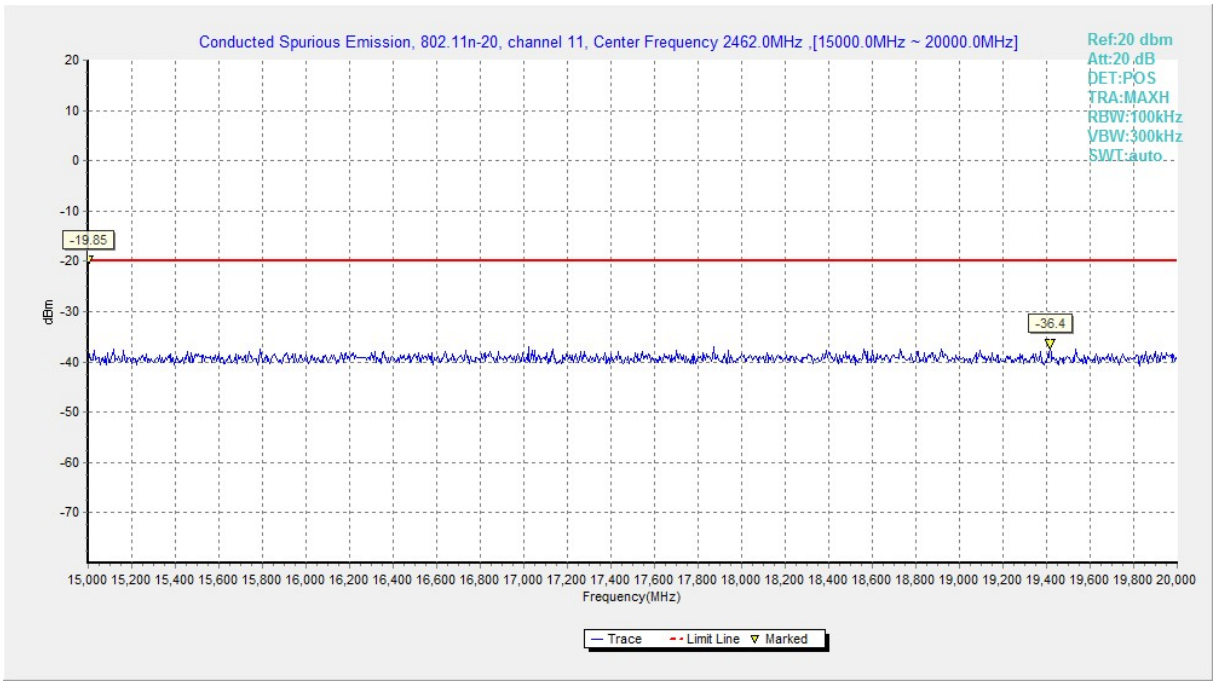

Fig.A.6.1.71 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 15 GHz-20 GHz)

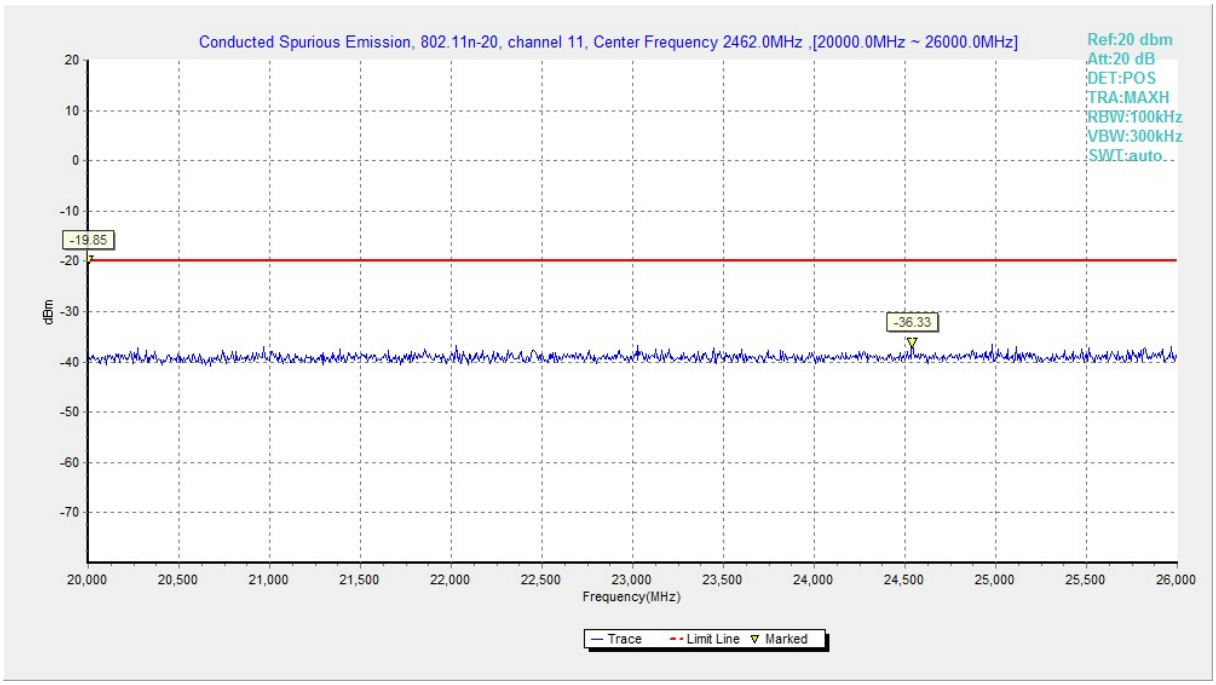

Fig.A.6.1.72 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 20 GHz-26 GHz)

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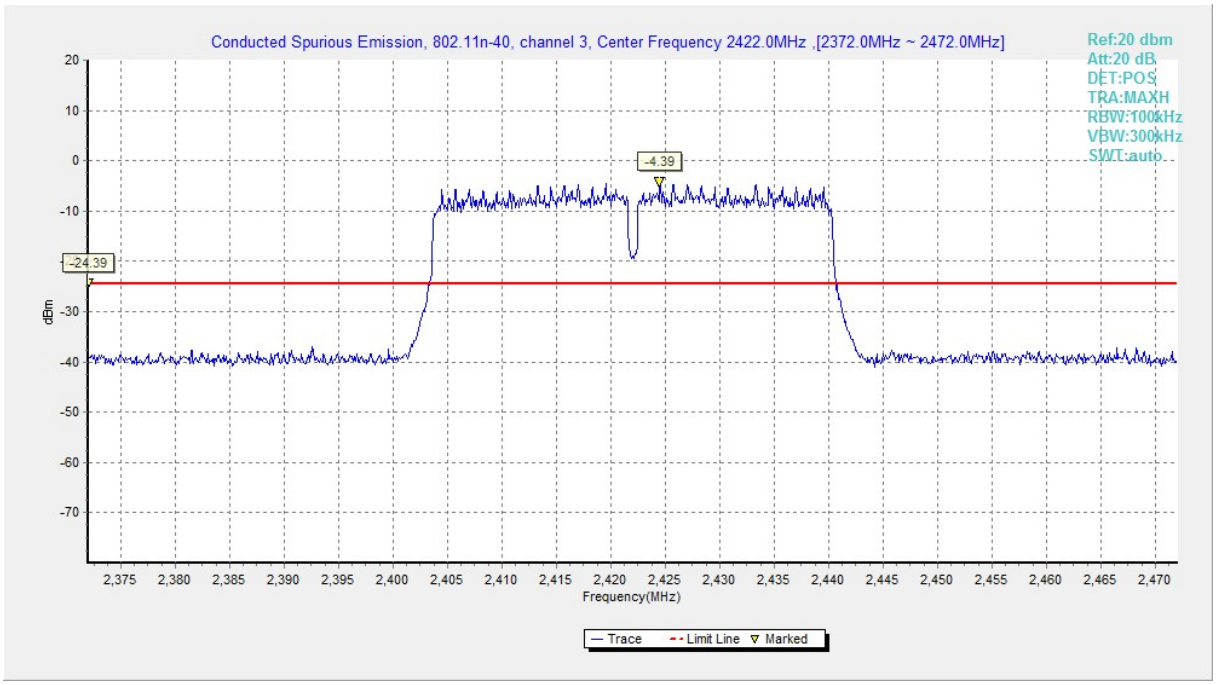

Fig.A.6.1.73 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, Center Frequency)

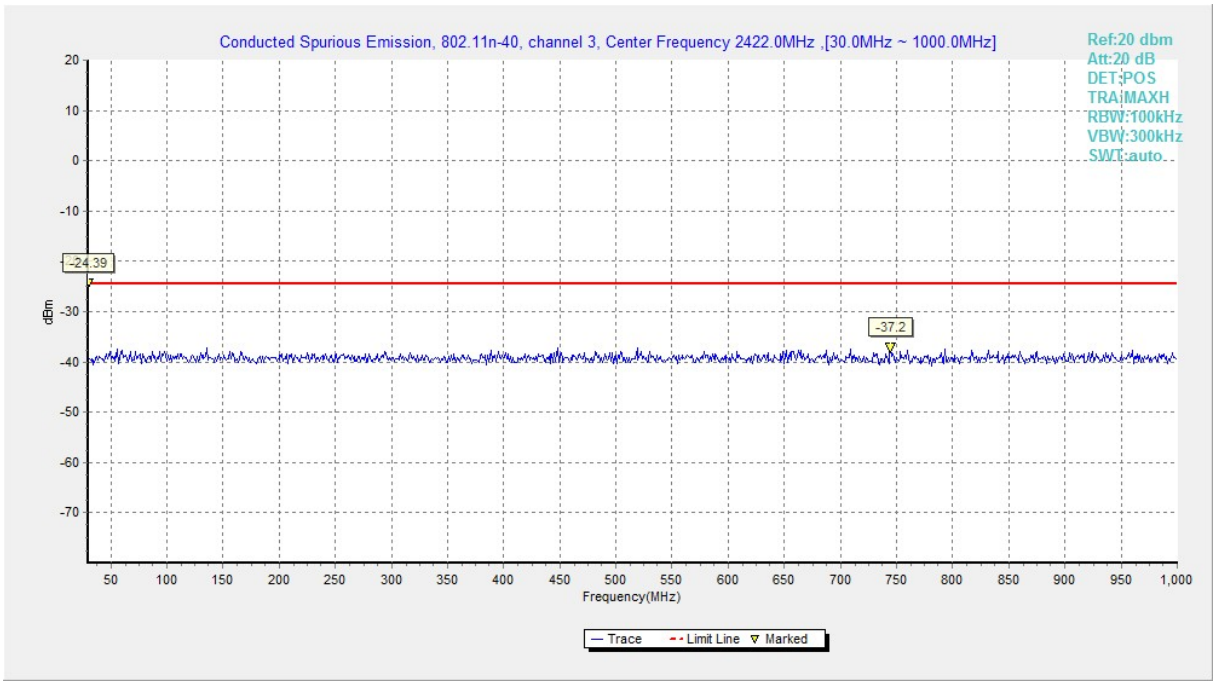

Fig.A.6.1.74 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 30 MHz-1 GHz)

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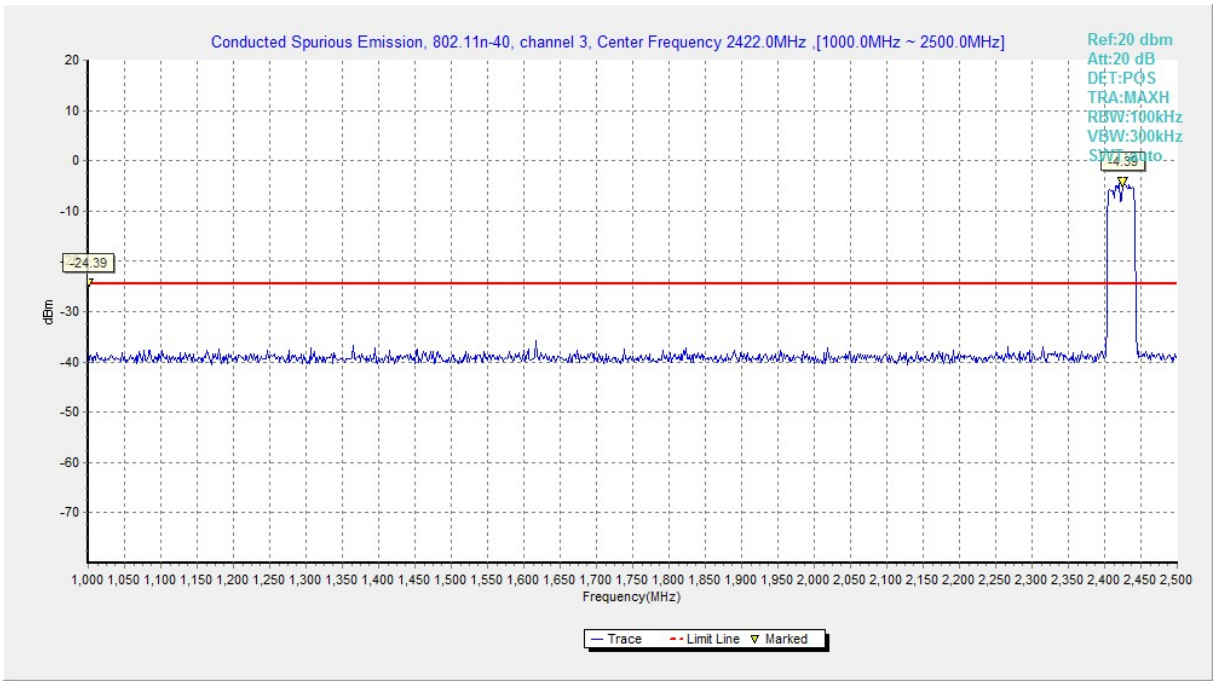

Fig.A.6.1.75 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 1 GHz-2.5 GHz)

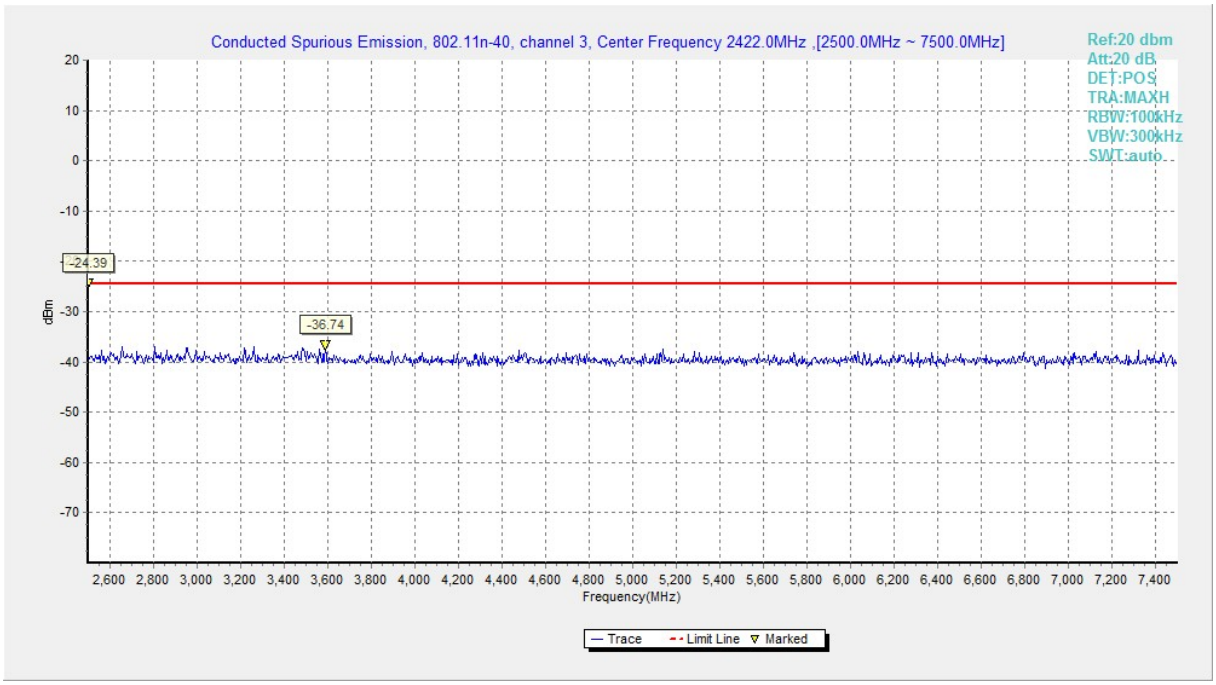

Fig.A.6.1.76 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 2.5 GHz-7.5 GHz)

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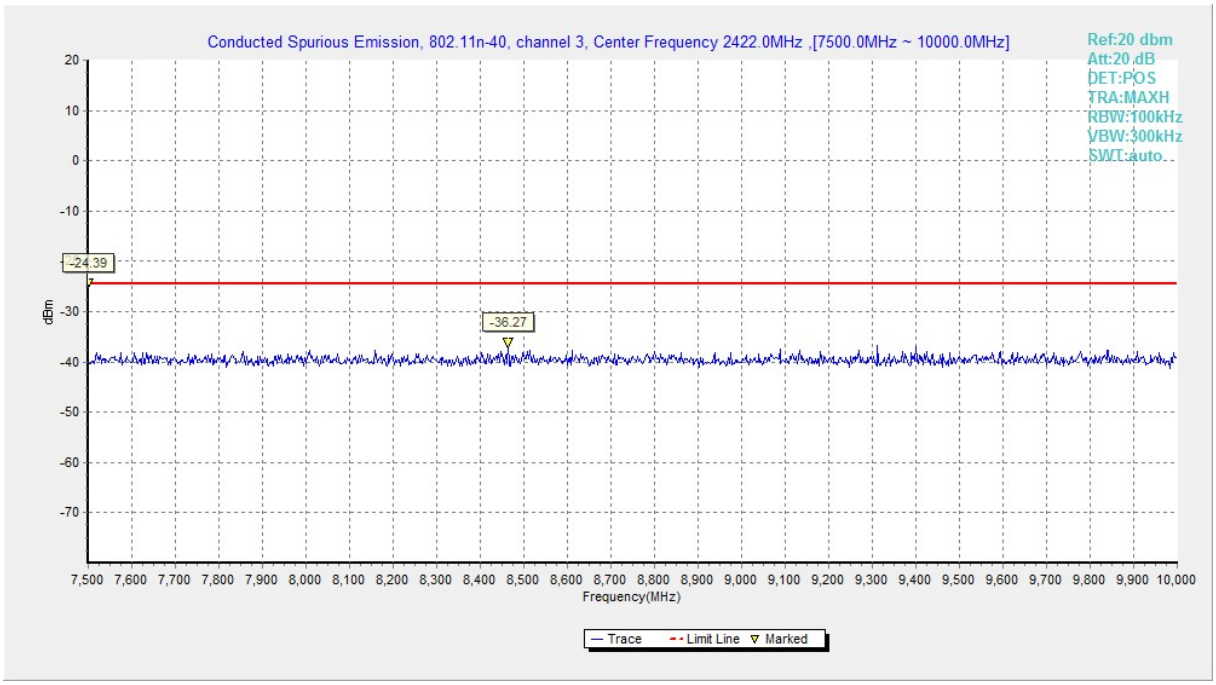

Fig.A.6.1.77 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 7.5 GHz-10 GHz)

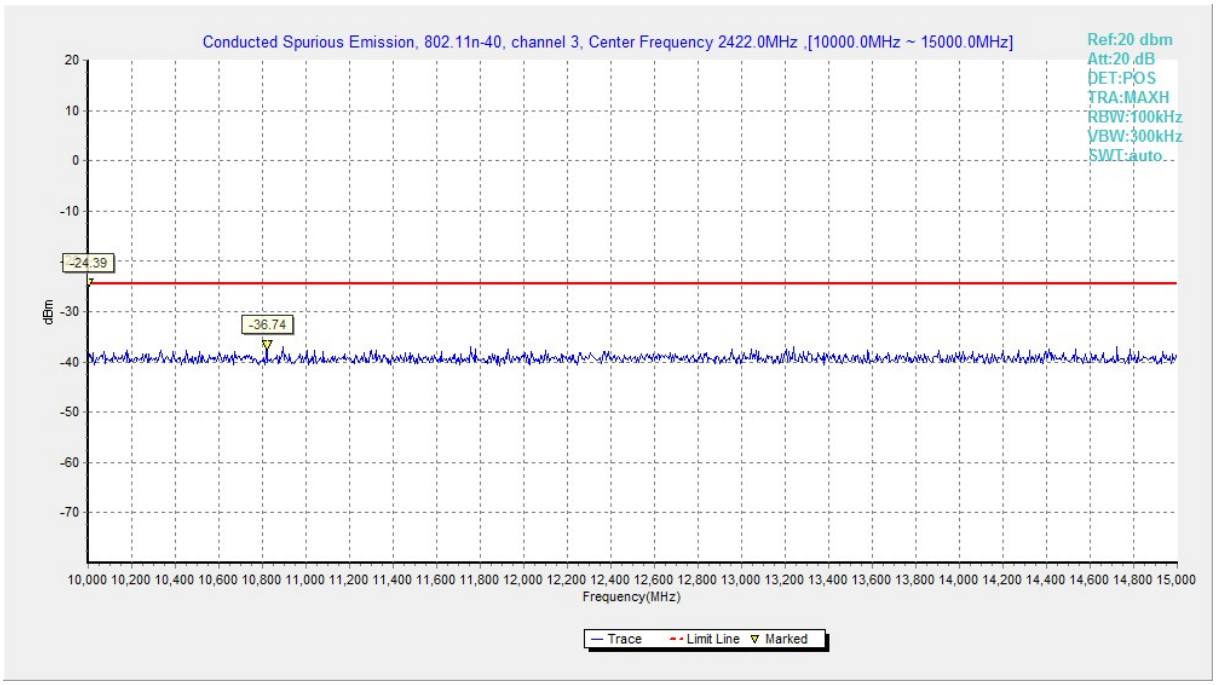

Fig.A.6.1.78 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 10 GHz-15 GHz)

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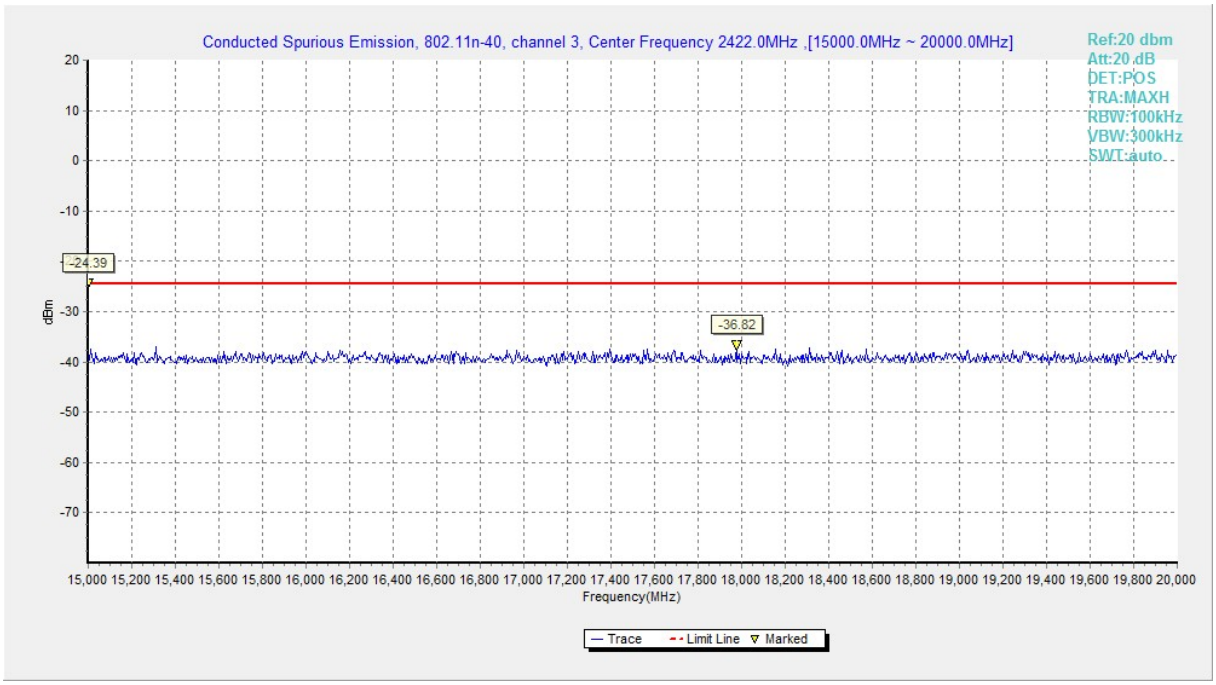

Fig.A.6.1.79 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 15 GHz-20 GHz)

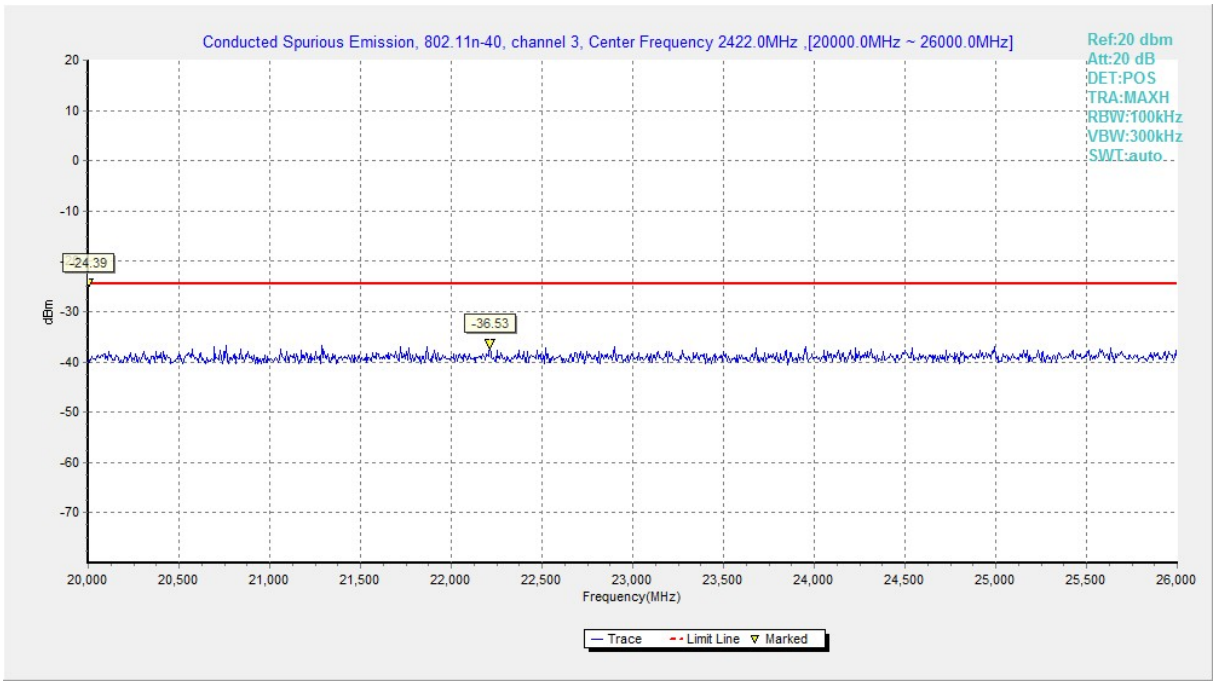

Fig.A.6.1.80 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 20 GHz-26 GHz)

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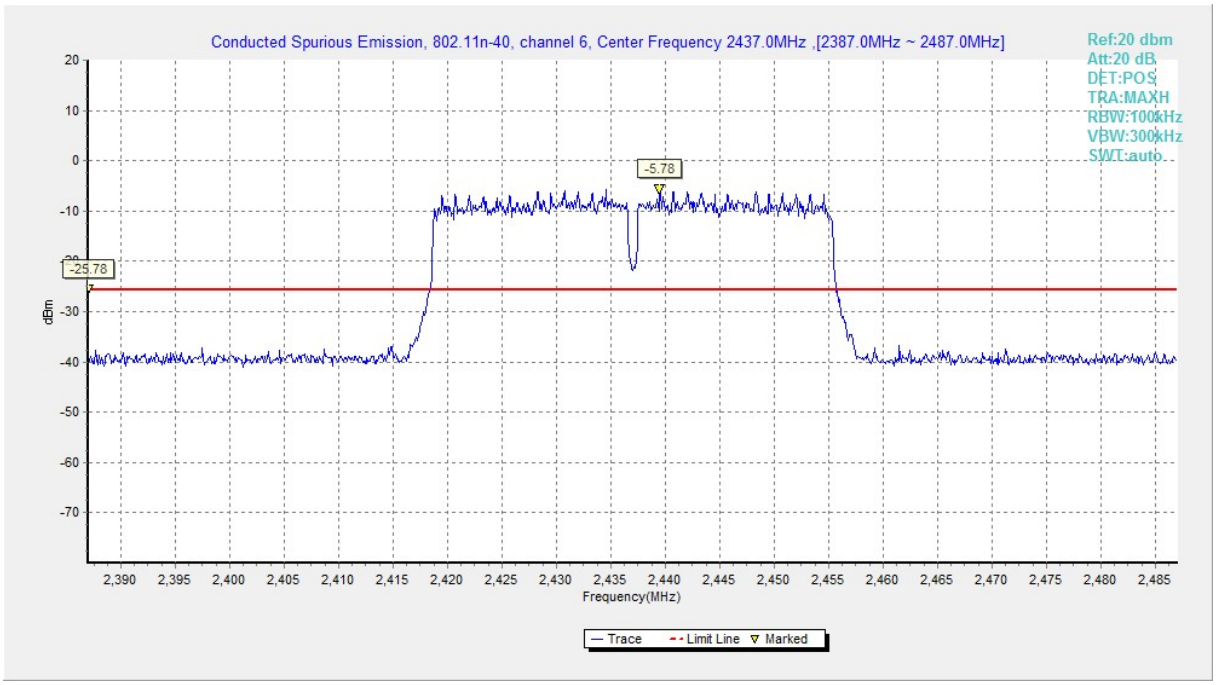

Fig.A.6.1.81 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, Center Frequency)

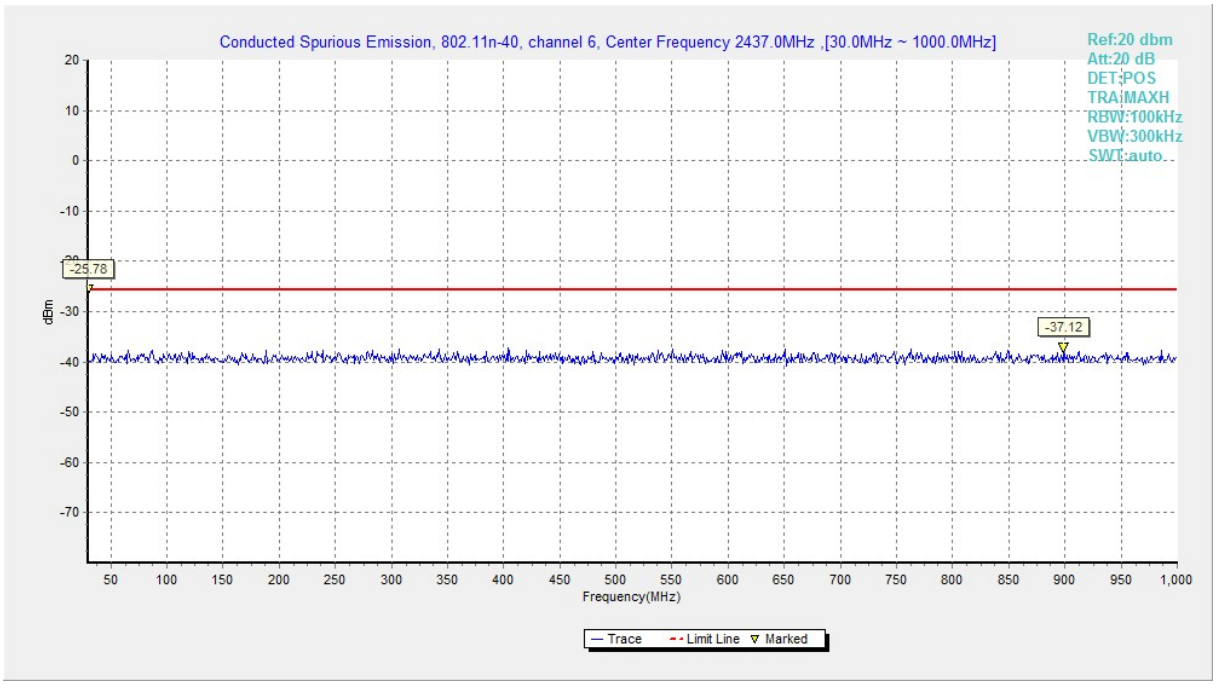

Fig.A.6.1.82 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 30 MHz-1 GHz)

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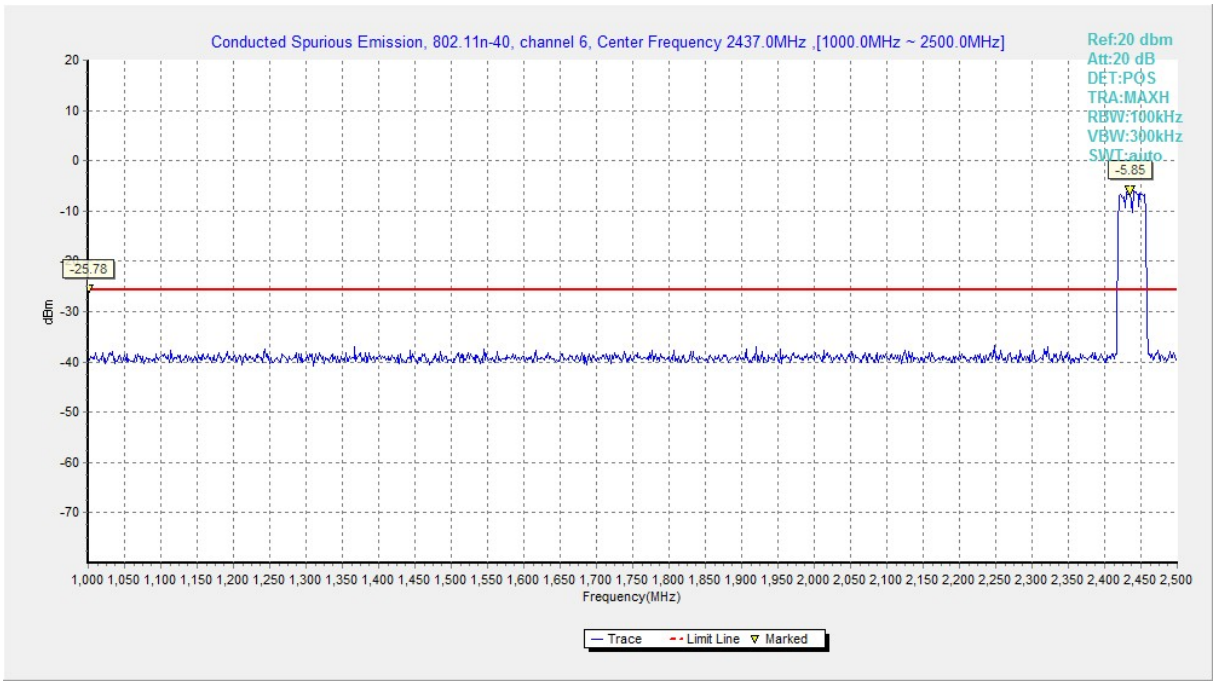

Fig.A.6.1.83 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 1 GHz-2.5 GHz)

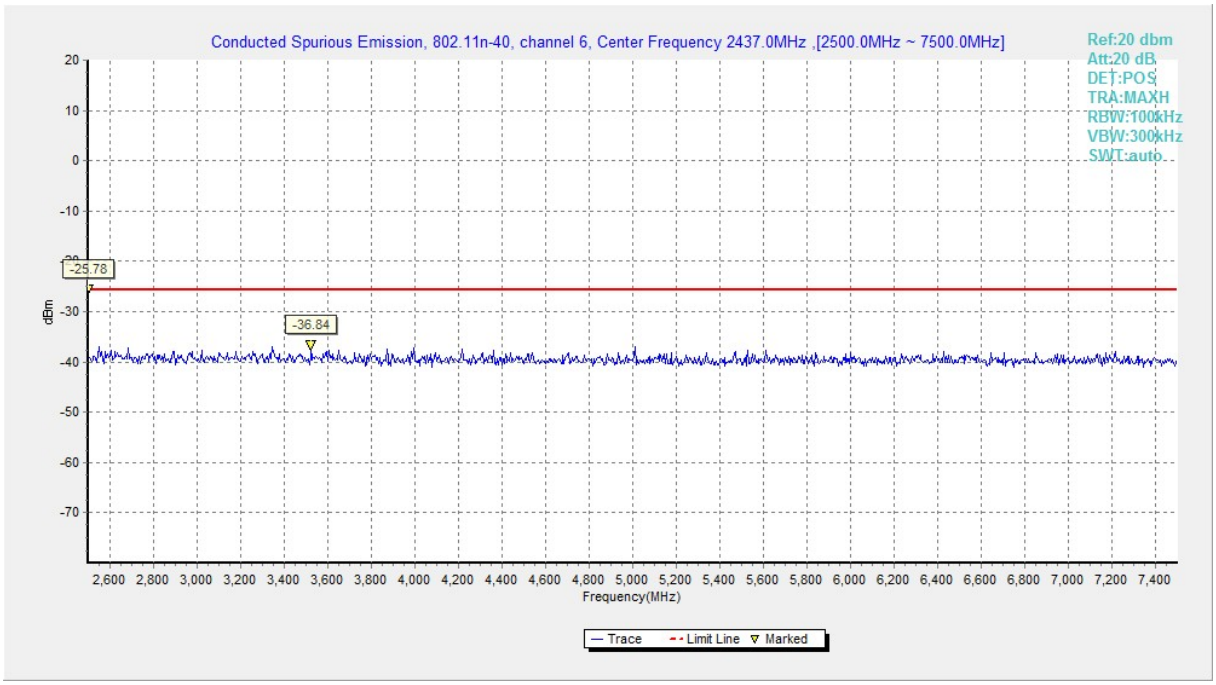

Fig.A.6.1.84 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 2.5 GHz-7.5 GHz)

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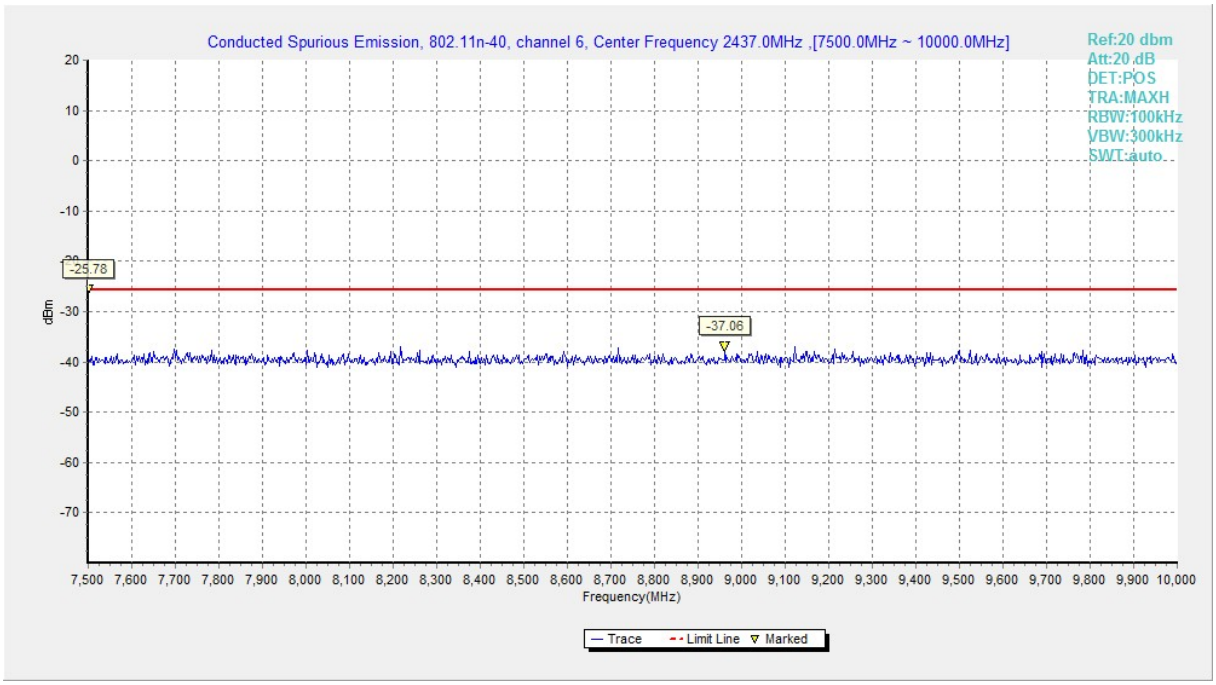

Fig.A.6.1.85 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 7.5 GHz-10 GHz)

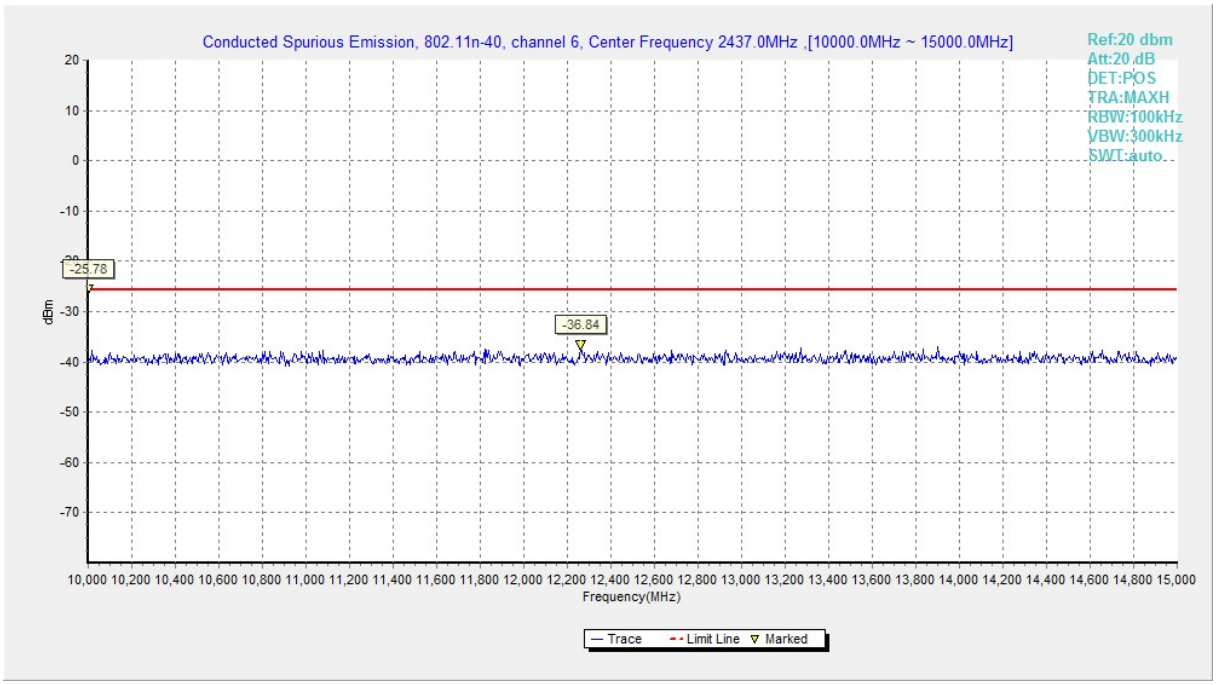

Fig.A.6.1.86 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 10 GHz-15 GHz)

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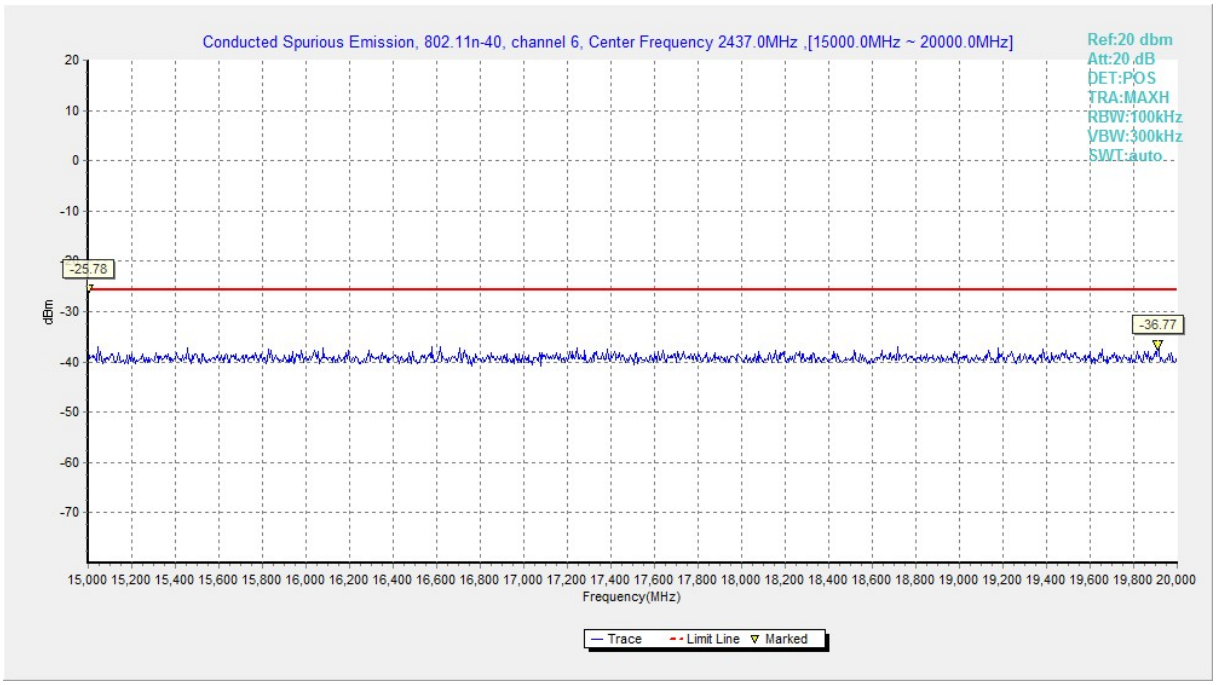

Fig.A.6.1.87 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 15 GHz-20 GHz)

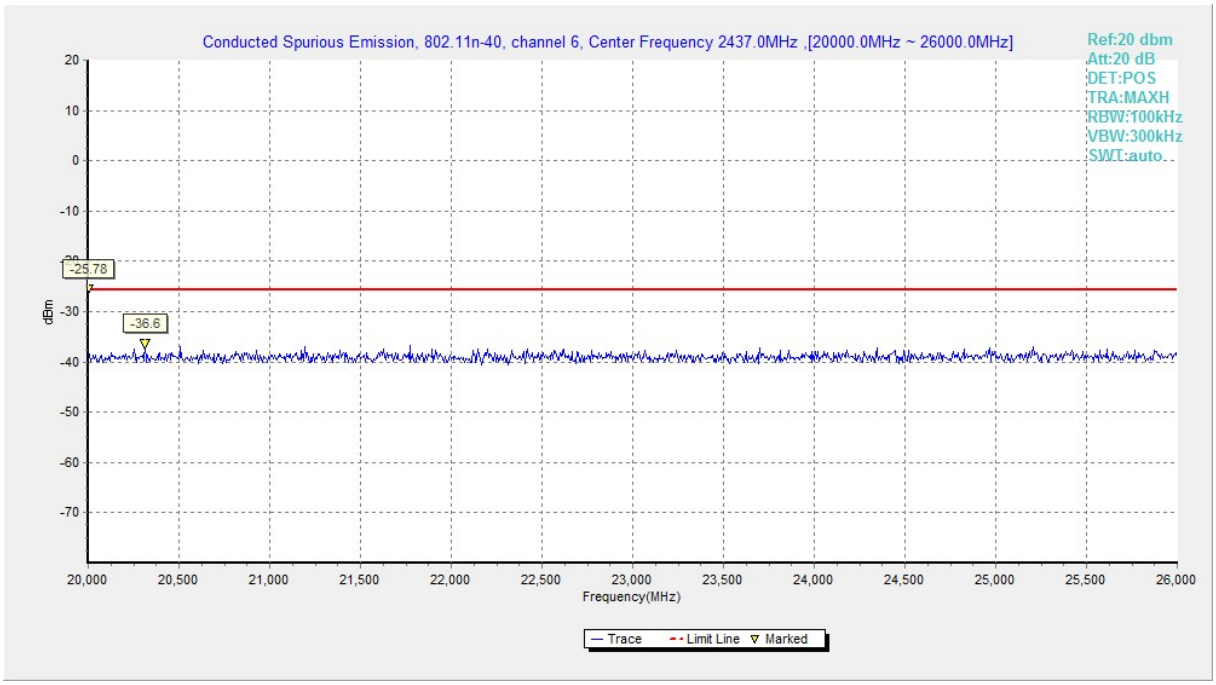

Fig.A.6.1.88 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 20 GHz-26 GHz)

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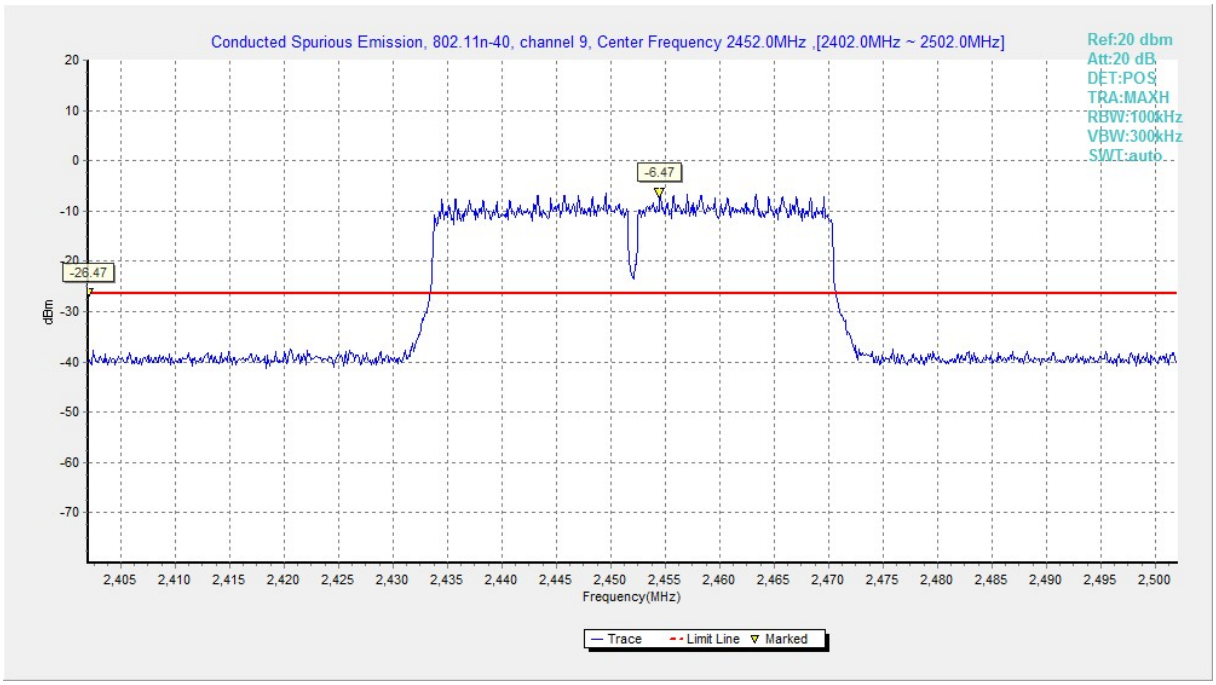

Fig.A.6.1.89 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, Center Frequency)

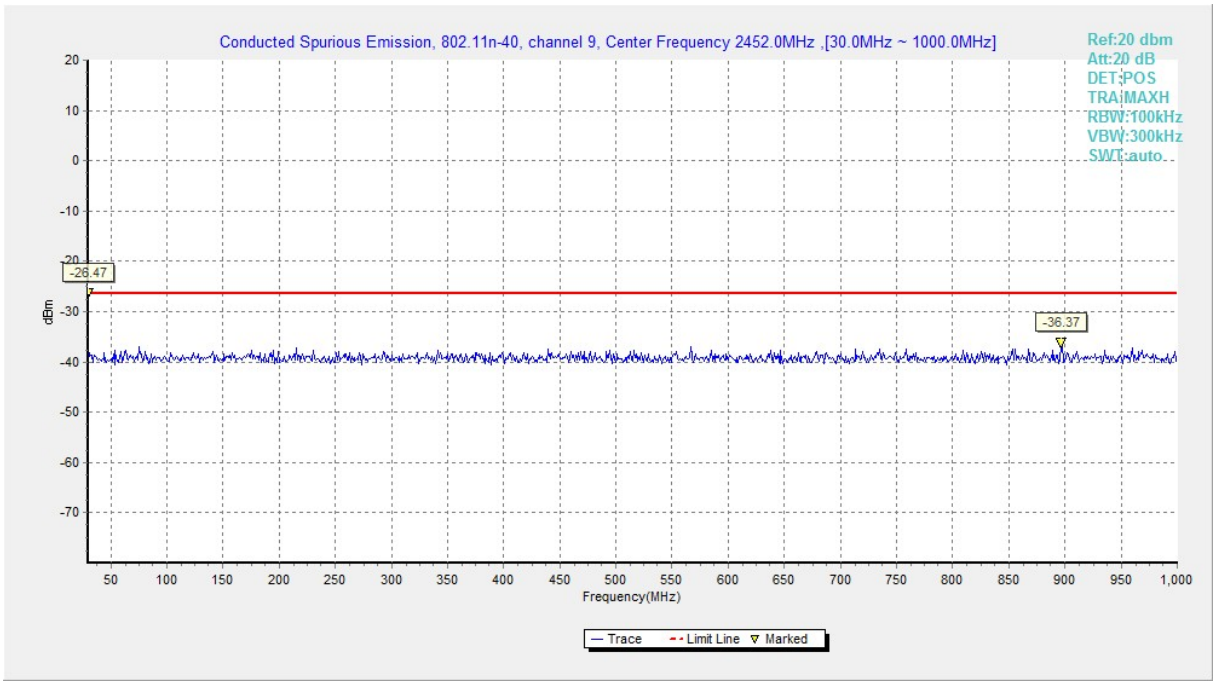

Fig.A.6.1.90 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 30 MHz-1 GHz)

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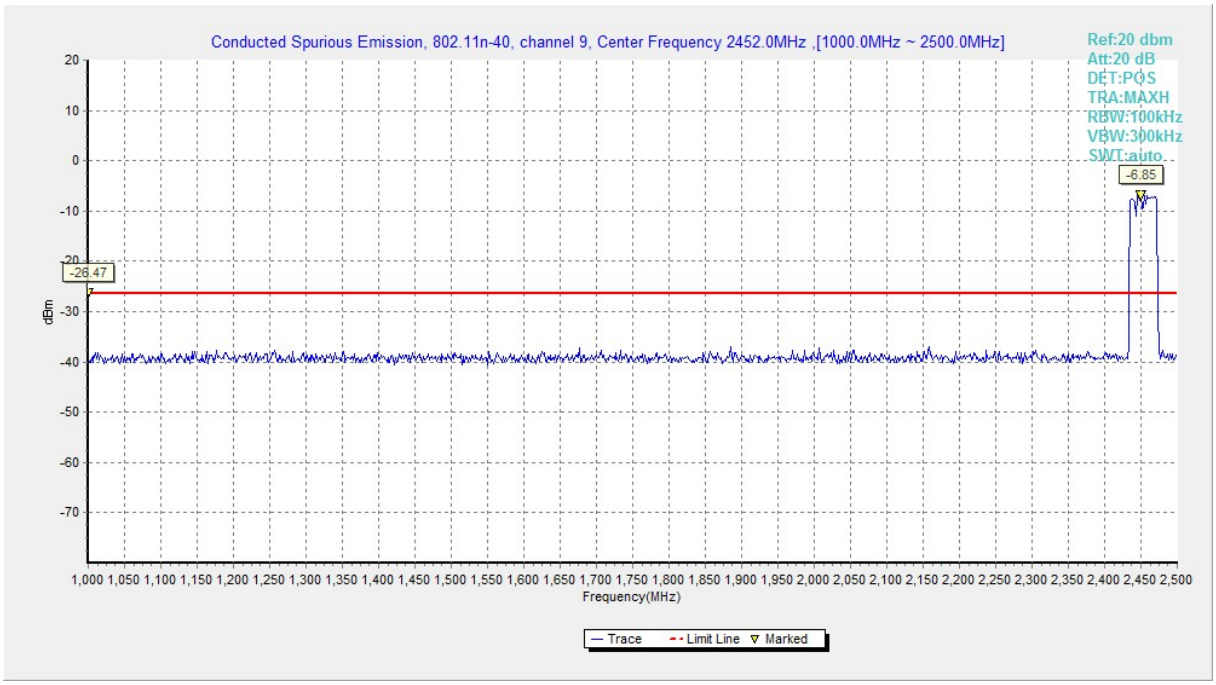

Fig.A.6.1.91 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 1 GHz-2.5 GHz)

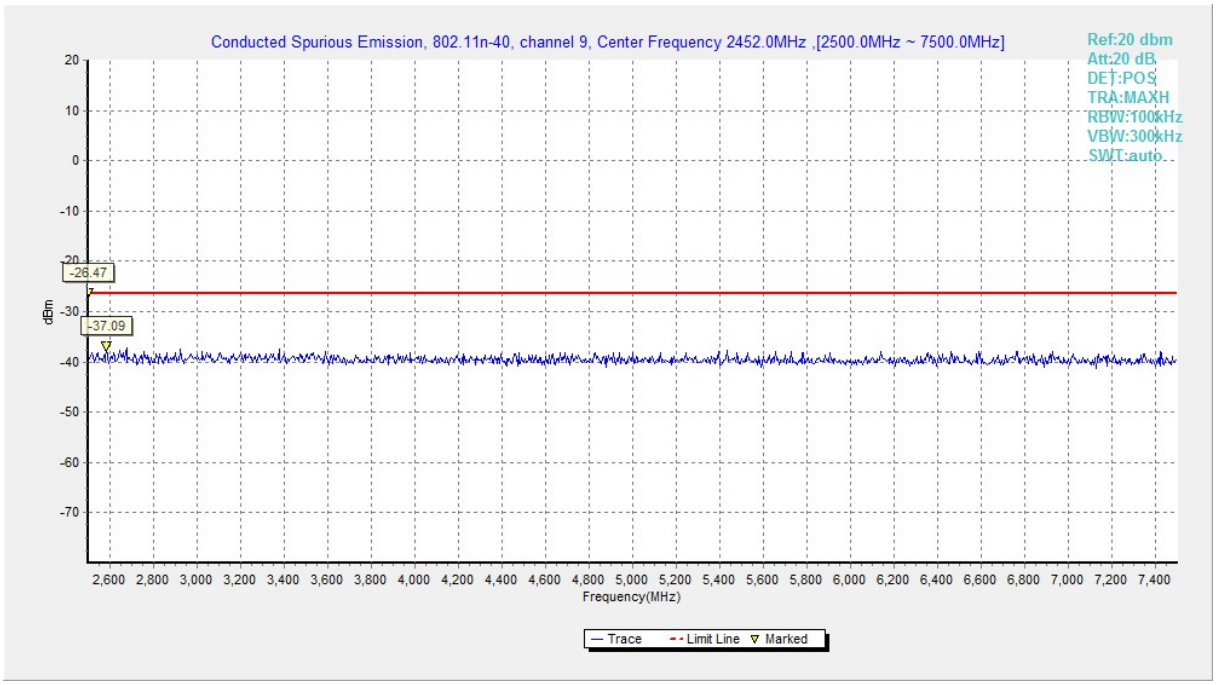

Fig.A.6.1.92 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 2.5 GHz-7.5 GHz)

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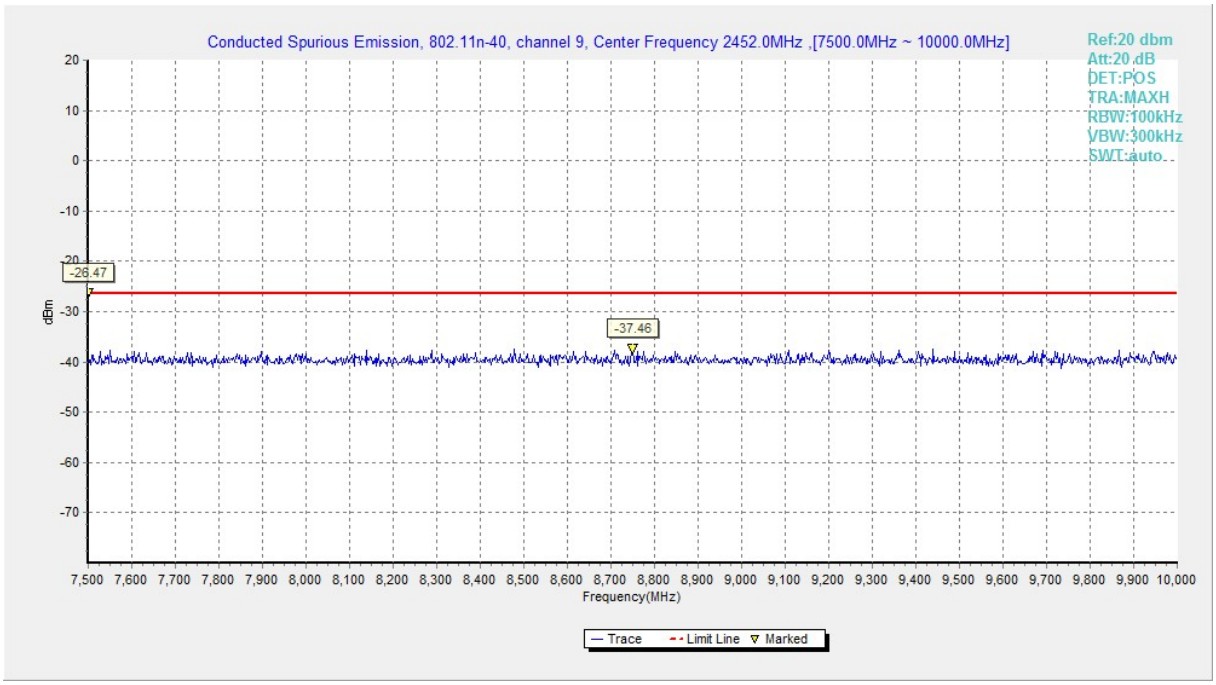

Fig.A.6.1.93 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 7.5 GHz-10 GHz)

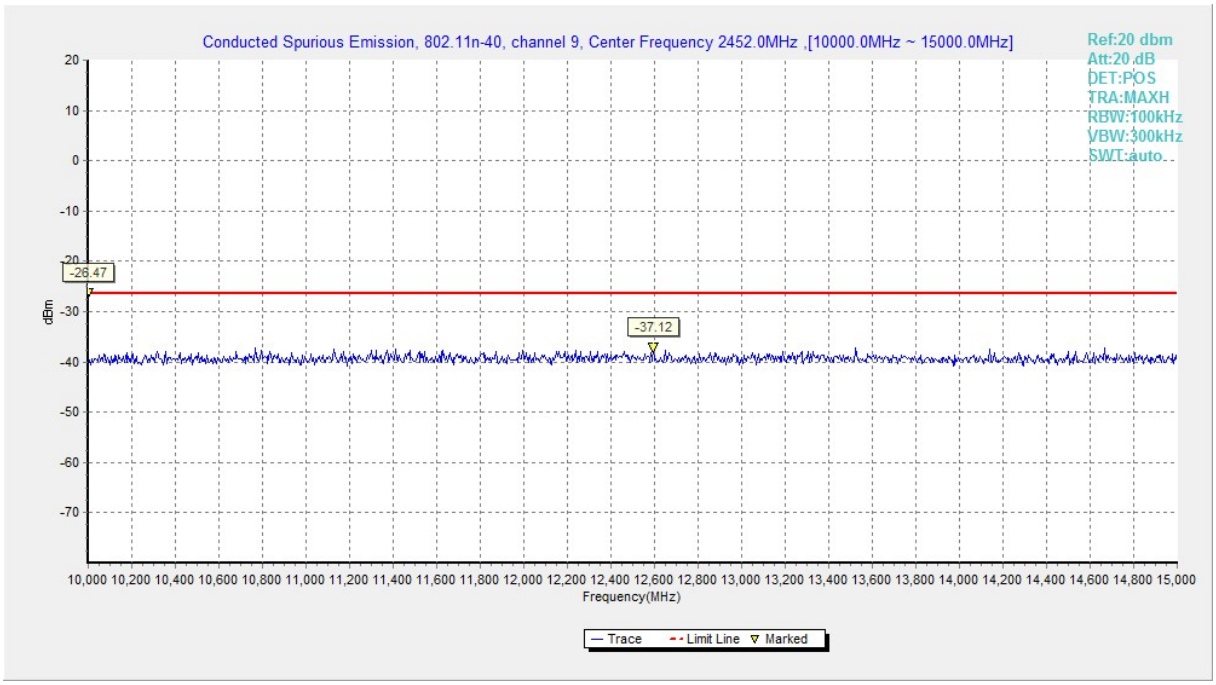

Fig.A.6.1.94 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 10 GHz-15 GHz)

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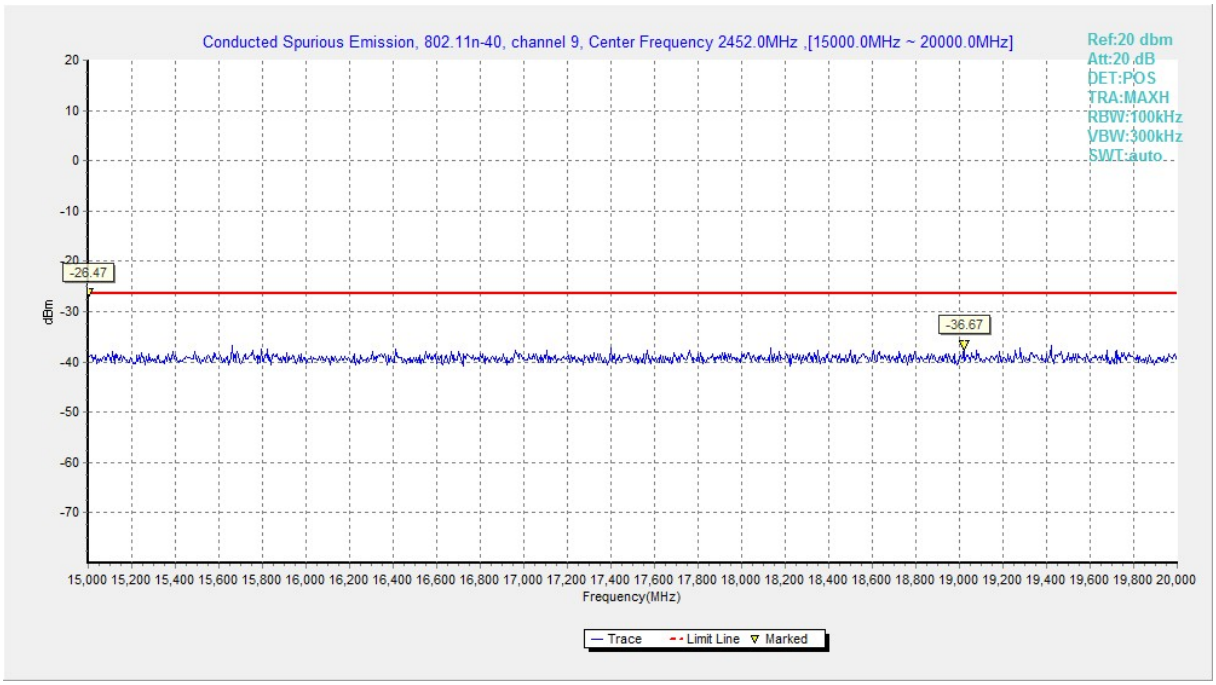

Fig.A.6.1.95 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 15 GHz-20 GHz)

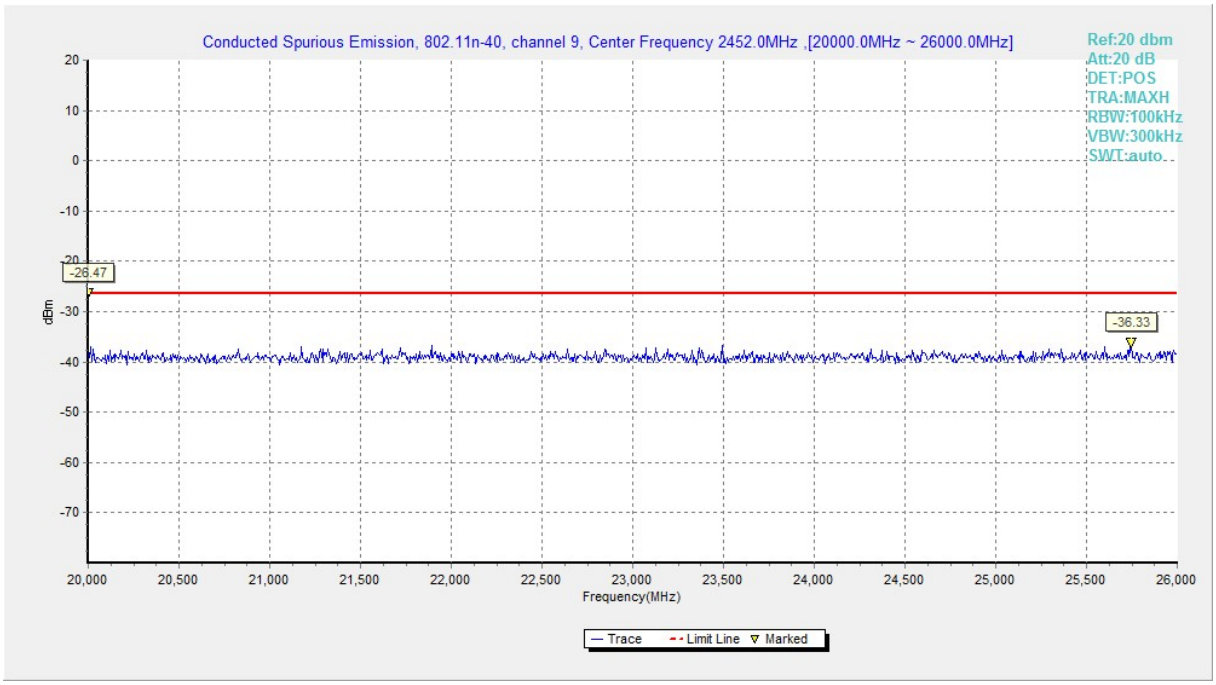

Fig.A.6.1.96 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 20 GHz-26 GHz)

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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(μV/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/1MHz	15
4000-18000	1MHz/1MHz	40
18000-26500	1MHz/1MHz	20

EUT ID: EUT1

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Measurement Results:

802.11b mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	Power	2.38GHz ~2.45GHz	Fig.A.6.2.1	**P**
	1	1 GHz ~ 3 GHz	Fig.A.6.2.2	**P**
		3 GHz ~ 18 GHz	Fig.A.6.2.3	**P**
	6	9 kHz ~30 MHz	Fig.A.6.2.4	**P**
		30 MHz ~1 GHz	Fig.A.6.2.5	**P**
		1 GHz ~ 3 GHz	Fig.A.6.2.6	**P**
		3 GHz ~ 18 GHz	Fig.A.6.2.7	**P**
		18 GHz~ 26.5 GHz	Fig.A.6.2.8	**P**
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.9	**P**
	11	1 GHz ~ 3 GHz	Fig.A.6.2.10	**P**
		3 GHz ~ 18 GHz	Fig.A.6.2.11	**P**

802.11g mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11g	Power	2.38GHz ~2.43GHz	Fig.A.6.2.12	**P**
	1	1 GHz ~ 3 GHz	Fig.A.6.2.13	**P**
		3 GHz ~ 18 GHz	Fig.A.6.2.14	**P**
	6	30 MHz ~1 GHz	Fig.A.6.2.15	**P**
		1 GHz ~ 3 GHz	Fig.A.6.2.16	**P**
		3 GHz ~ 18 GHz	Fig.A.6.2.17	**P**
		18 GHz~ 26.5 GHz	Fig.A.6.2.18	**P**
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.19	**P**
	11	1 GHz ~ 3 GHz	Fig.A.6.2.20	**P**
		3 GHz ~ 18 GHz	Fig.A.6.2.21	**P**

802.11n-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT20)	Power	2.38GHz ~2.45GHz	Fig.A.6.2.22	**P**
	1	1 GHz ~ 3 GHz	Fig.A.6.2.23	**P**
		3 GHz ~ 18 GHz	Fig.A.6.2.24	**P**
	6	30 MHz ~1 GHz	Fig.A.6.2.25	**P**
		1 GHz ~ 3 GHz	Fig.A.6.2.26	**P**
		3 GHz ~ 18 GHz	Fig.A.6.2.27	**P**
		18 GHz~ 26.5 GHz	Fig.A.6.2.28	**P**
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.29	**P**
	11	1 GHz ~ 3 GHz	Fig.A.6.2.30	**P**
		3 GHz ~ 18 GHz	Fig.A.6.2.31	**P**

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802.11n-HT40 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT40)	Power	2.38GHz ~2.45GHz	Fig.A.6.2.32	**P**
	3	1 GHz ~ 3 GHz	Fig.A.6.2.33	**P**
		3 GHz ~ 18 GHz	Fig.A.6.2.34	**P**
	6	30 MHz ~1 GHz	Fig.A.6.2.35	**P**
		1 GHz ~ 3 GHz	Fig.A.6.2.36	**P**
		3 GHz ~ 18 GHz	Fig.A.6.2.37	**P**
		18 GHz~ 26.5 GHz	Fig.A.6.2.38	**P**
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.39	**P**
	9	1 GHz ~ 3 GHz	Fig.A.6.2.40	**P**
		3 GHz ~ 18 GHz	Fig.A.6.2.41	**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

802.11b

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
2389.996	55.7	-26.9	32.4	50.208	H
17721.000	56.6	-23.9	41.2	39.253	H
17967.750	56.4	-23.9	41.2	39.053	H
17519.250	56.3	-23.4	41.2	38.472	V
17988.750	56.2	-24.3	41.2	39.269	V
17621.250	56.1	-23.4	41.2	38.272	V

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
17607.750	56.2	-23.9	41.2	38.853	V
17721.000	56.2	-24.4	41.1	39.530	V
17967.750	56.1	-23.9	41.2	38.753	H
17519.250	56.0	-23.4	41.0	38.372	V
17988.750	56.0	-24.6	41.4	39.215	H
17621.250	55.8	-23.9	41.2	38.453	H

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Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
2483.500	56.1	-27.4	32.4	51.072	V
17721.000	56.6	-23.9	41.2	39.253	V
17967.750	56.2	-23.3	41.0	38.533	H
17519.250	56.0	-24.3	41.2	39.069	V
17988.750	55.6	-23.4	41.2	37.772	V
17621.250	55.6	-23.0	41.0	37.647	V

802.11g

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
2389.996	64.5	-26.9	32.4	59.008	H
17721.000	55.9	-24.3	41.2	38.969	V
17967.750	55.8	-23.4	41.2	37.972	H
17519.250	55.8	-24.3	41.2	38.869	H
17988.750	55.7	-23.0	41.0	37.747	H
17621.250	55.7	-23.4	41.2	37.872	V

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
17962.500	56.1	-23.3	41.0	38.433	V
17721.000	56.0	-23.4	41.2	38.172	V
17967.750	55.9	-23.3	41.0	38.233	H
17519.250	55.9	-23.4	41.2	38.072	H
17988.750	55.9	-23.4	41.2	38.072	H
17621.250	55.7	-23.9	41.2	38.353	H

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
2483.500	68.1	-27.4	32.4	63.072	H
17721.000	56.0	-23.3	41.0	38.333	H
17967.750	56.0	-23.9	41.2	38.653	V
17519.250	55.9	-23.0	41.0	37.947	H
17988.750	55.9	-23.3	41.0	38.233	V
17621.250	55.8	-23.0	41.0	37.847	V

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802.11n-HT20

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
2389.996	60.7	-26.9	32.4	55.208	H
17721.000	56.8	-23.3	41.0	39.133	H
17967.750	56.4	-23.4	41.0	38.772	V
17519.250	56.0	-23.3	41.0	38.333	V
17988.750	55.9	-24.2	41.4	38.685	V
17621.250	55.8	-23.4	41.0	38.172	H

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
17789.250	56.5	-23.4	41.0	38.872	V
17721.000	56.0	-23.4	41.2	38.172	V
17967.750	55.9	-23.4	41.2	38.072	V
17519.250	55.8	-23.3	41.0	38.133	H
17988.750	55.7	-23.3	41.0	38.033	H
17621.250	55.6	-23.9	41.2	38.253	V

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
2483.760	65.9	-27.4	32.4	60.872	H
17721.000	55.8	-23.4	41.0	38.172	V
17967.750	55.7	-23.3	41.0	38.033	V
17519.250	55.7	-23.0	41.0	37.747	H
17988.750	55.7	-23.9	41.2	38.353	H
17621.250	55.6	-23.9	41.2	38.253	H

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802.11n-HT40

Ch3

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
2389.912	60.2	-26.9	32.4	54.708	V
17721.000	56.2	-23.3	41.0	38.533	V
17967.750	56.1	-23.9	41.2	38.753	H
17519.250	56.0	-23.3	41.0	38.333	V
17988.750	55.6	-23.9	41.2	38.253	V
17621.250	55.6	-23.9	41.2	38.253	V

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
17527.500	56.0	-23.9	41.2	38.653	V
17721.000	55.9	-23.9	41.2	38.553	H
17967.750	55.9	-23.4	41.0	38.272	H
17519.250	55.8	-23.0	41.0	37.847	H
17988.750	55.7	-23.4	41.2	37.872	H
17621.250	55.7	-23.9	41.2	38.353	V

Ch9

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
2483.358	61.5	-27.4	32.4	56.472	H
17721.000	56.4	-23.9	41.2	39.053	H
17967.750	56.1	-23.3	41.0	38.433	V
17519.250	55.9	-23.4	41.0	38.272	V
17988.750	55.7	-23.3	41.0	38.033	V
17621.250	55.7	-23.4	41.0	38.072	H

Test graphs as below:

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RE - Power-2.38GHz-2.45GHz

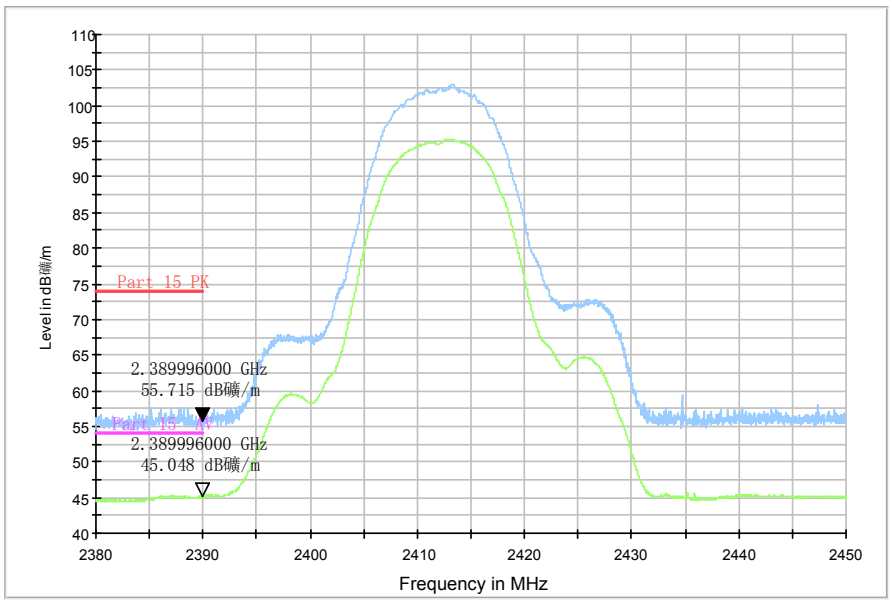

Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.38 GHz – 2.45GHz

RE - 1GHz-3GHz

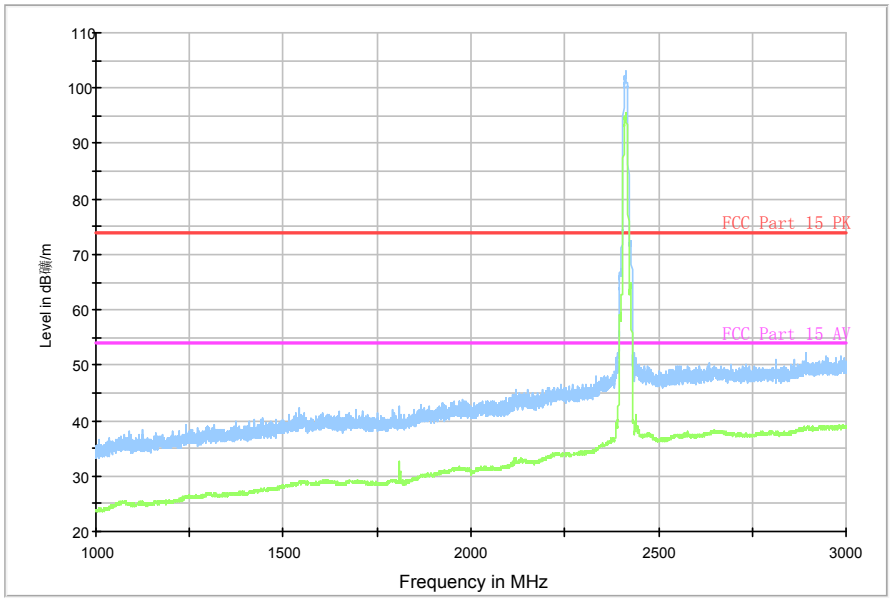

Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (802.11b, Ch1, 1 GHz-3 GHz)

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RE - 3GHz-18GHz

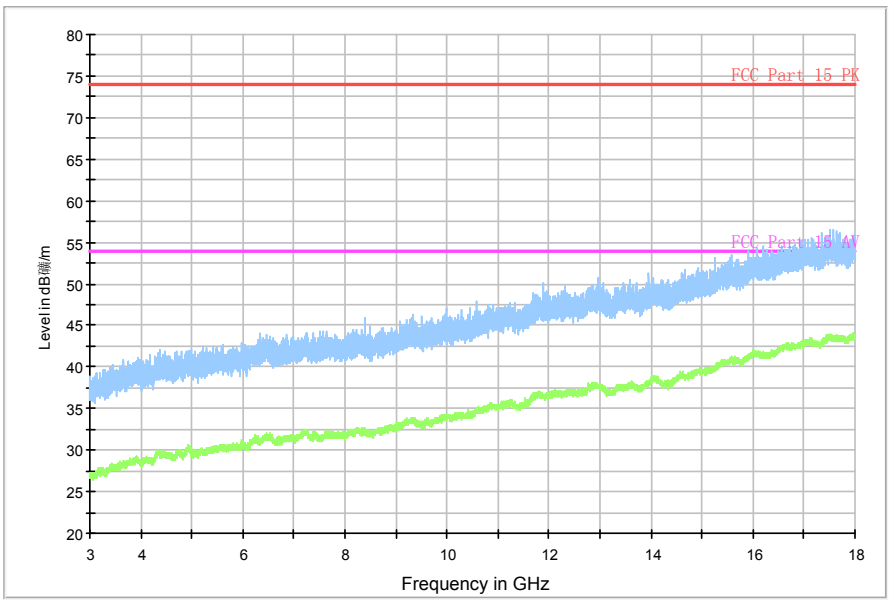

Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (802.11b, Ch1, 3 GHz-18 GHz)

RE 9kHz-30MHz

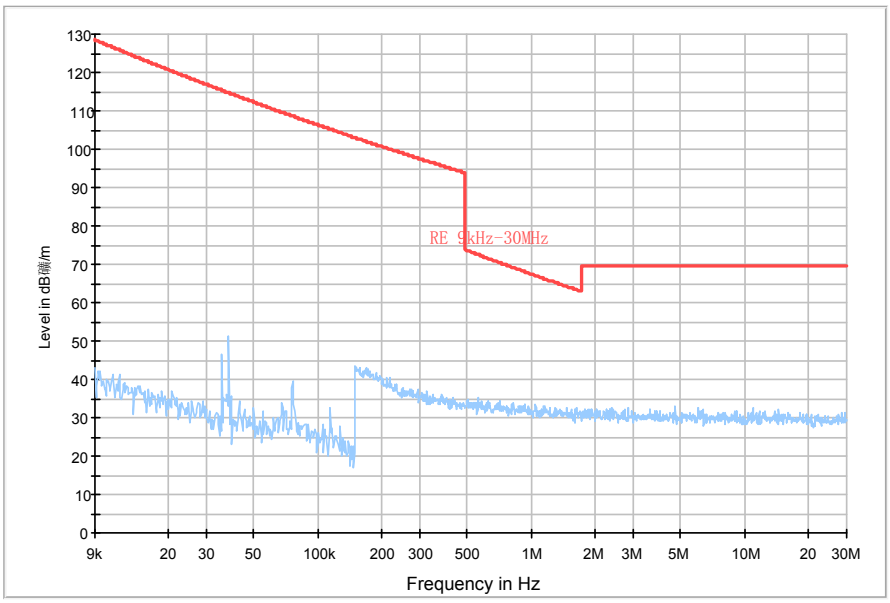

Fig.A.6.2.4 Transmitter Spurious Emission - Radiated (802.11b, Ch6, 9kHz-30 MHz)

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