

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

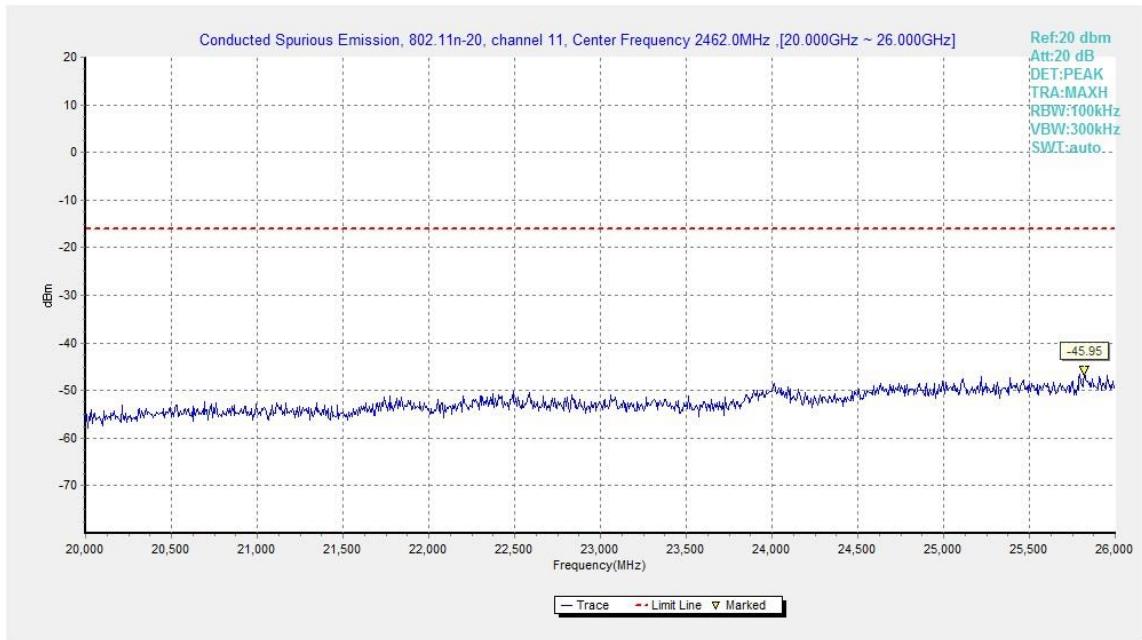


Fig.A.6.1.72 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 20 GHz-26 GHz)

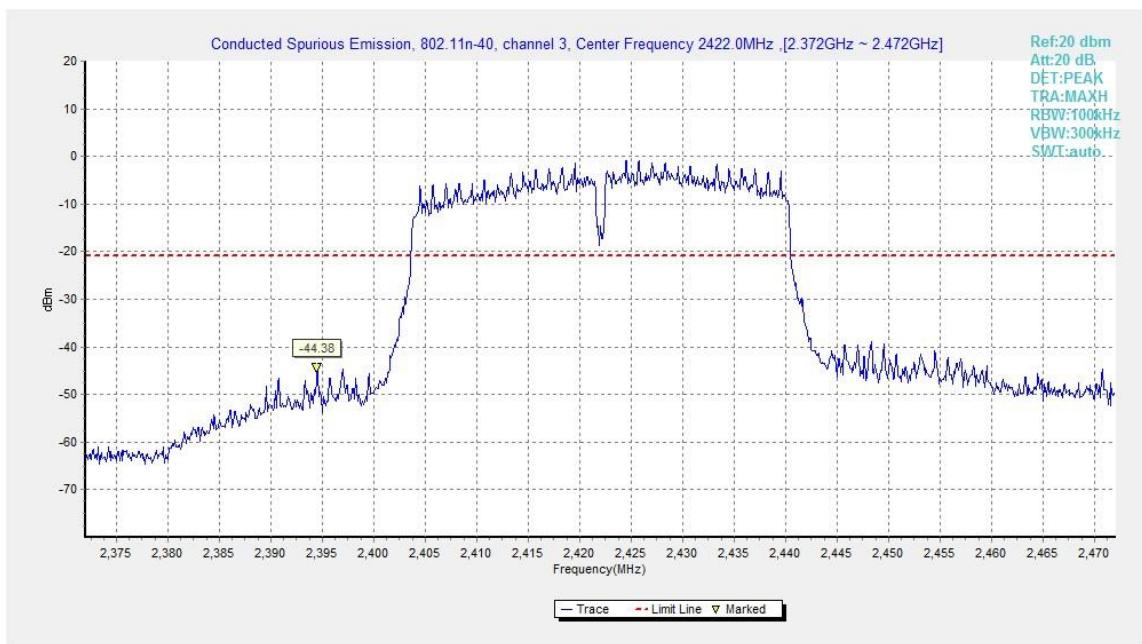


Fig.A.6.1.73 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, Center Frequency)

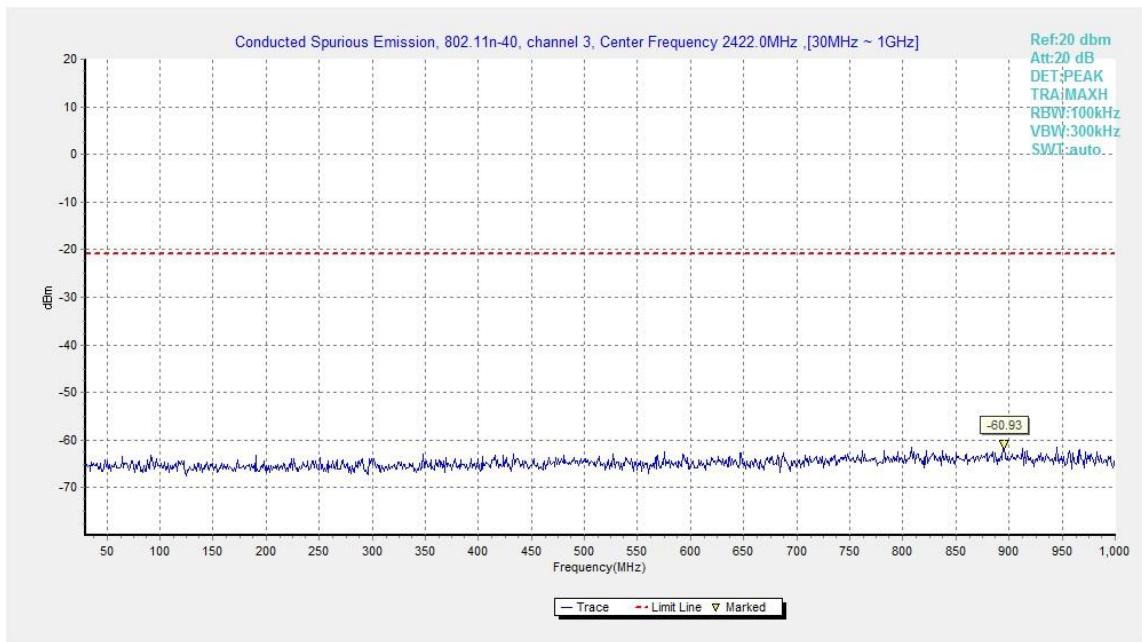


Fig.A.6.1.74 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 30 MHz-1 GHz)

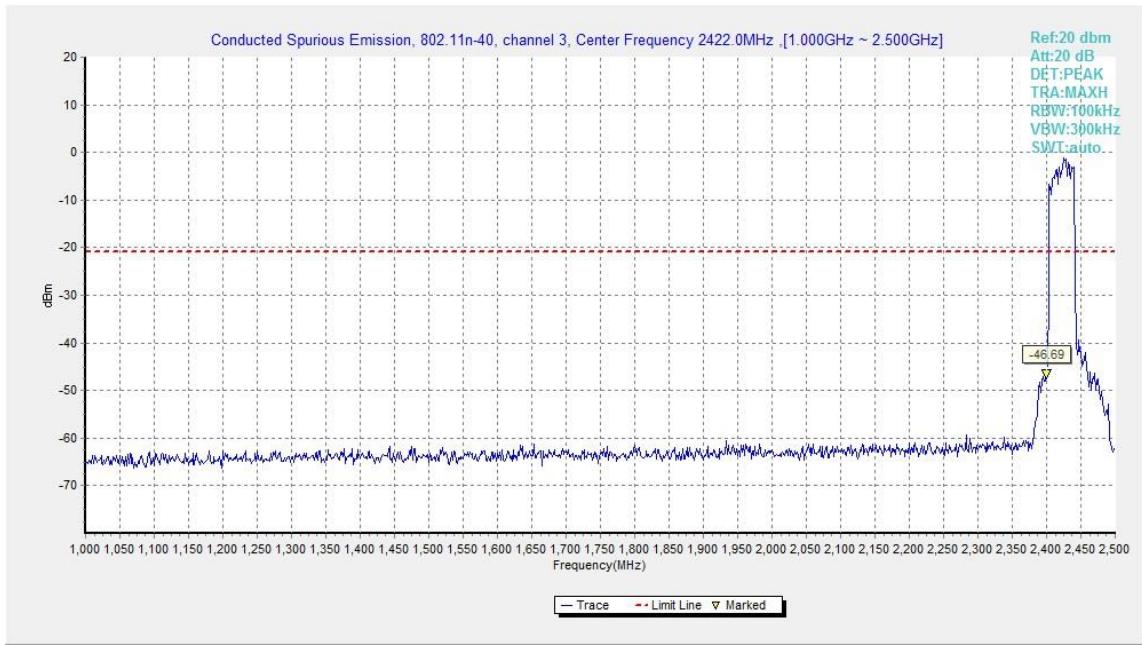


Fig.A.6.1.75 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 1 GHz-2.5 GHz)

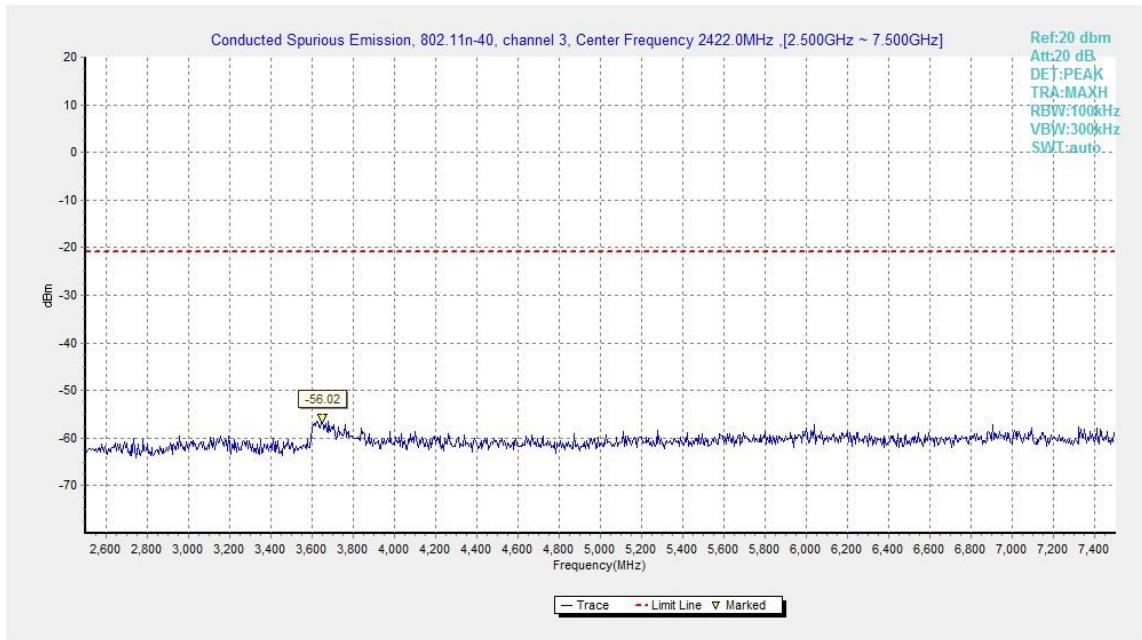


Fig.A.6.1.76 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 2.5 GHz-7.5 GHz)

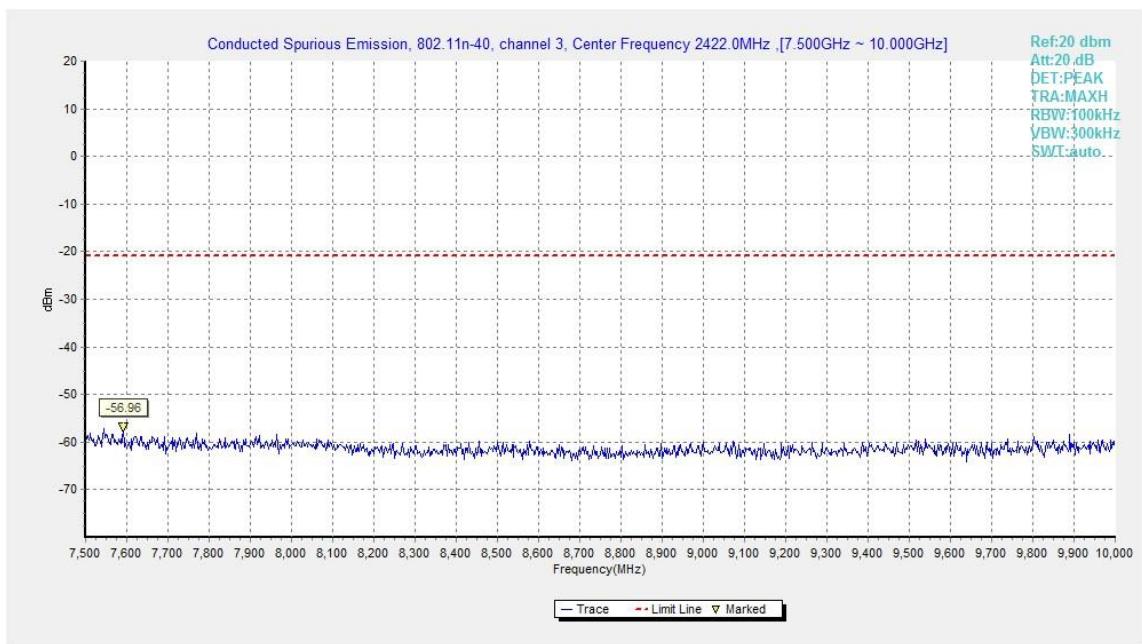


Fig.A.6.1.77 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 7.5 GHz-10 GHz)

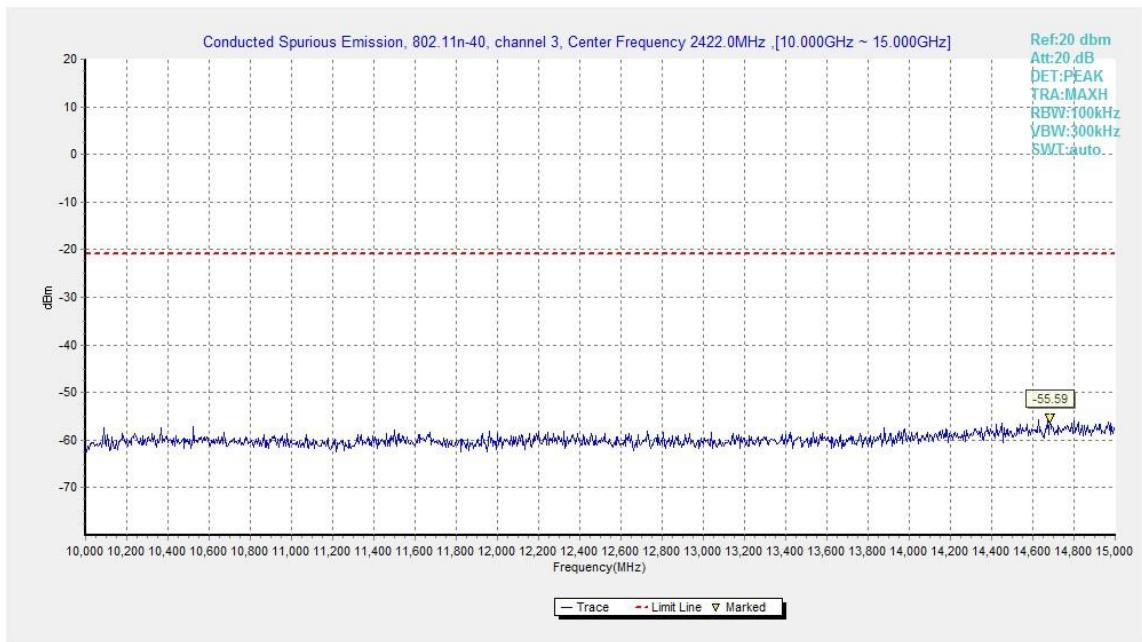


Fig.A.6.1.78 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 10 GHz-15 GHz)

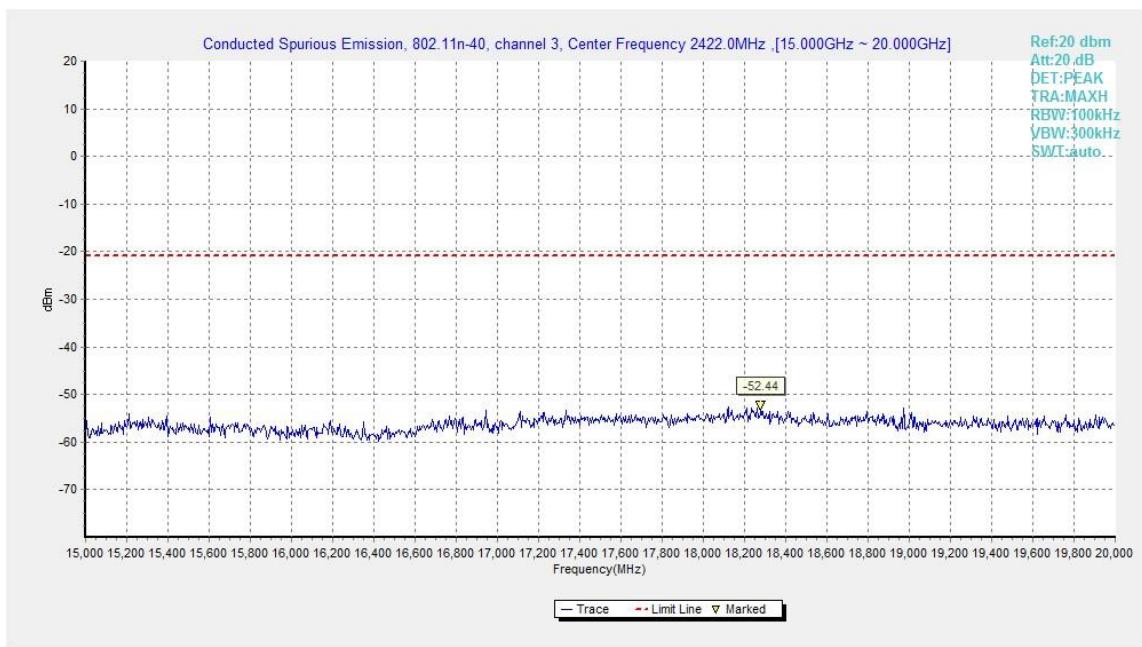


Fig.A.6.1.79 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 15 GHz-20 GHz)

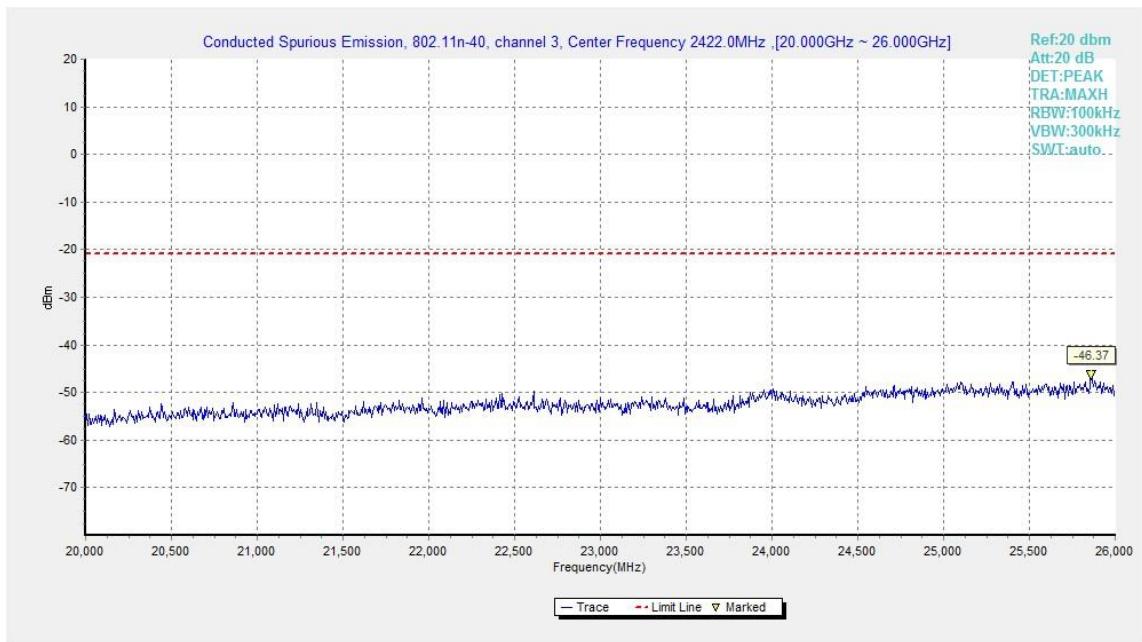


Fig.A.6.1.80 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch3, 20 GHz-26 GHz)

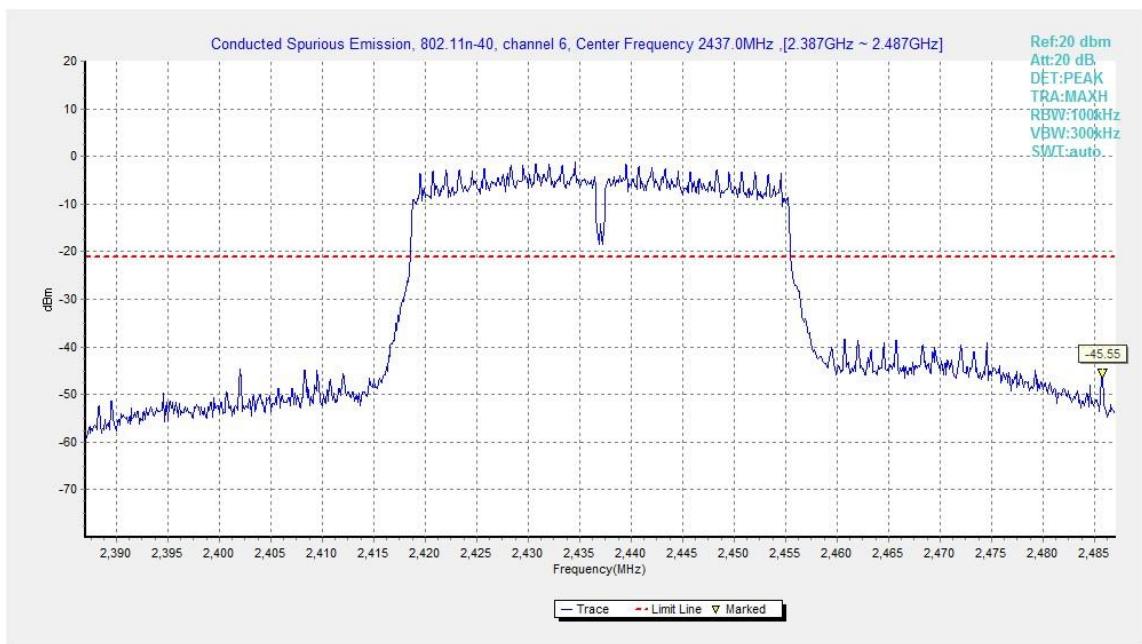


Fig.A.6.1.81 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, Center Frequency)

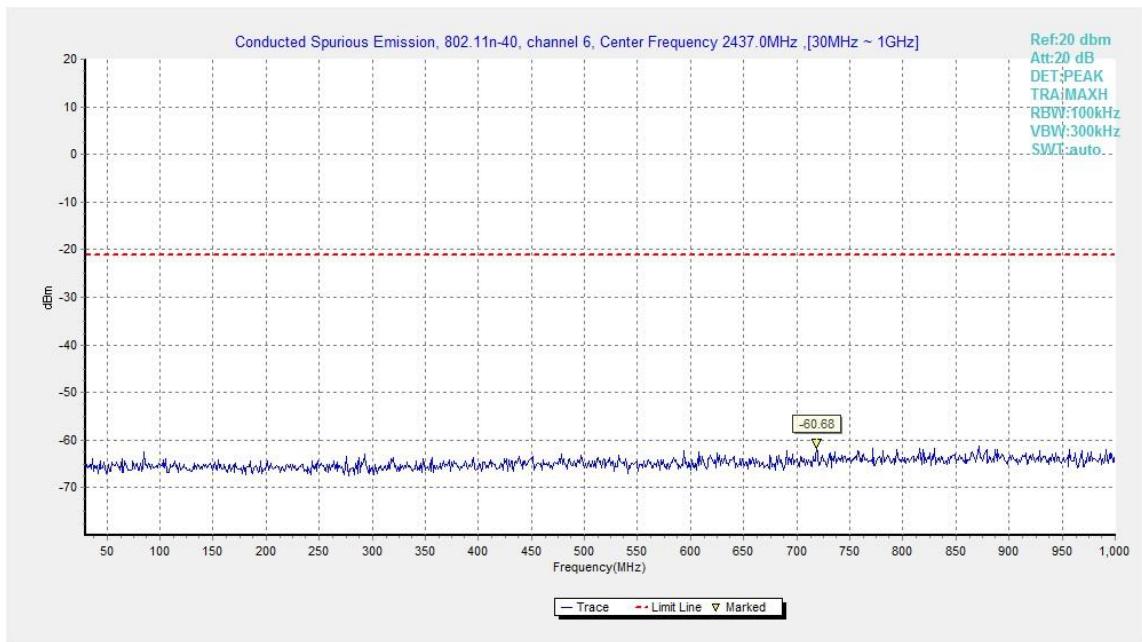


Fig.A.6.1.82 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 30 MHz-1 GHz)

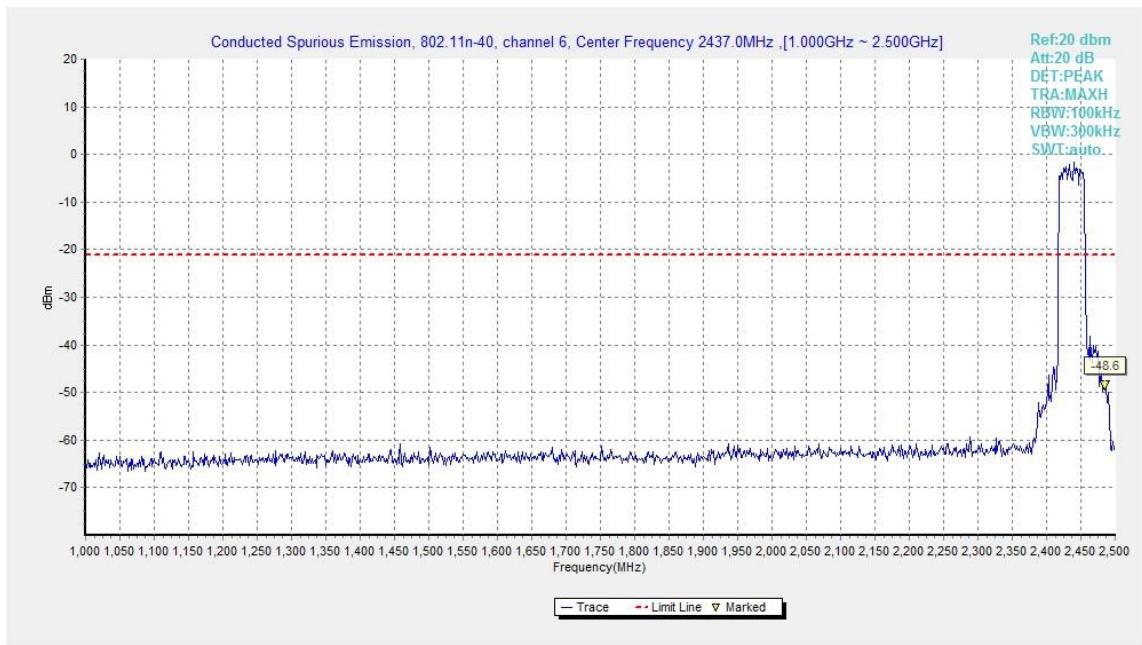


Fig.A.6.1.83 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 1 GHz-2.5 GHz)

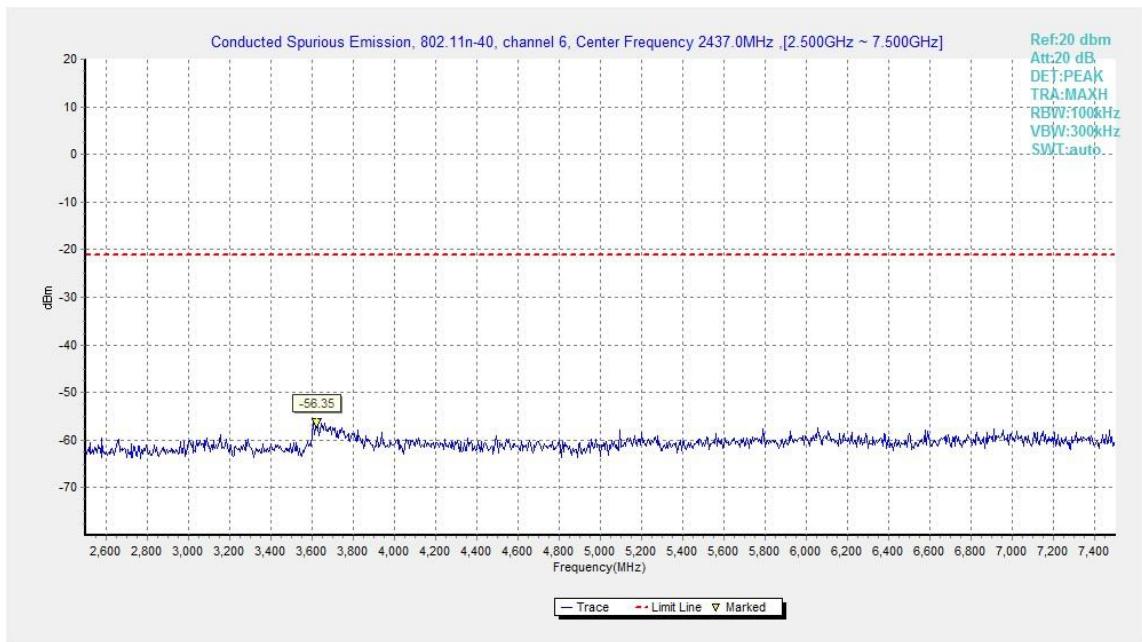


Fig.A.6.1.84 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 2.5 GHz-7.5 GHz)

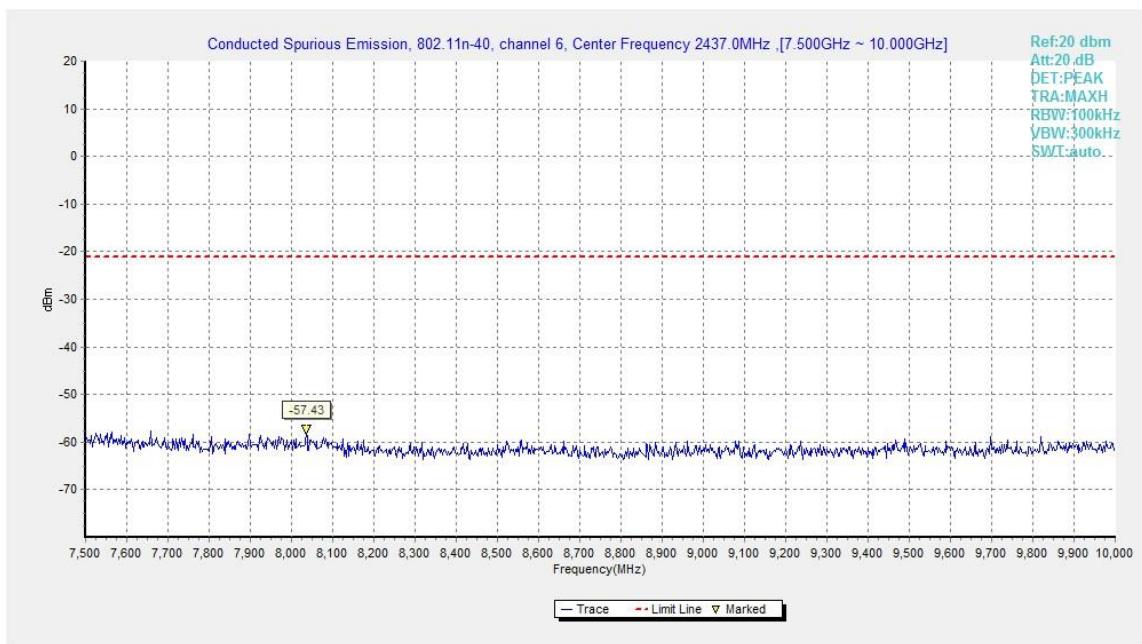


Fig.A.6.1.85 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 7.5 GHz-10 GHz)

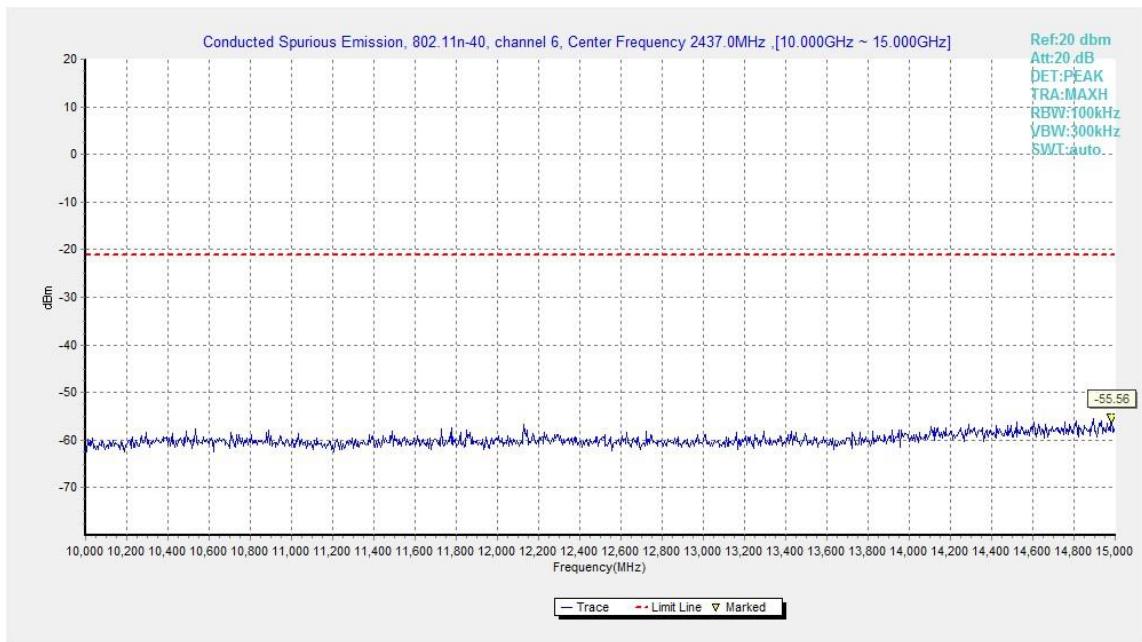


Fig.A.6.1.86 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 10 GHz-15 GHz)

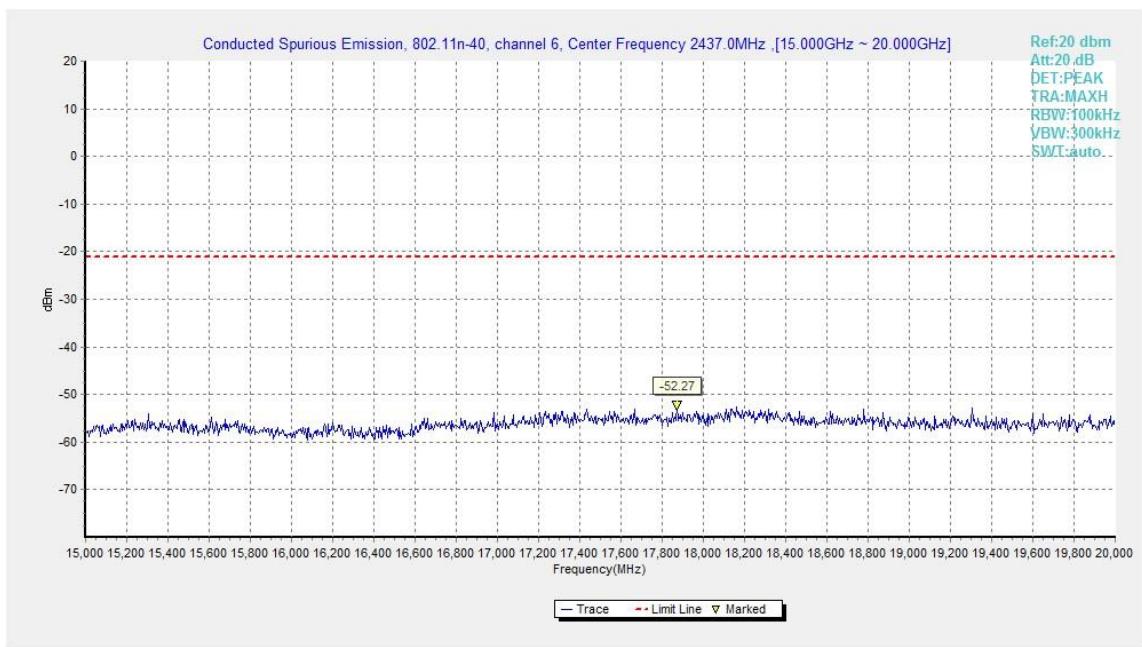


Fig.A.6.1.87 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 15 GHz-20 GHz)

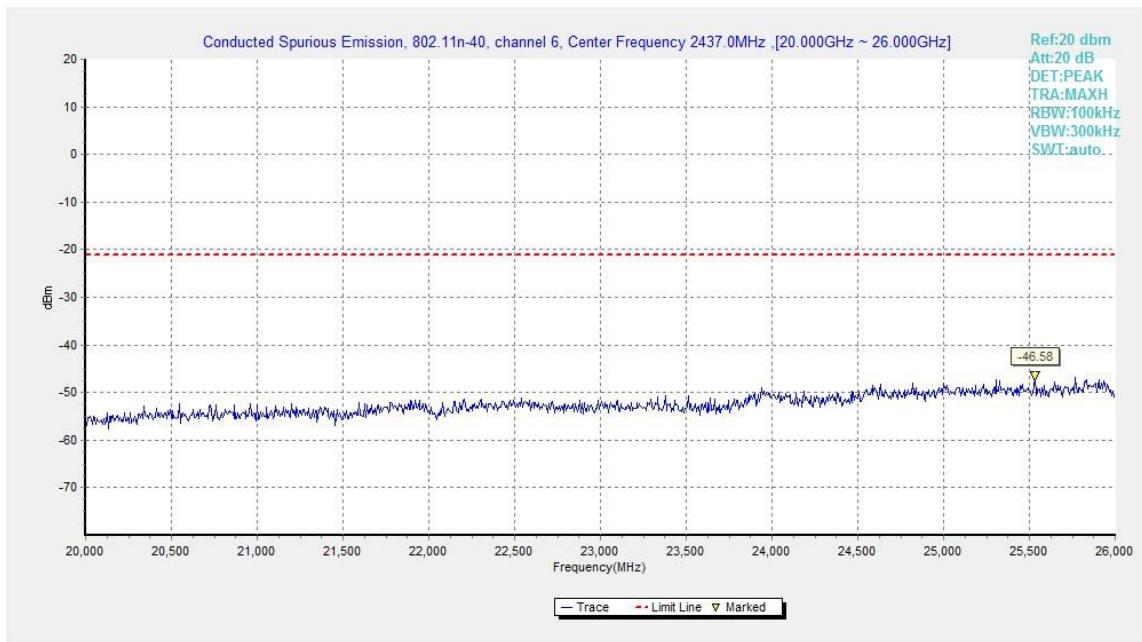


Fig.A.6.1.88 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 20 GHz-26 GHz)

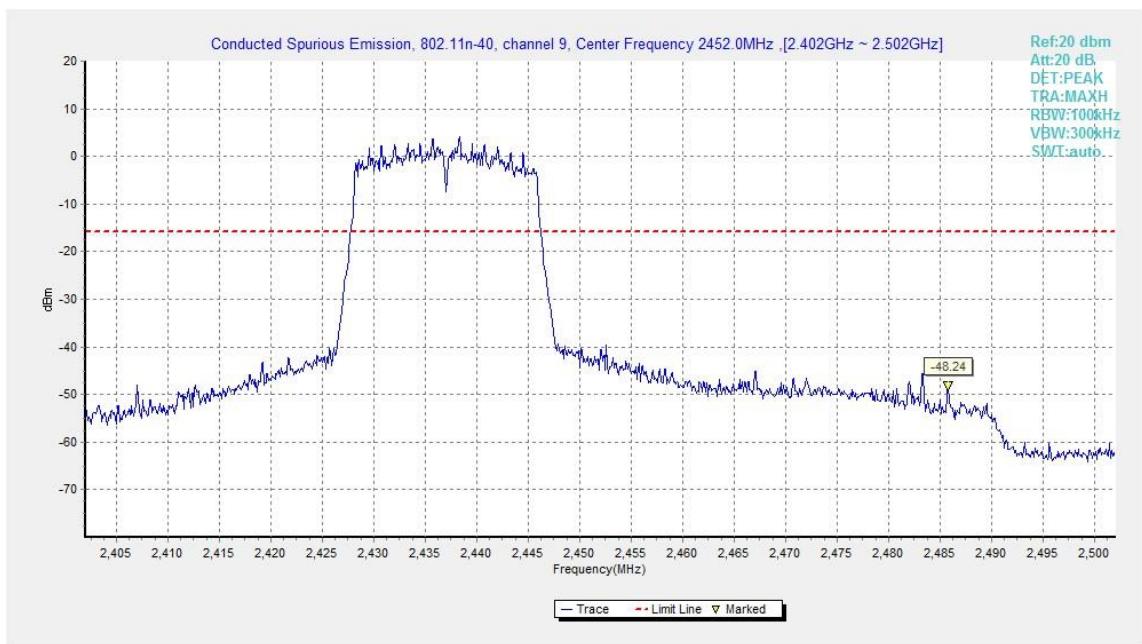


Fig.A.6.1.89 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, Center Frequency)

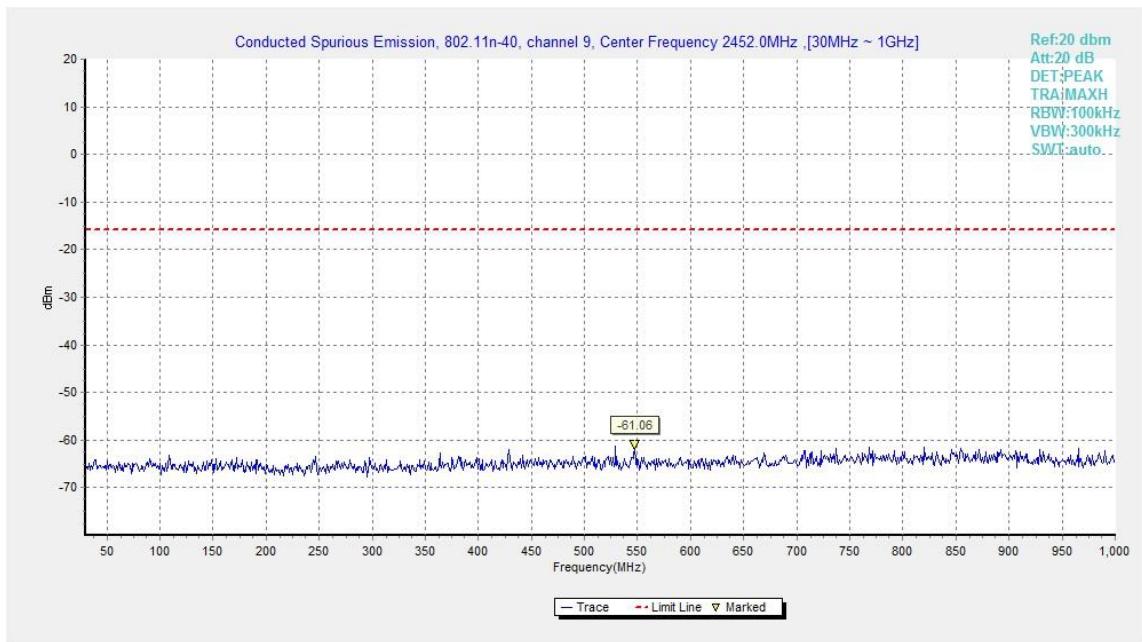


Fig.A.6.1.90 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 30 MHz-1 GHz)

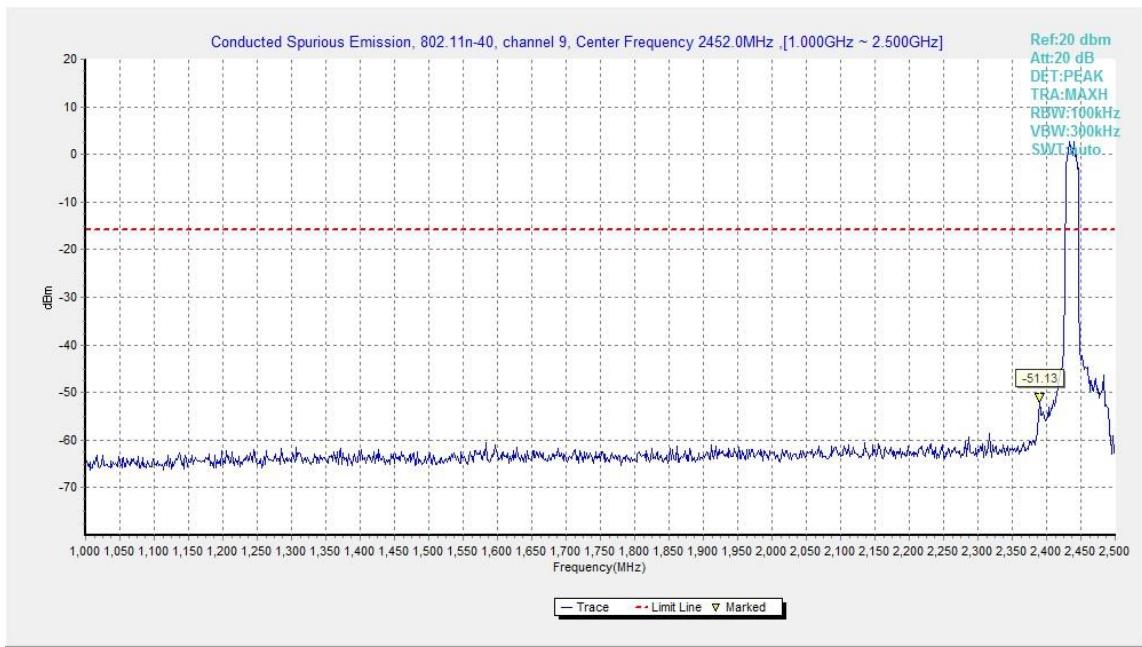


Fig.A.6.1.91 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 1 GHz-2.5 GHz)

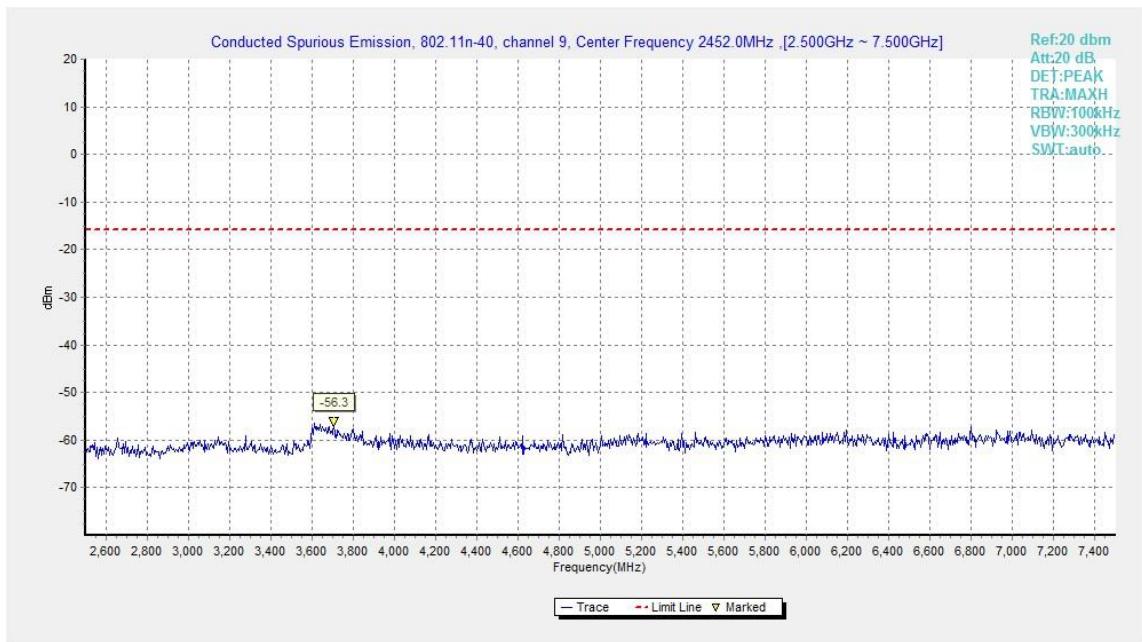


Fig.A.6.1.92 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 2.5 GHz-7.5 GHz)

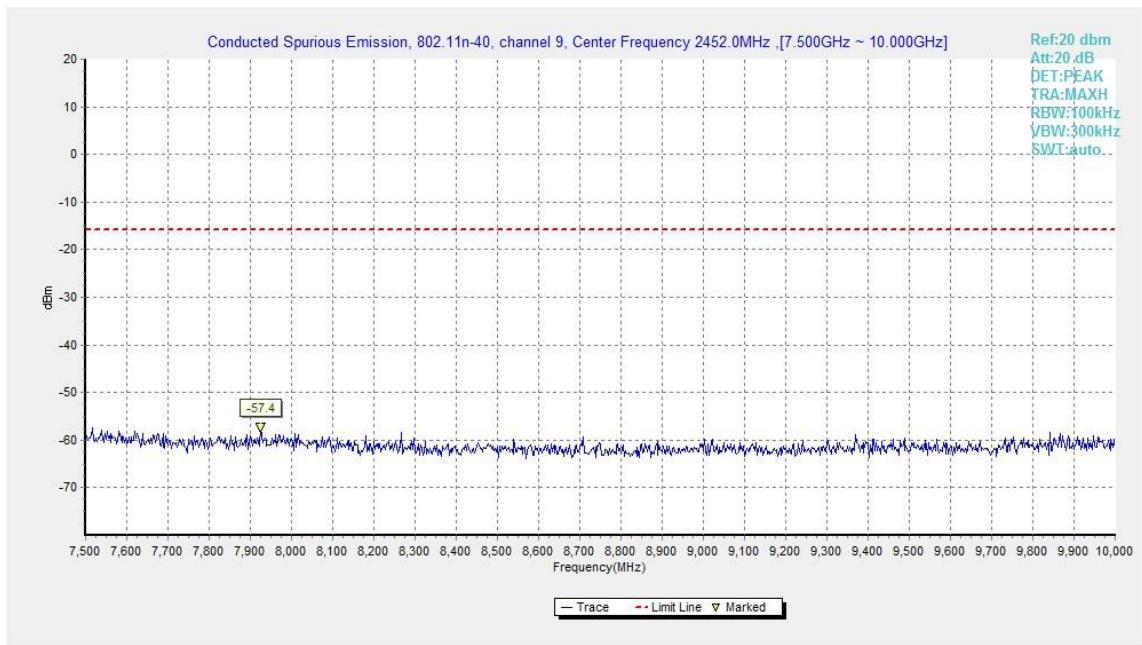


Fig.A.6.1.93 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 7.5 GHz-10 GHz)

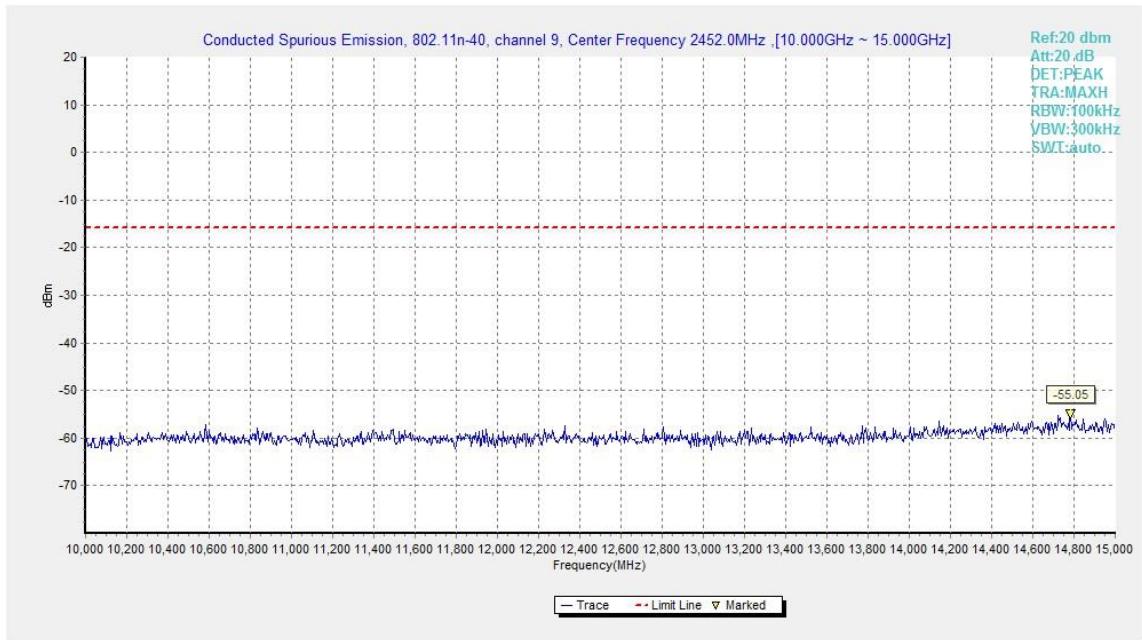


Fig.A.6.1.94 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 10 GHz-15 GHz)

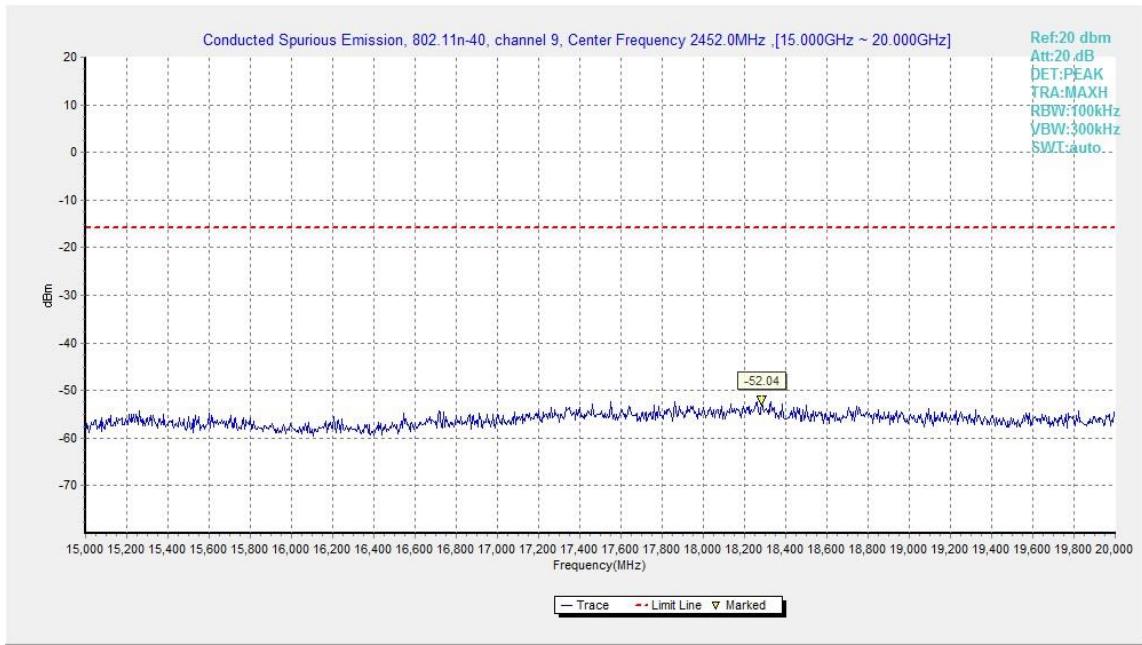


Fig.A.6.1.95 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 15 GHz-20 GHz)

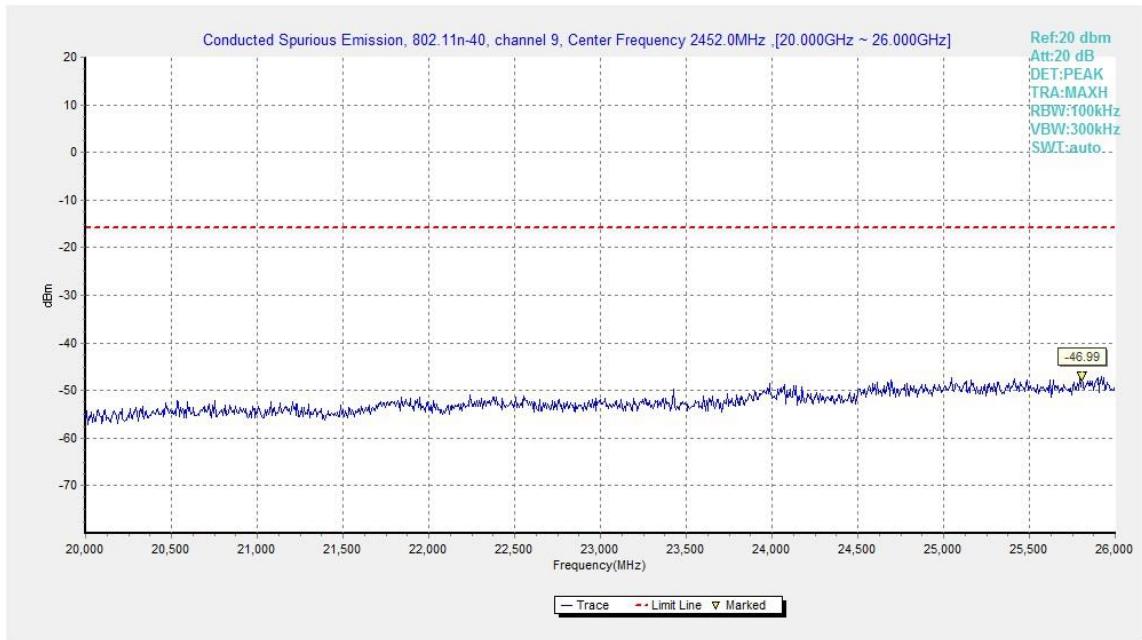


Fig.A.6.1.96 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 20 GHz-26 GHz)

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 for Set.10:
802.11b mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	Power	2.38GHz ~2.43GHz	Fig.A.6.2.1	P
	1	1 GHz ~ 3 GHz	--	P
		3 GHz ~ 18 GHz	--	P
	6	9 kHz ~30 MHz	--	P
		30 MHz ~1 GHz	--	P
		1 GHz ~ 3 GHz	--	P
		3 GHz ~ 18 GHz	--	P
		18 GHz~ 26.5 GHz	--	P
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.2	P
	11	1 GHz ~ 3 GHz	--	P
		3 GHz ~ 18 GHz	--	P

802.11g mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11g	Power	2.38GHz ~2.43GHz	Fig.A.6.2.3	P
	1	1 GHz ~ 3 GHz	--	P
		3 GHz ~ 18 GHz	--	P
	6	30 MHz ~1 GHz	--	P
		1 GHz ~ 3 GHz	--	P
		3 GHz ~ 18 GHz	--	P
		18 GHz~ 26.5 GHz	--	P
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.4	P
	11	1 GHz ~ 3 GHz	--	P
		3 GHz ~ 18 GHz	--	P

802.11n-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT20)	Power	2.38GHz ~2.43GHz	Fig.A.6.2.5	P
	1	1 GHz ~ 3 GHz	--	P
		3 GHz ~ 18 GHz	--	P
	6	30 MHz ~1 GHz	--	P
		1 GHz ~ 3 GHz	--	P
		3 GHz ~ 18 GHz	--	P
		18 GHz~ 26.5 GHz	--	P
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.6	P
	11	1 GHz ~ 3 GHz	--	P
		3 GHz ~ 18 GHz	--	P

802.11n-HT40 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT40)	Power	2.38GHz ~2.43GHz	Fig.A.6.2.7	P
	3	1 GHz ~ 3 GHz	--	P
		3 GHz ~ 18 GHz	--	P
	6	30 MHz ~1 GHz	--	P
		1 GHz ~ 3 GHz	--	P
		3 GHz ~ 18 GHz	--	P
		18 GHz~ 26.5 GHz	--	P
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.8	P
	9	1 GHz ~ 3 GHz	--	P
		3 GHz ~ 18 GHz	--	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)
2381.320	47.07	2.9	32.0	12.2	54.0	6.9	H	155	46
2388.720	47.16	2.9	32.0	12.3	54.0	6.8	H	155	60
4824.000	37.10	-32.8	34.5	35.4	54.0	16.9	H	155	116
7236.000	38.61	-31.7	36.1	34.3	54.0	15.4	H	155	8
9648.000	38.94	-30.4	37.0	32.3	54.0	15.1	H	155	128
12060.000	42.76	-29.6	39.3	33.1	54.0	11.2	H	155	94

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)
2384.640	47.10	2.9	32.0	12.2	54.0	6.9	H	155	92
2488.200	48.10	2.9	32.6	12.5	54.0	5.9	H	155	136
4874.000	36.98	-32.7	34.5	35.2	54.0	17.0	H	155	8
7311.000	38.61	-31.9	36.1	34.4	54.0	15.4	H	155	70
9748.000	38.73	-30.7	37.2	32.2	54.0	15.3	H	155	48
12185.000	43.81	-29.4	39.2	34.0	54.0	10.2	H	155	246

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)
2484.560	48.38	2.9	32.7	12.7	54.0	5.6	H	155	226
2486.360	48.11	2.9	32.7	12.5	54.0	5.9	H	155	92
4924.000	36.97	-33.1	34.5	35.6	54.0	17.0	H	155	70
7386.000	38.74	-31.8	36.0	34.5	54.0	15.3	H	155	8
9848.000	40.06	-30.1	37.3	32.8	54.0	13.9	H	155	48
12310.000	43.29	-29.7	39.2	33.8	54.0	10.7	H	155	246

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)
2386.286	60.01	2.9	32.0	25.1	74.0	14.0	H	155	44
2387.924	60.40	2.9	32.0	25.5	74.0	13.6	H	155	66
4824.000	47.40	-32.8	34.5	45.7	74.0	26.6	V	155	110
7236.000	45.74	-31.7	36.1	41.4	74.0	28.3	V	155	0
9648.000	46.13	-30.4	37.0	39.5	74.0	27.9	H	155	132
12060.000	49.32	-29.6	39.3	39.6	74.0	24.7	H	155	88

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)
2358.020	48.54	-27.7	31.8	44.4	74.0	25.5	H	155	88
2515.800	49.96	-26.6	32.6	44.0	74.0	24.0	V	155	132
4874.000	50.75	-32.7	34.5	49.0	74.0	23.2	H	155	0
7311.000	42.63	-31.9	36.1	38.5	74.0	31.4	H	155	66
9748.000	42.96	-30.7	37.2	36.4	74.0	31.0	V	155	44
12185.000	46.57	-29.4	39.2	36.8	74.0	27.4	V	155	242

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)
2483.820	60.35	2.9	32.8	24.7	74.0	13.6	H	155	220
2488.980	60.75	2.9	32.6	25.2	74.0	13.3	V	155	88
4923.750	52.43	-33.1	34.5	51.0	74.0	21.6	H	155	66
7386.000	42.83	-31.8	36.0	38.6	74.0	31.2	H	155	0
9848.250	44.18	-30.1	37.3	36.9	74.0	29.8	H	155	44
12309.750	45.97	-29.7	39.2	36.5	74.0	28.0	V	155	242

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)
2382.460	47.10	2.9	32.0	12.2	54.0	6.9	H	155	6
2388.690	47.16	2.9	32.0	12.3	54.0	6.8	H	155	26
4824.000	35.74	-32.8	34.5	34.0	54.0	18.3	H	155	92
7236.000	38.58	-31.7	36.1	34.2	54.0	15.4	H	155	24
9648.000	38.09	-30.4	37.0	31.4	54.0	15.9	H	155	136
12060.000	43.55	-29.6	39.3	33.9	54.0	10.4	H	155	356

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)
2381.960	47.32	2.9	32.0	12.4	54.0	6.7	H	155	8
2489.610	48.12	2.9	32.6	12.6	54.0	5.9	H	155	6
4874.000	35.91	-32.7	34.5	34.1	54.0	18.1	H	155	25
7311.000	38.29	-31.9	36.1	34.1	54.0	15.7	H	155	70
9748.000	38.54	-30.7	37.2	32.0	54.0	15.5	H	155	135
12185.000	43.97	-29.4	39.2	34.2	54.0	10.0	H	155	270

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	48.38	2.9	32.8	12.7	54.0	5.6	H	155	170
2485.120	48.15	2.9	32.7	12.5	54.0	5.8	H	155	150
4924.000	36.17	-33.1	34.5	34.8	54.0	17.8	H	155	20
7386.000	38.50	-31.8	36.0	34.3	54.0	15.5	H	155	180
9848.000	40.33	-30.1	37.3	33.1	54.0	13.7	H	155	202
12310.000	42.09	-29.7	39.2	32.6	54.0	11.9	H	155	8

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)
2389.632	62.62	2.9	32.0	27.8	74.0	11.4	V	155	0
2388.792	63.90	2.9	32.0	29.0	74.0	10.1	V	155	22
4824.000	46.40	-32.8	34.5	44.7	74.0	27.6	V	155	88
7236.000	42.48	-31.7	36.1	38.1	74.0	31.5	V	155	22
9648.000	42.59	-30.4	37.0	35.9	74.0	31.4	H	155	132
12060.000	46.33	-29.6	39.3	36.7	74.0	27.7	H	155	352

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)
2359.840	48.52	-27.6	31.8	44.3	74.0	25.5	H	155	0
2516.960	49.52	-26.7	32.6	43.6	74.0	24.5	V	155	0
4874.000	46.03	-32.7	34.5	44.2	74.0	28.0	V	155	22
7311.000	42.98	-31.9	36.1	38.8	74.0	31.0	V	155	66
9748.000	42.21	-30.7	37.2	35.7	74.0	31.8	V	155	132
12185.000	46.78	-29.4	39.2	37.0	74.0	27.2	V	155	274

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	69.52	2.9	32.8	33.8	74.0	4.5	H	155	176
2483.730	68.80	2.9	32.8	33.1	74.0	5.2	H	155	154
4924.000	50.31	-33.1	34.5	48.9	74.0	23.7	V	155	22
7386.000	42.00	-31.8	36.0	37.8	74.0	32.0	V	155	176
9848.000	45.49	-30.1	37.3	38.2	74.0	28.5	H	155	198
12310.000	46.53	-29.7	39.2	37.1	74.0	27.5	H	155	0



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)
2386.230	47.06	2.9	32.0	12.2	54.0	6.9	H	155	25
2386.790	47.12	2.9	32.0	12.3	54.0	6.9	H	155	49
4824.000	35.82	-32.8	34.5	34.1	54.0	18.2	H	155	4
7236.000	38.55	-31.7	36.1	34.2	54.0	15.4	H	155	6
9648.000	38.05	-30.4	37.0	31.4	54.0	15.9	H	155	25
12060.000	43.48	-29.6	39.3	33.8	54.0	10.5	H	155	186

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)
2383.670	47.09	2.9	32.0	12.2	54.0	6.9	H	155	4
2485.290	48.12	2.9	32.7	12.5	54.0	5.9	H	155	2
4874.000	35.94	-32.7	34.5	34.1	54.0	18.1	H	155	25
7311.000	38.62	-31.9	36.1	34.5	54.0	15.4	H	155	350
9748.000	38.16	-30.7	37.2	31.6	54.0	15.8	H	155	92
12185.000	43.52	-29.4	39.2	33.7	54.0	10.5	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)
2483.900	48.28	2.9	32.7	12.6	54.0	5.7	H	155	135
2489.650	48.03	2.9	32.6	12.5	54.0	6.0	H	155	160
4924.000	35.84	-33.1	34.5	34.4	54.0	18.2	H	155	92
7386.000	38.66	-31.8	36.0	34.5	54.0	15.3	H	155	115
9848.000	38.46	-30.1	37.3	31.2	54.0	15.5	H	155	112
12310.000	43.18	-29.7	39.2	33.7	54.0	10.8	H	155	85

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)
2383.304	60.20	2.9	32.0	25.3	74.0	13.8	H	155	22
2389.140	60.80	2.9	32.0	25.9	74.0	13.2	V	155	44
4824.000	45.78	-32.8	34.5	44.0	74.0	28.2	H	155	0
7236.000	42.70	-31.7	36.1	38.3	74.0	31.3	H	155	0
9648.000	42.38	-30.4	37.0	35.7	74.0	31.6	H	155	22
12060.000	46.77	-29.6	39.3	37.1	74.0	27.2	H	155	176

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)
2366.840	48.45	-27.2	32.0	43.7	74.0	25.5	H	155	0
2579.580	50.53	-26.8	33.0	44.4	74.0	23.5	H	155	0
4874.000	44.93	-32.7	34.5	43.1	74.0	29.1	V	155	22
7311.000	45.30	-31.9	36.1	41.1	74.0	28.7	V	155	352
9748.000	46.53	-30.7	37.2	40.0	74.0	27.5	V	155	88
12185.000	49.64	-29.4	39.2	39.8	74.0	24.4	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)
2483.670	66.99	2.9	32.8	31.3	74.0	7.0	H	155	132
2484.207	66.43	2.9	32.7	30.8	74.0	7.6	H	155	154
4924.000	47.12	-33.1	34.5	45.7	74.0	26.9	V	155	88
7386.000	43.58	-31.8	36.0	39.4	74.0	30.4	H	155	110
9848.000	45.82	-30.1	37.3	38.6	74.0	28.2	V	155	110
12310.000	49.19	-29.7	39.2	39.7	74.0	24.8	V	155	88

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)
2384.670	48.19	2.9	32.0	13.3	54.0	5.8	H	155	5
2386.790	48.26	2.9	32.0	13.4	54.0	5.7	H	155	25
4843.500	35.66	-32.7	34.5	33.9	54.0	18.3	H	155	356
7266.000	38.64	-31.9	36.1	34.4	54.0	15.4	H	155	350
9688.500	37.93	-30.7	37.1	31.5	54.0	16.1	H	155	185
12109.500	43.67	-29.5	39.3	33.9	54.0	10.3	H	155	187

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)
2384.880	47.29	2.9	32.0	12.4	54.0	6.7	H	155	90
2489.860	48.16	2.9	32.6	12.6	54.0	5.8	H	155	68
4873.500	35.87	-32.7	34.5	34.1	54.0	18.1	H	155	115
7311.000	38.42	-31.9	36.1	34.3	54.0	15.6	H	155	6
9748.500	38.46	-30.7	37.2	31.9	54.0	15.5	H	155	25
12184.500	43.94	-29.4	39.2	34.1	54.0	10.1	H	155	48

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)
2484.650	48.44	2.9	32.7	12.8	54.0	5.6	H	155	20
2488.790	48.06	2.9	32.6	12.5	54.0	5.9	H	155	45
4903.500	36.15	-32.9	34.5	34.5	54.0	17.9	H	155	240
7356.000	38.45	-31.9	36.1	34.3	54.0	15.6	H	155	180
9808.500	39.52	-30.3	37.3	32.6	54.0	14.5	H	155	85
12259.500	44.21	-29.6	39.2	34.6	54.0	9.8	H	155	25

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)
2389.674	63.81	2.9	32.0	29.0	74.0	10.2	H	155	0
2388.722	63.09	2.9	32.0	28.2	74.0	10.9	H	155	22
4844.000	41.66	-32.7	34.5	39.8	74.0	32.3	H	155	352
7266.000	42.47	-31.9	36.1	38.2	74.0	31.5	V	155	352
9688.000	42.89	-30.7	37.1	36.5	74.0	31.1	V	155	176
12110.000	47.49	-29.5	39.3	37.7	74.0	26.5	V	155	176

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)
2359.230	47.97	-27.6	31.8	43.8	74.0	26.0	H	155	88
2802.650	51.93	-26.1	33.5	44.5	74.0	22.1	H	155	66
4874.250	41.29	-32.7	34.5	39.5	74.0	32.7	V	155	110
7311.000	42.16	-31.9	36.1	38.0	74.0	31.8	H	155	0
9747.750	43.26	-30.7	37.2	36.7	74.0	30.7	H	155	22
12185.250	47.06	-29.4	39.2	37.3	74.0	26.9	V	155	44

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)
2483.780	64.11	2.9	32.8	28.4	74.0	9.9	H	155	22
2484.390	64.37	2.9	32.7	28.7	74.0	9.6	H	155	44
4904.250	41.35	-32.9	34.5	39.7	74.0	32.7	H	155	242
7356.000	42.97	-31.9	36.1	38.8	74.0	31.0	H	155	176
9707.750	43.35	-30.9	37.1	37.1	74.0	30.7	H	155	88
12260.250	47.30	-29.6	39.2	37.7	74.0	26.7	V	155	22

Test graphs as below:

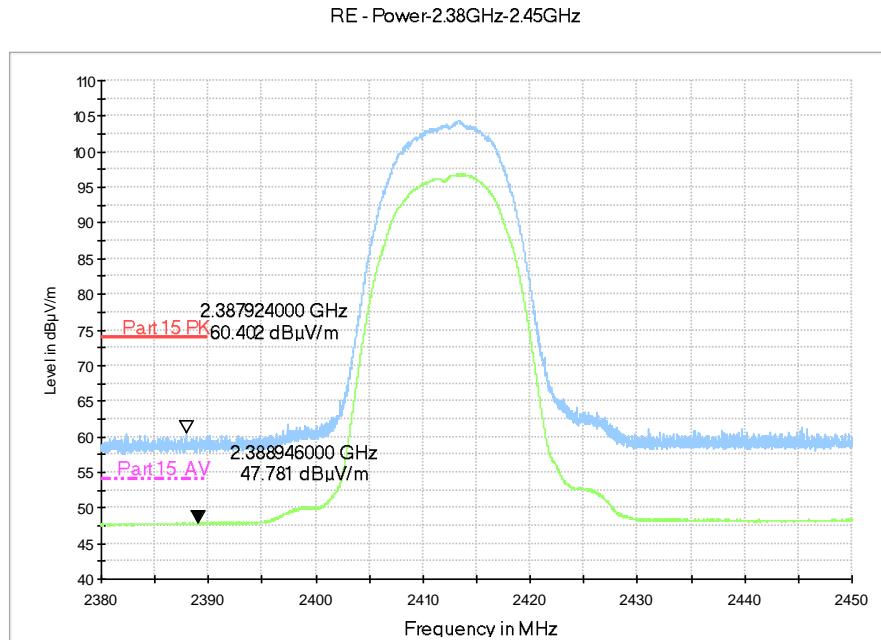


Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.38 GHz – 2.43GHz

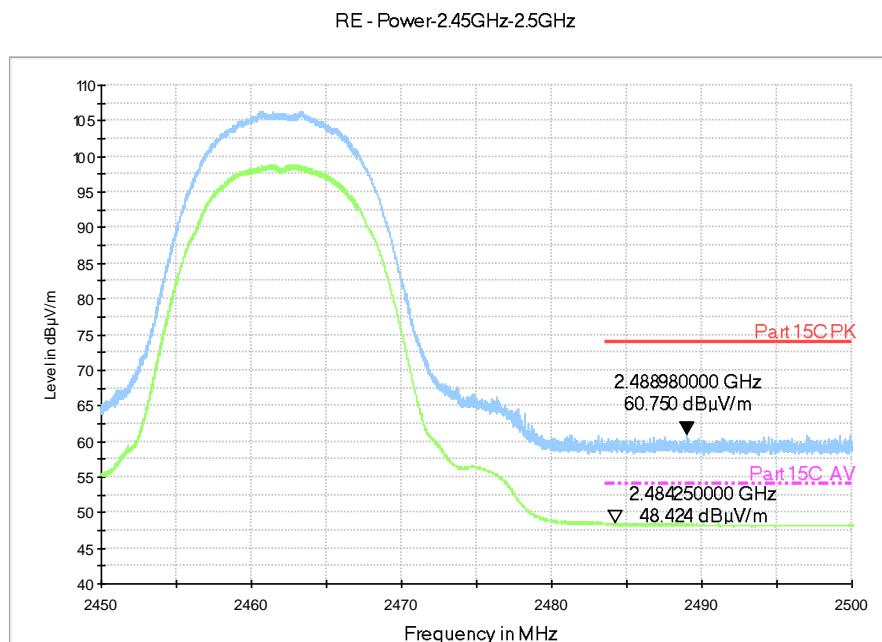


Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz

RE - Power-2.38GHz-2.45GHz

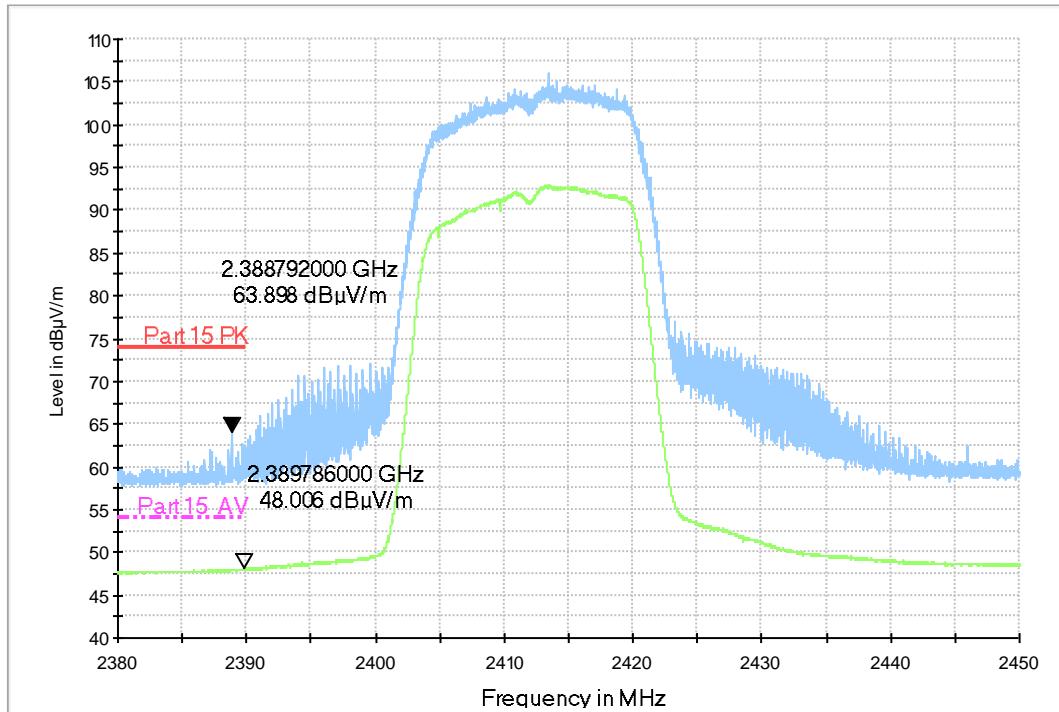


Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch1, 2.38 GHz - 2.43GHz

RE - Power-2.45GHz-2.5GHz

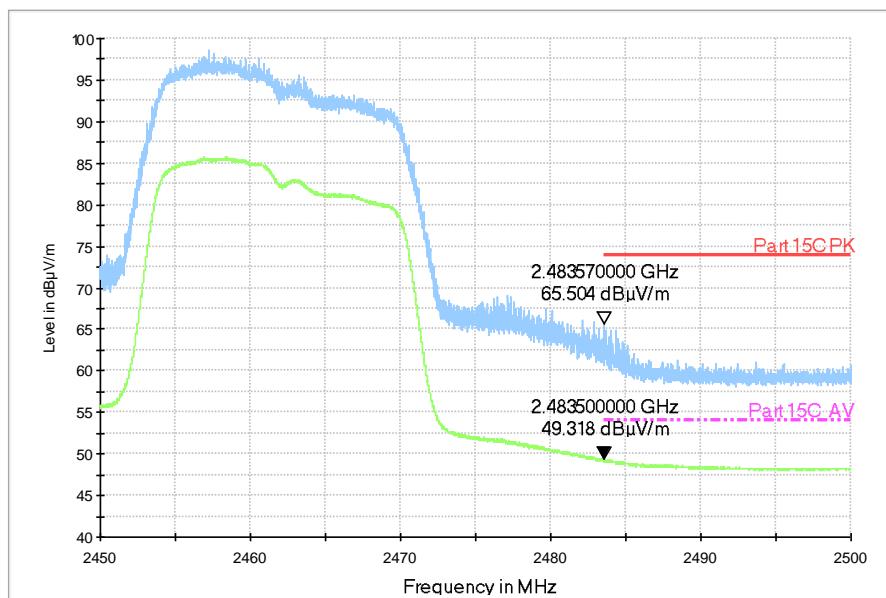


Fig.A.6.2.4 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz

RE - Power-2.38GHz-2.45GHz

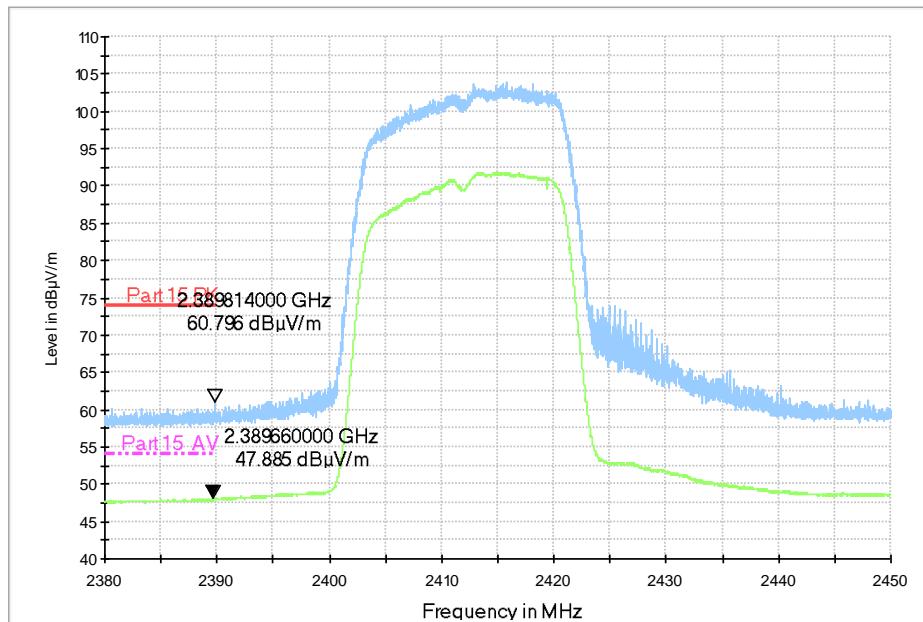


Fig.A.6.2.5 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch1, 2.38 GHz - 2.45GHz

RE - Power-2.45GHz-2.5GHz

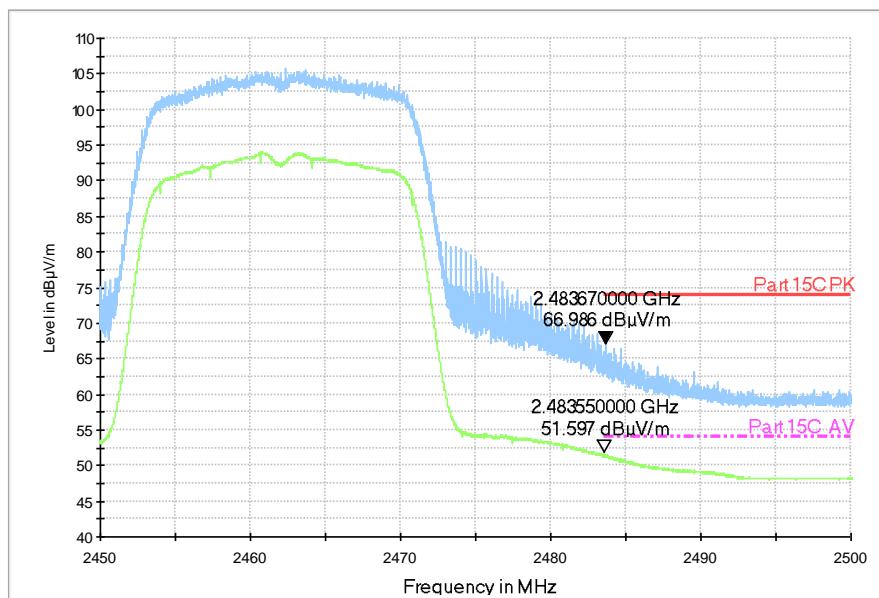


Fig.A.6.2.6 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz

RE - Power-2.38GHz-2.45GHz

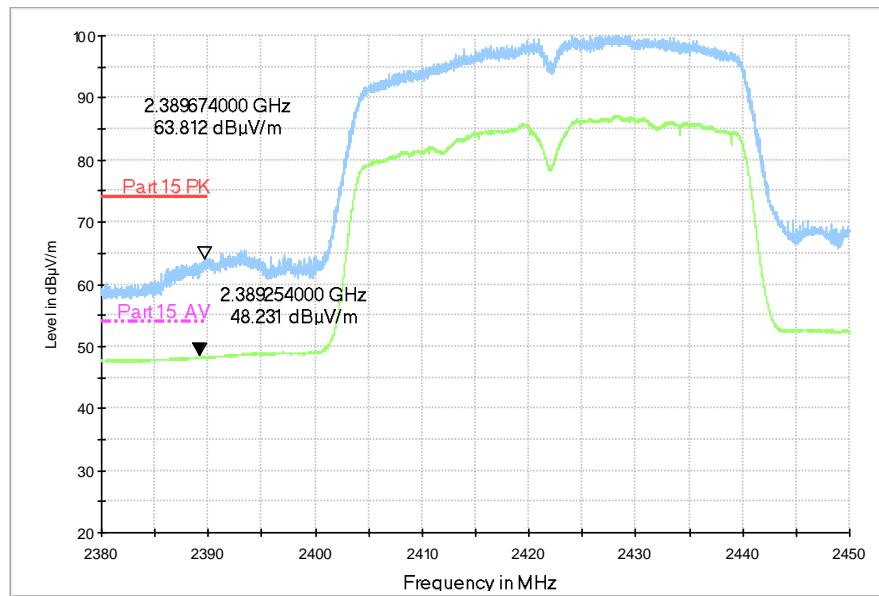


Fig.A.6.2.7 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch3, 2.38 GHz - 2.43GHz

RE - Power-2.45GHz-2.5GHz

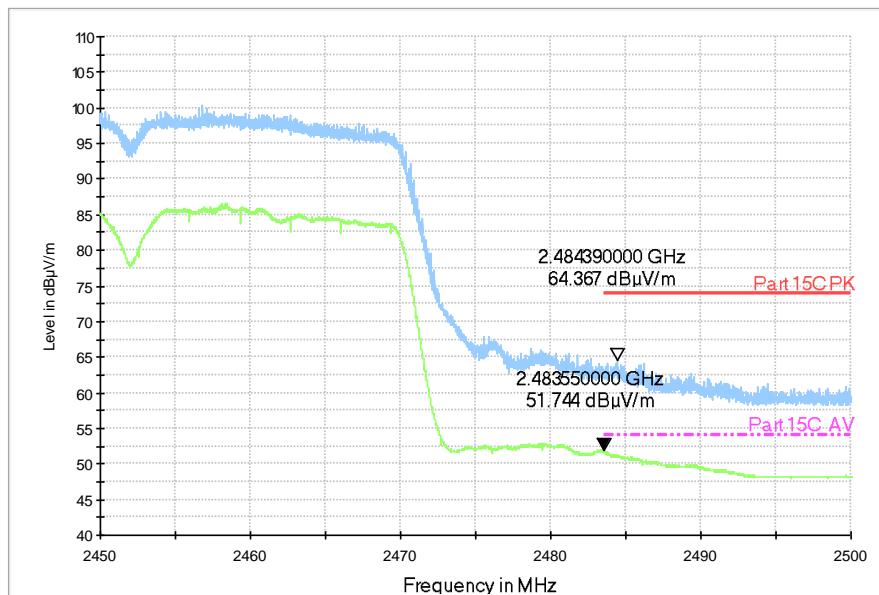


Fig.A.6.2.8 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch9, 2.45 GHz - 2.50GHz

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.7.3 Fig.A.7.4 Fig.A.7.5	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.

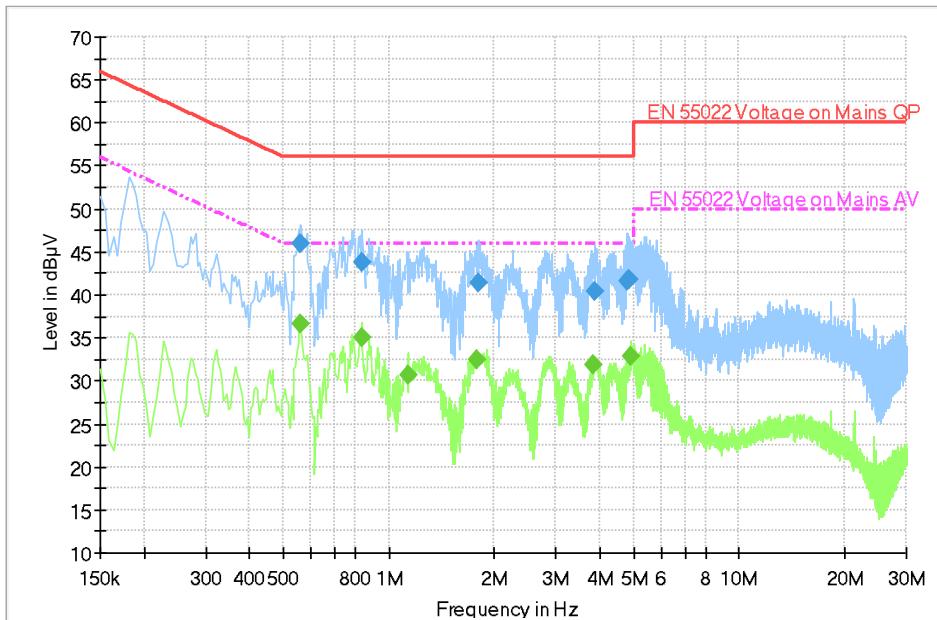
WLAN (Average Limit)

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.7.3 Fig.A.7.4 Fig.A.7.5	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: Set.20

Fig.A.7.1 AC Power line Conducted Emission-802.11b

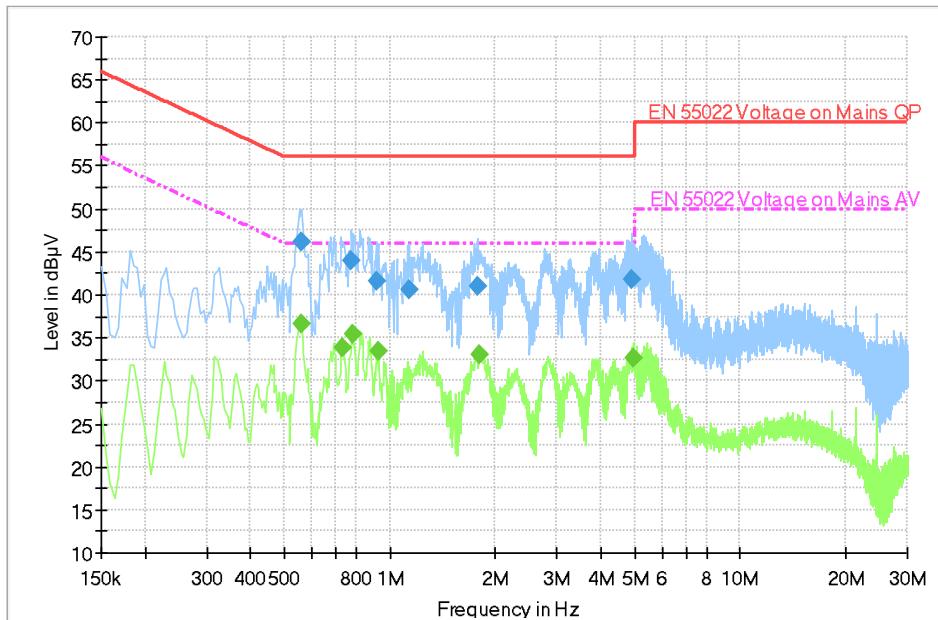
Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.559500	45.9	2000.0	9.000	L1	10.2	10.1	56.0
0.834000	43.8	2000.0	9.000	L1	10.2	12.2	56.0
1.806000	41.4	2000.0	9.000	L1	10.2	14.6	56.0
3.867000	40.4	2000.0	9.000	L1	10.3	15.6	56.0
4.803000	41.7	2000.0	9.000	L1	10.3	14.3	56.0
4.861500	41.9	2000.0	9.000	L1	10.3	14.1	56.0

Final Result 2

Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.559500	36.5	2000.0	9.000	L1	10.2	9.5	46.0
0.834000	35.0	2000.0	9.000	L1	10.2	11.0	46.0
1.135500	30.7	2000.0	9.000	L1	10.2	15.3	46.0
1.788000	32.4	2000.0	9.000	L1	10.2	13.6	46.0
3.826500	31.8	2000.0	9.000	L1	10.3	14.2	46.0
4.911000	32.8	2000.0	9.000	L1	10.3	13.2	46.0

Idle: Set.20

Fig.A.7.2 AC Power line Conducted Emission-Idle

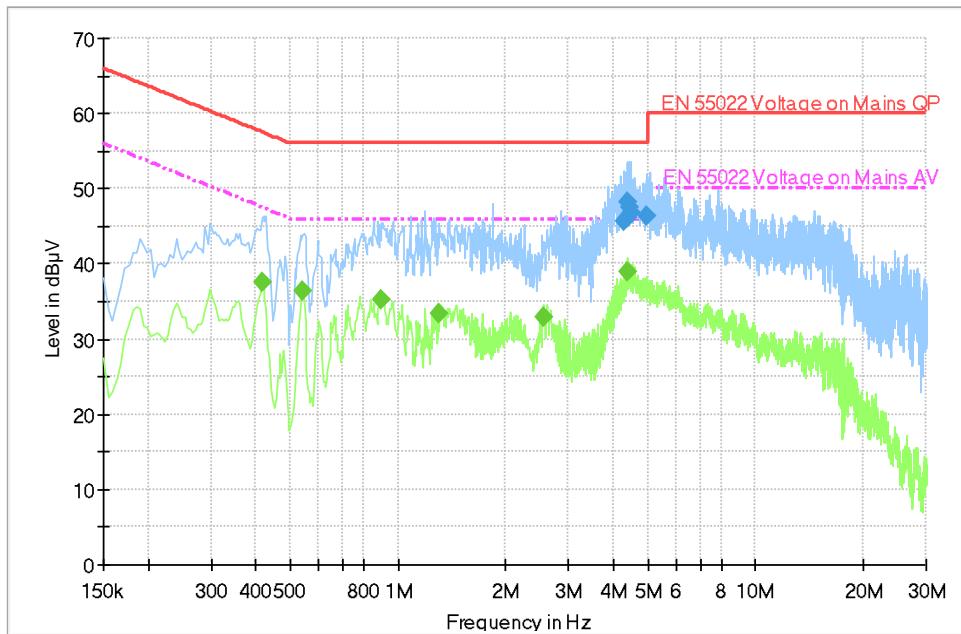
Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.559500	46.1	2000.0	9.000	L1	10.2	9.9	56.0
0.775500	43.9	2000.0	9.000	L1	10.2	12.1	56.0
0.915000	41.5	2000.0	9.000	L1	10.2	14.5	56.0
1.131000	40.6	2000.0	9.000	L1	10.2	15.4	56.0
1.774500	41.1	2000.0	9.000	L1	10.2	14.9	56.0
4.897500	41.8	2000.0	9.000	L1	10.3	14.2	56.0

Final Result 2

Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.559500	36.7	2000.0	9.000	L1	10.2	9.3	46.0
0.735000	33.9	2000.0	9.000	L1	10.2	12.1	46.0
0.784500	35.5	2000.0	9.000	L1	10.2	10.5	46.0
0.924000	33.4	2000.0	9.000	L1	10.2	12.6	46.0
1.806000	33.0	2000.0	9.000	L1	10.2	13.0	46.0
4.947000	32.6	2000.0	9.000	L1	10.3	13.4	46.0

Traffic: Set.21

Fig.A.7.3 AC Power line Conducted Emission-802.11b

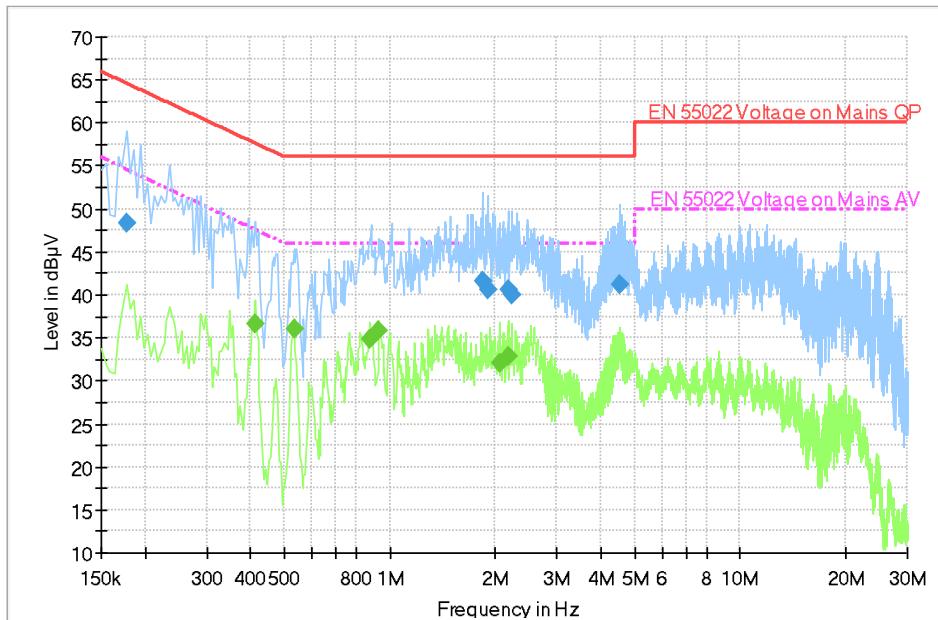
Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
4.308000	45.7	2000.0	9.000	L1	10.3	10.3	56.0
4.366500	46.1	2000.0	9.000	L1	10.3	9.9	56.0
4.407000	48.1	2000.0	9.000	L1	10.3	7.9	56.0
4.443000	47.5	2000.0	9.000	L1	10.3	8.5	56.0
4.501500	46.7	2000.0	9.000	L1	10.3	9.3	56.0
4.987500	46.3	2000.0	9.000	L1	10.3	9.7	56.0

Final Result 2

Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.415500	37.5	2000.0	9.000	L1	10.2	10.0	47.5
0.541500	36.5	2000.0	9.000	L1	10.2	9.5	46.0
0.897000	35.2	2000.0	9.000	L1	10.2	10.8	46.0
1.306500	33.4	2000.0	9.000	L1	10.2	12.6	46.0
2.553000	33.0	2000.0	9.000	L1	10.2	13.0	46.0
4.393500	39.0	2000.0	9.000	L1	10.3	7.0	46.0

Traffic: Set.22

Fig.A.7.4 AC Power line Conducted Emission-802.11b

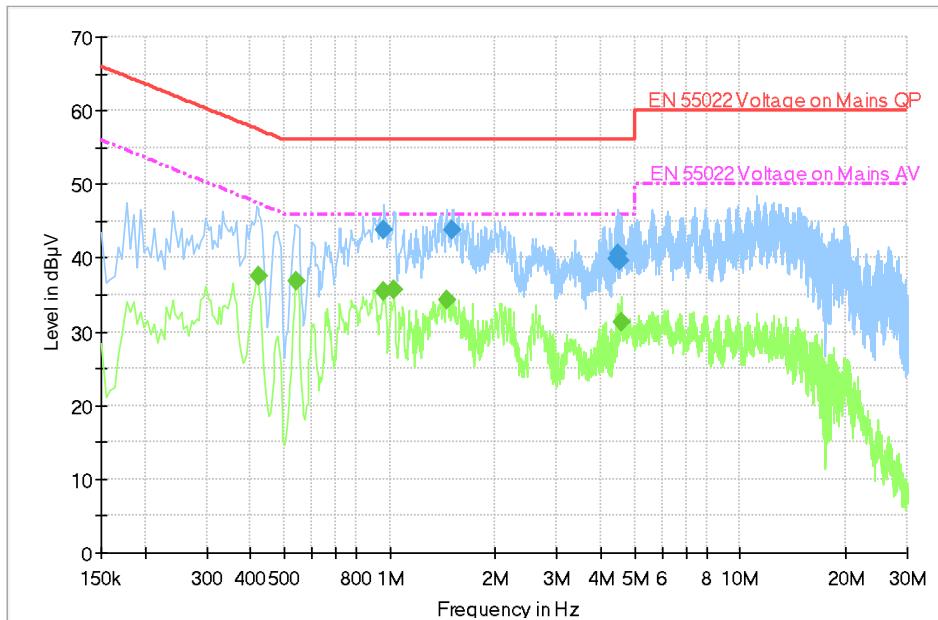
Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.177000	48.4	2000.0	9.000	L1	10.1	16.2	64.6
1.833000	41.6	2000.0	9.000	N	10.3	14.4	56.0
1.900500	40.6	2000.0	9.000	N	10.3	15.4	56.0
2.179500	40.5	2000.0	9.000	L1	10.2	15.5	56.0
2.238000	40.0	2000.0	9.000	L1	10.2	16.0	56.0
4.533000	41.3	2000.0	9.000	L1	10.3	14.7	56.0

Final Result 2

Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.411000	36.7	2000.0	9.000	L1	10.2	10.9	47.6
0.532500	36.0	2000.0	9.000	L1	10.2	10.0	46.0
0.879000	34.8	2000.0	9.000	L1	10.2	11.2	46.0
0.933000	35.8	2000.0	9.000	L1	10.2	10.2	46.0
2.053500	32.1	2000.0	9.000	L1	10.2	13.9	46.0
2.170500	32.8	2000.0	9.000	L1	10.2	13.2	46.0

Traffic: Set.23

Fig.A.7.5 AC Power line 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)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.964500	43.9	2000.0	9.000	L1	10.2	12.1	56.0
1.513500	43.8	2000.0	9.000	L1	10.2	12.2	56.0
4.443000	39.9	2000.0	9.000	L1	10.3	16.1	56.0
4.501500	40.7	2000.0	9.000	L1	10.3	15.3	56.0
4.519500	39.7	2000.0	9.000	L1	10.3	16.3	56.0
4.528500	39.7	2000.0	9.000	L1	10.3	16.3	56.0

Final Result 2

Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.420000	37.6	2000.0	9.000	L1	10.2	9.8	47.4
0.541500	36.8	2000.0	9.000	L1	10.2	9.2	46.0
0.964500	35.4	2000.0	9.000	L1	10.2	10.6	46.0
1.027500	35.7	2000.0	9.000	L1	10.2	10.3	46.0
1.459500	34.3	2000.0	9.000	L1	10.2	11.7	46.0
4.578000	31.3	2000.0	9.000	L1	10.3	14.7	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).*

2016-09-29 through 2017-09-30

Effective Dates



For the National Voluntary Laboratory Accreditation Program

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