



FCC RF Test Report

APPLICANT : TP-LINK TECHNOLOGIES CO., LTD.
EQUIPMENT : AC750 Wi-Fi Range Extender with Smart Plug
BRAND NAME : TP-LINK
MODEL NAME : RE270K
FCC ID : TE7RE270K
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Aug. 30, 2016 and testing was completed on Sep. 30, 2016. 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.

Prepared by: Ken Chen / Manager

Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL (SHENZHEN) INC.

**1F & 2F, Building A, Morning Business Center, No. 4003 ShiGu Rd., Xili Town,
Nanshan District, Shenzhen, Guangdong, P. R. 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 Feature of Equipment Under Test	5
1.4 Product Specification of Equipment Under Test	6
1.5 Modification of EUT	6
1.6 Testing Location	7
1.7 Applicable Standards	7
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	8
2.1 Carrier Frequency and Channel	8
2.2 Test Mode	9
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	14
3 TEST RESULT	15
3.1 26dB & 99% Occupied Bandwidth Measurement	15
3.2 Maximum Conducted Output Power Measurement	17
3.3 Power Spectral Density Measurement	19
3.4 Unwanted Emissions Measurement	22
3.5 AC Conducted Emission Measurement	27
3.6 Frequency Stability Measurement	31
3.7 Automatically Discontinue Transmission	32
3.8 Antenna Requirements	33
4 LIST OF MEASURING EQUIPMENT	34
5 UNCERTAINTY OF EVALUATION	35
APPENDIX A. CONDUCTED TEST RESULTS	
APPENDIX B. RADIATED SPURIOUS EMISSION	
APPENDIX C. DUTY CYCLE PLOTS	
APPENDIX D. SETUP PHOTOGRAPHS	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR683003B	Rev. 01	Initial issue of report	Oct. 26, 2016



SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	2.1049 15.403(i)	RSS-247 Section 6	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	RSS-247 Section 6	Maximum Conducted Output Power	FCC ≤ 30 dBm (depend on band)	Pass	-
3.3	15.407(a)	RSS-247 Section 6	Power Spectral Density	FCC ≤ 17 dBm (depend on band)	Pass	-
3.4	15.407(b)	RSS-247 Section 6	Unwanted Emissions	≤ -17, -27 dBm (depend on band)&15.209(a)	Pass	Under limit 0.07 dB at 5725.000 MHz
3.5	15.207	RSS-Gen 8.8	AC Conducted Emission	15.207(a)	Pass	Under limit 15.97 dB at 0.200 MHz
3.6	15.407(g)	-	Frequency Stability	Within Operation Band	Pass	-
3.7	15.407(c)	RSS-247 6.4(2)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.8	15.203 & 15.407(a)	N/A	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

TP-LINK TECHNOLOGIES CO., LTD.

Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park, Shennan Rd,
Nanshan, Shenzhen, China

1.2 Manufacturer

TP-LINK TECHNOLOGIES CO., LTD.

Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park, Shennan Rd,
Nanshan, Shenzhen, China

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	AC750 Wi-Fi Range Extender with Smart Plug
Brand Name	TP-LINK
Model Name	RE270K
FCC ID	TE7RE270K
EUT supports Radios application	WLAN2.4GHz 802.11b/g/n HT20/HT40/ WLAN5GHz 802.11a/n HT20/HT40/ WLAN5GHz 802.11ac VHT20/VHT40/VHT80
EUT Stage	Production Unit

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> 802.11a : 20.95 dBm / 0.1245 W 802.11n HT20 : 20.85 dBm / 0.1216 W 802.11n HT40 : 20.80 dBm / 0.1202 W 802.11ac VHT20 : 20.81 dBm / 0.1205 W 802.11ac VHT40 : 20.78 dBm / 0.1197 W 802.11ac VHT80 : 13.63 dBm / 0.0231 W <5260 MHz ~ 5320 MHz> 802.11a : 20.97 dBm / 0.1250 W 802.11n HT20 : 20.91 dBm / 0.1233 W 802.11n HT40 : 20.75 dBm / 0.1189 W 802.11ac VHT20 : 20.79 dBm / 0.1199 W 802.11ac VHT40 : 20.70 dBm / 0.1175 W 802.11ac VHT80 : 12.42 dBm / 0.0175 W <5500 MHz ~ 5700 MHz > 802.11a : 20.83 dBm / 0.1211 W 802.11n HT20 : 20.25 dBm / 0.1059 W 802.11n HT40 : 20.02 dBm / 0.1005 W 802.11ac VHT20 : 20.23 dBm / 0.1054 W 802.11ac VHT40 : 19.69 dBm / 0.0931 W 802.11ac VHT80 : 12.40 dBm / 0.0174 W
99% Occupied Bandwidth	802.11a : 24.88 MHz 802.11n HT20 : 26.62 MHz 802.11n HT40 : 41.46 MHz 802.11ac VHT20 : 29.97 MHz 802.11ac VHT40 : 42.86 MHz 802.11ac VHT80 : 76.00 MHz
Antenna Type	Dipole Antenna
Antenna Gain	<5180 MHz ~ 5240 MHz> : 1.95 dBi <5260 MHz ~ 5320 MHz> : 1.96 dBi <5500 MHz ~ 5700 MHz> : 1.92 dBi
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)

Note: WLAN operation in 5600 MHz ~ 5650 MHz is notched.

1.5 Modification of EUT

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

1.6 Testing Location

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.	
Test Site Location	1F & 2F,Building A, Morning Business Center, No. 4003 ShiGu Rd., Xili Town, Nanshan District, Shenzhen, Guangdong, P. R. China TEL: +86-755-8637-9589 FAX: +86-755-8637-9595	
Test Site No.	Sporton Site No.	
	TH01-SZ	CO01-SZ

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.	
Test Site Location	No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P. R. China TEL: +86-755- 3320-2398	
Test Site No.	Sporton Site No.	FCC/IC Registration No.
	03CH03-SZ	565805/4086F

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 v01r03
- ♦ ANSI C63.10-2013
- ♦ IC RSS-247 Issue 1
- ♦ IC RSS-Gen Issue 4

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: conducted emission (150 kHz to 30 MHz) and radiated 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.

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		

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

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
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

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.

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0
802.11ac VHT80	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : WLAN 5G Link (Client) + WLAN 5G Link (Master) + AC Load + RJ45 Link



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

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

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



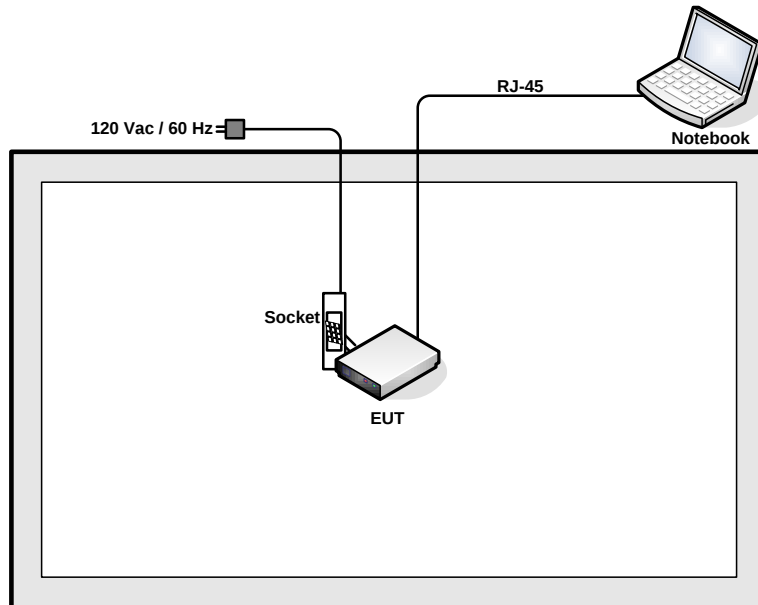
Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11ac VHT20	802.11ac VHT20	802.11ac VHT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I : 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

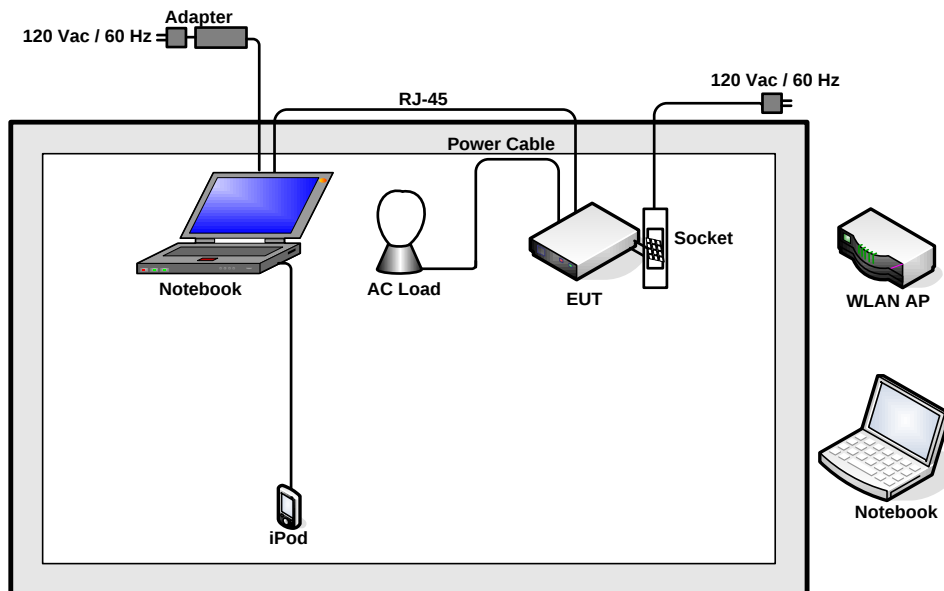
Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11ac VHT80	802.11ac VHT80	802.11ac VHT80
L	Low	-	-	-
M	Middle	42	58	106
H	High	-	-	-

2.3 Connection Diagram of Test System

<Radiated Emission Mode>



<AC Conducted Emission Mode>





2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	D-Link	DIR-820L	KA2IR820LA1	N/A	Unshielded, 1.8 m
2.	Notebook	Lenovo	E450	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	iPod nano 8GB	Apple	MC690ZP/A	FCC DoC	Shielded, 1.2m	N/A
4.	MicroSD Card	SanDisk	8G class 4	FCC DoC	N/A	N/A
5.	DC Power Supply	GWINSTEK	AnritsuGPS-3030D	N/A	N/A	Unshielded, 1.8 m
6.	AC Load	N/A	N/A	N/A	N/A	N/A
7.	Socket	N/A	N/A	N/A	N/A	N/A
8.	Power Cable	N/A	N/A	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 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 dB and 10dB attenuator.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 6 + 10 = 16 \text{ (dB)}\end{aligned}$$

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.

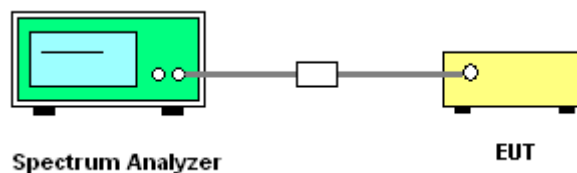
3.1.2 Measuring Instruments

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 v01r03. 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.

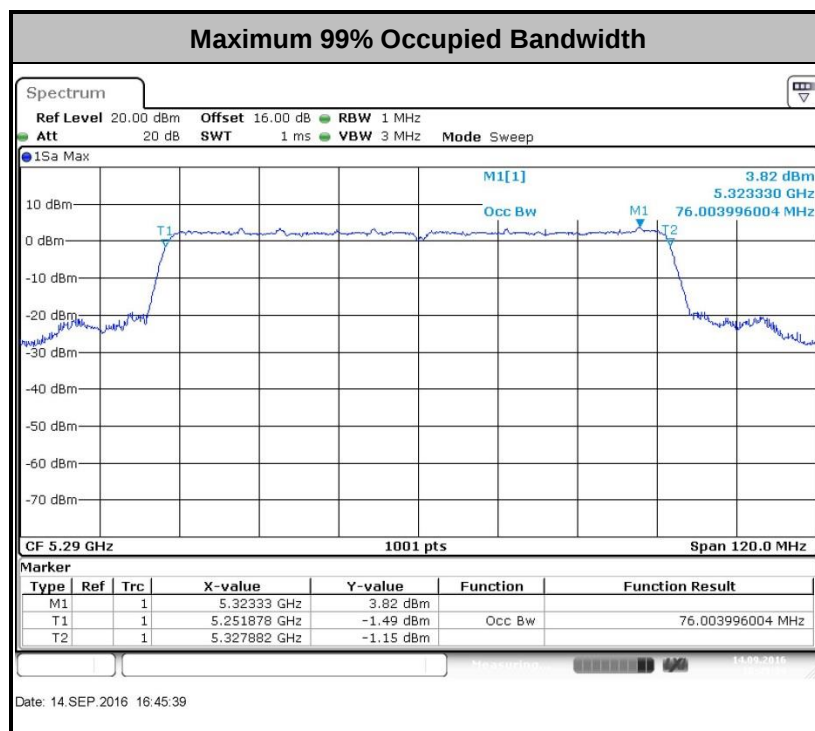
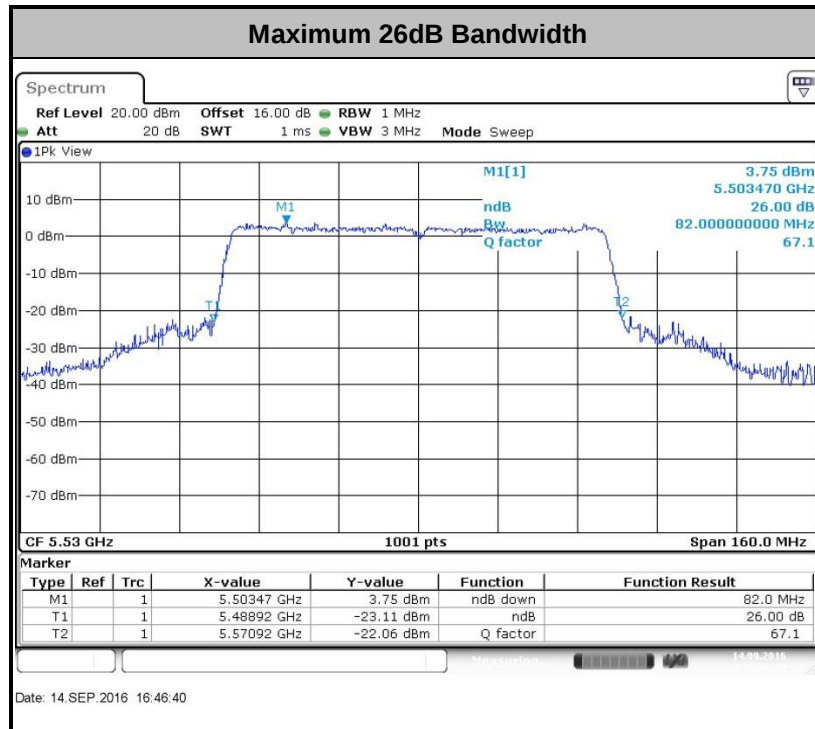
3.1.4 Test Setup





3.1.5 STest Result of 26dB & 99% Occupied Bandwidth

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 1W.

For the 5.47–5.6 GHz and 5.65–5.725 GHz band, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz.

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

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

3.2.2 Measuring Instruments

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

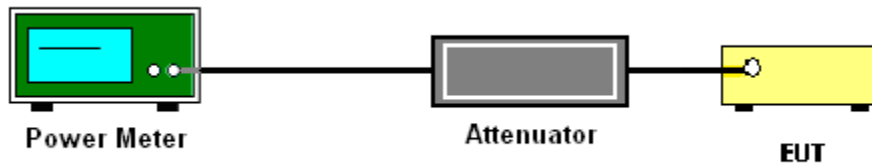
3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03.

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





3.3 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 17dBm in any 1 megahertz band.

For the 5.47–5.6 GHz and 5.65–5.725 GHz band, 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 v01r03.

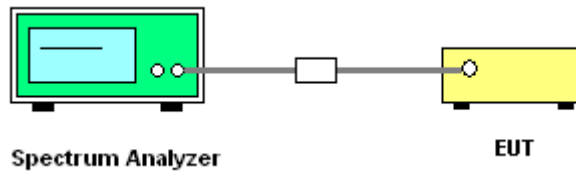
Section F) Maximum power spectral density.

Method SA-2

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

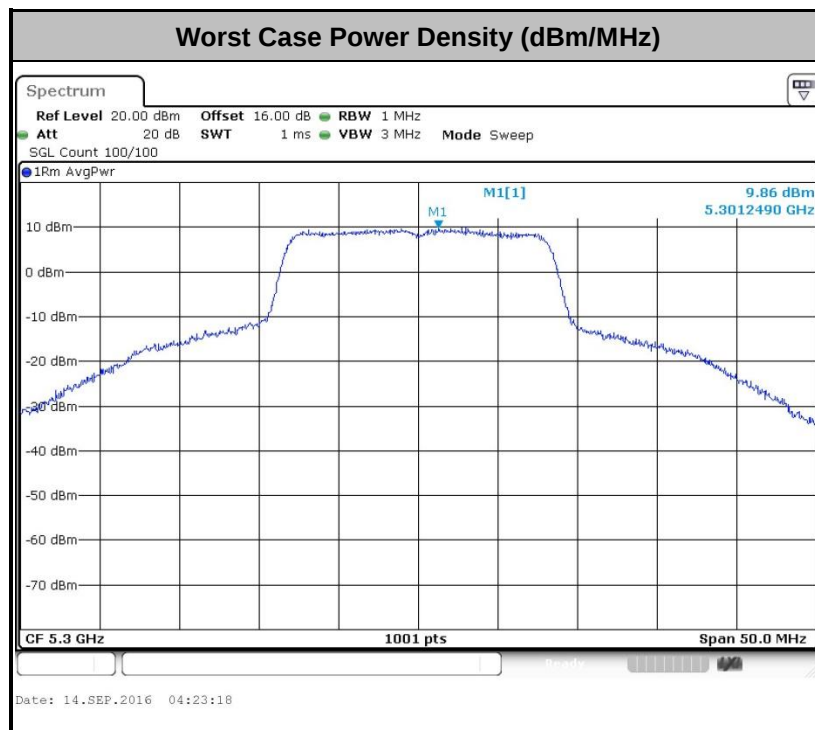
1. The testing follows Method SA-2 of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03.
 - Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 1 MHz.
 - Set VBW $\geq$ 3 MHz.
 - Number of points in sweep $\geq$ 2 Span / RBW.
 - 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.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



Note: Average Power Density (dB) = Measured value+ Duty Factor

3.4 Unwanted Emissions Measurement

This section as specified in FCC Part 15.407(b) is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement. The unwanted emissions shall comply with 15.407(b)(1) to (6), and restricted bands per FCC Part15.205.

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) Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 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)
-17	78.3
- 27	68.3

- (3) KDB789033 D02 v01r03 G)2)c) As specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.

3.4.2 Measuring Instruments

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

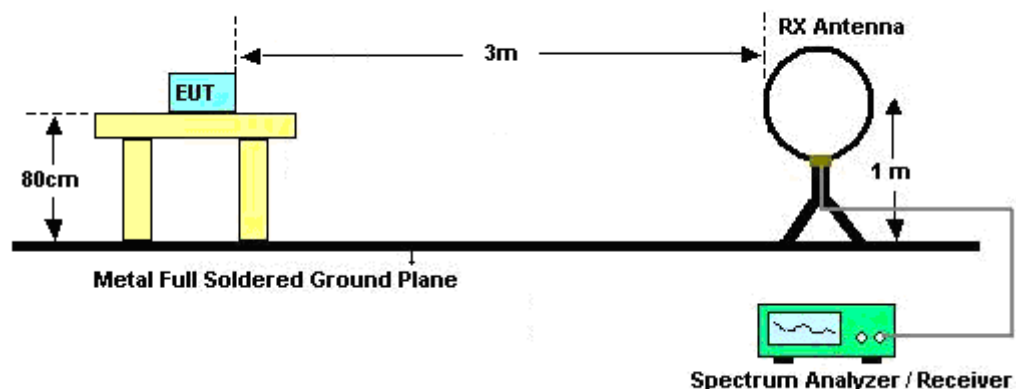
3.4.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03. 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.

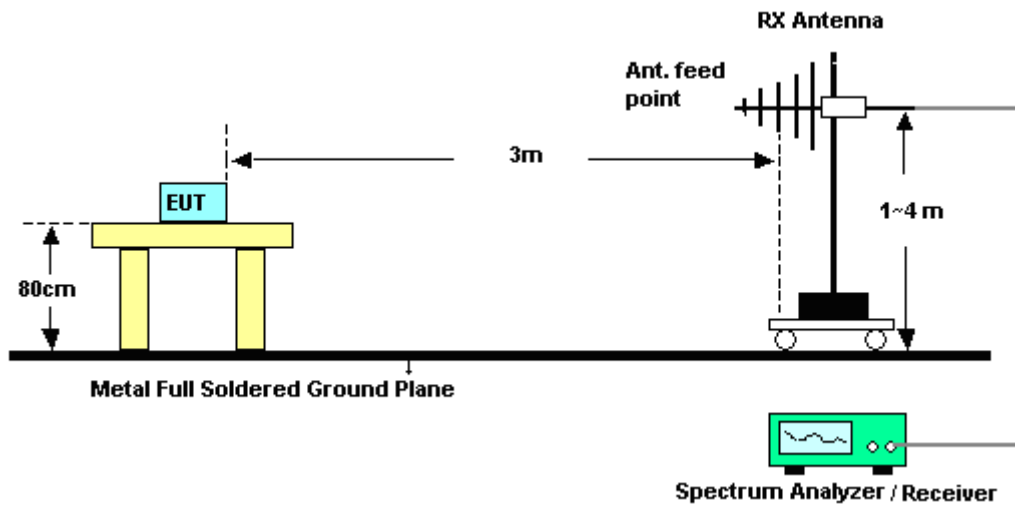
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband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

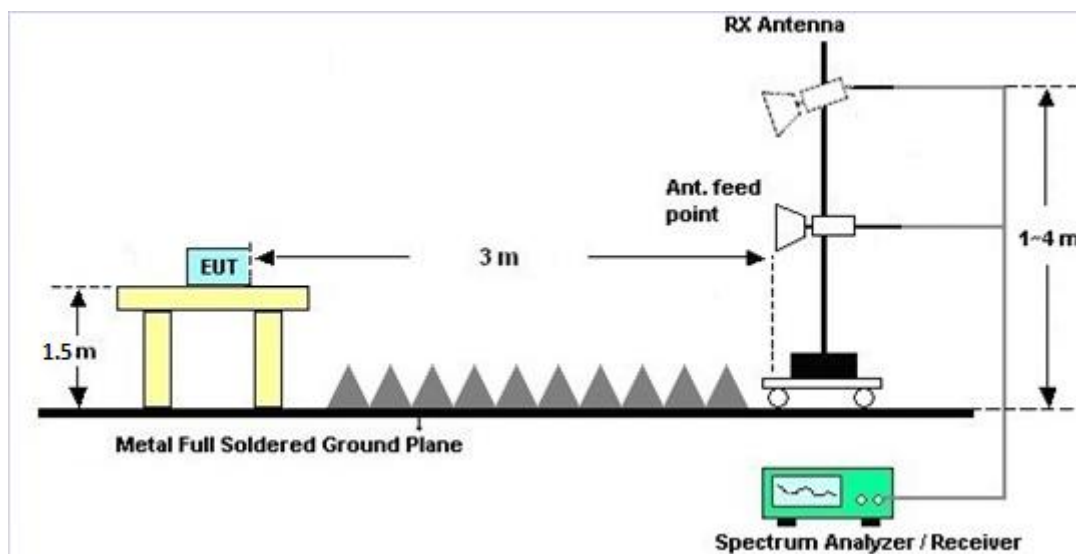
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



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 per 15.31(o) 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 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 (dB μ V)	
	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.

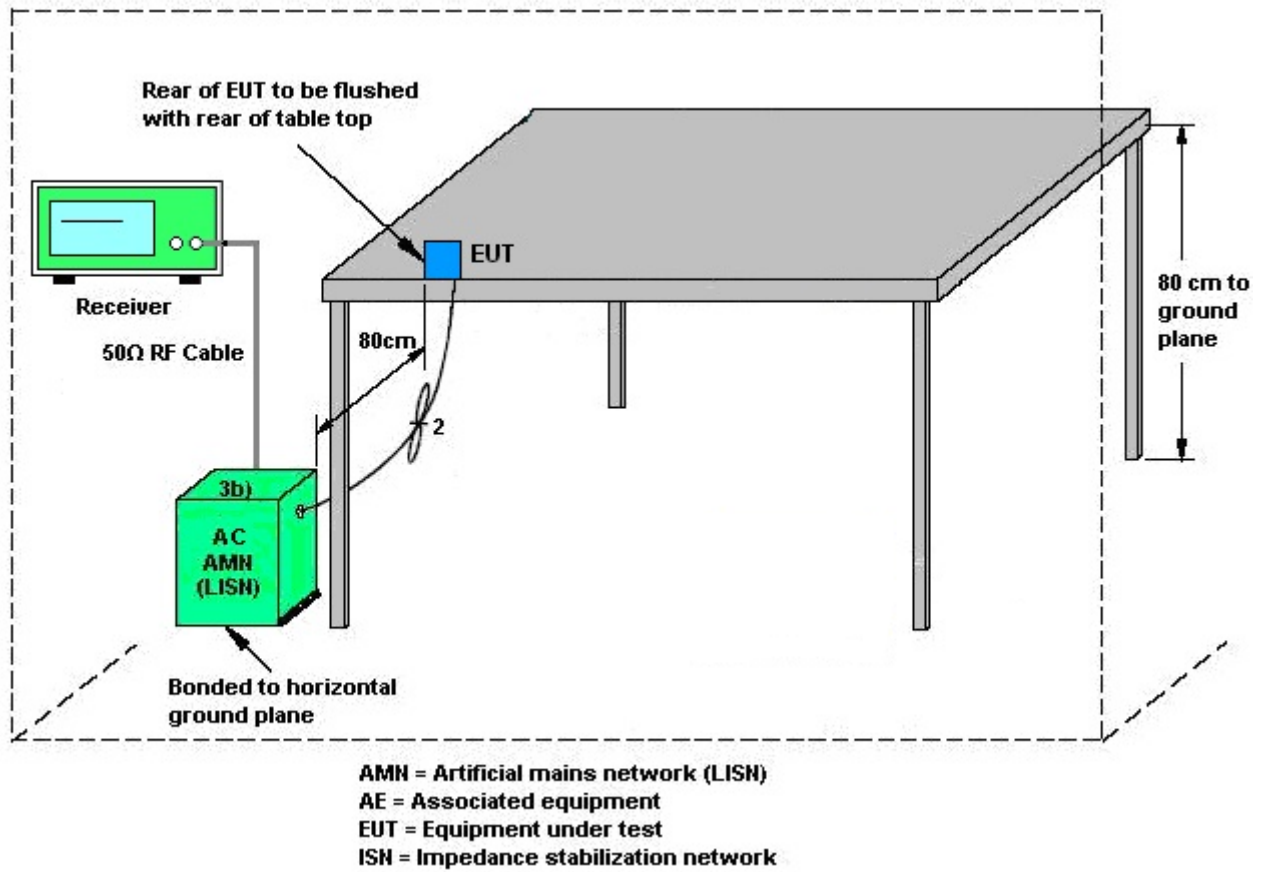
3.5.2 Measuring Instruments

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.

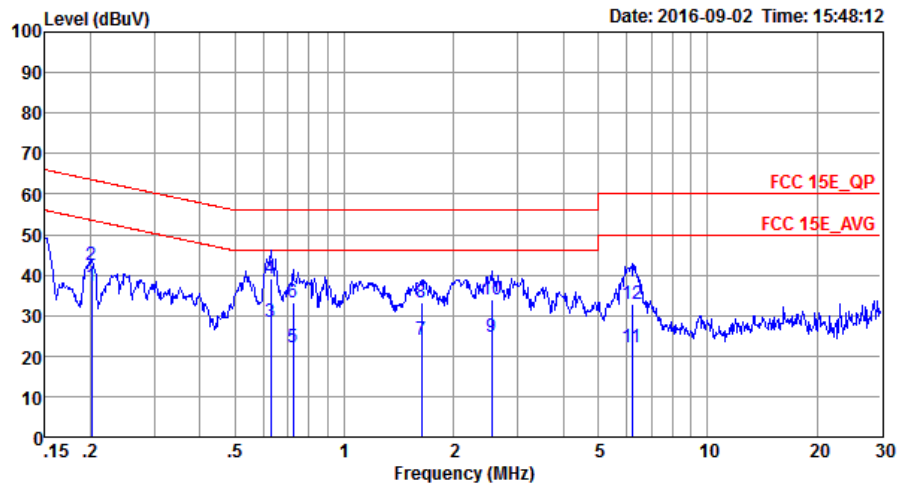
3.5.4 Test Setup





3.5.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	21~23℃
Test Engineer :	Tao Cheng	Relative Humidity :	41~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN 5G Link (Client) + WLAN 5G Link (Master) + AC Load + RJ45 Link		

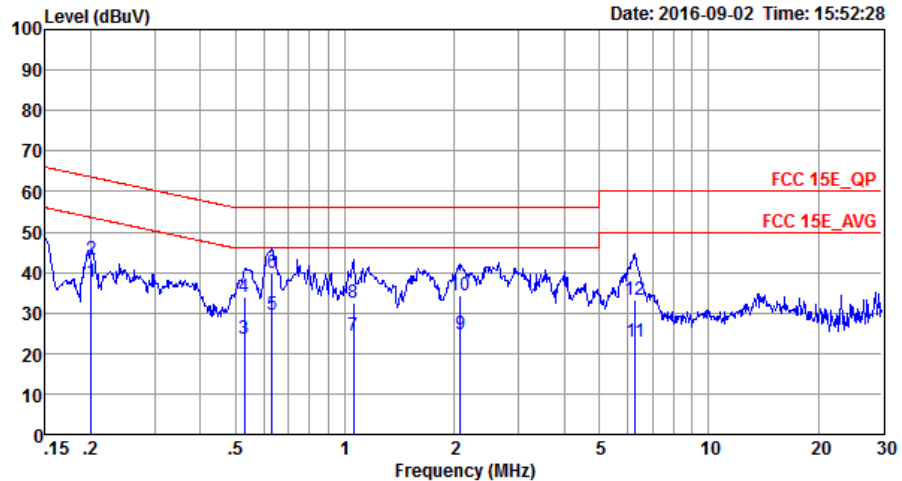


Site : C001-SZ
Condition: FCC 15E_QP LISN_20160509 LINE

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 *	0.20	37.11	-16.43	53.54	26.50	0.11	10.50	Average
2	0.20	42.41	-21.13	63.54	31.80	0.11	10.50	QP
3	0.63	28.59	-17.41	46.00	18.30	0.11	10.18	Average
4	0.63	39.09	-16.91	56.00	28.80	0.11	10.18	QP
5	0.72	22.07	-23.93	46.00	11.80	0.11	10.16	Average
6	0.72	33.17	-22.83	56.00	22.90	0.11	10.16	QP
7	1.63	24.08	-21.92	46.00	13.80	0.11	10.17	Average
8	1.63	33.28	-22.72	56.00	23.00	0.11	10.17	QP
9	2.54	24.70	-21.30	46.00	14.39	0.12	10.19	Average
10	2.54	33.80	-22.20	56.00	23.49	0.12	10.19	QP
11	6.19	22.24	-27.76	50.00	11.80	0.16	10.28	Average
12	6.19	32.84	-27.16	60.00	22.40	0.16	10.28	QP



Test Mode :	Mode 1	Temperature :	21~23℃
Test Engineer :	Tao Cheng	Relative Humidity :	41~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN 5G Link (Client) + WLAN 5G Link (Master) + AC Load + RJ45 Link		



Site : CO01-SZ
Condition: FCC 15E_QP LISN_20160509 NEUTRAL

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1 *	0.20	37.61	-15.97	53.58	27.00	0.11	10.50	Average
2	0.20	43.01	-20.57	63.58	32.40	0.11	10.50	QP
3	0.53	23.52	-22.48	46.00	13.20	0.11	10.21	Average
4	0.53	34.02	-21.98	56.00	23.70	0.11	10.21	QP
5	0.63	29.69	-16.31	46.00	19.40	0.11	10.18	Average
6	0.63	39.99	-16.01	56.00	29.70	0.11	10.18	QP
7	1.05	24.27	-21.73	46.00	14.00	0.11	10.16	Average
8	1.05	32.37	-23.63	56.00	22.10	0.11	10.16	QP
9	2.08	24.88	-21.12	46.00	14.60	0.11	10.17	Average
10	2.08	34.38	-21.62	56.00	24.10	0.11	10.17	QP
11	6.29	22.85	-27.15	50.00	12.41	0.16	10.28	Average
12	6.29	33.25	-26.75	60.00	22.81	0.16	10.28	QP

3.6 Frequency Stability Measurement

3.6.1 Limit of Frequency Stability

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

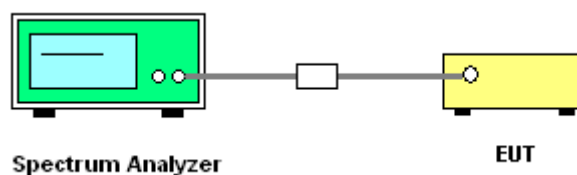
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

1. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
2. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
3. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

3.6.4 Test Setup



3.6.5 Test Result of Frequency Stability

Please refer to Appendix A.



3.7 Automatically Discontinue Transmission

3.7.1 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.

3.7.2 Measuring Instruments

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

3.7.3 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.



3.8 Antenna Requirements

3.8.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2), 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.

3.8.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.8.3 Antenna Gain

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



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	9kHz~40GHz	May 07, 2016	Sep. 14, 2016~ Sep. 22, 2016	May 06, 2017	Conducted (TH01-SZ)
Pulse Power Sensor	Anritsu	MA2411B	1207253	30MHz~40GHz	Jan. 12, 2016	Sep. 14, 2016~ Sep. 22, 2016	Jan. 11, 2017	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1218010	50MHz Bandwidth	Jan. 12, 2016	Sep. 14, 2016~ Sep. 22, 2016	Jan. 11, 2017	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhonggroup	LP-150U	H2014081803	-40~+150°C	Jul. 16, 2016	Sep. 14, 2016~ Sep. 22, 2016	Jul. 15, 2017	Conducted (TH01-SZ)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	May 07, 2016	Sep. 28, 2016~ Sep. 30, 2016	May 06, 2017	Radiation (03CH03-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz	May 07, 2016	Sep. 28, 2016~ Sep. 30, 2016	May 06, 2017	Radiation (03CH03-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	May 07, 2016	Sep. 28, 2016~ Sep. 30, 2016	May 06, 2017	Radiation (03CH03-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz~2GHz	May 21, 2016	Sep. 28, 2016~ Sep. 30, 2016	May 20, 2017	Radiation (03CH03-SZ)
Double Ridge Horn Antenna	SCHWARZBEC K	BBHA9120D	9120D-1355	1GHz~18GHz	May 07, 2016	Sep. 28, 2016~ Sep. 30, 2016	May 06, 2017	Radiation (03CH03-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz~40GHz	Aug. 10, 2016	Sep. 28, 2016~ Sep. 30, 2016	Aug. 09, 2017	Radiation (03CH03-SZ)
Amplifier	Burgeon	BPA-530	102210	0.01Hz ~3000MHz	Oct. 20, 2015	Sep. 28, 2016~ Sep. 30, 2016	Oct. 19, 2016	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	AMF-7D-001 01800-30-10 P-R	1943528	1GHz~18GHz	Oct. 20, 2015	Sep. 28, 2016~ Sep. 30, 2016	Oct. 19, 2016	Radiation (03CH03-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5G Hz	Jan. 12, 2016	Sep. 28, 2016~ Sep. 30, 2016	Jan. 11, 2017	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 16, 2016	Sep. 28, 2016~ Sep. 30, 2016	Jul. 15, 2017	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	Sep. 28, 2016~ Sep. 30, 2016	NCR	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Sep. 28, 2016~ Sep. 30, 2016	NCR	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Sep. 28, 2016~ Sep. 30, 2016	NCR	Radiation (03CH03-SZ)
EMI Receiver	R&S	ESCI7	100724	9kHz~3GHz	Nov. 23, 2015	Sep. 02, 2016	Nov. 22, 2016	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103892	9kHz~30MHz	Jan. 12, 2016	Sep. 02, 2016	Jan. 11, 2017	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	MessTec	3816/2SH	00103912	9kHz~30MHz	Jan. 12, 2016	Sep. 02, 2016	Jan. 11, 2017	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000891	100Vac~250Vac	Jul. 16, 2016	Sep. 02, 2016	Jul. 15, 2017	Conduction (CO01-SZ)
Pulse Limiter	COM-POWER	LIT-153 Transient Limiter	53139	150kHz~30MHz	Oct. 20, 2015	Sep. 02, 2016	Oct. 19, 2016	Conduction (CO01-SZ)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.5dB
--	-------

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% ($U = 2Uc(y)$)	4.8dB
--	-------

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

Test Engineer:	Sam Zheng	Temperature:	24~26	°C
Test Date:	2016/9/14 ~ 2016/9/22	Relative Humidity:	50~53	%

TEST RESULTS DATA
26dB and 99% OBW

Band I								
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)	IC 99% Bandwidth Power Limit (dBm)	IC 99% Bandwidth EIRP Limit (dBm)
11a	6Mbps	1	36	5180	18.48	28.82	-	22.67
11a	6Mbps	1	44	5220	20.18	31.62	-	23.01
11a	6Mbps	1	48	5240	20.23	35.96	-	23.01
HT20	MCS0	1	36	5180	22.43	34.57	-	23.01
HT20	MCS0	1	44	5220	25.32	40.46	-	23.01
HT20	MCS0	1	48	5240	26.02	38.91	-	23.01
HT40	MCS0	1	38	5190	36.56	41.45	-	23.01
HT40	MCS0	1	46	5230	40.16	72.11	-	23.01
VHT20	MCS0	1	36	5180	23.33	34.37	-	23.01
VHT20	MCS0	1	44	5220	25.42	40.26	-	23.01
VHT20	MCS0	1	48	5240	26.07	40.66	-	23.01
VHT40	MCS0	1	38	5190	36.46	41.45	-	23.01
VHT40	MCS0	1	46	5230	40.66	72.29	-	23.01
VHT80	MCS0	1	42	5210	75.88	81.84	-	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
11a	6Mbps	1	36	5180	0.60	20.25	24.00	1.95	Pass
11a	6Mbps	1	44	5220	0.60	20.78	24.00	1.95	Pass
11a	6Mbps	1	48	5240	0.60	20.95	24.00	1.95	Pass
HT20	MCS0	1	36	5180	0.64	20.16	24.00	1.95	Pass
HT20	MCS0	1	44	5220	0.64	20.67	24.00	1.95	Pass
HT20	MCS0	1	48	5240	0.64	20.85	24.00	1.95	Pass
HT40	MCS0	1	38	5190	1.14	15.64	24.00	1.95	Pass
HT40	MCS0	1	46	5230	1.14	20.80	24.00	1.95	Pass
VHT20	MCS0	1	36	5180	0.60	20.02	24.00	1.95	Pass
VHT20	MCS0	1	44	5220	0.60	20.64	24.00	1.95	Pass
VHT20	MCS0	1	48	5240	0.60	20.81	24.00	1.95	Pass
VHT40	MCS0	1	38	5190	1.14	15.18	24.00	1.95	Pass
VHT40	MCS0	1	46	5230	1.14	20.78	24.00	1.95	Pass
VHT80	MCS0	1	42	5210	2.03	13.63	24.00	1.95	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
11a	6Mbps	1	36	5180	0.60	9.20	11.00	1.95	Pass
11a	6Mbps	1	44	5220	0.60	9.21	11.00	1.95	Pass
11a	6Mbps	1	48	5240	0.60	9.79	11.00	1.95	Pass
HT20	MCS0	1	36	5180	0.64	8.44	11.00	1.95	Pass
HT20	MCS0	1	44	5220	0.64	9.22	11.00	1.95	Pass
HT20	MCS0	1	48	5240	0.64	9.85	11.00	1.95	Pass
HT40	MCS0	1	38	5190	1.14	0.83	11.00	1.95	Pass
HT40	MCS0	1	46	5230	1.14	6.58	11.00	1.95	Pass
VHT20	MCS0	1	36	5180	0.60	9.16	11.00	1.95	Pass
VHT20	MCS0	1	44	5220	0.60	9.60	11.00	1.95	Pass
VHT20	MCS0	1	48	5240	0.60	9.70	11.00	1.95	Pass
VHT40	MCS0	1	38	5190	1.14	0.65	11.00	1.95	Pass
VHT40	MCS0	1	46	5230	1.14	6.38	11.00	1.95	Pass
VHT80	MCS0	1	42	5210	2.03	-3.52	11.00	1.95	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)
11a	6M bps	1	52	5260	21.33	36.66	23.98	30.00	23.98
11a	6M bps	1	60	5300	22.18	36.76	23.98	30.00	23.98
11a	6M bps	1	64	5320	18.18	25.92	23.60	29.60	23.98
HT20	MCS 0	1	52	5260	26.12	41.96	23.98	30.00	23.98
HT20	MCS 0	1	60	5300	26.62	42.21	23.98	30.00	23.98
HT20	MCS 0	1	64	5320	18.73	30.42	23.73	29.73	23.98
HT40	MCS 0	1	54	5270	41.46	72.65	23.98	30.00	23.98
HT40	MCS 0	1	62	5310	36.46	41.81	23.98	30.00	23.98
VHT20	MCS 0	1	52	5260	26.02	41.26	23.98	30.00	23.98
VHT20	MCS 0	1	60	5300	25.32	38.61	23.98	30.00	23.98
VHT20	MCS 0	1	64	5320	18.63	25.08	23.70	29.70	23.98
VHT40	MCS 0	1	54	5270	42.86	71.75	23.98	30.00	23.98
VHT40	MCS 0	1	62	5310	36.46	41.54	23.98	30.00	23.98
VHT80	MCS 0	1	58	5290	76.00	81.84	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
11a	6M bps	1	52	5260	0.60	20.82	23.98	1.96	26.99	Pass
11a	6M bps	1	60	5300	0.60	20.97	23.98	1.96	26.99	Pass
11a	6M bps	1	64	5320	0.60	19.08	23.98	1.96	26.99	Pass
HT20	MCS 0	1	52	5260	0.64	20.73	23.98	1.96	26.99	Pass
HT20	MCS 0	1	60	5300	0.64	20.91	23.98	1.96	26.99	Pass
HT20	MCS 0	1	64	5320	0.64	18.54	23.98	1.96	26.99	Pass
HT40	MCS 0	1	54	5270	1.14	20.75	23.98	1.96	26.99	Pass
HT40	MCS 0	1	62	5310	1.14	14.96	23.98	1.96	26.99	Pass
VHT20	MCS 0	1	52	5260	0.60	20.16	23.98	1.96	26.99	Pass
VHT20	MCS 0	1	60	5300	0.60	20.79	23.98	1.96	26.99	Pass
VHT20	MCS 0	1	64	5320	0.60	18.05	23.98	1.96	26.99	Pass
VHT40	MCS 0	1	54	5270	1.14	20.70	23.98	1.96	26.99	Pass
VHT40	MCS 0	1	62	5310	1.14	14.94	23.98	1.96	26.99	Pass
VHT80	MCS 0	1	58	5290	2.03	12.42	23.98	1.96	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
11a	6M bps	1	52	5260	0.60	10.03	11.00	1.96	Pass
11a	6M bps	1	60	5300	0.60	10.46	11.00	1.96	Pass
11a	6M bps	1	64	5320	0.60	8.29	11.00	1.96	Pass
HT20	MCS 0	1	52	5260	0.64	9.91	11.00	1.96	Pass
HT20	MCS 0	1	60	5300	0.64	10.42	11.00	1.96	Pass
HT20	MCS 0	1	64	5320	0.64	8.03	11.00	1.96	Pass
HT40	MCS 0	1	54	5270	1.14	6.65	11.00	1.96	Pass
HT40	MCS 0	1	62	5310	1.14	0.53	11.00	1.96	Pass
VHT20	MCS 0	1	52	5260	0.60	9.68	11.00	1.96	Pass
VHT20	MCS 0	1	60	5300	0.60	9.72	11.00	1.96	Pass
VHT20	MCS 0	1	64	5320	0.60	7.18	11.00	1.96	Pass
VHT40	MCS 0	1	54	5270	1.14	6.70	11.00	1.96	Pass
VHT40	MCS 0	1	62	5310	1.14	0.62	11.00	1.96	Pass
VHT80	MCS 0	1	58	5290	2.03	-4.47	11.00	1.96	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)
11a	6M bps	1	100	5500	18.03	25.82	23.56	29.56	23.98
11a	6M bps	1	116	5580	24.88	38.31	23.98	30.00	23.98
11a	6M bps	1	140	5700	17.93	23.53	23.54	29.54	23.98
HT20	MCS 0	1	100	5500	18.73	25.38	23.73	29.73	23.98
HT20	MCS 0	1	116	5580	26.62	41.66	23.98	30.00	23.98
HT20	MCS 0	1	140	5700	18.33	22.08	23.63	29.63	23.98
HT40	MCS 0	1	102	5510	36.56	41.63	23.98	30.00	23.98
HT40	MCS 0	1	110	5550	40.46	77.77	23.98	30.00	23.98
HT40	MCS 0	1	134	5670	36.96	47.29	23.98	30.00	23.98
VHT20	MCS 0	1	100	5500	18.58	25.23	23.69	29.69	23.98
VHT20	MCS 0	1	116	5580	29.97	43.56	23.98	30.00	23.98
VHT20	MCS 0	1	140	5700	18.43	21.88	23.66	29.66	23.98
VHT40	MCS 0	1	102	5510	36.46	41.90	23.98	30.00	23.98
VHT40	MCS 0	1	110	5550	38.86	69.32	23.98	30.00	23.98
VHT40	MCS 0	1	134	5670	36.86	45.76	23.98	30.00	23.98
VHT80	MCS 0	1	106	5530	75.88	82.00	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
11a	6M bps	1	100	5500	0.60	18.18	30.00	1.92	26.99	Pass
11a	6M bps	1	116	5580	0.60	20.83	24.00	1.92	26.99	Pass
11a	6M bps	1	140	5700	0.60	16.55	23.98	1.92	26.99	Pass
HT20	MCS 0	1	100	5500	15.00	17.64	23.98	1.92	26.99	Pass
HT20	MCS 0	1	116	5580	15.00	20.25	23.98	1.92	26.99	Pass
HT20	MCS 0	1	140	5700	15.00	15.99	23.98	1.92	26.99	Pass
HT40	MCS 0	1	102	5510	1.14	14.94	23.98	1.92	26.99	Pass
HT40	MCS 0	1	110	5550	1.14	20.02	23.98	1.92	26.99	Pass
HT40	MCS 0	1	134	5670	1.14	17.22	23.98	1.92	26.99	Pass
VHT20	MCS 0	1	100	5500	0.60	17.18	23.98	1.92	26.99	Pass
VHT20	MCS 0	1	116	5580	0.60	20.23	23.98	1.92	26.99	Pass
VHT20	MCS 0	1	140	5700	0.60	15.50	23.98	1.92	26.99	Pass
VHT40	MCS 0	1	102	5510	1.14	14.53	23.98	1.92	26.99	Pass
VHT40	MCS 0	1	110	5550	1.14	19.69	23.98	1.92	26.99	Pass
VHT40	MCS 0	1	134	5670	1.14	16.94	23.98	1.92	26.99	Pass
VHT80	MCS 0	1	106	5530	2.03	12.40	23.98	1.92	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
11a	6M bps	1	100	5500	0.60	7.36	11.00	1.92	Pass
11a	6M bps	1	116	5580	0.60	10.10	11.00	1.92	Pass
11a	6M bps	1	140	5700	0.60	5.73	11.00	1.92	Pass
HT20	MCS 0	1	100	5500	0.64	6.60	11.00	1.92	Pass
HT20	MCS 0	1	116	5580	0.64	9.01	11.00	1.92	Pass
HT20	MCS 0	1	140	5700	0.64	4.53	11.00	1.92	Pass
HT40	MCS 0	1	102	5510	1.14	0.85	11.00	1.92	Pass
HT40	MCS 0	1	110	5550	1.14	5.53	11.00	1.92	Pass
HT40	MCS 0	1	134	5670	1.14	2.57	11.00	1.92	Pass
VHT20	MCS 0	1	100	5500	0.60	6.24	11.00	1.92	Pass
VHT20	MCS 0	1	116	5580	0.60	9.59	11.00	1.92	Pass
VHT20	MCS 0	1	140	5700	0.60	4.37	11.00	1.92	Pass
VHT40	MCS 0	1	102	5510	1.14	0.16	11.00	1.92	Pass
VHT40	MCS 0	1	110	5550	1.14	5.13	11.00	1.92	Pass
VHT40	MCS 0	1	134	5670	1.14	2.94	11.00	1.92	Pass
VHT80	MCS 0	1	106	5530	2.03	-4.26	11.00	1.92	Pass

TEST RESULTS DATA
Frequency Stability

Band I									
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)
11a	6Mbps	1	36	5180	5180.000	0.000	0.00	20	90
11a	6Mbps	1	36	5180	5179.975	-0.025	-4.83	20	135
11a	6Mbps	1	36	5180	5179.975	-0.025	-4.83	20	120
11a	6Mbps	1	36	5180	5180.025	0.025	4.83	-30	120
11a	6Mbps	1	36	5180	5179.975	-0.025	-4.83	50	120

Band II									
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)
11a	6Mbps	1	64	5320	5319.975	-0.025	-4.70	20	90
11a	6Mbps	1	64	5320	5319.975	-0.025	-4.70	20	135
11a	6Mbps	1	64	5320	5320.000	0.000	0.00	20	120
11a	6Mbps	1	64	5320	5320.025	0.025	4.70	-30	120
11a	6Mbps	1	64	5320	5319.975	-0.025	-4.70	50	120

Band III									
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)
11a	6Mbps	1	100	5500	5500.000	0.000	0.00	20	90
11a	6Mbps	1	100	5500	5499.975	-0.025	-4.55	20	135
11a	6Mbps	1	100	5500	5500.000	0.000	0.00	20	120
11a	6Mbps	1	100	5500	5500.025	0.025	4.55	-30	120
11a	6Mbps	1	100	5500	5499.975	-0.025	-4.55	50	120



Appendix B. Radiated Spurious Emission

Band 1 - 5150~5250MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 36 5180MHz		5149.76	65.77	-8.23	74	59.25	32.93	7.26	33.67	151	122	P	H
		5149.5	53.05	-0.95	54	46.53	32.93	7.26	33.67	151	122	A	H
	*	5180	109.78	-	-	103.12	32.94	7.37	33.65	151	122	P	H
	*	5180	100.68	-	-	94.02	32.94	7.37	33.65	151	122	A	H
		5148.98	60.24	-13.76	74	53.72	32.93	7.26	33.67	150	239	P	V
		5150	47.66	-6.34	54	41.14	32.93	7.26	33.67	150	239	A	V
	*	5180	104.21	-	-	97.55	32.94	7.37	33.65	150	239	P	V
	*	5180	96.46	-	-	89.8	32.94	7.37	33.65	150	239	A	V
802.11a CH 44 5220MHz		5127.92	51.63	-22.37	74	45.13	32.93	7.26	33.69	150	121	P	H
		5128.7	40.72	-13.28	54	34.22	32.93	7.26	33.69	150	121	A	H
	*	5220	111.04	-	-	104.37	32.94	7.37	33.64	150	121	P	H
	*	5220	101.69	-	-	95.02	32.94	7.37	33.64	150	121	A	H
		5441.52	54.02	-19.98	74	47.08	32.99	7.43	33.48	150	121	P	H
		5356.08	42.45	-11.55	54	35.62	32.97	7.39	33.53	150	121	A	H
		5140.66	47.79	-26.21	74	41.29	32.93	7.26	33.69	152	241	P	V
		5149.24	37.24	-16.76	54	30.72	32.93	7.26	33.67	152	241	A	V
	*	5220	105.07	-	-	98.4	32.94	7.37	33.64	152	241	P	V
	*	5220	96.67	-	-	90	32.94	7.37	33.64	152	241	A	V
		5359.2	49.41	-24.59	74	42.58	32.97	7.39	33.53	152	241	P	V
		5354.16	37.96	-16.04	54	31.13	32.97	7.39	33.53	152	241	A	V



802.11a CH 48 5240MHz		5141.18	51.08	-22.92	74	44.58	32.93	7.26	33.69	160	125	P	H
		5148.98	40.03	-13.97	54	33.51	32.93	7.26	33.67	160	125	A	H
	*	5240	110.84	-	-	104.14	32.95	7.37	33.62	160	125	P	H
	*	5240	101.73	-	-	95.03	32.95	7.37	33.62	160	125	A	H
		5385.84	53.81	-20.19	74	46.96	32.98	7.39	33.52	160	125	P	H
		5359.68	42.08	-11.92	54	35.25	32.97	7.39	33.53	160	125	A	H
		5149.76	49.14	-24.86	74	42.62	32.93	7.26	33.67	158	241	P	V
		5149.24	37.84	-16.16	54	31.32	32.93	7.26	33.67	158	241	A	V
	*	5240	105.87	-	-	99.17	32.95	7.37	33.62	158	241	P	V
	*	5240	97.16	-	-	90.46	32.95	7.37	33.62	158	241	A	V
		5400.72	50.19	-23.81	74	43.32	32.98	7.39	33.5	158	241	P	V
		5353.2	38.65	-15.35	54	31.82	32.97	7.39	33.53	158	241	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	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 36 5180MHz		10360	53.11	-20.89	74	61.82	39.71	10.58	59	152	260	P	H
		10360	44.45	-9.55	54	53.16	39.71	10.58	59	152	260	A	H
		15540	48.9	-25.1	74	57.58	37.97	13.04	59.69	189	238	P	H
		10360	50.68	-23.32	74	59.39	39.71	10.58	59	152	260	P	V
		15540	50.68	-23.32	74	59.36	37.97	13.04	59.69	189	238	P	V
802.11a CH 44 5220MHz		10440	52.41	-21.59	74	61	39.85	10.58	59.02	125	230	P	H
		10440	44.06	-9.94	54	52.65	39.85	10.58	59.02	125	230	A	H
		15660	51.63	-22.37	74	60.35	37.88	13.15	59.75	110	225	P	H
		15660	42.9	-11.1	54	51.62	37.88	13.15	59.75	110	225	A	H
		10440	54.62	-19.38	74	63.21	39.85	10.58	59.02	125	230	P	V
		10440	46.07	-7.93	54	54.66	39.85	10.58	59.02	125	230	A	V
		15660	55.23	-18.77	74	63.95	37.88	13.15	59.75	110	225	P	V
		15660	46.23	-7.77	54	54.95	37.88	13.15	59.75	110	225	A	V
802.11a CH 48 5240MHz		10480	53.61	-20.39	74	62.09	39.96	10.59	59.03	149	289	P	H
		10480	45.16	-8.84	54	53.64	39.96	10.59	59.03	149	289	A	H
		15720	51.16	-22.84	74	59.9	37.82	13.23	59.79	139	291	P	H
		15720	41.9	-12.1	54	50.64	37.82	13.23	59.79	139	291	A	H
		10480	56.26	-17.74	74	64.74	39.96	10.59	59.03	149	289	P	V
		10480	48.03	-5.97	54	56.51	39.96	10.59	59.03	149	289	A	V
		15720	54.99	-19.01	74	63.73	37.82	13.23	59.79	139	291	P	V
		15720	45.87	-8.13	54	54.61	37.82	13.23	59.79	139	291	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	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 36 5180MHz		5146.9	63.31	-10.69	74	56.79	32.93	7.26	33.67	150	124	P	H
		5149.5	53.13	-0.87	54	46.61	32.93	7.26	33.67	150	124	A	H
	*	5180	109.38	-	-	102.72	32.94	7.37	33.65	150	124	P	H
	*	5180	100.68	-	-	94.02	32.94	7.37	33.65	150	124	A	H
		5149.76	62.71	-11.29	74	56.19	32.93	7.26	33.67	153	246	P	V
		5149.24	49.82	-4.18	54	43.3	32.93	7.26	33.67	153	246	A	V
	*	5180	103.76	-	-	97.1	32.94	7.37	33.65	153	246	P	V
	*	5180	95.14	-	-	88.48	32.94	7.37	33.65	153	246	A	V
802.11n HT20 CH 44 5220MHz		5142.74	53	-21	74	46.5	32.93	7.26	33.69	150	123	P	H
		5132.6	41.85	-12.15	54	35.35	32.93	7.26	33.69	150	123	A	H
	*	5220	111.17	-	-	104.5	32.94	7.37	33.64	150	123	P	H
	*	5220	101.72	-	-	95.05	32.94	7.37	33.64	150	123	A	H
		5356.56	55.24	-18.76	74	48.41	32.97	7.39	33.53	150	123	P	H
		5355.36	43.31	-10.69	54	36.48	32.97	7.39	33.53	150	123	A	H
		5143.52	49.07	-24.93	74	42.57	32.93	7.26	33.69	154	244	P	V
		5147.68	38.35	-15.65	54	31.83	32.93	7.26	33.67	154	244	A	V
	*	5220	105.73	-	-	99.06	32.94	7.37	33.64	154	244	P	V
	*	5220	97.15	-	-	90.48	32.94	7.37	33.64	154	244	A	V
		5420.16	49.78	-24.22	74	42.87	32.98	7.43	33.5	154	244	P	V
		5350.08	38.65	-15.35	54	31.82	32.97	7.39	33.53	154	244	A	V



802.11n HT20 CH 48 5240MHz		5102.7	51.23	-22.77	74	44.85	32.92	7.16	33.7	155	125	P	H
		5147.94	40.63	-13.37	54	34.11	32.93	7.26	33.67	155	125	A	H
	*	5240	111	-	-	104.3	32.95	7.37	33.62	155	125	P	H
	*	5240	102.17	-	-	95.47	32.95	7.37	33.62	155	125	A	H
		5396.4	54.65	-19.35	74	47.8	32.98	7.39	33.52	155	125	P	H
		5350.8	42.86	-11.14	54	36.03	32.97	7.39	33.53	155	125	A	H
		5062.66	49.5	-24.5	74	43.18	32.91	7.15	33.74	157	241	P	V
		5144.04	37.88	-16.12	54	31.36	32.93	7.26	33.67	157	241	A	V
	*	5240	106.65	-	-	99.95	32.95	7.37	33.62	157	241	P	V
	*	5240	98.11	-	-	91.41	32.95	7.37	33.62	157	241	A	V
		5353.2	50.43	-23.57	74	43.6	32.97	7.39	33.53	157	241	P	V
		5350.08	38.89	-15.11	54	32.06	32.97	7.39	33.53	157	241	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	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 36 5180MHz		10360	54.36	-19.64	74	63.07	39.71	10.58	59	152	260	P	H
		10360	46.89	-7.11	54	55.6	39.71	10.58	59	152	260	A	H
		15540	49.32	-24.68	74	58	37.97	13.04	59.69	189	238	P	H
		10360	53.51	-20.49	74	62.22	39.71	10.58	59	152	260	P	V
		10360	45.26	-8.74	54	53.97	39.71	10.58	59	152	260	A	V
		15540	50.76	-23.24	74	59.44	37.97	13.04	59.69	189	238	P	V
802.11n HT20 CH 44 5220MHz		10440	53.26	-20.74	74	61.85	39.85	10.58	59.02	125	230	P	H
		10440	44.1	-9.9	54	52.69	39.85	10.58	59.02	125	230	A	H
		15660	50.36	-23.64	74	59.08	37.88	13.15	59.75	110	225	P	H
		10440	55.79	-18.21	74	64.38	39.85	10.58	59.02	125	230	P	V
		10440	47.83	-6.17	54	56.42	39.85	10.58	59.02	125	230	A	V
		15660	54.42	-19.58	74	63.14	37.88	13.15	59.75	110	225	P	V
		15660	45.89	-8.11	54	54.61	37.88	13.15	59.75	110	225	A	V
802.11n HT20 CH 48 5240MHz		10480	52.48	-21.52	74	60.96	39.96	10.59	59.03	149	289	P	H
		10480	44.2	-9.8	54	52.68	39.96	10.59	59.03	149	289	A	H
		15720	52.75	-21.25	74	61.49	37.82	13.23	59.79	139	291	P	H
		15720	44.15	-9.85	54	52.89	37.82	13.23	59.79	139	291	A	H
		10480	54.63	-19.37	74	63.11	39.96	10.59	59.03	149	289	P	V
		10480	46.71	-7.29	54	55.19	39.96	10.59	59.03	149	289	A	V
		15720	53.89	-20.11	74	62.63	37.82	13.23	59.79	139	291	P	V
		15720	44.95	-9.05	54	53.69	37.82	13.23	59.79	139	291	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 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 38 5190MHz		5143.78	68.09	-5.91	74	61.57	32.93	7.26	33.67	210	20	P	H
		5150	51.87	-2.13	54	45.35	32.93	7.26	33.67	210	20	A	H
	*	5190	106.84	-	-	100.18	32.94	7.37	33.65	210	20	P	H
	*	5190	97.17	-	-	90.51	32.94	7.37	33.65	210	20	P	H
		5360.4	52.62	-21.38	74	45.79	32.97	7.39	33.53	210	20	P	H
		5374.08	41.46	-12.54	54	34.62	32.97	7.39	33.52	210	20	A	H
		5144.04	62.57	-11.43	74	56.05	32.93	7.26	33.67	247	216	P	V
		5150	46.41	-7.59	54	39.89	32.93	7.26	33.67	247	216	A	V
	*	5190	99.83	-	-	93.17	32.94	7.37	33.65	247	216	P	V
	*	5190	91.26	-	-	84.6	32.94	7.37	33.65	247	216	A	V
		5413.68	48.4	-25.6	74	41.49	32.98	7.43	33.5	247	216	P	V
		5350.8	37.74	-16.26	54	30.91	32.97	7.39	33.53	247	216	A	V
802.11n HT40 CH 46 5230MHz		5149.24	66.45	-7.55	74	59.93	32.93	7.26	33.67	150	125	P	H
		5149.5	52.71	-1.29	54	46.19	32.93	7.26	33.67	150	125	A	H
	*	5230	109.17	-	-	102.47	32.95	7.37	33.62	150	125	P	H
	*	5230	101.52	-	-	94.82	32.95	7.37	33.62	150	125	A	H
		5351.76	59.53	-14.47	74	52.7	32.97	7.39	33.53	150	125	P	H
		5353.44	47.31	-6.69	54	40.48	32.97	7.39	33.53	150	125	A	H
		5149.24	58.42	-15.58	74	51.9	32.93	7.26	33.67	157	248	P	V
		5149.76	48	-6	54	41.48	32.93	7.26	33.67	157	248	A	V
	*	5230	103.68	-	-	96.98	32.95	7.37	33.62	157	248	P	V
	*	5230	96.86	-	-	90.16	32.95	7.37	33.62	157	248	A	V
		5355.84	54.68	-19.32	74	47.85	32.97	7.39	33.53	157	248	P	V
		5350.08	42.45	-11.55	54	35.62	32.97	7.39	33.53	157	248	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	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 38 5190MHz		10380	50.81	-23.19	74	59.5	39.74	10.58	59.01	250	0	P	H
		15570	49.23	-24.77	74	57.92	37.94	13.08	59.71	150	0	P	H
		10380	49.98	-24.02	74	58.67	39.74	10.58	59.01	250	0	P	V
		15570	50.37	-23.63	74	59.06	37.94	13.08	59.71	150	0	P	V
802.11n HT40 CH 46 5230MHz		10460	51.13	-22.87	74	59.68	39.89	10.59	59.03	100	360	P	H
		10460	44.45	-9.55	54	53	39.89	10.59	59.03	100	360	A	H
		15690	50.51	-23.49	74	59.24	37.85	13.19	59.77	100	225	P	H
		10460	51.49	-22.51	74	60.04	39.89	10.59	59.03	100	360	P	V
		10460	43.59	-10.41	54	52.14	39.89	10.59	59.03	100	360	A	V
		15690	52.82	-21.18	74	61.55	37.85	13.19	59.77	100	225	P	V
		15690	44.01	-9.99	54	52.74	37.85	13.19	59.77	100	225	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 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT80 CH 42 5210MHz		5145.6	65.82	-8.18	74	59.3	32.93	7.26	33.67	215	237	P	H
		5149.24	53.56	-0.44	54	47.04	32.93	7.26	33.67	215	237	A	H
	*	5210	102.81	-	-	96.14	32.94	7.37	33.64	215	237	P	H
	*	5210	93.19	-	-	86.52	32.94	7.37	33.64	215	237	A	H
		5363.52	52.73	-21.27	74	45.9	32.97	7.39	33.53	215	237	P	H
		5350.32	41.47	-12.53	54	34.64	32.97	7.39	33.53	215	237	A	H
		5142.48	59.56	-14.44	74	53.06	32.93	7.26	33.69	247	124	P	V
		5148.98	48.33	-5.67	54	41.81	32.93	7.26	33.67	247	124	A	V
	*	5210	97.85	-	-	91.18	32.94	7.37	33.64	247	124	P	V
	*	5210	97.3	-	-	90.63	32.94	7.37	33.64	247	124	A	V
		5352	48.11	-25.89	74	41.28	32.97	7.39	33.53	247	124	P	V
		5351.04	37.6	-16.4	54	30.77	32.97	7.39	33.53	247	124	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	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac		10420	50.29	-23.71	74	58.9	39.82	10.58	59.01	250	0	P	H
VHT80		15630	48.6	-25.4	74	57.33	37.89	13.12	59.74	150	0	P	H
CH 42		10420	50.35	-23.65	74	58.96	39.82	10.58	59.01	250	0	P	V
5210MHz		15630	48.87	-25.13	74	57.6	37.89	13.12	59.74	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.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 52 5260MHz		5125.84	52.45	-21.55	74	46.05	32.93	7.16	33.69	244	252	P	H
		5132.6	41.58	-12.42	54	35.08	32.93	7.26	33.69	244	252	A	H
	*	5260	112.86	-	-	106.13	32.95	7.38	33.6	244	252	P	H
	*	5260	104.04	-	-	97.31	32.95	7.38	33.6	244	252	A	H
		5415.6	54.64	-19.36	74	47.73	32.98	7.43	33.5	244	252	P	H
		5350.08	43.7	-10.3	54	36.87	32.97	7.39	33.53	244	252	A	H
		5122.2	48.79	-25.21	74	42.4	32.92	7.16	33.69	250	351	P	V
		5149.5	38.54	-15.46	54	32.02	32.93	7.26	33.67	250	351	A	V
	*	5260	109.21	-	-	102.48	32.95	7.38	33.6	250	351	P	V
	*	5260	99.75	-	-	93.02	32.95	7.38	33.6	250	351	A	V
		5352	49.99	-24.01	74	43.16	32.97	7.39	33.53	250	351	P	V
		5350.56	39.48	-14.52	54	32.65	32.97	7.39	33.53	250	351	A	V
802.11a CH 60 5300MHz		5118.56	52.67	-21.33	74	46.28	32.92	7.16	33.69	250	252	P	H
		5149.5	40.95	-13.05	54	34.43	32.93	7.26	33.67	250	252	A	H
	*	5300	113.42	-	-	106.65	32.96	7.38	33.57	250	252	P	H
	*	5300	104.33	-	-	97.56	32.96	7.38	33.57	250	252	A	H
		5355.36	61.59	-12.41	74	54.76	32.97	7.39	33.53	250	252	P	H
		5351.52	48.52	-5.48	54	41.69	32.97	7.39	33.53	250	252	A	H
		5147.68	48.93	-25.07	74	42.41	32.93	7.26	33.67	215	118	P	V
		5149.76	37.58	-16.42	54	31.06	32.93	7.26	33.67	215	118	A	V
	*	5300	108.22	-	-	101.45	32.96	7.38	33.57	215	118	P	V
	*	5300	98.91	-	-	92.14	32.96	7.38	33.57	215	118	A	V
		5357.28	56.01	-17.99	74	49.18	32.97	7.39	33.53	215	118	P	V
		5350.08	43.51	-10.49	54	36.68	32.97	7.39	33.53	215	118	A	V



802.11a CH 64 5320MHz	*	5320	111.19	-	-	104.42	32.96	7.38	33.57	244	250	P	H
	*	5320	102.02	-	-	95.25	32.96	7.38	33.57	244	250	A	H
		5352	67.2	-6.8	74	60.37	32.97	7.39	33.53	244	250	P	H
		5350.24	53.83	-0.17	54	47	32.97	7.39	33.53	244	250	A	H
	*	5320	106.8	-	-	100.03	32.96	7.38	33.57	227	120	P	V
	*	5320	98.79	-	-	92.02	32.96	7.38	33.57	227	120	A	V
		5351.84	65.23	-8.77	74	58.4	32.97	7.39	33.53	227	120	P	V
		5350.08	49.48	-4.52	54	42.65	32.97	7.39	33.53	227	120	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 52 5260MHz		10520	56.49	-17.51	74	64.97	39.99	10.59	59.06	110	220	P	H
		10520	46.42	-7.58	54	54.9	39.99	10.59	59.06	110	220	A	H
		15780	54.86	-19.14	74	63.63	37.78	13.27	59.82	109	345	P	H
		15780	44.64	-9.36	54	53.41	37.78	13.27	59.82	109	345	A	H
		10520	60.04	-13.96	74	68.52	39.99	10.59	59.06	110	220	P	V
		10520	49.34	-4.66	54	57.82	39.99	10.59	59.06	110	220	A	V
		15780	57.22	-16.78	74	65.99	37.78	13.27	59.82	109	345	P	V
		15780	47.07	-6.93	54	55.84	37.78	13.27	59.82	109	345	A	V
802.11a CH 60 5300MHz		10600	58.56	-15.44	74	67.1	39.96	10.65	59.15	185	215	P	H
		10600	49.3	-4.7	54	57.84	39.96	10.65	59.15	185	215	A	H
		15900	56.96	-17.04	74	65.78	37.68	13.38	59.88	196	190	P	H
		15900	47.69	-6.31	54	56.51	37.68	13.38	59.88	196	190	A	H
		10600	56.91	-17.09	74	65.45	39.96	10.65	59.15	185	215	P	V
		10600	47.15	-6.85	54	55.69	39.96	10.65	59.15	185	215	A	V
		15900	57.13	-16.87	74	65.95	37.68	13.38	59.88	196	190	P	V
		15900	47.65	-6.35	54	56.47	37.68	13.38	59.88	196	190	A	V
802.11a CH 64 5320MHz		10640	56.78	-17.22	74	65.34	39.94	10.68	59.18	152	135	P	H
		10640	47.42	-6.58	54	55.98	39.94	10.68	59.18	152	135	A	H
		15960	55.93	-18.07	74	64.76	37.63	13.46	59.92	173	245	P	H
		15960	47.07	-6.93	54	55.9	37.63	13.46	59.92	173	245	A	H
		10640	53.84	-20.16	74	62.4	39.94	10.68	59.18	152	135	P	V
		10640	44.85	-9.15	54	53.41	39.94	10.68	59.18	152	135	A	V
		15960	55.87	-18.13	74	64.7	37.63	13.46	59.92	173	245	P	V
		15960	46.31	-7.69	54	55.14	37.63	13.46	59.92	173	245	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 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 52 5260MHz		5113.88	53.03	-20.97	74	46.65	32.92	7.16	33.7	246	250	P	H
		5146.38	41.93	-12.07	54	35.41	32.93	7.26	33.67	246	250	A	H
	*	5260	113.03	-	-	106.3	32.95	7.38	33.6	246	250	P	H
	*	5260	103.78	-	-	97.05	32.95	7.38	33.6	246	250	A	H
		5356.32	54.71	-19.29	74	47.88	32.97	7.39	33.53	246	250	P	H
		5351.28	43.93	-10.07	54	37.1	32.97	7.39	33.53	246	250	A	H
		5120.12	49.18	-24.82	74	42.79	32.92	7.16	33.69	250	354	P	V
		5125.58	38.43	-15.57	54	32.03	32.93	7.16	33.69	250	354	A	V
	*	5260	108.65	-	-	101.92	32.95	7.38	33.6	250	354	P	V
	*	5260	99.32	-	-	92.59	32.95	7.38	33.6	250	354	A	V
		5375.76	50.72	-23.28	74	43.88	32.97	7.39	33.52	250	354	P	V
		5352.24	39.53	-14.47	54	32.7	32.97	7.39	33.53	250	354	A	V
802.11n HT20 CH 60 5300MHz		5141.18	52.46	-21.54	74	45.96	32.93	7.26	33.69	250	250	P	H
		5145.86	41.23	-12.77	54	34.71	32.93	7.26	33.67	250	250	A	H
	*	5300	113.23	-	-	106.46	32.96	7.38	33.57	250	250	P	H
	*	5300	104.51	-	-	97.74	32.96	7.38	33.57	250	250	A	H
		5350.08	64.55	-9.45	74	57.72	32.97	7.39	33.53	250	250	P	H
		5351.52	49.85	-4.15	54	43.02	32.97	7.39	33.53	250	250	A	H
		5117	49.42	-24.58	74	43.04	32.92	7.16	33.7	250	358	P	V
		5119.08	37.67	-16.33	54	31.28	32.92	7.16	33.69	250	358	A	V
	*	5300	109.83	-	-	103.06	32.96	7.38	33.57	250	358	P	V
	*	5300	100.82	-	-	94.05	32.96	7.38	33.57	250	358	A	V
		5350.56	57.36	-16.64	74	50.53	32.97	7.39	33.53	250	358	P	V
		5351.04	44.18	-9.82	54	37.35	32.97	7.39	33.53	250	358	A	V



802.11n HT20 CH 64 5320MHz	*	5320	111.93	-	-	105.16	32.96	7.38	33.57	242	247	P	H
	*	5320	101.82	-	-	95.05	32.96	7.38	33.57	242	247	A	H
		5354.24	70.08	-3.92	74	63.25	32.97	7.39	33.53	242	247	P	H
		5350.24	53.34	-0.66	54	46.51	32.97	7.39	33.53	242	247	A	H
	*	5320	105.71	-	-	98.94	32.96	7.38	33.57	250	352	P	V
	*	5320	96.95	-	-	90.18	32.96	7.38	33.57	250	352	A	V
		5351.04	63.78	-10.22	74	56.95	32.97	7.39	33.53	250	352	P	V
		5350.08	48.77	-5.23	54	41.94	32.97	7.39	33.53	250	352	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	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 52 5260MHz		10520	54.63	-19.37	74	63.11	39.99	10.59	59.06	150	312	P	H
		10520	45.48	-8.52	54	53.96	39.99	10.59	59.06	150	312	A	H
		15780	56.02	-17.98	74	64.79	37.78	13.27	59.82	219	329	P	H
		15780	45.23	-8.77	54	54	37.78	13.27	59.82	219	329	A	H
		10520	56.39	-17.61	74	64.87	39.99	10.59	59.06	220	327	P	V
		10520	43.75	-10.25	54	52.23	39.99	10.59	59.06	220	327	A	V
		15780	56.04	-17.96	74	64.81	37.78	13.27	59.82	200	3119	P	V
		15780	45.45	-8.55	54	54.22	37.78	13.27	59.82	200	3119	A	V
802.11n HT20 CH 60 5300MHz		10600	55.38	-18.62	74	63.92	39.96	10.65	59.15	150	227	P	H
		10600	44.67	-9.33	54	53.21	39.96	10.65	59.15	150	227	A	H
		15900	56.65	-17.35	74	65.47	37.68	13.38	59.88	150	328	P	H
		15900	46.48	-7.52	54	55.3	37.68	13.38	59.88	150	328	A	H
		10600	56.37	-17.63	74	64.91	39.96	10.65	59.15	150	315	P	V
		10600	43.57	-10.43	54	52.11	39.96	10.65	59.15	150	315	A	V
		15900	59.97	-14.03	74	68.79	37.68	13.38	59.88	150	316	P	V
		15900	46.09	-7.91	54	54.91	37.68	13.38	59.88	150	316	A	V
802.11n HT20 CH 64 5320MHz		10640	53.52	-20.48	74	62.08	39.94	10.68	59.18	150	320	P	H
		10640	42.66	-11.34	54	51.22	39.94	10.68	59.18	150	320	A	H
		15960	54.51	-19.49	74	63.34	37.63	13.46	59.92	150	256	P	H
		15960	44.28	-9.72	54	53.11	37.63	13.46	59.92	150	256	A	H
		10640	51.69	-22.31	74	60.25	39.94	10.68	59.18	150	200	P	V
		10640	42.72	-11.28	54	51.28	39.94	10.68	59.18	150	200	A	V
		15960	53.44	-20.56	74	62.27	37.63	13.46	59.92	150	245	P	V
		15960	44.05	-9.95	54	52.88	37.63	13.46	59.92	150	245	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 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 54 5270MHz		5146.12	57.03	-16.97	74	50.51	32.93	7.26	33.67	250	239	P	H
		5149.5	45	-9	54	38.48	32.93	7.26	33.67	250	239	A	H
	*	5270	110.96	-	-	104.23	32.95	7.38	33.6	250	239	P	H
	*	5270	102.17	-	-	95.44	32.95	7.38	33.6	250	239	A	H
		5356.08	65.27	-8.73	74	58.44	32.97	7.39	33.53	250	239	P	H
		5353.44	53.85	-0.15	54	47.02	32.97	7.39	33.53	250	239	A	H
		5142.22	52.59	-21.41	74	46.09	32.93	7.26	33.69	250	118	P	V
		5149.24	40.57	-13.43	54	34.05	32.93	7.26	33.67	250	118	A	V
	*	5270	104.66	-	-	97.93	32.95	7.38	33.6	250	118	P	V
	*	5270	96.75	-	-	90.02	32.95	7.38	33.6	250	118	A	V
		5354.4	58.88	-15.12	74	52.05	32.97	7.39	33.53	250	118	P	V
		5350.32	49.28	-4.72	54	42.45	32.97	7.39	33.53	250	118	A	V
802.11n HT40 CH 62 5310MHz		5010.66	49	-25	74	42.72	32.9	7.15	33.77	250	244	P	H
		5089.44	38.23	-15.77	54	31.87	32.92	7.16	33.72	250	244	A	H
	*	5310	105.8	-	-	99.03	32.96	7.38	33.57	250	244	P	H
	*	5310	97.37	-	-	90.6	32.96	7.38	33.57	250	244	A	H
		5353.92	67	-7	74	60.17	32.97	7.39	33.53	250	244	P	H
		5351.76	52.27	-1.73	54	45.44	32.97	7.39	33.53	250	244	A	H
		5115.96	49.06	-24.94	74	42.68	32.92	7.16	33.7	153	107	P	V
		5122.72	37.22	-16.78	54	30.82	32.93	7.16	33.69	153	107	A	V
	*	5310	98.81	-	-	92.04	32.96	7.38	33.57	153	107	P	V
	*	5310	92.32	-	-	85.55	32.96	7.38	33.57	153	107	A	V
		5351.28	62.18	-11.82	74	55.35	32.97	7.39	33.53	153	107	P	V
		5350.08	47.5	-6.5	54	40.67	32.97	7.39	33.53	153	107	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	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 54 5270MHz		10540	52.78	-21.22	74	61.25	39.99	10.62	59.08	150	25	P	H
		10540	40.64	-13.36	54	49.11	39.99	10.62	59.08	150	25	A	H
		15810	52.61	-21.39	74	61.39	37.75	13.31	59.84	150	355	P	H
		15810	41.44	-12.56	54	50.22	37.75	13.31	59.84	150	355	A	H
		10540	54.62	-19.38	74	63.09	39.99	10.62	59.08	150	251	P	V
		10540	43.75	-10.25	54	52.22	39.99	10.62	59.08	150	251	A	V
		15810	53.22	-20.78	74	62	37.75	13.31	59.84	150	360	P	V
		15810	44.02	-9.98	54	52.8	37.75	13.31	59.84	150	360	A	V
802.11n HT40 CH 62 5310MHz		10620	49.63	-24.37	74	58.17	39.95	10.68	59.17	250	0	P	H
		15930	50.6	-23.4	74	59.42	37.66	13.42	59.9	150	0	P	H
		10620	50.56	-23.44	74	59.1	39.95	10.68	59.17	250	0	P	V
		15930	50.31	-23.69	74	59.13	37.66	13.42	59.9	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 802.11ac VHT80 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT80 CH 58 5290MHz		5146.38	49.9	-24.1	74	43.38	32.93	7.26	33.67	231	243	P	H
		5148.98	39.07	-14.93	54	32.55	32.93	7.26	33.67	231	243	A	H
	*	5290	101.31	-	-	94.55	32.96	7.38	33.58	231	243	P	H
	*	5290	92.18	-	-	85.42	32.96	7.38	33.58	231	243	A	H
		5352	69.93	-4.07	74	63.1	32.97	7.39	33.53	231	243	P	H
		5350.56	52.91	-1.09	54	46.08	32.97	7.39	33.53	231	243	A	H
		5148.72	48.43	-25.57	74	41.91	32.93	7.26	33.67	150	112	P	V
		5147.42	37.25	-16.75	54	30.73	32.93	7.26	33.67	150	112	A	V
	*	5290	96.67	-	-	89.91	32.96	7.38	33.58	150	112	P	V
	*	5290	86.91	-	-	80.15	32.96	7.38	33.58	150	112	A	V
		5350.08	61.88	-12.12	74	55.05	32.97	7.39	33.53	150	112	P	V
		5350.08	46.15	-7.85	54	39.32	32.97	7.39	33.53	150	112	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	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamplifier Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac		10580	50	-24	74	58.51	39.97	10.65	59.13	250	0	P	H
VHT80		15870	50.25	-23.75	74	59.07	37.7	13.35	59.87	150	0	P	H
CH 58		10580	50.35	-23.65	74	58.86	39.97	10.65	59.13	250	0	P	V
5290MHz		15870	50.45	-23.55	74	59.27	37.7	13.35	59.87	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.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 100 5500MHz		5469.52	68.18	-5.82	74	61.19	32.99	7.47	33.47	250	262	P	H
		5470	53.72	-0.28	54	46.73	32.99	7.47	33.47	250	262	A	H
	*	5500	111.37	-	-	104.31	33	7.51	33.45	250	262	P	H
	*	5500	102.18	-	-	95.12	33	7.51	33.45	250	262	A	H
		5467.92	61.85	-12.15	74	54.86	32.99	7.47	33.47	177	20	P	V
		5469.84	48.97	-5.03	54	41.98	32.99	7.47	33.47	177	20	A	V
	*	5500	107.41	-	-	100.35	33	7.51	33.45	177	20	P	V
	*	5500	97.78	-	-	90.72	33	7.51	33.45	177	20	A	V
802.11a CH 116 5580MHz		5416.96	56.25	-17.75	74	49.34	32.98	7.43	33.5	205	246	P	H
		5467.12	44.67	-9.33	54	37.68	32.99	7.47	33.47	205	246	A	H
	*	5580	112.95	-	-	105.71	33.08	7.64	33.48	205	246	P	H
	*	5580	104.39	-	-	97.15	33.08	7.64	33.48	205	246	A	H
		5724.925	51.89	-22.11	74	44.46	33.27	7.68	33.52	205	246	P	H
		5726.15	40.56	-13.44	54	33.07	33.27	7.74	33.52	205	246	A	H
		5449.36	51.55	-22.45	74	44.57	32.99	7.47	33.48	161	121	P	V
		5439.76	39.48	-14.52	54	32.54	32.99	7.43	33.48	161	121	A	V
	*	5580	106.66	-	-	99.42	33.08	7.64	33.48	161	121	P	V
	*	5580	97.38	-	-	90.14	33.08	7.64	33.48	161	121	A	V
		5751.7	49.32	-24.68	74	41.8	33.31	7.74	33.53	161	121	P	V
		5726.325	37.52	-16.48	54	30.03	33.27	7.74	33.52	161	121	A	V



802.11a CH 140 5700MHz	*	5700	108.93	-	-	101.53	33.23	7.68	33.51	158	240	P	H
	*	5700	99.81	-	-	92.41	33.23	7.68	33.51	158	240	A	H
		5725.56	71.32	-2.68	74	63.89	33.27	7.68	33.52	158	240	P	H
		5725.56	53.04	-0.96	54	45.61	33.27	7.68	33.52	158	240	A	H
	*	5700	103.32	-	-	95.92	33.23	7.68	33.51	217	124	P	V
	*	5700	94.45	-	-	87.05	33.23	7.68	33.51	217	124	A	V
		5726.52	61.72	-12.28	74	54.23	33.27	7.74	33.52	217	124	P	V
		5725	47.66	-6.34	54	40.23	33.27	7.68	33.52	217	124	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 100 5500MHz		11000	50.71	-23.29	74	59.51	39.8	10.96	59.56	163	230	P	H
		16500	56.86	-17.14	74	64.22	38.5	13.81	59.67	178	296	P	H
		16500	47.22	-6.78	54	54.58	38.5	13.81	59.67	178	296	A	H
		11000	52.27	-21.73	74	61.07	39.8	10.96	59.56	163	230	P	V
		11000	43.24	-10.76	54	52.04	39.8	10.96	59.56	163	230	A	V
		16500	55.64	-18.36	74	63	38.5	13.81	59.67	178	296	P	V
		16500	45.65	-8.35	54	53.01	38.5	13.81	59.67	178	296	A	V
802.11a CH 116 5580MHz		11160	55.18	-18.82	74	64.04	39.77	11	59.63	170	200	P	H
		11160	46.09	-7.91	54	54.95	39.77	11	59.63	170	200	A	H
		16740	62.9	-11.1	74	68.94	38.98	14.4	59.42	156	350	P	H
		16740	52.79	-1.21	54	58.83	38.98	14.4	59.42	156	350	A	H
		11160	51.01	-22.99	74	59.87	39.77	11	59.63	170	200	P	V
		11160	41.28	-12.72	54	50.14	39.77	11	59.63	170	200	A	V
		16740	60.85	-13.15	74	66.89	38.98	14.4	59.42	156	350	P	V
802.11a CH 140 5700MHz		11400	54.89	-19.11	74	63.82	39.72	11.07	59.72	147	285	P	H
		11400	45.88	-8.12	54	54.81	39.72	11.07	59.72	147	285	A	H
		17100	57.32	-16.68	74	61.34	39.74	15.01	58.77	165	246	P	H
		17100	48.44	-5.56	54	52.46	39.74	15.01	58.77	165	246	A	H
		11400	52.67	-21.33	74	61.6	39.72	11.07	59.72	147	285	P	V
		11400	43.08	-10.92	54	52.01	39.72	11.07	59.72	147	285	A	V
		17100	60.06	-13.94	74	64.08	39.74	15.01	58.77	165	246	P	V
Remark		17100	50.93	-3.07	54	54.95	39.74	15.01	58.77	165	246	A	V
		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.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 100 5500MHz		5467.28	69.57	-4.43	74	62.58	32.99	7.47	33.47	227	251	P	H
		5470	52.99	-1.01	54	46	32.99	7.47	33.47	227	251	A	H
	*	5500	110.64	-	-	103.58	33	7.51	33.45	227	251	P	H
	*	5500	101.95	-	-	94.89	33	7.51	33.45	227	251	A	H
		5468.72	63.52	-10.48	74	56.53	32.99	7.47	33.47	171	120	P	V
		5470	47.97	-6.03	54	40.98	32.99	7.47	33.47	171	120	A	V
	*	5500	104.02	-	-	96.96	33	7.51	33.45	171	120	P	V
	*	5500	95.66	-	-	88.6	33	7.51	33.45	171	120	A	V
802.11n HT20 CH 116 5580MHz		5427.76	57.96	-16.04	74	51.03	32.98	7.43	33.48	250	323	P	H
		5443.6	45.92	-8.08	54	38.98	32.99	7.43	33.48	250	323	A	H
	*	5580	115.75	-	-	108.51	33.08	7.64	33.48	250	323	P	H
	*	5580	105.79	-	-	98.55	33.08	7.64	33.48	250	323	A	H
		5730.525	55.16	-18.84	74	47.68	33.27	7.74	33.53	250	323	P	H
		5725.275	42.9	-11.1	54	35.47	33.27	7.68	33.52	250	323	A	H
		5410.96	51.25	-22.75	74	44.34	32.98	7.43	33.5	191	212	P	V
		5466.88	40.23	-13.77	54	33.24	32.99	7.47	33.47	191	212	A	V
	*	5580	109.01	-	-	101.77	33.08	7.64	33.48	191	212	P	V
	*	5580	99.34	-	-	92.1	33.08	7.64	33.48	191	212	A	V
		5741.9	49.98	-24.02	74	42.48	33.29	7.74	33.53	191	212	P	V
		5745.05	39.1	-14.9	54	31.6	33.29	7.74	33.53	191	212	A	V



802.11n HT20 CH 140 5700MHz	*	5700	110.86	-	-	103.46	33.23	7.68	33.51	243	316	P	H
	*	5700	101.31	-	-	93.91	33.23	7.68	33.51	243	316	A	H
		5728.84	71.79	-2.21	74	64.3	33.27	7.74	33.52	243	316	P	H
		5725	53.93	-0.07	54	46.5	33.27	7.68	33.52	243	316	A	H
	*	5700	102.95	-	-	95.55	33.23	7.68	33.51	150	210	P	V
	*	5700	94.14	-	-	86.74	33.23	7.68	33.51	150	210	A	V
		5726.44	64.24	-9.76	74	56.75	33.27	7.74	33.52	150	210	P	V
		5725	47.9	-6.1	54	40.47	33.27	7.68	33.52	150	210	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.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 100 5500MHz		11000	50.7	-23.3	74	59.5	39.8	10.96	59.56	250	0	P	H
		16500	54.42	-19.58	74	61.78	38.5	13.81	59.67	150	325	P	H
		16500	46.19	-7.81	54	53.55	38.5	13.81	59.67	150	325	A	H
		11000	50.19	-23.81	74	58.99	39.8	10.96	59.56	250	0	P	V
		16500	54.1	-19.9	74	61.46	38.5	13.81	59.67	150	268	P	V
		16500	44.19	-9.81	54	51.55	38.5	13.81	59.67	150	268	A	V
802.11n HT20 CH 116 5580MHz		11160	52.84	-21.16	74	61.7	39.77	11	59.63	150	311	P	H
		11160	43.25	-10.75	54	52.11	39.77	11	59.63	150	311	A	H
		16740	60.6	-13.4	74	66.64	38.98	14.4	59.42	150	22	P	H
		16740	50.99	-3.01	54	57.03	38.98	14.4	59.42	150	22	A	H
		11160	51.11	-22.89	74	59.97	39.77	11	59.63	150	110	P	V
		11160	41.39	-12.61	54	50.25	39.77	11	59.63	150	110	A	V
		16740	62.45	-11.55	74	68.49	38.98	14.4	59.42	150	94	P	V
		16740	51.87	-2.13	54	57.91	38.98	14.4	59.42	150	94	A	V
802.11n HT20 CH 140 5700MHz		11400	54.83	-19.17	74	63.76	39.72	11.07	59.72	150	58	P	H
		11400	44.29	-9.71	54	53.22	39.72	11.07	59.72	150	58	A	H
		17100	55.95	-18.05	74	59.97	39.74	15.01	58.77	150	320	P	H
		17100	47.3	-6.7	54	51.32	39.74	15.01	58.77	150	320	A	H
		11400	52.8	-21.2	74	61.73	39.72	11.07	59.72	150	25	P	V
		11400	41.59	-12.41	54	50.52	39.72	11.07	59.72	150	25	A	V
		17100	57.31	-16.69	74	61.33	39.74	15.01	58.77	150	300	P	V
		17100	48.96	-5.04	54	52.98	39.74	15.01	58.77	150	300	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 (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.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 102 5510MHz		5470	71.9	-2.1	74	64.91	32.99	7.47	33.47	250	237	P	H
		5470	53.05	-0.95	54	46.06	32.99	7.47	33.47	250	237	A	H
	*	5510	103.78	-	-	96.73	33	7.51	33.46	250	237	P	H
	*	5510	94.55	-	-	87.5	33	7.51	33.46	250	237	A	H
		5730.875	48.89	-25.11	74	41.41	33.27	7.74	33.53	250	237	P	H
		5754.5	37.42	-16.58	54	29.9	33.31	7.74	33.53	250	237	A	H
		5469.04	63.65	-10.35	74	56.66	32.99	7.47	33.47	165	109	P	V
		5470	49.33	-4.67	54	42.34	32.99	7.47	33.47	165	109	A	V
	*	5510	98.02	-	-	90.97	33	7.51	33.46	165	109	P	V
	*	5510	89.26	-	-	82.21	33	7.51	33.46	165	109	A	V
		5750.65	48.38	-25.62	74	40.88	33.29	7.74	33.53	165	109	P	V
		5727.025	36.73	-17.27	54	29.24	33.27	7.74	33.52	165	109	A	V
802.11n HT40 CH 110 5550MHz		5469.04	64.8	-9.2	74	57.81	32.99	7.47	33.47	250	237	P	H
		5467.12	53.51	-0.49	54	46.52	32.99	7.47	33.47	250	237	A	H
	*	5550	109.22	-	-	102.06	33.06	7.57	33.47	250	237	P	H
	*	5550	101.01	-	-	93.85	33.06	7.57	33.47	250	237	A	H
		5727.025	49.81	-24.19	74	42.32	33.27	7.74	33.52	250	237	P	H
		5727.725	39.18	-14.82	54	31.69	33.27	7.74	33.52	250	237	A	H
		5465.68	59.45	-14.55	74	52.46	32.99	7.47	33.47	197	112	P	V
		5470	48.15	-5.85	54	41.16	32.99	7.47	33.47	197	112	A	V
	*	5550	103.08	-	-	95.92	33.06	7.57	33.47	197	112	P	V
	*	5550	94.91	-	-	87.75	33.06	7.57	33.47	197	112	A	V
		5752.925	47.45	-26.55	74	39.93	33.31	7.74	33.53	197	112	P	V
		5726.325	37.25	-16.75	54	29.76	33.27	7.74	33.52	197	112	A	V



802.11n HT40 CH 134 5670MHz		5466.4	51.84	-22.16	74	44.85	32.99	7.47	33.47	250	226	P	H
		5366.56	41.29	-12.71	54	34.46	32.97	7.39	33.53	250	226	A	H
	*	5670	107.3	-	-	99.92	33.21	7.67	33.5	250	226	P	H
	*	5670	98.41	-	-	91.03	33.21	7.67	33.5	250	226	A	H
		5725.1	62.92	-11.08	74	55.49	33.27	7.68	33.52	250	226	P	H
		5725.1	52.2	-1.8	54	44.77	33.27	7.68	33.52	250	226	A	H
		5450.32	48.21	-25.79	74	41.22	32.99	7.47	33.47	153	111	P	V
		5447.68	37.9	-16.1	54	30.92	32.99	7.47	33.48	153	111	A	V
	*	5670	99.81	-	-	92.43	33.21	7.67	33.5	153	111	P	V
	*	5670	90.91	-	-	83.53	33.21	7.67	33.5	153	111	A	V
		5727.375	58.35	-15.65	74	50.86	33.27	7.74	33.52	153	111	P	V
		5725.45	45.65	-8.35	54	38.22	33.27	7.68	33.52	153	111	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	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 102 5510MHz		11020	49.64	-24.36	74	58.44	39.8	10.97	59.57	250	0	P	H
		16530	50.07	-23.93	74	57.22	38.57	13.91	59.63	150	0	P	H
		11020	49.15	-24.85	74	57.95	39.8	10.97	59.57	250	0	P	V
		16530	50.12	-23.88	74	57.27	38.57	13.91	59.63	150	0	P	V
802.11n HT40 CH 110 5550MHz		11100	50.29	-23.71	74	59.12	39.78	10.99	59.6	250	0	P	H
		16650	56.12	-17.88	74	62.62	38.81	14.2	59.51	150	212	P	H
		16650	47.39	-6.61	54	53.89	38.81	14.2	59.51	150	212	A	H
		11100	49.28	-24.72	74	58.11	39.78	10.99	59.6	250	0	P	V
		16650	55.62	-18.38	74	62.12	38.81	14.2	59.51	150	255	P	V
		16650	45.83	-8.17	54	52.33	38.81	14.2	59.51	150	255	A	V
802.11n HT40 CH 134 5670MHz		11340	53.03	-20.97	74	61.93	39.73	11.06	59.69	250	209	P	H
		11340	42.32	-11.68	54	51.22	39.73	11.06	59.69	250	209	A	H
		17010	54.63	-19.37	74	59.11	39.54	15.08	59.1	150	0	P	H
		17010	44.63	-9.37	54	49.11	39.54	15.08	59.1	150	0	A	H
		11340	50.12	-23.88	74	59.02	39.73	11.06	59.69	250	0	P	V
		17010	53.52	-20.48	74	58	39.54	15.08	59.1	150	360	P	V
		17010	44.63	-9.37	54	49.11	39.54	15.08	59.1	150	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	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamplifier Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT80 CH 106 5530MHz		5469.28	64.57	-9.43	74	57.58	32.99	7.47	33.47	241	237	P	H
		5468.8	53.42	-0.58	54	46.43	32.99	7.47	33.47	241	237	A	H
	*	5530	101.31	-	-	94.19	33.02	7.57	33.47	241	237	P	H
	*	5530	91.99	-	-	84.87	33.02	7.57	33.47	241	237	A	H
		5753.975	49.17	-24.83	74	41.65	33.31	7.74	33.53	241	237	P	H
		5728.25	38.33	-15.67	54	30.84	33.27	7.74	33.52	241	237	A	H
		5469.76	59.38	-14.62	74	52.39	32.99	7.47	33.47	211	110	P	V
		5469.04	48.1	-5.9	54	41.11	32.99	7.47	33.47	211	110	A	V
	*	5530	95.65	-	-	88.53	33.02	7.57	33.47	211	110	P	V
	*	5530	85.65	-	-	78.53	33.02	7.57	33.47	211	110	A	V
		5735.075	47.64	-26.36	74	40.14	33.29	7.74	33.53	211	110	P	V
		5725.275	37.16	-16.84	54	29.73	33.27	7.68	33.52	211	110	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	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac		11060	49.31	-24.69	74	58.13	39.79	10.98	59.59	250	0	P	H
VHT80		16590	49.54	-24.46	74	56.44	38.67	14.01	59.58	150	0	P	H
CH 106		11060	48.97	-25.03	74	57.79	39.79	10.98	59.59	250	0	P	V
5530MHz		16590	49.78	-24.22	74	56.68	38.67	14.01	59.58	150	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

WIFI 802.11n HT20 (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.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 LF		31.94	25.66	-14.34	40	30.96	25.86	0.62	31.78	-	-	P	H
		428.67	26.74	-19.26	46	30.69	25.37	1.89	31.21	-	-	P	H
		700.27	29.4	-16.6	46	30.48	27.7	2.44	31.22	-	-	P	H
		861.29	30.72	-15.28	46	31.08	28.19	2.71	31.26	-	-	P	H
		900.09	31.68	-14.32	46	31.69	28.5	2.77	31.28	100	0	P	H
		963.14	32.79	-21.21	54	31.51	29.67	2.88	31.27	-	-	P	H
		30	26.88	-13.12	40	31.34	26.7	0.62	31.78	100	0	P	V
		192.96	21.06	-22.44	43.5	35.15	15.9	1.28	31.27	-	-	P	V
		439.34	27.11	-18.89	46	31.29	25.13	1.89	31.2	-	-	P	V
		724.52	29.56	-16.44	46	30.84	27.5	2.44	31.22	-	-	P	V
		929.19	31.81	-14.19	46	31.28	29.03	2.77	31.27	-	-	P	V
		995.15	32.05	-21.95	54	29.82	30.3	3.19	31.26	-	-	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)

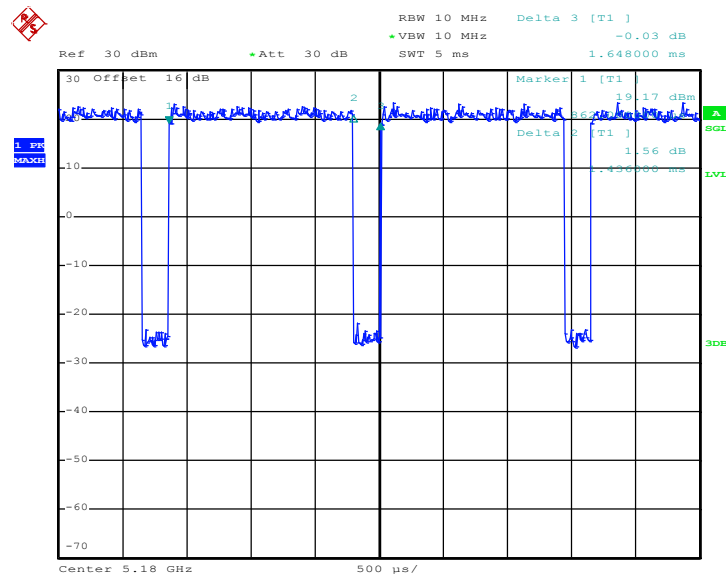
= -10.46(dB)

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

Appendix C. Duty Cycle Plots

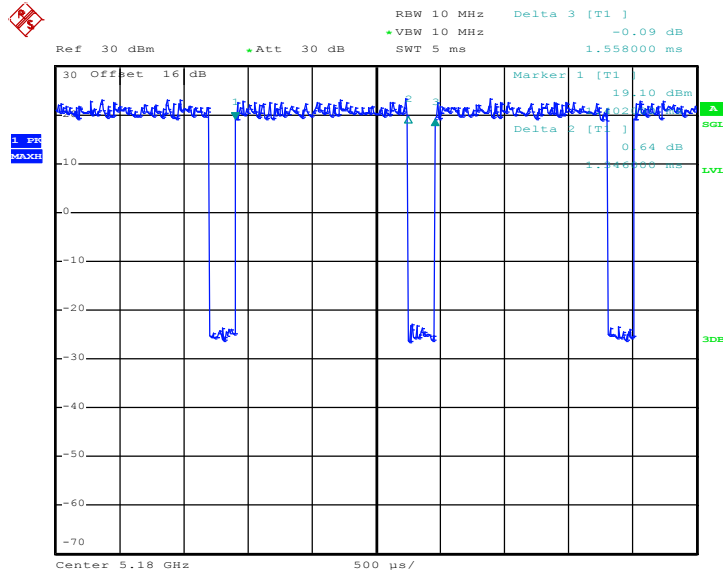
Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11a	87.14	1.44	0.70	1kHz
802.11n HT20	86.39	1.35	0.74	1kHz
802.11n HT40	76.99	0.68	1.48	3kHz
802.11ac VHT80	62.59	0.34	2.96	3kHz

802.11a

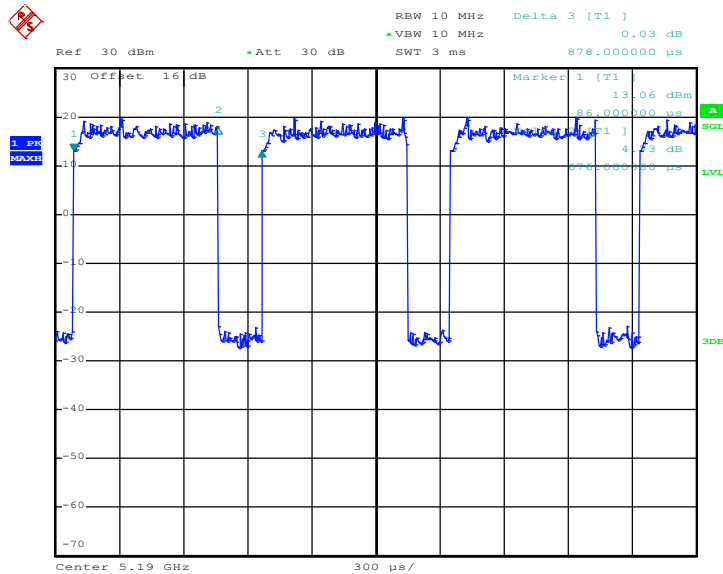




802.11n HT20



802.11n HT40



802.11ac VHT80

