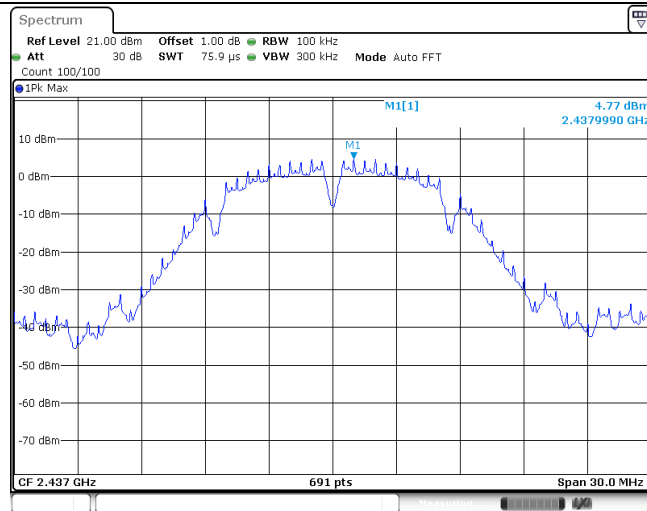
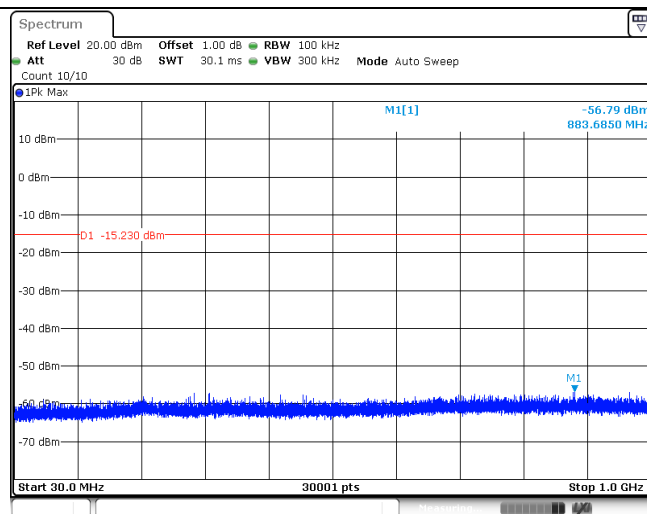


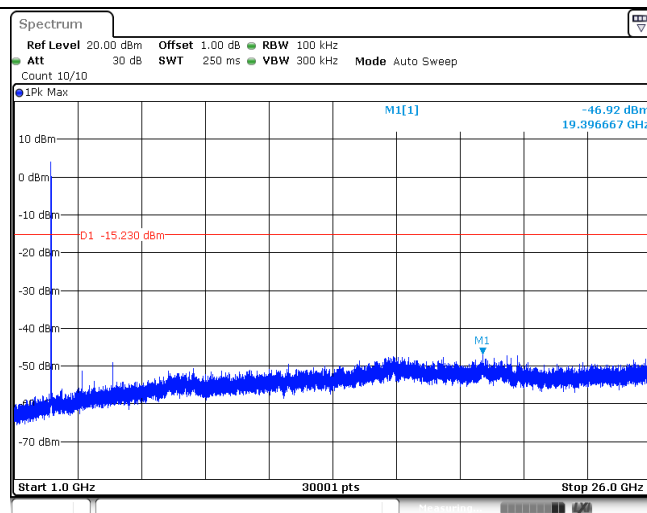
CH06
Reference level

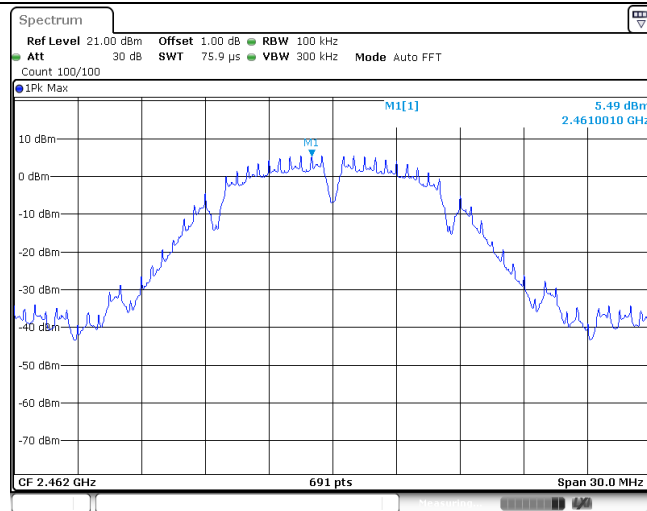
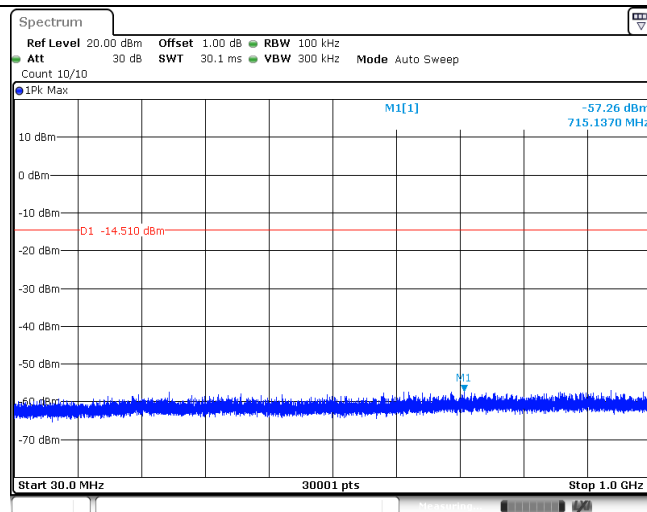
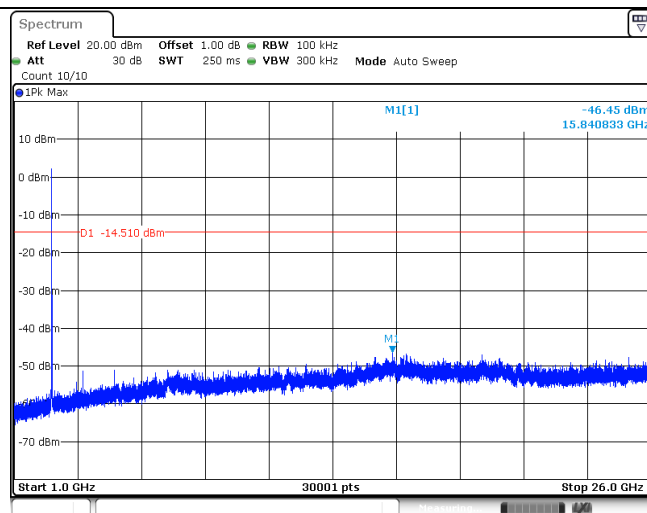


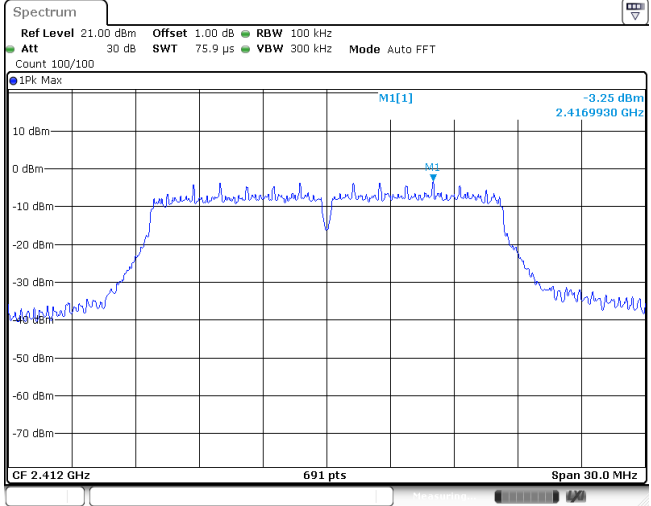
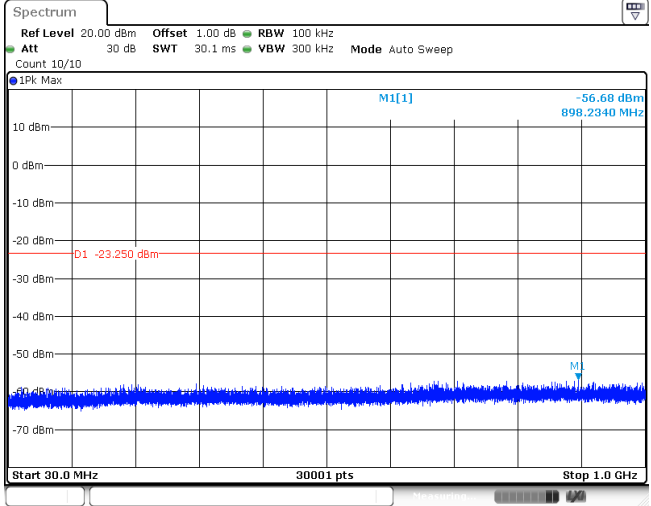
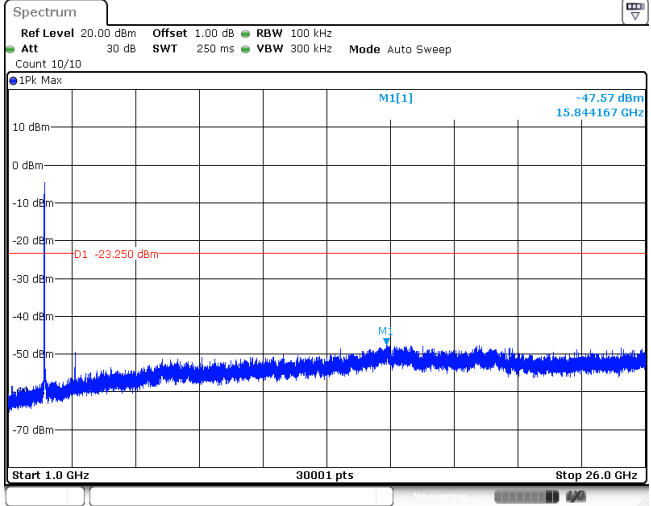
CH06
30MHz~1000MHz



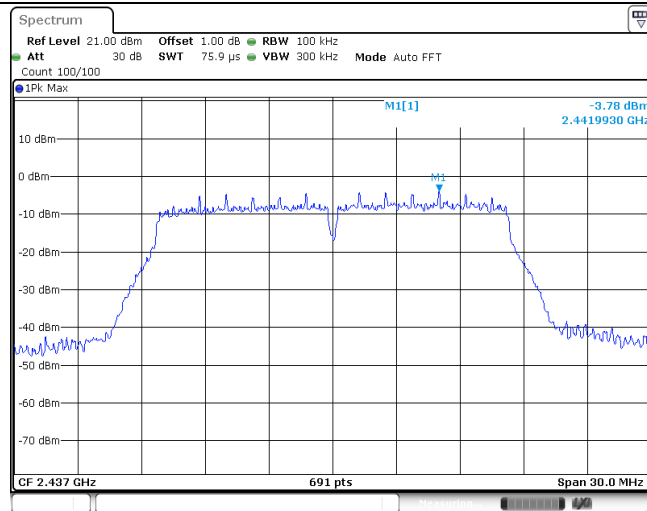
CH06
1GHz~26GHz



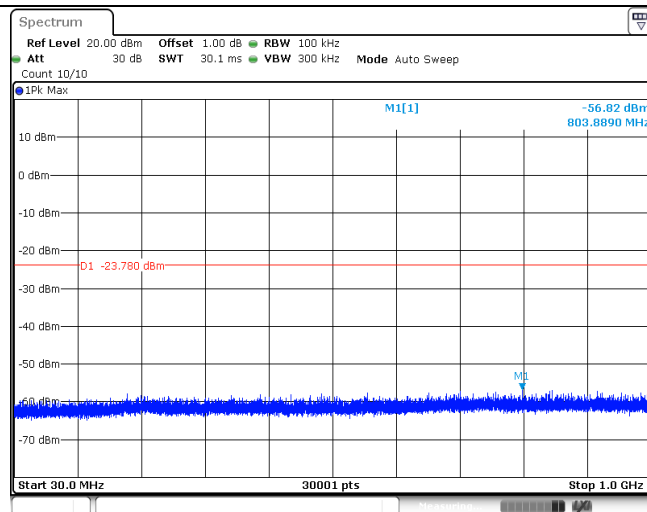
CH11
Reference levelCH11
30MHz~1000MHzCH11
1GHz~26GHz

Test Item:	SE	Type:	802.11g
CH01 Reference level			
CH01 30MHz~1000MHz			
CH01 1GHz~26GHz			

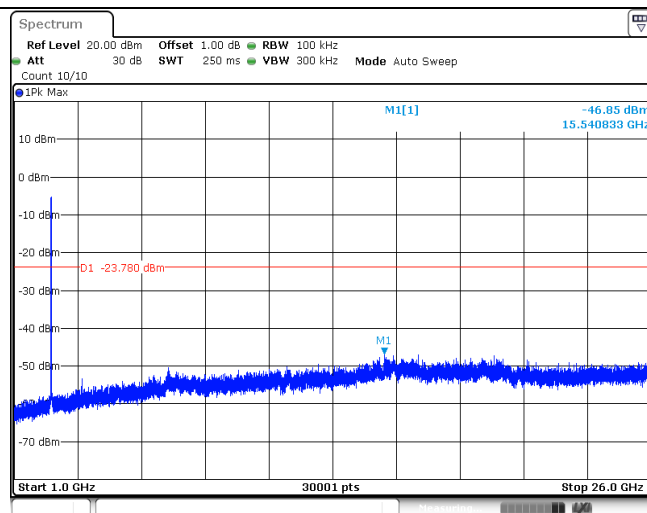
CH06
Reference level

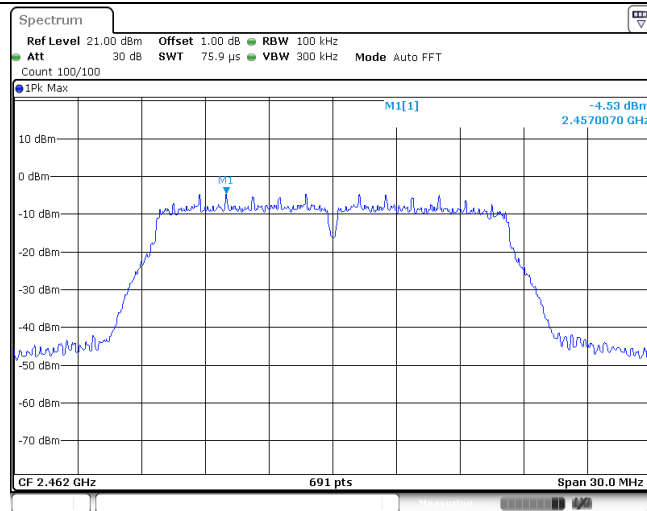
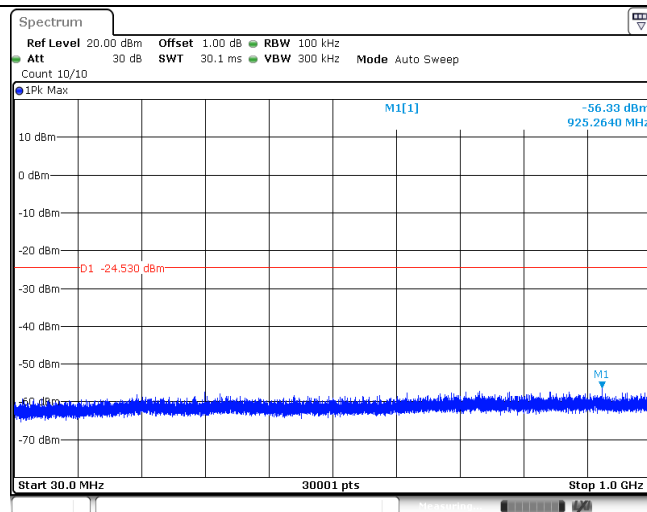
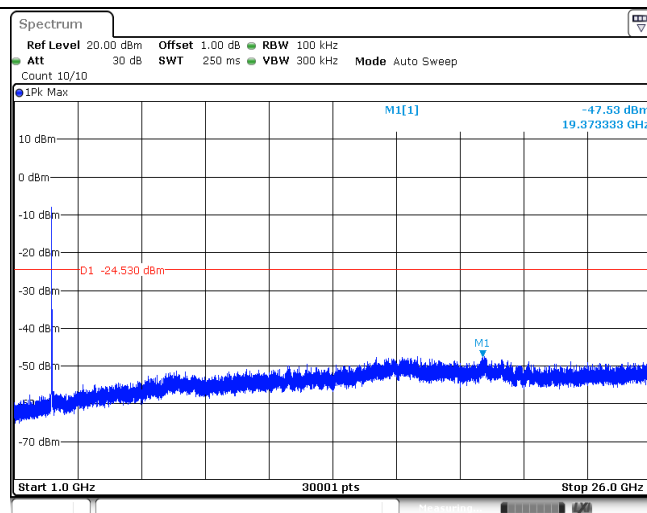


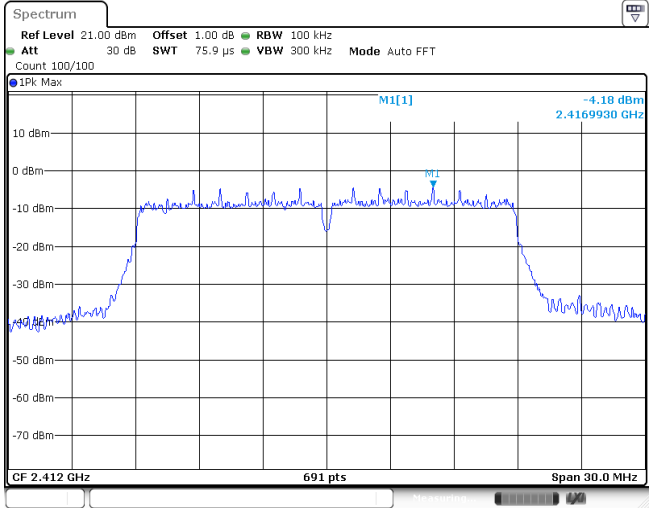
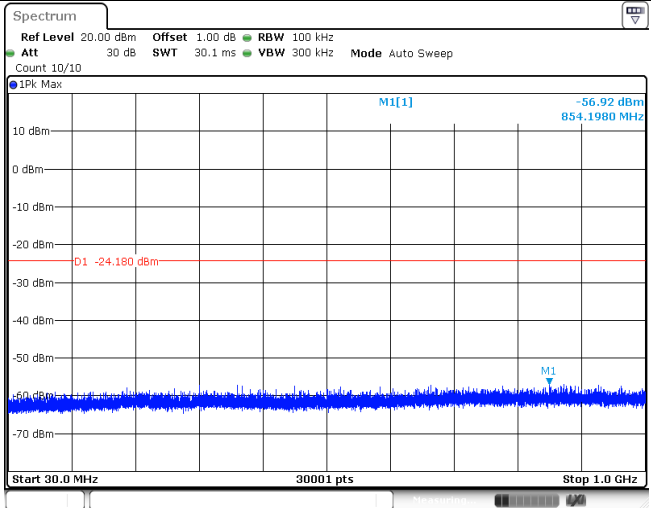
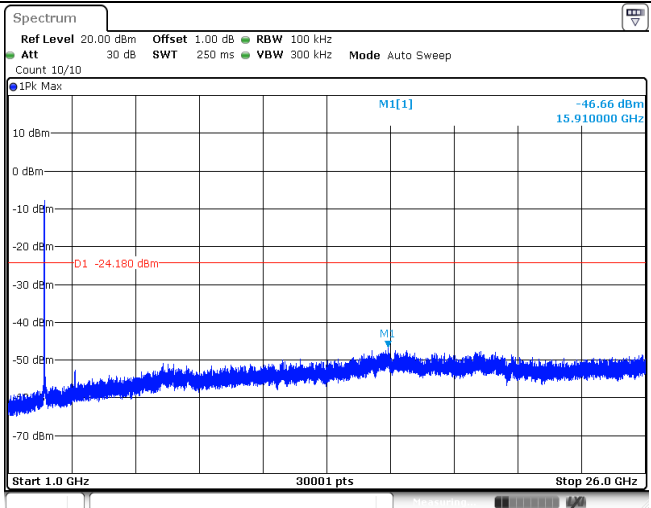
CH06
30MHz~1000MHz



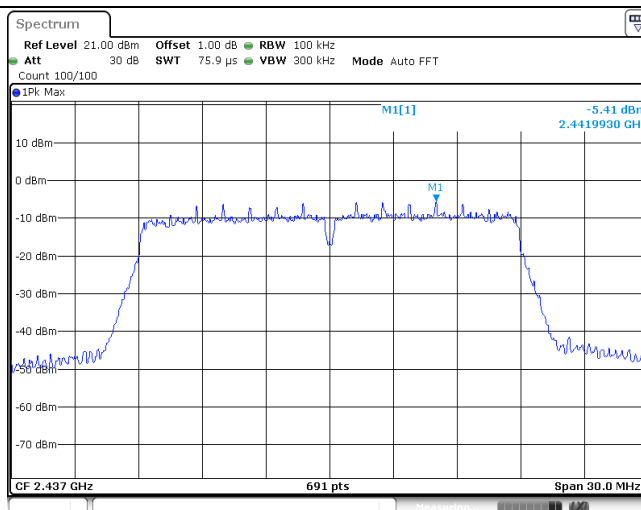
CH06
1GHz~26GHz



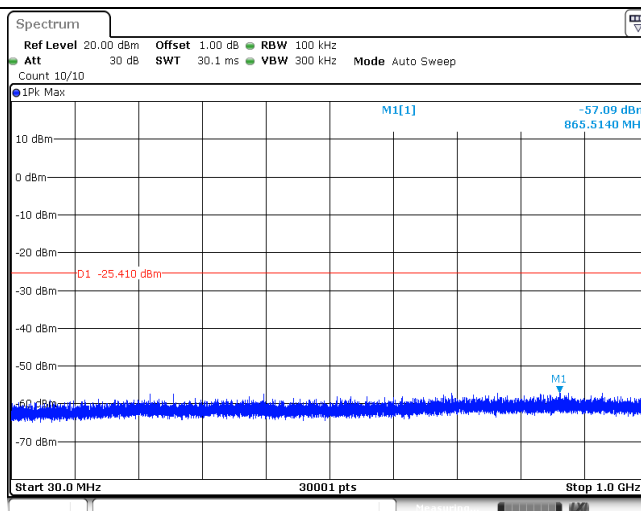
CH11
Reference levelCH11
30MHz~1000MHzCH11
1GHz~26GHz

Test Item:	SE	Type:	802.11n(HT20)
CH01 Reference level			
CH01 30MHz~1000MHz			
CH01 1GHz~26GHz			

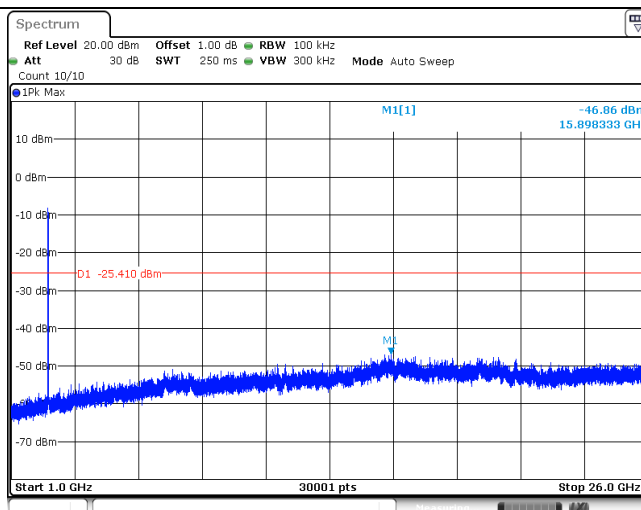
CH06
Reference level

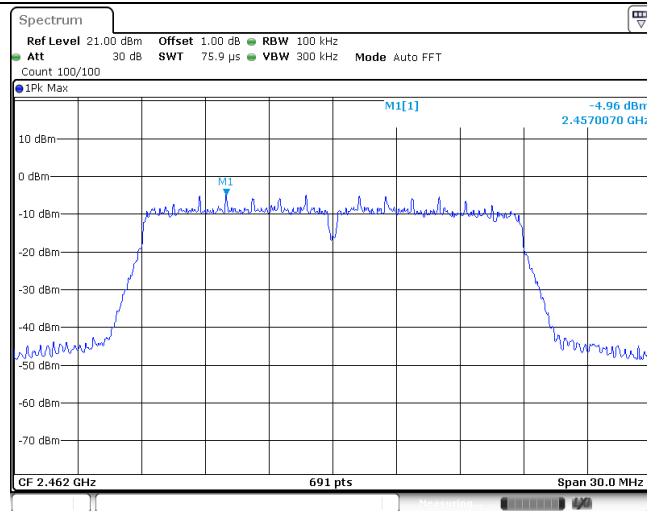
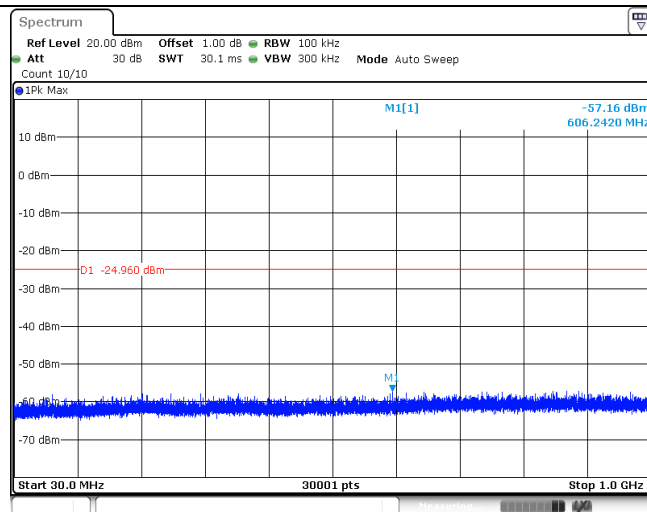
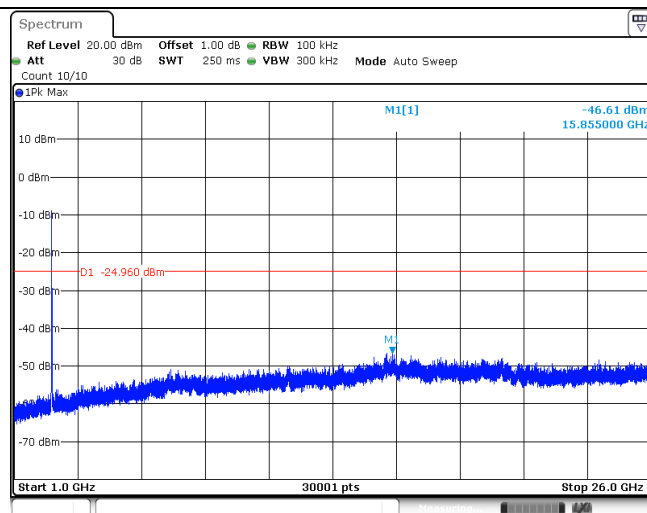


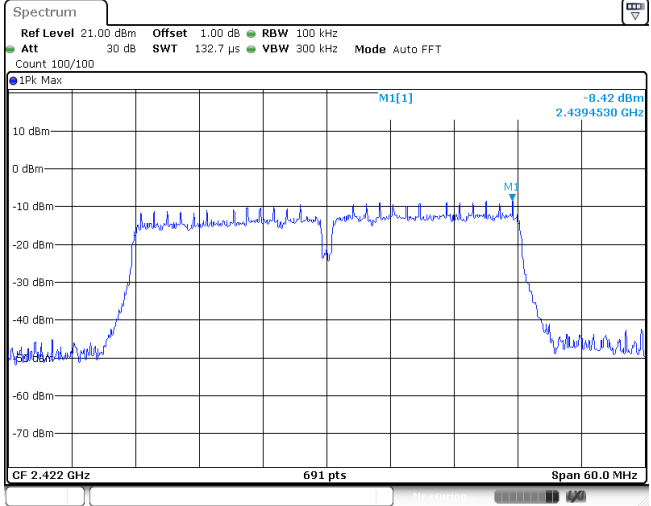
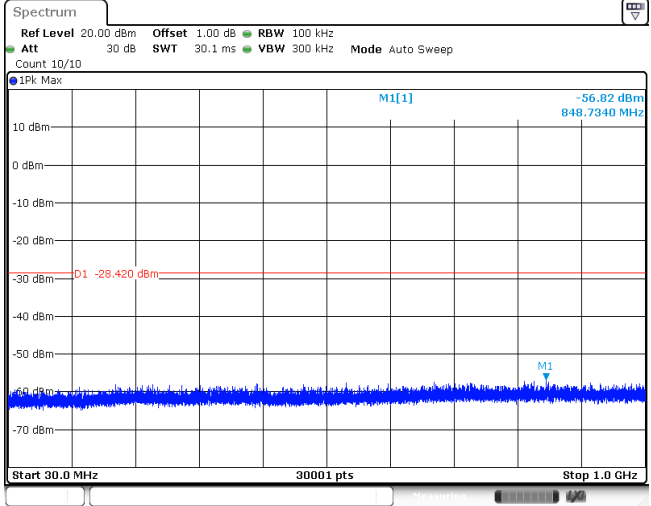
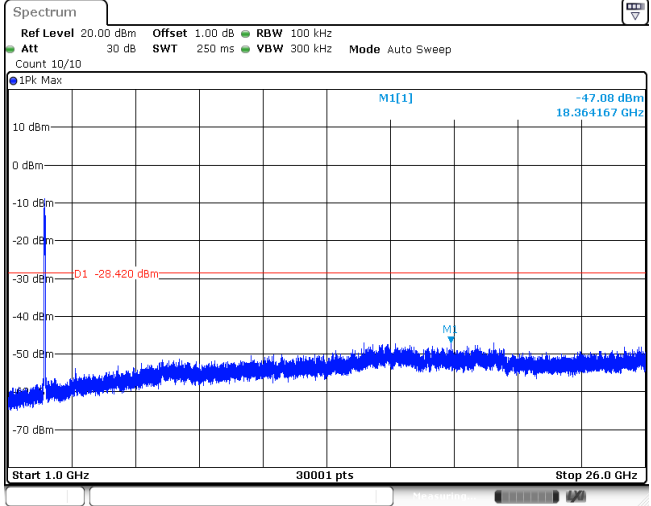
CH06
30MHz~1000MHz



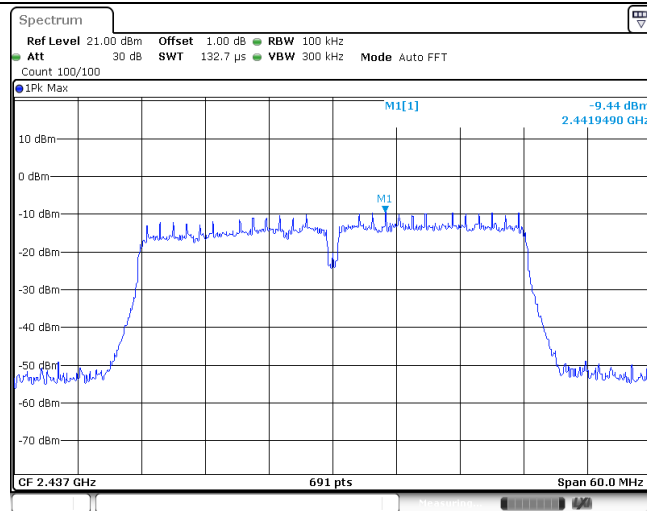
CH06
1GHz~26GHz



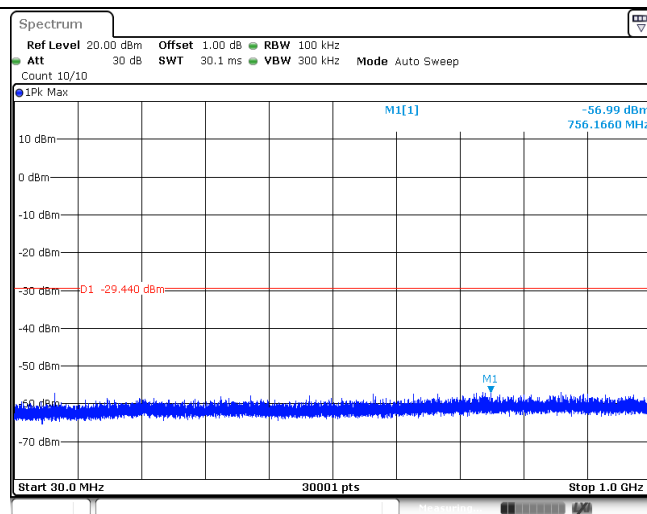
CH11
Reference levelCH11
30MHz~1000MHzCH11
1GHz~26GHz

Test Item:	SE	Type:	802.11n(HT40)
CH03 Reference level			
CH03 30MHz~1000MHz			
CH03 1GHz~26GHz			

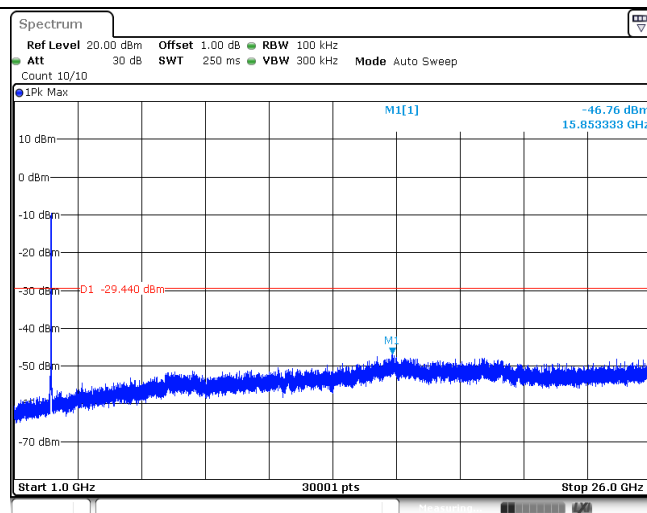
CH06
Reference level



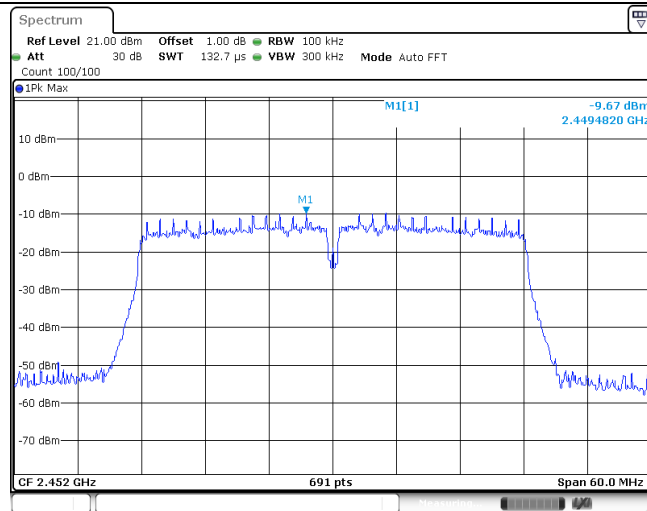
CH06
30MHz~1000MHz



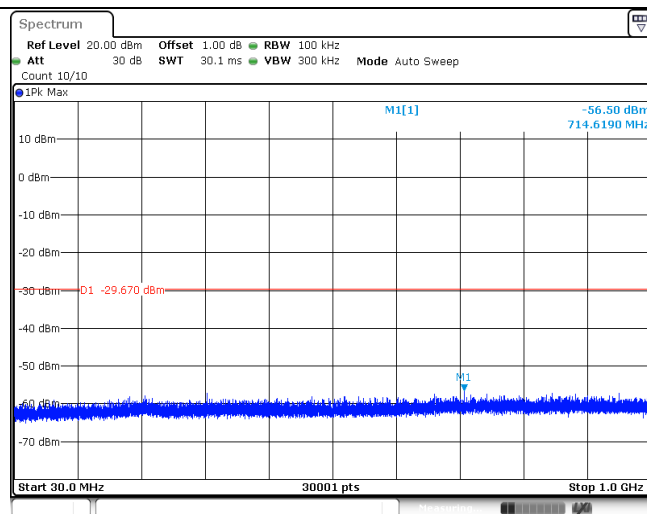
CH06
1GHz~26GHz



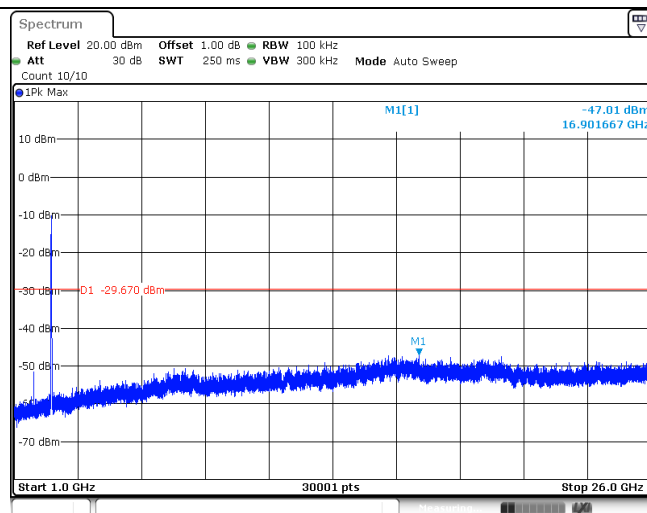
CH09
Reference level



CH09
30MHz~1000MHz



CH09
1GHz~26GHz



5.8. Spurious Emissions (radiated)

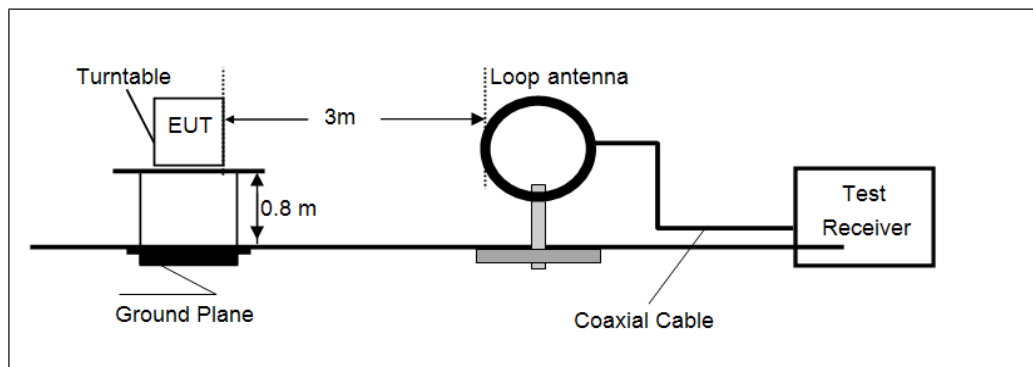
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.209

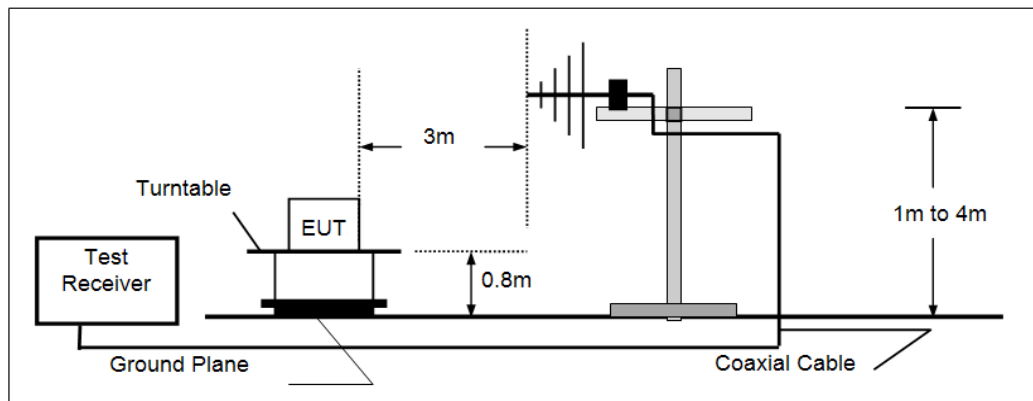
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

TEST CONFIGURATION

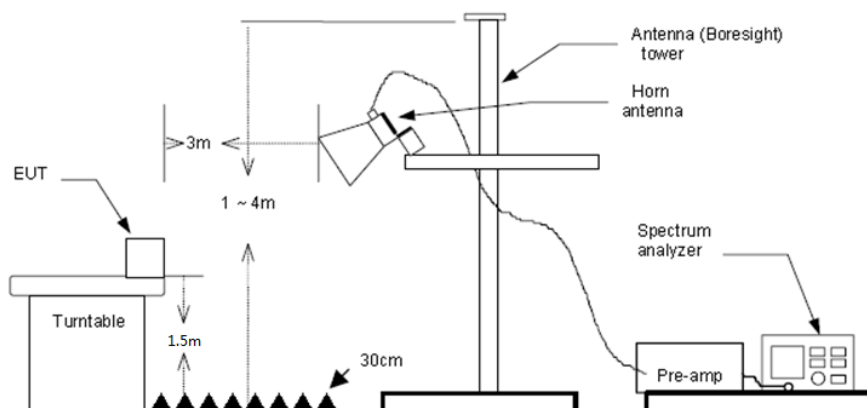
➤ 9kHz ~30MHz



➤ 30MHz ~ 1GHz



➤ Above 1GHz



TEST PROCEDURE

1. The EUT was setup and tested according to ANSI C63.10:2013 for compliance to FCC 47CFR 15.247 requirements.
2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
5. Set to the maximum power setting and enable the EUT transmit continuously.
6. Use the following spectrum analyzer settings
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Below 1 GHz:
RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold;
If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
 - (3) From 1 GHz to 10th harmonic:
RBW=1MHz, VBW=3MHz Peak detector for Peak value.
RBW=1MHz, VBW=3MHz RMS detector for Average value.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note:

- 1) Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
- 2) The emission levels of other frequencies are very lower than the limit and not show in test report.

➤ **9kHz ~ 30MHz**

The EUT was pre-scanned the frequency band (9kHz~30MHz), found the radiated level lower than the limit, so don't show on the report.

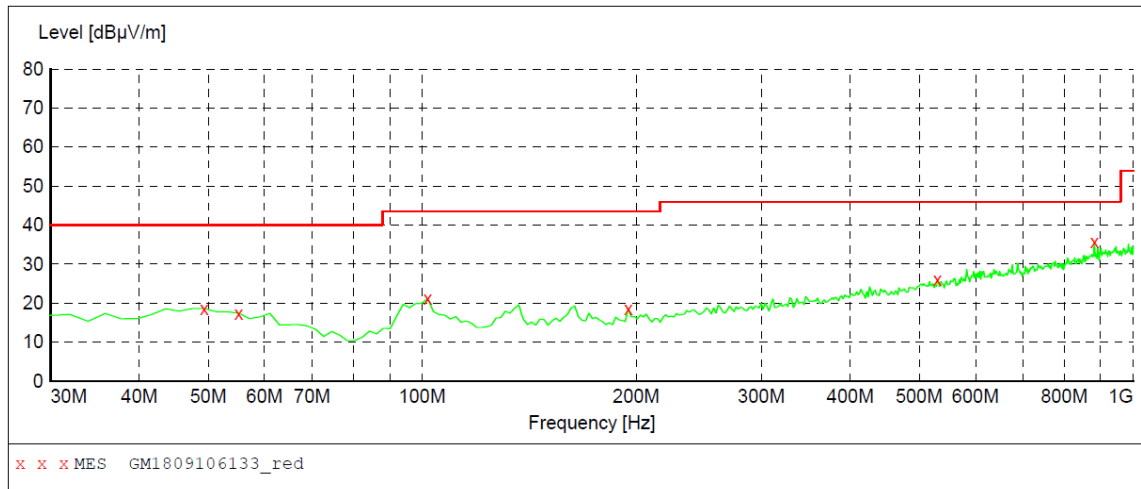
➤ **30MHz ~1000MHz**

Have pre-scan all modulation mode, found the 802.11b mode CH01 which it was worst case, so only the worst case's data on the test report.

➤ 30MHz ~ 1GHz

Polarization:

Vertical

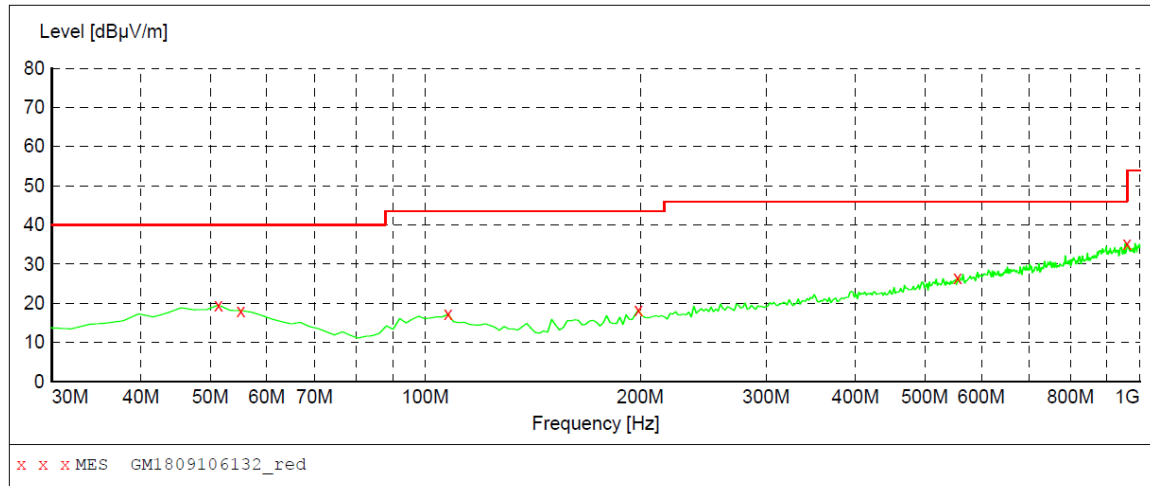
**MEASUREMENT RESULT: "GM1809106133_red"**

9/10/2018 8:49PM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
49.400000	18.60	-8.7	40.0	21.4	QP	100.0	119.00	VERTICAL
55.220000	17.40	-9.2	40.0	22.6	QP	100.0	347.00	VERTICAL
101.780000	21.20	-10.5	43.5	22.3	QP	100.0	108.00	VERTICAL
194.900000	18.50	-10.1	43.5	25.0	QP	100.0	292.00	VERTICAL
530.520000	26.00	-1.1	46.0	20.0	QP	100.0	228.00	VERTICAL
881.660000	35.70	6.3	46.0	10.3	QP	100.0	187.00	VERTICAL

Polarization:

Horizontal

**MEASUREMENT RESULT: "GM1809106132_red"**

9/10/2018 8:46PM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
51.340000	19.60	-8.8	40.0	20.4	QP	100.0	322.00	HORIZONTAL
55.220000	18.10	-9.2	40.0	21.9	QP	300.0	22.00	HORIZONTAL
107.600000	17.30	-10.6	43.5	26.2	QP	100.0	309.00	HORIZONTAL
198.780000	18.30	-9.8	43.5	25.2	QP	300.0	46.00	HORIZONTAL
555.740000	26.50	-0.6	46.0	19.5	QP	300.0	105.00	HORIZONTAL
959.260000	35.30	7.3	46.0	10.7	QP	100.0	94.00	HORIZONTAL

➤ 1 GHz ~ 25 GHz

802.11b					CH01				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1192.01	34.87	26.24	4.64	37.23	28.52	74.00	-45.48	Vertical	Peak
3616.45	36.02	29.30	8.29	37.05	36.56	74.00	-37.44	Vertical	Peak
4821.76	40.32	31.56	9.55	35.69	45.74	74.00	-28.26	Vertical	Peak
7508.69	31.23	36.11	12.42	33.02	46.74	74.00	-27.26	Vertical	Peak
1138.63	35.77	25.82	4.52	37.26	28.85	74.00	-45.15	Horizontal	Peak
3616.45	36.86	29.30	8.29	37.05	37.40	74.00	-36.60	Horizontal	Peak
4821.76	39.54	31.56	9.55	35.69	44.96	74.00	-29.04	Horizontal	Peak
8022.46	32.15	37.08	12.35	33.06	48.52	74.00	-25.48	Horizontal	Peak

802.11b					CH06				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1680.83	33.99	25.14	5.73	37.28	27.58	74.00	-46.42	Vertical	Peak
3653.46	36.23	29.30	8.33	37.02	36.84	74.00	-37.16	Vertical	Peak
4871.10	39.26	31.46	9.59	35.61	44.70	74.00	-29.30	Vertical	Peak
8549.59	33.04	37.10	12.88	32.92	50.10	74.00	-23.90	Vertical	Peak
1715.41	33.29	25.23	5.80	37.32	27.00	74.00	-47.00	Horizontal	Peak
3653.46	37.51	29.30	8.33	37.02	38.12	74.00	-35.88	Horizontal	Peak
4871.10	36.82	31.46	9.59	35.61	42.26	74.00	-31.74	Horizontal	Peak
8002.06	31.57	37.10	12.30	33.07	47.90	74.00	-26.10	Horizontal	Peak

802.11b					CH11				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1132.84	35.89	25.77	4.51	37.26	28.91	74.00	-45.09	Vertical	Peak
3690.85	35.48	29.30	8.37	36.99	36.16	74.00	-37.84	Vertical	Peak
4920.96	37.57	31.42	9.62	35.52	43.09	74.00	-30.91	Vertical	Peak
7585.53	32.08	36.19	12.67	33.03	47.91	74.00	-26.09	Vertical	Peak
1135.73	35.71	25.79	4.52	37.26	28.76	74.00	-45.24	Horizontal	Peak
3690.85	37.67	29.30	8.37	36.99	38.35	74.00	-35.65	Horizontal	Peak
4920.96	39.13	31.42	9.62	35.52	44.65	74.00	-29.35	Horizontal	Peak
7451.57	31.81	36.20	12.24	33.10	47.15	74.00	-26.85	Horizontal	Peak

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The peak level is lower than average limit(54 dBuV/m), this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies(test frequency band is 1GHz to 25GHz) are very lower than the limit and not show in test report.

802.11g					CH01				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1144.44	35.50	25.86	4.53	37.26	28.63	74.00	-45.37	Vertical	Peak
3616.45	36.37	29.30	8.29	37.05	36.91	74.00	-37.09	Vertical	Peak
4821.76	35.92	31.56	9.55	35.69	41.34	74.00	-32.66	Vertical	Peak
7941.19	31.30	36.87	12.58	33.06	47.69	74.00	-26.31	Vertical	Peak
1461.24	32.75	25.84	5.17	37.09	26.67	74.00	-47.33	Horizontal	Peak
3616.45	38.75	29.30	8.29	37.05	39.29	74.00	-34.71	Horizontal	Peak
4821.76	38.13	31.56	9.55	35.69	43.55	74.00	-30.45	Horizontal	Peak
8571.38	32.15	37.19	12.88	32.93	49.29	74.00	-24.71	Horizontal	Peak

802.11g					CH06				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1176.94	35.95	26.12	4.61	37.24	29.44	74.00	-44.56	Vertical	Peak
3662.78	36.04	29.30	8.34	37.01	36.67	74.00	-37.33	Vertical	Peak
4871.10	36.29	31.46	9.59	35.61	41.73	74.00	-32.27	Vertical	Peak
8527.85	31.58	37.01	12.88	32.92	48.55	74.00	-25.45	Vertical	Peak
1336.68	33.67	26.09	4.89	37.15	27.50	74.00	-46.50	Horizontal	Peak
3653.46	37.76	29.30	8.33	37.02	38.37	74.00	-35.63	Horizontal	Peak
4871.10	37.43	31.46	9.59	35.61	42.87	74.00	-31.13	Horizontal	Peak
7781.10	31.30	36.10	13.21	33.05	47.56	74.00	-26.44	Horizontal	Peak

802.11g					CH11				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1353.80	33.66	26.04	4.92	37.14	27.48	74.00	-46.52	Vertical	Peak
3700.26	35.50	29.30	8.39	36.98	36.21	74.00	-37.79	Vertical	Peak
4933.50	35.18	31.43	9.63	35.50	40.74	74.00	-33.26	Vertical	Peak
8571.38	31.80	37.19	12.88	32.93	48.94	74.00	-25.06	Vertical	Peak
1228.98	34.25	26.27	4.71	37.21	28.02	74.00	-45.98	Horizontal	Peak
3700.26	36.82	29.30	8.39	36.98	37.53	74.00	-36.47	Horizontal	Peak
4933.50	40.71	31.43	9.63	35.50	46.27	74.00	-27.73	Horizontal	Peak
9019.05	32.43	37.96	13.33	33.06	50.66	74.00	-23.34	Horizontal	Peak

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The peak level is lower than average limit(54 dBuV/m), this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies(test frequency band is 1GHz to 25GHz) are very lower than the limit and not show in test report.

802.11n(HT20)					CH01				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1280.07	34.02	26.22	4.80	37.18	27.86	74.00	-46.14	Vertical	Peak
3616.45	36.79	29.30	8.29	37.05	37.33	74.00	-36.67	Vertical	Peak
4821.76	37.77	31.56	9.55	35.69	43.19	74.00	-30.81	Vertical	Peak
8659.10	31.73	37.66	12.95	32.95	49.39	74.00	-24.61	Vertical	Peak
1185.96	34.81	26.19	4.63	37.23	28.40	74.00	-45.60	Horizontal	Peak
3625.67	39.03	29.30	8.30	37.04	39.59	74.00	-34.41	Horizontal	Peak
4821.76	38.69	31.56	9.55	35.69	44.11	74.00	-29.89	Horizontal	Peak
8022.46	31.76	37.08	12.35	33.06	48.13	74.00	-25.87	Horizontal	Peak

802.11n(HT20)					CH06				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1185.96	34.84	26.19	4.63	37.23	28.43	74.00	-45.57	Vertical	Peak
3653.46	36.86	29.30	8.33	37.02	37.47	74.00	-36.53	Vertical	Peak
4871.10	35.36	31.46	9.59	35.61	40.80	74.00	-33.20	Vertical	Peak
7880.77	31.32	36.59	12.87	33.06	47.72	74.00	-26.28	Vertical	Peak
1296.47	34.15	26.20	4.82	37.17	28.00	74.00	-46.00	Horizontal	Peak
3653.46	37.53	29.30	8.33	37.02	38.14	74.00	-35.86	Horizontal	Peak
4883.52	39.44	31.43	9.59	35.58	44.88	74.00	-29.12	Horizontal	Peak
8063.40	31.76	37.04	12.45	33.05	48.20	74.00	-25.80	Horizontal	Peak

802.11n(HT20)					CH11				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1153.21	35.59	25.93	4.55	37.25	28.82	74.00	-45.18	Vertical	Peak
3690.85	36.65	29.30	8.37	36.99	37.33	74.00	-36.67	Vertical	Peak
4933.50	35.38	31.43	9.63	35.50	40.94	74.00	-33.06	Vertical	Peak
8022.46	31.95	37.08	12.35	33.06	48.32	74.00	-25.68	Vertical	Peak
1219.64	34.88	26.28	4.69	37.21	28.64	74.00	-45.36	Horizontal	Peak
3690.85	36.54	29.30	8.37	36.99	37.22	74.00	-36.78	Horizontal	Peak
4920.96	39.69	31.42	9.62	35.52	45.21	74.00	-28.79	Horizontal	Peak
8002.06	32.60	37.10	12.30	33.07	48.93	74.00	-25.07	Horizontal	Peak

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The peak level is lower than average limit(54 dBuV/m), this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies(test frequency band is 1GHz to 25GHz) are very lower than the limit and not show in test report.

802.11n(HT40)					CH03				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1263.88	35.64	26.24	4.77	37.19	29.46	74.00	-44.54	Vertical	Peak
3634.91	35.21	29.30	8.31	37.03	35.79	74.00	-38.21	Vertical	Peak
5151.68	31.25	31.69	9.79	35.08	37.65	74.00	-36.35	Vertical	Peak
9275.16	32.07	39.05	13.57	33.48	51.21	74.00	-22.79	Vertical	Peak
1225.86	34.64	26.27	4.70	37.21	28.40	74.00	-45.60	Horizontal	Peak
3644.18	36.70	29.30	8.32	37.03	37.29	74.00	-36.71	Horizontal	Peak
4846.37	34.27	31.51	9.57	35.65	39.70	74.00	-34.30	Horizontal	Peak
8615.13	32.76	37.39	12.91	32.94	50.12	74.00	-23.88	Horizontal	Peak

802.11n(HT40)					CH06				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1663.80	33.14	25.09	5.69	37.26	26.66	74.00	-47.34	Vertical	Peak
3662.78	33.47	29.30	8.34	37.01	34.10	74.00	-39.90	Vertical	Peak
7027.82	32.50	35.38	11.85	33.83	45.90	74.00	-28.10	Vertical	Peak
7981.72	32.25	37.03	12.39	33.07	48.60	74.00	-25.40	Vertical	Peak
1273.57	34.93	26.23	4.79	37.18	28.77	74.00	-45.23	Horizontal	Peak
3653.46	35.44	29.30	8.33	37.02	36.05	74.00	-37.95	Horizontal	Peak
4883.52	35.30	31.43	9.59	35.58	40.74	74.00	-33.26	Horizontal	Peak
7880.77	30.60	36.59	12.87	33.06	47.00	74.00	-27.00	Horizontal	Peak

802.11n(HT40)					CH09				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1238.41	35.29	26.26	4.73	37.20	29.08	74.00	-44.92	Vertical	Peak
3662.78	34.00	29.30	8.34	37.01	34.63	74.00	-39.37	Vertical	Peak
5718.40	32.34	31.69	10.46	34.30	40.19	74.00	-33.81	Vertical	Peak
7900.86	31.31	36.70	12.78	33.06	47.73	74.00	-26.27	Vertical	Peak
1428.14	33.44	25.87	5.08	37.10	27.29	74.00	-46.71	Horizontal	Peak
3690.85	34.58	29.30	8.37	36.99	35.26	74.00	-38.74	Horizontal	Peak
4895.97	34.22	31.41	9.60	35.56	39.67	74.00	-34.33	Horizontal	Peak
7489.60	31.76	36.12	12.36	33.04	47.20	74.00	-26.80	Horizontal	Peak

Remark:

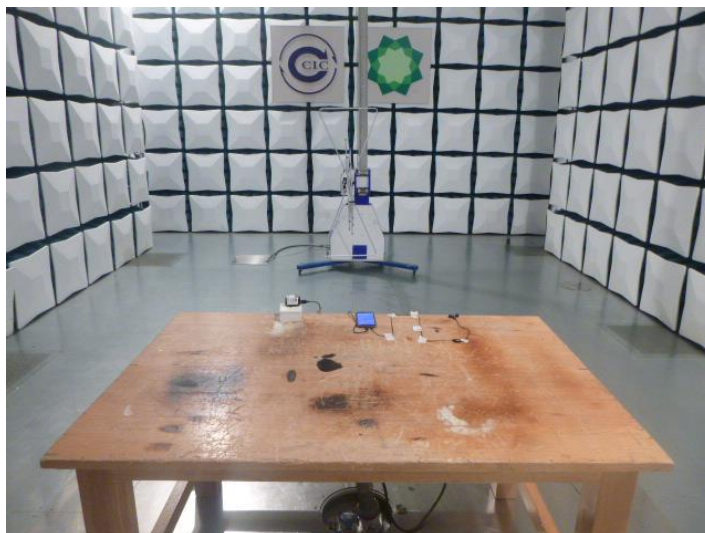
1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The peak level is lower than average limit(54 dBuV/m), this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies(test frequency band is 1GHz to 25GHz) are very lower than the limit and not show in test report.

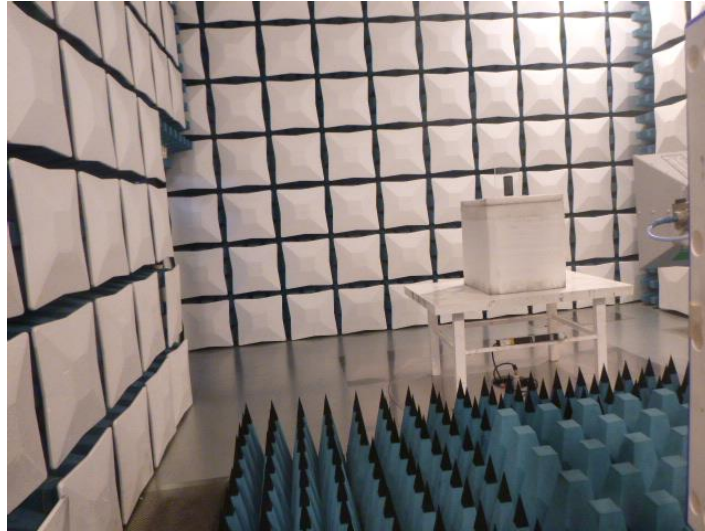
6. TEST SETUP PHOTOS

Conducted Emissions



Radiated Emissions





7. EXTERANAL AND INTERNAL PHOTOS

Reference to the test report No.: TRE1809000901

-----End of Report-----