



FCC RF Test Report

APPLICANT : Tabletop Media, LLC d/b/a Ziosk
EQUIPMENT : Ziosk Aurizon
BRAND NAME : Ziosk
MODEL NAME : Z500
FCC ID : XOX-Z500
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Feb. 08, 2018 and testing was completed on Apr. 04, 2018. We, Sporton International (Shenzhen) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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



Approved by: Eric Shih / Manager

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR820812E	Rev. 01	Initial issue of report	Apr. 16, 2018

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	2.1049 15.403(i)	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	FCC ≤ 24 dBm (depend on band)	Pass	-
3.3	15.407(a)	Power Spectral Density	FCC ≤ 11 dBm (depend on band)	Pass	-
3.4	15.407(b)	Unwanted Emissions	15.407(b) 15.209(a)	Pass	Under limit 0.31 dB at 5150.000 MHz
-	15.207	AC Conducted Emission	15.207(a)	Not Required	-
3.5	15.407(c)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.6	15.203 & 15.407(a)	Antenna Requirement	N/A	Pass	-

Note: Not required means after assessing, test items are not necessary to carry out.



1 General Description

1.1 Applicant

Tabletop Media, LLC d/b/a Ziosk
12404 Park Central Dr, Suite 350, Dallas, TX 75251

1.2 Manufacturer

SMTC de Chihuahua SA. DE C.V.
Washington 3701 building 20. Parque Industrial Las Americas, Chihuahua, Chih. 31200

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Ziosk Aurizon
Brand Name	Ziosk
Model Name	Z500
FCC ID	XOX-Z500
EUT supports Radios application	NFC WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth v3.0 + EDR / Bluetooth v4.0 LE/ Bluetooth v4.1 LE
HW Version	DV2
SW Version	Android 5.1.1
EUT Stage	Identical Prototype

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



1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5700 MHz
Maximum Output Power to Antenna	<5180 MHz ~ 5240 MHz> SISO<Ant. 2> 802.11a : 19.68 dBm / 0.0929 W MIMO <Ant. 1+2> 802.11n HT20 : 18.80 dBm / 0.0759 W 802.11n HT40 : 18.27 dBm / 0.0671 W 802.11ac VHT20: 18.74 dBm / 0.0748 W 802.11ac VHT40: 18.09 dBm / 0.0644 W 802.11ac VHT80: 15.97 dBm / 0.0395 W <5260 MHz ~ 5320 MHz> SISO<Ant. 1> 802.11a : 19.73 dBm / 0.0940 W MIMO <Ant. 1+2> 802.11n HT20 : 18.88 dBm / 0.0773 W 802.11n HT40 : 18.55 dBm / 0.0716 W 802.11ac VHT20: 18.72 dBm / 0.0745 W 802.11ac VHT40: 18.39 dBm / 0.0690 W 802.11ac VHT80: 16.24 dBm / 0.0421 W <5500 MHz ~ 5700 MHz > SISO <Ant. 2> 802.11a : 17.64 dBm / 0.0581 W MIMO <Ant. 1+2> 802.11n HT20 : 18.72 dBm / 0.0745 W 802.11n HT40 : 18.60 dBm / 0.0724 W 802.11ac VHT20: 18.62 dBm / 0.0728 W 802.11ac VHT40: 18.51 dBm / 0.0710 W 802.11ac VHT80: 16.02 dBm / 0.0400 W
99% Occupied Bandwidth	<5180 MHz ~ 5240 MHz> <Ant. 1> 802.11a : 19.73 MHz <Ant. 1+2(1)> 802.11n HT20 : 18.88 MHz 802.11n HT40 : 36.46 MHz 802.11ac VHT80 : 74.93 MHz <Ant. 2> 802.11a : 21.88 MHz <Ant. 1+2(2)> 802.11n HT20 : 18.73 MHz 802.11n HT40 : 36.26 MHz 802.11ac VHT80 : 74.93 MHz <5260 MHz ~ 5320 MHz> <Ant. 1> 802.11a : 19.28 MHz <Ant. 1+2(1)> 802.11n HT20 : 18.78 MHz 802.11n HT40 : 36.66 MHz 802.11ac VHT80 : 74.93 MHz <Ant. 2>

	802.11a : 19.23 MHz <Ant. 1+2(2)> 802.11n HT20 : 18.78 MHz 802.11n HT40 : 36.86 MHz 802.11ac VHT80 : 74.93 MHz <5500 MHz ~ 5700 MHz > <Ant. 1> 802.11a : 24.13 MHz <Ant. 1+2(1)> 802.11n HT20 : 18.93 MHz 802.11n HT40 : 36.36 MHz 802.11ac VHT80 : 75.04 MHz <Ant. 2> 802.11a : 23.43 MHz <Ant. 1+2(2)> 802.11n HT20 : 19.03 MHz 802.11n HT40 : 36.36 MHz 802.11ac VHT80 : 74.93 MHz		
Antenna Type	PIFA Antenna		
Antenna Gain	<5180 MHz ~ 5240 MHz> Ant. 1 : 2.77 dBi Ant. 2 : 2.27 dBi <5260 MHz ~ 5320 MHz> Ant. 1 : 3.40 dBi Ant. 2 : 2.62 dBi <5500 MHz ~ 5720 MHz> Ant. 1 : 3.06 dBi Ant. 2 : 3.49 dBi		
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)		
Antenna Function Description		Ant. 1	Ant. 2
	802.11 a/n/ac SISO	V	V
	802.11 n/ac MIMO	V	V

Note:

1. MIMO Ant. 1+2 is a calculated result from sum of the power MIMO Ant. 1 and MIMO Ant. 2.
2. For 802.11n HT20 / ac VHT20 and 802.11n HT40 / ac VHT40 mode, the whole testing is assessed only 802.11n HT20/ HT40 by referring to their higher conducted power.
3. For SISO & MIMO mode, the whole testing has assessed only MIMO mode by referring to their higher conducted power.

1.5 Modification of EUT

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

1.6 Testing Location

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

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

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

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

1.7 Applicable Standards

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

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

Remark:

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

2 Test Configuration of Equipment Under Test

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: radiated emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

2.1 Carrier Frequency Channel

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

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

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5500-5700 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

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

Note:

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



2.2 Test Mode

Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates as below table.

SISO Antenna

Modulation	Data Rate
802.11a	6 Mbps

MIMO Antenna

Modulation	Data Rate
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT80	MCS0



Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5720MHz
		802.11a	802.11a	802.11a
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5720MHz
		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 : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5720MHz
		802.11n HT40	802.11n HT40	802.11n HT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134

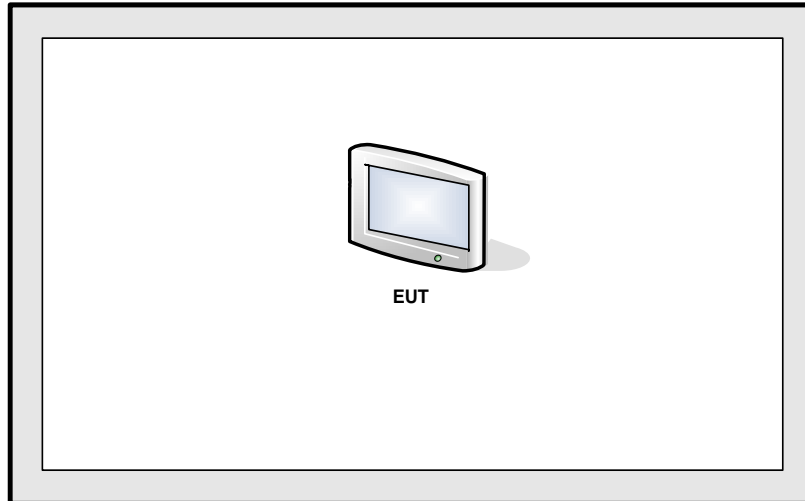
Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5720MHz
		802.11ac VHT20	802.11ac VHT20	802.11ac VHT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5720MHz
		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 : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5720MHz
		802.11ac VHT80	802.11ac VHT80	802.11ac VHT80
L	Low	-	-	106
M	Middle	42	58	-
H	High	-	-	122

2.3 Connection Diagram of Test System

<WLAN Tx Mode>



2.4 EUT Operation Test Setup

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

2.5 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor 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 and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 6.3 dB and 10dB attenuator.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 6.3 + 10 = 16.3 \text{ (dB)}\end{aligned}$$

3 Test Result

3.1 26dB & 99% Occupied Bandwidth Measurement

3.1.1 Description of 26dB & 99% Occupied Bandwidth

This section is for reporting purpose only.

There is no restriction limits for bandwidth.

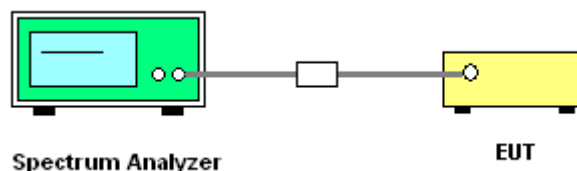
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

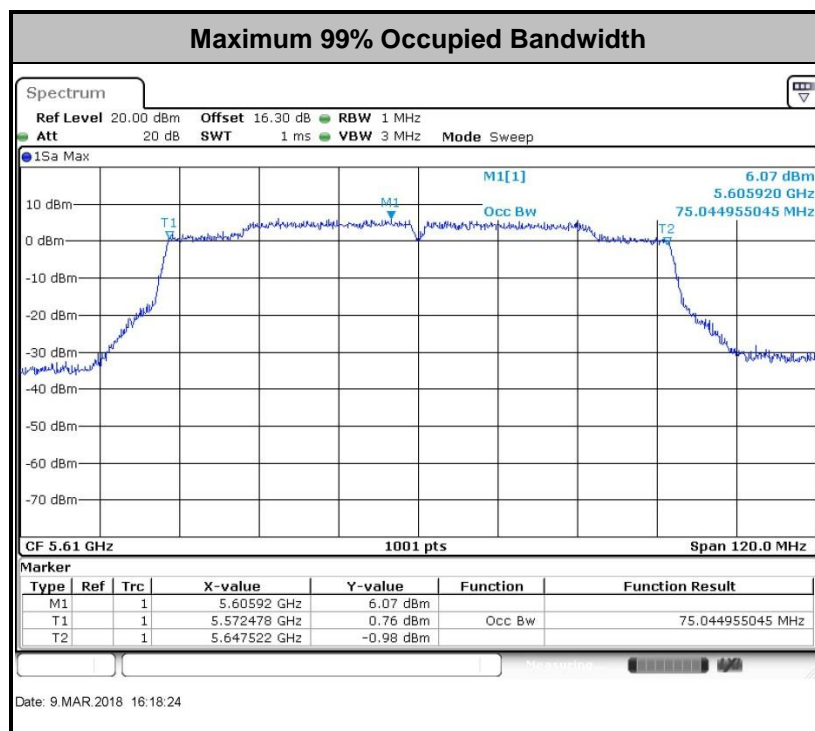
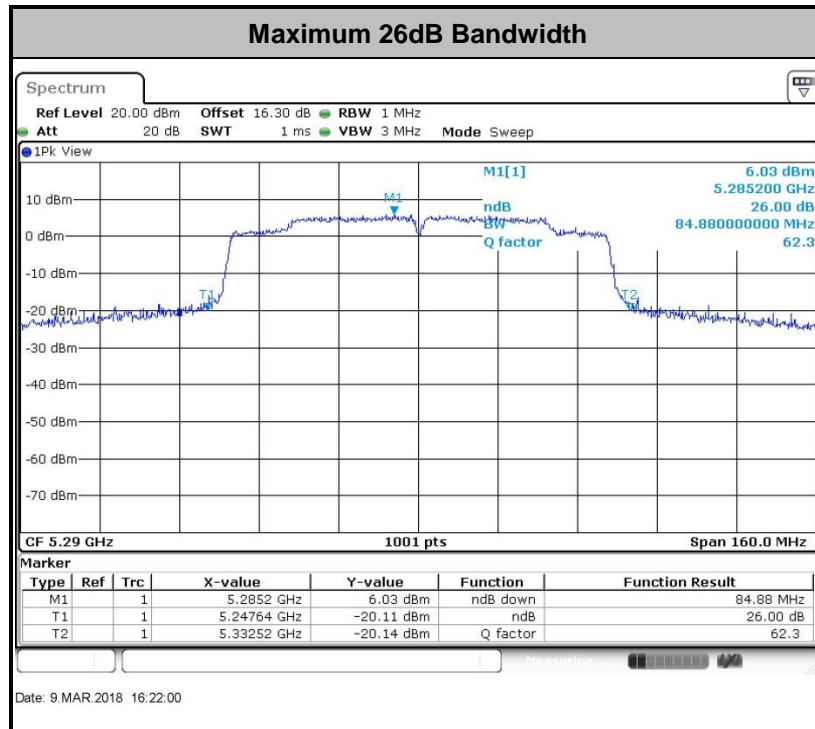
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section C) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB 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%.
7. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1MHz and set the Video bandwidth (VBW) $\geq 3 * \text{RBW}$.
8. Measure and record the results in the test report.

3.1.4 Test Setup



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

Please refer to Appendix A.



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.

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.

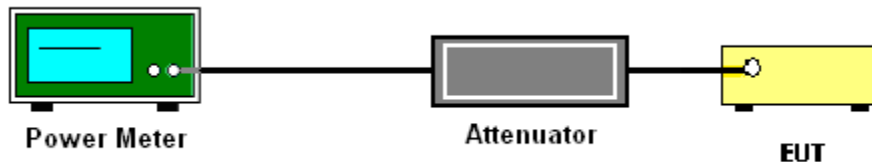
3.2.3 Test Procedures

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.

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.

Method SA-2

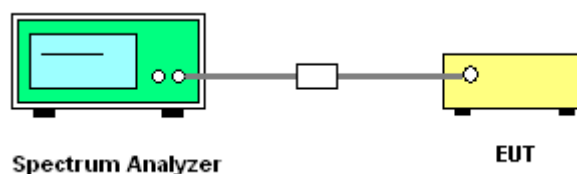
(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

1. The testing follows Method SA-2 of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
 - 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.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.
4. 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.

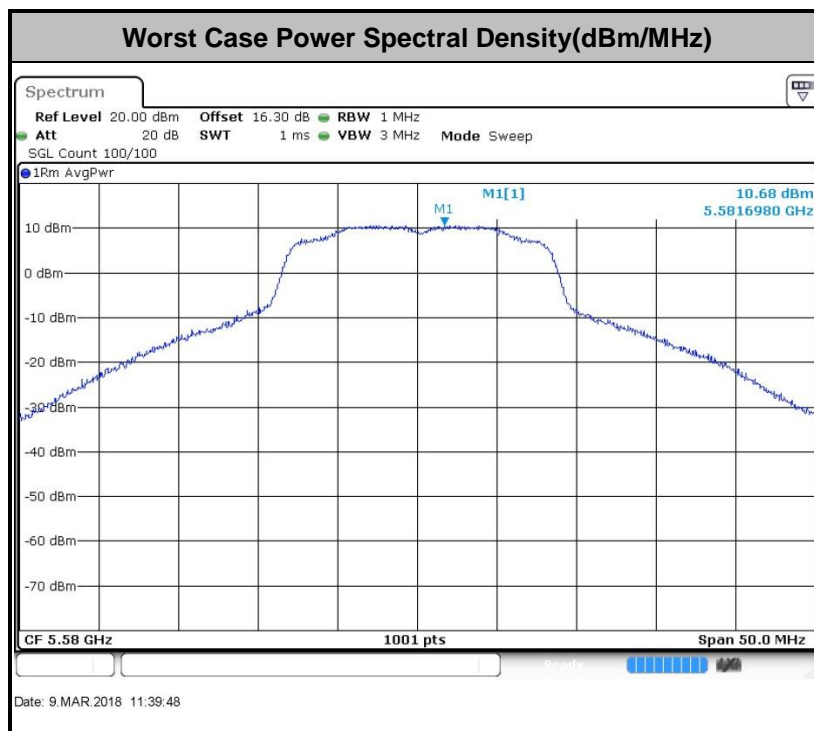
3.3.4 Test Setup





3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



3.4 Unwanted Radiated Emission 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 5470-5725MHz band: all emissions outside of the 5470-5725MHz band shall not exceed an EIRP of -27 dBm/MHz.

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

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

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

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

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

(3) KDB789033 D01 v02r01 G)2)c)

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

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

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

3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

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

Section G) Unwanted emissions measurement.

(1) Procedure for Unwanted Emissions Measurements Below 1000MHz

- RBW = 120 kHz
- VBW = 300 kHz
- Detector = Peak
- Trace mode = max hold

(2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz

- RBW = 1 MHz
- VBW \geq 3 MHz
- Detector = Peak
- Sweep time = auto
- Trace mode = max hold

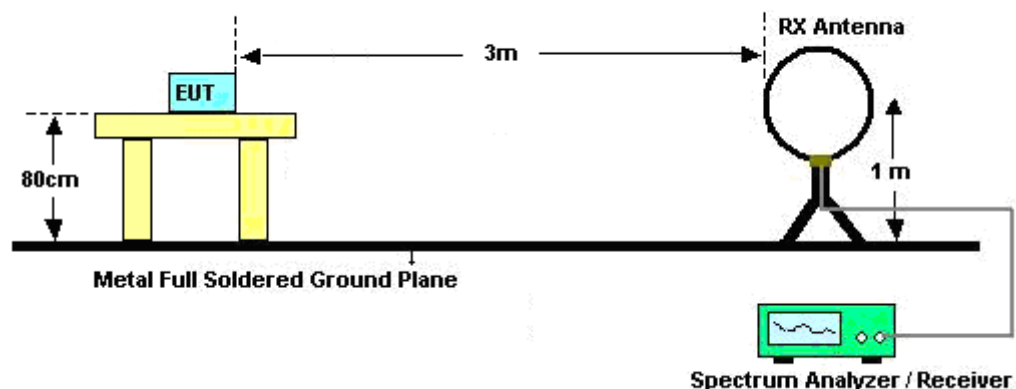
(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

- RBW = 1 MHz
- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW \geq 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
- Detector = Peak

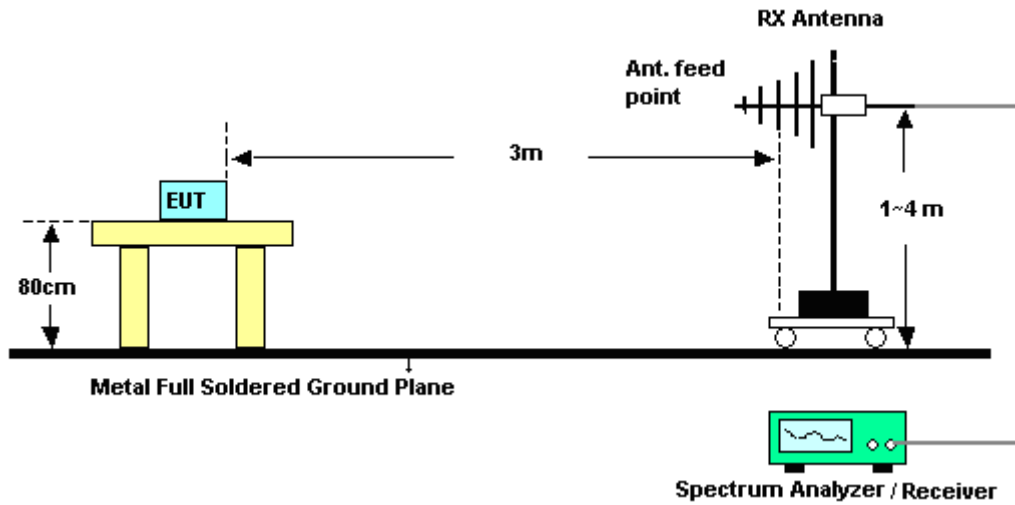
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband 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

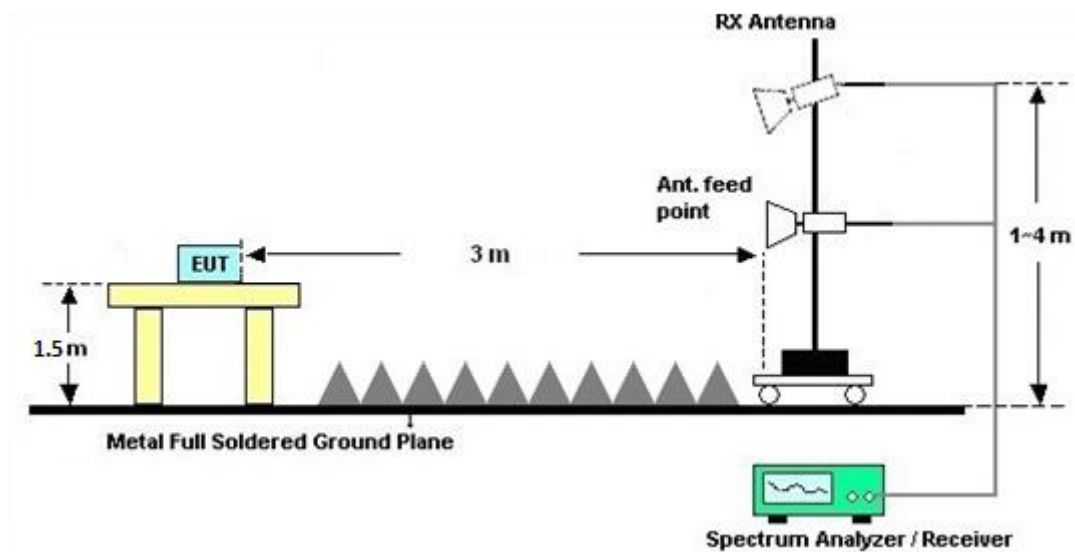
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



**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.

3.4.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix B.

3.4.7 Duty Cycle

Please refer to Appendix C.

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

Please refer to Appendix B.



3.5 Automatically Discontinue Transmission

3.5.1 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.

3.5.2 Measuring Instruments

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

3.5.3 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.

3.6 Antenna Requirements

3.6.1 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.

3.6.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.6.3 Antenna Gain

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

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

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

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

For power measurements on IEEE 802.11 devices,

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

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

The EUT supports CDD mode.

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

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

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

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

			DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
	Ant 1 (dBi)	Ant 2 (dBi)				
Band I	2.77	2.27	2.77	5.53	0.00	0.00
Band II	3.40	2.62	3.40	6.03	0.00	0.03
Band III	3.06	3.49	3.49	6.29	0.00	0.29

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

PSD limit reduction = Composite gain + PSD Array gain – 6dBi, (min = 0)



4 List of Measuring Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	9kHz~40GHz	Apr. 20, 2017	Mar. 09, 2018	Apr. 19, 2018	Conducted (TH01-SZ)
Pulse Power Sensor	Anritsu	MA2411B	1207253	30MHz~40GHz	Dec. 26, 2017	Mar. 09, 2018	Dec. 25, 2018	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1218010	50MHz Bandwidth	Dec. 26, 2017	Mar. 09, 2018	Dec. 25, 2018	Conducted (TH01-SZ)
EMI Test Receiver	R&S	ESR7	101404	9kHz~7GHz	Apr. 20, 2017	Apr. 04, 2018	Apr. 19, 2018	Radiation (03CH04-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Apr. 20, 2017	Apr. 04, 2018	Apr. 19, 2018	Radiation (03CH04-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	May 14, 2017	Apr. 04, 2018	May 13, 2018	Radiation (03CH04-SZ)
Bilog Antenna	TeseQ	CBL6111D	41909	30MHz~1GHz	May 16, 2017	Apr. 04, 2018	May 15, 2018	Radiation (03CH04-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1285	1GHz~18GHz	Dec. 13, 2017	Apr. 04, 2018	Dec. 12, 2018	Radiation (03CH04-SZ)
Horn Antenna	SCHWARZBECK	BBHA9170	9170#679	15GHz~40GHz	May 17, 2017	Apr. 04, 2018	May 16, 2018	Radiation (03CH04-SZ)
Amplifier	Burgeon	BPA-530	102211	0.01Hz~3000MHz	Oct.19, 2017	Apr. 04, 2018	Oct 18, 2018	Radiation (03CH04-SZ)
HF Amplifier	MITEQ	AMF-7D-0010 1800-30-10P-R	1989346	1GHz~18GHz	Jul. 27, 2017	Apr. 04, 2018	Jul. 26, 2018	Radiation (03CH04-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1988315	18GHz~40GHz	Jul.27, 2017	Apr. 04, 2018	Jul.26, 2018	Radiation (03CH04-SZ)
Amplifier	Agilent Technologies	83017A	MY53270156	500MHz~26.5GHz	Apr. 20, 2017	Apr. 04, 2018	Apr. 19, 2018	Radiation (03CH04-SZ)
AC Power Source	Chroma	61601	N/A	N/A	NCR	Apr. 04, 2018	NCR	Radiation (03CH04-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Apr. 04, 2018	NCR	Radiation (03CH04-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Apr. 04, 2018	NCR	Radiation (03CH04-SZ)

NCR: No Calibration Required



5 Uncertainty of Evaluation

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

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

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

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

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Walker Ye	Temperature:	21~25	°C
Test Date:	2018/3/9	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	1	36	5180	19.73	18.83	28.82	30.52	-		22.95	22.75	
11a	6Mbps	1	44	5220	17.93	18.68	27.52	29.92	-		22.54	22.71	
11a	6Mbps	1	48	5240	18.28	21.88	29.07	32.27	-		22.62	23.01	
HT20	MCS0	2	36	5180	18.38	18.48	23.98	24.13	-		22.64		
HT20	MCS0	2	44	5220	18.83	18.73	24.93	24.68	-		22.73		
HT20	MCS0	2	48	5240	18.88	18.73	24.58	24.33	-		22.73		
HT40	MCS0	2	38	5190	36.46	36.26	44.78	44.33	-		23.01		
HT40	MCS0	2	46	5230	36.46	36.16	41.18	44.42	-		23.01		
VHT80	MCS0	2	42	5210	74.93	74.93	82.16	83.76	-		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	1	36	5180	0.08	0.08	18.86	18.89		23.98	23.98	2.77	2.27		Pass
11a	6Mbps	1	44	5220	0.08	0.08	19.05	19.13		23.98	23.98	2.77	2.27		Pass
11a	6Mbps	1	48	5240	0.08	0.08	19.56	19.68		23.98	23.98	2.77	2.27		Pass
HT20	MCS0	2	36	5180	0.10	0.10	15.47	15.60	18.55	23.98		2.77			Pass
HT20	MCS0	2	44	5220	0.10	0.10	14.96	15.33	18.16	23.98		2.77			Pass
HT20	MCS0	2	48	5240	0.10	0.10	15.57	15.99	18.80	23.98		2.77			Pass
HT40	MCS0	2	38	5190	0.10	0.10	15.15	15.35	18.27	23.98		2.77			Pass
HT40	MCS0	2	46	5230	0.10	0.10	14.31	14.58	17.46	23.98		2.77			Pass
VHT20	MCS0	2	36	5180	0.10	0.10	15.35	15.43	18.41	23.98		2.77			Pass
VHT20	MCS0	2	44	5220	0.10	0.10	14.87	15.20	18.05	23.98		2.77			Pass
VHT20	MCS0	2	48	5240	0.10	0.10	15.48	15.95	18.74	23.98		2.77			Pass
VHT40	MCS0	2	38	5190	0.10	0.10	15.01	15.14	18.09	23.98		2.77			Pass
VHT40	MCS0	2	46	5230	0.10	0.10	14.30	14.55	17.44	23.98		2.77			Pass
VHT80	MCS0	2	42	5210	0.10	0.10	12.80	13.11	15.97	23.98		2.77			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	1	36	5180	0.08	0.08	9.90	10.25		11.00	11.00	2.77	2.27		Pass
11a	6Mbps	1	44	5220	0.08	0.08	9.36	9.48		11.00	11.00	2.77	2.27		Pass
11a	6Mbps	1	48	5240	0.08	0.08	9.84	10.25		11.00	11.00	2.77	2.27		Pass
HT20	MCS0	2	36	5180	0.10	0.10			8.90	11.00		5.53			Pass
HT20	MCS0	2	44	5220	0.10	0.10			7.82	11.00		5.53			Pass
HT20	MCS0	2	48	5240	0.10	0.10			9.06	11.00		5.53			Pass
HT40	MCS0	2	38	5190	0.10	0.10			5.03	11.00		5.53			Pass
HT40	MCS0	2	46	5230	0.10	0.10			4.52	11.00		5.53			Pass
VHT80	MCS0	2	42	5210	0.10	0.10			-0.30	11.00		5.53			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	1	52	5260	19.28	19.23	31.12	31.82	23.85	23.84	29.85	29.84	23.98	23.98	
11a	6Mbps	1	60	5300	18.63	18.73	28.72	29.02	23.70	23.73	29.70	29.73	23.98	23.98	
11a	6Mbps	1	64	5320	18.28	19.13	29.87	29.57	23.62	23.82	29.62	29.82	23.98	23.98	
HT20	MCS0	2	52	5260	18.78	18.73	25.13	24.88	23.73		29.73		23.98		
HT20	MCS0	2	60	5300	18.48	18.78	25.03	24.48	23.67		29.67		23.98		
HT20	MCS0	2	64	5320	18.53	18.58	25.33	24.93	23.68		29.68		23.98		
HT40	MCS0	2	54	5270	36.66	36.36	44.60	44.51	23.98		30.00		23.98		
HT40	MCS0	2	62	5310	36.36	36.86	45.14	45.14	23.98		30.00		23.98		
VHT80	MCS0	2	58	5290	74.93	74.93	84.88	83.28	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	1	52	5260	0.08	0.08	19.73	19.71		23.98	23.98	3.40	2.62	26.99	Pass
11a	6Mbps	1	60	5300	0.08	0.08	19.24	19.56		23.98	23.98	3.40	2.62	26.99	Pass
11a	6Mbps	1	64	5320	0.08	0.08	16.51	16.79		23.98	23.98	3.40	2.62	26.99	Pass
HT20	MCS0	2	52	5260	0.10	0.10	15.70	16.03	18.88	23.98		3.40		26.99	Pass
HT20	MCS0	2	60	5300	0.10	0.10	15.13	15.07	18.12	23.98		3.40		26.99	Pass
HT20	MCS0	2	64	5320	0.10	0.10	15.26	15.36	18.33	23.98		3.40		26.99	Pass
HT40	MCS0	2	54	5270	0.10	0.10	15.32	15.74	18.55	23.98		3.40		26.99	Pass
HT40	MCS0	2	62	5310	0.10	0.10	14.89	14.91	17.91	23.98		3.40		26.99	Pass
VHT20	MCS0	2	52	5260	0.10	0.10	15.61	15.80	18.72	23.98		3.40		26.99	Pass
VHT20	MCS0	2	60	5300	0.10	0.10	15.10	15.05	18.09	23.98		3.40		26.99	Pass
VHT20	MCS0	2	64	5320	0.10	0.10	15.25	15.30	18.29	23.98		3.40		26.99	Pass
VHT40	MCS0	2	54	5270	0.10	0.10	15.22	15.52	18.39	23.98		3.40		26.99	Pass
VHT40	MCS0	2	62	5310	0.10	0.10	14.80	14.75	17.79	23.98		3.40		26.99	Pass
VHT80	MCS0	2	58	5290	0.10	0.10	13.04	13.40	16.24	23.98		3.40		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	1	52	5260	0.08	0.08	10.40	10.24		11.00	11.00	3.40	2.62		Pass
11a	6Mbps	1	60	5300	0.08	0.08	9.14	9.55		11.00	11.00	3.40	2.62		Pass
11a	6Mbps	1	64	5320	0.08	0.08	9.83	9.77		11.00	11.00	3.40	2.62		Pass
HT20	MCS0	2	52	5260	0.10	0.10			8.96	10.97		6.03			Pass
HT20	MCS0	2	60	5300	0.10	0.10			8.23	10.97		6.03			Pass
HT20	MCS0	2	64	5320	0.10	0.10			7.67	10.97		6.03			Pass
HT40	MCS0	2	54	5270	0.10	0.10			5.36	10.97		6.03			Pass
HT40	MCS0	2	62	5310	0.10	0.10			4.71	10.97		6.03			Pass
VHT80	MCS0	2	58	5290	0.10	0.10			-0.02	10.97		6.03			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	1	100	5500	19.38	20.13	32.77	32.92	23.87	23.98	29.87	30.00	23.98	23.98	
11a	6Mbps	1	116	5580	24.13	22.23	37.26	36.86	23.98	23.98	30.00	30.00	23.98	23.98	
11a	6Mbps	1	140	5700	20.28	23.43	34.17	37.71	23.98	23.98	30.00	30.00	23.98	23.98	
HT20	MCS0	2	100	5500	18.63	18.68	24.68	25.03	23.70		29.70		23.98		
HT20	MCS0	2	116	5580	18.93	18.58	25.82	24.68	23.69		29.69		23.98		
HT20	MCS0	2	140	5700	18.53	19.03	25.48	26.72	23.68		29.68		23.98		
HT40	MCS0	2	102	5510	36.36	36.36	45.41	44.60	23.98		30.00		23.98		
HT40	MCS0	2	110	5550	36.36	36.36	45.14	44.24	23.98		30.00		23.98		
HT40	MCS0	2	134	5670	36.36	36.26	44.06	41.90	23.98		30.00		23.98		
VHT80	MCS0	2	106	5530	74.93	74.81	83.76	84.24	23.98		30.00		23.98		
VHT80	MCS0	2	122	5610	75.04	74.93	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	1	100	5500	0.08	0.08	17.07	17.15		23.98	23.98	3.06	3.49	26.99	Pass
11a	6Mbps	1	116	5580	0.08	0.08	17.51	17.64		23.98	23.98	3.06	3.49	26.99	Pass
11a	6Mbps	1	140	5700	0.08	0.08	16.30	16.39		23.98	23.98	3.06	3.49	26.99	Pass
HT20	MCS0	2	100	5500	0.10	0.10	14.76	15.30	18.05	23.98		3.49		26.99	Pass
HT20	MCS0	2	116	5580	0.10	0.10	15.60	15.81	18.72	23.98		3.49		26.99	Pass
HT20	MCS0	2	140	5700	0.10	0.10	14.51	15.20	17.88	23.98		3.49		26.99	Pass
HT40	MCS0	2	102	5510	0.10	0.10	14.23	14.79	17.53	23.98		3.49		26.99	Pass
HT40	MCS0	2	110	5550	0.10	0.10	14.74	15.35	18.07	23.98		3.49		26.99	Pass
HT40	MCS0	2	134	5670	0.10	0.10	15.17	15.96	18.60	23.98		3.49		26.99	Pass
VHT20	MCS0	2	100	5500	0.10	0.10	14.70	15.25	18.00	23.98		3.49		26.99	Pass
VHT20	MCS0	2	116	5580	0.10	0.10	15.45	15.75	18.62	23.98		3.49		26.99	Pass
VHT20	MCS0	2	140	5700	0.10	0.10	14.39	15.12	17.79	23.98		3.49		26.99	Pass
VHT40	MCS0	2	102	5510	0.10	0.10	14.20	14.77	17.51	23.98		3.49		26.99	Pass
VHT40	MCS0	2	110	5550	0.10	0.10	14.65	15.28	17.99	23.98		3.49		26.99	Pass
VHT40	MCS0	2	134	5670	0.10	0.10	15.09	15.86	18.51	23.98		3.49		26.99	Pass
VHT80	MCS0	2	106	5530	0.10	0.10	12.20	12.83	15.54	23.98		3.49		26.99	Pass
VHT80	MCS0	2	122	5610	0.10	0.10	12.88	13.13	16.02	23.98		3.49		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	1	100	5500	0.08	0.08	9.91	10.48		11.00	11.00	3.06	3.49	Pass
11a	6Mbps	1	116	5580	0.08	0.08	10.57	10.76		11.00	11.00	3.06	3.49	Pass
11a	6Mbps	1	140	5700	0.08	0.08	8.91	10.06		11.00	11.00	3.06	3.49	Pass
HT20	MCS0	2	100	5500	0.10	0.10			8.40	10.71		6.29		Pass
HT20	MCS0	2	116	5580	0.10	0.10			8.94	10.71		6.29		Pass
HT20	MCS0	2	140	5700	0.10	0.10			8.12	10.71		6.29		Pass
HT40	MCS0	2	102	5510	0.10	0.10			4.92	10.71		6.29		Pass
HT40	MCS0	2	110	5550	0.10	0.10			4.96	10.71		6.29		Pass
HT40	MCS0	2	134	5670	0.10	0.10			5.68	10.71		6.29		Pass
VHT80	MCS0	2	106	5530	0.10	0.10			-0.46	10.71		6.29		Pass
VHT80	MCS0	2	122	5610	0.10	0.10			0.31	10.71		6.29		Pass



Appendix B. 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.
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 36 5180MHz		5148.46	64.99	-9.01	74	53.99	32.24	6.04	27.28	173	324	P	H
		5150	53.69	-0.31	54	42.69	32.24	6.04	27.28	173	324	A	H
	*	5180	111.54	-	-	100.49	32.25	6.04	27.24	173	324	P	H
	*	5180	106.52	-	-	95.47	32.25	6.04	27.24	173	324	A	H
		5148.98	59.94	-14.06	74	48.94	32.24	6.04	27.28	322	97	P	V
		5150	52.97	-1.03	54	41.97	32.24	6.04	27.28	322	97	A	V
	*	5180	107.9	-	-	96.85	32.25	6.04	27.24	322	97	P	V
	*	5180	103.06	-	-	92.01	32.25	6.04	27.24	322	97	A	V
802.11a CH 44 5220MHz		5142.22	53.15	-20.85	74	42.19	32.24	6.04	27.32	188	323	P	H
		5150	45.26	-8.74	54	34.26	32.24	6.04	27.28	188	323	A	H
	*	5220	111.84	-	-	100.76	32.26	6.03	27.21	188	323	P	H
	*	5220	106.98	-	-	95.9	32.26	6.03	27.21	188	323	A	H
		5376	51.46	-22.54	74	40.09	32.31	6.01	26.95	188	323	P	H
		5372.16	42.78	-11.22	54	31.44	32.31	6.01	26.98	188	323	A	H
		5147.94	51.94	-22.06	74	40.94	32.24	6.04	27.28	349	94	P	V
		5147.42	44.52	-9.48	54	33.52	32.24	6.04	27.28	349	94	A	V
	*	5220	108.18	-	-	97.1	32.26	6.03	27.21	349	94	P	V
	*	5220	101.24	-	-	90.16	32.26	6.03	27.21	349	94	A	V
		5389.68	49.79	-24.21	74	38.41	32.32	6.01	26.95	349	94	P	V
		5445.84	42.16	-11.84	54	30.63	32.34	6.06	26.87	349	94	A	V



802.11a CH 48 5240MHz		5130.78	53.34	-20.66	74	42.38	32.24	6.04	27.32	197	319	P	H
		5149.5	44.9	-9.1	54	33.9	32.24	6.04	27.28	197	319	A	H
	*	5240	112.46	-	-	101.33	32.27	6.03	27.17	197	319	P	H
	*	5240	107.54	-	-	96.41	32.27	6.03	27.17	197	319	A	H
		5368.56	52.14	-21.86	74	40.8	32.31	6.01	26.98	197	319	P	H
		5350.32	42.9	-11.1	54	31.56	32.31	6.01	26.98	197	319	A	H
		5149.76	51.07	-22.93	74	40.07	32.24	6.04	27.28	334	89	P	V
		5148.46	43.83	-10.17	54	32.83	32.24	6.04	27.28	334	89	A	V
	*	5240	107.84	-	-	96.71	32.27	6.03	27.17	334	89	P	V
	*	5240	101.27	-	-	90.14	32.27	6.03	27.17	334	89	A	V
		5389.44	49.56	-24.44	74	38.18	32.32	6.01	26.95	334	89	P	V
		5351.52	42.08	-11.92	54	30.74	32.31	6.01	26.98	334	89	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 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 5180MHz		10360	46.18	-27.82	74	54.55	38.25	9.23	55.85	121	225	P	H
		15540	49.32	-24.68	74	55.18	38.94	11.93	56.73	185	210	P	H
		10360	46.89	-27.11	74	55.26	38.25	9.23	55.85	152	260	P	V
		15540	47.99	-26.01	74	53.85	38.94	11.93	56.73	189	238	P	V
802.11a CH 44 5220MHz		10440	46.82	-27.18	74	55.14	38.31	9.25	55.88	150	230	P	H
		15660	49.11	-24.89	74	54.99	38.54	12.07	56.49	160	225	P	H
		10440	47.3	-26.7	74	55.62	38.31	9.25	55.88	150	230	P	V
		15660	47.63	-26.37	74	53.51	38.54	12.07	56.49	160	225	P	V
802.11a CH 48 5240MHz		10480	46.26	-27.74	74	54.54	38.36	9.26	55.9	189	12	P	H
		15720	55.63	-18.37	74	61.56	38.31	12.11	56.35	198	226	P	H
		15720	43.19	-10.81	54	49.12	38.31	12.11	56.35	198	226	A	H
		10480	47.08	-26.92	74	55.36	38.36	9.26	55.9	189	12	P	V
		15720	51.57	-22.43	74	57.5	38.31	12.11	56.35	198	226	P	V
		15720	40.3	-13.7	54	46.23	38.31	12.11	56.35	198	226	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 36 5180MHz		5147.16	55.94	-18.06	74	44.94	32.24	6.04	27.28	127	343	P	H
		5150	45.67	-8.33	54	34.67	32.24	6.04	27.28	127	343	A	H
	*	5180	108.96	-	-	97.91	32.25	6.04	27.24	127	343	P	H
	*	5180	101.19	-	-	90.14	32.25	6.04	27.24	127	343	A	H
		5149.24	55.58	-18.42	74	44.58	32.24	6.04	27.28	235	129	P	V
		5149.5	47.54	-6.46	54	36.54	32.24	6.04	27.28	235	129	A	V
	*	5180	107.33	-	-	96.28	32.25	6.04	27.24	235	129	P	V
	*	5180	99.05	-	-	88	32.25	6.04	27.24	235	129	A	V
802.11n HT20 CH 44 5220MHz		5150	51.66	-22.34	74	40.66	32.24	6.04	27.28	351	336	P	H
		5147.68	42.69	-11.31	54	31.69	32.24	6.04	27.28	351	336	A	H
	*	5220	108.51	-	-	97.43	32.26	6.03	27.21	351	336	P	H
	*	5220	101.23	-	-	90.15	32.26	6.03	27.21	351	336	A	H
		5371.68	50.86	-23.14	74	39.52	32.31	6.01	26.98	351	336	P	H
		5370.72	43.06	-10.94	54	31.72	32.31	6.01	26.98	351	336	A	H
		5133.64	52.18	-21.82	74	41.22	32.24	6.04	27.32	240	90	P	V
		5149.5	43.65	-10.35	54	32.65	32.24	6.04	27.28	240	90	A	V
	*	5220	106.3	-	-	95.22	32.26	6.03	27.21	240	90	P	V
	*	5220	98.45	-	-	87.37	32.26	6.03	27.21	240	90	A	V
		5368.8	49.78	-24.22	74	38.44	32.31	6.01	26.98	240	90	P	V
		5369.52	41.52	-12.48	54	30.18	32.31	6.01	26.98	240	90	A	V



802.11n HT20 CH 48 5240MHz		5088.92	51.12	-22.88	74	40.23	32.23	6.05	27.39	330	314	P	H
		5150	42.75	-11.25	54	31.75	32.24	6.04	27.28	330	314	A	H
	*	5240	109.23	-	-	98.1	32.27	6.03	27.17	330	314	P	H
	*	5240	103.25	-	-	92.12	32.27	6.03	27.17	330	314	A	H
		5390.88	50.73	-23.27	74	39.35	32.32	6.01	26.95	330	314	P	H
		5389.92	42.62	-11.38	54	31.24	32.32	6.01	26.95	330	314	A	H
		5139.88	50.87	-23.13	74	39.91	32.24	6.04	27.32	322	128	P	V
		5150	42.79	-11.21	54	31.79	32.24	6.04	27.28	322	128	A	V
	*	5240	108.37	-	-	97.24	32.27	6.03	27.17	322	128	P	V
	*	5240	100.27	-	-	89.14	32.27	6.03	27.17	322	128	A	V
		5419.2	50.51	-23.49	74	39.08	32.33	6.01	26.91	322	128	P	V
		5350.32	41.76	-12.24	54	30.42	32.31	6.01	26.98	322	128	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 36 5180MHz		10360	46.76	-27.24	74	55.13	38.25	9.23	55.85	152	260	P	H
		15540	49.68	-24.32	74	55.54	38.94	11.93	56.73	189	238	P	H
		10360	46.58	-27.42	74	54.95	38.25	9.23	55.85	121	225	P	V
		15540	47.71	-26.29	74	53.57	38.94	11.93	56.73	185	210	P	V
802.11n HT20 CH 44 5220MHz		10440	48.4	-25.6	74	56.72	38.31	9.25	55.88	150	210	P	H
		15660	47.53	-26.47	74	53.41	38.54	12.07	56.49	160	225	P	H
		10440	46.44	-27.56	74	54.76	38.31	9.25	55.88	150	230	P	V
		15660	48.29	-25.71	74	54.17	38.54	12.07	56.49	141	225	P	V
802.11n HT20 CH 48 5240MHz		10480	46.56	-27.44	74	54.84	38.36	9.26	55.9	154	125	P	H
		15720	50.88	-23.12	74	56.81	38.31	12.11	56.35	198	226	P	H
		10480	47.5	-26.5	74	55.78	38.36	9.26	55.9	189	12	P	V
		15720	49.73	-24.27	74	55.66	38.31	12.11	56.35	200	115	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 38 5190MHz		5141.44	58.17	-15.83	74	47.21	32.24	6.04	27.32	213	320	P	H
		5149.76	52.83	-1.17	54	41.83	32.24	6.04	27.28	213	320	A	H
	*	5190	109.52	-	-	98.47	32.25	6.04	27.24	213	320	P	H
	*	5190	102.39	-	-	91.34	32.25	6.04	27.24	213	320	A	H
		5419.4	50.46	-23.54	74	39.03	32.33	6.01	26.91	213	320	P	H
		5350	42.78	-11.22	54	31.44	32.31	6.01	26.98	213	320	A	H
		5147.94	51.84	-22.16	74	40.84	32.24	6.04	27.28	393	297	P	V
		5149.5	46.81	-7.19	54	35.81	32.24	6.04	27.28	393	297	A	V
	*	5190	103.29	-	-	92.24	32.25	6.04	27.24	393	297	P	V
	*	5190	97.02	-	-	85.97	32.25	6.04	27.24	393	297	A	V
		5408.48	50.26	-23.74	74	38.84	32.32	6.01	26.91	393	297	P	V
		5428.08	41.19	-12.81	54	29.67	32.33	6.06	26.87	393	297	A	V
802.11n HT40 CH 46 5230MHz		5034.06	51.24	-22.76	74	40.43	32.21	6.06	27.46	329	336	P	H
		5149.76	43.36	-10.64	54	32.36	32.24	6.04	27.28	329	336	A	H
	*	5230	107.41	-	-	96.28	32.27	6.03	27.17	329	336	P	H
	*	5230	101.27	-	-	90.14	32.27	6.03	27.17	329	336	A	H
		5377.68	50.11	-23.89	74	38.73	32.32	6.01	26.95	329	336	P	H
		5366.76	42.05	-11.95	54	30.71	32.31	6.01	26.98	329	336	A	H
		5137.8	50.72	-23.28	74	39.76	32.24	6.04	27.32	397	277	P	V
		5149.24	42.64	-11.36	54	31.64	32.24	6.04	27.28	397	277	A	V
	*	5230	102.61	-	-	91.48	32.27	6.03	27.17	397	277	P	V
	*	5230	95.47	-	-	84.34	32.27	6.03	27.17	397	277	A	V
		5354.16	49.49	-24.51	74	38.15	32.31	6.01	26.98	397	277	P	V
		5451.6	41.28	-12.72	54	29.72	32.34	6.06	26.84	397	277	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 38 5190MHz		10380	46.16	-27.84	74	54.52	38.26	9.24	55.86	150	360	P	H
		15570	48.91	-25.09	74	54.77	38.82	11.98	56.66	155	360	P	H
		10380	46.78	-27.22	74	55.14	38.26	9.24	55.86	120	360	P	V
		15570	47.91	-26.09	74	53.77	38.82	11.98	56.66	155	32	P	V
802.11n HT40 CH 46 5230MHz		10460	47.29	-26.71	74	55.59	38.32	9.26	55.88	150	360	P	H
		15690	47.09	-26.91	74	52.98	38.42	12.11	56.42	150	225	P	H
		10460	46.65	-27.35	74	54.95	38.32	9.26	55.88	151	360	P	V
		15690	47.96	-26.04	74	53.85	38.42	12.11	56.42	159	241	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 42 5210MHz		5145.6	57.96	-16.04	74	46.96	32.24	6.04	27.28	207	320	P	H
		5149.24	51.41	-2.59	54	40.41	32.24	6.04	27.28	207	320	A	H
	*	5210	103	-	-	91.92	32.26	6.03	27.21	207	320	P	H
	*	5210	95.22	-	-	84.14	32.26	6.03	27.21	207	320	A	H
		5354.4	51.43	-22.57	74	40.09	32.31	6.01	26.98	207	320	P	H
		5352.24	42.65	-11.35	54	31.31	32.31	6.01	26.98	207	320	A	H
		5148.46	54.16	-19.84	74	43.16	32.24	6.04	27.28	368	96	P	V
		5149.5	47.62	-6.38	54	36.62	32.24	6.04	27.28	368	96	A	V
	*	5210	97.8	-	-	86.72	32.26	6.03	27.21	368	96	P	V
	*	5210	90.22	-	-	79.14	32.26	6.03	27.21	368	96	A	V
		5440.08	49.53	-24.47	74	38	32.34	6.06	26.87	368	96	P	V
		5451.84	41.29	-12.71	54	29.73	32.34	6.06	26.84	368	96	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

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

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		10420	45.32	-28.68	74	53.65	38.29	9.25	55.87	150	360	P	H
VHT80		15630	47.06	-26.94	74	52.97	38.59	12.02	56.52	150	0	P	H
CH 42		10420	46.4	-27.6	74	54.73	38.29	9.25	55.87	150	360	P	V
5210MHz		15630	48.26	-25.74	74	54.17	38.59	12.02	56.52	150	0	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)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 52 5260MHz		5148.72	52.75	-21.25	74	41.75	32.24	6.04	27.28	195	322	P	H
		5149.76	44.49	-9.51	54	33.49	32.24	6.04	27.28	195	322	A	H
	*	5260	112.86	-	-	101.68	32.28	6.03	27.13	195	322	P	H
	*	5260	107.83	-	-	96.65	32.28	6.03	27.13	195	322	A	H
		5382.48	52.45	-21.55	74	41.07	32.32	6.01	26.95	195	322	P	H
		5350.32	43.98	-10.02	54	32.64	32.31	6.01	26.98	195	322	A	H
		5116.48	50.41	-23.59	74	39.49	32.23	6.04	27.35	334	83	P	V
		5147.68	43.16	-10.84	54	32.16	32.24	6.04	27.28	334	83	A	V
	*	5260	109.22	-	-	98.04	32.28	6.03	27.13	334	83	P	V
	*	5260	102.39	-	-	91.21	32.28	6.03	27.13	334	83	A	V
		5413.68	50.64	-23.36	74	39.21	32.33	6.01	26.91	334	83	P	V
		5351.52	42.34	-11.66	54	31	32.31	6.01	26.98	334	83	A	V
802.11a CH 60 5300MHz		5143.5	53.2	-20.8	74	42.24	32.24	6.04	27.32	204	316	P	H
		5150	44.06	-9.94	54	33.06	32.24	6.04	27.28	204	316	A	H
	*	5300	111.96	-	-	100.71	32.29	6.02	27.06	204	316	P	H
	*	5300	107.11	-	-	95.86	32.29	6.02	27.06	204	316	A	H
		5363.04	55.3	-18.7	74	43.96	32.31	6.01	26.98	204	316	P	H
		5350.08	47.68	-6.32	54	36.34	32.31	6.01	26.98	204	316	A	H
		5077	50.51	-23.49	74	39.63	32.22	6.05	27.39	290	105	P	V
		5150	42.36	-11.64	54	31.36	32.24	6.04	27.28	290	105	A	V
	*	5300	107.95	-	-	96.7	32.29	6.02	27.06	290	105	P	V
	*	5300	104.21	-	-	92.96	32.29	6.02	27.06	290	105	A	V
		5358.96	52.2	-21.8	74	40.86	32.31	6.01	26.98	290	105	P	V
		5350.08	44.81	-9.19	54	33.47	32.31	6.01	26.98	290	105	A	V



802.11a CH 64 5320MHz	*	5320	110.32	-	-	99.02	32.3	6.02	27.02	198	321	P	H
	*	5320	104.61	-	-	93.31	32.3	6.02	27.02	198	321	A	H
		5350.24	64.68	-9.32	74	53.34	32.31	6.01	26.98	198	321	P	H
		5350.08	53.46	-0.54	54	42.12	32.31	6.01	26.98	198	321	A	H
	*	5320	106.1	-	-	94.84	32.3	6.02	27.06	289	85	P	V
	*	5320	100.61	-	-	89.35	32.3	6.02	27.06	289	85	A	V
		5352.16	57.62	-16.38	74	46.28	32.31	6.01	26.98	289	85	P	V
		5350.08	50.29	-3.71	54	38.95	32.31	6.01	26.98	289	85	A	V
Remark	<ol style="list-style-type: none">1. No other spurious found.2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 52 5260MHz		10520	47.09	-26.91	74	55.34	38.39	9.27	55.91	150	220	P	H
		15780	57.13	-16.87	74	63.04	38.14	12.2	56.25	159	345	P	H
		15780	47.31	-6.69	54	53.22	38.14	12.2	56.25	159	345	A	H
		10520	46.52	-27.48	74	54.77	38.39	9.27	55.91	150	220	P	V
		15780	53.91	-20.09	74	59.82	38.14	12.2	56.25	159	345	P	V
		15780	43.75	-10.25	54	49.66	38.14	12.2	56.25	159	345	A	V
802.11a CH 60 5300MHz		10600	46.89	-27.11	74	55.07	38.47	9.29	55.94	185	215	P	H
		15900	56.45	-17.55	74	62.38	37.74	12.34	56.01	196	190	P	H
		15900	45.53	-8.47	54	51.46	37.74	12.34	56.01	196	190	A	H
		10600	46.72	-27.28	74	54.9	38.47	9.29	55.94	185	215	P	V
		15900	54.93	-19.07	74	60.86	37.74	12.34	56.01	196	190	P	V
		15900	43.12	-10.88	54	49.05	37.74	12.34	56.01	196	190	A	V
802.11a CH 64 5320MHz		10640	45.88	-28.12	74	54.04	38.5	9.3	55.96	185	135	P	H
		15960	50.24	-23.76	74	56.17	37.51	12.43	55.87	100	0	P	H
		10640	45.32	-28.68	74	53.48	38.5	9.3	55.96	152	135	P	V
		15960	47.27	-26.73	74	53.2	37.51	12.43	55.87	173	245	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 52 5260MHz		5143	50.86	-23.14	74	39.9	32.24	6.04	27.32	319	339	P	H
		5148.72	41.82	-12.18	54	30.82	32.24	6.04	27.28	319	339	A	H
	*	5260	109.27	-	-	98.09	32.28	6.03	27.13	319	339	P	H
	*	5260	102.72	-	-	91.54	32.28	6.03	27.13	319	339	A	H
		5371.2	51.55	-22.45	74	40.21	32.31	6.01	26.98	319	339	P	H
		5351.28	43.16	-10.84	54	31.82	32.31	6.01	26.98	319	339	A	H
		5115.18	50.8	-23.2	74	39.88	32.23	6.04	27.35	393	116	P	V
		5148.98	41.71	-12.29	54	30.71	32.24	6.04	27.28	393	116	A	V
	*	5260	106.57	-	-	95.39	32.28	6.03	27.13	393	116	P	V
	*	5260	100.18	-	-	89	32.28	6.03	27.13	393	116	A	V
		5439.84	51.24	-22.76	74	39.71	32.34	6.06	26.87	393	116	P	V
		5350.8	41.93	-12.07	54	30.59	32.31	6.01	26.98	393	116	A	V
802.11n HT20 CH 60 5300MHz		5087.15	50.43	-23.57	74	39.55	32.22	6.05	27.39	323	335	P	H
		5148.75	42.11	-11.89	54	31.11	32.24	6.04	27.28	323	335	A	H
	*	5300	108.56	-	-	97.31	32.29	6.02	27.06	323	335	P	H
	*	5300	102.5	-	-	91.25	32.29	6.02	27.06	323	335	A	H
		5362.8	54.06	-19.94	74	42.72	32.31	6.01	26.98	323	335	P	H
		5350.08	45.44	-8.56	54	34.1	32.31	6.01	26.98	323	335	A	H
		5071.05	50.49	-23.51	74	39.61	32.22	6.05	27.39	391	114	P	V
		5150	42.02	-11.98	54	31.02	32.24	6.04	27.28	391	114	A	V
	*	5300	106.16	-	-	94.91	32.29	6.02	27.06	391	114	P	V
	*	5300	99.26	-	-	88.01	32.29	6.02	27.06	391	114	A	V
		5365.44	51.15	-22.85	74	39.81	32.31	6.01	26.98	391	114	P	V
		5350.8	43.34	-10.66	54	32	32.31	6.01	26.98	391	114	A	V



802.11n HT20 CH 64 5320MHz	*	5320	108.59	-	-	97.33	32.3	6.02	27.06	321	337	P	H
	*	5320	102.46	-	-	91.2	32.3	6.02	27.06	321	337	A	H
		5350.88	59.71	-14.29	74	48.37	32.31	6.01	26.98	321	337	P	H
		5364	49.64	-4.36	54	38.3	32.31	6.01	26.98	321	337	A	H
	*	5320	105.73	-	-	94.47	32.3	6.02	27.06	392	114	P	V
	*	5320	99.82	-	-	88.56	32.3	6.02	27.06	392	114	A	V
		5356.48	55.24	-18.76	74	43.9	32.31	6.01	26.98	392	114	P	V
		5350.56	46.94	-7.06	54	35.6	32.31	6.01	26.98	392	114	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 52 5260MHz		10520	48.88	-25.12	74	57.13	38.39	9.27	55.91	150	220	P	H
		15780	50.99	-23.01	74	56.9	38.14	12.2	56.25	151	0	P	H
		10520	48.43	-25.57	74	56.68	38.39	9.27	55.91	150	220	P	V
		15780	47.98	-26.02	74	53.89	38.14	12.2	56.25	159	345	P	V
802.11n HT20 CH 60 5300MHz		10600	48.59	-25.41	74	56.77	38.47	9.29	55.94	185	215	P	H
		15900	50.26	-23.74	74	56.19	37.74	12.34	56.01	196	190	P	H
		10600	48.77	-25.23	74	56.95	38.47	9.29	55.94	185	215	P	V
		15900	47.69	-26.31	74	53.62	37.74	12.34	56.01	196	190	P	V
802.11n HT20 CH 64 5320MHz		10640	49.14	-24.86	74	57.3	38.5	9.3	55.96	152	135	P	H
		15960	48.64	-25.36	74	54.57	37.51	12.43	55.87	173	245	P	H
		10640	49.35	-24.65	74	57.51	38.5	9.3	55.96	185	135	P	V
		15960	46.56	-27.44	74	52.49	37.51	12.43	55.87	173	296	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 54 5270MHz		5056.35	50.59	-23.41	74	39.75	32.22	6.05	27.43	333	316	P	H
		5129.15	43.04	-10.96	54	32.08	32.24	6.04	27.32	333	316	A	H
	*	5270	107.43	-	-	96.25	32.28	6.03	27.13	333	316	P	H
	*	5270	100.93	-	-	89.75	32.28	6.03	27.13	333	316	A	H
		5359.2	53.34	-20.66	74	42	32.31	6.01	26.98	333	316	P	H
		5351.04	44.81	-9.19	54	33.47	32.31	6.01	26.98	333	316	A	H
		5143.85	51.13	-22.87	74	40.13	32.24	6.04	27.28	346	307	P	V
		5134.75	42.22	-11.78	54	31.26	32.24	6.04	27.32	346	307	A	V
	*	5270	103.43	-	-	92.25	32.28	6.03	27.13	346	307	P	V
	*	5270	96.94	-	-	85.76	32.28	6.03	27.13	346	307	A	V
		5418	48.96	-25.04	74	37.53	32.33	6.01	26.91	346	307	P	V
		5350.08	41.96	-12.04	54	30.62	32.31	6.01	26.98	346	307	A	V
802.11n HT40 CH 62 5310MHz		5088.2	51.05	-22.95	74	40.17	32.22	6.05	27.39	325	317	P	H
		5084.7	43	-11	54	32.12	32.22	6.05	27.39	325	317	A	H
	*	5310	106.66	-	-	95.4	32.3	6.02	27.06	325	317	P	H
	*	5310	100	-	-	88.74	32.3	6.02	27.06	325	317	A	H
		5352	57.34	-16.66	74	46	32.31	6.01	26.98	325	317	P	H
		5350.32	49.81	-4.19	54	38.47	32.31	6.01	26.98	325	317	A	H
		5144.2	50.64	-23.36	74	39.64	32.24	6.04	27.28	358	308	P	V
		5147.35	41.9	-12.1	54	30.9	32.24	6.04	27.28	358	308	A	V
	*	5310	102.26	-	-	91	32.3	6.02	27.06	358	308	P	V
	*	5310	95.47	-	-	84.21	32.3	6.02	27.06	358	308	A	V
		5353.92	52.87	-21.13	74	41.53	32.31	6.01	26.98	358	308	P	V
		5350.08	46.15	-7.85	54	34.81	32.31	6.01	26.98	358	308	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 54 5270MHz		10540	46.67	-27.33	74	54.91	38.4	9.28	55.92	150	220	P	H
		15810	50.99	-23.01	74	56.89	38.03	12.25	56.18	151	0	P	H
		10540	46.66	-27.34	74	54.9	38.4	9.28	55.92	150	220	P	V
		15810	49.18	-24.82	74	55.08	38.03	12.25	56.18	168	345	P	V
802.11n HT40 CH 62 5310MHz		10620	47.32	-26.68	74	55.49	38.48	9.3	55.95	150	220	P	H
		15930	48.35	-25.65	74	54.28	37.63	12.38	55.94	160	100	P	H
		10620	48.98	-25.02	74	57.15	38.48	9.3	55.95	180	220	P	V
		15930	45.79	-28.21	74	51.72	37.63	12.38	55.94	160	169	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 58 5290MHz		5147.94	51.93	-22.07	74	40.93	32.24	6.04	27.28	203	322	P	H
		5147.42	44.54	-9.46	54	33.54	32.24	6.04	27.28	203	322	A	H
	*	5290	104.54	-	-	93.32	32.29	6.02	27.09	203	322	P	H
	*	5290	96.88	-	-	85.66	32.29	6.02	27.09	203	322	A	H
		5351.52	60.78	-13.22	74	49.44	32.31	6.01	26.98	203	322	P	H
		5350.56	52.88	-1.12	54	41.54	32.31	6.01	26.98	203	322	A	H
		5085.8	51.17	-22.83	74	40.29	32.22	6.05	27.39	383	77	P	V
		5149.24	42.35	-11.65	54	31.35	32.24	6.04	27.28	383	77	A	V
	*	5290	99.27	-	-	88.05	32.29	6.02	27.09	383	77	P	V
	*	5290	91.35	-	-	80.13	32.29	6.02	27.09	383	77	A	V
		5354.88	56.57	-17.43	74	45.23	32.31	6.01	26.98	383	77	P	V
		5350.08	49.23	-4.77	54	37.89	32.31	6.01	26.98	383	77	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

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

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		10580	46.23	-27.77	74	54.43	38.45	9.29	55.94	150	360	P	H
VHT80		15870	46.59	-27.41	74	52.54	37.8	12.29	56.04	150	0	P	H
CH 58		10580	47.67	-26.33	74	55.87	38.45	9.29	55.94	150	360	P	V
5290MHz		15870	47.65	-26.35	74	53.6	37.8	12.29	56.04	150	0	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.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 100 5500MHz		5468.4	57.85	-16.15	74	46.23	32.35	6.11	26.84	391	317	P	H
		5470	51.2	-2.8	54	39.58	32.35	6.11	26.84	391	317	A	H
	*	5500	108.7	-	-	97.03	32.36	6.11	26.8	391	317	P	H
	*	5500	101.57	-	-	89.9	32.36	6.11	26.8	391	317	A	H
		5469.68	56.85	-17.15	74	45.23	32.35	6.11	26.84	316	70	P	V
		5470	49.54	-4.46	54	37.92	32.35	6.11	26.84	316	70	A	V
	*	5500	105.13	-	-	93.46	32.36	6.11	26.8	316	70	P	V
	*	5500	98.99	-	-	87.32	32.36	6.11	26.8	316	70	A	V
802.11a CH 116 5580MHz		5463.28	50.65	-23.35	74	39.08	32.35	6.06	26.84	398	318	P	H
		5350.96	43.19	-10.81	54	31.85	32.31	6.01	26.98	398	318	A	H
	*	5580	109.16	-	-	97.4	32.38	6.22	26.84	398	318	P	H
	*	5580	102.63	-	-	90.87	32.38	6.22	26.84	398	318	A	H
		5730.035	49.77	-24.23	74	37.96	32.48	6.22	26.89	398	318	P	H
		5729.09	41.76	-12.24	54	29.95	32.48	6.22	26.89	398	318	A	H
		5469.52	49.44	-24.56	74	37.82	32.35	6.11	26.84	236	344	P	V
		5465.44	40.9	-13.1	54	29.33	32.35	6.06	26.84	236	344	A	V
	*	5580	104.94	-	-	93.18	32.38	6.22	26.84	236	344	P	V
	*	5580	96.97	-	-	85.21	32.38	6.22	26.84	236	344	A	V
		5738.225	50.49	-23.51	74	38.68	32.49	6.22	26.9	236	344	P	V
		5731.925	40.28	-13.72	54	28.48	32.48	6.22	26.9	236	344	A	V



802.11a CH 140 5700MHz	*	5700	106.65	-	-	94.86	32.45	6.22	26.88	397	311	P	H
	*	5700	98.64	-	-	86.85	32.45	6.22	26.88	397	311	A	H
		5728.12	62.72	-11.28	74	50.91	32.48	6.22	26.89	397	311	P	H
		5725.56	51.19	-2.81	54	39.38	32.48	6.22	26.89	397	311	A	H
	*	5700	102.99	-	-	91.2	32.45	6.22	26.88	236	344	P	V
	*	5700	96.47	-	-	84.68	32.45	6.22	26.88	236	344	A	V
		5725.16	56.62	-17.38	74	44.81	32.48	6.22	26.89	236	344	P	V
		5725.32	47.05	-6.95	54	35.24	32.48	6.22	26.89	236	344	A	V
Remark	<ol style="list-style-type: none">1. No other spurious found.2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 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 100 5500MHz		11000	48.27	-25.73	74	56.16	38.83	9.38	56.1	163	230	P	H
		16500	55.15	-18.85	74	58.31	39.48	13.41	56.05	178	296	P	H
		16500	47.45	-6.55	54	50.61	39.48	13.41	56.05	178	296	A	H
		11000	47.49	-26.51	74	55.38	38.83	9.38	56.1	163	230	P	V
		16500	50.15	-23.85	74	53.31	39.48	13.41	56.05	178	296	P	V
802.11a CH 116 5580MHz		11160	48.07	-25.93	74	55.5	38.99	9.43	55.85	170	200	P	H
		16740	59.8	-14.2	74	61.56	40.46	13.95	56.17	100	343	P	H
		16740	51.14	-2.86	54	52.9	40.46	13.95	56.17	100	343	A	H
		11160	48.23	-25.77	74	55.66	38.99	9.43	55.85	170	200	P	V
		16740	56.44	-17.56	74	58.2	40.46	13.95	56.17	156	350	P	V
		16740	49.3	-4.7	54	51.06	40.46	13.95	56.17	156	350	A	V
802.11a CH 140 5700MHz		11400	48.1	-25.9	74	54.9	39.21	9.48	55.49	157	285	P	H
		17100	50.64	-23.36	74	50.2	42.16	14.66	56.38	151	0	P	H
		11400	48.55	-25.45	74	55.35	39.21	9.48	55.49	157	285	P	V
		17100	48.56	-25.44	74	48.12	42.16	14.66	56.38	151	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 100 5500MHz		5461.36	56.45	-17.55	74	44.89	32.34	6.06	26.84	232	13	P	H
		5470	49.02	-4.98	54	37.4	32.35	6.11	26.84	232	13	A	H
	*	5500	110.09	-	-	98.42	32.36	6.11	26.8	232	13	P	H
	*	5500	103.88	-	-	92.21	32.36	6.11	26.8	232	13	A	H
		5464.24	53.75	-20.25	74	42.18	32.35	6.06	26.84	396	80	P	V
		5469.68	46.37	-7.63	54	34.75	32.35	6.11	26.84	396	80	A	V
	*	5500	104.68	-	-	93.01	32.36	6.11	26.8	396	80	P	V
	*	5500	98.08	-	-	86.41	32.36	6.11	26.8	396	80	A	V
802.11n HT20 CH 116 5580MHz		5426.8	53.95	-20.05	74	42.43	32.33	6.06	26.87	328	325	P	H
		5427.76	44.85	-9.15	54	33.33	32.33	6.06	26.87	328	325	A	H
	*	5580	111.21	-	-	99.45	32.38	6.22	26.84	328	325	P	H
	*	5580	105.27	-	-	93.51	32.38	6.22	26.84	328	325	A	H
		5730.35	50.63	-23.37	74	38.83	32.48	6.22	26.9	328	325	P	H
		5731.295	43.34	-10.66	54	31.54	32.48	6.22	26.9	328	325	A	H
		5445.52	51.01	-22.99	74	39.48	32.34	6.06	26.87	394	315	P	V
		5428.48	41.62	-12.38	54	30.1	32.33	6.06	26.87	394	315	A	V
	*	5580	105.95	-	-	94.19	32.38	6.22	26.84	394	315	P	V
	*	5580	98.88	-	-	87.12	32.38	6.22	26.84	394	315	A	V
		5763.11	49.38	-24.62	74	37.58	32.51	6.2	26.91	394	315	P	V
		5730.665	41.73	-12.27	54	29.93	32.48	6.22	26.9	394	315	A	V



802.11n HT20 CH 140 5700MHz	*	5700	110.68	-	-	98.89	32.45	6.22	26.88	316	323	P	H
	*	5700	103.92	-	-	92.13	32.45	6.22	26.88	316	323	A	H
		5727.88	66.34	-7.66	74	54.53	32.48	6.22	26.89	316	323	P	H
		5725	53.63	-0.37	54	41.82	32.48	6.22	26.89	316	323	A	H
	*	5700	105.45	-	-	93.66	32.45	6.22	26.88	322	123	P	V
	*	5700	98.1	-	-	86.31	32.45	6.22	26.88	322	123	A	V
		5725.24	56.59	-17.41	74	44.78	32.48	6.22	26.89	322	123	P	V
		5725.08	48.26	-5.74	54	36.45	32.48	6.22	26.89	322	123	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 100 5500MHz		11000	46.66	-27.34	74	54.55	38.83	9.38	56.1	163	230	P	H
		16500	50.93	-23.07	74	54.09	39.48	13.41	56.05	152	0	P	H
		11000	46.66	-27.34	74	54.55	38.83	9.38	56.1	163	230	P	V
		16500	50.51	-23.49	74	53.67	39.48	13.41	56.05	152	0	P	V
802.11n HT20 CH 116 5580MHz		11160	47.43	-26.57	74	54.86	38.99	9.43	55.85	170	200	P	H
		16740	58.4	-15.6	74	60.16	40.46	13.95	56.17	156	350	P	H
		16740	48.38	-5.62	54	50.14	40.46	13.95	56.17	156	350	A	H
		11160	48.07	-25.93	74	55.5	38.99	9.43	55.85	170	200	P	V
		16740	54.81	-19.19	74	56.57	40.46	13.95	56.17	156	350	P	V
		16740	46.36	-7.64	54	48.12	40.46	13.95	56.17	156	350	A	V
802.11n HT20 CH 140 5700MHz		11400	50.14	-23.86	74	56.94	39.21	9.48	55.49	157	285	P	H
		17100	56.73	-17.27	74	56.29	42.16	14.66	56.38	165	246	P	H
		17100	50.55	-3.45	54	50.11	42.16	14.66	56.38	165	246	A	H
		11400	50.61	-23.39	74	57.41	39.21	9.48	55.49	157	285	P	V
		17100	50.81	-23.19	74	50.37	42.16	14.66	56.38	165	246	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 102 5510MHz		5470	62.39	-11.61	74	50.77	32.35	6.11	26.84	325	322	P	H
		5470	53.13	-0.87	54	41.51	32.35	6.11	26.84	325	322	A	H
	*	5510	107.83	-	-	96.11	32.36	6.17	26.81	325	322	P	H
	*	5510	101.47	-	-	89.75	32.36	6.17	26.81	325	322	A	H
		5747.675	50.55	-23.45	74	38.76	32.49	6.2	26.9	325	322	P	H
		5733.185	42.26	-11.74	54	30.46	32.48	6.22	26.9	325	322	A	H
		5465.2	56.35	-17.65	74	44.78	32.35	6.06	26.84	349	311	P	V
		5470	48.01	-5.99	54	36.39	32.35	6.11	26.84	349	311	A	V
	*	5510	103.26	-	-	91.54	32.36	6.17	26.81	349	311	P	V
	*	5510	96.24	-	-	84.52	32.36	6.17	26.81	349	311	A	V
		5759.645	50.68	-23.32	74	38.88	32.51	6.2	26.91	349	311	P	V
		5736.65	41.67	-12.33	54	29.86	32.49	6.22	26.9	349	311	A	V
802.11n HT40 CH 110 5550MHz		5469.28	55.13	-18.87	74	43.51	32.35	6.11	26.84	320	323	P	H
		5461.34	44.62	-9.38	54	33.06	32.34	6.06	26.84	360	311	A	H
	*	5550	109.84	-	-	98.07	32.37	6.22	26.82	320	323	P	H
	*	5550	102.75	-	-	90.98	32.37	6.22	26.82	320	323	A	H
		5761.535	49.96	-24.04	74	38.16	32.51	6.2	26.91	320	323	P	H
		5729.72	42.14	-11.86	54	30.33	32.48	6.22	26.89	320	323	A	H
		5442.88	51.49	-22.51	74	39.96	32.34	6.06	26.87	360	311	P	V
		5461.12	43.67	-10.33	54	32.11	32.34	6.06	26.84	360	311	A	V
	*	5550	103.17	-	-	91.4	32.37	6.22	26.82	360	311	P	V
	*	5550	96.55	-	-	84.78	32.37	6.22	26.82	360	311	A	V
		5751.14	49.42	-24.58	74	37.63	32.49	6.2	26.9	360	311	P	V
		5743.265	41.62	-12.38	54	29.83	32.49	6.2	26.9	360	311	A	V



802.11n HT40 CH 134 5670MHz		5350.7	51.22	-22.78	74	39.88	32.31	6.01	26.98	304	323	P	H
		5449.75	42.57	-11.43	54	31.04	32.34	6.06	26.87	304	323	A	H
	*	5670	108.81	-	-	97.02	32.43	6.23	26.87	304	323	P	H
	*	5670	102.16	-	-	90.37	32.43	6.23	26.87	304	323	A	H
		5725.975	54.96	-19.04	74	43.15	32.48	6.22	26.89	304	323	P	H
		5725.45	47.92	-6.08	54	36.11	32.48	6.22	26.89	304	323	A	H
		5362.25	49.23	-24.77	74	37.89	32.31	6.01	26.98	396	314	P	V
		5434.7	41.29	-12.71	54	29.76	32.34	6.06	26.87	396	314	A	V
	*	5670	102.64	-	-	90.85	32.43	6.23	26.87	396	314	P	V
	*	5670	95.55	-	-	83.76	32.43	6.23	26.87	396	314	A	V
		5732.975	50.97	-23.03	74	39.17	32.48	6.22	26.9	396	314	P	V
		5726.5	42.96	-11.04	54	31.15	32.48	6.22	26.89	396	314	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 102 5510MHz		11020	46.71	-27.29	74	54.55	38.84	9.39	56.07	170	230	P	H
		16530	50.19	-23.81	74	53.16	39.62	13.48	56.07	160	300	P	H
		11020	47.5	-26.5	74	55.34	38.84	9.39	56.07	170	230	P	V
		16530	49.54	-24.46	74	52.51	39.62	13.48	56.07	160	300	P	V
802.11n HT40 CH 110 5550MHz		11100	47.44	-26.56	74	55.06	38.92	9.41	55.95	185	200	P	H
		16650	50.89	-23.11	74	53.19	40.11	13.72	56.13	158	34	P	H
		11100	47.01	-26.99	74	54.63	38.92	9.41	55.95	185	200	P	V
		16650	50.53	-23.47	74	52.83	40.11	13.72	56.13	180	325	P	V
802.11n HT40 CH 134 5670MHz		11340	50.61	-23.39	74	57.6	39.14	9.46	55.59	159	360	P	H
		17010	58.88	-15.12	74	59.08	41.61	14.5	56.31	154	254	P	H
		17010	49.92	-4.08	54	50.12	41.61	14.5	56.31	154	254	A	H
		11340	50.81	-23.19	74	57.8	39.14	9.46	55.59	100	254	P	V
		17010	54.19	-19.81	74	54.39	41.61	14.5	56.31	200	360	P	V
		17010	47.8	-6.2	54	48	41.61	14.5	56.31	200	360	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5470~5725MHz
WIFI 802.11ac VHT80 (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		5461.6	61.28	-12.72	74	49.72	32.34	6.06	26.84	202	313	P	H
		5465.68	53.17	-0.83	54	41.55	32.35	6.11	26.84	202	313	A	H
	*	5530	102.89	-	-	91.18	32.36	6.17	26.82	202	313	P	H
	*	5530	95.88	-	-	84.17	32.36	6.17	26.82	202	313	A	H
		5754.605	50.49	-23.51	74	38.68	32.51	6.2	26.9	202	313	P	H
		5727.2	41.96	-12.04	54	30.15	32.48	6.22	26.89	202	313	A	H
		5465.44	56.29	-17.71	74	44.72	32.35	6.06	26.84	398	82	P	V
		5465.2	47.4	-6.6	54	35.83	32.35	6.06	26.84	398	82	A	V
	*	5530	98.44	-	-	86.73	32.36	6.17	26.82	398	82	P	V
	*	5530	91.57	-	-	79.86	32.36	6.17	26.82	398	82	A	V
		5760.275	50.67	-23.33	74	38.87	32.51	6.2	26.91	398	82	P	V
		5730.35	41.73	-12.27	54	29.93	32.48	6.22	26.9	398	82	A	V
802.11ac VHT80 CH 122 5610MHz		5455.36	55.06	-18.94	74	43.5	32.34	6.06	26.84	206	319	P	H
		5468.32	43.85	-10.15	54	32.23	32.35	6.11	26.84	206	319	A	H
	*	5610	102.84	-	-	91.03	32.39	6.27	26.85	206	319	P	H
	*	5610	96.93	-	-	85.12	32.39	6.27	26.85	206	319	A	H
		5725	60.77	-13.23	74	48.96	32.48	6.22	26.89	206	319	P	H
		5725	53.68	-0.32	54	41.87	32.48	6.22	26.89	206	319	A	H
		5467.36	55.67	-18.33	74	44.05	32.35	6.11	26.84	392	81	P	V
		5464.48	42.72	-11.28	54	31.15	32.35	6.06	26.84	392	81	A	V
	*	5610	99.35	-	-	87.54	32.39	6.27	26.85	392	81	P	V
	*	5610	91.91	-	-	80.1	32.39	6.27	26.85	392	81	A	V
		5727.83	50.53	-23.47	74	38.72	32.48	6.22	26.89	392	81	P	V
		5725.94	43.28	-10.72	54	31.47	32.48	6.22	26.89	392	81	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5470~5725MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		11060	46.7	-27.3	74	54.41	38.89	9.4	56	150	360	P	H
VHT80		16590	49.24	-24.76	74	51.87	39.83	13.64	56.1	250	0	P	H
CH 106		11060	46.19	-27.81	74	53.9	38.89	9.4	56	150	360	P	V
5530MHz		16590	48.99	-25.01	74	51.62	39.83	13.64	56.1	150	0	P	V
802.11ac		11220	48.14	-25.86	74	55.44	39.03	9.44	55.77	150	360	P	H
VHT80		16830	50.42	-23.58	74	51.72	40.81	14.11	56.22	200	0	P	H
CH 122		11220	49.53	-24.47	74	56.83	39.03	9.44	55.77	150	360	P	V
5610MHz		16830	50.28	-23.72	74	51.58	40.81	14.11	56.22	250	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

WIFI 802.11a (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.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a LF		30	23.75	-16.25	40	30.57	24.9	0.25	31.97	-	-	P	H
		206.54	37.89	-5.61	43.5	52.29	15.3	1.62	31.32	100	56	P	H
		363.68	38.28	-7.72	46	46.37	21	2.12	31.21	-	-	P	H
		502.39	37.53	-8.47	46	42.29	24.03	2.44	31.23	-	-	P	H
		546.04	38.41	-7.59	46	42.29	24.82	2.55	31.25	-	-	P	H
		916.58	38.64	-7.36	46	36.94	29.5	3.42	31.22	-	-	P	H
		30	24.82	-15.18	40	31.64	24.9	0.25	31.97	-	-	P	V
		203.63	28.48	-15.02	43.5	42.88	15.3	1.62	31.32	-	-	P	V
		353.01	37.03	-8.97	46	45.41	20.73	2.1	31.21	-	-	P	V
		460.68	37.35	-8.65	46	43.13	23.17	2.33	31.28	-	-	P	V
		574.17	38.31	-7.69	46	41.61	25.33	2.63	31.26	100	183	P	V
		837.04	34.01	-11.99	46	33.16	28.8	3.23	31.18	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

Note symbol

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



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

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

1. Level(dBμV/m) =

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

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

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

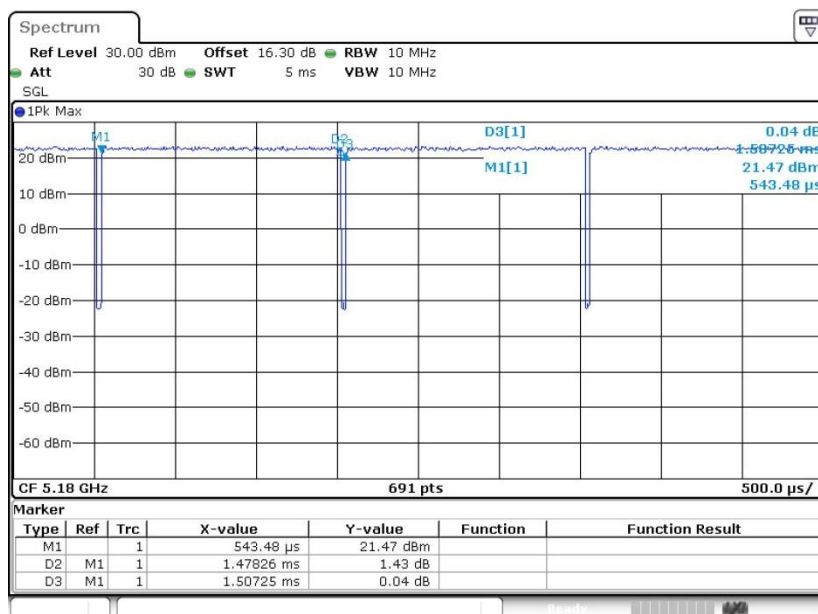
= -10.46(dB)

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

Appendix C. Duty Cycle Plots

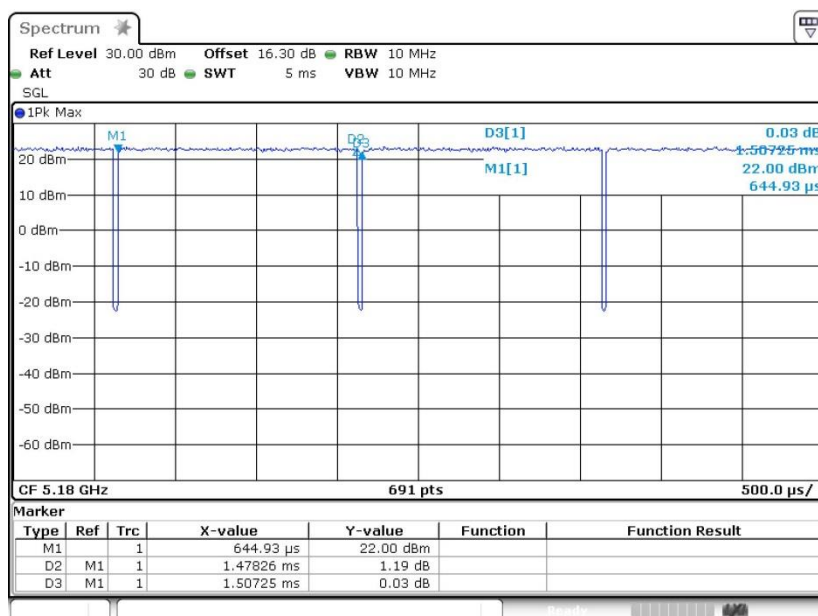
Antenna	Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
1	802.11a	98.08	-	-	10kHz
2	802.11a	98.08	-	-	10kHz
1+2	802.11n HT20	97.62	1.486	0.673	1kHz
1+2	802.11n HT40	97.62	1.486	0.673	1kHz
1+2	802.11ac VHT80	97.62	1.486	0.673	1kHz

802.11a Ant.1

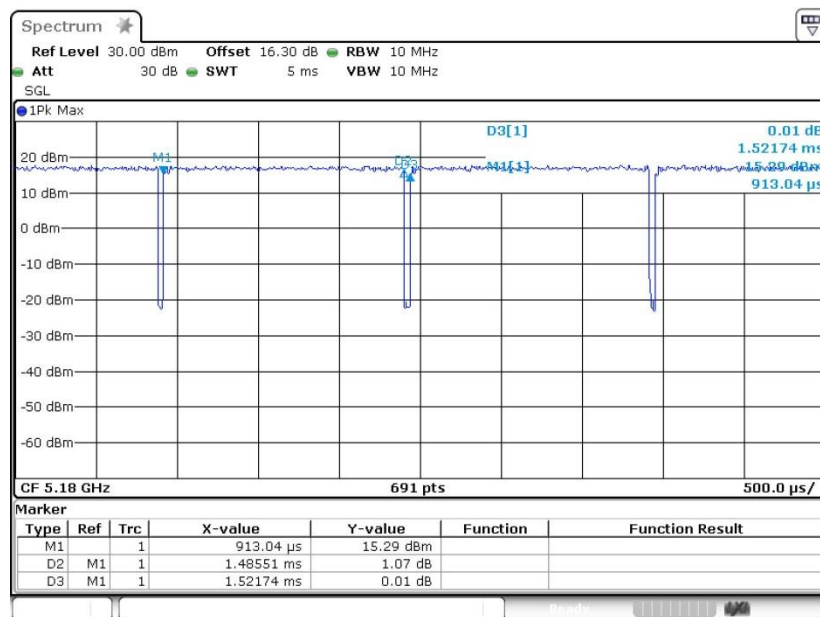




802.11a Ant.2

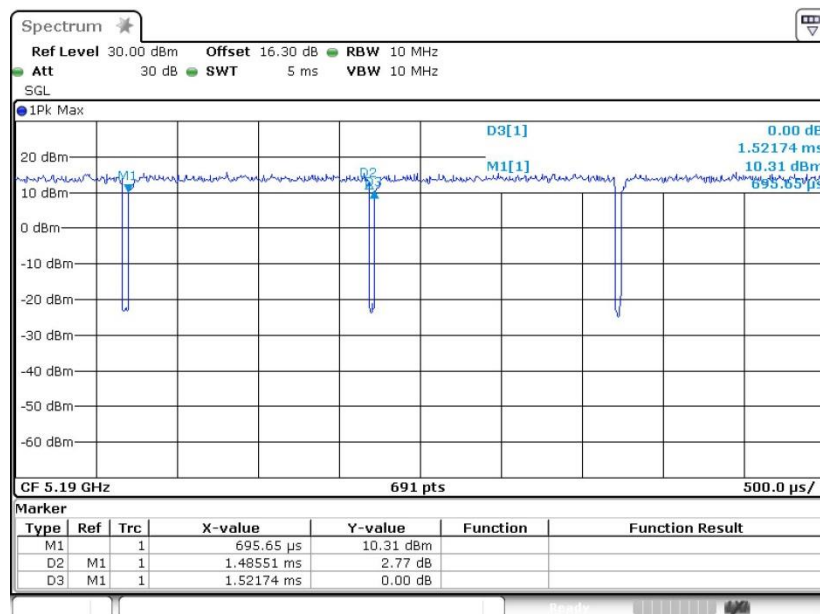


802.11n HT20 Ant.1+2



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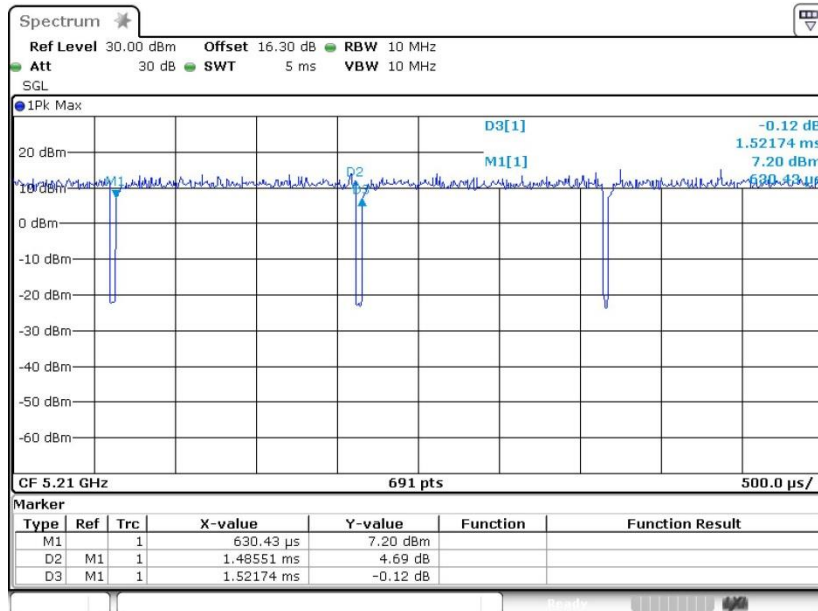
802.11n HT40 Ant.1+2



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802.11ac VHT80 Ant.1+2



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