74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA
TEL: +82-31-645-6300 FAX: +82-31-645-6401

FCC UNII REPORT

Certification

Applicant Name:
SAMSUNG Electronics Co., Ltd.

Address:
129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

Date of Issue:
May 16, 2023

Test Site/Location:
74, Seoicheon-ro 578 beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA

Report No.: HCT-RF-2305-FC047

FCC ID:	**A3LSMX810**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

According to the Evaluation report, all of the data contained herein is reused from the reference FCC ID : A3LSMX818U report.

Model:	SM-X810
EUT Type:	Tablet
Modulation type	OFDM
FCC Classification:	Unlicensed National Information Infrastructure(NII)
FCC Rule Part(s):	Part 15.407

Engineering Statement:

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules under normal use and maintenance.

REVIEWED BY

Report prepared by : Sang Hoon Lee
Engineer of Telecommunication Testing Center

Report approved by : Jong Seok Lee
Manager of Telecommunication Testing Center

This test results were applied only to the test methods required by the standard.

This laboratory is not accredited for the test results marked *.
The above Test Report is the accredited test result by (KS Q) ISO/IEC 17025 and KOLAS(Korea Laboratory Accreditation Scheme), which signed the ILAC-MRA. (HCT Accreditation No.: KT197)

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2305-FC047	May 16, 2023	- First Approval Report

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1. GENERAL INFORMATION

EUT DESCRIPTION

Model	SM-X810	
Additional Model	-	
EUT Type	Tablet	
Power Supply	DC 3.88 V	
Modulation Type	OFDM : 802.11a, 802.11n, 802.11ac	
Frequency Range (MHz)	U-NII-1	20 MHz BW : 5180 - 5240 40 MHz BW : 5190 - 5230 80 MHz BW : 5210 160 MHz BW : 5250
	U-NII-2A	20 MHz BW : 5260 - 5320 40 MHz BW : 5270 - 5310 80 MHz BW : 5290 160 MHz BW : 5250
	U-NII-2C	20 MHz BW : 5500 - 5720 40 MHz BW : 5510 - 5710 80 MHz BW : 5530 – 5690 160 MHz BW : 5570
	U-NII-3	20 MHz BW : 5745 - 5825 40 MHz BW : 5755 - 5795 80 MHz BW : 5775 160 MHz BW : 5815
	U-NII-4	20 MHz BW : 5845 - 5885 40 MHz BW : 5835 - 5875 80 MHz BW : 5855 160 MHz BW : 5815
Straddle channel	Supported	
TDWR Band	Supported	
Dynamic Frequency Selection	Slave without radar detection	
Date(s) of Tests	March 13, 2023 ~ May 09, 2023	
Serial number	Radiated: R32W2003HYN Conducted: R32W2003J8B	

ANTENNA CONFIGURATIONS

1. Antenna configuration

Configurations	SISO		MIMO	
	Ant.1	Ant.2	CDD	SDM
802.11a	X	X	O	X
802.11n	X	X	O	O
802.11ac	X	X	O	O

Note:

(1) O = Support, X = Not Support

(2) SISO = Single Input Single Output

(3) SDM = Spatial Diversity Multiplexing

(4) CDD = Cyclic Delay Diversity

2.This device supports simultaneous transmission operation, which allows for two channels to operate independent of one another in the 2.4 GHz and 5 GHz or 6 GHz bands simultaneously on each antenna.

RSDB Scenario	2.4 GHz WiFi Ant.1	2.4 GHz WiFi Ant.2	5 GHz WiFi Ant.1	5 GHz WiFi Ant.2	6 GHz WiFi Ant.1	6 GHz WiFi Ant.2	Bluetooth Ant.1	Bluetooth Ant.2	Test Case
2.4 GHz WiFi MIMO + 6 GHz WiFi MIMO	on	on			on	on			Scenario 1
2.4 GHz WiFi MIMO + 5 GHz WiFi MIMO	on	on	on	on					Scenario 2
Bluetooth ANT.1 + 2.4 GHz WiFi ANT.2 + 5 GHz WiFi MIMO		on	on	on			on		Scenario 3
Bluetooth ANT.1 + 2.4 GHz WiFi ANT.2 + 6 GHz WiFi MIMO		on			on	on	on		

3. Directional Gain Calculation

According to KDB 662911 D01 Multiple Transmitter Output v02r01 F) 2) f) (ii)

Directional gain =

$$\bullet \quad DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

Band	Ant Gain (dBi)		N_{ANT} / N_{SS}	Directional Gain (dBi)
	ANT1	ANT2		CDD
UNII 1	-4.90	-7.20	2 / 2	-2.96
UNII 2A	-5.00	-7.70	2 / 2	-3.24
UNII 2C	-4.90	-8.00	2 / 2	-3.30
UNII 3	-5.30	-7.80	2 / 2	-3.45
UNII 4	-5.60	-7.90	2 / 2	-3.66

Note

According to Ansi C63.10-2013 section 14.4.3, the directional gain is calculated using the formula, where GN is the gain of the nth antenna and NANT is the total number of antennas used.

Directional Gain = $10 \cdot \log(((10^{(ANT1\ Gain/20)}+10^{(ANT2\ Gain/20)})^2)/2)$ dBi

Sample Calculation (Conducted Power, MIMO):

Ex) Ant 1 : 11.58 dBm Ant 2 : 12.08 dBm

Ant1 + Ant 2 = MIMO

(11.58 dBm + 12.08 dBm) = (14.387 mW + 16.143 mW) = 30.53 mW = 14.88 dBm

Sample Calculation (E.I.R.P & E.I.R.P Spectral Density, MIMO):

Ex) ANT1 : 15.35 dBm , ANT2 : 15.12 dBm, Directional Gain : 3 dBi

Conducted Power = (15.35 dBm + 15.12 dBm) = (34.276 mW + 32.508 mW) = 66.784 mW = 18.25 dBm

E.I.R.P = 18.25 dBm + 3 dBi = 21.25 dBm

2. MAXIMUM OUTPUT POWER

The transmitter has a maximum total conducted average output power as follows:

Band	Mode	MIMO					
		Ant.1 Power		Ant.2 Power		Ant.1 + Ant.2 Power	
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)
UNII1	802.11a	16.53	0.045	16.45	0.044	19.50	0.089
	802.11n (HT20)	16.49	0.045	16.62	0.046	19.56	0.090
	802.11n (HT40)	16.86	0.049	16.54	0.045	19.71	0.094
	802.11ac (VHT20)	16.57	0.045	16.69	0.047	19.64	0.092
	802.11ac (VHT40)	16.90	0.049	16.62	0.046	19.77	0.095
	802.11ac (VHT80)	15.36	0.034	14.89	0.031	18.14	0.065
UNII2A	802.11a	16.47	0.044	16.59	0.046	19.54	0.090
	802.11n (HT20)	16.39	0.044	16.59	0.046	19.50	0.089
	802.11n (HT40)	16.60	0.046	16.70	0.047	19.66	0.092
	802.11ac (VHT20)	16.49	0.045	16.61	0.046	19.56	0.090
	802.11ac (VHT40)	16.57	0.045	16.88	0.049	19.74	0.094
	802.11ac (VHT80)	14.51	0.028	14.36	0.027	17.44	0.055
UNII2C	802.11a	16.61	0.046	16.49	0.045	19.56	0.090
	802.11n (HT20)	16.68	0.047	16.52	0.045	19.61	0.091
	802.11n (HT40)	16.65	0.046	16.48	0.044	19.57	0.091
	802.11ac (VHT20)	16.79	0.048	16.53	0.045	19.67	0.093
	802.11ac (VHT40)	16.97	0.050	16.89	0.049	19.94	0.099
	802.11ac (VHT80)	15.98	0.040	15.98	0.040	18.99	0.079
UNII3	802.11a	16.78	0.048	16.52	0.045	19.66	0.093
	802.11n (HT20)	16.82	0.048	16.56	0.045	19.70	0.093
	802.11n (HT40)	16.12	0.041	15.85	0.038	19.00	0.079
	802.11ac (VHT20)	16.83	0.048	16.52	0.045	19.69	0.093
	802.11ac (VHT40)	16.98	0.050	16.86	0.049	19.93	0.098
	802.11ac (VHT80)	15.71	0.037	15.77	0.038	18.75	0.077
UNII4 (Conducted For inf.)	802.11a	16.57	0.045	16.33	0.043	19.46	0.088
	802.11n (HT20)	16.55	0.045	16.40	0.044	19.45	0.088
	802.11n (HT40)	16.42	0.044	16.16	0.041	19.30	0.085
	802.11ac (VHT20)	16.60	0.046	16.38	0.043	19.50	0.089
	802.11ac (VHT40)	16.88	0.049	16.65	0.046	19.78	0.095
	802.11ac (VHT80)	15.96	0.039	15.76	0.038	18.87	0.077
UNII1-2A	802.11ac (VHT160)	11.34	0.014	10.90	0.012	14.14	0.026
UNII2C	802.11ac (VHT160)	11.89	0.015	11.86	0.015	14.89	0.031
UNII3&4	802.11ac (VHT160)	14.16	0.026	14.07	0.026	17.13	0.052

Band	Mode	MIMO (EIRP)											
		Ant.1 Power				Ant.2 Power				(Ant.1 + Ant.2) Power			
		(dBm)	ANT Gain(dBi)	EIRP (dBm)	(W)	(dBm)	ANT Gain(dBi)	EIRP (dBm)	(W)	(dBm)	ANT Gain(dBi)	EIRP (dBm)	(W)
UNII4 (E.I.R.P)	802.11a	16.57	-5.60	10.97	0.013	16.33	-7.90	8.43	0.007	19.46	-3.66	15.80	0.038
	802.11n (HT20)	16.55	-5.60	10.95	0.012	16.33	-7.90	8.43	0.007	19.45	-3.66	15.79	0.038
	802.11n (HT40)	16.42	-5.60	10.82	0.012	16.16	-7.90	8.26	0.007	19.30	-3.66	15.64	0.037
	802.11ac (VHT20)	16.60	-5.60	11.00	0.013	16.38	-7.90	8.48	0.007	19.50	-3.66	15.84	0.038
	802.11ac (VHT40)	16.88	-5.60	11.28	0.013	16.65	-7.90	8.75	0.007	19.78	-3.66	16.11	0.041
	802.11ac (VHT80)	15.96	-5.60	10.36	0.011	15.76	-7.90	7.86	0.006	18.87	-3.66	15.21	0.033
	802.11ac (VHT160)	14.16	-5.60	8.56	0.007	14.07	-7.90	6.17	0.004	17.13	-3.66	13.46	0.022

3. TEST METHODOLOGY

The measurement procedure described in FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01 dated December 14, 2017 entitled “Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part15, Subpart E” and ANSI C63.10(Version : 2013) ‘the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices’ were used in the measurement. Additionally, for U-NII-4 band, use the following measurement procedure KDB 291074 D02 EMC Measurement v01

EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

EUT EXERCISE

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.407 under the FCC Rules Part 15 Subpart E.

GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2 of ANSI C63.10. (Version :2013) Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane below 1 GHz. Above 1 GHz with 1.5 m using absorbers between the EUT and receive antenna. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes according to the requirements in Section 6.6.5 of ANSI C63.10. (Version: 2013)

DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

4. INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment's, which is traceable to recognized national standards.
Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA. The site is constructed in conformance with the requirements of ANSI C63.4. (Version :2014) and CISPR Publication 22.
Detailed description of test facility was submitted to the Commission and accepted dated April 02, 2018 (Registration Number: KR0032).

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.
Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers. Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.
All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

6. ANTENNA REQUIREMENTS

According to FCC 47 CFR §15.203, §15.407:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

(1) The antennas of this E.U.T are permanently attached.

(2) The E.U.T Complies with the requirement of §15.203, §15.407

7. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2013.

All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95 % level of confidence.

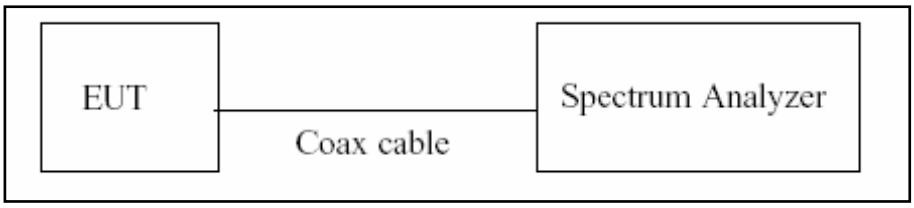
The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty (dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.90 (Confidence level about 95 %, k=2)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.14 (Confidence level about 95 %, k=2)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.82 (Confidence level about 95 %, k=2)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.74 (Confidence level about 95 %, k=2)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.76 (Confidence level about 95 %, k=2)
Radiated Disturbance (Above 40 GHz)	5.52 (Confidence level about 95 %, k=2)

8. DESCRIPTION OF TESTS

8.1. Duty Cycle

Test Configuration



Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

We tested according to Procedure B.2 in KDB 789033 D02 v02r01.

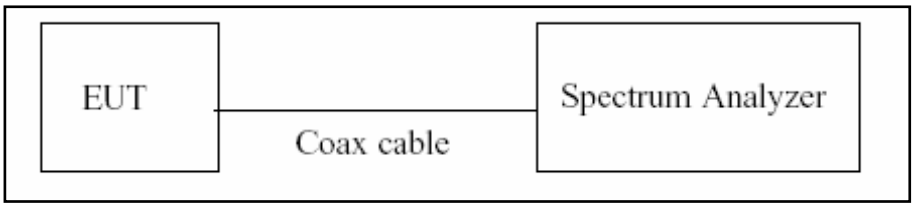
1. RBW = 8 MHz (the largest availble value)
2. VBW = 8 MHz (≥ RBW)
3. SPAN = 0 Hz
4. Detector = Peak
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = T_{on}/ T_{total} and Duty Cycle Factor = 10log(1/Duty Cycle)

8.2. 6 dB Bandwidth & 26 dB Bandwidth

Limit

Within the 5.725-5.85 GHz(NII-3) &5.85-5.925 GHz(NII-4) band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Configuration



Test Procedure(26 dB Bandwidth)

The transmitter output is connected to the Spectrum Analyzer.

We tested according to Procedure C.1 in KDB 789033 D02 v02r01.

1. RBW = approximately 1 % of the emission bandwidth
2. VBW > RBW
3. Detector = Peak
4. Trace mode = max hold
5. Measure the maximum width of the emission that is 26 dB down from the maximum 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 %.

Test Procedure (6 dB Bandwidth)

The transmitter output is connected to the Spectrum Analyzer.

We tested according to Procedure C.2 in KDB 789033 D02 v02r01.

1. RBW = 100 kHz
2. VBW ≥ 3 x RBW
3. Detector = Peak
4. Trace mode = max hold
5. Allow the trace to stabilize
6. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points(upper and lower frequencies) that are attenuated by 6 dB relative to the maximum lever measured in the fundamental emission.

Note:

1. We tested X dB bandwidth using the automatic bandwidth measurement capability of a spectrum analyzer.
2. DFS test channels should be defined. So, We performed the OBW test to prove that no part of the fundamental emissions of any channels belong to UNII1 and UNII3 band for DFS.
3. The 26 dB bandwidth is used to determine the conducted power limits.

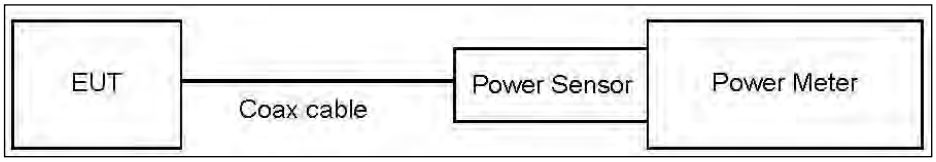
8.3. Output Power Measurement

Limit

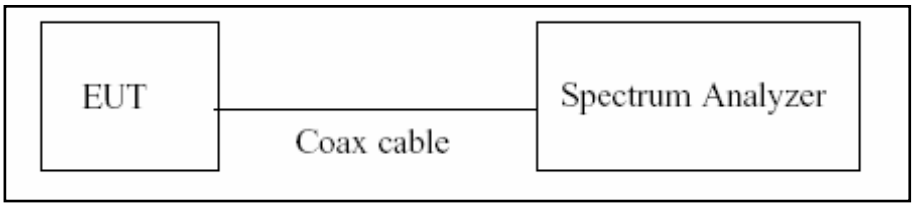
Band	Limit
UNII 1	- Master : Not exceed 1 W(=30 dBm) - Slave : Not exceed 250 mW(=23.98 dBm)
UNII 2A, 2C	Not exceed the lesser of 250 mW or 11 dBm + 10 log B, (where B is the 26 dB emission bandwidth in megahertz.)
UNII 3	Not exceed 1 W(=30 dBm)
UNII 4	EIRP 30 dBm

Test Configuration

Power Meter



Spectrum Analyzer(Only Straddle Channel)



Test Procedure(Power Meter)

We tested according to Procedure E.3.a in KDB 789033 D02 v02r01.

1. Measure the duty cycle.
2. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
3. 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.

Test Procedure(Spectrum Analyzer)

The transmitter output is connected to the Spectrum Analyzer.

We use the spectrum analyzer's integrated band power measurement function.

We tested according to Procedure E.2.d) in KDB 789033 D02 v02r01.

1. Measure the duty cycle.
2. Set span to encompass the 26 dB EBW of the signal.
3. RBW = 1 MHz.
4. VBW ≥ 3 MHz.
5. Number of points in sweep ≥ 2 x span/RBW.
6. Sweep time = auto.
7. Detector = RMS.
8. Do not use sweep triggering. Allow the sweep to "free run".
9. Trace average at least 100 traces in power averaging(RMS) mode
10. Integrated bandwidth = OBW
11. Add 10log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Sample Calculation

Total Power(dBm) = Measured Value(dBm) + ATT loss(dB) + Cable loss(dB) + Duty Cycle Factor(dB)

Note

1. Spectrum Measured Levels are not plot data.
   The power results in plot is already including the actual values of loss for the attenuator and cable combination.
2. Spectrum offset Loss
   Attenuator loss(20 dB) + Cable loss + EUT Cable loss
3. Actual value of loss for the attenuator and cable combination is below table.

Band	Loss(dB)
UNII 1	21.40
UNII 2A	21.40
UNII 2C	21.40
UNII 3&4	21.40

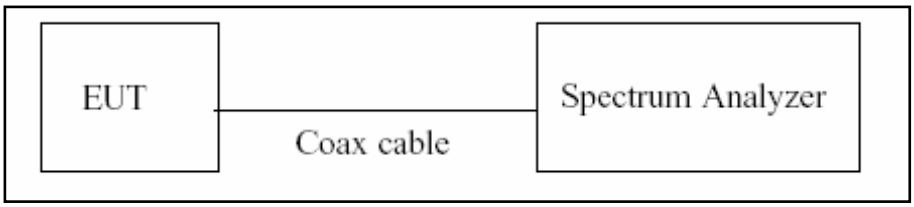
(Actual value of loss for the attenuator and cable combination)

8.4. Power Spectral Density

Limit

Band	Limit
UNII 1	11 dBm/MHz
UNII 2A, 2C	11 dBm/MHz
UNII 3	30 dBm/500 kHz
UNII 4	EIRP 14 dBm/MHz

Test Configuration



Test Procedure

We tested according to Procedure F in KDB 789033 D02 v02r01.

1. Set span to encompass the entire emission bandwidth(EBW) of the signal.
2. RBW = 1 MHz(510 kHz for UNII 3)
   ➔For portion within the NII-3 be used RBW 510kHz, for portion within the NII-4 be used RBW 1MHz
3. VBW ≥ 3 MHz
4. Number of points in sweep ≥ 2 x span/RBW.
5. Sweep time = auto.
6. Detector = RMS(i.e., power averaging), if available. Otherwise, use sample detector mode.
7. Do not use sweep triggering. Allow the sweep to “free run”.
8. Trace average at least 100 traces in power averaging(RMS) mode
9. Use the peak search function on the spectrum analyzer to find the peak of the spectrum.
10. If Method SA-2 was used, add 10 log(1/x), where x is the duty cycle, to the peak of the spectrum.

Sample Calculation

Total PSD(dBm) = Measured Value(dBm) + ATT loss(dB) + Cable loss(dB) + Duty Cycle Factor(dB)

Note

1. Spectrum Measured Levels are not plot data.
   The PSD results in plot is already including the actual values of loss for the attenuator and cable combination.
2. Spectrum offset Loss
   Attenuator loss(20 dB) + Cable loss + EUT Cable loss
3. Actual value of loss for the attenuator and cable combination is below table.

Band	Loss(dB)
UNII 1	21.40
UNII 2A	21.40
UNII 2C	21.40
UNII 3&4	21.40

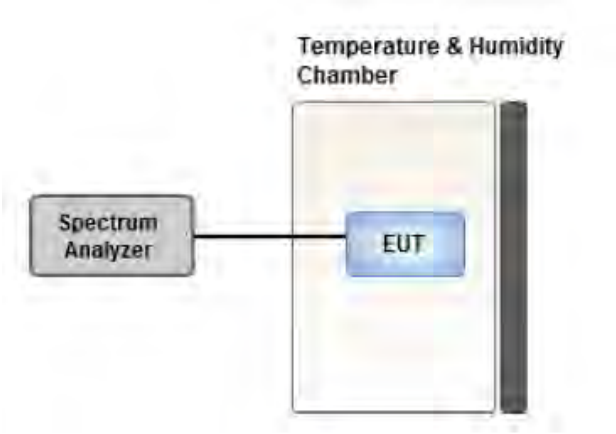
(Actual value of loss for the attenuator and cable combination)

8.5. Frequency Stability

Limit

Maintained within the band

Test Configuration



Test Procedure

1. The EUT was placed inside an environmental chamber as the temperature in the chamber was varied between -30 ℃ and 50 ℃.
2. The temperature was incremented by 10 ℃ intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.
3. The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battety operating end point which shall be specified by the manufacturer.
4. While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.

8.6. AC Power line Conducted Emissions

Limit

For an intentional radiator 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, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN).

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56[a]	56 to 46[a]
0.50 to 5	56	46
5 to 30	60	50

[a]Decreases with the logarithm of the frequency.

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration

See test photographs attached in Annex A for the actual connections between EUT and support equipment.

Test Procedure

1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors : Quasi Peak and Average Detector.

Sample Calculation

Quasi-peak(Final Result) = Measured Value + Correction Factor

8.7. Radiated Test

Limit

1. UNII 1: All emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of −27 dBm/MHz.
2. UNII 2A, 2C: All emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of −27 dBm/MHz.
3. UNII 3: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
4. UNII 4: [Low Channel O.O.B.E] measured with an Peak detector

   For a client device or indoor access point or subordinate device, all emissions below 5.725 GHz shall not exceed an e.i.r.p. of −27 dBm/MHz at 5.65 GHz increasing linearly to 10 dBm/MHz at 5.7 GHz, and from 5.7 GHz increasing linearly to a level of 15.6 dBm/MHz at 5.72 GHz, and from 5.72 GHz increasing linearly to a level of 27 dBm/MHz at 5.725 GHz.

   [High Channel O.O.B.E] measured with an RMS detector

   For a client device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of −5 dBm/MHz and shall decrease linearly to an e.i.r.p. of −27 dBm/MHz at or above 5.925 GHz.

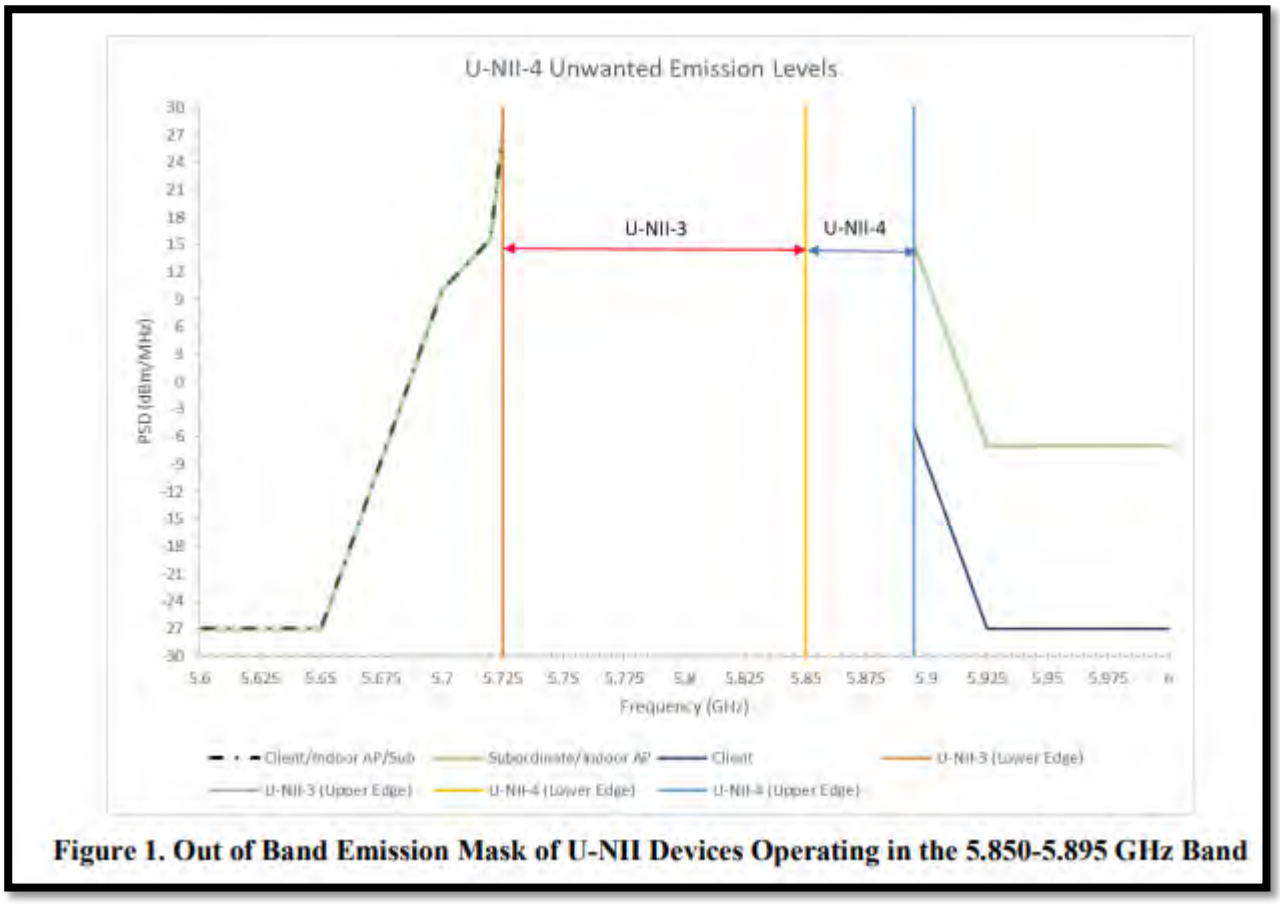


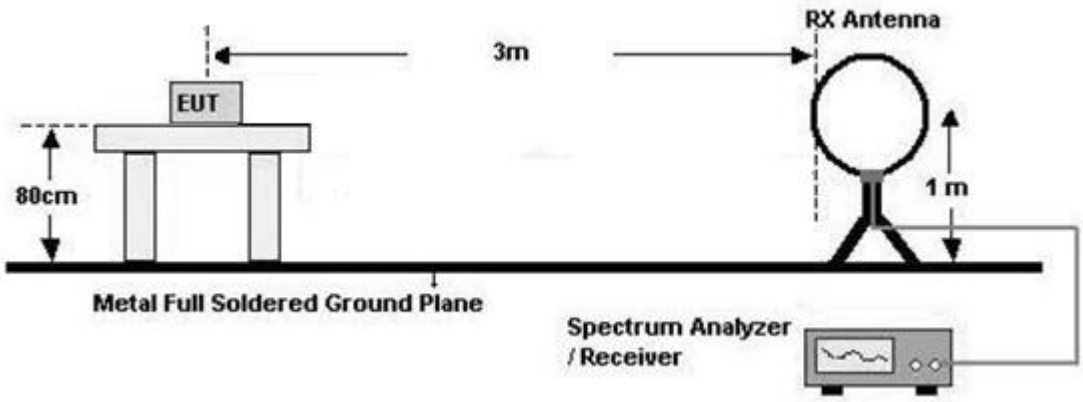
Figure 1. Out of Band Emission Mask of U-NII Devices Operating in the 5.850-5.895 GHz Band

5. All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Section 15.209.

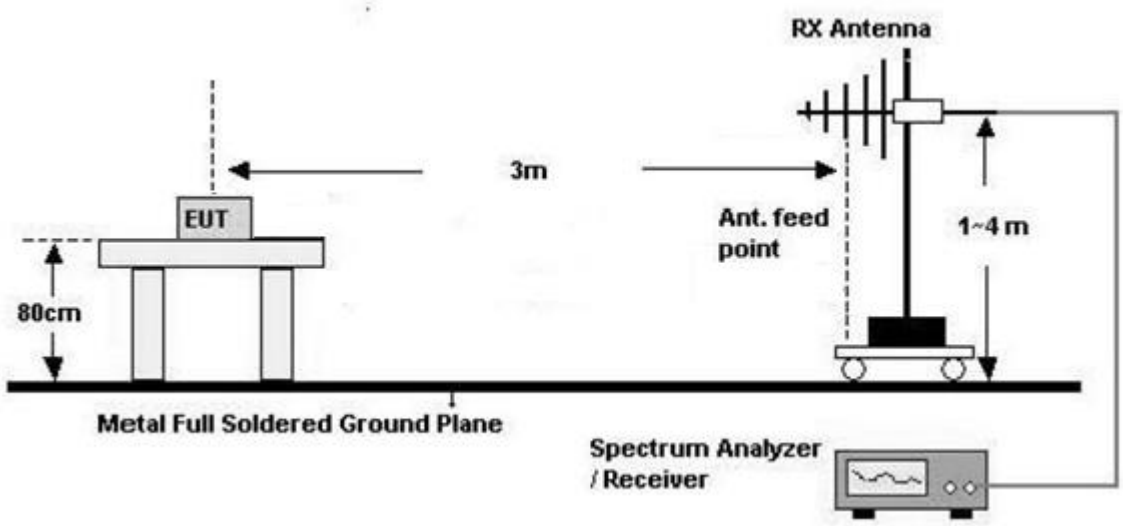
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

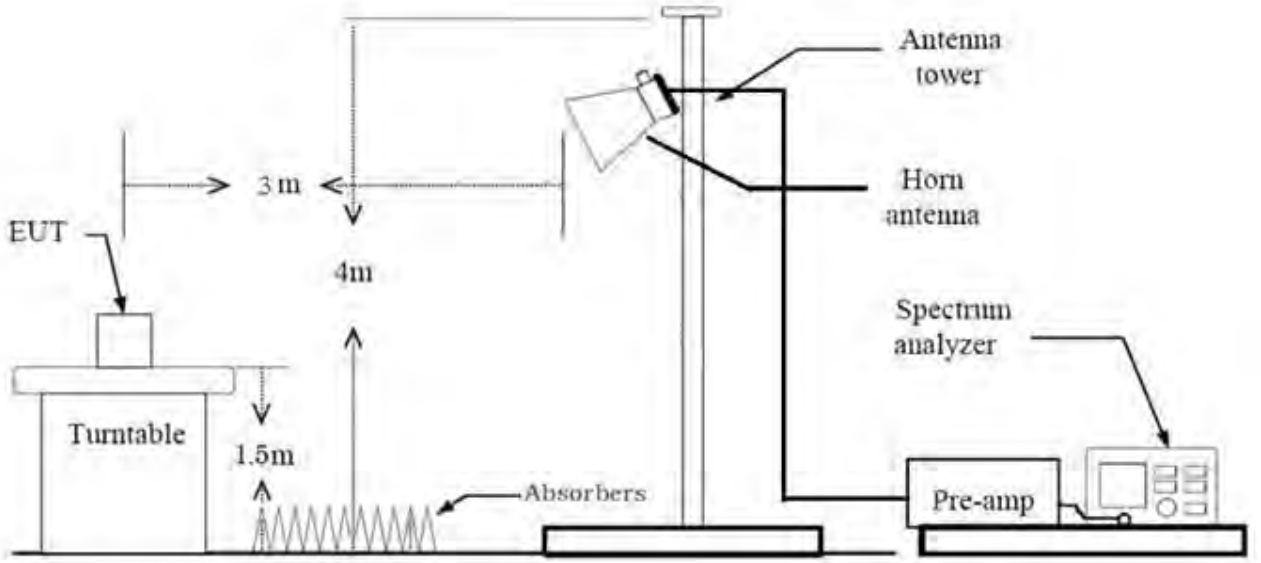
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



Test Procedure of Radiated spurious emissions(Below 30 MHz)

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The loop antenna was placed at a location 3 m from the EUT
3. The EUT is placed on a turntable, which is 0.8 m above ground plane.
4. .We have done x, y, z planes in EUT and horizontal and vertical polarization and Parallel to the ground plane in detecting antenna.
5. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
6. Distance Correction Factor(0.009 MHz – 0.490 MHz) = 40log(3 m/300 m) = - 80 dB
   Measurement Distance : 3 m
7. Distance Correction Factor(0.490 MHz – 30 MHz) = 40log(3 m/30 m) = - 40 dB
   Measurement Distance : 3 m
8. Spectrum Setting
   - Frequency Range = 9 kHz ~ 30 MHz
   - Detector = Peak
   - Trace = Maxhold
   - RBW = 9 kHz
   - VBW ≥ 3 x RBW
9. Total = Measured Value + Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)
10. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

KDB 414788 OFS and Chamber Correlation Justification

Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

OFS and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

Test Procedure of Radiated spurious emissions(Below 1 GHz)

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The EUT is placed on a turntable, which is 0.8 m above ground plane.
3. The Hybrid antenna was placed at a location 3 m from the EUT, which is varied from 1 m to 4 m to find out the highest emissions.
4. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
5. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
6. Spectrum Setting
   (1) Measurement Type(Peak):
      - Measured Frequency Range : 30 MHz – 1 GHz
      - Detector = Peak
      - Trace = Maxhold
      - RBW = 100 kHz
      - VBW ≥ 3 x RBW
   (2) Measurement Type(Quasi-peak):
      - Measured Frequency Range : 30 MHz – 1 GHz
      - Detector = Quasi-Peak
      - RBW = 120 kHz

   ※ In general, (1) is used mainly
7. Total = Measured Value + Antenna Factor(A.F) + Cable Loss(C.L)
8. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

Test Procedure of Radiated spurious emissions (Above 1 GHz)

1. The EUT is placed on a turntable, which is 1.5 m above ground plane.
2. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
3. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
4. EUT is set 3 m away from the receiving antenna, which is varied from 1 m to 4 m to find out the highest emissions.
5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
6. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. The unit was tested with its standard battery.
8. Spectrum Setting

(1) Measurement Type (Peak, G.5 in KDB 789033 v02r01):

- RBW = 1 MHz
- VBW ≥ 3 MHz
- Detector = Peak
- Sweep Time = auto
- Trace mode = max hold
- Allow sweeps to continue until the trace stabilizes.

Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately 1/x, where x is the duty cycle.

(2) Measurement Type (Average, G.6.d in KDB 789033 v02r01):

- RBW = 1 MHz
- VBW(Duty cycle ≥ 98 %) = VBW ≤ RBW/100(i.e., 10 kHz) but not less than 10 Hz.
- VBW(Duty cycle is < 98 %) = VBW ≥ 1/T, where T is the minimum transmission duration.
- The analyzer is set to linear detector mode.
- Detector = Peak.
- Sweep time = auto.
- Trace mode = max hold.
- Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 % duty cycle. For lower duty cycles, increase the minimym number of traces by a factor of 1/x, where x is the duty cycle.

9. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor
10. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency
11. Distance extrapolation factor = 20log (test distance / specific distance) (dB)
12. Total = Measured Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(A.G) + Distance Factor(D.F)

Test Procedure of Radiated Restricted Band Edge

1. The EUT is placed on a turntable, which is 1.5 m above ground plane.
2. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
3. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
4. EUT is set 3 m away from the receiving antenna, which is varied from 1 m to 4 m to find out the highest emissions.
5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
6. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. The unit was tested with its standard battery.
8. Spectrum Setting

(1) Measurement Type(Peak, G.5 in KDB 789033 v02r01):

- RBW = 1 MHz
- VBW ≥ 3 MHz
- Detector = Peak
- Sweep Time = auto
- Trace mode = max hold
- Allow sweeps to continue until the trace stabilizes.

Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately 1/x, where x is the duty cycle.

(2) Measurement Type(Average, G.6.d in KDB 789033 v02r01):

- RBW = 1 MHz
- VBW(Duty cycle ≥ 98 %) = VBW ≤ RBW/100(i.e., 10 kHz) but not less than 10 Hz.
- VBW(Duty cycle is < 98 %) = VBW ≥ 1/T, where T is the minimum transmission duration.
- The analyzer is set to linear detector mode.
- Detector = Peak.
- Sweep time = auto.
- Trace mode = max hold.
- Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 % duty cycle. For lower duty cycles, increase the minimym number of traces by a factor of 1/x, where x is the duty cycle.

9. Measured Frequency Range :
   - 4 500 MHz ~ 5 150 MHz
   - 5 350 MHz ~ 5 460 MHz
   - 5 460 MHz ~ 5 470 MHz
   - (75 MHz or more below the 5 725 MHz) ~ 5 725 MHz
   - 5 850 MHz ~ (75 MHz or more above the 5 850 MHz)
10. Distance extrapolation factor = 20log (test distance / specific distance) (dB)
11. Total = Measured Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(A.G) + Attenuator(ATT) + Distance Factor(D.F)

The actual setting value of VBW

Mode	Worst Data rate (Mbps)	Duty Cycle	Duty Cycle Factor (dB)	The actual setting value of VBW (Hz)
802.11a	6	0.938	0.277	1000
802.11n(HT20)	MCS 0	0.928	0.323	1000
802.11n(HT40)	MCS 0	0.859	0.659	3000
802.11ac(VHT20)	MCS 0	0.929	0.322	1000
802.11ac(VHT40)	MCS 0	0.866	0.624	3000
802.11ac(VHT80)	MCS 0	0.765	1.161	5000
802.11ac(VHT160)	MCS 0	0.625	2.041	10000

8.8. Worst case configuration and mode

Radiated test

1. All modes of operation were investigated and the worst case configuration results are reported.
   - Mode : Stand alone, Stand alone + External accessories(Earphone, etc)
   - Worstcase : Stand alone
2. EUT Axis
   - Radiated Spurious Emissions : Y
   - Radiated Restricted Band Edge : Z
3. All datarate of operation were investigated and the worst case datarate results are reported.
   - Mode : Ant.1+Ant.2(SDM), Ant.1+Ant.2(CDD)
   - Worstcase : Ant.1+Ant.2(CDD)
   - 802.11a : 6 Mbps
   - 802.11n_HT20 : MCS0
   - 802.11n_HT40 : MCS0
   - 802.11ac_VHT20 : MCS0
   - 802.11ac_VHT40 : MCS0
   - 802.11ac_VHT80 : MCS0
   - 802.11ac_VHT160: MCS0
4. Radiated Spurious Emission
   - All modulation of operation were investigated and the worst case modulation results are reported.

     Worst-case :

     1) 802.11n(HT20)_MCS0_UNII1 ~ UNII4
     2) 802.11a_6 Mbps_UNII4
     3) 802.11ac(VHT20)_MCS0_UNII4
     4) 802.11n(HT40)_MCS0_UNII4
     5) 802.11(VHT40)_MCS0_UNII4
     6) 802.11(VHT80)_MCS0_UNII4
     7) 802.11(VHT160)_MCS0_UNII3&4
5. All position of loop antenna were investigated and the test result is a no critical peak found at all positions.
   - Position : Horizontal, Vertical, Parallel to the ground plane

Radiated test(RSDB)

1. All modes of operation were investigated and the worst case configuration results are reported.
   - Mode : Stand alone, Stand alone + External accessories(Earphone, Keyboard, etc)
   - Worstcase : Stand alone
2. EUT Axis
   - Radiated Spurious Emissions : X
3. All of RSDB Scenario were investigated and the worst case configuration results are reported.

RSDB Scenario	2.4 GHz WiFi Ant.1	2.4 GHz WiFi Ant.2	5 GHz WiFi Ant.1	5 GHz WiFi Ant.2	6 GHz WiFi Ant.1	6 GHz WiFi Ant.2	Bluetooth Ant.1	Bluetooth Ant.2	Test Case
2.4 GHz WiFi MIMO + 6 GHz WiFi MIMO	on	on			on	on			Scenario 1
2.4 GHz WiFi MIMO + 5 GHz WiFi MIMO	on	on	on	on					Scenario 2
Bluetooth ANT.1 + 2.4 GHz WiFi ANT.2 + 5 GHz WiFi MIMO		on	on	on			on		Scenario 3
Bluetooth ANT.1 + 2.4 GHz WiFi ANT.2 + 6 GHz WiFi MIMO		on			on	on	on		

4. The following tables show the worst case configurations determined during testing.

   (Worst case: The lowest margin condition the channels and modes were selected for test.)

RSDB Scenario 1	Description	2.4GHz Emission	6 GHz Emission
2.4 GHz WiFi MIMO + 6 GHz WiFi MIMO	Antenna	Ant All	Ant All
	Channel	1	7
	Data Rate	1 Mbps	MCS 0
	Mode	802.11b	802.11ax(HE80) SU

Note : DTS, UNII 6e RSDB Data refer to [DTS], [UNII 6e] Test Report

RSDB Scenario 2	Description	2.4GHz Emission	5 GHz Emission
2.4 GHz WiFi MIMO + 5 GHz WiFi MIMO	Antenna	Ant All	Ant All
	Channel	1	169
	Data Rate	1 Mbps	MCS 0
	Mode	802.11b	802.11n(HT20)

Note : DTS RSDB Data refer to [DTS] Test Report

RSDB Scenario 3	Description	Bluetooth Emission	2.4GHz Emission	5 GHz Emission
Bluetooth ANT.1 + 2.4 GHz WiFi ANT.2 + 5 GHz WiFi MIMO	Antenna	ANT1	ANT2	Ant All
	Channel	78	1	169
	Data Rate	1 Mbps	1 Mbps	MCS 0
	Mode	GFSK	802.11b	802.11n(HT20)

Note : BT, DTS RSDB Data refer to [BT], [DTS] Test Report

AC Power line Conducted Emissions

1. All modes of operation were investigated and the worst case configuration results are reported.
   - Mode : Stand alone + External accessories(Earphone,etc) + Travel Adapter,
     Stand alone + Travel Adapter
   - Worstcase : Stand alone + Travel Adapter

Conducted test

1. All datarate of operation were investigated and the worst case datarate results are reported.

9. SUMMARY OF TEST RESULTS

Test Description	FCC Part Section(s)	Test Limit	Test Condition	Test Result
26 dB Bandwidth	§15.407 (for Power Measurement)	N/A	Conducted	PASS
6 dB Bandwidth	§15.407(e)	>500 kHz (5725-5850 MHz)(UNII-3) (5850-5895 MHz)(UNII-4)		PASS
Maximum Conducted Output Power	§15.407(a)(1),(2),(3)	< 250 mW(5150-5250 MHz) < 250 mW or 11+10log$_{10}$ (BW) dBm (5250-5350 MHz) < 250 mW or 11+10log$_{10}$ (BW) dBm (5470-5725 MHz) <1 W (5725-5850 MHz)		PASS
Maximum EIRP Output Power	§15.407(a)(1)(3)(iii)	< EIRP 30dBm (5850-5925 MHz)		
Maximum Power Spectral Density	§15.407(a)(1),(2),(3)	<11 dBm/ MHz (5150-5250 MHz) <11 dBm/ MHz (5250-5350 MHz) <11 dBm/ MHz (5470-5725 MHz) <30 dBm/500 kHz(5725-5850 MHz) < EIRP 14 dBm/MHz(5850-5895 MHz)		PASS
Frequency Stability	§15.407(g) §2.1055	Maintained within the band		PASS
AC Conducted Emissions 150 kHz-30 MHz	15.207 15.407(b)(8)	<FCC 15.207 limits		PASS
Undesirable Emissions	§15.407(b) (1),(2),(3),(4) §15.407(b)(5)(ii),(iii) §15.35(b)	<-27 dBm/MHz EIRP (UNII1, 2A, 2C) cf. Section 8.6 (UNII 3&4)	Radiated	PASS
General Field Strength Limits(Restricted Bands and Radiated Emission Limits)	15.205, 15.407(b)(9),(10)	Emissions in restricted bands must meet the radiated limits detailed in 15.209		PASS

10. TEST RESULT

10.1 DUTY CYCLE

Mode	Data Rate (Mbps)	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11a	6	1.464	1.561	0.938	0.277
	9	0.983	1.084	0.907	0.426
	12	0.740	0.841	0.880	0.558
	18	0.507	0.603	0.840	0.755
	24	0.385	0.481	0.800	0.969
	36	0.263	0.365	0.722	1.413
	48	0.203	0.299	0.678	1.688
	54	0.187	0.289	0.649	1.877

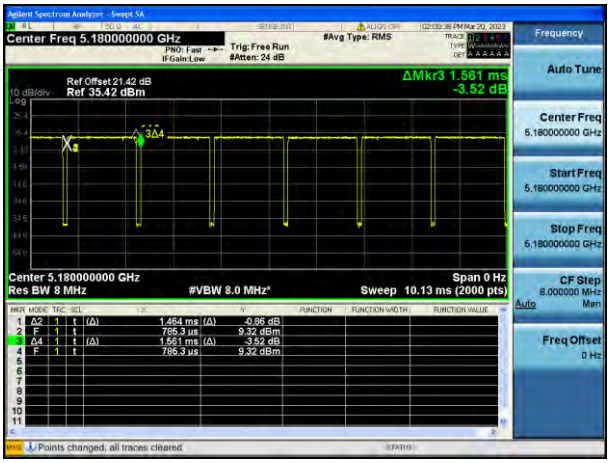
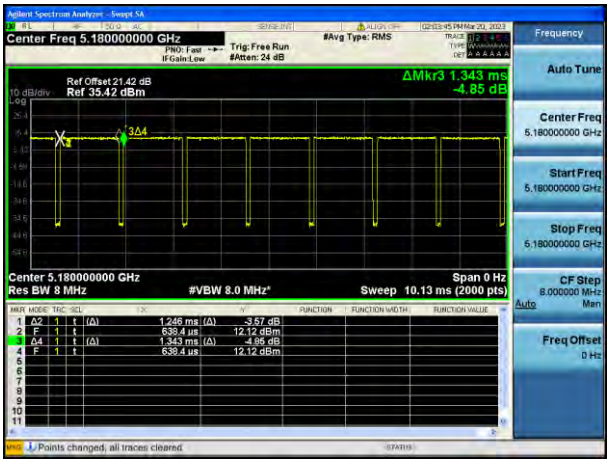
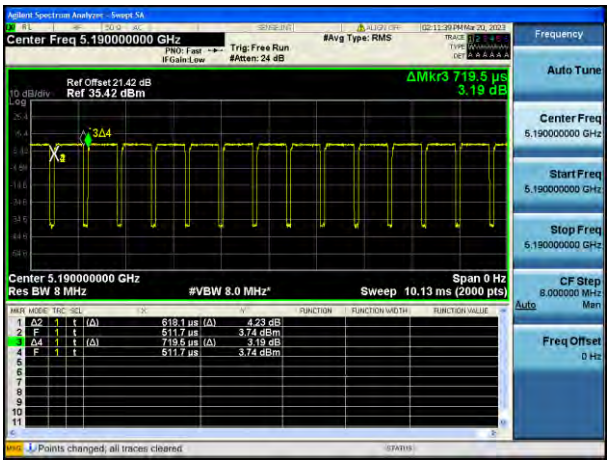
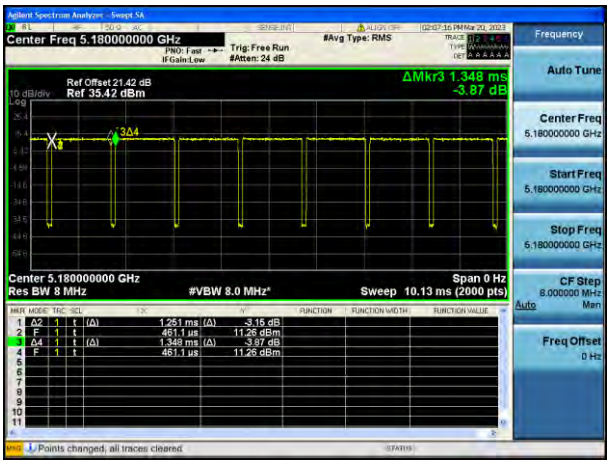
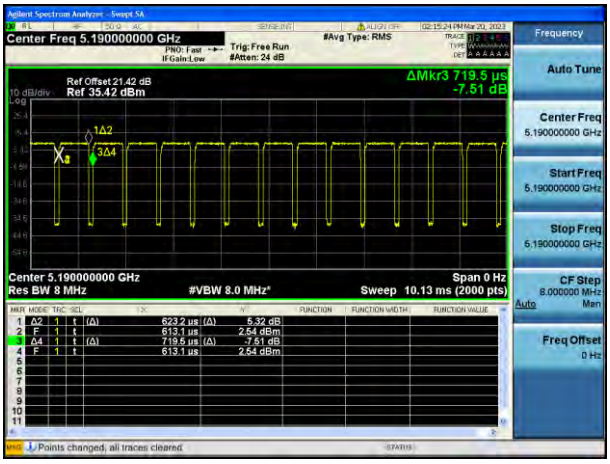
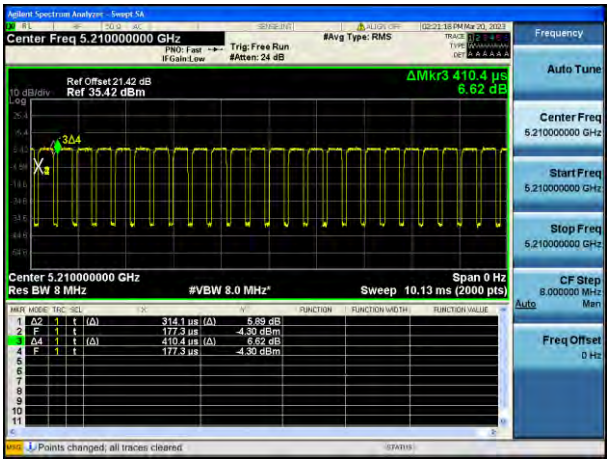
Mode	MCS Index	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11n (HT20)	0	1.246	1.343	0.928	0.323
	1	0.643	0.745	0.864	0.635
	2	0.441	0.537	0.821	0.858
	3	0.339	0.441	0.770	1.134
	4	0.238	0.334	0.712	1.474
	5	0.187	0.296	0.632	1.990
	6	0.170	0.294	0.577	2.385
	7	0.157	0.284	0.554	2.568
802.11n (HT40)	0	0.618	0.719	0.859	0.659
	1	0.324	0.426	0.762	1.181
	2	0.233	0.329	0.708	1.502
	3	0.188	0.329	0.570	2.442
	4	0.137	0.314	0.435	3.610
	5	0.111	0.309	0.361	4.429
	6	0.106	0.309	0.344	4.631
	7	0.096	0.309	0.312	5.065

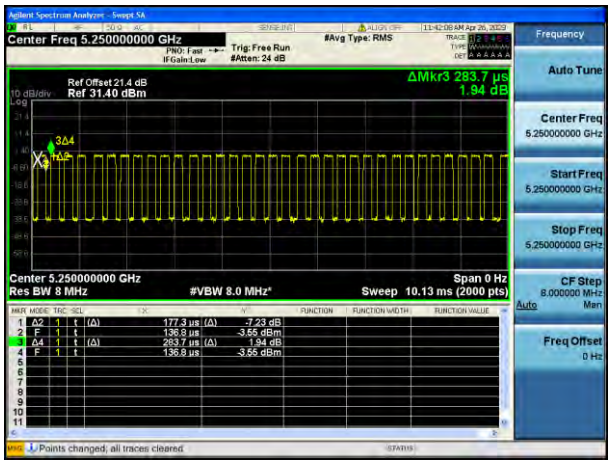
Mode	MCS Index	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11ac (VHT20)	0	1.251	1.348	0.929	0.322
	1	0.649	0.745	0.871	0.601
	2	0.446	0.542	0.822	0.849
	3	0.345	0.441	0.782	1.070
	4	0.243	0.345	0.706	1.513
	5	0.193	0.299	0.644	1.911
	6	0.178	0.299	0.597	2.241
	7	0.162	0.289	0.561	2.507
	8	0.147	0.289	0.509	2.935
802.11ac (VHT40)	0	0.623	0.719	0.866	0.624
	1	0.334	0.431	0.776	1.099
	2	0.233	0.334	0.697	1.568
	3	0.187	0.329	0.569	2.447
	4	0.139	0.319	0.436	3.601
	5	0.117	0.314	0.371	4.307
	6	0.106	0.314	0.339	4.702
	7	0.101	0.309	0.328	4.843
	8	0.091	0.307	0.298	5.264
	9	0.081	0.306	0.265	5.773
802.11ac (VHT80)	0	0.314	0.410	0.765	1.161
	1	0.175	0.370	0.473	3.255
	2	0.137	0.347	0.394	4.044
	3	0.106	0.345	0.309	5.102
	4	0.086	0.345	0.250	6.020
	5	0.076	0.345	0.221	6.564
	6	0.071	0.339	0.209	6.799
	7	0.068	0.334	0.205	6.892
	8	0.066	0.334	0.197	7.056
	9	0.061	0.332	0.183	7.371

Mode	MCS Index	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11ac (VHT160)	0	0.177	0.284	0.625	2.041
	1	0.107	0.283	0.379	4.212
	2	0.087	0.283	0.309	5.103
	3	0.074	0.283	0.260	5.849
	4	0.064	0.279	0.231	6.367
	5	0.061	0.279	0.220	6.579
	6	0.055	0.279	0.198	7.037
	7	0.055	0.279	0.198	7.038
	8	0.052	0.279	0.187	7.285
	9	0.052	0.279	0.187	7.285

Note:

In order to simplify the report, attached plots were only the lowest datarate.

802.11a	802.11n(HT20)
	
802.11n(HT40)	**802.11ac(VHT20)**
	
802.11ac(VHT40)	**802.11ac(VHT80)**
	

802.11ac(VHT160)


10.2 26 dB Bandwidth

Straddle channel data in the table below are for reporting purposes only. Straddle channel data were added in section 10.7.1.

[Ant.1]

802.11a Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	19.19	16.376
5200	40	18.98	16.400
5240	48	19.14	16.376
5260	52	19.04	16.386
5300	60	19.12	16.363
5320	64	18.99	16.385
5500	100	18.95	16.366
5580	116	19.28	16.387
5720	144	18.89	16.377
5745	149	19.15	16.376
5785	157	19.06	16.396
5825	165	19.75	16.397
5845	169	18.98	16.366
5865	173	18.83	16.385
5885	177	19.02	16.358

802.11n(HT20) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	20.25	17.598
5200	40	20.19	17.585
5240	48	20.12	17.584
5260	52	20.21	17.572
5300	60	20.09	17.576
5320	64	20.46	17.580
5500	100	20.17	17.580
5580	116	20.31	17.581
5720	144	20.34	17.580
5745	149	20.00	17.579
5785	157	20.19	17.565
5825	165	20.22	17.567
5845	169	20.03	17.583
5865	173	20.16	17.578
5885	177	20.14	17.579

802.11ac(VHT20) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	20.53	17.591
5200	40	20.06	17.594
5240	48	20.24	17.576
5260	52	20.13	17.583
5300	60	20.07	17.579
5320	64	20.12	17.587
5500	100	20.18	17.584
5580	116	20.26	17.591
5720	144	20.23	17.587
5745	149	20.18	17.590
5785	157	20.24	17.595
5825	165	20.15	17.581
5845	169	20.10	17.569
5865	173	20.15	17.578
5885	177	20.08	17.585

802.11n(HT40) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5190	38	39.56	36.033
5230	46	39.68	36.019
5270	54	39.70	36.012
5310	62	39.53	36.034
5510	102	39.61	36.059
5550	110	39.62	36.056
5710	142	39.77	36.055
5755	151	39.62	36.011
5795	159	39.49	36.035
5835	167	39.57	36.067
5875	175	39.75	36.040

802.11ac(VHT40) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5190	38	39.61	36.039
5230	46	39.68	36.018
5270	54	40.03	36.039
5310	62	39.46	36.053
5510	102	39.45	36.032
5550	110	39.49	36.029
5710	142	39.60	36.036
5755	151	39.81	36.049
5795	159	39.62	36.027
5835	167	39.84	36.043
5875	175	39.81	36.056

802.11ac(VHT80) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5210	42	81.60	75.508
5290	58	81.17	75.521
5530	106	81.77	75.489
5610	122	81.30	75.541
5690	138	81.42	75.470
5775	155	81.58	75.522
5855	171	81.19	75.566

802.11ac(VHT160) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5250	50	164.7	154.28
5570	114	165.2	154.34
5815	163	165.1	154.63

Note:

For channels 169/167/171 included in U-NII3&4, please refer to the table below.

[Ant.2]

802.11a Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	19.23	16.388
5200	40	19.38	16.388
5240	48	18.91	16.384
5260	52	18.89	16.378
5300	60	18.89	16.376
5320	64	19.04	16.403
5500	100	18.88	16.373
5580	116	19.12	16.386
5720	144	19.20	16.385
5745	149	19.09	16.394
5785	157	19.06	16.391
5825	165	19.82	16.428
5845	169	19.10	16.403
5865	173	19.23	16.393
5885	177	19.06	16.397

802.11n(HT20) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	20.30	17.590
5200	40	20.18	17.601
5240	48	20.20	17.577
5260	52	20.26	17.579
5300	60	20.30	17.577
5320	64	19.93	17.580
5500	100	19.96	17.578
5580	116	20.18	17.577
5720	144	20.25	17.593
5745	149	20.36	17.598
5785	157	20.07	17.587
5825	165	21.14	17.585
5845	169	20.15	17.592
5865	173	19.96	17.583
5885	177	20.21	17.587

802.11ac(VHT20) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	20.30	17.583
5200	40	20.33	17.587
5240	48	20.36	17.577
5260	52	20.11	17.578
5300	60	20.28	17.579
5320	64	20.45	17.577
5500	100	20.10	17.588
5580	116	20.22	17.581
5720	144	20.47	17.586
5745	149	20.06	17.583
5785	157	20.20	17.586
5825	165	20.73	17.589
5845	169	20.01	17.568
5865	173	19.86	17.594
5885	177	19.98	17.575

802.11n(HT40) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5190	38	39.96	36.042
5230	46	39.61	36.033
5270	54	39.73	36.049
5310	62	39.54	36.035
5510	102	39.73	36.062
5550	110	39.70	36.060
5710	142	39.96	36.058
5755	151	39.55	36.045
5795	159	39.58	36.079
5835	167	39.52	36.058
5875	175	39.43	35.991

802.11ac(VHT40) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5190	38	40.05	36.040
5230	46	39.34	36.039
5270	54	39.45	36.034
5310	62	39.72	36.015
5510	102	39.72	36.065
5550	110	39.56	36.014
5710	142	39.87	36.042
5755	151	39.59	36.028
5795	159	39.71	36.089
5835	167	39.58	36.074
5875	175	39.37	36.014

802.11ac(VHT80) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5210	42	82.03	75.527
5290	58	82.47	75.558
5530	106	81.85	75.530
5610	122	81.29	75.528
5690	138	81.68	75.488
5775	155	81.75	75.548
5855	171	81.30	75.630

802.11ac(VHT160) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5250	50	164.3	154.27
5570	114	164.5	154.34
5815	163	164.5	154.53

Note:

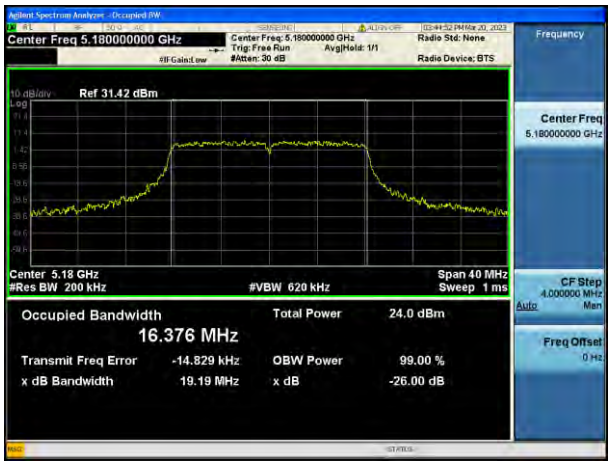
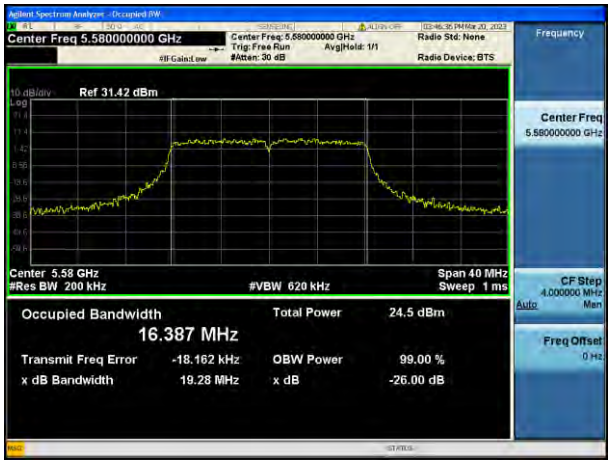
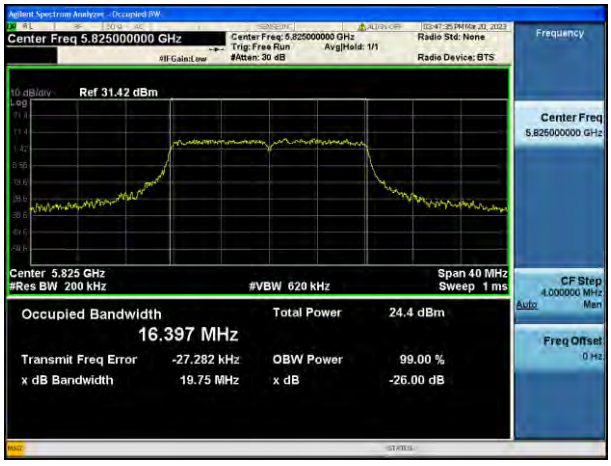
For channels 169/167/171 included in U-NII3&4, please refer to the table below.

[Ant.1]

▣ Test Plots(802.11a)

Note:

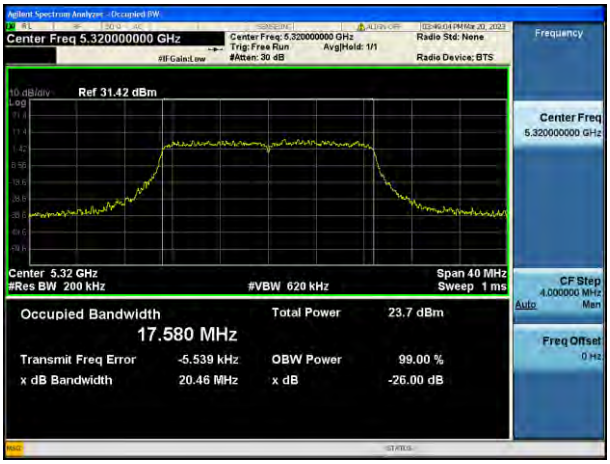
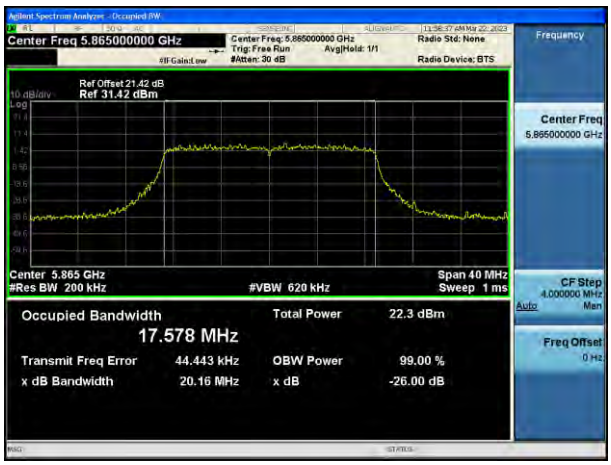
In order to simplify the report, attached plots were only the widest channel.

802.11a UNII 1 BAND 26 dB Bandwidth (CH 36)	802.11a UNII 2A BAND 26 dB Bandwidth (CH 60)
	
802.11a UNII 2C BAND 26 dB Bandwidth (CH 116)	**802.11a UNII 3 BAND 26 dB Bandwidth (CH 165)**
	
802.11a UNII 4 BAND 26 dB Bandwidth (CH 177)	
	

▣ Test Plots(802.11n(HT20))

Note:

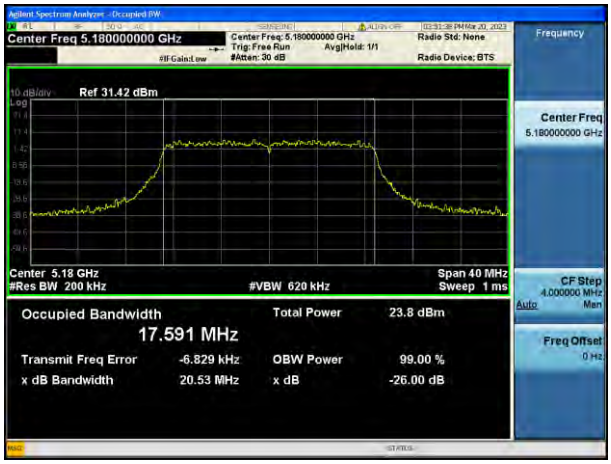
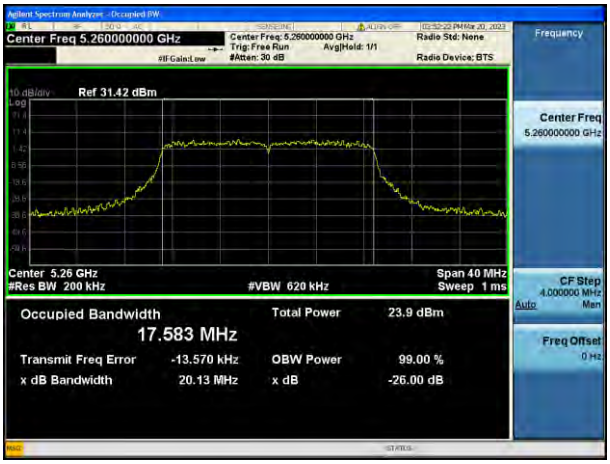
In order to simplify the report, attached plots were only the widest channel.

802.11n_HT20 UNII 1 BAND 26 dB Bandwidth(CH 36)	802.11n_HT20 UNII 2A BAND 26 dB Bandwidth(CH 64)
	
802.11n_HT20 UNII 2C BAND 26 dB Bandwidth(CH 144)	**802.11n_HT20 UNII 3 BAND 26 dB Bandwidth(CH 165)**
	
802.11n_HT20 UNII 4 BAND 26 dB Bandwidth(CH 173)	
	

▣ Test Plots(802.11ac(VHT20))

Note:

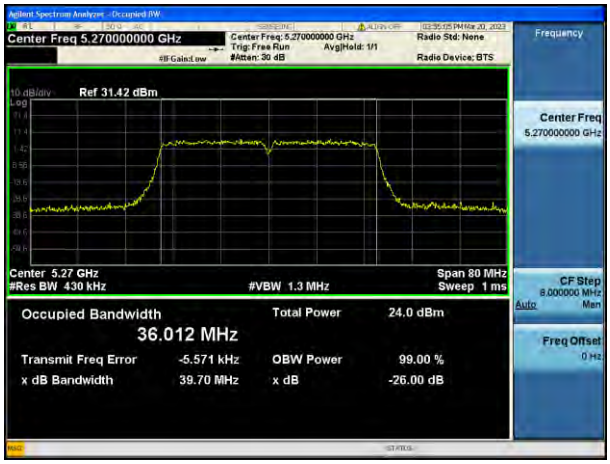
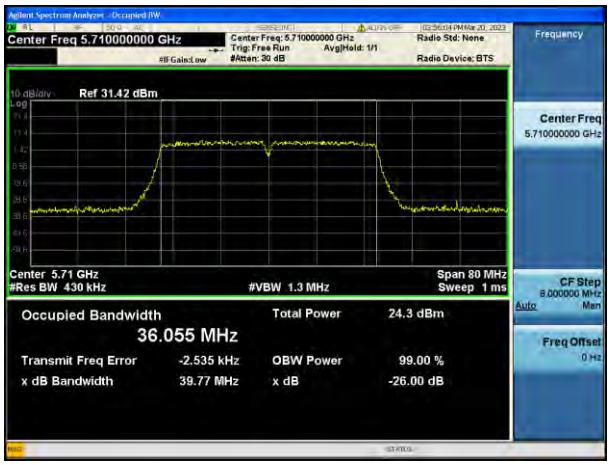
In order to simplify the report, attached plots were only the widest channel.

802.11ac_VHT20 UNII 1 BAND 26 dB Bandwidth(CH 36)	802.11ac_VHT20 UNII 2A BAND 26 dB Bandwidth(CH 52)
	
802.11ac_VHT20 UNII 2C BAND 26 dB Bandwidth(CH 116)	**802.11ac_VHT20 UNII 3 BAND 26 dB Bandwidth(CH 157)**
	
802.11ac_VHT20 UNII 4 BAND 26 dB Bandwidth(CH 173)	
	

▣ Test Plots(802.11n(HT40))

Note:

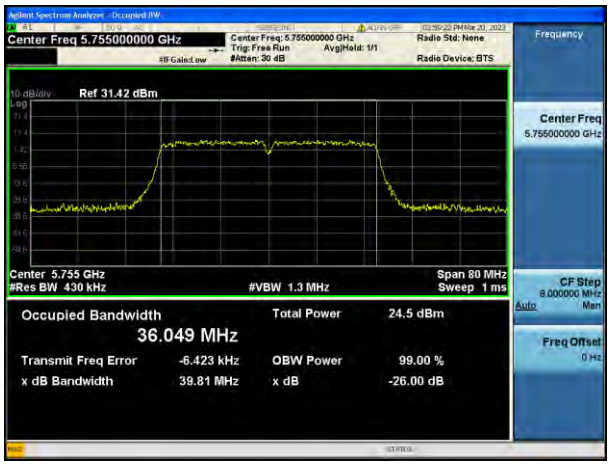
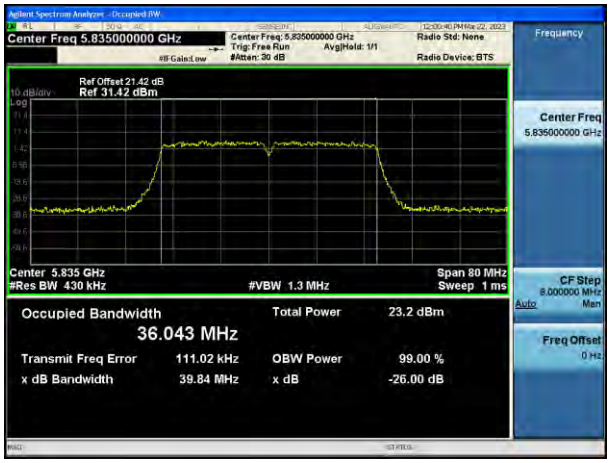
In order to simplify the report, attached plots were only the widest channel.

802.11n_HT40 UNII 1 BAND 26 dB Bandwidth(CH 46)	802.11n_HT40 UNII 2A BAND 26 dB Bandwidth (CH 54)
	
802.11n_HT40 UNII 2C BAND 26 dB Bandwidth(CH 142)	**802.11n_HT40 UNII 3 BAND 26 dB Bandwidth (CH 151)**
	
802.11n_HT40 UNII 4 BAND 26 dB Bandwidth (CH 175)	
	

▣ Test Plots(802.11ac(VHT40))

Note:

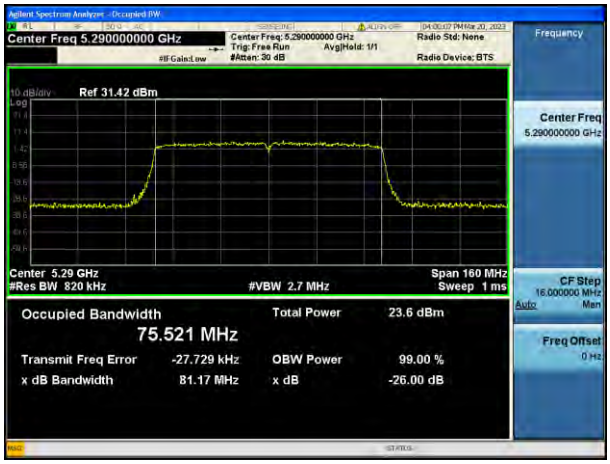
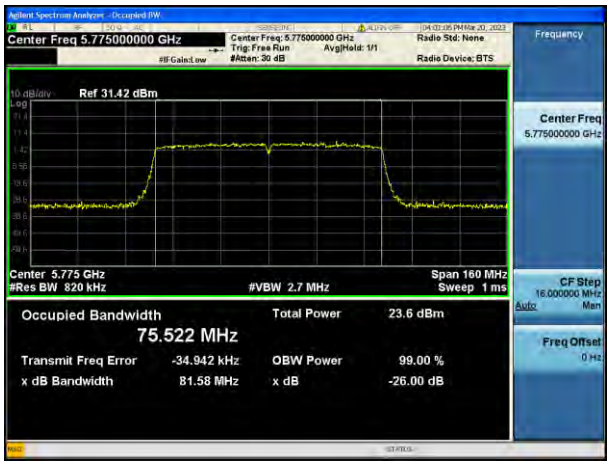
In order to simplify the report, attached plots were only the widest channel.

802.11ac_VHT40 UNII 1 BAND 26 dB Bandwidth(CH 46)	802.11ac_VHT40 UNII 2A BAND 26 dB Bandwidth (CH 54)
	
802.11ac_VHT40 UNII 2C BAND 26 dB Bandwidth(CH 142)	**802.11ac_VHT40 UNII 3 BAND 26 dB Bandwidth (CH 151)**
	
802.11ac_VHT40 UNII 4 BAND 26 dB Bandwidth (CH 167)	
	

▣ Test Plots(802.11ac(VHT80))

Note:

In order to simplify the report, attached plots were only the widest channel.

802.11ac_VHT80 UNII 1 BAND 26 dB Bandwidth(CH 42)	802.11ac_VHT80 UNII 2A BAND 26 dB Bandwidth (CH 58)
	
802.11ac_VHT80 UNII 2C BAND 26 dB Bandwidth(CH 106)	**802.11ac_VHT80 UNII 3 BAND 26 dB Bandwidth (CH 155)**
	
802.11ac_VHT80 UNII 4 BAND 26 dB Bandwidth (CH 171)	
	

▣ Test Plots(802.11ac(VHT160))

Note:

In order to simplify the report, attached plots were only the widest channel.

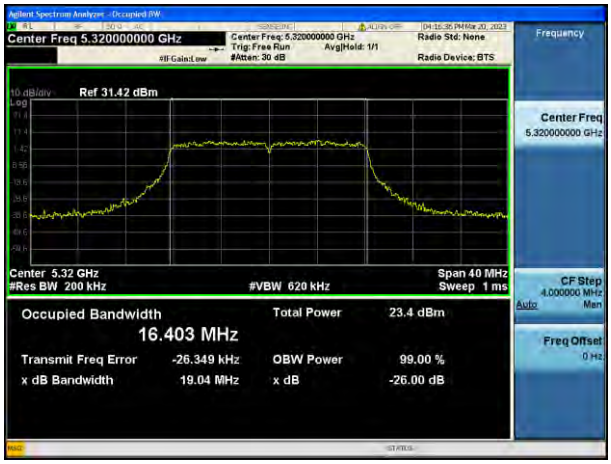
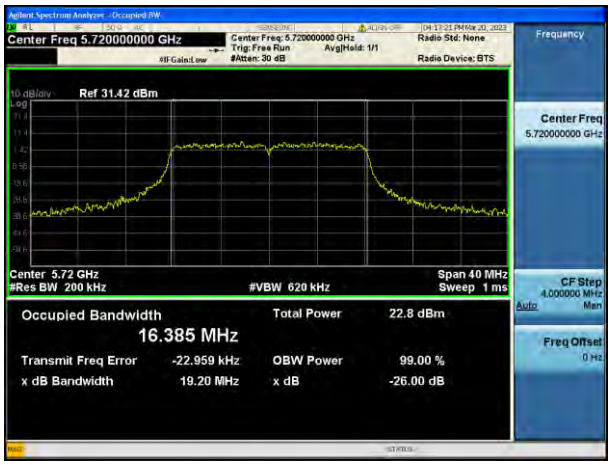
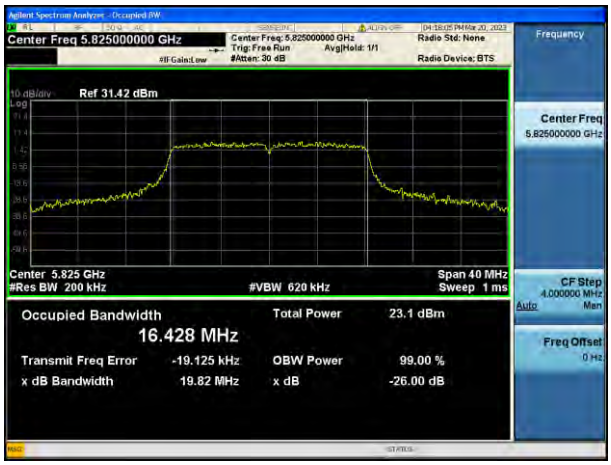
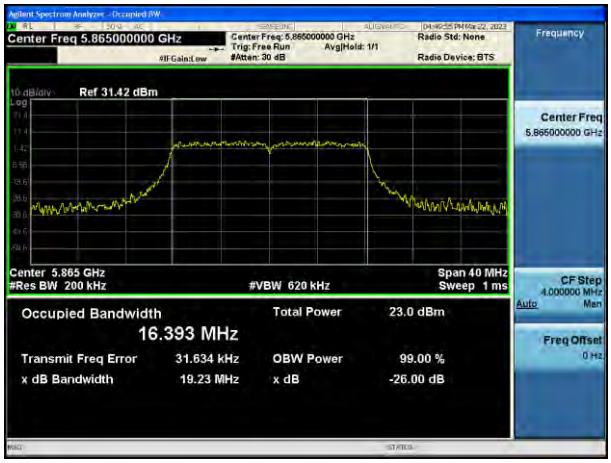
802.11ac_VHT160 UNII 1 BAND 26 dB Bandwidth(CH 50)	802.11ac_VHT160 UNII 2A BAND 26 dB Bandwidth (CH 114)
	
802.11ac_VHT160 UNII 4 BAND 26 dB Bandwidth(CH 163)	
	

[Ant.2]

▣ Test Plots(802.11a)

Note:

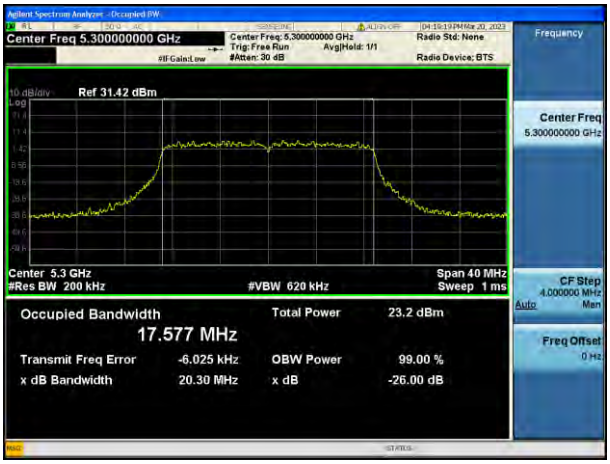
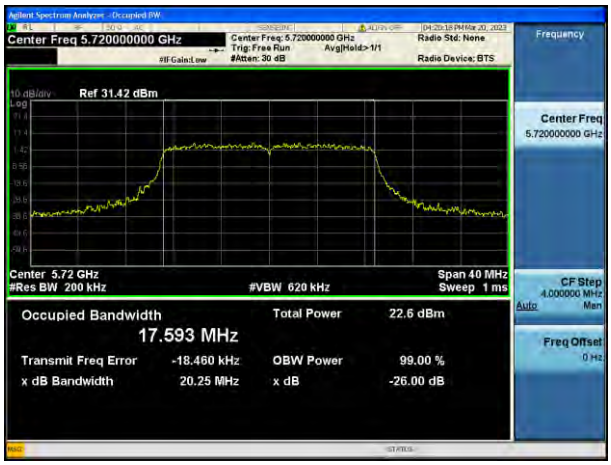
In order to simplify the report, attached plots were only the widest channel.

802.11a UNII 1 BAND 26 dB Bandwidth (CH 40)	802.11a UNII 2A BAND 26 dB Bandwidth (CH 64)
	
802.11a UNII 2C BAND 26 dB Bandwidth (CH 144)	**802.11a UNII 3 BAND 26 dB Bandwidth (CH 165)**
	
802.11a UNII 4 BAND 26 dB Bandwidth (CH 173)	
	

▣ Test Plots(802.11n(HT20))

Note:

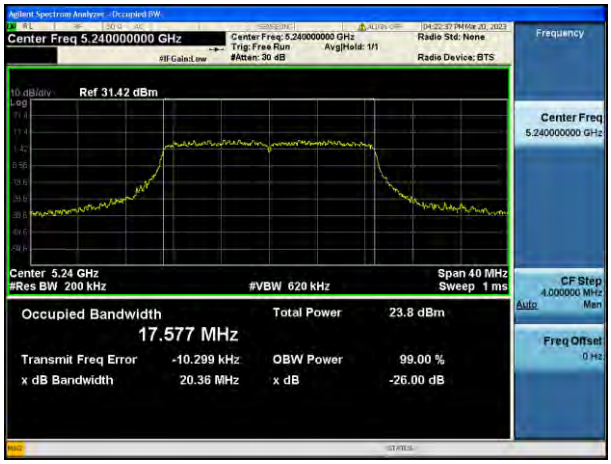
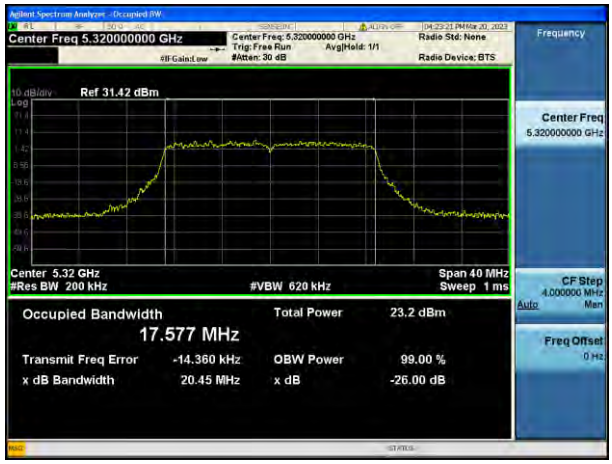
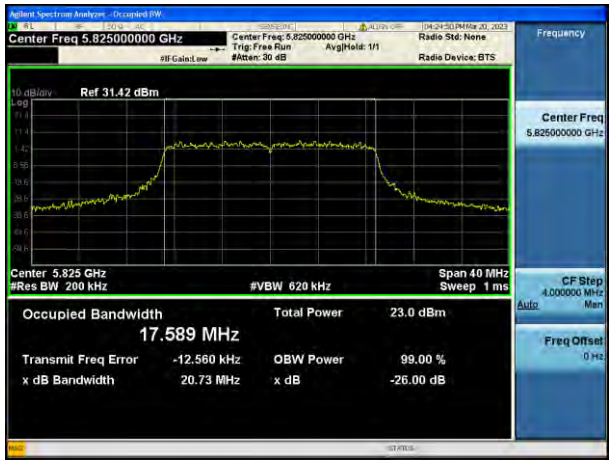
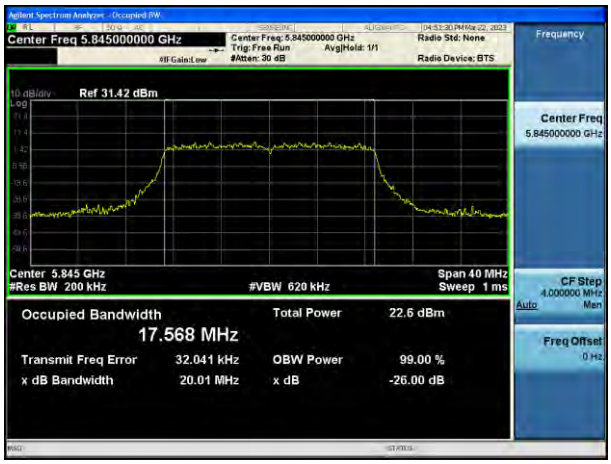
In order to simplify the report, attached plots were only the widest channel.

802.11n_HT20 UNII 1 BAND 26 dB Bandwidth(CH 36)	802.11n_HT20 UNII 2A BAND 26 dB Bandwidth(CH 60)
	
802.11n_HT20 UNII 2C BAND 26 dB Bandwidth(CH 144)	**802.11n_HT20 UNII 3 BAND 26 dB Bandwidth(CH 165)**
	
802.11n_HT20 UNII 4 BAND 26 dB Bandwidth(CH 177)	
	

▣ Test Plots(802.11ac(VHT20))

Note:

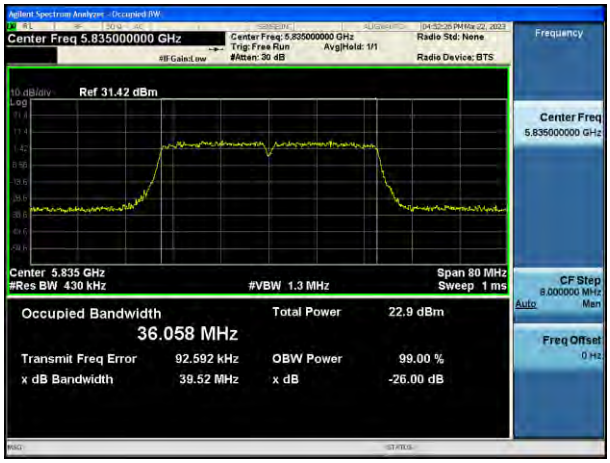
In order to simplify the report, attached plots were only the widest channel.

802.11ac_VHT20 UNII 1 BAND 26 dB Bandwidth(CH 48)	802.11ac_VHT20 UNII 2A BAND 26 dB Bandwidth(CH 64)
	
802.11ac_VHT20 UNII 2C BAND 26 dB Bandwidth(CH 144)	**802.11ac_VHT20 UNII 3 BAND 26 dB Bandwidth(CH 165)**
	
802.11ac_VHT20 UNII 4 BAND 26 dB Bandwidth(CH 169)	
	

▣ Test Plots(802.11n(HT40))

Note:

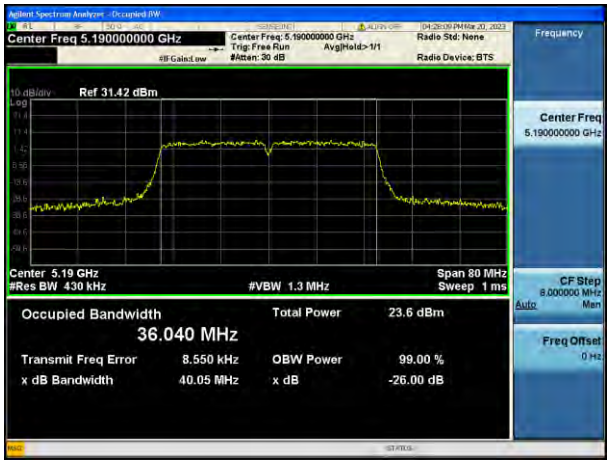
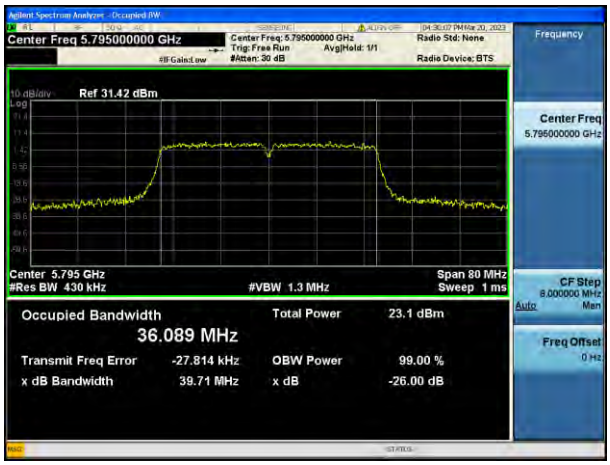
In order to simplify the report, attached plots were only the widest channel.

802.11n_HT40 UNII 1 BAND 26 dB Bandwidth(CH 38)	802.11n_HT40 UNII 2A BAND 26 dB Bandwidth (CH 54)
	
802.11n_HT40 UNII 2C BAND 26 dB Bandwidth(CH 142)	**802.11n_HT40 UNII 3 BAND 26 dB Bandwidth (CH 159)**
	
802.11n_HT40 UNII 4 BAND 26 dB Bandwidth (CH 167)	
	

▣ Test Plots(802.11ac(VHT40))

Note:

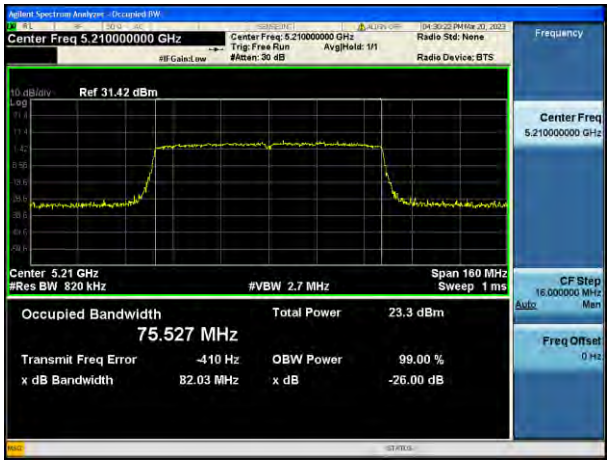
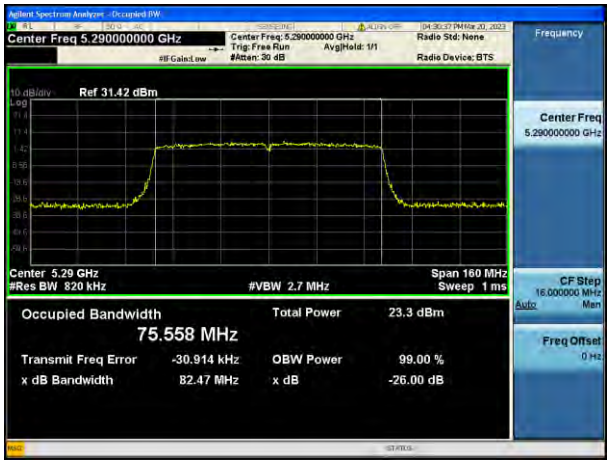
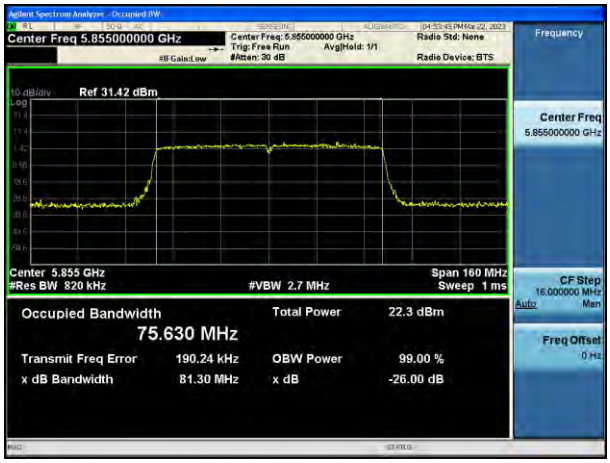
In order to simplify the report, attached plots were only the widest channel.

802.11ac_VHT40 UNII 1 BAND 26 dB Bandwidth(CH 38)	802.11ac_VHT40 UNII 2A BAND 26 dB Bandwidth (CH 62)
	
802.11ac_VHT40 UNII 2C BAND 26 dB Bandwidth(CH 142)	**802.11ac_VHT40 UNII 3 BAND 26 dB Bandwidth (CH 159)**
	
802.11ac_VHT40 UNII 4 BAND 26 dB Bandwidth (CH 167)	
	

▣ Test Plots(802.11ac(VHT80))

Note:

In order to simplify the report, attached plots were only the widest channel.

802.11ac_VHT80 UNII 1 BAND 26 dB Bandwidth(CH 42)	802.11ac_VHT80 UNII 2A BAND 26 dB Bandwidth (CH 58)
	
802.11ac_VHT80 UNII 2C BAND 26 dB Bandwidth(CH 106)	**802.11ac_VHT80 UNII 3 BAND 26 dB Bandwidth (CH 155)**
	
802.11ac_VHT80 UNII 4 BAND 26 dB Bandwidth (CH 171)	
	

▣ Test Plots(802.11ac(VHT160))

Note:

In order to simplify the report, attached plots were only the widest channel.

802.11ac_VHT160 UNII 1 BAND 26 dB Bandwidth(CH 50)

802.11ac_VHT160 UNII 2A BAND 26 dB Bandwidth (CH 114)

802.11ac_VHT160 UNII 4 BAND 26 dB Bandwidth(CH 163)

10.3 6 dB BANDWIDTH

[Ant.1]

802.11a Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	16.35	> 0.5	Pass
5785	157	16.34	> 0.5	Pass
5825	165	16.34	> 0.5	Pass
5845	169	16.34	> 0.5	Pass
5865	173	16.34	> 0.5	Pass
5885	177	16.35	> 0.5	Pass

802.11n(HT20) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	17.54	> 0.5	Pass
5785	157	16.98	> 0.5	Pass
5825	165	17.06	> 0.5	Pass
5845	169	16.88	> 0.5	Pass
5865	173	17.52	> 0.5	Pass
5885	177	17.54	> 0.5	Pass

802.11ac(VHT20) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	17.58	> 0.5	Pass
5785	157	16.95	> 0.5	Pass
5825	165	17.32	> 0.5	Pass
5845	169	17.55	> 0.5	Pass
5865	173	16.95	> 0.5	Pass
5885	177	17.31	> 0.5	Pass

802.11n(HT40) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	35.73	> 0.5	Pass
5795	159	35.82	> 0.5	Pass
5835	167	35.40	> 0.5	Pass
5875	175	35.60	> 0.5	Pass

802.11ac(VHT40) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	35.42	> 0.5	Pass
5795	159	35.56	> 0.5	Pass
5835	167	35.78	> 0.5	Pass
5875	175	35.70	> 0.5	Pass

802.11ac(VHT80) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5775	155	75.54	> 0.5	Pass
5855	171	75.60	> 0.5	Pass

802.11ac(VHT160) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5815	163	155.3	> 0.5	Pass

[Ant.2]

802.11a Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	16.35	> 0.5	Pass
5785	157	16.31	> 0.5	Pass
5825	165	16.37	> 0.5	Pass
5845	169	16.34	> 0.5	Pass
5865	173	16.34	> 0.5	Pass
5885	177	16.34	> 0.5	Pass

802.11n(HT20) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	17.58	> 0.5	Pass
5785	157	16.91	> 0.5	Pass
5825	165	17.57	> 0.5	Pass
5845	169	17.31	> 0.5	Pass
5865	173	17.29	> 0.5	Pass
5885	177	17.05	> 0.5	Pass

802.11ac(VHT20) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	16.99	> 0.5	Pass
5785	157	17.31	> 0.5	Pass
5825	165	17.08	> 0.5	Pass
5845	169	17.01	> 0.5	Pass
5865	173	17.58	> 0.5	Pass
5885	177	17.33	> 0.5	Pass

802.11n(HT40) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	35.37	> 0.5	Pass
5795	159	35.37	> 0.5	Pass
5835	167	35.51	> 0.5	Pass
5875	175	35.56	> 0.5	Pass

802.11ac(VHT40) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	35.69	> 0.5	Pass
5795	159	35.74	> 0.5	Pass
5835	167	35.48	> 0.5	Pass
5875	175	35.39	> 0.5	Pass

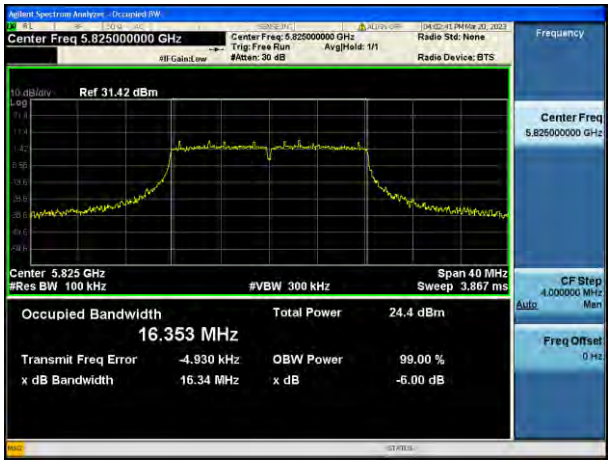
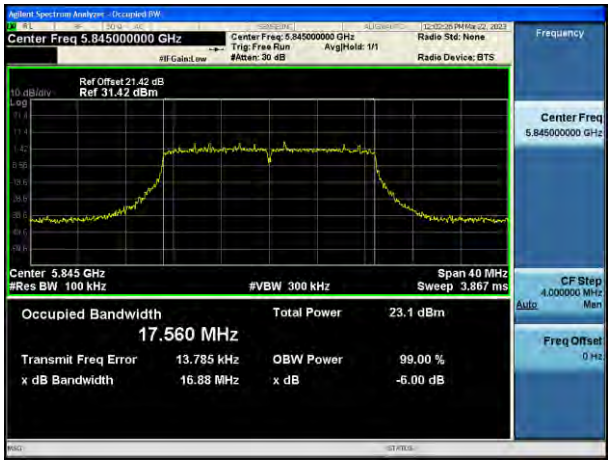
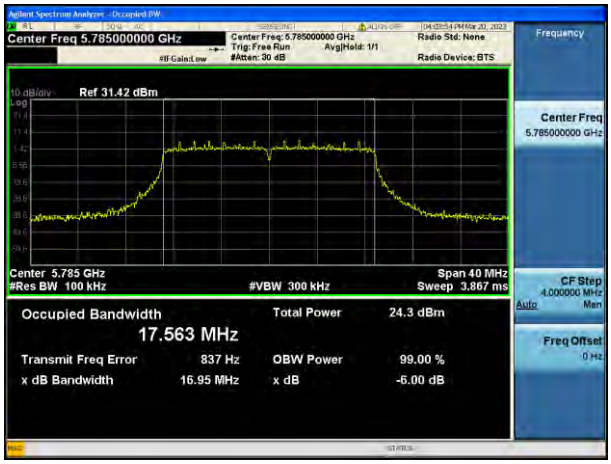
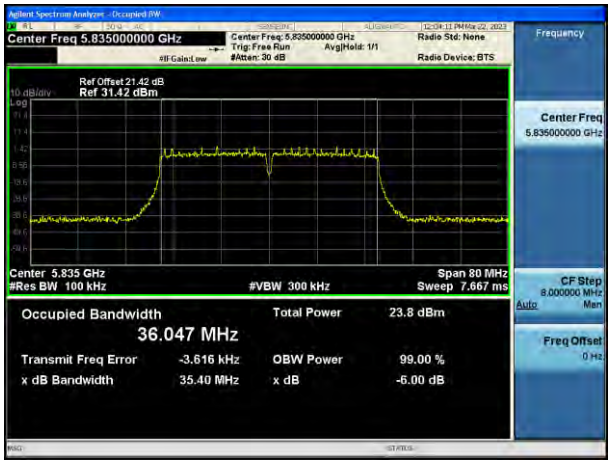
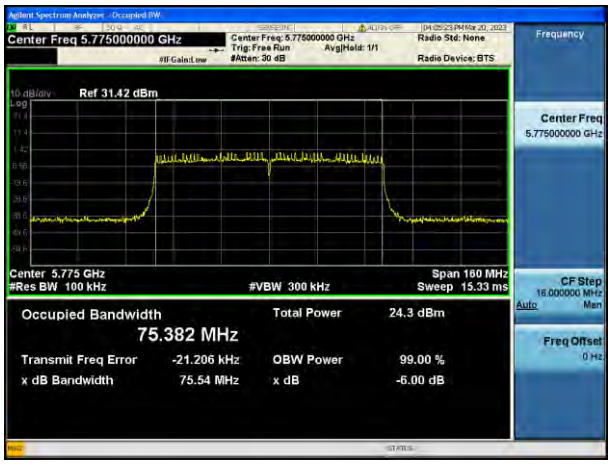
802.11ac(VHT80) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5775	155	75.48	> 0.5	Pass
5855	171	75.49	> 0.5	Pass

802.11ac(VHT160) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5815	163	155.4	> 0.5	Pass

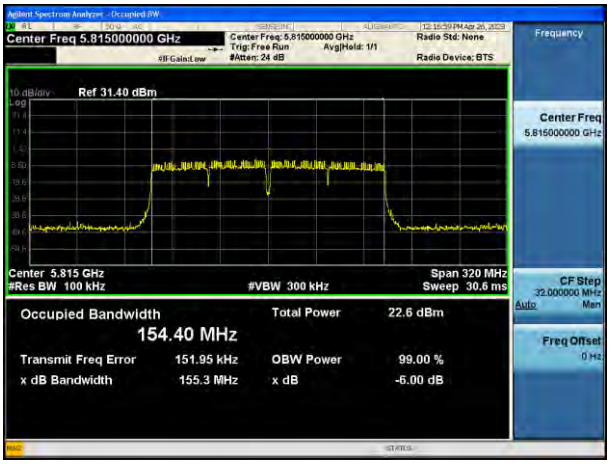
[Ant.1]

▣ Test Plots

Note: In order to simplify the report, attached plots were only the narrowest channel.

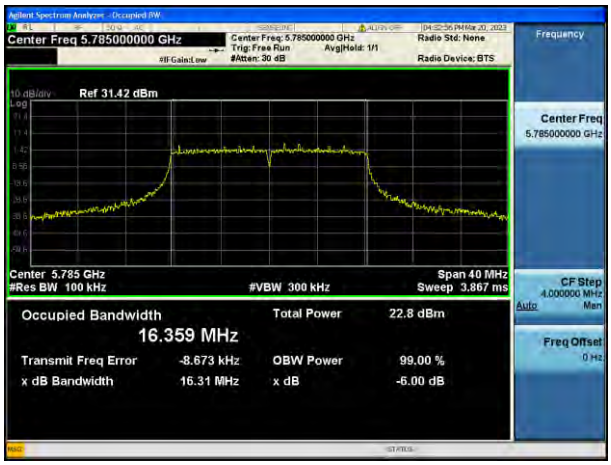
802.11a (CH.165)	802.11n(HT20) (CH.169)
	
802.11ac(VHT20) (CH.157)	**802.11n(HT40) (CH.167)**
	
802.11ac(VHT40) (CH.151)	**802.11ac(VHT80) (CH.155)**
	

802.11ac(VHT160) (CH.163)

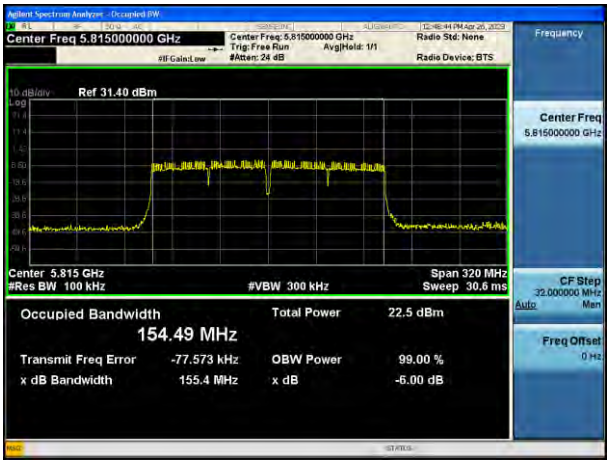


[Ant.2]

Note: In order to simplify the report, attached plots were only the narrowest channel.

802.11a (CH.157)	802.11n(HT20) (CH.157)
	
802.11ac(VHT20) (CH.149)	**802.11n(HT40) (CH.159)**
	
802.11ac(VHT40) (CH.175)	**802.11ac(VHT80) (CH.155)**
	

802.11ac(VHT160) (CH.163)



10.4 OUTPUT POWER MEASUREMENT

Straddle channel data in the table below are for reporting purposes only.

Straddle channel data were added in section 10.7.3.

Limit

(UNII 1) : 23.98 dBm

(UNII 2A, 2C) : 23.98 dBm or 11 dBm + 10 log B, (where B is the 26 dB emission bandwidth in megahertz.)

(UNII 3) : 30.00 dBm

(UNII 4) : EIRP 30.0 dBm/MHz

(UNII 3&4) : Worst limit 30.00 dBm ➔UNII 4 Band Antenna Gain Negative

[MIMO(ANT1)]

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Measured Power [dBm]	Duty Cyle Factor (dB)	Total Power (dBm)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	18M	a	15.67	0.755	16.42	-	-	23.98
5200	40	18M	a	15.68	0.755	16.43	-	-	23.98
5240	48	18M	a	15.77	0.755	16.53	-	-	23.98
5260	52	18M	a	15.72	0.755	16.47	-	-	23.80
5280	56	18M	a	15.65	0.755	16.40	-	-	23.82
5320	64	18M	a	15.60	0.755	16.35	-	-	23.79
5500	100	18M	a	15.47	0.755	16.22	-	-	23.78
5580	116	18M	a	15.69	0.755	16.44	-	-	23.85
5720	144	18M	a	15.86	0.755	16.61	-	-	23.76
5745	149	18M	a	15.62	0.755	16.38	-	-	30.00
5785	157	18M	a	15.62	0.755	16.37	-	-	30.00
5825	165	18M	a	16.03	0.755	16.78	-	-	30.00
5845	169	18M	a	15.82	0.755	16.57	-5.60	10.97	EIRP ≤ 30dBm
5865	173	18M	a	15.56	0.755	16.31	-5.60	10.71	EIRP ≤ 30dBm
5885	177	18M	a	15.55	0.755	16.30	-5.60	10.70	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Measured Power [dBm]	Duty Cyle Factor (dB)	Total Power (dBm)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	MCS4	n20	14.91	1.474	16.38	-	-	23.98
5200	40	MCS4	n20	14.90	1.474	16.37	-	-	23.98
5240	48	MCS4	n20	15.01	1.474	16.49	-	-	23.98
5260	52	MCS4	n20	14.91	1.474	16.39	-	-	23.98
5280	56	MCS4	n20	14.86	1.474	16.34	-	-	23.98
5320	64	MCS4	n20	14.80	1.474	16.27	-	-	23.98
5500	100	MCS4	n20	14.80	1.474	16.27	-	-	23.98
5580	116	MCS4	n20	15.00	1.474	16.48	-	-	23.98
5720	144	MCS4	n20	15.21	1.474	16.68	-	-	23.98
5745	149	MCS4	n20	14.96	1.474	16.43	-	-	30.00
5785	157	MCS4	n20	14.92	1.474	16.40	-	-	30.00
5825	165	MCS4	n20	15.34	1.474	16.82	-	-	30.00
5845	169	MCS4	n20	15.07	1.474	16.55	-5.60	10.95	EIRP ≤ 30dBm
5865	173	MCS4	n20	14.79	1.474	16.27	-5.60	10.67	EIRP ≤ 30dBm
5885	177	MCS4	n20	14.75	1.474	16.22	-5.60	10.62	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Measured Power [dBm]	Duty Cyle Factor (dB)	Total Power (dBm)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	MCS4	ac20	14.97	1.513	16.48	-	-	23.98
5200	40	MCS4	ac20	14.98	1.513	16.49	-	-	23.98
5240	48	MCS4	ac20	15.06	1.513	16.57	-	-	23.98
5260	52	MCS4	ac20	14.98	1.513	16.49	-	-	23.98
5280	56	MCS4	ac20	14.89	1.513	16.41	-	-	23.98
5320	64	MCS4	ac20	14.85	1.513	16.37	-	-	23.98
5500	100	MCS4	ac20	14.87	1.513	16.38	-	-	23.98
5580	116	MCS4	ac20	15.08	1.513	16.59	-	-	23.98
5720	144	MCS4	ac20	15.27	1.513	16.79	-	-	23.98
5745	149	MCS4	ac20	14.92	1.513	16.43	-	-	30.00
5785	157	MCS4	ac20	14.90	1.513	16.41	-	-	30.00
5825	165	MCS4	ac20	15.32	1.513	16.83	-	-	30.00
5845	169	MCS4	ac20	15.09	1.513	16.60	-5.60	11.00	EIRP ≤ 30dBm
5865	173	MCS4	ac20	14.78	1.513	16.30	-5.60	10.70	EIRP ≤ 30dBm
5885	177	MCS4	ac20	14.80	1.513	16.31	-5.60	10.71	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Measured Power [dBm]	Duty Cyle Factor (dB)	Total Power (dBm)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5190	38	MCS1	n40	14.55	1.181	15.73	-	-	23.98
5230	46	MCS1	n40	15.68	1.181	16.86	-	-	23.98
5270	54	MCS1	n40	15.42	1.181	16.60	-	-	23.98
5310	62	MCS1	n40	13.90	1.181	15.08	-	-	23.98
5510	102	MCS1	n40	13.74	1.181	14.92	-	-	23.98
5550	110	MCS1	n40	15.47	1.181	16.65	-	-	23.98
5710	142	MCS1	n40	15.32	1.181	16.50	-	-	23.98
5755	151	MCS1	n40	14.94	1.181	16.12	-	-	30.00
5795	159	MCS1	n40	14.68	1.181	15.86	-	-	30.00
5835	167	MCS1	n40	15.24	1.181	16.42	-5.60	10.82	EIRP ≤ 30dBm
5875	175	MCS1	n40	14.31	1.181	15.49	-5.60	9.89	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Measured Power [dBm]	Duty Cyle Factor (dB)	Total Power (dBm)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5190	38	MCS3	ac40	13.31	2.447	15.76	-	-	23.98
5230	46	MCS3	ac40	14.45	2.447	16.90	-	-	23.98
5270	54	MCS3	ac40	14.12	2.447	16.57	-	-	23.98
5310	62	MCS3	ac40	12.57	2.447	15.02	-	-	23.98
5510	102	MCS3	ac40	13.06	2.447	15.50	-	-	23.98
5550	110	MCS3	ac40	14.15	2.447	16.59	-	-	23.98
5710	142	MCS3	ac40	14.52	2.447	16.97	-	-	23.98
5755	151	MCS3	ac40	14.53	2.447	16.98	-	-	30.00
5795	159	MCS3	ac40	14.31	2.447	16.76	-	-	30.00
5835	167	MCS3	ac40	14.43	2.447	16.88	-5.60	11.28	EIRP ≤ 30dBm
5875	175	MCS3	ac40	13.13	2.447	15.58	-5.60	9.98	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Measured Power [dBm]	Duty Cyle Factor (dB)	Total Power (dBm)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5210	42	MCS1	ac80	12.10	3.255	15.36	-	-	23.98
5290	58	MCS1	ac80	11.25	3.255	14.51	-	-	23.98
5530	106	MCS1	ac80	12.71	3.255	15.97	-	-	23.98
5610	122	MCS1	ac80	12.64	3.255	15.90	-	-	23.98
5690	138	MCS1	ac80	12.73	3.255	15.98	-	-	23.98
5775	155	MCS1	ac80	12.45	3.255	15.71	-	-	30.00
5855	171	MCS1	ac80	12.71	3.255	15.96	-5.60	10.36	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Measured Power [dBm]	Duty Cyle Factor (dB)	Total Power (dBm)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5250	50	MCS0	ac160	9.30	2.041	11.34	-	-	23.98
5570	114	MCS0	ac160	9.85	2.041	11.89	-	-	23.98
5815	163	MCS0	ac160	12.12	2.041	14.16	-5.60	8.56	EIRP ≤ 30dBm

[MIMO(ANT2)]

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Measured Power [dBm]	Duty Cyle Factor (dB)	Total Power (dBm)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	18M	a	15.37	0.755	16.12	-	-	23.98
5200	40	18M	a	15.44	0.755	16.19	-	-	23.98
5240	48	18M	a	15.70	0.755	16.45	-	-	23.98
5260	52	18M	a	15.83	0.755	16.59	-	-	23.76
5280	56	18M	a	15.72	0.755	16.48	-	-	23.76
5320	64	18M	a	15.66	0.755	16.42	-	-	23.80
5500	100	18M	a	15.61	0.755	16.37	-	-	23.76
5580	116	18M	a	15.87	0.755	16.62	-	-	23.82
5720	144	18M	a	15.74	0.755	16.49	-	-	23.83
5745	149	18M	a	15.37	0.755	16.13	-	-	30.00
5785	157	18M	a	15.67	0.755	16.43	-	-	30.00
5825	165	18M	a	15.76	0.755	16.52	-	-	30.00
5845	169	18M	a	15.58	0.755	16.33	-7.90	8.43	EIRP ≤ 30dBm
5865	173	18M	a	15.63	0.755	16.38	-7.90	8.48	EIRP ≤ 30dBm
5885	177	18M	a	15.68	0.755	16.43	-7.90	8.53	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Measured Power [dBm]	Duty Cyle Factor (dB)	Total Power (dBm)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	MCS4	n20	14.82	1.474	16.29	-	-	23.98
5200	40	MCS4	n20	14.94	1.474	16.41	-	-	23.98
5240	48	MCS4	n20	15.14	1.474	16.62	-	-	23.98
5260	52	MCS4	n20	15.12	1.474	16.59	-	-	23.98
5280	56	MCS4	n20	15.02	1.474	16.50	-	-	23.98
5320	64	MCS4	n20	14.96	1.474	16.44	-	-	23.98
5500	100	MCS4	n20	14.93	1.474	16.41	-	-	23.98
5580	116	MCS4	n20	15.14	1.474	16.61	-	-	23.98
5720	144	MCS4	n20	15.04	1.474	16.52	-	-	23.98
5745	149	MCS4	n20	14.65	1.474	16.13	-	-	30.00
5785	157	MCS4	n20	14.95	1.474	16.43	-	-	30.00
5825	165	MCS4	n20	15.08	1.474	16.56	-	-	30.00
5845	169	MCS4	n20	14.85	1.474	16.33	-7.90	8.43	EIRP ≤ 30dBm
5865	173	MCS4	n20	14.90	1.474	16.37	-7.90	8.47	EIRP ≤ 30dBm
5885	177	MCS4	n20	14.92	1.474	16.40	-7.90	8.50	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Measured Power [dBm]	Duty Cyle Factor (dB)	Total Power (dBm)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	MCS4	ac20	14.89	1.513	16.40	-	-	23.98
5200	40	MCS4	ac20	14.94	1.513	16.45	-	-	23.98
5240	48	MCS4	ac20	15.17	1.513	16.69	-	-	23.98
5260	52	MCS4	ac20	15.09	1.513	16.61	-	-	23.98
5280	56	MCS4	ac20	15.00	1.513	16.51	-	-	23.98
5320	64	MCS4	ac20	14.92	1.513	16.44	-	-	23.98
5500	100	MCS4	ac20	14.89	1.513	16.40	-	-	23.98
5580	116	MCS4	ac20	15.16	1.513	16.67	-	-	23.98
5720	144	MCS4	ac20	15.01	1.513	16.53	-	-	23.98
5745	149	MCS4	ac20	14.65	1.513	16.16	-	-	30.00
5785	157	MCS4	ac20	14.90	1.513	16.42	-	-	30.00
5825	165	MCS4	ac20	15.00	1.513	16.52	-	-	30.00
5845	169	MCS4	ac20	14.87	1.513	16.38	-7.90	8.48	EIRP ≤ 30dBm
5865	173	MCS4	ac20	14.89	1.513	16.40	-7.90	8.50	EIRP ≤ 30dBm
5885	177	MCS4	ac20	14.92	1.513	16.43	-7.90	8.53	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Measured Power [dBm]	Duty Cyle Factor (dB)	Total Power (dBm)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5190	38	MCS1	n40	14.32	1.181	15.51	-	-	23.98
5230	46	MCS1	n40	15.36	1.181	16.54	-	-	23.98
5270	54	MCS1	n40	15.52	1.181	16.70	-	-	23.98
5310	62	MCS1	n40	13.99	1.181	15.17	-	-	23.98
5510	102	MCS1	n40	13.98	1.181	15.16	-	-	23.98
5550	110	MCS1	n40	15.30	1.181	16.48	-	-	23.98
5710	142	MCS1	n40	15.18	1.181	16.36	-	-	23.98
5755	151	MCS1	n40	14.67	1.181	15.85	-	-	30.00
5795	159	MCS1	n40	14.71	1.181	15.89	-	-	30.00
5835	167	MCS1	n40	14.98	1.181	16.16	-7.90	8.26	EIRP ≤ 30dBm
5875	175	MCS1	n40	14.80	1.181	15.98	-7.90	8.08	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Measured Power [dBm]	Duty Cyle Factor (dB)	Total Power (dBm)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5190	38	MCS3	ac40	13.10	2.447	15.55	-	-	23.98
5230	46	MCS3	ac40	14.17	2.447	16.62	-	-	23.98
5270	54	MCS3	ac40	14.43	2.447	16.88	-	-	23.98
5310	62	MCS3	ac40	12.76	2.447	15.21	-	-	23.98
5510	102	MCS3	ac40	13.18	2.447	15.63	-	-	23.98
5550	110	MCS3	ac40	14.16	2.447	16.60	-	-	23.98
5710	142	MCS3	ac40	14.44	2.447	16.89	-	-	23.98
5755	151	MCS3	ac40	14.41	2.447	16.86	-	-	30.00
5795	159	MCS3	ac40	14.49	2.447	16.94	-	-	30.00
5835	167	MCS3	ac40	14.20	2.447	16.65	-7.90	8.75	EIRP ≤ 30dBm
5875	175	MCS3	ac40	13.59	2.447	16.04	-7.90	8.14	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Measured Power [dBm]	Duty Cyle Factor (dB)	Total Power (dBm)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5210	42	MCS1	ac80	11.63	3.255	14.89	-	-	23.98
5290	58	MCS1	ac80	11.10	3.255	14.36	-	-	23.98
5530	106	MCS1	ac80	12.73	3.255	15.98	-	-	23.98
5610	122	MCS1	ac80	12.68	3.255	15.93	-	-	23.98
5690	138	MCS1	ac80	12.72	3.255	15.98	-	-	23.98
5775	155	MCS1	ac80	12.51	3.255	15.77	-	-	30.00
5855	171	MCS1	ac80	12.50	3.255	15.76	-7.90	7.86	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Measured Power [dBm]	Duty Cyle Factor (dB)	Total Power (dBm)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5250	50	MCS0	ac160	8.86	2.041	10.90	-	-	23.98
5570	114	MCS0	ac160	9.82	2.041	11.86	-	-	23.98
5815	163	MCS0	ac160	12.03	2.041	14.07	-7.90	6.17	EIRP ≤ 30dBm

[MIMO(ANT1+ANT2)]

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Ant.1 Measured Power [dBm] + Duty Cycle Factor[dB]	Ant.2 Measured Power [dBm] + Duty Cycle Factor[dB]	MIMO Total Power [dBm]	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	18M	a	16.42	16.12	19.28	-	-	23.98
5200	40	18M	a	16.43	16.19	19.32	-	-	23.98
5240	48	18M	a	16.53	16.45	19.50	-	-	23.98
5260	52	18M	a	16.47	16.59	19.54	-	-	23.76
5280	56	18M	a	16.40	16.48	19.45	-	-	23.76
5320	64	18M	a	16.35	16.42	19.40	-	-	23.79
5500	100	18M	a	16.22	16.37	19.31	-	-	23.76
5580	116	18M	a	16.44	16.62	19.54	-	-	23.82
5720	144	18M	a	16.61	16.49	19.56	-	-	23.76
5745	149	18M	a	16.38	16.13	19.27	-	-	30.00
5785	157	18M	a	16.37	16.43	19.41	-	-	30.00
5825	165	18M	a	16.78	16.52	19.66	-	-	30.00
5845	169	18M	a	16.57	16.33	19.46	-3.66	15.80	EIRP ≤ 30dBm
5865	173	18M	a	16.31	16.38	19.36	-3.66	15.70	EIRP ≤ 30dBm
5885	177	18M	a	16.30	16.43	19.38	-3.66	15.71	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Ant.1 Measured Power [dBm] + Duty Cycle Factor[dB]	Ant.2 Measured Power [dBm] + Duty Cycle Factor[dB]	MIMO Total Power [dBm]	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	MCS4	n20	16.38	16.29	19.35	-	-	23.98
5200	40	MCS4	n20	16.37	16.41	19.40	-	-	23.98
5240	48	MCS4	n20	16.49	16.62	19.57	-	-	23.98
5260	52	MCS4	n20	16.39	16.59	19.50	-	-	23.98
5280	56	MCS4	n20	16.34	16.5	19.43	-	-	23.98
5320	64	MCS4	n20	16.27	16.44	19.37	-	-	23.98
5500	100	MCS4	n20	16.27	16.41	19.35	-	-	23.98
5580	116	MCS4	n20	16.48	16.61	19.56	-	-	23.98
5720	144	MCS4	n20	16.68	16.52	19.61	-	-	23.98
5745	149	MCS4	n20	16.43	16.13	19.29	-	-	30.00
5785	157	MCS4	n20	16.40	16.43	19.42	-	-	30.00
5825	165	MCS4	n20	16.82	16.56	19.70	-	-	30.00
5845	169	MCS4	n20	16.55	16.33	19.45	-3.66	15.79	EIRP ≤ 30dBm
5865	173	MCS4	n20	16.27	16.37	19.33	-3.66	15.67	EIRP ≤ 30dBm
5885	177	MCS4	n20	16.22	16.4	19.32	-3.66	15.66	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Ant.1 Measured Power [dBm] + Duty Cycle Factor[dB]	Ant.2 Measured Power [dBm] + Duty Cycle Factor[dB]	MIMO Total Power [dBm]	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	MCS4	ac20	16.48	16.40	19.45	-	-	23.98
5200	40	MCS4	ac20	16.49	16.45	19.48	-	-	23.98
5240	48	MCS4	ac20	16.57	16.69	19.64	-	-	23.98
5260	52	MCS4	ac20	16.49	16.61	19.56	-	-	23.98
5280	56	MCS4	ac20	16.41	16.51	19.47	-	-	23.98
5320	64	MCS4	ac20	16.37	16.44	19.42	-	-	23.98
5500	100	MCS4	ac20	16.38	16.40	19.40	-	-	23.98
5580	116	MCS4	ac20	16.59	16.67	19.64	-	-	23.98
5720	144	MCS4	ac20	16.79	16.53	19.67	-	-	23.98
5745	149	MCS4	ac20	16.43	16.16	19.31	-	-	30.00
5785	157	MCS4	ac20	16.41	16.42	19.43	-	-	30.00
5825	165	MCS4	ac20	16.83	16.52	19.69	-	-	30.00
5845	169	MCS4	ac20	16.60	16.38	19.50	-3.66	15.84	EIRP ≤ 30dBm
5865	173	MCS4	ac20	16.30	16.40	19.36	-3.66	15.70	EIRP ≤ 30dBm
5885	177	MCS4	ac20	16.31	16.43	19.38	-3.66	15.72	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Ant.1 Measured Power [dBm] + Duty Cycle Factor[dB]	Ant.2 Measured Power [dBm] + Duty Cycle Factor[dB]	MIMO Total Power [dBm]	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5190	38	MCS1	n40	15.73	15.51	18.63	-	-	23.98
5230	46	MCS1	n40	16.86	16.54	19.71	-	-	23.98
5270	54	MCS1	n40	16.60	16.70	19.66	-	-	23.98
5310	62	MCS1	n40	15.08	15.17	18.14	-	-	23.98
5510	102	MCS1	n40	14.92	15.16	18.05	-	-	23.98
5550	110	MCS1	n40	16.65	16.48	19.58	-	-	23.98
5710	142	MCS1	n40	16.50	16.36	19.44	-	-	23.98
5755	151	MCS1	n40	16.12	15.85	19.00	-	-	30.00
5795	159	MCS1	n40	15.86	15.89	18.89	-	-	30.00
5835	167	MCS1	n40	16.42	16.16	19.30	-3.66	15.64	EIRP ≤ 30dBm
5875	175	MCS1	n40	15.49	15.98	18.75	-3.66	15.09	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Ant.1 Measured Power [dBm] + Duty Cycle Factor[dB]	Ant.2 Measured Power [dBm] + Duty Cycle Factor[dB]	MIMO Total Power [dBm]	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5190	38	MCS3	ac40	15.76	15.55	18.67	-	-	23.98
5230	46	MCS3	ac40	16.90	16.62	19.77	-	-	23.98
5270	54	MCS3	ac40	16.57	16.88	19.74	-	-	23.98
5310	62	MCS3	ac40	15.02	15.21	18.13	-	-	23.98
5510	102	MCS3	ac40	15.50	15.63	18.58	-	-	23.98
5550	110	MCS3	ac40	16.59	16.60	19.61	-	-	23.98
5710	142	MCS3	ac40	16.97	16.89	19.94	-	-	23.98
5755	151	MCS3	ac40	16.98	16.86	19.93	-	-	30.00
5795	159	MCS3	ac40	16.76	16.94	19.86	-	-	30.00
5835	167	MCS3	ac40	16.88	16.65	19.78	-3.66	16.11	EIRP ≤ 30dBm
5875	175	MCS3	ac40	15.58	16.04	18.83	-3.66	15.16	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Ant.1 Measured Power [dBm] + Duty Cycle Factor[dB]	Ant.2 Measured Power [dBm] + Duty Cycle Factor[dB]	MIMO Total Power [dBm]	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5210	42	MCS1	ac80	15.36	14.89	18.14	-	-	23.98
5290	58	MCS1	ac80	14.51	14.36	17.45	-	-	23.98
5530	106	MCS1	ac80	15.97	15.98	18.99	-	-	23.98
5610	122	MCS1	ac80	15.90	15.93	18.93	-	-	23.98
5690	138	MCS1	ac80	15.98	15.98	18.99	-	-	23.98
5775	155	MCS1	ac80	15.71	15.77	18.75	-	-	30.00
5855	171	MCS1	ac80	15.96	15.76	18.87	-3.66	15.21	EIRP ≤ 30dBm

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Ant.1 Measured Power [dBm] + Duty Cycle Factor[dB]	Ant.2 Measured Power [dBm] + Duty Cycle Factor[dB]	MIMO Total Power [dBm]	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5250	50	MCS0	ac160	11.34	10.90	14.14	-	-	23.98
5570	114	MCS0	ac160	11.89	11.86	14.89	-	-	23.98
5815	163	MCS0	ac160	14.16	14.07	17.13	-3.66	13.46	EIRP ≤ 30dBm

10.5 POWER SPECTRAL DENSITY

[MIMO(ANT1)]

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Mea. PSD (dBm/MHz)	Duty Cyle Factor (dB)	Total PSD (dBm/MHz)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	18M	a	4.919	0.755	5.674	-	-	11 dBm/MHz
5200	40	18M	a	4.695	0.755	5.450	-	-	11 dBm/MHz
5240	48	18M	a	4.737	0.755	5.492	-	-	11 dBm/MHz
5260	52	18M	a	4.744	0.755	5.499	-	-	11 dBm/MHz
5280	56	18M	a	4.728	0.755	5.483	-	-	11 dBm/MHz
5320	64	18M	a	5.009	0.755	5.764	-	-	11 dBm/MHz
5500	100	18M	a	4.669	0.755	5.424	-	-	11 dBm/MHz
5580	116	18M	a	5.043	0.755	5.798	-	-	11 dBm/MHz
5720	144	18M	a	5.151	0.755	5.906	-	-	11 dBm/MHz
5745	149	18M	a	2.355	0.755	3.110	-	-	30 dBm/500kHz
5785	157	18M	a	2.190	0.755	2.945	-	-	30 dBm/500kHz
5825	165	18M	a	2.831	0.755	3.586	-	-	30 dBm/500kHz
5845	169	18M	a	5.189	0.755	5.944	-5.60	0.344	14 dBm/EIRP
5865	173	18M	a	4.830	0.755	5.585	-5.60	-0.015	14 dBm/EIRP
5885	177	18M	a	4.959	0.755	5.714	-5.60	0.114	14 dBm/EIRP

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Mea. PSD (dBm/MHz)	Duty Cyle Factor (dB)	Total PSD (dBm/MHz)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	MCS4	n20	3.629	1.474	5.103	-	-	11 dBm/MHz
5200	40	MCS4	n20	3.663	1.474	5.137	-	-	11 dBm/MHz
5240	48	MCS4	n20	3.944	1.474	5.418	-	-	11 dBm/MHz
5260	52	MCS4	n20	4.007	1.474	5.481	-	-	11 dBm/MHz
5280	56	MCS4	n20	3.904	1.474	5.378	-	-	11 dBm/MHz
5320	64	MCS4	n20	3.585	1.474	5.059	-	-	11 dBm/MHz
5500	100	MCS4	n20	3.739	1.474	5.213	-	-	11 dBm/MHz
5580	116	MCS4	n20	3.999	1.474	5.473	-	-	11 dBm/MHz
5720	144	MCS4	n20	4.587	1.474	6.061	-	-	11 dBm/MHz
5745	149	MCS4	n20	1.151	1.474	2.625	-	-	30 dBm/500kHz
5785	157	MCS4	n20	1.289	1.474	2.763	-	-	30 dBm/500kHz
5825	165	MCS4	n20	1.627	1.474	3.101	-	-	30 dBm/500kHz
5845	169	MCS4	n20	4.098	1.474	5.572	-5.60	-0.028	14 dBm/EIRP
5865	173	MCS4	n20	3.972	1.474	5.446	-5.60	-0.154	14 dBm/EIRP
5885	177	MCS4	n20	3.974	1.474	5.448	-5.60	-0.152	14 dBm/EIRP

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Mea. PSD (dBm/MHz)	Duty Cyle Factor (dB)	Total PSD (dBm/MHz)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	MCS4	ac20	3.857	1.513	5.370	-	-	11 dBm/MHz
5200	40	MCS4	ac20	4.131	1.513	5.644	-	-	11 dBm/MHz
5240	48	MCS4	ac20	3.866	1.513	5.379	-	-	11 dBm/MHz
5260	52	MCS4	ac20	3.740	1.513	5.253	-	-	11 dBm/MHz
5280	56	MCS4	ac20	3.853	1.513	5.366	-	-	11 dBm/MHz
5320	64	MCS4	ac20	3.801	1.513	5.314	-	-	11 dBm/MHz
5500	100	MCS4	ac20	3.706	1.513	5.219	-	-	11 dBm/MHz
5580	116	MCS4	ac20	3.888	1.513	5.401	-	-	11 dBm/MHz
5720	144	MCS4	ac20	4.179	1.513	5.692	-	-	11 dBm/MHz
5745	149	MCS4	ac20	1.262	1.513	2.775	-	-	30 dBm/500kHz
5785	157	MCS4	ac20	1.116	1.513	2.629	-	-	30 dBm/500kHz
5825	165	MCS4	ac20	1.650	1.513	3.163	-	-	30 dBm/500kHz
5845	169	MCS4	ac20	4.126	1.513	5.639	-5.60	0.039	14 dBm/EIRP
5865	173	MCS4	ac20	3.844	1.513	5.357	-5.60	-0.243	14 dBm/EIRP
5885	177	MCS4	ac20	4.226	1.513	5.739	-5.60	0.139	14 dBm/EIRP

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Mea. PSD (dBm/MHz)	Duty Cyle Factor (dB)	Total PSD (dBm/MHz)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5190	38	MCS1	n40	0.419	1.181	1.600	-	-	11 dBm/MHz
5230	46	MCS1	n40	1.614	1.181	2.795	-	-	11 dBm/MHz
5270	54	MCS1	n40	1.365	1.181	2.546	-	-	11 dBm/MHz
5310	62	MCS1	n40	0.273	1.181	1.454	-	-	11 dBm/MHz
5510	102	MCS1	n40	0.613	1.181	1.794	-	-	11 dBm/MHz
5550	110	MCS1	n40	1.450	1.181	2.631	-	-	11 dBm/MHz
5710	142	MCS1	n40	1.355	1.181	2.536	-	-	11 dBm/MHz
5755	151	MCS1	n40	-1.957	1.181	-0.776	-	-	30 dBm/500kHz
5795	159	MCS1	n40	-2.183	1.181	-1.002	-	-	30 dBm/500kHz
5835	167	MCS1	n40	1.620	1.181	2.801	-5.60	-2.799	14 dBm/EIRP
5875	175	MCS1	n40	0.526	1.181	1.707	-5.60	-3.893	14 dBm/EIRP

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Mea. PSD (dBm/MHz)	Duty Cyle Factor (dB)	Total PSD (dBm/MHz)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5190	38	MCS3	ac40	-0.275	2.447	2.172	-	-	11 dBm/MHz
5230	46	MCS3	ac40	0.370	2.447	2.817	-	-	11 dBm/MHz
5270	54	MCS3	ac40	0.405	2.447	2.852	-	-	11 dBm/MHz
5310	62	MCS3	ac40	-0.674	2.447	1.773	-	-	11 dBm/MHz
5510	102	MCS3	ac40	-0.805	2.447	1.642	-	-	11 dBm/MHz
5550	110	MCS3	ac40	0.241	2.447	2.688	-	-	11 dBm/MHz
5710	142	MCS3	ac40	0.646	2.447	3.093	-	-	11 dBm/MHz
5755	151	MCS3	ac40	-1.842	2.447	0.605	-	-	30 dBm/500kHz
5795	159	MCS3	ac40	-2.251	2.447	0.196	-	-	30 dBm/500kHz
5835	167	MCS3	ac40	0.463	2.447	2.910	-5.60	-2.690	14 dBm/EIRP
5875	175	MCS3	ac40	-0.387	2.447	2.060	-5.60	-3.540	14 dBm/EIRP

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Mea. PSD (dBm/MHz)	Duty Cyle Factor (dB)	Total PSD (dBm/MHz)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5210	42	MCS1	ac80	-4.385	3.255	-1.130	-	-	11 dBm/MHz
5290	58	MCS1	ac80	-5.418	3.255	-2.163	-	-	11 dBm/MHz
5530	106	MCS1	ac80	-4.401	3.255	-1.146	-	-	11 dBm/MHz
5610	122	MCS1	ac80	-4.423	3.255	-1.168	-	-	11 dBm/MHz
5690	138	MCS1	ac80	-4.116	3.255	-0.861	-	-	11 dBm/MHz
5775	155	MCS1	ac80	-7.523	3.255	-4.268	-	-	30 dBm/500kHz
5855	171	MCS1	ac80	-4.571	3.255	-1.316	-5.60	-6.916	14 dBm/EIRP

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Mea. PSD (dBm/MHz)	Duty Cyle Factor (dB)	Total PSD (dBm/MHz)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5250	50	MCS0	ac160	-11.109	2.041	-9.068	-	-	11 dBm/MHz
5570	114	MCS0	ac160	-10.531	2.041	-8.490	-	-	11 dBm/MHz
5815	163	MCS0	ac160	-8.246	2.041	-6.205	-5.60	-11.805	14 dBm/EIRP

[MIMO(ANT2)]

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Mea. PSD (dBm/MHz)	Duty Cyle Factor (dB)	Total PSD (dBm/MHz)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	18M	a	4.550	0.755	5.305	-	-	11 dBm/MHz
5200	40	18M	a	4.736	0.755	5.491	-	-	11 dBm/MHz
5240	48	18M	a	5.338	0.755	6.093	-	-	11 dBm/MHz
5260	52	18M	a	4.873	0.755	5.628	-	-	11 dBm/MHz
5280	56	18M	a	4.902	0.755	5.657	-	-	11 dBm/MHz
5320	64	18M	a	4.883	0.755	5.638	-	-	11 dBm/MHz
5500	100	18M	a	4.943	0.755	5.698	-	-	11 dBm/MHz
5580	116	18M	a	5.171	0.755	5.926	-	-	11 dBm/MHz
5720	144	18M	a	4.916	0.755	5.671	-	-	11 dBm/MHz
5745	149	18M	a	1.840	0.755	2.595	-	-	30 dBm/500kHz
5785	157	18M	a	2.061	0.755	2.816	-	-	30 dBm/500kHz
5825	165	18M	a	1.990	0.755	2.745	-	-	30 dBm/500kHz
5845	169	18M	a	4.538	0.755	5.293	-7.90	-2.607	14 dBm/EIRP
5865	173	18M	a	5.017	0.755	5.772	-7.90	-2.128	14 dBm/EIRP
5885	177	18M	a	4.792	0.755	5.547	-7.90	-2.353	14 dBm/EIRP

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Mea. PSD (dBm/MHz)	Duty Cyle Factor (dB)	Total PSD (dBm/MHz)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	MCS4	n20	3.954	1.474	5.428	-	-	11 dBm/MHz
5200	40	MCS4	n20	3.911	1.474	5.385	-	-	11 dBm/MHz
5240	48	MCS4	n20	3.921	1.474	5.395	-	-	11 dBm/MHz
5260	52	MCS4	n20	4.002	1.474	5.476	-	-	11 dBm/MHz
5280	56	MCS4	n20	3.960	1.474	5.434	-	-	11 dBm/MHz
5320	64	MCS4	n20	3.826	1.474	5.300	-	-	11 dBm/MHz
5500	100	MCS4	n20	3.745	1.474	5.219	-	-	11 dBm/MHz
5580	116	MCS4	n20	4.284	1.474	5.758	-	-	11 dBm/MHz
5720	144	MCS4	n20	4.310	1.474	5.784	-	-	11 dBm/MHz
5745	149	MCS4	n20	0.770	1.474	2.244	-	-	30 dBm/500kHz
5785	157	MCS4	n20	1.126	1.474	2.600	-	-	30 dBm/500kHz
5825	165	MCS4	n20	1.421	1.474	2.895	-	-	30 dBm/500kHz
5845	169	MCS4	n20	3.515	1.474	4.989	-7.90	-2.911	14 dBm/EIRP
5865	173	MCS4	n20	3.803	1.474	5.277	-7.90	-2.623	14 dBm/EIRP
5885	177	MCS4	n20	3.731	1.474	5.205	-7.90	-2.695	14 dBm/EIRP

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Mea. PSD (dBm/MHz)	Duty Cyle Factor (dB)	Total PSD (dBm/MHz)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	MCS4	ac20	4.061	1.513	5.574	-	-	11 dBm/MHz
5200	40	MCS4	ac20	4.137	1.513	5.650	-	-	11 dBm/MHz
5240	48	MCS4	ac20	4.050	1.513	5.563	-	-	11 dBm/MHz
5260	52	MCS4	ac20	4.239	1.513	5.752	-	-	11 dBm/MHz
5280	56	MCS4	ac20	3.999	1.513	5.512	-	-	11 dBm/MHz
5320	64	MCS4	ac20	3.868	1.513	5.381	-	-	11 dBm/MHz
5500	100	MCS4	ac20	3.820	1.513	5.333	-	-	11 dBm/MHz
5580	116	MCS4	ac20	4.343	1.513	5.856	-	-	11 dBm/MHz
5720	144	MCS4	ac20	3.982	1.513	5.495	-	-	11 dBm/MHz
5745	149	MCS4	ac20	1.265	1.513	2.778	-	-	30 dBm/500kHz
5785	157	MCS4	ac20	1.592	1.513	3.105	-	-	30 dBm/500kHz
5825	165	MCS4	ac20	1.199	1.513	2.712	-	-	30 dBm/500kHz
5845	169	MCS4	ac20	3.709	1.513	5.222	-7.90	-2.678	14 dBm/EIRP
5865	173	MCS4	ac20	3.862	1.513	5.375	-7.90	-2.525	14 dBm/EIRP
5885	177	MCS4	ac20	3.987	1.513	5.500	-7.90	-2.400	14 dBm/EIRP

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Mea. PSD (dBm/MHz)	Duty Cyle Factor (dB)	Total PSD (dBm/MHz)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5190	38	MCS1	n40	0.397	1.181	1.578	-	-	11 dBm/MHz
5230	46	MCS1	n40	1.197	1.181	2.378	-	-	11 dBm/MHz
5270	54	MCS1	n40	1.326	1.181	2.507	-	-	11 dBm/MHz
5310	62	MCS1	n40	0.520	1.181	1.701	-	-	11 dBm/MHz
5510	102	MCS1	n40	0.431	1.181	1.612	-	-	11 dBm/MHz
5550	110	MCS1	n40	1.066	1.181	2.247	-	-	11 dBm/MHz
5710	142	MCS1	n40	1.501	1.181	2.682	-	-	11 dBm/MHz
5755	151	MCS1	n40	-2.082	1.181	-0.901	-	-	30 dBm/500kHz
5795	159	MCS1	n40	-2.289	1.181	-1.108	-	-	30 dBm/500kHz
5835	167	MCS1	n40	1.765	1.181	2.946	-7.90	-4.954	14 dBm/EIRP
5875	175	MCS1	n40	0.795	1.181	1.976	-7.90	-5.924	14 dBm/EIRP

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Mea. PSD (dBm/MHz)	Duty Cyle Factor (dB)	Total PSD (dBm/MHz)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5190	38	MCS3	ac40	-0.342	2.447	2.105	-	-	11 dBm/MHz
5230	46	MCS3	ac40	0.175	2.447	2.622	-	-	11 dBm/MHz
5270	54	MCS3	ac40	0.182	2.447	2.629	-	-	11 dBm/MHz
5310	62	MCS3	ac40	-0.774	2.447	1.673	-	-	11 dBm/MHz
5510	102	MCS3	ac40	-0.715	2.447	1.732	-	-	11 dBm/MHz
5550	110	MCS3	ac40	0.423	2.447	2.870	-	-	11 dBm/MHz
5710	142	MCS3	ac40	0.184	2.447	2.631	-	-	11 dBm/MHz
5755	151	MCS3	ac40	-1.983	2.447	0.464	-	-	30 dBm/500kHz
5795	159	MCS3	ac40	-1.974	2.447	0.473	-	-	30 dBm/500kHz
5835	167	MCS3	ac40	0.026	2.447	2.473	-7.90	-5.427	14 dBm/EIRP
5875	175	MCS3	ac40	-0.110	2.447	2.337	-7.90	-5.563	14 dBm/EIRP

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Mea. PSD (dBm/MHz)	Duty Cyle Factor (dB)	Total PSD (dBm/MHz)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5210	42	MCS1	ac80	-5.552	3.255	-2.297	-	-	11 dBm/MHz
5290	58	MCS1	ac80	-5.317	3.255	-2.062	-	-	11 dBm/MHz
5530	106	MCS1	ac80	-4.453	3.255	-1.198	-	-	11 dBm/MHz
5610	122	MCS1	ac80	-4.381	3.255	-1.126	-	-	11 dBm/MHz
5690	138	MCS1	ac80	-4.256	3.255	-1.001	-	-	11 dBm/MHz
5775	155	MCS1	ac80	-7.469	3.255	-4.214	-	-	30 dBm/500kHz
5855	171	MCS1	ac80	-4.867	3.255	-1.612	-7.90	-9.512	14 dBm/EIRP

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	Mea. PSD (dBm/MHz)	Duty Cyle Factor (dB)	Total PSD (dBm/MHz)	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5250	50	MCS0	ac160	-11.485	2.041	-9.444	-	-	11 dBm/MHz
5570	114	MCS0	ac160	-10.579	2.041	-8.538	-	-	11 dBm/MHz
5815	163	MCS0	ac160	-8.047	2.041	-6.006	-7.90	-13.906	14 dBm/EIRP

[MIMO(ANT1+ANT2)]

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	18M	a	5.674	5.305	8.504	-	-	11 dBm/MHz
5200	40	18M	a	5.450	5.491	8.481	-	-	11 dBm/MHz
5240	48	18M	a	5.492	6.093	8.814	-	-	11 dBm/MHz
5260	52	18M	a	5.499	5.628	8.575	-	-	11 dBm/MHz
5280	56	18M	a	5.483	5.657	8.582	-	-	11 dBm/MHz
5320	64	18M	a	5.764	5.638	8.712	-	-	11 dBm/MHz
5500	100	18M	a	5.424	5.698	8.574	-	-	11 dBm/MHz
5580	116	18M	a	5.798	5.926	8.873	-	-	11 dBm/MHz
5720	144	18M	a	5.906	5.671	8.801	-	-	11 dBm/MHz
5745	149	18M	a	3.110	2.595	5.871	-	-	30 dBm/500kHz
5785	157	18M	a	2.945	2.816	5.892	-	-	30 dBm/500kHz
5825	165	18M	a	3.586	2.745	6.197	-	-	30 dBm/500kHz
5845	169	18M	a	5.944	5.293	8.641	-3.66	4.978	14 dBm/EIRP
5865	173	18M	a	5.585	5.772	8.690	-3.66	5.026	14 dBm/EIRP
5885	177	18M	a	5.714	5.547	8.642	-3.66	4.978	14 dBm/EIRP

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	MCS4	n20	5.103	5.428	8.279	-	-	11 dBm/MHz
5200	40	MCS4	n20	5.137	5.385	8.274	-	-	11 dBm/MHz
5240	48	MCS4	n20	5.418	5.395	8.417	-	-	11 dBm/MHz
5260	52	MCS4	n20	5.481	5.476	8.489	-	-	11 dBm/MHz
5280	56	MCS4	n20	5.378	5.434	8.417	-	-	11 dBm/MHz
5320	64	MCS4	n20	5.059	5.300	8.192	-	-	11 dBm/MHz
5500	100	MCS4	n20	5.213	5.219	8.227	-	-	11 dBm/MHz
5580	116	MCS4	n20	5.473	5.758	8.629	-	-	11 dBm/MHz
5720	144	MCS4	n20	6.061	5.784	8.935	-	-	11 dBm/MHz
5745	149	MCS4	n20	2.625	2.244	5.449	-	-	30 dBm/500kHz
5785	157	MCS4	n20	2.763	2.600	5.693	-	-	30 dBm/500kHz
5825	165	MCS4	n20	3.101	2.895	6.010	-	-	30 dBm/500kHz
5845	169	MCS4	n20	5.572	4.989	8.301	-3.66	4.637	14 dBm/EIRP
5865	173	MCS4	n20	5.446	5.277	8.373	-3.66	4.709	14 dBm/EIRP
5885	177	MCS4	n20	5.448	5.205	8.339	-3.66	4.675	14 dBm/EIRP

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5180	36	MCS4	ac20	5.370	5.574	8.483	-	-	11 dBm/MHz
5200	40	MCS4	ac20	5.644	5.650	8.657	-	-	11 dBm/MHz
5240	48	MCS4	ac20	5.379	5.563	8.482	-	-	11 dBm/MHz
5260	52	MCS4	ac20	5.253	5.752	8.520	-	-	11 dBm/MHz
5280	56	MCS4	ac20	5.366	5.512	8.450	-	-	11 dBm/MHz
5320	64	MCS4	ac20	5.314	5.381	8.358	-	-	11 dBm/MHz
5500	100	MCS4	ac20	5.219	5.333	8.286	-	-	11 dBm/MHz
5580	116	MCS4	ac20	5.401	5.856	8.644	-	-	11 dBm/MHz
5720	144	MCS4	ac20	5.692	5.495	8.605	-	-	11 dBm/MHz
5745	149	MCS4	ac20	2.775	2.778	5.786	-	-	30 dBm/500kHz
5785	157	MCS4	ac20	2.629	3.105	5.883	-	-	30 dBm/500kHz
5825	165	MCS4	ac20	3.163	2.712	5.953	-	-	30 dBm/500kHz
5845	169	MCS4	ac20	5.639	5.222	8.445	-3.66	4.782	14 dBm/EIRP
5865	173	MCS4	ac20	5.357	5.375	8.376	-3.66	4.712	14 dBm/EIRP
5885	177	MCS4	ac20	5.739	5.500	8.631	-3.66	4.967	14 dBm/EIRP

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5190	38	MCS1	n40	1.600	1.578	4.599	-	-	11 dBm/MHz
5230	46	MCS1	n40	2.795	2.378	5.602	-	-	11 dBm/MHz
5270	54	MCS1	n40	2.546	2.507	5.537	-	-	11 dBm/MHz
5310	62	MCS1	n40	1.454	1.701	4.590	-	-	11 dBm/MHz
5510	102	MCS1	n40	1.794	1.612	4.714	-	-	11 dBm/MHz
5550	110	MCS1	n40	2.631	2.247	5.454	-	-	11 dBm/MHz
5710	142	MCS1	n40	2.536	2.682	5.620	-	-	11 dBm/MHz
5755	151	MCS1	n40	-0.776	-0.901	2.172	-	-	30 dBm/500kHz
5795	159	MCS1	n40	-1.002	-1.108	1.956	-	-	30 dBm/500kHz
5835	167	MCS1	n40	2.801	2.946	5.884	-3.66	2.221	14 dBm/EIRP
5875	175	MCS1	n40	1.707	1.976	4.854	-3.66	1.190	14 dBm/EIRP

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5190	38	MCS3	ac40	2.172	2.105	5.149	-	-	11 dBm/MHz
5230	46	MCS3	ac40	2.817	2.622	5.731	-	-	11 dBm/MHz
5270	54	MCS3	ac40	2.852	2.629	5.752	-	-	11 dBm/MHz
5310	62	MCS3	ac40	1.773	1.673	4.733	-	-	11 dBm/MHz
5510	102	MCS3	ac40	1.642	1.732	4.697	-	-	11 dBm/MHz
5550	110	MCS3	ac40	2.688	2.870	5.790	-	-	11 dBm/MHz
5710	142	MCS3	ac40	3.093	2.631	5.878	-	-	11 dBm/MHz
5755	151	MCS3	ac40	0.605	0.464	3.545	-	-	30 dBm/500kHz
5795	159	MCS3	ac40	0.196	0.473	3.347	-	-	30 dBm/500kHz
5835	167	MCS3	ac40	2.910	2.473	5.707	-3.66	2.043	14 dBm/EIRP
5875	175	MCS3	ac40	2.060	2.337	5.211	-3.66	1.547	14 dBm/EIRP

Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5210	42	MCS1	ac80	-1.130	-2.297	1.336	-	-	11 dBm/MHz
5290	58	MCS1	ac80	-2.163	-2.062	0.898	-	-	11 dBm/MHz
5530	106	MCS1	ac80	-1.146	-1.198	1.838	-	-	11 dBm/MHz
5610	122	MCS1	ac80	-1.168	-1.126	1.863	-	-	11 dBm/MHz
5690	138	MCS1	ac80	-0.861	-1.001	2.080	-	-	11 dBm/MHz
5775	155	MCS1	ac80	-4.268	-4.214	-1.231	-	-	30 dBm/500kHz
5855	171	MCS1	ac80	-1.316	-1.612	1.549	-3.66	-2.115	14 dBm/EIRP

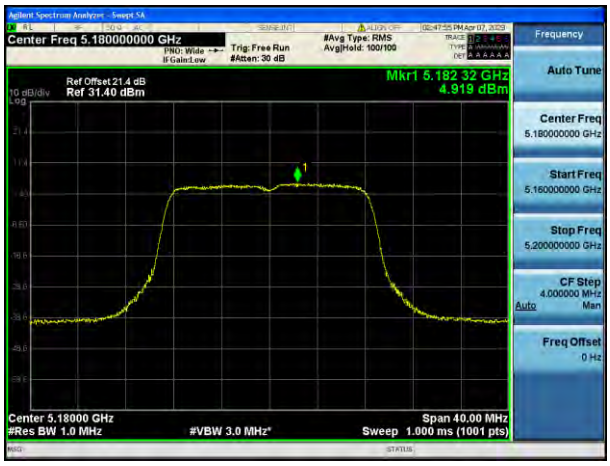
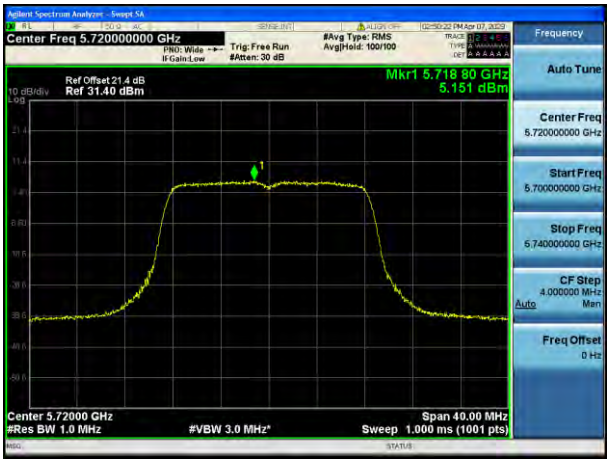
Frequency [MHz]	Channel No.	Worstcase Datarate	Mode(802.11)	ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Directional Gain	E.I.R.P (dBm)	Limit (dBm)
5250	50	MCS0	ac160	-9.068	-9.444	-6.241	-	-	11 dBm/MHz
5570	114	MCS0	ac160	-8.490	-8.538	-5.503	-	-	11 dBm/MHz
5815	163	MCS0	ac160	-6.205	-6.006	-3.094	-3.66	-6.758	14 dBm/EIRP

[Ant.1]

▣ Test Plots(802.11a)

Note:

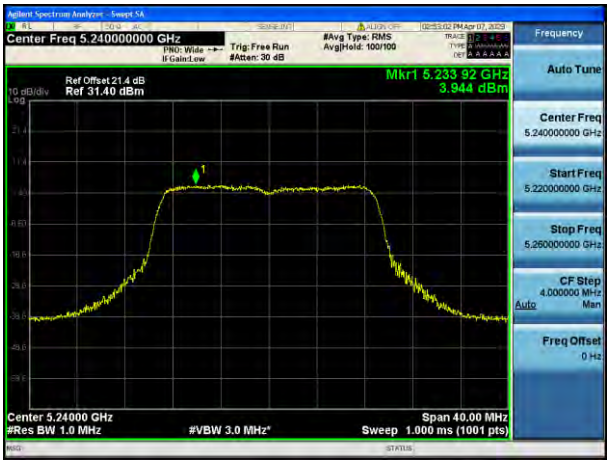
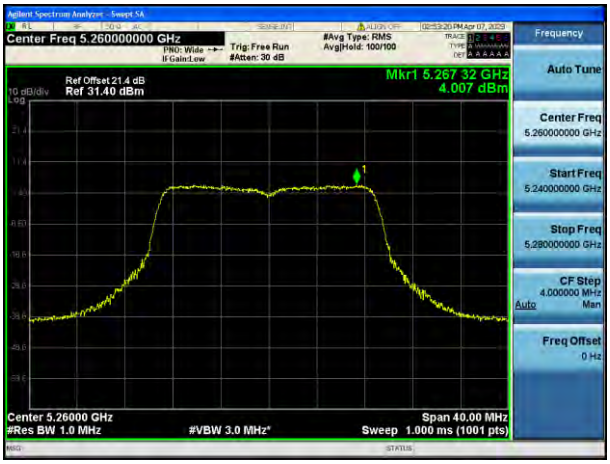
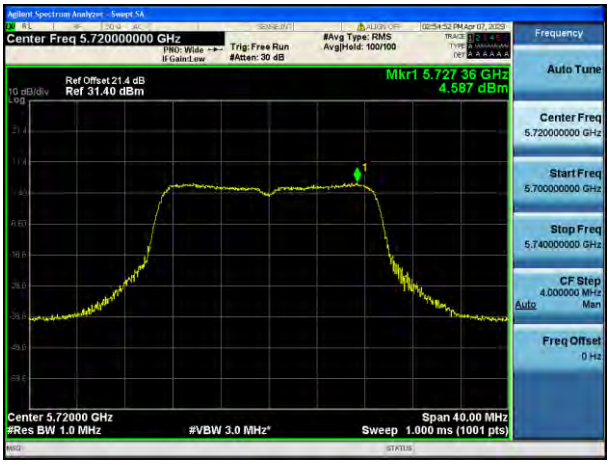
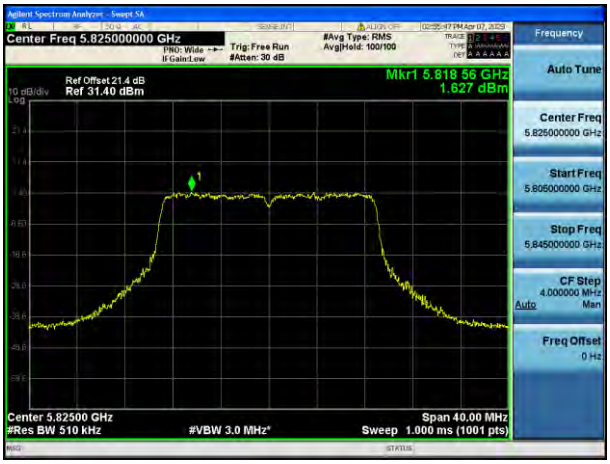
In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 36)	UNII 2A (Ch. 64)
	
UNII 2C (Ch. 144)	**UNII 3 (Ch. 165)**
	
UNII 4 (Ch. 169)	
	

▣ Test Plots(802.11n(HT20))

Note:

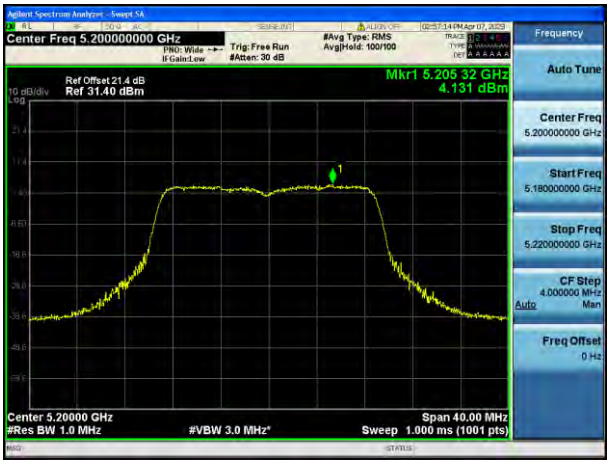
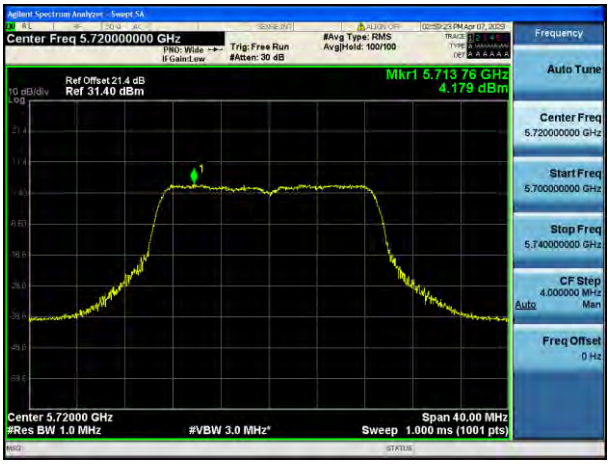
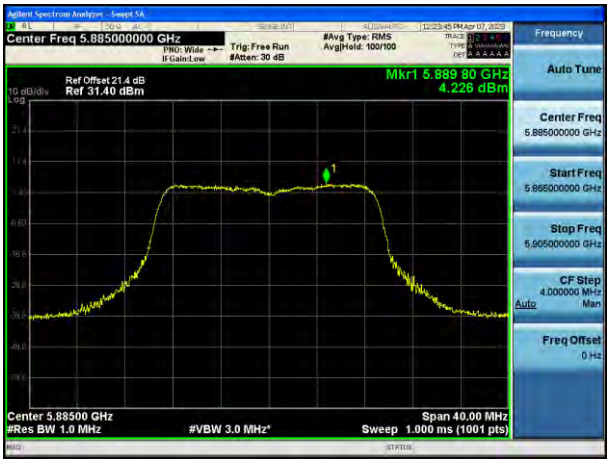
In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 48)	UNII 2A (Ch. 52)
	
UNII 2C (Ch. 144)	**UNII 3 (Ch. 165)**
	
UNII 4 (Ch. 169)	
	

▣ Test Plots(802.11ac(VHT20))

Note:

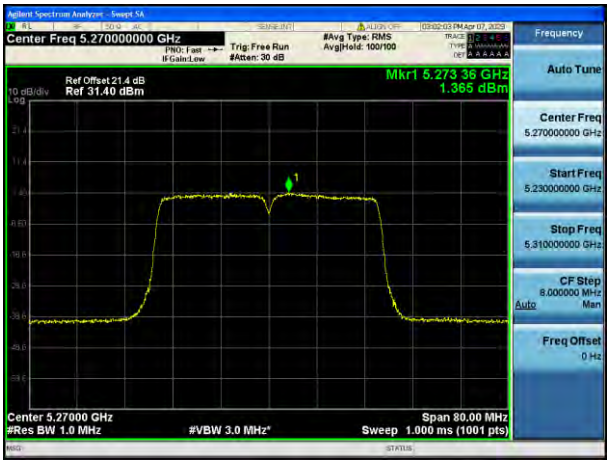
In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 40)	UNII 2A (Ch. 60)
	
UNII 2C (Ch. 144)	**UNII 3 (Ch. 165)**
	
UNII 4 (Ch. 177)	
	

▣ Test Plots(802.11n(HT40))

Note:

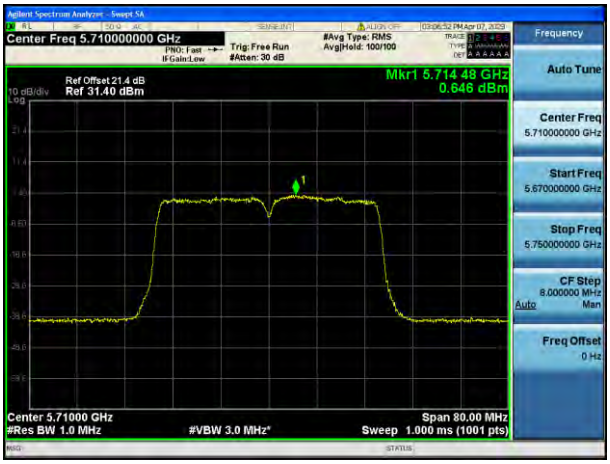
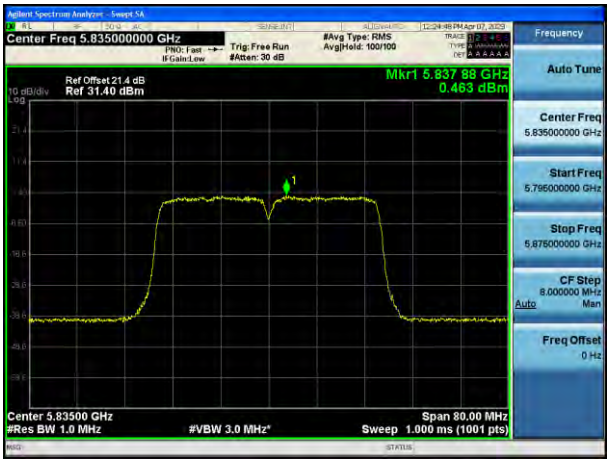
In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 46)	UNII 2A (Ch. 54)
	
UNII 2C (Ch. 110)	**UNII 3 (Ch. 151)**
	
UNII 4 (Ch. 167)	
	

▣ Test Plots(802.11ac(VHT40))

Note:

In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 46)	UNII 2A (Ch. 54)
	
UNII 2C (Ch. 142)	**UNII 3 (Ch. 151)**
	
UNII 4 (Ch. 167)	
	

▣ Test Plots(802.11ac(VHT80))

Note:

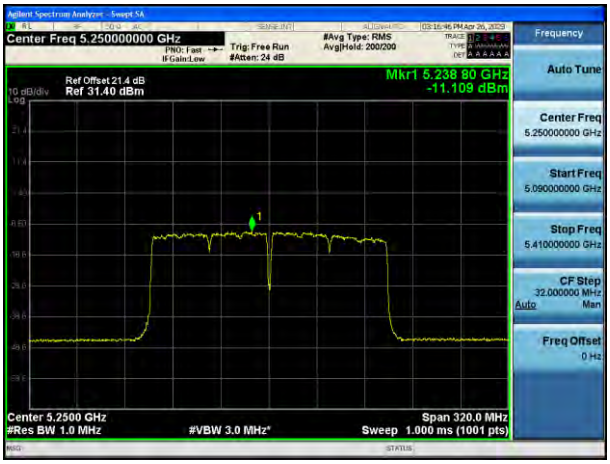
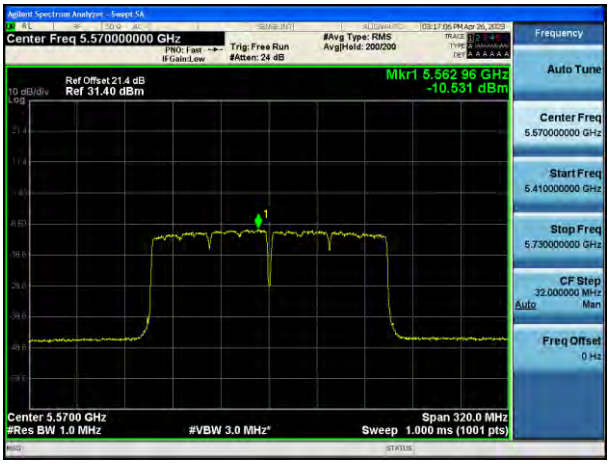
In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 42)	UNII 2A (Ch. 58)
	
UNII 2C (Ch. 138)	**UNII 3 (Ch. 155)**
	
UNII 4 (Ch. 171)	
	

▣ Test Plots(802.11ac(VHT160))

Note:

In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 50)	UNII 2C (Ch. 114)
	

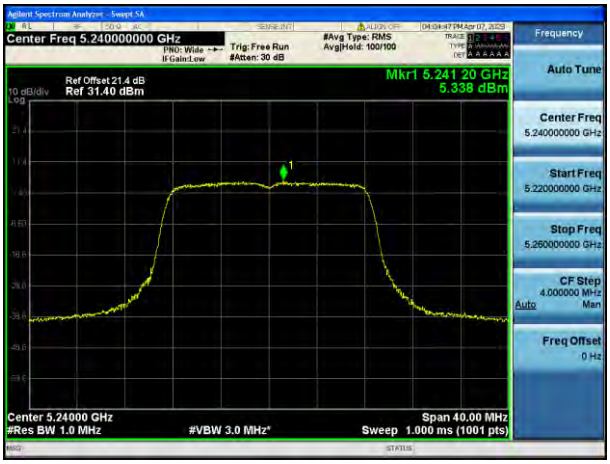
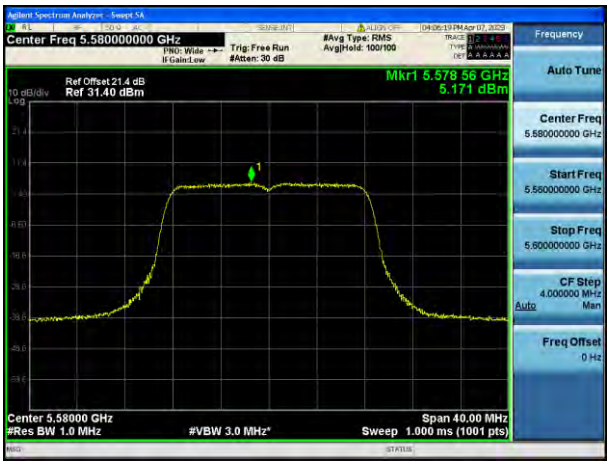
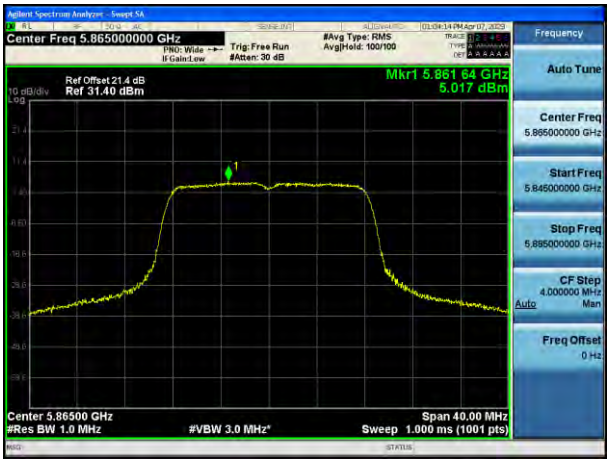
UNII 4 (Ch. 163)


[Ant.2]

▣ Test Plots(802.11a)

Note:

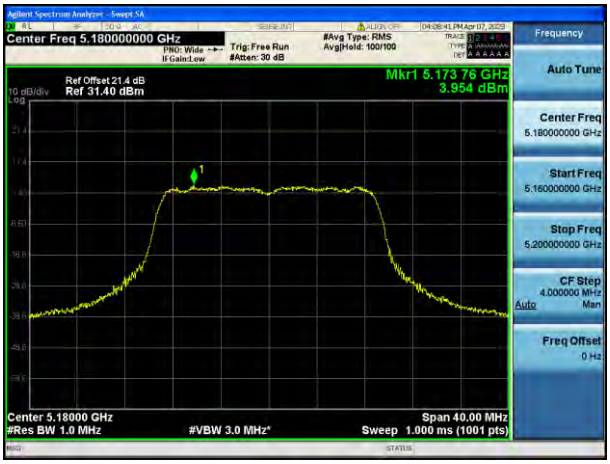
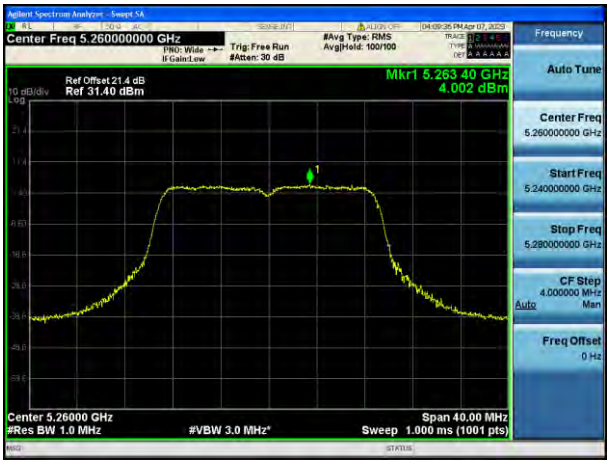
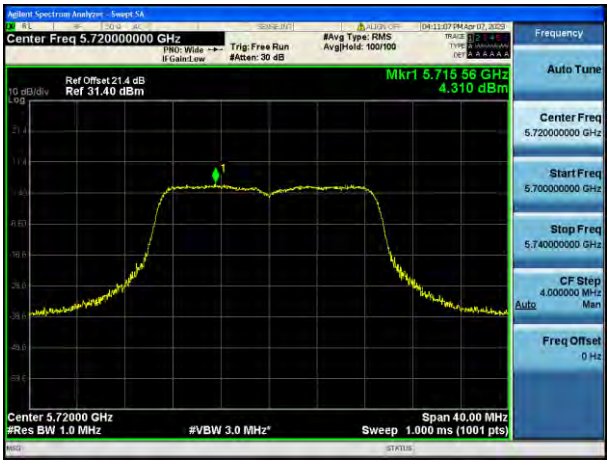
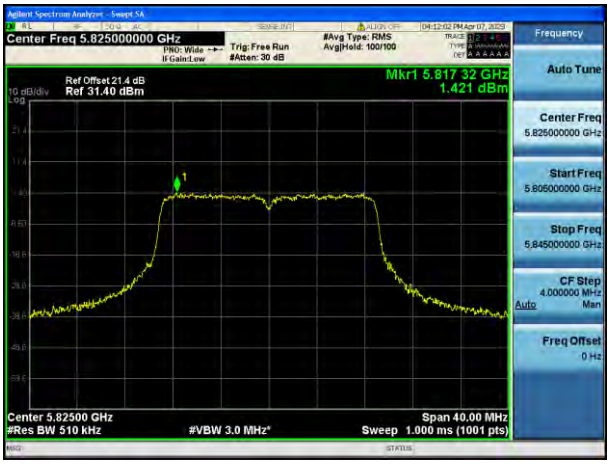
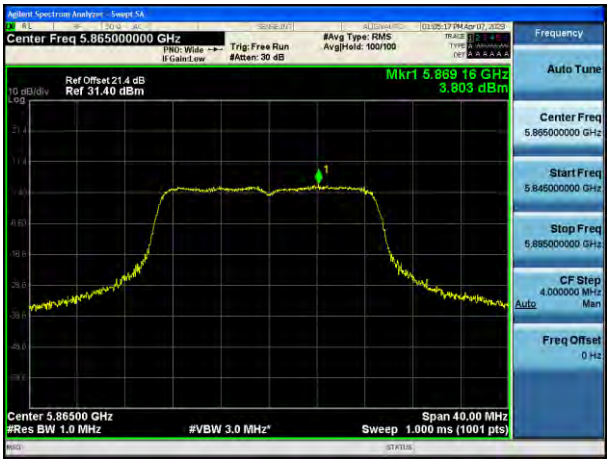
In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 48)	UNII 2A (Ch. 60)
	
UNII 2C (Ch. 116)	**UNII 3 (Ch. 157)**
	
UNII 4 (Ch. 173)	
	

▣ Test Plots(802.11n(HT20))

Note:

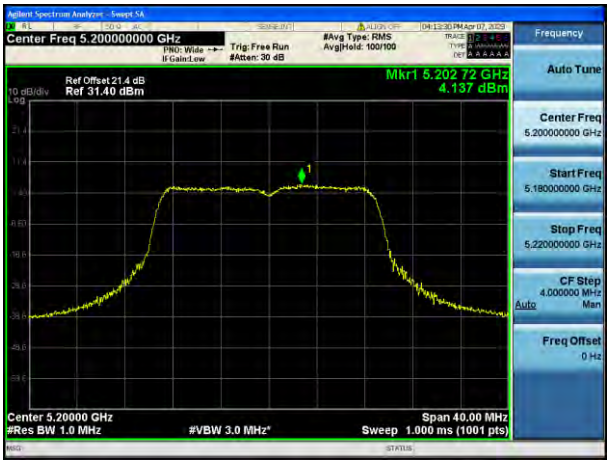
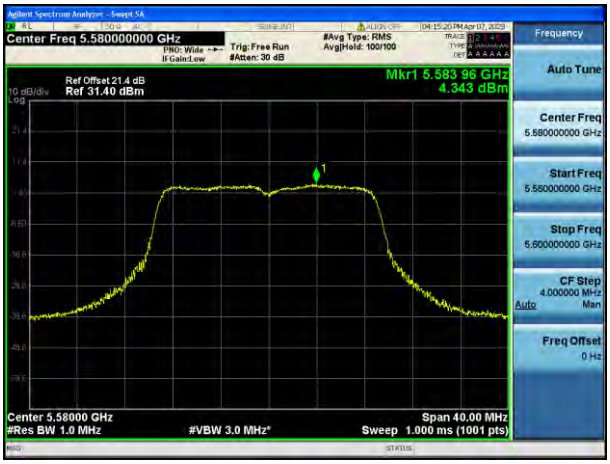
In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 36)	UNII 2A (Ch. 52)
	
UNII 2C (Ch. 144)	**UNII 3 (Ch. 165)**
	
UNII 4 (Ch. 173)	
	

▣ Test Plots(802.11ac(VHT20))

Note:

In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 40)	UNII 2A (Ch. 52)
	
UNII 2C (Ch. 116)	**UNII 3 (Ch. 157)**
	
UNII 4 (Ch. 177)	
	

▣ Test Plots(802.11n(HT40))

Note:

In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 46)	UNII 2A (Ch. 54)
	
UNII 2C (Ch. 142)	**UNII 3 (Ch. 151)**
	
UNII 4 (Ch. 167)	
	

▣ Test Plots(802.11ac(VHT40))

Note:

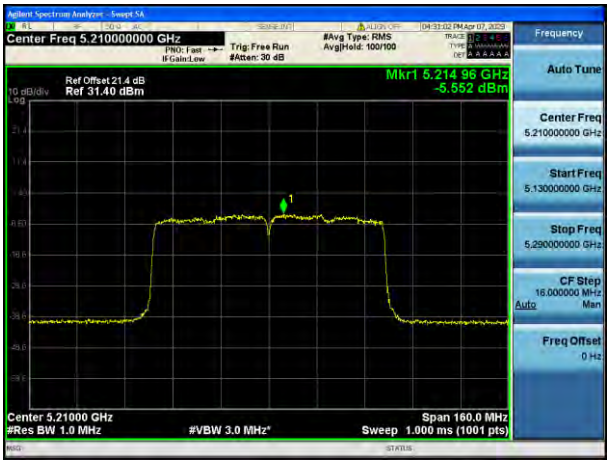
In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 46)	UNII 2A (Ch. 54)
	
UNII 2C (Ch. 110)	**UNII 3 (Ch. 159)**
	
UNII 4 (Ch. 167)	
	

▣ Test Plots(802.11ac(VHT80))

Note:

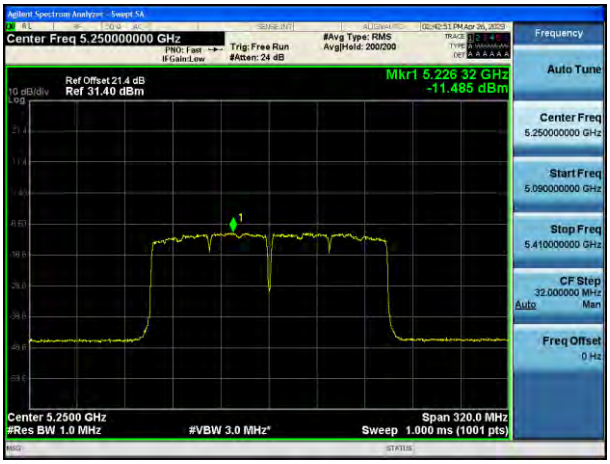
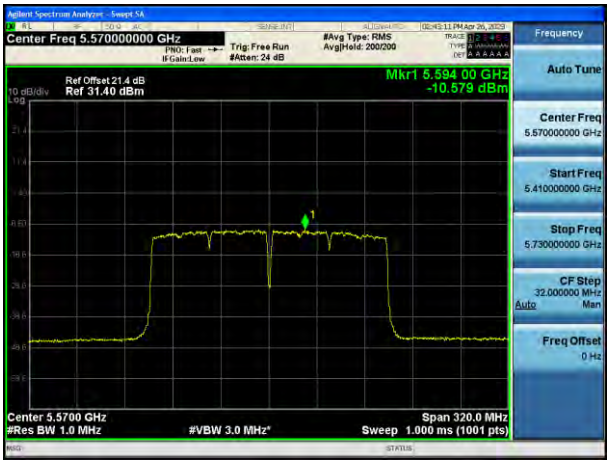
In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 42)	UNII 2A (Ch. 58)
	
UNII 2C (Ch. 138)	**UNII 3 (Ch. 155)**
	
UNII 4 (Ch. 171)	
	

▣ Test Plots(802.11ac(VHT160))

Note:

In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 50)	UNII 2C (Ch. 114)
	

UNII 4 (Ch. 163)


10.6 FREQUENCY STABILITY.

10.6.1 80 MHz BW

[Ant.1]

Startup after the EUT is energized

OPERATING BAND:	UNII Band 1
OPERATING FREQUENCY:	5,210,000,000 Hz
CHANNEL:	42
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5210057.65	57.65
100%		-30	5210077.22	77.22
100%		-20	5210074.01	74.01
100%		-10	5210068.37	68.37
100%		0	5210063.90	63.90
100%		+10	5210060.36	60.36
100%		+30	5210061.16	61.16
100%		+40	5210070.92	70.92
100%		+50	5210076.09	76.09
High	4.40	+20	5210076.82	76.82
Low	3.70	+20	5210075.39	75.39

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 2A
OPERATING FREQUENCY:	5,290,000,000 Hz
CHANNEL:	58
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5290056.28	56.28
100%		-30	5290075.27	75.27
100%		-20	5290071.71	71.71
100%		-10	5290065.78	65.78
100%		0	5290061.39	61.39
100%		+10	5290058.51	58.51
100%		+30	5290060.20	60.20
100%		+40	5290067.97	67.97
100%		+50	5290073.69	73.69
High	4.40	+20	5290076.00	76.00
Low	3.70	+20	5290074.81	74.81

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 2C
OPERATING FREQUENCY:	5,530,000,000 Hz
CHANNEL:	106
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5530058.74	58.74
100%		-30	5530078.85	78.85
100%		-20	5530076.66	76.66
100%		-10	5530071.03	71.03
100%		0	5530067.56	67.56
100%		+10	5530064.40	64.40
100%		+30	5530061.84	61.84
100%		+40	5530070.48	70.48
100%		+50	5530076.46	76.46
High	4.40	+20	5530078.72	78.72
Low	3.70	+20	5530075.74	75.74

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 3
OPERATING FREQUENCY:	5,775,000,000 Hz
CHANNEL:	155
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5775059.83	59.83
100%		-30	5775079.16	79.16
100%		-20	5775075.19	75.19
100%		-10	5775068.60	68.60
100%		0	5775065.44	65.44
100%		+10	5775062.27	62.27
100%		+30	5775063.85	63.85
100%		+40	5775073.48	73.48
100%		+50	5775077.92	77.92
High	4.40	+20	5775078.27	78.27
Low	3.70	+20	5775078.25	78.25

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

2 minutes after the EUT is energized

OPERATING BAND:	UNII Band 1
OPERATING FREQUENCY:	5,210,000,000 Hz
CHANNEL:	42
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5210069.92	69.92
100%		-30	5210089.23	89.23
100%		-20	5210086.88	86.88
100%		-10	5210080.95	80.95
100%		0	5210076.70	76.70
100%		+10	5210073.93	73.93
100%		+30	5210072.78	72.78
100%		+40	5210081.42	81.42
100%		+50	5210087.12	87.12
High	4.40	+20	5210089.62	89.62
Low	3.70	+20	5210089.57	89.57

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 2A
OPERATING FREQUENCY:	5,290,000,000 Hz
CHANNEL:	58
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5290071.60	71.60
100%		-30	5290090.55	90.55
100%		-20	5290087.14	87.14
100%		-10	5290081.93	81.93
100%		0	5290077.95	77.95
100%		+10	5290075.39	75.39
100%		+30	5290075.39	75.39
100%		+40	5290084.01	84.01
100%		+50	5290089.13	89.13
High	4.40	+20	5290090.72	90.72
Low	3.70	+20	5290088.87	88.87

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 2C
OPERATING FREQUENCY:	5,530,000,000 Hz
CHANNEL:	106
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5530072.45	72.45
100%		-30	5530093.31	93.31
100%		-20	5530091.17	91.17
100%		-10	5530085.57	85.57
100%		0	5530082.06	82.06
100%		+10	5530079.17	79.17
100%		+30	5530075.18	75.18
100%		+40	5530083.97	83.97
100%		+50	5530088.61	88.61
High	4.40	+20	5530091.09	91.09
Low	3.70	+20	5530091.82	91.82

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 3
OPERATING FREQUENCY:	5,775,000,000 Hz
CHANNEL:	155
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5775071.81	71.81
100%		-30	5775091.43	91.43
100%		-20	5775088.92	88.92
100%		-10	5775082.39	82.39
100%		0	5775078.07	78.07
100%		+10	5775075.81	75.81
100%		+30	5775075.52	75.52
100%		+40	5775085.97	85.97
100%		+50	5775090.39	90.39
High	4.40	+20	5775090.23	90.23
Low	3.70	+20	5775090.96	90.96

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

5 minutes after the EUT is energized

OPERATING BAND:	UNII Band 1
OPERATING FREQUENCY:	5,210,000,000 Hz
CHANNEL:	42
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5210073.25	73.25
100%		-30	5210093.93	93.93
100%		-20	5210091.51	91.51
100%		-10	5210084.44	84.44
100%		0	5210079.93	79.93
100%		+10	5210076.15	76.15
100%		+30	5210076.85	76.85
100%		+40	5210086.89	86.89
100%		+50	5210090.35	90.35
High	4.40	+20	5210090.71	90.71
Low	3.70	+20	5210090.69	90.69

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 2A
OPERATING FREQUENCY:	5,290,000,000 Hz
CHANNEL:	58
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5290075.84	75.84
100%		-30	5290094.76	94.76
100%		-20	5290091.08	91.08
100%		-10	5290085.44	85.44
100%		0	5290082.19	82.19
100%		+10	5290078.69	78.69
100%		+30	5290078.68	78.68
100%		+40	5290087.26	87.26
100%		+50	5290091.08	91.08
High	4.40	+20	5290093.66	93.66
Low	3.70	+20	5290094.14	94.14

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 2C
OPERATING FREQUENCY:	5,530,000,000 Hz
CHANNEL:	106
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5530077.34	77.34
100%		-30	5530096.64	96.64
100%		-20	5530094.32	94.32
100%		-10	5530087.51	87.51
100%		0	5530082.98	82.98
100%		+10	5530080.54	80.54
100%		+30	5530081.42	81.42
100%		+40	5530090.84	90.84
100%		+50	5530094.76	94.76
High	4.40	+20	5530095.26	95.26
Low	3.70	+20	5530096.20	96.20

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 3
OPERATING FREQUENCY:	5,775,000,000 Hz
CHANNEL:	155
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5775076.71	76.71
100%		-30	5775096.68	96.68
100%		-20	5775092.95	92.95
100%		-10	5775087.34	87.34
100%		0	5775082.72	82.72
100%		+10	5775078.83	78.83
100%		+30	5775079.21	79.21
100%		+40	5775088.36	88.36
100%		+50	5775091.54	91.54
High	4.40	+20	5775093.89	93.89
Low	3.70	+20	5775093.91	93.91

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

10 minutes after the EUT is energized

OPERATING BAND:	UNII Band 1
OPERATING FREQUENCY:	5,210,000,000 Hz
CHANNEL:	42
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5210082.25	82.25
100%		-30	5210101.66	101.66
100%		-20	5210098.89	98.89
100%		-10	5210091.86	91.86
100%		0	5210087.82	87.82
100%		+10	5210083.90	83.90
100%		+30	5210085.83	85.83
100%		+40	5210095.41	95.41
100%		+50	5210101.41	101.41
High	4.40	+20	5210102.25	102.25
Low	3.70	+20	5210101.30	101.30

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 2A
OPERATING FREQUENCY:	5,290,000,000 Hz
CHANNEL:	58
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5290080.42	80.42
100%		-30	5290099.77	99.77
100%		-20	5290097.29	97.29
100%		-10	5290090.46	90.46
100%		0	5290087.04	87.04
100%		+10	5290083.50	83.50
100%		+30	5290082.78	82.78
100%		+40	5290090.88	90.88
100%		+50	5290096.31	96.31
High	4.40	+20	5290099.85	99.85
Low	3.70	+20	5290098.29	98.29

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 2C
OPERATING FREQUENCY:	5,530,000,000 Hz
CHANNEL:	106
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5530079.96	79.96
100%		-30	5530099.62	99.62
100%		-20	5530096.23	96.23
100%		-10	5530089.90	89.90
100%		0	5530086.58	86.58
100%		+10	5530084.20	84.20
100%		+30	5530083.03	83.03
100%		+40	5530091.30	91.30
100%		+50	5530096.16	96.16
High	4.40	+20	5530098.82	98.82
Low	3.70	+20	5530098.19	98.19

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 3
OPERATING FREQUENCY:	5,775,000,000 Hz
CHANNEL:	155
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5775083.63	83.63
100%		-30	5775102.55	102.55
100%		-20	5775099.26	99.26
100%		-10	5775093.41	93.41
100%		0	5775089.10	89.10
100%		+10	5775085.61	85.61
100%		+30	5775086.22	86.22
100%		+40	5775095.36	95.36
100%		+50	5775101.09	101.09
High	4.40	+20	5775103.36	103.36
Low	3.70	+20	5775102.93	102.93

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

[Ant.2]

Startup after the EUT is energized

OPERATING BAND:	UNII Band 1
OPERATING FREQUENCY:	5,210,000,000 Hz
CHANNEL:	42
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5210058.15	58.15
100%		-30	5210077.34	77.34
100%		-20	5210073.61	73.61
100%		-10	5210066.77	66.77
100%		0	5210062.29	62.29
100%		+10	5210058.63	58.63
100%		+30	5210061.42	61.42
100%		+40	5210071.29	71.29
100%		+50	5210077.24	77.24
High	4.40	+20	5210078.10	78.10
Low	3.70	+20	5210076.73	76.73

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 2A
OPERATING FREQUENCY:	5,290,000,000 Hz
CHANNEL:	58
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5290058.91	58.91
100%		-30	5290078.33	78.33
100%		-20	5290075.19	75.19
100%		-10	5290069.53	69.53
100%		0	5290065.56	65.56
100%		+10	5290061.94	61.94
100%		+30	5290061.94	61.94
100%		+40	5290071.76	71.76
100%		+50	5290075.60	75.60
High	4.40	+20	5290076.75	76.75
Low	3.70	+20	5290078.57	78.57

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 2C
OPERATING FREQUENCY:	5,530,000,000 Hz
CHANNEL:	106
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5530056.19	56.19
100%		-30	5530075.77	75.77
100%		-20	5530072.60	72.60
100%		-10	5530065.66	65.66
100%		0	5530062.50	62.50
100%		+10	5530060.23	60.23
100%		+30	5530059.22	59.22
100%		+40	5530069.31	69.31
100%		+50	5530074.19	74.19
High	4.40	+20	5530075.07	75.07
Low	3.70	+20	5530074.51	74.51

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 3
OPERATING FREQUENCY:	5,775,000,000 Hz
CHANNEL:	155
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5775057.69	57.69
100%		-30	5775077.54	77.54
100%		-20	5775073.49	73.49
100%		-10	5775068.32	68.32
100%		0	5775063.53	63.53
100%		+10	5775061.20	61.20
100%		+30	5775060.65	60.65
100%		+40	5775071.44	71.44
100%		+50	5775075.38	75.38
High	4.40	+20	5775075.63	75.63
Low	3.70	+20	5775076.70	76.70

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

2 minutes after the EUT is energized

OPERATING BAND:	UNII Band 1
OPERATING FREQUENCY:	5,210,000,000 Hz
CHANNEL:	42
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5210070.25	70.25
100%		-30	5210089.48	89.48
100%		-20	5210087.05	87.05
100%		-10	5210081.61	81.61
100%		0	5210077.05	77.05
100%		+10	5210073.44	73.44
100%		+30	5210073.77	73.77
100%		+40	5210081.70	81.70
100%		+50	5210087.01	87.01
High	4.40	+20	5210089.56	89.56
Low	3.70	+20	5210089.46	89.46

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 2A
OPERATING FREQUENCY:	5,290,000,000 Hz
CHANNEL:	58
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5290069.83	69.83
100%		-30	5290090.32	90.32
100%		-20	5290086.92	86.92
100%		-10	5290081.15	81.15
100%		0	5290076.73	76.73
100%		+10	5290074.52	74.52
100%		+30	5290073.69	73.69
100%		+40	5290082.63	82.63
100%		+50	5290088.01	88.01
High	4.40	+20	5290089.21	89.21
Low	3.70	+20	5290087.58	87.58

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 2C
OPERATING FREQUENCY:	5,530,000,000 Hz
CHANNEL:	106
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5530071.07	71.07
100%		-30	5530090.77	90.77
100%		-20	5530088.10	88.10
100%		-10	5530081.58	81.58
100%		0	5530076.97	76.97
100%		+10	5530073.62	73.62
100%		+30	5530074.87	74.87
100%		+40	5530084.05	84.05
100%		+50	5530088.63	88.63
High	4.40	+20	5530089.65	89.65
Low	3.70	+20	5530089.71	89.71

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 3
OPERATING FREQUENCY:	5,775,000,000 Hz
CHANNEL:	155
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5775071.66	71.66
100%		-30	5775091.43	91.43
100%		-20	5775087.74	87.74
100%		-10	5775081.05	81.05
100%		0	5775077.59	77.59
100%		+10	5775074.36	74.36
100%		+30	5775074.02	74.02
100%		+40	5775083.15	83.15
100%		+50	5775088.21	88.21
High	4.40	+20	5775090.72	90.72
Low	3.70	+20	5775090.85	90.85

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

5 minutes after the EUT is energized

OPERATING BAND:	UNII Band 1
OPERATING FREQUENCY:	5,210,000,000 Hz
CHANNEL:	42
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5210072.67	72.67
100%		-30	5210093.13	93.13
100%		-20	5210089.50	89.50
100%		-10	5210083.55	83.55
100%		0	5210080.38	80.38
100%		+10	5210077.31	77.31
100%		+30	5210075.06	75.06
100%		+40	5210084.60	84.60
100%		+50	5210089.09	89.09
High	4.40	+20	5210091.16	91.16
Low	3.70	+20	5210089.62	89.62

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 2A
OPERATING FREQUENCY:	5,290,000,000 Hz
CHANNEL:	58
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5290073.38	73.38
100%		-30	5290093.99	93.99
100%		-20	5290091.23	91.23
100%		-10	5290085.19	85.19
100%		0	5290080.43	80.43
100%		+10	5290077.82	77.82
100%		+30	5290077.45	77.45
100%		+40	5290087.98	87.98
100%		+50	5290093.72	93.72
High	4.40	+20	5290093.12	93.12
Low	3.70	+20	5290093.15	93.15

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 2C
OPERATING FREQUENCY:	5,530,000,000 Hz
CHANNEL:	106
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5530076.49	76.49
100%		-30	5530095.59	95.59
100%		-20	5530093.36	93.36
100%		-10	5530086.55	86.55
100%		0	5530082.56	82.56
100%		+10	5530078.64	78.64
100%		+30	5530079.64	79.64
100%		+40	5530089.26	89.26
100%		+50	5530094.91	94.91
High	4.40	+20	5530096.14	96.14
Low	3.70	+20	5530094.87	94.87

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 3
OPERATING FREQUENCY:	5,775,000,000 Hz
CHANNEL:	155
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5775075.67	75.67
100%		-30	5775095.39	95.39
100%		-20	5775092.58	92.58
100%		-10	5775086.69	86.69
100%		0	5775083.20	83.20
100%		+10	5775080.25	80.25
100%		+30	5775079.68	79.68
100%		+40	5775089.38	89.38
100%		+50	5775093.28	93.28
High	4.40	+20	5775093.57	93.57
Low	3.70	+20	5775094.28	94.28

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

10 minutes after the EUT is energized

OPERATING BAND:	UNII Band 1
OPERATING FREQUENCY:	5,210,000,000 Hz
CHANNEL:	42
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5210079.55	79.55
100%		-30	5210100.32	100.32
100%		-20	5210097.43	97.43
100%		-10	5210091.54	91.54
100%		0	5210087.40	87.40
100%		+10	5210084.38	84.38
100%		+30	5210082.43	82.43
100%		+40	5210091.94	91.94
100%		+50	5210095.48	95.48
High	4.40	+20	5210097.09	97.09
Low	3.70	+20	5210097.75	97.75

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 2A
OPERATING FREQUENCY:	5,290,000,000 Hz
CHANNEL:	58
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5290083.71	83.71
100%		-30	5290104.14	104.14
100%		-20	5290101.82	101.82
100%		-10	5290096.56	96.56
100%		0	5290092.83	92.83
100%		+10	5290088.73	88.73
100%		+30	5290086.81	86.81
100%		+40	5290096.49	96.49
100%		+50	5290102.47	102.47
High	4.40	+20	5290103.69	103.69
Low	3.70	+20	5290102.34	102.34

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 2C
OPERATING FREQUENCY:	5,530,000,000 Hz
CHANNEL:	106
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5530081.97	81.97
100%		-30	5530102.15	102.15
100%		-20	5530098.40	98.40
100%		-10	5530091.44	91.44
100%		0	5530087.50	87.50
100%		+10	5530084.00	84.00
100%		+30	5530084.83	84.83
100%		+40	5530092.83	92.83
100%		+50	5530096.83	96.83
High	4.40	+20	5530099.97	99.97
Low	3.70	+20	5530099.07	99.07

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND:	UNII Band 3
OPERATING FREQUENCY:	5,775,000,000 Hz
CHANNEL:	155
REFERENCE VOLTAGE:	3.88 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.88	+20(Ref)	5775082.47	82.47
100%		-30	5775101.76	101.76
100%		-20	5775098.82	98.82
100%		-10	5775093.42	93.42
100%		0	5775089.16	89.16
100%		+10	5775086.30	86.30
100%		+30	5775085.17	85.17
100%		+40	5775093.35	93.35
100%		+50	5775099.25	99.25
High	4.40	+20	5775102.37	102.37
Low	3.70	+20	5775102.01	102.01

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

10.7 STRADDLE CHANNEL

10.7.1 26 dB Bandwidth

[Ant.1]

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11a	UNII 2C	5720	144	5710.40	14.60
802.11n(HT20)				5709.48	15.52
802.11ac(VHT20)				5708.76	16.24
802.11a	UNII 3	5720	144	5729.48	4.48
802.11n(HT20)				5731.00	6.00
802.11ac(VHT20)				5731.24	6.24

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11n(HT40)	UNII 2C	5710	142	5690.32	34.68
802.11ac(VHT40)				5690.24	34.76
802.11n(HT40)	UNII 3	5710	142	5729.44	4.44
802.11ac(VHT40)				5729.68	4.68

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11ac(VHT80)	UNII 2C	5690	138	5649.52	75.48
	UNII 3	5690	138	5730.80	5.80

Note:

[UNII 2C] 26 dB Bandwidth = 5 725 MHz - Measured Frequency[MHz]

[UNII 3C] 26 dB Bandwidth = Measured Frequency[MHz] – 5 725 MHz

[Ant.2]

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11a	UNII 2C	5720	144	5710.44	14.56
802.11n(HT20)				5709.36	15.64
802.11ac(VHT20)				5708.76	16.24
802.11a	UNII 3	5720	144	5729.40	4.40
802.11n(HT20)				5731.28	6.28
802.11ac(VHT20)				5731.40	6.40

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11n(HT40)	UNII 2C	5710	142	5690.32	34.68
802.11ac(VHT40)				5690.24	34.76
802.11n(HT40)	UNII 3	5710	142	5729.52	4.52
802.11ac(VHT40)				5729.60	4.60

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11ac(VHT80)	UNII 2C	5690	138	5649.36	75.64
	UNII 3	5690	138	5730.96	5.96

Note:

[UNII 2C] 26 dB Bandwidth = 5 725 MHz - Measured Frequency[MHz]

[UNII 3C] 26 dB Bandwidth = Measured Frequency[MHz] – 5 725 MHz

[Ant.1]

▣ Test Plots (26 dB Bandwidth)

802.11a UNII Band	802.11n(HT20) UNII Band
	

802.11ac(VHT20) UNII Band