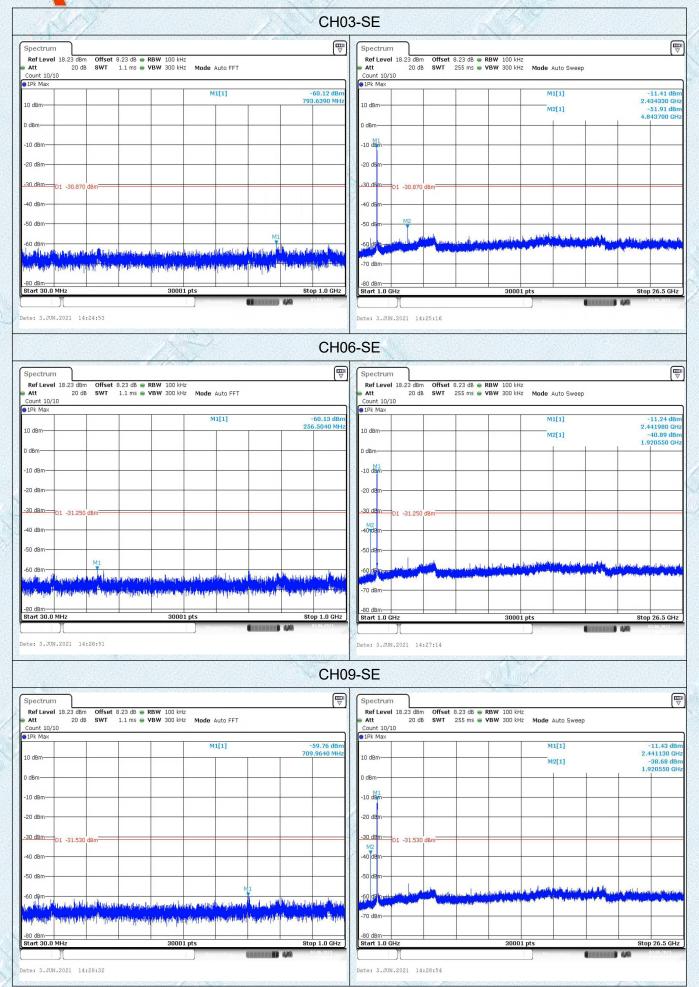


802.11n(HT40)





Report No.: KS2103S0650E



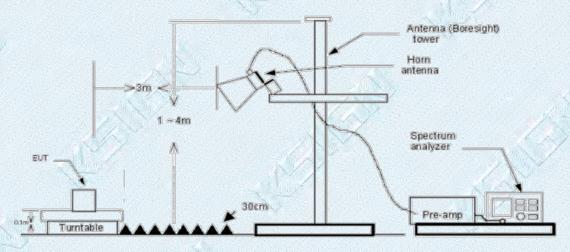
3.6. Band Edge Emissions(Radiated)

Limit

Restricted Frequency Band	(dBuV/m)(at 3m)			
(MHz)	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

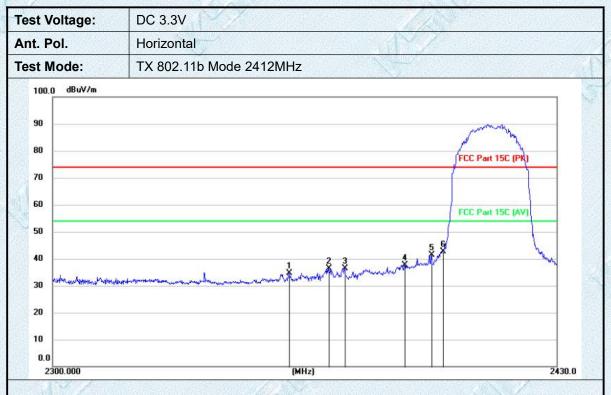
Note:

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 802.11b mode which it is worse case, so only show the test data for worse case.

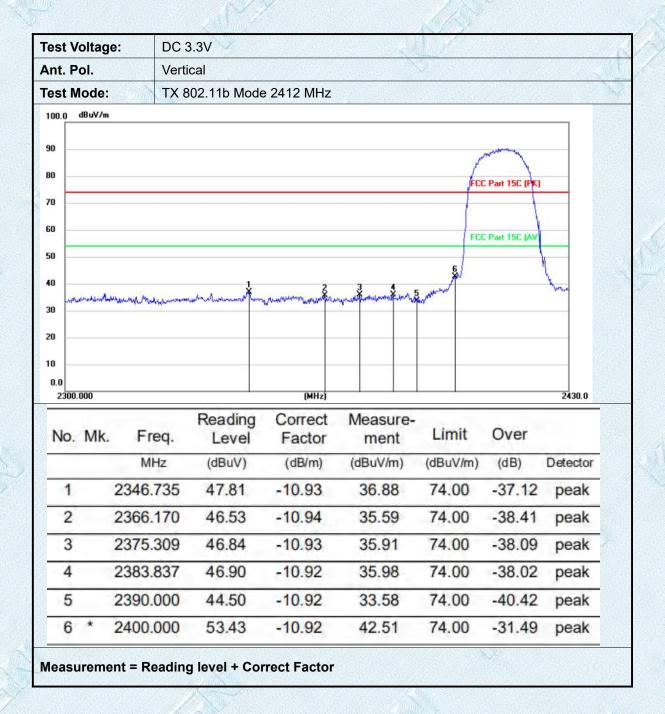




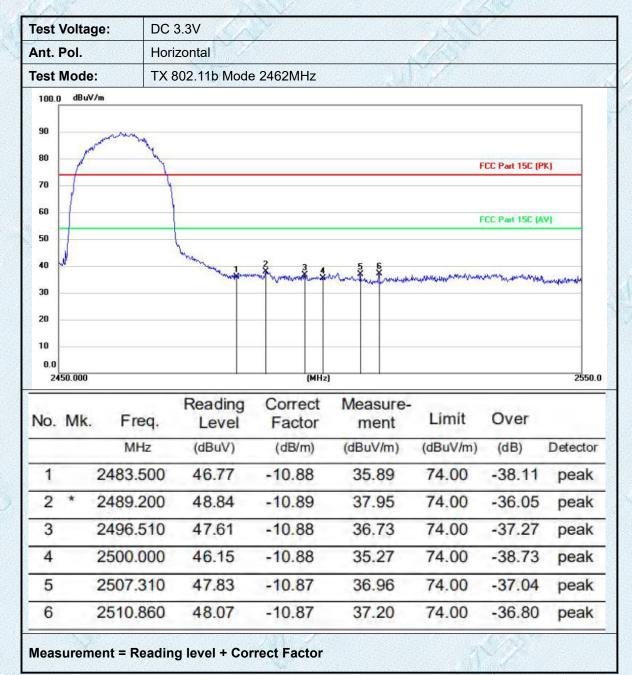
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		2360.099	45.47	-10.93	34.54	74.00	-39.46	peak
2		2370.226	47.38	-10.92	36.46	74.00	-37.54	peak
3		2374.464	47.39	-10.93	36.46	74.00	-37.54	peak
4		2390.000	48.44	-10.92	37.52	74.00	-36.48	peak
5		2397.162	52.27	-10.92	41.35	74.00	-32.65	peak
6	*	2400.000	53.47	-10.92	42.55	74.00	-31.45	peak

Measurement = Reading level + Correct Factor

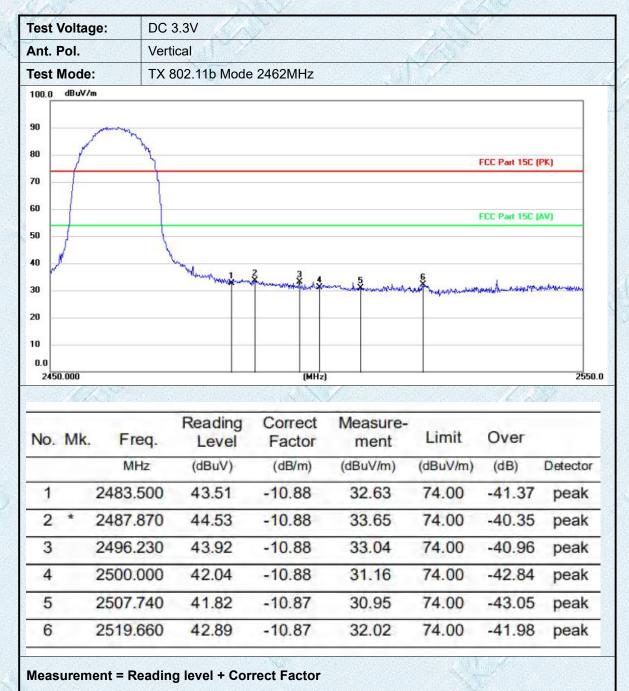
















3.7. Spurious Emission (Radiated)

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

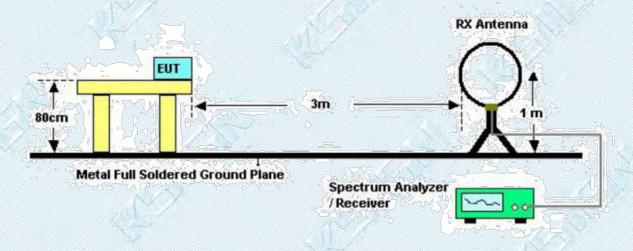
Radiated Emission Limit (Above 1000MHz)

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

Note:

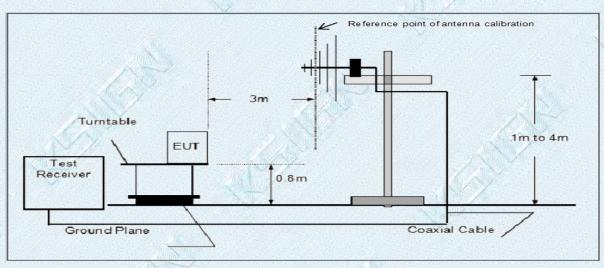
- (1) The tighter limit applies at the band edges.
- (2) Emission Level (dBuV/m)=20log Emission Level (uV/m).

Test Configuration

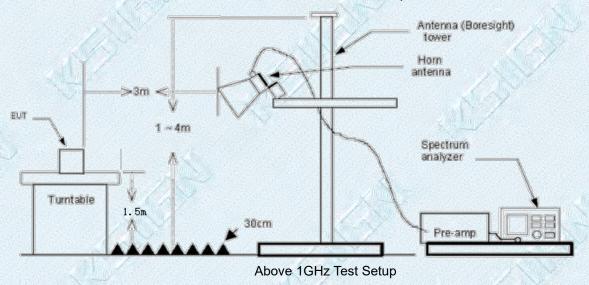


Below 30MHz Test Setup





Below 1000MHz 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 Peak value.

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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

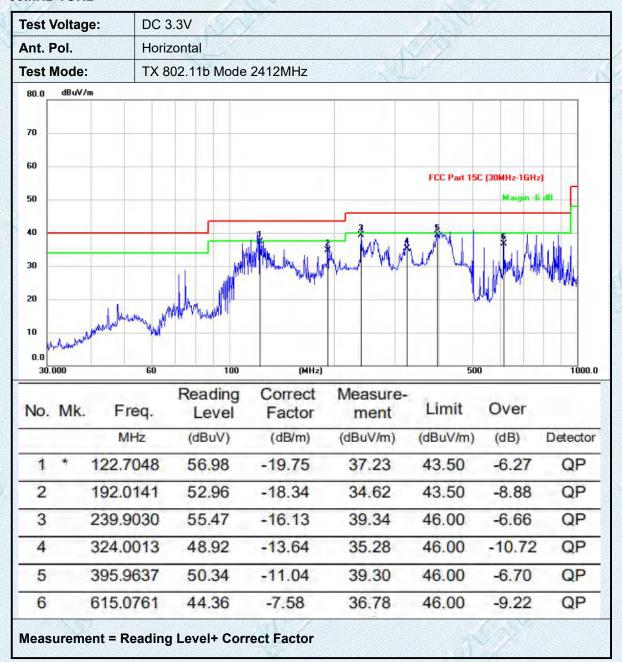
- Measurement = Reading level + Correct Factor
 Correct Factor=Antenna Factor + Cable Loss -Preamplifier Factor
- 2) The peak level is lower than average limit(54 dBuV/m), this data is the too weak instrument of signal is unable to test.
- 3) The emission levels of other frequencies are very lower than 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 the 802.11b modulation which it is worse case for above 1GHz, so only show the test data for worse case.

BELOW 30MHZ

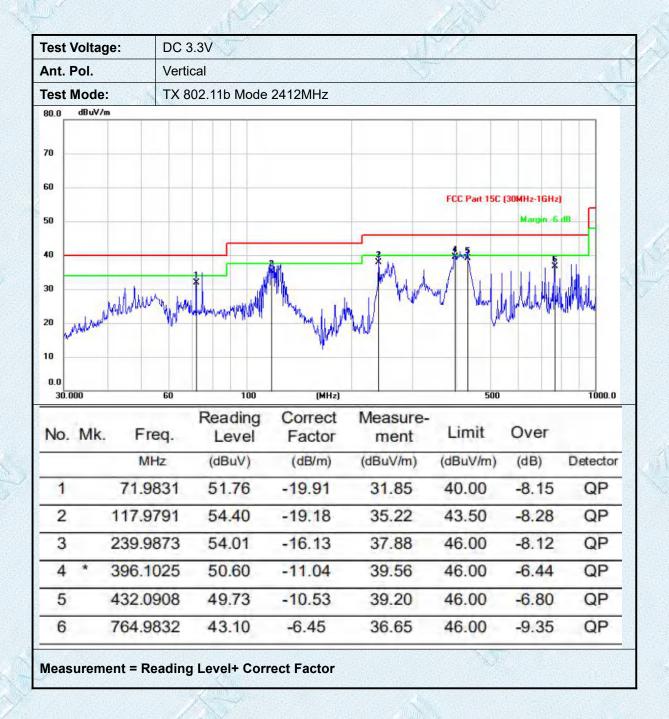
No emission found between lowest internal used/generated frequencies to 30MHz.

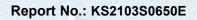


30MHz-1GHz











est Vol	tage:	DC 3.3	3V			(20)		
nt. Po	l.	Horizo	ontal			7/		
est Mo	ode:	TX 80	2.11b Mode	e 2412MHz	72			
80.0	dBuV/m							
80.0	abuvim					F	CC Part 15C (PK	q
70								
60								we
50			ş				CC Part 15C (AV	100
		Ť	ĺ	3	4/months affect and	n problem procession with the	pending he windy	A. P. P. A.
40	and the above of the second	and the same of the	equal of regularity and a state of the	perdeducer man their	7,44-2			
30 MM	a lost a discount of faithful							
30	Coult de Co. Co.							
STATE								
20								
STATE								
20		4400.00		7800.00 (MHz)	11200.00 12	900.00 14600	0.00 16300.0	0 18000.0
20 10 0.0			6100.00		35335-W65C07656 9835	900.00 14600	0.00 16300.0	0 18000.00
20 10 0.0	000 2700.00			Correct Factor	11200.00 12 Measure-ment	900.00 14600 Limit	0.00 16300.0 Over	0 18000.00
20 10 0.0 1000.0	000 2700.00 Mk. F	4400.00	Reading	Correct	Measure-		22.000000	
20 10 0.0 1000.0	000 2700.00 Mk. F	4400.00 req.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
20 10 0.0 1000.0	Mk. F	4400.00 req. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measure- ment (dBuV/m)	Limit (dBuV/m)	Over	Detector
20 10 0.0 1000.0	Mk. F	4400.00 freq. MHz	Reading Level (dBuV) 53.90	Correct Factor (dB/m) -5.95	Measure- ment (dBuV/m) 47.95	Limit (dBuV/m) 74.00	Over (dB) -26.05	Detector peak
20 10 0.0 1000.0	Mk. F	4400.00 Freq. MHz 5.100 1.100 7.900	Reading Level (dBuV) 53.90 49.67	Correct Factor (dB/m) -5.95 0.10	Measure- ment (dBuV/m) 47.95 49.77	Limit (dBuV/m) 74.00 74.00	Over (dB) -26.05 -24.23	Detector peak peak

37.03

13.19

50.22

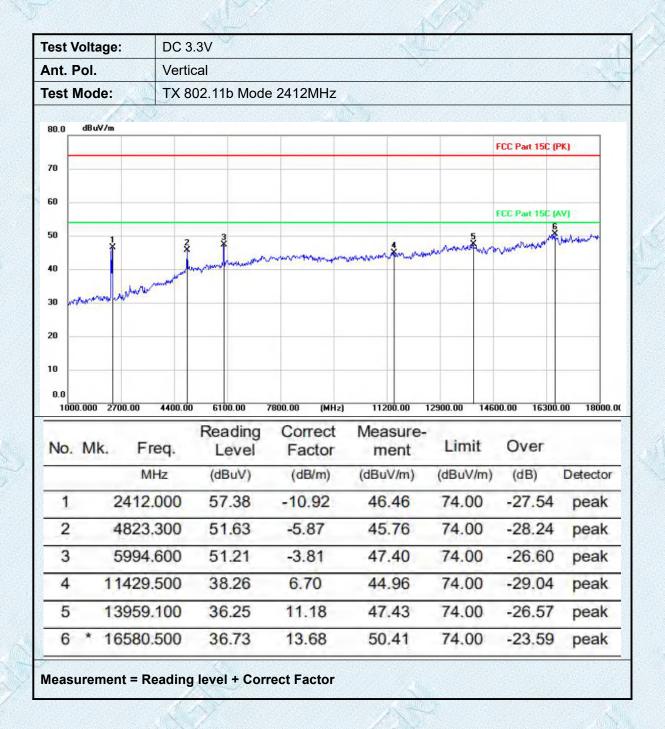
74.00

-23.78

peak

6 * 17226.500

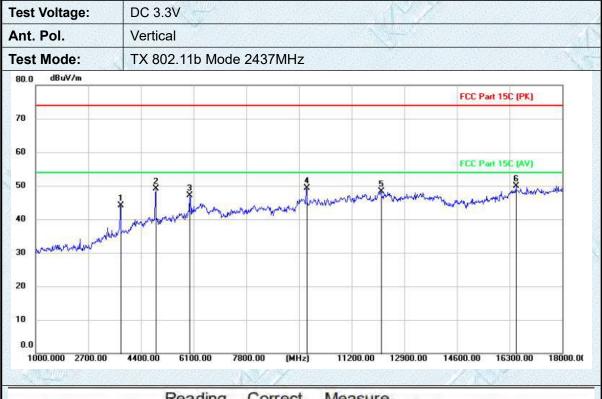






Test Voltage:	DC 3.	3V			6/83		
Ant. Pol.	Horiz	ontal			$\mathbb{Y}/\!\!/$		
Test Mode:	TX 80	2.11b Mod	e 2437MHz	- 7/			7.5
80.0 dBuV/m	(1) No. 1						- X
80.0 db47m						FCC Part 15C (F	PK)
70							
60							
						FCC Part 15C (/	(V)
50	*	Š	*	a man	5 Annana Maria	ny panjananahan	hannamana
40	and rea	munday when	compromise will accompany	and the same of th			
30 morphistory of	white de aller de la constitue						
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20							
10							
0.0							
1000.000 2700.0	00 4400.00	6100.00	7800.00 (MHz)	11200.00	12900.00 1460	0.00 16300.	.00 18000.
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1 48	74.300	54.08	-5.74	48.34	74.00	-25.66	peak
2 64	19.600	44.69	-2.39	42.30	74.00	-31.70	peak
3 73	37.600	46.84	0.32	47.16	74.00	-26.84	peak
	50.000	44.45	2.88	47.33	74.00	-26.67	peak
4 94	59.200						
	75.000	39.83	8.91	48.74	74.00	-25.26	peak

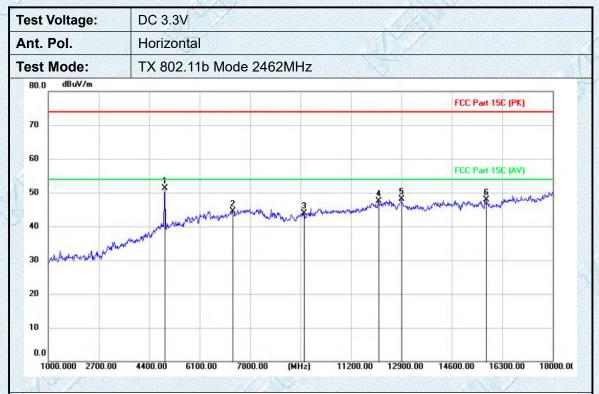




No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		3742.100	53.22	-9.08	44.14	74.00	-29.86	peak
2		4875.000	54.90	-5.73	49.17	74.00	-24.83	peak
3		5977.600	50.98	-3.85	47.13	74.00	-26.87	peak
4		9748.200	45.74	3.52	49.26	74.00	-24.74	peak
5	1	2138.400	40.10	8.19	48.29	74.00	-25.71	peak
6	* 1	6512.500	36.14	13.79	49.93	74.00	-24.07	peak

Measurement = Reading level + Correct Factor





No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1	*	4927.000	56.93	-5.59	51.34	74.00	-22.66	peak
2		7220.300	44.47	-0.04	44.43	74.00	-29.57	peak
3		9608.800	40.76	3.21	43.97	74.00	-30.03	peak
4	1	2124.800	39.31	8.16	47.47	74.00	-26.53	peak
5	1	2908.500	38.28	9.76	48.04	74.00	-25.96	peak
6	1	5773.000	35.49	12.35	47.84	74.00	-26.16	peak

Measurement = Reading level + Correct Factor



Test Voltage:	DC 3.	.3V					
Ant. Pol.	Vertic	al			4//		
Test Mode:	TX 80	02.11b Mo	de 2462MHz		4.0		
80.0 dBuV/m							
80.0 0007/11						FCC Part 15C (PK)	
70							
60							
		2	4			FCC Part 15C (AV)	
50	1	*	3	h and a second	warman There	- Marine	Machine
40		man hay more about the	discourt a september that	A Committee of the Comm			
30 madranted	halden mighty my applica						
30 May My March Color							
20							
10							
0.0							
1000.000 2700.	00 4400.00	6100.00	7800.00 (MHz)	11200.00 1	2900.00 146	00.00 16300.00	18000.00
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB) D	etector
1 49	27.000	50.54	-5.59	44.95	74.00	-29.05	peak
2 59	77.600	54.17	-3.85	50.32	74.00	-23.68	peak
3 80	34.600	43.47	2.07	45.54	74.00	-28.46	peak
18	348.500	47.54	3.74	51.28	74.00	-22.72	peak
4 * 98	46.500						
	01.600	38.05	11.23	49.28	74.00	-24.72	peak

Report No.: KS2103S0650E



3.8. Conducted Emission

Limit

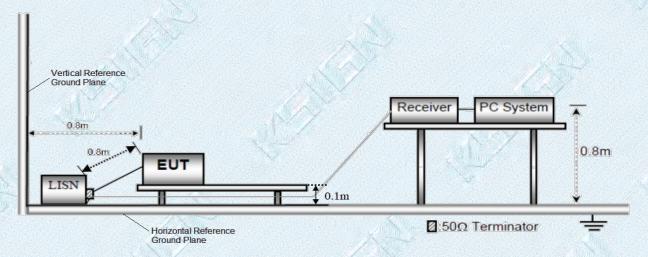
Conducted Emission Test Limit

_	Maximum RF Line Voltage (dBμV)			
Frequency	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.

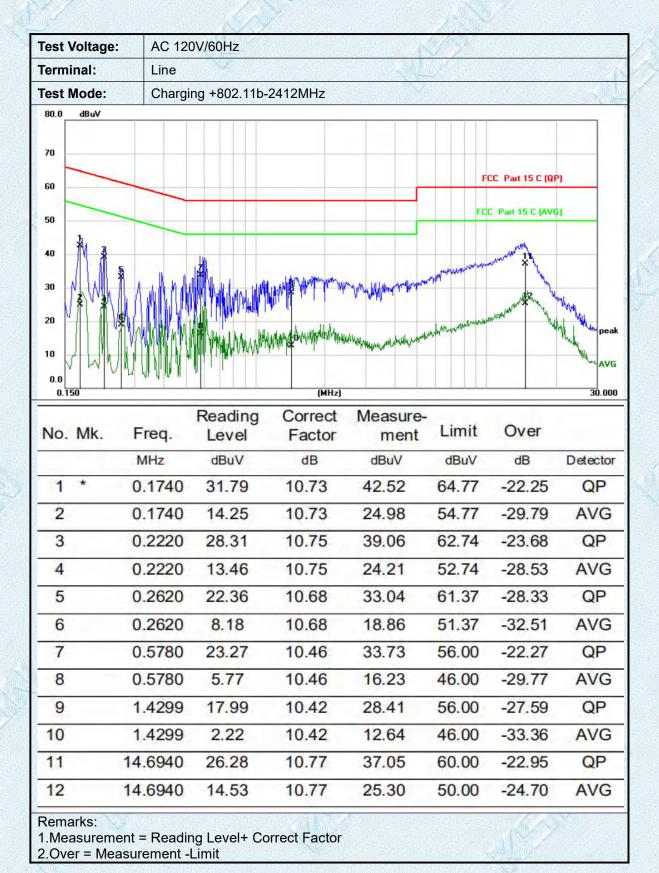
Test Mode:

Please refer to the clause 2.2.

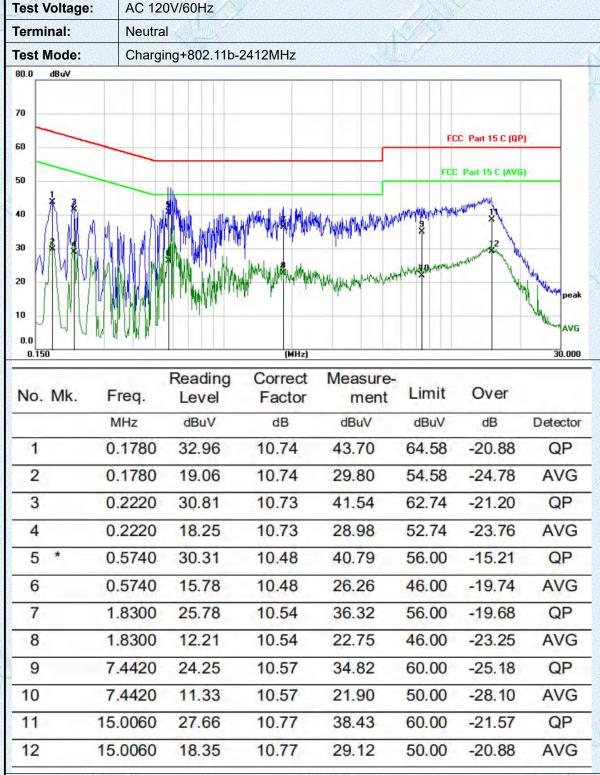
Test Results

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.









Remarks:

^{1.}Measurement = Reading Level+ Correct Factor

^{2.}Over = Measurement -Limit



4.EUT TEST PHOTOS



Radiated Emissions (Above 1GHz)



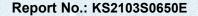






Conducted Emission







5.PHOTOGRAPHS OF EUT CONSTRUCTIONAL

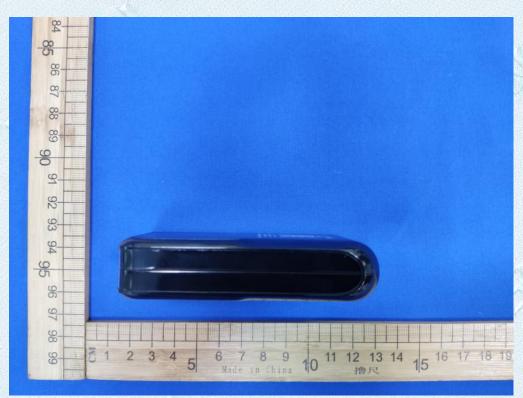
External Photographs



















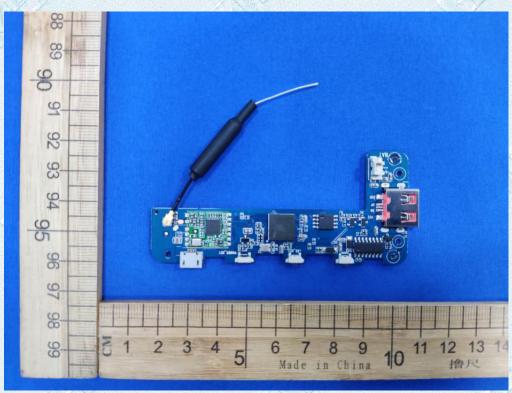


Internal Photographs

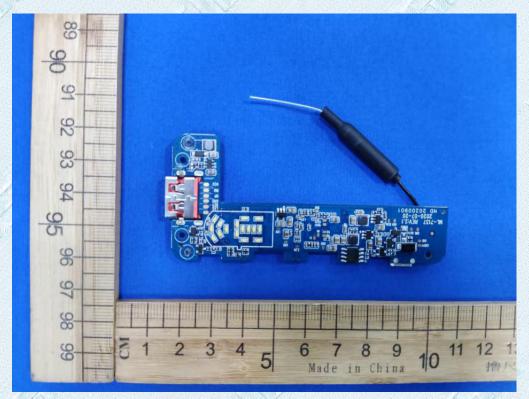


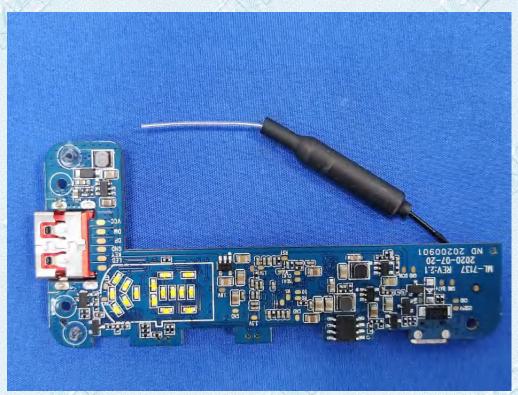




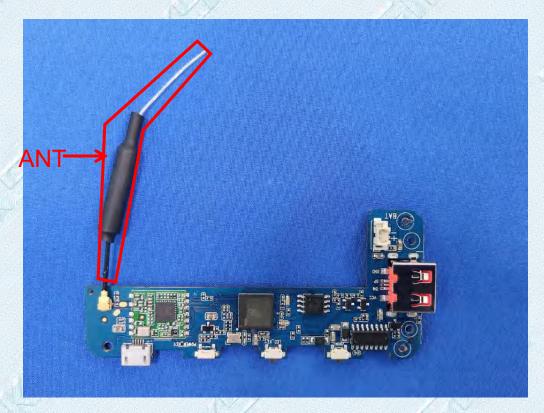


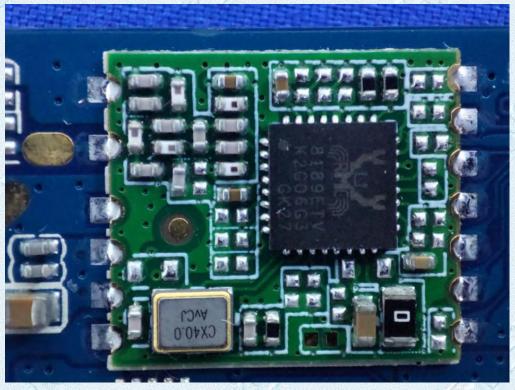












**************THE END**************