



FCC RF Test Report

APPLICANT : Acer Incorporated
EQUIPMENT : Notebook computer
BRAND NAME : acer
MODEL NAME : N18H1
FCC ID : Contains FCC ID : HLZ9560D2W
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was installed a module during the test: WLAN and BT, 2*2 PCIe M.2 1216 SD adapter card (Brand Name: acer, Model Name: 9560D2W, FCC ID: HLZ9560D2W) during test.

The product was received on Mar. 28, 2018 and testing was completed on May 01, 2018. We, Sporton International (Shenzhen) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (Shenzhen) Inc., the test report shall not be reproduced except in full.

Approved by: Eric Shih / Manager



Sporton International (Shenzhen) Inc.

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Guangdong Province 518055 China**



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR832810D	Rev. 01	Initial issue of report	May 11, 2018



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
-	2.1049 & 15.403(i)	26dB & 99% Bandwidth	-	Pass	1
3.1	15.407(a)	Maximum Conducted Output Power	≤ 24 dBm	Pass	-
-	15.407(a)	Power Spectral Density	≤ 11 dBm	Pass	1
3.2	15.407(b)	Unwanted Emissions	15.407(b) & 15.209(a)	Pass	Under limit 1.57 dB at 5725.100 MHz
3.3	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 5.62 dB at 1.270 MHz
3.4	15.407(c)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.5	15.203 & 15.407(a)	Antenna Requirement	N/A	Pass	-
Remark: All conducted test items were leveraged from module RF report "170919-03.TR01/02".					



1 General Description

1.1 Applicant

Acer Incorporated

8F, 88, Sec.1 Xintai 5th Rd. Xizhi, New Taipei City 221, Taiwan, R.O.C

1.2 Manufacturer

Acer Incorporated

8F, 88, Sec.1 Xintai 5th Rd. Xizhi, New Taipei City 221, Taiwan, R.O.C

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Notebook computer
Brand Name	acer
Model Name	N18H1
FCC ID	Contains FCC ID : HLZ9560D2W
EUT supports Radios application	WLAN2.4GHz 802.11b/g/n HT20/HT40 WLAN5GHz 802.11a/n HT20/HT40 WLAN5GHz 802.11ac VHT20/VHT40/VHT80/VHT160 Bluetooth V3.0+EDR/ Bluetooth V5.0 LE
EUT Stage	Identical Prototype

Module Feature & Specification	
Equipment	WLAN and BT, 2*2 PCIe M.2 1216 SD adapter card
Brand Name	acer
Model Name	9560D2W
FCC ID	HLZ9560D2W
Applicant	Acer Incorporated 8F, 88, Sec.1 Xintai 5th Rd. Xizhi, New Taipei City 221, Taiwan, R.O.C
Manufacturer	Acer Incorporated 8F, 88, Sec.1 Xintai 5th Rd. Xizhi, New Taipei City 221, Taiwan, R.O.C

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5700 MHz
Maximum Output Power to Antenna	Ant.1 <5180 MHz ~ 5240 MHz> 802.11a : 15.90 dBm / 0.0389 W 802.11n HT20 : 15.86 dBm / 0.0385 W 802.11n HT40 : 15.88 dBm / 0.0387 W 802.11n VHT20 : 15.85 dBm / 0.0385 W 802.11n VHT40 : 15.85 dBm / 0.0385 W 802.11n VHT80 : 15.62 dBm / 0.0365 W <5260 MHz ~ 5320 MHz> 802.11a : 16.00 dBm / 0.0398 W 802.11n HT20 : 15.97 dBm / 0.0395 W 802.11n HT40 : 15.87 dBm / 0.0386 W 802.11n VHT20 : 15.94 dBm / 0.0393 W 802.11n VHT40 : 15.86 dBm / 0.0385 W 802.11n VHT80 : 14.84 dBm / 0.0305 W <5500 MHz ~ 5700 MHz > 802.11a : 17.22 dBm / 0.0527 W 802.11n HT20 : 16.89 dBm / 0.0489 W 802.11n HT40 : 17.12 dBm / 0.0515 W 802.11n VHT20 : 16.88 dBm / 0.0488 W 802.11n VHT40 : 17.10 dBm / 0.0513 W 802.11n VHT80 : 17.12 dBm / 0.0515 W 802.11n VHT160 : 12.49 dBm / 0.0177 W <5180 MHz ~ 5320 MHz> 802.11n VHT160 : 15.67 dBm / 0.0369 W Ant.2 <5180 MHz ~ 5240 MHz> 802.11a : 15.60 dBm / 0.0363 W 802.11n HT20 : 15.55 dBm / 0.0359 W 802.11n HT40 : 15.59 dBm / 0.0362 W 802.11n VHT20 : 15.52 dBm / 0.0356 W 802.11n VHT40 : 15.55 dBm / 0.0359 W 802.11n VHT80 : 15.58 dBm / 0.0361 W <5260 MHz ~ 5320 MHz> 802.11a : 15.56 dBm / 0.0360 W 802.11n HT20 : 15.54 dBm / 0.0358 W 802.11n HT40 : 15.55 dBm / 0.0359 W 802.11n VHT20 : 15.53 dBm / 0.0357 W 802.11n VHT40 : 15.52 dBm / 0.0356 W 802.11n VHT80 : 14.44 dBm / 0.0278 W <5500 MHz ~ 5700 MHz > 802.11a : 15.42 dBm / 0.0348 W 802.11n HT20 : 15.41 dBm / 0.0348 W 802.11n HT40 : 15.31 dBm / 0.0340 W 802.11n VHT20 : 15.39 dBm / 0.0346 W 802.11n VHT40 : 15.28 dBm / 0.0337 W 802.11n VHT80 : 15.00 dBm / 0.0316 W 802.11n VHT160 : 12.42 dBm / 0.0175 W

	<5180 MHz ~ 5320 MHz> 802.11n VHT160 : 15.69 dBm / 0.0371 W Ant.1+2 <5180 MHz ~ 5240 MHz> 802.11n HT20 : 18.58 dBm / 0.0721 W 802.11n HT40 : 18.57 dBm / 0.0719 W 802.11n VHT20 : 18.54 dBm / 0.0714 W 802.11n VHT40 : 18.56 dBm / 0.0718 W 802.11n VHT80 : 12.33 dBm / 0.0171 W <5260 MHz ~ 5320 MHz> 802.11n HT20 : 18.63 dBm / 0.0729 W 802.11n HT40 : 18.59 dBm / 0.0723 W 802.11n VHT20 : 18.60 dBm / 0.0724 W 802.11n VHT40 : 18.58 dBm / 0.0721 W 802.11n VHT80 : 14.92 dBm / 0.0310 W <5500 MHz ~ 5700 MHz > 802.11n HT20 : 18.82 dBm / 0.0762 W 802.11n HT40 : 19.19 dBm / 0.0830 W 802.11n VHT20 : 18.78 dBm / 0.0755 W 802.11n VHT40 : 19.19 dBm / 0.0830 W 802.11n VHT80 : 19.18 dBm / 0.0828 W 802.11n VHT160 : 15.36 dBm / 0.0344 W <5180 MHz ~ 5320 MHz> 802.11n VHT160 : 16.13 dBm / 0.0410 W		
Antenna Gain / Gain	<5150 MHz ~ 5250 MHz> <Ant. 1> : PIFA Antenna with gain 2.70 dBi <Ant. 2> : PIFA Antenna with gain 2.60 dBi <5250 MHz ~ 5350 MHz> <Ant. 1> : PIFA Antenna with gain 1.60 dBi <Ant. 2> : PIFA Antenna with gain 2.60 dBi <5470 MHz ~ 5700 MHz> <Ant. 1> : PIFA Antenna with gain 2.70 dBi <Ant. 2> : PIFA Antenna with gain 2.80 dBi		
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)		
Antenna Function Description		Ant. 1	Ant. 2
	802.11 a/n/ac SISO	V	V
	802.11 n/ac MIMO	V	V

Note:

- For 802.11n HT20 / ac VHT20 and 802.11n HT40 / ac VHT40 mode, the whole testing has assessed only 802.11ac VHT20/ VHT40 by referring to their higher conducted power.
- For 802.11n/ac SISO & MIMO mode, the whole testing has assessed only MIMO mode by referring to their higher conducted power



1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Testing Location

Sporton International (Shenzhen) Inc. is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600156-0) and the FCC designation No are CN5018 and CN5019.

Test Site	Sporton International (Shenzhen) Inc.		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan Shenzhen City Guangdong Province 518055 China TEL: +86-755-8637-9589 FAX: +86-755-8637-9595		
Test Site No.	Sporton Site No.		FCC Test Firm Registration No.
	TH01-SZ	CO01-SZ	251365

Test Site	Sporton International (Shenzhen) Inc.		
Test Site Location	No. 3 Bldg the third floor of south, Shahe River west, Fengzeyuan Warehouse, Nanshan District Shenzhen City Guangdong Province 518055 China TEL: +86-755-3320-2398		
Test Site No.	Sporton Site No.		FCC Test Firm Registration No.
	03CH04-SZ		577730

Note: The test site complies with ANSI C63.4 2014 requirement.



1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).
- b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5150-5250 MHz Band 1 (U-NII-1)	36	5180	44	5220
	38*	5190	46*	5230
	40	5200	48	5240
	42 [#]	5210	50 [@]	5250

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5250-5350 MHz Band 2 (U-NII-2A)	52	5260	60	5300
	54*	5270	62*	5310
	56	5280	64	5320
	58 [#]	5290	50 [@]	5250

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5470-5725 MHz Band 3 (U-NII-2C)	100	5500	112	5560
	102*	5510	114 [@]	5570
	104	5520	116	5580
	106 [#]	5530	132	5660
	108	5540	134*	5670
	110*	5550	136	5680
			140	5700



Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
TDWR Channel	118*	5590	124	5620
	120	5600	126*	5630
	122 [#]	5610	128	5640

Note:

1. The above Frequency and Channel in "*" were 802.11n HT40 and 802.11ac VHT40.
2. The above Frequency and Channel in "[#]" were 802.11ac VHT80.
3. The above Frequency and Channel in "@[@]" were 802.11ac VHT160.

2.2 Test Mode

Final test modes are considering the modulation and worse data rates as below table.

Single Mode

Modulation	Data Rate
802.11a	6 Mbps

MIMO Mode

Modulation	Data Rate
802.11n HT20 (Covered by VHT20)	MCS8
802.11n HT40 (Covered by VHT40)	MCS8
802.11ac VHT80	MCS0
802.11ac VHT160	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : WLAN(5G) Link + Bluetooth Link + Earphone + Adapter 1 Mode 2 : WLAN(5G) Link + Bluetooth Link + Earphone + Adapter 2
Remark: 1. The worst case of conducted emission is mode 2; only the test data of it was reported. 2. For Radiated Test Cases, we chose Adapter 1 to evaluate full test, and Adapter 2 only verified the worst cases of Adapter 1.	



Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11a	802.11a	802.11a
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

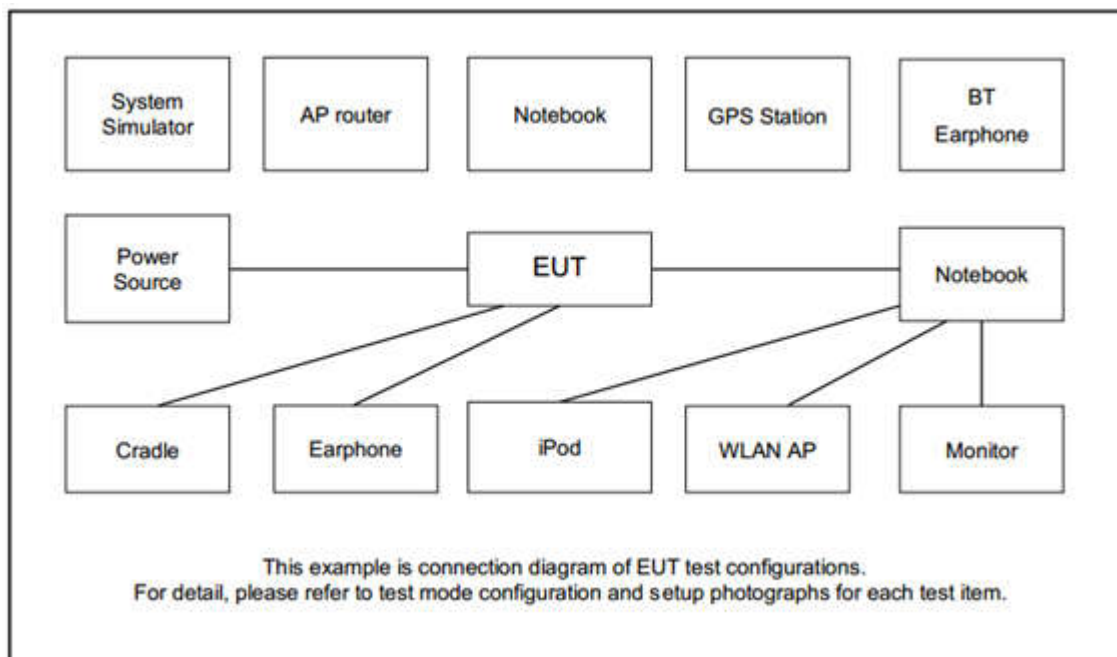
Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11n HT20	802.11n HT20	802.11n HT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11n HT40	802.11n HT40	802.11n HT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134

Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11ac VHT80	802.11ac VHT80	802.11ac VHT80
L	Low	-	-	106
M	Middle	42	58	-
H	High	-	-	-

Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11ac VHT160		802.11ac VHT160
L	Low	-		-
M	Middle	50		114
H	High	-		-

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Earphone	Samsung	EO-MG900	PYAHS-107W	N/A	N/A
2.	WLAN AP	D-Link	DIR-820L	KA2IR820LA1	N/A	Unshielded, 1.8 m
3.	Earphone	Apple	MC690ZP/A	N/A	Unshielded, 1.0 m	N/A
4.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A

2.5 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuous transmit/receive.

For AC power line conducted emissions, the EUT was set to connect with the WLAN AP under large package sizes transmission.



3 Test Result

3.1 Maximum Conducted Output Power Measurement

3.1.1 Limit of Maximum Conducted Output Power

<FCC 14-30 CFR 15.407>

For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW.

For the 5.25–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Note that U-NII-2 band, devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

3.1.2 Measuring Instruments

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

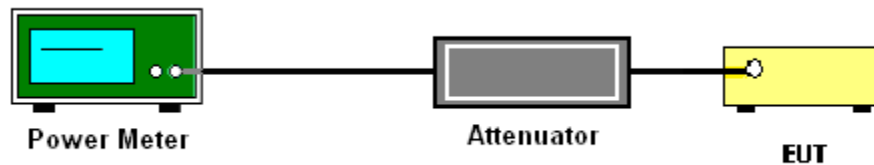
3.1.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, $10 \log(1/x)$, where x is the duty cycle.

3.1.4 Test Setup



3.1.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

3.2 Unwanted Emissions Measurement

This section is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement.

3.2.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5150-5250 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27dBm/MHz.

For transmitters operating in the 5250-5350 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5250-5350 MHz band that generate emissions in the 5150-5250 MHz band must meet all applicable technical requirements for operation in the 5150-5250 MHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5150-5250 MHz band.

For transmitters operating in the 5470-5600 MHz and 5650-5725MHz band: all emissions outside of the 5470-5600 MHz and 5650-5725MHz band shall not exceed an EIRP of -27 dBm/MHz.

- (2) Unwanted spurious emissions fallen in restricted bands shall comply with the general field strength limits as below table,

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

Note: The following formula is used to convert the EIRP to field strength.

$$E = \frac{1000000\sqrt{30P}}{3} \text{ } \mu\text{V/m, where P is the eirp (Watts)}$$

EIRP (dBm)	Field Strength at 3m (dB μ V/m)
- 27	68.3

(3) KDB789033 D02 v02r01 G)2)c)

- (i) Section 15.407(b)(1) to (b)(3) specify the unwanted emission limits for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz.³
- (ii) Section 15.407(b)(4) specifies the unwanted emission limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are in terms of a Peak detector. An alternative to the band emissions mask is specified in Section 15.407(b)(4)(ii). The alternative limits are based on the highest antenna gain specified in the filing. There are also marketing and importation restrictions for the devices using the alternative limit.⁴

Note 3: An out-of-band emission that complies with both the average and peak limits of Section 15.209 is not required to satisfy the -27 dBm/MHz peak emission limit.

Note 4: Only devices with antenna gains of 10 dBi or less may be approved using the emission limits specified in Section 15.247(d) till March 2, 2018; all other devices operating in this band must use the mask specified in Section 15.407(b)(4)(i).

3.2.2 Measuring Instruments

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

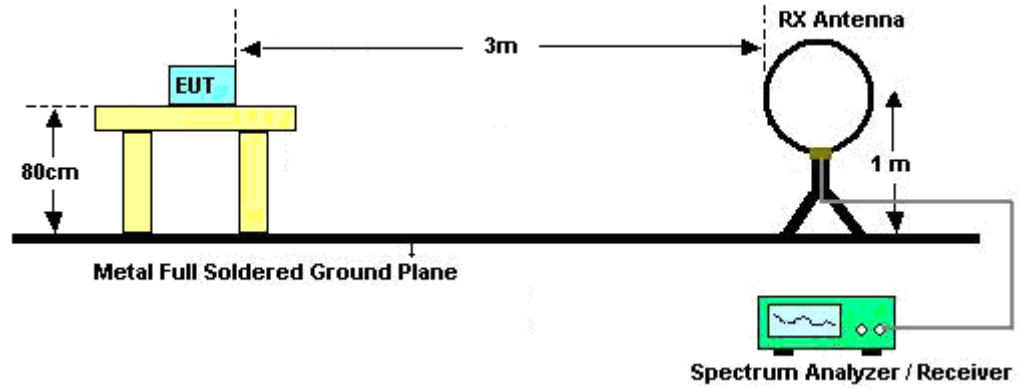


3.2.3 Test Procedures

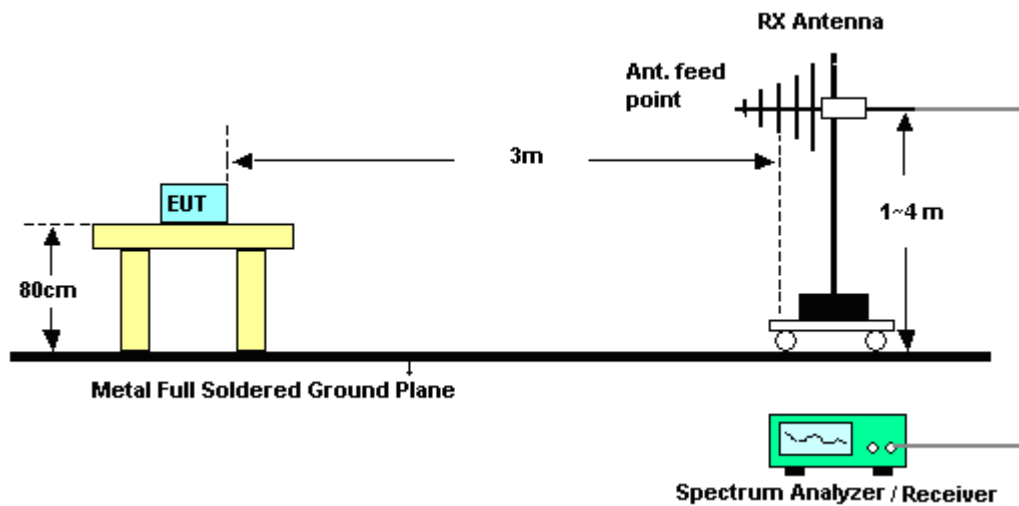
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section G) Unwanted emissions measurement.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW $\geq$ 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold
 - (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
 - RBW = 1 MHz
 - 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.
2. 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.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
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.

3.2.4 Test Setup

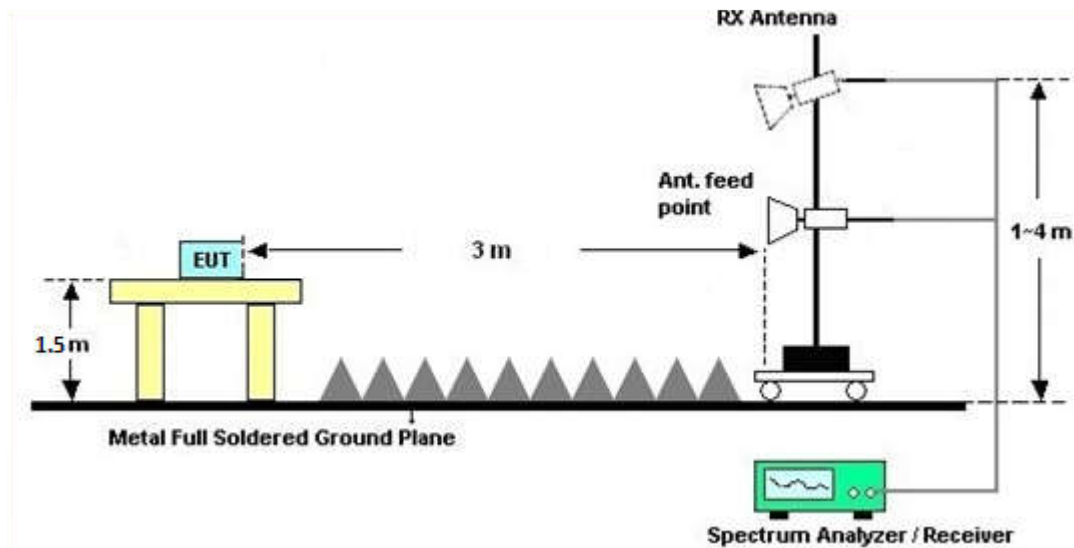
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

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.

3.2.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C.

3.2.7 Duty Cycle

Please refer to Appendix D.

3.2.8 Test Result of Radiated Spurious Emissions (30MHz ~ 10th Harmonic)

Please refer to Appendix C.

3.3 AC Conducted Emission Measurement

3.3.1 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.

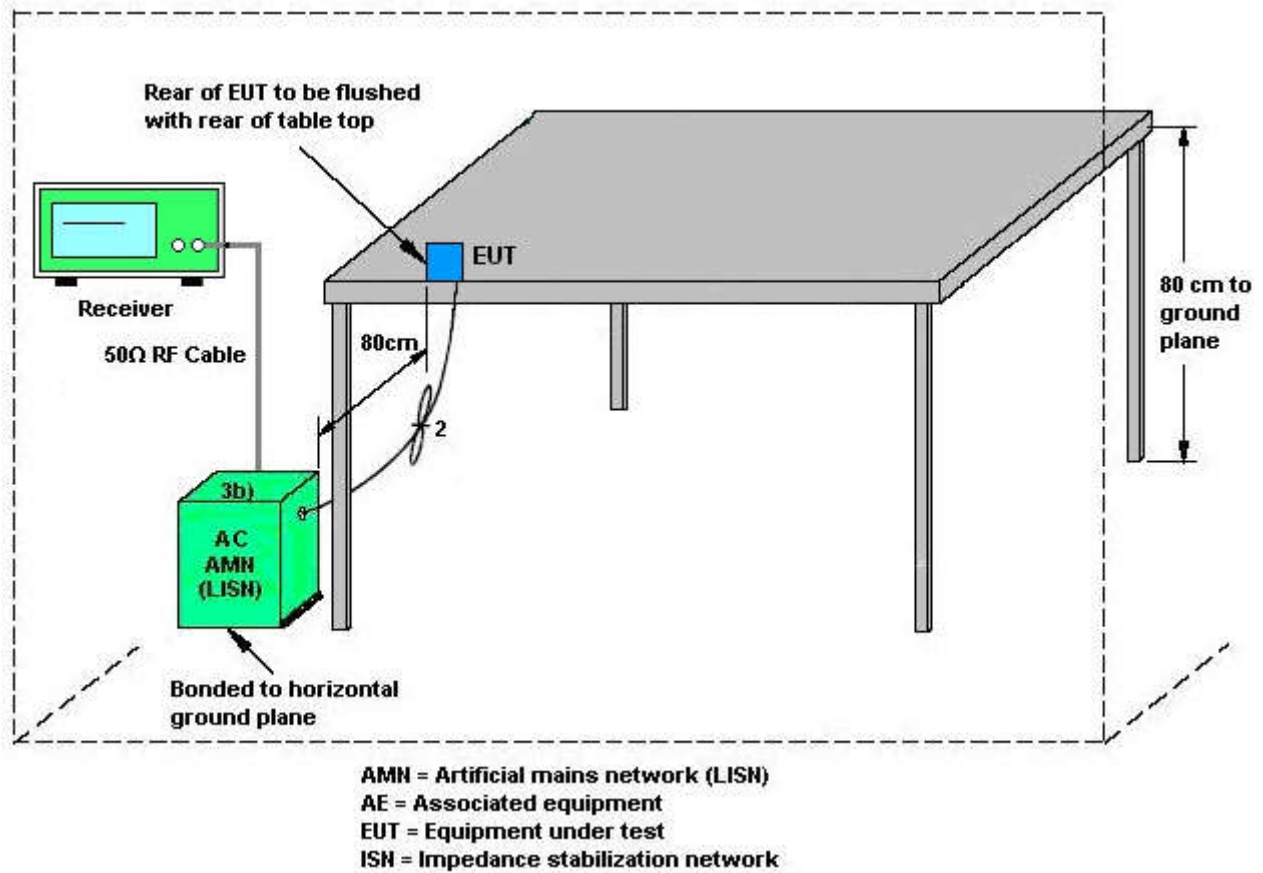
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room 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 with Maximum Hold Mode.

3.3.4 Test Setup



3.3.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.4 Automatically Discontinue Transmission

3.4.1 Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

3.4.2 Measuring Instruments

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

3.4.3 Test Result of Automatically Discontinue Transmission

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

3.5 Antenna Requirements

3.5.1 Standard Applicable

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.5.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.5.3 Antenna Gain

<CDD Modes >

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = GANT + Array Gain, where Array Gain is as follows.

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

Array Gain = $10 \log(\text{NANT}/\text{NSS}=1)$ dB.

For power measurements on IEEE 802.11 devices,

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

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 EUT supports CDD mode.

For power, the directional gain GANT 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.

<CDD Modes>						
			DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
	Ant. 1 (dBi)	Ant. 2 (dBi)				
Band I	2.70	2.60	2.70	5.66	0.00	0.00
Band II	1.60	2.60	2.60	5.12	0.00	0.00
Band III	2.70	2.80	2.80	5.76	0.00	0.00

Power limit reduction = Composite gain – 6dBi, (min = 0)

PSD limit reduction = Composite gain + PSD Array gain – 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	10Hz~40GHz	Apr.19, 2018	Apr. 21, 2018	Apr.18, 2019	Conducted (TH01-SZ)
Pulse Power Sensor	Anritsu	MA2411B	1207253	30MHz~40GHz	Dec. 26, 2017	Apr. 21, 2018	Dec. 25, 2018	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1218010	50MHz Bandwidth	Dec. 26, 2017	Apr. 21, 2018	Dec. 25, 2018	Conducted (TH01-SZ)
EMI Test Receiver	R&S	ESR7	101404	9kHz~7GHz	Apr. 19, 2018	May 01, 2018	Apr. 18, 2019	Radiation (03CH04-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Apr. 19, 2018	May 01, 2018	Apr. 18, 2019	Radiation (03CH04-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	May 14, 2017	May 01, 2018	May 13, 2018	Radiation (03CH04-SZ)
Bilog Antenna	TeseQ	CBL6111D	41909	30MHz~1GHz	May 16, 2017	May 01, 2018	May 15, 2018	Radiation (03CH04-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1285	1GHz~18GHz	Dec. 13, 2017	May 01, 2018	Dec. 12, 2018	Radiation (03CH04-SZ)
Horn Antenna	SCHWARZBECK	BBHA9170	9170#679	15GHz~40GHz	May 17, 2017	May 01, 2018	May 16, 2018	Radiation (03CH04-SZ)
Amplifier	Burgeon	BPA-530	102211	0.01Hz~3000MHz	Oct. 19, 2017	May 01, 2018	Oct. 18, 2018	Radiation (03CH04-SZ)
HF Amplifier	MITEQ	AMF-7D-00101800-30-10P-R	1989346	1GHz~18GHz	Jul. 27, 2017	May 01, 2018	Jul. 26, 2018	Radiation (03CH04-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1988315	18GHz~40GHz	Jul. 27, 2017	May 01, 2018	Jul. 26, 2018	Radiation (03CH04-SZ)
Amplifier	Agilent Technologies	83017A	MY53270156	500MHz~26.5GHz	Apr. 19, 2018	May 01, 2018	Apr. 18, 2019	Radiation (03CH04-SZ)
AC Power Source	Chroma	61601	N/A	N/A	NCR	May 01, 2018	NCR	Radiation (03CH04-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	May 01, 2018	NCR	Radiation (03CH04-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	May 01, 2018	NCR	Radiation (03CH04-SZ)
EMI Receiver	R&S	ESR7	101630	9kHz~7GHz;	Dec. 26, 2017	Apr. 20 2018	Dec. 25, 2018	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103912	9kHz~30MHz	Dec. 26, 2017	Apr. 20 2018	Dec. 25, 2018	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	MessTec	3816/2SH	00103892	9kHz~30MHz	Nov. 01, 2017	Apr. 20 2018	Oct. 31, 2018	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000891	100Vac~250Vac	Jul. 19, 2017	Apr. 20 2018	Jul. 18, 2018	Conduction (CO01-SZ)

NCR: No Calibration Required



5 Uncertainty of Evaluation

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

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.1 dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.8 dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.1 dB
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Sam Zheng	Temperature:	21~25	°C
Test Date:	2018/4/21	Relative Humidity:	51~54	%

TEST RESULTS DATA
Average Power Table

FCC Band I														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	36	5180	0.67	0.67	15.90	15.39		24.00	24.00	2.70	2.60	Pass
11a	6Mbps	1	44	5220	0.67	0.67	15.83	15.52		24.00	24.00	2.70	2.60	Pass
11a	6Mbps	1	48	5240	0.67	0.67	15.84	15.60		24.00	24.00	2.70	2.60	Pass
HT20	MCS0	1	36	5180	0.67	0.67	15.76	15.40		24.00	24.00	2.70	2.60	Pass
HT20	MCS0	1	44	5220	0.67	0.67	15.78	15.49		24.00	24.00	2.70	2.60	Pass
HT20	MCS0	1	48	5240	0.67	0.67	15.86	15.55		24.00	24.00	2.70	2.60	Pass
HT40	MCS0	1	38	5190	0.70	0.69	15.86	15.57		24.00	24.00	2.70	2.60	Pass
HT40	MCS0	1	46	5230	0.70	0.69	15.88	15.59		24.00	24.00	2.70	2.60	Pass
VHT20	MCS0	1	36	5180	0.68	0.68	15.73	15.38		24.00	24.00	2.70	2.60	Pass
VHT20	MCS0	1	44	5220	0.68	0.68	15.76	15.48		24.00	24.00	2.70	2.60	Pass
VHT20	MCS0	1	48	5240	0.68	0.68	15.85	15.52		24.00	24.00	2.70	2.60	Pass
VHT40	MCS0	1	38	5190	0.70	0.68	15.84	15.54		24.00	24.00	2.70	2.60	Pass
VHT40	MCS0	1	46	5230	0.70	0.68	15.85	15.55		24.00	24.00	2.70	2.60	Pass
VHT80	MCS0	1	42	5210	0.68	0.70	15.62	15.58		24.00	24.00	2.70	2.60	Pass
VHT160	MCS0	1	50	5250	0.69	0.69	15.67	15.69		24.00	24.00	2.70	2.60	Pass
HT20	MCS8	2	36	5180	0.70	0.69	15.85	15.09	18.50	24.00		2.70		Pass
HT20	MCS8	2	44	5220	0.70	0.69	15.83	15.18	18.53	24.00		2.70		Pass
HT20	MCS8	2	48	5240	0.70	0.69	15.84	15.27	18.58	24.00		2.70		Pass
HT40	MCS8	2	38	5190	0.67	0.67	13.88	13.75	16.83	24.00		2.70		Pass
HT40	MCS8	2	46	5230	0.67	0.67	15.74	15.37	18.57	24.00		2.70		Pass
VHT20	MCS0	2	36	5180	0.69	0.69	15.82	15.05	18.46	24.00		2.70		Pass
VHT20	MCS0	2	44	5220	0.69	0.69	15.81	15.16	18.51	24.00		2.70		Pass
VHT20	MCS0	2	48	5240	0.69	0.69	15.80	15.24	18.54	24.00		2.70		Pass
VHT40	MCS0	2	38	5190	0.70	0.69	13.90	13.73	16.83	24.00		2.70		Pass
VHT40	MCS0	2	46	5230	0.70	0.69	15.74	15.35	18.56	24.00		2.70		Pass
VHT80	MCS0	2	42	5210	0.80	0.78	9.28	9.36	12.33	24.00		2.70		Pass
VHT160	MCS0	2	50	5250	1.26	1.26	13.33	12.91	16.13	24.00		2.70		Pass

TEST RESULTS DATA
Average Power Table

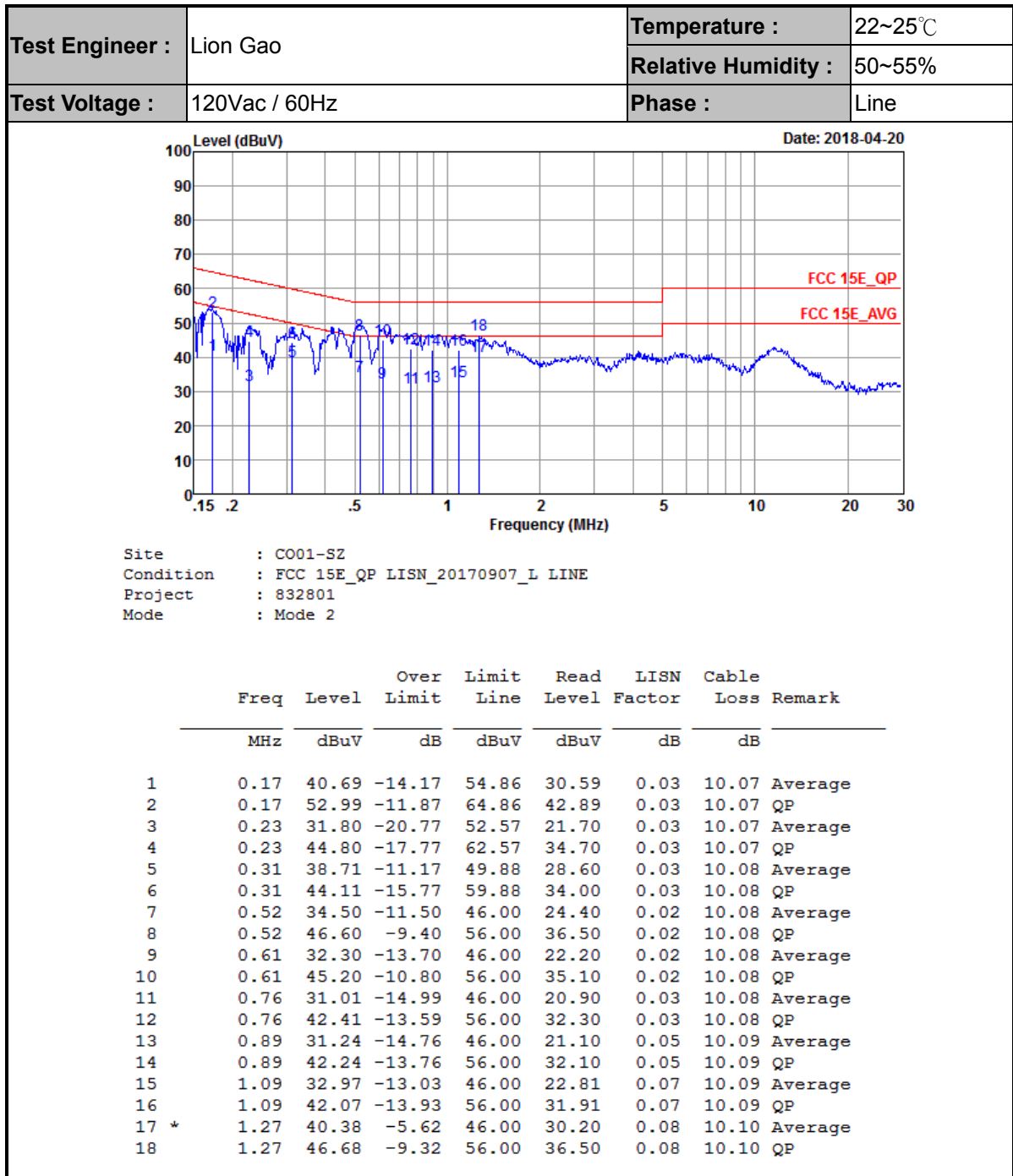
FCC Band II															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	52	5260	0.67	0.67	16.00	15.53		24.00	24.00	1.60	2.60	26.99	Pass
11a	6Mbps	1	60	5300	0.67	0.67	15.69	15.52		24.00	24.00	1.60	2.60	26.99	Pass
11a	6Mbps	1	64	5320	0.67	0.67	15.55	15.56		24.00	24.00	1.60	2.60	26.99	Pass
HT20	MCS0	1	52	5260	0.67	0.67	15.97	15.52		24.00	24.00	1.60	2.60	26.99	Pass
HT20	MCS0	1	60	5300	0.67	0.67	15.67	15.47		24.00	24.00	1.60	2.60	26.99	Pass
HT20	MCS0	1	64	5320	0.67	0.67	15.50	15.54		24.00	24.00	1.60	2.60	26.99	Pass
HT40	MCS0	1	54	5270	0.70	0.69	15.87	15.55		24.00	24.00	1.60	2.60	26.99	Pass
HT40	MCS0	1	62	5310	0.70	0.69	15.59	15.45		24.00	24.00	1.60	2.60	26.99	Pass
VHT20	MCS0	1	52	5260	0.68	0.68	15.94	15.49		24.00	24.00	1.60	2.60	26.99	Pass
VHT20	MCS0	1	60	5300	0.68	0.68	15.65	15.45		24.00	24.00	1.60	2.60	26.99	Pass
VHT20	MCS0	1	64	5320	0.68	0.68	15.48	15.53		24.00	24.00	1.60	2.60	26.99	Pass
VHT40	MCS0	1	54	5270	0.70	0.68	15.86	15.52		24.00	24.00	1.60	2.60	26.99	Pass
VHT40	MCS0	1	62	5310	0.70	0.68	15.55	15.43		24.00	24.00	1.60	2.60	26.99	Pass
VHT80	MCS0	1	58	5290	0.68	0.70	14.84	14.44		24.00	24.00	1.60	2.60	26.99	Pass
HT20	MCS8	2	52	5260	0.70	0.69	15.95	15.25	18.63	24.00		2.60		26.99	Pass
HT20	MCS8	2	60	5300	0.70	0.69	15.70	15.20	18.47	24.00		2.60		26.99	Pass
HT20	MCS8	2	64	5320	0.70	0.69	15.52	15.26	18.40	24.00		2.60		26.99	Pass
HT40	MCS8	2	54	5270	0.67	0.67	15.77	15.38	18.59	24.00		2.60		26.99	Pass
HT40	MCS8	2	62	5310	0.67	0.67	14.09	14.22	17.17	24.00		2.60		26.99	Pass
VHT20	MCS0	2	52	5260	0.69	0.69	15.92	15.23	18.60	24.00		2.60		26.99	Pass
VHT20	MCS0	2	60	5300	0.69	0.69	15.69	15.19	18.46	24.00		2.60		26.99	Pass
VHT20	MCS0	2	64	5320	0.69	0.69	15.49	15.24	18.38	24.00		2.60		26.99	Pass
VHT40	MCS0	2	54	5270	0.70	0.69	15.77	15.36	18.58	24.00		2.60		26.99	Pass
VHT40	MCS0	2	62	5310	0.70	0.69	14.10	14.19	17.16	24.00		2.60		26.99	Pass
VHT80	MCS0	2	58	5290	0.80	0.78	12.08	11.73	14.92	24.00		2.60		26.99	Pass

TEST RESULTS DATA
Average Power Table

FCC Band III															
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	100	5500	0.67	0.67	17.07	15.42		24.00	24.00	2.70	2.80	26.99	Pass
11a	6Mbps	1	116	5580	0.67	0.67	16.90	14.95		24.00	24.00	2.70	2.80	26.99	Pass
11a	6Mbps	1	140	5700	0.67	0.67	17.22	14.89		24.00	24.00	2.70	2.80	26.99	Pass
HT20	MCS0	1	100	5500	0.67	0.67	12.72	15.41		24.00	24.00	2.70	2.80	26.99	Pass
HT20	MCS0	1	116	5580	0.67	0.67	16.89	14.95		24.00	24.00	2.70	2.80	26.99	Pass
HT20	MCS0	1	140	5700	0.67	0.67	14.17	14.94		24.00	24.00	2.70	2.80	26.99	Pass
HT40	MCS0	1	102	5510	0.70	0.69	14.80	14.17		24.00	24.00	2.70	2.80	26.99	Pass
HT40	MCS0	1	110	5550	0.70	0.69	17.10	15.31		24.00	24.00	2.70	2.80	26.99	Pass
HT40	MCS0	1	134	5670	0.70	0.69	17.12	15.09		24.00	24.00	2.70	2.80	26.99	Pass
VHT20	MCS0	1	100	5500	0.68	0.68	12.70	15.39		24.00	24.00	2.70	2.80	26.99	Pass
VHT20	MCS0	1	116	5580	0.68	0.68	16.88	14.94		24.00	24.00	2.70	2.80	26.99	Pass
VHT20	MCS0	1	140	5700	0.68	0.68	14.15	14.92		24.00	24.00	2.70	2.80	26.99	Pass
VHT40	MCS0	1	102	5510	0.70	0.68	14.76	14.14		24.00	24.00	2.70	2.80	26.99	Pass
VHT40	MCS0	1	110	5550	0.70	0.68	17.07	15.28		24.00	24.00	2.70	2.80	26.99	Pass
VHT40	MCS0	1	134	5670	0.70	0.68	17.10	15.03		24.00	24.00	2.70	2.80	26.99	Pass
VHT80	MCS0	1	106	5530	0.68	0.70	15.91	14.28		24.00	24.00	2.70	2.80	26.99	Pass
VHT80	MCS0	1	122	5610	0.68	0.70	17.12	15.00		24.00	24.00	2.70	2.80	26.99	Pass
VHT160	MCS0	1	114	5570	0.69	0.69	12.49	12.42		24.00	24.00	2.70	2.80	26.99	Pass
HT20	MCS8	2	100	5500	0.70	0.69	12.81	15.43	17.33	24.00		2.80		26.99	Pass
HT20	MCS8	2	116	5580	0.70	0.69	16.55	14.91	18.82	24.00		2.80		26.99	Pass
HT20	MCS8	2	140	5700	0.70	0.69	14.26	14.92	17.61	24.00		2.80		26.99	Pass
HT40	MCS8	2	102	5510	0.67	0.67	12.55	12.40	15.49	24.00		2.80		26.99	Pass
HT40	MCS8	2	110	5550	0.67	0.67	17.03	15.13	19.19	24.00		2.80		26.99	Pass
HT40	MCS8	2	134	5670	0.67	0.67	16.92	15.05	19.09	24.00		2.80		26.99	Pass
VHT20	MCS0	2	100	5500	0.69	0.69	12.79	15.41	17.30	24.00		2.80		26.99	Pass
VHT20	MCS0	2	116	5580	0.69	0.69	16.51	14.89	18.78	24.00		2.80		26.99	Pass
VHT20	MCS0	2	140	5700	0.69	0.69	14.24	14.89	17.59	24.00		2.80		26.99	Pass
VHT40	MCS0	2	102	5510	0.70	0.69	12.54	12.39	15.48	24.00		2.80		26.99	Pass
VHT40	MCS0	2	110	5550	0.70	0.69	17.04	15.09	19.19	24.00		2.80		26.99	Pass
VHT40	MCS0	2	134	5670	0.70	0.69	16.90	15.04	19.08	24.00		2.80		26.99	Pass
VHT80	MCS0	2	106	5530	0.80	0.78	11.02	10.53	13.80	24.00		2.80		26.99	Pass
VHT80	MCS0	2	122	5610	0.80	0.78	17.12	14.95	19.18	24.00		2.80		26.99	Pass
VHT160	MCS0	2	114	5570	1.26	1.26	12.51	12.19	15.36	24.00		2.80		26.99	Pass

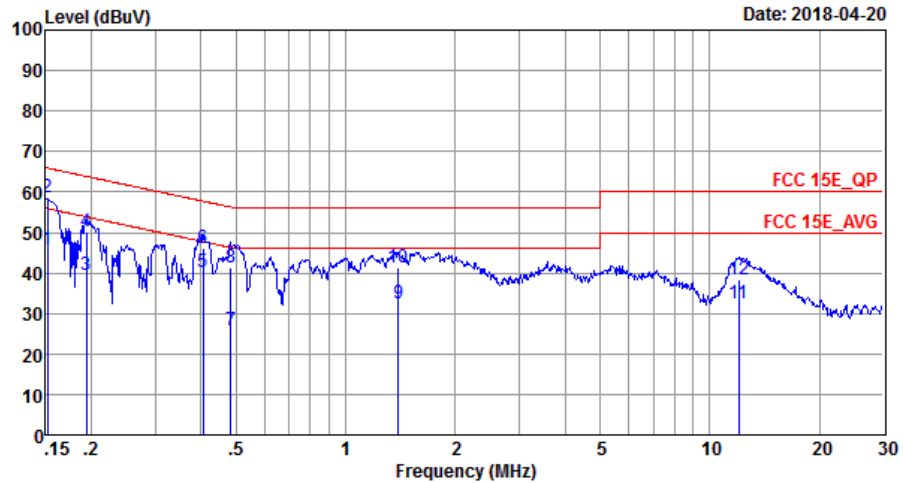


Appendix B. AC Conducted Emission Test Results





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



Site : CO01-SZ
Condition : FCC 15E_QP LISN_20170907_N NEUTRAL
Project : 832801
Mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15	45.59	-10.32	55.91	35.50	0.03	10.06	Average
2	0.15	58.49	-7.42	65.91	48.40	0.03	10.06	QP
3	0.19	39.49	-14.35	53.84	29.39	0.03	10.07	Average
4	0.19	50.10	-13.74	63.84	40.00	0.03	10.07	QP
5 *	0.41	40.40	-7.33	47.73	30.30	0.02	10.08	Average
6	0.41	46.30	-11.43	57.73	36.20	0.02	10.08	QP
7	0.48	25.70	-20.57	46.27	15.60	0.02	10.08	Average
8	0.48	41.30	-14.97	56.27	31.20	0.02	10.08	QP
9	1.40	32.35	-13.65	46.00	22.20	0.05	10.10	Average
10	1.40	41.45	-14.55	56.00	31.30	0.05	10.10	QP
11	12.00	32.50	-17.50	50.00	21.90	0.23	10.37	Average
12	12.00	38.20	-21.80	60.00	27.60	0.23	10.37	QP



Appendix C. Radiated Spurious Emission

For Adapter 1

Band 1 - 5150~5250MHz WIFI 802.11a (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)
802.11a CH 36 5180MHz		5147.94	53.38	-20.62	74	42.38	32.24	6.04	27.28	102	114	P	H
		5150	45.88	-8.12	54	34.88	32.24	6.04	27.28	102	114	A	H
	*	5180	105.6	-	-	94.55	32.25	6.04	27.24	102	114	P	H
	*	5180	98.11	-	-	87.06	32.25	6.04	27.24	102	114	A	H
		5106.34	53.37	-20.63	74	42.44	32.23	6.05	27.35	222	299	P	V
		5150	44.09	-9.91	54	33.09	32.24	6.04	27.28	222	299	A	V
	*	5180	101.9	-	-	90.85	32.25	6.04	27.24	222	299	P	V
	*	5180	94.05	-	-	83	32.25	6.04	27.24	222	299	A	V
802.11a CH 44 5220MHz		5075.14	52.67	-21.33	74	41.79	32.22	6.05	27.39	100	112	P	H
		5029.12	43.84	-10.16	54	33.03	32.21	6.06	27.46	100	112	A	H
	*	5220	105.07			93.95	32.26	6.03	27.17	100	112	P	H
	*	5220	98.29			87.17	32.26	6.03	27.17	100	112	A	H
		5457.76	51.56	-22.44	74	40	32.34	6.06	26.84	100	112	P	H
		5447.12	43.59	-10.41	54	32.06	32.34	6.06	26.87	100	112	A	H
		5051.74	53.06	-20.94	74	42.23	32.21	6.05	27.43	229	306	P	V
		5008.84	43.92	-10.08	54	33.16	32.2	6.06	27.5	229	306	A	V
	*	5220	101.86			90.78	32.26	6.03	27.21	229	306	P	V
	*	5220	94.54			83.46	32.26	6.03	27.21	229	306	A	V
		5442.36	51.93	-22.07	74	40.4	32.34	6.06	26.87	229	306	P	V
		5443.2	43.47	-10.53	54	31.94	32.34	6.06	26.87	229	306	A	V



802.11a CH 48 5240MHz		5096.72	52.96	-21.04	74	42.03	32.23	6.05	27.35	104	109	P	H
		5028.34	43.92	-10.08	54	33.11	32.21	6.06	27.46	104	109	A	H
	*	5240	105.7	-	-	94.57	32.27	6.03	27.17	104	109	P	H
	*	5240	98.29	-	-	87.16	32.27	6.03	27.17	104	109	A	H
		5444.04	51.45	-22.55	74	39.92	32.34	6.06	26.87	104	109	P	H
		5451.88	43.59	-10.41	54	32.03	32.34	6.06	26.84	104	109	A	H
		5035.88	52.55	-21.45	74	41.74	32.21	6.06	27.46	220	305	P	V
		5001.56	43.97	-10.03	54	33.25	32.16	6.06	27.5	220	305	A	V
	*	5240	101.49	-	-	90.36	32.27	6.03	27.17	220	305	P	V
	*	5240	94.59	-	-	83.46	32.27	6.03	27.17	220	305	A	V
		5429.2	51.64	-22.36	74	40.11	32.34	6.06	26.87	220	305	P	V
		5456.08	43.58	-10.42	54	32.02	32.34	6.06	26.84	220	305	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

WIFI 802.11a (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)
802.11a CH 36 5180MHz		10360	47.36	-26.64	74	55.73	38.25	9.23	55.85	152	260	P	H
		15540	49.33	-24.67	74	55.19	38.94	11.93	56.73	189	238	P	H
		10360	47.59	-26.41	74	55.96	38.25	9.23	55.85	152	260	P	V
		15540	48.48	-25.52	74	54.34	38.94	11.93	56.73	189	238	P	V
802.11a CH 44 5220MHz		10440	47.5	-26.5	74	55.82	38.31	9.25	55.88	150	230	P	H
		15660	49.63	-24.37	74	55.51	38.54	12.07	56.49	160	225	P	H
		10440	46.48	-27.52	74	54.8	38.31	9.25	55.88	150	230	P	V
		15660	48.6	-25.4	74	54.48	38.54	12.07	56.49	160	225	P	V
802.11a CH 48 5240MHz		10480	47.75	-26.25	74	56.03	38.36	9.26	55.9	189	12	P	H
		15720	48.76	-25.24	74	54.69	38.31	12.11	56.35	198	226	P	H
		10480	46.84	-27.16	74	55.12	38.36	9.26	55.9	189	12	P	V
		15720	49.05	-24.95	74	54.98	38.31	12.11	56.35	198	226	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz
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 36 5180MHz		5147.16	53.73	-20.27	74	42.73	32.24	6.04	27.28	208	46	P	H
		5150	46.6	-7.4	54	35.6	32.24	6.04	27.28	208	46	A	H
	*	5180	109.11	-	-	98.06	32.25	6.04	27.24	208	46	P	H
	*	5180	103.19	-	-	92.14	32.25	6.04	27.24	208	46	A	H
		5065.78	52.08	-21.92	74	41.24	32.22	6.05	27.43	221	87	P	V
		5149.5	44.2	-9.8	54	33.2	32.24	6.04	27.28	221	87	A	V
	*	5180	107.85	-	-	96.8	32.25	6.04	27.24	221	87	P	V
	*	5180	101.18	-	-	90.13	32.25	6.04	27.24	221	87	A	V
802.11n HT20 CH 44 5220MHz		5124.28	52.25	-21.75	74	41.29	32.24	6.04	27.32	206	45	P	H
		5003.9	44	-10	54	33.24	32.2	6.06	27.5	206	45	A	H
	*	5220	109.28	-	-	98.2	32.26	6.03	27.21	206	45	P	H
	*	5220	103.35	-	-	92.27	32.26	6.03	27.21	206	45	A	H
		5430.6	52.4	-21.6	74	40.87	32.34	6.06	26.87	206	45	P	H
		5448.24	43.83	-10.17	54	32.3	32.34	6.06	26.87	206	45	A	H
		5020.28	53.29	-20.71	74	42.49	32.2	6.06	27.46	212	87	P	V
		5002.34	44.13	-9.87	54	33.41	32.16	6.06	27.5	212	87	A	V
	*	5220	107.84	-	-	96.76	32.26	6.03	27.21	212	87	P	V
	*	5220	101.3	-	-	90.22	32.26	6.03	27.21	212	87	A	V
		5406.8	53.18	-20.82	74	41.76	32.32	6.01	26.91	212	87	P	V
		5447.12	44.19	-9.81	54	32.66	32.34	6.06	26.87	212	87	A	V



802.11n HT20 CH 48 5240MHz		5039	52.42	-21.58	74	41.62	32.21	6.05	27.46	205	47	P	H
		5093.08	44.07	-9.93	54	33.14	32.23	6.05	27.35	205	47	A	H
	*	5240	109.21	-	-	98.08	32.27	6.03	27.17	205	47	P	H
	*	5240	103.27	-	-	92.14	32.27	6.03	27.17	205	47	A	H
		5450.2	51.73	-22.27	74	40.17	32.34	6.06	26.84	205	47	P	H
		5439.84	44.04	-9.96	54	32.51	32.34	6.06	26.87	205	47	A	H
		5079.82	52.49	-21.51	74	41.61	32.22	6.05	27.39	210	79	P	V
		5005.72	44.11	-9.89	54	33.35	32.2	6.06	27.5	210	79	A	V
	*	5240	107.75	-	-	96.62	32.27	6.03	27.17	210	79	P	V
	*	5240	101.44	-	-	90.31	32.27	6.03	27.17	210	79	A	V
		5387.76	51.59	-22.41	74	40.21	32.32	6.01	26.95	210	79	P	V
		5456.64	43.8	-10.2	54	32.24	32.34	6.06	26.84	210	79	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz
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 36 5180MHz		10360	47.41	-26.59	74	55.78	38.25	9.23	55.85	152	260	P	H
		15540	48.2	-25.8	74	54.06	38.94	11.93	56.73	189	238	P	H
		10360	47.03	-26.97	74	55.4	38.25	9.23	55.85	152	260	P	V
		15540	47.73	-26.27	74	53.59	38.94	11.93	56.73	189	238	P	V
802.11n HT20 CH 44 5220MHz		10440	47.84	-26.16	74	56.16	38.31	9.25	55.88	150	230	P	H
		15660	48.9	-25.1	74	54.78	38.54	12.07	56.49	160	225	P	H
		10440	46.36	-27.64	74	54.68	38.31	9.25	55.88	150	230	P	V
		15660	47.76	-26.24	74	53.64	38.54	12.07	56.49	160	225	P	V
802.11n HT20 CH 48 5240MHz		10480	47.58	-26.42	74	55.86	38.36	9.26	55.9	189	12	P	H
		15720	48.88	-25.12	74	54.81	38.31	12.11	56.35	198	226	P	H
		10480	46.41	-27.59	74	54.69	38.36	9.26	55.9	189	12	P	V
		15720	48.55	-25.45	74	54.48	38.31	12.11	56.35	198	226	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

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 38 5190MHz		5141.18	53.5	-20.5	74	42.54	32.24	6.04	27.32	222	71	P	H
		5150	46.21	-7.79	54	35.21	32.24	6.04	27.28	222	71	A	H
	*	5190	101.09	-	-	90.04	32.25	6.04	27.24	222	71	P	H
	*	5190	93.51	-	-	82.46	32.25	6.04	27.24	222	71	A	H
		5447.4	51.89	-22.11	74	40.36	32.34	6.06	26.87	222	71	P	H
		5448.8	43.44	-10.56	54	31.91	32.34	6.06	26.87	222	71	A	H
		5070.98	52.54	-21.46	74	41.66	32.22	6.05	27.39	225	360	P	V
		5023.4	43.71	-10.29	54	32.9	32.21	6.06	27.46	225	360	A	V
	*	5190	98.64	-	-	87.59	32.25	6.04	27.24	225	360	P	V
	*	5190	91.18	-	-	80.13	32.25	6.04	27.24	225	360	A	V
		5423.32	51.57	-22.43	74	40.14	32.33	6.01	26.91	225	360	P	V
		5432.56	43.37	-10.63	54	31.84	32.34	6.06	26.87	225	360	A	V
802.11n HT40 CH 46 5230MHz		5022.88	52.98	-21.02	74	42.17	32.21	6.06	27.46	121	134	P	H
		5087.88	44.22	-9.78	54	33.34	32.22	6.05	27.39	121	134	A	H
	*	5230	101.44	-	-	90.31	32.27	6.03	27.17	121	134	P	H
	*	5230	94.45	-	-	83.32	32.27	6.03	27.17	121	134	A	H
		5440.4	53.42	-20.58	74	41.89	32.34	6.06	26.87	121	134	P	H
		5452.16	44.04	-9.96	54	32.48	32.34	6.06	26.84	121	134	A	H
		5096.98	52.78	-21.22	74	41.85	32.23	6.05	27.35	112	360	P	V
		5001.82	44.17	-9.83	54	33.45	32.16	6.06	27.5	112	360	A	V
	*	5230	98.89	-	-	87.76	32.27	6.03	27.17	112	360	P	V
	*	5230	92.11	-	-	80.98	32.27	6.03	27.17	112	360	A	V
		5458.04	51.65	-22.35	74	40.09	32.34	6.06	26.84	112	360	P	V
		5456.92	43.82	-10.18	54	32.26	32.34	6.06	26.84	112	360	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz
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 38 5190MHz		10380	46.18	-27.82	74	54.54	38.26	9.24	55.86	150	360	P	H
		15570	48.3	-25.7	74	54.16	38.82	11.98	56.66	155	360	P	H
		10380	46.03	-27.97	74	54.39	38.26	9.24	55.86	150	360	P	V
		15570	48.75	-25.25	74	54.61	38.82	11.98	56.66	155	360	P	V
802.11n HT40 CH 46 5230MHz		10460	47.37	-26.63	74	55.67	38.32	9.26	55.88	150	360	P	H
		15690	48.03	-25.97	74	53.92	38.42	12.11	56.42	150	225	P	H
		10460	46.59	-27.41	74	54.89	38.32	9.26	55.88	150	360	P	V
		15690	48.47	-25.53	74	54.36	38.42	12.11	56.42	150	225	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz
WIFI 802.11ac VHT80 (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)
802.11ac VHT80 CH 42 5210MHz		5028.86	52.62	-21.38	74	41.81	32.21	6.06	27.46	217	90	P	H
		5148.98	46.26	-7.74	54	35.26	32.24	6.04	27.28	217	90	A	H
	*	5210	94.44	-	-	83.36	32.26	6.03	27.21	217	90	P	H
	*	5210	87.52	-	-	76.44	32.26	6.03	27.21	217	90	A	H
		5450.64	51.66	-22.34	74	40.1	32.34	6.06	26.84	217	90	P	H
		5447.04	44.76	-9.24	54	33.23	32.34	6.06	26.87	217	90	A	H
		5138.06	53.86	-20.14	74	42.9	32.24	6.04	27.32	213	89	P	V
		5146.64	46.22	-7.78	54	35.22	32.24	6.04	27.28	213	89	A	V
	*	5210	95.16	-	-	84.08	32.26	6.03	27.21	213	89	P	V
	*	5210	87.95	-	-	76.87	32.26	6.03	27.21	213	89	A	V
		5447.28	52.04	-21.96	74	40.51	32.34	6.06	26.87	213	89	P	V
		5454.96	45.01	-8.99	54	33.45	32.34	6.06	26.84	213	89	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

WIFI 802.11ac VHT80 (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)
802.11ac		10420	46.03	-27.97	74	54.36	38.29	9.25	55.87	100	54	P	H
VHT80		15630	47.87	-26.13	74	53.78	38.59	12.02	56.52	186	245	P	H
CH 42		10420	46.6	-27.4	74	54.93	38.29	9.25	55.87	256	341	P	V
5210MHz		15630	49.23	-24.77	74	55.14	38.59	12.02	56.52	100	248	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1/2 5150~5350MHz
WIFI 802.11ac VHT160 (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)
802.11ac VHT160 CH 50 5250MHz		5136.5	54.2	-19.8	74	43.24	32.24	6.04	27.32	100	114	P	H
		5147.16	49.11	-4.89	54	38.11	32.24	6.04	27.28	100	114	A	H
	*	5250	96.1			84.92	32.28	6.03	27.13	100	114	P	H
	*	5250	88.2			77.02	32.28	6.03	27.13	100	114	A	H
		5399.52	54.4	-19.6	74	42.98	32.32	6.01	26.91	100	114	P	H
		5403.6	49.72	-4.28	54	38.3	32.32	6.01	26.91	100	114	A	H
		5135.72	52.47	-21.53	74	41.51	32.24	6.04	27.32	106	27	P	V
		5143.78	46.73	-7.27	54	35.73	32.24	6.04	27.28	106	27	A	V
	*	5250	92			80.82	32.28	6.03	27.13	106	27	P	V
	*	5250	84.25			73.07	32.28	6.03	27.13	106	27	A	V
		5444.88	52.98	-21.02	74	41.45	32.34	6.06	26.87	106	27	P	V
		5402.4	47.28	-6.72	54	35.86	32.32	6.01	26.91	106	27	A	V
Remark	3. No other spurious found. 4. All results are PASS against Peak and Average limit line.												



Band 1/2 5150~5350MHz
WIFI 802.11ac VHT160 (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)
802.11ac		10500	46.63	-27.37	74	54.89	38.37	9.27	55.9	245	177	P	H
VHT160		15750	48.05	-25.95	74	53.97	38.2	12.16	56.28	278	148	P	H
CH 50		10500	46.78	-27.22	74	55.04	38.37	9.27	55.9	100	78	P	V
5250MHz		15750	47.32	-26.68	74	53.24	38.2	12.16	56.28	150	27	P	V
Remark	3. No other spurious found. 4. All results are PASS against Peak and Average limit line.												



Band 2 - 5250~5350MHz
WIFI 802.11a (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)
802.11a CH 52 5260MHz		5072.8	52.72	-21.28	74	41.84	32.22	6.05	27.39	101	111	P	H
		5006.3	44.01	-9.99	54	33.25	32.2	6.06	27.5	101	111	A	H
	*	5260	106.63	-	-	95.45	32.28	6.03	27.13	101	111	P	H
	*	5260	99.07	-	-	87.89	32.28	6.03	27.13	101	111	A	H
		5405.76	52.27	-21.73	74	40.85	32.32	6.01	26.91	101	111	P	H
		5456.88	43.8	-10.2	54	32.24	32.34	6.06	26.84	101	111	A	H
		5082.6	52.66	-21.34	74	41.78	32.22	6.05	27.39	229	307	P	V
		5011.55	43.99	-10.01	54	33.23	32.2	6.06	27.5	229	307	A	V
	*	5260	104.49	-	-	93.31	32.28	6.03	27.13	229	307	P	V
	*	5260	96.2	-	-	85.02	32.28	6.03	27.13	229	307	A	V
		5440.56	52.47	-21.53	74	40.94	32.34	6.06	26.87	229	307	P	V
		5451.36	43.74	-10.26	54	32.18	32.34	6.06	26.84	229	307	A	V
802.11a CH 60 5300MHz		5028.35	52.89	-21.11	74	42.08	32.21	6.06	27.46	102	110	P	H
		5002.8	43.95	-10.05	54	33.23	32.16	6.06	27.5	102	110	A	H
	*	5300	105.18	-	-	93.93	32.29	6.02	27.06	102	110	P	H
	*	5300	97.68	-	-	86.43	32.29	6.02	27.06	102	110	A	H
		5378.64	51.62	-22.38	74	40.24	32.32	6.01	26.95	102	110	P	H
		5452.08	43.91	-10.09	54	32.35	32.34	6.06	26.84	102	110	A	H
		5135.45	53.04	-20.96	74	42.08	32.24	6.04	27.32	219	306	P	V
		5008.4	43.93	-10.07	54	33.17	32.2	6.06	27.5	219	306	A	V
	*	5300	103.64	-	-	92.39	32.29	6.02	27.06	219	306	P	V
	*	5300	96.72	-	-	85.47	32.29	6.02	27.06	219	306	A	V
		5454.96	51.92	-22.08	74	40.36	32.34	6.06	26.84	219	306	P	V
		5454.24	43.69	-10.31	54	32.13	32.34	6.06	26.84	219	306	A	V



802.11a CH 64 5320MHz	*	5320	104.6	-	-	93.34	32.3	6.02	27.06	100	111	P	H
	*	5320	97.71	-	-	86.45	32.3	6.02	27.06	100	111	A	H
		5350.4	52.92	-21.08	74	41.58	32.31	6.01	26.98	100	111	P	H
		5350.72	44.8	-9.2	54	33.46	32.31	6.01	26.98	100	111	A	H
	*	5320	102.91	-	-	91.65	32.3	6.02	27.06	218	307	P	V
	*	5320	95.38	-	-	84.12	32.3	6.02	27.06	218	307	A	V
		5400.32	51.77	-22.23	74	40.35	32.32	6.01	26.91	218	307	P	V
		5350.56	44.18	-9.82	54	32.84	32.31	6.01	26.98	218	307	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11a (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)
802.11a CH 52 5260MHz		10520	47.02	-26.98	74	55.27	38.39	9.27	55.91	150	220	P	H
		15780	47.9	-26.1	74	53.81	38.14	12.2	56.25	159	345	P	H
		10520	46.36	-27.64	74	54.61	38.39	9.27	55.91	150	220	P	V
		15780	47.89	-26.11	74	53.8	38.14	12.2	56.25	159	345	P	V
802.11a CH 60 5300MHz		10600	47.67	-26.33	74	55.85	38.47	9.29	55.94	185	215	P	H
		15900	47.01	-26.99	74	52.94	37.74	12.34	56.01	196	190	P	H
		10600	46.96	-27.04	74	55.14	38.47	9.29	55.94	185	215	P	V
		15900	47.01	-26.99	74	52.94	37.74	12.34	56.01	196	190	P	V
802.11a CH 64 5320MHz		10640	48.13	-25.87	74	56.29	38.5	9.3	55.96	152	135	P	H
		15960	46.86	-27.14	74	52.79	37.51	12.43	55.87	173	245	P	H
		10640	46.85	-27.15	74	55.01	38.5	9.3	55.96	152	135	P	V
		15960	47.95	-26.05	74	53.88	37.51	12.43	55.87	173	245	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

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 52 5260MHz		5098	52.47	-21.53	74	41.54	32.23	6.05	27.35	207	46	P	H
		5021	44.31	-9.69	54	33.5	32.21	6.06	27.46	207	46	A	H
	*	5260	110.32	-	-	99.14	32.28	6.03	27.13	207	46	P	H
	*	5260	103.96	-	-	92.78	32.28	6.03	27.13	207	46	A	H
		5442.48	52.86	-21.14	74	41.33	32.34	6.06	26.87	207	46	P	H
		5442	44.24	-9.76	54	32.71	32.34	6.06	26.87	207	46	A	H
		5040.95	51.45	-22.55	74	40.65	32.21	6.05	27.46	209	83	P	V
		5022.05	44.27	-9.73	54	33.46	32.21	6.06	27.46	209	83	A	V
	*	5260	108.44	-	-	97.26	32.28	6.03	27.13	209	83	P	V
	*	5260	102.3	-	-	91.12	32.28	6.03	27.13	209	83	A	V
		5449.92	51.67	-22.33	74	40.11	32.34	6.06	26.84	209	83	P	V
		5444.88	44.06	-9.94	54	32.53	32.34	6.06	26.87	209	83	A	V
802.11n HT20 CH 60 5300MHz		5042	52.71	-21.29	74	41.88	32.21	6.05	27.43	187	47	P	H
		5005.25	44.11	-9.89	54	33.35	32.2	6.06	27.5	187	47	A	H
	*	5300	107.07	-	-	95.82	32.29	6.02	27.06	187	47	P	H
	*	5300	101.4	-	-	90.15	32.29	6.02	27.06	187	47	A	H
		5357.28	51.85	-22.15	74	40.51	32.31	6.01	26.98	187	47	P	H
		5456.64	44.05	-9.95	54	32.49	32.34	6.06	26.84	187	47	A	H
		5041.65	51.79	-22.21	74	40.99	32.21	6.05	27.46	203	91	P	V
		5025.2	44.18	-9.82	54	33.37	32.21	6.06	27.46	203	91	A	V
	*	5300	106.98	-	-	95.73	32.29	6.02	27.06	203	91	P	V
	*	5300	100.49	-	-	89.24	32.29	6.02	27.06	203	91	A	V
		5376.24	52.58	-21.42	74	41.21	32.31	6.01	26.95	203	91	P	V
		5456.88	44.03	-9.97	54	32.47	32.34	6.06	26.84	203	91	A	V



802.11n HT20 CH 64 5320MHz	*	5320	106.28	-	-	95.02	32.3	6.02	27.06	198	47	P	H
	*	5320	100.47	-	-	89.21	32.3	6.02	27.06	198	47	A	H
		5350.88	53.06	-20.94	74	41.72	32.31	6.01	26.98	198	47	P	H
		5350.72	45.7	-8.3	54	34.36	32.31	6.01	26.98	198	47	A	H
	*	5320	108.5	-	-	97.24	32.3	6.02	27.06	201	91	P	V
	*	5320	101.37	-	-	90.11	32.3	6.02	27.06	201	91	A	V
		5357.76	53.24	-20.76	74	41.9	32.31	6.01	26.98	201	91	P	V
		5350.08	46.94	-7.06	54	35.6	32.31	6.01	26.98	201	91	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz
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 52 5260MHz		10520	46.67	-27.33	74	54.92	38.39	9.27	55.91	150	220	P	H
		15780	48.22	-25.78	74	54.13	38.14	12.2	56.25	159	345	P	H
		10520	47.2	-26.8	74	55.45	38.39	9.27	55.91	150	220	P	V
		15780	48.06	-25.94	74	53.97	38.14	12.2	56.25	159	345	P	V
802.11n HT20 CH 60 5300MHz		10600	46.95	-27.05	74	55.13	38.47	9.29	55.94	185	215	P	H
		15900	47.12	-26.88	74	53.05	37.74	12.34	56.01	196	190	P	H
		10600	47.91	-26.09	74	56.09	38.47	9.29	55.94	185	215	P	V
		15900	47.94	-26.06	74	53.87	37.74	12.34	56.01	196	190	P	V
802.11n HT20 CH 64 5320MHz		10640	47.39	-26.61	74	55.55	38.5	9.3	55.96	152	135	P	H
		15960	46.53	-27.47	74	52.46	37.51	12.43	55.87	173	245	P	H
		10640	48.08	-25.92	74	56.24	38.5	9.3	55.96	152	135	P	V
		15960	46.53	-27.47	74	52.46	37.51	12.43	55.87	173	245	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz
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 54 5270MHz		5124.6	52.89	-21.11	74	41.93	32.24	6.04	27.32	103	113	P	H
		5025.55	44.11	-9.89	54	33.3	32.21	6.06	27.46	103	113	A	H
	*	5270	103.65	-	-	92.47	32.28	6.03	27.13	103	113	P	H
	*	5270	96.78	-	-	85.6	32.28	6.03	27.13	103	113	A	H
		5458.32	52.16	-21.84	74	40.6	32.34	6.06	26.84	103	113	P	H
		5350.56	44.35	-9.65	54	33.01	32.31	6.01	26.98	103	113	A	H
		5009.1	51.93	-22.07	74	41.17	32.2	6.06	27.5	217	88	P	V
		5025.9	44.24	-9.76	54	33.43	32.21	6.06	27.46	217	88	A	V
	*	5270	106.33	-	-	95.15	32.28	6.03	27.13	217	88	P	V
	*	5270	96.98	-	-	85.8	32.28	6.03	27.13	217	88	A	V
		5350.8	53.19	-20.81	74	41.85	32.31	6.01	26.98	217	88	P	V
		5350.08	45	-9	54	33.66	32.31	6.01	26.98	217	88	A	V
802.11n HT40 CH 62 5310MHz		5000.35	52.12	-21.88	74	41.4	32.16	6.06	27.5	109	132	P	H
		5059.85	44	-10	54	33.16	32.22	6.05	27.43	109	132	A	H
	*	5310	102.05	-	-	90.79	32.3	6.02	27.06	109	132	P	H
	*	5310	96.02	-	-	84.76	32.3	6.02	27.06	109	132	A	H
		5358.24	53.99	-20.01	74	42.65	32.31	6.01	26.98	109	132	P	H
		5352.24	47.05	-6.95	54	35.71	32.31	6.01	26.98	109	132	A	H
		5049.35	52.16	-21.84	74	41.33	32.21	6.05	27.43	207	90	P	V
		5018.55	44	-10	54	33.2	32.2	6.06	27.46	207	90	A	V
	*	5310	103.55	-	-	92.29	32.3	6.02	27.06	207	90	P	V
	*	5310	97.1	-	-	85.84	32.3	6.02	27.06	207	90	A	V
		5353.92	55.52	-18.48	74	44.18	32.31	6.01	26.98	207	90	P	V
		5351.76	48.74	-5.26	54	37.4	32.31	6.01	26.98	207	90	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz
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 54 5270MHz		10540	47.26	-26.74	74	55.5	38.4	9.28	55.92	150	220	P	H
		15810	48.43	-25.57	74	54.33	38.03	12.25	56.18	168	345	P	H
		10540	46.63	-27.37	74	54.87	38.4	9.28	55.92	150	220	P	V
		15810	48.75	-25.25	74	54.65	38.03	12.25	56.18	168	345	P	V
802.11n HT40 CH 62 5310MHz		10620	47.75	-26.25	74	55.92	38.48	9.3	55.95	150	220	P	H
		15930	47.28	-26.72	74	53.21	37.63	12.38	55.94	160	100	P	H
		10620	47.08	-26.92	74	55.25	38.48	9.3	55.95	150	220	P	V
		15930	47.55	-26.45	74	53.48	37.63	12.38	55.94	160	100	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz
WIFI 802.11ac VHT80 (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)
802.11ac VHT80 CH 58 5290MHz		5020.02	52.64	-21.36	74	41.84	32.2	6.06	27.46	218	93	P	H
		5102.18	45.22	-8.78	54	34.29	32.23	6.05	27.35	218	93	A	H
	*	5290	97.02	-	-	85.8	32.29	6.02	27.09	218	93	P	H
	*	5290	89.85	-	-	78.63	32.29	6.02	27.09	218	93	A	H
		5352.24	52.62	-21.38	74	41.28	32.31	6.01	26.98	218	93	P	H
		5350.32	46.03	-7.97	54	34.69	32.31	6.01	26.98	218	93	A	H
		5010.66	52.54	-21.46	74	41.78	32.2	6.06	27.5	216	94	P	V
		5029.9	45	-9	54	34.19	32.21	6.06	27.46	216	94	A	V
	*	5290	97.15	-	-	85.93	32.29	6.02	27.09	216	94	P	V
	*	5290	89.88	-	-	78.66	32.29	6.02	27.09	216	94	A	V
		5351.76	51.95	-22.05	74	40.61	32.31	6.01	26.98	216	94	P	V
		5357.28	46.21	-7.79	54	34.87	32.31	6.01	26.98	216	94	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11ac VHT80 (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)
802.11ac		10580	47.29	-26.71	74	55.49	38.45	9.29	55.94	156	266	P	H
VHT80		15870	48.84	-25.16	74	54.79	37.8	12.29	56.04	116	324	P	H
CH 58		10580	46.15	-27.85	74	54.35	38.45	9.29	55.94	189	246	P	V
5290MHz		15870	49.18	-24.82	74	55.13	37.8	12.29	56.04	185	247	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz

WIFI 802.11a (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)
802.11a CH 100 5500MHz		5469.52	61.18	-12.82	74	49.56	32.35	6.11	26.84	369	163	P	H
		5470	51.25	-2.75	54	39.63	32.35	6.11	26.84	369	163	A	H
	*	5500	107.62	-	-	95.95	32.36	6.11	26.8	369	163	P	H
	*	5500	99.97	-	-	88.3	32.36	6.11	26.8	369	163	A	H
		5468.24	56.01	-17.99	74	44.39	32.35	6.11	26.84	269	280	P	V
		5469.68	48.21	-5.79	54	36.59	32.35	6.11	26.84	269	280	A	V
	*	5500	104.7	-	-	93.03	32.36	6.11	26.8	269	280	P	V
	*	5500	97.15	-	-	85.48	32.36	6.11	26.8	269	280	A	V
802.11a CH 116 5580MHz		5466.4	51.87	-22.13	74	40.25	32.35	6.11	26.84	359	162	P	H
		5463.28	44.15	-9.85	54	32.58	32.35	6.06	26.84	359	162	A	H
	*	5580	106.74	-	-	94.98	32.38	6.22	26.84	359	162	P	H
	*	5580	99.74	-	-	87.98	32.38	6.22	26.84	359	162	A	H
		5728.145	51.95	-22.05	74	40.14	32.48	6.22	26.89	359	162	P	H
		5742.32	43.63	-10.37	54	31.84	32.49	6.2	26.9	359	162	A	H
		5400.4	53.08	-20.92	74	41.66	32.32	6.01	26.91	261	281	P	V
		5461.6	43.92	-10.08	54	32.36	32.34	6.06	26.84	261	281	A	V
	*	5580	103.86	-	-	92.1	32.38	6.22	26.84	261	281	P	V
	*	5580	96.92	-	-	85.16	32.38	6.22	26.84	261	281	A	V
		5741.375	51.31	-22.69	74	39.52	32.49	6.2	26.9	261	281	P	V
		5743.58	43.73	-10.27	54	31.94	32.49	6.2	26.9	261	281	A	V



802.11a CH 140 5700MHz	*	5700	106.36	-	-	94.57	32.45	6.22	26.88	342	159	P	H
	*	5700	99.62	-	-	87.83	32.45	6.22	26.88	342	159	A	H
		5725.8	59.8	-14.2	74	47.99	32.48	6.22	26.89	342	159	P	H
		5728.44	48.97	-5.03	54	37.16	32.48	6.22	26.89	342	159	A	H
	*	5700	104.66	-	-	92.87	32.45	6.22	26.88	237	283	P	V
	*	5700	97.24	-	-	85.45	32.45	6.22	26.88	237	283	A	V
		5728.2	57.3	-16.7	74	45.49	32.48	6.22	26.89	237	283	P	V
		5727.24	47.82	-6.18	54	36.01	32.48	6.22	26.89	237	283	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11a (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)
802.11a CH 100 5500MHz		11000	47.52	-26.48	74	55.41	38.83	9.38	56.1	163	230	P	H
		16500	49.48	-24.52	74	52.64	39.48	13.41	56.05	178	296	P	H
		11000	47.55	-26.45	74	55.44	38.83	9.38	56.1	163	230	P	V
		16500	50.01	-23.99	74	53.17	39.48	13.41	56.05	178	296	P	V
802.11a CH 116 5580MHz		11160	48.14	-25.86	74	55.57	38.99	9.43	55.85	170	200	P	H
		16740	49.33	-24.67	74	51.09	40.46	13.95	56.17	156	350	P	H
		11160	47.17	-26.83	74	54.6	38.99	9.43	55.85	170	200	P	V
		16740	48.52	-25.48	74	50.28	40.46	13.95	56.17	156	350	P	V
802.11a CH 140 5700MHz		11400	49.1	-24.9	74	55.9	39.21	9.48	55.49	157	285	P	H
		17100	50.76	-23.24	74	50.32	42.16	14.66	56.38	165	246	P	H
		11400	48.61	-25.39	74	55.41	39.21	9.48	55.49	157	285	P	V
		17100	49.28	-24.72	74	48.84	42.16	14.66	56.38	165	246	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
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 100 5500MHz		5441.84	51.94	-22.06	74	40.41	32.34	6.06	26.87	200	49	P	H
		5470	44.26	-9.74	54	32.64	32.35	6.11	26.84	200	49	A	H
	*	5500	103.8	-	-	92.13	32.36	6.11	26.8	200	49	P	H
	*	5500	97.59	-	-	85.92	32.36	6.11	26.8	200	49	A	H
		5470	53.33	-20.67	74	41.71	32.35	6.11	26.84	189	91	P	V
		5466.8	44.21	-9.79	54	32.59	32.35	6.11	26.84	189	91	A	V
	*	5500	104.53	30.53	74	92.81	32.36	6.17	26.81	189	91	A	V
	*	5500	98.17	44.17	54	86.5	32.36	6.11	26.8	189	91	P	V
802.11n HT20 CH 116 5580MHz		5465.44	51.7	-22.3	74	40.13	32.35	6.06	26.84	261	174	P	H
		5455.36	43.84	-10.16	54	32.28	32.34	6.06	26.84	261	174	A	H
	*	5580	107.02	-	-	95.26	32.38	6.22	26.84	261	174	P	H
	*	5580	99.74	-	-	87.98	32.38	6.22	26.84	261	174	A	H
		5730.035	51.31	-22.69	74	39.5	32.48	6.22	26.89	261	174	P	H
		5735.39	43.68	-10.32	54	31.87	32.49	6.22	26.9	261	174	A	H
		5468.56	51.86	-22.14	74	40.24	32.35	6.11	26.84	257	271	P	V
		5454.64	43.86	-10.14	54	32.3	32.34	6.06	26.84	257	271	A	V
	*	5580	107.94	-	-	96.18	32.38	6.22	26.84	257	271	P	V
	*	5580	100.25	-	-	88.49	32.38	6.22	26.84	257	271	A	V
		5730.035	51.87	-22.13	74	40.06	32.48	6.22	26.89	257	271	P	V
		5726.255	43.81	-10.19	54	32	32.48	6.22	26.89	257	271	A	V



802.11n HT20 CH 140 5700MHz	*	5700	107.58	-	-	95.79	32.45	6.22	26.88	261	175	P	H
	*	5700	100.67	-	-	88.88	32.45	6.22	26.88	261	175	A	H
		5748.84	52.53	-21.47	74	40.74	32.49	6.2	26.9	261	175	P	H
		5725	45.05	-8.95	54	33.24	32.48	6.22	26.89	261	175	A	H
	*	5700	104.01	-	-	92.22	32.45	6.22	26.88	241	267	P	V
	*	5700	96.56	-	-	84.77	32.45	6.22	26.88	241	267	A	V
		5725.56	52.53	-21.47	74	40.72	32.48	6.22	26.89	241	267	P	V
		5728.2	44.24	-9.76	54	32.43	32.48	6.22	26.89	241	267	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
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 100 5500MHz		11000	47.66	-26.34	74	55.55	38.83	9.38	56.1	163	230	P	H
		16500	49.55	-24.45	74	52.71	39.48	13.41	56.05	178	296	P	H
		11000	47.81	-26.19	74	55.7	38.83	9.38	56.1	163	230	P	V
		16500	49.14	-24.86	74	52.3	39.48	13.41	56.05	178	296	P	V
802.11n HT20 CH 116 5580MHz		11160	47.19	-26.81	74	54.62	38.99	9.43	55.85	170	200	P	H
		16740	50.12	-23.88	74	51.88	40.46	13.95	56.17	156	350	P	H
		11160	47.32	-26.68	74	54.75	38.99	9.43	55.85	170	200	P	V
		16740	50.13	-23.87	74	51.89	40.46	13.95	56.17	156	350	P	V
802.11n HT20 CH 140 5700MHz		11400	49.5	-24.5	74	56.3	39.21	9.48	55.49	157	285	P	H
		17100	50.01	-23.99	74	49.57	42.16	14.66	56.38	165	246	P	H
		11400	49.25	-24.75	74	56.05	39.21	9.48	55.49	157	285	P	V
		17100	50.06	-23.94	74	49.62	42.16	14.66	56.38	165	246	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
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 102 5510MHz		5431.84	52.77	-21.23	74	41.24	32.34	6.06	26.87	281	175	P	H
		5468.8	45.27	-8.73	54	33.65	32.35	6.11	26.84	281	175	A	H
	*	5510	102.21	-	-	90.49	32.36	6.17	26.81	281	175	P	H
	*	5510	96.28	-	-	84.56	32.36	6.17	26.81	281	175	A	H
		5750.825	51.82	-22.18	74	40.03	32.49	6.2	26.9	281	175	P	H
		5727.2	43.85	-10.15	54	32.04	32.48	6.22	26.89	281	175	A	H
		5469.76	53.79	-20.21	74	42.17	32.35	6.11	26.84	185	95	P	V
		5463.52	46.08	-7.92	54	34.51	32.35	6.06	26.84	185	95	A	V
	*	5510	102.37	-	-	90.65	32.36	6.17	26.81	185	95	P	V
	*	5510	95.56	-	-	83.84	32.36	6.17	26.81	185	95	A	V
		5764.685	52.68	-21.32	74	40.88	32.51	6.2	26.91	185	95	P	V
		5743.895	43.86	-10.14	54	32.07	32.49	6.2	26.9	185	95	A	V
802.11n HT40 CH 110 5550MHz		5429.92	52.62	-21.38	74	41.09	32.34	6.06	26.87	279	174	P	H
		5468.32	44.91	-9.09	54	33.29	32.35	6.11	26.84	279	174	A	H
	*	5550	106.84	-	-	95.07	32.37	6.22	26.82	279	174	P	H
	*	5550	100.01	-	-	88.24	32.37	6.22	26.82	279	174	A	H
		5736.965	51.96	-22.04	74	40.15	32.49	6.22	26.9	279	174	P	H
		5725.94	44.05	-9.95	54	32.24	32.48	6.22	26.89	279	174	A	H
		5462.08	54.41	-19.59	74	42.85	32.34	6.06	26.84	185	91	P	V
		5466.88	44.91	-9.09	54	33.29	32.35	6.11	26.84	185	91	A	V
	*	5550	104.63	-	-	92.86	32.37	6.22	26.82	185	91	P	V
	*	5550	99.33	-	-	87.56	32.37	6.22	26.82	185	91	A	V
		5743.265	54.82	-19.18	74	43.03	32.49	6.2	26.9	185	91	P	V
		5737.595	44.16	-9.84	54	32.35	32.49	6.22	26.9	185	91	A	V



802.11n HT40 CH 134 5670MHz		5409.15	51.12	-22.88	74	39.7	32.32	6.01	26.91	280	174	P	H
		5461.65	44.8	-9.2	54	33.24	32.34	6.06	26.84	280	174	A	H
	*	5670	103.8	-	-	92.01	32.43	6.23	26.87	280	174	P	H
	*	5670	99.91	-	-	88.12	32.43	6.23	26.87	280	174	A	H
		5726.15	59.48	-14.52	74	47.67	32.48	6.22	26.89	280	174	P	H
		5725.1	52.43	-1.57	54	40.62	32.48	6.22	26.89	280	174	A	H
		5442.4	51.86	-22.14	74	40.33	32.34	6.06	26.87	182	93	P	V
		5464.8	44.43	-9.57	54	32.86	32.35	6.06	26.84	182	93	A	V
	*	5670	104.71	-	-	92.92	32.43	6.23	26.87	182	93	P	V
	*	5670	97.15	-	-	85.36	32.43	6.23	26.87	182	93	A	V
		5728.075	57.39	-16.61	74	45.58	32.48	6.22	26.89	182	93	P	V
		5725.8	52.21	-1.79	54	40.4	32.48	6.22	26.89	182	93	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
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 102 5510MHz		11020	46.78	-27.22	74	54.62	38.84	9.39	56.07	170	230	P	H
		16530	50.37	-23.63	74	53.34	39.62	13.48	56.07	160	300	P	H
		11020	48.26	-25.74	74	56.1	38.84	9.39	56.07	170	230	P	V
		16530	50.12	-23.88	74	53.09	39.62	13.48	56.07	160	300	P	V
802.11n HT40 CH 110 5550MHz		11100	48.04	-25.96	74	55.66	38.92	9.41	55.95	185	200	P	H
		16650	50.25	-23.75	74	52.55	40.11	13.72	56.13	180	325	P	H
		11100	47.86	-26.14	74	55.48	38.92	9.41	55.95	185	200	P	V
		16650	50.71	-23.29	74	53.01	40.11	13.72	56.13	180	325	P	V
802.11n HT40 CH 134 5670MHz		11340	47.84	-26.16	74	54.83	39.14	9.46	55.59	200	360	P	H
		17010	50.73	-23.27	74	50.93	41.61	14.5	56.31	200	360	P	H
		11340	48.12	-25.88	74	55.11	39.14	9.46	55.59	200	360	P	V
		17010	49.71	-24.29	74	49.91	41.61	14.5	56.31	200	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11ac VHT80 (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)
802.11ac VHT80 CH 106 5530MHz		5467.84	53.06	-20.94	74	41.44	32.35	6.11	26.84	204	88	P	H
		5469.04	46.34	-7.66	54	34.72	32.35	6.11	26.84	204	88	A	H
	*	5530	97.1	-	-	85.39	32.36	6.17	26.82	204	88	P	H
	*	5530	89.02	-	-	77.31	32.36	6.17	26.82	204	88	A	H
		5749.25	50.92	-23.08	74	39.13	32.49	6.2	26.9	204	88	P	H
		5734.445	44.86	-9.14	54	33.06	32.48	6.22	26.9	204	88	A	H
		5449.6	53.3	-20.7	74	41.77	32.34	6.06	26.87	202	88	P	V
		5469.76	46.12	-7.88	54	34.5	32.35	6.11	26.84	202	88	A	V
	*	5530	97.91	-	-	86.2	32.36	6.17	26.82	202	88	P	V
	*	5530	89.65	-	-	77.94	32.36	6.17	26.82	202	88	A	V
		5736.02	50.46	-23.54	74	38.65	32.49	6.22	26.9	202	88	P	V
		5735.39	44.75	-9.25	54	32.94	32.49	6.22	26.9	202	88	A	V
802.11ac VHT80 CH 122 5610MHz		5464.24	53.45	-20.55	74	41.88	32.35	6.06	26.84	201	89	P	H
		5461.36	46.31	-7.69	54	34.75	32.34	6.06	26.84	201	89	A	H
	*	5610	103.19	-	-	91.38	32.39	6.27	26.85	201	89	P	H
	*	5610	94.18	-	-	82.37	32.39	6.27	26.85	201	89	A	H
		5743.265	52.91	-21.09	74	41.12	32.49	6.2	26.9	201	89	P	H
		5725.31	47.09	-6.91	54	35.28	32.48	6.22	26.89	201	89	A	H
		5466.4	54.07	-19.93	74	42.45	32.35	6.11	26.84	234	91	P	V
		5455.84	45.84	-8.16	54	34.28	32.34	6.06	26.84	234	91	A	V
	*	5610	102.98	-	-	91.17	32.39	6.27	26.85	234	91	P	V
	*	5610	94.79	-	-	82.98	32.39	6.27	26.85	234	91	A	V
		5736.965	52.93	-21.07	74	41.12	32.49	6.22	26.9	234	91	P	V
		5725	47.12	-6.88	54	35.31	32.48	6.22	26.89	234	91	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5470~5725MHz

WIFI 802.11ac VHT80 (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)
802.11ac		11060	46.86	-27.14	74	54.57	38.89	9.4	56	176	227	P	H
VHT80		16590	49.06	-24.94	74	51.69	39.83	13.64	56.1	185	227	P	H
CH 106		11060	47.01	-26.99	74	54.72	38.89	9.4	56	158	244	P	V
5530MHz		16590	49.58	-24.42	74	52.21	39.83	13.64	56.1	186	266	P	V
802.11ac		11220	46.44	-27.56	74	53.74	39.03	9.44	55.77	100	172	P	H
VHT80		16830	49.32	-24.68	74	50.62	40.81	14.11	56.22	167	263	P	H
CH 122		11220	47.33	-26.67	74	54.63	39.03	9.44	55.77	145	314	P	V
5610MHz		16830	49.15	-24.85	74	50.45	40.81	14.11	56.22	247	36	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11ac VHT160 (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)
802.11ac VHT160 CH 114 5570MHz		5458.72	54.13	-19.87	74	42.57	32.34	6.06	26.84	352	164	P	H
		5464	49.69	-4.31	54	38.12	32.35	6.06	26.84	352	164	A	H
	*	5570	96.88	22.88	74	85.11	32.38	6.22	26.83	352	164	P	H
	*	5570	88.98	34.98	54	77.21	32.38	6.22	26.83	352	164	A	H
		5727.9	59.06	-14.94	74	47.25	32.48	6.22	26.89	352	164	P	H
		5727.9	51.45	-2.55	54	39.64	32.48	6.22	26.89	352	164	A	H
		5463.04	56.55	-17.45	74	44.98	32.35	6.06	26.84	246	93	P	V
		5463.76	50.63	-3.37	54	39.06	32.35	6.06	26.84	246	93	A	V
	*	5570	96.4	22.4	74	84.63	32.38	6.22	26.83	246	93	P	V
	*	5570	88.9	34.9	54	77.13	32.38	6.22	26.83	246	93	A	V
		5728.075	56.96	-17.04	74	45.15	32.48	6.22	26.89	246	93	P	V
		5726.325	50.48	-3.52	54	38.67	32.48	6.22	26.89	246	93	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5470~5725MHz

WIFI 802.11ac VHT160 (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)
802.11ac		11140	46.93	-27.07	74	54.46	38.95	9.42	55.9	187	249	P	H
VHT160		16710	50.37	-23.63	74	52.34	40.32	13.87	56.16	161	243	P	H
CH 114		11140	47.48	-26.52	74	55.01	38.95	9.42	55.9	178	228	P	V
5570MHz		16710	50.74	-23.26	74	52.71	40.32	13.87	56.16	224	166	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



For Adapter 2

Band 3 - 5470~5725MHz

WIFI 802.11n HT40 (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+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 134 5670MHz		5437.5	51.69	-22.31	74	40.16	32.34	6.06	26.87	271	22	P	H
		5461.65	44.41	-9.59	54	32.85	32.34	6.06	26.84	271	22	A	H
	*	5670	105.54	-	-	93.75	32.43	6.23	26.87	271	22	P	H
	*	5670	98.92	-	-	87.13	32.43	6.23	26.87	271	22	A	H
		5725.8	58.72	-15.28	74	46.91	32.48	6.22	26.89	271	22	P	H
		5727.375	51.66	-2.34	54	39.85	32.48	6.22	26.89	271	22	A	H
		5455.35	51.59	-22.41	74	40.03	32.34	6.06	26.84	236	270	P	V
		5450.8	44.25	-9.75	54	32.69	32.34	6.06	26.84	236	270	A	V
	*	5670	103.31	-	-	91.52	32.43	6.23	26.87	236	270	P	V
	*	5670	97.13	-	-	85.34	32.43	6.23	26.87	236	270	A	V
		5730.875	58.97	-15.03	74	47.17	32.48	6.22	26.9	236	270	P	V
		5725.625	49.41	-4.59	54	37.6	32.48	6.22	26.89	236	270	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
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 134 5670MHz		11340	48.54	-25.46	74	55.53	39.14	9.46	55.59	200	360	P	H
		17010	50.58	-23.42	74	50.78	41.61	14.5	56.31	200	360	P	H
		11340	48.29	-25.71	74	55.28	39.14	9.46	55.59	200	360	P	V
		17010	50.44	-23.56	74	50.64	41.61	14.5	56.31	200	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

WIFI 802.11n HT40 (LF @ 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+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 LF		30	24.34	-15.66	40	31.16	24.9	0.25	31.97			P	H
		191.02	36.16	-7.34	43.5	50.85	15.16	1.52	31.37	100	162	P	H
		259.89	26.41	-19.59	46	35.51	20.4	1.74	31.24			P	H
		471.35	28.56	-17.44	46	34.07	23.39	2.36	31.26			P	H
		669.23	30.56	-15.44	46	32.52	26.42	2.86	31.24			P	H
		774.96	32.28	-13.72	46	32.31	28.05	3.1	31.18			P	H
		54.25	31.69	-8.31	40	49.4	13.46	0.75	31.92			P	V
		78.5	33.15	-6.85	40	50.72	13.44	0.84	31.85	100	233	P	V
		190.05	34.53	-8.97	43.5	49.24	15.15	1.51	31.37			P	V
		390.84	24.86	-21.14	46	32.22	21.68	2.15	31.19			P	V
		540.22	29.77	-16.23	46	33.77	24.72	2.53	31.25			P	V
		904.94	33.62	-12.38	46	32.04	29.36	3.4	31.18			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	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		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

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)

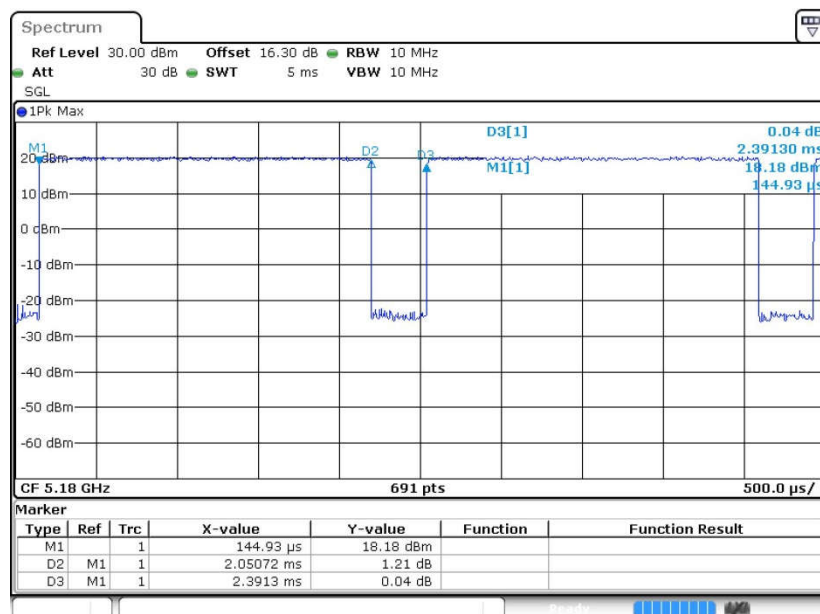
Both peak and average measured complies with the limit line, so test result is “PASS”.

Appendix D. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
1	802.11a	85.76	2.051	0.488	1kHz
1+2	802.11n HT20	85.25	0.980	1.021	3kHz
1+2	802.11n HT40	85.76	0.493	2.031	3kHz
1+2	802.11ac VHT80	83.49	0.257	3.898	10kHz
1+2	802.11ac VHT160	74.89	0.152	6.571	10kHz

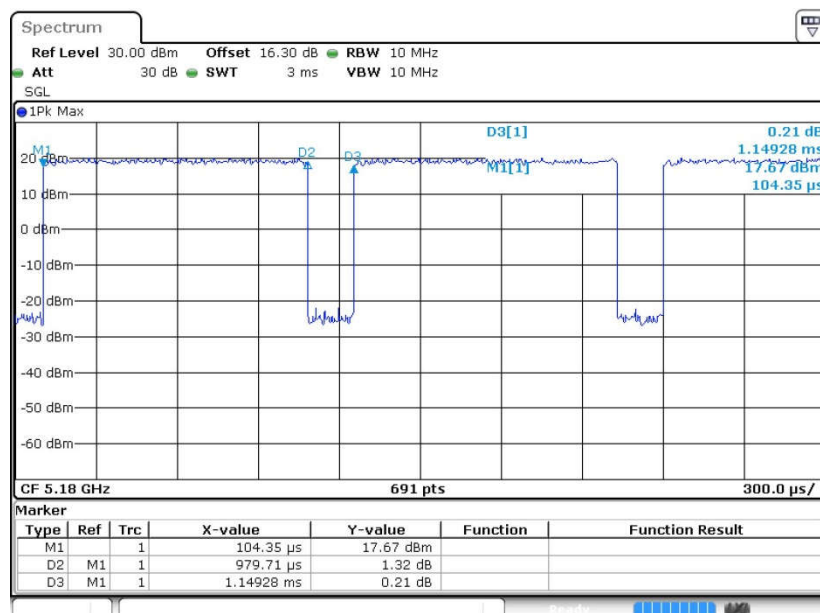
Ant.1

802.11a



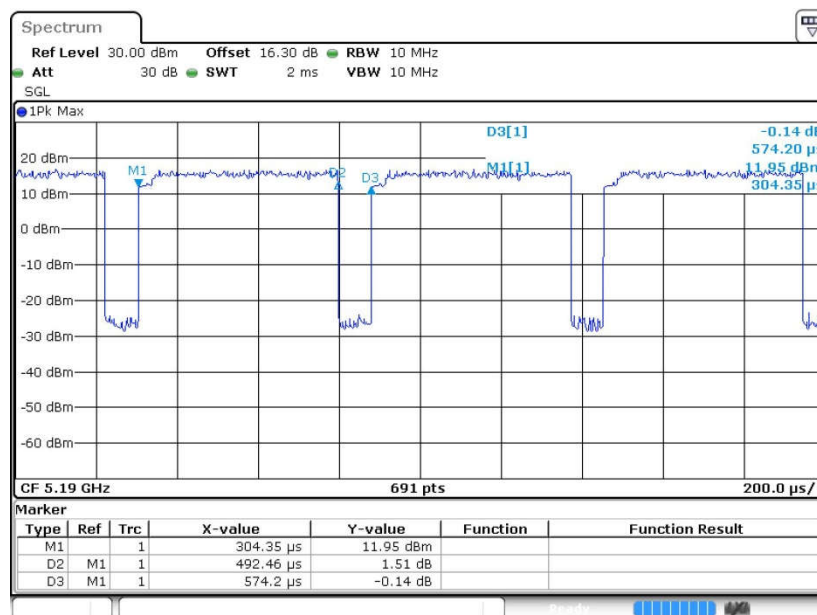
Ant.1+2

802.11n HT20

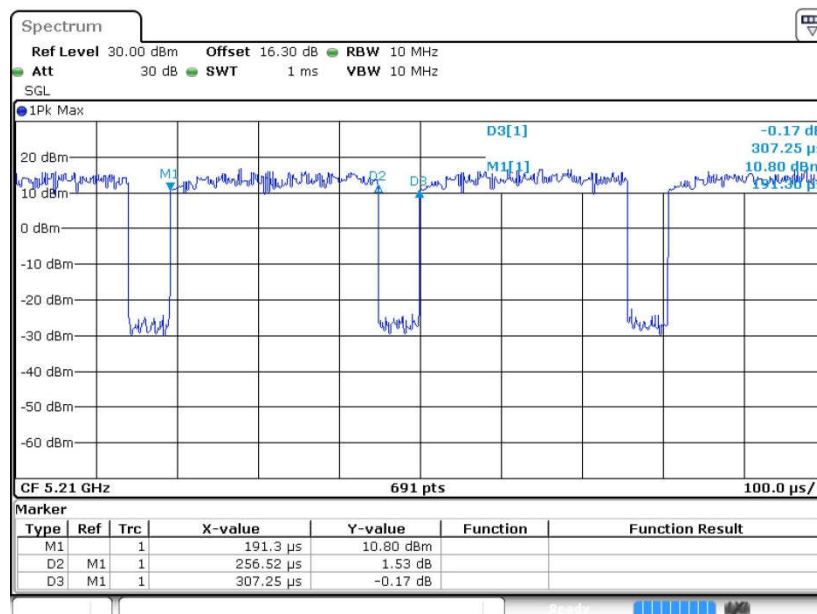




802.11n HT40



802.11ac VHT80





802.11ac VHT160

