RF Test Report

Applicant:	Quectel Wireless Solutions Co., Ltd.
Address:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, 200233, China
Product:	Wi-Fi & Bluetooth Module
Model No.:	FCS852R
Brand Name:	QUECTEL
FCC ID:	XMR2023FCS852R
Standards:	FCC CFR47 Part 15E
Report No.:	PD20230218RF11
Issue Date:	2024/03/13
Test Result:	PASS *

* **The above equipment has been tested and compliance with the requirement of the relative standards by Hefei Panwin Technology Co., Ltd.**

Charlie. Wang

Reviewed By: Charlie Wang

Approved By: Alec Yang

Hefei Panwin Technology Co., Ltd.

Floor 1, Zone E, Plant 2#, Mingzhu Industrial Park, No.106 Chuangxin Avenue, High-tech Zone, Hefei City, Anhui Province,China

TEL: 0551-63811775

Revision History

Report No.	Version	Description	Issue Date	Note
PD20230218RF11	1	Initial Report	2024/03/13	Valid

CONTENTS

1 General Information 5
1.1 Notes of the Test Report 5
1.2 Test Facility 5
1.3 Testing Laboratory 5
2 General Description of Equipment under Test 6
2.1 Details of Application 6
2.2 General Information 6
2.3 Applicable Standards 7
3 Test Condition 8
3.1 Test Configuration 8
3.2 Wireless Technology and Frequency Range 9
3.3 Equipment List 10
3.4 Support Equipment List 11
3.5 Test Uncertainty 11
4 Test Items Description 12
4.1 6dB and 26dB and 99% Occupied Bandwidth Measurement 12
4.2 Maximum Conducted Output Power Measurement 14
4.3 Power Spectral Density Measurement 17
4.4 Unwanted Emissions Measurement 19
4.5 AC Conducted Emission Measurement 24
4.6 Antenna Requirements 27
Appendix A – Test Results of Conducted Test 28
Appendix B – Test Results of Radiated Test 178
Appendix C – The EUT Appearance 240
Appendix D – Test Setup Photograph 240

Summary of Test Results

No.	Test Case	FCC Rules	Verdict
1	Occupied Bandwidth Measurement	15.407(e)	PASS
2	Maximum Conducted Output Power Measurement	15.407(a)	PASS
3	Power Spectral Density Measurement	15.407(a)	PASS
4	Unwanted Emissions Measurement	15.407(b)	PASS
5	AC Conducted Emission Measurement	15.207	PASS
6	Antenna Requirements	15.203 & 15.407(a)	PASS

Date of Testing:2023/12/16 to 2024/03/13
Date of Sample Received: 2023/12/07

- We, Hefei Panwin Technology Co., Ltd., would like to declare that the tested sample has been evaluated in accordance with the procedures given in applied standard(s) in **Section 2.3** of this report and shown compliance with the applicable technical standards.
- All indications of PASS/FAIL in this report are based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.

1 General Information

1.1 Notes of the Test Report

This report is invalid without signature of auditor and approver or with any alterations. The report shall not be partially reproduced without written approval of the testing company. Entrusted test results are only responsible for incoming samples. If there is any objection to the testing report, it shall be raised to the testing company within 15 days from the date of receiving the report. In the test results, "NA" means "not applicable", and the test items marked with "Δ" are subcontracted projects.

1.2 Test Facility

FCC (Designation number: CN1361, Test Firm Registration Number: 473156)

Hefei Panwin Technology Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

A2LA (Certificate Number: 6849.01)

Hefei Panwin Technology Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

1.3 Testing Laboratory

Company Name	Hefei Panwin Technology Co., Ltd.
Address	Floor 1, Zone E, Plant 2#, Mingzhu Industrial Park, No.106 Chuangxin Avenue, High-tech Zone, Hefei City, Anhui Province,China
Telephone	+86-0551-63811775
Post Code	230031

2 General Description of Equipment under Test

2.1 Details of Application

Applicant	Quectel Wireless Solutions Co., Ltd.
Applicant Address	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, 200233, China
Manufacturer	Quectel Wireless Solutions Co., Ltd.
Manufacturer Address	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, 200233, China

2.2 General Information

Product	Wi-Fi & Bluetooth Module
Model	FCS852R
SN	1. E1823K90Q000124 2. E1823K90Q000148
Hardware Version	R1.0
Software Version	NA
Antenna Type	External Antenna
Max. Conducted Power	Wi-Fi 5G: 19.28dBm
WLAN Mode Supported:	802.11a 802.11n 20M/40M 802.11ac 20M/40M/80M
Antenna Gain	5150MHz to 5250MHz: -0.90dBi (Ant0), -0.90dBi (Ant1) 5250MHz to 5350MHz: -1.40dBi(Ant0),-1.40dBi(Ant1) 5470MHz to 5725MHz: -0.30dBi (Ant0), -0.30dBi(Ant1) 5725MHz to 5850MHz: 0.40dBi(Ant0), 0.40dBi(Ant1)
Directional Gain	U-NII-1/2A/2C_MIMO For Power: 0.40dBi U-NII-1/2A/2C/3_MIMO For PSD: 3.41dBi
Test Band	U-NII-1(5150MHz-5250MHz) U-NII-2A(5250MHz-5350MHz) U-NII-2C(5470MHz-5725MHz) U-NII-3(5725MHz-5850MHz)
Operating voltage range	Typical 3.3Vdc
Modulation Type	802.11a/n/ac: BPSK,QPSK,16QAM,64QAM,256QAM
Note: The declared of product specification for EUT and/or Antenna presented in the report are provided by the	

manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

2.3 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 UN II Test Procedures New Rules v02r01
- ANSI C63.10-2013
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01

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.

3 Test Condition

3.1 Test Configuration

Test mode

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). The worst cases were recorded in this report.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes (Z, X, Y axis), receiver antenna polarization (horizontal and vertical), the worst emission was found in Z position and the worst case was recorded.

Test Mode	Data Rate(Mbps)		
	Antenna 1	Antenna 2	MIMO/CDD
802.11a	6	6	/
802.11n 20M	MCS0	MCS0	MCS0
802.11n 40M	MCS0	MCS0	MCS0
802.11ac 20M	MCS0	MCS0	MCS0
802.11ac 40M	MCS0	MCS0	MCS0
802.11ac 80M	MCS0	MCS0	MCS0

The worst case Antenna mode for each of the following tests for Wi-Fi:

Test Cases	Antenna 1	Antenna 2	MIMO/CDD
Maximum Conducted Output Power Measurement	O	O	O
Power Spectral Density Measurement	O	O	O
26dB Occupied Bandwidth	O	O	O
99% Occupied Bandwidth	O	O	O
6dB Occupied Bandwidth	/	/	O
Unwanted Emissions Measurement	/	/	O
AC Conducted Emission Measurement	/	/	O
Note: “O”: test all bands			

According to RF Output power results in Appendix A.2, we picked the worst antenna mode to test.

3.2 Wireless Technology and Frequency Range

Wireless Technology	Bandwidth		Channel	Frequency
Wi-Fi	U-NII-1	20MHz	36	5180 MHz
			40	5200 MHz
			44	5220 MHz
			48	5240 MHz
		40MHz	38	5190 MHz
			46	5230 MHz
		80MHz	42	5210 MHz
	U-NII-2A	20MHz	52	5260 MHz
			56	5280 MHz
			60	5300 MHz
			64	5320 MHz
		40MHz	54	5270 MHz
			62	5310 MHz
		80MHz	58	5290 MHz
	U-NII-2C	20MHz	100	5500 MHz
			104	5520 MHz
			108	5540 MHz
			112	5560 MHz
			116	5580 MHz
			120	5600 MHz
			124	5620 MHz
			128	5640 MHz
			132	5660 MHz
			136	5680 MHz
			140	5700 MHz
			144	5720 MHz
		40MHz	102	5510 MHz
			110	5550 MHz
			118	5590 MHz
			126	5630 MHz
			134	5670 MHz
			142	5710 MHz
		80MHz	106	5530 MHz
			122	5610 MHz
			138	5690 MHz
	U-NII-3	20MHz	149	5180 MHz

			153	5200 MHz
			157	5220 MHz
			161	5240 MHz
			165	5825 MHz
		40MHz	151	5755 MHz
			159	5795 MHz
		80MHz	155	5775 MHz
Does this device support TPC function?		☑ Yes		☐ No
Does this device support TDWR band?		☑ Yes		☐ No

3.3 Equipment List

Conducted

Instrument	Manufacturer	Model	Asset No.	Cal. Interval	Cal. Due Date
Spectrum Analyzer	KEYSIGHT	N9020B	PWC0055	1 Year	2024/10/11
DC Power	KEYSIGHT	E3640A	PWC0046	1 Year	2024/10/11
RF Control Unit	Tonseced	JS0806-2	PWC0055	/	/
Shielded Chamber	Maorui	MR543	PWC0041	3 Years	2026/08/26
Test Software	Tonseced	JS1120-3 V3.2.22	/	/	/

Radiated

Instrument	Manufacturer	Model	Asset No.	Cal. Interval	Cal. Due Date
EMI Test Receiver	R&S	ESR7	PWB0023	1 Year	2024/10/11
Spectrum Analyzer	R&S	FSV3044	PWB0024	1 Year	2024/10/11
Loop Antenna	R&S	HFH2-Z2E	PWB0026	1 Year	2024/10/21
TRILOG Broadband Antenna	Schwarzbeck	VULB9162	PWB0029	1 Year	2024/10/14
Double-Ridged Guide Antenna	ETS-Lindgren	3117	PWB0031	1 Year	2024/10/12
k Type Horn Antenna	Steatite Antennas	QMS-00880	PWB0035	1 Year	2024/10/17
Anechoic Chamber	ETS.LINDGREN	Fact 3-2m	PWB0003	3 Years	2026/06/05
Pre-Amplifier	R&S	SCU18F	PWB0034	1 Year	2024/10/11
Pre-Amplifier	R&S	SCU40F1	PWB0036	1 Year	2024/10/11

Pre-Amplifier	COM-MW	DLNA8	PWB0094	1 Year	2024/11/08
Test Software	R&S	ELEKTRA 4.20.2	/	/	/

3.4 Support Equipment List

Equipment	Manufacturer	Description	Model	Serial Number
External Antenna	QUECTEL	/	/	/
EVB	QUECTEL	/	/	/
USB Cable	/	/	/	/
Adapter	Xiamen Xinsenhai Electronics Co., Ltd	Output:12V 60W	P60EB120500	/

3.5 Test Uncertainty

No.	Parameter	Uncertainty
1	Emission Bandwidth	1.9%
2	Occupied channel bandwidth	1.9%
3	Min emission bandwidth	1.9%
4	Unwanted Emissions Measurement	9kHz-7GHz: 1.21dB 7GHz-40GHz: 3.31dB
5	Radiated Band Edges and Spurious Emission	Below 1GHz: 4.88 dB Above 1GHz: 5.06 dB
6	Temperature	3 °C
7	Humidity	1.3 %
8	Supply voltages	0.006 V

4 Test Items Description

Ambient condition

Shielded Chamber

Temperature [°C]	21.1 to 25.1
Humidity [%RH]	25 to 35
Pressure [kPa]	101.4 to 103.2

Anechoic Chamber

Temperature [°C]	20.1 to 24.3
Humidity [%RH]	36 to 48
Pressure [kPa]	101.1 to 103.6

4.1 6dB and 26dB and 99% Occupied Bandwidth Measurement

4.1.1 6dB and 26dB and 99% Occupied Bandwidth Measurement

The minimum 6 dB bandwidth shall be at least 500 kHz

26dB and 99% Occupied bandwidth are reporting only.

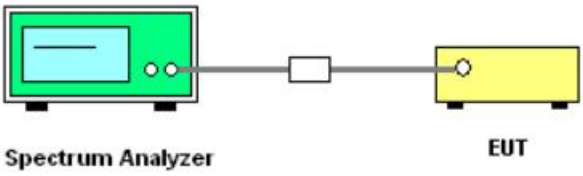
4.1.2 Measuring Instruments

The measuring equipment is listed in the section 3.3 of this test report.

4.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01Section C) Emission bandwidth.
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 ≥ 3 × 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 measurements needed until the RBW/EBW ratio is approximately 1%.
7. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set1% to 5% of the OBW and set the Video bandwidth (VBW) ≥ 3* RBW.
8. Measure and record the results in the test report.

4.1.4 Test Setup



4.1.5 Test Results

See Appendix A.1.

4.2 Maximum Conducted Output Power Measurement

4.2.1 Limit of Maximum Conducted Output Power

<FCC 14 -30 CFR 15.407>

For the band 5.15–5.25 GHz.

(i) For an outdoor access point operating in the band 5.15－5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U－NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U－NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For 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 provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2)For the 5.25－5.35 GHz and 5.47－5.725 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 B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in

dB that the directional gain of the antenna exceeds 6 dBi.

(3)For the band 5.725–5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500–kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

4.2.2 Measuring Instruments

The measuring equipment is listed in the section 3.3 of this test report.

4.2.3 Test Procedures

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

Method SA-2 (trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

1. Measure the duty cycle, x, of the transmitter output signal as described in II.B.
2. Set span to encompass the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
3. Set RBW = 1 MHz.
4. Set VBW ⩾ 3 MHz.
5. Number of points in sweep ⩾ 2 × span / RBW. (This ensures that bin-to-bin spacing is

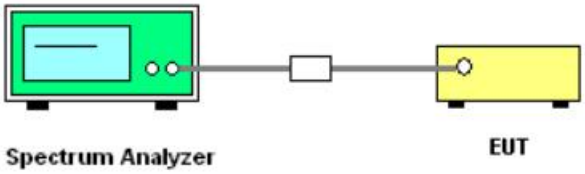
⩽ RBW/2, so that narrowband signals are not lost between frequency bins.)

6. Sweep time = auto.
7. Detector = power averaging (rms), if available. Otherwise, use sample detector mode.
8. Do not use sweep triggering. Allow the sweep to "free run."
9. Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed to ensure that the average accurately represents the true average over the on and off periods of the transmitter.
10. Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
11. 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 (because the measurement represents an average over both the on and off times of the transmission). For example, add 10 log (1/0.25) = 6 dB if the duty cycle is 25%.

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-NI-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

4.2.4 Test Setup



4.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.2.

4.3 Power Spectral Density Measurement

4.3.1 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 any1 megahertz band.

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

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.

4.3.2 Measuring Instruments

The measuring equipment is listed in the section 3.3 of this test report.

4.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01
Section F) Maximum power spectral density.

1.Measure the duty cycle.

2.Set span to encompass the entire emission bandwidth (EBW) of the signal.

3.Set RBW ≥ 1/T, where T is defined in II.B.I.a).

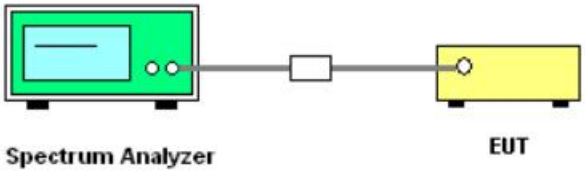
4.Set VBW ≥ 3 RBW.

5.If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10 log (500 kHz/RBW) to the measured result, whereas RBW (<500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

6.If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10 log (1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.

7. Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

4.3.4 Test Setup



4.3.5Test Result of Power Spectral Density

Please refer to Appendix A.3.

4.4 Unwanted Emissions Measurement

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

4.4.1 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 5470-5725MHz band shall not exceed an EIRP of -27 dBm/MHz.

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 15.6dBm/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 (dB μ V/m)
- 27	68.2

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

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

where

EIRP is the equivalent isotropically radiated power, in dBm

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

d_{Meas} is the measurement distance, in m

4.4.2 Measuring Instruments

The measuring equipment is listed in the section 3.3 of this test report.

4.4.3 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

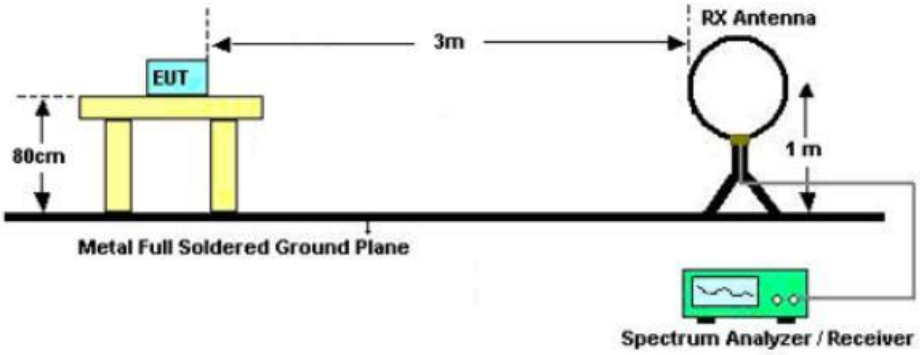
   (3)Procedures for Average Unwanted Emissions Measurements Above 1000MHz
   - RBW = 1 MHz
   - VBW = 10 Hz, when duty cycle is no less than 98 percent
   - VBW ⩾ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting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

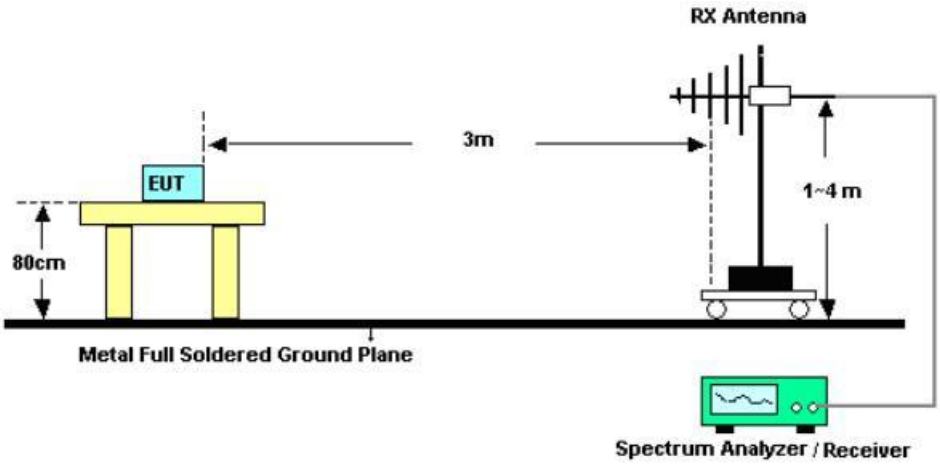
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, 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.

4.4.4 Test Setup

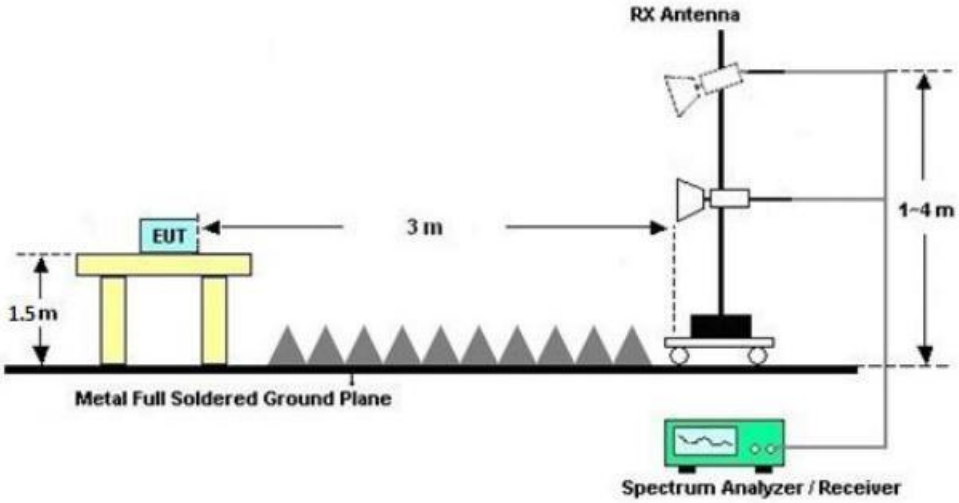
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



4.4.5Test 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.

4.4.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix B.1.

4.4.7 Test Result of Radiated Spurious Emissions (30MHz - 10th Harmonic or 40GHz whichever is lower)

Please refer to Appendix B.1

4.4.8 Duty Cycle

Please refer to Appendix B.2.

4.5 AC Conducted Emission Measurement

4.5.1 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.

4.5.2 Measuring Instruments

The section 3.3 of List of Measuring Equipment of this test report is used for test.

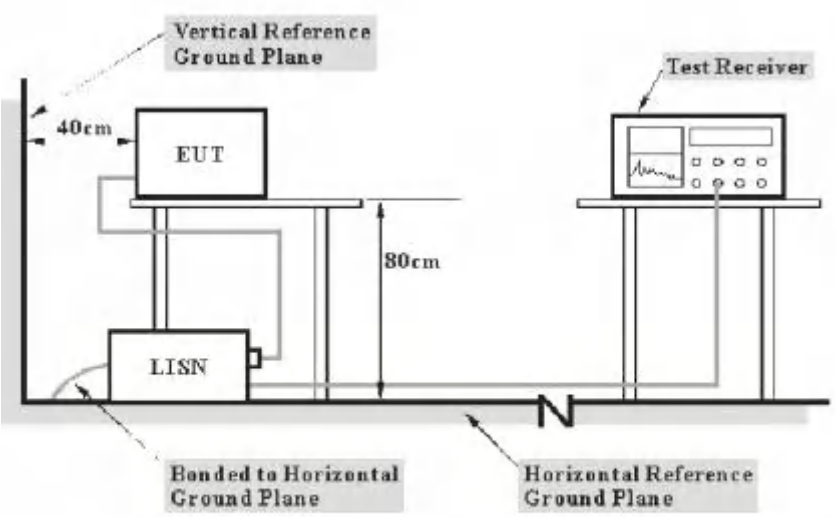
4.5.3 Test Procedures

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 (IF Bandwidth =9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

4.5.4 Test Equipment

Instrument	Manufacturer	Model	Asset No.	Cal. Interval	Cal. Due Date
EMI Test Receiver	R&S	ESR 3	PWB0061	1 Year	2024/10/11
LISN	R&S	ENV216	PWB0062	1 Year	2024/10/11
Shielded Chamber	MIX-BEP	SR 433	PWB0002	3 Years	2024/08/08
Test Software	R&S	ELEKTRA V4.20.2	/	/	/

4.5.5 Test Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

4.5.6 Test Result

Test Site	EMC 02 Shielding Room	Test Time	2024/01/30
Engineer	Kane sun	Test Voltage	120Vac/60Hz

Ambient condition

Temperature	Relative humidity	Pressure
20.3℃ to 20.7℃	40%RH to 41%RH	101.89kPa to 102.09kPa

4.5.7 Test Results

Frequency [MHz]	QPK Level [dBμV]	QPK Limit [dBμV]	QPK Margin [dB]	CAV Level [dBμV]	CAV: AVG Limit [dBμV]	CAV Margin [dB]	Correction [dB]	Line
0.182	45.24	64.42	19.18	33.82	54.42	20.60	9.52	L1
0.267	42.17	61.21	19.05	31.11	51.21	20.10	9.52	L1
0.420	40.68	57.45	16.77	29.54	47.45	17.90	9.52	L1
0.555	33.43	56.00	22.57	20.82	46.00	25.18	9.52	L1
1.505	30.25	56.00	25.75	13.46	46.00	32.54	9.53	L1
5.987	26.34	60.00	33.66	6.62	50.00	43.38	9.56	L1
0.200	46.16	63.63	17.47	34.15	53.63	19.48	9.52	N
0.258	44.50	61.50	16.99	32.85	51.50	18.65	9.53	N

0.438	41.87	57.10	15.23	27.70	47.10	19.40	9.53	N
0.951	29.41	56.00	26.59	15.57	46.00	30.43	9.53	N
5.064	26.63	60.00	33.37	6.12	50.00	43.88	9.56	N
25.634	19.76	60.00	40.24	8.67	50.00	41.33	9.67	N

Test Graphs

150KHz to 30MHz_L1	150KHz to 30MHz_N

4.5.8 Uncertainty Measurement

Where relevant,the following measurement uncertainty levels have been estimated for tests performed on the EUT. The listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

CASE	Uncertainty
Continuous Emission (AC port)	2.92 dB

4.6 Antenna Requirements

4.6.1 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.

4.6.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

4.6.3 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.

Appendix A – Test Results of Conducted Test

A.1 6dB and 26dB and 99% Occupied Bandwidth Measurement

Test Result_26dB Bandwidth

U-NII-1

Test Mode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	18.280	5171.040	5189.320	---	---
11A	Ant2	5180	18.120	5171.080	5189.200	---	---
11A	Ant1	5220	18.000	5211.120	5229.120	---	---
11A	Ant2	5220	18.000	5210.920	5228.920	---	---
11A	Ant1	5240	17.960	5231.200	5249.160	---	---
11A	Ant2	5240	17.920	5231.240	5249.160	---	---
11A-CDD	Ant1	5180	18.280	5171.040	5189.320	---	---
11A-CDD	Ant2	5180	17.920	5171.240	5189.160	---	---
11A-CDD	Ant1	5220	18.120	5211.120	5229.240	---	---
11A-CDD	Ant2	5220	18.000	5211.080	5229.080	---	---
11A-CDD	Ant1	5240	18.320	5230.960	5249.280	---	---
11A-CDD	Ant2	5240	18.080	5230.960	5249.040	---	---
11N20SISO	Ant1	5180	19.120	5170.560	5189.680	---	---
11N20SISO	Ant2	5180	19.360	5170.400	5189.760	---	---
11N20SISO	Ant1	5220	18.960	5210.560	5229.520	---	---
11N20SISO	Ant2	5220	19.240	5210.560	5229.800	---	---
11N20SISO	Ant1	5240	18.960	5230.640	5249.600	---	---
11N20SISO	Ant2	5240	19.120	5230.480	5249.600	---	---
11N20MIMO	Ant1	5180	19.080	5170.480	5189.560	---	---
11N20MIMO	Ant2	5180	18.840	5170.800	5189.640	---	---
11N20MIMO	Ant1	5220	19.480	5210.360	5229.840	---	---
11N20MIMO	Ant2	5220	19.280	5210.320	5229.600	---	---
11N20MIMO	Ant1	5240	19.200	5230.480	5249.680	---	---
11N20MIMO	Ant2	5240	19.160	5230.440	5249.600	---	---
11N40SISO	Ant1	5190	38.240	5170.960	5209.200	---	---
11N40SISO	Ant2	5190	38.320	5171.040	5209.360	---	---
11N40SISO	Ant1	5230	38.640	5210.640	5249.280	---	---
11N40SISO	Ant2	5230	38.800	5210.800	5249.600	---	---
11N40MIMO	Ant1	5190	38.240	5171.040	5209.280	---	---
11N40MIMO	Ant2	5190	38.240	5170.960	5209.200	---	---
11N40MIMO	Ant1	5230	38.640	5210.560	5249.200	---	---

11N40MIMO	Ant2	5230	38.400	5210.640	5249.040	---	---
11AC20SISO	Ant1	5180	19.120	5170.480	5189.600	---	---
11AC20SISO	Ant2	5180	19.280	5170.520	5189.800	---	---
11AC20SISO	Ant1	5220	19.200	5210.520	5229.720	---	---
11AC20SISO	Ant2	5220	19.200	5210.480	5229.680	---	---
11AC20SISO	Ant1	5240	19.120	5230.560	5249.680	---	---
11AC20SISO	Ant2	5240	19.040	5230.560	5249.600	---	---
11AC20MIMO	Ant1	5180	19.240	5170.520	5189.760	---	---
11AC20MIMO	Ant2	5180	19.120	5170.520	5189.640	---	---
11AC20MIMO	Ant1	5220	19.200	5210.520	5229.720	---	---
11AC20MIMO	Ant2	5220	19.000	5210.560	5229.560	---	---
11AC20MIMO	Ant1	5240	19.320	5230.480	5249.800	---	---
11AC20MIMO	Ant2	5240	19.200	5230.400	5249.600	---	---
11AC40SISO	Ant1	5190	38.880	5170.640	5209.520	---	---
11AC40SISO	Ant2	5190	38.160	5171.120	5209.280	---	---
11AC40SISO	Ant1	5230	38.320	5210.880	5249.200	---	---
11AC40SISO	Ant2	5230	38.640	5210.720	5249.360	---	---
11AC40MIMO	Ant1	5190	38.480	5170.720	5209.200	---	---
11AC40MIMO	Ant2	5190	38.160	5171.120	5209.280	---	---
11AC40MIMO	Ant1	5230	38.400	5210.800	5249.200	---	---
11AC40MIMO	Ant2	5230	38.400	5210.480	5248.880	---	---
11AC80SISO	Ant1	5210	79.520	5170.320	5249.840	---	---
11AC80SISO	Ant2	5210	79.520	5170.640	5250.160	---	---
11AC80MIMO	Ant1	5210	79.840	5170.320	5250.160	---	---
11AC80MIMO	Ant2	5210	135.040	5148.240	5283.280	---	---

U-NII-2A

Test Mode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5260	35.800	5242.520	5278.320	---	---
11A	Ant2	5260	18.240	5251.120	5269.360	---	---
11A	Ant1	5300	18.240	5291.000	5309.240	---	---
11A	Ant2	5300	18.320	5291.000	5309.320	---	---
11A	Ant1	5320	18.080	5311.080	5329.160	---	---
11A	Ant2	5320	17.960	5310.960	5328.920	---	---
11A-CDD	Ant1	5260	18.120	5251.000	5269.120	---	---
11A-CDD	Ant2	5260	17.960	5251.080	5269.040	---	---
11A-CDD	Ant1	5300	18.160	5291.040	5309.200	---	---
11A-CDD	Ant2	5300	18.040	5291.240	5309.280	---	---
11A-CDD	Ant1	5320	18.920	5310.560	5329.480	---	---

11A-CDD	Ant2	5320	18.960	5310.800	5329.760	---	---
11N20SISO	Ant1	5260	19.120	5250.480	5269.600	---	---
11N20SISO	Ant2	5260	19.080	5250.440	5269.520	---	---
11N20SISO	Ant1	5300	18.920	5290.600	5309.520	---	---
11N20SISO	Ant2	5300	19.120	5290.640	5309.760	---	---
11N20SISO	Ant1	5320	18.960	5310.560	5329.520	---	---
11N20SISO	Ant2	5320	19.240	5310.360	5329.600	---	---
11N20MIMO	Ant1	5260	19.080	5250.560	5269.640	---	---
11N20MIMO	Ant2	5260	18.960	5250.520	5269.480	---	---
11N20MIMO	Ant1	5300	18.920	5290.600	5309.520	---	---
11N20MIMO	Ant2	5300	18.840	5290.760	5309.600	---	---
11N20MIMO	Ant1	5320	19.120	5310.480	5329.600	---	---
11N20MIMO	Ant2	5320	19.000	5310.720	5329.720	---	---
11N40SISO	Ant1	5270	38.480	5250.800	5289.280	---	---
11N40SISO	Ant2	5270	38.640	5250.720	5289.360	---	---
11N40SISO	Ant1	5310	38.800	5290.960	5329.760	---	---
11N40SISO	Ant2	5310	38.400	5290.720	5329.120	---	---
11N40MIMO	Ant1	5270	38.560	5250.880	5289.440	---	---
11N40MIMO	Ant2	5270	57.440	5237.040	5294.480	---	---
11N40MIMO	Ant1	5310	38.800	5290.800	5329.600	---	---
11N40MIMO	Ant2	5310	38.320	5291.280	5329.600	---	---
11AC20SISO	Ant1	5260	19.040	5250.600	5269.640	---	---
11AC20SISO	Ant2	5260	19.400	5250.440	5269.840	---	---
11AC20SISO	Ant1	5300	19.160	5290.560	5309.720	---	---
11AC20SISO	Ant2	5300	19.240	5290.440	5309.680	---	---
11AC20SISO	Ant1	5320	19.240	5310.480	5329.720	---	---
11AC20SISO	Ant2	5320	19.040	5310.600	5329.640	---	---
11AC20MIMO	Ant1	5260	19.240	5250.480	5269.720	---	---
11AC20MIMO	Ant2	5260	19.120	5250.360	5269.480	---	---
11AC20MIMO	Ant1	5300	19.080	5290.640	5309.720	---	---
11AC20MIMO	Ant2	5300	19.000	5290.800	5309.800	---	---
11AC20MIMO	Ant1	5320	19.000	5310.640	5329.640	---	---
11AC20MIMO	Ant2	5320	19.000	5310.880	5329.880	---	---
11AC40SISO	Ant1	5270	38.480	5250.960	5289.440	---	---
11AC40SISO	Ant2	5270	38.880	5250.800	5289.680	---	---
11AC40SISO	Ant1	5310	38.720	5290.800	5329.520	---	---
11AC40SISO	Ant2	5310	38.640	5290.720	5329.360	---	---
11AC40MIMO	Ant1	5270	38.480	5250.880	5289.360	---	---
11AC40MIMO	Ant2	5270	39.840	5250.320	5290.160	---	---

11AC40MIMO	Ant1	5310	38.240	5290.880	5329.120	---	---
11AC40MIMO	Ant2	5310	38.560	5291.200	5329.760	---	---
11AC80SISO	Ant1	5290	80.800	5249.840	5330.640	---	---
11AC80SISO	Ant2	5290	80.160	5250.320	5330.480	---	---
11AC80MIMO	Ant1	5290	79.680	5250.320	5330.000	---	---
11AC80MIMO	Ant2	5290	79.200	5250.320	5329.520	---	---

U-NII-2C

Test Mode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5500	18.360	5491.000	5509.360	---	---
11A	Ant2	5500	18.000	5491.160	5509.160	---	---
11A	Ant1	5580	18.120	5571.040	5589.160	---	---
11A	Ant2	5580	17.920	5571.160	5589.080	---	---
11A	Ant1	5700	18.080	5691.120	5709.200	---	---
11A	Ant2	5700	18.280	5691.040	5709.320	---	---
11A	Ant1	5720	18.120	5711.080	5729.200	---	---
11A	Ant2	5720	17.960	5711.240	5729.200	---	---
11A	Ant1	5720_UNII-2C	13.92	5711.080	5725	---	---
11A	Ant2	5720_UNII-2C	13.76	5711.240	5725	---	---
11A	Ant1	5720_UNII-3	4.2	5725	5729.200	---	---
11A	Ant2	5720_UNII-3	4.2	5725	5729.200	---	---
11A-CDD	Ant1	5500	18.320	5490.880	5509.200	---	---
11A-CDD	Ant2	5500	18.240	5491.040	5509.280	---	---
11A-CDD	Ant1	5580	18.200	5570.920	5589.120	---	---
11A-CDD	Ant2	5580	17.960	5571.040	5589.000	---	---
11A-CDD	Ant1	5700	18.200	5691.000	5709.200	---	---
11A-CDD	Ant2	5700	17.840	5691.240	5709.080	---	---
11A-CDD	Ant1	5720	18.080	5711.240	5729.320	---	---
11A-CDD	Ant2	5720	17.920	5711.040	5728.960	---	---
11A-CDD	Ant1	5720_UNII-2C	13.76	5711.240	5725	---	---
11A-CDD	Ant2	5720_UNII-2C	13.96	5711.040	5725	---	---
11A-CDD	Ant1	5720_UNII-3	4.32	5725	5729.320	---	---
11A-CDD	Ant2	5720_UNII-3	3.96	5725	5728.960	---	---
11N20SISO	Ant1	5500	19.160	5490.440	5509.600	---	---
11N20SISO	Ant2	5500	19.040	5490.560	5509.600	---	---
11N20SISO	Ant1	5580	18.880	5570.680	5589.560	---	---
11N20SISO	Ant2	5580	19.240	5570.360	5589.600	---	---
11N20SISO	Ant1	5700	19.280	5690.480	5709.760	---	---

11N20SISO	Ant2	5700	19.200	5690.440	5709.640	---	---
11N20SISO	Ant1	5720	19.120	5710.520	5729.640	---	---
11N20SISO	Ant2	5720	19.160	5710.560	5729.720	---	---
11N20SISO	Ant1	5720_UNII-2C	14.48	5710.520	5725	---	---
11N20SISO	Ant2	5720_UNII-2C	14.44	5710.560	5725	---	---
11N20SISO	Ant1	5720_UNII-3	4.64	5725	5729.640	---	---
11N20SISO	Ant2	5720_UNII-3	4.72	5725	5729.720	---	---
11N20MIMO	Ant1	5500	19.120	5490.480	5509.600	---	---
11N20MIMO	Ant2	5500	19.040	5490.680	5509.720	---	---
11N20MIMO	Ant1	5580	18.960	5570.600	5589.560	---	---
11N20MIMO	Ant2	5580	18.880	5570.600	5589.480	---	---
11N20MIMO	Ant1	5700	19.160	5690.480	5709.640	---	---
11N20MIMO	Ant2	5700	19.160	5690.520	5709.680	---	---
11N20MIMO	Ant1	5720	19.360	5710.320	5729.680	---	---
11N20MIMO	Ant2	5720	18.920	5710.600	5729.520	---	---
11N20MIMO	Ant1	5720_UNII-2C	14.68	5710.320	5725	---	---
11N20MIMO	Ant2	5720_UNII-2C	14.4	5710.600	5725	---	---
11N20MIMO	Ant1	5720_UNII-3	4.68	5725	5729.680	---	---
11N20MIMO	Ant2	5720_UNII-3	4.52	5725	5729.520	---	---
11N40SISO	Ant1	5510	38.640	5490.800	5529.440	---	---
11N40SISO	Ant2	5510	38.480	5490.880	5529.360	---	---
11N40SISO	Ant1	5550	38.720	5530.960	5569.680	---	---
11N40SISO	Ant2	5550	38.240	5530.960	5569.200	---	---
11N40SISO	Ant1	5670	39.120	5650.400	5689.520	---	---
11N40SISO	Ant2	5670	38.400	5650.960	5689.360	---	---
11N40SISO	Ant1	5710	38.480	5690.880	5729.360	---	---
11N40SISO	Ant2	5710	38.960	5690.480	5729.440	---	---
11N40SISO	Ant1	5710_UNII-2C	34.12	5690.880	5725	---	---
11N40SISO	Ant2	5710_UNII-2C	34.52	5690.480	5725	---	---
11N40SISO	Ant1	5710_UNII-3	4.36	5725	5729.360	---	---
11N40SISO	Ant2	5710_UNII-3	4.44	5725	5729.440	---	---
11N40MIMO	Ant1	5510	38.480	5491.040	5529.520	---	---
11N40MIMO	Ant2	5510	38.320	5491.200	5529.520	---	---
11N40MIMO	Ant1	5550	38.800	5530.800	5569.600	---	---
11N40MIMO	Ant2	5550	37.920	5531.200	5569.120	---	---
11N40MIMO	Ant1	5670	38.560	5650.800	5689.360	---	---
11N40MIMO	Ant2	5670	38.160	5651.280	5689.440	---	---
11N40MIMO	Ant1	5710	39.360	5690.480	5729.840	---	---
11N40MIMO	Ant2	5710	38.400	5690.960	5729.360	---	---

11N40MIMO	Ant1	5710_UNII-2C	34.52	5690.480	5725	---	---
11N40MIMO	Ant2	5710_UNII-2C	34.04	5690.960	5725	---	---
11N40MIMO	Ant1	5710_UNII-3	4.84	5725	5729.840	---	---
11N40MIMO	Ant2	5710_UNII-3	4.36	5725	5729.360	---	---
11AC20SISO	Ant1	5500	19.040	5490.560	5509.600	---	---
11AC20SISO	Ant2	5500	19.160	5490.480	5509.640	---	---
11AC20SISO	Ant1	5580	19.160	5570.560	5589.720	---	---
11AC20SISO	Ant2	5580	19.080	5570.480	5589.560	---	---
11AC20SISO	Ant1	5700	19.480	5690.280	5709.760	---	---
11AC20SISO	Ant2	5700	19.000	5690.680	5709.680	---	---
11AC20SISO	Ant1	5720	19.240	5710.360	5729.600	---	---
11AC20SISO	Ant2	5720	18.960	5710.640	5729.600	---	---
11AC20SISO	Ant1	5720_UNII-2C	14.64	5710.360	5725	---	---
11AC20SISO	Ant2	5720_UNII-2C	14.36	5710.640	5725	---	---
11AC20SISO	Ant1	5720_UNII-3	4.6	5725	5729.600	---	---
11AC20SISO	Ant2	5720_UNII-3	4.6	5725	5729.600	---	---
11AC20MIMO	Ant1	5500	19.320	5490.520	5509.840	---	---
11AC20MIMO	Ant2	5500	19.120	5490.640	5509.760	---	---
11AC20MIMO	Ant1	5580	19.000	5570.680	5589.680	---	---
11AC20MIMO	Ant2	5580	19.040	5570.440	5589.480	---	---
11AC20MIMO	Ant1	5700	19.120	5690.520	5709.640	---	---
11AC20MIMO	Ant2	5700	19.000	5690.560	5709.560	---	---
11AC20MIMO	Ant1	5720	19.280	5710.400	5729.680	---	---
11AC20MIMO	Ant2	5720	19.080	5710.560	5729.640	---	---
11AC20MIMO	Ant1	5720_UNII-2C	14.6	5710.400	5725	---	---
11AC20MIMO	Ant2	5720_UNII-2C	14.44	5710.560	5725	---	---
11AC20MIMO	Ant1	5720_UNII-3	4.68	5725	5729.680	---	---
11AC20MIMO	Ant2	5720_UNII-3	4.64	5725	5729.640	---	---
11AC40SISO	Ant1	5510	38.640	5490.880	5529.520	---	---
11AC40SISO	Ant2	5510	38.880	5490.640	5529.520	---	---
11AC40SISO	Ant1	5550	38.400	5530.880	5569.280	---	---
11AC40SISO	Ant2	5550	38.400	5530.960	5569.360	---	---
11AC40SISO	Ant1	5670	38.640	5650.800	5689.440	---	---
11AC40SISO	Ant2	5670	38.640	5650.800	5689.440	---	---
11AC40SISO	Ant1	5710	38.640	5690.800	5729.440	---	---
11AC40SISO	Ant2	5710	38.640	5690.640	5729.280	---	---
11AC40SISO	Ant1	5710_UNII-2C	34.2	5690.800	5725	---	---
11AC40SISO	Ant2	5710_UNII-2C	34.36	5690.640	5725	---	---
11AC40SISO	Ant1	5710_UNII-3	4.44	5725	5729.440	---	---

11AC40SISO	Ant2	5710_UNII-3	4.28	5725	5729.280	---	---
11AC40MIMO	Ant1	5510	38.800	5490.720	5529.520	---	---
11AC40MIMO	Ant2	5510	38.480	5491.040	5529.520	---	---
11AC40MIMO	Ant1	5550	38.480	5530.880	5569.360	---	---
11AC40MIMO	Ant2	5550	38.400	5530.960	5569.360	---	---
11AC40MIMO	Ant1	5670	38.640	5650.800	5689.440	---	---
11AC40MIMO	Ant2	5670	37.920	5651.280	5689.200	---	---
11AC40MIMO	Ant1	5710	38.880	5690.560	5729.440	---	---
11AC40MIMO	Ant2	5710	38.400	5690.880	5729.280	---	---
11AC40MIMO	Ant1	5710_UNII-2C	34.44	5690.560	5725	---	---
11AC40MIMO	Ant2	5710_UNII-2C	34.12	5690.880	5725	---	---
11AC40MIMO	Ant1	5710_UNII-3	4.44	5725	5729.440	---	---
11AC40MIMO	Ant2	5710_UNII-3	4.28	5725	5729.280	---	---
11AC80SISO	Ant1	5530	79.520	5490.480	5570.000	---	---
11AC80SISO	Ant2	5530	79.520	5490.160	5569.680	---	---
11AC80SISO	Ant1	5610	79.040	5570.640	5649.680	---	---
11AC80SISO	Ant2	5610	79.360	5569.840	5649.200	---	---
11AC80SISO	Ant1	5690	79.360	5650.640	5730.000	---	---
11AC80SISO	Ant2	5690	80.000	5650.480	5730.480	---	---
11AC80SISO	Ant1	5690_UNII-2C	74.36	5650.640	5725	---	---
11AC80SISO	Ant2	5690_UNII-2C	74.52	5650.480	5725	---	---
11AC80SISO	Ant1	5690_UNII-3	5	5725	5730.000	---	---
11AC80SISO	Ant2	5690_UNII-3	5.48	5725	5730.480	---	---
11AC80MIMO	Ant1	5530	80.160	5490.160	5570.320	---	---
11AC80MIMO	Ant2	5530	79.200	5490.640	5569.840	---	---
11AC80MIMO	Ant1	5610	79.680	5570.320	5650.000	---	---
11AC80MIMO	Ant2	5610	80.160	5569.680	5649.840	---	---
11AC80MIMO	Ant1	5690	79.040	5650.480	5729.520	---	---
11AC80MIMO	Ant2	5690	79.040	5651.120	5730.160	---	---
11AC80MIMO	Ant1	5690_UNII-2C	74.52	5650.480	5725	---	---
11AC80MIMO	Ant2	5690_UNII-2C	73.88	5651.120	5725	---	---
11AC80MIMO	Ant1	5690_UNII-3	4.52	5725	5729.520	---	---
11AC80MIMO	Ant2	5690_UNII-3	5.16	5725	5730.160	---	---

U-NII-3

Test Mode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	18.040	5736.160	5754.200	---	---
11A	Ant2	5745	18.080	5736.120	5754.200	---	---
11A	Ant1	5785	18.160	5776.200	5794.360	---	---

11A	Ant2	5785	18.160	5776.040	5794.200	---	---
11A	Ant1	5825	18.080	5816.080	5834.160	---	---
11A	Ant2	5825	18.080	5816.080	5834.160	---	---
11A-CDD	Ant1	5745	18.000	5736.080	5754.080	---	---
11A-CDD	Ant2	5745	17.840	5736.280	5754.120	---	---
11A-CDD	Ant1	5785	18.280	5776.080	5794.360	---	---
11A-CDD	Ant2	5785	27.000	5770.520	5797.520	---	---
11A-CDD	Ant1	5825	18.080	5816.080	5834.160	---	---
11A-CDD	Ant2	5825	37.640	5807.320	5844.960	---	---
11N20SISO	Ant1	5745	19.360	5735.400	5754.760	---	---
11N20SISO	Ant2	5745	19.240	5735.640	5754.880	---	---
11N20SISO	Ant1	5785	19.160	5775.520	5794.680	---	---
11N20SISO	Ant2	5785	19.040	5775.600	5794.640	---	---
11N20SISO	Ant1	5825	19.040	5815.640	5834.680	---	---
11N20SISO	Ant2	5825	19.080	5815.600	5834.680	---	---
11N20MIMO	Ant1	5745	19.200	5735.480	5754.680	---	---
11N20MIMO	Ant2	5745	19.160	5735.440	5754.600	---	---
11N20MIMO	Ant1	5785	19.000	5775.640	5794.640	---	---
11N20MIMO	Ant2	5785	25.840	5771.520	5797.360	---	---
11N20MIMO	Ant1	5825	19.200	5815.600	5834.800	---	---
11N20MIMO	Ant2	5825	38.440	5805.880	5844.320	---	---
11N40SISO	Ant1	5755	38.640	5735.800	5774.440	---	---
11N40SISO	Ant2	5755	38.560	5735.880	5774.440	---	---
11N40SISO	Ant1	5795	38.800	5775.720	5814.520	---	---
11N40SISO	Ant2	5795	38.480	5775.880	5814.360	---	---
11N40MIMO	Ant1	5755	38.720	5735.960	5774.680	---	---
11N40MIMO	Ant2	5755	38.320	5735.560	5773.880	---	---
11N40MIMO	Ant1	5795	38.640	5775.880	5814.520	---	---
11N40MIMO	Ant2	5795	38.480	5776.120	5814.600	---	---
11AC20SISO	Ant1	5745	19.240	5735.520	5754.760	---	---
11AC20SISO	Ant2	5745	19.040	5735.680	5754.720	---	---
11AC20SISO	Ant1	5785	19.120	5775.640	5794.760	---	---
11AC20SISO	Ant2	5785	19.120	5775.520	5794.640	---	---
11AC20SISO	Ant1	5825	18.880	5815.720	5834.600	---	---
11AC20SISO	Ant2	5825	19.320	5815.560	5834.880	---	---
11AC20MIMO	Ant1	5745	19.040	5735.640	5754.680	---	---
11AC20MIMO	Ant2	5745	19.080	5735.520	5754.600	---	---
11AC20MIMO	Ant1	5785	19.080	5775.720	5794.800	---	---
11AC20MIMO	Ant2	5785	22.040	5775.360	5797.400	---	---

11AC20MIMO	Ant1	5825	19.240	5815.520	5834.760	---	---
11AC20MIMO	Ant2	5825	19.040	5815.720	5834.760	---	---
11AC40SISO	Ant1	5755	38.800	5735.800	5774.600	---	---
11AC40SISO	Ant2	5755	38.560	5735.880	5774.440	---	---
11AC40SISO	Ant1	5795	38.560	5775.960	5814.520	---	---
11AC40SISO	Ant2	5795	38.720	5775.800	5814.520	---	---
11AC40MIMO	Ant1	5755	38.560	5735.800	5774.360	---	---
11AC40MIMO	Ant2	5755	38.160	5735.960	5774.120	---	---
11AC40MIMO	Ant1	5795	38.640	5775.720	5814.360	---	---
11AC40MIMO	Ant2	5795	38.400	5776.280	5814.680	---	---
11AC80SISO	Ant1	5775	80.160	5735.320	5815.480	---	---
11AC80SISO	Ant2	5775	79.040	5735.320	5814.360	---	---
11AC80MIMO	Ant1	5775	80.960	5734.840	5815.800	---	---
11AC80MIMO	Ant2	5775	97.120	5725.240	5822.360	---	---

Test Result_6dB Bandwidth

Test Mode	Antenna	Frequency[MHz]	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A-CDD	Ant1	5745	16.120	5736.920	5753.040	0.5	PASS
11A-CDD	Ant2	5745	15.760	5737.600	5753.360	0.5	PASS
11A-CDD	Ant1	5785	15.840	5777.000	5792.840	0.5	PASS
11A-CDD	Ant2	5785	16.280	5777.000	5793.280	0.5	PASS
11A-CDD	Ant1	5825	15.480	5817.440	5832.920	0.5	PASS
11A-CDD	Ant2	5825	12.760	5820.520	5833.280	0.5	PASS
11N20MIMO	Ant1	5745	16.280	5737.280	5753.560	0.5	PASS
11N20MIMO	Ant2	5745	16.280	5736.400	5752.680	0.5	PASS
11N20MIMO	Ant1	5785	17.160	5776.400	5793.560	0.5	PASS
11N20MIMO	Ant2	5785	17.200	5776.760	5793.960	0.5	PASS
11N20MIMO	Ant1	5825	16.920	5816.680	5833.600	0.5	PASS
11N20MIMO	Ant2	5825	14.600	5818.960	5833.560	0.5	PASS
11N40MIMO	Ant1	5755	33.760	5737.720	5771.480	0.5	PASS
11N40MIMO	Ant2	5755	31.280	5737.640	5768.920	0.5	PASS
11N40MIMO	Ant1	5795	34.480	5777.560	5812.040	0.5	PASS
11N40MIMO	Ant2	5795	33.200	5780.120	5813.320	0.5	PASS
11AC20MIMO	Ant1	5745	17.560	5736.360	5753.920	0.5	PASS
11AC20MIMO	Ant2	5745	16.320	5736.360	5752.680	0.5	PASS
11AC20MIMO	Ant1	5785	17.400	5776.520	5793.920	0.5	PASS
11AC20MIMO	Ant2	5785	17.200	5776.720	5793.920	0.5	PASS
11AC20MIMO	Ant1	5825	17.560	5816.360	5833.920	0.5	PASS

11AC20MIMO	Ant2	5825	15.360	5818.600	5833.960	0.5	PASS
11AC40MIMO	Ant1	5755	31.280	5741.400	5772.680	0.5	PASS
11AC40MIMO	Ant2	5755	30.400	5737.240	5767.640	0.5	PASS
11AC40MIMO	Ant1	5795	33.840	5777.640	5811.480	0.5	PASS
11AC40MIMO	Ant2	5795	24.400	5788.920	5813.320	0.5	PASS
11AC80MIMO	Ant1	5775	67.680	5738.840	5806.520	0.5	PASS
11AC80MIMO	Ant2	5775	75.360	5737.240	5812.600	0.5	PASS

Test Result_99% Bandwidth

U-NII-1

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	16.351	5171.9412	5188.2922	---	---
11A	Ant2	5180	16.410	5171.8946	5188.3046	---	---
11A	Ant1	5220	16.437	5211.8693	5228.3063	---	---
11A	Ant2	5220	16.411	5211.9053	5228.3163	---	---
11A	Ant1	5240	16.452	5231.8703	5248.3223	---	---
11A	Ant2	5240	16.355	5231.9279	5248.2829	---	---
11A-CDD	Ant1	5180	16.357	5171.9164	5188.2734	---	---
11A-CDD	Ant2	5180	16.338	5171.9608	5188.2988	---	---
11A-CDD	Ant1	5220	16.364	5211.9210	5228.2850	---	---
11A-CDD	Ant2	5220	16.326	5211.8673	5228.1933	---	---
11A-CDD	Ant1	5240	16.351	5231.9070	5248.2580	---	---
11A-CDD	Ant2	5240	16.363	5231.8649	5248.2279	---	---
11N20SISO	Ant1	5180	17.587	5171.3142	5188.9012	---	---
11N20SISO	Ant2	5180	17.568	5171.3178	5188.8858	---	---
11N20SISO	Ant1	5220	17.580	5211.3045	5228.8845	---	---
11N20SISO	Ant2	5220	17.562	5211.3236	5228.8856	---	---
11N20SISO	Ant1	5240	17.557	5231.3014	5248.8584	---	---
11N20SISO	Ant2	5240	17.539	5231.3451	5248.8841	---	---
11N20MIMO	Ant1	5180	17.540	5171.3453	5188.8853	---	---
11N20MIMO	Ant2	5180	17.482	5171.4165	5188.8985	---	---
11N20MIMO	Ant1	5220	17.556	5211.3382	5228.8942	---	---
11N20MIMO	Ant2	5220	17.497	5211.2845	5228.7815	---	---
11N20MIMO	Ant1	5240	17.555	5231.3330	5248.8880	---	---
11N20MIMO	Ant2	5240	17.521	5231.2721	5248.7931	---	---
11N40SISO	Ant1	5190	36.003	5172.1130	5208.1160	---	---
11N40SISO	Ant2	5190	35.974	5172.1631	5208.1371	---	---
11N40SISO	Ant1	5230	36.084	5212.1094	5248.1934	---	---
11N40SISO	Ant2	5230	35.892	5212.1822	5248.0742	---	---
11N40MIMO	Ant1	5190	35.998	5172.1182	5208.1162	---	---
11N40MIMO	Ant2	5190	35.710	5172.2319	5207.9419	---	---
11N40MIMO	Ant1	5230	35.910	5212.1861	5248.0961	---	---
11N40MIMO	Ant2	5230	35.645	5211.9418	5247.5868	---	---
11AC20SISO	Ant1	5180	17.576	5171.3134	5188.8894	---	---
11AC20SISO	Ant2	5180	17.541	5171.3364	5188.8774	---	---
11AC20SISO	Ant1	5220	17.536	5211.3375	5228.8735	---	---

11AC20SISO	Ant2	5220	17.549	5211.3235	5228.8725	---	---
11AC20SISO	Ant1	5240	17.551	5231.3219	5248.8729	---	---
11AC20SISO	Ant2	5240	17.541	5231.3571	5248.8981	---	---
11AC20MIMO	Ant1	5180	17.546	5171.3118	5188.8578	---	---
11AC20MIMO	Ant2	5180	17.485	5171.3924	5188.8774	---	---
11AC20MIMO	Ant1	5220	17.516	5211.3399	5228.8559	---	---
11AC20MIMO	Ant2	5220	17.491	5211.2789	5228.7699	---	---
11AC20MIMO	Ant1	5240	17.521	5231.3521	5248.8731	---	---
11AC20MIMO	Ant2	5240	17.491	5231.2810	5248.7720	---	---
11AC40SISO	Ant1	5190	35.972	5172.1272	5208.0992	---	---
11AC40SISO	Ant2	5190	36.004	5172.1126	5208.1166	---	---
11AC40SISO	Ant1	5230	35.979	5212.0884	5248.0674	---	---
11AC40SISO	Ant2	5230	35.990	5212.1639	5248.1539	---	---
11AC40MIMO	Ant1	5190	36.091	5172.0617	5208.1527	---	---
11AC40MIMO	Ant2	5190	35.753	5172.2388	5207.9918	---	---
11AC40MIMO	Ant1	5230	36.013	5212.1020	5248.1150	---	---
11AC40MIMO	Ant2	5230	35.827	5211.9159	5247.7429	---	---
11AC80SISO	Ant1	5210	74.904	5172.8732	5247.7772	---	---
11AC80SISO	Ant2	5210	75.027	5172.8038	5247.8308	---	---
11AC80MIMO	Ant1	5210	74.592	5172.9874	5247.5794	---	---
11AC80MIMO	Ant2	5210	78.619	5171.7027	5250.3217	---	---

U-NII-2A

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5260	19.567	5250.5690	5270.1360	---	---
11A	Ant2	5260	16.395	5251.8977	5268.2927	---	---
11A	Ant1	5300	16.425	5291.8860	5308.3110	---	---
11A	Ant2	5300	16.398	5291.9072	5308.3052	---	---
11A	Ant1	5320	16.362	5311.9119	5328.2739	---	---
11A	Ant2	5320	16.407	5311.9107	5328.3177	---	---
11A-CDD	Ant1	5260	16.355	5251.9132	5268.2682	---	---
11A-CDD	Ant2	5260	16.355	5251.8542	5268.2092	---	---
11A-CDD	Ant1	5300	16.390	5291.8985	5308.2885	---	---
11A-CDD	Ant2	5300	16.401	5291.9990	5308.4000	---	---
11A-CDD	Ant1	5320	17.572	5311.3106	5328.8826	---	---
11A-CDD	Ant2	5320	17.495	5311.4712	5328.9662	---	---
11N20SISO	Ant1	5260	17.571	5251.3081	5268.8791	---	---
11N20SISO	Ant2	5260	17.550	5251.3243	5268.8743	---	---
11N20SISO	Ant1	5300	17.559	5291.3333	5308.8923	---	---

11N20SISO	Ant2	5300	17.560	5291.3097	5308.8697	---	---
11N20SISO	Ant1	5320	17.538	5311.3178	5328.8558	---	---
11N20SISO	Ant2	5320	17.503	5311.3571	5328.8601	---	---
11N20MIMO	Ant1	5260	17.534	5251.3121	5268.8461	---	---
11N20MIMO	Ant2	5260	17.554	5251.2746	5268.8286	---	---
11N20MIMO	Ant1	5300	17.526	5291.3374	5308.8634	---	---
11N20MIMO	Ant2	5300	17.552	5291.4314	5308.9834	---	---
11N20MIMO	Ant1	5320	17.560	5311.3165	5328.8765	---	---
11N20MIMO	Ant2	5320	17.508	5311.4492	5328.9572	---	---
11N40SISO	Ant1	5270	35.983	5252.1013	5288.0843	---	---
11N40SISO	Ant2	5270	36.000	5252.1143	5288.1143	---	---
11N40SISO	Ant1	5310	36.017	5292.0993	5328.1163	---	---
11N40SISO	Ant2	5310	35.953	5292.1462	5328.0992	---	---
11N40MIMO	Ant1	5270	35.932	5252.1084	5288.0404	---	---
11N40MIMO	Ant2	5270	36.183	5251.9709	5288.1539	---	---
11N40MIMO	Ant1	5310	36.020	5292.1347	5328.1547	---	---
11N40MIMO	Ant2	5310	35.624	5292.6485	5328.2725	---	---
11AC20SISO	Ant1	5260	17.563	5251.3233	5268.8863	---	---
11AC20SISO	Ant2	5260	17.521	5251.3476	5268.8686	---	---
11AC20SISO	Ant1	5300	17.553	5291.3237	5308.8767	---	---
11AC20SISO	Ant2	5300	17.564	5291.3326	5308.8966	---	---
11AC20SISO	Ant1	5320	17.565	5311.3114	5328.8764	---	---
11AC20SISO	Ant2	5320	17.569	5311.3184	5328.8874	---	---
11AC20MIMO	Ant1	5260	17.535	5251.3188	5268.8538	---	---
11AC20MIMO	Ant2	5260	17.497	5251.3051	5268.8021	---	---
11AC20MIMO	Ant1	5300	17.541	5291.3276	5308.8686	---	---
11AC20MIMO	Ant2	5300	17.516	5291.4352	5308.9512	---	---
11AC20MIMO	Ant1	5320	17.542	5311.3147	5328.8567	---	---
11AC20MIMO	Ant2	5320	17.511	5311.4589	5328.9699	---	---
11AC40SISO	Ant1	5270	35.999	5252.1140	5288.1130	---	---
11AC40SISO	Ant2	5270	36.002	5252.0972	5288.0992	---	---
11AC40SISO	Ant1	5310	35.958	5292.1582	5328.1162	---	---
11AC40SISO	Ant2	5310	35.950	5292.1740	5328.1240	---	---
11AC40MIMO	Ant1	5270	36.038	5252.0986	5288.1366	---	---
11AC40MIMO	Ant2	5270	36.167	5251.9538	5288.1208	---	---
11AC40MIMO	Ant1	5310	36.024	5292.1112	5328.1352	---	---
11AC40MIMO	Ant2	5310	35.658	5292.6907	5328.3487	---	---
11AC80SISO	Ant1	5290	75.133	5252.6190	5327.7520	---	---
11AC80SISO	Ant2	5290	74.950	5252.6851	5327.6351	---	---

11AC80MIMO	Ant1	5290	74.909	5252.5494	5327.4584	---	---
11AC80MIMO	Ant2	5290	75.468	5252.8349	5328.3029	---	---

U-NII-2C

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5500	16.372	5491.9324	5508.3044	---	---
11A	Ant2	5500	16.365	5491.9460	5508.3110	---	---
11A	Ant1	5580	16.336	5571.9489	5588.2849	---	---
11A	Ant2	5580	16.373	5571.9278	5588.3008	---	---
11A	Ant1	5700	16.414	5691.8794	5708.2934	---	---
11A	Ant2	5700	16.381	5691.9122	5708.2932	---	---
11A	Ant1	5720	16.390	5711.8923	5728.2823	---	---
11A	Ant2	5720	16.410	5711.9220	5728.3320	---	---
11A	Ant1	5720_UNII-2C	13.108	5711.8923	5725	---	---
11A	Ant2	5720_UNII-2C	13.078	5711.9220	5725	---	---
11A	Ant1	5720_UNII-3	3.282	5725	5728.2823	---	---
11A	Ant2	5720_UNII-3	3.332	5725	5728.3320	---	---
11A-CDD	Ant1	5500	16.364	5491.9343	5508.2983	---	---
11A-CDD	Ant2	5500	16.417	5491.9532	5508.3702	---	---
11A-CDD	Ant1	5580	16.410	5571.9184	5588.3284	---	---
11A-CDD	Ant2	5580	16.401	5571.8459	5588.2469	---	---
11A-CDD	Ant1	5700	16.366	5691.9442	5708.3102	---	---
11A-CDD	Ant2	5700	16.363	5691.9158	5708.2788	---	---
11A-CDD	Ant1	5720	16.353	5711.9423	5728.2953	---	---
11A-CDD	Ant2	5720	16.370	5711.9220	5728.2920	---	---
11A-CDD	Ant1	5720_UNII-2C	13.058	5711.9423	5725	---	---
11A-CDD	Ant2	5720_UNII-2C	13.078	5711.9220	5725	---	---
11A-CDD	Ant1	5720_UNII-3	3.295	5725	5728.2953	---	---
11A-CDD	Ant2	5720_UNII-3	3.292	5725	5728.2920	---	---
11N20SISO	Ant1	5500	17.539	5491.3394	5508.8784	---	---
11N20SISO	Ant2	5500	17.554	5491.3324	5508.8864	---	---
11N20SISO	Ant1	5580	17.556	5571.3373	5588.8933	---	---
11N20SISO	Ant2	5580	17.523	5571.3620	5588.8850	---	---
11N20SISO	Ant1	5700	17.568	5691.3121	5708.8801	---	---
11N20SISO	Ant2	5700	17.545	5691.3468	5708.8918	---	---
11N20SISO	Ant1	5720	17.554	5711.3432	5728.8972	---	---
11N20SISO	Ant2	5720	17.527	5711.3527	5728.8797	---	---
11N20SISO	Ant1	5720_UNII-2C	13.657	5711.3432	5725	---	---

11N20SISO	Ant2	5720_UNII-2C	13.647	5711.3527	5725	---	---
11N20SISO	Ant1	5720_UNII-3	3.897	5725	5728.8972	---	---
11N20SISO	Ant2	5720_UNII-3	3.88	5725	5728.8797	---	---
11N20MIMO	Ant1	5500	17.551	5491.3362	5508.8872	---	---
11N20MIMO	Ant2	5500	17.543	5491.4094	5508.9524	---	---
11N20MIMO	Ant1	5580	17.543	5571.3479	5588.8909	---	---
11N20MIMO	Ant2	5580	17.482	5571.2815	5588.7635	---	---
11N20MIMO	Ant1	5700	17.503	5691.3658	5708.8688	---	---
11N20MIMO	Ant2	5700	17.542	5691.3445	5708.8865	---	---
11N20MIMO	Ant1	5720	17.563	5711.3307	5728.8937	---	---
11N20MIMO	Ant2	5720	17.555	5711.2932	5728.8482	---	---
11N20MIMO	Ant1	5720_UNII-2C	13.669	5711.3307	5725	---	---
11N20MIMO	Ant2	5720_UNII-2C	13.707	5711.2932	5725	---	---
11N20MIMO	Ant1	5720_UNII-3	3.894	5725	5728.8937	---	---
11N20MIMO	Ant2	5720_UNII-3	3.848	5725	5728.8482	---	---
11N40SISO	Ant1	5510	36.000	5492.1693	5528.1693	---	---
11N40SISO	Ant2	5510	35.995	5492.1035	5528.0985	---	---
11N40SISO	Ant1	5550	36.039	5532.1295	5568.1685	---	---
11N40SISO	Ant2	5550	36.063	5532.0642	5568.1272	---	---
11N40SISO	Ant1	5670	36.059	5652.1209	5688.1799	---	---
11N40SISO	Ant2	5670	35.952	5652.1444	5688.0964	---	---
11N40SISO	Ant1	5710	35.889	5692.1571	5728.0461	---	---
11N40SISO	Ant2	5710	35.991	5692.1475	5728.1385	---	---
11N40SISO	Ant1	5710_UNII-2C	32.843	5692.1571	5725	---	---
11N40SISO	Ant2	5710_UNII-2C	32.853	5692.1475	5725	---	---
11N40SISO	Ant1	5710_UNII-3	3.046	5725	5728.0461	---	---
11N40SISO	Ant2	5710_UNII-3	3.139	5725	5728.1385	---	---
11N40MIMO	Ant1	5510	36.047	5492.1403	5528.1873	---	---
11N40MIMO	Ant2	5510	35.772	5492.3876	5528.1596	---	---
11N40MIMO	Ant1	5550	35.987	5532.1466	5568.1336	---	---
11N40MIMO	Ant2	5550	35.750	5532.0771	5567.8271	---	---
11N40MIMO	Ant1	5670	35.977	5652.1582	5688.1352	---	---
11N40MIMO	Ant2	5670	35.695	5652.6038	5688.2988	---	---
11N40MIMO	Ant1	5710	35.935	5692.1808	5728.1158	---	---
11N40MIMO	Ant2	5710	35.877	5692.1140	5727.9910	---	---
11N40MIMO	Ant1	5710_UNII-2C	32.819	5692.1808	5725	---	---
11N40MIMO	Ant2	5710_UNII-2C	32.886	5692.1140	5725	---	---
11N40MIMO	Ant1	5710_UNII-3	3.116	5725	5728.1158	---	---
11N40MIMO	Ant2	5710_UNII-3	2.991	5725	5727.9910	---	---

11AC20SISO	Ant1	5500	17.532	5491.3635	5508.8955	---	---
11AC20SISO	Ant2	5500	17.541	5491.3381	5508.8791	---	---
11AC20SISO	Ant1	5580	17.541	5571.3517	5588.8927	---	---
11AC20SISO	Ant2	5580	17.538	5571.3409	5588.8789	---	---
11AC20SISO	Ant1	5700	17.561	5691.3329	5708.8939	---	---
11AC20SISO	Ant2	5700	17.561	5691.3253	5708.8863	---	---
11AC20SISO	Ant1	5720	17.559	5711.3370	5728.8960	---	---
11AC20SISO	Ant2	5720	17.535	5711.3682	5728.9032	---	---
11AC20SISO	Ant1	5720_UNII-2C	13.663	5711.3370	5725	---	---
11AC20SISO	Ant2	5720_UNII-2C	13.632	5711.3682	5725	---	---
11AC20SISO	Ant1	5720_UNII-3	3.896	5725	5728.8960	---	---
11AC20SISO	Ant2	5720_UNII-3	3.903	5725	5728.9032	---	---
11AC20MIMO	Ant1	5500	17.542	5491.3455	5508.8875	---	---
11AC20MIMO	Ant2	5500	17.539	5491.4196	5508.9586	---	---
11AC20MIMO	Ant1	5580	17.575	5571.3332	5588.9082	---	---
11AC20MIMO	Ant2	5580	17.515	5571.2939	5588.8089	---	---
11AC20MIMO	Ant1	5700	17.557	5691.3350	5708.8920	---	---
11AC20MIMO	Ant2	5700	17.493	5691.3721	5708.8651	---	---
11AC20MIMO	Ant1	5720	17.557	5711.3275	5728.8845	---	---
11AC20MIMO	Ant2	5720	17.506	5711.3279	5728.8339	---	---
11AC20MIMO	Ant1	5720_UNII-2C	13.672	5711.3275	5725	---	---
11AC20MIMO	Ant2	5720_UNII-2C	13.672	5711.3279	5725	---	---
11AC20MIMO	Ant1	5720_UNII-3	3.885	5725	5728.8845	---	---
11AC20MIMO	Ant2	5720_UNII-3	3.834	5725	5728.8339	---	---
11AC40SISO	Ant1	5510	36.016	5492.1378	5528.1538	---	---
11AC40SISO	Ant2	5510	35.971	5492.1230	5528.0940	---	---
11AC40SISO	Ant1	5550	35.979	5532.1709	5568.1499	---	---
11AC40SISO	Ant2	5550	36.002	5532.1604	5568.1624	---	---
11AC40SISO	Ant1	5670	36.042	5652.1345	5688.1765	---	---
11AC40SISO	Ant2	5670	35.951	5652.1588	5688.1098	---	---
11AC40SISO	Ant1	5710	36.006	5692.1081	5728.1141	---	---
11AC40SISO	Ant2	5710	35.936	5692.1274	5728.0634	---	---
11AC40SISO	Ant1	5710_UNII-2C	32.892	5692.1081	5725	---	---
11AC40SISO	Ant2	5710_UNII-2C	32.873	5692.1274	5725	---	---
11AC40SISO	Ant1	5710_UNII-3	3.114	5725	5728.1141	---	---
11AC40SISO	Ant2	5710_UNII-3	3.063	5725	5728.0634	---	---
11AC40MIMO	Ant1	5510	35.958	5492.2054	5528.1634	---	---
11AC40MIMO	Ant2	5510	35.859	5492.3261	5528.1851	---	---
11AC40MIMO	Ant1	5550	35.906	5532.1985	5568.1045	---	---

11AC40MIMO	Ant2	5550	35.782	5532.1094	5567.8914	---	---
11AC40MIMO	Ant1	5670	36.072	5652.1195	5688.1915	---	---
11AC40MIMO	Ant2	5670	35.764	5652.5027	5688.2667	---	---
11AC40MIMO	Ant1	5710	35.984	5692.1144	5728.0984	---	---
11AC40MIMO	Ant2	5710	35.793	5692.1232	5727.9162	---	---
11AC40MIMO	Ant1	5710_UNII-2C	32.886	5692.1144	5725	---	---
11AC40MIMO	Ant2	5710_UNII-2C	32.877	5692.1232	5725	---	---
11AC40MIMO	Ant1	5710_UNII-3	3.098	5725	5728.0984	---	---
11AC40MIMO	Ant2	5710_UNII-3	2.916	5725	5727.9162	---	---
11AC80SISO	Ant1	5530	74.892	5492.7441	5567.6361	---	---
11AC80SISO	Ant2	5530	75.008	5492.6083	5567.6163	---	---
11AC80SISO	Ant1	5610	74.734	5572.7825	5647.5165	---	---
11AC80SISO	Ant2	5610	74.805	5572.6861	5647.4911	---	---
11AC80SISO	Ant1	5690	75.070	5652.6360	5727.7060	---	---
11AC80SISO	Ant2	5690	74.962	5652.5445	5727.5065	---	---
11AC80SISO	Ant1	5690_UNII-2C	72.364	5652.6360	5725	---	---
11AC80SISO	Ant2	5690_UNII-2C	72.456	5652.5445	5725	---	---
11AC80SISO	Ant1	5690_UNII-3	2.706	5725	5727.7060	---	---
11AC80SISO	Ant2	5690_UNII-3	2.507	5725	5727.5065	---	---
11AC80MIMO	Ant1	5530	75.049	5492.7575	5567.8065	---	---
11AC80MIMO	Ant2	5530	73.658	5493.6325	5567.2905	---	---
11AC80MIMO	Ant1	5610	74.959	5572.5613	5647.5203	---	---
11AC80MIMO	Ant2	5610	75.614	5572.0051	5647.6191	---	---
11AC80MIMO	Ant1	5690	75.006	5652.6329	5727.6389	---	---
11AC80MIMO	Ant2	5690	72.818	5654.6789	5727.4969	---	---
11AC80MIMO	Ant1	5690_UNII-2C	72.367	5652.6329	5725	---	---
11AC80MIMO	Ant2	5690_UNII-2C	70.321	5654.6789	5725	---	---
11AC80MIMO	Ant1	5690_UNII-3	2.639	5725	5727.6389	---	---
11AC80MIMO	Ant2	5690_UNII-3	2.497	5725	5727.4969	---	---

U-NII-3

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.406	5736.8919	5753.2979	---	---
11A	Ant2	5745	16.366	5736.9091	5753.2751	---	---
11A	Ant1	5785	16.458	5776.8686	5793.3266	---	---
11A	Ant2	5785	16.394	5776.9228	5793.3168	---	---
11A	Ant1	5825	16.445	5816.8768	5833.3218	---	---
11A	Ant2	5825	16.383	5816.9021	5833.2851	---	---
11A-CDD	Ant1	5745	16.462	5736.8352	5753.2972	---	---

11A-CDD	Ant2	5745	16.326	5736.9517	5753.2777	---	---
11A-CDD	Ant1	5785	16.365	5776.9750	5793.3400	---	---
11A-CDD	Ant2	5785	16.680	5776.8859	5793.5659	---	---
11A-CDD	Ant1	5825	16.404	5816.9742	5833.3782	---	---
11A-CDD	Ant2	5825	16.354	5817.0780	5833.4320	---	---
11N20SISO	Ant1	5745	17.589	5736.3320	5753.9210	---	---
11N20SISO	Ant2	5745	17.559	5736.3169	5753.8759	---	---
11N20SISO	Ant1	5785	17.581	5776.3217	5793.9027	---	---
11N20SISO	Ant2	5785	17.542	5776.3115	5793.8535	---	---
11N20SISO	Ant1	5825	17.552	5816.3192	5833.8712	---	---
11N20SISO	Ant2	5825	17.550	5816.3193	5833.8693	---	---
11N20MIMO	Ant1	5745	17.576	5736.3815	5753.9575	---	---
11N20MIMO	Ant2	5745	17.521	5736.3198	5753.8408	---	---
11N20MIMO	Ant1	5785	17.536	5776.3935	5793.9295	---	---
11N20MIMO	Ant2	5785	17.718	5776.3220	5794.0400	---	---
11N20MIMO	Ant1	5825	17.510	5816.4189	5833.9289	---	---
11N20MIMO	Ant2	5825	27.307	5813.4415	5840.7485	---	---
11N40SISO	Ant1	5755	36.006	5737.1233	5773.1293	---	---
11N40SISO	Ant2	5755	35.978	5737.1573	5773.1353	---	---
11N40SISO	Ant1	5795	36.020	5777.1215	5813.1415	---	---
11N40SISO	Ant2	5795	35.956	5777.1228	5813.0788	---	---
11N40MIMO	Ant1	5755	35.941	5737.1800	5773.1210	---	---
11N40MIMO	Ant2	5755	35.563	5736.9881	5772.5511	---	---
11N40MIMO	Ant1	5795	36.020	5777.1702	5813.1902	---	---
11N40MIMO	Ant2	5795	36.048	5777.3776	5813.4256	---	---
11AC20SISO	Ant1	5745	17.511	5736.3477	5753.8587	---	---
11AC20SISO	Ant2	5745	17.549	5736.3634	5753.9124	---	---
11AC20SISO	Ant1	5785	17.533	5776.3488	5793.8818	---	---
11AC20SISO	Ant2	5785	17.528	5776.3600	5793.8880	---	---
11AC20SISO	Ant1	5825	17.534	5816.3549	5833.8889	---	---
11AC20SISO	Ant2	5825	17.525	5816.3620	5833.8870	---	---
11AC20MIMO	Ant1	5745	17.548	5736.3785	5753.9265	---	---
11AC20MIMO	Ant2	5745	17.497	5736.3611	5753.8581	---	---
11AC20MIMO	Ant1	5785	17.527	5776.4150	5793.9420	---	---
11AC20MIMO	Ant2	5785	17.786	5776.3053	5794.0913	---	---
11AC20MIMO	Ant1	5825	17.511	5816.4192	5833.9302	---	---
11AC20MIMO	Ant2	5825	21.626	5816.3988	5838.0248	---	---
11AC40SISO	Ant1	5755	35.969	5737.1429	5773.1119	---	---
11AC40SISO	Ant2	5755	35.953	5737.1675	5773.1205	---	---

11AC40SISO	Ant1	5795	35.981	5777.1380	5813.1190	---	---
11AC40SISO	Ant2	5795	36.029	5777.1167	5813.1457	---	---
11AC40MIMO	Ant1	5755	35.957	5737.2148	5773.1718	---	---
11AC40MIMO	Ant2	5755	35.530	5736.9945	5772.5245	---	---
11AC40MIMO	Ant1	5795	35.986	5777.1720	5813.1580	---	---
11AC40MIMO	Ant2	5795	36.040	5777.3837	5813.4237	---	---
11AC80SISO	Ant1	5775	75.036	5737.5182	5812.5542	---	---
11AC80SISO	Ant2	5775	75.068	5737.5829	5812.6509	---	---
11AC80MIMO	Ant1	5775	75.245	5737.4464	5812.6914	---	---
11AC80MIMO	Ant2	5775	75.983	5737.1366	5813.1196	---	---

Test Graphs
26dB Occupied Bandwidth
U-NII-1

11A-Ant1-5180	11A-Ant2-5180
11A-Ant1-5220	11A-Ant2-5220
11A-Ant1-5240	11A-Ant2-5240
11A-CDD-Ant1-5180	11A-CDD-Ant2-5180
11A-CDD-Ant1-5220	11A-CDD-Ant2-5220

11A-CDD-Ant1-5240

11A-CDD-Ant2-5240

11N20SISO-Ant1-5180

11N20SISO-Ant2-5180

11N20SISO-Ant1-5220

11N20SISO-Ant2-5220

11N20SISO-Ant1-5240

11N20SISO-Ant2-5240

11N20MIMO-Ant1-5180

11N20MIMO-Ant2-5180

11N20MIMO-Ant1-5220

11N20MIMO-Ant2-5220

11N20MIMO-Ant1-5240

11N20MIMO-Ant2-5240

11N40SISO-Ant1-5190

11N40SISO-Ant2-5190

11N40SISO-Ant1-5230

11N40SISO-Ant2-5230

11N40MIMO-Ant1-5190

11N40MIMO-Ant2-5190

11N40MIMO-Ant1-5230

11N40MIMO-Ant2-5230

11AC20SISO-Ant1-5180

11AC20SISO-Ant2-5180

11AC20SISO-Ant1-5220

11AC20SISO-Ant2-5220

11AC20SISO-Ant1-5240

11AC20SISO-Ant2-5240

11AC20MIMO-Ant1-5180

11AC20MIMO-Ant2-5180

11AC20MIMO-Ant1-5220

11AC20MIMO-Ant2-5220

11AC20MIMO-Ant1-5240

11AC20MIMO-Ant2-5240

11AC40SISO-Ant1-5190

11AC40SISO-Ant2-5190

11AC40SISO-Ant1-5230

11AC40SISO-Ant2-5230

11AC40MIMO-Ant1-5190

11AC40MIMO-Ant2-5190

11AC40MIMO-Ant1-5230

11AC40MIMO-Ant2-5230

11AC80SISO-Ant1-5210

11AC80SISO-Ant2-5210

11AC80MIMO-Ant1-5210

11AC80MIMO-Ant2-5210

U-NII-2A

11A-Ant1-5260	11A-Ant2-5260
11A-Ant1-5300	11A-Ant2-5300
11A-Ant1-5320	11A-Ant2-5320
11A-CDD-Ant1-5260	11A-CDD-Ant2-5260
11A-CDD-Ant1-5300	11A-CDD-Ant2-5300

11A-CDD-Ant1-5320

11A-CDD-Ant2-5320

11N20SISO-Ant1-5260

11N20SISO-Ant2-5260

11N20SISO-Ant1-5300

11N20SISO-Ant2-5300

11N20SISO-Ant1-5320

11N20SISO-Ant2-5320

11N20MIMO-Ant1-5260

11N20MIMO-Ant2-5260

11N20MIMO-Ant1-5300

11N20MIMO-Ant2-5300

11N20MIMO-Ant1-5320

11N20MIMO-Ant2-5320

11N40SISO-Ant1-5270

11N40SISO-Ant2-5270

11N40SISO-Ant1-5310

11N40SISO-Ant2-5310

11N40MIMO-Ant1-5270

11N40MIMO-Ant2-5270

11N40MIMO-Ant1-5310

11N40MIMO-Ant2-5310

11AC20SISO-Ant1-5260

11AC20SISO-Ant2-5260

11AC20SISO-Ant1-5300

11AC20SISO-Ant2-5300

11AC20SISO-Ant1-5320

11AC20SISO-Ant2-5320

11AC20MIMO-Ant1-5260

11AC20MIMO-Ant2-5260

11AC20MIMO-Ant1-5300

11AC20MIMO-Ant2-5300

11AC20MIMO-Ant1-5320

11AC20MIMO-Ant2-5320

11AC40SISO-Ant1-5270

11AC40SISO-Ant2-5270

11AC40SISO-Ant1-5310

11AC40SISO-Ant2-5310

11AC40MIMO-Ant1-5270

11AC40MIMO-Ant2-5270

11AC40MIMO-Ant1-5310

11AC40MIMO-Ant2-5310

11AC80SISO-Ant1-5290

11AC80SISO-Ant2-5290

11AC80MIMO-Ant1-5290

11AC80MIMO-Ant2-5290