



Appendix F) Antenna Requirement

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 2.2dBi.



Appendix G) AC Power Line Conducted Emission

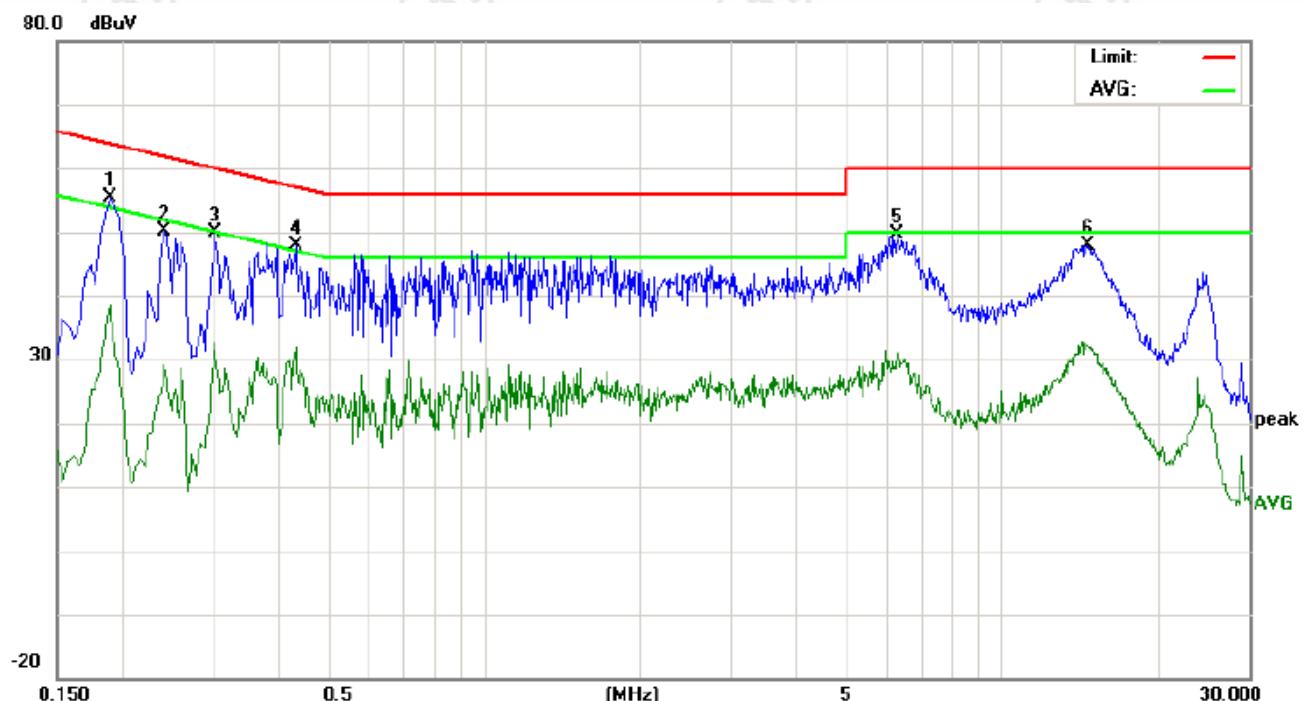
Test Procedure:	Test frequency range :150KHz-30MHz 1) The mains terminal disturbance voltage test was conducted in a shielded room. 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded. 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2. 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.																
Limit:	<table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th> <th colspan="2">Limit (dBμV)</th> </tr> <tr> <th>Quasi-peak</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>0.15-0.5</td> <td>66 to 56*</td> <td>56 to 46*</td> </tr> <tr> <td>0.5-5</td> <td>56</td> <td>46</td> </tr> <tr> <td>5-30</td> <td>60</td> <td>50</td> </tr> </tbody> </table> <p>* The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.</p> <p>NOTE : The lower limit is applicable at the transition frequency</p>			Frequency range (MHz)	Limit (dB μ V)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	5-30	60	50
Frequency range (MHz)	Limit (dB μ V)																
	Quasi-peak	Average															
0.15-0.5	66 to 56*	56 to 46*															
0.5-5	56	46															
5-30	60	50															

Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

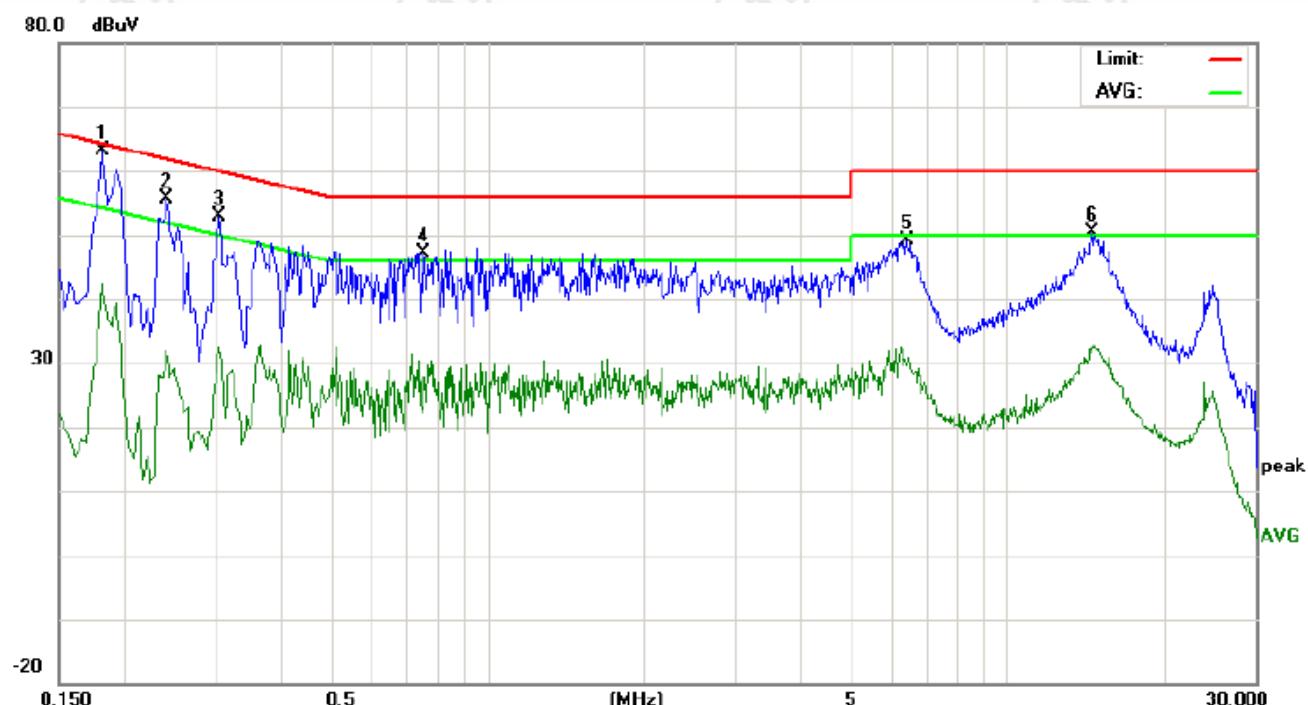
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Live line:



No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor		Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	QP	AVG	
1	0.1900	45.60	37.68	19.32	9.80	55.40	47.48	29.12	64.03	54.03	-16.55	-24.91	P		
2	0.2420	40.35	32.10	15.59	9.80	50.15	41.90	25.39	62.02	52.02	-20.12	-26.63	P		
3	0.3020	40.03	35.28	17.26	9.80	49.83	45.08	27.06	60.19	50.19	-15.11	-23.13	P		
4	0.4340	37.86	30.19	11.94	9.90	47.76	40.09	21.84	57.18	47.18	-17.09	-25.34	P		
5	6.2540	39.58	33.03	17.82	10.00	49.58	43.03	27.82	60.00	50.00	-16.97	-22.18	P		
6	14.7460	37.85	33.93	21.36	10.09	47.94	44.02	31.45	60.00	50.00	-15.98	-18.55	P		

Neutral line:



No.	Freq.	Reading_Level (dBuV)			Correct_Factor			Measurement (dBuV)			Limit (dBuV)			Margin (dB)		
		MHz	Peak	QP	Avg	dB	peak	QP	Avg	QP	Avg	QP	Avg	P/F	Comment	
1	0.1819	53.27	46.54	25.45	9.80	63.07	56.34	35.25	64.39	54.39	-8.05	-19.14	P			
2	0.2420	45.83	38.81	17.74	9.80	55.63	48.61	27.54	62.02	52.02	-13.41	-24.48	P			
3	0.3060	34.92	35.02	18.38	9.81	44.73	44.83	28.19	60.08	50.08	-15.25	-21.89	P			
4	0.7580	37.28	31.39	13.34	9.90	47.18	41.29	23.24	56.00	46.00	-14.71	-22.76	P			
5	6.4020	39.17	32.76	16.97	10.00	49.17	42.76	26.87	60.00	50.00	-17.24	-23.03	P			
6	14.5900	40.29	34.03	20.65	10.09	50.38	44.12	30.74	60.00	50.00	-15.88	-19.26	P			

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.

Appendix H) Restricted bands around fundamental frequency (Radiated)

Receiver Setup:	Frequency	Detector	RBW	VBW	Remark	
	30MHz-1GHz	Quasi-peak	120 kHz	300kHz	Quasi-peak	
	Above 1GHz	Peak	1MHz	3MHz	Peak	
		Peak	1MHz	10Hz	Average	
Test Procedure:	Below 1GHz test procedure as below: <ol style="list-style-type: none"> The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 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. 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 rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel Above 1GHz test procedure as below: <ol style="list-style-type: none"> Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber change form table 0.8 metre to 1.5 metre(Above 18GHz the distance is 1 meter and table is 1.5 metre). Test the EUT in the lowest channel , the Highest channel The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case. Repeat above procedures until all frequencies measured was complete. 					
Limit:	Frequency	Limit (dBuV/m @3m)	Remark			
	30MHz-88MHz	40.0	Quasi-peak Value			
	88MHz-216MHz	43.5	Quasi-peak Value			
	216MHz-960MHz	46.0	Quasi-peak Value			
	960MHz-1GHz	54.0	Quasi-peak Value			
	Above 1GHz	54.0	Average Value			
		74.0	Peak Value			

Test plot as follows:

Worse case mode: 802.11b (11Mbps)										
Frequency (MHz)	Read Level (dB μ V)	Level (dB μ V/m)	Antenna Factor (dB/m)	Cable Loss (dB)	Premap Factor (dB)	Limit (dB μ V/m)	Over Limit (dB)	Antenna Polaxis	Remark	Test channel
2390.00	44.01	43.61	32.53	4.28	37.21	74	-30.39	H	PK	Lowest
2390.00	44.02	43.62	32.53	4.28	37.21	74	-30.38	V	PK	Lowest
2483.50	45.03	45.06	32.71	4.51	37.19	74	-28.94	H	PK	Highest
2483.50	43.76	43.79	32.71	4.51	37.19	74	-30.21	V	PK	Highest

Worse case mode: 802.11g (6Mbps)										
Frequency (MHz)	Read Level (dB μ V)	Level (dB μ V/m)	Antenna Factor (dB/m)	Cable Loss (dB)	Premap Factor (dB)	Limit (dB μ V/m)	Over Limit (dB)	Antenna Polaxis	Remark	Test channel
2390.00	48.13	47.73	32.53	4.28	37.21	74	-26.27	H	PK	Lowest
2390.00	44.62	44.22	32.53	4.28	37.21	74	-29.78	V	PK	Lowest
2483.50	48.57	48.60	32.71	4.51	37.19	74	-25.40	H	PK	Highest
2483.50	44.11	44.14	32.71	4.51	37.19	74	-29.86	V	PK	Highest

Worse case mode: 802.11n(HT20) (6.5Mbps)										
Frequency (MHz)	Read Level (dB μ V)	Level (dB μ V/m)	Antenna Factor (dB/m)	Cable Loss (dB)	Premap Factor (dB)	Limit (dB μ V/m)	Over Limit (dB)	Antenna Polaxis	Remark	Test channel
2390.00	44.68	44.28	32.53	4.28	37.21	74	-29.72	H	PK	Lowest
2390.00	44.60	44.20	32.53	4.28	37.21	74	-29.80	V	PK	Lowest
2483.50	44.86	44.89	32.71	4.51	37.19	74	-29.11	H	PK	Highest
2483.50	44.12	44.15	32.71	4.51	37.19	74	-29.85	V	PK	Highest

Worse case mode: 802.11n(HT40) (13.5Mbps)										
Frequency (MHz)	Read Level (dB μ V)	Level (dB μ V/m)	Antenna Factor (dB/m)	Cable Loss (dB)	Premap Factor (dB)	Limit (dB μ V/m)	Over Limit (dB)	Antenna Polaxis	Remark	Test channel
2390.00	44.38	43.98	32.53	4.28	37.21	74	-30.02	H	PK	Lowest
2390.00	45.55	45.15	32.53	4.28	37.21	74	-28.85	V	PK	Lowest
2483.50	44.70	44.73	32.71	4.51	37.19	74	-29.27	H	PK	Highest
2483.50	44.39	44.42	32.71	4.51	37.19	74	-29.58	V	PK	Highest

Note:

1) Through transmitter mode with all kind of modulation and data rate, find the 11Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) ; 13.5Mbps of rate is the worst case of 802.11n(HT40),and then Only the worst case is recorded in the report.

2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading - Correct Factor

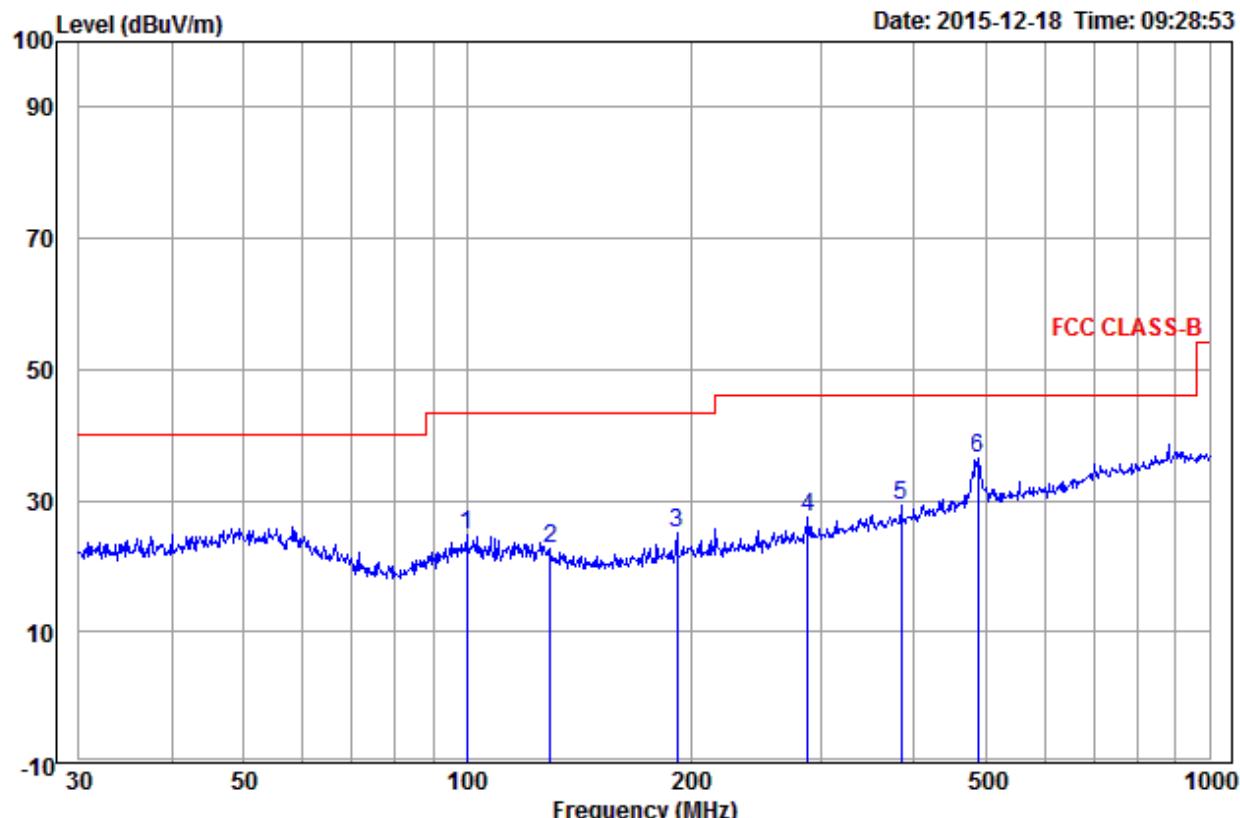
Correct Factor = Preamplifier Factor- Antenna Factor-Cable Factor

Appendix I) Radiated Spurious Emissions

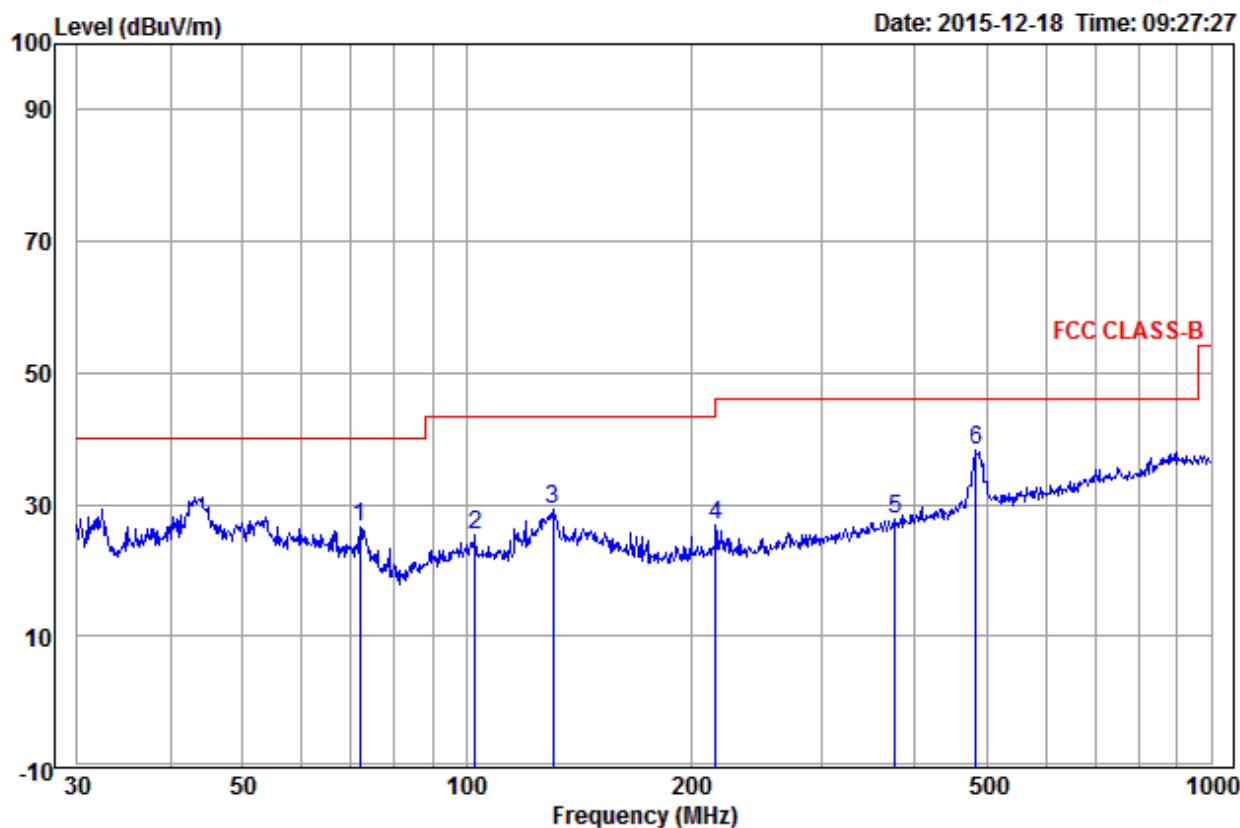
Receiver Setup:		Frequency	Detector	RBW	VBW	Remark					
0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak							
0.009MHz-0.090MHz	Average	10kHz	30kHz	Average							
0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak							
0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak							
0.110MHz-0.490MHz	Average	10kHz	30kHz	Average							
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak							
30MHz-1GHz	Quasi-peak	120 kHz	300kHz	Quasi-peak							
Above 1GHz	Peak	1MHz	3MHz	Peak							
	Peak	1MHz	10Hz	Average							
Test Procedure:											
Below 1GHz test procedure as below:											
a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. 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. d. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. 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.											
Above 1GHz test procedure as below:											
g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 metre to 1.5 metre(Above 18GHz the distance is 1 meter and table is 1.5 metre).. h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case. j. Repeat above procedures until all frequencies measured was complete.											
Limit:		Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)					
Limit:	0.009MHz-0.490MHz	2400/F(kHz)	-	-		300					
	0.490MHz-1.705MHz	24000/F(kHz)	-	-		30					
	1.705MHz-30MHz	30	-	-		30					
	30MHz-88MHz	100	40.0	Quasi-peak		3					
	88MHz-216MHz	150	43.5	Quasi-peak		3					
	216MHz-960MHz	200	46.0	Quasi-peak		3					
	960MHz-1GHz	500	54.0	Quasi-peak		3					
	Above 1GHz	500	54.0	Average		3					
	Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.										

**Radiated Spurious Emissions test Data:
Radiated Emission below 1GHz**

30MHz~1GHz (QP)



Freq	Ant Factor	Cable Loss	Read Level	Limit Level	Over Line		Over Limit Pol/Phase	Remark
					MHz	dBuV/m	dB	
1	99.88	13.18	1.57	9.93	24.68	43.50	-18.82	Horizontal
2	129.47	10.97	1.58	10.16	22.71	43.50	-20.79	Horizontal
3	191.75	11.32	2.12	11.61	25.05	43.50	-18.45	Horizontal
4	287.99	13.25	2.37	11.75	27.37	46.00	-18.63	Horizontal
5	383.93	15.84	2.77	10.75	29.36	46.00	-16.64	Horizontal
6 pp	487.32	18.08	3.10	15.15	36.33	46.00	-9.67	Horizontal



Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Over Limit Pol/Phase		Remark
							MHz	dB/m	
1	71.83	10.05	1.47	14.91	26.43	40.00	-13.57	Vertical	
2	102.72	12.97	1.57	10.70	25.24	43.50	-18.26	Vertical	
3	130.84	10.88	1.58	16.78	29.24	43.50	-14.26	Vertical	
4	216.02	11.88	2.26	12.78	26.92	46.00	-19.08	Vertical	
5	375.94	15.60	2.76	9.34	27.70	46.00	-18.30	Vertical	
6 pp	483.91	18.00	3.09	17.07	38.16	46.00	-7.84	Vertical	

Transmitter Emission above 1GHz

Test mode:		802.11b		Test Frequencyl:		2412MHz		
Frequency (MHz)	Antenna Factor (dB/m)	Preamp Gain (dB)	Cable Loss (dB)	Read Level (dB μ V)	Level (dB μ V/m)	Limit Line (dB μ V/m)	Over Limit (dB)	Antenna Polaxis
1609.646	31.07	37.80	2.93	46.11	42.31	74	-31.69	H
3607.257	33.09	36.97	5.50	45.31	46.93	74	-27.07	H
4824.000	34.73	36.82	5.10	48.50	51.51	74	-22.49	H
6283.164	36.05	36.94	7.14	44.88	51.13	74	-22.87	H
7236.000	36.42	37.45	6.69	45.79	51.45	74	-22.55	H
9648.000	37.93	37.83	7.70	42.13	49.93	74	-24.07	H
1439.090	30.75	38.06	2.77	49.07	44.53	74	-29.47	V
3681.469	33.03	36.96	5.49	45.37	46.93	74	-27.07	V
4824.000	34.73	36.82	5.10	48.20	51.21	74	-22.79	V
5732.974	35.70	36.72	6.83	44.65	50.46	74	-23.54	V
7236.000	36.42	37.45	6.69	42.79	48.45	74	-25.55	V
9648.000	37.93	37.83	7.70	43.00	50.80	74	-23.20	V

Test mode:		802.11b		Test Frequencyl:		2437MHz		
Frequency (MHz)	Antenna Factor (dB/m)	Preamp Gain (dB)	Cable Loss (dB)	Read Level (dB μ V)	Level (dB μ V/m)	Limit Line (dB μ V/m)	Over Limit (dB)	Antenna Polaxis
1521.981	30.91	37.93	2.85	45.49	41.32	74	-32.68	H
3534.541	33.14	36.99	5.52	44.87	46.54	74	-27.46	H
4874.000	34.84	36.81	5.09	46.42	49.54	74	-24.46	H
6331.329	36.07	36.98	7.10	45.43	51.62	74	-22.38	H
7311.000	36.43	37.43	6.76	44.15	49.91	74	-24.09	H
9748.000	38.03	37.85	7.61	41.91	49.70	74	-24.30	H
1439.090	30.75	38.06	2.77	47.52	42.98	74	-31.02	V
3786.010	32.95	36.94	5.47	45.80	47.28	74	-26.72	V
4874.000	34.84	36.81	5.09	46.47	49.59	74	-24.41	V
6078.644	35.94	36.77	7.35	44.10	50.62	74	-23.38	V
7311.000	36.43	37.43	6.76	45.85	51.61	74	-22.39	V
9748.000	38.03	37.85	7.61	42.12	49.91	74	-24.09	V

Test mode:		802.11b		Test Frequencyl:		2462MHz		
Frequency (MHz)	Antenna Factor (dB/m)	Preamp Gain (dB)	Cable Loss (dB)	Read Level (dB μ V)	Level (dB μ V/m)	Limit Line (dB μ V/m)	Over Limit (dB)	Antenna Polaxis
1728.561	31.28	37.64	3.03	45.99	42.66	74	-31.34	H
3291.385	33.34	37.04	5.56	45.34	47.20	74	-26.80	H
4924.000	34.94	36.81	5.07	45.57	48.77	74	-25.23	H
6363.645	36.09	37.01	7.06	44.91	51.05	74	-22.95	H
7386.000	36.44	37.42	6.83	42.45	48.30	74	-25.70	H
9848.000	38.14	37.87	7.53	42.81	50.61	74	-23.39	H
1439.090	30.75	38.06	2.77	48.97	44.43	74	-29.57	V
3709.691	33.01	36.95	5.49	45.48	47.03	74	-26.97	V
4924.000	34.94	36.81	5.07	43.99	47.19	74	-26.81	V
6283.164	36.05	36.94	7.14	44.05	50.30	74	-23.70	V
7386.000	36.44	37.42	6.83	45.95	51.80	74	-22.20	V
9848.000	38.14	37.87	7.53	42.15	49.95	74	-24.05	V

Test mode:		802.11g		Test Frequencyl:		2412MHz		
Frequency (MHz)	Antenna Factor (dB/m)	Preamp Gain (dB)	Cable Loss (dB)	Read Level (dB μ V)	Level (dB μ V/m)	Limit Line (dB μ V/m)	Over Limit (dB)	Antenna Polaxis
1818.842	31.43	37.52	3.10	44.99	42.00	74	-32.00	H
3192.366	33.43	37.06	5.58	46.28	48.23	74	-25.77	H
4824.000	34.73	36.82	5.10	43.17	46.18	74	-27.82	H
6347.466	36.08	36.99	7.08	45.03	51.20	74	-22.80	H
7236.000	36.42	37.45	6.69	43.11	48.77	74	-25.23	H
9648.000	37.93	37.83	7.70	43.13	50.93	74	-23.07	H
1439.090	30.75	38.06	2.77	47.23	42.69	74	-31.31	V
3333.545	33.31	37.03	5.55	45.39	47.22	74	-26.78	V
4824.000	34.73	36.82	5.10	42.81	45.82	74	-28.18	V
5971.290	35.88	36.70	7.37	43.80	50.35	74	-23.65	V
7236.000	36.42	37.45	6.69	44.79	50.45	74	-23.55	V
9648.000	37.93	37.83	7.70	42.17	49.97	74	-24.03	V

Test mode:		802.11g		Test Frequencyl:		2437MHz		
Frequency (MHz)	Antenna Factor (dB/m)	Preamp Gain (dB)	Cable Loss (dB)	Read Level (dB μ V)	Level (dB μ V/m)	Limit Line (dB μ V/m)	Over Limit (dB)	Antenna Polaxis
1439.090	30.75	38.06	2.77	49.70	45.16	74	-28.84	H
3757.208	32.97	36.94	5.48	45.47	46.98	74	-27.02	H
4874.000	34.84	36.81	5.09	42.45	45.57	74	-28.43	H
5895.771	35.82	36.71	7.20	44.79	51.10	74	-22.90	H
7311.000	36.43	37.43	6.76	44.28	50.04	74	-23.96	H
9748.000	38.03	37.85	7.61	43.81	51.60	74	-22.40	H
1439.090	30.75	38.06	2.77	50.29	45.75	74	-28.25	V
3249.760	33.38	37.04	5.57	45.77	47.68	74	-26.32	V
4874.000	34.84	36.81	5.09	42.34	45.46	74	-28.54	V
6428.771	36.12	37.06	7.00	44.54	50.60	74	-23.40	V
7311.000	36.43	37.43	6.76	45.72	51.48	74	-22.52	V
9748.000	38.03	37.85	7.61	41.28	49.07	74	-24.93	V

Test mode:		802.11g		Test Frequencyl:		2462MHz		
Frequency (MHz)	Antenna Factor (dB/m)	Preamp Gain (dB)	Cable Loss (dB)	Read Level (dB μ V)	Level (dB μ V/m)	Limit Line (dB μ V/m)	Over Limit (dB)	Antenna Polaxis
1651.146	31.15	37.74	2.96	45.43	41.80	74	-32.20	H
3757.208	32.97	36.94	5.48	45.63	47.14	74	-26.86	H
4924.000	34.94	36.81	5.07	42.91	46.11	74	-27.89	H
5865.832	35.80	36.71	7.13	44.83	51.05	74	-22.95	H
7386.000	36.44	37.42	6.83	44.48	50.33	74	-23.67	H
9848.000	38.14	37.87	7.53	42.12	49.92	74	-24.08	H
1439.090	30.75	38.06	2.77	49.50	44.96	74	-29.04	V
3795.660	32.95	36.94	5.47	45.56	47.04	74	-26.96	V
4924.000	34.94	36.81	5.07	42.53	45.73	74	-28.27	V
5880.782	35.81	36.71	7.17	43.97	50.24	74	-23.76	V
7386.000	36.44	37.42	6.83	44.67	50.52	74	-23.48	V
9848.000	38.14	37.87	7.53	42.98	50.78	74	-23.22	V

Test mode:		802.11n(HT20)		Test Frequencyl:		2412MHz		
Frequency (MHz)	Antenna Factor (dB/m)	Preamp Gain (dB)	Cable Loss (dB)	Read Level (dB μ V)	Level (dB μ V/m)	Limit Line (dB μ V/m)	Over Limit (dB)	Antenna Polaxis
1439.090	30.75	38.06	2.77	50.21	45.67	74	-28.33	H
3266.346	33.36	37.04	5.57	46.19	48.08	74	-25.92	H
4824.000	34.73	36.82	5.10	42.52	45.53	74	-28.47	H
5956.109	35.87	36.70	7.33	44.69	51.19	74	-22.81	H
7236.000	36.42	37.45	6.69	42.89	48.55	74	-25.45	H
9648.000	37.93	37.83	7.70	41.75	49.55	74	-24.45	H
1439.090	30.75	38.06	2.77	48.78	44.24	74	-29.76	V
3873.749	32.89	36.92	5.46	46.20	47.63	74	-26.37	V
4824.000	34.73	36.82	5.10	42.70	45.71	74	-28.29	V
6396.125	36.11	37.03	7.03	45.15	51.26	74	-22.74	V
7236.000	36.42	37.45	6.69	43.64	49.30	74	-24.70	V
9648.000	37.93	37.83	7.70	42.43	50.23	74	-23.77	V

Test mode:		802.11n(HT20)		Test Frequencyl:		2437MHz		
Frequency (MHz)	Antenna Factor (dB/m)	Preamp Gain (dB)	Cable Loss (dB)	Read Level (dB μ V)	Level (dB μ V/m)	Limit Line (dB μ V/m)	Over Limit (dB)	Antenna Polaxis
1442.758	30.76	38.05	2.77	46.57	42.05	74	-31.95	H
3738.129	32.99	36.95	5.48	45.57	47.09	74	-26.91	H
4874.000	34.84	36.81	5.09	42.65	45.77	74	-28.23	H
6315.233	36.07	36.97	7.11	45.76	51.97	74	-22.03	H
7311.000	36.43	37.43	6.76	43.21	48.97	74	-25.03	H
9748.000	38.03	37.85	7.61	43.05	50.84	74	-23.16	H
1439.090	30.75	38.06	2.77	50.62	46.08	74	-27.92	V
3359.099	33.29	37.02	5.55	46.51	48.33	74	-25.67	V
4874.000	34.84	36.81	5.09	44.65	47.77	74	-26.23	V
6363.645	36.09	37.01	7.06	44.99	51.13	74	-22.87	V
7311.000	36.43	37.43	6.76	44.17	49.93	74	-24.07	V
9748.000	38.03	37.85	7.61	41.80	49.59	74	-24.41	V

Test mode:		802.11n(HT20)		Test Frequencyl:		2462MHz		
Frequency (MHz)	Antenna Factor (dB/m)	Preamp Gain (dB)	Cable Loss (dB)	Read Level (dB μ V)	Level (dB μ V/m)	Limit Line (dB μ V/m)	Over Limit (dB)	Antenna Polaxis
1728.561	31.28	37.64	3.03	45.37	42.04	74	-31.96	H
3672.110	33.04	36.96	5.49	45.21	46.78	74	-27.22	H
4924.000	34.94	36.81	5.07	42.68	45.88	74	-28.12	H
5956.109	35.87	36.70	7.33	44.20	50.70	74	-23.30	H
7386.000	36.44	37.42	6.83	44.47	50.32	74	-23.68	H
9848.000	38.14	37.87	7.53	41.57	49.37	74	-24.63	H
1439.090	30.75	38.06	2.77	46.75	42.21	74	-31.79	V
3709.691	33.01	36.95	5.49	45.71	47.26	74	-26.74	V
4924.000	34.94	36.81	5.07	42.11	45.31	74	-28.69	V
6063.190	35.93	36.75	7.36	44.30	50.84	74	-23.16	V
7386.000	36.44	37.42	6.83	43.63	49.48	74	-24.52	V
9848.000	38.14	37.87	7.53	41.43	49.23	74	-24.77	V

Test mode:		802.11n(HT40)		Test Frequencyl:		2422MHz		
Frequency (MHz)	Antenna Factor (dB/m)	Preamp Gain (dB)	Cable Loss (dB)	Read Level (dB μ V)	Level (dB μ V/m)	Limit Line (dB μ V/m)	Over Limit (dB)	Antenna Polaxis
1439.090	30.75	38.06	2.77	48.81	44.27	74	-29.73	H
3625.669	33.07	36.97	5.50	45.51	47.11	74	-26.89	H
4844.000	34.77	36.81	5.10	42.86	45.92	74	-28.08	H
6412.427	36.12	37.05	7.02	45.05	51.14	74	-22.86	H
7266.000	36.43	37.44	6.72	44.04	49.75	74	-24.25	H
9688.000	37.97	37.84	7.66	42.10	49.89	74	-24.11	H
1439.090	30.75	38.06	2.77	52.40	47.86	74	-26.14	V
3359.099	33.29	37.02	5.55	45.14	46.96	74	-27.04	V
4844.000	34.77	36.81	5.10	41.85	44.91	74	-29.09	V
6494.564	36.16	37.11	6.94	44.81	50.80	74	-23.20	V
7266.000	36.43	37.44	6.72	43.24	48.95	74	-25.05	V
9688.000	37.97	37.84	7.66	42.27	50.06	74	-23.94	V

Test mode:		802.11n(HT40)		Test Frequencyl:		2437MHz		
Frequency (MHz)	Antenna Factor (dB/m)	Preamp Gain (dB)	Cable Loss (dB)	Read Level (dB μ V)	Level (dB μ V/m)	Limit Line (dB μ V/m)	Over Limit (dB)	Antenna Polaxis
1597.401	31.05	37.82	2.92	45.65	41.80	74	-32.20	H
3776.385	32.96	36.94	5.48	45.61	47.11	74	-26.89	H
4874.000	34.84	36.81	5.09	43.14	46.26	74	-27.74	H
5910.798	35.83	36.71	7.23	44.42	50.77	74	-23.23	H
7311.000	36.43	37.43	6.76	44.09	49.85	74	-24.15	H
9748.000	38.03	37.85	7.61	44.33	52.12	74	-21.88	H
1435.431	30.74	38.07	2.77	46.73	42.17	74	-31.83	V
3359.099	33.29	37.02	5.55	46.76	48.58	74	-25.42	V
3766.785	32.97	36.94	5.48	45.93	47.44	74	-26.56	V
4874.000	34.84	36.81	5.09	42.57	45.69	74	-28.31	V
6347.466	36.08	36.99	7.08	44.84	51.01	74	-22.99	V
7311.000	36.43	37.43	6.76	43.42	49.18	74	-24.82	V

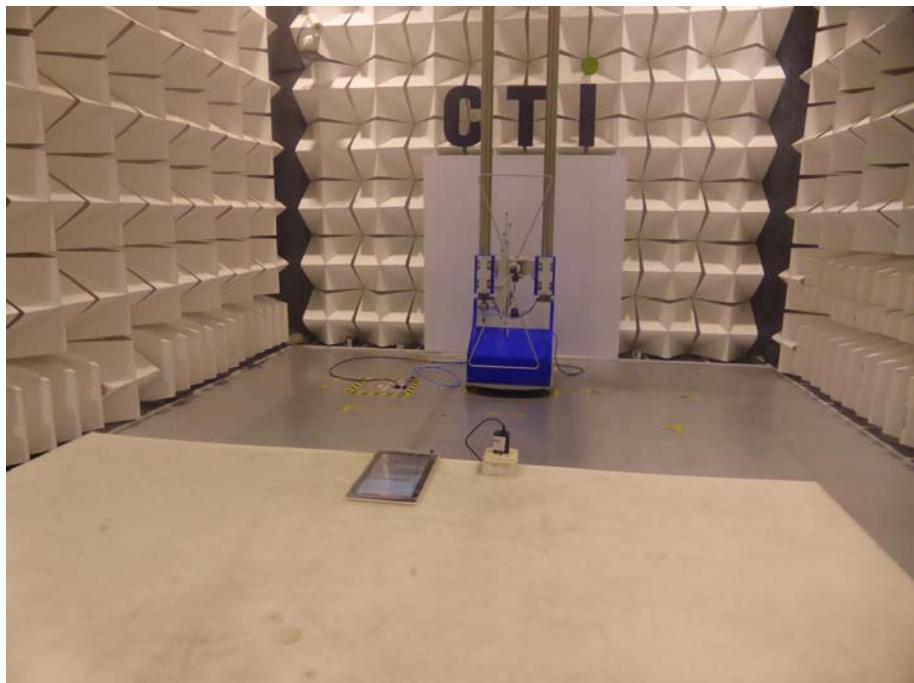
Test mode:		802.11n(HT40)		Test Frequencyl:		2452MHz		
Frequency (MHz)	Antenna Factor (dB/m)	Preamp Gain (dB)	Cable Loss (dB)	Read Level (dB μ V)	Level (dB μ V/m)	Limit Line (dB μ V/m)	Over Limit (dB)	Antenna Polaxis
1439.090	30.75	38.06	2.77	48.93	44.39	74	-29.61	H
3283.018	33.35	37.04	5.56	46.68	48.55	74	-25.45	H
4278.055	33.49	36.87	5.32	45.76	47.70	74	-26.30	H
4904.000	34.90	36.81	5.07	42.62	45.78	74	-28.22	H
7356.000	36.44	37.43	6.80	43.32	49.13	74	-24.87	H
9808.000	38.10	37.86	7.56	42.96	50.76	74	-23.24	H
1439.090	30.75	38.06	2.77	50.93	46.39	74	-27.61	V
3359.099	33.29	37.02	5.55	48.78	50.60	74	-23.40	V
4904.000	34.90	36.81	5.07	43.16	46.32	74	-27.68	V
6283.164	36.05	36.94	7.14	45.04	51.29	74	-22.71	V
7356.000	36.44	37.43	6.80	43.80	49.61	74	-24.39	V
9808.000	38.10	37.86	7.56	48.87	56.67	74	-17.33	V
9808.000	38.10	37.86	7.56	40.34	48.14	54	-5.86	V-AV

Note:

- 1) Through transmitter mode with all kind of modulation and data rate, find the 11Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20); 13.5Mbps of rate is the worst case of 802.11n(HT40), and then Only the worst case is recorded in the report.
- 2) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

PHOTOGRAPHS OF TEST SETUP

Test mode No.: K100



Radiated spurious emission Test Setup-1(Below 1GHz)



Radiated spurious emission Test Setup-2(Above 1GHz)



Conducted emission Test Setup

PHOTOGRAPHS OF EUT Constructional Details

Test mode No.: K100



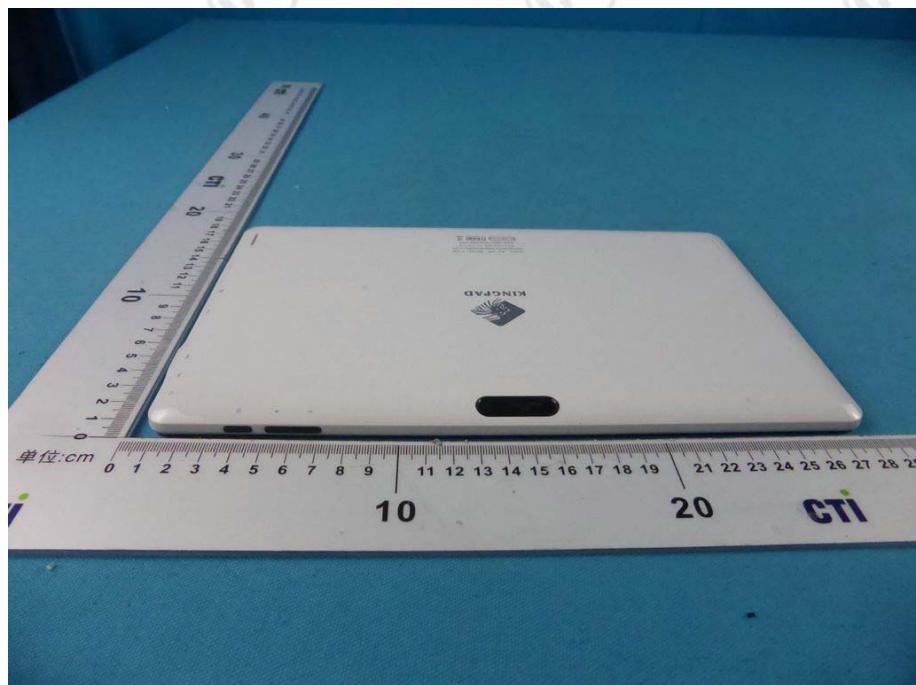
View of product-1



View of product-2



View of product-3



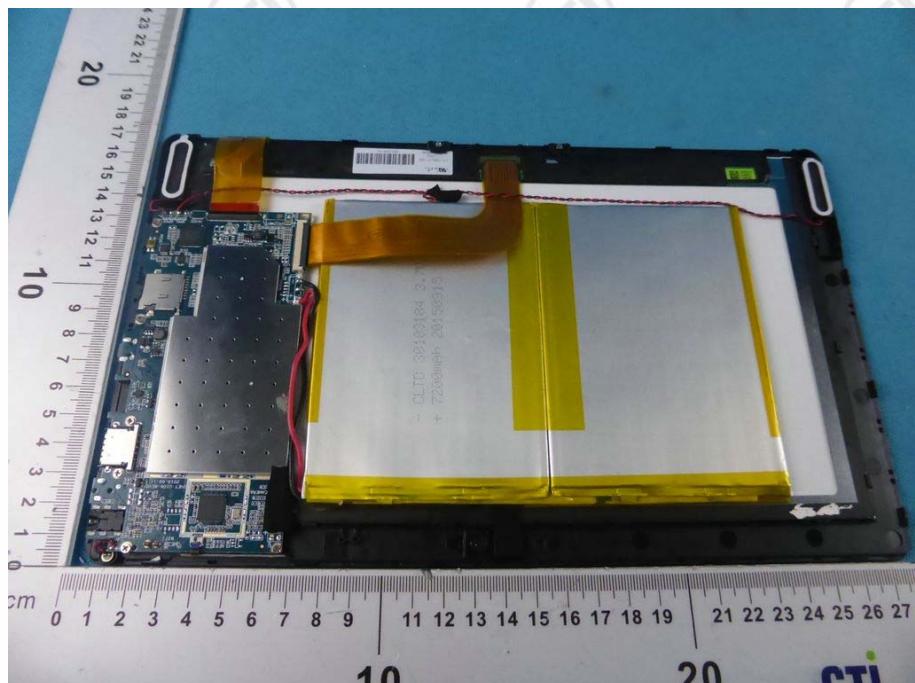
View of product-4



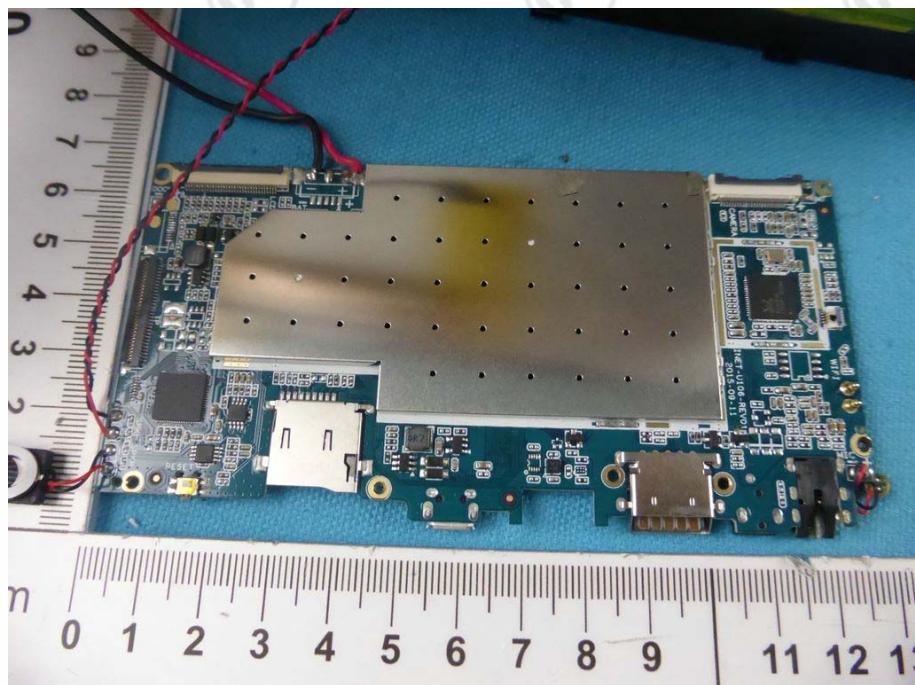
View of product-5



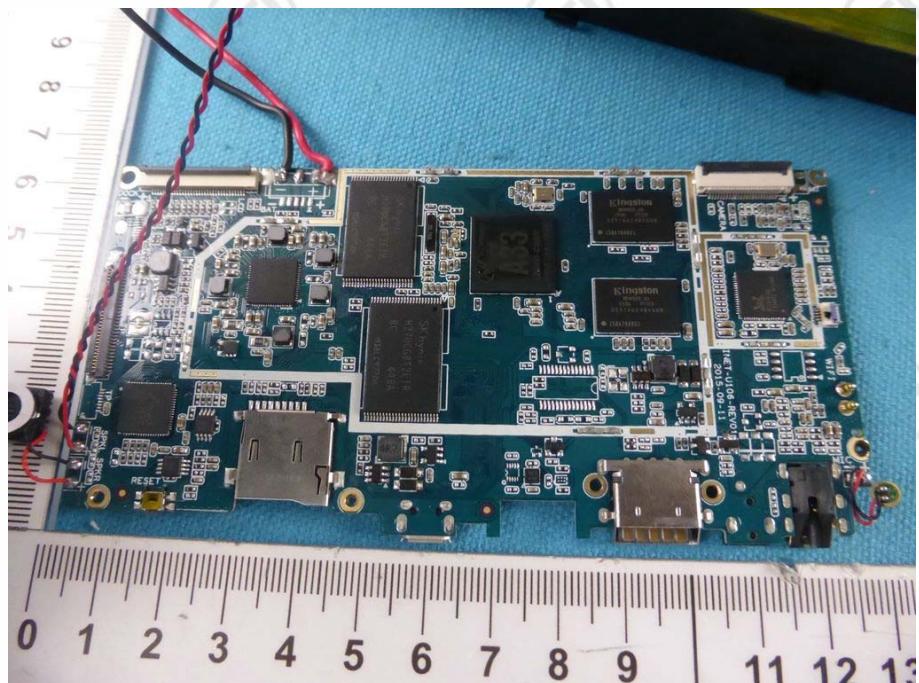
View of product-6



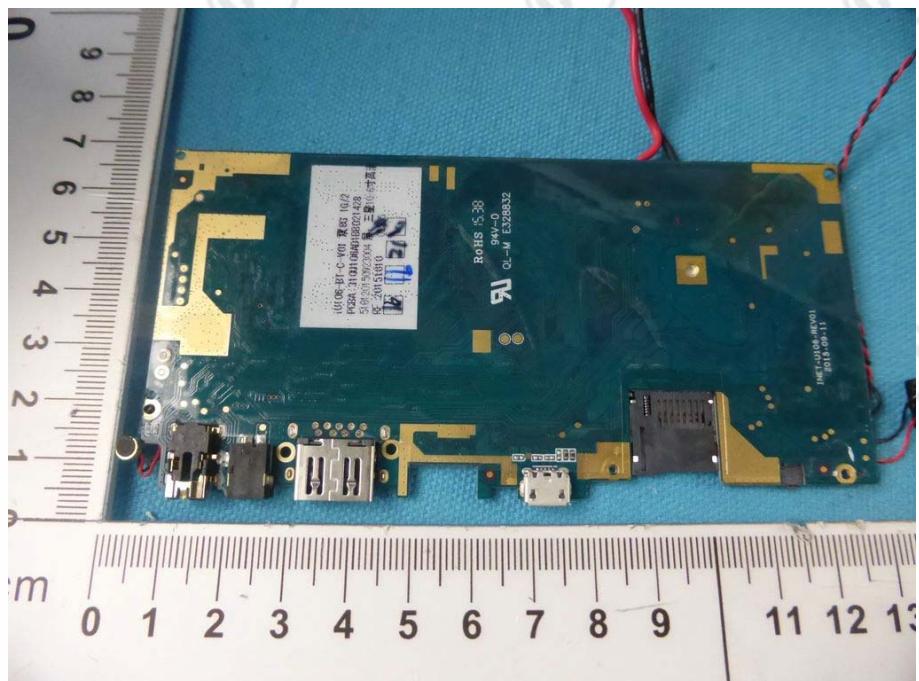
View of product-7



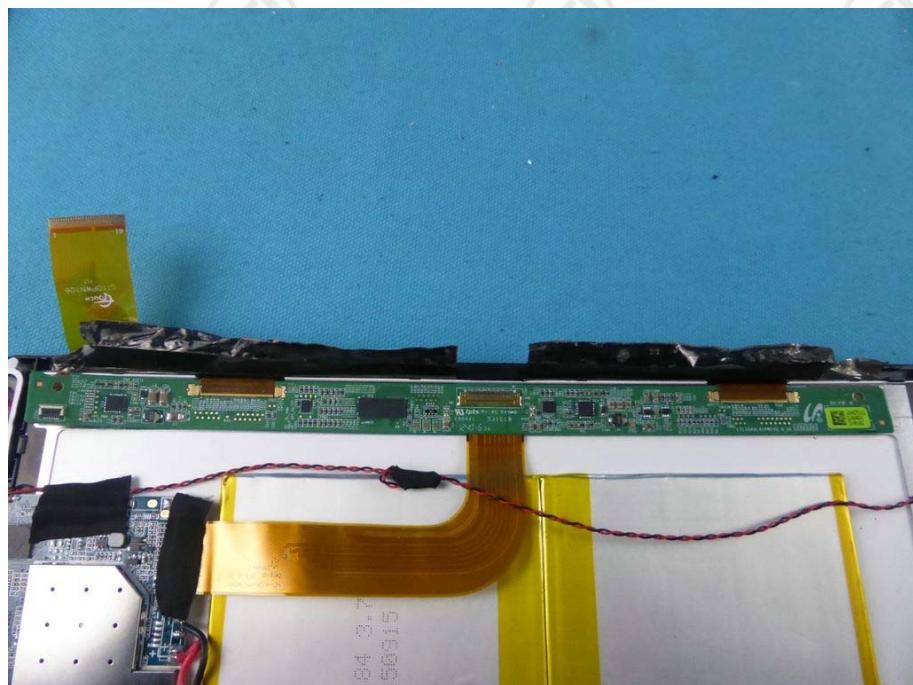
View of product-8



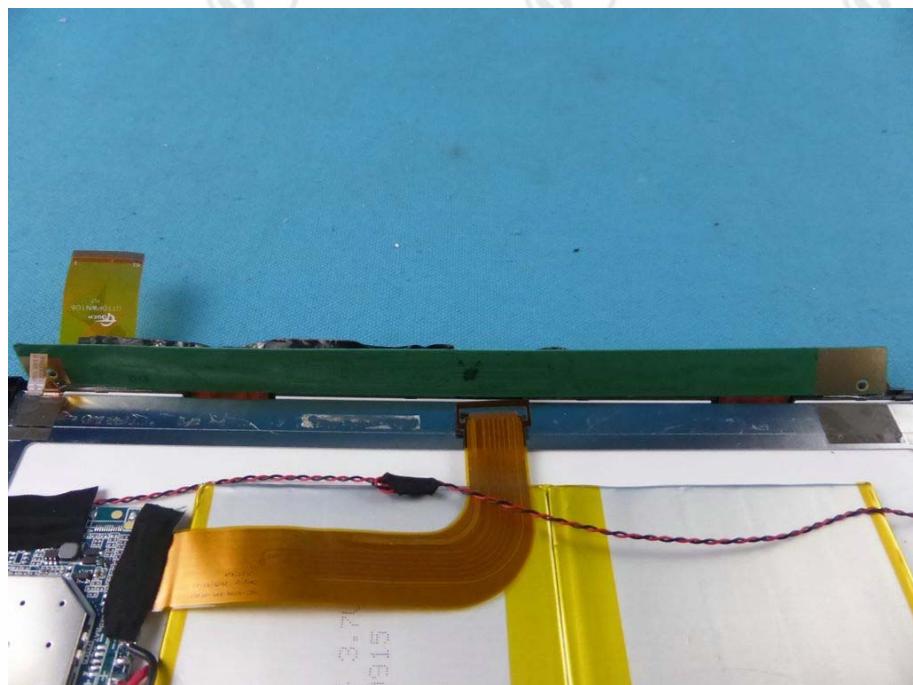
View of product-9



View of product-10



View of product-11



View of product-12



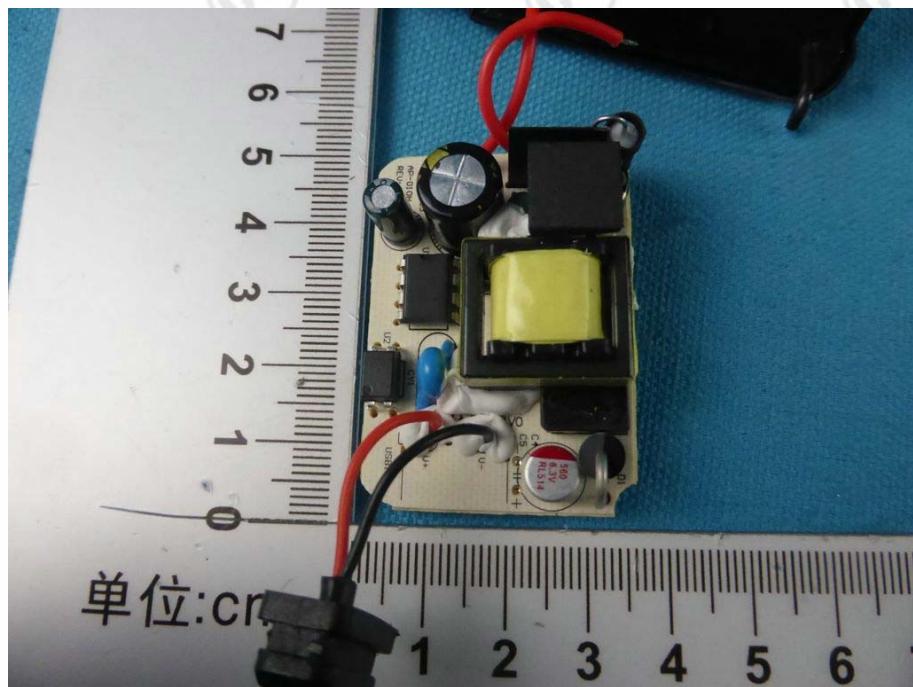
View of product-13



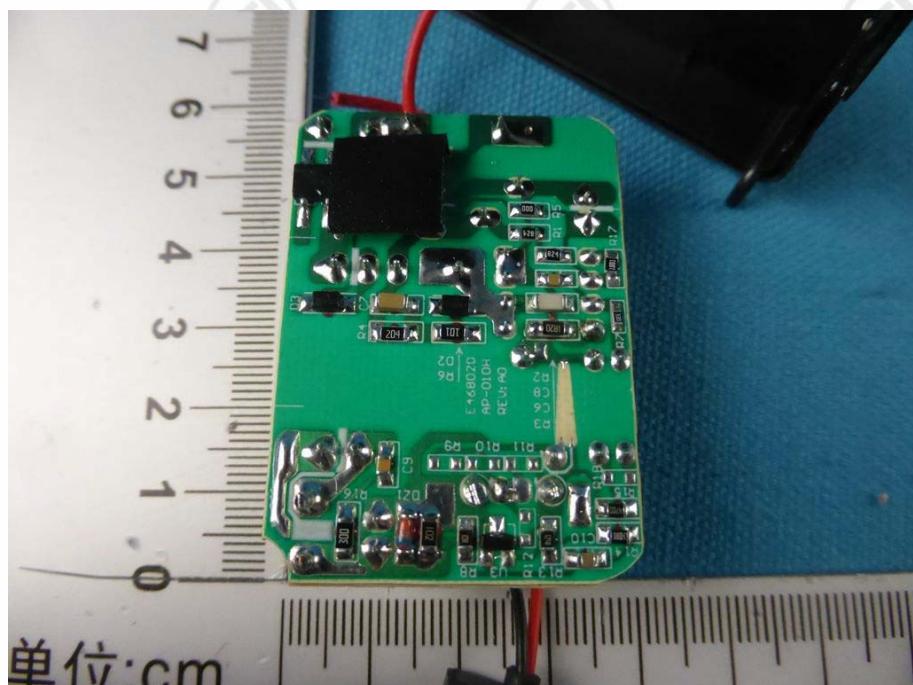
View of product-14



View of product-15



View of product-16



View of product-17

*** End of Report ***

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