



FCC RF Test Report

APPLICANT : Motorola Mobility LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola
MODEL NAME : XT2345-6
FCC ID : IHDT56AK5
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure
TEST DATE(S) : Nov. 09, 2022 ~ Dec. 02, 2022

We, Sporton International Inc. (Kunshan), 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.

This report contains data that were produced under subcontract by Sporton International Inc. (Shenzhen)

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

Jason Jia



Approved by: Jason Jia

Sporton International Inc. (Kunshan)

**No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China**



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR292305D	Rev. 01	Initial issue of report	Dec. 15, 2022



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit for U-NII-1/2A/2C	Limit for U-NII-3	Result	Remark
3.1	2.1049 & 15.403(i)	6dB, 26dB & 99% Bandwidth	-	6dB Bandwidth > 500kHz	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	≤ 24 dBm	≤ 30 dBm	Pass	-
3.3	15.407(a)	Power Spectral Density	≤ 11 dBm/MHz	≤ 30 dBm/500kHz	Pass	-
3.4	15.407(b)	Unwanted Emissions	15.407(b) & 15.209(a)	15.407(b)(4)(i) & 15.209(a)	Pass	Under limit 3.33 dB at 5149.76 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	15.207(a)	Pass	Under limit 7.48 dB at 0.64 MHz
3.6	15.203 & 15.407(a)	Antenna Requirement	15.203 & 15.407(a)	15.203 & 15.407(a)	Pass	-

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



1 General Description

1.1 Applicant

Motorola Mobility LLC
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.2 Manufacturer

Motorola Mobility LLC
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2345-6
FCC ID	IHDT56AK5
IMEI Code	Conducted: 353995380004105 Conduction: 353995380002745 Radiation: 353995380005177
HW Version	DVT2
SW Version	TLA33.89
EUT Stage	Identical Prototype

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



1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5700 MHz 5745 MHz ~ 5825 MHz
Maximum Output Power to Antenna	<p><5180 MHz ~ 5240 MHz> 802.11a : 18.17 dBm / 0.0656 W 802.11n HT20 : 18.19 dBm / 0.0659 W 802.11ac VHT20: 17.35 dBm / 0.0543 W</p> <p><5260 MHz ~ 5320 MHz> 802.11a : 18.10 dBm / 0.0646 W 802.11n HT20 : 18.08 dBm / 0.0643 W 802.11ac VHT20: 17.16 dBm / 0.0520 W</p> <p><5500 MHz ~ 5700 MHz > 802.11a : 18.28 dBm / 0.0673 W 802.11n HT20 : 18.17 dBm / 0.0656 W 802.11ac VHT20: 17.22 dBm / 0.0527 W</p> <p><5745 MHz ~ 5825 MHz> 802.11a : 18.21 dBm / 0.0662 W 802.11n HT20 : 18.22 dBm / 0.0664 W 802.11ac VHT20: 17.39 dBm / 0.0548 W</p>
99% Occupied Bandwidth	<p><5180 MHz ~ 5240 MHz> 802.11a : 17.08 MHz 802.11n HT20 : 17.93 MHz</p> <p><5260 MHz ~ 5320 MHz> 802.11a : 17.13 MHz 802.11n HT20 : 17.88 MHz</p> <p><5500 MHz ~ 5700 MHz> 802.11a : 18.88 MHz 802.11n HT20 : 17.98 MHz</p> <p><5745 MHz ~ 5825 MHz> 802.11a : 17.88 MHz 802.11n HT20 : 18.78 MHz</p>
Antenna Type / Gain	<p><5180 MHz ~ 5240 MHz> PIFA Antenna with gain -2.5 dBi</p> <p><5260 MHz ~ 5320 MHz> PIFA Antenna with gain -1.0 dBi</p> <p><5500 MHz ~ 5700 MHz> PIFA Antenna with gain -0.70 dBi</p> <p><5745 MHz ~ 5825 MHz> PIFA Antenna with gain -5.5 dBi</p>
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)

Note: For 802.11n HT20 / ac VHT20 mode, the whole testing has assessed only 802.11n HT20 by referring to their higher output power.



1.5 Modification of EUT

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

1.6 Specification of Accessory

Specification of Accessory				
AC Adapter 1(US)	Brand Name	Motorola(aohai)	Model Name	MC-101
AC Adapter 1(EU)	Brand Name	Motorola(aohai)	Model Name	MC-102
AC Adapter 1(UK)	Brand Name	Motorola(aohai)	Model Name	MC-103
AC Adapter 1(IN)	Brand Name	Motorola(aohai)	Model Name	MC-104
AC Adapter 1(AU)	Brand Name	Motorola(aohai)	Model Name	MC-105
AC Adapter 1(AR)	Brand Name	Motorola(aohai)	Model Name	MC-106
AC Adapter 2(US)	Brand Name	Motorola(chenyang)	Model Name	MC-101
AC Adapter 2(EU)	Brand Name	Motorola(chenyang)	Model Name	MC-102
AC Adapter 2(UK)	Brand Name	Motorola(chenyang)	Model Name	MC-103
AC Adapter 2(IN)	Brand Name	Motorola(chenyang)	Model Name	MC-104
AC Adapter 2(AU)	Brand Name	Motorola(chenyang)	Model Name	MC-105
AC Adapter 2(AR)	Brand Name	Motorola(chenyang)	Model Name	MC-106
AC Adapter 2(BR)	Brand Name	Motorola(chenyang)	Model Name	MC-107
AC Adapter 3(US)	Brand Name	Motorola(Salcomp)	Model Name	MC-101
AC Adapter 3(EU)	Brand Name	Motorola(Salcomp)	Model Name	MC-102
AC Adapter 3(UK)	Brand Name	Motorola(Salcomp)	Model Name	MC-103
AC Adapter 3(AU)	Brand Name	Motorola(Salcomp)	Model Name	MC-105
AC Adapter 3(AR)	Brand Name	Motorola(Salcomp)	Model Name	MC-106
AC Adapter 3(CHILE)	Brand Name	Motorola(Salcomp)	Model Name	MC-109
Battery 1	Brand Name	Motorola(ATL)	Model Name	NH50
Battery 2	Brand Name	Motorola(SUNWODA)	Model Name	NH50
Earphone 1	Brand Name	Motorola(New leader)	Model Name	NLD-EM313A-20SF
Earphone 2	Brand Name	Motorola(JWELL)	Model Name	JWEP1205-L20H
USB Cable 1	Brand Name	Motorola(SAIBAO)	Model Name	SLQ-A214A
USB Cable 2	Brand Name	Motorola(JIEYE)	Model Name	JY-C03-410



1.7 Testing Location

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	TH01-KS	CN1257	314309

Sporton International Inc. (ShenZhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	CO01-SZ	CN1256	421272

Test data subcontracted: The test case for Conducted Emission in section 3.5 of this report.

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City Guangdong Province China 518103 TEL: +86-755-33202398		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH01-SZ	CN1256	421272

Test data subcontracted: The test case for RSE in section 3.4 of this report.



1.8 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH01-SZ	AUDIX	E3	6.2009-8-24
2.	CO01-SZ	AUDIX	E3	6.120613b

1.9 Applicable Standards

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

- ♦ 47 CFR Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules 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 (X/Z 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 U-NII-1	36	5180	44	5220
	40	5200	48	5240
5260-5320 MHz U-NII-2A	52	5260	60	5300
	56	5280	64	5320
5500-5700MHz U-NII-2C	100	5500	124	5620
	104	5520	128	5640
	108	5540	132	5660
	112	5560	136	5680
	116	5580	140	5700
	120	5600	-	-
5745-5825 MHz U-NII-3	149	5745	161	5805
	153	5765	165	5825
	157	5785	-	-



2.2 Test Mode

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

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0

AC Conducted Emission	Mode 1 : GSM850 Idle + Bluetooth Link+ WLAN Link (5G) + USB Cable 1(Charging from Adapter2) + Earphone 2+ Battery 1
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Simultaneous transmission
802.11n HT20 CH36 Tx + GSM 850 Link

Remark:

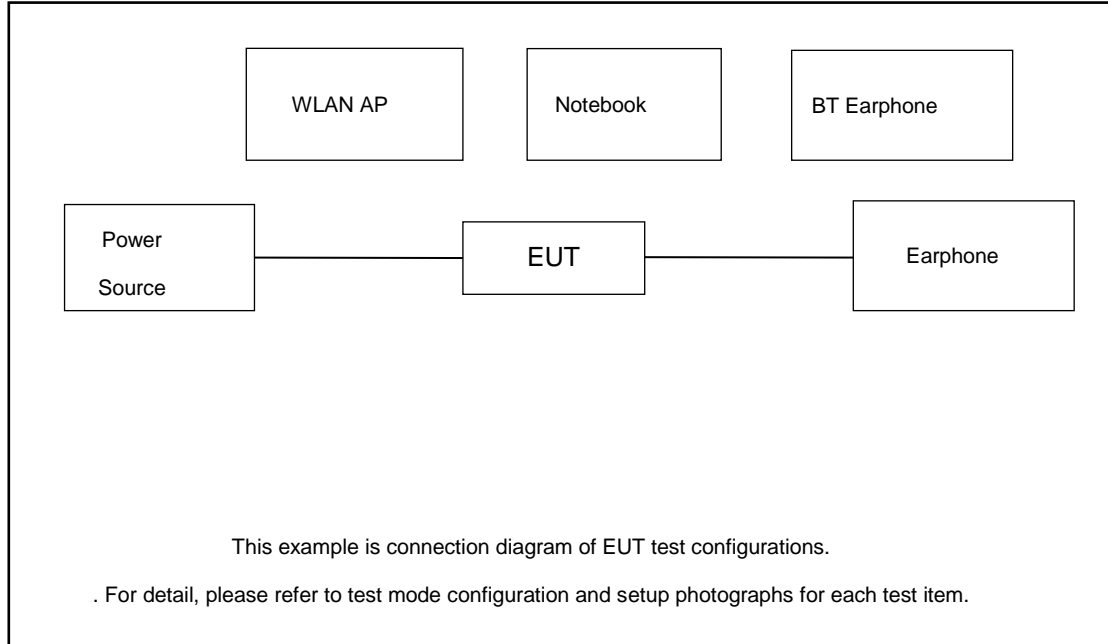
1. RSE tests were performance with Adapter 2, Earphone 2 and USB Cable 2.
2. The Simultaneous transmission mode is assessed from the worst WLAN TX + WWAN Link mode.

Ch. #		U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
		802.11a	802.11a	802.11a	802.11a
L	Low	36	52	100	149
M	Middle	44	60	116	157
H	High	48	64	140	165

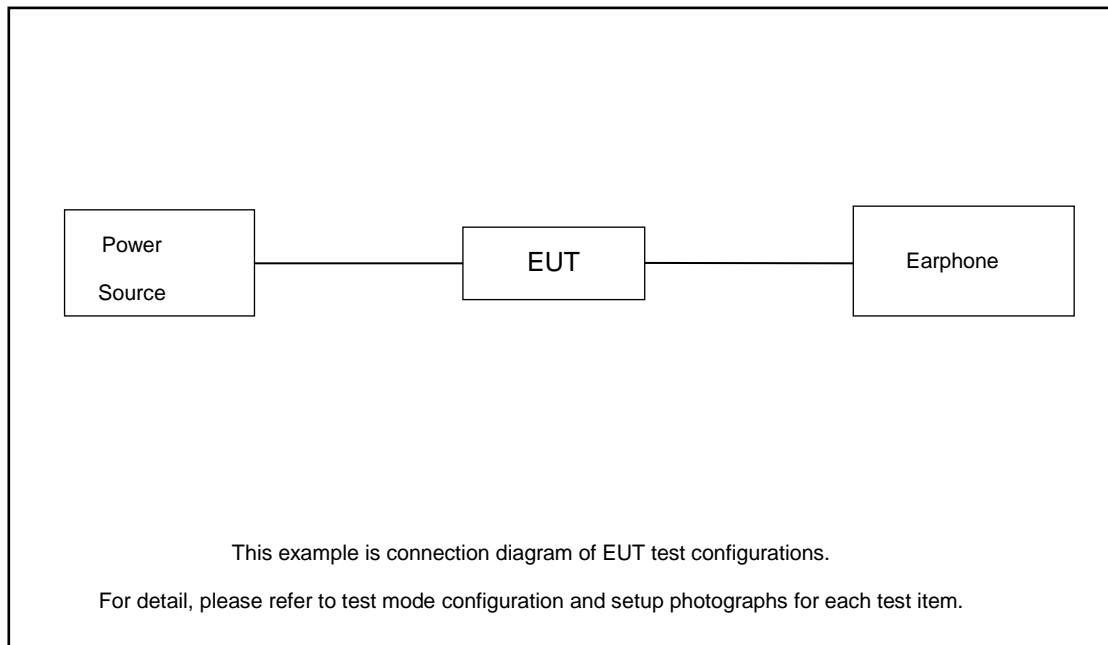
Ch. #		U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
		802.11n HT20	802.11n HT20	802.11n HT20	802.11n HT20
L	Low	36	52	100	149
M	Middle	44	60	116	157
H	High	48	64	140	165

2.3 Connection Diagram of Test System

AC Conducted Emission:



Radiated Emission:





2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Base Station(LTE)	Anritsu	MT8820C	N/A	N/A	Unshielded,1.8m
2.	Bluetooth Earphone	Samsung	EO-MG900	PYAHS-107W	N/A	N/A
3.	WLAN AP	Dlink	DIR-820L	KA2IR820LA1	N/A	Unshielded,1.8m

2.5 EUT Operation Test Setup

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

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 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.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 7.0 dB.

$$\begin{aligned}
 \text{Offset(dB)} &= \text{RF cable loss(dB)} \\
 &= 7.0 \text{ (dB)}
 \end{aligned}$$



3 Test Result

3.1 6dB and 26dB and 99% Occupied Bandwidth Measurement

3.1.1 Description of 6dB and 26dB and 99% Occupied Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

26dB and 99% Occupied bandwidth are reporting only.

3.1.2 Measuring Instruments

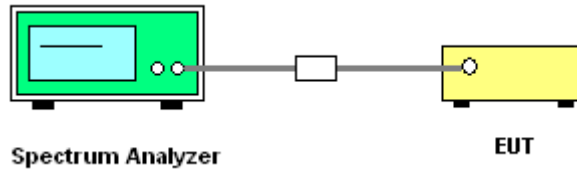
The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

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

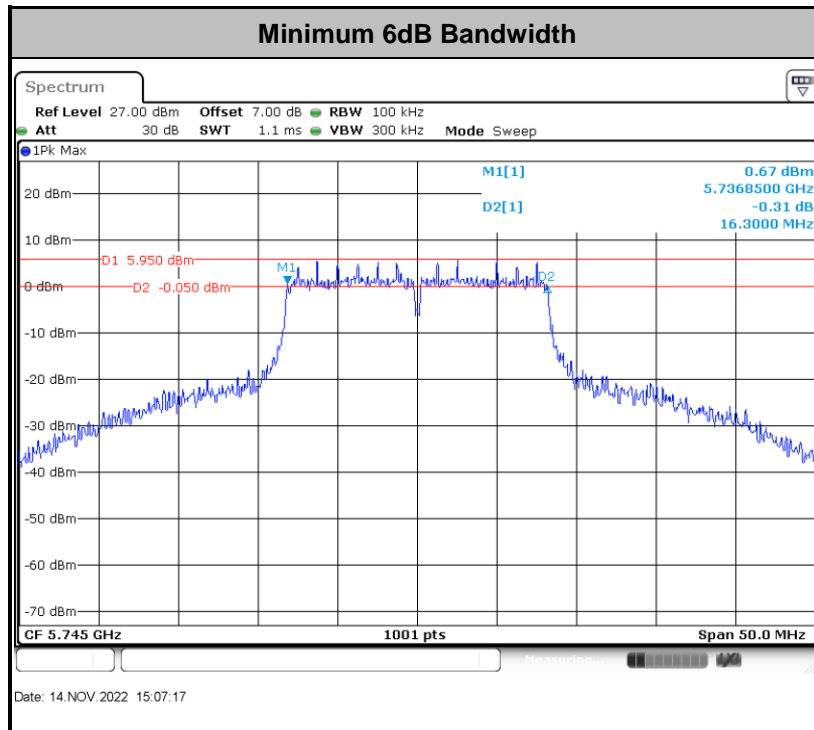
<input checked="" type="checkbox"/>	Section C) Bandwidth Measurement 1. Emission Bandwidth (EBW) and 99% OBW
	<ol style="list-style-type: none"> Set RBW = approximately 1% of the emission bandwidth. Set the VBW > RBW. Detector = Peak. Trace mode = max hold Measure the maximum width of the emission that 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%. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set to 1%~5% of the OBW and set the Video bandwidth (VBW) ≥ 3 * RBW. Measure and record the results in the test report.
<input checked="" type="checkbox"/>	Section C) Bandwidth Measurement 2. Minimum Emission Bandwidth for the band 5.725 - 5.85 GHz
	<ol style="list-style-type: none"> Set RBW = 100kHz. Set the VBW ≥ 3 x RBW. Detector = Peak. Trace mode = max hold Measure the maximum width of the emission that is 6 dB down from the peak of the emission. Measure and record the results in the test report.

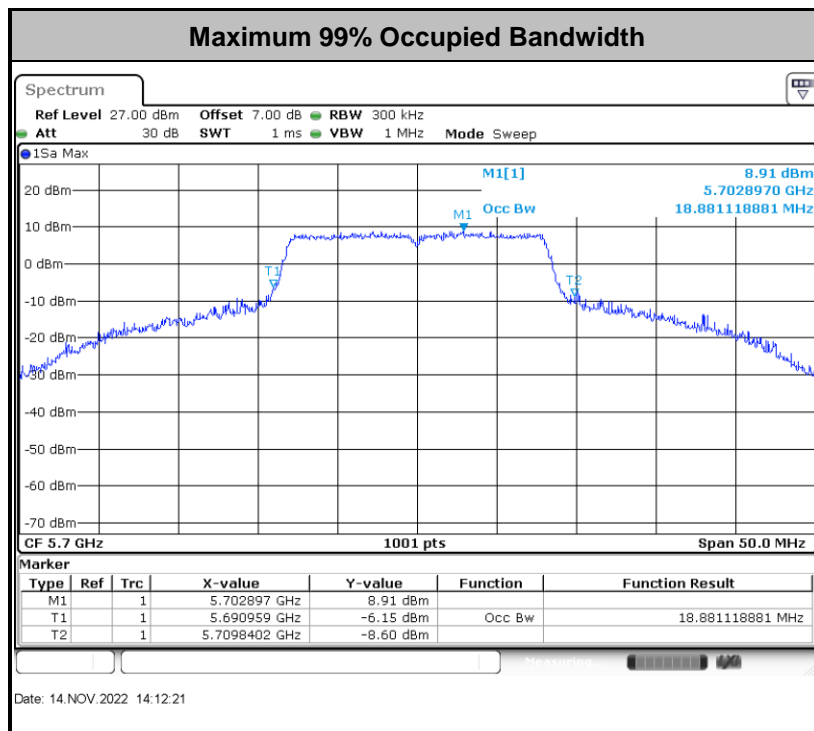
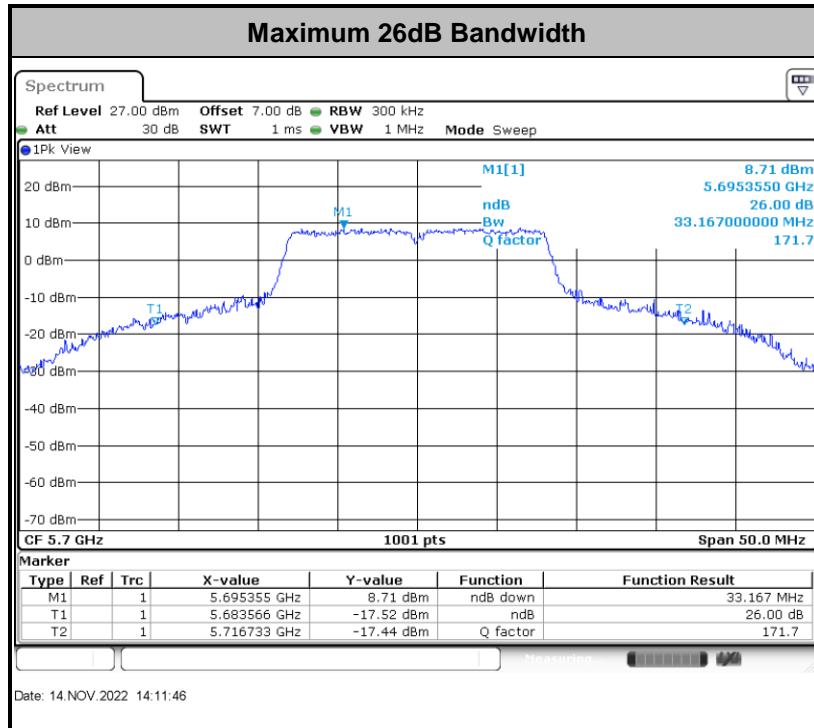
3.1.4 Test Setup



3.1.5 Test Result of 6dB 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 $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz.

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

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.

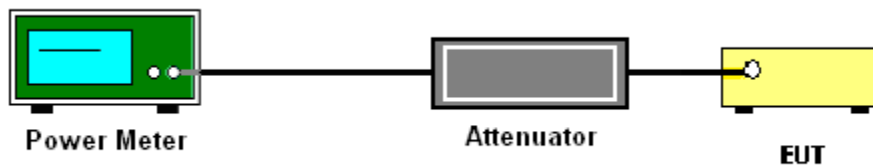
3.2.3 Test Procedures

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.
4. For MIMO mode, the measure-and-sum technique should be used for measuring the in-band transmit power of a device.

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.

For the band 5.725–5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz 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.

For devices operating in the bands 5.15 - 5.25 GHz, 5.25 - 5.35 GHz, and 5.47 - 5.725 GHz

Method SA-2

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

- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 KHz.
- 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 RBW offset $10 \log(1\text{MHz}/300\text{KHz})$ to the test result.
- 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.

For devices operating in the band 5.725 - 5.85 GHz

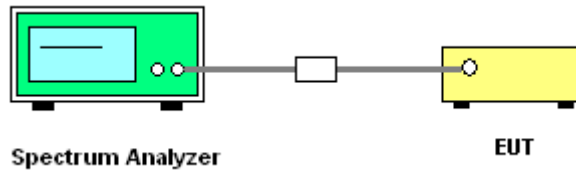
Method SA-2

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

- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300KHz
- Set VBW \geq 1 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 RBW offset $10 \log(500\text{KHz} / 300\text{KHz})$ to the test result.
- 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.

1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

3.3.4 Test Setup

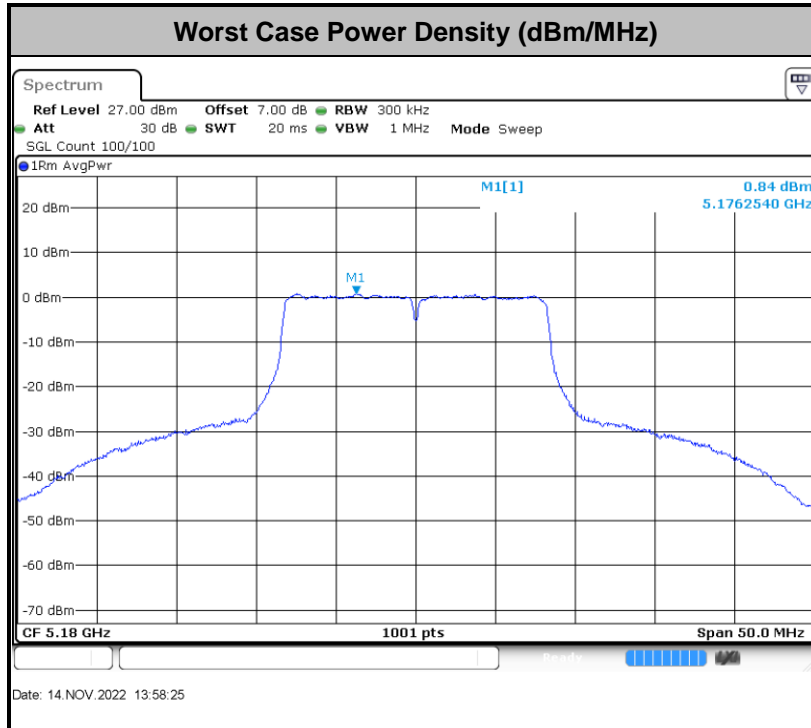




3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

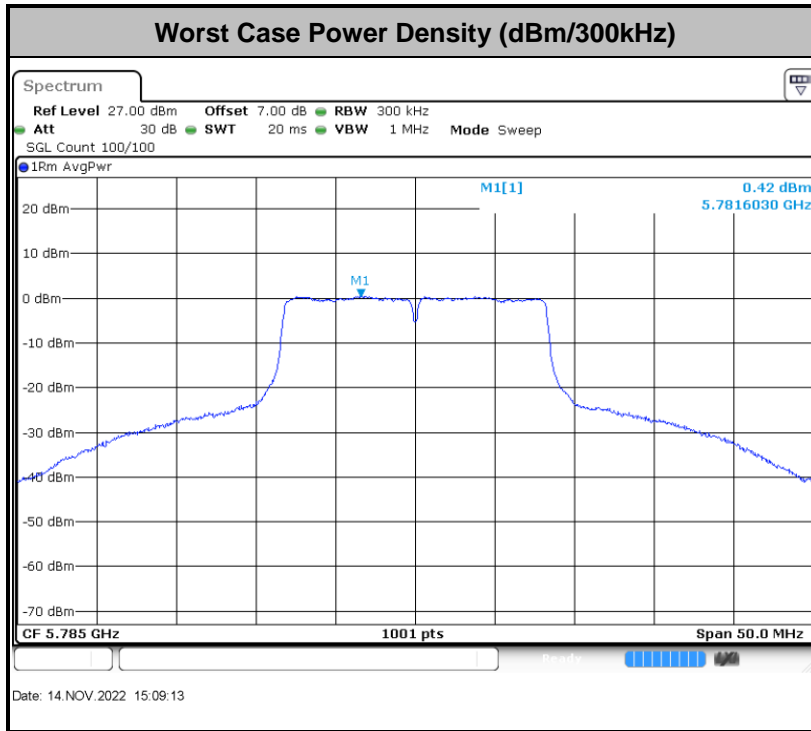
For devices operating in the bands 5.15 - 5.25 GHz, 5.25 - 5.35 GHz, and 5.47 - 5.725 GHz



Note: Worst Average Power Density (6.50 dBm/MHz) = Measured value (0.84 dBm/300KHz) + RBW offset (5.23dB) + Duty cycle offset (0.43dB)



For devices operating in the band 5.725 - 5.85 GHz



Note: Worst Average Power Density (3.07 dBm/500KHz) = Measured value (0.42 dBm/300KHz) + RBW offset (2.22dB) + Duty cycle offset (0.43dB)



3.4 Unwanted Emissions Measurement

This section as specified in FCC Part 15.407(b) is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement. The unwanted emissions shall comply with 15.407(b)(1) to (6), and restricted bands per FCC Part 15.205.

3.4.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5150-5250 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27 dBm/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 5650-5725 MHz band: all emissions outside of the 5470-5600 MHz and 5650-5725 MHz band shall not exceed an EIRP of -27 dBm/MHz.

- (2) For transmitters operating in the 5.725-5.85 GHz band:
15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.



(3) 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

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

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

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

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

(4) ANSI C63.10-2013 clause 12.7.3 note 97

As specified by regulatory requirements, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit. However, an out-of-band emission that complies with both the average and peak general regulatory limits is not required to satisfy the peak emission limit.

3.4.2 Measuring Instruments

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



3.4.3 Test Procedures

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

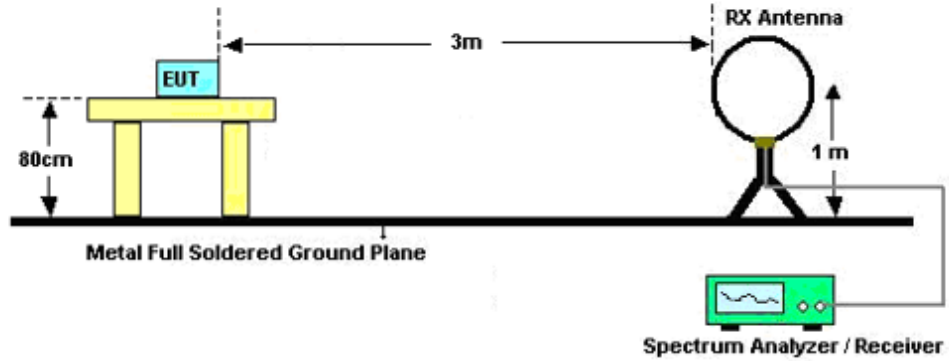
(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

- 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.

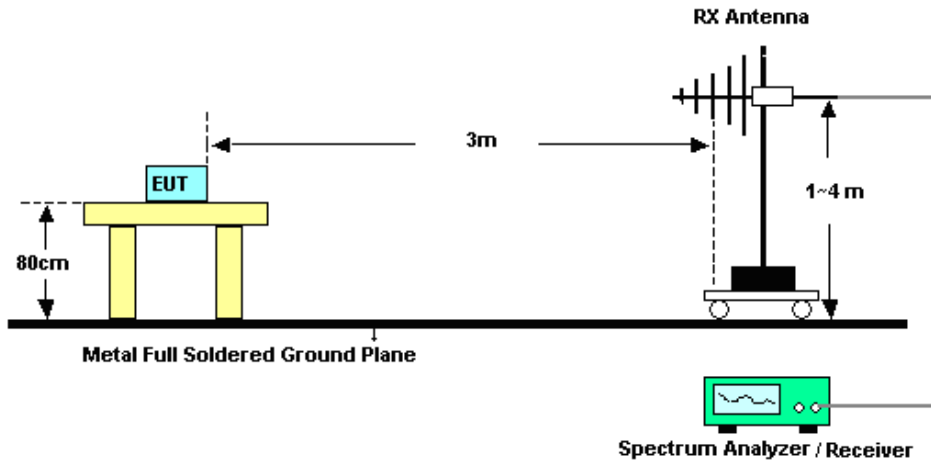
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband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

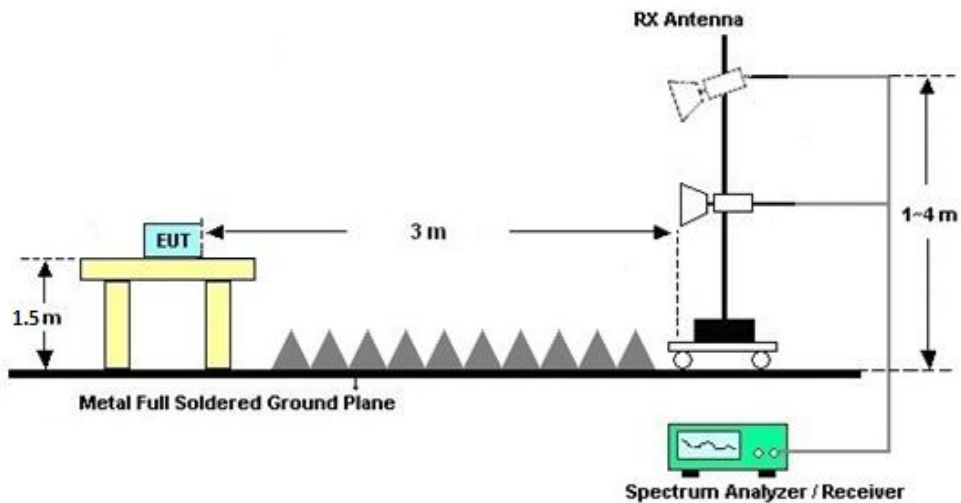
For radiated emissions below 30MHz



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.

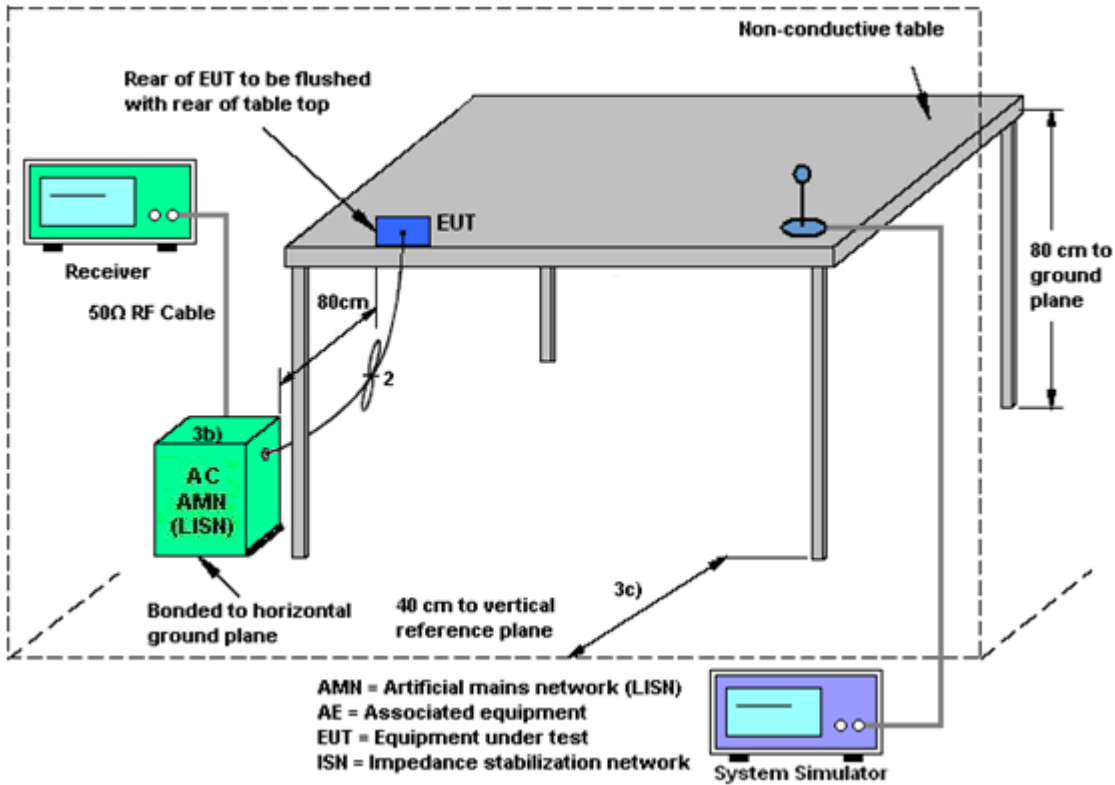
3.5.2 Measuring Instruments

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 Antenna Requirements

3.6.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2), if transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.6.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.6.3 Antenna Gain

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



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 12, 2022	Nov. 11, 2022	Oct. 11, 2023	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 05, 2022	Nov. 11, 2022	Jan. 04, 2023	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 05, 2022	Nov. 11, 2022	Jan. 04, 2023	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 15, 2022	Nov. 11, 2022	Jul. 14, 2023	Conducted (TH01-KS)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Dec. 27, 2021	Dec. 02, 2022	Dec. 26, 2022	Radiation (03CH01-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 07, 2022	Dec. 02, 2022	Jul. 06, 2023	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jul. 28, 2022	Dec. 02, 2022	Jun. 27, 2024	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Sep. 28, 2021	Dec. 02, 2022	Sep. 27, 2023	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 07, 2022	Dec. 02, 2022	Jul. 06, 2023	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz-40GHz	Apr.10, 2022	Dec. 02, 2022	Apr.09 2023	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 06, 2022	Dec. 02, 2022	Apr. 05, 2023	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00101 800-30-10P-R	1943528	1GHz~18GHz	Oct. 19, 2022	Dec. 02, 2022	Oct. 18, 2023	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5GHz	Oct. 19, 2022	Dec. 02, 2022	Oct. 18, 2023	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35-H G	1871923	18GHz~40GHz	Jul. 06, 2022	Dec. 02, 2022	Jul. 05, 2023	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	6160100019 85	N/A	NCR	Dec. 02, 2022	NCR	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Dec. 02, 2022	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Dec. 02, 2022	NCR	Radiation (03CH01-SZ)
EMI Receiver	R&S	ESR7	101630	9kHz~7GHz;	Jul. 07, 2022	Nov. 09, 2022	Jul. 06 2023	Conduction (CO01-SZ)
AC LISN	R&S	ENV216	100063	9kHz~30MHz	Sep. 15, 2022	Nov. 09, 2022	Sep. 14, 2023	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Oct. 17, 2022	Nov. 09, 2022	Oct. 16, 2023	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	6160200008 91	100Vac~250Vac	Jul. 07, 2022	Nov. 09, 2022	Jul. 06 2023	Conduction (CO01-SZ)

NCR: No Calibration Required



5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.10-2013. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Measurement

Test Item	Uncertainty
Conducted Power	±0.46 dB
Conducted Emissions	±0.48 dB
Occupied Channel Bandwidth	±0.1 %
Conducted Power Spectral Density	±0.40 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.2dB
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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))	4.2dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

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

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

A1. Conducted Test Results

Test Engineer:	Jacob Zhang	Temperature:	21~25	°C
Test Date:	2022/11/11	Relative Humidity:	51~54	%

TEST RESULTS DATA
26dB and 99% OBW

U-NII-1 single antenna													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		Note
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	36	5180	17.03	-	21.88	-	-	-	22.31	-	
11a	6Mbps	1	44	5220	17.03	-	26.07	-	-	-	22.31	-	
11a	6Mbps	1	48	5240	17.08	-	26.47	-	-	-	22.33	-	
HT20	MCS0	1	36	5180	17.93	-	24.13	-	-	-	22.54	-	
HT20	MCS0	1	44	5220	17.88	-	24.78	-	-	-	22.52	-	
HT20	MCS0	1	48	5240	17.88	-	21.48	-	-	-	22.52	-	

TEST RESULTS DATA
Average Power Table

FCC U-NII-1 single antenna												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power with duty factor (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	36	5180	18.17	-		24.00	-	-2.50	-	Pass
11a	6Mbps	1	44	5220	17.90	-		24.00	-	-2.50	-	Pass
11a	6Mbps	1	48	5240	18.02	-		24.00	-	-2.50	-	Pass
HT20	MCS0	1	36	5180	18.19	-		24.00	-	-2.50	-	Pass
HT20	MCS0	1	44	5220	17.88	-		24.00	-	-2.50	-	Pass
HT20	MCS0	1	48	5240	18.03	-		24.00	-	-2.50	-	Pass
VHT20	MCS0	1	36	5180	17.35	-		24.00	-	-2.50	-	Pass
VHT20	MCS0	1	44	5220	17.02	-		24.00	-	-2.50	-	Pass
VHT20	MCS0	1	48	5240	17.14	-		24.00	-	-2.50	-	Pass

TEST RESULTS DATA
Power Spectral Density

FCC U-NII-1 single antenna																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		10log (1MHz /RBW) Factor (dB)		Average Power Density with Duty Factor (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	36	5180	0.43	-	5.23	-	6.50	-		11.00	-	-2.50	-	Pass
11a	6Mbps	1	44	5220	0.43	-	5.23	-	5.71	-		11.00	-	-2.50	-	Pass
11a	6Mbps	1	48	5240	0.43	-	5.23	-	6.12	-		11.00	-	-2.50	-	Pass
HT20	MCS0	1	36	5180	0.50	-	5.23	-	5.48	-		11.00	-	-2.50	-	Pass
HT20	MCS0	1	44	5220	0.50	-	5.23	-	5.00	-		11.00	-	-2.50	-	Pass
HT20	MCS0	1	48	5240	0.50	-	5.23	-	5.13	-		11.00	-	-2.50	-	Pass

TEST RESULTS DATA
26dB and 99% OBW

U-NII-2A single antenna															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		FCC 26dB Bandwidth Power Limit (dBm)		Note
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	52	5260	17.13	-	26.42	-	23.34	-	29.34	-	23.98	-	
11a	6Mbps	1	60	5300	17.08	-	25.82	-	23.33	-	29.33	-	23.98	-	
11a	6Mbps	1	64	5320	17.08	-	26.77	-	23.33	-	29.33	-	23.98	-	
HT20	MCS0	1	52	5260	17.88	-	24.08	-	23.52	-	29.52	-	23.98	-	
HT20	MCS0	1	60	5300	17.88	-	22.68	-	23.52	-	29.52	-	23.98	-	
HT20	MCS0	1	64	5320	17.88	-	25.18	-	23.52	-	29.52	-	23.98	-	

TEST RESULTS DATA
Average Power Table

FCC U-NII-2A single antenna													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power with duty factor (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	52	5260	18.10	-		23.98	-	-1.00	-	26.99	Pass
11a	6Mbps	1	60	5300	18.02	-		23.98	-	-1.00	-	26.99	Pass
11a	6Mbps	1	64	5320	17.91	-		23.98	-	-1.00	-	26.99	Pass
HT20	MCS0	1	52	5260	18.00	-		23.98	-	-1.00	-	26.99	Pass
HT20	MCS0	1	60	5300	18.08	-		23.98	-	-1.00	-	26.99	Pass
HT20	MCS0	1	64	5320	17.95	-		23.98	-	-1.00	-	26.99	Pass
VHT20	MCS0	1	52	5260	17.11	-		23.98	-	-1.00	-	26.99	Pass
VHT20	MCS0	1	60	5300	17.16	-		23.98	-	-1.00	-	26.99	Pass
VHT20	MCS0	1	64	5320	17.12	-		23.98	-	-1.00	-	26.99	Pass

TEST RESULTS DATA
Power Spectral Density

U-NII-2A single antenna																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		10log (1MHz /RBW) Factor (dB)		Average Power Density with Duty Factor (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	52	5260	0.43	-	5.23	-	5.80	-		11.00	-	-1.00	-	Pass
11a	6Mbps	1	60	5300	0.43	-	5.23	-	5.89	-		11.00	-	-1.00	-	Pass
11a	6Mbps	1	64	5320	0.43	-	5.23	-	5.61	-		11.00	-	-1.00	-	Pass
HT20	MCS0	1	52	5260	0.50	-	5.23	-	4.82	-		11.00	-	-1.00	-	Pass
HT20	MCS0	1	60	5300	0.50	-	5.23	-	4.88	-		11.00	-	-1.00	-	Pass
HT20	MCS0	1	64	5320	0.50	-	5.23	-	4.73	-		11.00	-	-1.00	-	Pass

TEST RESULTS DATA
26dB and 99% OBW

U-NII-2C single antenna																
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	1	100	5500	17.43	-	29.17	-	23.41	-	29.41	-	23.98	-	----	----
11a	6Mbps	1	116	5580	17.48	-	31.22	-	23.43	-	29.43	-	23.98	-	----	----
11a	6Mbps	1	140	5700	18.88	-	33.17	-	23.76	-	29.76	-	23.98	-	----	----
HT20	MCS0	1	100	5500	17.93	-	24.93	-	23.54	-	29.54	-	23.98	-	----	----
HT20	MCS0	1	116	5580	17.93	-	25.43	-	23.54	-	29.54	-	23.98	-	----	----
HT20	MCS0	1	140	5700	17.98	-	25.72	-	23.55	-	29.55	-	23.98	-	----	----

TEST RESULTS DATA
Average Power Table

FCC U-NII-2C single antenna													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power with duty factor (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	100	5500	18.28	-		23.98	-	-0.70	-	26.99	Pass
11a	6Mbps	1	116	5580	17.92	-		23.98	-	-0.70	-	26.99	Pass
11a	6Mbps	1	140	5700	18.28	-		23.98	-	-0.70	-	26.99	Pass
HT20	MCS0	1	100	5500	17.81	-		23.98	-	-0.70	-	26.99	Pass
HT20	MCS0	1	116	5580	18.17	-		23.98	-	-0.70	-	26.99	Pass
HT20	MCS0	1	140	5700	17.87	-		23.98	-	-0.70	-	26.99	Pass
VHT20	MCS0	1	100	5500	17.22	-		23.98	-	-0.70	-	26.99	Pass
VHT20	MCS0	1	116	5580	17.02	-		23.98	-	-0.70	-	26.99	Pass
VHT20	MCS0	1	140	5700	17.06	-		23.98	-	-0.70	-	26.99	Pass

TEST RESULTS DATA
Power Spectral Density

U-NII-2C single antenna																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		10log (1MHz /RBW) Factor (dB)		Average Power Density with Duty Factor (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	100	5500	0.43	-	5.23	-	5.53	-		11.00	-	-0.70	-	Pass
11a	6Mbps	1	116	5580	0.43	-	5.23	-	5.58	-		11.00	-	-0.70	-	Pass
11a	6Mbps	1	140	5700	0.43	-	5.23	-	6.38	-		11.00	-	-0.70	-	Pass
HT20	MCS0	1	100	5500	0.50	-	5.23	-	4.05	-		11.00	-	-0.70	-	Pass
HT20	MCS0	1	116	5580	0.50	-	5.23	-	4.77	-		11.00	-	-0.70	-	Pass
HT20	MCS0	1	140	5700	0.50	-	5.23	-	5.10	-		11.00	-	-0.70	-	Pass

TEST RESULTS DATA
6dB and 26dB EBW and 99% OBW

U-NII-3 single antenna												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26dB Bandwidth (MHz)		6 dB Bandwidth (MHz)		6 dB Bandwidth Min. Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	149	5745	17.38	-	28.77	-	16.30	-	0.5	Pass
11a	6Mbps	1	157	5785	17.88	-	31.22	-	16.30	-	0.5	Pass
11a	6Mbps	1	165	5825	17.38	-	27.72	-	16.30	-	0.5	Pass
HT20	MCS0	1	149	5745	18.78	-	31.32	-	17.40	-	0.5	Pass
HT20	MCS0	1	157	5785	18.13	-	27.32	-	17.10	-	0.5	Pass
HT20	MCS0	1	165	5825	17.98	-	24.33	-	16.95	-	0.5	Pass

TEST RESULTS DATA
Average Power Table

U-NII-3 single antenna												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power with duty factor (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745	17.93	-		30.00	-	-5.50	-	Pass
11a	6Mbps	1	157	5785	18.21	-		30.00	-	-5.50	-	Pass
11a	6Mbps	1	165	5825	18.07	-		30.00	-	-5.50	-	Pass
HT20	MCS0	1	149	5745	18.22	-		30.00	-	-5.50	-	Pass
HT20	MCS0	1	157	5785	18.04	-		30.00	-	-5.50	-	Pass
HT20	MCS0	1	165	5825	18.11	-		30.00	-	-5.50	-	Pass
VHT20	MCS0	1	149	5745	17.21	-		30.00	-	-5.50	-	Pass
VHT20	MCS0	1	157	5785	17.12	-		30.00	-	-5.50	-	Pass
VHT20	MCS0	1	165	5825	17.39	-		30.00	-	-5.50	-	Pass

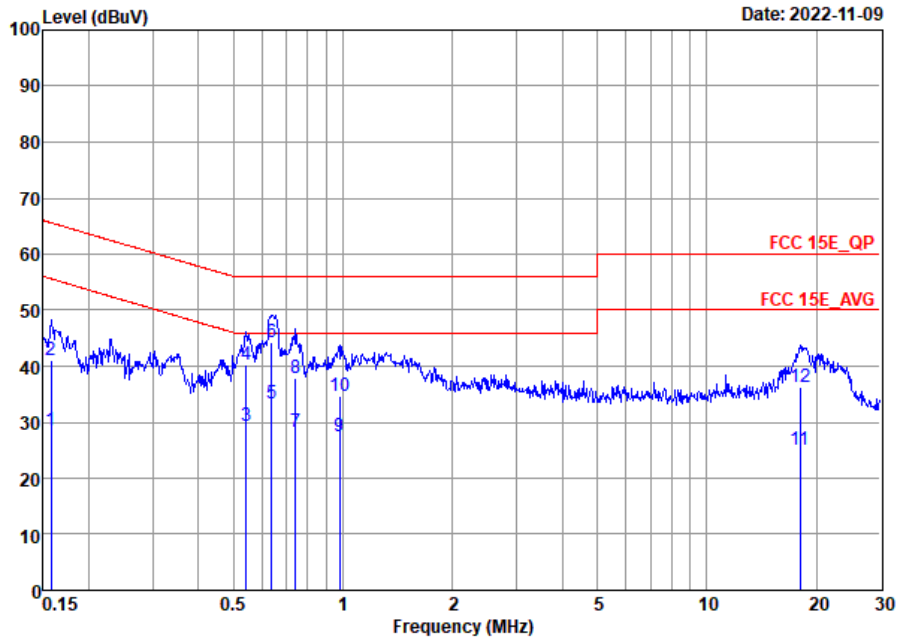
TEST RESULTS DATA
Power Spectral Density

U-NII-3 single antenna																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		10log (500kHz /RBW) Factor (dB)		Average Power Density with Duty Factor (dBm/500kHz)			Average PSD Limit (dBm/500kHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745	0.43		2.22	-	2.35	-		30.00	-	-5.50	-	Pass
11a	6Mbps	1	157	5785	0.43		2.22	-	3.07	-		30.00	-	-5.50	-	Pass
11a	6Mbps	1	165	5825	0.43		2.22	-	2.25	-		30.00	-	-5.50	-	Pass
HT20	MCS0	1	149	5745	0.50		2.22	-	2.66	-		30.00	-	-5.50	-	Pass
HT20	MCS0	1	157	5785	0.50		2.22	-	2.37	-		30.00	-	-5.50	-	Pass
HT20	MCS0	1	165	5825	0.50		2.22	-	1.54	-		30.00	-	-5.50	-	Pass



Appendix B. AC Conducted Emission Test Results

Test Engineer :	Lily Qiu	Temperature :	21~24°C
		Relative Humidity :	39~43%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

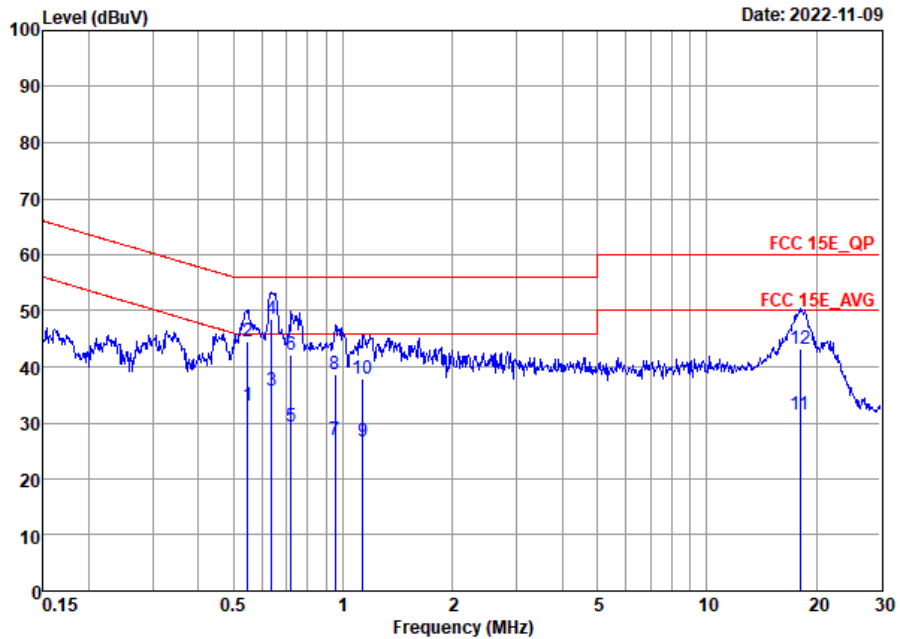


Site : CO01-SZ
 Condition: FCC 15E QP LISN 20220811 L LINE

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.16	28.43	-27.17	55.60	7.50	10.20	10.73	Average
2	0.16	41.03	-24.57	65.60	20.10	10.20	10.73	QP
3	0.54	29.38	-16.62	46.00	7.60	10.11	11.67	Average
4	0.54	40.18	-15.82	56.00	18.40	10.11	11.67	QP
5	0.64	33.32	-12.68	46.00	11.90	10.13	11.29	Average
6 *	0.64	44.32	-11.68	56.00	22.90	10.13	11.29	QP
7	0.74	28.40	-17.60	46.00	7.30	10.15	10.95	Average
8	0.74	37.80	-18.20	56.00	16.70	10.15	10.95	QP
9	0.98	27.50	-18.50	46.00	7.09	10.12	10.29	Average
10	0.98	34.60	-21.40	56.00	14.19	10.12	10.29	QP
11	18.04	25.18	-24.82	50.00	5.00	9.83	10.35	Average
12	18.04	36.38	-23.62	60.00	16.20	9.83	10.35	QP



Test Engineer :	Lily Qiu	Temperature :	21~24°C
		Relative Humidity :	39~43%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-SZ
 Condition: FCC 15E_QP LISN_20220811_L LINE

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.55	33.06	-12.94	46.00	11.30	10.11	11.65	Average
2	0.55	44.66	-11.34	56.00	22.90	10.11	11.65	QP
3	0.64	35.72	-10.28	46.00	14.30	10.13	11.29	Average
4 *	0.64	48.52	-7.48	56.00	27.10	10.13	11.29	QP
5	0.72	29.46	-16.54	46.00	8.29	10.16	11.01	Average
6	0.72	42.16	-13.84	56.00	20.99	10.16	11.01	QP
7	0.95	26.86	-19.14	46.00	6.40	10.12	10.34	Average
8	0.95	38.56	-17.44	56.00	18.10	10.12	10.34	QP
9	1.14	26.67	-19.33	46.00	6.31	10.13	10.23	Average
10	1.14	37.97	-18.03	56.00	17.61	10.13	10.23	QP
11	18.04	31.58	-18.42	50.00	11.40	9.83	10.35	Average
12	18.04	43.28	-16.72	60.00	23.10	9.83	10.35	QP

Note:

- Level(dBμV) = Read Level(dBμV) + LISN Factor(dB) + Cable Loss(dB)
- Over Limit(dB) = Level(dBμV) – Limit Line(dBμV)



Appendix C. Radiated Spurious Emission

U-NII-1 - 5150~5250MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 36 5180MHz		5149.5	64.13	-9.87	74	49.96	34.87	11.09	31.79	100	287	P	H
		5150	49.16	-4.84	54	34.99	34.87	11.09	31.79	100	287	A	H
	*	5180	104.72	-	-	90.61	34.86	11.07	31.82	100	287	P	H
	*	5180	97.35	-	-	83.24	34.86	11.07	31.82	100	287	A	H
		5149.76	62.35	-11.65	74	48.18	34.87	11.09	31.79	394	350	P	V
		5149.76	48.8	-5.2	54	34.63	34.87	11.09	31.79	394	350	A	V
	*	5180	102.8	-	-	88.69	34.86	11.07	31.82	394	350	P	V
	*	5180	95.3	-	-	81.19	34.86	11.07	31.82	394	350	A	V
802.11a CH 44 5220MHz		5127.92	53.32	-20.68	74	39.12	34.87	11.09	31.76	103	288	P	H
		5144.82	42.76	-11.24	54	28.59	34.87	11.09	31.79	103	288	A	H
	*	5220	104.74	-	-	90.68	34.86	11.05	31.85	103	288	P	H
	*	5220	98.5	-	-	84.44	34.86	11.05	31.85	103	288	A	H
		5380.08	51.46	-22.54	74	37.78	34.82	10.93	32.07	103	288	P	H
		5445.6	41.61	-12.39	54	27.88	34.81	11.06	32.14	103	288	A	H
		5067.08	52.64	-21.36	74	38.27	34.89	11.14	31.66	265	356	P	V
		5148.72	42.95	-11.05	54	28.78	34.87	11.09	31.79	265	356	A	V
	*	5220	102.67	-	-	88.61	34.86	11.05	31.85	265	356	P	V
	*	5220	96.42	-	-	82.36	34.86	11.05	31.85	265	356	A	V
		5379.6	51.71	-22.29	74	38.03	34.82	10.93	32.07	265	356	P	V
		5370.72	41.74	-12.26	54	28.02	34.83	10.93	32.04	265	356	A	V



802.11a CH 48 5240MHz		5063.96	52.87	-21.13	74	38.5	34.89	11.14	31.66	100	286	P	H
		5048.1	42.85	-11.15	54	28.48	34.89	11.14	31.66	100	286	A	H
	*	5240	104.82	-	-	90.83	34.85	11.02	31.88	100	286	P	H
	*	5240	98.75	-	-	84.76	34.85	11.02	31.88	100	286	A	H
		5354.16	51.34	-22.66	74	37.62	34.83	10.93	32.04	100	286	P	H
		5458.08	41.93	-12.07	54	28.23	34.81	11.06	32.17	100	286	A	H
		5146.12	53.8	-20.2	74	39.63	34.87	11.09	31.79	263	355	P	V
		5096.46	42.8	-11.2	54	28.53	34.88	11.12	31.73	263	355	A	V
	*	5240	104.29	-	-	90.3	34.85	11.02	31.88	263	355	P	V
	*	5240	96.84	-	-	82.85	34.85	11.02	31.88	263	355	A	V
		5433.6	51.26	-22.74	74	37.53	34.81	11.06	32.14	263	355	P	V
		5399.76	41.71	-12.29	54	28.1	34.82	10.9	32.11	263	355	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**U-NII-1 5150~5250MHz
WIFI 802.11a (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 36 5180MHz		10360	50.98	-17.32	68.3	48.16	39.44	14.15	50.77	-	-	P	H
		15540	50.08	-23.92	74	42.84	41.82	16.85	51.43	-	-	P	H
		10360	50.97	-17.33	68.3	48.15	39.44	14.15	50.77	-	-	P	V
		15540	50.07	-23.93	74	42.83	41.82	16.85	51.43	-	-	P	V
802.11a CH 44 5220MHz		10440	50.79	-17.51	68.3	47.9	39.48	14.2	50.79	-	-	P	H
		15660	50.26	-23.74	74	42.93	41.9	16.95	51.52	-	-	P	H
		10440	50.13	-18.17	68.3	47.24	39.48	14.2	50.79	-	-	P	V
		15660	50.35	-23.65	74	43.02	41.9	16.95	51.52	-	-	P	V
802.11a CH 48 5240MHz		10480	49.96	-18.34	68.3	47.05	39.49	14.22	50.8	-	-	P	H
		15720	50.09	-23.91	74	42.76	41.93	16.98	51.58	-	-	P	H
		10480	49.36	-18.94	68.3	46.45	39.49	14.22	50.8	-	-	P	V
		15720	50.81	-23.19	74	43.48	41.93	16.98	51.58	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**U-NII-1 5150~5250MHz
WIFI 802.11n HT20 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 36 5180MHz		5149.76	63.92	-10.08	74	49.75	34.87	11.09	31.79	104	289	P	H
		5149.76	50.67	-3.33	54	36.5	34.87	11.09	31.79	104	289	A	H
	*	5180	105.34	-	-	91.23	34.86	11.07	31.82	104	289	P	H
	*	5180	99.07	-	-	84.96	34.86	11.07	31.82	104	289	A	H
		5149.76	63.02	-10.98	74	48.85	34.87	11.09	31.79	267	359	P	V
		5150	50.03	-3.97	54	35.86	34.87	11.09	31.79	267	359	A	V
	*	5180	104.21	-	-	90.1	34.86	11.07	31.82	267	359	P	V
	*	5180	97.73	-	-	83.62	34.86	11.07	31.82	267	359	A	V
802.11n HT20 CH 44 5220MHz		5056.42	53.2	-20.8	74	38.83	34.89	11.14	31.66	104	289	P	H
		5149.5	42.9	-11.1	54	28.73	34.87	11.09	31.79	104	289	A	H
	*	5220	104.7	-	-	90.64	34.86	11.05	31.85	104	289	P	H
	*	5220	98.18	-	-	84.12	34.86	11.05	31.85	104	289	A	H
		5413.2	52.5	-21.5	74	38.89	34.82	10.9	32.11	104	289	P	H
		5420.16	41.87	-12.13	54	28.26	34.82	10.9	32.11	104	289	A	H
		5057.98	52.73	-21.27	74	38.36	34.89	11.14	31.66	266	359	P	V
		5039.26	42.96	-11.04	54	28.56	34.89	11.14	31.63	266	359	A	V
	*	5220	104.23	-	-	90.17	34.86	11.05	31.85	266	359	P	V
	*	5220	97.81	-	-	83.75	34.86	11.05	31.85	266	359	A	V
		5377.68	52.28	-21.72	74	38.6	34.82	10.93	32.07	266	359	P	V
	5355.84	41.8	-12.2	54	28.08	34.83	10.93	32.04	266	359	A	V	



802.11n HT20 CH 48 5240MHz		5134.68	53	-21	74	38.8	34.87	11.09	31.76	102	289	P	H
		5127.14	42.84	-11.16	54	28.64	34.87	11.09	31.76	102	289	A	H
	*	5240	104.95	-	-	90.96	34.85	11.02	31.88	102	289	P	H
	*	5240	98.78	-	-	84.79	34.85	11.02	31.88	102	289	A	H
		5425.44	51.83	-22.17	74	38.26	34.81	10.9	32.14	102	289	P	H
		5401.68	41.99	-12.01	54	28.38	34.82	10.9	32.11	102	289	A	H
		5103.22	52.9	-21.1	74	38.63	34.88	11.12	31.73	263	359	P	V
		5041.86	42.96	-11.04	54	28.59	34.89	11.14	31.66	263	359	A	V
	*	5240	104.09	-	-	90.1	34.85	11.02	31.88	263	359	P	V
	*	5240	97.77	-	-	83.78	34.85	11.02	31.88	263	359	A	V
		5418.48	52.04	-21.96	74	38.43	34.82	10.9	32.11	263	359	P	V
		5354.4	41.93	-12.07	54	28.21	34.83	10.93	32.04	263	359	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**U-NII-1 5150~5250MHz
WIFI 802.11n HT20 (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n		10360	49.84	-18.46	68.3	47.02	39.44	14.15	50.77	-	-	P	H
HT20		15540	50.22	-23.78	74	42.98	41.82	16.85	51.43	-	-	P	H
CH 36		10360	50.08	-18.22	68.3	47.26	39.44	14.15	50.77	-	-	P	V
5180MHz		15540	50.31	-23.69	74	43.07	41.82	16.85	51.43	-	-	P	V
802.11n		10440	49.73	-18.57	68.3	46.84	39.48	14.2	50.79	-	-	P	H
HT20		15660	50.15	-23.85	74	42.82	41.9	16.95	51.52	-	-	P	H
CH 44		10440	50.06	-18.24	68.3	47.17	39.48	14.2	50.79	-	-	P	V
5220MHz		15660	50.2	-23.8	74	42.87	41.9	16.95	51.52	-	-	P	V
802.11n		10480	49.83	-18.47	68.3	46.92	39.49	14.22	50.8	-	-	P	H
HT20		15720	50.04	-23.96	74	42.71	41.93	16.98	51.58	-	-	P	H
CH 48		10480	49.19	-19.11	68.3	46.28	39.49	14.22	50.8	-	-	P	V
5240MHz		15720	50.8	-23.2	74	43.47	41.93	16.98	51.58	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



U-NII-2A - 5250~5350MHz
WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)	
802.11a CH 52 5260MHz		5065.26	52.58	-21.42	74	38.21	34.89	11.14	31.66	105	287	P	H	
		5101.92	42.89	-11.11	54	28.62	34.88	11.12	31.73	105	287	A	H	
	*	5260	104.72	-	-	90.77	34.85	11.02	31.92	105	287	P	H	
	*	5260	97.54	-	-	83.59	34.85	11.02	31.92	105	287	A	H	
		5350.56	52.1	-21.9	74	38.38	34.83	10.93	32.04	105	287	P	H	
		5356.8	41.86	-12.14	54	28.14	34.83	10.93	32.04	105	287	A	H	
		5096.72	53.32	-20.68	74	39.05	34.88	11.12	31.73	274	354	P	V	
		5039.52	42.83	-11.17	54	28.43	34.89	11.14	31.63	274	354	A	V	
	*	5260	103.31	-	-	89.36	34.85	11.02	31.92	274	354	P	V	
	*	5260	96.74	-	-	82.79	34.85	11.02	31.92	274	354	A	V	
		5374.56	52.53	-21.47	74	38.84	34.83	10.93	32.07	274	354	P	V	
		5425.68	41.93	-12.07	54	28.36	34.81	10.9	32.14	274	354	A	V	
	802.11a CH 60 5300MHz		5049.7	54	-20	74	39.63	34.89	11.14	31.66	109	286	P	H
			5054.25	42.82	-11.18	54	28.45	34.89	11.14	31.66	109	286	A	H
*		5300	104.75	-	-	90.9	34.84	10.99	31.98	109	286	P	H	
*		5300	97.32	-	-	83.47	34.84	10.99	31.98	109	286	A	H	
		5350.56	52.62	-21.38	74	38.9	34.83	10.93	32.04	109	286	P	H	
		5350.08	43.13	-10.87	54	29.41	34.83	10.93	32.04	109	286	A	H	
		5136.85	52.44	-21.56	74	38.24	34.87	11.09	31.76	271	355	P	V	
		5041.65	42.83	-11.17	54	28.43	34.89	11.14	31.63	271	355	A	V	
*		5300	103.15	-	-	89.3	34.84	10.99	31.98	271	355	P	V	
*		5300	96.54	-	-	82.69	34.84	10.99	31.98	271	355	A	V	
		5458.08	52.15	-21.85	74	38.45	34.81	11.06	32.17	271	355	P	V	
	5350.8	42.51	-11.49	54	28.79	34.83	10.93	32.04	271	355	A	V		



802.11a CH 64 5320MHz	*	5320	104.67	-	-	90.85	34.84	10.96	31.98	104	285	P	H
	*	5320	96.56	-	-	82.74	34.84	10.96	31.98	104	285	A	H
		5350.08	66.89	-7.11	74	53.17	34.83	10.93	32.04	104	285	P	H
		5350.24	49.54	-4.46	54	35.82	34.83	10.93	32.04	104	285	A	H
	*	5320	103.08	-	-	89.26	34.84	10.96	31.98	270	360	P	V
	*	5320	96.49	-	-	82.67	34.84	10.96	31.98	270	360	A	V
		5350.08	65.65	-8.35	74	51.93	34.83	10.93	32.04	270	360	P	V
		5350.24	48.97	-5.03	54	35.25	34.83	10.93	32.04	270	360	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**U-NII-2A 5250~5350MHz
WIFI 802.11a (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 52 5260MHz		10520	50.93	-17.37	68.3	47.98	39.5	14.25	50.8	-	-	P	H
		15780	50.18	-23.82	74	42.79	41.97	17.04	51.62	-	-	P	H
		10520	50.09	-18.21	68.3	47.14	39.5	14.25	50.8	-	-	P	V
		15780	50.9	-23.1	74	43.51	41.97	17.04	51.62	-	-	P	V
802.11a CH 60 5300MHz		10600	50.56	-23.44	74	47.59	39.48	14.29	50.8	-	-	P	H
		15900	50.09	-23.91	74	42.63	42.04	17.14	51.72	-	-	P	H
		10600	50.44	-23.56	74	47.47	39.48	14.29	50.8	-	-	P	V
		15900	50.97	-23.03	74	43.51	42.04	17.14	51.72	-	-	P	V
802.11a CH 64 5320MHz		10640	50.69	-23.31	74	47.7	39.47	14.32	50.8	-	-	P	H
		15960	50.03	-23.97	74	42.52	42.08	17.2	51.77	-	-	P	H
		10640	50.33	-23.67	74	47.34	39.47	14.32	50.8	-	-	P	V
		15960	50.96	-23.04	74	43.45	42.08	17.2	51.77	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**U-NII-2A 5250~5350MHz
WIFI 802.11n HT20 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 52 5260MHz		5045.76	52.79	-21.21	74	38.42	34.89	11.14	31.66	100	290	P	H
		5120.9	42.69	-11.31	54	28.48	34.88	11.09	31.76	100	290	A	H
	*	5260	104.93	-	-	90.98	34.85	11.02	31.92	100	290	P	H
	*	5260	98.8	-	-	84.85	34.85	11.02	31.92	100	290	A	H
		5413.44	51.57	-22.43	74	37.96	34.82	10.9	32.11	100	290	P	H
		5380.32	41.78	-12.22	54	28.1	34.82	10.93	32.07	100	290	A	H
		5137.54	53.19	-20.81	74	38.99	34.87	11.09	31.76	260	360	P	V
		5101.4	42.91	-11.09	54	28.64	34.88	11.12	31.73	260	360	A	V
	*	5260	104.19	-	-	90.24	34.85	11.02	31.92	260	360	P	V
	*	5260	98.08	-	-	84.13	34.85	11.02	31.92	260	360	A	V
		5412.24	51.47	-22.53	74	37.86	34.82	10.9	32.11	260	360	P	V
		5434.8	41.79	-12.21	54	28.06	34.81	11.06	32.14	260	360	A	V
802.11n HT20 CH 60 5300MHz		5085.4	53.42	-20.58	74	39.11	34.88	11.12	31.69	100	288	P	H
		5044.8	42.97	-11.03	54	28.6	34.89	11.14	31.66	100	288	A	H
	*	5300	104.7	-	-	90.85	34.84	10.99	31.98	100	288	P	H
	*	5300	98.52	-	-	84.67	34.84	10.99	31.98	100	288	A	H
		5356.08	52.47	-21.53	74	38.75	34.83	10.93	32.04	100	288	P	H
		5351.04	42.77	-11.23	54	29.05	34.83	10.93	32.04	100	288	A	H
		5067.9	52.55	-21.45	74	38.21	34.89	11.14	31.69	289	357	P	V
		5094.15	42.86	-11.14	54	28.59	34.88	11.12	31.73	289	357	A	V
	*	5300	103.67	-	-	89.82	34.84	10.99	31.98	289	357	P	V
	*	5300	97.59	-	-	83.74	34.84	10.99	31.98	289	357	A	V
		5392.32	51.42	-22.58	74	37.77	34.82	10.9	32.07	289	357	P	V
		5350.56	42.31	-11.69	54	28.59	34.83	10.93	32.04	289	357	A	V



802.11n HT20 CH 64 5320MHz	*	5320	104.94	-	-	91.12	34.84	10.96	31.98	105	291	P	H
	*	5320	97.97	-	-	84.15	34.84	10.96	31.98	105	291	A	H
		5351.2	63.7	-10.3	74	49.98	34.83	10.93	32.04	105	291	P	H
		5350.88	48.62	-5.38	54	34.9	34.83	10.93	32.04	105	291	A	H
	*	5320	104.07	-	-	90.25	34.84	10.96	31.98	283	359	P	V
	*	5320	97.68	-	-	83.86	34.84	10.96	31.98	283	359	A	V
		5350.88	63.01	-10.99	74	49.29	34.83	10.93	32.04	283	359	P	V
	5350.24	47.87	-6.13	54	34.15	34.83	10.93	32.04	283	359	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



U-NII-2A 5250~5350MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

Table with 14 columns: WIFI, Note, Frequency, Level, Margin, Limit, Read, Antenna, Path, Preamp, Ant, Table, Peak, Pol. It contains multiple rows of test data for various channels and frequencies, and a final 'Remark' section.



U-NII-2C - 5470~5725MHz
WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 100 5500MHz		5459.92	57.03	-16.97	74	43.33	34.81	11.06	32.17	100	289	P	H
		5469.68	63.37	-4.93	68.3	49.51	34.81	11.22	32.17	100	289	P	H
		5460	46.17	-7.83	54	32.47	34.81	11.06	32.17	100	289	A	H
	*	5500	105.48	-	-	91.66	34.8	11.22	32.2	100	289	P	H
	*	5500	98.39	-	-	84.57	34.8	11.22	32.2	100	289	A	H
		5459.76	55.03	-18.97	74	41.33	34.81	11.06	32.17	285	358	P	V
		5470	62.98	-5.32	68.3	49.12	34.81	11.22	32.17	285	358	P	V
		5458.48	44.5	-9.5	54	30.8	34.81	11.06	32.17	285	358	A	V
	*	5500	103.15	-	-	89.33	34.8	11.22	32.2	285	358	P	V
	*	5500	95.98	-	-	82.16	34.8	11.22	32.2	285	358	A	V
802.11a CH 116 5580MHz		5359.36	52.2	-21.8	74	38.48	34.83	10.93	32.04	100	286	P	H
		5461.84	52.03	-16.27	68.3	38.33	34.81	11.06	32.17	100	286	P	H
		5459.44	42.03	-11.97	54	28.33	34.81	11.06	32.17	100	286	A	H
	*	5580	105.76	-	-	91.58	34.91	11.55	32.28	100	286	P	H
	*	5580	99.61	-	-	85.43	34.91	11.55	32.28	100	286	A	H
		5749.88	51.86	-16.44	68.3	37.47	35.15	11.64	32.4	100	286	P	H
		5453.68	51.37	-22.63	74	37.67	34.81	11.06	32.17	275	358	P	V
		5469.52	50.73	-17.57	68.3	36.87	34.81	11.22	32.17	275	358	P	V
		5457.76	41.88	-12.12	54	28.18	34.81	11.06	32.17	275	358	A	V
	*	5580	104.19	-	-	90.01	34.91	11.55	32.28	275	358	P	V
	*	5580	97.85	-	-	83.67	34.91	11.55	32.28	275	358	A	V
	5752.715	51.42	-16.88	68.3	37.03	35.15	11.64	32.4	275	358	P	V	



802.11a CH 140 5700MHz	*	5700	105.36	-	-	90.98	35.08	11.66	32.36	237	285	P	H
	*	5700	98.15	-	-	83.77	35.08	11.66	32.36	237	285	A	H
		5725	64.58	-3.72	68.3	50.19	35.11	11.66	32.38	237	285	P	H
	*	5700	105.42	-	-	91.04	35.08	11.66	32.36	289	276	P	V
	*	5700	98.07	-	-	83.69	35.08	11.66	32.36	289	276	A	V
		5725.64	62.73	-5.57	68.3	48.33	35.12	11.66	32.38	289	276	P	V
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. 												



**U-NII-2C - 5470~5725MHz
WIFI 802.11a (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 100 5500MHz		11000	50.83	-23.17	74	47.7	39.4	14.53	50.8	-	-	P	H
		16500	50.21	-18.09	68.3	42.25	42.4	17.36	51.8	-	-	P	H
		11000	50.36	-23.64	74	47.23	39.4	14.53	50.8	-	-	P	V
		16500	50.69	-17.61	68.3	42.73	42.4	17.36	51.8	-	-	P	V
802.11a CH 116 5580MHz		11160	50.29	-23.71	74	46.88	39.53	14.65	50.77	-	-	P	H
		16740	50.92	-17.38	68.3	42.78	42.45	17.44	51.75	-	-	P	H
		11160	50.02	-23.98	74	46.61	39.53	14.65	50.77	-	-	P	V
		16740	50.29	-18.01	68.3	42.15	42.45	17.44	51.75	-	-	P	V
802.11a CH 140 5700MHz		11400	50.61	-23.39	74	46.82	39.72	14.79	50.72	-	-	P	H
		17100	50.19	-18.11	68.3	42	42.46	17.53	51.8	-	-	P	H
		11400	50.52	-23.48	74	46.73	39.72	14.79	50.72	-	-	P	V
		17100	50.46	-17.84	68.3	42.27	42.46	17.53	51.8	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**U-NII-2C - 5470~5725MHz
WIFI 802.11n HT20 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 100 5500MHz		5459.44	55.36	-18.64	74	41.66	34.81	11.06	32.17	104	290	P	H
		5466.96	63.28	-5.02	68.3	49.42	34.81	11.22	32.17	104	290	P	H
		5460	45.28	-8.72	54	31.58	34.81	11.06	32.17	104	290	A	H
	*	5500	104.22	-	-	90.4	34.8	11.22	32.2	104	290	P	H
	*	5500	98.06	-	-	84.24	34.8	11.22	32.2	104	290	A	H
		5459.76	55.83	-18.17	74	42.13	34.81	11.06	32.17	285	357	P	V
		5469.84	63.52	-4.78	68.3	49.66	34.81	11.22	32.17	285	357	P	V
		5459.28	44.47	-9.53	54	30.77	34.81	11.06	32.17	285	357	A	V
	*	5500	103.28	-	-	89.46	34.8	11.22	32.2	285	357	P	V
	*	5500	97.09	-	-	83.27	34.8	11.22	32.2	285	357	A	V
802.11n HT20 CH 116 5580MHz		5457.04	51.71	-22.29	74	38.01	34.81	11.06	32.17	237	285	P	H
		5469.28	52.4	-15.9	68.3	38.54	34.81	11.22	32.17	237	285	P	H
		5458.72	42.13	-11.87	54	28.43	34.81	11.06	32.17	237	285	A	H
	*	5580	106.03	-	-	91.85	34.91	11.55	32.28	237	285	P	H
	*	5580	99.85	-	-	85.67	34.91	11.55	32.28	237	285	A	H
		5732.87	52.07	-16.23	68.3	37.68	35.13	11.66	32.4	237	285	P	H
		5459.2	52.67	-21.33	74	38.97	34.81	11.06	32.17	260	356	P	V
		5463.52	52.56	-15.74	68.3	38.86	34.81	11.06	32.17	260	356	P	V
		5459.2	41.94	-12.06	54	28.24	34.81	11.06	32.17	260	356	A	V
	*	5580	103.54	-	-	89.36	34.91	11.55	32.28	260	356	P	V
*	5580	97.42	-	-	83.24	34.91	11.55	32.28	260	356	A	V	
		5726.255	52.12	-16.18	68.3	37.72	35.12	11.66	32.38	260	356	P	V



802.11n HT20 CH 140 5700MHz	*	5700	106.18	-	-	91.8	35.08	11.66	32.36	229	289	P	H
	*	5700	99.15	-	-	84.77	35.08	11.66	32.36	229	289	A	H
		5725	64.87	-3.43	68.3	50.48	35.11	11.66	32.38	229	289	P	H
	*	5700	104.39	-	-	90.01	35.08	11.66	32.36	222	262	P	V
	*	5700	97.26	-	-	82.88	35.08	11.66	32.36	222	262	A	V
		5725.08	62.89	-5.41	68.3	48.49	35.12	11.66	32.38	222	262	P	V
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. 												



**U-NII-2C - 5470~5725MHz
WIFI 802.11n HT20 (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n		11000	49.81	-24.19	74	46.68	39.4	14.53	50.8	-	-	P	H
HT20		16500	50.09	-18.21	68.3	42.13	42.4	17.36	51.8	-	-	P	H
CH 100		11000	50.6	-23.4	74	47.47	39.4	14.53	50.8	-	-	P	V
5500MHz		16500	50.12	-18.18	68.3	42.16	42.4	17.36	51.8	-	-	P	V
802.11n		11160	50.49	-23.51	74	47.08	39.53	14.65	50.77	-	-	P	H
HT20		16740	50.64	-17.66	68.3	42.5	42.45	17.44	51.75	-	-	P	H
CH 116		11160	50.84	-23.16	74	47.43	39.53	14.65	50.77	-	-	P	V
5580MHz		16740	50.57	-17.73	68.3	42.43	42.45	17.44	51.75	-	-	P	V
802.11n		11400	50.31	-23.69	74	46.52	39.72	14.79	50.72	-	-	P	H
HT20		17100	50.16	-18.14	68.3	41.97	42.46	17.53	51.8	-	-	P	H
CH 140		11400	49.9	-24.1	74	46.11	39.72	14.79	50.72	-	-	P	V
5700MHz		17100	50.48	-17.82	68.3	42.29	42.46	17.53	51.8	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz
WIFI 802.11n HT20 (LF @ 3m)

Table with 14 columns: WIFI Ant., Note, Frequency (MHz), Level (dBµV/m), Margin (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). Rows include frequency data for 802.11n HT20 LF and a Remark section.



U-NII-3 - 5725~5850MHz
WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5636	53.78	-14.52	68.3	39.42	34.99	11.69	32.32	100	295	P	H
		5699.4	53.52	-51.24	104.76	39.13	35.08	11.67	32.36	100	295	P	H
		5719.8	66.07	-44.67	110.74	51.68	35.11	11.66	32.38	100	295	P	H
		5725	73.83	-48.37	122.2	59.44	35.11	11.66	32.38	100	295	P	H
	*	5745	102.16	-	-	87.78	35.14	11.64	32.4	100	295	P	H
	*	5745	96.02	-	-	81.64	35.14	11.64	32.4	100	295	A	H
		5602.2	53.75	-14.55	68.3	39.38	34.94	11.71	32.28	345	256	P	V
		5695.6	53.81	-48.16	101.97	39.43	35.07	11.67	32.36	345	256	P	V
		5719.8	66.83	-43.91	110.74	52.44	35.11	11.66	32.38	345	256	P	V
		5724.6	74.79	-46.5	121.29	60.4	35.11	11.66	32.38	345	256	P	V
	*	5745	104.38	-	-	90	35.14	11.64	32.4	345	256	P	V
	*	5745	98.17	-	-	83.79	35.14	11.64	32.4	345	256	A	V



WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 157 5785MHz		5647.4	53.07	-15.23	68.3	38.69	35.01	11.69	32.32	105	274	P	H
		5697.2	53.41	-49.73	103.14	39.02	35.08	11.67	32.36	105	274	P	H
		5709.2	53.04	-54.74	107.78	38.67	35.09	11.66	32.38	105	274	P	H
		5721.6	52.95	-61.5	114.45	38.56	35.11	11.66	32.38	105	274	P	H
	*	5785	103.14	-	-	88.76	35.2	11.62	32.44	105	274	P	H
	*	5785	97.03	-	-	82.65	35.2	11.62	32.44	105	274	A	H
		5854	52.3	-60.78	113.08	37.93	35.3	11.55	32.48	105	274	P	H
		5875	52.23	-52.97	105.2	37.91	35.33	11.49	32.5	105	274	P	H
		5912.8	52.65	-24.55	77.2	38.39	35.38	11.42	32.54	105	274	P	H
		5947	52.57	-15.73	68.3	38.34	35.43	11.36	32.56	105	274	P	H
		5626.2	53.37	-14.93	68.3	39	34.98	11.69	32.3	360	256	P	V
		5699.4	53.37	-51.39	104.76	38.98	35.08	11.67	32.36	360	256	P	V
		5719.6	53.09	-57.6	110.69	38.7	35.11	11.66	32.38	360	256	P	V
		5720.2	52.46	-58.8	111.26	38.07	35.11	11.66	32.38	360	256	P	V
	*	5785	104.81	-	-	90.43	35.2	11.62	32.44	360	256	P	V
	*	5785	98.62	-	-	84.24	35.2	11.62	32.44	360	256	A	V
		5851.6	51.9	-66.65	118.55	37.54	35.29	11.55	32.48	360	256	P	V
		5872	52.52	-53.52	106.04	38.21	35.32	11.49	32.5	360	256	P	V
		5894	52.85	-38.25	91.1	38.53	35.35	11.49	32.52	360	256	P	V
		5936.2	52.55	-15.75	68.3	38.34	35.41	11.36	32.56	360	256	P	V



WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 165 5825MHz	*	5825	101.72	-	-	87.37	35.26	11.55	32.46	104	281	P	H
	*	5825	95.62	-	-	81.27	35.26	11.55	32.46	104	281	A	H
		5850.4	64.8	-56.49	121.29	50.44	35.29	11.55	32.48	104	281	P	H
		5855.6	60.4	-50.23	110.63	46.09	35.3	11.49	32.48	104	281	P	H
		5883	52.53	-46.73	99.26	38.2	35.34	11.49	32.5	104	281	P	H
		5940	52.61	-15.69	68.3	38.39	35.42	11.36	32.56	104	281	P	H
	*	5825	104.9	-	-	90.55	35.26	11.55	32.46	319	255	P	V
	*	5825	98.77	-	-	84.42	35.26	11.55	32.46	319	255	A	V
		5850.6	64.51	-56.32	120.83	50.15	35.29	11.55	32.48	319	255	P	V
		5855.8	61.28	-49.3	110.58	46.97	35.3	11.49	32.48	319	255	P	V
		5915.4	52.9	-22.38	75.28	38.64	35.38	11.42	32.54	319	255	P	V
		5937.8	52.39	-15.91	68.3	38.18	35.41	11.36	32.56	319	255	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**U-NII-3 5725~5850MHz
WIFI 802.11a (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		11490	50.19	-23.81	74	46.26	39.79	14.84	50.7	-	-	P	H
		17235	50.23	-18.07	68.3	42.19	42.41	17.56	51.93	-	-	P	H
		11490	50.2	-23.8	74	46.27	39.79	14.84	50.7	-	-	P	V
		17235	50.32	-17.98	68.3	42.28	42.41	17.56	51.93	-	-	P	V
802.11a CH 157 5785MHz		11570	50.2	-23.8	74	46.12	39.86	14.88	50.66	-	-	P	H
		17355	50.58	-17.72	68.3	42.67	42.36	17.6	52.05	-	-	P	H
		11570	50.21	-23.79	74	46.13	39.86	14.88	50.66	-	-	P	V
		17355	50.5	-17.8	68.3	42.59	42.36	17.6	52.05	-	-	P	V
802.11a CH 165 5825MHz		11650	50.8	-23.2	74	46.57	39.92	14.93	50.62	-	-	P	H
		17475	50.34	-17.96	68.3	42.57	42.31	17.63	52.17	-	-	P	H
		11650	50.23	-23.77	74	46	39.92	14.93	50.62	-	-	P	V
		17475	50.9	-17.4	68.3	43.13	42.31	17.63	52.17	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**U-NII-3 5725~5850MHz
WIFI 802.11n HT20 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 149 5745MHz		5634.4	53.34	-14.96	68.3	38.98	34.99	11.69	32.32	102	278	P	H
		5696.2	54.43	-47.98	102.41	40.05	35.07	11.67	32.36	102	278	P	H
		5719.8	68.58	-42.16	110.74	54.19	35.11	11.66	32.38	102	278	P	H
		5723.8	77.1	-42.36	119.46	62.71	35.11	11.66	32.38	102	278	P	H
	*	5745	103.81	-	-	89.43	35.14	11.64	32.4	102	278	P	H
	*	5745	97.67	-	-	83.29	35.14	11.64	32.4	102	278	A	H
		5621.4	53.04	-15.26	68.3	38.66	34.97	11.71	32.3	344	259	P	V
		5698.2	53.88	-50	103.88	39.49	35.08	11.67	32.36	344	259	P	V
		5720	68.52	-42.28	110.8	54.13	35.11	11.66	32.38	344	259	P	V
		5722.8	74.08	-43.1	117.18	59.69	35.11	11.66	32.38	344	259	P	V
*	5745	104.88	-	-	90.5	35.14	11.64	32.4	344	259	P	V	
*	5745	98.73	-	-	84.35	35.14	11.64	32.4	344	259	A	V	



WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 157 5785MHz		5635.2	53.59	-14.71	68.3	39.23	34.99	11.69	32.32	107	279	P	H
		5650.6	54.34	-14.4	68.74	39.96	35.01	11.69	32.32	107	279	P	H
		5708.4	53.28	-54.27	107.55	38.91	35.09	11.66	32.38	107	279	P	H
		5721.2	52.61	-60.93	113.54	38.22	35.11	11.66	32.38	107	279	P	H
	*	5785	103.49	-	-	89.11	35.2	11.62	32.44	107	279	P	H
	*	5785	97.17	-	-	82.79	35.2	11.62	32.44	107	279	A	H
		5853.2	52.46	-62.44	114.9	38.1	35.29	11.55	32.48	107	279	P	H
		5857.8	52.28	-57.73	110.01	37.99	35.3	11.49	32.5	107	279	P	H
		5916.2	52.28	-22.41	74.69	38.02	35.38	11.42	32.54	107	279	P	H
		5926	53.14	-15.16	68.3	38.86	35.4	11.42	32.54	107	279	P	H
		5603	53.46	-14.84	68.3	39.11	34.94	11.71	32.3	344	250	P	V
		5673.4	53.6	-32.01	85.61	39.23	35.04	11.67	32.34	344	250	P	V
		5702.8	53.24	-52.75	105.99	38.86	35.08	11.66	32.36	344	250	P	V
		5722.4	52.62	-63.65	116.27	38.23	35.11	11.66	32.38	344	250	P	V
	*	5785	104.95	-	-	90.57	35.2	11.62	32.44	344	250	P	V
	*	5785	98.8	-	-	84.42	35.2	11.62	32.44	344	250	A	V
		5850	51.82	-70.38	122.2	37.46	35.29	11.55	32.48	344	250	P	V
		5873	52.59	-53.17	105.76	38.28	35.32	11.49	32.5	344	250	P	V
	5906.8	52.5	-29.13	81.63	38.23	35.37	11.42	32.52	344	250	P	V	
	5947.8	52.28	-16.02	68.3	38.05	35.43	11.36	32.56	344	250	P	V	



WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)	
802.11n	*	5825	102.76	-	-	88.41	35.26	11.55	32.46	107	277	P	H	
	*	5825	96.66	-	-	82.31	35.26	11.55	32.46	107	277	A	H	
		5850.2	67.66	-54.08	121.74	53.3	35.29	11.55	32.48	107	277	P	H	
		5855.2	62.47	-48.27	110.74	48.1	35.3	11.55	32.48	107	277	P	H	
		5877.8	53.02	-50.1	103.12	38.7	35.33	11.49	32.5	107	277	P	H	
	HT20		5934.8	53.11	-15.19	68.3	38.9	35.41	11.36	32.56	107	277	P	H
	CH 165	*	5825	104.64	-	-	90.29	35.26	11.55	32.46	320	252	P	V
	5825MHz	*	5825	98.5	-	-	84.15	35.26	11.55	32.46	320	252	A	V
			5850	65.87	-56.33	122.2	51.51	35.29	11.55	32.48	320	252	P	V
			5856.4	63.07	-47.34	110.41	48.76	35.3	11.49	32.48	320	252	P	V
		5883.6	53.18	-45.63	98.81	38.87	35.34	11.49	32.52	320	252	P	V	
		5946.6	53.13	-15.17	68.3	38.9	35.43	11.36	32.56	320	252	P	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



U-NII-3 5725~5850MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

Table with 14 columns: WIFI, Note, Frequency, Level, Margin, Limit, Read, Antenna, Path, Preamp, Ant, Table, Peak, Pol. It contains multiple rows of test data for various channels and frequencies, and a final 'Remark' section with two entries.



Emission below 1GHz
WIFI 802.11n HT20 (LF @ 3m)

Table with 14 columns: WIFI Ant., Note, Frequency (MHz), Level (dBµV/m), Margin (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). Rows include test data for 802.11n HT20 LF and a Remark section.



<Co-location>

U-NII-1 5150~5250MHz

WIFI 802.11n20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant. 1		(MHz)	(dBμV/m)	(dB)	Line (dBμV/m)	Level (dBμV)	Factor (dB/m)	Loss (dB)	Factor (dB)	Pos (cm)	Pos (deg)	Avg. (P/A)	(H/V)
802.11n20 CH36 5180MHz & GSM850 Co-colation	*	5149.9	61.81	-12.19	74	47.64	34.87	11.09	31.79	244	285	P	H
	*	5149.5	49.2	-4.8	54	35.03	34.87	11.09	31.79	244	285	A	H
		5180	104.37	-	-	90.26	34.86	11.07	31.82	244	285	P	H
		5180	97.35	-	-	83.24	34.86	11.07	31.82	244	285	A	H
	*	5149.9	57.76	-16.24	74	43.59	34.87	11.09	31.79	100	61	P	V
	*	5150	46.53	-7.47	54	32.36	34.87	11.09	31.79	100	61	A	V
		5180	99.44	-	-	85.33	34.86	11.07	31.82	100	61	P	V
		5180	92.26	-	-	78.15	34.86	11.07	31.82	100	61	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**U-NII-1 5150~5250MHz
WIFI 802.11n (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n20 CH36 5180MHz & GSM850 Co-colation		1672.8	41.69	-32.31	74	37.64	29.96	6.57	32.48	-	-	P	H
		2509.2	45.8	-22.5	68.3	37.46	32.53	7.91	32.1	-	-	P	H
		3345.6	49.4	-18.9	68.3	38.03	34.61	9.03	32.27	-	-	P	H
		10360	50.07	-18.23	68.3	47.25	39.44	14.15	50.77	-	-	P	H
		15540	50.6	-23.4	74	43.36	41.82	16.85	51.43	-	-	P	H
		1672.8	42.01	-31.99	74	37.96	29.96	6.57	32.48	-	-	P	V
		2509.2	45.78	-22.52	68.3	37.44	32.53	7.91	32.1	-	-	P	V
		3345.6	50.09	-18.21	68.3	38.72	34.61	9.03	32.27	-	-	P	V
		10360	50.47	-17.83	68.3	47.65	39.44	14.15	50.77	-	-	P	V
	15540	50.37	-23.63	74	43.13	41.82	16.85	51.43	-	-	P	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average 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 Margin line.
P/A	Peak or Average
H/V	Horizontal or Vertical



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

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

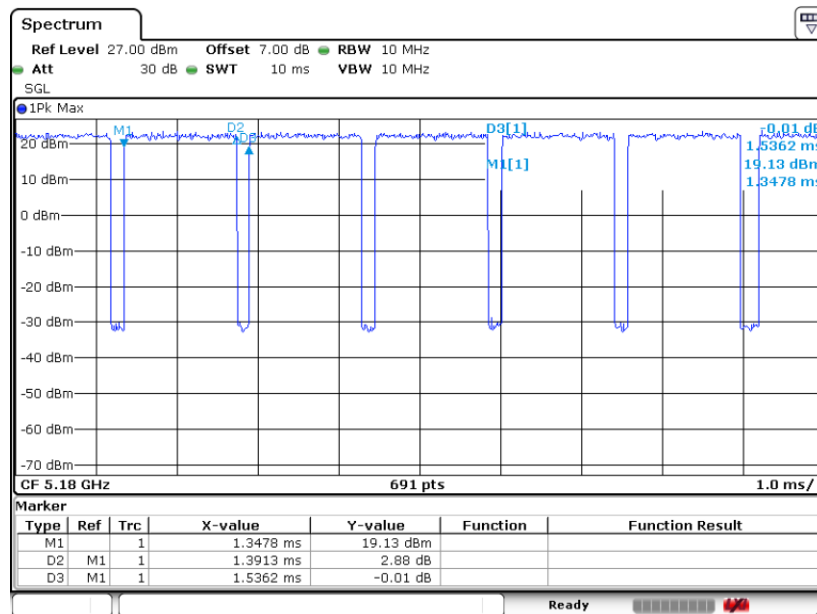
Both peak and average measured complies with the limit line, so test result is “PASS”.



Appendix D. Duty Cycle Plots

Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11a	90.57	1.391	0.719	1KHz
802.11n HT20	89.10	1.304	0.767	1KHz

802.11a



802.11n HT20

