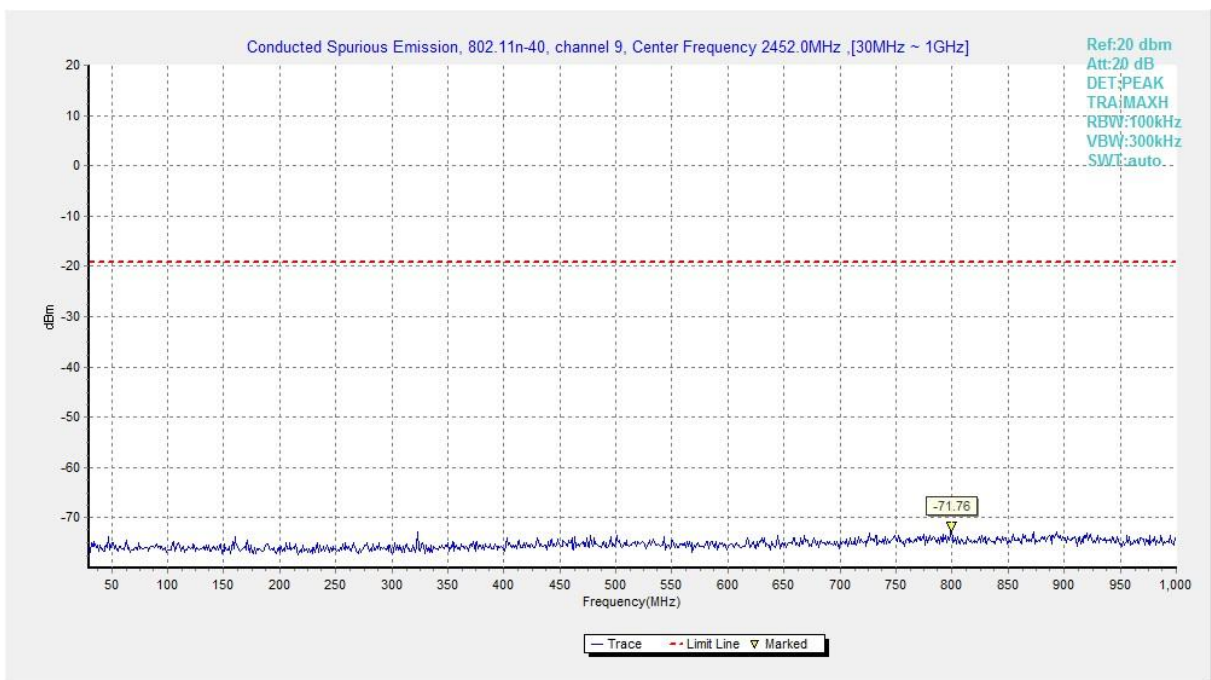
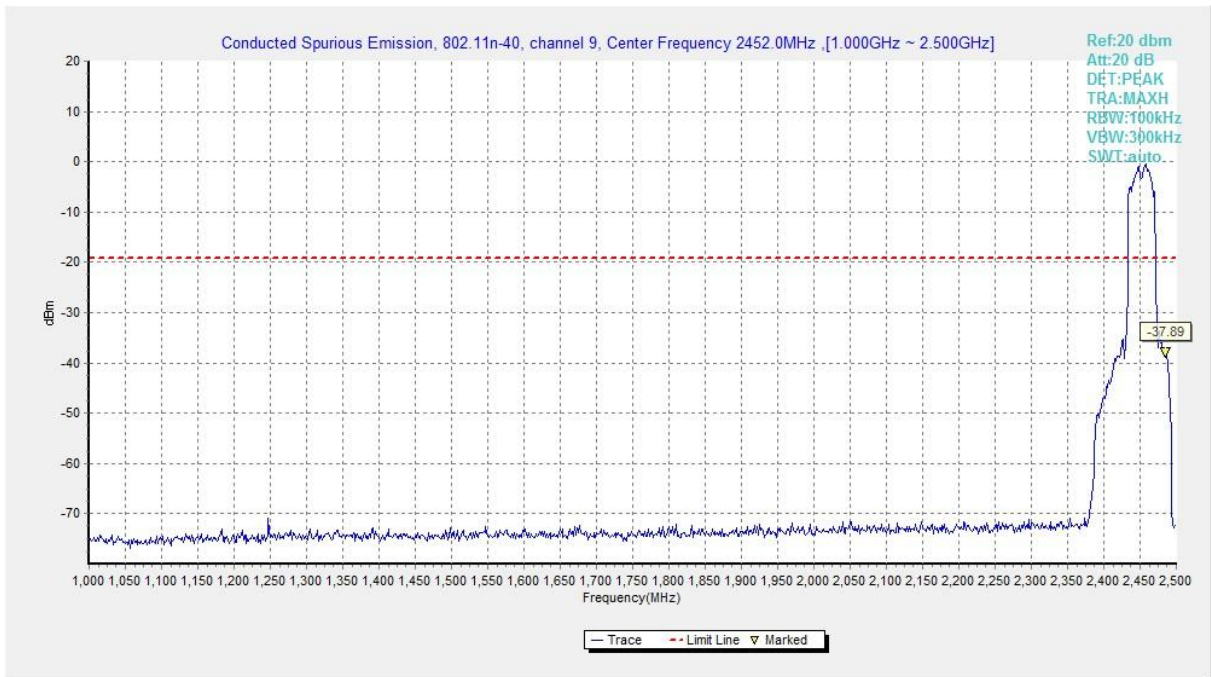


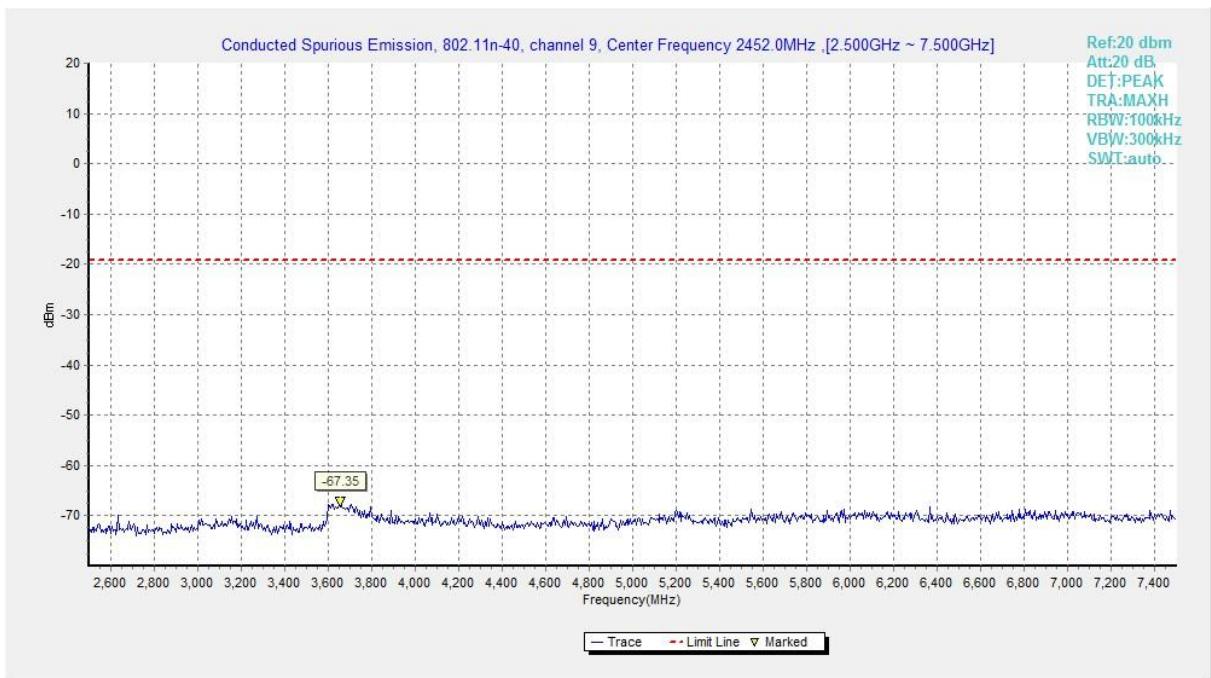
**Fig.A.6.1.41 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, Center Frequency)**



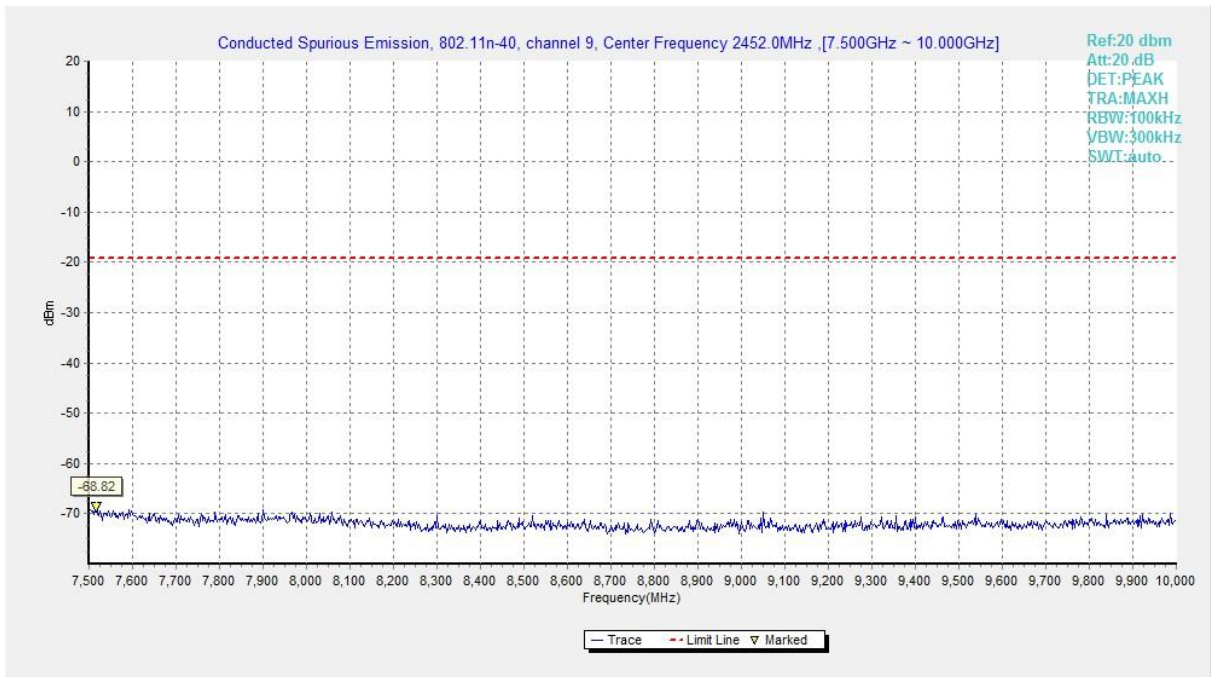
**Fig.A.6.1.42 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 30 MHz-1 GHz)**



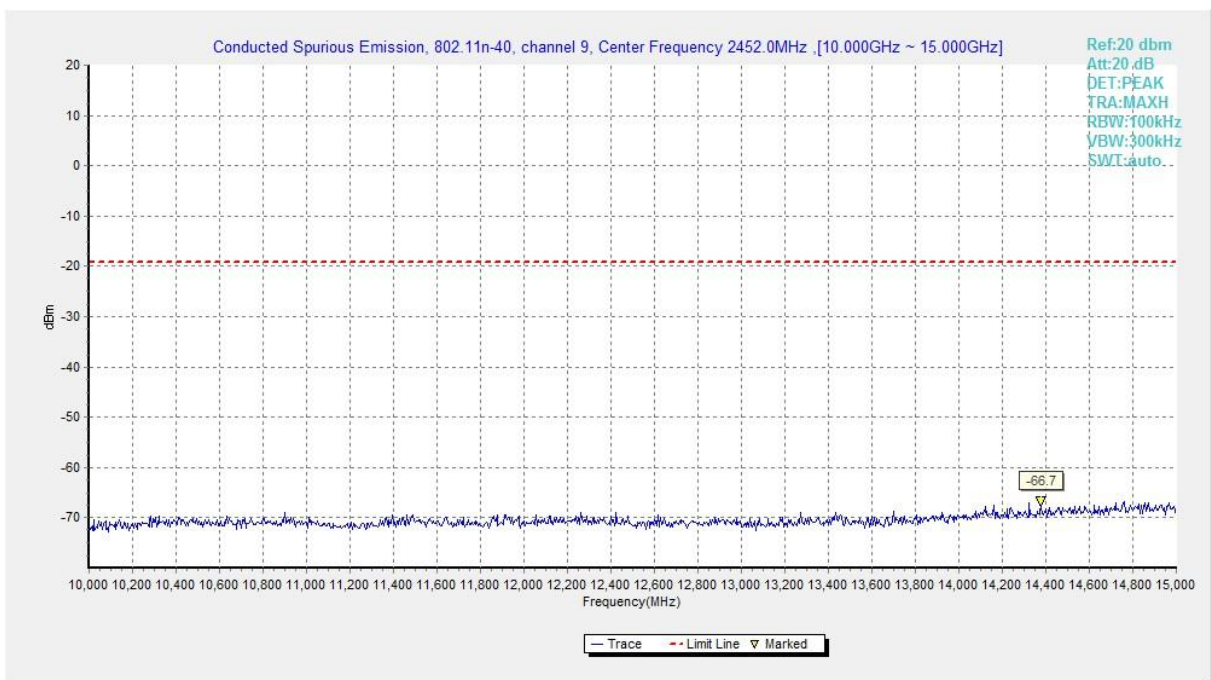
**Fig.A.6.1.43 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 1 GHz-2.5 GHz)**



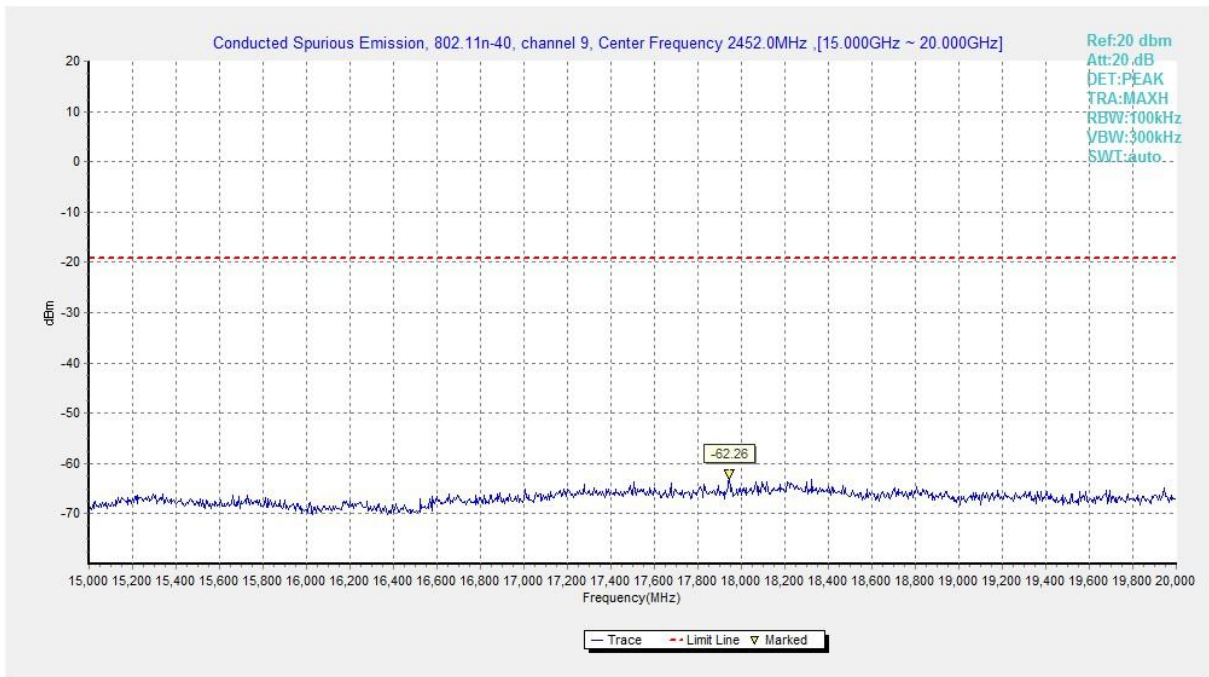
**Fig.A.6.1.44 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 2.5 GHz-7.5 GHz)**



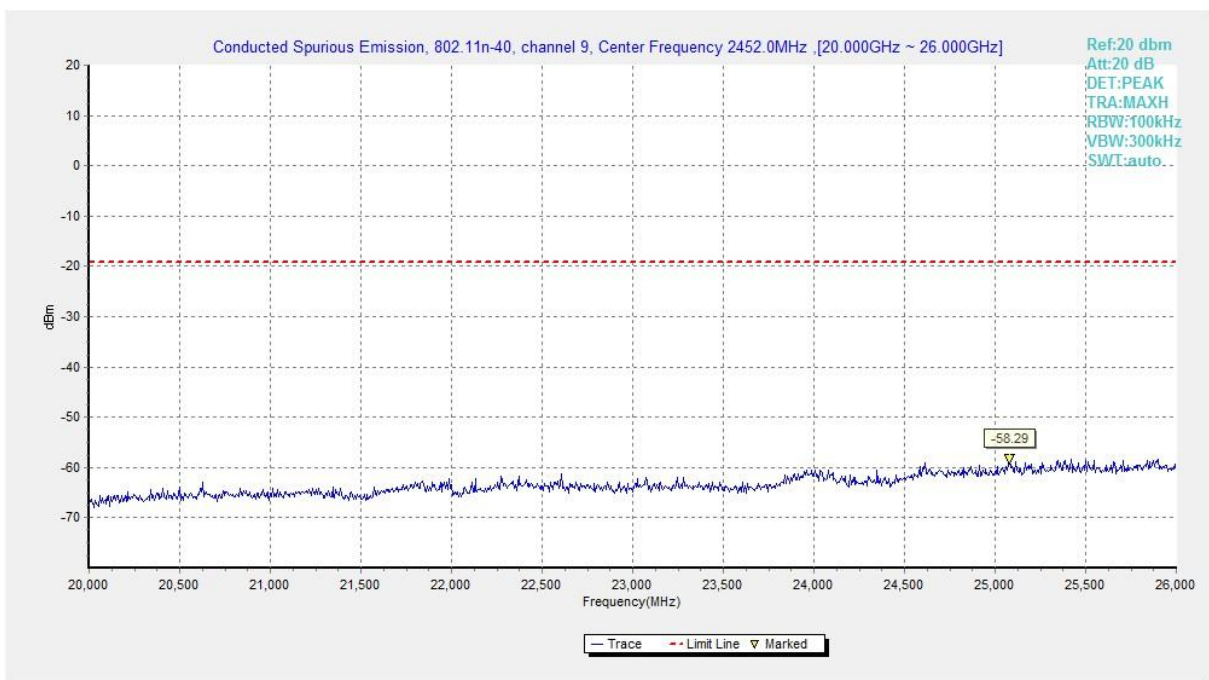
**Fig.A.6.1.45 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 7.5 GHz-10 GHz)**



**Fig.A.6.1.46 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 10 GHz-15 GHz)**



**Fig.A.6.1.47 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 15 GHz-20 GHz)**



**Fig.A.6.1.48 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 20 GHz-26 GHz)**

**A.6.2 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( $\mu\text{V}/\text{m}$ )	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( $\mu\text{V}/\text{m}$ )	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/3MHz	15
4000-18000	1MHz/3MHz	40
18000-26500	1MHz/3MHz	20

**EUT ID: EUT1**

**Measurement results for Set.1:****802.11b mode**

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

**802.11n-HT40 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT40)	3	2.31GHz~2.43GHz---L	Fig.A.6.2.3	<b>P</b>
	9	2.45GHz~2.50GHz---H	Fig.A.6.2.4	<b>P</b>

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

**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)
2339.085	60.14	2.6	27.6	29.91	74.0	13.9	H
2358.090	59.51	2.6	27.6	29.24	74.0	14.5	V
4823.906	47.46	-37.5	32.1	52.91	74.0	26.5	V
7236.094	48.81	-37.0	35.8	50.03	74.0	25.2	V
9647.813	43.85	-36.0	37.8	42.05	74.0	30.2	H
12060.000	47.40	-34.8	39.1	43.15	74.0	26.6	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)
2366.600	39.14	-34.6	27.7	46.11	74.0	34.9	H
2520.600	38.59	-34.4	27.8	45.19	74.0	35.4	H
4874.063	45.77	-37.9	32.2	51.46	74.0	28.2	H
7311.094	45.48	-37.1	36.0	46.59	74.0	28.5	H
9748.125	45.56	-35.4	37.8	43.17	74.0	28.4	H
12185.156	47.31	-34.7	39.0	43.05	74.0	26.7	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)
2490.881	59.67	2.7	27.7	29.27	74.0	14.3	V
2495.463	59.91	2.7	27.7	29.47	74.0	14.1	H
4924.219	45.03	-37.9	32.3	50.62	74.0	29.0	H
7386.094	45.02	-36.9	36.1	45.82	74.0	29.0	H
9847.969	45.34	-35.6	37.8	43.10	74.0	28.7	H
12309.844	46.86	-34.7	38.9	42.63	74.0	27.1	H

**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)
2388.523	61.23	2.6	27.7	30.95	74.0	12.8	V
2389.975	61.54	2.6	27.7	31.26	74.0	12.5	V
4844.063	39.70	-37.7	32.1	45.28	74.0	34.3	H
7266.094	43.64	-37.0	35.8	44.82	74.0	30.4	V
9688.125	44.92	-35.8	37.8	42.95	74.0	29.1	V
12110.156	46.64	-34.8	39.0	42.38	74.0	27.4	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)
2366.200	38.91	-34.6	27.7	45.90	74.0	35.1	H
2502.600	39.38	-34.2	27.7	45.85	74.0	34.6	V
4874.063	40.97	-37.9	32.2	46.65	74.0	33.0	V
7311.094	42.24	-37.1	36.0	43.35	74.0	31.8	H
9748.125	46.19	-35.4	37.8	43.81	74.0	27.8	H
12185.156	48.20	-34.7	39.0	43.94	74.0	25.8	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)
2484.738	66.04	2.7	27.7	35.69	74.0	8.0	V
2484.888	65.91	2.7	27.7	35.56	74.0	8.1	V
4904.063	40.39	-37.8	32.3	45.98	74.0	33.6	H
7356.094	43.90	-37.0	36.1	44.82	74.0	30.1	H
9808.125	44.72	-35.4	37.8	42.36	74.0	29.3	H
12260.156	46.86	-34.7	38.9	42.63	74.0	27.1	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)
2362.175	44.82	2.6	27.6	14.54	54.0	9.2	V
2365.000	44.78	2.6	27.7	14.51	54.0	9.2	V
4823.750	44.32	-37.5	32.1	49.76	54.0	9.7	V
7236.250	33.10	-37.0	35.8	34.32	54.0	20.9	V
9648.125	33.34	-36.0	37.8	31.54	54.0	20.7	H
12060.000	35.05	-34.8	39.1	30.80	54.0	19.0	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)
2314.875	44.76	2.6	27.6	14.58	54.0	9.2	V
2492.900	44.93	2.7	27.7	14.51	54.0	9.1	V
4873.750	40.52	-37.9	32.2	46.20	54.0	13.5	H
7310.000	33.13	-37.1	36.0	34.24	54.0	20.9	H
9748.125	33.56	-35.4	37.8	31.17	54.0	20.4	H
12185.000	35.94	-34.7	39.0	31.68	54.0	18.1	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)
2498.325	44.96	2.8	27.7	14.51	54.0	9.0	V
2499.500	44.94	2.8	27.7	14.49	54.0	9.1	V
4923.750	39.70	-37.9	32.3	45.29	54.0	14.3	H
7386.250	38.25	-36.9	36.1	39.05	54.0	15.7	V
9848.125	33.57	-35.6	37.8	31.33	54.0	20.4	V
12310.000	35.47	-34.7	38.9	31.23	54.0	18.5	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)
2389.500	48.43	2.6	27.7	18.15	54.0	5.6	V
2389.975	48.65	2.6	27.7	18.36	54.0	5.4	V
4843.750	30.22	-37.7	32.1	35.80	54.0	23.8	H
7266.250	31.02	-37.0	35.8	32.20	54.0	23.0	H
9688.125	32.98	-35.8	37.8	31.00	54.0	21.0	V
12110.000	34.94	-34.8	39.0	30.67	54.0	19.1	H

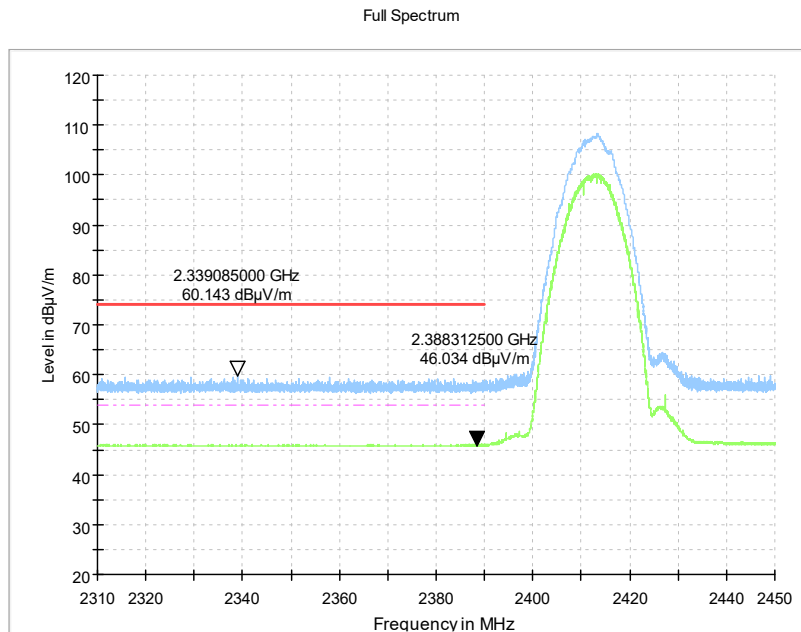
## Ch6

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)
2389.775	45.31	2.6	27.7	15.03	54.0	8.7	V
2483.525	46.33	2.6	27.7	15.99	54.0	7.7	V
4873.750	27.86	-37.9	32.2	33.55	54.0	26.1	V
7311.250	30.34	-37.1	36.0	31.45	54.0	23.7	V
9748.125	33.54	-35.4	37.8	31.16	54.0	20.5	H
12185.000	35.73	-34.7	39.0	31.46	54.0	18.3	V

## Ch9

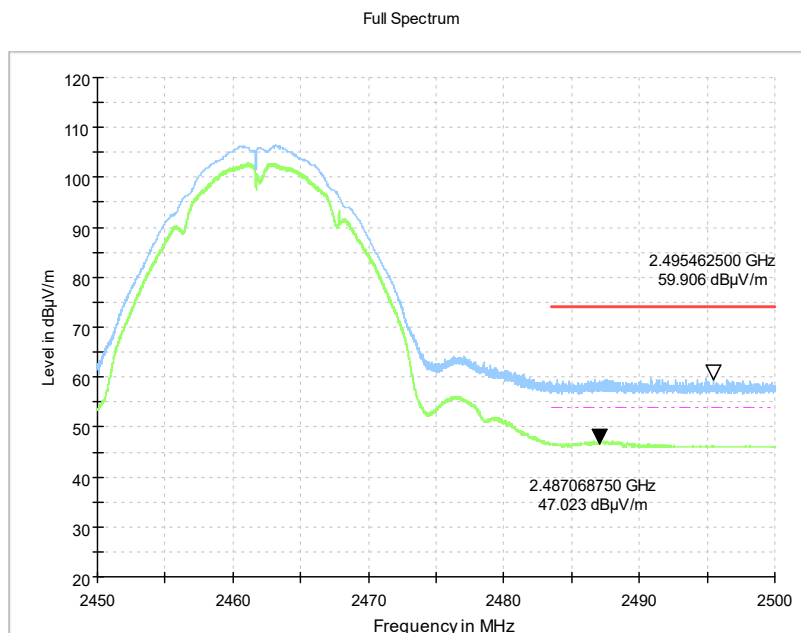
Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
2483.600	51.09	2.6	27.7	20.75	54.0	2.9	V
2483.850	51.04	2.6	27.7	20.69	54.0	3.0	V
4903.750	27.89	-37.8	32.3	33.47	54.0	26.1	V
7356.250	31.77	-37.0	36.1	32.70	54.0	22.2	H
9808.125	33.85	-35.4	37.8	31.50	54.0	20.1	H
12260.000	35.17	-34.7	38.9	30.95	54.0	18.8	V

Test graphs as below:

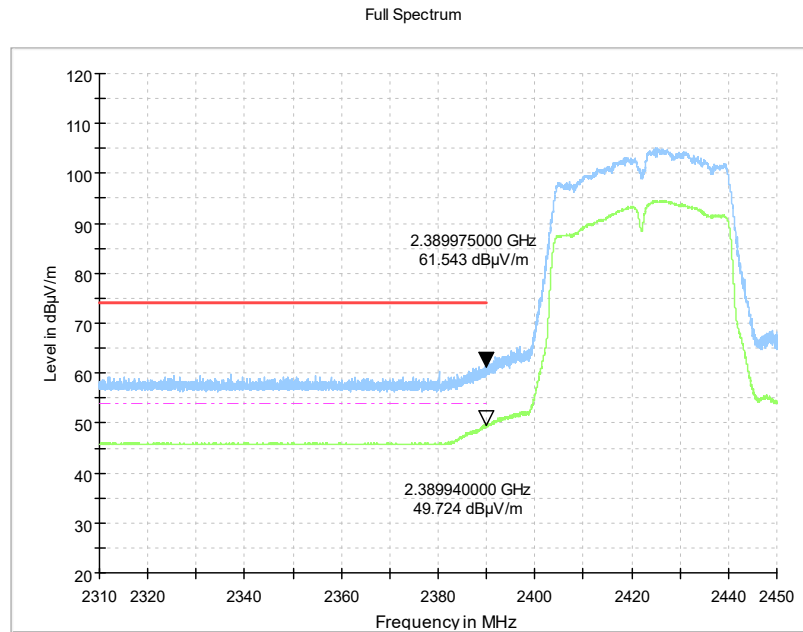


**Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.31 GHz – 2.45GHz**

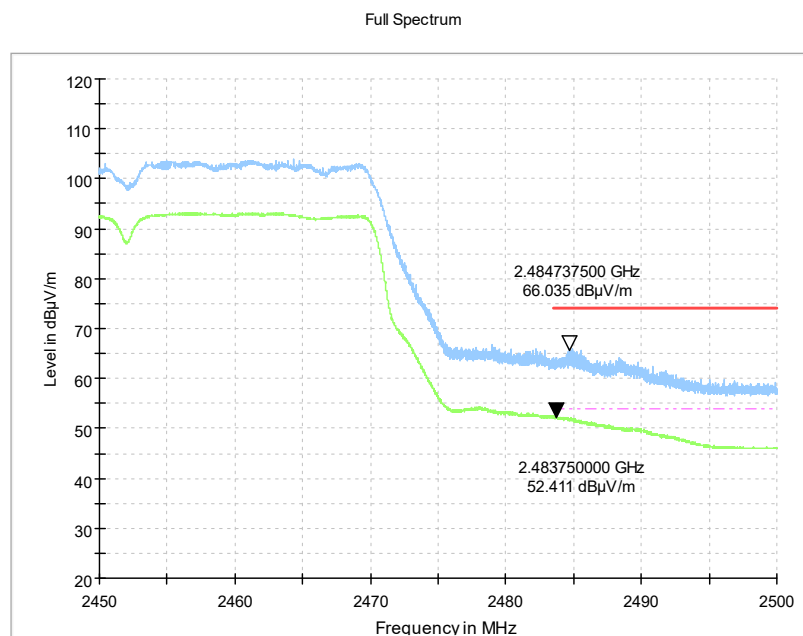
**Fig.A.6.2.2**



**Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz**



**Fig.A.6.2.4 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch3, 2.31 GHz - 2.45GHz**



**Fig.A.6.2.5 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	
0.15 to 0.5	66 to 56	Fig.A.7.1	<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	
0.15 to 0.5	56 to 46	Fig.A.7.1	<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.

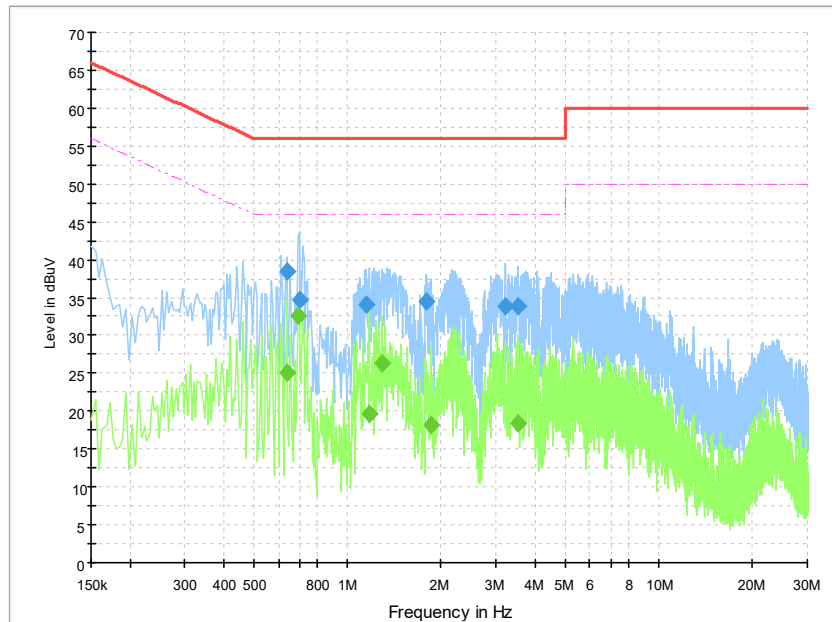
**Conclusion: Pass**

Note: The measurement results showed here are worst cases.

**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)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.636000	38.4	3000.0	9.000	On	L1	19.8	17.6	56.0
0.699000	34.6	3000.0	9.000	On	N	19.8	21.4	56.0
1.149000	34.2	3000.0	9.000	On	L1	19.7	21.8	56.0
1.797000	34.4	3000.0	9.000	On	L1	19.7	21.6	56.0
3.214500	34.0	3000.0	9.000	On	L1	19.6	22.0	56.0
3.538500	33.8	3000.0	9.000	On	L1	19.6	22.2	56.0

**Final Result 2**

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.636000	25.0	3000.0	9.000	On	N	19.8	21.0	46.0
0.694500	32.5	3000.0	9.000	On	L1	19.8	13.5	46.0
1.176000	19.6	3000.0	9.000	On	N	19.7	26.4	46.0
1.284000	26.4	3000.0	9.000	On	L1	19.7	19.6	46.0
1.855500	18.1	3000.0	9.000	On	L1	19.7	27.9	46.0
3.516000	18.5	3000.0	9.000	On	N	19.6	27.5	46.0

## ANNEX B: Accreditation Certificate

<p>United States Department of Commerce National Institute of Standards and Technology</p>  	
<hr/> <b>Certificate of Accreditation to ISO/IEC 17025:2017</b> <hr/>	
NVLAP LAB CODE: 600118-0	
<b>Telecommunication Technology Labs, CAICT</b> Beijing China	
<i>is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:</i>	
<b>Electromagnetic Compatibility &amp; Telecommunications</b>	
<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>	
2021-09-29 through 2022-09-30 <i>Effective Dates</i>	 For the National Voluntary Laboratory Accreditation Program

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