



FCC RF Test Report

APPLICANT : Motorola Mobility LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola
MODEL NAME : XT2201-1
FCC ID : IHDT56AB1
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure
TEST DATE(S) : Nov. 05, 2021 ~ Dec. 10, 2021

We, Sporton International (Kunshan) 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 (Kunshan) Inc., the test report shall not be reproduced except in full.

Jason Jia

Reviewed by: Jason Jia / Supervisor

Alex Wang

Approved by: Alex Wang / Manager



Sporton International (Kunshan) Inc.

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People's Republic of China



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR192317F	Rev. 01	Initial issue of report	Dec. 10, 2021

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	6dB, 26dB and 99% Occupied Bandwidth	> 500kHz	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	≤ 30 dBm	Pass	-
3.3	15.407(a)	Power Spectral Density	≤ 30 dBm/500kHz	Pass	-
3.4	15.407(b)	Unwanted Emissions	15.407(b)(4)(i) & 15.209(a)	Pass	Under limit 10.88 dB at 5619.600 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 11.04 dB at 1.503 MHz
3.6	15.203 & 15.407(a)	Antenna Requirement	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	XT2201-1
FCC ID	IHDT56AB1
IMEI Code	Conducted: 355871980013291/355871980013309 Conduction: 355871980015197/355871980019205 Radiation: 355871980016294
HW Version	DVT2
SW Version	SSH32.79
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 Channel Frequency Range		5745 MHz ~ 5825 MHz							
Maximum Output Power		MIMO<Ant.1+2> <5745 MHz ~ 5825 MHz> 802.11a : 21.31 dBm / 0.1352 W 802.11n HT20 : 21.23 dBm / 0.1327 W 802.11n HT40 : 20.05 dBm / 0.1012 W 802.11ac VHT20: 21.11 dBm / 0.1291 W 802.11ac VHT40: 19.90 dBm / 0.0977 W 802.11ac VHT80: 18.85 dBm / 0.0767 W 802.11ax HE20: 21.28 dBm / 0.1343 W 802.11ax HE40: 20.10 dBm / 0.1026 W 802.11ax HE80: 18.89 dBm / 0.0774 W							
Type of Modulation		802.11a/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) 802.11ax: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM)							
Antenna Type / Gain		<Ant. 1> : PIFA Antenna with gain -3.10 dBi <Ant. 2> : PIFA Antenna with gain -3.10 dBi							
Antenna Function Description		<table><tr><td></td><td>Ant. 1</td><td>Ant. 2</td></tr><tr><td>802.11 a/n/ac/ax SISO/MIMO</td><td>V</td><td>V</td></tr></table>			Ant. 1	Ant. 2	802.11 a/n/ac/ax SISO/MIMO	V	V
	Ant. 1	Ant. 2							
802.11 a/n/ac/ax SISO/MIMO	V	V							

Note:

- For 802.11n/ac/ax 20/40/80/160 mode, the whole testing have assessed only 802.11ax 20/40/80/160 by referring to their maximum conducted power.
- 802.11ax support full RU tone and partial RU tone, both full RU and partial RU-left (for low CH) and partial RU-right (for high CH) are tested, only the worse data were reported.
- Ant.1 corresponds to ant.5 in EP. Ant.2 corresponds to ant.6 in EP.

1.5 Modification of EUT

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



1.6 Testing Location

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

Test Firm	Sporton International (Kunshan) Inc.		
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.
	CO01-KS 03CH05-KS TH01-KS	CN1257	314309

1.7 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH05-KS	AUDIX	E3	6.2009-8-24a1
2.	CO01-KS	AUDIX	E3	6.2009-8-24

1.8 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.
- 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.



1.9 Specification of Accessory

Specification of Accessory				
AC Adapter 1(US)	Brand Name	Motorola(Salom)	Model Name	MC-681
AC Adapter 1(EU)	Brand Name	Motorola(Salom)	Model Name	MC-682
AC Adapter 1(UK)	Brand Name	Motorola(Salom)	Model Name	MC-683
AC Adapter 1(AR)	Brand Name	Motorola(Salom)	Model Name	MC-686
AC Adapter 1(BR)	Brand Name	Motorola(Salom)	Model Name	MC-687
AC Adapter 1(Chile)	Brand Name	Motorola(Salom)	Model Name	MC-689
AC Adapter 2(AU)	Brand Name	Motorola(Salom)	Model Name	MC-305
AC Adapter 3(AU)	Brand Name	Motorola(Acbel)	Model Name	MC-305
Battery	Brand Name	Motorola(ATL)	Model Name	NA50
Earphone	Brand Name	Motorola (Lyand)	Model Name	MD211(SH38D20195)
USB Cable 1	Brand Name	Motorola(Saibao)	Model Name	SC18D13215
USB Cable 2	Brand Name	Motorola(Cabletech)	Model Name	SC18D13216
USB Cable 3	Brand Name	Motorola(Luxshare)	Model Name	SC18D13217
USB Cable 4	Brand Name	Motorola(Saibao)	Model Name	SC18D24968
Type C to HDMI Cable /USBC Cable	Brand Name	Motorola(Linxee)	Model Name	SC18D02146
Stylus	Brand Name	Motorola smart stylus	Model Name	XT2201-S
Smart Folio	Brand Name	Motorola(Techson)	Model Name	SS68D36907,SS68D36906
Wireless Dongle	Brand Name	Motorola	Model Name	MD-02
HDMI Cable	Brand Name	Motorola	Model Name	HC-01
USB Cable(Type A/C)	Brand Name	Motorola	Model Name	SC18C24367

2 Test Configuration of Equipment Under Test

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

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz U-NII-3	149	5745	157	5785
	151*	5755	159*	5795
	153	5765	161	5805
	155 [#]	5775	165	5825

Note:

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

2.2 Test Mode

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

MIMO Mode

Modulation	Data Rate
802.11a	6 Mbps
802.11ax HE20	MCS0
802.11ax HE40	MCS0
802.11ax HE80	MCS0

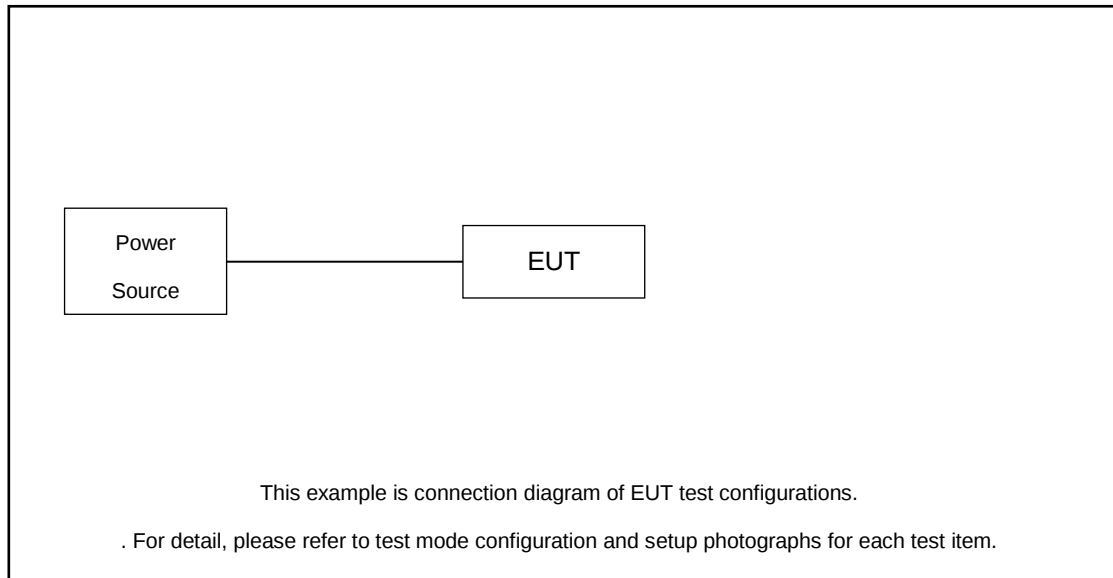
AC Conducted Emission	Mode 1 : GSM 850 Idle + Bluetooth Link + WLAN Link(5G) + USB Cable 4(Charging From Adaptor 1)
Remark: 1. For Radiated Test Cases, The tests were performance with Adapter2, Battery, and USB Cable1.	

Ch. #		U-NII-3 : 5725-5850 MHz			
		802.11a	802.11n HT20	802.11n HT40	802.11ac VHT80
L	Low	149	149	151	-
M	Middle	157	157	-	155
H	High	165	165	159	-

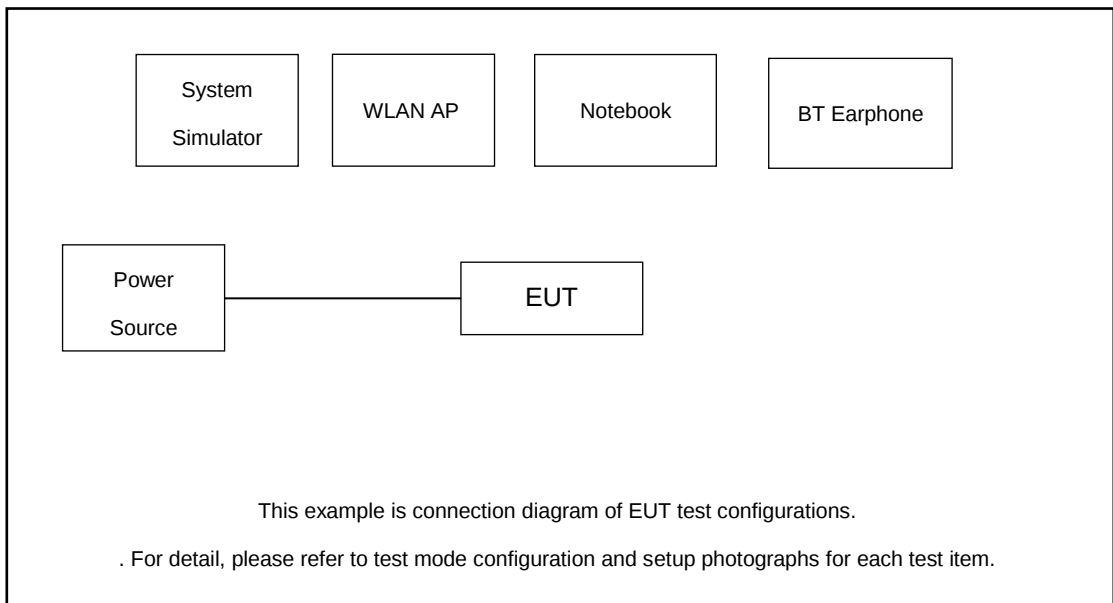
Ch. #		U-NII-3 : 5725-5850 MHz		
		802.11ax HE20	802.11ax HE40	802.11ax HE80
L	Low	149	151	-
M	Middle	157	-	155
H	High	165	159	-

2.3 Connection Diagram of Test System

For Radiated Emission



For Conducted Emission



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritus	MT8821C	N/A	N/A	Unshielded,1.8m
2.	Bluetooth Earphone	Lenovo	LBH308	N/A	N/A	N/A
3.	Notebook	Lenovo	V130-15IKB005	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
4.	WLAN AP	D-link	DIR-655	KA21R655B1	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 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 7.0 dB.

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

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.

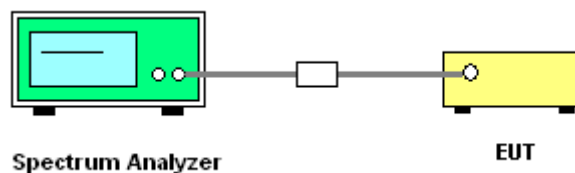
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section C) Emission bandwidth for the band 5.725-5.85GHz
2. Set RBW = 100kHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.
7. Measure and record the results in the test report.

3.1.4 Test Setup

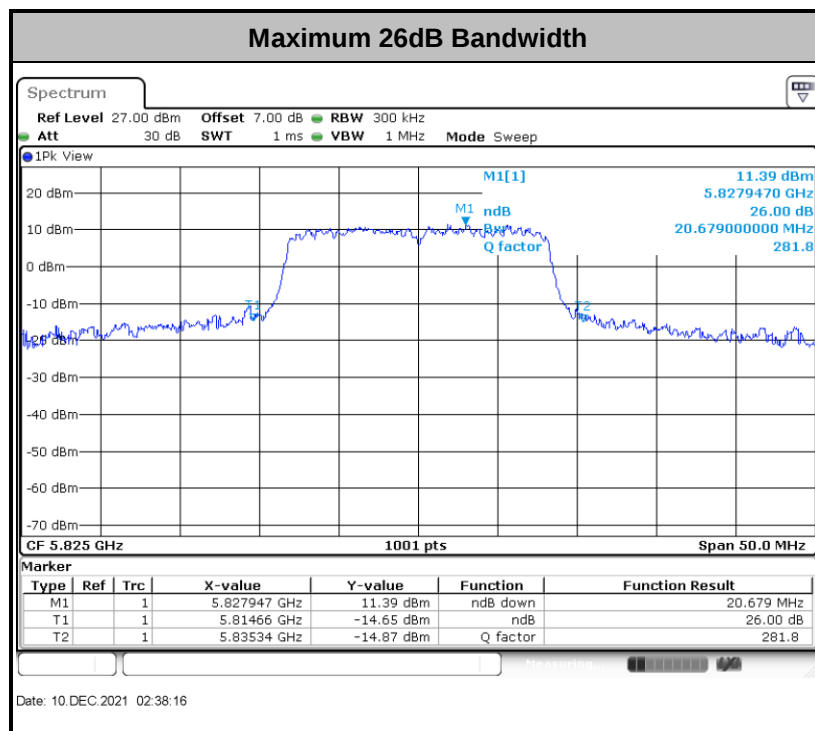
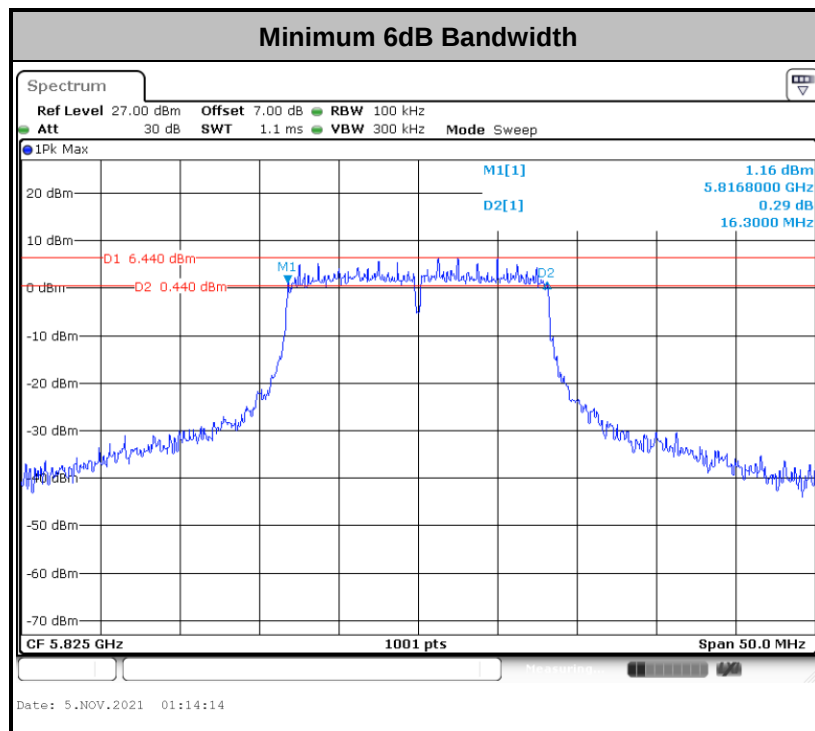


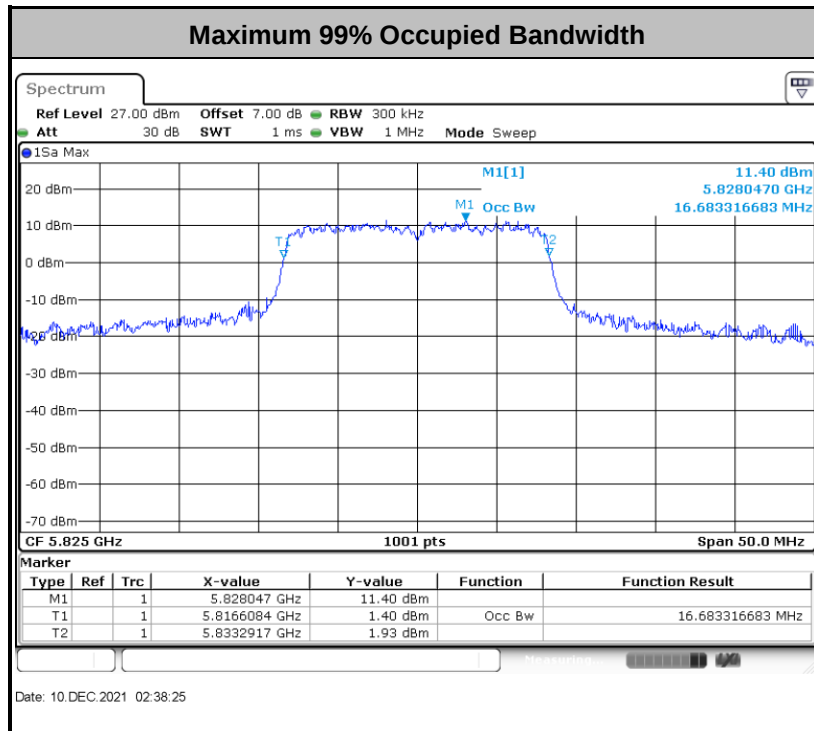
3.1.5 Test Result of 6dB and 26dB and 99% Occupied Bandwidth

Please refer to Appendix A.

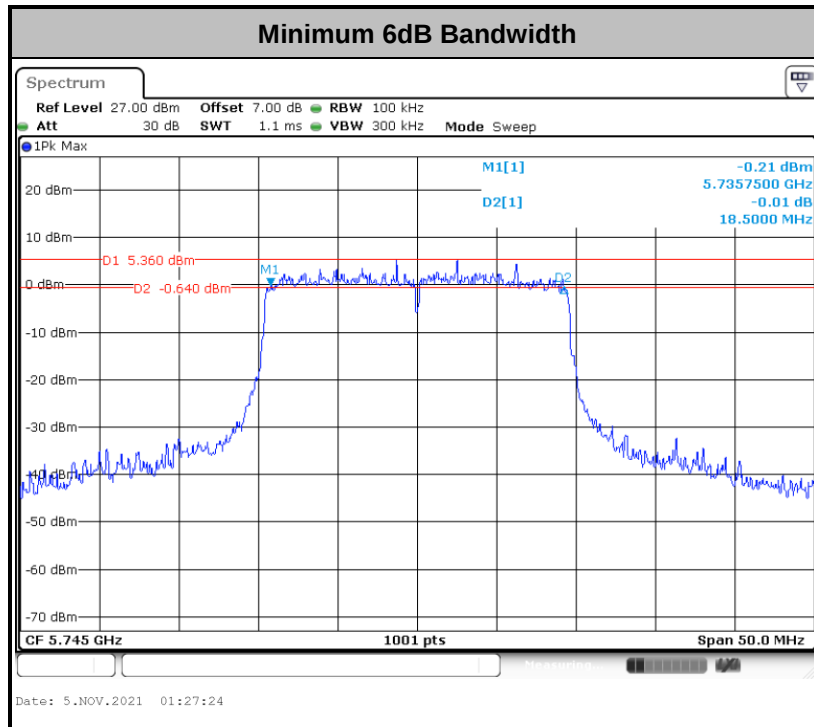


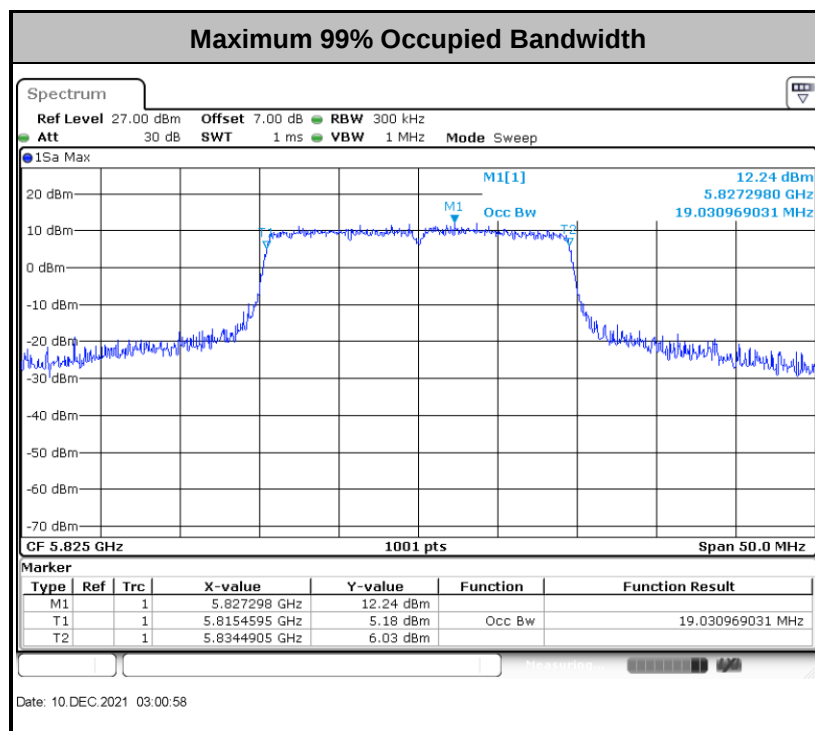
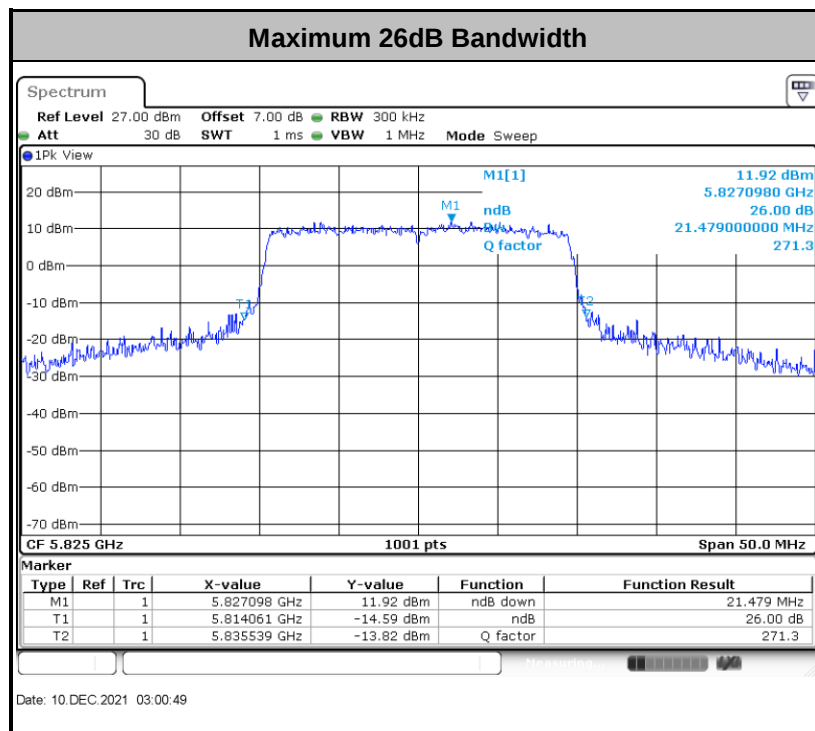
For 802.11a:





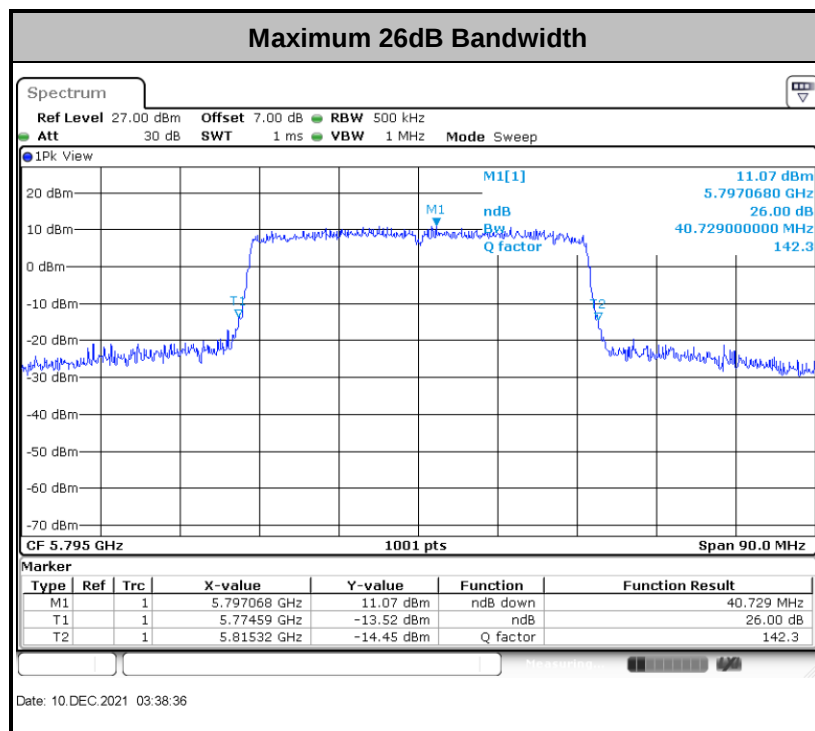
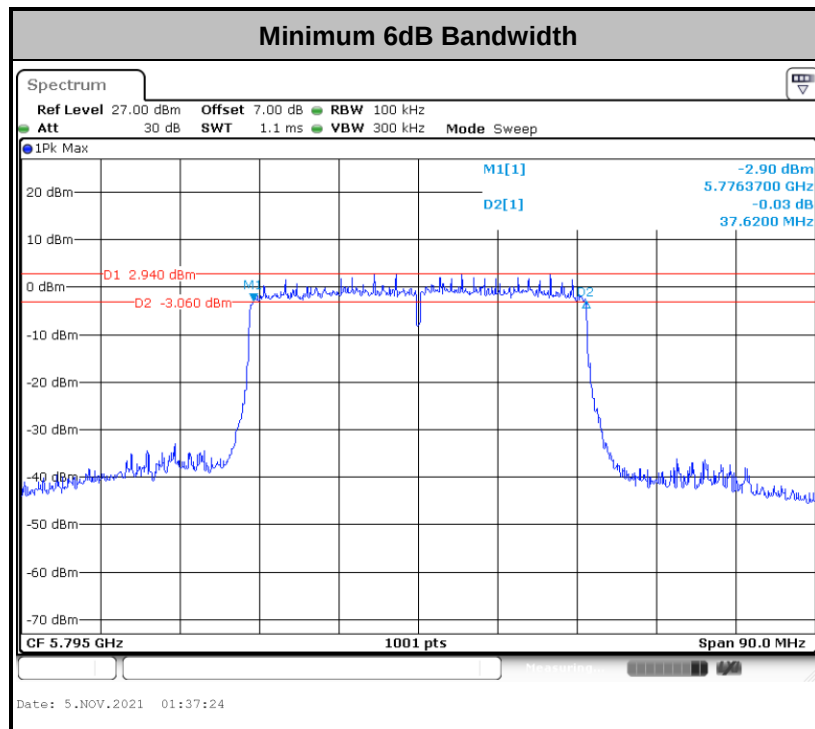
For 20MHz:

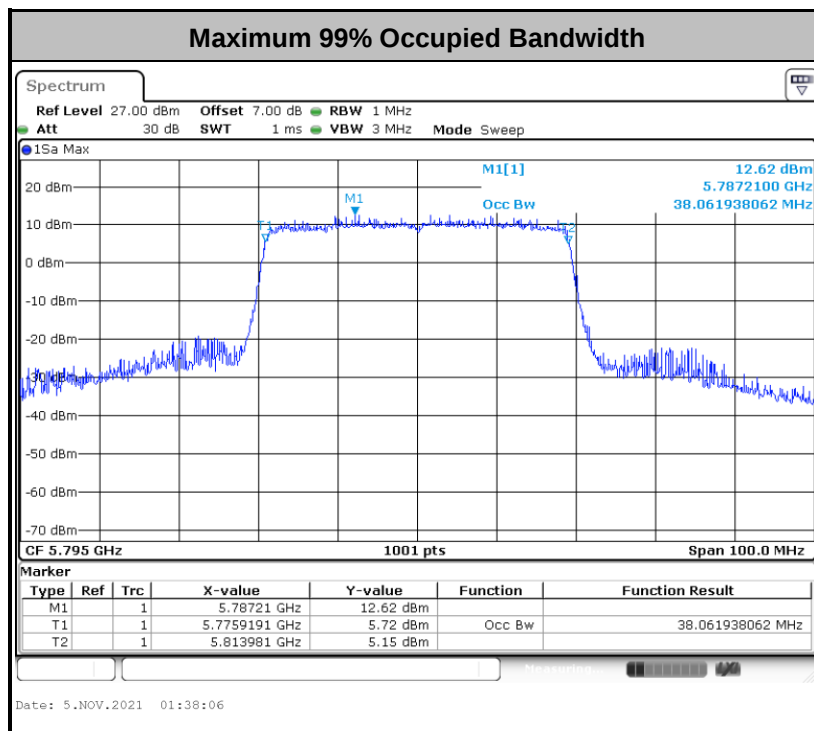




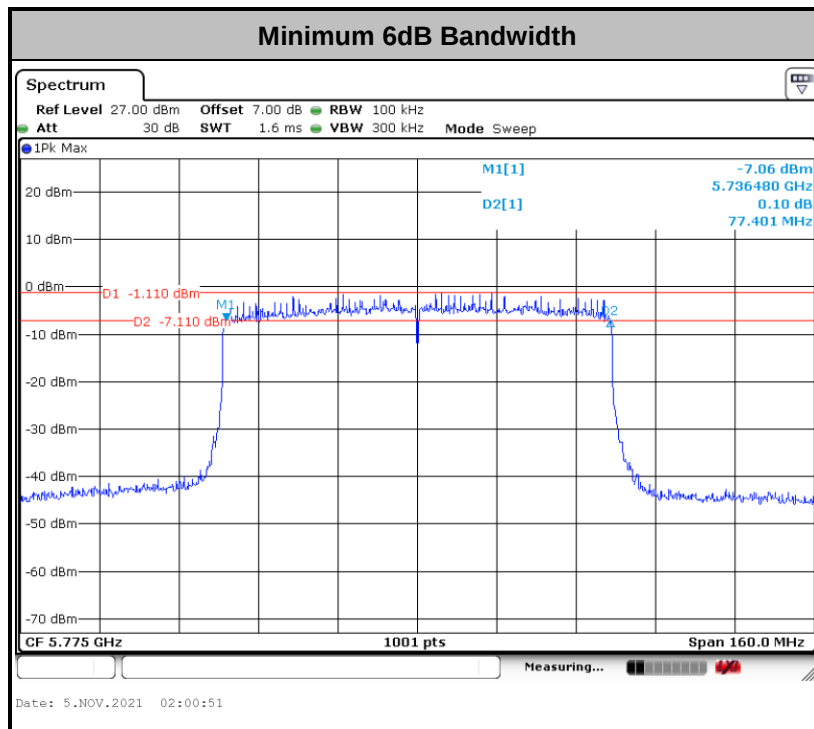


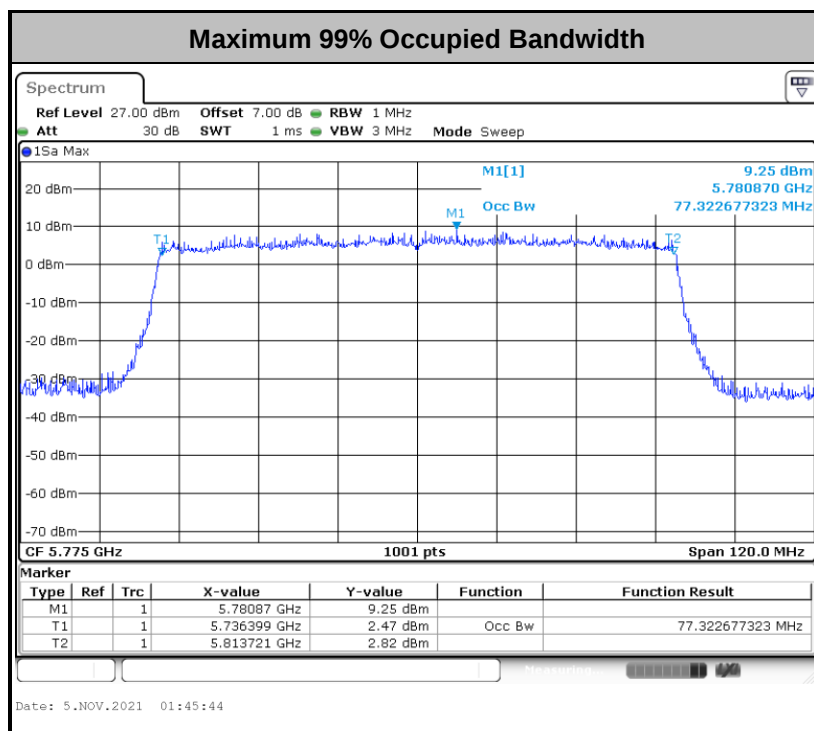
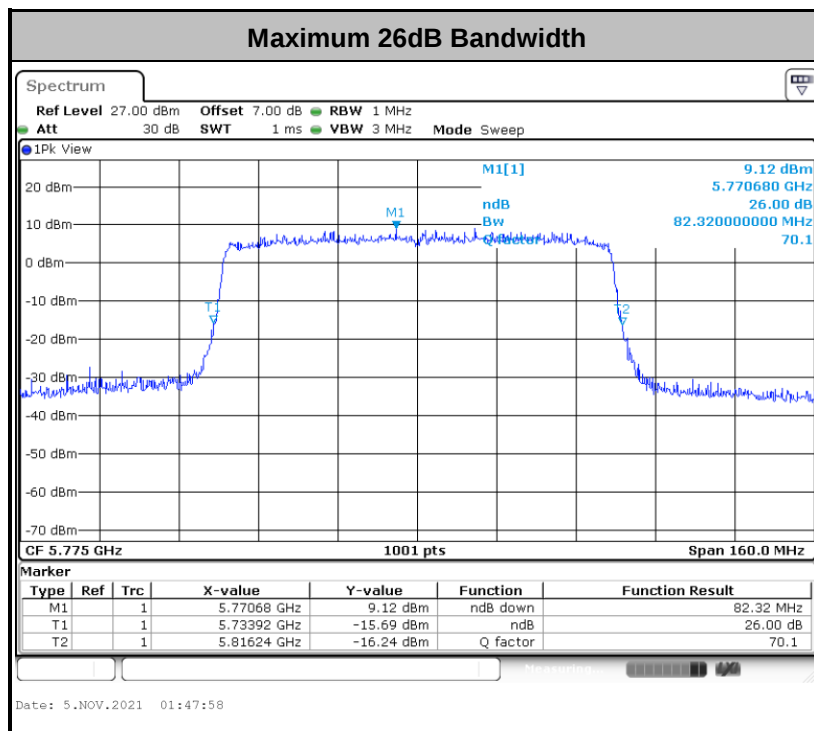
For 40MHz:





For 80MHz:





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

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

For Straddle Channel, According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, If the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

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.

3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

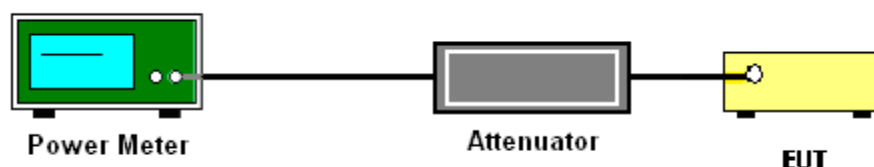
<CDD Modes>

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

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

For Straddle Channel, According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, If the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

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.

<CDD Modes>

Method SA-2

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

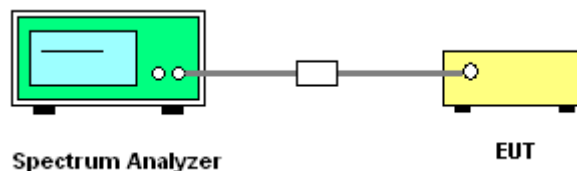
- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz.
- Set VBW $\geq$ 1 MHz.
- Number of points in sweep $\geq$ 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- Add $10 \log(500\text{kHz}/\text{RBW})$ 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 PSD and record it.
3. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Method (c): Measure and add $10 \log(N_{\text{ANT}})$ dB.

With this technique, spectrum measurements are performed at each output of the device, but rather than summing the spectra or the spectral peaks across the outputs, the quantity $10 \log(N_{\text{ANT}})$ dB is added to each spectrum value before comparing to the emission limit. The addition of $10 \log(N_{\text{ANT}})$ dB serves to apportion the emission limit among the N_{ANT} outputs so that each output is permitted to contribute no more than $1/N_{\text{ANT}}^{\text{th}}$ of the PSD limit.

3.3.4 Test Setup

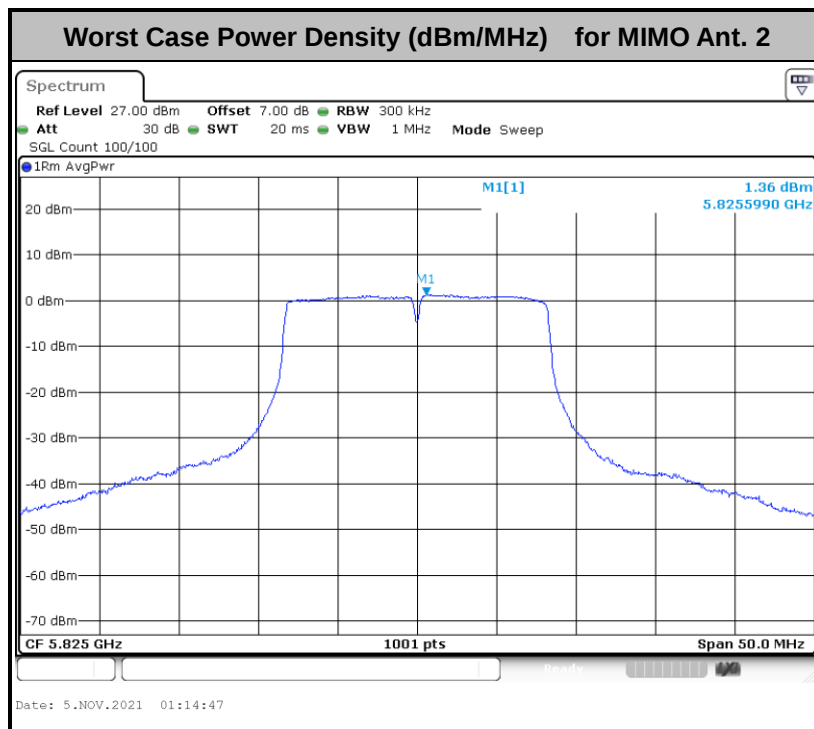
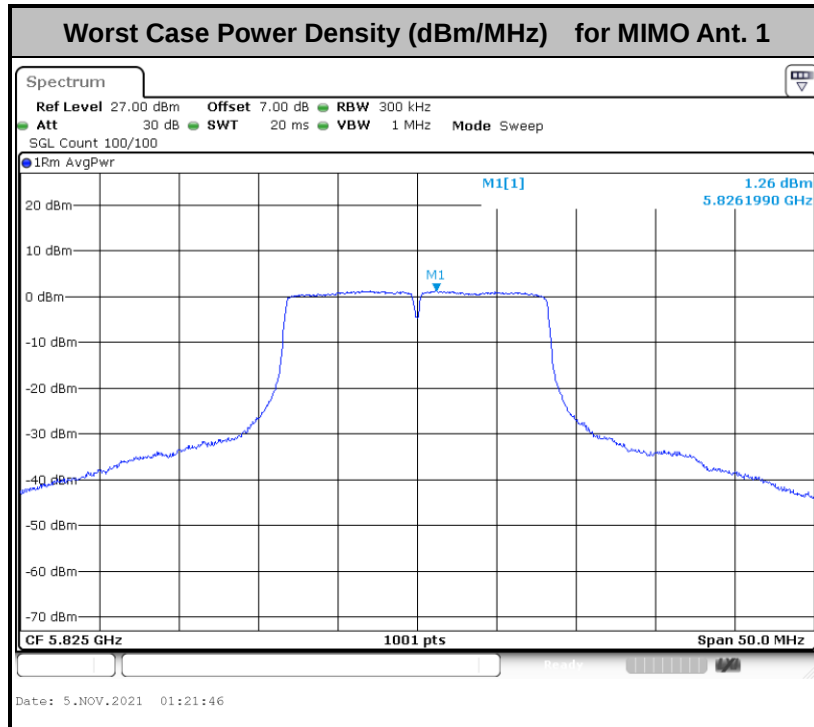




3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

<CDD Modes>



Note: MIMO Average Power Density (dB) = Measured value (Max ant1,ant2)+ Duty Factor + 10log2

3.4 Unwanted Emissions Measurement

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

3.4.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 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.

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

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

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

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

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

where

EIRP is the equivalent isotropically radiated power, in dBm

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

d_{Meas} is the measurement distance, in m

3.4.2 Measuring Instruments

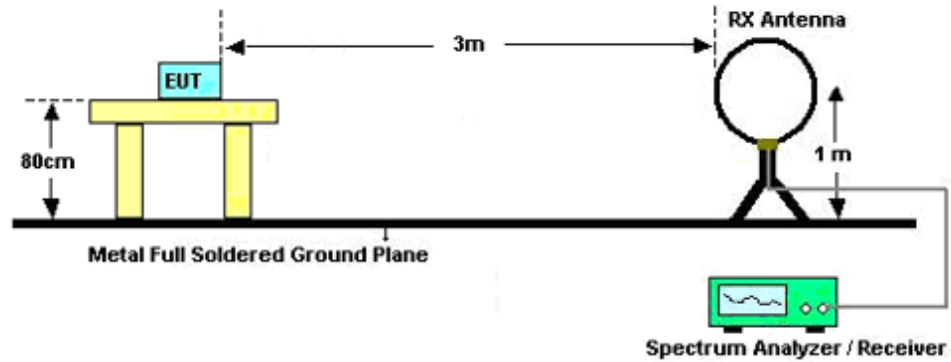
The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

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

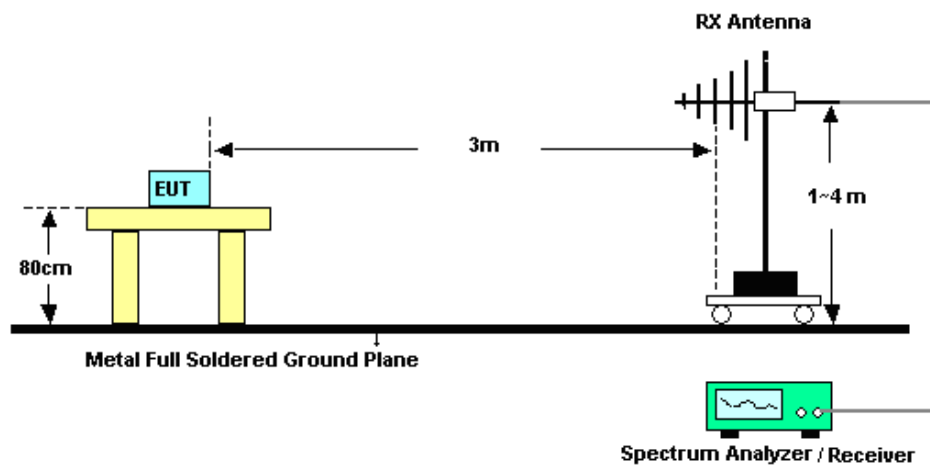
3.4.4 Test Setup

For radiated emissions below 30MHz



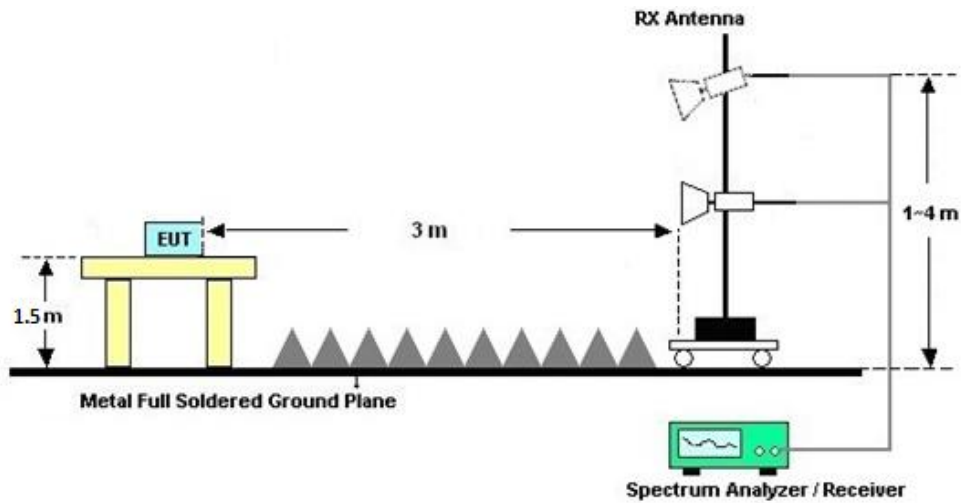
For radiated emissions from 30MHz to 1GHz

<CDD Mode>



For radiated emissions above 1GHz

<CDD Mode>



3.4.5 Test Results of Radiated 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 Band Edges

Please refer to Appendix C.

3.4.7 Duty Cycle

Please refer to Appendix D.

3.4.8 Test Result of Unwanted Radiated Emission (30MHz ~ 10th Harmonic or 40GHz, whichever is lower)

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 (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.

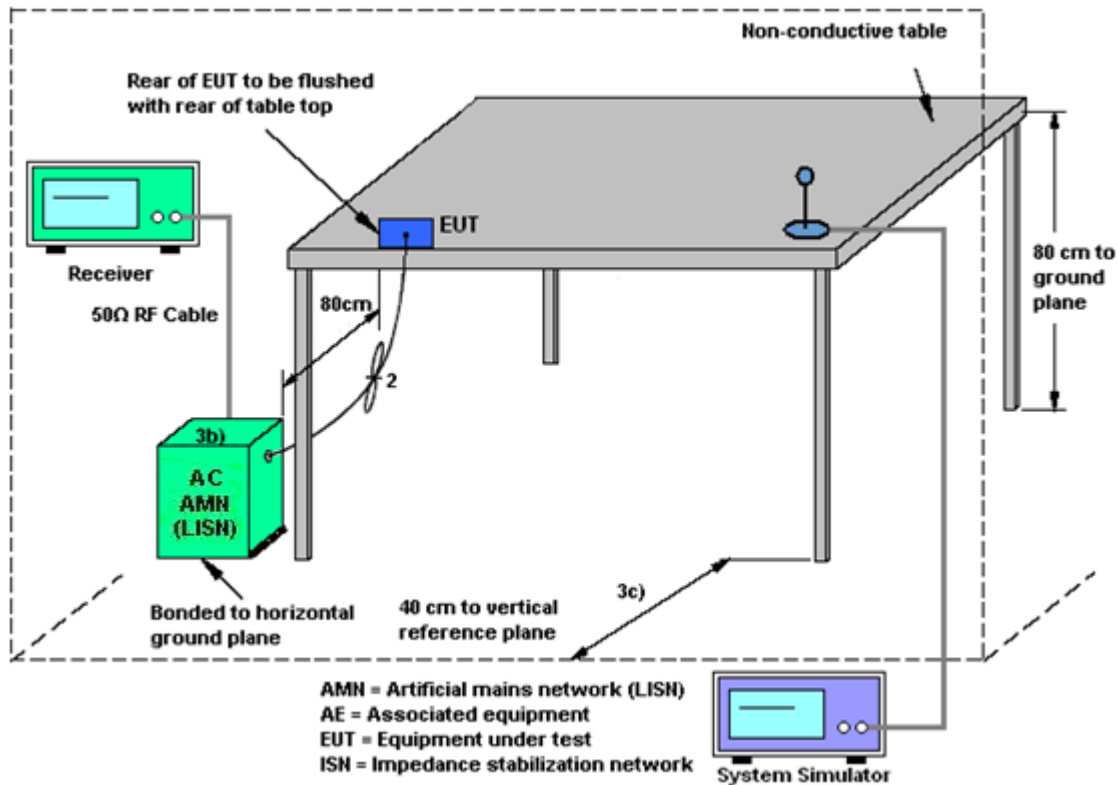
3.5.2 Measuring Instruments

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

Please refer to Appendix B.



3.6 Antenna Requirements

3.6.1 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.

3.6.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.6.3 Antenna Gain

<CDD Modes >

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 IV	-3.10	-3.10	-3.10	-0.09	0.00	0.00

$Power\ Limit\ Reduction = DG(Power) - 6dBi, (min = 0)$

$PSD\ Limit\ Reduction = DG(PSD) - 6dBi, (min = 0)$



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. 14, 2021	Nov. 05, 2021~ Dec. 10, 2021	Oct. 13, 2022	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 07, 2021	Nov. 05, 2021~ Dec. 10, 2021	Jan. 06, 2022	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 07, 2021	Nov. 05, 2021~ Dec. 10, 2021	Jan. 06, 2022	Conducted (TH01-KS)
EMI Test Receiver	Keysight	N9038A	MY56400004	3Hz~8.5GHz; Max 30dBm	Oct. 16, 2021	Nov. 23, 2021	Oct. 15, 2022	Radiation (03CH05-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz~44GHz, Max 30dB	Apr.13, 2021	Nov. 23, 2021	Apr. 12, 2022	Radiation (03CH05-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 30, 2021	Nov. 23, 2021	Oct. 29, 2022	Radiation (03CH05-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz~1GHz	Jun. 04, 2021	Nov. 23, 2021	Jun. 03, 2022	Radiation (03CH05-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00218652	1GHz~18GHz	Apr. 24, 2021	Nov. 23, 2021	Apr. 23, 2022	Radiation (03CH05-KS)
SHF-EHF Horn	Com-power	AH-840	101115	18GHz~40GHz	Nov. 8, 2021	Nov. 23, 2021	Nov. 07, 2022	Radiation (03CH05-KS)
Amplifier	SONOMA	310N	187289	9kHz~1GHz	Apr. 12, 2021	Nov. 23, 2021	Apr. 11, 2022	Radiation (03CH05-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 07, 2021	Nov. 23, 2021	Jan. 06, 2022	Radiation (03CH05-KS)
high gain Amplifier	MITEQ	AMF-7D-00101800-30-10P	2012228	1GHz~18GHz	Oct. 16, 2021	Nov. 23, 2021	Oct. 15, 2022	Radiation (03CH05-KS)
Amplifier	Keysight	83017A	MY53270316	500MHz~26.5GHz	Oct. 16, 2021	Nov. 23, 2021	Oct. 15, 2022	Radiation (03CH05-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Nov. 23, 2021	NCR	Radiation (03CH05-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Nov. 23, 2021	NCR	Radiation (03CH05-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Nov. 23, 2021	NCR	Radiation (03CH05-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 21, 2021	Nov. 30, 2021	Apr. 20, 2022	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 14, 2021	Nov. 30, 2021	Oct. 13, 2022	Conduction (CO01-KS)
AC LISN	R&S	ENV216	100334	9kHz~30MHz	Oct. 14, 2021	Nov. 30, 2021	Oct. 13, 2022	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 14, 2021	Nov. 30, 2021	Oct. 13, 2022	Conduction (CO01-KS)

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 Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.9dB
---	-------

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
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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
---	-------

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
---	-------



Appendix A. Conducted Test Results

A1. Conducted Test Results

Test Engineer:	Jiang Jun	Temperature:	21~25	°C
Test Date:	2021.11.5~2021.12.10	Relative Humidity:	51~54	%

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

U-NII-3 MIMO												
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	2	149	5745	16.48	16.48	19.48	20.03	16.30	16.30	0.5	Pass
11a	6Mbps	2	157	5785	16.48	16.48	19.43	19.53	16.30	16.35	0.5	Pass
11a	6Mbps	2	165	5825	16.48	16.68	19.38	20.68	16.30	16.30	0.5	Pass

TEST RESULTS DATA
Average Power Table

U-NII-3 MIMO												
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	2	149	5745	17.76	18.07	20.93	30.00		-3.10		Pass
11a	6Mbps	2	157	5785	17.70	18.38	21.06	30.00		-3.10		Pass
11a	6Mbps	2	165	5825	18.15	18.45	21.31	30.00		-3.10		Pass
HT20	MCS0	2	149	5745	17.48	18.06	20.79	30.00		-3.10		Pass
HT20	MCS0	2	157	5785	17.76	18.07	20.93	30.00		-3.10		Pass
HT20	MCS0	2	165	5825	18.01	18.42	21.23	30.00		-3.10		Pass
HT40	MCS0	2	151	5755	16.77	17.13	19.96	30.00		-3.10		Pass
HT40	MCS0	2	159	5795	16.82	17.24	20.05	30.00		-3.10		Pass
VHT20	MCS0	2	149	5745	17.42	17.96	20.71	30.00		-3.10		Pass
VHT20	MCS0	2	157	5785	17.71	17.98	20.86	30.00		-3.10		Pass
VHT20	MCS0	2	165	5825	17.93	18.27	21.11	30.00		-3.10		Pass
VHT40	MCS0	2	151	5755	16.72	16.97	19.86	30.00		-3.10		Pass
VHT40	MCS0	2	159	5795	16.78	16.99	19.90	30.00		-3.10		Pass
VHT80	MCS0	2	155	5775	15.55	16.12	18.85	30.00		-3.10		Pass

TEST RESULTS DATA
Power Spectral Density

U-NII-3 single antenna														
U-NII-3 MIMO														
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	10log (500kHz /RBW) Factor (dB)	Average Power Density (dBm/500kHz)			Average PSD Limit (dBm/500kHz)		DG (dBi)		Pass /Fail	
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1		Ant 2
11a	6Mbps	2	149	5745	2.22		3.07	3.12	6.13	30.00		-0.09		Pass
11a	6Mbps	2	157	5785	2.22		3.04	3.39	6.40	30.00		-0.09		Pass
11a	6Mbps	2	165	5825	2.22		3.48	3.58	6.59	30.00		-0.09		Pass

Note: PSD Sum = Max PSD(Ant. 1, Ant. 2) + 10 log (n)

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

U-NII-3 MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	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		
HE20	MCS0	2	149	5745	Full	18.93	18.98	21.18	21.48	18.50	18.55	0.5	Pass
HE20	MCS0	2	157	5785	Full	18.93	19.03	21.13	21.28	18.65	18.65	0.5	Pass
HE20	MCS0	2	165	5825	Full	18.93	19.03	20.93	21.48	18.90	18.85	0.5	Pass
HE40	MCS0	2	151	5755	Full	38.06	38.06	40.37	40.73	37.98	37.98	0.5	Pass
HE40	MCS0	2	159	5795	Full	37.96	38.06	40.46	40.73	37.98	37.62	0.5	Pass
HE80	MCS0	2	155	5775	Full	77.32	77.20	82.00	82.32	77.44	77.40	0.5	Pass

TEST RESULTS DATA
Average Power Table

U-NII-3 MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	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	
HE20	MCS0	2	149	5745	Full	17.52	18.07	20.81	30.00		-3.10		Pass
HE20	MCS0	2	149	5745	26/0	7.65	8.46	11.08	30.00		-3.10		Pass
HE20	MCS0	2	149	5745	52/37	10.43	11.32	13.91	30.00		-3.10		Pass
HE20	MCS0	2	149	5745	106/53	12.77	13.91	16.39	30.00		-3.10		Pass
HE20	MCS0	2	157	5785	Full	17.84	18.11	20.99	30.00		-3.10		Pass
HE20	MCS0	2	157	5785	26/4	7.44	8.58	11.06	30.00		-3.10		Pass
HE20	MCS0	2	157	5785	52/38	10.81	11.05	13.94	30.00		-3.10		Pass
HE20	MCS0	2	157	5785	106/53	13.01	13.85	16.46	30.00		-3.10		Pass
HE20	MCS0	2	165	5825	Full	18.07	18.47	21.28	30.00		-3.10		Pass
HE20	MCS0	2	165	5825	26/8	7.84	8.72	11.31	30.00		-3.10		Pass
HE20	MCS0	2	165	5825	52/40	11.01	11.79	14.43	30.00		-3.10		Pass
HE20	MCS0	2	165	5825	106/54	13.28	14.13	16.74	30.00		-3.10		Pass
HE40	MCS0	2	151	5755	Full	16.78	17.19	20.00	30.00		-3.10		Pass
HE40	MCS0	2	151	5755	242/61	12.62	13.82	16.27	30.00		-3.10		Pass
HE40	MCS0	2	159	5795	Full	16.85	17.31	20.10	30.00		-3.10		Pass
HE40	MCS0	2	159	5795	242/62	12.94	13.89	16.45	30.00		-3.10		Pass
HE80	MCS0	2	155	5775	Full	15.56	16.17	18.89	30.00		-3.10		Pass
HE80	MCS0	2	155	5775	484/65	12.33	12.98	15.68	30.00		-3.10		Pass
HE80	MCS0	2	155	5775	484/66	12.45	12.82	15.65	30.00		-3.10		Pass

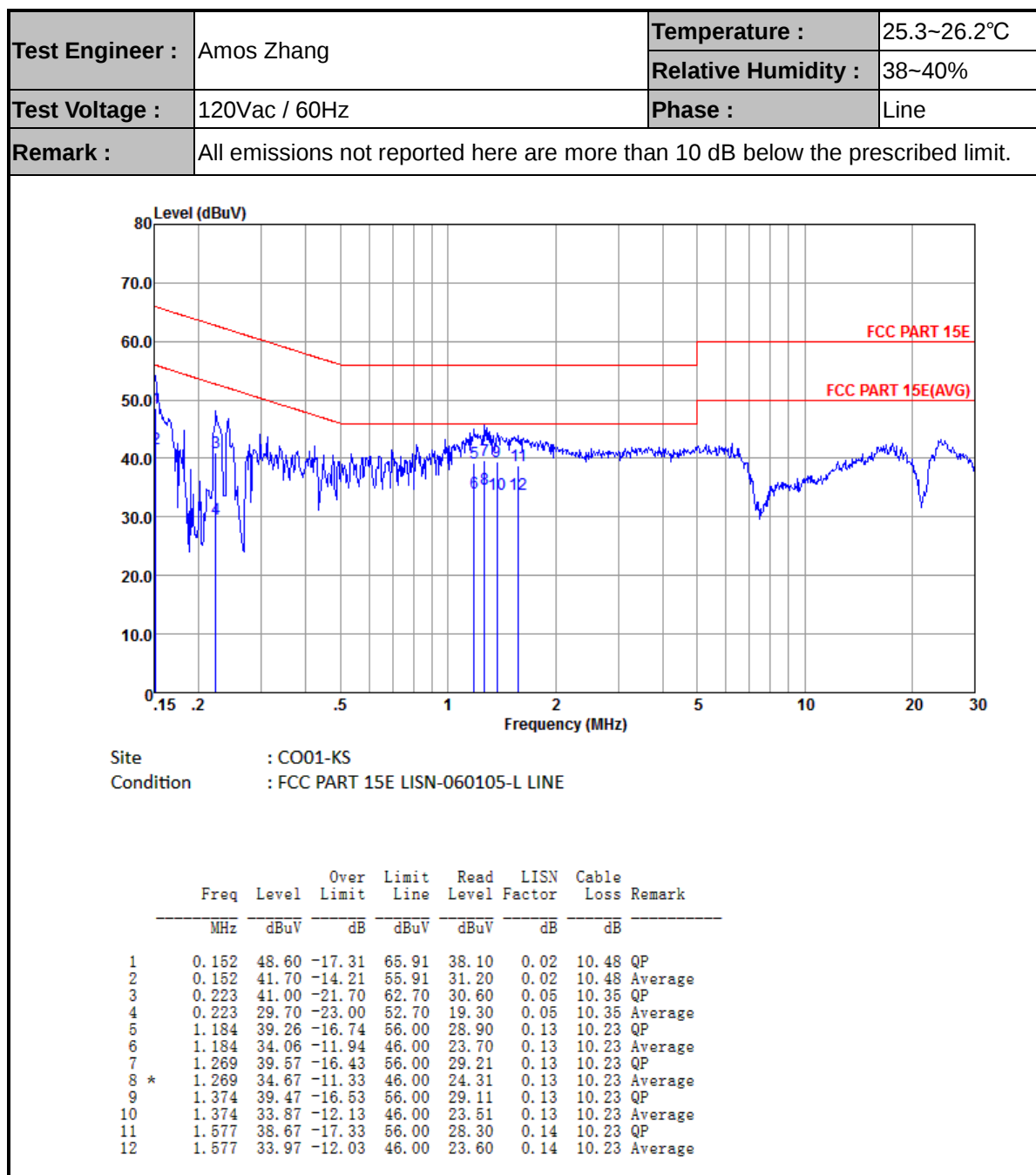
TEST RESULTS DATA
Power Spectral Density

U-NII-3 MIMO															
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	RU Config.	10log (500kHz /RBW) Factor (dB)		Average Power Density (dBm/500kHz)			Average PSD Limit (dBm/500kHz)		DG (dBi)		Pass./Fail
						Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
HE20	MCS0	2	149	5745	Full	2.22		1.94	2.41	5.42	30.00		-0.09		Pass
HE20	MCS0	2	149	5745	26/0	2.22		1.61	2.36	5.37	30.00		-0.09		Pass
HE20	MCS0	2	149	5745	52/37	2.22		1.51	2.26	5.27	30.00		-0.09		Pass
HE20	MCS0	2	149	5745	106/53	2.22		1.04	2.18	5.19	30.00		-0.09		Pass
HE20	MCS0	2	157	5785	Full	2.22		2.32	2.64	5.65	30.00		-0.09		Pass
HE20	MCS0	2	157	5785	26/4	2.22		1.31	2.63	5.64	30.00		-0.09		Pass
HE20	MCS0	2	157	5785	52/38	2.22		1.86	2.08	5.09	30.00		-0.09		Pass
HE20	MCS0	2	157	5785	106/53	2.22		1.28	2.19	5.20	30.00		-0.09		Pass
HE20	MCS0	2	165	5825	Full	2.22		2.85	2.92	5.93	30.00		-0.09		Pass
HE20	MCS0	2	165	5825	26/8	2.22		1.91	2.83	5.84	30.00		-0.09		Pass
HE20	MCS0	2	165	5825	52/40	2.22		2.02	2.91	5.92	30.00		-0.09		Pass
HE20	MCS0	2	165	5825	106/54	2.22		1.45	2.47	5.48	30.00		-0.09		Pass
HE40	MCS0	2	151	5755	Full	2.22		-1.62	-1.45	1.56	30.00		-0.09		Pass
HE40	MCS0	2	151	5755	242/61	2.22		-2.73	-1.68	1.33	30.00		-0.09		Pass
HE40	MCS0	2	159	5795	Full	2.22		-1.57	-1.11	1.90	30.00		-0.09		Pass
HE40	MCS0	2	159	5795	242/62	2.22		-2.39	-1.28	1.73	30.00		-0.09		Pass
HE80	MCS0	2	155	5775	Full	2.22		-5.55	-5.27	-2.26	30.00		-0.09		Pass
HE80	MCS0	2	155	5775	484/65	2.22		-5.86	-5.38	-2.33	30.00		-0.09		Pass
HE80	MCS0	2	155	5775	484/66	2.22		-5.93	-5.36	-2.31	30.00		-0.09		Pass

Note: PSD Sum = Max PSD(Ant. 1, Ant. 2) + 10 log (n)

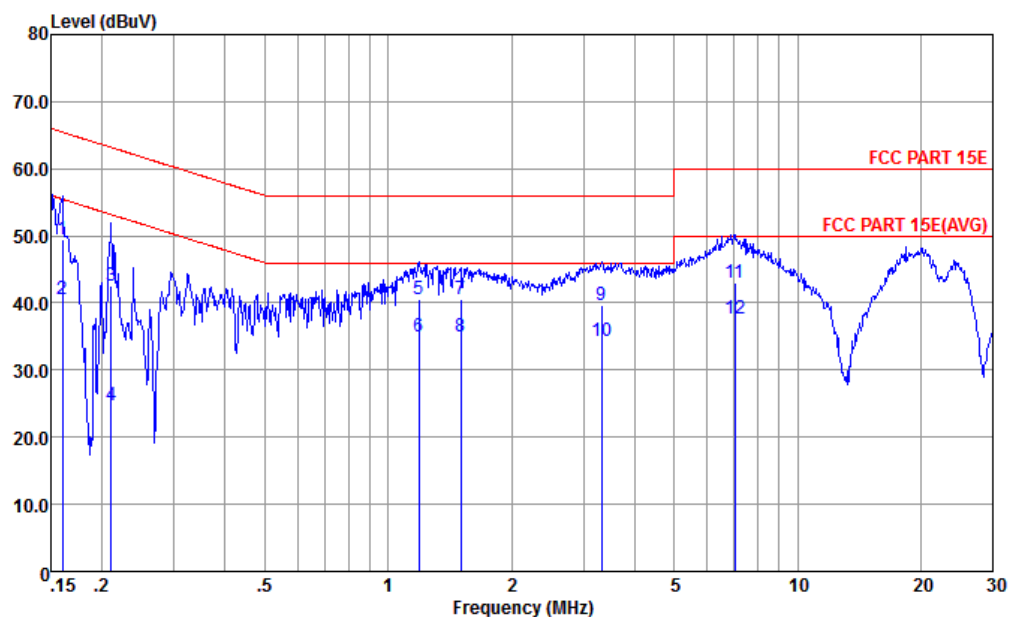


Appendix B. AC Conducted Emission Test Results





Test Engineer :	Amos Zhang	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-KS
Condition : FCC PART 15E LISN-060105-N NEUTRAL

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.160	49.46	-16.01	65.47	38.90	0.11	10.45	QP
2	0.160	40.46	-15.01	55.47	29.90	0.11	10.45	Average
3	0.211	42.56	-20.62	63.18	32.10	0.10	10.36	QP
4	0.211	24.66	-28.52	53.18	14.20	0.10	10.36	Average
5	1.191	40.56	-15.44	56.00	30.21	0.12	10.23	QP
6	1.191	34.96	-11.04	46.00	24.61	0.12	10.23	Average
7	1.503	40.56	-15.44	56.00	30.20	0.13	10.23	QP
8 *	1.503	34.96	-11.04	46.00	24.60	0.13	10.23	Average
9	3.328	39.70	-16.30	56.00	29.29	0.16	10.25	QP
10	3.328	34.30	-11.70	46.00	23.89	0.16	10.25	Average
11	7.025	43.10	-16.90	60.00	32.60	0.20	10.30	QP
12	7.025	37.60	-12.40	50.00	27.10	0.20	10.30	Average

Note:

1. Level(dBuV) = Read Level(dBuV) + LISN Factor(dB) + Cable Loss(dB)
2. Over Limit(dB) = Level(dBuV) – Limit Line(dBuV)



Appendix C. Radiated Spurious Emission

Band 3 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
5+6		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5637.6	56.1	-12.2	68.3	41.04	35.5	12.08	32.52	117	4	P	H
		5658.4	56.38	-18.16	74.54	41.28	35.53	12.09	32.52	117	4	P	H
		5720	57.41	-53.49	110.9	42.47	35.65	12.15	32.86	117	4	P	H
		5724.8	59.39	-62.45	121.84	44.45	35.65	12.15	32.86	117	4	P	H
		5740	110.27	-	-	95.4	35.68	12.16	32.97	117	4	P	H
		5740	102.47	-	-	87.6	35.68	12.16	32.97	117	4	A	H
		5611.6	56.3	-12	68.3	41.4	35.47	12.05	32.62	166	32	P	V
		5697.2	56.64	-46.6	103.24	41.68	35.59	12.12	32.75	166	32	P	V
		5720	56.76	-54.14	110.9	41.82	35.65	12.15	32.86	166	32	P	V
		5723.2	60.57	-57.63	118.2	45.63	35.65	12.15	32.86	166	32	P	V
		5746	107.14	-	-	92.27	35.68	12.16	32.97	166	32	P	V
		5746	99.68	-	-	84.81	35.68	12.16	32.97	166	32	A	V
802.11a CH 165 5825MHz		5852.8	65.37	-50.55	115.92	50.68	35.87	12.25	33.43	120	2	P	H
		5858	61.27	-48.79	110.06	46.54	35.9	12.26	33.43	120	2	P	H
		5916	56.55	-18.39	74.94	41.9	35.88	12.31	33.54	120	2	P	H
		5937.6	56.39	-11.91	68.3	41.8	35.87	12.32	33.6	120	2	P	H
		5818	110	-	-	95.29	35.81	12.22	33.32	120	2	P	H
		5818	102.02	-	-	87.31	35.81	12.22	33.32	120	2	A	H
		5851.6	59.71	-58.94	118.65	45.02	35.87	12.25	33.43	122	15	P	V
		5856.4	60.58	-49.93	110.51	45.85	35.9	12.26	33.43	122	15	P	V
		5879.2	55.97	-46.21	102.18	41.29	35.89	12.28	33.49	122	15	P	V
		5951.2	55.54	-12.76	68.3	41	35.86	12.34	33.66	122	15	P	V
		5830	106.61	-	-	91.85	35.84	12.24	33.32	122	15	P	V
		5830	99	-	-	84.24	35.84	12.24	33.32	122	15	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5725~5850MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 5+6	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 149 5745MHz		11489.48	45.05	-28.95	74	49.17	38.69	17.62	60.43	300	0	P	H
		11489.48	44.52	-29.48	74	48.64	38.69	17.62	60.43	300	0	P	V
802.11a CH 157 5785MHz		11569.56	45.92	-28.08	74	49.88	38.74	17.68	60.38	300	0	P	H
		11569.56	45.75	-28.25	74	49.71	38.74	17.68	60.38	300	0	P	V
802.11a CH 165 5825MHz		11649.64	45.23	-28.77	74	49.06	38.78	17.72	60.33	300	0	P	H
		11649.64	45.57	-28.43	74	49.4	38.78	17.72	60.33	300	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5725~5850MHz

WIFI 802.11ax HE20_Full (Band Edge @ 3m)

WIFI Ant. 5+6	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Full CH 149 5745MHz		5644	56.23	-12.07	68.3	41.17	35.5	12.08	32.52	117	3	P	H
		5676.8	56.23	-31.94	88.17	41.2	35.56	12.1	32.63	117	3	P	H
		5719.6	58.86	-51.93	110.79	43.92	35.65	12.15	32.86	117	3	P	H
		5723.2	59.49	-58.71	118.2	44.55	35.65	12.15	32.86	117	3	P	H
		5746	109.77	-	-	94.9	35.68	12.16	32.97	117	3	P	H
		5746	102.28	-	-	87.41	35.68	12.16	32.97	117	3	A	H
		5606	57.13	-11.17	68.3	42.33	35.47	12.05	32.72	131	28	P	V
		5650.4	55.9	-12.7	68.6	40.8	35.53	12.09	32.52	131	28	P	V
		5720	62.07	-48.83	110.9	47.13	35.65	12.15	32.86	131	28	P	V
		5724.4	61.95	-58.98	120.93	47.01	35.65	12.15	32.86	131	28	P	V
		5752	107.07	-	-	92.14	35.72	12.18	32.97	131	28	P	V
		5752	98.04	-	-	83.11	35.72	12.18	32.97	131	28	A	V
802.11ax HE20 Full CH 165 5825MHz		5854.4	68.3	-43.97	112.27	53.57	35.9	12.26	33.43	149	353	P	H
		5858	70.8	-39.26	110.06	56.07	35.9	12.26	33.43	149	353	P	H
		5876.8	60.34	-43.62	103.96	45.66	35.89	12.28	33.49	149	353	P	H
		5943.6	55.53	-12.77	68.3	40.93	35.86	12.34	33.6	149	353	P	H
		5836	110.92	-	-	96.16	35.84	12.24	33.32	149	353	P	H
		5836	102.24	-	-	87.48	35.84	12.24	33.32	149	353	A	H
		5850.8	70.63	-49.85	120.48	55.94	35.87	12.25	33.43	195	17	P	V
		5856.4	66.33	-44.18	110.51	51.6	35.9	12.26	33.43	195	17	P	V
		5875.6	58.11	-46.74	104.85	43.43	35.89	12.28	33.49	195	17	P	V
		5941.2	56.58	-11.72	68.3	41.98	35.86	12.34	33.6	195	17	P	V
		5824	105.61	-	-	90.85	35.84	12.24	33.32	195	17	P	V
		5824	97.88	-	-	83.12	35.84	12.24	33.32	195	17	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5725~5850MHz

WIFI 802.11ax HE20 Full (Harmonic @ 3m)

WIFI Ant. 5+6	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Full		11489.48	45.66	-28.34	74	49.78	38.69	17.62	60.43	300	0	P	H
CH 149 5745MHz		11489.48	45.17	-28.83	74	49.29	38.69	17.62	60.43	300	0	P	V
802.11ax HE20 Full		11569.56	45.39	-28.61	74	49.35	38.74	17.68	60.38	300	0	P	H
CH 157 5785MHz		11569.56	44.32	-29.68	74	48.28	38.74	17.68	60.38	300	0	P	V
802.11ax HE20 Full		7560.56	48.54	-25.46	74	58.46	36.65	13.99	60.56	300	0	P	H
CH 165 5825MHz		11649.64	44.72	-29.28	74	48.55	38.78	17.72	60.33	300	0	P	H
		7560.56	49.22	-24.78	74	59.14	36.65	13.99	60.56	300	0	P	V
		11649.64	45.57	-28.43	74	49.4	38.78	17.72	60.33	300	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5725~5850MHz

WIFI 802.11ax HE20_Partial 26 (Band Edge @ 3m)

WIFI Ant. 5+6	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Partial 26/0 CH 149 5745MHz		5637.6	56.86	-11.44	68.3	41.8	35.5	12.08	32.52	140	5	P	H
		5670.4	56.68	-26.76	83.44	41.65	35.56	12.1	32.63	140	5	P	H
		5716.4	56.45	-53.44	109.89	41.56	35.62	12.13	32.86	140	5	P	H
		5720.8	55.92	-56.8	112.72	40.98	35.65	12.15	32.86	140	5	P	H
		5734	107.7	-	-	92.76	35.65	12.15	32.86	140	5	P	H
		5734	101.76	-	-	86.82	35.65	12.15	32.86	140	5	A	H
		5606	57.01	-11.29	68.3	42.21	35.47	12.05	32.72	299	34	P	V
		5657.2	55.44	-18.21	73.65	40.34	35.53	12.09	32.52	299	34	P	V
		5710.4	55.25	-52.96	108.21	40.25	35.62	12.13	32.75	299	34	P	V
		5720	53.91	-56.99	110.9	38.97	35.65	12.15	32.86	299	34	P	V
		5734	103	-	-	88.06	35.65	12.15	32.86	299	34	P	V
		5734	97.49	-	-	82.55	35.65	12.15	32.86	299	34	A	V
802.11ax HE20 Partial 26/8 CH 165 5825MHz		5851.2	56.31	-63.25	119.56	41.62	35.87	12.25	33.43	118	355	P	H
		5855.2	55.28	-55.56	110.84	40.55	35.9	12.26	33.43	118	355	P	H
		5892.8	55.73	-36.36	92.09	41.05	35.88	12.29	33.49	118	355	P	H
		5936	56.1	-12.2	68.3	41.51	35.87	12.32	33.6	118	355	P	H
		5836	109.58	-	-	94.82	35.84	12.24	33.32	118	355	P	H
		5836	101.58	-	-	86.82	35.84	12.24	33.32	118	355	A	H
		5851.2	54.65	-64.91	119.56	39.96	35.87	12.25	33.43	342	131	P	V
		5862	55.92	-53.02	108.94	41.19	35.9	12.26	33.43	342	131	P	V
		5920.4	56.58	-15.11	71.69	41.93	35.88	12.31	33.54	342	131	P	V
		5948.4	56.7	-11.6	68.3	42.16	35.86	12.34	33.66	342	131	P	V
		5836	104.43	-	-	89.67	35.84	12.24	33.32	342	131	P	V
		5836	96.69	-	-	81.93	35.84	12.24	33.32	342	131	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5725~5850MHz

WIFI 802.11ax HE20_Partial 52 (Band Edge @ 3m)

WIFI Ant. 5+6	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Partial 52/37 CH 149 5745MHz		5637.2	56.46	-11.84	68.3	41.4	35.5	12.08	32.52	129	6	P	H
		5652.8	56.75	-13.63	70.38	41.65	35.53	12.09	32.52	129	6	P	H
		5706.4	55.64	-51.45	107.09	40.64	35.62	12.13	32.75	129	6	P	H
		5723.6	55.05	-64.06	119.11	40.11	35.65	12.15	32.86	129	6	P	H
		5740	108.11	-	-	93.24	35.68	12.16	32.97	129	6	P	H
		5740	101.72	-	-	86.85	35.68	12.16	32.97	129	6	A	H
		5632.8	55.84	-12.46	68.3	40.88	35.5	12.08	32.62	273	133	P	V
		5658.8	57.1	-17.74	74.84	42	35.53	12.09	32.52	273	133	P	V
		5703.2	55.59	-50.61	106.2	40.59	35.62	12.13	32.75	273	133	P	V
		5720.8	56	-56.72	112.72	41.06	35.65	12.15	32.86	273	133	P	V
		5740	104.41	-	-	89.54	35.68	12.16	32.97	273	133	P	V
		5740	95.95	-	-	81.08	35.68	12.16	32.97	273	133	A	V
802.11ax HE20 Partial 52/40 CH 165 5825MHz		5851.6	55.72	-62.93	118.65	41.03	35.87	12.25	33.43	130	343	P	H
		5865.2	56.26	-51.78	108.04	41.53	35.9	12.26	33.43	130	343	P	H
		5876.4	56.24	-48.02	104.26	41.56	35.89	12.28	33.49	130	343	P	H
		5956.8	55.23	-13.07	68.3	40.69	35.85	12.35	33.66	130	343	P	H
		5836	108.8	-	-	94.04	35.84	12.24	33.32	130	343	P	H
		5836	102.05	-	-	87.29	35.84	12.24	33.32	130	343	A	H
		5850.4	55.32	-66.07	121.39	40.63	35.87	12.25	33.43	348	130	P	V
		5858.8	56.29	-53.54	109.83	41.56	35.9	12.26	33.43	348	130	P	V
		5888	55.25	-40.4	95.65	40.57	35.88	12.29	33.49	348	130	P	V
		5963.6	55.62	-12.68	68.3	41.08	35.85	12.35	33.66	348	130	P	V
		5830	105.12	-	-	90.36	35.84	12.24	33.32	348	130	P	V
		5830	97.9	-	-	83.14	35.84	12.24	33.32	348	130	A	V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												



Band 3 5725~5850MHz

WIFI 802.11ax HE20_Partial 106 (Band Edge @ 3m)

WIFI Ant. 5+6	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Partial 106/53 CH 149 5745MHz		5630.4	56.04	-12.26	68.3	41.12	35.48	12.06	32.62	116	27	P	H
		5694.8	56.4	-45.07	101.47	41.44	35.59	12.12	32.75	116	27	P	H
		5719.6	55.63	-55.16	110.79	40.69	35.65	12.15	32.86	116	27	P	H
		5723.6	56.06	-63.05	119.11	41.12	35.65	12.15	32.86	116	27	P	H
		5740	106.47	-	-	91.6	35.68	12.16	32.97	116	27	P	H
		5740	99.97	-	-	85.1	35.68	12.16	32.97	116	27	A	H
		5640	56.48	-11.82	68.3	41.42	35.5	12.08	32.52	288	124	P	V
		5674.4	56.29	-30.11	86.4	41.26	35.56	12.1	32.63	288	124	P	V
		5711.2	56.7	-51.74	108.44	41.7	35.62	12.13	32.75	288	124	P	V
		5720.8	55.3	-57.42	112.72	40.36	35.65	12.15	32.86	288	124	P	V
		5740	103.99	-	-	89.12	35.68	12.16	32.97	288	124	P	V
		5740	96.1	-	-	81.23	35.68	12.16	32.97	288	124	A	V
802.11ax HE20 Partial 106/54 CH 165 5825MHz		5852	55.94	-61.8	117.74	41.25	35.87	12.25	33.43	100	350	P	H
		5865.2	55.95	-52.09	108.04	41.22	35.9	12.26	33.43	100	350	P	H
		5899.6	56.02	-31.04	87.06	41.39	35.88	12.29	33.54	100	350	P	H
		5932	55.03	-13.27	68.3	40.44	35.87	12.32	33.6	100	350	P	H
		5830	108.11	-	-	93.35	35.84	12.24	33.32	100	350	P	H
		5830	100.69	-	-	85.93	35.84	12.24	33.32	100	350	A	H
		5851.2	55.07	-64.49	119.56	40.38	35.87	12.25	33.43	280	139	P	V
		5871.6	55.4	-50.85	106.25	40.72	35.89	12.28	33.49	280	139	P	V
		5877.2	55.45	-48.22	103.67	40.77	35.89	12.28	33.49	280	139	P	V
		5950.4	55.34	-12.96	68.3	40.8	35.86	12.34	33.66	280	139	P	V
		5830	104.82	-	-	90.06	35.84	12.24	33.32	280	139	P	V
		5830	96.72	-	-	81.96	35.84	12.24	33.32	280	139	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5725~5850MHz

WIFI 802.11ax HE40_Full (Band Edge @ 3m)

WIFI Ant. 5+6	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE40 Full CH 151 5755MHz		5624.8	55.81	-12.49	68.3	40.89	35.48	12.06	32.62	150	0	P	H
		5682.8	56.27	-36.34	92.61	41.24	35.56	12.1	32.63	150	0	P	H
		5717.2	60.07	-50.05	110.12	45.18	35.62	12.13	32.86	150	0	P	H
		5721.2	58.7	-54.94	113.64	43.76	35.65	12.15	32.86	150	0	P	H
		5746	108.43	-	-	93.56	35.68	12.16	32.97	150	0	P	H
		5746	98.9	-	-	84.03	35.68	12.16	32.97	150	0	A	H
		5852	56.79	-60.95	117.74	42.1	35.87	12.25	33.43	150	0	P	H
		5858	55.82	-54.24	110.06	41.09	35.9	12.26	33.43	150	0	P	H
		5876.4	56.89	-47.37	104.26	42.21	35.89	12.28	33.49	150	0	P	H
		5962.4	55.5	-12.8	68.3	40.96	35.85	12.35	33.66	150	0	P	H
		5605.2	56.43	-11.87	68.3	41.63	35.47	12.05	32.72	304	136	P	V
		5674.4	56.55	-29.85	86.4	41.52	35.56	12.1	32.63	304	136	P	V
		5718.8	57.57	-52.99	110.56	42.63	35.65	12.15	32.86	304	136	P	V
		5722.4	57.85	-58.52	116.37	42.91	35.65	12.15	32.86	304	136	P	V
		5764	101.64	-	-	86.71	35.72	12.18	32.97	304	136	P	V
		5764	94.02	-	-	79.09	35.72	12.18	32.97	304	136	A	V
		5850.8	55.24	-65.24	120.48	40.55	35.87	12.25	33.43	304	136	P	V
		5869.6	55.6	-51.21	106.81	40.93	35.9	12.26	33.49	304	136	P	V
		5886.8	55.22	-41.32	96.54	40.54	35.89	12.28	33.49	304	136	P	V
		5942.4	56.29	-12.01	68.3	41.69	35.86	12.34	33.6	304	136	P	V
802.11ax HE40 Full CH 159 5795MHz		5622.4	56.81	-11.49	68.3	41.89	35.48	12.06	32.62	158	360	P	H
		5682	56.7	-35.32	92.02	41.67	35.56	12.1	32.63	158	360	P	H
		5701.6	55.85	-49.9	105.75	40.85	35.62	12.13	32.75	158	360	P	H
		5722	54.89	-60.57	115.46	39.95	35.65	12.15	32.86	158	360	P	H
		5788	106.45	-	-	91.55	35.78	12.21	33.09	158	360	P	H
		5788	98.33	-	-	83.43	35.78	12.21	33.09	158	360	A	H
		5852.8	55.68	-60.24	115.92	40.99	35.87	12.25	33.43	158	360	P	H
		5864.4	55.92	-52.35	108.27	41.19	35.9	12.26	33.43	158	360	P	H
		5885.6	56.92	-40.51	97.43	42.24	35.89	12.28	33.49	158	360	P	H
		5929.6	55.19	-13.11	68.3	40.6	35.87	12.32	33.6	158	360	P	H



		5623.2	56.49	-11.81	68.3	41.57	35.48	12.06	32.62	304	135	P	V
		5662.4	55.97	-21.54	77.51	40.98	35.53	12.09	32.63	304	135	P	V
		5710	55.63	-52.47	108.1	40.63	35.62	12.13	32.75	304	135	P	V
		5722.4	54.66	-61.71	116.37	39.72	35.65	12.15	32.86	304	135	P	V
		5806	102.19	-	-	87.36	35.81	12.22	33.2	304	135	P	V
		5806	92.7	-----	-----	77.87	35.81	12.22	33.2	304	135	A	V
		5853.6	55.1	-58.99	114.09	40.37	35.9	12.26	33.43	304	135	P	V
		5870	57.82	-48.88	106.7	43.15	35.9	12.26	33.49	304	135	P	V
		5909.6	55.29	-24.37	79.66	40.64	35.88	12.31	33.54	304	135	P	V
		5962.4	55.31	-12.99	68.3	40.77	35.85	12.35	33.66	304	135	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5725~5850MHz

WIFI 802.11ax HE40_Full (Harmonic @ 3m)

WIFI Ant. 5+6	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE40 Full		11509.5	45.24	-28.76	74	49.34	38.7	17.63	60.43	300	0	P	H
CH 151 5755MHz		11509.5	44.78	-29.22	74	48.88	38.7	17.63	60.43	300	0	P	V
802.11ax HE40 Full		11589.58	44.82	-29.18	74	48.75	38.75	17.69	60.37	300	0	P	H
CH 159 5795MHz		11589.58	44.55	-29.45	74	48.48	38.75	17.69	60.37	300	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5725~5850MHz

WIFI 802.11ax HE40_Partial 242 (Band Edge @ 3m)

WIFI Ant. 5+6	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE40 Partial 242/61 CH 151 5755MHz		5643.2	55.58	-12.72	68.3	40.52	35.5	12.08	32.52	136	18	P	H
		5690	55.89	-42.04	97.93	40.93	35.59	12.12	32.75	136	18	P	H
		5713.6	55.68	-53.43	109.11	40.79	35.62	12.13	32.86	136	18	P	H
		5722.4	56.71	-59.66	116.37	41.77	35.65	12.15	32.86	136	18	P	H
		5851.6	54.7	-63.95	118.65	40.01	35.87	12.25	33.43	136	18	P	H
		5874.4	54.9	-50.57	105.47	40.22	35.89	12.28	33.49	136	18	P	H
		5887.2	56.89	-39.35	96.24	42.21	35.89	12.28	33.49	136	18	P	H
		5932.8	55.49	-12.81	68.3	40.9	35.87	12.32	33.6	136	18	P	H
		5746	105.72	-	-	90.85	35.68	12.16	32.97	136	18	P	H
		5746	97	-	-	82.13	35.68	12.16	32.97	136	18	A	H
		5634	56.53	-11.77	68.3	41.57	35.5	12.08	32.62	289	142	P	V
		5654	55.91	-15.36	71.27	40.81	35.53	12.09	32.52	289	142	P	V
		5718.4	57.29	-53.16	110.45	42.35	35.65	12.15	32.86	289	142	P	V
		5720.4	57	-54.81	111.81	42.06	35.65	12.15	32.86	289	142	P	V
		5853.2	55.06	-59.94	115	40.37	35.87	12.25	33.43	289	142	P	V
		5858.8	55.27	-54.56	109.83	40.54	35.9	12.26	33.43	289	142	P	V
		5880.8	55.69	-45.3	100.99	41.01	35.89	12.28	33.49	289	142	P	V
		5934.8	56.78	-11.52	68.3	42.19	35.87	12.32	33.6	289	142	P	V
		5752	100.5	-	-	85.57	35.72	12.18	32.97	289	142	P	V
		5752	93.04	-	-	78.11	35.72	12.18	32.97	289	142	A	V
802.11ax HE40 Partial 242/62 CH 159 5795MHz		5622.8	55.8	-12.5	68.3	40.88	35.48	12.06	32.62	124	25	P	H
		5668	56.54	-25.12	81.66	41.51	35.56	12.1	32.63	124	25	P	H
		5709.6	55.52	-52.47	107.99	40.52	35.62	12.13	32.75	124	25	P	H
		5724	55.1	-64.92	120.02	40.16	35.65	12.15	32.86	124	25	P	H
		5854.4	54.88	-57.39	112.27	40.15	35.9	12.26	33.43	124	25	P	H
		5872.8	55.79	-50.13	105.92	41.11	35.89	12.28	33.49	124	25	P	H
		5881.6	56.64	-43.76	100.4	41.96	35.89	12.28	33.49	124	25	P	H
		5939.2	55.44	-12.86	68.3	40.84	35.86	12.34	33.6	124	25	P	H
		5812	104.75	-	-	89.92	35.81	12.22	33.2	124	25	P	H
		5812	96.89	-	-	82.06	35.81	12.22	33.2	124	25	A	H



		5619.6	57.42	-10.88	68.3	42.5	35.48	12.06	32.62	201	24	P	V
		5674	56.68	-29.42	86.1	41.65	35.56	12.1	32.63	201	24	P	V
		5710.8	56.85	-51.48	108.33	41.85	35.62	12.13	32.75	201	24	P	V
		5724.8	54.48	-67.36	121.84	39.54	35.65	12.15	32.86	201	24	P	V
		5852	56.36	-61.38	117.74	41.67	35.87	12.25	33.43	201	24	P	V
		5856	55.15	-55.47	110.62	40.42	35.9	12.26	33.43	201	24	P	V
		5921.6	55.48	-15.33	70.81	40.89	35.87	12.32	33.6	201	24	P	V
		5953.2	54.94	-13.36	68.3	40.4	35.86	12.34	33.66	201	24	P	V
		5800	100.9	-	-	86.11	35.78	12.21	33.2	201	24	P	V
		5800	93.53	-	-	78.74	35.78	12.21	33.2	201	24	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5725~5850MHz

WIFI 802.11ax HE80_Full (Band Edge @ 3m)

WIFI Ant. 5+6	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE80 Full CH 155 5775MHz		5612.8	56.47	-11.83	68.3	41.57	35.47	12.05	32.62	151	0	P	H
		5686.8	58.59	-36.97	95.56	43.51	35.59	12.12	32.63	151	0	P	H
		5707.2	58.75	-48.57	107.32	43.75	35.62	12.13	32.75	151	0	P	H
		5724.8	59.08	-62.76	121.84	44.14	35.65	12.15	32.86	151	0	P	H
		5776	104.2	-	-	89.35	35.75	12.19	33.09	151	0	P	H
		5776	94.75	-	-	79.9	35.75	12.19	33.09	151	0	A	H
		5854.4	56.89	-55.38	112.27	42.16	35.9	12.26	33.43	151	0	P	H
		5856.8	57.61	-52.79	110.4	42.88	35.9	12.26	33.43	151	0	P	H
		5883.6	56.39	-42.52	98.91	41.71	35.89	12.28	33.49	151	0	P	H
		5937.6	54.98	-13.32	68.3	40.39	35.87	12.32	33.6	151	0	P	H
		5614.4	57.13	-11.17	68.3	42.23	35.47	12.05	32.62	281	135	P	V
		5654.8	56.25	-15.62	71.87	41.15	35.53	12.09	32.52	281	135	P	V
		5705.2	56.29	-50.47	106.76	41.29	35.62	12.13	32.75	281	135	P	V
		5721.6	57.17	-57.38	114.55	42.23	35.65	12.15	32.86	281	135	P	V
		5782	99.27	-	-	84.42	35.75	12.19	33.09	281	135	P	V
		5782	89.76	-	-	74.91	35.75	12.19	33.09	281	135	A	V
		5853.2	55.19	-59.81	115	40.5	35.87	12.25	33.43	281	135	P	V
		5856.8	55.23	-55.17	110.4	40.5	35.9	12.26	33.43	281	135	P	V
		5911.2	56.33	-22.15	78.48	41.68	35.88	12.31	33.54	281	135	P	V
		5963.6	55.52	-12.78	68.3	40.98	35.85	12.35	33.66	281	135	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 3 5725~5850MHz****WIFI 802.11ax HE80_Full (Harmonic @ 3m)**

WIFI Ant. 5+6	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE80 Full		11549.54	44.9	-29.1	74	48.9	38.73	17.66	60.39	300	0	P	H
CH 155 5775MHz		11549.54	44.59	-29.41	74	48.59	38.73	17.66	60.39	300	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5725~5850MHz

WIFI 802.11ax HE80_Partial 484 (Band Edge @ 3m)

WIFI Ant. 5+6	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE80 Partial 484/65 CH 155 5775MHz		5632.8	56.63	-11.67	68.3	41.67	35.5	12.08	32.62	137	353	P	H
		5689.6	56.35	-41.28	97.63	41.39	35.59	12.12	32.75	137	353	P	H
		5716.4	64.76	-45.13	109.89	49.87	35.62	12.13	32.86	137	353	P	H
		5724.8	66.62	-55.22	121.84	51.68	35.65	12.15	32.86	137	353	P	H
		5852.8	54.73	-61.19	115.92	40.04	35.87	12.25	33.43	137	353	P	H
		5859.6	56.25	-53.36	109.61	41.52	35.9	12.26	33.43	137	353	P	H
		5911.2	55.5	-22.98	78.48	40.85	35.88	12.31	33.54	137	353	P	H
		5930.4	55.01	-13.29	68.3	40.42	35.87	12.32	33.6	137	353	P	H
		5752	102.01	-	-	87.08	35.72	12.18	32.97	137	353	P	H
		5752	93.73	-	-	78.8	35.72	12.18	32.97	137	353	A	H
		5636.8	56.63	-11.67	68.3	41.57	35.5	12.08	32.52	289	143	P	V
		5679.2	56.67	-33.28	89.95	41.64	35.56	12.1	32.63	289	143	P	V
		5716	60.19	-49.59	109.78	45.3	35.62	12.13	32.86	289	143	P	V
		5720.8	63.24	-49.48	112.72	48.3	35.65	12.15	32.86	289	143	P	V
		5850.8	54.35	-66.13	120.48	39.66	35.87	12.25	33.43	289	143	P	V
		5864	55.74	-52.64	108.38	41.01	35.9	12.26	33.43	289	143	P	V
		5912	55.94	-21.95	77.89	41.29	35.88	12.31	33.54	289	143	P	V
		5948.4	55.64	-12.66	68.3	41.1	35.86	12.34	33.66	289	143	P	V
		5752	98.26	-	-	83.33	35.72	12.18	32.97	289	143	P	V
		5752	90.14	-	-	75.21	35.72	12.18	32.97	289	143	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



WIFI Ant. 5+6	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE80 Partial 484/66 CH 155 5775MHz		5632	56.07	-12.23	68.3	41.15	35.48	12.06	32.62	126	357	P	H
		5681.2	55.41	-36.02	91.43	40.38	35.56	12.1	32.63	126	357	P	H
		5714.4	56.87	-52.46	109.33	41.98	35.62	12.13	32.86	126	357	P	H
		5720.4	59.27	-52.54	111.81	44.33	35.65	12.15	32.86	126	357	P	H
		5853.6	53.92	-60.17	114.09	39.19	35.9	12.26	33.43	126	357	P	H
		5872	56.56	-49.58	106.14	41.88	35.89	12.28	33.49	126	357	P	H
		5893.6	56.92	-34.58	91.5	42.24	35.88	12.29	33.49	126	357	P	H
		5948.8	55.96	-12.34	68.3	41.42	35.86	12.34	33.66	126	357	P	H
		5788	101.91	-	-	87.01	35.78	12.21	33.09	126	357	P	H
		5788	94.76	-	-	79.86	35.78	12.21	33.09	126	357	A	H
		5642.8	56.32	-11.98	68.3	41.26	35.5	12.08	32.52	284	143	P	V
		5684	56.55	-36.95	93.5	41.47	35.59	12.12	32.63	284	143	P	V
		5713.2	57.07	-51.93	109	42.18	35.62	12.13	32.86	284	143	P	V
		5724.4	58.97	-61.96	120.93	44.03	35.65	12.15	32.86	284	143	P	V
		5854	55.75	-57.43	113.18	41.02	35.9	12.26	33.43	284	143	P	V
		5874.8	55.79	-49.57	105.36	41.11	35.89	12.28	33.49	284	143	P	V
		5896.8	55.54	-33.59	89.13	40.91	35.88	12.29	33.54	284	143	P	V
		5943.2	55	-13.3	68.3	40.4	35.86	12.34	33.6	284	143	P	V
		5794	97.35	-	-	82.56	35.78	12.21	33.2	284	143	P	V
		5794	89.19	-	-	74.4	35.78	12.21	33.2	284	143	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

Band 3 5725~5850MHz

WIFI 802.11ax HE40_Partial 242 (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preampl Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
5+6		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ax HE40 Partial 242/62 CH 159 LF		45.52	28.05	-11.95	40	43.02	16.92	1.03	32.92	-	-	P	H
		95.96	25.72	-17.78	43.5	39.72	17.26	1.48	32.74	-	-	P	H
		182.29	20.41	-23.09	43.5	34.63	16.72	2.05	32.99	-	-	P	H
		303.54	20.51	-25.49	46	30.46	20.29	2.66	32.9	-	-	P	H
		472.32	23.81	-22.19	46	29.23	24	3.32	32.74	-	-	P	H
		759.44	27.04	-18.96	46	28.9	26.58	4.22	32.66	-	-	P	H
		45.52	27.04	-12.96	40	42.01	16.92	1.03	32.92	-	-	P	V
		98.87	25.07	-18.43	43.5	38.54	17.89	1.5	32.86	-	-	P	V
		184.23	20.82	-22.68	43.5	35.09	16.68	2.06	33.01	-	-	P	V
		416.06	22.17	-23.83	46	28.84	22.99	3.11	32.77	-	-	P	V
		686.69	26.04	-19.96	46	29.05	25.75	4.01	32.77	-	-	P	V
		885.54	27.17	-18.83	46	27.81	27.34	4.55	32.53	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

**Note symbol**

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



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
5+6		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)
 = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
 = 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)
 = 55.45 (dBμV/m)
2. Over Limit(dB)
 = Level(dBμV/m) – Limit Line(dBμV/m)
 = 55.45(dBμV/m) – 74(dBμV/m)
 = -18.55(dB)

For Average Limit @ 2390MHz:

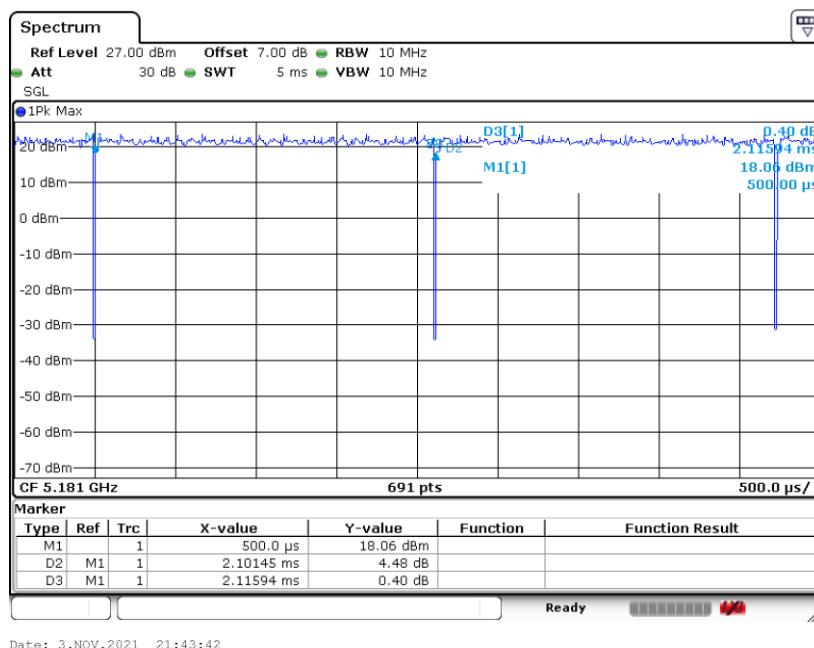
1. Level(dBμV/m)
 = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
 = 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)
 = 43.54 (dBμV/m)
2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)
 = 43.54(dBμV/m) – 54(dBμV/m)
 = -10.46(dB)

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

Appendix D. Duty Cycle Plots

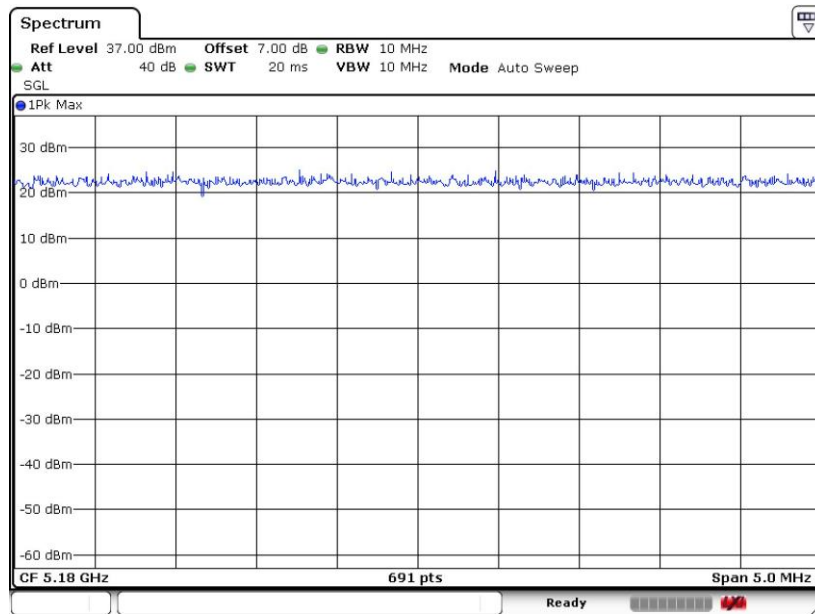
Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11a	99.32	-	-	10Hz
802.11ax HE20	100	-	-	10Hz
802.11ax HE40	100	-	-	10Hz
802.11ax HE80	100	-	-	10Hz
802.11ax HE160	100	-	-	10Hz

802.11a



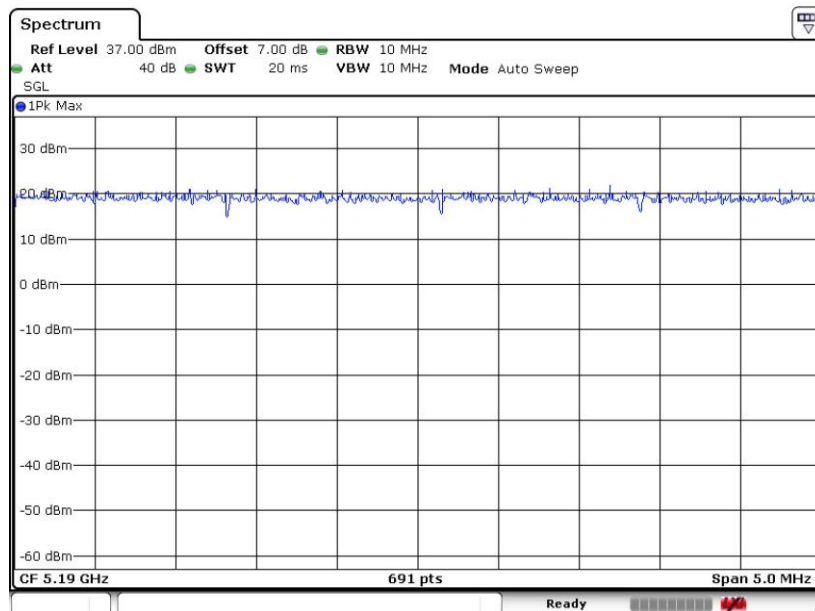


802.11ax HE20



Date: 31.OCT.2021 05:07:01

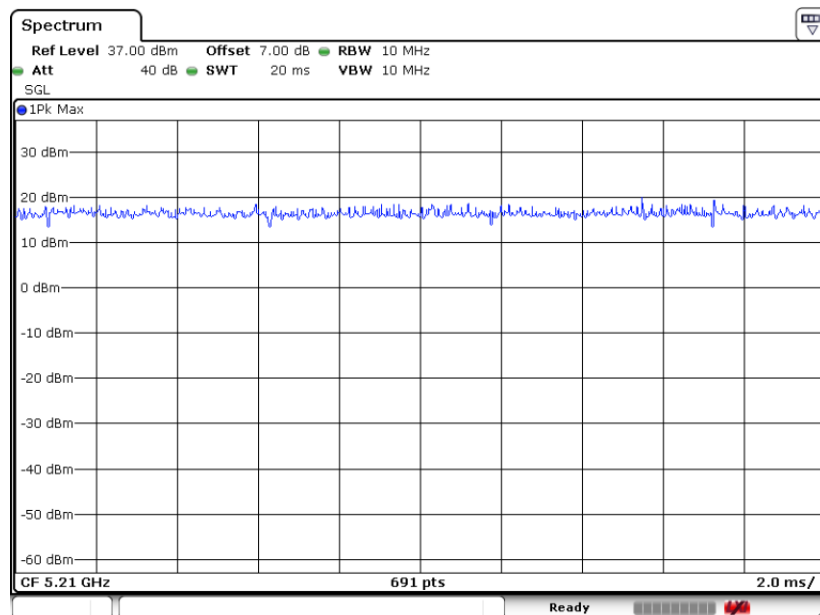
802.11ax HE40



Date: 31.OCT.2021 04:54:39

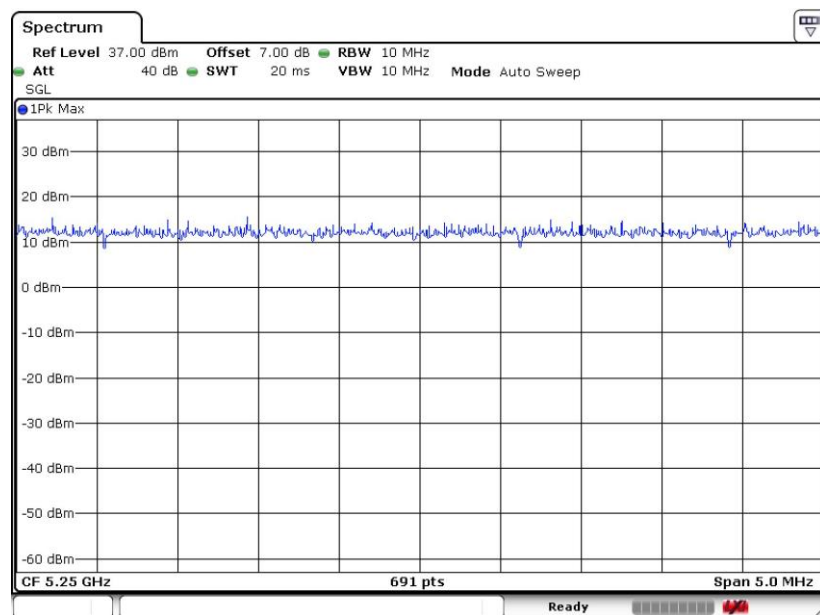


802.11ax HE80



Date: 24.NOV.2021 12:46:55

802.11ax HE160



Date: 31.OCT.2021 04:43:12