

Fig.A.6.1.29 Transmitter Spurious Emission - Conducted (802.11g, Ch1, 7.5 GHz-10 GHz)

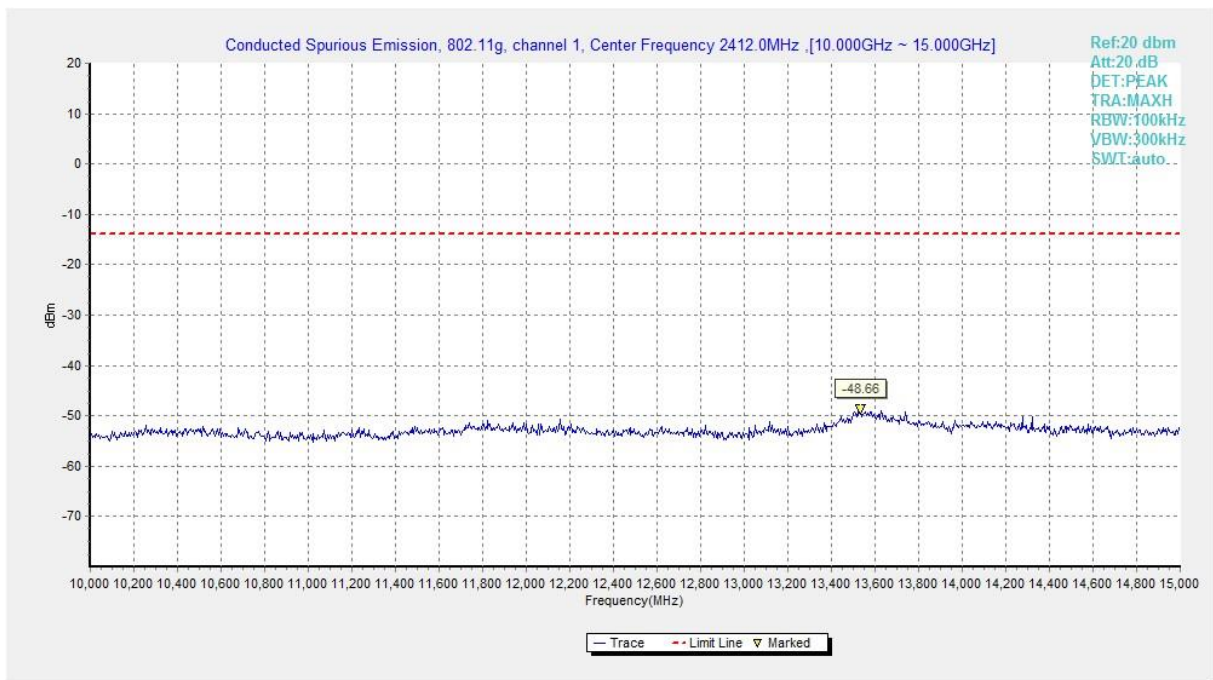


Fig.A.6.1.30 Transmitter Spurious Emission - Conducted (802.11g, Ch1, 10 GHz-15 GHz)

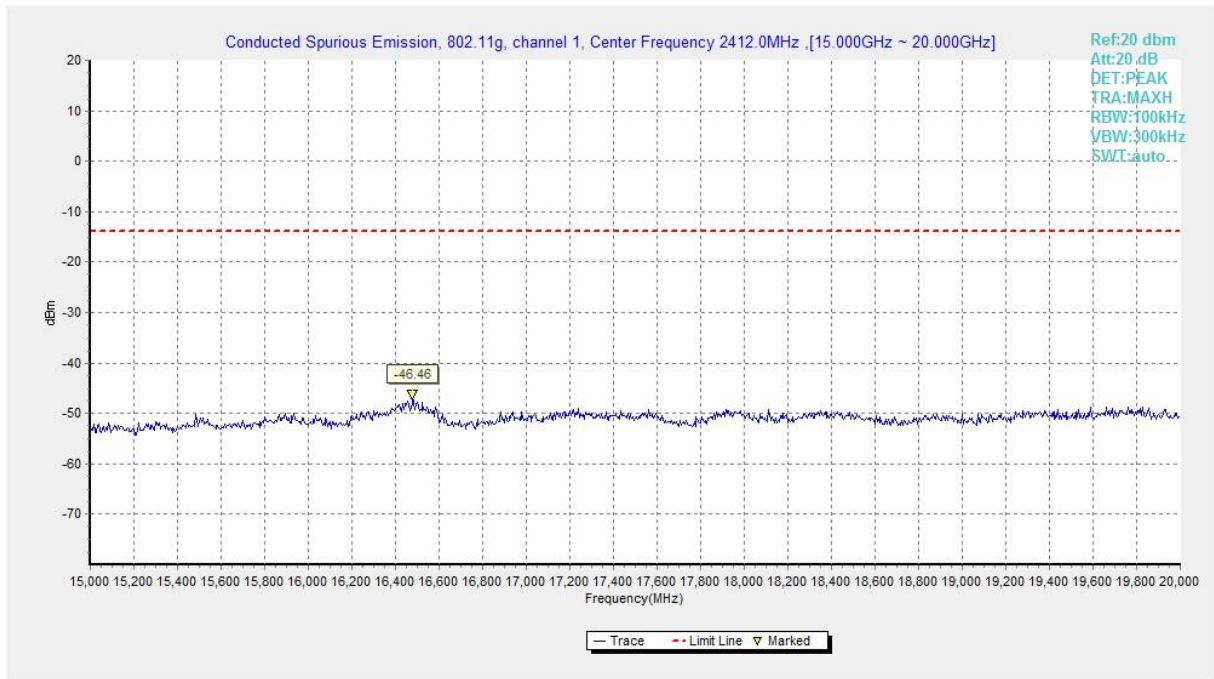


Fig.A.6.1.31 Transmitter Spurious Emission - Conducted (802.11g, Ch1, 15 GHz-20 GHz)

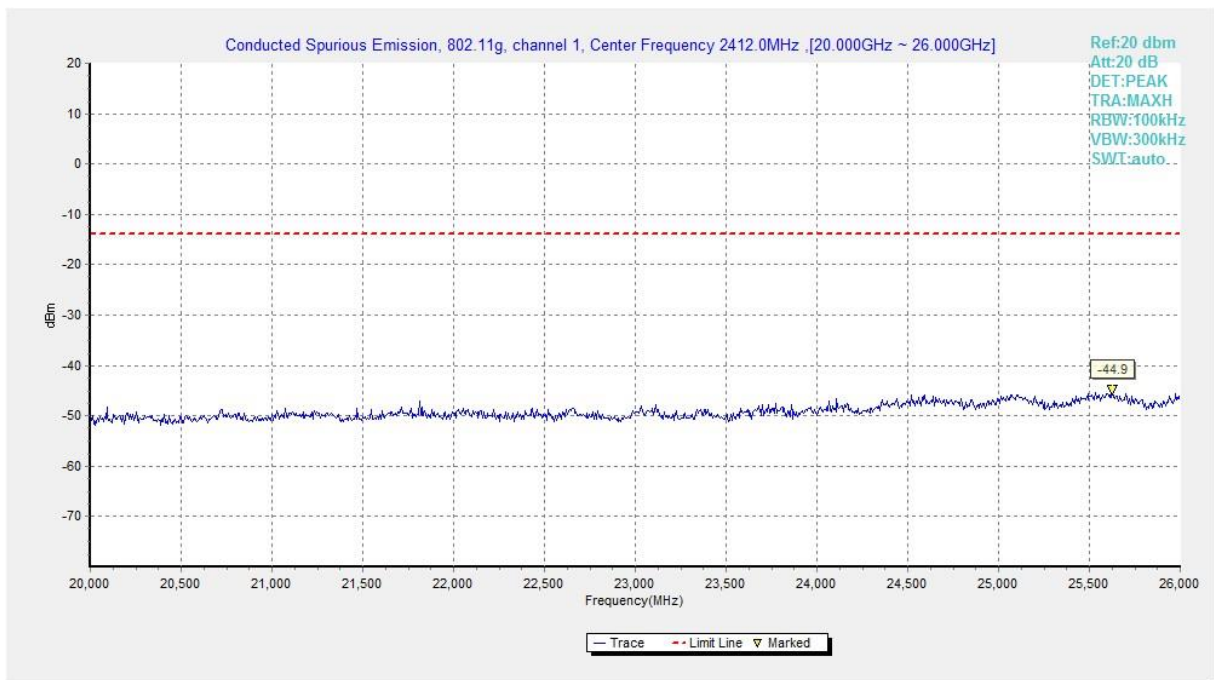


Fig.A.6.1.32 Transmitter Spurious Emission - Conducted (802.11g, Ch1, 20 GHz-26 GHz)

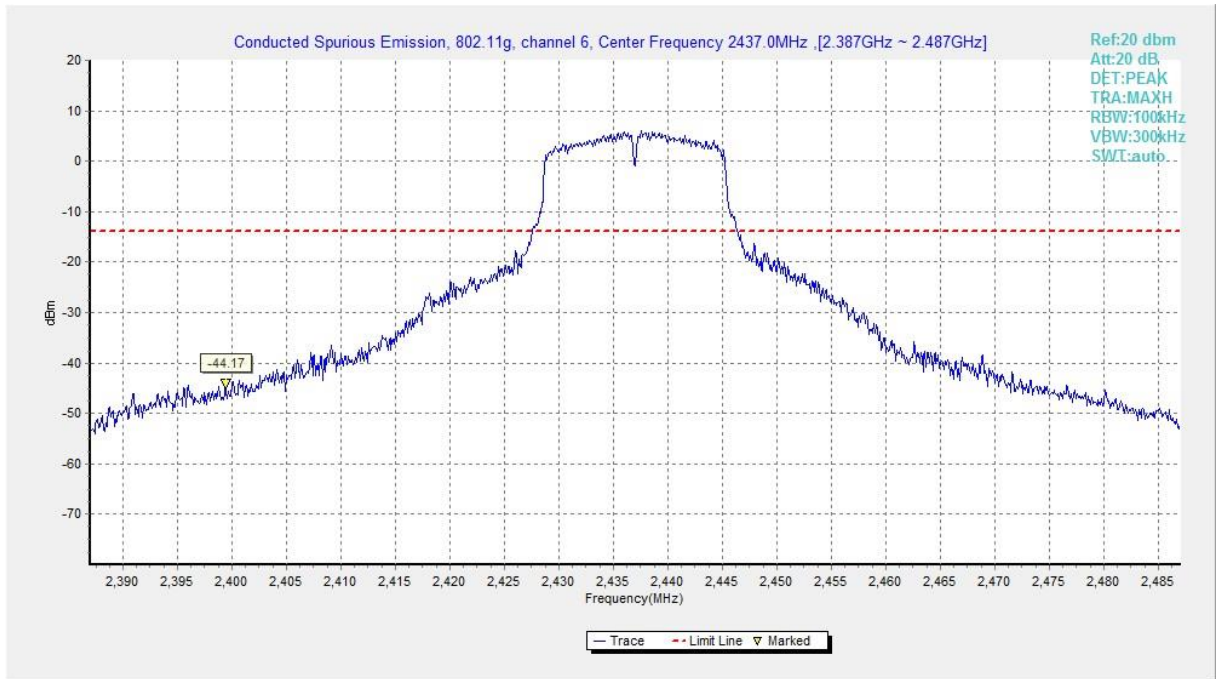


Fig.A.6.1.33 Transmitter Spurious Emission - Conducted (802.11g, Ch6, Center Frequency)

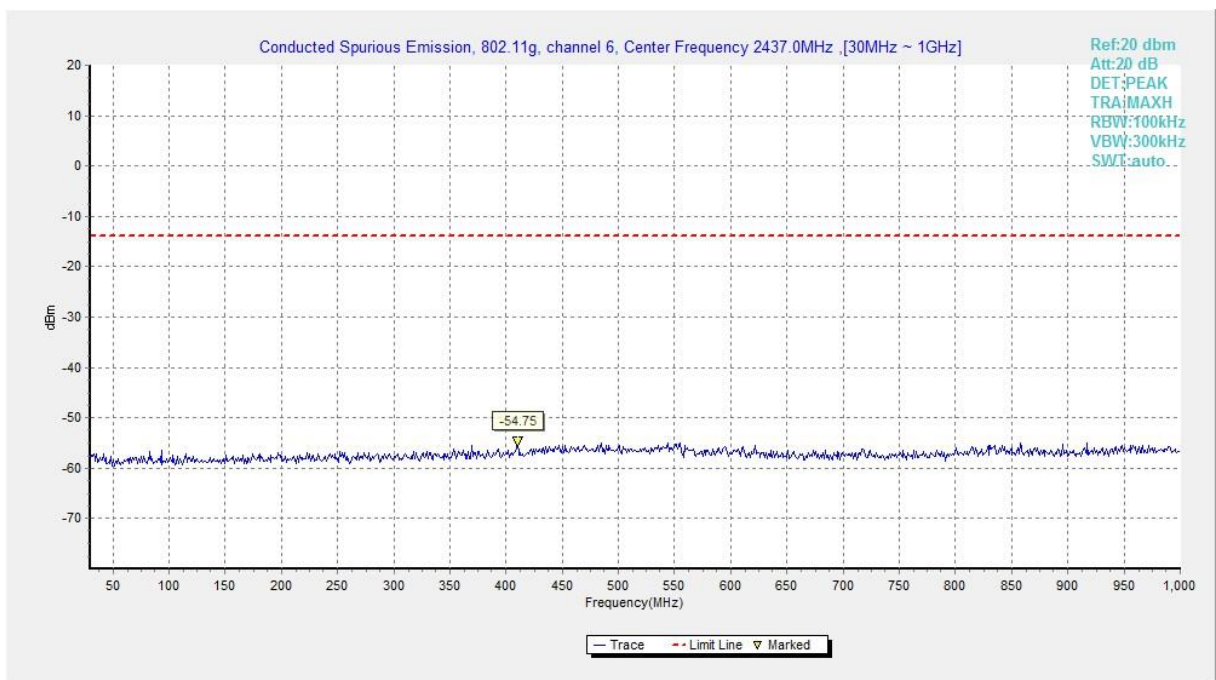


Fig.A.6.1.34 Transmitter Spurious Emission - Conducted (802.11g, Ch6, 30 MHz-1 GHz)

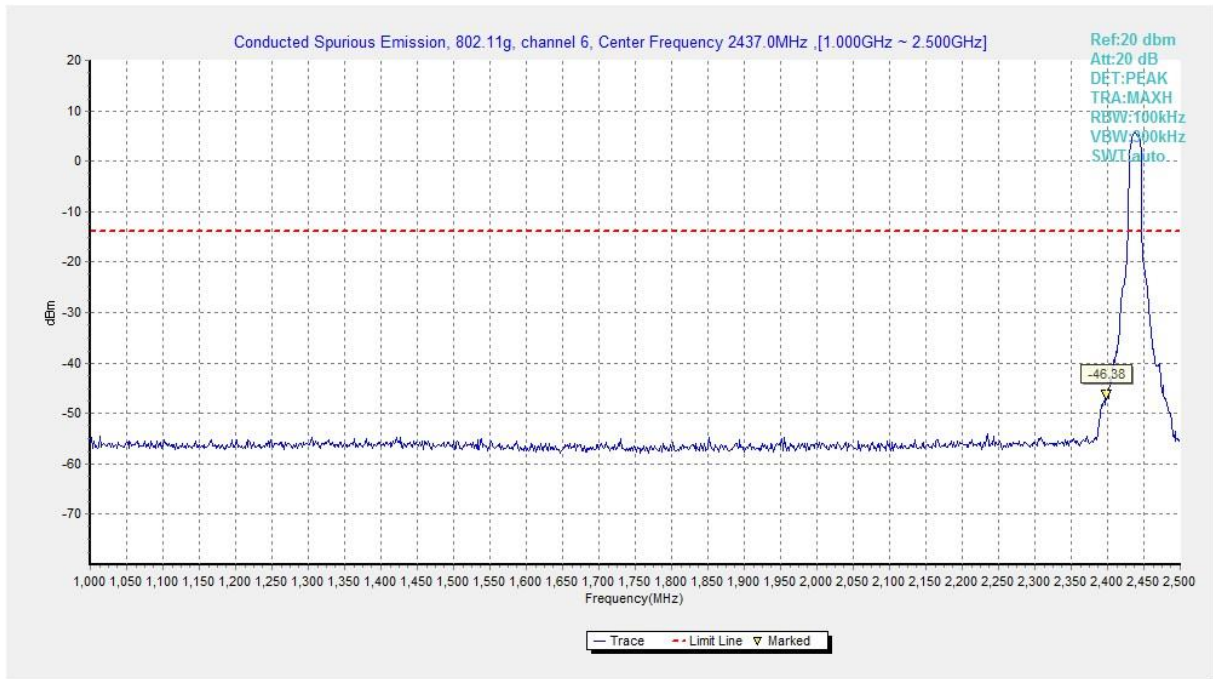


Fig.A.6.1.35 Transmitter Spurious Emission - Conducted (802.11g, Ch6, 1 GHz-2.5 GHz)

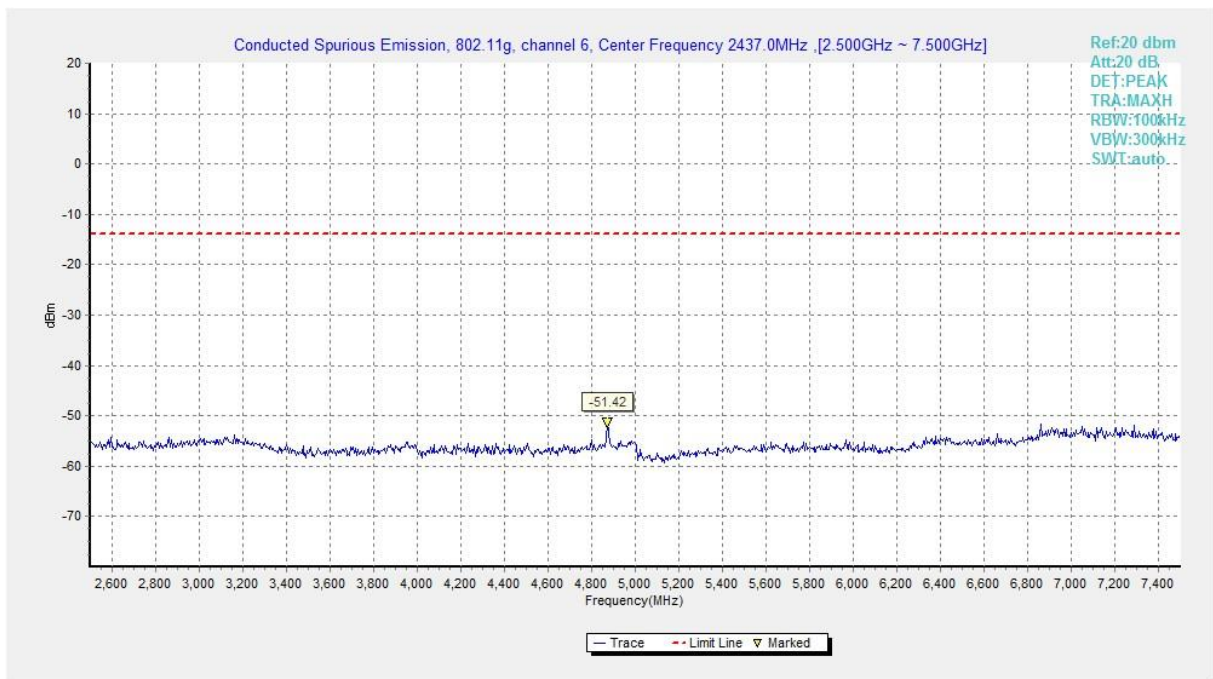


Fig.A.6.1.36 Transmitter Spurious Emission - Conducted (802.11g, Ch6, 2.5 GHz-7.5 GHz)

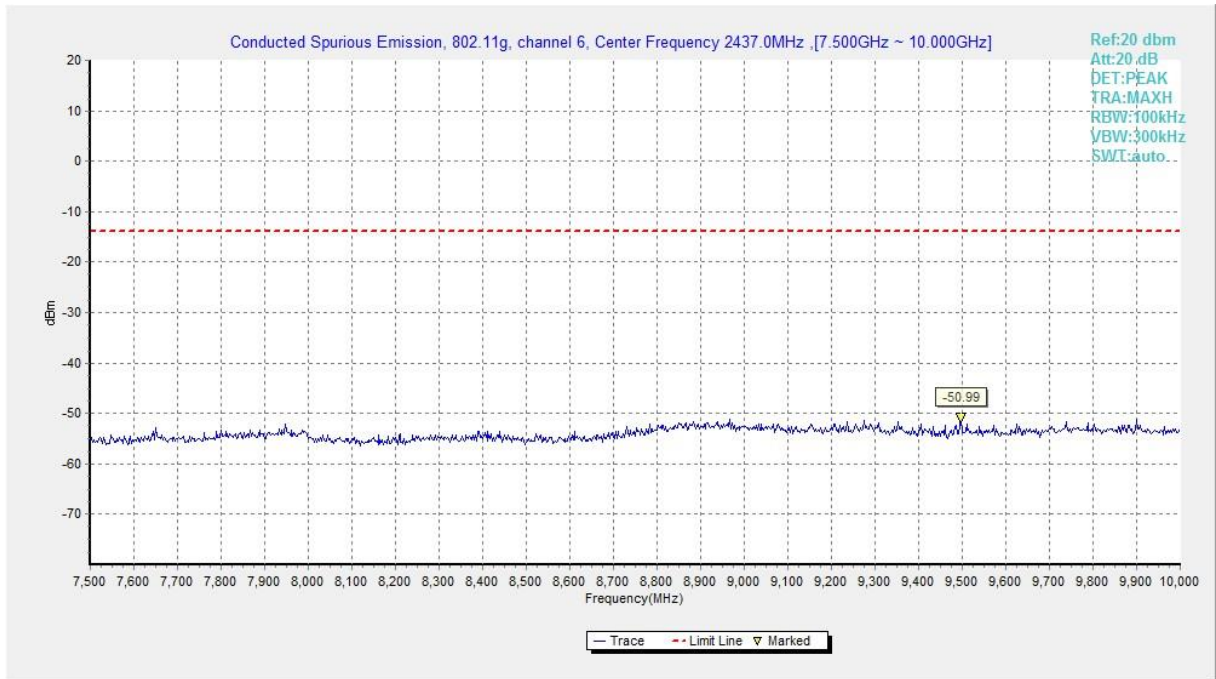


Fig.A.6.1.37 Transmitter Spurious Emission - Conducted (802.11g, Ch6, 7.5 GHz-10 GHz)

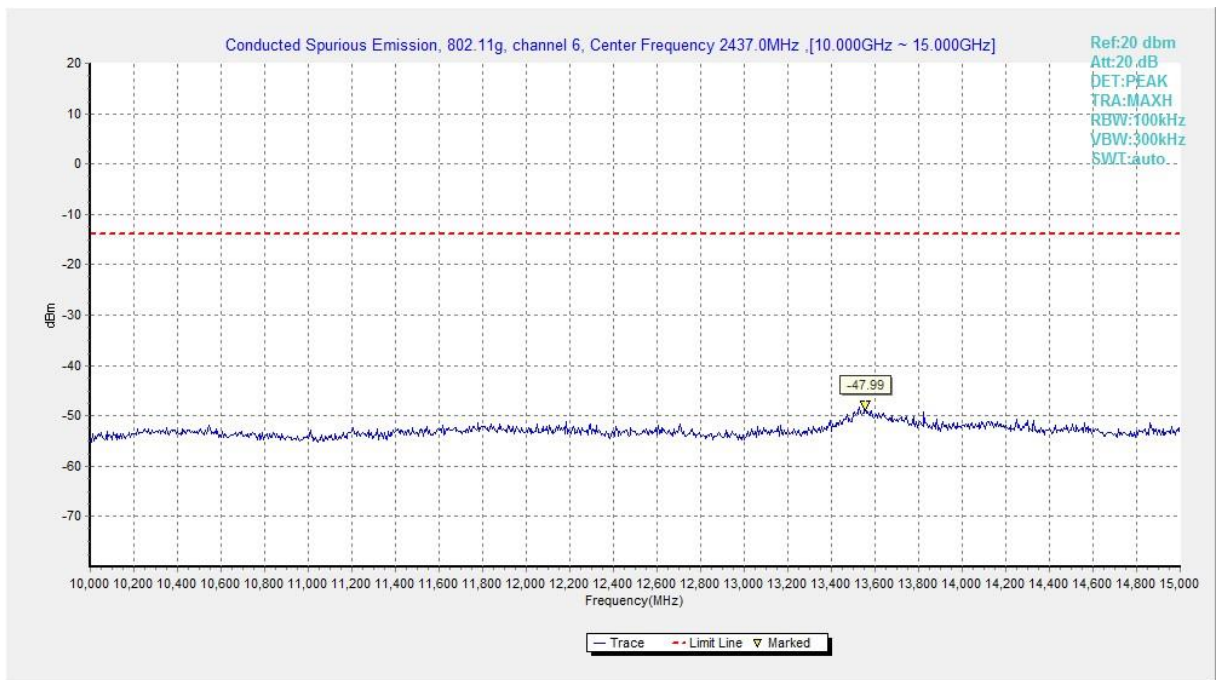


Fig.A.6.1.38 Transmitter Spurious Emission - Conducted (802.11g, Ch6, 10 GHz-15 GHz)

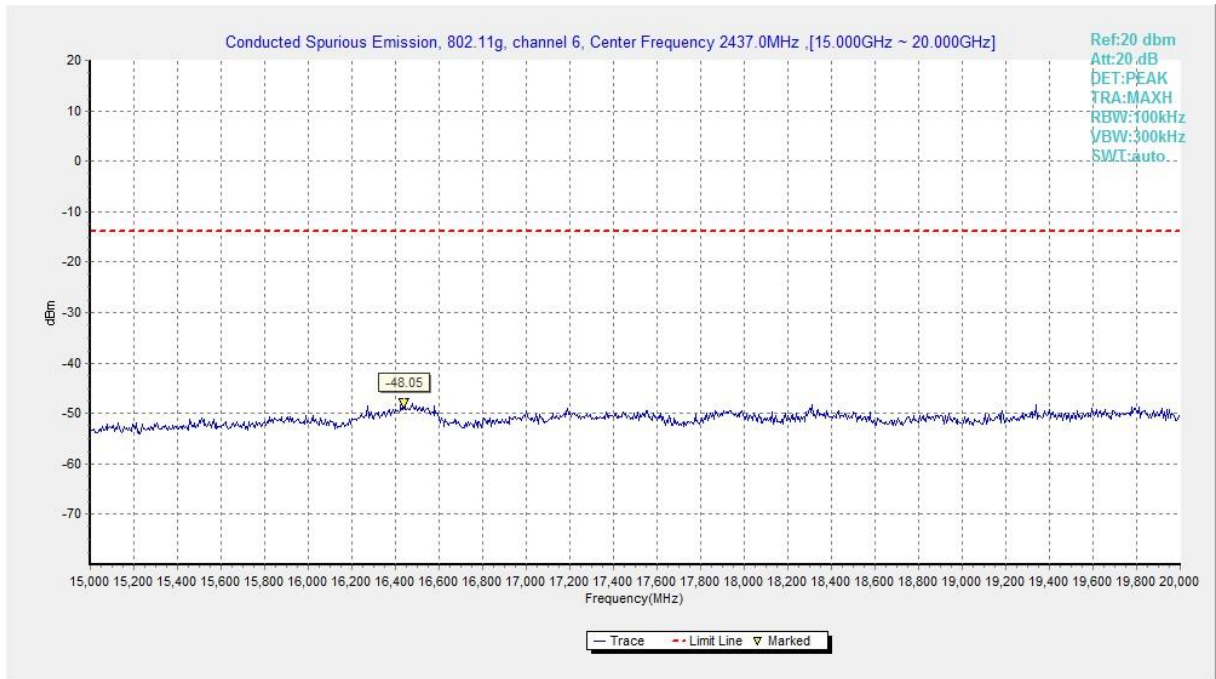


Fig.A.6.1.39 Transmitter Spurious Emission - Conducted (802.11g, Ch6, 15 GHz-20 GHz)

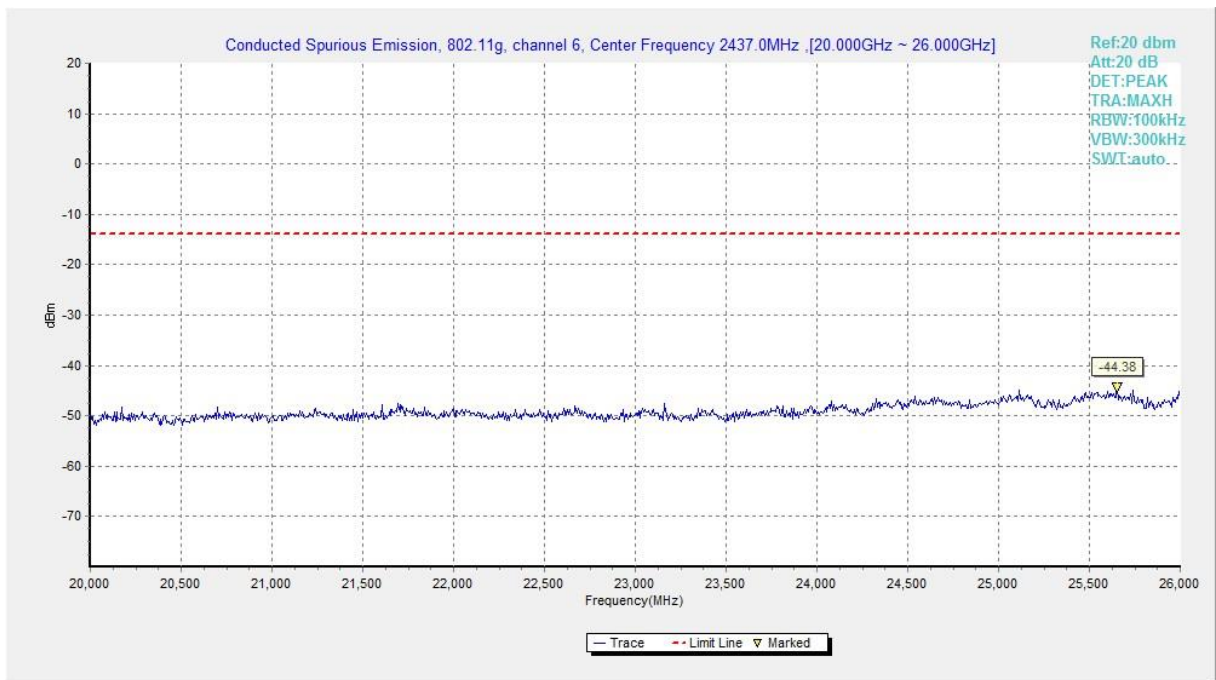


Fig.A.6.1.40 Transmitter Spurious Emission - Conducted (802.11g, Ch6, 20 GHz-26 GHz)

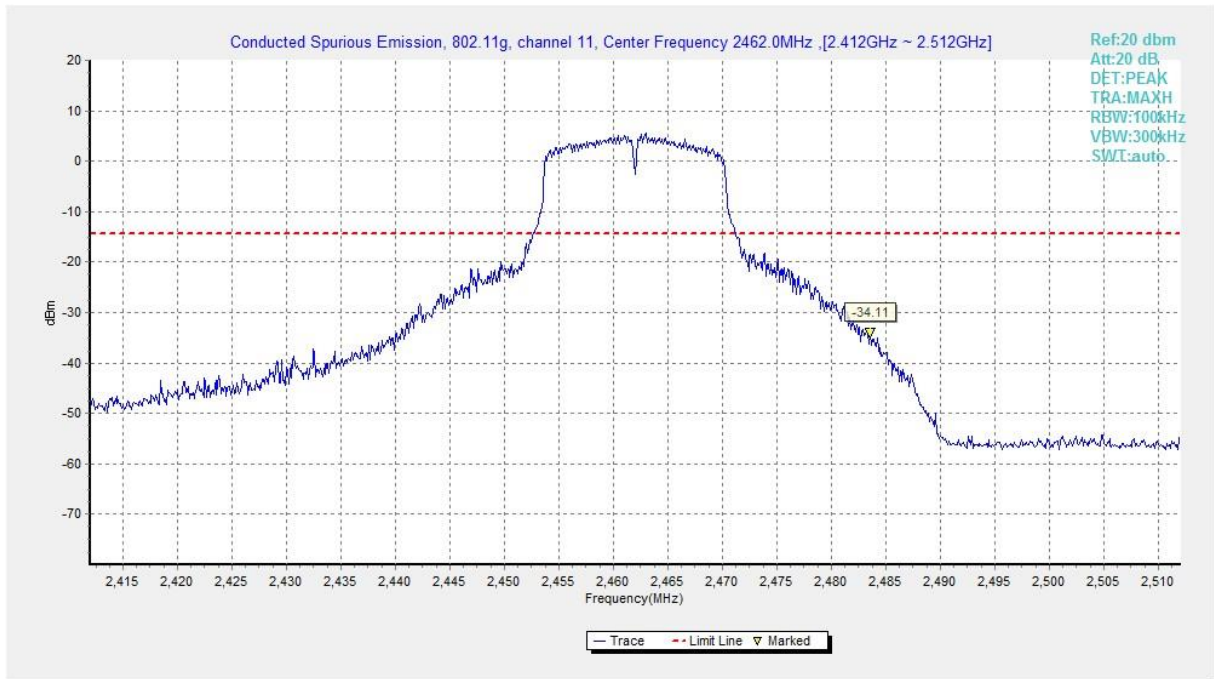


Fig.A.6.1.41 Transmitter Spurious Emission - Conducted (802.11g, Ch11, Center Frequency)

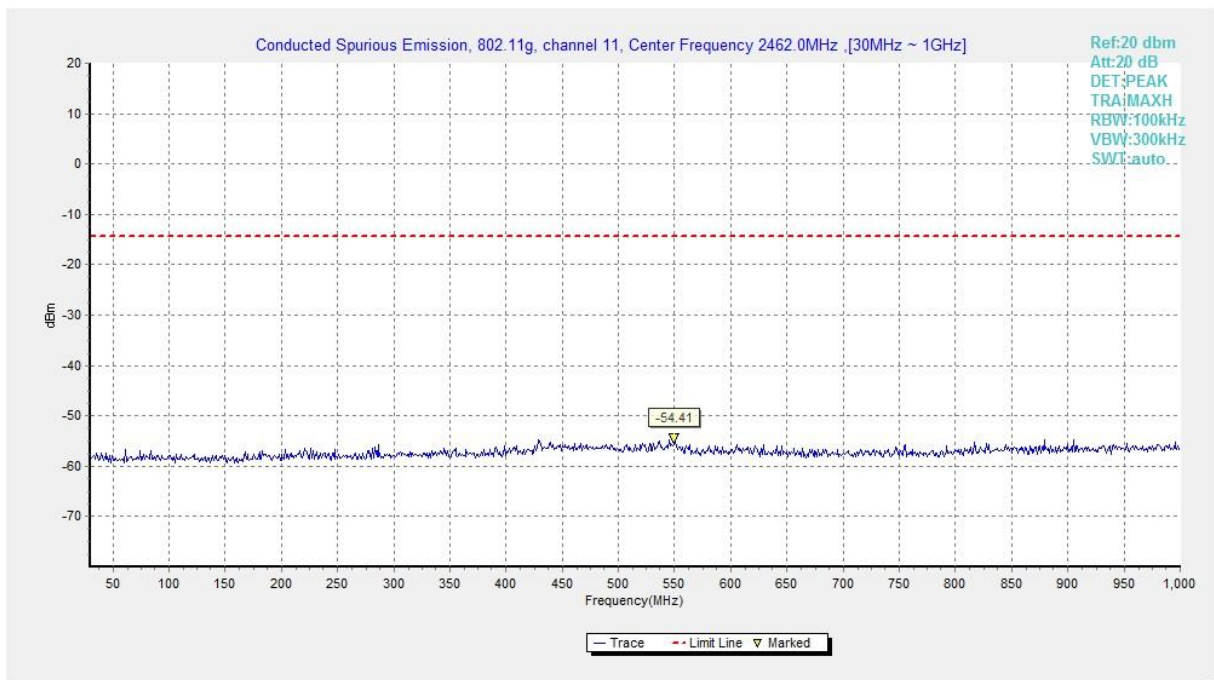


Fig.A.6.1.42 Transmitter Spurious Emission - Conducted (802.11g, Ch11, 30 MHz-1 GHz)

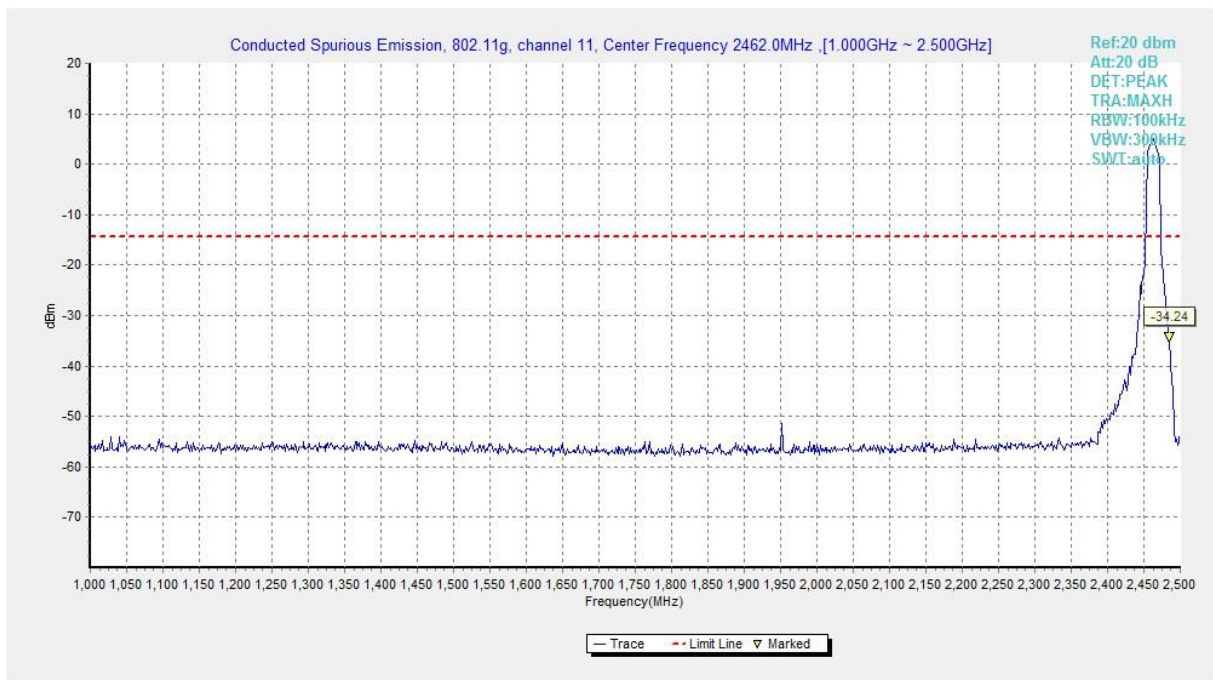


Fig.A.6.1.43 Transmitter Spurious Emission - Conducted (802.11g, Ch11, 1 GHz-2.5 GHz)

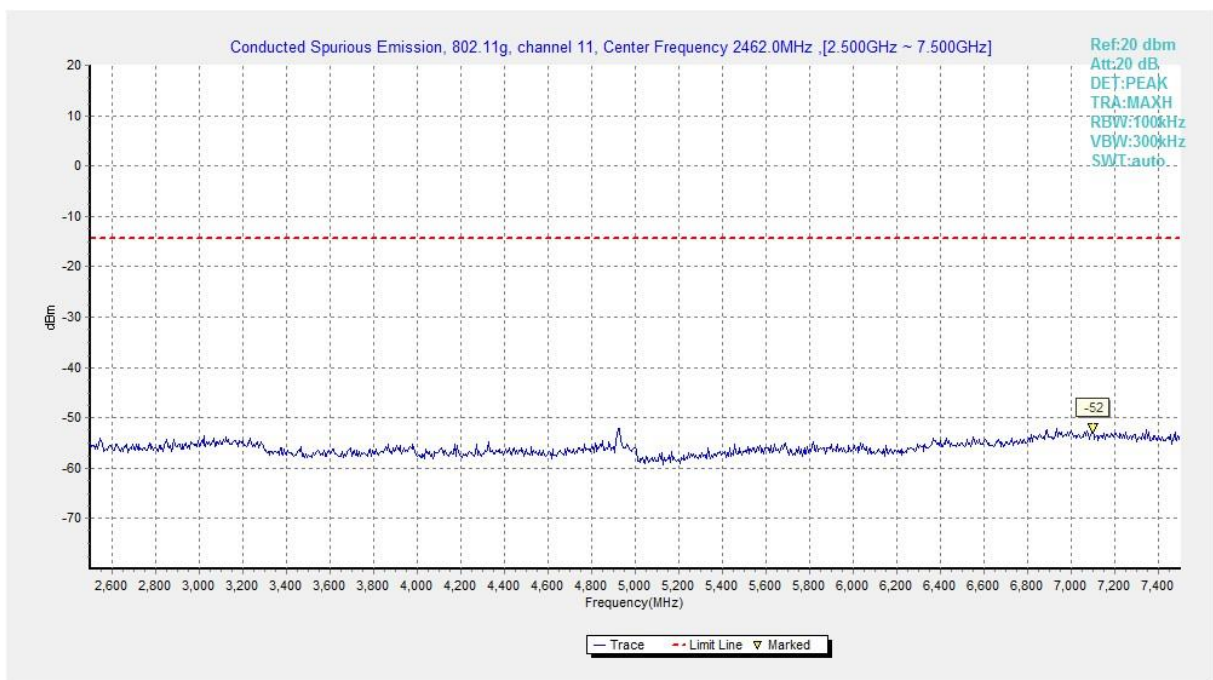


Fig.A.6.1.44 Transmitter Spurious Emission - Conducted (802.11g, Ch11, 2.5 GHz-7.5 GHz)

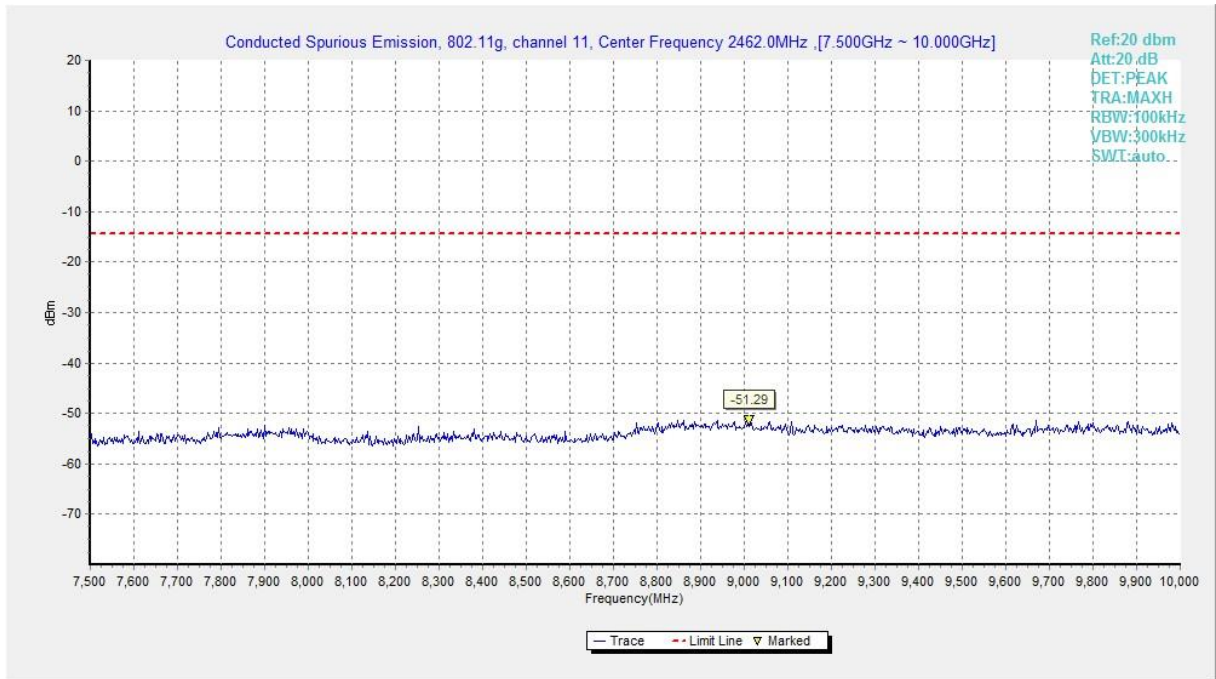


Fig.A.6.1.45 Transmitter Spurious Emission - Conducted (802.11g, Ch11, 7.5 GHz-10 GHz)

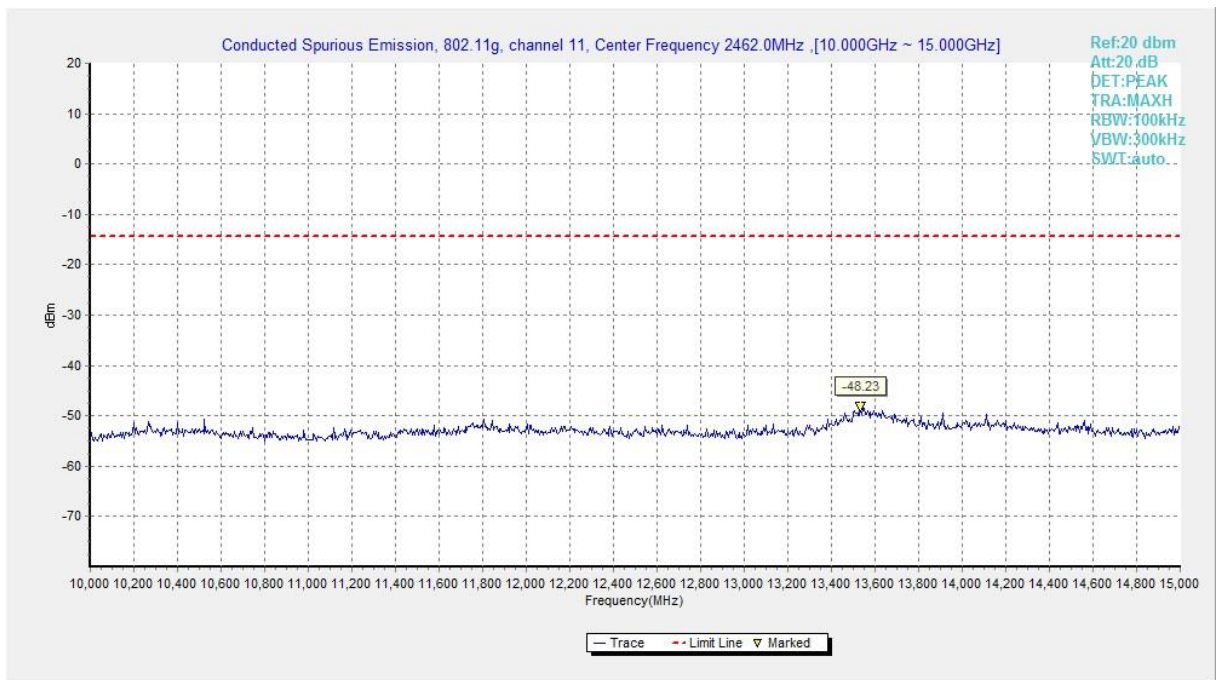


Fig.A.6.1.46 Transmitter Spurious Emission - Conducted (802.11g, Ch11, 10 GHz-15 GHz)

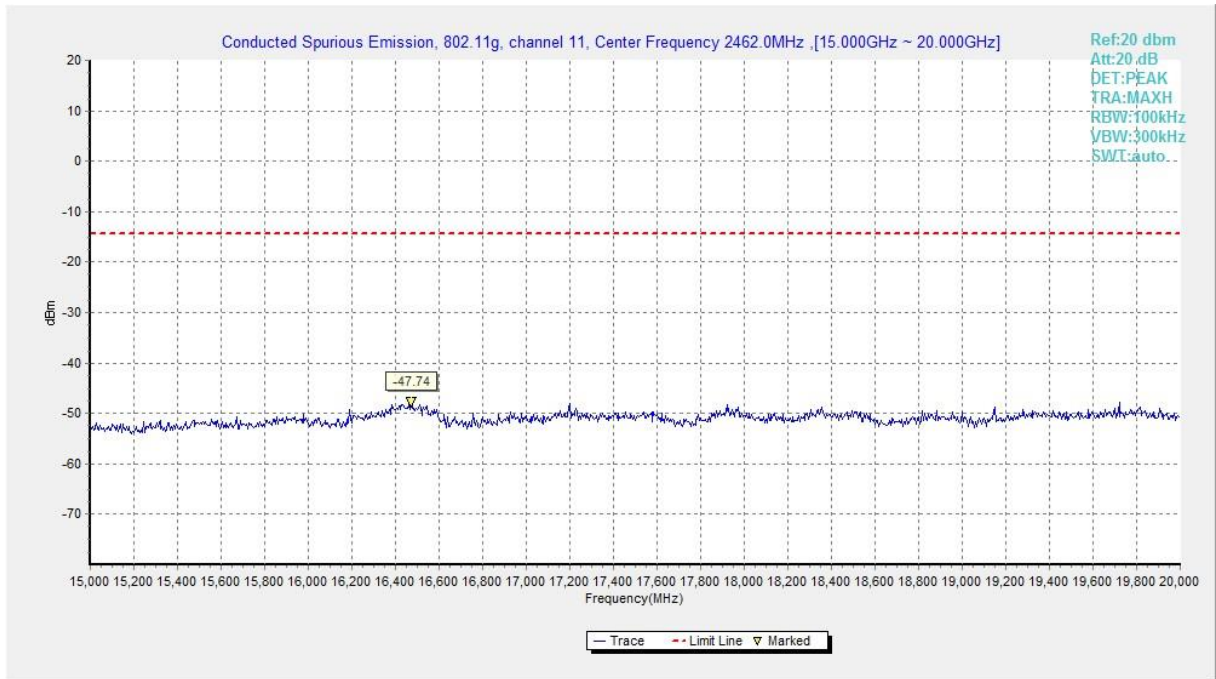


Fig.A.6.1.47 Transmitter Spurious Emission - Conducted (802.11g, Ch11, 15 GHz-20 GHz)

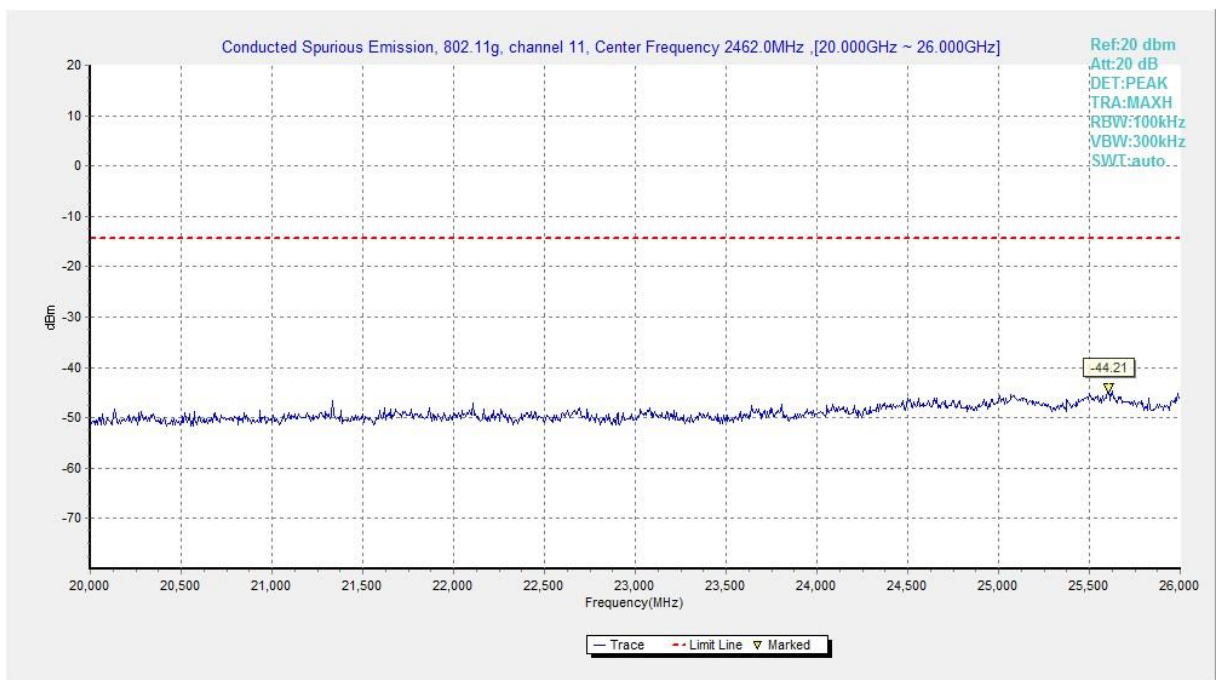


Fig.A.6.1.48 Transmitter Spurious Emission - Conducted (802.11g, Ch11, 20 GHz-26 GHz)

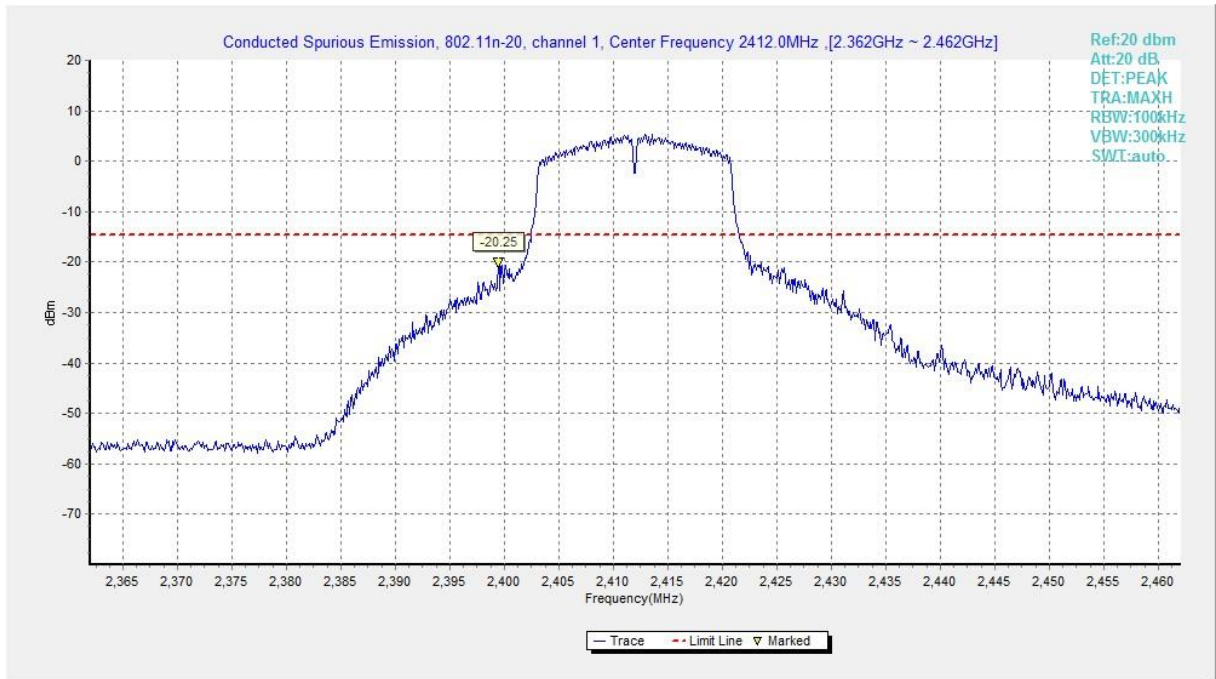


Fig.A.6.1.49 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, Center Frequency)

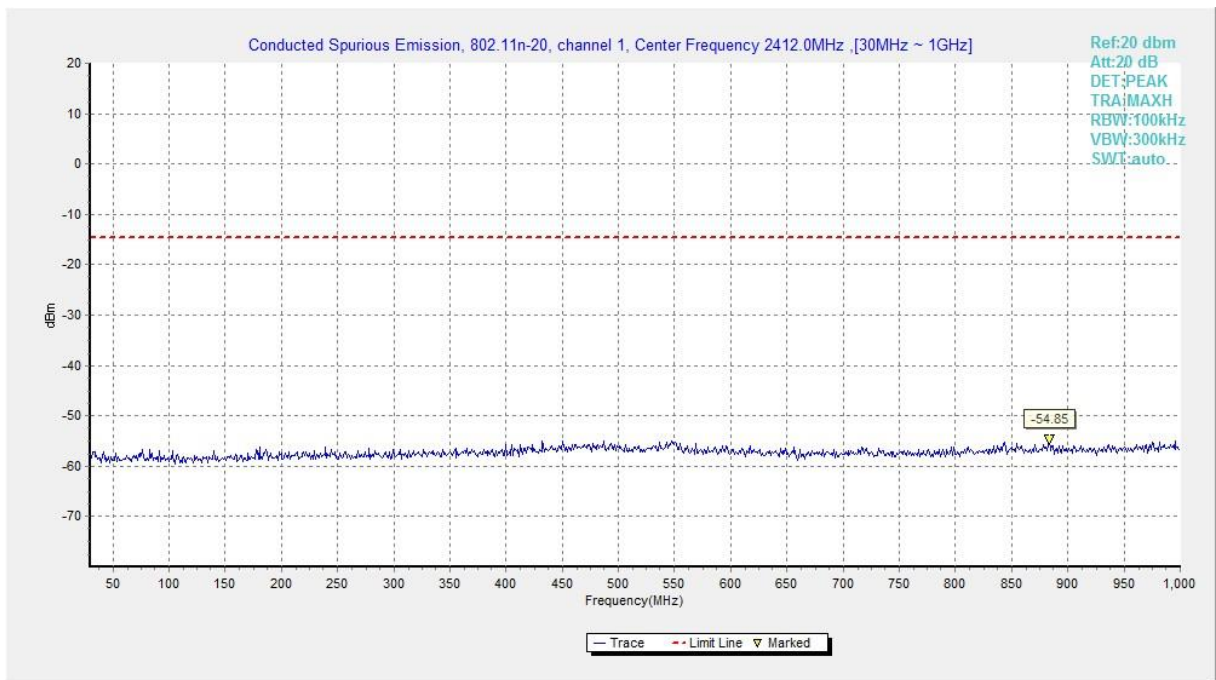


Fig.A.6.1.50 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 30 MHz-1 GHz)

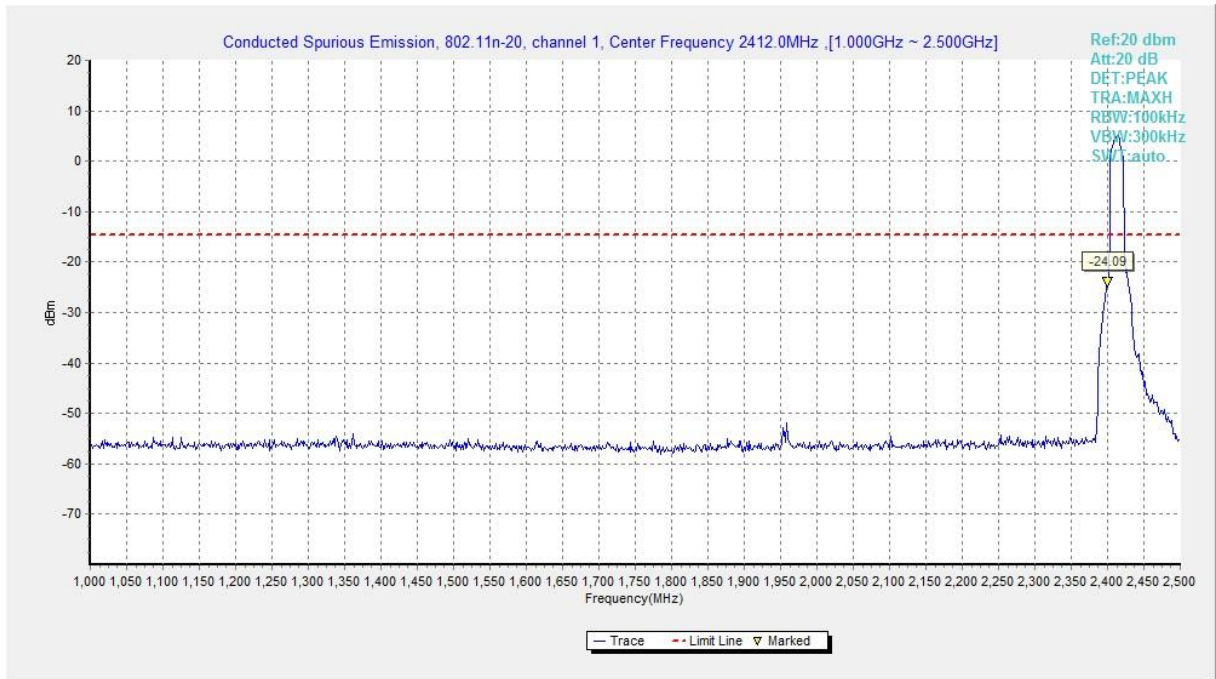


Fig.A.6.1.51 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 1 GHz-2.5 GHz)

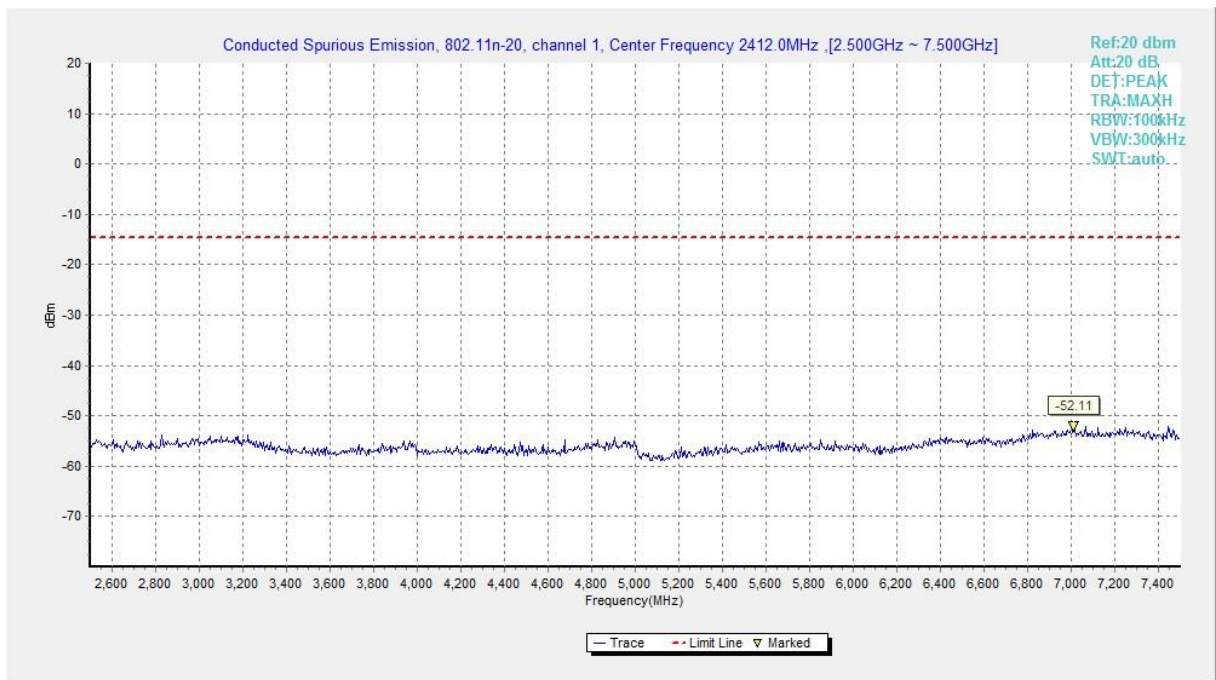


Fig.A.6.1.52 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 2.5 GHz-7.5 GHz)

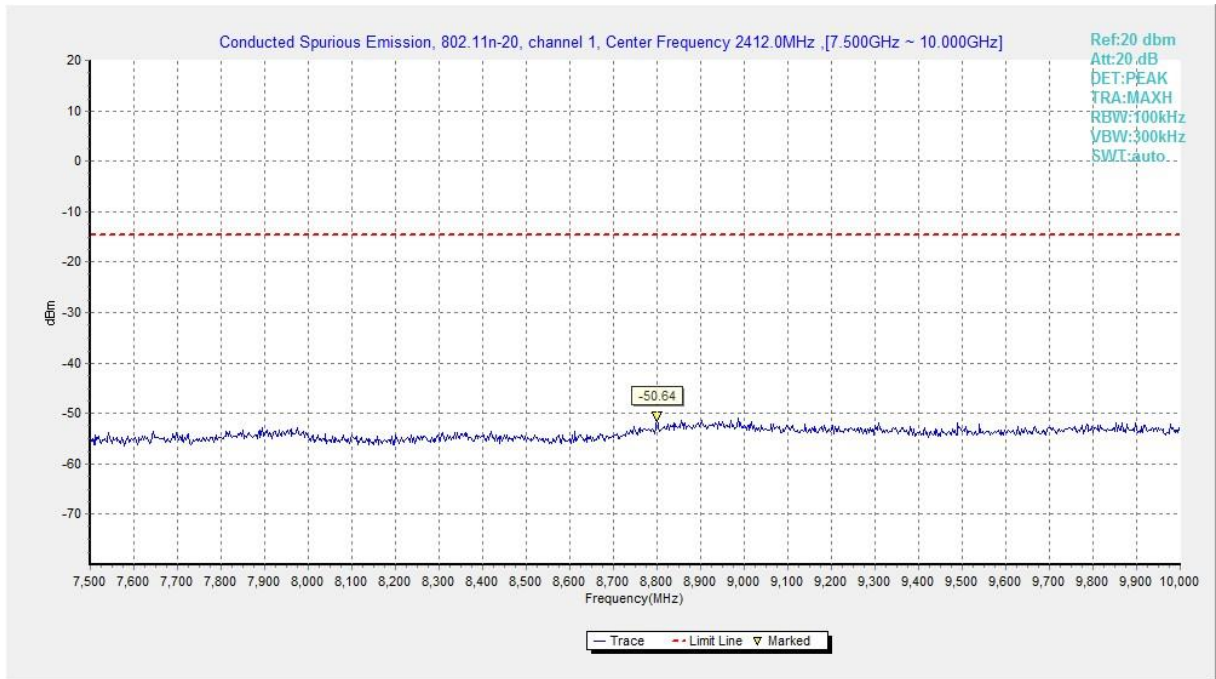


Fig.A.6.1.53 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 7.5 GHz-10 GHz)

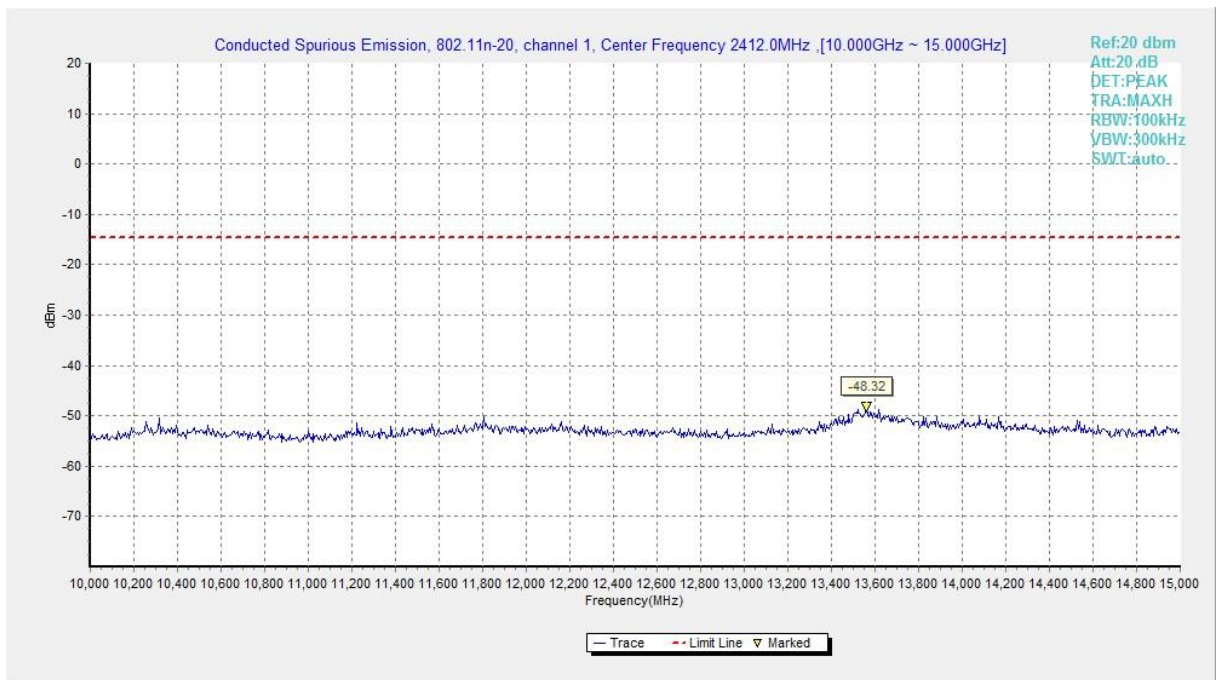


Fig.A.6.1.54 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 10 GHz-15 GHz)

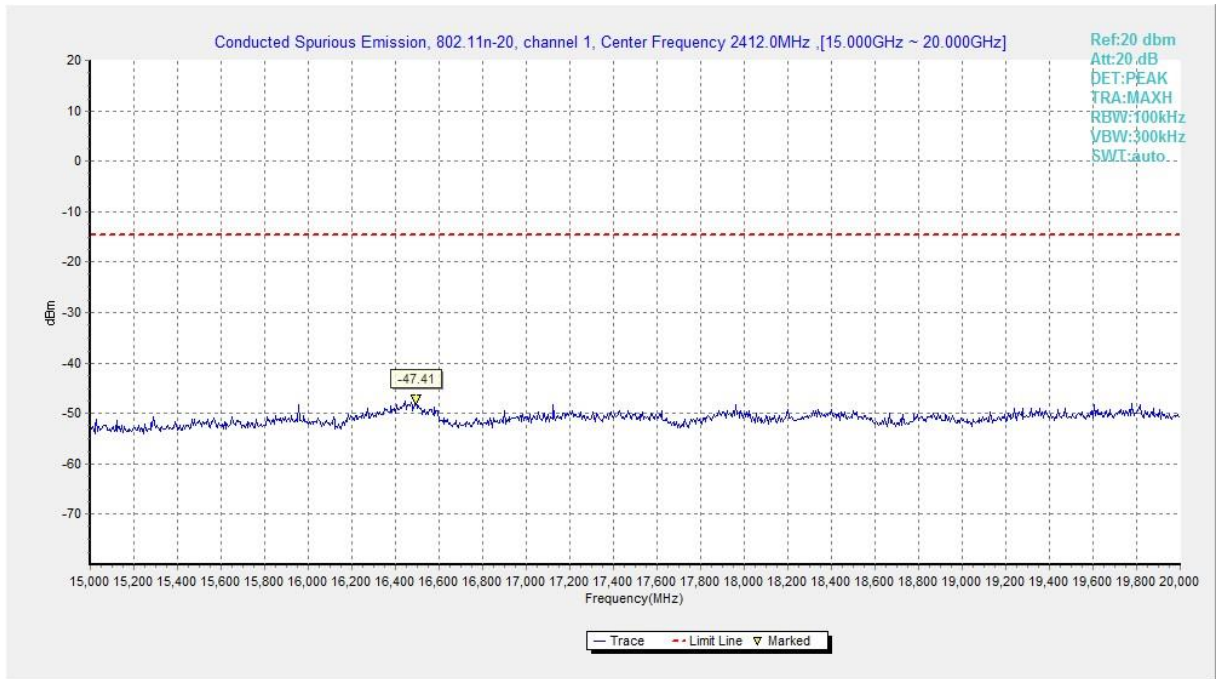


Fig.A.6.1.55 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 15 GHz-20 GHz)

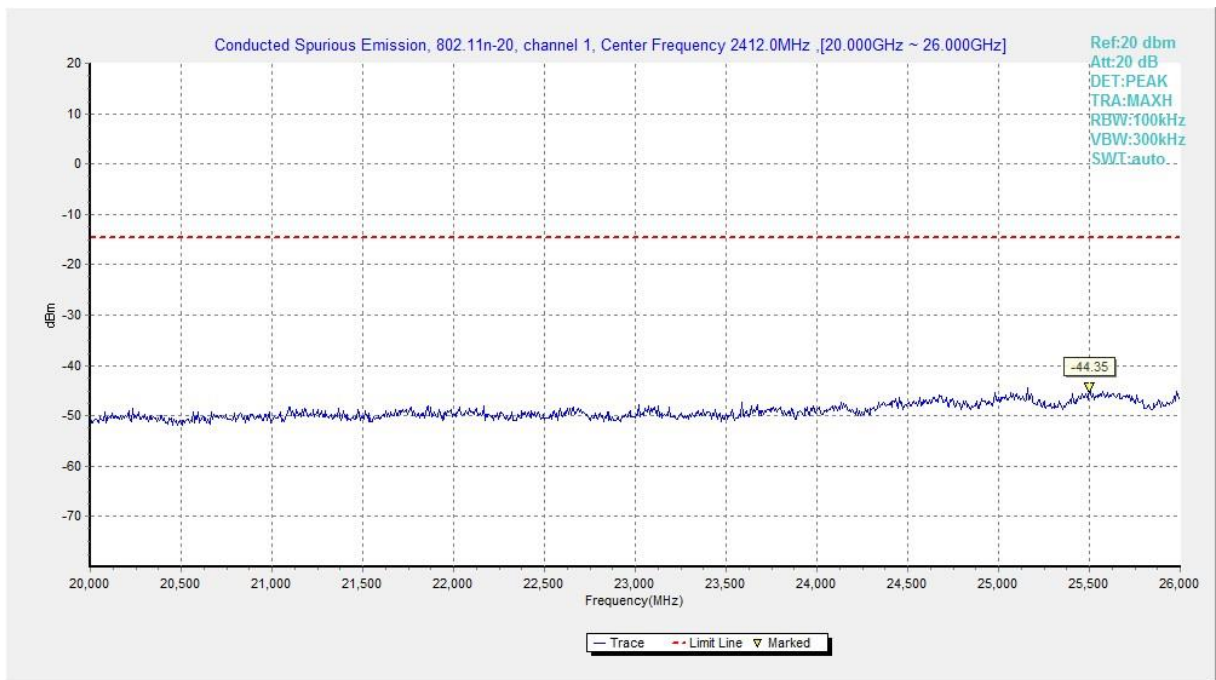


Fig.A.6.1.56 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 20 GHz-26 GHz)

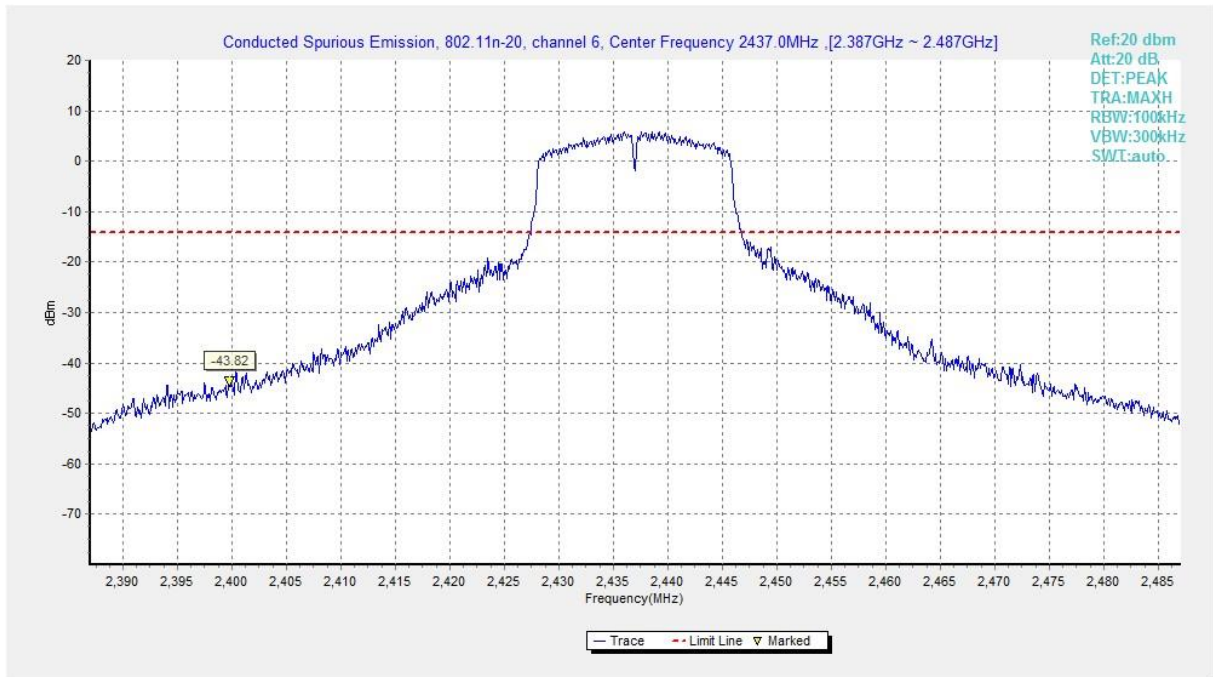


Fig.A.6.1.57 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, Center Frequency)

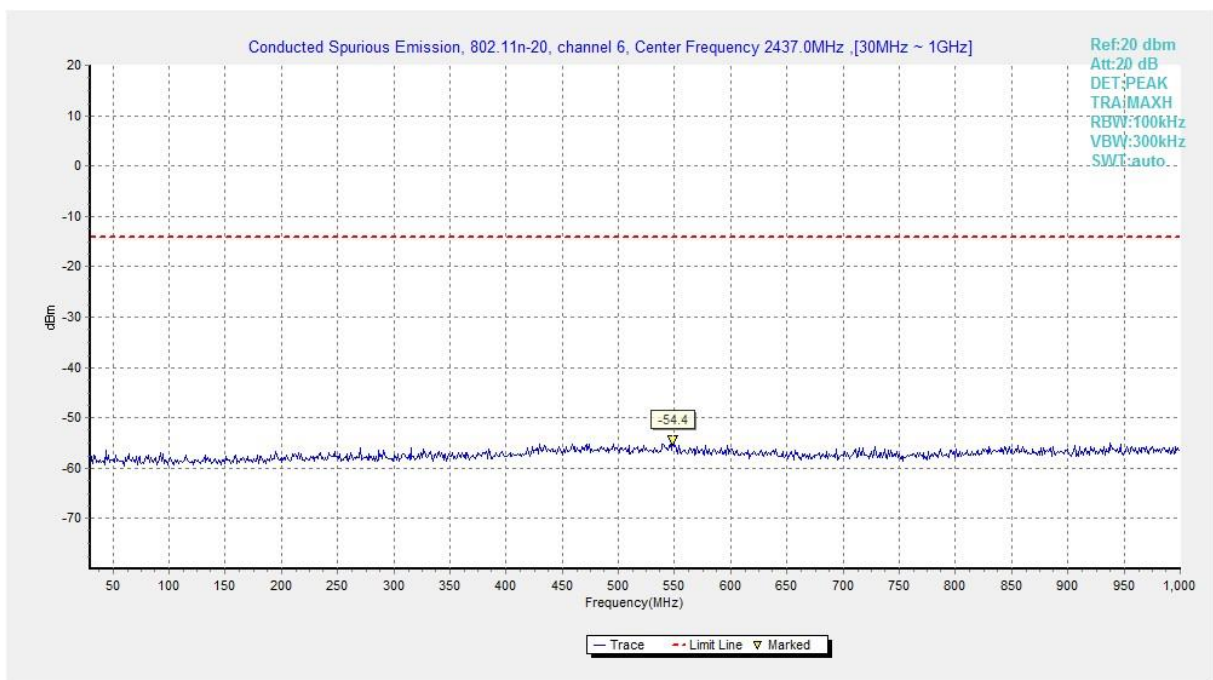


Fig.A.6.1.58 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 30 MHz-1 GHz)

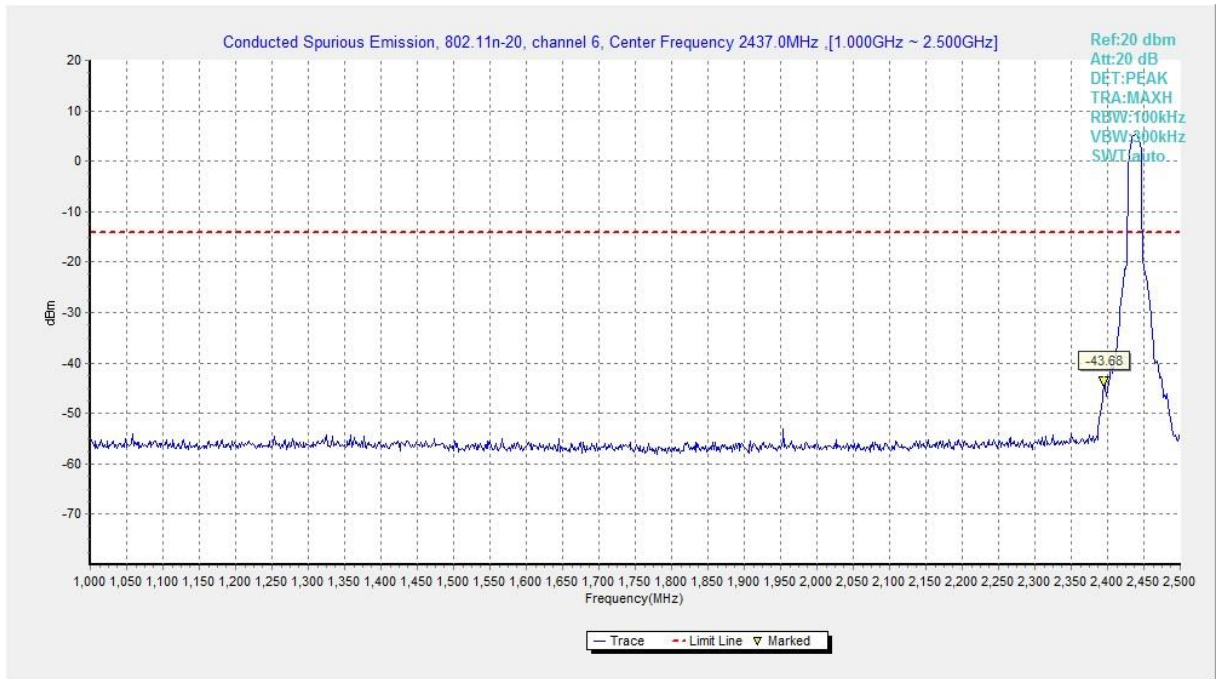


Fig.A.6.1.59 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 1 GHz-2.5 GHz)

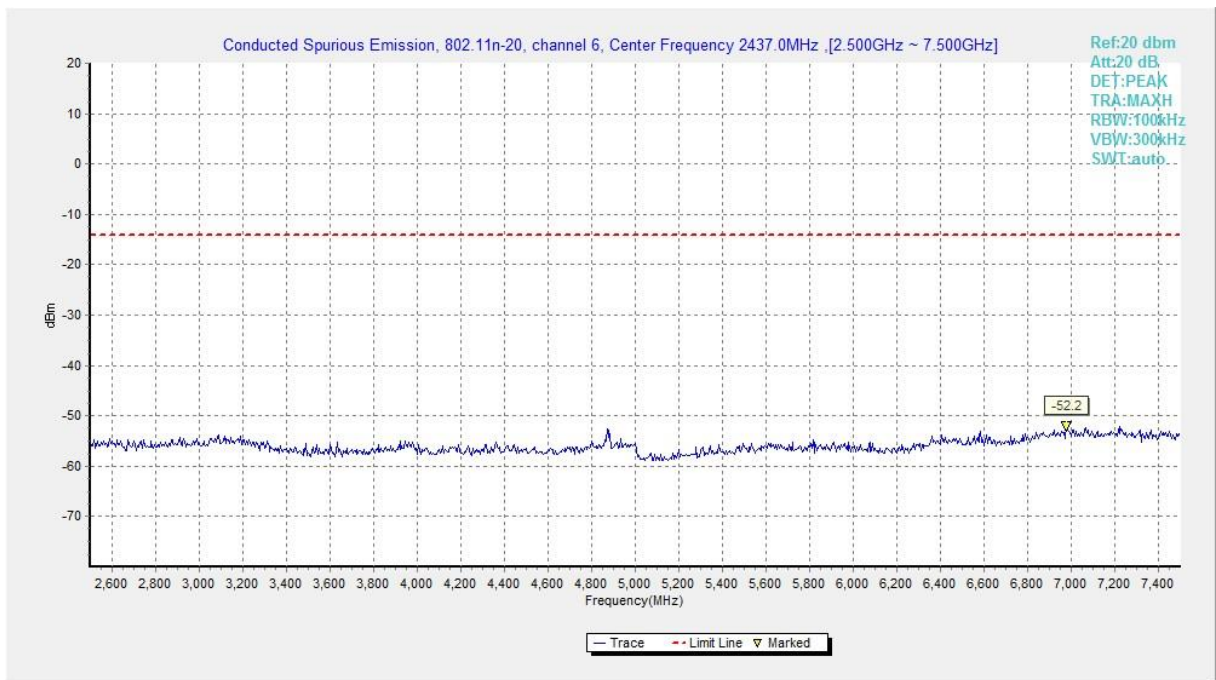


Fig.A.6.1.60 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 2.5 GHz-7.5 GHz)

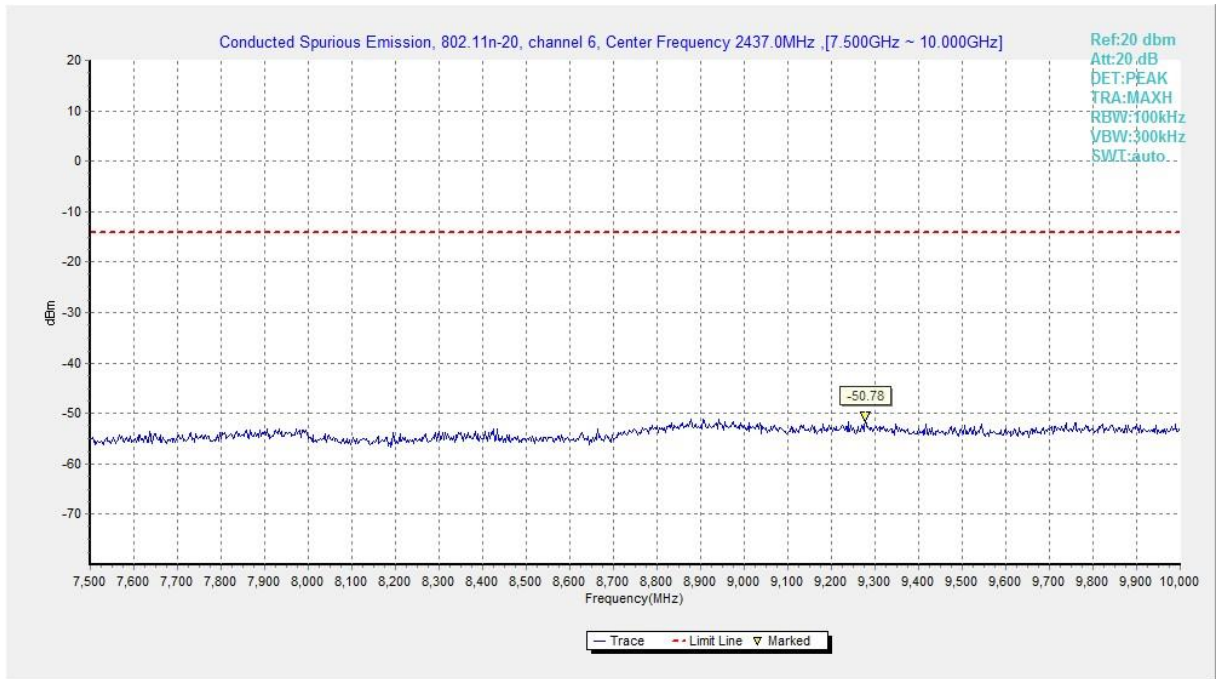


Fig.A.6.1.61 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 7.5 GHz-10 GHz)

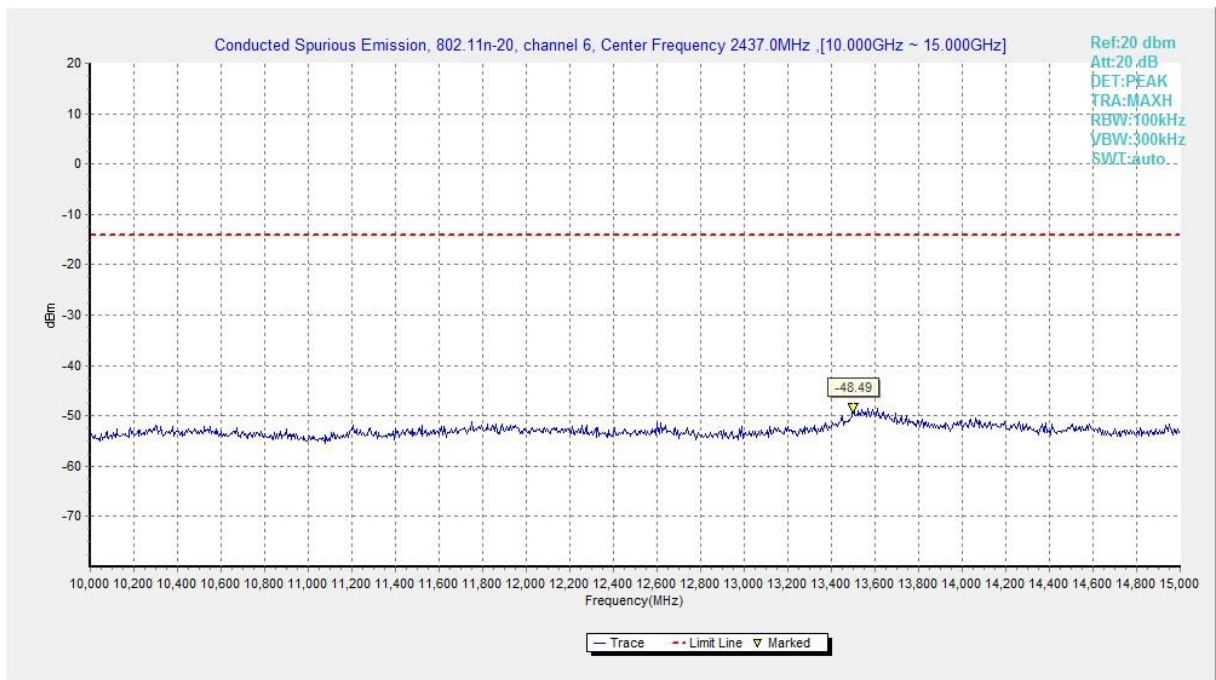


Fig.A.6.1.62 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 10 GHz-15 GHz)

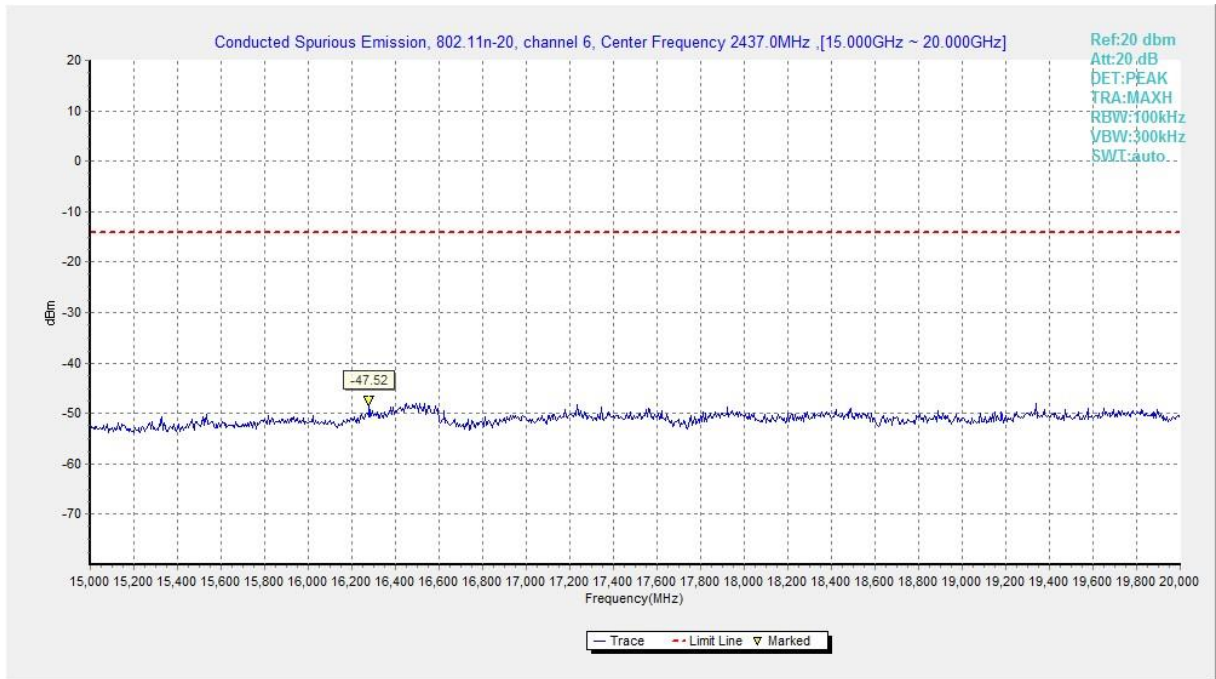


Fig.A.6.1.63 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 15 GHz-20 GHz)

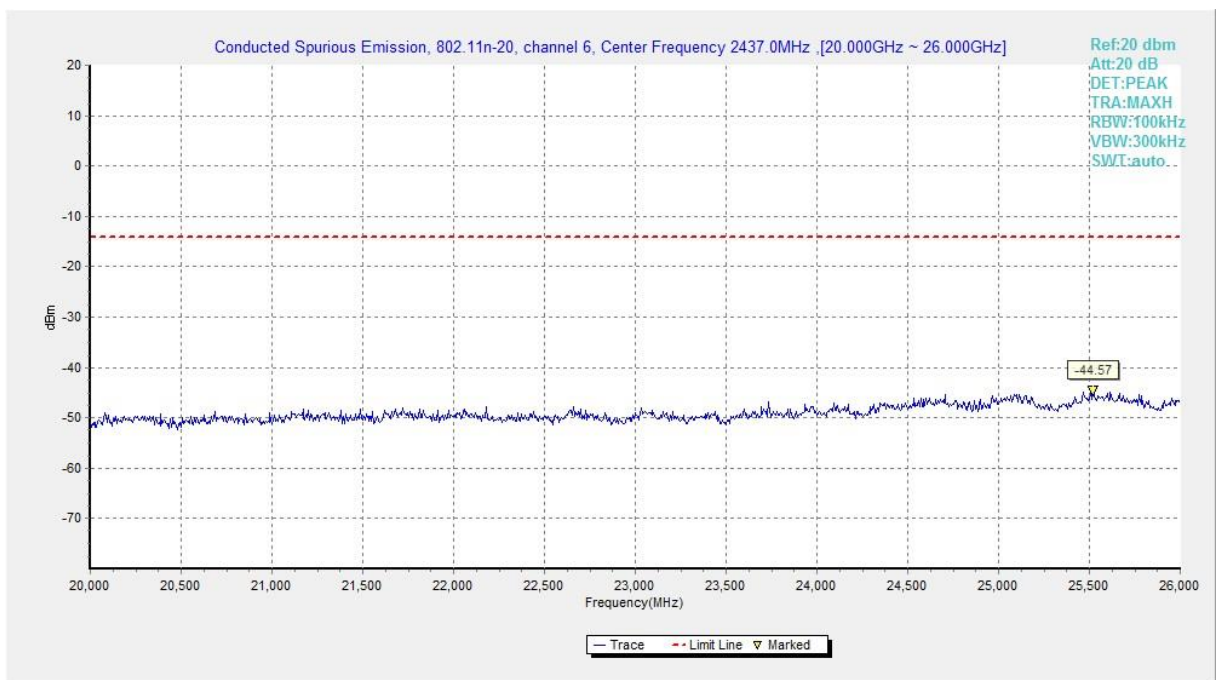


Fig.A.6.1.64 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 20 GHz-26 GHz)

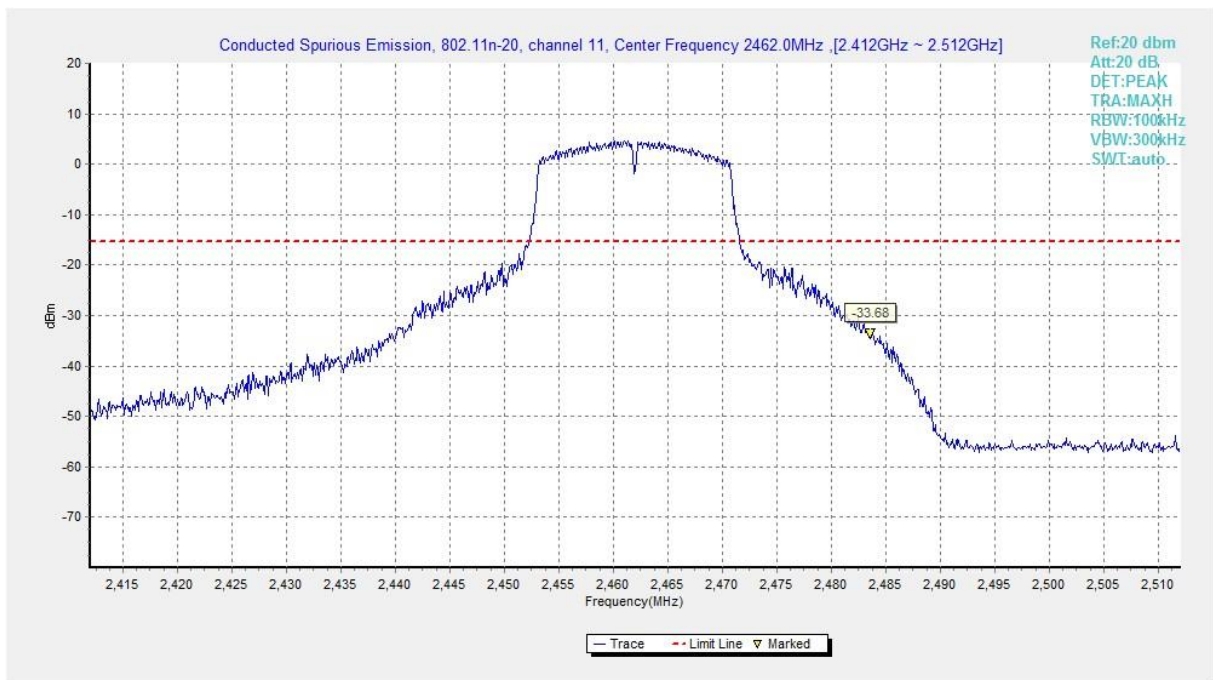


Fig.A.6.1.65 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, Center Frequency)

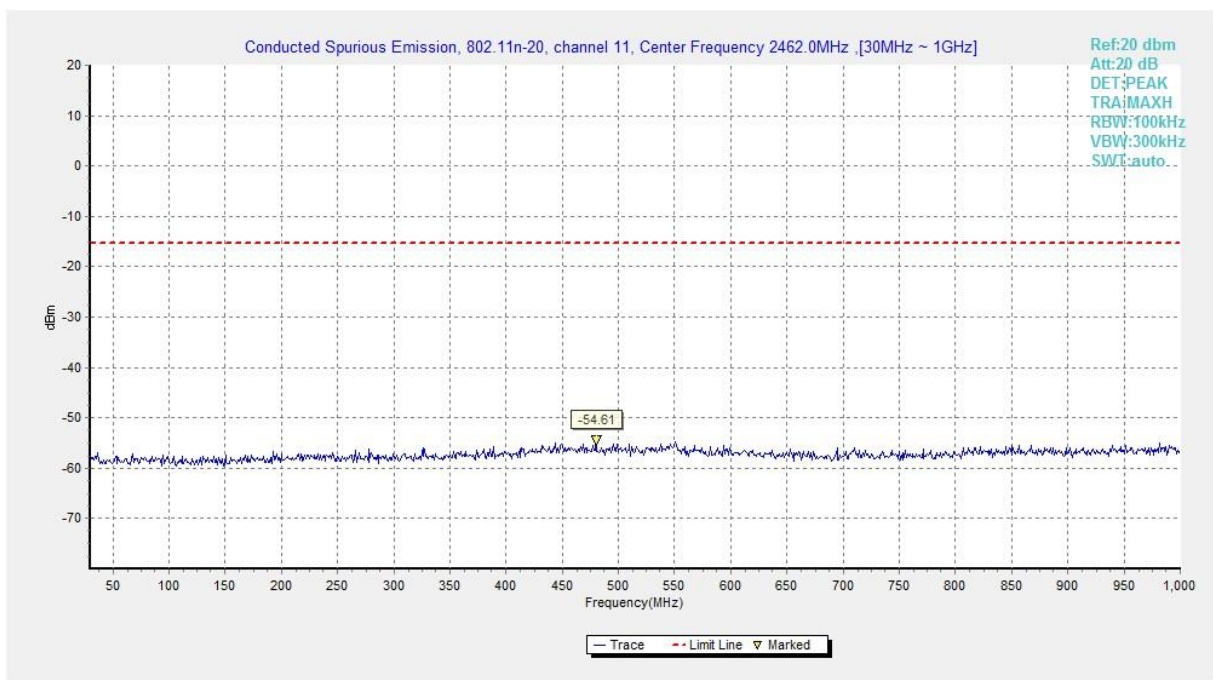


Fig.A.6.1.66 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 30 MHz-1 GHz)

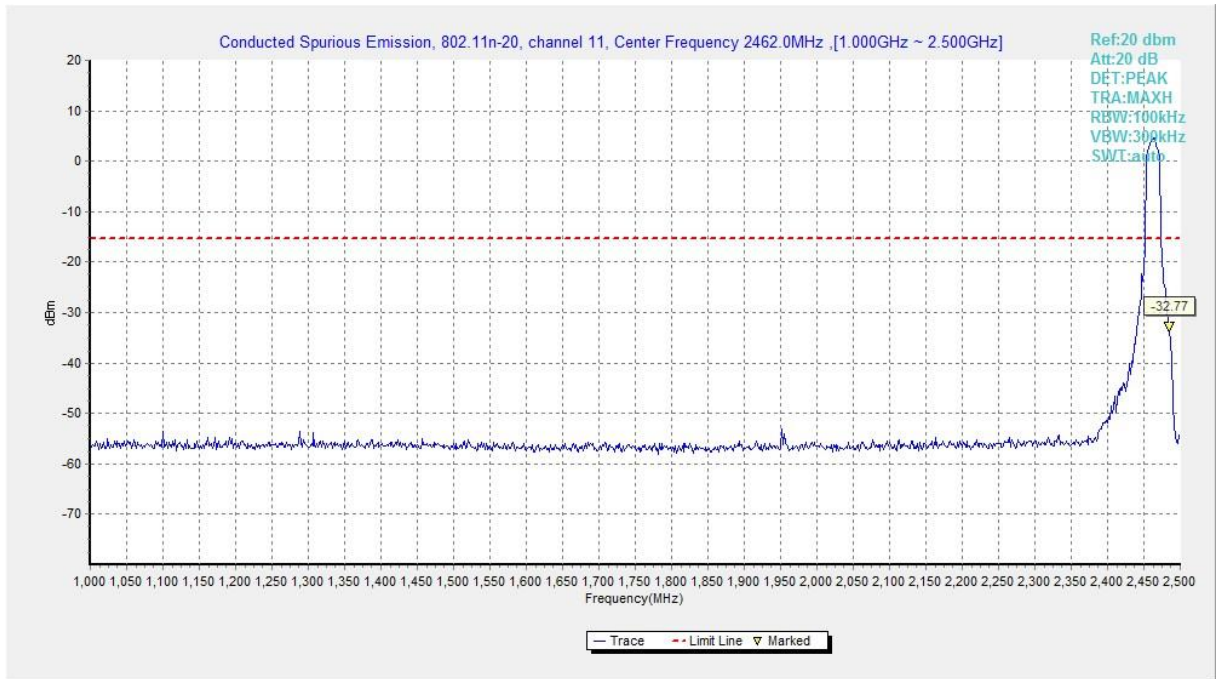


Fig.A.6.1.67 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 1 GHz-2.5 GHz)

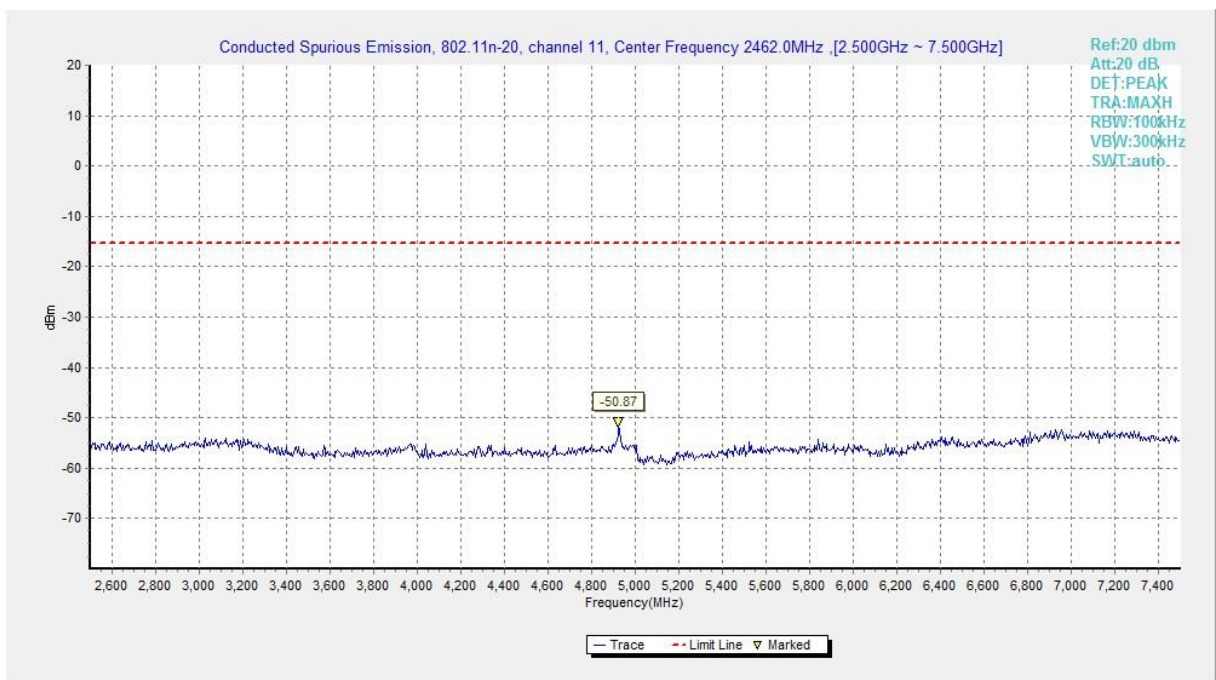


Fig.A.6.1.68 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 2.5 GHz-7.5 GHz)

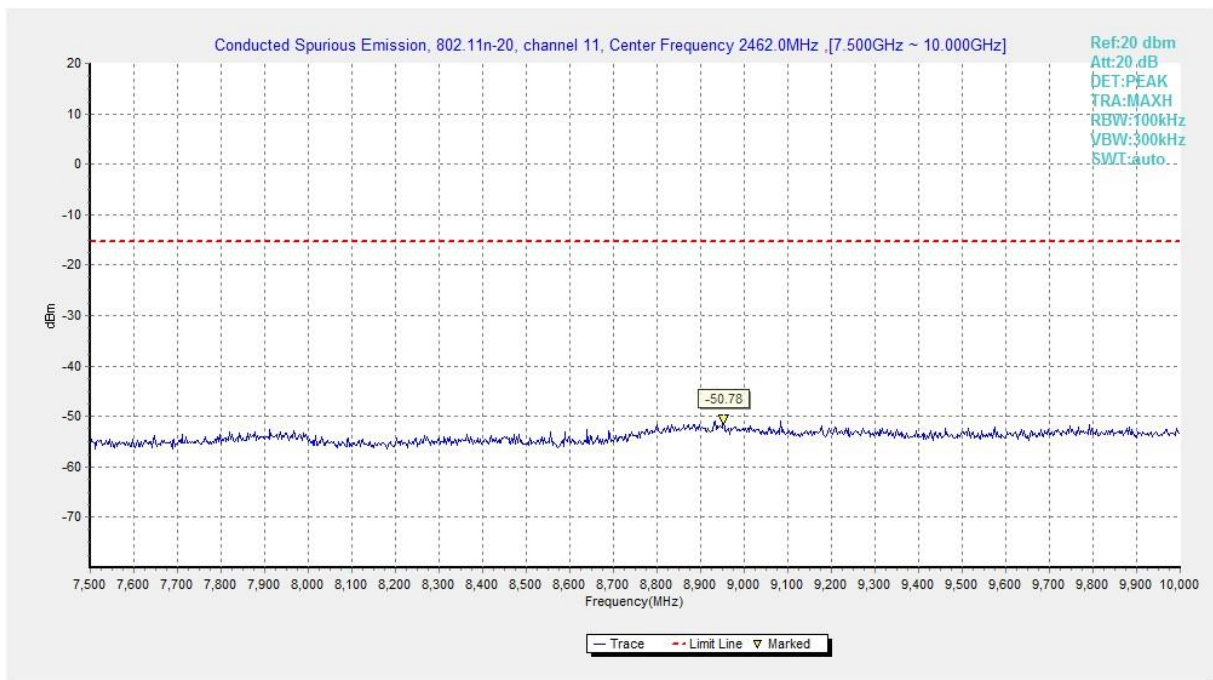


Fig.A.6.1.69 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 7.5 GHz-10 GHz)

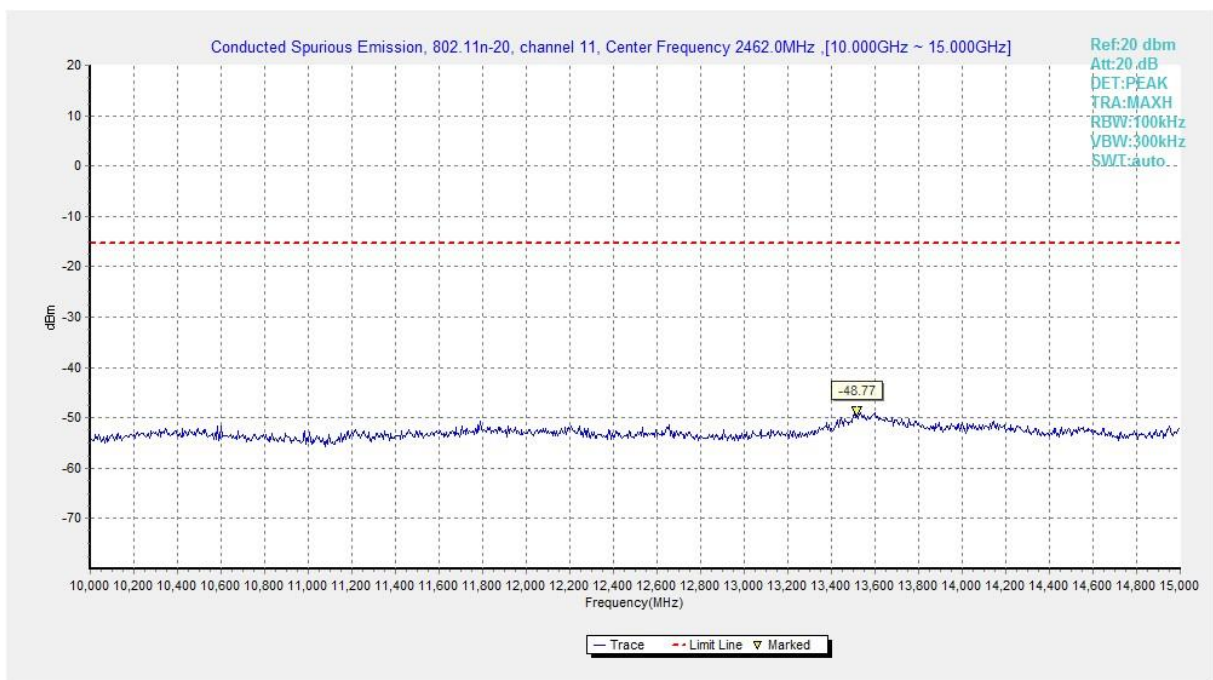


Fig.A.6.1.70 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 10 GHz-15 GHz)

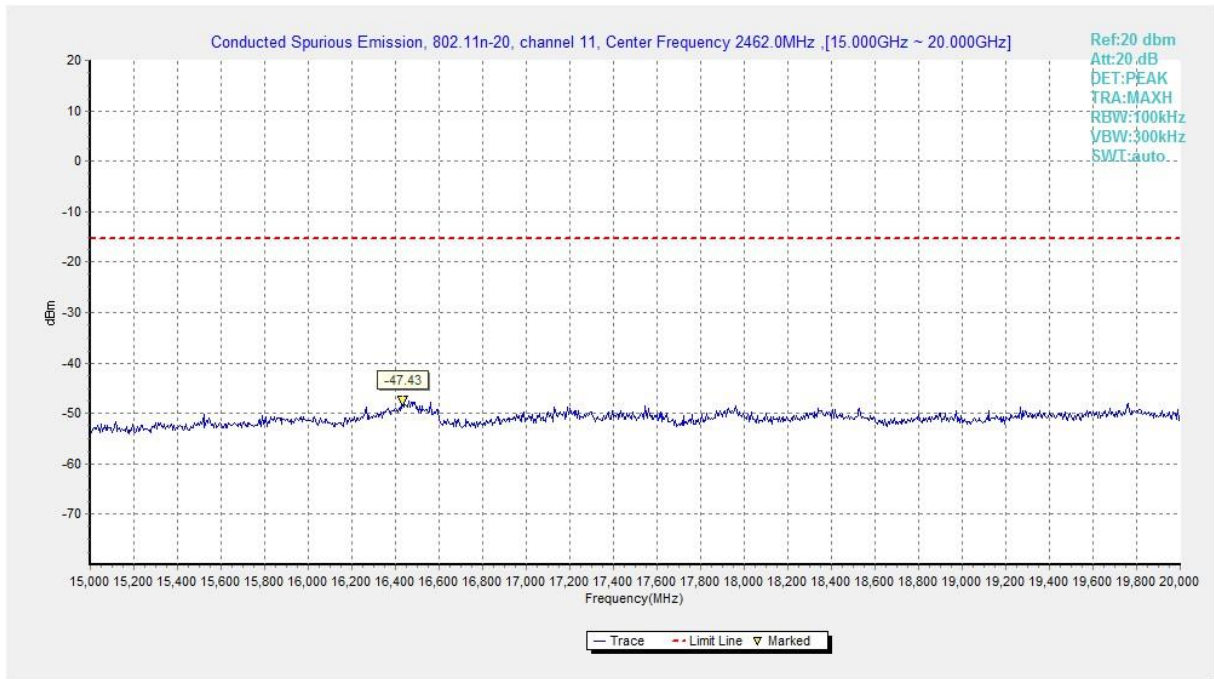


Fig.A.6.1.71 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 15 GHz-20 GHz)

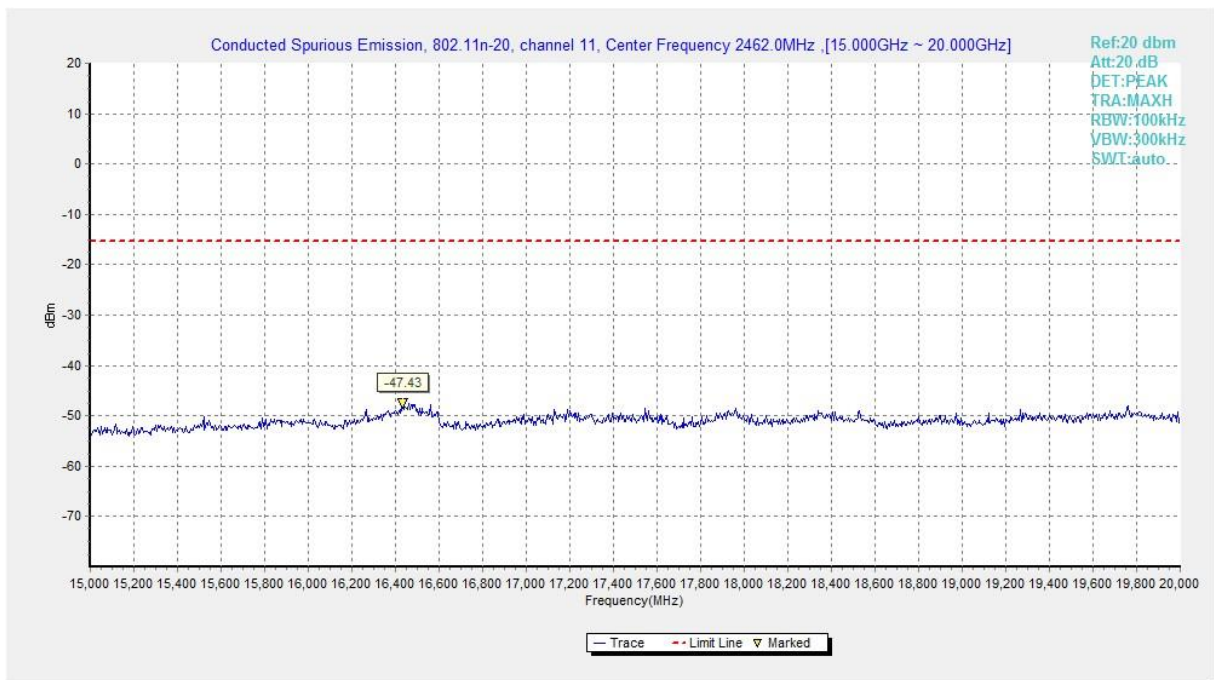


Fig.A.6.1.72 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 20 GHz-26 GHz)

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

Set up:

Tabletop devices shall be placed on a nonconducting platform with nominal top surface dimensions 1 m by 1.5 m. For emissions testing at or below 1 GHz, the table height shall be 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m

The EUT and transmitting antenna shall be centered on the turntable.

Test Procedure

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept. During the test, the turntable is rotated 360° and the measurement antenna is moved from 1m to 4m to get the maximization result. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The receiver references:

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:
802.11b mode

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

802.11g mode

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

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	P
	11	2.45GHz~2.50GHz---H	Fig.A.6.2.6	P

Conclusion: Pass
Note:

1. 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:

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

2. The range of evaluated frequency is from 9 kHz to 26GHz. Measurement value show only up to 6 maximum emissions noted.

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)
2354.100	60.40	2.84	31.97	25.59	74.00	13.60	V
2357.866	60.64	2.84	31.97	25.83	74.00	13.36	V
4824.000	45.18	-33.24	34.13	44.28	74.00	28.82	H
7236.000	42.72	-30.88	35.80	37.81	74.00	31.28	V
9648.000	44.66	-30.46	36.71	38.41	74.00	29.34	V
12060.000	46.48	-28.70	38.74	36.45	74.00	27.52	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)
2327.250	43.23	-35.35	31.94	46.65	74.00	30.77	H
2595.600	44.99	-35.07	32.29	47.78	74.00	29.01	H
4874.000	46.79	-33.30	34.15	45.94	74.00	27.21	H
7311.000	43.23	-30.82	35.83	38.23	74.00	30.77	V
9748.000	44.95	-30.33	36.85	38.43	74.00	29.05	V
12185.000	46.64	-28.11	38.81	35.93	74.00	27.36	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)
2492.170	60.89	2.94	32.09	25.86	74.00	13.11	H
2493.970	60.60	2.94	32.09	25.57	74.00	13.40	V
4924.000	48.80	-33.53	34.17	48.15	74.00	25.20	H
7386.000	41.84	-31.45	35.86	37.44	74.00	32.16	H
9848.000	43.26	-30.18	36.99	36.45	74.00	30.74	V
12310.000	45.86	-27.75	38.89	34.72	74.00	28.14	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)
2389.184	62.50	2.87	32.00	27.63	74.00	11.50	H
1289.702	63.41	2.05	27.68	33.68	74.00	10.59	V
4824.000	43.31	-33.24	34.13	42.41	74.00	30.69	V
7236.000	43.01	-30.88	35.80	38.10	74.00	30.99	V
9648.000	43.50	-30.46	36.71	37.25	74.00	30.50	H
12060.000	46.01	-28.70	38.74	35.98	74.00	27.99	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)
2287.400	44.40	-35.50	31.90	48.00	74.00	29.60	H
2518.630	44.66	-34.34	32.14	46.87	74.00	29.34	V
4874.000	46.00	-33.30	34.15	45.15	74.00	28.00	V
7311.000	43.71	-30.82	35.83	38.70	74.00	30.29	H
9748.000	44.54	-30.33	36.85	38.02	74.00	29.46	H
12185.000	46.93	-28.11	38.81	36.22	74.00	27.07	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)
2483.640	64.72	2.93	32.09	29.71	74.00	9.28	H
2483.860	65.97	2.93	32.09	30.95	74.00	8.03	H
4924.000	49.58	-33.53	34.17	48.94	74.00	24.42	H
7386.000	42.47	-31.45	35.86	38.07	74.00	31.53	H
9848.000	44.57	-30.18	36.99	37.76	74.00	29.43	V
12310.000	46.81	-27.75	38.89	35.68	74.00	27.19	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)
2389.772	63.11	2.87	32.00	28.24	74.00	10.89	H
2389.828	63.41	2.87	32.00	28.55	74.00	10.59	H
4824.000	45.77	-33.24	34.13	44.88	74.00	28.23	V
7236.000	43.13	-30.88	35.80	38.22	74.00	30.87	H
9648.000	45.16	-30.46	36.71	38.91	74.00	28.84	H
12060.000	47.85	-28.70	38.74	37.82	74.00	26.15	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)
2310.450	43.58	-35.45	31.92	47.10	74.00	30.42	H
2523.800	44.91	-34.40	32.15	47.16	74.00	29.09	V
4874.000	48.74	-33.30	34.15	47.89	74.00	25.26	H
7311.000	43.30	-30.82	35.83	38.29	74.00	30.70	H
9748.000	43.75	-30.33	36.85	37.23	74.00	30.25	V
12185.000	46.81	-28.11	38.81	36.11	74.00	27.19	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)
2483.570	69.15	2.93	32.09	34.13	74.00	4.85	V
2484.340	68.90	2.93	32.09	33.88	74.00	5.10	V
4924.000	50.39	-33.53	34.17	49.75	74.00	23.61	H
7386.000	43.21	-31.45	35.86	38.81	74.00	30.79	H
9848.000	43.57	-30.18	36.99	36.76	74.00	30.43	V
12310.000	46.47	-27.75	38.89	35.33	74.00	27.53	V

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)
2389.920	46.39	2.87	32.00	11.52	54.00	7.61	V
2389.980	46.39	2.87	32.00	11.52	54.00	7.61	V
4824.000	39.13	-33.24	34.13	38.24	54.00	14.87	H
7236.000	30.07	-30.88	35.80	25.16	54.00	23.93	V
9648.000	30.71	-30.46	36.71	24.46	54.00	23.29	V
12060.000	33.25	-28.70	38.74	23.22	54.00	20.75	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)
2417.460	47.89	2.88	32.02	12.98	54.00	6.11	V
2458.860	46.70	2.91	32.06	11.72	54.00	7.30	V
4874.000	42.82	-33.30	34.15	41.97	54.00	11.18	V
7311.000	30.13	-30.82	35.83	25.12	54.00	23.87	V
9748.000	30.91	-30.33	36.85	24.40	54.00	23.09	V
12185.000	33.59	-28.11	38.81	22.88	54.00	20.41	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)
2483.520	46.55	2.93	32.09	11.54	54.00	7.45	V
2483.640	46.62	2.93	32.09	11.60	54.00	7.38	V
4924.000	44.39	-33.53	34.17	43.74	54.00	9.61	V
7386.000	30.11	-31.45	35.86	25.71	54.00	23.89	V
9848.000	30.86	-30.18	36.99	24.05	54.00	23.14	V
12310.000	33.38	-27.75	38.89	22.24	54.00	20.62	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)
2389.920	48.43	2.87	32.00	13.56	54.00	5.57	V
2389.980	48.54	2.87	32.00	13.68	54.00	5.46	V
4824.000	30.37	-33.24	34.13	29.47	54.00	23.63	H
7236.000	30.24	-30.88	35.80	25.33	54.00	23.76	V
9648.000	30.77	-30.46	36.71	24.52	54.00	23.23	H
12060.000	33.23	-28.70	38.74	23.19	54.00	20.77	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)
2408.100	48.84	2.88	32.02	13.95	54.00	5.16	V
2464.020	48.45	2.92	32.07	13.47	54.00	5.55	V
4874.000	31.29	-33.30	34.15	30.44	54.00	22.71	V
7311.000	30.07	-30.82	35.83	25.06	54.00	23.93	V
9748.000	30.77	-30.33	36.85	24.25	54.00	23.23	H
12185.000	33.59	-28.11	38.81	22.89	54.00	20.41	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)
2483.520	47.44	2.93	32.09	12.42	54.00	6.56	V
2483.580	47.39	2.93	32.09	12.37	54.00	6.61	V
4924.000	34.39	-33.53	34.17	33.75	54.00	19.61	H
7386.000	30.31	-31.45	35.86	25.91	54.00	23.69	H
9848.000	30.78	-30.18	36.99	23.96	54.00	23.22	H
12310.000	33.47	-27.75	38.89	22.34	54.00	20.53	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)
2389.920	47.23	2.87	32.00	12.36	54.00	6.77	V
2389.980	47.25	2.87	32.00	12.39	54.00	6.75	V
4824.000	30.39	-33.24	34.13	29.50	54.00	23.61	H
7236.000	30.44	-30.88	35.80	25.52	54.00	23.56	H
9648.000	30.91	-30.46	36.71	24.66	54.00	23.09	H
12060.000	33.41	-28.70	38.74	23.37	54.00	20.59	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)
2412.240	49.03	2.88	32.02	14.13	54.00	4.97	V
2459.340	48.76	2.91	32.06	13.78	54.00	5.24	V
4874.000	31.03	-33.30	34.15	30.18	54.00	22.97	H
7311.000	30.32	-30.82	35.83	25.31	54.00	23.68	H
9748.000	31.12	-30.33	36.85	24.60	54.00	22.88	V
12185.000	33.91	-28.11	38.81	23.20	54.00	20.09	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)
2483.520	47.81	2.93	32.09	12.80	54.00	6.19	V
2483.640	47.81	2.93	32.09	12.79	54.00	6.19	V
4924.000	36.39	-33.53	34.17	35.75	54.00	17.61	V
7386.000	30.47	-31.45	35.86	26.07	54.00	23.53	V
9848.000	31.17	-30.18	36.99	24.36	54.00	22.83	H
12310.000	33.55	-27.75	38.89	22.41	54.00	20.45	V

Test graphs as below:

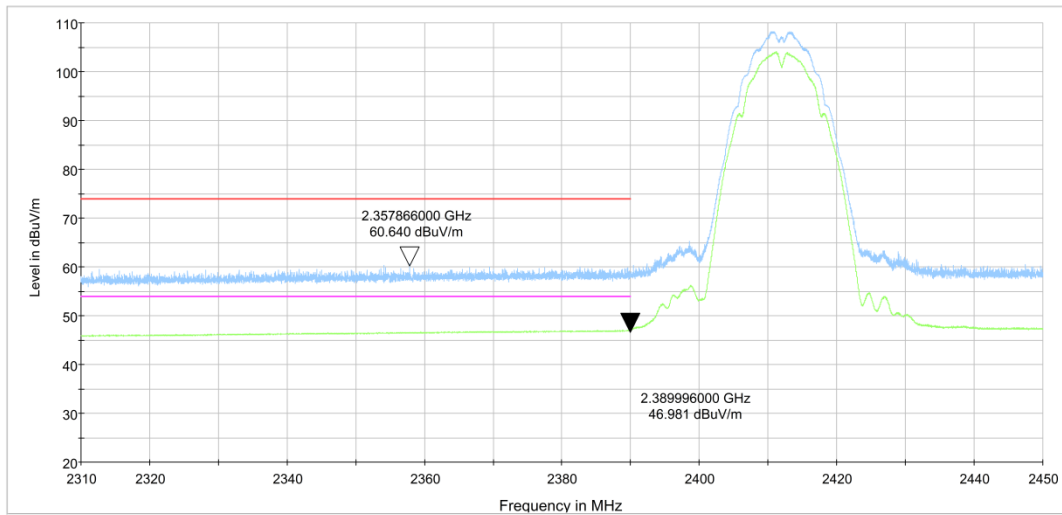


Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.31 GHz – 2.45GHz

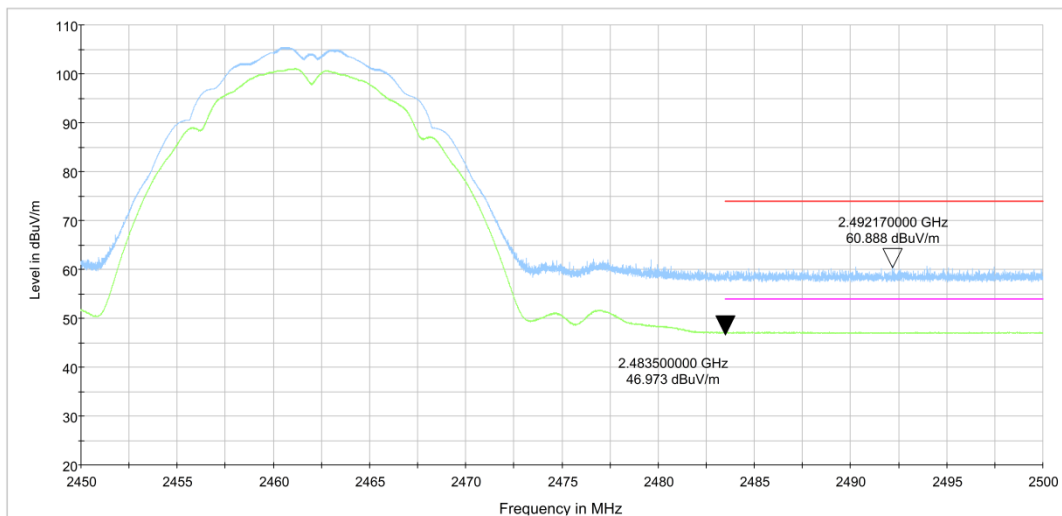


Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz

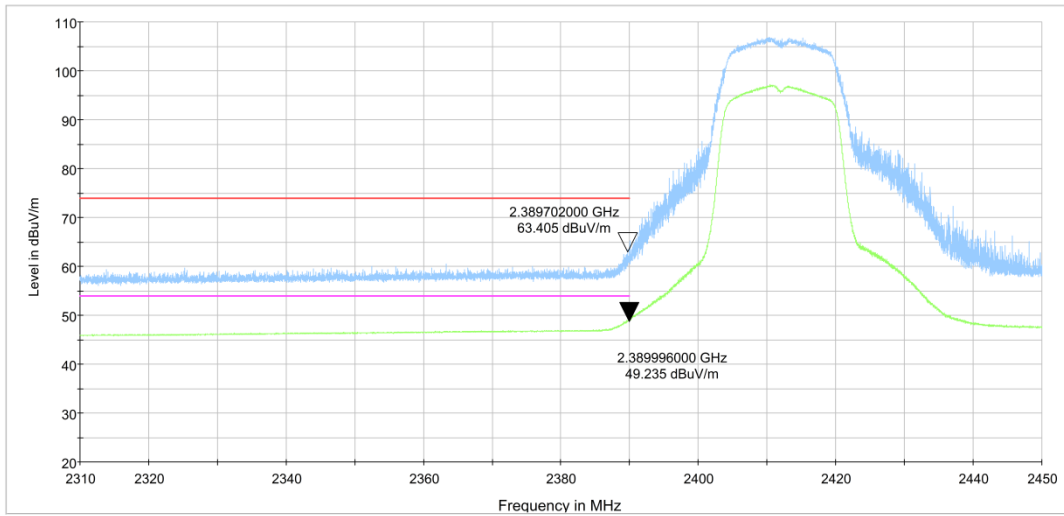


Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch1, 2.31 GHz - 2.45GHz

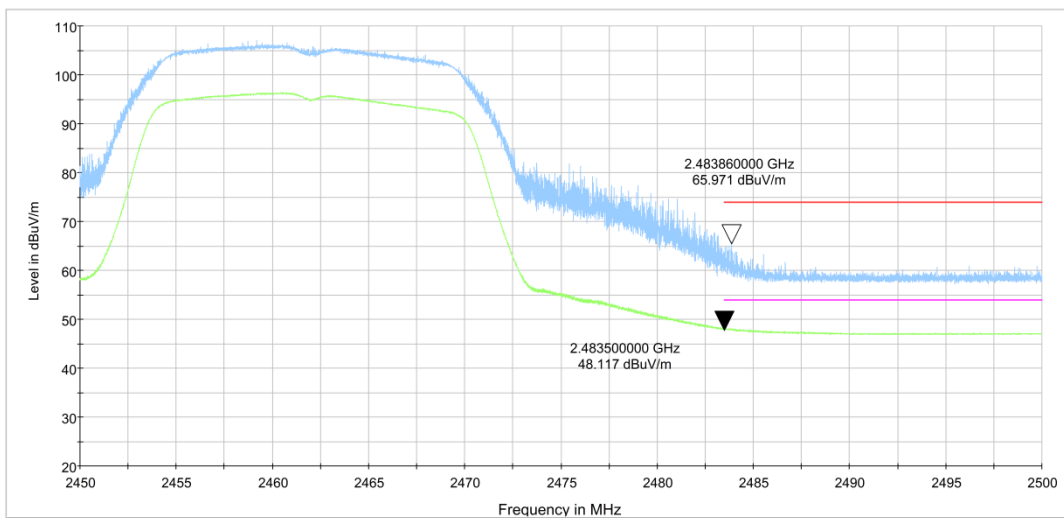


Fig.A.6.2.4 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz

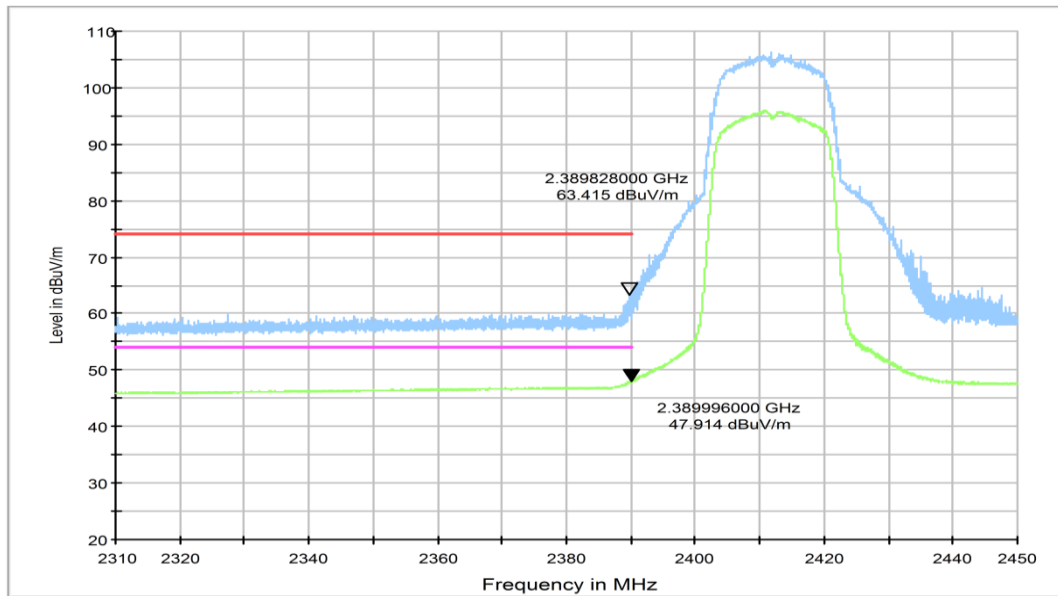


Fig.A.6.2.5 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch1, 2.31 GHz - 2.45GHz

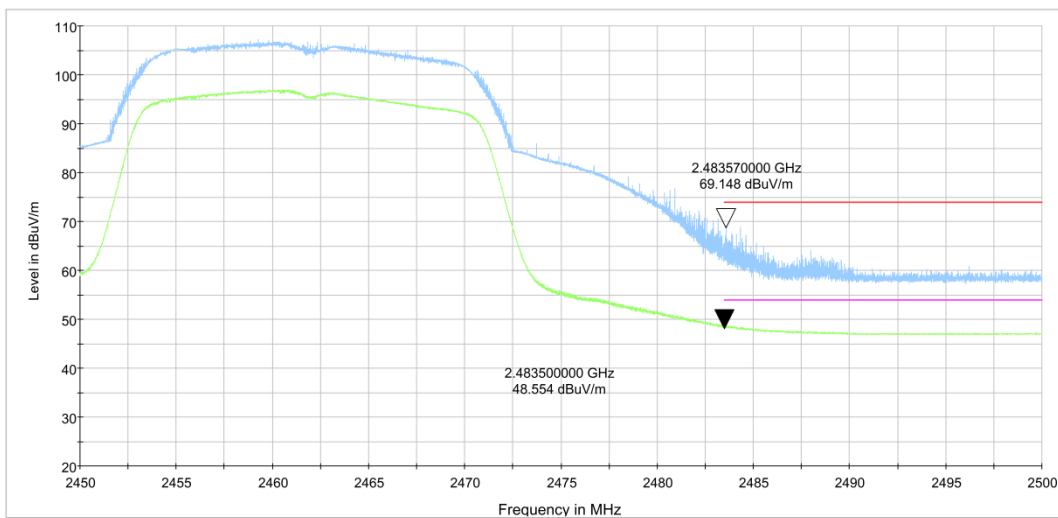


Fig.A.6.2.6 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz

A.7. AC Power-line Conducted Emission

Method of Measurement:

See Clause 6.2 of ANSI C63.10-2013 specifically.

See Clause 4 and Clause 5 of ANSI C63.10-2013 generally.

The conducted emissions from the AC port of the EUT are measured in a shielding room. The EUT is connected to a Line Impedance Stabilization Network (LISN). An overview sweep with peak detection was performed. The measurements were performed with a quasi-peak detector and if required, an average detector.

The conducted emission measurements were made with the following detector of the test receiver: Quasi-Peak / Average Detector.

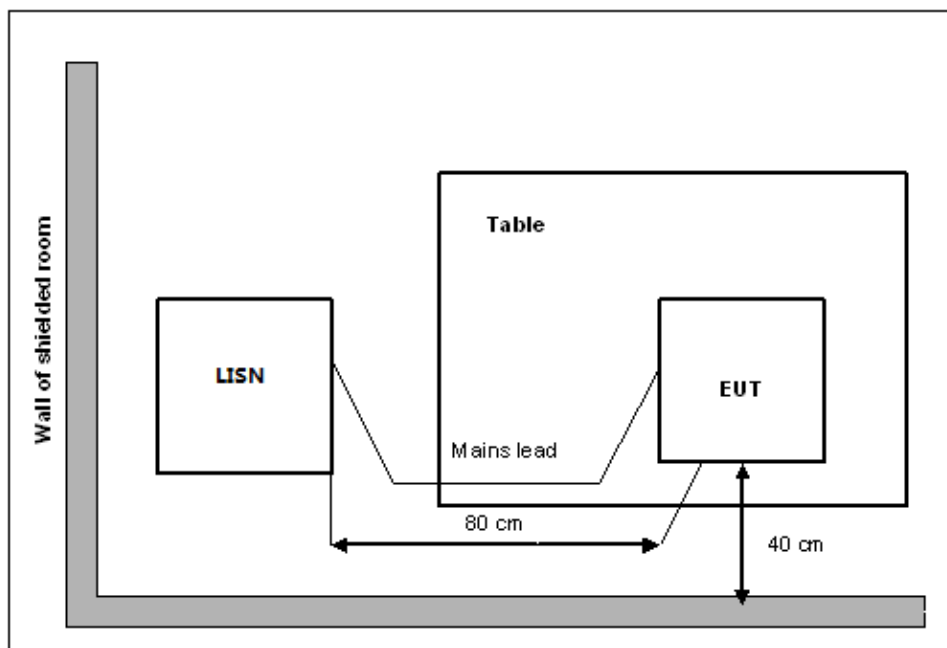
The measurement bandwidth is:

Frequency of Emission (MHz)	RBW/VBW
0.15-30	9kHz

Test Condition:

Voltage (V)	Frequency (Hz)
120	60

Measurement Setup



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:

Result for Traffic:

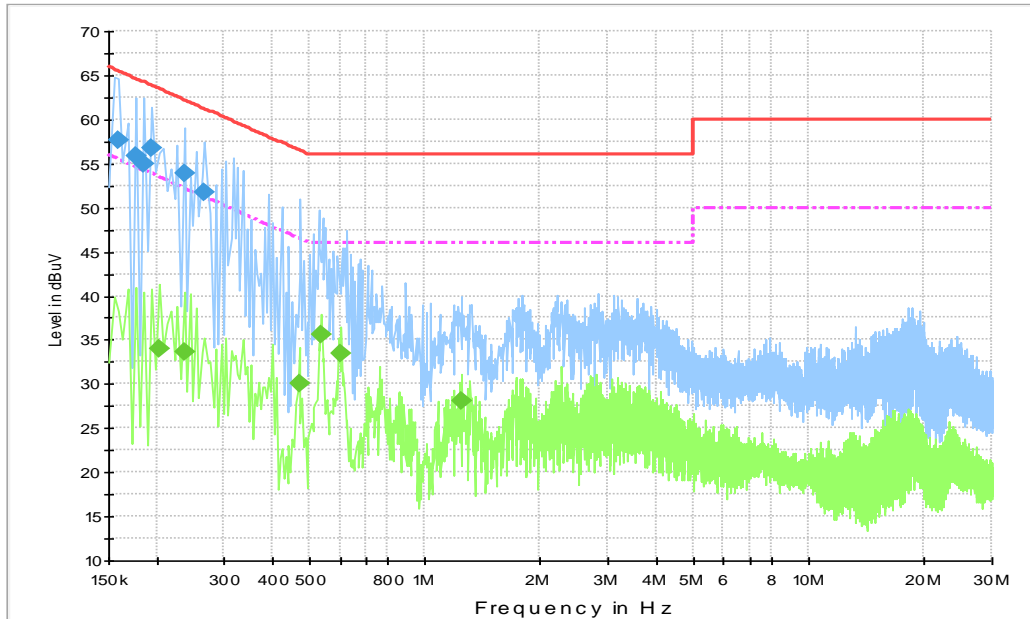


Fig.A.7.1 AC Powerline Conducted Emission-802.11b

Note1: 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)
0.159000	57.7	1000.	9.000	N	19.6	7.8	65.5
0.177000	55.8	1000.	9.000	N	19.6	8.8	64.6
0.186000	55.0	1000.	9.000	N	19.7	9.2	64.2
0.195000	56.7	1000.	9.000	L1	19.6	7.1	63.8
0.235500	53.9	1000.	9.000	L1	19.7	8.4	62.3
0.267000	51.8	1000.	9.000	N	19.7	9.5	61.2

Final Result 2

Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.204000	34.1	1000.0	9.000	L1	19.7	19.4	53.4
0.235500	33.7	1000.0	9.000	L1	19.7	18.5	52.3
0.469500	30.1	1000.0	9.000	L1	19.8	16.4	46.5
0.537000	35.6	1000.0	9.000	L1	19.8	10.4	46.0
0.604500	33.4	1000.0	9.000	L1	19.7	12.6	46.0
1.243500	28.0	1000.0	9.000	L1	19.7	18.0	46.0

Result for Idle:

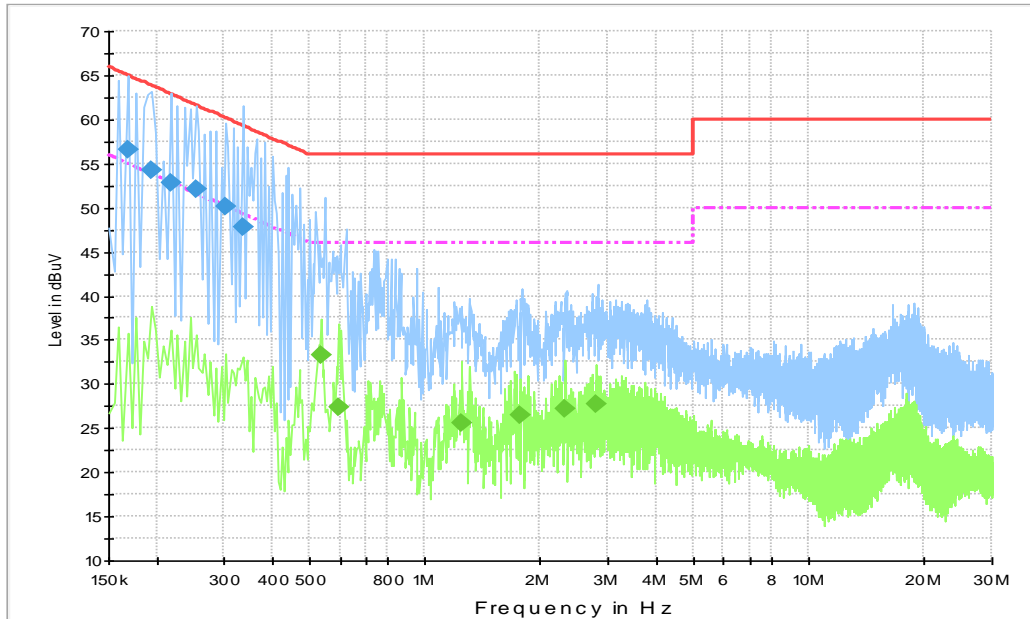


Fig.A.7.2 AC Powerline Conducted Emission-Idle

Note1: 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)
0.168000	56.5	1000.	9.000	N	19.6	8.5	65.1
0.195000	54.2	1000.	9.000	N	19.6	9.6	63.8
0.217500	52.9	1000.	9.000	N	19.7	10.0	62.9
0.253500	52.1	1000.	9.000	L1	19.7	9.5	61.6
0.303000	50.2	1000.	9.000	L1	19.7	10.0	60.2
0.334500	47.8	1000.	9.000	L1	19.7	11.5	59.3




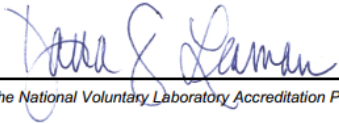
Final Result 2

Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.537000	33.2	1000.0	9.000	L1	19.8	12.8	46.0
0.595500	27.3	1000.0	9.000	L1	19.7	18.7	46.0
1.243500	25.6	1000.0	9.000	L1	19.7	20.4	46.0
1.774500	26.5	1000.0	9.000	L1	19.7	19.5	46.0
2.328000	27.2	1000.0	9.000	L1	19.6	18.8	46.0
2.787000	27.8	1000.0	9.000	L1	19.7	18.2	46.0

ANNEX B: EUT parameters

Disclaimer: The 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

<p>United States Department of Commerce National Institute of Standards and Technology</p>  	
<hr/> <h3>Certificate of Accreditation to ISO/IEC 17025:2017</h3> <hr/>	
<p>NVLAP LAB CODE: 600118-0</p>	
<p>Telecommunication Technology Labs, CAICT Beijing China</p>	
<p><i>is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:</i></p>	
<p>Electromagnetic Compatibility & Telecommunications</p>	
<p><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></p>	
<hr/> <p>2020-09-29 through 2021-09-30 <i>Effective Dates</i></p>	  <hr/> <p><i>For the National Voluntary Laboratory Accreditation Program</i></p>

END OF REPORT