

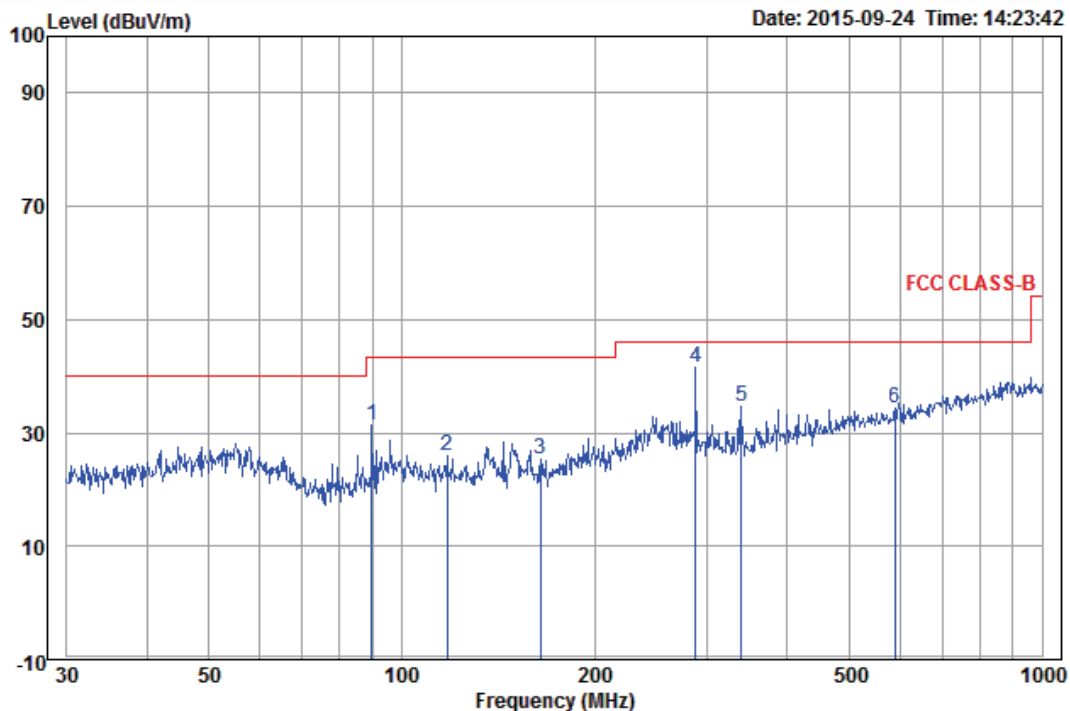
Appendix I) Radiated Spurious Emissions

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	100 kHz	300kHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average
Test Procedure:					
Below 1GHz test procedure as below:					
<p>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.</p> <p>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.</p> <p>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.</p> <p>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 was turned from 0 degrees to 360 degrees to find the maximum reading.</p> <p>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>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.</p>					
Above 1GHz test procedure as below:					
<p>g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter)..</p> <p>h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel</p> <p>i. Repeat above procedures until all frequencies measured was complete.</p>					
Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBμV/m)	Remark	Measurement distance (m)
	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**

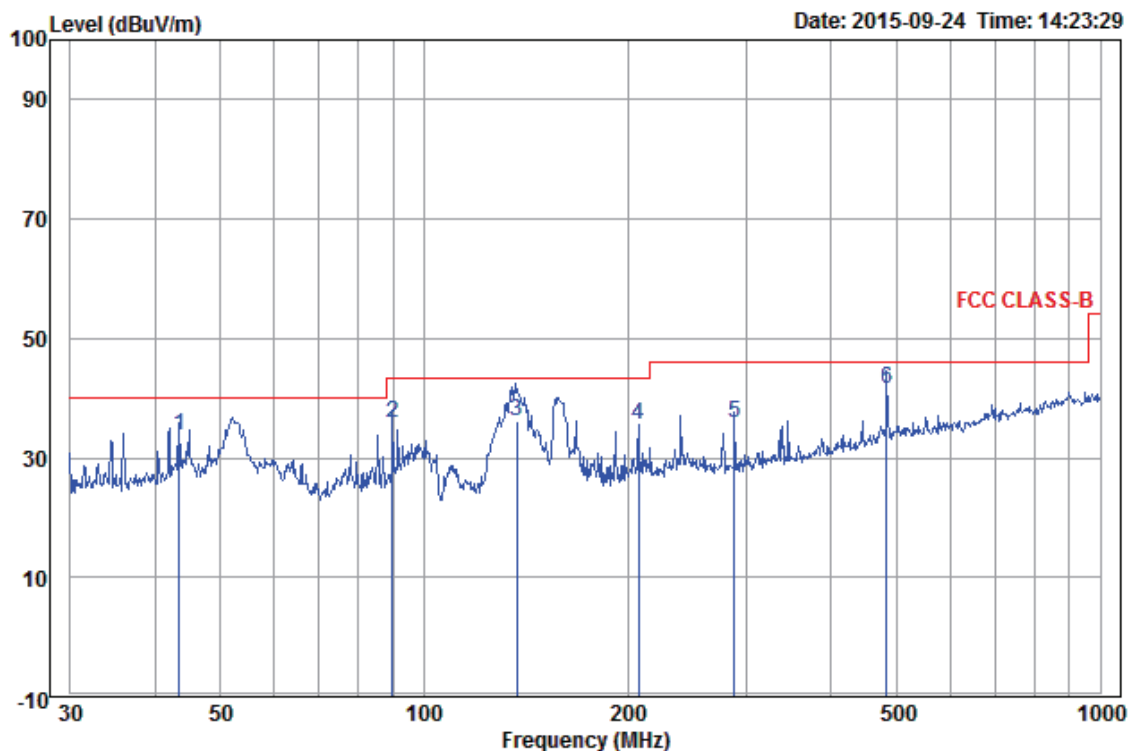
30MHz~1GHz (QP)

Test mode:	Transmitting	Horizontal
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	Ant Freq	Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	89.90	11.18	1.59	18.48	31.25	43.50	-12.25
2	117.77	11.79	1.57	12.56	25.92	43.50	-17.58
3	164.91	10.33	1.79	13.13	25.25	43.50	-18.25
4 pp	287.99	13.25	2.37	26.04	41.66	46.00	-4.34
5	339.59	14.55	2.65	17.44	34.64	46.00	-11.36
6	588.91	18.76	3.45	12.24	34.45	46.00	-11.55

Test mode:	Transmitting	Vertical
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	Ant Freq	Cable Factor	Read Loss	Level	Limit	Over
	MHz	dB/m	dB	dBuV	dBuV/m	dB
1	43.51	14.54	0.86	18.45	33.85	40.00 -6.15
2	89.90	11.18	1.59	23.14	35.91	43.50 -7.59
3	136.99	10.48	1.58	24.10	36.16	43.50 -7.34
4	207.85	11.74	2.23	21.46	35.43	43.50 -8.07
5	287.99	13.25	2.37	20.16	35.78	46.00 -10.22
6 pp	483.91	18.00	3.09	20.38	41.47	46.00 -4.53

Transmitter Emission above 1GHz

Test mode:		802.11b		Test Frequency:		2412MHz		
Frequency (MHz)	Read Level (dBμV)	PK Level (dBμV/m)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Limit (dBμV/m)	Over Limit (dB)	Antenna Polaxis
1038.921	49.60	42.91	29.81	2.31	38.81	74	-31.09	H
1147.354	47.92	41.89	30.10	2.45	38.58	74	-32.11	H
1659.574	55.60	52.00	31.16	2.97	37.73	74	-22.00	H
2995.538	47.92	50.02	33.59	5.61	37.10	74	-23.98	H
4824.000	47.61	50.62	34.73	5.10	36.82	74	-23.38	H
7236.000	43.49	49.15	36.42	6.69	37.45	74	-24.85	H
1038.921	49.60	42.91	29.81	2.31	38.81	74	-31.09	V
1147.354	47.92	41.89	30.10	2.45	38.58	74	-32.11	V
1659.574	55.60	52.00	31.16	2.97	37.73	74	-22.00	V
2995.538	47.92	50.02	33.59	5.61	37.10	74	-23.98	V
4824.000	47.61	50.62	34.73	5.10	36.82	74	-23.38	V
7236.000	43.49	49.15	36.42	6.69	37.45	74	-24.85	V

Test mode:		802.11b		Test Frequency:		2437MHz		
Frequency (MHz)	Read Level (dBμV)	PK Level (dBμV/m)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Limit (dBμV/m)	Over Limit (dB)	Antenna Polaxis
1038.921	49.82	43.13	29.81	2.31	38.81	74	-30.87	H
1479.955	45.75	41.39	30.83	2.81	38.00	74	-32.61	H
1870.49	46.38	43.58	31.51	3.14	37.45	74	-30.42	H
2995.538	48.30	50.40	33.59	5.61	37.1	74	-23.60	H
4874.000	46.42	49.54	34.84	5.09	36.81	74	-24.46	H
7311.000	43.44	49.20	36.43	6.76	37.43	74	-24.80	H
1057.599	50.58	44.01	29.86	2.34	38.77	74	-29.99	V
1201.149	49.41	43.68	30.23	2.52	38.48	74	-30.32	V

3003.173	49.91	52.03	33.60	5.62	37.10	74	-21.97	V
4874.000	48.48	51.60	34.84	5.09	36.81	74	-22.40	V
7311.000	45.11	50.87	36.43	6.76	37.43	74	-23.13	V

Test mode:		802.11b		Test Frequency:		2462MHz		
Frequency (MHz)	Read Level (dBμV)	PK Level (dBμV/m)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Limit (dBμV/m)	Over Limit (dB)	Antenna Polaxis
1038.921	49.60	42.91	29.81	2.31	38.81	74	-31.09	H
1364.182	47.02	42.13	30.60	2.69	38.18	74	-31.87	H
1655.354	47.25	43.63	31.15	2.97	37.74	74	-30.37	H
2995.538	48.02	50.12	33.59	5.61	37.10	74	-23.88	H
4924.000	46.14	49.34	34.94	5.07	36.81	74	-24.66	H
7386.000	43.33	49.18	36.44	6.83	37.42	74	-24.82	H
1038.921	48.75	42.06	29.81	2.31	38.81	74	-31.94	V
1201.149	48.13	42.40	30.23	2.52	38.48	74	-31.60	V
1668.044	49.00	45.44	31.18	2.98	37.72	74	-28.56	V

4924.000	48.30	51.50	34.94	5.07	36.81	74	-22.50	V
7386.000	42.92	48.77	36.44	6.83	37.42	74	-25.23	V

Test mode:		802.11g		Test Frequency:		2412MHz		
Frequency (MHz)	Read Level (dBμV)	PK Level (dBμV/m)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Limit (dBμV/m)	Over Limit (dB)	Antenna Polaxis
1038.921	50.41	43.72	29.81	2.31	38.81	74	-30.28	H
1668.044	54.75	51.19	31.18	2.98	37.72	74	-22.81	H
2995.538	49.22	51.32	33.59	5.61	37.10	74	-22.68	H
3216.838	48.83	50.77	33.41	5.58	37.05	74	-23.23	H
4824.000	46.56	49.57	34.73	5.10	36.82	74	-24.43	H
7236.000	43.44	49.10	36.42	6.69	37.45	74	-24.90	H
1782.177	46.05	42.92	31.37	3.07	37.57	74	-31.08	V
2269.730	45.63	44.66	32.29	3.98	37.24	74	-29.34	V
2995.538	50.14	52.24	33.59	5.61	37.10	74	-21.76	V
3795.660	45.44	46.92	32.95	5.47	36.94	74	-27.08	V
4824.000	48.11	51.12	34.73	5.10	36.82	74	-22.88	V
7236.000	43.60	49.26	36.42	6.69	37.45	74	-24.74	V

Test mode:		802.11g		Test Frequency:		2437MHz		
Frequency (MHz)	Read Level (dBμV)	PK Level (dBμV/m)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Limit (dBμV/m)	Over Limit (dB)	Antenna Polaxis
1319.777	49.48	44.37	30.50	2.65	38.26	74	-29.63	H
1663.803	55.82	52.24	31.17	2.97	37.72	74	-21.76	H
2995.538	48.31	50.41	33.59	5.61	37.10	74	-23.59	H
3249.760	49.82	51.73	33.38	5.57	37.04	74	-22.27	H
4874.000	46.31	49.43	34.84	5.09	36.81	74	-24.57	H
7311.000	44.23	49.99	36.43	6.76	37.43	74	-24.01	H
1472.440	47.29	42.90	30.82	2.80	38.01	74	-31.10	V
1759.638	49.68	46.46	31.33	3.05	37.60	74	-27.54	V
2060.463	46.11	44.07	31.84	3.41	37.29	74	-29.93	V
2995.538	50.10	52.20	33.59	5.61	37.10	74	-21.80	V
3249.760	47.91	49.82	33.38	5.57	37.04	74	-24.18	V
4874.000	47.44	50.56	34.84	5.09	36.81	74	-23.44	V

Test mode:		802.11g		Test Frequency:		2462MHz		
Frequency (MHz)	Read Level (dBμV)	PK Level (dBμV/m)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Limit (dBμV/m)	Over Limit (dB)	Antenna Polaxis
1038.921	50.68	43.99	29.81	2.31	38.81	74	-30.01	H
1319.777	47.69	42.58	30.50	2.65	38.26	74	-31.42	H
1659.574	49.54	45.94	31.16	2.97	37.73	74	-28.06	H
3283.018	51.18	53.05	33.35	5.56	37.04	74	-20.95	H
4924.000	46.84	50.04	34.94	5.07	36.81	74	-23.96	H
7386.000	43.02	48.87	36.44	6.83	37.42	74	-25.13	H
2151.585	45.69	44.13	32.04	3.66	37.26	74	-29.87	V

3283.018	47.64	49.51	33.35	5.56	37.04	74	-24.49	V
3766.785	45.49	47.00	32.97	5.48	36.94	74	-27.00	V
4924.000	47.25	50.45	34.94	5.07	36.81	74	-23.55	V
7386.000	44.30	50.15	36.44	6.83	37.42	74	-23.85	V

Test mode:		802.11n(HT20)		Test Frequency:		2412MHz		
Frequency (MHz)	Read Level (dBμV)	PK Level (dBμV/m)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Limit (dBμV/m)	Over Limit (dB)	Antenna Polaxis
1663.803	47.10	43.52	31.17	2.97	37.72	74	-30.48	H
2235.328	45.53	44.39	32.22	3.89	37.25	74	-29.61	H
3003.173	47.69	49.81	33.60	5.62	37.10	74	-24.19	H
3216.838	50.30	52.24	33.41	5.58	37.05	74	-21.76	H
4824.000	47.82	50.83	34.73	5.10	36.82	74	-23.17	H
7236.000	43.61	49.27	36.42	6.69	37.45	74	-24.73	H
1502.732	49.10	44.85	30.88	2.83	37.96	74	-29.15	V
1655.354	50.96	47.34	31.15	2.97	37.74	74	-26.66	V
2281.315	46.43	45.52	32.32	4.01	37.24	74	-28.48	V
2995.538	49.42	51.52	33.59	5.61	37.10	74	-22.48	V
4824.000	50.07	53.08	34.73	5.10	36.82	74	-20.92	V
7236.000	44.82	50.48	36.42	6.69	37.45	74	-23.52	V

Test mode:		802.11n(HT20)		Test Frequency:		2437MHz		
Frequency (MHz)	Read Level (dBμV)	PK Level (dBμV/m)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Limit (dBμV/m)	Over Limit (dB)	Antenna Polaxis
1663.803	50.40	46.82	31.17	2.97	37.72	74	-27.18	H
2235.328	45.66	44.52	32.22	3.89	37.25	74	-29.48	H
2995.538	48.52	50.62	33.59	5.61	37.10	74	-23.38	H
3249.760	48.70	50.61	33.38	5.57	37.04	74	-23.39	H
4874.000	46.84	49.96	34.84	5.09	36.81	74	-24.04	H
7311.000	45.31	51.07	36.43	6.76	37.43	74	-22.93	H
2190.267	47.21	45.85	32.13	3.77	37.26	74	-28.15	V
2995.538	49.84	51.94	33.59	5.61	37.10	74	-22.06	V
3249.760	47.86	49.77	33.38	5.57	37.04	74	-24.23	V
3709.691	45.94	47.49	33.01	5.49	36.95	74	-26.51	V
4874.000	48.17	51.29	34.84	5.09	36.81	74	-22.71	V
7311.000	43.02	48.78	36.43	6.76	37.43	74	-25.22	V

Test mode:		802.11n(HT20)		Test Frequency:		2462MHz		
Frequency (MHz)	Read Level (dBμV)	PK Level (dBμV/m)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Limit (dBμV/m)	Over Limit (dB)	Antenna Polaxis
2190.267	47.21	45.85	32.13	3.77	37.26	74	-28.15	H
2995.538	49.84	51.94	33.59	5.61	37.10	74	-22.06	H
3249.760	47.86	49.77	33.38	5.57	37.04	74	-24.23	H
3709.691	45.94	47.49	33.01	5.49	36.95	74	-26.51	H
4874.000	48.17	51.29	34.84	5.09	36.81	74	-22.71	H
7311.000	43.02	48.78	36.43	6.76	37.43	74	-25.22	H
2190.267	47.21	45.85	32.13	3.77	37.26	74	-28.15	V
2995.538	49.84	51.94	33.59	5.61	37.10	74	-22.06	V
3249.760	47.86	49.77	33.38	5.57	37.04	74	-24.23	V
3709.691	45.94	47.49	33.01	5.49	36.95	74	-26.51	V
4874.000	48.17	51.29	34.84	5.09	36.81	74	-22.71	V
7311.000	43.02	48.78	36.43	6.76	37.43	74	-25.22	V

Test mode:		802.11n(HT40)		Test Frequency:		2422MHz		
Frequency (MHz)	Read Level (dBμV)	PK Level (dBμV/m)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Limit (dBμV/m)	Over Limit (dB)	Antenna Polaxis
1201.149	49.11	43.38	30.23	2.52	38.48	74	-30.62	H
1319.777	50.13	45.02	30.50	2.65	38.26	74	-28.98	H
1953.211	51.07	48.55	31.63	3.20	37.35	74	-25.45	H
2995.538	50.14	52.24	33.59	5.61	37.10	74	-21.76	H
4844.000	50.65	53.71	34.77	5.10	36.81	74	-20.29	H
7266.000	44.04	49.75	36.43	6.72	37.44	74	-24.25	H
1201.149	49.11	43.38	30.23	2.52	38.48	74	-30.62	V
1319.777	50.13	45.02	30.50	2.65	38.26	74	-28.98	V
1953.211	51.07	48.55	31.63	3.20	37.35	74	-25.45	V
2995.538	50.14	52.24	33.59	5.61	37.10	74	-21.76	V
4844.000	50.65	53.71	34.77	5.10	36.81	74	-20.29	V
7266.000	44.04	49.75	36.43	6.72	37.44	74	-24.25	V

Test mode:		802.11n(HT40)		Test Frequency:		2437MHz		
Frequency (MHz)	Read Level (dBμV)	PK Level (dBμV/m)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Limit (dBμV/m)	Over Limit (dB)	Antenna Polaxis
1079.357	49.15	42.72	29.92	2.37	38.72	74	-31.28	H
1319.777	48.74	43.63	30.50	2.65	38.26	74	-30.37	H
1663.803	45.02	41.44	31.17	2.97	37.72	74	-32.56	H
2995.538	50.02	52.12	33.59	5.61	37.10	74	-21.88	H
4874.000	44.76	47.88	34.84	5.09	36.81	74	-26.12	H
7311.000	43.71	49.47	36.43	6.76	37.43	74	-24.53	H
1201.149	49.88	44.15	30.23	2.52	38.48	74	-29.85	V
1319.777	49.77	44.66	30.50	2.65	38.26	74	-29.34	V
1655.354	55.92	52.30	31.15	2.97	37.74	74	-21.70	V
2995.538	50.10	52.20	33.59	5.61	37.10	74	-21.80	V
4874.000	44.95	48.07	34.84	5.09	36.81	74	-25.93	V
7311.000	44.10	49.86	36.43	6.76	37.43	74	-24.14	V

Test mode:		802.11n(HT40)		Test Frequency:		2452MHz		
Frequency (MHz)	Read Level (dBμV)	PK Level (dBμV/m)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Limit (dBμV/m)	Over Limit (dB)	Antenna Polaxis
1417.277	46.13	41.49	30.71	2.75	38.10	74	-32.51	H
3266.346	50.12	52.01	33.36	5.57	37.04	74	-21.99	H
4904.000	42.47	45.63	34.90	5.07	36.81	74	-28.37	H
6315.233	44.90	51.11	36.07	7.11	36.97	74	-22.89	H
7356.000	45.97	51.78	36.44	6.80	37.43	74	-22.22	H
9157.857	46.19	53.95	37.38	8.11	37.73	74	-20.05	H
1472.440	47.16	42.77	30.82	2.80	38.01	74	-31.23	V
2995.538	49.84	51.94	33.59	5.61	37.10	74	-22.06	V
4904.000	42.30	45.46	34.90	5.07	36.81	74	-28.54	V
5776.922	45.04	50.98	35.73	6.93	36.72	74	-23.02	V
7356.000	43.25	49.06	36.44	6.80	37.43	74	-24.94	V
7981.717	45.23	51.77	36.50	7.34	37.30	74	-22.23	V

Note:

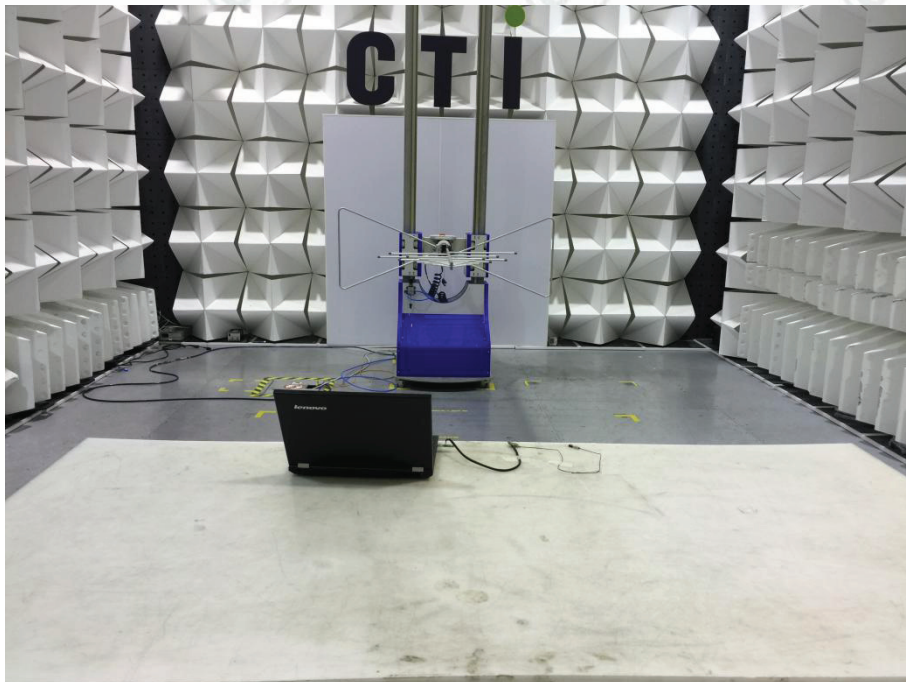
1) Through Pre-scan transmitting mode and charge+transmitter mode with all kind of modulation and data rate, find the 11Mbps of rate is the worst case of 802.11b; 6 Mbps of rate is the worst case of 802.11g; 6.5 Mbps of rate is the worst case of 802.11n(HT20); 13.5Mbps of rate is the worst case of 802.11n(HT40), 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

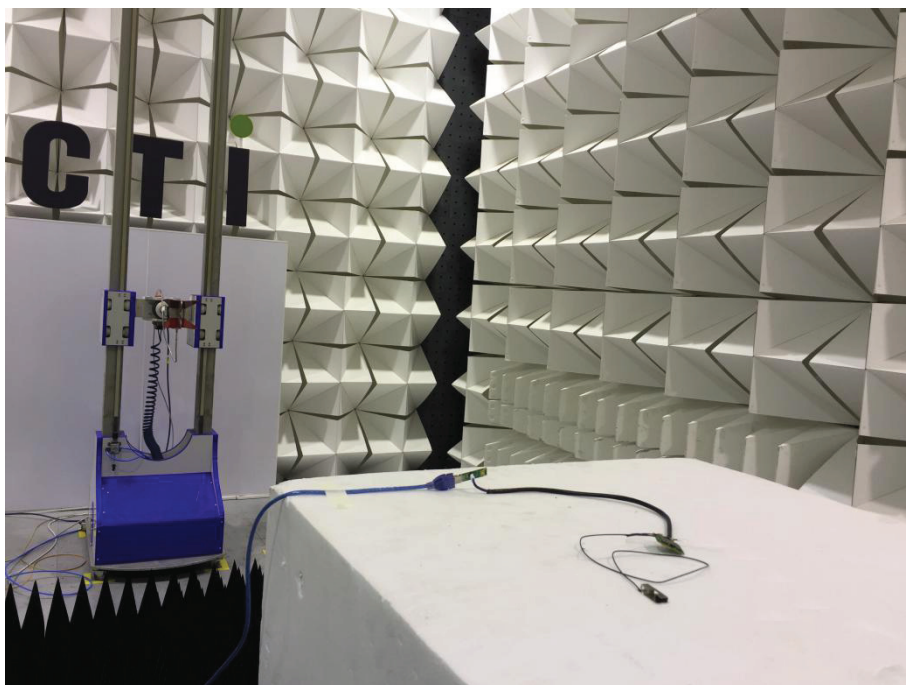
Correct Factor = Preamplifier Factor- Antenna Factor-Cable Factor

PHOTOGRAPHS OF TEST SETUP

Test mode No.: W7HM1200



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



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



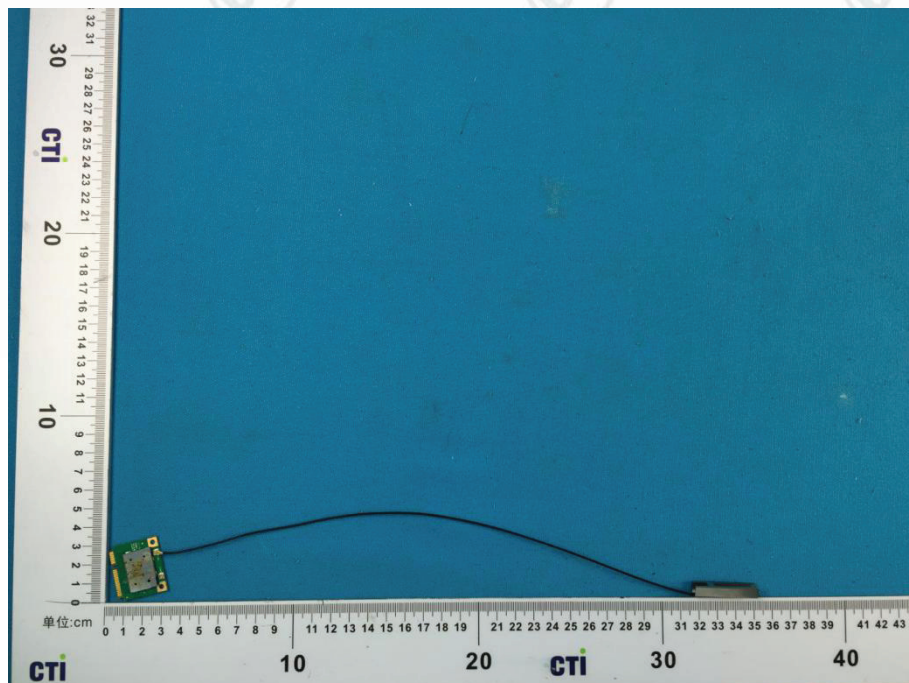
Conducted emission Test Setup-1



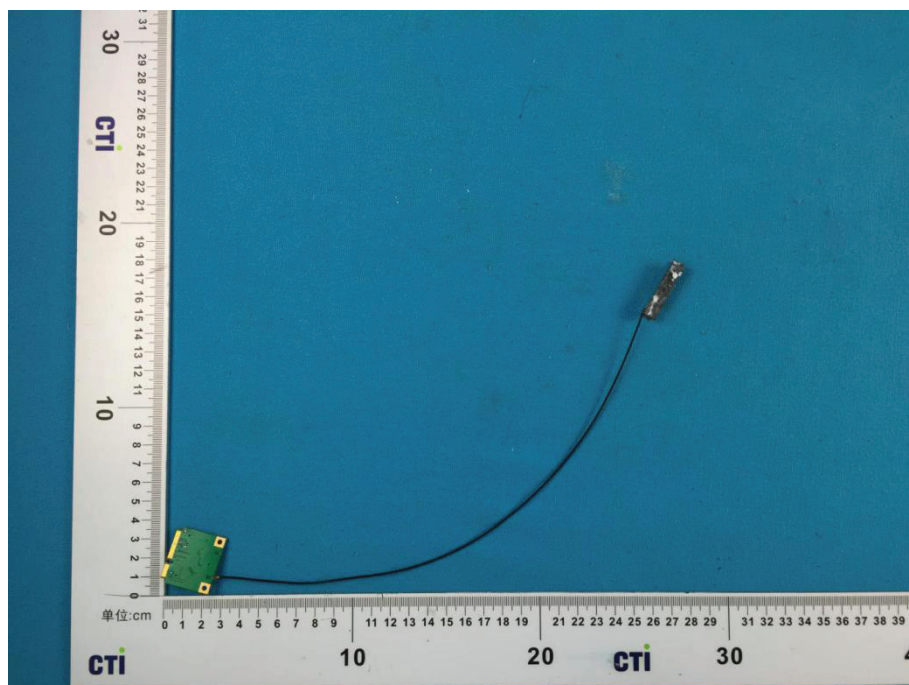
Conducted emission Test Setup-2

PHOTOGRAPHS OF EUT Constructional Details

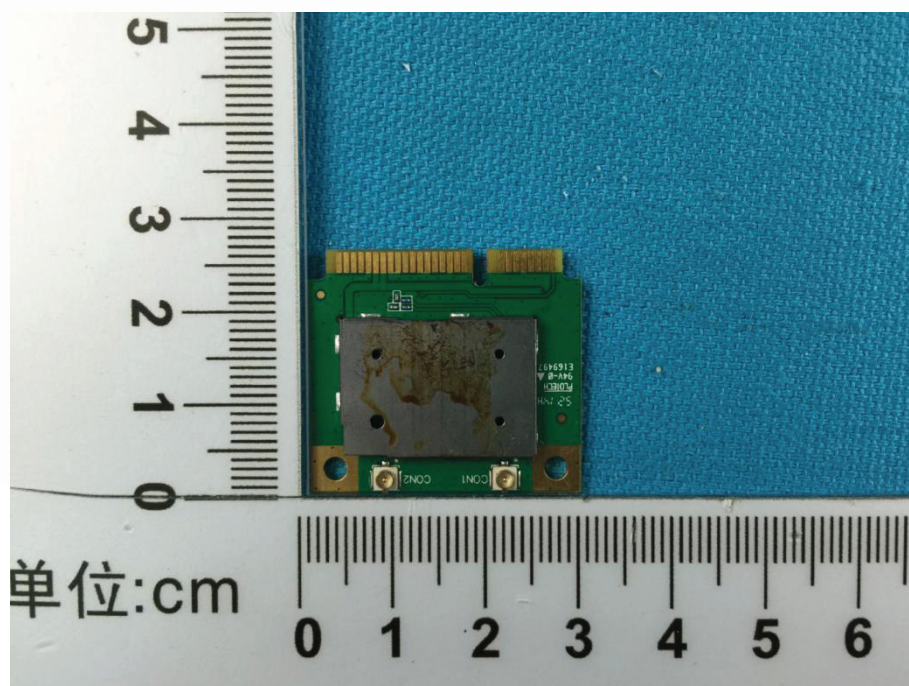
Test mode No.: W7HM1200



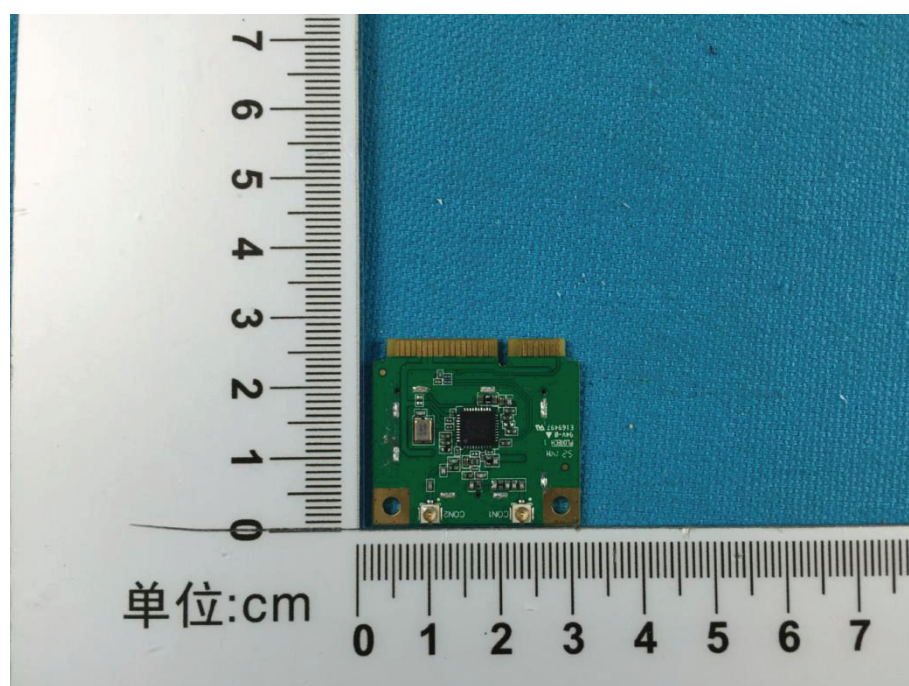
View of product-1



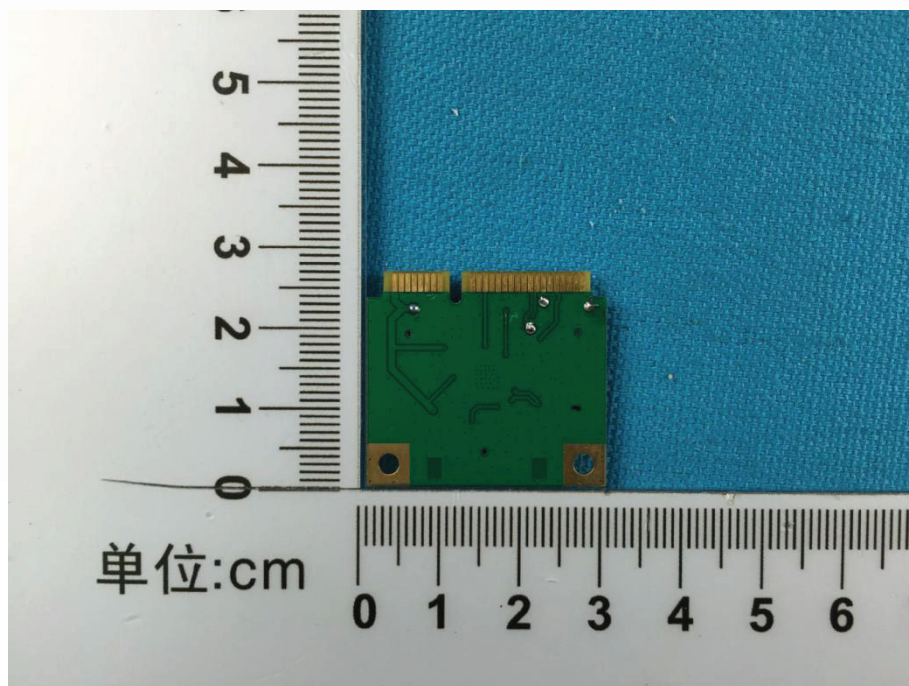
View of product-2



View of product-3



View of product-4



View of product-5

*** End of Report ***

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