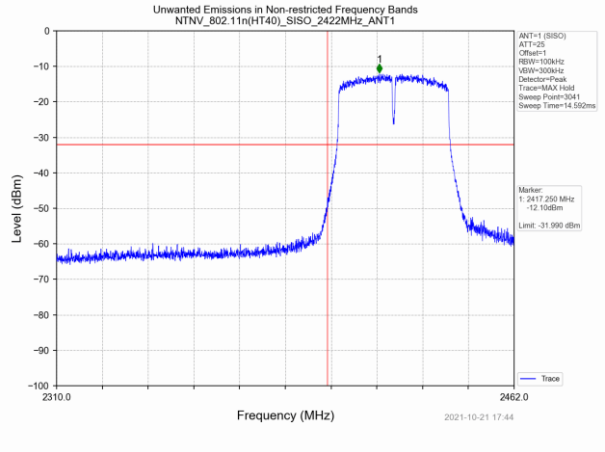
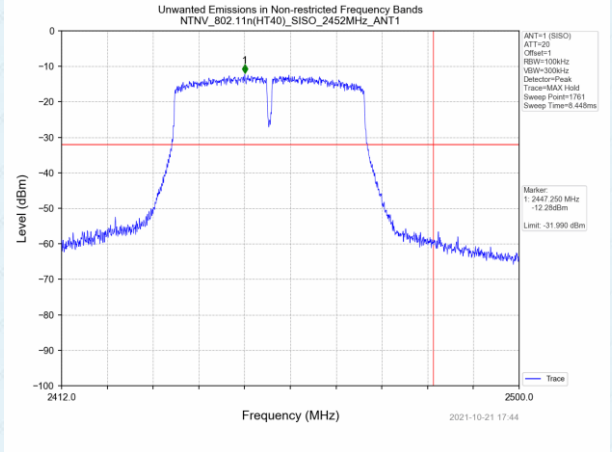
Test mode:	802.11n(HT40)



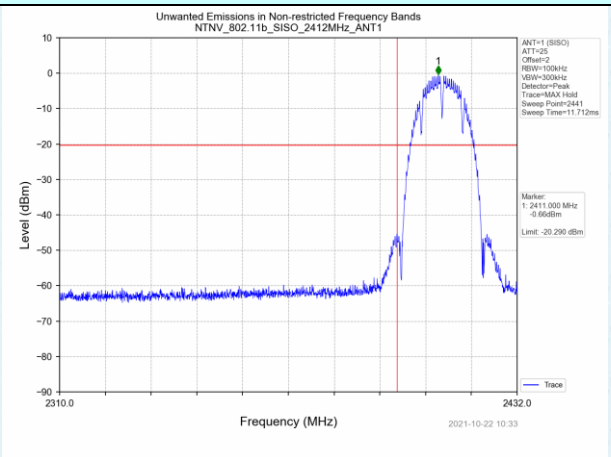
Lowest channel



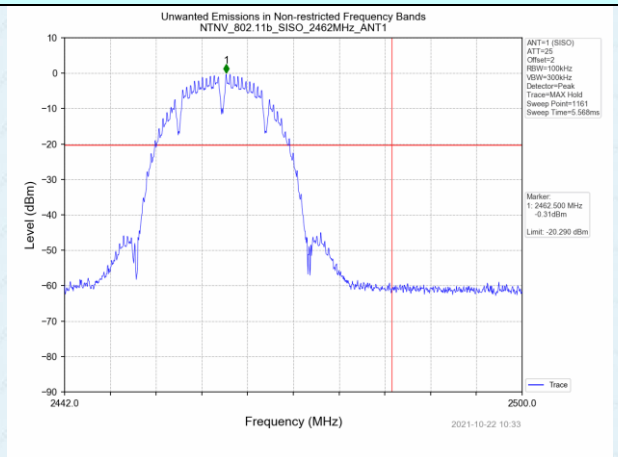
Highest channel

ANT2:

Test mode:	802.11b

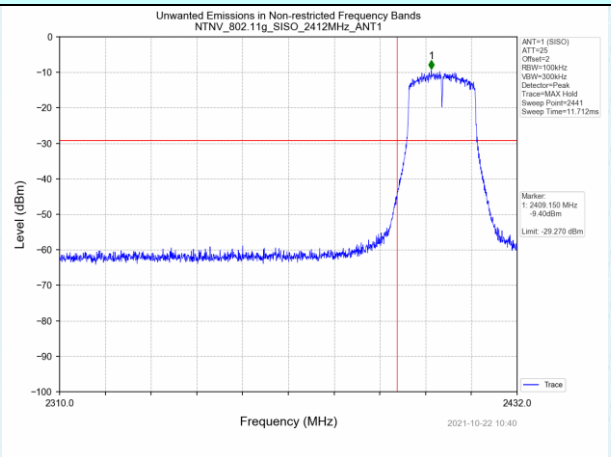


Lowest channel

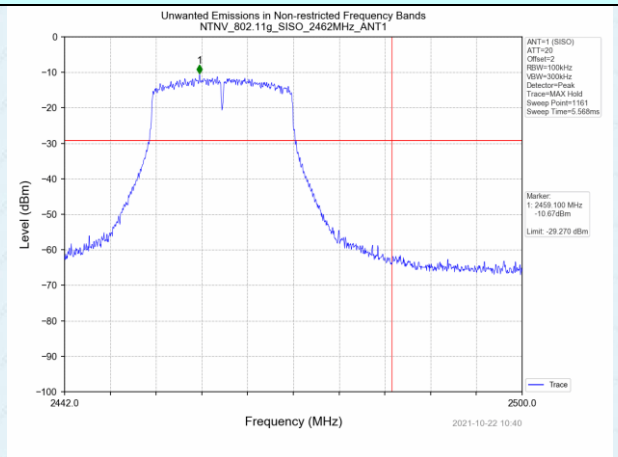


Highest channel

Test mode:	802.11g

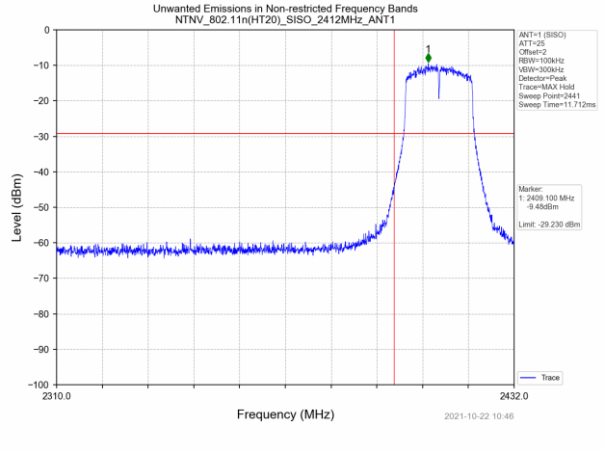


Lowest channel

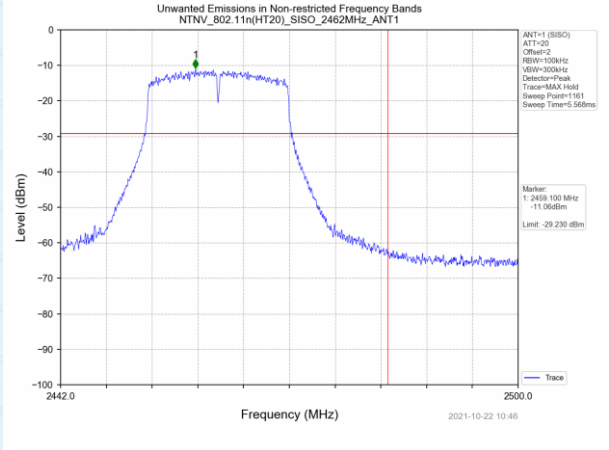


Highest channel

Test mode:	802.11n(HT20)

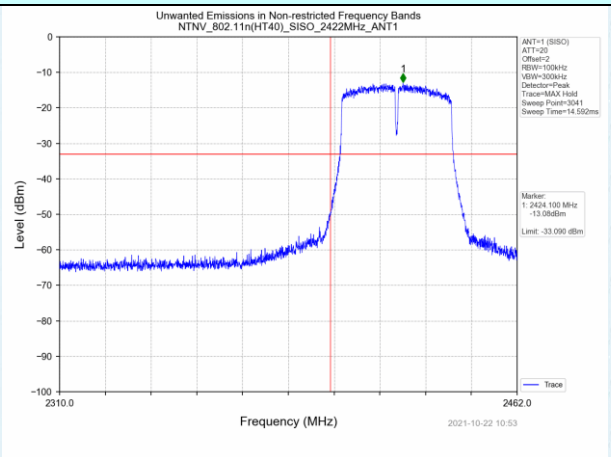


Lowest channel

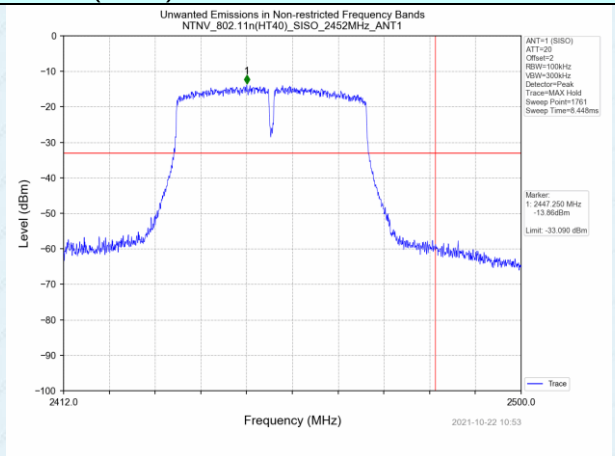


Highest channel

Test mode:	802.11n(HT40)



Lowest channel



Highest channel

7.6.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205
Test Method:	ANSI C63.10: 2013
Test Frequency Range:	All of the restrict bands were tested, only the worst band's (2310MHz to 2500MHz) data was showed.
Test site:	Measurement Distance: 3m

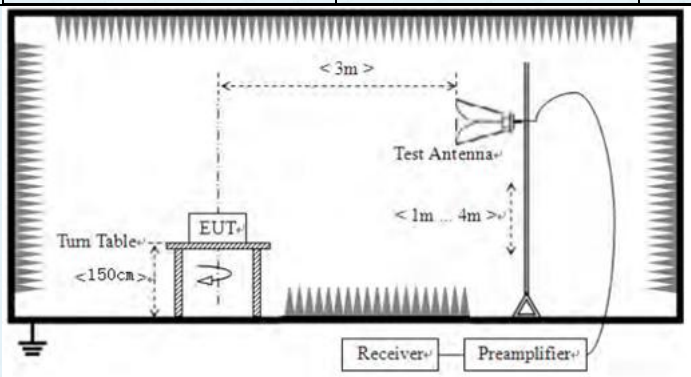
Receiver setup:

Frequency	Detector	RBW	VBW	Value
Above 1GHz	Peak	1MHz	3MHz	Peak
	Average	1MHz	3MHz	Average

Limit:

Frequency	Limit (dBuV/m @3m)	Value
Above 1GHz	54.00	Average
	74.00	Peak

Test setup:



Test Procedure:

1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
7. The radiation measurements are performed in X, Y, Z axis positioning. And found the Y axis positioning which it is worse case, only the test worst case mode is recorded in the report.

Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement data:

Test mode:	802.11g	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390	66.28	-5.68	60.60	74.00	-13.40	Horizontal
2390	65.31	-5.68	59.63	74.00	-14.37	Vertical
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Average value:

Frequency (MHz)	Read Level (dBuV)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390	46.71	-5.68	41.03	54.00	-12.97	Horizontal
2390	45.88	-5.68	40.20	54.00	-13.80	Vertical
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Test mode:	802.11g	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.5	66.71	-5.85	60.86	74.00	-13.14	Horizontal
2483.5	65.49	-5.65	59.84	74.00	-14.16	Vertical
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Average value:

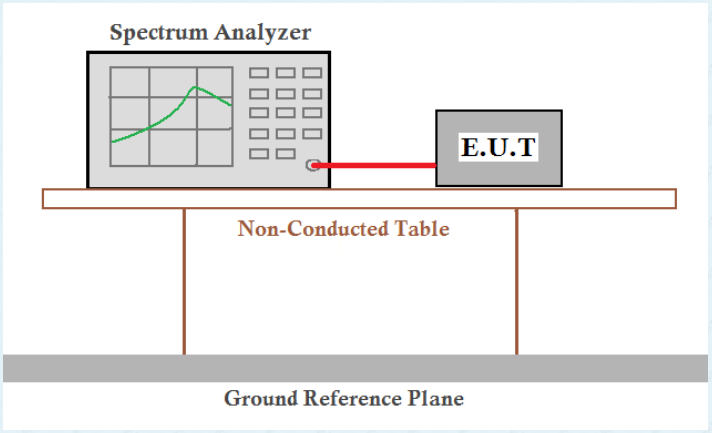
Frequency (MHz)	Read Level (dBuV)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.5	46.21	-5.85	40.36	54.00	-13.64	Horizontal
2483.5	45.28	-5.65	39.63	54.00	-14.37	Vertical
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Remarks:

1. *Antenna 1 and antenna 2 have been tested to show only the worst antenna 1 test data.*
2. *The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.*
3. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
4. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
5. *During the test, pre-scan the 802.11b/802.11g/802.11n (H20)/802.11n (H40) modulation, and found the 802.11g modulation which it is worse case.*

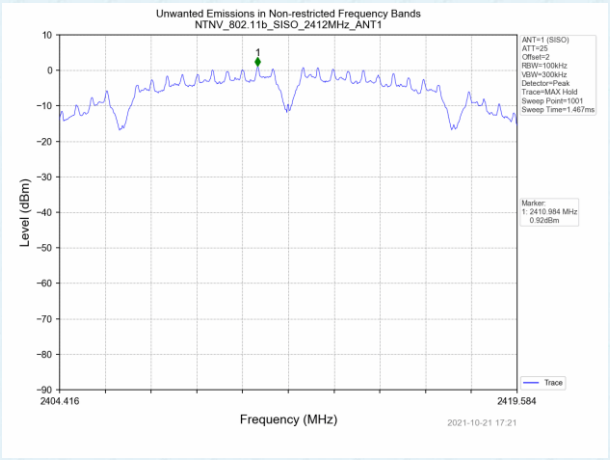
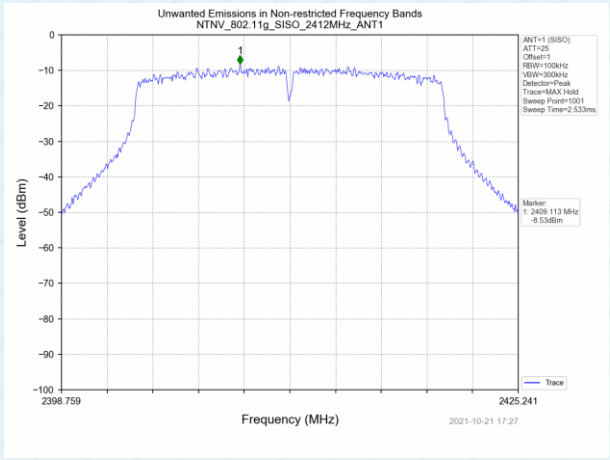
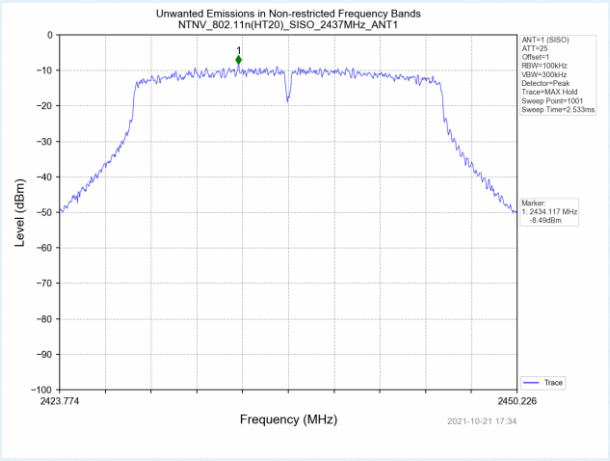
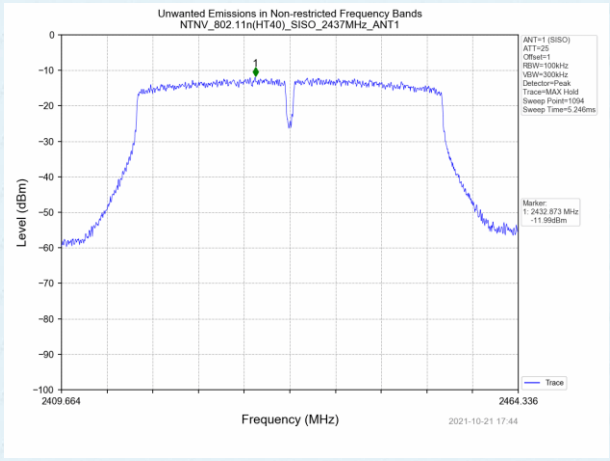
7.7 Spurious Emission

7.7.1 Conducted Emission Method

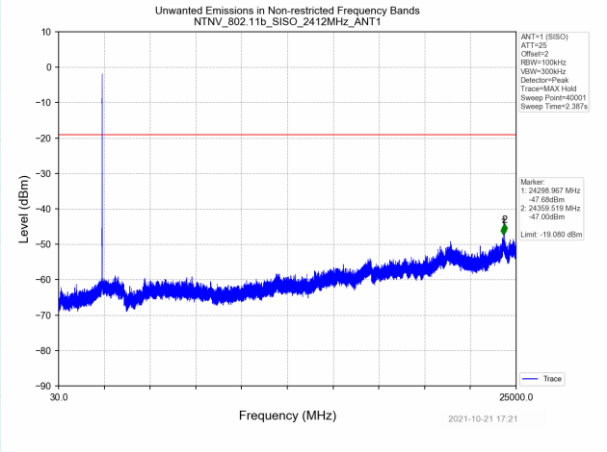
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074 D01 15.247 Meas Guidance v05r02
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

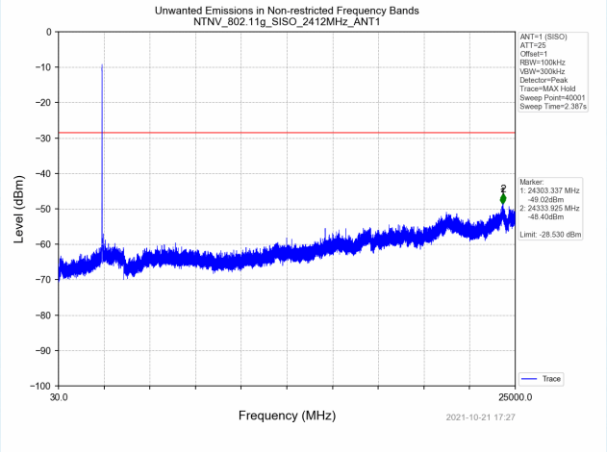
Test plot as follows:

ANT1:

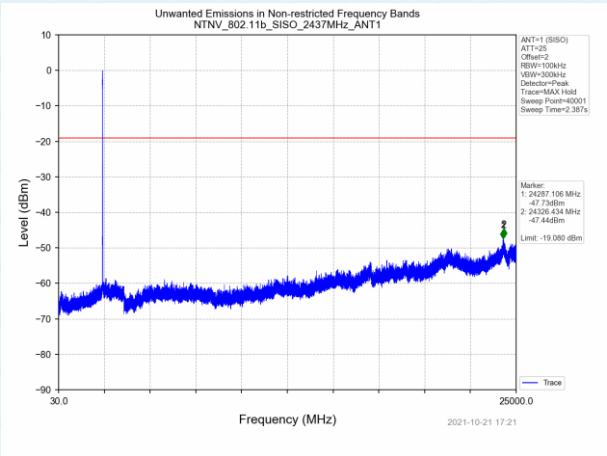
Reference	
	
802.11b	***802.11g***
	
802.11n(HT20)	***802.11n(HT40)***

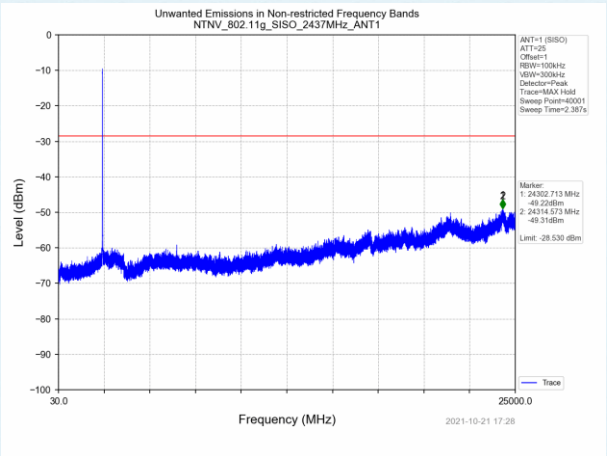
802.11b (30MHz~25GHz)	802.11g (30MHz~25GHz)



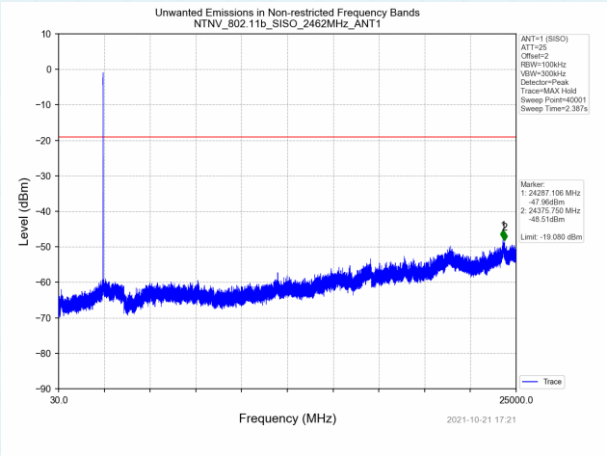


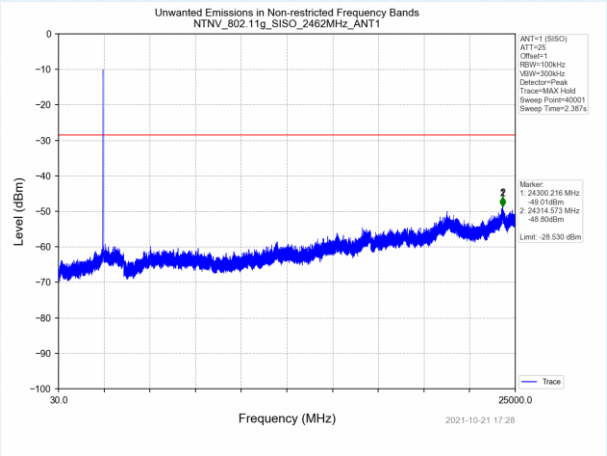
Lowest channel





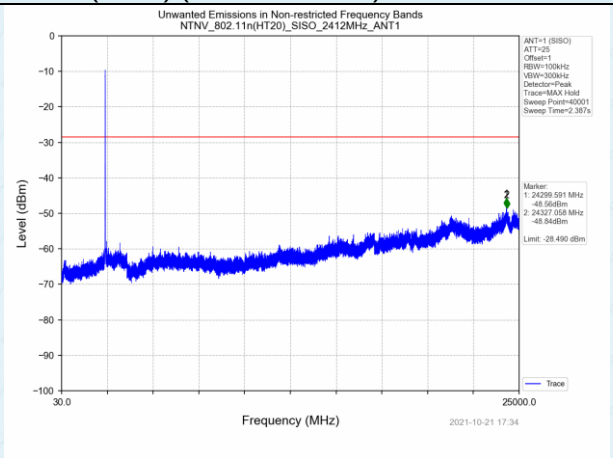
Middle channel

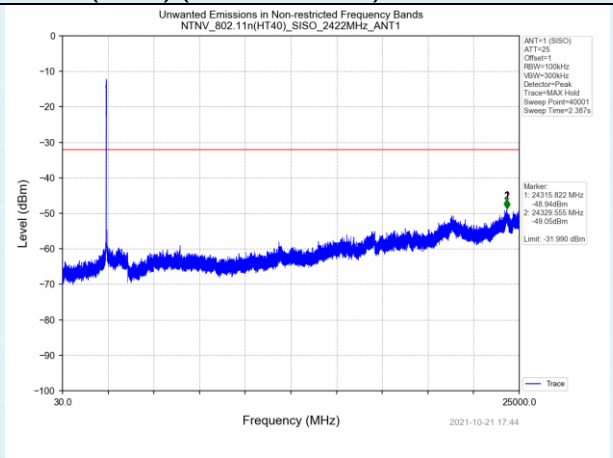




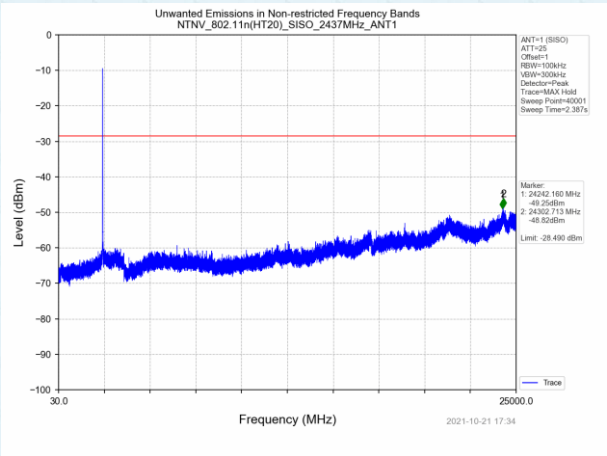
Highest channel

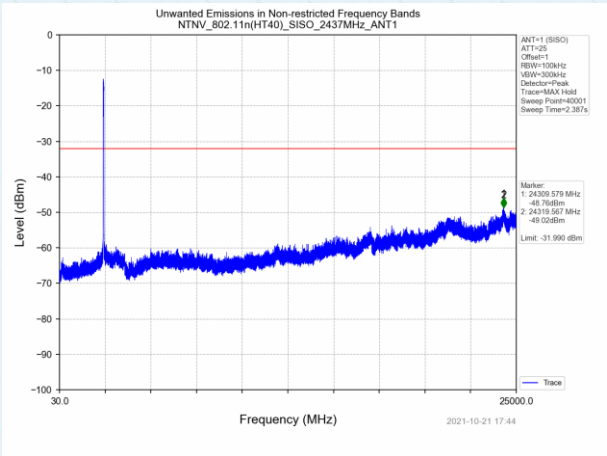
802.11n(HT20) (30MHz~25GHz)	802.11n(HT40) (30MHz~25GHz)



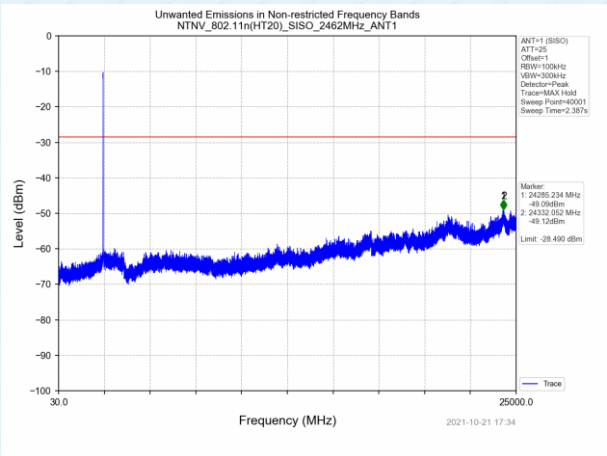


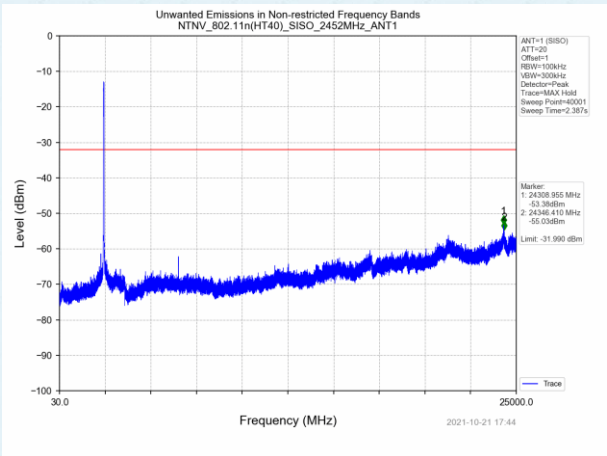
Lowest channel





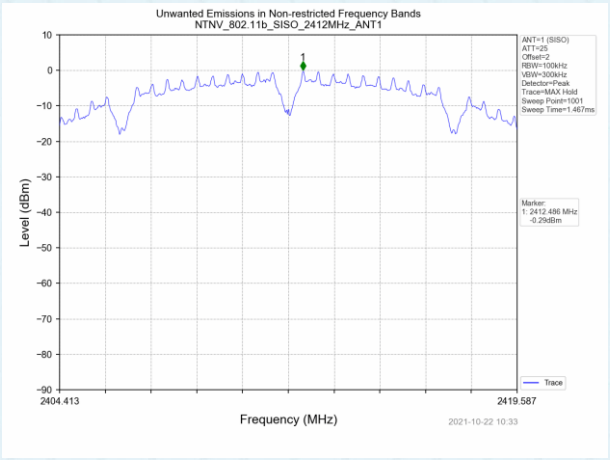
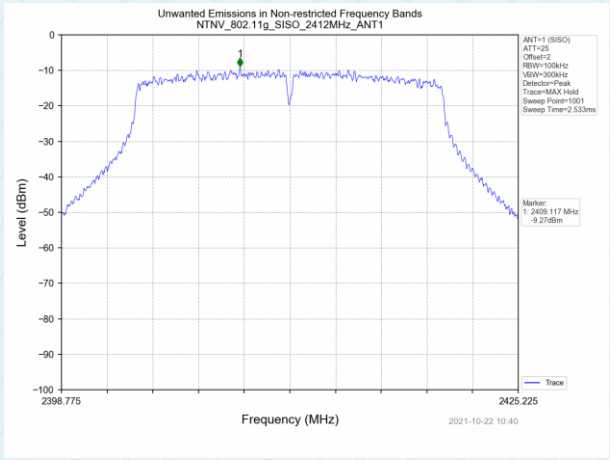
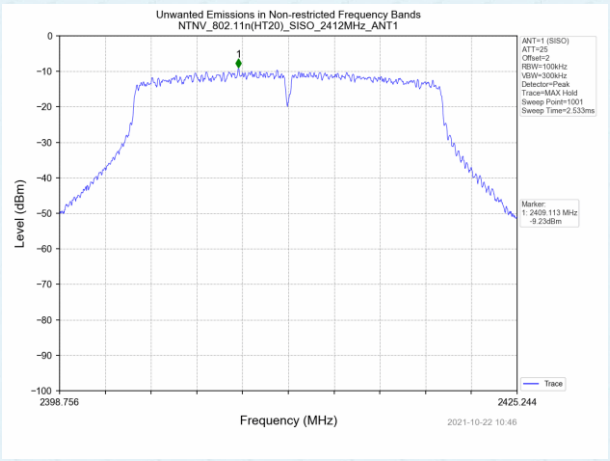
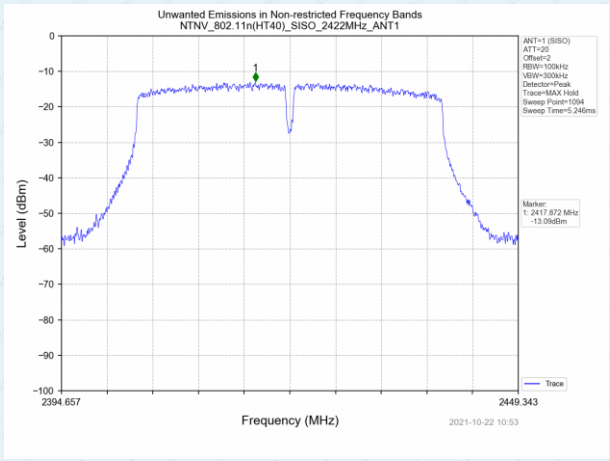
Middle channel



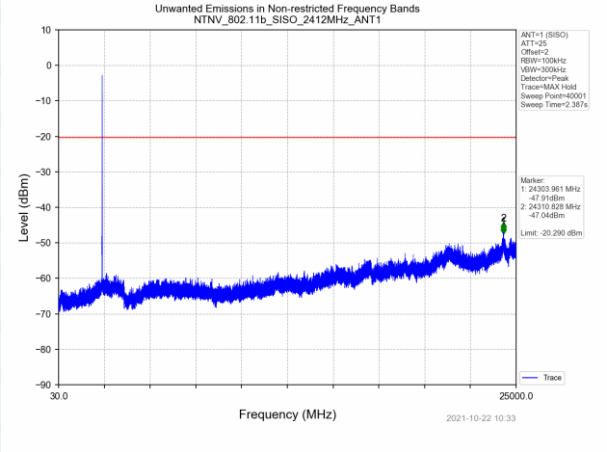


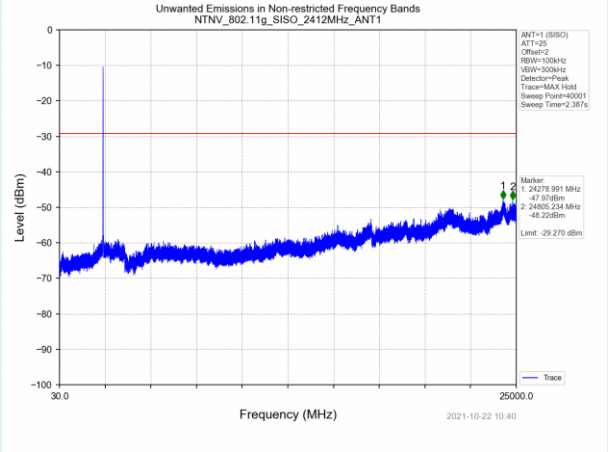
Highest channel

ANT2:

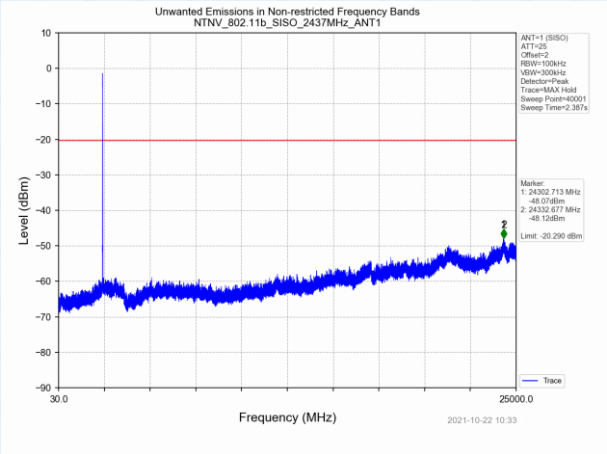
Reference	
	
802.11b	***802.11g***
	
802.11n(HT20)	***802.11n(HT40)***

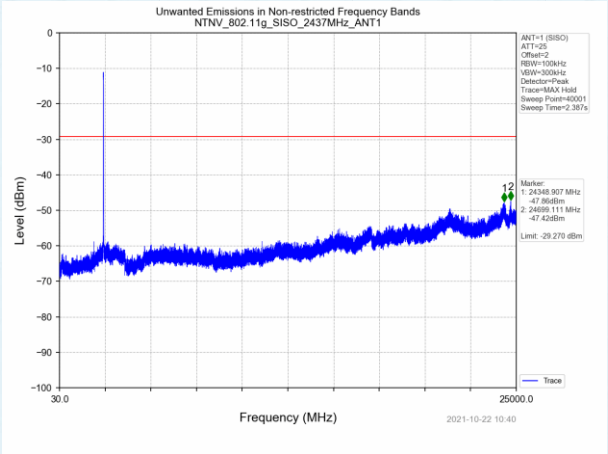
802.11b (30MHz~25GHz)	802.11g (30MHz~25GHz)



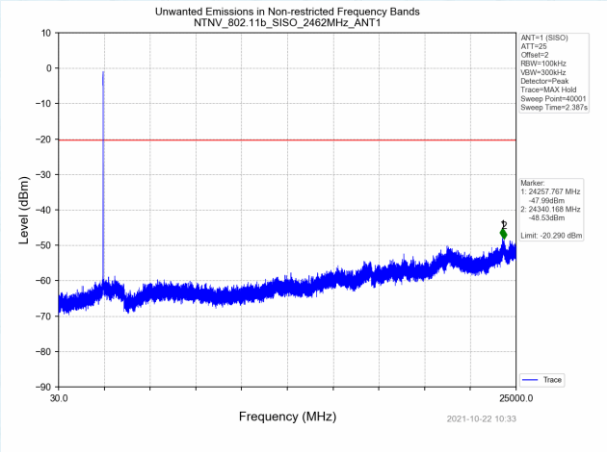


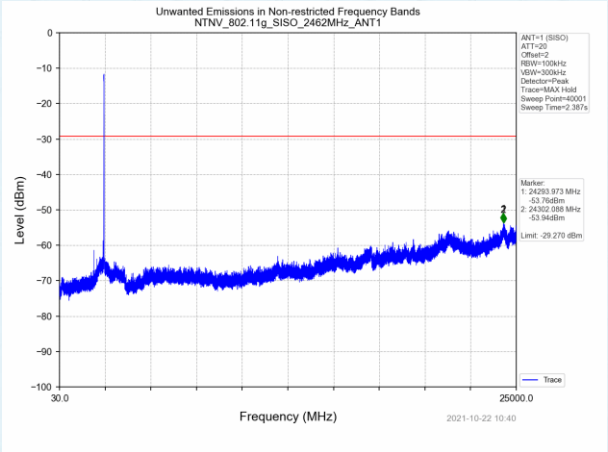
Lowest channel





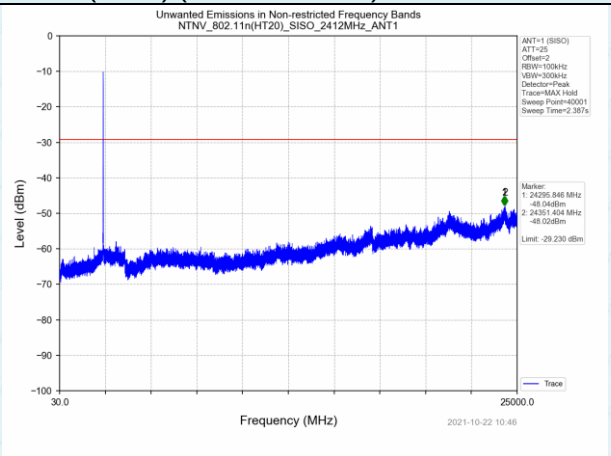
Middle channel

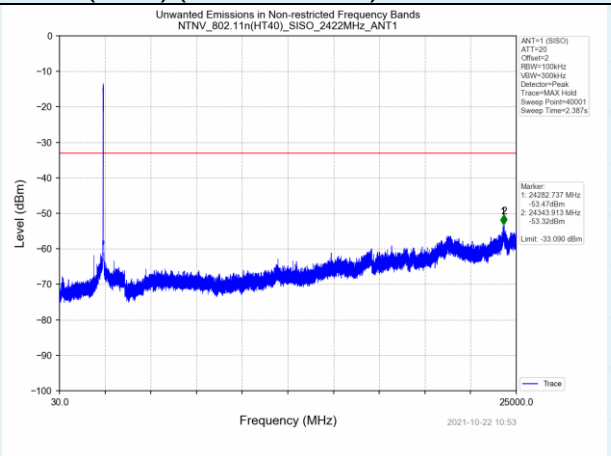




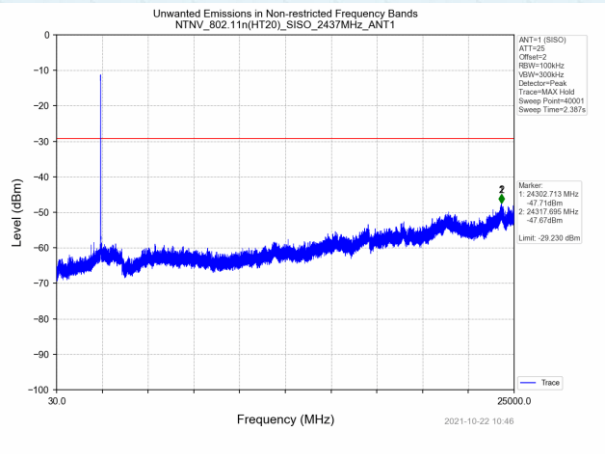
Highest channel

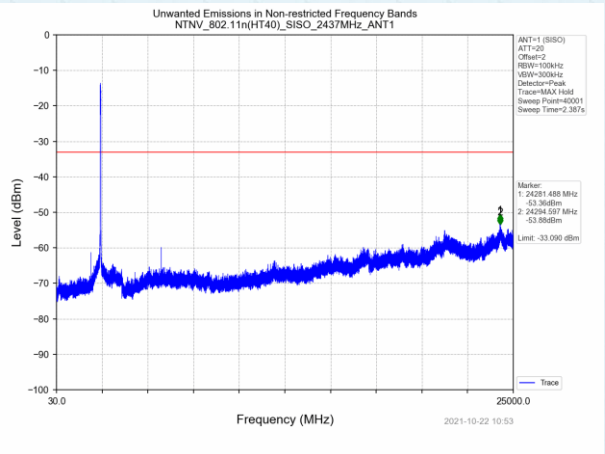
802.11n(HT20) (30MHz~25GHz)	802.11n(HT40) (30MHz~25GHz)



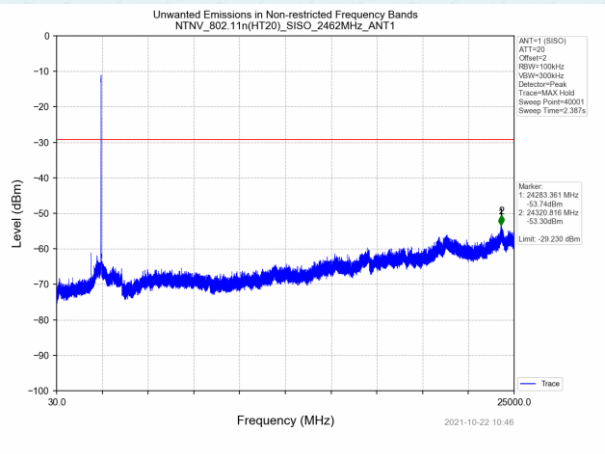


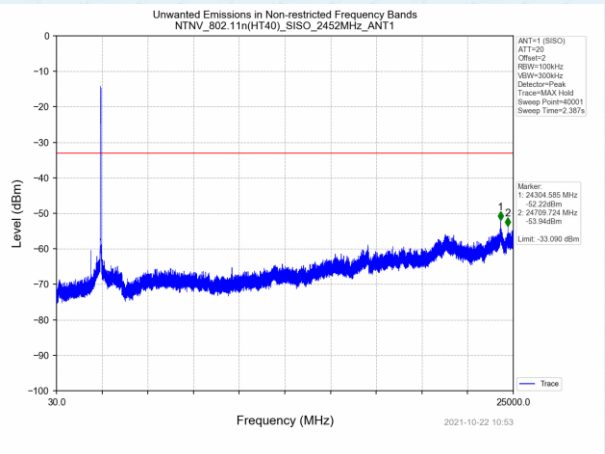
Lowest channel





Middle channel





Highest channel

7.7.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10: 2013
Test Frequency Range:	9kHz to 25GHz
Test site:	Measurement Distance: 3m

Receiver setup:

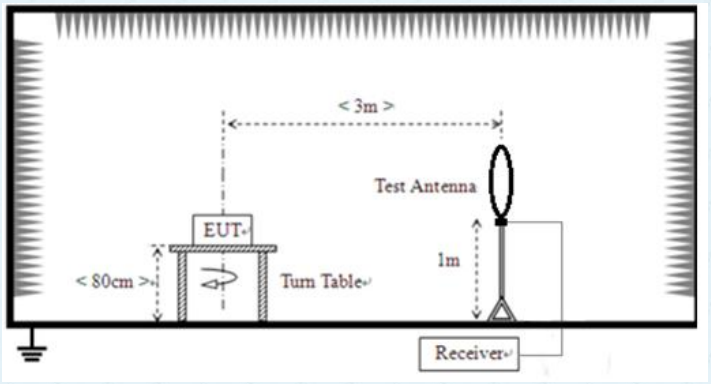
Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Limit:

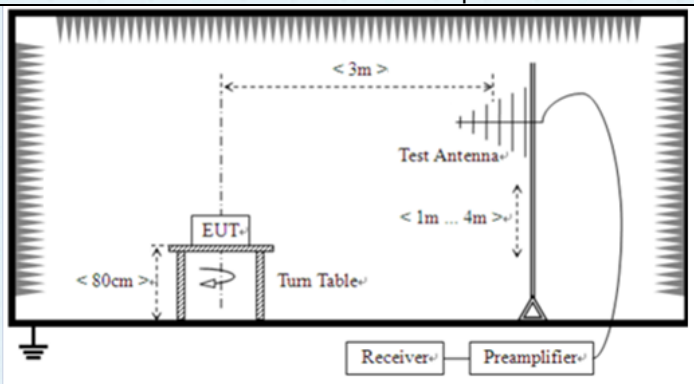
Frequency	Limit (uV/m)	Value	Measurement Distance
0.009MHz-0.490MHz	2400/F(KHz)	QP	300m
0.490MHz-1.705MHz	24000/F(KHz)	QP	300m
1.705MHz-30MHz	30	QP	30m
30MHz-88MHz	100	QP	3m
88MHz-216MHz	150	QP	
216MHz-960MHz	200	QP	
960MHz-1GHz	500	QP	
Above 1GHz	500	Average	
	5000	Peak	

Test setup:

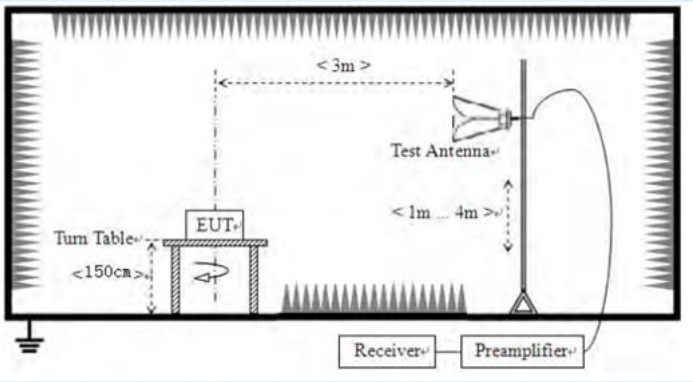
For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to1GHz



For radiated emissions above 1GHz



Test Procedure:	1. The EUT was placed on the top of a rotating table (0.8m for below 1G and 1.5m for above 1G) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details

Test voltage:	AC120V 60Hz					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Test voltage:	AC 120V, 60Hz					
Test results:	Pass					

Remarks:

1. *Antenna 1 and antenna 2 have been tested to show only the worst antenna 1 test data.*
2. *Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.*

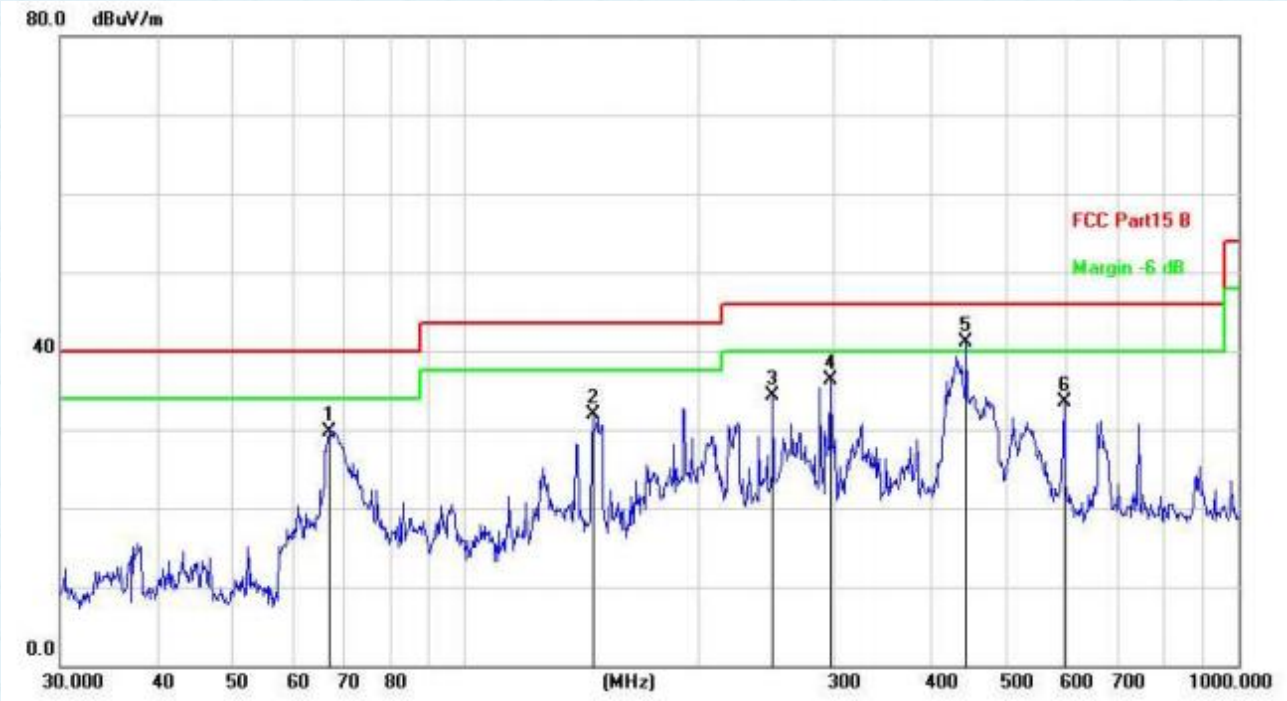
Measurement data:

■ **9kHz~30MHz**

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

■ **Below 1GHz**

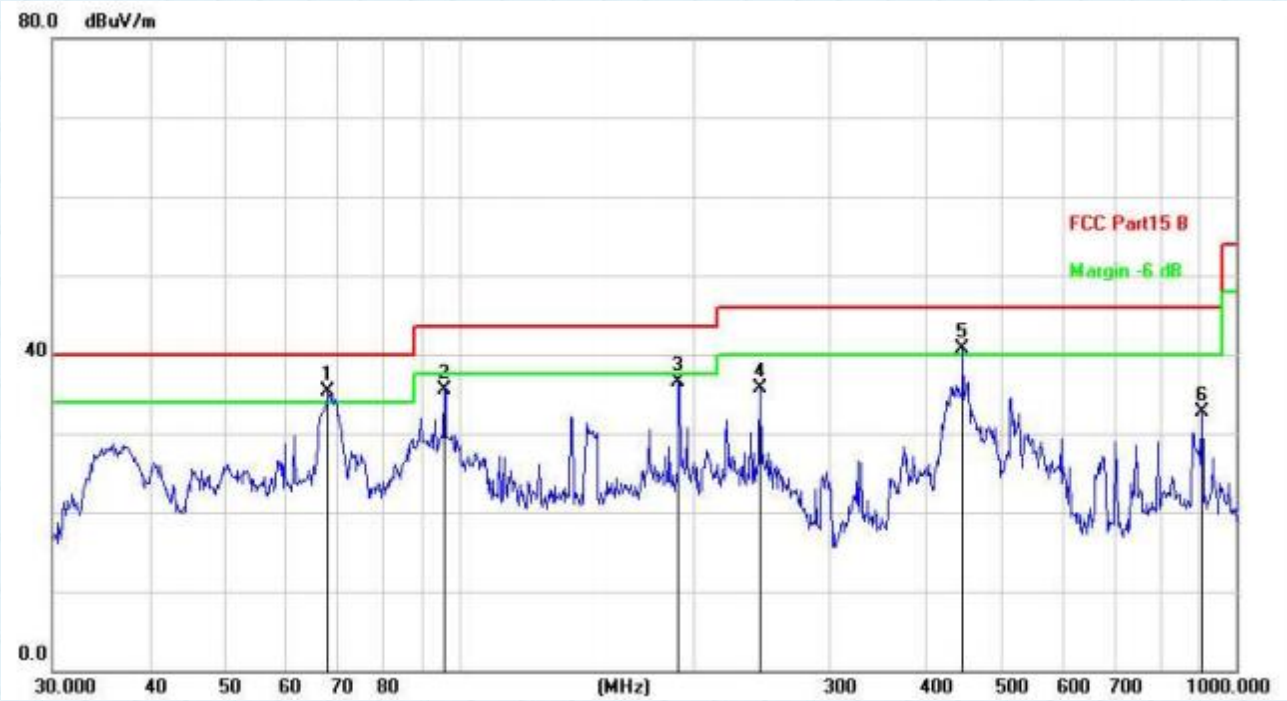
Horizontal:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		66.9668	49.37	-19.58	29.79	40.00	-10.21	QP
2		146.3735	49.74	-17.93	31.81	43.50	-11.69	QP
3		250.3009	53.38	-19.13	34.25	46.00	-11.75	QP
4		297.2241	54.70	-18.38	36.32	46.00	-9.68	QP
5	*	444.8514	57.31	-16.15	41.16	46.00	-4.84	QP
6		595.1326	46.79	-13.34	33.45	46.00	-12.55	QP

Final Level =Receiver Read level + Correct Factor

Vertical:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	67.9128	54.89	-19.68	35.21	40.00	-4.79	QP
2		95.7622	56.40	-20.85	35.55	43.50	-7.95	QP
3		191.7450	56.43	-19.94	36.49	43.50	-7.01	QP
4		244.2321	55.16	-19.51	35.65	46.00	-10.35	QP
5	!	444.8514	56.78	-16.15	40.63	46.00	-5.37	QP
6		903.3093	42.15	-9.54	32.61	46.00	-13.39	QP

Final Level =Receiver Read level + Correct Factor

■ **Above 1GHz**

Note: During the test, pre-scan the 802.11b/802.11g/802.11n (H20)/802.11n (H40) modulation of antenna 1 and antenna 2, and found the 802.11b modulation of antenna 1 which it is worse case.

Test mode:	802.11b	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824	61.58	-3.67	57.91	74.00	-16.09	Vertical
7236	60.07	-0.90	59.17	74.00	-14.83	Vertical
4824	60.79	-3.67	57.12	74.00	-16.88	Horizontal
7236	59.86	-0.90	58.96	74.00	-15.04	Horizontal
---	---	---	---	---	---	---
---	---	---	---	---	---	---
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Average value:

Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824	46.77	-3.64	43.13	54.00	-10.87	Vertical
7236	45.94	-0.90	45.04	54.00	-8.96	Vertical
4824	46.08	-3.64	42.44	54.00	-11.56	Horizontal
7236	45.60	-0.90	44.70	54.00	-9.30	Horizontal
---	---	---	---	---	---	---
---	---	---	---	---	---	---
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*

Test mode:	802.11b	Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874	61.38	-3.53	57.85	74.00	-16.15	Vertical
7311	60.77	-0.85	59.92	74.00	-14.08	Vertical
4874	61.16	-3.53	57.63	74.00	-16.37	Horizontal
7311	60.40	-0.85	59.55	74.00	-14.45	Horizontal
---	---	---	---	---	---	---
---	---	---	---	---	---	---
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Average value:

Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874	46.77	-3.53	43.24	54.00	-10.76	Vertical
7311	45.82	-0.85	44.97	54.00	-9.03	Vertical
4874	46.21	-3.53	42.68	54.00	-11.32	Horizontal
7311	45.44	-0.85	44.59	54.00	-9.41	Horizontal
---	---	---	---	---	---	---
---	---	---	---	---	---	---
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*

Test mode:	802.11b	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924	61.28	-3.49	57.79	74.00	-16.21	Vertical
7386	60.21	-0.78	59.43	74.00	-14.57	Vertical
4924	61.07	-3.49	57.58	74.00	-16.42	Horizontal
7386	60.12	-0.78	59.34	74.00	-14.66	Horizontal
---	---	---	---	---	---	---
---	---	---	---	---	---	---
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Average value:

Frequency (MHz)	Read Level (dBuV)	Factor(dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924	46.53	-3.49	43.04	54.00	-10.96	Vertical
7386	45.55	-0.78	44.77	54.00	-9.23	Vertical
4924	46.21	-3.49	42.72	54.00	-11.28	Horizontal
7386	45.11	-0.78	44.33	54.00	-9.67	Horizontal
---	---	---	---	---	---	---
---	---	---	---	---	---	---
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*

8 Test Setup Photo

Reference to the **appendix I** for details.

9 EUT Constructional Details

Reference to the **appendix II** for details.

------End------