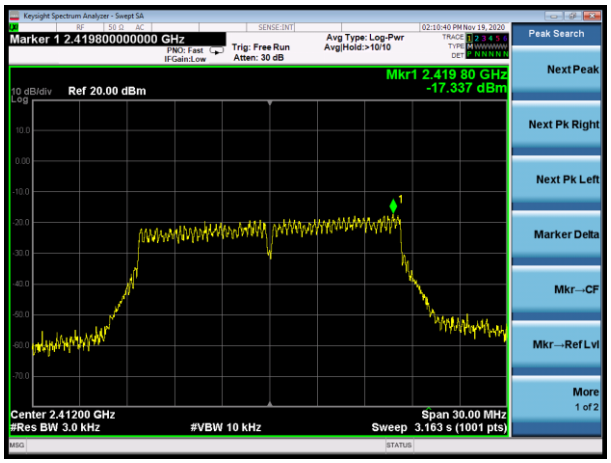
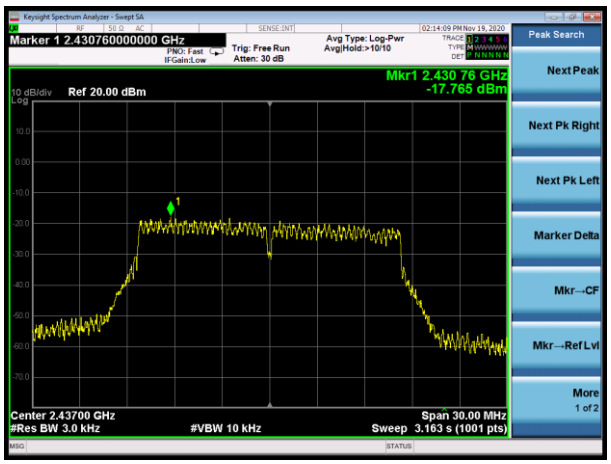
Antenna 2:

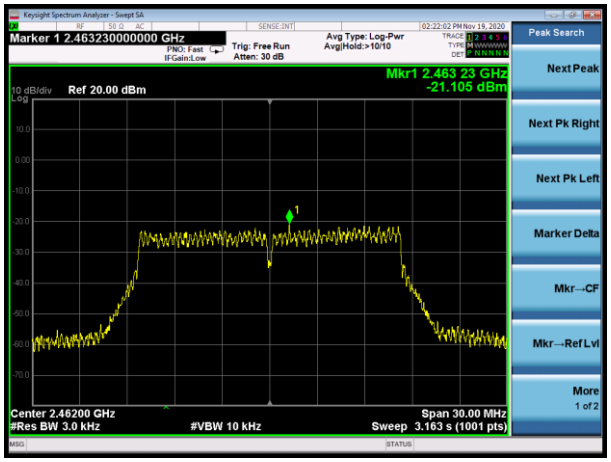
802.11b		802.11g	



Lowest channel

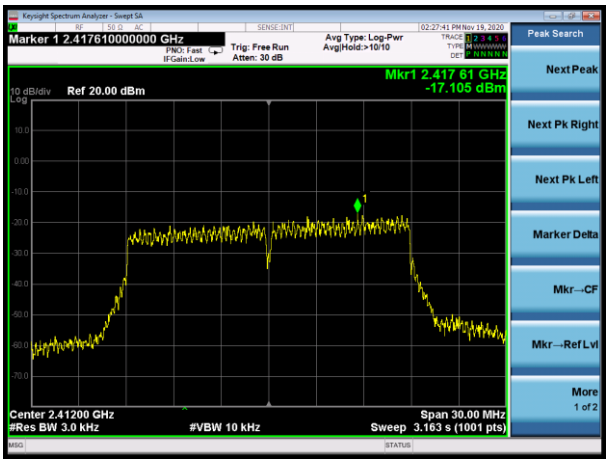


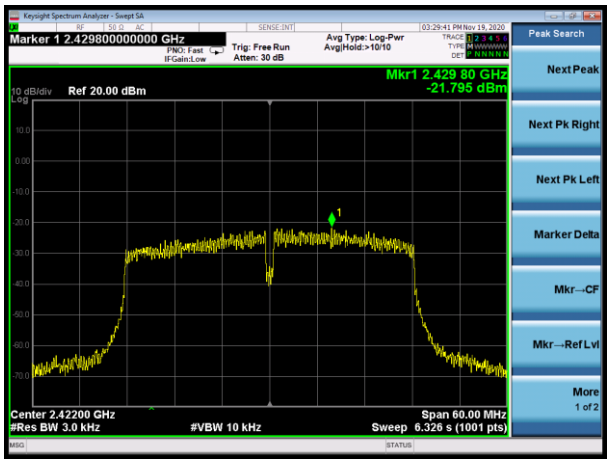
Middle channel



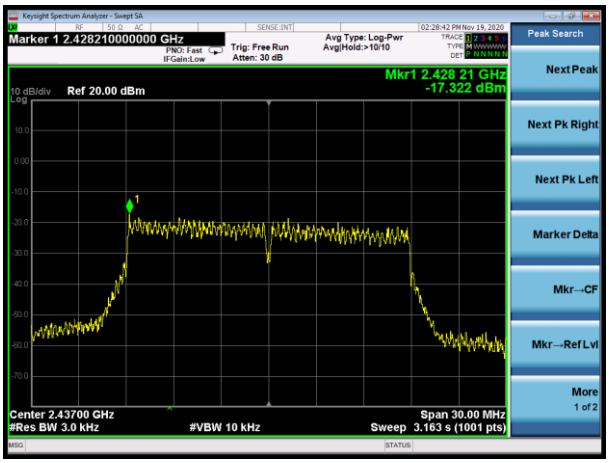
Highest channel

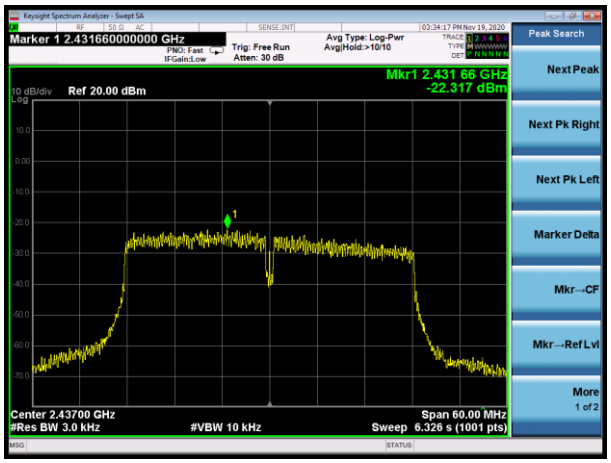
802.11n(HT20)		802.11n(HT40)	



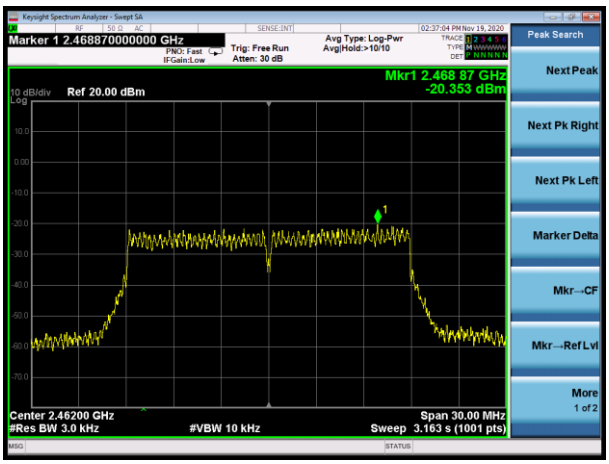


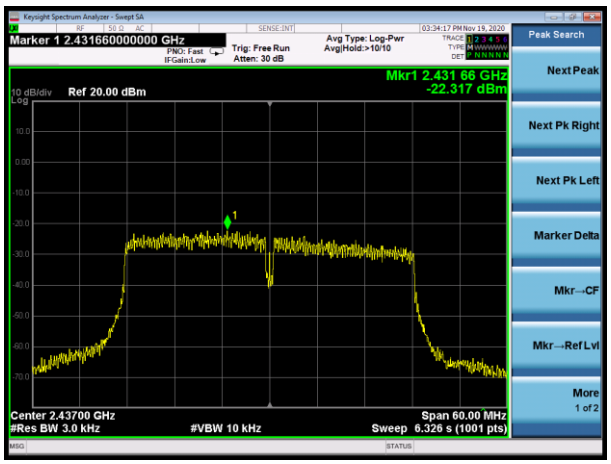
Lowest channel





Middle channel

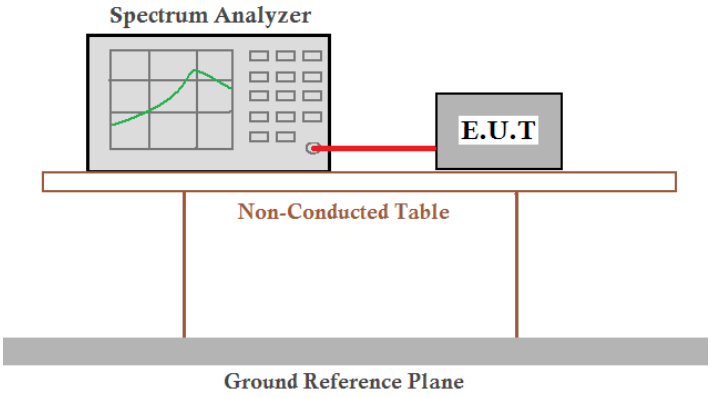




Highest channel

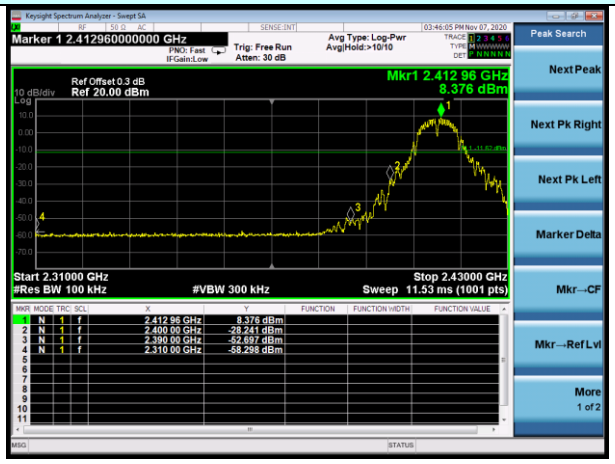
7.6 Band edges

7.6.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074 D01 15.247 Meas Guidance v05r02 KDB 662911 D01 Multiple Transmitter Output v02r01
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

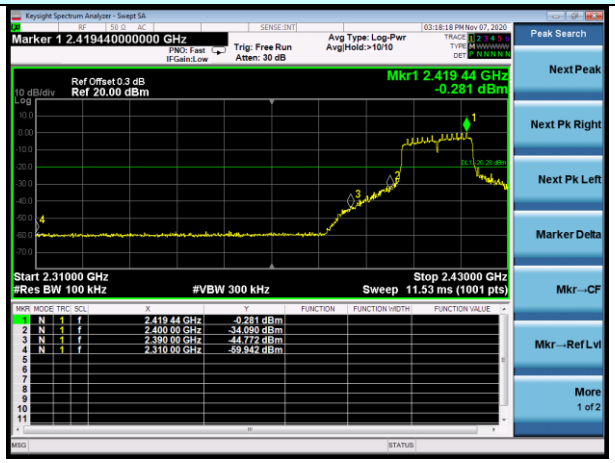
Test plot as follows:

Antenna 1:

Test mode:	802.11b
	
Lowest channel	Highest channel

Test mode:	802.11g
Lowest channel	Highest channel

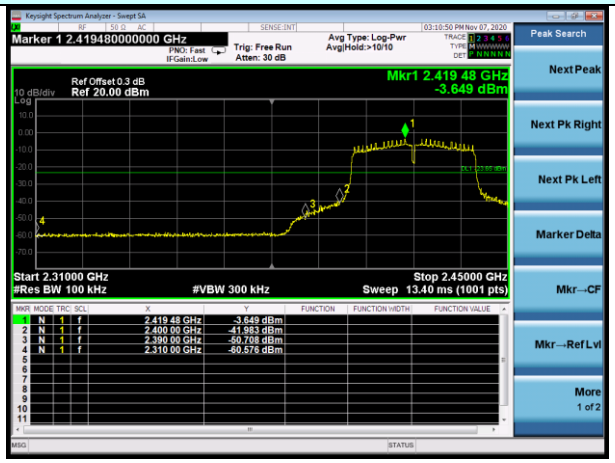
Test mode:	802.11n(HT20)



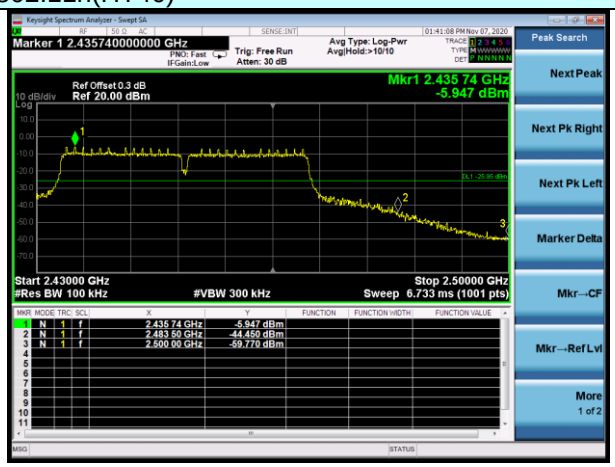
Lowest channel

Highest channel

Test mode:	802.11n(HT40)

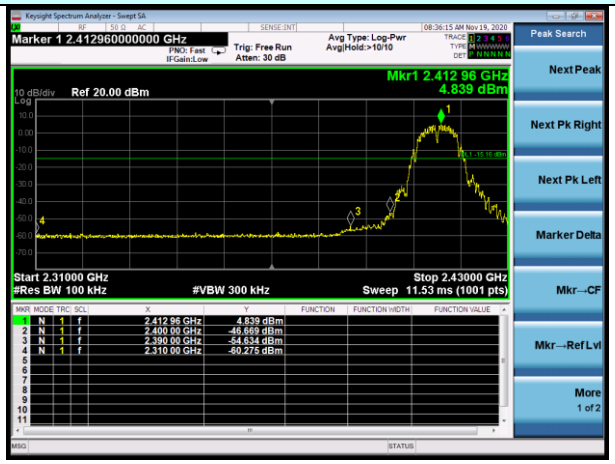


Lowest channel



Highest channel

Antenna 2:

Test mode:	802.11b
	
Lowest channel	Highest channel

Test mode:	802.11g
Lowest channel	Highest channel

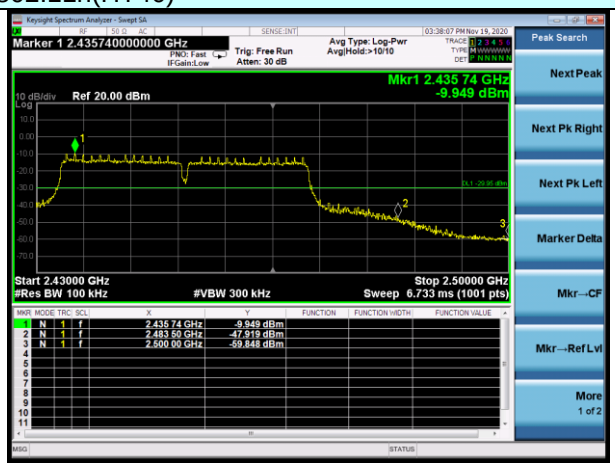
Test mode:	802.11n(HT20)

Lowest channel

Highest channel

Test mode:	802.11n(HT40)

Lowest channel



Highest channel

7.6.2 Radiated Emission Method

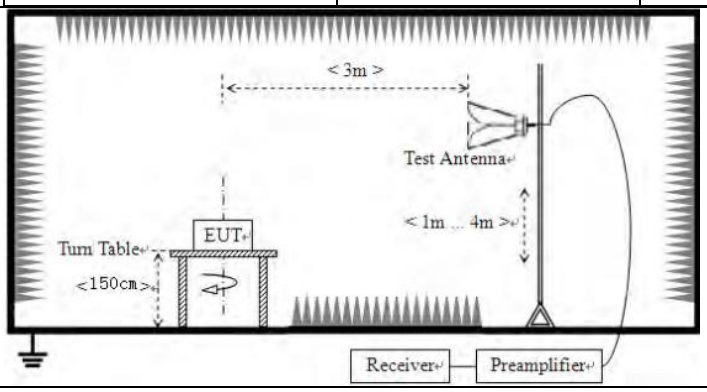
Test Requirement:	FCC Part15 C Section 15.209 and 15.205
Test Method:	ANSI C63.10: 2013
Test Frequency Range:	All of the restrict bands were tested, only the worst band's (2310MHz to 2500MHz) data was showed.
Test site:	Measurement Distance: 3m
Receiver setup:	

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:

All antennas have test, only the worst case ANT 1 report.

Test mode:	802.11b	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	52.49	27.59	5.38	34.01	51.45	74.00	-22.55	Horizontal
2400.00	61.46	27.58	5.39	34.01	60.42	74.00	-13.58	Horizontal
2390.00	54.27	27.59	5.38	34.01	53.23	74.00	-20.77	Vertical
2400.00	63.44	27.58	5.39	34.01	62.40	74.00	-11.61	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	39.14	27.59	5.38	34.01	38.10	54.00	-15.90	Horizontal
2400.00	47.51	27.58	5.39	34.01	46.47	54.00	-7.53	Horizontal
2390.00	40.85	27.59	5.38	34.01	39.81	54.00	-14.20	Vertical
2400.00	48.69	27.58	5.39	34.01	47.65	54.00	-6.35	Vertical

Test mode:	802.11b	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	53.15	27.53	5.47	33.92	52.23	74.00	-21.77	Horizontal
2500.00	49.02	27.55	5.49	29.93	52.13	74.00	-21.87	Horizontal
2483.50	55.50	27.53	5.47	33.92	54.58	74.00	-19.42	Vertical
2500.00	51.65	27.55	5.49	29.93	54.76	74.00	-19.25	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	39.48	27.53	5.47	33.92	38.56	54.00	-15.44	Horizontal
2500.00	35.59	27.55	5.49	29.93	38.70	54.00	-15.30	Horizontal
2483.50	41.59	27.53	5.47	33.92	40.67	54.00	-13.33	Vertical
2500.00	37.39	27.55	5.49	29.93	40.50	54.00	-13.50	Vertical

Test mode:	802.11g	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	50.94	27.59	5.38	34.01	49.90	74.00	-24.10	Horizontal
2400.00	59.73	27.58	5.39	34.01	58.69	74.00	-15.31	Horizontal
2390.00	52.79	27.59	5.38	34.01	51.75	74.00	-22.25	Vertical
2400.00	61.50	27.58	5.39	34.01	60.46	74.00	-13.54	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	38.19	27.59	5.38	34.01	37.15	54.00	-16.85	Horizontal
2400.00	46.57	27.58	5.39	34.01	45.53	54.00	-8.47	Horizontal
2390.00	39.82	27.59	5.38	34.01	38.78	54.00	-15.22	Vertical
2400.00	47.20	27.58	5.39	34.01	46.16	54.00	-7.84	Vertical

Test mode:	802.11g	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	51.09	27.53	5.47	33.92	50.17	74.00	-23.83	Horizontal
2500.00	47.38	27.55	5.49	29.93	50.49	74.00	-23.51	Horizontal
2483.50	53.15	27.53	5.47	33.92	52.23	74.00	-21.77	Vertical
2500.00	49.74	27.55	5.49	29.93	52.85	74.00	-21.15	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	38.21	27.53	5.47	33.92	37.29	54.00	-16.71	Horizontal
2500.00	34.56	27.55	5.49	29.93	37.67	54.00	-16.33	Horizontal
2483.50	40.17	27.53	5.47	33.92	39.25	54.00	-14.75	Vertical
2500.00	36.33	27.55	5.49	29.93	39.44	54.00	-14.56	Vertical

Test mode:	802.11n(HT20)	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	50.90	27.59	5.38	34.01	49.86	74.00	-24.14	Horizontal
2400.00	59.70	27.58	5.39	34.01	58.66	74.00	-15.34	Horizontal
2390.00	52.80	27.59	5.38	34.01	51.76	74.00	-22.24	Vertical
2400.00	61.48	27.58	5.39	34.01	60.44	74.00	-13.56	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	38.21	27.59	5.38	34.01	37.17	54.00	-16.83	Horizontal
2400.00	46.61	27.58	5.39	34.01	45.57	54.00	-8.43	Horizontal
2390.00	39.82	27.59	5.38	34.01	38.78	54.00	-15.22	Vertical
2400.00	47.18	27.58	5.39	34.01	46.14	54.00	-7.86	Vertical

Test mode:	802.11n(HT20)	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	51.00	27.53	5.47	33.92	50.08	74.00	-23.92	Horizontal
2500.00	47.36	27.55	5.49	29.93	50.47	74.00	-23.53	Horizontal
2483.50	53.05	27.53	5.47	33.92	52.13	74.00	-21.87	Vertical
2500.00	49.70	27.55	5.49	29.93	52.81	74.00	-21.19	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	38.19	27.53	5.47	33.92	37.27	54.00	-16.73	Horizontal
2500.00	34.57	27.55	5.49	29.93	37.68	54.00	-16.32	Horizontal
2483.50	40.16	27.53	5.47	33.92	39.24	54.00	-14.76	Vertical
2500.00	36.31	27.55	5.49	29.93	39.42	54.00	-14.58	Vertical

Test mode:	802.11n(HT40)	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	50.25	27.59	5.38	34.01	49.21	74.00	-24.79	Horizontal
2400.00	58.84	27.58	5.39	34.01	57.80	74.00	-16.20	Horizontal
2390.00	52.21	27.59	5.38	34.01	51.17	74.00	-22.83	Vertical
2400.00	60.53	27.58	5.39	34.01	59.49	74.00	-14.51	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	37.90	27.59	5.38	34.01	36.86	54.00	-17.14	Horizontal
2400.00	46.32	27.58	5.39	34.01	45.28	54.00	-8.72	Horizontal
2390.00	39.38	27.59	5.38	34.01	38.34	54.00	-15.66	Vertical
2400.00	46.59	27.58	5.39	34.01	45.55	54.00	-8.45	Vertical

Test mode:	802.11n(HT40)	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	49.97	27.53	5.47	33.92	49.05	74.00	-24.95	Horizontal
2500.00	46.65	27.55	5.49	29.93	49.76	74.00	-24.24	Horizontal
2483.50	51.85	27.53	5.47	33.92	50.93	74.00	-23.07	Vertical
2500.00	48.87	27.55	5.49	29.93	51.98	74.00	-22.02	Vertical

Average value:

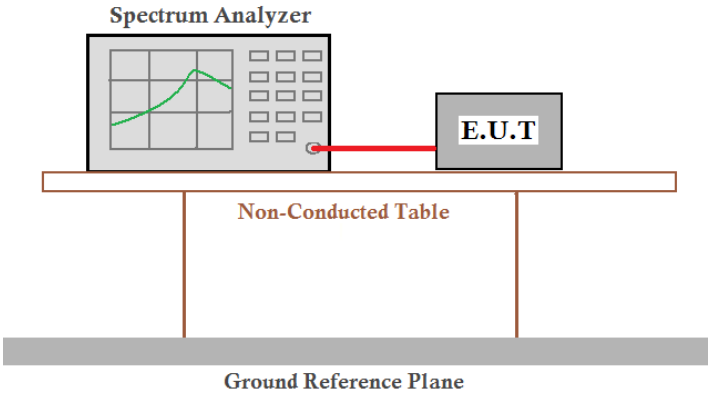
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	37.65	27.53	5.47	33.92	36.73	54.00	-17.27	Horizontal
2500.00	34.22	27.55	5.49	29.93	37.33	54.00	-16.67	Horizontal
2483.50	39.60	27.53	5.47	33.92	38.68	54.00	-15.32	Vertical
2500.00	35.89	27.55	5.49	29.93	39.00	54.00	-15.00	Vertical

Remarks:

1. *Only the worst case Main Antenna 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.*

7.7 Spurious Emission

7.7.1 Conducted Emission Method

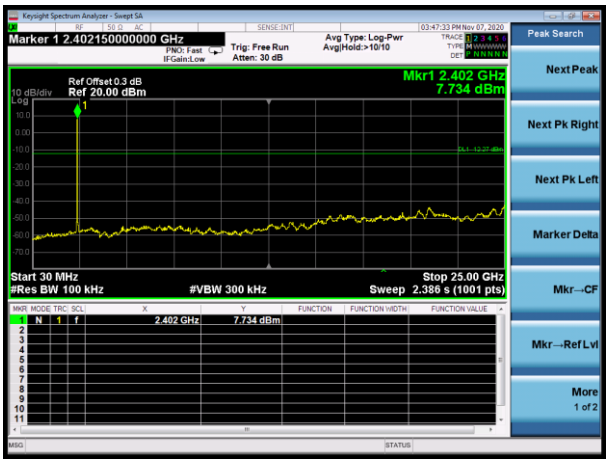
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074 D01 15.247 Meas Guidance v05r02 KDB 662911 D01 Multiple Transmitter Output v02r01
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power 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:

Antenna 1:

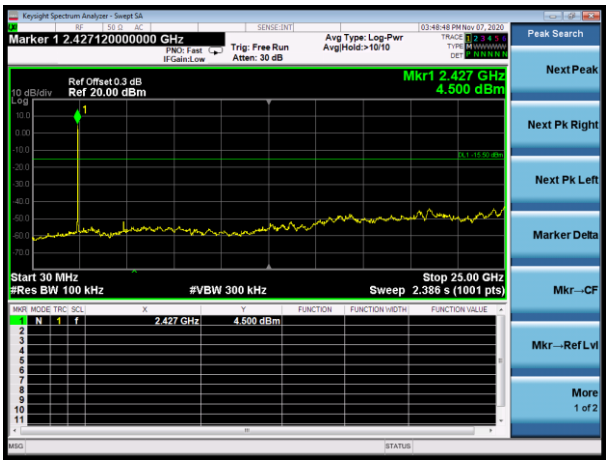
802.11b

Lowest channel



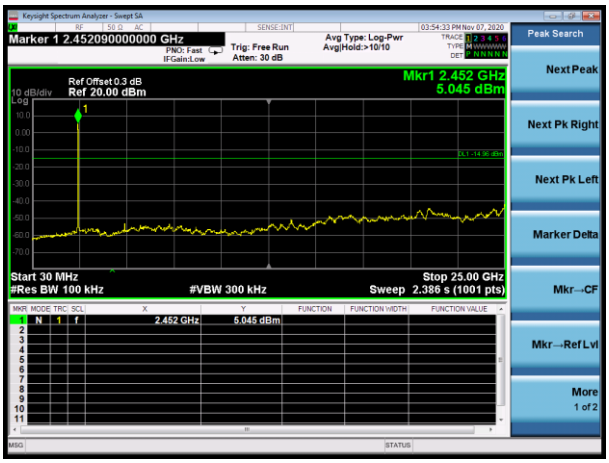
30MHz~25GHz

Middle channel



30MHz~25GHz

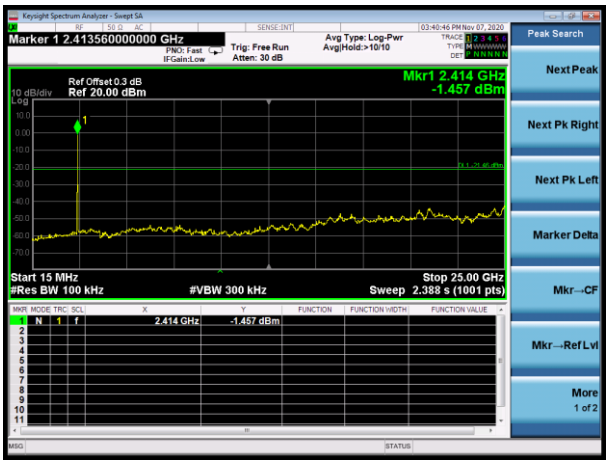
Highest channel



30MHz~25GHz

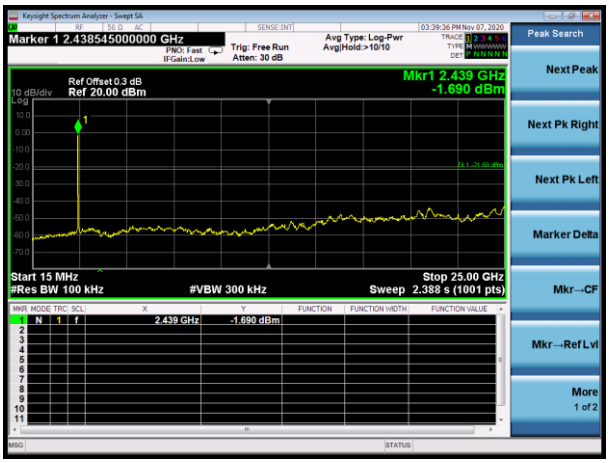
802.11g

Lowest channel



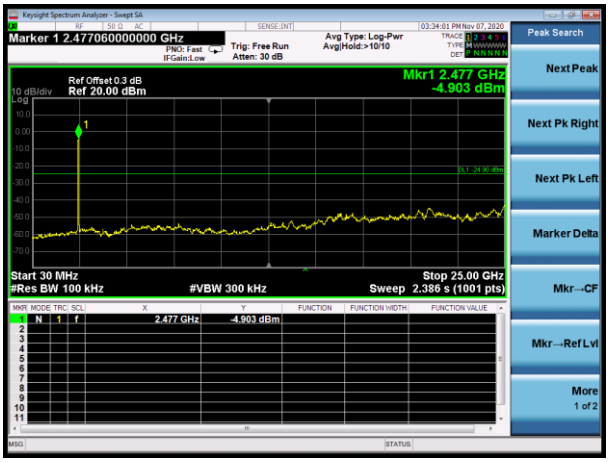
30MHz~25GHz

Middle channel



30MHz~25GHz

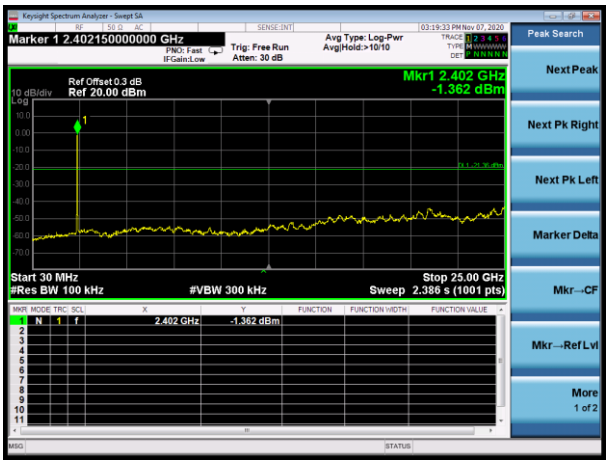
Highest channel



30MHz~25GHz

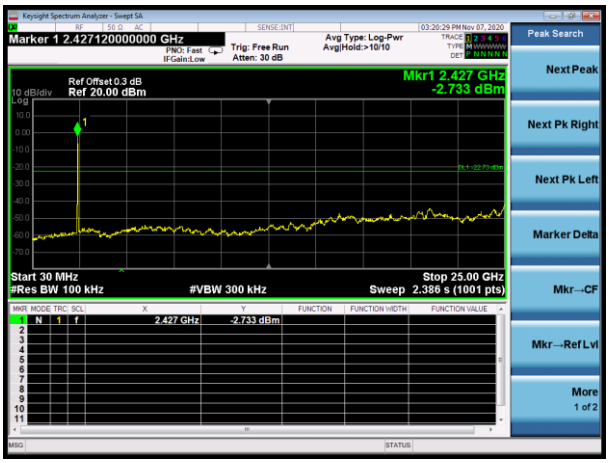
802.11n(HT20)

Lowest channel



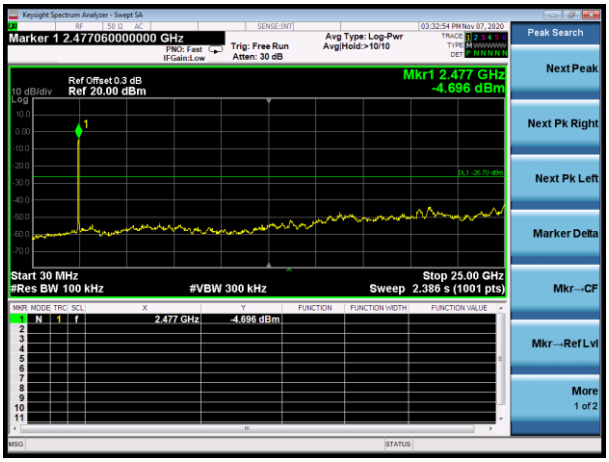
30MHz~25GHz

Middle channel



30MHz~25GHz

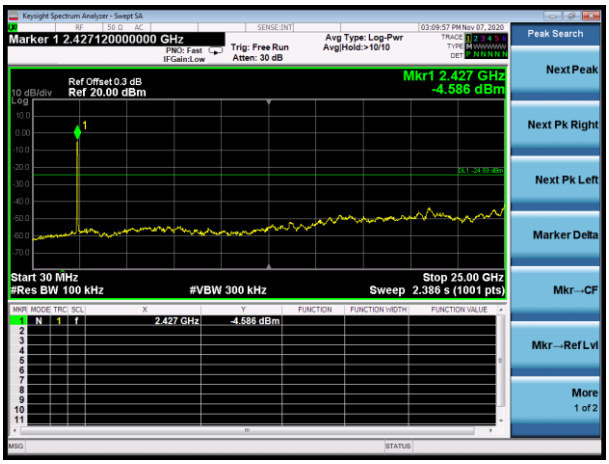
Highest channel



30MHz~25GHz

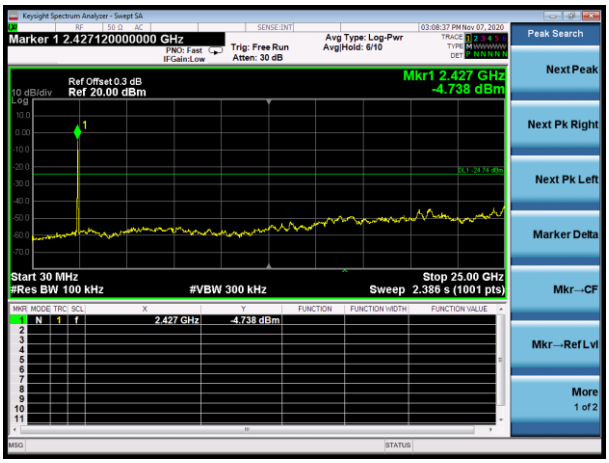
802.11n(HT40)

Lowest channel



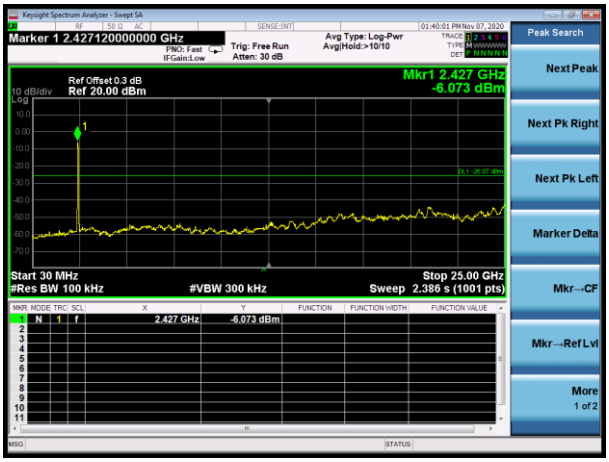
30MHz~25GHz

Middle channel



30MHz~25GHz

Highest channel

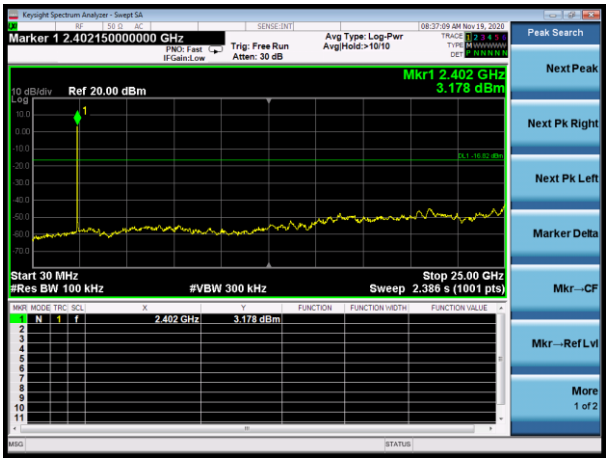


30MHz~25GHz

Antenna 2:

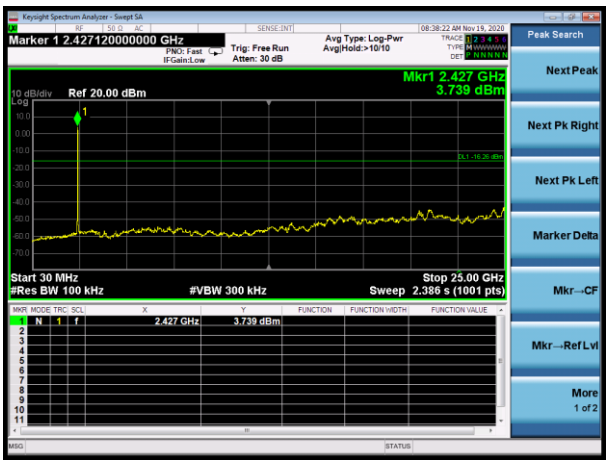
802.11b

Lowest channel



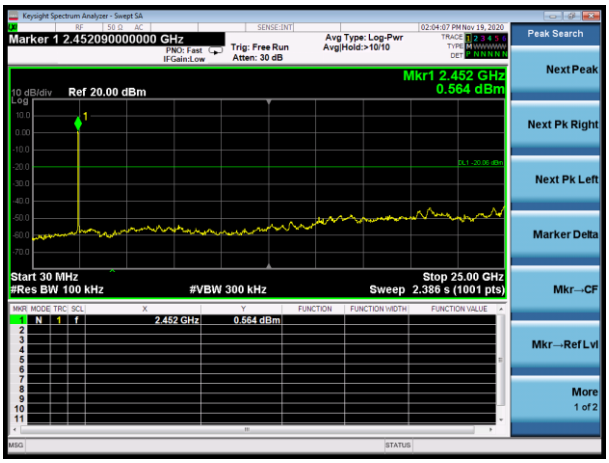
30MHz~25GHz

Middle channel



30MHz~25GHz

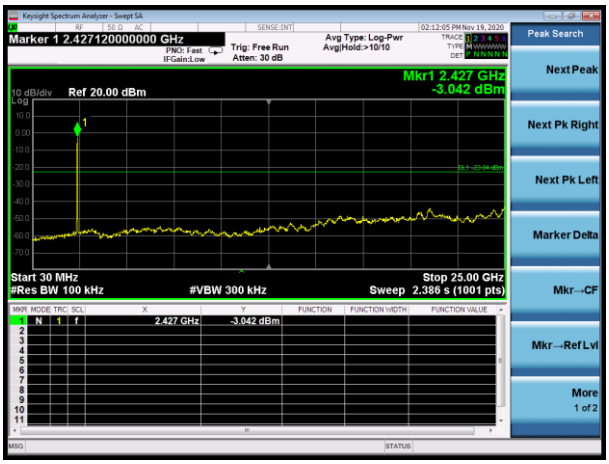
Highest channel



30MHz~25GHz

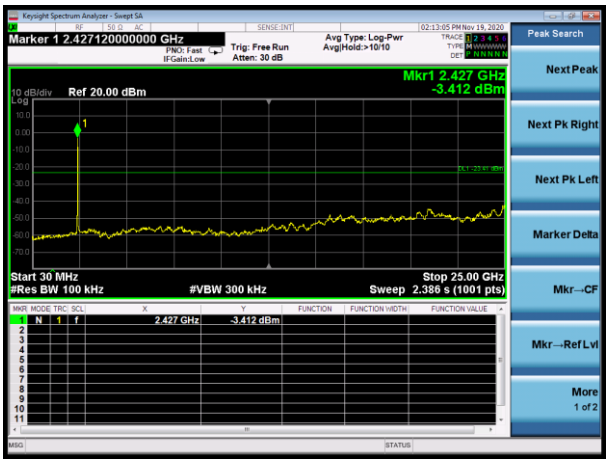
802.11g

Lowest channel



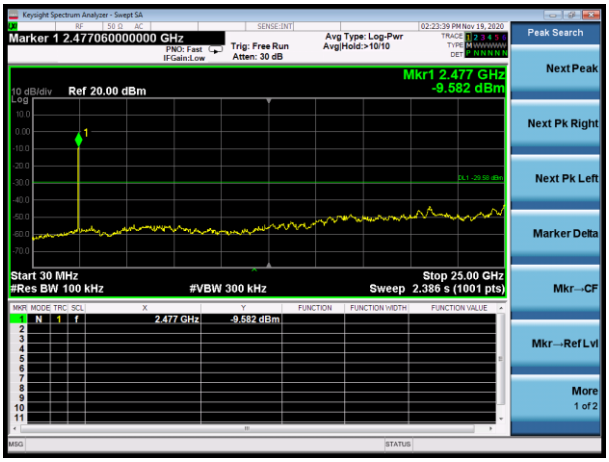
30MHz~25GHz

Middle channel



30MHz~25GHz

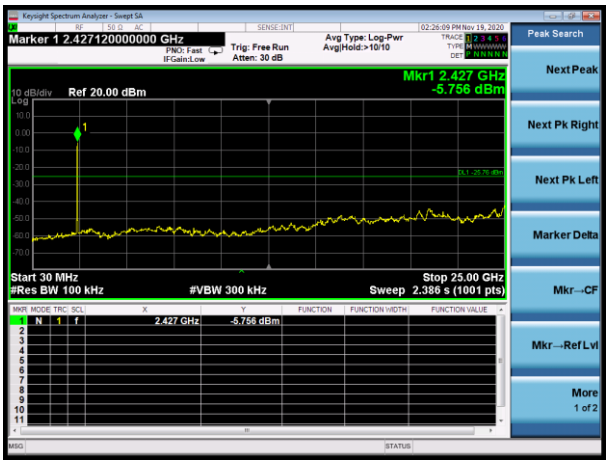
Highest channel



30MHz~25GHz

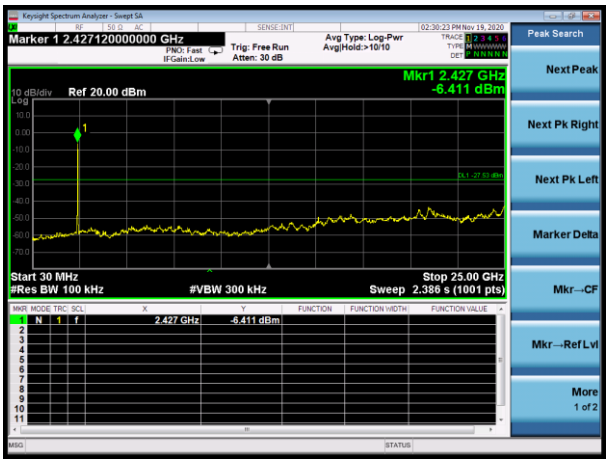
802.11n(HT20)

Lowest channel



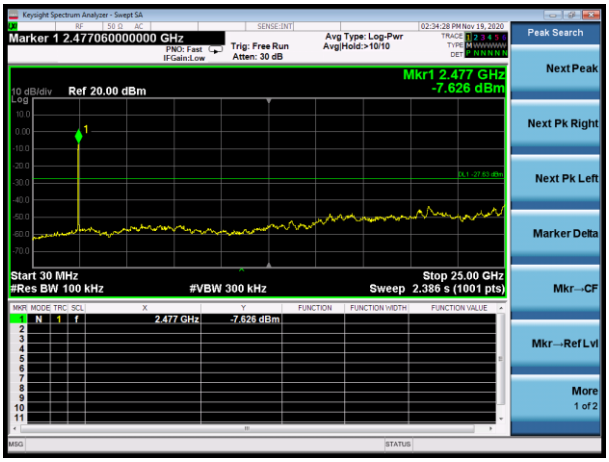
30MHz~25GHz

Middle channel



30MHz~25GHz

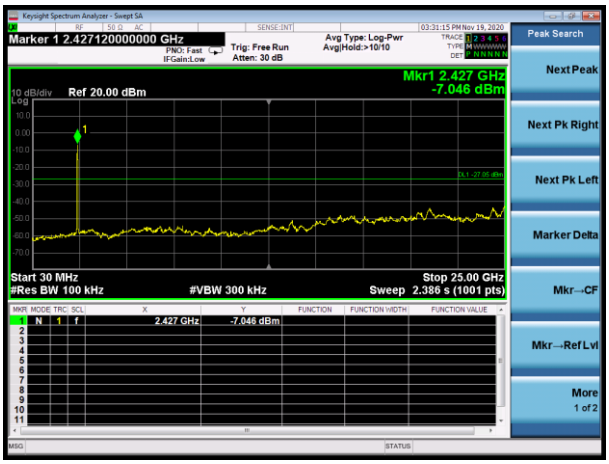
Highest channel



30MHz~25GHz

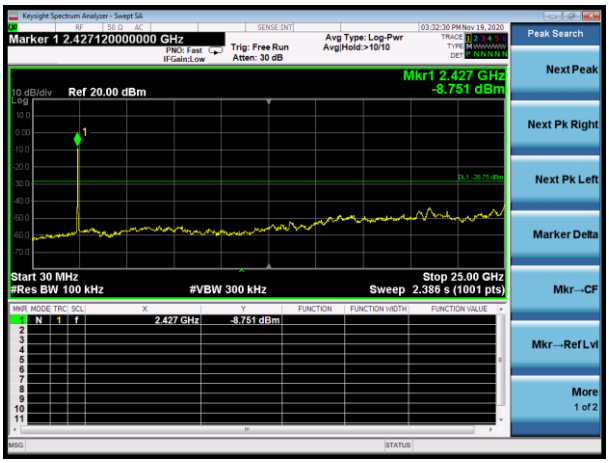
802.11n(HT40)

Lowest channel



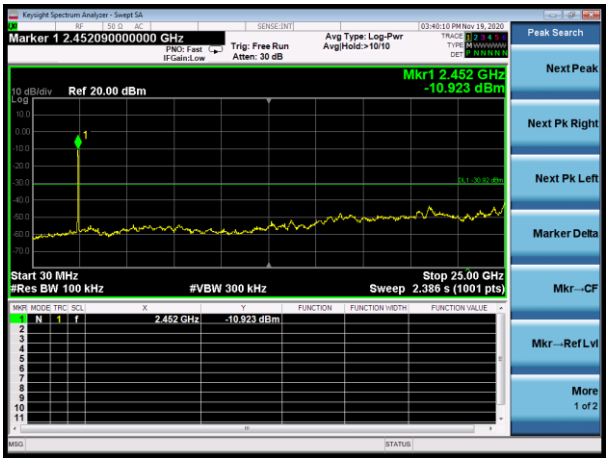
30MHz~25GHz

Middle channel



30MHz~25GHz

Highest channel



30MHz~25GHz

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:

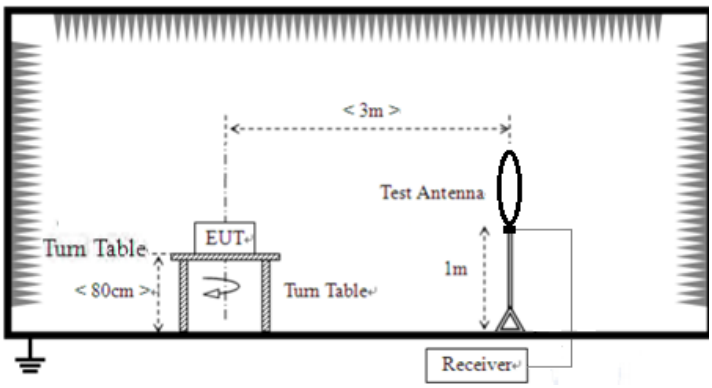
Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Limit:

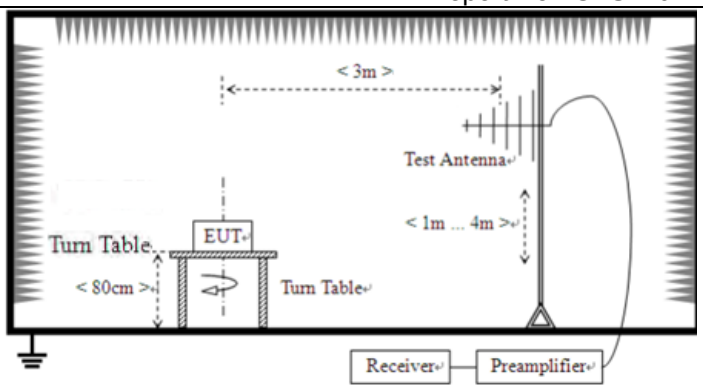
Frequency	Limit (uV/m)	Value	Measurement Distance
0.009MHz-0.490MHz	2400/F(KHz)	QP	300m
0.490MHz-1.705MHz	24000/F(KHz)	QP	300m
1.705MHz-30MHz	30	QP	30m
30MHz-88MHz	100	QP	3m
88MHz-216MHz	150	QP	
216MHz-960MHz	200	QP	
960MHz-1GHz	500	QP	
Above 1GHz	500	Average	
	5000	Peak	

Test setup:

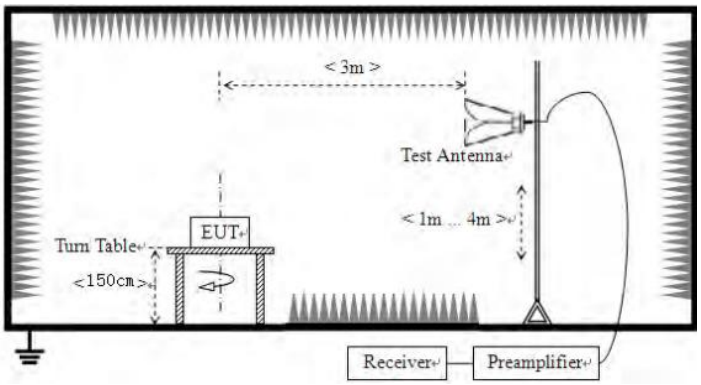
For radiated emissions from 9kHz to 30MHz



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. *Only the worst case Main Antenna 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.*
3. *All antennas have test, only the worst case ANT 1 report.*

Measurement data:

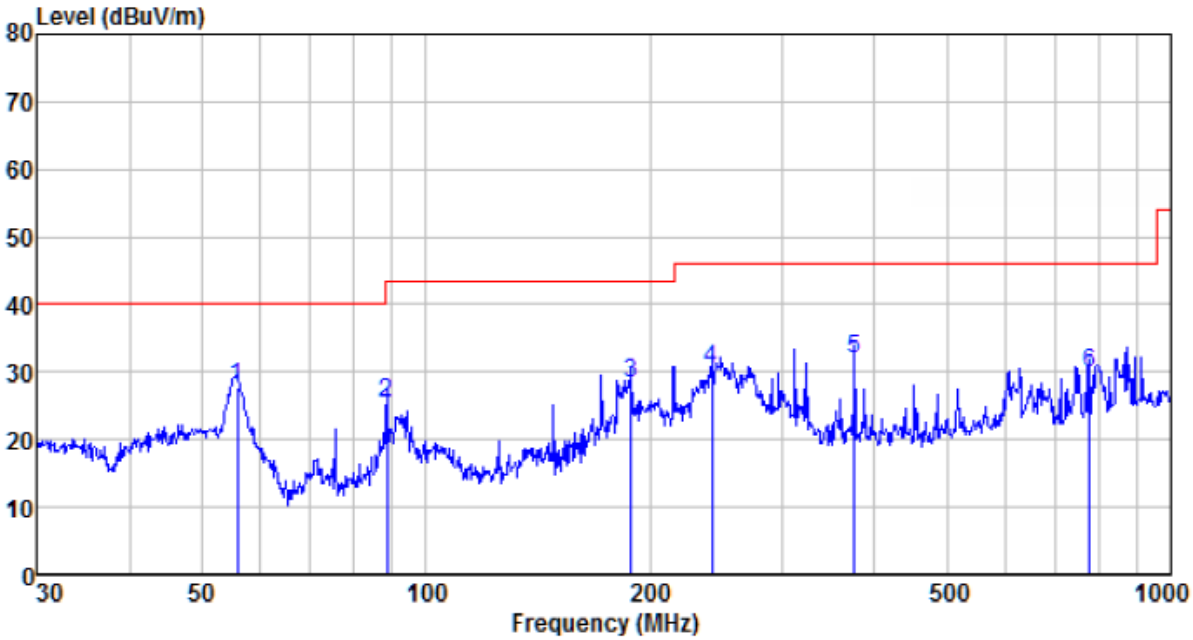
- **9kHz~30MHz**

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**

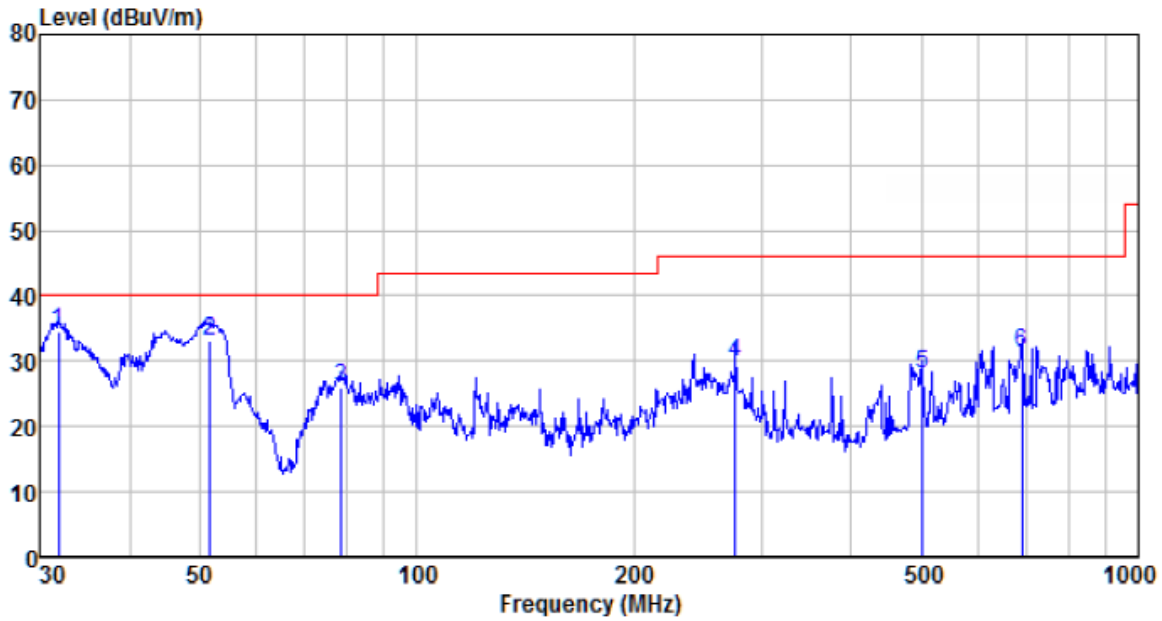
Pre-scan all test modes, found worst case at MIMO mode of 802.11n (HT20), and so only show the test result MIMO mode of 802.11n (HT20) 2412MHz on the report.

Horizontal:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
55.805	51.49	11.70	0.82	36.27	27.74	40.00	-12.26	QP
88.652	50.83	10.19	1.10	36.63	25.49	43.50	-18.01	QP
188.413	54.08	9.73	1.78	37.28	28.31	43.50	-15.19	QP
241.676	53.94	11.89	2.08	37.37	30.54	46.00	-15.46	QP
375.939	51.63	14.94	2.75	37.50	31.82	46.00	-14.18	QP
776.878	42.11	21.03	4.37	37.62	29.89	46.00	-16.11	QP

Vertical:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
31.843	58.01	11.24	0.57	35.14	34.68	40.00	-5.32	QP
51.662	56.44	12.12	0.79	36.21	33.14	40.00	-6.86	QP
78.689	54.11	7.41	1.02	36.53	26.01	40.00	-13.99	QP
276.124	52.09	12.95	2.25	37.40	29.89	46.00	-16.11	QP
502.940	44.85	17.35	3.32	37.51	28.01	46.00	-17.99	QP
689.565	45.36	19.59	4.05	37.62	31.38	46.00	-14.62	QP

■ **Above 1GHz**

Test mode:	802.11b	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	41.35	31.78	8.60	32.09	49.64	74.00	-24.36	Vertical
7236.00	35.00	36.15	11.65	32.00	50.80	74.00	-23.20	Vertical
9648.00	33.64	37.95	14.14	31.62	54.11	74.00	-19.89	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	39.90	31.78	8.60	32.09	48.19	74.00	-25.81	Horizontal
7236.00	34.95	36.15	11.65	32.00	50.75	74.00	-23.25	Horizontal
9648.00	32.74	37.95	14.14	31.62	53.21	74.00	-20.79	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal
16884.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	30.40	31.78	8.60	32.09	38.69	54.00	-15.31	Vertical
7236.00	23.86	36.15	11.65	32.00	39.66	54.00	-14.34	Vertical
9648.00	23.98	37.95	14.14	31.62	44.45	54.00	-9.55	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4824.00	29.41	31.78	8.60	32.09	37.70	54.00	-16.30	Horizontal
7236.00	23.52	36.15	11.65	32.00	39.32	54.00	-14.68	Horizontal
9648.00	22.48	37.95	14.14	31.62	42.95	54.00	-11.05	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal
16884.00	*					54.00		Horizontal

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)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	40.33	31.85	8.67	32.12	48.73	74.00	-25.27	Vertical
7311.00	35.03	36.37	11.72	31.89	51.23	74.00	-22.77	Vertical
9748.00	34.62	38.35	14.25	31.62	55.60	74.00	-18.40	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	40.70	31.85	8.67	32.12	49.10	74.00	-24.90	Horizontal
7311.00	33.87	36.37	11.72	31.89	50.07	74.00	-23.93	Horizontal
9748.00	34.04	38.35	14.25	31.62	55.02	74.00	-18.98	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	31.15	31.85	8.67	32.12	39.55	54.00	-14.45	Vertical
7311.00	23.33	36.37	11.72	31.89	39.53	54.00	-14.47	Vertical
9748.00	23.87	38.35	14.25	31.62	44.85	54.00	-9.15	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	30.80	31.85	8.67	32.12	39.20	54.00	-14.80	Horizontal
7311.00	22.95	36.37	11.72	31.89	39.15	54.00	-14.85	Horizontal
9748.00	23.75	38.35	14.25	31.62	44.73	54.00	-9.27	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

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)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4944.00	46.12	31.93	8.73	32.16	54.62	74.00	-19.38	Vertical
7416.00	35.87	36.59	11.79	31.78	52.47	74.00	-21.53	Vertical
9888.00	38.04	38.81	14.38	31.88	59.35	74.00	-14.65	Vertical
12360.00	*					74.00		Vertical
14832.00	*					74.00		Vertical
17304.00	*					74.00		Vertical
4944.00	45.28	31.93	8.73	32.16	53.78	74.00	-20.22	Horizontal
7416.00	34.95	36.59	11.79	31.78	51.55	74.00	-22.45	Horizontal
9888.00	33.73	38.81	14.38	31.88	55.04	74.00	-18.96	Horizontal
12360.00	*					74.00		Horizontal
14832.00	*					74.00		Horizontal
17304.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4944.00	36.98	31.93	8.73	32.16	45.48	54.00	-8.52	Vertical
7416.00	25.77	36.59	11.79	31.78	42.37	54.00	-11.63	Vertical
9888.00	26.53	38.81	14.38	31.88	47.84	54.00	-6.16	Vertical
12360.00	*					54.00		Vertical
14832.00	*					54.00		Vertical
17304.00	*					54.00		Vertical
4944.00	35.61	31.93	8.73	32.16	44.11	54.00	-9.89	Horizontal
7416.00	24.33	36.59	11.79	31.78	40.93	54.00	-13.07	Horizontal
9888.00	22.98	38.81	14.38	31.88	44.29	54.00	-9.71	Horizontal
12360.00	*					54.00		Horizontal
14832.00	*					54.00		Horizontal
17304.00	*					54.00		Horizontal

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:	802.11g	Test channel:	lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	41.01	31.78	8.60	32.09	49.30	74.00	-24.70	Vertical
7236.00	34.80	36.15	11.65	32.00	50.60	74.00	-23.40	Vertical
9648.00	33.50	37.95	14.14	31.62	53.97	74.00	-20.03	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	39.62	31.78	8.60	32.09	47.91	74.00	-26.09	Horizontal
7236.00	34.78	36.15	11.65	32.00	50.58	74.00	-23.42	Horizontal
9648.00	32.60	37.95	14.14	31.62	53.07	74.00	-20.93	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal
16884.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	30.09	31.78	8.60	32.09	38.38	54.00	-15.62	Vertical
7236.00	23.67	36.15	11.65	32.00	39.47	54.00	-14.53	Vertical
9648.00	23.85	37.95	14.14	31.62	44.32	54.00	-9.68	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertica
4824.00	29.15	31.78	8.60	32.09	37.44	54.00	-16.56	Horizontal
7236.00	23.36	36.15	11.65	32.00	39.16	54.00	-14.84	Horizontal
9648.00	22.35	37.95	14.14	31.62	42.82	54.00	-11.18	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal
16884.00	*					54.00		Horizontal

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:	802.11g	Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	40.05	31.85	8.67	32.12	48.45	74.00	-25.55	Vertical
7311.00	34.86	36.37	11.72	31.89	51.06	74.00	-22.94	Vertical
9748.00	34.52	38.35	14.25	31.62	55.50	74.00	-18.50	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	40.47	31.85	8.67	32.12	48.87	74.00	-25.13	Horizontal
7311.00	33.74	36.37	11.72	31.89	49.94	74.00	-24.06	Horizontal
9748.00	33.92	38.35	14.25	31.62	54.90	74.00	-19.10	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	30.90	31.85	8.67	32.12	39.30	54.00	-14.70	Vertical
7311.00	23.18	36.37	11.72	31.89	39.38	54.00	-14.62	Vertical
9748.00	23.77	38.35	14.25	31.62	44.75	54.00	-9.25	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	30.58	31.85	8.67	32.12	38.98	54.00	-15.02	Horizontal
7311.00	22.83	36.37	11.72	31.89	39.03	54.00	-14.97	Horizontal
9748.00	23.64	38.35	14.25	31.62	44.62	54.00	-9.38	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

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:	802.11g	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4944.00	45.62	31.93	8.73	32.16	54.12	74.00	-19.88	Vertical
7416.00	35.56	36.59	11.79	31.78	52.16	74.00	-21.84	Vertical
9888.00	37.83	38.81	14.38	31.88	59.14	74.00	-14.86	Vertical
12360.00	*					74.00		Vertical
14832.00	*					74.00		Vertical
17304.00	*					74.00		Vertical
4944.00	44.86	31.93	8.73	32.16	53.36	74.00	-20.64	Horizontal
7416.00	34.70	36.59	11.79	31.78	51.30	74.00	-22.70	Horizontal
9888.00	33.52	38.81	14.38	31.88	54.83	74.00	-19.17	Horizontal
12360.00	*					74.00		Horizontal
14832.00	*					74.00		Horizontal
17304.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4944.00	36.53	31.93	8.73	32.16	45.03	54.00	-8.97	Vertical
7416.00	25.48	36.59	11.79	31.78	42.08	54.00	-11.92	Vertical
9888.00	26.33	38.81	14.38	31.88	47.64	54.00	-6.36	Vertical
12360.00	*					54.00		Vertical
14832.00	*					54.00		Vertical
17304.00	*					54.00		Vertical
4944.00	35.22	31.93	8.73	32.16	43.72	54.00	-10.28	Horizontal
7416.00	24.08	36.59	11.79	31.78	40.68	54.00	-13.32	Horizontal
9888.00	22.78	38.81	14.38	31.88	44.09	54.00	-9.91	Horizontal
12360.00	*					54.00		Horizontal
14832.00	*					54.00		Horizontal
17304.00	*					54.00		Horizontal

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:	802.11n(HT20)	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	41.03	31.78	8.60	32.09	49.32	74.00	-24.68	Vertical
7236.00	34.85	36.15	11.65	32.00	50.65	74.00	-23.35	Vertical
9648.00	33.65	37.95	14.14	31.62	54.12	74.00	-19.88	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	39.64	31.78	8.60	32.09	47.93	74.00	-26.07	Horizontal
7236.00	34.92	36.15	11.65	32.00	50.72	74.00	-23.28	Horizontal
9648.00	32.61	37.95	14.14	31.62	53.08	74.00	-20.92	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal
16884.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	30.12	31.78	8.60	32.09	38.41	54.00	-15.59	Vertical
7236.00	23.72	36.15	11.65	32.00	39.52	54.00	-14.48	Vertical
9648.00	24.00	37.95	14.14	31.62	44.47	54.00	-9.53	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4824.00	29.19	31.78	8.60	32.09	37.48	54.00	-16.52	Horizontal
7236.00	23.50	36.15	11.65	32.00	39.30	54.00	-14.70	Horizontal
9648.00	22.36	37.95	14.14	31.62	42.83	54.00	-11.17	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal
16884.00	*					54.00		Horizontal

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:	802.11n(HT20)	Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	40.10	31.85	8.67	32.12	48.50	74.00	-25.50	Vertical
7311.00	34.94	36.37	11.72	31.89	51.14	74.00	-22.86	Vertical
9748.00	34.67	38.35	14.25	31.62	55.65	74.00	-18.35	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	40.53	31.85	8.67	32.12	48.93	74.00	-25.07	Horizontal
7311.00	33.89	36.37	11.72	31.89	50.09	74.00	-23.91	Horizontal
9748.00	33.95	38.35	14.25	31.62	54.93	74.00	-19.07	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	30.96	31.85	8.67	32.12	39.36	54.00	-14.64	Vertical
7311.00	23.25	36.37	11.72	31.89	39.45	54.00	-14.55	Vertical
9748.00	23.93	38.35	14.25	31.62	44.91	54.00	-9.09	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	30.64	31.85	8.67	32.12	39.04	54.00	-14.96	Horizontal
7311.00	22.98	36.37	11.72	31.89	39.18	54.00	-14.82	Horizontal
9748.00	23.66	38.35	14.25	31.62	44.64	54.00	-9.36	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

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:	802.11n(HT20)	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4944.00	45.57	31.93	8.73	32.16	54.07	74.00	-19.93	4924.00
7416.00	35.57	36.59	11.79	31.78	52.17	74.00	-21.83	7386.00
9888.00	37.94	38.81	14.38	31.88	59.25	74.00	-14.75	9848.00
12360.00	*					74.00		Vertical
14832.00	*					74.00		Vertical
17304.00	*					74.00		Vertical
4944.00	44.83	31.93	8.73	32.16	53.33	74.00	-20.67	Horizontal
7416.00	34.79	36.59	11.79	31.78	51.39	74.00	-22.61	Horizontal
9888.00	33.50	38.81	14.38	31.88	54.81	74.00	-19.19	Horizontal
12360.00	*					74.00		Horizontal
14832.00	*					74.00		Horizontal
17304.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4944.00	36.50	31.93	8.73	32.16	45.00	54.00	-9.00	Vertical
7416.00	25.49	36.59	11.79	31.78	42.09	54.00	-11.91	Vertical
9888.00	26.45	38.81	14.38	31.88	47.76	54.00	-6.24	Vertical
12360.00	*					54.00		Vertical
14832.00	*					54.00		Vertical
17304.00	*					54.00		Vertical
4944.00	35.20	31.93	8.73	32.16	43.70	54.00	-10.30	Horizontal
7416.00	24.19	36.59	11.79	31.78	40.79	54.00	-13.21	Horizontal
9888.00	22.76	38.81	14.38	31.88	44.07	54.00	-9.93	Horizontal
12360.00	*					54.00		Horizontal
14832.00	*					54.00		Horizontal
17304.00	*					54.00		Horizontal

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:	802.11n(HT40)	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4844.00	40.37	31.78	8.60	32.09	48.66	74.00	-25.34	Vertical
7266.00	34.39	36.15	11.65	32.00	50.19	74.00	-23.81	Vertical
9688.00	33.21	37.95	14.14	31.62	53.68	74.00	-20.32	Vertical
12110.00	*					74.00		Vertical
14532.00	*					74.00		Vertical
16954.00	*					74.00		Vertical
4844.00	39.08	31.78	8.60	32.09	47.37	74.00	-26.63	Horizontal
7266.00	34.43	36.15	11.65	32.00	50.23	74.00	-23.77	Horizontal
9688.00	32.33	37.95	14.14	31.62	52.80	74.00	-21.20	Horizontal
12110.00	*					74.00		Horizontal
14532.00	*					74.00		Horizontal
16954.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4844.00	29.50	31.78	8.60	32.09	37.79	54.00	-16.21	Vertical
7266.00	23.27	36.15	11.65	32.00	39.07	54.00	-14.93	Vertical
9688.00	23.57	37.95	14.14	31.62	44.04	54.00	-9.96	Vertical
12110.00	*					54.00		Vertical
14532.00	*					54.00		Vertical
16954.00	*					54.00		Vertical
4844.00	28.65	31.78	8.60	32.09	36.94	54.00	-17.06	Horizontal
7266.00	23.02	36.15	11.65	32.00	38.82	54.00	-15.18	Horizontal
9688.00	22.09	37.95	14.14	31.62	42.56	54.00	-11.44	Horizontal
12110.00	*					54.00		Horizontal
14532.00	*					54.00		Horizontal
16954.00	*					54.00		Horizontal

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:	802.11n(HT40)	Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	39.53	31.85	8.67	32.12	47.93	74.00	-26.07	Vertical
7311.00	34.53	36.37	11.72	31.89	50.73	74.00	-23.27	Vertical
9748.00	34.27	38.35	14.25	31.62	55.25	74.00	-18.75	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	40.03	31.85	8.67	32.12	48.43	74.00	-25.57	Horizontal
7311.00	33.44	36.37	11.72	31.89	49.64	74.00	-24.36	Horizontal
9748.00	33.70	38.35	14.25	31.62	54.68	74.00	-19.32	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	30.42	31.85	8.67	32.12	38.82	54.00	-15.18	Vertical
7311.00	22.85	36.37	11.72	31.89	39.05	54.00	-14.95	Vertical
9748.00	23.54	38.35	14.25	31.62	44.52	54.00	-9.48	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	30.16	31.85	8.67	32.12	38.56	54.00	-15.44	Horizontal
7311.00	22.54	36.37	11.72	31.89	38.74	54.00	-15.26	Horizontal
9748.00	23.42	38.35	14.25	31.62	44.40	54.00	-9.60	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

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:	802.11n(HT40)	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4904.00	44.72	31.93	8.73	32.16	53.22	74.00	-20.78	Vertical
7356.00	34.99	36.59	11.79	31.78	51.59	74.00	-22.41	Vertical
9808.00	37.42	38.81	14.38	31.88	58.73	74.00	-15.27	Vertical
12260.00	*					74.00		Vertical
14712.00	*					74.00		Vertical
17164.00	*					74.00		Vertical
4904.00	44.10	31.93	8.73	32.16	52.60	74.00	-21.40	Horizontal
7356.00	34.19	36.59	11.79	31.78	50.79	74.00	-23.21	Horizontal
9808.00	33.14	38.81	14.38	31.88	54.45	74.00	-19.55	Horizontal
12260.00	*					74.00		Horizontal
14712.00	*					74.00		Horizontal
17164.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4904.00	35.70	31.93	8.73	32.16	44.20	54.00	-9.80	Vertical
7356.00	24.92	36.59	11.79	31.78	41.52	54.00	-12.48	Vertical
9808.00	25.93	38.81	14.38	31.88	47.24	54.00	-6.76	Vertical
12260.00	*					54.00		Vertical
14712.00	*					54.00		Vertical
17164.00	*					54.00		Vertical
4904.00	34.51	31.93	8.73	32.16	43.01	54.00	-10.99	Horizontal
7356.00	23.60	36.59	11.79	31.78	40.20	54.00	-13.80	Horizontal
9808.00	22.41	38.81	14.38	31.88	43.72	54.00	-10.28	Horizontal
12260.00	*					54.00		Horizontal
14712.00	*					54.00		Horizontal
17164.00	*					54.00		Horizontal

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------