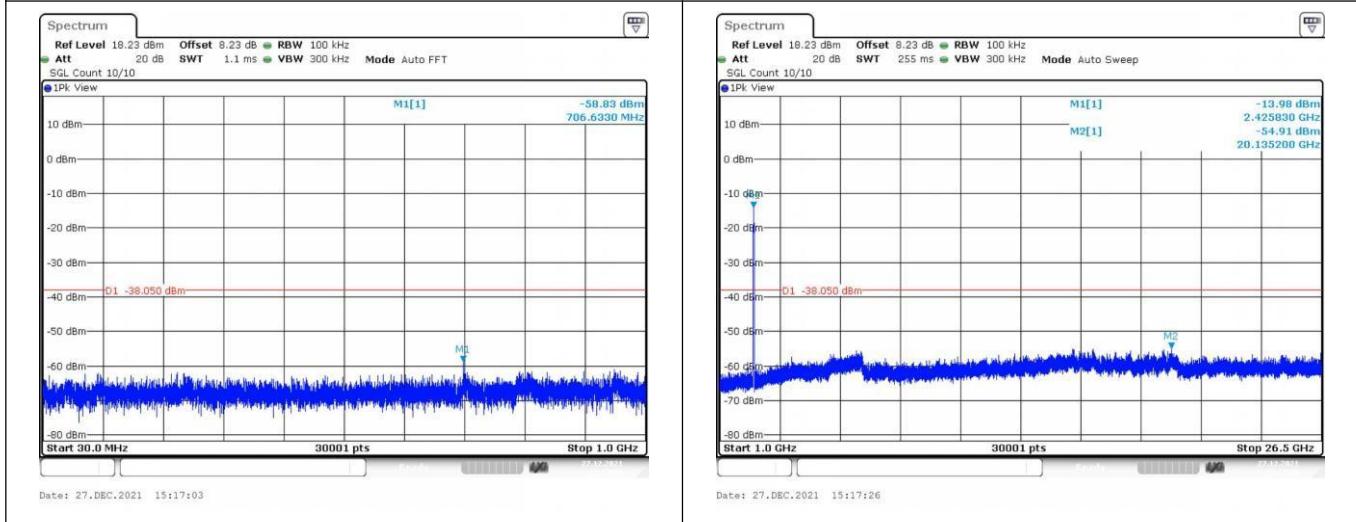
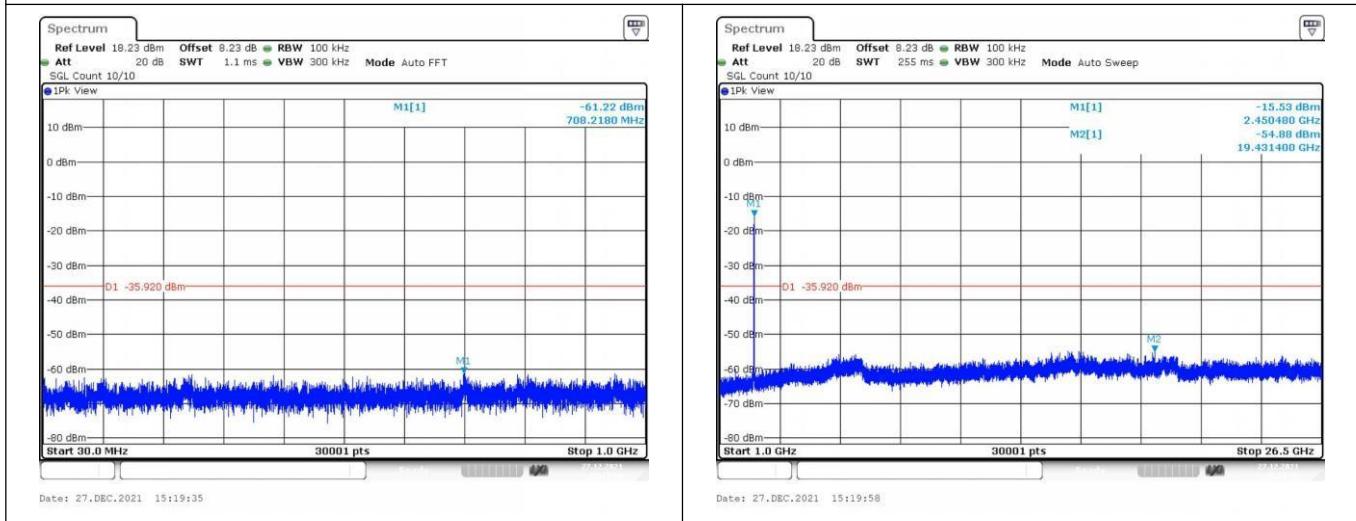
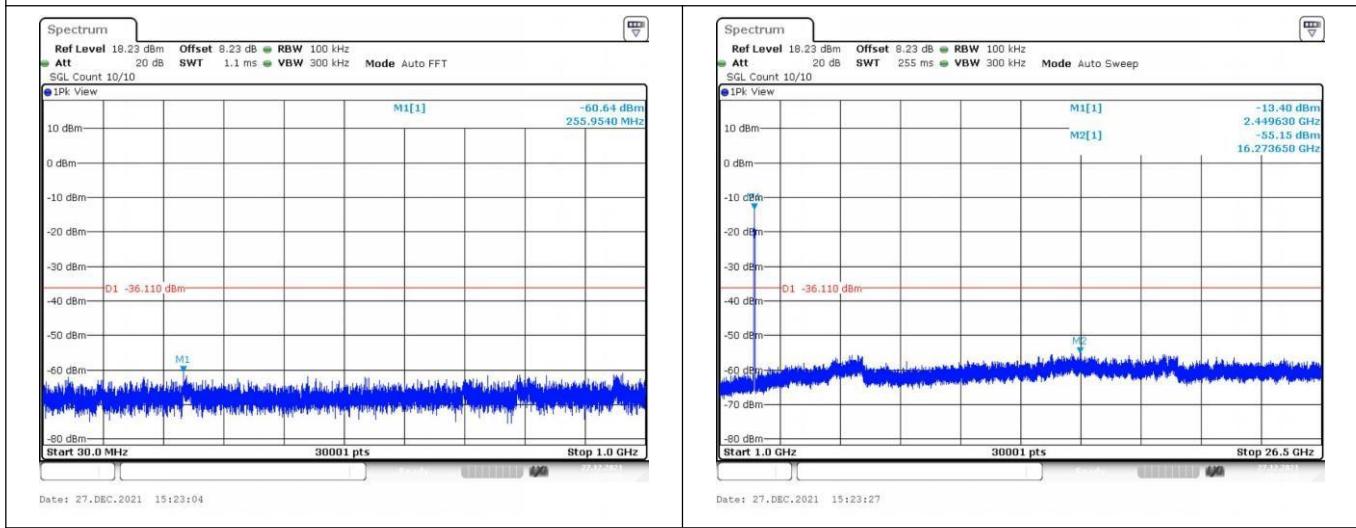


802.11n(HT40)
CH03-SE

CH06-SE

CH09-SE


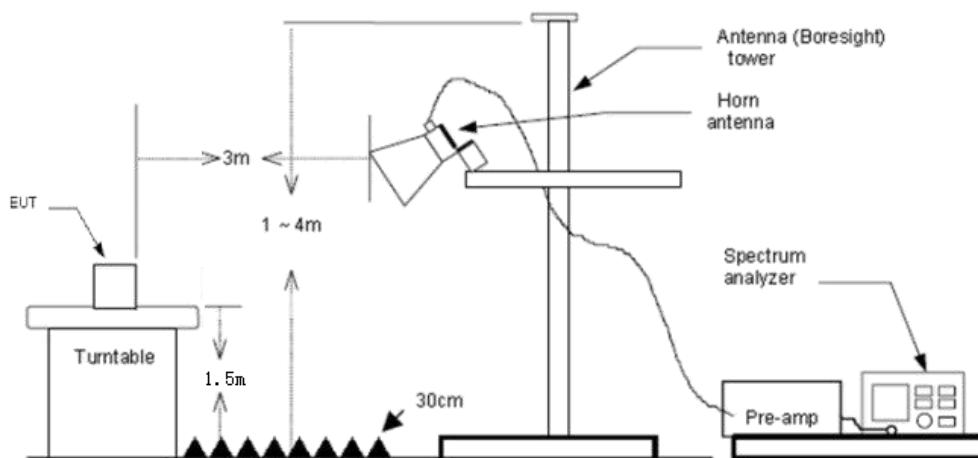
3.6. Band Edge Emissions(Radiated)

Limit

Restricted Frequency Band (MHz)	(dBuV/m)(at 3m)	
	Peak	Average
2310 ~2390	74	54
2483.5 ~2500	74	54

Note: All restriction bands have been tested, only the worst case is reported.

Test Configuration



Test Procedure

1. The EUT was setup and tested according to ANSI C63.10:2013 requirements.
2. The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.
5. The receiver set as follow:
 RBW=1MHz, VBW=3MHz PEAK detector for Peak value.
 RBW=1MHz, VBW=10Hz with PEAK detector for Average Value.

Test Mode

Please refer to the clause 2.2.

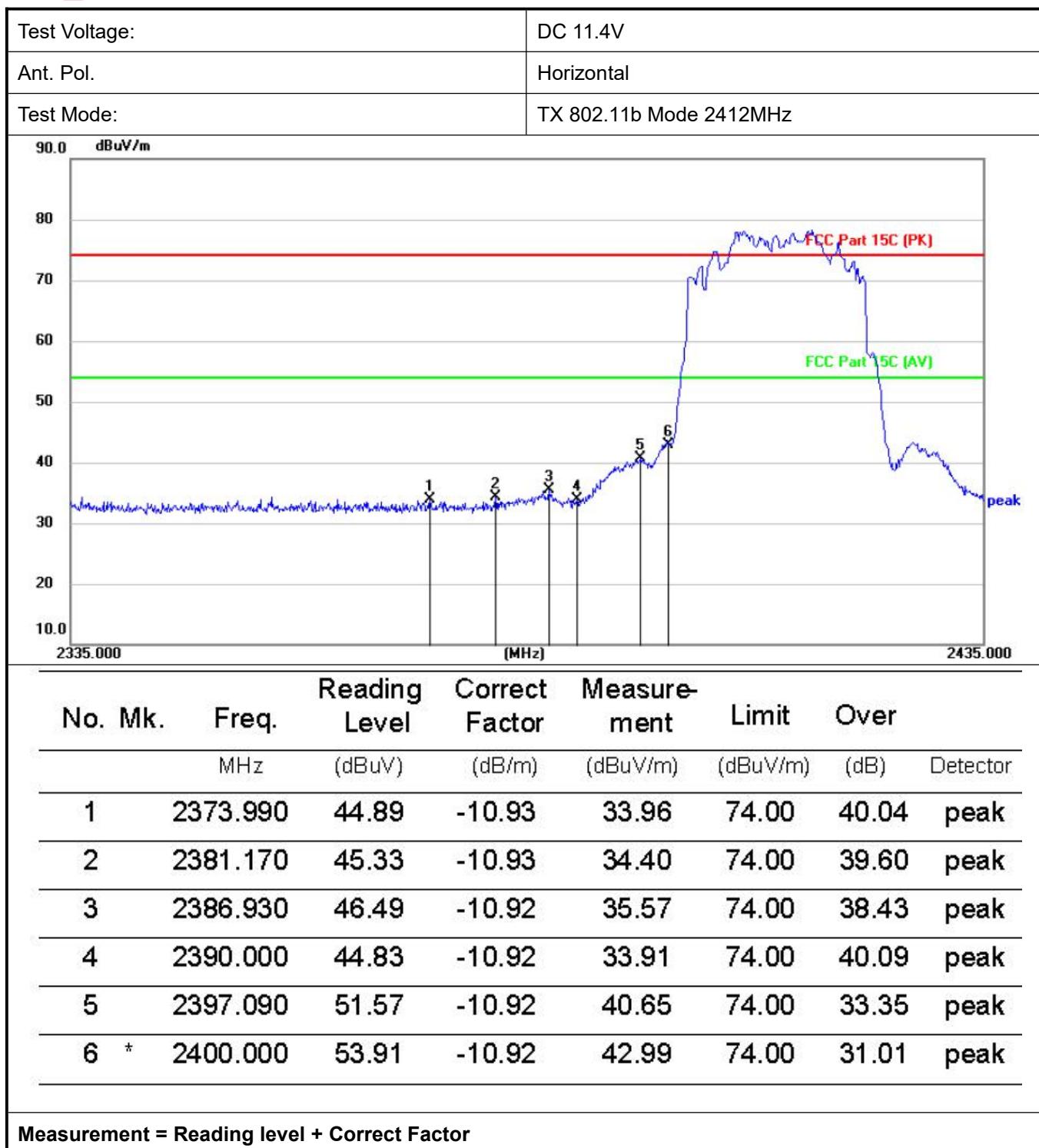
Test Results

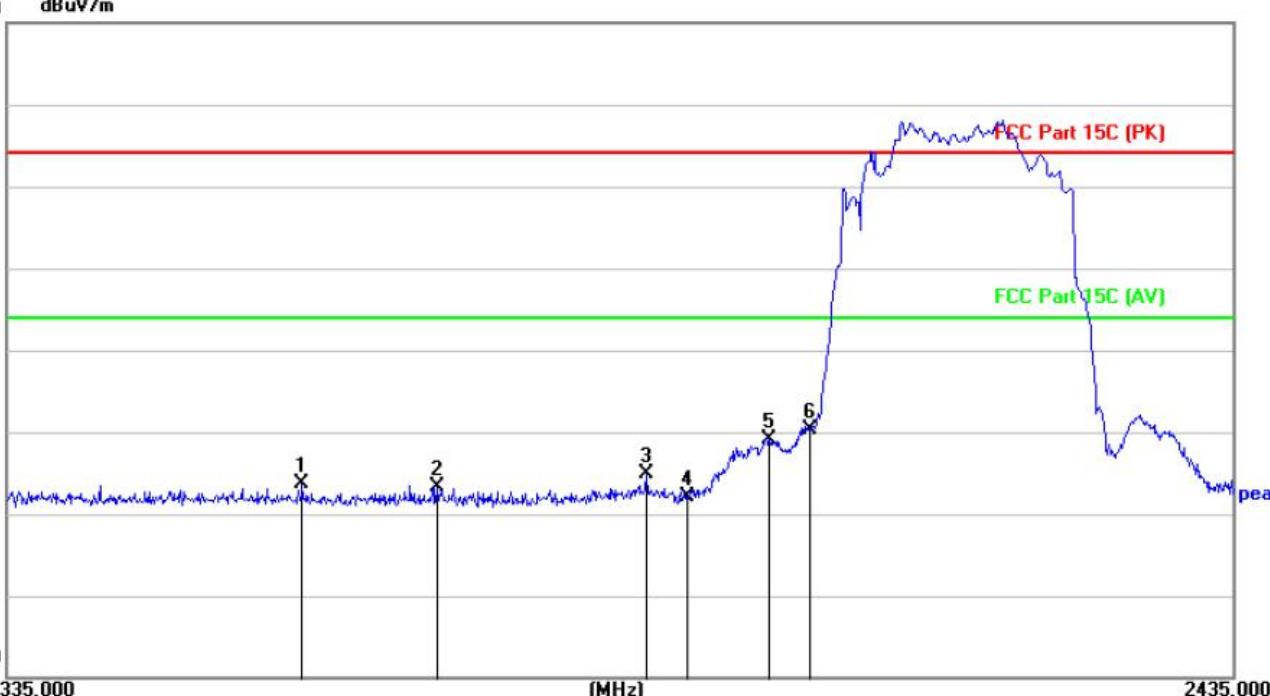
Note:

1. Measurement = Reading level + Correct Factor

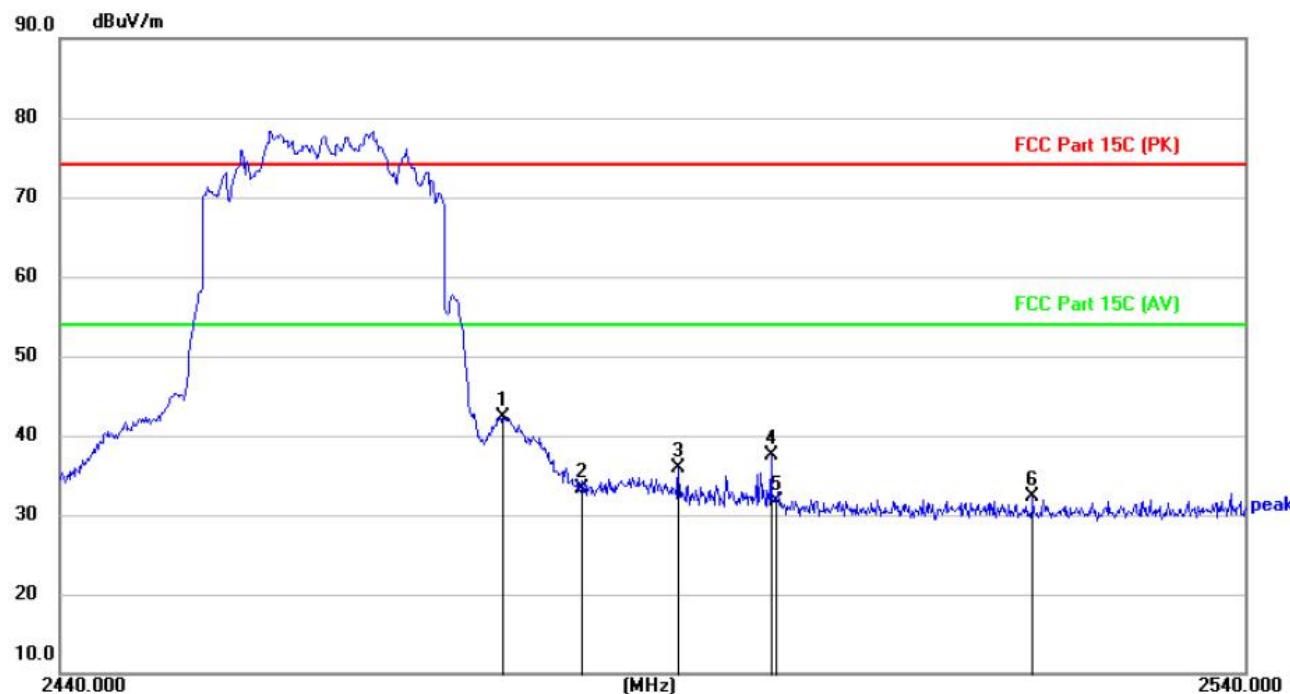
Correct Factor=Antenna Factor + Cable Loss -Preamplifier Factor

2. Pre-scan 802.11b, 802.11g, 802.11n(HT20) and 802.11n(HT40) mode, and found the 802.11n20 mode which is worse case, so only show the test data for worse case.



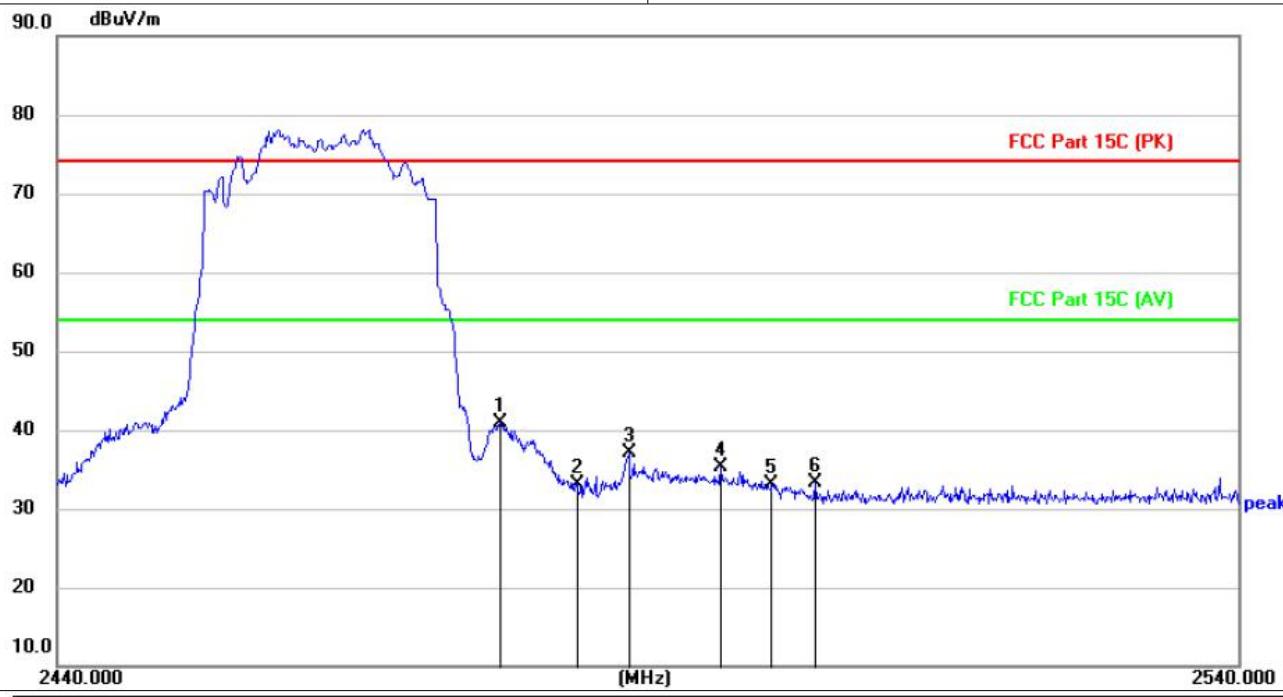
Test Voltage:	DC 11.4V							
Ant. Pol.	Vertical							
Test Mode:	TX 802.11b Mode 2412 MHz							
								
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		2358.810	44.59	-10.93	33.66	74.00	40.34	peak
2		2369.640	44.26	-10.92	33.34	74.00	40.66	peak
3		2386.750	45.78	-10.92	34.86	74.00	39.14	peak
4		2390.000	42.99	-10.92	32.07	74.00	41.93	peak
5		2396.790	50.12	-10.92	39.20	74.00	34.80	peak
6	*	2400.000	51.19	-10.92	40.27	74.00	33.73	peak
Measurement = Reading level + Correct Factor								

Test Voltage:	DC 11.4V
Ant. Pol.	Horizontal
Test Mode:	TX 802.11b Mode 2462MHz



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1	*	2477.030	53.21	-10.89	42.32	74.00	31.68	peak
2		2483.500	44.11	-10.88	33.23	74.00	40.77	peak
3		2491.750	46.86	-10.89	35.97	74.00	38.03	peak
4		2499.570	48.37	-10.88	37.49	74.00	36.51	peak
5		2500.000	42.61	-10.88	31.73	74.00	42.27	peak
6		2521.880	43.10	-10.87	32.23	74.00	41.77	peak

Measurement = Reading level + Correct Factor

Test Voltage:	DC 11.4V						
Ant. Pol.	Vertical						
Test Mode:	TX 802.11b Mode 2462MHz						
							
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)
1	*	2477.120	51.73	-10.89	40.84	74.00	33.16
2		2483.500	43.91	-10.88	33.03	74.00	40.97
3		2487.940	47.96	-10.88	37.08	74.00	36.92
4		2495.770	46.16	-10.87	35.29	74.00	38.71
5		2500.000	44.01	-10.88	33.13	74.00	40.87
6		2503.770	44.16	-10.88	33.28	74.00	40.72

Measurement = Reading level + Correct Factor

3.7. Spurious Emission (Radiated)

Limit

Radiated Emission Limits (9 kHz~1000 MHz)

Frequency (MHz)	Field Strength (microvolt/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

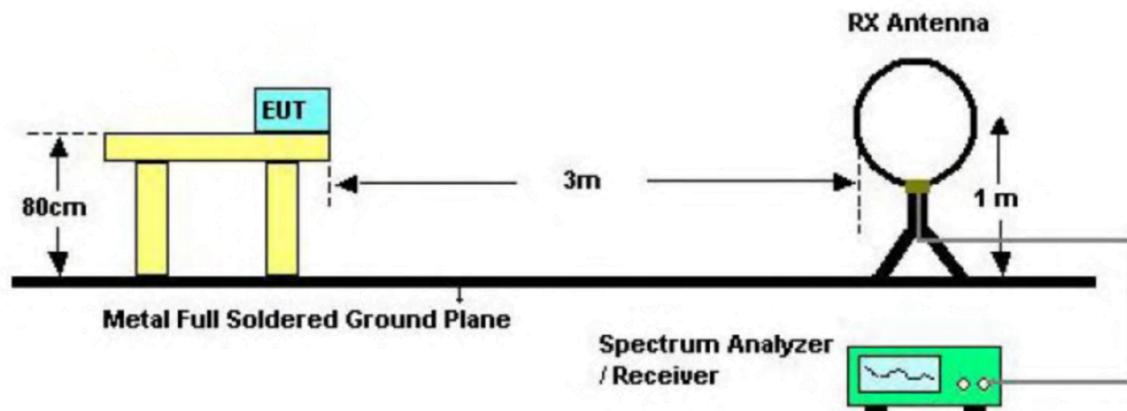
Radiated Emission Limit (Above 1000MHz)

Frequency (MHz)	Distance Meters(at 3m)	
	Peak	Average
Above 1000	74	54

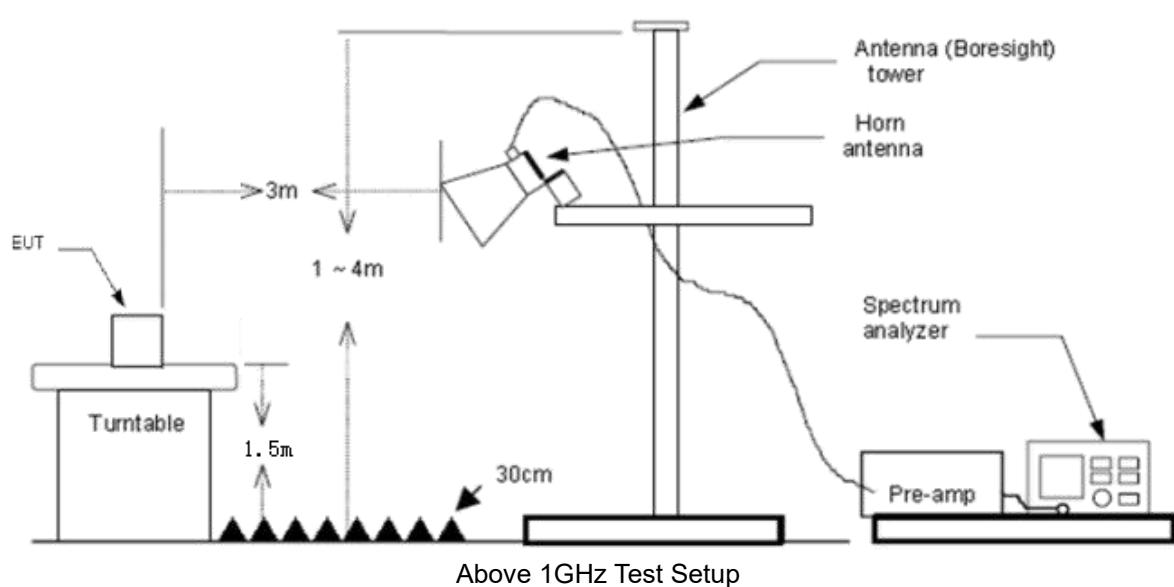
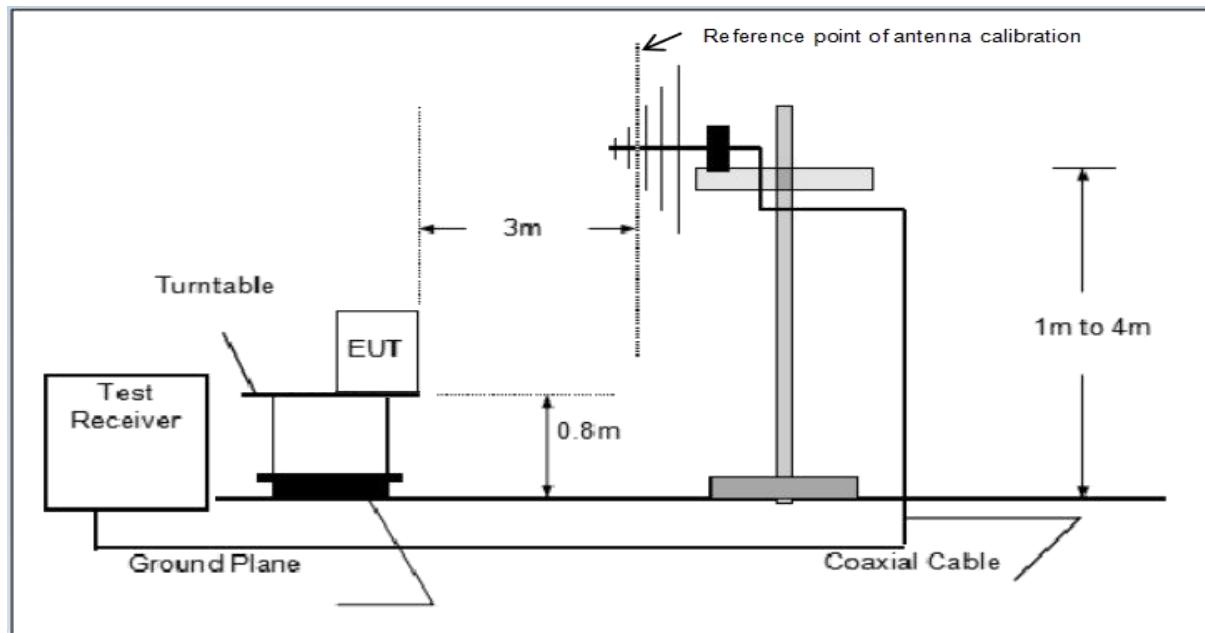
Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission Level (dBuV/m)=20log Emission Level (uV/m).

Test Configuration



Below 30MHz Test Setup



Test Procedure

1. The EUT was setup and tested according to ANSI C63.10:2013
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=1MHz Peak detector for Peak value.
RBW=1MHz, VBW=10Hz Peak detector for Average value.

Test Mode

Please refer to the clause 2.2

Test Result

9 KHz~30 MHz and 18GHz~25GHz

From 9 KHz~30 MHz and 18GHz~25GHz: Conclusion: PASS

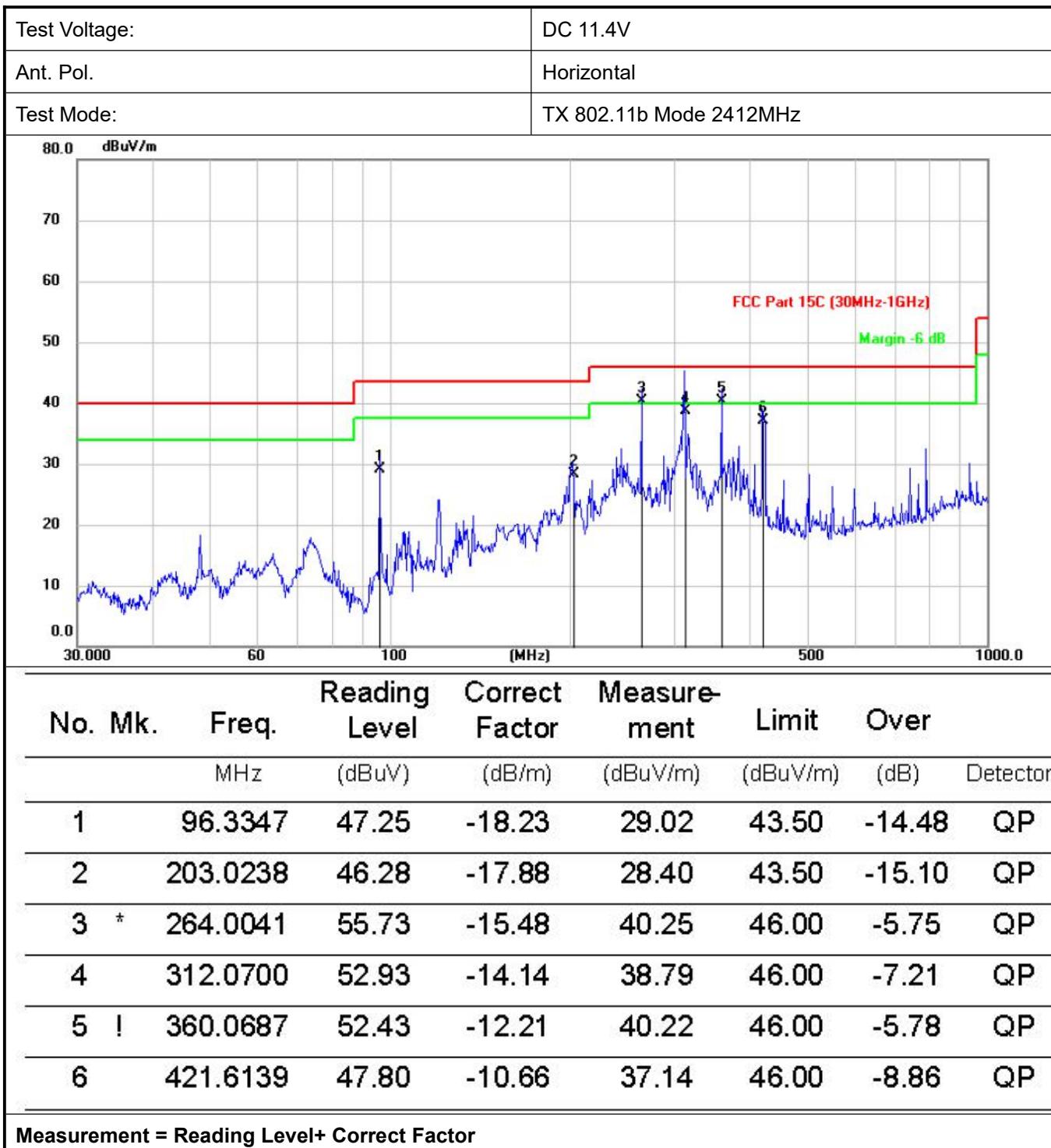
Note:

- 1) Measurement = Reading level + Correct Factor
Correct Factor=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 are very lower than the limit and not show in test report.
- 4) The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
- 5) Pre-scan 802.11b/g/n(HT20/HT40) modulation, found 802.11n20_2412MHz which it is worse case for 30MHz-1GHz , the 802.11n20 modulation which it is worse case for above 1GHz, so only show the test data for worse case.

BELOW 30MHz

No emission found between lowest internal used/generated frequencies to 30MHz.

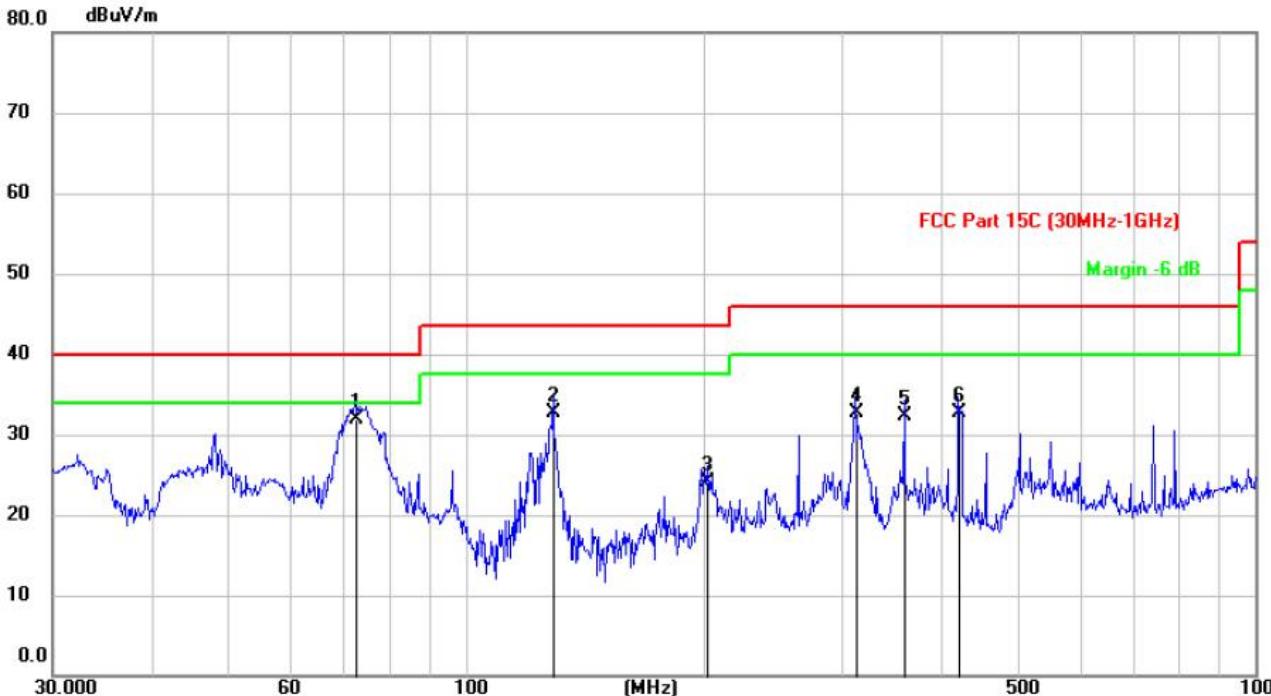
30MHz-1GHz



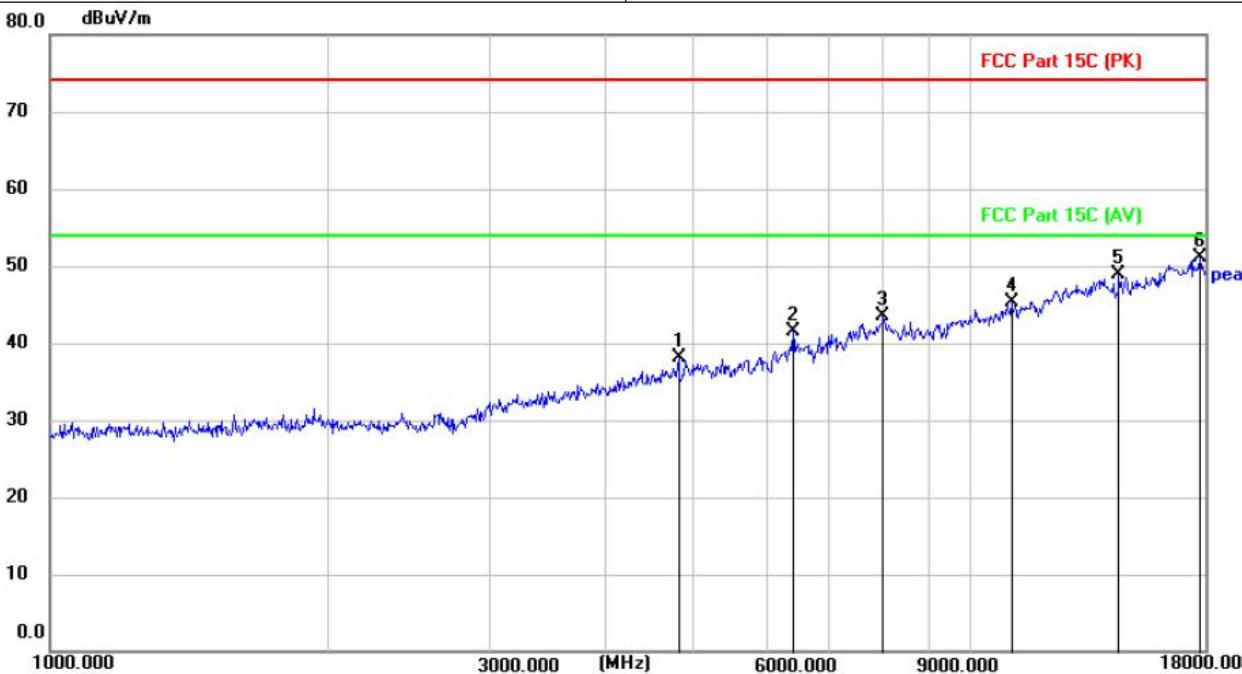
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Test Voltage:	DC 11.4V							
Ant. Pol.	Vertical							
Test Mode:	TX 802.11b Mode 2412MHz							
								
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1	*	72.4390	51.79	-19.95	31.84	40.00	-8.16	QP
2		129.1503	53.65	-20.86	32.79	43.50	-10.71	QP
3		202.1712	42.01	-17.91	24.10	43.50	-19.40	QP
4		312.0700	46.85	-14.14	32.71	46.00	-13.29	QP
5		360.0687	44.60	-12.21	32.39	46.00	-13.61	QP
6		421.6139	43.45	-10.66	32.79	46.00	-13.21	QP
Measurement = Reading Level+ Correct Factor								

Adobe 1GHz

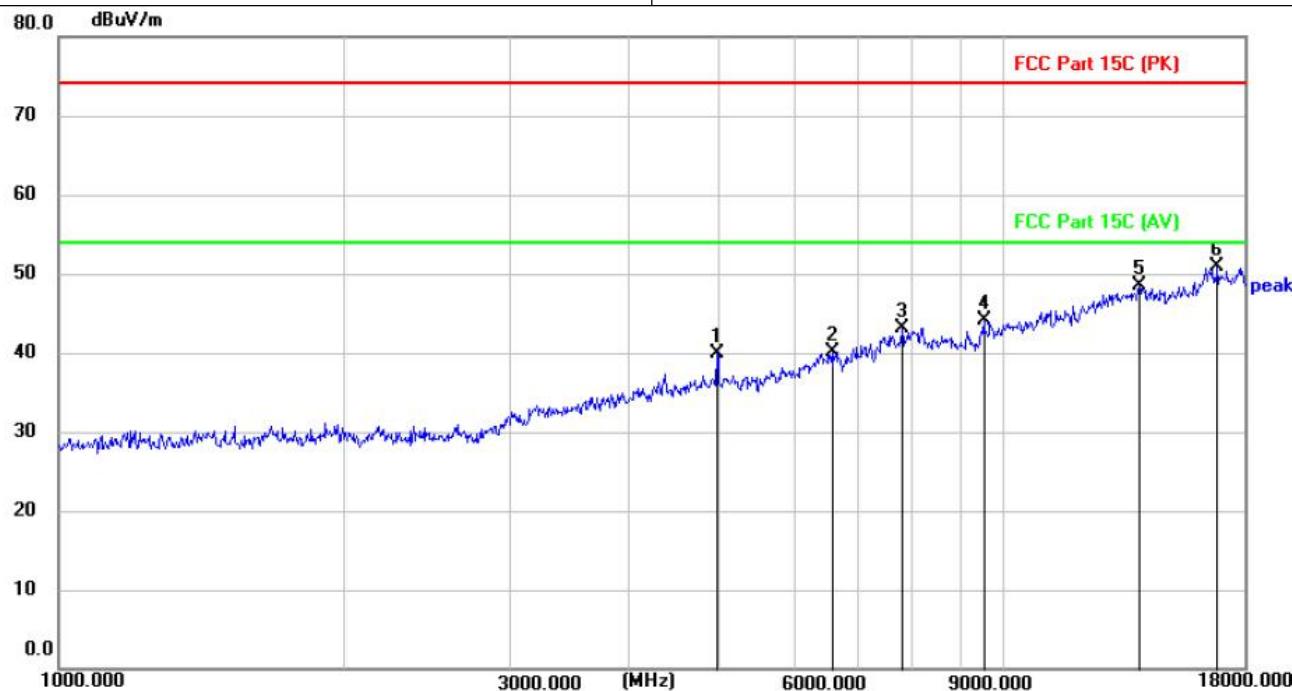
Test Voltage:	DC 11.4V							
Ant. Pol.	Horizontal							
Test Mode:	TX 802.11b Mode 2412MHz							
								
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1	4823.300	44.04	-5.87	38.17	74.00	35.83	peak	
2	6431.500	43.94	-2.34	41.60	74.00	32.40	peak	
3	8049.900	41.51	2.06	43.57	74.00	30.43	peak	
4	11103.100	39.47	5.93	45.40	74.00	28.60	peak	
5	14511.600	38.31	10.59	48.90	74.00	25.10	peak	
6	* 17780.700	37.52	13.53	51.05	74.00	22.95	peak	
Measurement = Reading level + Correct Factor								

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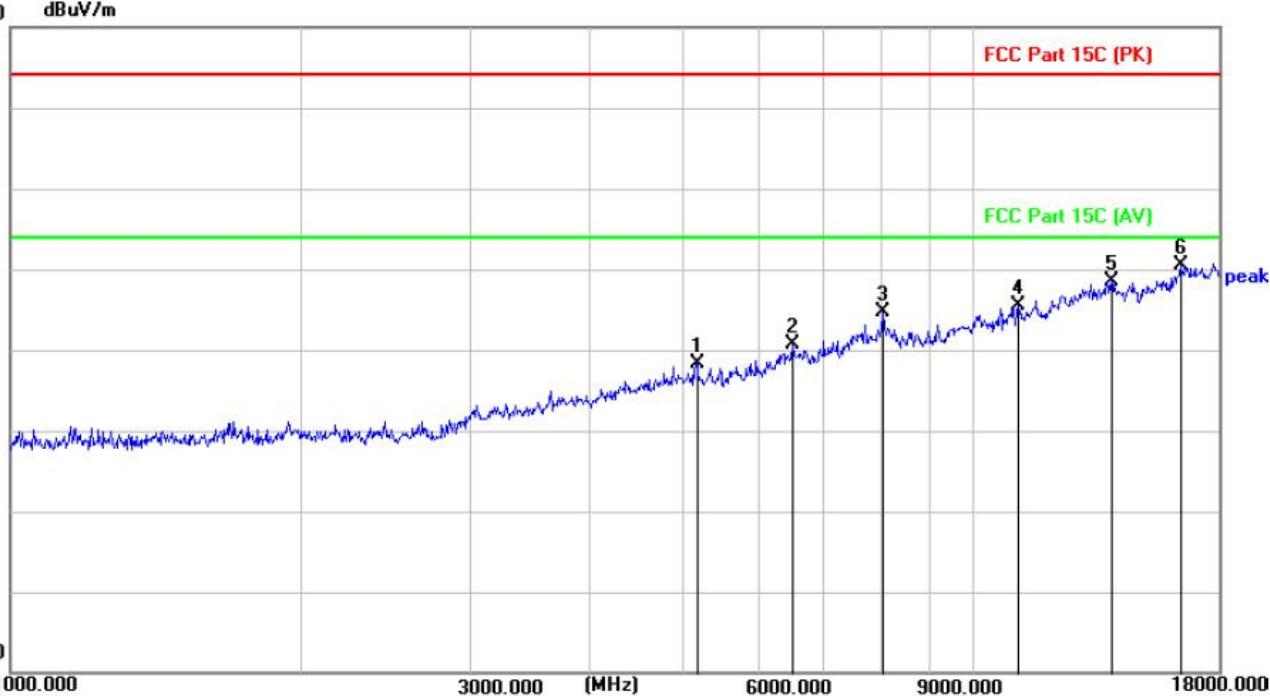
Tel : +(86) 0571-8836 6861 Fax: +(86) 0571-8836 6821 E-mail: server@ksign.cn Web: www.ksign.cn

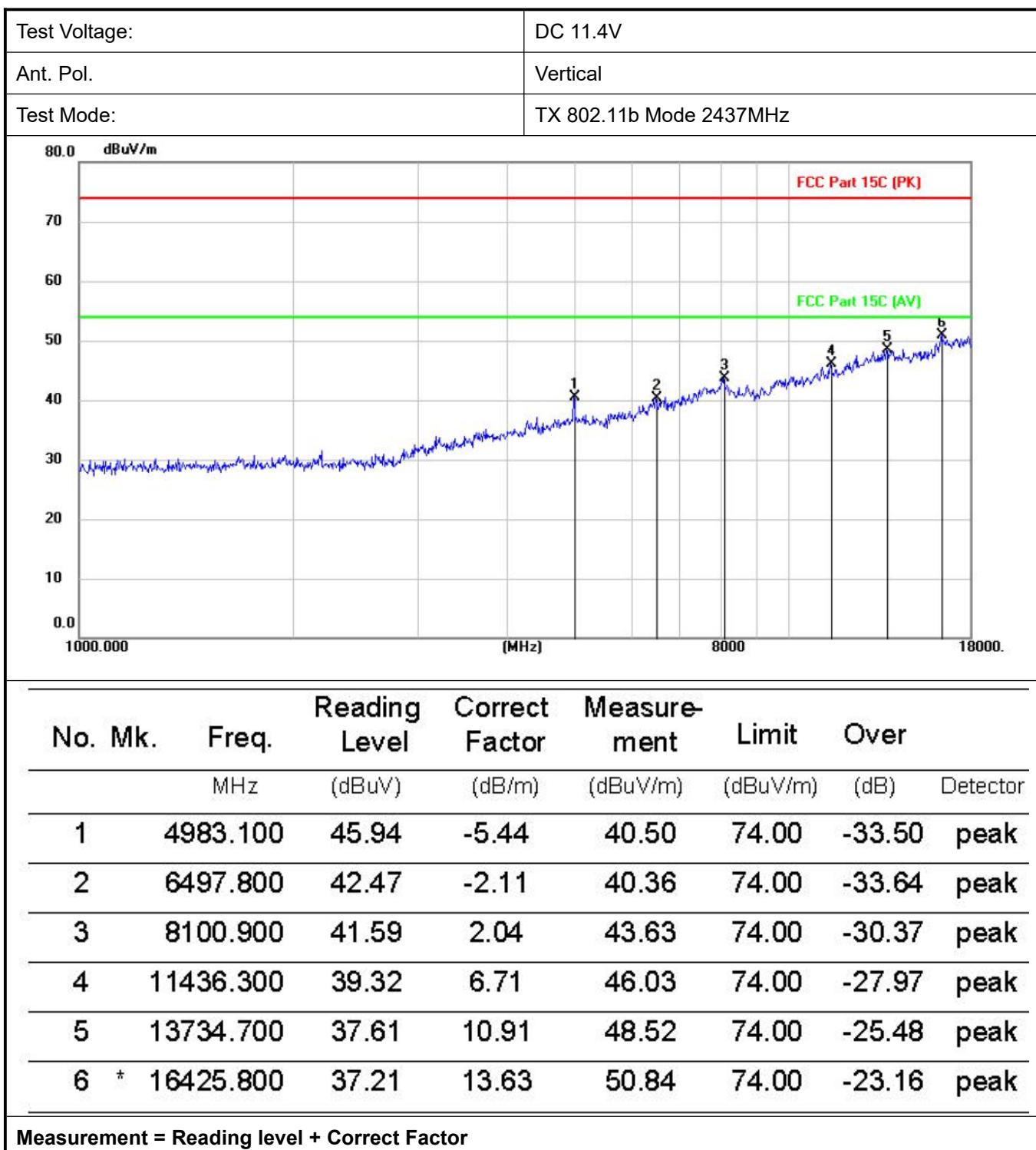
Test Voltage:	DC 11.4V
Ant. Pol.	Vertical
Test Mode:	TX 802.11n20 Mode 2412MHz

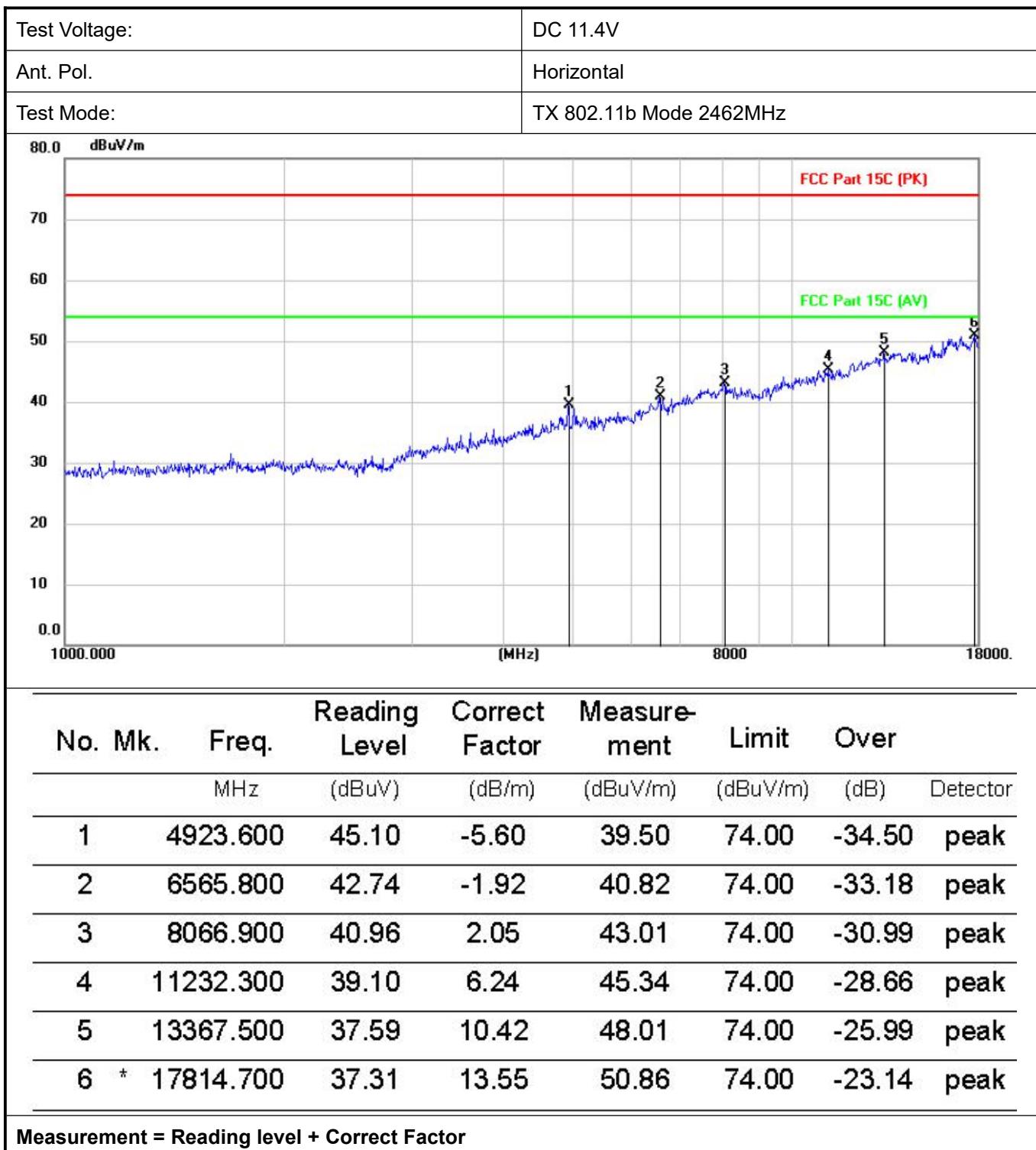


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	Detector
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1		4983.100	45.40	-5.44	39.96	74.00	34.04	peak
2		6593.000	41.93	-1.84	40.09	74.00	33.91	peak
3		7813.600	41.46	1.60	43.06	74.00	30.94	peak
4		9542.500	40.97	3.07	44.04	74.00	29.96	peak
5		13950.600	37.27	11.17	48.44	74.00	25.56	peak
6	*	16859.300	37.68	13.25	50.93	74.00	23.07	peak

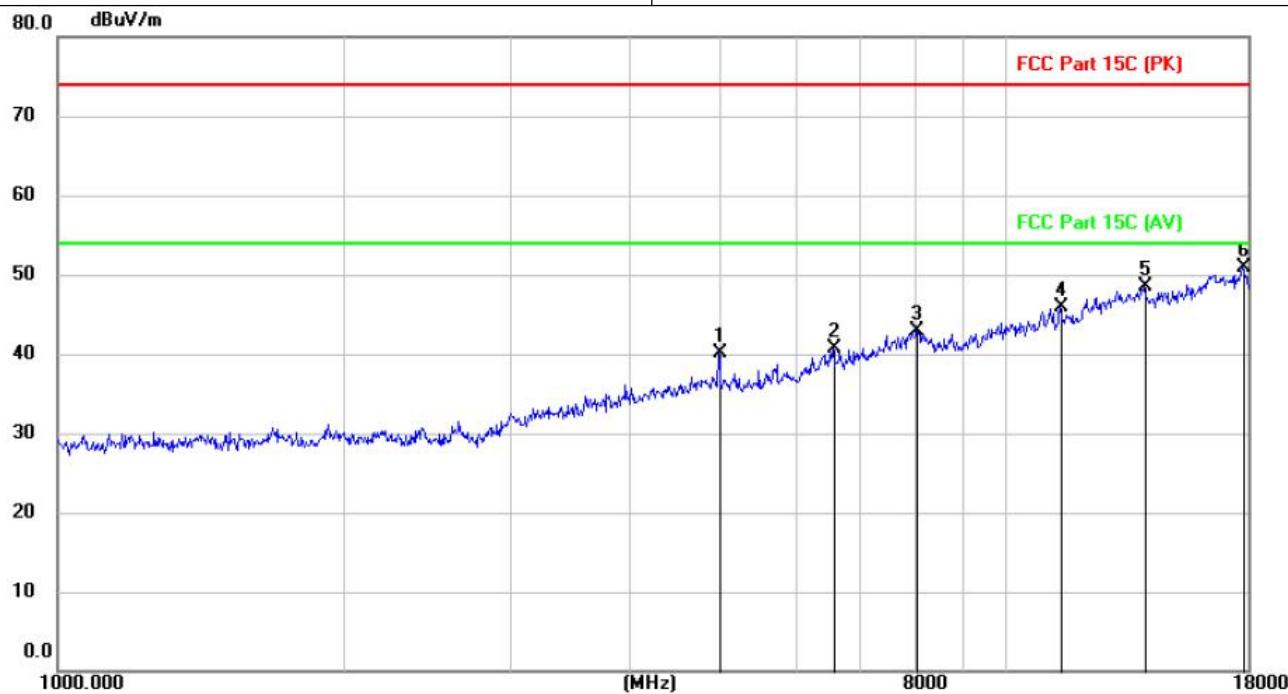
Measurement = Reading level + Correct Factor

Test Voltage:	DC 11.4V							
Ant. Pol.	Horizontal							
Test Mode:	TX 802.11b Mode 2437MHz							
								
No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measure- ment (dBuV/m)	Limit (dBuV/m)	Over (dB)	Over Detector
1	5171.800	43.44	-5.23	38.21	74.00	35.79	peak	
2	6499.500	42.86	-2.11	40.75	74.00	33.25	peak	
3	8082.200	42.72	2.05	44.77	74.00	29.23	peak	
4	11149.000	39.54	6.04	45.58	74.00	28.42	peak	
5	13921.700	37.47	11.13	48.60	74.00	25.40	peak	
6	* 16454.700	36.71	13.70	50.41	74.00	23.59	peak	
Measurement = Reading level + Correct Factor								





Test Voltage:	DC 11.4V
Ant. Pol.	Vertical
Test Mode:	TX 802.11b Mode 2462MHz



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		4983.100	45.50	-5.44	40.06	74.00	-33.94	peak
2		6565.800	42.60	-1.92	40.68	74.00	-33.32	peak
3		8058.400	40.93	2.06	42.99	74.00	-31.01	peak
4		11402.300	39.29	6.63	45.92	74.00	-28.08	peak
5		14006.700	37.26	11.22	48.48	74.00	-25.52	peak
6	*	17782.400	37.28	13.53	50.81	74.00	-23.19	peak

Measurement = Reading level + Correct Factor

Note:

1. All test modes had been tested. The 802.11b modulation is the worst case and recorded in the report.
2. 18GHz-26.5GHz is the background of the site, there is no radiated spurious.

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3.8. Conducted Emission

Limit

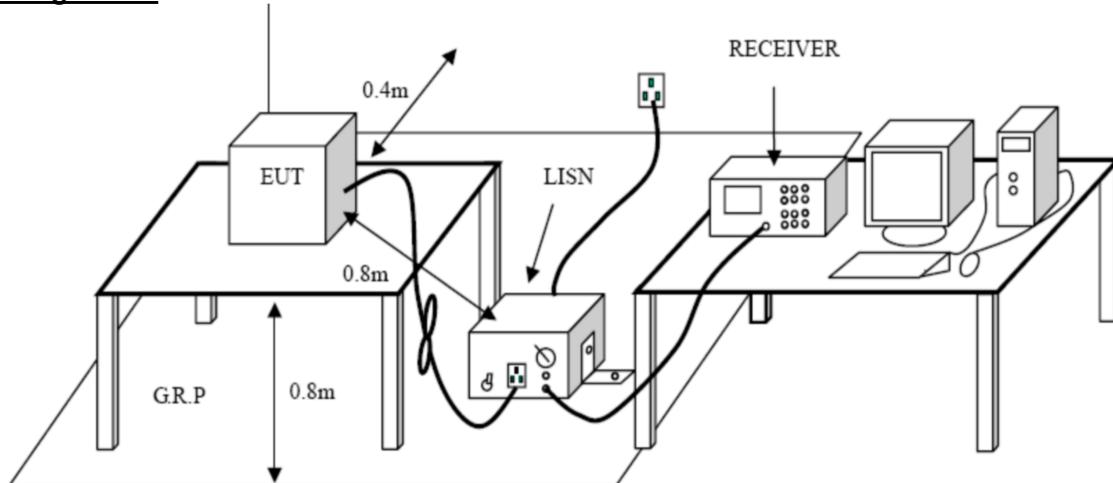
Conducted Emission Test Limit

Frequency	Maximum RF Line Voltage (dB μ V)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Notes:

- (1) *Decreasing linearly with logarithm of the frequency.
- (2) The lower limit shall apply at the transition frequencies.
- (3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

Test Configuration



Test Procedure

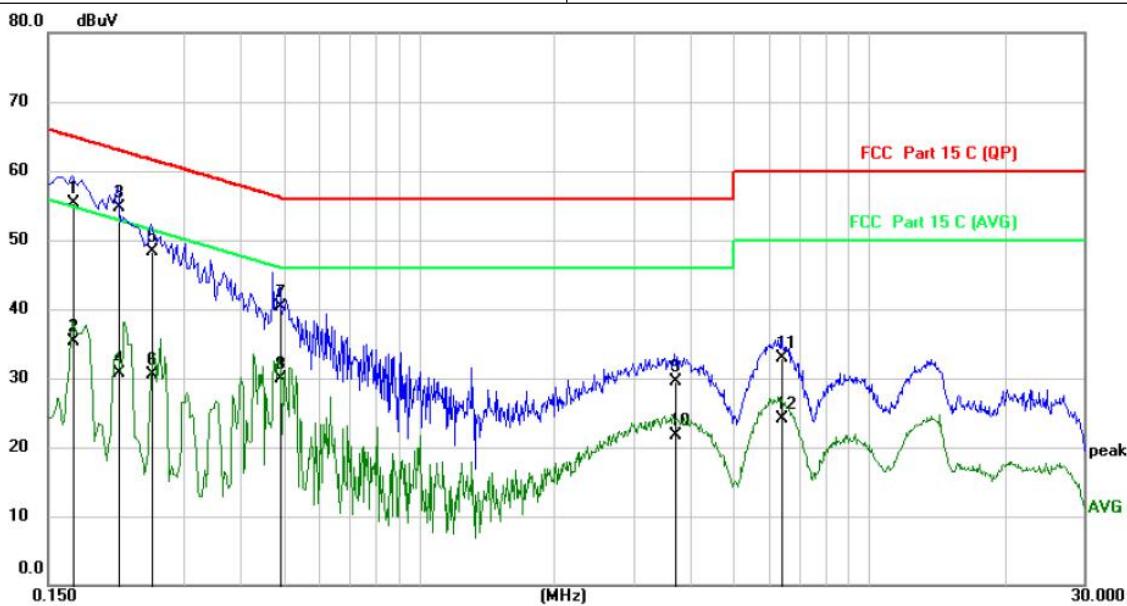
1. The EUT was setup according to ANSI C63.10:2013 requirements.
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 0.1m above the conducting ground plane. The vertical conducting plane was located 80 cm to the rear of the EUT. All other surfaces of EUT were at least 0.8m from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 50ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
4. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
5. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
6. Conducted Emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
7. During the above scans, the emissions were maximized by cable manipulation.

Test Mode:

Please refer to the clause 2.2.

Test Results

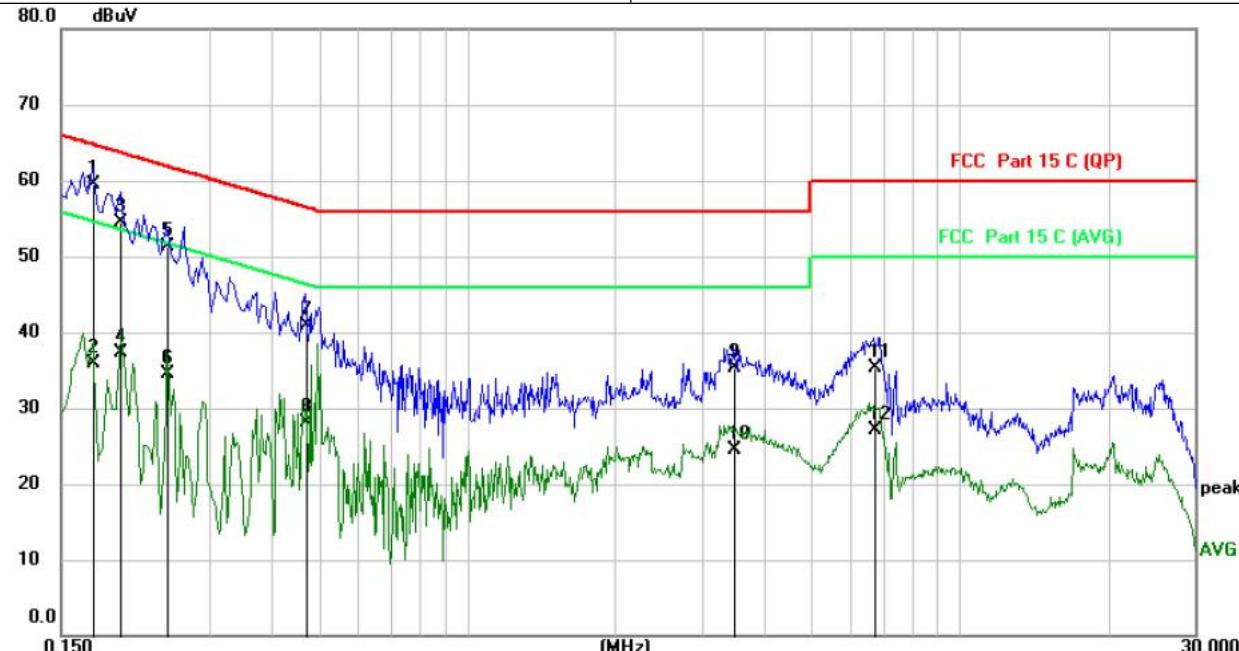
Pre-scan 802.11b/g/n(HT20/HT40) modulation, and found the 802.11b modulation 2412MHz which it is worse case, so only show the test data for worse case.

Test Voltage:	AC 120V/60Hz							
Terminal:	Line							
Test Mode:	Charging+2.4G WIFI							
								
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1700	44.54	10.73	55.27	64.96	-9.69	QP
2		0.1700	24.58	10.73	35.31	54.96	-19.65	AVG
3	*	0.2140	44.03	10.75	54.78	63.05	-8.27	QP
4		0.2140	20.01	10.75	30.76	53.05	-22.29	AVG
5		0.2540	37.67	10.71	48.38	61.63	-13.25	QP
6		0.2540	19.85	10.71	30.56	51.63	-21.07	AVG
7		0.4900	29.94	10.40	40.34	56.17	-15.83	QP
8		0.4900	19.48	10.40	29.88	46.17	-16.29	AVG
9		3.7060	18.86	10.61	29.47	56.00	-26.53	QP
10		3.7060	11.10	10.61	21.71	46.00	-24.29	AVG
11		6.3940	22.29	10.60	32.89	60.00	-27.11	QP
12		6.3940	13.54	10.60	24.14	50.00	-25.86	AVG
Remarks:								
1.Measurement = Reading Level+ Correct Factor								
2.Over = Measurement -Limit								

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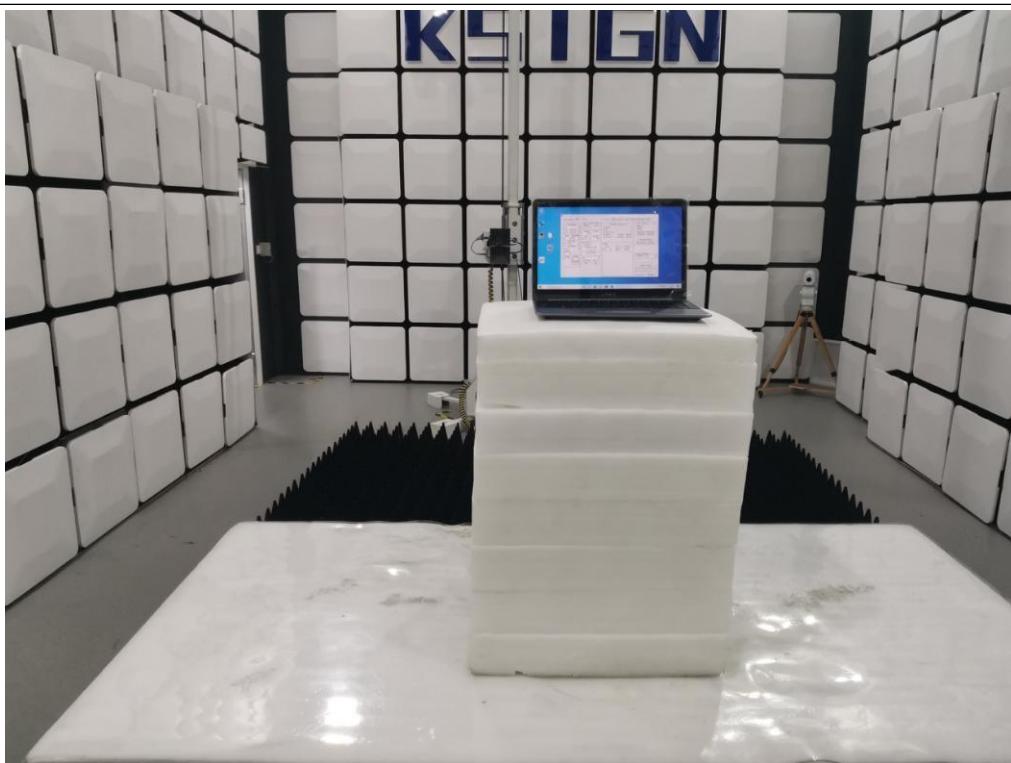
Test Voltage:	AC 120V/60Hz						
Terminal:	Neutral						
Test Mode:	Charging+2.4G WIFI						
							
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over
		MHz	dBuV	dB	dBuV	dB	Detector
1	*	0.1740	48.76	10.74	59.50	64.77	-5.27 QP
2		0.1740	25.07	10.74	35.81	54.77	-18.96 AVG
3		0.1980	43.68	10.75	54.43	63.69	-9.26 QP
4		0.1980	26.62	10.75	37.37	53.69	-16.32 AVG
5		0.2460	40.55	10.71	51.26	61.89	-10.63 QP
6		0.2460	23.87	10.71	34.58	51.89	-17.31 AVG
7		0.4700	30.48	10.52	41.00	56.51	-15.51 QP
8		0.4700	17.60	10.52	28.12	46.51	-18.39 AVG
9		3.4820	24.69	10.60	35.29	56.00	-20.71 QP
10		3.4820	13.87	10.60	24.47	46.00	-21.53 AVG
11		6.7180	24.68	10.57	35.25	60.00	-24.75 QP
12		6.7180	16.61	10.57	27.18	50.00	-22.82 AVG
Remarks:							
1.Measurement = Reading Level+ Correct Factor							
2.Over = Measurement -Limit							

4. EUT TEST PHOTOS

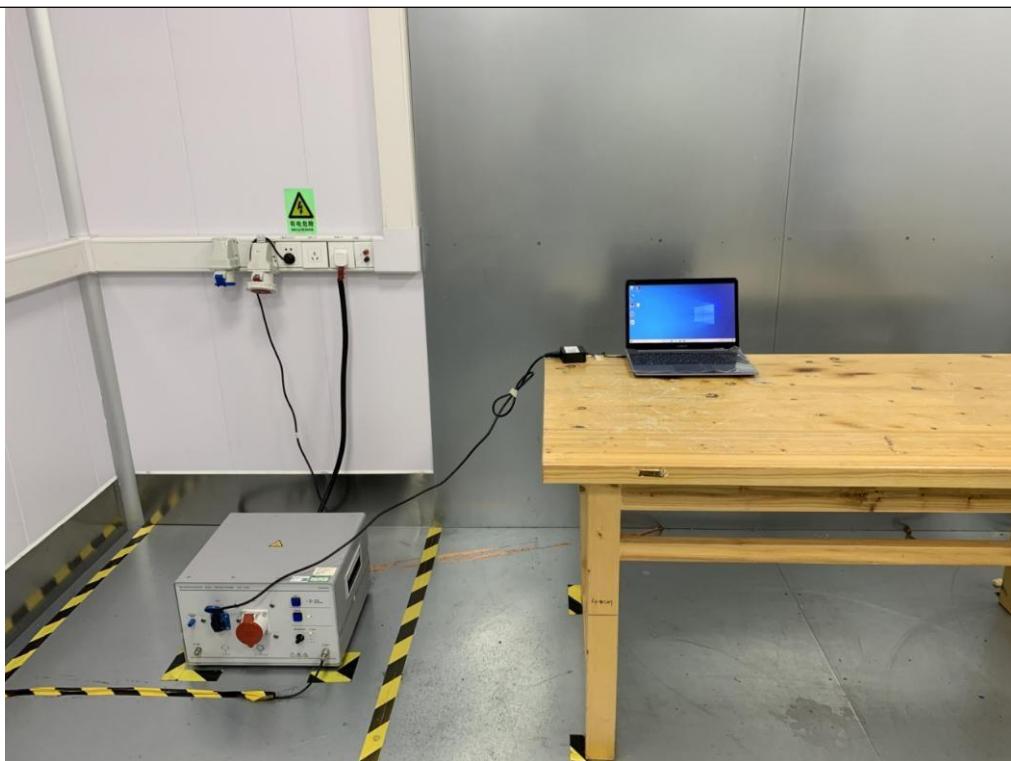
Radiated Measurement (Below 1GHz)



Radiated Measurement (Above 1GHz)



Conducted Emission



RF Conducted



5. PHOTOGRAPHS OF EUT CONSTRUCTIONAL

External Photographs

Photo 1



Photo 2



Photo 3



Photo 4



Photo 5

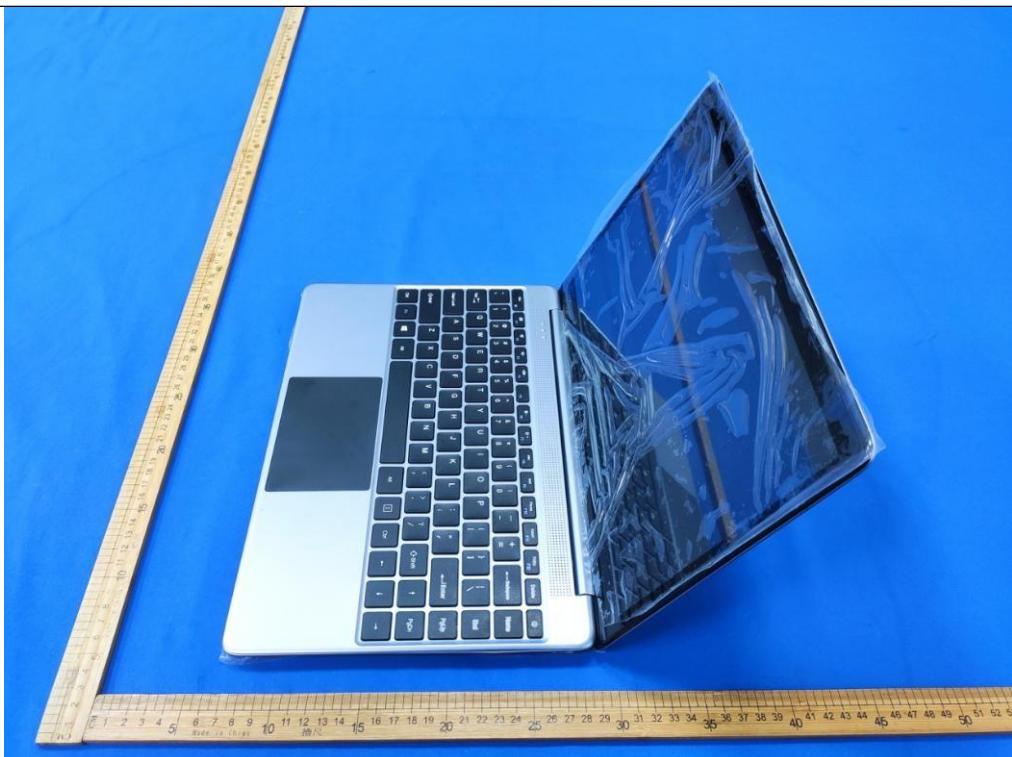


Photo 6

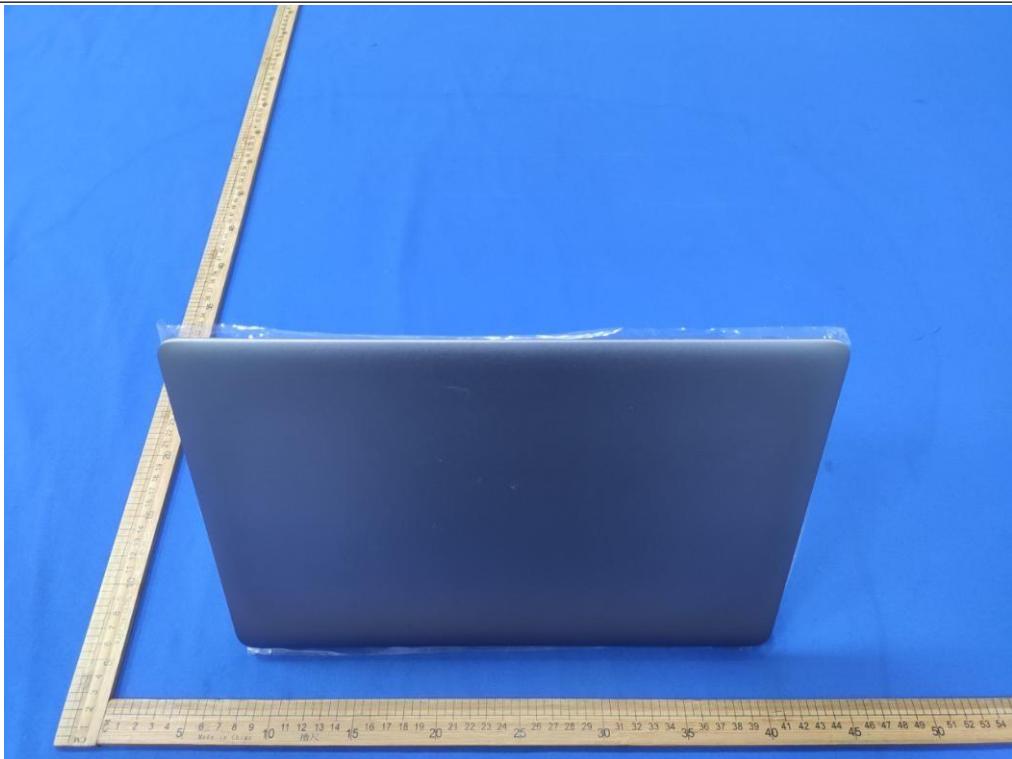


Photo 7



Photo 8



Photo 9



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Internal Photographs

Photo 1



Photo 2



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Add : West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China

Tel : +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail : info@gdksign.cn Web: www.gdksign.com

Photo 3



Photo 4

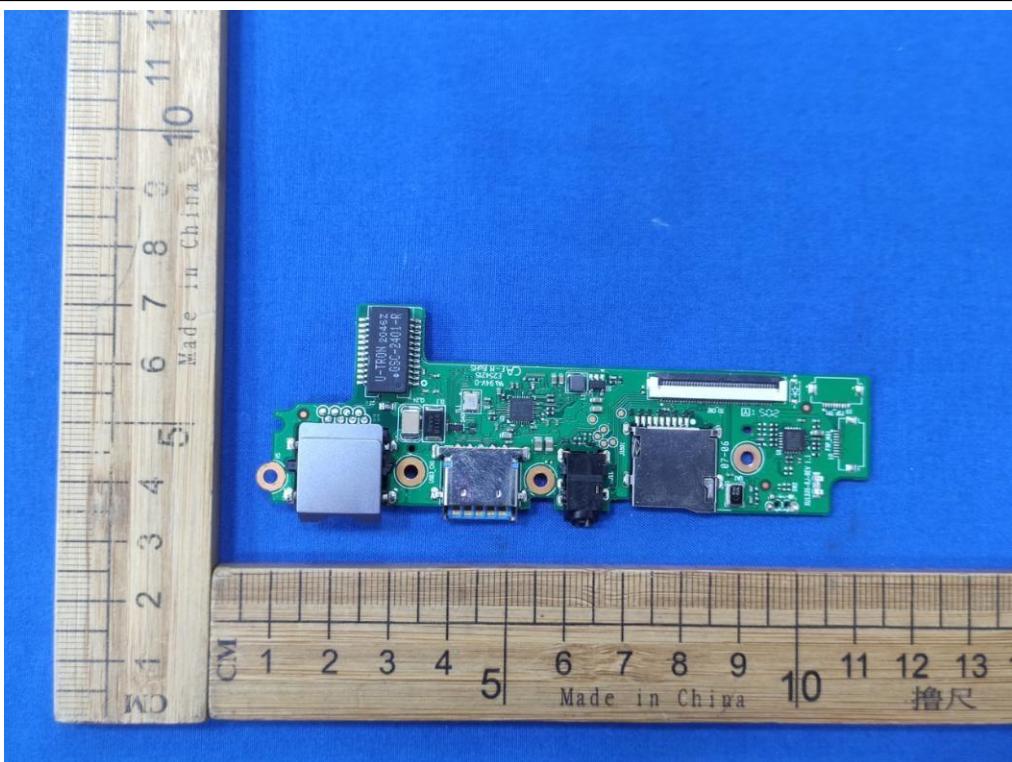


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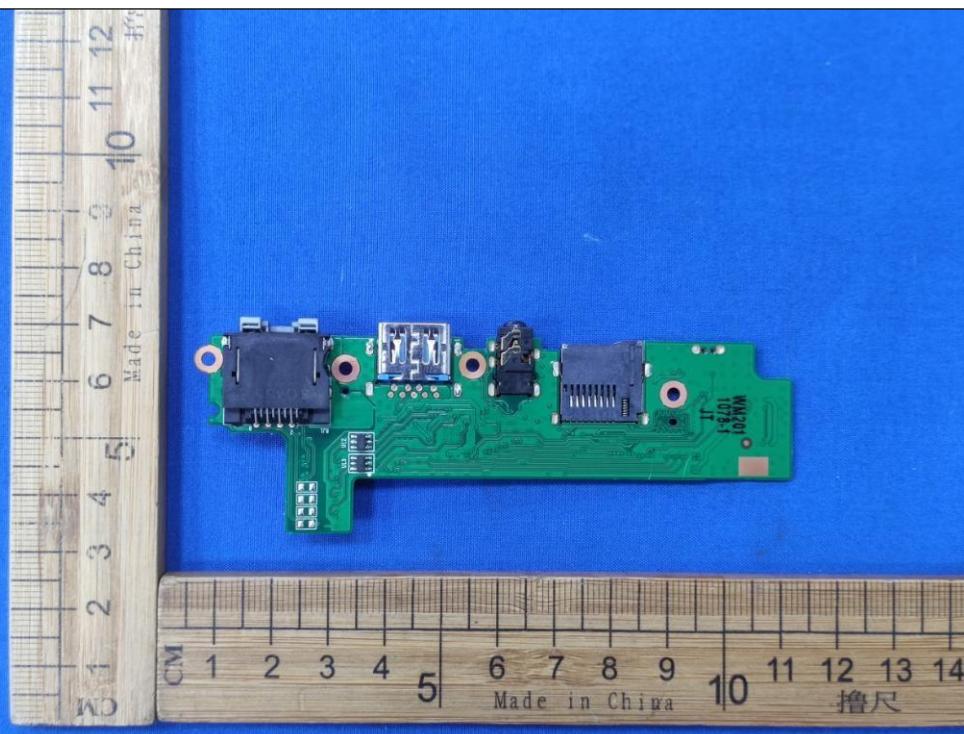


Photo 6



Photo 7

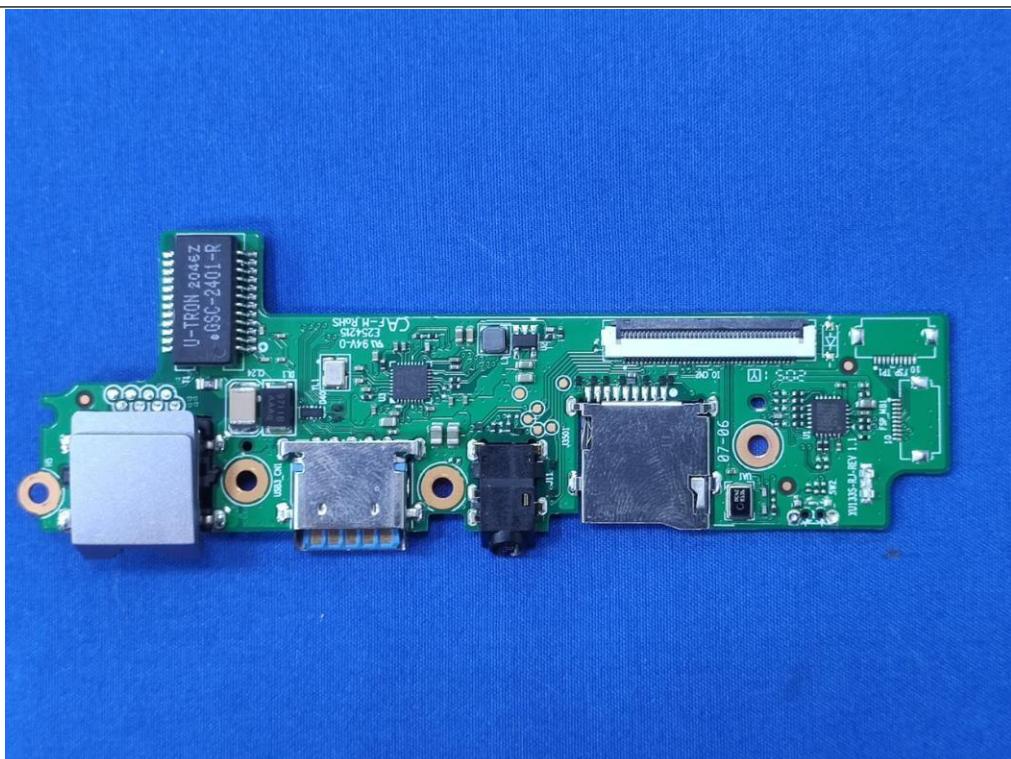


Photo 8

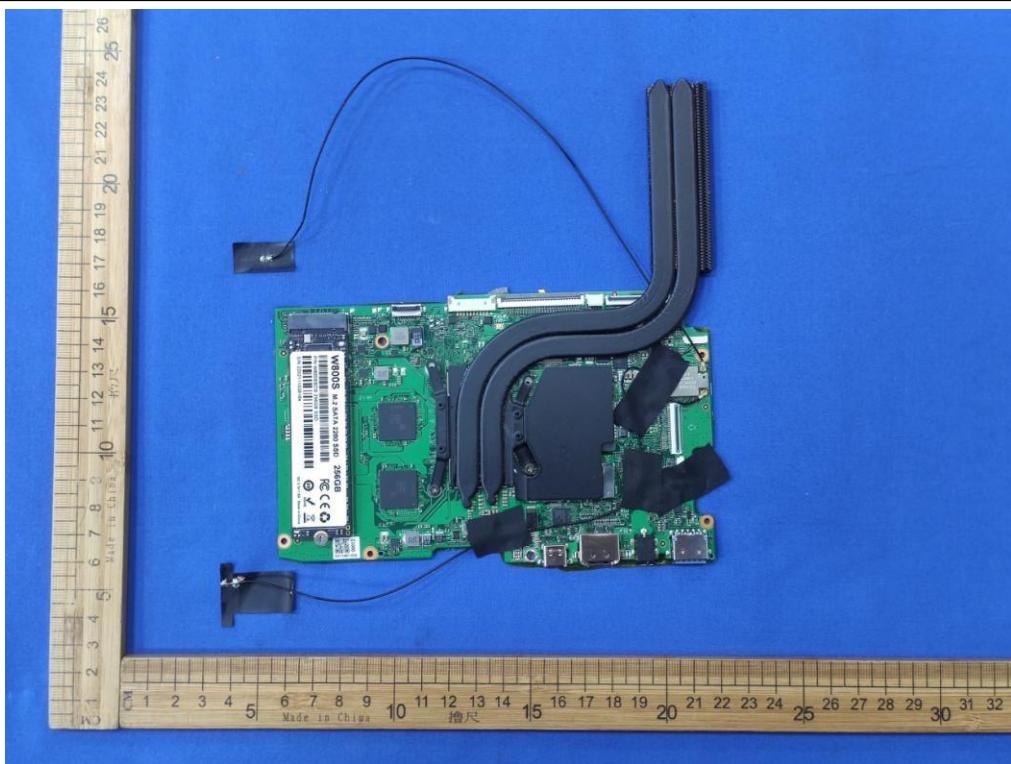


Photo 9

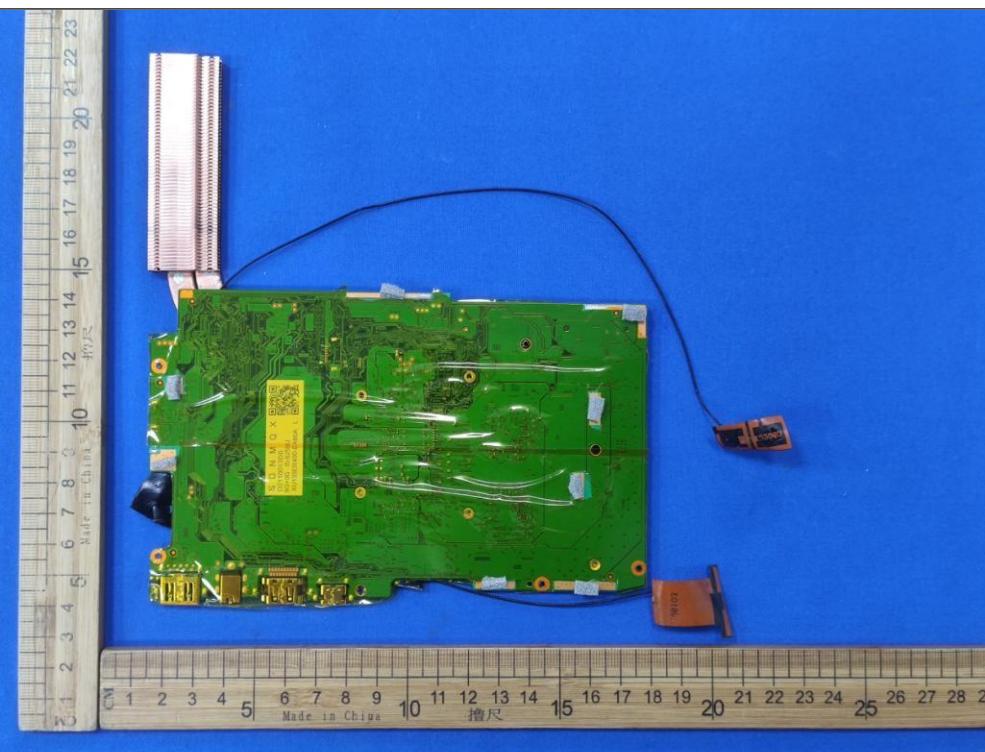


Photo 10

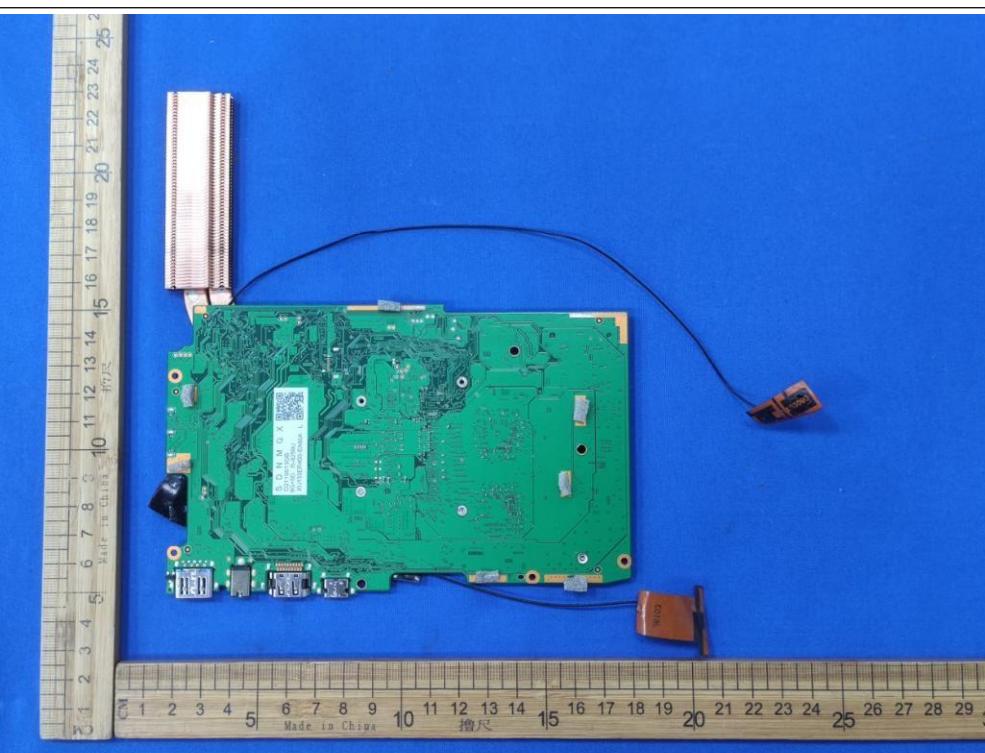


Photo 11



Photo 12

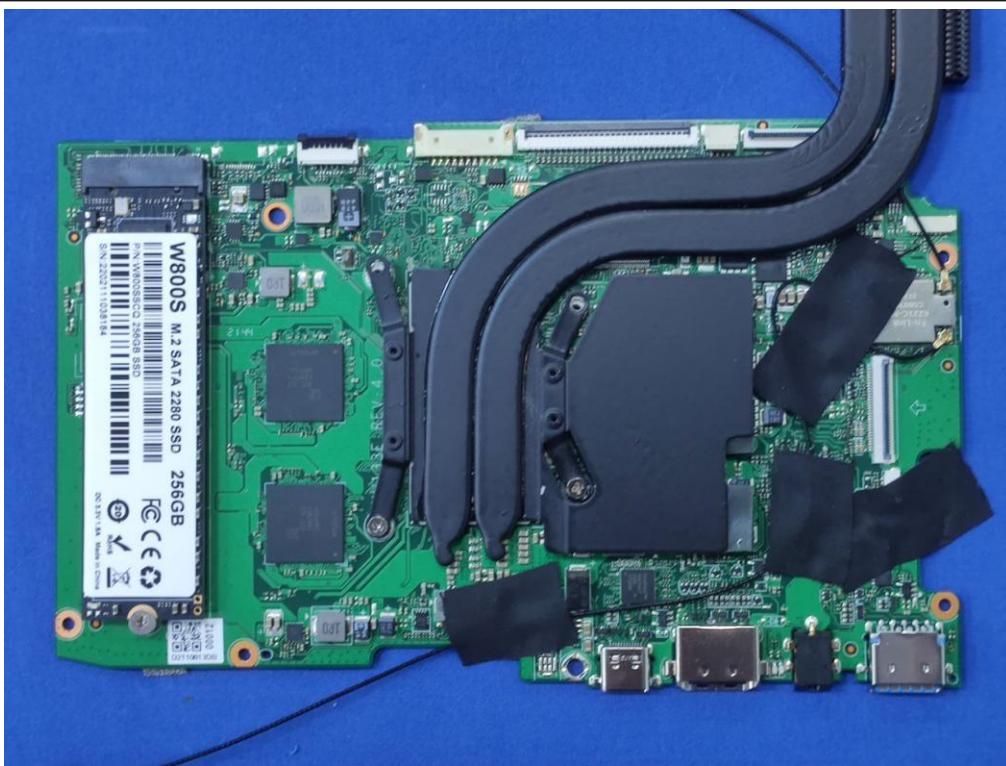


Photo 13

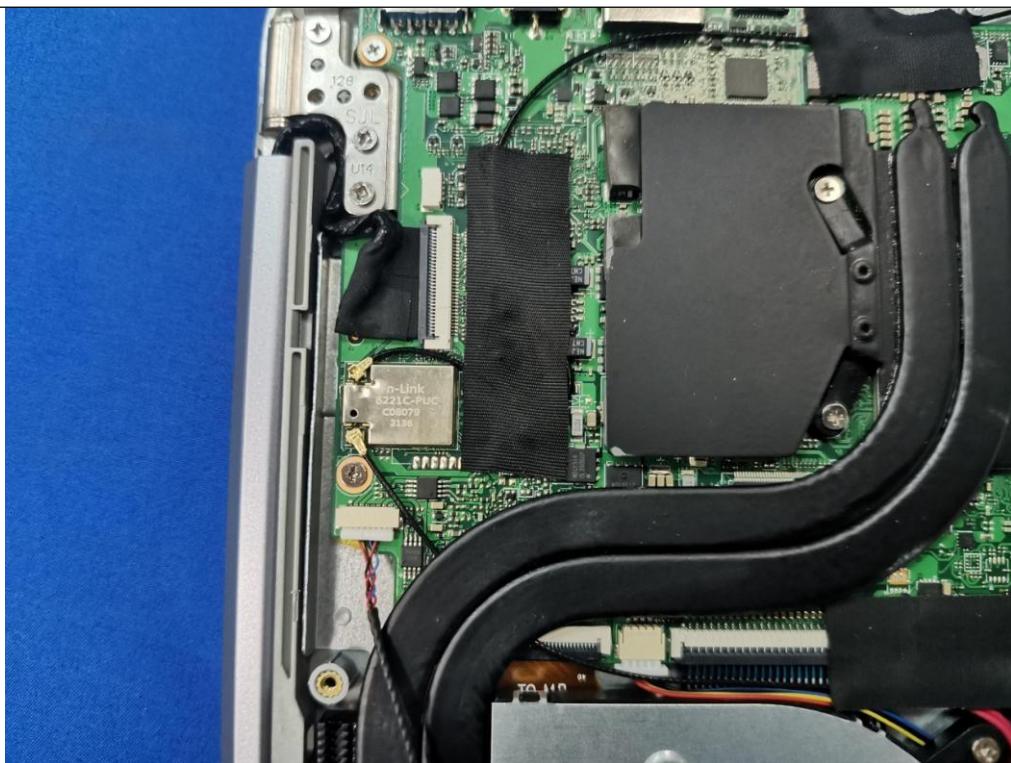


Photo 14

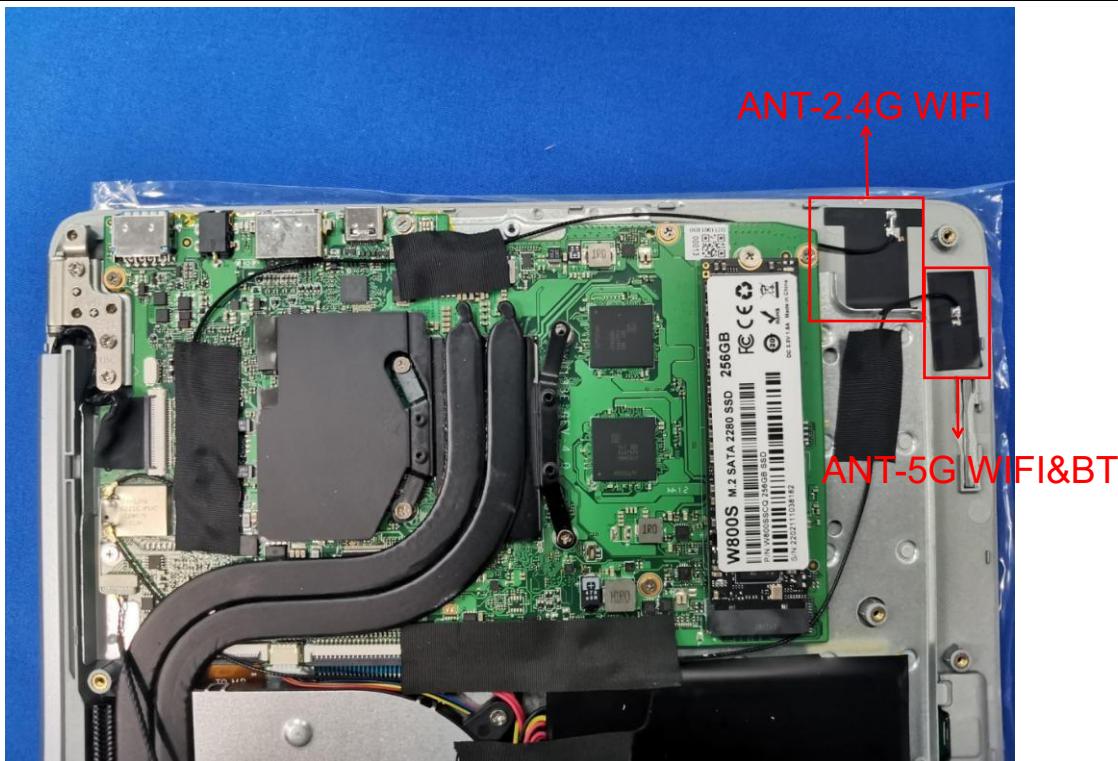
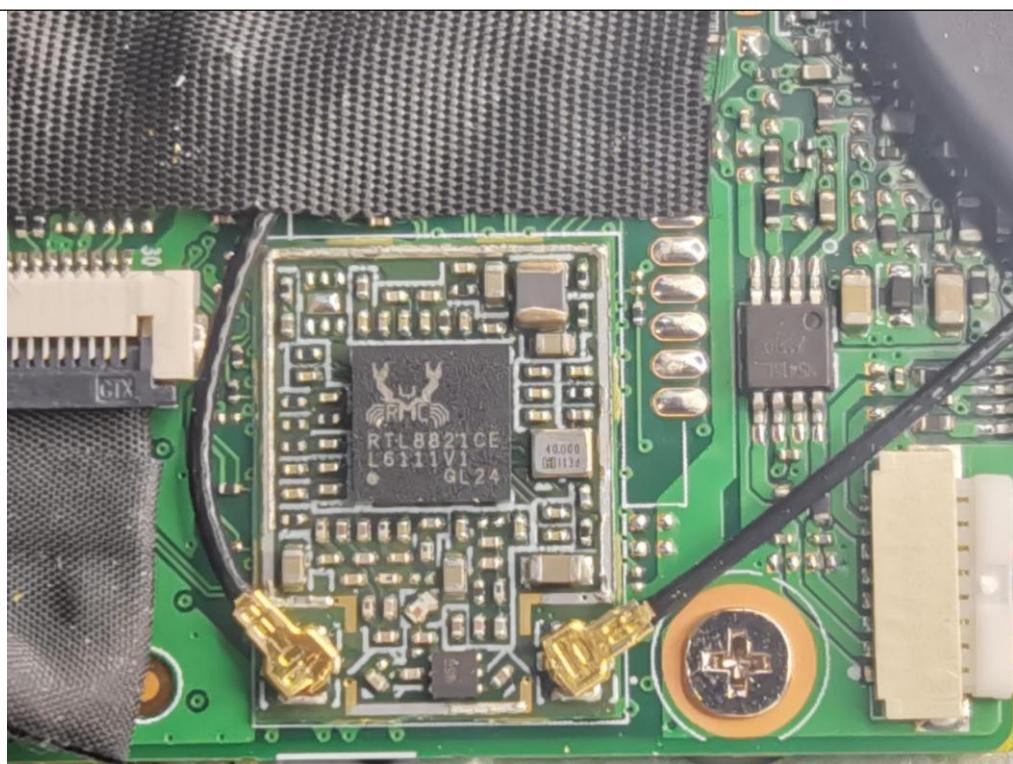


Photo 15



--THE END--