

Fig.A.6.1.56 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 30 MHz-1 GHz)

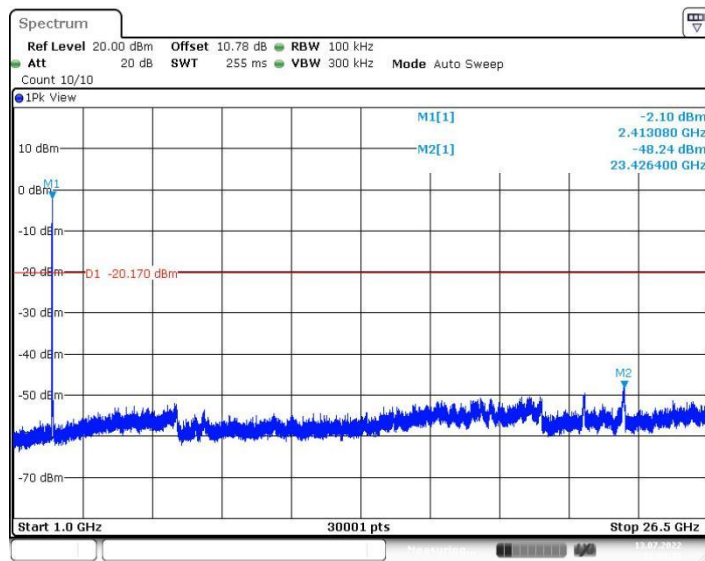


Fig.A.6.1.57 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 1 GHz-26.5 GHz)

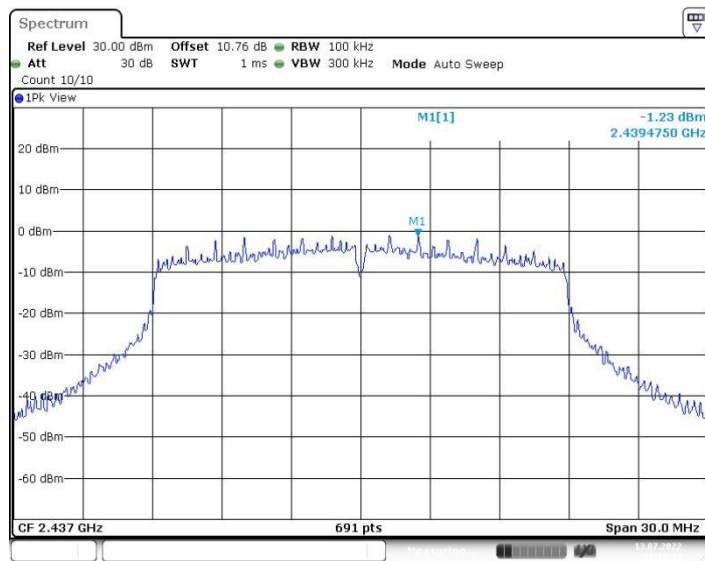


Fig.A.6.1.58 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, Center Frequency)

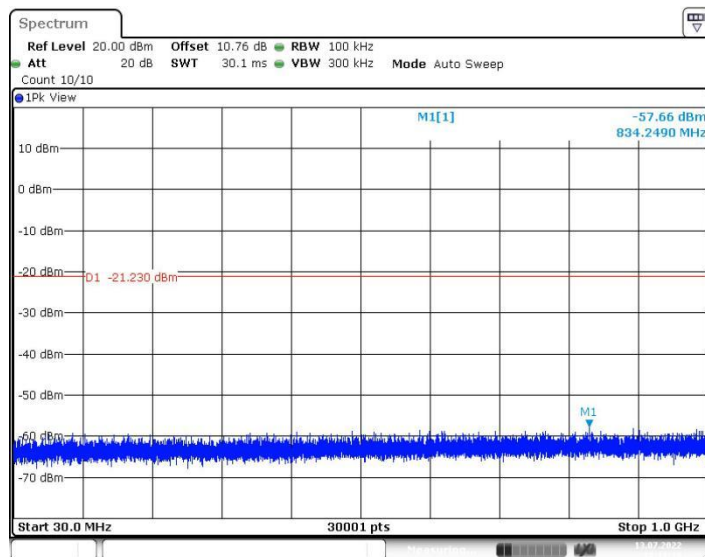
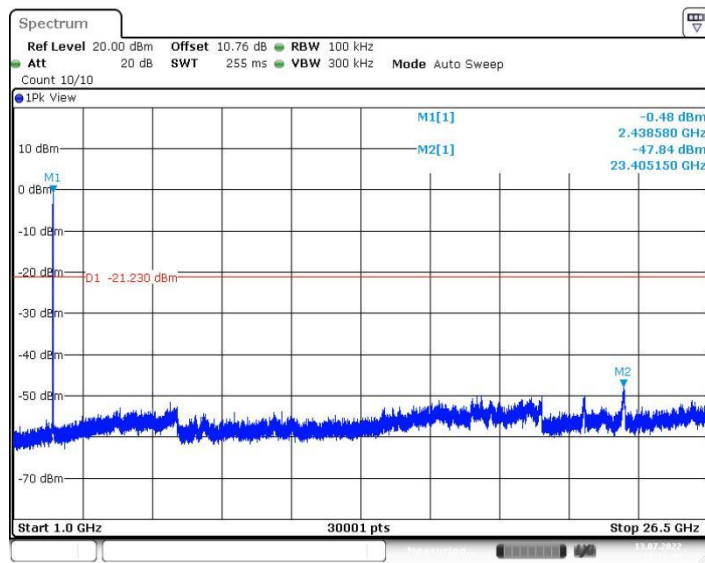
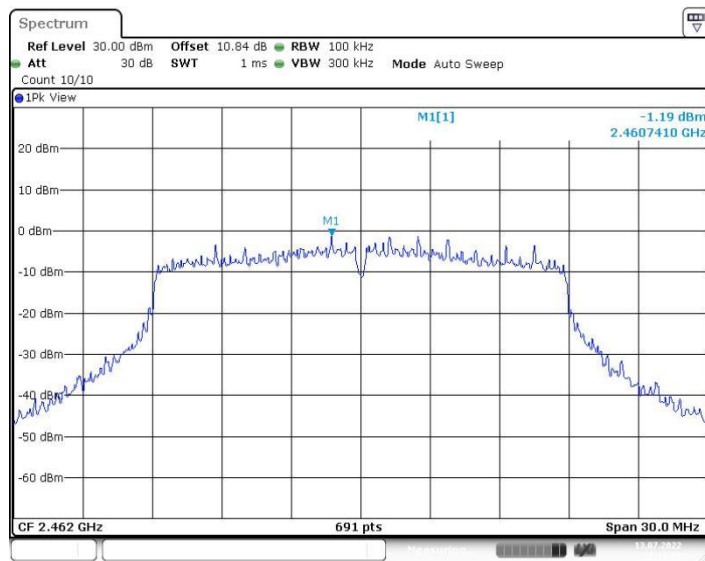


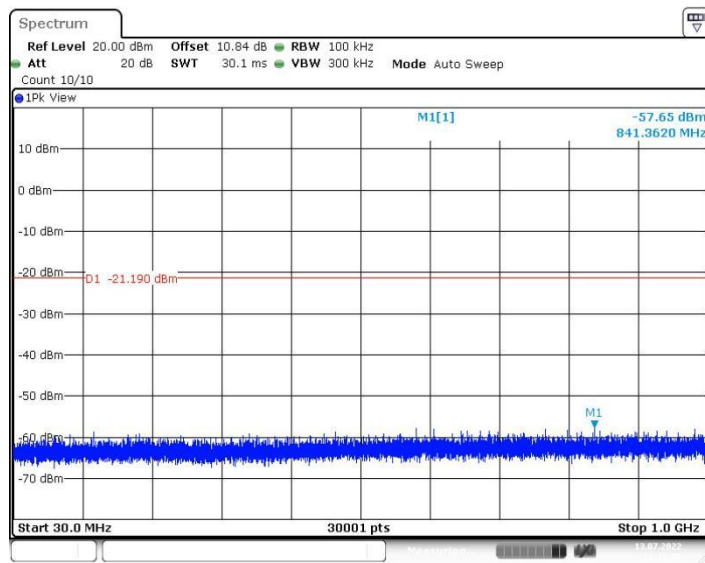
Fig.A.6.1.59 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 30 MHz-1 GHz)



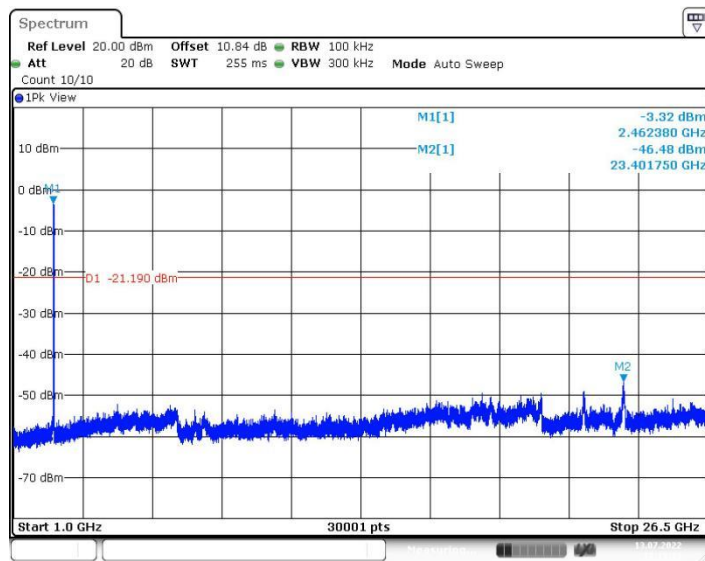
**Fig.A.6.1.60 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 1 GHz-26.5 GHz)**



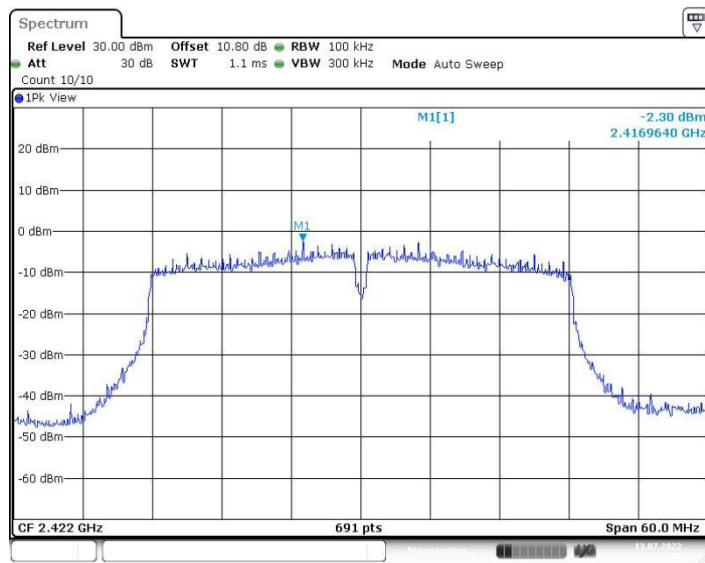
**Fig.A.6.1.61 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, Center Frequency)**



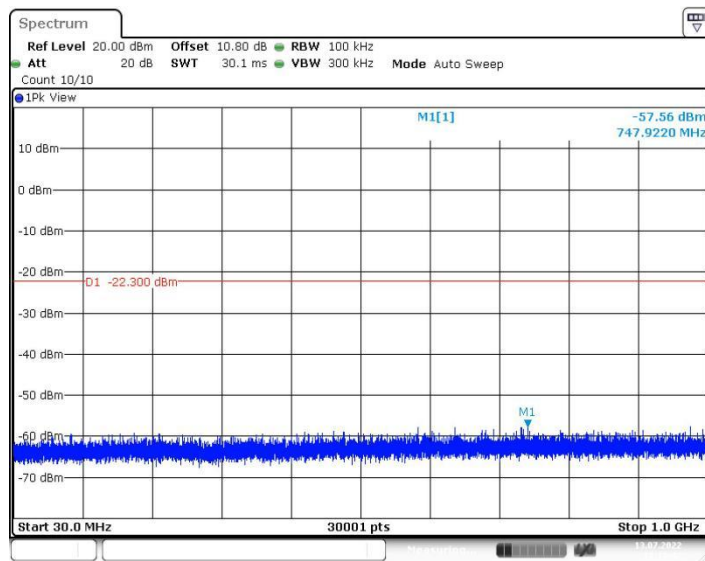
**Fig.A.6.1.62 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 30 MHz-1 GHz)**



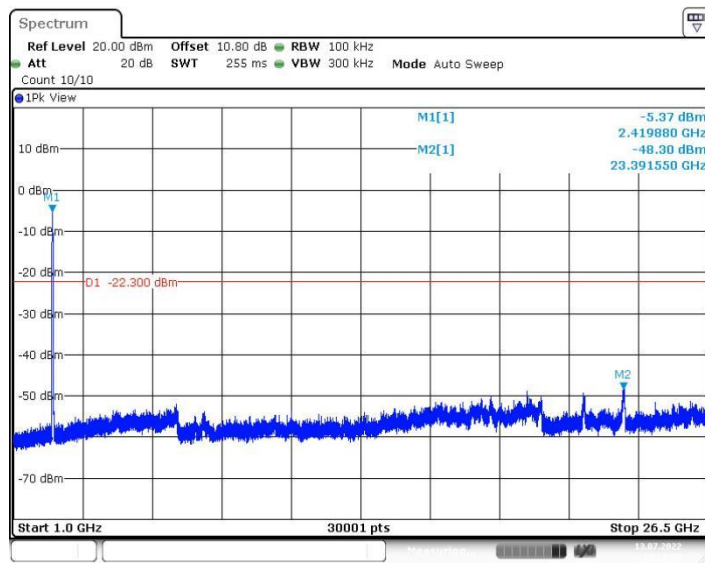
**Fig.A.6.1.63 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 1 GHz-26.5 GHz)**



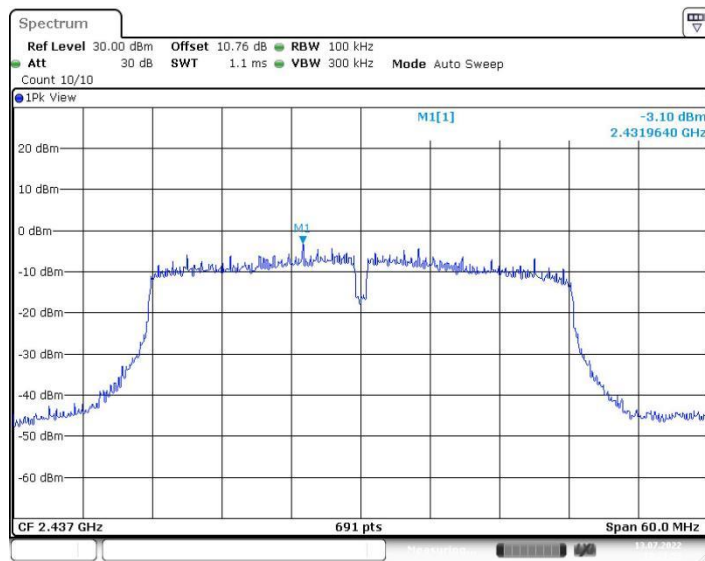
**Fig.A.6.1.64 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, Center Frequency)**



**Fig.A.6.1.65 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 30 MHz-1 GHz)**



**Fig.A.6.1.66 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 1 GHz-26.5 GHz)**



**Fig.A.6.1.67 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, Center Frequency)**

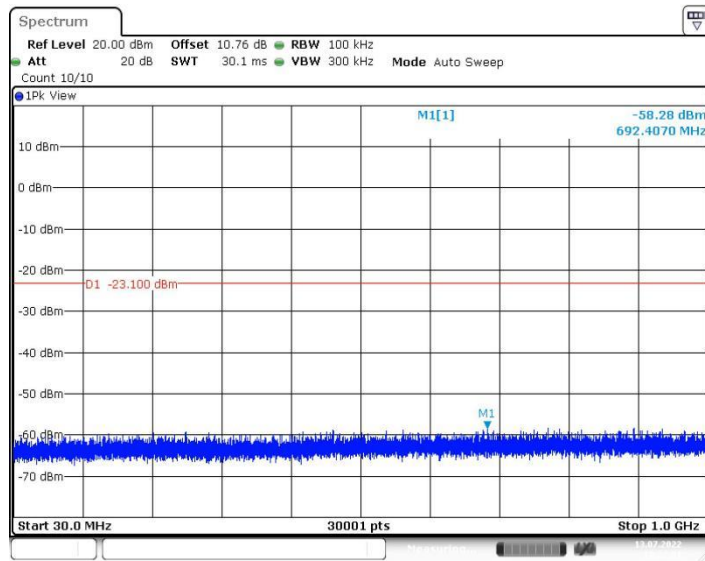


Fig.A.6.1.68 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 30 MHz-1 GHz)

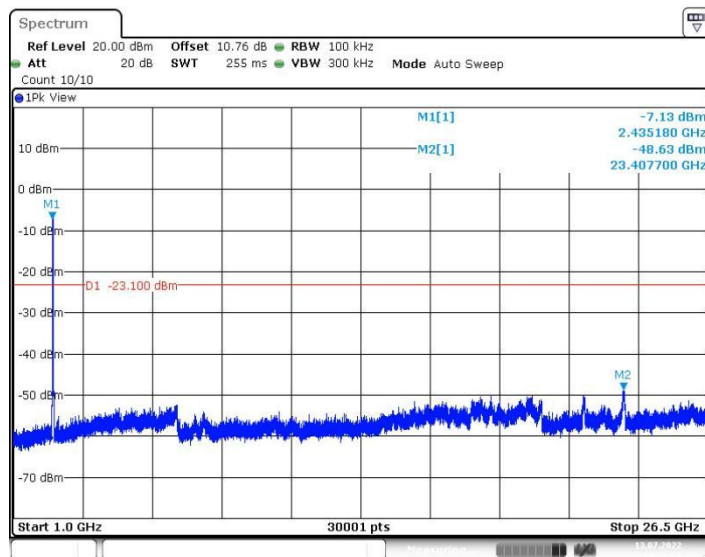
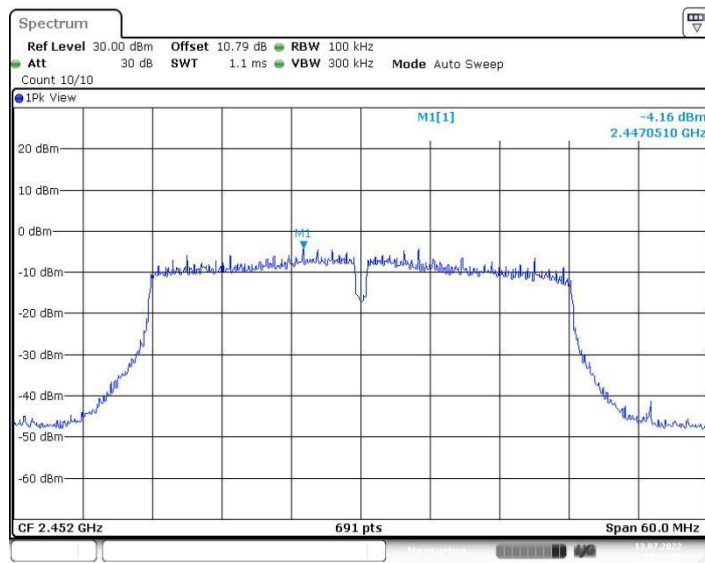
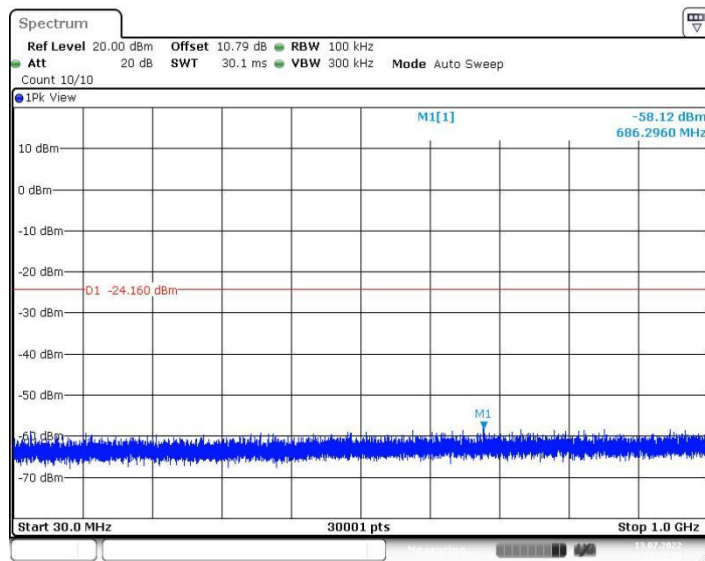


Fig.A.6.1.69 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 1 GHz-26.5 GHz)



**Fig.A.6.1.70 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, Center Frequency)**



**Fig.A.6.1.71 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 30 MHz-1 GHz)**



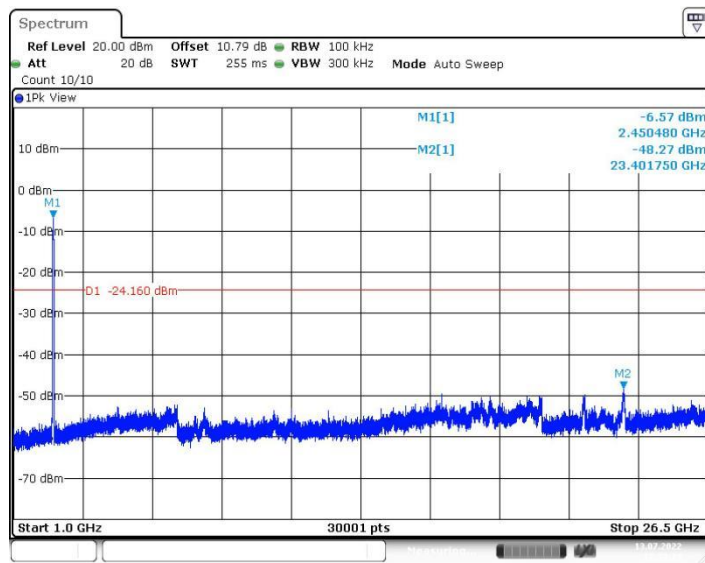


Fig.A.6.1.72 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 1 GHz-26.5 GHz)

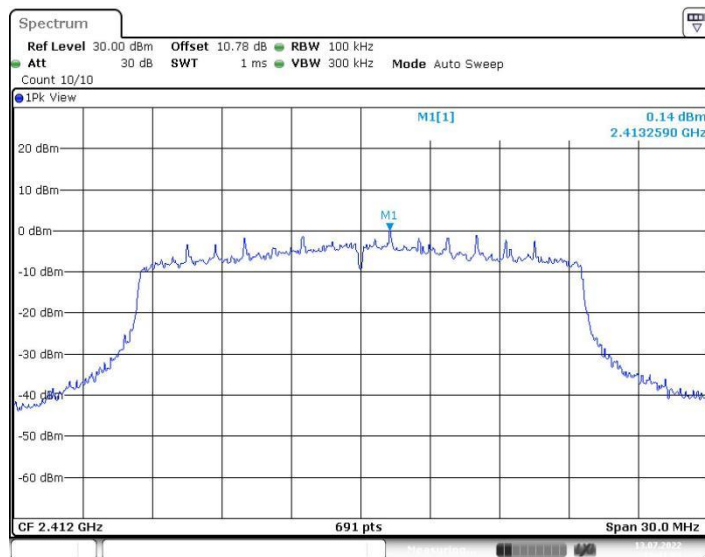
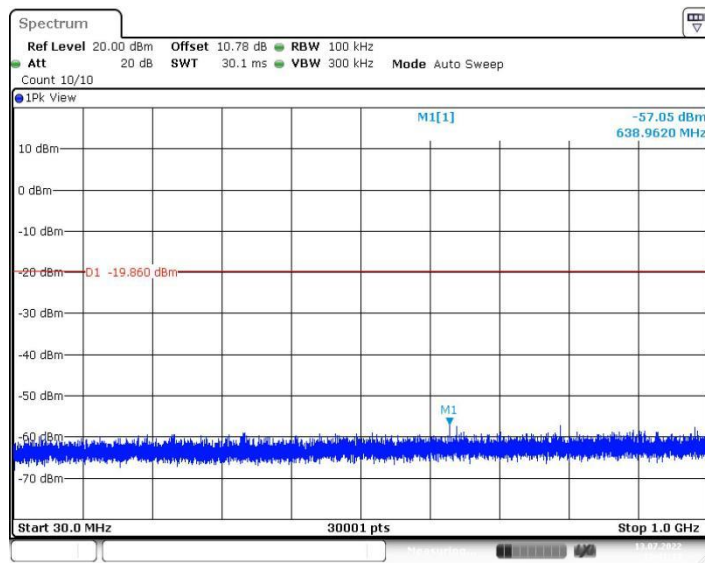
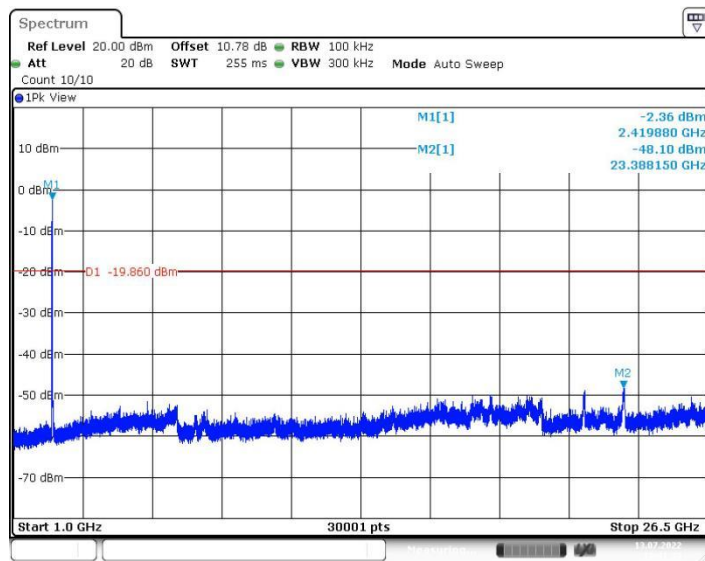


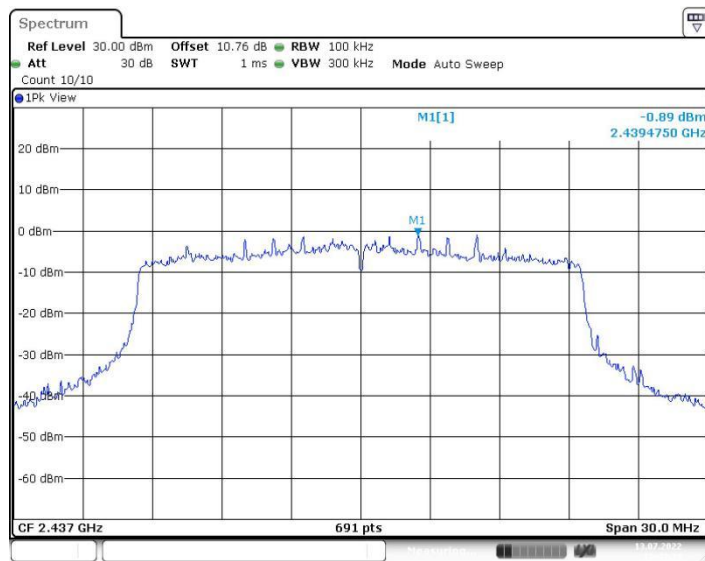
Fig.A.6.1.73 Transmitter Spurious Emission - Conducted (802.11ax-HE20, Ch1, Center Frequency)



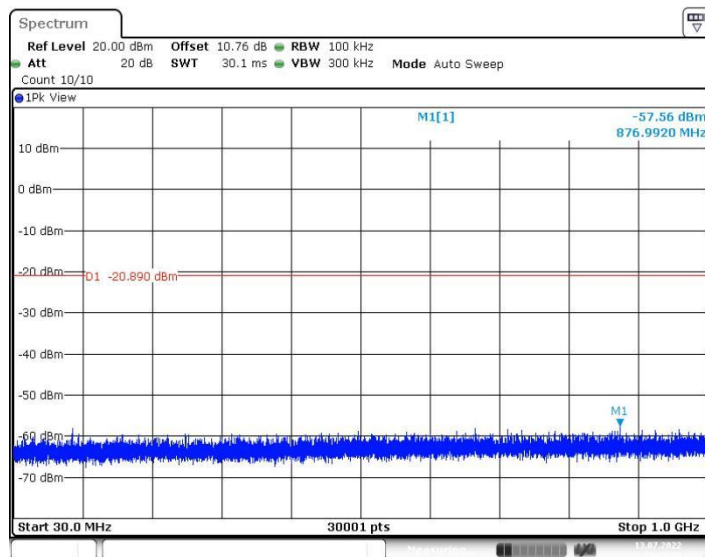
**Fig.A.6.1.74 Transmitter Spurious Emission - Conducted (802.11ax-HE20, Ch1, 30 MHz-1 GHz)**



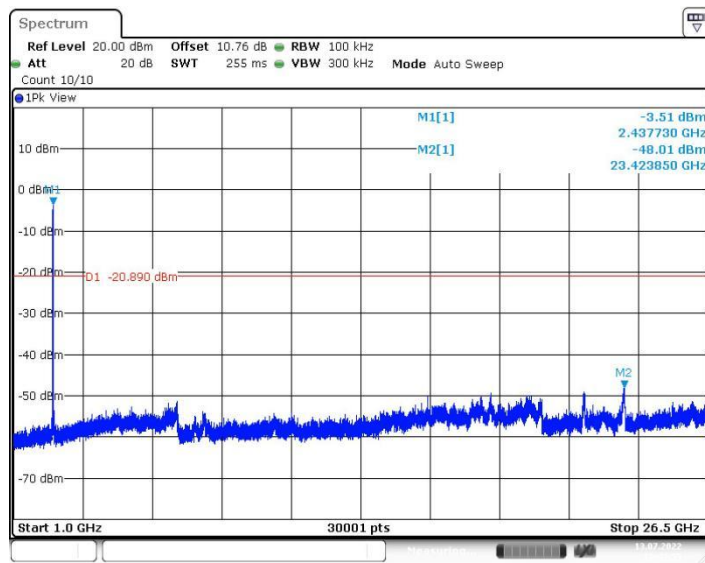
**Fig.A.6.1.75 Transmitter Spurious Emission - Conducted (802.11ax-HE20, Ch1, 1 GHz-26.5 GHz)**



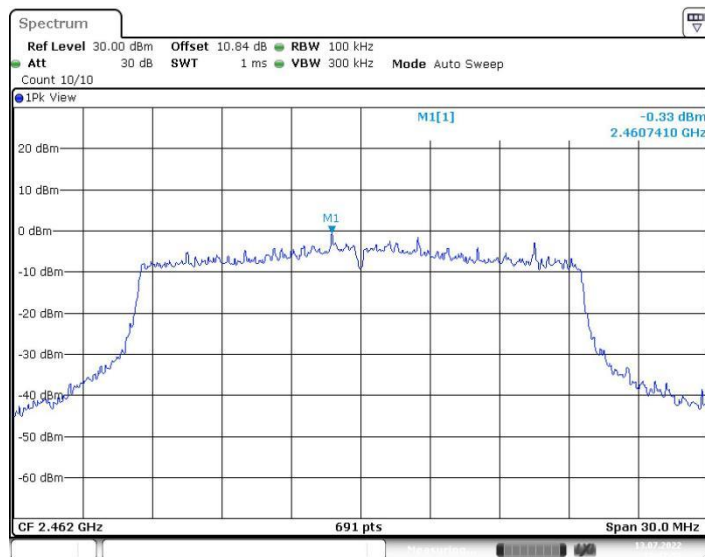
**Fig.A.6.1.76 Transmitter Spurious Emission - Conducted (802.11ax-HE20, Ch6, Center Frequency)**



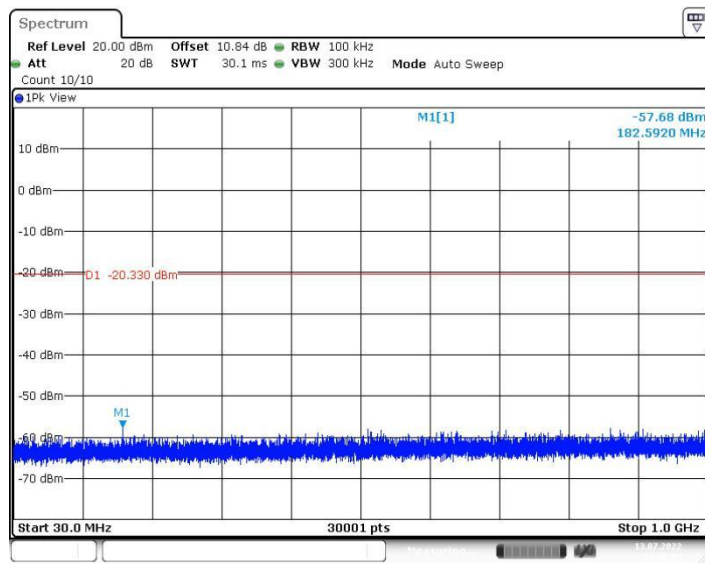
**Fig.A.6.1.77 Transmitter Spurious Emission - Conducted (802.11ax-HE20, Ch6, 30 MHz-1 GHz)**



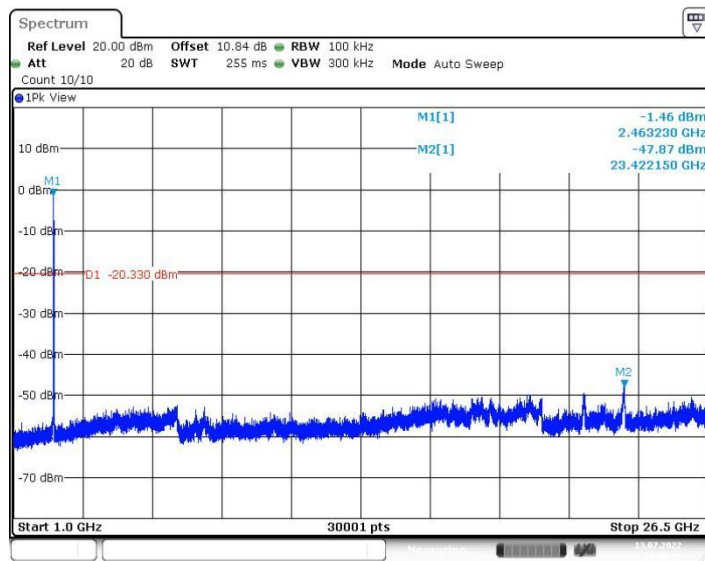
**Fig.A.6.1.78 Transmitter Spurious Emission - Conducted (802.11ax-HE20, Ch6, 1 GHz-26.5 GHz)**



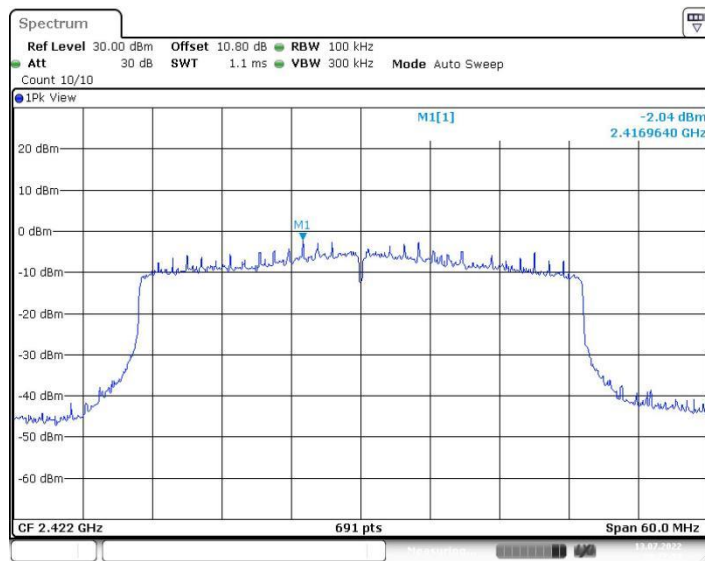
**Fig.A.6.1.79 Transmitter Spurious Emission - Conducted (802.11ax-HE20, Ch11, Center Frequency)**



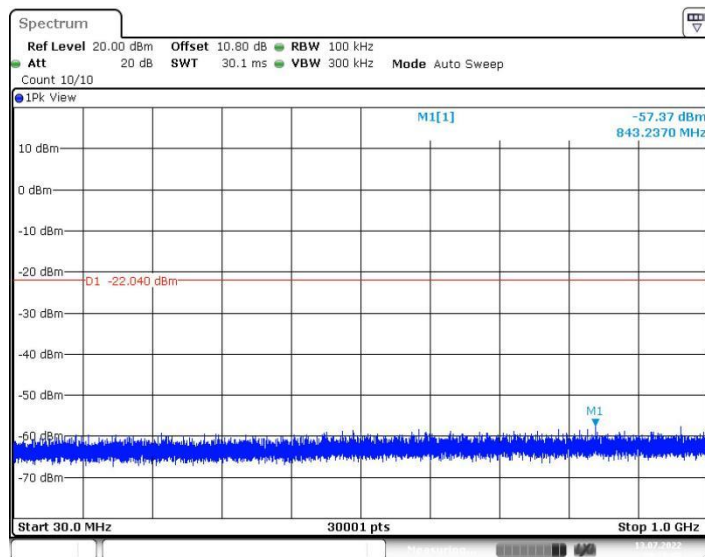
**Fig.A.6.1.80 Transmitter Spurious Emission - Conducted (802.11ax-HE20, Ch11, 30 MHz-1 GHz)**



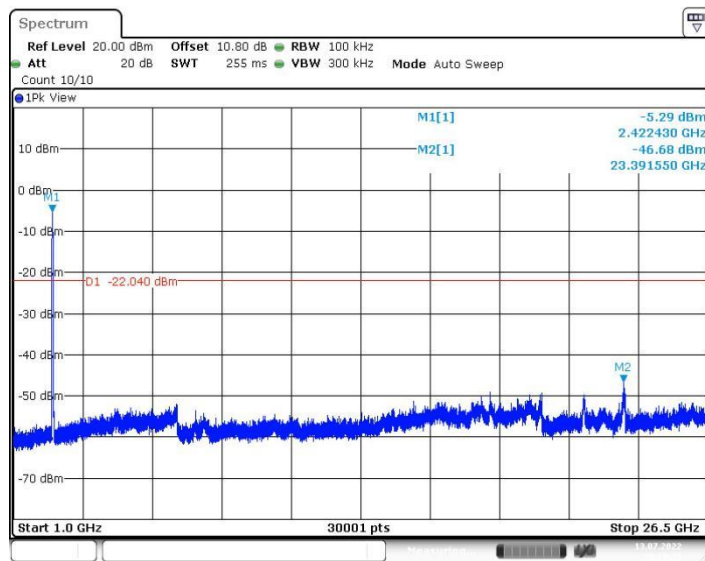
**Fig.A.6.1.81 Transmitter Spurious Emission - Conducted (802.11ax-HE20, Ch11, 1 GHz-26.5 GHz)**



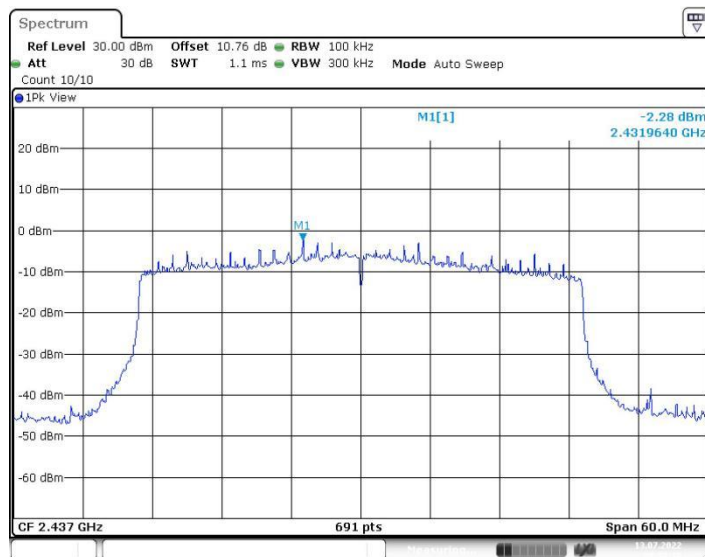
**Fig.A.6.1.82 Transmitter Spurious Emission - Conducted (802.11ax-HE40, Ch3, Center Frequency)**



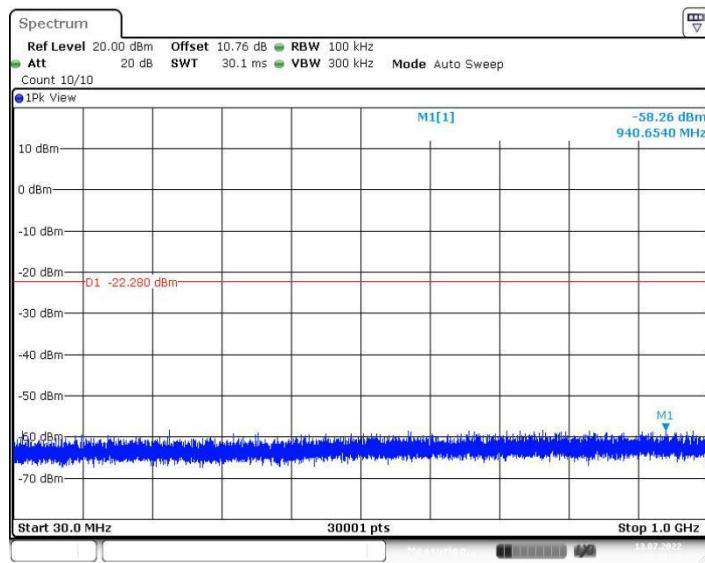
**Fig.A.6.1.83 Transmitter Spurious Emission - Conducted (802.11ax-HE40, Ch3, 30 MHz-1 GHz)**



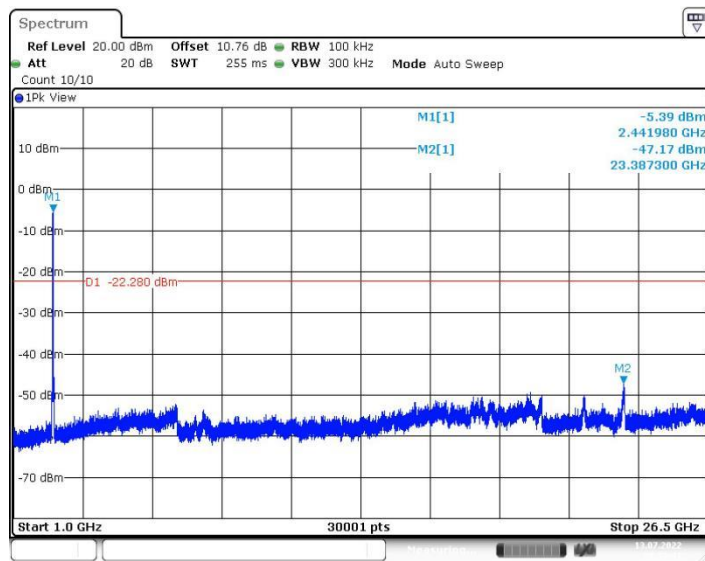
**Fig.A.6.1.84 Transmitter Spurious Emission - Conducted (802.11ax-HE40, Ch3, 1 GHz-26.5 GHz)**



**Fig.A.6.1.85 Transmitter Spurious Emission - Conducted (802.11ax-HE40, Ch6, Center Frequency)**

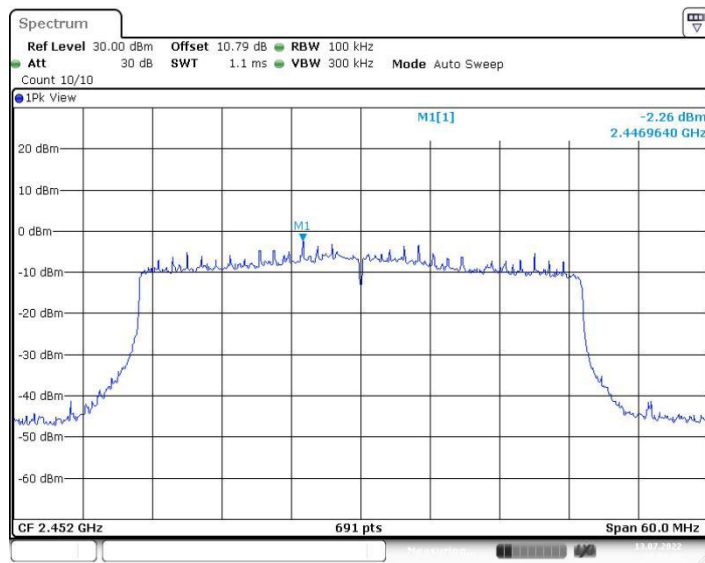


**Fig.A.6.1.86 Transmitter Spurious Emission - Conducted (802.11ax-HE40, Ch6, 30 MHz-1 GHz)**

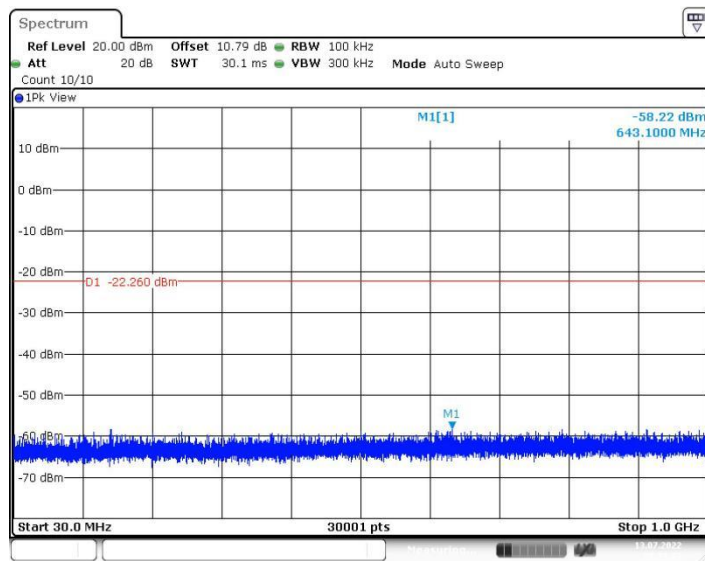


**Fig.A.6.1.87 Transmitter Spurious Emission - Conducted (802.11ax-HE40, Ch6, 1 GHz-26.5 GHz)**

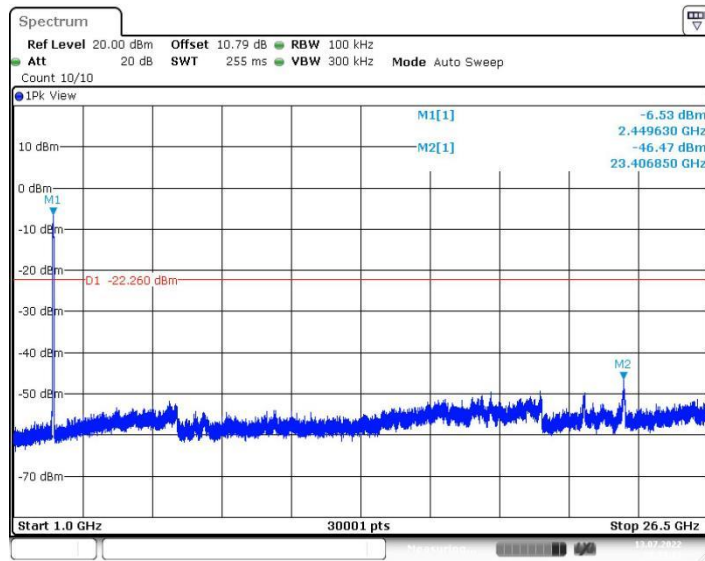




**Fig.A.6.1.88 Transmitter Spurious Emission - Conducted (802.11ax-HE40, Ch9, Center Frequency)**



**Fig.A.6.1.89 Transmitter Spurious Emission - Conducted (802.11ax-HE40, Ch9, 30 MHz-1 GHz)**



**Fig.A.6.1.90 Transmitter Spurious Emission - Conducted (802.11ax-HE40, Ch9, 1 GHz-26.5 GHz)**

## A.6.2 Transmitter Spurious Emission - Radiated

**Method of Measurement:** See ANSI C63.10-2013-clause 6.4 & 6.5 & 6.6

**Measurement Limit:**

Standard	Limit
FCC 47 CFR Part 15.247, 15.205, 15.209	20dB 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(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Frequency (MHz)	Field strength( $\mu$ 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

### 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	100kHz/300kHz	5
1000-4000	1MHz/3MHz	15
4000-18000	1MHz/3MHz	40
18000-26500	1MHz/3MHz	20

**EUT ID:** EUT1

**Measurement results for Set.1:**
**802.11b mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	1	2.31GHz~2.43GHz---L	Fig.A.6.2.1	<b>P</b>
	11	2.45GHz~2.50GHz---H	Fig.A.6.2.2	<b>P</b>

**802.11g mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11g	1	2.31GHz~2.43GHz---L	Fig.A.6.2.3	<b>P</b>
	11	2.45GHz~2.50GHz---H	Fig.A.6.2.4	<b>P</b>

**802.11n-HT20 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT20)	1	2.31GHz~2.43GHz---L	Fig.A.6.2.5	<b>P</b>
	11	2.45GHz~2.50GHz---H	Fig.A.6.2.6	<b>P</b>

**802.11n-HT40 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT40)	1	2.31GHz~2.43GHz---L	Fig.A.6.2.7	<b>P</b>
	11	2.45GHz~2.50GHz---H	Fig.A.6.2.8	<b>P</b>

**802.11ax-HT20 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ax (HT20)	1	2.31GHz~2.43GHz---L	Fig.A.6.2.9	<b>P</b>
	11	2.45GHz~2.50GHz---H	Fig.A.6.2.10	<b>P</b>

**802.11ax-HT40 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ax (HT40)	3	2.31GHz~2.43GHz---L	Fig.A.6.2.11	<b>P</b>
	9	2.45GHz~2.50GHz---H	Fig.A.6.2.12	<b>P</b>

**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:

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

**Peak**  
**802.11b**

Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17646	54.36	-25.7	46	34.16	74	19.64	V
13522.5	51.61	-29.6	40	41.21	74	22.39	V
12870.5	48.76	-30.7	39.1	40.26	74	25.24	H
9115.5	46.38	-33.8	38.1	42.18	74	27.62	H
7347.5	45.19	-35.1	36.6	43.69	74	28.81	H
2363.6	55.12	-20.1	28	47.12	74	18.88	V

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17514	52.82	-26.9	45.2	34.42	74	21.18	V
14236.5	50.76	-29	42	37.76	74	23.24	V
12749.5	48.31	-30.5	39.1	39.71	74	25.69	V
9661.5	46.3	-33.1	38	41.4	74	27.7	V
7886.5	45.17	-34.9	37.1	42.97	74	28.83	V
4940.5	40.3	-37.1	33.3	44.1	74	33.7	V

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17668.5	52.74	-25.7	46	32.54	74	21.26	V
13616	50.4	-29.5	40.4	39.5	74	23.6	V
12907.5	48.48	-30.5	39.2	39.78	74	25.52	V
9784.5	46.1	-33.5	38	41.6	74	27.9	V
7241	44.45	-35.5	36.4	43.55	74	29.55	V
2493.5	55.4	-20	28.3	47.1	74	18.6	V

**802.11g**

## Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17316.5	53.09	-25.9	44.4	34.69	74	20.91	H
13727	50.64	-29.1	40.9	38.84	74	23.36	H
12442	48.57	-31.2	38.9	40.87	74	25.43	V
9224	46.69	-33.7	38	42.39	74	27.31	H
6749.5	44.9	-35.5	35.5	44.9	74	29.1	H
2343.1	55.32	-20.1	28	47.42	74	18.68	V

## Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17753	53.56	-25.5	46.7	32.36	74	20.44	V
13804	50.6	-29.1	40.9	38.8	74	23.4	H
12687	48.55	-30.5	39.1	39.95	74	25.45	H
9693	46.12	-33	38	41.12	74	27.88	V
7969.5	45.5	-34.8	37.1	43.2	74	28.5	H
4821	39.95	-37.5	33.1	44.25	74	34.05	H

## Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17401	52.82	-26.9	45.2	34.42	74	21.18	H
13648.5	51.37	-29.5	40.4	40.47	74	22.63	V
12857	48.14	-30.7	39.1	39.64	74	25.86	V
9630	46.22	-33.1	38	41.32	74	27.78	V
7225	45.15	-35.5	36.4	44.25	74	28.85	V
2485.7	55.41	-20	28.3	47.11	74	18.59	H

**802.11n-HT20**

## Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17781	53.12	-25.5	46.7	31.92	74	20.88	H
13772	50.89	-29.1	40.9	39.09	74	23.11	V
12943	47.8	-30.5	39.2	39.1	74	26.2	H
8900	46.66	-33.5	38.1	42.06	74	27.34	V
7998.5	44.98	-34.8	37.1	42.68	74	29.02	V
2339.3	55.47	-20.1	28	47.57	74	18.53	V

## Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17881	53.28	-25.5	46.7	32.08	74	20.72	H
13599.5	51.37	-29.5	40.4	40.47	74	22.63	H
12851	48.55	-30.7	39.1	40.05	74	25.45	V
9726.5	45.78	-33	38	40.78	74	28.22	H
7249	45.2	-35	36.5	43.6	74	28.8	H
4949.5	39.64	-37.1	33.3	43.44	74	34.36	H

## Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17770	52.89	-25.5	46.7	31.69	74	21.11	V
13589.5	51.4	-29.5	40.4	40.5	74	22.6	H
12878.5	48.9	-30.7	39.1	40.4	74	25.1	H
9790	46.01	-33.5	38	41.51	74	27.99	V
7346.5	44.67	-35.1	36.6	43.17	74	29.33	H
2490.4	55.39	-20	28.3	47.09	74	18.61	H

**802.11n-HT40**
**Ch3**

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17695	52.59	-25.7	46	32.39	74	21.41	H
13585	51.2	-29.5	40.4	40.3	74	22.8	V
12834	48.46	-30.7	39.1	39.96	74	25.54	H
9586	45.92	-33.1	38	41.02	74	28.08	H
8000	44.54	-34.8	37.1	42.24	74	29.46	H
2388.9	56.42	-20	28.1	48.42	74	17.58	H

**Ch6**

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17992	52.91	-25.5	46.7	31.71	74	21.09	V
13714	50.4	-29.1	40.9	38.6	74	23.6	V
12958	48.33	-30.5	39.2	39.63	74	25.67	V
9185	45.99	-33.8	38.1	41.79	74	28.01	V
7239.5	45.67	-35.5	36.4	44.77	74	28.33	H
4781	40.21	-37.3	33	44.41	74	33.79	V

**Ch9**

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17207	53.52	-26.6	43.4	36.72	74	20.48	V
13602.5	50.73	-29.5	40.4	39.83	74	23.27	H
12994	48.51	-30.5	39.2	39.81	74	25.49	V
8723	46.57	-34.4	38	42.97	74	27.43	V
7997.5	45.46	-34.8	37.1	43.16	74	28.54	V
2485.2	56.49	-20	28.3	48.19	74	17.51	H



**802.11ax-HT20**

## Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)
17970	52.73	-25.5	46.7	31.53	74	21.27
13608.5	50.68	-29.5	40.4	39.78	74	23.32
12780.5	48.15	-30.7	39.1	39.65	74	25.85
9816.5	45.38	-33.5	38	40.88	74	28.62
7408	43.91	-35.2	36.7	42.31	74	30.09
2388.5	55.57	-20	28.1	47.57	74	18.43

## Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)
17991.5	52.85	-25.5	46.7	31.65	74	21.15
13640.5	49.74	-29.5	40.4	38.84	74	24.26
12938.5	47.57	-30.5	39.2	38.87	74	26.43
9154.5	45.87	-33.8	38.1	41.67	74	28.13
6822.5	44.58	-35.7	35.7	44.58	74	29.42
4946.5	39.57	-37.1	33.3	43.37	74	34.43

## Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)
17521	52.54	-26.9	45.2	34.14	74	21.46
13701	50.8	-29.1	40.9	39	74	23.2
12323.5	47.31	-31.1	38.9	39.51	74	26.69
9525	46.07	-33.2	37.9	41.37	74	27.93
7234	43.98	-35.5	36.4	43.08	74	30.02
2486.9	55.83	-20	28.3	47.53	74	18.17

**802.11ax-HT40**

## Ch3

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)
17380	52.98	-25.9	44.4	34.58	74	21.02
13667.5	51.5	-29.5	40.4	40.6	74	22.5
12988.5	48.06	-30.5	39.2	39.36	74	25.94
9544.5	45.42	-33.2	37.9	40.72	74	28.58
7823	44.52	-35.1	37	42.62	74	29.48
2389.7	57.49	-20	28.1	49.49	74	16.51

## Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)
17232.5	52.77	-25.9	44.4	34.37	74	21.23
13532.5	49.57	-29.6	40	39.17	74	24.43
12855	48.33	-30.7	39.1	39.83	74	25.67
8799.5	45.81	-33.9	38.1	41.61	74	28.19
7138.5	44.22	-35.4	36.3	43.32	74	29.78
4612.5	39.69	-37.3	32.7	44.39	74	34.31

## Ch9

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)
17695.5	52.7	-25.7	46	32.5	74	21.3
13635	50.45	-29.5	40.4	39.55	74	23.55
12524.5	48.19	-31	39	40.29	74	25.81
9410.5	45.06	-32.9	37.9	40.06	74	28.94
7631	44.34	-34.7	36.9	42.04	74	29.66
2485.5	58.15	-20	28.3	49.85	74	15.85

**Average**
**802.11b**

## Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17609	41.77	-25.7	46	21.57	54	12.23	H
13678.5	39.45	-29.5	40.4	28.55	54	14.55	H
12865.5	37.29	-30.7	39.1	28.79	54	16.71	H
9148.5	34.66	-33.8	38.1	30.46	54	19.34	V
7981.5	33.32	-34.8	37.1	31.02	54	20.68	V
2365.8	44.49	-20.1	28	36.49	54	9.51	V

## Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17772.5	41.27	-25.5	46.7	20.07	54	12.73	H
13608.5	39.43	-29.5	40.4	28.53	54	14.57	H
12840	36.83	-30.7	39.1	28.33	54	17.17	H
9230	34.56	-33.7	38	30.26	54	19.44	H
7996	33.22	-34.8	37.1	30.92	54	20.78	V
4874	32.73	-37.2	33.2	36.73	54	21.27	H

## Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17702	41.34	-25.7	46	21.14	54	12.66	V
13597.5	39.16	-29.5	40.4	28.26	54	14.84	V
12840	36.76	-30.7	39.1	28.26	54	17.24	H
9242	34.47	-33.7	38	30.17	54	19.53	V
4924	33.5	-37.1	33.3	37.3	54	20.5	H
2489.2	44.87	-20	28.3	36.57	54	9.13	H

**802.11g**

## Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17786.5	41.54	-25.5	46.7	20.34	54	12.46	V
13591	39.28	-29.5	40.4	28.38	54	14.72	H
12854.5	36.93	-30.7	39.1	28.43	54	17.07	V
9230	34.72	-33.7	38	30.42	54	19.28	H
7224	33.53	-35.5	36.4	32.63	54	20.47	H
2389.9	44.5	-20	28.1	36.5	54	9.5	H

## Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17798	41.57	-25.5	46.7	20.37	54	12.43	V
13598	39.3	-29.5	40.4	28.4	54	14.7	V
12852	37.01	-30.7	39.1	28.51	54	16.99	V
9146.5	34.6	-33.8	38.1	30.4	54	19.4	V
7222.5	33.5	-35.5	36.4	32.6	54	20.5	V
4958.5	28.38	-37.1	33.3	32.18	54	25.62	H

## Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17782.5	41.41	-25.5	46.7	20.21	54	12.59	H
13593.5	39.28	-29.5	40.4	28.38	54	14.72	V
12844	37.13	-30.7	39.1	28.63	54	16.87	H
9639.5	34.55	-33.1	38	29.65	54	19.45	V
7231	33.58	-35.5	36.4	32.68	54	20.42	V
2489.6	44.28	-20	28.3	35.98	54	9.72	V

**802.11n-HT20**

## Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17776	41.46	-25.5	46.7	20.26	54	12.54	H
13610.5	39.26	-29.5	40.4	28.36	54	14.74	H
12864.5	37	-30.7	39.1	28.5	54	17	H
9231.5	34.69	-33.7	38	30.39	54	19.31	H
7231.5	33.34	-35.5	36.4	32.44	54	20.66	V
2359.7	43.95	-20.1	28	35.95	54	10.05	H

## Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17817	41.53	-25.5	46.7	20.33	54	12.47	H
13592	39.3	-29.5	40.4	28.4	54	14.7	V
12855	37.08	-30.7	39.1	28.58	54	16.92	V
9140.5	34.54	-33.8	38.1	30.34	54	19.46	H
7915.5	33.52	-34.9	37.1	31.32	54	20.48	V
4942.5	28.46	-37.1	33.3	32.26	54	25.54	V

## Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17797	41.44	-25.5	46.7	20.24	54	12.56	H
13647.5	39.06	-29.5	40.4	28.16	54	14.94	H
12852.5	37.16	-30.7	39.1	28.66	54	16.84	H
9135.5	34.42	-33.8	38.1	30.22	54	19.58	H
7414	33.34	-35.2	36.7	31.74	54	20.66	V
2488.5	44.61	-20	28.3	36.31	54	9.39	V

**802.11n-HT40**

## Ch3

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17797.5	41.42	-25.5	46.7	20.22	54	12.58	H
13514	39.02	-29.6	40	28.62	54	14.98	V
12852	36.8	-30.7	39.1	28.3	54	17.2	H
9162.5	34.61	-33.8	38.1	30.41	54	19.39	V
7346.5	33.38	-35.1	36.6	31.88	54	20.62	H
2389.9	46.21	-20	28.1	38.21	54	7.79	H

## Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17690.5	41.2	-25.7	46	21	54	12.8	V
13584	39.52	-29.5	40.4	28.62	54	14.48	H
12838.5	37	-30.7	39.1	28.5	54	17	V
9125	34.71	-33.8	38.1	30.51	54	19.29	H
7910.5	33.38	-34.9	37.1	31.18	54	20.62	H
4836	28.2	-37.5	33.1	32.5	54	25.8	V

## Ch9

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17405	41.49	-26.9	45.2	23.09	54	12.51	H
13596	39.43	-29.5	40.4	28.53	54	14.57	V
12846.5	36.81	-30.7	39.1	28.31	54	17.19	V
9129	34.68	-33.8	38.1	30.48	54	19.32	V
7435.5	33.39	-35.2	36.7	31.79	54	20.61	H
2485.3	45.05	-20	28.3	36.75	54	8.95	H

**802.11ax-HT20**
**Ch1**

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)
17970	52.73	-25.5	46.7	31.53	54	1.27
13608.5	50.68	-29.5	40.4	39.78	54	3.32
12886	47.35	-30.7	39.1	38.85	54	6.65
9742	45.11	-33	38	40.11	54	8.89
7977.5	43.8	-34.8	37.1	41.5	54	10.2
2388.9	44.07	-20	28.1	36.07	54	9.93

**Ch6**

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)
17991.5	52.85	-25.5	46.7	31.65	54	1.15
14326.5	49.66	-28.4	42.3	35.76	54	4.34
12938.5	47.57	-30.5	39.2	38.87	54	6.43
9107	45.45	-33.8	38.1	41.25	54	8.55
6822.5	44.58	-35.7	35.7	44.58	54	9.42
4946.5	39.57	-37.1	33.3	43.37	54	14.43

**Ch11**

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)
17521	52.54	-26.9	45.2	34.14	54	1.46
13701	50.8	-29.1	40.9	39	54	3.2
12870.5	47.06	-30.7	39.1	38.56	54	6.94
9525	46.07	-33.2	37.9	41.37	54	7.93
7385.5	43.5	-35.1	36.6	42	54	10.5
2486.2	44.63	-20	28.3	36.33	54	9.37

**802.11ax-HT40**
**Ch3**

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)
17601	52.16	-25.7	46	31.96	54	1.84
13559	51.17	-29.5	40.4	40.27	54	2.83
12122	47.39	-31.6	39	39.99	54	6.61
9544.5	45.42	-33.2	37.9	40.72	54	8.58
7823	44.52	-35.1	37	42.62	54	9.48
2389.6	48.47	-20	28.1	40.47	54	5.53

**Ch6**

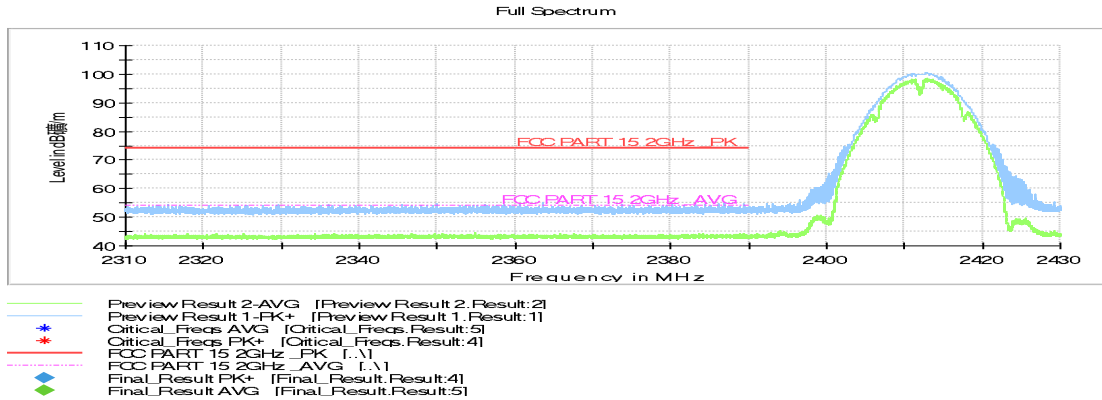
Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)
17232.5	52.77	-25.9	44.4	34.37	54	1.23
13549.5	49.37	-29.6	40	38.97	54	4.63
12457	47.77	-31.2	38.9	40.07	54	6.23
9178.5	45.44	-33.8	38.1	41.24	54	8.56
6835.5	43.87	-35.5	35.8	43.47	54	10.13
4970	39.17	-36.6	33.4	42.37	54	14.83

**Ch9**

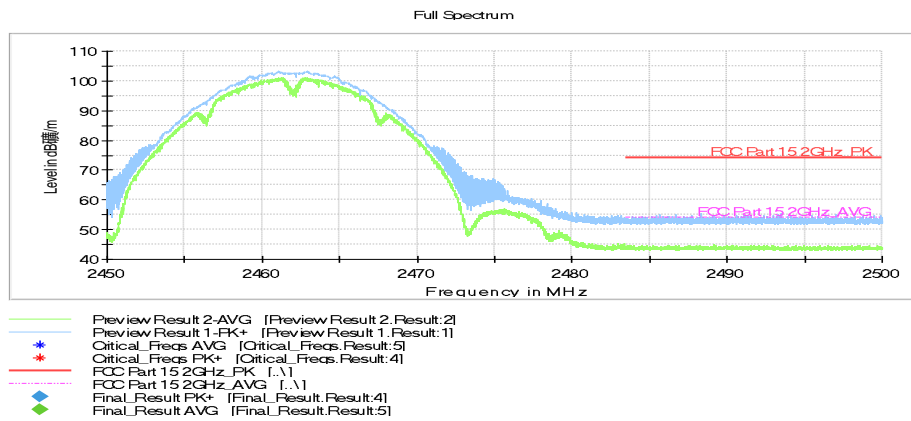
Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)
17587.5	52.02	-25.7	46	31.82	54	1.98
13635	50.45	-29.5	40.4	39.55	54	3.55
12524.5	48.19	-31	39	40.29	54	5.81
9093.5	44.91	-33.8	38.1	40.51	54	9.09
7631	44.34	-34.7	36.9	42.04	54	9.66
2485.8	47.73	-20	28.3	39.43	54	6.27



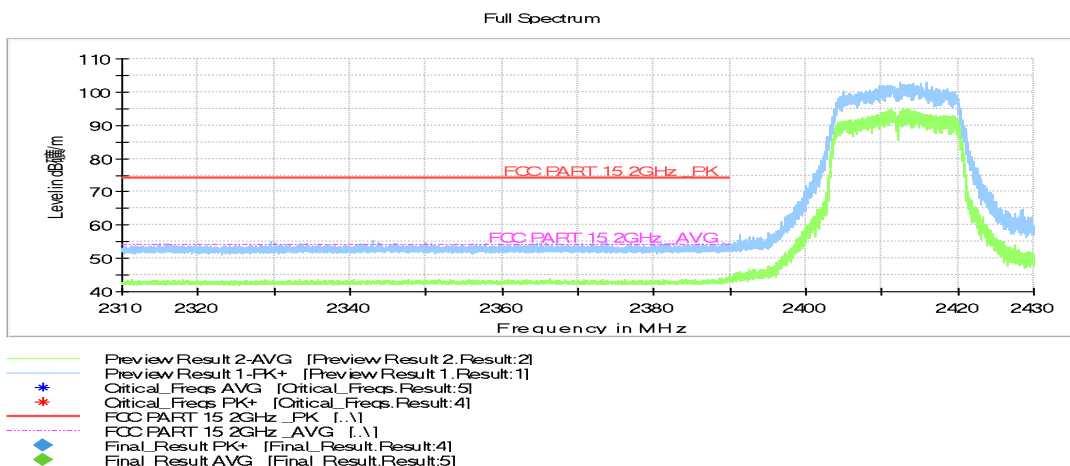
Test graphs as below:



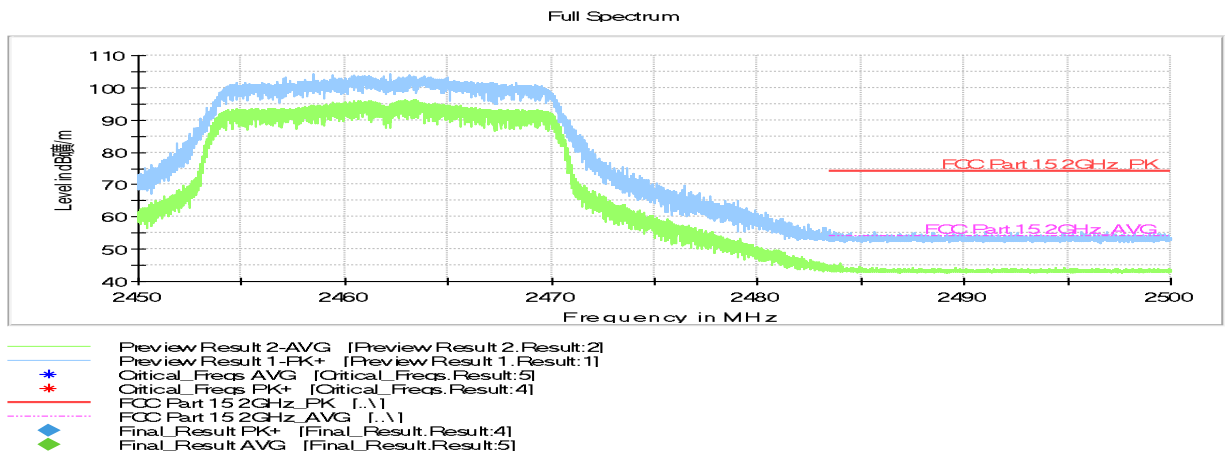
**Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.31 GHz - 2.43GHz**



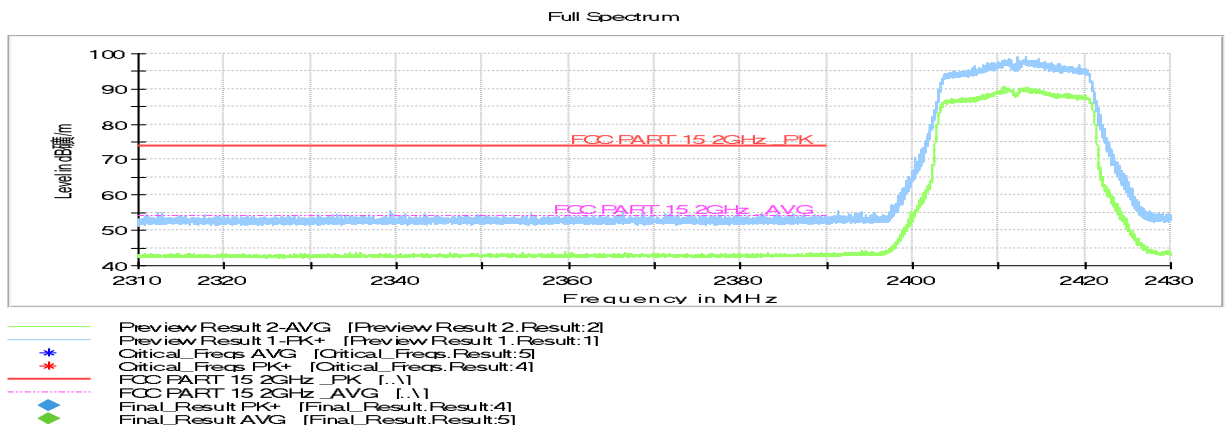
**Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz**



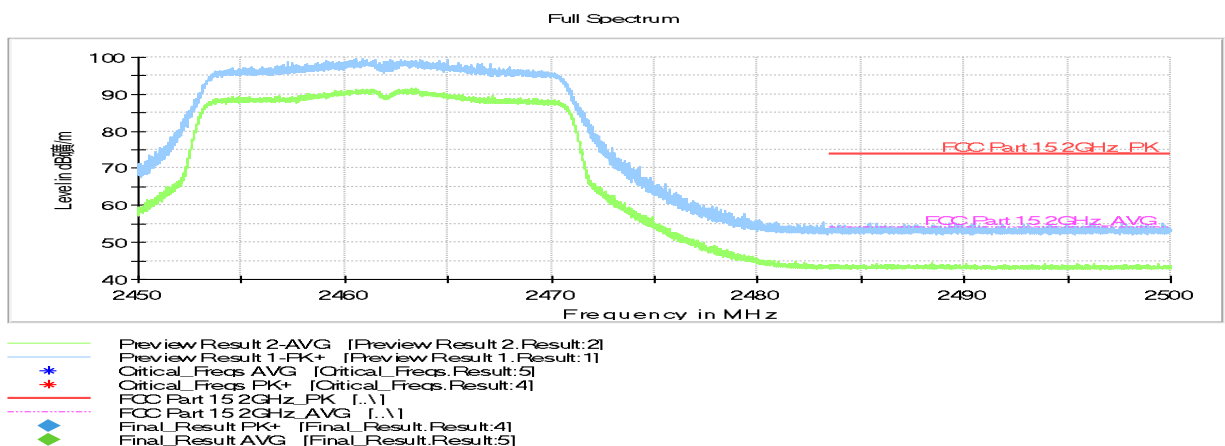
**Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch1, 2.31 GHz - 2.43GHz**



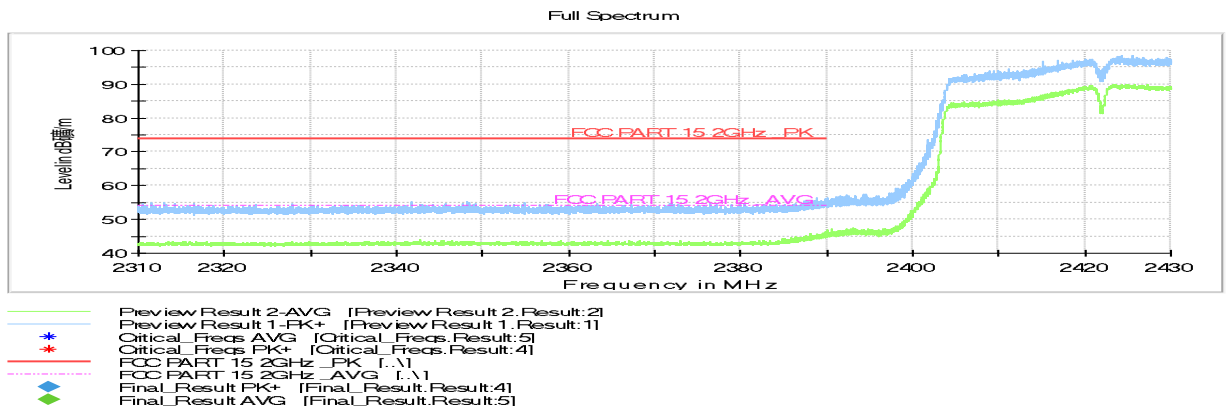
**Fig.A.6.2.4 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz**



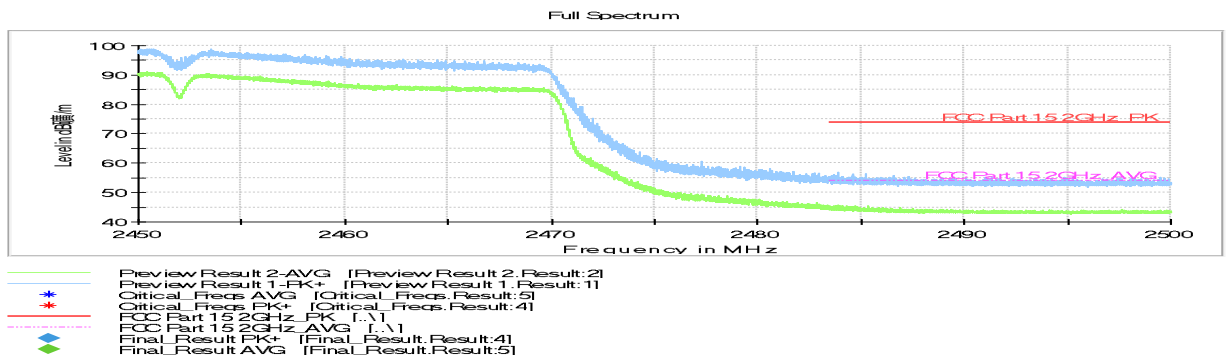
**Fig.A.6.2.5 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch1, 2.31 GHz - 2.43GHz**



**Fig.A.6.2.6 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz**



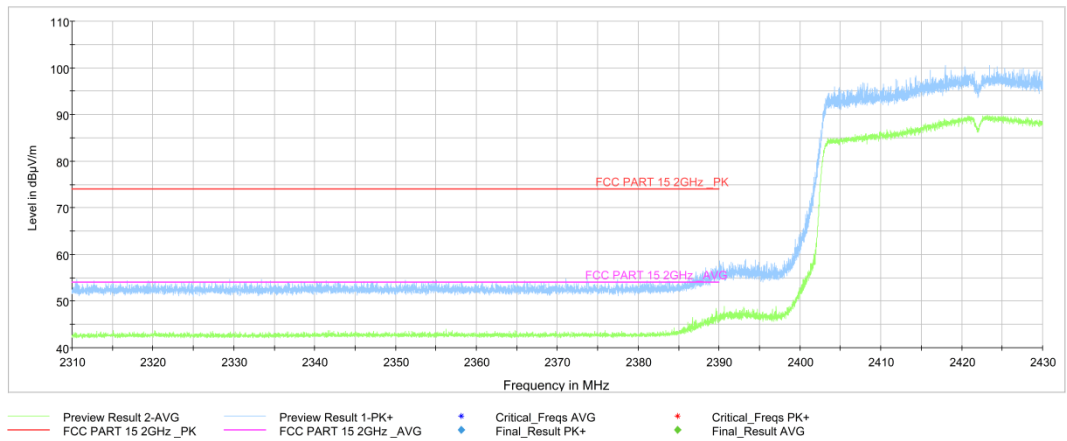
**Fig.A.6.2.7 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch3, 2.31 GHz - 2.43GHz**



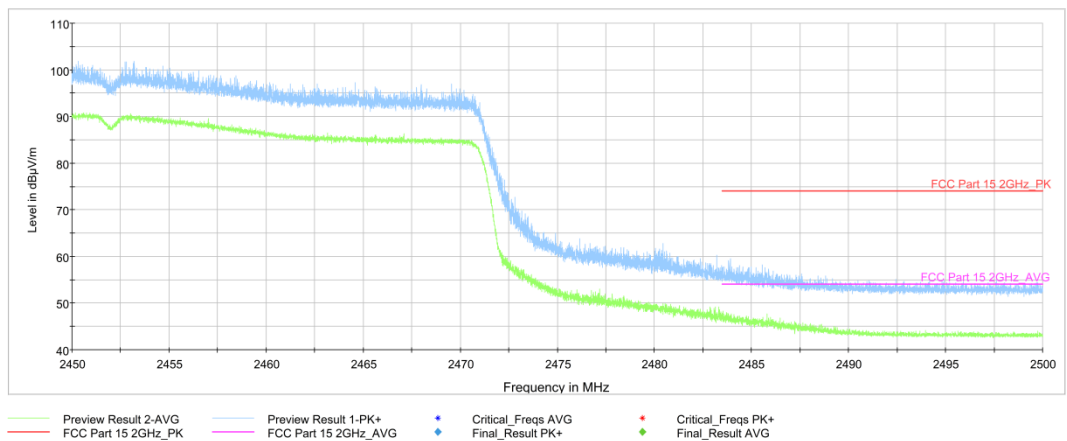
**Fig.A.6.2.8 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch9, 2.45 GHz - 2.50GHz**



**Fig.A.6.2.9 Transmitter Spurious Emission - Radiated (Power): 802.11ax-HT20, ch1, 2.31 GHz - 2.43GHz**



**Fig.A.6.2.10 Transmitter Spurious Emission - Radiated (Power): 802.11ax-HT40, ch3, 2.31 GHz - 2.43GHz**



**Fig.A.6.2.11 Transmitter Spurious Emission - Radiated (Power): 802.11ax-HT40, ch11, 2.45 GHz - 2.50GHz**

## **A.7. AC Power-line Conducted Emission**

### **Method of Measurement: See ANSI C63.10-2013-clause 6.2**

- 1 The one EUT cable configuration and arrangement and mode of operation that produced the emission with the highest amplitude relative to the limit is selected for the final measurement, while applying the appropriate modulating signal to the EUT.
- 2 If the EUT is relocated from an exploratory test site to a final test site, the highest emissions shall be remaximized at the final test location before final ac power-line conducted emission measurements are performed.
- 3 The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment in the system) is then performed for the full frequency range for which the EUT is being tested for compliance without further variation of the EUT arrangement, cable positions, or EUT mode of operation.
- 4 If the EUT is comprised of equipment units that have their own separate ac power connections, e.g., floor-standing equipment with independent power cords for each shelf that are able to connect directly to the ac power network, each current-carrying conductor of one unit is measured while the other units are connected to a second (or more) LISN(s). All units shall be separately measured. If a power strip is provided by the manufacturer, to supply all of the units making up the EUT, only the conductors in the power cord of the power strip shall be measured.
- 5 If the EUT uses a detachable antenna, these measurements shall be made with a suitable dummy load connected to the antenna output terminals; otherwise, the tests shall be made with the antenna connected and, if adjustable, fully extended. When measuring the ac conducted emissions from a device that operates between 150 kHz and 30 MHz a non-detachable antenna may be replaced with a dummy load for the measurements within the fundamental emission band of the transmitter, but only for those measurements.<sup>36</sup> Record the six highest EUT emissions relative to the limit of each of the current-carrying conductors of the power cords of the equipment that comprises the EUT over the frequency range specified by the procuring or regulatory agency. Diagram or photograph the test setup that was used. See Clause 8 for full reporting requirements.

### **Test Condition:**

<b>Voltage (V)</b>	<b>Frequency (Hz)</b>
120	60

**Measurement Result and limit:**

## WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	66 to 56	Fig.A.7.1	Fig.A.7.2	<b>P</b>
0.5 to 5	56			
5 to 30	60			

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

## WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	56 to 46	Fig.A.7.1	Fig.A.7.2	<b>P</b>
0.5 to 5	46			
5 to 30	50			

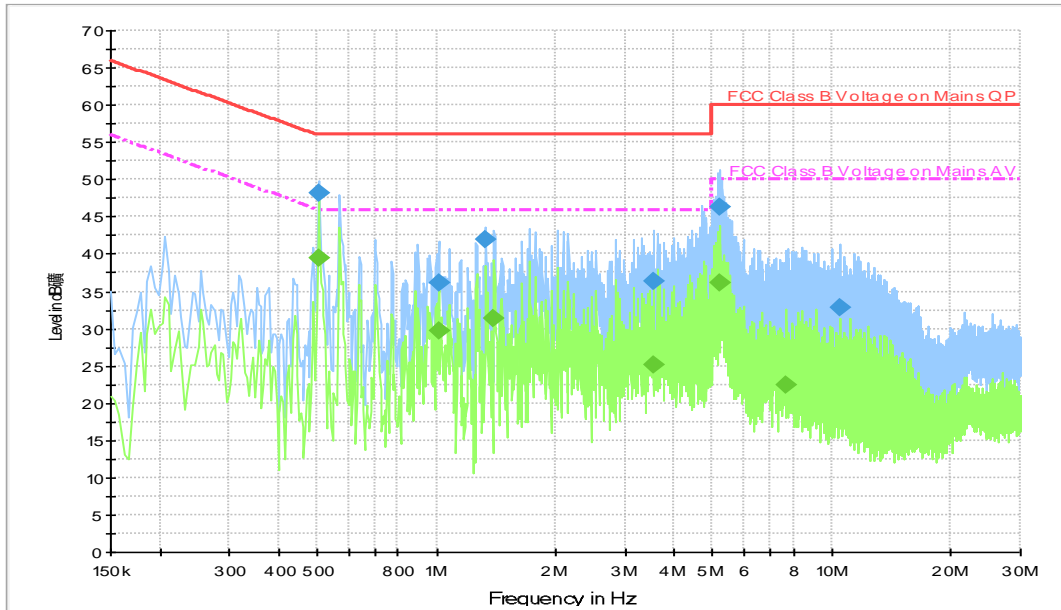
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

**Conclusion: Pass**

**Test graphs as below:**

**Measurement results for Set.1:**

**Result for Traffic:**



**Fig.A.7.1 AC Powerline Conducted Emission-802.11b**

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

**Final Result 1**

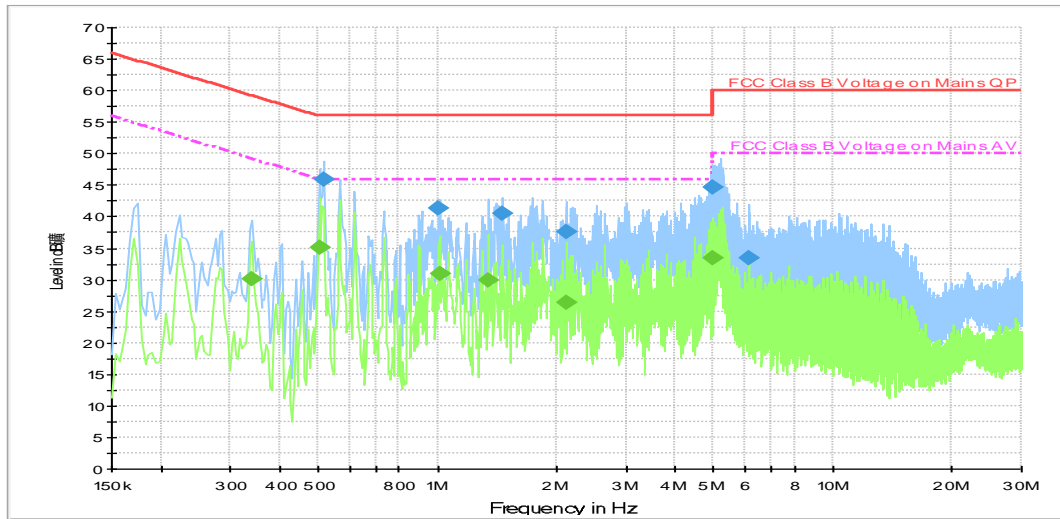
Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.502000	48.2	5000.0	9.000	On	L1	19.8	7.8	56.0
1.014000	36.0	5000.0	9.000	On	L1	19.8	20.0	56.0
1.330000	41.9	5000.0	9.000	On	L1	19.7	14.1	56.0
3.546000	36.4	5000.0	9.000	On	L1	19.6	19.6	56.0
5.202000	46.2	5000.0	9.000	On	L1	19.6	13.8	60.0
10.458000	32.9	5000.0	9.000	On	L1	19.7	27.1	60.0

**Final Result 2**

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.502000	39.4	5000.0	9.000	On	L1	19.8	6.6	46.0
1.014000	29.8	5000.0	9.000	On	L1	19.8	16.2	46.0
1.398000	31.3	5000.0	9.000	On	N	19.6	14.7	46.0
3.546000	25.1	5000.0	9.000	On	L1	19.6	20.9	46.0
5.202000	36.1	5000.0	9.000	On	L1	19.6	13.9	50.0
7.634000	22.4	5000.0	9.000	On	L1	19.8	27.6	50.0

### Measurement results for Set.1:

#### Result for Idle:



**Fig.A.7.2 AC Powerline Conducted Emission-Idle**

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

#### Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.514000	45.8	5000.0	9.000	On	N	19.8	10.2	56.0
1.010000	41.4	5000.0	9.000	On	N	19.6	14.6	56.0
1.462000	40.6	5000.0	9.000	On	N	19.6	15.4	56.0
2.126000	37.6	5000.0	9.000	On	L1	19.6	18.4	56.0
4.994000	44.6	5000.0	9.000	On	L1	19.6	11.4	56.0
6.166000	33.5	5000.0	9.000	On	N	19.6	26.5	60.0

#### Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.338000	30.1	5000.0	9.000	On	L1	19.8	19.2	49.3
0.502000	35.1	5000.0	9.000	On	L1	19.8	10.9	46.0
1.014000	30.9	5000.0	9.000	On	L1	19.8	15.1	46.0
1.346000	30.0	5000.0	9.000	On	L1	19.7	16.0	46.0
2.126000	26.4	5000.0	9.000	On	L1	19.6	19.6	46.0
4.994000	33.5	5000.0	9.000	On	L1	19.6	12.5	46.0



## **ANNEX B: EUT parameters**

Disclaimer: The antenna gain and worse case provided by the client may affect the validity of the measurement results in this report, and the client shall bear the impact and consequences arising therefrom.

## **ANNEX C: Accreditation Certificate**

<b>United States Department of Commerce National Institute of Standards and Technology</b>	
	
<hr/> <b>Certificate of Accreditation to ISO/IEC 17025:2017</b> <hr/>	
NVLAP LAB CODE: 600118-0	
<b>Telecommunication Technology Labs, CAICT</b> Beijing China	
<i>is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:</i>	
<b>Electromagnetic Compatibility &amp; Telecommunications</b>	
<i>This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).</i>	
2021-09-29 through 2022-09-30 <i>Effective Dates</i>	 For the National Voluntary Laboratory Accreditation Program

\*\*\*END OF REPORT\*\*\*