

FCC RF Test Report

APPLICANT : Xiaomi Communications Co., Ltd.
EQUIPMENT : Mobile Phone
BRAND NAME : MI
MODEL NAME : M1803E1A
FCC ID : 2AFZZ-XME1A
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Apr. 20, 2018 and testing was completed on Jun. 07, 2018. We, SPORTON INTERNATIONAL 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 INC., the test report shall not be reproduced except in full.



Reviewed by: Joseph Lin / Supervisor



Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR842002E	Rev. 01	Initial issue of report	Jun. 11, 2018



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	2.1049 & 15.403(i)	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	≤ 24 dBm	Pass	-
3.3	15.407(a)	Power Spectral Density	≤ 11 dBm	Pass	-
3.4	15.407(b)	Unwanted Emissions	15.407(b) & 15.209(a)	Pass	Under limit 7.19 dB at 5350.080 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 13.51 dB at 0.152 MHz
3.6	15.407(c)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.7	15.203 & 15.407(a)	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

Xiaomi Communications Co., Ltd.

The Rainbow City of China Resources, NO.68, Qinghe Middle Street, Haidian District, Beijing, China

1.2 Manufacturer

Xiaomi Communications Co., Ltd.

The Rainbow City of China Resources, NO.68, Qinghe Middle Street, Haidian District, Beijing, China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	MI
Model Name	M1803E1A
FCC ID	2AFZZ-XME1A
EUT supports Radios application	CDMA/EV-DO/GSM/GPRS/EGPRS/WCDMA/HSPA/ DC-HSDPA/HSPA+(16QAM uplink is not supported)/LTE/NFC WLAN 2.4GHz 802.11b/g/n HT20 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth v3.0 + EDR/Bluetooth v4.0 LE / Bluetooth v4.2 LE/ Bluetooth v5.0 LE
IMEI Code	Conducted: 867252030137219 Conduction: 867252030157993/867252030158009 Radiation: 867252030134935
HW Version	P2
SW Version	MIUI 9
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. There are two types of EUT, the difference between two samples is for memory, the sample 1 is 6+64GB capacity and the sample 2 is 6+128GB capacity. According to the difference, we only choose sample 1 to perform full test.

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5700 MHz
Maximum Output Power to Antenna	<p><5180 MHz ~ 5240 MHz></p> <p><Ant. 1></p> 802.11a : 15.10 dBm / 0.0324 W 802.11n HT20 : 14.02 dBm / 0.0252 W 802.11n HT40 : 13.22 dBm / 0.0210 W 802.11ac VHT20 : 13.99 dBm / 0.0251 W 802.11ac VHT40 : 13.20 dBm / 0.0209 W 802.11ac VHT80 : 12.08 dBm / 0.0161 W <p><Ant. 2></p> 802.11a : 14.82 dBm / 0.0303 W 802.11n HT20 : 13.84 dBm / 0.0242 W 802.11n HT40 : 13.09 dBm / 0.0204 W 802.11ac VHT20 : 13.80 dBm / 0.0240 W 802.11ac VHT40 : 12.98 dBm / 0.0199 W 802.11ac VHT80 : 11.78 dBm / 0.0151 W <p>MIMO <Ant. 1+2></p> 802.11a : 18.00 dBm / 0.0631 W 802.11n HT20 : 17.02 dBm / 0.0504 W 802.11n HT40 : 16.18 dBm / 0.0415 W 802.11ac VHT20 : 17.00 dBm / 0.0501 W 802.11ac VHT40 : 16.15 dBm / 0.0412 W 802.11ac VHT80 : 15.16 dBm / 0.0328 W <p><5260 MHz ~ 5320 MHz></p> <p><Ant. 1></p> 802.11a : 15.11 dBm / 0.0324 W 802.11n HT20 : 13.99 dBm / 0.0251 W 802.11n HT40 : 13.42 dBm / 0.0220 W 802.11ac VHT20 : 13.80 dBm / 0.0240 W 802.11ac VHT40 : 13.40 dBm / 0.0219 W 802.11ac VHT80 : 12.03 dBm / 0.0160 W <p><Ant. 2></p> 802.11a : 14.85 dBm / 0.0305 W 802.11n HT20 : 13.86 dBm / 0.0243 W 802.11n HT40 : 13.13 dBm / 0.0206 W 802.11ac VHT20 : 13.77 dBm / 0.0238 W 802.11ac VHT40 : 13.06 dBm / 0.0202 W 802.11ac VHT80 : 11.83 dBm / 0.0152 W <p>MIMO <Ant. 1+2></p> 802.11a : 17.97 dBm / 0.0627 W 802.11n HT20 : 16.98 dBm / 0.0499 W 802.11n HT40 : 16.30 dBm / 0.0427 W 802.11ac VHT20 : 16.94 dBm / 0.0494 W 802.11ac VHT40 : 16.26 dBm / 0.0423 W 802.11ac VHT80 : 15.24 dBm / 0.0334 W <p><5500 MHz ~ 5700 MHz ></p> 802.11a : 15.22 dBm / 0.0333 W 802.11n HT20 : 14.39 dBm / 0.0275 W 802.11n HT40 : 13.41 dBm / 0.0219 W

	802.11ac VHT20 : 14.22 dBm / 0.0264 W 802.11ac VHT40 : 13.38 dBm / 0.0218 W 802.11ac VHT80 : 12.39 dBm / 0.0173 W <Ant. 2> 802.11a : 14.87 dBm / 0.0307 W 802.11n HT20 : 13.94 dBm / 0.0248 W 802.11n HT40 : 13.25 dBm / 0.0211 W 802.11ac VHT20 : 13.93 dBm / 0.0247 W 802.11ac VHT40 : 13.25 dBm / 0.0211 W 802.11ac VHT80 : 12.05 dBm / 0.0160 W MIMO <Ant. 1+2> 802.11a : 18.09 dBm / 0.0644 W 802.11n HT20 : 17.33 dBm / 0.0541 W 802.11n HT40 : 16.40 dBm / 0.0437 W 802.11ac VHT20 : 17.28 dBm / 0.0535 W 802.11ac VHT40 : 16.36 dBm / 0.0433 W 802.11ac VHT80 : 15.50 dBm / 0.0355 W		
99% Occupied Bandwidth	<5180 MHz ~ 5240 MHz> 802.11a : 17.55 MHz 802.11n HT20 : 18.70 MHz 802.11n HT40 : 36.70 MHz 802.11ac VHT80 : 75.84 MHz <5260 MHz ~ 5320 MHz> 802.11a : 17.50 MHz 802.11n HT20 : 18.65 MHz 802.11n HT40 : 36.60 MHz 802.11ac VHT80 : 75.72 MHz <5500 MHz ~ 5720 MHz > 802.11a : 17.50 MHz 802.11n HT20 : 18.70 MHz 802.11n HT40 : 36.70 MHz 802.11ac VHT80 : 75.84 MHz		
Antenna Type	Ant. 1 : Dipole Antenna Ant. 2 : PIFA Antenna		
Antenna Gain	<5180 MHz ~ 5240 MHz> Ant. 1 : -4.72 dBi Ant. 2 : -4.55 dBi <5260 MHz ~ 5320 MHz> Ant. 1 : -1.29 dBi Ant. 2 : -4.84 dBi <5500 MHz ~ 5720 MHz> Ant. 1 : -0.13 dBi Ant. 2 : -1.03 dBi		
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)		
Antenna Function Description		Ant. 1	Ant. 2
	802.11 a/n/ac SISO	V	V
	802.11 a/n/ac MIMO	V	V

Note:

1. MIMO Ant. 1+2 is a calculated result from sum of the power MIMO Ant. 1 and MIMO Ant. 2.
2. For SISO & MIMO mode, the whole testing has assessed only MIMO mode by referring to their

higher conducted power.

3. 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.
4. For 802.11a / an HT20 MIMO mode, the whole testing has assessed only 802.11a mode by referring to their higher conducted power for RSE testing.

1.5 Modification of EUT

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

1.6 Testing Location

SPORTON INTERNATIONAL INC. is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and under the FCC-recognized accredited testing laboratories by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	Sporton Site No.	
	TH05-HY	CO05-HY

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

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No.58, Aly. 75, Ln. 564 Wenhua 3rd Rd. Guishan Dist. Taoyuan City Taiwan TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	Sporton Site No.	FCC designation No.	FCC Test Firm Registration No.
	03CH13-HY	TW0007	214511

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



1.7 Applicable Standards

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

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

Remark:

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

2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.
- b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5180-5240 MHz Band 1 (U-NII-1)	36	5180	44	5220
	38*	5190	46*	5230
	40	5200	48	5240
	42 [#]	5210		
Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5260-5320 MHz Band 2 (U-NII-2A)	52	5260	60	5300
	54*	5270	62*	5310
	56	5280	64	5320
	58 [#]	5290		
Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5500-5700 MHz Band 3 (U-NII-2C)	100	5500	112	5560
	102*	5510	116	5580
	104	5520	132	5660
	106 [#]	5530	134*	5670
	108	5540	136	5680
	110*	5550	140	5700



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

Note:

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

2.2 Test Mode

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

Single Antenna

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

MIMO Antenna

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 : GSM850 Idle + Bluetooth Link + WLAN Link(5GHz) + Camera(Rear) + USB Cable 1(Charging from Adapter) + SIM 1
Remark: For Radiated Test Cases, The tests were performed with Adapter , Battery and USB Cable 1.	

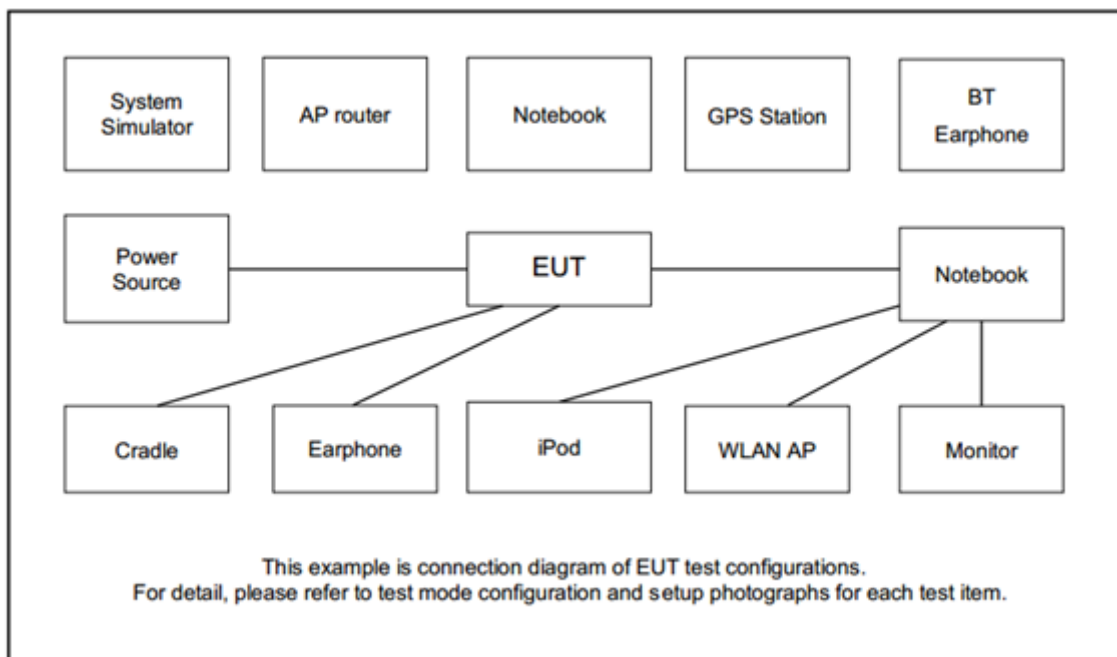


Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5700MHz
		802.11a	802.11a	802.11a
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140
Straddle		-	-	144

Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5700MHz
		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 : 5500-5700MHz
		802.11ac VHT80	802.11ac VHT80	802.11ac VHT80
L	Low	-	-	106
M	Middle	42	58	122
H	High	-	-	-
Straddle		-	-	138

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8m
3.	NOTE BOOK	Dell	Latitude E6320	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	Bluetooth Earphone	Sony Ericsson	MW600	PY700A2029	N/A	N/A



2.5 EUT Operation Test Setup

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

For AC power line conducted emissions, the EUT was set to connect with the 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 8 dB and 20dB attenuator.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 8 + 20 = 28 \text{ (dB)}\end{aligned}$$

3 Test Result

3.1 26dB & 99% Occupied Bandwidth Measurement

3.1.1 Description of 26dB & 99% Occupied Bandwidth

This section is for reporting purpose only.

There is no restriction limits for bandwidth.

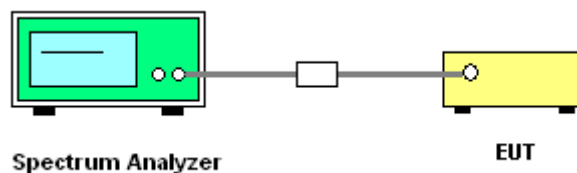
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

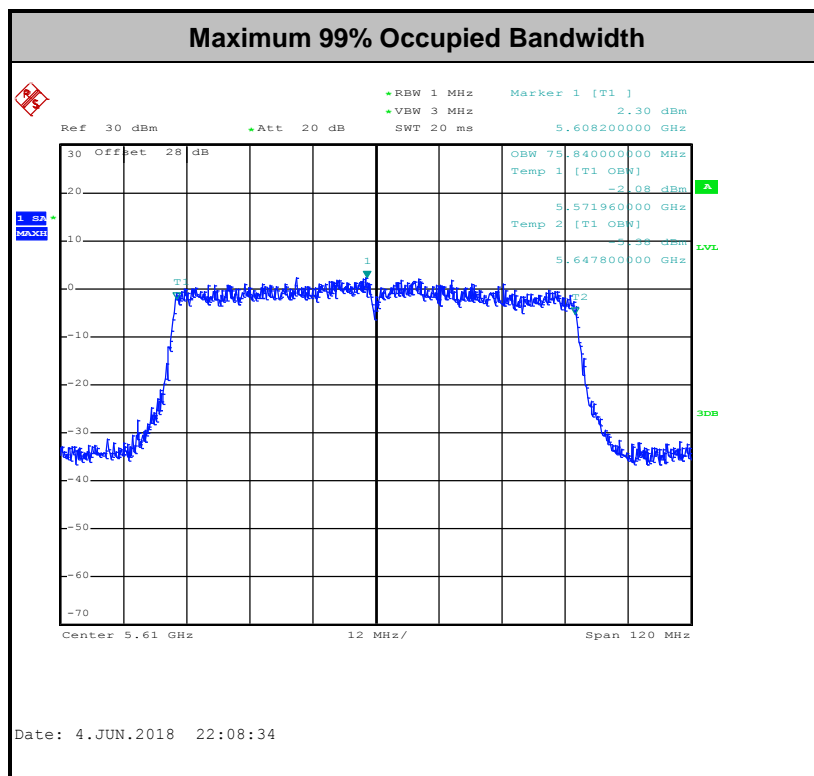
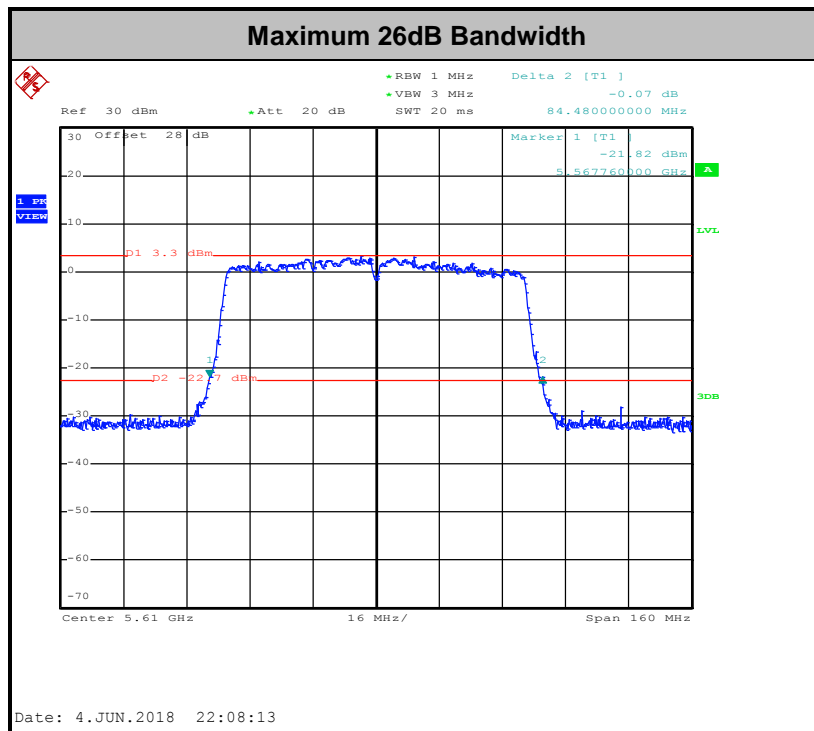
3.1.4 Test Setup





3.1.5 Test Result of 26dB & 99% Occupied Bandwidth

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.

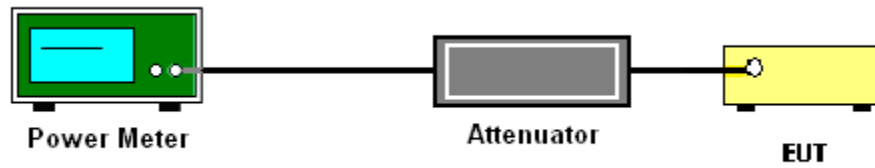
3.2.3 Test Procedures

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

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

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

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

<FCC 14-30 CFR 15.407>

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

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

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

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

Section F) Maximum power spectral density.

Method SA-2

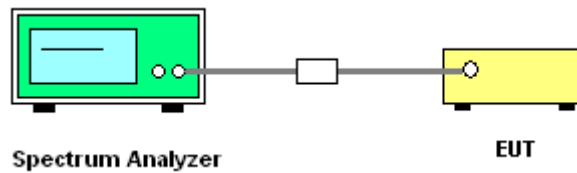
(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

1. The testing follows Method SA-2 of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
 - Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 1 MHz.
 - Set VBW \geq 3 MHz.
 - Number of points in sweep \geq 2 Span / RBW.
 - Sweep time = auto.
 - Detector = RMS
 - Trace average at least 100 traces in power averaging mode.
 - Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add $10 \log(1/0.25) = 6$ dB if the duty cycle is 25 percent.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.
4. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

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

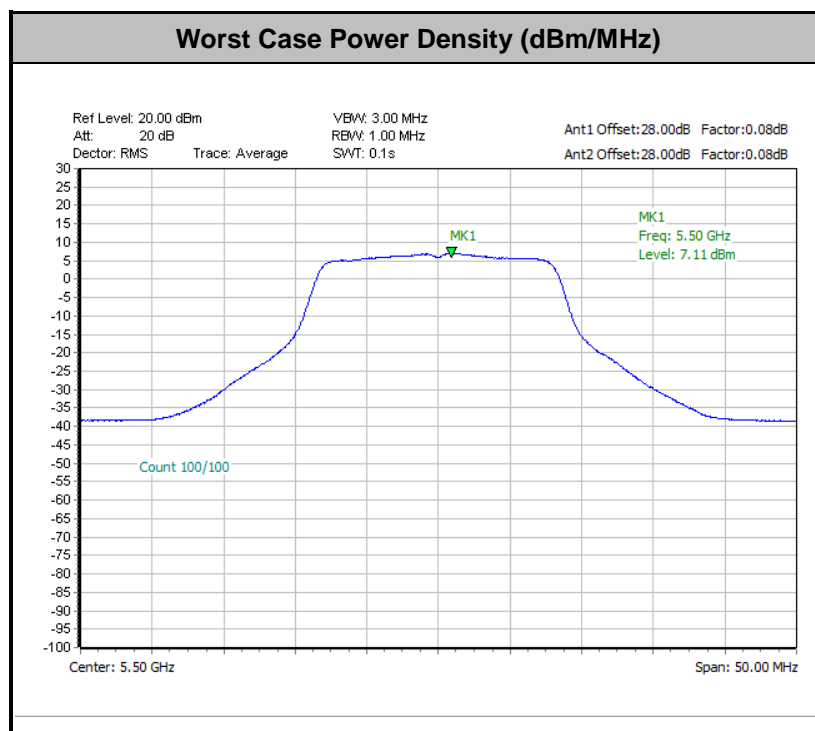
The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points, the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of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

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



3.4 Unwanted Emissions Measurement

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

3.4.1 Limit of Unwanted Emissions

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

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

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

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

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



EIRP (dBm)	Field Strength at 3m (dBμV/m)
- 27	68.2

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

$$\text{EIRP} = E_{\text{Meas}} + 20\log(d_{\text{Meas}}) - 104.7$$

where

EIRP is the equivalent isotropically radiated power, in dBm

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

d_{Meas} is the measurement distance, in m

3.4.2 Measuring Instruments

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

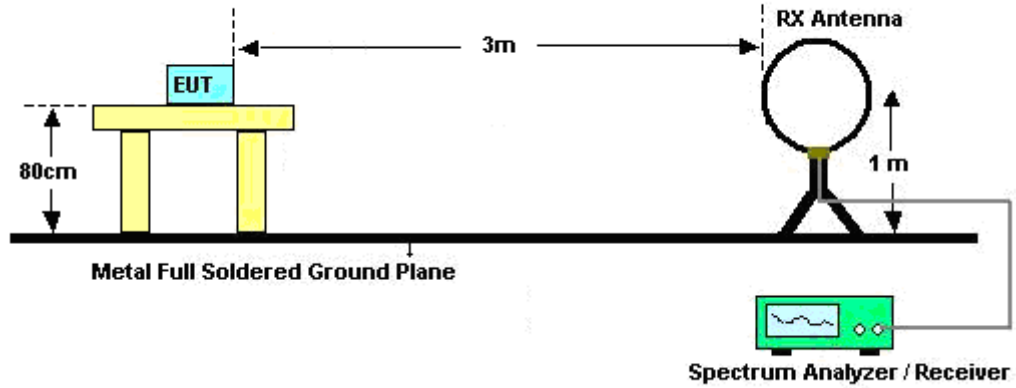


3.4.3 Test Procedures

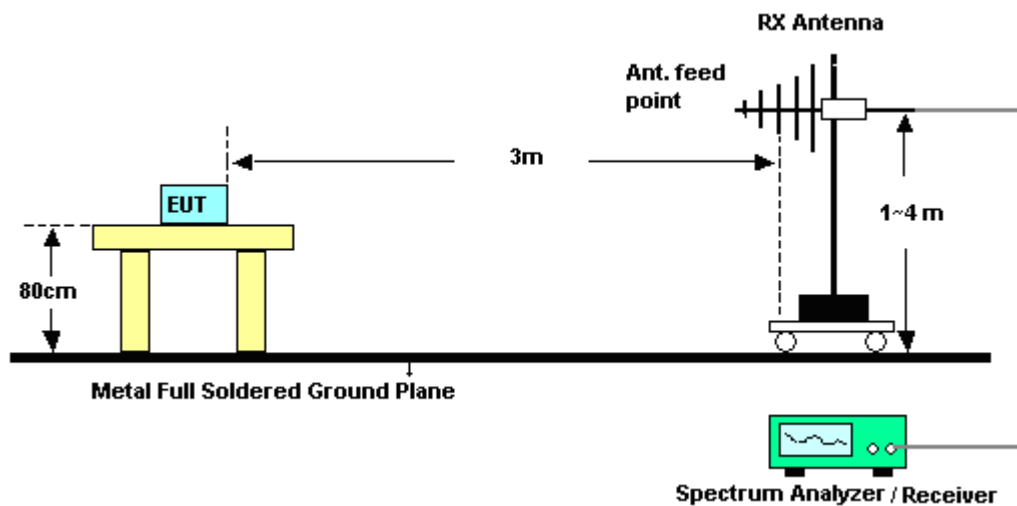
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section G) Unwanted emissions measurement.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW \geq 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold
 - (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
 - RBW = 1 MHz
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW \geq 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.4.4 Test Setup

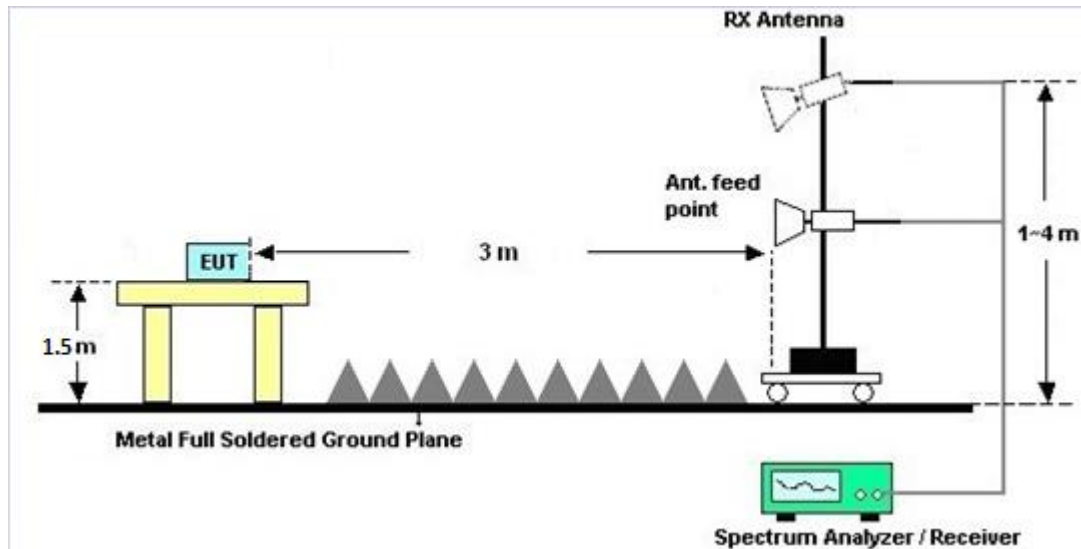
For radiated emissions below 30MHz



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.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.4.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C.

3.4.7 Duty Cycle

Please refer to Appendix D.

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

Please refer to Appendix C.

3.5 AC Conducted Emission Measurement

3.5.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

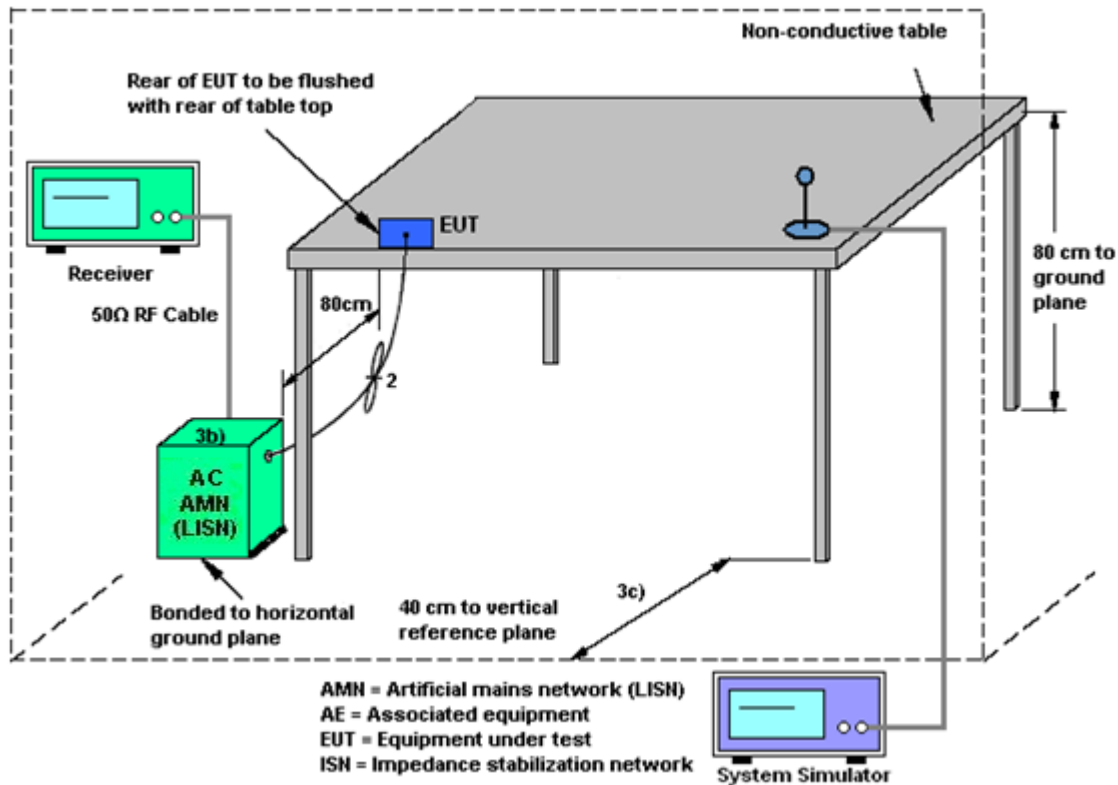
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.5.4 Test Setup



3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.6 Automatically Discontinue Transmission

3.6.1 Limit of Automatically Discontinue Transmission

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

3.6.2 Measuring Instruments

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

3.6.3 Test Result of Automatically Discontinue Transmission

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

3.7 Antenna Requirements

3.7.1 Standard Applicable

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

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

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

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

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

For power measurements on IEEE 802.11 devices,

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

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

The EUT supports CDD mode.

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

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

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

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

			DG	DG	Power	PSD
			for	for	Limit	Limit
	Ant 1	Ant 2	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
Band I	-4.72	-4.55	-4.55	-1.62	0.00	0.00
Band II	-1.29	-4.84	-1.29	0.13	0.00	0.00
Band III	-0.13	-1.03	-0.13	2.44	0.00	0.00

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

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



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	Testo	608-H1	34893241	N/A	Mar. 06, 2018	May 23, 2018~ Jun. 05, 2018	Mar. 05, 2019	Conducted (TH05-HY)
Power Meter	Anritsu	ML2495A	0932001	N/A	Sep. 26, 2017	May 23, 2018~ Jun. 05, 2018	Sep. 25, 2018	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	0846202	300MHz~40GHz	Sep. 26, 2017	May 23, 2018~ Jun. 05, 2018	Sep. 25, 2018	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9kHz ~ 30GHz	Nov. 13, 2017	May 23, 2018~ Jun. 05, 2018	Nov. 12, 2018	Conducted (TH05-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Nov. 10, 2017	Jun. 01, 2018~ Jun. 05, 2018	Nov. 09, 2018	Radiation (03CH13-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	40103&07	30MHz to 1GHz	Jan. 10, 2018	Jun. 01, 2018~ Jun. 05, 2018	Jan. 09, 2019	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-124 1	1GHz ~ 18GHz	Jun. 15, 2017	Jun. 01, 2018~ Jun. 05, 2018	Jun. 14, 2018	Radiation (03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170 584	18GHz- 40GHz	Nov. 27, 2017	Jun. 01, 2018~ Jun. 05, 2018	Nov. 26, 2018	Radiation (03CH13-HY)
Amplifier	Sonoma-Instrument	310 N	187282	9KHz~1GHz	Jan. 19, 2018	Jun. 01, 2018~ Jun. 05, 2018	Jan. 18, 2020	Radiation (03CH13-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590074	1GHz~18GHz	May 21, 2018	Jun. 01, 2018~ Jun. 05, 2018	May 20, 2019	Radiation (03CH13-HY)
Preamplifier	Keysight	83017A	MY532701 47	1GHz~26.5GHz	Feb. 02, 2018	Jun. 01, 2018~ Jun. 05, 2018	Feb. 01, 2019	Radiation (03CH13-HY)
Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz, VSWR : 2.5:1 max	Jul. 18, 2017	Jun. 01, 2018~ Jun. 05, 2018	Jul. 17, 2018	Radiation (03CH13-HY)
EMI Test Receiver	Agilent	N9038A(MXE)	MY532900 53	20Hz to 26.5GHz	Jan. 16, 2018	Jun. 01, 2018~ Jun. 05, 2018	Jan. 15, 2019	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY553705 26	10Hz~44GHz	Mar. 15, 2018	Jun. 01, 2018~ Jun. 05, 2018	Mar. 14, 2019	Radiation (03CH13-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	NCR	Jun. 01, 2018~ Jun. 05, 2018	NCR	Radiation (03CH13-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	NCR	Jun. 01, 2018~ Jun. 05, 2018	NCR	Radiation (03CH13-HY)
Filter	Wainwright	WLKS1200-8 SS	SN3	1.2G Low Pass	Nov. 21, 2017	Jun. 01, 2018~ Jun. 05, 2018	Nov. 20, 2018	Radiation (03CH13-HY)
Filter	Woken	WHKX8-5272. 5-6750-18000 -40ST	SN2	6.75G Highpass	Jul. 17, 2017	Jun. 01, 2018~ Jun. 05, 2018	Jul. 16, 2018	Radiation (03CH13-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	NCR	Jun. 01, 2018~ Jun. 05, 2018	NCR	Radiation (03CH13-HY)
Hygrometer	TECPEL	DTM-303B	TP157151	N/A	May. 19, 2018	Jun. 01, 2018~ Jun. 05, 2018	May. 18, 2019	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	MY1082/2 6EA	30M~18GHz	Oct. 17, 2017	Jun. 01, 2018~ Jun. 05, 2018	Oct. 16, 2018	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30M~40GHz	Oct. 17, 2017	Jun. 01, 2018~ Jun. 05, 2018	Oct. 16, 2018	Radiation (03CH13-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	NCR	Jun. 07, 2018	NCR	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	3.6GHz	Dec. 08, 2017	Jun. 07, 2018	Dec. 07, 2018	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Mar. 06, 2018	Jun. 07, 2018	Mar. 05, 2019	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 30, 2017	Jun. 07, 2018	Nov. 29, 2018	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 03, 2018	Jun. 07, 2018	Jan. 02, 2019	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Jan. 03, 2018	Jun. 07, 2018	Jan. 02, 2019	Conduction (CO05-HY)

NCR: No Calibration Required



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.7dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.9dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.4dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

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

Test Engineer:	Lena Lo /Tommy Lee /Kai Liao/Shiang Wang/Luffy Lin	Temperature:	21~25	°C
Test Date:	2018/5/23 ~ 2018/06/04	Relative Humidity:	51~54	%

TEST RESULTS DATA
26dB and 99% OBW

Band I													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		Note
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	36	5180	17.50	17.45	24.60	24.40	-	-	22.42	-	
11a	6Mbps	2	44	5220	17.45	17.45	24.50	24.30	-	-	22.42	-	
11a	6Mbps	2	48	5240	17.45	17.55	24.50	24.16	-	-	22.42	-	
HT20	MCS0	2	36	5180	18.60	18.70	25.60	25.10	-	-	22.70	-	
HT20	MCS0	2	44	5220	18.55	18.60	26.10	25.20	-	-	22.68	-	
HT20	MCS0	2	48	5240	18.55	18.50	25.90	25.00	-	-	22.67	-	
HT40	MCS0	2	38	5190	36.70	36.60	41.94	41.76	-	-	23.01	-	
HT40	MCS0	2	46	5230	36.40	36.60	41.94	41.76	-	-	23.01	-	
VHT80	MCS0	2	42	5210	75.84	75.72	83.84	83.20	-	-	23.01	-	

TEST RESULTS DATA
Average Power Table

FCC Band I														
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	36	5180	0.10	0.10	15.06	14.74		24.00	24.00	-4.72	-4.55	Pass
11a	6Mbps	1	44	5220	0.10	0.10	15.10	14.82		24.00	24.00	-4.72	-4.55	Pass
11a	6Mbps	1	48	5240	0.10	0.10	15.08	14.78		24.00	24.00	-4.72	-4.55	Pass
HT20	MCS0	1	36	5180	0.09	0.09	13.98	13.60		24.00	24.00	-4.72	-4.55	Pass
HT20	MCS0	1	44	5220	0.09	0.09	14.02	13.63		24.00	24.00	-4.72	-4.55	Pass
HT20	MCS0	1	48	5240	0.09	0.09	13.99	13.84		24.00	24.00	-4.72	-4.55	Pass
HT40	MCS0	1	38	5190	0.18	0.18	13.19	12.98		24.00	24.00	-4.72	-4.55	Pass
HT40	MCS0	1	46	5230	0.18	0.18	13.22	13.09		24.00	24.00	-4.72	-4.55	Pass
VHT20	MCS0	1	36	5180	0.09	0.09	13.94	13.57		24.00	24.00	-4.72	-4.55	Pass
VHT20	MCS0	1	44	5220	0.09	0.09	13.99	13.61		24.00	24.00	-4.72	-4.55	Pass
VHT20	MCS0	1	48	5240	0.09	0.09	13.94	13.80		24.00	24.00	-4.72	-4.55	Pass
VHT40	MCS0	1	38	5190	0.18	0.18	13.17	12.96		24.00	24.00	-4.72	-4.55	Pass
VHT40	MCS0	1	46	5230	0.18	0.18	13.20	12.98		24.00	24.00	-4.72	-4.55	Pass
VHT80	MCS0	1	42	5210	0.36	0.36	12.08	11.78		24.00	24.00	-4.72	-4.55	Pass
11a	6Mbps	2	36	5180	0.08	0.08	15.07	14.76	17.93	24.00		-4.55		Pass
11a	6Mbps	2	44	5220	0.08	0.08	15.12	14.84	18.00	24.00		-4.55		Pass
11a	6Mbps	2	48	5240	0.08	0.08	15.10	14.83	17.98	24.00		-4.55		Pass
HT20	MCS0	2	36	5180	0.09	0.11	14.00	13.99	17.01	24.00		-4.55		Pass
HT20	MCS0	2	44	5220	0.09	0.11	14.03	13.98	17.02	24.00		-4.55		Pass
HT20	MCS0	2	48	5240	0.09	0.11	14.01	14.00	17.02	24.00		-4.55		Pass
HT40	MCS0	2	38	5190	0.18	0.18	13.22	12.99	16.12	24.00		-4.55		Pass
HT40	MCS0	2	46	5230	0.18	0.18	13.24	13.10	16.18	24.00		-4.55		Pass
VHT20	MCS0	2	36	5180	0.17	0.17	13.98	13.97	16.99	24.00		-4.55		Pass
VHT20	MCS0	2	44	5220	0.17	0.17	14.00	13.97	17.00	24.00		-4.55		Pass
VHT20	MCS0	2	48	5240	0.17	0.17	13.96	13.99	16.99	24.00		-4.55		Pass
VHT40	MCS0	2	38	5190	0.35	0.36	13.18	12.97	16.09	24.00		-4.55		Pass
VHT40	MCS0	2	46	5230	0.35	0.36	13.22	13.07	16.15	24.00		-4.55		Pass
VHT80	MCS0	2	42	5210	0.61	0.61	12.41	11.89	15.16	24.00		-4.55		Pass

TEST RESULTS DATA
Power Spectral Density

FCC Band I															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)			Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	2	36	5180	0.08	0.08			5.93	11.00	-1.62			Pass	
11a	6Mbps	2	44	5220	0.08	0.08			6.08	11.00	-1.62			Pass	
11a	6Mbps	2	48	5240	0.08	0.08			6.08	11.00	-1.62			Pass	
HT20	MCS0	2	36	5180	0.09	0.11			4.22	11.00	-1.62			Pass	
HT20	MCS0	2	44	5220	0.09	0.11			4.57	11.00	-1.62			Pass	
HT20	MCS0	2	48	5240	0.09	0.11			4.66	11.00	-1.62			Pass	
HT40	MCS0	2	38	5190	0.18	0.18			1.03	11.00	-1.62			Pass	
HT40	MCS0	2	46	5230	0.18	0.18			1.29	11.00	-1.62			Pass	
VHT80	MCS0	2	42	5210	0.61	0.61			-2.77	11.00	-1.62			Pass	

TEST RESULTS DATA
26dB and 99% OBW

Band II															
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		FCC 26dB Bandwidth Power Limit (dBm)		Note
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	52	5260	17.35	17.50	24.30	24.30	23.39		29.39		23.98		
11a	6Mbps	2	60	5300	17.40	17.50	24.60	24.50	23.41		29.41		23.98		
11a	6Mbps	2	64	5320	17.45	17.50	24.24	24.40	23.42		29.42		23.98		
HT20	MCS0	2	52	5260	18.50	18.60	26.00	25.00	23.67		29.67		23.98		
HT20	MCS0	2	60	5300	18.60	18.60	26.00	25.30	23.70		29.70		23.98		
HT20	MCS0	2	64	5320	18.45	18.65	25.40	24.94	23.66		29.66		23.98		
HT40	MCS0	2	54	5270	36.50	36.60	41.76	42.03	23.98		30.00		23.98		
HT40	MCS0	2	62	5310	36.60	36.60	41.76	42.01	23.98		30.00		23.98		
VHT80	MCS0	2	58	5290	75.72	75.72	83.61	83.52	23.98		30.00		23.98		

TEST RESULTS DATA
Average Power Table

FCC Band II															
Mod.	Data Rate	Ntx	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	52	5260	0.10	0.10	15.02	14.85		23.98	23.98	-1.29	-4.84	26.99	Pass
11a	6Mbps	1	60	5300	0.10	0.10	15.07	14.76		23.98	23.98	-1.29	-4.84	26.99	Pass
11a	6Mbps	1	64	5320	0.10	0.10	15.11	14.75		23.98	23.98	-1.29	-4.84	26.99	Pass
HT20	MCS0	1	52	5260	0.09	0.09	13.99	13.86		23.98	23.98	-1.29	-4.84	26.99	Pass
HT20	MCS0	1	60	5300	0.09	0.09	13.93	13.85		23.98	23.98	-1.29	-4.84	26.99	Pass
HT20	MCS0	1	64	5320	0.09	0.09	13.82	13.76		23.98	23.98	-1.29	-4.84	26.99	Pass
HT40	MCS0	1	54	5270	0.18	0.18	13.23	13.10		23.98	23.98	-1.29	-4.84	26.99	Pass
HT40	MCS0	1	62	5310	0.18	0.18	13.42	13.13		23.98	23.98	-1.29	-4.84	26.99	Pass
VHT20	MCS0	1	52	5260	0.09	0.09	13.79	13.77		23.98	23.98	-1.29	-4.84	26.99	Pass
VHT20	MCS0	1	60	5300	0.09	0.09	13.80	13.76		23.98	23.98	-1.29	-4.84	26.99	Pass
VHT20	MCS0	1	64	5320	0.09	0.09	13.62	13.61	23.98	23.98	-1.29	-4.84	26.99	Pass	
VHT40	MCS0	1	54	5270	0.18	0.18	13.21	12.98	23.98	23.98	-1.29	-4.84	26.99	Pass	
VHT40	MCS0	1	62	5310	0.18	0.18	13.40	13.06	23.98	23.98	-1.29	-4.84	26.99	Pass	
VHT80	MCS0	1	58	5290	0.36	0.36	12.03	11.83	23.98	23.98	-1.29	-4.84	26.99	Pass	
11a	6Mbps	2	52	5260	0.08	0.08	15.04	14.86	17.96	23.98		-1.29		26.99	Pass
11a	6Mbps	2	60	5300	0.08	0.08	15.08	14.77	17.94	23.98		-1.29		26.99	Pass
11a	6Mbps	2	64	5320	0.08	0.08	15.13	14.77	17.97	23.98		-1.29		26.99	Pass
HT20	MCS0	2	52	5260	0.09	0.11	14.02	13.92	16.98	23.98		-1.29		26.99	Pass
HT20	MCS0	2	60	5300	0.09	0.11	13.98	13.88	16.94	23.98		-1.29		26.99	Pass
HT20	MCS0	2	64	5320	0.09	0.11	13.83	13.80	16.83	23.98		-1.29		26.99	Pass
HT40	MCS0	2	54	5270	0.18	0.18	13.26	13.13	16.20	23.98		-1.29		26.99	Pass
HT40	MCS0	2	62	5310	0.18	0.18	13.43	13.14	16.30	23.98		-1.29		26.99	Pass
VHT20	MCS0	2	52	5260	0.17	0.17	13.98	13.88	16.94	23.98		-1.29		26.99	Pass
VHT20	MCS0	2	60	5300	0.17	0.17	13.97	13.85	16.92	23.98		-1.29		26.99	Pass
VHT20	MCS0	2	64	5320	0.17	0.17	13.77	13.73	16.76	23.98		-1.29		26.99	Pass
VHT40	MCS0	2	54	5270	0.35	0.36	13.22	13.08	16.16	23.98		-1.29		26.99	Pass
VHT40	MCS0	2	62	5310	0.35	0.36	13.41	13.09	16.26	23.98		-1.29		26.99	Pass
VHT80	MCS0	2	58	5290	0.61	0.61	12.22	12.24	15.24	23.98		-1.29		26.99	Pass

TEST RESULTS DATA
Power Spectral Density

Band II															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)			Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	2	52	5260	0.08	0.08			6.11	11.00	0.13			Pass	
11a	6Mbps	2	60	5300	0.08	0.08			6.05	11.00	0.13			Pass	
11a	6Mbps	2	64	5320	0.08	0.08			6.08	11.00	0.13			Pass	
HT20	MCS0	2	52	5260	0.09	0.11			4.70	11.00	0.13			Pass	
HT20	MCS0	2	60	5300	0.09	0.11			4.46	11.00	0.13			Pass	
HT20	MCS0	2	64	5320	0.09	0.11			4.72	11.00	0.13			Pass	
HT40	MCS0	2	54	5270	0.18	0.18			1.18	11.00	0.13			Pass	
HT40	MCS0	2	62	5310	0.18	0.18			1.47	11.00	0.13			Pass	
VHT80	MCS0	2	58	5290	0.61	0.61			-2.65	11.00	0.13			Pass	

TEST RESULTS DATA
26dB and 99% OBW

Band III																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth In U-NII 2C (MHz)		26 dB Bandwidth In U-NII 2C (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		FCC 26dB Bandwidth Power Limit (dBm)		6 dB Bandwidth for Straddle Channel (MHz)	
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2
11a	6Mbps	2	100	5500	17.45	17.40	24.10	23.80	23.41		29.41		23.98		----	----
11a	6Mbps	2	116	5580	17.35	17.45	24.50	23.70	23.39		29.39		23.98		----	----
11a	6Mbps	2	140	5700	17.50	17.45	24.60	24.20	23.42		29.42		23.98		----	----
HT20	MCS0	2	100	5500	18.65	18.70	25.90	26.34	23.71		29.71		23.98		----	----
HT20	MCS0	2	116	5580	18.55	18.70	25.31	25.20	23.68		29.68		23.98		----	----
HT20	MCS0	2	140	5700	18.70	18.65	25.93	24.90	23.71		29.71		23.98		----	----
HT40	MCS0	2	102	5510	36.60	36.60	41.94	41.94	23.98		30.00		23.98		----	----
HT40	MCS0	2	110	5550	36.50	36.50	41.94	41.40	23.98		30.00		23.98		----	----
HT40	MCS0	2	134	5670	36.70	36.70	41.94	42.12	23.98		30.00		23.98		----	----
VHT80	MCS0	2	106	5530	75.72	75.84	83.84	83.20	23.98		30.00		23.98		----	----
VHT80	MCS0	2	122	5610	75.84	75.84	84.48	83.34	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
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	100	5500	0.10	0.10	15.22	14.87		23.98	23.98	-0.13	-1.03	26.99	Pass
11a	6Mbps	1	116	5580	0.10	0.10	15.15	14.83		23.98	23.98	-0.13	-1.03	26.99	Pass
11a	6Mbps	1	140	5700	0.10	0.10	15.03	14.59		23.98	23.98	-0.13	-1.03	26.99	Pass
HT20	MCS0	1	100	5500	0.09	0.09	14.39	13.94		23.98	23.98	-0.13	-1.03	26.99	Pass
HT20	MCS0	1	116	5580	0.09	0.09	14.06	13.80		23.98	23.98	-0.13	-1.03	26.99	Pass
HT20	MCS0	1	140	5700	0.09	0.09	13.85	13.59		23.98	23.98	-0.13	-1.03	26.99	Pass
HT40	MCS0	1	102	5510	0.18	0.18	13.41	13.25		23.98	23.98	-0.13	-1.03	26.99	Pass
HT40	MCS0	1	110	5550	0.18	0.18	13.30	13.14		23.98	23.98	-0.13	-1.03	26.99	Pass
HT40	MCS0	1	134	5670	0.18	0.18	13.10	12.96		23.98	23.98	-0.13	-1.03	26.99	Pass
VHT20	MCS0	1	100	5500	0.09	0.09	14.22	13.93		23.98	23.98	-0.13	-1.03	26.99	Pass
VHT20	MCS0	1	116	5580	0.09	0.09	13.79	13.78		23.98	23.98	-0.13	-1.03	26.99	Pass
VHT20	MCS0	1	140	5700	0.09	0.09	13.61	12.78		23.98	23.98	-0.13	-1.03	26.99	Pass
VHT40	MCS0	1	102	5510	0.18	0.18	13.38	13.25		23.98	23.98	-0.13	-1.03	26.99	Pass
VHT40	MCS0	1	110	5550	0.18	0.18	13.29	13.10		23.98	23.98	-0.13	-1.03	26.99	Pass
VHT40	MCS0	1	134	5670	0.18	0.18	13.06	12.92		23.98	23.98	-0.13	-1.03	26.99	Pass
VHT80	MCS0	1	106	5530	0.36	0.36	12.39	12.05		23.98	23.98	-0.13	-1.03	26.99	Pass
VHT80	MCS0	1	122	5610	0.36	0.36	12.00	11.92	23.98	23.98	-0.13	-1.03	26.99	Pass	
11a	6Mbps	2	100	5500	0.08	0.08	15.25	14.89	18.09	23.98		-0.13		26.99	Pass
11a	6Mbps	2	116	5580	0.08	0.08	15.16	14.85	18.02	23.98		-0.13		26.99	Pass
11a	6Mbps	2	140	5700	0.08	0.08	15.04	14.60	17.84	23.98		-0.13		26.99	Pass
HT20	MCS0	2	100	5500	0.09	0.11	14.41	14.23	17.33	23.98		-0.13		26.99	Pass
HT20	MCS0	2	116	5580	0.09	0.11	14.07	14.07	17.08	23.98		-0.13		26.99	Pass
HT20	MCS0	2	140	5700	0.09	0.11	13.86	13.64	16.76	23.98		-0.13		26.99	Pass
HT40	MCS0	2	102	5510	0.18	0.18	13.44	13.35	16.40	23.98		-0.13		26.99	Pass
HT40	MCS0	2	110	5550	0.18	0.18	13.33	13.17	16.26	23.98		-0.13		26.99	Pass
HT40	MCS0	2	134	5670	0.18	0.18	13.11	12.98	16.05	23.98		-0.13		26.99	Pass
VHT20	MCS0	2	100	5500	0.17	0.17	14.32	14.22	17.28	23.98		-0.13		26.99	Pass
VHT20	MCS0	2	116	5580	0.17	0.17	13.94	13.98	16.97	23.98		-0.13		26.99	Pass
VHT20	MCS0	2	140	5700	0.17	0.17	13.84	13.61	16.74	23.98		-0.13		26.99	Pass
VHT40	MCS0	2	102	5510	0.35	0.36	13.39	13.31	16.36	23.98		-0.13		26.99	Pass
VHT40	MCS0	2	110	5550	0.35	0.36	13.31	13.14	16.24	23.98		-0.13		26.99	Pass
VHT40	MCS0	2	134	5670	0.35	0.36	13.09	12.97	16.04	23.98		-0.13		26.99	Pass
VHT80	MCS0	2	106	5530	0.61	0.61	12.65	12.34	15.50	23.98		-0.13		26.99	Pass
VHT80	MCS0	2	122	5610	0.61	0.61	12.10	12.28	15.20	23.98		-0.13		26.99	Pass

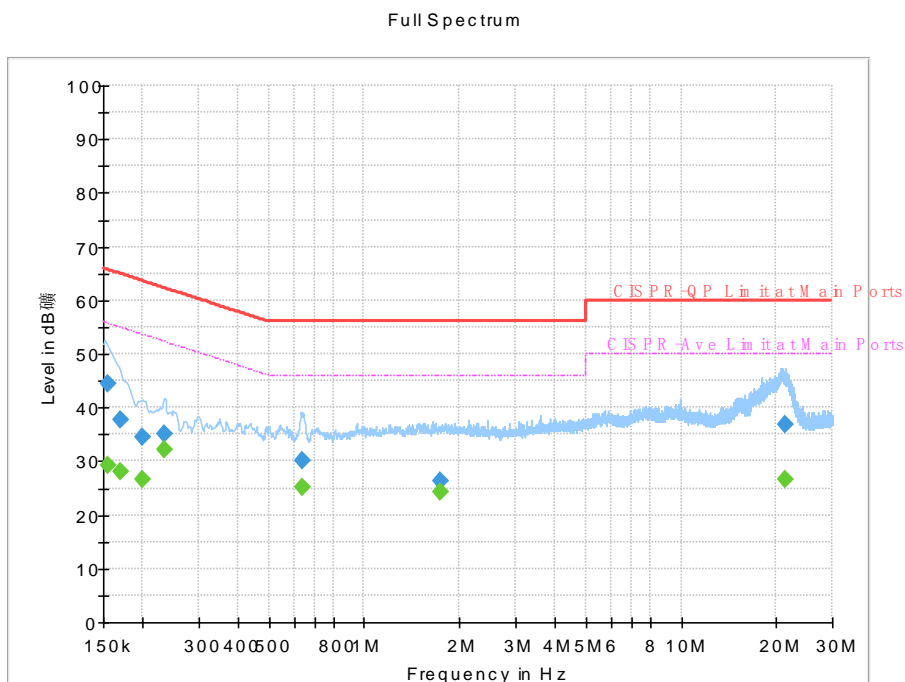
TEST RESULTS DATA
Power Spectral Density

Band III															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)			Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	2	100	5500	0.08	0.08			7.11	11.00	2.44			Pass	
11a	6Mbps	2	116	5580	0.08	0.08			6.78	11.00	2.44			Pass	
11a	6Mbps	2	140	5700	0.08	0.08			5.33	11.00	2.44			Pass	
HT20	MCS0	2	100	5500	0.09	0.11			5.32	11.00	2.44			Pass	
HT20	MCS0	2	116	5580	0.09	0.11			5.16	11.00	2.44			Pass	
HT20	MCS0	2	140	5700	0.09	0.11			3.78	11.00	2.44			Pass	
HT40	MCS0	2	102	5510	0.18	0.18			2.48	11.00	2.44			Pass	
HT40	MCS0	2	110	5550	0.18	0.18			2.30	11.00	2.44			Pass	
HT40	MCS0	2	134	5670	0.18	0.18			0.46	11.00	2.44			Pass	
VHT80	MCS0	2	106	5530	0.61	0.61			-1.52	11.00	2.44			Pass	
VHT80	MCS0	2	122	5610	0.61	0.61			-2.41	11.00	2.44			Pass	



Appendix B. AC Conducted Emission Test Results

Test Engineer :	Arthur Hsieh	Temperature :	21~25°C
		Relative Humidity :	51~55%
Test Voltage :	120Vac / 60Hz	Phase :	Line



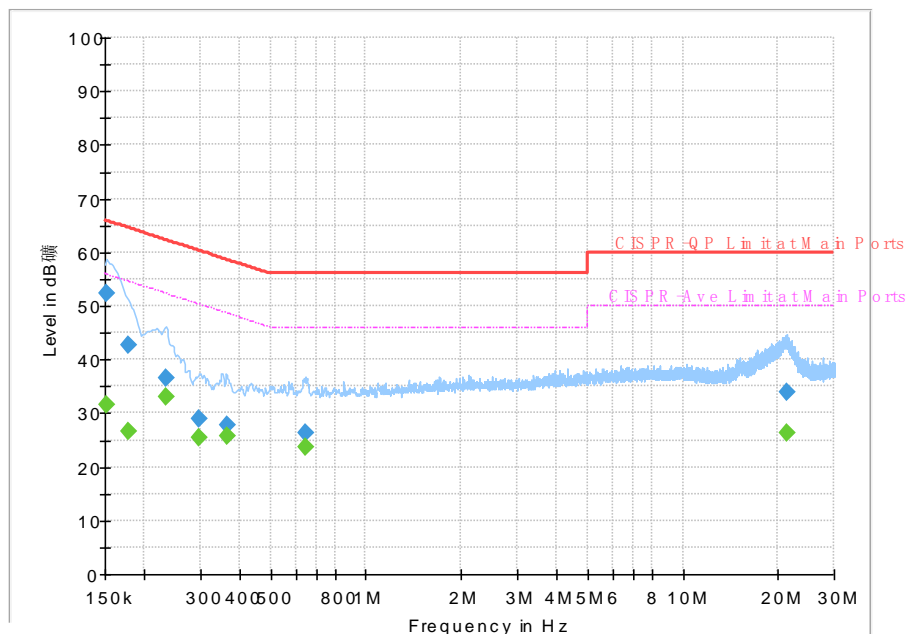
Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Line	Filter	Corr. (dB)
0.154500	---	29.20	55.75	26.55	L1	OFF	19.5
0.154500	44.49	---	65.75	21.26	L1	OFF	19.5
0.170250	---	28.05	54.95	26.90	L1	OFF	19.5
0.170250	37.60	---	64.95	27.35	L1	OFF	19.5
0.199500	---	26.74	53.63	26.89	L1	OFF	19.5
0.199500	34.42	---	63.63	29.21	L1	OFF	19.5
0.233250	---	32.19	52.33	20.14	L1	OFF	19.5
0.233250	35.00	---	62.33	27.33	L1	OFF	19.5
0.636000	---	25.08	46.00	20.92	L1	OFF	19.6
0.636000	30.05	---	56.00	25.95	L1	OFF	19.6
1.743000	---	24.18	46.00	21.82	L1	OFF	19.6
1.743000	26.29	---	56.00	29.71	L1	OFF	19.6
21.286500	---	26.75	50.00	23.25	L1	OFF	20.3
21.286500	36.92	---	60.00	23.08	L1	OFF	20.3



Test Engineer :	Arthur Hsieh	Temperature :	21~25°C
		Relative Humidity :	51~55%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	31.49	55.88	24.39	N	OFF	19.5
0.152250	52.37	---	65.88	13.51	N	OFF	19.5
0.177000	---	26.60	54.63	28.03	N	OFF	19.5
0.177000	42.67	---	64.63	21.96	N	OFF	19.5
0.233250	---	32.95	52.33	19.38	N	OFF	19.5
0.233250	36.58	---	62.33	25.75	N	OFF	19.5
0.298500	---	25.39	50.28	24.89	N	OFF	19.5
0.298500	29.03	---	60.28	31.25	N	OFF	19.5
0.363750	---	25.68	48.64	22.96	N	OFF	19.5
0.363750	27.72	---	58.64	30.92	N	OFF	19.5
0.642750	---	23.66	46.00	22.34	N	OFF	19.6
0.642750	26.36	---	56.00	29.64	N	OFF	19.6
21.286500	---	26.24	50.00	23.76	N	OFF	20.4
21.286500	33.91	---	60.00	26.09	N	OFF	20.4



Appendix C. Radiated Spurious Emission

Test Engineer :	Alex Jheng/ Fu Chen/ Wilson Wu	Temperature :	24.5~25°C
		Relative Humidity :	47~50%



Band 1 - 5150~5250MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 36 5180MHz		5062.92	53.59	-20.41	74	43.19	31.88	8.06	29.54	173	328	P	H
		5150	42.54	-11.46	54	31.94	31.98	8.17	29.55	173	328	A	H
	*	5180	105.37	-	-	94.68	32.02	8.22	29.55	173	328	P	H
	*	5180	97.81	-	-	87.12	32.02	8.22	29.55	173	328	A	H
		5090.74	52.86	-21.14	74	42.38	31.92	8.1	29.54	143	345	P	V
		5150	42.3	-11.7	54	31.7	31.98	8.17	29.55	143	345	A	V
	*	5180	106.34	-	-	95.65	32.02	8.22	29.55	143	345	P	V
	*	5180	98.4	-	-	87.71	32.02	8.22	29.55	143	345	A	V
802.11a CH 44 5220MHz		5102.7	52.35	-21.65	74	41.87	31.92	8.1	29.54	207	331	P	H
		5149.76	41.65	-12.35	54	31.05	31.98	8.17	29.55	207	331	A	H
	*	5220	106.21	-	-	95.46	32.06	8.25	29.56	207	331	P	H
	*	5220	98.25	-	-	87.5	32.06	8.25	29.56	207	331	A	H
		5452.72	51.77	-22.23	74	40.56	32.34	8.46	29.59	207	331	P	H
		5452.72	41.46	-12.54	54	30.25	32.34	8.46	29.59	207	331	A	H
		5117	53.97	-20.03	74	43.44	31.94	8.13	29.54	130	346	P	V
		5149.5	41.69	-12.31	54	31.09	31.98	8.17	29.55	130	346	A	V
	*	5220	107.03	-	-	96.28	32.06	8.25	29.56	130	346	P	V
	*	5220	99.52	-	-	88.77	32.06	8.25	29.56	130	346	A	V
		5362.28	51.17	-22.83	74	40.2	32.24	8.3	29.57	130	346	P	V
		5452.72	41.53	-12.47	54	30.32	32.34	8.46	29.59	130	346	A	V



802.11a CH 48 5240MHz		5034.06	52.76	-21.24	74	42.44	31.84	8.01	29.53	170	325	P	H
		5084.76	41.66	-12.34	54	31.22	31.9	8.08	29.54	170	325	A	H
	*	5240	106.83	-	-	96.06	32.08	8.25	29.56	170	325	P	H
	*	5240	99.28	-	-	88.51	32.08	8.25	29.56	170	325	A	H
		5449.08	52.34	-21.66	74	41.12	32.34	8.46	29.58	170	325	P	H
		5452.72	41.69	-12.31	54	30.48	32.34	8.46	29.59	170	325	A	H
		5015.34	52.62	-21.38	74	42.34	31.82	7.99	29.53	113	344	P	V
		5087.1	41.67	-12.33	54	31.23	31.9	8.08	29.54	113	344	A	V
	*	5240	107.51	-	-	96.74	32.08	8.25	29.56	113	344	P	V
	*	5240	99.86	-	-	89.09	32.08	8.25	29.56	113	344	A	V
		5391.4	52.67	-21.33	74	41.69	32.26	8.3	29.58	113	344	P	V
		5452.72	41.65	-12.35	54	30.44	32.34	8.46	29.59	113	344	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 36 5180MHz		10360	46.36	-21.84	68.2	55.48	39.29	12.34	60.75	100	0	P	H
		15540	45.81	-28.19	74	53.46	38.31	14.61	60.57	100	0	P	H
		10360	46.04	-22.16	68.2	55.16	39.29	12.34	60.75	100	0	P	V
		15540	46.03	-27.97	74	53.68	38.31	14.61	60.57	100	0	P	V
802.11a CH 44 5220MHz		10440	47.27	-20.93	68.2	56.41	39.39	12.36	60.89	100	0	P	H
		15660	45.35	-28.65	74	53.15	38	14.67	60.47	100	0	P	H
		10440	46.53	-21.67	68.2	55.67	39.39	12.36	60.89	100	0	P	V
		15660	44.87	-29.13	74	52.67	38	14.67	60.47	100	0	P	V
802.11a CH 48 5240MHz		10480	47.06	-21.14	68.2	56.17	39.47	12.38	60.96	100	0	P	H
		15720	44.37	-29.63	74	52.29	37.82	14.68	60.42	100	0	P	H
		10480	46.78	-21.42	68.2	55.89	39.47	12.38	60.96	100	0	P	V
		15720	44.38	-29.62	74	52.3	37.82	14.68	60.42	100	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+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 38 5190MHz		5148.98	52.32	-21.68	74	41.72	31.98	8.17	29.55	199	337	P	H
		5149.5	44.05	-9.95	54	33.45	31.98	8.17	29.55	199	337	A	H
	*	5190	100.7	-	-	90.01	32.02	8.22	29.55	199	337	P	H
	*	5190	93.12	-	-	82.43	32.02	8.22	29.55	199	337	A	H
		5393.36	51	-23	74	40.02	32.26	8.3	29.58	199	337	P	H
		5458.04	42.81	-11.19	54	31.6	32.34	8.46	29.59	199	337	A	H
		5149.5	52.37	-21.63	74	41.77	31.98	8.17	29.55	189	341	P	V
		5148.46	44.5	-9.5	54	33.9	31.98	8.17	29.55	189	341	A	V
	*	5190	100.56	-	-	89.87	32.02	8.22	29.55	189	341	P	V
	*	5190	93.22	-	-	82.53	32.02	8.22	29.55	189	341	A	V
		5448.52	51.68	-22.32	74	40.46	32.34	8.46	29.58	189	341	P	V
		5458.04	42.71	-11.29	54	31.5	32.34	8.46	29.59	189	341	A	V
802.11n HT40 CH 46 5230MHz		5015.6	51.65	-22.35	74	41.37	31.82	7.99	29.53	183	329	P	H
		5082.16	43.41	-10.59	54	32.97	31.9	8.08	29.54	183	329	A	H
	*	5230	101.94	-	-	91.17	32.08	8.25	29.56	183	329	P	H
	*	5230	94.33	-	-	83.56	32.08	8.25	29.56	183	329	A	H
		5441.24	51.46	-22.54	74	40.31	32.32	8.41	29.58	183	329	P	H
		5452.44	42.76	-11.24	54	31.55	32.34	8.46	29.59	183	329	A	H
		5094.64	52.4	-21.6	74	41.92	31.92	8.1	29.54	164	349	P	V
		5139.88	43.57	-10.43	54	32.99	31.98	8.15	29.55	164	349	A	V
	*	5230	101.71	-	-	90.94	32.08	8.25	29.56	164	349	P	V
	*	5230	94.44	-	-	83.67	32.08	8.25	29.56	164	349	A	V
		5398.12	51.74	-22.26	74	40.73	32.28	8.31	29.58	164	349	P	V
		5456.92	42.84	-11.16	54	31.63	32.34	8.46	29.59	164	349	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 Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 42 5210MHz		5083.98	51.59	-22.41	74	41.15	31.9	8.08	29.54	183	330	P	H
		5125.06	44.83	-9.17	54	34.27	31.96	8.15	29.55	183	330	A	H
	*	5210	97.02	-	-	86.28	32.06	8.24	29.56	183	330	P	H
	*	5210	90.3	-	-	79.56	32.06	8.24	29.56	183	330	A	H
		5399.24	51.08	-22.92	74	40.07	32.28	8.31	29.58	183	330	P	H
		5452.16	44.03	-9.97	54	32.82	32.34	8.46	29.59	183	330	A	H
		5090.22	51.17	-22.83	74	40.69	31.92	8.1	29.54	153	356	P	V
		5149.5	45.14	-8.86	54	34.54	31.98	8.17	29.55	153	356	A	V
	*	5210	97.37	-	-	86.63	32.06	8.24	29.56	153	356	P	V
	*	5210	90.21	-	-	79.47	32.06	8.24	29.56	153	356	A	V
		5404.84	50.52	-23.48	74	39.51	32.28	8.31	29.58	153	356	P	V
		5459.44	44.23	-9.77	54	33.02	32.34	8.46	29.59	153	356	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 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 52 5260MHz		5096.56	53.07	-20.93	74	42.59	31.92	8.1	29.54	208	330	P	H
		5073.1	41.79	-12.21	54	31.35	31.9	8.08	29.54	208	330	A	H
	*	5260	106.86	-	-	96.04	32.12	8.26	29.56	208	330	P	H
	*	5260	98.98	-	-	88.16	32.12	8.26	29.56	208	330	A	H
		5451.84	51.65	-22.35	74	40.44	32.34	8.46	29.59	208	330	P	H
		5452.8	41.62	-12.38	54	30.41	32.34	8.46	29.59	208	330	A	H
		5116.28	52.29	-21.71	74	41.76	31.94	8.13	29.54	143	346	P	V
		5085.68	41.77	-12.23	54	31.33	31.9	8.08	29.54	143	346	A	V
	*	5260	108.03	-	-	97.21	32.12	8.26	29.56	143	346	P	V
	*	5260	100.29	-	-	89.47	32.12	8.26	29.56	143	346	A	V
		5458.32	52.34	-21.66	74	41.13	32.34	8.46	29.59	143	346	P	V
		5452.8	41.69	-12.31	54	30.48	32.34	8.46	29.59	143	346	A	V
802.11a CH 60 5300MHz		5015.3	52.54	-21.46	74	42.26	31.82	7.99	29.53	213	314	P	H
		5085	41.77	-12.23	54	31.33	31.9	8.08	29.54	213	314	A	H
	*	5300	106.48	-	-	95.62	32.16	8.27	29.57	213	314	P	H
	*	5300	99	-	-	88.14	32.16	8.27	29.57	213	314	A	H
		5354.88	52.48	-21.52	74	41.54	32.22	8.29	29.57	213	314	P	H
		5352	41.97	-12.03	54	31.03	32.22	8.29	29.57	213	314	A	H
		5064.6	52.61	-21.39	74	42.21	31.88	8.06	29.54	139	346	P	V
		5085.68	41.78	-12.22	54	31.34	31.9	8.08	29.54	139	346	A	V
	*	5300	107.84	-	-	96.98	32.16	8.27	29.57	139	346	P	V
	*	5300	100.82	-	-	89.96	32.16	8.27	29.57	139	346	A	V
		5355.36	52.48	-21.52	74	41.54	32.22	8.29	29.57	139	346	P	V
		5350.56	42.34	-11.66	54	31.4	32.22	8.29	29.57	139	346	A	V



802.11a CH 64 5320MHz	*	5320	106.44	-	-	95.55	32.18	8.28	29.57	189	328	P	H
	*	5320	99.04	-	-	88.15	32.18	8.28	29.57	189	328	A	H
		5368.16	52.97	-21.03	74	42	32.24	8.3	29.57	189	328	P	H
		5358.4	42.29	-11.71	54	31.34	32.22	8.3	29.57	189	328	A	H
	*	5320	107.67	-	-	96.78	32.18	8.28	29.57	141	347	P	V
	*	5320	100.6	-	-	89.71	32.18	8.28	29.57	141	347	A	V
		5368.96	52.45	-21.55	74	41.48	32.24	8.3	29.57	141	347	P	V
		5350.24	42.83	-11.17	54	31.89	32.22	8.29	29.57	141	347	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+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 52 5260MHz		10520	46.79	-21.41	68.2	55.9	39.52	12.39	61.02	100	0	P	H
		15780	44.25	-29.75	74	52.24	37.68	14.71	60.38	100	0	P	H
		10520	46.24	-21.96	68.2	55.35	39.52	12.39	61.02	100	0	P	V
		15780	43.91	-30.09	74	51.9	37.68	14.71	60.38	100	0	P	V
802.11a CH 60 5300MHz		10600	47.66	-26.34	74	56.71	39.62	12.41	61.08	100	0	P	H
		15900	43.77	-30.23	74	51.91	37.37	14.77	60.28	100	0	P	H
		10600	46.73	-27.27	74	55.78	39.62	12.41	61.08	100	0	P	V
		15900	45.07	-28.93	74	53.21	37.37	14.77	60.28	100	0	P	V
802.11a CH 64 5320MHz		10640	46.8	-27.2	74	55.83	39.67	12.41	61.11	100	0	P	H
		15960	45.07	-28.93	74	53.33	37.19	14.78	60.23	100	0	P	H
		10640	46.31	-27.69	74	55.34	39.67	12.41	61.11	100	0	P	V
		15960	46.3	-27.7	74	54.56	37.19	14.78	60.23	100	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+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 54 5270MHz		5000.68	51.54	-22.46	74	41.28	31.8	7.99	29.53	194	312	P	H
		5115.26	43.45	-10.55	54	32.92	31.94	8.13	29.54	194	312	A	H
	*	5270	100.41	-	-	89.58	32.12	8.27	29.56	194	312	P	H
	*	5270	93.04	-	-	82.21	32.12	8.27	29.56	194	312	A	H
		5372.64	52.55	-21.45	74	41.58	32.24	8.3	29.57	194	312	P	H
		5446.32	43.11	-10.89	54	31.94	32.34	8.41	29.58	194	312	A	H
		5040.8	51.59	-22.41	74	41.22	31.86	8.04	29.53	145	348	P	V
		5094.86	43.53	-10.47	54	33.05	31.92	8.1	29.54	145	348	A	V
	*	5270	102.47	-	-	91.64	32.12	8.27	29.56	145	348	P	V
	*	5270	95.19	-	-	84.36	32.12	8.27	29.56	145	348	A	V
		5454	51.47	-22.53	74	40.26	32.34	8.46	29.59	145	348	P	V
		5455.92	42.89	-11.11	54	31.68	32.34	8.46	29.59	145	348	A	V
802.11n HT40 CH 62 5310MHz		5064.94	52.12	-21.88	74	41.72	31.88	8.06	29.54	177	315	P	H
		5073.44	43.32	-10.68	54	32.88	31.9	8.08	29.54	177	315	A	H
	*	5310	103.11	-	-	92.22	32.18	8.28	29.57	177	315	P	H
	*	5310	95.5	-	-	84.61	32.18	8.28	29.57	177	315	A	H
		5351.04	54.26	-19.74	74	43.32	32.22	8.29	29.57	177	315	P	H
		5350.08	46.81	-7.19	54	35.87	32.22	8.29	29.57	177	315	A	H
		5113.22	52.82	-21.18	74	42.29	31.94	8.13	29.54	192	352	P	V
		5031.62	43.33	-10.67	54	33.01	31.84	8.01	29.53	192	352	A	V
	*	5310	101.99	-	-	91.1	32.18	8.28	29.57	192	352	P	V
	*	5310	94.08	-	-	83.19	32.18	8.28	29.57	192	352	A	V
		5350.8	52.64	-21.36	74	41.7	32.22	8.29	29.57	192	352	P	V
		5354.16	45.85	-8.15	54	34.91	32.22	8.29	29.57	192	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 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 58 5290MHz		5054.4	51.51	-22.49	74	41.13	31.86	8.06	29.54	180	316	P	H
		5078.2	45.17	-8.83	54	34.73	31.9	8.08	29.54	180	316	A	H
	*	5290	97.2	-	-	86.35	32.14	8.27	29.56	180	316	P	H
	*	5290	90.39	-	-	79.54	32.14	8.27	29.56	180	316	A	H
		5362.08	53	-21	74	42.03	32.24	8.3	29.57	180	316	P	H
		5359.92	46.56	-7.44	54	35.61	32.22	8.3	29.57	180	316	A	H
		5086.02	51.77	-22.23	74	41.33	31.9	8.08	29.54	199	351	P	V
		5109.48	44.94	-9.06	54	34.41	31.94	8.13	29.54	199	351	A	V
	*	5290	95.97	-	-	85.12	32.14	8.27	29.56	199	351	P	V
	*	5290	89.03	-	-	78.18	32.14	8.27	29.56	199	351	A	V
		5356.56	52.07	-21.93	74	41.13	32.22	8.29	29.57	199	351	P	V
		5353.2	46.37	-7.63	54	35.43	32.22	8.29	29.57	199	351	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 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 100 5500MHz		5458.64	52.09	-21.91	74	40.88	32.34	8.46	29.59	217	316	P	H
		5467.6	52.2	-16	68.2	40.92	32.36	8.51	29.59	217	316	P	H
		5459.12	42.36	-11.64	54	31.15	32.34	8.46	29.59	217	316	A	H
	*	5500	107.59	-	-	96.22	32.4	8.56	29.59	217	316	P	H
	*	5500	99.57	-	-	88.2	32.4	8.56	29.59	217	316	A	H
		5445.84	51.67	-22.33	74	40.5	32.34	8.41	29.58	200	26	P	V
		5463.28	52.52	-15.68	68.2	41.29	32.36	8.46	29.59	200	26	P	V
		5460	41.89	-12.11	54	30.68	32.34	8.46	29.59	200	26	A	V
	*	5500	104.25	-	-	92.88	32.4	8.56	29.59	200	26	P	V
	*	5500	96.66	-	-	85.29	32.4	8.56	29.59	200	26	A	V
802.11a CH 116 5580MHz		5394.88	51.26	-22.74	74	40.25	32.28	8.31	29.58	203	316	P	H
		5467.6	52	-16.2	68.2	40.72	32.36	8.51	29.59	203	316	P	H
		5452.72	41.34	-12.66	54	30.13	32.34	8.46	29.59	203	316	A	H
	*	5580	108.08	-	-	96.44	32.47	8.8	29.63	203	316	P	H
	*	5580	100.13	-	-	88.49	32.47	8.8	29.63	203	316	A	H
		5734.76	51.8	-16.4	68.2	40.03	32.64	8.82	29.69	203	316	P	H
		5428.48	50.82	-23.18	74	39.74	32.3	8.36	29.58	194	23	P	V
		5468.08	51.18	-17.02	68.2	39.9	32.36	8.51	29.59	194	23	P	V
		5452.72	41.16	-12.84	54	29.95	32.34	8.46	29.59	194	23	A	V
	*	5580	104.38	-	-	92.74	32.47	8.8	29.63	194	23	P	V
	*	5580	96.85	-	-	85.21	32.47	8.8	29.63	194	23	A	V
		5763.425	52	-16.2	68.2	40.24	32.66	8.81	29.71	194	23	P	V



802.11a CH 140 5700MHz	*	5700	108.07	-	-	96.33	32.59	8.82	29.67	179	310	P	H
	*	5700	100.21	-	-	88.47	32.59	8.82	29.67	179	310	A	H
		5729.4	53.92	-14.28	68.2	42.16	32.62	8.82	29.68	179	310	P	H
	*	5700	103.33	-	-	91.59	32.59	8.82	29.67	186	27	P	V
	*	5700	95.22	-	-	83.48	32.59	8.82	29.67	186	27	A	V
		5739.32	53.47	-14.73	68.2	41.71	32.64	8.81	29.69	186	27	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 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 100 5500MHz		11000	47.66	-26.34	74	56.45	40.1	12.51	61.4	100	0	P	H
		16500	45.86	-22.34	68.2	52.14	38.3	14.92	59.5	100	0	P	H
		11000	47.25	-26.75	74	56.04	40.1	12.51	61.4	100	0	P	V
		16500	45.97	-22.23	68.2	52.25	38.3	14.92	59.5	100	0	P	V
802.11a CH 116 5580MHz		11160	48.09	-25.91	74	56.87	40.03	12.59	61.4	100	0	P	H
		16740	46.59	-21.61	68.2	51.43	39.12	14.96	58.92	100	0	P	H
		11160	46.86	-27.14	74	55.64	40.03	12.59	61.4	100	0	P	V
		16740	46.04	-22.16	68.2	50.88	39.12	14.96	58.92	100	0	P	V
802.11a CH 140 5700MHz		11400	47.64	-26.36	74	56.38	39.94	12.72	61.4	100	0	P	H
		17100	48.89	-19.31	68.2	51.55	40.24	15.06	57.96	100	0	P	H
		11400	46.46	-27.54	74	55.2	39.94	12.72	61.4	100	0	P	V
		17100	48.94	-19.26	68.2	51.6	40.24	15.06	57.96	100	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+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 102 5510MHz		5458.24	51.87	-22.13	74	40.66	32.34	8.46	29.59	190	316	P	H
		5470	52.79	-15.41	68.2	41.51	32.36	8.51	29.59	190	316	P	H
		5458.48	43.46	-10.54	54	32.25	32.34	8.46	29.59	190	316	A	H
	*	5510	103.29	-	-	91.89	32.4	8.6	29.6	190	316	P	H
	*	5510	95.33	-	-	83.93	32.4	8.6	29.6	190	316	A	H
		5732.555	52.12	-16.08	68.2	40.37	32.62	8.82	29.69	190	316	P	H
		5456.56	52.09	-21.91	74	40.88	32.34	8.46	29.59	173	19	P	V
		5462.8	51.64	-16.56	68.2	40.41	32.36	8.46	29.59	173	19	P	V
		5448.64	43.18	-10.82	54	31.96	32.34	8.46	29.58	173	19	A	V
	*	5510	100.82	-	-	89.42	32.4	8.6	29.6	173	19	P	V
	*	5510	92.93	-	-	81.53	32.4	8.6	29.6	173	19	A	V
		5763.74	51.44	-16.76	68.2	39.68	32.66	8.81	29.71	173	19	P	V
802.11n HT40 CH 110 5550MHz		5444.32	51.93	-22.07	74	40.78	32.32	8.41	29.58	201	316	P	H
		5470	51.73	-16.47	68.2	40.45	32.36	8.51	29.59	201	316	P	H
		5448.16	43.1	-10.9	54	31.88	32.34	8.46	29.58	201	316	A	H
	*	5550	103.79	-	-	92.25	32.45	8.7	29.61	201	316	P	H
	*	5550	95.34	-	-	83.8	32.45	8.7	29.61	201	316	A	H
		5758.07	52.79	-15.41	68.2	41.03	32.66	8.81	29.71	201	316	P	H
		5430.16	51.02	-22.98	74	39.87	32.32	8.41	29.58	188	23	P	V
		5469.04	51.35	-16.85	68.2	40.07	32.36	8.51	29.59	188	23	P	V
		5457.52	42.8	-11.2	54	31.59	32.34	8.46	29.59	188	23	A	V
	*	5550	100.55	-	-	89.01	32.45	8.7	29.61	188	23	P	V
	*	5550	92.3	-	-	80.76	32.45	8.7	29.61	188	23	A	V
		5725.625	52.07	-16.13	68.2	40.31	32.62	8.82	29.68	188	23	P	V



802.11n HT40 CH 134 5670MHz		5458.15	51.13	-22.87	74	39.92	32.34	8.46	29.59	170	311	P	H
		5466.9	51.04	-17.16	68.2	39.76	32.36	8.51	29.59	170	311	P	H
		5455	42.75	-11.25	54	31.54	32.34	8.46	29.59	170	311	A	H
	*	5670	103.53	-	-	91.79	32.57	8.83	29.66	170	311	P	H
	*	5670	95.76	-	-	84.02	32.57	8.83	29.66	170	311	A	H
		5759.015	53.97	-14.23	68.2	42.21	32.66	8.81	29.71	170	311	P	H
		5403.9	50.98	-23.02	74	39.97	32.28	8.31	29.58	138	14	P	V
		5470	50.35	-17.85	68.2	39.07	32.36	8.51	29.59	138	14	P	V
		5446.95	42.53	-11.47	54	31.36	32.34	8.41	29.58	138	14	A	V
	*	5670	99.62	-	-	87.88	32.57	8.83	29.66	138	14	P	V
	*	5670	92.05	-	-	80.31	32.57	8.83	29.66	138	14	A	V
		5764.37	53.11	-15.09	68.2	41.35	32.66	8.81	29.71	138	14	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 106 5530MHz		5451.04	52.55	-21.45	74	41.34	32.34	8.46	29.59	184	316	P	H
		5459.92	52.11	-21.89	74	40.9	32.34	8.46	29.59	184	316	P	H
		5459.68	45.1	-8.9	54	33.89	32.34	8.46	29.59	184	316	A	H
	*	5530	100.1	-	-	88.64	32.42	8.65	29.61	184	316	P	H
	*	5530	92.7	-	-	81.24	32.42	8.65	29.61	184	316	A	H
		5731.295	51.96	-16.24	68.2	40.21	32.62	8.82	29.69	184	316	P	H
		5453.68	52.08	-21.92	74	40.87	32.34	8.46	29.59	176	19	P	V
		5465.44	51.53	-16.67	68.2	40.3	32.36	8.46	29.59	176	19	P	V
		5454.4	44.56	-9.44	54	33.35	32.34	8.46	29.59	176	19	A	V
	*	5530	97.12	-	-	85.66	32.42	8.65	29.61	176	19	P	V
	*	5530	88.67	-	-	77.21	32.42	8.65	29.61	176	19	A	V
		5735.39	51.87	-16.33	68.2	40.1	32.64	8.82	29.69	176	19	P	V
802.11ac VHT80 CH 122 5610MHz		5453.92	50.7	-23.3	74	39.49	32.34	8.46	29.59	185	316	P	H
		5466.64	50.93	-17.27	68.2	39.65	32.36	8.51	29.59	185	316	P	H
		5452	44.62	-9.38	54	33.41	32.34	8.46	29.59	185	316	A	H
	*	5610	100.1	-	-	88.39	32.5	8.85	29.64	185	316	P	H
	*	5610	92.18	-	-	80.47	32.5	8.85	29.64	185	316	A	H
		5756.81	52.39	-15.81	68.2	40.63	32.66	8.81	29.71	185	316	P	H
		5449.36	50.78	-23.22	74	39.56	32.34	8.46	29.58	177	23	P	V
		5460.16	51.81	-16.39	68.2	40.6	32.34	8.46	29.59	177	23	P	V
		5459.2	44.11	-9.89	54	32.9	32.34	8.46	29.59	177	23	A	V
	*	5610	95.02	-	-	83.31	32.5	8.85	29.64	177	23	P	V
	*	5610	86.9	-	-	75.19	32.5	8.85	29.64	177	23	A	V
		5755.235	52.04	-16.16	68.2	40.26	32.66	8.81	29.69	177	23	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

WIFI 802.11n HT40 (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 LF		32.16	23.99	-16.01	40	32	23.54	0.79	32.34	-	-	P	H
		77.25	22.93	-17.07	40	40.55	13.4	1.28	32.3	-	-	P	H
		98.31	29.74	-13.76	43.5	44.77	15.91	1.35	32.29	-	-	P	H
		831.3	31.51	-14.49	46	31.31	28.55	3.49	31.84	-	-	P	H
		934.2	33.12	-12.88	46	30.8	29.86	3.66	31.2	100	0	P	H
		974.1	34.06	-19.94	54	30.37	30.81	3.72	30.84	-	-	P	H
		31.62	26.86	-13.14	40	34.87	23.54	0.79	32.34	-	-	P	V
		47.28	28.06	-11.94	40	43.7	15.68	1	32.32	100	0	P	V
		61.05	27.35	-12.65	40	46.57	12.05	1.04	32.31	-	-	P	V
		861.4	31.81	-14.19	46	30.88	29.11	3.52	31.7	-	-	P	V
		910.4	32.05	-13.95	46	30.68	29.19	3.6	31.42	-	-	P	V
		941.2	33.68	-12.32	46	30.98	30.13	3.71	31.14	-	-	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	Path	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. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)
 = Antenna Factor(dB/m) + Path 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:

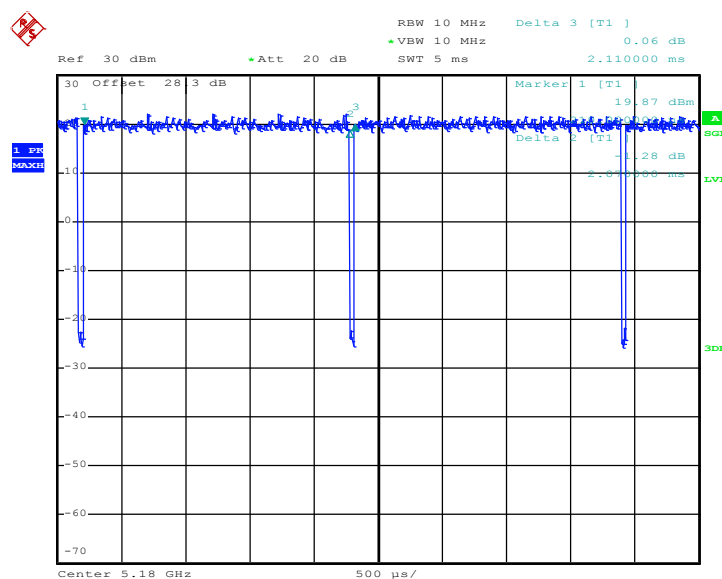
1. Level(dBμV/m)
 = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
 = 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)
 = 43.54 (dBμV/m)
2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)
 = 43.54(dBμV/m) – 54(dBμV/m)
 = -10.46(dB)

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

Appendix D. Duty Cycle Plots

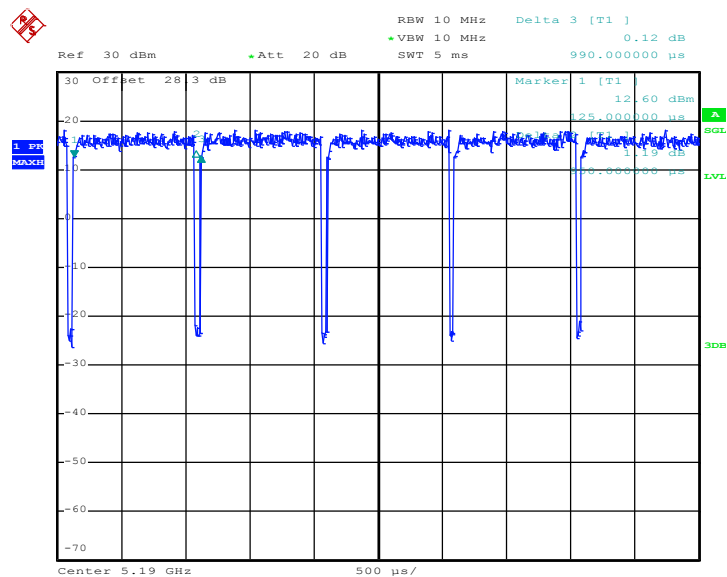
Antenna	Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
1+2	802.11a	98.10	2.070	0.48	1kHz
1+2	802.11n HT40	95.96	0.950	1.05	3kHz
1+2	802.11ac VHT80	86.99	0.254	3.94	10kHz

802.11a





802.11HT40



802.11ac VHT80

