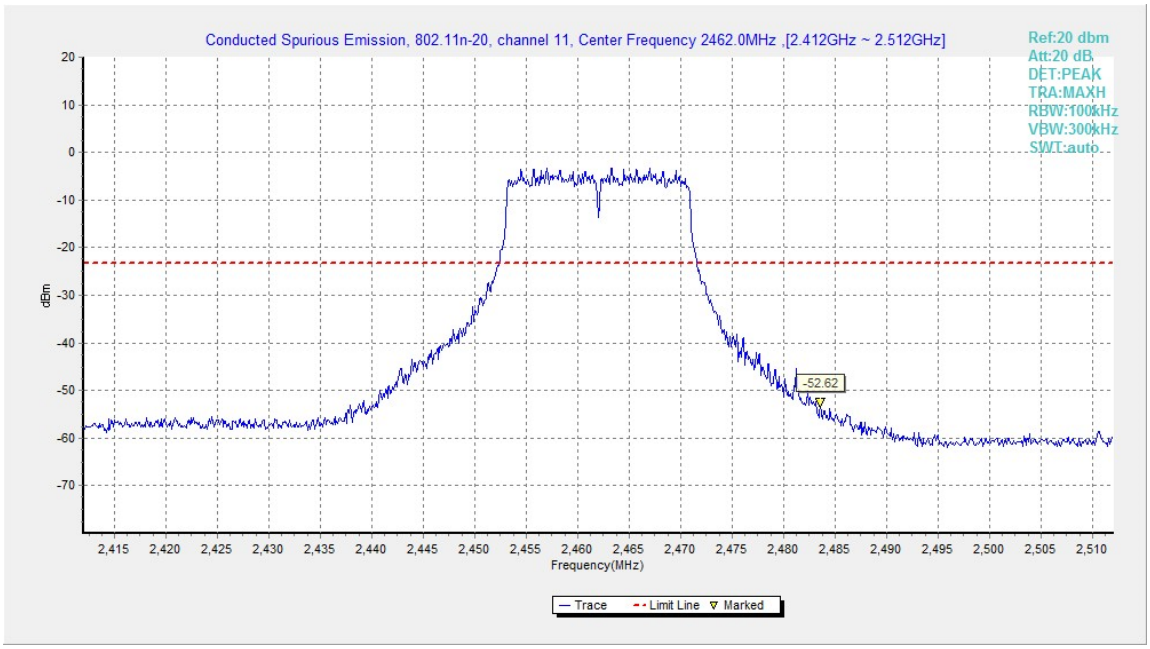

Fig.A.6.1.65 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, Center Frequency)

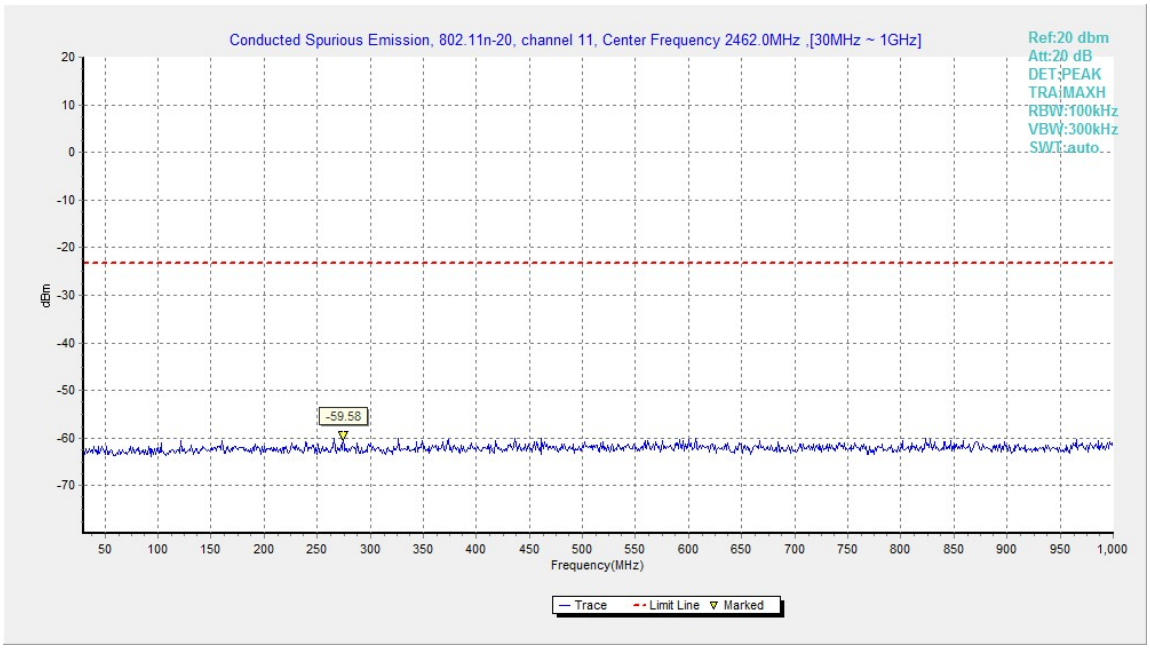

Fig.A.6.1.66 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 30 MHz-1 GHz)

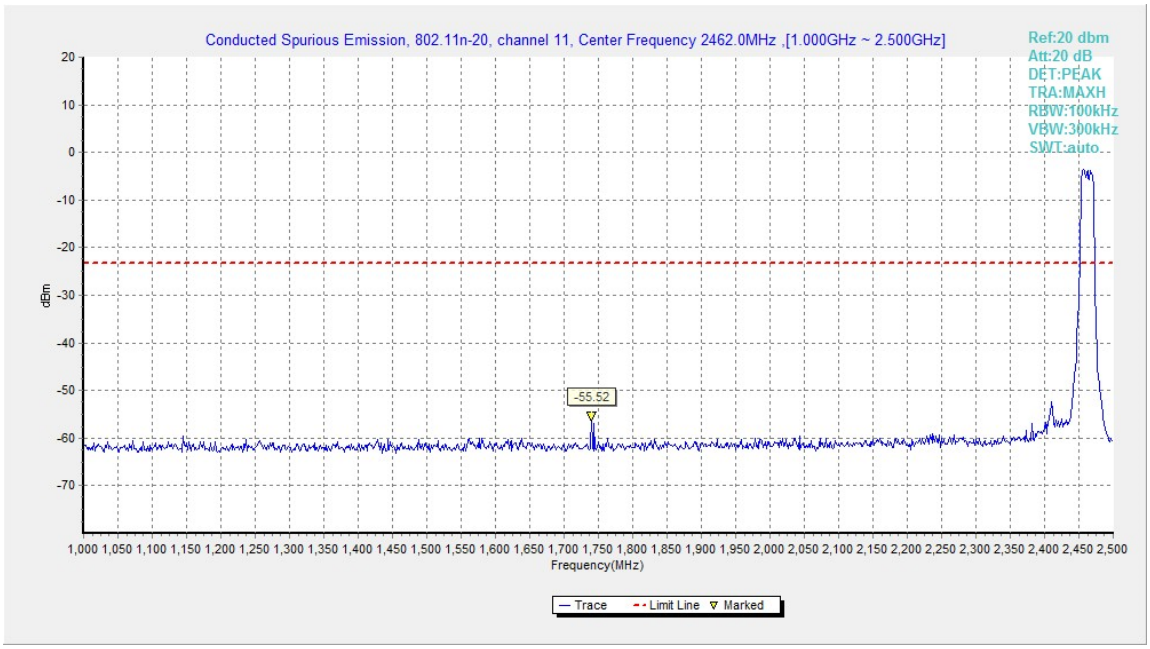

Fig.A.6.1.67 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 1 GHz-2.5 GHz)

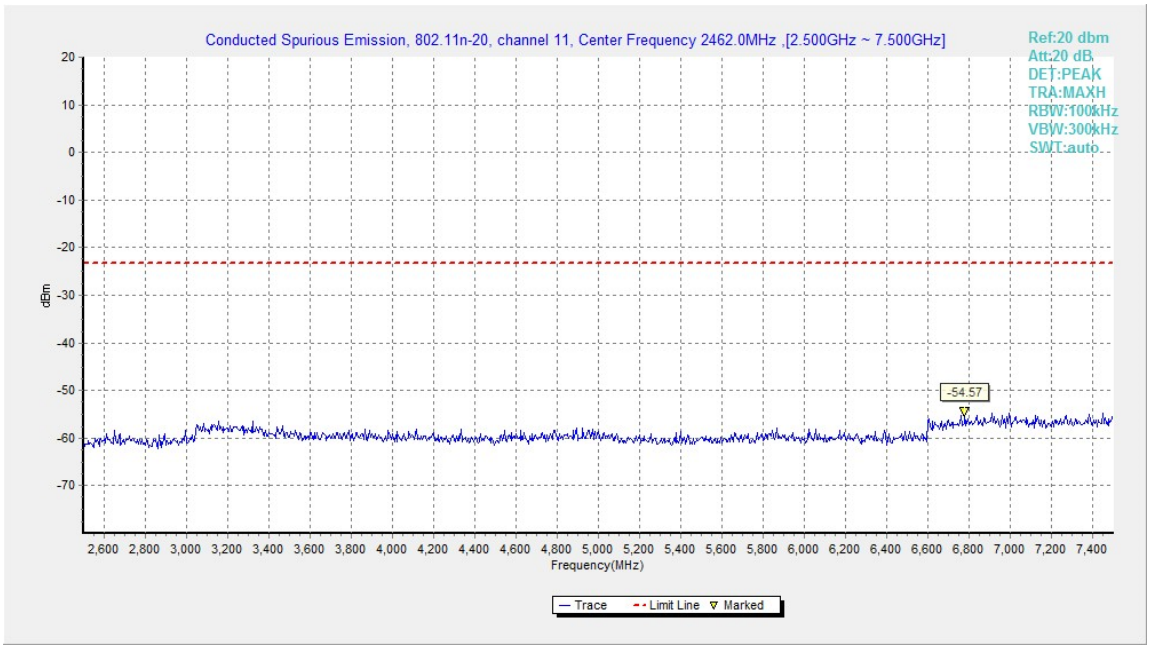

Fig.A.6.1.68 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 2.5 GHz-7.5 GHz)

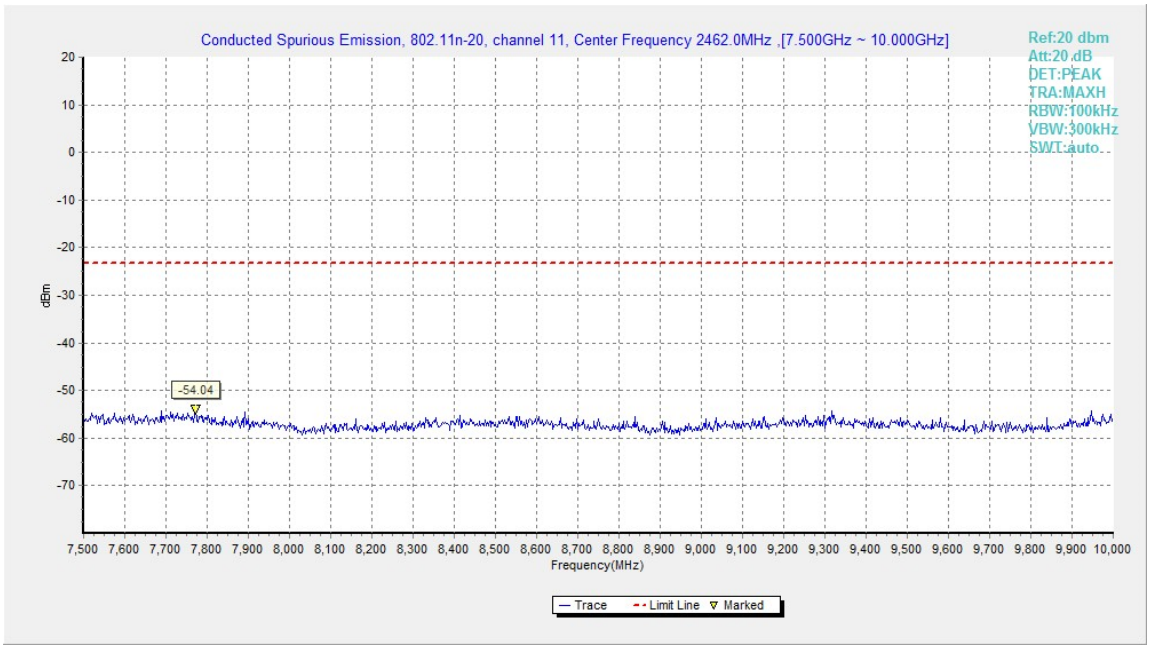

Fig.A.6.1.69 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 7.5 GHz-10 GHz)

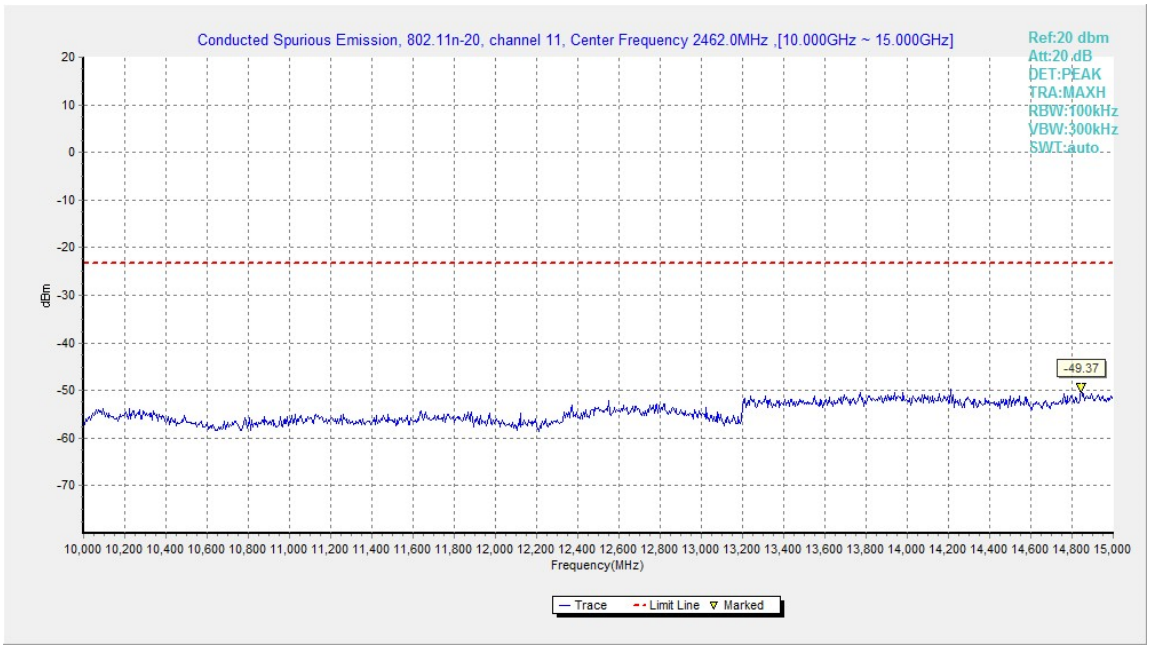

Fig.A.6.1.70 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 10 GHz-15 GHz)

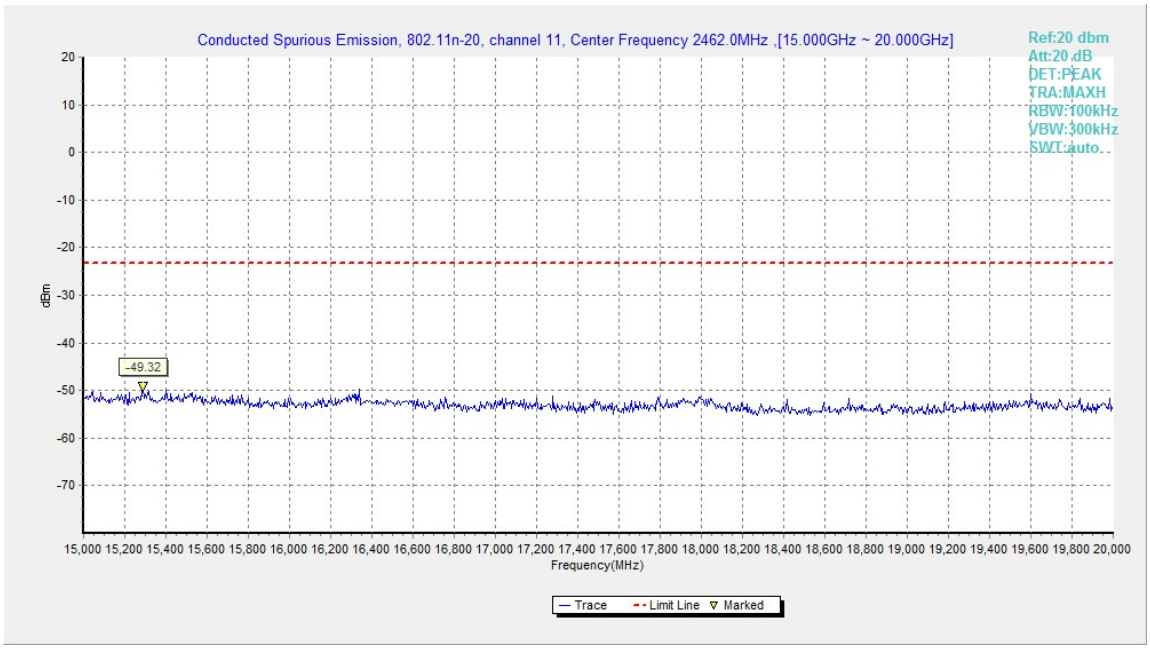

Fig.A.6.1.71 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 15 GHz-20 GHz)

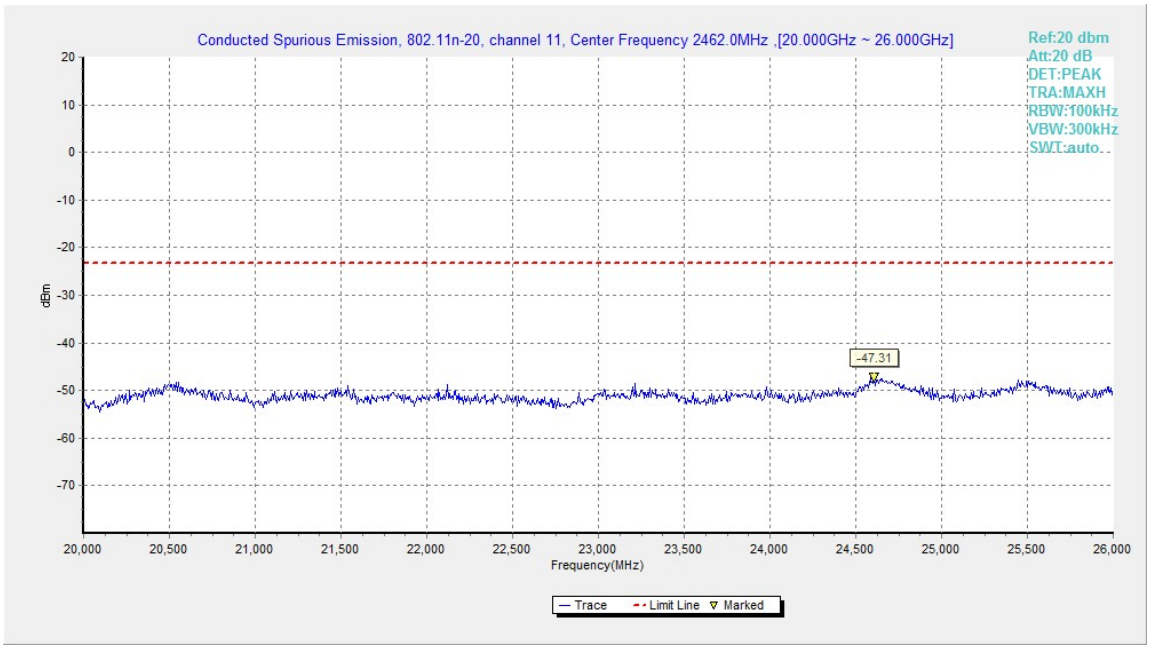

Fig.A.6.1.72 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 20 GHz-26 GHz)

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(μV/m)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

Test Condition

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	100KHz/300KHz	5
1000-4000	1MHz/1MHz	15
4000-18000	1MHz/1MHz	40
18000-26500	1MHz/1MHz	20

EUT ID: EUT1

Measurement Results for Set.11:

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(ch11)	2.45GHz ~2.5GHz	Fig.A.6.2.2	**P**

802.11g mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11g	Power(ch1)	2.38GHz ~2.43GHz	Fig.A.6.2.3	**P**
	Power(ch11)	2.45GHz ~2.5GHz	Fig.A.6.2.4	**P**

802.11n-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT20)	Power(ch1)	2.38GHz ~2.43GHz	Fig.A.6.2.5	**P**
	Power(ch11)	2.45GHz ~2.5GHz	Fig.A.6.2.6	**P**

Conclusion: Pass

Note:

A "reference path loss" is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

P_{Mea} is the field strength recorded from the instrument.

The measurement results are obtained as described below:

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

802.11b-Average

Ch1

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2385.800	47.45	2.9	32.0	12.57	54.0	6.6	H	155	40
2386.000	47.43	2.9	32.0	12.56	54.0	6.6	H	155	65
4823.560	34.52	-32.8	34.5	32.78	54.0	19.5	H	155	20
7236.240	37.27	-31.7	36.1	32.91	54.0	16.7	H	155	180
9648.000	40.51	-30.4	37.0	33.83	54.0	13.5	H	155	202
12060.080	41.66	-29.6	39.3	31.98	54.0	12.3	H	155	8

Ch6

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2415.300	46.67	2.9	31.8	12.01	54.0	7.3	H	155	6
2452.900	46.88	2.9	32.4	11.54	54.0	7.1	H	155	48
4874.000	35.65	-32.7	34.5	33.86	54.0	18.3	H	155	92
7311.000	37.33	-31.9	36.1	33.16	54.0	16.7	H	155	48
9748.000	40.53	-30.7	37.2	34.00	54.0	13.5	H	155	68
12185.000	41.75	-29.4	39.2	31.96	54.0	12.2	H	155	92

Ch11

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2483.600	46.88	2.9	32.8	11.18	54.0	7.1	H	155	8
2483.800	46.81	2.9	32.8	11.12	54.0	7.2	H	155	28
4923.680	39.01	-33.1	34.5	37.59	54.0	15.0	H	155	135
7386.180	38.71	-31.8	36.0	34.50	54.0	15.3	H	155	156
9848.320	40.20	-30.1	37.3	32.95	54.0	13.8	H	155	180
12310.450	41.58	-29.7	39.2	32.10	54.0	12.4	H	155	204

802.11b-Peak

Ch1

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2387.210	60.64	2.9	32.0	25.77	74.0	13.4	V	155	44
2388.974	60.53	2.9	32.0	25.67	74.0	13.5	H	155	66
4824.210	43.24	-32.8	34.5	41.49	74.0	30.8	V	155	22
7236.210	44.53	-31.7	36.1	40.17	74.0	29.5	V	155	176
9648.230	47.60	-30.4	37.0	40.92	74.0	26.4	H	155	198
12060.460	47.60	-29.6	39.3	37.92	74.0	26.4	H	155	0

Ch6

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2367.200	48.26	-27.2	32.0	43.46	74.0	25.7	H	155	0
2507.800	48.47	-26.4	32.4	42.48	74.0	25.5	H	155	44
4874.000	43.53	-32.7	34.5	41.74	74.0	30.5	V	155	88
7311.000	44.63	-31.9	36.1	40.47	74.0	29.4	V	155	44
9748.000	47.74	-30.7	37.2	41.21	74.0	26.3	V	155	66
12185.000	47.74	-29.4	39.2	37.95	74.0	26.3	H	155	88

Ch11

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2488.580	60.55	2.9	32.6	25.00	74.0	13.5	V	155	0
2492.000	60.91	2.9	32.5	25.45	74.0	13.1	V	155	22
4924.000	44.76	-33.1	34.5	43.35	74.0	29.2	H	155	132
7386.000	46.14	-31.8	36.0	41.93	74.0	27.9	V	155	154
9848.000	47.59	-30.1	37.3	40.33	74.0	26.4	V	155	176
12310.000	47.96	-29.7	39.2	38.49	74.0	26.0	H	155	198

802.11g - Average

Ch1

Frequency (MHz)	Measurement Result (dBµV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBµV)	Limit (dBµV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2389.100	47.74	2.9	32.0	12.89	54.0	6.3	H	155	86
2389.700	47.80	2.9	32.0	12.95	54.0	6.2	H	155	107
4823.000	33.19	-32.8	34.5	31.44	54.0	20.8	H	155	72
7236.000	37.26	-31.7	36.1	32.90	54.0	16.7	H	155	92
9648.000	40.49	-30.4	37.0	33.81	54.0	13.5	H	155	40
12060.080	41.64	-29.6	39.3	31.96	54.0	12.4	H	155	6

Ch6

Frequency (MHz)	Measurement Result (dBµV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBµV)	Limit (dBµV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2414.800	47.42	2.9	31.8	12.76	54.0	6.6	H	155	4
2452.300	47.08	2.9	32.4	11.76	54.0	6.9	H	155	26
4874.000	33.14	-32.7	34.5	31.35	54.0	20.9	H	155	72
7311.000	37.35	-31.9	36.1	33.18	54.0	16.7	H	155	90
9748.000	40.52	-30.7	37.2	33.99	54.0	13.5	H	155	46
12185.000	41.73	-29.4	39.2	31.94	54.0	12.3	H	155	16

Ch11

Frequency (MHz)	Measurement Result (dBµV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBµV)	Limit (dBµV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2483.700	46.52	2.9	32.8	10.83	54.0	7.5	H	155	40
2484.000	46.52	2.9	32.7	10.84	54.0	7.5	H	155	65
4924.000	33.34	-33.1	34.5	31.92	54.0	20.7	H	155	222
7386.000	38.68	-31.8	36.0	34.48	54.0	15.3	H	155	190
9848.000	40.22	-30.1	37.3	32.97	54.0	13.8	H	155	240
12310.000	41.58	-29.7	39.2	32.11	54.0	12.4	H	155	270

802.11g - Peak

Ch1

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2386.440	64.99	2.9	32.0	30.12	74.0	9.0	H	155	88
2387.266	65.01	2.9	32.0	30.15	74.0	9.0	H	155	110
4824.000	43.10	-32.8	34.5	41.35	74.0	30.9	V	155	66
7236.000	44.43	-31.7	36.1	40.07	74.0	29.6	H	155	88
9648.000	47.54	-30.4	37.0	40.86	74.0	26.5	V	155	44
12060.050	47.61	-29.6	39.3	37.94	74.0	26.4	V	155	0

Ch6

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2369.600	47.90	-27.0	32.0	42.91	74.0	26.1	H	155	0
2510.000	48.12	-26.5	32.5	42.15	74.0	25.9	V	155	22
4874.000	43.24	-32.7	34.5	41.45	74.0	30.8	V	155	66
7311.000	44.68	-31.9	36.1	40.51	74.0	29.3	V	155	88
9748.000	47.70	-30.7	37.2	41.17	74.0	26.3	V	155	44
12185.000	47.78	-29.4	39.2	37.99	74.0	26.2	H	155	22

Ch11

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2483.630	61.07	2.9	32.8	25.38	74.0	12.9	V	155	44
2484.090	60.91	2.9	32.7	25.23	74.0	13.1	H	155	66
4924.000	44.21	-33.1	34.5	42.79	74.0	29.8	V	155	220
7386.000	46.00	-31.8	36.0	41.80	74.0	28.0	V	155	198
9848.000	47.49	-30.1	37.3	40.24	74.0	26.5	H	155	242
12310.000	47.69	-29.7	39.2	38.21	74.0	26.3	V	155	264

802.11n-HT20-Average

Ch1

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2388.400	46.45	2.9	32.0	11.60	54.0	7.5	H	155	180
2389.900	46.50	2.9	32.0	11.66	54.0	7.5	H	155	202
4823.000	33.64	-32.8	34.5	31.90	54.0	20.4	H	155	312
7236.000	37.33	-31.7	36.1	32.97	54.0	16.7	H	155	46
9648.000	40.52	-30.4	37.0	33.84	54.0	13.5	H	155	70
12060.080	41.63	-29.6	39.3	31.95	54.0	12.4	H	155	92

Ch6

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2415.300	47.00	2.9	31.8	12.34	54.0	7.0	H	155	226
2450.100	47.10	2.9	32.4	11.84	54.0	6.9	H	155	92
4874.000	33.36	-32.7	34.5	31.57	54.0	20.6	H	155	70
7311.000	37.38	-31.9	36.1	33.22	54.0	16.6	H	155	8
9748.000	40.54	-30.7	37.2	34.01	54.0	13.5	H	155	48
12185.000	41.70	-29.4	39.2	31.91	54.0	12.3	H	155	246

Ch11

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2488.300	46.39	2.9	32.6	10.83	54.0	7.6	H	155	25
2490.200	46.38	2.9	32.6	10.87	54.0	7.6	H	155	49
4923.460	33.30	-33.1	34.5	31.88	54.0	20.7	H	155	4
7386.200	38.64	-31.8	36.0	34.44	54.0	15.4	H	155	6
9848.460	40.19	-30.1	37.3	32.94	54.0	13.8	H	155	25
12310.640	41.55	-29.7	39.2	32.08	54.0	12.5	H	155	186

802.11n-HT20-Peak

Ch1

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2384.004	60.23	2.9	32.0	25.34	74.0	13.8	H	155	176
2388.722	60.26	2.9	32.0	25.41	74.0	13.7	H	155	198
4824.000	43.02	-32.8	34.5	41.27	74.0	31.0	V	155	308
7236.000	45.94	-31.7	36.1	41.57	74.0	28.1	H	155	44
9648.000	46.78	-30.4	37.0	40.10	74.0	27.2	H	155	66
12060.000	46.81	-29.6	39.3	37.14	74.0	27.2	V	155	88

Ch6

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2368.600	47.55	-27.1	32.0	42.64	74.0	26.5	H	155	220
2509.000	47.92	-26.5	32.4	41.94	74.0	26.1	V	155	88
4874.000	43.25	-32.7	34.5	41.5	74.0	30.8	H	155	66
7311.000	46.08	-31.9	36.1	41.9	74.0	27.9	H	155	0
9748.000	46.31	-30.7	37.2	39.8	74.0	27.7	H	155	44
12185.000	47.62	-29.4	39.2	37.8	74.0	26.4	V	155	242

Ch11

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2491.840	60.74	2.9	32.5	25.28	74.0	13.3	H	155	22
2495.050	60.42	2.9	32.4	25.05	74.0	13.6	V	155	44
4924.000	43.30	-33.1	34.5	41.88	74.0	30.7	H	155	0
7386.000	45.88	-31.8	36.0	41.67	74.0	28.1	H	155	0
9848.000	46.98	-30.1	37.3	39.72	74.0	27.0	H	155	22
12310.000	47.20	-29.7	39.2	37.72	74.0	26.8	H	155	176

Test graphs as below:

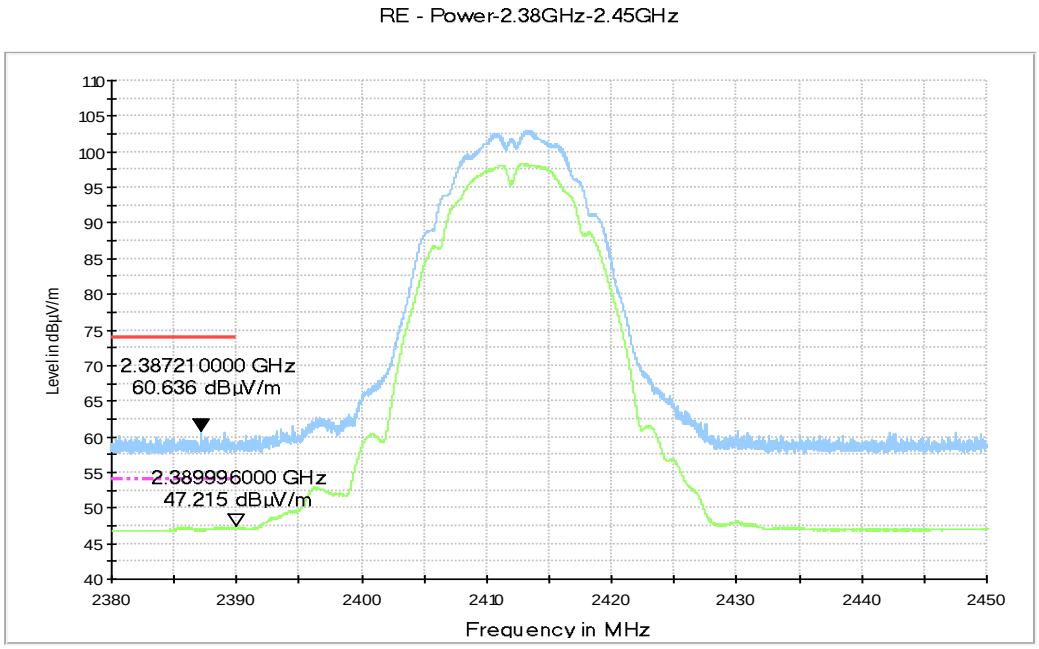

Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.38 GHz – 2.43GHz

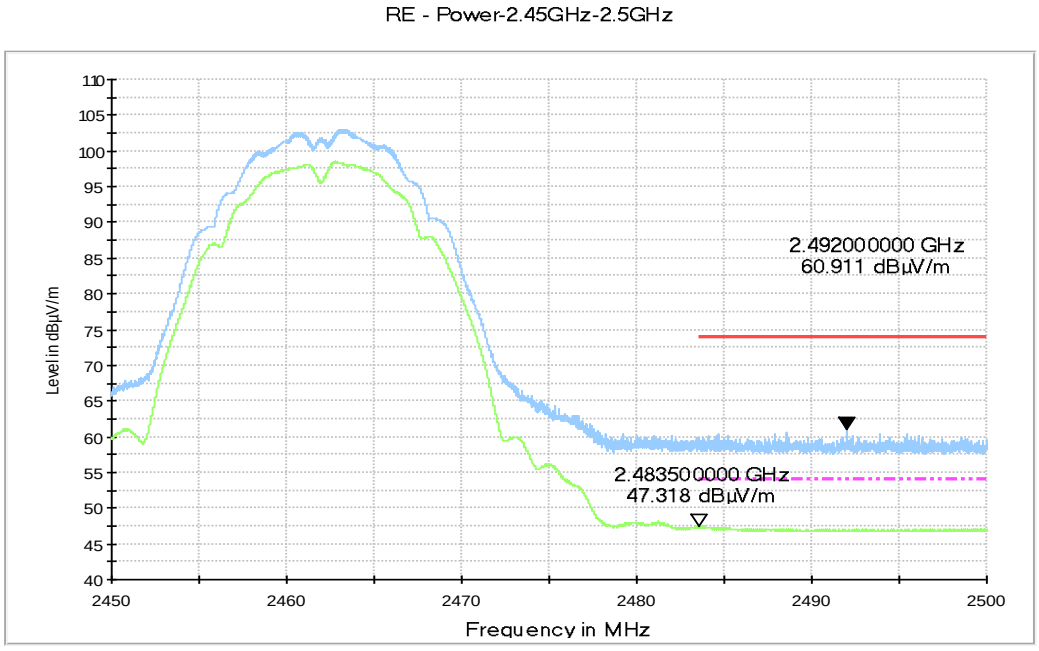

Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz

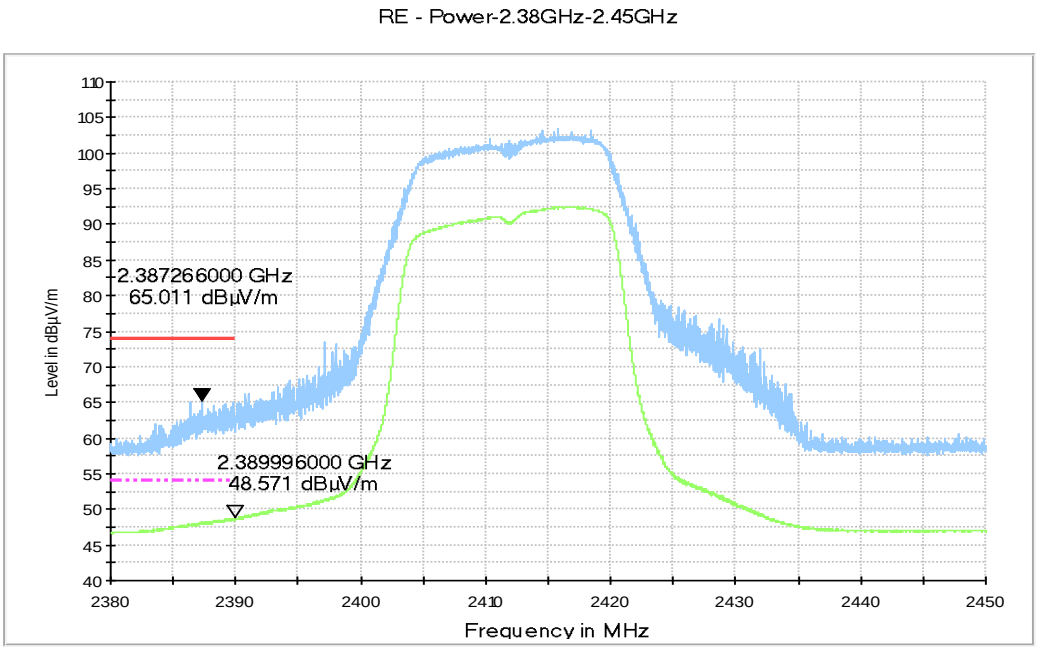

Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch1, 2.38 GHz - 2.43GHz

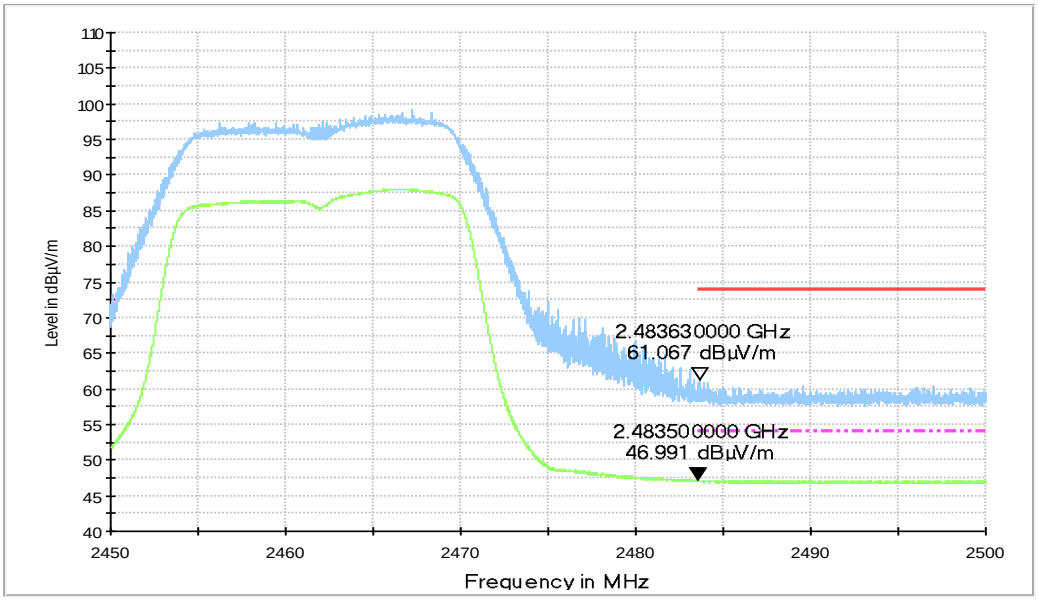

Fig.A.6.2.4 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz

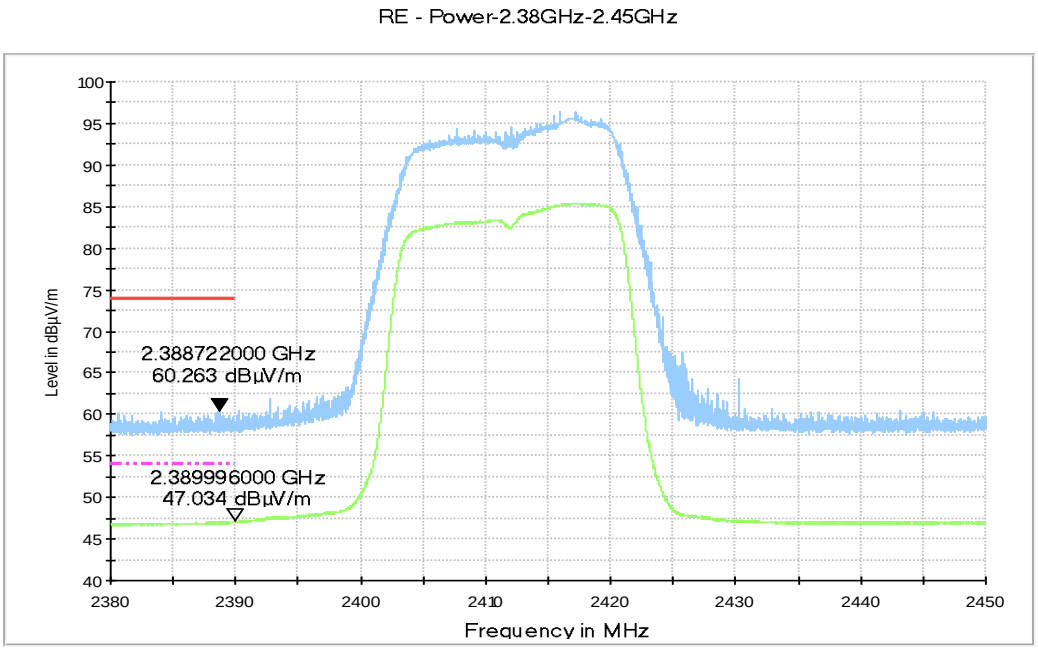

Fig.A.6.2.5 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch1, 2.38 GHz - 2.45GHz

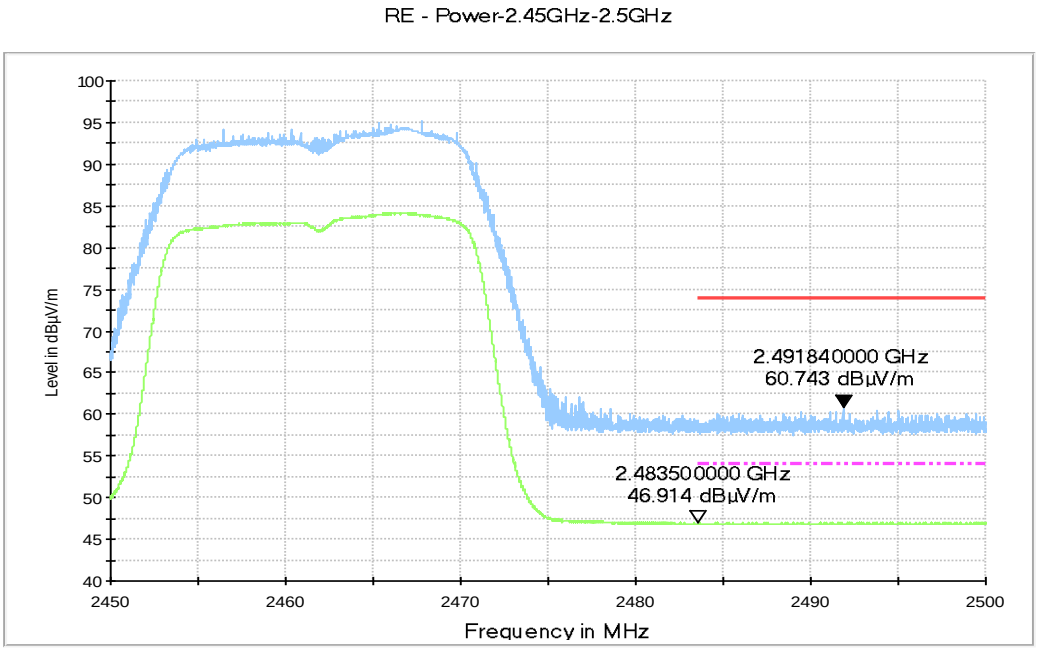

Fig.A.6.2.6 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz

A.7. AC Power-line Conducted Emission

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

1 The one EUT cable configuration and arrangement and mode of operation that produced the emission with the highest amplitude relative to the limit is selected for the final measurement, while applying the appropriate modulating signal to the EUT.

2 If the EUT is relocated from an exploratory test site to a final test site, the highest emissions shall be remaximized at the final test location before final ac power-line conducted emission measurements are performed.

3 The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment in the system) is then performed for the full frequency range for which the EUT is being tested for compliance without further variation of the EUT arrangement, cable positions, or EUT mode of operation.

4 If the EUT is comprised of equipment units that have their own separate ac power connections, e.g., floor-standing equipment with independent power cords for each shelf that are able to connect directly to the ac power network, each current-carrying conductor of one unit is measured while the other units are connected to a second (or more) LISN(s). All units shall be separately measured. If a power strip is provided by the manufacturer, to supply all of the units making up the EUT, only the conductors in the power cord of the power strip shall be measured.

5 If the EUT uses a detachable antenna, these measurements shall be made with a suitable dummy load connected to the antenna output terminals; otherwise, the tests shall be made with the antenna connected and, if adjustable, fully extended. When measuring the ac conducted emissions from a device that operates between 150 kHz and 30 MHz a non-detachable antenna may be replaced with a dummy load for the measurements within the fundamental emission band of the transmitter, but only for those measurements.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 (dBμV)	Result (dBμV)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	66 to 56	Fig.A.7.1 Fig.A.7.3	Fig.A.7.2	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 (dBμV)	Result (dBμV)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	56 to 46	Fig.A.7.1 Fig.A.7.3	Fig.A.7.2	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: