



FCC RF Test Report

APPLICANT : OnePlus Technology (shenzhen) Co., Ltd
EQUIPMENT : Smart Phone
BRAND NAME : ONEPLUS
MODEL NAME : ONEPLUS A6003
FCC ID : 2ABZ2-A6003
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Jan. 25, 2018 and testing was completed on Feb. 16, 2018. We, Sporton International (Shenzhen) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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



Approved by: Eric Shih / Manager

Sporton International (Shenzhen) Inc.
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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR812508-01E	Rev. 01	Initial issue of report	Mar. 29, 2018



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	2.1049 15.403(i)	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	FCC ≤ 24 dBm (depend on band)	Pass	-
3.3	15.407(a)	Power Spectral Density	FCC ≤ 11 dBm (depend on band)	Pass	-
3.4	15.407(b)	Unwanted Emissions	15.407(b) 15.209(a)	Pass	Under limit 3.15 dB at 5146.120 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 14.40 dB at 0.600 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

OnePlus Technology (shenzhen) Co., Ltd

18C02, 18C03, 18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen

1.2 Manufacturer

OnePlus Technology (shenzhen) Co., Ltd

18C02, 18C03, 18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smart Phone
Brand Name	ONEPLUS
Model Name	ONEPLUS A6003
FCC ID	2ABZ2-A6003
EUT supports Radios application	CDMA/EV-DO/GSM/GPRS/EGPRS/WCDMA/HSPA/DC-HSDPA/HSPA+/LTE/NFC WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 2.4GHz 802.11ac VHT20/VHT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth v3.0 + EDR / Bluetooth v4.0 LE/ Bluetooth v4.1 LE / Bluetooth v5.0 LE
IMEI Code	Conducted: 868263030005842/868263030007343 Conduction: 868263030005057/868263030006550 Radiation: 868263030005024/868263030006527
HW Version	EC101
SW Version	oxygen version 5.1.0
EUT Stage	Production Unit

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

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5720 MHz
Maximum Output Power to Antenna	<5180 MHz ~ 5240 MHz> MIMO <Ant. 1+2> 802.11a : 19.95 dBm / 0.0989 W 802.11n HT20 : 19.74 dBm / 0.0942 W 802.11n HT40 : 19.20 dBm / 0.0832 W 802.11ac VHT20: 19.73 dBm / 0.0940 W 802.11ac VHT40: 19.18 dBm / 0.0828 W 802.11ac VHT80: 18.94 dBm / 0.0783 W <5260 MHz ~ 5320 MHz> MIMO <Ant. 1+2> 802.11a : 19.90 dBm / 0.0977 W 802.11n HT20 : 19.68 dBm / 0.0929 W 802.11n HT40 : 19.11 dBm / 0.0815 W 802.11ac VHT20: 19.66 dBm / 0.0925 W 802.11ac VHT40: 19.07 dBm / 0.0807 W 802.11ac VHT80: 16.78 dBm / 0.0476 W <5500 MHz ~ 5720 MHz > MIMO <Ant. 1+2> 802.11a : 19.75 dBm / 0.0944 W 802.11n HT20 : 19.55 dBm / 0.0902 W 802.11n HT40 : 19.01 dBm / 0.0796 W 802.11ac VHT20: 19.53 dBm / 0.0897 W 802.11ac VHT40: 18.98 dBm / 0.0791 W 802.11ac VHT80: 18.78 dBm / 0.0755 W
99% Occupied Bandwidth	<5180 MHz ~ 5240 MHz> <Ant. 1> 802.11a : 17.63 MHz 802.11n HT20 : 18.83 MHz 802.11n HT40 : 36.66 MHz 802.11ac VHT80 : 75.76 MHz <Ant. 2> 802.11a : 17.58 MHz 802.11n HT20 : 18.78 MHz 802.11n HT40 : 36.46 MHz 802.11ac VHT80 : 75.52 MHz <5260 MHz ~ 5320 MHz> <Ant. 1> 802.11a : 17.83 MHz 802.11n HT20 : 18.83 MHz 802.11n HT40 : 36.66 MHz 802.11ac VHT80 : 75.64 MHz <Ant. 2> 802.11a : 17.63 MHz 802.11n HT20 : 18.88 MHz 802.11n HT40 : 36.56 MHz 802.11ac VHT80 : 75.52 MHz <5500 MHz ~ 5720 MHz > <Ant. 1>

	802.11a : 17.63 MHz 802.11n HT20 : 18.93 MHz 802.11n HT40 : 36.66 MHz 802.11ac VHT80 : 75.76 MHz <Ant. 2> 802.11a : 17.68 MHz 802.11n HT20 : 18.93 MHz 802.11n HT40 : 36.56 MHz 802.11ac VHT80 : 75.52 MHz		
Antenna Type	PIFA Antenna		
Antenna Gain	<5180 MHz ~ 5240 MHz> Ant. 1 : -3.00 dBi Ant. 2 : -3.00 dBi <5260 MHz ~ 5320 MHz> Ant. 1 : -3.00 dBi Ant. 2 : -3.00 dBi <5500 MHz ~ 5720 MHz> Ant. 1 : -3.00 dBi Ant. 2 : -3.00 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 802.11n HT20 / ac VHT20 and 802.11n HT40 / ac VHT40 mode, the whole testing is assessed only 802.11n HT20/ HT40 by referring to their higher conducted power.
3. For SISO & MIMO mode, the whole testing has assessed only MIMO mode by referring to their higher conducted power.

1.5 Modification of EUT

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

1.6 Testing Location

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

Test Site	Sporton International (Shenzhen) Inc.		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan Shenzhen City Guangdong Province 518055 China TEL: +86-755-8637-9589 FAX: +86-755-8637-9595		
Test Site No.	Sporton Site No.		FCC Test Firm Registration No.
	TH01-SZ	CO01-SZ	251365
Test Site	Sporton International (Shenzhen) Inc.		
Test Site Location	No. 3 Bldg the third floor of south, Shahe River west, Fengzeyuan Warehouse, Nanshan District Shenzhen City Guangdong Province 518055 China TEL: +86-755-3320-2398		
Test Site No.	Sporton Site No.		FCC Test Firm Registration No.
	03CH01-SZ		577730

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

1.7 Applicable Standards

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

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

Remark:

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



2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: 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 (Z 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.
3. For Straddle Channel, it is permitted to perform a single measurement over the entire emission bandwidth to demonstrate compliance to the power limit, provided that the more conservative of the applicable power and power density limits are applied.

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.

MIMO Antenna

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

AC Conducted Emission	Mode 1 : GSM850 Idle + Bluetooth Link + WLAN Link (5G) + USB Cable (Charging from Adapter) + Earphone
Remark: For Radiated Test Cases, The tests were performed 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



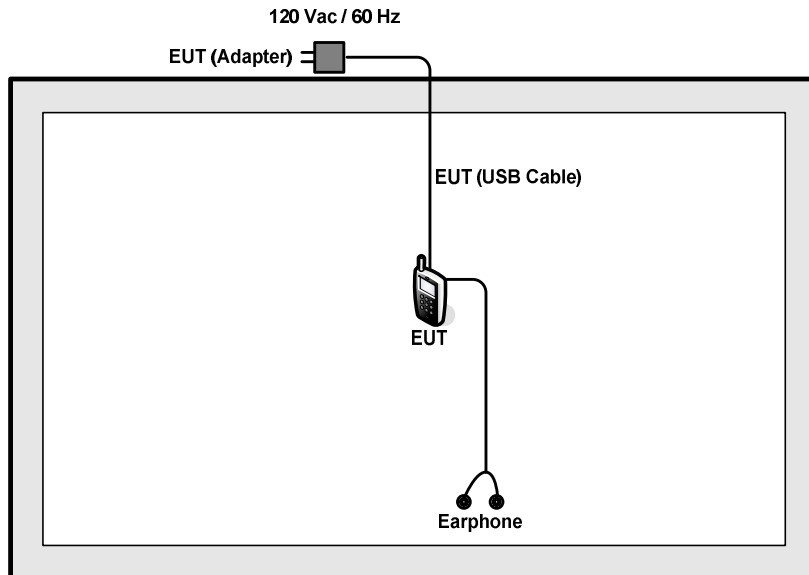
Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5720MHz
		802.11ac VHT20	802.11ac VHT20	802.11ac VHT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140
Straddle		-	-	144

Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5720MHz
		802.11ac VHT40	802.11ac VHT40	802.11ac VHT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134
Straddle		-	-	142

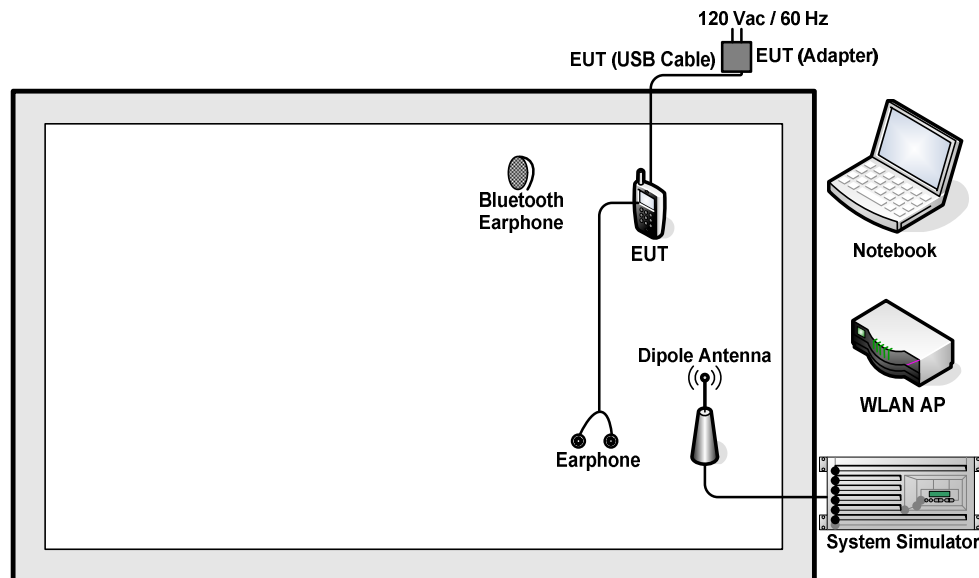
Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5720MHz
		802.11ac VHT80	802.11ac VHT80	802.11ac VHT80
L	Low	-	-	106
M	Middle	42	58	-
H	High	-	-	122
Straddle		-	-	138

2.3 Connection Diagram of Test System

<WLAN Tx 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.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	D-Link	DIR-820L	KA2IR820LA1	N/A	Unshielded, 1.8 m
3.	Notebook	Lenovo	E540	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	Bluetooth Earphone	Samsung	EO-MG900	N/A	N/A	N/A
5.	Earphone	Apple	MC690ZP/A	N/A	Shielded, 1.0m	N/A
6.	Earphone	Apple	N/A	N/A	Shielded, 1.0m	N/A

2.5 EUT Operation Test Setup

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

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

2.6 Measurement Results Explanation Example

For all conducted test items:

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

Example :

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

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

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

3 Test Result

3.1 26dB & 99% Occupied Bandwidth Measurement

3.1.1 Description of 26dB & 99% Occupied Bandwidth

This section is for reporting purpose only.

There is no restriction limits for bandwidth.

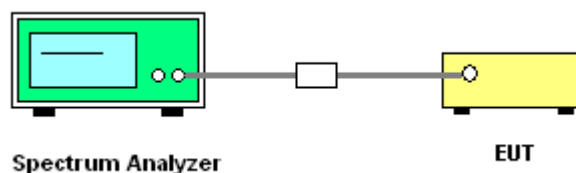
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

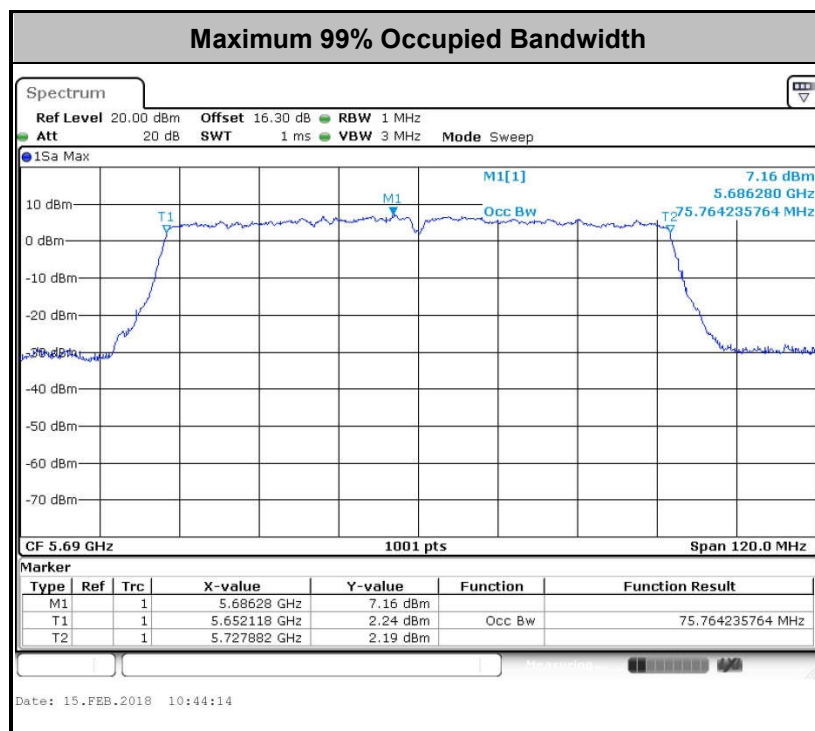
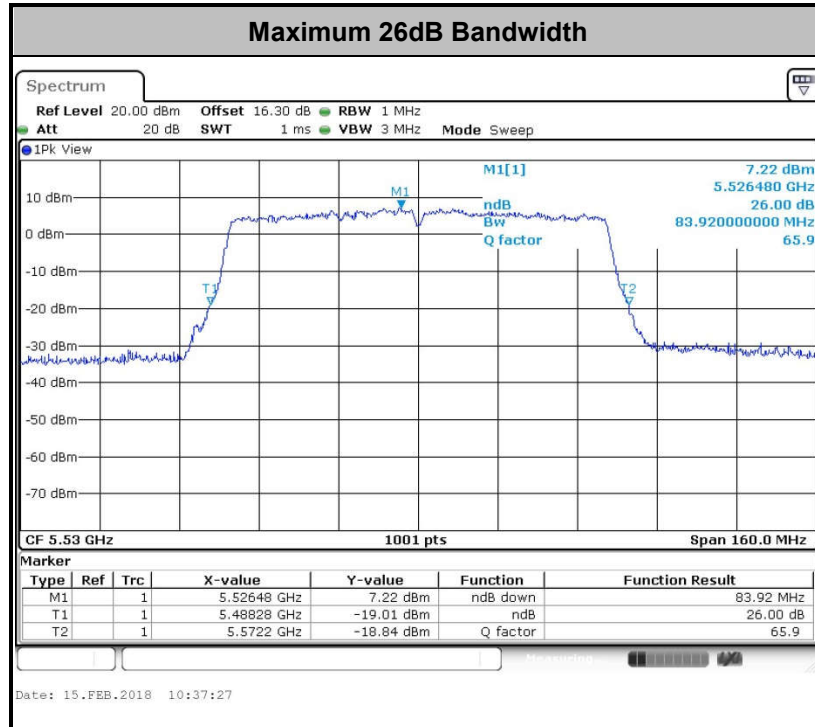
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section C) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB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

3.1.4 Test Setup



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

Please refer to Appendix A.



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



3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

<FCC 14-30 CFR 15.407>

For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW.

For the 5.25–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz.

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

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

3.2.2 Measuring Instruments

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

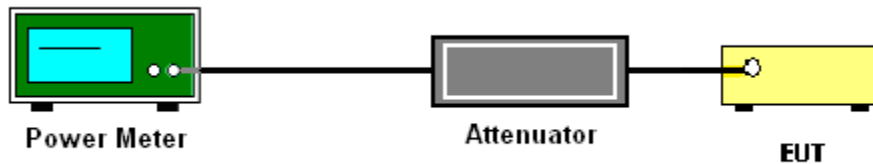
3.2.3 Test Procedures

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

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

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

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

<FCC 14-30 CFR 15.407>

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

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

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

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

Section F) Maximum power spectral density.

Method SA-2

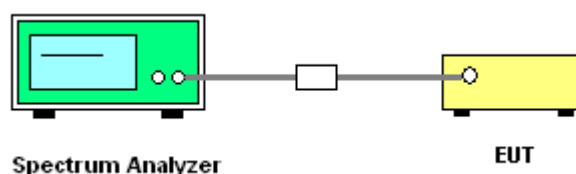
(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

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

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

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

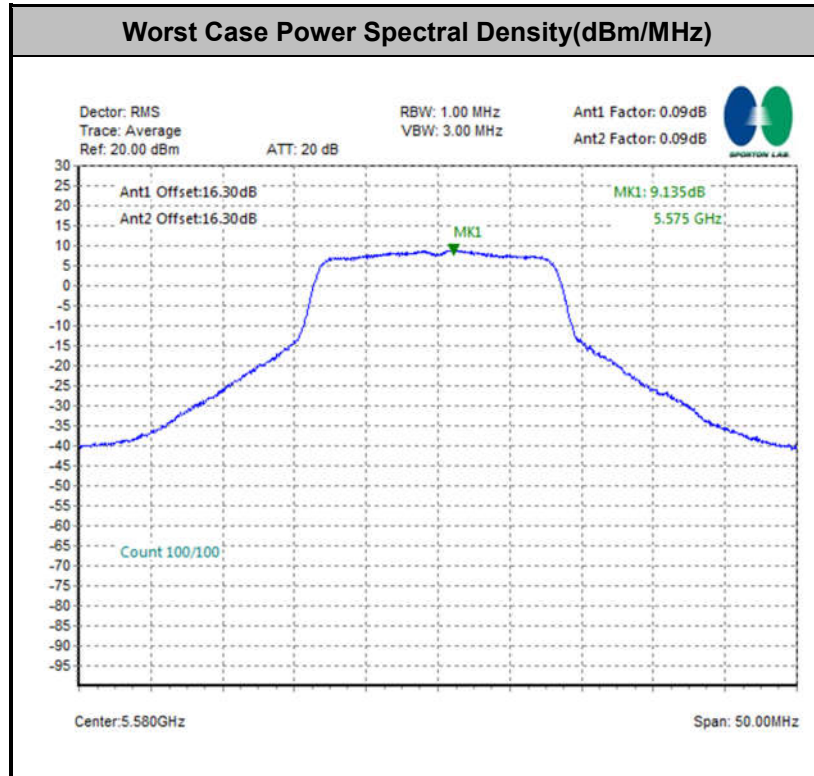
3.3.4 Test Setup





3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



3.4 Unwanted Radiated Emission Measurement

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

3.4.1 Limit of Unwanted Emissions

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

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

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

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

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

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

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



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

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

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

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

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

3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section G) Unwanted emissions measurement.

(1) Procedure for Unwanted Emissions Measurements Below 1000MHz

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

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

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

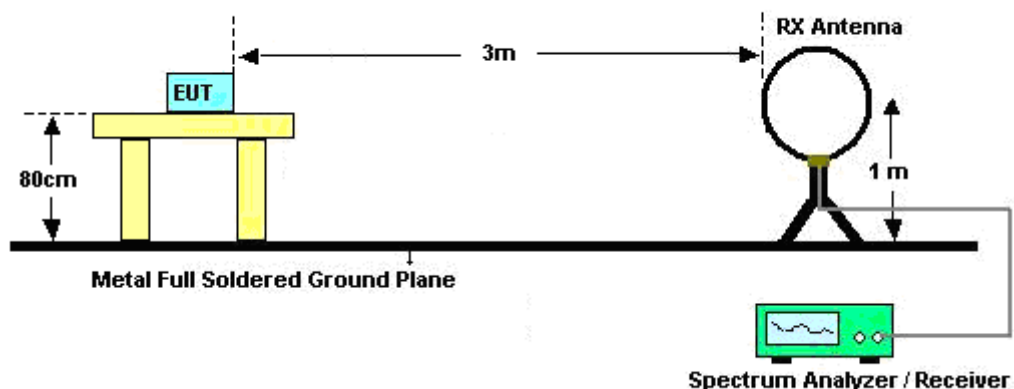
(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

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

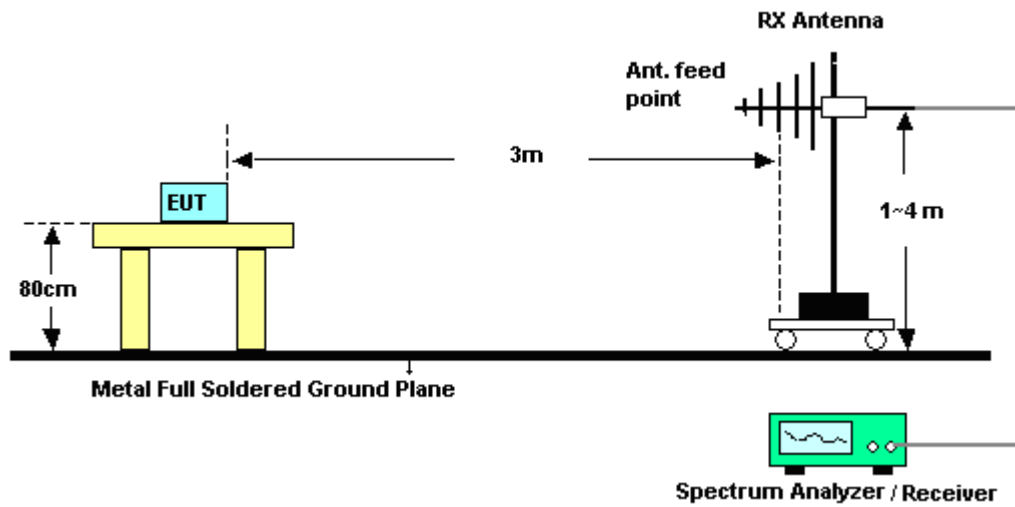
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband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

3.4.4 Test Setup

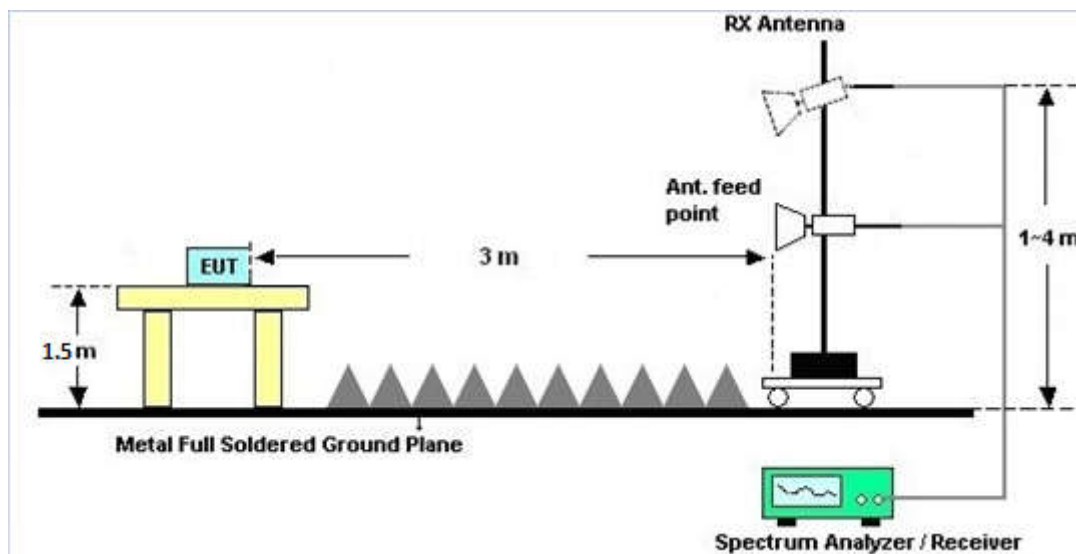
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



**3.4.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)**

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

3.4.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix B.

3.4.7 Duty Cycle

Please refer to Appendix C.

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

Please refer to Appendix B.

3.5 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.

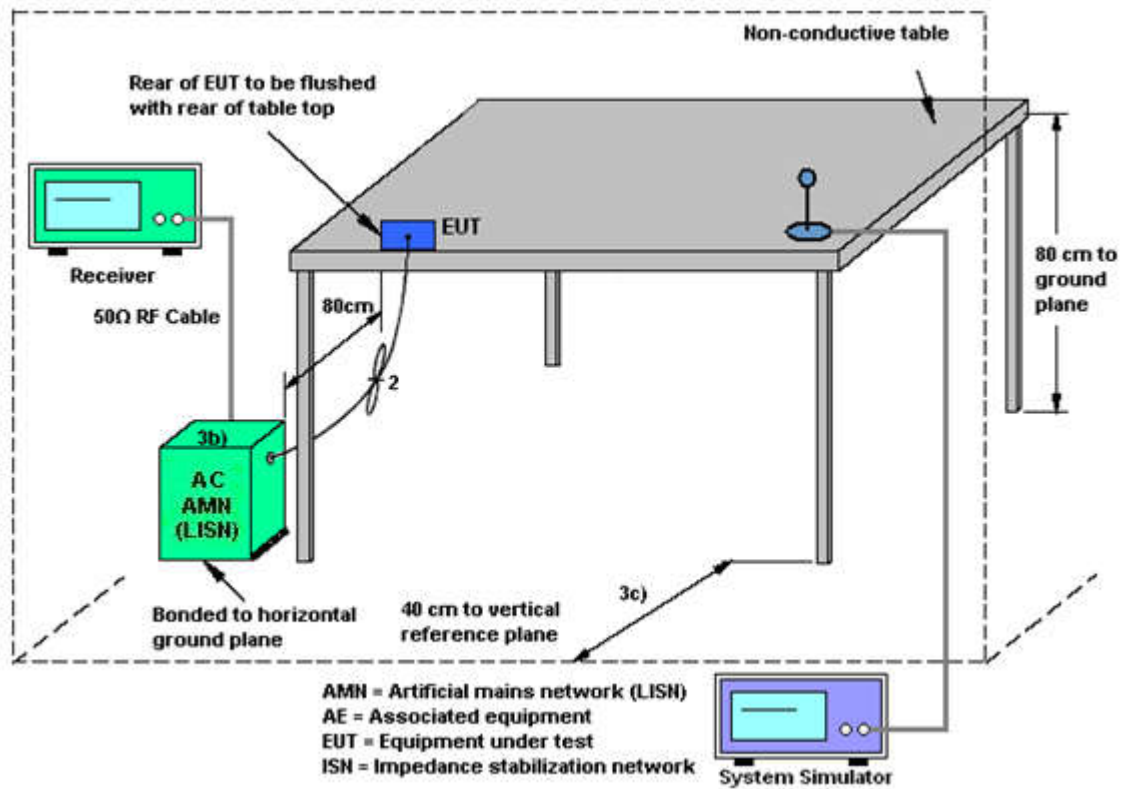
3.5.2 Measuring Instruments

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.

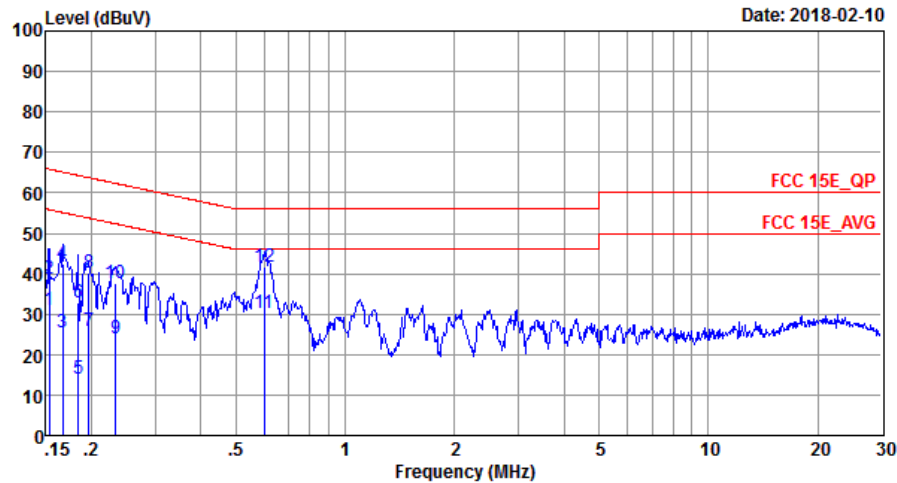
3.5.4 Test Setup





3.5.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	22~25℃
Test Engineer :	Walker Ye	Relative Humidity :	50~55%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link (5G) + USB Cable (Charging from Adapter) + Earphone		



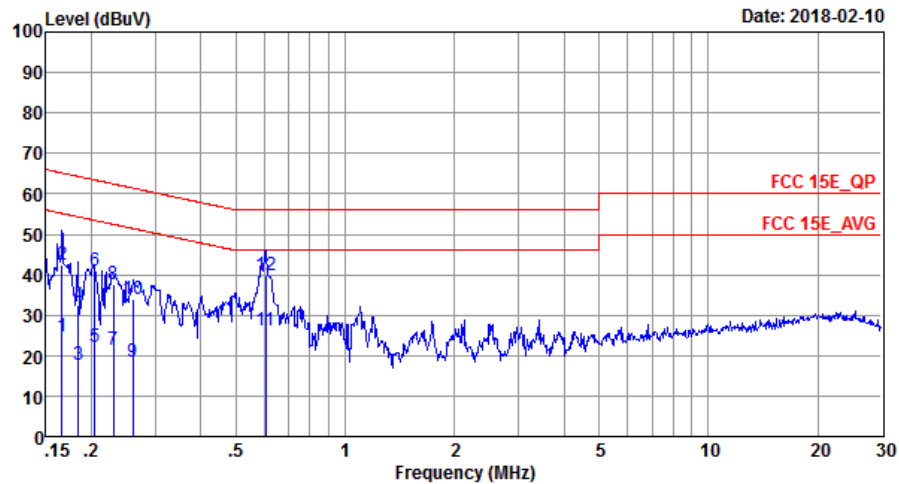
Site : CO01-SZ
Condition: FCC 15E_QP LISN_20170907_L LINE

Mode : Mode 1
IMEI : 868263030005057/868263030006550

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15	30.89	-24.93	55.82	20.80	0.03	10.06	Average
2	0.15	38.69	-27.13	65.82	28.60	0.03	10.06	QP
3	0.17	25.60	-29.52	55.12	15.50	0.03	10.07	Average
4	0.17	42.30	-22.82	65.12	32.20	0.03	10.07	QP
5	0.18	14.10	-40.18	54.28	4.00	0.03	10.07	Average
6	0.18	32.69	-31.59	64.28	22.59	0.03	10.07	QP
7	0.20	25.70	-28.06	53.76	15.60	0.03	10.07	Average
8	0.20	40.30	-23.46	63.76	30.20	0.03	10.07	QP
9	0.23	23.90	-28.45	52.35	13.80	0.03	10.07	Average
10	0.23	37.80	-24.55	62.35	27.70	0.03	10.07	QP
11	0.60	30.40	-15.60	46.00	20.30	0.02	10.08	Average
12 *	0.60	41.60	-14.40	56.00	31.50	0.02	10.08	QP



Test Mode :	Mode 1	Temperature :	22~25°C
Test Engineer :	Walker Ye	Relative Humidity :	50~55%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link (5G) + USB Cable (Charging from Adapter) + Earphone		



Site : CO01-SZ
Condition: FCC 15E_QP LISN_20170907_N NEUTRAL

Mode : Mode 1
IMEI : 868263030005057/868263030006550

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.17	24.90	-30.26	55.16	14.80	0.03	10.07	Average
2	0.17	42.40	-22.76	65.16	32.30	0.03	10.07	QP
3	0.18	17.69	-36.59	54.28	7.59	0.03	10.07	Average
4	0.18	32.40	-31.88	64.28	22.30	0.03	10.07	QP
5	0.20	22.20	-31.25	53.45	12.10	0.03	10.07	Average
6	0.20	41.00	-22.45	63.45	30.90	0.03	10.07	QP
7	0.23	21.50	-30.94	52.44	11.40	0.03	10.07	Average
8	0.23	37.70	-24.74	62.44	27.60	0.03	10.07	QP
9	0.26	18.31	-33.11	51.42	8.20	0.03	10.08	Average
10	0.26	34.01	-27.41	61.42	23.90	0.03	10.08	QP
11	0.60	26.30	-19.70	46.00	16.20	0.02	10.08	Average
12 *	0.60	40.00	-16.00	56.00	29.90	0.02	10.08	QP



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 for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
	Ant 1 (dBi)	Ant 2 (dBi)				
Band I	-3.00	-3.00	-3.00	0.01	0.00	0.00
Band II	-3.00	-3.00	-3.00	0.01	0.00	0.00
Band III	-3.00	-3.00	-3.00	0.01	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 Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	9kHz~40GHz	Apr. 20, 2017	Jan. 29, 2018~ Feb. 15, 2018	Apr. 19, 2018	Conducted (TH01-SZ)
Pulse Power Sensor	Anritsu	MA2411B	1207253	30MHz~40GHz	Dec. 26, 2017	Jan. 29, 2018~ Feb. 15, 2018	Dec. 25, 2018	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1218010	50MHz Bandwidth	Dec. 26, 2017	Jan. 29, 2018~ Feb. 15, 2018	Dec. 25, 2018	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Apr. 20, 2017	Jan. 29, 2018~ Feb. 16, 2018	Apr. 19, 2018	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	May 14, 2017	Jan. 29, 2018~ Feb. 16, 2018	May 13, 2018	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	23188	30MHz~2GHz	Apr. 25, 2017	Jan. 29, 2018~ Feb. 16, 2018	Apr. 24, 2018	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS Lindgren	3117	119436	1GHz~18GHz	Jul. 28, 2017	Jan. 29, 2018~ Feb. 16, 2018	Jul. 27, 2018	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz~40GHz	Jun. 16, 2017	Jan. 29, 2018~ Feb. 16, 2018	Jun. 15, 2018	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 20, 2017	Jan. 29, 2018~ Feb. 16, 2018	Apr. 19, 2018	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-0010 1800-30-10P-R	1707137	1GHz~18GHz	Oct. 19, 2017	Jan. 29, 2018~ Feb. 16, 2018	Oct. 18, 2018	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270104	0.5GHz~26.5GHz	Oct. 19, 2017	Jan. 29, 2018~ Feb. 16, 2018	Oct. 18, 2018	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35-H G	1871923	18GHz~40GHz	Jul. 18, 2017	Jan. 29, 2018~ Feb. 16, 2018	Jul. 17, 2018	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	6160100019 85	N/A	NCR	Jan. 29, 2018~ Feb. 16, 2018	NCR	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Jan. 29, 2018~ Feb. 16, 2018	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Jan. 29, 2018~ Feb. 16, 2018	NCR	Radiation (03CH01-SZ)
EMI Receiver	R&S	ESR7	101630	9kHz~7GHz;	Dec. 26, 2017	Feb. 10, 2018	Dec. 25, 2018	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103912	9kHz~30MHz	Dec. 26, 2017	Feb. 10, 2018	Dec. 25, 2018	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	MessTec	3816/2SH	00103892	9kHz~30MHz	Nov. 01, 2017	Feb. 10, 2018	Oct. 31, 2018	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	6160200008 91	100Vac~250Vac	Jul. 19, 2017	Feb. 10, 2018	Jul. 18, 2018	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% ($U = 2U_c(y)$)	2.6dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

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

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

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

Test Engineer:	Sam Zheng	Temperature:	24~26	°C
Test Date:	2018/1/29~2018/2/15	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)		Note
					Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	36	5180	17.48	17.53	23.23	22.38	
11a	6Mbps	2	44	5220	17.63	17.58	23.48	23.33	
11a	6Mbps	2	48	5240	17.53	17.58	23.58	23.18	
HT20	MCS0	2	36	5180	18.68	18.78	24.48	24.23	
HT20	MCS0	2	44	5220	18.73	18.73	24.63	24.43	
HT20	MCS0	2	48	5240	18.83	18.78	25.48	24.63	
HT40	MCS0	2	38	5190	36.66	36.46	41.81	41.81	
HT40	MCS0	2	46	5230	36.66	36.46	41.72	41.72	
VHT80	MCS0	2	42	5210	75.76	75.52	83.12	82.96	

TEST RESULTS DATA
Average Power Table

FCC Band I															
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)			Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	2	36	5180	0.09	0.09	17.09	16.78	19.95	24.00		-3.00			Pass
11a	6Mbps	2	44	5220	0.09	0.09	17.11	16.64	19.89	24.00		-3.00			Pass
11a	6Mbps	2	48	5240	0.09	0.09	17.19	16.62	19.92	24.00		-3.00			Pass
HT20	MCS0	2	36	5180	0.08	0.08	16.91	16.54	19.74	24.00		-3.00			Pass
HT20	MCS0	2	44	5220	0.08	0.08	16.94	16.39	19.68	24.00		-3.00			Pass
HT20	MCS0	2	48	5240	0.08	0.08	17.03	16.41	19.74	24.00		-3.00			Pass
HT40	MCS0	2	38	5190	0.18	0.18	16.44	15.94	19.20	24.00		-3.00			Pass
HT40	MCS0	2	46	5230	0.18	0.18	16.36	15.88	19.13	24.00		-3.00			Pass
VHT20	MCS0	2	36	5180	0.15	0.17	16.90	16.53	19.73	24.00		-3.00			Pass
VHT20	MCS0	2	44	5220	0.15	0.17	16.92	16.37	19.66	24.00		-3.00			Pass
VHT20	MCS0	2	48	5240	0.15	0.17	16.98	16.39	19.70	24.00		-3.00			Pass
VHT40	MCS0	2	38	5190	0.29	0.29	16.41	15.91	19.18	24.00		-3.00			Pass
VHT40	MCS0	2	46	5230	0.29	0.29	16.32	15.82	19.09	24.00		-3.00			Pass
VHT80	MCS0	2	42	5210	0.60	0.57	16.11	15.74	18.94	24.00		-3.00			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	0.09	0.09			8.75	11.00		0.01		Pass
11a	6Mbps	2	44	5220	0.09	0.09			8.53	11.00		0.01		Pass
11a	6Mbps	2	48	5240	0.09	0.09			8.91	11.00		0.01		Pass
HT20	MCS0	2	36	5180	0.08	0.08			8.35	11.00		0.01		Pass
HT20	MCS0	2	44	5220	0.08	0.08			8.35	11.00		0.01		Pass
HT20	MCS0	2	48	5240	0.08	0.08			8.47	11.00		0.01		Pass
HT40	MCS0	2	38	5190	0.18	0.18			4.64	11.00		0.01		Pass
HT40	MCS0	2	46	5230	0.18	0.18			4.91	11.00		0.01		Pass
VHT80	MCS0	2	42	5210	0.60	0.57			1.69	11.00		0.01		Pass

TEST RESULTS DATA
26dB and 99% OBW

Band II											
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		FCC 26dB Bandwidth Power Limit (dBm)		Note
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	52	5260	17.83	17.58	23.93	23.03	23.98		
11a	6Mbps	2	60	5300	17.53	17.58	23.23	23.43	23.98		
11a	6Mbps	2	64	5320	17.63	17.63	24.03	23.48	23.98		
HT20	MCS0	2	52	5260	18.83	18.88	24.78	24.88	23.98		
HT20	MCS0	2	60	5300	18.78	18.78	24.93	24.78	23.98		
HT20	MCS0	2	64	5320	18.78	18.88	24.43	25.03	23.98		
HT40	MCS0	2	54	5270	36.66	36.46	41.72	41.72	23.98		
HT40	MCS0	2	62	5310	36.66	36.56	41.81	42.08	23.98		
VHT80	MCS0	2	58	5290	75.64	75.52	83.60	82.64	23.98		

TEST RESULTS DATA
Average Power Table

FCC Band II															
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	2	52	5260	0.09	0.09	17.24	16.50	19.90	23.98		-3.00		26.99	Pass
11a	6Mbps	2	60	5300	0.09	0.09	17.25	16.49	19.90	23.98		-3.00		26.99	Pass
11a	6Mbps	2	64	5320	0.09	0.09	17.17	16.56	19.89	23.98		-3.00		26.99	Pass
HT20	MCS0	2	52	5260	0.08	0.08	16.91	16.30	19.63	23.98		-3.00		26.99	Pass
HT20	MCS0	2	60	5300	0.08	0.08	17.05	16.26	19.68	23.98		-3.00		26.99	Pass
HT20	MCS0	2	64	5320	0.08	0.08	16.84	16.32	19.60	23.98		-3.00		26.99	Pass
HT40	MCS0	2	54	5270	0.18	0.18	16.43	15.76	19.11	23.98		-3.00		26.99	Pass
HT40	MCS0	2	62	5310	0.18	0.18	14.08	13.79	16.94	23.98		-3.00		26.99	Pass
VHT20	MCS0	2	52	5260	0.15	0.17	16.90	16.29	19.61	23.98		-3.00		26.99	Pass
VHT20	MCS0	2	60	5300	0.15	0.17	17.02	16.24	19.66	23.98		-3.00		26.99	Pass
VHT20	MCS0	2	64	5320	0.15	0.17	16.82	16.29	19.57	23.98		-3.00		26.99	Pass
VHT40	MCS0	2	54	5270	0.29	0.29	16.39	15.71	19.07	23.98		-3.00		26.99	Pass
VHT40	MCS0	2	62	5310	0.29	0.29	14.04	13.72	16.89	23.98		-3.00		26.99	Pass
VHT80	MCS0	2	58	5290	0.60	0.57	13.92	13.62	16.78	23.98		-3.00		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	0.09	0.09			8.93	11.00		0.01		Pass
11a	6Mbps	2	60	5300	0.09	0.09			8.83	11.00		0.01		Pass
11a	6Mbps	2	64	5320	0.09	0.09			8.71	11.00		0.01		Pass
HT20	MCS0	2	52	5260	0.08	0.08			8.60	11.00		0.01		Pass
HT20	MCS0	2	60	5300	0.08	0.08			8.41	11.00		0.01		Pass
HT20	MCS0	2	64	5320	0.08	0.08			7.97	11.00		0.01		Pass
HT40	MCS0	2	54	5270	0.18	0.18			4.83	11.00		0.01		Pass
HT40	MCS0	2	62	5310	0.18	0.18			4.60	11.00		0.01		Pass
VHT80	MCS0	2	58	5290	0.60	0.57			1.83	11.00		0.01		Pass

TEST RESULTS DATA
26dB and 99% OBW

Band III											
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		FCC 26dB Bandwidth Power Limit (dBm)		Note
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	100	5500	17.63	17.68	24.03	23.88	23.98		
11a	6Mbps	2	116	5580	17.63	17.63	24.18	23.53	23.98		
11a	6Mbps	2	140	5700	17.58	17.63	24.53	23.78	23.98		
11a	6Mbps	2	144	5720	17.63	17.63	24.03	24.28	23.98		
HT20	MCS0	2	100	5500	18.83	18.93	25.52	24.78	23.98		
HT20	MCS0	2	116	5580	18.88	18.83	25.48	24.58	23.98		
HT20	MCS0	2	140	5700	18.88	18.88	25.67	24.98	23.98		
HT20	MCS0	2	144	5720	18.93	18.88	25.72	24.88	23.98		
HT40	MCS0	2	102	5510	36.66	36.56	41.81	41.90	23.98		
HT40	MCS0	2	110	5550	36.66	36.56	41.90	41.99	23.98		
HT40	MCS0	2	134	5670	36.66	36.56	41.72	42.17	23.98		
HT40	MCS0	2	142	5710	36.66	36.56	41.99	42.08	23.98		
VHT80	MCS0	2	106	5530	75.64	75.52	83.92	83.12	23.98		
VHT80	MCS0	2	122	5610	75.64	75.52	83.76	82.96	23.98		
VHT80	MCS0	2	138	5690	75.76	75.52	83.60	83.12	23.98		

TEST RESULTS DATA
Average Power Table

FCC Band III															
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	2	100	5500	0.09	0.09	16.87	16.52	19.71	23.98		-3.00		26.99	Pass
11a	6Mbps	2	116	5580	0.09	0.09	16.95	16.51	19.75	23.98		-3.00		26.99	Pass
11a	6Mbps	2	140	5700	0.09	0.09	16.40	16.57	19.50	23.98		-3.00		26.99	Pass
11a	6Mbps	2	144	5720	0.09	0.09	16.34	16.58	19.47	23.98		-3.00		26.99	Pass
HT20	MCS0	2	100	5500	0.08	0.08	16.52	16.30	19.42	23.98		-3.00		26.99	Pass
HT20	MCS0	2	116	5580	0.08	0.08	16.68	16.39	19.55	23.98		-3.00		26.99	Pass
HT20	MCS0	2	140	5700	0.08	0.08	16.15	16.48	19.33	23.98		-3.00		26.99	Pass
HT20	MCS0	2	144	5720	0.08	0.08	16.08	16.44	19.27	23.98		-3.00		26.99	Pass
HT40	MCS0	2	102	5510	0.18	0.18	15.04	15.11	18.08	23.98		-3.00		26.99	Pass
HT40	MCS0	2	110	5550	0.18	0.18	16.19	15.80	19.01	23.98		-3.00		26.99	Pass
HT40	MCS0	2	134	5670	0.18	0.18	15.98	15.83	18.91	23.98		-3.00		26.99	Pass
HT40	MCS0	2	142	5710	0.18	0.18	15.68	15.75	18.72	23.98		-3.00		26.99	Pass
VHT20	MCS0	2	100	5500	0.15	0.17	16.50	16.29	19.41	23.98		-3.00		26.99	Pass
VHT20	MCS0	2	116	5580	0.15	0.17	16.66	16.37	19.53	23.98		-3.00		26.99	Pass
VHT20	MCS0	2	140	5700	0.15	0.17	16.13	16.47	19.31	23.98		-3.00		26.99	Pass
VHT20	MCS0	2	144	5720	0.15	0.17	16.06	16.43	19.26	23.98		-3.00		26.99	Pass
VHT40	MCS0	2	102	5510	0.29	0.29	15.00	15.05	18.04	23.98		-3.00		26.99	Pass
VHT40	MCS0	2	110	5550	0.29	0.29	16.17	15.76	18.98	23.98		-3.00		26.99	Pass
VHT40	MCS0	2	134	5670	0.29	0.29	15.94	15.79	18.88	23.98		-3.00		26.99	Pass
VHT40	MCS0	2	142	5710	0.29	0.29	15.64	15.68	18.67	23.98		-3.00		26.99	Pass
VHT80	MCS0	2	106	5530	0.60	0.57	13.61	13.69	16.66	23.98		-3.00		26.99	Pass
VHT80	MCS0	2	122	5610	0.60	0.57	15.96	15.56	18.78	23.98		-3.00		26.99	Pass
VHT80	MCS0	2	138	5690	0.60	0.57	15.64	15.67	18.67	23.98		-3.00		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	0.09	0.09			8.79	11.00		0.01		Pass
11a	6Mbps	2	116	5580	0.09	0.09			9.14	11.00		0.01		Pass
11a	6Mbps	2	140	5700	0.09	0.09			8.52	11.00		0.01		Pass
11a	6Mbps	2	144	5720	0.09	0.09			8.45	11.00		0.01		Pass
HT20	MCS0	2	100	5500	0.08	0.08			8.27	11.00		0.01		Pass
HT20	MCS0	2	116	5580	0.08	0.08			8.53	11.00		0.01		Pass
HT20	MCS0	2	140	5700	0.08	0.08			8.32	11.00		0.01		Pass
HT20	MCS0	2	144	5720	0.08	0.08			8.12	11.00		0.01		Pass
HT40	MCS0	2	102	5510	0.18	0.18			4.71	11.00		0.01		Pass
HT40	MCS0	2	110	5550	0.18	0.18			4.97	11.00		0.01		Pass
HT40	MCS0	2	134	5670	0.18	0.18			4.83	11.00		0.01		Pass
HT40	MCS0	2	142	5710	0.18	0.18			4.64	11.00		0.01		Pass
VHT80	MCS0	2	106	5530	0.60	0.57			1.62	11.00		0.01		Pass
VHT80	MCS0	2	122	5610	0.60	0.57			1.58	11.00		0.01		Pass
VHT80	MCS0	2	138	5690	0.60	0.57			1.49	11.00		0.01		Pass



Appendix B. Radiated Spurious Emission

Band 1 - 5150~5250MHz

WiFi 802.11a (Band Edge @ 3m)

WiFi	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
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		5139.36	53.31	-20.69	74	41.19	33.85	11.37	33.1	272	334	P	H
		5150	43.51	-10.49	54	31.37	33.87	11.37	33.1	272	334	A	H
	*	5180	103.84	-	-	91.55	33.92	11.47	33.1	272	334	P	H
	*	5180	96.29	-	-	84	33.92	11.47	33.1	272	334	A	H
		5080.34	53.32	-20.68	74	41.37	33.79	11.26	33.1	246	50	P	V
		5148.72	44.01	-9.99	54	31.87	33.87	11.37	33.1	246	50	A	V
	*	5180	105.63	-	-	93.34	33.92	11.47	33.1	246	50	P	V
	*	5180	97.35	-	-	85.06	33.92	11.47	33.1	246	50	A	V
802.11a CH 44 5220MHz		5118.56	53.48	-20.52	74	41.38	33.83	11.37	33.1	292	337	P	H
		5034.84	43.32	-10.68	54	31.65	33.72	11.05	33.1	292	337	A	H
	*	5220	104.83	-	-	92.39	33.96	11.58	33.1	292	337	P	H
	*	5220	96.24	-	-	83.8	33.96	11.58	33.1	292	337	A	H
		5425.28	51.76	-22.24	74	38.86	34.22	11.78	33.1	292	337	P	H
		5456.64	43.27	-10.73	54	30.27	34.26	11.84	33.1	292	337	A	H
		5096.72	53.51	-20.49	74	41.54	33.81	11.26	33.1	246	47	P	V
		5036.4	43.29	-10.71	54	31.62	33.72	11.05	33.1	246	47	A	V
	*	5220	105.49	-	-	93.05	33.96	11.58	33.1	246	47	P	V
	*	5220	97.84	-	-	85.4	33.96	11.58	33.1	246	47	A	V
		5451.32	52.3	-21.7	74	39.3	34.26	11.84	33.1	246	47	P	V
		5458.04	43.24	-10.76	54	30.24	34.26	11.84	33.1	246	47	A	V



802.11a CH 48 5240MHz		5150	53.03	-20.97	74	40.89	33.87	11.37	33.1	292	337	P	H
		5035.36	43.33	-10.67	54	31.66	33.72	11.05	33.1	292	337	A	H
	*	5240	104.75	-	-	92.25	33.98	11.62	33.1	292	337	P	H
	*	5240	96.7	-	-	84.2	33.98	11.62	33.1	292	337	A	H
		5419.12	51.96	-22.04	74	39.06	34.22	11.78	33.1	292	337	P	H
		5459.16	43.3	-10.7	54	30.3	34.26	11.84	33.1	292	337	A	H
		5122.2	53.18	-20.82	74	41.08	33.83	11.37	33.1	203	352	P	V
		5059.54	43.44	-10.56	54	31.62	33.76	11.16	33.1	203	352	A	V
	*	5240	105.74	-	-	93.24	33.98	11.62	33.1	203	352	P	V
	*	5240	97.54	-	-	85.04	33.98	11.62	33.1	203	352	A	V
		5436.2	52.48	-21.52	74	39.5	34.24	11.84	33.1	203	352	P	V
		5460	43.49	-10.51	54	30.49	34.26	11.84	33.1	203	352	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 36 5180MHz		10360	49.82	-24.18	74	54.04	37.02	14.61	55.85	152	260	P	H
		15540	50.1	-23.9	74	49.71	40.78	16.34	56.73	189	238	P	H
		10360	49.12	-24.88	74	53.34	37.02	14.61	55.85	152	260	P	V
		15540	50.59	-23.41	74	50.2	40.78	16.34	56.73	189	238	P	V
802.11a CH 44 5220MHz		10440	50.86	-23.14	74	55.05	37.06	14.63	55.88	150	230	P	H
		15660	50.26	-23.74	74	49.25	41.07	16.43	56.49	160	225	P	H
		10440	50.03	-23.97	74	54.22	37.06	14.63	55.88	150	230	P	V
		15660	50.3	-23.7	74	49.29	41.07	16.43	56.49	160	225	P	V
802.11a CH 48 5240MHz		10480	49.71	-24.29	74	53.88	37.09	14.64	55.9	150	289	P	H
		15720	50.23	-23.77	74	48.89	41.24	16.45	56.35	150	291	P	H
		10480	49.61	-24.39	74	53.78	37.09	14.64	55.9	150	289	P	V
		15720	50.56	-23.44	74	49.22	41.24	16.45	56.35	150	291	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	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 36 5180MHz		5007.02	53.55	-20.45	74	41.9	33.7	11.05	33.1	102	339	P	H
		5150	43.42	-10.58	54	31.28	33.87	11.37	33.1	102	339	A	H
	*	5180	103.53	-	-	91.24	33.92	11.47	33.1	102	339	P	H
	*	5180	96.09	-	-	83.8	33.92	11.47	33.1	102	339	A	H
		5139.1	52.95	-21.05	74	40.83	33.85	11.37	33.1	233	16	P	V
		5036.92	43.35	-10.65	54	31.57	33.72	11.16	33.1	233	16	A	V
	*	5180	106.48	-	-	94.19	33.92	11.47	33.1	233	16	P	V
	*	5180	98.89	-	-	86.6	33.92	11.47	33.1	233	16	A	V
802.11n HT20 CH 44 5220MHz		5089.44	53.78	-20.22	74	41.81	33.81	11.26	33.1	100	314	P	H
		5033.8	43.29	-10.71	54	31.62	33.72	11.05	33.1	100	314	A	H
	*	5220	103.04	-	-	90.6	33.96	11.58	33.1	100	314	P	H
	*	5220	96.02	-	-	83.58	33.96	11.58	33.1	100	314	A	H
		5453.56	52.5	-21.5	74	39.5	34.26	11.84	33.1	100	314	P	H
		5458.32	43.27	-10.73	54	30.27	34.26	11.84	33.1	100	314	A	H
		5033.02	53.2	-20.8	74	41.53	33.72	11.05	33.1	242	27	P	V
		5034.32	43.32	-10.68	54	31.65	33.72	11.05	33.1	242	27	A	V
	*	5220	105.26	-	-	92.82	33.96	11.58	33.1	242	27	P	V
	*	5220	97.91	-	-	85.47	33.96	11.58	33.1	242	27	A	V
		5448.52	53.11	-20.89	74	40.11	34.26	11.84	33.1	242	27	P	V
		5458.6	43.29	-10.71	54	30.29	34.26	11.84	33.1	242	27	A	V



802.11n HT20 CH 48 5240MHz		5049.66	53.2	-20.8	74	41.4	33.74	11.16	33.1	100	313	P	H
		5036.92	43.13	-10.87	54	31.35	33.72	11.16	33.1	100	313	A	H
	*	5240	102.49	-	-	89.99	33.98	11.62	33.1	100	313	P	H
	*	5240	96.08	-	-	83.58	33.98	11.62	33.1	100	313	A	H
		5430.6	51.38	-22.62	74	38.4	34.24	11.84	33.1	100	313	P	H
		5459.72	43.26	-10.74	54	30.26	34.26	11.84	33.1	100	313	A	H
		5014.56	53.36	-20.64	74	41.71	33.7	11.05	33.1	200	19	P	V
		5035.1	43.14	-10.86	54	31.47	33.72	11.05	33.1	200	19	A	V
	*	5240	105.97	-	-	93.47	33.98	11.62	33.1	200	19	P	V
	*	5240	98.4	-	-	85.9	33.98	11.62	33.1	200	19	A	V
		5449.36	52.92	-21.08	74	39.92	34.26	11.84	33.1	200	19	P	V
		5459.44	43.25	-10.75	54	30.25	34.26	11.84	33.1	200	19	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n		10360	50.13	-23.87	74	54.35	37.02	14.61	55.85	152	260	P	H
HT20		15540	50.08	-23.92	74	49.69	40.78	16.34	56.73	189	238	P	H
CH 36		10360	49.86	-24.14	74	54.08	37.02	14.61	55.85	152	260	P	V
5180MHz		15540	50.26	-23.74	74	49.87	40.78	16.34	56.73	189	238	P	V
802.11n		10440	50.65	-23.35	74	54.84	37.06	14.63	55.88	150	230	P	H
HT20		15660	50.97	-23.03	74	49.96	41.07	16.43	56.49	160	225	P	H
CH 44		10440	50.58	-23.42	74	54.77	37.06	14.63	55.88	150	230	P	V
5220MHz		15660	50.6	-23.4	74	49.59	41.07	16.43	56.49	160	225	P	V
802.11n		10480	49.7	-24.3	74	53.87	37.09	14.64	55.9	150	289	P	H
HT20		15720	50.38	-23.62	74	49.04	41.24	16.45	56.35	150	291	P	H
CH 48		10480	50.48	-23.52	74	54.65	37.09	14.64	55.9	150	289	P	V
5240MHz		15720	50.79	-23.21	74	49.45	41.24	16.45	56.35	150	291	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	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 38 5190MHz		5147.42	53.2	-20.8	74	41.06	33.87	11.37	33.1	100	356	P	H
		5148.98	46.62	-7.38	54	34.48	33.87	11.37	33.1	100	356	A	H
	*	5190	99.49	-	-	87.2	33.92	11.47	33.1	100	356	P	H
	*	5190	94.43	-	-	82.14	33.92	11.47	33.1	100	356	A	H
		5428.08	52.76	-21.24	74	39.8	34.22	11.84	33.1	100	356	P	H
		5441.8	44.51	-9.49	54	31.53	34.24	11.84	33.1	100	356	A	H
		5148.98	56.35	-17.65	74	44.21	33.87	11.37	33.1	245	13	P	V
		5150	49.34	-4.66	54	37.2	33.87	11.37	33.1	245	13	A	V
	*	5190	103.61	-	-	91.32	33.92	11.47	33.1	245	13	P	V
	*	5190	95.34	-	-	83.05	33.92	11.47	33.1	245	13	A	V
		5448.24	53.14	-20.86	74	40.14	34.26	11.84	33.1	245	13	P	V
		5458.04	44.33	-9.67	54	31.33	34.26	11.84	33.1	245	13	A	V
802.11n HT40 CH 46 5230MHz		5059.02	52.95	-21.05	74	41.13	33.76	11.16	33.1	100	355	P	H
		5065.52	44.43	-9.57	54	32.61	33.76	11.16	33.1	100	355	A	H
	*	5230	98.79	-	-	86.33	33.98	11.58	33.1	100	355	P	H
	*	5230	92.26	-	-	79.8	33.98	11.58	33.1	100	355	A	H
		5433.12	53.42	-20.58	74	40.44	34.24	11.84	33.1	100	355	P	H
		5454.4	44.51	-9.49	54	31.51	34.26	11.84	33.1	100	355	A	H
		5055.9	53.87	-20.13	74	42.05	33.76	11.16	33.1	239	25	P	V
		5083.98	44.37	-9.63	54	32.42	33.79	11.26	33.1	239	25	A	V
	*	5230	103.44	-	-	90.98	33.98	11.58	33.1	239	25	P	V
	*	5230	96.36	-	-	83.9	33.98	11.58	33.1	239	25	A	V
		5459.44	52.91	-21.09	74	39.91	34.26	11.84	33.1	239	25	P	V
		5453.56	44.62	-9.38	54	31.62	34.26	11.84	33.1	239	25	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n		10380	49.8	-24.2	74	54.01	37.03	14.62	55.86	150	360	P	H
HT40		15570	50.77	-23.23	74	50.19	40.87	16.37	56.66	155	360	P	H
CH 38		10380	49.33	-24.67	74	53.54	37.03	14.62	55.86	150	360	P	V
5190MHz		15570	50.47	-23.53	74	49.89	40.87	16.37	56.66	155	360	P	V
802.11n		10460	50.78	-23.22	74	54.95	37.07	14.64	55.88	150	360	P	H
HT40		15690	50.99	-23.01	74	49.8	41.16	16.45	56.42	150	225	P	H
CH 46		10460	50.06	-23.94	74	54.23	37.07	14.64	55.88	150	360	P	V
5230MHz		15690	50.08	-23.92	74	48.89	41.16	16.45	56.42	150	225	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	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT80 CH 42 5210MHz		5144.3	57.02	-16.98	74	44.88	33.87	11.37	33.1	320	322	P	H
		5149.5	50	-4	54	37.86	33.87	11.37	33.1	320	322	A	H
	*	5210	97.65	-	-	85.21	33.96	11.58	33.1	320	322	P	H
	*	5210	91.42	-	-	78.98	33.96	11.58	33.1	320	322	A	H
		5428.08	52.8	-21.2	74	39.84	34.22	11.84	33.1	320	322	P	H
		5447.96	45.56	-8.44	54	32.56	34.26	11.84	33.1	320	322	A	H
		5137.8	56.33	-17.67	74	44.21	33.85	11.37	33.1	251	48	P	V
		5146.12	50.85	-3.15	54	38.71	33.87	11.37	33.1	251	48	A	V
	*	5210	97.9	-	-	85.46	33.96	11.58	33.1	251	48	P	V
	*	5210	91.34	-	-	78.9	33.96	11.58	33.1	251	48	A	V
		5430.88	51.48	-22.52	74	38.5	34.24	11.84	33.1	251	48	P	V
		5456.64	45.45	-8.55	54	32.45	34.26	11.84	33.1	251	48	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac		10420	50.81	-23.19	74	55	37.05	14.63	55.87	150	230	P	H
VHT80		15630	50.51	-23.49	74	49.6	41.03	16.4	56.52	160	225	P	H
CH 42		10420	50.48	-23.52	74	54.67	37.05	14.63	55.87	150	230	P	V
5210MHz		15630	50.62	-23.38	74	49.71	41.03	16.4	56.52	160	225	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+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 52 5260MHz		5039.2	52.2	-21.8	74	40.4	33.74	11.16	33.1	113	358	P	H
		5023.45	43.25	-10.75	54	31.58	33.72	11.05	33.1	113	358	A	H
	*	5260	103.06	-	-	90.52	34.02	11.62	33.1	113	358	P	H
	*	5260	96.04	-	-	83.5	34.02	11.62	33.1	113	358	A	H
		5459.76	52.13	-21.87	74	39.13	34.26	11.84	33.1	113	358	P	H
		5458.56	43.2	-10.8	54	30.2	34.26	11.84	33.1	113	358	A	H
		5121.45	52.6	-21.4	74	40.5	33.83	11.37	33.1	248	41	P	V
		5032.9	43.24	-10.76	54	31.57	33.72	11.05	33.1	248	41	A	V
	*	5260	106.02	-	-	93.48	34.02	11.62	33.1	248	41	P	V
	*	5260	97.56	-	-	85.02	34.02	11.62	33.1	248	41	A	V
		5393.76	52.15	-21.85	74	39.29	34.18	11.78	33.1	248	41	P	V
		5459.28	43.2	-10.8	54	30.2	34.26	11.84	33.1	248	41	A	V
802.11a CH 60 5300MHz		5036.75	52.13	-21.87	74	40.35	33.72	11.16	33.1	113	358	P	H
		5037.1	43.26	-10.74	54	31.48	33.72	11.16	33.1	113	358	A	H
	*	5300	103.27	-	-	90.64	34.07	11.66	33.1	113	358	P	H
	*	5300	96.33	-	-	83.7	34.07	11.66	33.1	113	358	A	H
		5386.32	52.8	-21.2	74	39.98	34.18	11.74	33.1	113	358	P	H
		5458.32	43.2	-10.8	54	30.2	34.26	11.84	33.1	113	358	A	H
		5116.2	53.55	-20.45	74	41.45	33.83	11.37	33.1	248	38	P	V
		5028.7	43.27	-10.73	54	31.6	33.72	11.05	33.1	248	38	A	V
	*	5300	106.41	-	-	93.78	34.07	11.66	33.1	248	38	P	V
	*	5300	97.53	-	-	84.9	34.07	11.66	33.1	248	38	A	V
		5429.52	52.38	-21.62	74	39.4	34.24	11.84	33.1	248	38	P	V
		5457.6	43.22	-10.78	54	30.22	34.26	11.84	33.1	248	38	A	V



802.11a CH 64 5320MHz	*	5320	104.69	-	-	92	34.09	11.7	33.1	122	335	P	H
	*	5320	96.59	-	-	83.9	34.09	11.7	33.1	122	335	A	H
		5361.6	53.03	-20.97	74	40.24	34.15	11.74	33.1	122	335	P	H
		5350.08	44.48	-9.52	54	31.71	34.13	11.74	33.1	122	335	A	H
	*	5320	105.1	-	-	92.41	34.09	11.7	33.1	229	29	P	V
	*	5320	96.93	-	-	84.24	34.09	11.7	33.1	229	29	A	V
		5350.72	54.24	-19.76	74	41.47	34.13	11.74	33.1	229	29	P	V
		5350.08	44.7	-9.3	54	31.93	34.13	11.74	33.1	229	29	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 52 5260MHz		10520	50.55	-23.45	74	54.7	37.11	14.65	55.91	150	220	P	H
		15780	50.21	-23.79	74	48.59	41.36	16.51	56.25	159	345	P	H
		10520	50.19	-23.81	74	54.34	37.11	14.65	55.91	150	220	P	V
		15780	50.28	-23.72	74	48.66	41.36	16.51	56.25	159	345	P	V
802.11a CH 60 5300MHz		10600	49.62	-24.38	74	53.73	37.16	14.67	55.94	185	215	P	H
		15900	50.54	-23.46	74	48.31	41.65	16.59	56.01	196	190	P	H
		10600	50.02	-23.98	74	54.13	37.16	14.67	55.94	185	215	P	V
		15900	50.65	-23.35	74	48.42	41.65	16.59	56.01	196	190	P	V
802.11a CH 64 5320MHz		10640	50.71	-23.29	74	54.81	37.18	14.68	55.96	152	135	P	H
		15960	50.33	-23.67	74	47.74	41.82	16.64	55.87	173	245	P	H
		10640	50.21	-23.79	74	54.31	37.18	14.68	55.96	152	135	P	V
		15960	50.53	-23.47	74	47.94	41.82	16.64	55.87	173	245	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 52 5260MHz		5063.7	53.09	-20.91	74	41.27	33.76	11.16	33.1	100	309	P	H
		5030.1	43.27	-10.73	54	31.6	33.72	11.05	33.1	100	309	A	H
	*	5260	104.24	-	-	91.7	34.02	11.62	33.1	100	309	P	H
	*	5260	97.52	-	-	84.98	34.02	11.62	33.1	100	309	A	H
		5437.68	52.72	-21.28	74	39.74	34.24	11.84	33.1	100	309	P	H
		5455.92	43.21	-10.79	54	30.21	34.26	11.84	33.1	100	309	A	H
		5072.1	52.51	-21.49	74	40.66	33.79	11.16	33.1	241	350	P	V
		5021.35	43.27	-10.73	54	31.6	33.72	11.05	33.1	241	350	A	V
	*	5260	105.46	-	-	92.92	34.02	11.62	33.1	241	350	P	V
	*	5260	97.22	-	-	84.68	34.02	11.62	33.1	241	350	A	V
		5426.88	52.96	-21.04	74	40	34.22	11.84	33.1	241	350	P	V
		5459.76	43.24	-10.76	54	30.24	34.26	11.84	33.1	241	350	A	V
802.11n HT20 CH 60 5300MHz		5036.4	53.32	-20.68	74	41.65	33.72	11.05	33.1	118	334	P	H
		5031.15	43.53	-10.47	54	31.86	33.72	11.05	33.1	118	334	A	H
	*	5300	106.6	-	-	93.97	34.07	11.66	33.1	118	334	P	H
	*	5300	99.53	-	-	86.9	34.07	11.66	33.1	118	334	A	H
		5396.16	53.42	-20.58	74	40.54	34.2	11.78	33.1	118	334	P	H
		5457.6	43.56	-10.44	54	30.56	34.26	11.84	33.1	118	334	A	H
		5072.45	53.17	-20.83	74	41.32	33.79	11.16	33.1	234	31	P	V
		5035.35	43.43	-10.57	54	31.76	33.72	11.05	33.1	234	31	A	V
	*	5300	106.5	-	-	93.87	34.07	11.66	33.1	234	31	P	V
	*	5300	99.52	-	-	86.89	34.07	11.66	33.1	234	31	A	V
		5439.12	52.98	-21.02	74	40	34.24	11.84	33.1	234	31	P	V
		5459.52	43.47	-10.53	54	30.47	34.26	11.84	33.1	234	31	A	V



802.11n HT20 CH 64 5320MHz	*	5320	104.62	-	-	91.93	34.09	11.7	33.1	215	356	P	H
	*	5320	98.47	-	-	85.78	34.09	11.7	33.1	215	356	A	H
		5350.88	53.9	-20.1	74	41.13	34.13	11.74	33.1	215	356	P	H
		5350.08	44.97	-9.03	54	32.2	34.13	11.74	33.1	215	356	A	H
	*	5320	106.55	-	-	93.86	34.09	11.7	33.1	234	31	P	V
	*	5320	99.49	-	-	86.8	34.09	11.7	33.1	234	31	A	V
		5359.84	52.38	-21.62	74	39.61	34.13	11.74	33.1	234	31	P	V
		5350.08	44.22	-9.78	54	31.45	34.13	11.74	33.1	234	31	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n		10520	50.27	-23.73	74	54.42	37.11	14.65	55.91	150	220	P	H
HT20		15780	50.29	-23.71	74	48.67	41.36	16.51	56.25	159	345	P	H
CH 52		10520	50.69	-23.31	74	54.84	37.11	14.65	55.91	150	220	P	V
5260MHz		15780	50.18	-23.82	74	48.56	41.36	16.51	56.25	159	345	P	V
802.11n		10600	50.08	-23.92	74	54.19	37.16	14.67	55.94	185	215	P	H
HT20		15900	50.93	-23.07	74	48.7	41.65	16.59	56.01	196	190	P	H
CH 60		10600	49.64	-24.36	74	53.75	37.16	14.67	55.94	185	215	P	V
5300MHz		15900	50.65	-23.35	74	48.42	41.65	16.59	56.01	196	190	P	V
802.11n		10640	50.12	-23.88	74	54.22	37.18	14.68	55.96	152	135	P	H
HT20		15960	50.22	-23.78	74	47.63	41.82	16.64	55.87	173	245	P	H
CH 64		10640	50.29	-23.71	74	54.39	37.18	14.68	55.96	152	135	P	V
5320MHz		15960	50.93	-23.07	74	48.34	41.82	16.64	55.87	173	245	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 54 5270MHz		5003.85	53.01	-20.99	74	41.36	33.7	11.05	33.1	265	336	P	H
		5067.55	44.98	-9.02	54	33.16	33.76	11.16	33.1	265	336	A	H
	*	5270	102.26	-	-	89.72	34.02	11.62	33.1	265	336	P	H
	*	5270	95.04	-	-	82.5	34.02	11.62	33.1	265	336	A	H
		5422.8	51.71	-22.29	74	38.81	34.22	11.78	33.1	265	336	P	H
		5455.44	44.48	-9.52	54	31.48	34.26	11.84	33.1	265	336	A	H
		5047.6	52.58	-21.42	74	40.78	33.74	11.16	33.1	253	51	P	V
		5054.95	45.07	-8.93	54	33.25	33.76	11.16	33.1	253	51	A	V
	*	5270	101.09	-	-	88.55	34.02	11.62	33.1	253	51	P	V
	*	5270	94.34	-	-	81.8	34.02	11.62	33.1	253	51	A	V
		5401.68	53.05	-20.95	74	40.17	34.2	11.78	33.1	253	51	P	V
		5453.28	44.4	-9.6	54	31.4	34.26	11.84	33.1	253	51	A	V
802.11n HT40 CH 62 5310MHz		5025.55	52.73	-21.27	74	41.06	33.72	11.05	33.1	257	335	P	H
		5058.45	45.08	-8.92	54	33.26	33.76	11.16	33.1	257	335	A	H
	*	5310	100.54	-	-	87.85	34.09	11.7	33.1	257	335	P	H
	*	5310	93.89	-	-	81.2	34.09	11.7	33.1	257	335	A	H
		5354.64	54.04	-19.96	74	41.27	34.13	11.74	33.1	257	335	P	H
		5350.8	48.15	-5.85	54	35.38	34.13	11.74	33.1	257	335	A	H
		5074.2	52.96	-21.04	74	41.11	33.79	11.16	33.1	230	23	P	V
		5020.65	44.82	-9.18	54	33.15	33.72	11.05	33.1	230	23	A	V
	*	5310	97.2	-	-	84.51	34.09	11.7	33.1	230	23	P	V
	*	5310	91.49	-	-	78.8	34.09	11.7	33.1	230	23	A	V
		5355.36	52.13	-21.87	74	39.36	34.13	11.74	33.1	230	23	P	V
		5352.96	45.66	-8.34	54	32.89	34.13	11.74	33.1	230	23	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n		10540	50.41	-23.59	74	54.55	37.12	14.66	55.92	150	220	P	H
HT40		15810	50.03	-23.97	74	48.24	41.44	16.53	56.18	168	345	P	H
CH 54		10540	50.29	-23.71	74	54.43	37.12	14.66	55.92	150	220	P	V
5270MHz		15810	50.39	-23.61	74	48.6	41.44	16.53	56.18	168	345	P	V
802.11n		10620	50.76	-23.24	74	54.86	37.17	14.68	55.95	150	220	P	H
HT40		15930	50.38	-23.62	74	47.97	41.73	16.62	55.94	160	100	P	H
CH 62		10620	50.42	-23.58	74	54.52	37.17	14.68	55.95	150	220	P	V
5310MHz		15930	50.74	-23.26	74	48.33	41.73	16.62	55.94	160	100	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT80 CH 58 5290MHz		5043.05	53.17	-20.83	74	41.37	33.74	11.16	33.1	320	322	P	H
		5029.4	46.48	-7.52	54	34.81	33.72	11.05	33.1	320	322	A	H
	*	5290	95.98	-	-	83.37	34.05	11.66	33.1	320	322	P	H
	*	5290	88.41	-	-	75.8	34.05	11.66	33.1	320	322	A	H
		5351.52	54.59	-19.41	74	41.82	34.13	11.74	33.1	320	322	P	H
		5352.24	48.57	-5.43	54	35.8	34.13	11.74	33.1	320	322	A	H
		5024.5	53.44	-20.56	74	41.77	33.72	11.05	33.1	253	27	P	V
		5080.15	46.81	-7.19	54	34.86	33.79	11.26	33.1	253	27	A	V
	*	5290	95.82	-	-	83.21	34.05	11.66	33.1	253	27	P	V
	*	5290	89.21	-	-	76.6	34.05	11.66	33.1	253	27	A	V
		5350.08	56.89	-17.11	74	44.12	34.13	11.74	33.1	253	27	P	V
		5350.08	50.41	-3.59	54	37.64	34.13	11.74	33.1	253	27	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac		10580	49.82	-24.18	74	53.94	37.15	14.67	55.94	150	220	P	H
VHT80		15870	50.52	-23.48	74	48.39	41.61	16.56	56.04	168	345	P	H
CH 58		10580	50.18	-23.82	74	54.3	37.15	14.67	55.94	150	220	P	V
5290MHz		15870	50.44	-23.56	74	48.31	41.61	16.56	56.04	168	345	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 100 5500MHz		5467.12	53.56	-20.44	74	40.48	34.28	11.9	33.1	100	334	P	H
		5470	45	-9	54	31.92	34.28	11.9	33.1	100	334	A	H
	*	5500	105.14	-	-	92.01	34.33	11.9	33.1	100	334	P	H
	*	5500	99.15	-	-	86.02	34.33	11.9	33.1	100	334	A	H
		5454.96	53.31	-20.69	74	40.31	34.26	11.84	33.1	242	35	P	V
		5468.24	44.89	-9.11	54	31.81	34.28	11.9	33.1	242	35	A	V
	*	5500	106.17	-	-	93.04	34.33	11.9	33.1	242	35	P	V
	*	5500	99.63	-	-	86.5	34.33	11.9	33.1	242	35	A	V
802.11a CH 116 5580MHz		5434	53.28	-20.72	74	40.3	34.24	11.84	33.1	114	335	P	H
		5466.4	43.41	-10.59	54	30.33	34.28	11.9	33.1	114	335	A	H
	*	5580	105	-	-	91.66	34.41	12.03	33.1	114	335	P	H
	*	5580	97.36	-	-	84.02	34.41	12.03	33.1	114	335	A	H
		5737.595	53.26	-20.74	74	39.4	34.45	12.51	33.1	114	335	P	H
		5738.54	43.91	-10.09	54	29.91	34.45	12.65	33.1	114	335	A	H
		5467.36	52.71	-21.29	74	39.63	34.28	11.9	33.1	221	37	P	V
		5470	43.45	-10.55	54	30.37	34.28	11.9	33.1	221	37	A	V
	*	5580	107.82	-	-	94.48	34.41	12.03	33.1	221	37	P	V
	*	5580	98.94	-	-	85.6	34.41	12.03	33.1	221	37	A	V
		5756.495	52.27	-21.73	74	38.27	34.45	12.65	33.1	221	37	P	V
		5744.21	43.94	-10.06	54	29.94	34.45	12.65	33.1	221	37	A	V



802.11a CH 140 5700MHz	*	5700	105.81	-	-	91.92	34.48	12.51	33.1	100	334	P	H
	*	5700	98.92	-	-	85.03	34.48	12.51	33.1	100	334	A	H
		5752.84	53.68	-20.32	74	39.68	34.45	12.65	33.1	100	334	P	H
		5728.52	45.65	-8.35	54	31.78	34.46	12.51	33.1	100	334	A	H
	*	5700	107.66	-	-	93.77	34.48	12.51	33.1	220	35	P	V
	*	5700	98.94	-	-	85.05	34.48	12.51	33.1	220	35	A	V
		5727.48	54.83	-19.17	74	40.96	34.46	12.51	33.1	220	35	P	V
		5727.48	46	-8	54	32.13	34.46	12.51	33.1	220	35	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 100 5500MHz		11000	50.79	-23.21	74	54.73	37.4	14.76	56.1	163	230	P	H
		16500	50.12	-23.88	74	45.7	43.27	17.2	56.05	178	296	P	H
		11000	50.17	-23.83	74	54.11	37.4	14.76	56.1	163	230	P	V
		16500	50.76	-23.24	74	46.34	43.27	17.2	56.05	178	296	P	V
802.11a CH 116 5580MHz		11160	50.06	-23.94	74	53.6	37.5	14.81	55.85	170	200	P	H
		16740	50.13	-23.87	74	44.88	43.91	17.51	56.17	156	350	P	H
		11160	48.9	-25.1	74	52.44	37.5	14.81	55.85	170	200	P	V
		16740	50.93	-23.07	74	45.68	43.91	17.51	56.17	156	350	P	V
802.11a CH 140 5700MHz		11400	50.7	-23.3	74	53.69	37.64	14.86	55.49	157	285	P	H
		17100	50.55	-23.45	74	44.73	44.29	17.91	56.38	165	246	P	H
		11400	50.21	-23.79	74	53.2	37.64	14.86	55.49	157	285	P	V
		17100	50.92	-23.08	74	45.1	44.29	17.91	56.38	165	246	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 100 5500MHz		5465.52	54.39	-19.61	74	41.31	34.28	11.9	33.1	215	356	P	H
		5470	46.63	-7.37	54	33.55	34.28	11.9	33.1	215	356	A	H
	*	5500	103.27	-	-	90.14	34.33	11.9	33.1	215	356	P	H
	*	5500	96.71	-	-	83.58	34.33	11.9	33.1	215	356	A	H
		5469.36	54.78	-19.22	74	41.7	34.28	11.9	33.1	227	13	P	V
		5467.44	46.17	-7.83	54	33.09	34.28	11.9	33.1	227	13	A	V
	*	5500	107.61	-	-	94.48	34.33	11.9	33.1	227	13	P	V
	*	5500	100.63	-	-	87.5	34.33	11.9	33.1	227	13	A	V
802.11n HT20 CH 116 5580MHz		5464.72	51.87	-22.13	74	38.85	34.28	11.84	33.1	130	18	P	H
		5469.52	43.49	-10.51	54	30.41	34.28	11.9	33.1	130	18	A	H
	*	5580	103.66	-	-	90.32	34.41	12.03	33.1	130	18	P	H
	*	5580	97.23	-	-	83.89	34.41	12.03	33.1	130	18	A	H
		5742.32	53.66	-20.34	74	39.66	34.45	12.65	33.1	130	18	P	H
		5746.73	43.99	-10.01	54	29.99	34.45	12.65	33.1	130	18	A	H
		5436.64	52.42	-21.58	74	39.44	34.24	11.84	33.1	227	12	P	V
		5469.04	43.58	-10.42	54	30.5	34.28	11.9	33.1	227	12	A	V
	*	5580	106.06	-	-	92.72	34.41	12.03	33.1	227	12	P	V
	*	5580	100.24	-	-	86.9	34.41	12.03	33.1	227	12	A	V
		5738.855	52.44	-21.56	74	38.44	34.45	12.65	33.1	227	12	P	V
		5740.115	44.07	-9.93	54	30.07	34.45	12.65	33.1	227	12	A	V



802.11n HT20 CH 140 5700MHz	*	5700	104.69	-	-	90.8	34.48	12.51	33.1	100	334	P	H
	*	5700	97.58	-	-	83.69	34.48	12.51	33.1	100	334	A	H
		5728.6	54.02	-19.98	74	40.15	34.46	12.51	33.1	100	334	P	H
		5725	46.12	-7.88	54	32.25	34.46	12.51	33.1	100	334	A	H
	*	5700	106.54	-	-	92.65	34.48	12.51	33.1	241	13	P	V
	*	5700	99.39	-	-	85.5	34.48	12.51	33.1	241	13	A	V
		5741	54.52	-19.48	74	40.52	34.45	12.65	33.1	241	13	P	V
		5725	46.07	-7.93	54	32.2	34.46	12.51	33.1	241	13	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	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n		11000	50.94	-23.06	74	54.88	37.4	14.76	56.1	163	230	P	H
HT20		16500	50.35	-23.65	74	45.93	43.27	17.2	56.05	178	296	P	H
CH 100		11000	50.1	-23.9	74	54.04	37.4	14.76	56.1	163	230	P	V
5500MHz		16500	50.84	-23.16	74	46.42	43.27	17.2	56.05	178	296	P	V
802.11n		11160	49.49	-24.51	74	53.03	37.5	14.81	55.85	170	200	P	H
HT20		16740	50.7	-23.3	74	45.45	43.91	17.51	56.17	156	350	P	H
CH 116		11160	49.62	-24.38	74	53.16	37.5	14.81	55.85	170	200	P	V
5580MHz		16740	50.07	-23.93	74	44.82	43.91	17.51	56.17	156	350	P	V
802.11n		11400	50.1	-23.9	74	53.09	37.64	14.86	55.49	157	285	P	H
HT20		17100	50.78	-23.22	74	44.96	44.29	17.91	56.38	165	246	P	H
CH 140		11400	50.58	-23.42	74	53.57	37.64	14.86	55.49	157	285	P	V
5700MHz		17100	50.75	-23.25	74	44.93	44.29	17.91	56.38	165	246	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 102 5510MHz		5468.32	57.56	-16.44	74	44.48	34.28	11.9	33.1	240	335	P	H
		5470	50.36	-3.64	54	37.28	34.28	11.9	33.1	240	335	A	H
	*	5510	100.27	-	-	87.07	34.33	11.97	33.1	240	335	P	H
	*	5510	94.43	-	-	81.23	34.33	11.97	33.1	240	335	A	H
		5759.33	52.73	-21.27	74	38.73	34.45	12.65	33.1	240	335	P	H
		5730.98	45.02	-8.98	54	31.15	34.46	12.51	33.1	240	335	A	H
		5466.88	54.33	-19.67	74	41.25	34.28	11.9	33.1	250	14	P	V
		5465.2	47.51	-6.49	54	34.49	34.28	11.84	33.1	250	14	A	V
	*	5510	102.34	-	-	89.14	34.33	11.97	33.1	250	14	P	V
	*	5510	95.23	-	-	82.03	34.33	11.97	33.1	250	14	A	V
		5746.415	52.38	-21.62	74	38.38	34.45	12.65	33.1	250	14	P	V
		5740.43	45.6	-8.4	54	31.6	34.45	12.65	33.1	250	14	A	V
802.11n HT40 CH 110 5550MHz		5447.44	51.87	-22.13	74	38.87	34.26	11.84	33.1	240	335	P	H
		5469.52	44.88	-9.12	54	31.8	34.28	11.9	33.1	240	335	A	H
	*	5550	101.74	-	-	88.42	34.39	12.03	33.1	240	335	P	H
	*	5550	94.9	-	-	81.58	34.39	12.03	33.1	240	335	A	H
		5747.99	53.5	-20.5	74	39.5	34.45	12.65	33.1	240	335	P	H
		5740.43	45.38	-8.62	54	31.38	34.45	12.65	33.1	240	335	A	H
		5434	52.58	-21.42	74	39.6	34.24	11.84	33.1	276	19	P	V
		5467.6	44.92	-9.08	54	31.84	34.28	11.9	33.1	276	19	A	V
	*	5550	102.56	-	-	89.24	34.39	12.03	33.1	276	19	P	V
	*	5550	96.52	-	-	83.2	34.39	12.03	33.1	276	19	A	V
		5747.99	53.02	-20.98	74	39.02	34.45	12.65	33.1	276	19	P	V
		5755.235	45.03	-8.97	54	31.03	34.45	12.65	33.1	276	19	A	V



802.11n HT40 CH 134 5670MHz		5429.8	51.89	-22.11	74	38.91	34.24	11.84	33.1	141	352	P	H
		5459.9	44.38	-9.62	54	31.38	34.26	11.84	33.1	141	352	A	H
	*	5670	100.97	-	-	87.22	34.48	12.37	33.1	141	352	P	H
	*	5670	93.8	-	-	80.05	34.48	12.37	33.1	141	352	A	H
		5737.35	52.65	-21.35	74	38.79	34.45	12.51	33.1	141	352	P	H
		5725.275	45.95	-8.05	54	32.08	34.46	12.51	33.1	141	352	A	H
		5469.35	51.98	-22.02	74	38.9	34.28	11.9	33.1	276	19	P	V
		5468.3	44.64	-9.36	54	31.56	34.28	11.9	33.1	276	19	A	V
	*	5670	103.43	-	-	89.68	34.48	12.37	33.1	276	19	P	V
	*	5670	96.34	-	-	82.59	34.48	12.37	33.1	276	19	A	V
		5733.85	52.84	-21.16	74	38.97	34.46	12.51	33.1	276	19	P	V
		5727.55	46.6	-7.4	54	32.73	34.46	12.51	33.1	276	19	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n		11020	50.79	-23.21	74	54.68	37.41	14.77	56.07	170	230	P	H
HT40		16530	50.83	-23.17	74	46.29	43.36	17.25	56.07	160	300	P	H
CH 102		11020	49.75	-24.25	74	53.64	37.41	14.77	56.07	170	230	P	V
5510MHz		16530	50.75	-23.25	74	46.21	43.36	17.25	56.07	160	300	P	V
802.11n		11100	50.75	-23.25	74	54.45	37.46	14.79	55.95	150	200	P	H
HT40		16650	50.93	-23.07	74	46	43.68	17.38	56.13	180	350	P	H
CH 110		11100	50.76	-23.24	74	54.46	37.46	14.79	55.95	150	200	P	V
5550MHz		16650	50.69	-23.31	74	45.76	43.68	17.38	56.13	180	350	P	V
802.11n		11340	50.55	-23.45	74	53.7	37.6	14.84	55.59	200	360	P	H
HT40		17010	50.59	-23.41	74	44.53	44.55	17.82	56.31	200	360	P	H
CH 134		11340	50.88	-23.12	74	54.03	37.6	14.84	55.59	200	360	P	V
5670MHz		17010	50.43	-23.57	74	44.37	44.55	17.82	56.31	200	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT80 CH 106 5530MHz		5467.84	55.51	-18.49	74	42.43	34.28	11.9	33.1	228	338	P	H
		5468.56	49.07	-4.93	54	35.99	34.28	11.9	33.1	228	338	A	H
	*	5530	96.81	-	-	83.59	34.35	11.97	33.1	228	338	P	H
	*	5530	89.79	-	-	76.57	34.35	11.97	33.1	228	338	A	H
		5741.69	52.62	-21.38	74	38.62	34.45	12.65	33.1	228	338	P	H
		5749.25	46.18	-7.82	54	32.18	34.45	12.65	33.1	228	338	A	H
		5462.32	53.67	-20.33	74	40.67	34.26	11.84	33.1	262	37	P	V
		5469.76	47.85	-6.15	54	34.77	34.28	11.9	33.1	262	37	A	V
	*	5530	96.99	-	-	83.77	34.35	11.97	33.1	262	37	P	V
	*	5530	89.41	-	-	76.19	34.35	11.97	33.1	262	37	A	V
		5737.595	52.41	-21.59	74	38.55	34.45	12.51	33.1	262	37	P	V
		5748.62	46.15	-7.85	54	32.15	34.45	12.65	33.1	262	37	A	V
802.11ac VHT80 CH 122 5610MHz		5469.52	52.28	-21.72	74	39.2	34.28	11.9	33.1	294	357	P	H
		5455.6	45.64	-8.36	54	32.64	34.26	11.84	33.1	294	357	A	H
	*	5610	97.11	-	-	83.66	34.46	12.09	33.1	294	357	P	H
	*	5610	90.95	-	-	77.5	34.46	12.09	33.1	294	357	A	H
		5743.895	52.65	-21.35	74	38.65	34.45	12.65	33.1	294	357	P	H
		5725	46.5	-7.5	54	32.63	34.46	12.51	33.1	294	357	A	H
		5468.08	52.1	-21.9	74	39.02	34.28	11.9	33.1	228	338	P	V
		5465.68	45.82	-8.18	54	32.74	34.28	11.9	33.1	228	338	A	V
	*	5610	98.57	-	-	85.12	34.46	12.09	33.1	228	338	P	V
	*	5610	92.44	-	-	78.99	34.46	12.09	33.1	228	338	A	V
		5730.665	53.25	-20.75	74	39.38	34.46	12.51	33.1	228	338	P	V
		5731.61	46.87	-7.13	54	33	34.46	12.51	33.1	228	338	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5470~5725MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac		11060	50.5	-23.5	74	54.28	37.44	14.78	56	170	230	P	H
VHT80		16590	50.54	-23.46	74	45.81	43.5	17.33	56.1	160	300	P	H
CH 106		11060	50.89	-23.11	74	54.67	37.44	14.78	56	170	230	P	V
5530MHz		16590	50.65	-23.35	74	45.92	43.5	17.33	56.1	160	300	P	V
802.11ac		11220	50.25	-23.75	74	53.67	37.53	14.82	55.77	170	200	P	H
VHT80		16830	50.16	-23.84	74	44.64	44.14	17.6	56.22	156	350	P	H
CH 122		11220	50.08	-23.92	74	53.5	37.53	14.82	55.77	170	200	P	V
5610MHz		16830	50	-24	74	44.48	44.14	17.6	56.22	156	350	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	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 144 5720MHz		11440	50.68	-23.32	74	53.59	37.66	14.87	55.44	151	360	P	H
		17160	50.09	-23.91	74	44.48	44.09	17.96	56.44	151	0	P	H
		11440	50.58	-23.42	74	53.49	37.66	14.87	55.44	151	360	P	V
		17160	50.95	-23.05	74	45.34	44.09	17.96	56.44	151	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	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n		11440	50.74	-23.26	74	53.65	37.66	14.87	55.44	151	360	P	H
HT20		17160	50.04	-23.96	74	44.43	44.09	17.96	56.44	151	0	P	H
CH 144		11440	50.96	-23.04	74	53.87	37.66	14.87	55.44	151	360	P	V
5720MHz		17160	50.8	-23.2	74	45.19	44.09	17.96	56.44	151	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	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n		11420	50.42	-23.58	74	53.37	37.65	14.86	55.46	151	360	P	H
HT40		17130	50.21	-23.79	74	44.47	44.19	17.96	56.41	151	0	P	H
CH 142		11420	50.87	-23.13	74	53.82	37.65	14.86	55.46	151	360	P	V
5710MHz		17130	50.89	-23.11	74	45.15	44.19	17.96	56.41	151	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	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT80 CH 138 5690MHz		11380	50.32	-23.68	74	53.36	37.63	14.85	55.52	149	360	P	H
		17070	50.13	-23.87	74	44.21	44.4	17.87	56.35	149	0	P	H
		11380	50.44	-23.56	74	53.48	37.63	14.85	55.52	149	360	P	V
		17070	50.64	-23.36	74	44.72	44.4	17.87	56.35	149	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

WIFI 802.11ac VHT80 (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT80 LF		30	26.64	-13.36	40	30.31	27.7	0.23	31.6	-	-	P	H
		167.74	31.27	-12.23	43.5	43.26	17.92	1.42	31.33	100	16	P	H
		199.75	28.97	-14.53	43.5	40.95	17.6	1.62	31.2	-	-	P	H
		310.33	30.4	-15.6	46	39.44	19.98	2.08	31.1	-	-	P	H
		405.39	29.99	-16.01	46	33.93	24.75	2.41	31.1	-	-	P	H
		910.76	32.47	-13.53	46	31.24	28.68	3.85	31.3	-	-	P	H
		32.91	34.44	-5.56	40	38.9	26.86	0.28	31.6	100	57	QP	V
		95.96	26.66	-16.84	43.5	38.92	18.44	0.8	31.5	-	-	P	V
		137.67	26.55	-16.95	43.5	38.54	18.23	1.2	31.42	-	-	P	V
		191.02	26.19	-17.31	43.5	38.18	17.69	1.56	31.24	-	-	P	V
		449.04	28.38	-17.62	46	30.25	26.66	2.57	31.1	-	-	P	V
		919.49	33.55	-12.45	46	32.07	28.91	3.87	31.3	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Note symbol

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



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

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

1. Level(dBμV/m) =

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

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

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) - Limit Line(dBμV/m)

= 55.45(dBμV/m) - 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) - Limit Line(dBμV/m)

= 43.54(dBμV/m) - 54(dBμV/m)

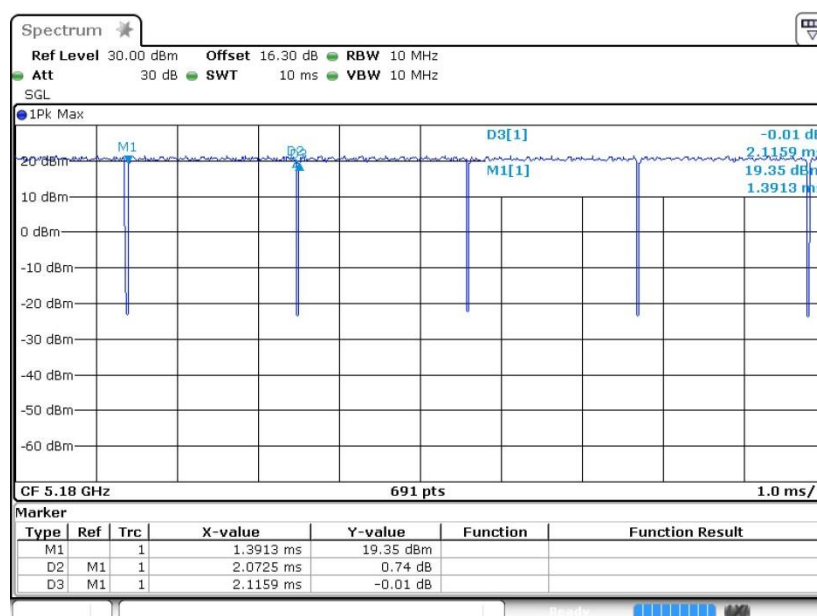
= -10.46(dB)

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

Appendix C. Duty Cycle Plots

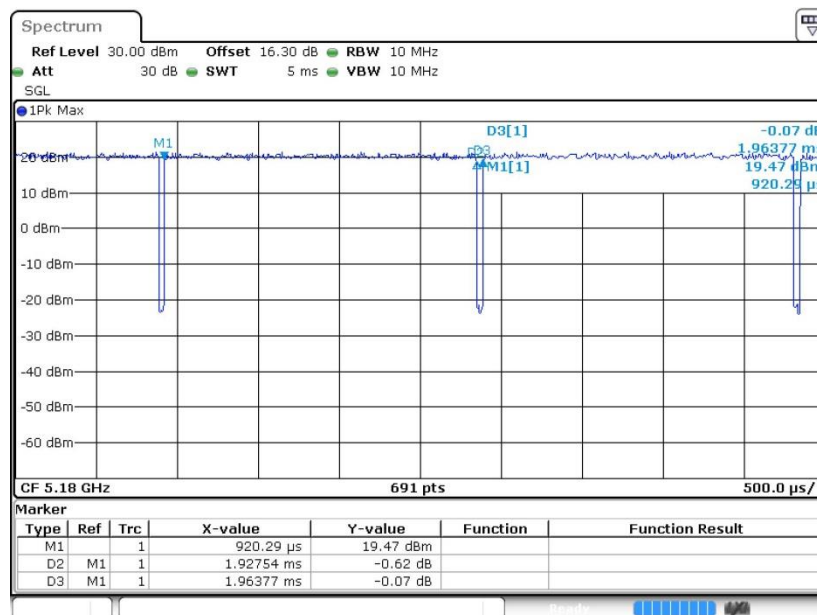
Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11a	97.95	2.073	0.482	1KHz
802.11n HT20	98.16	-	-	10Hz
802.11n HT40	96.04	0.948	1.055	3kHz
802.11ac VHT80	87.13	0.255	3.920	10kHz

802.11a

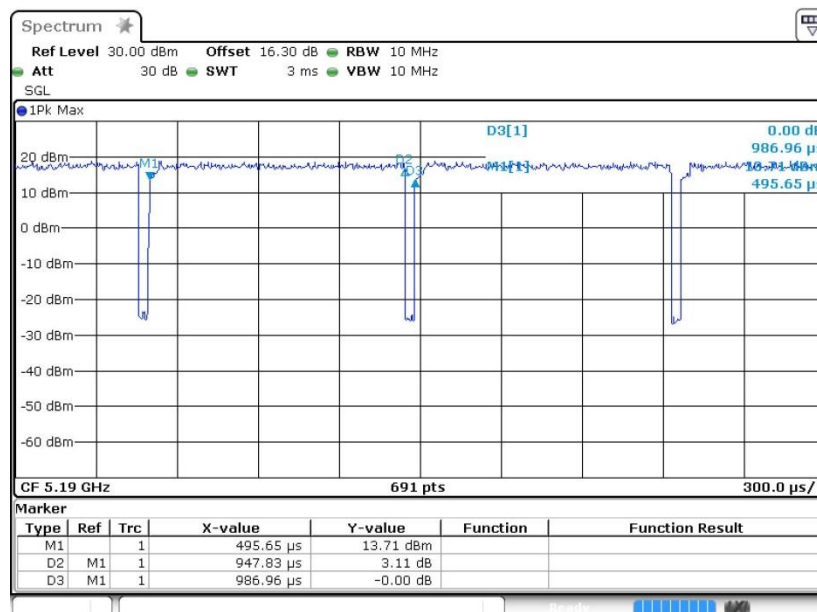




802.11n HT20



802.11n HT40



802.11ac VHT80

