

Fig.51 Conducted Spurious Emission (1GHz-26.5GHz, 802.11b, CH1)

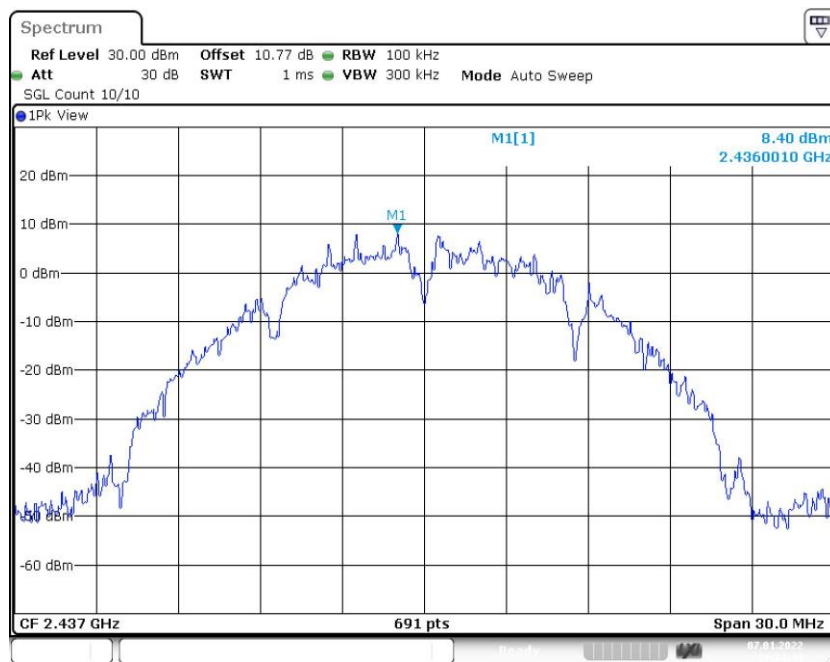


Fig.52 Conducted Spurious Emission (Center Frequency, 802.11b, CH6)

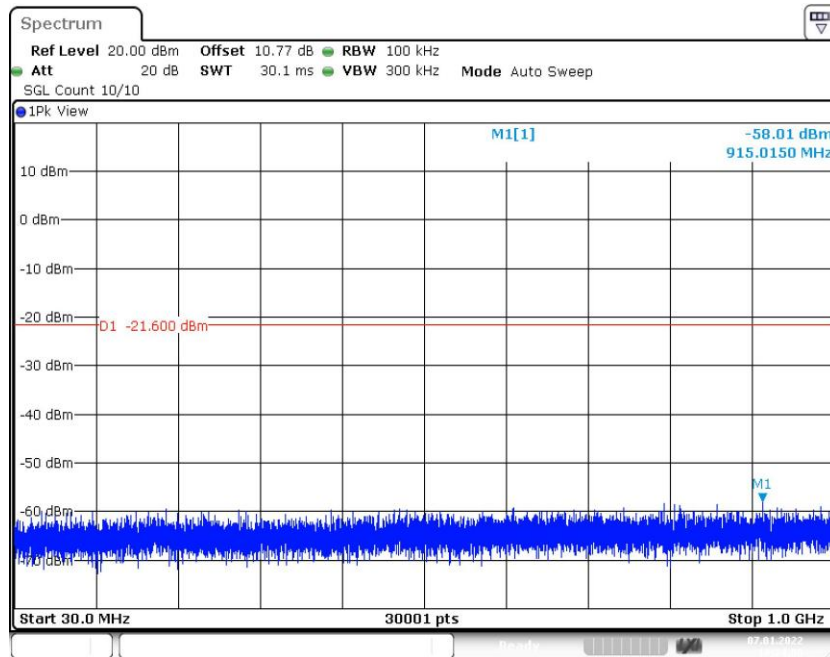


Fig.53 Conducted Spurious Emission (30MHz -1GHz, 802.11b, CH6)

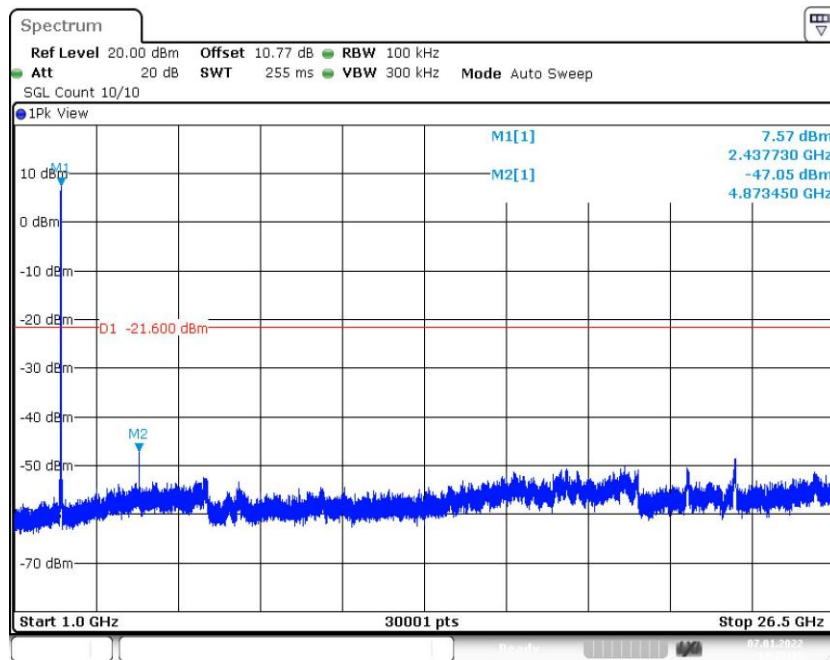


Fig.54 Conducted Spurious Emission (1GHz-26.5GHz, 802.11b, CH6)

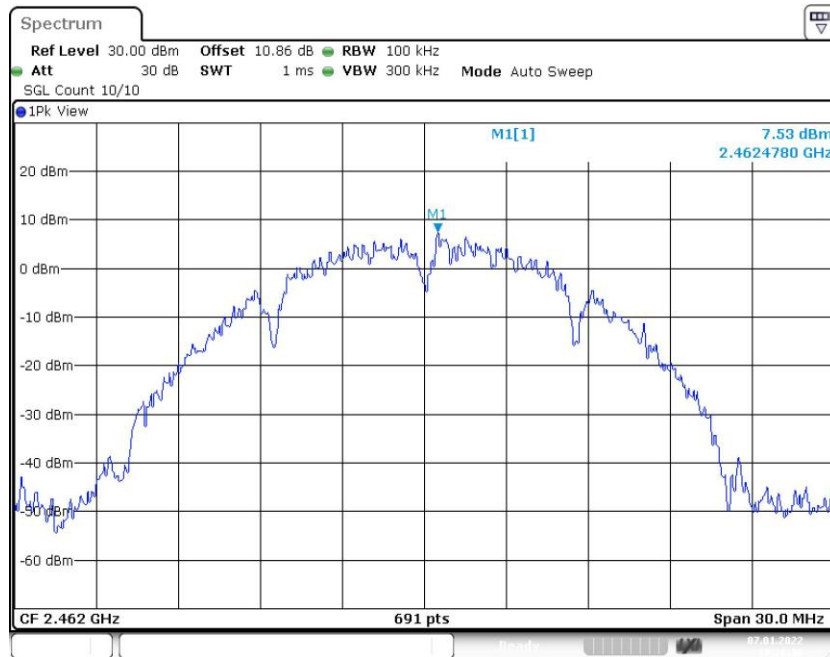


Fig.55 Conducted Spurious Emission (Center Frequency, 802.11b, CH11)

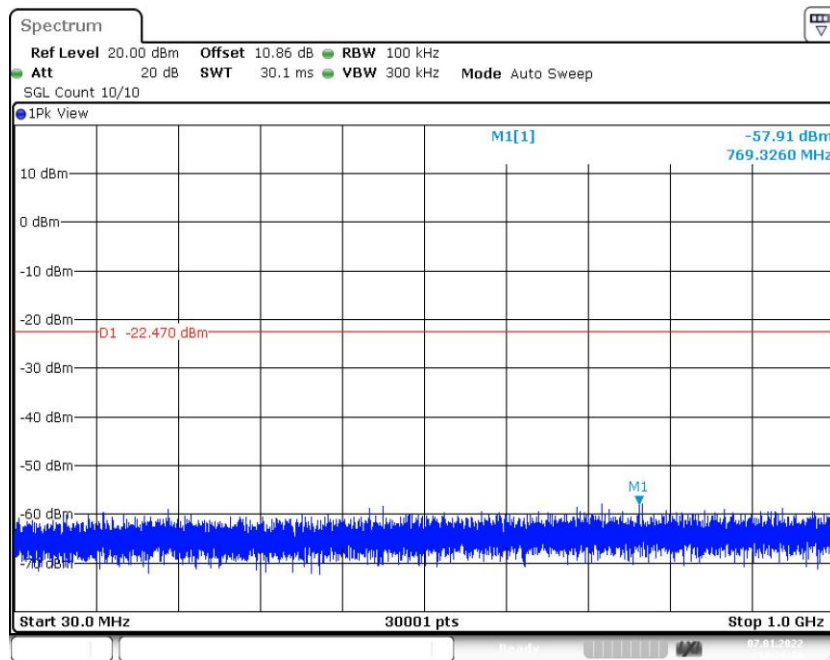


Fig.56 Conducted Spurious Emission (30MHz -1GHz, 802.11b, CH11)

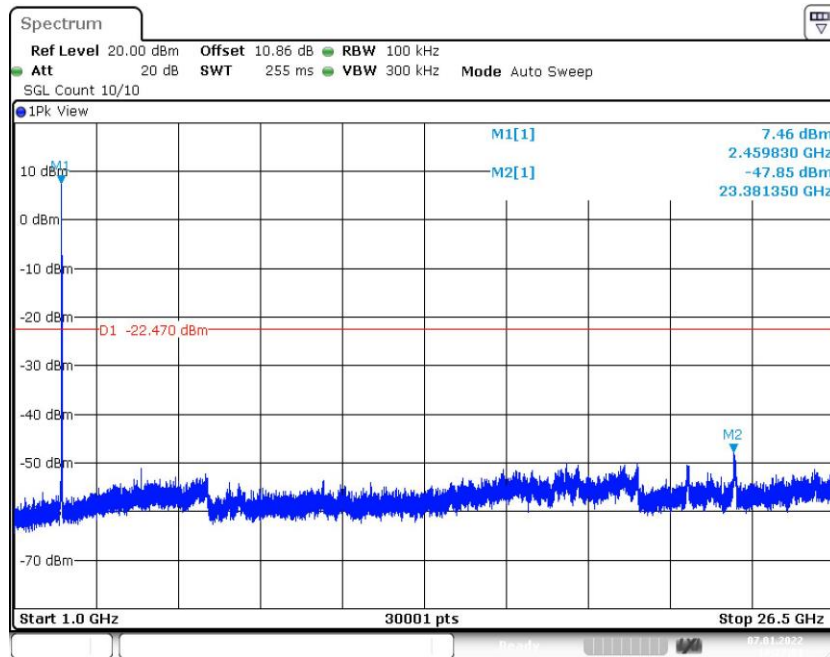


Fig.57 Conducted Spurious Emission (1GHz-26.5GHz, 802.11b, CH11)

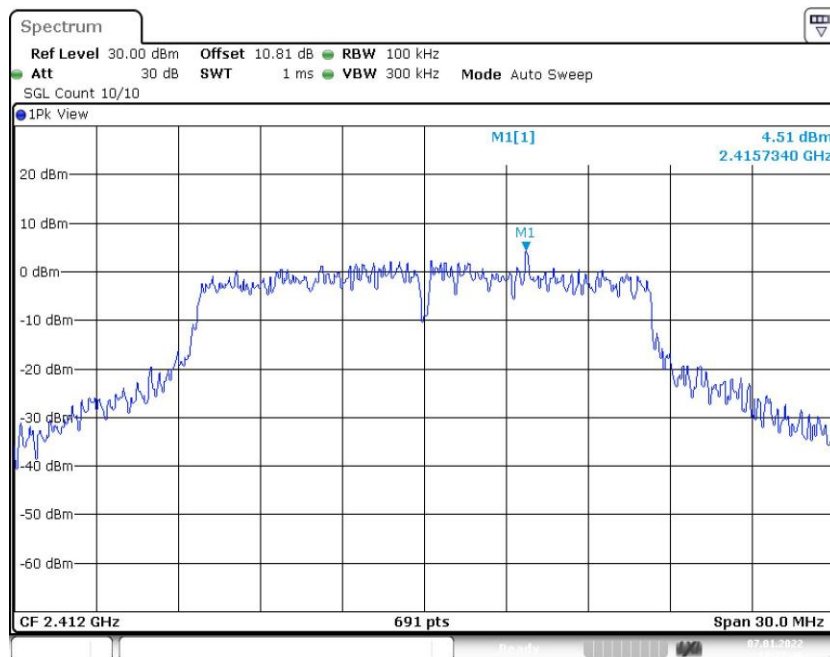


Fig.58 Conducted Spurious Emission (Center Frequency, 802.11g, CH1)

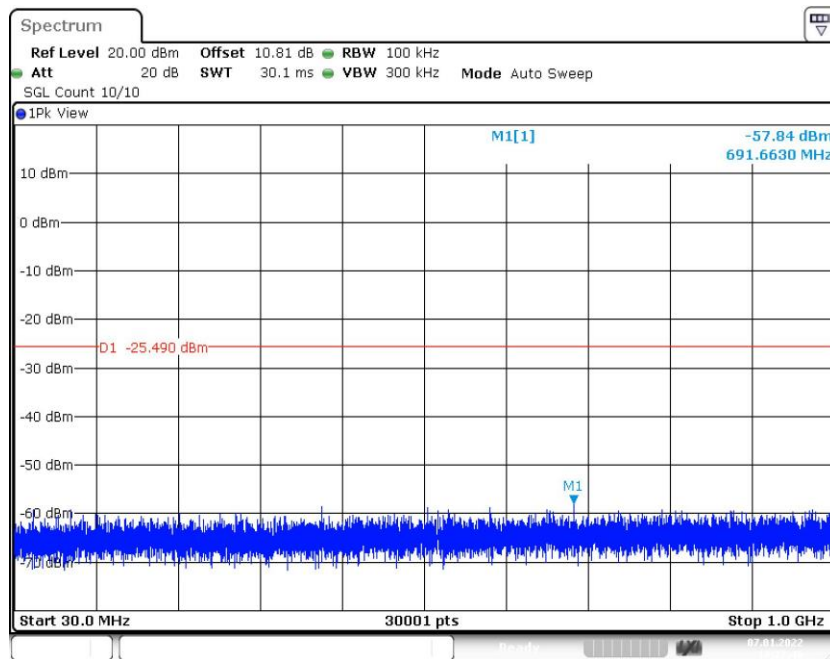


Fig.59 Conducted Spurious Emission (30MHz -1GHz, 802.11g, CH1)

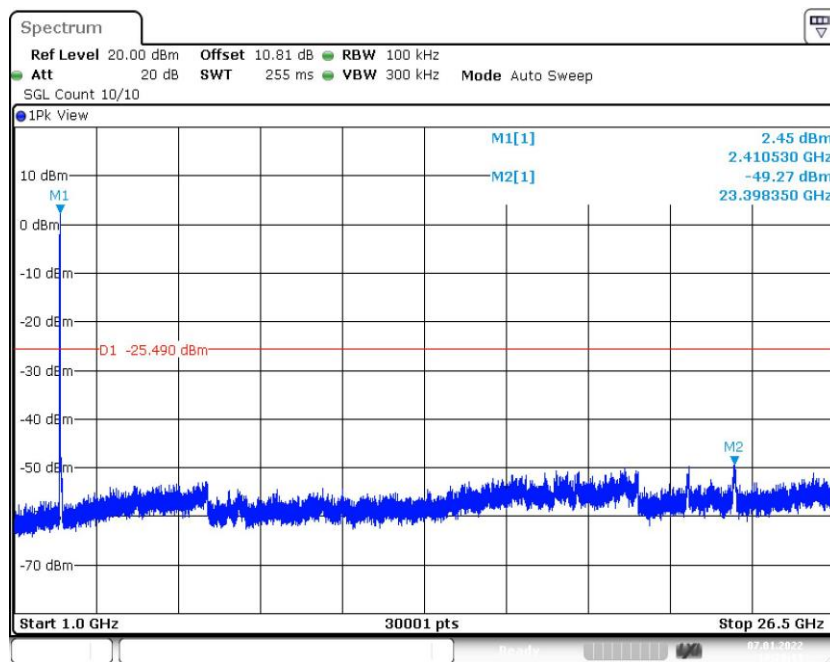


Fig.60 Conducted Spurious Emission (1GHz-26.5GHz, 802.11g, CH1)

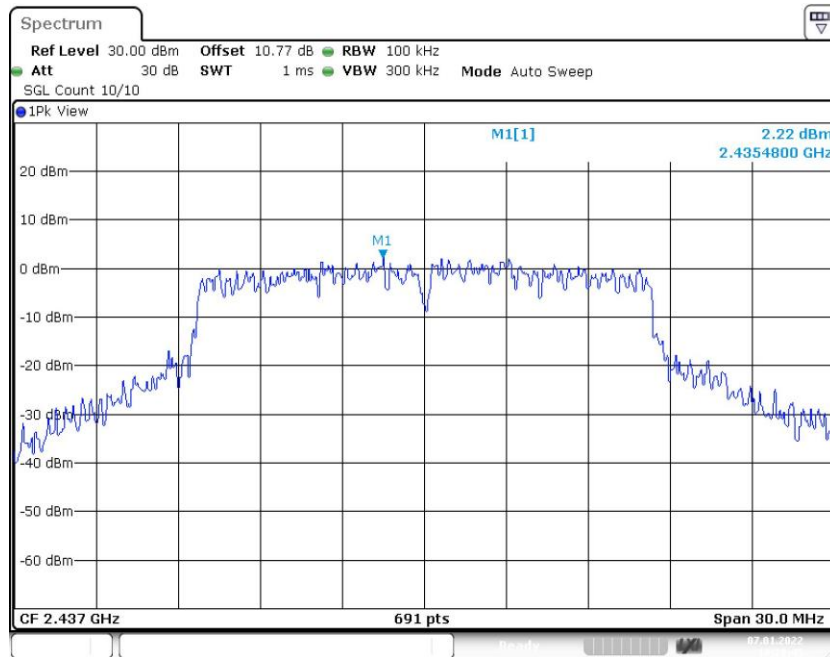


Fig.61 Conducted Spurious Emission (Center Frequency, 802.11g, CH6)

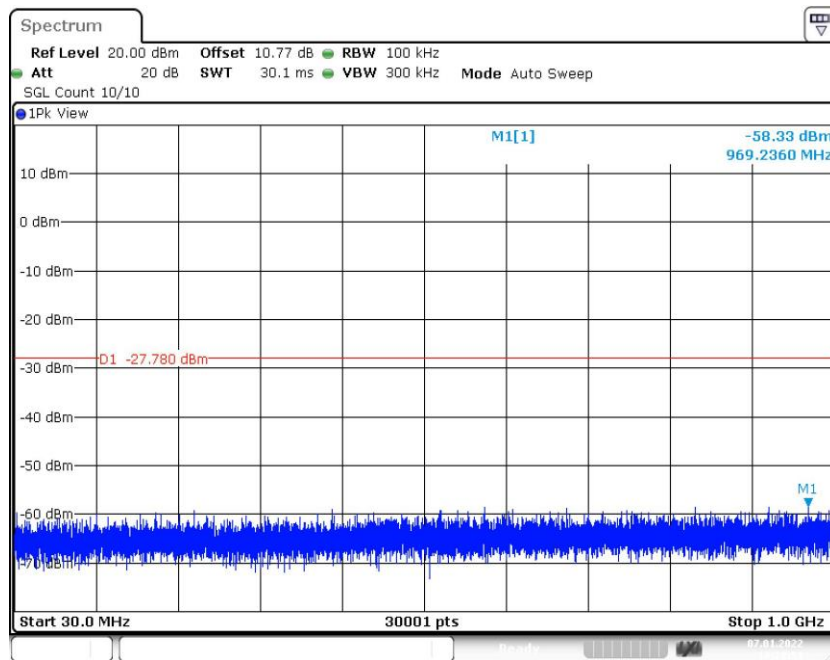


Fig.62 Conducted Spurious Emission (30MHz -1GHz, 802.11g, CH6)

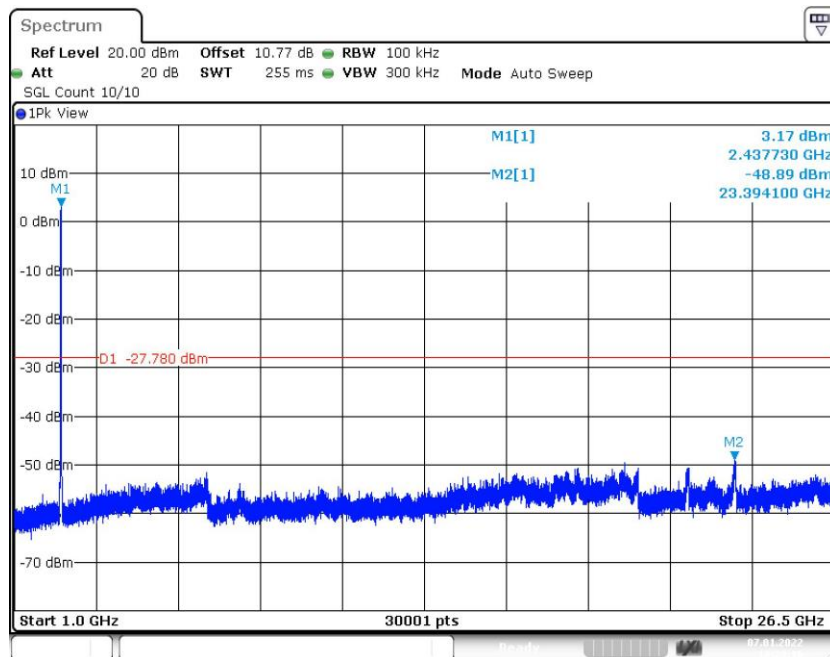


Fig.63 Conducted Spurious Emission (1GHz-26.5GHz, 802.11g, CH6)

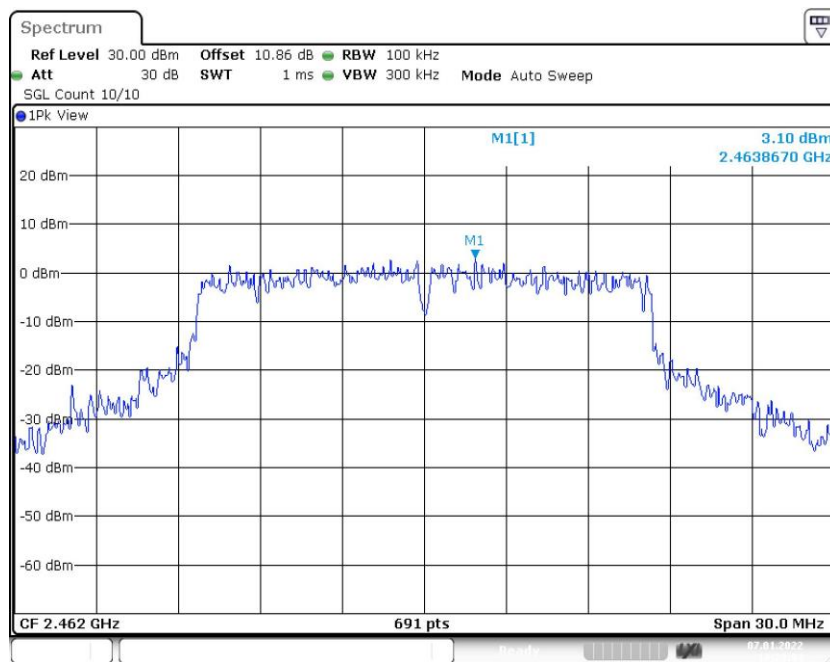


Fig.64 Conducted Spurious Emission (Center Frequency, 802.11g, CH11)

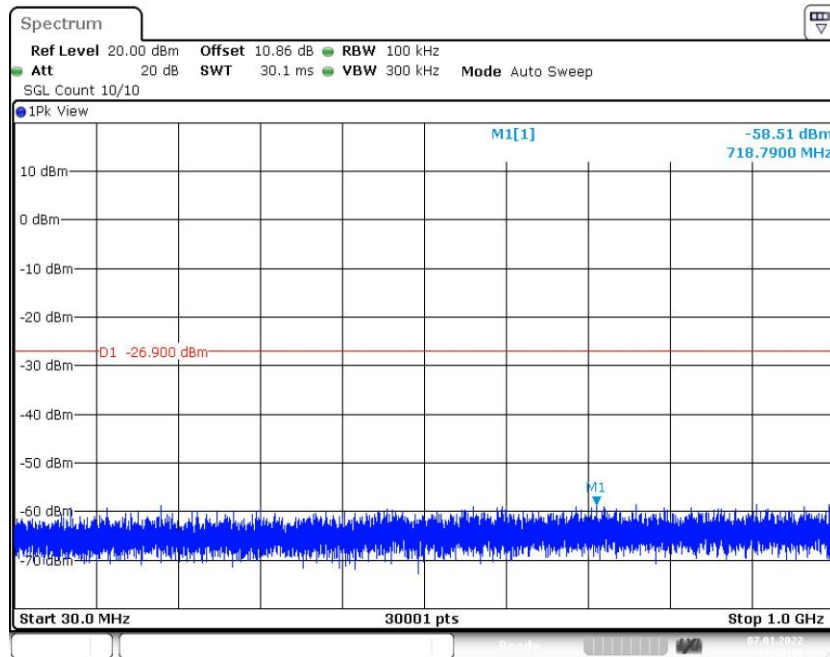


Fig.65 Conducted Spurious Emission (30MHz -1GHz, 802.11g, CH11)

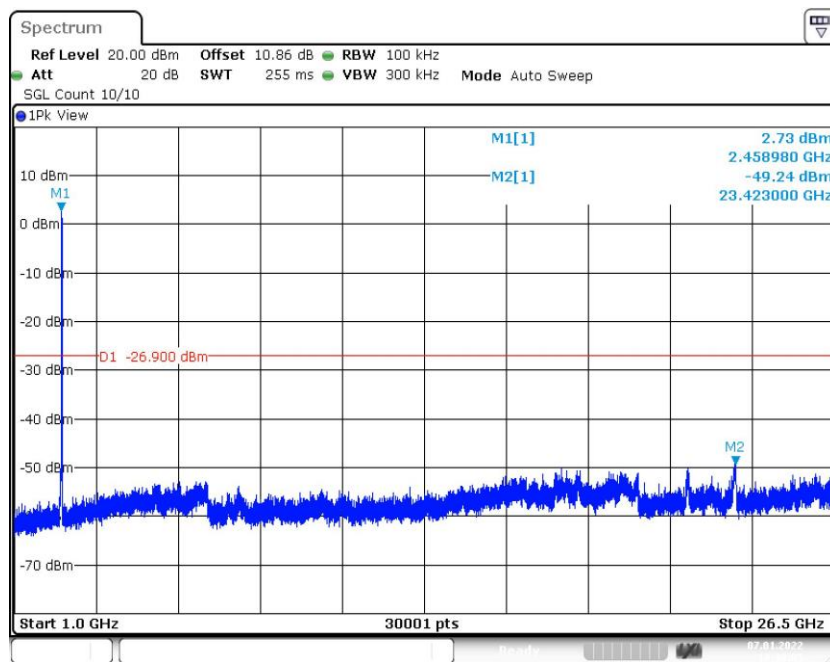


Fig.66 Conducted Spurious Emission (1GHz-26.5GHz, 802.11g, CH11)



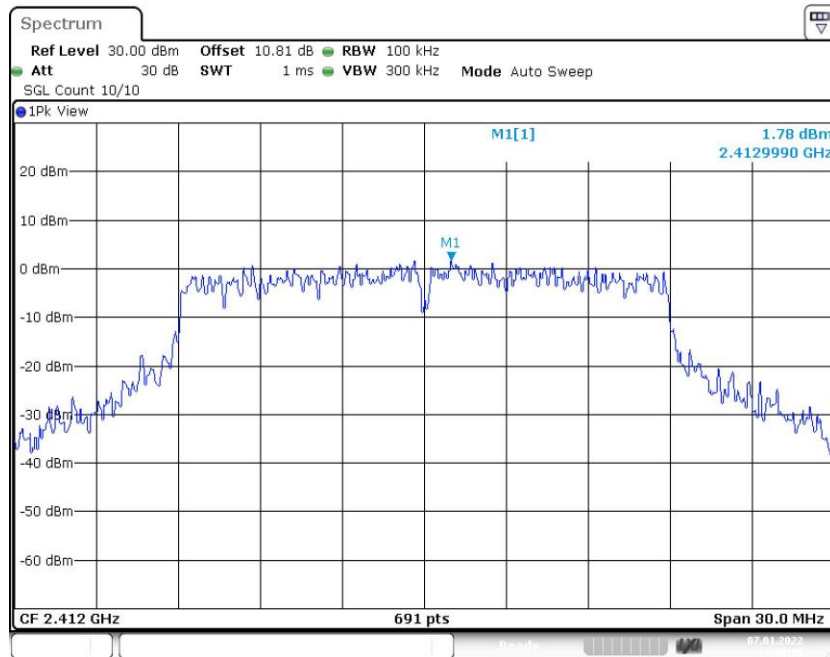


Fig.67 Conducted Spurious Emission (Center Frequency, 802.11n-HT20, CH1)

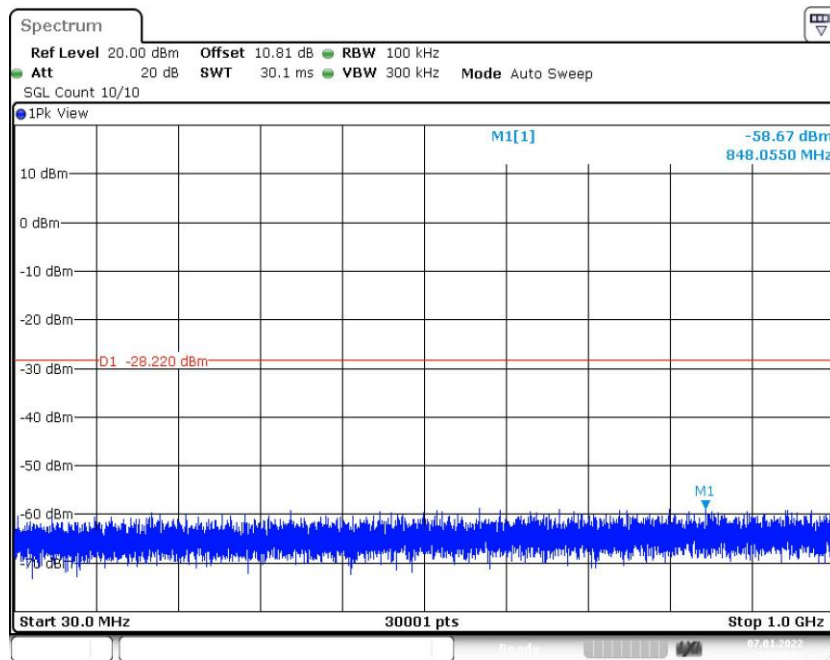


Fig.68 Conducted Spurious Emission (30MHz -1GHz, 802.11n-HT20, CH1)

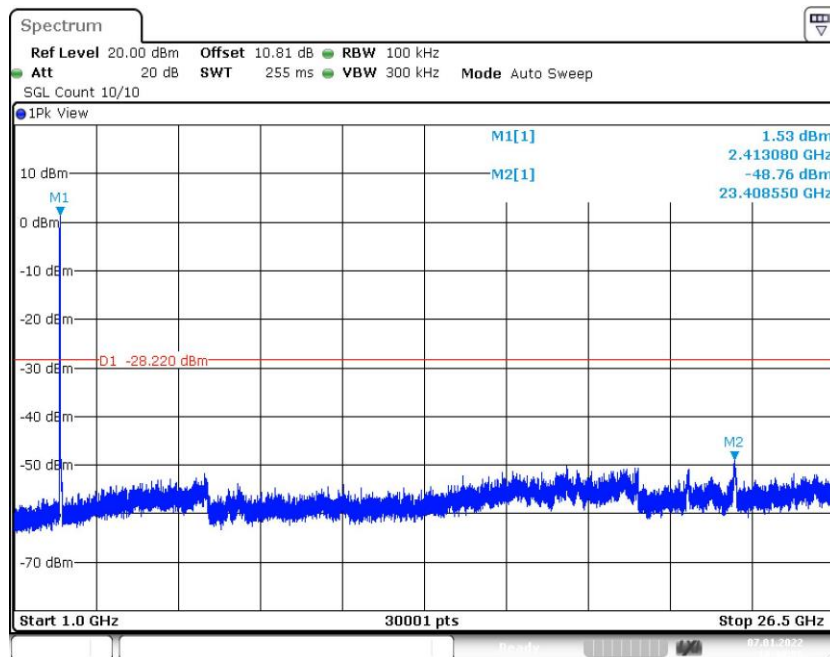


Fig.69 Conducted Spurious Emission (1GHz-26.5GHz, 802.11n-HT20, CH1)

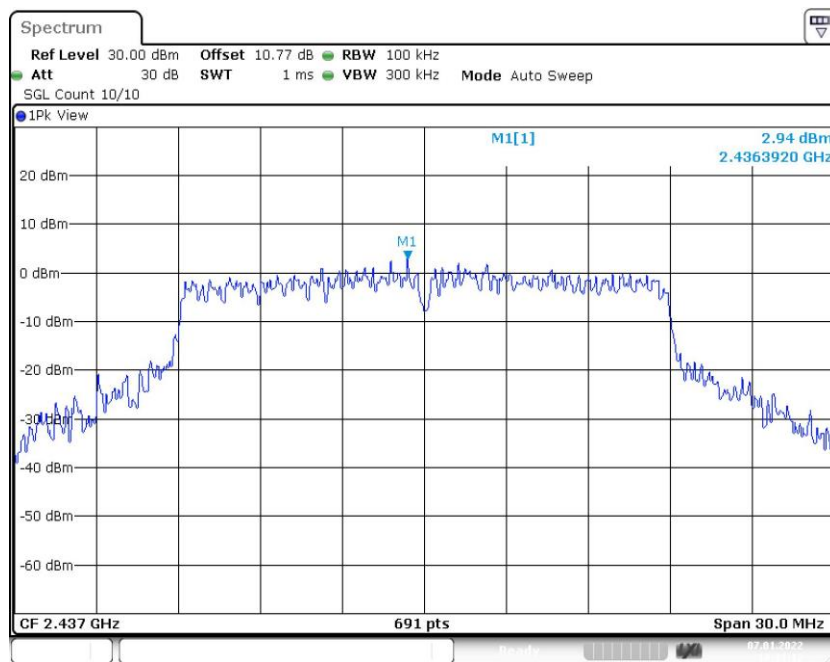


Fig.70 Conducted Spurious Emission (Center Frequency, 802.11n-HT20, CH6)

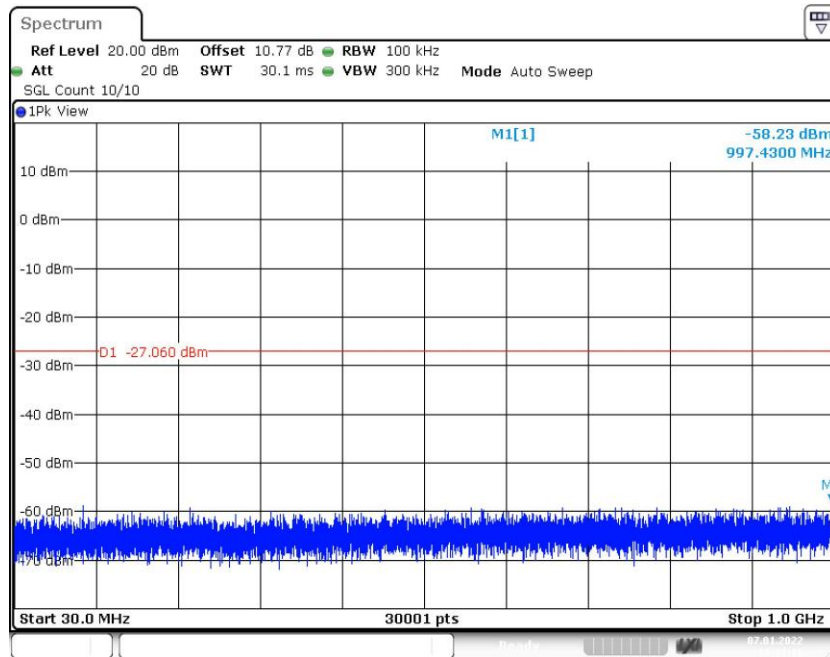


Fig.71 Conducted Spurious Emission (30MHz -1GHz, 802.11n-HT20, CH6)

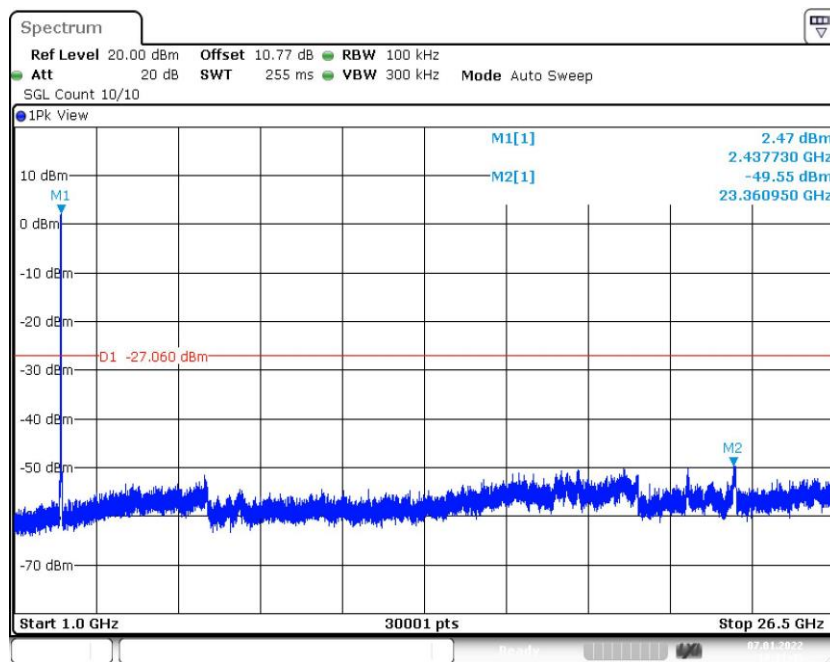


Fig.72 Conducted Spurious Emission (1GHz-26.5GHz, 802.11n-HT20, CH6)

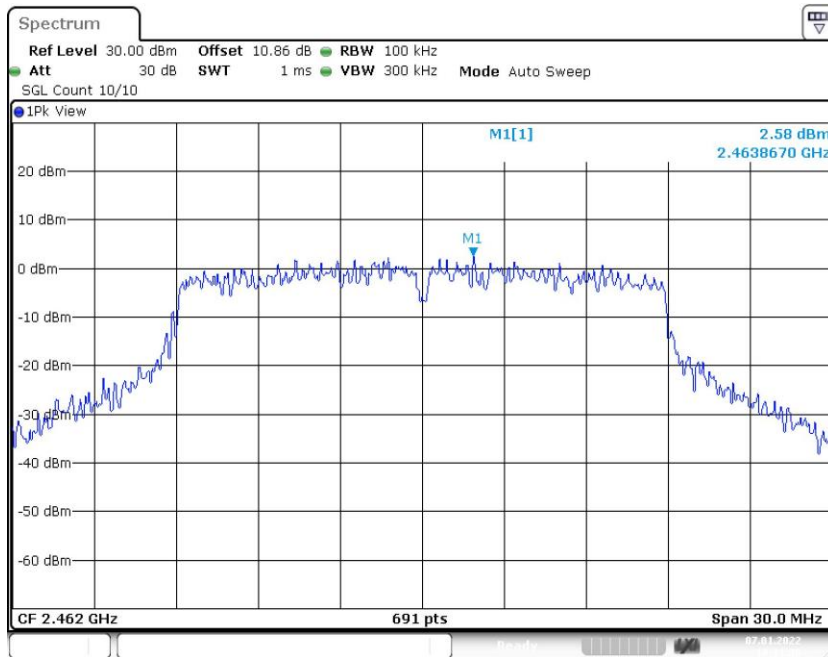


Fig.73 Conducted Spurious Emission (Center Frequency, 802.11n-HT20, CH11)

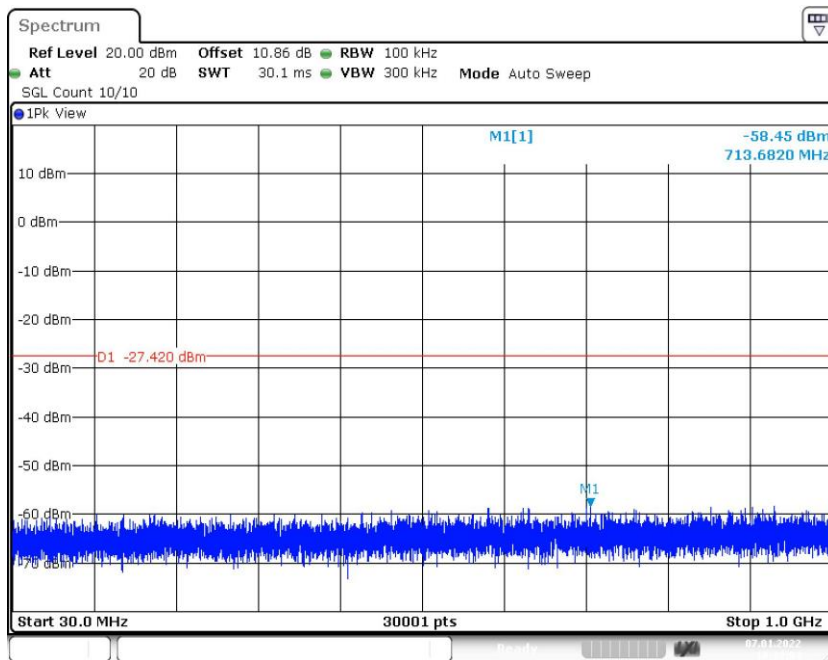


Fig.74 Conducted Spurious Emission (30MHz -1GHz, 802.11n-HT20, CH11)

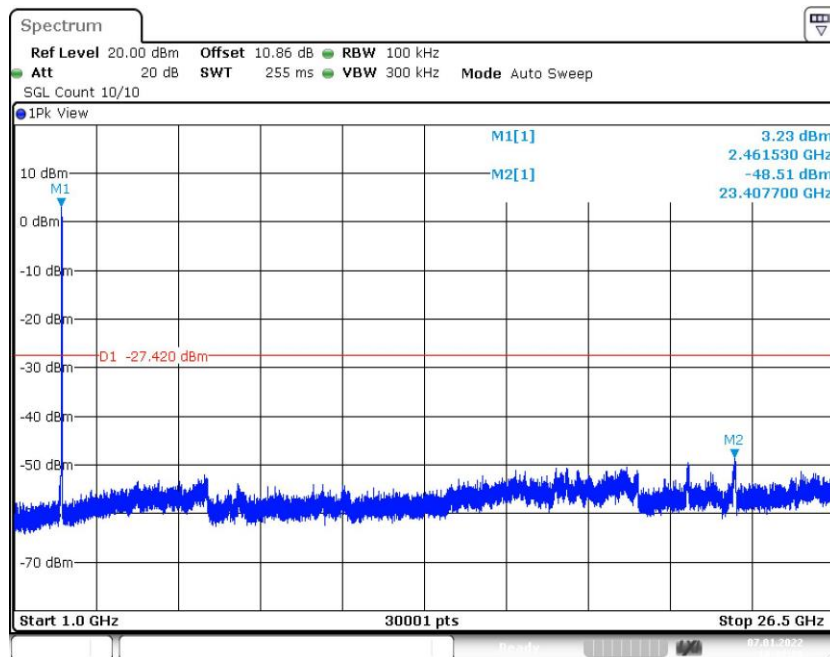


Fig.75 Conducted Spurious Emission (1GHz-26.5GHz, 802.11n-HT20, CH11)

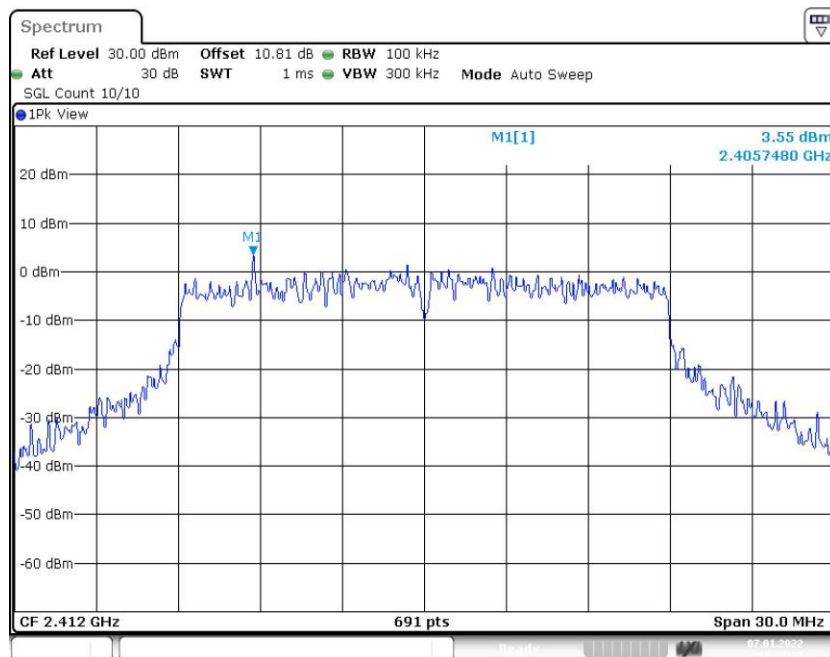


Fig.76 Conducted Spurious Emission (Center Frequency, 802.11-VHT20, CH1)

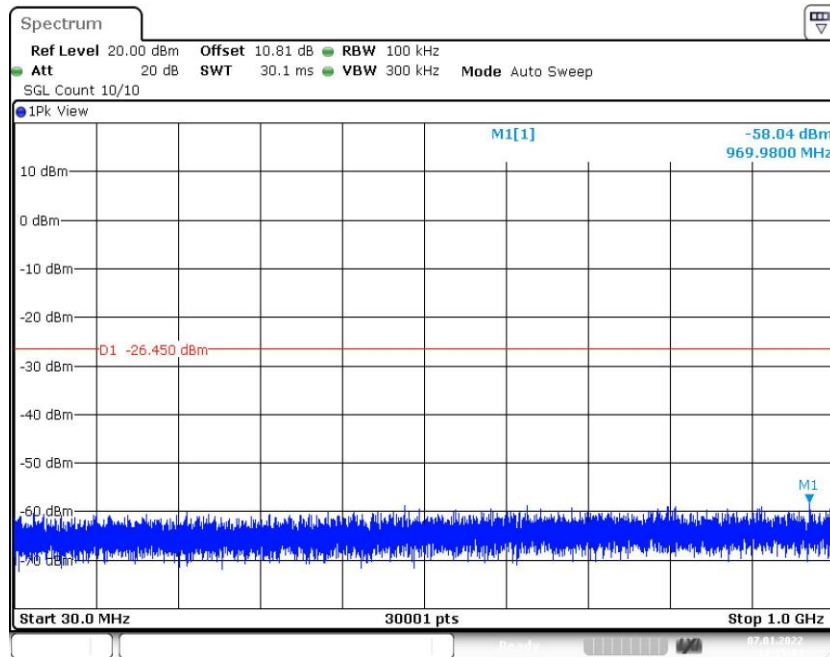


Fig.77 Conducted Spurious Emission (30MHz -1GHz, 802.11-VHT20, CH1)

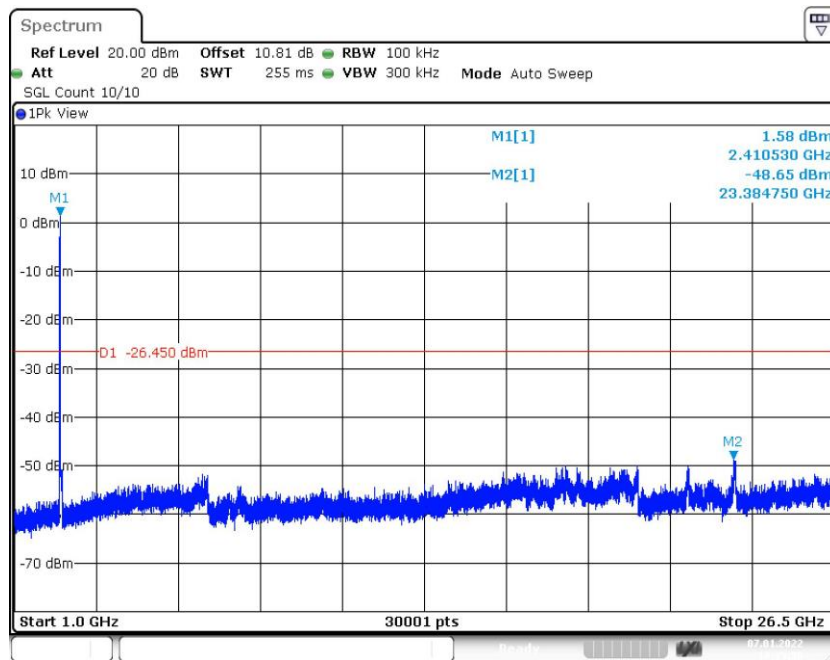


Fig.78 Conducted Spurious Emission (1GHz-26.5GHz, 802.11-VHT20, CH1)

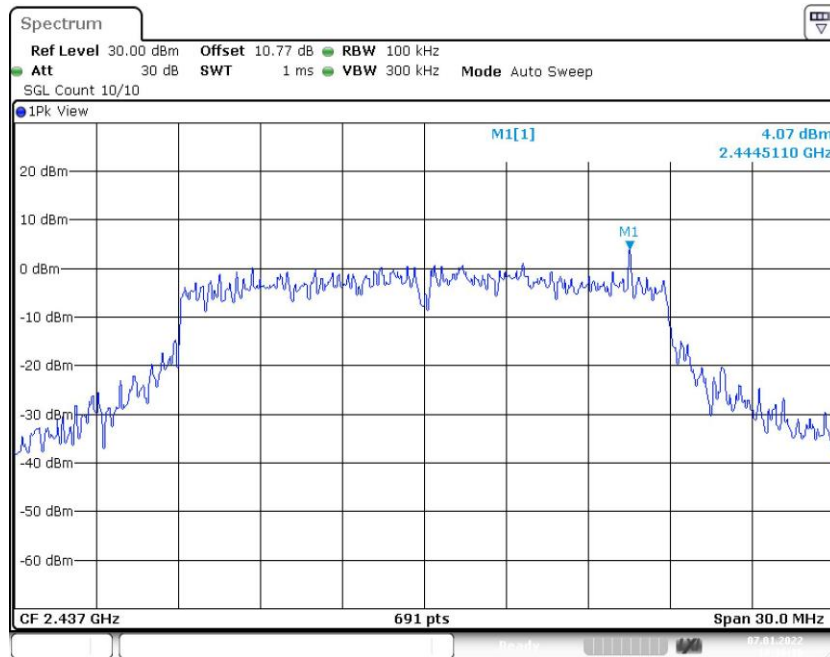


Fig.79 Conducted Spurious Emission (Center Frequency, 802.11-VHT20, CH6)

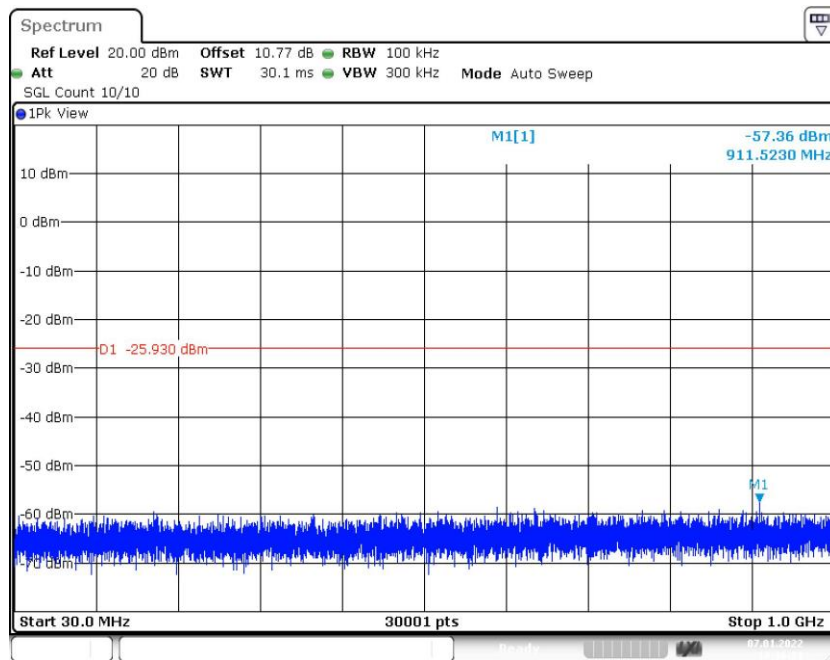
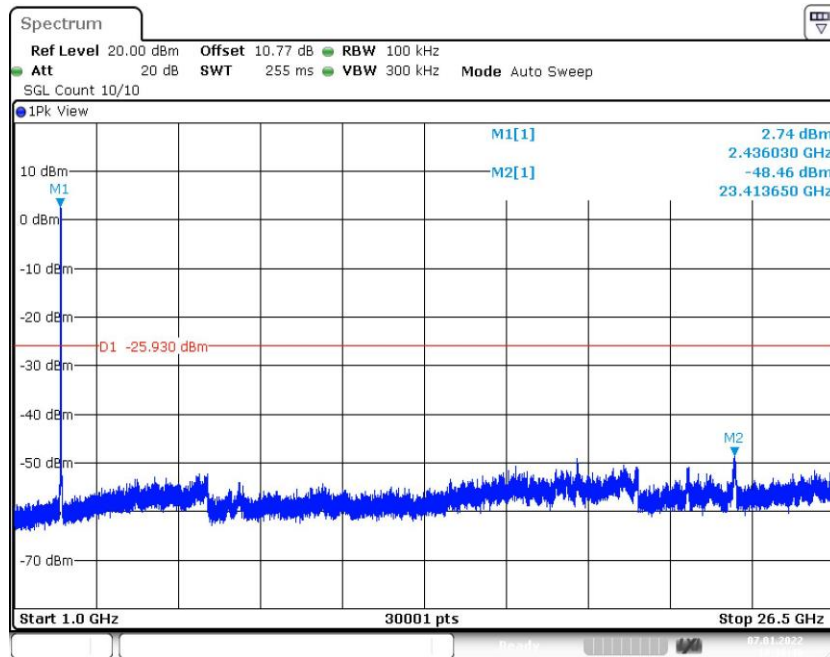
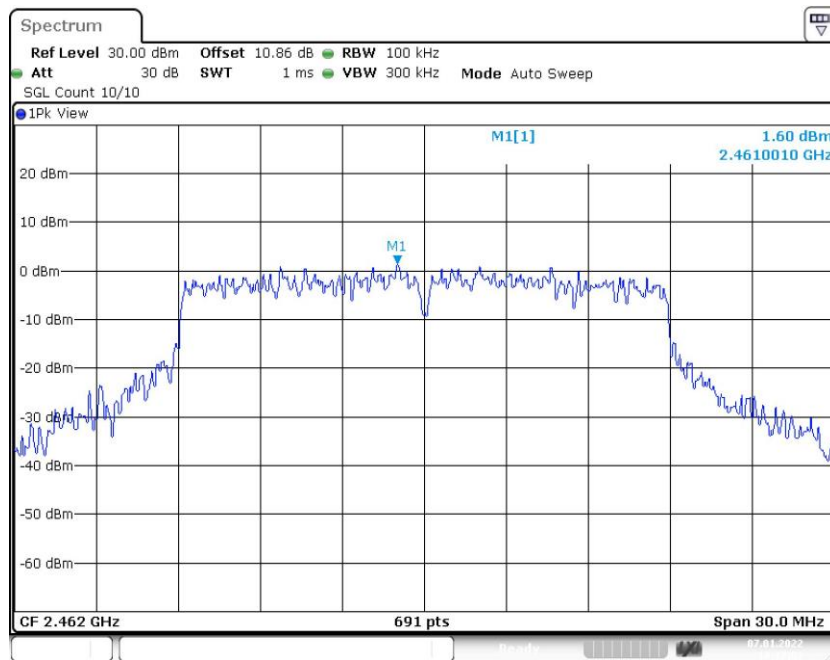


Fig.80 Conducted Spurious Emission (30MHz -1GHz, 802.11-VHT20, CH6)



**Fig.81 Conducted Spurious Emission (1GHz-26.5GHz, 802.11-VHT20, CH6)**



**Fig.82 Conducted Spurious Emission (Center Frequency, 802.11-VHT20, CH11)**



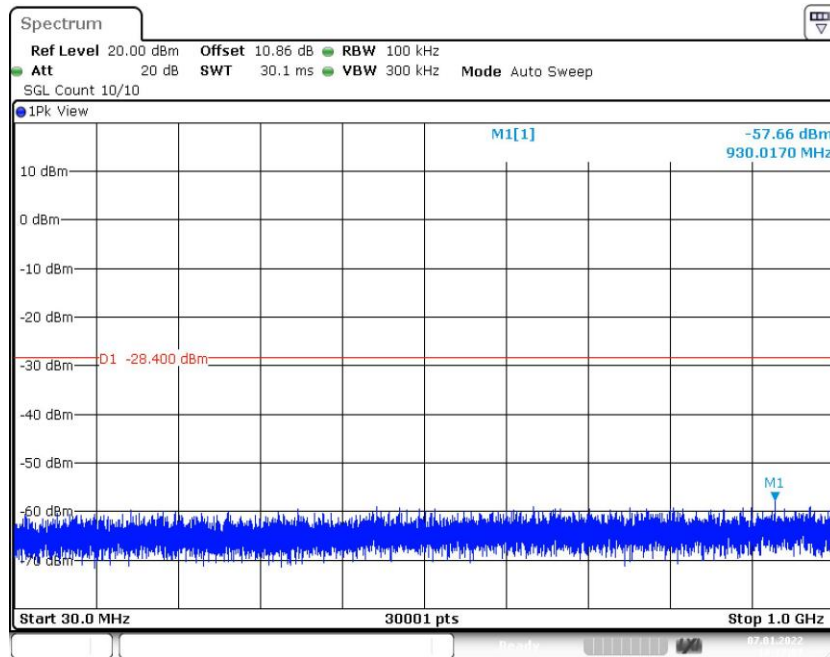


Fig.83 Conducted Spurious Emission (30MHz -1GHz, 802.11-VHT20, CH11)

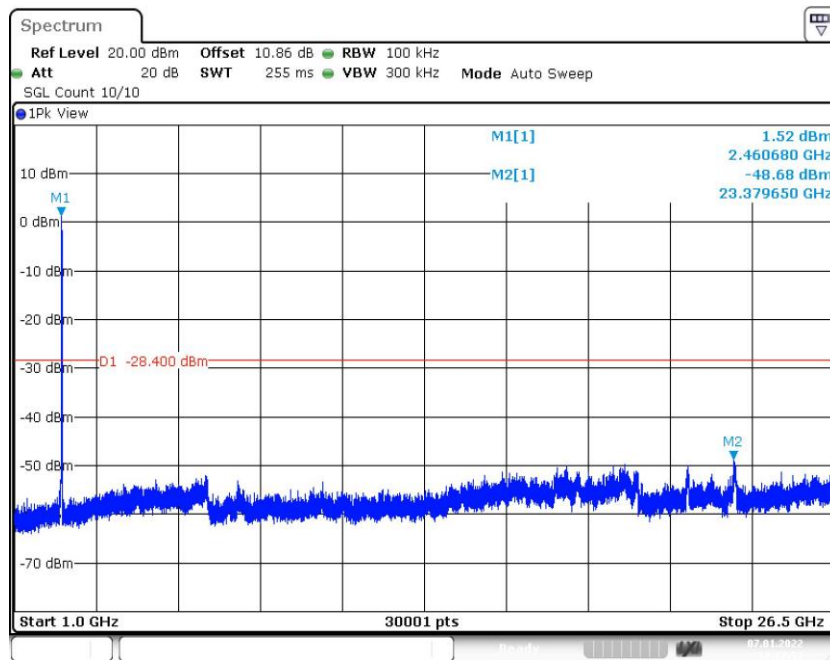


Fig.84 Conducted Spurious Emission (1GHz-26.5GHz, 802.11-VHT20, CH11)

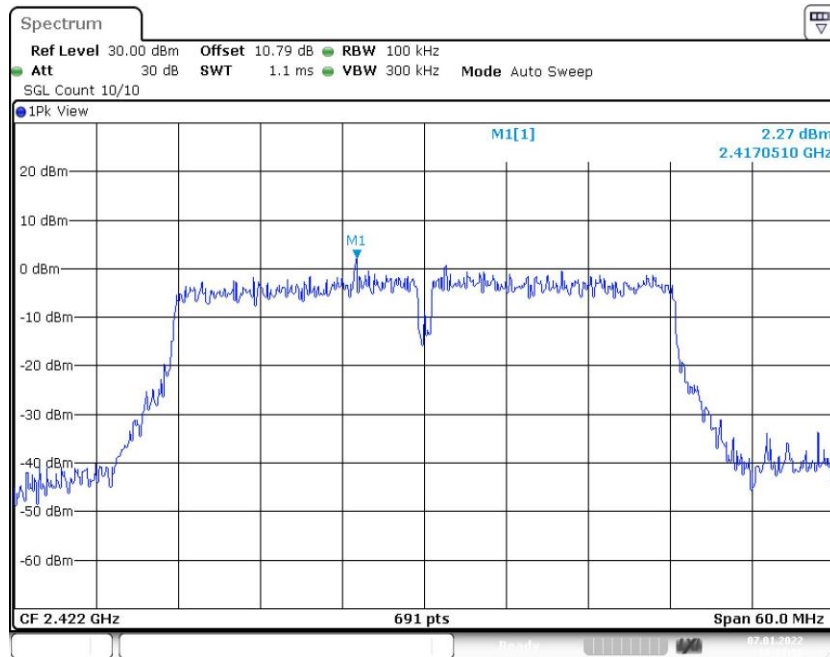


Fig.85 Conducted Spurious Emission (Center Frequency, 802.11n-HT40, CH3)

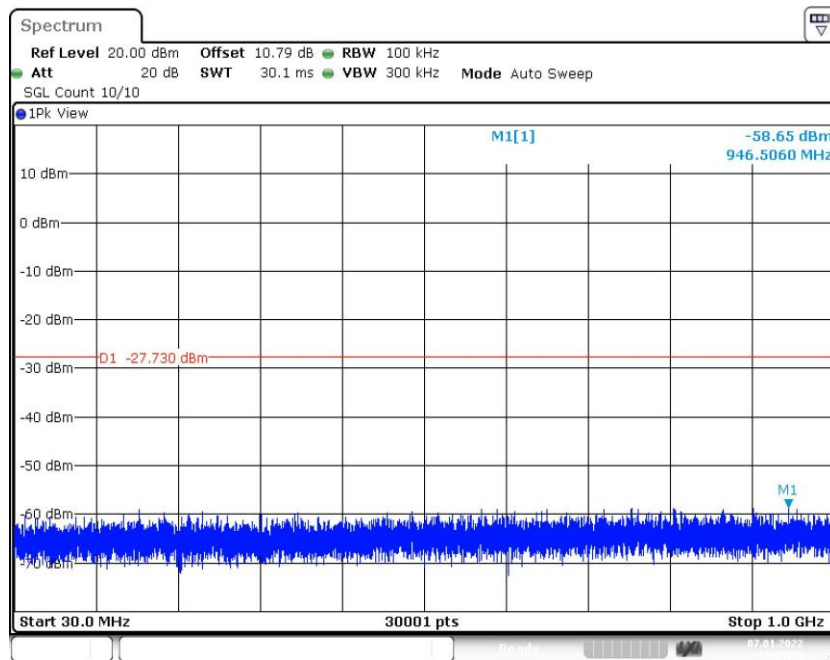


Fig.86 Conducted Spurious Emission (30MHz -1GHz, 802.11n-HT40, CH3)

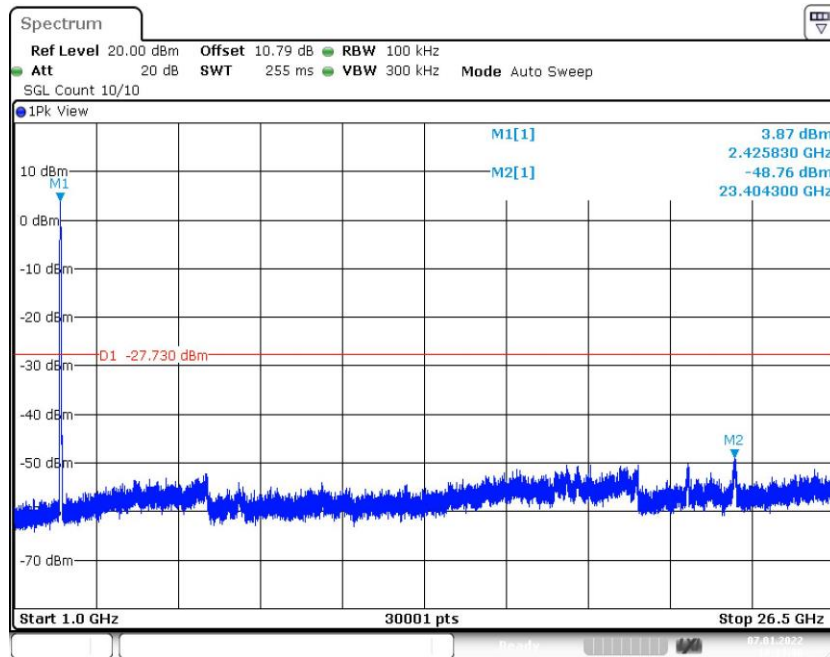


Fig.87 Conducted Spurious Emission (1GHz-26.5GHz, 802.11n-HT40, CH3)

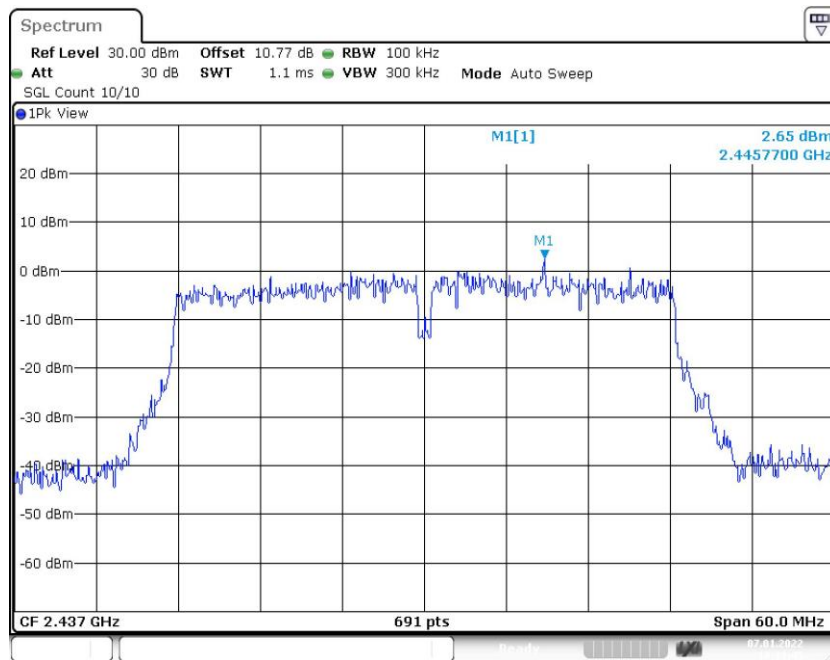


Fig.88 Conducted Spurious Emission (Center Frequency, 802.11n-HT40, CH6)

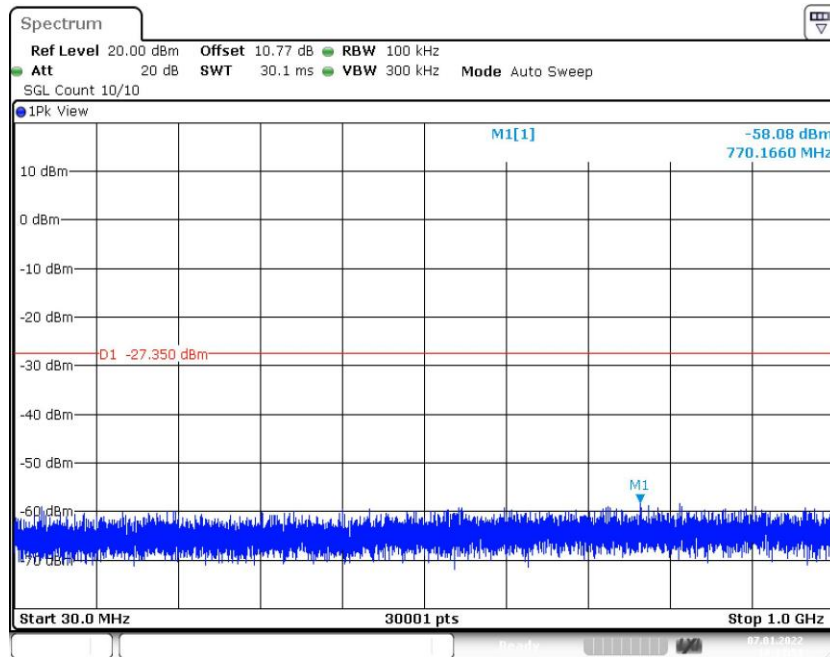


Fig.89 Conducted Spurious Emission (30MHz -1GHz, 802.11n-HT40, CH6)

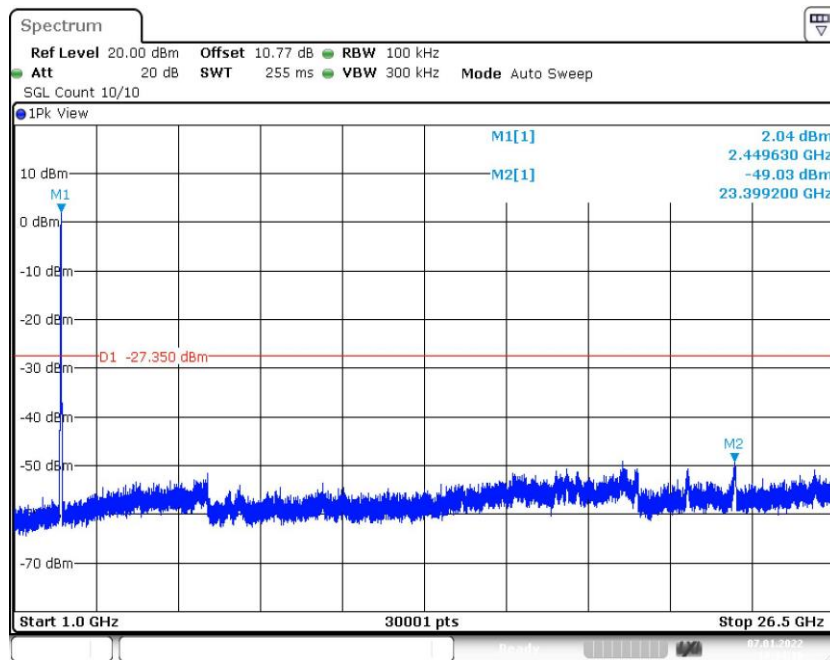


Fig.90 Conducted Spurious Emission (1GHz-26.5GHz, 802.11n-HT40, CH6)

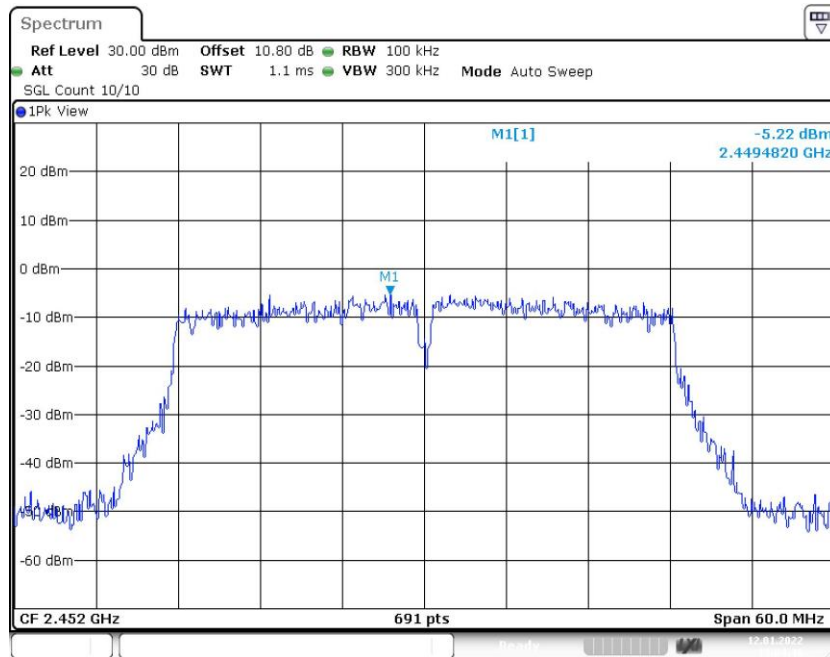


Fig.91 Conducted Spurious Emission (Center Frequency, 802.11n-HT40, CH9)

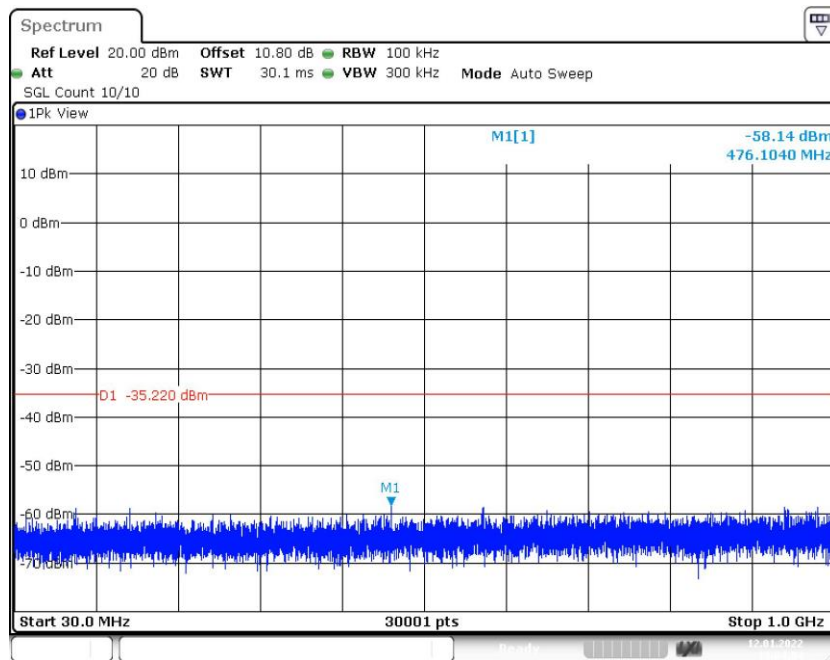
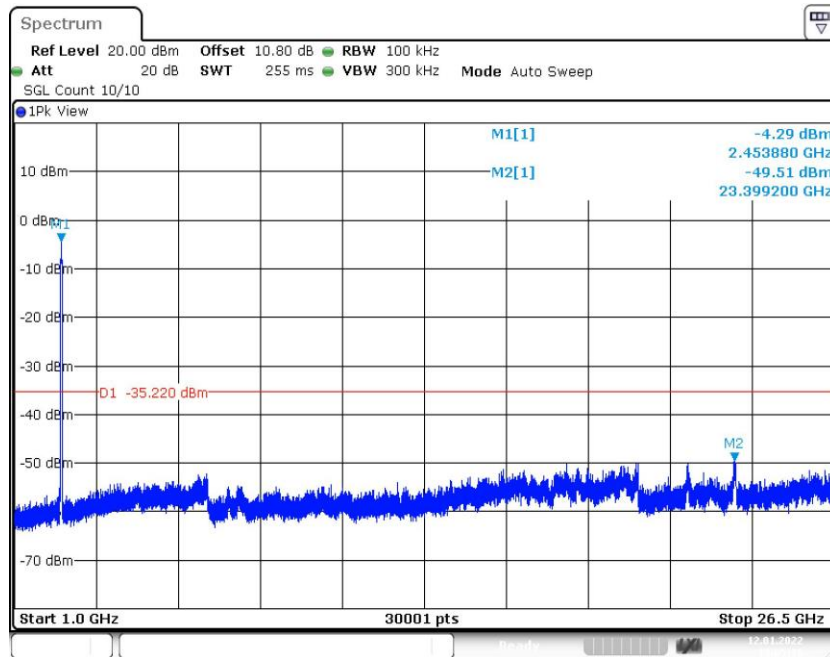
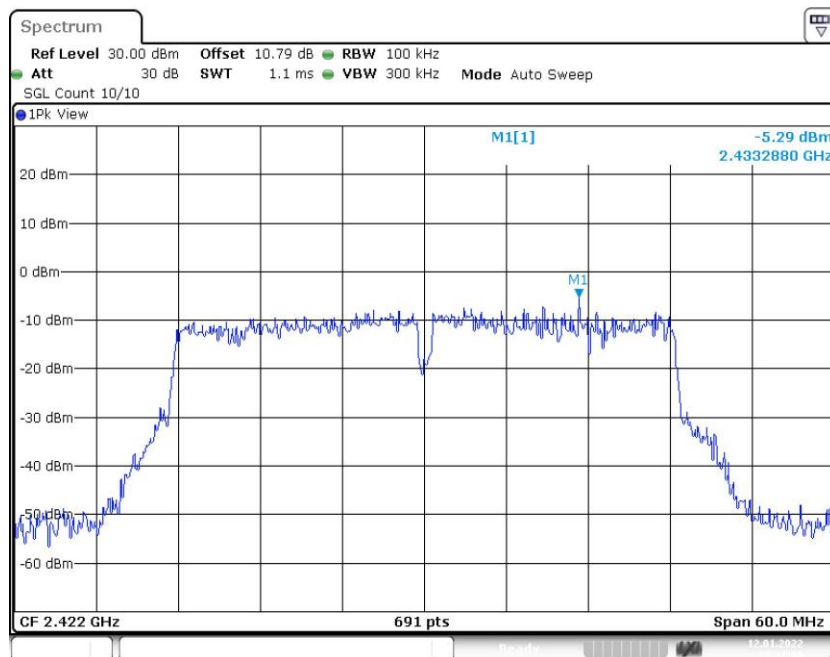


Fig.92 Conducted Spurious Emission (30MHz -1GHz, 802.11n-HT40, CH9)



**Fig.93 Conducted Spurious Emission (1GHz-26.5GHz, 802.11n-HT40, CH9)**



**Fig.94 Conducted Spurious Emission (Center Frequency, 802.11-VHT40, CH3)**

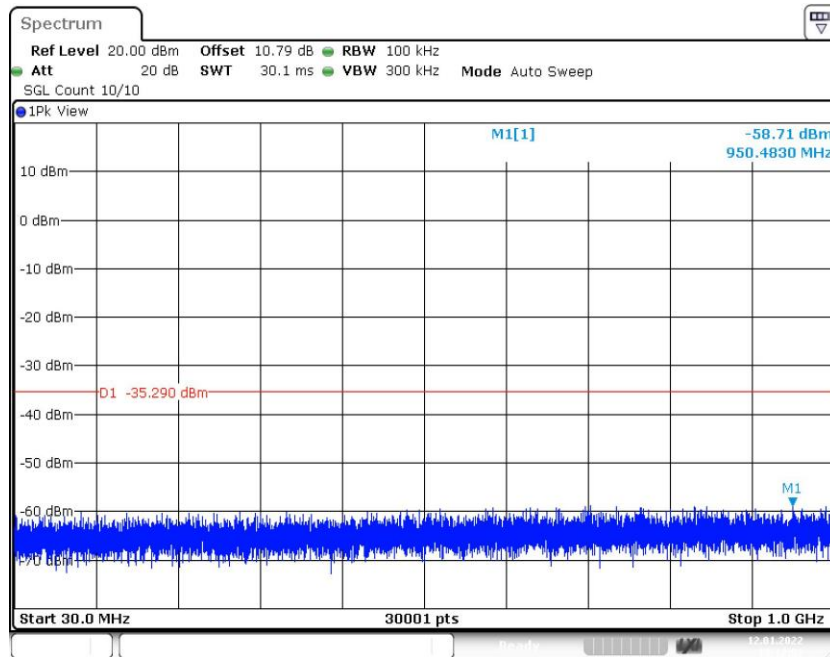


Fig.95 Conducted Spurious Emission (30MHz -1GHz, 802.11-VHT40, CH3)

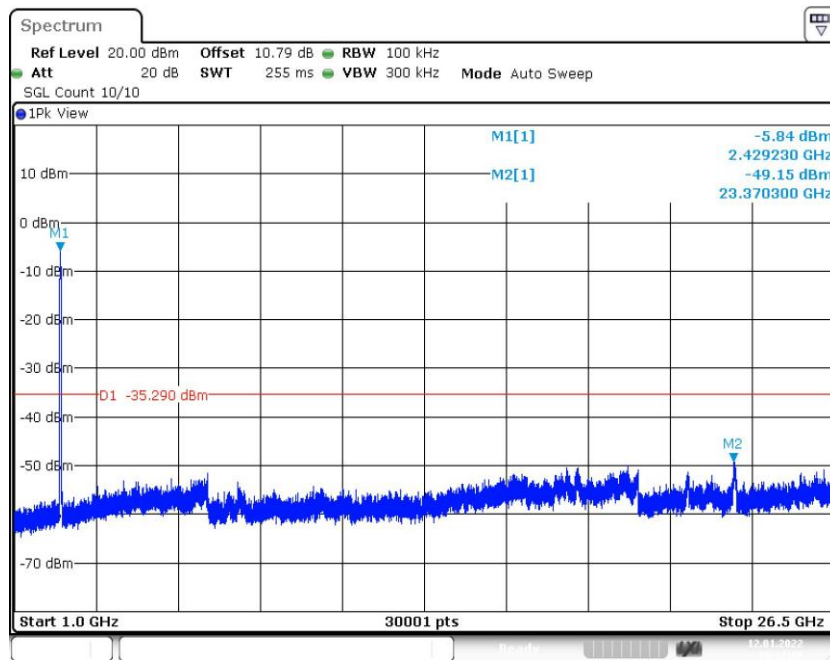


Fig.96 Conducted Spurious Emission (1GHz-26.5GHz, 802.11-VHT40, CH3)

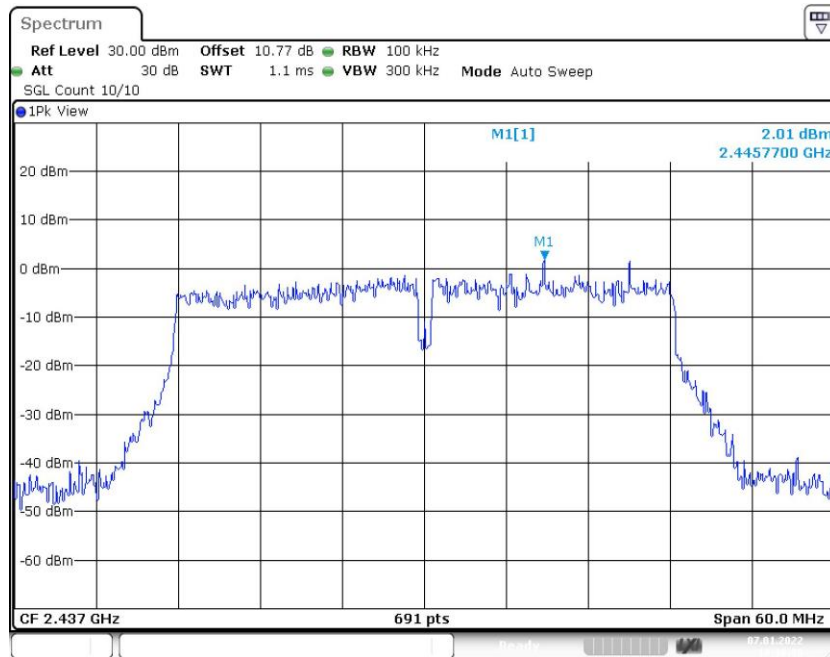


Fig.97 Conducted Spurious Emission (Center Frequency, 802.11-VHT40, CH6)

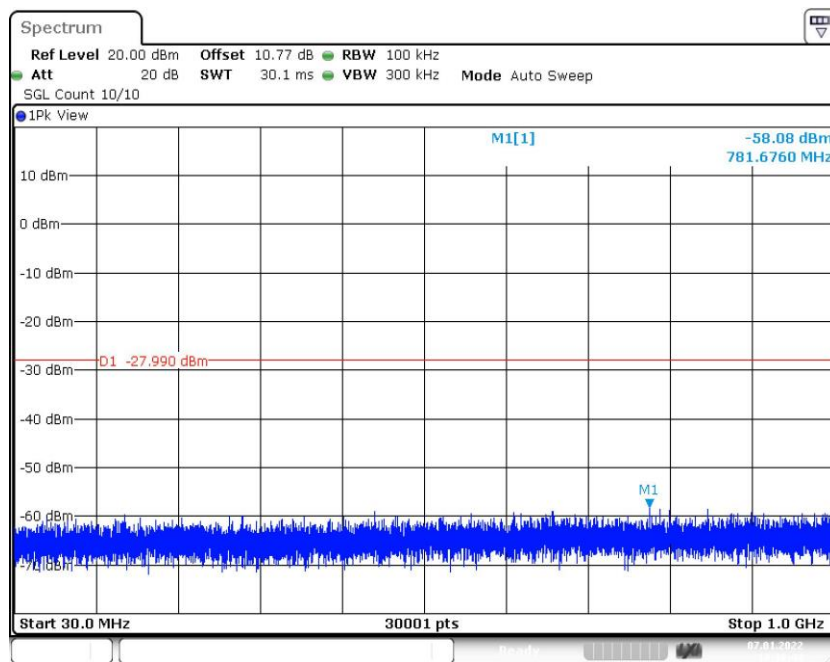


Fig.98 Conducted Spurious Emission (30MHz -1GHz, 802.11-VHT40, CH6)



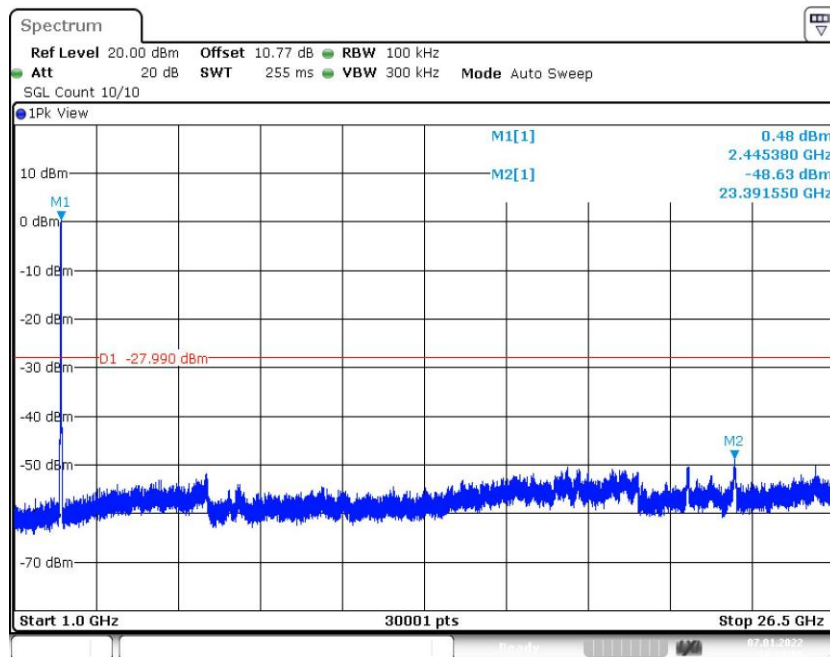


Fig.99 Conducted Spurious Emission (1GHz-26.5GHz, 802.11-VHT40, CH6)

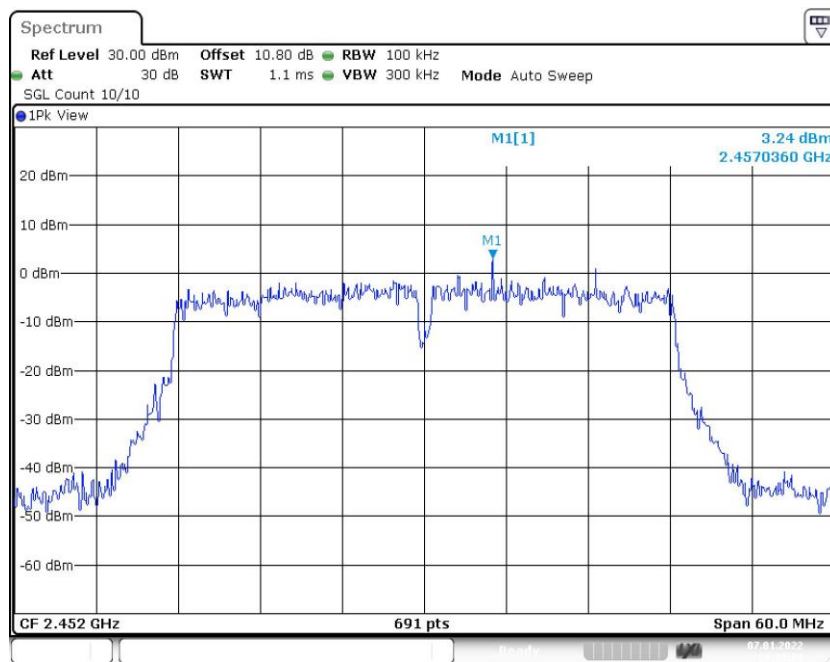


Fig.100 Conducted Spurious Emission (Center Frequency, 802.11-VHT40, CH9)

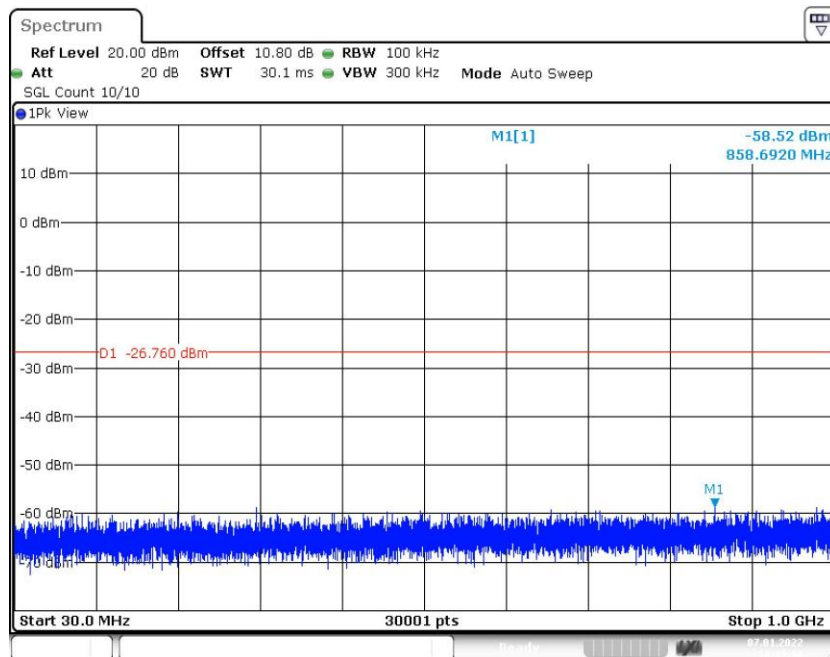


Fig.101 Conducted Spurious Emission (30MHz -1GHz, 802.11-VHT40, CH9)

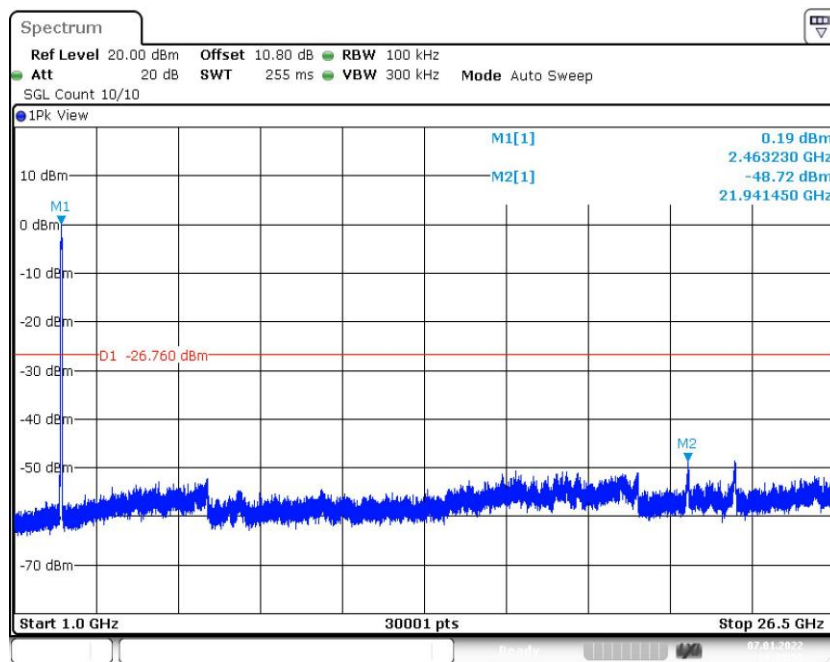


Fig.102 Conducted Spurious Emission (1GHz-26.5GHz, 802.11-VHT40, CH9)



## A.6 Radiated Emission

**Method of Measurement: See ANSI C63.10-clause 11.11&11.12**

**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.103	<b>P</b>
	CH 6	1 GHz ~18 GHz	Fig.104	<b>P</b>
	CH 11	1 GHz ~18 GHz	Fig.105	<b>P</b>
	Restricted Band (CH1)	2.38 GHz ~ 2.45 GHz	Fig.106	<b>P</b>
	Restricted Band (CH11)	2.45 GHz ~ 2.5 GHz	Fig.107	<b>P</b>
802.11g	CH 1	1 GHz ~18 GHz	Fig.108	<b>P</b>
	CH 6	1 GHz ~18 GHz	Fig.109	<b>P</b>
	CH 11	1 GHz ~18 GHz	Fig.110	<b>P</b>
	Restricted Band (CH1)	2.38 GHz ~ 2.45 GHz	Fig.111	<b>P</b>
	Restricted Band (CH11)	2.45 GHz ~ 2.5 GHz	Fig.112	<b>P</b>
802.11n- HT20	CH 1	1 GHz ~18 GHz	Fig.113	<b>P</b>
	CH 6	1 GHz ~18 GHz	Fig.114	<b>P</b>
	CH 11	1 GHz ~18 GHz	Fig.115	<b>P</b>
	Restricted Band (CH1)	2.38 GHz ~ 2.45 GHz	Fig.116	<b>P</b>
	Restricted Band (CH11)	2.45 GHz ~ 2.5 GHz	Fig.117	<b>P</b>
802.11- VHT20	CH 1	1 GHz ~18 GHz	Fig.118	<b>P</b>
	CH 6	1 GHz ~18 GHz	Fig.119	<b>P</b>
	CH 11	1 GHz ~18 GHz	Fig.120	<b>P</b>
	Restricted Band (CH1)	2.38 GHz ~ 2.45 GHz	Fig.121	<b>P</b>
	Restricted Band (CH11)	2.45 GHz ~ 2.5 GHz	Fig.122	<b>P</b>
802.11n- HT40	CH 3	1 GHz ~18 GHz	Fig.123	<b>P</b>
	CH 6	1 GHz ~18 GHz	Fig.124	<b>P</b>
	CH 9	1 GHz ~18 GHz	Fig.125	<b>P</b>
	Restricted Band (CH3)	2.38 GHz ~ 2.45 GHz	Fig.126	<b>P</b>
	Restricted Band (CH9)	2.45 GHz ~ 2.5 GHz	Fig.127	<b>P</b>
802.11- VHT40	CH 3	1 GHz ~6 GHz	Fig.128	<b>P</b>
		6 GHz ~18 GHz	Fig.129	<b>P</b>
	CH 6	1 GHz ~6 GHz	Fig.130	<b>P</b>
		6 GHz ~18 GHz	Fig.131	<b>P</b>
	CH 9	1 GHz ~6 GHz	Fig.132	<b>P</b>
		6 GHz ~18 GHz	Fig.133	<b>P</b>
	Restricted Band (CH3)	2.38 GHz ~ 2.45 GHz	Fig.134	<b>P</b>
Restricted Band (CH9)	2.45 GHz ~ 2.5 GHz	Fig.135	<b>P</b>	
/	All Channels	9 kHz ~30 MHz	Fig.136	<b>P</b>
		30 MHz ~1 GHz	Fig.137	<b>P</b>
		18 GHz ~26.5 GHz	Fig.138	<b>P</b>



**Worst-Case Result:**

**802.11b CH11 (1-18GHz)**

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2999.285714	52.44	74.00	21.56	V	6.7
5811.900000	49.15	74.00	24.85	V	4.5
7386.857143	53.58	74.00	20.42	V	5.5
10859.142857	47.79	74.00	26.21	H	9.3
14908.285714	52.12	74.00	21.88	V	13.0
17916.428571	55.92	74.00	18.08	H	18.9

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2999.285714	40.00	54.00	14.00	V	6.7
5811.900000	36.31	54.00	17.69	V	4.5
7386.857143	47.81	54.00	6.19	V	5.5
10859.142857	35.65	54.00	18.35	H	9.3
14908.285714	39.19	54.00	14.81	V	13.0
17916.428571	43.33	54.00	10.67	H	18.9

**802.11g CH1 (1GHz-18GHz)**

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2985.714286	52.60	74.00	21.40	H	6.7
5246.100000	47.43	74.00	26.57	H	3.8
7385.142857	53.40	74.00	20.60	V	5.5
11132.142857	48.96	74.00	25.04	V	9.7
14851.714286	52.04	74.00	21.96	H	13.0
17160.857143	54.89	74.00	19.11	H	18.4

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2985.714286	40.06	54.00	13.94	H	6.7
5246.100000	34.89	54.00	19.11	H	3.8
7385.142857	39.54	54.00	14.46	V	5.5
11132.142857	36.22	54.00	17.78	V	9.7
14851.714286	39.15	54.00	14.85	H	13.0
17160.857143	42.62	54.00	11.38	H	18.4



**802.11n-HT20 CH11 (1GHz-18GHz)**

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2998.571429	52.92	74.00	21.08	V	6.7
5474.400000	47.81	74.00	26.19	H	3.8
7344.857143	53.58	74.00	20.42	V	5.3
10404.857143	48.93	74.00	25.07	H	9.1
14845.714286	51.14	74.00	22.86	H	13.0
17919.000000	55.94	74.00	18.06	H	18.9

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2998.571429	40.00	54.00	14.00	V	6.7
5474.400000	35.84	54.00	18.16	H	3.8
7344.857143	37.79	54.00	16.21	V	5.3
10404.857143	35.94	54.00	18.06	H	9.1
14845.714286	39.17	54.00	14.83	H	13.0
17919.000000	43.22	54.00	10.78	H	18.9

**802.11-VHT20 CH11 (1GHz-18GHz)**

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
7383.000000	53.99	74.00	20.01	V	5.5
9491.571429	46.52	74.00	27.48	H	7.0
11225.142857	48.22	74.00	25.78	H	9.7
13344.857143	49.33	74.00	24.67	V	11.3
15882.000000	52.90	74.00	21.10	H	14.0
17000.142857	54.94	74.00	19.06	V	18.4

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
7383.000000	38.71	54.00	15.29	V	5.5
9491.571429	34.32	54.00	19.68	H	7.0
11225.142857	35.35	54.00	18.65	H	9.7
13344.857143	36.67	54.00	17.33	V	11.3
15882.000000	40.47	54.00	13.53	H	14.0
17000.142857	42.34	54.00	11.66	V	18.4



**802.11n-HT40 CH6 (1GHz-18GHz)**

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2980.714286	52.75	74.00	21.25	H	6.8
5177.700000	47.13	74.00	26.87	H	3.4
7314.857143	51.29	74.00	22.71	V	5.1
10397.571429	48.42	74.00	25.58	V	9.1
14922.000000	51.70	74.00	22.30	V	12.9
17917.285714	55.66	74.00	18.34	V	18.9

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2980.714286	40.03	54.00	13.97	H	6.8
5177.700000	34.71	54.00	19.29	H	3.4
7314.857143	38.44	54.00	15.56	V	5.1
10397.571429	35.93	54.00	18.07	V	9.1
14922.000000	39.01	54.00	14.99	V	12.9
17917.285714	43.29	54.00	10.71	V	18.9

**802.11-VHT40 CH9 (1GHz-18GHz)**

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
10224.428572	46.96	74.00	27.04	V	8.3
11134.285714	47.68	74.00	26.32	V	9.7
12521.571429	49.41	74.00	24.59	V	11.3
14872.714286	52.31	74.00	21.69	V	13.0
16964.571429	54.95	74.00	19.05	V	18.3
17921.571429	56.16	74.00	17.84	V	18.9

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
10224.428572	36.70	54.00	17.30	V	8.3
11134.285714	38.12	54.00	15.88	V	9.7
12521.571429	39.13	54.00	14.87	V	11.3
14872.714286	39.53	54.00	14.47	V	13.0
16964.571429	42.63	54.00	11.37	V	18.3
17921.571429	43.38	54.00	10.62	V	18.9

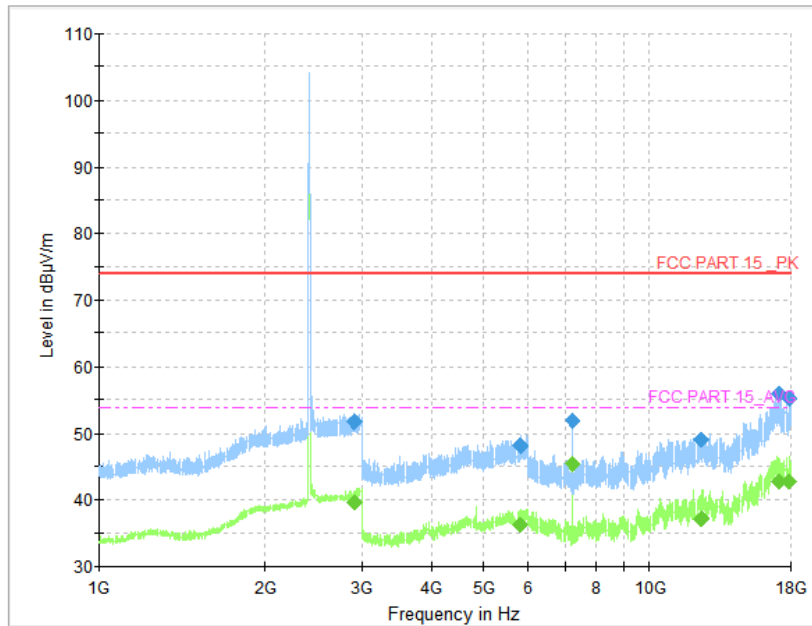
**Note:**

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:

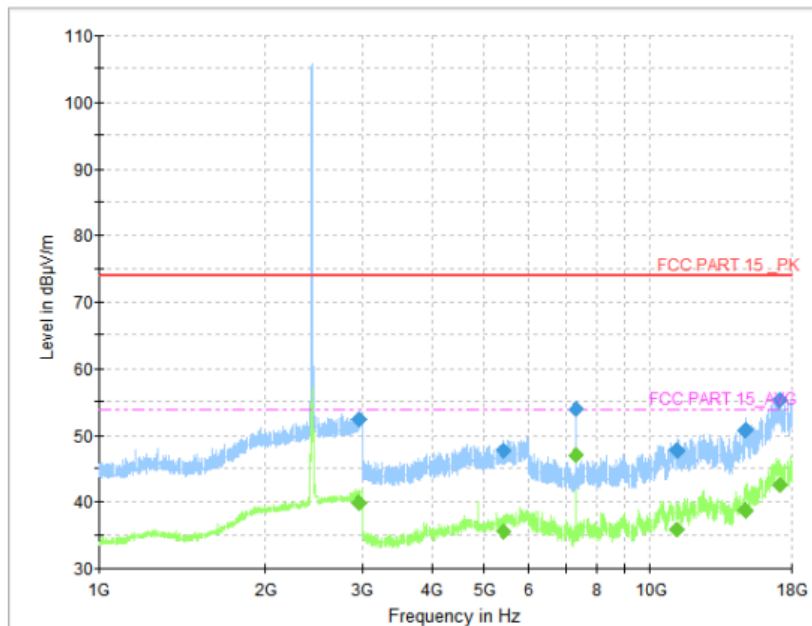
Result=  $P_{Mea}$  +Cable Loss +Antenna Factor-Gain of the preamplifier.

**See below for test graphs.**

**Conclusion: PASS**

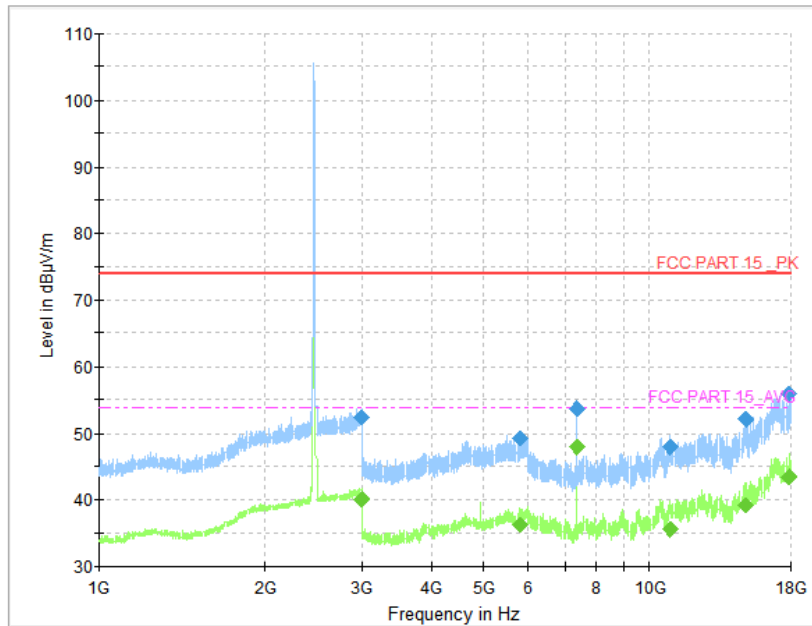


**Fig.103 Radiated Spurious Emission (802.11b, CH1, 1 GHz-18GHz)**

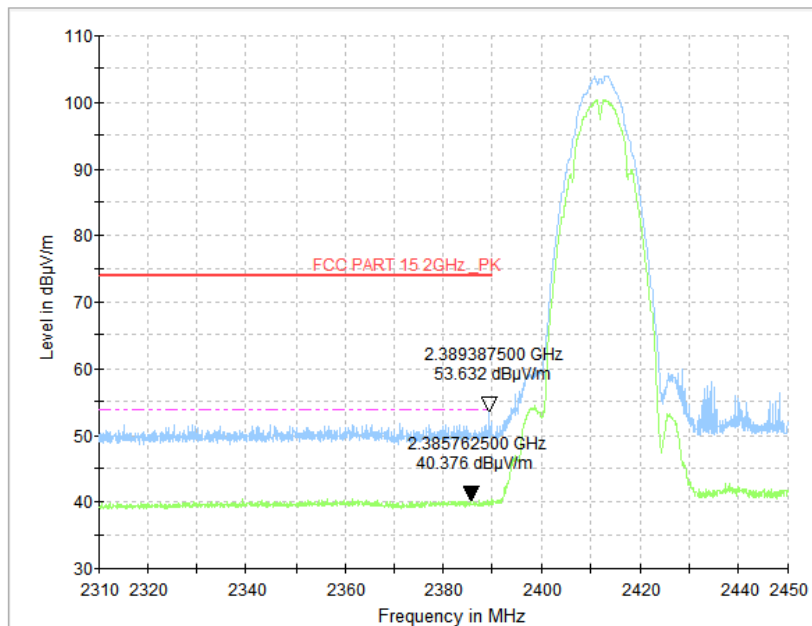


**Fig.104 Radiated Spurious Emission (802.11b, CH6, 1 GHz-18GHz)**

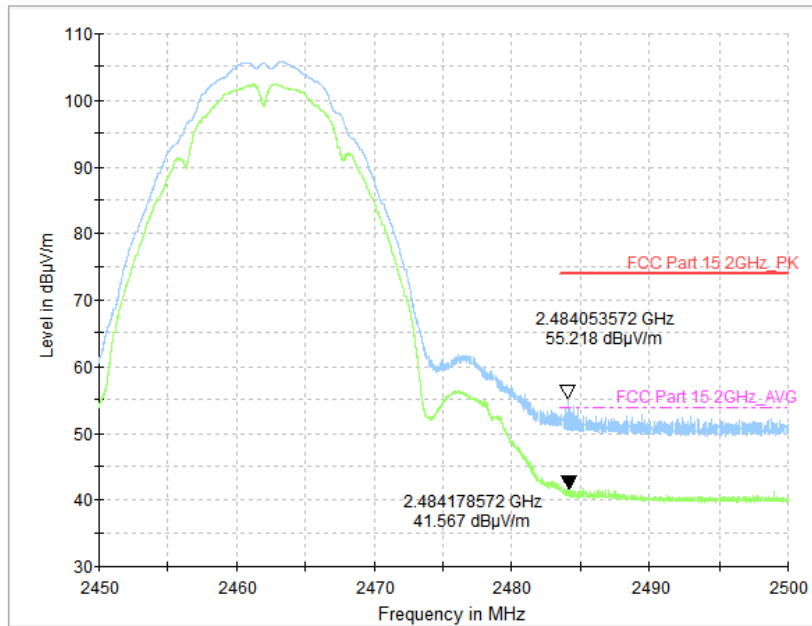




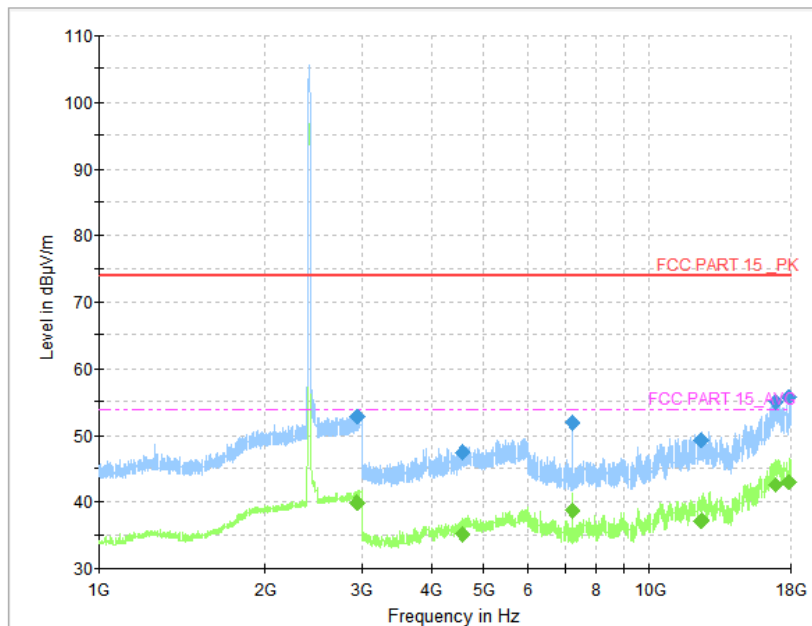
**Fig.105 Radiated Spurious Emission (802.11b, CH11, 1 GHz-18GHz)**



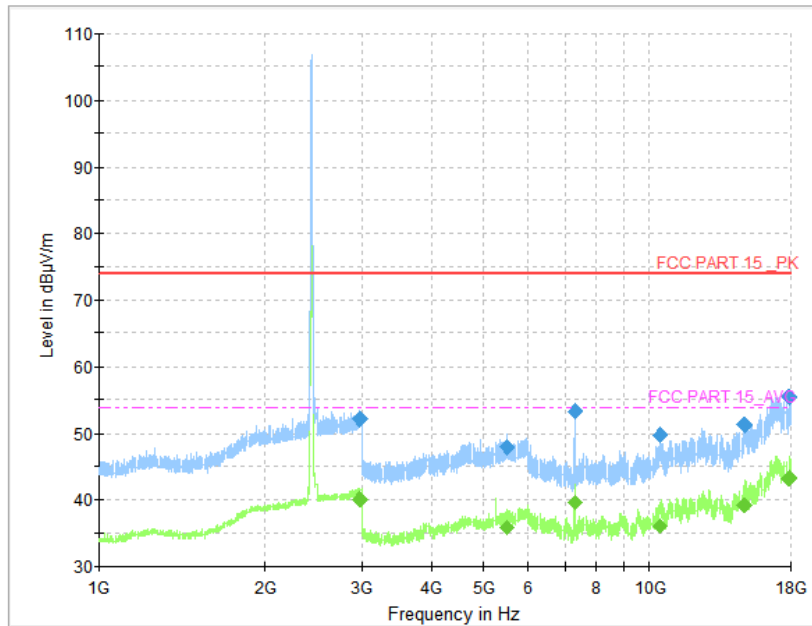
**Fig.106 Radiated Restricted Band (802.11b, CH1, 2.38GHz~2.45GHz)**



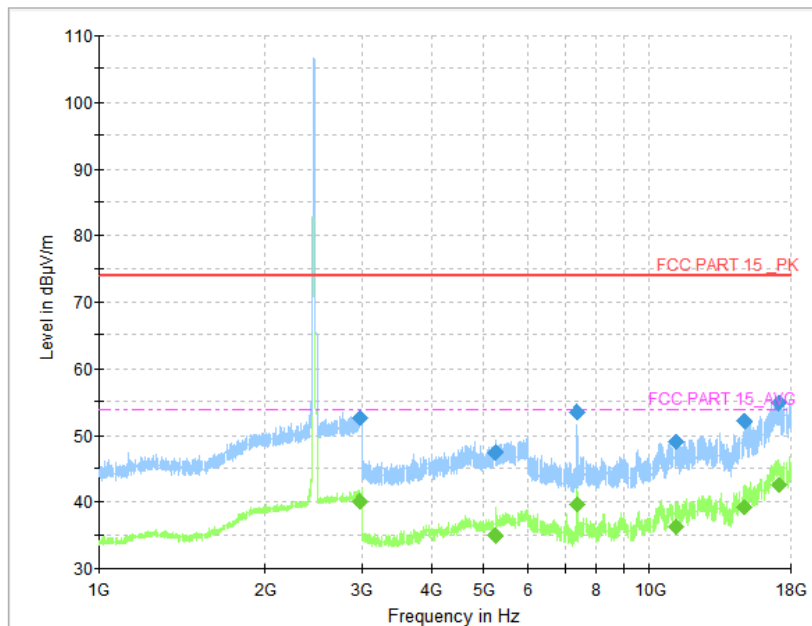
**Fig.107 Radiated Restricted Band (802.11b, CH11, 2.45GHz~2.5GHz)**



**Fig.108 Radiated Spurious Emission (802.11g, CH1, 1 GHz-18 GHz)**



**Fig.109 Radiated Spurious Emission (802.11g, CH6, 1 GHz-18 GHz)**



**Fig.110 Radiated Spurious Emission (802.11g, CH11, 1 GHz-18 GHz)**

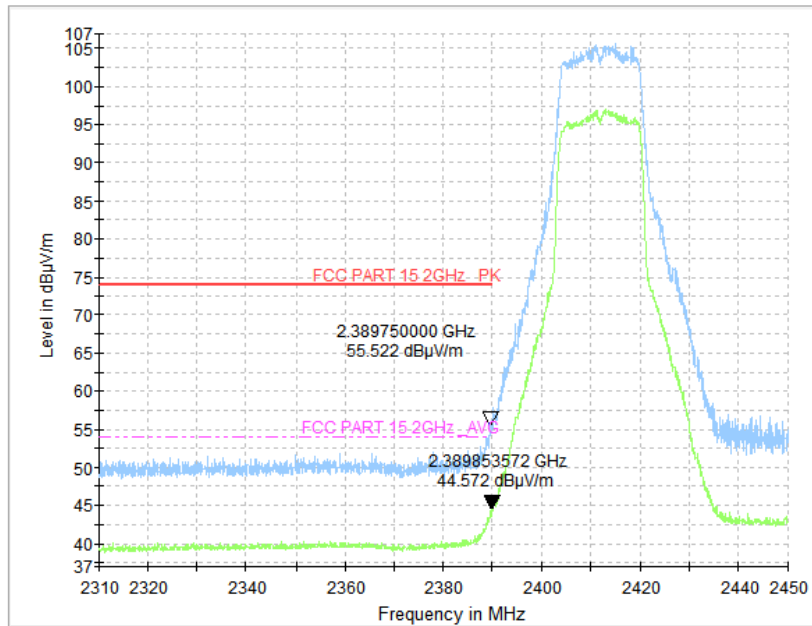


Fig.111 Radiated Restricted Band (802.11g, CH1, 2.38GHz~2.45GHz)

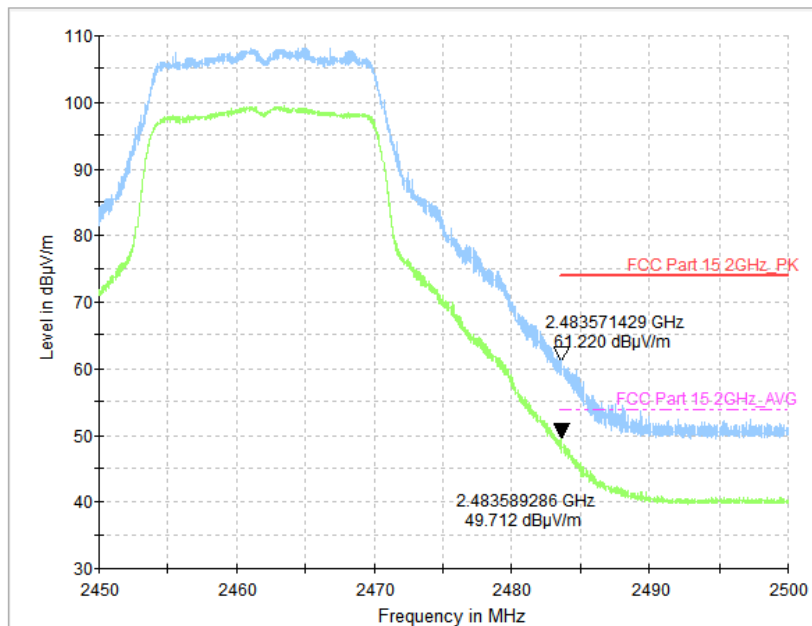
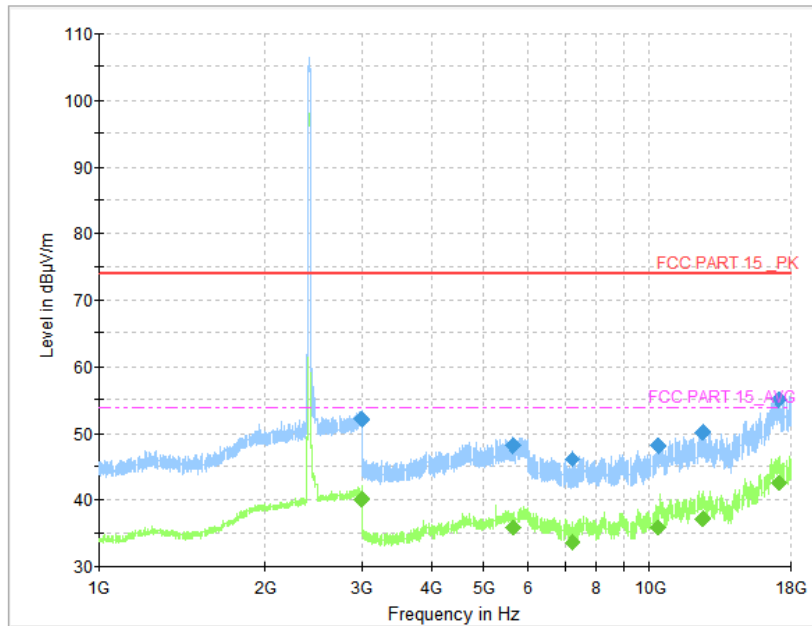
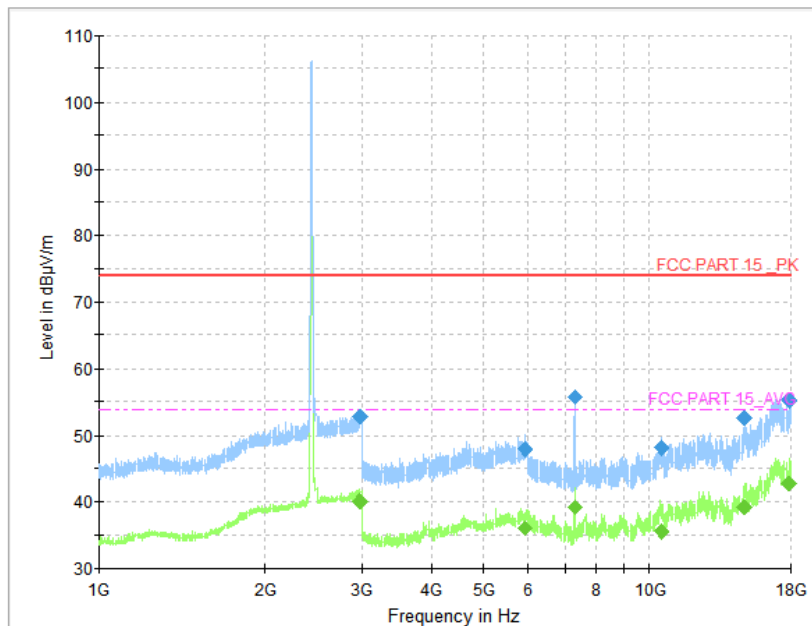


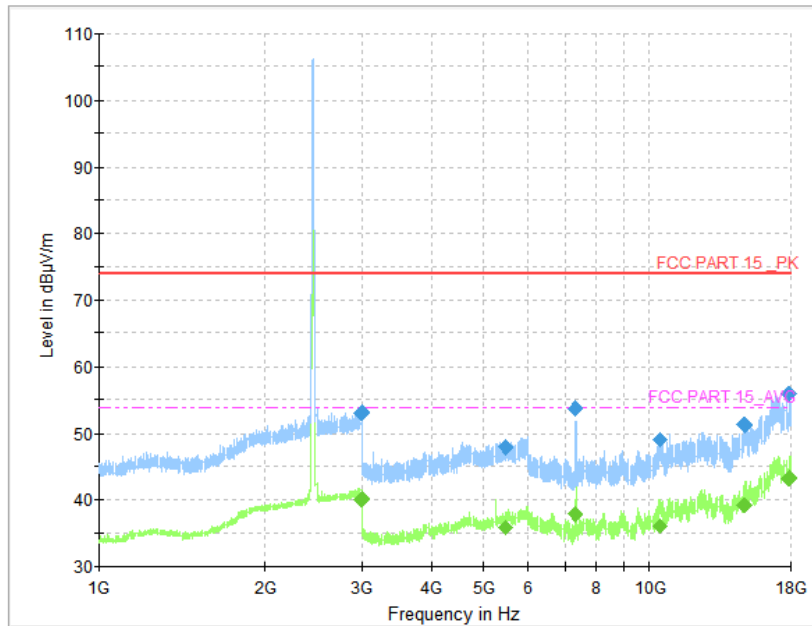
Fig.112 Radiated Restricted Band (802.11g, CH11, 2.45GHz~2.5GHz)



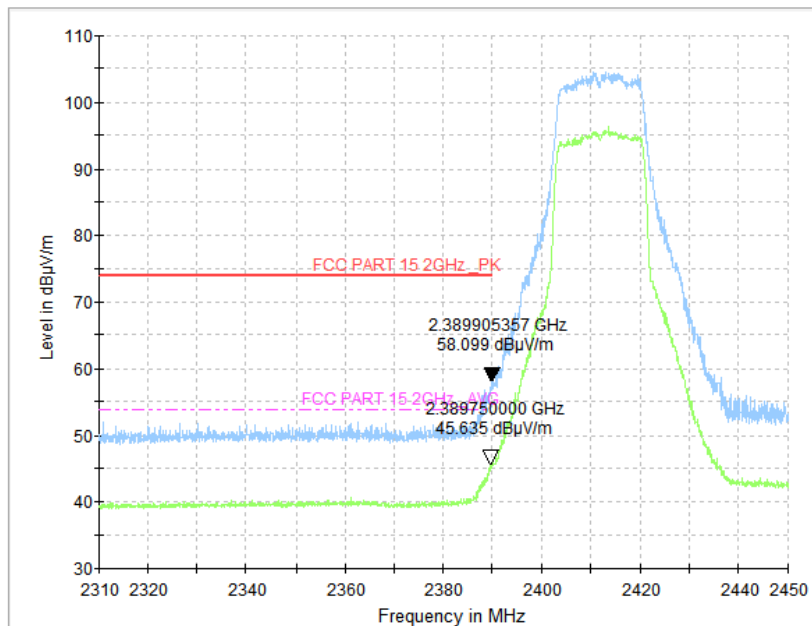
**Fig.113 Radiated Spurious Emission (802.11n-HT20, CH1, 1 GHz-18 GHz)**



**Fig.114 Radiated Spurious Emission (802.11n-HT20, CH6, 1 GHz-18 GHz)**



**Fig.115 Radiated Spurious Emission (802.11n-HT20, CH11, 1 GHz-18 GHz)**



**Fig.116 Radiated Restricted Band (802.11n-HT20, CH1, 2.38GHz~2.45GHz)**

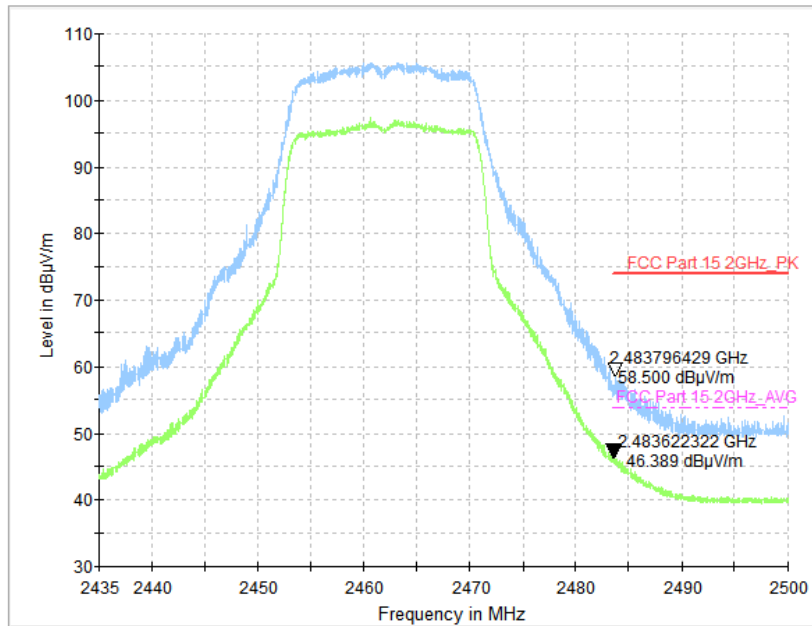


Fig.117 Radiated Restricted Band (802.11n-HT20, CH11, 2.45GHz~2.5GHz)

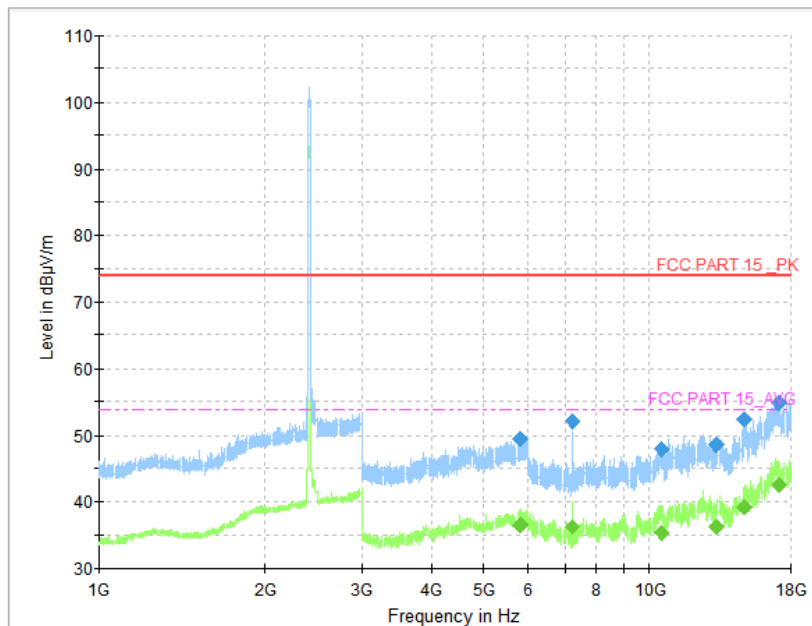


Fig.118 Radiated Spurious Emission (802.11-VHT20, CH1, 1 GHz-18 GHz)

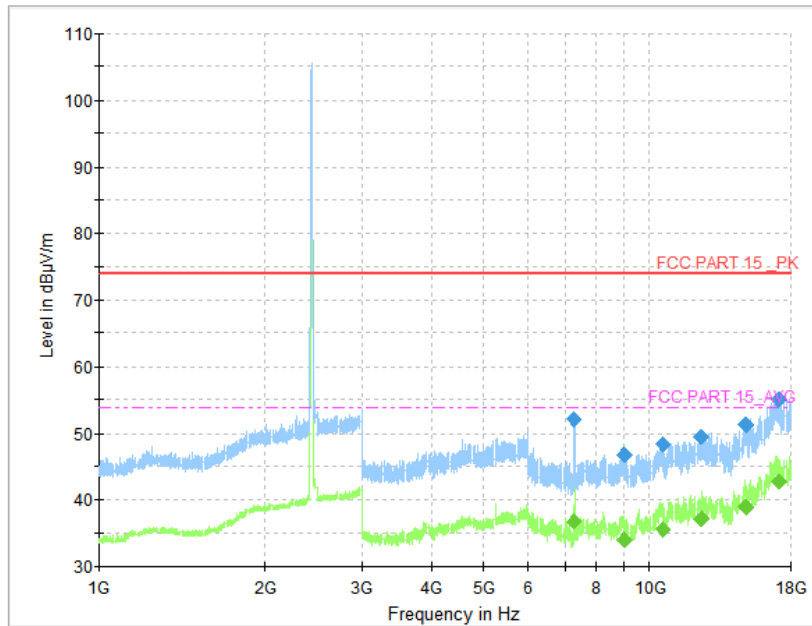


Fig.119 Radiated Spurious Emission (802.11-VHT20, CH6, 1 GHz-18 GHz)

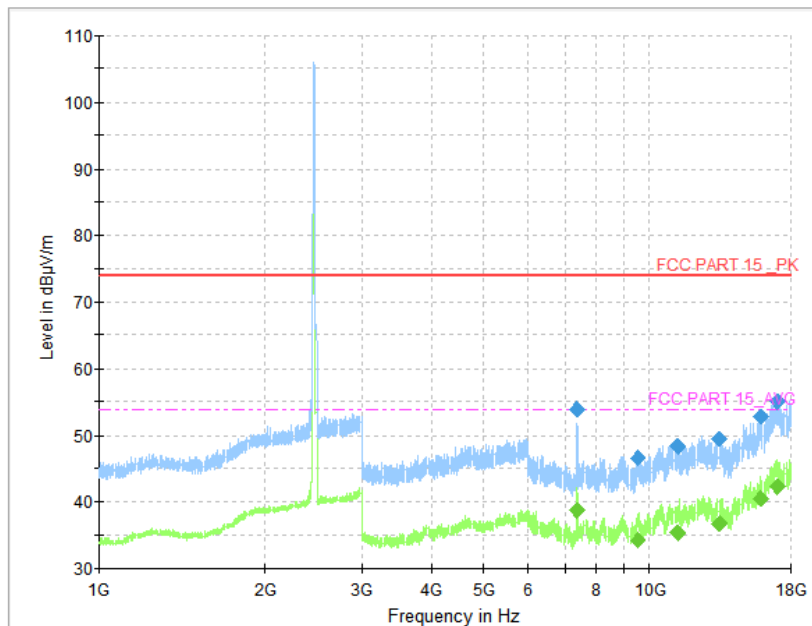


Fig.120 Radiated Spurious Emission (802.11-VHT20, CH11, 1 GHz-18 GHz)



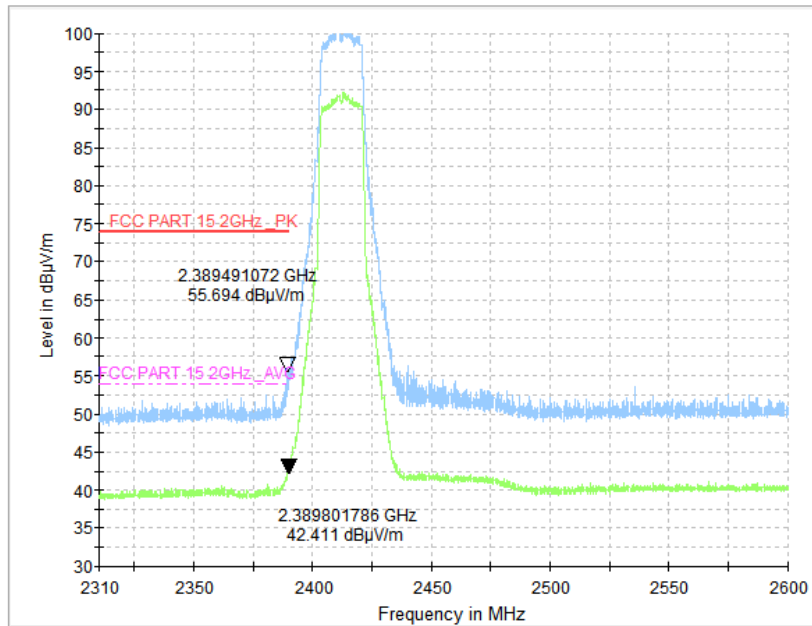


Fig.121 Radiated Restricted Band (802.11-VHT20, CH1, 2.38GHz~2.45GHz)

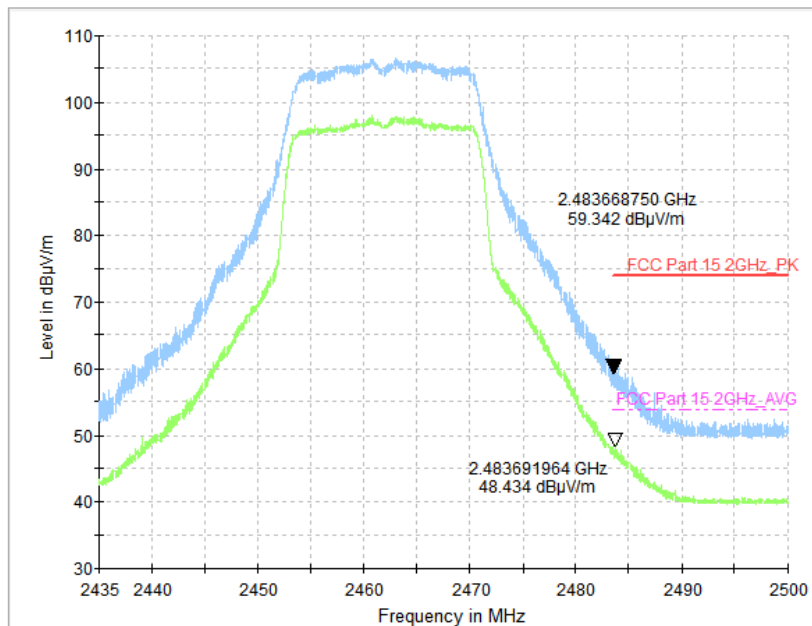
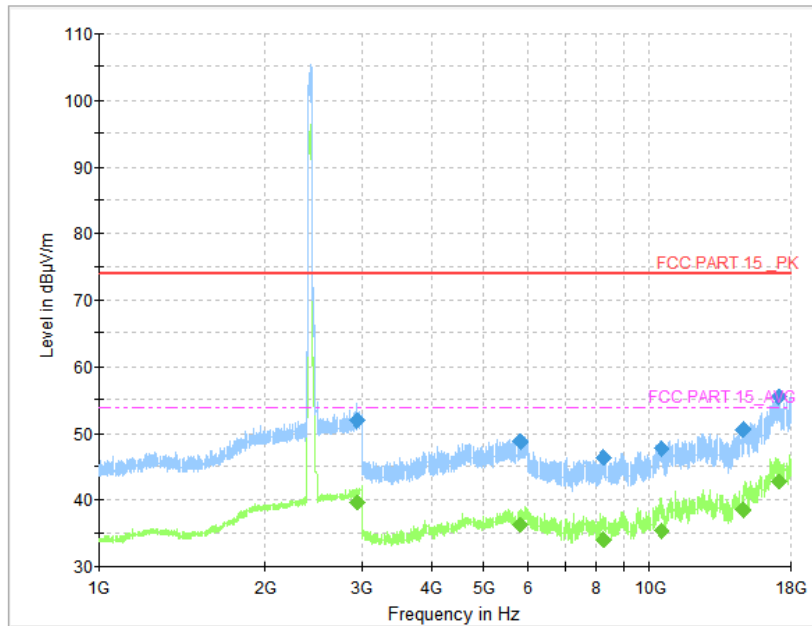
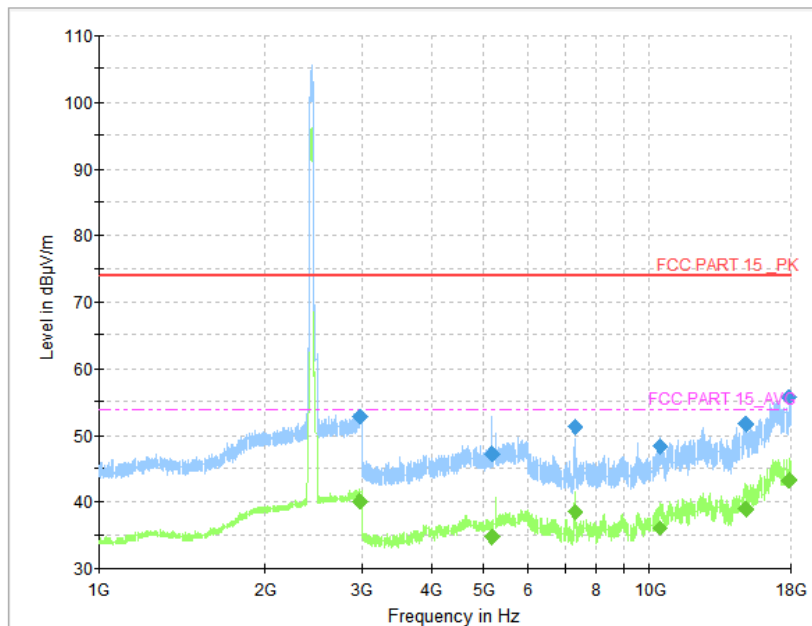


Fig.122 Radiated Restricted Band (802.11-VHT20, CH11, 2.45GHz~2.5GHz)



**Fig.123 Radiated Spurious Emission (802.11n-HT40, CH3, 1 GHz-18 GHz)**



**Fig.124 Radiated Spurious Emission (802.11n-HT40, CH6, 1 GHz-18 GHz)**

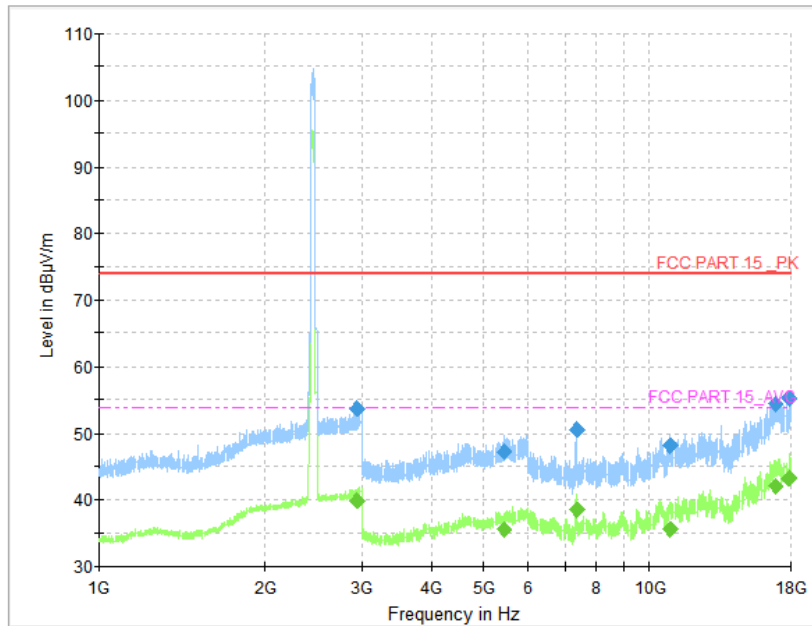


Fig.125 Radiated Spurious Emission (802.11n-HT40, CH9, 1 GHz-18 GHz)

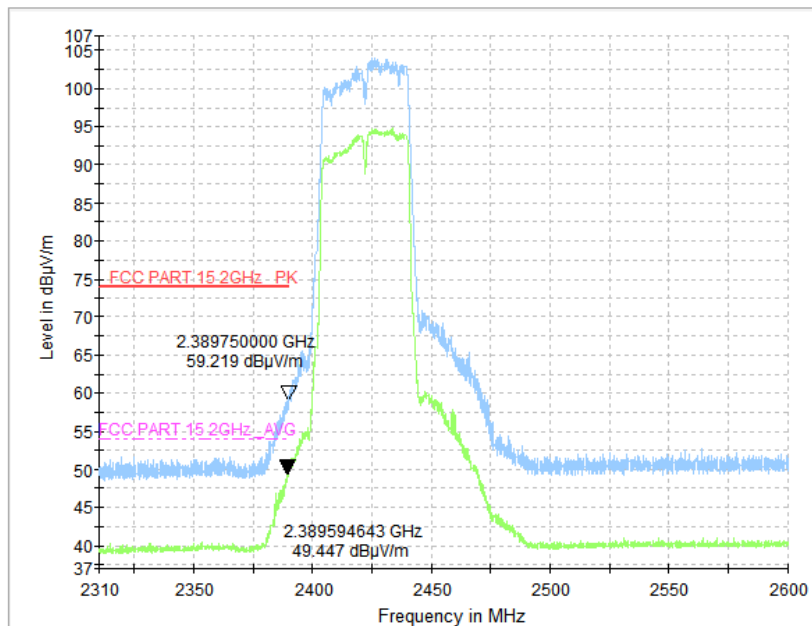


Fig.126 Radiated Restricted Band (802.11n-HT40, CH3, 2.38GHz~2.45GHz)

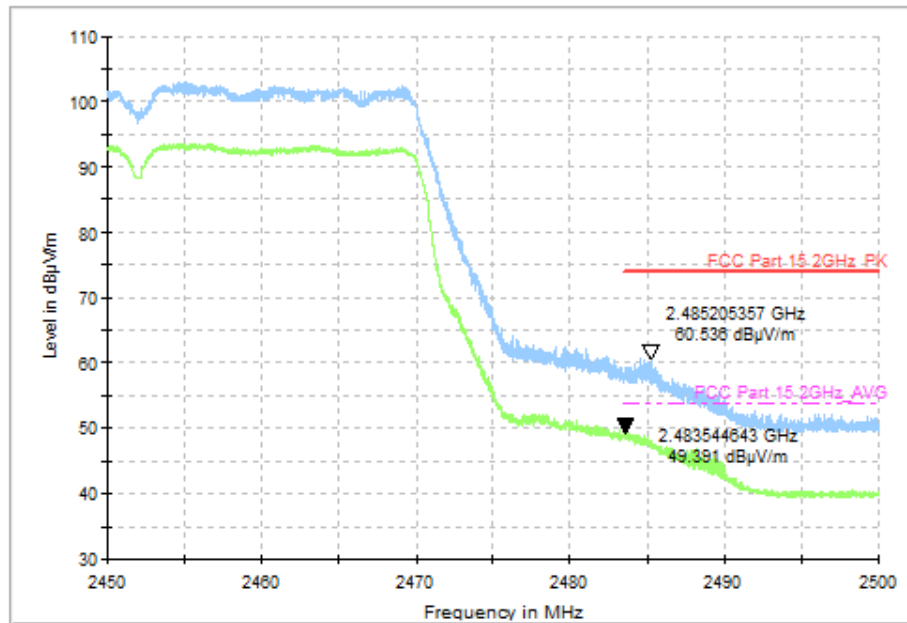


Fig.127 Radiated Restricted Band (802.11n-HT40, CH9, 2.45GHz~2.5GHz)

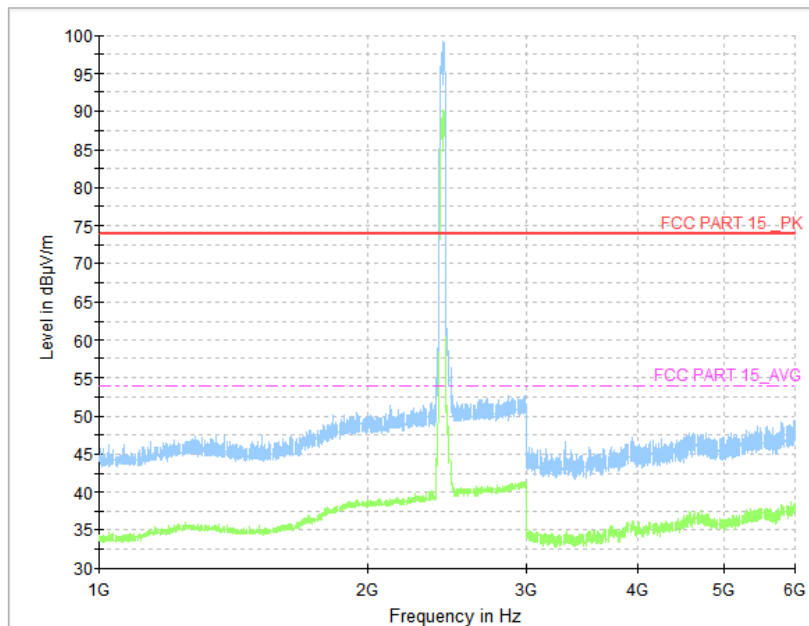
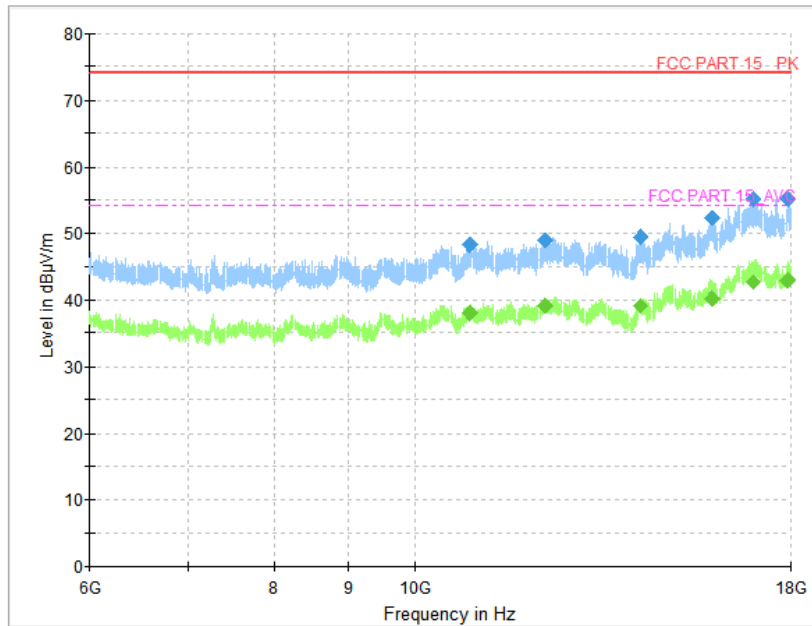
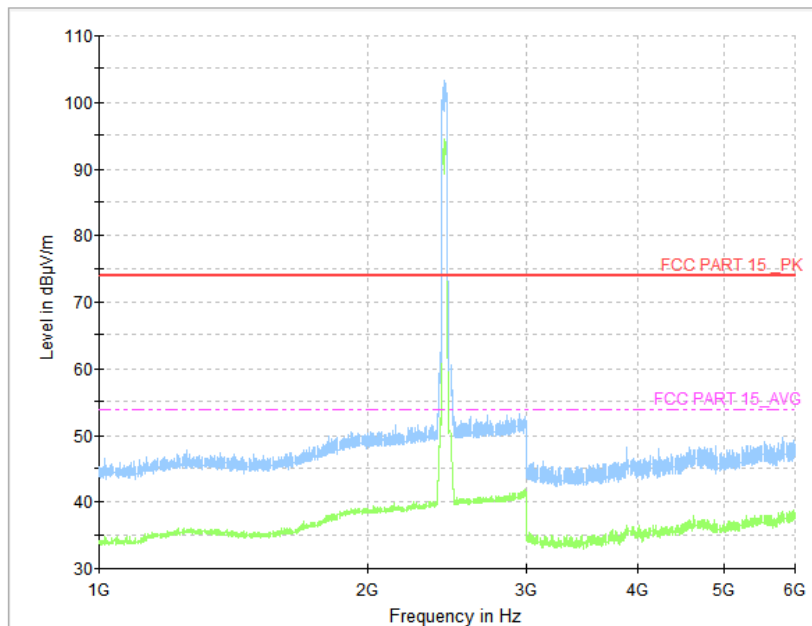


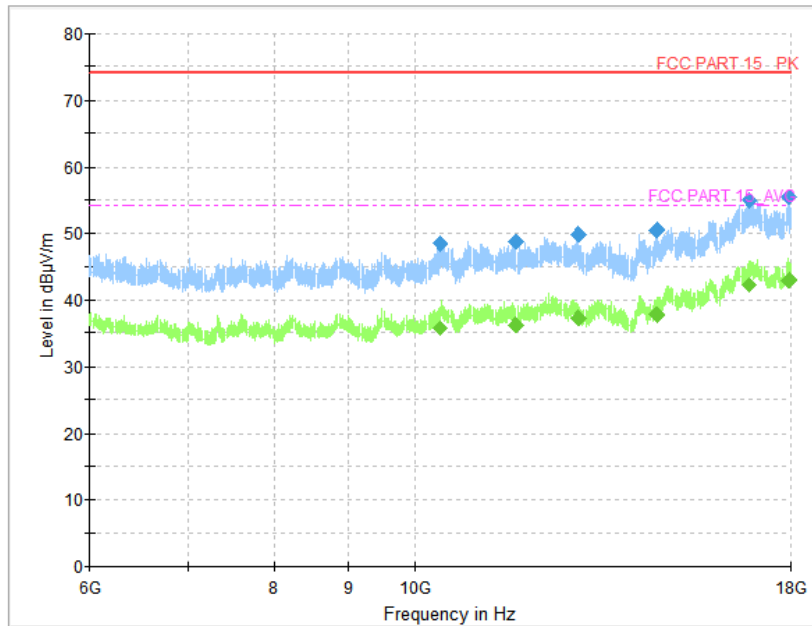
Fig.128 Radiated Spurious Emission (802.11-VHT40, CH3, 1 GHz-6 GHz)



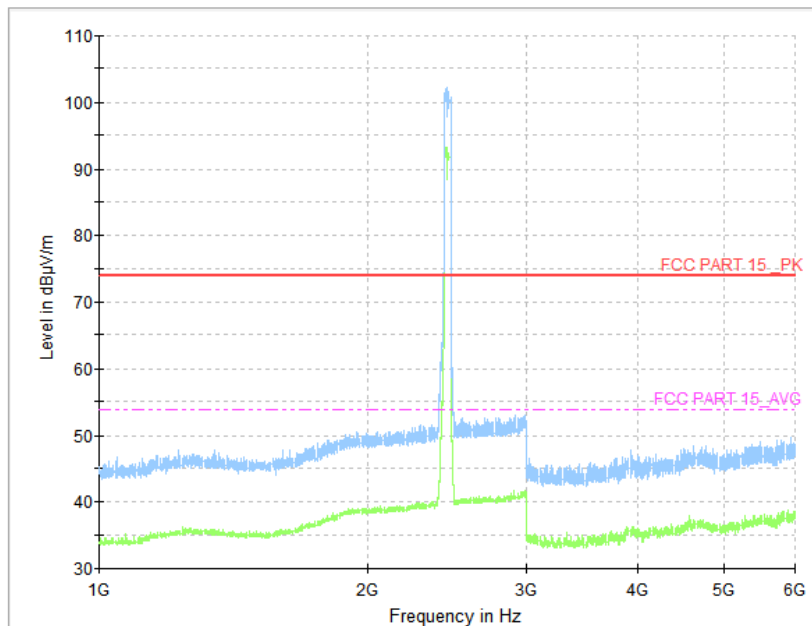
**Fig.129 Radiated Spurious Emission (802.11-VHT40, CH3, 6 GHz-18 GHz)**



**Fig.130 Radiated Spurious Emission (802.11-VHT40, CH6, 1 GHz-6 GHz)**



**Fig.131 Radiated Spurious Emission (802.11-VHT40, CH6, 6 GHz-18 GHz)**



**Fig.132 Radiated Spurious Emission (802.11-VHT40, CH9, 1 GHz-6 GHz)**

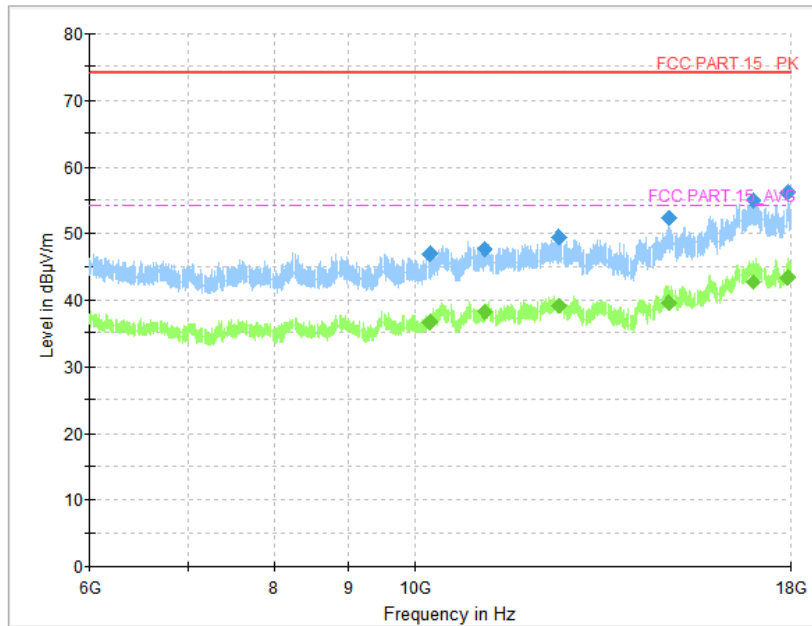


Fig.133 Radiated Spurious Emission (802.11-VHT40, CH9, 6 GHz-18 GHz)

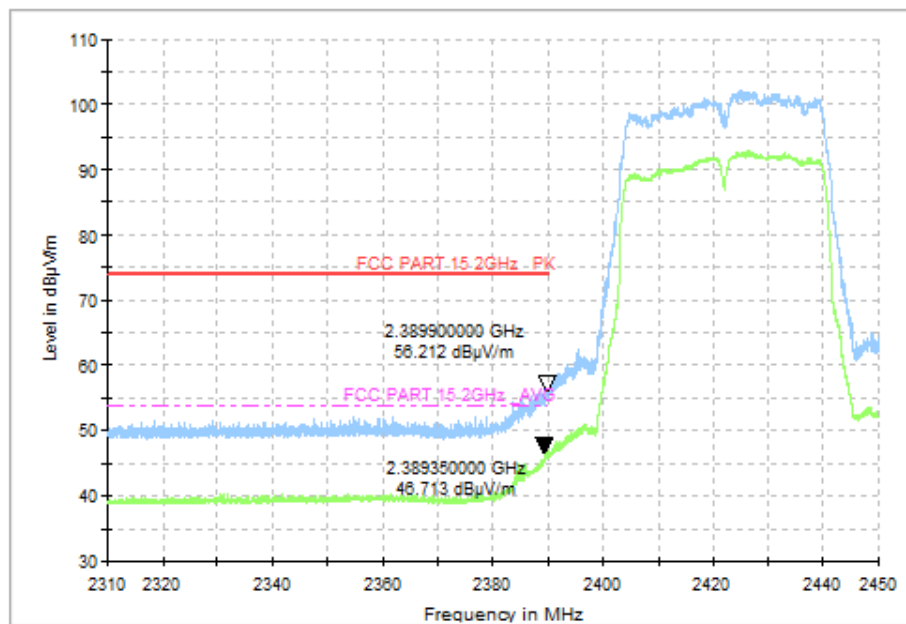


Fig.134 Radiated Restricted Band (802.11-VHT40, CH3, 2.38GHz~2.45GHz)