

**802.11n-HT40**
**Ch3**

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)
16859.0	50.67	-26.60	41.50	35.77	74.00	23.33	V
14531.5	47.41	-28.60	42.50	33.51	74.00	26.59	V
12704.0	47.30	-30.50	39.10	38.70	74.00	26.70	V
9963.5	43.24	-33.60	38.10	38.74	74.00	30.76	V
7991.5	41.78	-34.80	37.10	39.48	74.00	32.22	H
2388.8	63.08	-20.00	28.10	55.08	74.00	10.92	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)
16261.5	50.27	-27.10	39.30	38.07	74.00	23.73	V
14867.5	47.83	-28.60	40.80	35.63	74.00	26.17	H
12584.5	46.95	-31.00	39.00	39.05	74.00	27.05	V
8866.0	42.89	-33.50	38.10	38.29	74.00	31.11	H
7989.0	42.56	-34.80	37.10	40.26	74.00	31.44	V
4880.0	41.11	-37.20	33.20	45.11	74.00	32.89	H

**Ch9**

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)
16934.0	50.74	-26.30	42.40	34.74	74.00	23.26	V
12565.0	47.83	-31.00	39.00	39.93	74.00	26.17	H
14745.5	47.11	-28.30	41.30	34.11	74.00	26.89	V
9848.0	43.02	-33.50	38.00	38.52	74.00	30.98	H
7995.0	42.40	-34.80	37.10	40.10	74.00	31.60	H
2486.7	72.51	-20.00	28.30	64.21	74.00	1.49	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)
16931.5	40.74	-26.30	42.40	24.74	54.00	13.26	V
4824.0	38.41	-37.50	33.10	42.71	54.00	15.59	H
14763.5	38.05	-28.30	41.30	25.05	54.00	15.95	V
12566.5	37.96	-31.00	39.00	30.06	54.00	16.04	V
8264.5	33.42	-35.00	37.60	30.82	54.00	20.58	H
2387.1	47.43	-20.00	28.10	39.43	54.00	6.57	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)
4874.0	44.61	-37.20	33.20	48.61	54.00	9.39	H
16896.5	40.63	-26.30	42.40	24.63	54.00	13.37	H
12562.0	38.45	-31.00	39.00	30.55	54.00	15.55	V
14834.5	37.86	-28.60	40.80	25.66	54.00	16.14	H
9043.5	33.44	-33.80	38.10	29.04	54.00	20.56	H
7970.5	32.61	-34.80	37.10	30.31	54.00	21.39	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)
17981.0	40.71	-25.50	46.70	19.51	54.00	13.29	V
12563.0	38.12	-31.00	39.00	30.22	54.00	15.88	H
14834.5	38.07	-28.60	40.80	25.87	54.00	15.93	V
4924.0	34.10	-37.10	33.30	37.90	54.00	19.90	H
8606.0	33.36	-34.40	37.90	29.76	54.00	20.64	H
2487.2	48.34	-20.00	28.30	40.04	54.00	5.66	V

**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)
17983.0	40.40	-25.50	46.70	19.20	54.00	13.60	V
12041.0	37.87	-31.60	39.00	30.47	54.00	16.13	V
14835.0	37.58	-28.60	40.80	25.38	54.00	16.42	H
9971.0	33.37	-33.60	38.10	28.87	54.00	20.63	H
7971.0	32.82	-34.80	37.10	30.52	54.00	21.18	V
2389.9	49.30	-20.00	28.10	41.30	54.00	4.70	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)
16974.5	40.60	-26.30	42.40	24.60	54.00	13.40	V
14831.5	37.75	-28.60	40.80	25.55	54.00	16.25	V
12565.0	37.66	-31.00	39.00	29.76	54.00	16.34	H
4875.0	35.94	-37.20	33.20	39.94	54.00	18.06	H
8853.0	33.14	-33.50	38.10	28.54	54.00	20.86	H
7992.0	32.79	-34.80	37.10	30.49	54.00	21.21	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)
16972.0	40.33	-26.30	42.40	24.33	54.00	13.67	H
14830.5	37.81	-28.60	40.80	25.61	54.00	16.19	H
12540.5	37.71	-31.00	39.00	29.81	54.00	16.29	H
8153.5	33.12	-34.60	37.30	30.32	54.00	20.88	V
7983.0	32.71	-34.80	37.10	30.41	54.00	21.29	H
2487.0	50.22	-20.00	28.30	41.92	54.00	3.78	V

**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)
16866.5	40.42	-26.60	41.50	25.52	54.00	13.58	V
14764.5	38.10	-28.30	41.30	25.10	54.00	15.90	V
12611.0	37.72	-31.00	39.00	29.82	54.00	16.28	V
8537.5	33.13	-34.10	37.90	29.43	54.00	20.87	H
7995.5	32.76	-34.80	37.10	30.46	54.00	21.24	H
2389.5	47.99	-20.00	28.10	39.99	54.00	6.01	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)
16973.5	40.60	-26.30	42.40	24.60	54.00	13.40	V
12561.0	37.85	-31.00	39.00	29.95	54.00	16.15	H
14834.0	37.82	-28.60	40.80	25.62	54.00	16.18	H
4872.0	33.82	-37.20	33.20	37.82	54.00	20.18	H
8292.0	33.15	-35.00	37.60	30.55	54.00	20.85	H
7993.5	32.57	-34.80	37.10	30.27	54.00	21.43	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)
17956.0	40.49	-25.50	46.70	19.29	54.00	13.51	V
12562.0	37.89	-31.00	39.00	29.99	54.00	16.11	V
14832.0	37.79	-28.60	40.80	25.59	54.00	16.21	V
8009.5	33.21	-34.70	37.20	30.71	54.00	20.79	V
7989.5	32.73	-34.80	37.10	30.43	54.00	21.27	V
2485.1	49.51	-20.00	28.30	41.21	54.00	4.49	V

**802.11n-HT40**
**Ch3**

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)
16971.5	40.36	-26.30	42.40	24.36	54.00	13.64	V
14833.0	37.68	-28.60	40.80	25.48	54.00	16.32	H
12566.0	37.48	-31.00	39.00	29.58	54.00	16.52	H
8011.5	33.35	-34.70	37.20	30.85	54.00	20.65	V
7963.5	32.66	-34.80	37.10	30.36	54.00	21.34	H
2390.0	51.78	-20.00	28.10	43.78	54.00	2.22	V

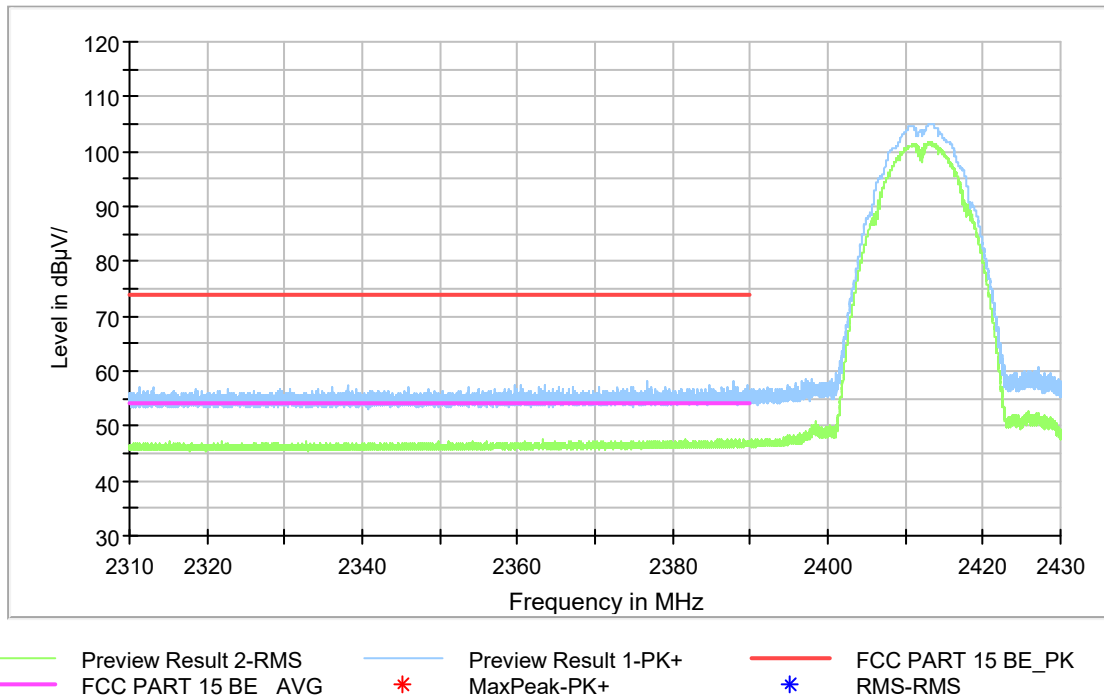
**Ch6**

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)
16865.5	40.30	-26.60	41.50	25.40	54.00	13.70	H
14833.0	38.55	-28.60	40.80	26.35	54.00	15.45	V
12559.5	37.96	-31.00	39.00	30.06	54.00	16.04	V
8169.5	32.97	-35.20	37.40	30.67	54.00	21.03	H
7997.5	32.85	-34.80	37.10	30.55	54.00	21.15	V
4875.5	32.60	-37.20	33.20	36.60	54.00	21.40	H

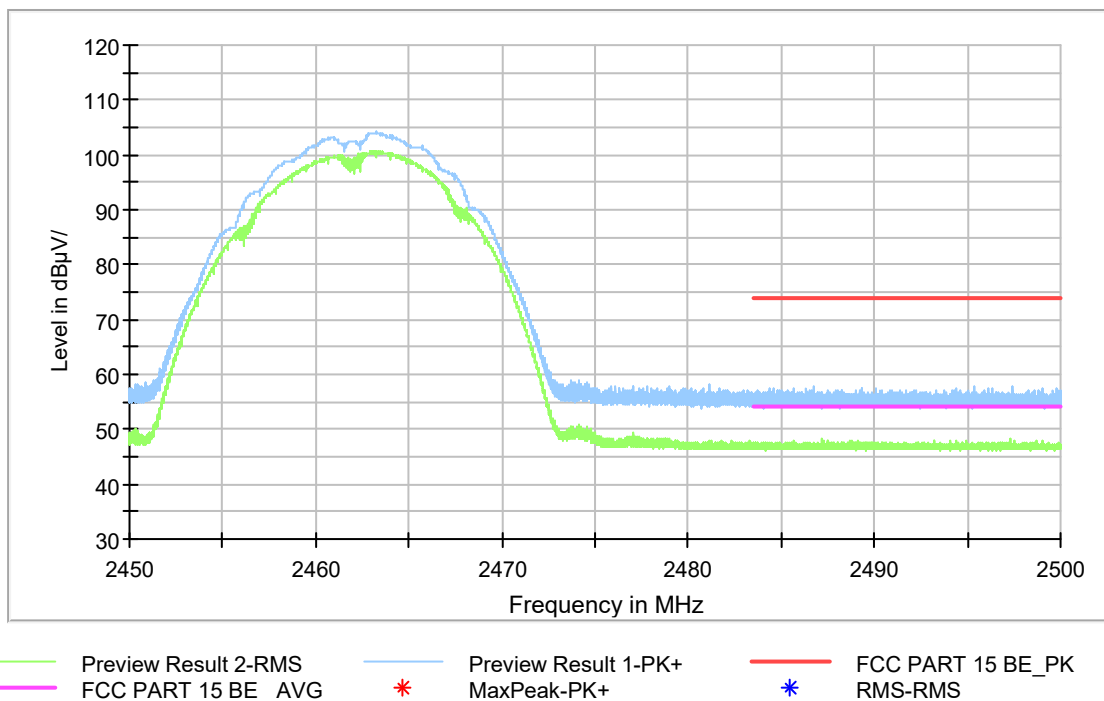
**Ch9**

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)
16861.5	40.41	-26.60	41.50	25.51	54.00	13.59	V
14834.0	38.45	-28.60	40.80	26.25	54.00	15.55	V
12560.5	38.33	-31.00	39.00	30.43	54.00	15.67	H
8494.0	33.45	-34.10	37.90	29.75	54.00	20.55	H
7977.5	32.62	-34.80	37.10	30.32	54.00	21.38	V
2486.7	56.38	-20.00	28.30	48.08	54.00	-2.38	V

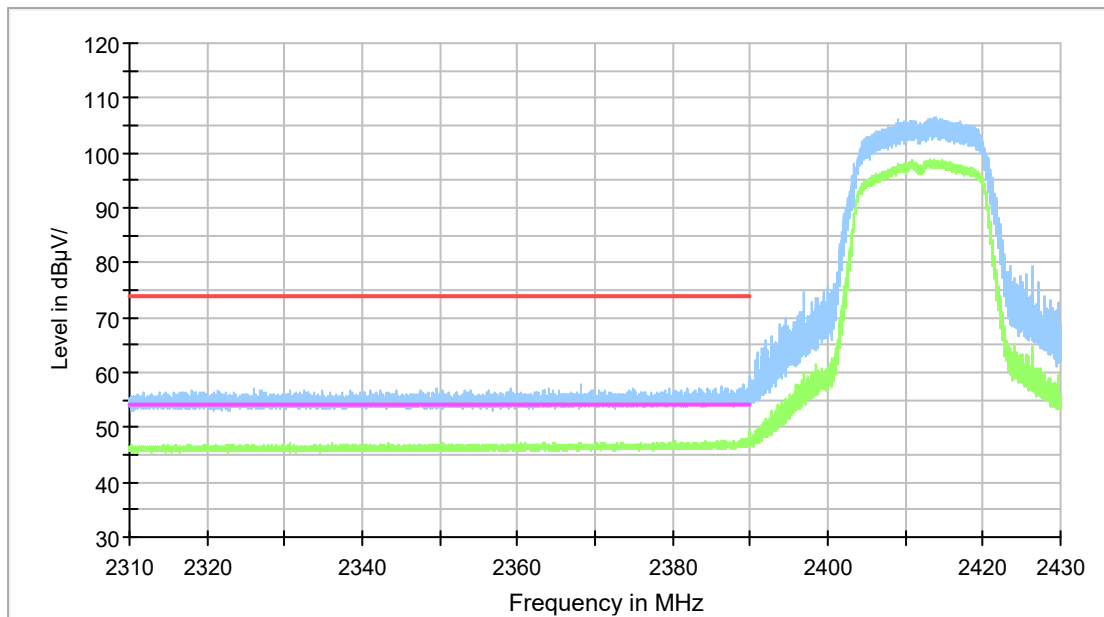
Test graphs as below:



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

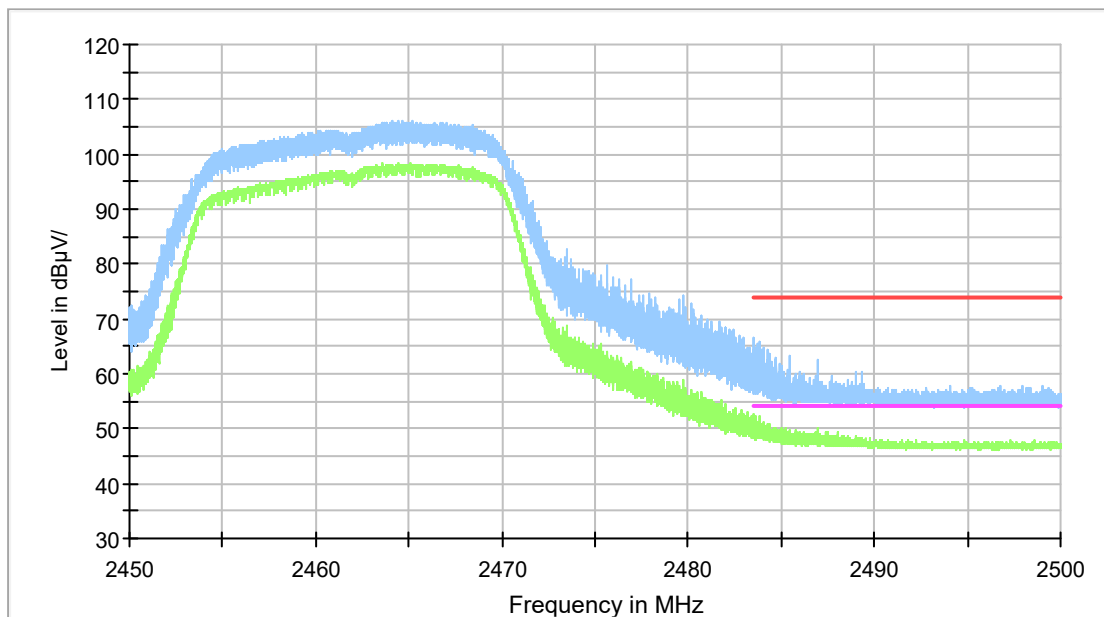


**Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz**



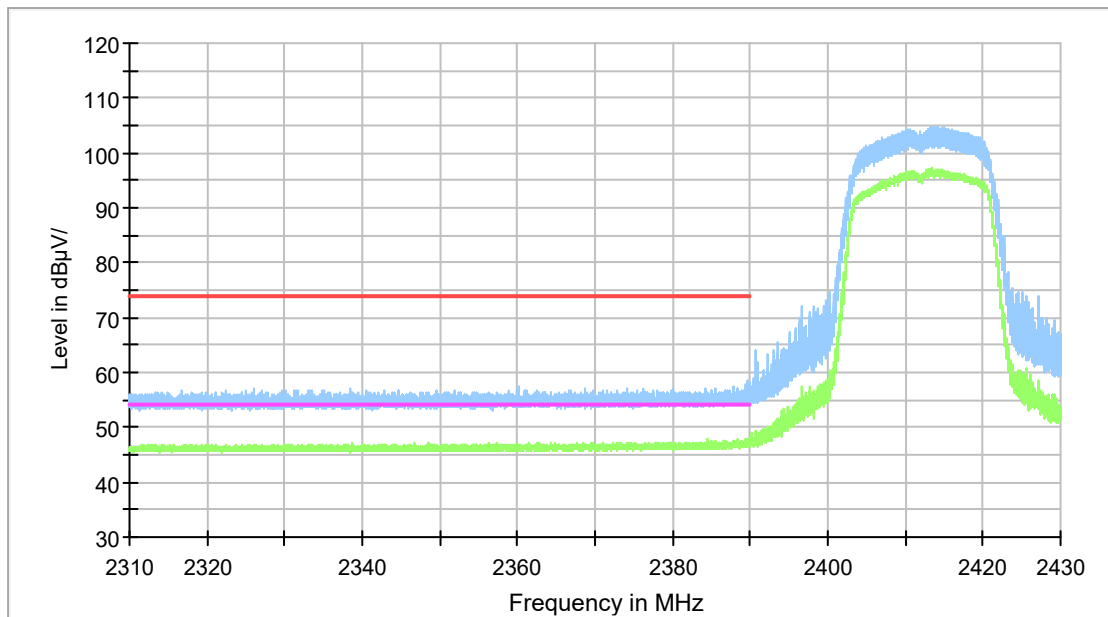
— Preview Result 2-RMS     — Preview Result 1-PK+     — FCC PART 15 BE\_PK  
— FCC PART 15 BE\_AVG     \* MaxPeak-PK+     \* RMS-RMS

**Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch1, 2.31 GHz - 2.43GHz**



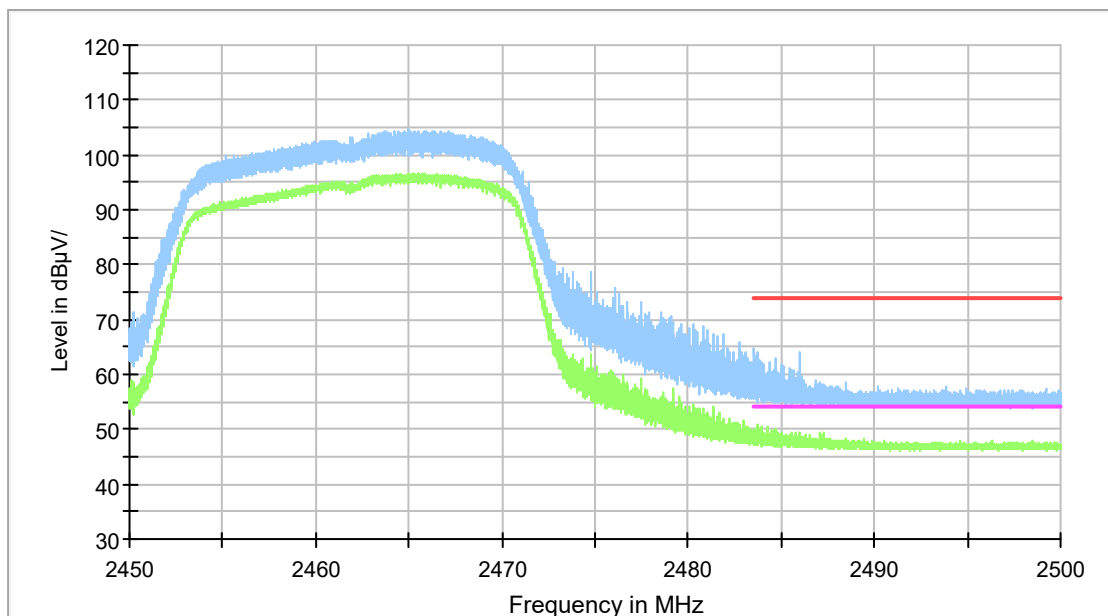
— Preview Result 2-RMS     — Preview Result 1-PK+     — FCC PART 15 BE\_PK  
— FCC PART 15 BE\_AVG     \* MaxPeak-PK+     \* RMS-RMS

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



— Preview Result 2-RMS     — Preview Result 1-PK+     — FCC PART 15 BE\_PK  
— FCC PART 15 BE\_AVG     \* MaxPeak-PK+     \* RMS-RMS

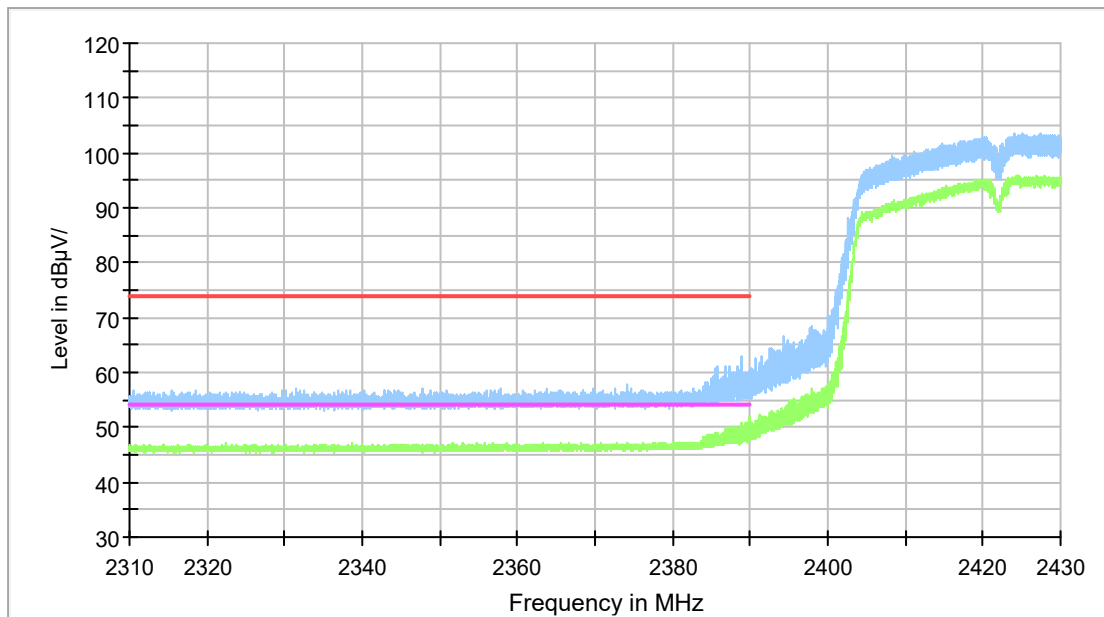
**Fig.A.6.2.5 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch1, 2.31 GHz - 2.43GHz**



— Preview Result 2-RMS     — Preview Result 1-PK+     — FCC PART 15 BE\_PK  
— FCC PART 15 BE\_AVG     \* MaxPeak-PK+     \* RMS-RMS

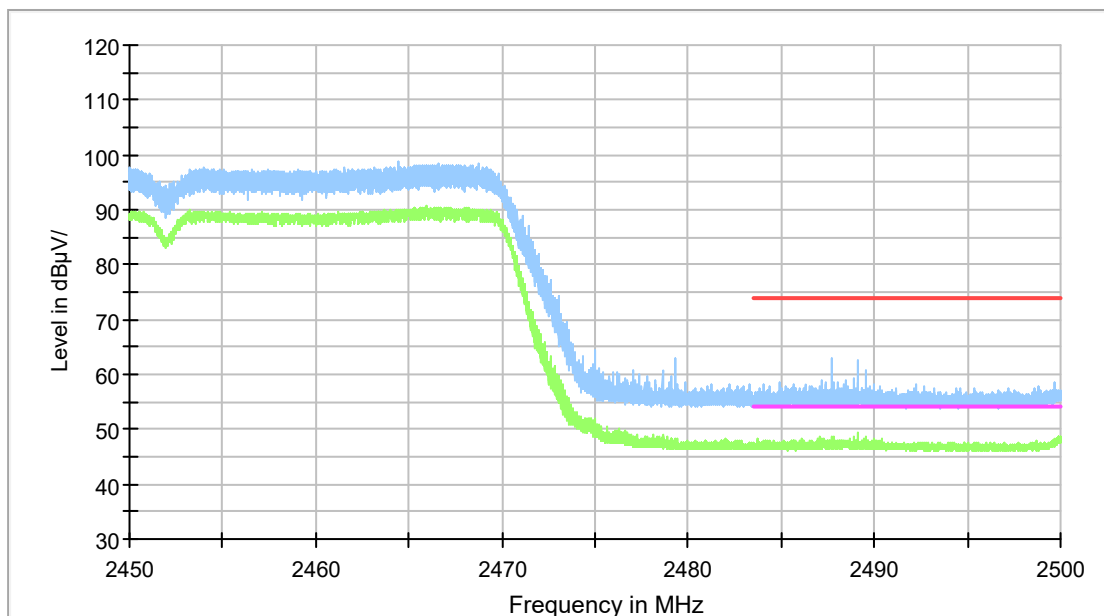
**Fig.A.6.2.6 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz**





— Preview Result 2-RMS     — Preview Result 1-PK+     — FCC PART 15 BE\_PK  
— FCC PART 15 BE\_AVG     \* MaxPeak-PK+     \* RMS-RMS

**Fig.A.6.2.7 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch3, 2.31 GHz - 2.43GHz**



— Preview Result 2-RMS     — Preview Result 1-PK+     — FCC PART 15 BE\_PK  
— FCC PART 15 BE\_AVG     \* MaxPeak-PK+     \* RMS-RMS

**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.<sup>36</sup> 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:**

<b>Voltage (V)</b>	<b>Frequency (Hz)</b>
120	60

**Measurement Result and limit:**

## WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	66 to 56	Fig.A.7.1	Fig.A.7.2	<b>P</b>
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 $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	56 to 46	Fig.A.7.1	Fig.A.7.2	<b>P</b>
0.5 to 5	46			
5 to 30	50			

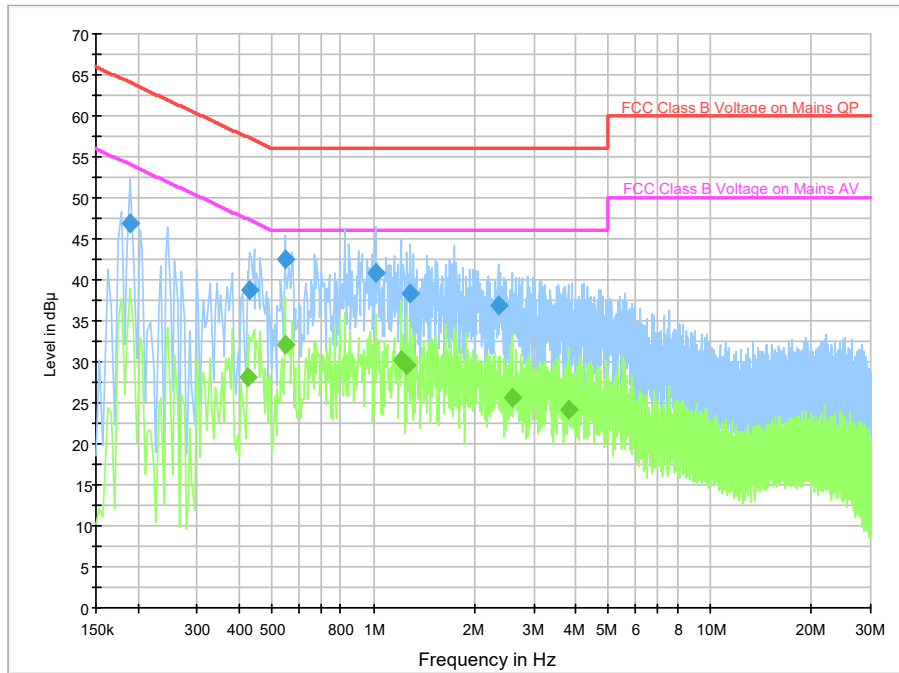
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

**Conclusion: Pass**

**Test graphs as below:**

**Measurement results for Set.1:**

**Result for Traffic:**



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

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

**Final Result 1**

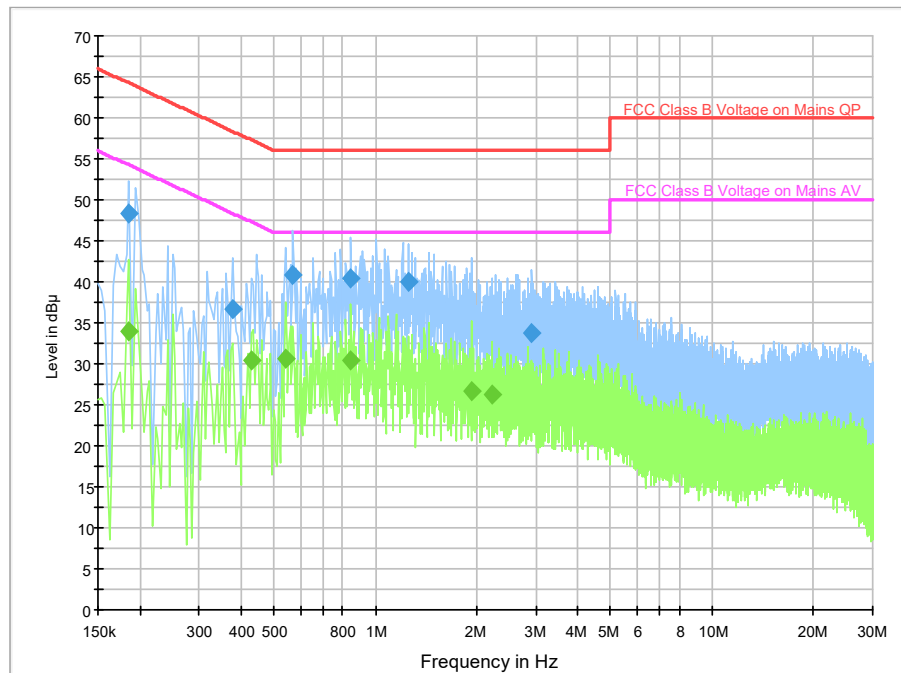
Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.190000	46.9	9.000	On	N	19.7	17.1	64.0	
0.430000	38.8	9.000	On	N	19.7	18.4	57.3	
0.546000	42.5	9.000	On	L1	19.7	13.5	56.0	
1.014000	40.8	9.000	On	L1	19.7	15.2	56.0	
1.290000	38.2	9.000	On	L1	19.7	17.8	56.0	
2.346000	36.9	9.000	On	L1	19.6	19.1	56.0	

**Final Result 2**

Frequency (MHz)	Average (dBuV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.422000	28.1	9.000	On	L1	19.7	19.3	47.4	
0.546000	32.0	9.000	On	L1	19.7	14.0	46.0	
1.206000	30.2	9.000	On	L1	19.6	15.8	46.0	
1.262000	29.6	9.000	On	L1	19.7	16.4	46.0	
2.590000	25.7	9.000	On	L1	19.6	20.3	46.0	
3.822000	24.1	9.000	On	L1	19.6	21.9	46.0	

**Measurement results for Set.1:**

**Result for Idle:**



**Fig.A.7.2 AC Powerline Conducted Emission-Idle**

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

**Final Result 1**

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.186000	48.4	9.000	On	L1	19.7	15.8	64.2	
0.378000	36.8	9.000	On	L1	19.7	21.6	58.3	
0.570000	40.8	9.000	On	L1	19.7	15.2	56.0	
0.846000	40.5	9.000	On	L1	19.7	15.5	56.0	
1.258000	40.1	9.000	On	L1	19.6	15.9	56.0	
2.922000	33.9	9.000	On	L1	19.6	22.2	56.0	

**Final Result 2**

Frequency (MHz)	Average (dBuV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.186000	34.0	9.000	On	L1	19.7	20.2	54.2	
0.430000	30.5	9.000	On	N	19.7	16.8	47.3	
0.542000	30.6	9.000	On	L1	19.7	15.4	46.0	
0.846000	30.4	9.000	On	L1	19.7	15.6	46.0	
1.930000	26.6	9.000	On	L1	19.6	19.4	46.0	
2.218000	26.2	9.000	On	L1	19.6	19.8	46.0	

## ANNEX B: EUT parameters

Disclaimer: The antenna gain and 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



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