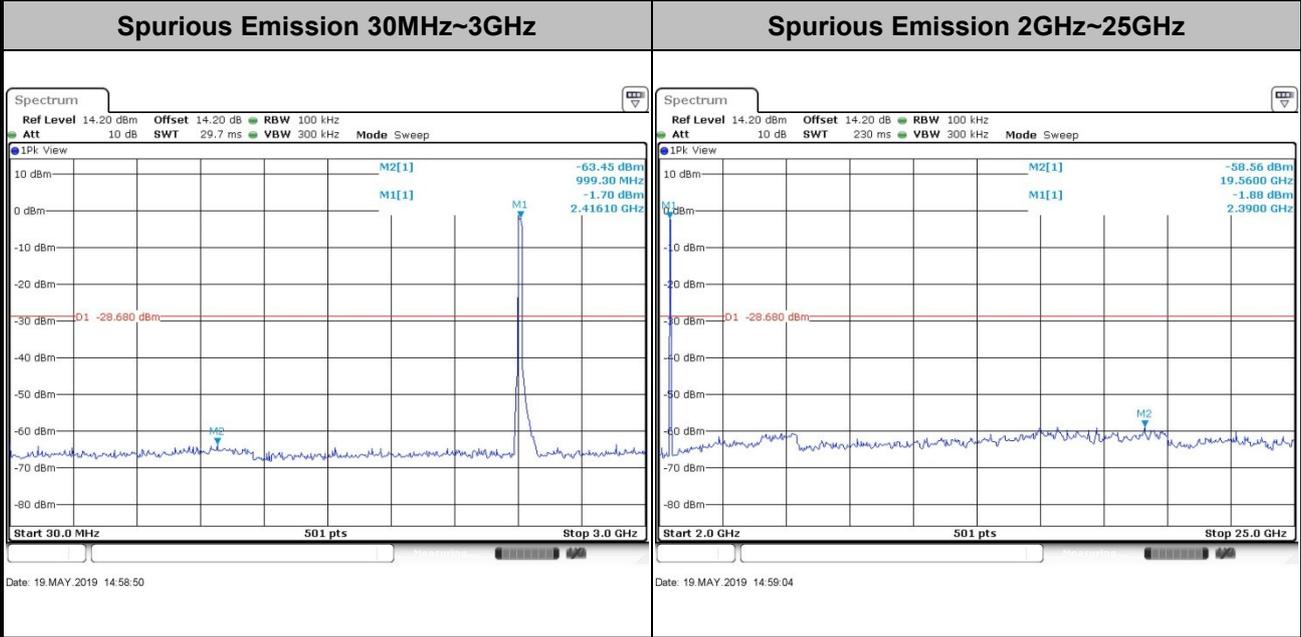
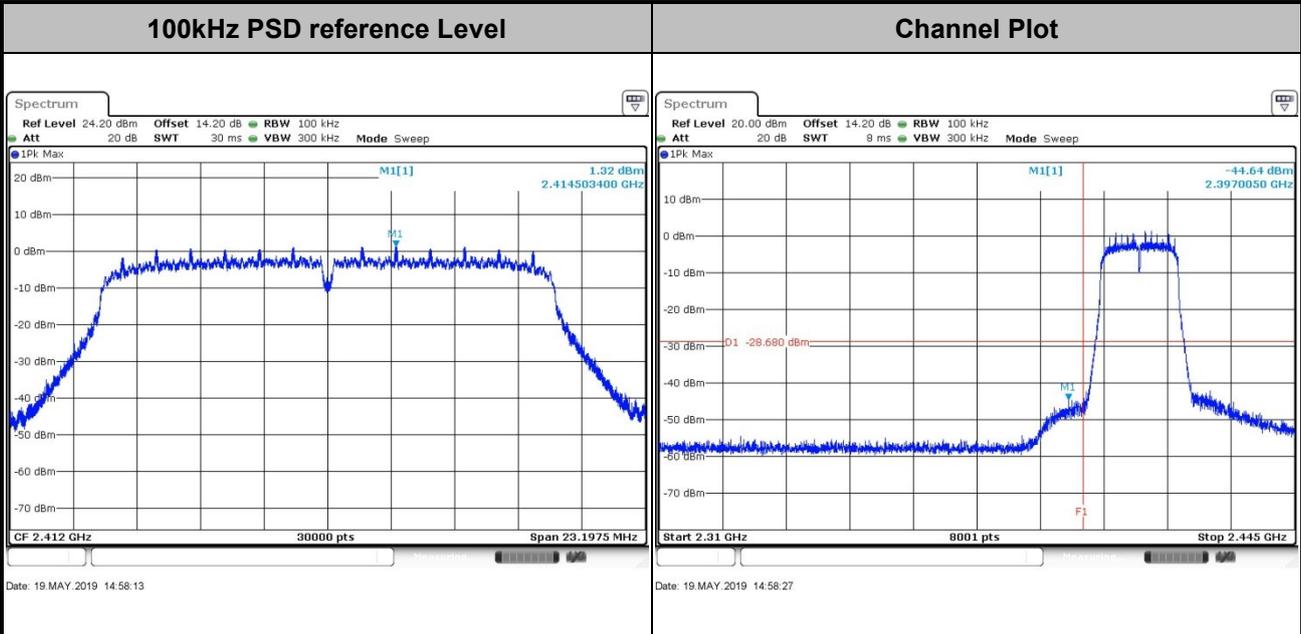




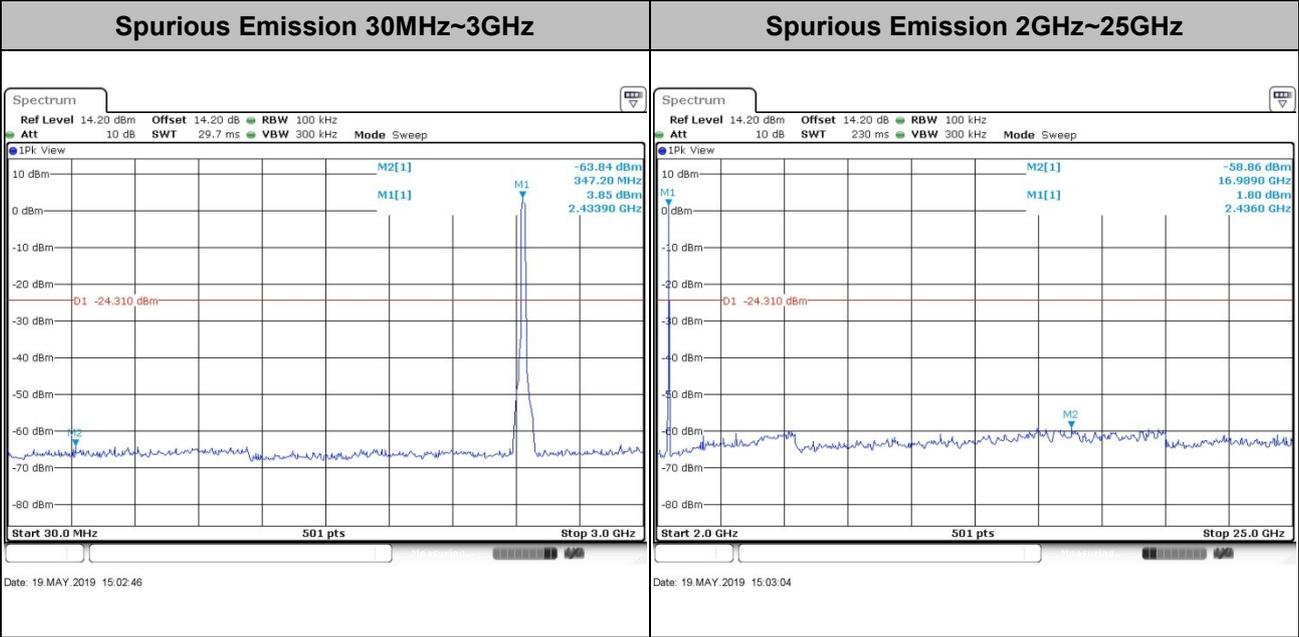
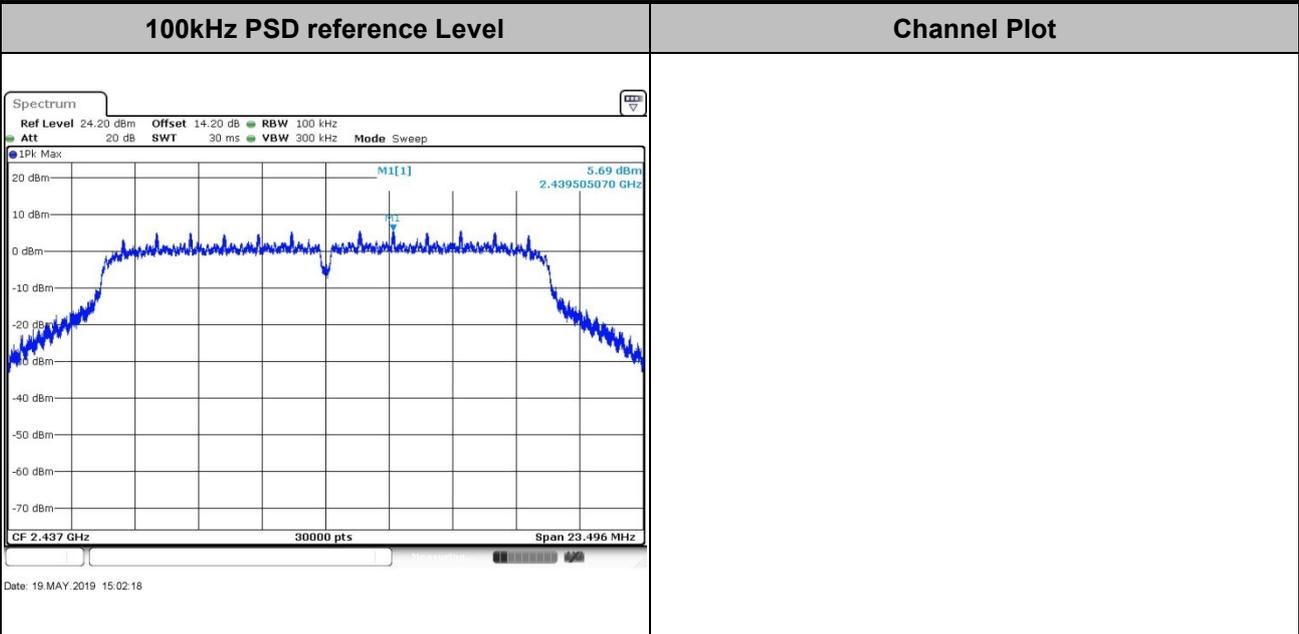
Number of TX = 2, Ant. 2 (Measured)

Test Mode :	802.11g	Test Channel :	01
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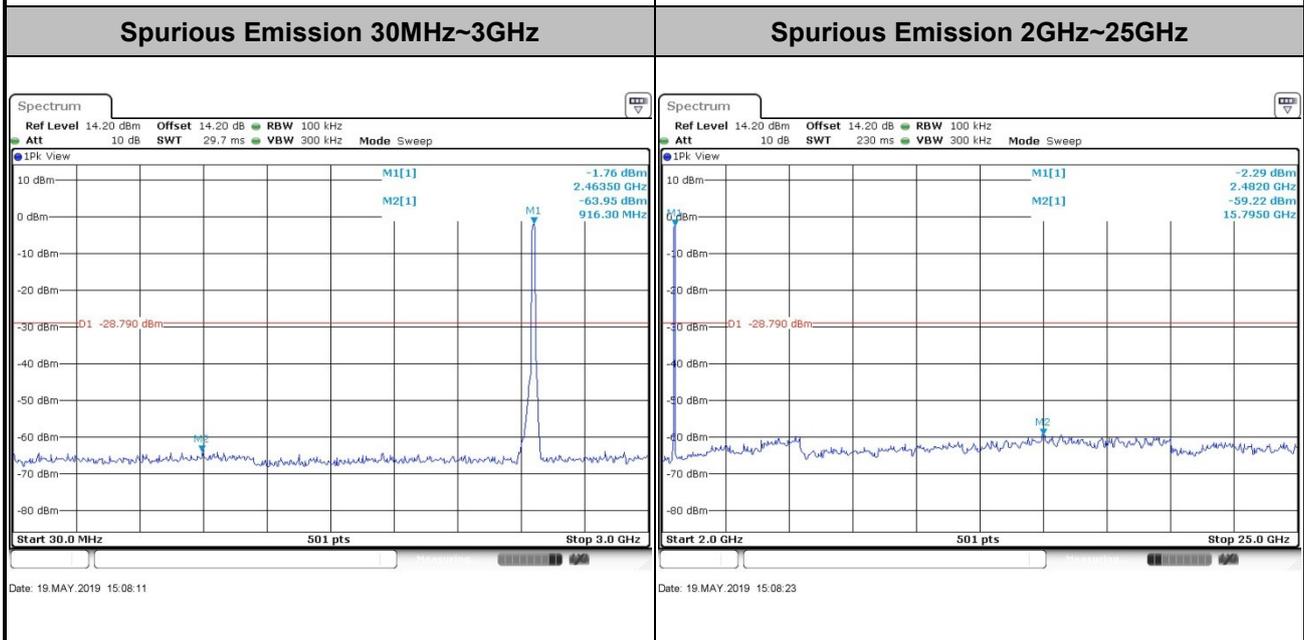
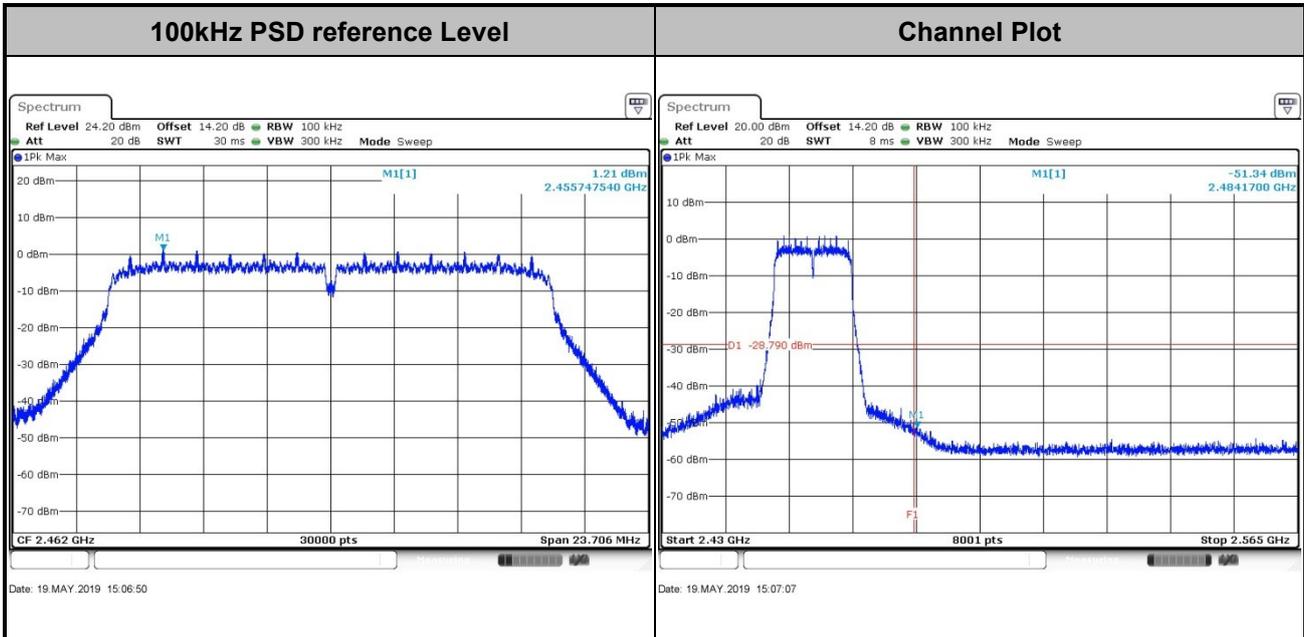


Test Mode :	802.11g	Test Channel :	06
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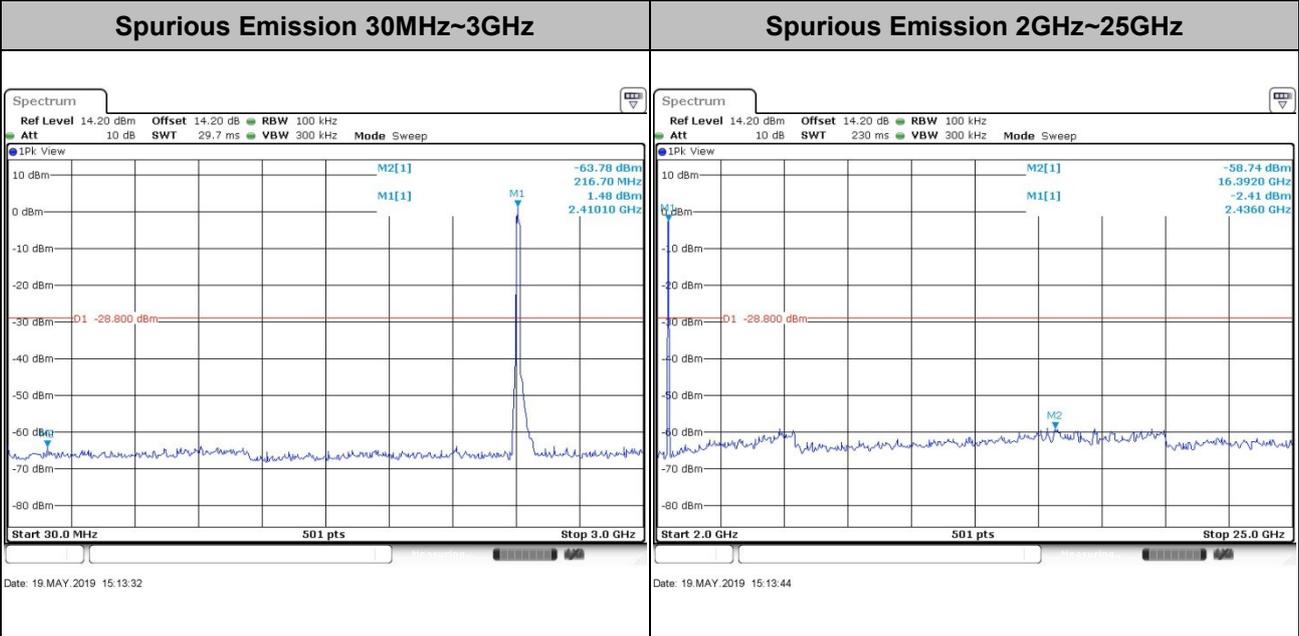
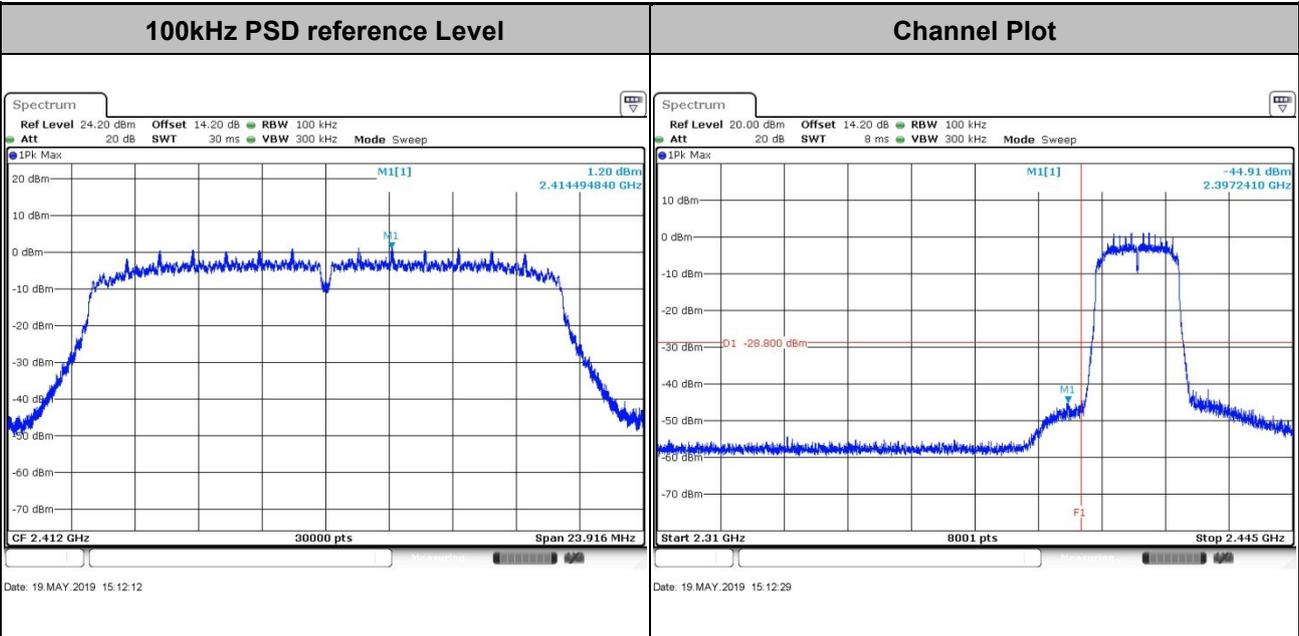


Test Mode :	802.11g	Test Channel :	11
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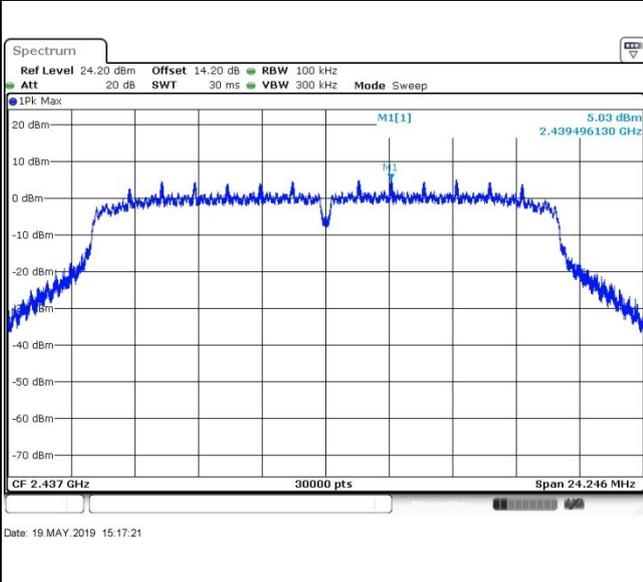
Test Mode : 802.11n HT20 Test Channel : 01



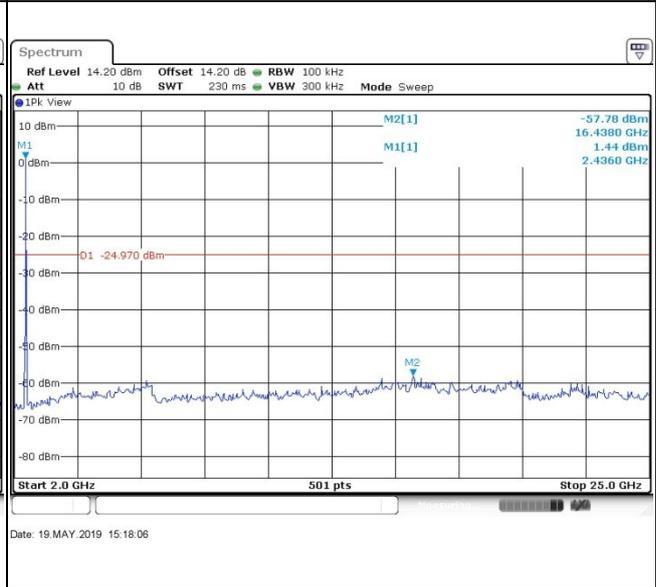
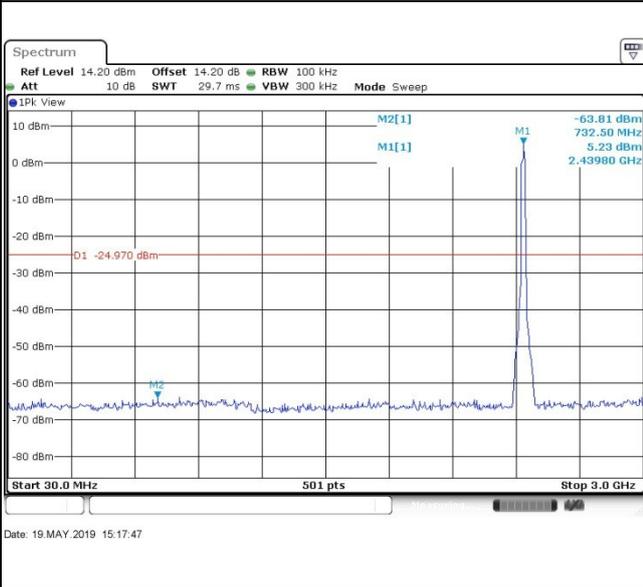


Test Mode :	802.11n HT20	Test Channel :	06
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100kHz PSD reference Level	Channel Plot
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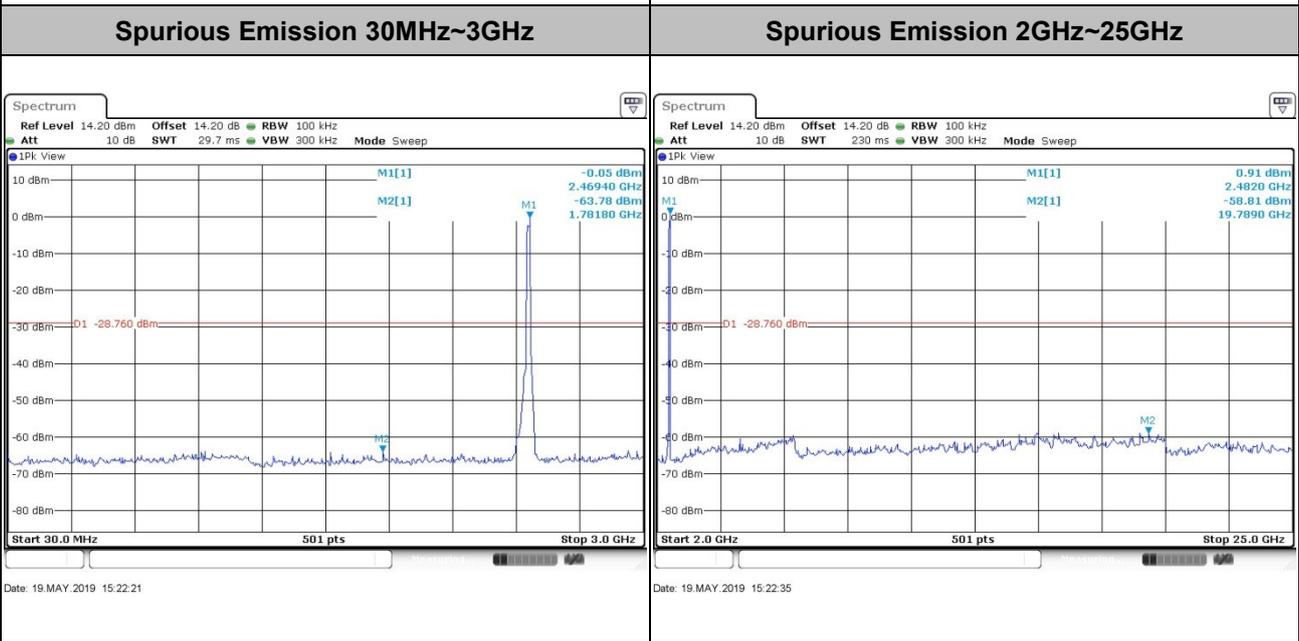
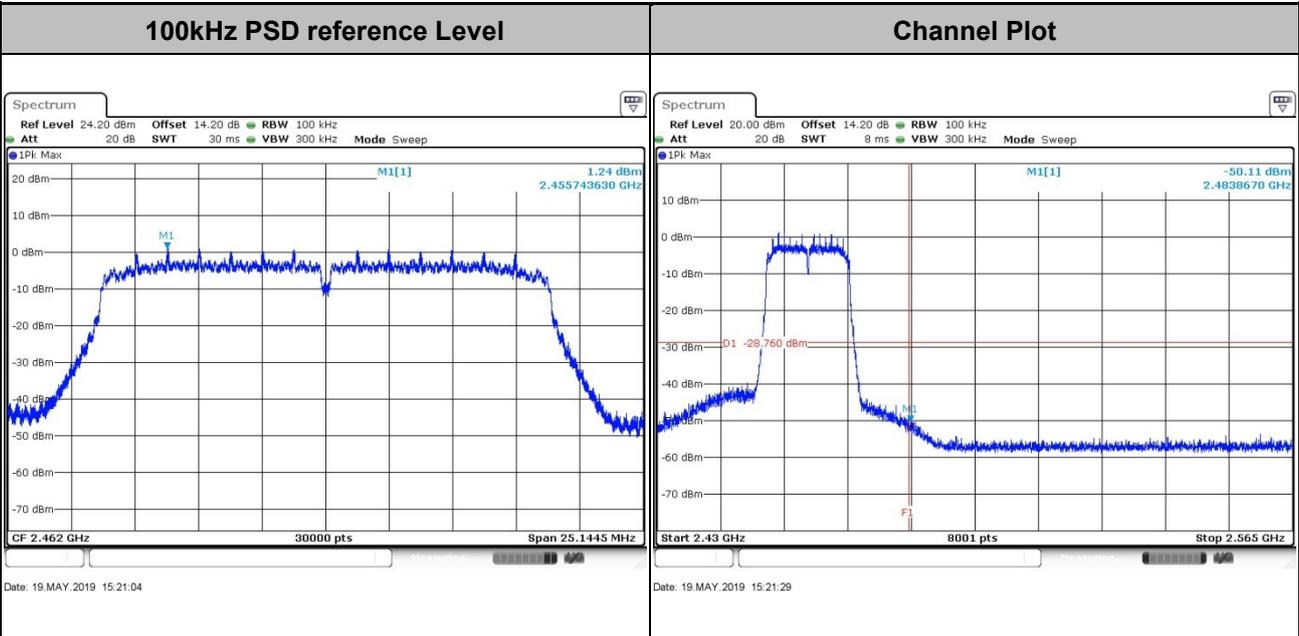


Spurious Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
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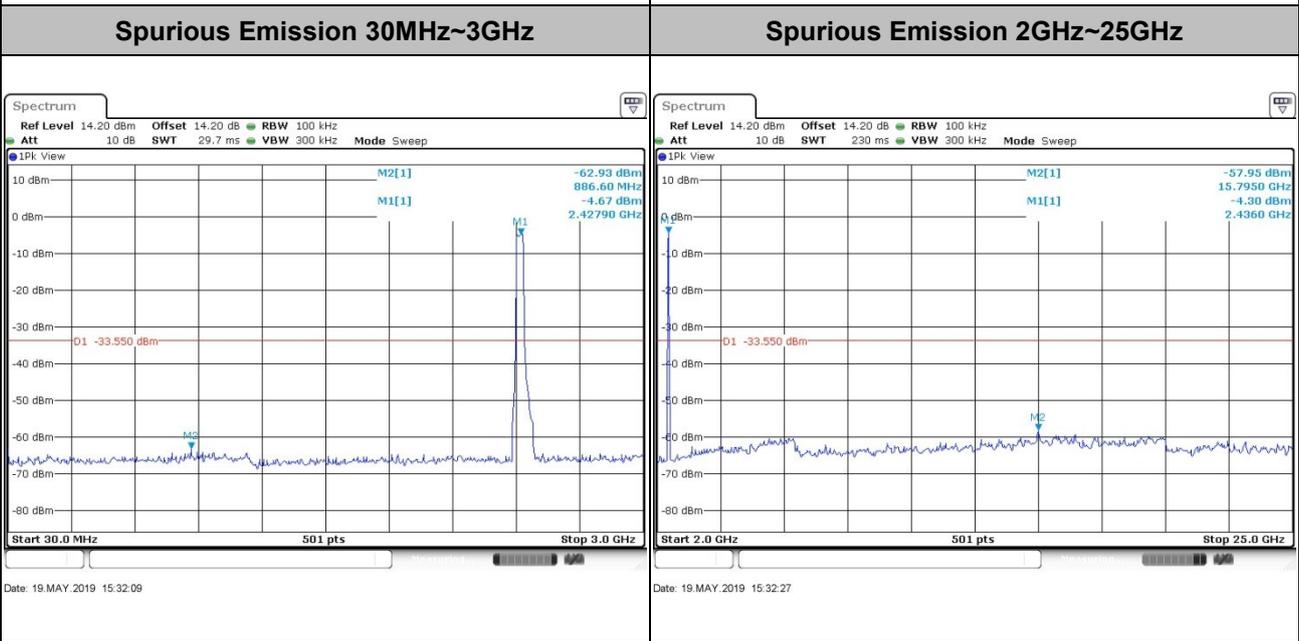
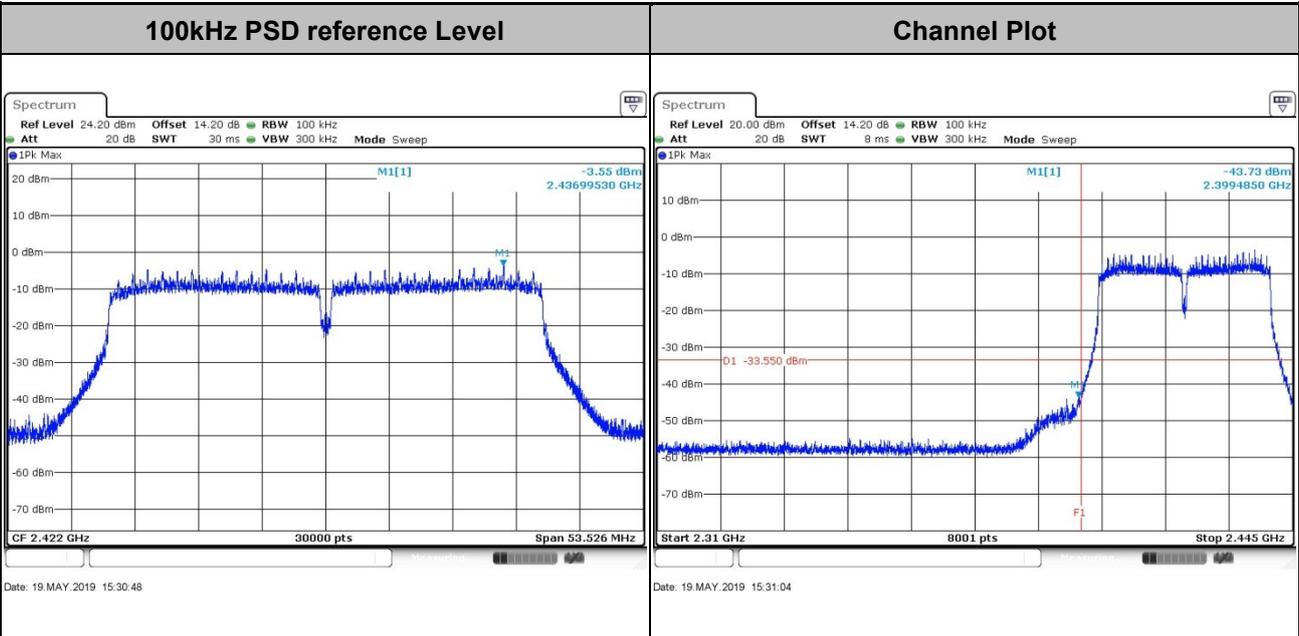


Test Mode :	802.11n HT20	Test Channel :	11
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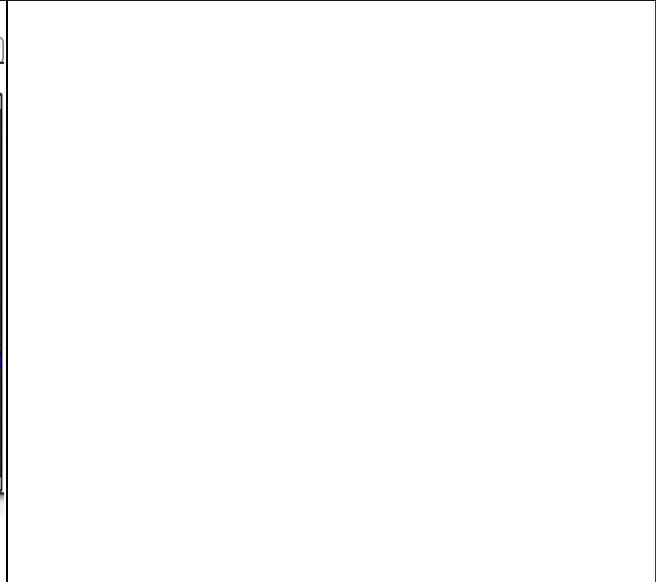
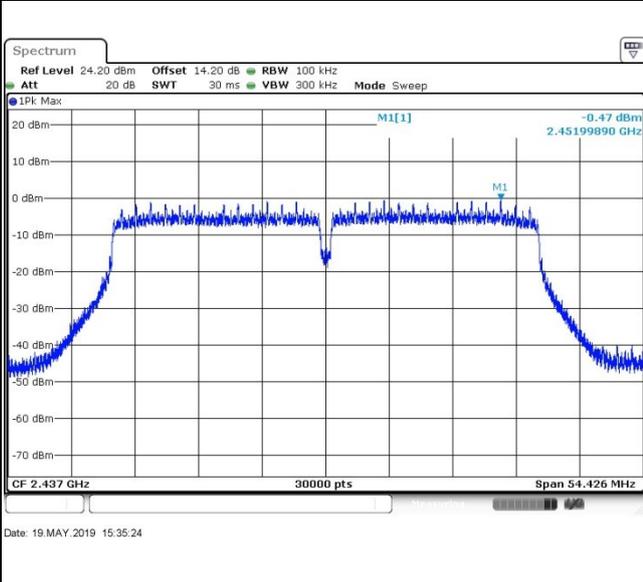
Test Mode :	802.11n HT40	Test Channel :	03
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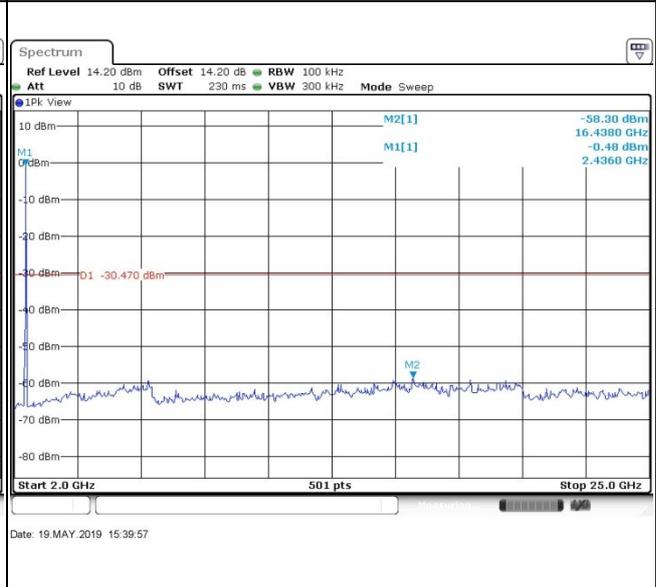
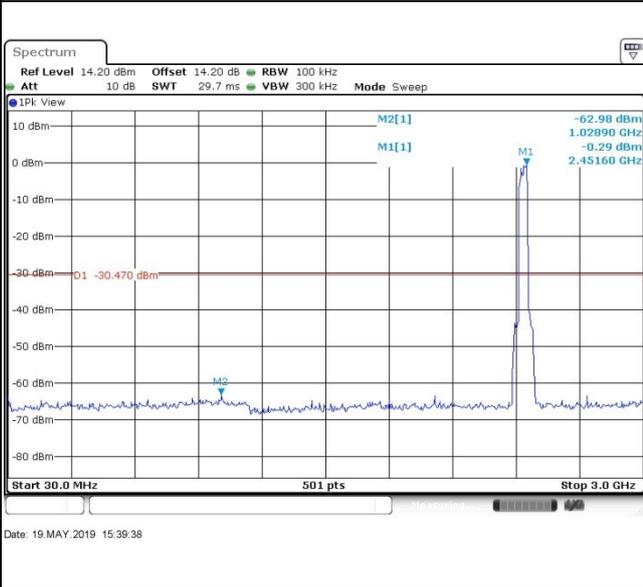


Test Mode :	802.11n HT40	Test Channel :	06
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100kHz PSD reference Level	Channel Plot
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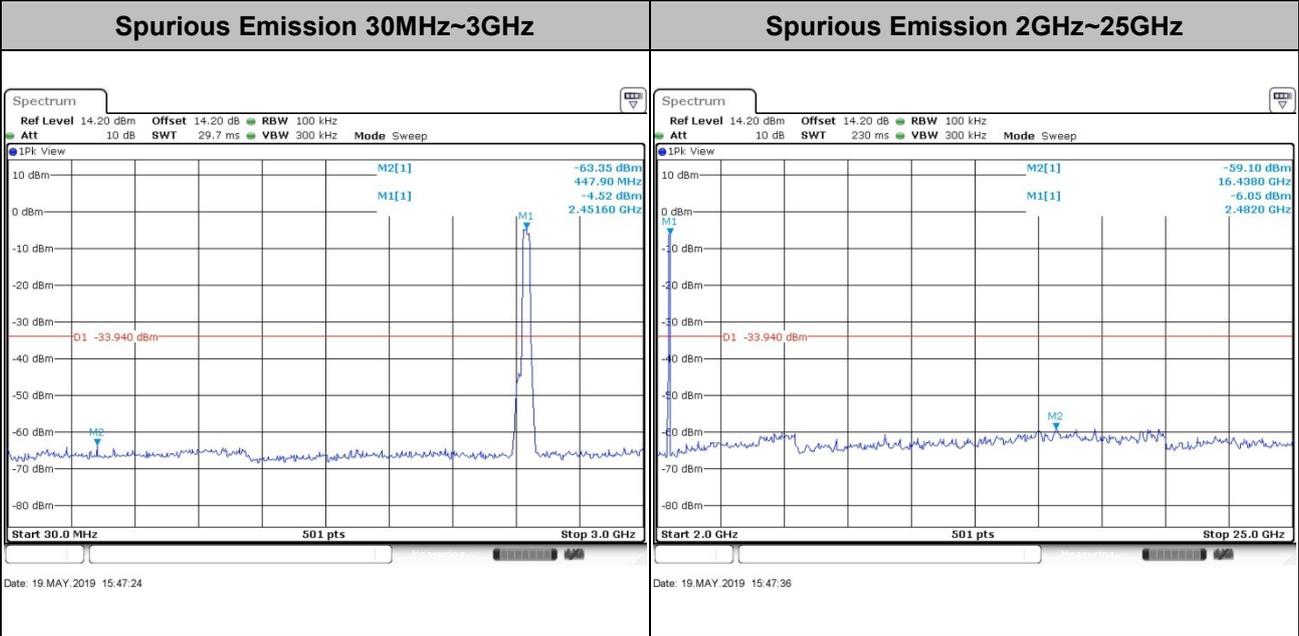
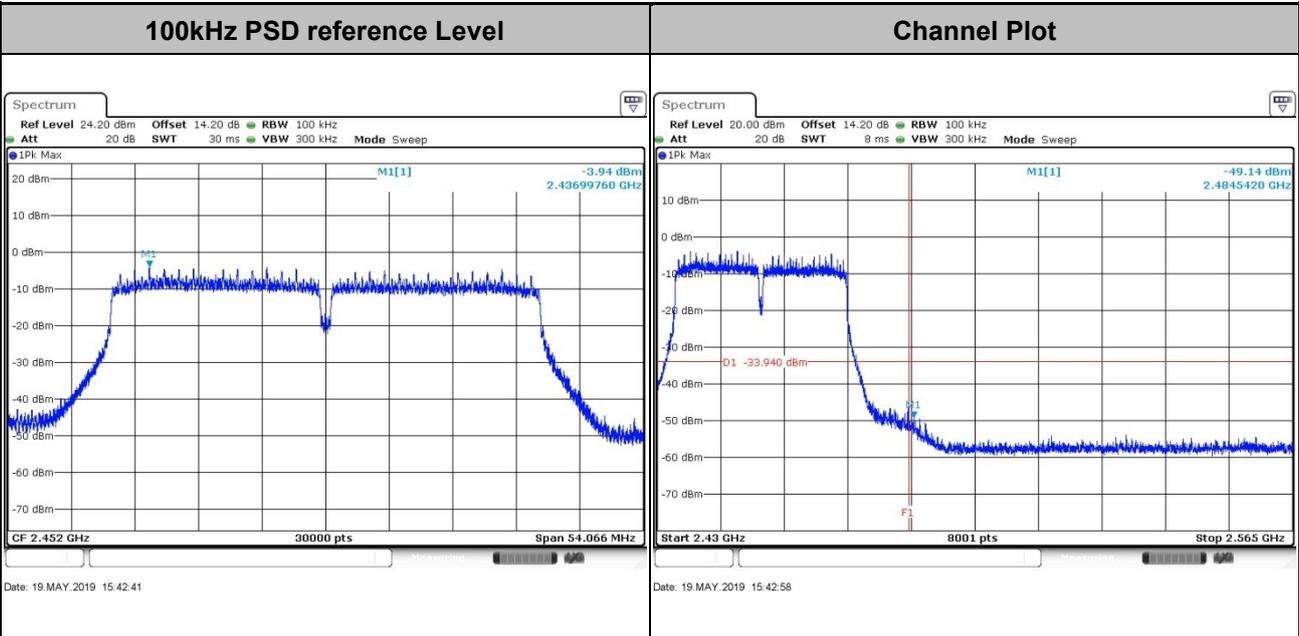


Spurious Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
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Test Mode : 802.11n HT40 Test Channel : 09





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 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.

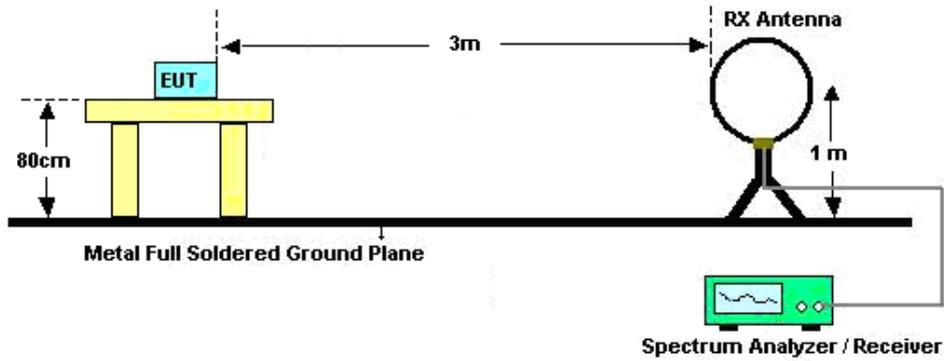


3.5.3 Test Procedures

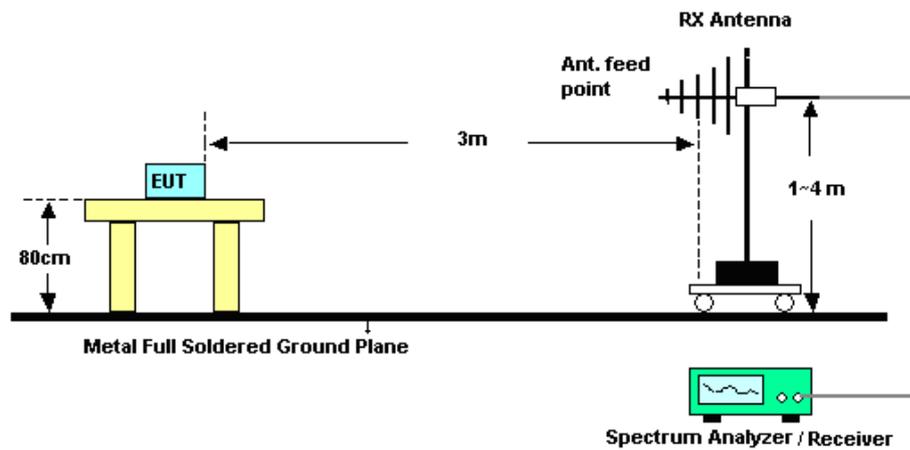
1. The testing follows ANSI C63.10-2013 clause 11.11 & 11.12
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better 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 testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
8. 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 \geq RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.
For average measurement:
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, 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

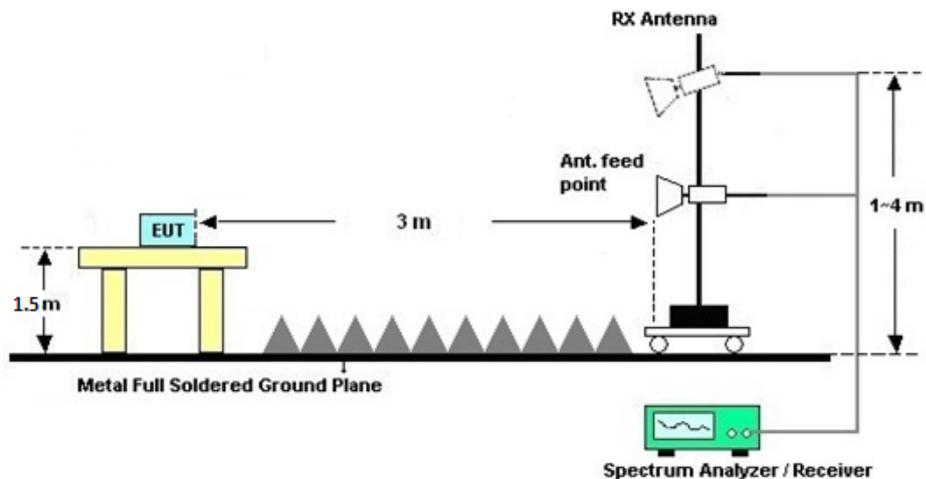
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





3.5.5 Test Results of Radiated Spurious 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 was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C.

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 C.



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.

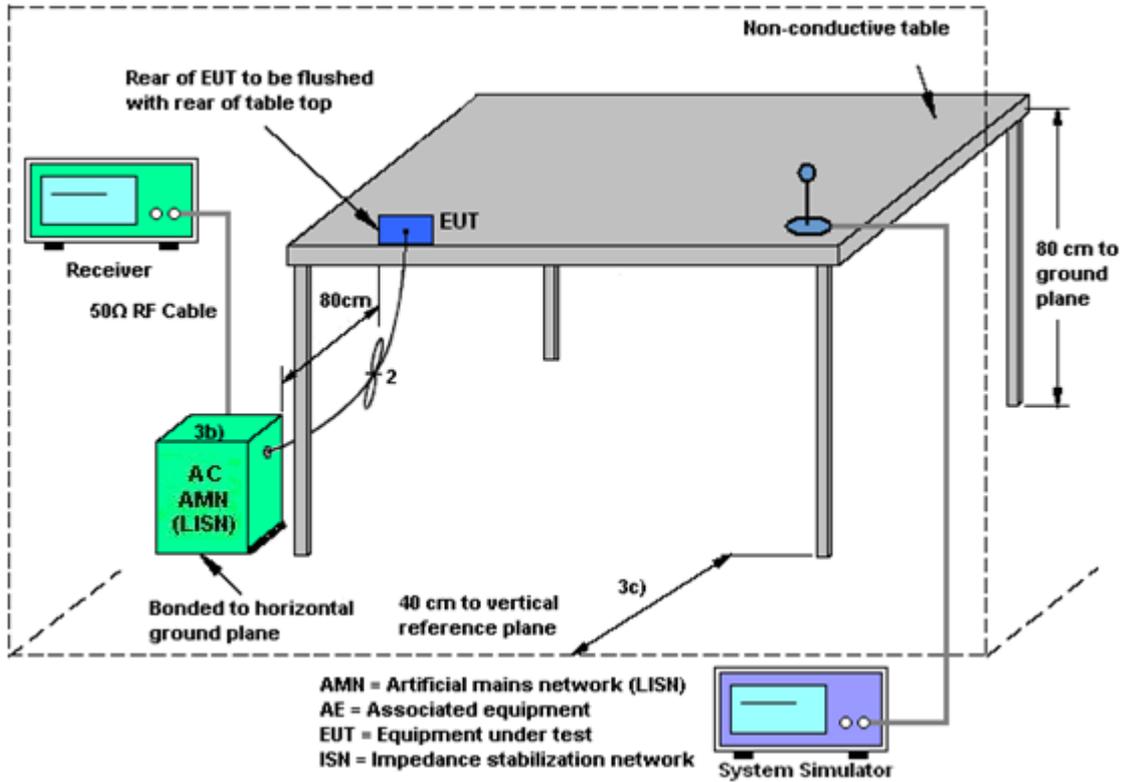
3.6.2 Measuring Instruments

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

Please refer to Appendix B.



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. 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 rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

<CDD Modes > for 802.11g Mode

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = $10 \log(N_{ANT}/N_{SS}=1)$ dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

For power, the directional gain G_{ANT} is set equal to the antenna having the highest gain, i.e., F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain "DG" is calculated as following table.

	Ant. 1 (dBi)	Ant. 2 (dBi)	Power (dBi)	PSD (dBi)	Reduction (dB)	Reduction (dB)
2.4 GHz	-1.00	-2.40	-1.00	1.34	0.00	0.00

$Power\ Limit\ Reduction = DG(Power) - 6dBi, (min = 0)$

$PSD\ Limit\ Reduction = DG(PSD) - 6dBi, (min = 0)$



<STBC Modes> for 802.11n Mode

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

MIMO mode does not support Nss = 1.

Directional gain may be calculated by using the formulas applicable to equal gain antennas with GANT set equal to the gain of the antenna having the highest gain;

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain "DG" is calculated as following table.

	Ant. 1 (dBi)	Ant. 2 (dBi)	Power (dBi)	PSD (dBi)	Reduction (dB)	Reduction (dB)
2.4 GHz	-1.00	-2.40	-1.00	-1.00	0.00	0.00

Power Limit Reduction = DG(Power) – 6dBi, (min = 0)

PSD Limit Reduction = DG(PSD) – 6dBi, (min = 0)



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	9kHz~40GHz	Apr. 18, 2019	May 19, 2019	Apr. 17, 2020	Conducted (TH01-SZ)
Pulse Power Sensor	Anritsu	MA2411B	1207253	30MHz~40GHz	Dec. 22, 2018	May 19, 2019	Dec. 21, 2019	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1218010	50MHz Bandwidth	Dec. 22, 2018	May 19, 2019	Dec. 21, 2019	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Aug. 30, 2018	May 17, 2019~ May 20, 2019	Aug. 29, 2019	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	May 28, 2018	May 17, 2019~ May 20, 2019	May 29, 2019	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Jun. 05, 2018	May 17, 2019~ May 20, 2019	Jun. 04, 2019	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS Lindgren	3117	119436	1GHz~18GHz	Jun. 28, 2018	May 17, 2019~ May 20, 2019	Jun. 27, 2019	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz-40GHz	Mar. 30, 2019	May 17, 2019~ May 20, 2019	Mar. 29, 2020	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 19, 2019	May 17, 2019~ May 20, 2019	Apr. 18, 2020	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-0010 1800-30-10P-R	1707137	1GHz~18GHz	Oct. 19, 2018	May 17, 2019~ May 20, 2019	Oct. 18, 2019	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270104	0.5GHz~26.5GHz	Dec. 22, 2018	May 17, 2019~ May 20, 2019	Dec. 21, 2019	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 17, 2018	May 17, 2019~ May 20, 2019	Jul. 16, 2019	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	May 17, 2019~ May 20, 2019	NCR	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	May 17, 2019~ May 20, 2019	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	May 17, 2019~ May 20, 2019	NCR	Radiation (03CH01-SZ)
EMI Receiver	R&S	ESR7	101630	9kHz~7GHz;	Dec. 23, 2018	May 18, 2019	Dec. 22, 2019	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103912	9kHz~30MHz	Oct. 18, 2018	May 18, 2019	Oct. 17, 2019	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Dec. 23, 2018	May 18, 2019	Dec. 22, 2019	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000891	100Vac~250Vac	Jul. 18, 2018	May 18, 2019	Jul. 17, 2019	Conduction (CO01-SZ)



5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.10-2013. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.6dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.8 dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0 dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.3 dB
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Appendix A. Conducted Test Results

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Jensen Wu	Temperature:	21~25	°C
Test Date:	2019/5/19	Relative Humidity:	51~54	%

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	5.5Mbps	1	1	2412	11.69	11.59	9.03	9.03	0.50	Pass
11b	5.5Mbps	1	6	2437	11.64	11.64	9.23	9.05	0.50	Pass
11b	5.5Mbps	1	11	2462	11.64	11.69	9.05	9.23	0.50	Pass
11g	6Mbps	2	1	2412	16.38	16.28	15.68	15.47	0.50	Pass
11g	6Mbps	2	6	2437	16.53	16.48	15.47	15.66	0.50	Pass
11g	6Mbps	2	11	2462	16.33	16.33	15.78	15.80	0.50	Pass
HT20	MCS8	2	1	2412	17.43	17.28	16.26	15.94	0.50	Pass
HT20	MCS8	2	6	2437	17.43	17.48	15.94	16.16	0.50	Pass
HT20	MCS8	2	11	2462	17.38	17.43	16.78	16.76	0.50	Pass
HT40	MCS8	2	3	2422	36.56	36.46	35.68	35.68	0.50	Pass
HT40	MCS8	2	6	2437	36.46	36.56	36.00	36.28	0.50	Pass
HT40	MCS8	2	9	2452	36.96	36.66	35.88	36.04	0.50	Pass

TEST RESULTS DATA
Average Output Power

2.4GHz Band																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average 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	16.70	16.40		30.00	30.00	-1.00	-2.40	15.70	14.00	36.00	36.00	Pass
11b	1Mbps	1	6	2437	16.90	16.50		30.00	30.00	-1.00	-2.40	15.90	14.10	36.00	36.00	Pass
11b	1Mbps	1	11	2462	16.60	16.20		30.00	30.00	-1.00	-2.40	15.60	13.80	36.00	36.00	Pass
11b	2Mbps	1	1	2412	16.70	16.40		30.00	30.00	-1.00	-2.40	15.70	14.00	36.00	36.00	Pass
11b	2Mbps	1	6	2437	16.90	16.50		30.00	30.00	-1.00	-2.40	15.90	14.10	36.00	36.00	Pass
11b	2Mbps	1	11	2462	16.60	16.20		30.00	30.00	-1.00	-2.40	15.60	13.80	36.00	36.00	Pass
11b	5.5Mbps	1	1	2412	17.20	17.00		30.00	30.00	-1.00	-2.40	16.20	14.60	36.00	36.00	Pass
11b	5.5Mbps	1	6	2437	17.50	17.20		30.00	30.00	-1.00	-2.40	16.50	14.80	36.00	36.00	Pass
11b	5.5Mbps	1	11	2462	17.20	17.10		30.00	30.00	-1.00	-2.40	16.20	14.70	36.00	36.00	Pass
11b	11Mbps	1	1	2412	17.20	17.00		30.00	30.00	-1.00	-2.40	16.20	14.60	36.00	36.00	Pass
11b	11Mbps	1	6	2437	17.50	17.20		30.00	30.00	-1.00	-2.40	16.50	14.80	36.00	36.00	Pass
11b	11Mbps	1	11	2462	17.20	17.10		30.00	30.00	-1.00	-2.40	16.20	14.70	36.00	36.00	Pass
11g	6Mbps	1	1	2412	12.90	12.80		30.00	30.00	-1.00	-2.40	11.90	10.40	36.00	36.00	Pass
11g	6Mbps	1	2	2417	17.20	16.50		30.00	30.00	-1.00	-2.40	16.20	14.10	36.00	36.00	Pass
11g	6Mbps	1	6	2437	16.90	16.70		30.00	30.00	-1.00	-2.40	15.90	14.30	36.00	36.00	Pass
11g	6Mbps	1	10	2457	16.70	16.00		30.00	30.00	-1.00	-2.40	15.70	13.60	36.00	36.00	Pass
11g	6Mbps	1	11	2462	12.60	12.60		30.00	30.00	-1.00	-2.40	11.60	10.20	36.00	36.00	Pass
HT20	MCS0	1	1	2412	12.70	12.60		30.00	30.00	-1.00	-2.40	11.70	10.20	36.00	36.00	Pass
HT20	MCS0	1	2	2417	16.60	16.50		30.00	30.00	-1.00	-2.40	15.60	14.10	36.00	36.00	Pass
HT20	MCS0	1	6	2437	16.30	16.10		30.00	30.00	-1.00	-2.40	15.30	13.70	36.00	36.00	Pass
HT20	MCS0	1	10	2457	16.10	16.00		30.00	30.00	-1.00	-2.40	15.10	13.60	36.00	36.00	Pass
HT20	MCS0	1	11	2462	12.30	12.40		30.00	30.00	-1.00	-2.40	11.30	10.00	36.00	36.00	Pass
HT40	MCS0	1	3	2422	10.30	9.80		30.00	30.00	-1.00	-2.40	9.30	7.40	36.00	36.00	Pass
HT40	MCS0	1	4	2427	14.60	13.60		30.00	30.00	-1.00	-2.40	13.60	11.20	36.00	36.00	Pass
HT40	MCS0	1	6	2437	14.40	13.80		30.00	30.00	-1.00	-2.40	13.40	11.40	36.00	36.00	Pass
HT40	MCS0	1	7	2442	12.50	12.00		30.00	30.00	-1.00	-2.40	11.50	9.60	36.00	36.00	Pass
HT40	MCS0	1	8	2447	10.50	9.90		30.00	30.00	-1.00	-2.40	9.50	7.50	36.00	36.00	Pass
HT40	MCS0	1	9	2452	10.40	9.80		30.00	30.00	-1.00	-2.40	9.40	7.40	36.00	36.00	Pass
11g	6Mbps	2	1	2412	13.00	12.90	15.96	30.00		-1.00		14.96		36.00		Pass
11g	6Mbps	2	2	2417	16.70	16.60	19.66	30.00		-1.00		18.66		36.00		Pass
11g	6Mbps	2	6	2437	17.00	16.80	19.91	30.00		-1.00		18.91		36.00		Pass
11g	6Mbps	2	10	2457	16.40	16.50	19.46	30.00		-1.00		18.46		36.00		Pass
11g	6Mbps	2	11	2462	12.70	12.70	15.71	30.00		-1.00		14.71		36.00		Pass
HT20	MCS8	2	1	2412	12.80	12.80	15.81	30.00		-1.00		14.81		36.00		Pass
HT20	MCS8	2	2	2417	16.70	16.60	19.66	30.00		-1.00		18.66		36.00		Pass
HT20	MCS8	2	6	2437	16.40	16.10	19.26	30.00		-1.00		18.26		36.00		Pass
HT20	MCS8	2	10	2457	16.20	16.10	19.16	30.00		-1.00		18.16		36.00		Pass
HT20	MCS8	2	11	2462	12.40	12.50	15.46	30.00		-1.00		14.46		36.00		Pass
HT40	MCS8	2	3	2422	10.40	10.00	13.21	30.00		-1.00		12.21		36.00		Pass
HT40	MCS8	2	4	2427	14.70	13.90	17.33	30.00		-1.00		16.33		36.00		Pass
HT40	MCS8	2	6	2437	14.50	13.90	17.22	30.00		-1.00		16.22		36.00		Pass
HT40	MCS8	2	7	2442	12.60	12.10	15.37	30.00		-1.00		14.37		36.00		Pass
HT40	MCS8	2	8	2447	10.70	10.00	13.37	30.00		-1.00		12.37		36.00		Pass
HT40	MCS8	2	9	2452	10.50	10.10	13.31	30.00		-1.00		12.31		36.00		Pass

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

TEST RESULTS DATA
Power Spectral Density

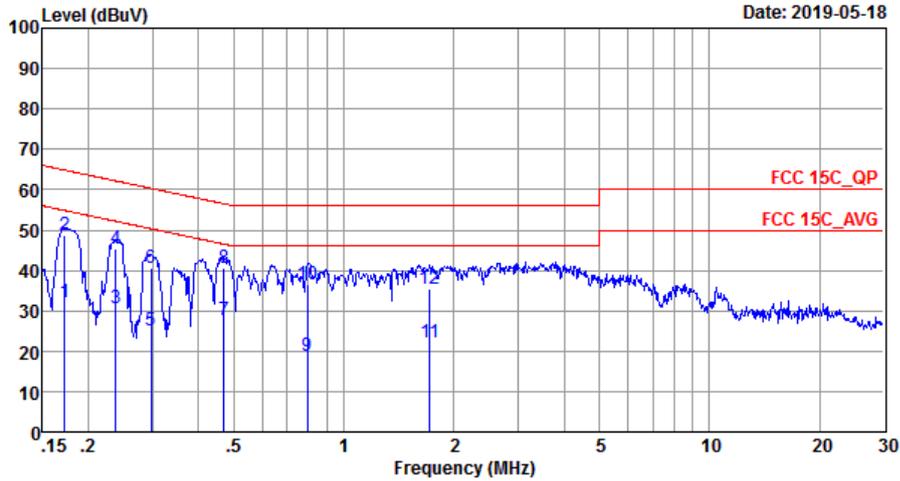
2.4GHz Band												
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
					Ant 1	Ant 2	Worse + 3.01	Ant 1	Ant 2	Ant 1	Ant 2	
11b	5.5Mbps	1	1	2412	-5.67	-5.72	-	-1.00	-2.40	8.00	8.00	Pass
11b	5.5Mbps	1	6	2437	-4.94	-5.63	-	-1.00	-2.40	8.00	8.00	Pass
11b	5.5Mbps	1	11	2462	-5.41	-6.01	-	-1.00	-2.40	8.00	8.00	Pass
11g	6Mbps	2	1	2412	-11.53	-11.82	-8.52	1.34		8.00		Pass
11g	6Mbps	2	6	2437	-7.41	-7.58	-4.40	1.34		8.00		Pass
11g	6Mbps	2	11	2462	-12.59	-12.18	-9.17	1.34		8.00		Pass
HT20	MCS8	2	1	2412	-12.08	-13.21	-9.07	-1.00		8.00		Pass
HT20	MCS8	2	6	2437	-7.82	-8.85	-4.81	-1.00		8.00		Pass
HT20	MCS8	2	11	2462	-11.31	-12.54	-8.30	-1.00		8.00		Pass
HT40	MCS8	2	3	2422	-17.19	-17.17	-14.16	-1.00		8.00		Pass
HT40	MCS8	2	6	2437	-13.66	-14.91	-10.65	-1.00		8.00		Pass
HT40	MCS8	2	9	2452	-17.79	-17.43	-14.42	-1.00		8.00		Pass

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



Appendix B. AC Conducted Emission Test Results

Test Engineer :	Dalin Liu	Temperature :	22~25°C
		Relative Humidity :	50~55%
Test Voltage :	120Vac / 60Hz	Phase :	Line



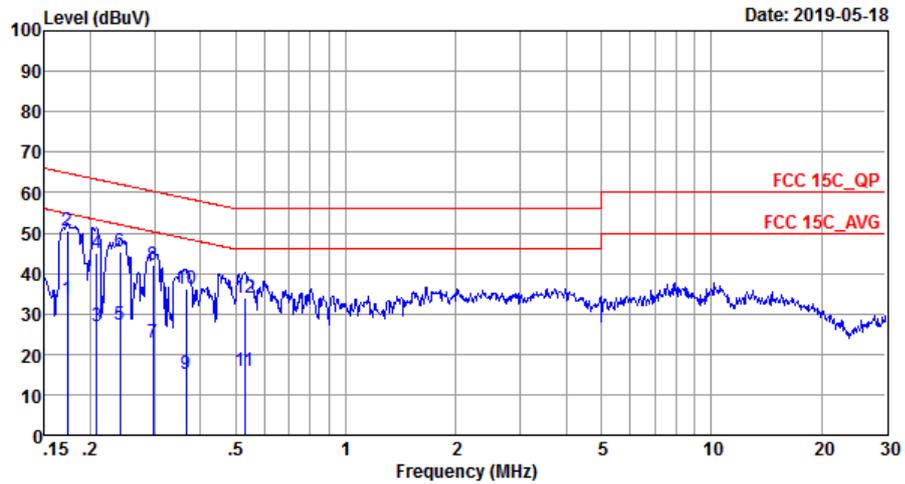
Site : CO01-SZ
 Condition: FCC 15C_QP LISN_20180719_L LINE

IMEI : 869436040038560/869436040043065

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.17	31.99	-22.87	54.86	21.80	0.03	10.16	Average
2	0.17	48.69	-16.17	64.86	38.50	0.03	10.16	QP
3	0.24	30.79	-21.38	52.17	20.60	0.03	10.16	Average
4	0.24	45.39	-16.78	62.17	35.20	0.03	10.16	QP
5	0.30	25.00	-25.32	50.32	14.80	0.03	10.17	Average
6	0.30	40.50	-19.82	60.32	30.30	0.03	10.17	QP
7	0.47	27.60	-18.89	46.49	17.41	0.02	10.17	Average
8 *	0.47	40.60	-15.89	56.49	30.41	0.02	10.17	QP
9	0.80	18.82	-27.18	46.00	8.60	0.04	10.18	Average
10	0.80	36.62	-19.38	56.00	26.40	0.04	10.18	QP
11	1.72	22.09	-23.91	46.00	11.80	0.10	10.19	Average
12	1.72	35.39	-20.61	56.00	25.10	0.10	10.19	QP



Test Engineer :	Dalin Liu	Temperature :	22~25°C
		Relative Humidity :	50~55%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral



Site : C001-SZ
 Condition: FCC 15C_QP LISN_20180719_N NEUTRAL

IMEI : 869436040038560/869436040043065

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.17	33.69	-21.12	54.81	23.50	0.03	10.16	Average
2 *	0.17	50.49	-14.32	64.81	40.30	0.03	10.16	QP
3	0.21	26.79	-26.48	53.27	16.60	0.03	10.16	Average
4	0.21	45.19	-18.08	63.27	35.00	0.03	10.16	QP
5	0.24	27.19	-24.85	52.04	17.00	0.03	10.16	Average
6	0.24	45.49	-16.55	62.04	35.30	0.03	10.16	QP
7	0.30	22.80	-27.52	50.32	12.60	0.03	10.17	Average
8	0.30	42.10	-18.22	60.32	31.90	0.03	10.17	QP
9	0.37	15.19	-33.42	48.61	5.00	0.02	10.17	Average
10	0.37	36.19	-22.42	58.61	26.00	0.02	10.17	QP
11	0.53	15.79	-30.21	46.00	5.60	0.02	10.17	Average
12	0.53	33.99	-22.01	56.00	23.80	0.02	10.17	QP



Appendix C. Radiated Spurious Emission

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2364.7	53.21	-20.79	74	45.63	31.54	9.04	33	174	25	P	H
		2390	42.17	-11.83	54	34.53	31.5	9.14	33	174	25	A	H
	*	2412	106.65	-	-	98.94	31.57	9.14	33	174	25	P	H
	*	2412	100.63	-	-	92.92	31.57	9.14	33	174	25	A	H
		2350.74	53.09	-20.91	74	45.5	31.55	9.04	33	304	115	P	V
		2389.9	42.25	-11.75	54	34.61	31.5	9.14	33	304	115	A	V
	*	2412	102.47	-	-	94.76	31.57	9.14	33	304	115	P	V
	*	2412	96.81	-	-	89.1	31.57	9.14	33	304	115	A	V
802.11b CH 06 2437MHz		2321.76	53.03	-20.97	74	45.52	31.57	8.94	33	174	8	P	H
		2389.94	42.04	-11.96	54	34.4	31.5	9.14	33	174	8	A	H
	*	2437	107.85	-	-	99.93	31.71	9.21	33	174	8	P	H
	*	2437	101.89	-	-	93.97	31.71	9.21	33	174	8	A	H
		2497.48	53.02	-20.98	74	44.81	31.93	9.28	33	174	8	P	H
		2483.5	42.47	-11.53	54	34.33	31.86	9.28	33	174	8	A	H
		2387.14	52.93	-21.07	74	45.29	31.5	9.14	33	304	105	P	V
		2389.94	42.03	-11.97	54	34.39	31.5	9.14	33	304	105	A	V
	*	2437	102.23	-	-	94.31	31.71	9.21	33	304	105	P	V
	*	2437	96.29	-	-	88.37	31.71	9.21	33	304	105	A	V
		2496.08	52.56	-21.44	74	44.35	31.93	9.28	33	304	105	P	V
	2499.23	42.4	-11.6	54	34.19	31.93	9.28	33	304	105	A	V	



802.11b CH 11 2462MHz	*	2462	107.47	-	-	99.47	31.79	9.21	33	174	8	P	H
	*	2462	101.79	-	-	93.79	31.79	9.21	33	174	8	A	H
		2499.88	53.03	-20.97	74	44.82	31.93	9.28	33	174	8	P	H
		2483.52	43.34	-10.66	54	35.2	31.86	9.28	33	174	8	A	H
	*	2462	102.58	-	-	94.58	31.79	9.21	33	304	106	P	V
	*	2462	96.99	-	-	88.99	31.79	9.21	33	304	106	A	V
		2493.32	52.71	-21.29	74	44.5	31.93	9.28	33	304	106	P	V
		2483.52	42.69	-11.31	54	34.55	31.86	9.28	33	304	106	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	42.3	-31.7	74	53.11	33.77	12.9	57.48	174	29	P	H
		4824	43.01	-30.99	74	53.82	33.77	12.9	57.48	185	255	P	V
802.11b CH 06 2437MHz		4874	38.66	-35.34	74	49.42	33.75	13.01	57.52	165	106	P	H
		7311	44.42	-29.58	74	51.37	35.46	16.51	58.92	174	100	P	H
		4874	39.35	-34.65	74	50.11	33.75	13.01	57.52	165	106	P	V
802.11b CH 11 2462MHz		7311	44.14	-29.86	74	51.09	35.46	16.51	58.92	174	100	P	V
		4924	39.24	-34.76	74	49.85	33.73	13.21	57.55	150	285	P	H
		7386	43.46	-30.54	74	50.21	35.61	16.6	58.96	155	274	P	H
		4924	38.91	-35.09	74	49.52	33.73	13.21	57.55	150	285	P	V
		7386	43.68	-30.32	74	50.43	35.61	16.6	58.96	155	274	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+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)
802.11g CH 01 2412MHz		2311.15	53.81	-20.19	74	46.28	31.59	8.94	33	109	15	P	H
		2390	44.17	-9.83	54	36.53	31.5	9.14	33	109	15	A	H
	*	2412	105.66	-	-	97.95	31.57	9.14	33	109	15	P	H
	*	2412	97.39	-	-	89.68	31.57	9.14	33	109	15	A	H
		2322.28	53.36	-20.64	74	45.85	31.57	8.94	33	327	81	P	V
		2390	42.85	-11.15	54	35.21	31.5	9.14	33	327	81	A	V
	*	2412	98.41	-	-	90.7	31.57	9.14	33	327	81	P	V
	*	2412	91.94	-	-	84.23	31.57	9.14	33	327	81	A	V
802.11g CH 06 2437MHz		2345.56	53.05	-20.95	74	45.46	31.55	9.04	33	151	20	P	H
		2389.94	42.55	-11.45	54	34.91	31.5	9.14	33	151	20	A	H
	*	2437	108.5	-	-	100.58	31.71	9.21	33	151	20	P	H
	*	2437	101.47	-	-	93.55	31.71	9.21	33	151	20	A	H
		2499.09	53.55	-20.45	74	45.34	31.93	9.28	33	151	20	P	H
		2483.5	43.23	-10.77	54	35.09	31.86	9.28	33	151	20	A	H
		2339.96	52.37	-21.63	74	44.88	31.55	8.94	33	327	81	P	V
		2389.66	42.05	-11.95	54	34.41	31.5	9.14	33	327	81	A	V
	*	2437	105.59	-	-	97.67	31.71	9.21	33	327	81	P	V
	*	2437	99.06	-	-	91.14	31.71	9.21	33	327	81	A	V
		2494.61	52.93	-21.07	74	44.72	31.93	9.28	33	327	81	P	V
		2483.55	42.43	-11.57	54	34.29	31.86	9.28	33	327	81	A	V



802.11g CH 11 2462MHz	*	2462	105.41	-	-	97.41	31.79	9.21	33	210	38	P	H
	*	2462	97.86	-	-	89.86	31.79	9.21	33	210	38	A	H
		2484.2	54.97	-19.03	74	46.83	31.86	9.28	33	210	38	P	H
		2483.52	45.66	-8.34	54	37.52	31.86	9.28	33	210	38	A	H
	*	2462	99.67	-	-	91.67	31.79	9.21	33	326	78	P	V
	*	2462	93.72	-	-	85.72	31.79	9.21	33	326	78	A	V
		2495.16	53.33	-20.67	74	45.12	31.93	9.28	33	326	78	P	V
		2483.56	43.42	-10.58	54	35.28	31.86	9.28	33	326	78	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+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)
802.11g CH 01 2412MHz		4824	39.19	-34.81	74	50	33.77	12.9	57.48	174	29	P	H
		4824	39.72	-34.28	74	50.53	33.77	12.9	57.48	185	255	P	V
802.11g CH 06 2437MHz		4874	39.28	-34.72	74	50.04	33.75	13.01	57.52	172	146	P	H
		7311	43.23	-30.77	74	50.18	35.46	16.51	58.92	227	189	P	H
		4874	38.65	-35.35	74	49.41	33.75	13.01	57.52	165	106	P	V
		7311	42.97	-31.03	74	49.92	35.46	16.51	58.92	174	100	P	V
802.11g CH 11 2462MHz		4924	39.06	-34.94	74	49.67	33.73	13.21	57.55	183	227	P	H
		7386	43.11	-30.89	74	49.86	35.61	16.6	58.96	175	315	P	H
		4924	39.61	-34.39	74	50.22	33.73	13.21	57.55	150	285	P	V
		7386	43.99	-30.01	74	50.74	35.61	16.6	58.96	155	274	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 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)
802.11n HT20 CH 01 2412MHz		2364.91	54.54	-19.46	74	46.96	31.54	9.04	33	109	13	P	H
		2390	44.14	-9.86	54	36.5	31.5	9.14	33	109	13	A	H
	*	2412	105.3	-	-	97.59	31.57	9.14	33	109	13	P	H
	*	2412	97.13	-	-	89.42	31.57	9.14	33	109	13	A	H
		2377.72	52.5	-21.5	74	44.94	31.52	9.04	33	326	78	P	V
		2390	42.88	-11.12	54	35.24	31.5	9.14	33	326	78	A	V
	*	2412	99.76	-	-	92.05	31.57	9.14	33	326	78	P	V
	*	2412	92.49	-	-	84.78	31.57	9.14	33	326	78	A	V
802.11n HT20 CH 06 2437MHz		2330.16	53.94	-20.06	74	46.43	31.57	8.94	33	182	10	P	H
		2389.94	43.45	-10.55	54	35.81	31.5	9.14	33	182	10	A	H
	*	2437	107.78	-	-	99.86	31.71	9.21	33	182	10	P	H
	*	2442	100.43	-	-	92.51	31.71	9.21	33	182	10	A	H
		2485.16	54.04	-19.96	74	45.9	31.86	9.28	33	182	10	P	H
		2483.62	44.08	-9.92	54	35.94	31.86	9.28	33	182	10	A	H
		2348.5	53.34	-20.66	74	45.75	31.55	9.04	33	326	78	P	V
		2389.8	42.05	-11.95	54	34.41	31.5	9.14	33	326	78	A	V
	*	2437	104.45	-	-	96.53	31.71	9.21	33	326	78	P	V
	*	2437	97.02	-	-	89.1	31.71	9.21	33	326	78	A	V
		2495.8	52.76	-21.24	74	44.55	31.93	9.28	33	326	78	P	V
		2483.55	42.48	-11.52	54	34.34	31.86	9.28	33	326	78	A	V



802.11n HT20 CH 11 2462MHz	*	2462	104.81	-	-	96.81	31.79	9.21	33	182	10	P	H
	*	2462	96.67	-	-	88.67	31.79	9.21	33	182	10	A	H
		2483.52	55.53	-18.47	74	47.39	31.86	9.28	33	182	10	P	H
		2483.52	45.74	-8.26	54	37.6	31.86	9.28	33	182	10	A	H
	*	2462	99.34	-	-	91.34	31.79	9.21	33	326	78	P	V
	*	2462	91.95	-	-	83.95	31.79	9.21	33	326	78	A	V
		2484.04	56.15	-17.85	74	48.01	31.86	9.28	33	326	78	P	V
		2483.52	43.51	-10.49	54	35.37	31.86	9.28	33	326	78	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 HT20 CH 01 2412MHz		4824	40.46	-33.54	74	51.27	33.77	12.9	57.48	185	255	P	H
		4824	39.08	-34.92	74	49.89	33.77	12.9	57.48	174	29	P	V
802.11n HT20 CH 06 2437MHz		4874	39.09	-34.91	74	49.85	33.75	13.01	57.52	165	106	P	H
		7311	45.28	-28.72	74	52.23	35.46	16.51	58.92	174	100	P	H
		4874	38.48	-35.52	74	49.24	33.75	13.01	57.52	172	146	P	V
		7311	43.55	-30.45	74	50.5	35.46	16.51	58.92	227	189	P	V
802.11n HT20 CH 11 2462MHz		4924	39.14	-34.86	74	49.75	33.73	13.21	57.55	183	227	P	H
		7386	43.19	-30.81	74	49.94	35.61	16.6	58.96	175	315	P	H
		4924	39.11	-34.89	74	49.72	33.73	13.21	57.55	150	285	P	V
		7386	43.49	-30.51	74	50.24	35.61	16.6	58.96	155	274	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)
802.11n HT40 CH 03 2422MHz		2389.66	54.44	-19.56	74	46.8	31.5	9.14	33	151	20	P	H
		2389.94	46.55	-7.45	54	38.91	31.5	9.14	33	151	20	A	H
	*	2422	99.86	-	-	92.08	31.64	9.14	33	151	20	P	H
	*	2422	92.45	-	-	84.67	31.64	9.14	33	151	20	A	H
		2485.23	54.37	-19.63	74	46.23	31.86	9.28	33	151	20	P	H
		2492.16	45.47	-8.53	54	37.26	31.93	9.28	33	151	20	A	H
		2371.88	52.94	-21.06	74	45.38	31.52	9.04	33	326	78	P	V
		2389.94	44.78	-9.22	54	37.14	31.5	9.14	33	326	78	A	V
	*	2422	95	-	-	87.22	31.64	9.14	33	326	78	P	V
	*	2422	87.62	-	-	79.84	31.64	9.14	33	326	78	A	V
		2489.99	52.98	-21.02	74	44.77	31.93	9.28	33	326	78	P	V
		2484.04	43.97	-10.03	54	35.83	31.86	9.28	33	326	78	A	V
802.11n HT40 CH 06 2437MHz		2389.66	56.81	-17.19	74	49.17	31.5	9.14	33	151	18	P	H
		2389.94	46.92	-7.08	54	39.28	31.5	9.14	33	151	18	A	H
	*	2437	103.16	-	-	95.24	31.71	9.21	33	151	18	P	H
	*	2437	95.71	-	-	87.79	31.71	9.21	33	151	18	A	H
		2483.55	57.76	-16.24	74	49.62	31.86	9.28	33	151	18	P	H
		2483.62	47.9	-6.1	54	39.76	31.86	9.28	33	151	18	A	H
		2389.8	56.05	-17.95	74	48.41	31.5	9.14	33	326	78	P	V
		2389.8	45.49	-8.51	54	37.85	31.5	9.14	33	326	78	A	V
	*	2437	98.69	-	-	90.77	31.71	9.21	33	326	78	P	V
	*	2437	91.96	-	-	84.04	31.71	9.21	33	326	78	A	V
	2483.9	58.94	-15.06	74	50.8	31.86	9.28	33	326	78	P	V	
	2484.11	46	-8	54	37.86	31.86	9.28	33	326	78	A	V	



802.11n HT40 CH 09 2452MHz		2377.62	52.54	-21.46	74	44.98	31.52	9.04	33	166	20	P	H
		2389.38	43.67	-10.33	54	36.03	31.5	9.14	33	166	20	A	H
	*	2452	99.34	-	-	91.42	31.71	9.21	33	166	20	P	H
	*	2452	91.54	-	-	83.62	31.71	9.21	33	166	20	A	H
		2485.16	56.37	-17.63	74	48.23	31.86	9.28	33	166	20	P	H
		2483.5	47.14	-6.86	54	39	31.86	9.28	33	166	20	A	H
		2322.18	52.36	-21.64	74	44.85	31.57	8.94	33	326	78	P	V
		2311.96	43.68	-10.32	54	36.15	31.59	8.94	33	326	78	A	V
	*	2452	95.93	-	-	88.01	31.71	9.21	33	326	78	P	V
	*	2452	88.78	-	-	80.86	31.71	9.21	33	326	78	A	V
		2483.9	52.92	-21.08	74	44.78	31.86	9.28	33	326	78	P	V
		2483.76	45.33	-8.67	54	37.19	31.86	9.28	33	326	78	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 HT40 CH 03		4844	39.89	-34.11	74	50.6	33.77	13.01	57.49	188	296	P	H
		7266	43.16	-30.84	74	50.21	35.4	16.46	58.91	169	275	P	H
2422MHz		4844	39.73	-34.27	74	50.44	33.77	13.01	57.49	150	350	P	V
		7266	43.51	-30.49	74	50.56	35.4	16.46	58.91	200	360	P	V
802.11n HT40 CH 06		4874	38.66	-35.34	74	49.42	33.75	13.01	57.52	166	185	P	H
		7311	44.85	-29.15	74	51.8	35.46	16.51	58.92	163	298	P	H
		4874	38.82	-35.18	74	49.58	33.75	13.01	57.52	165	230	P	V
		7311	43.31	-30.69	74	50.26	35.46	16.51	58.92	186	323	P	V
802.11n HT40 CH 09		4904	39.67	-34.33	74	50.36	33.74	13.11	57.54	162	318	P	H
		7356	43.52	-30.48	74	50.36	35.55	16.55	58.94	189	298	P	H
		4904	38.89	-35.11	74	49.58	33.74	13.11	57.54	150	360	P	V
		7356	43.77	-30.23	74	50.61	35.55	16.55	58.94	165	335	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

Emission below 1GHz

2.4GHz WIFI 802.11n HT40 (LF)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1+2		(MHz)	(dB μ V/m)	(dB)	(dB μ V/m)	(dB μ V)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11n HT40 LF		30	24.98	-15.02	40	30.92	24.4	0.96	31.3	100	154	P	H
		94.99	24.39	-19.11	43.5	38.55	15.7	1.74	31.6	-	-	P	H
		157.07	23.96	-19.54	43.5	36.9	16.2	2.24	31.38	-	-	P	H
		284.14	23.22	-22.78	46	32.74	18.96	3.01	31.49	-	-	P	H
		652.74	29.54	-16.46	46	31.7	24.71	4.55	31.42	-	-	P	H
		981.57	32.35	-21.65	54	30.77	27.23	5.59	31.24	-	-	P	H
		42.61	28.5	-11.5	40	41.4	17.37	1.18	31.45	-	-	P	V
		62.98	28.72	-11.28	40	46.21	12.62	1.39	31.5	166	328	P	V
		167.74	21.55	-21.95	43.5	34.9	15.7	2.31	31.36	-	-	P	V
		510.15	26.62	-19.38	46	30.3	23.51	4.03	31.22	-	-	P	V
		638.19	29.08	-16.92	46	31.38	24.65	4.5	31.45	-	-	P	V
	995.15	30.2	-23.8	54	28.42	27.36	5.63	31.21	-	-	P	V	
Remark	1. No other spurious found. 2. All results are PASS against 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	Peak or Average
H/V	Horizontal or Vertical



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		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

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

For Peak Limit @ 2390MHz:

- 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)
- Over Limit(dB)
= Level(dBμV/m) – Limit Line(dBμV/m)
= 55.45(dBμV/m) – 74(dBμV/m)
= -18.55(dB)

For Average Limit @ 2390MHz:

- 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)
- 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”.

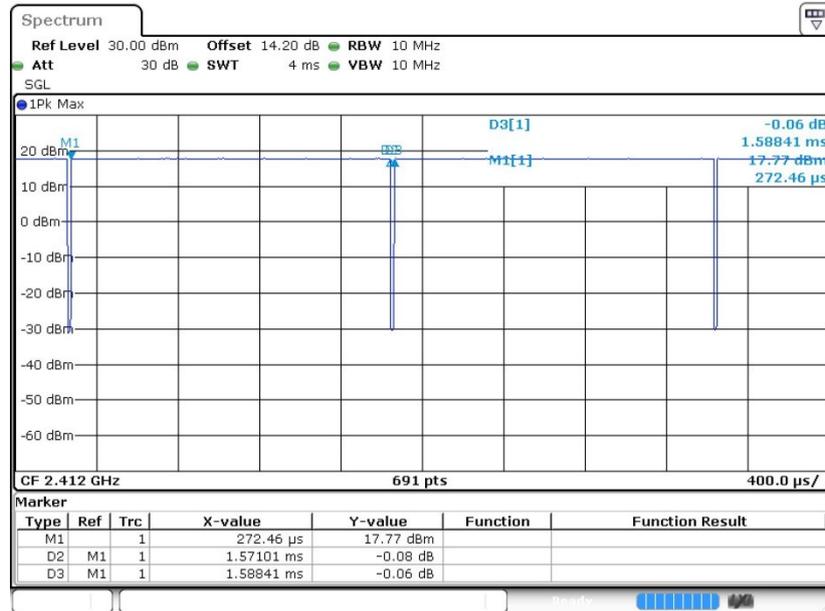


Appendix D. Duty Cycle Plots

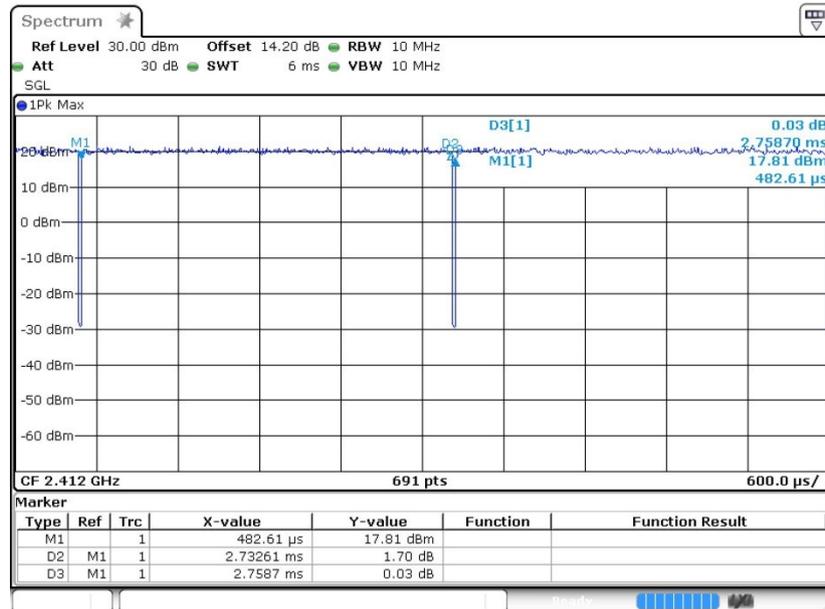
Antenna	Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
1	802.11b	98.90	-	-	10Hz
1+2	802.11g	99.05	-	-	10Hz
1+2	802.11n HT20	98.34	-	-	10Hz
1+2	802.11n HT40	97.38	0.646	1.549	3KHz



802.11b

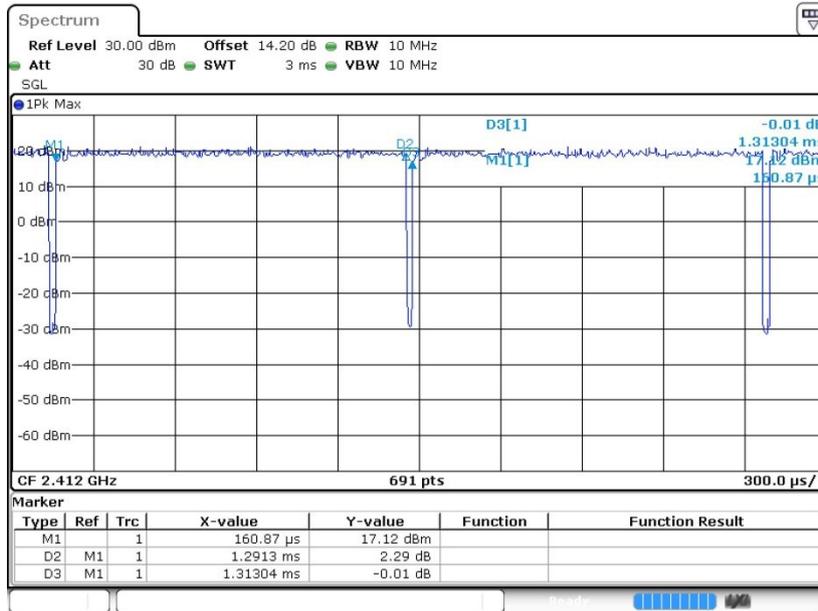


802.11g





802.11n20



802.11n40

