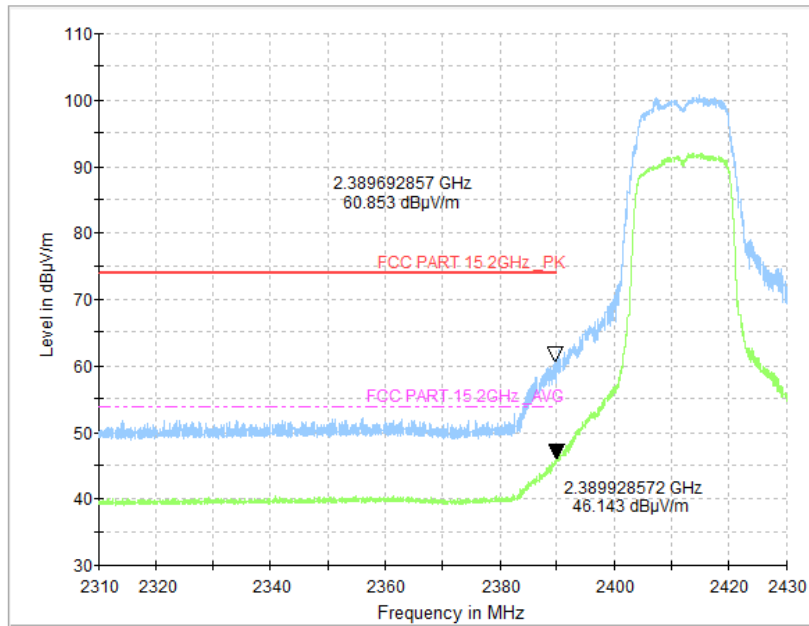


Fig.60 Radiated Restricted Band (802.11g, CH1, 2.38GHz~2.45GHz)

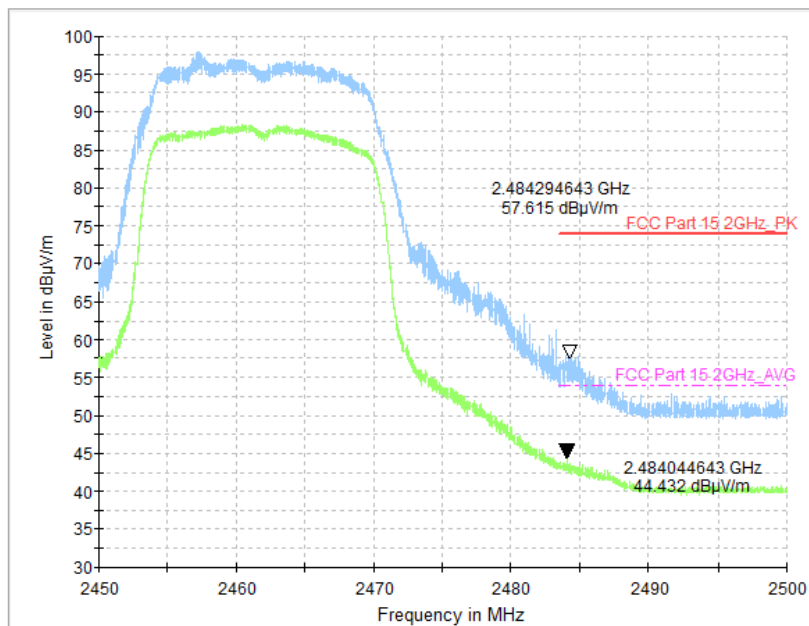


Fig.61 Radiated Restricted Band (802.11g, CH11, 2.45GHz~2.5GHz)

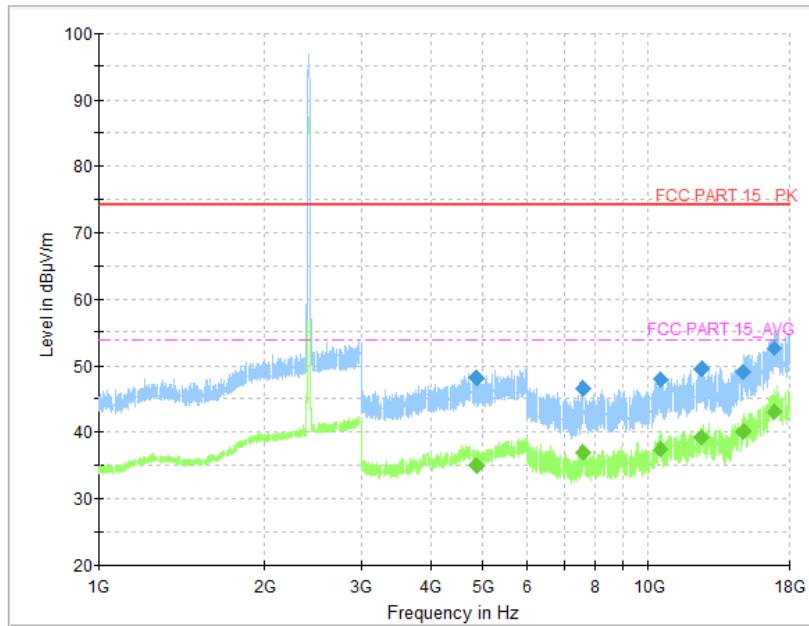


Fig.62 Radiated Spurious Emission (802.11n-HT20, CH1, 1 GHz-18 GHz)

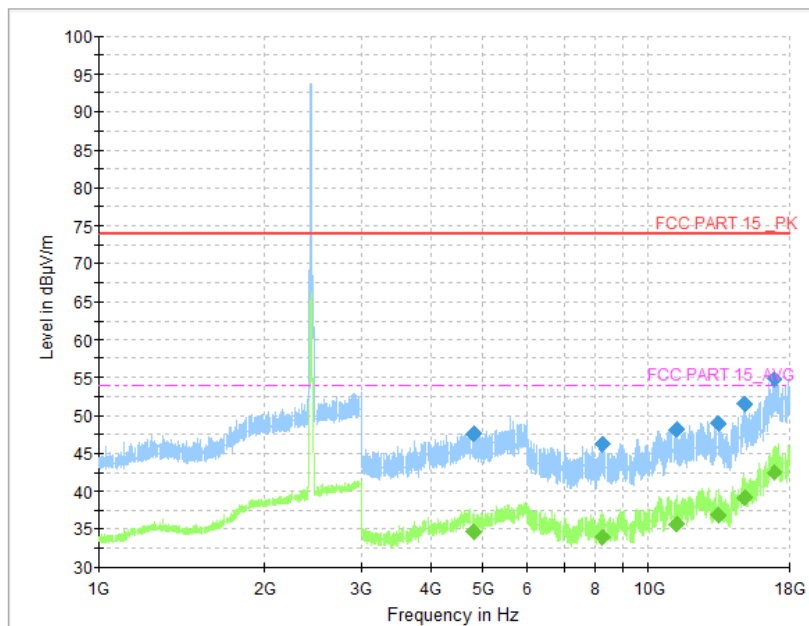


Fig.63 Radiated Spurious Emission (802.11n-HT20, CH6, 1 GHz-18 GHz)

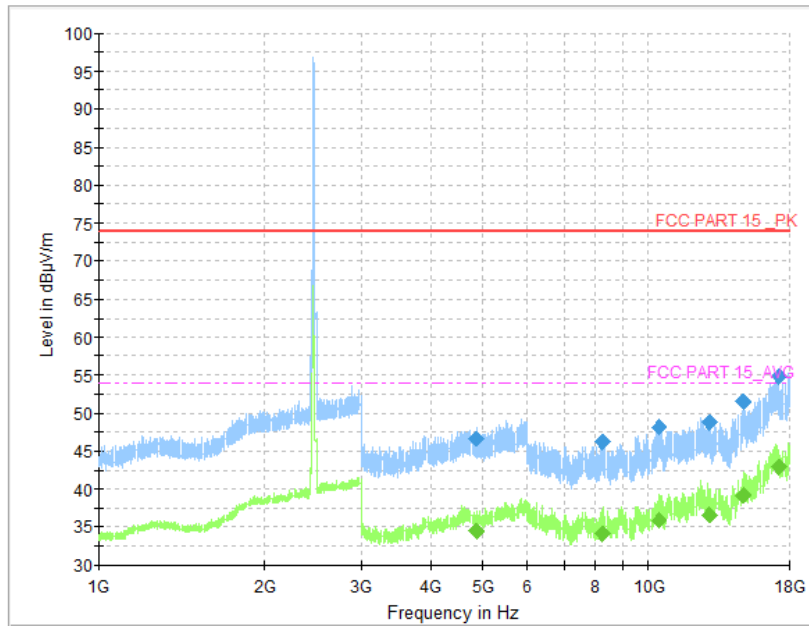


Fig.64 Radiated Spurious Emission (802.11n-HT20, CH11, 1 GHz-18 GHz)

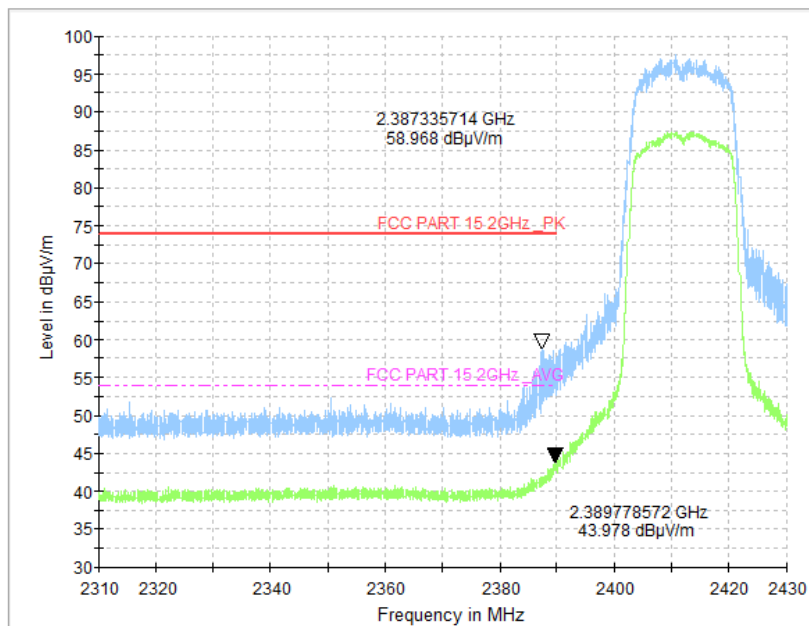


Fig.65 Radiated Restricted Band (802.11n-HT20, CH1, 2.38GHz~2.45GHz)

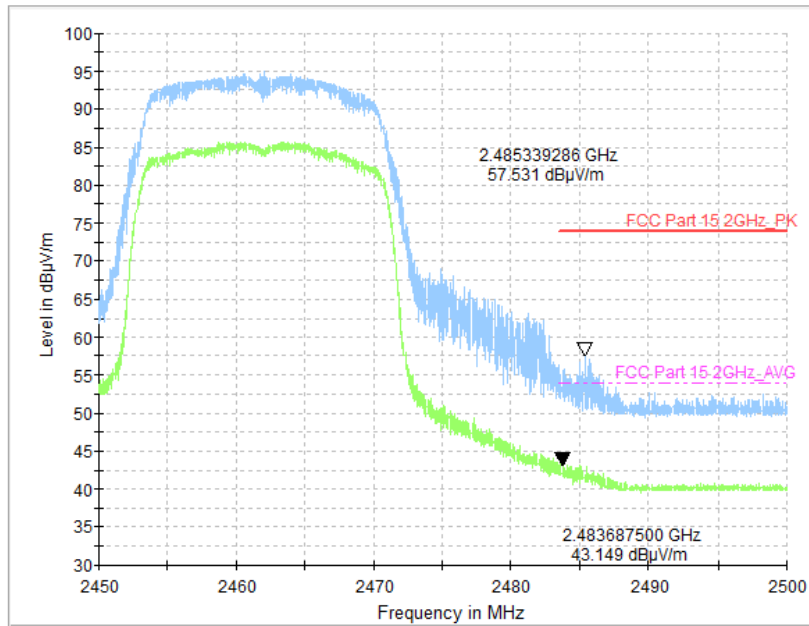


Fig.66 Radiated Restricted Band (802.11n-HT20, CH11, 2.45GHz~2.5GHz)

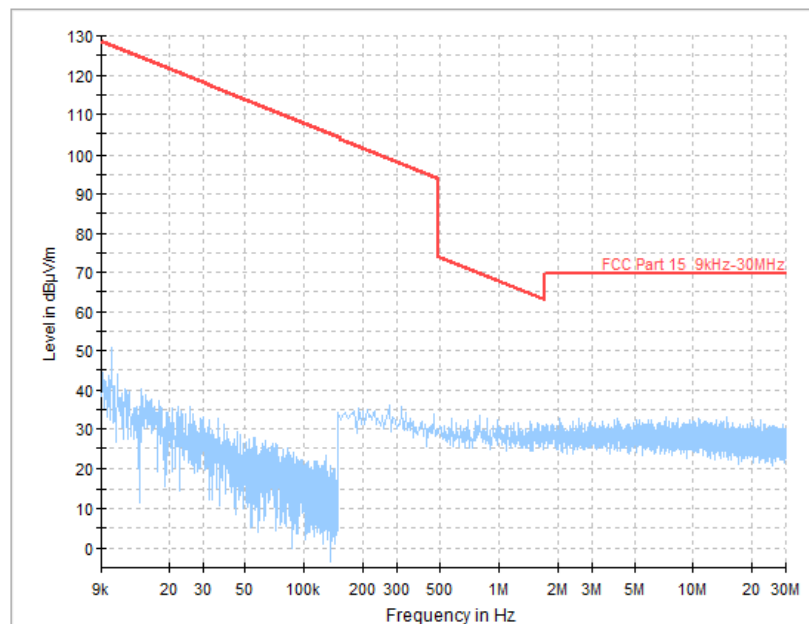


Fig.67 Radiated Spurious Emission (All Channels, 9 kHz-30 MHz)

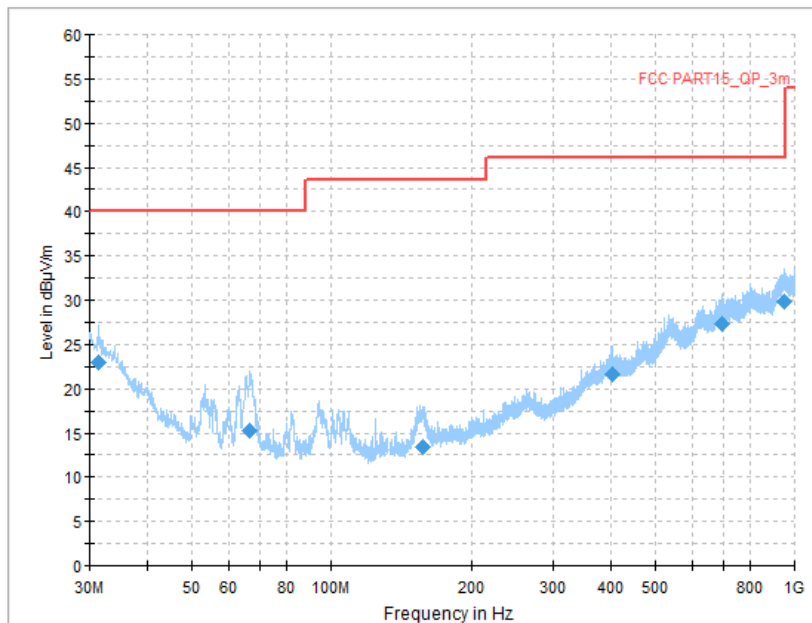


Fig.68 Radiated Spurious Emission (All Channels, 30MHz-1 GHz)

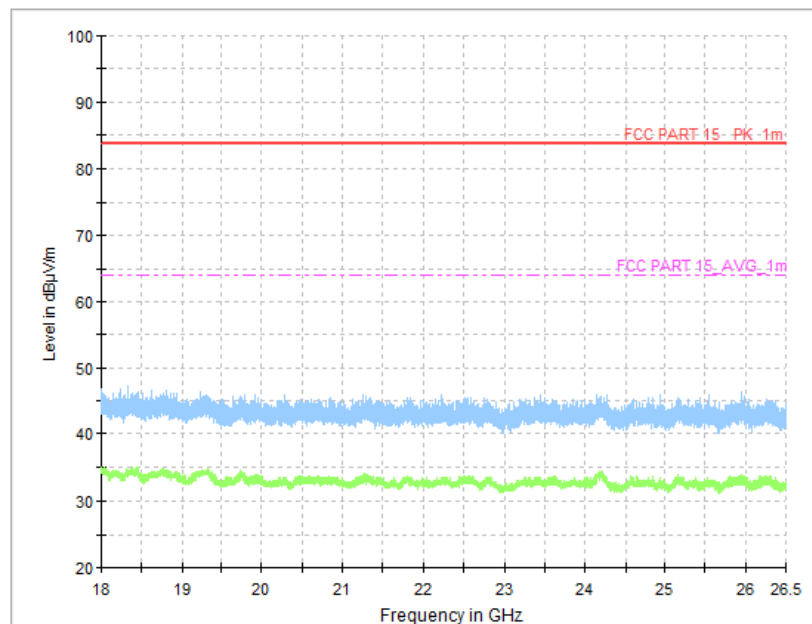


Fig.69 Radiated Spurious Emission (All Channels, 18 GHz-26.5 GHz)



A.7 AC Power line Conducted Emission

Test Condition:

Voltage (V)	Frequency (Hz)
120	60

Measurement Result and limit:

WLAN -AE2, AE3, AE4

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Average-peak Limit (dB μ V)	Result (dB μ V)		Conclusion
			Traffic	Idle	
0.15 to 0.5	66 to 56	56 to 46	Fig.70	Fig.71	P
0.5 to 5	56	46			
5 to 30	60	50			

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

Note: The measurement results include the L1 and N measurements.

See below for test graphs.

Conclusion: **PASS**

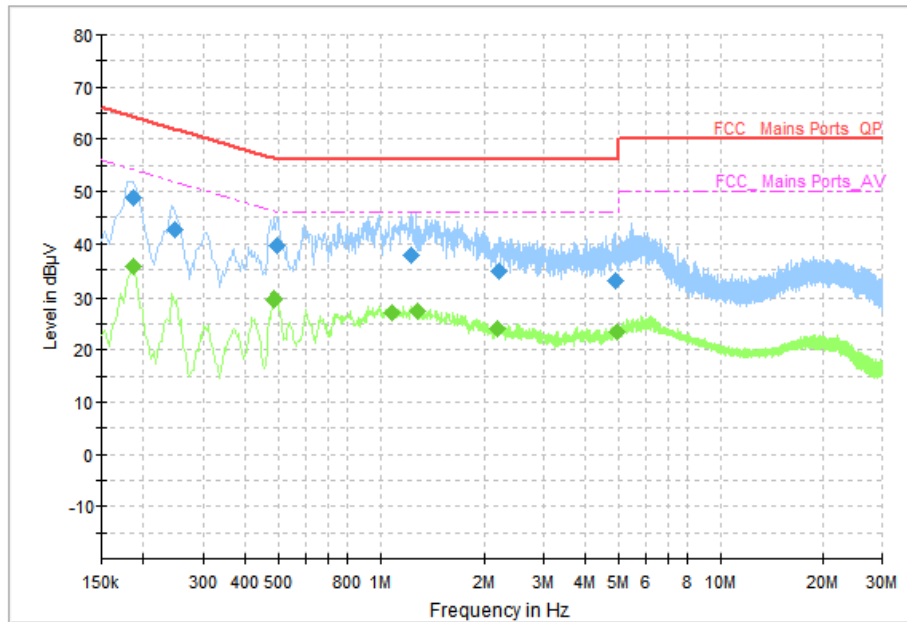


Fig.70 AC Power line Conducted Emission (Traffic)

Measurement Results: Quasi Peak

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.186000	48.87	64.21	15.35	L1	ON	10
0.246000	42.69	61.89	19.20	N	ON	10
0.494000	39.51	56.10	16.60	N	ON	10
1.234000	37.70	56.00	18.30	N	ON	10
2.206000	34.75	56.00	21.25	N	ON	10
4.878000	32.96	56.00	23.04	N	ON	10

Measurement Results: Average

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.186000	35.64	54.21	18.58	N	ON	10
0.486000	29.48	46.24	16.76	N	ON	10
1.078000	27.20	46.00	18.80	N	ON	10
1.290000	27.25	46.00	18.75	N	ON	10
2.194000	24.02	46.00	21.98	N	ON	10
4.954000	23.49	46.00	22.51	N	ON	10

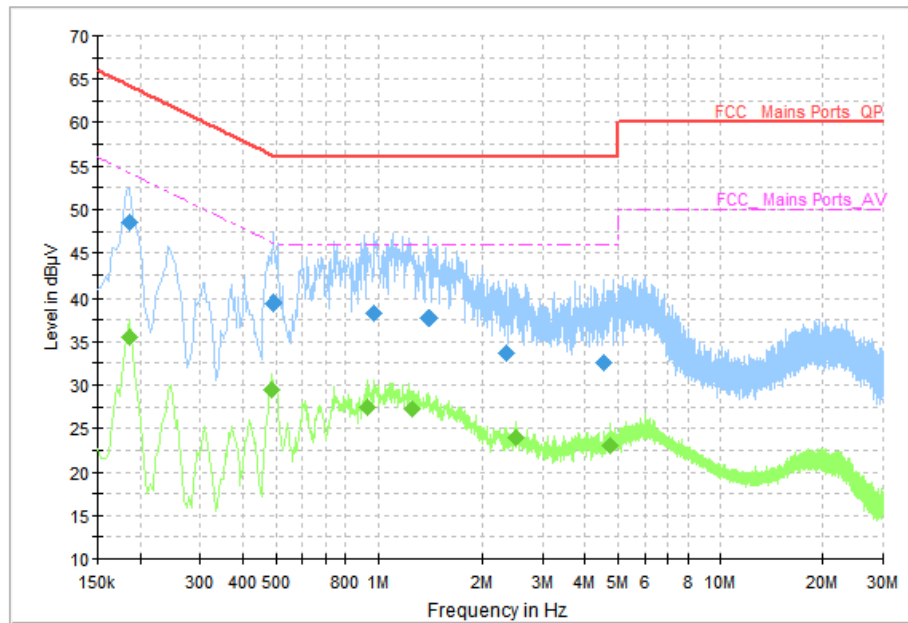


Fig.71 AC Power line Conducted Emission (Idle)

Measurement Results: Quasi Peak

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.186000	48.47	64.21	15.74	N	ON	10
0.490000	39.33	56.17	16.84	N	ON	10
0.970000	38.28	56.00	17.72	N	ON	10
1.406000	37.62	56.00	18.38	N	ON	10
2.358000	33.70	56.00	22.30	N	ON	10
4.542000	32.56	56.00	23.44	N	ON	10

Measurement Results: Average

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.186000	35.48	54.21	18.73	N	ON	10
0.486000	29.44	46.24	16.79	N	ON	10
0.934000	27.36	46.00	18.64	N	ON	10
1.254000	27.32	46.00	18.68	N	ON	10
2.506000	23.86	46.00	22.14	N	ON	10
4.742000	22.98	46.00	23.02	N	ON	10

END OF REPORT