



FCC RF Test Report

APPLICANT : Motorola Mobility LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola
MODEL NAME : XT2243-1
FCC ID : IHDT56AF5
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure
TEST DATE(S) : Jun. 06, 2022 ~ Jun. 18, 2022

We, Sporton International Inc. (Shenzhen), would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

Jason Jia

Approved by: Jason Jia



Sporton International Inc. (ShenZhen)

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People's Republic of China



TABLE OF CONTENTS

REVISION HISTORY	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Applicant	5
1.2 Manufacturer	5
1.3 Product Feature of Equipment Under Test	5
1.4 Product Specification of Equipment Under Test	6
1.5 Modification of EUT	7
1.6 Specification of Accessory	7
1.7 Testing Location	7
1.8 Test Software	8
1.9 Applicable Standards	8
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	9
2.1 Carrier Frequency and Channel	9
2.2 Test Mode	10
2.3 Connection Diagram of Test System	11
2.4 Support Unit used in test configuration and system	11
2.5 EUT Operation Test Setup	11
2.6 Measurement Results Explanation Example	12
3 TEST RESULT	13
3.1 6dB and 26dB and 99% Occupied Bandwidth Measurement	13
3.2 Maximum Conducted Output Power Measurement	18
3.3 Power Spectral Density Measurement	19
3.4 Unwanted Emissions Measurement	22
3.5 AC Conducted Emission Measurement	27
3.6 Antenna Requirements	29
4 LIST OF MEASURING EQUIPMENT	30
5 UNCERTAINTY OF EVALUATION	31
APPENDIX A. CONDUCTED TEST RESULTS	
APPENDIX B. AC CONDUCTED EMISSION TEST RESULT	
APPENDIX C. RADIATED SPURIOUS EMISSION	
APPENDIX D. DUTY CYCLE PLOTS	
APPENDIX E. SETUP PHOTOGRAPHS	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR242301F	Rev. 01	Initial issue of report	Jun. 29, 2022

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 8.53 dB at 5646.600 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 6.75 dB at 0.150 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	XT2243-1
FCC ID	IHDT56AF5
IMEI Code	Conducted:353593830017874/353593830017882 Conduction: 353593830020878/353593830020886 Radiation: 353593830028236/353593830028244
HW Version	DVT2
SW Version	SSJ32.60
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 : 19.21 dBm / 0.0834 W 802.11n HT20 : 17.87 dBm / 0.0612 W 802.11n HT40 : 18.58 dBm / 0.0721 W 802.11ac VHT20: 18.89 dBm / 0.0774 W 802.11ac VHT40: 19.46 dBm / 0.0883 W 802.11ac VHT80: 18.11 dBm / 0.0647 W 802.11ax HE20 : 19.13 dBm / 0.0818 W 802.11ax HE40 : 17.84 dBm / 0.0608 W 802.11ax HE80 : 17.70 dBm / 0.0589 W		
99% Occupied Bandwidth		<Ant. 1> 802.11a : 16.33 MHz 802.11ac VHT20 : 17.53 MHz 802.11ac VHT40 : 36.06 MHz 802.11ac VHT80 : 75.04 MHz 802.11ax HE20 : 18.88 MHz 802.11ax HE40 : 37.86 MHz 802.11ax HE80 : 76.72 MHz <Ant. 2> 802.11a : 16.33 MHz 802.11ac VHT20 : 17.53 MHz 802.11ac VHT40 : 36.06 MHz 802.11ac VHT80 : 74.93 MHz 802.11ax HE20 : 18.93 MHz 802.11ax HE40 : 37.76 MHz 802.11ax HE80 : 76.60 MHz		
Type of Modulation		802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac/ax : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM)		
Antenna Type / Gain		<Ant. 1> : IFA Antenna with gain -7.30 dBi <Ant. 2> : IFA Antenna with gain -5.80 dBi		
Antenna Function Description			Ant. 1	Ant. 2
		802.11 a/n/ac/ax MIMO	V	V

Note:

- For 802.11n HT20 / ac VHT20 / ax HE20 and 802.11n HT40 / ac VHT40 / ax HE40mode, the whole testing have assessed only 802.11ax HE20/ac VHT40 by referring to their maximum conducted power.
- WIFI support MIMO only and STBC by manufacturer declared.
- WIFI do not support OFDMA partial RU tone mode.
- WLAN 5G Ant. 1 / Ant. 2 corresponding to EUT Photo Ant. 5 / Ant. 4



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 (US)	Brand Name	Motorola (Salcomp)	Model Name	MC-681L
AC Adapter (EU)	Brand Name	Motorola (Salcomp)	Model Name	MC-682L
AC Adapter (UK)	Brand Name	Motorola (Salcomp)	Model Name	MC-683L
AC Adapter (AU)	Brand Name	Motorola (Salcomp)	Model Name	MC-685L
AC Adapter (AR)	Brand Name	Motorola (Salcomp)	Model Name	MC-686L
AC Adapter (BR)	Brand Name	Motorola (Salcomp)	Model Name	MC-687L
AC Adapter (PRC)	Brand Name	Motorola (Salcomp)	Model Name	MC-688L
AC Adapter (CHILE)	Brand Name	Motorola (Salcomp)	Model Name	MC-689L
Battery 1	Brand Name	Motorola (ATL)	Model Name	NP44
Battery 2	Brand Name	Motorola(Sunwoda)	Model Name	NP44
Earphone 1	Brand Name	Motorola (Lyand)	Model Name	MD211(SH38D20195)
Earphone 2	Brand Name	Motorola (LCHSE)	Model Name	MD211(SH38D41948)
USB Cable	Brand Name	Motorola(Saibao)	Model Name	SC18D58980\SC18D24968
Type C to HDMI HDMI/USBC Cable 1	Brand Name	Motorola (Linxee)	Model Name	SC18D02146
Type C to HDMI HDMI/USBC Cable 2	Brand Name	Motorola(Linxee)	Model Name	SC18D38847

1.7 Testing Location

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 TH01-SZ	CN1256	421272



Test Firm	Sporton International Inc. (Shenzhen)		
Test Location	Site	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.
	03CH04-SZ	CN1256	421272

1.8 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH04-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.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

Remark:

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

2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (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)
5745-5825 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.

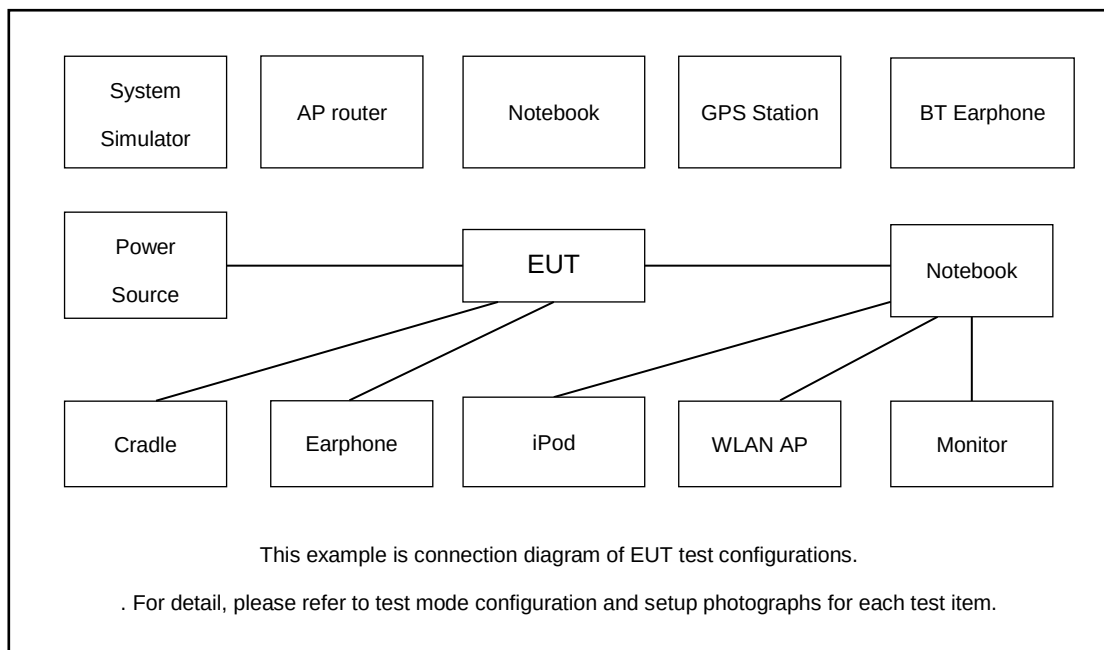
MIMO Mode

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0
802.11ac VHT80	MCS0
802.11ax HE20	MCS0
802.11ax HE40	MCS0
802.11ax HE80	MCS0

AC Conducted Emission	Mode 1 : GSM850 Idle+ Bluetooth Link+ WLAN Link(5G)+ USB Cable (Charging from Adapter)+ Battery 1
--------------------------------------	---

Ch. #		U-NII-3 : 5745-5825 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	-

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

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

2.5 EUT Operation Test Setup

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

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 2.8 dB and 10dB attenuator.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 2.8 + 10 = 12.8 \text{ (dB)}\end{aligned}$$

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.

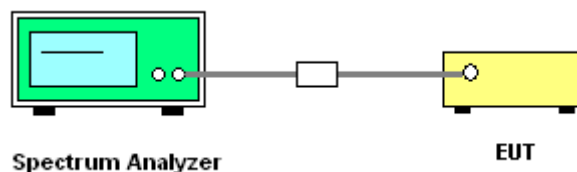
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

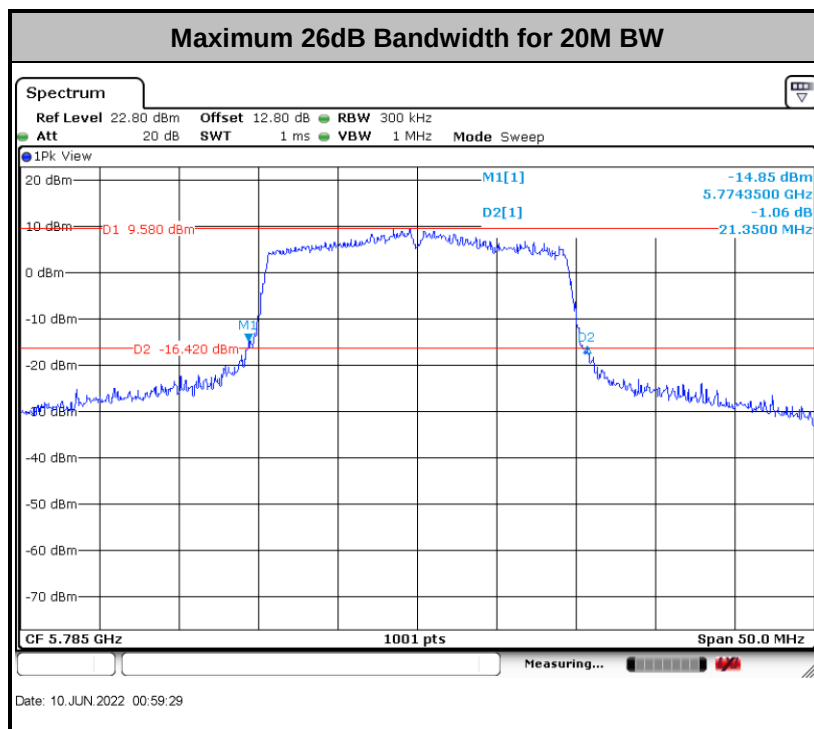
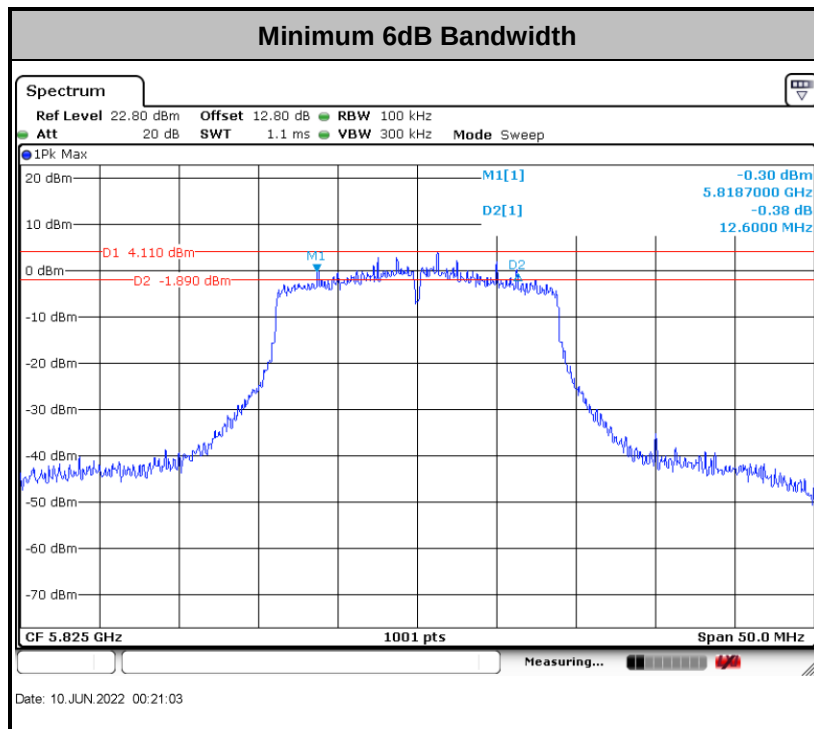
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section C) Emission bandwidth for the band 5.725-5.85GHz
2. For 6dB BW, Set RBW = 100kHz.
For 26dB BW, Set RBW = approximately 1% of the emission bandwidth.
For 99% OBW, Set RBW = 1% to 5% of the OBW.
3. For 26dB BW, Set the VBW > RBW.
For 6dB BW & 99% OBW, 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.

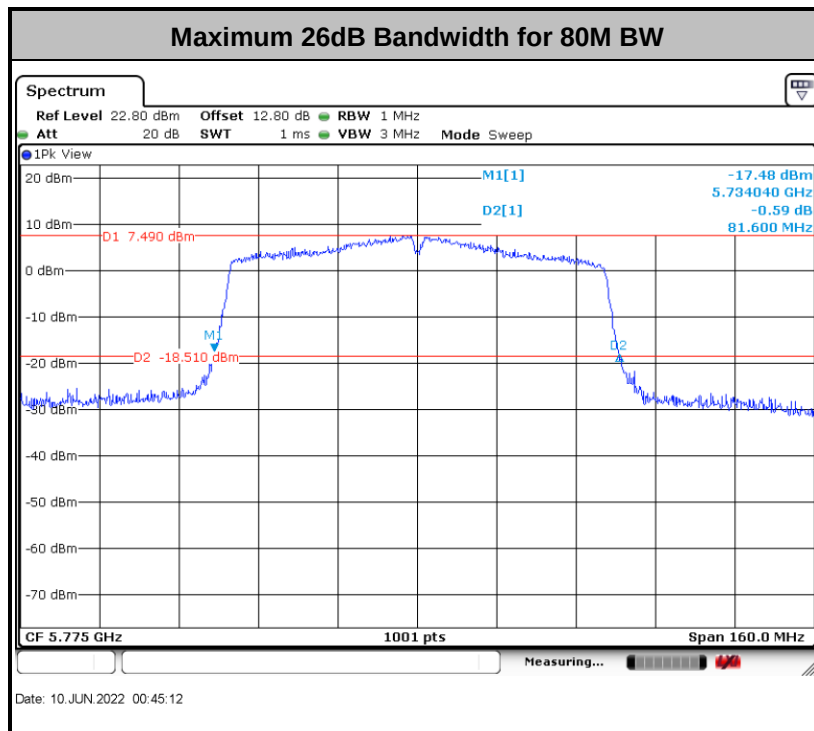
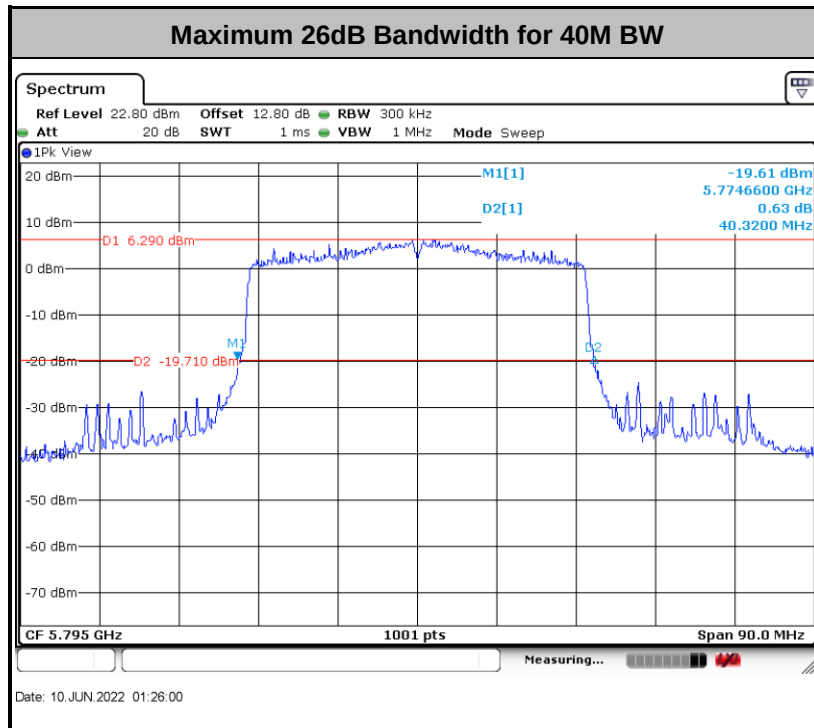
3.1.4 Test Setup

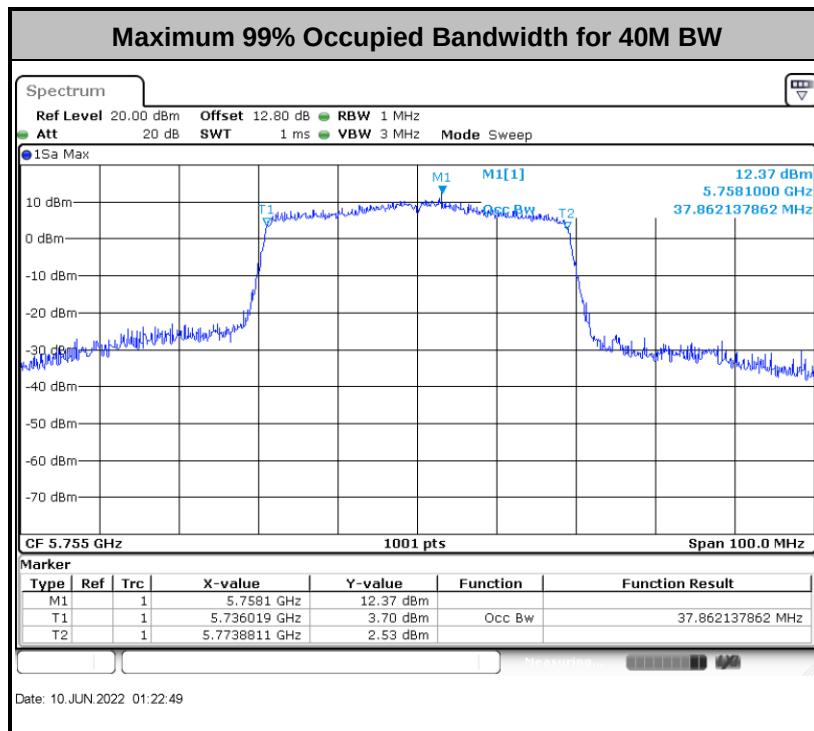
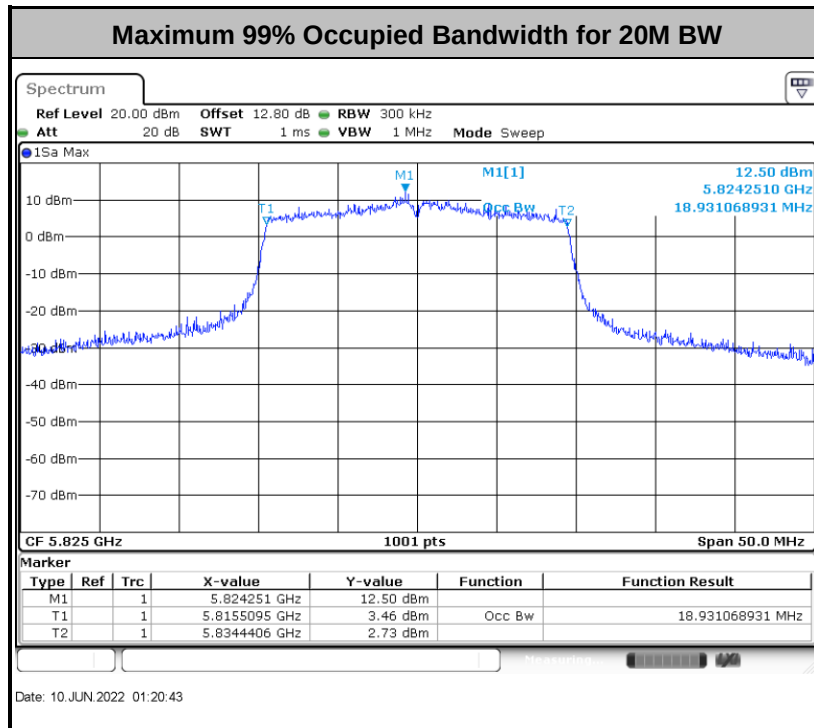


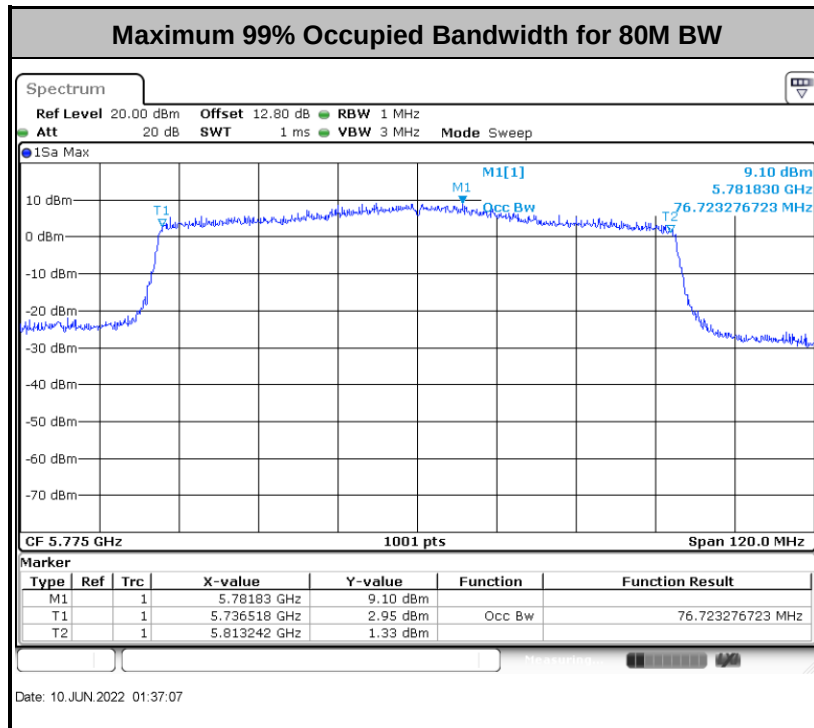
3.1.5 Test Result of 6dB Bandwidth

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

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.

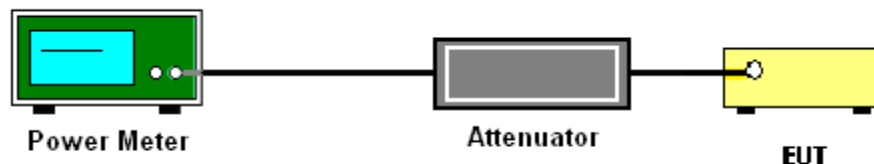
3.2.3 Test Procedures

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.

Method SA-2

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

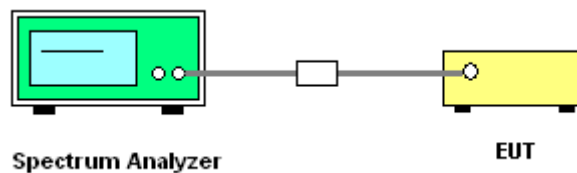
- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz.
- Set VBW $\geq$ 1 MHz.
- Number of points in sweep $\geq$ 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- Add $10 \log(500\text{kHz}/\text{RBW})$ 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.

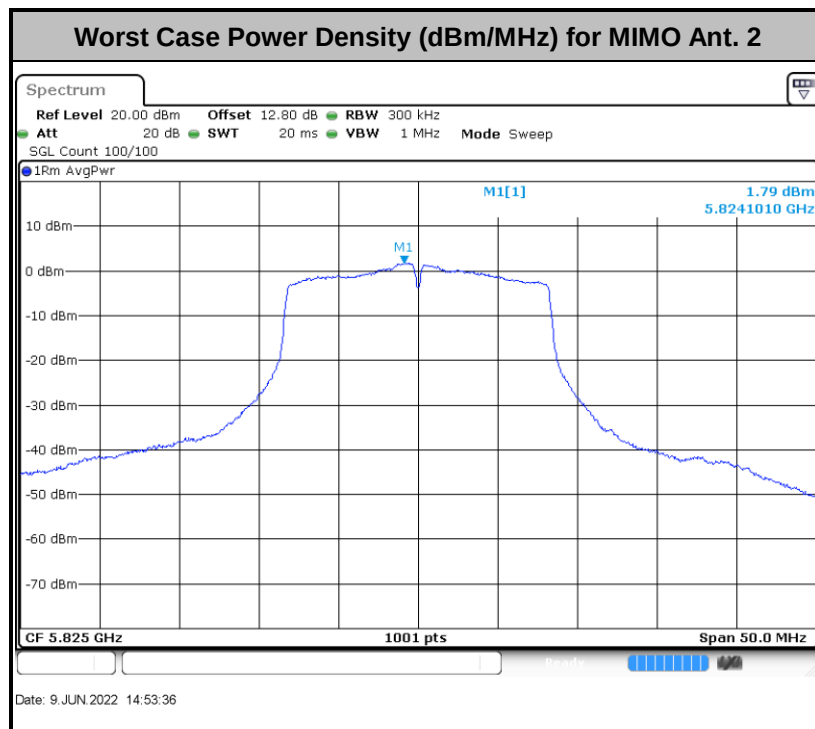
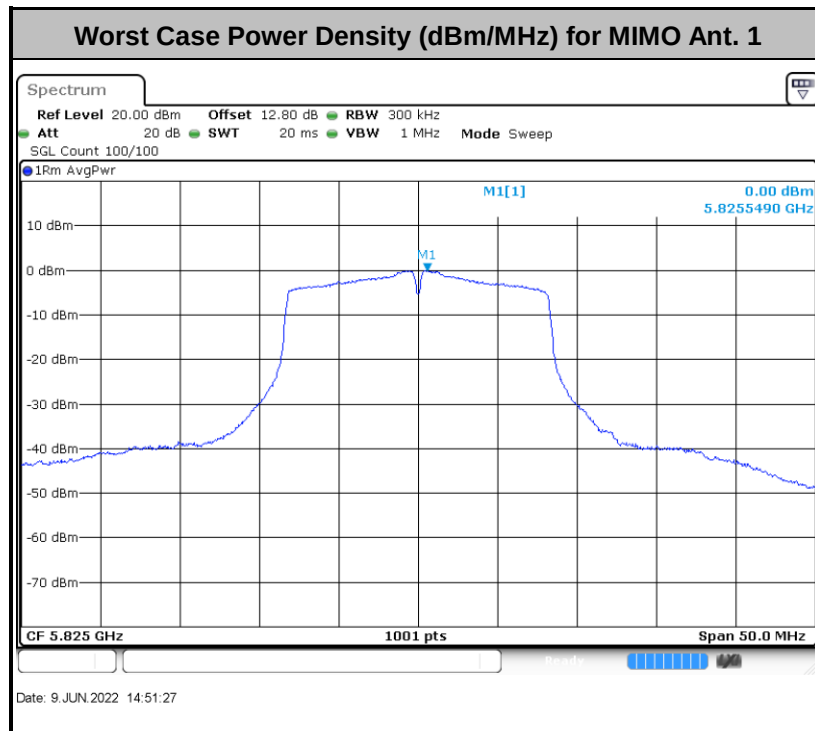
With this technique, spectrum measurements are performed at each output of the device, but rather than summing the spectra or the spectral peaks across the outputs, the quantity $10 \log(N_{\text{ANT}})$ dB is added to each spectrum value before comparing to the emission limit. The addition of $10 \log(N_{\text{ANT}})$ 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.



Note: Average Power Density (dB) = Measured value (MIMO 1+2)+ Duty Factor

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) 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

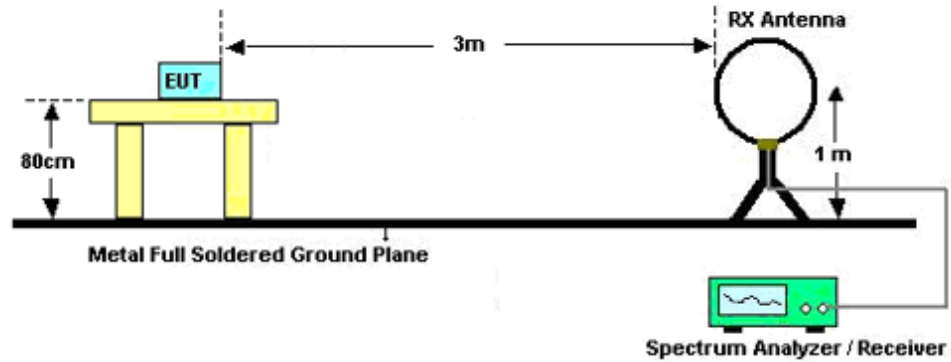
The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

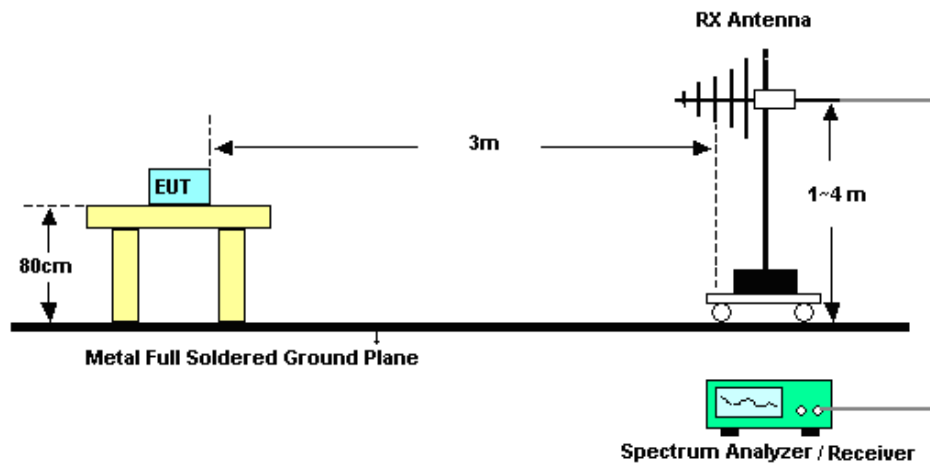
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section G) Unwanted emissions measurement.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak 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 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

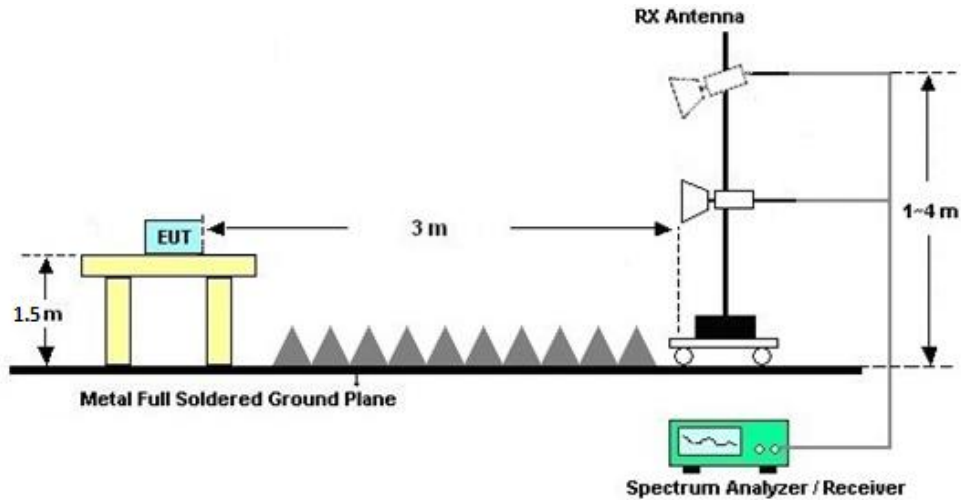
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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.

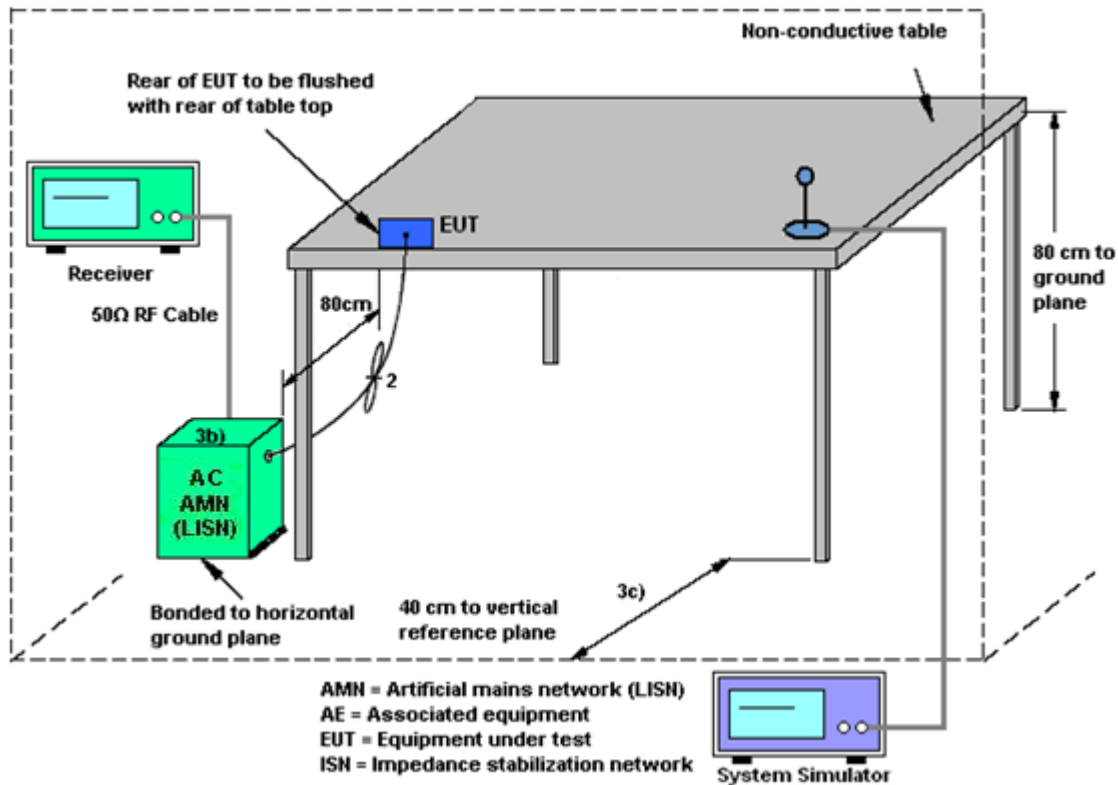
3.5.2 Measuring Instruments

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

<STBC Modes>

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

Basic methodology with N_{ANT} transmit antennas, each with the same directional gain G_{ANT} dBi, being driven by N_{ANT} transmitter outputs of equal power, and If antenna gains are not equal and each transmit antenna can be driven by more than one spatial stream, directional gain may be calculated by either of the following two formulas:

Directional gain = $G_{ANT\ MAX} + 10 \log(N_{ANT}/N_{SS})$ dBi, where $N_{ANT}=2$, $N_{SS}=2$.

<STBC Modes>						
			DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
	Ant. 1 (dBi)	Ant. 2 (dBi)				
Band IV	-7.30	-5.80	-5.80	-5.80	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	101078	10Hz~40GHz	Apr. 07, 2022	Jun. 06, 2022~ Jun. 10, 2022	Apr. 08, 2023	Conducted (TH01-SZ)
Pulse Power Sensor	Anritsu	MA2411B	1339473	30MHz~40GHz	Dec. 28, 2021	Jun. 06, 2022~ Jun. 10, 2022	Dec. 27, 2022	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1542004	50MHz Bandwidth	Dec. 28, 2021	Jun. 06, 2022~ Jun. 10, 2022	Dec. 27, 2022	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 14, 2021	Jun. 06, 2022~ Jun. 10, 2022	Jul. 13, 2022	Conducted (TH01-SZ)
EMI Test Receiver	R&S	ESR7	101404	9kHz~7GHz	Oct. 22, 2021	May 30, 2022~ Jun. 18, 2022	Oct. 21, 2022	Radiation (03CH04-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 20, 2021	May 30, 2022~ Jun. 18, 2022	Jul. 19, 2022	Radiation (03CH04-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jun. 22, 2020	May 30, 2022~ Jun. 18, 2022	Jun. 21, 2022	Radiation (03CH04-SZ)
Bilog Antenna	TeseQ	CBL6111D	41909	30MHz~1GHz	Oct. 22, 2021	May 30, 2022~ Jun. 18, 2022	Oct. 21, 2022	Radiation (03CH04-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1474	1GHz~18GHz	Jul. 15, 2021	May 30, 2022~ Jun. 18, 2022	Jul. 14, 2022	Radiation (03CH04-SZ)
Horn Antenna	SCHWARZBECK	BBHA9170	9170#679	15GHz~40GHz	Jul. 25, 2021	May 30, 2022~ Jun. 18, 2022	Jul. 24, 2022	Radiation (03CH04-SZ)
Amplifier	Burgeon	BPA-530	102211	0.01Hz~3000MHz	Oct. 22, 2021	May 30, 2022~ Jun. 18, 2022	Oct. 21, 2022	Radiation (03CH04-SZ)
HF Amplifier	MITEQ	AMF-7D-00101800-30-10P-R	1943528	1GHz~18GHz	Oct. 22, 2021	May 30, 2022~ Jun. 18, 2022	Oct. 21, 2022	Radiation (03CH04-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 20, 2021	May 30, 2022~ Jun. 18, 2022	Jul. 19, 2022	Radiation (03CH04-SZ)
Amplifier	Agilent Technologies	83017A	MY53270156	500MHz~26.5GHz	Oct. 22, 2021	May 30, 2022~ Jun. 18, 2022	Oct. 21, 2022	Radiation (03CH04-SZ)
AC Power Source	Chroma	61601	N/A	N/A	NCR	May 30, 2022~ Jun. 18, 2022	NCR	Radiation (03CH04-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	May 30, 2022~ Jun. 18, 2022	NCR	Radiation (03CH04-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	May 30, 2022~ Jun. 18, 2022	NCR	Radiation (03CH04-SZ)
EMI Receiver	R&S	ESR7	101630	9kHz~7GHz;	Sep. 01, 2021	Jun. 10, 2022	Aug. 31, 2022	Conduction (CO01-SZ)
AC LISN	R&S	ENV216	100063	9kHz~30MHz	Sep. 01, 2021	Jun. 10, 2022	Aug. 31, 2022	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Oct. 29, 2021	Jun. 10, 2022	Oct. 28, 2022	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000891	100Vac~250Vac	Jul. 14, 2021	Jun. 10, 2022	Jul. 13, 2022	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	±1.34 dB
Conducted Emissions	±1.34 dB
Occupied Channel Bandwidth	±0.13 %
Conducted Power Spectral Density	±1.32 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))	5.1dB
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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))	4.8dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.1dB
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----- THE END -----



Appendix A. Conducted Test Results

Report Number : FR242301F

Test Engineer:	Chen Hong	Temperature:	21~25	°C
Test Date:	2022/6/9~2022/6/10	Relative Humidity:	51~54	%

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

Band IV													
Mod.	Data Rate	N _{TX}	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	Ant 1	Ant 2	
11a	6Mbps	2	149	5745	16.33	16.33	19.65	19.15	15.14	15.09	0.5		Pass
11a	6Mbps	2	157	5785	16.33	16.33	20.05	19.25	15.09	15.09	0.5		Pass
11a	6Mbps	2	165	5825	16.28	16.33	19.45	19.40	15.09	15.09	0.5		Pass
VHT20	MCS0	2	149	5745	17.53	17.53	20.75	19.95	15.09	15.64	0.5		Pass
VHT20	MCS0	2	157	5785	17.53	17.53	20.35	20.40	14.69	15.09	0.5		Pass
VHT20	MCS0	2	165	5825	17.53	17.53	20.65	20.50	12.60	15.70	0.5		Pass
VHT40	MCS0	2	151	5755	36.06	35.96	39.51	39.33	35.08	35.10	0.5		Pass
VHT40	MCS0	2	159	5795	36.06	36.06	39.33	39.42	35.10	34.47	0.5		Pass
VHT80	MCS0	2	155	5775	75.04	74.93	81.60	80.80	71.33	71.36	0.5		Pass
HE20	MCS0	2	149	5745	18.88	18.83	21.25	21.25	17.00	18.70	0.5		Pass
HE20	MCS0	2	157	5785	18.83	18.83	21.35	21.20	18.25	18.20	0.5		Pass
HE20	MCS0	2	165	5825	18.88	18.93	20.95	20.90	16.84	15.44	0.5		Pass
HE40	MCS0	2	151	5755	37.86	37.76	39.87	39.60	36.36	35.10	0.5		Pass
HE40	MCS0	2	159	5795	37.86	37.66	39.69	40.32	35.10	35.10	0.5		Pass
HE80	MCS0	2	155	5775	76.72	76.60	81.44	81.44	71.32	71.32	0.5		Pass

TEST RESULTS DATA
Average Power Table

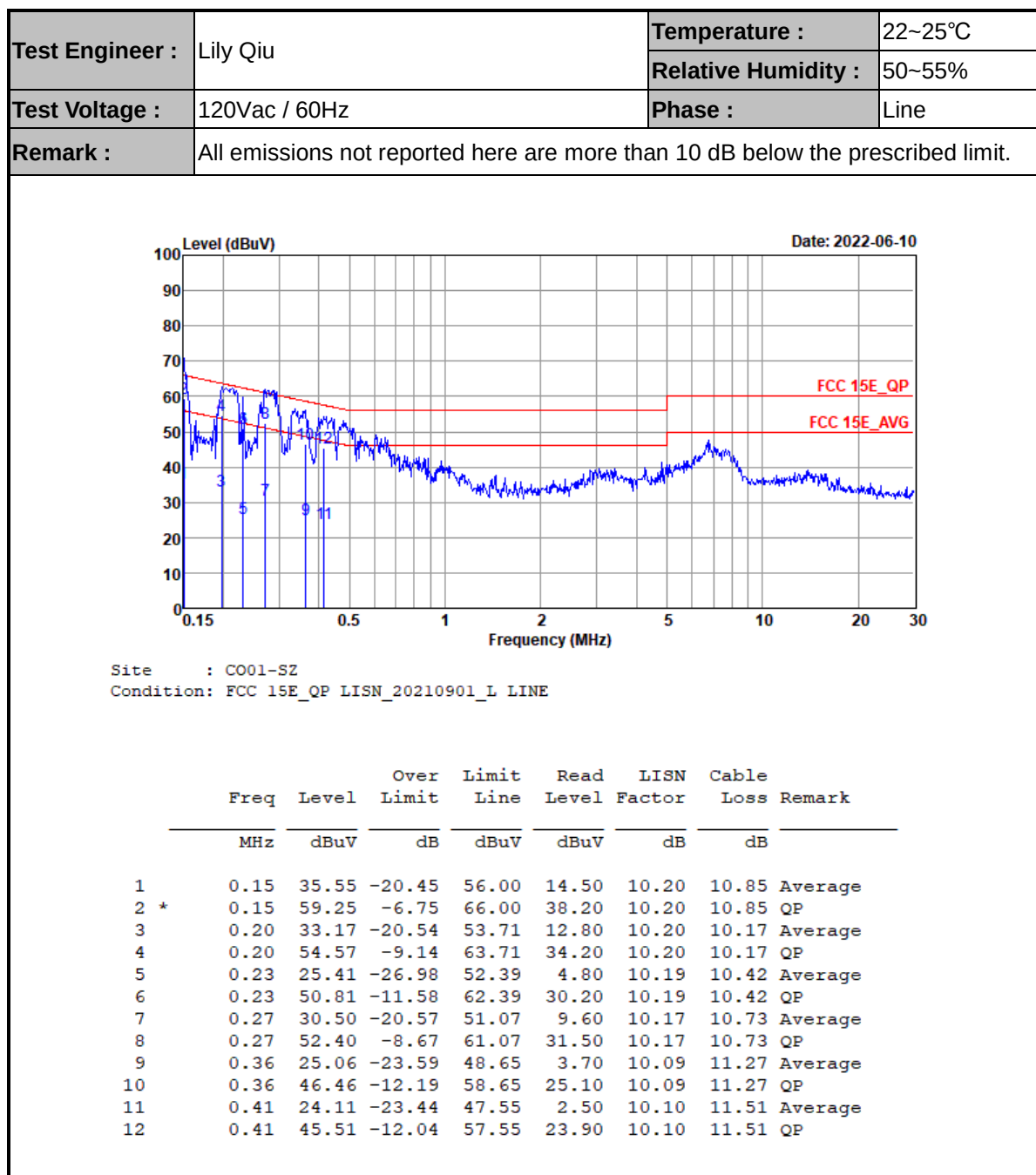
Band IV															
Mod.	Data Rate	NTx	CH.	RU Config	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
						Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	149	Full	5745	0.46	0.46	15.96	16.22	19.10	30.00		-5.80		Pass
11a	6Mbps	2	157	Full	5785	0.46	0.46	15.60	16.72	19.21	30.00		-5.80		Pass
11a	6Mbps	2	165	Full	5825	0.46	0.46	15.13	16.88	19.10	30.00		-5.80		Pass
HT20	MCS0	2	149	Full	5745	0.51	0.51	14.60	14.92	17.78	30.00		-5.80		Pass
HT20	MCS0	2	157	Full	5785	0.51	0.51	14.35	15.26	17.84	30.00		-5.80		Pass
HT20	MCS0	2	165	Full	5825	0.51	0.51	13.90	15.64	17.87	30.00		-5.80		Pass
HT40	MCS0	2	151	Full	5755	0.53	0.53	15.31	15.51	18.42	30.00		-5.80		Pass
HT40	MCS0	2	159	Full	5795	0.53	0.53	15.04	16.05	18.58	30.00		-5.80		Pass
VHT20	MCS0	2	149	Full	5745	0.51	0.51	15.62	15.87	18.76	30.00		-5.80		Pass
VHT20	MCS0	2	157	Full	5785	0.51	0.51	15.32	16.38	18.89	30.00		-5.80		Pass
VHT20	MCS0	2	165	Full	5825	0.51	0.51	14.86	16.53	18.79	30.00		-5.80		Pass
VHT40	MCS0	2	151	Full	5755	0.53	0.53	16.01	16.57	19.31	30.00		-5.80		Pass
VHT40	MCS0	2	159	Full	5795	0.53	0.53	15.74	17.06	19.46	30.00		-5.80		Pass
VHT80	MCS0	2	155	Full	5775	0.64	0.64	14.76	15.41	18.11	30.00		-5.80		Pass
HE20	MCS0	2	149	Full	5745	0.49	0.49	15.84	16.05	18.96	30.00		-5.80		Pass
HE20	MCS0	2	157	Full	5785	0.49	0.49	15.54	16.63	19.13	30.00		-5.80	Pass	
HE20	MCS0	2	165	Full	5825	0.49	0.49	15.06	16.82	19.04	30.00		-5.80	Pass	
HE40	MCS0	2	151	Full	5755	0.62	0.62	14.52	14.68	17.61	30.00		-5.80	Pass	
HE40	MCS0	2	159	Full	5795	0.62	0.62	14.37	15.24	17.84	30.00		-5.80	Pass	
HE80	MCS0	2	155	Full	5775	0.65	0.65	14.45	14.92	17.70	30.00		-5.80	Pass	

TEST RESULTS DATA
Power Spectral Density

Band IV																	
Mod.	Data Rate	NTX	CH.	RU Config	Freq. (MHz)	Duty Factor (dB)		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	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	149	Full	5745	0.46	0.46	2.22				6.53	30.00		-5.80	Pass	
11a	6Mbps	2	157	Full	5785	0.46	0.46	2.22				7.39	30.00		-5.80	Pass	
11a	6Mbps	2	165	Full	5825	0.46	0.46	2.22				7.48	30.00		-5.80	Pass	
VHT20	MCS0	2	149	Full	5745	0.51	0.51	2.22				5.63	30.00		-5.80	Pass	
VHT20	MCS0	2	157	Full	5785	0.51	0.51	2.22				6.28	30.00		-5.80	Pass	
VHT20	MCS0	2	165	Full	5825	0.51	0.51	2.22				6.59	30.00		-5.80	Pass	
VHT40	MCS0	2	151	Full	5755	0.53	0.53	2.22				3.34	30.00		-5.80	Pass	
VHT40	MCS0	2	159	Full	5795	0.53	0.53	2.22				3.91	30.00		-5.80	Pass	
VHT80	MCS0	2	155	Full	5775	0.64	0.64	2.22				-0.22	30.00		-5.80	Pass	
HE20	MCS0	2	149	Full	5745	0.49	0.49	2.22				5.48	30.00		-5.80	Pass	
HE20	MCS0	2	157	Full	5785	0.49	0.49	2.22				4.97	30.00		-5.80	Pass	
HE20	MCS0	2	165	Full	5825	0.49	0.49	2.22				6.53	30.00		-5.80	Pass	
HE40	MCS0	2	151	Full	5755	0.62	0.62	2.22				1.32	30.00		-5.80	Pass	
HE40	MCS0	2	159	Full	5795	0.62	0.62	2.22				2.31	30.00		-5.80	Pass	
HE80	MCS0	2	155	Full	5775	0.65	0.00	2.22			-1.40	30.00		-5.80	Pass		

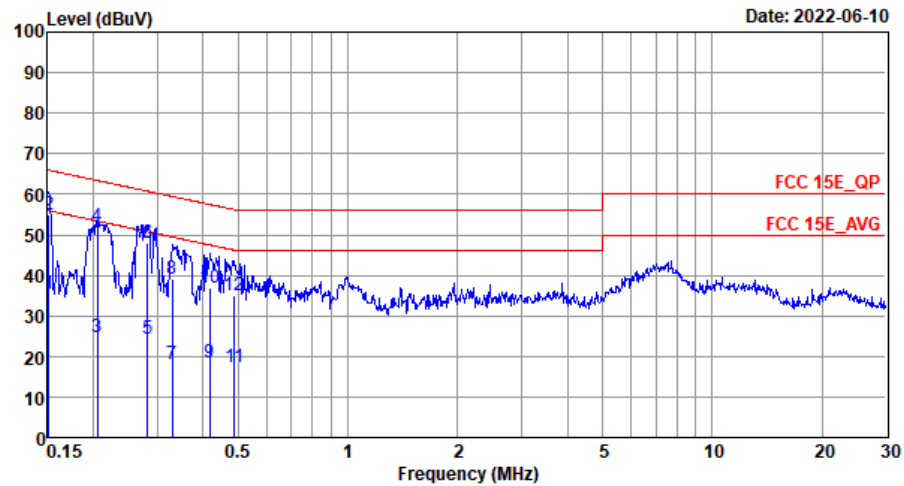


Appendix B. AC Conducted Emission Test Results





Test Engineer :	Lily Qiu	Temperature :	22~25°C
		Relative Humidity :	50~55%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : C001-SZ
Condition: FCC 15E_QP LISN_20210901_N NEUTRAL

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.15	35.26	-20.70	55.96	14.10	10.31	10.85	Average
2 *	0.15	54.86	-11.10	65.96	33.70	10.31	10.85	QP
3	0.21	24.87	-28.53	53.40	4.39	10.28	10.20	Average
4	0.21	51.87	-11.53	63.40	31.39	10.28	10.20	QP
5	0.28	24.22	-26.54	50.76	3.20	10.22	10.80	Average
6	0.28	47.92	-12.84	60.76	26.90	10.22	10.80	QP
7	0.33	18.17	-31.27	49.44	-3.10	10.18	11.09	Average
8	0.33	39.17	-20.27	59.44	17.90	10.18	11.09	QP
9	0.42	18.42	-29.09	47.51	-3.30	10.19	11.53	Average
10	0.42	36.82	-20.69	57.51	15.10	10.19	11.53	QP
11	0.49	17.50	-28.69	46.19	-4.50	10.19	11.81	Average
12	0.49	35.10	-21.09	56.19	13.10	10.19	11.81	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-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+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz	*	5647.8	49.04	-19.26	68.3	39.53	32.48	9.84	32.81	100	134	P	H
		5696.2	56.19	-46.22	102.41	46.64	32.51	9.92	32.88	100	134	P	H
		5720	62.08	-48.72	110.8	52.44	32.53	10.01	32.9	100	134	P	H
		5724.6	63.47	-57.82	121.29	53.83	32.53	10.01	32.9	100	134	P	H
	*	5745	104.53	-	-	94.83	32.54	10.09	32.93	100	134	P	H
		5745	98.47	-	-	88.77	32.54	10.09	32.93	100	134	A	H
	*	5634.6	49.28	-19.02	68.3	39.77	32.48	9.84	32.81	246	59	P	V
		5698.8	57.89	-46.43	104.32	48.34	32.51	9.92	32.88	246	59	P	V
		5714.6	65.89	-43.4	109.29	56.26	32.52	10.01	32.9	246	59	P	V
		5723.2	67.03	-51.07	118.1	57.39	32.53	10.01	32.9	246	59	P	V
	*	5745	106.93	-	-	97.23	32.54	10.09	32.93	246	59	P	V
		5745	99.85	-	-	90.15	32.54	10.09	32.93	246	59	A	V
802.11a CH 157 5785MHz	*	5608.2	48.01	-20.29	68.3	38.56	32.46	9.76	32.77	100	119	P	H
		5684.8	49.37	-44.65	94.02	39.82	32.51	9.92	32.88	100	119	P	H
		5718.2	50.06	-60.24	110.3	40.42	32.53	10.01	32.9	100	119	P	H
		5721.8	50	-64.9	114.9	40.36	32.53	10.01	32.9	100	119	P	H
	*	5785	104.53	-	-	94.77	32.57	10.17	32.98	100	119	P	H
		5785	98.41	-	-	88.65	32.57	10.17	32.98	100	119	A	H
		5850.6	48.65	-72.18	120.83	38.85	32.61	10.25	33.06	100	119	P	H
		5856.8	49.07	-61.23	110.3	39.18	32.62	10.33	33.06	100	119	P	H
		5919	49.44	-23.27	72.71	39.51	32.65	10.42	33.14	100	119	P	H
	*	5929.8	48.66	-19.64	68.3	38.72	32.66	10.42	33.14	100	119	P	H
	*	5638	49.16	-19.14	68.3	39.65	32.48	9.84	32.81	260	132	P	V
		5695	49.22	-52.3	101.52	39.67	32.51	9.92	32.88	260	132	P	V
		5715.4	49.99	-59.52	109.51	40.36	32.52	10.01	32.9	260	132	P	V
		5721.2	51.5	-62.04	113.54	41.86	32.53	10.01	32.9	260	132	P	V
	*	5785	106.38	-	-	96.62	32.57	10.17	32.98	260	132	P	V



		5785	98.31	-	-	88.55	32.57	10.17	32.98	260	132	A	V
		5851.6	47.66	-70.89	118.55	37.86	32.61	10.25	33.06	260	132	P	V
		5867	48.76	-58.68	107.44	38.9	32.62	10.33	33.09	260	132	P	V
		5903	48.87	-35.63	84.5	38.94	32.64	10.42	33.13	260	132	P	V
	*	5927.8	48.32	-19.98	68.3	38.38	32.66	10.42	33.14	260	132	P	V
802.11a CH 165 5825MHz	*	5825	106.01	-	-	96.18	32.6	10.25	33.02	102	122	P	H
		5825	100.94	-	-	91.11	32.6	10.25	33.02	102	122	A	H
		5851.2	59.42	-60.04	119.46	49.62	32.61	10.25	33.06	102	122	P	H
		5857	58.17	-52.07	110.24	48.28	32.62	10.33	33.06	102	122	P	H
		5881.6	53.47	-46.84	100.31	43.6	32.63	10.33	33.09	102	122	P	H
	*	5934.2	48.39	-19.91	68.3	38.37	32.66	10.5	33.14	102	122	P	H
	*	5825	104.91	-	-	95.08	32.6	10.25	33.02	100	61	P	V
		5825	98.94	-	-	89.11	32.6	10.25	33.02	100	61	A	V
		5850	60.23	-61.97	122.2	50.43	32.61	10.25	33.06	100	61	P	V
		5857.6	56.96	-53.11	110.07	47.07	32.62	10.33	33.06	100	61	P	V
		5887.4	52.92	-43.1	96.02	43.09	32.63	10.33	33.13	100	61	P	V
	*	5948.4	49.3	-19	68.3	39.28	32.67	10.5	33.15	100	61	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 Ant. 1+2	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)
802.11a CH 149 5745MHz		11490	47.44	-26.56	74	47.74	39.7	12.88	52.88	-	-	P	H
	*	17235	47.88	-20.42	68.3	41.57	42.93	15.71	52.33	-	-	P	H
		11490	46.96	-27.04	74	47.26	39.7	12.88	52.88	-	-	P	V
	*	17235	47.41	-20.89	68.3	41.1	42.93	15.71	52.33	-	-	P	V
802.11a CH 157 5785MHz		11570	46.63	-27.37	74	46.78	39.72	12.93	52.8	-	-	P	H
	*	17355	50.48	-17.82	68.3	43.37	43.8	15.8	52.49	-	-	P	H
		11570	46.82	-27.18	74	46.97	39.72	12.93	52.8	-	-	P	V
	*	17355	49.93	-18.37	68.3	42.82	43.8	15.8	52.49	-	-	P	V
802.11a CH 165 5825MHz		11650	47.28	-26.72	74	47.27	39.73	12.99	52.71	-	-	P	H
	*	17475	49.97	-18.33	68.3	42.07	44.66	15.89	52.65	-	-	P	H
		11650	47.11	-26.89	74	47.1	39.73	12.99	52.71	-	-	P	V
	*	17475	50.35	-17.95	68.3	42.45	44.66	15.89	52.65	-	-	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 802.11ac VHT20 (Band Edge @ 3m)

WIFI Ant. 1+2	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)
802.11ac VHT20 CH 149 5745MHz	*	5629.8	48.72	-19.58	68.3	39.22	32.47	9.84	32.81	100	161	P	H
		5694.2	55.39	-45.55	100.94	45.84	32.51	9.92	32.88	100	161	P	H
		5719.2	60.82	-49.76	110.58	51.18	32.53	10.01	32.9	100	161	P	H
		5724.8	62.69	-59.05	121.74	53.05	32.53	10.01	32.9	100	161	P	H
	*	5745	104.83	-	-	95.13	32.54	10.09	32.93	100	161	P	H
		5745	98.81	-	-	89.11	32.54	10.09	32.93	100	161	A	H
	*	5624.8	48.07	-20.23	68.3	38.53	32.47	9.84	32.77	100	59	P	V
		5700	55.32	-49.88	105.2	45.68	32.51	10.01	32.88	100	59	P	V
		5719.6	60.6	-50.09	110.69	50.96	32.53	10.01	32.9	100	59	P	V
		5723	65.49	-52.15	117.64	55.85	32.53	10.01	32.9	100	59	P	V
	*	5745	106.39	-	-	96.69	32.54	10.09	32.93	100	59	P	V
		5745	98.25	-	-	88.55	32.54	10.09	32.93	100	59	A	V
802.11ac VHT20 CH 157 5785MHz	*	5613	47.86	-20.44	68.3	38.41	32.46	9.76	32.77	100	163	P	H
		5669.2	48.59	-33.92	82.51	39.01	32.5	9.92	32.84	100	163	P	H
		5714.4	50.04	-59.19	109.23	40.41	32.52	10.01	32.9	100	163	P	H
		5724.8	51.23	-70.51	121.74	41.59	32.53	10.01	32.9	100	163	P	H
	*	5785	105.54	-	-	95.78	32.57	10.17	32.98	100	163	P	H
		5785	99.42	-	-	89.66	32.57	10.17	32.98	100	163	A	H
		5851.2	48.64	-70.82	119.46	38.84	32.61	10.25	33.06	100	163	P	H
		5873.6	49.68	-55.91	105.59	39.81	32.63	10.33	33.09	100	163	P	H
		5879.6	48.81	-52.98	101.79	38.94	32.63	10.33	33.09	100	163	P	H
	*	5946	48.19	-20.11	68.3	38.17	32.67	10.5	33.15	100	163	P	H
	*	5610.6	48.54	-19.76	68.3	39.09	32.46	9.76	32.77	100	59	P	V
		5681.4	49.1	-42.41	91.51	39.56	32.5	9.92	32.88	100	59	P	V
		5718.6	51.1	-59.31	110.41	41.46	32.53	10.01	32.9	100	59	P	V
		5722.8	50.15	-67.03	117.18	40.51	32.53	10.01	32.9	100	59	P	V
	*	5785	106.77	-	-	97.01	32.57	10.17	32.98	100	59	P	V
		5785	99.87	-	-	90.11	32.57	10.17	32.98	100	59	A	V
		5852.8	47.83	-67.99	115.82	38.03	32.61	10.25	33.06	100	59	P	V
		5872.2	49.13	-56.85	105.98	39.26	32.63	10.33	33.09	100	59	P	V



		5895.2	48.5	-41.75	90.25	38.57	32.64	10.42	33.13	100	59	P	V
	*	5949.6	48.45	-19.85	68.3	38.43	32.67	10.5	33.15	100	59	P	V
802.11ac VHT20 CH 165 5825MHz	*	5825	106.83	-	-	97	32.6	10.25	33.02	102	122	P	H
		5825	99.71	-	-	89.88	32.6	10.25	33.02	102	122	A	H
		5850	56.87	-65.33	122.2	47.07	32.61	10.25	33.06	102	122	P	H
		5856.6	55.92	-54.43	110.35	46.03	32.62	10.33	33.06	102	122	P	H
		5875.8	50.61	-54	104.61	40.74	32.63	10.33	33.09	102	122	P	H
	*	5925	48.49	-19.81	68.3	38.55	32.66	10.42	33.14	102	122	P	H
	*	5825	104.4	-	-	94.57	32.6	10.25	33.02	100	59	P	V
		5825	98.27	-	-	88.44	32.6	10.25	33.02	100	59	A	V
		5850.8	54.19	-66.19	120.38	44.39	32.61	10.25	33.06	100	59	P	V
		5862.6	56.18	-52.49	108.67	46.32	32.62	10.33	33.09	100	59	P	V
		5875	51.14	-54.06	105.2	41.27	32.63	10.33	33.09	100	59	P	V
	*	5932.4	48.95	-19.35	68.3	39.01	32.66	10.42	33.14	100	59	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 802.11ac VHT20 (Harmonic @ 3m)

WIFI Ant. 1+2	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)
802.11ac		11490	46.69	-27.31	74	46.99	39.7	12.88	52.88	-	-	P	H
VHT20	*	17235	50.18	-18.12	68.3	43.87	42.93	15.71	52.33	-	-	P	H
CH 149		11490	46.72	-27.28	74	47.02	39.7	12.88	52.88	-	-	P	V
5745MHz	*	17235	50.85	-17.45	68.3	44.54	42.93	15.71	52.33	-	-	P	V
802.11ac		11570	46.72	-27.28	74	46.87	39.72	12.93	52.8	-	-	P	H
VHT20	*	17355	50.46	-17.84	68.3	43.35	43.8	15.8	52.49	-	-	P	H
CH 157		11570	47.64	-26.36	74	47.79	39.72	12.93	52.8	-	-	P	V
5785MHz	*	17355	50.63	-17.67	68.3	43.52	43.8	15.8	52.49	-	-	P	V
802.11ac		11650	47.21	-26.79	74	47.2	39.73	12.99	52.71	-	-	P	H
VHT20	*	17475	50.56	-17.74	68.3	42.66	44.66	15.89	52.65	-	-	P	H
CH 165		11650	47.21	-26.79	74	47.2	39.73	12.99	52.71	-	-	P	V
5825MHz	*	17475	50.24	-18.06	68.3	42.34	44.66	15.89	52.65	-	-	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 802.11ac VHT40 (Band Edge @ 3m)

WIFI Ant. 1+2	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)
802.11ac VHT40 CH 151 5755MHz	*	5635.2	56.51	-11.79	68.3	47	32.48	9.84	32.81	189	291	P	H
		5699.2	61.85	-42.76	104.61	52.3	32.51	9.92	32.88	189	291	P	H
		5718.8	70.45	-40.01	110.46	60.81	32.53	10.01	32.9	189	291	P	H
		5724.4	71.95	-48.88	120.83	62.31	32.53	10.01	32.9	189	291	P	H
	*	5755	105.96	-	-	96.24	32.56	10.09	32.93	189	291	P	H
		5755	98.82	-	-	89.1	32.56	10.09	32.93	189	291	A	H
		5854.2	52.83	-59.79	112.62	43.02	32.62	10.25	33.06	189	291	P	H
		5856.8	52.25	-58.05	110.3	42.36	32.62	10.33	33.06	189	291	P	H
		5878.4	50.17	-52.51	102.68	40.3	32.63	10.33	33.09	189	291	P	H
	*	5926.2	48.91	-19.39	68.3	38.97	32.66	10.42	33.14	189	291	P	H
	*	5624.4	54.08	-14.22	68.3	44.54	32.47	9.84	32.77	100	42	P	V
		5683.8	59.21	-34.07	93.28	49.66	32.51	9.92	32.88	100	42	P	V
		5714	68.05	-41.07	109.12	58.42	32.52	10.01	32.9	100	42	P	V
		5724.8	68.83	-52.91	121.74	59.19	32.53	10.01	32.9	100	42	P	V
	*	5755	103.72	-	-	94	32.56	10.09	32.93	100	42	P	V
		5755	97.6	-	-	87.88	32.56	10.09	32.93	100	42	A	V
		5851.4	50.32	-68.69	119.01	40.52	32.61	10.25	33.06	100	42	P	V
		5865.4	51.53	-56.36	107.89	41.67	32.62	10.33	33.09	100	42	P	V
		5907.8	48.93	-32.03	80.96	38.99	32.65	10.42	33.13	100	42	P	V
	*	5929.6	48.01	-20.29	68.3	38.07	32.66	10.42	33.14	100	42	P	V
802.11ac VHT40 CH 159 5795MHz	*	5646.2	52.23	-16.07	68.3	42.72	32.48	9.84	32.81	189	291	P	H
		5666.2	56.3	-23.99	80.29	46.73	32.49	9.92	32.84	189	291	P	H
		5715	60.1	-49.3	109.4	50.47	32.52	10.01	32.9	189	291	P	H
		5724.6	61.33	-59.96	121.29	51.69	32.53	10.01	32.9	189	291	P	H
	*	5795	106.78	-	-	97.01	32.58	10.17	32.98	189	291	P	H
		5795	101.65	-	-	91.88	32.58	10.17	32.98	189	291	A	H
		5854.6	57.87	-53.84	111.71	48.06	32.62	10.25	33.06	189	291	P	H
		5861.6	58.51	-50.44	108.95	48.65	32.62	10.33	33.09	189	291	P	H
		5875.8	54.8	-49.81	104.61	44.93	32.63	10.33	33.09	189	291	P	H
	*	5926.4	51.07	-17.23	68.3	41.13	32.66	10.42	33.14	189	291	P	H



	*	5644.6	50.76	-17.54	68.3	41.25	32.48	9.84	32.81	100	67	P	V
		5684.4	54.43	-39.29	93.72	44.88	32.51	9.92	32.88	100	67	P	V
		5719.2	57.36	-53.22	110.58	47.72	32.53	10.01	32.9	100	67	P	V
		5721	58.72	-54.36	113.08	49.08	32.53	10.01	32.9	100	67	P	V
	*	5795	103.42	-	-	93.65	32.58	10.17	32.98	100	67	P	V
		5795	97.33	-	-	87.56	32.58	10.17	32.98	100	67	A	V
		5853.4	55.77	-58.68	114.45	45.97	32.61	10.25	33.06	100	67	P	V
		5863.2	53.01	-55.49	108.5	43.15	32.62	10.33	33.09	100	67	P	V
		5883.4	50.83	-48.15	98.98	41	32.63	10.33	33.13	100	67	P	V
	*	5926.8	48.41	-19.89	68.3	38.47	32.66	10.42	33.14	100	67	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 802.11ac VHT40 (Harmonic @ 3m)

WIFI Ant. 1+2	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)
802.11ac		11510	47.15	-26.85	74	47.47	39.7	12.88	52.9	-	-	P	H
VHT40	*	17265	50.02	-18.28	68.3	43.47	43.18	15.74	52.37	-	-	P	H
CH 151		11510	46.69	-27.31	74	47.01	39.7	12.88	52.9	-	-	P	V
5755MHz	*	17265	50.04	-18.26	68.3	43.49	43.18	15.74	52.37	-	-	P	V
802.11ac		11590	47.49	-26.51	74	47.59	39.72	12.96	52.78	-	-	P	H
VHT40	*	17385	50.71	-17.59	68.3	43.37	44.05	15.83	52.54	-	-	P	H
CH 159		11590	47.79	-26.21	74	47.89	39.72	12.96	52.78	-	-	P	V
5795MHz	*	17385	50.16	-18.14	68.3	42.82	44.05	15.83	52.54	-	-	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 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1+2	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)
802.11ac VHT80 CH 155 5775MHz	*	5646.6	59.77	-8.53	68.3	50.26	32.48	9.84	32.81	185	298	P	H
		5666	63.51	-16.63	80.14	53.94	32.49	9.92	32.84	185	298	P	H
		5719	68.1	-42.42	110.52	58.46	32.53	10.01	32.9	185	298	P	H
		5724	67.4	-52.52	119.92	57.76	32.53	10.01	32.9	185	298	P	H
	*	5775	103.04	-	-	93.34	32.57	10.09	32.96	185	298	P	H
		5775	96.91	-	-	87.21	32.57	10.09	32.96	185	298	A	H
		5854	58.59	-54.49	113.08	48.78	32.62	10.25	33.06	185	298	P	H
		5856.4	57.43	-52.98	110.41	47.54	32.62	10.33	33.06	185	298	P	H
		5875.6	53.98	-50.78	104.76	44.11	32.63	10.33	33.09	185	298	P	H
	*	5927.2	49.8	-18.5	68.3	39.86	32.66	10.42	33.14	185	298	P	H
	*	5641.6	55.17	-13.13	68.3	45.66	32.48	9.84	32.81	100	44	P	V
		5694.6	60.14	-41.09	101.23	50.59	32.51	9.92	32.88	100	44	P	V
		5719.2	65.5	-45.08	110.58	55.86	32.53	10.01	32.9	100	44	P	V
		5724.2	64.43	-55.95	120.38	54.79	32.53	10.01	32.9	100	44	P	V
	*	5775	100.34	-	-	90.64	32.57	10.09	32.96	100	44	P	V
		5775	94.03	-	-	84.33	32.57	10.09	32.96	100	44	A	V
		5852	56.7	-60.94	117.64	46.9	32.61	10.25	33.06	100	44	P	V
		5861.8	53.52	-55.37	108.89	43.66	32.62	10.33	33.09	100	44	P	V
		5884.6	51.84	-46.25	98.09	42.01	32.63	10.33	33.13	100	44	P	V
	*	5932.8	48.73	-19.57	68.3	38.79	32.66	10.42	33.14	100	44	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 802.11ac VHT80 (Harmonic @ 3m)**

WIFI Ant. 1+2	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)
802.11ac		11550	47.42	-26.58	74	47.61	39.71	12.93	52.83			P	H
VHT80	*	17325	50.76	-17.54	68.3	43.85	43.55	15.8	52.44			P	H
CH 155		11550	47.26	-26.74	74	47.45	39.71	12.93	52.83			P	V
5775MHz	*	17325	50.59	-17.71	68.3	43.68	43.55	15.8	52.44			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 802.11ax HE20_Full (Band Edge @ 3m)

WIFI Ant. 1+2	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)
802.11ax HE20 Full CH 149 5745MHz		5644.4	49.32	-18.98	68.3	39.81	32.48	9.84	32.81	100	163	P	H
		5691.4	56.7	-42.18	98.88	47.15	32.51	9.92	32.88	100	163	P	H
		5715.2	65.68	-43.78	109.46	56.05	32.52	10.01	32.9	100	163	P	H
		5725	66.57	-55.63	122.2	56.93	32.53	10.01	32.9	100	163	P	H
		5745	105.37	-	-	95.67	32.54	10.09	32.93	100	163	P	H
		5745	99.14	-	-	89.44	32.54	10.09	32.93	100	163	A	H
		5630.8	49.55	-18.75	68.3	40.05	32.47	9.84	32.81	100	59	P	V
		5699	56.69	-47.78	104.47	47.14	32.51	9.92	32.88	100	59	P	V
		5717.6	64.98	-45.15	110.13	55.34	32.53	10.01	32.9	100	59	P	V
		5725	68.62	-53.58	122.2	58.98	32.53	10.01	32.9	100	59	P	V
		5745	106.45	-	-	96.75	32.54	10.09	32.93	100	59	P	V
		5745	100.25	-	-	90.55	32.54	10.09	32.93	100	59	A	V
802.11ax HE20 Full CH 157 5785MHz		5649	48.08	-20.22	68.3	38.57	32.48	9.84	32.81	100	163	P	H
		5699.8	50.8	-54.25	105.05	41.16	32.51	10.01	32.88	100	163	P	H
		5707.2	55.12	-52.1	107.22	45.49	32.52	10.01	32.9	100	163	P	H
		5723	55.42	-62.22	117.64	45.78	32.53	10.01	32.9	100	163	P	H
		5785	106.12	-	-	96.36	32.57	10.17	32.98	100	163	P	H
		5785	98.87	-	-	89.11	32.57	10.17	32.98	100	163	A	H
		5854	49.57	-63.51	113.08	39.76	32.62	10.25	33.06	100	163	P	H
		5855.2	51.87	-58.87	110.74	42.06	32.62	10.25	33.06	100	163	P	H
		5876.6	50.04	-53.97	104.01	40.17	32.63	10.33	33.09	100	163	P	H
		5935.6	48.8	-19.5	68.3	38.79	32.66	10.5	33.15	100	163	P	H
		5626.2	48.11	-20.19	68.3	38.57	32.47	9.84	32.77	100	61	P	V
		5690.8	50.56	-47.87	98.43	41.01	32.51	9.92	32.88	100	61	P	V
		5707.4	54.53	-52.74	107.27	44.9	32.52	10.01	32.9	100	61	P	V
		5723.8	54.93	-64.53	119.46	45.29	32.53	10.01	32.9	100	61	P	V
		5785	104.83	-	-	95.07	32.57	10.17	32.98	100	61	P	V
		5785	98.87	-	-	89.11	32.57	10.17	32.98	100	61	A	V
		5854.6	51.52	-60.19	111.71	41.71	32.62	10.25	33.06	100	61	P	V
		5858	50.14	-59.82	109.96	40.28	32.62	10.33	33.09	100	61	P	V



		5875	49.74	-55.46	105.2	39.87	32.63	10.33	33.09	100	61	P	V
		5938	48.91	-19.39	68.3	38.9	32.66	10.5	33.15	100	61	P	V
802.11ax HE20 Full CH 165 5825MHz		5825	107.84	-	-	98.01	32.6	10.25	33.02	100	121	P	H
		5825	102.38	-	-	92.55	32.6	10.25	33.02	100	121	A	H
		5850.2	65.89	-55.85	121.74	56.09	32.61	10.25	33.06	100	121	P	H
		5859.6	62.06	-47.45	109.51	52.2	32.62	10.33	33.09	100	121	P	H
		5879.6	55.48	-46.31	101.79	45.61	32.63	10.33	33.09	100	121	P	H
		5932.8	50.94	-17.36	68.3	41	32.66	10.42	33.14	100	121	P	H
		5825	104.56	-	-	94.73	32.6	10.25	33.02	100	59	P	V
		5825	98.27	-	-	88.44	32.6	10.25	33.02	100	59	A	V
		5850.4	63.68	-57.61	121.29	53.88	32.61	10.25	33.06	100	59	P	V
		5856.8	62.91	-47.39	110.3	53.02	32.62	10.33	33.06	100	59	P	V
		5877.8	55.54	-47.59	103.13	45.67	32.63	10.33	33.09	100	59	P	V
		5930.2	49.22	-19.08	68.3	39.28	32.66	10.42	33.14	100	59	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 802.11ax HE20 Full (Harmonic @ 3m)

WIFI Ant. 1+2	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)
802.11ax		11490	47.12	-26.88	74	47.42	39.7	12.88	52.88	-	-	P	H
HE20 Full		17235	50.13	-18.17	68.3	43.82	42.93	15.71	52.33	-	-	P	H
CH 149		11490	47.36	-26.64	74	47.66	39.7	12.88	52.88	-	-	P	V
5745MHz		17235	50.52	-17.78	68.3	44.21	42.93	15.71	52.33	-	-	P	V
802.11ax		11570	47.59	-26.41	74	47.74	39.72	12.93	52.8	-	-	P	H
HE20 Full		17355	50.32	-17.98	68.3	43.21	43.8	15.8	52.49	-	-	P	H
CH 157		11570	47.2	-26.8	74	47.35	39.72	12.93	52.8	-	-	P	V
5785MHz		17355	50.88	-17.42	68.3	43.77	43.8	15.8	52.49	-	-	P	V
802.11ax		11650	47.31	-26.69	74	47.3	39.73	12.99	52.71	-	-	P	H
HE20 Full		17475	50.43	-17.87	68.3	42.53	44.66	15.89	52.65	-	-	P	H
CH 165		11650	47.02	-26.98	74	47.01	39.73	12.99	52.71	-	-	P	V
5825MHz		17475	50.7	-17.6	68.3	42.8	44.66	15.89	52.65	-	-	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 802.11ax HE40_Full (Band Edge @ 3m)

WIFI Ant. 1+2	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)
802.11ax HE40 Full CH 151 5755MHz		5634.8	49.09	-19.21	68.3	39.58	32.48	9.84	32.81	100	139	P	H
		5696.4	54.55	-48	102.55	45	32.51	9.92	32.88	100	139	P	H
		5715.6	62.87	-46.7	109.57	53.24	32.52	10.01	32.9	100	139	P	H
		5725	62.19	-60.01	122.2	52.55	32.53	10.01	32.9	100	139	P	H
		5755	102.43	-	-	92.71	32.56	10.09	32.93	100	139	A	H
		5755	96.26	-	-	86.54	32.56	10.09	32.93	100	139	P	H
		5851.2	48.44	-71.02	119.46	38.64	32.61	10.25	33.06	100	139	P	H
		5874.4	48.15	-57.22	105.37	38.28	32.63	10.33	33.09	100	139	P	H
		5896.4	49.28	-40.09	89.37	39.35	32.64	10.42	33.13	100	139	P	H
		5930.4	48.46	-19.84	68.3	38.52	32.66	10.42	33.14	100	139	P	H
		5630.6	48.75	-19.55	68.3	39.25	32.47	9.84	32.81	200	70	P	V
		5684.2	54.99	-38.58	93.57	45.44	32.51	9.92	32.88	200	70	P	V
		5717	62.08	-47.88	109.96	52.45	32.52	10.01	32.9	200	70	P	V
		5722.8	67.26	-49.92	117.18	57.62	32.53	10.01	32.9	200	70	P	V
		5755	101.67	-	-	91.95	32.56	10.09	32.93	200	70	A	V
		5755	95.15	-	-	85.43	32.56	10.09	32.93	200	70	P	V
		5854.6	47.89	-63.82	111.71	38.08	32.62	10.25	33.06	200	70	P	V
		5875	48.38	-56.82	105.2	38.51	32.63	10.33	33.09	200	70	P	V
		5898.6	48.96	-38.78	87.74	39.03	32.64	10.42	33.13	200	70	P	V
		5944.2	48.43	-19.87	68.3	38.41	32.67	10.5	33.15	200	70	P	V



WIFI Ant. 1+2	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)
802.11ax HE40 Full CH 159 5795MHz		5648.6	48.32	-19.98	68.3	38.81	32.48	9.84	32.81	100	139	P	H
		5677.4	50.54	-38.02	88.56	40.96	32.5	9.92	32.84	100	139	P	H
		5716.2	54.02	-55.72	109.74	44.39	32.52	10.01	32.9	100	139	P	H
		5725	53.02	-69.18	122.2	43.38	32.53	10.01	32.9	100	139	P	H
		5795	102.51	-	-	92.74	32.58	10.17	32.98	100	139	P	H
		5795	96.32	-	-	86.55	32.58	10.17	32.98	100	139	A	H
		5850.2	49.13	-72.61	121.74	39.33	32.61	10.25	33.06	100	139	P	H
		5868.2	49.55	-57.55	107.1	39.69	32.62	10.33	33.09	100	139	P	H
		5905.4	49.89	-32.84	82.73	39.95	32.65	10.42	33.13	100	139	P	H
		5932.8	48.9	-19.4	68.3	38.96	32.66	10.42	33.14	100	139	P	H
		5619.8	47.94	-20.36	68.3	38.48	32.47	9.76	32.77	200	70	P	V
		5694.4	49.03	-52.05	101.08	39.48	32.51	9.92	32.88	200	70	P	V
		5715.2	50.54	-58.92	109.46	40.91	32.52	10.01	32.9	200	70	P	V
		5724.2	54.28	-66.1	120.38	44.64	32.53	10.01	32.9	200	70	P	V
		5795	100.6	-	-	90.83	32.58	10.17	32.98	200	70	P	V
		5795	94.21	-	-	84.44	32.58	10.17	32.98	200	70	A	V
		5854.4	49.28	-62.89	112.17	39.47	32.62	10.25	33.06	200	70	P	V
		5855.8	49.91	-60.67	110.58	40.02	32.62	10.33	33.06	200	70	P	V
		5886.2	48.52	-48.39	96.91	38.69	32.63	10.33	33.13	200	70	P	V
		5930.6	48.49	-19.81	68.3	38.55	32.66	10.42	33.14	200	70	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 802.11ax HE40_Full (Harmonic @ 3m)

WIFI Ant. 1+2	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)
802.11ax		11650	47.31	-26.69	74	47.3	39.73	12.99	52.71	-	-	P	H
HE40 Full		17475	50.43	-17.87	68.3	42.53	44.66	15.89	52.65	-	-	P	H
CH 151		11650	47.02	-26.98	74	47.01	39.73	12.99	52.71	-	-	P	V
5755MHz		17475	50.7	-17.6	68.3	42.8	44.66	15.89	52.65	-	-	P	V
802.11ax		11510	46.76	-27.24	74	47.08	39.7	12.88	52.9	-	-	P	H
HE40 Full		17265	50.99	-17.31	68.3	44.44	43.18	15.74	52.37	-	-	P	H
CH 159		11510	47.93	-26.07	74	48.25	39.7	12.88	52.9	-	-	P	V
5795MHz		17265	50.37	-17.93	68.3	43.82	43.18	15.74	52.37	-	-	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 802.11ax HE80_Full (Band Edge @ 3m)

WIFI Ant. 1+2	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)
802.11ax HE80 Full CH 155 5775MHz		5644.8	58.33	-9.97	68.3	48.82	32.48	9.84	32.81	239	291	P	H
		5686	63.96	-30.94	94.9	54.41	32.51	9.92	32.88	239	291	P	H
		5715.8	70.6	-39.03	109.63	60.97	32.52	10.01	32.9	239	291	P	H
		5720.8	70.87	-41.75	112.62	61.23	32.53	10.01	32.9	239	291	P	H
		5775	103.98	-	-	94.28	32.57	10.09	32.96	239	291	P	H
		5775	97.81	-	-	88.11	32.57	10.09	32.96	239	291	A	H
		5850	57.02	-65.18	122.2	47.22	32.61	10.25	33.06	239	291	P	H
		5857.4	58.06	-52.07	110.13	48.17	32.62	10.33	33.06	239	291	P	H
		5877.2	54.19	-49.38	103.57	44.32	32.63	10.33	33.09	239	291	P	H
		5926	49.66	-18.64	68.3	39.72	32.66	10.42	33.14	239	291	P	H
		5645.2	56.22	-12.08	68.3	46.71	32.48	9.84	32.81	100	43	P	V
		5695.4	61.99	-39.83	101.82	52.44	32.51	9.92	32.88	100	43	P	V
		5718.2	68.51	-41.79	110.3	58.87	32.53	10.01	32.9	100	43	P	V
		5724.2	68.8	-51.58	120.38	59.16	32.53	10.01	32.9	100	43	P	V
		5775	100.24	-	-	90.54	32.57	10.09	32.96	100	43	P	V
		5775	94.03	-	-	84.33	32.57	10.09	32.96	100	43	A	V
		5853.8	56.69	-56.85	113.54	46.88	32.62	10.25	33.06	100	43	P	V
		5856.4	54.42	-55.99	110.41	44.53	32.62	10.33	33.06	100	43	P	V
		5875.4	50.54	-54.36	104.9	40.67	32.63	10.33	33.09	100	43	P	V
		5944.8	48.03	-20.27	68.3	38.01	32.67	10.5	33.15	100	43	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 802.11ax HE80_Full (Harmonic @ 3m)**

WIFI Ant. 1+2	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)
802.11ax		11550	47.67	-26.33	74	47.86	39.71	12.93	52.83	-	-	P	H
HE80 Full		17325	50.63	-17.67	68.3	43.72	43.55	15.8	52.44	-	-	P	H
CH 155		11550	47.04	-26.96	74	47.23	39.71	12.93	52.83	-	-	P	V
5775MHz		17325	50.12	-18.18	68.3	43.21	43.55	15.8	52.44	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



U-NII-3 5725~5850MHz

Emission below 1GHz

5GHz WIFI 802.11ac VHT80 (LF)

WIFI Ant.	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
5GHz 802.11ac VHT80 LF		30	24.49	-15.51	40	30.5	25.86	0.53	32.4	-	-	P	H
		103.72	20.89	-22.61	43.5	35.6	16.45	1.04	32.2	-	-	P	H
		203.63	22.08	-21.42	43.5	37.35	15.36	1.45	32.08	-	-	P	H
		276.38	30.06	-15.94	46	40.74	19.34	1.73	31.75	-	-	P	H
		451.95	26.89	-19.11	46	32.8	23.18	2.2	31.29	-	-	P	H
		948.59	31.9	-14.1	46	29.06	31.11	3.23	31.5	-	-	P	H
		30	23.47	-16.53	40	29.48	25.86	0.53	32.4	-	-	P	V
		54.25	22.19	-17.81	40	40.4	13.46	0.73	32.4	-	-	P	V
		159.01	21.46	-22.04	43.5	35.64	16.71	1.29	32.18	-	-	P	V
		281.23	25.4	-20.6	46	35.94	19.46	1.74	31.74	-	-	P	V
		790.48	30.05	-15.95	46	29.57	28.82	2.92	31.26	-	-	P	V
		951.5	31.83	-14.17	46	28.97	31.13	3.23	31.5	-	-	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 Margin line.
P/A	Peak or Average
H/V	Horizontal or Vertical



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

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

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

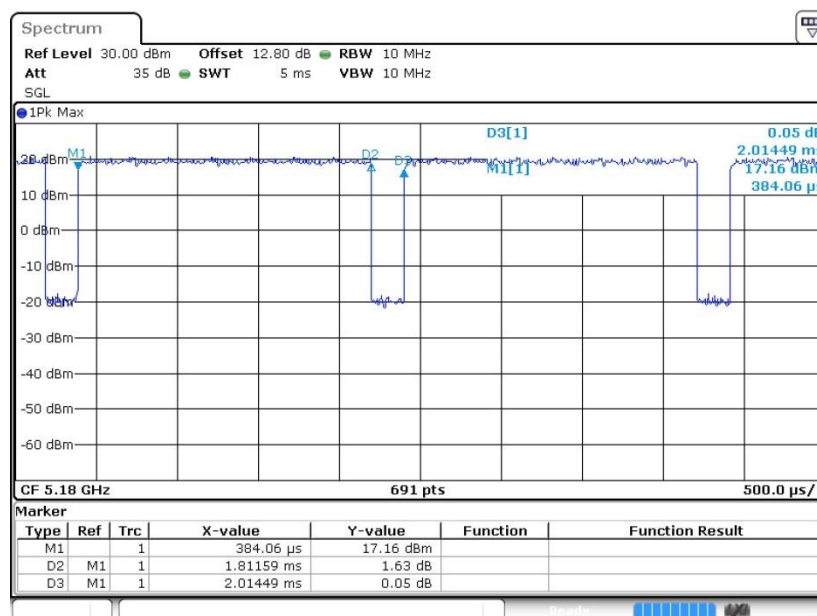
1. Level(dBμV/m)
 = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
 = 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)
 = 43.54 (dBμV/m)
2. Margin (dB) = Level(dBμV/m) – Limit Line(dBμV/m)
 = 43.54(dBμV/m) – 54(dBμV/m)
 = -10.46(dB)

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

Appendix D. Duty Cycle Plots

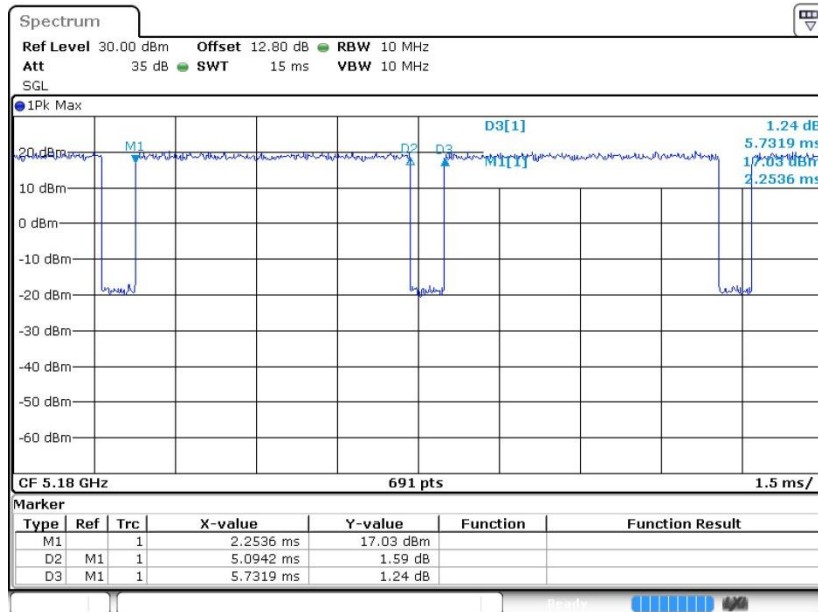
Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11a	89.93	1.812	0.552	1KHz
802.11n HT20	88.87	5.094	0.196	300Hz
802.11n HT40	88.56	2.625	0.381	1KHz
802.11ac VHT20	88.87	5.094	0.196	300Hz
802.11ac VHT40	88.56	2.625	0.381	1KHz
802.11ac VHT80	86.31	2.138	0.468	1KHz
802.11ac VHT160	86.31	2.138	0.468	1KHz
802.11ax HE20	89.35	3.891	0.257	300Hz
802.11ax HE40	86.69	2.209	0.453	1KHz
802.11ax HE80	86.07	2.158	0.463	1KHz
802.11ax HE160	86.42	2.158	0.463	1KHz

802.11a



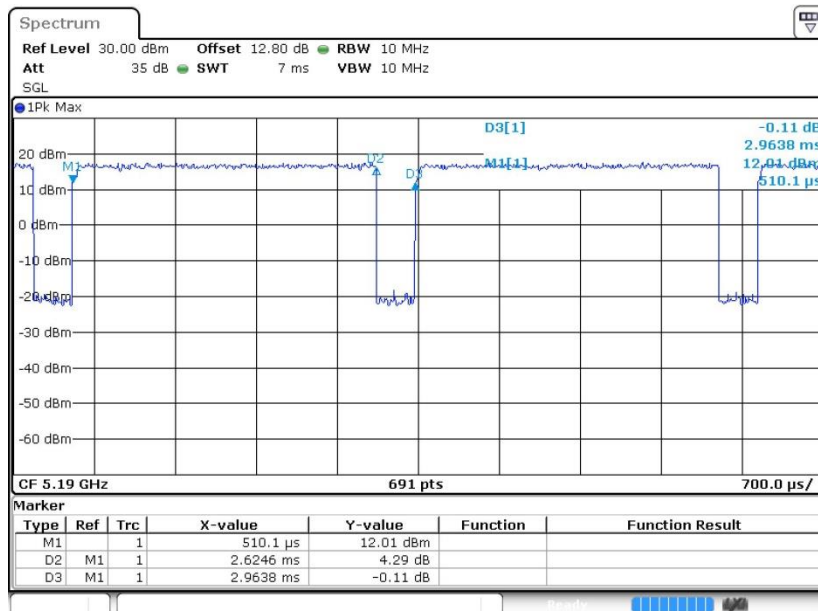
Date: 6 JUN 2022 11:00:48

802.11n HT20



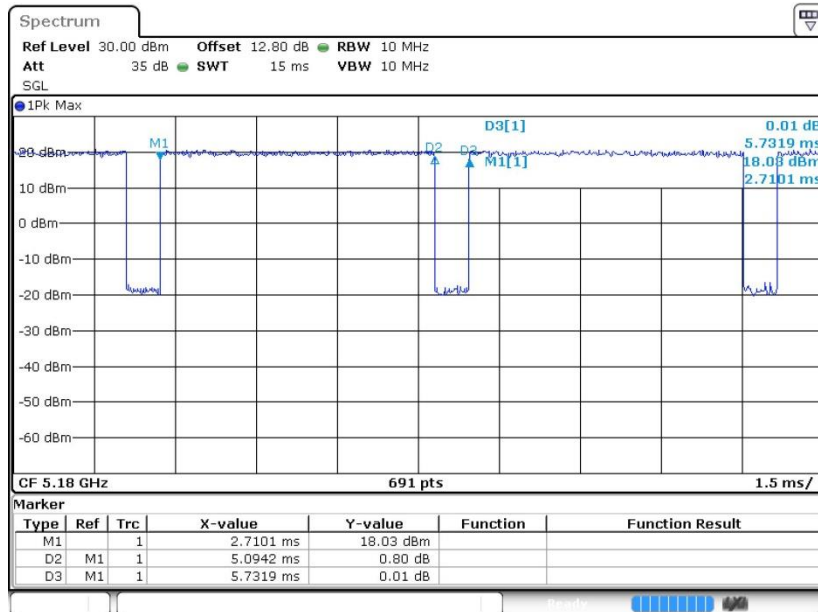
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802.11n HT40



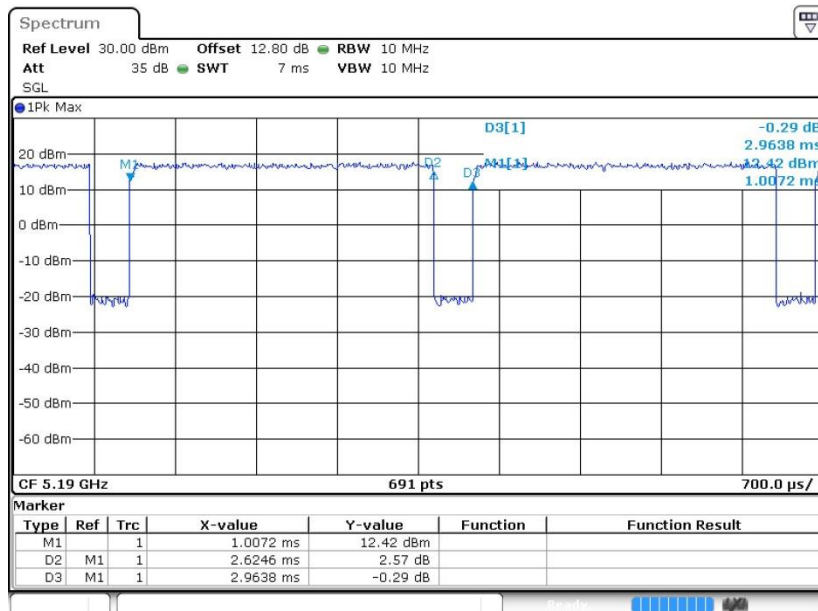
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802.11ac VHT20



Date: 6 JUN.2022 11:07:54

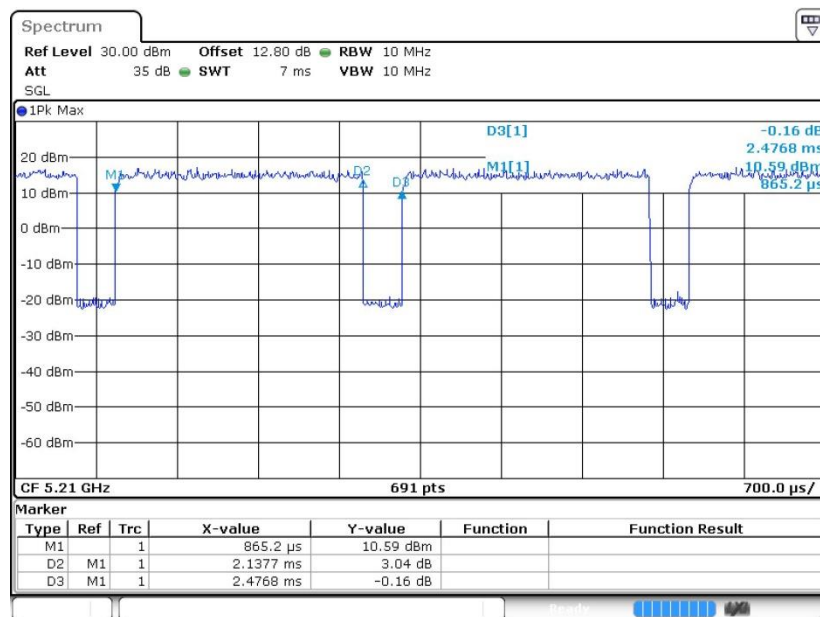
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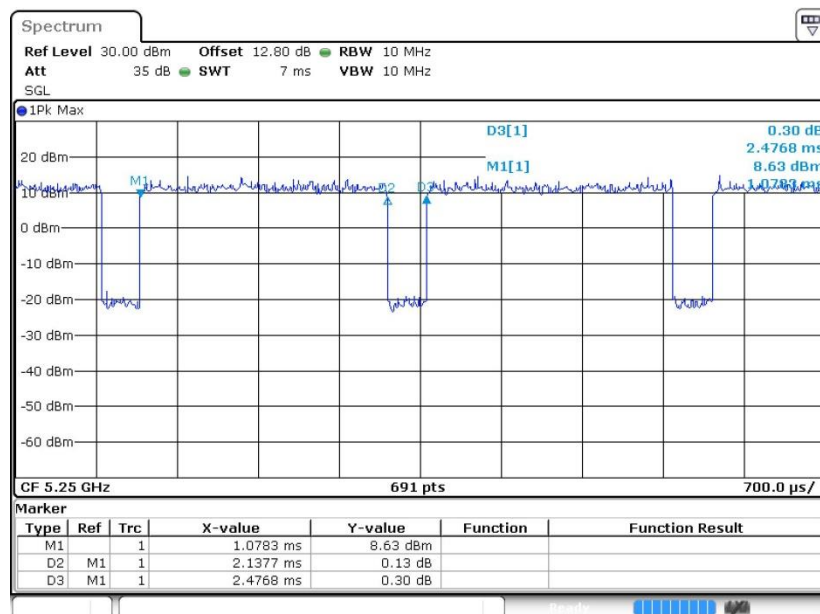


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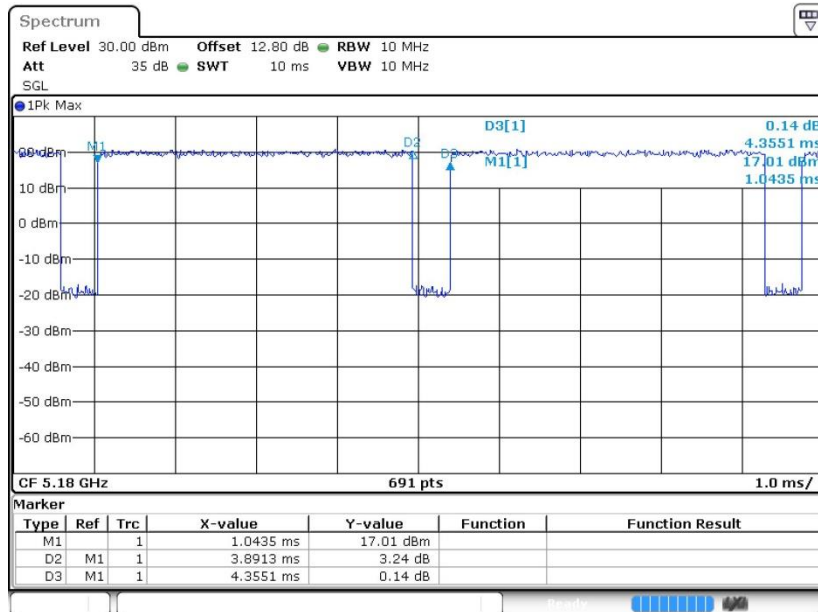
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Date: 6 JUN 2022 13:51:00

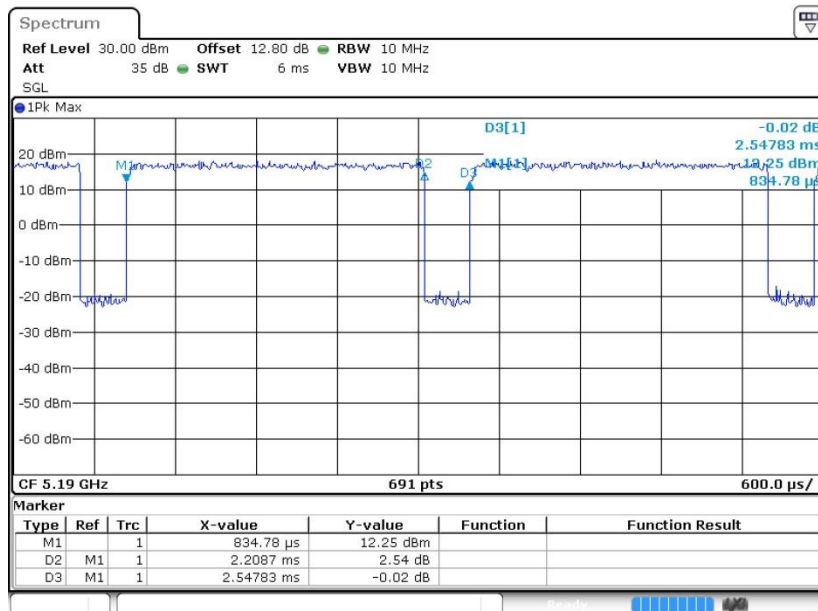


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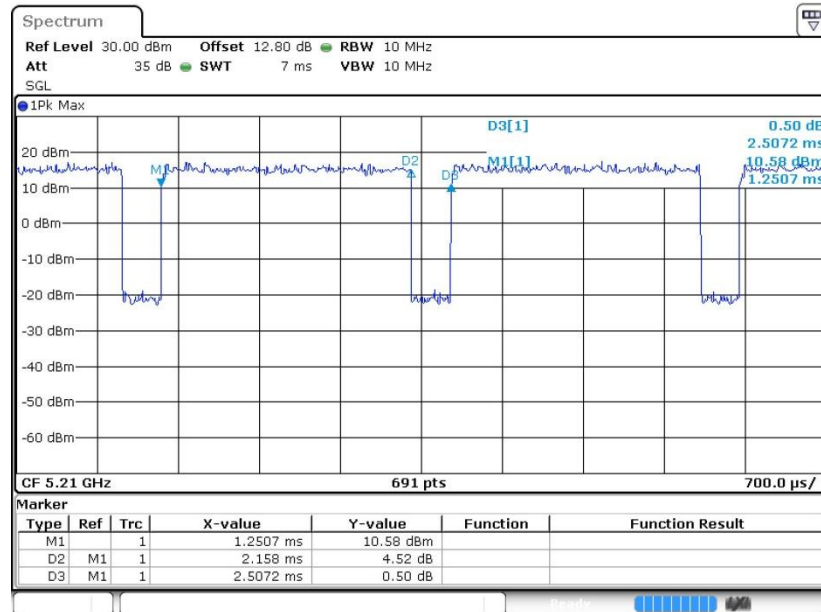
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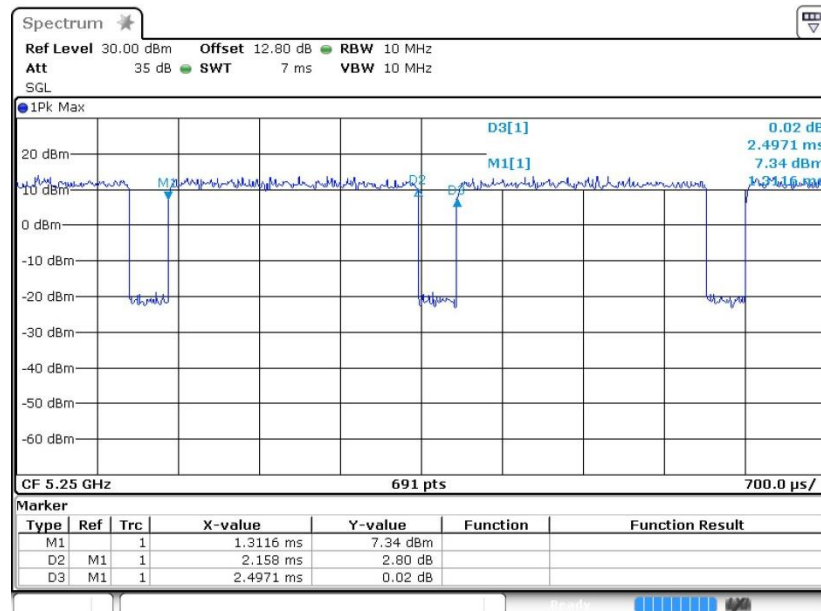
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802.11ax HE80



Date: 6 JUN.2022 13:47:27

802.11ax HE160



Date: 6 JUN.2022 13:48:40