



FCC RF Test Report

APPLICANT : Yulong Computer Telecommunication Scientific
(Shenzhen) Co., Ltd
EQUIPMENT : Smartphone
BRAND NAME : Coolpad
MODEL NAME : Coolpad 3701A
FCC ID : R38YL3701A
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Apr. 24, 2017 and testing was completed on Jun. 21, 2017. 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.

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Guangdong Province, China**



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR742403D	Rev. 01	Initial issue of report	Jul. 12, 2017



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 5.22 dB at 11160.000 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 8.57 dB at 0.160 MHz
3.6	15.407(g)	Frequency Stability	Within Operation Band	Pass	-
3.7	15.407(c)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.8	15.203 & 15.407(a)	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd

Coolpad Information Harbor, High-tech Industrial Park (North), Nanshan District, Shenzhen, P.R.C.

1.2 Manufacturer

Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd

Coolpad Information Harbor, High-tech Industrial Park (North), Nanshan District, Shenzhen, P.R.C.

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smartphone
Brand Name	Coolpad
Model Name	Coolpad 3701A
FCC ID	R38YL3701A
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/DC-HSDPA/HSPA+(16QAM uplink is not supported)/LTE/ WLAN 2.4GHz 802.11b/g/n HT20/HT40/ WLAN 5GHz 802.11a/n HT20/HT40/ WLAN5GHz 802.11ac VHT20/VHT40/VHT80/ Bluetooth v3.0 + EDR/ Bluetooth v 4.0 LE/
IMEI Code	Conducted: 861273030009071 Conduction: 861273030007810 Radiation: 861273030007877
HW Version	V2
SW Version	117.00.170706.3701A-TMO
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 ~ 5720 MHz
Maximum Output Power to Antenna	<5180 MHz ~ 5240 MHz> 802.11a : 13.81 dBm / 0.0240 W 802.11n HT20 : 13.80 dBm / 0.0240 W 802.11n HT40 : 13.76 dBm / 0.0238 W 802.11ac VHT20 : 13.75 dBm / 0.0237 W 802.11ac VHT40 : 13.72 dBm / 0.0236 W 802.11ac VHT80 : 13.78 dBm / 0.0239 W <5260 MHz ~ 5320 MHz> 802.11a : 13.89 dBm / 0.0245 W 802.11n HT20 : 13.16 dBm / 0.0207 W 802.11n HT40 : 13.88 dBm / 0.0244 W 802.11ac VHT20 : 13.08 dBm / 0.0203 W 802.11ac VHT40 : 13.68 dBm / 0.0233 W 802.11ac VHT80 : 13.84 dBm / 0.0242 W <5500 MHz ~ 5720 MHz > 802.11a : 14.45 dBm / 0.0279 W 802.11n HT20 : 14.29 dBm / 0.0269 W 802.11n HT40 : 14.33 dBm / 0.0271 W 802.11ac VHT20 : 14.17 dBm / 0.0261 W 802.11ac VHT40 : 14.27 dBm / 0.0267 W 802.11ac VHT80 : 13.93 dBm / 0.0247 W
99% Occupied Bandwidth	<5180 MHz ~ 5240 MHz> 802.11a : 18.98 MHz 802.11n HT20 : 19.68 MHz 802.11n HT40 : 36.96 MHz 802.11ac VHT80 : 74.69 MHz <5260 MHz ~ 5320 MHz> 802.11a : 18.88 MHz 802.11n HT20 : 19.68 MHz 802.11n HT40 : 36.76 MHz 802.11ac VHT80 : 74.69 MHz <5500 MHz ~ 5720 MHz > 802.11a : 18.98 MHz 802.11n HT20 : 19.48 MHz 802.11n HT40 : 37.06 MHz 802.11ac VHT80 : 74.69 MHz
Antenna Gain / Gain	<5150 MHz ~ 5250 MHz> IFA Antenna with gain -0.50 dBi <5250 MHz ~ 5350 MHz> IFA Antenna with gain -0.70 dBi <5470 MHz ~ 5725 MHz> IFA Antenna with gain -1.00 dBi
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)

Note: For 802.11n HT20 / ac VHT20 and 802.11n HT40 / ac VHT40 mode, the whole testing have



assessed only 802.11n HT20/ HT40 by referring to their maximum conducted power.

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	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan District, Shenzhen City, Guangdong Province, 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 Registration No.
	03CH03-SZ	565805

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 v01r04
- ♦ FCC KDB 644545 D03 Guidance for IEEE 802.11ac New Rules v01
- ♦ 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: 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 (Y plane) were recorded in this report.

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)
5500-5720 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



Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
Straddle Channel	138 [#]	5690	144	5720
	142 [*]	5710		

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 VHT80	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : Bluetooth Link + WLAN Link (5G) + USB Cable (Charging from Adapter) + Earphone
Remark: For Radiated Test Cases, The tests were performance with Earphone, Adapter and USB Cable.	



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
Straddle		-	-	144

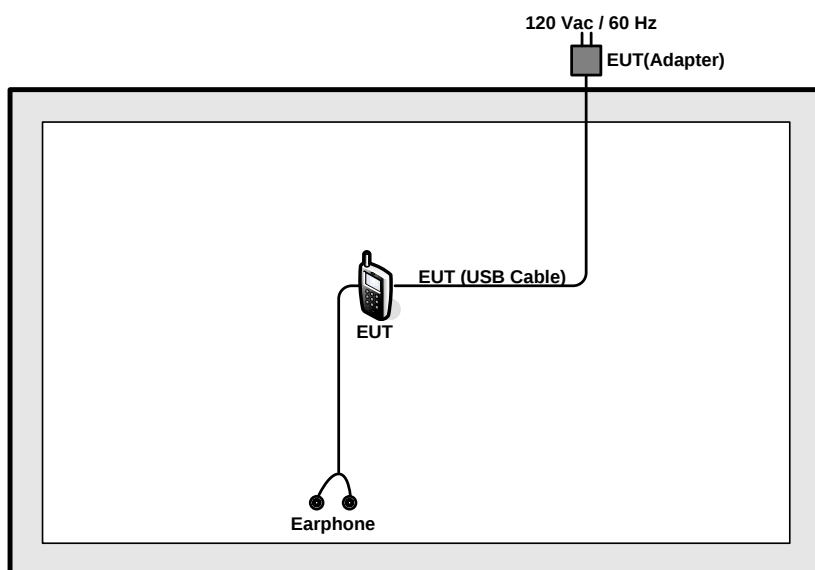
Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5720MHz
		802.11n HT20	802.11n HT20	802.11n HT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140
Straddle		-	-	144

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
Straddle		-	-	142

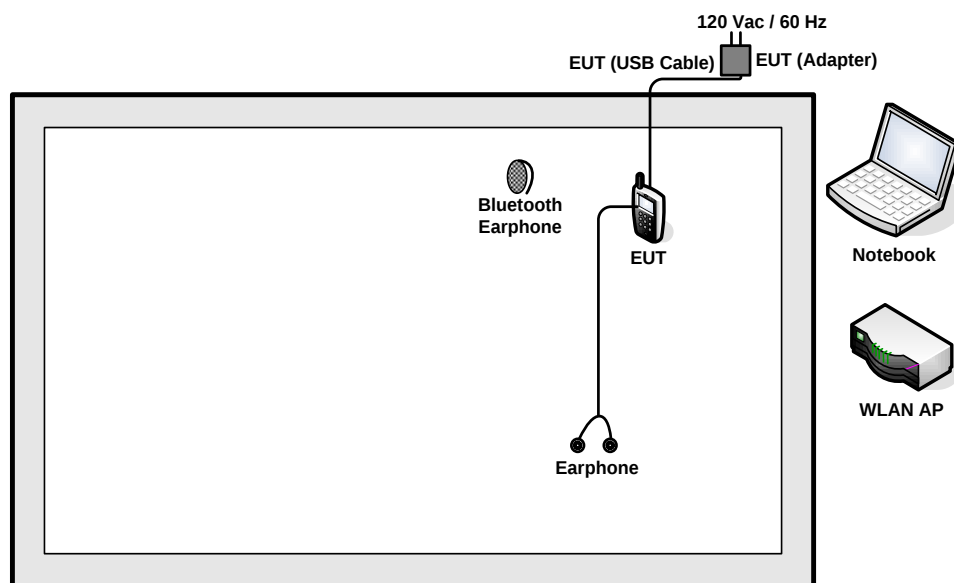
Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5720MHz
		802.11ac VHT80	802.11ac VHT80	802.11ac VHT80
L	Low	-	-	106
M	Middle	42	58	-
H	High	-	-	122
Straddle		-	-	138

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-865L	KA2IR865LA1	N/A	WLAN AP
2.	Notebook	Lenovo	E450	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	Bluetooth Earphone	Nokia	BH-108	PYAHS-107W	N/A	N/A
4.	Earphone	Apple	MC690ZP/A	N/A	Unshielded,1.6m	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 Notebook 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 6.3 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.

For Straddle Channel, U-NII procedures were applied for operations in the frequency band in accordance with FCC KDB 644545 D03.

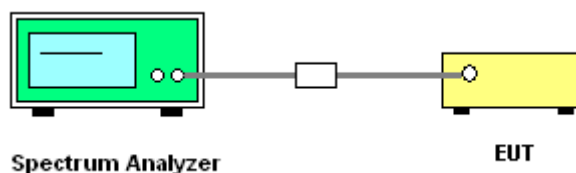
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

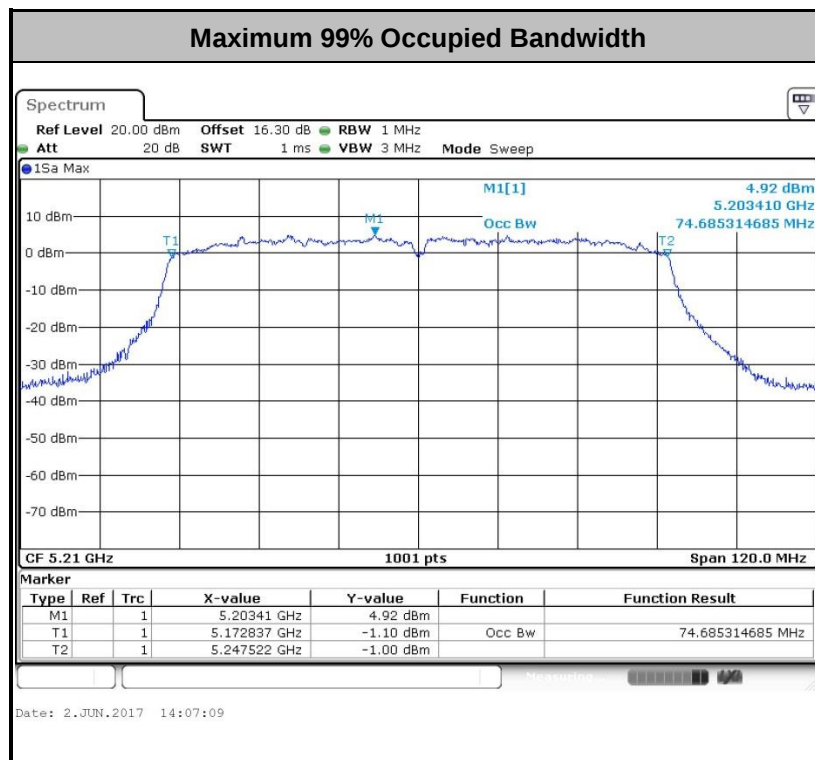
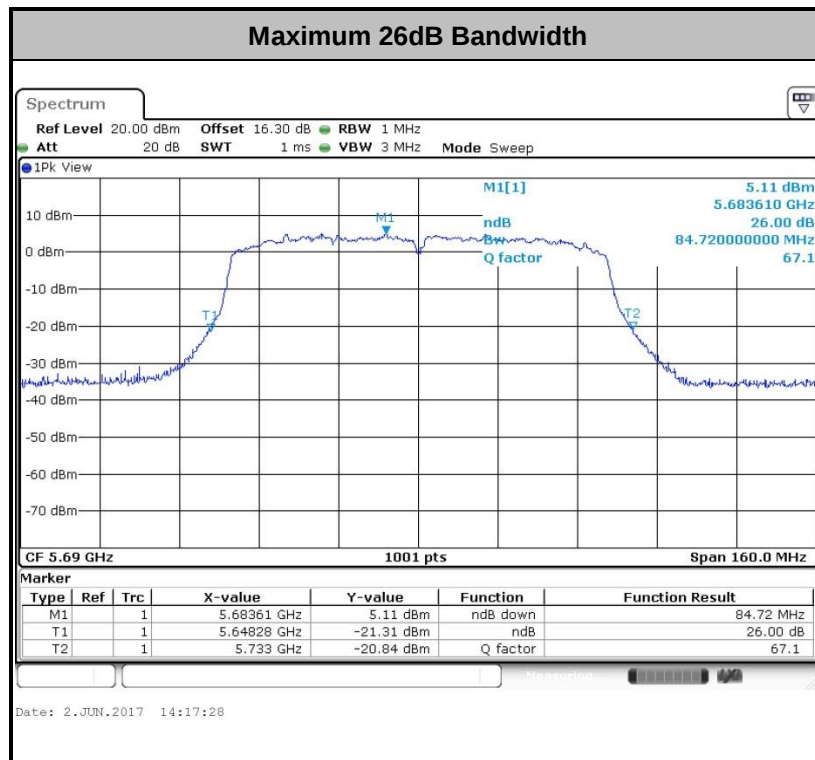
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04. Section C) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB 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) $\geq 3 * RBW$.
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 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.

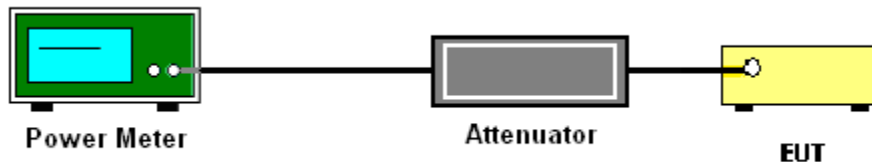
3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04.

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 v01r04.

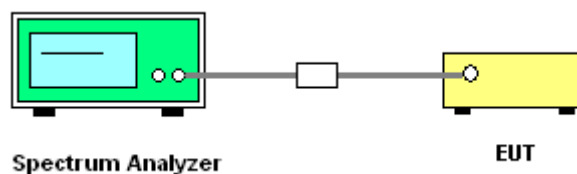
Section F) Maximum power spectral density.

Method SA-2

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

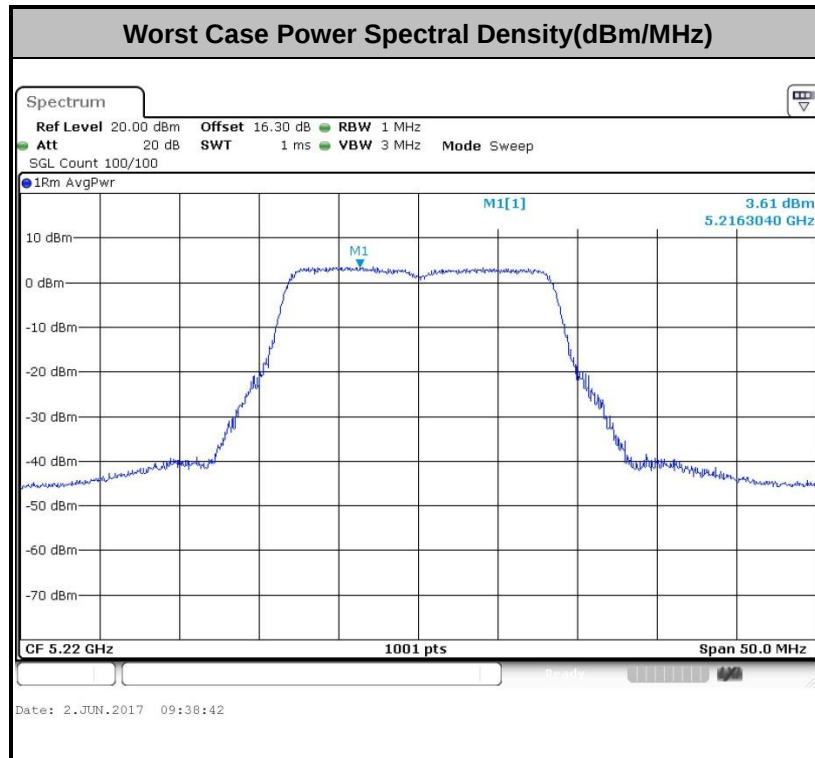
1. The testing follows Method SA-2 of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04.
 - Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 1 MHz.
 - Set VBW $\geq$ 3 MHz.
 - Number of points in sweep $\geq$ 2 Span / RBW.
 - 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 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.

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

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

(3) KDB789033 D01 v01r04 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 v01r04.
Section G) Unwanted emissions measurement.

(1) Procedure for Unwanted Emissions Measurements Below 1000MHz

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

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

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

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

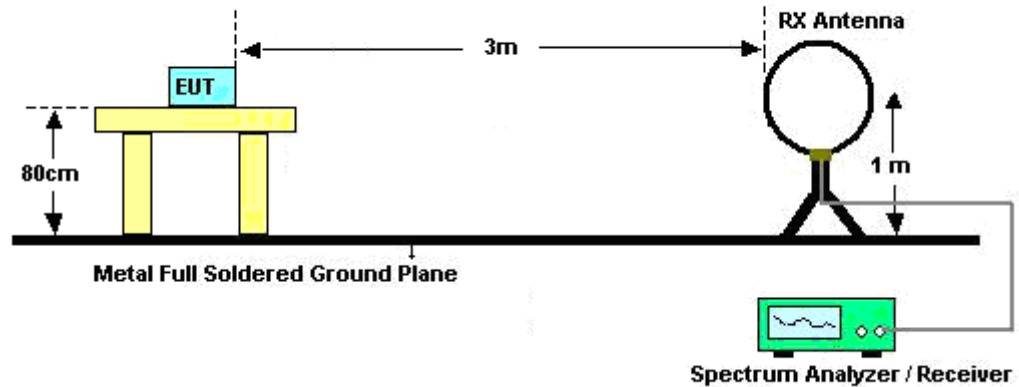
- RBW = 1 MHz
- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW $\geq$ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.



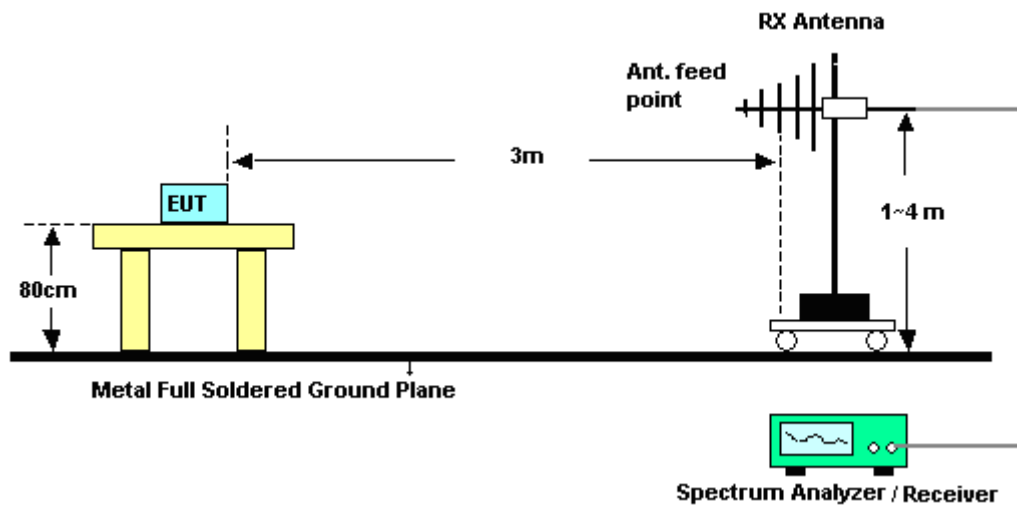
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.4.4 Test Setup

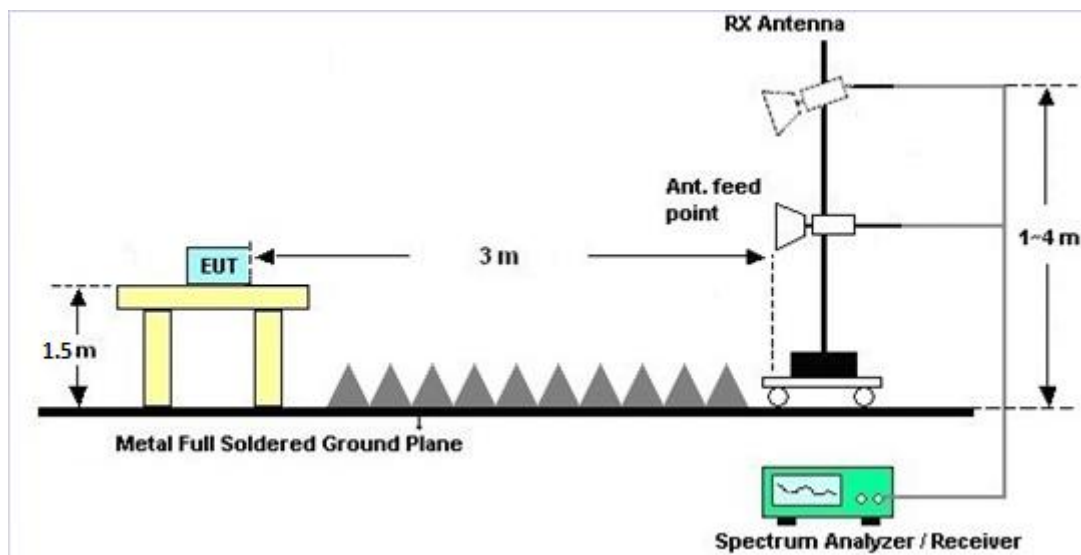
For radiated emissions below 30MHz



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 Emission (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.

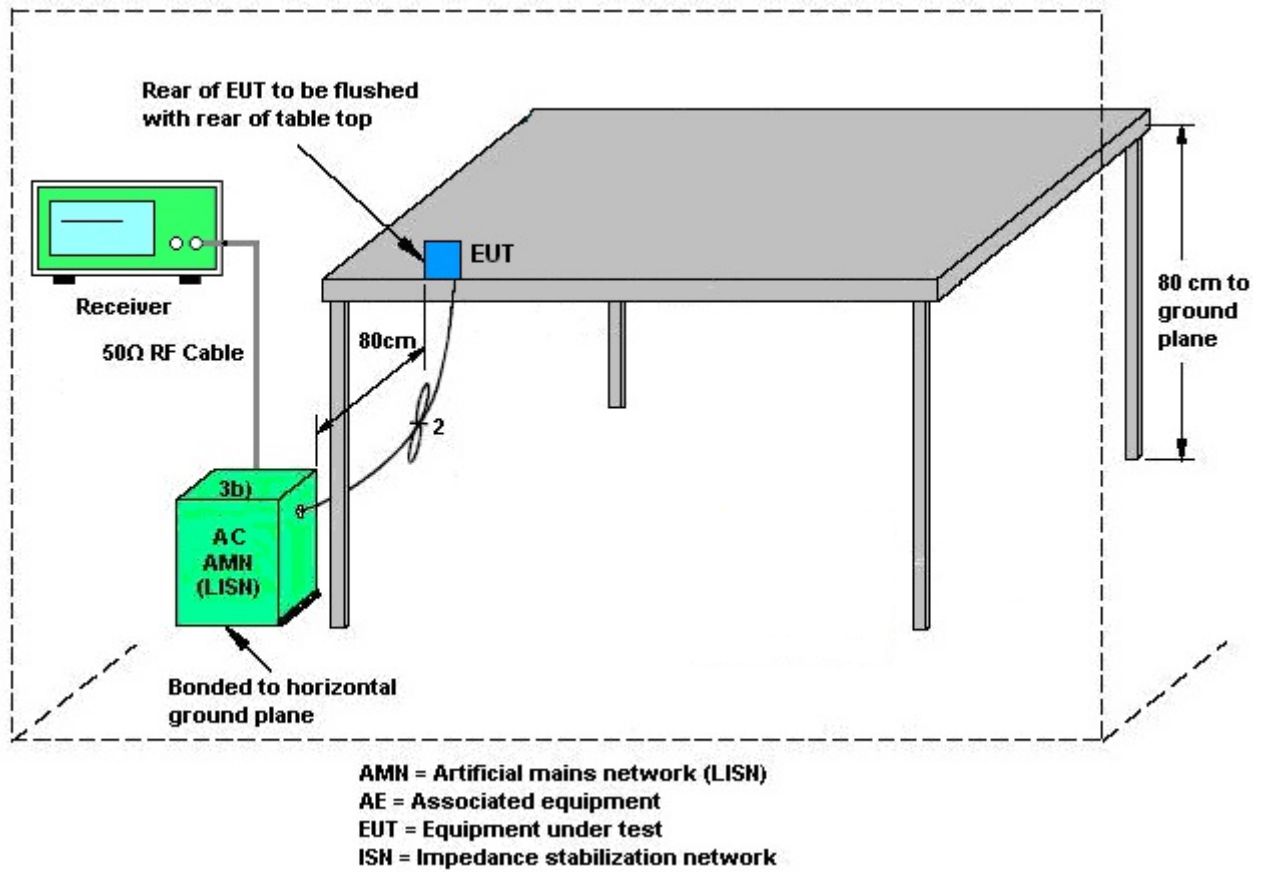
3.5.2 Measuring Instruments

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.

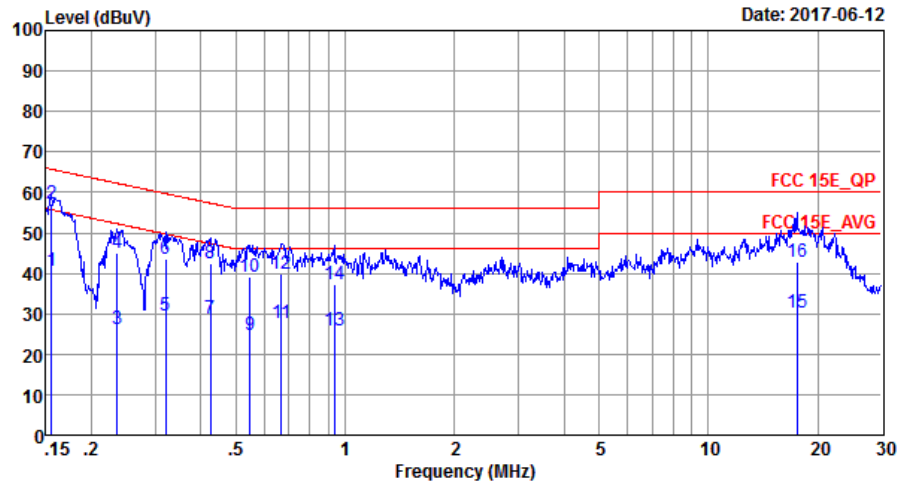
3.5.4 Test Setup





3.5.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	22~25℃
Test Engineer :	Tao Cheng	Relative Humidity :	50~55%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	Bluetooth Link + WLAN Link (5G) + USB Cable (Charging from Adapter) + Earphone		



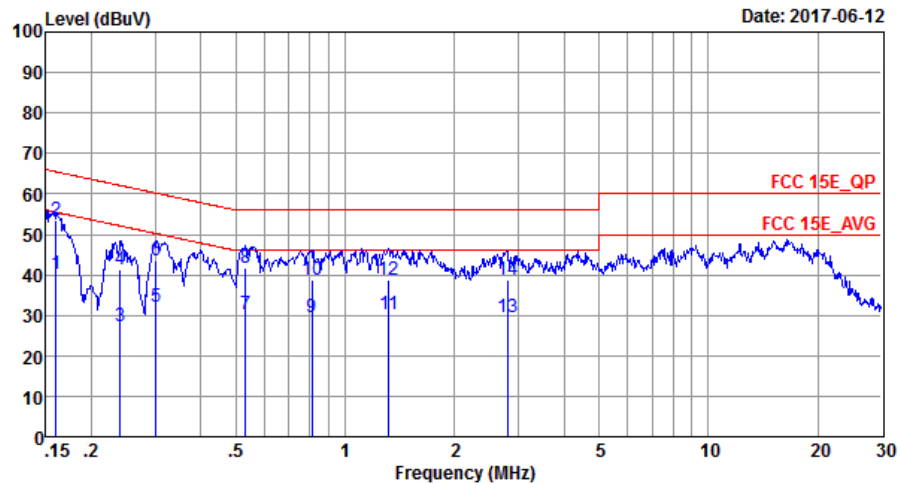
Site : CO01-SZ
Condition: FCC 15E_QP LISN_20170301_L LINE

Mode : Mode 1
IMEI : 861273030007810

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.16	40.52	-15.17	55.69	30.10	0.03	10.39	Average
2 *	0.16	57.12	-8.57	65.69	46.70	0.03	10.39	QP
3	0.24	26.15	-26.11	52.26	15.90	0.03	10.22	Average
4	0.24	45.05	-17.21	62.26	34.80	0.03	10.22	QP
5	0.32	29.34	-20.37	49.71	19.10	0.03	10.21	Average
6	0.32	43.44	-16.27	59.71	33.20	0.03	10.21	QP
7	0.43	28.61	-18.72	47.33	18.39	0.03	10.19	Average
8	0.43	42.41	-14.92	57.33	32.19	0.03	10.19	QP
9	0.55	24.60	-21.40	46.00	14.40	0.02	10.18	Average
10	0.55	39.20	-16.80	56.00	29.00	0.02	10.18	QP
11	0.67	27.59	-18.41	46.00	17.40	0.02	10.17	Average
12	0.67	39.79	-16.21	56.00	29.60	0.02	10.17	QP
13	0.93	25.71	-20.29	46.00	15.50	0.06	10.15	Average
14	0.93	37.31	-18.69	56.00	27.10	0.06	10.15	QP
15	17.57	30.24	-19.76	50.00	18.80	0.94	10.50	Average
16	17.57	42.74	-17.26	60.00	31.30	0.94	10.50	QP



Test Mode :	Mode 1	Temperature :	22~25℃
Test Engineer :	Tao Cheng	Relative Humidity :	50~55%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	Bluetooth Link + WLAN Link (5G) + USB Cable (Charging from Adapter) + Earphone		



Site : CO01-SZ
Condition: FCC 15E QP LISN_20170301_N NEUTRAL

Mode : Mode 1
IMEI : 861273030007810

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.16	40.10	-15.37	55.47	29.70	0.03	10.37	Average
2 *	0.16	53.60	-11.87	65.47	43.20	0.03	10.37	QP
3	0.24	27.15	-24.93	52.08	16.90	0.03	10.22	Average
4	0.24	41.35	-20.73	62.08	31.10	0.03	10.22	QP
5	0.30	32.25	-17.94	50.19	22.00	0.03	10.22	Average
6	0.30	43.55	-16.64	60.19	33.30	0.03	10.22	QP
7	0.53	30.40	-15.60	46.00	20.20	0.02	10.18	Average
8	0.53	41.70	-14.30	56.00	31.50	0.02	10.18	QP
9	0.81	29.49	-16.51	46.00	19.30	0.03	10.16	Average
10	0.81	38.79	-17.21	56.00	28.60	0.03	10.16	QP
11	1.32	30.30	-15.70	46.00	20.10	0.05	10.15	Average
12	1.32	38.70	-17.30	56.00	28.50	0.05	10.15	QP
13	2.79	29.64	-16.36	46.00	19.41	0.03	10.20	Average
14	2.79	38.84	-17.16	56.00	28.61	0.03	10.20	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.

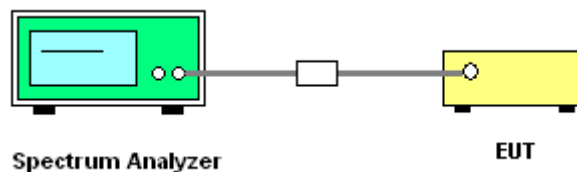
3.6.2 Measuring Instruments

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

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	Apr. 20. 2017	Jun. 02, 2017	Apr. 19. 2018	Conducted (TH01-SZ)
Pulse Power Sensor	Anritsu	MA2411B	1207253	30MHz~40GHz	Jan. 06, 2017	Jun. 02, 2017	Jan. 05, 2018	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1218010	50MHz Bandwidth	Jan. 06, 2017	Jun. 02, 2017	Jan. 05, 2018	Conducted (TH01-SZ)
DC Power Supply	GWINSTEK	AnritsuGPS-3030D	EM882636	Max 30V	May.12.2017	Jun. 02, 2017	May.11.2018	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 16, 2016	Jun. 02, 2017	Jul. 15, 2017	Conducted (TH01-SZ)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	Apr. 20, 2017	Jun. 21, 2017	Apr. 19, 2018	Radiation (03CH03-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz;	Apr. 20, 2017	Jun. 21, 2017	Apr. 19, 2018	Radiation (03CH03-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	May 14, 2017	Jun. 21, 2017	May 13, 2018	Radiation (03CH03-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz-2GHz	May 14, 2017	Jun. 21, 2017	May 13, 2018	Radiation (03CH03-SZ)
Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1285	1GHz~18GHz	Jan. 12, 2017	Jun. 21, 2017	Jan. 11, 2018	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 16, 2016	Jun. 21, 2017	Jul. 15, 2017	Radiation (03CH03-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Aug. 10, 2016	Jun. 21, 2017	Aug. 09, 2017	Radiation (03CH03-SZ)
Amplifier	Burgeon	BPA-530	102210	0.01Hz~3000MHz	Oct. 11, 2016	Jun. 21, 2017	Oct. 10, 2017	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	AMF-7D-00101800-30-10P-R	1943528	1GHz~18GHz	Oct. 11, 2016	Jun. 21, 2017	Oct. 10, 2017	Radiation (03CH03-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5GHz	Jan. 06, 2017	Jun. 21, 2017	Jan. 05, 2018	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	Jun. 21, 2017	NCR	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Jun. 21, 2017	NCR	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Jun. 21, 2017	NCR	Radiation (03CH03-SZ)
EMI Receiver	R&S	ESR7	101630	9kHz~7GHz;	Jan. 06, 2017	Jun. 12, 2017	Jan. 05, 2018	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103892	9kHz~30MHz	Jan. 05, 2017	Jun. 12, 2017	Jan. 04, 2018	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	MessTec	3816/2SH	00103912	9kHz~30MHz	Jan. 05, 2017	Jun. 12, 2017	Jan. 04, 2018	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000891	100Vac~250Vac	Jul. 16, 2016	Jun. 12, 2017	Jul. 15, 2017	Conduction (CO01-SZ)

NCR: No Calibration Required

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.5dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

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

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0 dB
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Appendix A. Conducted Test Results

Report Number : FR742403D

Test Engineer:	Bruce Huang	Temperature:	24~26	°C
Test Date:	2017/6/2	Relative Humidity:	50~53	%

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)		
11a	6Mbps	1	36	5180	18.63	23.43	-	22.70		
11a	6Mbps	1	44	5220	18.98	23.63	-	22.78		
11a	6Mbps	1	48	5240	18.73	23.53	-	22.73		
HT20	MCS0	1	36	5180	19.68	23.73	-	22.94		
HT20	MCS0	1	44	5220	19.33	24.08	-	22.86		
HT20	MCS0	1	48	5240	19.43	23.73	-	22.88		
HT40	MCS0	1	38	5190	36.96	44.06	-	23.01		
HT40	MCS0	1	46	5230	36.96	44.60	-	23.01		
VHT80	MCS0	1	42	5210	74.69	84.56	-	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	0.58	13.81	24.00	-0.50		Pass
11a	6Mbps	1	44	5220	0.58	13.69	24.00	-0.50		Pass
11a	6Mbps	1	48	5240	0.58	13.66	24.00	-0.50		Pass
HT20	MCS0	1	36	5180	0.62	13.80	24.00	-0.50		Pass
HT20	MCS0	1	44	5220	0.62	13.77	24.00	-0.50		Pass
HT20	MCS0	1	48	5240	0.62	13.68	24.00	-0.50		Pass
HT40	MCS0	1	38	5190	1.19	13.76	24.00	-0.50		Pass
HT40	MCS0	1	46	5230	1.19	13.70	24.00	-0.50		Pass
VHT20	MCS0	1	36	5180	0.80	13.71	24.00	-0.50		Pass
VHT20	MCS0	1	44	5220	0.80	13.75	24.00	-0.50		Pass
VHT20	MCS0	1	48	5240	0.80	13.66	24.00	-0.50		Pass
VHT40	MCS0	1	38	5190	1.46	13.72	24.00	-0.50		Pass
VHT40	MCS0	1	46	5230	1.46	13.65	24.00	-0.50		Pass
VHT80	MCS0	1	42	5210	2.57	13.78	24.00	-0.50		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	0.58	4.15	11.00	-0.50		Pass
11a	6Mbps	1	44	5220	0.58	4.19	11.00	-0.50		Pass
11a	6Mbps	1	48	5240	0.58	3.83	11.00	-0.50		Pass
HT20	MCS0	1	36	5180	0.62	3.43	11.00	-0.50		Pass
HT20	MCS0	1	44	5220	0.62	3.70	11.00	-0.50		Pass
HT20	MCS0	1	48	5240	0.62	3.22	11.00	-0.50		Pass
HT40	MCS0	1	38	5190	1.19	0.83	11.00	-0.50		Pass
HT40	MCS0	1	46	5230	1.19	1.06	11.00	-0.50		Pass
VHT80	MCS0	1	42	5210	2.57	-2.73	11.00	-0.50		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
11a	6M bps	1	52	5260	18.58	23.58	23.69	29.69	23.98	
11a	6M bps	1	60	5300	18.83	23.58	23.75	29.75	23.98	
11a	6M bps	1	64	5320	18.88	23.68	23.76	29.76	23.98	
HT20	MCS 0	1	52	5260	19.43	23.73	23.88	29.88	23.98	
HT20	MCS 0	1	60	5300	19.58	23.73	23.92	29.92	23.98	
HT20	MCS 0	1	64	5320	19.68	23.88	23.94	29.94	23.98	
HT40	MCS 0	1	54	5270	36.76	44.60	23.98	30.00	23.98	
HT40	MCS 0	1	62	5310	36.76	44.15	23.98	30.00	23.98	
VHT80	MCS 0	1	58	5290	74.69	83.92	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	0.58	13.75	23.98	-0.70	26.99	Pass
11a	6M bps	1	60	5300	0.58	13.89	23.98	-0.70	26.99	Pass
11a	6M bps	1	64	5320	0.58	13.72	23.98	-0.70	26.99	Pass
HT20	MCS 0	1	52	5260	0.62	13.16	23.98	-0.70	26.99	Pass
HT20	MCS 0	1	60	5300	0.62	13.09	23.98	-0.70	26.99	Pass
HT20	MCS 0	1	64	5320	0.62	13.03	23.98	-0.70	26.99	Pass
HT40	MCS 0	1	54	5270	1.19	13.81	23.98	-0.70	26.99	Pass
HT40	MCS 0	1	62	5310	1.19	13.88	23.98	-0.70	26.99	Pass
VHT20	MCS 0	1	52	5260	0.80	13.08	23.98	-0.70	26.99	Pass
VHT20	MCS 0	1	60	5300	0.80	13.06	23.98	-0.70	26.99	Pass
VHT20	MCS 0	1	64	5320	0.80	13.02	23.98	-0.70	26.99	Pass
VHT40	MCS 0	1	54	5270	1.46	13.59	23.98	-0.70	26.99	Pass
VHT40	MCS 0	1	62	5310	1.46	13.68	23.98	-0.70	26.99	Pass
VHT80	MCS 0	1	58	5290	2.57	13.84	23.98	-0.70	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	0.58	3.69	11.00	-0.70		Pass
11a	6M bps	1	60	5300	0.58	3.62	11.00	-0.70		Pass
11a	6M bps	1	64	5320	0.58	3.57	11.00	-0.70		Pass
HT20	MCS 0	1	52	5260	0.62	3.51	11.00	-0.70		Pass
HT20	MCS 0	1	60	5300	0.62	3.42	11.00	-0.70		Pass
HT20	MCS 0	1	64	5320	0.62	3.35	11.00	-0.70		Pass
HT40	MCS 0	1	54	5270	1.19	0.74	11.00	-0.70		Pass
HT40	MCS 0	1	62	5310	1.19	0.88	11.00	-0.70		Pass
VHT80	MCS 0	1	58	5290	2.57	-3.38	11.00	-0.70		Pass

TEST RESULTS DATA
26dB and 99% OBW

Band III										
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)	FCC 26dB Bandwidth Power Limit (dBm)	Note
11a	6M bps	1	100	5500	18.88	23.63	23.76	29.76	23.98	
11a	6M bps	1	116	5580	18.83	23.68	23.75	29.75	23.98	
11a	6M bps	1	140	5700	18.88	23.83	23.76	29.76	23.98	
11a	6Mbps	1	144	5720	18.98	23.68	23.78	29.78	23.98	
HT20	MCS 0	1	100	5500	19.38	23.83	23.87	29.87	23.98	
HT20	MCS 0	1	116	5580	19.48	23.93	23.90	29.90	23.98	
HT20	MCS 0	1	140	5700	19.43	23.83	23.88	29.88	23.98	
HT20	MCS0	1	144	5720	19.48	23.88	23.90	29.90	23.98	
HT40	MCS 0	1	102	5510	36.96	44.24	23.98	30.00	23.98	
HT40	MCS 0	1	110	5550	36.96	44.69	23.98	30.00	23.98	
HT40	MCS 0	1	134	5670	36.96	44.78	23.98	30.00	23.98	
HT40	MCS0	1	142	5710	37.06	44.51	23.98	30.00	23.98	
VHT80	MCS 0	1	106	5530	74.69	84.56	23.98	30.00	23.98	
VHT80	MCS 0	1	122	5610	74.57	83.92	23.98	30.00	23.98	
VHT80	MCS0	1	138	5690	74.69	84.72	23.98	30.00	23.98	

TEST RESULTS DATA
Average Power Table

FCC Band III										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
11a	6M bps	1	100	5500	0.58	14.21	23.98	-1.00	26.99	Pass
11a	6M bps	1	116	5580	0.58	14.35	23.98	-1.00	26.99	Pass
11a	6M bps	1	140	5700	0.58	14.42	23.98	-1.00	26.99	Pass
11a	6M bps	1	144	5720	0.58	14.45	23.98	-1.00	26.99	Pass
HT20	MCS 0	1	100	5500	0.62	13.96	23.98	-1.00	26.99	Pass
HT20	MCS 0	1	116	5580	0.62	14.10	23.98	-1.00	26.99	Pass
HT20	MCS 0	1	140	5700	0.62	14.29	23.98	-1.00	26.99	Pass
HT20	MCS 0	1	144	5720	0.62	14.21	23.98	-1.00	26.99	Pass
HT40	MCS 0	1	102	5510	1.19	14.17	23.98	-1.00	26.99	Pass
HT40	MCS 0	1	110	5550	1.19	14.14	23.98	-1.00	26.99	Pass
HT40	MCS 0	1	134	5670	1.19	14.33	23.98	-1.00	26.99	Pass
HT40	MCS 0	1	142	5710	1.19	14.27	23.98	-1.00	26.99	Pass
VHT20	MCS 0	1	100	5500	0.80	13.93	23.98	-1.00	26.99	Pass
VHT20	MCS 0	1	116	5580	0.80	13.92	23.98	-1.00	26.99	Pass
VHT20	MCS 0	1	140	5700	0.80	14.04	23.98	-1.00	26.99	Pass
VHT20	MCS 0	1	144	5720	0.80	14.17	23.98	-1.00	26.99	Pass
VHT40	MCS 0	1	102	5510	1.46	14.07	23.98	-1.00	26.99	Pass
VHT40	MCS 0	1	110	5550	1.46	14.08	23.98	-1.00	26.99	Pass
VHT40	MCS 0	1	134	5670	1.46	14.27	23.98	-1.00	26.99	Pass
VHT40	MCS 0	1	142	5710	1.46	14.16	23.98	-1.00	26.99	Pass
VHT80	MCS 0	1	106	5530	2.57	13.76	23.98	-1.00	26.99	Pass
VHT80	MCS 0	1	122	5610	2.57	13.66	23.98	-1.00	26.99	Pass
VHT80	MCS 0	1	138	5690	2.57	13.93	23.98	-1.00	26.99	Pass

TEST RESULTS DATA
Power Spectral Density

Band III										
Mod.	Data Rate	N _{TX}	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	0.58	3.51	11.00	-1.00		Pass
11a	6M bps	1	116	5580	0.58	3.52	11.00	-1.00		Pass
11a	6M bps	1	140	5700	0.58	3.46	11.00	-1.00		Pass
11a	6Mbps	1	144	5720	0.58	3.51	11.00	-1.00		Pass
HT20	MCS 0	1	100	5500	0.62	3.18	11.00	-1.00		Pass
HT20	MCS 0	1	116	5580	0.62	3.50	11.00	-1.00		Pass
HT20	MCS 0	1	140	5700	0.62	3.45	11.00	-1.00		Pass
HT20	MCS0	1	144	5720	0.62	3.42	11.00	-1.00		Pass
HT40	MCS 0	1	102	5510	1.19	0.26	11.00	-1.00		Pass
HT40	MCS 0	1	110	5550	1.19	0.23	11.00	-1.00		Pass
HT40	MCS 0	1	134	5670	1.19	0.64	11.00	-1.00		Pass
HT40	MCS0	1	142	5710	1.19	1.02	11.00	-1.00		Pass
VHT80	MCS 0	1	106	5530	2.57	-3.29	11.00	-1.00		Pass
VHT80	MCS 0	1	122	5610	2.57	-3.12	11.00	-1.00		Pass
VHT80	MCS0	1	138	5690	2.57	-3.08	11.00	-1.00		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)	Note
11a	6Mbps	1	36	5180	5180.075	0.075	14.48	50	3.85	
11a	6Mbps	1	36	5180	5180.075	0.075	14.48	-30	3.85	
11a	6Mbps	1	36	5180	5180.075	0.075	14.48	20	4.4	
11a	6Mbps	1	36	5180	5180.075	0.075	14.48	20	3.4	
11a	6Mbps	1	36	5180	5180.075	0.075	14.48	20	3.85	

Band II										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	64	5320	5320.075	0.075	14.10	50	3.85	
11a	6Mbps	1	64	5320	5320.100	0.100	18.80	-30	3.85	
11a	6Mbps	1	64	5320	5320.075	0.075	14.10	20	4.4	
11a	6Mbps	1	64	5320	5320.075	0.075	14.10	20	3.4	
11a	6Mbps	1	64	5320	5320.075	0.075	14.10	20	3.85	

Band III										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	100	5500	5500.100	0.100	18.18	50	3.85	
11a	6Mbps	1	100	5500	5500.100	0.100	18.18	-30	3.85	
11a	6Mbps	1	100	5500	5500.100	0.100	18.18	20	4.4	
11a	6Mbps	1	100	5500	5500.075	0.075	13.64	20	3.4	
11a	6Mbps	1	100	5500	5500.100	0.100	18.18	20	3.85	



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.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 36 5180MHz		5081.38	48.35	-25.65	74	41.39	31.93	7.86	32.83	163	360	P	H
		5127.66	42.14	-11.86	54	35.17	31.95	7.87	32.85	163	360	A	H
	*	5180	101.64	-	-	94.65	31.97	7.89	32.87	163	360	P	H
	*	5180	93.34	-	-	86.35	31.97	7.89	32.87	163	360	A	H
		5041.6	48.04	-25.96	74	41.09	31.92	7.84	32.81	190	170	P	V
		5127.66	39.77	-14.23	54	32.8	31.95	7.87	32.85	190	170	A	V
	*	5180	94.53	-	-	87.54	31.97	7.89	32.87	190	170	P	V
	*	5180	88.64	-	-	81.65	31.97	7.89	32.87	190	170	A	V
802.11a CH 44 5220MHz		5030.42	49.2	-24.8	74	42.28	31.91	7.82	32.81	154	358	P	H
		5022.88	41.08	-12.92	54	34.16	31.91	7.82	32.81	154	358	A	H
	*	5220	100.93	-	-	93.91	31.99	7.91	32.88	154	358	P	H
	*	5220	93.83	-	-	86.81	31.99	7.91	32.88	154	358	A	H
		5407.92	47.18	-26.82	74	40.13	32.06	7.96	32.97	154	358	P	H
		5417.52	38.62	-15.38	54	31.56	32.07	7.96	32.97	154	358	A	H
		5080.6	48.61	-25.39	74	41.65	31.93	7.86	32.83	119	112	P	V
		5012.22	39.51	-14.49	54	32.58	31.91	7.82	32.8	119	112	A	V
	*	5220	93.51	-	-	86.49	31.99	7.91	32.88	119	112	P	V
	*	5220	86.33	-	-	79.31	31.99	7.91	32.88	119	112	A	V
		5386.8	46.44	-27.56	74	39.4	32.05	7.95	32.96	119	112	P	V
		5445.12	38.39	-15.61	54	31.29	32.07	8.01	32.98	119	112	A	V



802.11a CH 48 5240MHz		5049.14	48.95	-25.05	74	42.01	31.92	7.84	32.82	302	0	P	H
		5048.88	40.54	-13.46	54	33.6	31.92	7.84	32.82	302	0	A	H
	*	5240	100.83	26.83	74	93.81	31.99	7.92	32.89	302	0	P	H
	*	5240	93.34	39.34	54	86.32	31.99	7.92	32.89	302	0	A	H
		5378.64	47.05	-26.95	74	40.01	32.05	7.95	32.96	302	0	P	H
		5438.16	39.34	-14.66	54	32.24	32.07	8.01	32.98	302	0	A	H
		5050.7	48.04	-25.96	74	41.1	31.92	7.84	32.82	167	92	P	V
		5005.72	39.78	-14.22	54	32.85	31.91	7.82	32.8	167	92	A	V
		5240	95.78	21.78	74	88.76	31.99	7.92	32.89	167	92	P	V
		5240	87.88	33.88	54	80.86	31.99	7.92	32.89	167	92	A	V
		5413.2	47.22	-26.78	74	40.16	32.07	7.96	32.97	167	92	P	V
		5445.84	38.52	-15.48	54	31.41	32.08	8.01	32.98	167	92	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	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	48.73	-25.27	74	55.96	38.69	10.53	56.45	150	360	P	H
		15540	50.9	-23.1	74	54.51	38.88	13.25	55.74	150	0	P	H
		10360	48.77	-25.23	74	56	38.69	10.53	56.45	150	360	P	V
		15540	50.04	-23.96	74	53.65	38.88	13.25	55.74	150	0	P	V
802.11a CH 44 5220MHz		10440	49.02	-24.98	74	56.18	38.75	10.59	56.5	150	360	P	H
		15660	50.01	-23.99	74	53.32	38.81	13.31	55.43	150	0	P	H
		10440	47.26	-26.74	74	54.42	38.75	10.59	56.5	150	360	P	V
		15660	50.92	-23.08	74	54.23	38.81	13.31	55.43	150	0	P	V
802.11a CH 48 5240MHz		10480	48.02	-25.98	74	55.17	38.79	10.61	56.55	150	0	P	H
		15720	50.68	-23.32	74	53.83	38.77	13.33	55.25	147	0	P	H
		10480	47.33	-26.67	74	54.48	38.79	10.61	56.55	150	0	P	V
		15720	50.15	-23.85	74	53.3	38.77	13.33	55.25	147	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1	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		5128.44	50.63	-23.37	74	43.66	31.95	7.87	32.85	159	0	P	H
		5128.18	42.77	-11.23	54	35.8	31.95	7.87	32.85	159	0	A	H
	*	5180	100.87	-	-	93.88	31.97	7.89	32.87	159	0	P	H
	*	5180	95.35	-	-	88.36	31.97	7.89	32.87	159	0	A	H
		5017.42	47.95	-26.05	74	41.03	31.91	7.82	32.81	173	190	P	V
		5128.18	40.27	-13.73	54	33.3	31.95	7.87	32.85	173	190	A	V
	*	5180	94.64	-	-	87.65	31.97	7.89	32.87	173	190	P	V
	*	5180	87.55	-	-	80.56	31.97	7.89	32.87	173	190	A	V
802.11n HT20 CH 44 5220MHz		5035.1	49.53	-24.47	74	42.61	31.91	7.82	32.81	129	360	P	H
		5028.34	40.88	-13.12	54	33.96	31.91	7.82	32.81	129	360	A	H
	*	5220	100.5	-	-	93.48	31.99	7.91	32.88	129	360	P	H
	*	5220	93.64	-	-	86.62	31.99	7.91	32.88	129	360	A	H
		5413.68	47.28	-26.72	74	40.22	32.07	7.96	32.97	129	360	P	H
		5410.32	38.72	-15.28	54	31.67	32.06	7.96	32.97	129	360	A	H
		5072.54	48.15	-25.85	74	41.21	31.93	7.84	32.83	156	360	P	V
		5010.14	39.48	-14.52	54	32.55	31.91	7.82	32.8	156	360	A	V
	*	5220	93.88	-	-	86.86	31.99	7.91	32.88	156	360	P	V
	*	5220	86.07	-	-	79.05	31.99	7.91	32.88	156	360	A	V
		5418.24	46.18	-27.82	74	39.12	32.07	7.96	32.97	156	360	P	V
		5444.16	38.29	-15.71	54	31.19	32.07	8.01	32.98	156	360	A	V



802.11n HT20 CH 48 5240MHz		5135.72	48.52	-25.48	74	41.55	31.95	7.87	32.85	133	360	P	H
		5049.92	40.34	-13.66	54	33.4	31.92	7.84	32.82	133	360	A	H
	*	5240	100.17	-	-	93.15	31.99	7.92	32.89	133	360	P	H
	*	5240	96.32	-	-	89.3	31.99	7.92	32.89	133	360	A	H
		5427.84	46.9	-27.1	74	39.8	32.07	8.01	32.98	133	360	P	H
		5438.88	38.9	-15.1	54	31.8	32.07	8.01	32.98	133	360	A	H
		5022.1	48.42	-25.58	74	41.5	31.91	7.82	32.81	100	106	P	V
		5010.66	39.57	-14.43	54	32.64	31.91	7.82	32.8	100	106	A	V
	*	5240	94.27	-	-	87.25	31.99	7.92	32.89	100	106	P	V
	*	5240	86.85	-	-	79.83	31.99	7.92	32.89	100	106	A	V
		5413.68	46.74	-27.26	74	39.68	32.07	7.96	32.97	100	106	P	V
		5437.92	38.33	-15.67	54	31.23	32.07	8.01	32.98	100	106	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	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	46.71	-27.29	74	53.94	38.69	10.53	56.45	150	360	P	H
		15540	50.86	-23.14	74	54.47	38.88	13.25	55.74	150	0	P	H
		10360	47.59	-26.41	74	54.82	38.69	10.53	56.45	150	360	P	V
		15540	50.59	-23.41	74	54.2	38.88	13.25	55.74	150	0	P	V
802.11n HT20 CH 44 5220MHz		10440	47.17	-26.83	74	54.33	38.75	10.59	56.5	150	360	P	H
		15660	50.19	-23.81	74	53.5	38.81	13.31	55.43	150	0	P	H
		10440	46.99	-27.01	74	54.15	38.75	10.59	56.5	150	360	P	V
		15660	50.97	-23.03	74	54.28	38.81	13.31	55.43	150	0	P	V
802.11n HT20 CH 48 5240MHz		10480	48.45	-25.55	74	55.6	38.79	10.61	56.55	153	360	P	H
		15720	50.65	-23.35	74	53.8	38.77	13.33	55.25	153	0	P	H
		10480	48.08	-25.92	74	55.23	38.79	10.61	56.55	153	360	P	V
		15720	49.81	-24.19	74	52.96	38.77	13.33	55.25	153	0	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	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		5087.88	48.61	-25.39	74	41.65	31.93	7.86	32.83	302	351	P	H
		5004.94	40.86	-13.14	54	33.93	31.91	7.82	32.8	302	351	A	H
	*	5190	99.49	-	-	92.5	31.97	7.89	32.87	302	351	P	H
	*	5190	88.02	-	-	81.03	31.97	7.89	32.87	302	351	A	H
		5452.16	46.02	-27.98	74	38.92	32.08	8.01	32.99	302	351	P	H
		5455.52	39.33	-14.67	54	32.23	32.08	8.01	32.99	302	351	A	H
		5019.24	48.88	-25.12	74	41.96	31.91	7.82	32.81	123	157	P	V
		5011.44	40.08	-13.92	54	33.15	31.91	7.82	32.8	123	157	A	V
	*	5190	91.32	-	-	84.33	31.97	7.89	32.87	123	157	P	V
	*	5190	85.31	-	-	78.32	31.97	7.89	32.87	123	157	A	V
		5444.32	47.85	-26.15	74	40.75	32.07	8.01	32.98	123	157	P	V
		5447.4	38.68	-15.32	54	31.57	32.08	8.01	32.98	123	157	A	V
802.11n HT40 CH 46 5230MHz		5042.12	49.59	-24.41	74	42.65	31.92	7.84	32.82	332	355	P	H
		5043.94	40.73	-13.27	54	33.79	31.92	7.84	32.82	332	355	A	H
	*	5230	99.16	-	-	92.15	31.99	7.91	32.89	332	355	P	H
	*	5230	92.51	-	-	85.5	31.99	7.91	32.89	332	355	A	H
		5385.36	47.9	-26.1	74	40.86	32.05	7.95	32.96	332	355	P	H
		5430	39.09	-14.91	54	31.99	32.07	8.01	32.98	332	355	A	H
		5122.46	48.51	-25.49	74	41.54	31.95	7.87	32.85	100	157	P	V
		5001.82	40.19	-13.81	54	33.27	31.9	7.82	32.8	100	157	A	V
	*	5230	92.79	-	-	85.78	31.99	7.91	32.89	100	157	P	V
	*	5230	86.24	-	-	79.23	31.99	7.91	32.89	100	157	A	V
		5397.84	46.94	-27.06	74	39.88	32.06	7.96	32.96	100	157	P	V
		5442.48	38.88	-15.12	54	31.78	32.07	8.01	32.98	100	157	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	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	52.12	-21.88	74	59.31	38.71	10.56	56.46	153	360	P	H
		10380	45.02	-8.98	54	52.21	38.71	10.56	56.46	153	360	A	H
		15570	49.49	-24.51	74	53.01	38.86	13.27	55.65	153	0	P	H
		10380	49.15	-24.85	74	56.34	38.71	10.56	56.46	150	360	P	V
		15570	50.67	-23.33	74	54.19	38.86	13.27	55.65	153	0	P	V
802.11n HT40 CH 46 5230MHz		10460	50.43	-23.57	74	57.58	38.76	10.61	56.52	150	360	P	H
		15690	50.66	-23.34	74	53.88	38.79	13.33	55.34	153	0	P	H
		10460	48.53	-25.47	74	55.68	38.76	10.61	56.52	150	360	P	V
		15690	50.54	-23.46	74	53.76	38.79	13.33	55.34	153	0	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	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		5140.92	51.65	-22.35	74	44.67	31.96	7.87	32.85	293	360	P	H
		5126.36	42.6	-11.4	54	35.63	31.95	7.87	32.85	293	360	A	H
	*	5210	93.22	-	-	86.2	31.99	7.91	32.88	293	360	P	H
	*	5210	85.35	-	-	78.33	31.99	7.91	32.88	293	360	A	H
		5429.28	47.2	-26.8	74	40.1	32.07	8.01	32.98	293	360	P	H
		5443.68	40.21	-13.79	54	33.11	32.07	8.01	32.98	293	360	A	H
		5143	49.22	-24.78	74	42.24	31.96	7.87	32.85	222	24	P	V
		5005.98	41.07	-12.93	54	34.14	31.91	7.82	32.8	222	24	A	V
	*	5210	87.16	-	-	80.14	31.99	7.91	32.88	222	24	P	V
	*	5210	79.54	-	-	72.52	31.99	7.91	32.88	222	24	A	V
		5424.96	46.5	-27.5	74	39.45	32.07	7.96	32.98	222	24	P	V
		5460	39.96	-14.04	54	32.86	32.08	8.01	32.99	222	24	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	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	49.08	-24.92	74	56.25	38.73	10.59	56.49	153	360	P	H
VHT80		15630	50.97	-23.03	74	54.33	38.82	13.29	55.47	153	0	P	H
CH 42		10420	49.73	-24.27	74	56.9	38.73	10.59	56.49	153	360	P	V
5210MHz		15630	49.76	-24.24	74	53.12	38.82	13.29	55.47	153	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		5061.88	50.4	-23.6	74	43.45	31.93	7.84	32.82	118	360	P	H
		5075.66	40.6	-13.4	54	33.64	31.93	7.86	32.83	118	360	A	H
	*	5260	100.06	-	-	93.04	32.01	7.92	32.91	118	360	P	H
	*	5260	94.05	-	-	87.03	32.01	7.92	32.91	118	360	A	H
		5447.52	48.16	-25.84	74	41.05	32.08	8.01	32.98	118	360	P	H
		5453.52	38.75	-15.25	54	31.65	32.08	8.01	32.99	118	360	A	H
		5018.72	49.29	-24.71	74	42.37	31.91	7.82	32.81	170	80	P	V
		5006.24	39.56	-14.44	54	32.63	31.91	7.82	32.8	170	80	A	V
	*	5260	94.01	-	-	86.99	32.01	7.92	32.91	170	80	P	V
	*	5260	88.54	-	-	81.52	32.01	7.92	32.91	170	80	A	V
		5366.64	46.6	-27.4	74	39.55	32.05	7.95	32.95	170	80	P	V
		5454.96	38.47	-15.53	54	31.37	32.08	8.01	32.99	170	80	A	V
802.11a CH 60 5300MHz	*	5085.75	49.37	-24.63	74	42.41	31.93	7.86	32.83	249	360	P	H
	*	5107.45	40.55	-13.45	54	33.58	31.95	7.86	32.84	249	360	A	H
		5300	100.53	-	-	93.51	32.02	7.93	32.93	249	360	P	H
		5300	95.16	-	-	88.14	32.02	7.93	32.93	249	360	A	H
		5420.16	46.49	-27.51	74	39.43	32.07	7.96	32.97	249	360	P	H
		5352.48	40.78	-13.22	54	33.74	32.04	7.95	32.95	249	360	A	H
	*	5051.8	48.33	-25.67	74	41.39	31.92	7.84	32.82	100	115	P	V
	*	5006.3	39.92	-14.08	54	32.99	31.91	7.82	32.8	100	115	A	V
		5300	95.74	-	-	88.72	32.02	7.93	32.93	100	115	P	V
		5300	86.83	-	-	79.81	32.02	7.93	32.93	100	115	A	V
		5377.68	46.37	-27.63	74	39.33	32.05	7.95	32.96	100	115	P	V
		5352.72	38.91	-15.09	54	31.87	32.04	7.95	32.95	100	115	A	V



802.11a CH 64 5320MHz		5320	99.07	-	-	92.03	32.03	7.94	32.93	215	360	P	H
		5320	90.07	-	-	83.03	32.03	7.94	32.93	215	360	A	H
		5372.48	46.02	-27.98	74	38.97	32.05	7.95	32.95	215	360	P	H
		5372.64	40.28	-13.72	54	33.23	32.05	7.95	32.95	215	360	A	H
		5320	94.76	-	-	87.72	32.03	7.94	32.93	100	97	P	V
		5320	85.9	-	-	78.86	32.03	7.94	32.93	100	97	A	V
		5381.6	47.05	-26.95	74	40.01	32.05	7.95	32.96	100	97	P	V
		5372.64	39.01	-14.99	54	31.96	32.05	7.95	32.95	100	97	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 52 5260MHz		10520	48.13	-25.87	74	55.19	38.83	10.64	56.53	150	360	P	H
		15780	50.43	-23.57	74	53.44	38.73	13.37	55.11	150	0	P	H
		10520	47.88	-26.12	74	54.94	38.83	10.64	56.53	150	360	P	V
		15780	50.6	-23.4	74	53.61	38.73	13.37	55.11	150	0	P	V
802.11a CH 60 5300MHz		10600	50.51	-23.49	74	57.16	39.01	10.7	56.36	153	360	P	H
		15900	50.45	-23.55	74	53.16	38.66	13.43	54.8	153	0	P	H
		10600	50.67	-23.33	74	57.32	39.01	10.7	56.36	153	360	P	V
		15900	50.06	-23.94	74	52.77	38.66	13.43	54.8	153	0	P	V
		10640	49.67	-24.33	74	56.17	39.08	10.72	56.3	153	360	P	V
		15960	49.99	-24.01	74	52.52	38.62	13.47	54.62	153	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 802.11n HT20 (Band Edge @ 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)
802.11n HT20 CH 52 5260MHz		5041.3	48.78	-25.22	74	41.83	31.92	7.84	32.81	118	360	P	H
		5060.55	41.24	-12.76	54	34.29	31.93	7.84	32.82	118	360	A	H
	*	5260	99.87	-	-	92.85	32.01	7.92	32.91	118	360	P	H
	*	5260	94.55	-	-	87.53	32.01	7.92	32.91	118	360	A	H
		5459.52	48.83	-25.17	74	41.73	32.08	8.01	32.99	118	360	P	H
		5452.56	39.71	-14.29	54	32.61	32.08	8.01	32.99	118	360	A	H
		5006.65	47.47	-26.53	74	40.54	31.91	7.82	32.8	100	72	P	V
		5009.8	39.64	-14.36	54	32.71	31.91	7.82	32.8	100	72	A	V
	*	5260	90.16	-	-	83.14	32.01	7.92	32.91	100	72	P	V
	*	5260	87.76	-	-	80.74	32.01	7.92	32.91	100	72	A	V
		5382.96	46.86	-27.14	74	39.82	32.05	7.95	32.96	100	72	P	V
		5454.96	38.67	-15.33	54	31.57	32.08	8.01	32.99	100	72	A	V
802.11n HT20 CH 60 5300MHz		5095.9	49.74	-24.26	74	42.78	31.94	7.86	32.84	131	0	P	H
		5110.95	40.76	-13.24	54	33.79	31.95	7.86	32.84	131	0	A	H
	*	5300	99.22	-	-	92.2	32.02	7.93	32.93	131	0	P	H
	*	5300	92.54	-	-	85.52	32.02	7.93	32.93	131	0	A	H
		5450.16	46.95	-27.05	74	39.85	32.08	8.01	32.99	131	0	P	H
		5351.76	41.88	-12.12	54	34.84	32.04	7.95	32.95	131	0	A	H
		5063.7	48.52	-25.48	74	41.57	31.93	7.84	32.82	258	38	P	V
		5007.7	39.8	-14.2	54	32.87	31.91	7.82	32.8	258	38	A	V
	*	5300	92.49	-	-	85.47	32.02	7.93	32.93	258	38	P	V
	*	5300	83.54	-	-	76.52	32.02	7.93	32.93	258	38	A	V
		5399.76	47.35	-26.65	74	40.3	32.06	7.96	32.97	258	38	P	V
		5352.72	38.68	-15.32	54	31.64	32.04	7.95	32.95	258	38	A	V



802.11n HT20 CH 64 5320MHz	*	5320	99.31	-	-	92.27	32.03	7.94	32.93	229	194	P	H
	*	5320	92.09	-	-	85.05	32.03	7.94	32.93	229	194	A	H
		5371.84	48.57	-25.43	74	41.52	32.05	7.95	32.95	229	194	P	H
		5372	40.11	-13.89	54	33.06	32.05	7.95	32.95	229	194	A	H
	*	5320	93.01	-	-	85.97	32.03	7.94	32.93	369	101	P	V
	*	5320	87.54	-	-	80.5	32.03	7.94	32.93	369	101	A	V
		5448	47.52	-26.48	74	40.41	32.08	8.01	32.98	369	101	P	V
		5371.84	38.67	-15.33	54	31.62	32.05	7.95	32.95	369	101	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	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		10520	48.27	-25.73	74	55.33	38.83	10.64	56.53	152	360	P	H
HT20		15780	50.19	-23.81	74	53.2	38.73	13.37	55.11	152	0	P	H
CH 52		10520	46.14	-27.86	74	53.2	38.83	10.64	56.53	152	360	P	V
5260MHz		15780	49.82	-24.18	74	52.83	38.73	13.37	55.11	152	0	P	V
802.11n		10600	50.25	-23.75	74	56.9	39.01	10.7	56.36	150	360	P	H
HT20		15900	48.25	-25.75	74	50.96	38.66	13.43	54.8	150	0	P	H
CH 60		10600	49.28	-24.72	74	55.93	39.01	10.7	56.36	150	360	P	V
5300MHz		15900	48.74	-25.26	74	51.45	38.66	13.43	54.8	150	0	P	V
802.11n		10640	50.55	-23.45	74	57.05	39.08	10.72	56.3	150	360	P	H
HT20		15960	49.55	-24.45	74	52.08	38.62	13.47	54.62	150	0	P	H
CH 64		10640	51.55	-22.45	74	58.05	39.08	10.72	56.3	150	360	P	V
5320MHz		10640	41.8	-12.2	54	48.3	39.08	10.72	56.3	150	360	A	V
		15960	49.86	-24.14	74	52.39	38.62	13.47	54.62	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 802.11n HT40 (Band Edge @ 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)
802.11n HT40 CH 54 5270MHz		5025.9	48.49	-25.51	74	41.57	31.91	7.82	32.81	293	355	P	H
		5083.65	40.47	-13.53	54	33.51	31.93	7.86	32.83	293	355	A	H
	*	5270	97.11	-	-	90.09	32.01	7.92	32.91	293	355	P	H
	*	5270	91.54	-	-	84.52	32.01	7.92	32.91	293	355	A	H
		5448.96	47.58	-26.42	74	40.47	32.08	8.01	32.98	293	355	P	H
		5457.36	39.25	-14.75	54	32.15	32.08	8.01	32.99	293	355	A	H
		5091	47.91	-26.09	74	40.94	31.94	7.86	32.83	100	155	P	V
		5005.6	40.11	-13.89	54	33.18	31.91	7.82	32.8	100	155	A	V
	*	5270	91.63	-	-	84.61	32.01	7.92	32.91	100	155	P	V
	*	5270	84.88	-	-	77.86	32.01	7.92	32.91	100	155	A	V
		5390.16	47.01	-26.99	74	39.96	32.05	7.96	32.96	100	155	P	V
		5435.28	38.96	-15.04	54	31.86	32.07	8.01	32.98	100	155	A	V
802.11n HT40 CH 62 5310MHz		5010.5	47.89	-26.11	74	40.96	31.91	7.82	32.8	142	360	P	H
		5004.9	40.24	-13.76	54	33.31	31.91	7.82	32.8	142	360	A	H
	*	5310	97.45	-	-	90.41	32.03	7.94	32.93	142	360	P	H
	*	5310	89.06	-	-	82.02	32.03	7.94	32.93	142	360	A	H
		5459.52	46.6	-27.4	74	39.5	32.08	8.01	32.99	142	360	P	H
		5453.76	39.11	-14.89	54	32.01	32.08	8.01	32.99	142	360	A	H
		5009.1	50.18	-23.82	74	43.25	31.91	7.82	32.8	100	92	P	V
		5006.3	40.23	-13.77	54	33.3	31.91	7.82	32.8	100	92	A	V
	*	5310	94.72	-	-	87.68	32.03	7.94	32.93	100	92	P	V
	*	5310	86.54	-	-	79.5	32.03	7.94	32.93	100	92	A	V
		5459.28	46.93	-27.07	74	39.83	32.08	8.01	32.99	100	92	P	V
		5418.24	38.81	-15.19	54	31.75	32.07	7.96	32.97	100	92	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	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		10540	50.74	-23.26	74	57.69	38.87	10.67	56.49	150	220	P	H
HT40		15810	50.9	-23.1	74	53.82	38.71	13.39	55.02	150	0	P	H
CH 54		10540	50.71	-23.29	74	57.66	38.87	10.67	56.49	150	220	P	V
5270MHz		15810	50.12	-23.88	74	53.04	38.71	13.39	55.02	150	0	P	V
802.11n		10620	50.19	-23.81	74	56.76	39.04	10.72	56.33	153	360	P	H
HT40		15930	49.65	-24.35	74	52.27	38.64	13.45	54.71	153	0	P	H
CH 62		10620	50.04	-23.96	74	56.61	39.04	10.72	56.33	150	220	P	V
5310MHz		15930	50.35	-23.65	74	52.97	38.64	13.45	54.71	153	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 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)
802.11ac VHT80 CH 58 5290MHz		5044.45	49.2	-24.8	74	42.26	31.92	7.84	32.82	235	353	P	H
		5019.25	41.49	-12.51	54	34.57	31.91	7.82	32.81	235	353	A	H
	*	5290	93.85	-	-	86.83	32.01	7.93	32.92	235	353	P	H
	*	5290	86.84	-	-	79.82	32.01	7.93	32.92	235	353	A	H
		5354.64	47.81	-26.19	74	40.77	32.04	7.95	32.95	235	353	P	H
		5352.24	42.58	-11.42	54	35.54	32.04	7.95	32.95	235	353	A	H
		5050.4	48.18	-25.82	74	41.24	31.92	7.84	32.82	229	28	P	V
		5007	41.42	-12.58	54	34.49	31.91	7.82	32.8	229	28	A	V
	*	5290	86.89	-	-	79.87	32.01	7.93	32.92	229	28	P	V
	*	5290	79.06	-	-	72.04	32.01	7.93	32.92	229	28	A	V
		5413.92	47.41	-26.59	74	40.35	32.07	7.96	32.97	229	28	P	V
		5350.56	40.45	-13.55	54	33.41	32.04	7.95	32.95	229	28	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	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	49.43	-24.57	74	56.15	38.97	10.7	56.39	153	360	P	H
VHT80		15870	50.21	-23.79	74	52.97	38.67	13.41	54.84	153	0	P	H
CH 58		10580	49.61	-24.39	74	56.33	38.97	10.7	56.39	153	360	P	V
5290MHz		15870	50.15	-23.85	74	52.91	38.67	13.41	54.84	153	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.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 100 5500MHz		5426.32	47.41	-26.59	74	40.36	32.07	7.96	32.98	232	360	P	H
		5448.08	39.31	-14.69	54	32.2	32.08	8.01	32.98	232	360	A	H
		5500	95.91	-	-	88.75	32.1	8.06	33	232	360	P	H
		5500	88.39	-	-	81.23	32.1	8.06	33	232	360	A	H
		5451.44	47.89	-26.11	74	40.79	32.08	8.01	32.99	100	157	P	V
		5447.76	38.39	-15.61	54	31.28	32.08	8.01	32.98	100	157	A	V
		5500	86.23	-	-	79.07	32.1	8.06	33	100	157	P	V
		5500	79.07	-	-	71.91	32.1	8.06	33	100	157	A	V
802.11a CH 116 5580MHz		5463.04	48.55	-25.45	74	41.44	32.09	8.01	32.99	100	360	P	H
		5440.48	39.06	-14.94	54	31.96	32.07	8.01	32.98	100	360	A	H
		5580	95.54	-	-	88.14	32.24	8.16	33	100	360	P	H
		5580	89.43	-	-	82.03	32.24	8.16	33	100	360	A	H
		5743.895	47.66	-26.34	74	39.85	32.58	8.23	33	100	360	P	H
		5747.99	39.32	-14.68	54	31.51	32.58	8.23	33	100	360	A	H
		5435.92	47.5	-26.5	74	40.4	32.07	8.01	32.98	100	137	P	V
		5442.4	37.66	-16.34	54	30.56	32.07	8.01	32.98	100	137	A	V
		5580	92.89	-	-	85.49	32.24	8.16	33	100	137	P	V
		5580	87.21	-	-	79.81	32.24	8.16	33	100	137	A	V
		5762.48	46.65	-27.35	74	38.8	32.62	8.23	33	100	137	P	V
		5747.99	38.19	-15.81	54	30.38	32.58	8.23	33	100	137	A	V



802.11a CH 140 5700MHz		5700	95.66	-	-	87.95	32.48	8.23	33	194	360	P	H
		5700	92.8	-	-	85.09	32.48	8.23	33	194	360	A	H
		5735.64	48.22	-25.78	74	40.41	32.58	8.23	33	194	360	P	H
		5725.24	42.41	-11.59	54	34.63	32.55	8.23	33	194	360	A	H
		5700	92.64	-	-	84.93	32.48	8.23	33	100	140	P	V
		5700	85.62	-	-	77.91	32.48	8.23	33	100	140	A	V
		5745.24	48.29	-25.71	74	40.48	32.58	8.23	33	100	140	P	V
		5752.04	39.36	-14.64	54	31.51	32.62	8.23	33	100	140	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 100 5500MHz		11000	49.8	-24.2	74	54.63	39.8	10.97	55.6	153	360	P	H
		16500	50.78	-23.22	74	51.04	38.5	14.81	53.57	153	0	P	H
		11000	49.09	-24.91	74	53.92	39.8	10.97	55.6	153	360	P	V
		16500	50.73	-23.27	74	50.99	38.5	14.81	53.57	153	0	P	V
802.11a CH 116 5580MHz		11160	54.42	-19.58	74	59.46	39.6	11.1	55.74	153	360	P	H
		11160	47.81	-6.19	54	52.85	39.6	11.1	55.74	153	360	A	H
		16740	50.23	-23.77	74	49.38	39.22	15.57	53.94	153	0	P	H
		11160	53.42	-20.58	74	58.46	39.6	11.1	55.74	153	360	P	V
		11160	48.03	-5.97	54	53.07	39.6	11.1	55.74	153	360	A	V
		16740	50.42	-23.58	74	49.57	39.22	15.57	53.94	153	0	P	V
802.11a CH 140 5700MHz		11400	55.13	-18.87	74	60.49	39.32	11.26	55.94	153	360	P	H
		11400	45.68	-8.32	54	51.04	39.32	11.26	55.94	153	360	A	H
		17100	50.73	-23.27	74	48.34	40.64	16.56	54.81	153	0	P	H
		11400	52.46	-21.54	74	57.82	39.32	11.26	55.94	153	360	P	V
		11400	44.77	-9.23	54	50.13	39.32	11.26	55.94	153	360	A	V
		17100	50.46	-23.54	74	48.07	40.64	16.56	54.81	153	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	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		5448.24	47.46	-26.54	74	40.35	32.08	8.01	32.98	181	0	P	H
		5448.56	40.85	-13.15	54	33.74	32.08	8.01	32.98	181	0	A	H
	*	5500	96.93	-	-	89.77	32.1	8.06	33	181	0	P	H
	*	5500	90.66	-	-	83.5	32.1	8.06	33	181	0	A	H
		5456.4	47.34	-26.66	74	40.24	32.08	8.01	32.99	270	45	P	V
		5448.4	39.35	-14.65	54	32.24	32.08	8.01	32.98	270	45	A	V
	*	5500	91.99	-	-	84.83	32.1	8.06	33	270	45	P	V
	*	5500	85.18	-	-	78.02	32.1	8.06	33	270	45	A	V
802.11n HT20 CH 116 5580MHz		5469.04	47.24	-26.76	74	40.08	32.09	8.06	32.99	117	12	P	H
		5444.32	38.37	-15.63	54	31.27	32.07	8.01	32.98	117	12	A	H
	*	5580	95.3	-	-	87.9	32.24	8.16	33	117	12	P	H
	*	5580	89.3	-	-	81.9	32.24	8.16	33	117	12	A	H
		5741.06	46.9	-27.1	74	39.09	32.58	8.23	33	117	12	P	H
		5744.84	38.93	-15.07	54	31.12	32.58	8.23	33	117	12	A	H
		5438.56	47.27	-26.73	74	40.17	32.07	8.01	32.98	379	90	P	V
		5441.92	38.55	-15.45	54	31.45	32.07	8.01	32.98	379	90	A	V
	*	5580	91.47	-	-	84.07	32.24	8.16	33	379	90	P	V
	*	5580	85.2	-	-	77.8	32.24	8.16	33	379	90	A	V
		5743.265	48.68	-25.32	74	40.87	32.58	8.23	33	379	90	P	V
		5740.43	39.08	-14.92	54	31.27	32.58	8.23	33	379	90	A	V



802.11n HT20 CH 140 5700MHz	*	5700	95.73	-	-	88.02	32.48	8.23	33	130	11	P	H
	*	5700	90.01	-	-	82.3	32.48	8.23	33	130	11	A	H
		5749.48	48	-26	74	40.19	32.58	8.23	33	130	11	P	H
		5752.04	40.23	-13.77	54	32.38	32.62	8.23	33	130	11	A	H
	*	5700	91.9	-	-	84.19	32.48	8.23	33	323	42	P	V
	*	5700	85.21	-	-	77.5	32.48	8.23	33	323	42	A	V
		5752.12	47.37	-26.63	74	39.52	32.62	8.23	33	323	42	P	V
		5751.8	39.2	-14.8	54	31.35	32.62	8.23	33	323	42	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	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	55.36	-18.64	74	60.19	39.8	10.97	55.6	150	360	P	H
		11000	47.47	-6.53	54	52.3	39.8	10.97	55.6	150	360	A	H
		16500	50.57	-23.43	74	50.83	38.5	14.81	53.57	150	0	P	H
		11000	56.3	-17.7	74	61.13	39.8	10.97	55.6	150	360	P	V
		11000	48.53	-5.47	54	53.36	39.8	10.97	55.6	150	360	A	V
		16500	50.79	-23.21	74	51.05	38.5	14.81	53.57	150	0	P	V
802.11n HT20 CH 116 5580MHz		11160	54.93	-19.07	74	59.97	39.6	11.1	55.74	150	360	P	H
		11160	47.19	-6.81	54	52.23	39.6	11.1	55.74	150	360	A	H
		16740	50.92	-23.08	74	50.07	39.22	15.57	53.94	150	0	P	H
		11160	54.86	-19.14	74	59.9	39.6	11.1	55.74	150	360	P	V
		11160	48.78	-5.22	54	53.82	39.6	11.1	55.74	150	360	A	V
		16740	50.83	-23.17	74	49.98	39.22	15.57	53.94	150	0	P	V
802.11n HT20 CH 140 5700MHz		11400	54.32	-19.68	74	59.68	39.32	11.26	55.94	150	360	P	H
		11400	47.34	-6.66	54	52.7	39.32	11.26	55.94	150	360	A	H
		17100	50.47	-23.53	74	48.08	40.64	16.56	54.81	150	0	P	H
		11400	55.39	-18.61	74	60.75	39.32	11.26	55.94	150	360	P	V
		11400	48.76	-5.24	54	54.12	39.32	11.26	55.94	150	360	A	V
		17100	50.32	-23.68	74	47.93	40.64	16.56	54.81	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 802.11n HT40 (Band Edge @ 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)
802.11n HT40 CH 102 5510MHz		5459.44	47.39	-26.61	74	40.29	32.08	8.01	32.99	123	360	P	H
		5457.76	39.01	-14.99	54	31.91	32.08	8.01	32.99	123	360	A	H
	*	5510	94.82	-	-	87.61	32.1	8.11	33	123	360	P	H
	*	5510	87.53	-	-	80.32	32.1	8.11	33	123	360	A	H
		5742.005	47.15	-26.85	74	39.34	32.58	8.23	33	123	360	P	H
		5747.675	39.49	-14.51	54	31.68	32.58	8.23	33	123	360	A	H
		5466.64	47.66	-26.34	74	40.5	32.09	8.06	32.99	100	101	P	V
		5468.56	39.1	-14.9	54	31.94	32.09	8.06	32.99	100	101	A	V
	*	5510	93.44	-	-	86.23	32.1	8.11	33	100	101	P	V
	*	5510	86.24	-	-	79.03	32.1	8.11	33	100	101	A	V
		5733.185	47.42	-26.58	74	39.64	32.55	8.23	33	100	101	P	V
		5749.25	39.64	-14.36	54	31.83	32.58	8.23	33	100	101	A	V
802.11n HT40 CH 110 5550MHz		5359.36	47.37	-26.63	74	40.33	32.04	7.95	32.95	100	360	P	H
		5448.88	39.18	-14.82	54	32.07	32.08	8.01	32.98	100	360	A	H
	*	5550	94.17	-	-	86.81	32.2	8.16	33	100	360	P	H
	*	5550	87.48	-	-	80.12	32.2	8.16	33	100	360	A	H
		5749.565	47.11	-26.89	74	39.3	32.58	8.23	33	100	360	P	H
		5746.1	39.83	-14.17	54	32.02	32.58	8.23	33	100	360	A	H
		5453.44	47.36	-26.64	74	40.26	32.08	8.01	32.99	107	100	P	V
		5449.12	39.09	-14.91	54	31.98	32.08	8.01	32.98	107	100	A	V
	*	5550	92.93	-	-	85.57	32.2	8.16	33	107	100	P	V
	*	5550	87.19	-	-	79.83	32.2	8.16	33	107	100	A	V
		5738.54	46.88	-27.12	74	39.07	32.58	8.23	33	107	100	P	V
		5747.045	39.97	-14.03	54	32.16	32.58	8.23	33	107	100	A	V



802.11n HT40 CH 134 5670MHz		5410.9	47.05	-26.95	74	40	32.06	7.96	32.97	124	360	P	H
		5457.8	39.06	-14.94	54	31.96	32.08	8.01	32.99	124	360	A	H
	*	5670	94.99	-	-	87.33	32.44	8.22	33	124	360	P	H
	*	5670	87.79	-	-	80.13	32.44	8.22	33	124	360	A	H
		5741.725	47.19	-26.81	74	39.38	32.58	8.23	33	124	360	P	H
		5749.6	39.75	-14.25	54	31.94	32.58	8.23	33	124	360	A	H
		5421.05	46.3	-27.7	74	39.24	32.07	7.96	32.97	243	26	P	V
		5452.55	39.1	-14.9	54	32	32.08	8.01	32.99	243	26	A	V
	*	5670	91.07	-	-	83.41	32.44	8.22	33	243	26	P	V
	*	5670	86.09	-	-	78.43	32.44	8.22	33	243	26	A	V
		5757.825	47.57	-26.43	74	39.72	32.62	8.23	33	243	26	P	V
		5745.575	39.5	-14.5	54	31.69	32.58	8.23	33	243	26	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	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	54.45	-19.55	74	59.29	39.78	10.99	55.61	170	230	P	H
		11020	46.58	-7.42	54	51.42	39.78	10.99	55.61	170	230	A	H
		16530	50.25	-23.75	74	50.36	38.6	14.91	53.62	153	0	P	H
		11020	52.85	-21.15	74	57.69	39.78	10.99	55.61	170	230	P	V
		11020	45.23	-8.77	54	50.07	39.78	10.99	55.61	170	230	A	V
		16530	50.38	-23.62	74	50.49	38.6	14.91	53.62	153	0	P	V
802.11n HT40 CH 110 5550MHz		11100	54.79	-19.21	74	59.75	39.68	11.05	55.69	150	200	P	H
		11100	46.51	-7.49	54	51.47	39.68	11.05	55.69	150	200	A	H
		16650	50.73	-23.27	74	50.33	38.97	15.24	53.81	150	0	P	H
		11100	55.19	-18.81	74	60.15	39.68	11.05	55.69	150	200	P	V
		11100	43.99	-10.01	54	48.95	39.68	11.05	55.69	150	200	A	V
		16650	50.14	-23.86	74	49.74	38.97	15.24	53.81	150	0	P	V
802.11n HT40 CH 134 5670MHz		11340	52.65	-21.35	74	57.93	39.4	11.21	55.89	200	360	P	H
		11340	42.85	-11.15	54	48.13	39.4	11.21	55.89	200	360	A	H
		17010	50.89	-23.11	74	48.85	40.11	16.34	54.41	153	0	P	H
		11340	56.19	-17.81	74	61.47	39.4	11.21	55.89	200	360	P	V
		11340	44.25	-9.75	54	49.53	39.4	11.21	55.89	200	360	A	V
		17010	50.95	-23.05	74	48.91	40.11	16.34	54.41	153	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 802.11ac VHT80 (Band Edge @ 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)
802.11ac VHT80 CH 106 5530MHz		5458.48	50.89	-23.11	74	43.79	32.08	8.01	32.99	221	360	P	H
		5469.52	44.01	-9.99	54	36.85	32.09	8.06	32.99	221	360	A	H
	*	5530	92.02	-	-	84.78	32.13	8.11	33	221	360	P	H
	*	5530	83.26	-	-	76.02	32.13	8.11	33	221	360	A	H
		5731.925	47.57	-26.43	74	39.79	32.55	8.23	33	221	360	P	H
		5742.635	40.56	-13.44	54	32.75	32.58	8.23	33	221	360	A	H
		5458.24	48.65	-25.35	74	41.55	32.08	8.01	32.99	250	21	P	V
		5467.6	42.18	-11.82	54	35.02	32.09	8.06	32.99	250	21	A	V
	*	5530	87.96	-	-	80.72	32.13	8.11	33	250	21	P	V
	*	5530	79.35	-	-	72.11	32.13	8.11	33	250	21	A	V
		5745.155	47	-27	74	39.19	32.58	8.23	33	250	21	P	V
		5398.24	48.29	-25.71	74	41.23	32.06	7.96	32.96	100	360	P	H
802.11ac VHT80 CH 122 5610MHz		5374.96	40.37	-13.63	54	33.33	32.05	7.95	32.96	100	360	A	H
	*	5610	92.45	-	-	84.93	32.31	8.21	33	100	360	P	H
	*	5610	85.01	-	-	77.49	32.31	8.21	33	100	360	A	H
		5741.375	47.14	-26.86	74	39.33	32.58	8.23	33	100	360	P	H
		5750.3	40.7	-13.3	54	32.89	32.58	8.23	33	100	360	A	H
		5431.84	46.8	-27.2	74	39.7	32.07	8.01	32.98	234	26	P	V
		5420.32	39.95	-14.05	54	32.89	32.07	7.96	32.97	234	26	A	V
	*	5610	87.3	-	-	79.78	32.31	8.21	33	234	26	P	V
	*	5610	78.61	-	-	71.09	32.31	8.21	33	234	26	A	V
		5738.05	47.72	-26.28	74	39.91	32.58	8.23	33	234	26	P	V
		5747.15	40.42	-13.58	54	32.61	32.58	8.23	33	234	26	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	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	50.1	-23.9	74	55.02	39.72	11.02	55.66	153	360	P	H
VHT80		16590	50.13	-23.87	74	49.94	38.76	15.13	53.7	153	0	P	H
CH 106		11060	50.47	-23.53	74	55.39	39.72	11.02	55.66	153	360	P	V
5530MHz		16590	50.63	-23.37	74	50.44	38.76	15.13	53.7	153	0	P	V
802.11ac		11220	50.01	-23.99	74	55.13	39.54	11.13	55.79	152	360	P	H
VHT80		16830	50.98	-23.02	74	49.78	39.48	15.79	54.07	152	0	P	H
CH 122		11220	50.63	-23.37	74	55.75	39.54	11.13	55.79	152	360	P	V
5610MHz		16830	50.8	-23.2	74	49.6	39.48	15.79	54.07	152	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
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 144 5720MHz		11440	54.94	-19.06	74	60.34	39.28	11.29	55.97	150	360	P	H
		11440	42.16	-11.84	54	47.56	39.28	11.29	55.97	150	360	A	H
		17160	50.51	-23.49	74	47.9	41.07	16.67	55.13	150	0	P	H
		11440	53	-21	74	58.4	39.28	11.29	55.97	150	360	P	V
		11440	41.49	-12.51	54	46.89	39.28	11.29	55.97	150	360	A	V
		17160	50.91	-23.09	74	48.3	41.07	16.67	55.13	150	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11n HT20 (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)
802.11n HT20 CH 144 5720MHz		11440	53.65	-20.35	74	59.05	39.28	11.29	55.97	150	360	P	H
		11440	43.25	-10.75	54	48.65	39.28	11.29	55.97	150	360	A	H
		17160	50.71	-23.29	74	48.1	41.07	16.67	55.13	150	0	P	H
		11440	54.01	-19.99	74	59.41	39.28	11.29	55.97	150	360	P	V
		11440	44.29	-9.71	54	49.69	39.28	11.29	55.97	150	360	A	V
		17160	50.86	-23.14	74	48.25	41.07	16.67	55.13	150	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11n HT40 (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)
802.11n		11380	50.15	-23.85	74	55.5	39.34	11.24	55.93	150	360	P	H
HT40		17070	50	-24	74	47.77	40.43	16.45	54.65	150	0	P	H
CH 142		11380	50.29	-23.71	74	55.64	39.34	11.24	55.93	150	360	P	V
5710MHz		17070	50.49	-23.51	74	48.26	40.43	16.45	54.65	150	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11ac VHT80 (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)
802.11ac		11380	50.15	-23.85	74	55.5	39.34	11.24	55.93	150	360	P	H
VHT80		17070	50	-24	74	47.77	40.43	16.45	54.65	150	0	P	H
CH 138		11380	50.29	-23.71	74	55.64	39.34	11.24	55.93	150	360	P	V
5690MHz		17070	50.49	-23.51	74	48.26	40.43	16.45	54.65	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.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 LF		30.97	24.98	-15.02	40	31.97	24.52	0.27	31.78	100	250	P	H
		107.6	26.03	-17.47	43.5	39.76	16.73	1.09	31.55	-	-	P	H
		214.3	23.22	-20.28	43.5	36.96	15.88	1.64	31.26	-	-	P	H
		355.92	23.69	-22.31	46	32.64	20.22	2.11	31.28	-	-	P	H
		556.71	27.01	-18.99	46	31.24	24.39	2.58	31.2	-	-	P	H
		750.71	29.18	-16.82	46	31.36	26.02	3.03	31.23	-	-	P	H
		30.97	31	-9	40	38.26	24.52	0	31.78	100	0	P	H
		120.21	23.28	-20.22	43.5	37.68	17.11	0	31.51	-	-	P	H
		172.59	22.8	-20.7	43.5	37.45	16.69	0	31.34	-	-	P	H
		365.62	22.71	-23.29	46	33.57	20.41	0	31.27	-	-	P	H
		523.73	26.96	-19.04	46	34.47	23.66	0	31.17	-	-	P	V
		674.08	27.94	-18.06	46	31.68	25.44	2.05	31.23	-	-	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		(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)

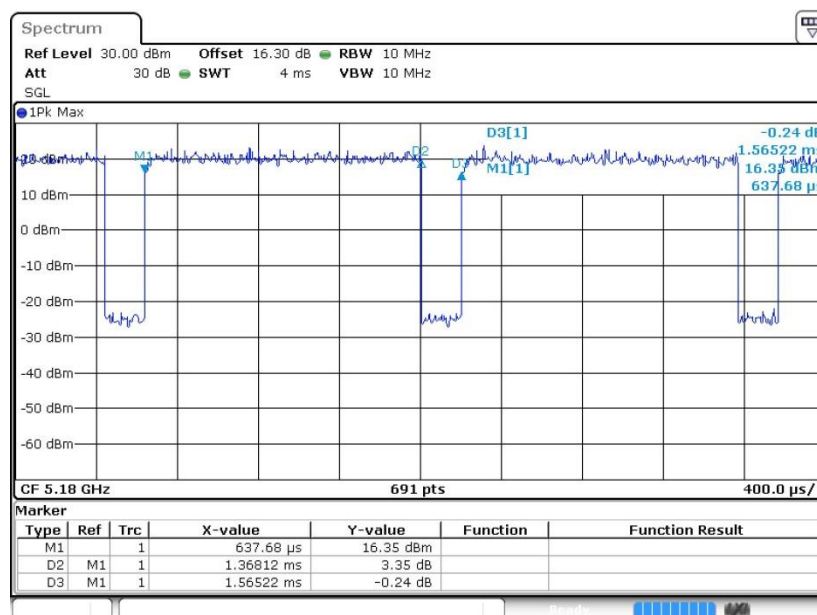
= -10.46(dB)

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

Appendix C. Duty Cycle Plots

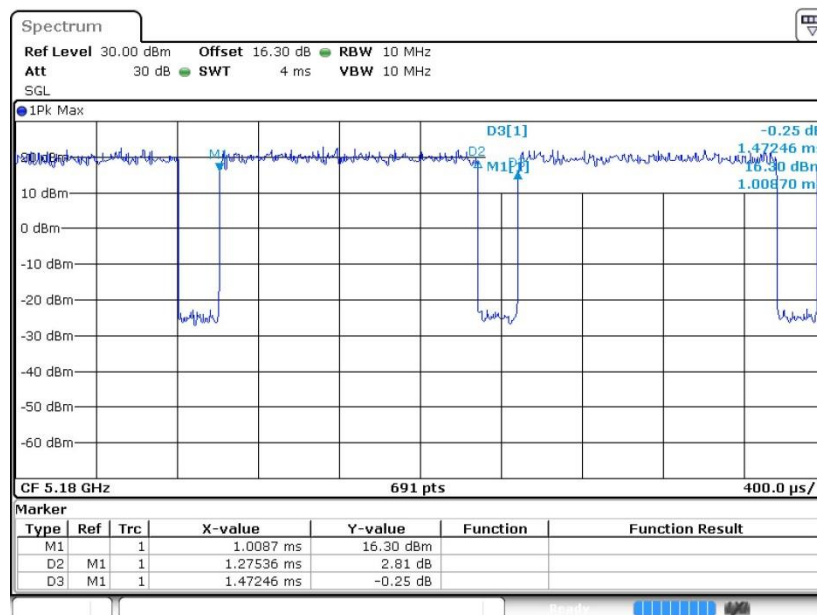
Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11a	87.41	1.368	0.731	1 kHz
802.11n HT20	86.61	1.275	0.784	1 kHz
802.11n HT40	76.04	0.635	1.575	3 kHz
802.11ac VHT20	83.25	0.980	1.021	3 kHz
802.11ac VHT40	71.43	0.493	2.029	3 kHz
802.11ac VHT80	55.34	0.248	4.035	10kHz

802.11a

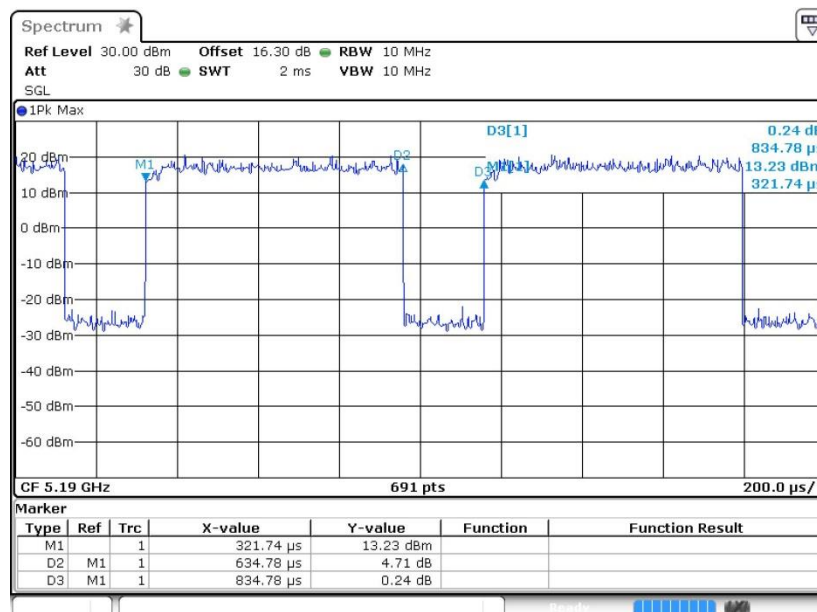




802.11n HT20

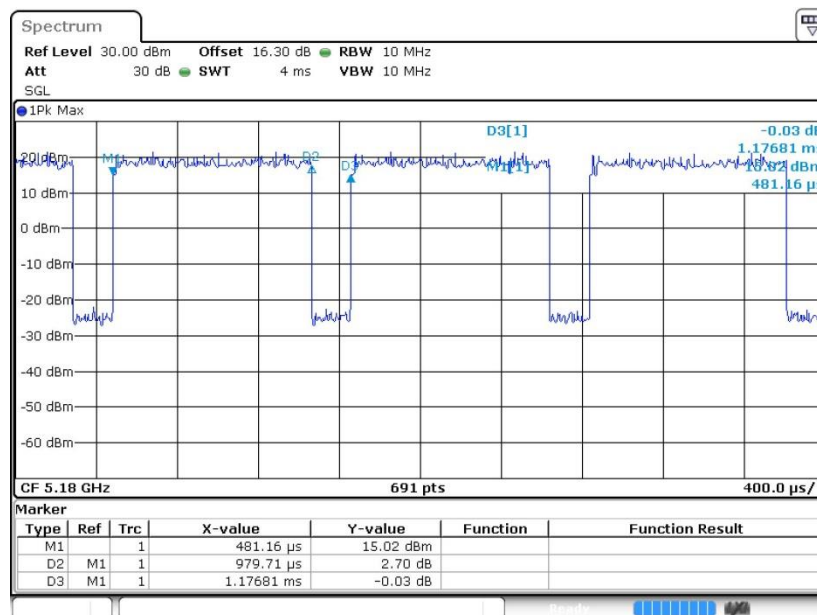


802.11n HT40

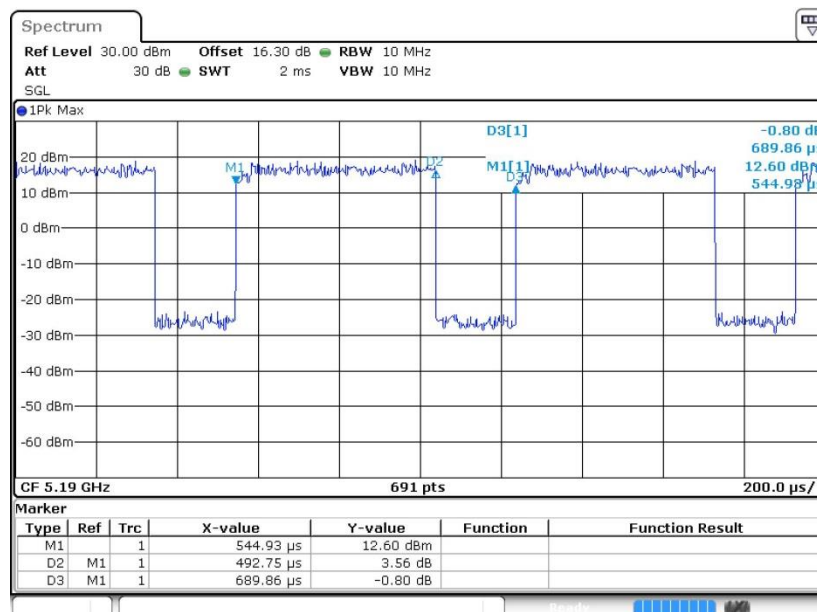




802.11ac VHT20



802.11ac VHT40





802.11ac VHT80

