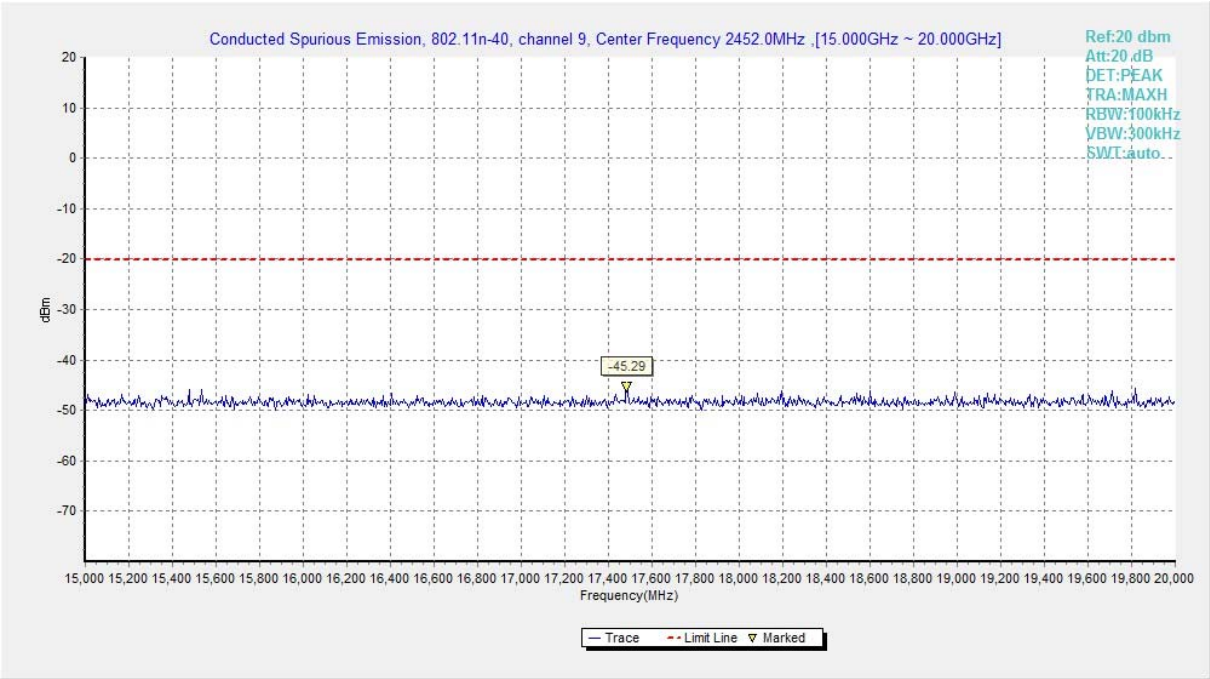


Fig.A.6.1.95 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 15 GHz-20 GHz)

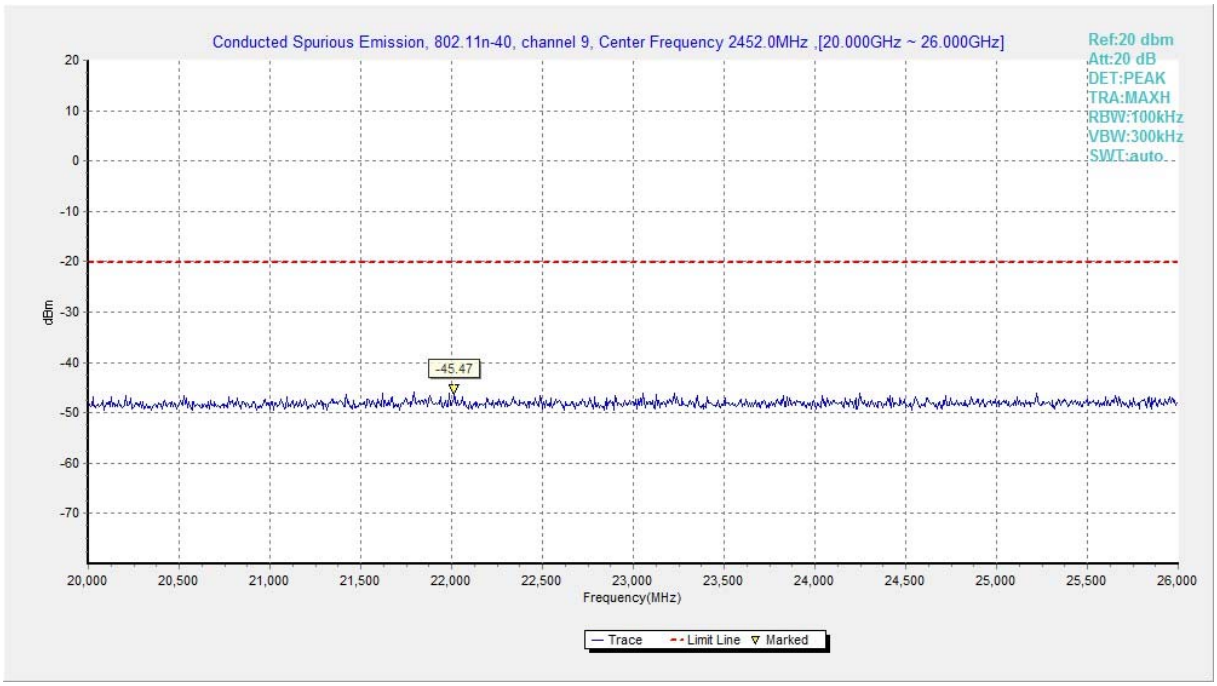


Fig.A.6.1.96 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 20 GHz-26 GHz)

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(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:

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:

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)
2383.840	46.30	2.9	32.0	11.41	54.0	7.7	H	155	170
2389.160	46.32	2.9	32.0	11.47	54.0	7.7	H	155	150
4824.000	38.09	-32.8	34.5	36.34	54.0	15.9	H	155	20
7236.000	38.46	-31.7	36.1	34.10	54.0	15.5	H	155	180
9648.000	39.28	-30.4	37.0	32.59	54.0	14.7	H	155	202
12060.000	43.40	-29.6	39.3	33.72	54.0	10.6	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)
2381.530	46.44	2.9	32.0	46.44	2.9	32.0	H	155	25
2486.790	46.79	2.9	32.7	46.79	2.9	32.7	H	155	49
4874.000	38.64	-32.7	34.5	38.64	-32.7	34.5	H	155	4
7311.000	38.76	-31.9	36.1	38.76	-31.9	36.1	H	155	6
9748.000	40.12	-30.7	37.2	40.12	-30.7	37.2	H	155	25
12185.000	43.67	-29.4	39.2	43.67	-29.4	39.2	H	155	186

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)
2483.930	47.25	2.9	32.7	11.56	54.0	6.8	H	155	4
2485.130	47.12	2.9	32.7	11.47	54.0	6.9	H	155	2
4924.000	39.01	-33.1	34.5	37.60	54.0	15.0	H	155	25
7386.000	39.14	-31.8	36.0	34.93	54.0	14.9	H	155	350
9848.000	40.30	-30.1	37.3	33.05	54.0	13.7	H	155	92
12310.000	44.02	-29.7	39.2	34.54	54.0	10.0	H	155	85

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)
2382.086	59.62	2.9	32.0	24.72	74.0	14.4	H	155	176
2385.950	59.83	2.9	32.0	24.96	74.0	14.2	H	155	154
4824.000	44.93	-32.8	34.5	43.18	74.0	29.1	V	155	22
7236.120	44.30	-31.7	36.1	39.94	74.0	29.7	V	155	176
9647.560	44.70	-30.4	37.0	38.01	74.0	29.3	H	155	198
12060.500	48.38	-29.6	39.3	38.71	74.0	25.6	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)
2365.020	47.11	-27.3	31.9	42.47	74.0	26.9	H	155	22
2525.230	49.49	-26.8	32.7	43.61	74.0	24.5	V	155	44
4873.500	46.01	-32.7	34.5	44.22	74.0	28.0	H	155	0
7311.000	44.66	-31.9	36.1	40.49	74.0	29.3	H	155	0
9748.000	46.22	-30.7	37.2	39.69	74.0	27.8	H	155	22
12185.000	49.05	-29.4	39.2	39.26	74.0	25.0	H	155	176

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)
2484.450	59.71	2.9	32.7	24.04	74.0	14.3	H	155	0
2485.594	60.18	2.9	32.7	24.54	74.0	13.8	H	155	0
4924.000	44.23	-33.1	34.5	42.82	74.0	29.8	V	155	22
7386.000	45.34	-31.8	36.0	41.13	74.0	28.7	V	155	352
9848.000	47.87	-30.1	37.3	40.61	74.0	26.1	V	155	88
12310.000	48.14	-29.7	39.2	38.67	74.0	25.9	V	155	88

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)
2382.086	59.62	2.9	32.0	24.72	74.0	14.4	H	155	176
2385.950	59.83	2.9	32.0	24.96	74.0	14.2	H	155	154
4824.000	44.93	-32.8	34.5	43.18	74.0	29.1	V	155	22
7236.120	44.30	-31.7	36.1	39.94	74.0	29.7	V	155	176
9647.560	44.70	-30.4	37.0	38.01	74.0	29.3	H	155	198
12060.500	48.38	-29.6	39.3	38.71	74.0	25.6	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)
2365.020	47.11	-27.3	31.9	42.47	74.0	26.9	H	155	22
2525.230	49.49	-26.8	32.7	43.61	74.0	24.5	V	155	44
4873.500	46.01	-32.7	34.5	44.22	74.0	28.0	H	155	0
7311.000	44.66	-31.9	36.1	40.49	74.0	29.3	H	155	0
9748.000	46.22	-30.7	37.2	39.69	74.0	27.8	H	155	22
12185.000	49.05	-29.4	39.2	39.26	74.0	25.0	H	155	176

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)
2484.450	59.71	2.9	32.7	24.04	74.0	14.3	H	155	0
2485.594	60.18	2.9	32.7	24.54	74.0	13.8	H	155	0
4924.000	44.23	-33.1	34.5	42.82	74.0	29.8	V	155	22
7386.000	45.34	-31.8	36.0	41.13	74.0	28.7	V	155	352
9848.000	47.87	-30.1	37.3	40.61	74.0	26.1	V	155	88
12310.000	48.14	-29.7	39.2	38.67	74.0	25.9	V	155	88

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)
2386.740	46.47	2.9	32.0	11.60	54.0	7.5	H	155	20
2388.670	46.94	2.9	32.0	12.09	54.0	7.1	H	155	45
4824.000	36.78	-32.8	34.5	35.03	54.0	17.2	H	155	240
7236.000	39.10	-31.7	36.1	34.74	54.0	14.9	H	155	180
9648.000	40.02	-30.4	37.0	33.33	54.0	14.0	H	155	85
12060.000	45.01	-29.6	39.3	35.33	54.0	9.0	H	155	25

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)
2384.230	46.56	2.9	32.0	11.67	54.0	7.4	H	155	175
2486.750	46.89	2.9	32.7	11.29	54.0	7.1	H	155	5
4874.000	36.49	-32.7	34.5	34.70	54.0	17.5	H	155	26
7311.000	38.72	-31.9	36.1	34.55	54.0	15.3	H	155	355
9748.000	40.12	-30.7	37.2	33.59	54.0	13.9	H	155	6
12185.000	44.48	-29.4	39.2	34.69	54.0	9.5	H	155	12

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)
2485.230	47.04	2.9	32.7	11.40	54.0	7.0	H	155	20
2489.630	46.93	2.9	32.6	11.41	54.0	7.1	H	155	248
4924.000	36.51	-33.1	34.5	35.09	54.0	17.5	H	155	49
7386.000	38.61	-31.8	36.0	34.40	54.0	15.4	H	155	335
9848.000	39.47	-30.1	37.3	32.21	54.0	14.5	H	155	180
12310.000	44.23	-29.7	39.2	34.76	54.0	9.8	H	155	8

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)
2386.762	59.39	2.9	32.0	24.52	74.0	14.6	H	155	22
2389.324	59.31	2.9	32.0	24.46	74.0	14.7	H	155	44
4824.000	45.84	-32.8	34.5	44.09	74.0	28.2	H	155	242
7236.000	43.90	-31.7	36.1	39.54	74.0	30.1	H	155	176
9648.000	46.12	-30.4	37.0	39.44	74.0	27.9	H	155	88
12060.000	48.84	-29.6	39.3	39.16	74.0	25.2	V	155	22

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)
2375.640	49.21	-26.6	32.1	43.72	74.0	24.8	H	155	176
2521.480	49.24	-26.8	32.6	43.35	74.0	24.8	H	155	0
4874.000	45.63	-32.7	34.5	43.84	74.0	28.4	V	155	22
7311.000	43.91	-31.9	36.1	39.75	74.0	30.1	V	155	352
9748.000	45.86	-30.7	37.2	39.33	74.0	28.1	V	155	0
12185.000	49.06	-29.4	39.2	39.27	74.0	24.9	V	155	0

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)
2483.870	60.75	2.9	32.8	25.07	74.0	13.2	H	155	22
2484.816	61.22	2.9	32.7	25.56	74.0	12.8	H	155	242
4923.750	44.19	-33.1	34.5	42.77	74.0	29.8	V	155	44
7386.000	44.13	-31.8	36.0	39.93	74.0	29.9	H	155	330
9848.000	45.69	-30.1	37.3	38.44	74.0	28.3	H	155	176
12310.000	49.10	-29.7	39.2	39.63	74.0	24.9	H	155	0

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)
2382.640	46.37	2.9	32.0	46.37	2.9	32.0	H	155	135
2387.610	46.37	2.9	32.0	46.37	2.9	32.0	H	155	160
4824.000	36.50	-32.8	34.5	36.50	-32.8	34.5	H	155	92
7236.000	38.55	-31.7	36.1	38.55	-31.7	36.1	H	155	115
9648.000	40.50	-30.4	37.0	40.50	-30.4	37.0	H	155	112
12060.000	44.36	-29.6	39.3	44.36	-29.6	39.3	H	155	85

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)
2384.670	46.75	2.9	32.0	11.87	54.0	7.3	H	155	5
2489.560	47.02	2.9	32.6	11.49	54.0	7.0	H	155	25
4874.000	36.54	-32.7	34.5	34.75	54.0	17.5	H	155	356
7311.000	38.65	-31.9	36.1	34.48	54.0	15.4	H	155	350
9748.000	41.02	-30.7	37.2	34.49	54.0	13.0	H	155	185
12185.000	45.01	-29.4	39.2	35.22	54.0	9.0	H	155	187

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)
2483.450	47.09	2.9	32.8	11.40	54.0	6.9	H	155	86
2486.320	47.05	2.9	32.7	11.43	54.0	7.0	H	155	107
4924.000	36.62	-33.1	34.5	35.20	54.0	17.4	H	155	130
7386.000	38.45	-31.8	36.0	34.24	54.0	15.6	H	155	152
9848.000	40.23	-30.1	37.3	32.97	54.0	13.8	H	155	174
12310.000	44.68	-29.7	39.2	35.21	54.0	9.3	H	155	195

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)
2384.760	59.14	2.9	32.0	24.25	74.0	14.9	H	155	132
2387.602	59.32	2.9	32.0	24.45	74.0	14.7	H	155	154
4824.000	43.88	-32.8	34.5	42.13	74.0	30.1	V	155	88
7236.000	43.66	-31.7	36.1	39.30	74.0	30.3	H	155	110
9648.000	45.56	-30.4	37.0	38.88	74.0	28.4	V	155	110
12060.000	48.35	-29.6	39.3	38.67	74.0	25.7	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)
2374.830	48.27	-26.7	32.1	42.84	74.0	25.7	H	155	0
2524.680	49.73	-26.8	32.7	43.86	74.0	24.3	H	155	22
4874.000	45.81	-32.7	34.5	44.02	74.0	28.2	H	155	352
7311.000	44.92	-31.9	36.1	40.75	74.0	29.1	V	155	352
9748.000	45.97	-30.7	37.2	39.44	74.0	28.0	V	155	176
12185.000	48.80	-29.4	39.2	39.01	74.0	25.2	V	155	176

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)
2484.320	68.42	2.9	32.7	32.75	74.0	5.6	V	155	88
2486.613	67.96	2.9	32.7	32.36	74.0	6.0	H	155	110
4924.000	45.47	-33.1	34.5	44.05	74.0	28.5	V	155	132
7386.000	44.20	-31.8	36.0	39.99	74.0	29.8	H	155	154
9848.000	46.16	-30.1	37.3	38.90	74.0	27.8	V	155	176
12310.000	48.19	-29.7	39.2	38.72	74.0	25.8	V	155	198

802.11n-HT40-Average

Ch3

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)
2384.620	46.45	2.9	32.0	11.56	54.0	7.6	H	155	175
2386.740	46.52	2.9	32.0	11.65	54.0	7.5	H	155	194
4844.000	36.57	-32.7	34.5	34.76	54.0	17.4	H	155	215
7266.000	38.44	-31.9	36.1	34.20	54.0	15.6	H	155	196
9688.000	40.49	-30.7	37.1	34.11	54.0	13.5	H	155	241
12110.000	44.29	-29.5	39.3	34.52	54.0	9.7	H	155	259

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)
2382.390	46.59	2.9	32.0	11.69	54.0	7.4	H	155	40
2487.640	47.02	2.9	32.6	11.44	54.0	7.0	H	155	65
4874.000	36.67	-32.7	34.5	34.88	54.0	17.3	H	155	84
7311.000	38.55	-31.9	36.1	34.38	54.0	15.5	H	155	107
9748.000	40.65	-30.7	37.2	34.12	54.0	13.3	H	155	135
12185.000	44.45	-29.4	39.2	34.66	54.0	9.5	H	155	151

Ch9

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)
2483.920	47.36	2.9	32.7	11.68	54.0	6.6	H	155	6
2487.120	47.14	2.9	32.7	11.54	54.0	6.9	H	155	48
4904.000	36.85	-32.9	34.5	35.24	54.0	17.2	H	155	92
7356.000	38.58	-31.9	36.1	34.42	54.0	15.4	H	155	48
9808.000	40.53	-30.4	37.3	33.61	54.0	13.5	H	155	68
12260.000	44.68	-29.6	39.2	35.06	54.0	9.3	H	155	92

802.11n-HT40-Peak

Ch3

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)
2386.972	61.96	2.9	32.0	27.09	74.0	12.0	V	155	176
2389.492	62.84	2.9	32.0	27.99	74.0	11.2	H	155	198
4844.000	43.93	-32.7	34.5	42.12	74.0	30.1	V	155	220
7266.000	44.85	-31.9	36.1	40.61	74.0	29.2	H	155	198
9688.000	45.85	-30.7	37.1	39.46	74.0	28.2	H	155	242
12110.000	49.53	-29.5	39.3	39.76	74.0	24.5	V	155	264

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)
2381.460	49.06	-25.7	32.0	42.69	74.0	24.9	V	155	44
2647.850	49.68	-26.7	33.7	42.75	74.0	24.3	H	155	66
4874.000	45.57	-32.7	34.5	43.78	74.0	28.4	H	155	88
7311.000	44.69	-31.9	36.1	40.52	74.0	29.3	V	155	110
9748.000	45.69	-30.7	37.2	39.16	74.0	28.3	V	155	132
12185.000	48.13	-29.4	39.2	38.34	74.0	25.9	H	155	154

Ch9

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)
2485.850	61.76	2.9	32.7	26.13	74.0	12.2	H	155	0
2488.030	61.77	2.9	32.6	26.20	74.0	12.2	H	155	44
4904.000	44.14	-32.9	34.5	42.53	74.0	29.9	V	155	88
7356.000	43.90	-31.9	36.1	39.75	74.0	30.1	V	155	44
9808.000	45.04	-30.4	37.3	38.12	74.0	29.0	V	155	66
12260.000	48.80	-29.6	39.2	39.18	74.0	25.2	H	155	88

Test graphs as below:

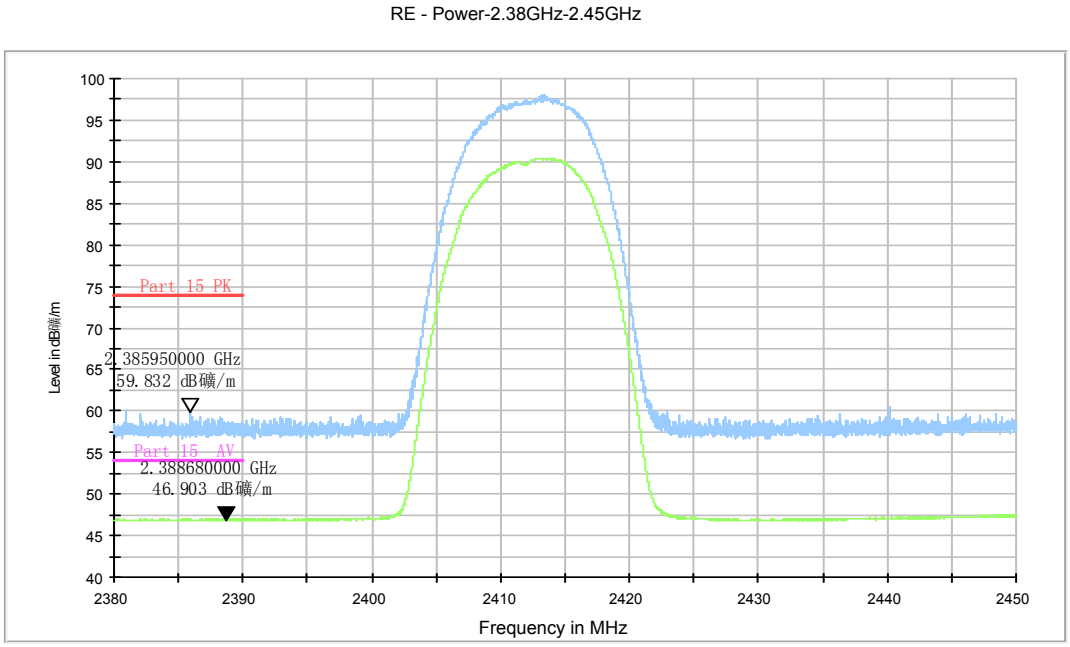


Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.38 GHz – 2.43GHz

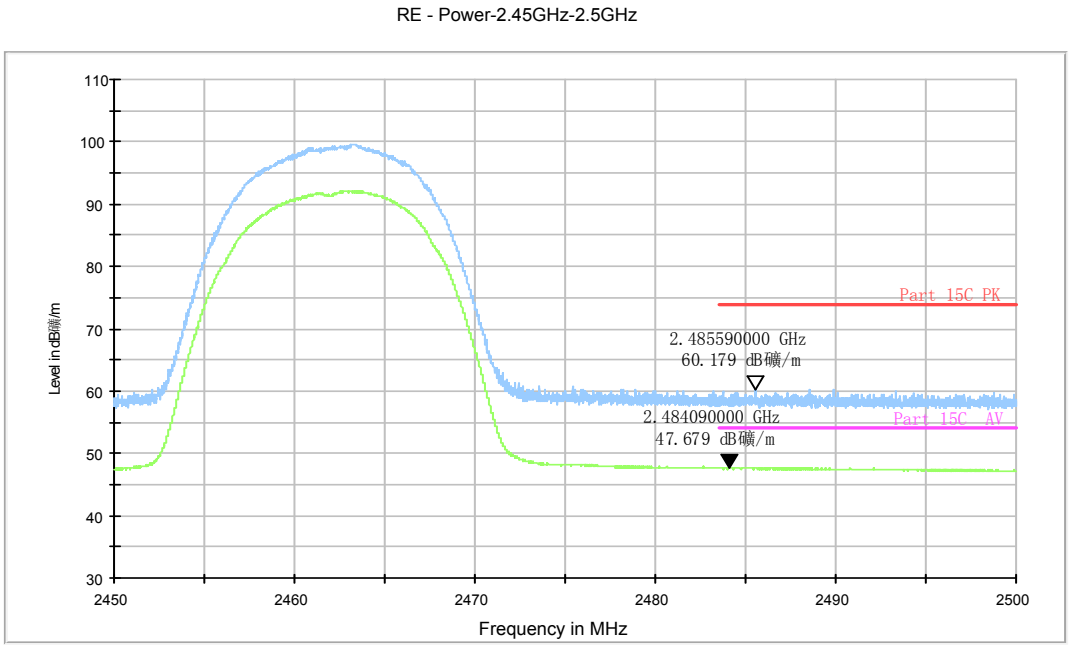


Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz

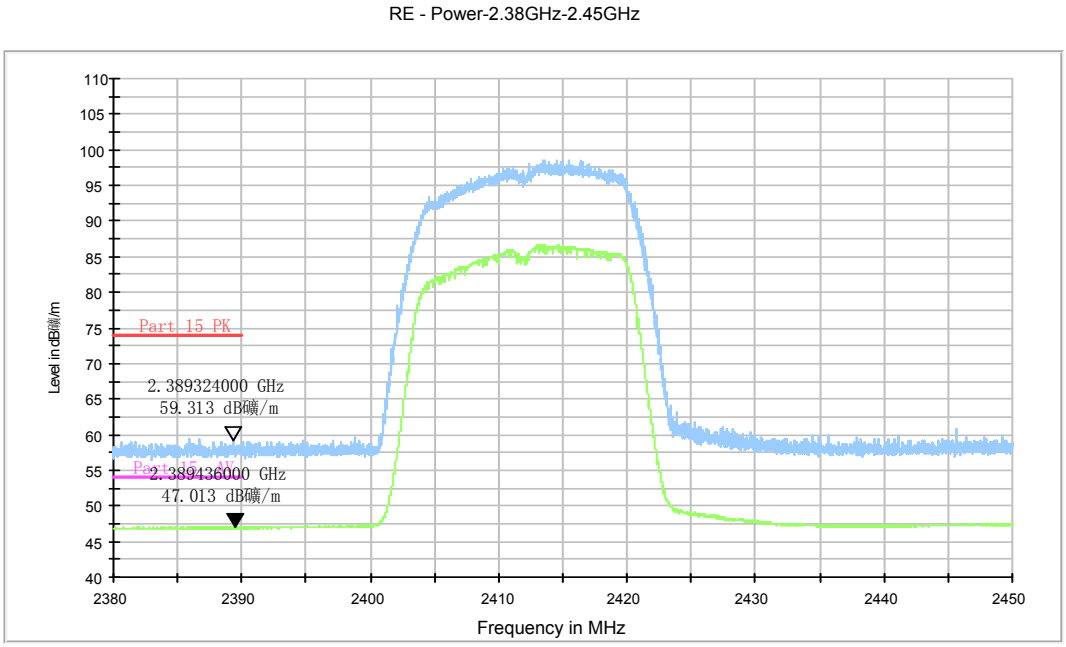
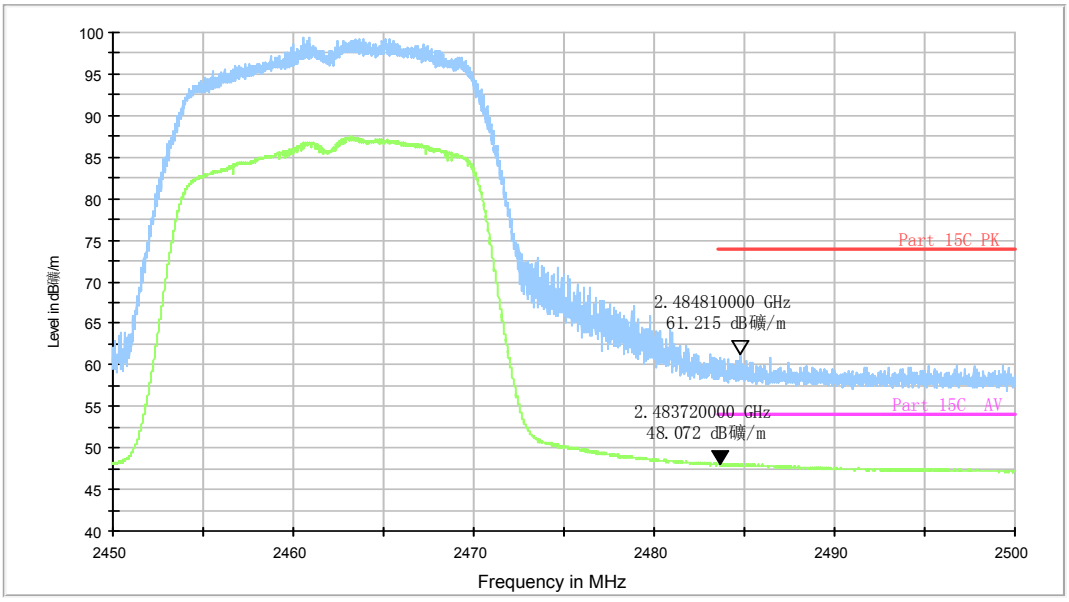


Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch1, 2.38 GHz - 2.43GHz



3

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

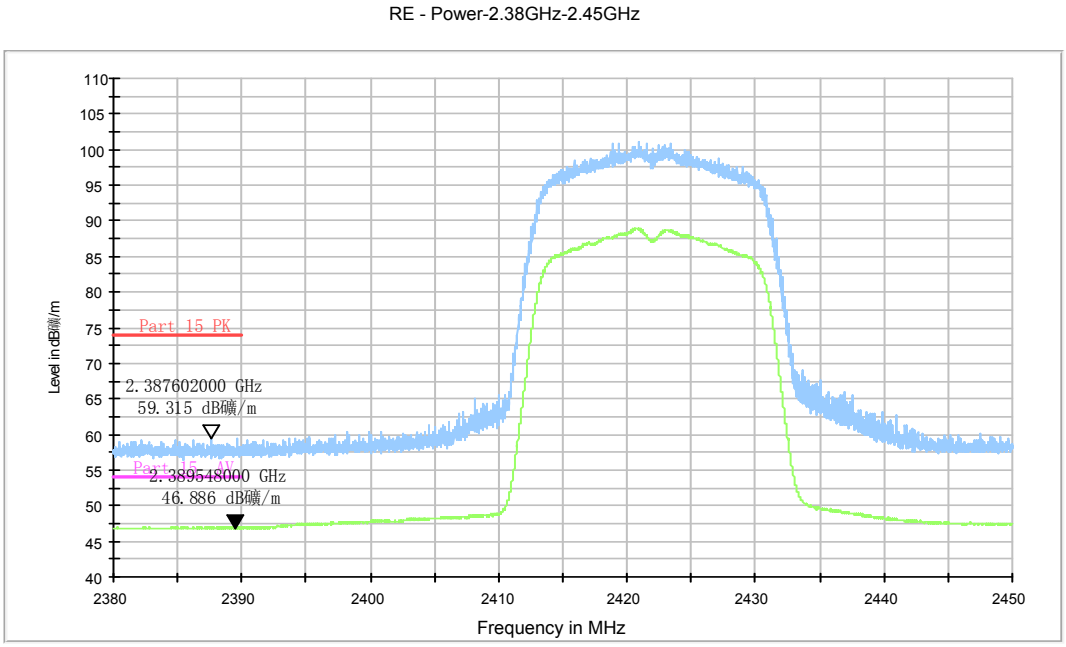


Fig.A.6.2.5 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch1, 2.38 GHz - 2.45GHz

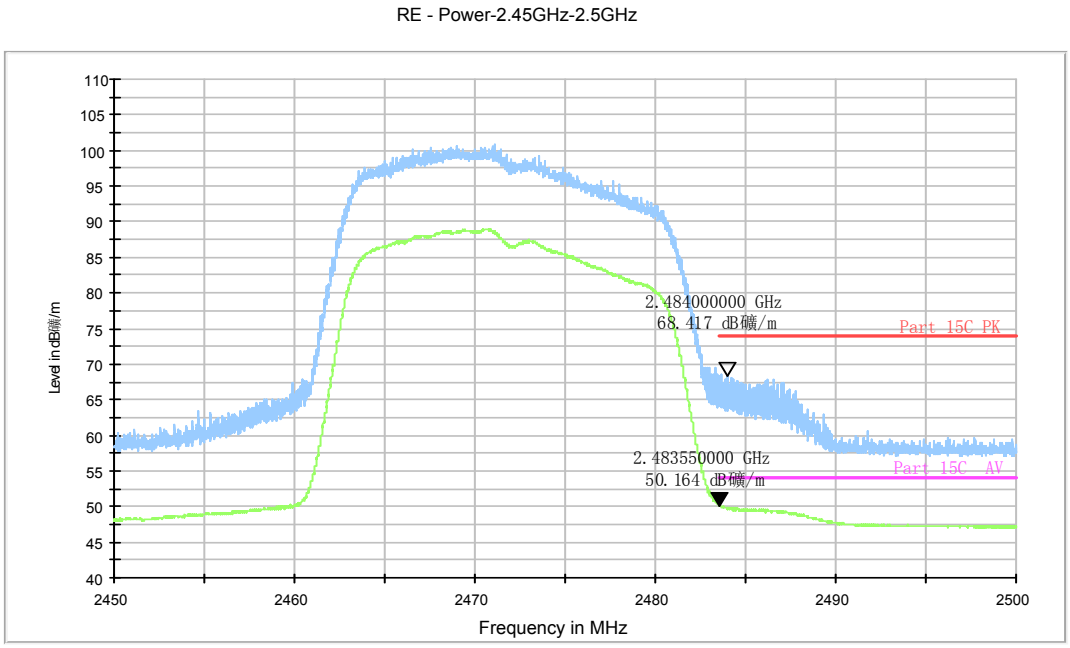


Fig.A.6.2.6 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz

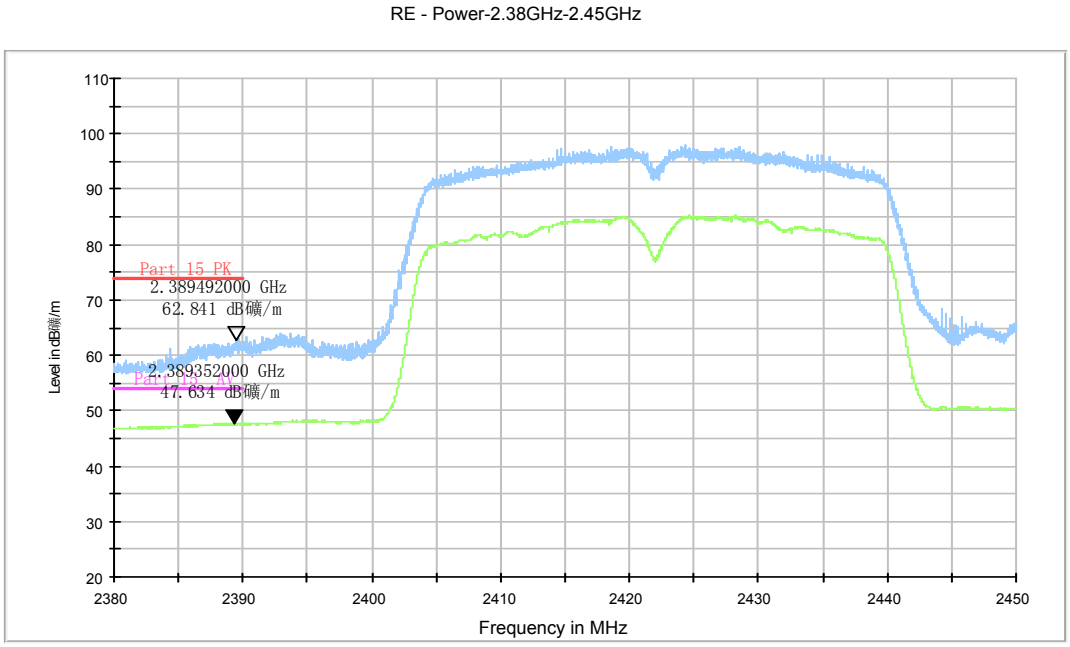


Fig.A.6.2.7 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch3, 2.38 GHz - 2.43GHz

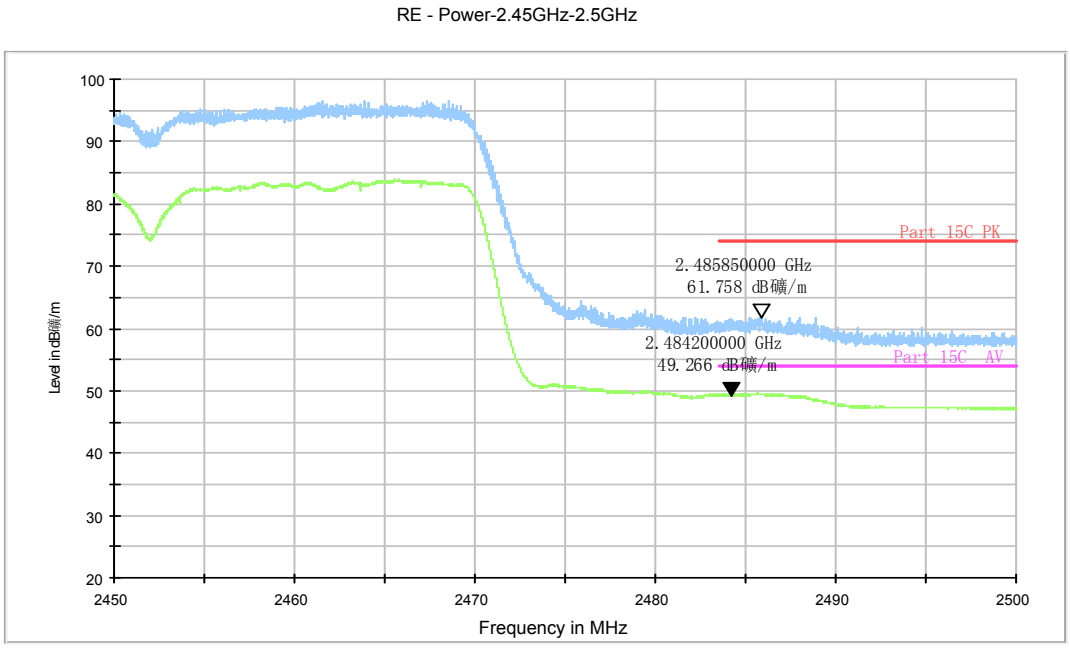


Fig.A.6.2.8 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch9, 2.45 GHz - 2.50GHz

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 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.7.2 Fig.A.7.3 Fig.A.7.4 Fig.A.7.5	Fig.A.7.6	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.7.2 Fig.A.7.3 Fig.A.7.4 Fig.A.7.5	Fig.A.7.6	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.1

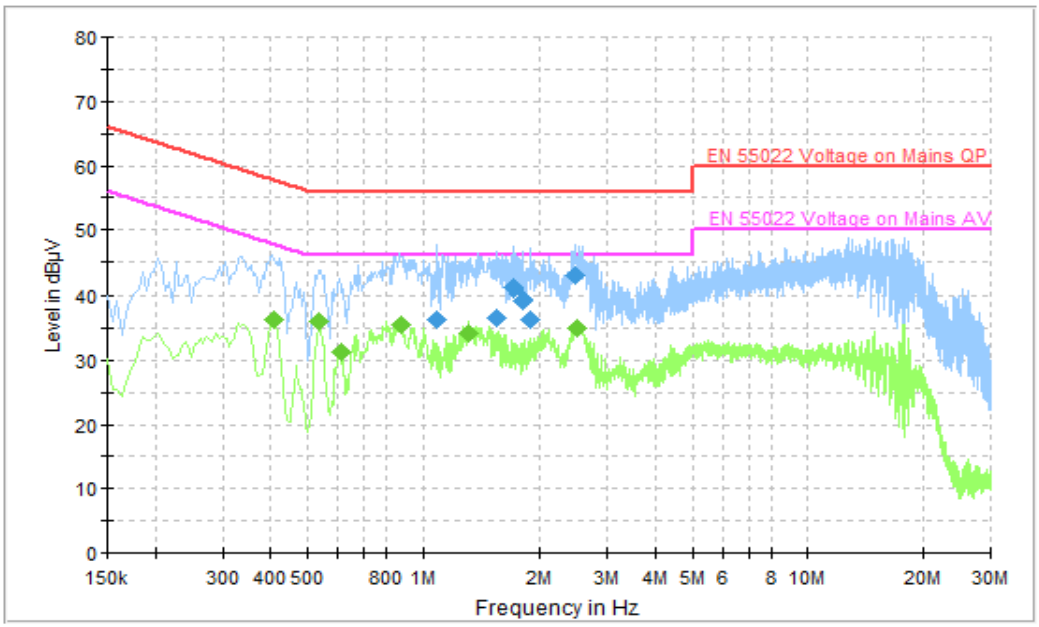


Fig.A.7.1 AC Powerline Conducted Emission-802.11b

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

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
1.086000	36.4	2000.0	9.000	N	10.2	19.6	56.0
1.531500	36.6	2000.0	9.000	N	10.2	19.4	56.0
1.702500	40.9	2000.0	9.000	L1	10.2	15.1	56.0
1.806000	39.3	2000.0	9.000	L1	10.2	16.7	56.0
1.891500	36.2	2000.0	9.000	N	10.3	19.8	56.0
2.481000	42.9	2000.0	9.000	L1	10.2	13.1	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.406500	36.2	2000.0	9.000	L1	10.2	11.5	47.7
0.537000	36.1	2000.0	9.000	L1	10.2	9.9	46.0
0.609000	31.3	2000.0	9.000	L1	10.2	14.7	46.0
0.874500	35.5	2000.0	9.000	L1	10.2	10.5	46.0
1.320000	34.1	2000.0	9.000	L1	10.2	11.9	46.0
2.499000	35.0	2000.0	9.000	L1	10.2	11.0	46.0

Traffic: Set.2

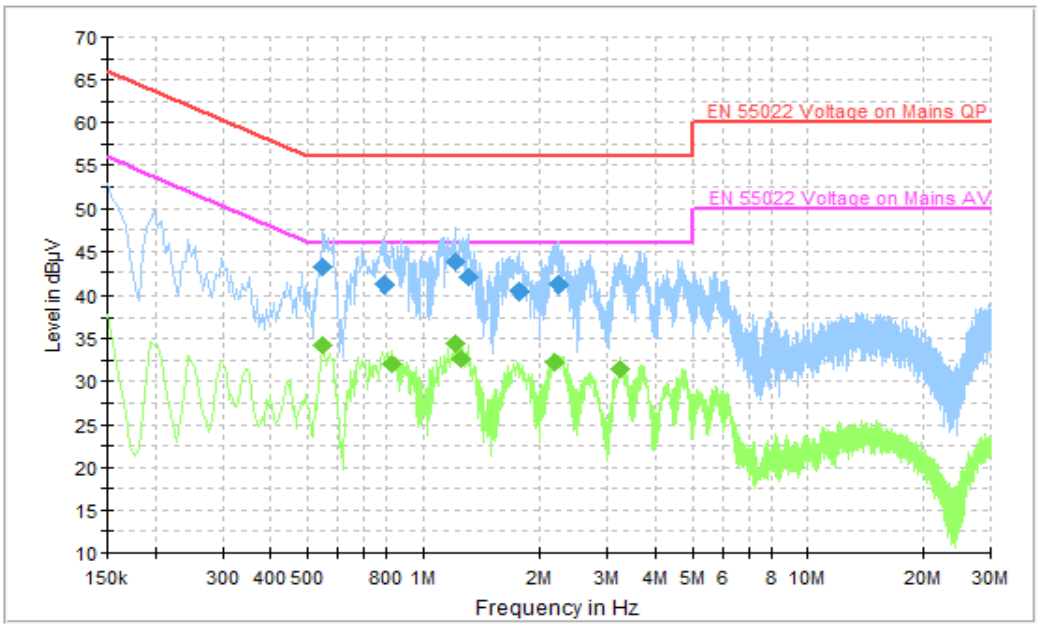


Fig.A.7.2 AC Powerline Conducted Emission-802.11b

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

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.546000	43.1	2000.0	9.000	L1	10.2	12.9	56.0
0.789000	41.2	2000.0	9.000	L1	10.2	14.8	56.0
1.216500	43.7	2000.0	9.000	L1	10.2	12.3	56.0
1.315500	42.0	2000.0	9.000	L1	10.2	14.0	56.0
1.756500	40.4	2000.0	9.000	L1	10.2	15.6	56.0
2.224500	41.3	2000.0	9.000	L1	10.2	14.7	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.546000	34.1	2000.0	9.000	L1	10.2	11.9	46.0
0.829500	32.1	2000.0	9.000	L1	10.2	13.9	46.0
1.216500	34.5	2000.0	9.000	L1	10.2	11.5	46.0
1.252500	32.7	2000.0	9.000	L1	10.2	13.3	46.0
2.175000	32.2	2000.0	9.000	L1	10.2	13.8	46.0
3.232500	31.4	2000.0	9.000	L1	10.3	14.6	46.0

Traffic: Set.3

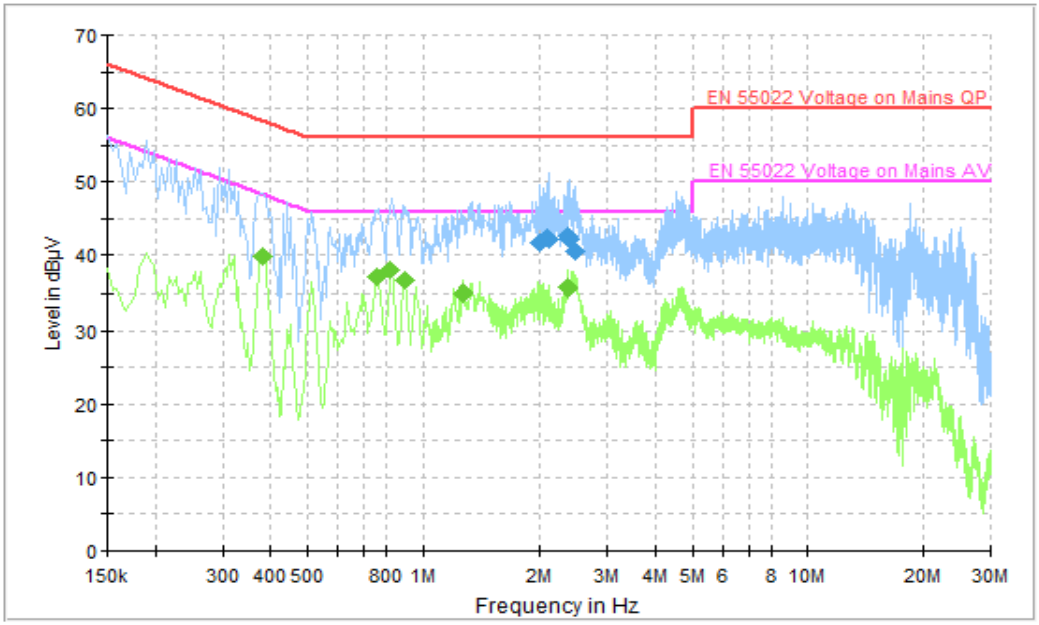


Fig.A.7.3 AC Powerline Conducted Emission-802.11b

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

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
2.004000	41.7	2000.0	9.000	L1	10.3	14.3	56.0
2.080500	42.4	2000.0	9.000	L1	10.2	13.6	56.0
2.103000	42.1	2000.0	9.000	L1	10.2	13.9	56.0
2.355000	42.7	2000.0	9.000	L1	10.2	13.3	56.0
2.382000	42.1	2000.0	9.000	L1	10.2	13.9	56.0
2.481000	40.5	2000.0	9.000	L1	10.2	15.5	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.379500	39.8	2000.0	9.000	L1	10.2	8.5	48.3
0.757500	37.2	2000.0	9.000	L1	10.2	8.8	46.0
0.820500	37.9	2000.0	9.000	L1	10.2	8.1	46.0
0.892500	36.6	2000.0	9.000	L1	10.2	9.4	46.0
1.275000	35.1	2000.0	9.000	L1	10.2	10.9	46.0
2.364000	35.6	2000.0	9.000	L1	10.2	10.4	46.0

Traffic: Set.4

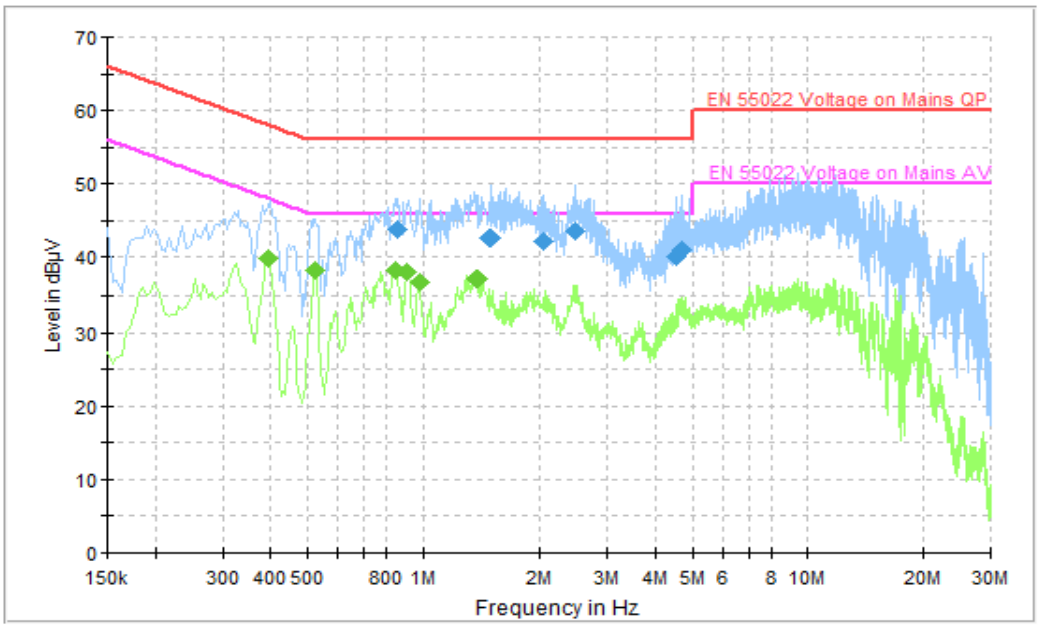


Fig.A.7.4 AC Powerline Conducted Emission-802.11b

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

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.856500	43.7	2000.0	9.000	N	10.2	12.3	56.0
1.495500	42.6	2000.0	9.000	L1	10.2	13.4	56.0
2.044500	42.1	2000.0	9.000	L1	10.2	13.9	56.0
2.472000	43.6	2000.0	9.000	L1	10.2	12.4	56.0
4.555500	40.1	2000.0	9.000	L1	10.3	15.9	56.0
4.713000	41.0	2000.0	9.000	L1	10.3	15.0	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.393000	39.9	2000.0	9.000	N	10.2	8.1	48.0
0.523500	38.2	2000.0	9.000	N	10.2	7.8	46.0
0.852000	38.2	2000.0	9.000	N	10.2	7.8	46.0
0.910500	38.0	2000.0	9.000	N	10.2	8.0	46.0
0.978000	36.6	2000.0	9.000	N	10.2	9.4	46.0
1.374000	37.1	2000.0	9.000	N	10.2	8.9	46.0

Traffic: Set.5

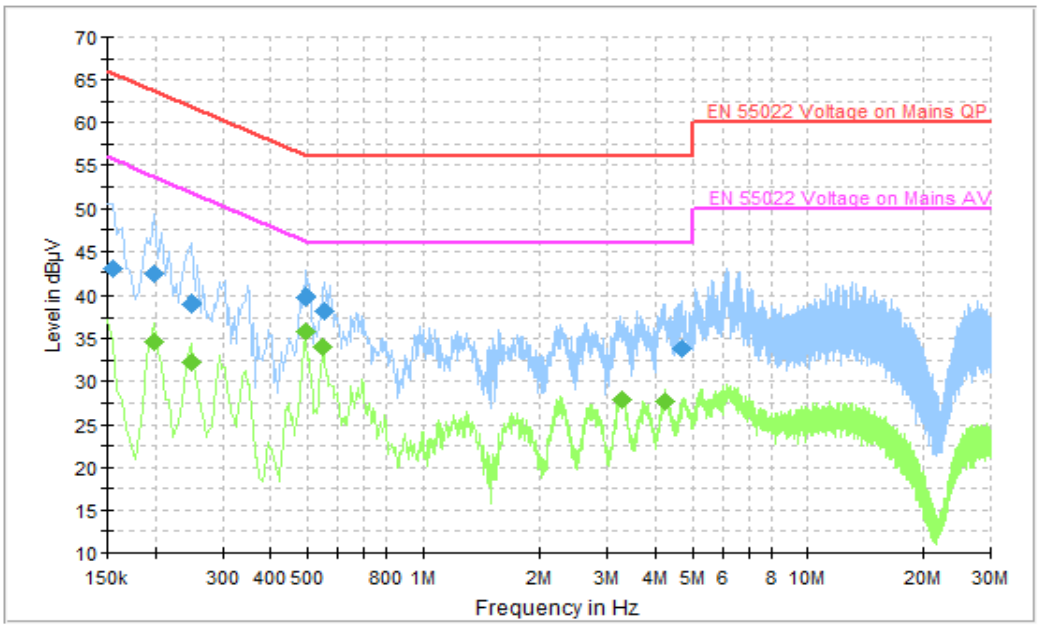


Fig.A.7.5 AC Powerline Conducted Emission-802.11b

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

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.154500	43.1	2000.0	9.000	L1	10.1	22.7	65.8
0.199500	42.5	2000.0	9.000	L1	10.1	21.2	63.6
0.249000	39.0	2000.0	9.000	L1	10.2	22.8	61.8
0.496500	39.8	2000.0	9.000	L1	10.2	16.2	56.1
0.550500	38.2	2000.0	9.000	L1	10.2	17.8	56.0
4.695000	33.7	2000.0	9.000	L1	10.3	22.3	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.199500	34.6	2000.0	9.000	L1	10.1	19.0	53.6
0.249000	32.2	2000.0	9.000	L1	10.2	19.6	51.8
0.492000	35.8	2000.0	9.000	L1	10.2	10.3	46.1
0.546000	34.0	2000.0	9.000	L1	10.2	12.0	46.0
3.259500	27.8	2000.0	9.000	L1	10.3	18.2	46.0
4.245000	27.7	2000.0	9.000	L1	10.3	18.3	46.0

Idle: Set.1

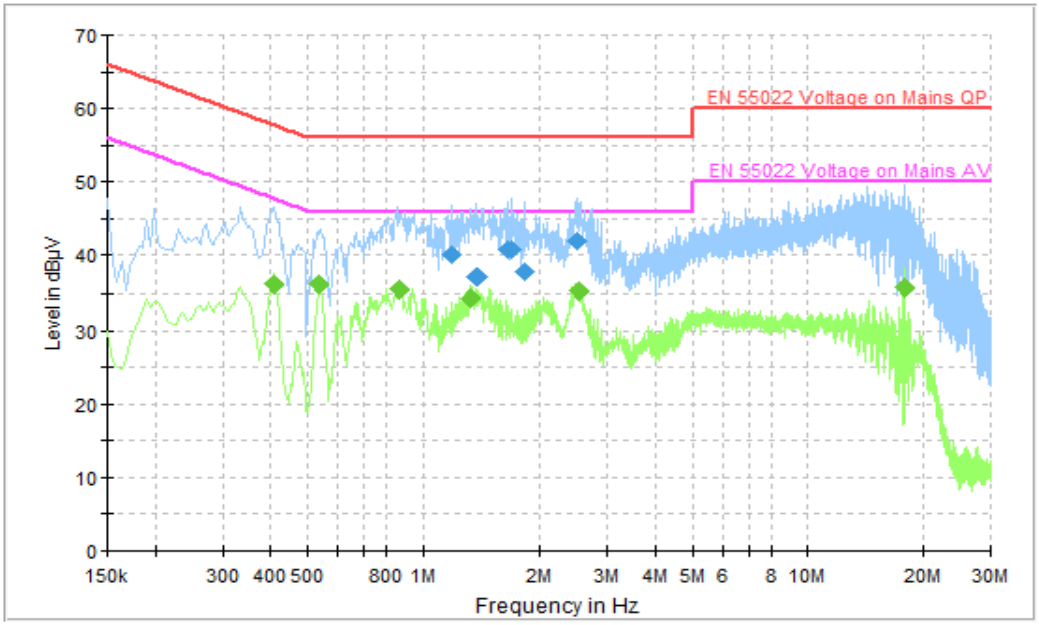


Fig.A.7.6 AC Powerline Conducted Emission-Idle

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

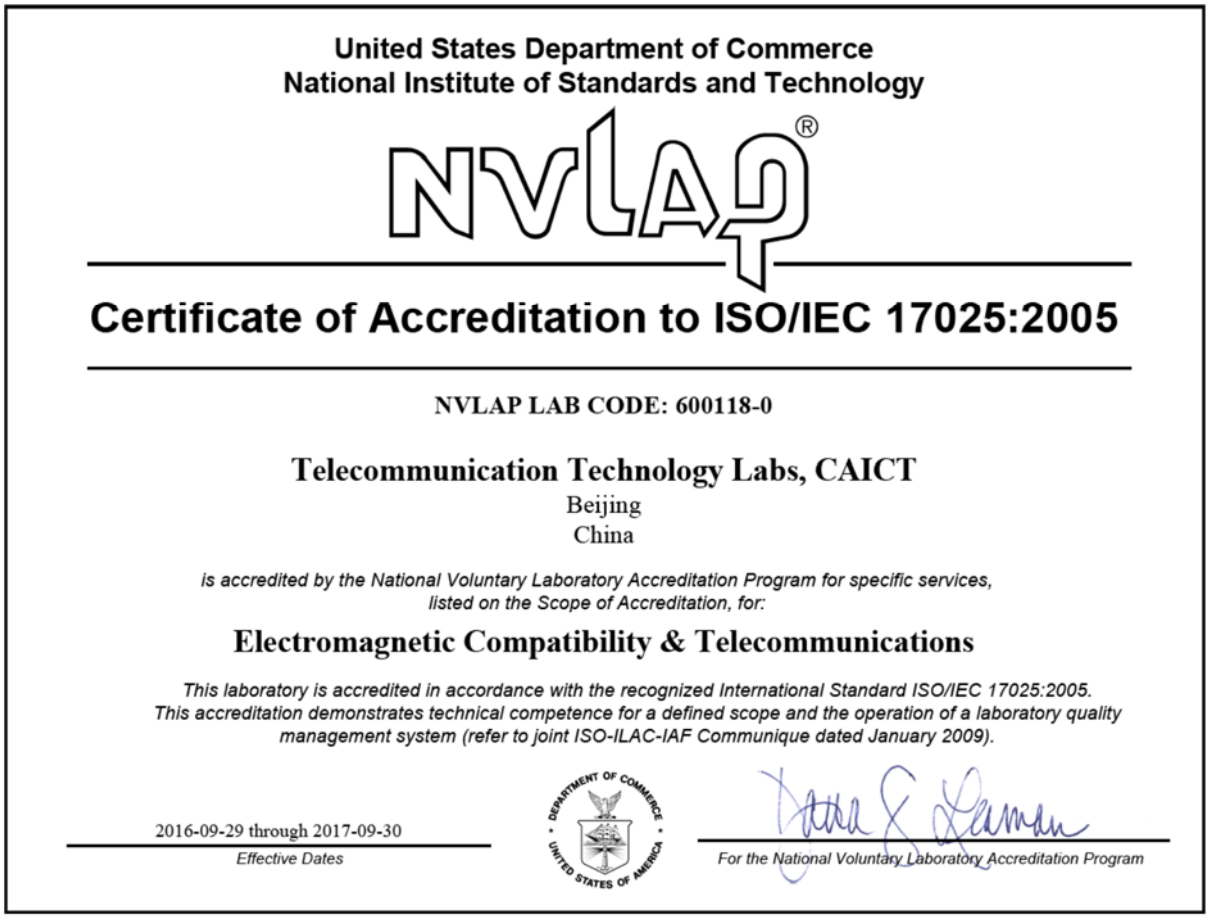
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
1.185000	40.2	2000.0	9.000	L1	10.2	15.8	56.0
1.378500	37.0	2000.0	9.000	N	10.2	19.0	56.0
1.648500	40.7	2000.0	9.000	L1	10.2	15.3	56.0
1.693500	40.8	2000.0	9.000	L1	10.2	15.2	56.0
1.815000	37.9	2000.0	9.000	N	10.3	18.1	56.0
2.494500	41.9	2000.0	9.000	L1	10.2	14.1	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.406500	36.2	2000.0	9.000	L1	10.2	11.5	47.7
0.537000	36.1	2000.0	9.000	L1	10.2	9.9	46.0
0.870000	35.6	2000.0	9.000	L1	10.2	10.4	46.0
1.333500	34.4	2000.0	9.000	L1	10.2	11.6	46.0
2.521500	35.3	2000.0	9.000	L1	10.2	10.7	46.0
17.803500	35.7	2000.0	9.000	L1	11.1	14.3	50.0

ANNEX B: Accreditation Certificate



United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

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 Communique dated January 2009).

2016-09-29 through 2017-09-30
Effective Dates

DEPARTMENT OF COMMERCE · UNITED STATES OF AMERICA

For the National Voluntary Laboratory Accreditation Program

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