FCC RF Test Report

APPLICANT	:	Bullitt Group
EQUIPMENT	:	Rugged Smart Phone
BRAND NAME	:	Motorola
MODEL NAME	:	BM2S1E
FCC ID	:	ZL5BM2S1EE
STANDARD	:	FCC Part 15 Subpart E §15.407
CLASSIFICATION	:	(NII) Unlicensed National Information Infrastructure
TEST DATE(S)	:	Nov. 14, 2022 ~ Dec. 06, 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

ACCREDITED
Cert #5145.01

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People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR322807-01E	Rev. 01	Initial issue of report	Mar. 13, 2023

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	2.1049 & 15.403(i)	26dB & 99% Bandwidth	-	Report only	-
3.2	15.407(a)	Maximum Conducted Output Power	≤ 24 dBm	Pass	-
3.3	15.407(a)	Power Spectral Density	≤ 11 dBm/MHz	Pass	-
3.4	15.407(b)	Unwanted Emissions	15.407(b) & 15.209(a)	Pass	Under limit 1.24 dB at 5459.68 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 20.55 dB at 1.01 MHz
3.6	15.203 & 15.407(a)	Antenna Requirement	15.203 & 15.407(a)	Pass	-

Note: This is the change FCC ID report. Since no changes have been made to this device, therefore, all test cases were leveraged from original report (FR2O1410-01E).

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

Bullitt Group
One Valpy, Valpy Street, Reading, Berkshire, RG1 1AR, United Kingdom

1.2 Manufacturer

Bullitt Mobile Limited
One Valpy, Valpy Street, Reading, Berkshire, RG1 1AR, United Kingdom

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Rugged Smart Phone
Brand Name	Motorola
Model Name	BM2S1E
FCC ID	ZL5BM2S1EE
IMEI Code	Conducted: 351416010000076/351416010002072 Conduction: 351416010000043/351416010002049 Radiation: 351416010000050/351416010002056
EUT Stage	Identical Prototype

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

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5720 MHz
Maximum Output Power to Antenna	**<5180 MHz ~ 5240 MHz>** 802.11a : 17.75 dBm / 0.0596 W 802.11n HT20 : 17.20 dBm / 0.0525 W 802.11n HT40 : 16.84 dBm / 0.0483 W 802.11ac VHT20 : 16.67 dBm / 0.0465 W 802.11ac VHT40 : 16.36 dBm / 0.0433 W 802.11ac VHT80 : 9.02 dBm / 0.0080 W **<5260 MHz ~ 5320 MHz>** 802.11a : 17.74 dBm / 0.0594 W 802.11n HT20 : 17.19 dBm / 0.0524 W 802.11n HT40 : 16.86 dBm / 0.0485 W 802.11ac VHT20 : 16.70 dBm / 0.0468 W 802.11ac VHT40 : 16.42 dBm / 0.0439 W 802.11ac VHT80 : 10.22 dBm / 0.0105 W **<5500 MHz ~ 5720 MHz >** 802.11a : 17.32 dBm / 0.0540 W 802.11n HT20 : 16.73 dBm / 0.0471 W

	802.11n HT40 : 16.21 dBm / 0.0418 W 802.11ac VHT20 : 16.17 dBm / 0.0414 W 802.11ac VHT40 : 15.78 dBm / 0.0378 W 802.11ac VHT80 : 13.59 dBm / 0.0229 W
99% Occupied Bandwidth	**<5180 MHz ~ 5240 MHz>** 802.11a : 17.38 MHz 802.11n HT20 : 17.98 MHz 802.11n HT40 : 37.26 MHz 802.11ac VHT80 : 75.04 MHz **<5260 MHz ~ 5320 MHz>** 802.11a : 17.18 MHz 802.11n HT20 : 17.98 MHz 802.11n HT40 : 37.06 MHz 802.11ac VHT80 : 75.16 MHz **<5500 MHz ~ 5720 MHz >** 802.11a : 16.98 MHz 802.11n HT20 : 17.93 MHz 802.11n HT40 : 37.26 MHz 802.11ac VHT80 : 75.04 MHz
Antenna Type / Gain	**<5180 MHz ~ 5240 MHz>** IFA Antenna with gain -1.80 dBi **<5260 MHz ~ 5320 MHz>** IFA Antenna with gain -2.50 dBi **<5500 MHz ~ 5720 MHz>** IFA Antenna with gain -3.50 dBi
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)

Note: Note: For 802.11n HT20 / ac VHT20 and 802.11n HT40 / ac VHT40 mode, the whole testing have assessed only 802.11n HT20/HT40 by referring to their higher output power.

1.5 Modification of EUT

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

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

1.7 Test Software

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

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.
- ANSI C63.10-2013

Remark:

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

2 Test Configuration of Equipment Under Test

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

b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5180-5240 MHz U-NII-1	36	5180	44	5220
	38*	5190	46*	5230
	40	5200	48	5240
	42#	5210		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5260-5320 MHz U-NII-2A	52	5260	60	5300
	54*	5270	62*	5310
	56	5280	64	5320
	58#	5290		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5500- 5720 MHz MHz U-NII-2C	100	5500	112	5560
	102*	5510	116	5580
	104	5520	132	5660
	106#	5530	134*	5670
	108	5540	136	5680
	110*	5550	140	5700

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

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
Straddle Channel	138#	5690	144	5720
	142*	5710		

Note:

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

2.2 Test Mode

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

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0
802.11ac VHT80	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : GSM850 Idle + Bluetooth Link + WLAN(2.4G)Link + USB Cable 1(Charging from Adapter) + Battery1

Simultaneous transmission
802.11ac80 CH106(5530MHz)+ BT normal Link+ GSM 850 link 802.11ac80 CH106(5530MHz)+ GSM 850 Link

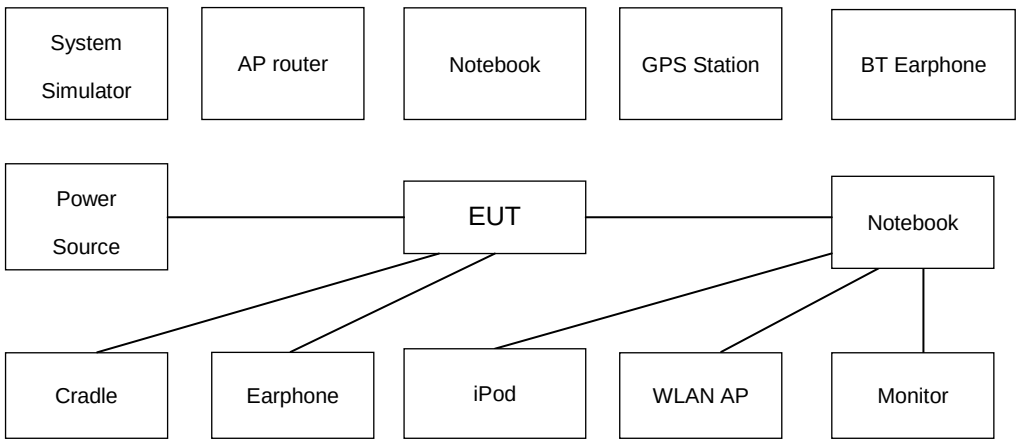
Ch. #		U-NII-1：5180-5240 MHz	U-NII-2A：5260-5320 MHz	U-NII-2C：5500- 5720 MHz
		802.11a	802.11a	802.11a
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140
Straddle		-	-	144

Ch. #		U-NII-1：5180-5240 MHz	U-NII-2A：5260-5320 MHz	U-NII-2C：5500- 5720 MHz
		802.11n HT20	802.11n HT20	802.11n HT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140
Straddle		-	-	144

Ch. #		U-NII-1：5180-5240 MHz	U-NII-2A：5260-5320 MHz	U-NII-2C：5500- 5720 MHz
		802.11n HT40	802.11n HT40	802.11n HT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134
Straddle		-	-	142

Ch. #		U-NII-1：5180-5240 MHz	U-NII-2A：5260-5320 MHz	U-NII-2C：5500- 5720 MHz
		802.11ac VHT80	802.11ac VHT80	802.11ac VHT80
L	Low	-	-	106
M	Middle	42	58	-
H	High	-	-	122
Straddle		-	-	138

2.3 Connection Diagram of Test System



This example is connection diagram of EUT test configurations.

. For detail, please refer to test mode configuration and setup photographs for each test item.

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.	Base Station	Anritsu	MT8821C	Fcc DoC	N/A	Shielded, 1.5m
3.	WLAN AP	Dlink	DIR-820L	KA2IR820LA1	N/A	Unshielded,1.8m
4.	Bluetooth Earphone	Samsung	EO-MG900	PYAHS-107W	N/A	N/A
5.	Bluetooth Earphone	Nokia	N95	PYA WE03M	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.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 2.8 + 10 = 12.8 (dB)

3 Test Result

3.1 26dB & 99% Occupied Bandwidth Measurement

3.1.1 Description of 26dB & 99% Occupied Bandwidth

This section is for reporting purpose only.

There is no restriction limits for bandwidth.

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.

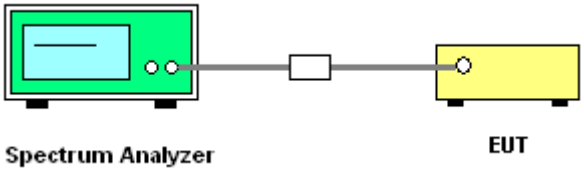
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

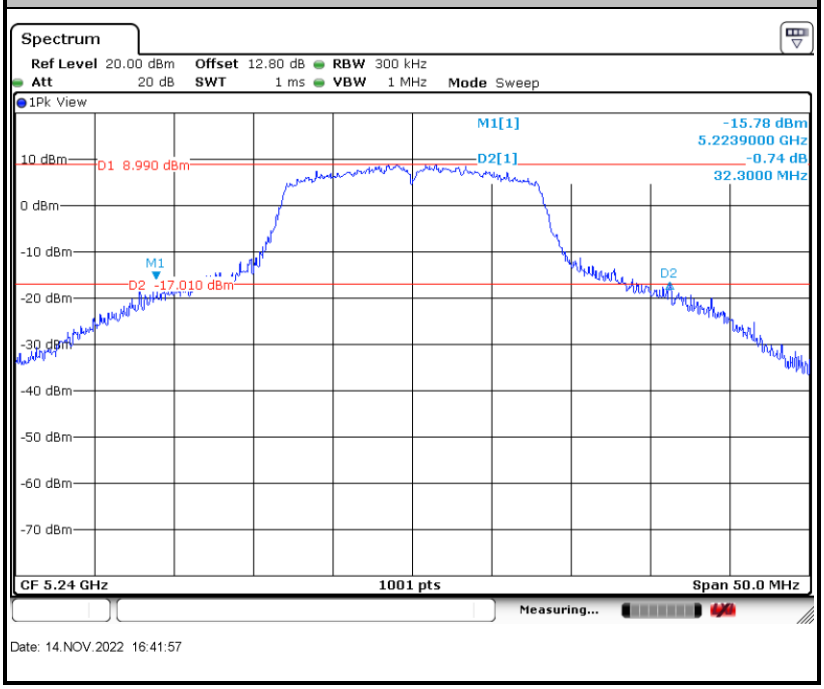
3.1.4 Test Setup



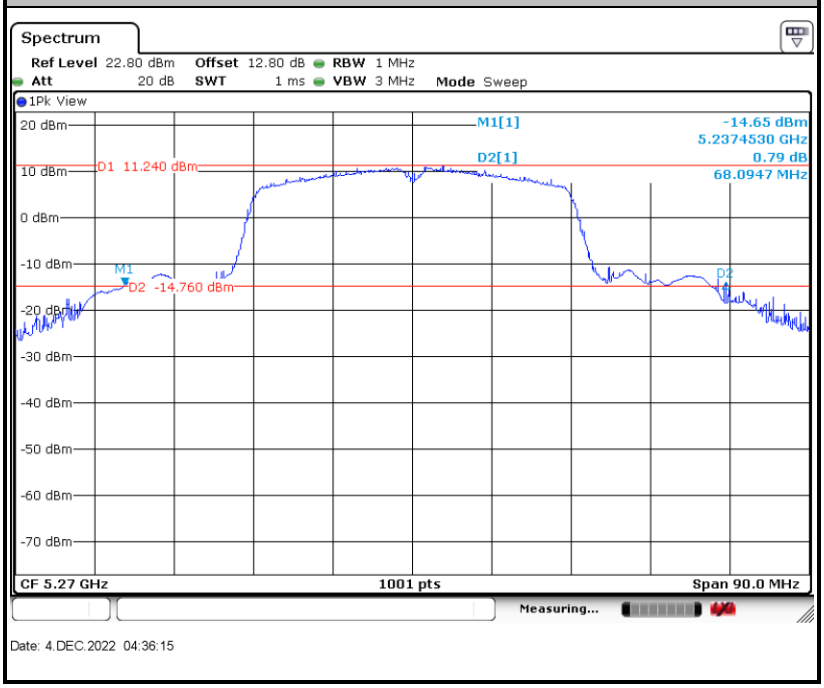
3.1.5 Test Result of 26dB & 99% Occupied Bandwidth

Please refer to Appendix A.

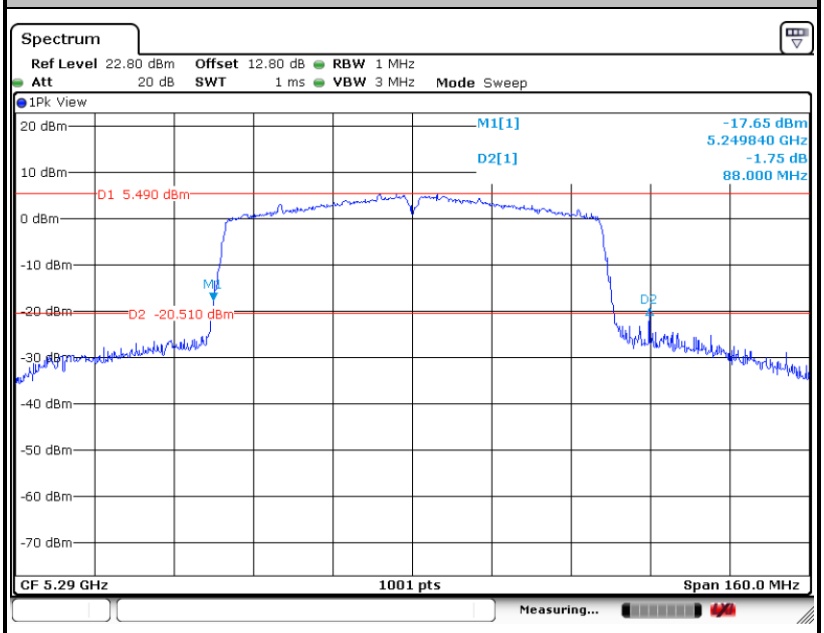
Maximum 26dB Bandwidth for 20M BW



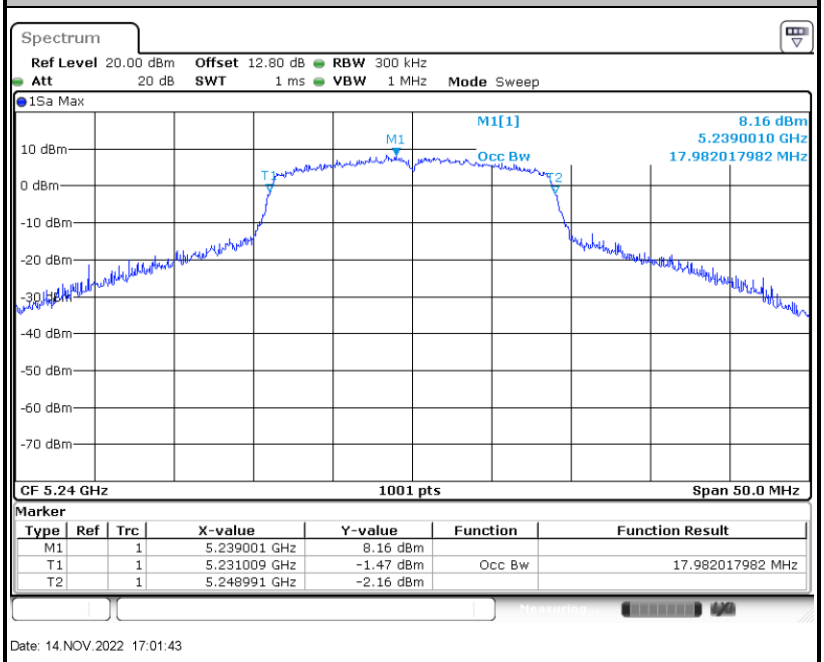
Maximum 26dB Bandwidth for 40M BW



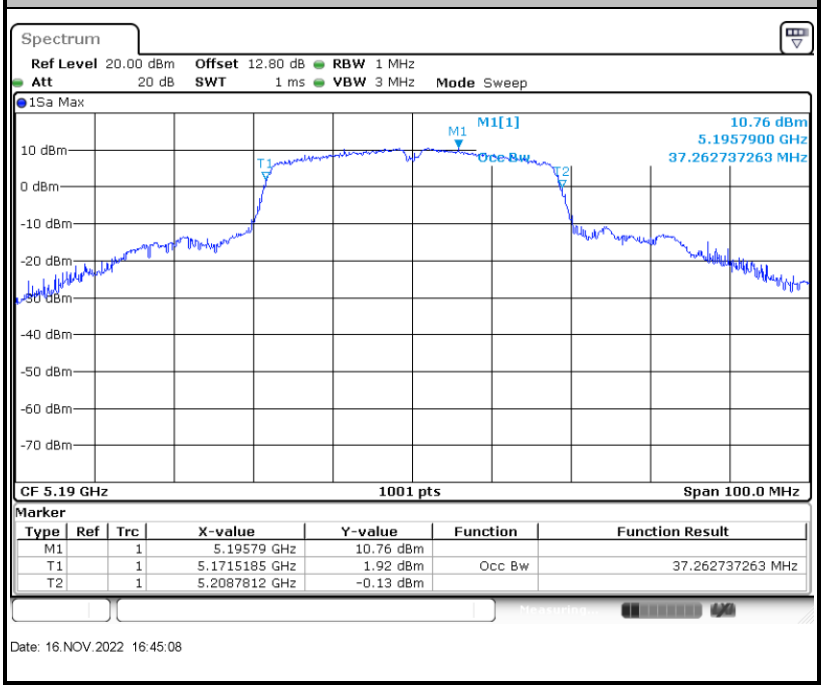
Maximum 26dB Bandwidth for 80M BW



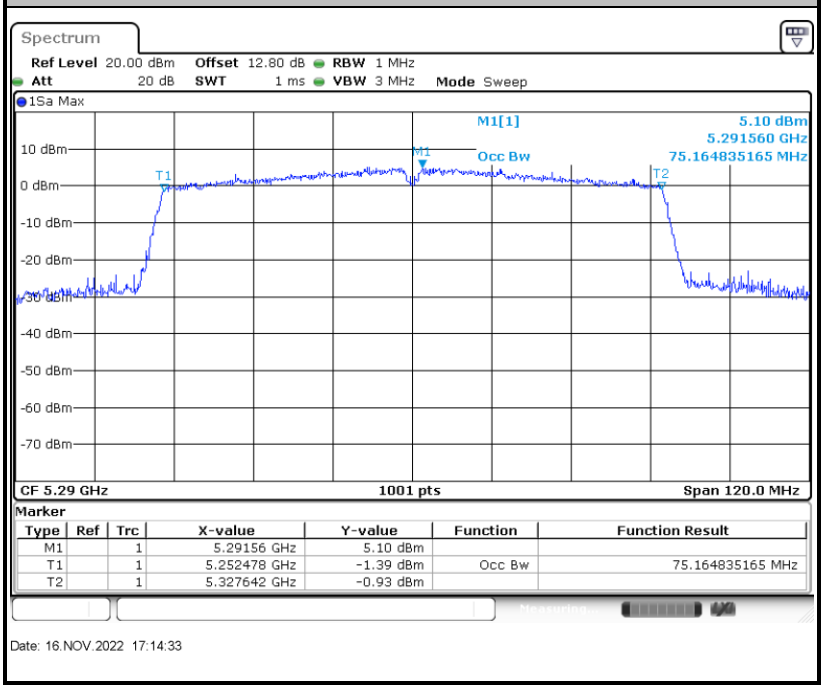
Maximum 99% Occupied Bandwidth for 20M BW



Maximum 99% Occupied Bandwidth for 40M BW



Maximum 99% Occupied Bandwidth for 80M BW



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

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

<FCC 14-30 CFR 15.407>

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

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

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.

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

3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

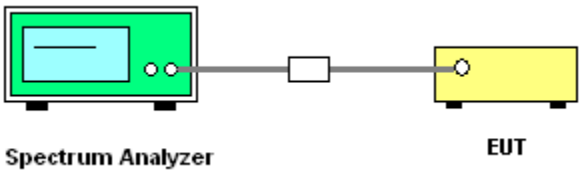
The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

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

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

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.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

<FCC 14-30 CFR 15.407>

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

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

For 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.

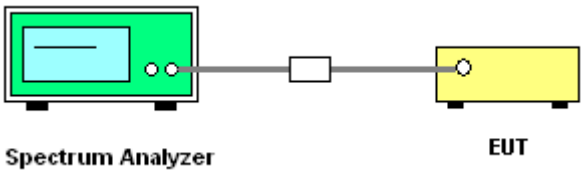
 # Method SA-2 #

(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 = 1 MHz.
- Set VBW ≥ 3 MHz.
- Number of points in sweep ≥ 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- Add 10 log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add 10 log(1/0.25) = 6 dB if the duty cycle is 25 percent.

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

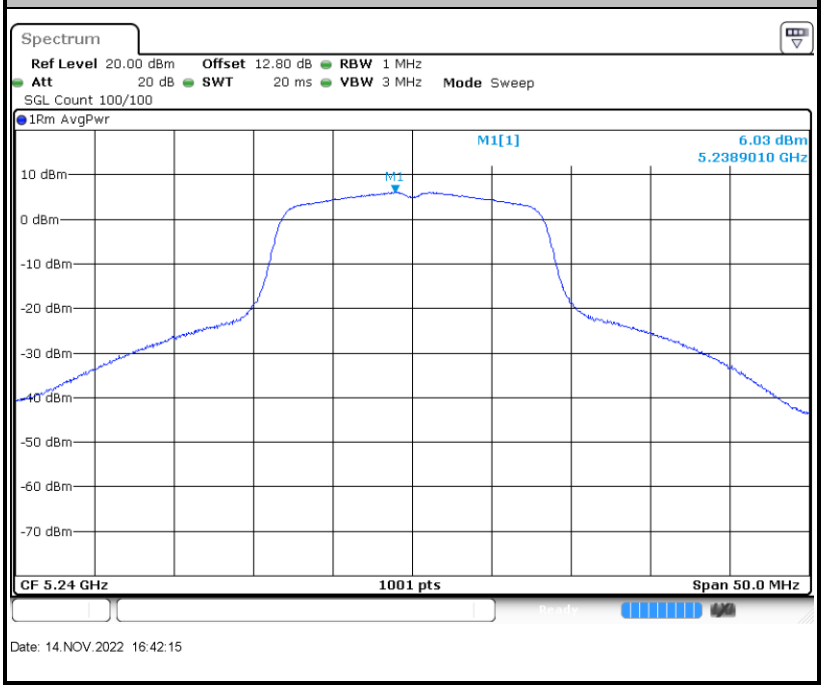
3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

Worst Case Power Density (dBm/MHz)



Note: Average Power Density (6.14dBm/MHz) = Measured value (6.03dBm/MHz)+ Duty Factor (0.11dB).

3.4 Unwanted Emissions Measurement

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

3.4.1 Limit of Unwanted Emissions

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

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

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

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

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

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

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

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

where

EIRP is the equivalent isotropically radiated power, in dBm

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

d_{Meas} is the measurement distance, in m

(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.

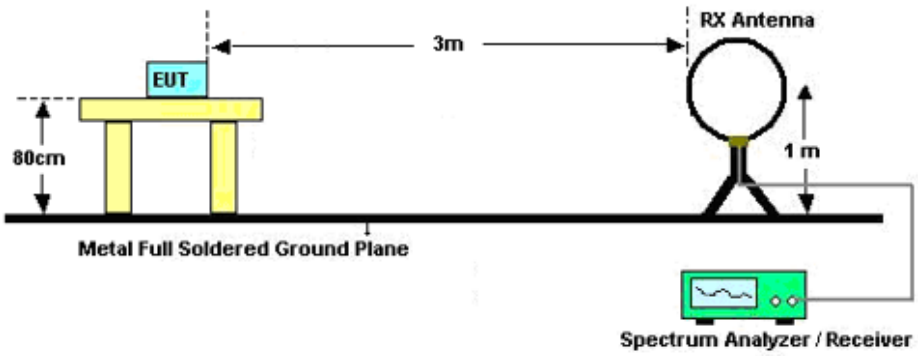
   (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
   - RBW = 120 kHz
   - VBW = 300 kHz
   - Detector = Peak
   - Trace mode = max hold

   (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
   - RBW = 1 MHz
   - VBW ≥ 3 MHz
   - Detector = Peak
   - Sweep time = auto
   - Trace mode = max hold

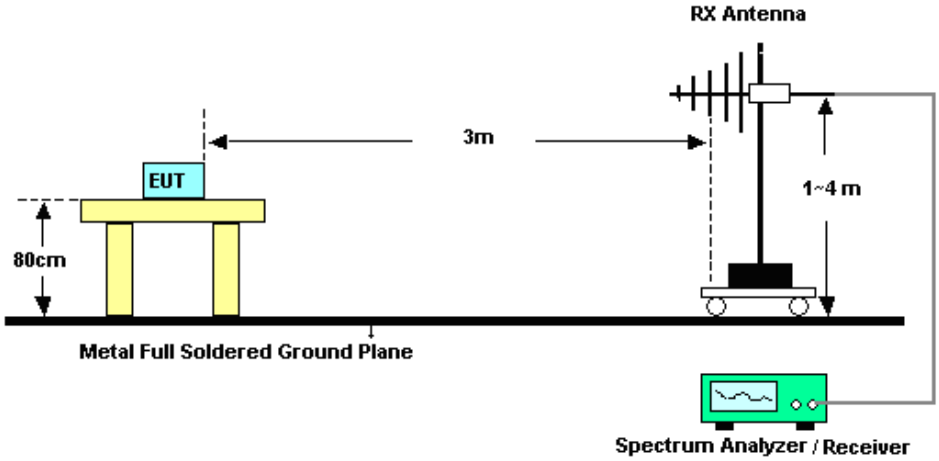
   (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
   - RBW = 1 MHz
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting 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

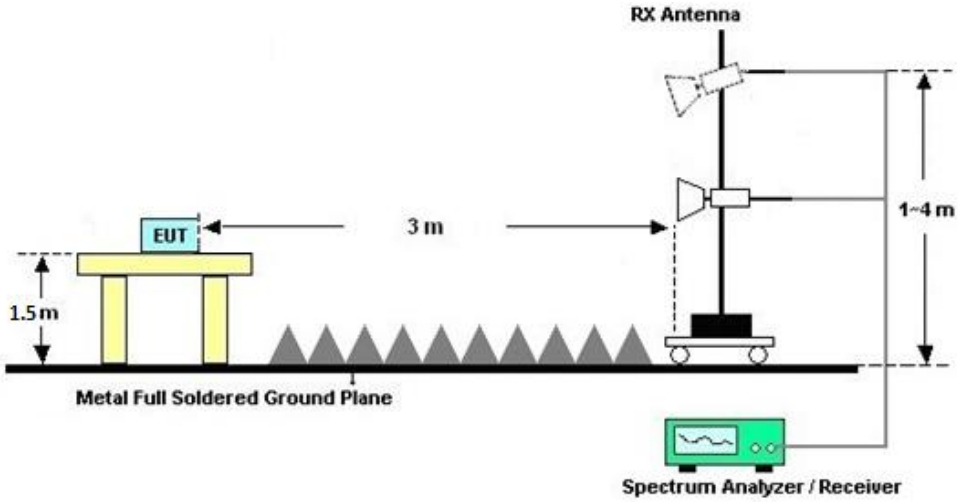
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

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

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

3.4.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C.

3.4.7 Duty Cycle

Please refer to Appendix D.

3.4.8 Test Result of Radiated Spurious Emissions (30MHz ~ 10th Harmonic 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 (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

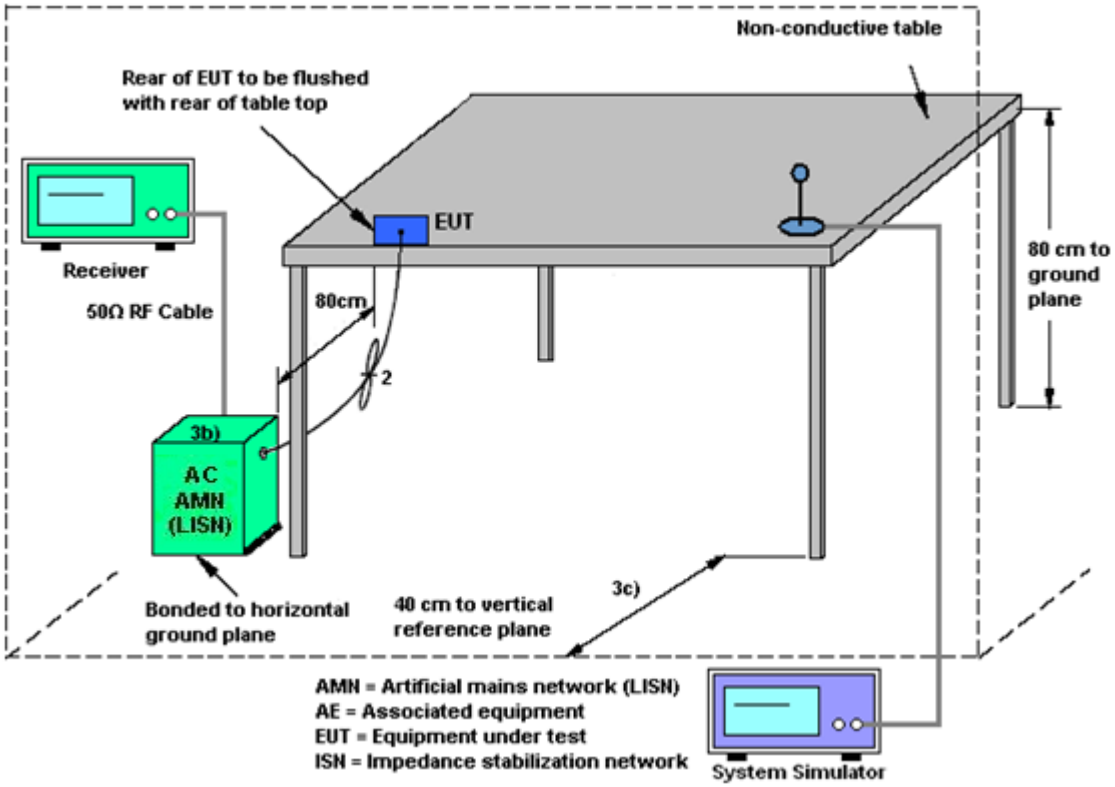
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

3.5.4 Test Setup



3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.6 Antenna Requirements

3.6.1 Standard Applicable

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

3.6.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.6.3 Antenna Gain

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

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 07, 2022	Nov. 14, 2022~ Dec. 04, 2022	Apr. 08, 2023	Conducted (TH01-SZ)
Pulse Power Senor	Anritsu	MA2411B	1339473	30MHz~40GHz	Dec. 28, 2021	Nov. 14, 2022~ Dec. 04, 2022	Dec. 27, 2022	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1542004	50MHz Bandwidth	Dec. 28, 2021	Nov. 14, 2022~ Dec. 04, 2022	Dec. 27, 2022	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Dec. 27, 2021	Dec. 06, 2022	Dec. 26, 2022	Radiation (03CH01-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 07, 2022	Dec. 06, 2022	Jul. 06, 2023	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jun. 28, 2022	Dec. 06, 2022	Jun. 27, 2023	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Sep. 27, 2022	Dec. 06, 2022	Sep. 26, 2023	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 07, 2022	Dec. 06, 2022	Jul. 06, 2023	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 10, 2022	Dec. 06, 2022	Apr. 09, 2023	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 06, 2022	Dec. 06, 2022	Apr. 05, 2023	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00101800-30-10P-R	1943528	1GHz~18GHz	Oct.19, 2022	Dec. 06, 2022	Oct.18, 2023	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5Ghz	Oct. 19, 2022	Dec. 06, 2022	Oct.18, 2023	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 06, 2022	Dec. 06, 2022	Jul. 05, 2023	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	Nov.10, 2022	Dec. 06, 2022	Nov. 09, 2023	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Dec. 06, 2022	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Dec. 06, 2022	NCR	Radiation (03CH01-SZ)
EMI Receiver	R&S	ESR7	101630	9kHz~7GHz;	Jul. 07, 2022	Nov. 18, 2022	Jul. 06, 2023	Conduction (CO01-SZ)
AC LISN	R&S	ENV216	100063	9kHz~30MHz	Sep. 15, 2022	Nov. 18, 2022	Sep. 14, 2023	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Oct. 17, 2022	Nov. 18, 2022	Oct. 16, 2023	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000891	100Vac~250Vac	Jul. 07, 2022	Nov. 18, 2022	Jul. 06, 2023	Conduction (CO01-SZ)

NCR: No Calibration Required

5 Uncertainty of Evaluation

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

Uncertainty of Conducted Measurement

Test Item	Uncertainty
Conducted Power	±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

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.2dB

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))	4.3dB

---------- THE END ----------

Appendix A. Conducted Test Results

Report Number : FR322807-01E

Test Engineer:	Chen Ran	Temperature:	21~25	°C
Test Date:	2022/11/14~2022/12/04	Relative Humidity:	51~54	%

Report Number : FR322807-01E

TEST RESULTS DATA
26dB and 99% OBW

FCC U-NII-1						
Mod.	Data Rate	N_{TX}	CH.	Freq. (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
11a	6Mbps	1	36	5180	16.98	27.05
11a	6Mbps	1	44	5220	17.18	29.85
11a	6Mbps	1	48	5240	17.38	32.30
HT20	MCS0	1	36	5180	17.93	26.40
HT20	MCS0	1	44	5220	17.98	27.00
HT20	MCS0	1	48	5240	17.98	29.40
HT40	MCS0	1	38	5190	37.26	66.38
HT40	MCS0	1	46	5230	37.06	65.85
VHT80	MCS0	1	42	5210	75.04	81.76

Report Number : FR322807-01E

TEST RESULTS DATA
Average Power Table

FCC U-NII-1										
Mod.	Data Rate	N_{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)		Pass/Fail
11a	6Mbps	1	36	5180	0.11	15.87	24.00	-1.80		Pass
11a	6Mbps	1	44	5220	0.11	17.39	24.00	-1.80		Pass
11a	6Mbps	1	48	5240	0.11	17.75	24.00	-1.80		Pass
HT20	MCS0	1	36	5180	0.12	15.75	24.00	-1.80		Pass
HT20	MCS0	1	44	5220	0.12	17.06	24.00	-1.80		Pass
HT20	MCS0	1	48	5240	0.12	17.20	24.00	-1.80		Pass
HT40	MCS0	1	38	5190	0.23	12.12	24.00	-1.80		Pass
HT40	MCS0	1	46	5230	0.23	16.84	24.00	-1.80		Pass
VHT20	MCS0	1	36	5180	0.11	15.68	24.00	-1.80		Pass
VHT20	MCS0	1	44	5220	0.11	16.35	24.00	-1.80		Pass
VHT20	MCS0	1	48	5240	0.11	16.67	24.00	-1.80		Pass
VHT40	MCS0	1	38	5190	0.22	12.08	24.00	-1.80		Pass
VHT40	MCS0	1	46	5230	0.22	16.36	24.00	-1.80		Pass
VHT80	MCS0	1	42	5210	0.44	9.02	24.00	-1.80		Pass

Report Number : FR322807-01E

TEST RESULTS DATA
Power Spectral Density

FCC U-NII-1										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm/MHz)	DG (dBi)	-	Pass/Fail
11a	6Mbps	1	36	5180	0.11	5.29	11.00	-1.80		Pass
11a	6Mbps	1	44	5220	0.11	5.89	11.00	-1.80		Pass
11a	6Mbps	1	48	5240	0.11	6.14	11.00	-1.80		Pass
HT20	MCS0	1	36	5180	0.12	4.58	11.00	-1.80		Pass
HT20	MCS0	1	44	5220	0.12	5.20	11.00	-1.80		Pass
HT20	MCS0	1	48	5240	0.12	5.45	11.00	-1.80		Pass
HT40	MCS0	1	38	5190	0.23	-1.84	11.00	-1.80		Pass
HT40	MCS0	1	46	5230	0.23	2.61	11.00	-1.80		Pass
VHT80	MCS0	1	42	5210	0.44	-8.10	11.00	-1.80		Pass

Report Number : FR322807-01E

TEST RESULTS DATA
26dB and 99% OBW

FCC U-NII-2A								
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)	FCC 26dB Bandwidth Power Limit (dBm)	Note
11a	6M bps	1	52	5260	17.18	29.85	23.98	
11a	6M bps	1	60	5300	17.18	30.95	23.98	
11a	6M bps	1	64	5320	17.13	29.05	23.98	
HT20	MCS 0	1	52	5260	17.98	27.65	23.98	
HT20	MCS 0	1	60	5300	17.93	31.50	23.98	
HT20	MCS 0	1	64	5320	17.93	26.80	23.98	
HT40	MCS 0	1	54	5270	36.86	68.09	23.98	
HT40	MCS 0	1	62	5310	37.06	66.75	23.98	
VHT80	MCS 0	1	58	5290	75.16	88.00	23.98	

Report Number : FR322807-01E

TEST RESULTS DATA
Average Power Table

FCC U-NII-2A										
Mod.	Data Rate	N_{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
11a	6M bps	1	52	5260	0.11	17.62	23.98	-2.50	26.99	Pass
11a	6M bps	1	60	5300	0.11	17.74	23.98	-2.50	26.99	Pass
11a	6M bps	1	64	5320	0.11	17.30	23.98	-2.50	26.99	Pass
HT20	MCS 0	1	52	5260	0.12	17.06	23.98	-2.50	26.99	Pass
HT20	MCS 0	1	60	5300	0.12	17.19	23.98	-2.50	26.99	Pass
HT20	MCS 0	1	64	5320	0.12	16.74	23.98	-2.50	26.99	Pass
HT40	MCS 0	1	54	5270	0.23	16.86	23.98	-2.50	26.99	Pass
HT40	MCS 0	1	62	5310	0.23	12.87	23.98	-2.50	26.99	Pass
VHT20	MCS 0	1	52	5260	0.11	16.52	23.98	-2.50	26.99	Pass
VHT20	MCS 0	1	60	5300	0.11	16.65	23.98	-2.50	26.99	Pass
VHT20	MCS 0	1	64	5320	0.11	16.70	23.98	-2.50	26.99	Pass
VHT40	MCS 0	1	54	5270	0.22	16.42	23.98	-2.50	26.99	Pass
VHT40	MCS 0	1	62	5310	0.22	12.82	23.98	-2.50	26.99	Pass
VHT80	MCS 0	1	58	5290	0.44	10.22	23.98	-2.50	26.99	Pass

Report Number : FR322807-01E

TEST RESULTS DATA
Power Spectral Density

FCC U-NII-2A										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm/MHz)	DG (dBi)		Pass/Fail
11a	6M bps	1	52	5260	0.11	5.98	11.00	-2.50		Pass
11a	6M bps	1	60	5300	0.11	6.09	11.00	-2.50		Pass
11a	6M bps	1	64	5320	0.11	6.05	11.00	-2.50		Pass
HT20	MCS 0	1	52	5260	0.12	5.36	11.00	-2.50		Pass
HT20	MCS 0	1	60	5300	0.12	5.40	11.00	-2.50		Pass
HT20	MCS 0	1	64	5320	0.12	5.21	11.00	-2.50		Pass
HT40	MCS 0	1	54	5270	0.23	2.33	11.00	-2.50		Pass
HT40	MCS 0	1	62	5310	0.23	-1.50	11.00	-2.50		Pass
VHT80	MCS 0	1	58	5290	0.44	-6.96	11.00	-2.50		Pass

Report Number : FR322807-01E

TEST RESULTS DATA
26dB and 99% OBW

FCC U-NII-2C								
Mod.	Data Rate	N_{TX}	CH.	Freq. (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)	FCC 26dB Bandwidth Power Limit (dBm)	Note
11a	6M bps	1	100	5500	16.83	24.20	23.98	
11a	6M bps	1	116	5580	16.88	26.10	23.98	
11a	6M bps	1	140	5700	16.88	26.05	23.98	
11a	6Mbps	1	144	5720	16.98	25.00	23.98	
HT20	MCS 0	1	100	5500	17.88	24.70	23.98	
HT20	MCS 0	1	116	5580	17.93	25.60	23.98	
HT20	MCS 0	1	140	5700	17.88	24.80	23.98	
HT20	MCS0	1	144	5720	17.93	24.80	23.98	
HT40	MCS 0	1	102	5510	36.86	45.63	23.98	
HT40	MCS 0	1	110	5550	37.06	45.63	23.98	
HT40	MCS 0	1	134	5670	37.16	53.55	23.98	
HT40	MCS0	1	142	5710	37.26	53.82	23.98	
VHT80	MCS 0	1	106	5530	75.04	80.80	23.98	
VHT80	MCS 0	1	122	5610	75.04	81.12	23.98	
VHT80	MCS0	1	138	5690	75.04	80.96	23.98	

Report Number : FR322807-01E

TEST RESULTS DATA
Average Power Table

FCC U-NII-2C										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
11a	6M bps	1	100	5500	0.11	16.92	23.98	-3.50	26.99	Pass
11a	6M bps	1	116	5580	0.11	17.32	23.98	-3.50	26.99	Pass
11a	6M bps	1	140	5700	0.11	15.06	23.98	-3.50	26.99	Pass
11a	6M bps	1	144	5720	0.11	17.11	23.98	-3.50	26.99	Pass
HT20	MCS 0	1	100	5500	0.12	16.35	23.98	-3.50	26.99	Pass
HT20	MCS 0	1	116	5580	0.12	16.73	23.98	-3.50	26.99	Pass
HT20	MCS 0	1	140	5700	0.12	14.38	23.98	-3.50	26.99	Pass
HT20	MCS 0	1	144	5720	0.12	16.59	23.98	-3.50	26.99	Pass
HT40	MCS 0	1	102	5510	0.23	13.51	23.98	-3.50	26.99	Pass
HT40	MCS 0	1	110	5550	0.23	16.21	23.98	-3.50	26.99	Pass
HT40	MCS 0	1	134	5670	0.23	15.77	23.98	-3.50	26.99	Pass
HT40	MCS 0	1	142	5710	0.23	16.18	23.98	-3.50	26.99	Pass
VHT20	MCS 0	1	100	5500	0.11	15.79	23.98	-3.50	26.99	Pass
VHT20	MCS 0	1	116	5580	0.11	16.17	23.98	-3.50	26.99	Pass
VHT20	MCS 0	1	140	5700	0.11	14.34	23.98	-3.50	26.99	Pass
VHT20	MCS 0	1	144	5720	0.11	16.05	23.98	-3.50	26.99	Pass
VHT40	MCS 0	1	102	5510	0.22	13.46	23.98	-3.50	26.99	Pass
VHT40	MCS 0	1	110	5550	0.22	15.61	23.98	-3.50	26.99	Pass
VHT40	MCS 0	1	134	5670	0.22	15.75	23.98	-3.50	26.99	Pass
VHT40	MCS 0	1	142	5710	0.22	15.78	23.98	-3.50	26.99	Pass
VHT80	MCS 0	1	106	5530	0.44	10.47	23.98	-3.50	26.99	Pass
VHT80	MCS 0	1	122	5610	0.44	13.59	23.98	-3.50	26.99	Pass
VHT80	MCS 0	1	138	5690	0.44	13.54	23.98	-3.50	26.99	Pass

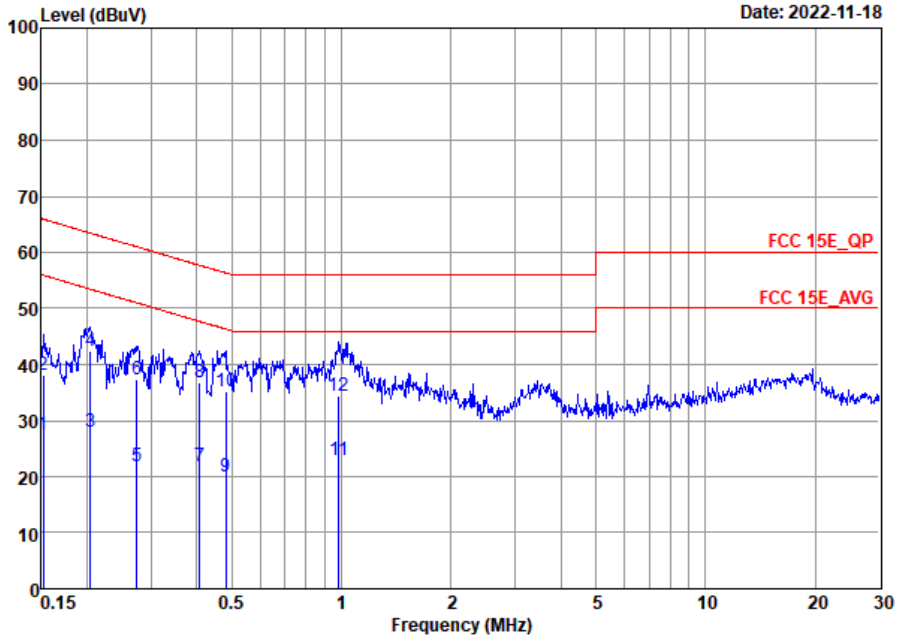
Report Number : FR322807-01E

TEST RESULTS DATA
Power Spectral Density

FCC U-NII-2C										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm/MHz)	DG (dBi)		Pass/Fail
11a	6M bps	1	100	5500	0.11	5.55	11.00	-3.50		Pass
11a	6M bps	1	116	5580	0.11	5.55	11.00	-3.50		Pass
11a	6M bps	1	140	5700	0.11	5.43	11.00	-3.50		Pass
11a	6Mbps	1	144	5720	0.11	5.47	11.00	-3.50		Pass
HT20	MCS 0	1	100	5500	0.12	4.84	11.00	-3.50		Pass
HT20	MCS 0	1	116	5580	0.12	4.98	11.00	-3.50		Pass
HT20	MCS 0	1	140	5700	0.12	4.73	11.00	-3.50		Pass
HT20	MCS0	1	144	5720	0.12	4.75	11.00	-3.50		Pass
HT40	MCS 0	1	102	5510	0.23	1.90	11.00	-3.50		Pass
HT40	MCS 0	1	110	5550	0.23	1.88	11.00	-3.50		Pass
HT40	MCS 0	1	134	5670	0.23	2.04	11.00	-3.50		Pass
HT40	MCS0	1	142	5710	0.23	1.87	11.00	-3.50		Pass
VHT80	MCS 0	1	106	5530	0.44	-6.39	11.00	-3.50		Pass
VHT80	MCS 0	1	122	5610	0.44	-3.51	11.00	-3.50		Pass
VHT80	MCS0	1	138	5690	0.44	-3.65	11.00	-3.50		Pass

Appendix B. AC Conducted Emission Test Results

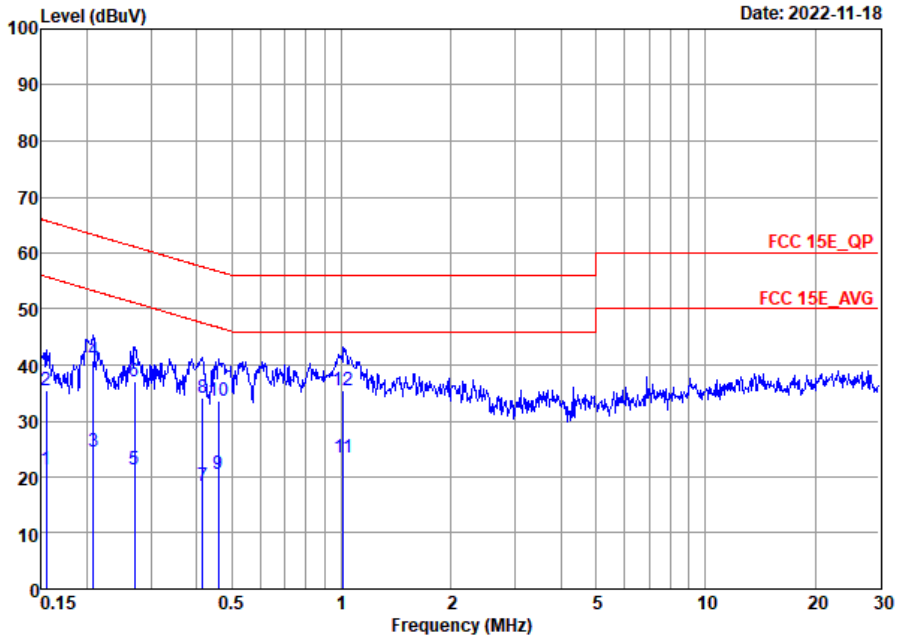
Test Engineer :	Lily Qiu	**Temperature :**	21~24℃
		Relative Humidity :	39~43%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-SZ
Condition: FCC 15E_QP LISN_20220811_ L LINE

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1		0.15	27.43	-28.48	55.91	6.40	10.20	10.83	Average
2		0.15	38.13	-27.78	65.91	17.10	10.20	10.83	QP
3		0.20	27.99	-25.46	53.45	7.59	10.20	10.20	Average
4		0.20	42.49	-20.96	63.45	22.09	10.20	10.20	QP
5		0.27	21.81	-29.17	50.98	0.90	10.17	10.74	Average
6		0.27	37.31	-23.67	60.98	16.40	10.17	10.74	QP
7		0.41	21.88	-25.80	47.68	0.30	10.10	11.48	Average
8	*	0.41	36.88	-20.80	57.68	15.30	10.10	11.48	QP
9		0.48	20.12	-26.20	46.32	-1.80	10.12	11.80	Average
10		0.48	35.12	-21.20	56.32	13.20	10.12	11.80	QP
11		0.98	22.89	-23.11	46.00	2.50	10.12	10.27	Average
12		0.98	34.49	-21.51	56.00	14.10	10.12	10.27	QP

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



Site : CO01-SZ
Condition: FCC 15E_QP LISN_20220811_ N NEUTRAL

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15	21.38	-34.36	55.74	0.30	10.31	10.77	Average
2	0.15	35.48	-30.26	65.74	14.40	10.31	10.77	QP
3	0.21	24.60	-28.67	53.27	4.10	10.27	10.23	Average
4	0.21	40.70	-22.57	63.27	20.20	10.27	10.23	QP
5	0.27	21.44	-29.68	51.12	0.50	10.23	10.71	Average
6	0.27	36.94	-24.18	61.12	16.00	10.23	10.71	QP
7	0.41	18.50	-29.05	47.55	-3.20	10.19	11.51	Average
8	0.41	34.20	-23.35	57.55	12.50	10.19	11.51	QP
9	0.46	20.60	-26.11	46.71	-1.30	10.19	11.71	Average
10	0.46	33.60	-23.11	56.71	11.70	10.19	11.71	QP
11	1.01	23.45	-22.55	46.00	3.00	10.22	10.23	Average
12 *	1.01	35.45	-20.55	56.00	15.00	10.22	10.23	QP

Note:

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

Appendix C. Radiated Spurious Emission

U-NII-1 - 5150~5250MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
9		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 36 5180MHz		5148.72	59.42	-14.58	74	45.25	34.87	11.09	31.79	278	342	P	H
		5149.76	50.42	-3.58	54	36.25	34.87	11.09	31.79	278	342	A	H
	*	5180	104.88	------	------	90.77	34.86	11.07	31.82	278	342	P	H
	*	5180	98.57	------	------	84.46	34.86	11.07	31.82	278	342	A	H
		5149.5	60.89	-13.11	74	46.72	34.87	11.09	31.79	285	4	P	V
		5150	50.64	-3.36	54	36.47	34.87	11.09	31.79	285	4	A	V
	*	5180	106.62	------	------	92.51	34.86	11.07	31.82	285	4	P	V
	*	5180	100.86	------	------	86.75	34.86	11.07	31.82	285	4	A	V
802.11a CH 48 5240MHz		5076.7	52.77	-21.23	74	38.46	34.88	11.12	31.69	282	339	P	H
		5137.28	43.14	-10.86	54	28.94	34.87	11.09	31.76	282	339	A	H
	*	5240	107.48	------	------	93.49	34.85	11.02	31.88	282	339	P	H
	*	5240	101.53	------	------	87.54	34.85	11.02	31.88	282	339	A	H
		5351.52	52.07	-21.93	74	38.35	34.83	10.93	32.04	282	339	P	H
		5358.72	42.07	-11.93	54	28.35	34.83	10.93	32.04	282	339	A	H
		5002.6	53.24	-20.76	74	38.78	34.9	11.16	31.6	244	2	P	V
		5133.9	43.22	-10.78	54	29.02	34.87	11.09	31.76	244	2	A	V
	*	5240	107.93	------	------	93.94	34.85	11.02	31.88	244	2	P	V
	*	5240	101.53	------	------	87.54	34.85	11.02	31.88	244	2	A	V
		5375.04	52.28	-21.72	74	38.6	34.82	10.93	32.07	244	2	P	V
		5350.8	42.46	-11.54	54	28.74	34.83	10.93	32.04	244	2	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-1 5150~5250MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 9	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 36 5180MHz		10360	50.58	-17.72	68.3	47.76	39.44	14.15	50.77	-	-	P	H
		15540	50.13	-23.87	74	42.89	41.82	16.85	51.43	-	-	P	H
		10360	50.17	-18.13	68.3	47.35	39.44	14.15	50.77	-	-	P	V
		15540	50.53	-23.47	74	43.29	41.82	16.85	51.43	-	-	P	V
802.11a CH 44 5220MHz		10440	50.61	-17.69	68.3	47.72	39.48	14.2	50.79	-	-	P	H
		15660	50.34	-23.66	74	43.01	41.9	16.95	51.52	-	-	P	H
		10440	50.53	-17.77	68.3	47.64	39.48	14.2	50.79	-	-	P	V
		15660	50.31	-23.69	74	42.98	41.9	16.95	51.52	-	-	P	V
802.11a CH 48 5240MHz		10480	50.47	-17.83	68.3	47.56	39.49	14.22	50.8	-	-	P	H
		15720	50.05	-23.95	74	42.72	41.93	16.98	51.58	-	-	P	H
		10480	50.64	-17.66	68.3	47.73	39.49	14.22	50.8	-	-	P	V
		15720	50.66	-23.34	74	43.33	41.93	16.98	51.58	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-1 5150~5250MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 9	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)
802.11n HT20 CH 36 5180MHz		5149.24	63.36	-10.64	74	49.19	34.87	11.09	31.79	275	347	P	H
		5149.76	50.36	-3.64	54	36.19	34.87	11.09	31.79	275	347	A	H
	*	5180	104.4	------	------	90.29	34.86	11.07	31.82	275	347	P	H
	*	5180	98.66	------	------	84.55	34.86	11.07	31.82	275	347	A	H
		5149.99	64.31	-9.69	74	50.14	34.87	11.09	31.79	243	0	P	V
		5149.76	50.61	-3.39	54	36.44	34.87	11.09	31.79	243	0	A	V
	*	5180	105.94	------	------	91.83	34.86	11.07	31.82	243	0	P	V
	*	5180	99.56	------	------	85.45	34.86	11.07	31.82	243	0	A	V
802.11n HT20 CH 48 5240MHz		5047.32	53.21	-20.79	74	38.84	34.89	11.14	31.66	282	340	P	H
		5136.76	43.19	-10.81	54	28.99	34.87	11.09	31.76	282	340	A	H
	*	5240	106.79	------	------	92.8	34.85	11.02	31.88	282	340	P	H
	*	5240	100.45	------	------	86.46	34.85	11.02	31.88	282	340	A	H
		5394.24	51.89	-22.11	74	38.24	34.82	10.9	32.07	282	340	P	H
		5350.32	42.2	-11.8	54	28.48	34.83	10.93	32.04	282	340	A	H
		5136.24	53.76	-20.24	74	39.56	34.87	11.09	31.76	267	0	P	V
		5137.02	43.09	-10.91	54	28.89	34.87	11.09	31.76	267	0	A	V
	*	5240	107.34	------	------	93.35	34.85	11.02	31.88	267	0	P	V
	*	5240	101.45	------	------	87.46	34.85	11.02	31.88	267	0	A	V
		5359.44	51.85	-22.15	74	38.13	34.83	10.93	32.04	267	0	P	V
		5350.8	42.17	-11.83	54	28.45	34.83	10.93	32.04	267	0	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-1 5150~5250MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 9	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)
802.11n HT20 CH 36 5180MHz		10360	50.99	-17.31	68.3	48.17	39.44	14.15	50.77	-	-	P	H
		15540	50.19	-23.81	74	42.95	41.82	16.85	51.43	-	-	P	H
		10360	50.47	-17.83	68.3	47.65	39.44	14.15	50.77	-	-	P	V
		15540	50.08	-23.92	74	42.84	41.82	16.85	51.43	-	-	P	V
802.11n HT20 CH 44 5220MHz		10440	50.5	-17.8	68.3	47.61	39.48	14.2	50.79	-	-	P	H
		15660	50.21	-23.79	74	42.88	41.9	16.95	51.52	-	-	P	H
		10440	50.19	-18.11	68.3	47.3	39.48	14.2	50.79	-	-	P	V
		15660	50.17	-23.83	74	42.84	41.9	16.95	51.52	-	-	P	V
802.11n HT20 CH 48 5240MHz		10480	50.14	-18.16	68.3	47.23	39.49	14.22	50.8	-	-	P	H
		15720	50.43	-23.57	74	43.1	41.93	16.98	51.58	-	-	P	H
		10480	50.32	-17.98	68.3	47.41	39.49	14.22	50.8	-	-	P	V
		15720	50.21	-23.79	74	42.88	41.93	16.98	51.58	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-1 5150~5250MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 9	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)
802.11n HT40 CH 38 5190MHz		5149.76	63.16	-10.84	74	48.99	34.87	11.09	31.79	240	306	P	H
		5149.5	51.3	-2.7	54	37.13	34.87	11.09	31.79	240	306	A	H
	*	5190	100.14	------	------	86.03	34.86	11.07	31.82	240	306	P	H
	*	5190	94	------	------	79.89	34.86	11.07	31.82	240	306	A	H
		5359.76	51.4	-22.6	74	37.68	34.83	10.93	32.04	240	306	P	H
		5362	42.86	-11.14	54	29.14	34.83	10.93	32.04	240	306	A	H
		5148.46	61.7	-12.3	74	47.53	34.87	11.09	31.79	240	8	P	V
		5148.46	52.58	-1.42	54	38.41	34.87	11.09	31.79	240	8	A	V
	*	5190	101.1	------	------	86.99	34.86	11.07	31.82	240	8	P	V
	*	5190	94.78	------	------	80.67	34.86	11.07	31.82	240	8	A	V
		5428.36	52.49	-21.51	74	38.76	34.81	11.06	32.14	240	8	P	V
		5357.8	43.14	-10.86	54	29.42	34.83	10.93	32.04	240	8	A	V
802.11n HT40 CH 46 5230MHz		5149.24	58.09	-15.91	74	43.92	34.87	11.09	31.79	226	319	P	H
		5149.5	47.63	-6.37	54	33.46	34.87	11.09	31.79	226	319	A	H
	*	5230	104.22	------	------	90.2	34.85	11.05	31.88	226	319	P	H
	*	5230	97.43	------	------	83.41	34.85	11.05	31.88	226	319	A	H
		5382.24	51.46	-22.54	74	37.78	34.82	10.93	32.07	226	319	P	H
		5352	43.02	-10.98	54	29.3	34.83	10.93	32.04	226	319	A	H
		5148.98	57.47	-16.53	74	43.3	34.87	11.09	31.79	241	0	P	V
		5150	47.22	-6.78	54	33.05	34.87	11.09	31.79	241	0	A	V
	*	5230	104.45	------	------	90.43	34.85	11.05	31.88	241	0	P	V
	*	5230	97.28	------	------	83.26	34.85	11.05	31.88	241	0	A	V
		5351.52	52.41	-21.59	74	38.69	34.83	10.93	32.04	241	0	P	V
		5350.08	43.19	-10.81	54	29.47	34.83	10.93	32.04	241	0	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-1 5150~5250MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 9	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)
802.11n HT40 CH 38 5190MHz		10380	50.95	-17.35	68.3	48.1	39.45	14.18	50.78	-	-	P	H
		15570	50.38	-23.62	74	43.12	41.84	16.88	51.46	-	-	P	H
		10380	50.7	-17.6	68.3	47.85	39.45	14.18	50.78	-	-	P	V
		15570	50.84	-23.16	74	43.58	41.84	16.88	51.46	-	-	P	V
802.11n HT40 CH 46 5230MHz		10460	49.57	-18.73	68.3	46.66	39.48	14.22	50.79	-	-	P	H
		15690	50.71	-23.29	74	43.37	41.91	16.98	51.55	-	-	P	H
		10460	50.56	-17.74	68.3	47.65	39.48	14.22	50.79	-	-	P	V
		15690	50.25	-23.75	74	42.91	41.91	16.98	51.55	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-1 5150~5250MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 9	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 42 5210MHz		5149.76	59.91	-14.09	74	45.74	34.87	11.09	31.79	240	307	P	H
		5150	51.89	-2.11	54	37.72	34.87	11.09	31.79	240	307	A	H
	*	5210	93.98	------	------	79.92	34.86	11.05	31.85	240	307	P	H
	*	5210	87.91	------	------	73.85	34.86	11.05	31.85	240	307	A	H
		5403.12	52.52	-21.48	74	38.91	34.82	10.9	32.11	240	307	P	H
		5366.88	44.1	-9.9	54	30.38	34.83	10.93	32.04	240	307	A	H
		5147.94	58.6	-15.4	74	44.43	34.87	11.09	31.79	242	6	P	V
		5149.76	52.32	-1.68	54	38.15	34.87	11.09	31.79	242	6	A	V
	*	5210	95.39	------	------	81.33	34.86	11.05	31.85	242	6	P	V
	*	5210	89.37	------	------	75.31	34.86	11.05	31.85	242	6	A	V
		5423.04	52.41	-21.59	74	38.8	34.82	10.9	32.11	242	6	P	V
		5394.24	44.61	-9.39	54	30.96	34.82	10.9	32.07	242	6	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-1 5150~5250MHz
WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 9	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 42 5210MHz		10420	50.58	-17.72	68.3	47.69	39.47	14.2	50.78	-	-	P	H
		15630	50.02	-23.98	74	42.74	41.88	16.91	51.51	-	-	P	H
		10420	50.05	-18.25	68.3	47.16	39.47	14.2	50.78	-	-	P	V
		15630	50.17	-23.83	74	42.89	41.88	16.91	51.51	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2A - 5250~5350MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant. 9	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 52 5260MHz		5047.58	53.21	-20.79	74	38.84	34.89	11.14	31.66	235	308	P	H
		5135.2	43.1	-10.9	54	28.9	34.87	11.09	31.76	235	308	A	H
	*	5260	107.08	------	------	93.13	34.85	11.02	31.92	235	308	P	H
	*	5260	100.31	------	------	86.36	34.85	11.02	31.92	235	308	A	H
		5387.04	52.51	-21.49	74	38.83	34.82	10.93	32.07	235	308	P	H
		5368.32	42.7	-11.3	54	28.98	34.83	10.93	32.04	235	308	A	H
		5105.56	52.81	-21.19	74	38.54	34.88	11.12	31.73	247	0	P	V
		5130.26	42.99	-11.01	54	28.79	34.87	11.09	31.76	247	0	A	V
	*	5260	107.84	------	------	93.89	34.85	11.02	31.92	247	0	P	V
	*	5260	100.37	------	------	86.42	34.85	11.02	31.92	247	0	A	V
		5351.04	52.32	-21.68	74	38.6	34.83	10.93	32.04	247	0	P	V
		5361.6	42.85	-11.15	54	29.13	34.83	10.93	32.04	247	0	A	V
802.11a CH 64 5320MHz	*	5320	105.23	------	------	91.41	34.84	10.96	31.98	245	297	P	H
	*	5320	98.27	------	------	84.45	34.84	10.96	31.98	245	297	A	H
		5351.68	61.11	-12.89	74	47.39	34.83	10.93	32.04	245	297	P	H
		5350.72	49.03	-4.97	54	35.31	34.83	10.93	32.04	245	297	A	H
	*	5320	107.93	------	------	94.11	34.84	10.96	31.98	225	0	P	V
	*	5320	101.66	------	------	87.84	34.84	10.96	31.98	225	0	A	V
		5353.6	65.36	-8.64	74	51.64	34.83	10.93	32.04	225	0	P	V
		5350.72	50.87	-3.13	54	37.15	34.83	10.93	32.04	225	0	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2A 5250~5350MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 9	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 52 5260MHz		10520	50.69	-17.61	68.3	47.74	39.5	14.25	50.8	-	-	P	H
		15780	49.78	-24.22	74	42.39	41.97	17.04	51.62	-	-	P	H
		10520	50.47	-17.83	68.3	47.52	39.5	14.25	50.8	-	-	P	V
		15780	50.27	-23.73	74	42.88	41.97	17.04	51.62	-	-	P	V
802.11a CH 60 5300MHz		10600	49.83	-24.17	74	46.86	39.48	14.29	50.8	-	-	P	H
		15900	50.77	-23.23	74	43.31	42.04	17.14	51.72	-	-	P	H
		10600	49.97	-24.03	74	47	39.48	14.29	50.8	-	-	P	V
		15900	50.57	-23.43	74	43.11	42.04	17.14	51.72	-	-	P	V
802.11a CH 64 5320MHz		10640	50.64	-23.36	74	47.65	39.47	14.32	50.8	-	-	P	H
		15960	50.02	-23.98	74	42.51	42.08	17.2	51.77	-	-	P	H
		10640	50.24	-23.76	74	47.25	39.47	14.32	50.8	-	-	P	V
		15960	50.07	-23.93	74	42.56	42.08	17.2	51.77	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2A 5250~5350MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 9	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)
802.11n HT20 CH 52 5260MHz		5022.36	52.05	-21.95	74	37.62	34.9	11.16	31.63	223	306	P	H
		5038.74	42.84	-11.16	54	28.44	34.89	11.14	31.63	223	306	A	H
	*	5260	105.35	------	------	91.4	34.85	11.02	31.92	223	306	P	H
	*	5260	98.14	------	------	84.19	34.85	11.02	31.92	223	306	A	H
		5359.92	52.33	-21.67	74	38.61	34.83	10.93	32.04	223	306	P	H
		5372.16	42.13	-11.87	54	28.41	34.83	10.93	32.04	223	306	A	H
		5146.38	52.81	-21.19	74	38.64	34.87	11.09	31.79	223	5	P	V
		5127.14	42.94	-11.06	54	28.74	34.87	11.09	31.76	223	5	A	V
	*	5260	107.18	------	------	93.23	34.85	11.02	31.92	223	5	P	V
	*	5260	100.2	------	------	86.25	34.85	11.02	31.92	223	5	A	V
		5405.28	52.38	-21.62	74	38.77	34.82	10.9	32.11	223	5	P	V
		5356.56	42.74	-11.26	54	29.02	34.83	10.93	32.04	223	5	A	V
802.11n HT20 CH 64 5320MHz	*	5320	104.98	------	------	91.16	34.84	10.96	31.98	233	317	P	H
	*	5320	97.97	------	------	84.15	34.84	10.96	31.98	233	317	A	H
		5350.08	62.49	-11.51	74	48.77	34.83	10.93	32.04	233	317	P	H
		5351.04	48.53	-5.47	54	34.81	34.83	10.93	32.04	233	317	A	H
	*	5320	106.36	------	------	92.54	34.84	10.96	31.98	235	0	P	V
	*	5320	99.05	------	------	85.23	34.84	10.96	31.98	235	0	A	V
		5350.56	62.45	-11.55	74	48.73	34.83	10.93	32.04	235	0	P	V
		5350.08	50.62	-3.38	54	36.9	34.83	10.93	32.04	235	0	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2A 5250~5350MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 9	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)
802.11n HT20 CH 52 5260MHz		10520	50.9	-17.4	68.3	47.95	39.5	14.25	50.8	-	-	P	H
		15780	50.63	-23.37	74	43.24	41.97	17.04	51.62	-	-	P	H
		10520	50.9	-17.4	68.3	47.95	39.5	14.25	50.8	-	-	P	V
		15780	50.64	-23.36	74	43.25	41.97	17.04	51.62	-	-	P	V
802.11n HT20 CH 60 5300MHz		10600	50.45	-23.55	74	47.48	39.48	14.29	50.8	-	-	P	H
		15900	50.62	-23.38	74	43.16	42.04	17.14	51.72	-	-	P	H
		10600	49.93	-24.07	74	46.96	39.48	14.29	50.8	-	-	P	V
		15900	50.71	-23.29	74	43.25	42.04	17.14	51.72	-	-	P	V
802.11n HT20 CH 64 5320MHz		10640	50.46	-23.54	74	47.47	39.47	14.32	50.8	-	-	P	H
		15960	50.92	-23.08	74	43.41	42.08	17.2	51.77	-	-	P	H
		10640	50.47	-23.53	74	47.48	39.47	14.32	50.8	-	-	P	V
		15960	50.18	-23.82	74	42.67	42.08	17.2	51.77	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2A 5250~5350MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 9	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)
802.11n HT40 CH 54 5270MHz		5094.85	52.83	-21.17	74	38.56	34.88	11.12	31.73	200	304	P	H
		5149.45	43.9	-10.1	54	29.73	34.87	11.09	31.79	200	304	A	H
	*	5270	104.43	------	------	90.48	34.85	11.02	31.92	200	304	P	H
	*	5270	97.26	------	------	83.31	34.85	11.02	31.92	200	304	A	H
		5350.56	57.69	-16.31	74	43.97	34.83	10.93	32.04	200	304	P	H
		5350.08	46.22	-7.78	54	32.5	34.83	10.93	32.04	200	304	A	H
		5097.65	53.39	-20.61	74	39.12	34.88	11.12	31.73	227	0	P	V
		5146.65	44.28	-9.72	54	30.11	34.87	11.09	31.79	227	0	A	V
	*	5270	104.73	------	------	90.78	34.85	11.02	31.92	227	0	P	V
	*	5270	97.61	------	------	83.66	34.85	11.02	31.92	227	0	A	V
		5351.04	59.31	-14.69	74	45.59	34.83	10.93	32.04	227	0	P	V
		5352.24	47.64	-6.36	54	33.92	34.83	10.93	32.04	227	0	A	V
802.11n HT40 CH 62 5310MHz		5117.25	52.8	-21.2	74	38.56	34.88	11.09	31.73	238	306	P	H
		5045.15	43.74	-10.26	54	29.37	34.89	11.14	31.66	238	306	A	H
	*	5310	97.62	------	------	83.8	34.84	10.96	31.98	238	306	P	H
	*	5310	91.46	------	------	77.64	34.84	10.96	31.98	238	306	A	H
		5351.28	59.71	-14.29	74	45.99	34.83	10.93	32.04	238	306	P	H
		5350.08	50.54	-3.46	54	36.82	34.83	10.93	32.04	238	306	A	H
		5129.5	52.07	-21.93	74	37.87	34.87	11.09	31.76	236	9	P	V
		5143.5	43.78	-10.22	54	29.58	34.87	11.09	31.76	236	9	A	V
	*	5310	100.1	------	------	86.28	34.84	10.96	31.98	236	9	P	V
	*	5310	93.89	------	------	80.07	34.84	10.96	31.98	236	9	A	V
		5350.08	63.05	-10.95	74	49.33	34.83	10.93	32.04	236	9	P	V
		5350.08	52.73	-1.27	54	39.01	34.83	10.93	32.04	236	9	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2A 5250~5350MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 9	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)
802.11n HT40 CH 54 5270MHz		10540	50.15	-18.15	68.3	47.19	39.49	14.27	50.8	-	-	P	H
		15810	50.04	-23.96	74	42.63	41.99	17.07	51.65	-	-	P	H
		10540	50.2	-18.1	68.3	47.24	39.49	14.27	50.8	-	-	P	V
		15810	50.3	-23.7	74	42.89	41.99	17.07	51.65	-	-	P	V
802.11n HT40 CH 62 5310MHz		10620	50.09	-23.91	74	47.09	39.48	14.32	50.8	-	-	P	H
		15930	50.71	-23.29	74	43.22	42.06	17.17	51.74	-	-	P	H
		10620	50.03	-23.97	74	47.03	39.48	14.32	50.8	-	-	P	V
		15930	50.83	-23.17	74	43.34	42.06	17.17	51.74	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

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

WIFI Ant. 9	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 58 5290MHz		5085.4	52.61	-21.39	74	38.3	34.88	11.12	31.69	233	307	P	H
		5145.25	45.59	-8.41	54	31.42	34.87	11.09	31.79	233	307	A	H
	*	5290	93.36	------	------	79.48	34.84	10.99	31.95	233	307	P	H
	*	5290	87.17	------	------	73.29	34.84	10.99	31.95	233	307	A	H
		5352.72	58.12	-15.88	74	44.4	34.83	10.93	32.04	233	307	P	H
		5350.08	50.03	-3.97	54	36.31	34.83	10.93	32.04	233	307	A	H
		5128.45	53.05	-20.95	74	38.85	34.87	11.09	31.76	242	9	P	V
		5135.45	44.84	-9.16	54	30.64	34.87	11.09	31.76	242	8	A	V
	*	5290	96.06	------	------	82.18	34.84	10.99	31.95	242	8	P	V
	*	5290	89.56	------	------	75.68	34.84	10.99	31.95	242	8	A	V
		5350.56	59.91	-14.09	74	46.19	34.83	10.93	32.04	242	8	P	V
		5350.08	52.13	-1.87	54	38.41	34.83	10.93	32.04	242	8	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2A 5250~5350MHz
WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 9	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 58 5290MHz		10580	50.14	-18.16	68.3	47.17	39.48	14.29	50.8	-	-	P	H
		15870	50.77	-23.23	74	43.35	42.02	17.1	51.7	-	-	P	H
		10580	49.95	-18.35	68.3	46.98	39.48	14.29	50.8	-	-	P	V
		15870	50.33	-23.67	74	42.91	42.02	17.1	51.7	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C - 5470~5725MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant. 9	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 100 5500MHz		5458.48	58.54	-15.46	74	44.84	34.81	11.06	32.17	182	315	P	H
		5468.4	61.86	-6.44	68.3	48	34.81	11.22	32.17	182	315	P	H
		5460	48.31	-5.69	54	34.61	34.81	11.06	32.17	182	315	A	H
	*	5500	107.13	------	------	93.31	34.8	11.22	32.2	182	315	P	H
	*	5500	99.69	------	------	85.87	34.8	11.22	32.2	182	315	A	H
		5457.52	59.49	-14.51	74	45.79	34.81	11.06	32.17	100	13	P	V
		5469.04	61.4	-6.9	68.3	47.54	34.81	11.22	32.17	100	13	P	V
		5460	48.13	-5.87	54	34.43	34.81	11.06	32.17	100	13	A	V
	*	5500	107.76	------	------	93.94	34.8	11.22	32.2	100	13	P	V
	*	5500	100.21	------	------	86.39	34.8	11.22	32.2	100	13	A	V
802.11a CH 140 5700MHz	*	5700	106.98	------	------	92.6	35.08	11.66	32.36	280	317	P	H
	*	5700	100.14	------	------	85.76	35.08	11.66	32.36	280	317	A	H
		5725.16	63.42	-4.88	68.3	49.02	35.12	11.66	32.38	280	317	P	H
	*	5700	107.24	------	------	92.86	35.08	11.66	32.36	230	17	P	V
	*	5700	100.34	------	------	85.96	35.08	11.66	32.36	230	17	A	V
		5727.08	64.05	-4.25	68.3	49.65	35.12	11.66	32.38	230	17	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C - 5470~5725MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 9	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 100 5500MHz		11000	50.72	-23.28	74	47.59	39.4	14.53	50.8	-	-	P	H
		16500	52.15	-16.15	68.3	44.19	42.4	17.36	51.8	-	-	P	H
		11000	50.86	-23.14	74	47.73	39.4	14.53	50.8	-	-	P	V
		16500	53.63	-14.67	68.3	45.67	42.4	17.36	51.8	-	-	P	V
802.11a CH 116 5580MHz		11160	50.27	-23.73	74	46.86	39.53	14.65	50.77	-	-	P	H
		16740	50.91	-17.39	68.3	42.77	42.45	17.44	51.75	-	-	P	H
		11160	50.77	-23.23	74	47.36	39.53	14.65	50.77	-	-	P	V
		16740	51.85	-16.45	68.3	43.71	42.45	17.44	51.75	-	-	P	V
802.11a CH 140 5700MHz		11400	50.15	-23.85	74	46.36	39.72	14.79	50.72	-	-	P	H
		17100	51.12	-17.18	68.3	42.93	42.46	17.53	51.8	-	-	P	H
		11400	50.23	-23.77	74	46.44	39.72	14.79	50.72	-	-	P	V
		17100	52.23	-16.07	68.3	44.04	42.46	17.53	51.8	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C - 5470~5725MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 9	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)
802.11n HT20 CH 100 5500MHz		5458.8	61.34	-12.66	74	47.64	34.81	11.06	32.17	282	320	P	H
		5470	63.73	-4.57	68.3	49.87	34.81	11.22	32.17	282	320	P	H
		5459.76	47.14	-6.86	54	33.44	34.81	11.06	32.17	282	320	A	H
	*	5500	107.37	------	------	93.55	34.8	11.22	32.2	282	320	P	H
	*	5500	101.28	------	------	87.46	34.8	11.22	32.2	282	320	A	H
		5458.16	61.5	-12.5	74	47.8	34.81	11.06	32.17	236	9	P	V
		5470	64.38	-3.92	68.3	50.52	34.81	11.22	32.17	236	9	P	V
		5459.92	48.41	-5.59	54	34.71	34.81	11.06	32.17	236	9	A	V
	*	5500	106.62	------	------	92.8	34.8	11.22	32.2	236	9	P	V
	*	5500	99.95	------	------	86.13	34.8	11.22	32.2	236	9	A	V
802.11n HT20 CH 140 5700MHz	*	5700	106.36	------	------	91.98	35.08	11.66	32.36	280	317	P	H
	*	5700	99.8	------	------	85.42	35.08	11.66	32.36	280	317	A	H
		5727	63.64	-4.66	68.3	49.24	35.12	11.66	32.38	280	317	P	H
	*	5700	107.43	------	------	93.05	35.08	11.66	32.36	240	7	P	V
	*	5700	101.84	------	------	87.46	35.08	11.66	32.36	240	7	A	V
		5725.32	62.93	-5.37	68.3	48.53	35.12	11.66	32.38	240	7	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C - 5470~5725MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 9	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)
802.11n HT20 CH 100 5500MHz		11000	50.53	-23.47	74	47.4	39.4	14.53	50.8	-	-	P	H
		16500	52.15	-16.15	68.3	44.19	42.4	17.36	51.8	-	-	P	H
		11000	50.84	-23.16	74	47.71	39.4	14.53	50.8	-	-	P	V
		16500	51.94	-16.36	68.3	43.98	42.4	17.36	51.8	-	-	P	V
802.11n HT20 CH 116 5580MHz		11160	50.61	-23.39	74	47.2	39.53	14.65	50.77	-	-	P	H
		16740	50.5	-17.8	68.3	42.36	42.45	17.44	51.75	-	-	P	H
		11160	50.59	-23.41	74	47.18	39.53	14.65	50.77	-	-	P	V
		16740	50.48	-17.82	68.3	42.34	42.45	17.44	51.75	-	-	P	V
802.11n HT20 CH 140 5700MHz		11400	50.71	-23.29	74	46.92	39.72	14.79	50.72	-	-	P	H
		17100	51.16	-17.14	68.3	42.97	42.46	17.53	51.8	-	-	P	H
		11400	50.94	-23.06	74	47.15	39.72	14.79	50.72	-	-	P	V
		17100	52.18	-16.12	68.3	43.99	42.46	17.53	51.8	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C - 5470~5725MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 9	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)
802.11n HT40 CH 102 5510MHz		5458.24	57.77	-16.23	74	44.07	34.81	11.06	32.17	231	308	P	H
		5470	63.81	-4.49	68.3	49.95	34.81	11.22	32.17	231	308	P	H
		5459.68	48.63	-5.37	54	34.93	34.81	11.06	32.17	231	308	A	H
	*	5510	100.97	------	------	86.99	34.81	11.39	32.22	231	308	P	H
	*	5510	94.65	------	------	80.67	34.81	11.39	32.22	231	308	A	H
		5728.46	52.31	-15.99	68.3	37.91	35.12	11.66	32.38	231	308	P	H
		5458.48	58.18	-15.82	74	44.48	34.81	11.06	32.17	259	8	P	V
		5466.64	66.4	-1.9	68.3	52.54	34.81	11.22	32.17	259	8	P	V
		5459.44	49.81	-4.19	54	36.11	34.81	11.06	32.17	259	8	A	V
	*	5510	102.59	------	------	88.61	34.81	11.39	32.22	259	8	P	V
	*	5510	96.13	------	------	82.15	34.81	11.39	32.22	259	8	A	V
		5734.76	52.48	-15.82	68.3	38.09	35.13	11.66	32.4	259	8	P	V
802.11n HT40 CH 134 5670MHz		5415.45	51.26	-22.74	74	37.65	34.82	10.9	32.11	280	318	P	H
		5463.75	51.33	-16.97	68.3	37.63	34.81	11.06	32.17	280	318	P	H
		5457.1	42.79	-11.21	54	29.09	34.81	11.06	32.17	280	318	A	H
	*	5670	104.89	------	------	90.52	35.04	11.67	32.34	280	318	P	H
	*	5670	98.64	------	------	84.27	35.04	11.67	32.34	280	318	A	H
		5725.275	64.57	-3.73	68.3	50.17	35.12	11.66	32.38	280	318	P	H
		5450.1	51.77	-22.23	74	38.07	34.81	11.06	32.17	244	6	P	V
		5462.35	51.8	-16.5	68.3	38.1	34.81	11.06	32.17	244	6	P	V
		5452.55	43.12	-10.88	54	29.42	34.81	11.06	32.17	244	6	A	V
	*	5670	105.35	------	------	90.98	35.04	11.67	32.34	244	6	P	V
	*	5670	98.73	------	------	84.36	35.04	11.67	32.34	244	6	A	V
		5725.45	64.6	-3.7	68.3	50.2	35.12	11.66	32.38	244	6	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C - 5470~5725MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 9	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)
802.11n		11020	50	-24	74	46.83	39.42	14.55	50.8	-	-	P	H
HT40		16530	52.15	-16.15	68.3	44.16	42.41	17.37	51.79	-	-	P	H
CH 102		11020	50.52	-23.48	74	47.35	39.42	14.55	50.8	-	-	P	V
5510MHz		16530	52.11	-16.19	68.3	44.12	42.41	17.37	51.79	-	-	P	V
802.11n		11100	50.06	-23.94	74	46.76	39.48	14.6	50.78	-	-	P	H
HT40		16650	52.96	-15.34	68.3	44.9	42.43	17.4	51.77	-	-	P	H
CH 110		11100	49.08	-24.92	74	45.78	39.48	14.6	50.78	-	-	P	V
5550MHz		16650	52.34	-15.96	68.3	44.28	42.43	17.4	51.77	-	-	P	V
802.11n		11340	50.6	-23.4	74	46.92	39.67	14.74	50.73	-	-	P	H
HT40		17010	52.2	-16.1	68.3	43.91	42.5	17.51	51.72	-	-	P	H
CH 134		11340	50.64	-23.36	74	46.96	39.67	14.74	50.73	-	-	P	V
5670MHz		17010	51.63	-16.67	68.3	43.34	42.5	17.51	51.72	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C - 5470~5725MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 9	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 106 5530MHz		5459.92	58.35	-15.65	74	44.65	34.81	11.06	32.17	230	319	P	H
		5470	60.88	-7.42	68.3	47.02	34.81	11.22	32.17	230	319	P	H
		5459.2	50.91	-3.09	54	37.21	34.81	11.06	32.17	230	319	A	H
	*	5530	95.93	------	------	81.94	34.84	11.39	32.24	230	319	P	H
	*	5530	89.85	------	------	75.86	34.84	11.39	32.24	230	319	A	H
		5761.85	51.67	-16.63	68.3	37.28	35.17	11.64	32.42	230	319	P	H
		5459.44	59.71	-14.29	74	46.01	34.81	11.06	32.17	227	18	P	V
		5468.8	62.28	-6.02	68.3	48.42	34.81	11.22	32.17	227	18	P	V
		5459.68	52.76	-1.24	54	39.06	34.81	11.06	32.17	227	18	A	V
	*	5530	96.68	------	------	82.69	34.84	11.39	32.24	227	18	P	V
	*	5530	90.52	------	------	76.53	34.84	11.39	32.24	227	18	A	V
		5748.305	53.25	-15.05	68.3	38.86	35.15	11.64	32.4	227	18	P	V
802.11ac VHT80 CH 122 5610MHz		5421.76	52.27	-21.73	74	38.66	34.82	10.9	32.11	283	323	P	H
		5463.52	52.31	-15.99	68.3	38.61	34.81	11.06	32.17	283	323	P	H
		5388.64	44.37	-9.63	54	30.72	34.82	10.9	32.07	283	323	A	H
	*	5610	97.5	------	------	83.14	34.95	11.71	32.3	283	323	P	H
	*	5610	91.92	------	------	77.56	34.95	11.71	32.3	283	323	A	H
		5732.625	53.42	-14.88	68.3	39.03	35.13	11.66	32.4	283	323	P	H
		5458.48	52.06	-21.94	74	38.36	34.81	11.06	32.17	233	5	P	V
		5467.36	52.84	-15.46	68.3	38.98	34.81	11.22	32.17	233	5	P	V
		5459.92	45.02	-8.98	54	31.32	34.81	11.06	32.17	233	5	A	V
	*	5610	99.81	------	------	85.45	34.95	11.71	32.3	233	5	P	V
	*	5610	93.72	------	------	79.36	34.95	11.71	32.3	233	5	A	V
		5724.925	55.05	-13.25	68.3	40.66	35.11	11.66	32.38	233	5	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C 5470~5725MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 9	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		11060	50.05	-23.95	74	46.81	39.45	14.58	50.79	-	-	P	H
VHT80		16590	51.99	-16.31	68.3	43.96	42.42	17.39	51.78	-	-	P	H
CH 106		11060	50.12	-23.88	74	46.88	39.45	14.58	50.79	-	-	P	V
5530MHz		16590	51.74	-16.56	68.3	43.71	42.42	17.39	51.78	-	-	P	V
802.11ac		11220	50.37	-23.63	74	46.88	39.58	14.67	50.76	-	-	P	H
VHT80		16830	51.46	-16.84	68.3	43.26	42.47	17.46	51.73	-	-	P	H
CH 122		11220	50.57	-23.43	74	47.08	39.58	14.67	50.76	-	-	P	V
5610MHz		16830	51.06	-17.24	68.3	42.86	42.47	17.46	51.73	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C - Straddle Channel

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant. 9	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 144 5720MHz		5364.3	51.82	-22.18	74	38.1	34.83	10.93	32.04	115	357	P	H
		5463.85	51.54	-16.76	68.3	37.84	34.81	11.06	32.17	115	357	P	H
	*	5720	105.78	------	------	91.39	35.11	11.66	32.38	115	357	P	H
		5880.75	52.51	-15.79	68.3	38.19	35.33	11.49	32.5	115	357	P	H
		5458.9	41.97	-12.03	54	28.27	34.81	11.06	32.17	115	357	P	H
	*	5720	99.18	------	------	84.79	35.11	11.66	32.38	115	357	A	H
		5435.8	51.96	-22.04	74	38.23	34.81	11.06	32.14	359	358	P	V
		5465.5	51.68	-16.62	68.3	37.98	34.81	11.06	32.17	359	358	P	V
	*	5720	109.05	------	------	94.66	35.11	11.66	32.38	359	358	P	V
		5871.4	51.93	-16.37	68.3	37.62	35.32	11.49	32.5	359	358	P	V
		5456.15	41.96	-12.04	54	28.26	34.81	11.06	32.17	359	358	P	V
	*	5720	102.39	------	------	88	35.11	11.66	32.38	359	358	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C - Straddle Channel

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 9	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 144 5720MHz		11440	49.68	-24.32	74	45.83	39.75	14.81	50.71	-	-	P	H
		17160	51.56	-16.74	68.3	43.45	42.44	17.54	51.87	-	-	P	H
		11440	50.62	-23.38	74	46.77	39.75	14.81	50.71	-	-	P	V
		17160	50.94	-17.36	68.3	42.83	42.44	17.54	51.87	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C - Straddle Channel
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 9	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)
802.11n HT20 CH 144 5720MHz		5422.05	52.01	-21.99	74	38.4	34.82	10.9	32.11	116	358	P	H
		5462.2	51.11	-17.19	68.3	37.41	34.81	11.06	32.17	116	358	P	H
	*	5720	104.71	------	------	90.32	35.11	11.66	32.38	116	358	P	H
		5889.55	52.84	-15.46	68.3	38.52	35.35	11.49	32.52	116	358	P	H
		5455.6	41.86	-12.14	54	28.16	34.81	11.06	32.17	116	358	P	H
	*	5720	97.69	------	------	83.3	35.11	11.66	32.38	116	358	A	H
		5395.1	52.18	-21.82	74	38.53	34.82	10.9	32.07	360	358	P	V
		5467.15	51.77	-16.53	68.3	37.91	34.81	11.22	32.17	360	358	P	V
	*	5720	108.62	------	------	94.23	35.11	11.66	32.38	360	358	P	V
		5899.45	52.65	-15.65	68.3	38.39	35.36	11.42	32.52	360	358	P	V
		5455.6	41.99	-12.01	54	28.29	34.81	11.06	32.17	360	358	P	V
	*	5720	101.89	------	------	87.5	35.11	11.66	32.38	360	358	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C - Straddle Channel
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 9	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)
802.11n HT20 CH 144 5720MHz		11440	50.28	-23.72	74	46.43	39.75	14.81	50.71	-	-	P	H
		17160	51.2	-17.1	68.3	43.09	42.44	17.54	51.87	-	-	P	H
		11440	49.39	-24.61	74	45.54	39.75	14.81	50.71	-	-	P	V
		17160	50.5	-17.8	68.3	42.39	42.44	17.54	51.87	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C - Straddle Channel
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 9	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)
802.11n HT40 CH 142 5710MHz		5456.7	52.78	-21.22	74	39.08	34.81	11.06	32.17	118	358	P	H
		5464.95	51.91	-16.39	68.3	38.21	34.81	11.06	32.17	118	358	P	H
	*	5710	102.63	------	------	88.26	35.09	11.66	32.38	118	358	P	H
		5863.15	52.97	-15.33	68.3	38.67	35.31	11.49	32.5	118	358	P	H
		5452.3	42.57	-11.43	54	28.87	34.81	11.06	32.17	118	358	P	H
	*	5710	94.93	------	------	80.56	35.09	11.66	32.38	118	358	A	H
		5419.85	51.65	-22.35	74	38.04	34.82	10.9	32.11	348	360	P	V
		5461.1	50.98	-17.32	68.3	37.28	34.81	11.06	32.17	348	360	P	V
	*	5710	105.53	------	------	91.16	35.09	11.66	32.38	348	360	P	V
		5882.4	52.49	-15.81	68.3	38.16	35.34	11.49	32.5	348	360	P	V
		5429.75	42.68	-11.32	54	28.95	34.81	11.06	32.14	348	360	P	V
	*	5710	99.1	------	------	84.73	35.09	11.66	32.38	348	360	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C - Straddle Channel
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 9	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)
802.11n HT40 CH 142 5710MHz		11420	50.47	-23.53	74	46.66	39.74	14.79	50.72	-	-	P	H
		17130	51.47	-16.83	68.3	43.31	42.45	17.54	51.83	-	-	P	H
		11420	50.39	-23.61	74	46.58	39.74	14.79	50.72	-	-	P	V
		17130	50.81	-17.49	68.3	42.65	42.45	17.54	51.83	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C - Straddle Channel
WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 9	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 138 5690MHz		5433.6	51.6	-22.4	74	37.87	34.81	11.06	32.14	109	357	P	H
		5460.55	51.18	-17.12	68.3	37.48	34.81	11.06	32.17	109	357	P	H
	*	5690	95.62	------	------	81.24	35.07	11.67	32.36	109	357	P	H
		5863.7	52.63	-15.67	68.3	38.33	35.31	11.49	32.5	109	357	P	H
		5425.35	44.09	-9.91	54	30.52	34.81	10.9	32.14	109	357	P	H
	*	5690	89.8	------	------	75.42	35.07	11.67	32.36	109	357	A	H
		5448.45	52.04	-21.96	74	38.31	34.81	11.06	32.14	348	360	P	V
		5468.25	51.33	-16.97	68.3	37.47	34.81	11.22	32.17	348	360	P	V
	*	5690	100.3	------	------	85.92	35.07	11.67	32.36	348	360	P	V
		5883.5	53.11	-15.19	68.3	38.8	35.34	11.49	32.52	348	360	P	V
		5443.5	44.02	-9.98	54	30.29	34.81	11.06	32.14	348	360	P	V
	*	5690	94.25	------	------	79.87	35.07	11.67	32.36	348	360	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C - Straddle Channel
WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 9	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 138 5690MHz		11380	50.5	-23.5	74	46.76	39.7	14.76	50.72	-	-	P	H
		17070	51.41	-16.89	68.3	43.19	42.47	17.52	51.77	-	-	P	H
		11380	50.92	-23.08	74	47.18	39.7	14.76	50.72	-	-	P	V
		17070	51.45	-16.85	68.3	43.23	42.47	17.52	51.77	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

5GHz WIFI 802.11ac VHT80 (LF)

WIFI Ant. 9	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)
5GHz 802.11ac VHT80 LF		177.44	28.48	-15.02	43.5	43.36	17.34	2.48	34.7	-	-	P	H
		247.28	30.94	-15.06	46	45.17	17.48	2.99	34.7	-	-	P	H
		314.21	26.89	-19.11	46	38.77	19.44	3.28	34.6	-	-	P	H
		540.22	23.85	-22.15	46	30.84	24.03	3.48	34.5	-	-	P	H
		690.57	27.55	-18.45	46	31.3	26.94	3.73	34.42	-	-	P	H
		852.56	29.6	-16.4	46	30.73	28.79	4.38	34.3	-	-	P	H
		32.91	30.48	-9.52	40	45.75	18.23	1.26	34.76	-	-	P	V
		164.83	27.54	-15.96	43.5	41.73	18.1	2.41	34.7	-	-	P	V
		253.1	28.11	-17.89	46	42.12	17.66	3.02	34.69	-	-	P	V
		455.83	23.96	-22.04	46	32.18	22.82	3.46	34.5	-	-	P	V
		662.44	26.16	-19.84	46	30.49	26.46	3.69	34.48	-	-	P	V
		862.26	29.21	-16.79	46	30.36	28.76	4.39	34.3	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

<Simultaneous transmission>

Sample 1

U-NII-2C 5470~5725MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
9		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac80 CH106 5530MHz &BT normal Link& GSM 850 Co-colation		5458	56.9	-17.1	74	43.2	34.81	11.06	32.17	100	351	P	H
		5467.84	60.84	-7.46	68.3	46.98	34.81	11.22	32.17	100	351	P	H
		5458.96	49.95	-4.05	54	36.25	34.81	11.06	32.17	100	351	A	H
	*	5530	94.34	------	------	80.35	34.84	11.39	32.24	100	351	P	H
	*	5530	87.25	------	------	73.26	34.84	11.39	32.24	100	351	A	H
		5758.07	52.27	-16.03	68.3	37.89	35.16	11.64	32.42	100	351	P	H
		5454.88	58.88	-15.12	74	45.18	34.81	11.06	32.17	100	352	P	V
		5469.04	59.87	-8.43	68.3	46.01	34.81	11.22	32.17	100	352	P	V
		5459.2	51.06	-2.94	54	37.36	34.81	11.06	32.17	100	352	A	V
	*	5530	96	------	------	82.01	34.84	11.39	32.24	100	352	P	V
	*	5530	89.44	------	------	75.45	34.84	11.39	32.24	100	352	A	V
		5737.595	52.24	-16.06	68.3	37.85	35.13	11.66	32.4	100	352	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C 5470~5725MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 9	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac80 CH106 5530MHz &BT normal Link& GSM 850 Co-colation		1672.8	44.88	-29.12	74	40.83	29.96	6.57	32.48	-	-	P	H
		2509.2	47.92	-20.38	68.3	39.58	32.53	7.91	32.1	-	-	P	H
		3345.6	51.31	-16.99	68.3	39.94	34.61	9.03	32.27	-	-	P	H
		11060	50.83	-23.17	74	47.59	39.45	14.58	50.79	-	-	P	H
		16590	52.51	-15.79	68.3	44.48	42.42	17.39	51.78	-	-	P	H
		1672.8	45.03	-28.97	74	40.98	29.96	6.57	32.48	-	-	P	V
		2509.2	48.2	-20.1	68.3	39.86	32.53	7.91	32.1	-	-	P	V
		3345.6	50.91	-17.39	68.3	39.54	34.61	9.03	32.27	-	-	P	V
		11060	49.95	-24.05	74	46.71	39.45	14.58	50.79	-	-	P	V
		16590	50.96	-17.34	68.3	42.93	42.42	17.39	51.78	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Sample 2

U-NII-2C 5470~5725MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 9	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac80 CH106 5530MHz & GSM 850 Co-colation	*	5458.72	57.82	-16.18	74	44.12	34.81	11.06	32.17	331	0	P	H
	*	5470	61.77	-6.53	68.3	47.91	34.81	11.22	32.17	331	0	P	H
		5457.76	50.3	-3.7	54	36.6	34.81	11.06	32.17	331	0	A	H
		5530	97.48	------	------	83.49	34.84	11.39	32.24	331	0	P	H
		5530	91.18	------	------	77.19	34.84	11.39	32.24	331	0	A	H
		5679.95	52.38	-15.92	68.3	38.02	35.05	11.67	32.36	331	0	P	H
	*	5459.2	59.84	-14.16	74	46.14	34.81	11.06	32.17	103	360	P	V
	*	5470	64.59	-3.71	68.3	50.73	34.81	11.22	32.17	103	360	P	V
		5457.52	52.22	-1.78	54	38.52	34.81	11.06	32.17	103	360	A	V
		5530	101.65	------	------	87.66	34.84	11.39	32.24	103	360	P	V
		5530	95.52	------	------	81.53	34.84	11.39	32.24	103	360	A	V
		5734.13	52.12	-16.18	68.3	37.73	35.13	11.66	32.4	103	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

U-NII-2C 5470~5725MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 9	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac80 CH106 5530MHz & GSM 850 Co-colation		1672.8	50.96	-23.04	74	46.91	29.96	6.57	32.48	-	-	P	H
		2509.2	48.05	-20.25	68.3	39.71	32.53	7.91	32.1	-	-	P	H
		3345.6	50.57	-17.73	68.3	39.2	34.61	9.03	32.27	-	-	P	H
		11060	50.91	-23.09	74	47.67	39.45	14.58	50.79	-	-	P	H
		16590	50.36	-17.94	68.3	42.33	42.42	17.39	51.78	-	-	P	H
		1672.8	46.74	-27.26	74	42.69	29.96	6.57	32.48	-	-	P	V
		2509.2	47.73	-20.57	68.3	39.39	32.53	7.91	32.1	-	-	P	V
		3345.6	50.9	-17.4	68.3	39.53	34.61	9.03	32.27	-	-	P	V
		11060	49.15	-24.85	74	45.91	39.45	14.58	50.79	-	-	P	V
		16590	50.76	-17.54	68.3	42.73	42.42	17.39	51.78	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Note symbol

*	**Fundamental Frequency** which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is **Margin** line.
P/A	**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	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
9		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

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

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 55.45 (dBμV/m)

2. Margin (dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

2. Margin (dB) = Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

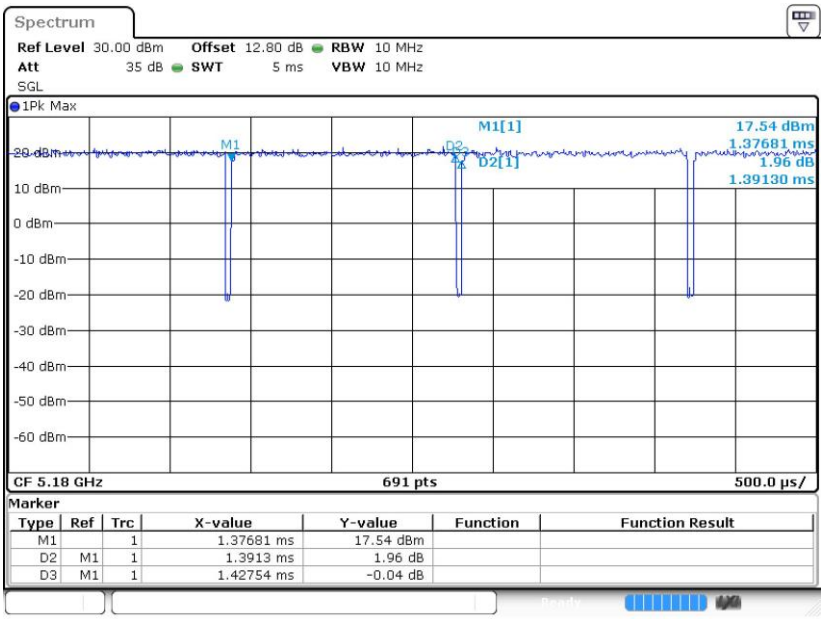
= -10.46(dB)

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

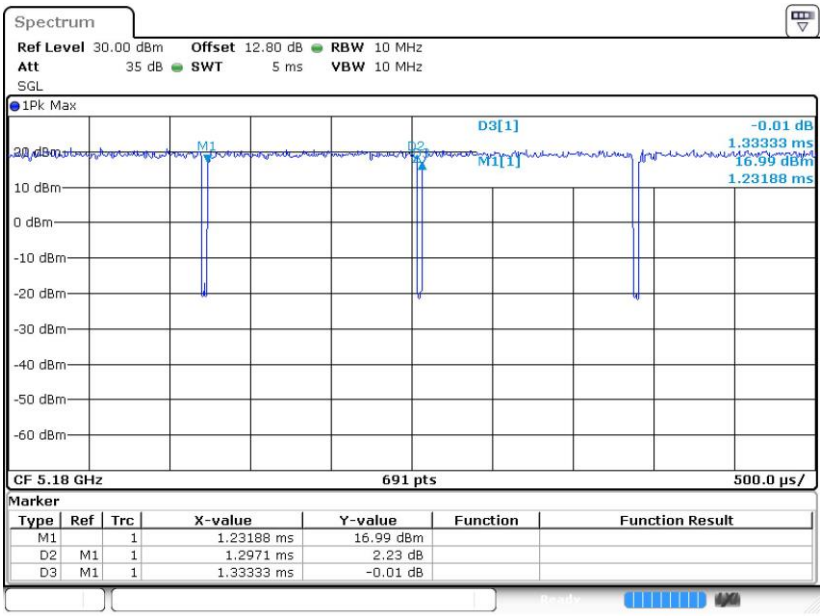
Appendix D. Duty Cycle Plots

Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11a	97.46	1.391	0.719	1KHz
802.11n HT20	97.28	1.297	0.771	1KHz
802.11n HT40	94.92	0.649	1.540	3KHz
802.11ac VHT80	90.32	0.325	3.080	10KHZ

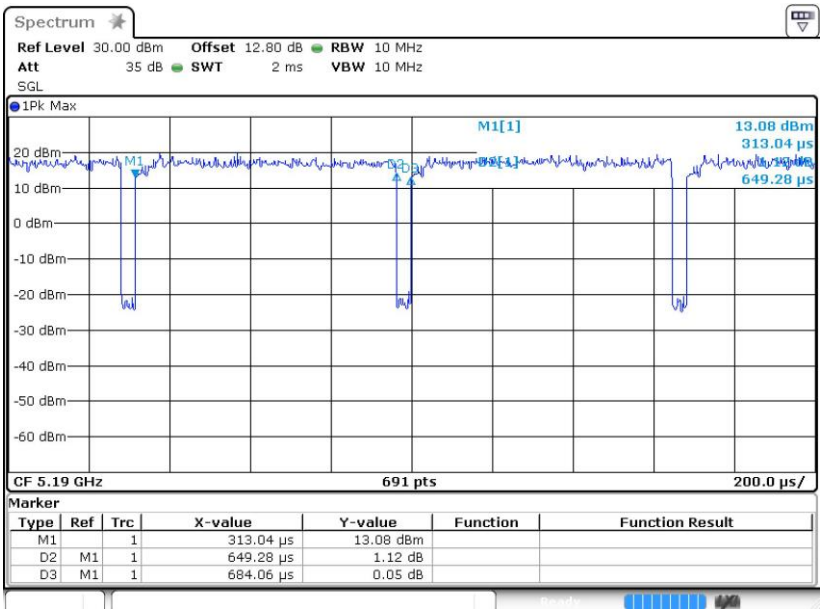
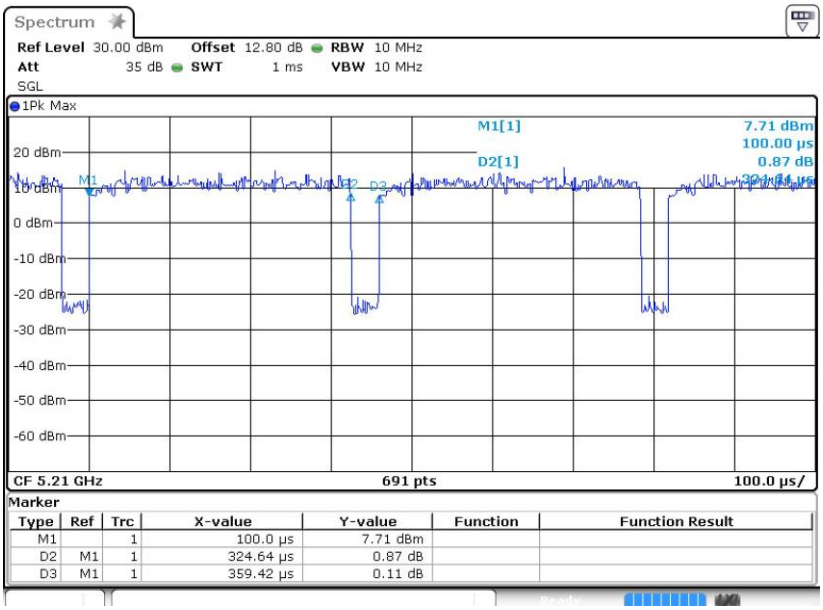
802.11a



802.11n HT20



802.11n HT40



802.11ac VHT80