



FCC RF Test Report

APPLICANT : Lenovo (Shanghai) Electronics Technology Co., Ltd.
EQUIPMENT : Portable Tablet Computer
BRAND NAME : Lenovo
MODEL NAME : Lenovo TB-J706F
FCC ID : O57TBJ706F
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on May 09, 2020 and testing was completed on Aug. 03, 2020. We, Sporton International (Kunshan) 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 (Kunshan) Inc., the test report shall not be reproduced except in full.

Jason Jia

Reviewed by: Jason Jia / Supervisor

James Huang

Approved by: James Huang / Manager



Sporton International (Kunshan) Inc.

**No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China**



TABLE OF CONTENTS

REVISION HISTORY..... 3

SUMMARY OF TEST RESULT 4

1 GENERAL DESCRIPTION 5

 1.1 Applicant 5

 1.2 Manufacturer 5

 1.3 Product Feature of Equipment Under Test 5

 1.4 Product Specification of Equipment Under Test 6

 1.5 Modification of EUT 7

 1.6 Testing Location 8

 1.7 Test Software 8

 1.8 Applicable Standards 8

2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST 9

 2.1 Carrier Frequency and Channel 9

 2.2 Test Mode 10

 2.3 Connection Diagram of Test System 12

 2.4 Support Unit used in test configuration and system 13

 2.5 EUT Operation Test Setup 13

 2.6 Measurement Results Explanation Example 13

3 TEST RESULT 14

 3.1 6dB and 26dB and 99% Occupied Bandwidth Measurement 14

 3.2 Maximum Conducted Output Power Measurement 17

 3.3 Power Spectral Density Measurement 19

 3.4 Unwanted Emissions Measurement 24

 3.5 AC Conducted Emission Measurement 29

 3.6 Automatically Discontinue Transmission 31

 3.7 Antenna Requirements 32

4 LIST OF MEASURING EQUIPMENT 33

5 UNCERTAINTY OF EVALUATION 34

APPENDIX A. CONDUCTED TEST RESULTS

APPENDIX B. AC CONDUCTED EMISSION TEST RESULT

APPENDIX C. RADIATED SPURIOUS EMISSION

APPENDIX D. DUTY CYCLE PLOTS

APPENDIX E. SETUP PHOTOGRAPHS



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit for Band I~III	Limit for Band IV	Result	Remark
3.1	2.1049 & 15.403(i)	6dB, 26dB & 99% Bandwidth	-	> 500kHz	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	≤ 24 dBm	≤ 30 dBm	Pass	-
3.3	15.407(a)	Power Spectral Density	≤ 11 dBm	≤ 30 dBm/500kHz	Pass	-
3.4	15.407(b)	Unwanted Emissions	15.407(b) & 15.209(a)	15.407(b)(4)(i) & 15.209(a)	Pass	Under limit 3.08 dB at 7375.375 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	15.207(a)	Pass	Under limit 6.77 dB at 0.157 MHz
3.6	15.407(c)	Automatically Discontinue Transmission	Discontinue Transmission	Discontinue Transmission	Pass	-
3.7	15.203 & 15.407(a)	Antenna Requirement	N/A	N/A	Pass	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



1 General Description

1.1 Applicant

Lenovo (Shanghai) Electronics Technology Co., Ltd.

Section 304-305, Building No. 4, # 222, Meiyue Road, China (Shanghai) Pilot Free Trade Zone

1.2 Manufacturer

Lenovo PC HK Limited

23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong, P.R.China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Portable Tablet Computer
Brand Name	Lenovo
Model Name	Lenovo TB-J706F
FCC ID	O57TBJ706F
EUT supports Radios application	WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac HT20/HT40/VHT20/VHT40/VHT80/VHT80+VHT80 Bluetooth BR/EDR/LE GNSS
HW Version	Lenovo TB-J706F
SW Version	TB-J706F_RF01_200701
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. There are two types of EUT sample 1 and sample 2, the difference between them can refer to the Operational Description exhibit separately. According to the difference, we choose sample 1 to perform RF test



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 5745 MHz ~ 5825 MHz
Maximum Output Power to Antenna	MIMO <Ant. 1+2> <5180 MHz ~ 5240 MHz> 802.11a : 16.19 dBm / 0.0416 W 802.11n HT20 : 16.86 dBm / 0.0485 W 802.11n HT40 : 19.90 dBm / 0.0977 W 802.11ac VHT20 : 16.84 dBm / 0.0483 W 802.11ac VHT40 : 18.48 dBm / 0.0705 W 802.11ac VHT80 : 17.06 dBm / 0.0508 W <5260 MHz ~ 5320 MHz> 802.11a : 19.89 dBm / 0.0975 W 802.11n HT20 : 20.46 dBm / 0.1112 W 802.11n HT40 : 20.39 dBm / 0.1094 W 802.11ac VHT20 : 18.82 dBm / 0.0762 W 802.11ac VHT40 : 18.94 dBm / 0.0783 W 802.11ac VHT80 : 16.38 dBm / 0.0435 W <5500 MHz ~ 5700 MHz> 802.11a : 20.62 dBm / 0.1153 W 802.11n HT20 : 19.90 dBm / 0.0977 W 802.11n HT40 : 20.31 dBm / 0.1074 W 802.11ac VHT20 : 18.21 dBm / 0.0662 W 802.11ac VHT40 : 18.85 dBm / 0.0767 W 802.11ac VHT80 : 17.33 dBm / 0.0541 W <5745 MHz ~ 5825 MHz> 802.11a : 20.87 dBm / 0.1222 W 802.11n HT20 : 19.57 dBm / 0.0906 W 802.11n HT40 : 19.84 dBm / 0.0964 W 802.11ac VHT20 : 18.07 dBm / 0.0641 W 802.11ac VHT40 : 18.42 dBm / 0.0695 W 802.11ac VHT80 : 16.73 dBm / 0.0471 W
99% Occupied Bandwidth	<5180 MHz ~ 5240 MHz> 802.11a : 17.63 MHz 802.11n HT20 : 18.83 MHz 802.11n HT40 : 36.56 MHz 802.11ac VHT80 : 75.76 MHz <5260 MHz ~ 5320 MHz> 802.11a : 17.58 MHz 802.11n HT20 : 18.83 MHz 802.11n HT40 : 36.56 MHz 802.11ac VHT80 : 75.64 MHz <5500 MHz ~ 5700 MHz> 802.11a : 17.73 MHz 802.11n HT20 : 18.83 MHz 802.11n HT40 : 36.66 MHz 802.11ac VHT80 : 75.64 MHz <5745 MHz ~ 5825 MHz> 802.11a : 17.48 MHz 802.11n HT20 : 18.68 MHz



	802.11n HT40 : 36.56 MHz 802.11ac VHT80 : 75.64 MHz						
Antenna Type / Gain	<p><5180 MHz ~ 5240 MHz> <Ant. 1> : Fixed Internal Antenna with gain 0.1 dBi <Ant. 2> : Fixed Internal Antenna with gain 0.1 dBi</p> <p><5260 MHz ~ 5320 MHz> <Ant. 1> : Fixed Internal Antenna with gain -0.5 dBi <Ant. 2> : Fixed Internal Antenna with gain -1.5 dBi</p> <p><5500 MHz ~ 5700 MHz> <Ant. 1> : Fixed Internal Antenna with gain -1.5 dBi <Ant. 2> : Fixed Internal Antenna with gain -2.1 dBi</p> <p><5745 MHz ~ 5825 MHz> <Ant. 1> : Fixed Internal Antenna with gain 0.9 dBi <Ant. 2> : Fixed Internal Antenna with gain -1.5 dBi</p>						
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)						
Antenna Function Description	<table border="1"> <thead> <tr> <th></th> <th>Ant. 1</th> <th>Ant. 2</th> </tr> </thead> <tbody> <tr> <td>802.11 a/n/ac MIMO</td> <td>V</td> <td>V</td> </tr> </tbody> </table>		Ant. 1	Ant. 2	802.11 a/n/ac MIMO	V	V
	Ant. 1	Ant. 2					
802.11 a/n/ac MIMO	V	V					

Note:

1. WLAN operation in 5600 MHz ~ 5650 MHz is notched.
2. For 802.11n HT20 / ac VHT20 and 802.11n HT40 / ac VHT40 mode, the whole testing has assessed only 802.11n HT20/ HT40 by referring to their higher conducted power.
3. The EUT only supports SISO mode for 802.11ac VHT80 + VHT80 mode.

1.5 Modification of EUT

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



1.6 Testing Location

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International (Kunshan) Inc.		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People’s Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	CO01-KS 03CH06-KS TH01-KS	CN1257	314309

1.7 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH06-KS	AUDIX	E3	6.2009-8-24al
2.	CO01-KS	AUDIX	E3	6.2009-8-24

1.8 Applicable Standards

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

- 47 CFR 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). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane) were recorded in this report.
- 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		
5250-5350 MHz Band 2 (U-NII-2A)	52	5260	60	5300
	54*	5270	62*	5310
	56	5280	64	5320
	58 [#]	5290		
5470-5725 MHz Band 3 (U-NII-2C)	100	5500	112	5560
	102*	5510	116	5580
	104	5520	132	5660
	106 [#]	5530	134*	5670
	108	5540	136	5680
	110*	5550	140	5700
5725-5850 MHz Band 4 (U-NII-3)	149	5745	157	5785
	151*	5755	159*	5795
	153	5765	161	5805
	155 [#]	5775	165	5825



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.

2.2 Test Mode

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

MIMO Mode

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT80	MCS0

Simultaneous Transmission:

Test Modes	
Tx	802.11ac VHT80 (CH42) + VHT80 (CH106)
Tx	802.11ac VHT80 (CH42) + VHT80 (CH155)
Tx	802.11ac VHT80 (CH58) + VHT80 (CH106)
Tx	802.11ac VHT80 (CH58) + VHT80 (CH155)
Tx	802.11ac VHT80 (CH106) + VHT80 (CH155)
Tx	802.11ac VHT80 CH106 (5530MHz) + VHT80 CH155 (5775MHz) + Bluetooth v4.2 LE (CH39)

Test Cases	
AC Conducted Emission	Mode 1 : Bluetooth Link + WLAN Link(5G) + USB Cable(Charging from Adaptor 2) for Sample 1

Remark:

- 1. For Radiated Test Cases, The tests were performance with Adapter 1, USB Cable for Sample 1.
- 2. For simultaneous transmission test mode, the combination testing was assessed from the worst RSE link mode of WLAN 2.4G/5G and the worst RSE link mode of BT/BLE.



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
		802.11ac VHT40	802.11ac VHT40	802.11ac VHT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134

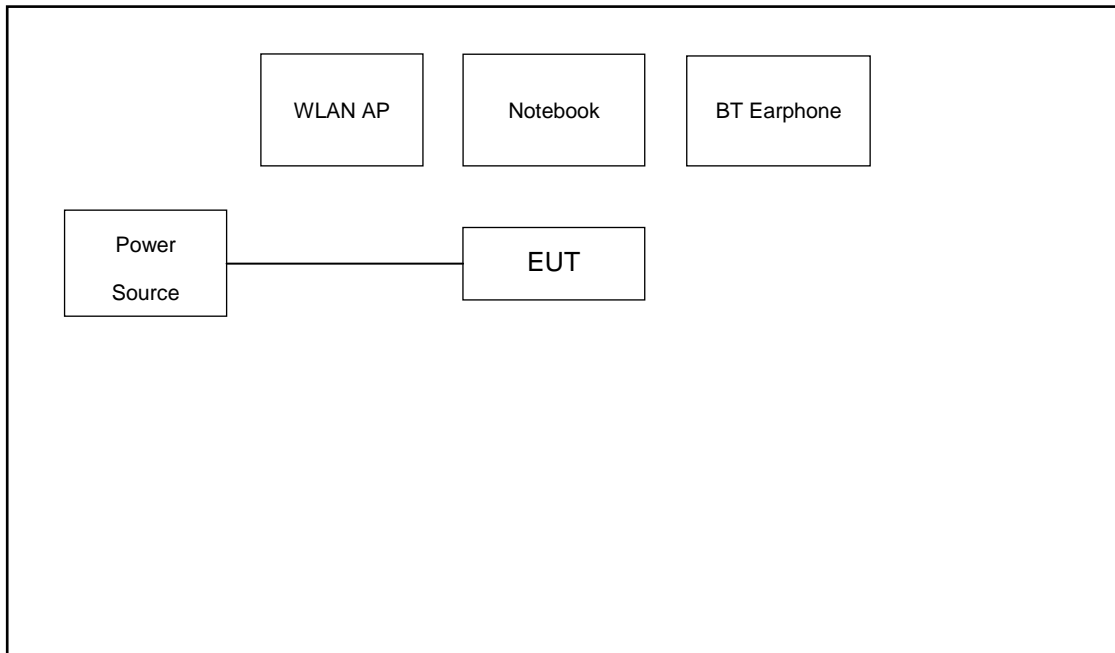
Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11ac VHT80	802.11ac VHT80	802.11ac VHT80
L	Low	-	-	106
M	Middle	42	58	-
H	High	-	-	-

Ch. #		Band IV : 5725-5850 MHz			
		802.11a	802.11n HT20	802.11n HT40	802.11ac VHT80
L	Low	149	149	151	-
M	Middle	157	157	-	155
H	High	165	165	159	-

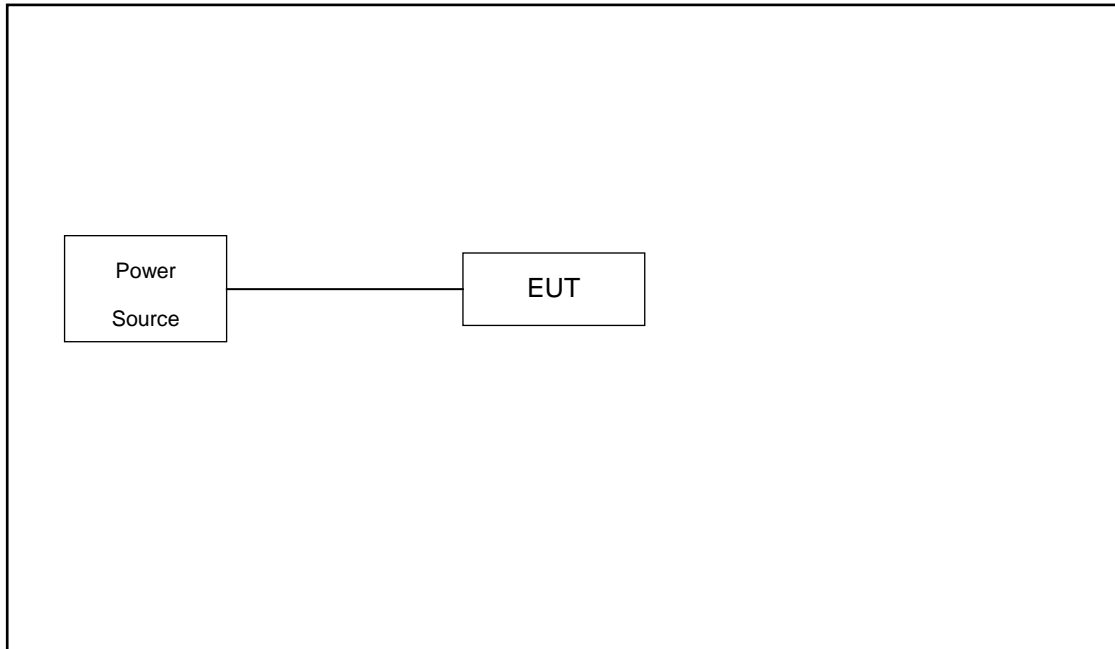
Ch. #		Band I~IV			
		802.11ac VHT80+ VHT80			
Ch. #		42+106			
		42+155			
		58+106			
		58+155			
		106+155			

2.3 Connection Diagram of Test System

For Conducted Emission:



For Radiated Emission:





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	Lenovo	LBH308	N/A	N/A	N/A
2.	WLAN AP	D-link	DIR-655	KA21R655B1	N/A	Unshielded, 1.8m
3.	Notebook	Lenovo	G480	QDS-BRCM1050I	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
4.	SD Card	Kingston	8GB	N/A	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 continuously transmit/receive.

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

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss.

$$\text{Offset} = \text{RF cable loss.}$$

Following shows an offset computation example with cable loss 7.0 dB.

$$\begin{aligned} \text{Offset(dB)} &= \text{RF cable loss(dB)}. \\ &= 7.0 \text{ (dB)} \end{aligned}$$



3 Test Result

3.1 6dB and 26dB and 99% Occupied Bandwidth Measurement

3.1.1 Description of 6dB and 26dB and 99% Occupied Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz for the band 5.725-5.85GHz.
26dB and 99% Occupied bandwidth are reporting only.

3.1.2 Measuring Instruments

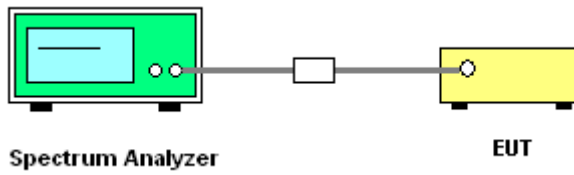
The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

- 1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

<input checked="" type="checkbox"/>	Section C) Bandwidth Measurement 1. Emission Bandwidth (EBW)
	<ol style="list-style-type: none"> 1. Set RBW = approximately 1% of the emission bandwidth. 2. Set the VBW > RBW. 3. Detector = Peak. 4. Trace mode = max hold 5. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%. 6. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1MHz and set the Video bandwidth (VBW) ≥ 3 * RBW. 7. Measure and record the results in the test report.
<input checked="" type="checkbox"/>	Section C) Bandwidth Measurement 2. Emission Bandwidth for the band 5.725-5.85GHz
	<ol style="list-style-type: none"> 1. Set RBW = 100kHz. 2. Set the VBW ≥ 3 x RBW. 3. Detector = Peak. 4. Trace mode = max hold 5. Measure the maximum width of the emission that is 6 dB down from the peak of the emission. 6. Measure and record the results in the test report.

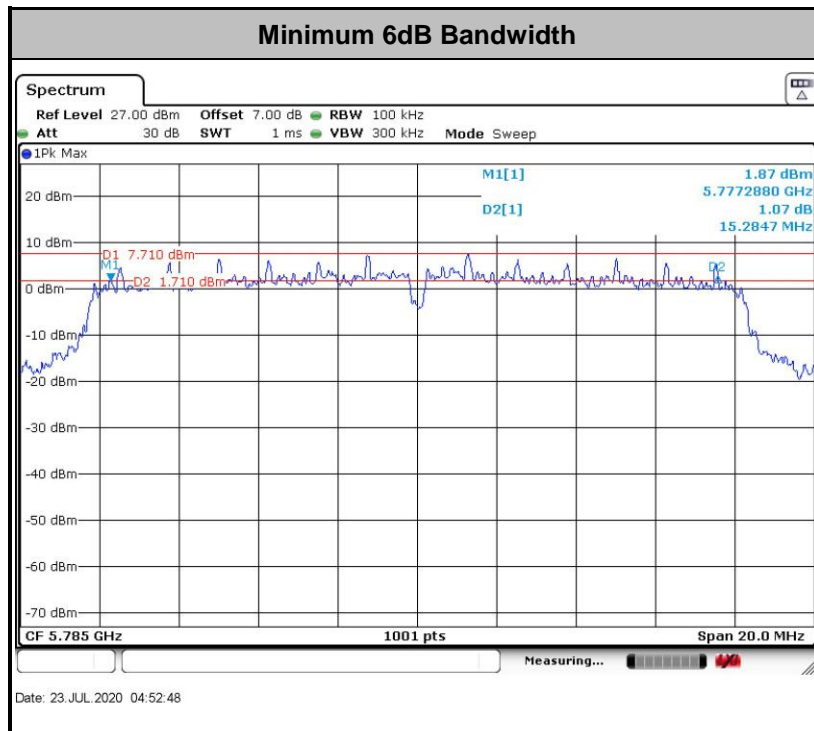
3.1.4 Test Setup

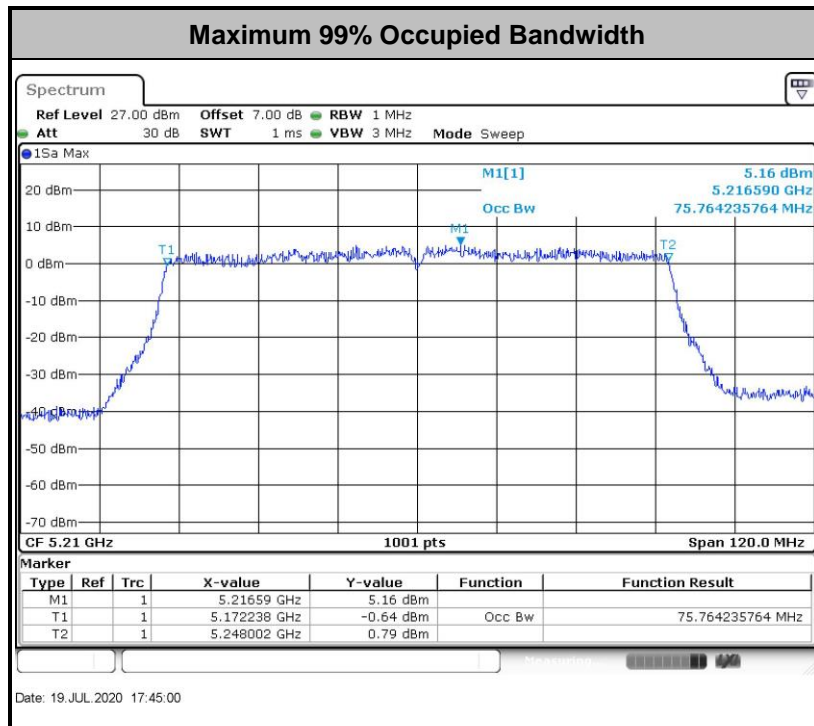
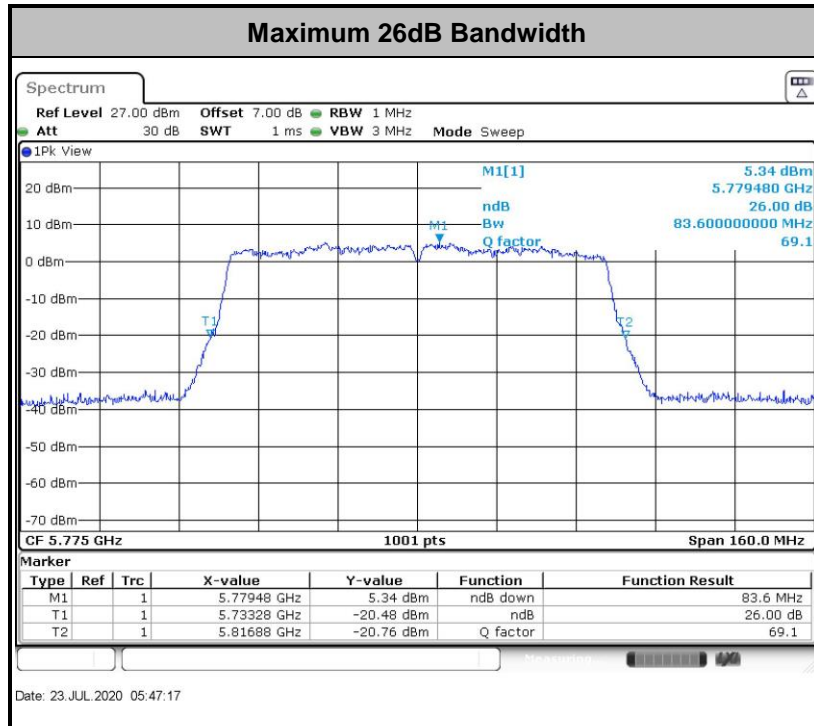


3.1.5 Test Result of 6dB & 26dB & 99% Occupied Bandwidth

Please refer to Appendix A.

<CDD Mode>





Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.



3.2 Maximum Conducted Output Power Measurement

3.2.1 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 $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz.

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

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.

3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

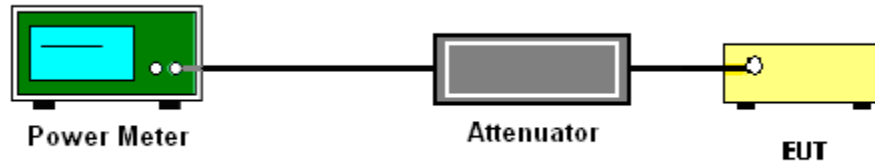
<CDD Modes>

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.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

<FCC 14-30 CFR 15.407>

For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum power spectral density shall not exceed 11dBm in any 1 megahertz band.

For the 5.25–5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

For the band 5.725–5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

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.

3.3.2 Measuring Instruments

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



3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section F) Maximum power spectral density.

For devices operating in the bands 5.15 - 5.25 GHz, 5.25 - 5.35 GHz, and 5.47 - 5.725 GHz

<CDD Modes>

Method SA-2

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 1 MHz.
 - Set VBW \geq 3 MHz.
 - Number of points in sweep \geq 2 Span / RBW.
 - Sweep time = auto.
 - Detector = RMS
 - Trace average at least 100 traces in power averaging mode.
 - Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add $10 \log(1/0.25) = 6$ dB if the duty cycle is 25 percent.
1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
 2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.
 3. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Method (a): Measure and sum the spectra across the outputs.

The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points, the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 to obtain the value for the first frequency bin of the summed spectrum.

For devices operating in the band 5.725 - 5.85 GHz**<CDD Modes>****# Method SA-2 #**

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 300 kHz.
 - Set VBW \geq 1 MHz.
 - Number of points in sweep \geq 2 Span / RBW.
 - Sweep time = auto.
 - Detector = RMS
 - Trace average at least 100 traces in power averaging mode.
 - Add $10 \log(500\text{kHz}/\text{RBW})$ to the test result.
 - Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add $10 \log(1/0.25) = 6$ dB if the duty cycle is 25 percent.
1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
 2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.
 3. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Method (c): Measure and add $10 \log(N_{\text{ANT}})$ dB.

With this technique, spectrum measurements are performed at each output of the device, but rather than summing the spectra or the spectral peaks across the outputs, the quantity $10 \log(N_{\text{ANT}})$ dB is added to each spectrum value before comparing to the emission limit. The addition of $10 \log(N_{\text{ANT}})$ dB serves to apportion the emission limit among the N_{ANT} outputs so that each output is permitted to contribute no more than $1/N_{\text{ANT}}^{\text{th}}$ of the PSD limit.

3.3.4 Test Setup

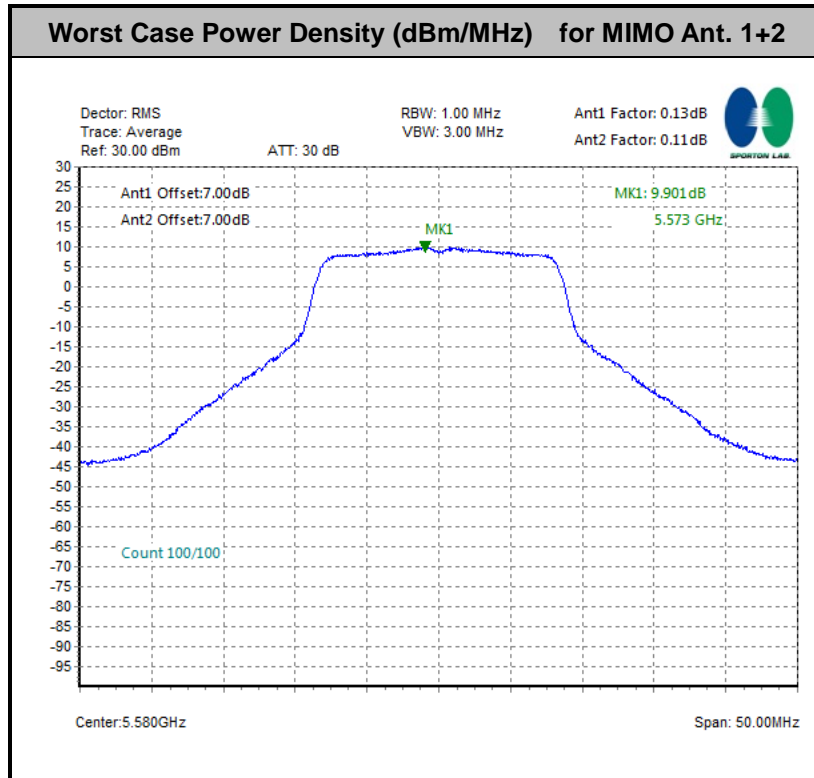


3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

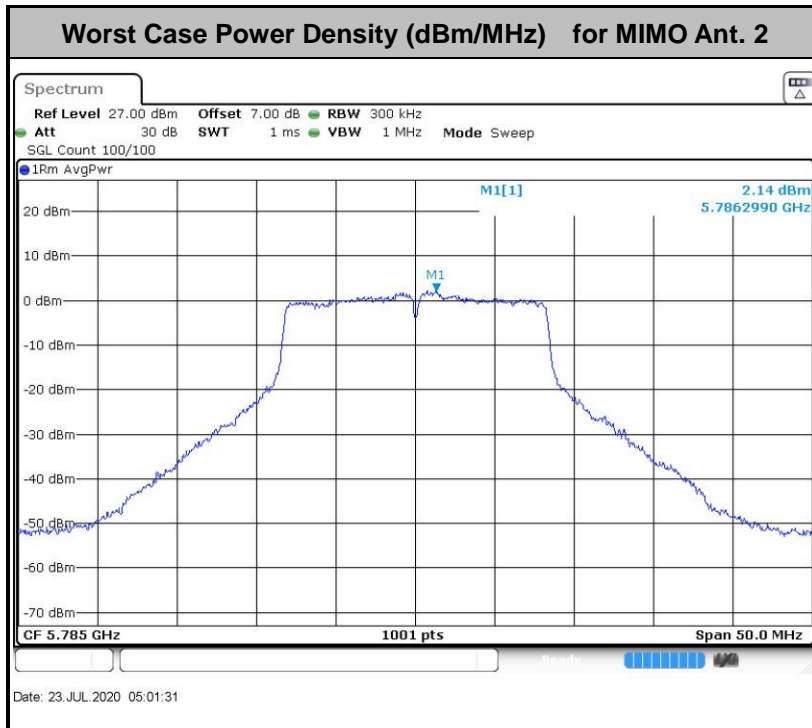
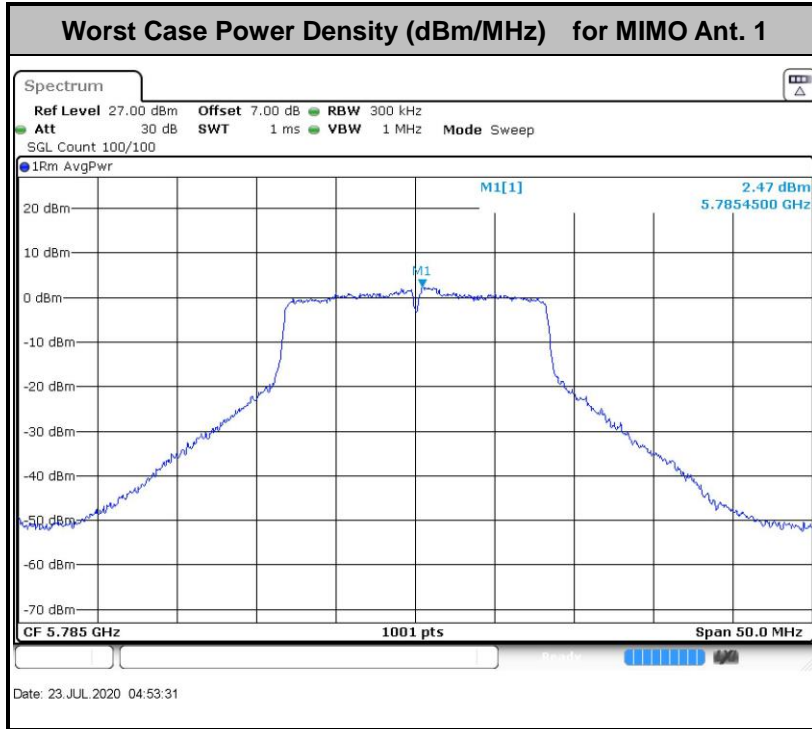
<CDD Modes>

For Band I~3:





For Band 4:





3.4 Unwanted Emissions Measurement

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

3.4.1 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) For transmitters operating in the 5.725-5.85 GHz band:
15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

- (3) 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



EIRP (dBm)	Field Strength at 3m (dBμV/m)
- 27	68.3

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

$$EIRP = E_{Meas} + 20\log(d_{Meas}) - 104.8$$

where

EIRP is the equivalent isotropically radiated power, in dBm

E_{Meas} is the field strength of the emission at the measurement distance, in dBμV/m

d_{Meas} is the measurement distance, in m

3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

- 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 ≥ 3 MHz
- Detector = Peak
- Sweep time = auto
- Trace mode = max hold

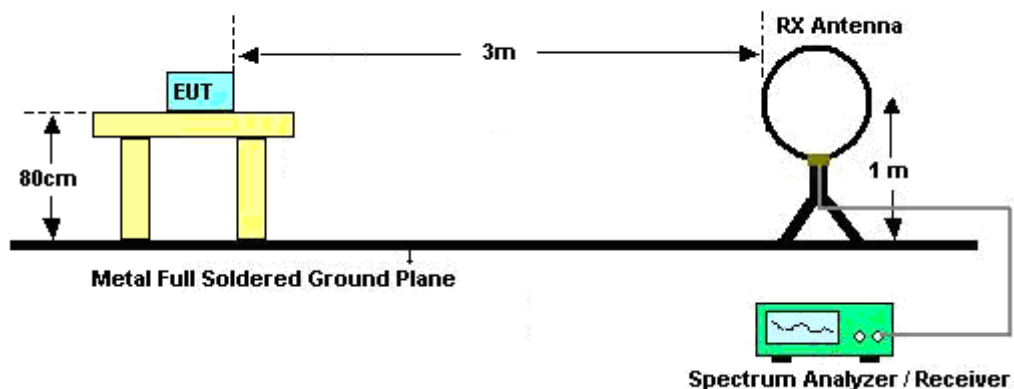
(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

- RBW = 1 MHz
- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW ≥ 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.

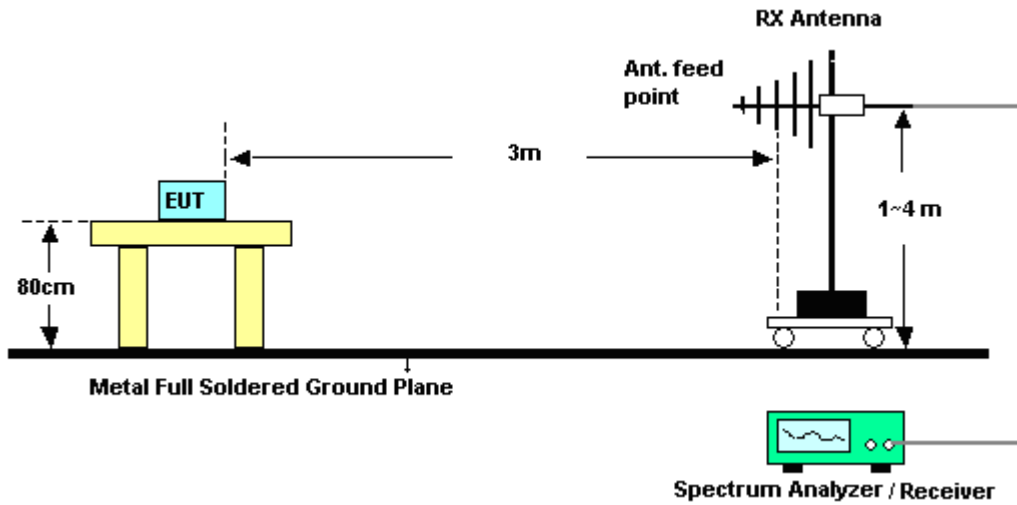
3.4.4 Test Setup

For radiated emissions below 30MHz



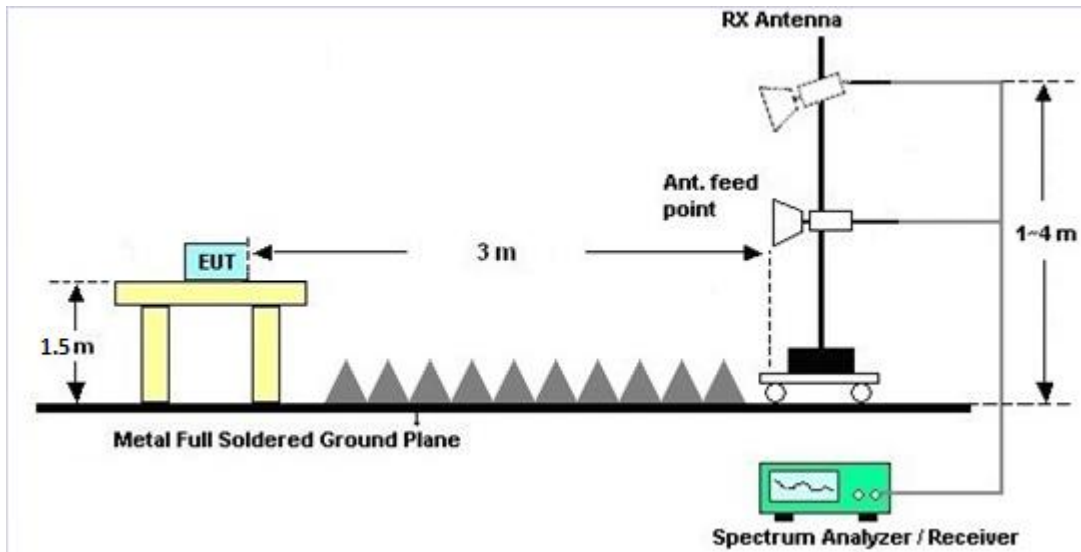
For radiated emissions from 30MHz to 1GHz

<CDD Mode>



For radiated emissions above 1GHz

<CDD Mode>





3.4.5 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.

3.4.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C.

3.4.7 Duty Cycle

Please refer to Appendix D.

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

Please refer to Appendix C.



3.5 AC Conducted Emission Measurement

3.5.1 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.

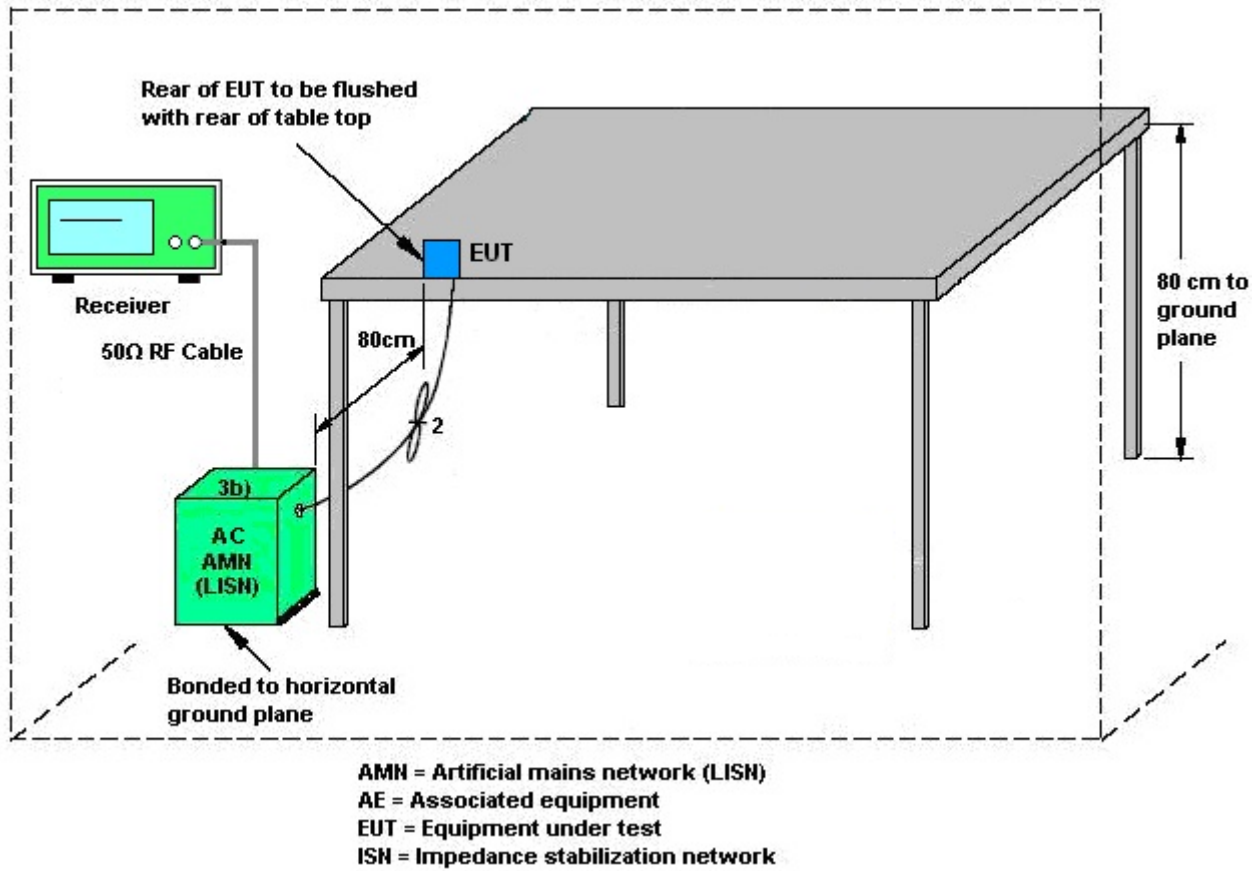
3.5.2 Measuring Instruments

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

3.5.3 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.

3.5.4 Test Setup



3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.6 Automatically Discontinue Transmission

3.6.1 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.

3.6.2 Measuring Instruments

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

3.6.3 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.



3.7 Antenna Requirements

3.7.1 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.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 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(NANT/NSS=1) dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 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>						
	Ant. 1 (dBi)	Ant. 2 (dBi)	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
Band I	0.10	0.10	0.10	3.11	0.00	0.00
Band II	-0.50	-1.50	-0.50	2.02	0.00	0.00
Band III	-1.50	-2.10	-1.50	1.22	0.00	0.00
Band IV	0.90	-1.50	0.90	2.79	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	101040	10Hz~40GHz	Nov. 02, 2019	Jul. 19, 2020~ Jul. 23, 2020	Nov. 01, 2020	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 15, 2020	Jul. 19, 2020~ Jul. 23, 2020	Jan. 14, 2021	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 08, 2020	Jul. 19, 2020~ Jul. 23, 2020	Jan. 07, 2021	Conducted (TH01-KS)
EMI Test Receiver	Keysight	N9038A	MY56400004	3Hz~8.5GHz;Max 30dBm	Oct. 18, 2019	Jul. 28, 2020	Oct. 17, 2020	Radiation (03CH06-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150208	10Hz~44GHz	Apr. 15, 2020	Jul. 28, 2020	Apr. 16, 2021	Radiation (03CH06-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Nov. 10, 2019	Jul. 28, 2020	Nov. 09, 2020	Radiation (03CH06-KS)
Bilog Antenna	TeseQ	CBL6111D	49921	30MHz~1GHz	May 29, 2020	Jul. 28, 2020	May 28, 2021	Radiation (03CH06-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00218652	1GHz~18GHz	Apr. 27, 2020	Jul. 28, 2020	Apr. 26, 2021	Radiation (03CH06-KS)
SHF-EHF Horn	Com-power	AH-840	101115	18GHz~40GHz	Nov. 10, 2019	Jul. 28, 2020	Nov. 09, 2020	Radiation (03CH06-KS)
Amplifier	SONOMA	310N	187289	9KHz ~1GHZ	Apr. 14, 2020	Jul. 28, 2020	Apr. 13, 2021	Radiation (03CH06-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 08, 2020	Jul. 28, 2020	Jan. 07, 2021	Radiation (03CH06-KS)
high gain Amplifier	MITEQ	AMF-7D-00101800-30-10P	2025788	1Ghz-18Ghz	Jan. 02, 2020	Jul. 28, 2020	Jan. 03, 2021	Radiation (03CH06-KS)
Amplifier	Keysight	83017A	MY53270203	500MHz~26.5GHz	Apr. 15, 2020	Jul. 28, 2020	Apr. 14, 2021	Radiation (03CH06-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jul. 28, 2020	NCR	Radiation (03CH06-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jul. 28, 2020	NCR	Radiation (03CH06-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jul. 28, 2020	NCR	Radiation (03CH06-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 14, 2020	Aug. 03, 2020	Apr. 13, 2021	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 18, 2019	Aug. 03, 2020	Oct. 17, 2020	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	Oct. 28, 2019	Aug. 03, 2020	Oct. 27, 2020	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 18, 2019	Aug. 03, 2020	Oct. 17, 2020	Conduction (CO01-KS)

NCR: No Calibration Required



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))	2.9dB
---	-------

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0dB
---	-------

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0dB
---	-------

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0dB
---	-------



Appendix A. Conducted Test Results

Report Number : FR050905-01D

Test Engineer:	Aaron shen	Temperature:	21~25	°C
Test Date:	2020/7/19~2020/7/23	Relative Humidity:	51~54	%

TEST RESULTS DATA
26dB and 99% OBW

Band I													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		Note
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	36	5180	17.63	17.48	23.88	23.23	-	-	22.43	22.43	
11a	6Mbps	2	44	5220	17.53	17.48	24.43	23.58	-	-	22.43	22.43	
11a	6Mbps	2	48	5240	17.48	17.53	24.73	23.48	-	-	22.43	22.43	
HT20	MCS0	2	36	5180	18.73	18.68	24.73	24.43	-	-	22.71	22.71	
HT20	MCS0	2	44	5220	18.83	18.63	24.98	24.48	-	-	22.70	22.70	
HT20	MCS0	2	48	5240	18.63	18.73	24.78	24.93	-	-	22.70	22.70	
HT40	MCS0	2	38	5190	36.56	36.46	41.63	41.72	-	-	23.01	23.01	
HT40	MCS0	2	46	5230	36.46	36.46	41.54	41.72	-	-	23.01	23.01	
VHT80	MCS0	2	42	5210	75.64	75.76	82.96	82.80	-	-	23.01	23.01	

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	2	36	5180	0.13	0.11	13.11	13.25	16.19	23.98	0.10		Pass	
11a	6Mbps	2	44	5220	0.13	0.11	12.99	13.23	16.12	23.98	0.10		Pass	
11a	6Mbps	2	48	5240	0.13	0.11	12.76	13.36	16.08	23.98	0.10		Pass	
HT20	MCS0	2	36	5180	0.12	0.12	13.91	13.80	16.86	23.98	0.10		Pass	
HT20	MCS0	2	44	5220	0.12	0.12	13.36	13.64	16.51	23.98	0.10		Pass	
HT20	MCS0	2	48	5240	0.12	0.12	13.24	13.69	16.48	23.98	0.10		Pass	
HT40	MCS0	2	38	5190	0.22	0.22	15.63	15.15	18.40	23.98	0.10		Pass	
HT40	MCS0	2	46	5230	0.22	0.22	16.98	16.80	19.90	23.98	0.10		Pass	
VHT20	MCS0	2	36	5180	0.12	0.12	13.88	13.79	16.84	23.98	0.10		Pass	
VHT20	MCS0	2	44	5220	0.12	0.12	13.15	13.61	16.39	23.98	0.10		Pass	
VHT20	MCS0	2	48	5240	0.12	0.12	13.23	13.66	16.46	23.98	0.10		Pass	
VHT40	MCS0	2	38	5190	0.23	0.23	15.29	15.08	18.20	23.98	0.10		Pass	
VHT40	MCS0	2	46	5230	0.23	0.23	15.48	15.46	18.48	23.98	0.10		Pass	
VHT80	MCS0	2	42	5210	0.44	0.48	14.18	13.92	17.06	23.98	0.10		Pass	

TEST RESULTS DATA
Power Spectral Density

FCC Band I														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	36	5180	0.13	0.11			5.77	11.00	3.11		Pass	
11a	6Mbps	2	44	5220	0.13	0.11			5.44	11.00	3.11		Pass	
11a	6Mbps	2	48	5240	0.13	0.11			5.51	11.00	3.11		Pass	
HT20	MCS0	2	36	5180	0.12	0.12			5.85	11.00	3.11		Pass	
HT20	MCS0	2	44	5220	0.12	0.12			5.85	11.00	3.11		Pass	
HT20	MCS0	2	48	5240	0.12	0.12			5.27	11.00	3.11		Pass	
HT40	MCS0	2	38	5190	0.22	0.22			5.23	11.00	3.11		Pass	
HT40	MCS0	2	46	5230	0.22	0.22			5.70	11.00	3.11		Pass	
VHT80	MCS0	2	42	5210	0.44	0.48			0.30	11.00	3.11		Pass	

TEST RESULTS DATA
26dB and 99% OBW

Band II															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		FCC 26dB Bandwidth Power Limit (dBm)		Note
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	52	5260	17.48	17.53	23.98	23.18	23.43		29.43		23.98		
11a	6Mbps	2	60	5300	17.53	17.53	24.93	23.68	23.44		29.44		23.98		
11a	6Mbps	2	64	5320	17.58	17.53	24.63	24.13	23.44		29.44		23.98		
HT20	MCS0	2	52	5260	18.63	18.73	25.23	24.93	23.70		29.70		23.98		
HT20	MCS0	2	60	5300	18.58	18.78	25.28	24.83	23.69		29.69		23.98		
HT20	MCS0	2	64	5320	18.68	18.83	25.43	24.68	23.71		29.71		23.98		
HT40	MCS0	2	54	5270	36.36	36.56	41.63	41.90	23.98		30.00		23.98		
HT40	MCS0	2	62	5310	36.56	36.46	41.63	41.72	23.98		30.00		23.98		
VHT80	MCS0	2	58	5290	75.64	75.64	83.28	82.32	23.98		30.00		23.98		

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	2	52	5260	0.13	0.11	16.47	16.33	19.41	23.98		-0.50	26.99	Pass	
11a	6Mbps	2	60	5300	0.13	0.11	16.89	16.69	19.80	23.98		-0.50	26.99	Pass	
11a	6Mbps	2	64	5320	0.13	0.11	17.01	16.74	19.89	23.98		-0.50	26.99	Pass	
HT20	MCS0	2	52	5260	0.12	0.12	16.63	16.86	19.76	23.98		-0.50	26.99	Pass	
HT20	MCS0	2	60	5300	0.12	0.12	17.45	17.33	20.40	23.98		-0.50	26.99	Pass	
HT20	MCS0	2	64	5320	0.12	0.12	17.56	17.34	20.46	23.98		-0.50	26.99	Pass	
HT40	MCS0	2	54	5270	0.22	0.22	17.44	17.33	20.39	23.98		-0.50	26.99	Pass	
HT40	MCS0	2	62	5310	0.22	0.22	16.13	16.11	19.13	23.98		-0.50	26.99	Pass	
VHT20	MCS0	2	52	5260	0.12	0.12	15.33	15.34	18.34	23.98		-0.50	26.99	Pass	
VHT20	MCS0	2	60	5300	0.12	0.12	15.63	15.64	18.64	23.98		-0.50	26.99	Pass	
VHT20	MCS0	2	64	5320	0.12	0.12	15.95	15.66	18.82	23.98		-0.50	26.99	Pass	
VHT40	MCS0	2	54	5270	0.23	0.23	15.87	15.98	18.94	23.98		-0.50	26.99	Pass	
VHT40	MCS0	2	62	5310	0.23	0.23	15.59	15.64	18.63	23.98		-0.50	26.99	Pass	
VHT80	MCS0	2	58	5290	0.44	0.48	13.32	13.42	16.38	23.98		-0.50	26.99	Pass	

TEST RESULTS DATA
Power Spectral Density

Band II														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	52	5260	0.13	0.11			9.23	11.00	2.02			Pass
11a	6Mbps	2	60	5300	0.13	0.11			9.73	11.00	2.02			Pass
11a	6Mbps	2	64	5320	0.13	0.11			9.65	11.00	2.02			Pass
HT20	MCS0	2	52	5260	0.12	0.12			8.53	11.00	2.02			Pass
HT20	MCS0	2	60	5300	0.12	0.12			8.96	11.00	2.02			Pass
HT20	MCS0	2	64	5320	0.12	0.12			8.93	11.00	2.02			Pass
HT40	MCS0	2	54	5270	0.22	0.22			5.91	11.00	2.02			Pass
HT40	MCS0	2	62	5310	0.22	0.22			6.35	11.00	2.02			Pass
VHT80	MCS0	2	58	5290	0.44	0.48			0.46	11.00	2.02			Pass

TEST RESULTS DATA
26dB and 99% OBW

Band III															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		FCC 26dB Bandwidth Power Limit (dBm)		Note
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	100	5500	17.53	17.43	24.53	23.13	23.41		29.41		23.98		
11a	6Mbps	2	116	5580	17.63	17.48	24.68	23.23	23.43		29.43		23.98		
11a	6Mbps	2	140	5700	17.58	17.73	24.38	25.62	23.45		29.45		23.98		
HT20	MCS0	2	100	5500	18.68	18.58	24.88	24.53	23.69		29.69		23.98		
HT20	MCS0	2	116	5580	18.83	18.58	25.52	24.18	23.69		29.69		23.98		
HT20	MCS0	2	140	5700	18.78	18.63	25.97	24.48	23.70		29.70		23.98		
HT40	MCS0	2	102	5510	36.46	36.46	41.72	41.72	23.98		30.00		23.98		
HT40	MCS0	2	110	5550	36.66	36.56	42.00	41.63	23.98		30.00		23.98		
HT40	MCS0	2	134	5670	36.66	36.36	41.54	41.72	23.98		30.00		23.98		
VHT80	MCS0	2	106	5530	75.64	75.64	83.44	82.96	23.98		30.00		23.98		

TEST RESULTS DATA
Average Power Table

FCC Band III															
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	2	100	5500	0.13	0.11	17.31	16.57	19.97	23.98		-1.50	26.99	Pass	
11a	6Mbps	2	116	5580	0.13	0.11	17.65	17.02	20.36	23.98		-1.50	26.99	Pass	
11a	6Mbps	2	140	5700	0.13	0.11	17.50	17.72	20.62	23.98		-1.50	26.99	Pass	
HT20	MCS0	2	100	5500	0.12	0.12	16.88	16.29	19.60	23.98		-1.50	26.99	Pass	
HT20	MCS0	2	116	5580	0.12	0.12	17.08	16.69	19.90	23.98		-1.50	26.99	Pass	
HT20	MCS0	2	140	5700	0.12	0.12	16.15	16.29	19.23	23.98		-1.50	26.99	Pass	
HT40	MCS0	2	102	5510	0.22	0.22	17.38	16.56	20.00	23.98		-1.50	26.99	Pass	
HT40	MCS0	2	110	5550	0.22	0.22	17.86	16.67	20.31	23.98		-1.50	26.99	Pass	
HT40	MCS0	2	134	5670	0.22	0.22	16.80	16.65	19.73	23.98		-1.50	26.99	Pass	
VHT20	MCS0	2	100	5500	0.12	0.12	15.17	15.21	18.20	23.98		-1.50	26.99	Pass	
VHT20	MCS0	2	116	5580	0.12	0.12	15.38	15.01	18.21	23.98		-1.50	26.99	Pass	
VHT20	MCS0	2	140	5700	0.12	0.12	14.48	14.98	17.75	23.98		-1.50	26.99	Pass	
VHT40	MCS0	2	102	5510	0.23	0.23	15.65	15.28	18.48	23.98		-1.50	26.99	Pass	
VHT40	MCS0	2	110	5550	0.23	0.23	16.18	15.47	18.85	23.98		-1.50	26.99	Pass	
VHT40	MCS0	2	134	5670	0.23	0.23	15.32	15.59	18.47	23.98		-1.50	26.99	Pass	
VHT80	MCS0	2	106	5530	0.44	0.48	14.61	14.01	17.33	23.98		-1.50	26.99	Pass	

TEST RESULTS DATA
Power Spectral Density

Band III														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	100	5500	0.13	0.11			9.54	11.00	1.22			Pass
11a	6Mbps	2	116	5580	0.13	0.11			9.90	11.00	1.22			Pass
11a	6Mbps	2	140	5700	0.13	0.11			9.83	11.00	1.22			Pass
HT20	MCS0	2	100	5500	0.12	0.12			8.64	11.00	1.22			Pass
HT20	MCS0	2	116	5580	0.12	0.12			8.81	11.00	1.22			Pass
HT20	MCS0	2	140	5700	0.12	0.12			8.20	11.00	1.22			Pass
HT40	MCS0	2	102	5510	0.22	0.22			5.69	11.00	1.22			Pass
HT40	MCS0	2	110	5550	0.22	0.22			6.40	11.00	1.22			Pass
HT40	MCS0	2	134	5670	0.22	0.22			4.08	11.00	1.22			Pass
VHT80	MCS0	2	106	5530	0.44	0.48			0.40	11.00	1.22			Pass

TEST RESULTS DATA
6dB and 26dB EBW and 99% OBW

Band IV													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26dB Bandwidth (MHz)		6 dB Bandwidth (MHz)		6 dB Bandwidth Min. Limit (MHz)		Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	149	5745	17.43	17.43	24.68	23.03	15.62	15.30	0.5		Pass
11a	6Mbps	2	157	5785	17.43	17.48	24.13	23.33	15.28	15.32	0.5		Pass
11a	6Mbps	2	165	5825	17.43	17.38	23.33	23.08	15.64	15.64	0.5		Pass
HT20	MCS0	2	149	5745	18.68	18.63	25.33	24.73	16.78	16.50	0.5		Pass
HT20	MCS0	2	157	5785	18.58	18.58	24.73	24.48	16.14	16.02	0.5		Pass
HT20	MCS0	2	165	5825	18.48	18.48	24.48	23.78	16.76	16.52	0.5		Pass
HT40	MCS0	2	151	5755	36.46	36.46	41.72	41.90	35.28	35.28	0.5		Pass
HT40	MCS0	2	159	5795	36.56	36.46	41.63	41.81	35.32	35.64	0.5		Pass
VHT80	MCS0	2	155	5775	75.64	75.64	83.60	82.48	75.05	75.05	0.5		Pass

TEST RESULTS DATA
Average Power Table

Band IV														
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	2	149	5745	0.13	0.11	17.79	17.93	20.87	30.00		0.90		Pass
11a	6Mbps	2	157	5785	0.13	0.11	17.72	17.28	20.52	30.00		0.90		Pass
11a	6Mbps	2	165	5825	0.13	0.11	17.88	16.93	20.44	30.00		0.90		Pass
HT20	MCS0	2	149	5745	0.12	0.12	16.57	16.56	19.57	30.00		0.90		Pass
HT20	MCS0	2	157	5785	0.12	0.12	16.66	16.18	19.44	30.00		0.90		Pass
HT20	MCS0	2	165	5825	0.12	0.12	16.64	15.76	19.23	30.00		0.90		Pass
HT40	MCS0	2	151	5755	0.22	0.22	16.56	17.08	19.84	30.00		0.90		Pass
HT40	MCS0	2	159	5795	0.22	0.22	16.94	16.46	19.71	30.00		0.90		Pass
VHT80	MCS0	2	155	5775	0.44	0.48	13.62	13.81	16.73	30.00		0.90		Pass

TEST RESULTS DATA
Power Spectral Density

Band IV																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		10log (500kHz /RBW) Factor (dB)		Average Power Density (dBm/500kHz)			Average PSD Limit (dBm/500kHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	149	5745	0.13	0.11	2.22			7.76	30.00		2.79		Pass	
11a	6Mbps	2	157	5785	0.13	0.11	2.22			7.83	30.00		2.79		Pass	
11a	6Mbps	2	165	5825	0.13	0.11	2.22			7.76	30.00		2.79		Pass	
HT20	MCS0	2	149	5745	0.12	0.12	2.22			6.28	30.00		2.79		Pass	
HT20	MCS0	2	157	5785	0.12	0.12	2.22			6.35	30.00		2.79		Pass	
HT20	MCS0	2	165	5825	0.12	0.12	2.22			6.11	30.00		2.79		Pass	
HT40	MCS0	2	151	5755	0.22	0.22	2.22			3.82	30.00		2.79		Pass	
HT40	MCS0	2	159	5795	0.22	0.22	2.22			3.70	30.00		2.79		Pass	
VHT80	MCS0	2	155	5775	0.44	0.48	2.22			-2.47	30.00		2.79		Pass	

TEST RESULTS DATA
EIRP Average Power Table
(ac VHT80+VHT80)

CH42 5210MHz + CH106 5530MHz							
NTX	CH	Average Conducted Power (dBm)			DG (dBi)	FCC Conducted Power Limit	Pass /Fail
Ant1	42	10.23			0.10	23.98	Pass
Ant2	106	10.10			-1.50	23.98	Pass

CH42 5210MHz + CH155 5775MHz							
NTX	CH	Average Conducted Power (dBm)			DG (dBi)	FCC Conducted Power Limit	Pass /Fail
Ant1	42	10.07			0.10	23.98	Pass
Ant2	155	8.93			0.90	30	Pass

CH58 5290MHz + CH106 5530MHz							
NTX	CH	Average Conducted Power (dBm)			DG (dBi)	FCC Conducted Power Limit	Pass /Fail
Ant1	58	10.46			-0.50	23.98	Pass
Ant2	106	10.15			-1.50	23.98	Pass

CH58 5290MHz + CH155 5775MHz							
NTX	CH	Average Conducted Power (dBm)			DG (dBi)	FCC Conducted Power Limit	Pass /Fail
Ant1	58	10.45			-0.50	23.98	Pass
Ant2	155	8.75			0.90	30	Pass

CH106 5530MHz + CH155 5775MHz							
NTX	CH	Average Conducted Power (dBm)			DG (dBi)	FCC Conducted Power Limit	Pass /Fail
Ant1	106	10.93			-1.50	23.98	Pass
Ant2	155	8.82			0.90	30	Pass

TEST RESULTS DATA
Occupied Bandwidth
(ac VHT80+VHT80)

Mode	Nrx	CH	Freq. (MHz)	Channel Bandwidth (MHz)			Pass/Fail
				99% Bandwidth (MHz)	26 dB Bandwidth (MHz)	6 dB Bandwidth (MHz)	
				VHT80+VHT80	Ant1	42	
	Ant2	106	5530	75.64	82.96		Pass
VHT80+VHT80	Ant1	42	5210	75.76	83.44		Pass
	Ant2	155	5775	75.52	83.28	75.05	Pass
VHT80+VHT80	Ant1	58	5290	75.76	83.28		Pass
	Ant2	106	5530	75.64	83.28		Pass
VHT80+VHT80	Ant1	58	5290	75.64	83.44		Pass
	Ant2	155	5775	75.64	82.96	75.05	Pass
VHT80+VHT80	Ant1	106	5530	75.76	83.28		Pass
	Ant2	155	5775	75.52	83.12	75.05	Pass

TEST RESULTS DATA
Power Spectral Density
(ac VHT80+VHT80)

CH42 5210MHz + CH106 5530MHz												
Mode	NTX	CH	Freq. (MHz)	Duty Factor (dB)	Conducted Power Density with Duty Factor (dBm/MHz)				Gain (dBi)	EIRP PSD Limit (dBm/MHz)	Pass /Fail	
								SUM				
VHT80+VHT80	Ant1	42	5210	0.65	-6.42				-5.77	0.10	11	Pass
	Ant2	106	5530	0.61	-6.56				-5.95	-1.50	11	Pass

CH42 5210MHz + CH155 5775MHz												
Mode	NTX	CH	Freq. (MHz)	Duty Factor (dB)	Conducted Power Density with Duty Factor (dBm/MHz)				Gain (dBi)	EIRP PSD Limit (dBm/MHz)	Pass /Fail	
								SUM				
VHT80+VHT80	Ant1	42	5210	0.65	-7.15				-6.50	0.10	11	Pass
	Ant2	155	5775	0.61	-13.19				-10.36	0.90	30	Pass

CH58 5290MHz + CH106 5530MHz												
Mode	NTX	CH	Freq. (MHz)	Duty Factor (dB)	Conducted Power Density with Duty Factor (dBm/MHz)				Gain (dBi)	EIRP PSD Limit (dBm/MHz)	Pass /Fail	
								SUM				
VHT80+VHT80	Ant1	58	5290	0.65	-6.53				-5.88	-0.50	11	Pass
	Ant2	106	5530	0.61	-6.55				-5.94	-1.50	11	Pass

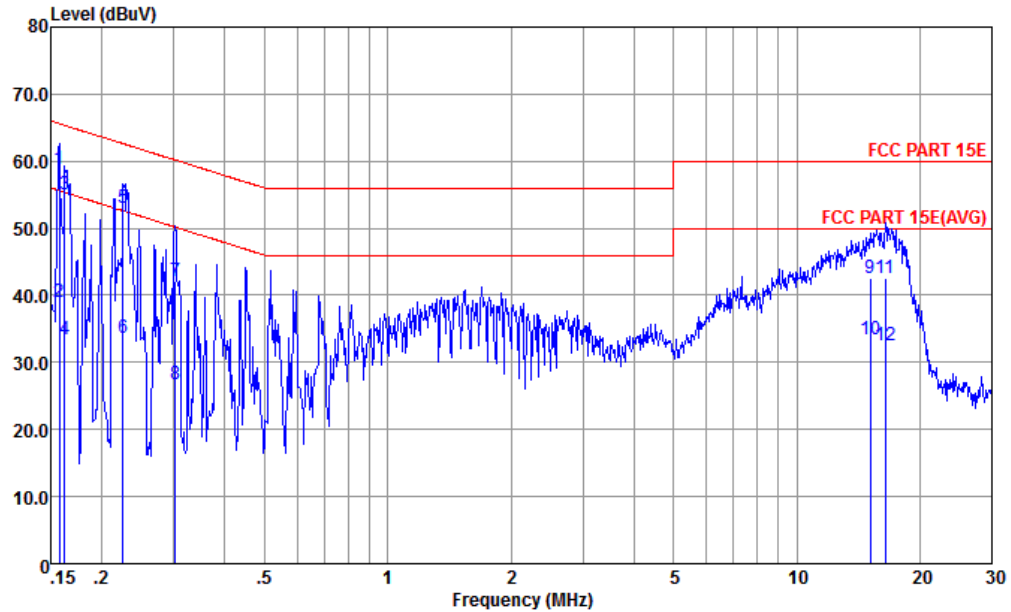
CH58 5290MHz + CH155 5775MHz												
Mode	NTX	CH	Freq. (MHz)	Duty Factor (dB)	Conducted Power Density with Duty Factor (dBm/MHz)				Gain (dBi)	EIRP PSD Limit (dBm/MHz)	Pass /Fail	
								SUM				
VHT80+VHT80	Ant1	58	5290	0.65	-6.73				-6.08	-0.50	11	Pass
	Ant2	155	5775	0.61	-13.27				-10.44	0.90	30	Pass

CH106 5530MHz + CH155 5775MHz												
Mode	NTX	CH	Freq. (MHz)	Duty Factor (dB)	Conducted Power Density with Duty Factor (dBm/MHz)				Gain (dBi)	EIRP PSD Limit (dBm/MHz)	Pass /Fail	
								SUM				
VHT80+VHT80	Ant1	106	5530	0.65	-6.30				-5.65	-1.50	11	Pass
	Ant2	155	5775	0.61	-12.35				-9.52	0.90	30	Pass



Appendix B. AC Conducted Emission Test Results

Test Engineer :	Amos Zhang	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line

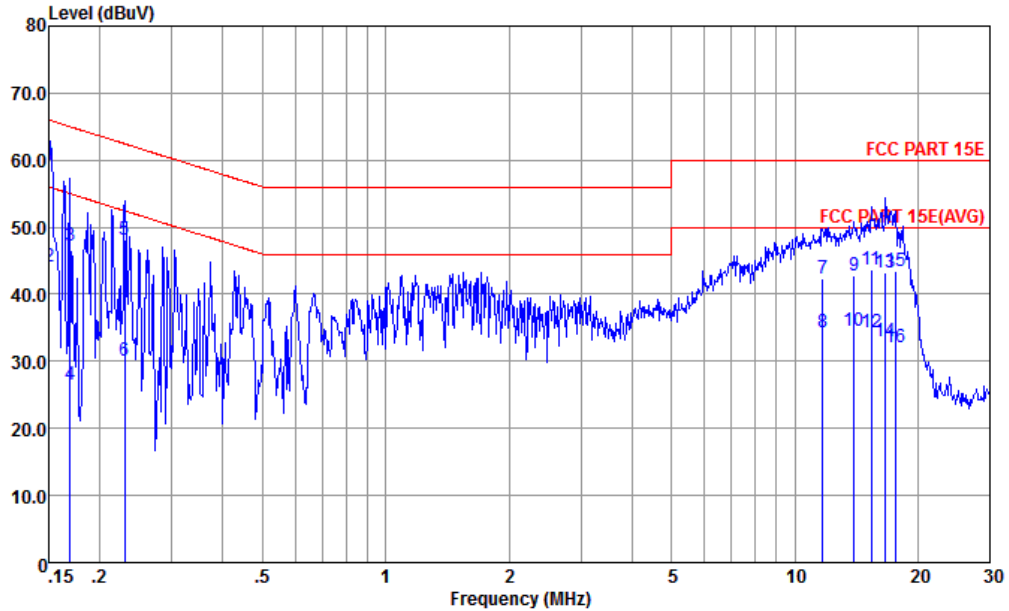


Site : CO01-KS
 Condition : FCC PART 15E LISN-L-191028-CN02 LINE

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1 *	0.157	58.83	-6.77	65.60	48.30	0.07	10.46	QP
2	0.157	39.03	-16.57	55.60	28.50	0.07	10.46	Average
3	0.162	55.02	-10.32	65.34	44.50	0.07	10.45	QP
4	0.162	33.42	-21.92	55.34	22.90	0.07	10.45	Average
5	0.226	52.94	-9.67	62.61	42.50	0.09	10.35	QP
6	0.226	33.74	-18.87	52.61	23.30	0.09	10.35	Average
7	0.302	42.21	-17.98	60.19	31.79	0.11	10.31	QP
8	0.302	26.71	-23.48	50.19	16.29	0.11	10.31	Average
9	15.146	42.48	-17.52	60.00	30.50	1.58	10.40	QP
10	15.146	33.48	-16.52	50.00	21.50	1.58	10.40	Average
11	16.486	42.67	-17.33	60.00	30.49	1.75	10.43	QP
12	16.486	32.47	-17.53	50.00	20.29	1.75	10.43	Average



Test Engineer :	Amos Zhang	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral



Site : CO01-KS
 Condition : FCC PART 15E LISN-N-191028-CN02 NEUTRAL

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1 *	0.150	59.23	-6.77	66.00	48.60	0.15	10.48	QP
2	0.150	44.23	-11.77	56.00	33.60	0.15	10.48	Average
3	0.169	47.19	-17.80	64.99	36.60	0.16	10.43	QP
4	0.169	26.49	-28.50	54.99	15.90	0.16	10.43	Average
5	0.230	48.12	-14.32	62.44	37.60	0.18	10.34	QP
6	0.230	30.12	-22.32	52.44	19.60	0.18	10.34	Average
7	11.683	42.44	-17.56	60.00	30.60	1.48	10.36	QP
8	11.683	34.34	-15.66	50.00	22.50	1.48	10.36	Average
9	13.989	42.69	-17.31	60.00	30.49	1.81	10.39	QP
10	13.989	34.49	-15.51	50.00	22.29	1.81	10.39	Average
11	15.388	43.62	-16.38	60.00	31.21	2.01	10.40	QP
12	15.388	34.32	-15.68	50.00	21.91	2.01	10.40	Average
13	16.661	43.26	-16.74	60.00	30.60	2.23	10.43	QP
14	16.661	32.96	-17.04	50.00	20.30	2.23	10.43	Average
15	17.661	43.47	-16.53	60.00	30.60	2.42	10.45	QP
16	17.661	32.07	-17.93	50.00	19.20	2.42	10.45	Average

Note:

- Level(dBμV) = Read Level(dBμV) + LISN Factor(dB) + Cable Loss(dB)
- Over Limit(dB) = Level(dBμV) – Limit Line(dBμV)



Appendix C. Radiated Spurious Emission

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+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 36 5180MHz		5149.92	56.36	-17.64	74	42.99	35.33	11.36	33.32	100	238	P	H
		5149.12	47.05	-6.95	54	33.68	35.33	11.36	33.32	100	238	A	H
	*	5176	112.29	-	-	98.85	35.36	11.4	33.32	100	238	P	H
		5176	104.4	-	-	90.96	35.36	11.4	33.32	100	238	A	H
		5146.08	56.46	-17.54	74	43.09	35.33	11.36	33.32	298	92	P	V
		5148	46.68	-7.32	54	33.31	35.33	11.36	33.32	298	92	A	V
	*	5182	111.64	-	-	98.2	35.36	11.4	33.32	298	92	P	V
		5182	104	-	-	90.56	35.36	11.4	33.32	298	92	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+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)
802.11a CH 36		10360	44.98	-23.32	68.3	51.63	39.6	15.83	62.08	100	360	P	H
5180MHz		10360	45.5	-22.8	68.3	52.15	39.6	15.83	62.08	100	360	P	V
802.11a CH 44		10440	46.42	-21.88	68.3	52.95	39.63	15.89	62.05	100	360	P	H
5220MHz		10440	46.59	-21.71	68.3	53.12	39.63	15.89	62.05	100	360	P	V
802.11a CH 48		10480	45.59	-22.71	68.3	52.01	39.66	15.94	62.02	100	360	P	H
5240MHz		10480	46.3	-22	68.3	52.72	39.66	15.94	62.02	100	360	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)

Table with 14 columns: 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). Rows include test data for 802.11n HT20 CH 36 5180MHz and a Remark section.



Band 1 5150~5250MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

Table with 14 columns: 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). Rows include test results for 802.11n HT20 channels 36, 44, and 48 at various frequencies (10358.36, 10440, 10480 MHz).



Band 1 5150~5250MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

Table with 14 columns: 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). Rows include test results for 802.11n HT40 CH 38 5190MHz and a Remark section.



Band 1 5150~5250MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

Table with 14 columns: 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). Rows include test results for 802.11n HT40 CH 38 (5190MHz) and CH 46 (5230MHz), and a Remark section.



Band 1 5150~5250MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

Table with 14 columns: 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). Rows include test data for 802.11ac VHT80 CH 42 5210MHz and a Remark section.



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 VHT80		10418.42	45.16	-23.14	68.3	51.72	39.62	15.88	62.06	100	360	P	H
CH 42 5210MHz		10418.42	44.84	-23.46	68.3	51.4	39.62	15.88	62.06	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 - 5250~5350MHz
WIFI 802.11a (Band Edge @ 3m)

Table with 14 columns: WIFI, Note, Frequency, Level, Over, Limit, Read, Antenna, Cable, Preamp, Ant, Table, Peak, Pol. It contains 8 rows of test data for 802.11a CH 64 at 5320MHz and a Remark section at the bottom.



Band 2 5250~5350MHz

WIFI 802.11a (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)
802.11a CH 52		10520	45.43	-22.87	68.3	51.78	39.68	15.98	62.01	100	360	P	H
5260MHz		10520	47.17	-21.13	68.3	53.52	39.68	15.98	62.01	100	360	P	V
802.11a CH 60		10600	44.61	-29.39	74	50.8	39.72	16.06	61.97	100	360	P	H
5300MHz		10600	44.63	-29.37	74	50.82	39.72	16.06	61.97	100	360	P	V
802.11a CH 64		10640	45.18	-28.82	74	51.3	39.74	16.09	61.95	100	360	P	H
5320MHz		10640	46.78	-27.22	74	52.9	39.74	16.09	61.95	100	360	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)

Table with 14 columns: 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). Rows include test results for 802.11n HT20 CH 64 5320MHz and a Remark section.



Band 2 5250~5350MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

Table with 14 columns: 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). Rows include data for channels 52, 60, and 64 at frequencies 10520, 10600, and 10638.63 MHz.



Band 2 5250~5350MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

Table with 14 columns: 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). Rows include test results for 802.11n HT40 CH 62 5310MHz and a Remark section.



Band 2 5250~5350MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

Table with 14 columns: 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). Rows include data for 802.11n HT40 CH 54 and CH 62, and a Remark section.



Band 2 5250~5350MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

Table with 14 columns: 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). Rows include test data for 802.11ac VHT80 CH 58 5290MHz and a Remark section.



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 VHT80		10578.58	45.33	-22.97	68.3	51.57	39.71	16.03	61.98	100	360	P	H
CH 58 5290MHz		10578.58	45.26	-23.04	68.3	51.5	39.71	16.03	61.98	100	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 802.11a (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+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 100 5500MHz		5451.12	56.88	-17.12	74	42.97	35.62	11.6	33.31	100	241	P	H
		5469.2	55.58	-12.72	68.3	41.64	35.64	11.61	33.31	100	241	P	H
		5452.72	46.67	-7.33	54	32.76	35.62	11.6	33.31	100	241	A	H
	*	5500	110.95	-	-	96.98	35.67	11.61	33.31	100	241	P	H
		5500	104.31	-	-	90.34	35.67	11.61	33.31	100	241	A	H
		5455.92	57.94	-16.06	74	44.03	35.62	11.6	33.31	275	83	P	V
		5466.32	60.75	-7.55	68.3	46.81	35.64	11.61	33.31	275	83	P	V
		5452.88	47.86	-6.14	54	33.95	35.62	11.6	33.31	275	83	A	V
	*	5506	113.38	-	-	99.41	35.67	11.61	33.31	275	83	P	V
		5506	105.94	-	-	91.97	35.67	11.61	33.31	275	83	A	V
802.11a CH 140 5700MHz		5734.28	60.06	-8.24	68.3	45.65	35.84	11.95	33.38	100	242	P	H
	*	5704	111.13	-	-	96.72	35.83	11.95	33.37	100	242	P	H
		5704	104.06	-	-	89.65	35.83	11.95	33.37	100	242	A	H
		5725.64	57.49	-10.81	68.3	43.08	35.84	11.95	33.38	274	20	P	V
	*	5698	110.19	-	-	95.79	35.82	11.95	33.37	274	20	P	V
	5698	104.65	-	-	90.25	35.82	11.95	33.37	274	20	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)

Table with 14 columns: 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). Rows include channels 100, 116, and 140 at various frequencies.

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		5455.76	55.09	-18.91	74	41.18	35.62	11.6	33.31	110	65	P	H
		5469.68	54.63	-13.67	68.3	40.69	35.64	11.61	33.31	110	65	P	H
		5453.04	45.95	-8.05	54	32.04	35.62	11.6	33.31	110	65	A	H
	*	5498	108.71	-	-	94.74	35.67	11.61	33.31	110	65	P	H
		5498	101.63	-	-	87.66	35.67	11.61	33.31	110	65	A	H
		5456.24	56.45	-17.55	74	42.54	35.62	11.6	33.31	276	256	P	V
		5469.68	56.22	-12.08	68.3	42.28	35.64	11.61	33.31	276	256	P	V
		5452.88	46.58	-7.42	54	32.67	35.62	11.6	33.31	276	256	A	V
	*	5496	109.19	-	-	95.24	35.65	11.61	33.31	276	256	P	V
	5496	102.33	-	-	88.38	35.65	11.61	33.31	276	256	A	V	
802.11n HT20 CH 140 5700MHz		5751.56	56.82	-11.48	68.3	42.4	35.85	11.96	33.39	109	283	P	H
	*	5702	109.73	-	-	95.32	35.83	11.95	33.37	109	283	P	H
		5702	103.67	-	-	89.26	35.83	11.95	33.37	109	283	A	H
		5730.84	60.09	-8.21	68.3	45.68	35.84	11.95	33.38	269	201	P	V
	*	5698	110.62	-	-	96.22	35.82	11.95	33.37	269	201	P	V
	5698	103.71	-	-	89.31	35.82	11.95	33.37	269	201	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		10999	45.42	-28.58	74	50.83	39.93	16.45	61.79	100	360	P	H
CH 100		10999	46.99	-27.01	74	52.4	39.93	16.45	61.79	100	360	P	V
5500MHz													
802.11n HT20		11159.16	46.52	-27.48	74	51.62	40.02	16.72	61.84	100	360	P	H
CH 116		11159.16	47.36	-26.64	74	52.46	40.02	16.72	61.84	100	360	P	V
5580MHz													
802.11n HT20		11399.39	45.92	-28.08	74	50.58	40.15	17.1	61.91	100	360	P	H
CH 140		11399.39	45.8	-28.2	74	50.46	40.15	17.1	61.91	100	360	P	V
5700MHz													
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		5450.96	57.69	-16.31	74	43.78	35.62	11.6	33.31	106	114	P	H
		5469.36	59.53	-8.77	68.3	45.59	35.64	11.61	33.31	106	114	P	H
		5452.56	48.78	-5.22	54	34.87	35.62	11.6	33.31	106	114	A	H
	*	5512	109.46	-	-	95.49	35.67	11.61	33.31	106	114	P	H
		5512	101.61	-	-	87.64	35.67	11.61	33.31	106	114	A	H
		5760.2	54.96	-13.34	68.3	40.55	35.85	11.96	33.4	106	114	P	H
		5452.24	57.1	-16.9	74	43.19	35.62	11.6	33.31	268	85	P	V
		5468.56	58.88	-9.42	68.3	44.94	35.64	11.61	33.31	268	85	P	V
		5452.72	48.69	-5.31	54	34.78	35.62	11.6	33.31	268	85	A	V
	*	5512	109.36	-	-	95.39	35.67	11.61	33.31	268	85	P	V
		5512	101.86	-	-	87.89	35.67	11.61	33.31	268	85	A	V
		5741.48	55.46	-12.84	68.3	41.04	35.85	11.96	33.39	268	85	P	V
802.11n HT40 CH 134 5670MHz		5419.28	54.33	-19.67	74	40.45	35.59	11.6	33.31	100	283	P	H
		5465.84	54.4	-13.9	68.3	40.46	35.64	11.61	33.31	100	283	P	H
		5452.72	45.5	-8.5	54	31.59	35.62	11.6	33.31	100	283	A	H
	*	5680	108.59	-	-	94.2	35.82	11.94	33.37	100	283	P	H
		5680	101.01	-	-	86.62	35.82	11.94	33.37	100	283	A	H
		5730.76	60.03	-8.27	68.3	45.62	35.84	11.95	33.38	100	283	P	H
		5437.52	53.99	-20.01	74	40.09	35.61	11.6	33.31	282	200	P	V
		5461.04	54.3	-14	68.3	40.39	35.62	11.6	33.31	282	200	P	V
		5453.36	44.99	-9.01	54	31.08	35.62	11.6	33.31	282	200	A	V
	*	5674	108.69	-	-	94.3	35.82	11.94	33.37	282	200	P	V
	5674	101.64	-	-	87.25	35.82	11.94	33.37	282	200	A	V	
	5735.88	58.33	-9.97	68.3	43.9	35.85	11.96	33.38	282	200	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 (Harmonic @ 3m)

Table with 14 columns: 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). Rows include test results for channels 102, 110, and 134.



Band 3 - 5470~5725MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

Table with 14 columns: 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). Rows include test data for 802.11ac VHT80 CH 106 5530MHz and a Remark section.



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 VHT80		11059.05	47.31	-26.69	74	52.59	39.97	16.56	61.81	300	0	P	H
CH 106 5530MHz		11059.05	46.64	-27.36	74	51.92	39.97	16.56	61.81	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

WiFi 802.11ac VHT80 (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)
802.11ac VHT80 LF		33.88	19.1	-20.9	40	33.51	23.42	1.09	38.92	-	-	P	H
		137.67	24.66	-18.84	43.5	43.85	17.65	1.88	38.72	200	0	P	H
		218.18	23.75	-22.25	46	42.34	17.43	2.33	38.35	-	-	P	H
		239.52	25.19	-20.81	46	42.54	18.74	2.43	38.52	-	-	P	H
		331.67	23.36	-22.64	46	37.11	20.96	2.84	37.55	-	-	P	H
		388.9	21.25	-24.75	46	32.44	22.42	3.07	36.68	-	-	P	H
		45.52	23.89	-16.11	40	44.56	16.92	1.18	38.77	100	360	P	V
		105.66	18.56	-24.94	43.5	37.65	18.03	1.67	38.79	-	-	P	V
		210.42	24.95	-18.55	43.5	43.98	16.96	2.29	38.28	-	-	P	V
		224.97	25.88	-20.12	46	44.07	17.85	2.36	38.4	-	-	P	V
		299.66	20.98	-25.02	46	35.35	20.2	2.73	37.3	-	-	P	V
	471.35	20.9	-25.1	46	30.15	23.98	3.35	36.58	-	-	P	V	
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Band 4 - 5725~5850MHz
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+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5603.6	55.32	-12.98	68.3	40.96	35.77	11.93	33.34	111	286	P	H
		5686	59.32	-35.65	94.97	44.92	35.82	11.95	33.37	111	286	P	H
		5712.8	63.03	-45.86	108.89	48.63	35.83	11.95	33.38	111	286	P	H
		5723.2	63.06	-55.14	118.2	48.65	35.84	11.95	33.38	111	286	P	H
		5746	110.83	-	-	96.41	35.85	11.96	33.39	111	286	P	H
		5746	105.33	-	-	90.91	35.85	11.96	33.39	111	286	A	H
		5630.4	55.54	-12.76	68.3	41.18	35.78	11.93	33.35	274	206	P	V
		5692.8	56.63	-43.36	99.99	42.23	35.82	11.95	33.37	274	206	P	V
		5706.4	58.76	-48.33	107.09	44.36	35.83	11.95	33.38	274	206	P	V
		5724.8	62.59	-59.25	121.84	48.18	35.84	11.95	33.38	274	206	P	V
		5740	112.16	-	-	97.73	35.85	11.96	33.38	274	206	P	V
		5740	106.75	-	-	92.32	35.85	11.96	33.38	274	206	A	V
802.11a CH 165 5825MHz		5850.4	57.28	-64.11	121.39	42.77	35.89	12.04	33.42	102	284	P	H
		5868.4	56.01	-51.14	107.15	41.48	35.9	12.06	33.43	102	284	P	H
		5896.4	56.18	-33.25	89.43	41.58	35.94	12.1	33.44	102	284	P	H
		5965.6	55.57	-12.73	68.3	40.7	36.02	12.31	33.46	102	284	P	H
		5824	110.85	-	-	96.37	35.88	12.01	33.41	102	284	P	H
		5824	104.66	-	-	90.18	35.88	12.01	33.41	102	284	A	H
		5853.6	57.17	-56.92	114.09	42.63	35.9	12.06	33.42	266	204	P	V
		5861.2	57.22	-51.94	109.16	42.68	35.9	12.06	33.42	266	204	P	V
		5894.8	57.28	-33.33	90.61	42.68	35.94	12.1	33.44	266	204	P	V
		5950.4	55.63	-12.67	68.3	40.82	36	12.26	33.45	266	204	P	V
		5824	113.44	-	-	98.96	35.88	12.01	33.41	266	204	P	V
		5824	106.68	-	-	92.2	35.88	12.01	33.41	266	204	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11a (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)
802.11a CH 149 5745MHz		11490	47.58	-26.42	74	52.09	40.19	17.24	61.94	100	360	P	H
		11490	46.95	-27.05	74	51.46	40.19	17.24	61.94	100	360	P	V
802.11a CH 157 5785MHz		11569.56	47.98	-26.02	74	52.29	40.27	17.38	61.96	100	360	P	H
		11569.56	46.04	-27.96	74	50.35	40.27	17.38	61.96	100	360	P	V
802.11a CH 165 5825MHz		11649.64	47.52	-26.48	74	51.67	40.34	17.49	61.98	100	360	P	H
		11649.64	48.32	-25.68	74	52.47	40.34	17.49	61.98	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

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 149 5745MHz		5605.2	55.61	-12.69	68.3	41.25	35.77	11.93	33.34	107	287	P	H
		5680.8	55.72	-35.41	91.13	41.33	35.82	11.94	33.37	107	287	P	H
		5708.4	56.53	-51.12	107.65	42.13	35.83	11.95	33.38	107	287	P	H
		5724.8	68.95	-52.89	121.84	54.54	35.84	11.95	33.38	107	287	P	H
		5746	111.91	-	-	97.49	35.85	11.96	33.39	107	287	P	H
		5746	105.34	-	-	90.92	35.85	11.96	33.39	107	287	A	H
		5614.8	55.31	-12.99	68.3	40.95	35.77	11.93	33.34	248	194	P	V
		5664	55.96	-22.73	78.69	41.57	35.81	11.94	33.36	248	194	P	V
		5719.6	58.59	-52.2	110.79	44.18	35.84	11.95	33.38	248	194	P	V
		5724.8	67.03	-54.81	121.84	52.62	35.84	11.95	33.38	248	194	P	V
		5740	111.04	-	-	96.61	35.85	11.96	33.38	248	194	P	V
		5740	104.75	-	-	90.32	35.85	11.96	33.38	248	194	A	V
802.11n HT20 CH 165 5825MHz		5850	57.73	-64.57	122.3	43.22	35.89	12.04	33.42	103	283	P	H
		5864.4	56.99	-51.28	108.27	42.46	35.9	12.06	33.43	103	283	P	H
		5894.4	55.85	-35.06	90.91	41.25	35.94	12.1	33.44	103	283	P	H
		5986.4	55.86	-12.44	68.3	40.93	36.04	12.36	33.47	103	283	P	H
		5824	111.91	-	-	97.43	35.88	12.01	33.41	103	283	P	H
		5824	105.89	-	-	91.41	35.88	12.01	33.41	103	283	A	H
		5851.2	58.05	-61.51	119.56	43.54	35.89	12.04	33.42	257	196	P	V
		5857.6	59.16	-51.01	110.17	44.62	35.9	12.06	33.42	257	196	P	V
		5875.2	56.65	-48.5	105.15	42.08	35.92	12.08	33.43	257	196	P	V
		5958	56.42	-11.88	68.3	41.55	36.02	12.31	33.46	257	196	P	V
	5824	112.61	-	-	98.13	35.88	12.01	33.41	257	196	P	V	
	5824	105.82	-	-	91.34	35.88	12.01	33.41	257	196	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

Table with 14 columns: 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). Rows include test results for channels 149, 157, and 165.



Band 4 5725~5850MHz
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 151 5755MHz		5610.8	56.4	-11.9	68.3	42.04	35.77	11.93	33.34	100	283	P	H
		5699.6	57.5	-47.51	105.01	43.1	35.82	11.95	33.37	100	283	P	H
		5716	68.68	-41.1	109.78	54.28	35.83	11.95	33.38	100	283	P	H
		5720.4	67.34	-44.47	111.81	52.93	35.84	11.95	33.38	100	283	P	H
		5850.8	55.88	-64.6	120.48	41.37	35.89	12.04	33.42	100	283	P	H
		5855.2	55.51	-55.33	110.84	40.97	35.9	12.06	33.42	100	283	P	H
		5908.4	56.37	-24.18	80.55	41.69	35.96	12.16	33.44	100	283	P	H
		5984.8	56.94	-11.36	68.3	42	36.04	12.36	33.46	100	283	P	H
		5758	110.38	-	-	95.96	35.85	11.96	33.39	100	283	P	H
		5758	102.66	-	-	88.24	35.85	11.96	33.39	100	283	A	H
		5607.6	55.56	-12.74	68.3	41.2	35.77	11.93	33.34	274	202	P	V
		5697.6	56.5	-47.03	103.53	42.1	35.82	11.95	33.37	274	202	P	V
		5718.8	69.69	-40.87	110.56	55.28	35.84	11.95	33.38	274	202	P	V
		5723.6	70.55	-48.56	119.11	56.14	35.84	11.95	33.38	274	202	P	V
		5851.6	55.01	-63.64	118.65	40.5	35.89	12.04	33.42	274	202	P	V
		5869.2	54.79	-52.13	106.92	40.26	35.9	12.06	33.43	274	202	P	V
		5898.8	55.5	-32.15	87.65	40.9	35.94	12.1	33.44	274	202	P	V
		5964.4	56.34	-11.96	68.3	41.47	36.02	12.31	33.46	274	202	P	V
		5752	109.27	-	-	94.85	35.85	11.96	33.39	274	202	P	V
	5752	102.6	-	-	88.18	35.85	11.96	33.39	274	202	A	V	



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 159 5795MHz		5613.2	56.18	-12.12	68.3	41.82	35.77	11.93	33.34	100	286	P	H
		5688.4	55.97	-40.77	96.74	41.57	35.82	11.95	33.37	100	286	P	H
		5705.2	57.13	-49.63	106.76	42.72	35.83	11.95	33.37	100	286	P	H
		5721.2	56.71	-56.93	113.64	42.3	35.84	11.95	33.38	100	286	P	H
		5852	60.13	-57.61	117.74	45.62	35.89	12.04	33.42	100	286	P	H
		5865.2	57.47	-50.57	108.04	42.94	35.9	12.06	33.43	100	286	P	H
		5916	56.57	-18.37	74.94	41.89	35.96	12.16	33.44	100	286	P	H
		5979.6	55.93	-12.37	68.3	40.99	36.04	12.36	33.46	100	286	P	H
		5782	109.64	-	-	95.21	35.86	11.97	33.4	100	286	P	H
		5782	102.53	-	-	88.1	35.86	11.97	33.4	100	286	A	H
		5645.6	54.73	-13.57	68.3	40.35	35.8	11.94	33.36	268	207	P	V
		5697.6	55.9	-47.63	103.53	41.5	35.82	11.95	33.37	268	207	P	V
		5712.4	56.28	-52.49	108.77	41.88	35.83	11.95	33.38	268	207	P	V
		5724	55.71	-64.31	120.02	41.3	35.84	11.95	33.38	268	207	P	V
		5852	55.56	-62.18	117.74	41.05	35.89	12.04	33.42	268	207	P	V
		5859.2	56.73	-52.99	109.72	42.19	35.9	12.06	33.42	268	207	P	V
		5879.2	55.58	-46.6	102.18	41.01	35.92	12.08	33.43	268	207	P	V
		5939.2	55.67	-12.63	68.3	40.86	36	12.26	33.45	268	207	P	V
		5800	110.22	-	-	95.79	35.87	11.97	33.41	268	207	P	V
	5800	102.47	-	-	88.04	35.87	11.97	33.41	268	207	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

Table with 14 columns: 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). Rows include test results for 802.11n HT40 CH 151 and CH 159 at 11509.5 MHz and 11589.58 MHz.



Band 4 5725~5850MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

Table with 14 columns: 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). Rows include frequencies from 5617.2 to 5770 MHz.

Remark

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



Band 4 5725~5850MHz

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 VHT80		11549.54	46.98	-27.02	74	51.34	40.25	17.35	61.96	100	360	P	H
CH 155 5775MHz		11549.54	45.96	-28.04	74	50.32	40.25	17.35	61.96	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

5GHz 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)
5GHz 802.11n HT40 LF		99.84	16.28	-27.22	43.5	35.35	18.1	1.63	38.8	-	-	P	H
		143.49	20.03	-23.47	43.5	39.24	17.58	1.92	38.71	-	-	P	H
		215.27	25.08	-18.42	43.5	43.84	17.25	2.31	38.32	-	-	P	H
		245.34	22	-24	46	39	19.1	2.46	38.56	-	-	P	H
		329.73	22.58	-23.42	46	36.37	20.92	2.83	37.54	-	-	P	H
		793.39	28.29	-17.71	46	30.84	26.85	4.34	33.74	100	0	P	H
		59.1	23.4	-16.6	40	46.54	13.56	1.82	38.52	100	360	P	V
		128.94	19.38	-24.12	43.5	38.54	17.75	1.83	38.74	-	-	P	V
		185.2	21.7	-21.8	43.5	41.25	16.65	2.15	38.35	-	-	P	V
		217.21	26.51	-19.49	46	45.16	17.37	2.32	38.34	-	-	P	V
		328.76	20.56	-25.44	46	34.37	20.89	2.83	37.53	-	-	P	V
	471.35	24.39	-21.61	46	33.64	23.98	3.35	36.58	-	-	P	V	
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



For Co-location:

WIFI 802.11ac VHT80+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)
CH 42 5210MHz		5137.28	55.38	-18.62	74	42.05	35.31	11.34	33.32	100	282	P	H
		5144.8	47.02	-6.98	54	33.65	35.33	11.36	33.32	100	282	A	H
		5200	94.11	-	-	80.64	35.38	11.41	33.32	100	282	P	H
		5200	86.33	-	-	72.86	35.38	11.41	33.32	100	282	A	H
		5371.92	54.58	-19.42	74	40.76	35.54	11.6	33.32	100	282	P	H
		5400	45.62	-8.38	54	31.76	35.57	11.6	33.31	100	282	A	H
		5138.72	55.34	-18.66	74	42.01	35.31	11.34	33.32	103	215	P	V
		5148.32	47.01	-6.99	54	33.64	35.33	11.36	33.32	103	215	A	V
		5212	95.19	-	-	81.67	35.39	11.45	33.32	103	215	P	V
		5212	86.55	-	-	73.03	35.39	11.45	33.32	103	215	A	V
		5397.12	54.29	-19.71	74	40.43	35.57	11.6	33.31	103	215	P	V
		5395.14	45.3	-8.7	54	31.44	35.57	11.6	33.31	103	215	A	V
CH 106 5530MHz		5455.6	55.1	-18.9	74	41.19	35.62	11.6	33.31	107	285	P	H
		5467.76	55.76	-12.54	68.3	41.82	35.64	11.61	33.31	107	285	P	H
		5453.2	47.54	-6.46	54	33.63	35.62	11.6	33.31	107	285	A	H
		5518	95.14	-	-	81.11	35.69	11.66	33.32	107	285	P	H
		5518	88	-	-	73.97	35.69	11.66	33.32	107	285	A	H
		5741.96	54.79	-13.51	68.3	40.37	35.85	11.96	33.39	107	285	P	H
		5454.64	55.85	-18.15	74	41.94	35.62	11.6	33.31	297	256	P	V
		5466.32	55.22	-13.08	68.3	41.28	35.64	11.61	33.31	297	256	P	V
		5454.64	46.78	-7.22	54	32.87	35.62	11.6	33.31	297	256	A	V
		5536	96.01	-	-	81.91	35.7	11.72	33.32	297	256	P	V
	5536	88.18	-	-	74.08	35.7	11.72	33.32	297	256	A	V	
	5725.88	54.94	-13.36	68.3	40.53	35.84	11.95	33.38	297	256	P	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



WIFI 802.11ac VHT80+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)
CH 106 5530MHz + CH42 5210MHz		10420	45.26	-23.04	68.3	51.82	39.62	15.88	62.06	100	360	P	H
		11060	45.81	-28.19	74	51.09	39.97	16.56	61.81	100	360	P	H
		10420	45.27	-23.03	68.3	51.83	39.62	15.88	62.06	100	360	P	V
		11060	45.1	-28.9	74	50.38	39.97	16.56	61.81	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



WIFI 802.11ac VHT80+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)
CH 42 5210MHz		5121.28	55.33	-18.67	74	42.04	35.3	11.32	33.33	109	277	P	H
		5145.76	47.26	-6.74	54	33.89	35.33	11.36	33.32	109	277	A	H
		5200	92.92	-	-	79.45	35.38	11.41	33.32	109	277	P	H
		5200	85.67	-	-	72.2	35.38	11.41	33.32	109	277	A	H
		5398.38	54.32	-19.68	74	40.46	35.57	11.6	33.31	109	277	P	H
		5351.22	45.69	-8.31	54	31.88	35.52	11.61	33.32	109	277	A	H
		5133.92	54.98	-19.02	74	41.65	35.31	11.34	33.32	101	212	P	V
		5148.96	47.31	-6.69	54	33.94	35.33	11.36	33.32	101	212	A	V
		5206	93.61	-	-	80.14	35.38	11.41	33.32	101	212	P	V
		5206	93.61	-	-	80.14	35.38	11.41	33.32	101	212	A	V
		5352.12	53.77	-20.23	74	39.96	35.52	11.61	33.32	101	212	P	V
		5398.38	45.54	-8.46	54	31.68	35.57	11.6	33.31	101	212	A	V
CH 155 5775MHz		5623.2	55.07	-13.23	68.3	40.71	35.78	11.93	33.35	101	282	P	H
		5678.4	54.89	-34.47	89.36	40.5	35.82	11.94	33.37	101	282	P	H
	*	5700.4	55.82	-49.59	105.41	41.42	35.82	11.95	33.37	101	282	P	H
		5723.6	54.88	-64.23	119.11	40.47	35.84	11.95	33.38	101	282	P	H
		5851.6	53.76	-64.89	118.65	39.25	35.89	12.04	33.42	101	282	P	H
		5872.4	54.9	-51.13	106.03	40.33	35.92	12.08	33.43	101	282	P	H
		5906	54.66	-27.66	82.32	39.98	35.96	12.16	33.44	101	282	P	H
		5959.6	55.21	-13.09	68.3	40.34	36.02	12.31	33.46	101	282	P	H
		5782	94.01	-	-	79.58	35.86	11.97	33.4	101	282	P	H
		5782	86.55	-	-	72.12	35.86	11.97	33.4	101	282	A	H
		5607.6	54.99	-13.31	68.3	40.63	35.77	11.93	33.34	274	191	P	V
		5695.2	54.85	-46.91	101.76	40.45	35.82	11.95	33.37	274	191	P	V
		5708.4	56.73	-50.92	107.65	42.33	35.83	11.95	33.38	274	191	P	V
		5721.6	56.3	-58.25	114.55	41.89	35.84	11.95	33.38	274	191	P	V
		5851.2	55.14	-64.42	119.56	40.63	35.89	12.04	33.42	274	191	P	V
		5870	54.7	-52	106.7	40.17	35.9	12.06	33.43	274	191	P	V
*	5917.2	56.18	-17.87	74.05	41.51	35.96	12.16	33.45	274	191	P	V	
	5951.2	54.86	-13.44	68.3	40.05	36	12.26	33.45	274	191	P	V	
	5764	95.63	-	-	81.22	35.85	11.96	33.4	274	191	P	V	



		5764	88.17	-	-	73.76	35.85	11.96	33.4	274	191	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

WIFI 802.11ac VHT80+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)
CH 155 5775MHZ+ CH42 5210MHZ		10420	45.35	-22.95	68.3	51.91	39.62	15.88	62.06	100	360	P	H
		11550	45.98	-28.02	74	50.34	40.25	17.35	61.96	100	360	P	H
		10420	45.78	-22.52	68.3	52.34	39.62	15.88	62.06	100	360	P	V
		11550	46.29	-27.71	74	50.65	40.25	17.35	61.96	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



WIFI 802.11ac VHT80+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)
CH 58 5290MHz		5116.48	55.16	-18.84	74	41.87	35.3	11.32	33.33	133	25	P	H
		5110.88	46.21	-7.79	54	32.92	35.3	11.32	33.33	133	25	A	H
		5296	95.36	-	-	81.58	35.48	11.62	33.32	133	25	P	H
		5296	86.78	-	-	73	35.48	11.62	33.32	133	25	A	H
		5361.9	54.5	-19.5	74	40.68	35.54	11.6	33.32	133	25	P	H
		5361.6	46.28	-7.72	54	32.46	35.54	11.6	33.32	133	25	A	H
		5126.08	55.11	-18.89	74	41.79	35.31	11.34	33.33	106	212	P	V
		5112.16	46.25	-7.75	54	32.96	35.3	11.32	33.33	106	212	A	V
		5296	93.48	-	-	79.7	35.48	11.62	33.32	106	212	P	V
		5296	85.85	-	-	72.07	35.48	11.62	33.32	106	212	A	V
		5394.9	55.02	-18.98	74	41.16	35.57	11.6	33.31	106	212	P	V
		5350.4	47.15	-6.85	54	33.34	35.52	11.61	33.32	106	212	A	V
CH 106 5530MHz		5354.16	54.52	-19.48	74	40.71	35.52	11.61	33.32	100	283	P	H
		5463.44	55.42	-12.88	68.3	41.48	35.64	11.61	33.31	100	283	P	H
		5458.8	46.83	-7.17	54	32.92	35.62	11.6	33.31	100	283	A	H
		5536	95.79	-	-	81.69	35.7	11.72	33.32	100	283	P	H
		5536	88.12	-	-	74.02	35.7	11.72	33.32	100	283	A	H
		5750.52	54.81	-13.49	68.3	40.39	35.85	11.96	33.39	100	283	P	H
		5457.84	56.05	-17.95	74	42.14	35.62	11.6	33.31	295	256	P	V
		5468.72	55.86	-12.44	68.3	41.92	35.64	11.61	33.31	295	256	P	V
		5458.8	47.06	-6.94	54	33.15	35.62	11.6	33.31	295	256	A	V
		5530	96.23	-	-	82.2	35.69	11.66	33.32	295	256	P	V
		5530	88.65	-	-	74.62	35.69	11.66	33.32	295	256	A	V
	5753	56.07	-12.23	68.3	41.65	35.85	11.96	33.39	295	256	P	V	



WIFI 802.11ac VHT80+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)
CH 58 5290MHz + CH 106 5530MHz		7055.055	54.64	-13.66	68.3	66.72	36.81	13.25	62.14	288	0	P	H
		10580	46.51	-21.79	68.3	52.74	39.71	16.04	61.98	100	360	P	H
		11060	46.07	-27.93	74	51.35	39.97	16.56	61.81	100	360	P	H
		7055.055	58.31	-9.99	68.3	70.39	36.81	13.25	62.14	102	278	P	V
		10580	46.09	-22.21	68.3	52.32	39.71	16.04	61.98	100	360	P	V
		11060	46.26	-27.74	74	51.54	39.97	16.56	61.81	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



WIFI 802.11ac VHT80+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)
CH 58 5290MHz		5100.32	55.28	-18.72	74	42.03	35.28	11.3	33.33	207	28	P	H
		5108	46.34	-7.66	54	33.05	35.3	11.32	33.33	207	28	A	H
		5296	95.02	-	-	81.24	35.48	11.62	33.32	207	28	P	H
		5296	86.74	-	-	72.96	35.48	11.62	33.32	207	28	A	H
		5358.1	56.38	-17.62	74	42.57	35.52	11.61	33.32	207	28	P	H
		5352.4	46.98	-7.02	54	33.17	35.52	11.61	33.32	207	28	A	H
		5129.76	54.8	-19.2	74	41.47	35.31	11.34	33.32	128	212	P	V
		5143.36	46.31	-7.69	54	32.94	35.33	11.36	33.32	128	212	A	V
		5296	93.79	-	-	80.01	35.48	11.62	33.32	128	212	P	V
		5296	86.55	-	-	72.77	35.48	11.62	33.32	128	212	A	V
		5362.7	55.53	-18.47	74	41.71	35.54	11.6	33.32	128	212	P	V
		5364.9	46.58	-7.42	54	32.76	35.54	11.6	33.32	128	212	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



CH 155 5775MHZ		5609.6	54.77	-13.53	68.3	40.41	35.77	11.93	33.34	100	284	P	H
		5684.8	56.97	-37.12	94.09	42.57	35.82	11.95	33.37	100	284	P	H
	*	5719.6	56.25	-54.54	110.79	41.84	35.84	11.95	33.38	100	284	P	H
		5720.4	55.08	-56.73	111.81	40.67	35.84	11.95	33.38	100	284	P	H
		5854	54.94	-58.24	113.18	40.4	35.9	12.06	33.42	100	284	P	H
		5858	55.02	-55.04	110.06	40.48	35.9	12.06	33.42	100	284	P	H
		5920.8	55.27	-16.13	71.4	40.6	35.96	12.16	33.45	100	284	P	H
		5960	55.45	-12.85	68.3	40.58	36.02	12.31	33.46	100	284	P	H
		5764	95.03	-	-	80.62	35.85	11.96	33.4	100	284	P	H
		5764	87.35	-	-	72.94	35.85	11.96	33.4	100	284	A	H
		5605.6	54.68	-13.62	68.3	40.32	35.77	11.93	33.34	278	192	P	V
		5680	55.43	-35.11	90.54	41.04	35.82	11.94	33.37	278	192	P	V
		5712.8	56.17	-52.72	108.89	41.77	35.83	11.95	33.38	278	192	P	V
		5722.4	55.77	-60.6	116.37	41.36	35.84	11.95	33.38	278	192	P	V
		5853.2	54.83	-60.17	115	40.32	35.89	12.04	33.42	278	192	P	V
		5868	56.24	-51.02	107.26	41.71	35.9	12.06	33.43	278	192	P	V
	*	5878.8	56.32	-46.16	102.48	41.75	35.92	12.08	33.43	278	192	P	V
		5937.6	56.32	-11.98	68.3	41.58	35.98	12.21	33.45	278	192	P	V
		5782	95.91	-	-	81.48	35.86	11.97	33.4	278	192	P	V
		5782	89.11	-	-	74.68	35.86	11.97	33.4	278	192	A	V
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. 												



WIFI 802.11ac VHT80+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)
CH 155 5775 MHZ + CH58 5290 MHZ		7055.055	54.71	-13.59	68.3	66.79	36.81	13.25	62.14	102	241	P	H
		10580	46.34	-21.96	68.3	52.57	39.71	16.04	61.98	100	360	P	H
		11550	47.16	-26.84	74	51.52	40.25	17.35	61.96	100	360	P	H
		7055.055	58.61	-9.69	68.3	70.69	36.81	13.25	62.14	287	360	P	V
		10580	45.03	-23.27	68.3	51.26	39.71	16.04	61.98	100	360	P	V
		11550	46.42	-27.58	74	50.78	40.25	17.35	61.96	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



WIFI 802.11ac VHT80+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)
CH 106 5530 MHZ		5452.72	55.64	-18.36	74	41.73	35.62	11.6	33.31	109	238	P	H
		5463.12	54.97	-13.33	68.3	41.03	35.64	11.61	33.31	109	238	P	H
		5452.88	47.89	-6.11	54	33.98	35.62	11.6	33.31	109	238	A	H
		5536	97.79	-	-	83.69	35.7	11.72	33.32	109	238	P	H
		5536	90.33	-	-	76.23	35.7	11.72	33.32	109	238	A	H
		5452.08	55.17	-18.83	74	41.26	35.62	11.6	33.31	246	33	P	V
		5469.52	55.35	-12.95	68.3	41.41	35.64	11.61	33.31	246	33	P	V
		5453.2	47.15	-6.85	54	33.24	35.62	11.6	33.31	246	33	A	V
		5524	97.09	-	-	83.06	35.69	11.66	33.32	246	33	P	V
		5524	89.06	-	-	75.03	35.69	11.66	33.32	246	33	A	V
CH 155 5775MHz		5606	55.6	-12.7	68.3	41.24	35.77	11.93	33.34	100	105	P	H
		5689.2	55.35	-41.99	97.34	40.95	35.82	11.95	33.37	100	105	P	H
	*	5716.4	55.78	-54.11	109.89	41.38	35.83	11.95	33.38	100	105	P	H
		5721.6	55.87	-58.68	114.55	41.46	35.84	11.95	33.38	100	105	P	H
		5852.8	54.65	-61.27	115.92	40.14	35.89	12.04	33.42	100	105	P	H
		5866.8	55.71	-51.88	107.59	41.18	35.9	12.06	33.43	100	105	P	H
		5885.6	54.78	-42.65	97.43	40.22	35.92	12.08	33.44	100	105	P	H
		5952	54.86	-13.44	68.3	40.06	36	12.26	33.46	100	105	P	H
		5782	95.16	-	-	80.73	35.86	11.97	33.4	100	105	P	H
		5782	87.08	-	-	72.65	35.86	11.97	33.4	100	105	A	H
		5623.6	55.57	-12.73	68.3	41.21	35.78	11.93	33.35	279	14	P	V
		5699.2	55.32	-49.39	104.71	40.92	35.82	11.95	33.37	279	14	P	V
		5717.6	57.13	-53.1	110.23	42.72	35.84	11.95	33.38	279	14	P	V
		5722	57.35	-58.11	115.46	42.94	35.84	11.95	33.38	279	14	P	V
		5853.2	54.7	-60.3	115	40.19	35.89	12.04	33.42	279	14	P	V
		5871.6	55.81	-50.44	106.25	41.24	35.92	12.08	33.43	279	14	P	V
	5891.6	55.1	-37.88	92.98	40.5	35.94	12.1	33.44	279	14	P	V	
	5952.4	56.3	-12	68.3	41.5	36	12.26	33.46	279	14	P	V	
	5782	97.1	-	-	82.67	35.86	11.97	33.4	279	14	P	V	
	5782	89.96	-	-	75.53	35.86	11.97	33.4	279	14	A	V	



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

WIFI 802.11ac VHT80+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)
CH 155 5775MHz + CH106 5530 MHz		7375.375	51.51	-22.49	74	63.33	36.88	13.53	62.23	100	127	P	H
		7375.375	48.7	-5.3	54	60.52	36.88	13.53	62.23	100	127	A	H
		11060	47.18	-26.82	74	52.46	39.97	16.56	61.81	300	0	P	H
		11550	46.88	-27.12	74	51.24	40.25	17.35	61.96	300	0	P	H
		7375.375	54.03	-19.97	74	65.85	36.88	13.53	62.23	300	186	P	V
		7375.375	50.92	-3.08	54	62.74	36.88	13.53	62.23	300	186	A	V
		11060	47.52	-26.48	74	52.8	39.97	16.56	61.81	100	360	P	V
	11550	48.1	-25.9	74	52.46	40.25	17.35	61.96	100	360	P	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



802.11ac VHT80 CH106 (5530MHz) + VHT80 CH155 (5775MHz) + Bluetooth v4.2 LE (CH39)
(Band Edge @ 3m)

BLE	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)
BLE CH 39 2480MHz		2483.92	54.83	-19.17	74	48.89	31.99	7.89	33.94	131	329	P	H
		2483.5	46.77	-7.23	54	40.83	31.99	7.89	33.94	131	329	A	H
		2480	96.5	-	-	90.56	31.99	7.89	33.94	131	329	P	H
		2480	95.01	-	-	89.07	31.99	7.89	33.94	131	329	A	H
		2483.62	55.58	-18.42	74	49.64	31.99	7.89	33.94	320	195	P	V
		2483.5	47.45	-6.55	54	41.51	31.99	7.89	33.94	320	195	A	V
		2480	97.95	-	-	92.01	31.99	7.89	33.94	320	195	P	V
		2480	96.3	-	-	90.36	31.99	7.89	33.94	320	195	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

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		5452.4	56.11	-17.89	74	42.2	35.62	11.6	33.31	107	281	P	H
		5464.24	56.29	-12.01	68.3	42.35	35.64	11.61	33.31	107	281	P	H
		5458.64	48.33	-5.67	54	34.42	35.62	11.6	33.31	107	281	A	H
		5536	97.71	-	-	83.61	35.7	11.72	33.32	107	281	P	H
		5536	89.23	-	-	75.13	35.7	11.72	33.32	107	281	A	H
		5451.44	55.14	-18.86	74	41.23	35.62	11.6	33.31	275	207	P	V
		5466.8	55.43	-12.87	68.3	41.49	35.64	11.61	33.31	275	207	P	V
		5458.8	47.09	-6.91	54	33.18	35.62	11.6	33.31	275	207	A	V
		5536	95.27	-	-	81.17	35.7	11.72	33.32	275	207	P	V
		5536	87.71	-	-	73.61	35.7	11.72	33.32	275	207	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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 155 5775MHz		5603.2	57.5	-10.8	68.3	43.14	35.77	11.93	33.34	100	287	P	H
		5680.8	57.05	-34.08	91.13	42.66	35.82	11.94	33.37	100	287	P	H
		5717.6	59.21	-51.02	110.23	44.8	35.84	11.95	33.38	100	287	P	H
		5722	58.83	-56.63	115.46	44.42	35.84	11.95	33.38	100	287	P	H
		5782	98.55	-	-	84.12	35.86	11.97	33.4	100	287	P	H
		5782	91.32	-	-	76.89	35.86	11.97	33.4	100	287	A	H
		5850.8	59.23	-61.25	120.48	44.72	35.89	12.04	33.42	100	287	P	H
		5859.6	58.03	-51.58	109.61	43.49	35.9	12.06	33.42	100	287	P	H
		5891.6	55.19	-37.79	92.98	40.59	35.94	12.1	33.44	100	287	P	H
		5959.2	56.38	-11.92	68.3	41.51	36.02	12.31	33.46	100	287	P	H
		5601.6	55.55	-12.75	68.3	41.19	35.77	11.93	33.34	275	257	P	V
		5692.4	55.66	-44.04	99.7	41.26	35.82	11.95	33.37	275	257	P	V
		5715.2	58.06	-51.5	109.56	43.66	35.83	11.95	33.38	275	257	P	V
		5723.2	57.42	-60.78	118.2	43.01	35.84	11.95	33.38	275	257	P	V
		5770	97.22	-	-	82.79	35.86	11.97	33.4	275	257	P	V
		5770	91.32	-	-	76.89	35.86	11.97	33.4	275	257	A	V
		5851.2	56.68	-62.88	119.56	42.17	35.89	12.04	33.42	275	257	P	V
		5866	57.67	-50.15	107.82	43.14	35.9	12.06	33.43	275	257	P	V
	5916.4	56.5	-18.14	74.64	41.83	35.96	12.16	33.45	275	257	P	V	
	5982.4	55.92	-12.38	68.3	40.98	36.04	12.36	33.46	275	257	P	V	

Remark

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



802.11ac VHT80 CH106 (5530MHz) + VHT80 CH155 (5775MHz) + Bluetooth v4.2 LE (CH39)
(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)
BT5.0 CH39 +11ac80 CH106 +11ac80 CH155		4960	57.41	-16.59	74	73.11	35.19	11.14	62.03	100	112	P	H
		4960	49.77	-4.23	54	65.47	35.19	11.14	62.03	100	112	A	H
		7440	43.17	-30.83	74	54.8	36.89	13.59	62.11	300	0	P	H
		11060	46.48	-27.52	74	51.76	39.97	16.56	61.81	300	0	P	H
		11550	48.2	-25.8	74	52.56	40.25	17.35	61.96	300	0	P	H
		4960	56.13	-17.87	74	71.83	35.19	11.14	62.03	300	101	P	V
		4960	47.52	-6.48	54	63.22	35.19	11.14	62.03	300	101	A	V
		7374	51.85	-22.15	74	63.67	36.88	13.53	62.23	269	49	P	V
		7374	49	-5	54	60.82	36.88	13.53	62.23	269	49	A	V
		7440	43.46	-30.54	74	55.09	36.89	13.59	62.11	100	0	P	V
		11060	47.06	-26.94	74	52.34	39.97	16.56	61.81	100	0	P	V
		11550	47.02	-26.98	74	51.38	40.25	17.35	61.96	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	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)

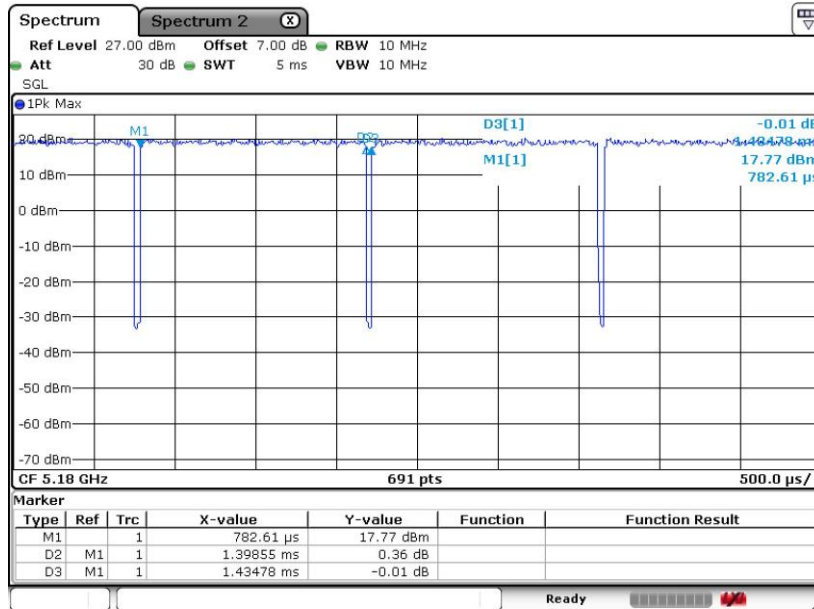
Both peak and average measured complies with the limit line, so test result is “PASS”.



Appendix D. Duty Cycle Plots

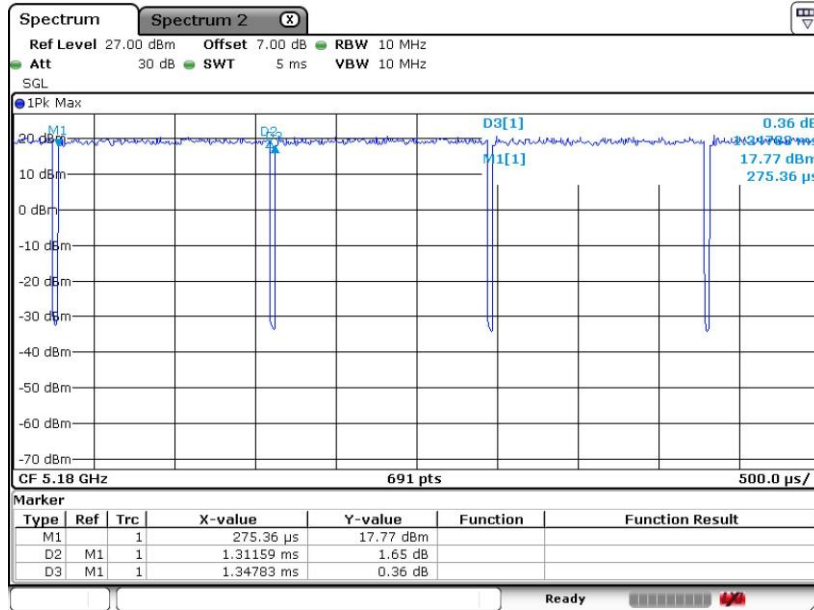
Antenna	Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
1+2	802.11a	97.47	1.3986	0.7150	0.75kHz
1+2	802.11n HT20	97.31	1.3116	0.7624	0.82kHz
1+2	802.11n HT40	95.13	0.6507	1.5368	1.6kHz
1+2	802.11ac VHT80	90.32	0.3246	3.0803	3.3kHz

802.11a

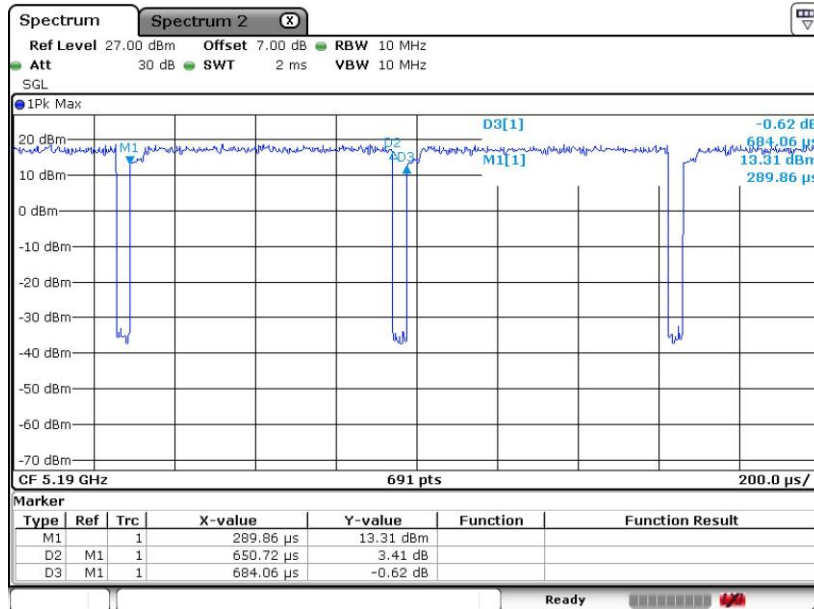




802.11n HT20



802.11n HT40





802.11ac VHT80

