

Fig.A.6.1.67 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 1 GHz-2.5 GHz)

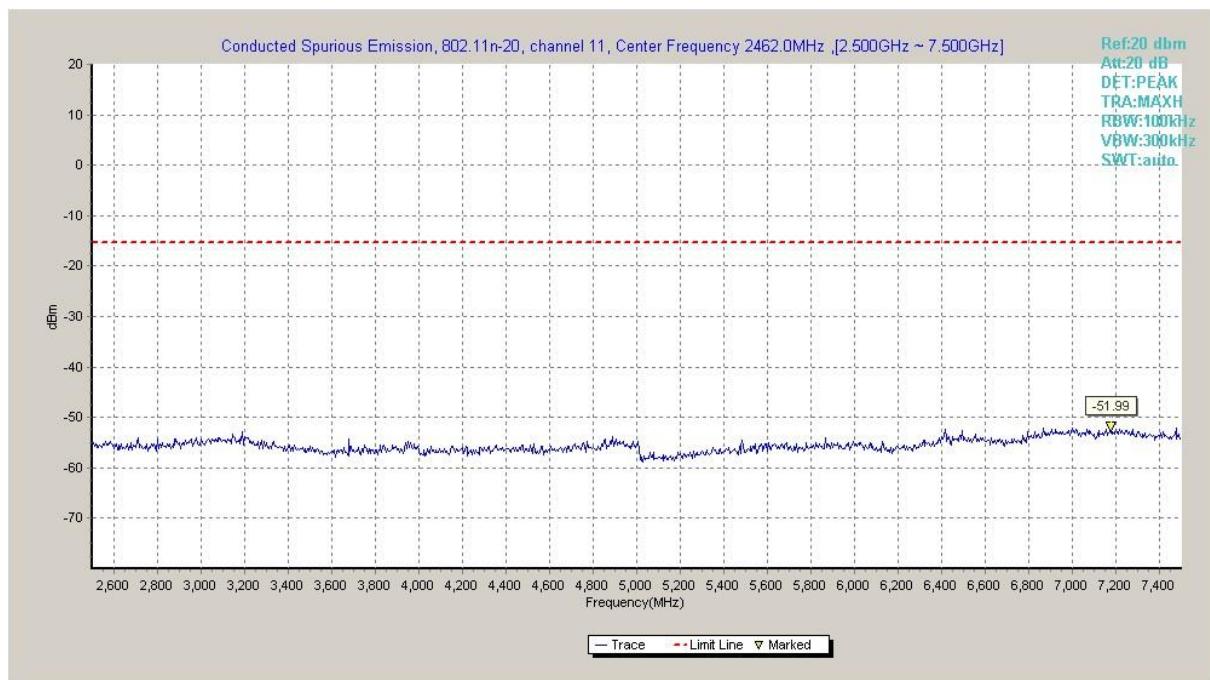


Fig.A.6.1.68 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 2.5 GHz-7.5 GHz)

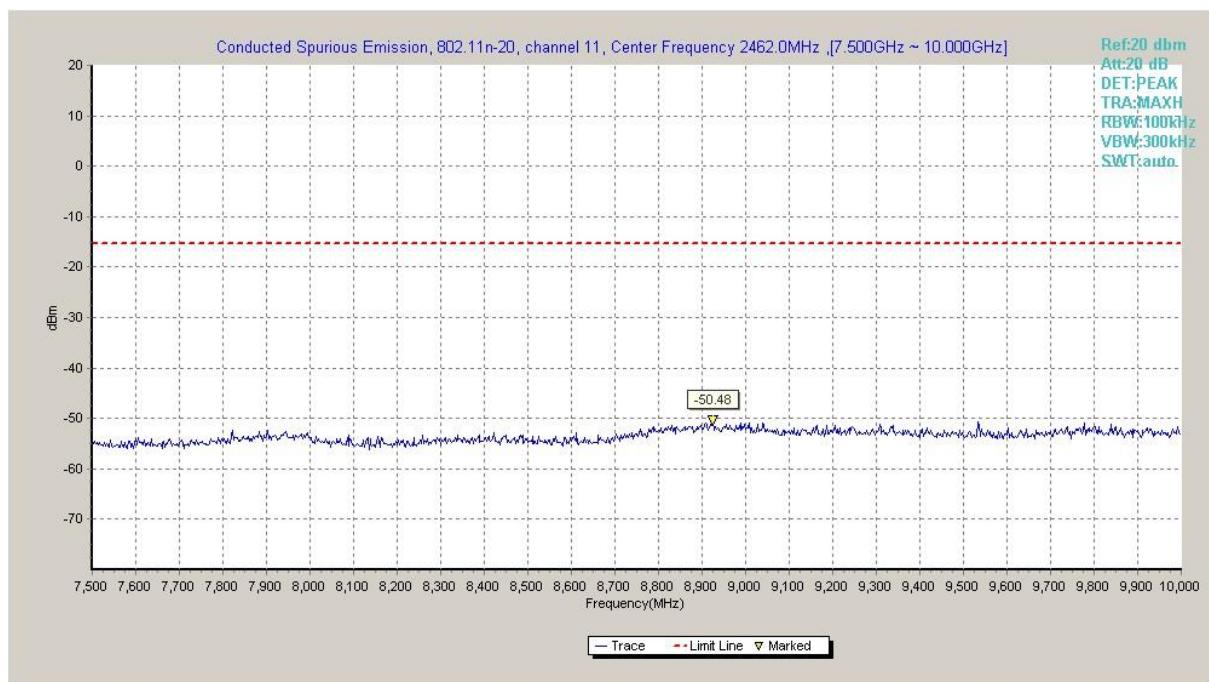


Fig.A.6.1.69 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 7.5 GHz-10 GHz)

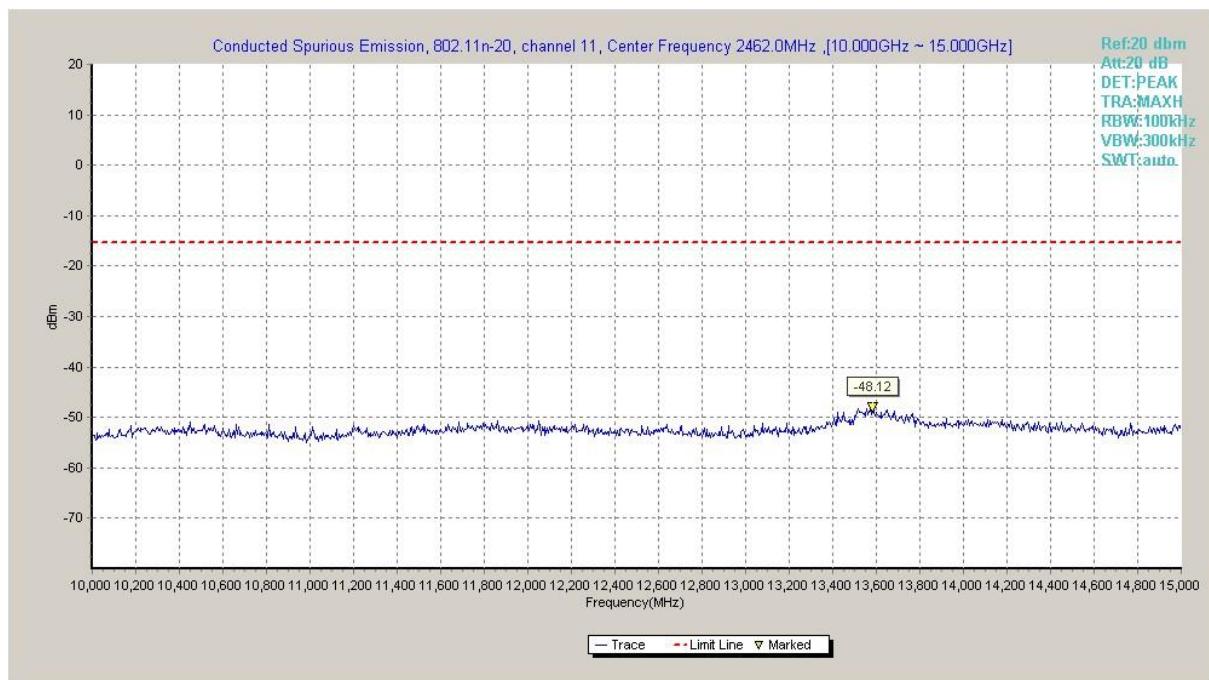


Fig.A.6.1.70 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 10 GHz-15 GHz)

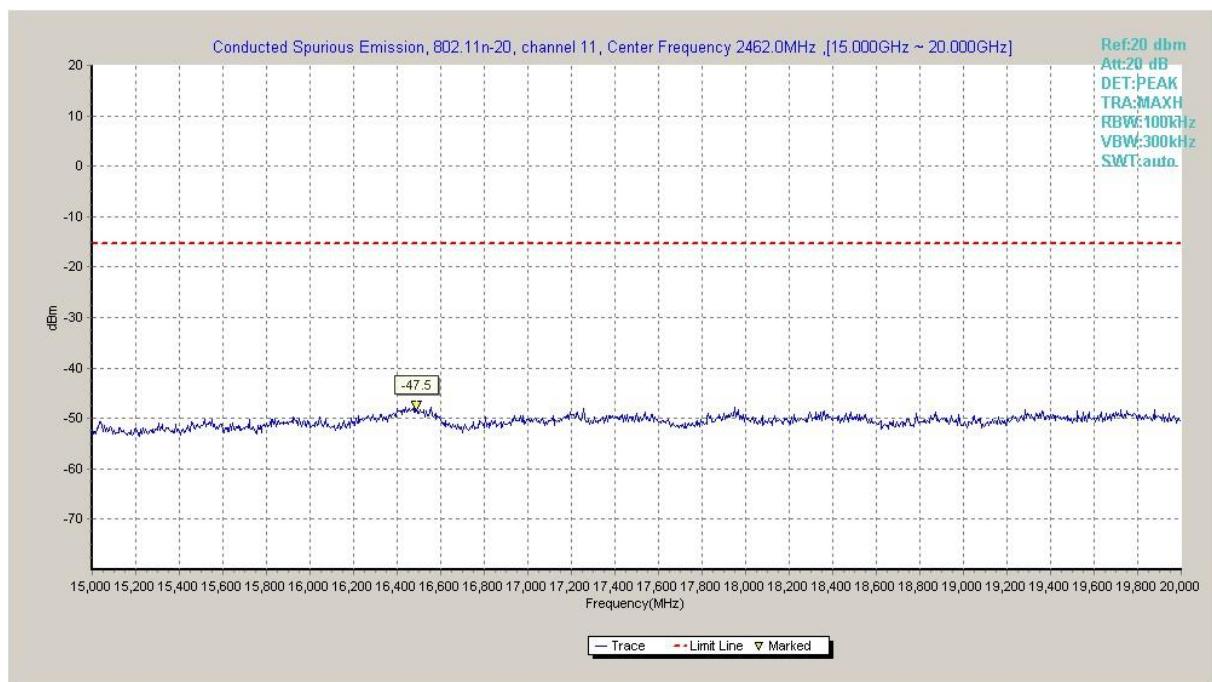


Fig.A.6.1.71 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 15 GHz-20 GHz)

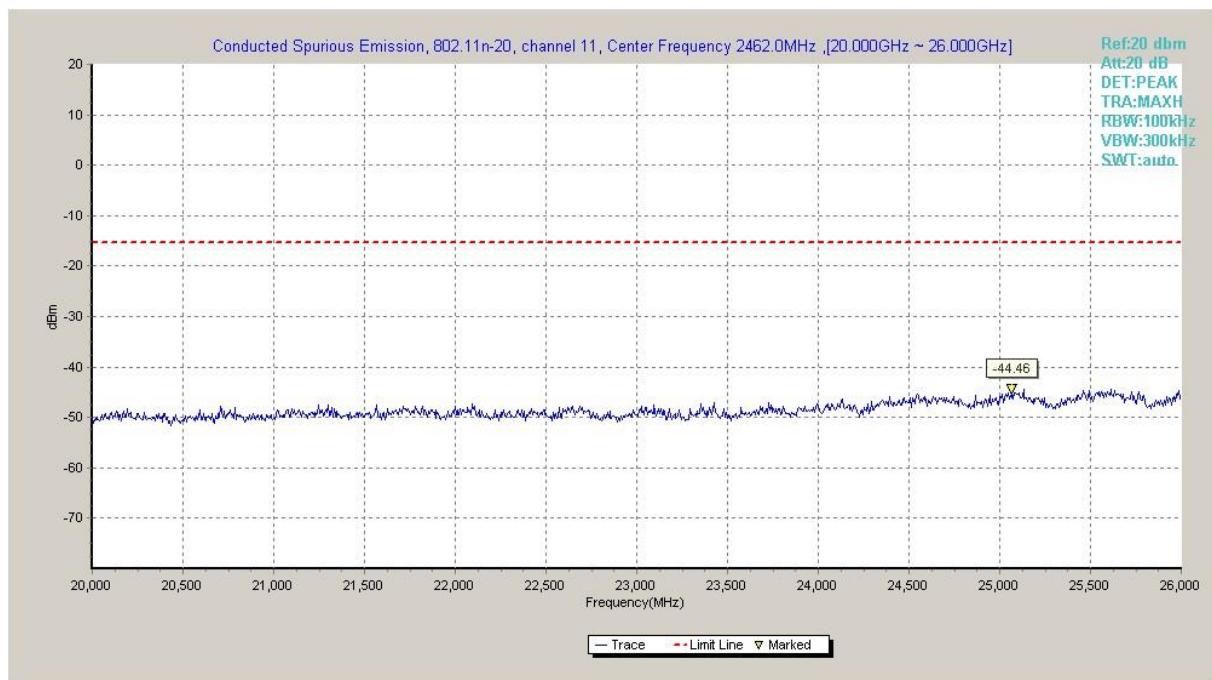


Fig.A.6.1.72 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 20 GHz-26 GHz)

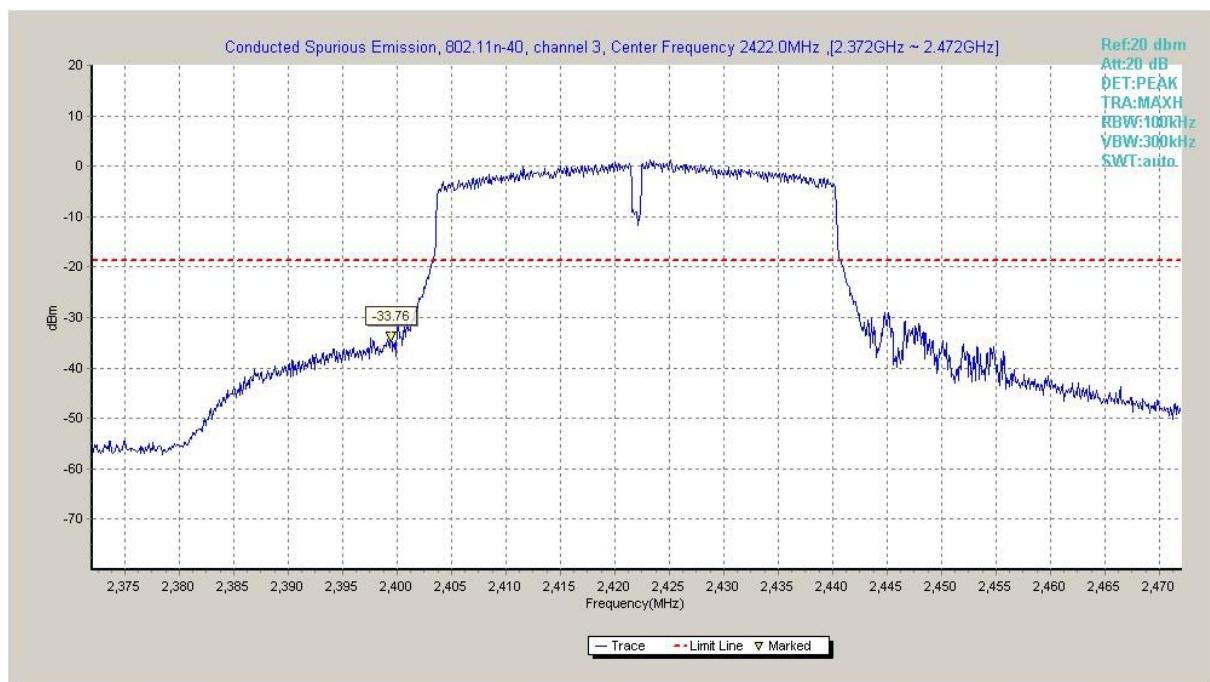


Fig.A.6.1.73 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, Center Frequency)

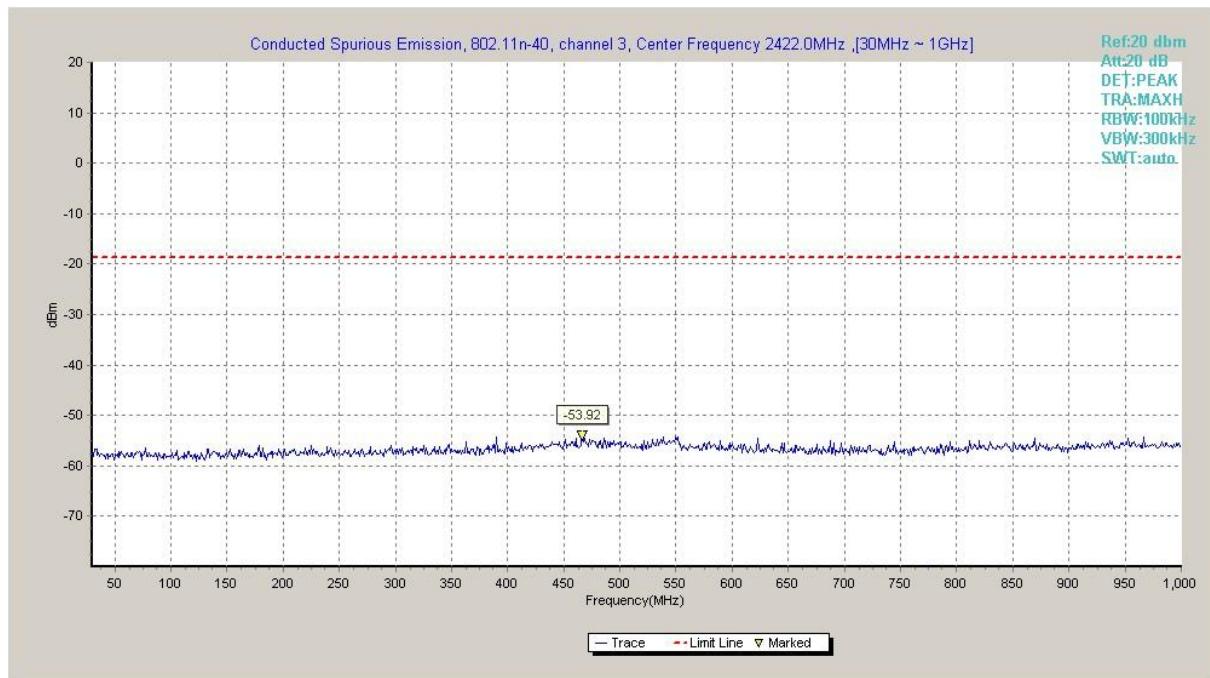


Fig.A.6.1.74 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 30 MHz-1 GHz)

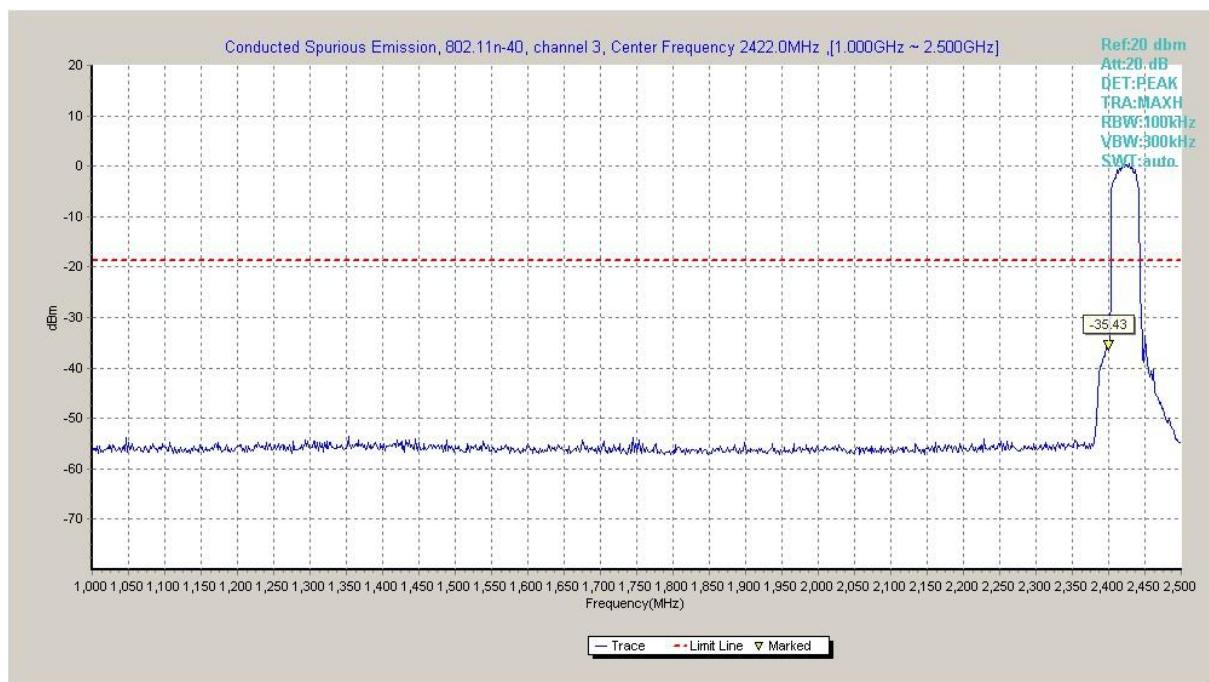


Fig.A.6.1.75 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 1 GHz-2.5 GHz)

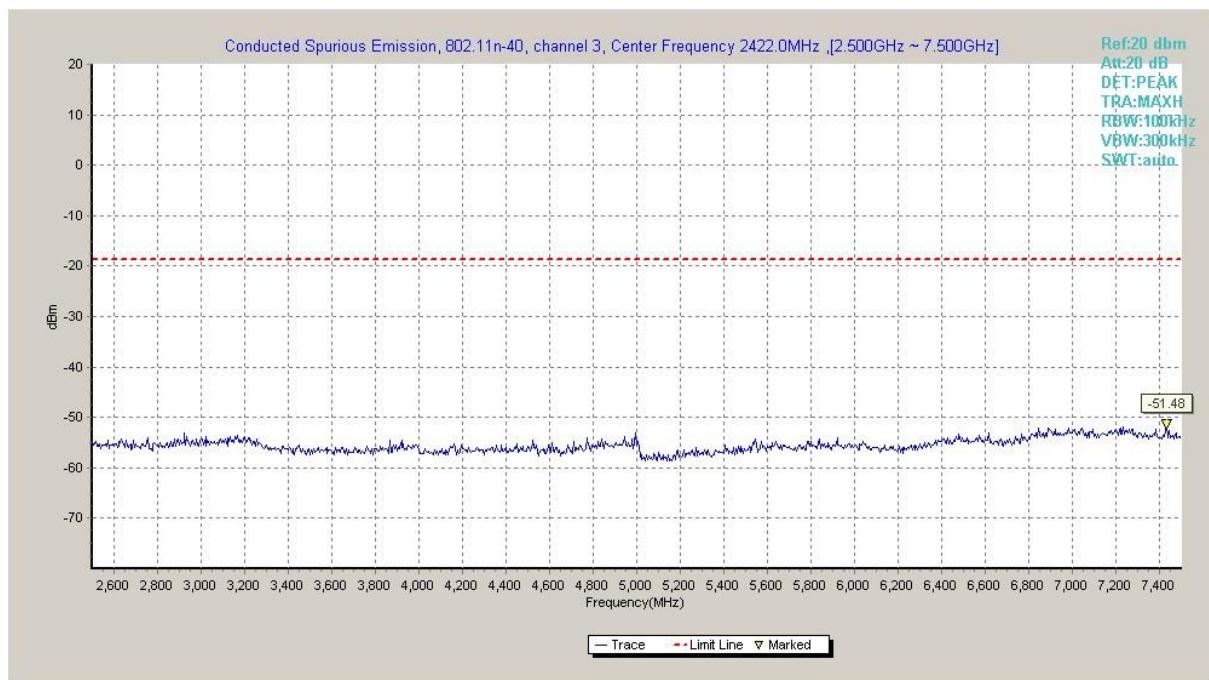


Fig.A.6.1.76 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 2.5 GHz-7.5 GHz)

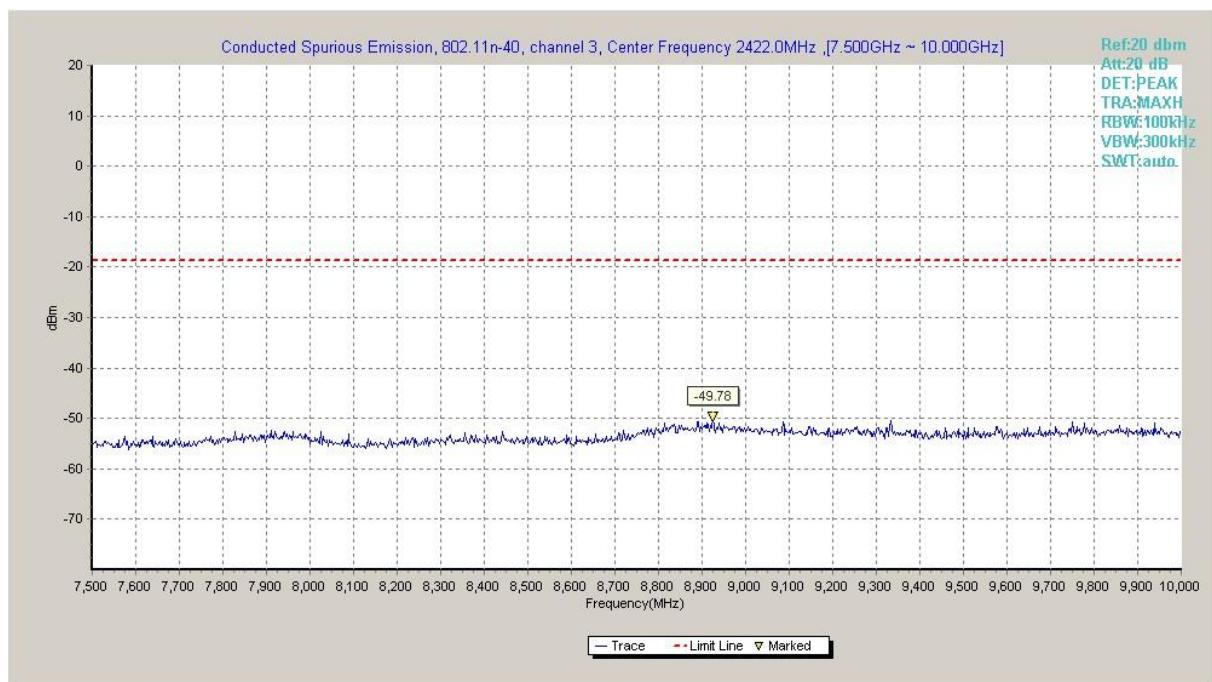


Fig.A.6.1.77 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 7.5 GHz-10 GHz)

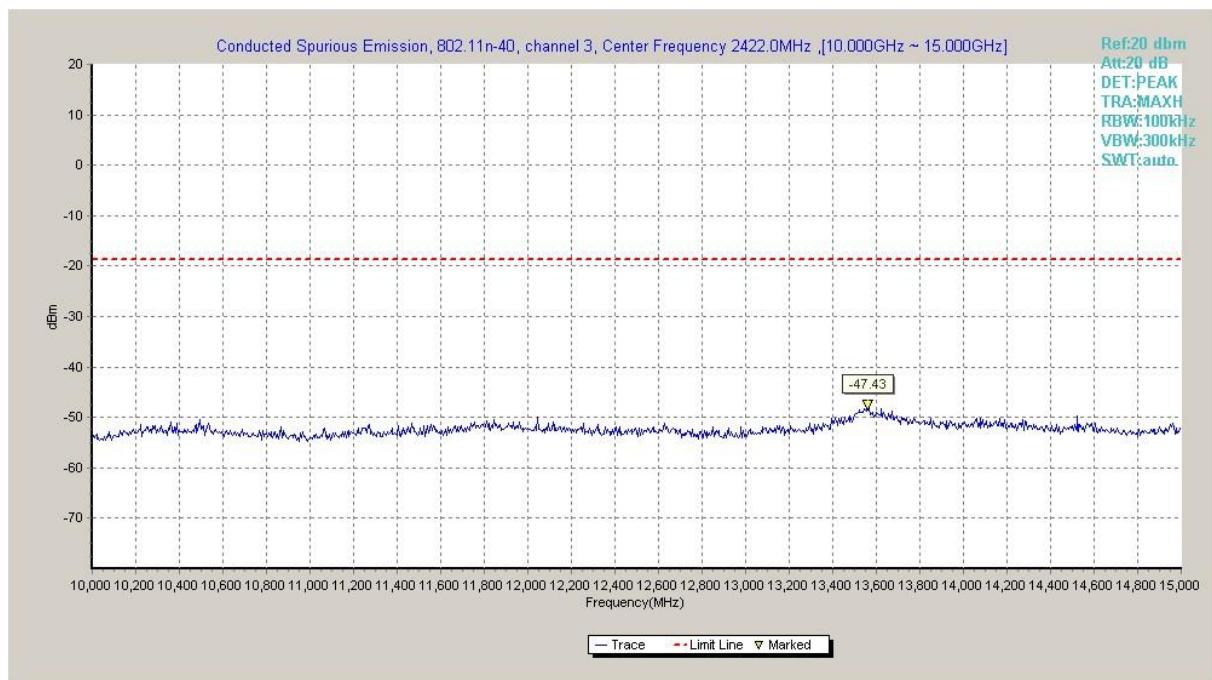


Fig.A.6.1.78 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 10 GHz-15 GHz)

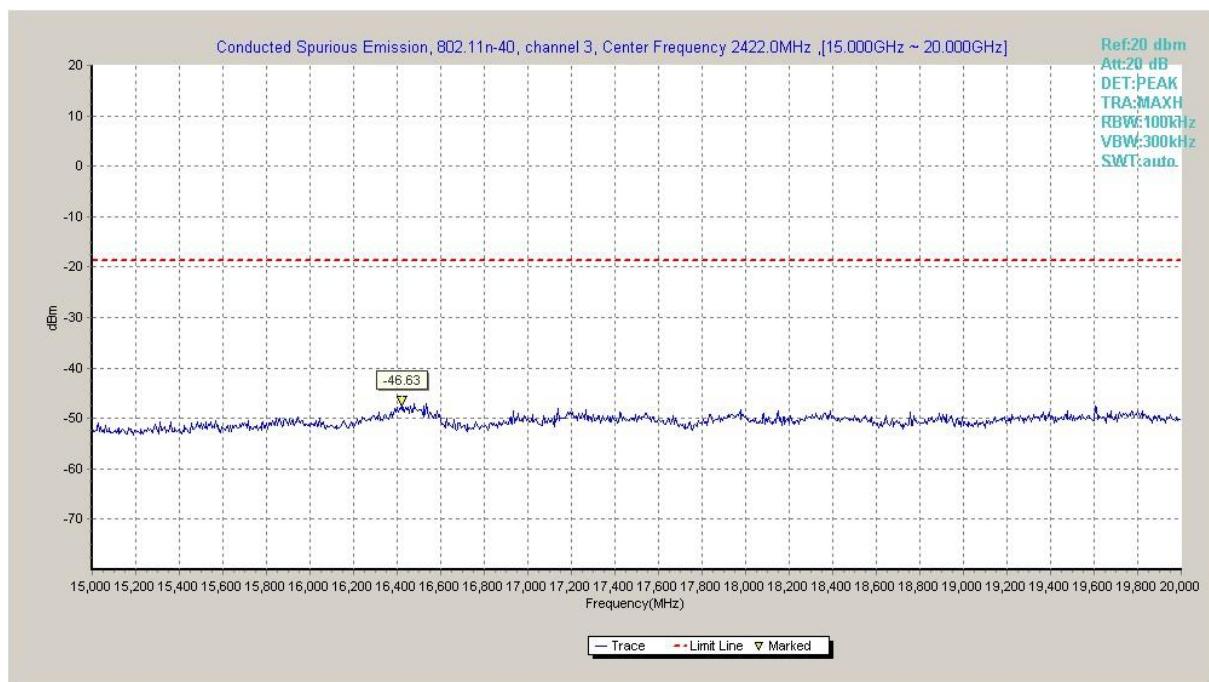


Fig.A.6.1.79 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 15 GHz-20 GHz)

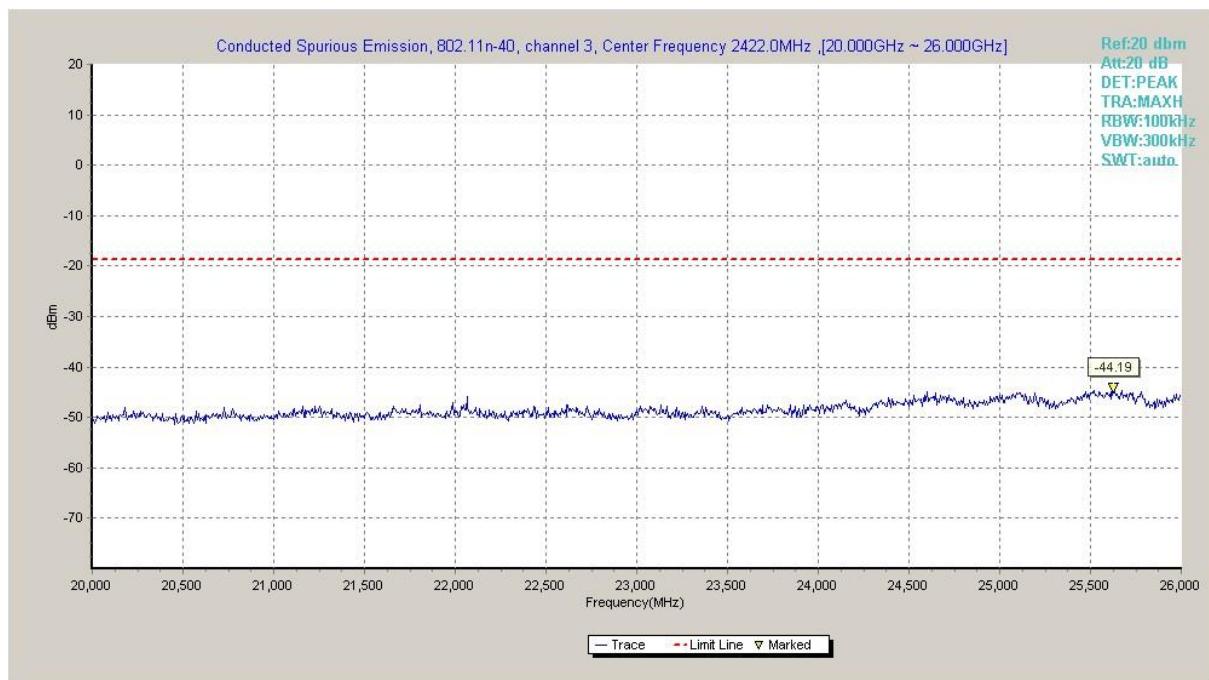


Fig.A.6.1.80 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 20 GHz-26 GHz)

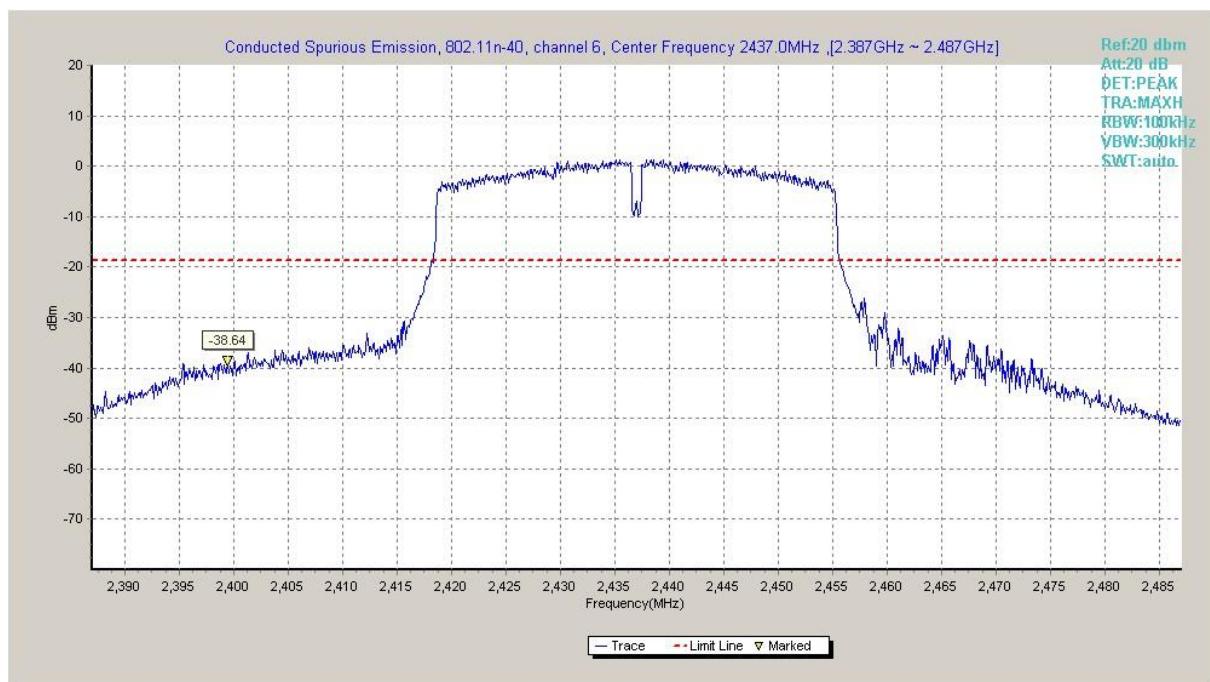


Fig.A.6.1.81 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, Center Frequency)

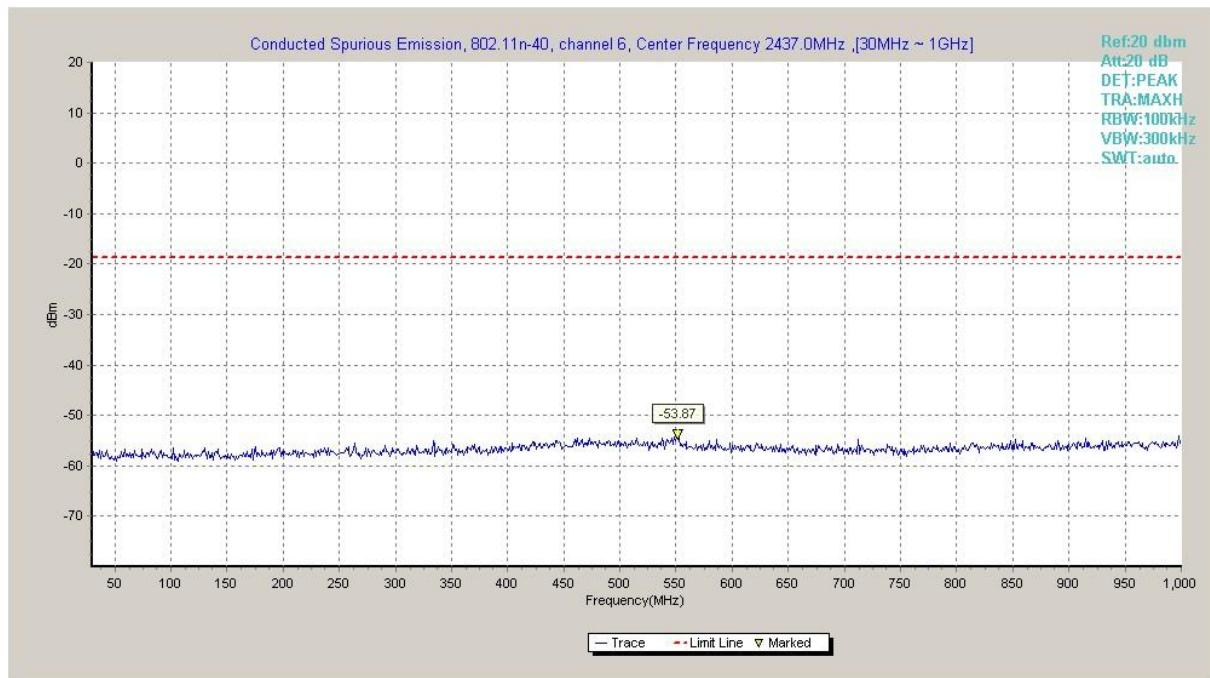


Fig.A.6.1.82 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 30 MHz-1 GHz)

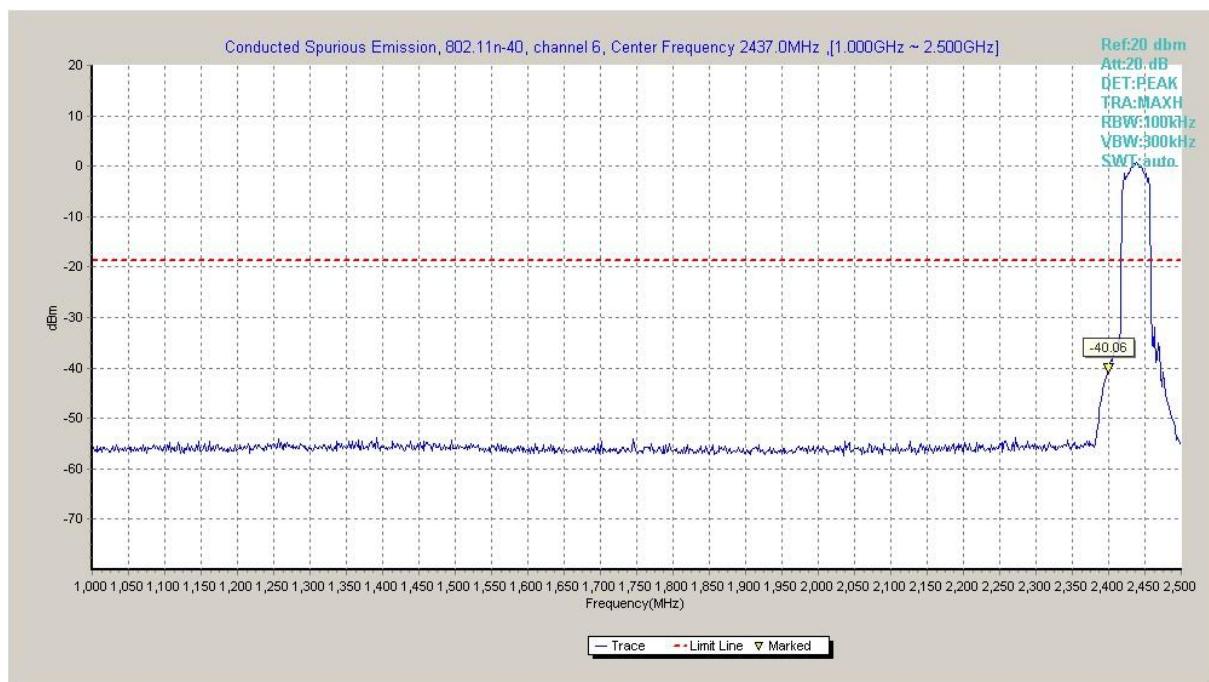


Fig.A.6.1.83 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 1 GHz-2.5 GHz)

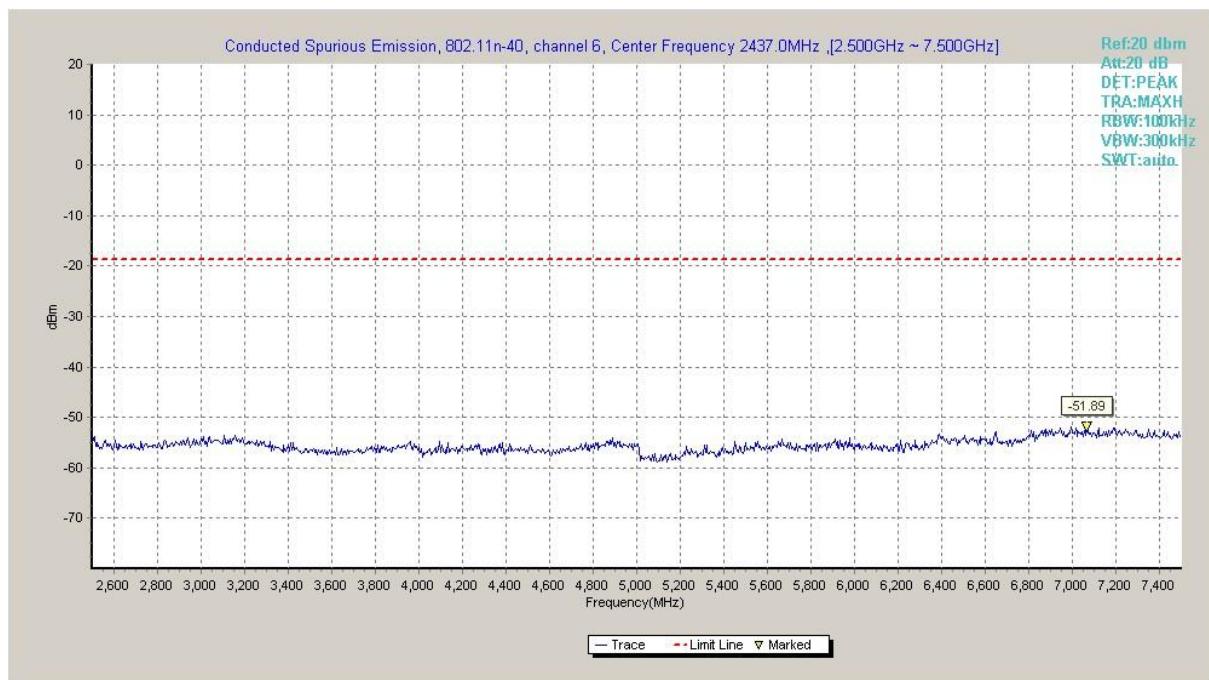


Fig.A.6.1.84 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 2.5 GHz-7.5 GHz)

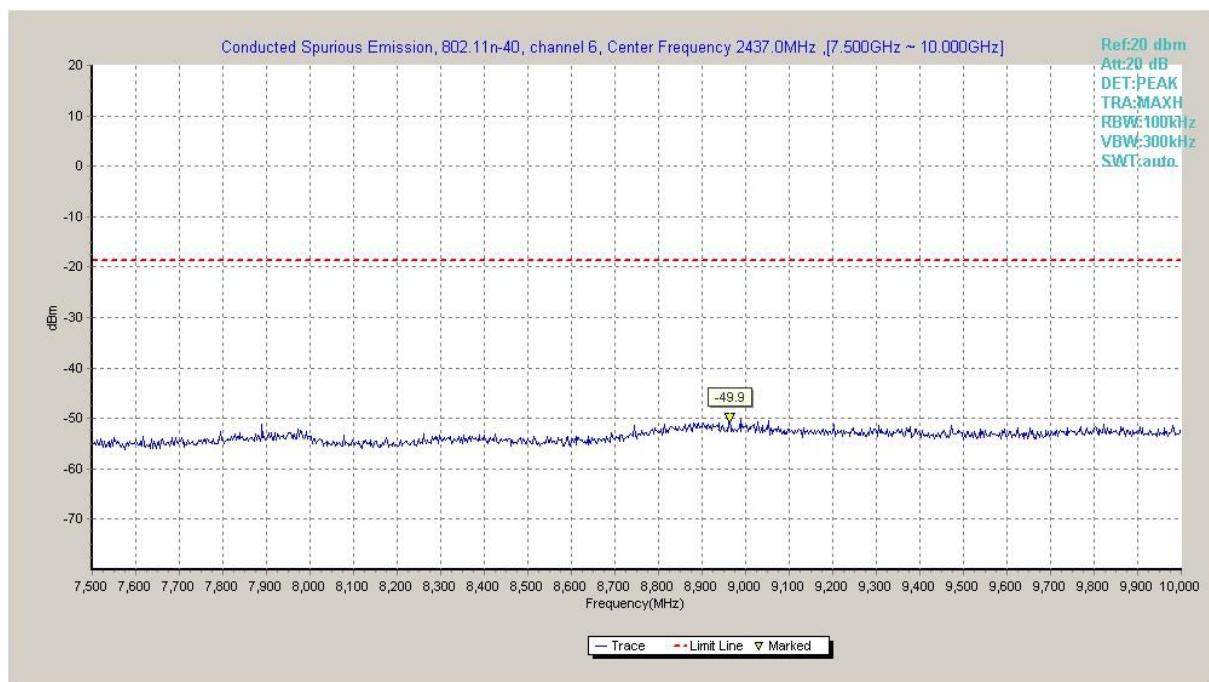


Fig.A.6.1.85 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 7.5 GHz-10 GHz)

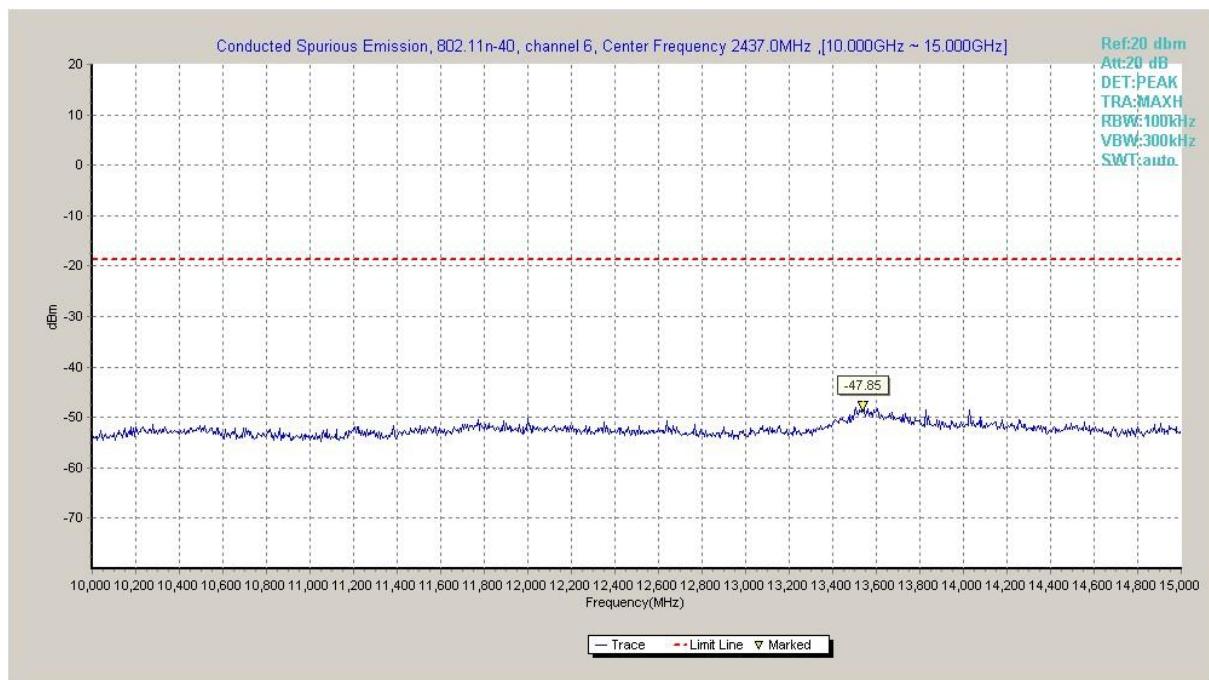


Fig.A.6.1.86 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 10 GHz-15 GHz)

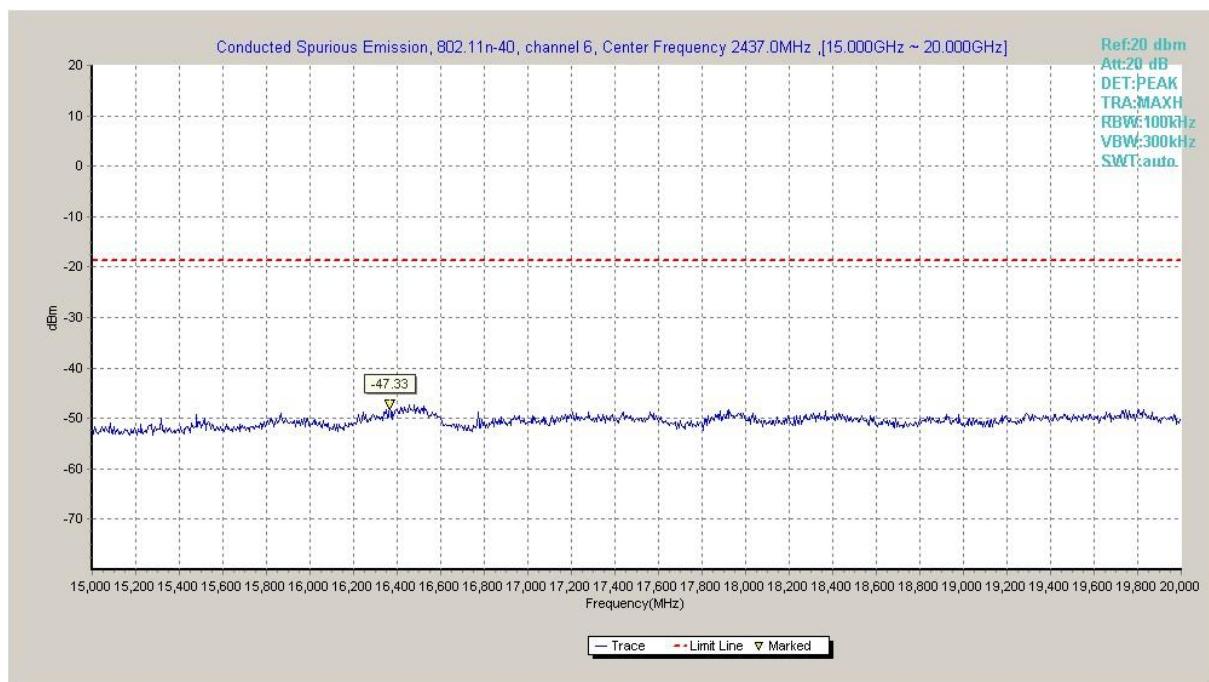


Fig.A.6.1.87 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 15 GHz-20 GHz)

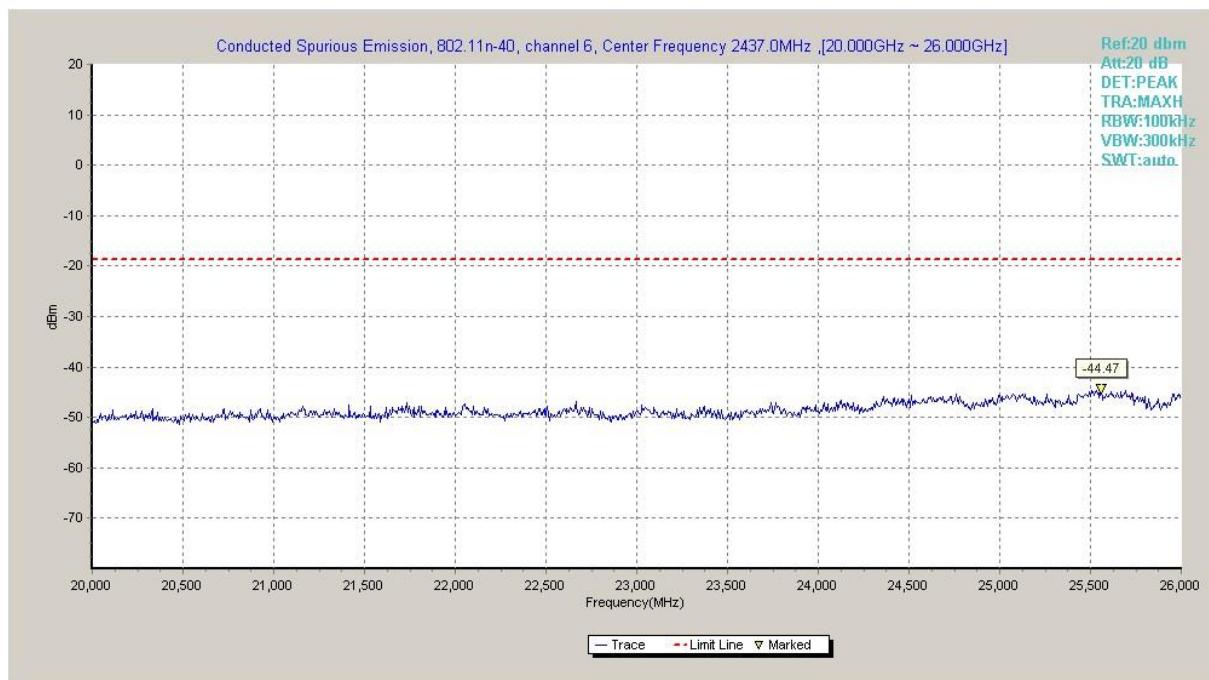


Fig.A.6.1.88 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 20 GHz-26 GHz)

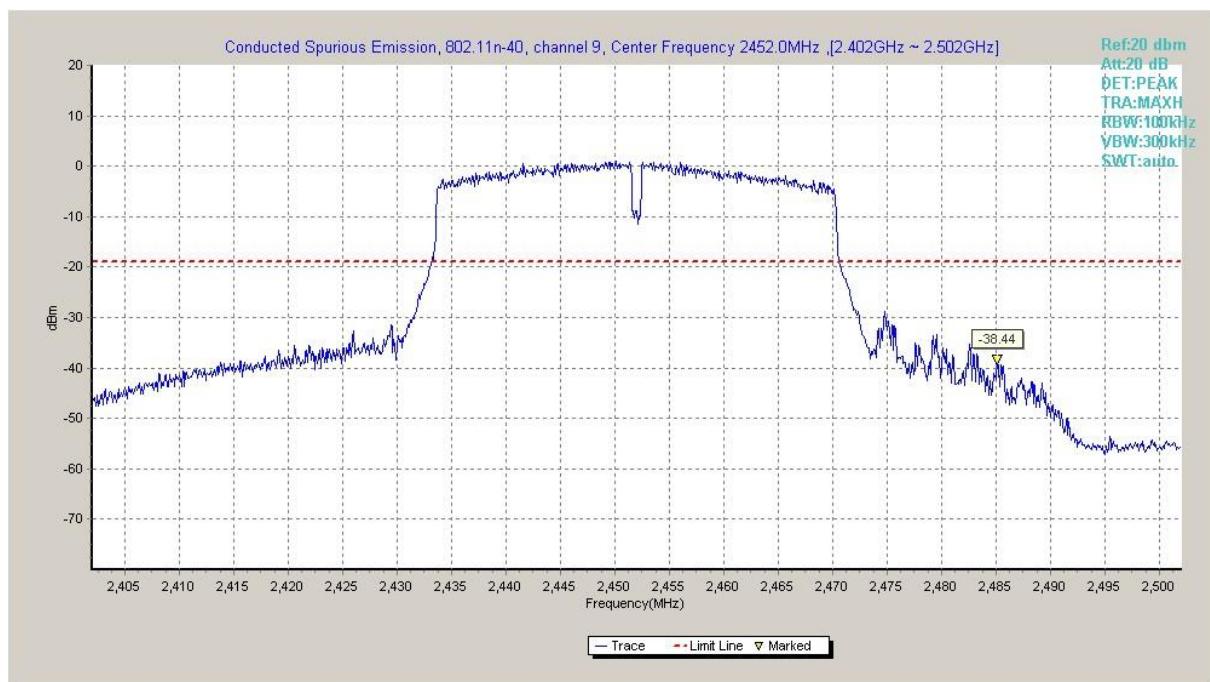


Fig.A.6.1.89 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, Center Frequency)

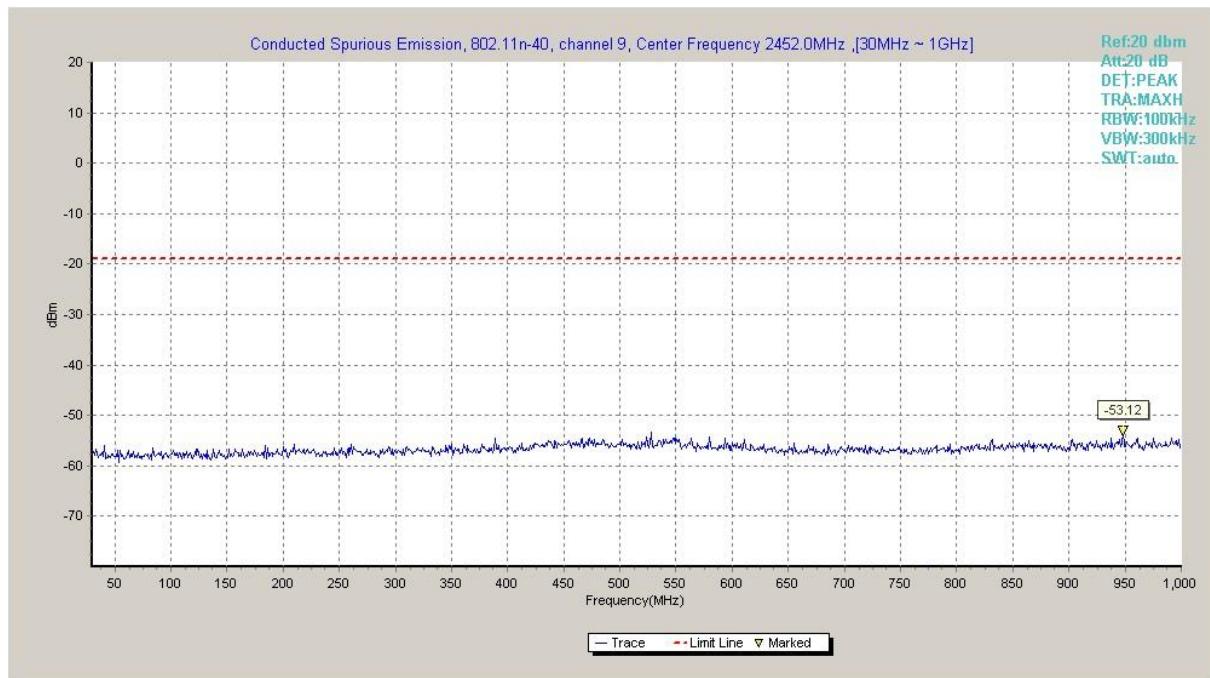


Fig.A.6.1.90 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 30 MHz-1 GHz)

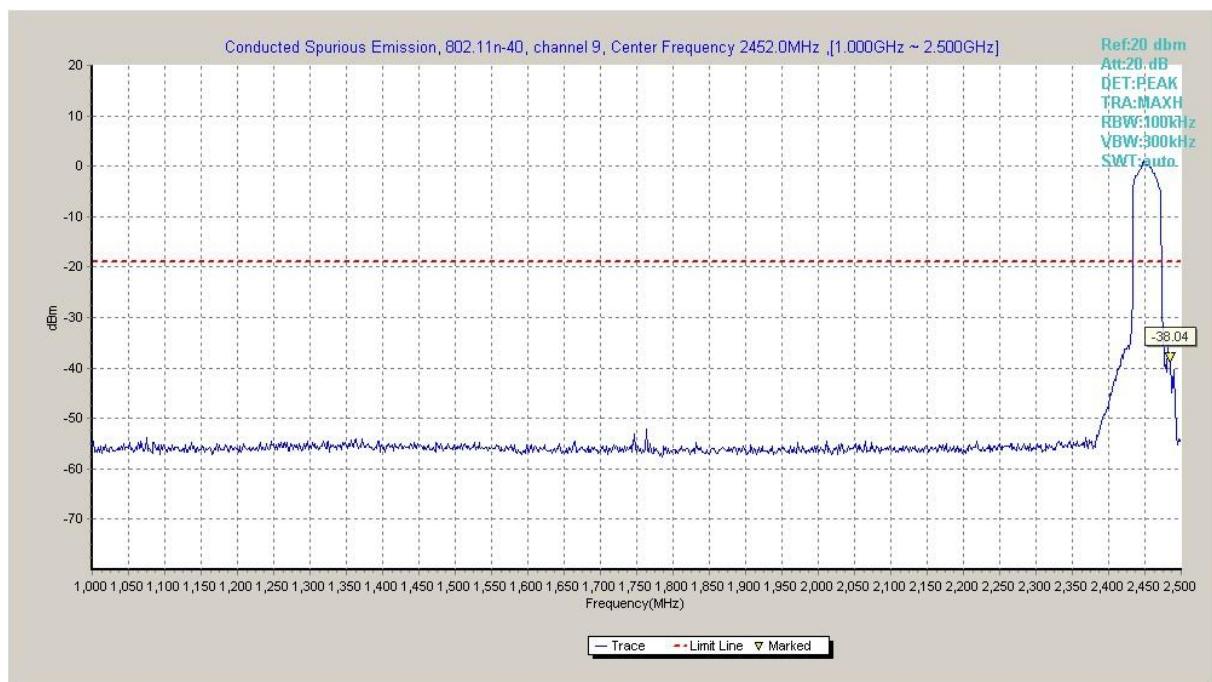


Fig.A.6.1.91 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 1 GHz-2.5 GHz)

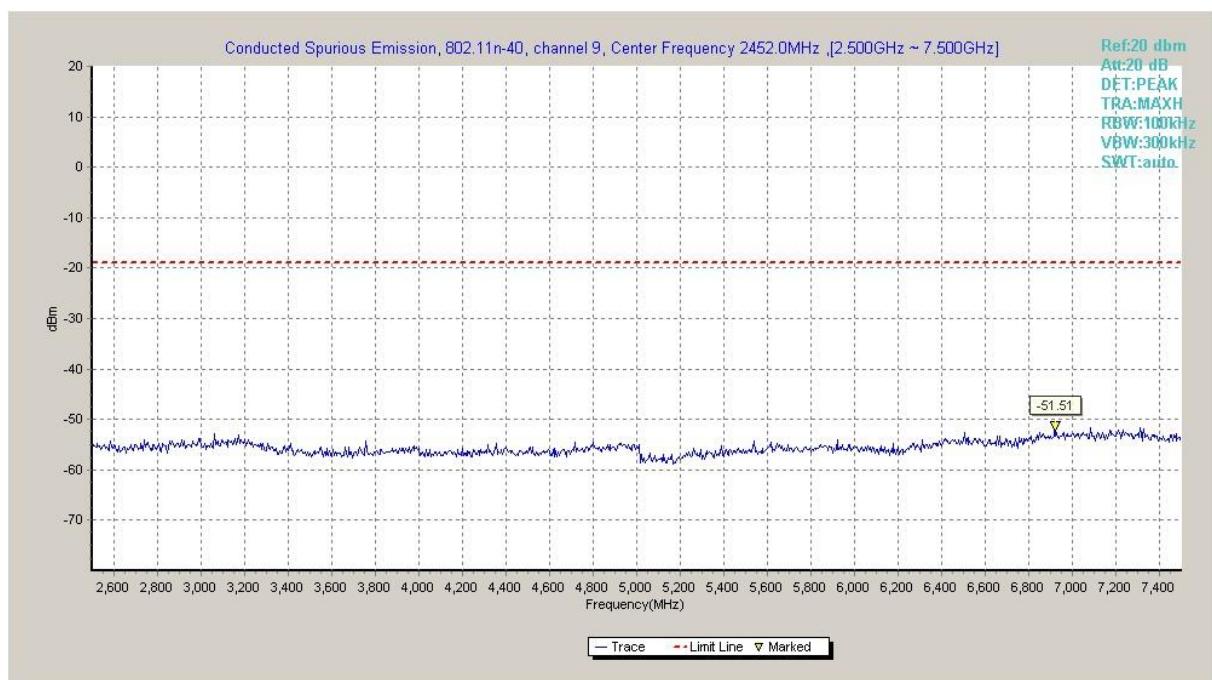


Fig.A.6.1.92 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 2.5 GHz-7.5 GHz)

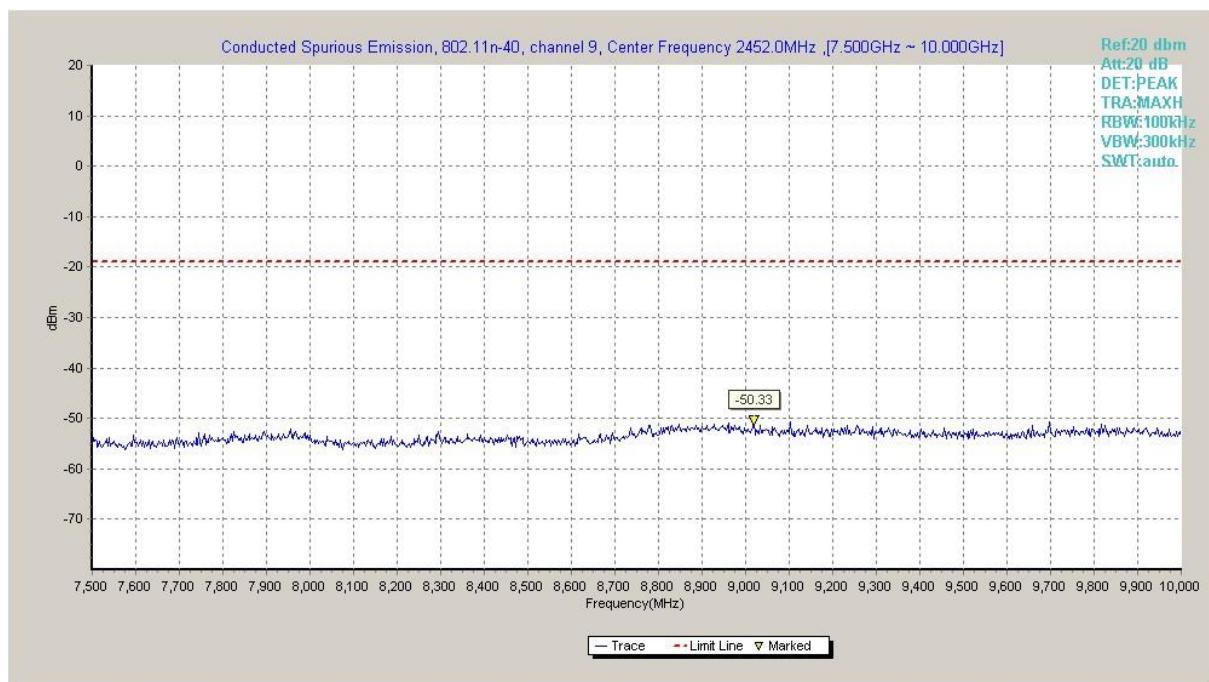


Fig.A.6.1.93 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 7.5 GHz-10 GHz)

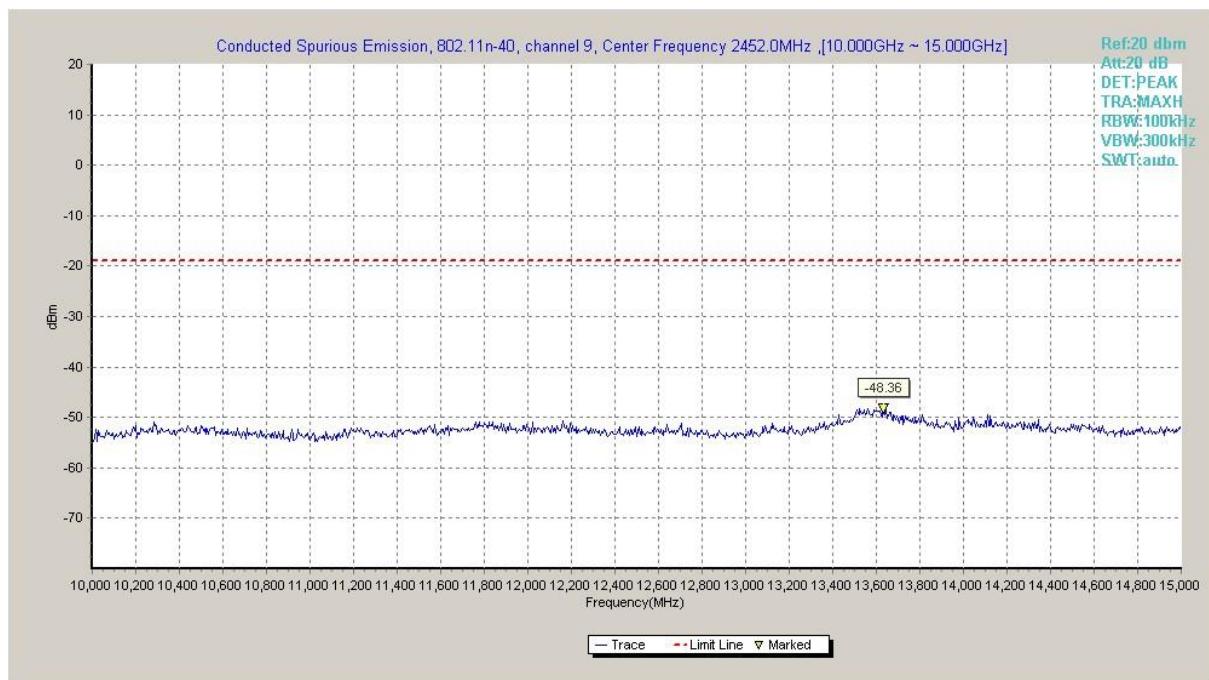


Fig.A.6.1.94 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 10 GHz-15 GHz)

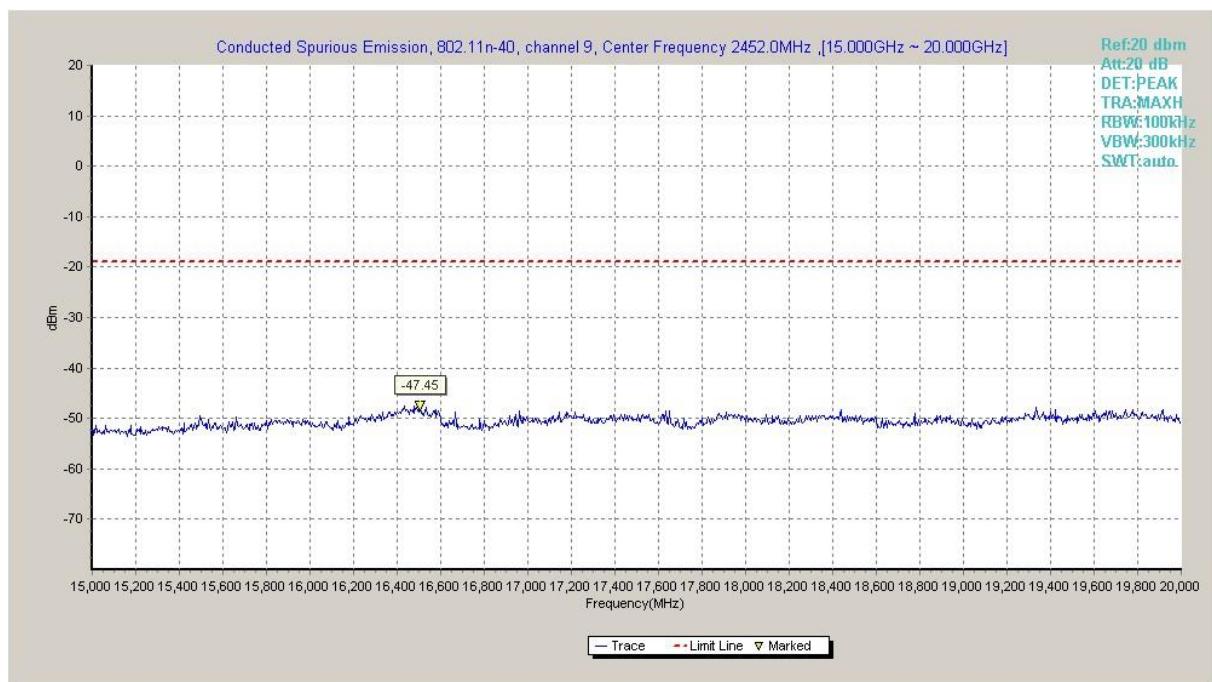


Fig.A.6.1.95 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 15 GHz-20 GHz)

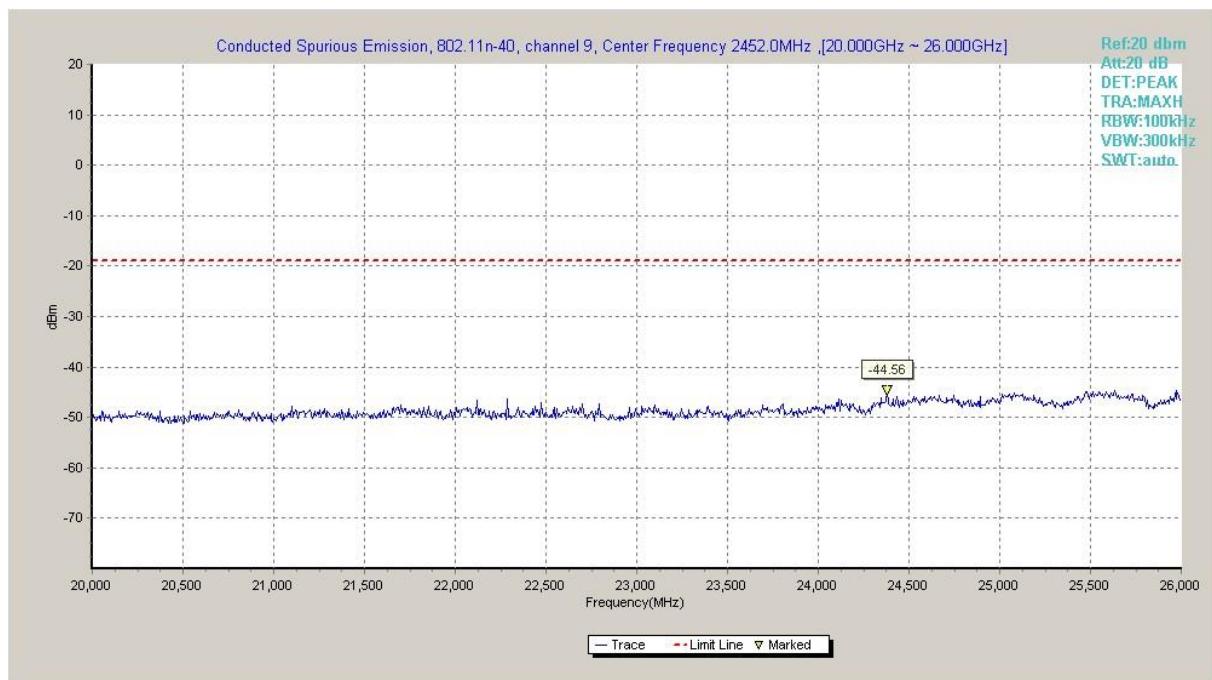


Fig.A.6.1.96 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 20 GHz-26 GHz)

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

EUT ID: EUT1

Measurement Results:
802.11b mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	Power(ch1)	2.38GHz ~2.43GHz	Fig.A.6.2.1	P
	Power(ch2)	2.38GHz ~2.43GHz	Fig.A.6.2.2	P
	Power(ch11)	2.45GHz ~2.5GHz	Fig.A.6.2.3	P

802.11g mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11g	Power(ch1)	2.38GHz ~2.43GHz	Fig.A.6.2.4	P
	Power(ch2)	2.38GHz ~2.43GHz	Fig.A.6.2.5	P
	Power(ch11)	2.45GHz ~2.5GHz	Fig.A.6.2.6	P

802.11n-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n(HT20)	Power(ch1)	2.38GHz ~2.43GHz	Fig.A.6.2.7	P
	Power(ch11)	2.45GHz ~2.5GHz	Fig.A.6.2.8	P

802.11n-HT40 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n(HT40)	Power(ch3)	2.38GHz ~2.43GHz	Fig.A.6.2.9	P
	Power(ch9)	2.45GHz ~2.5GHz	Fig.A.6.2.10	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:

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

802.11b-Average

Ch1

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2388.400	46.11	2.9	32.0	11.29	54.0	7.9	H	155	175
2390.000	46.17	2.9	32.0	11.34	54.0	7.8	H	155	194
4824.000	46.77	-35.2	34.1	47.92	54.0	7.2	H	155	215
7234.500	40.90	-32.4	35.8	37.54	54.0	13.1	H	155	196
9648.000	41.39	-30.1	36.8	34.75	54.0	12.6	H	155	241
12060.000	41.95	-31.0	38.9	34.06	54.0	12.0	H	155	259

Ch6

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2407.000	46.29	2.9	32.0	11.44	54.0	7.7	H	155	40
2459.700	46.34	2.9	32.0	11.44	54.0	7.7	H	155	65
4873.500	48.65	-35.5	34.1	50.06	54.0	5.4	H	155	84
7309.500	41.59	-31.6	35.8	37.42	54.0	12.4	H	155	107
9748.500	40.21	-31.3	36.9	34.60	54.0	13.8	H	155	135
12184.500	43.99	-29.1	39.0	34.14	54.0	10.0	H	155	151

Ch11

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2483.500	46.28	2.9	32.0	11.36	54.0	7.7	H	155	6
2484.200	46.33	2.9	32.0	11.40	54.0	7.7	H	155	48
4923.000	49.73	-35.2	34.1	50.81	54.0	4.3	H	155	92
7386.000	40.43	-31.2	35.8	35.86	54.0	13.6	H	155	48
9747.500	41.13	-31.3	36.9	35.50	54.0	12.9	H	155	68
12310.500	41.85	-31.6	39.0	34.44	54.0	12.2	H	155	92

802.11b-Peak

Ch1

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2374.316	59.35	2.9	32.0	24.54	74.0	14.7	V	155	176
2382.940	60.88	2.9	32.0	26.06	74.0	13.1	H	155	198
4823.500	49.99	-35.2	34.1	51.14	74.0	24.0	V	155	220
7237.500	49.40	-32.4	35.8	46.04	74.0	24.6	H	155	198
9648.000	46.06	-30.1	36.8	39.42	74.0	27.9	H	155	242
12060.000	46.39	-31.0	38.9	38.50	74.0	27.6	V	155	264

Ch6

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2314.000	48.01	-27.8	31.9	43.86	74.0	26.0	V	155	44
2528.800	47.74	-26.8	32.0	42.53	74.0	26.3	H	155	66
4873.500	52.14	-35.5	34.1	53.56	74.0	21.9	H	155	88
7310.000	49.85	-31.6	35.8	45.68	74.0	24.1	V	155	110
9748.000	44.53	-31.3	36.9	38.91	74.0	29.5	V	155	132
12185.000	48.69	-29.1	39.0	38.83	74.0	25.3	H	155	154

Ch11

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2484.010	60.15	2.9	32.0	25.22	74.0	13.9	H	155	0
2488.550	60.00	2.9	32.0	25.07	74.0	14.0	H	155	44
4924.000	52.84	-35.2	34.1	53.92	74.0	21.2	V	155	88
7385.000	48.40	-31.2	35.8	43.81	74.0	25.6	V	155	44
9848.000	47.46	-30.5	37.0	40.99	74.0	26.5	V	155	66
12310.000	45.92	-31.6	39.0	38.50	74.0	28.1	H	155	88

802.11g - Average

Ch1

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2389.700	49.52	2.9	32.0	14.70	54.0	4.5	H	155	24
2390.000	49.57	2.9	32.0	14.75	54.0	4.4	H	155	336
4822.500	39.08	-35.2	34.1	40.21	54.0	14.9	H	155	248
7236.000	38.29	-32.4	35.8	34.94	54.0	15.7	H	155	268
9648.000	41.55	-30.1	36.8	34.91	54.0	12.5	H	155	290
12060.000	41.88	-31.0	38.9	33.99	54.0	12.1	H	155	300

Ch6

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2404.800	46.41	2.9	32.0	11.56	54.0	7.6	H	155	135
2465.100	46.74	2.9	32.0	11.83	54.0	7.3	H	155	160
4872.000	41.53	-35.5	34.1	42.94	54.0	12.5	H	155	92
7311.000	39.42	-31.6	35.8	35.22	54.0	14.6	H	155	115
9748.500	40.51	-31.3	36.9	34.89	54.0	13.5	H	155	112
12184.500	44.04	-29.1	39.0	34.20	54.0	10.0	H	155	85

Ch11

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2483.500	49.08	2.9	32.0	14.16	54.0	4.9	H	155	5
2484.100	48.74	2.9	32.0	13.82	54.0	5.3	H	155	25
4923.000	38.08	-35.2	34.1	39.17	54.0	15.9	H	155	356
7386.000	39.33	-31.2	35.8	34.76	54.0	14.7	H	155	350
9847.500	41.22	-30.6	37.0	34.76	54.0	12.8	H	155	185
12310.500	41.78	-31.6	39.0	34.37	54.0	12.2	H	155	187

802.11g - Peak

Ch1

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2385.600	65.70	2.9	32.0	30.88	74.0	8.3	H	155	22
2389.212	66.37	2.9	32.0	31.54	74.0	7.6	H	155	330
4826.000	50.31	-35.2	34.1	51.48	74.0	23.7	H	155	242
7225.500	48.95	-32.4	35.8	45.57	74.0	25.1	V	155	264
9648.000	46.39	-30.1	36.8	39.74	74.0	27.6	V	155	286
12060.000	46.33	-31.0	38.9	38.44	74.0	27.7	V	155	308

Ch6

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2351.200	47.59	-27.8	31.9	43.39	74.0	26.4	H	155	132
2512.000	48.06	-26.5	32.0	42.58	74.0	25.9	H	155	154
4874.000	51.84	-35.5	34.1	53.3	74.0	22.2	V	155	88
7305.000	50.60	-31.7	35.8	46.5	74.0	23.4	H	155	110
9748.000	44.84	-31.3	36.9	39.2	74.0	29.2	V	155	110
12185.000	47.10	-29.1	39.0	37.2	74.0	26.9	V	155	88

Ch11

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2484.090	69.55	2.9	32.0	34.62	74.0	4.5	H	155	0
2484.335	70.81	2.9	32.0	35.89	74.0	3.2	H	155	22
4927.000	53.06	-35.1	34.1	54.11	74.0	20.9	H	155	352
7396.000	57.50	-31.3	35.8	53.04	74.0	16.5	V	155	352
9848.000	46.64	-30.5	37.0	40.16	74.0	27.4	V	155	176
12310.000	46.17	-31.6	39.0	38.74	74.0	27.8	V	155	176

802.11n-HT20-Average

Ch1

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2388.800	46.46	2.9	32.0	11.64	54.0	7.5	H	155	86
2389.400	46.44	2.9	32.0	11.61	54.0	7.6	H	155	107
4822.500	39.08	-35.2	34.1	40.22	54.0	14.9	H	155	130
7236.000	37.97	-32.4	35.8	34.61	54.0	16.0	H	155	152
9648.000	41.56	-30.1	36.8	34.92	54.0	12.4	H	155	174
12060.000	41.90	-31.0	38.9	34.02	54.0	12.1	H	155	195

Ch6

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2396.000	46.66	2.9	32.0	11.83	54.0	7.3	H	155	20
2347.350	47.00	2.8	31.9	12.22	54.0	7.0	H	155	45
4872.000	39.98	-35.5	34.1	41.39	54.0	14.0	H	155	240
7311.000	38.93	-31.6	35.8	34.73	54.0	15.1	H	155	180
9748.500	40.36	-31.3	36.9	34.74	54.0	13.6	H	155	85
12184.500	43.92	-29.1	39.0	34.07	54.0	10.1	H	155	25

Ch11

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2483.500	49.02	2.9	32.0	14.09	54.0	5.0	H	155	175
2483.600	48.94	2.9	32.0	14.01	54.0	5.1	H	155	5
4924.500	39.10	-35.2	34.1	40.17	54.0	14.9	H	155	26
7386.000	39.26	-31.2	35.8	34.69	54.0	14.7	H	155	355
9847.500	41.27	-30.6	37.0	34.81	54.0	12.7	H	155	6
12310.500	41.82	-31.6	39.0	34.40	54.0	12.2	H	155	12

802.11n-HT20-Peak

Ch1

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2389.632	66.10	2.9	32.0	31.28	74.0	7.9	V	155	88
2389.870	66.41	2.9	32.0	31.58	74.0	7.6	H	155	110
4822.000	49.88	-35.2	34.1	51.00	74.0	24.1	V	155	132
7236.000	43.93	-32.4	35.8	40.57	74.0	30.1	H	155	154
9648.000	46.25	-30.1	36.8	39.61	74.0	27.7	V	155	176
12060.000	45.99	-31.0	38.9	38.10	74.0	28.0	V	155	198

Ch6

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2342.600	48.59	-27.7	31.9	44.31	74.0	25.4	H	155	22
2696.000	60.16	-26.7	32.2	54.65	74.0	13.8	H	155	44
4872.500	53.57	-35.5	34.1	54.98	74.0	20.4	H	155	242
7309.500	49.05	-31.6	35.8	44.89	74.0	24.9	H	155	176
9748.000	45.88	-31.3	36.9	40.26	74.0	28.1	H	155	88
12185.000	47.58	-29.1	39.0	37.73	74.0	26.4	V	155	22

Ch11

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2483.655	72.31	2.9	32.0	37.39	74.0	1.7	H	155	176
2483.910	70.80	2.9	32.0	35.87	74.0	3.2	H	155	0
4923.500	51.20	-35.2	34.1	52.28	74.0	22.8	V	155	22
7386.000	53.85	-31.2	35.8	49.28	74.0	20.1	V	155	352
9848.000	45.70	-30.5	37.0	39.23	74.0	28.3	V	155	0
12310.000	45.02	-31.6	39.0	37.60	74.0	29.0	V	155	0

802.11n-HT40-Average

Ch3

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2389.200	48.34	2.9	32.0	13.52	54.0	5.7	H	155	20
2389.600	48.45	2.9	32.0	13.62	54.0	5.6	H	155	248
4845.000	36.76	-35.4	34.1	38.07	54.0	17.2	H	155	49
7266.000	37.77	-32.5	35.8	34.47	54.0	16.2	H	155	335
9688.500	40.94	-30.7	36.8	34.82	54.0	13.1	H	155	180
12109.500	42.40	-30.7	38.9	34.14	54.0	11.6	H	155	8

Ch6

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2390.800	46.88	2.9	32.0	12.06	54.0	7.1	H	155	170
3476.800	47.02	-35.8	33.1	49.71	54.0	7.0	H	155	150
4872.000	37.52	-35.5	34.1	38.93	54.0	16.5	H	155	20
7311.000	38.59	-31.6	35.8	34.39	54.0	15.4	H	155	180
9748.500	40.39	-31.3	36.9	34.78	54.0	13.6	H	155	202
12184.500	43.96	-29.1	39.0	34.11	54.0	10.0	H	155	8

Ch9

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2483.900	47.99	2.9	32.0	13.06	54.0	6.0	H	155	25
2484.400	47.99	2.9	32.0	13.06	54.0	6.0	H	155	49
4899.000	37.75	-35.4	34.1	39.07	54.0	16.3	H	155	4
7356.000	39.62	-30.9	35.8	34.70	54.0	14.4	H	155	6
9808.500	40.06	-31.6	37.0	34.66	54.0	13.9	H	155	25
12259.500	42.96	-30.3	39.0	34.23	54.0	11.0	H	155	186

802.11n-HT40-Peak

Ch3

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2389.506	67.71	2.9	32.0	32.88	74.0	6.3	H	155	22
2389.996	68.85	2.9	32.0	34.02	74.0	5.2	H	155	242
4857.000	49.02	-35.4	34.1	50.37	74.0	25.0	V	155	44
7266.000	42.62	-32.5	35.8	39.32	74.0	31.4	H	155	330
9688.000	45.06	-30.7	36.8	38.92	74.0	28.9	H	155	176
12110.000	45.75	-30.7	38.9	37.48	74.0	28.2	H	155	0

Ch6

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2324.400	47.60	-27.7	31.9	43.40	74.0	26.4	H	155	176
2538.400	48.41	-26.8	32.1	43.17	74.0	25.6	H	155	154
4872.500	50.38	-35.5	34.1	51.79	74.0	23.6	V	155	22
7311.000	43.06	-31.6	35.8	38.86	74.0	30.9	V	155	176
9748.000	44.90	-31.3	36.9	39.28	74.0	29.1	H	155	198
12185.000	47.19	-29.1	39.0	37.33	74.0	26.8	H	155	0

Ch9

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2484.385	72.90	2.9	32.0	37.98	74.0	1.1	H	155	22
2485.175	72.45	2.9	32.0	37.52	74.0	1.5	V	155	44
4904.000	49.97	-35.4	34.1	51.25	74.0	24.0	H	155	0
7356.000	45.39	-30.9	35.8	40.47	74.0	28.6	H	155	0
9808.000	44.82	-31.6	37.0	39.44	74.0	29.2	H	155	22
12260.000	45.33	-30.3	39.0	36.62	74.0	28.7	H	155	176

Test graphs as below:

RE - Power-2.31GHz-2.45GHz

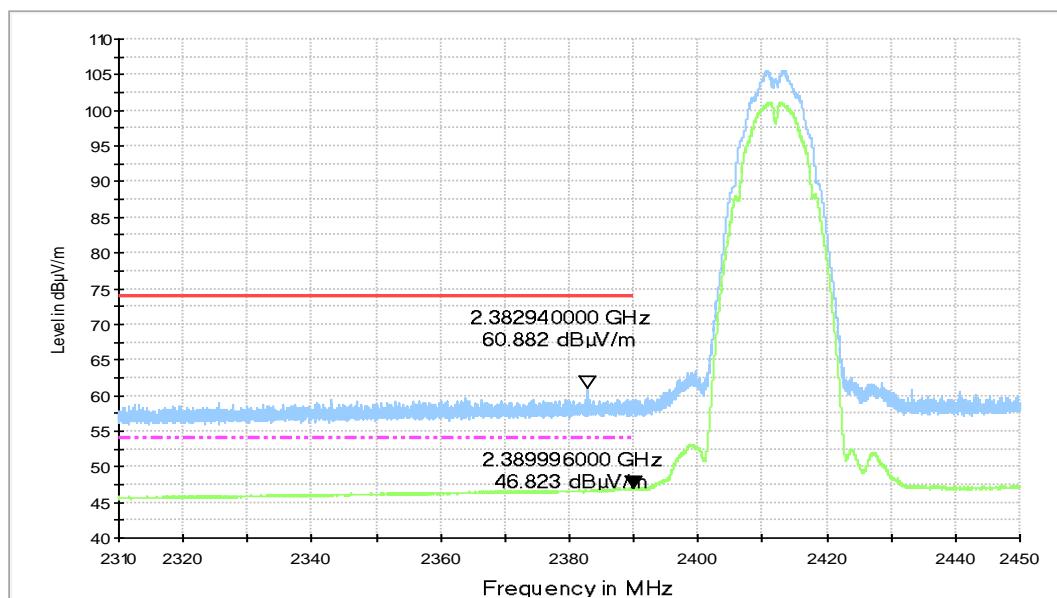


Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.31 GHz – 2.43GHz

RE - Power-2.31GHz-2.45GHz

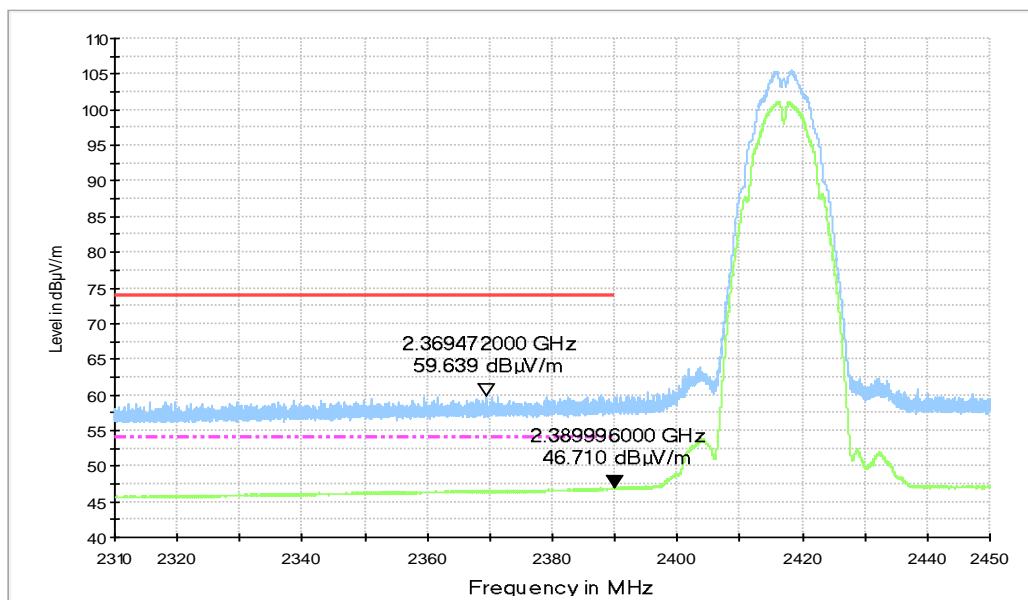


Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch2, 2.31 GHz – 2.43GHz

RE - Power-2.45GHz-2.5GHz

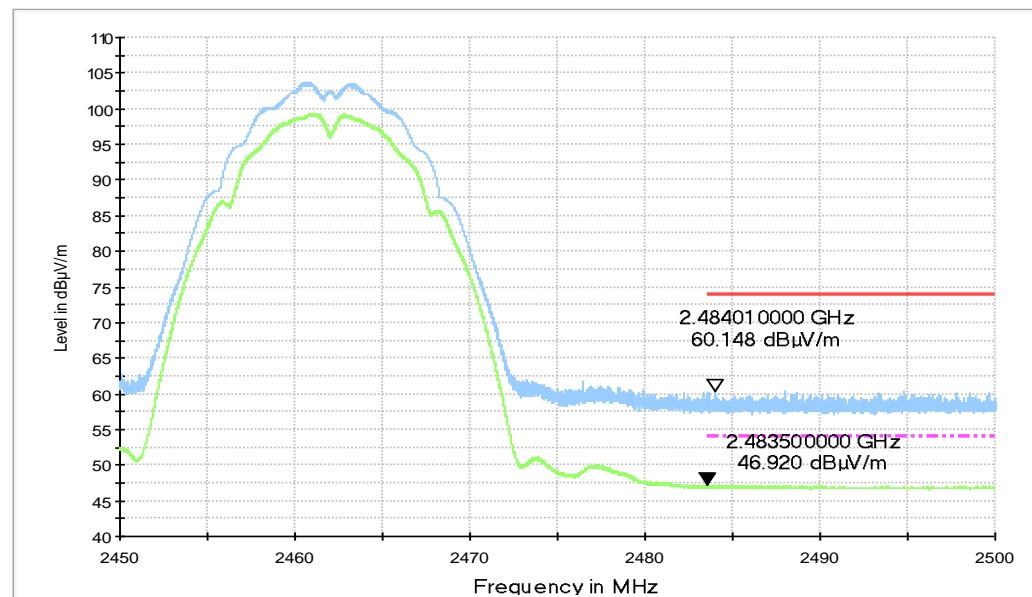


Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz

RE - Power-2.31GHz-2.45GHz

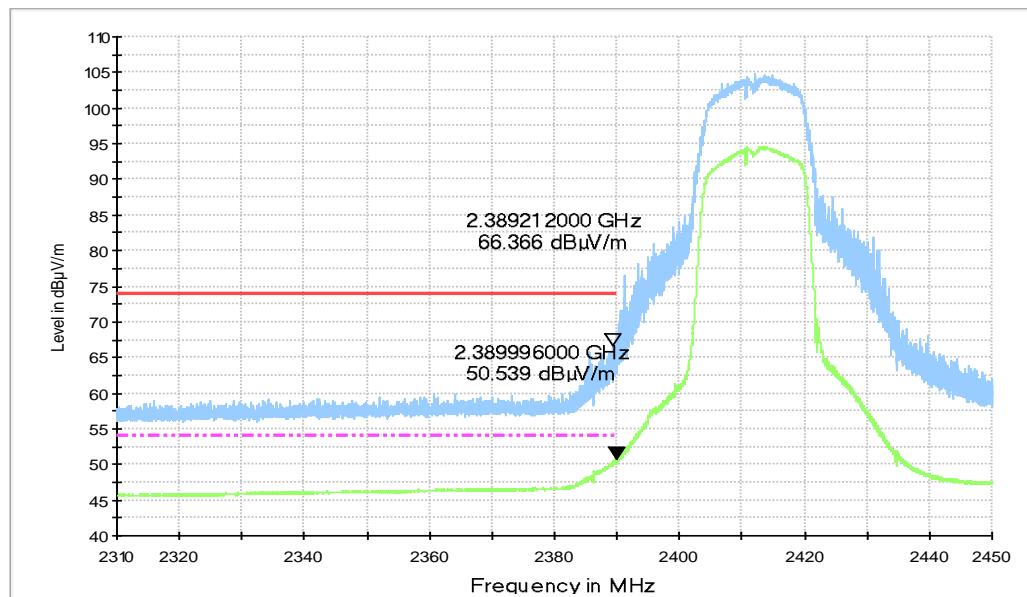


Fig.A.6.2.4 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch1, 2.31 GHz - 2.43GHz

RE - Power-2.31GHz-2.45GHz

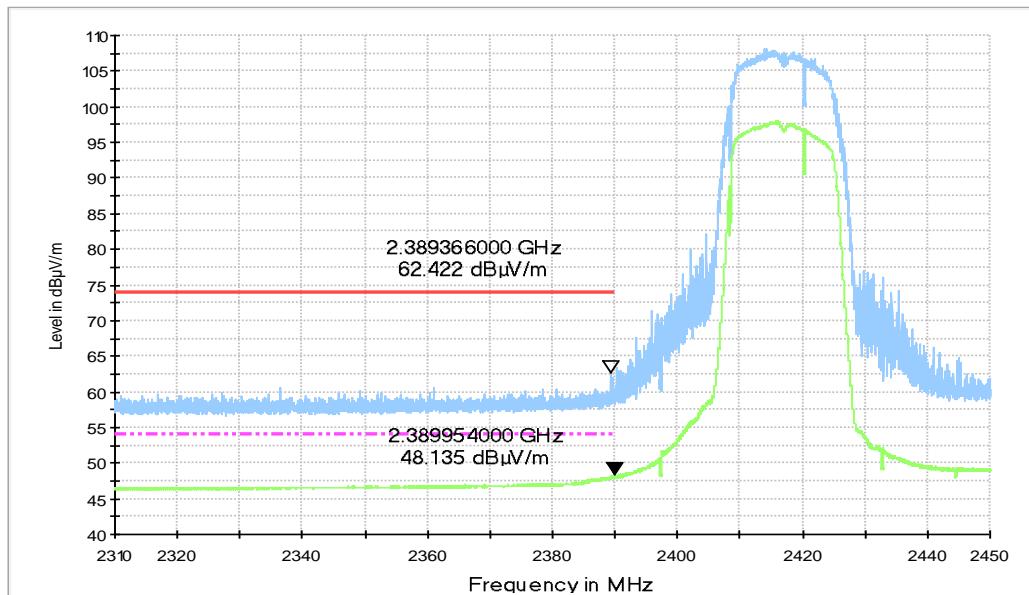


Fig.A.6.2.5 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch2, 2.31 GHz - 2.43GHz

RE - Power-2.45GHz-2.5GHz

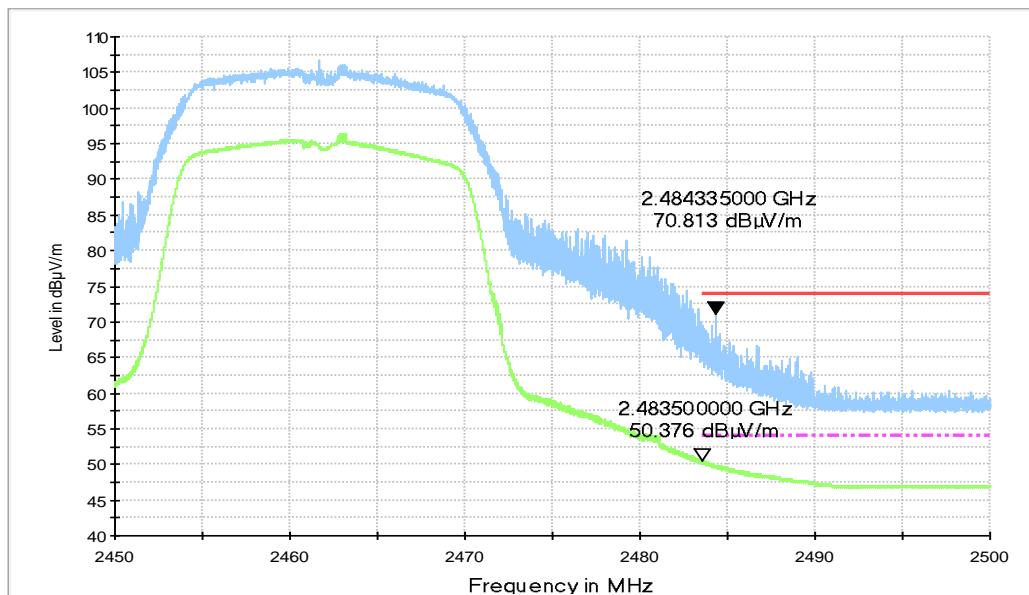


Fig.A.6.2.6 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz

RE - Power-2.31GHz-2.45GHz

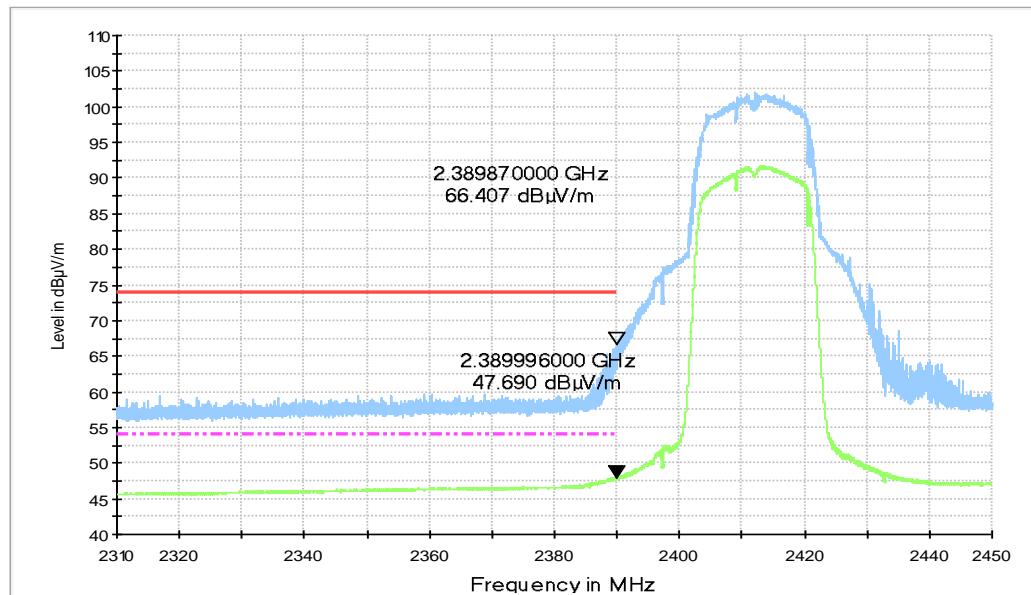


Fig.A.6.2.7 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch1, 2.31GHz - 2.45GHz

RE - Power-2.45GHz-2.5GHz

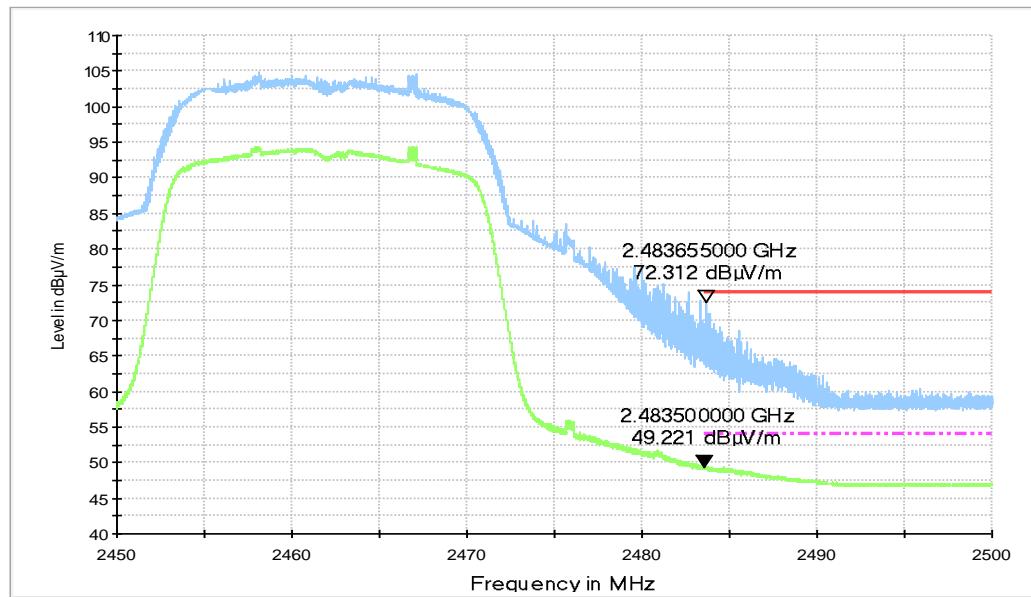


Fig.A.6.2.8 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz

RE - Power-2.31GHz-2.45GHz

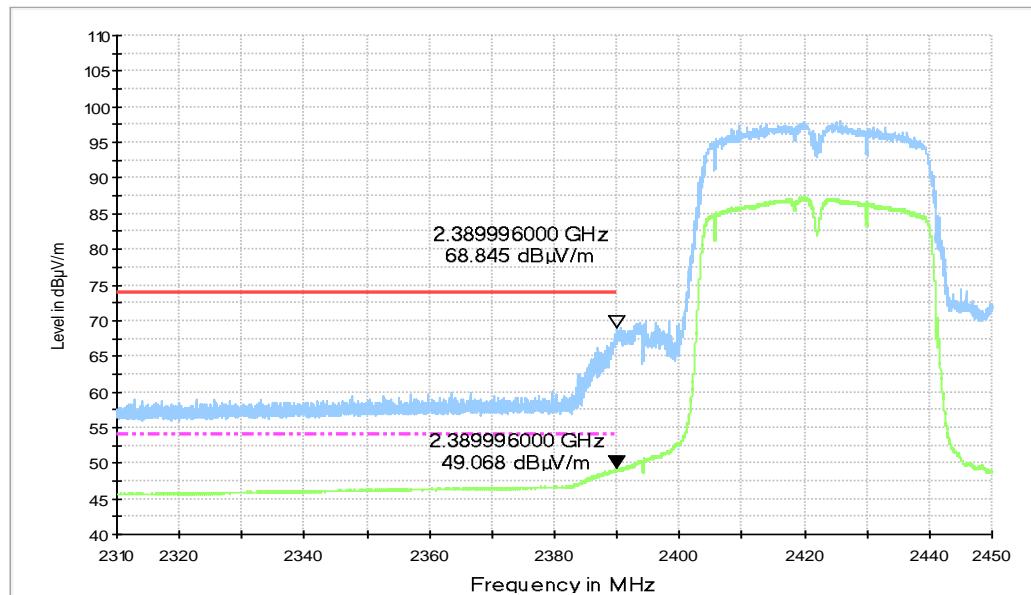


Fig.A.6.2.9 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch3, 2.31 GHz - 2.45GHz

RE - Power-2.45GHz-2.5GHz

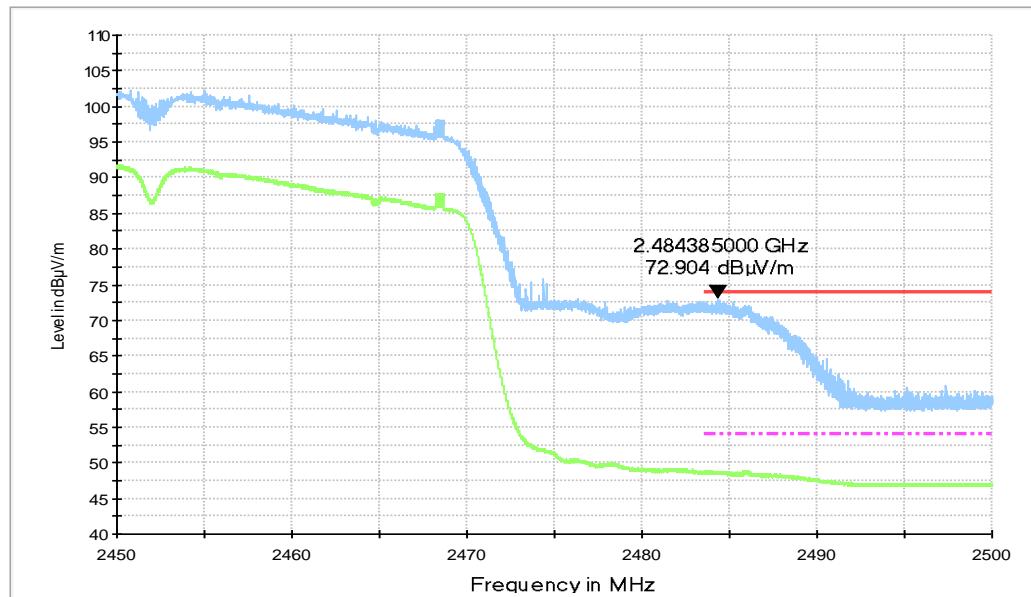


Fig.A.6.2.10 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch9, 2.45 GHz - 2.50GHz

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.³⁶ 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:

Voltage (V)	Frequency (Hz)
120	60

Measurement Result and limit:

WLAN (Quasi-peak Limit)

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

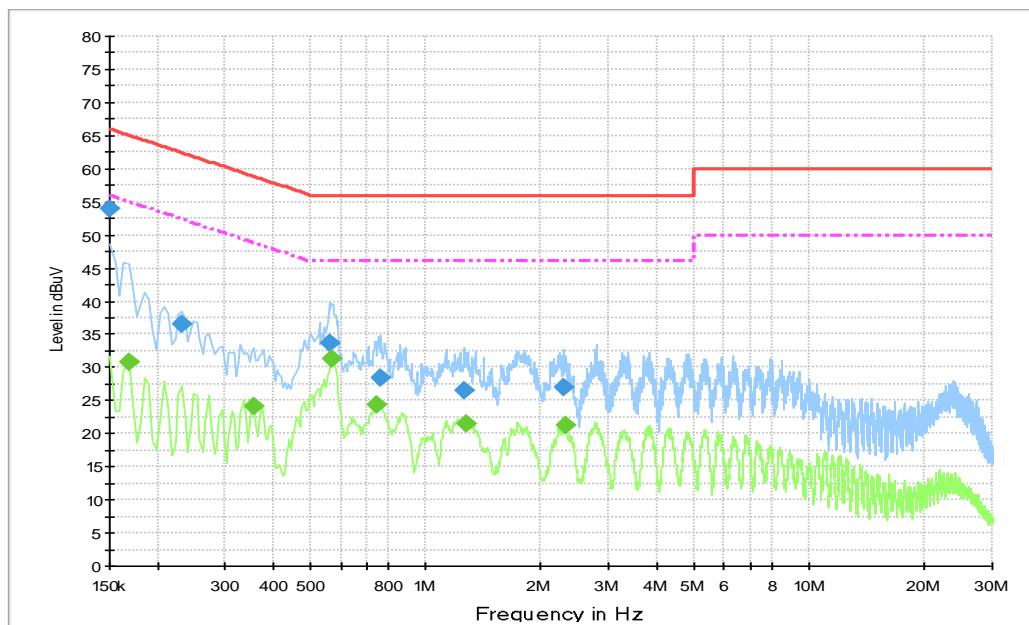
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

WLAN (Average Limit)

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

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

Conclusion: Pass
Test graphs as below:

Traffic:

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

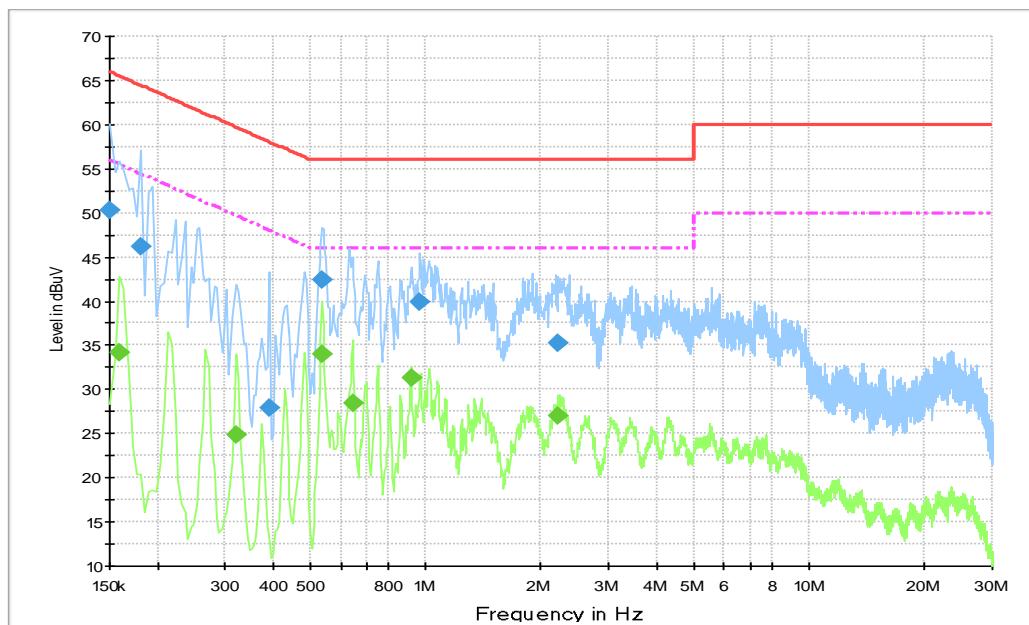
Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150000	54.0	10000	9.000	On	N	28.9	12.0	66.0
0.231000	36.6	10000	9.000	On	L1	20.0	25.8	62.4
0.559500	33.6	10000	9.000	On	N	20.0	22.4	56.0
0.766500	28.4	10000	9.000	On	N	19.9	27.6	56.0
1.261500	26.5	10000	9.000	On	L1	19.8	29.5	56.0
2.287500	27.1	10000	9.000	On	N	19.8	28.9	56.0

Final Result 2

Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.168000	30.7	10000.	9.000	On	L1	25.4	24.3	55.1
0.357000	24.1	10000.	9.000	On	L1	20.0	24.7	48.8
0.568500	31.2	10000.	9.000	On	L1	20.0	14.8	46.0
0.744000	24.3	10000.	9.000	On	L1	20.0	21.7	46.0
1.275000	21.6	10000.	9.000	On	L1	19.8	24.4	46.0
2.305500	21.3	10000.	9.000	On	L1	19.8	24.7	46.0

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 (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	50.3	10000	9.000	On	L1	28.9	15.7	66.0
0.181500	46.2	10000	9.000	On	L1	23.0	18.2	64.4
0.393000	27.8	10000	9.000	On	L1	20.0	30.2	58.0
0.537000	42.5	10000	9.000	On	L1	20.0	13.5	56.0
0.964500	39.8	10000	9.000	On	L1	19.9	16.2	56.0
2.206500	35.3	10000	9.000	On	L1	19.8	20.7	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.159000	34.2	10000.	9.000	On	L1	27.1	21.3	55.5
0.321000	25.0	10000.	9.000	On	L1	20.0	24.7	49.7
0.537000	34.1	10000.	9.000	On	L1	20.0	11.9	46.0
0.645000	28.4	10000.	9.000	On	L1	19.9	17.6	46.0
0.915000	31.3	10000.	9.000	On	L1	19.9	14.7	46.0
2.220000	27.0	10000.	9.000	On	N	19.8	19.0	46.0

ANNEX B: Accreditation Certificate

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 600118-0

Telecommunication Technology Labs, CAICT

Beijing
China

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

Electromagnetic Compatibility & Telecommunications

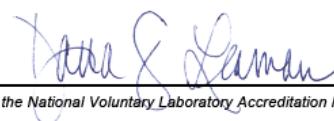
*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communiqué dated January 2009).*

2019-09-26 through 2020-09-30

Effective Dates



For the National Voluntary Laboratory Accreditation Program



END OF REPORT