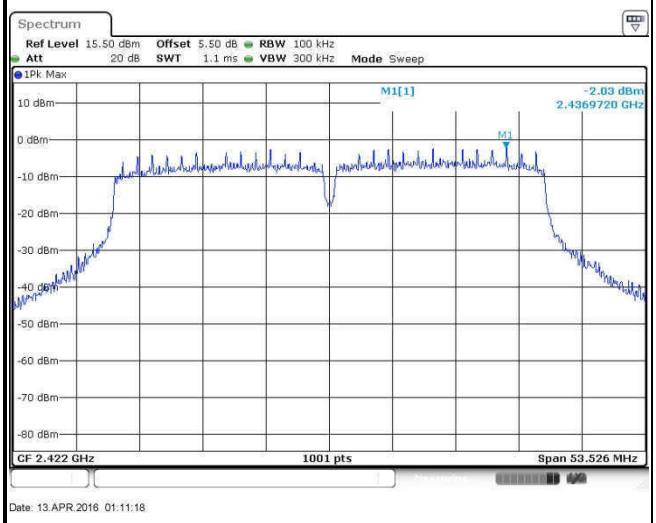
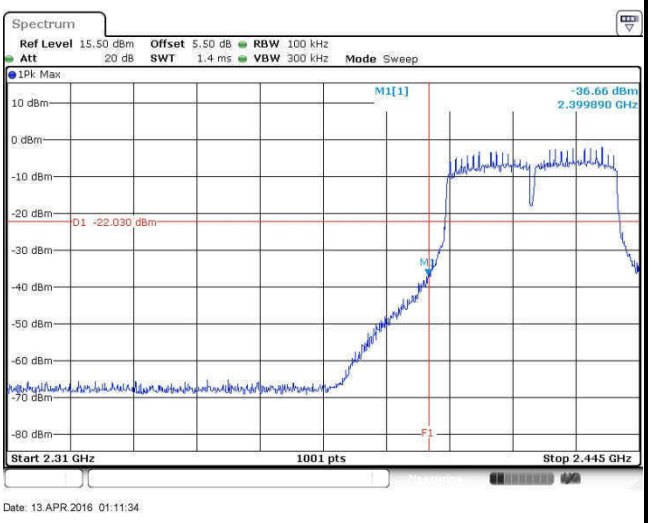
Number of TX :	2	**Ant. :**	1+2(2)
Test Mode :	802.11n HT40	**Temperature :**	24~25℃
Test Band :	2.4GHz Low	**Relative Humidity :**	49~51%
Test Channel :	03	**Test Engineer :**	Issac Song

WLAN 802.11n HT40 Channel 03

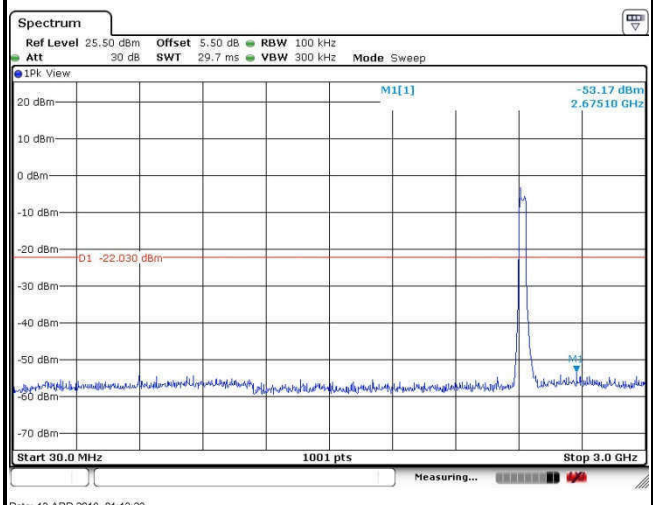
100kHz PSD reference Level



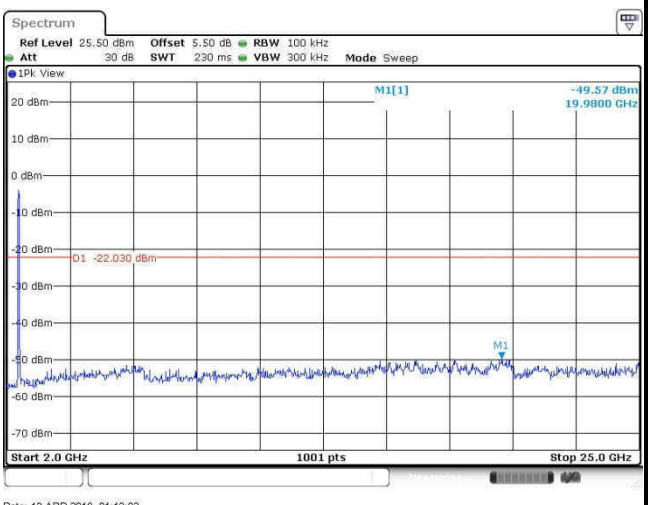
Low Channel Plot



Spurious Emission 30MHz~3GHz



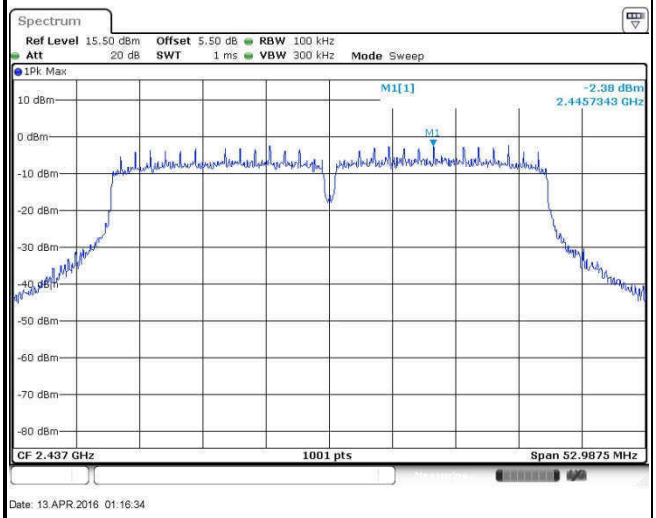
Spurious Emission 2GHz~25GHz



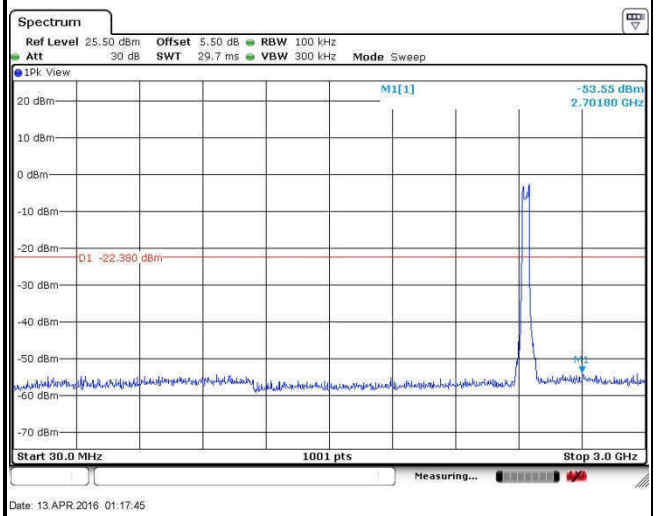
Number of TX :	2	**Ant. :**	1+2(2)
Test Mode :	802.11n HT40	**Temperature :**	24~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	49~51%
Test Channel :	06	**Test Engineer :**	Issac Song

WLAN 802.11n HT40 Channel 06

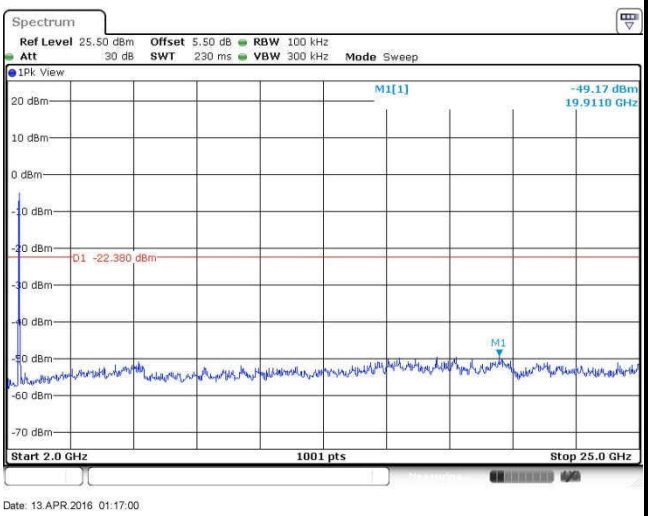
100kHz PSD reference Level



Spurious Emission 30MHz~3GHz



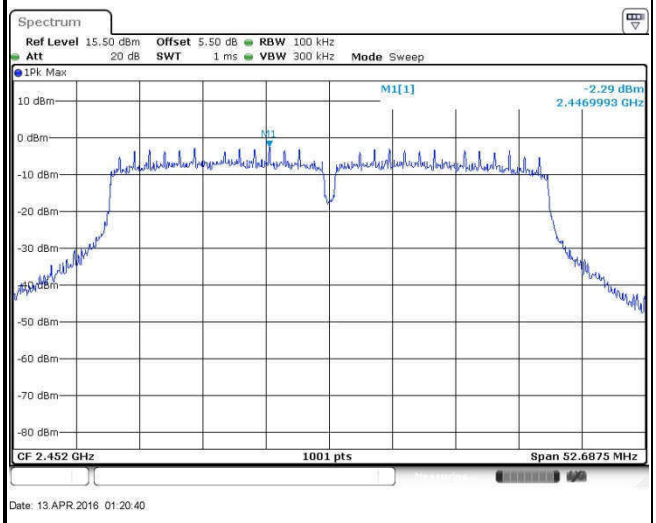
Spurious Emission 2GHz~25GHz



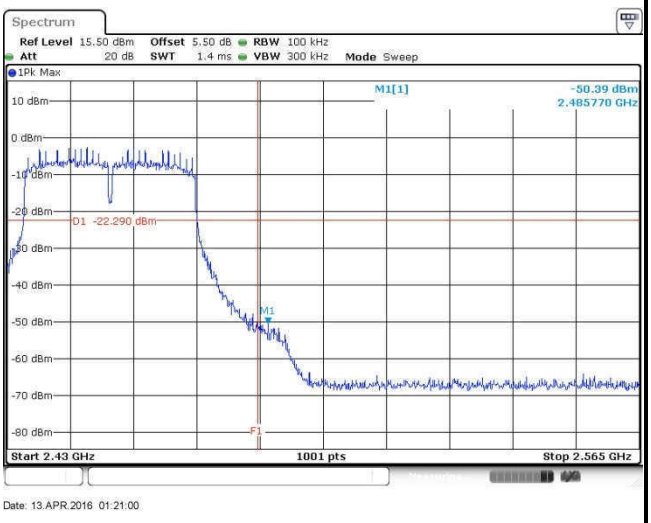
Number of TX :	2	**Ant. :**	1+2(2)
Test Mode :	802.11n HT40	**Temperature :**	24~25℃
Test Band :	2.4GHz High	**Relative Humidity :**	49~51%
Test Channel :	09	**Test Engineer :**	Issac Song

WLAN 802.11n HT40 Channel 09

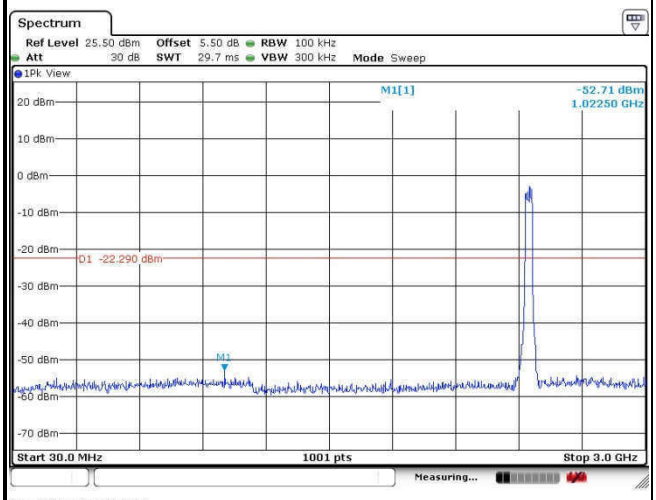
100kHz PSD reference Level



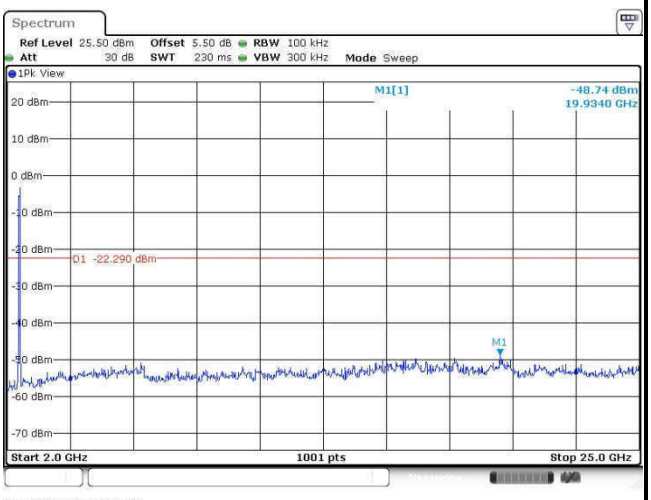
High Channel Plot



Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz



3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

Frequency (MHz)	Field Strength (microvolts/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

3.5.2 Measuring Instruments

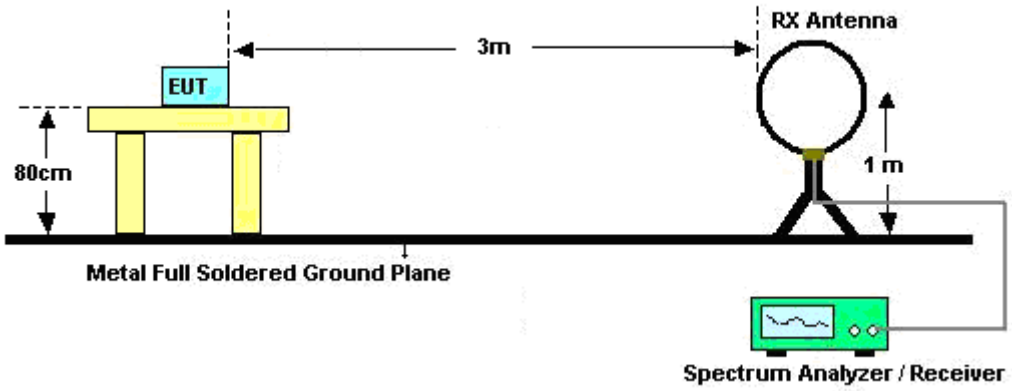
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedure

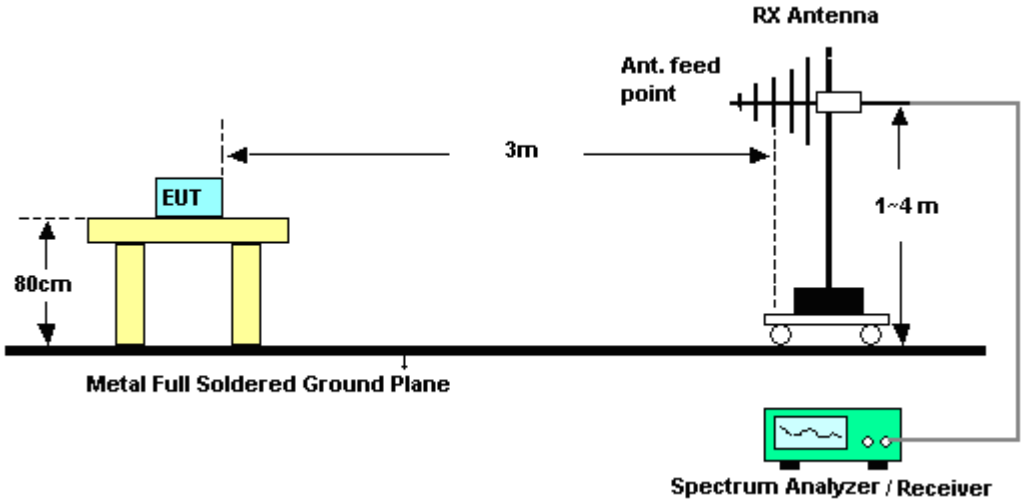
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r05.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, 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.
7. Use the following spectrum analyzer settings:
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Set RBW=100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
   (3) Set RBW = 1 MHz, VBW= 3MHz for f ≥ 1 GHz for peak measurement.
   For average measurement:
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

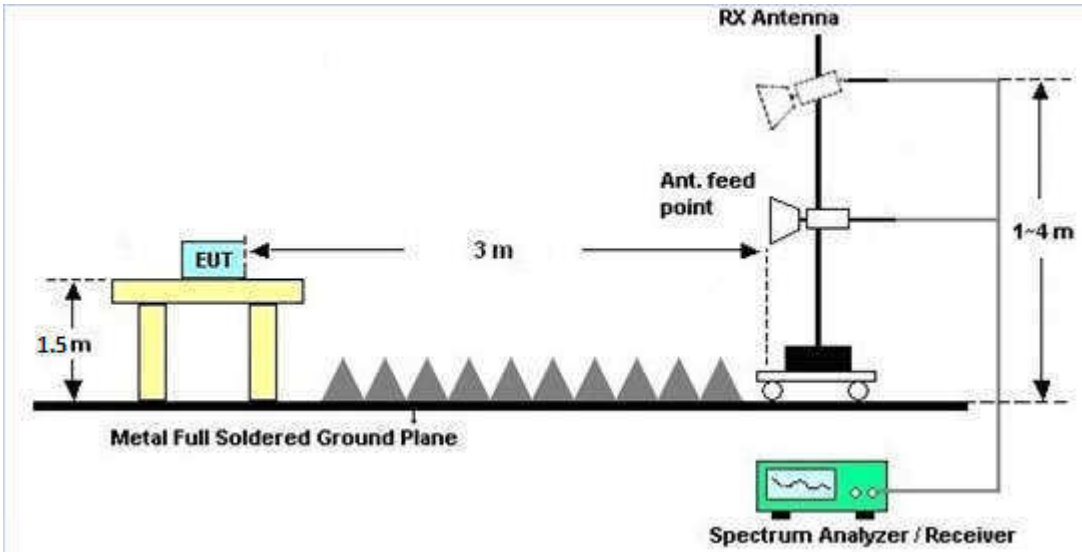
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Results of Radiated Emissions (9kHz ~ 30MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix B of this test report.

3.5.7 Duty Cycle

Please refer to Appendix D.

3.5.8 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix B of this test report.

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

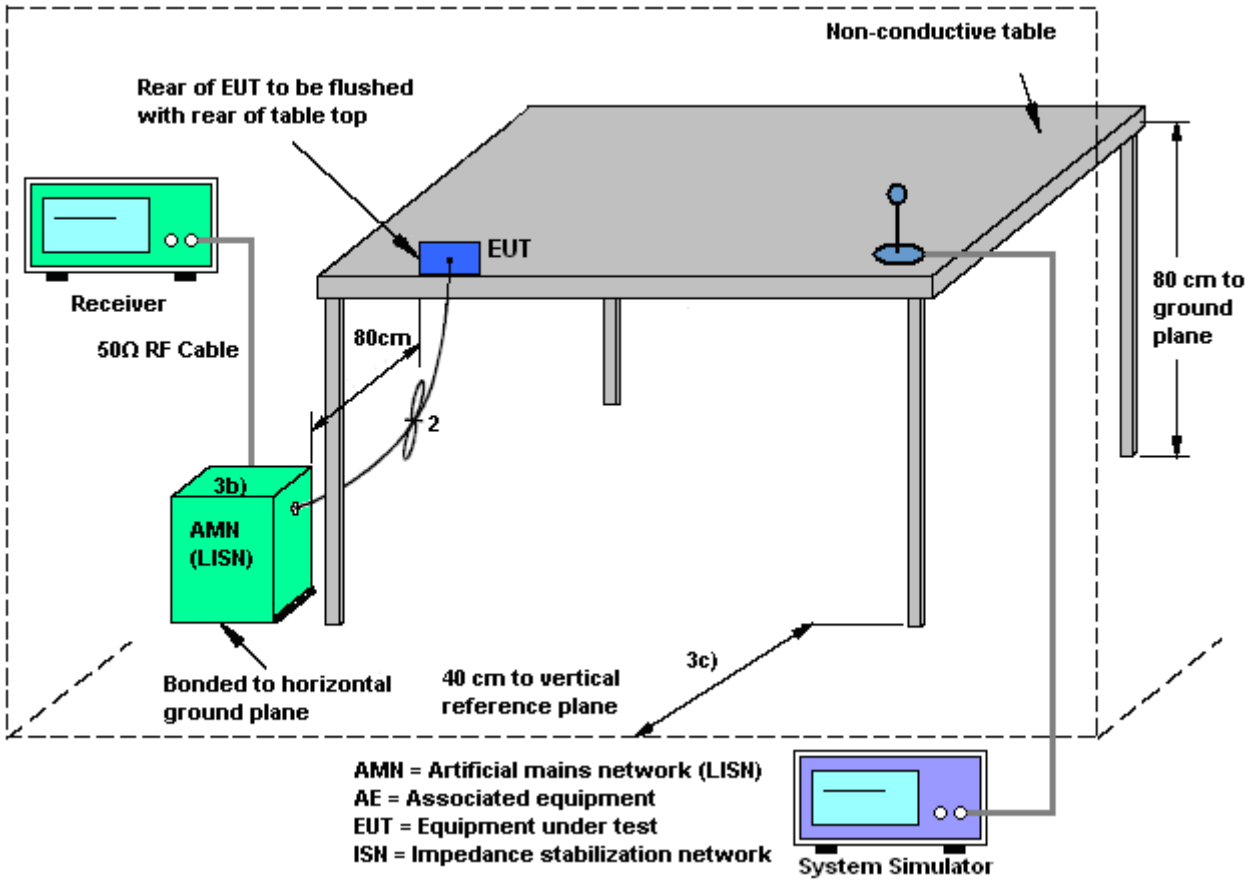
3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

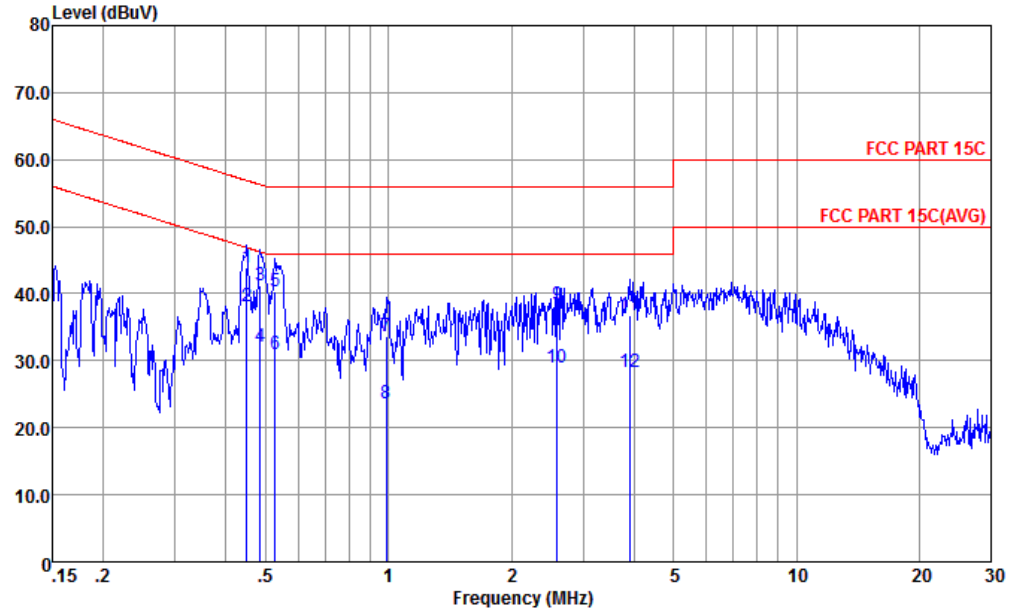
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF bandwidth = 9kHz) with Maximum Hold Mode.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	**Temperature :**	22~24℃
Test Engineer :	Amos Zhang	**Relative Humidity :**	44~46%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link (2.4G) + USB Cable (Charging from Adapter 1) + ANT+		

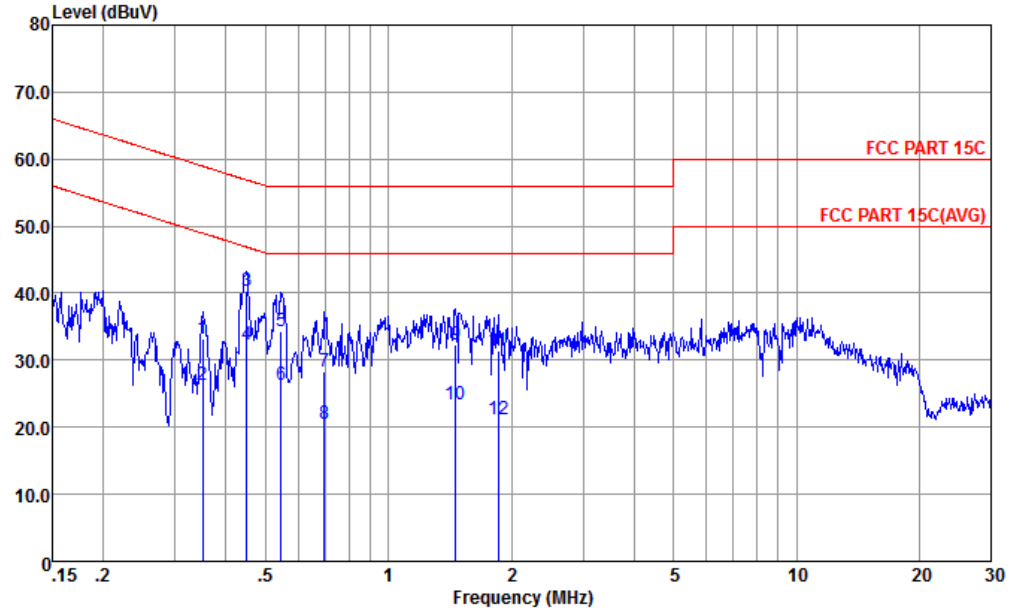


Site : CO01-KS
Condition : FCC PART 15C LISN-L-20151024 LINE

mode : Mode 1
: 869941020004383/869941020004391 #15

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1		0.45	44.00	-12.89	56.89	33.60	0.23	10.17	QP
2	*	0.45	38.20	-8.69	46.89	27.80	0.23	10.17	Average
3		0.48	41.19	-15.08	56.27	30.80	0.23	10.16	QP
4		0.48	32.19	-14.08	46.27	21.80	0.23	10.16	Average
5		0.53	40.29	-15.71	56.00	29.90	0.23	10.16	QP
6		0.53	30.89	-15.11	46.00	20.50	0.23	10.16	Average
7		0.99	33.69	-22.31	56.00	23.30	0.25	10.14	QP
8		0.99	23.59	-22.41	46.00	13.20	0.25	10.14	Average
9		2.59	38.23	-17.77	56.00	27.90	0.18	10.15	QP
10		2.59	28.93	-17.07	46.00	18.60	0.18	10.15	Average
11		3.90	36.85	-19.15	56.00	26.50	0.19	10.16	QP
12		3.90	28.25	-17.75	46.00	17.90	0.19	10.16	Average

Test Mode :	Mode 1	Temperature :	22~24℃
Test Engineer :	Amos Zhang	Relative Humidity :	44~46%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link (2.4G) + USB Cable (Charging from Adapter 1) + ANT+		



Site : CO01-KS
Condition : FCC PART 15C LISN-N-20151024 NEUTRAL

mode : Mode 1
: 869941020004383/869941020004391 #15

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1		0.35	33.28	-25.68	58.96	22.80	0.32	10.16	QP
2		0.35	26.38	-22.58	48.96	15.90	0.32	10.16	Average
3		0.45	40.29	-16.60	56.89	29.80	0.32	10.17	QP
4	*	0.45	32.39	-14.50	46.89	21.90	0.32	10.17	Average
5		0.55	34.29	-21.71	56.00	23.80	0.33	10.16	QP
6		0.55	26.29	-19.71	46.00	15.80	0.33	10.16	Average
7		0.70	28.39	-27.61	56.00	17.90	0.34	10.15	QP
8		0.70	20.39	-25.61	46.00	9.90	0.34	10.15	Average
9		1.46	32.41	-23.59	56.00	21.89	0.38	10.14	QP
10		1.46	23.31	-22.69	46.00	12.79	0.38	10.14	Average
11		1.86	31.42	-24.58	56.00	20.90	0.38	10.14	QP
12		1.86	21.22	-24.78	46.00	10.70	0.38	10.14	Average

3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting Antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the Antenna exceeds 6 dBi. The use of a permanently attached Antenna or of an Antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV30	101338	10Hz~30GHz	May 04, 2015	Apr. 06, 2016~ Apr. 13, 2016	May 03, 2016	Conducted (TH01-KS)
Pulse Power Senor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 20, 2016	Apr. 06, 2016~ Apr. 13, 2016	Jan. 19, 2017	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 20, 2016	Apr. 06, 2016~ Apr. 13, 2016	Jan. 19, 2017	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz; Max 30dBm	Sep. 10, 2015	Apr. 06, 2016~ Apr. 26, 2016	Sep. 09, 2016	Radiation (03CH02-KS)
Spectrum Analyzer	R&S	FSV40	101040	10kHz~40GHz; Max 30dBm	Sep. 10, 2015	Apr. 06, 2016~ Apr. 26, 2016	Sep. 09, 2016	Radiation (03CH02-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Nov. 07, 2015	Apr. 06, 2016~ Apr. 26, 2016	Nov. 06, 2016	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6112D	23182	25MHz-2GHz	Jan. 16, 2016	Apr. 06, 2016~ Apr. 26, 2016	Jan. 15, 2017	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Nov. 07, 2015	Apr. 06, 2016~ Apr. 26, 2016	Nov. 06, 2016	Radiation (03CH02-KS)
SHF-EHF Horn	com-power	AH-840	101070	18GHz~40Ghz	Oct. 10, 2015	Apr. 06, 2016~ Apr. 26, 2016	Oct. 09, 2016	Radiation (03CH02-KS)
Amplifier	com-power	PA-103A	161069	1kHz~1000MHz / 32 dB	May 04, 2015	Apr. 06, 2016~ Apr. 26, 2016	May 03, 2016	Radiation (03CH02-KS)
Amplifier	Agilent	8449B	3008A02384	1GHz~26.5GHz	Oct. 24, 2015	Apr. 06, 2016~ Apr. 26, 2016	Oct. 23, 2016	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	616010002473	N/A	NCR	Apr. 06, 2016~ Apr. 26, 2016	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Apr. 06, 2016~ Apr. 26, 2016	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Apr. 06, 2016~ Apr. 26, 2016	NCR	Radiation (03CH02-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	May 04, 2015	Apr. 25, 2016	May 03, 2016	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 24, 2015	Apr. 25, 2016	Oct. 23, 2016	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 24, 2015	Apr. 25, 2016	Oct. 23, 2016	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 24, 2015	Apr. 25, 2016	Oct. 23, 2016	Conduction (CO01-KS)

NCR: No Calibration Required

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.3 dB

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.1 dB

Appendix A. Conducted Test Results

Test Engineer:	Issac Song	Temperature:	24~25	°C
Test Date:	2016/4/06~2016/4/13	Relative Humidity:	49~51	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Occupied BW (MHz)		6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2		
11b	1Mbps	1	1	2412	13.44	-	8.05	-	0.50	Pass
11b	1Mbps	1	6	2437	13.34	-	8.05	-	0.50	Pass
11b	1Mbps	1	11	2462	13.29	-	8.05	-	0.50	Pass
11g	6Mbps	1	1	2412	17.13	-	15.92	-	0.50	Pass
11g	6Mbps	1	6	2437	17.13	-	16.26	-	0.50	Pass
11g	6Mbps	1	11	2462	17.08	-	16.02	-	0.50	Pass
HT20	MCS0	1	1	2412	18.13	-	17.12	-	0.50	Pass
HT20	MCS0	1	6	2437	18.13	-	16.80	-	0.50	Pass
HT20	MCS0	1	11	2462	18.13	-	16.78	-	0.50	Pass
HT40	MCS0	1	3	2422	36.56	-	35.45	-	0.50	Pass
HT40	MCS0	1	6	2437	36.46	-	35.13	-	0.50	Pass
HT40	MCS0	1	9	2452	36.46	-	35.33	-	0.50	Pass
HT20	MCS0	2	1	2412	18.08	18.13	16.78	15.94	0.50	Pass
HT20	MCS0	2	6	2437	18.13	18.13	16.78	16.26	0.50	Pass
HT20	MCS0	2	11	2462	18.08	18.13	15.96	15.98	0.50	Pass
HT40	MCS0	2	3	2422	36.46	36.36	35.13	35.68	0.50	Pass
HT40	MCS0	2	6	2437	36.46	36.36	35.13	35.33	0.50	Pass
HT40	MCS0	2	9	2452	36.46	36.36	35.33	35.13	0.50	Pass

Report Number : FR630205C

TEST RESULTS DATA
Peak Output Power

2.4GHz Band																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11b	1Mbps	1	1	2412	19.62	18.79		30.00	30.00	2.70	-3.00	22.32	15.79	36.00	36.00	Pass
11b	1Mbps	1	6	2437	19.55	18.67		30.00	30.00	2.70	-3.00	22.25	15.67	36.00	36.00	Pass
11b	1Mbps	1	11	2462	19.46	18.68		30.00	30.00	2.70	-3.00	22.16	15.68	36.00	36.00	Pass
11g	6Mbps	1	1	2412	22.01	20.18		30.00	30.00	2.70	-3.00	24.71	17.18	36.00	36.00	Pass
11g	6Mbps	1	6	2437	21.66	19.93		30.00	30.00	2.70	-3.00	24.36	16.93	36.00	36.00	Pass
11g	6Mbps	1	11	2462	21.58	19.88		30.00	30.00	2.70	-3.00	24.28	16.88	36.00	36.00	Pass
HT20	MCS0	1	1	2412	21.15	19.09		30.00	30.00	2.70	-3.00	23.85	16.09	36.00	36.00	Pass
HT20	MCS0	1	6	2437	20.83	19.12		30.00	30.00	2.70	-3.00	23.53	16.12	36.00	36.00	Pass
HT20	MCS0	1	11	2462	20.74	19.30		30.00	30.00	2.70	-3.00	23.44	16.30	36.00	36.00	Pass
HT40	MCS0	1	3	2422	20.77	18.26		30.00	30.00	2.70	-3.00	23.47	15.26	36.00	36.00	Pass
HT40	MCS0	1	6	2437	20.66	18.22		30.00	30.00	2.70	-3.00	23.36	15.22	36.00	36.00	Pass
HT40	MCS0	1	9	2452	20.68	18.18		30.00	30.00	2.70	-3.00	23.38	15.18	36.00	36.00	Pass
HT20	MCS0	2	1	2412	20.34	19.12	22.78	30.00		2.70		25.48		36.00		Pass
HT20	MCS0	2	6	2437	19.87	19.04	22.49	30.00		2.70		25.19		36.00		Pass
HT20	MCS0	2	11	2462	19.66	19.06	22.38	30.00		2.70		25.08		36.00		Pass
HT40	MCS0	2	3	2422	19.81	19.11	22.48	30.00		2.70		25.18		36.00		Pass
HT40	MCS0	2	6	2437	19.85	19.17	22.53	30.00		2.70		25.23		36.00		Pass
HT40	MCS0	2	9	2452	19.72	19.09	22.43	30.00		2.70		25.13		36.00		Pass

Note: Measured power (dBm) has offset with cable loss.

TEST RESULTS DATA
Average Output Power

2.4GHz Band									
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)		
					Ant 1	Ant 2	Ant 1	Ant 2	SUM
11b	1Mbps	1	1	2412	0.04	0.05	17.13	16.26	
11b	1Mbps	1	6	2437	0.04	0.05	16.99	16.19	
11b	1Mbps	1	11	2462	0.04	0.05	16.92	16.11	
11g	6Mbps	1	1	2412	0.24	0.22	15.88	14.10	
11g	6Mbps	1	6	2437	0.24	0.22	15.68	13.94	
11g	6Mbps	1	11	2462	0.24	0.22	15.57	13.89	
HT20	MCS0	1	1	2412	0.25	0.27	14.81	12.82	
HT20	MCS0	1	6	2437	0.25	0.27	14.46	12.91	
HT20	MCS0	1	11	2462	0.25	0.27	14.37	12.95	
HT40	MCS0	1	3	2422	0.46	0.43	14.00	11.54	
HT40	MCS0	1	6	2437	0.46	0.43	13.94	11.48	
HT40	MCS0	1	9	2452	0.46	0.43	13.97	11.41	
HT20	MCS0	2	1	2412	0.27	0.20	13.70	12.93	16.34
HT20	MCS0	2	6	2437	0.27	0.20	13.53	12.83	16.20
HT20	MCS0	2	11	2462	0.27	0.20	13.39	12.78	16.11
HT40	MCS0	2	3	2422	0.46	0.46	12.98	12.41	15.72
HT40	MCS0	2	6	2437	0.46	0.46	13.08	12.44	15.78
HT40	MCS0	2	9	2452	0.46	0.46	12.94	12.34	15.66

Note: Measured power (dBm) has offset with cable loss.

TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
					Ant 1	Ant 2	Worse + 3.01	Ant 1	Ant 2	Ant 1	Ant 2	
11b	1Mbps	1	1	2412	-8.59	-		2.70	-3.00	8.00	8.00	Pass
11b	1Mbps	1	6	2437	-8.61	-		2.70	-3.00	8.00	8.00	Pass
11b	1Mbps	1	11	2462	-8.09	-		2.70	-3.00	8.00	8.00	Pass
11g	6Mbps	1	1	2412	-13.32	-		2.70	-3.00	8.00	8.00	Pass
11g	6Mbps	1	6	2437	-13.11	-		2.70	-3.00	8.00	8.00	Pass
11g	6Mbps	1	11	2462	-13.58	-		2.70	-3.00	8.00	8.00	Pass
HT20	MCS0	1	1	2412	-13.13	-		2.70	-3.00	8.00	8.00	Pass
HT20	MCS0	1	6	2437	-13.79	-		2.70	-3.00	8.00	8.00	Pass
HT20	MCS0	1	11	2462	-13.59	-		2.70	-3.00	8.00	8.00	Pass
HT40	MCS0	1	3	2422	-16.08	-		2.70	-3.00	8.00	8.00	Pass
HT40	MCS0	1	6	2437	-15.88	-		2.70	-3.00	8.00	8.00	Pass
HT40	MCS0	1	9	2452	-17.05	-		2.70	-3.00	8.00	8.00	Pass
HT20	MCS0	2	1	2412	-14.21	-15.33	-11.20	3.32		8.00		Pass
HT20	MCS0	2	6	2437	-14.48	-14.85	-11.47	3.32		8.00		Pass
HT20	MCS0	2	11	2462	-14.59	-15.29	-11.58	3.32		8.00		Pass
HT40	MCS0	2	3	2422	-17.35	-18.89	-14.34	3.32		8.00		Pass
HT40	MCS0	2	6	2437	-17.63	-17.10	-14.09	3.32		8.00		Pass
HT40	MCS0	2	9	2452	-16.05	-18.30	-13.04	3.32		8.00		Pass

Measured power density (dBm) has offset with cable loss.

Appendix B. Radiated Test Results

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2389.56	53.42	-20.58	74	49.78	31.4	5.59	33.35	210	37	P	H
		2389.92	41.89	-12.11	54	38.11	31.4	5.59	33.21	210	37	A	H
	*	2413.193	106.23	-	-	102.47	31.41	5.56	33.21	210	37	P	H
	*	2413.193	103.69	-	-	99.93	31.41	5.56	33.21	210	37	A	H
		2388.12	51.94	-22.06	74	48.3	31.4	5.59	33.35	320	124	P	V
		2389.98	41.38	-12.62	54	37.6	31.4	5.59	33.21	320	124	A	V
	*	2413.193	103.63	-	-	99.87	31.41	5.56	33.21	320	124	P	V
	*	2413.193	101.15	-	-	97.39	31.41	5.56	33.21	320	124	A	V
802.11b CH 06 2437MHz	*	2436.99	106.99	-	-	103.44	31.44	5.33	33.22	140	65	P	H
	*	2435.905	104.34	-	-	100.8	31.43	5.33	33.22	140	65	A	H
	*	2435.989	104.81	-	-	101.27	31.43	5.33	33.22	337	80	P	V
	*	2435.989	102.29	-	-	98.75	31.43	5.33	33.22	337	80	A	V
802.11b CH 11 2462MHz	*	2462.041	104.19	-	-	101.09	31.46	4.88	33.24	140	50	P	H
	*	2463.126	101.68	-	-	98.58	31.46	4.88	33.24	140	50	A	H
		2487.84	50.15	-23.85	74	47.27	31.49	4.65	33.26	140	50	P	H
		2487.2	39.4	-14.6	54	36.54	31.47	4.65	33.26	140	50	A	H
	*	2463.293	102.23	-	-	99.13	31.46	4.88	33.24	380	110	P	V
	*	2463.126	99.74	-	-	96.64	31.46	4.88	33.24	380	110	A	V
		2484.56	49.13	-24.87	74	46.27	31.47	4.65	33.26	380	110	P	V
		2483.64	38.26	-15.74	54	35.4	31.47	4.65	33.26	380	110	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		4824	45.5	-28.5	74	38.62	34.98	5.13	33.23	101	5	P	H
		4824	45.18	-28.82	74	38.3	34.98	5.13	33.23	101	332	P	V
802.11b CH 06 2437MHz		4875	45.58	-28.42	74	38.81	34.93	5.4	33.56	101	0	P	H
		7311	46.43	-27.57	74	38.32	35.82	7.57	35.28	101	360	P	H
		4875	45.59	-28.41	74	38.82	34.93	5.4	33.56	101	0	P	V
		7311	47.26	-26.74	74	39.15	35.82	7.57	35.28	101	360	P	V
802.11b CH 11 2462MHz		4923	43.2	-30.8	74	37.31	34.88	4.91	33.9	101	357	P	H
		7386	45.05	-28.95	74	37.54	35.86	6.98	35.33	154	0	P	H
		4923	43.93	-30.07	74	38.04	34.88	4.91	33.9	158	355	P	V
		7386	44.63	-29.37	74	37.12	35.86	6.98	35.33	169	65	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		2390	60.87	-13.13	74	57.09	31.4	5.59	33.21	150	70	P	H
	!	2390	48.72	-5.28	54	44.94	31.4	5.59	33.21	150	70	A	H
	*	2418.287	107.74	-	-	104.22	31.41	5.33	33.22	150	70	P	H
	*	2417.284	100.04	-	-	96.52	31.41	5.33	33.22	150	70	A	H
		2389.92	55.55	-18.45	74	51.77	31.4	5.59	33.21	270	111	P	V
		2390	44.91	-9.09	54	41.13	31.4	5.59	33.21	270	111	A	V
	*	2418.37	102.78	-	-	99.26	31.41	5.33	33.22	270	111	P	V
	*	2417.117	95.05	-	-	91.53	31.41	5.33	33.22	270	111	A	V
802.11g CH 06 2437MHz	*	2432.982	106.09	-	-	102.55	31.43	5.33	33.22	100	75	P	H
	*	2432.398	98.33	-	-	94.79	31.43	5.33	33.22	100	75	A	H
	*	2433.567	103.11	-	-	99.57	31.43	5.33	33.22	339	95	P	V
	*	2435.07	95.25	-	-	91.71	31.43	5.33	33.22	339	95	A	V
802.11g CH 11 2462MHz	*	2465.046	107.29	-	-	104.19	31.46	4.88	33.24	157	34	P	H
	*	2466.8	99.73	-	-	96.65	31.46	4.88	33.26	157	34	A	H
		2483.56	56.32	-17.68	74	53.46	31.47	4.65	33.26	157	34	P	H
		2483.52	45.52	-8.48	54	42.66	31.47	4.65	33.26	157	34	A	H
	*	2455.611	102.98	-	-	99.65	31.46	5.11	33.24	290	110	P	V
	*	2456.029	95.48	-	-	92.15	31.46	5.11	33.24	290	110	A	V
		2484.32	52.52	-21.48	74	49.66	31.47	4.65	33.26	290	110	P	V
		2483.56	41.57	-12.43	54	38.71	31.47	4.65	33.26	290	110	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		4824	46.02	-27.98	74	39.14	34.98	5.13	33.23	100	1	P	H
		4824	44	-30	74	37.12	34.98	5.13	33.23	100	0	P	V
802.11g CH 06 2437MHz		4875	44.01	-29.99	74	37.24	34.93	5.4	33.56	100	360	P	H
		7311	48.42	-25.58	74	40.31	35.82	7.57	35.28	100	0	P	H
		4875	44.81	-29.19	74	38.04	34.93	5.4	33.56	100	360	P	V
		7311	46.82	-27.18	74	38.71	35.82	7.57	35.28	100	0	P	V
802.11g CH 11 2462MHz		4923	43.54	-30.46	74	37.65	34.88	4.91	33.9	100	360	P	H
		7386	46.35	-27.65	74	38.84	35.86	6.98	35.33	100	0	P	H
		4923	44.59	-29.41	74	38.7	34.88	4.91	33.9	100	360	P	V
		7386	46.51	-27.49	74	39	35.86	6.98	35.33	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

2.4GHz WIFI 802.11g (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11g LF		88.2	31.49	-12.01	43.5	44.78	17	0.21	30.5	154	0	P	H
		108.57	29.74	-13.76	43.5	41.7	18.19	0.25	30.4	-	-	P	H
		174.53	28.74	-14.76	43.5	42.27	16.5	0.37	30.4	-	-	P	H
		225.94	27.33	-18.67	46	40.97	16.35	0.46	30.45	-	-	P	H
		300.63	29.6	-16.4	46	41.7	17.8	0.6	30.5	-	-	P	H
		441.28	30.17	-15.83	46	35.17	24.63	0.9	30.53	-	-	P	H
		38.73	32.21	-7.79	40	39.89	23.1	0.12	30.9	198	56	P	V
		55.22	24.04	-15.96	40	40.67	13.9	0.15	30.68	-	-	P	V
		108.57	23.56	-19.94	43.5	35.52	18.19	0.25	30.4	-	-	P	V
		224	27.08	-18.92	46	40.8	16.27	0.46	30.45	-	-	P	V
		298.69	28.7	-17.3	46	40.82	17.78	0.6	30.5	-	-	P	V
		441.28	30.87	-15.13	46	35.87	24.63	0.9	30.53	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		2389.92	59.67	-14.33	74	55.89	31.4	5.59	33.21	100	80	P	H
		2390	47.79	-6.21	54	44.01	31.4	5.59	33.21	100	80	A	H
802.11n	*	2419.038	105.4	-	-	101.88	31.41	5.33	33.22	100	80	P	H
HT20	*	2418.37	98.06	-	-	94.54	31.41	5.33	33.22	100	80	A	H
CH 01		2389.92	56.4	-17.6	74	52.62	31.4	5.59	33.21	400	91	P	V
2412MHz		2390	45.66	-8.34	54	41.88	31.4	5.59	33.21	400	91	A	V
	*	2419.038	101.98	-	-	98.46	31.41	5.33	33.22	400	91	P	V
	*	2418.287	94.63	-	-	91.11	31.41	5.33	33.22	400	91	A	V
802.11n	*	2433.233	105.72	-	-	102.18	31.43	5.33	33.22	100	80	P	H
HT20	*	2433.316	97.95	-	-	94.41	31.43	5.33	33.22	100	80	A	H
CH 06	*	2435.07	104.44	-	-	100.9	31.43	5.33	33.22	338	90	P	V
2437MHz	*	2434.152	96.72	-	-	93.18	31.43	5.33	33.22	338	90	A	V
	*	2458.533	92.31	-	-	88.98	31.46	5.11	33.24	140	82	P	H
	*	2457.531	84.81	-	-	81.48	31.46	5.11	33.24	140	82	A	H
802.11n		2486.88	48.54	-25.46	74	45.68	31.47	4.65	33.26	140	82	P	H
HT20		2483.52	38.1	-15.9	54	35.24	31.47	4.65	33.26	140	82	A	H
CH 11	*	2466.633	89.58	-	-	86.5	31.46	4.88	33.26	380	95	P	V
2462MHz	*	2466.8	82.15	-	-	79.07	31.46	4.88	33.26	380	95	A	V
		2489.2	48.52	-25.48	74	45.64	31.49	4.65	33.26	380	95	P	V
		2485.6	37.87	-16.13	54	35.01	31.47	4.65	33.26	380	95	A	V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n		4824	44.7	-29.3	74	37.82	34.98	5.13	33.23	100	360	P	H
HT20 CH 01 2412MHz		4824	44.36	-29.64	74	37.48	34.98	5.13	33.23	100	0	P	V
802.11n		4875	46.15	-27.85	74	39.38	34.93	5.4	33.56	100	65	P	H
HT20		7311	46.31	-27.69	74	38.2	35.82	7.57	35.28	100	58	P	H
CH 06		4875	45.62	-28.38	74	38.85	34.93	5.4	33.56	100	158	P	V
2437MHz		7311	46.05	-27.95	74	37.94	35.82	7.57	35.28	100	98	P	V
802.11n		4923	45.71	-28.29	74	39.82	34.88	4.91	33.9	101	360	P	H
HT20		7386	46.65	-27.35	74	39.14	35.86	6.98	35.33	101	0	P	H
CH 11		4923	43.71	-30.29	74	37.82	34.88	4.91	33.9	101	360	P	V
2462MHz		7386	46.4	-27.6	74	38.89	35.86	6.98	35.33	101	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		2389.56	60.79	-13.21	74	57.15	31.4	5.59	33.35	303	79	P	H
		2389.92	47.27	-6.73	54	43.49	31.4	5.59	33.21	303	79	A	H
	*	2431.313	102.91	-	-	99.37	31.43	5.33	33.22	303	79	P	H
	*	2432.064	95.49	-	-	91.95	31.43	5.33	33.22	303	79	A	H
802.11n		2484.72	56.93	-17.07	74	54.07	31.47	4.65	33.26	303	79	P	H
HT40		2484.68	37.68	-16.32	54	34.82	31.47	4.65	33.26	303	79	A	H
CH 03		2389.47	60.86	-13.14	74	57.22	31.4	5.59	33.35	302	107	P	V
2422MHz	!	2389.74	48.17	-5.83	54	44.53	31.4	5.59	33.35	302	107	A	V
	*	2435.07	100.9	-	-	97.36	31.43	5.33	33.22	302	107	P	V
	*	2435.571	93.36	-	-	89.82	31.43	5.33	33.22	302	107	A	V
		2486.4	56.02	-17.98	74	53.16	31.47	4.65	33.26	302	107	P	V
		2484.68	40.29	-13.71	54	37.43	31.47	4.65	33.26	302	107	A	V
		2390	58.24	-15.76	74	54.46	31.4	5.59	33.21	101	70	P	H
		2390	42.83	-11.17	54	39.05	31.4	5.59	33.21	101	70	A	H
	*	2433.817	101.5	-	-	97.96	31.43	5.33	33.22	101	70	P	H
	*	2433.233	94.13	-	-	90.59	31.43	5.33	33.22	101	70	A	H
802.11n		2488.16	57.44	-16.56	74	54.56	31.49	4.65	33.26	101	70	P	H
HT40		2483.64	42.47	-11.53	54	39.61	31.47	4.65	33.26	101	70	A	H
CH 06		2389.92	56.21	-17.79	74	52.43	31.4	5.59	33.21	300	100	P	V
2437MHz		2389.92	41.28	-12.72	54	37.5	31.4	5.59	33.21	300	100	A	V
	*	2451.186	98.09	-	-	94.78	31.44	5.11	33.24	300	100	P	V
	*	2450.601	90.74	-	-	87.43	31.44	5.11	33.24	300	100	A	V
		2487.8	55.05	-18.95	74	52.17	31.49	4.65	33.26	300	100	P	V
		2483.72	40.28	-13.72	54	37.42	31.47	4.65	33.26	300	100	A	V

802.11n HT40 CH 09 2452MHz		2389.74	57.29	-16.71	74	53.65	31.4	5.59	33.35	100	80	P	H
		2389.92	42.49	-11.51	54	38.71	31.4	5.59	33.21	100	80	A	H
	*	2459.034	102.65	-	-	99.32	31.46	5.11	33.24	100	80	P	H
	*	2459.201	94.59	-	-	91.26	31.46	5.11	33.24	100	80	A	H
		2484.88	63.1	-10.9	74	60.24	31.47	4.65	33.26	100	80	P	H
		2483.68	47.98	-6.02	54	45.12	31.47	4.65	33.26	100	80	A	H
		2389.38	52.75	-21.25	74	49.11	31.4	5.59	33.35	330	110	P	V
		2388.93	40.22	-13.78	54	36.58	31.4	5.59	33.35	330	110	A	V
	*	2454.943	99.72	-	-	96.39	31.46	5.11	33.24	330	110	P	V
	*	2447.762	92.28	-	-	88.97	31.44	5.11	33.24	330	110	A	V
		2485.44	60.09	-13.91	74	57.23	31.47	4.65	33.26	330	110	P	V
		2483.52	45.2	-8.8	54	42.34	31.47	4.65	33.26	330	110	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n		4845	45.92	-28.08	74	38.92	34.97	5.43	33.4	100	356	P	H
HT40		7266	47.5	-26.5	74	39.05	35.81	7.9	35.26	100	0	P	H
CH 03		4845	45.35	-28.65	74	38.35	34.97	5.43	33.4	100	359	P	V
2422MHz		7266	46.7	-27.3	74	38.25	35.81	7.9	35.26	100	0	P	V
802.11n		4875	44.98	-29.02	74	38.21	34.93	5.4	33.56	101	357	P	H
HT40		7311	45.5	-28.5	74	37.39	35.82	7.57	35.28	101	1	P	H
CH 06		4875	45.41	-28.59	74	38.64	34.93	5.4	33.56	101	1	P	V
2437MHz		7311	48.21	-25.79	74	40.1	35.82	7.57	35.28	101	355	P	V
802.11n		4905	45.94	-28.06	74	39.44	34.9	5.33	33.73	101	360	P	H
HT40		7356	46.91	-27.09	74	39.15	35.84	7.23	35.31	101	1	P	H
CH 09		4905	43.71	-30.29	74	37.21	34.9	5.33	33.73	101	360	P	V
2452MHz		7356	47.37	-26.63	74	39.61	35.84	7.23	35.31	101	62	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Note symbol

*	**Fundamental Frequency** which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is **over limit** line.
P/A	**P**eak or **A**verage
H/V	**H**orizontal or **V**ertical

A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

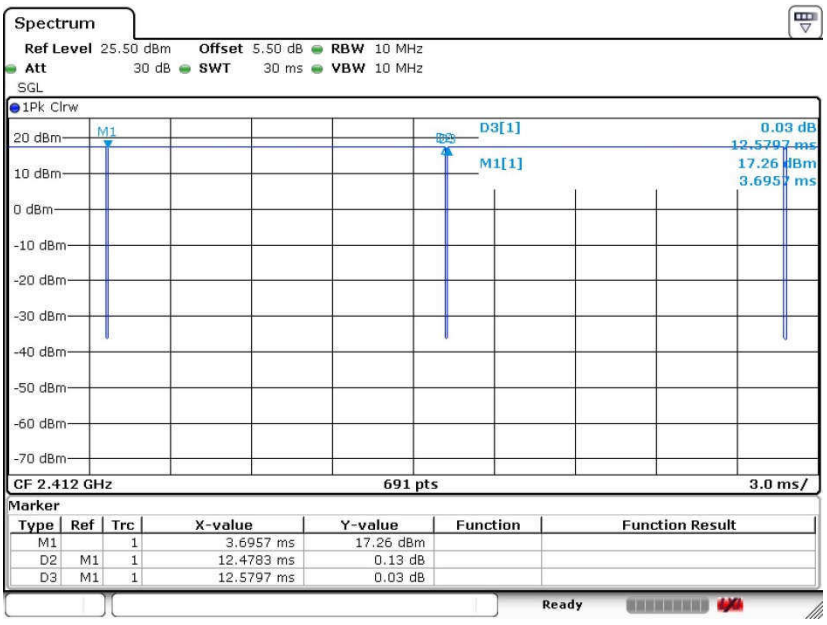
= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is "PASS".

Appendix D. Duty Cycle Plots

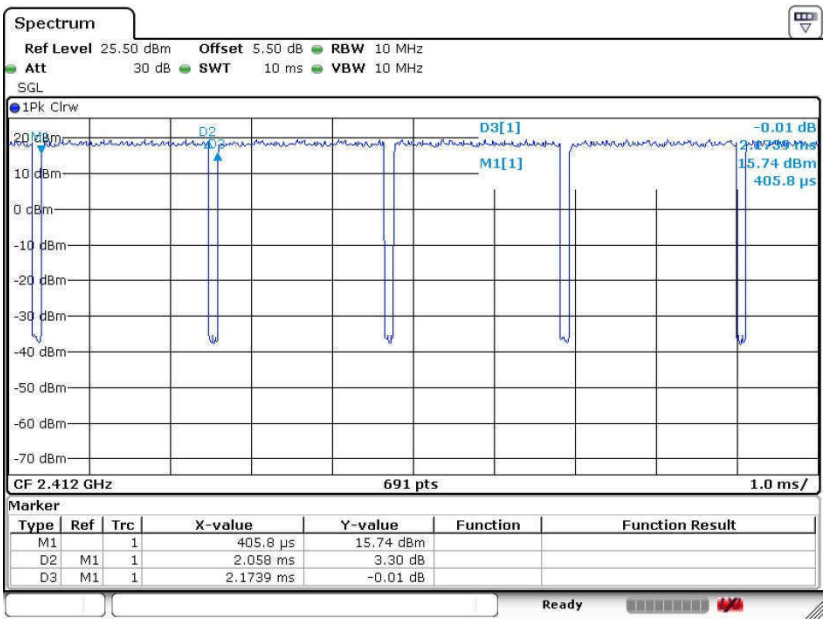
Antenna	Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
1	802.11b	99.19	-	-	10Hz
1	802.11g	94.67	2.06	0.49	1kHz
1+2	2.4GHz 802.11n HT20	94.05	1.92	0.52	1kHz
1+2	2.4GHz 802.11n HT40	89.89	0.95	1.05	3kHz

802.11b Antenna 1



Date: 6.APR.2016 20:17:35

802.11g Antenna 1



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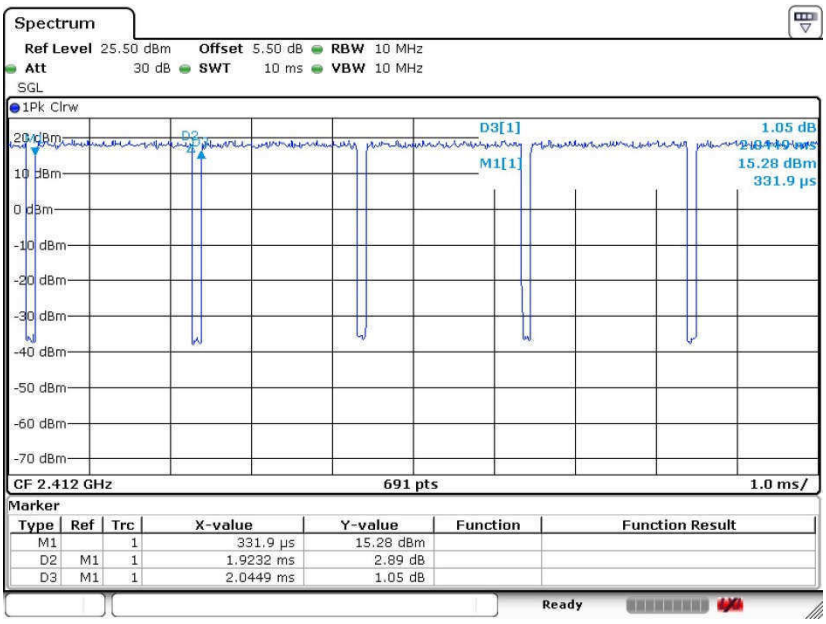
2.4GHz 802.11n HT20 Antenna 1 + 2



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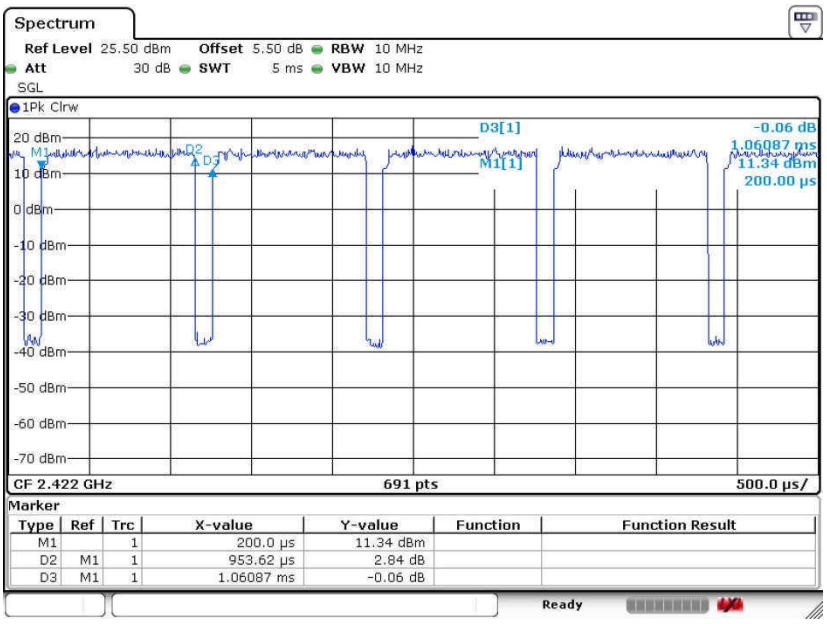
2.4GHz 802.11n HT40 Antenna 1 + 2



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